QUOTATION FOR: THE TRADE

JOB LOCATION:
VA RNOVATION B-1

ENGINEER: BRITT, PETERS & ASSOCIATES

TAB-1

WHA-A

ZURN Z1700-100 WATER HAMMER ARRSTOR 1-11 UNITS

TAB-2

WHA-B

ZURN Z1700-200 WATER HAMMER ARRSTOR 12-32 UNITS

TAB-3

WHA-C

ZURN Z1700-300 WATER HAMMER ARRSTOR 33-60 UNITS

TAB-4

WHA-D

ZURN Z1700-400 WATER HAMMER ARRSTOR 61-113 UNITS

TAB-5

WHA-E

ZURN Z1700-500 WATER HAMMER ARRSTOR 114-154 UNITS

TAB-6

WHA-F

ZURN Z1700-600 WATER HAMMER ARRSTOR 155-330 UNITS

TAB-7

FD"C"

ZURN ZN1400-2NL-6SZ1 ADJUSTABLE SQUARE BRONZE TOP CLEANOUT

ZURN ZN1400-3NL-6SZ1 ADJUSTABLE SQUARE BRONZE TOP CLEANOUT

ZURN ZN1400-4NL-6SZ1 ADJUSTABLE SQUARE BRONZE TOP CLEANOUT

MIFAB MR-500 1/2" TRAP PRIMER

MIFAB MI-DU TRAP PRIMER DISTRIBUTION UNIT

TAB-8

FCO

ZURN Z1474 HEAVY DUTY CLEANOUT HOUSING

ADD FOR -N4 INTERNAL CLEANOUT

ADD FOR -N6 INTERNAL CLEANOUT

TAB-9

WCO

ZURN Z-1440-2NH CLEANOUT FERRULE

ZURN Z-1440-3NH CLEANOUT FERRULE

ZURN Z-1440-4NH CLEANOUT FERRULE

ZURN ZS1469-4 ROUND SS ACCESS COVER WITH SCREW

ZURN ZS1469-5 ROUND SS ACCESS COVER WITH SCREW

ZURN ZS1469-7 ROUND SS ACCESS COVER WITH SCREW

TAB-10

P103

AMERICAN STANDARD 2257101.020 WC WH FV ELG AFWALL MILLENNIUM BOWL

ZURN Z6000AV-HET 1.28GPF MANUAL WATER CLOSET FLUSH VALVE

BEMIS 1055SSC WHITE OPENFRONT ELONGATED TIOLET SEAT LESS COVER

ADD FOR ZURN Z1202-N4-XB 1000# VERTICAL CLOSET CARRIER

ADD FOR ZURN Z1202-ND4-XB BACK-TO-BACK 1000# VERTICAL CLOSET CARRIER

TAB-11

P-408

AMERICAN STANDARD 0355012.020 LAV WM 4OC LUCERN
CHICAGO 895-GN2AE72-319AB CHROME GOOSENECK LAV FAUCET WITH WRISTBALDE HANDLES
MCGUIRE 155WC OFFSET WHEELCHAIR LAV DRAIN
MCGUIRE MCT125075ZN 1-1/4 TUBULAR P-TRAP POLISHED CHROME
1/2"(5/8" OD) CHROME ESCUTCHEON
ANGLE STOP 5/8COMPX3/8COMP CHROME PLATED

STAINLESS STEEL BRAIDED LAV SUPPLY 3/8COMPX1/2FIPX20"
TRUEBRO 103-EZ P-TRAP & SUPPLY COVER
BRADLEY S59-4000A 3/8" TMV
ADD FOR ZURN Z1231-UNIV-81 LAV CARRIER

TAB-12

P-502

FIAT TSBCR1100 28 X 28 X 12 TERRAZZO CORNER MOP SERVICE BASIN
CHICAGO 897-CRCF SERVICE FAUCET
ZURN JP1996-MH MOP HANGER
ZURN JP1996 -HH HOSE AND HOSE BRACKET
FIAT MSG2424 WALL GUARD

TAB-13

P-708

BRADLEY S19-214SS WALL MOUNT EYE FACE WASH
FOOT/HAND OPERATED

BRADLEY S19-2000 THERMOSTATIC EMERGENCY MIXING VALVE

TAB-14

TV-1

BRADLEY S59-4000A 3/8" TMV

TAB-15

TV-2

BRADLEY S19-2000 THERMOSTATIC EMERGENCY MIXING VALVE

TAB-16

DCWRP-1

BELL & GOSSETT 60B0B1004 ECOCIRC+20-18 115V 1PH
STAINLESS CIRC PUMP
BELL & GOSSETT 113224 AQS-3/4 AQUASTAT
BELL & GOSSETT 113210 TC-1 TIMER KIT
CIRC PUMP FLANGE KIT

STAR MECHANICAL SUPPLY

TAB-1

WHA-A

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

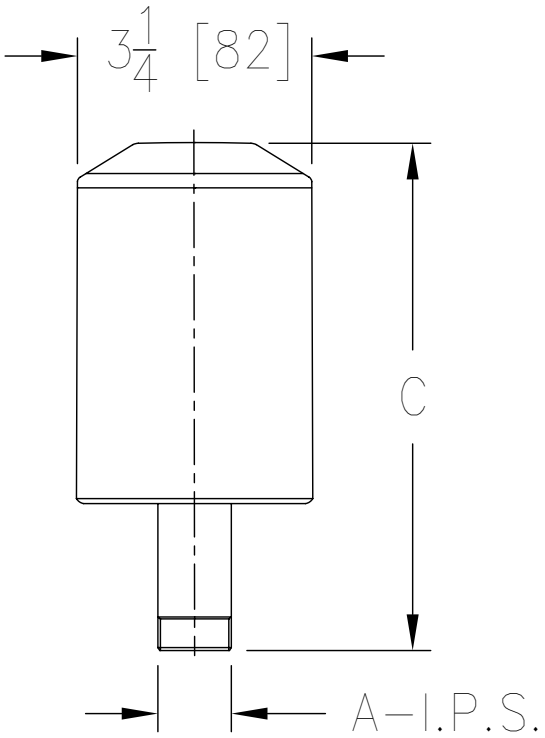
Z1700
SHOKTROL WATER HAMMER ARRESTORS

SPECIFICATION SHEET

TAG _____

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Size	'A' In. [mm]	'C' In. [mm]	Approx. Wt. Lbs. [kg]	Fixture Unit Capacity
100	3/4 [19]	3-1/4 [82]	15/16 [.425]	1-11
200	1 [25]	4-1/16 [103]	1-5/32 [.525]	12-32
300	1 [25]	4-3/8 [111]	1-5/16 [.6]	33-60
400	1 [25]	5-1/4 [133]	1-9/16 [.7]	61-113
500	1 [25]	7-1/32 [178]	2-3/16 [1.0]	114-154
600	1 [25]	7-1/32 [178]	2-3/16 [1.0]	155-330



Pressure and Temperature Requirements:
Maximum Working Pressure: 125 psi [862 Kpa]
Maximum Static Pressure: 250 psi [1724 Kpa]
Operating Temperature Range: 33°F to 300 °F [1°C to 149°C]

ENGINEERING SPECIFICATION: ZURN Z1700
Shoktrol Water Hammer Arrestors are regularly furnished in all stainless steel construction. Pipe threads are accurately machined to assure tight connection. 3/4" [19mm] male I.P.S. inlet is standard for the 100 size units, while 1" [25mm] male I.P.S. inlet is standard for sizes 200 thru 600.

All sizes of Zurn Z1700 Shoktrol Water Hammer Arrestors comply with the following specifications:

PDI	WH-201
ASSE	1010

Where required in piping systems, properly sized water hammer arrestors shall be ZURN Z1700 (specify size) with nesting type bellows contained within a casing having sufficient displacement volume to dissipate the calculated kinetic energy generated, in the piping system. Both casing and bellows constructed of Type 304 stainless steel.

* Regularly furnished unless otherwise specified

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⚠ **AVERTISSEMENT:** Cancer et effets néfastes sur la reproduction - www.P65Warnings.ca.gov

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www.zurn.com

Rev. F
Date: 03/08/2023
C.N. No. 145154
Patent: Zurn.com/patents
Prod. | Dwg. No. Z1700

Z1700

INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

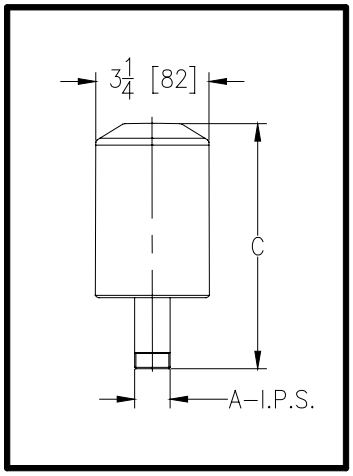
Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Zurn SHOKTROLS provide complete protection against water hammer in common pipe diameters for varying pipe lengths wherever flow velocity is subject to sudden change - in quick closing, solenoid-actuated valves used with lavatories and sinks, dishwashers, and residential automatic washers; in improperly adjusted water closet flush valves; in pumping systems, and in drinking fountains or similar installations where water flow is valved for intermittent operation.

Each SHOKTROL has its shock-absorbing air cushion hermetically sealed within the unit. Consequently, there is no loss of air from the SHOKTROL due to leakage past worn elastomeric sealing surfaces nor due to permeation through elastomeric features. In addition, the SHOKTROL's Type 304 (18-8) stainless steel construction makes it virtually immune to attack and degradation by high levels of chloramine and other common waterborne chemicals which quickly degrade elastomeric components.

Approved by:

Zurn SHOKTROLS should always be installed in an upright position on a horizontal run of piping.



Dimensions in Inches [mm]			Approx. Wt. Lbs. [kg]
Size	A	C	
100	3/4 [19]	3-1/4 [82]	15/16 [.425]
200	1 [25]	4-1/16 [103]	1-5/32 [.525]
300	1 [25]	4-3/8 [111]	1-5/16 [.60]
400	1 [25]	5-1/4 [133]	1-9/16 [.70]
500	1 [25]	7-1/32 [178]	2-3/16 [1]
600	1 [25]	7-1/32 [178]	2-3/16 [1]

Pressure and Temperature Requirements:
Max. Working Pressure: 125 psi
Max. Static Pressure: 250 psi
Max. Temperature: 300 °F

SIZING AND LOCATION:

When a unit of equipment is located at the remote end of a long run of piping, the Zurn SHOKTROL should be placed as close to the point of valve closure as possible. At this location, the SHOKTROL will control any developed energy and prevent shock waves from surging through the piping system (Illus. 1). Properly sized SHOKTROLS should be selected for such installations using Tables 1-A and 1-B below.

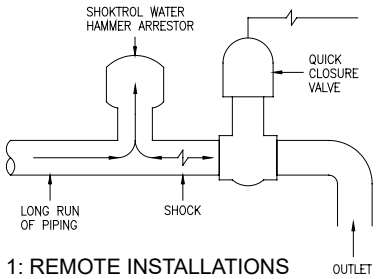


ILLUSTRATION 1: REMOTE INSTALLATIONS

Table I-A. For Pressure Up To 65 spig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #100	One #100	One #200	One #300	One #400	One #500
50	One #100	One #200	One #300	One #400	One #500	One #600
75	One #200	One #300	One #400	One #100 & One #500	One #600	One #500 & One #600
100	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
125`	One #300	One #400	One #600	One #100 & One #600	One #500 & One #600	One #500 & Two #600
150	One #400	One #500	One #600	One #400 & One #600	Two #600	Three #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

Table I-B. For Pressure 65 psig to 85 psig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #200	One #200	One #300	One #400	One #500	One #600
50	One #200	One #300	One #400	One #500	One #600	One #300 & One #600
75	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
100	One #400	One #500	One #600	One #300 & One #600	One #500 & One #600	One #500 & Two #600
125`	One #400	One #500	One #300 & One #600	One #400 & One #600	Two #600	One #200 & Three #600
150	One #500	One #600	One #300 & One #600	Two #600	One #400 & Two #600	Four #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

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Rev. E
Date: 08/28/23
C.N. No. 145154
Patent: Zurn.com/patents
Form # WH1

Z1700
INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

In an effort to arrive at a uniform method of sizing water hammer arrestors, members of the Plumbing and Drainage Institute sponsored a comprehensive testing program which lasted four years. As a result, there is now an industry-wide standard, P.D.I.-WH201 and the all-stainless-steel Zurn SHOKTROL conforms with every aspect of this newly-available information.

HOW TO PROPERLY LOCATE ZURN SHOKTROLS

Multiple Fixture-Branch Line Less Than 20' Long-(Illus. 2). The preferred location for a Zurn SHOKTROL is at the end of the branch line between the last two fixtures served when the branch line does not exceed 20' in length, from the start of the horizontal branch line to the last fixture supply on the line (Use Tables II & III Below).

Multiple Fixtures-Branch Line More Than 20' Long-(Illus. 3). On branch lines over 20' in length, use two SHOKTROLS whose capacities total the requirements of the branch. Locate one unit between the last and next to last fixture and the other unit approximately midway between the fixtures. (Use Tables II & III Below).

Multiple Fixtures-Extremely Long Branch Line-(Illus. 4). In unusual instances where a very long branch line is involved, the water supply is generally fed to some midpoint or other location on the branch line. (Use Tables II & III Below).

Illustration 2. Example of P.D.I. Rule 1

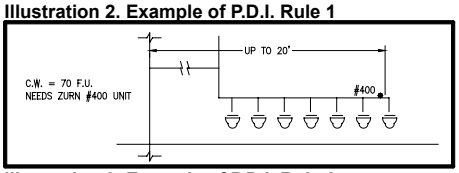


Illustration 3. Example of P.D.I. Rule 2

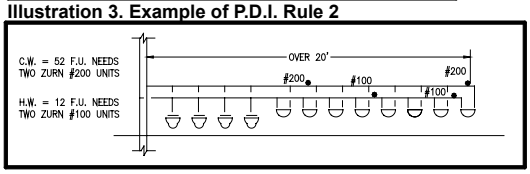
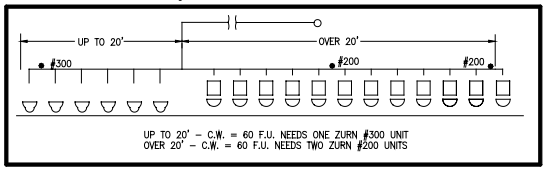


Illustration 4. Example of P.D.I. Rule 1 and Rule 2

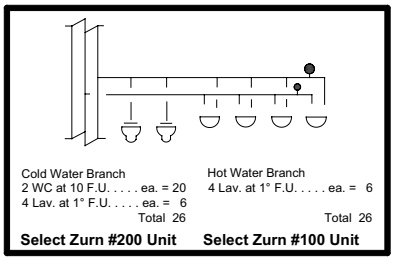


Standard P.D.I.-WH201 bases its sizing data upon the well-known fixture-unit formula. Since most engineers and specifiers utilize fixture-units in their daily calculations, it was appropriate to employ this method for quick, concise water hammer arrestor sizing.

Using Table II (below), determine the "weight in fixture-units" for cold and hot water branch lines serving a group of fixtures, either for public or private installations. When the "weight in" has been established, the data is then applied to the selection Table III.

Using the "weight in fixture-units" obtained from Table II, select the properly-sized SHOKTROL from Table III. If the water pressure in the line exceeds 65 PSIG, select the next larger size SHOKTROL. If the fixture-unit contains "1/2" fraction, "round it up" to the next larger or whole number. (Example: If total is 11-1/2 fixture units, change it to 12 fixture-units).

Example 1



Example 2

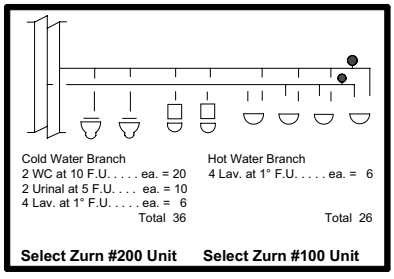


Table II

Fixture	Type of Supply Control	Weight in Fixture-Units					
		Public			Private		
		Total	C.W.	H.W.	Total	C.W.	H.W.
Water Closet	Flush Valve	10	10	-	6	6	-
Water Closet	Flush Tank	5	5	-	3	3	-
Pedestal Urinal	Flush Valve	10	10	-	-	-	-
Stall or Wall Urinal	Flush Valve	5	5	-	-	-	-
Stall or Wall Urinal	Flush Tank	3	3	-	-	-	-
Lavatory	Faucet	2	1-1/2	1-1/2	1	1	1
Bathtub	Faucet	4	2	3	2	1-1/2	1-1/2
Shower Head	Mixing Valve	4	2	3	2	1	2
Bathroom Group Closet	Flush Valve	-	-	-	8	8	3
Bathroom Group Closet	Flush Valve	-	-	-	6	6	3
Separate Shower	Mixing Valve	-	-	-	2	1	2
Service Sink	Faucet	3	3	3	-	-	-
Laundry Tubs (1-3)	Faucet	-	-	-	3	3	3
Combination Fixture	Faucet	-	-	-	3	3	3

Table III

Zurn Shoktrol Size Z1700 Series	#100	#200	#300	#400	#500	#600
P.D.I. Units	A	B	C	D	E	F
Fixture-Units	1-11	12-32	33-60	61-113	114-154	155-330

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1801 Pittsburgh Avenue, Erie, PA 16502, Ph. 855.663.9876

In Canada | Zurn Industries Limited
7900 Goreway Drive, Unit 10, Brampton, Ontario L6T 5W6, Ph. 877.892.5216

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Rev. E
Date: 08/28/23
C.N. No. 145154
Patent: Zurn.com/patents
Form # WH1

STAR MECHANICAL SUPPLY

TAB-2

WHA-B

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

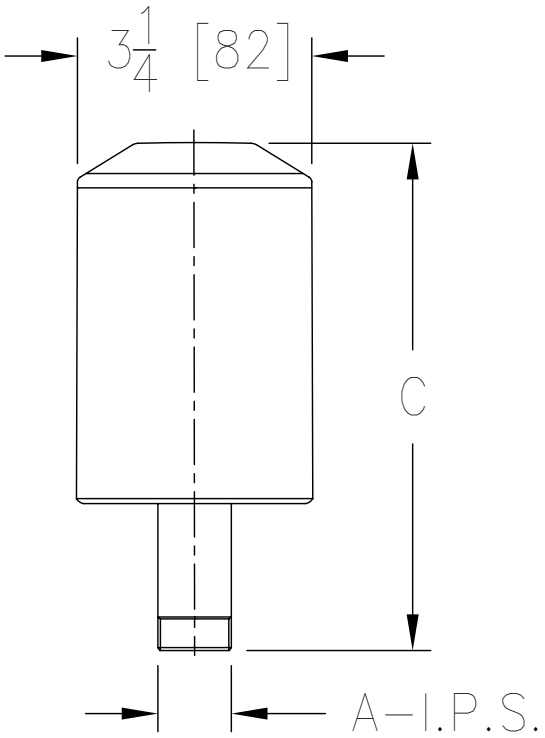
Z1700
SHOKTROL WATER HAMMER ARRESTORS

SPECIFICATION SHEET

TAG _____

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Size	'A' In. [mm]	'C' In. [mm]	Approx. Wt. Lbs. [kg]	Fixture Unit Capacity
100	3/4 [19]	3-1/4 [82]	15/16 [.425]	1-11
200	1 [25]	4-1/16 [103]	1-5/32 [.525]	12-32
300	1 [25]	4-3/8 [111]	1-5/16 [.6]	33-60
400	1 [25]	5-1/4 [133]	1-9/16 [.7]	61-113
500	1 [25]	7-1/32 [178]	2-3/16 [1.0]	114-154
600	1 [25]	7-1/32 [178]	2-3/16 [1.0]	155-330



Pressure and Temperature Requirements:
Maximum Working Pressure: 125 psi [862 Kpa]
Maximum Static Pressure: 250 psi [1724 Kpa]
Operating Temperature Range: 33°F to 300 °F [1°C to 149°C]

ENGINEERING SPECIFICATION: ZURN Z1700
Shoktrol Water Hammer Arrestors are regularly furnished in all stainless steel construction. Pipe threads are accurately machined to assure tight connection. 3/4" [19mm] male I.P.S. inlet is standard for the 100 size units, while 1" [25mm] male I.P.S. inlet is standard for sizes 200 thru 600.

All sizes of Zurn Z1700 Shoktrol Water Hammer Arrestors comply with the following specifications:

PDI	WH-201
ASSE	1010

Where required in piping systems, properly sized water hammer arrestors shall be ZURN Z1700 (specify size) with nesting type bellows contained within a casing having sufficient displacement volume to dissipate the calculated kinetic energy generated, in the piping system. Both casing and bellows constructed of Type 304 stainless steel.

* Regularly furnished unless otherwise specified

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Rev. F
Date: 03/08/2023
C.N. No. 145154
Patent: Zurn.com/patents
Prod. | Dwg. No. Z1700

Z1700

INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

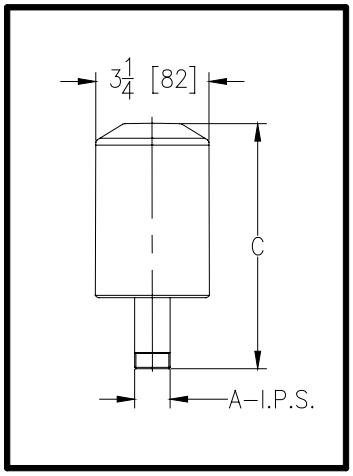
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Zurn SHOKTROLS provide complete protection against water hammer in common pipe diameters for varying pipe lengths wherever flow velocity is subject to sudden change - in quick closing, solenoid-actuated valves used with lavatories and sinks, dishwashers, and residential automatic washers; in improperly adjusted water closet flush valves; in pumping systems, and in drinking fountains or similar installations where water flow is valved for intermittent operation.

Each SHOKTROL has its shock-absorbing air cushion hermetically sealed within the unit. Consequently, there is no loss of air from the SHOKTROL due to leakage past worn elastomeric sealing surfaces nor due to permeation through elastomeric features. In addition, the SHOKTROL's Type 304 (18-8) stainless steel construction makes it virtually immune to attack and degradation by high levels of chloramine and other common waterborne chemicals which quickly degrade elastomeric components.

Approved by:

Zurn SHOKTROLS should always be installed in an upright position on a horizontal run of piping.



Dimensions in Inches [mm]			Approx. Wt. Lbs. [kg]
Size	A	C	
100	3/4 [19]	3-1/4 [82]	15/16 [.425]
200	1 [25]	4-1/16 [103]	1-5/32 [.525]
300	1 [25]	4-3/8 [111]	1-5/16 [.60]
400	1 [25]	5-1/4 [133]	1-9/16 [.70]
500	1 [25]	7-1/32 [178]	2-3/16 [1]
600	1 [25]	7-1/32 [178]	2-3/16 [1]

Pressure and Temperature Requirements:
Max. Working Pressure: 125 psi
Max. Static Pressure: 250 psi
Max. Temperature: 300 °F

SIZING AND LOCATION:

When a unit of equipment is located at the remote end of a long run of piping, the Zurn SHOKTROL should be placed as close to the point of valve closure as possible. At this location, the SHOKTROL will control any developed energy and prevent shock waves from surging through the piping system (Illus. 1). Properly sized SHOKTROLS should be selected for such installations using Tables 1-A and 1-B below.

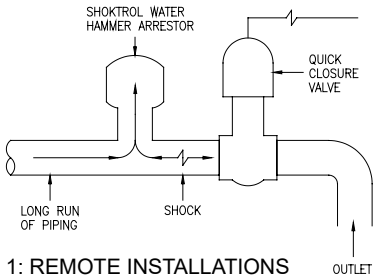


ILLUSTRATION 1: REMOTE INSTALLATIONS

Table I-A. For Pressure Up To 65 spig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #100	One #100	One #200	One #300	One #400	One #500
50	One #100	One #200	One #300	One #400	One #500	One #600
75	One #200	One #300	One #400	One #100 & One #500	One #600	One #500 & One #600
100	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
125`	One #300	One #400	One #600	One #100 & One #600	One #500 & One #600	One #500 & Two #600
150	One #400	One #500	One #600	One #400 & One #600	Two #600	Three #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

Table I-B. For Pressure 65 psig to 85 psig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #200	One #200	One #300	One #400	One #500	One #600
50	One #200	One #300	One #400	One #500	One #600	One #300 & One #600
75	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
100	One #400	One #500	One #600	One #300 & One #600	One #500 & One #600	One #500 & Two #600
125`	One #400	One #500	One #300 & One #600	One #400 & One #600	Two #600	One #200 & Three #600
150	One #500	One #600	One #300 & One #600	Two #600	One #400 & Two #600	Four #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

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In Canada | Zurn Industries Limited
7900 Goreway Drive, Unit 10, Brampton, Ontario L6T 5W6, Ph. 877.892.5216

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Rev. E
Date: 08/28/23
C.N. No. 145154
Patent: Zurn.com/patents
Form # WH1

Z1700
INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

In an effort to arrive at a uniform method of sizing water hammer arrestors, members of the Plumbing and Drainage Institute sponsored a comprehensive testing program which lasted four years. As a result, there is now an industry-wide standard, P.D.I.-WH201 and the all-stainless-steel Zurn SHOKTROL conforms with every aspect of this newly-available information.

HOW TO PROPERLY LOCATE ZURN SHOKTROLS

Multiple Fixture-Branch Line Less Than 20' Long-(Illus. 2). The preferred location for a Zurn SHOKTROL is at the end of the branch line between the last two fixtures served when the branch line does not exceed 20' in length, from the start of the horizontal branch line to the last fixture supply on the line (Use Tables II & III Below).

Multiple Fixtures-Branch Line More Than 20' Long-(Illus. 3). On branch lines over 20' in length, use two SHOKTROLS whose capacities total the requirements of the branch. Locate one unit between the last and next to last fixture and the other unit approximately midway between the fixtures. (Use Tables II & III Below).

Multiple Fixtures-Extremely Long Branch Line-(Illus. 4). In unusual instances where a very long branch line is involved, the water supply is generally fed to some midpoint or other location on the branch line. (Use Tables II & III Below).

Illustration 2. Example of P.D.I. Rule 1

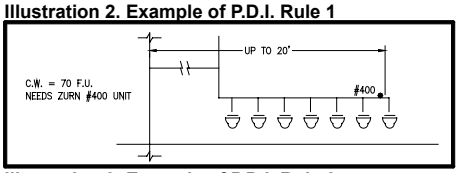


Illustration 3. Example of P.D.I. Rule 2

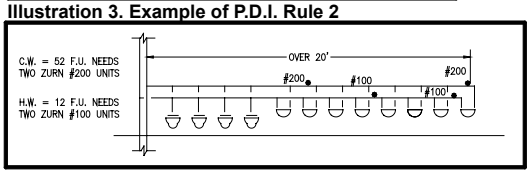
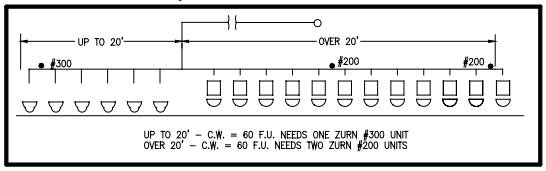


Illustration 4. Example of P.D.I. Rule 1 and Rule 2

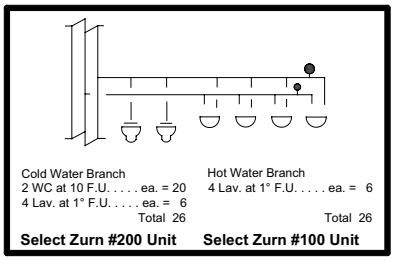


Standard P.D.I.-WH201 bases its sizing data upon the well-known fixture-unit formula. Since most engineers and specifiers utilize fixture-units in their daily calculations, it was appropriate to employ this method for quick, concise water hammer arrestor sizing.

Using Table II (below), determine the "weight in fixture-units" for cold and hot water branch lines serving a group of fixtures, either for public or private installations. When the "weight in" has been established, the data is then applied to the selection Table III.

Using the "weight in fixture-units" obtained from Table II, select the properly-sized SHOKTROL from Table III. If the water pressure in the line exceeds 65 PSIG, select the next larger size SHOKTROL. If the fixture-unit contains "1/2" fraction, "round it up" to the next larger or whole number. (Example: If total is 11-1/2 fixture units, change it to 12 fixture-units).

Example 1



Example 2

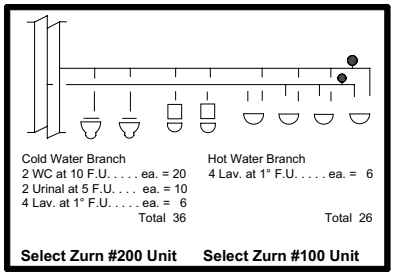


Table II

Fixture	Type of Supply Control	Weight in Fixture-Units					
		Public			Private		
		Total	C.W.	H.W.	Total	C.W.	H.W.
Water Closet	Flush Valve	10	10	-	6	6	-
Water Closet	Flush Tank	5	5	-	3	3	-
Pedestal Urinal	Flush Valve	10	10	-	-	-	-
Stall or Wall Urinal	Flush Valve	5	5	-	-	-	-
Stall or Wall Urinal	Flush Tank	3	3	-	-	-	-
Lavatory	Faucet	2	1-1/2	1-1/2	1	1	1
Bathtub	Faucet	4	2	3	2	1-1/2	1-1/2
Shower Head	Mixing Valve	4	2	3	2	1	2
Bathroom Group Closet	Flush Valve	-	-	-	8	8	3
Bathroom Group Closet	Flush Valve	-	-	-	6	6	3
Separate Shower	Mixing Valve	-	-	-	2	1	2
Service Sink	Faucet	3	3	3	-	-	-
Laundry Tubs (1-3)	Faucet	-	-	-	3	3	3
Combination Fixture	Faucet	-	-	-	3	3	3

Table III

Zurn Shoktrol Size Z1700 Series	#100	#200	#300	#400	#500	#600
P.D.I. Units	A	B	C	D	E	F
Fixture-Units	1-11	12-32	33-60	61-113	114-154	155-330

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STAR MECHANICAL SUPPLY

TAB-3

WHA-C

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

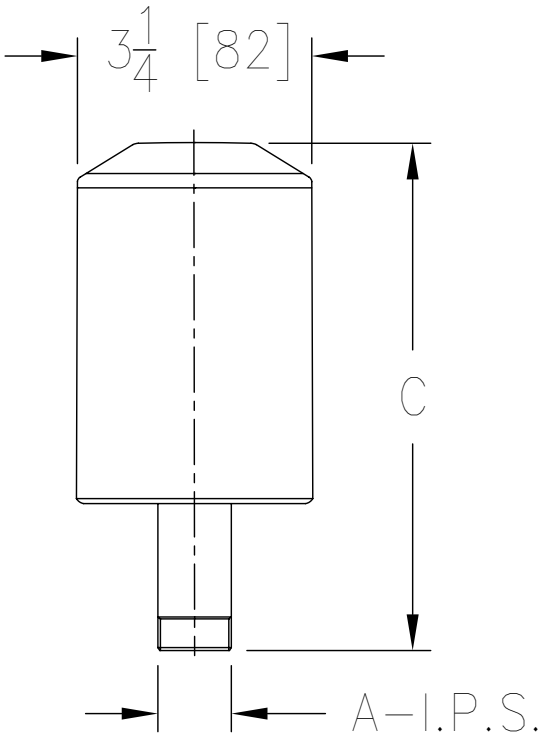
Z1700
SHOKTROL WATER HAMMER ARRESTORS

SPECIFICATION SHEET

TAG _____

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Size	'A' In. [mm]	'C' In. [mm]	Approx. Wt. Lbs. [kg]	Fixture Unit Capacity
100	3/4 [19]	3-1/4 [82]	15/16 [.425]	1-11
200	1 [25]	4-1/16 [103]	1-5/32 [.525]	12-32
300	1 [25]	4-3/8 [111]	1-5/16 [.6]	33-60
400	1 [25]	5-1/4 [133]	1-9/16 [.7]	61-113
500	1 [25]	7-1/32 [178]	2-3/16 [1.0]	114-154
600	1 [25]	7-1/32 [178]	2-3/16 [1.0]	155-330



Pressure and Temperature Requirements:
Maximum Working Pressure: 125 psi [862 Kpa]
Maximum Static Pressure: 250 psi [1724 Kpa]
Operating Temperature Range: 33°F to 300 °F [1°C to 149°C]

ENGINEERING SPECIFICATION: ZURN Z1700
Shoktrol Water Hammer Arrestors are regularly furnished in all stainless steel construction. Pipe threads are accurately machined to assure tight connection. 3/4" [19mm] male I.P.S. inlet is standard for the 100 size units, while 1" [25mm] male I.P.S. inlet is standard for sizes 200 thru 600.

All sizes of Zurn Z1700 Shoktrol Water Hammer Arrestors comply with the following specifications:

PDI	WH-201
ASSE	1010

Where required in piping systems, properly sized water hammer arrestors shall be ZURN Z1700 (specify size) with nesting type bellows contained within a casing having sufficient displacement volume to dissipate the calculated kinetic energy generated, in the piping system. Both casing and bellows constructed of Type 304 stainless steel.

* Regularly furnished unless otherwise specified

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Rev. F
Date: 03/08/2023
C.N. No. 145154
Patent: Zurn.com/patents
Prod. | Dwg. No. Z1700

Z1700

INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

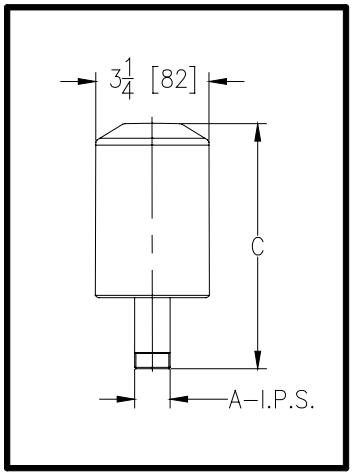
Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Zurn SHOKTROLS provide complete protection against water hammer in common pipe diameters for varying pipe lengths wherever flow velocity is subject to sudden change - in quick closing, solenoid-actuated valves used with lavatories and sinks, dishwashers, and residential automatic washers; in improperly adjusted water closet flush valves; in pumping systems, and in drinking fountains or similar installations where water flow is valved for intermittent operation.

Each SHOKTROL has its shock-absorbing air cushion hermetically sealed within the unit. Consequently, there is no loss of air from the SHOKTROL due to leakage past worn elastomeric sealing surfaces nor due to permeation through elastomeric features. In addition, the SHOKTROL's Type 304 (18-8) stainless steel construction makes it virtually immune to attack and degradation by high levels of chloramine and other common waterborne chemicals which quickly degrade elastomeric components.

Approved by:

Zurn SHOKTROLS should always be installed in an upright position on a horizontal run of piping.



Dimensions in Inches [mm]			Approx. Wt. Lbs. [kg]
Size	A	C	
100	3/4 [19]	3-1/4 [82]	15/16 [.425]
200	1 [25]	4-1/16 [103]	1-5/32 [.525]
300	1 [25]	4-3/8 [111]	1-5/16 [.60]
400	1 [25]	5-1/4 [133]	1-9/16 [.70]
500	1 [25]	7-1/32 [178]	2-3/16 [1]
600	1 [25]	7-1/32 [178]	2-3/16 [1]

Pressure and Temperature Requirements:
Max. Working Pressure: 125 psi
Max. Static Pressure: 250 psi
Max. Temperature: 300 °F

SIZING AND LOCATION:

When a unit of equipment is located at the remote end of a long run of piping, the Zurn SHOKTROL should be placed as close to the point of valve closure as possible. At this location, the SHOKTROL will control any developed energy and prevent shock waves from surging through the piping system (Illus. 1). Properly sized SHOKTROLS should be selected for such installations using Tables 1-A and 1-B below.

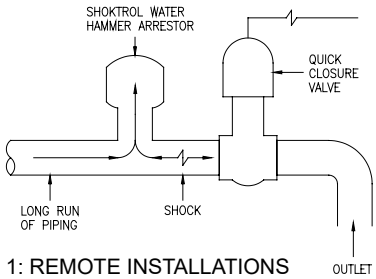


ILLUSTRATION 1: REMOTE INSTALLATIONS

Table I-A. For Pressure Up To 65 spig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #100	One #100	One #200	One #300	One #400	One #500
50	One #100	One #200	One #300	One #400	One #500	One #600
75	One #200	One #300	One #400	One #100 & One #500	One #600	One #500 & One #600
100	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
125`	One #300	One #400	One #600	One #100 & One #600	One #500 & One #600	One #500 & Two #600
150	One #400	One #500	One #600	One #400 & One #600	Two #600	Three #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

Table I-B. For Pressure 65 psig to 85 psig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #200	One #200	One #300	One #400	One #500	One #600
50	One #200	One #300	One #400	One #500	One #600	One #300 & One #600
75	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
100	One #400	One #500	One #600	One #300 & One #600	One #500 & One #600	One #500 & Two #600
125`	One #400	One #500	One #300 & One #600	One #400 & One #600	Two #600	One #200 & Three #600
150	One #500	One #600	One #300 & One #600	Two #600	One #400 & Two #600	Four #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

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Rev. E
Date: 08/28/23
C.N. No. 145154
Patent: Zurn.com/patents
Form # WH1

Z1700
INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

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HOW TO PROPERLY LOCATE ZURN SHOKTROLS

Multiple Fixture-Branch Line Less Than 20' Long-(Illus. 2). The preferred location for a Zurn SHOKTROL is at the end of the branch line between the last two fixtures served when the branch line does not exceed 20' in length, from the start of the horizontal branch line to the last fixture supply on the line (Use Tables II & III Below).

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Multiple Fixtures-Extremely Long Branch Line-(Illus. 4). In unusual instances where a very long branch line is involved, the water supply is generally fed to some midpoint or other location on the branch line. (Use Tables II & III Below).

Illustration 2. Example of P.D.I. Rule 1

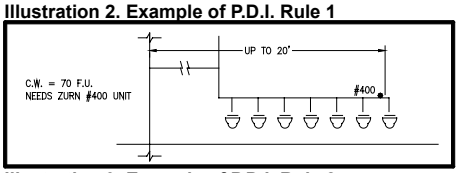


Illustration 3. Example of P.D.I. Rule 2

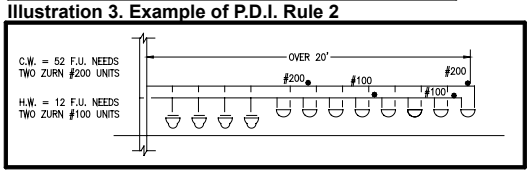
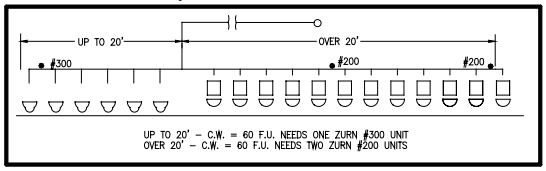


Illustration 4. Example of P.D.I. Rule 1 and Rule 2

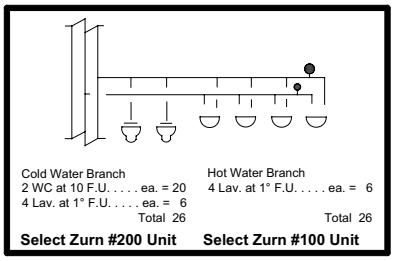


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Using Table II (below), determine the "weight in fixture-units" for cold and hot water branch lines serving a group of fixtures, either for public or private installations. When the "weight in" has been established, the data is then applied to the selection Table III.

Using the "weight in fixture-units" obtained from Table II, select the properly-sized SHOKTROL from Table III. If the water pressure in the line exceeds 65 PSIG, select the next larger size SHOKTROL. If the fixture-unit contains "1/2" fraction, "round it up" to the next larger or whole number. (Example: If total is 11-1/2 fixture units, change it to 12 fixture-units).

Example 1



Example 2

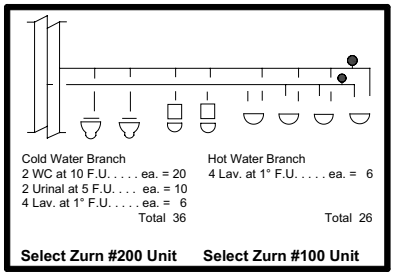


Table II

Fixture	Type of Supply Control	Weight in Fixture-Units					
		Public			Private		
		Total	C.W.	H.W.	Total	C.W.	H.W.
Water Closet	Flush Valve	10	10	-	6	6	-
Water Closet	Flush Tank	5	5	-	3	3	-
Pedestal Urinal	Flush Valve	10	10	-	-	-	-
Stall or Wall Urinal	Flush Valve	5	5	-	-	-	-
Stall or Wall Urinal	Flush Tank	3	3	-	-	-	-
Lavatory	Faucet	2	1-1/2	1-1/2	1	1	1
Bathtub	Faucet	4	2	3	2	1-1/2	1-1/2
Shower Head	Mixing Valve	4	2	3	2	1	2
Bathroom Group Closet	Flush Valve	-	-	-	8	8	3
Bathroom Group Closet	Flush Valve	-	-	-	6	6	3
Separate Shower	Mixing Valve	-	-	-	2	1	2
Service Sink	Faucet	3	3	3	-	-	-
Laundry Tubs (1-3)	Faucet	-	-	-	3	3	3
Combination Fixture	Faucet	-	-	-	3	3	3

Table III

Zurn Shoktrol Size Z1700 Series	#100	#200	#300	#400	#500	#600
P.D.I. Units	A	B	C	D	E	F
Fixture-Units	1-11	12-32	33-60	61-113	114-154	155-330

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STAR MECHANICAL SUPPLY

TAB-4

WHA-D

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

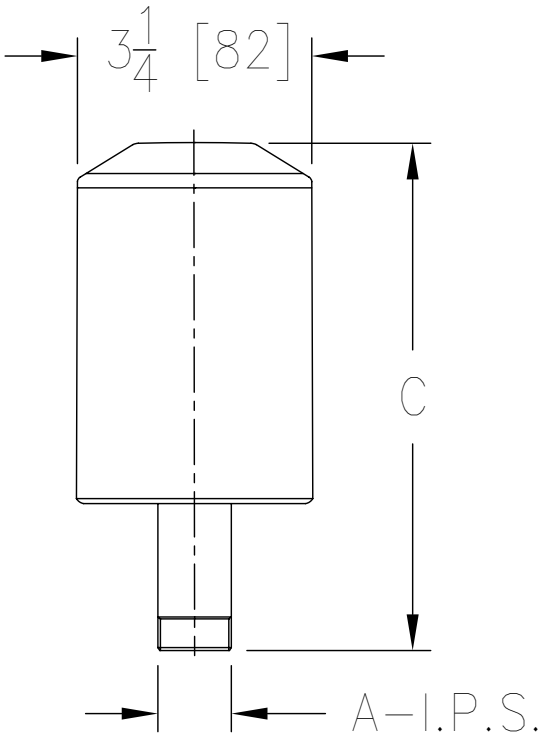
Z1700
SHOKTROL WATER HAMMER ARRESTORS

SPECIFICATION SHEET

TAG _____

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Size	'A' In. [mm]	'C' In. [mm]	Approx. Wt. Lbs. [kg]	Fixture Unit Capacity
100	3/4 [19]	3-1/4 [82]	15/16 [.425]	1-11
200	1 [25]	4-1/16 [103]	1-5/32 [.525]	12-32
300	1 [25]	4-3/8 [111]	1-5/16 [.6]	33-60
400	1 [25]	5-1/4 [133]	1-9/16 [.7]	61-113
500	1 [25]	7-1/32 [178]	2-3/16 [1.0]	114-154
600	1 [25]	7-1/32 [178]	2-3/16 [1.0]	155-330



Pressure and Temperature Requirements:
Maximum Working Pressure: 125 psi [862 Kpa]
Maximum Static Pressure: 250 psi [1724 Kpa]
Operating Temperature Range: 33°F to 300 °F [1°C to 149°C]

ENGINEERING SPECIFICATION: ZURN Z1700
Shoktrol Water Hammer Arrestors are regularly furnished in all stainless steel construction. Pipe threads are accurately machined to assure tight connection. 3/4" [19mm] male I.P.S. inlet is standard for the 100 size units, while 1" [25mm] male I.P.S. inlet is standard for sizes 200 thru 600.

All sizes of Zurn Z1700 Shoktrol Water Hammer Arrestors comply with the following specifications:

PDI	WH-201
ASSE	1010

Where required in piping systems, properly sized water hammer arrestors shall be ZURN Z1700 (specify size) with nesting type bellows contained within a casing having sufficient displacement volume to dissipate the calculated kinetic energy generated, in the piping system. Both casing and bellows constructed of Type 304 stainless steel.

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Patent: Zurn.com/patents
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Z1700

INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

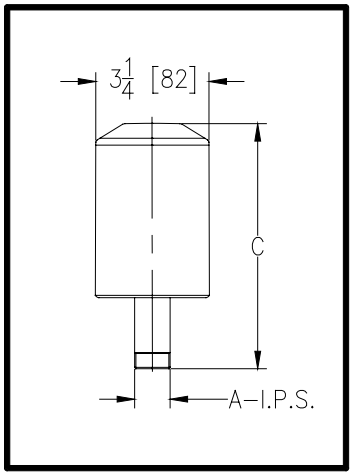
Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Zurn SHOKTROLS provide complete protection against water hammer in common pipe diameters for varying pipe lengths wherever flow velocity is subject to sudden change - in quick closing, solenoid-actuated valves used with lavatories and sinks, dishwashers, and residential automatic washers; in improperly adjusted water closet flush valves; in pumping systems, and in drinking fountains or similar installations where water flow is valved for intermittent operation.

Each SHOKTROL has its shock-absorbing air cushion hermetically sealed within the unit. Consequently, there is no loss of air from the SHOKTROL due to leakage past worn elastomeric sealing surfaces nor due to permeation through elastomeric features. In addition, the SHOKTROL's Type 304 (18-8) stainless steel construction makes it virtually immune to attack and degradation by high levels of chloramine and other common waterborne chemicals which quickly degrade elastomeric components.

Approved by:

Zurn SHOKTROLS should always be installed in an upright position on a horizontal run of piping.



Dimensions in Inches [mm]			Approx. Wt. Lbs. [kg]
Size	A	C	
100	3/4 [19]	3-1/4 [82]	15/16 [.425]
200	1 [25]	4-1/16 [103]	1-5/32 [.525]
300	1 [25]	4-3/8 [111]	1-5/16 [.60]
400	1 [25]	5-1/4 [133]	1-9/16 [.70]
500	1 [25]	7-1/32 [178]	2-3/16 [1]
600	1 [25]	7-1/32 [178]	2-3/16 [1]

Pressure and Temperature Requirements:
Max. Working Pressure: 125 psi
Max. Static Pressure: 250 psi
Max. Temperature: 300 °F

SIZING AND LOCATION:

When a unit of equipment is located at the remote end of a long run of piping, the Zurn SHOKTROL should be placed as close to the point of valve closure as possible. At this location, the SHOKTROL will control any developed energy and prevent shock waves from surging through the piping system (Illus. 1). Properly sized SHOKTROLS should be selected for such installations using Tables 1-A and 1-B below.

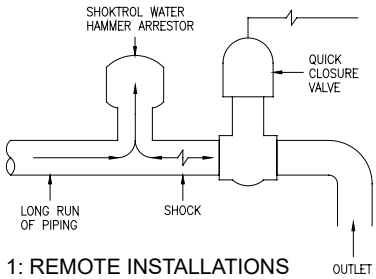


ILLUSTRATION 1: REMOTE INSTALLATIONS

Table I-A. For Pressure Up To 65 spig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #100	One #100	One #200	One #300	One #400	One #500
50	One #100	One #200	One #300	One #400	One #500	One #600
75	One #200	One #300	One #400	One #100 & One #500	One #600	One #500 & One #600
100	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
125`	One #300	One #400	One #600	One #100 & One #600	One #500 & One #600	One #500 & Two #600
150	One #400	One #500	One #600	One #400 & One #600	Two #600	Three #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

Table I-B. For Pressure 65 psig to 85 psig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #200	One #200	One #300	One #400	One #500	One #600
50	One #200	One #300	One #400	One #500	One #600	One #300 & One #600
75	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
100	One #400	One #500	One #600	One #300 & One #600	One #500 & One #600	One #500 & Two #600
125`	One #400	One #500	One #300 & One #600	One #400 & One #600	Two #600	One #200 & Three #600
150	One #500	One #600	One #300 & One #600	Two #600	One #400 & Two #600	Four #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

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Rev. E
Date: 08/28/23
C.N. No. 145154
Patent: Zurn.com/patents
Form # WH1

Z1700
INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

In an effort to arrive at a uniform method of sizing water hammer arrestors, members of the Plumbing and Drainage Institute sponsored a comprehensive testing program which lasted four years. As a result, there is now an industry-wide standard, P.D.I.-WH201 and the all-stainless-steel Zurn SHOKTROL conforms with every aspect of this newly-available information.

HOW TO PROPERLY LOCATE ZURN SHOKTROLS

Multiple Fixture-Branch Line Less Than 20' Long-(Illus. 2). The preferred location for a Zurn SHOKTROL is at the end of the branch line between the last two fixtures served when the branch line does not exceed 20' in length, from the start of the horizontal branch line to the last fixture supply on the line (Use Tables II & III Below).

Multiple Fixtures-Branch Line More Than 20' Long-(Illus. 3). On branch lines over 20' in length, use two SHOKTROLS whose capacities total the requirements of the branch. Locate one unit between the last and next to last fixture and the other unit approximately midway between the fixtures. (Use Tables II & III Below).

Multiple Fixtures-Extremely Long Branch Line-(Illus. 4). In unusual instances where a very long branch line is involved, the water supply is generally fed to some midpoint or other location on the branch line. (Use Tables II & III Below).

Illustration 2. Example of P.D.I. Rule 1

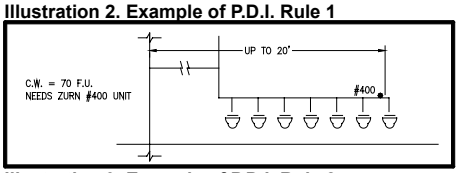


Illustration 3. Example of P.D.I. Rule 2

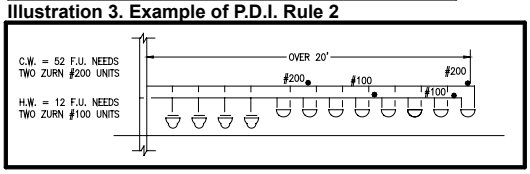
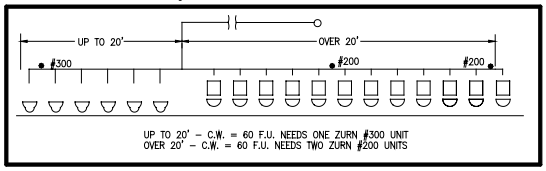


Illustration 4. Example of P.D.I. Rule 1 and Rule 2

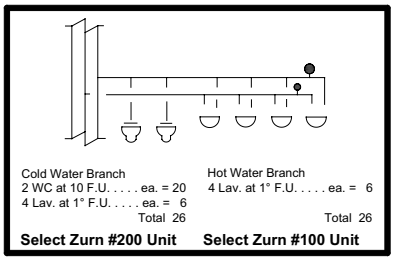


Standard P.D.I.-WH201 bases its sizing data upon the well-known fixture-unit formula. Since most engineers and specifiers utilize fixture-units in their daily calculations, it was appropriate to employ this method for quick, concise water hammer arrestor sizing.

Using Table II (below), determine the "weight in fixture-units" for cold and hot water branch lines serving a group of fixtures, either for public or private installations. When the "weight in" has been established, the data is then applied to the selection Table III.

Using the "weight in fixture-units" obtained from Table II, select the properly-sized SHOKTROL from Table III. If the water pressure in the line exceeds 65 PSIG, select the next larger size SHOKTROL. If the fixture-unit contains "1/2" fraction, "round it up" to the next larger or whole number. (Example: If total is 11-1/2 fixture units, change it to 12 fixture-units).

Example 1



Example 2

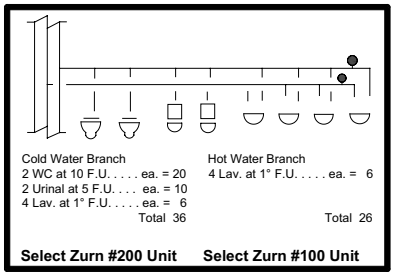


Table II

Fixture	Type of Supply Control	Weight in Fixture-Units					
		Public			Private		
		Total	C.W.	H.W.	Total	C.W.	H.W.
Water Closet	Flush Valve	10	10	-	6	6	-
Water Closet	Flush Tank	5	5	-	3	3	-
Pedestal Urinal	Flush Valve	10	10	-	-	-	-
Stall or Wall Urinal	Flush Valve	5	5	-	-	-	-
Stall or Wall Urinal	Flush Tank	3	3	-	-	-	-
Lavatory	Faucet	2	1-1/2	1-1/2	1	1	1
Bathtub	Faucet	4	2	3	2	1-1/2	1-1/2
Shower Head	Mixing Valve	4	2	3	2	1	2
Bathroom Group Closet	Flush Valve	-	-	-	8	8	3
Bathroom Group Closet	Flush Valve	-	-	-	6	6	3
Separate Shower	Mixing Valve	-	-	-	2	1	2
Service Sink	Faucet	3	3	3	-	-	-
Laundry Tubs (1-3)	Faucet	-	-	-	3	3	3
Combination Fixture	Faucet	-	-	-	3	3	3

Table III

Zurn Shoktrol Size Z1700 Series	#100	#200	#300	#400	#500	#600
P.D.I. Units	A	B	C	D	E	F
Fixture-Units	1-11	12-32	33-60	61-113	114-154	155-330

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Date: 08/28/23
C.N. No. 145154
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STAR MECHANICAL SUPPLY

TAB-5

WHA-E

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Springdale AR, 72764
Phone: 479-756-2055

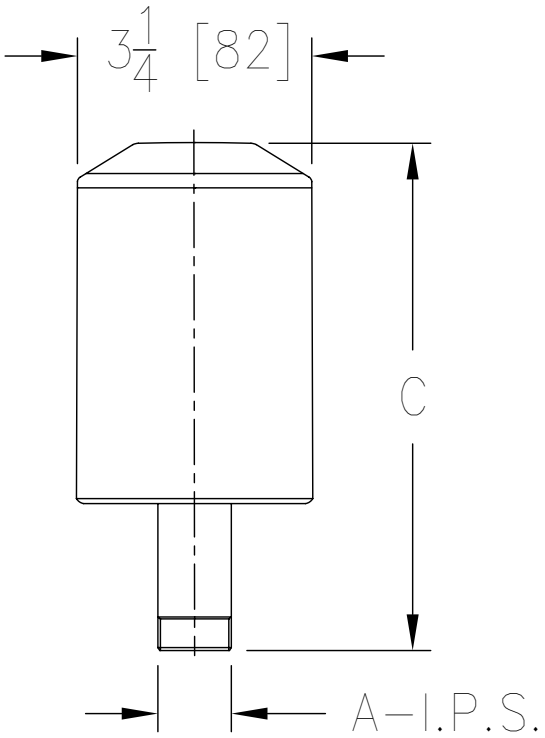
Z1700
SHOKTROL WATER HAMMER ARRESTORS

SPECIFICATION SHEET

TAG _____

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Size	'A' In. [mm]	'C' In. [mm]	Approx. Wt. Lbs. [kg]	Fixture Unit Capacity
100	3/4 [19]	3-1/4 [82]	15/16 [.425]	1-11
200	1 [25]	4-1/16 [103]	1-5/32 [.525]	12-32
300	1 [25]	4-3/8 [111]	1-5/16 [.6]	33-60
400	1 [25]	5-1/4 [133]	1-9/16 [.7]	61-113
500	1 [25]	7-1/32 [178]	2-3/16 [1.0]	114-154
600	1 [25]	7-1/32 [178]	2-3/16 [1.0]	155-330



Pressure and Temperature Requirements:
Maximum Working Pressure: 125 psi [862 Kpa]
Maximum Static Pressure: 250 psi [1724 Kpa]
Operating Temperature Range: 33°F to 300 °F [1°C to 149°C]

ENGINEERING SPECIFICATION: ZURN Z1700
Shoktrol Water Hammer Arrestors are regularly furnished in all stainless steel construction. Pipe threads are accurately machined to assure tight connection. 3/4" [19mm] male I.P.S. inlet is standard for the 100 size units, while 1" [25mm] male I.P.S. inlet is standard for sizes 200 thru 600.

All sizes of Zurn Z1700 Shoktrol Water Hammer Arrestors comply with the following specifications:

PDI	WH-201
ASSE	1010

Where required in piping systems, properly sized water hammer arrestors shall be ZURN Z1700 (specify size) with nesting type bellows contained within a casing having sufficient displacement volume to dissipate the calculated kinetic energy generated, in the piping system. Both casing and bellows constructed of Type 304 stainless steel.

* Regularly furnished unless otherwise specified

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Rev. F
Date: 03/08/2023
C.N. No. 145154
Patent: Zurn.com/patents
Prod. | Dwg. No. Z1700

Z1700

INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

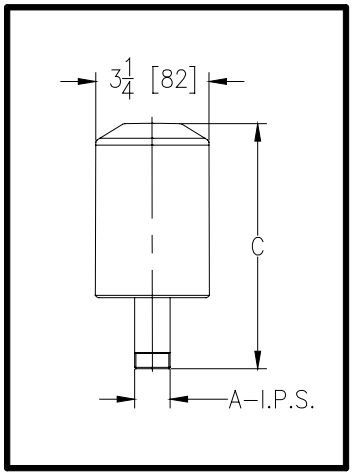
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Each SHOKTROL has its shock-absorbing air cushion hermetically sealed within the unit. Consequently, there is no loss of air from the SHOKTROL due to leakage past worn elastomeric sealing surfaces nor due to permeation through elastomeric features. In addition, the SHOKTROL's Type 304 (18-8) stainless steel construction makes it virtually immune to attack and degradation by high levels of chloramine and other common waterborne chemicals which quickly degrade elastomeric components.

Approved by:

Zurn SHOKTROLS should always be installed in an upright position on a horizontal run of piping.



Dimensions in Inches [mm]			Approx. Wt. Lbs. [kg]
Size	A	C	
100	3/4 [19]	3-1/4 [82]	15/16 [.425]
200	1 [25]	4-1/16 [103]	1-5/32 [.525]
300	1 [25]	4-3/8 [111]	1-5/16 [.60]
400	1 [25]	5-1/4 [133]	1-9/16 [.70]
500	1 [25]	7-1/32 [178]	2-3/16 [1]
600	1 [25]	7-1/32 [178]	2-3/16 [1]

Pressure and Temperature Requirements:
Max. Working Pressure: 125 psi
Max. Static Pressure: 250 psi
Max. Temperature: 300 °F

SIZING AND LOCATION:

When a unit of equipment is located at the remote end of a long run of piping, the Zurn SHOKTROL should be placed as close to the point of valve closure as possible. At this location, the SHOKTROL will control any developed energy and prevent shock waves from surging through the piping system (Illus. 1). Properly sized SHOKTROLS should be selected for such installations using Tables 1-A and 1-B below.

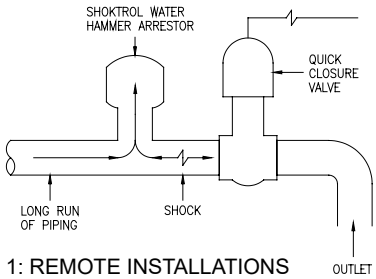


ILLUSTRATION 1: REMOTE INSTALLATIONS

Table I-A. For Pressure Up To 65 spig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #100	One #100	One #200	One #300	One #400	One #500
50	One #100	One #200	One #300	One #400	One #500	One #600
75	One #200	One #300	One #400	One #100 & One #500	One #600	One #500 & One #600
100	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
125`	One #300	One #400	One #600	One #100 & One #600	One #500 & One #600	One #500 & Two #600
150	One #400	One #500	One #600	One #400 & One #600	Two #600	Three #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

Table I-B. For Pressure 65 psig to 85 psig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #200	One #200	One #300	One #400	One #500	One #600
50	One #200	One #300	One #400	One #500	One #600	One #300 & One #600
75	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
100	One #400	One #500	One #600	One #300 & One #600	One #500 & One #600	One #500 & Two #600
125`	One #400	One #500	One #300 & One #600	One #400 & One #600	Two #600	One #200 & Three #600
150	One #500	One #600	One #300 & One #600	Two #600	One #400 & Two #600	Four #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

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Rev. E
Date: 08/28/23
C.N. No. 145154
Patent: Zurn.com/patents
Form # WH1

Z1700
INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

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Illustration 2. Example of P.D.I. Rule 1

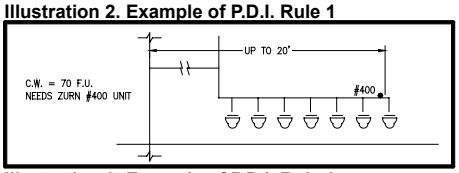


Illustration 3. Example of P.D.I. Rule 2

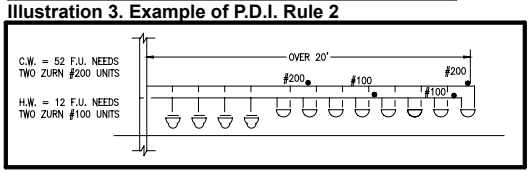
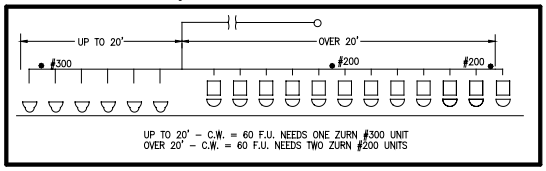


Illustration 4. Example of P.D.I. Rule 1 and Rule 2

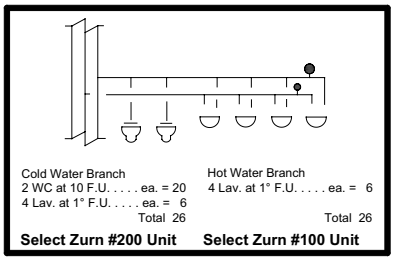


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Example 1



Example 2

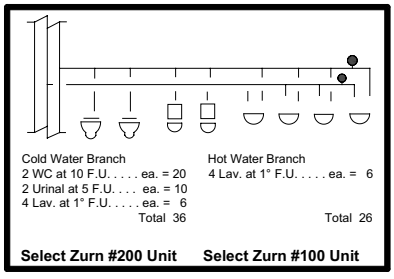


Table II

Fixture	Type of Supply Control	Weight in Fixture-Units					
		Public			Private		
		Total	C.W.	H.W.	Total	C.W.	H.W.
Water Closet	Flush Valve	10	10	-	6	6	-
Water Closet	Flush Tank	5	5	-	3	3	-
Pedestal Urinal	Flush Valve	10	10	-	-	-	-
Stall or Wall Urinal	Flush Valve	5	5	-	-	-	-
Stall or Wall Urinal	Flush Tank	3	3	-	-	-	-
Lavatory	Faucet	2	1-1/2	1-1/2	1	1	1
Bathtub	Faucet	4	2	3	2	1-1/2	1-1/2
Shower Head	Mixing Valve	4	2	3	2	1	2
Bathroom Group Closet	Flush Valve	-	-	-	8	8	3
Bathroom Group Closet	Flush Valve	-	-	-	6	6	3
Separate Shower	Mixing Valve	-	-	-	2	1	2
Service Sink	Faucet	3	3	3	-	-	-
Laundry Tubs (1-3)	Faucet	-	-	-	3	3	3
Combination Fixture	Faucet	-	-	-	3	3	3

Table III

Zurn Shoktrol Size Z1700 Series	#100	#200	#300	#400	#500	#600
P.D.I. Units	A	B	C	D	E	F
Fixture-Units	1-11	12-32	33-60	61-113	114-154	155-330

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Rev. E
Date: 08/28/23
C.N. No. 145154
Patent: Zurn.com/patents
Form # WH1

STAR MECHANICAL SUPPLY

TAB-6

WHA-F

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

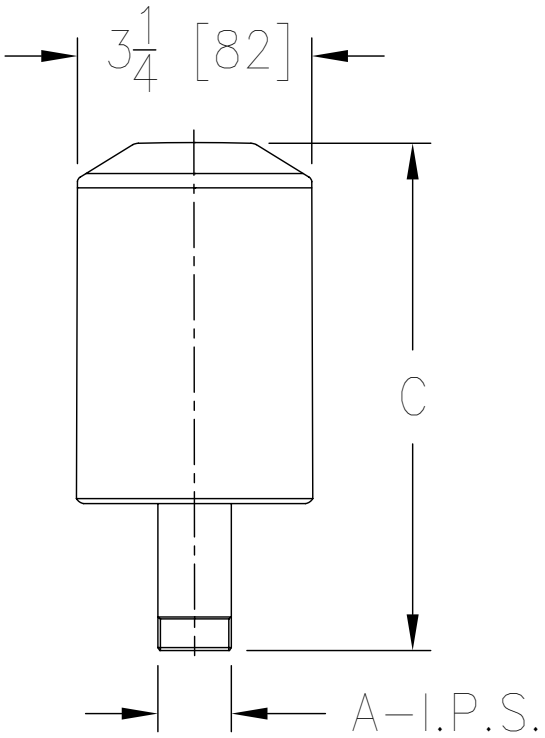
Z1700
SHOKTROL WATER HAMMER ARRESTORS

SPECIFICATION SHEET

TAG _____

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Size	'A' In. [mm]	'C' In. [mm]	Approx. Wt. Lbs. [kg]	Fixture Unit Capacity
100	3/4 [19]	3-1/4 [82]	15/16 [.425]	1-11
200	1 [25]	4-1/16 [103]	1-5/32 [.525]	12-32
300	1 [25]	4-3/8 [111]	1-5/16 [.6]	33-60
400	1 [25]	5-1/4 [133]	1-9/16 [.7]	61-113
500	1 [25]	7-1/32 [178]	2-3/16 [1.0]	114-154
600	1 [25]	7-1/32 [178]	2-3/16 [1.0]	155-330



Pressure and Temperature Requirements:
Maximum Working Pressure: 125 psi [862 Kpa]
Maximum Static Pressure: 250 psi [1724 Kpa]
Operating Temperature Range: 33°F to 300 °F [1°C to 149°C]

ENGINEERING SPECIFICATION: ZURN Z1700
Shoktrol Water Hammer Arrestors are regularly furnished in all stainless steel construction. Pipe threads are accurately machined to assure tight connection. 3/4" [19mm] male I.P.S. inlet is standard for the 100 size units, while 1" [25mm] male I.P.S. inlet is standard for sizes 200 thru 600.

All sizes of Zurn Z1700 Shoktrol Water Hammer Arrestors comply with the following specifications:

PDI WH-201
ASSE 1010

Where required in piping systems, properly sized water hammer arrestors shall be ZURN Z1700 (specify size) with nesting type bellows contained within a casing having sufficient displacement volume to dissipate the calculated kinetic energy generated, in the piping system. Both casing and bellows constructed of Type 304 stainless steel.

* Regularly furnished unless otherwise specified

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Date: 03/08/2023
C.N. No. 145154
Patent: Zurn.com/patents
Prod. | Dwg. No. Z1700

Z1700

INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

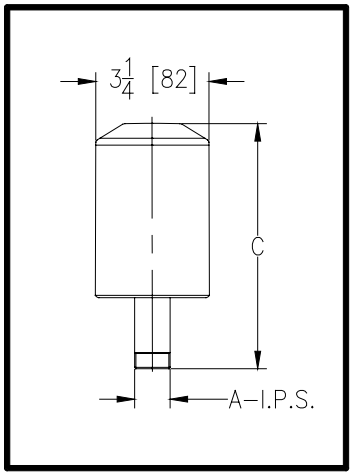
Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Zurn SHOKTROLS provide complete protection against water hammer in common pipe diameters for varying pipe lengths wherever flow velocity is subject to sudden change - in quick closing, solenoid-actuated valves used with lavatories and sinks, dishwashers, and residential automatic washers; in improperly adjusted water closet flush valves; in pumping systems, and in drinking fountains or similar installations where water flow is valved for intermittent operation.

Each SHOKTROL has its shock-absorbing air cushion hermetically sealed within the unit. Consequently, there is no loss of air from the SHOKTROL due to leakage past worn elastomeric sealing surfaces nor due to permeation through elastomeric features. In addition, the SHOKTROL's Type 304 (18-8) stainless steel construction makes it virtually immune to attack and degradation by high levels of chloramine and other common waterborne chemicals which quickly degrade elastomeric components.

Approved by:

Zurn SHOKTROLS should always be installed in an upright position on a horizontal run of piping.



Dimensions in Inches [mm]			Approx. Wt. Lbs. [kg]
Size	A	C	
100	3/4 [19]	3-1/4 [82]	15/16 [.425]
200	1 [25]	4-1/16 [103]	1-5/32 [.525]
300	1 [25]	4-3/8 [111]	1-5/16 [.60]
400	1 [25]	5-1/4 [133]	1-9/16 [.70]
500	1 [25]	7-1/32 [178]	2-3/16 [1]
600	1 [25]	7-1/32 [178]	2-3/16 [1]

Pressure and Temperature Requirements:
Max. Working Pressure: 125 psi
Max. Static Pressure: 250 psi
Max. Temperature: 300 °F

SIZING AND LOCATION:

When a unit of equipment is located at the remote end of a long run of piping, the Zurn SHOKTROL should be placed as close to the point of valve closure as possible. At this location, the SHOKTROL will control any developed energy and prevent shock waves from surging through the piping system (Illus. 1). Properly sized SHOKTROLS should be selected for such installations using Tables 1-A and 1-B below.

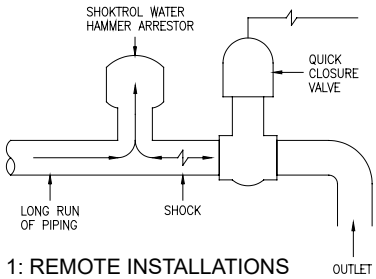


ILLUSTRATION 1: REMOTE INSTALLATIONS

Table I-A. For Pressure Up To 65 spig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #100	One #100	One #200	One #300	One #400	One #500
50	One #100	One #200	One #300	One #400	One #500	One #600
75	One #200	One #300	One #400	One #100 & One #500	One #600	One #500 & One #600
100	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
125`	One #300	One #400	One #600	One #100 & One #600	One #500 & One #600	One #500 & Two #600
150	One #400	One #500	One #600	One #400 & One #600	Two #600	Three #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

Table I-B. For Pressure 65 psig to 85 psig

Length of Pipe	Z1700 Series Zurn Shoktrol Water Hammer Arrestors Nominal Pipe Diameters					
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
25	One #200	One #200	One #300	One #400	One #500	One #600
50	One #200	One #300	One #400	One #500	One #600	One #300 & One #600
75	One #300	One #400	One #500	One #600	One #300 & One #600	Two #600
100	One #400	One #500	One #600	One #300 & One #600	One #500 & One #600	One #500 & Two #600
125`	One #400	One #500	One #300 & One #600	One #400 & One #600	Two #600	One #200 & Three #600
150	One #500	One #600	One #300 & One #600	Two #600	One #400 & Two #600	Four #600

For further sizing information, see "Plumbing & Drainage Institute Standard WH-201."

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Date: 08/28/23
C.N. No. 145154
Patent: Zurn.com/patents
Form # WH1

Z1700
INSTALLATION INSTRUCTIONS FOR SHOKTROL WATER HAMMER ARRESTOR

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

In an effort to arrive at a uniform method of sizing water hammer arrestors, members of the Plumbing and Drainage Institute sponsored a comprehensive testing program which lasted four years. As a result, there is now an industry-wide standard, P.D.I.-WH201 and the all-stainless-steel Zurn SHOKTROL conforms with every aspect of this newly-available information.

HOW TO PROPERLY LOCATE ZURN SHOKTROLS

Multiple Fixture-Branch Line Less Than 20' Long-(Illus. 2). The preferred location for a Zurn SHOKTROL is at the end of the branch line between the last two fixtures served when the branch line does not exceed 20' in length, from the start of the horizontal branch line to the last fixture supply on the line (Use Tables II & III Below).

Multiple Fixtures-Branch Line More Than 20' Long-(Illus. 3). On branch lines over 20' in length, use two SHOKTROLS whose capacities total the requirements of the branch. Locate one unit between the last and next to last fixture and the other unit approximately midway between the fixtures. (Use Tables II & III Below).

Multiple Fixtures-Extremely Long Branch Line-(Illus. 4). In unusual instances where a very long branch line is involved, the water supply is generally fed to some midpoint or other location on the branch line. (Use Tables II & III Below).

Illustration 2. Example of P.D.I. Rule 1

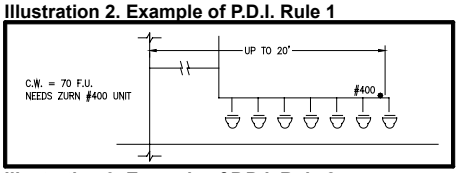


Illustration 3. Example of P.D.I. Rule 2

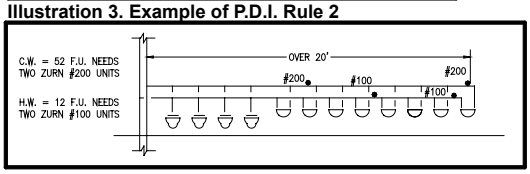
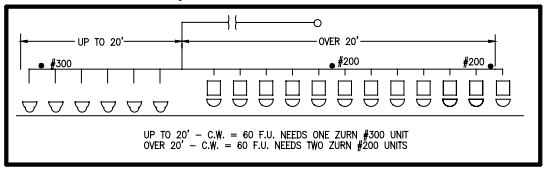


Illustration 4. Example of P.D.I. Rule 1 and Rule 2

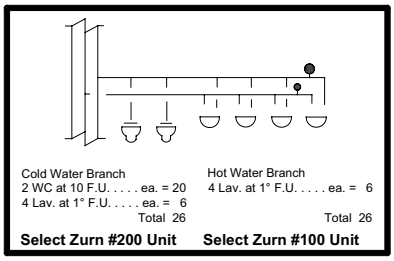


Standard P.D.I.-WH201 bases its sizing data upon the well-known fixture-unit formula. Since most engineers and specifiers utilize fixture-units in their daily calculations, it was appropriate to employ this method for quick, concise water hammer arrestor sizing.

Using Table II (below), determine the "weight in fixture-units" for cold and hot water branch lines serving a group of fixtures, either for public or private installations. When the "weight in" has been established, the data is then applied to the selection Table III.

Using the "weight in fixture-units" obtained from Table II, select the properly-sized SHOKTROL from Table III. If the water pressure in the line exceeds 65 PSIG, select the next larger size SHOKTROL. If the fixture-unit contains "1/2" fraction, "round it up" to the next larger or whole number. (Example: If total is 11-1/2 fixture units, change it to 12 fixture-units).

Example 1



Example 2

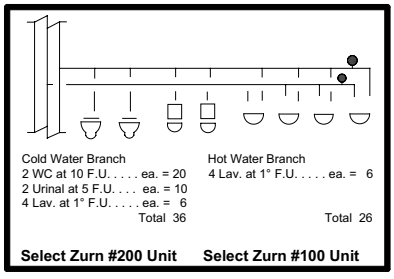


Table II

Fixture	Type of Supply Control	Weight in Fixture-Units					
		Public			Private		
		Total	C.W.	H.W.	Total	C.W.	H.W.
Water Closet	Flush Valve	10	10	-	6	6	-
Water Closet	Flush Tank	5	5	-	3	3	-
Pedestal Urinal	Flush Valve	10	10	-	-	-	-
Stall or Wall Urinal	Flush Valve	5	5	-	-	-	-
Stall or Wall Urinal	Flush Tank	3	3	-	-	-	-
Lavatory	Faucet	2	1-1/2	1-1/2	1	1	1
Bathtub	Faucet	4	2	3	2	1-1/2	1-1/2
Shower Head	Mixing Valve	4	2	3	2	1	2
Bathroom Group Closet	Flush Valve	-	-	-	8	8	3
Bathroom Group Closet	Flush Valve	-	-	-	6	6	3
Separate Shower	Mixing Valve	-	-	-	2	1	2
Service Sink	Faucet	3	3	3	-	-	-
Laundry Tubs (1-3)	Faucet	-	-	-	3	3	3
Combination Fixture	Faucet	-	-	-	3	3	3

Table III

Zurn Shoktrol Size Z1700 Series	#100	#200	#300	#400	#500	#600
P.D.I. Units	A	B	C	D	E	F
Fixture-Units	1-11	12-32	33-60	61-113	114-154	155-330

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Rev. E
Date: 08/28/23
C.N. No. 145154
Patent: Zurn.com/patents
Form # WH1

STAR MECHANICAL SUPPLY

TAB-7

FD-C

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

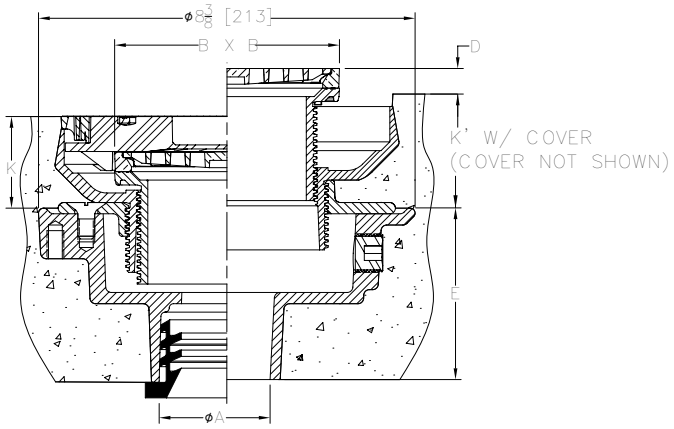
Z415-SZ1

BODY ASSEMBLY W/ “TYPE S” STRAINER and EZ1™ TECHNOLOGY

SPECIFICATION SHEET

TAG _____

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



Note:
Minimum K Dimension is Only Possible with -LR Option

Dimension in Inches [mm]								Approx. Wt. Lbs. [kg]	Strainer Open Area Sq. In. [cm²]
A Pipe Size	B X B Strainer Top Size	D		K		K’			
		Min.	Max.	Min.	Max.	Min.	Max.		
2, 3 [51, 76]	5 X 5 [127 X127]	0	1 [25]	2-1/16 [52]	3-1/4 [83]	2-9/16 [65]	3-3/4 [95]	19 [9]	9 [58]
2, 3, 4 [51-76-102]	6 X 6 [152 X 152]	0	1 [25]	2-1/8 [54]	3-5/16 [84]	2-5/8 [67]	3-13/16 [97]	22[10]	13[84]
3, 4 [76-102]	8 X 8 [203 X 203]	0	15/16 [24]	2-1/2 [64]	3-11/16 [94]	3 [76]	4-3/16 [106]	27[12]	27[174]
6 [152]	8 X 8 [203 X 203]	0	15/16 [24]	2-1/2 [64]	3-11/16 [94]	3 [76]	4-3/16 [106]	28[13]	27[174]

ENGINEERING SPECIFICATION:

Zurn Z415-SZ1 floor and shower drain, Dura-coated cast iron body with bottom outlet, combination invertible membrane clamp and adjustable collar with seepage slots and top assembly. EZ1™ drainage series is engineered to simplify product installation, comprised of concrete shield, up to 1” [25] of vertical post pour adjustment, pre-packaged shims for tilt correction and integrated self-contained “Type S” nickel bronze light duty, heel proof strainer with rough-in cover for protection during concrete pour.

OPTIONS (Check/specify appropriate options)

PIPE SIZE	(Specify size/type) OUTLET		‘E’ BODY HT. DIM.
2, 3, 4 [51, 76, 102]	_____ IC	Inside Caulk	4-3/16 [106]
2 [51]	_____ IP	Threaded	2-7/16 [62]
3 [76]	_____ IP	Threaded	2-3/4 [70]
4 [102]	_____ IP	Threaded	2-13/16 [71]
6 [152]	_____ IP	Threaded	2-7/8 [73]
2, 3, 4 [51, 76, 102]	_____ NH	No-Hub	3-13/16 [97]
2, 3, 4 [51, 76, 102]	✓ NL	Neo-Loc	3-7/8 [98]

PREFIXES

_____ ZB D.C.C.I. Body Assembly w/ Polished Bronze Top
✓ ZN D.C.C.I. Body Assembly w/ Polished Nickel Bronze Top*
_____ ZS D.C.C.I. Body Assembly w/ Polished Stainless Steel Top

SUFFIXES

_____ -AR Acid Resisting Epoxy Coated Cast Iron
_____ -EF 3/4 [19] Extension Frame
_____ -G Galvanized Cast Iron
_____ -LR Low Rough-In
✓ -P Trap Primer Connection (1/2* [13] or 3/4 [19])
_____ -SA Stabilizer Assembly for Sub-Floor Install (See Z1035)
_____ -SQ Stabilizer Q-Deck for Steel Decking Install (See Z1035-Q)
_____ -SR Stabilizer Ring Assembly for On-Grade Install
✓ -TC Neo-Loc Test Cap Gasket (2,3,4 [51,76,102] NL Outlet Only)
_____ -TSP Trap Seal Protection Device (Size Matches Drain Outlet Selected) (See Z1072)
_____ -U 2 - 3-1/4 [51-83] High Post-Pour Extension Adapter
_____ -UP 1-3/4 [44] Pre-Pour Adjustment Extension Adapter
_____ -VP Vandal-Proof Secured Top
_____ -Y Sediment Bucket

* Regularly furnished unless otherwise specified.

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Rev. E
Date: 01/09/23
C.N. No. 144898
Patent zurn.com/patents
Prod. | Dwg. No. Z415-SZ1

Location: _____

MIFAB® M-500

PRESSURE DROP ACTIVATED TRAP SEAL PRIMER



3 P.S.I PRESSURE DROP

Only a three p.s.i. line pressure drop is required to activate the primer, compared to five or ten p.s.i. by others. Lower water voume fixtures and faucets has resulted in lower line pressure drops. A three p.s.i. performance point ensures reliable water delivery to maintain the trap seal.

(Inlet opening of 1/2" male N.P.T. and outlet opening of female 1/2" N.P.T.)

NO PRECHARGE

MIFAB's trap seal primers can be disassembled in the field for easy cleaning and repair, without risk of losing a precharge.

VIEW HOLES

Four view holes permit easy inspection of water delivery. The holes are across from each other, enabling light at the opposite end to illuminate the performance of the primer.

SEDIMENT FILTER

A replacement stainless steel sediment filter prevents line debris from entering the primer. This can be replaced after wear and build up of debris to ensure maximum life and performance of the primer.

NO ADJUSTMENTS (except for M3-500-NPB)

The replaceable and repairable cartridge tubes inside of the body are factory engineered to deliver enough water to service three, six or ten floor drain traps without adjustment. This eliminates confusion during field installation.

The M-500 Series of trap seal primers are tested and third party listed to the A.S.S.E. 1018 Standard.

FUNCTION AND DESCRIPTION: MIFAB's M-500 Series of pressure activated trap seal primers (MR-500-NPB, M1-500-NPB and M2-500-NPB, M3-500-NPB) can be connected to any cold water line, and will be automatically activated when a valve or faucet, that is on the line, is opened. A pressure drop of three p.s.i. will activate all of the trap seal primers. MIFAB's M-500 Series of trap seal primers can be disassembled in the field. Their unique design permits filter replacement without affecting the performance of the primer. The "O" ring seals are tested for reliability at a temperature range of -40 degrees to 450 degrees F. The M-500 Series of trap seal primers do not require adjustment. The opening range for all of MIFAB's M-500 Series of trap seal primers is 20 to 80 p.s.i. All three models are listed with I.A.P.M.O. and C.S.A. and are tested and certified to the A.S.S.E. Standard 1018 and are so marked. U.S. Patent # 6,152,164.

UPC®

*The wetted surface of the -NPB Series of trap seal primers contacted by consumable water contains less than one quarter of one percent (0.25%) of l ead by weight.

M-500 SERIES					
MODEL NO.	A	B	PIPE FLATS	DRAINS SERVED	WATER OUTPUT
◯ MR-500-NPB	4-1/8"	1-1/4"	1-1/8"	6	1/2 ounce
◯ M1-500-NPB	4-1/8"	1-1/4"	1-1/8"	10	1 ounce
◯ M2-500-NPB	4-1/8"	1-1/4"	1-1/8"	3	1/4 ounce
◯ M3-500-NPB	4-1/8"	1-1/4"	1-1/8"	10	Adjustable
◯ MR-500-SS (Stainless Steel)	4-1/8"	1-1/4"	1-1/8"	6	1/2 ounce

OPTIONAL VARIATIONS

◯ -RC REPLACEMENT CARTRIDGE

◯ -RF REPLACEMENT FILTER SCREEN

CALIFORNIA PROPOSITION 65 WARNING. This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Job Name: _____ Page No: _____

Section No: _____ Contractor: _____

Schedule No: _____ Purchase Order No: _____

MIFAB® *reserves the right to make changes in material and design without formal notice and obligation.*

TRAP SEAL PRIMER TROUBLESHOOTING

Following are some things to trouble shoot when it comes to our M-500-NPB Series of Trap Seal Primers (M1-500-NPB, M2-500-NPB, MR-500-NPB, M3-500-NPB):

1) **WHAT IS THE LINE PRESSURE FOR THE INSTALLATION?**
   The M-500-NPB Series of trap seal primers will work within a line pressure range of 35 – 80 psi. Do not subject the trap seal primer to pressure in excess of 80 psi. The trap seal primer must be installed on a cold fresh water line of 1 ½" diameter or less.
2) **HOW FAR AWAY IS THE TRAP PRIMER FROM THE SOURCE OF THE PRESSURE DROP?**
   Anything farther away than 20 feet is an issue, as the farther the primer is away from the source of the pressure drop, the less likely it will sense it and work.
3) **WHAT IS THE PRESSURE DROP WHERE THE PRIMER IS?**
   MIFAB's M-500-NPB Series of primers will work with as little as 3 psi in pressure drop. With today's low flow and consumption faucets, there is less pressure drop being created when the faucets and toilets are used. Therefore, it is recommended to install the trap seal primer as close to the low flow fixture as possible.
4) **WATER HAMMER ARRESTORS ON THE LINE CAN ALSO AFFECT PRESSURE DROP IN THE LINE.**
   It would be best to get a pressure reading where the trap primer is installed. The M-500-NPB series needs a fast, sharp pressure drop to activate. The long pipe run to the trap primer and the water hammer arrestor may not be allowing the trap primer to function properly.
5) **LOOK AT THE GAUGE FLUCTUATION**
   Is it a quick and sharp pressure drop? Or did it gradually drop? The trap primers need a quick pressure drop to activate. A slow gradual pressure drop may not be enough to activate the M-500-NPB. That is why we state that they should be as close to the pressure drop source as possible. The M1-500-NPB has the most buoyant cartridge and should perform the best. If the trap primer looked good and was filled with water then it is the rate of the pressure drop that is causing the issue.
6) **WATER HEATERS**
   Do not install the trap seal primer on a water heater line due to insufficient pressure drop.
7) **NOT WORKING**
   In some cases, the installation conditions cannot deliver the required 3 psi pressure drop to activate MIFAB's MR-500-NPB, M1-500-NPB and / or M2-500-NPB trap seal primers. In such cases, MIFAB® recommends the use of the M3-500-NPB (page 4) adjustable trap seal primer which does not require a pressure drop to activate or the MI-100 (page 8) Series of electronic trap seal primers which also do not require a pressure drop and are electronically programmed to deliver a specific amount of water at specific time intervals.

   Also refer to the copy in the Trap Seal Primer section (Pages 1-4).

M-500-NPB SERIES INSTALLATION INSTRUCTIONS

Use a 1 1/8" open end wrench to install the M-500-NPB Series of trap seal primers to the line by using the flats on the top of the trap seal primer. Water lines must be flushed before installing MIFAB's MR-500-NPB Series of trap seal primers. The leading cause of trap seal primer performance problems is interference from foreign debris. The trap seal primers should be cycled at least six times to reduce problems of interference from foreign debris. The following steps are highly recommended:

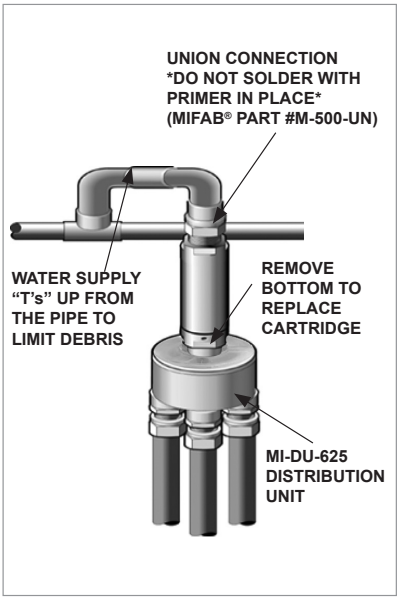
- Ensure that all flux and other debris is removed from supply line to the primer.
- Use only teflon tape around threads, NEVER use pipe dope.
- Do not solder fittings directly onto the inlet or outlet of the primer, as the primer uses a PE (polyethylene) cartridge.

Failure to follow these instructions will negatively affect performance of the product. MIFAB's primers have a unique design which allows the primer to be taken apart and cleaned before re-assembly. Do this in the event of excess water discharge.

Trap seal primers should be mounted one foot above the finished floor for every twenty feet of floor drain trap make-up water line. For easy access to the trap seal primer, install a union connection above it. Install a line shut off valve upstream of the trap seal primer in order to shut off the water supply when performing maintenance on the trap seal primer.

"The MIFAB® MR-500-NPB is a well proven product. We have sold many for many years and I don't recall any ever coming back or a customer being unsatisfied. The distribution boxes are a well thought out item also. Good job MIFAB®!"

– Rick Sharp, Sales Manager, Lion Plumbing Supply, Miami, FL



INSPECTION INSTRUCTIONS

After installing and pre-cycling the trap seal primer, use any of the four holes to view water discharge from the orifice. A light can be placed opposite the viewing hole to improve clarity in this inspection.

MAINTENANCE INSTRUCTIONS

In order to replace the filter screen, remove the trap seal primer by using an open end wrench on the top set of flats. Grasp the top of the filter screen with fingers, squeeze and remove the filter. Insert the new filter screen by squeezing and pushing it firmly down into the top of the trap seal primer. Re-install the trap seal primer using the top set of flats. In regions that experience heavy residual deposits such as calcium in the water supply, MIFAB's M-500-NPB Series of trap seal primers can be field refurbished by removing the bottom end of the primer, and replacing the cartridge.
Go to **www.mifab.com** for more information on maintenance of trap seal primers.

CALIFORNIA PROPOSITION 65 WARNING. This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Design and dimensions are subject to modification. Prices do not include applicable taxes. Visit www.mifab.com for the most recent product information.

MIFAB®, Inc., 1321 West 119th Street, Chicago, Illinois 60643-5109, USA
Toll Free: 1-800-465-2736, Fax: 1-773-341-3049
sales@mifab.com Canada Toll Free: 1-800-387-3880

All sales subject to MIFAB's® Terms and Warranties. Please refer to page 32.

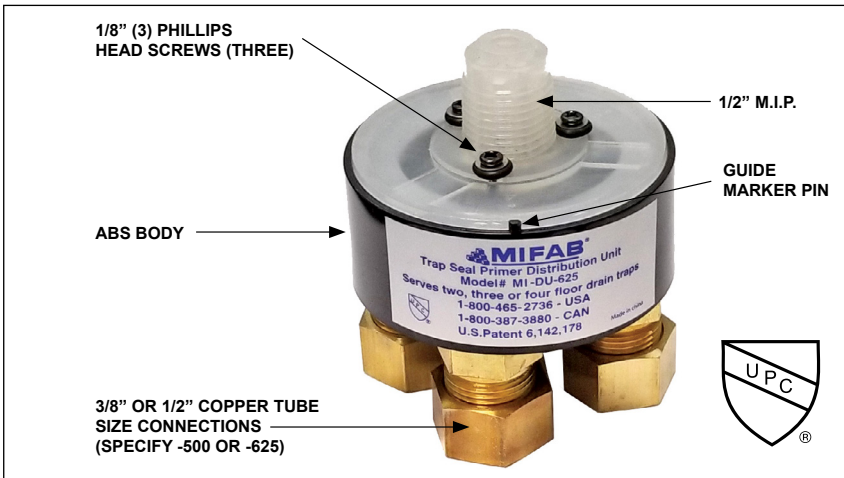
Location: _____

MIFAB® MI-DU

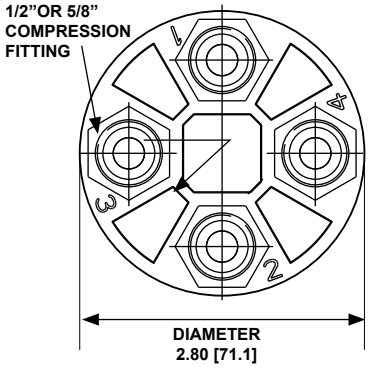
TRAP SEAL PRIMER DISTRIBUTION UNIT

Specification: MIFAB® Series MI-DU trap seal primer distribution unit is engineered to receive a metered amount of water from a trap seal primer and distribute the water equally to either two, three or four floor drain traps. Choose from either 3/8" or 1/2" Copper tube size (1/2" or 5/8" compression connection) by indicating suffix (-500) or 1/2" or suffix (-625) for 5/8". The lid of the distribution unit has the numbers 2", 3" and 4" marked on it. The body of the distribution unit has a guide marker on the top of the body. The numbers and the guide marker are positioned by removing the three screws in the lid of the unit and rotating the lid to match the appropriate numbers with guide marker to provide priming for the desired number of drains. The underside is marked with numbers 1-4 for ease in determining which ports will receive the water. Do not over torque the three lid screws when securing the lid back to the body. It is not necessary to install MIFAB's distribution perfectly level. The unique design will distribute water uniformly when out of level up to 5 degree.

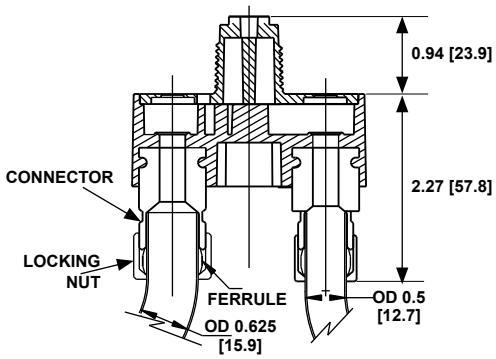
Function: Used underneath a pressure drop activated trap seal primer to distribute water to either two, three or four floor drain traps.The lid of the distribution unit is marked with the numbers 2, 3, & 4. Remove the three lid securing screws to rotate the lid to match the desired number of drains with the guide marker pin to provide priming only to the required ports. The underside of the MI-DU is marked accordingly with numbers 1-4 to for ease in determining which ports will receive the prime. The four wall internal body design ensures that water is only directed to the selected outlets. Note: The MI-DU is factory preset to deliver priming water to ports 1 and 2. Do not over torque the three lid screws when securing the lid back onto the body. It is not necessary to install MIFAB's distribution unit perfectly level. The unique design will distribute water uniformly when out of level. Select MI-DU-500 when installing 3/8" copper tube size and MI-DU-625 when installing 1/2" copper tube size.



BOTTOM VIEW



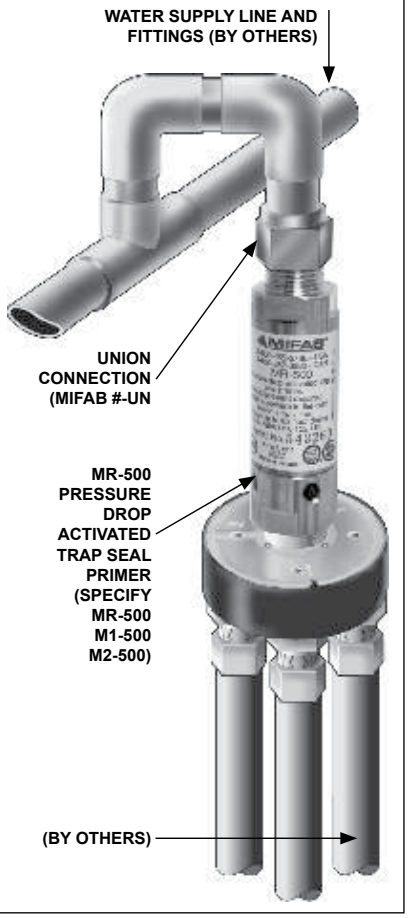
CROSS SECTION VIEW



FOR 3/8" COPPER TUBE SIZE (1/2" COMPRESSION CONNECTION)

FOR 1/2" COPPER TUBE SIZE (5/8" COMPRESSION CONNECTION)

TYPICAL INSTALLATION



Note: U.S. Patent # 6,283,442, Canadian Patent # 2,287,103, Australia Patent #755777

	SUFFIX	OPTIONAL VARIATIONS
☐	**-500**	3/8" Copper tube size (1/2" compression connection)
☐	**-625**	1/2" Copper tube size (5/8" compression connection)

CALIFORNIA PROPOSITION 65 WARNING. This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Job Name: _____ Page No: _____

Section No: _____ Contractor: _____

Schedule No: _____ Purchase Order No: _____

MIFAB® *reserves the right to make changes in material and design without formal notice and obligation.*

STAR MECHANICAL SUPPLY

TAB-8

FCO

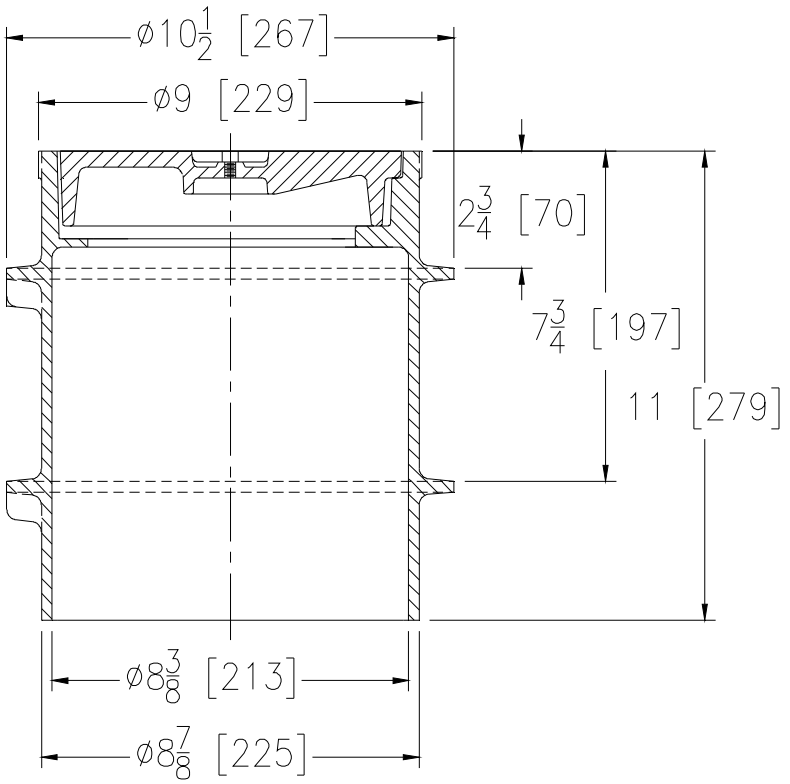
122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

Z1474
HEAVY DUTY CLEANOUT HOUSING

SPECIFICATION SHEET

TAG _____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



ENGINEERING SPECIFICATION: ZURN Z1474
Heavy Duty Cleanout Housing. Dura-Coated cast iron body with integral anchor flange, secured scoriated cover with lifting device. The cleanout housing has an approximate weight of 38 lbs. [17 kg].

OPTIONS (Check/specify appropriate options)

PREFIXES

xxxx	Z	Dura-Coated Cast Iron*
____	ZN	D.C.C.I. with Polished Nickel Bronze Top (Add 3/16 [5] to 11 [280] Dim. & 3/4 [19] to 9 [229] Dim.)

SUFFIXES

____	-DC	Duresist Cover
____	-G	Galvanized Cast Iron
____	-N	With Internal Cleanout (See Z1440) (4, 6 [102, 152] Outlets Only)
____	-SG	Solid Gasketed Cover
____	-VP	Vandal-Proof Screw

* Regularly furnished unless otherwise specified.

Zurn Industries, LLC | **Specification Drainage Operation**
1801 Pittsburgh Avenue, Erie, PA U.S.A. 16502 · Ph. 855-663-9876, Fax 814-454-7929
In Canada | **Zurn Industries Limited**
3544 Nashua Drive, Mississauga, Ontario L4V 1L2 · Ph. 905-405-8272, Fax 905-405-1292
www.zurn.com

Rev. G
Date: 09/28/2017
C.N. No. 138032
Prod. | Dwg. No. Z1474

STAR MECHANICAL SUPPLY

TAB-9

WCO

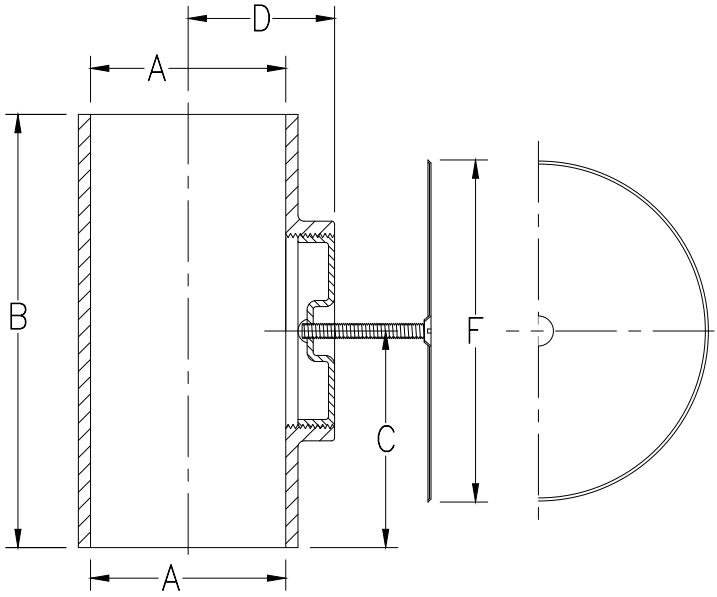
122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

Z1446
CLEANOUT W/ ROUND WALL ACCESS COVER

SPECIFICATION SHEET

TAG _____

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



Dimensions In Inches					Approx. Wt. Lbs. [kg]
A- Pipe Size	NH				
	B	C	D	F	
2 [51]	6-3/8 [162]	3-3/16 [81]	1-3/4 [44]	5 [127]	9 [4]
3 [76]	7-3/4 [197]	3-7/8 [98]	2-1/2 [64]	5 [127]	16 [7]
4 [102]	8-7/8 [225]	4-7/16 [113]	3 [76]	7 [178]	18 [8]
5 [127]	-	-	-	-	24 [11]
6 [152]	12-1/2 [318]	6-1/4 [159]	4-5/16 [110]	9 [229]	38 [17]

ENGINEERING SPECIFICATION: ZURN Z1446
Cleanout Tee, Dura-Coated cast iron body, gas and watertight ABS tapered thread plug, and round, smooth stainless steel wall access cover with securing screw.

OPTIONS (Check/specify appropriate options)

PIPE SIZE
2,3,4,6 [51, 76,102,152]

(Specify size/type) **OUTLET**
____ NH No-Hub

PREFIXES
____ Z D.C.C.I. with Polished Stainless Steel Cover*
____ ZB D.C.C.I. with Polished Bronze Cover

SUFFIXES
____ -A Raised Head Plug
____ -BP Bronze Plug
____ -G Galvanized Cast Iron
____ -SL Screws Longer Than 3-1/2 [89]
____ -VP Vandal-Proof Screw

* Regularly furnished unless otherwise specified

⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov
⚠ **ADVERTENCIA:** Cáncer y daño reproductivo - www.P65Warnings.ca.gov
⚠ **AVERTISSEMENT:** Cancer et effets néfastes sur la reproduction - www.P65Warnings.ca.gov

Zurn Industries, LLC | Specification Drainage Operation
1801 Pittsburgh Avenue, Erie, PA 16502, Ph. 855.663.9876

In Canada | Zurn Industries Limited
7900 Goreway Drive, Unit 10, Brampton, Ontario L6T 5W6, Ph. 877.892.5216

www.zurn.com

Rev. E
Date: 01/04/23
C.N. No. 145006
Prod. | Dwg. No. Z1446

STAR MECHANICAL SUPPLY

TAB-10

P103

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

Afwall® Millennium™ FloWise® Elongated Flushometer Toilet

VITREOUS CHINA LESS EVERCLEAN®

BARRIER FREE

Afwall® Millenium™ FloWise® Elongated Flushometer Toilet LESS EverClean®

- Wall-mounted flushometer valve toilet
- Vitreous china
- Conventional glaze
- High Efficiency, Low Consumption. Operates in the range of 1.1 gpf to 1.6 gpf (4.2 Lpf to 6.0 Lpf)
- Meets definition of HET (High Efficiency Toilet) when used with a high efficiency flush valve (1.1 gpf - 1.6 gpf or 1.28/1.1 gpf dual flush)
- Maximum Performance (MaP) score of 1,000 grams at 1.1 gpf - 1.6 gpf
- Condensation channel
- Concealed trapway design
- Elongated bowl
- Powerful direct-fed siphon jet action
- 1-1/2" inlet spud
- Fully-glazed 2-1/8" trapway
- 10" x 12" water surface area
- Tested to support static weight load of 1,000 lbs. (454 kg)

❑ **2257.101** Elongated bowl only, top spud
❑ **2633.101** Elongated bowl only, top spud with slotted rim for bedpan holding
❑ **2634.101** Elongated bowl only, back spud

System MaP* Score:
- 1,000 grams of miso @ 1.1 gpf to 1.6 gpf when used with an American Standard flush valve

* Maximum Performance (MaP) testing performed by IAPMO R&T Lab. MaP Report conducted by Veritec Consulting, Inc. and Koeller and Company.

Component Parts:
❑ **047007-0070A** Inlet Spud (furnished with bowl)

Nominal Dimensions:
660 x 356 x 381mm
(26" x 14" x 15")

Recommended working pressure–between 25 psi at valve when flushing and 80 psi static

Fixture only, less seat, bolt caps, and flushometer valve

Compliance Certifications - Meets or Exceeds the Following Specifications:
- ASME A112.19.2/CSA B45.1 for Vitreous China Fixtures



SEE REVERSE FOR ROUGHING-IN DIMENSIONS

To Be Specified:
❑ Color: ❑ White
❑ Seat:
- ❑ American Standard #5901.100 Heavy duty open front less cover
- ❑ American Standard #5905.100 Extra heavy duty open front less cover

❑ Flushometer Valve:
- ❑ 1.6 gpf:
  - ❑ Sensor-Operated: American Standard Selectronic® DC Power #6065.161.002 (Top Spud) AC Power #6067.161.002 (Top Spud)
  - ❑ Manual: American Standard #6047.161.002 (Top Spud)
- ❑ 1.28 gpf:
  - ❑ Sensor-Operated: American Standard Selectronic® DC Power #6065.121.002 (Top Spud) AC Power #6067.121.002 (Top Spud)
  - ❑ Manual: American Standard #6047.121.002 (Top Spud)
- ❑ 1.6 / 1.1 gpf Dual Flush:
  - ❑ Sensor-Operated: American Standard Selectronic® DC Power #6065.761.002 (Top Spud) AC Power #6067.761.002 (Top Spud)
- ❑ 1.28 / 1.1 gpf Dual Flush:
  - ❑ Sensor-Operated: American Standard Selectronic® DC Power #6065.721.002 (Top Spud) AC Power #6067.721.002 (Top Spud)

MEETS THE AMERICANS WITH DISABILITIES ACT GUIDELINES AND ANSI A117.1 REQUIREMENTS FOR ACCESSIBLE AND USABLE BUILDING FACILITIES - CHECK LOCAL CODES.
- When installed so top of seat is 432 to 483mm (17" to 19") from the finished floor.

ENVIROMENTAL PRODUCT DECLARATION

When used with **1.1 or 1.28 gpf** toilet flush valves

ADA COMPLIANT

WATER EFFICIENT

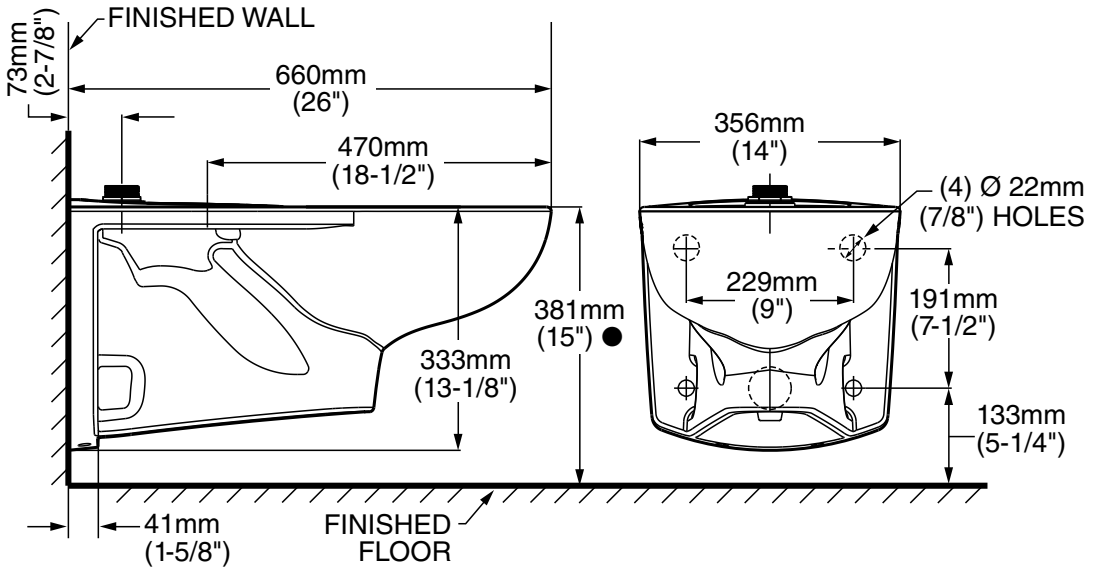
© 2018 AS America Inc.

Afwall® Millennium™ FloWise® Elongated Flushometer Toilet

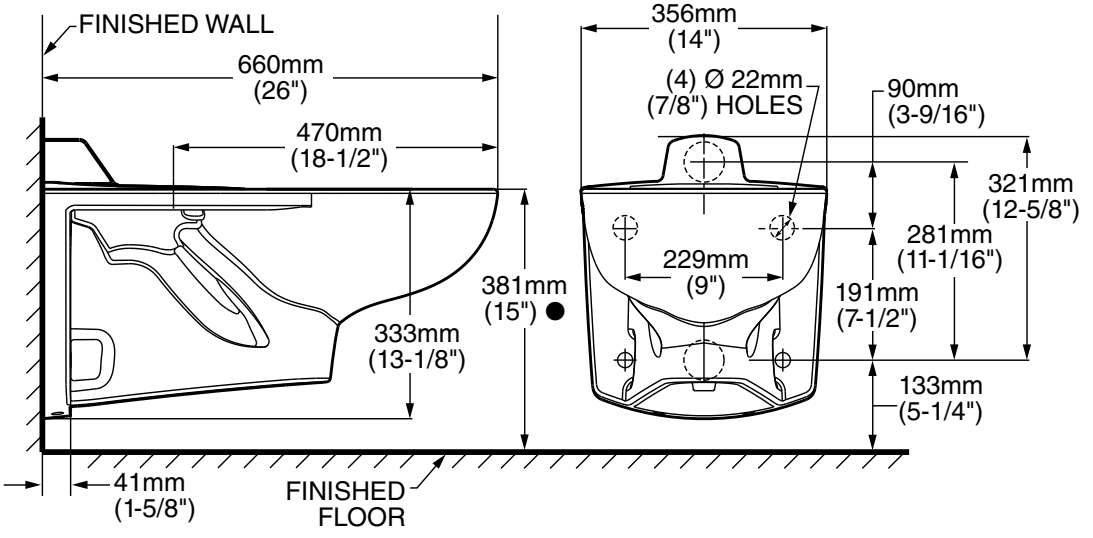
VITREOUS CHINA LESS EVERCLEAN®

BARRIER FREE

2257.101/2633.101



2634.101



NOTES:

● Toilet designed to meet ADA accessibility standards when top of seat height set at 432 to 483mm (17" to 19") from finished floor.

PRODUCT 2257 SHOWN, 2366 SAME EXCEPT WITH SLOTTED RIM FOR BED PAN HOLDING.
WASTE OUTLET SEAL RING MUST BE NEOPRENE OR GRAPHITE-FELT (WAX RING NOT RECOMMENDED).
SUGGESTED 2mm (1/16) CLEARANCE BETWEEN FACE OF WALL AND BACK OF BOWL.
TO COMPLY WITH AREA CODE GOVERNING THE HEIGHT OF VACUUM BREAKER ON THE FLUSHOMETER VALVE, THE PLUMBER MUST VERIFY DIMENSIONS SHOWN FOR SUPPLY ROUGHING.
FLUSHOMETER VALVE NOT INCLUDED WITH FIXTURE AND MUST BE ORDERED SEPARATELY.
CARRIER FITTING AS REQUIRED TO BE FURNISHED BY OTHERS.
PROVIDE SUITABLE REINFORCEMENT FOR ALL WALL SUPPORT.

IMPORTANT: Dimensions of fixtures are nominal and may vary within the range of tolerances established by ANSI Standard A112.19.2. These measurements are subject to change or cancellation. No responsibility is assumed for use of superseded or voided pages

© 2018 AS America Inc.

PART OF LIXIL

INSTALLATION INSTRUCTIONS

AFWALL® MILLENNIUM™ FLUSHOMETER WALL-MOUNTED TOILETS

Models 3351.101, 3352.101, 3353.101, 3354.101, 2257.101, 2257.101.NAF, 2633.101, 2634.101

Meets the American Disabilities Act Guidelines and ANSI A117.1 Requirements for the Physically Challenged

Thank you for selecting American Standard – the benchmark of fine quality for over 100 years. To ensure this product is installed properly, please read these instructions carefully before you begin. (Certain installations may require professional help.) Also be sure your installation conforms to local codes.

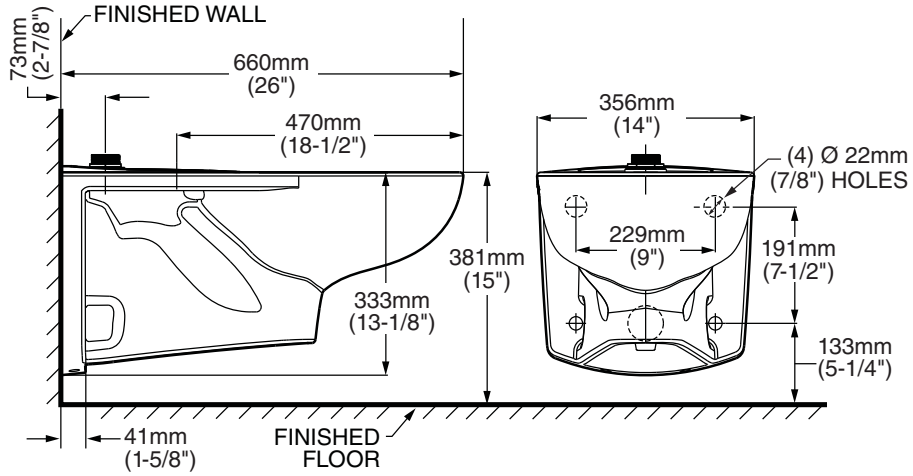
⚠ CAUTION: PRODUCT IS FRAGILE. TWO PEOPLE ARE RECOMMENDED FOR HANDLING TO AVOID BREAKAGE AND POSSIBLE INJURY!

NOTE: *For proper operation product requires a minimum of 30 psi working line pressure*

RECOMMENDED TOOLS AND MATERIALS

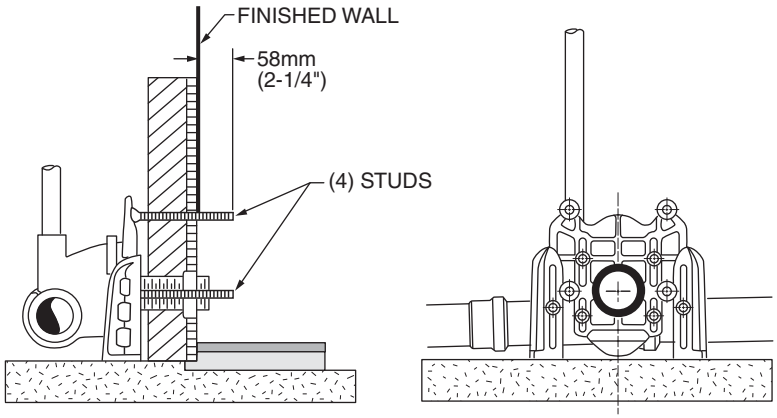
Closet Carrier Support	Regular Screwdriver	Sealant	Carpenters Level
Putty Knife	Adjustable Wrench	Tape Measure	Flush Valve

1 **Pictures may not exactly define contour of china**



2 **FIXTURE MOUNTING**

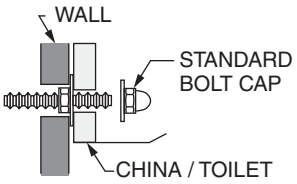
Fixture studs should project 58mm (2-1/4") from face of finished wall.



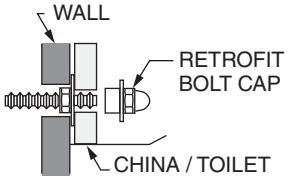
SIDE VIEW **FRONT VIEW**

NOTE: If carrier bolt does not extend or is flush with china, use retrofit caps 7381285-200.0070A (sold separately).

STANDARD BOLT CAP



RETROFIT BOLT CAP



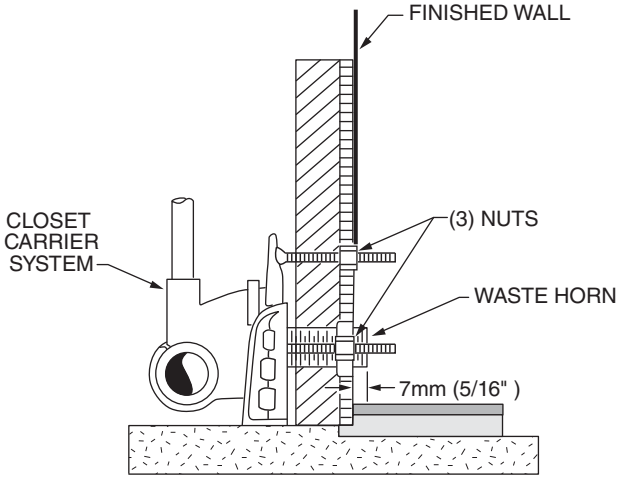
SAVE FOR FUTURE USE

Product names listed herein are trademarks of AS America, Inc.
© AS America, Inc. 2014

7301962-100D

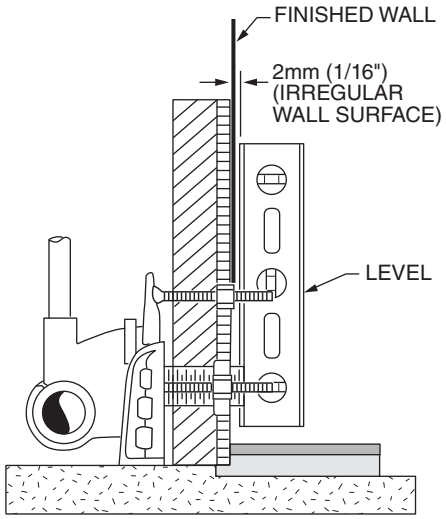
3

- Place back-up nuts on both bottom bolts, and the top left-hand bolt only.
- Adjust the two lower back-up nuts so that front face of nuts and washers are positioned to allow a minimum 1/16" (2mm) gap between fixture and wall surface.
- Adjust waste horn to project 7mm (5/16") from finished wall.



4

- Using a level, adjust the top left back-up nut so that it is in the same vertical plane as the lower left back-up nut.



5

- NOTE: Bearing nuts and washers must be set to take full loading from the fixture allowing 1/16" (2mm) clearance between fixture and wall.
- Follow support manufacturer's recommended setting of closet outlet connection.
- Place felt or neoprene gasket (wax ring not recommended) on closet outlet.
- When the fixture is installed, closet outlet gasket must be compressed sufficiently to assure a gas and watertight seal.

The following steps require a helper:

- Install bowl on support using cap nuts and fiber washers with the back-up nuts and washers.

  DO NOT APPLY TOP RIGHT FIBER WASHER AND CAP NUT UNTIL OTHER CAP NUTS HAVE BEEN FIRMLY TIGHTENED USING A WRENCH.

- Install top right cap nut with fiber washer and run up hand tight. Wrench tighten approximately 1/4 turn.

- Apply sealant to gap between bowl and finished wall. Remove excess sealant.

In the United States:
American Standard Brands
P.O. Box 6820
Piscataway, New Jersey 08855
Attention: Director of Customer Care

For residents of the United States, warranty information may also be obtained by calling the following toll free number: (800) 442-1902

www.americanstandard.com

In Canada:
AS Canada, ULC
5900 Avebury Rd.
Mississauga, Ontario
Canada L5R 3M3

Toll Free: (800) 387-0369

www.americanstandard.ca

In Mexico:
American Standard B&K Mexico
S. de R.L. de C.V.
Via Morelos #330
Col. Santa Clara
Ecatepec 55540 Edo. Mexico

Toll Free: 01-800-839-1200

www.americanstandard.com.mx

INSTRUCCIONES DE INSTALACIÓN

AFWALL® MILLENNIUM™ FLUSHOMETER INODOROS MONTADOS EN LA PARED

American Standard

Modelos 3351.101, 3352.101, 3353.101, 3354.101, 2257.101, 2257.101.NAF, 2633.101, 2634.101

Cumple con las normas de American Disabilities Act Guidelines (Ley para Americanos con discapacidades) y el certificado de la norma ANSI A117.1 para personas discapacitadas

Gracias por elegir American Standard - el parámetro de primera calidad por más de 100 años. Para asegurarse de que el producto esté instalado correctamente, por favor lea estas instrucciones cuidadosamente antes de comenzar. (Ciertas instalaciones pueden requerir ayuda profesional). Asegúrese de que su instalación cumpla con los códigos locales.

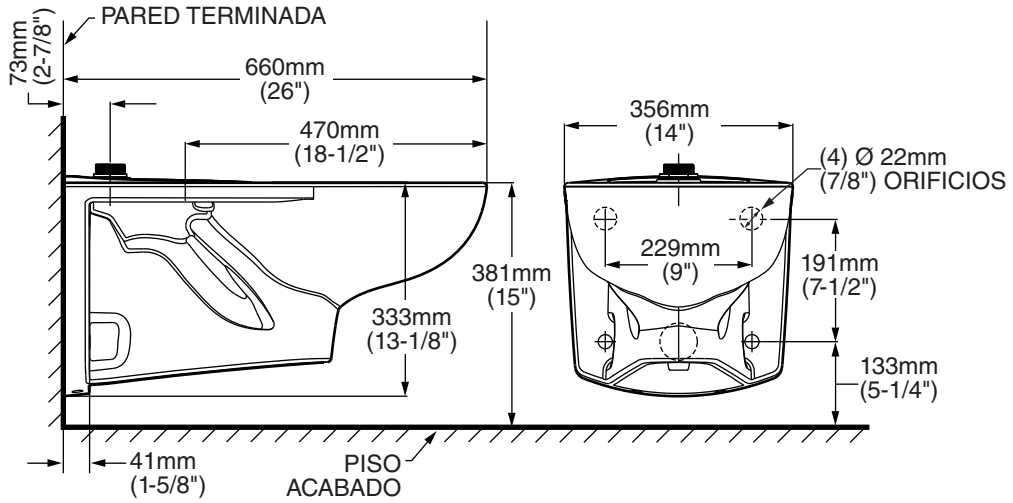
⚠ ADVERTENCIA: EL PRODUCTO ES FRÁGIL. SE RECOMIENDA QUE DOS PERSONAS MANIPULEN EL INODORO PARA NO ROMPERLO Y EVITAR POSIBLES LESIONES

NOTA: *Para un funcionamiento adecuado, el producto requiere un mínimo de presión de suministro de 30 psi.*

HERRAMIENTAS Y MATERIALES RECOMENDADOS

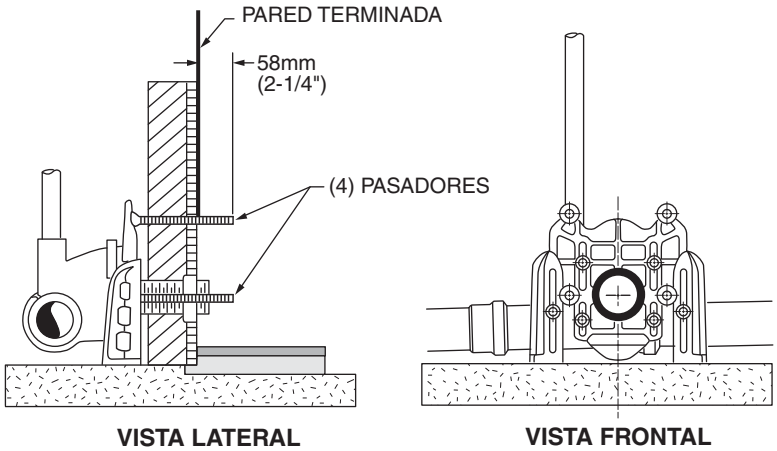
Carril ajustable de fijación	Destornillador normal	Sellador	Nivel de carpintero
Cuchillo para masilla	Llave ajustable	Cinta métrica	Válvula de descarga

1 **Es posible que las imágenes no definan con exactitud el contorno de la loza.**



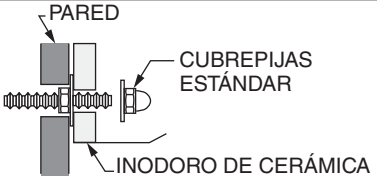
2 **MONTAJE DEL ARTEFACTO**

Los pasadores deben salir 58mm (2-1/4") hacia fuera de la pared terminada.

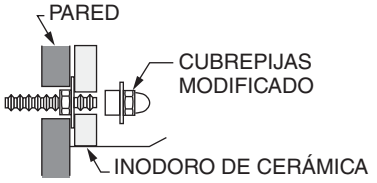


NOTA: Si el perno pasador no sobresale o queda al ras de la cerámica, use cubrepijas modificados 7381285-200.0070A (se venden por separado).

CUBREPIJAS ESTÁNDAR



CUBREPIJAS MODIFICADO

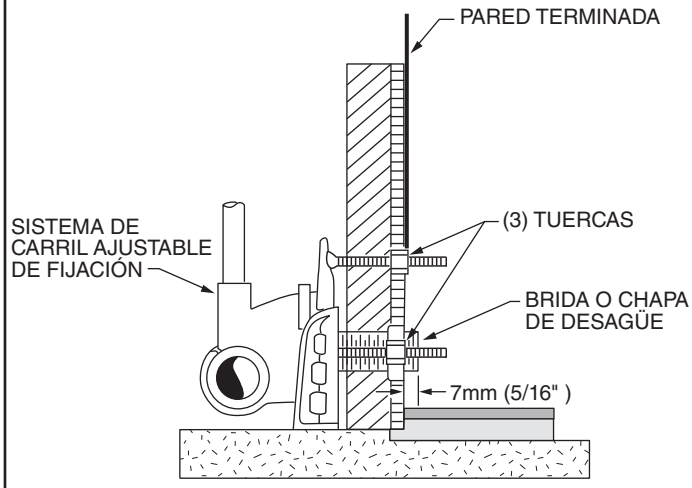


GUARDE ESTAS INSTRUCCIONES PARA CONSULTAS POSTERIORES

Los nombres de productos que aparecen en este documento son marcas comerciales de AS America, Inc.
© AS America, Inc. 2014

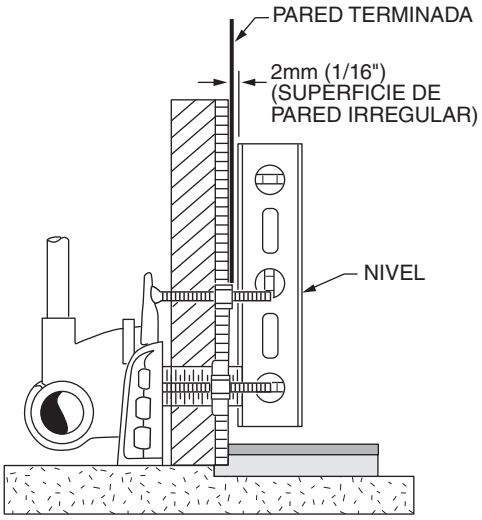
3

- Coloque las tuercas de retención en ambos pernos inferiores y sólo el perno izquierdo superior.
- Ajustar las dos tuercas inferiores de respaldo de manera que la superficie frontal de las tuercas y arandelas esté en posición para permitir un espacio mínimo de 1/16 " (2mm) entre el aparato y la superficie de la pared.
- Ajuste la brida del desagüe para que pase 7mm (5/16") de la pared terminada.



4

- Con un nivel, ajuste la tuerca de retención superior izquierda de modo que esté en el mismo plano vertical que la tuerca de retención inferior izquierda.



5

- NOTA: Los cojinetes y arandelas se deben colocar para soportar la carga completa del artefacto dejando una separación de 2mm (1/16") entre el artefacto y la pared.
- Siga las recomendaciones del fabricante para instalar la conexión de salida del inodoro.
- Coloque empaquetaduras de fieltro o neoprén (no se recomienda el uso de anillo de cera) en la salida del inodoro.
- Cuando se ha instalado el artefacto, la empaquetadura de la salida del inodoro se debe comprimir lo suficiente como para garantizar un sellado hermético y estanqueidad de los gases.

Los siguientes pasos requieren la ayuda de un asistente:

- Instale la taza en la base usando tuercas de tapa y arandelas de fibra con las tuercas y arandelas de retención.

  NO PONGA LA TUERCA DE TAPA Y ARANDELA DE FIBRA SUPERIOR DERECHA HASTA QUE LAS OTRAS TUERCAS DE TAPA HAYAN SIDO APRETADAS FIRMEMENTE CON UNA LLAVE.

- Instale la tuerca de tapa superior derecha con la arandela de fibra y apriétela con la mano hasta que quede firme.
- Aplique sellador al espacio entre la taza y la pared terminada. Quite el exceso de sellador.

En los Estados Unidos:
American Standard Brands
P.O. Box 6820
Piscataway, New Jersey 08855
Atención: Director de Servicio al Cliente

Para los residentes en los Estados Unidos, la información de la garantía puede obtenerse también llamando al siguiente número sin cargo: (800) 442-1902

www.americanstandard.com

En Canadá:
AS Canada, ULC
5900 Avebury Rd.
Mississauga, Ontario
Canadá L5R 3M3

Número sin cargo: (800) 387-0369

www.americanstandard.ca

En México:
American Standard B&K México
S. de R. L. de C.V.
Vía Morelos #330
Col. Santa Clara
Ecatepec 55540 Edo. México

Número sin cargo: 01-800-839-1200

www.americanstandard.com.mx

INSTRUCTIONS D'INSTALLATION

TOILETTE AFWALL® MILLENNIUM™ À MONTAGE MURAL AVEC FLUSHOMETER

Modèle 3351.101, 3352.101, 3353.101, 3354.101, 2257.101, 2257.101.NAF, 2633.101, 2634.101

Satisfait aux directives de la loi américaine de l'aménagement pour personnes handicapées et aux normes ANSI A117.1 pour les personnes ayant une déficience physique

Nous vous remercions d'avoir choisi American Standard - synonyme de qualité supérieure depuis plus de 100 ans. Afin de s'assurer que ce produit soit bien installé, veuillez lire ces instructions attentivement avant de commencer. (Certaines installations peuvent requérir une aide professionnelle.) Assurez-vous également que votre installation se conforme aux codes locaux.

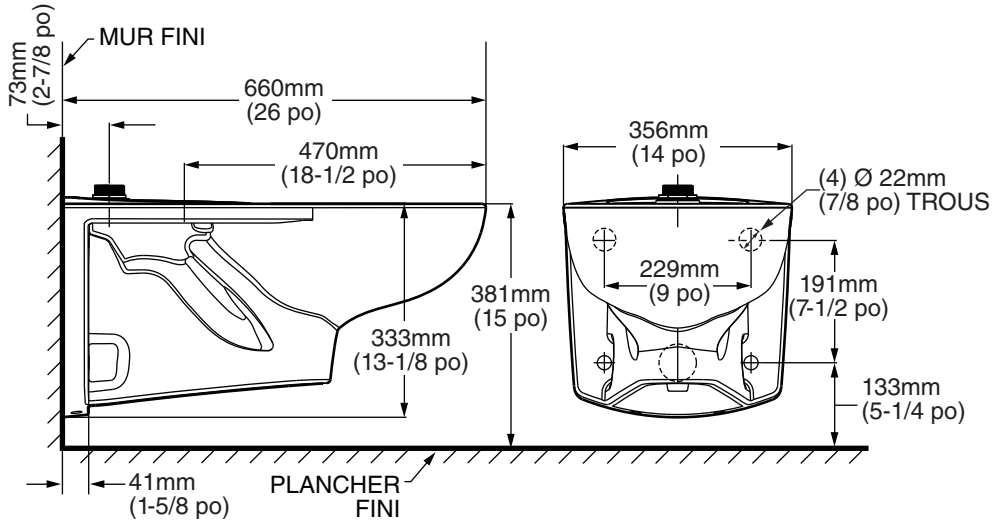
⚠ AVERTISSEMENT : CE PRODUIT EST FRAGILE. POUR ÉVITER LES BRIS ET LES BLESSURES, IL EST RECOMMANDÉ D'ÊTRE DEUX PERSONNES POUR MANIPULER L'ACCESSOIRE.

REMARQUE : Afin d'assurer un fonctionnement adéquat, la pression de la conduite doit être au moins de 30 psi.

OUTILS ET MATÉRIAUX RECOMMANDÉS

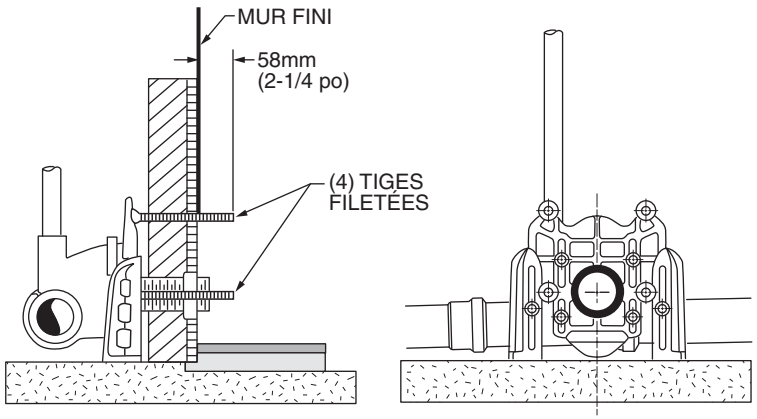
Support de toilette	Tournevis ordinaire	Scellant	Niveau de menuisier
Couteau à mastiquer	Clé universelle	Ruban à mesurer	Valve de chasse

1 **Les dessins peuvent ne pas correspondre exactement aux contours de l'appareil ou des composants**



2 **MONTAGE DE L'APPAREIL**

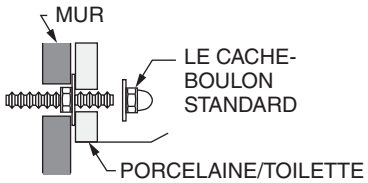
Les tiges du support mural doivent sortir de 58 mm (2-1/4 po) de la surface du mur fini.



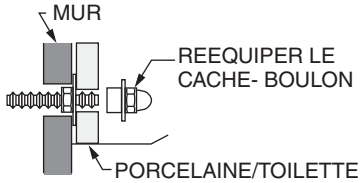
VUE LATÉRALE **VUE FRONTALE**

NOTE: Si le boulon de transporteur ne s'étend pas ou est au ras de porcelain, utiliser rééquipe des bouchons 7381285-200.0070A (a vendu séparément).

LE CACHE- BOULON STANDARD



REEQUIPER LE CACHE- BOULON

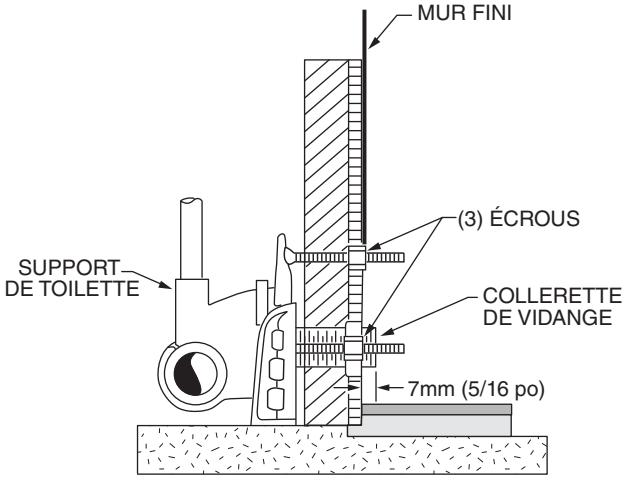


CONSERVER POUR RÉFÉRENCE ULTÉRIEURE

Les noms de produits indiqués ci-après sont des marques de commerce de AS America, Inc.
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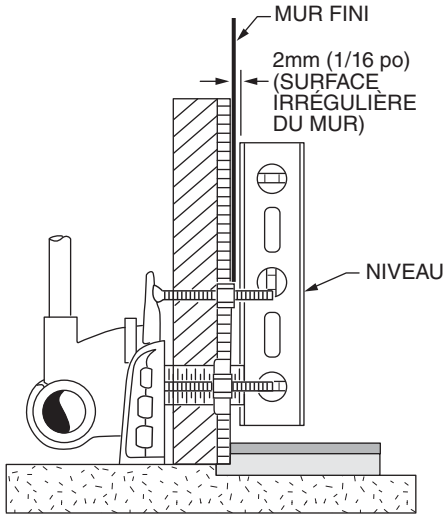
3

- Placer les écrous de retenue sur les boulons du bas et sur le boulon supérieur gauche seulement.
- Ajuster les deux écrous inférieurs de manière à ce la surface d'appui de la cuvette soit au minimum 2mm en avant de la surface du mur fini.
- Ajuster la collerette de vidange afin qu'elle sorte de 7 mm (5/16 po) du mur fini.



4

- Avec un niveau, régler l'écrou de retenue en haut à gauche, de manière à ce qu'il soit sur le même plan vertical que l'écrou de retenue en bas à gauche.



5

- REMARQUE : Les écrous supports et les rondelles doivent être installés de manière à prendre la charge complète de la toilette en laissant un écart de 2 mm (1/16 po) entre la toilette et le mur.
- Respecter les réglages de support recommandés par le fabricant pour le raccordement de sortie de la toilette.
- Placer le joint en feutre ou en néoprène (rondelle en cire déconseillée) sur la sortie de la toilette.
- Lorsque la toilette est installée, le joint de sortie de la toilette soit être suffisamment comprimée afin de garantir une étanchéité contre les fuites de gas ou d'eau.

Les étapes suivantes exigent de l'aide :

- Installer la cuvette sur le support à l'aide des écrous borgnes et des rondelles en fibre avec les écrous de retenue et les rondelles.

  NE PAS POSER LA RONDELLE EN FIBRE ET L'ÉCROU BORGNE À DROITE AVANT D'AVOIR SOLIDEMENT SERRÉ LES AUTRES ÉCROUS BORGNES AVEC UNE CLÉ.

- Installer l'écrou borgne avec la rondelle en haut à droite puis serrer à la main. Serrer avec une clé à environ ¼ de tour.
- Étendre le scellant pour boucher l'espace entre la cuvette et le mur fini. Enlever l'excédent de scellant.

Aux États-Unis:
American Standard Brands
P.O. Box 6820
Piscataway, New Jersey 08855
Attention: Directeur du Service à la clientèle

Les résidents des États-Unis peuvent aussi obtenir des informations à propos de la garantie en composant le numéro sans frais (800) 442-1902

www.americanstandard.com

Au Canada:
AS Canada, ULC
5900 Avebury Rd.
Mississauga, Ontario
Canada L5R 3M3

Sans frais: (800) 387-0369

www.americanstandard.ca

Au Mexique :
American Standard B&K Mexique
S. de R.L. de C.V.
Via Morelos n° 330
Col. Santa Clara
Ecatepec 55540 Edo. Mexique

Sans frais: 01-800-839-1200

www.americanstandard.com.mx

Z6000AV

Exposed Flush Valve for Water Closets

TAG _____

Architectural/Engineering Specification:

Exposed, quiet diaphragm-type, chrome plated flushometer valve with a polished exterior. Complete with Zurn's AquaVantage® TPE, chloramine resistant, dual seal diaphragm with a clog resistant, triple filtered by-pass. The valve is ADA compliant with a non-hold open and no leak handle feature. Internal seals are made of chloramine resistant materials.

Product Features:

- Proprietary Dezincification resistant low lead brass alloy
- Control Stop has internal siphon-guard protection and vandal resistant stop cap, Sweat solder kit, wall flange with set screw.
- High back pressure Vacuum Breaker with one piece hex coupling nut
- Chloramine resistant Internal seals
- Adjustable tailpiece
- Spud coupling and flange for top spud connection

Valve Height Options:

	Product No.	A
☑	Z6000AV	11 1/2" [292]
☐	Z6000AV-1	16" [406]
☐	Z6000AV-2	24" [610]
☐	Z6000AV-3	27" [686]

Compliance and Certification:

- ADA Compliant

*This product should be used with a WaterSense labeled counterpart with a compatible flow volume to ensure that the entire system meets the requirements for water efficiency and performance.



Flow Options:

	Flush Volume	Dual Flush	WaterSense* Labeled
☐ **-ONE****	1.1 gpf		✓
☑ **-HET****	1.28 gpf		✓
☐ **-WS1**	1.6 gpf	1.6/1.1 gpf	
☐ **-Standard**	3.5 gpf	3.5/2.4 gpf	

Suffix Options:

☐	-BG	BioCare Handle
☐	-DF	Dual Flush Handle (See Chart Above)
☐	-H	Handle on Front of Flush Valve
☐	-L	1" [25] Metal Push Button
☐	-YJ	Split Ring Pipe Support
☐	-YK	Solid Ring Pipe Support

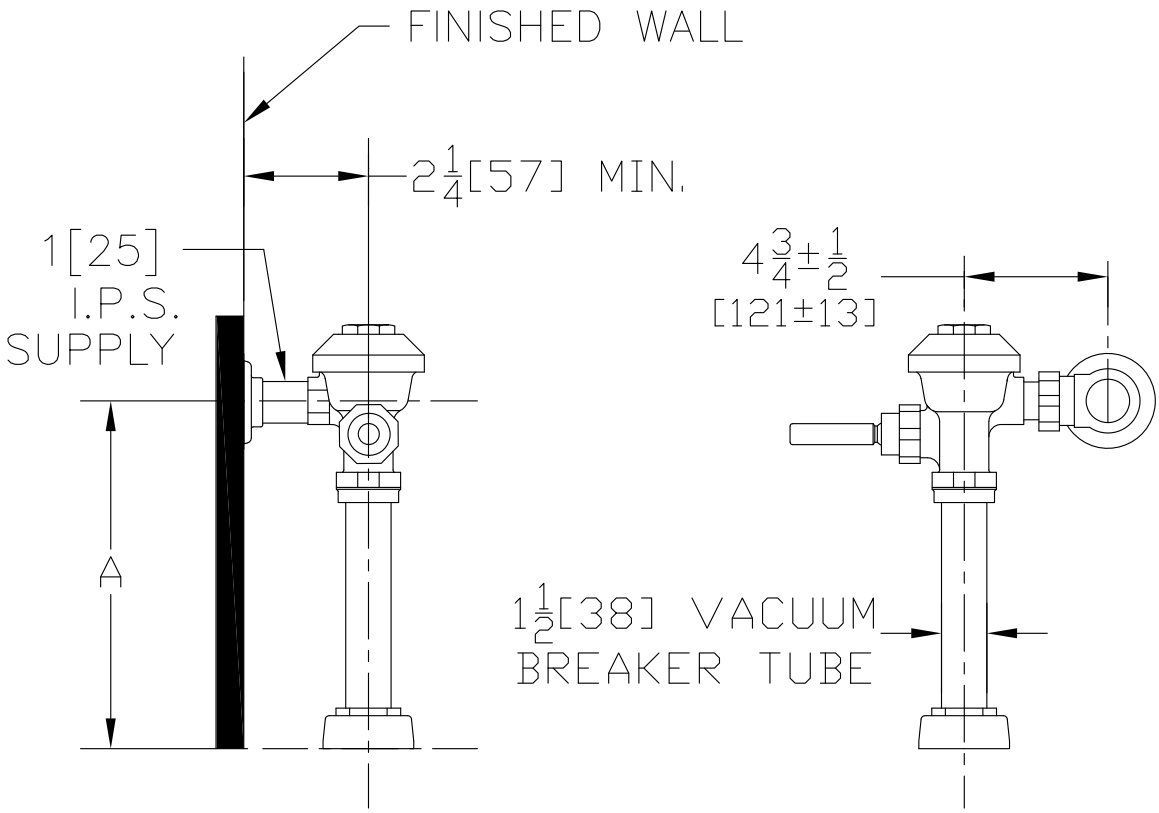
** Not available with triple filter by-pass

Architectural/Engineering Approval

The information contained in this document is subject to change without notice.
Please contact Zurn for most up to date information.

Rev. B | Date: 12/06/22 | C.N. No. 144844 | Prod./Dwg. No. SS Z6000AV

Rough-in/Overview dimensions



Patent zurn.com/patents
US 1.855.ONE.ZURN **CANADA** 1.877.892.5216
ZURN.COM
by zurn ELKAY Water Solutions

AquaVantage® Z6000AV Series

AquaVantage Exposed Flushometer

Installation, Operation, Maintenance and Parts Manual



Z6000AV



Z6003AV

AquaVantage Exposed Closet/Urinal Systems

Z6000AV
Z6000AV-HET
Z6001AV
Z6003AV
Z6003AV-ULF
Z6010AV
Z6014AV
Z6017AV
Z6096AV
Z6099AV

NOTICE: READ ENTIRE MANUAL PRIOR TO INSTALLING PRODUCT.

⚠ **WARNING**: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

⚠ **ADVERTENCIA:** Cáncer y daño reproductivo - www.P65Warnings.ca.gov

⚠ **AVERTISSEMENT:** Cancer et effets néfastes sur la reproduction - www.P65Warnings.ca.gov

LIMITED WARRANTY

All goods sold hereunder are warranted to be free from defects in material and factory workmanship for a period of three years from the date of purchase. Decorative finishes warranted for one year. We will replace at no costs goods that prove defective provided we are notified in writing of such defect and the goods are returned to us prepaid at Sanford, NC, with evidence that they have been properly maintained and used in accordance with instructions. We shall not be responsible for any labor charges or any loss, injury or damages whatsoever, including incidental or consequential damages. The sole and exclusive remedy shall be limited to the replacement of the defective goods. Before installation and use, the purchaser shall determine the suitability of the product for his intended use and the purchaser assume all risk and liability whatever in connection therewith. Where permitted by law, the implied warranty of merchantability is expressly excluded. If the products sold hereunder are "consumer products," the implied warranty of merchantability is limited to a period of three years and shall be limited solely to the replacement of the defective goods. All weights stated in our catalogs and listed are approximate and are not guaranteed.

NOTE: The information in this manual is subject to change at any time without notice. Installations may be performed at different times of construction by different individuals. For this reason, these instructions should be left on-site with the facility or maintenance manager.

Rev. C | Date: 11/08/22 | C.N. No. 144844 | Prod./Dwg. No. FV211

AquaVantage® Rough-In, Product Specification, Models and Options

ENGINEERING SPECIFICATION: ZURN AquaVantage® 'AV' Exposed Closet Flush Valve – Exposed, quiet diaphragm type, chrome-plated flushometer valve with a polished exterior. Complete with Zurn's AquaVantage TPE, chloramine resistant, dual seal diaphragm with a clog resistant, triple filtered by-pass. The valve is ADA compliant with a non-hold-open and no-leak handle feature, high back pressure vacuum breaker, one-piece hex coupling nut, adjustable tailpiece, spud coupling, and flange for spud connection. Control stop has internal siphon-guard protection, vandal-resistant stop cap, sweat solder kit, and a cast wall flange with setscrew. Internal seals are made of chloramine resistant materials.

MODELS

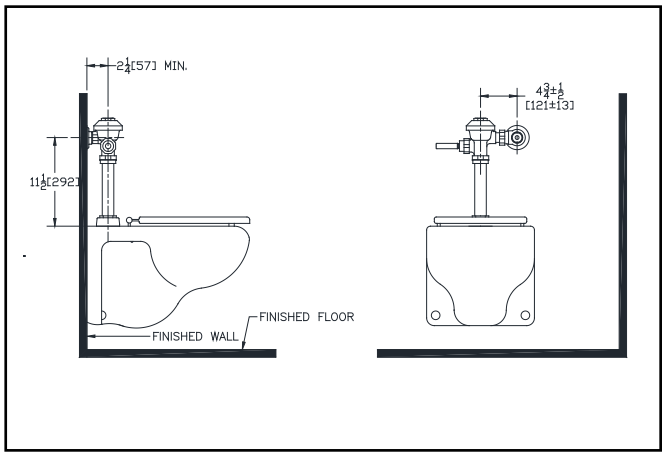
Z6000AV – 1-1/2" Water Closet Valve with top spud connection.
Z6010AV – 1-1/2" Water Closet Valve with back spud connection.
Z6001AV – 1-1/4" Urinal Valve with top spud connection.
Z6003AV – 3/4" Urinal Valve with top spud connection.

FLOWS

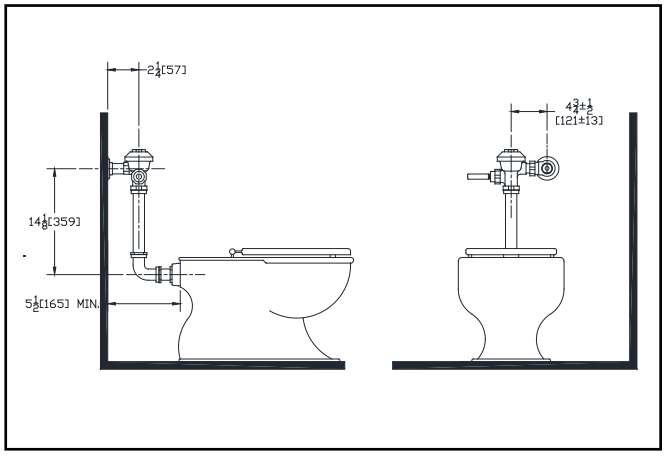
-FF	Full Flow 3.0 Gal. for Urinal, 4.5 Gal. for Water Closet
-HET	High Efficiency Toilet 1.28 Gal. for Water Closet
-WS1	Low Consumption 1.0 Gal. for Urinal, 1.6 Gal. for Water Closet
-ULF	Ultra Low Flow 0.125 Gal. for Urinal

OPTIONS

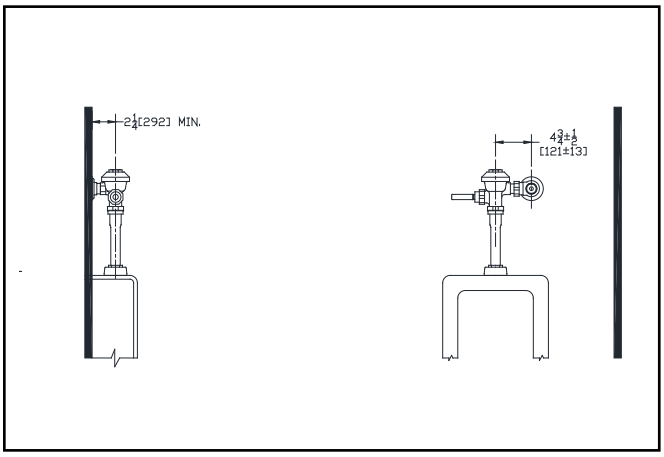
____**-BG**	BioCare Handle
____**-H**	Handle on Front of Flush Valve
____**-L**	1" [25] Metal Push Button
____**-L3**	3" [76] Metal Push Button
____**-YJ**	Split Ring Pipe Support
____**-YK**	Solid Ring Pipe Support
____**-YO**	Bumper on Stop Angle
____**-1**	16" Rough-In
____**-2**	24" Rough-In
____	Other



Models: Z6000AV, Z6000AV-1, Z6000AV-2, Z6000AV-3,
-HET (High Efficiency) 1.28 Gal.
-WS1 (Water Saver) 1.6 Gal. Low Consumption



Models: Z6010AV, Z6010AV-1, Z6010AV-2,
-HET (High Efficiency) 1.28 Gal.
-WS1 (Water Saver) 1.6 Gal. Low Consumption



Models: Z6001AV (1-1/4" urinal flush valve)
Z6003AV (3/4" urinal flush valve)
-WS1 (Water Saver) 1.0 Gal. Low Consumption
-ULF (Ultra Low Flow) 0.125 Gal.

Sweat Solder Adaptor Installation Instructions

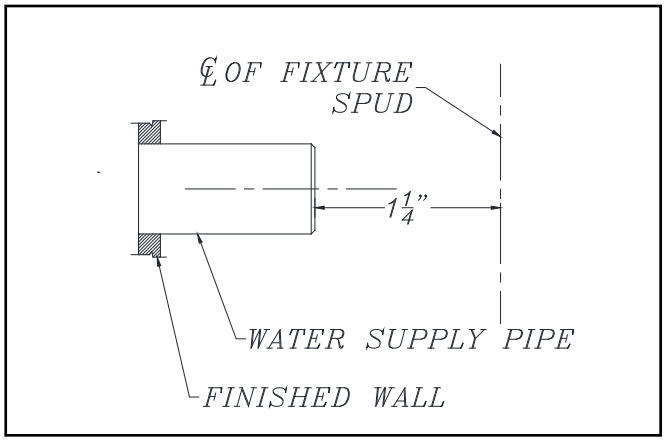
Important:
- All plumbing is to be installed according to state and local codes and regulations.
- Water supply lines need to allow proper water flow for each fixture.
- Flush all lines of any **debris** before making connections.
- Do not use pipe sealant or plumbing grease on any fitting other then the control stop inlet.

The Aquaflush valve is designed to operate under various water pressures with a recommended range between 10 and 100 psi (69 to 689 kPa). Each Zurn valve is tested for proper performance at the factory before being shipped. Consult the product pages of the catalog for available flow options.

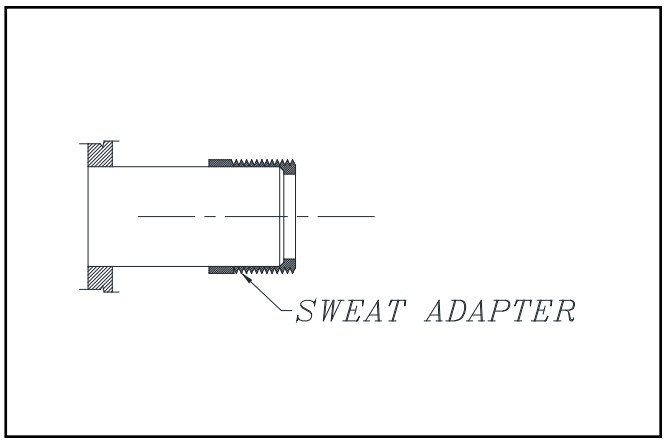
Most low consumption fixtures (1.28 and 1.6 gallon) require a minimum of 25 psi running pressure through the valve to obtain proper evacuation. Please be sure to consult fixture manufacturer on minimum running water supply requirements for proper evacuation.

When installing your quality Zurn valve it is rec om mend ed that to protect the polished finish you do not use a toothed wrench. This will cause gouges and scratches on your valve.

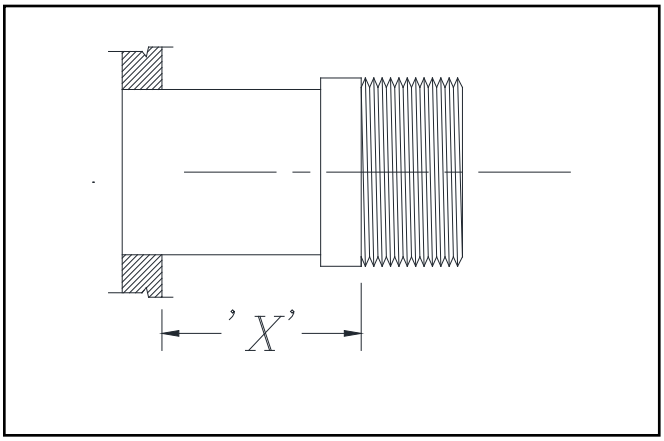
STEP NO. 1
Measure distance from finished wall to center line of fixture spud; cut water supply pipe 1-1/4" shorter than this mea sure ment. Chamfer O.D. and I.D.



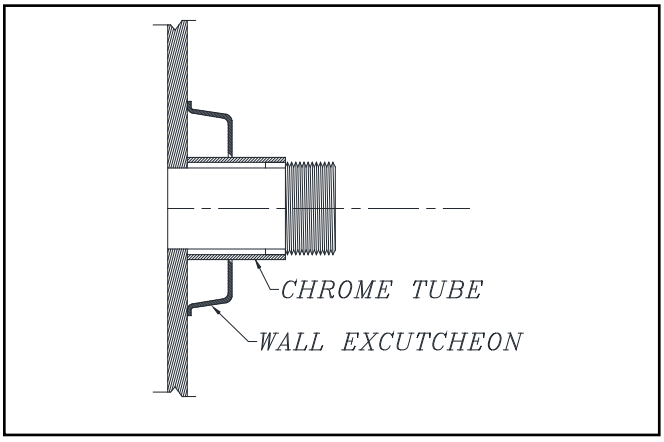
STEP NO. 2
Slide threaded adapter onto supply pipe until shoulder stops on end of pipe. Then sweat-solder the adapter to water supply pipe.



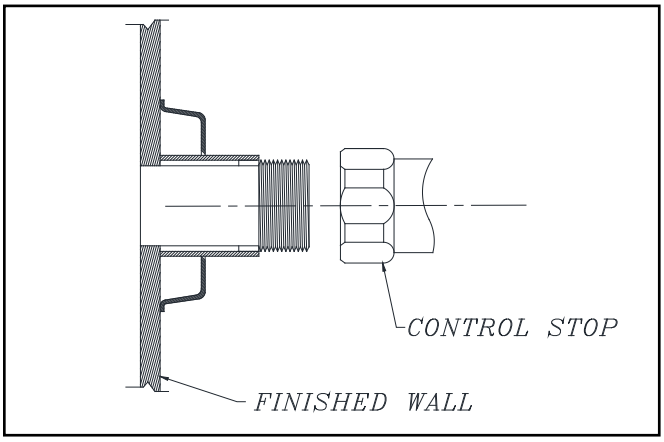
STEP NO. 3
Measure from finished wall to first thread of adapter for length of chrome tube. Cut chrome tube this length 'x'.



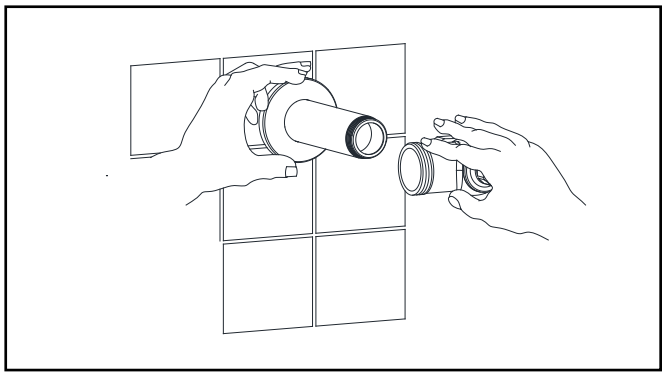
STEP NO. 4
Slide wall escutcheon over chrome tube and slide both chrome tube and wall escutcheon over supply pipe pushing the wall escutcheon all the way to the wall.



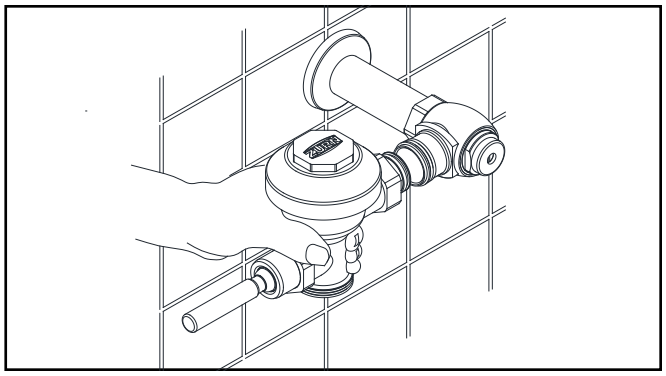
STEP NO. 5
Screw control stop onto water supply water adaptor.



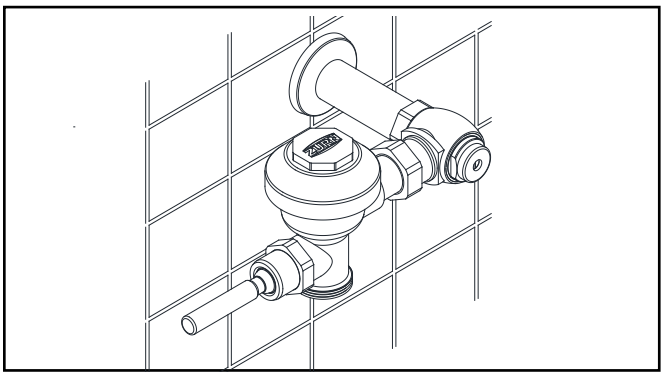
1. Install stop valve assembly using proper size supply escutcheon and sweat solder adapter kit if applicable (see 1). Thread sealing compounds should be used on male NPT threads only.



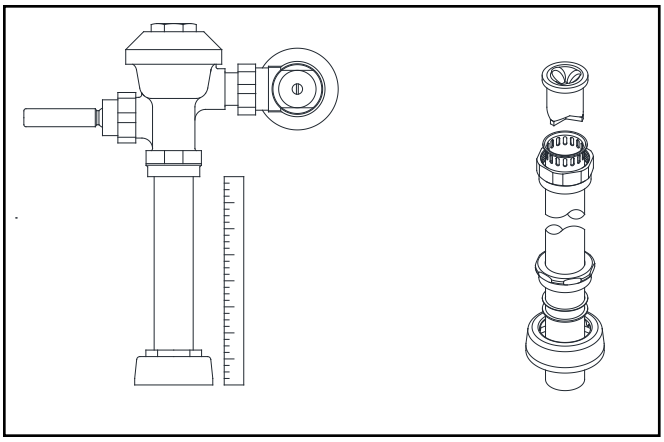
2. Prior to inserting the flush valve tailpiece into stop valve, be certain that the O-ring seal is located in O-ring seal groove at the end of the tailpiece and the locking nut and locking snap ring are located as shown below (see 2). Care should be taken not to damage the O-ring when inserting the tailpiece into the stop valve. If lubrication is needed, wetting the O-ring with water will be sufficient.



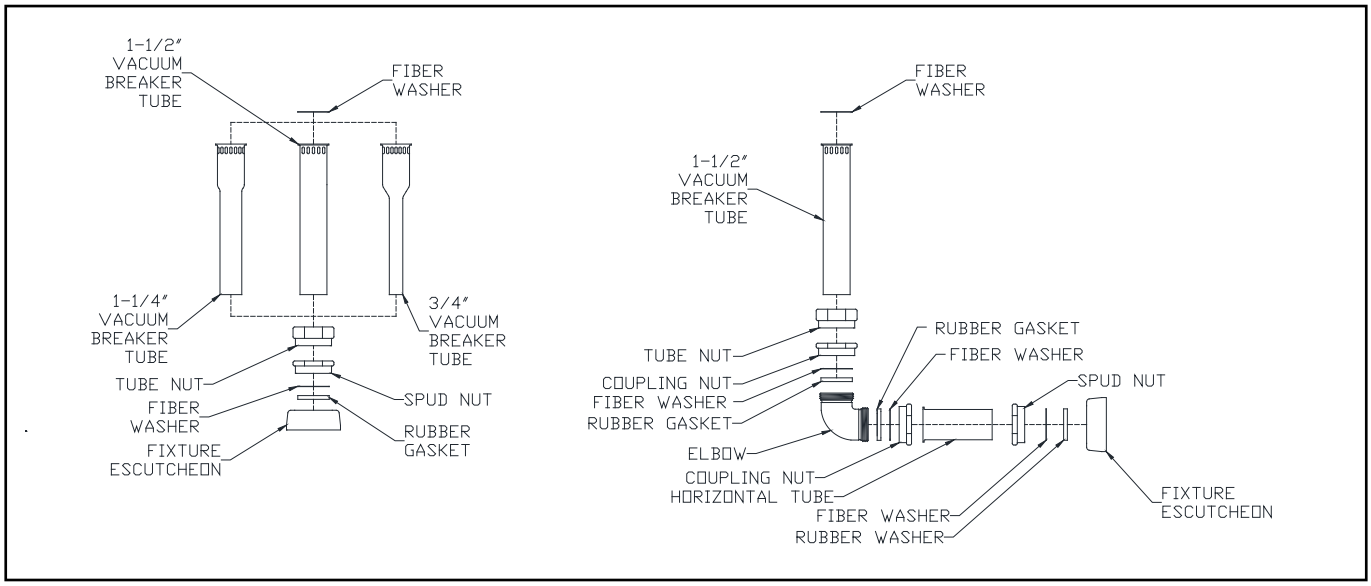
3. Insert the flush valve tailpiece into the stop valve and hand tighten the lock nut to the stop valve. Plumb the entire unit (see 3).



4. Determine the length of vacuum breaker tube required to join the flush valve and fixture spud. Cut the vacuum breaker tube, if re quired, to this length (see 4a). Assemble the vacuum breaker tube assembly and spud nut assembly to the flush valve and fixture spud (see 4b).

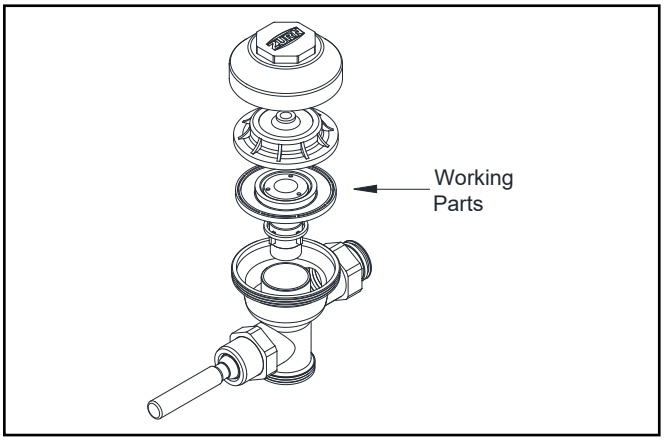


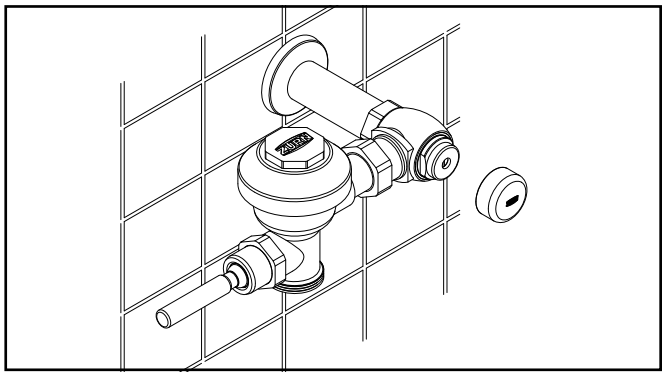
5. Hand tighten spud nut and vacuum breaker tube nut to fixture and flush valve. Adjust the valve assembly for plumb. Tighten fixture spud nut, vacuum breaker tube nut and lock nut with a wrench.



AquaVantage® Installation Instructions

6. When all flush valves are connected to the fixtures and water pressure is available, it is recommended that the supply piping be flushed to remove dirt, pipe chips, etc. from system. Before the water is turned on, be sure all stop valves to the flush valves are closed off tight. The stop valves can be opened and closed by using the adjusting screw located at the center of the stop valve cap, behind the stop snap cap screw cover if already installed (see 6a). Stop valve adjustments can only be made by using the adjusting screw. **It is not neces sary to remove the stop valve cap when making adjustments. If for any reason it becomes necessary to remove the stop valve cap, be certain the water is shut off at the main supply valve.**





Use the following procedure to flush out the supply piping:

A. Remove the main valve body cover.

B. Remove the working parts from the flush valve (shown in 6b).

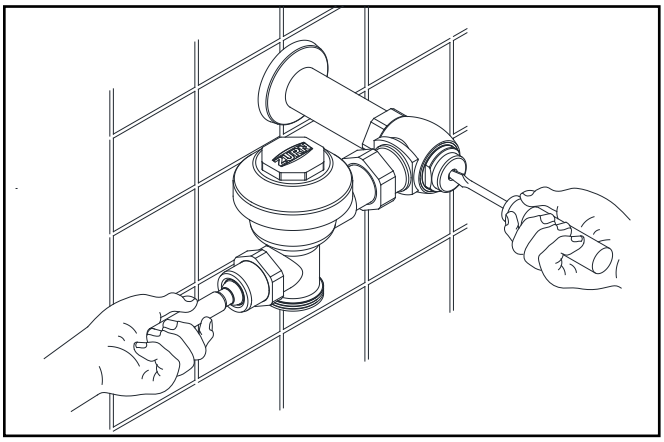
C. Replace the main valve body cover and plastic cover without reinstalling the working parts.

D. Open the stop valve by using the stop adjusting screw, and flush out all debris from pipe and connections.

E. Shut stop, open cover, replace the working parts, replace and tighten cover.

This procedure should also be followed when the system has been drained for some time, as occurs in athletic fields, recreation parks, etc.

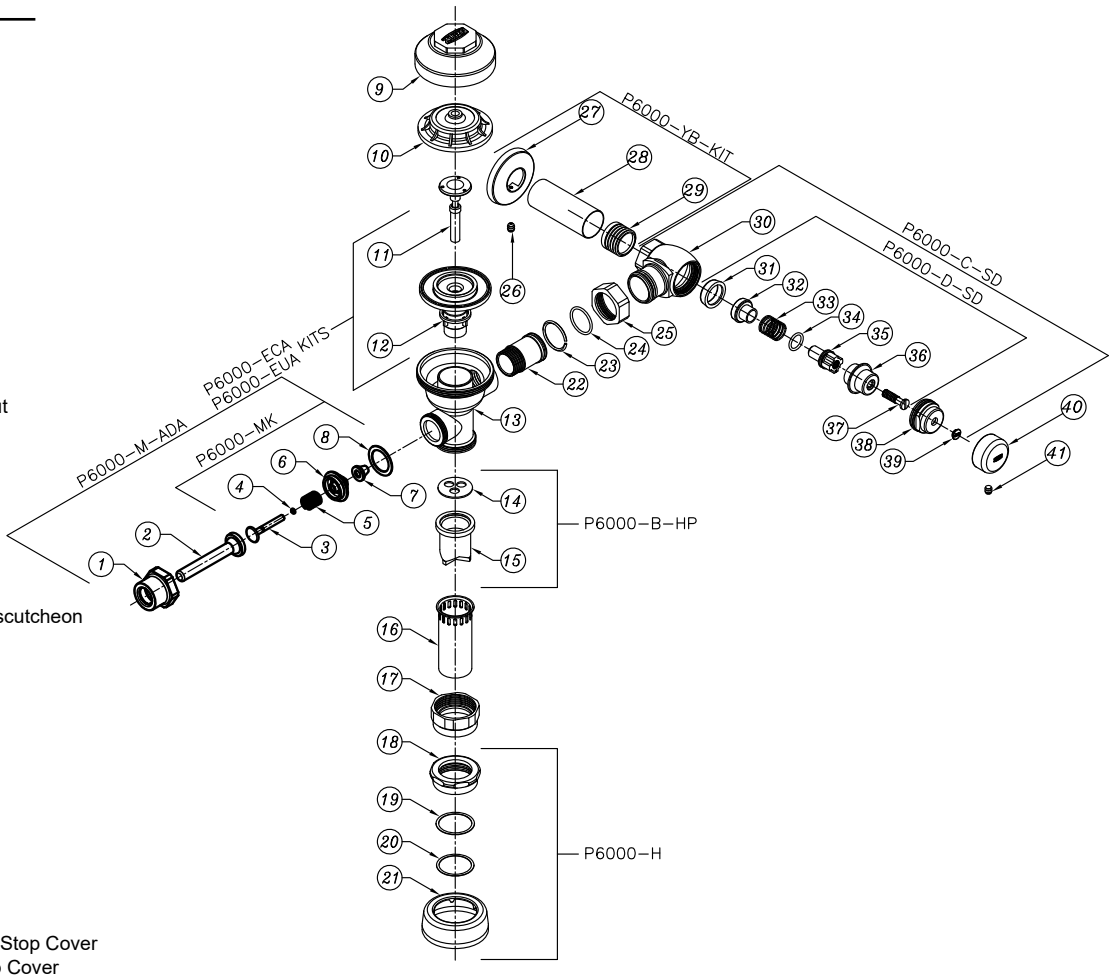
7. The Aquaflush flush valves are preset for fixture volume as marked on the valve cartons. The valve does not require regulation for vari a tion in water pressure within its operating range. To set the flush valve for proper operation, gradually adjust the stop valve open, using the adjusting screw, while actuating the valve until the rate of water flow into the fixture is not excessive, yet is sufficient enough to adequately evacuate the waste. The final setting for urinals should be such that the fixture will not overflow when the valve is actuated in succession. The stop snap cap screw cov er should be secured after final adjustments have been made.



AquaVantage® Repair Kits

Part Identification

1. Handle Nut
2. Handle
3. Actuator Rod
4. Handle O-Ring
5. Handle Spring
6. Handle Seal Retainer
7. Handle Seal
8. Handle Gasket
9. Valve Body Cover
10. Plastic Wrap
11. Trip Mechanism
12. Diaphragm Assembly
13. Valve Body
14. Vacuum Breaker Insert
15. Vacuum Breaker Duckbill
16. Vacuum Breaker Tube
17. Vacuum Breaker Tube Nut
18. Spud Nut
19. Spud Friction Washer
20. Spud Sleeve
21. Spud Escutcheon
22. Tailpiece
23. Snap Ring
24. Tailpiece O-Ring
25. Locking Nut
26. Setscrew for Cast Wall Escutcheon
27. Cast Wall Escutcheon
28. Supply Cover Tube
29. Sweat Solder Adapter
30. Stop Body
31. Piston Seal
32. Piston Seal
33. Stop Spring
34. Guide O-Ring
35. Piston Guide
36. Guide Holder
37. Adjusting Screw
38. Stop Cap
39. Snap Cap Screw Cover
40. Vandal-Resistant Control Stop Cover
41. Setscrew for Control Stop Cover



Covers and Repair Kits	Product No.
Outside Cover - CP – Item 9	P6000-LL
Inside Cover – Item 10	P6000-L
HET Water Closet Kit – 1.28 gal. flush (PL Only)	P6000-ECA-HET
ULF Urinal Kit – 0.125 gal. flush (PL Only)	P6000-EUA-ULF
Low Consumption Closet Kit – 1.6 gal. flush	P6000-ECA-WS1
Water Saving Closet Kit – 3.5 gal. flush	P6000-ECA-WS
Full Flow Closet Kit – 4.5 gal. flush	P6000-ECA-FF
Low Consumption Urinal Kit – 1.0 gal. flush	P6000-EUA-WS1
Water Saving Urinal Kit – 1.5 gal. flush	P6000-EUA-WS
Full Flow Urinal Kit – 3.0 gal. flush	P6000-EUA-FF

Repair Parts - Inside Parts	Product No.
Urinal Relief Valve - Item 11	P6000-EU13
Closet Relief Valve - Item 11	P6000-EC13

AquaVantage Rebuild Kits	Product No.
Closet and Urinal Rebuild Kits Include Items 3-8, 11, 12, 24, 28-34	P6000-EC-WS-RK P6000-EC-WS1-RK P6000-EU-WS-RK P6000-EU-WS1-RK

Handle Assembly and Repair Kits	Product No.
ADA Handle Assembly (Side) Includes Items 1-8	P6000-M-ADA
Handle Repair Kit (Side) Includes Items 4-8	P6000-MK
Handle Seal Includes Item 8	P6000-M9
Handle Gasket Includes Item 9	P6000-M10
Repair Kit for Front Operation - Exposed Includes Items 4-9	P6000-MHK
Handle Assembly (Front) Includes Items 2-9	P6000-MH

Control Stop Repair Kit and Parts	Product No.
Control Stop Repair Kit for 1” and 3⁄4” Includes Items 31-37	P6000-D-SD
Seal Seat for 1” and 3⁄4”, Includes Item 31	P6000-D42
VP Control Stop Repair Kit for 1” and 3⁄4”, Includes Items 30-39	P6000-C-SD
Sweat Solder Connection with Cast Wall Flange, Includes Items 26-29	P6000-YB

Adjustable Tailpieces	Product No.
Adjustable Tailpiece for Standard Flush Valve Includes Items 22-25	P6000-J1
Tailpiece Coupling Assembly Includes Items 23-25	P6000-K
Tailpiece Locking Ring Includes Item 23	P6000-C30
Tailpiece O-Ring Includes Item 24	P6000-C31
Coupling Nut Includes Item 25	P6000-C32

Flush Connections and Spud Coupling Kits	Product No.
Flush Tube Assembly for Flush Valves Includes Items 14-16. Specify diameter and length.	P6000-A-HP
Vacuum Breaker Repair Kit Includes Items 14-15	P6000-B-HP
Spud Coupling Assembly Includes Items 18-21. Specify size.	P6000-H

AquaVantage® Trouble Shooting Guide

Problem	Cause*	Corrective Action*
Valve will not operate.	1.) Stop valve is closed. 2.) Supply valve is closed.	1.) Open stop valve. 2.) Open supply valve.
Insufficient volume of water to adequately siphon fixture.	"1.) Stop valve is not open enough. 2.) Urinal trip mechanism installed in wrong kit, urinal for closet. 3.) Insufficient volume or pressure at supply.	1.) Open stop valve for desired volume of water. 2.) Replace urinal part with proper closet valve part. 3.) If gauges are not available to measure supply pressure or volume of water at the valve, completely remove the working parts and open the stop valve to allow water to pass through the empty valve. If the supply is adequate to siphon the fixture, the guide ring (#16) may be removed from the guide assembly to provide additional flow (see page 5). Should this prove unsatisfactory, steps should be taken to increase the pressure and/or supply.
Flush valve shuts off too quickly.	1.) Damaged or punctured diaphragm. 2.) Enlarged by-pass orifice. "	1.) Install new P6000-EUR or P6000-ECR replacement kit to remedy the problem. (#12 thru #17) 2.) Install new P6000-EUR or P6000-ECR replacement kit to remedy the problem. (#12 thru #17) "
Valve is short flushing.	1.) Diaphragm kit is not matched to the fixture. 2.) Urinal trip mechanism (black #12) is in the closet flush valve.	"1.) Install the proper P6000-EUR or P6000-ECR replacement kit to remedy the problem. (#12 thru #17) 2.) Install closet trip mechanism (white #12).
Valve is flushing too long or not shutting off.	1.) Trip mechanism not seating properly due to foreign material between trip mechanism and retainer disc. 2.) By-pass orifice is plugged or partially plugged. 3.) Line pressure is not adequate to force trip mechanism to seal. 4.) Cracked cover. (#11)	1.) Disassemble parts and rinse thoroughly. 2.) Examine by-pass orifice and clean if necessary being certain not to enlarge orifice opening. 3.) Pressure is inadequate or has dropped below minimum operating range. Steps should be taken to increase the line pressure. 4.) Replace cover with new one.
Water splashes out of fixture.	1.) Supply volume is more than is necessary. 2.) Lime accumulation on vortex or spreader holes of fixture.	1.) Adjust downward on control stop. 2.) Remove the lime build up.
Flush is not considered quiet.	1.) Control stop may not be adjusted for quiet operation. 2.) Fixture may be contributing to noise. 3.) Piping system may be source of noise.	1.) Adjust the control stop for quiet operation keeping in mind the fixture evacuation requirements. 2.) Check noise created by fixture by placing a cover over the bowl opening to separate valve noise from bowl noise. If it is deter-mined the fixture is too noisy consult with fixture manufacturer. 3.) High pressure in the system can sometimes be controlled by the stop valve. Other sources of noise may be the absence of air chambers and shock arrestors, loose pipes, improper size pipes, etc. In these cases the building engineer should be consulted.
Handle assembly leaking.	1.) Handle assembly is not tight.	1.) Tighten handle assembly.
Water drips from chrome cap.	1.) P6000-L inside plastic cap is cracked.	1.) Replace P6000-L plastic cap.

Care of Chrome Plated Surfaces

The suggested cleaning of chrome plated surfaces is simply to clean them with mild soap and water, then dry. Commercial cleaning compounds are never recommended.

Seasonal Use

Valves used in installations subject to shut down because of cold and freezing conditions should be maintained in the following manner. After the main supply has been shut off and the water drained from the system, remove the stop valve cap and stop valve internals to allow the water to drain from the flush valve itself.

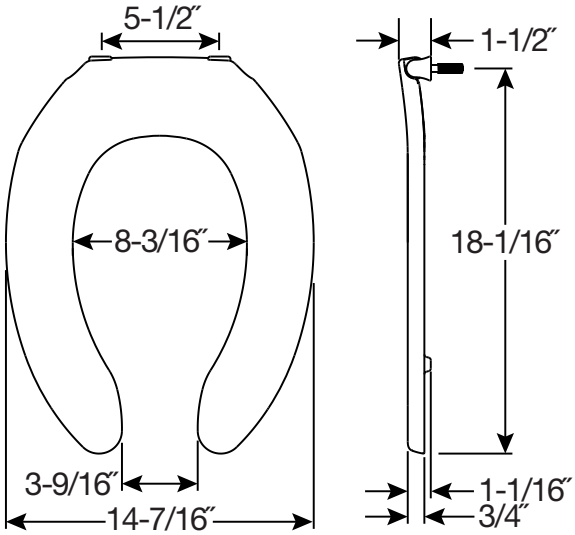
*See previous page for numerical references.

ZURN INDUSTRIES, LLC *COMMERCIAL BRASS OPERATION, 5900 ELWIN BUCHANAN DRIVE, SANFORD, NC, U.S.A. 27330*
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ZURN INDUSTRIES LIMITED *3544 NASHUA DRIVE, MISSISSAUGA, ONTARIO L4V 1L2 PHONE: 905/405-8272 FAX: 905/405-1292*

1055 / 1055SSC

COMMERCIAL HEAVY-DUTY
PLASTIC TOILET SEAT





SPECIFICATIONS:

Size: Elongated

Material: Plastic

Style: Open Front less Cover

Ring Bumpers: Two

Hinges: Plastic Non Self-Sustaining Check Hinge (1055) or Self-Sustaining Check Hinge (1055SSC) with Non-Corroding 300 Series Stainless Steel Posts and Pintles

Hardware: Non-Corroding 300 Series Stainless Steel Washers and Nuts

Codes & Standards: Complies with IAPMO/ANSI Z124.5 Performance Standards Heavy-Duty Commercial

Proudly Made in the USA

Eco-Friendly

Bemis Manufacturing Co., Sheboygan Falls, WI 53085 | ToiletSeats.com | ph: 800.558.7651 | fx: 800.292.3647

Bemis Manufacturing Co. reserves the right to make revisions without notice to product specifications.
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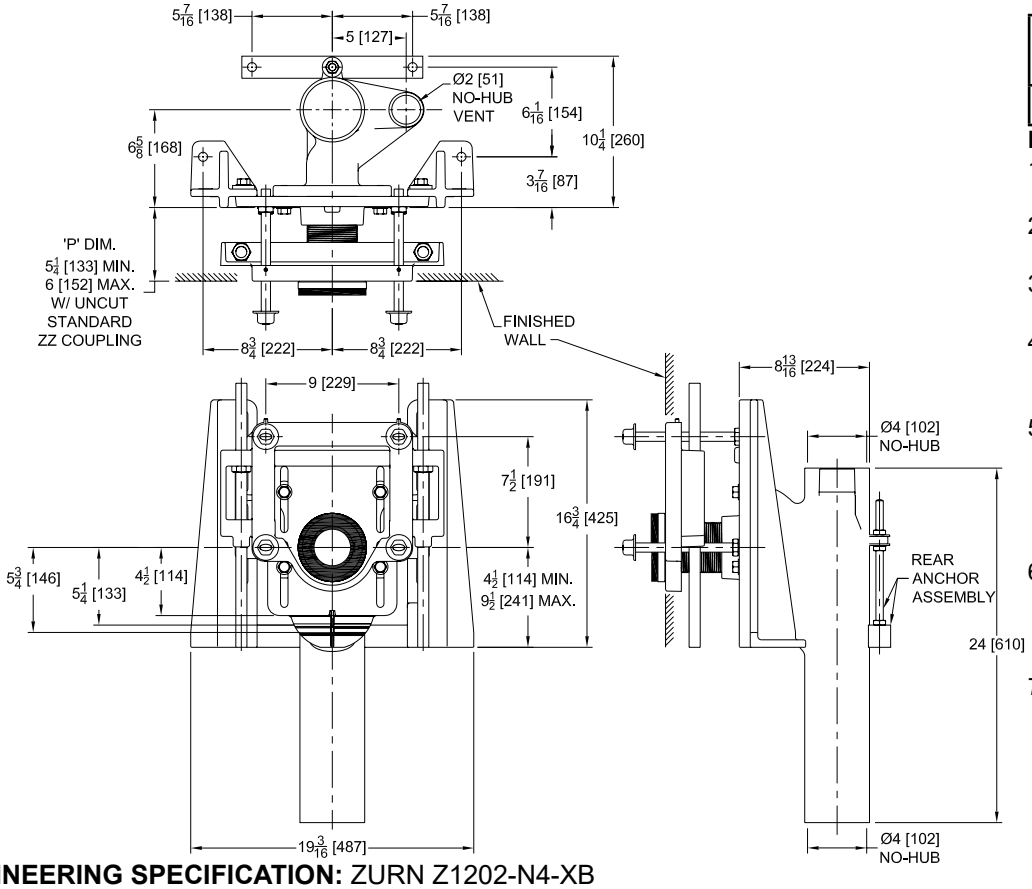
Z1202-N4-XB

BARIATRIC CARRIER - 1000 lbs [454kg]
EZCARRY® ADJUSTABLE VERTICAL HIGH PERFORMANCE
SIPHON JET NO-HUB WATER CLOSET CARRIER SYSTEM

SPECIFICATION SHEET

TAG _____

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



Z1202-N4-XB Illustrated

Product Number	Approx. Wt. lbs [kg]
Z1202-N4-XB	115 [52]

Note:

1. Cut ZZ Coupling, Min. 'P' Dim. Obtainable = 3 [76]
2. Feet bolted to floor using 1/2 [13] dia. anchors.
3. Rear anchor foot required for secure installation.
4. Floor anchors must each be able to withstand a pull-out force of 748 lbs [339 kg].
5. Pull-out forces are calculated values with standard coupling assembly. No safety factor has been applied. See Form C38 for more information.
6. 2 [51] No-Hub vent connection regularly furnished on right hand side. Left hand available when specified (Suffix -VL)
7. Auxiliary inlet available right (-JR) or left (-JL) or both sides (-JJ) when specified.

ENGINEERING SPECIFICATION: ZURN Z1202-N4-XB
EZCarry® Bariatric vertical siphon jet water closet carrier system with high performance Dura-Coated cast iron main fitting with hydro-mechanically optimized sweep, 4" [102 mm] no-hub connections, and extended 2" [51mm] vent. Corrosion resistant, adjustable 3" [76 mm] dia. X 6" [152 mm] coupling, designed to increase flow velocity and line carry, and labor saving "Neo-Seal" bonded gasket optimizes flow performance while reducing installation steps. Complete system includes adjustable faceplate, QuickFit™ faceplate gasket, floor mounted foot supports; rigid support frame assembly; extra-heavy-duty ½" [13 mm] rear anchor tie down; fixture bolts, trim, and stud protectors. EZCarry® XB system complies with all applicable requirements of ASME A112.6.1M up to a 1000 lbs [454 kg] maximum static load.

OPTIONS (Check/specify appropriate options)
✓ Z1202-N4-XB 4 [102] No-Hub Stack, Single Inlet, 2 [51] Right Hand Vent

PREFIXES
✓ Z D.C.C.I. System with Zurn ZZ Adjustable Coupling*

SUFFIXES
_____ -CC Corrosion Resistant Cast Iron Coupling (2-1/4 [57] to 12 [305])
_____ -G Galvanized Cast Iron
_____ -JJ Two 2 [51] Auxiliary Inlets
_____ -JL 2 [51] Left-Hand Auxiliary Inlet
_____ -JR 2 [51] Right-Hand Auxiliary Inlet
_____ -VL Left Hand Vent Connection
_____ -VP Vandal-Proof Trim
_____ -50 Flush Valve Supply Support for Water Closets

* Regularly furnished unless otherwise specified.

⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov
⚠ **ADVERTENCIA:** Cáncer y daño reproductivo - www.P65Warnings.ca.gov
⚠ **AVERTISSEMENT:** Cancer et effets néfastes sur la reproduction - www.P65Warnings.ca.gov

Zurn Industries, LLC | Specification Drainage Operation
1801 Pittsburgh Avenue, Erie, PA 16502, Ph. 855.663.9876

In Canada | Zurn Industries Limited
7900 Goreway Drive, Unit 10, Brampton, Ontario L6T 5W6, Ph. 877.892.5216

www.zurn.com

Rev. E
Date: 08/16/24
C.N. No. 146178
Patent zurn.com/patents
Prod. | Dwg. No. Z1202-N4-XB

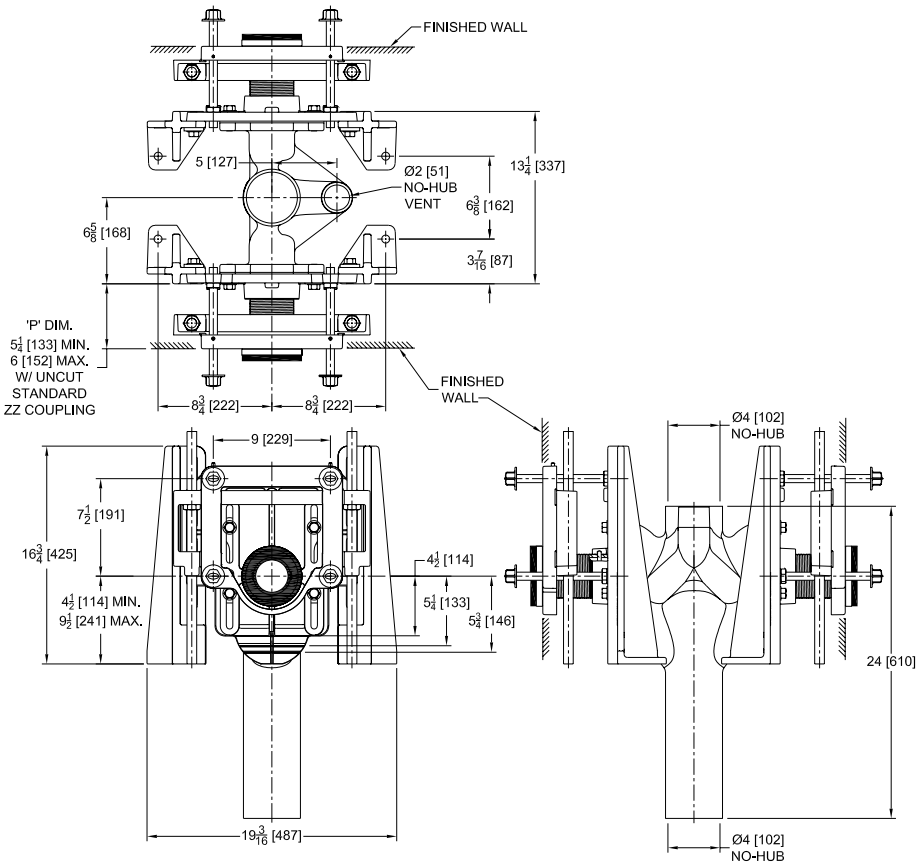
Z1202-ND4-XB

BARIATRIC CARRIER BACK-TO-BACK CARRIER- 1000 lbs [454kg]
EZCARRY® ADJUSTABLE VERTICAL HIGH PERFORMANCE
SIPHON JET NO-HUB WATER CLOSET CARRIER SYSTEM

SPECIFICATION SHEET

TAG _____

Design and Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



Z1202-ND4-XB Illustrated

Product Number	Approx. Wt. lbs [kg]
Z1202-ND4-XB	188 [85]

Note:

1. Cut ZZ Coupling, Min. 'P' Dim. Obtainable = 3 [76]
2. Feet bolted to floor using 1/2 [13] dia. anchors.

ENGINEERING SPECIFICATION: ZURN Z1202-ND4-XB
EZCarry® Bariatric vertical siphon jet water closet carrier system, with high performance Dura-Coated cast iron main fitting with hydro-mechanically optimized sweep, 4" [102 mm] no-hub connections, and extended 2" [51 mm] vent. Corrosion resistant, adjustable cast iron couplings, designed to increase flow velocity and line carry, and labor saving "Neo-Seal" bonded gaskets optimize flow performance while reducing installation steps. Complete system includes adjustable faceplates, QuickFit™ faceplate gaskets, floor mounted foot supports; rigid support frame assemblies; extra-heavy-duty ½" [13 mm] rear anchor tie downs; fixture bolts, trim, and stud protectors. EZCarry® XB system complies with all applicable requirements of ASME A112.6.1M up to a 1000 lbs [454 kg] maximum static load

OPTIONS (Check/specify appropriate options)
✓ Z1202-ND4-XB 4 [102] No-Hub Stack, Back-to-Back Inlet (Double), 2 [51] Right Hand Vent

PREFIXES
✓ Z D.C.C.I. System with Zurn ZZ Adjustable Coupling*

SUFFIXES
____ -CC Corrosion Resistant Cast Iron Coupling (2-1/4 [57] to 12 [305])
____ -G Galvanized Cast Iron
____ -JJ Two 2 [51] Auxiliary Inlets
____ -JL 2 [51] Left-Hand Auxiliary Inlet
____ -JR 2 [51] Right-Hand Auxiliary Inlet
____ -VP Vandal-Proof Trim
____ -50 Flush Valve Supply Support for Water Closets

* Regularly furnished unless otherwise specified.

⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov
⚠ **ADVERTENCIA:** Cáncer y daño reproductivo - www.P65Warnings.ca.gov
⚠ **AVERTISSEMENT:** Cancer et effets néfastes sur la reproduction - www.P65Warnings.ca.gov

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Rev. C
Date: 07/23/24
C.N. No. 146178
Patent zurn.com/patents
Prod. | Dwg. No. Z1202-ND4-XB

Z1201-ND4-XB

BARIATRIC BACK-TO-BACK CARRIER - 1000 lbs [454kg]
EZCARRY® ADJUSTABLE HORIZONTAL HIGH PERFORMANCE
SIPHON JET NO-HUB WATER CLOSET CARRIER SYSTEM

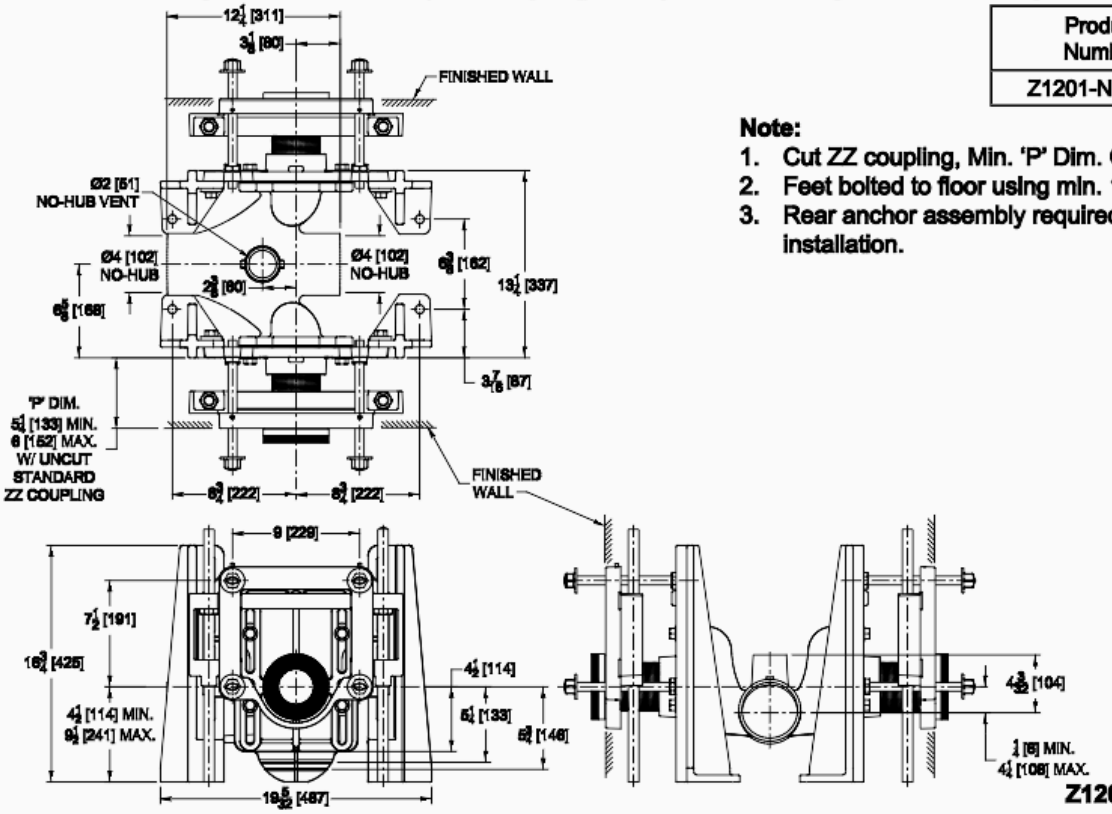
SPECIFICATION SHEET

TAG _____

Design and Dimensional Data (Inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

Product Number	Approx. Wt. Lbs. [kg]
Z1201-ND4-XB	173 [79]

Note:
1. Cut ZZ coupling, Min. 'P' Dim. Obtainable =3 [76]
2. Feet bolted to floor using min. 1/2 [13] dia. anchors.
3. Rear anchor assembly required for secure installation.



Z1201-ND4-XB Illustrated

ENGINEERING SPECIFICATION: ZURN Z1201-ND4-XB
EZCarry® Bariatric horizontal siphon jet water closet carrier system, with high performance Dura-Coated cast iron main fitting with hydro-mechanically optimized sweep, 4" [102 mm] no-hub connections, and extended 2" [51 mm] vent. Corrosion resistant, adjustable 3" [76mm] X 6" [102mm] cast iron couplings, designed to increase flow velocity and line carry, and labor saving "Neo-Seal" bonded gaskets optimize flow performance while reducing installation steps. Complete system includes adjustable faceplates; QuickFit™ faceplate gaskets, floor mounted foot supports; rigid support frame assemblies; extra-heavy-duty ½" [13 mm] rear anchor tie downs; fixture bolts, trim, and stud protectors. EZCarry® XB system complies with all applicable requirements of ASME A112.6.1M up to a 1000 lbs [454 kg] maximum static load.

OPTIONS (Check/specify appropriate options)
____ Z1201-ND4-XB 4 [102] No-Hub Back-to-Back Inlet (Double)

PREFIXES
____ Z D.C.C.I. System with Zurn ZZ Adjustable Coupling*

SUFFIXES
____ -CC Corrosion Resistant Cast Iron Coupling (2-1/4 [57] to 12 [305])
____ -G Galvanized Cast Iron
____ -VP Vandal-Proof Trim
____ -50 Flush Valve Supply Support for Water Closets

* Regularly furnished unless otherwise specified.

⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov
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Rev. E
Date: 06/24/24
C.N. No. 146095
Patent zurn.com/patents
Prod. | Dwg. No. Z1201-ND4-XB

STAR MECHANICAL SUPPLY

TAB-11

P-408

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

Lucerne™ Wall-Hung Lavatory

- Wall-hung sink
- Vitreous china
- Front overflow
- D-shaped bowl
- Self-draining deck area with contoured back and side splash shields
- Faucet ledge
- Compliant with Texas Accessibility Standard (TAS) for children age group 13 and up

Faucet holes on 203 mm (8") centers:

❑ **0356.028** For exposed bracket support (by others)

❑ **0356.015** For wall hanger (included) or concealed arms support (by others)

❑ **0356.915** For wall hanger (included) or concealed arms support (by others) less overflow

❑ **0356.037** For wall hanger (included) or concealed arms support (by others) with extra 35 mm (1-3/8") hole for soap/lotion dispenser (by others) on right-hand side

Faucet holes on 102 mm (4") centers:

❑ **0355.027** For exposed bracket support (by others)

❑ **0355.012** For wall hanger (included) or concealed arms support (by others)

❑ **0355.912** For wall hanger (included) or concealed arms support (by others) less overflow

❑ **0355.056** For wall hanger (included) or concealed arms support (by others) with extra 35 mm (1-3/8") hole for soap/lotion dispenser (by others) on left-hand side

❑ **0355.034** For wall hanger (included) or concealed arms support (by others) with extra 35 mm (1-3/8") hole for soap/lotion dispenser (by others) on right-hand side

❑ **0355.041** With two holes spaced 343 mm (13-1/2") in back splash for 10 mm (3/8") bolts (by others)

Single center faucet hole:

❑ **0356.041** For exposed bracket support (by others)

❑ **0356.421** For wall hanger (included) or concealed arms support (by others)

❑ **0356.921** For wall hanger (included) or concealed arms support (by others) less overflow

❑ **0356.439** For wall hanger (included) or concealed arms support (by others) with single faucet hole on right

❑ **0356.066** For exposed bracket support (by others) with single faucet hole on right

❑ **0356.115** For wall hanger (included) or concealed arms support (by others) with extra 35 mm (1-3/8") hole for soap/lotion dispenser (by others) on left-hand side

❑ **0356.137** For wall hanger (included) or concealed arms support (by others) with extra 35 mm (1-3/8") hole for soap/lotion dispenser (by others) on right-hand side



0355.012



0356.041

SEE FOLLOWING PAGES FOR ROUGHING-IN DIMENSIONS

Compliance Certifications -
Meets or Exceeds the Following Specifications:

- ASME A112.19.2 / CSA B45.1 for Vitreous China Fixtures

Nominal Dimensions:
540 x 464 mm
(21-1/4" x 18-1/4")

Bowl sizes:
379 mm (14-7/8") wide
254 mm (10") front to back
165 mm (6-1/2") deep

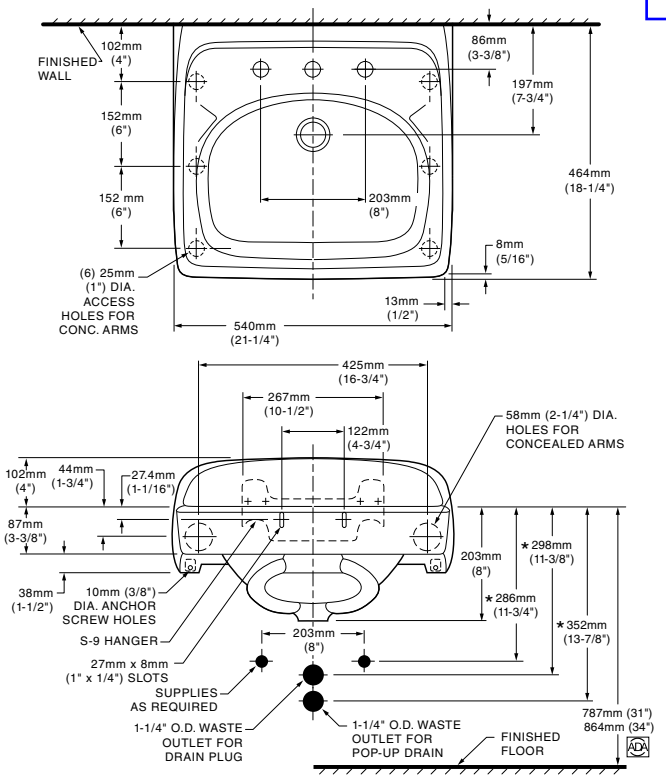
To Be Specified:

❑ Color: ❑ White
❑ Faucet:
❑ Faucet Finish:
❑ Supplies:
❑ 1-1/4" Trap:
❑ Bracket Support (by others):
❑ Concealed Arms Support (by others):

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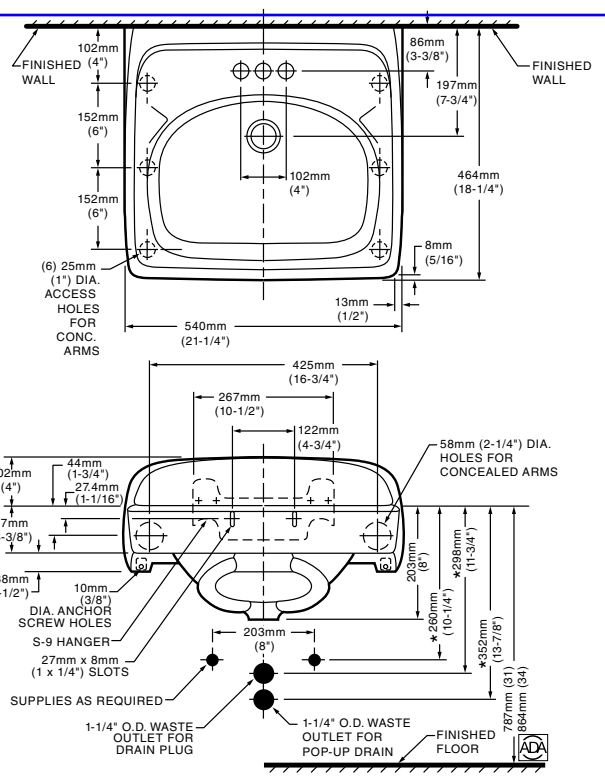
8" CENTER CONFIGURATIONS

All Wall Hanger (included) or Concealed Arm Configurations

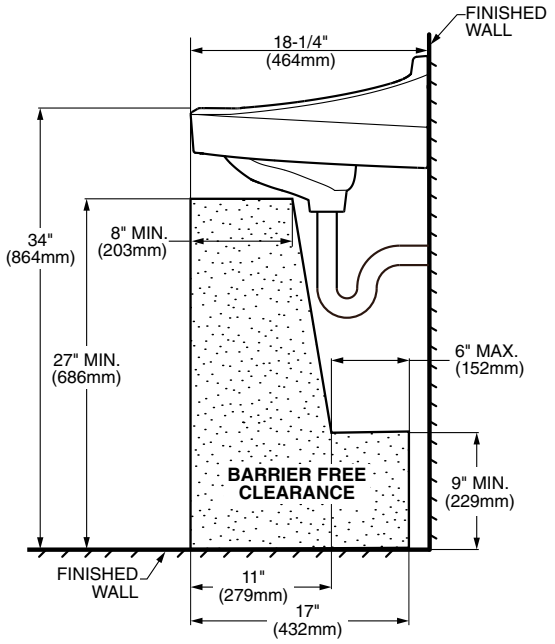


4" CENTER CONFIGURATIONS

All Wall Hanger (included) or Concealed Arm Configurations



SIDE VIEW - ALL CONFIGURATIONS



NOTES:

* DIMENSIONS SHOWN FOR LOCATION OF SUPPLIES AND "P" TRAP ARE SUGGESTED. PROVIDE SUITABLE REINFORCEMENT FOR ALL WALL SUPPORTS. FITTINGS NOT INCLUDED AND MUST BE ORDERED SEPARATELY. CONCEALED ARM SUPPORT AS REQUIRED TO BE FURNISHED BY OTHERS.

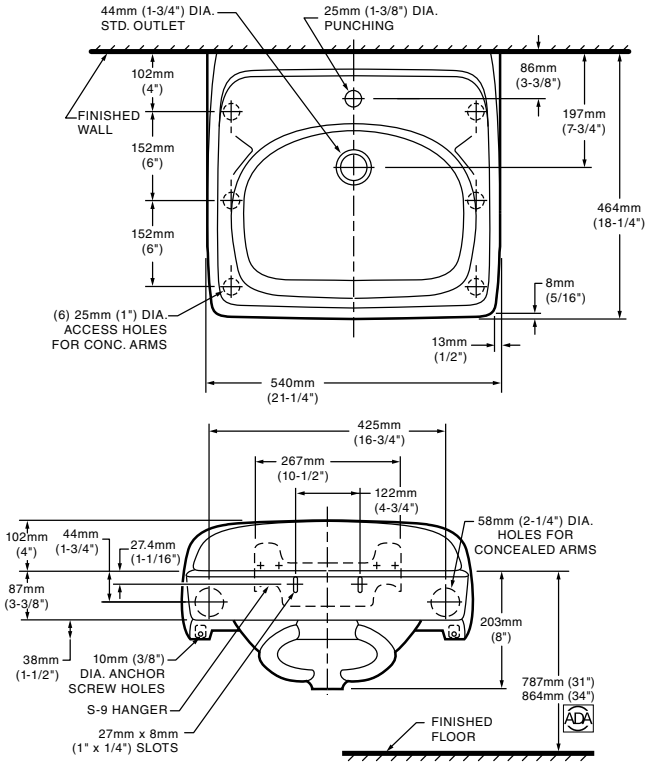
IMPORTANT: Dimensions of fixtures are nominal and may vary within the range of tolerances established by ANSI Standard A112.19.2. These measurements are subject to change or cancellation. No responsibility is assumed for use of superseded or voided pages.

ADA **MEETS THE AMERICANS WITH DISABILITIES ACT GUIDELINES AND ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES - CHECK LOCAL CODES.**
Top of front rim mounted 864mm (34") from finished floor.

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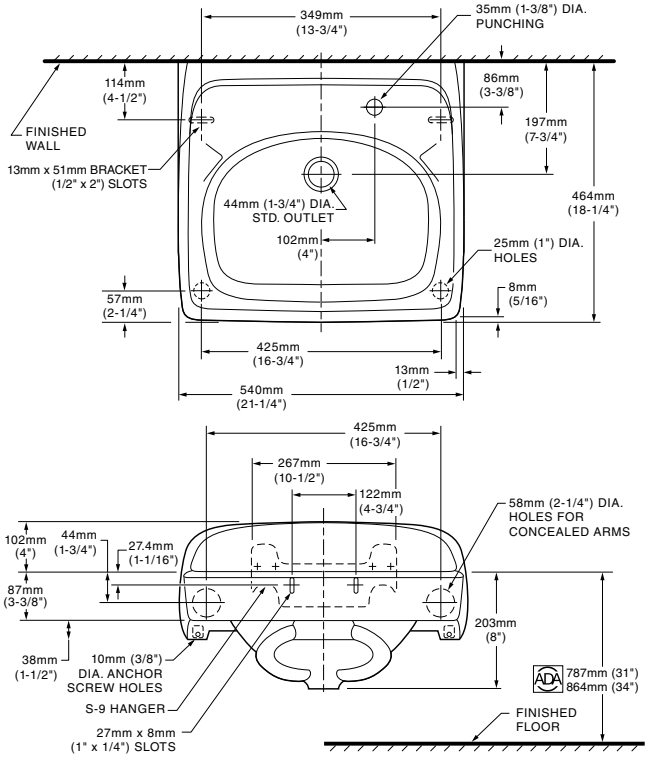
SINGLE CENTER HOLE CONFIGURATIONS

All Wall Hanger (included) or Concealed Arm Configurations



SINGLE CENTER HOLE ON RIGHT CONFIGURATIONS

All Wall Hanger (included) or Concealed Arm Configurations



NOTES:

***** DIMENSIONS SHOWN FOR LOCATION OF SUPPLIES AND “P” TRAP ARE SUGGESTED. PROVIDE SUITABLE REINFORCEMENT FOR ALL WALL SUPPORTS. FITTINGS NOT INCLUDED AND MUST BE ORDERED SEPARATELY. CONCEALED ARM SUPPORT AS REQUIRED TO BE FURNISHED BY OTHERS.

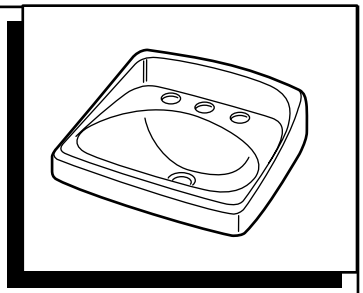
IMPORTANT: Dimensions of fixtures are nominal and may vary within the range of tolerances established by ANSI Standard A112.19.2. These measurements are subject to change or cancellation. No responsibility is assumed for use of superseded or voided pages.

MEETS THE AMERICANS WITH DISABILITIES ACT GUIDELINES AND ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES - CHECK LOCAL CODES.
Top of front rim mounted 864mm (34") from finished floor.

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American Standard **INSTALLATION INSTRUCTIONS**

Wall Hung Bathroom Sink



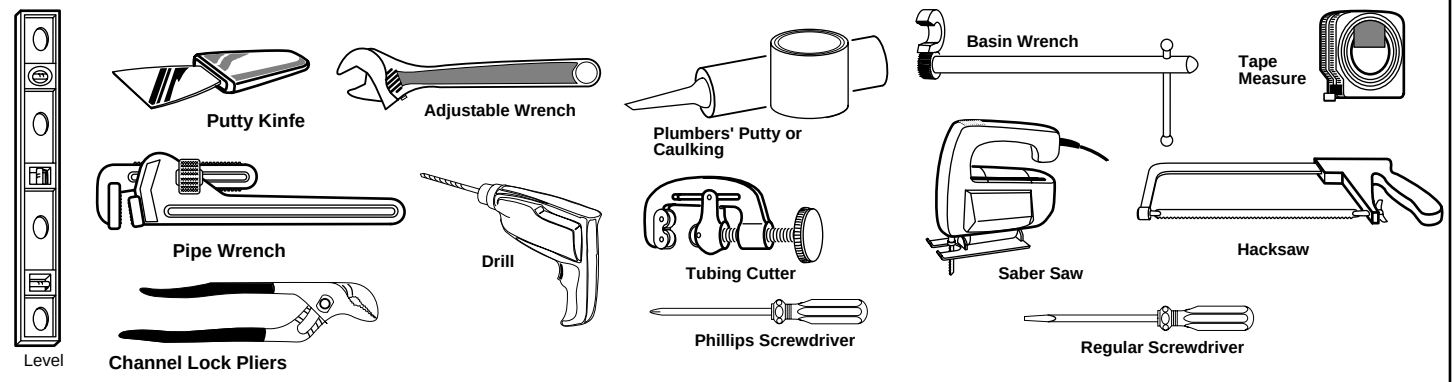
***NOTE:** For installation of models using concealed or exposed arms, follow instruction provided by arms manufacturer.

Introduction: Thank you for selecting our products...products which have been the benchmarks of fine quality for years. To help insure that the installation process will proceed smoothly, please read these instructions carefully before you begin. Also, review the recommended tools and materials list; carefully unpack and examine your new plumbing fixture.

⚠ **CAUTION: PRODUCT IS FRAGILE. TO AVOID BREAKAGE AND POSSIBLE INJURY HANDLE WITH CARE!**

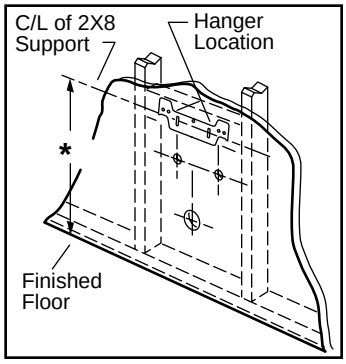
NOTE: *Pictures may not exactly define contour of china and components.*

Recommended Tools & Materials



1 Provide suitable reinforcement behind finished wall for lavatory hanger mounting screws. *Determine horizontal center line location of support from the table listed in Step 2. (Make sure support bottom extends to lavatory back wall bottom.)

NOTE: If replacing an existing sink be certain to shut off water supply before removing old sink.

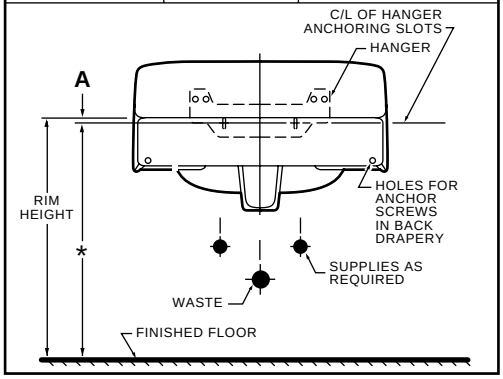


2 Determine the desired rim height (for example 32") then select from the Table at right the height of the hanger mounting bolts centerline

EXAMPLE:

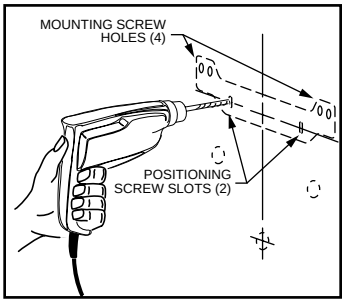
For Lucerne:
32"-1"=31"
For Ledgewood:
32"+2-7/8"=34-7/8"

TABLE		
Part #	**Model**	**Distance "A"**
0124	Comrade	- 2-1/2" (64mm)
0321	Declyn	- 2-3/4" (70mm)
0355/0356	Lucerne	- 1" (25mm)
0372/0373	Penlyn	- 1/8" (3mm)
4300	Ledgewood	+ 2-7/8" (73mm)
4867/4869	Regalyn	+ 2-3/4" (70mm)
5300	Ledgemere	+ 2-1/2" (64mm)



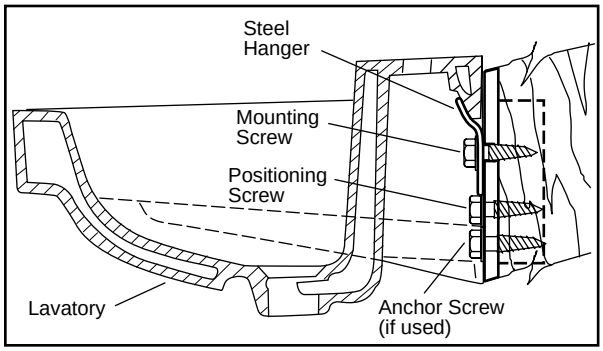
3 Position hanger according to Step 2, making sure its center is aligned with the waste hole centerline. Mark the hanger screw locations through its mounting holes.

4 Drill pilot holes in positioning screw slots of hanger. (Note: Some models are supplied with anchor screws, or steel hangers for lavatory installations. Other models are not provided with mounting hardware which can be purchased at local hardware outlets. Lavator-ies with bottom anchor screw holes should be secured with anchor screws in addition to hangers.

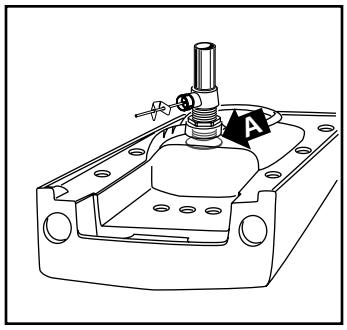


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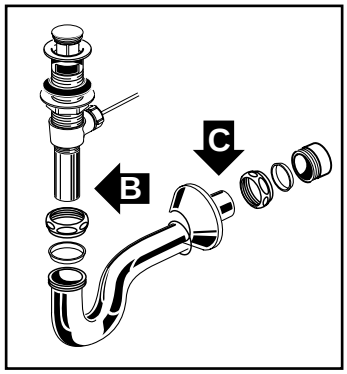
5 Affix hanger to wall (hand tighten only). Mount lavatory for positioning, level the deck, and mark bottom anchor screw holes (if applicable). Remove lavatory, tighten the hanger positioning screws and drill pilot holes for anchor screws and 4 mounting screws. Install and tighten the mounting screws.



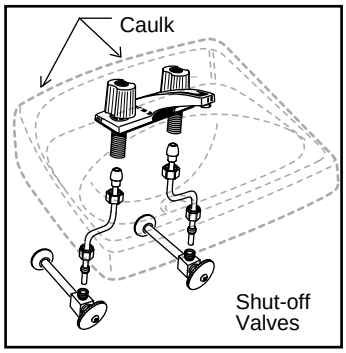
6 Following manufacturers instructions, install faucet and drain assembly. (Not included). Be certain to apply a bead of sealing putty on the underside of the drain (Part "A") in order to ensure a watertight seal between the lavatory and drain. Remove excess putty after installing drain on lavatory.



7 Return the fitted lavatory to the installed position. Connect trap to drain assembly hand tight to check alignment. It may be necessary to cut off part of the tailpiece (area "B") or part of the horizontal leg of the trap (area "C").



8 Secure lavatory on hanger as shown in **5**. Insert and tighten anchor screws if applicable. Connect hot and cold supply lines to the shut-off valves. Tighten trap joints for watertight assembly. Apply a bead of caulk around the edge which contacts the wall as shown.



American Standard Ideal Standard Incesa Standard Sadosa Standard Cedelca Saniwares

AMERICAN STANDARD ONE-YEAR LIMITED WARRANTY

If inspection of this American Standard plumbing product, within one year after its initial installation, confirms that it is defective in materials or workmanship, American Standard will repair or, at its option, exchange the product for a similar model.

This limited warranty **does not apply** to local building code compliance; since local building codes vary considerably, the purchaser of this product should check with a local building or plumbing contractor to insure local code compliance before installation.

This warranty **shall be void** if the product has been moved from its initial place of installation; if it has been subjected to faulty maintenance, abuse, misuse, accident or other damage; if it was not installed in accordance with American Standard's instructions; or if it has been modified in a manner inconsistent with the product as shipped by American Standard.

American Standard's option to repair or exchange the product under this warranty does not cover any labor or other costs of removal or installation, **nor shall American Standard be responsible for any other incidental or consequential damages attributable to a product defect or to the repair or exchange of a defective product, all of which are expressly excluded from this warranty.** (Some states or provinces do not allow the exclusion or limitation of implied warranties, so this exclusion may not apply to you.)

This warranty gives you specific legal rights. You may have other statutory rights that vary from state to state or from province to province, in which case this warranty does not affect such statutory rights.

For service under this warranty, it is suggested that a claim be made through the contractor or dealer from or through whom the product was purchased, or that a service request (including a description of the product model and of the defect) be sent to the following address:

In the United States:
American Standard, Inc.
One Centennial Ave.
Piscataway, New Jersey 08855
Attention: Director of Consumer Affairs

Toll Free: (800) 442-1902

In Canada:
American Standard, Inc.
2480 Stanfield Rd.,
Mississauga, Ontario
Canada L4Y 1S2
Toll Free: (800) 387-0369

In Mexico:
Customer Service Manager
American Standard, Inc.
Via Morelos #330
Col. Santa Clara
Ecatepec 55540 Edo. Mexico

AS America, Inc. ("American Standard") Limited Warranty – Toilets

General Terms and Requirements

American Standard warrants each Product to be free of defects in material and workmanship during normal residential or commercial use for the relevant time periods identified here, measured from the initial date of purchase.

This warranty extends only to the **original purchaser** and is non-transferable unless purchased by a plumber, contractor or other service provider, in which case this warranty extends to the first property owner on whose behalf the product was purchased for installation.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state or province to province.

Exclusions and Limitations

American Standard's obligations under this warranty are limited to the repair or replacement of the Product or any part, or exchange of the Product for the same or a similar model, in its sole discretion. American Standard reserves the right to make inspections it deems necessary.

WARNING: This warranty **DOES NOT COVER:**

(I) Any damages caused by use of in-tank cleaners.

(II) Any damages that occur during shipment.

(III) Any damages to personal or real property from use of the Product.

(IV) Any damages from negligent or improper installation or use of non-genuine American Standard Parts.

(V) Any damages caused by factors beyond the control of American Standard, such as installation, maintenance and normal wear and tear, and failure to follow care and cleaning instructions.

(VI) Failure of the Product or parts thereof from external forces such as, but not limited to, vandalism, vehicular or other impact.

(VII) Local building code compliance. Purchasers should check with a local building or plumbing contractor to ensure local code compliance before installation.

(VIII) Labor or other costs of removal or installation, including any costs of any surrounding material (such as tile or marble).

(IX) Any damages caused by an Act of God or natural disaster (such as earthquake, storm, hurricane, lightning strike, tornado, hail, cyclone, typhoon, blizzard, volcanic activity, landslide, tidal wave, tsunami, flood, drought); outbreaks of infectious disease or any other public health crisis; explosion, fire, prolonged break-down of transport; shortage or inability to obtain critical material or supplies to the extent not subject to the reasonable control of American Standard; or any other event or condition beyond its reasonable control.

WARNING: This warranty is **VOID** if the Product:

(I) Has been moved from its initial place of installation.

(II) Has been subjected to faulty or improper maintenance, abuse, misuse, improper use, accident, fault or negligence.

(III) Was not installed in accordance with instructions.

(IV) Has been modified or altered in a manner inconsistent with the Product as shipped by American Standard.

(V) Was purchased from an unauthorized seller.

(VI) Was accidentally or intentionally damaged.

(VII) Was used in a manner for which it was not designed.

(VIII) Was improperly shipped, stored or handled.

LIMITATIONS AND DISCLAIMERS

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, AMERICAN STANDARD EXPRESSLY DISCLAIMS ANY WARRANTIES OTHER THAN THE ONE PROVIDED HEREIN, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE. AMERICAN STANDARD EXCLUDES SPECIAL, INCIDENTAL AND CONSEQUENTIAL DAMAGES FOR ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY APPLICABLE TO THE PRODUCT.

Some States do not allow the exclusion or limitation of incidental or consequential damages, so this limitation or exclusion may not apply to you. Any implied warranties, including those of merchantability or fitness for an intended purpose, are limited in duration to the duration of this warranty. Some States do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

Obtaining Warranty Service

If you believe you have a warranty claim, contact American Standard, either through an authorized dealer or re-seller, by writing to the addresses below, or visiting the website below:

In the United States
AMERICAN STANDARD BRANDS
30 Knightsbridge Road, Suite 301, Piscataway, NJ 08854
Attn: Director of Consumer Affairs.
Toll Free: (800) 442-1902 www.americanstandard.com

AS America, Inc. (“American Standard”) Limited Warranty – Toilets

In Canada
LIXIL Canada Inc.
5900 Avebury Rd. Mississauga, Ontario Canada L5R 3M3
Toll Free: (855) 836-9615 www.americanstandard.ca

In Mexico
American Standard B&K Mexico
S. de R.L. de C.V. Via Morelos #330
Col. Santa Clara Ecatepec 55540 Edo. Mexico

Toll Free: 01-800-839-1200 www.americanstandard.com

Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, color, the date the product was purchased and from whom the product was purchased. Also include your proof of purchase (original sales receipt).

Product	Non-Commercial Use	Commercial Use[1]
ActiClean®, Boulevard® Dual Flush, Champion® PRO, Champion®4, Heritage® VorMax®, VorMax, VorMax Plus and LXP® Toilets	• Lifetime warranty on chinaware for as long as the original owner owns the product. • 10-year warranty on all mechanical parts.	• 1-year warranty on chinaware • 1-year warranty on all mechanical parts of the toilet
Cadet® PRO, Cadet®3, Cadet®3 Skirted Design, Edgemere®, H2Optimum®, H2Option®, Loft®, Studio® Activate® and Studio® Dual Flush Toilets	• Lifetime warranty on chinaware for as long as the original owner owns the product. • 5-year warranty on all mechanical parts.	• 1-year warranty on chinaware 1-year warranty on all mechanical parts of the toilet
AS America, Inc. Limited Warranty for Colony® and Fairfield® Toilets	• Lifetime warranty on chinaware for as long as the original owner owns the product. • 5-year warranty on all mechanical parts.	• 1-year warranty on chinaware 1-year warranty on all mechanical parts of the toilet
SpaLet® Limited Warranty	3-year warranty on all parts of the SpaLet	2-year warranty on all parts of the SpaLet
Toilet Seats	1-year warranty on the toilet seat if included with product	1-year warranty on the toilet seat if included with product
Electrical Components	1-year warranty on electrical components included	1-year warranty on electrical components included

[1] The term “commercial use” includes use of the Product in apartments and other rental units, non-residential facilities, hotels, commercial businesses and/or other public accommodations.

Manual Sink Faucets
895-GN2AE72-319AB

CHICAGO FAUCETS
Geberit Group

Product Type

Deck-mounted manual faucet with 4" centers

Features & Specifications

- 4" fixed centers
- 5-1/4" Rigid/swing gooseneck spout
- Pressure compensating non-aerating laminar flow outlet, 0.5 GPM
- Vandal Proof 6" Elbow blade handle (pair)
- Quaturn™ compression operating cartridge, right-hand
- Quaturn™ compression operating cartridge, left-hand
- ECAST® design provides durable cast brass construction with total lead content equal to or less than 0.25% by weighted average
- Complies with the requirements of the Buy American Act of 1933.

Performance Specification

- Rated Operating Pressure: 20-125 PSI
- Rated Operating Temperature: 40-140°F

Warranty

- 5-Year Limited Cartridge Warranty
- Lifetime Limited Faucet Warranty
- 1-Year Limited Finish Warranty

Codes & Standards

- ADA ANSI/ICC A117.1
- ASME A112.18.1/CSA B125.1
- NSF/ANSI/CAN 61: Q ≤ 1

Job Name _____

Item Number _____

Section/Tag _____

Model Specified _____

Architect _____

Engineer _____

Contractor _____

[ ] Submitted as Shown [ ] Submitted with Variations

Date _____



ECAST

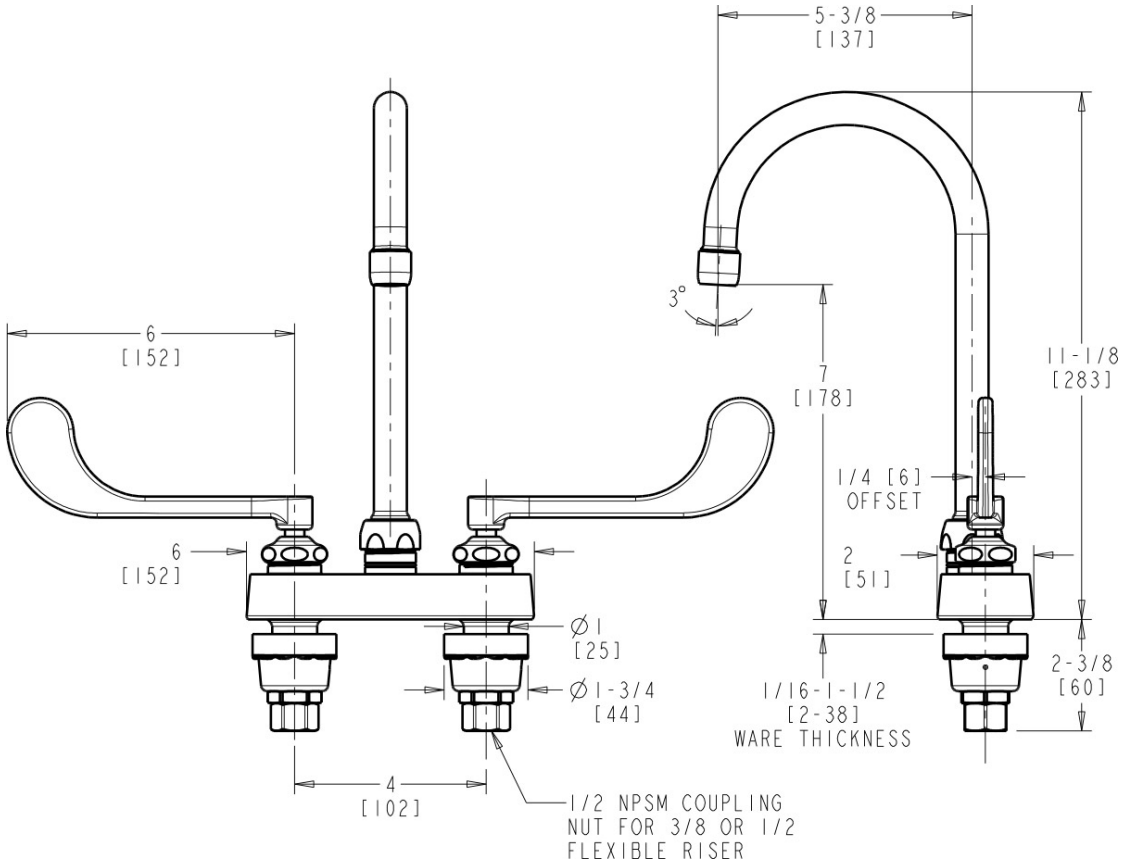
ECAST products are intended for installation where state laws and local codes mandate lead content levels or in any location where lead content is a concern.

2100 South Clearwater Drive
Des Plaines, IL
P: 847/803-5000
F: 847/803-5454
Technical: 800/TEC-TRUE
www.chicagofaucets.com

895-GN2AE72-319AB

Architect/Engineer Specification

Chicago Faucets No. 895-GN2AE72-319AB, Sink Faucet for hot and cold water, deck-mounted with 4" fixed centers, chrome plated. Rigid/swing gooseneck spout, 5-1/4" center-to-center. 0.5 GPM (1.9 L/min) non-aerating laminar outlet. 6" metal elbow blade handles with sixteen-point, tapered broach and secured blue and red index buttons. Quaturn™ rebuildable compression cartridge, opens and closes 90°, closes with water pressure, features square, tapered stem. 1/2" NPSM supply inlets and coupling nut for 3/8" or 1/2" flexible riser. ECAST® construction with less than 0.25% lead content by weighted average. This product meets ADA ANSI/ICC A117.1 requirements and is tested and certified to industry standards: ASME A112.18.1/CSA B125.1, and Certified to NSF/ANSI 61, Section 9.



Operation and Maintenance

Installation should be in accordance with local plumbing codes. Flush all pipes thoroughly before installation. After installation, remove spout outlet or flow control and flush faucet thoroughly to clear any debris. Care should be taken when cleaning the product. Do not use abrasive cleaners, chemicals or solvents as they can result in surface damage. Use mild soap and warm water for cleaning and protecting the life of Chicago Faucet products. For specific operation and maintenance refer to the installation instructions and repair parts documents that are located at www.chicagofaucets.com.

Chicago Faucets, member of the Geberit Group, is the leading brand of commercial faucets and fittings in the United States, offering a complete range of products for schools, laboratories, hospitals, office buildings, food service, airports and sport facilities. Call 1.800.TECTRUE or 1.847.803.5000 Option 1 for installation or other technical assistance.

2100 South Clearwater Drive
Des Plaines, IL
P: 847/803-5000
F: 847/803-5454
Technical: 800/TEC-TRUE
www.chicagofaucets.com

Deck Mounted Faucets Installation Instructions

Recommended for base numbers 50, 50T, 51, 51T, 333, 335, 349, 350, 525, 526, 527, 700, 701, 730, 797, 802, 891, 894, 895, 929, 930, 931, 1100, 1102, 1891, 1895, and LWM Series Centerset and Single Basin Fittings, Pop-Up Drain Installation and Rigid/Swing Convertible Spout Installation.

CHICAGO FAUCETS
Geberit Group



Overview

Chicago Faucets deck mounted faucets feature cast brass bodies and precision cartridges for years of reliable operation. Metering models with adjustable cycle time offer true water savings.

Notice to the Installer

- Read this entire instruction sheet before installing to ensure proper installation.
- Installation must comply with local codes and ordinances.
- For fittings installed with pre-rinse or glass filler valves, check valves must be installed to prevent crossflow.

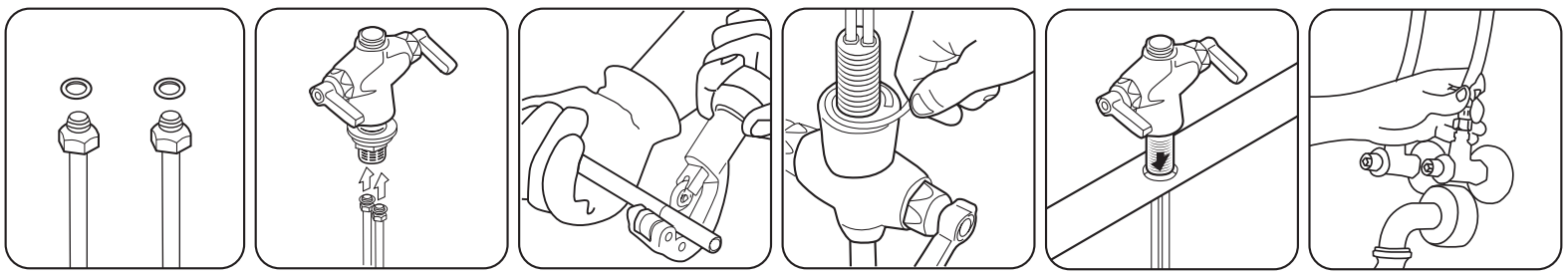
Pressurized plumbing fixtures shall be installed in accordance with manufacturer's recommendations. The supply piping to these devices shall be securely anchored to the building structure to prevent installed device from unnecessary movement when operated by the user. Care shall be exercised when installing the device to prevent marring the exposed surface.

NOTE: The information in this manual is subject to change without notice.

Please leave this manual with the facility manager after completing the faucet installation. This document contains information necessary for routine maintenance and servicing.

NOTE: Before installation, turn off water supplies to existing faucet and remove faucet if replacing. Clean faucet basin and clear away debris. Flush all supply lines before connecting to faucet. Failure to do so can result in debris clogging the inlets and/or cartridges.

Single Hole Mixing Fittings — Base numbers 50, 50T, 51, 51T

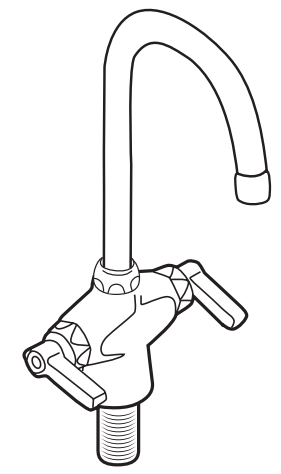


1. Ensure O-Rings are installed on hoses or tubes.
2. Install hoses or tubes.

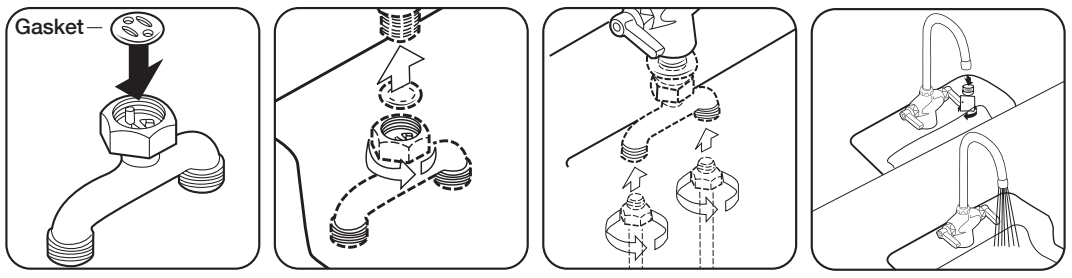
Copper Tube Installation

2b. Cut tubes to desired length.

3. Apply putty to underside of faucet body to assure a good seal and level fit.
4. Place shank through hole in sink and assemble mounting hardware.
5. Attach hoses or tubes to supply stops. Make sure gasket is installed.

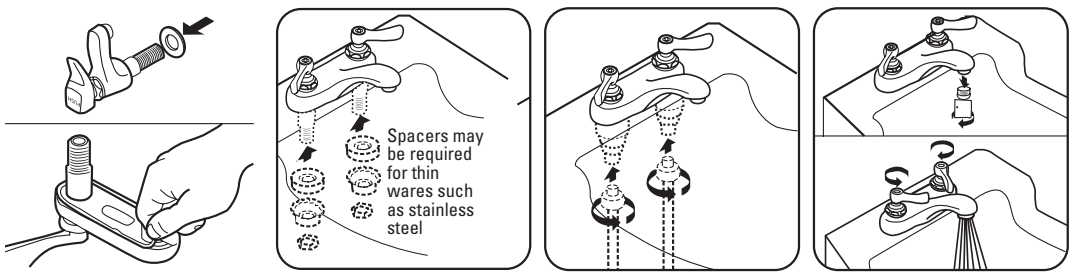


Mixing Tee Installation

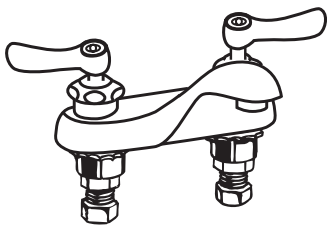


1. Install tee gasket over guide pins and secure coupling nut of tee to body shank.
2. Secure coupling nut of tee to body shank. Tighten securely.
3. Attach supply lines with coupling nuts. Tighten securely.
4. Remove outlet and flush lines for about one minute. Replace outlet.

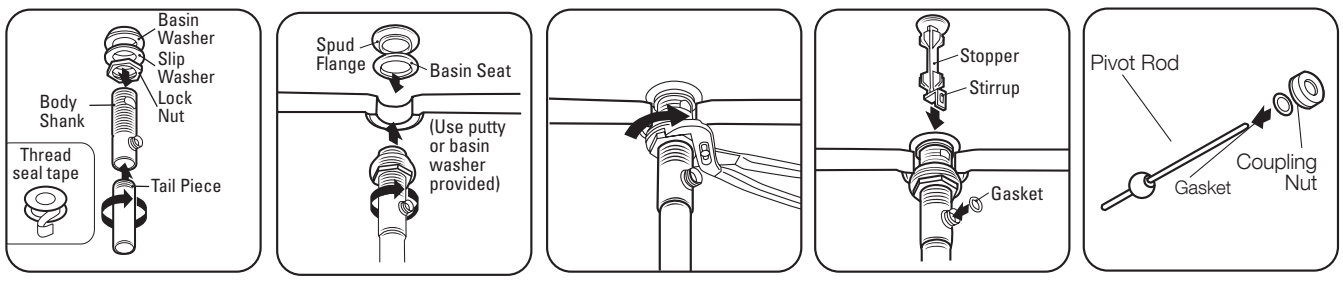
Centerset and Single Basin Fittings — Base numbers 333, 335, 349, 350, 525, 526, 527, 700, 701, 730, 797, 802, 891, 894, 895, 1100, 1102, 1891, 1895



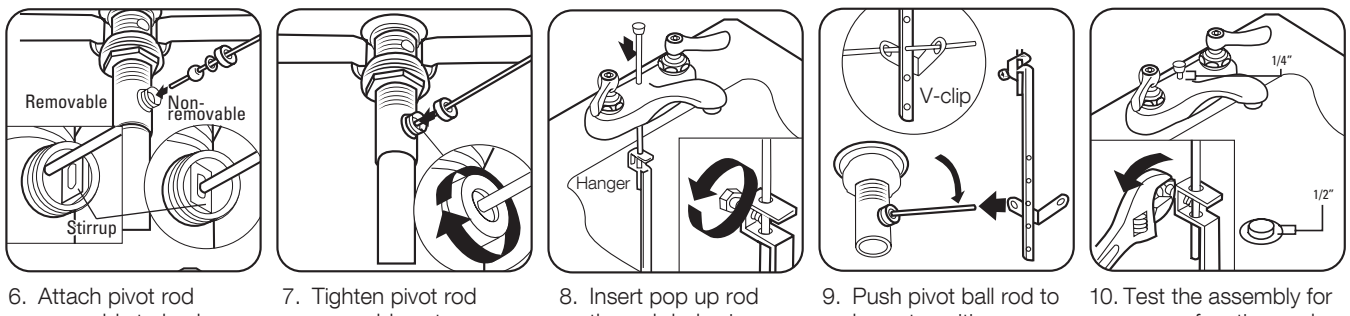
1. Apply putty or rubber washer to underside of faucet body to assure a good seal and level fit.
2. Place shank(s) through holes in sink and assemble mounting hardware. Use spacers if necessary.
3. Attach supply lines with coupling nuts and tighten securely. Attach spout if provided separately.
4. Remove outlet and flush lines for about one minute. Replace outlet.



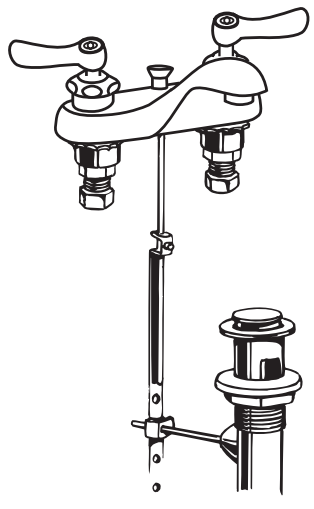
Pop-Up Drain Installation



1. Assemble tail piece to body shank with thread seal tape. Assemble lock nut, slip washer, and basin washer to body shank.
2. Fully assemble the basin seat and spud flange to body shank assembly.
3. Position body shank toward the lift rod. Tighten lock nut until properly sealed.
4. Place stopper into body shank cavity orienting the stirrup for removable or non-removable stopper as desired. (see #6)
5. Insert pivot ball rod assembly through pivot rod gasket and coupling nut.



6. Attach pivot rod assembly to body shank.
7. Tighten pivot rod assembly nut as required to seal and provide smooth operation.
8. Insert pop up rod through holes in hanger and hand tighten.
9. Push pivot ball rod to lowest position, squeeze v-clip and slide pivot ball rod through v-clip and appropriate hole in hanger.
10. Test the assembly for proper function and make adjustments as necessary. Once set, tighten securely.

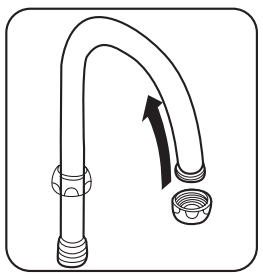


For additional technical assistance, call 800/TEC-TRUE (800-832-8783) or visit our website at chicagofaucets.com.

Deck Mounted Faucets Installation Instructions
(continued)

CHICAGO FAUCETS
Geberit Group

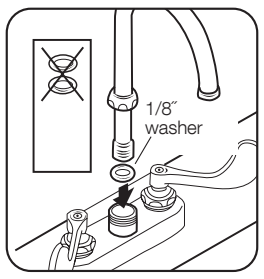
Rigid/Swing Convertible Spout Installation



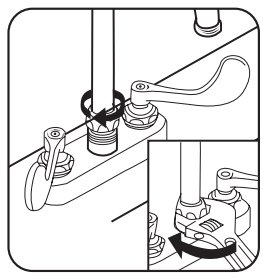
1. Remove outlet and assemble spout nut over outlet end, until it rests on shoulder of spout joint.



For Swing Spouts
2a. Assemble two plastic split washers to spout joint and discard 1/8″ thick plastic washer.

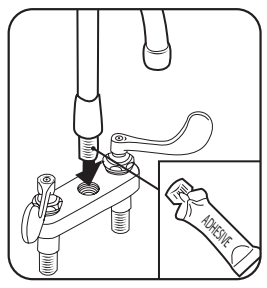


For Rigid Spouts Only
2b. Place 1/8″ thick plastic washer into spout base bore and discard plastic split washers.

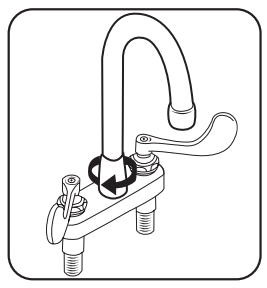


3. Insert spout assembly firmly into spout base and tighten spout nut.

RGD1 and RGD2 Only Spout Installation



1. Apply Loctite 680, Permabond HH-040 anaerobic sealant, or equivalent NSF 61 approved sealant to threads of spout and tighten spout into base. Back off as necessary for centered position.



2. Hand tighten sleeve until flush with body.

Chicago Faucets deck mounted faucets come with cartridges already installed. Instructions for adjusting the timing on metering cartridges are shown below. For complete instructions on servicing and replacing Chicago Faucets cartridges, see our Cartridge Maintenance/Repair Guide, available online at chicagofaucets.com/pdf/CF1081.pdf. You may also order a copy of the Guide by calling 800-832-8783.

Supplemental Bubbler Installation Instructions for 748-665CP, 748-665FHCP, 748-244CP and 748-244FHCP

Installation with Anti-Rotational Pins (Figure A)

1. Choose Two holes in bubbler base that corresponds with the deck/sink drilling and tap each anti-rotational pin with a hammer until seated. There should be approximately 1/8″ length of pin exposed when fully seated.
2. Drill 3/16″ diameter holes on 1-9/32″ centers and 1/4″ deep in the deck/sink for anti-rotational pins if mounting holes are not provided.
3. Attach Bubbler to deck using the anti-rotational washer provided.

Flow Adjustments (Figure B)

1. The projection of water flow can be adjusted by using the 1/8″ hex wrench provided. Insert hex wrench and rotate control clockwise or counterclockwise until the desired flow is achieved.

   Note: Bubblers have been designed to utilize the 722-013K inlet flow control.
   To insure proper performance, it is imperative that the 722-013K be installed with each bubbler.

Timing Adjustment on an MVP Metering Cartridge

1. With cartridge and handle installed in body and water supply turned on, purge cartridge of air by pushing handle completely down 4-8 times repeatedly, then check timing cycle.
2. To change cycle time, remove index button, then handle using a 3/32″ hex wrench. (Figure C)
3. Using your fingers, change height of adjustment nut by 1/4 turn only. Turn adjustment nut clockwise to increase cycle time or counter-clockwise to decrease cycle time. (Figure D)
4. If filter and lower valve cartridge have been removed from fitting, replace them by inserting filter first.
5. If gasket has been removed from the actuator assembly, replace it by inserting into bottom of actuator assembly.
6. Assemble actuator assembly to body and tighten to 12-15 ft-lbs torque.
7. Replace handle and verify desired cycle time. NOTE: TIMING MUST BE CHECKED WITH HANDLE IN PLACE.
8. If additional adjustment is necessary, repeat steps 3 through 7 until desired cycle time is achieved.
   Note: Some new installations might produce a slight closing noise. This is normally the result of air trapped in the cartridge. The noise will dissipate over time.
9. Attach handle and tighten set screw with a 3/32″ hex wrench. If index button is included, snap into handle.

Timing Adjustment on Push-Button (NAIAD) & Tip-Tap Self-Closing Cartridges

1. Turn off water supply.
2. Remove cartridge from valve body with 1-1/4″ flat hex wrench. Use care to prevent damage to cap hex nut.
3. Locate timing hex nut on bottom of dashpot. Turn hex nut clockwise to increase cycle time or counter-clockwise to decrease cycle time (Figure E). NOTE: Turn in 90 degree increments for each adjustment cycle. Fill the dashpot with water, slide it over the bottom of the cartridge, and place both back into the faucet body.
4. Place cartridge into faucet body and fully tighten cap nut with wrench to 15-25 ft-lbs torque. Turn on water and verify cycle time by depressing cartridge fully. NOTE: Insure that cap gasket is in place within cap before assembly into valve body.

   NOTE: Cartridges with ‘SLO’ designation include an external timing adjustment via a set screw in the top of the handle. Using a 7/64″ hex wrench, turn the set screw clockwise to decrease cycle time or counter-clockwise to increase cycle time. (Figure E)

Timing Adjustment on a Push-Tilt Self-Closing Cartridge

For Push-Tilt cartridges, the timing adjustment procedure is identical to Push-Button Self-Closing Cartridges, except for an external timing adjustment feature that is integral to Push-Tilt handles. This adjustment can be used for minor cycle time changes without the need to remove the cartridge from the body.

For external adjustment, lift handle slightly to expose 1/16″ hex socket set screw (Figure F). Turn adjustment set screw clockwise to increase cycle time or counter-clockwise to decrease cycle time. If greater timing adjustment is required, follow the instructions for adjusting the timing on a Push-Button Self-Closing Cartridge.

FIGURE A

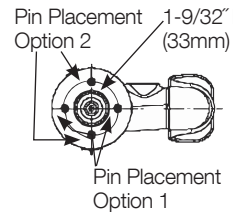


FIGURE B

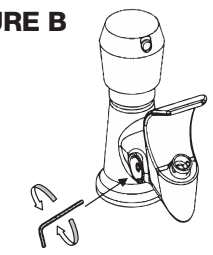


FIGURE C

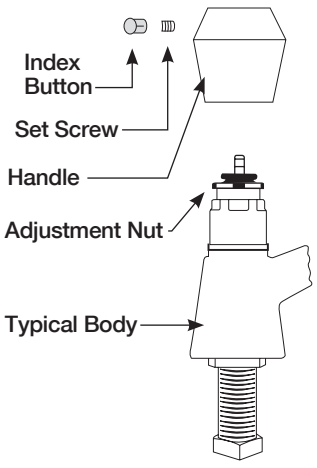


FIGURE D
How To Adjust (Top View)

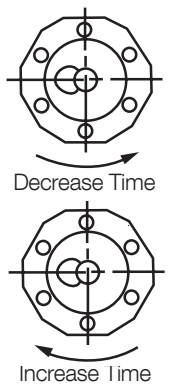


FIGURE E

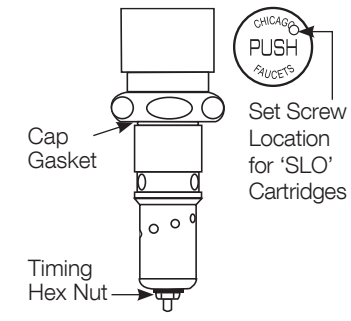
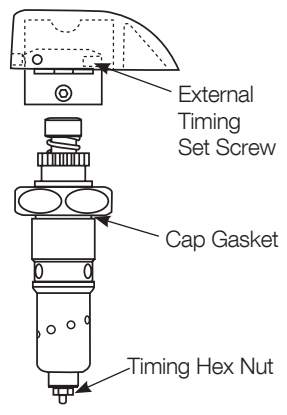


FIGURE F



Care and Maintenance
All Chicago Faucets fittings are designed and engineered to meet or exceed industry performance standards. Care should be taken when cleaning this product. Do not use abrasive cleaners, chemicals or solvents as they can result in surface damage. Use mild soap with warm water for cleaning and protecting the surface of Chicago Faucets fittings.

For additional technical assistance, call 800/TEC-TRUE (800-832-8783) or visit our website at chicagofaucets.com.

CHICAGO FAUCETS LIMITED WARRANTY

TO WHOM DOES THIS WARRANTY APPLY? — The Company extends the following limited warranty to the original user only.

WHAT DOES THIS WARRANTY COVER AND HOW LONG DOES IT LAST?
This warranty covers the following Commercial Products:

LIFETIME FAUCET WARRANTY — The “Faucet,” defined as any metal cast, forged, stamped or formed portion of the Product, not including electronic or moving parts or other products separately covered by this Limited Warranty or water restricting components or other components, is warranted against material manufacturing defects for the life of the Product.

FIVE YEAR FAUCET WARRANTY — Certain Products and portions of the Product are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase. Products warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase are referred to by the product numbers 42X, 43X, 15XX and E-Tronic® - 4X, 5X, 6X, 7X, 8X and 9X. All zinc die cast portions of Product are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase.

THREE YEAR ELECTRONICS WARRANTY — Electronic components, including the solenoid, are warranted for three (3) years from the date of installation.

FIVE YEAR CARTRIDGE WARRANTY — The “Cartridge”, defined as the metal portion of any Product typically referred to by the product numbers containing 1-099, 1-100, 377X, 217X and 274X, excluding any rubber or plastic components, is warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase. All Cartridges included in the Company’s Single Control or Shower Products also are warranted against material manufacturing defects for a period of five (5) years from the date of Product purchase.

ONE YEAR FINISH WARRANTY – COMMERCIAL — For Products used in commercial applications, the finish of the Product is warranted against material manufacturing defects for a period of one (1) year from the date of Product purchase.

OTHER WARRANTIES — All other Products not covered above are warranted against material manufacturing defects for a period of one (1) year from the date of Product purchase.

Other restrictions and limitations apply. For complete warranty details, call Chicago Faucets Customer Service at 847-803-5000 or visit chicagofaucets.com.

The Chicago Faucet Company
2100 South Clearwater Drive
Des Plaines, IL 60018
Phone: 847/803-5000
Fax: 847/849-1845
Technical: 800/832-8783
www.chicagofaucets.com

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TAG-258 04/22

McGuire Manufacturing Co., Inc.
60 Grandview Court
Cheshire, Connecticut 06410
(203) 699-1801 Fax (203) 699-1813
customerservice@mcguiremfg.com mcguiremfg.com

PRODUCT SPECIFICATION

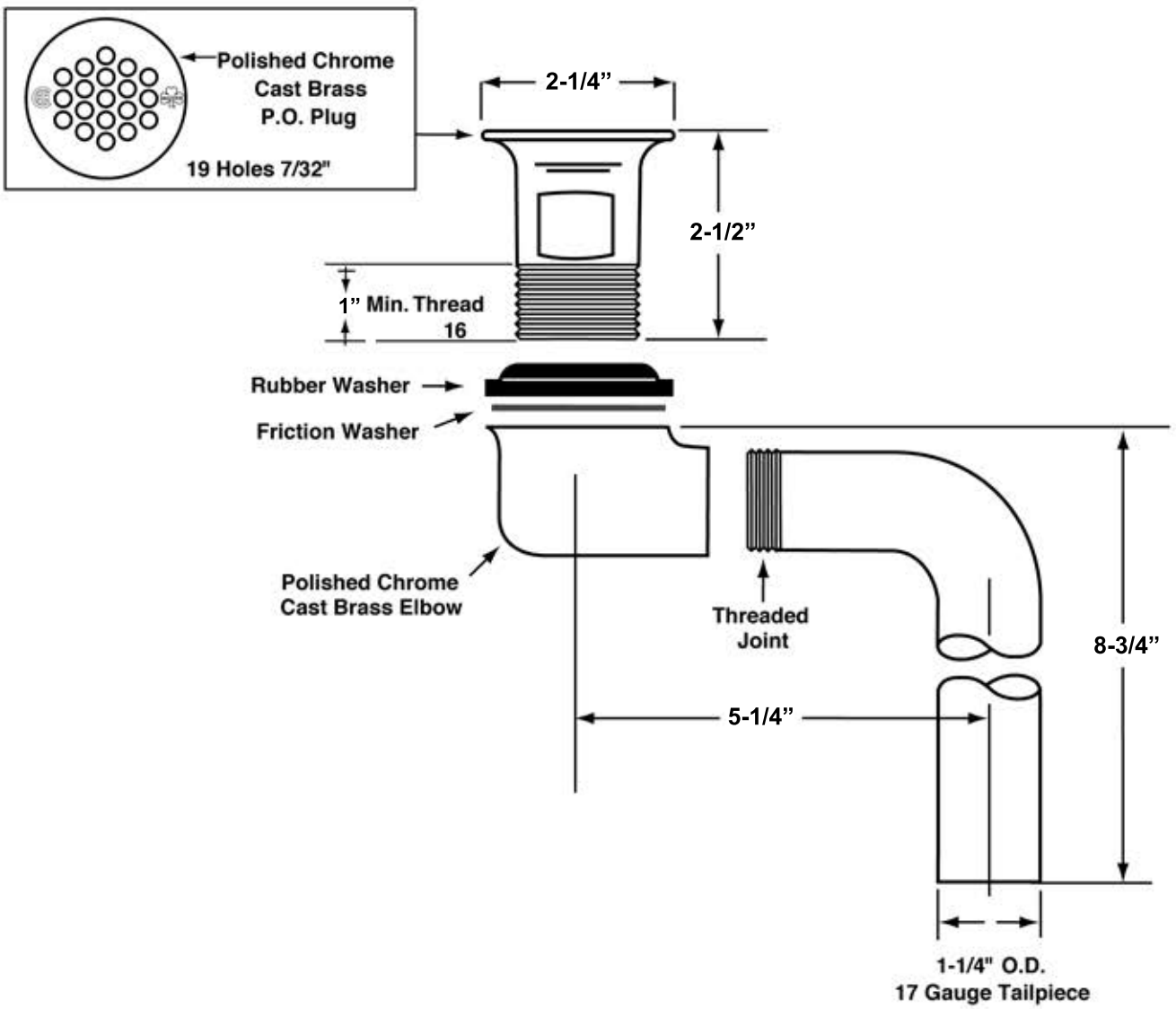
Part No.

155WC

Offset Lavatory Grid Strainer

Job Name:

Submittal Number:



A.D.A.

- Rated Operating Temperature: 40-140ºF
- Note: 180°F max. during temporary high-temperature system flush

ASME A112.18.2/CSA B125.2

Specifications:

Cast brass chrome plated offset wheelchair strainer with polished chrome cast brass elbow, 17GA 1-1/4" seamless brass offset tailpiece, rubber basin washer and fiber friction washer. Offset lavatory strainer shall be in compliance with CSA or other recognized testing authority and bear both manufacturer and testing mark.

WARNING:

This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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Cheshire, Connecticut 06410
(203) 699-1801 Fax (203) 699-1813
customerservice@mcguiremfg.com mcguiremfg.com

PRODUCT SPECIFICATION

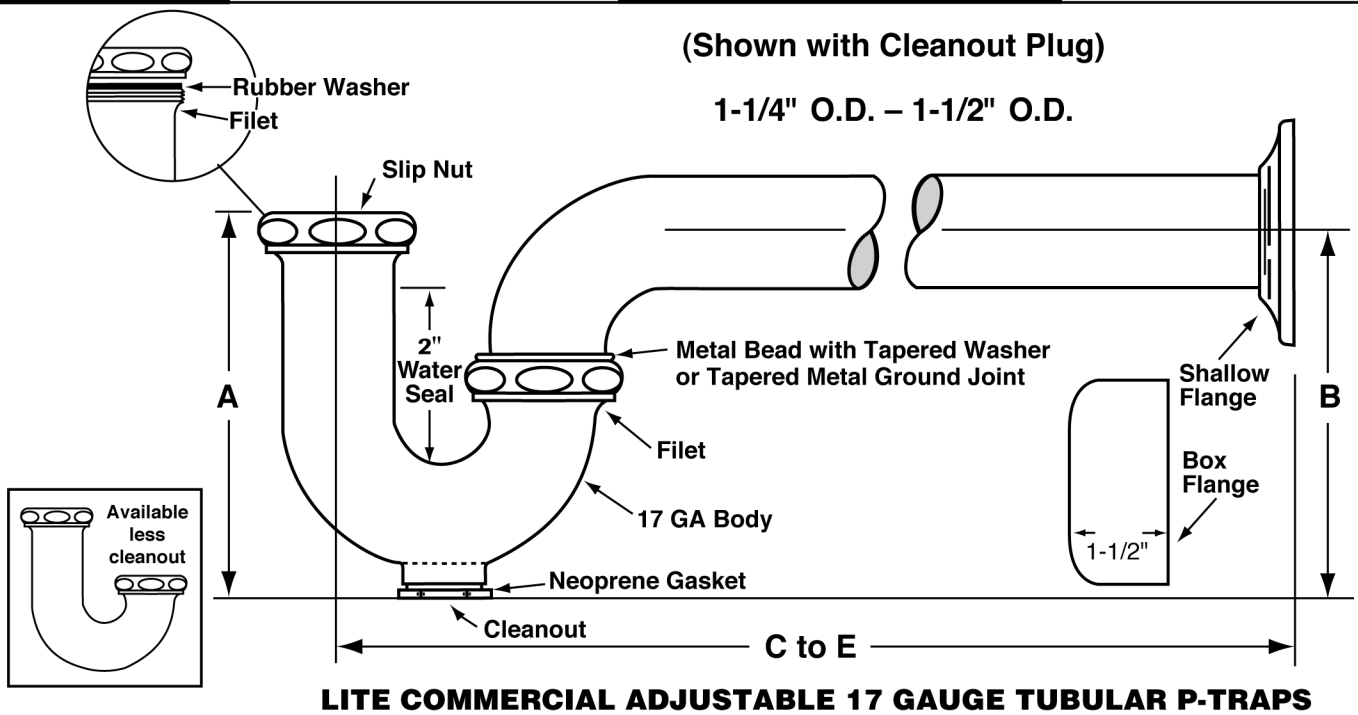
Part No.

MCT125075ZN

Lite Commercial 17 GA Tubular P-Trap

Job Name:

Submittal Number:



LITE COMMERCIAL ADJUSTABLE 17 GAUGE TUBULAR P-TRAPS

Roughing Measurements

Model No.	INLET	OUTLET	A	B	C to E	Flange	Slip Nut
MCT125085	1-1/4"	1-1/4"	5"	4-1/2"	11-1/2"	Shallow	Brass
MCT125085B	1-1/4"	1-1/4"	5-1/4"	4-1/2"	11-1/2"	Box	Brass
MCT125085NC	1-1/4"	1-1/4"	5"	5"	11-1/2"	Shallow	Brass
MCT125085NCB	1-1/4"	1-1/4"	5"	4-5/8"	11-1/2"	Box	Brass
MCT125075ZN	1-1/4"	1-1/4"	5-1/4"	4-3/4"	10-1/2"	Shallow	Zinc
MCT125075NCZN	1-1/4"	1-1/4"	5"	4-1/2"	10-1/2"	Shallow	Zinc

- Rated Operating Temperature: 40-140ºF
- Note: 180°F max. during temporary high-temperature system flush

Suffix Designations
NC = No Cleanout Plug
GJ = Ground Joint Wall Bend

ASME A112.18.2/CSA B125.2

Specifications:

P-Trap shall be 17 gauge seamless chrome plated tubular brass with wall bend and flange.

WARNING:
This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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SPECIALTIES LOW PATTERN CHROME PLATED FLANGES TECHNICAL SPECIFICATION

Job Name _____ Item # _____
Location _____
Engineer _____ Contractor _____
PO # _____ Tag _____
Representative _____

SPECIFICATIONS

Dearborn Low Pattern Chrome Plated Flanges are designed for use in tubular drain applications. Available in various sizes.



DESCRIPTION

- Chrome Finish
- Made of steel

PRODUCT SELECTOR

SPECIALTIES LOW PATTERN CHROME PLATED FLANGES

✓	Product Number	Description	Carton Quantity	Carton Weight
	1097	3/8" O.D. for 1/4" Nominal	50	1.0 lbs.
	1098	1/2" O.D. for 3/8" Nominal	50	1.0 lbs.
	1099	5/8" O.D. for 1/2" Nominal	50	1.2 lbs.
	1099A	7/8" O.D. for 3/4" Nominal Copper	50	1.1 lbs.
	H1099A	Flat Escutcheon 7/8" Copper – Bagged	20	1.0 lbs.
	1099AB	7/8" O.D. for 3/4" Nominal – Bulk	250	5.8 lbs.
	1099B	5/8" O.D. for 3/4" Nominal – Bulk	250	5.8 lbs.
	1100	3/8" NPT	50	1.2 lbs.
	HD1831C	3/8" IPS – Bagged	20	1.0 lbs.
	1100B	3/8" NPT – Bulk	250	6.0 lbs.
	1101	1/2" NPT	50	1.1 lbs.
	HD75C	1/2" IPS – Bagged	20	1.0 lbs.
	1101A	3/4" NPT	50	1.7 lbs.
	HD76C	5/8" O.D. for 1/2" Nominal Copper – Bagged	20	1.0 lbs.
	1101AA	1" NPT	50	1.6 lbs.
	1101B	1/2" NPT – Bulk	250	5.5 lbs.
	1102	1-1/4” O.D.	50	1.5 lbs.
	HD72C	1-1/4" O.D.	20	0.7 lbs.
	1104	1-1/2" O.D.	50	1.3 lbs.
	HD73C	1/2" O.D. – Bagged	20	0.7 lbs.
	1104A	2" O.D.	50	2.1 lbs.
	1105	1-1/4" NPT	50	2.0 lbs.
	1106	1-1/2" NPT	50	1.5 lbs.
	1106A	2" NPT	50	2.3 lbs.
	1106B	1-1/2" NPT – Bulk	250	6.5 lbs.

Data is subject to manufacturing tolerances.

Access BIM/Revit content through www.oatey.com

For Commercial & Residential Applications

Job Name _____ Contractor _____

Job Location _____ Approval _____

Engineer _____ Contractor's P.O. No. _____

Approval _____ Representative _____

LEAD FREE*

Multi-Turn Water Supply Stops



LF894001



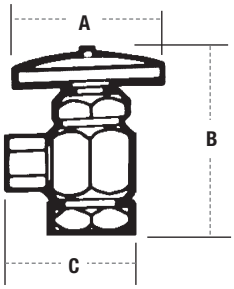
LF892003

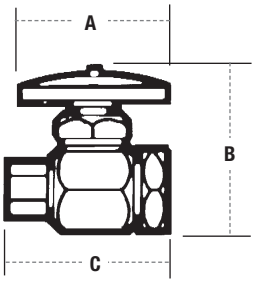


LF892013



LF894013





The Lead Free* Multi Turn Water Supply Stops are constructed to comply with Lead Free* installation requirements.

Features

- Available in straight and angle configurations
- Certified to NSF/ANSI 61 Section 9-G
- IAPMO Listed
- Lead Free* brass

Pressure — Temperature

Maximum Pressure: 125psi (8.6 bar)

Maximum Temperature: 160°F (71.1°C)

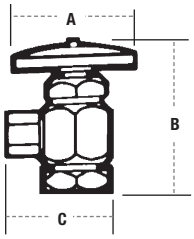
Approvals

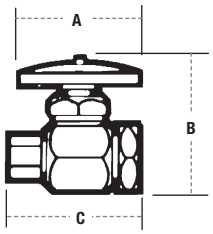
*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

MODEL	✓ TO SUBMIT	TYPE	DESCRIPTION	DIMENSIONS						FINISH
				A		B		C		
				in	mm	in	mm	in	mm	
IPS Inlet										
LF889003		Angle	⅜" x ⅜" OD Comp	2	51	2⅜	60	1 7⁄16	36	Chrome
LF889003LK		Angle	⅜" x ⅜"OD Comp Loose Key Model	2	51	2⅜	60	1 7⁄16	36	Chrome
LF890003		Angle	½" x ⅜" OD Comp	2	51	2½	64	1 9⁄16	39	Chrome
LF890003LK		Angle	½" x ⅜" OD Comp Loose Key Model	2	51	2½	64	1 9⁄16	39	Chrome
LF890203		Angle	½" x ½" OD Comp	2	51	2½	64	1¾	44	Chrome
LF890203LK		Angle	½" x ½" OD Comp Loose Key Model	2	51	2½	64	1¾	44	Chrome
LF890303		Angle	½" x ½" and 7⁄16" OD rubber slip joint	2	51	2½	64	1 11⁄16	42	Chrome
LF890303LN		Angle	½" x ½" and 7⁄16" OD rubber slip joint Less Nuts	2	51	2½	64	1 11⁄16	42	Chrome
LF889013		Straight	⅜" x ⅜" OD Comp	2	51	2 3⁄16	55	2	51	Chrome
LF890013		Straight	½" x ⅜" OD Comp	2	51	2¼	57	2 1⁄16	53	Chrome

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

WATTS®





MODEL NO.	✓ TO SUBMIT	TYPE	DESCRIPTION	DIMENSIONS						FINISH
				A		B		C		
				in	*mm*	*in*	*mm*	*in*	*mm*	
Barbed Inlet										
LF891203		Angle	½" PEX x ⅜" OD Comp	2	51	2⅝	66	1 7/16	36	Chrome
LF891213		Straight	½" PEX x ⅜" OD Comp	2	51	2 3/16	55	2⅛	54	Chrome
Solder Inlet										
LF892001		Angle	½" x ⅜" OD Comp	2	51	2⅜	61	1 7/16	36	Rough Brass
LF892003		Angle	½" x ⅜" OD Comp	2	51	2⅜	61	1 7/16	36	Chrome
LF892003LK		Angle	½" x ⅜" OD Comp Loose Key Model	2	51	2⅜	61	1 7/16	36	Chrome
LF892151		Angle	½" x ¼" OD Comp	2	51	2⅜	61	1 7/16	37	Rough Brass
LF892503		Angle	½" with 5" extension x ⅜" OD Comp, with deep escutcheon	2	51	7	178	1 7/16	37	Chrome
LF892503LK		Angle	½" with 5" extension x ⅜" OD Comp, Loose Key Model	2	51	7	178	1 7/16	37	Chrome
LF892011		Straight	½" x ⅜" OD Comp	2	51	2⅜	61	1 7/16	37	Rough Brass
LF892013		Straight	½" x ⅜" OD Comp	2	51	2 3/16	55	2	51	Chrome
LF892513		Straight	½" Copper Solder with 5" extension x ⅜" OD Comp, with deep escutcheon	2	51	2¼	57	6 13/16	173	Chrome
CPVC Inlet										
LF892401		Angle	⅝" OD CPVC x ⅜" OD Comp	2	51	3⅜	85	1 7/16	36	Rough Brass
LF892403		Angle	⅝" OD CPVC x ⅜" OD Comp	2	51	3⅜	85	1 7/16	36	Chrome
LF892411		Straight	⅝" OD CPVC x ⅜" OD Comp	2	51	2⅛	54	3 1/16	78	Rough Brass
LF892413		Straight	⅝" OD CPVC x ⅜" OD Comp	2	51	2⅛	54	3 1/16	78	Chrome
Compression Inlet										
LF894001		Angle	⅝" x ⅜" OD Comp	2	51	2 11/16	69	1 7/16	36	Rough Brass
LF894003		Angle	⅝" x ⅜" OD Comp	2	51	2 11/16	69	1 7/16	36	Chrome
LF89400WE		Angle	⅝" x ⅜" OD Comp with escutcheon	2	51	2 11/16	69	1 7/16	36	Chrome
LF894003LK		Angle	⅝" x ⅜" OD Comp Loose Key Model	2	51	2 11/16	69	1 7/16	36	Chrome
LF894151		Angle	⅝" x ¼" OD Comp	2	51	2 11/16	69	1 7/16	36	Rough Brass
LF894153		Angle	⅝" x ¼" OD Comp	2	51	2 11/16	69	1 7/16	36	Chrome
LF894203		Angle	⅝" x ½" OD Comp	2	51	2¾	70	1⅝	41	Chrome
LF894303		Angle	⅝" x ½" and 7/16" OD, rubber slip joint	2	51	2⅞	73	1 9/16	40	Chrome
LF894011		Straight	⅝" x ⅜" OD Comp	2	51	2½	64	2	51	Rough Brass
LF894013		Straight	⅝" x ⅜" OD Comp	2	51	2½	64	2	51	Chrome

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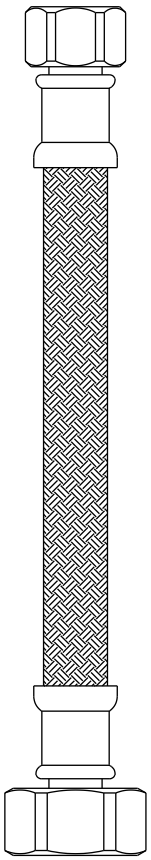
For Residential and Commercial Applications

Job Name		Engineer / Architect	
Job Location		Wholesaler	
Submittal Date		Contractor	

Product Submittal Form

B1-**A/ B2-**A/ B3-**A Speedi Plumb® PLUS Braided Faucet Connector - Compression Inlet

Use: For use in potable water distribution systems in accessible locations only.



Design Features:

- **Engineered polymer braided** fibers bend freely without kinking or crimping
- **Reinforced PVC inner hose** provides added durability
- **Rubber washers** provide a large pliable sealing surface and ensure a long lasting water-tight connection
- ☑

Operating Specifications:

Temperature: 40˚- 160˚ F, intermittent to 180˚ F

Pressure: 125 PSI maximum

Tubing Diameter: 0.300” ID (0.550” OD)

CONNECTOR MATERIAL SPECIFICATIONS	
Inner Hose	*Reinforced PVC*
Braiding	*PVC coated yarn*
Barb	*Brass*
Ferrule	*Stainless steel*
Nut	*Brass, plated or polypropylene*
Washer	*Rubber*

Part Listing:

☐	B1-12A F	3/8” compression x 1/2” FIP* x 12” length
☐	B1-16A F	3/8” compression x 1/2” FIP* x 16” length
☐	B1-20A F	3/8” compression x 1/2” FIP* x 20” length
☐	B1-20A P8	3/8” compression x 1/2” FIP* x 20” length, bagged, 8-pack
☐	B1-20AU D	3/8” compression x 1/2” FIP* x 20” length connector with 1/2” OD compression & 1/2” iron pipe valve adaptors, and washers, carded
☐	B1-24A F	3/8” compression x 1/2” FIP* x 24” length
☐	B1-30A F	3/8” compression x 1/2” FIP* x 30” length
☐	B1-36A F	3/8” compression x 1/2” FIP* x 36” length
☐	B1-48A F	3/8” compression x 1/2” FIP* x 48” length
☐	B1-60A F	3/8” compression x 1/2” FIP* x 60” length

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BrassCraft®

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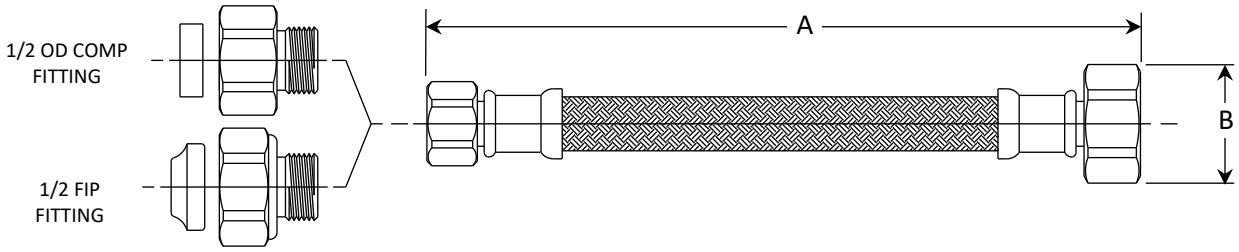
B1-**A/ B2-**A/ B3-**A Speedi Plumb® PLUS Braided Faucet Connector - Compression Inlet

Product Submittal Form

Part Listing (con't):

☐	B2-12A F	7/16" compression x 1/2" FIP* x 12" length
☐	B2-20A F	7/16" compression x 1/2" FIP* x 20" length
☐	B3-12A F	1/2" compression x 1/2" FIP* x 12" length
☐	B3-16A F	1/2" compression x 1/2" FIP* x 16" length
☐	B3-20A F	1/2" compression x 1/2" FIP* x 20" length
☐	B3-30A F	1/2" compression x 1/2" FIP* x 30" length

* 1/2" FIP also fits 7/16" rubber slip nut



***PART DIMENSIONS** (Inches)*		
Model	***DIM. A***	***DIM. B***
B1-12	12.0 / 13.0	1.02
B1-16	16.0 / 17.0	1.02
B1-20	20.0 / 21.0	1.02
B1-24	24.0 / 25.0	1.02
B1-30	30.0 / 31.0	1.02
B1-36	36.0 / 37.0	1.02
B1-48	48.0 / 49.0	1.02

***PART DIMENSIONS** (Inches)*		
Model	***DIM. A***	***DIM. B***
B1-60	60.0 / 61.0	1.02
B2-12	12.0 / 13.0	1.02
B2-20	20.0 / 21.0	1.02
B3-12	12.0 / 13.0	1.02
B3-16	16.0 / 17.0	1.02
B3-20	20.0 / 21.0	1.02
B3-30	30.0 / 31.0	1.02

Listings & Certifications:

- IAPMO listed to ASME A112.18.6 / CSA B125.6
- IAPMO listed to NSF/ANSI 372 for Low-Lead Compliance
- IAPMO listed to NSF/ANSI/CAN 61

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IPS CORPORATION

LAV GUARD 2
FAST FIT UNDERSINK PIPING COVERS

ADA-compliant undersink protection

Submittal Sheet

General Description:

LAV GUARD® 2E-Z Series waste and supply piping covers satisfy ADA compliance requirements. Built-in E-Z Grip internal fasteners and internal, E-Z Tear-To-Fit trimming feature allow for fast installation without tools. Series #100 E-Z kits are designed to fit on all tubular and cast brass P-trap assemblies. Series #400 kits are the "original" LAV GUARD design and fit schedule 40 ABS and PVC P-trap assemblies — regardless of their geometry or rotational offset.Valve cover completely encloses angle valve and supply tube for both handled and keyed type water stops.

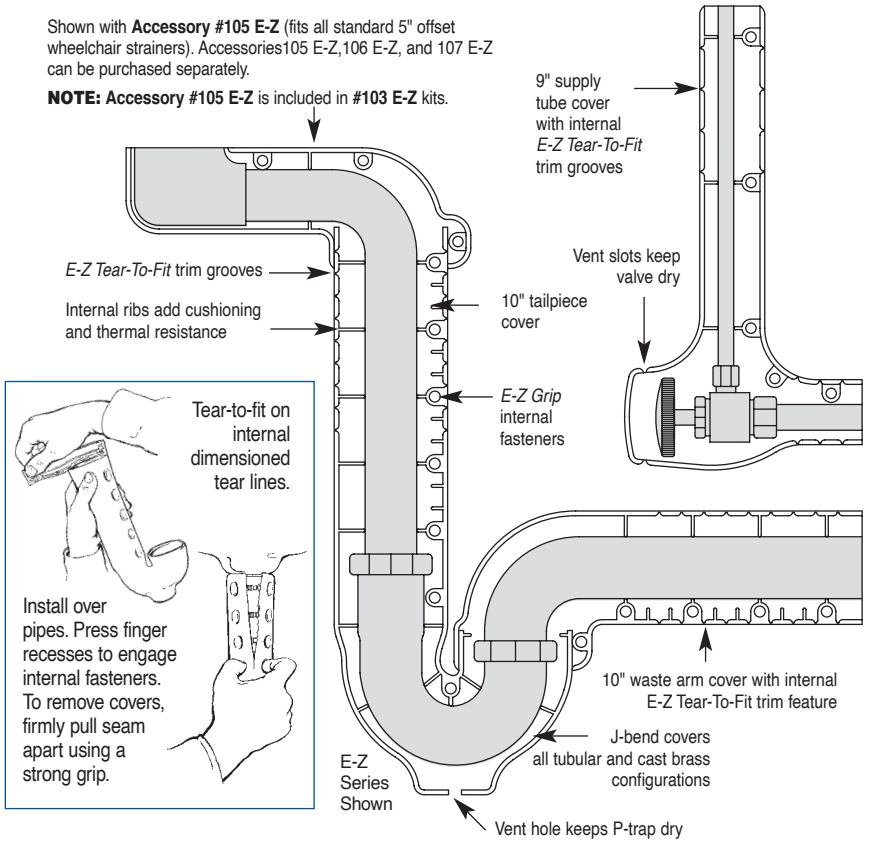
Material	Molded vinyl
Nominal Wall	1/8" constant
Durometer	70 - 80 - Shore A
UV Protection	Will not fade or discolor
Durability	Virtually indestructible
Trimming (E-Z Series)	Internal, *E-Z Tear-To-Fit* trim feature
Fasteners (E-Z Series)	Internal *E-Z Grip* fasteners (reusable)
Color	China white
Paintability	Apply Latex paint
Burning Characteristics ASTM D-635	Self extinguished 0 sec (ATB) 0 mm (AEB)
Bacteria/Fungus Resistance	ASTM G21 and G22/ Result: 0 growth
Maintenance	Use common detergents

Antimicrobial Vinyl Minimizes Maintainance

Lav Guard 2 is molded from impact-resistant, stain-resistant, antimicrobial vinyl. Its smooth surface makes it exceptionally easy to clean and maintain.

Manufactured under one or more of the following U.S. or Canadian patents. Other patents pending.

5,303,730 5,360,031 5,524,669 5,564,463 5,678,598 5,699,828 5,915,412 5,915,413 5,901,739 5,960,820 2,075,324 2,119,427 2,136,027 2,158,083



#100 E-Z Series *(shown above right) for tubular and cast brass P-trap assemblies.*
#400W* Series *(original design) for schedule 40 P-trap assemblies.*

☐ **Model #99 E-Z**
One angle valve and supply cover

☐ **Model #100 E-Z**
One P-trap cover

☐ **Model #400W***
One P-trap cover

☐ **Model #101 E-Z**
One P-trap cover, one angle valve cover

☐ **Model #401W***
One P-trap cover, one angle valve cover

☐ **Model #102 E-Z**
One P-trap cover, two angle valves and covers

☐ **Model #402W***
One P-trap cover, two angle valves and covers

☐ **Model #103 E-Z**
One P-trap cover, two angle valves and supply covers, one 5" offset tailpiece wheelchair strainer cover

☐ **Accessory #105 E-Z**
One 5" offset tailpiece wheelchair strainer assembly

*All #400W series items are the "original" LAV GUARD® design and construction. Specifications may change without notice.

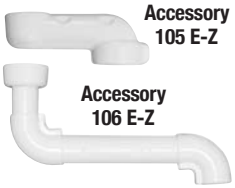
☐ **Accessory #105-K**
Kohler 6" offset

☐ **Accessory #106 E-Z**
One basket strainer cover and offset waste cover (adjustable to 18")

☐ **Accessory #107 E-Z**
Two basket strainer covers and center or end outlet waste cover (adjustable)

☐ **Accessory #Ex99 E-Z**
One 14" extension for water supply

☐ **Accessory #Ex100 E-Z**
One 14" extension for drain waste arm or tailpiece



Accessory 107 E-Z
(Configuration Options Shown)

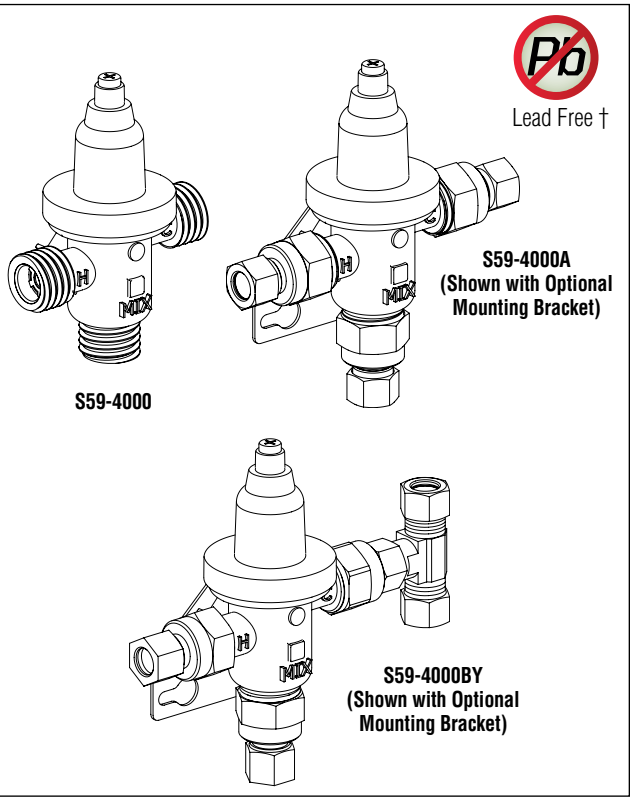


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S59-4000, S59-4000A, S59-4000BY
Navigator® Thermostatic Mixing Valves

- Lead-free design †
- Glass-filled polysulfone valve body
- Thermoplastic polymer cartridge
- Reliable wax-filled thermostat
- Adjustable set point within temperature range
- Easy installation and serviceability
- Universal mounting capability
- Integral check valves and strainers
- Factory assembled and tested
- Optional mounting bracket



Valve Specifications

Maximum Operating Pressure
125 PSI (860 kPA)

Maximum Inlet Temperature
180° F (82° C)

Temperature Range

Std. 95° F (35° C) to 120° F (49° C)

Temperature Differential – Hot to Mix
10° F (5.6°C)

Flow Capacities – GPM (L/Min)

Min. Flow	Pressure Drop – PSI (Bar)						
	5 (.5)	10 (1.0)	15 (1.5)	20 (2.0)	30 (2.5)	45 (3.0)	60 (4.0)
0.2 (0.8)	2.0 (7.5)	2.5 (9.0)	3.0 (11.0)	3.5 (13.0)	4.5 (17.0)	5.5 (19.0)	6.5 (24.5)

Product Compliance

Listed by IAPMO R&T to
- ASSE 1070/ASME A112.1070/CSA B125.70
- Uniform Plumbing Code (UPC)
- National Plumbing Code of Canada
- International Plumbing Code (IPC)

Listed by ASSE International to
- ASSE 1070

Listed by NSF International to
- NSF/ANSI 372

† Wetted surface contains less than .25% lead

Models (Must select one)

Model	Description
○ **S59-4000**	Navigator® Thermostatic Mixing Valve with 1/2" male NPT connection
○ **S59-4000A**	Navigator Thermostatic Mixing Valve with 3/8" Compression Fittings
○ **S59-4000BY**	Navigator Thermostatic Mixing Valve with 3/8" Compression Cold Side Bypass
○ **S45-2456**	Optional Mounting Bracket

☑ *Standard product selections contained within this document are third party LISTED to NSF/ANSI 372 meeting the Lead-Free content requirement. Any product configured with custom options will be COMPLIANT with NSF/ANSI 372 meeting the Lead-Free content requirement.*

Engineer's Approval_____

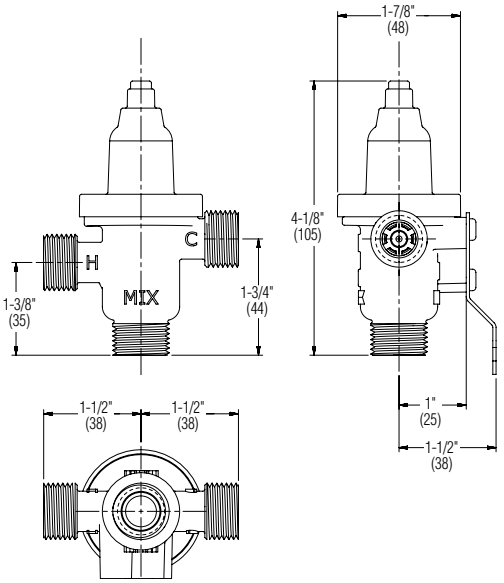
Consult local and national codes. Conformity and compliance to local and national codes is the responsibility of the installer.

This information is subject to change without notice.

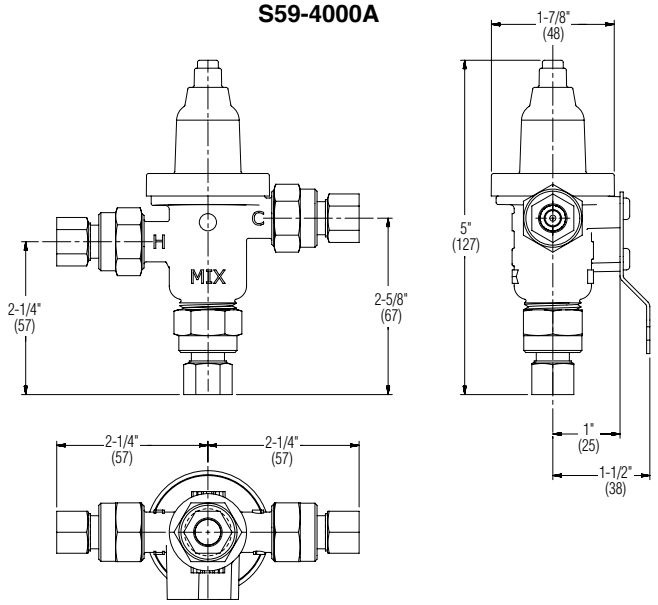
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P.O. Box 309, Menomonee Falls, WI 53052-0309
800 BRADLEY (800 272 3539) +1 262 251 6000
bradleycorp.com

Dimensions (mm)

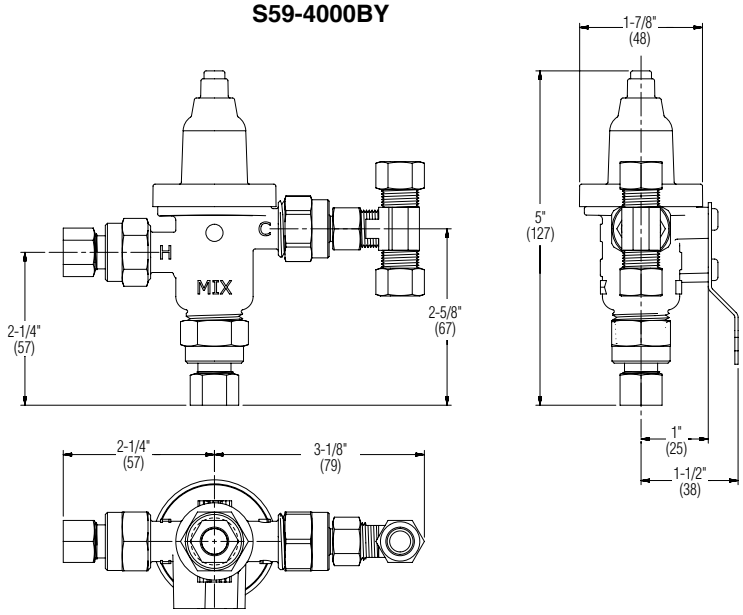
S59-4000



S59-4000A



S59-4000BY



Consult local and national codes. Conformity and compliance to local and national codes is the responsibility of the installer.

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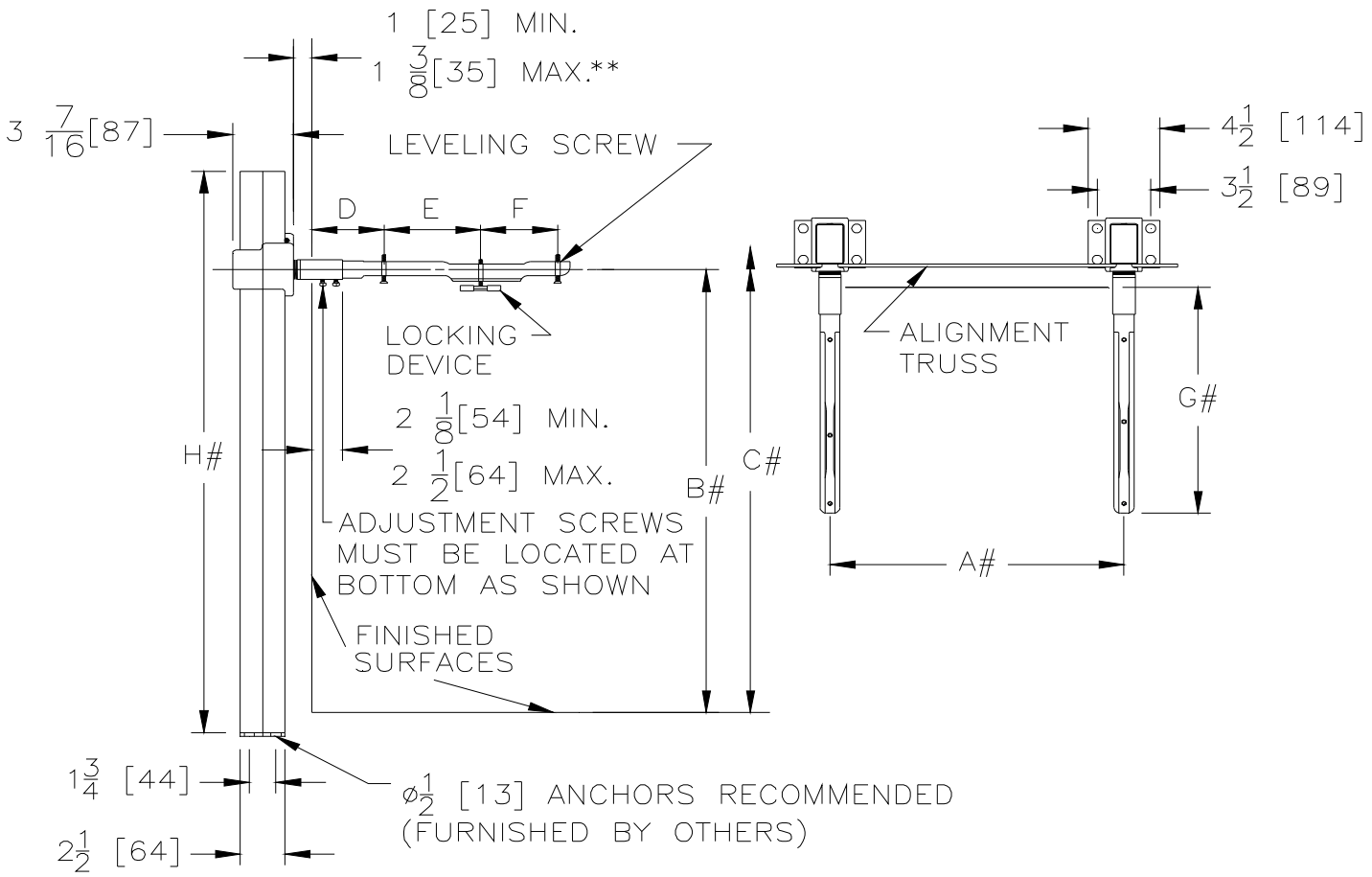
Z1231

CONCEALED ARM SYSTEM
WALL LAVATORIES

SPECIFICATION SHEET

TAG _____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



NOTES:
REFER TO ROUGH-IN GUIDE OF SPECIFIC FIXTURE FOR DIMENSION
** WITH STANDARD SLEEVE LENGTH OF 4 [102]

Product No.	Approx. Wt. Lbs. [kg]
Z1231	45 [20]

ENGINEERING SPECIFICATION: ZURN Z1231
Lavatory support system with concealed arms. Complete with Dura-Coated rectangular steel uprights with welded feet, cast iron adjustable headers, concealed arms, steel sleeves, alignment truss, and mounting fasteners.

OPTIONS (Check/specify appropriate options)

PREFIXES

____ Z Dura-Coated System with Concealed Arms*

SUFFIXES

____ -AL Adapter Lug
____ -CB Carrier Bank
____ -D Back to Back System
____ -E2 Concealed Arm Escutcheons 2 [51] Long
____ -SL Sleeve Length Over 4 [102] (Specify Length)
____ -WS Wall Support Valve Plate (Specify Knee or Foot action, Valve Name, and Number)
____ -79 ADA Rough-in

* Regularly furnished unless otherwise specified.

Zurn Industries, LLC | **Specification Drainage Operation**
1801 Pittsburgh Avenue, Erie, PA U.S.A. 16502 · Ph. 855-663-9876, Fax 814-454-7929
In Canada | **Zurn Industries Limited**
3544 Nashua Drive, Mississauga, Ontario L4V 1L2 · Ph. 905-405-8272, Fax 905-405-1292
www.zurn.com

Rev. J
Date: 09/27/2017
C.N. No. 137983
Prod. | Dwg. No. Z1231

STAR MECHANICAL SUPPLY

TAB-12

P-502

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

FIAT PRODUCTS

STOCKTON TERRAZZO
CURVED FRONT MOP BASIN
TSBCR1000 NEO CORNER SERIES

TERRAZZO
12" MOP SERVICE BASIN
WITH 6" CURVED DROP FRONT

- One piece, precast terrazzo made of black and white marble chips in gray portland cement to produce a compressive strength not less than 3000 P.S.I. seven days after casting.
- Terrazzo surface shall be ground and polished with all air holes or pits grouted and excess removed.
- Shoulders shall be not less than 12" high outside, 10" inside at lowest wall and 6" high drop front.
- Shoulder width not less than 1-1/2" on all sides with a 1/4" pitch towards the inside.
- Standard drain body is stainless steel cast integrally and provides for a caulked lead connection not less than 1" deep to a 3" pipe.
- Stainless steel strainer # 1453BB
- Made in the U.S.A.

Options:
- QDC quick drain connectors
- Stainless steel tiling flanges available with up-charge. Must be custom order.
- Chrome plated brass drain or Vandal proof drain. Must be custom order.

❑ **TSBCR1000 Series** with plain curbs only

❑ **TSBCR1100 Series** with stainless steel cap on threshold only

Optional Components:

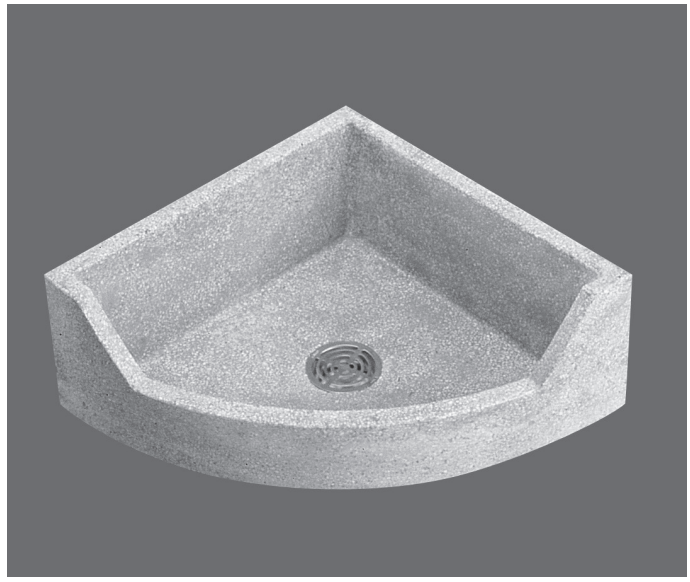
❑ **830AA** Mop Service Basin Fitting

❑ **832AA** Hose & Hose Bracket

❑ **889CC** Mop Hanger

❑ **833AA** Silicone Sealant

❑ **MSG** Wall Guards - Stainless Steel
- Wall Guards are manufactured of heavy gauge stainless steel and help protect walls adjacent to Mop Basin. Two panels are required for corner installations. Optional third panel is required for a recessed installation. (MSG2828)



Shown: TSBCR1000

SEE REVERSE FOR ROUGHING-IN DIMENSIONS

INSTALLATIONS: Terrazzo Mop Basins must be installed on a 1/2" layer of mortar in order that the mop basin be level and to prevent cracking. Failure to install terrazzo without a mortar bed will void the warranty. Installations require a 1⁄4" clearance between mop basin and wall.

IMPORTANT: Rough-in dimensions may vary 1/2" (13mm) and are subject to change or cancellation without prior notice.

CERTIFICATIONS:
Meets requirements CSA B45.8-18 / IAPMO Z403-2018.
All models are CUPC listed

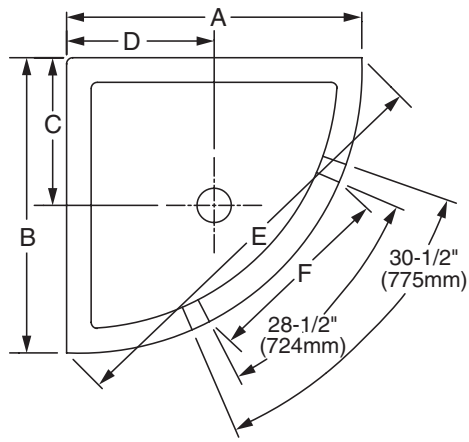
FIAT PRODUCTS

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833-549-2887
www.fiatproducts.com

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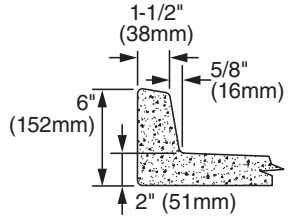
FIAT PRODUCTS

STOCKTON TERRAZZO
CURVED FRONT MOP BASIN
TSBCR1000 NEO CORNER SERIES

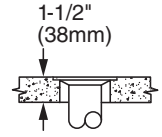


TSBCR1000 Series With Plain Curbs Only

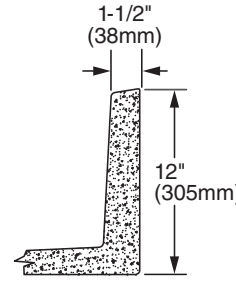
MODEL	SIZE	A	B	C	D	E	F
TSBCR1000	28" x 28" x 12"	28	28	12	12	44	28-1/2



SECTION THRU THRESHOLD



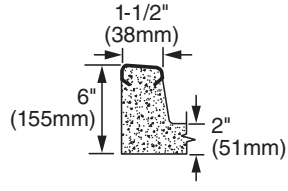
SECTION THRU DRAIN (LEAD CAULK & 3" PIPE "P" TRAP BY OTHERS)



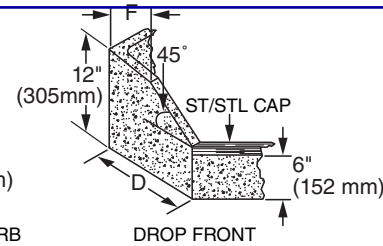
SECTION THRU SIDES

TSBCR-1100 Series
With Stainless Steel Cap On Threshold Only

MODEL	SIZE	A	B	C	D	E	F
TSBCR1100	28" x 28" x 12"	28	28	12	12	44	28-1/2



ST/ST CAP DETAIL WITH 6" CURB



DROP FRONT THRESHOLD DETAIL

IMPORTANT: Roughing in dimensions may vary 1/2" and are subject to change or cancellation without prior notice.

FIAT PRODUCTS

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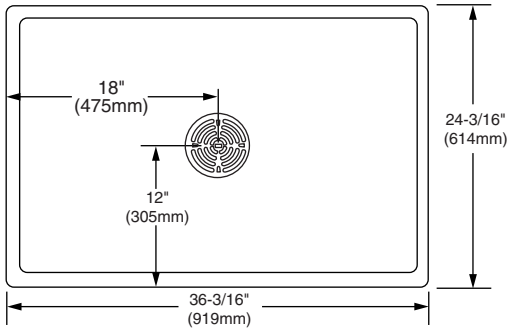
INSTALLATION INSTRUCTIONS

MOP SERVICE BASIN
MODELS MSB2424 & MSB3624

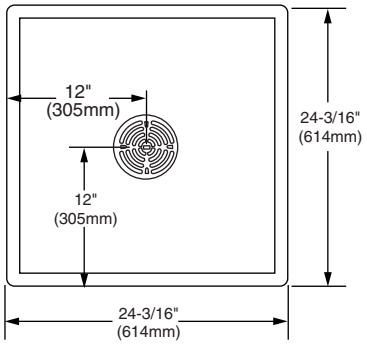
&

EVERYTHING FLOOR SINK
MODELS 24 EFS & 36 EFS

MSB 3624 & 36 EFS

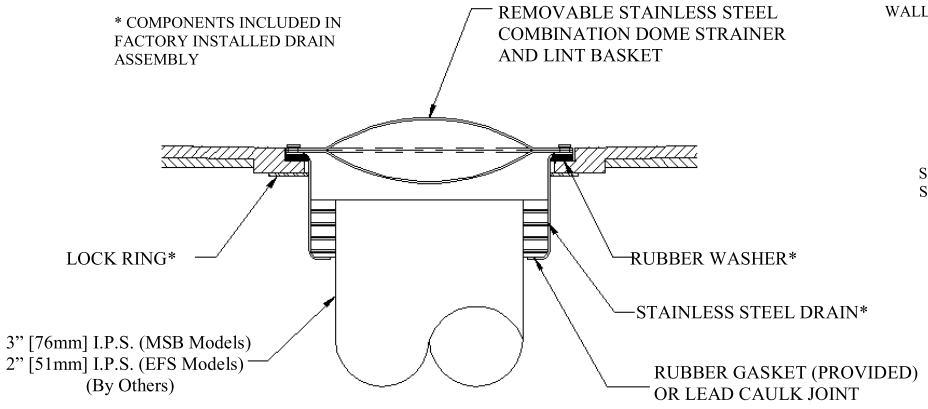


MSB 2424 & 24 EFS

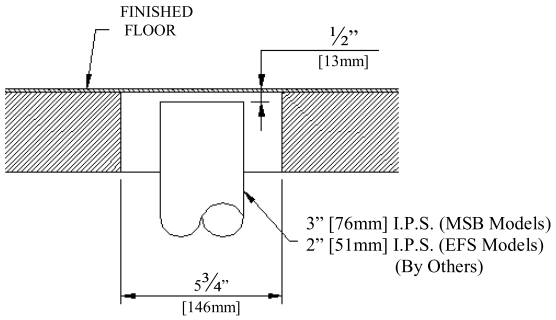


INSTRUCTIONS

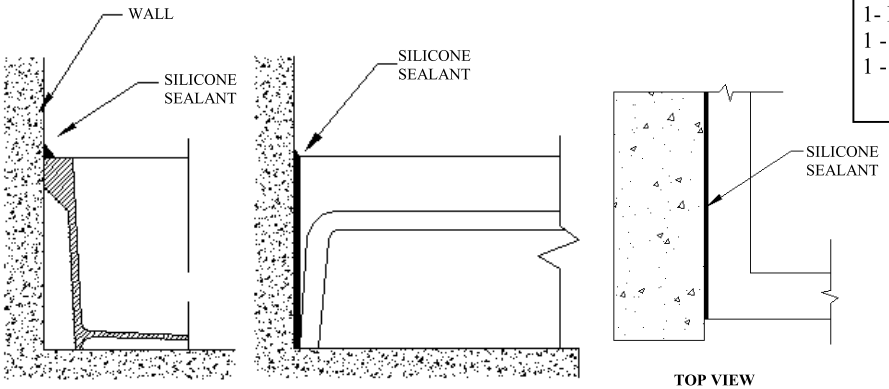
1. Level basin and shim as necessary.
2. Drain to be connected to 3" I.P.S. in MSB models and 2" I.P.S. in EFS models with rubber gasket (provided) or lead caulk joint.
3. Apply silicone sealant at all points where basin meets wall.
4. Do not install lint basket and dome strainer until room is ready for use.



SECTION THRU DRAIN CONNECTION



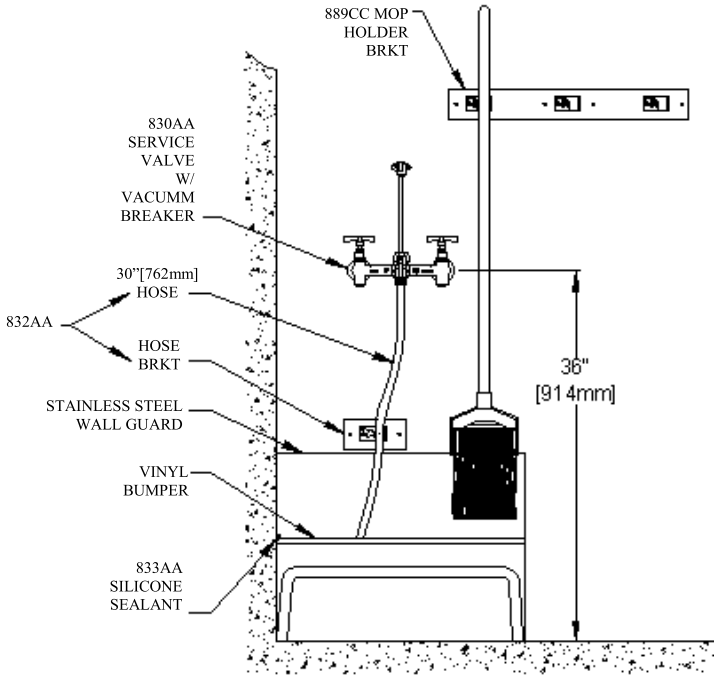
SUGGESTED INSTALLATION THRU DRAIN PIPE



AGAINST CONCRETE BLOCK OR WALL BOARD (FINSIHED OR UNFINISHED)

FRONT VIEW

TOP VIEW



OPTIONAL EQUIPMENT

MSB MODEL CONTENTS
1 - MOP SERVICE BASIN (24" X 24" OR 36" X 24")
1 - QDC 3XH
1 - INSTRUCTION SHEET

EFS CONTENTS
1- MOP SERVICE BASIN (24" X 24" OR 36" X 24")
1 - QDC 32
1 - INSTRUCTION SHEET

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www.fiatproducts.com

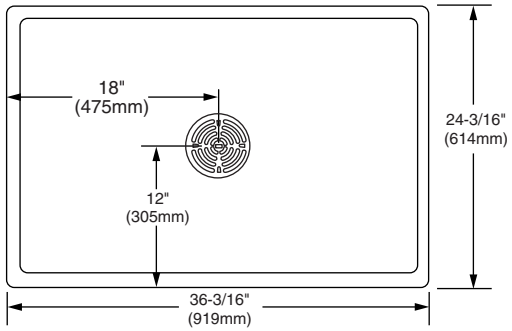
710089-100 Rev.A

INSTRUCTIONS D'INSTALLATION

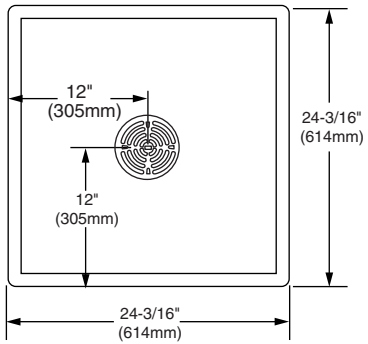
CUVE D'ENTRETIEN DE VADROUILLES ET ÉVIER DE PLANCHER TOUT USAGE

MODÈLES MSB2424 ET MSB3624 — MODÈLES 24 EFS ET 36 EFS

MSB 3624 & 36 EFS

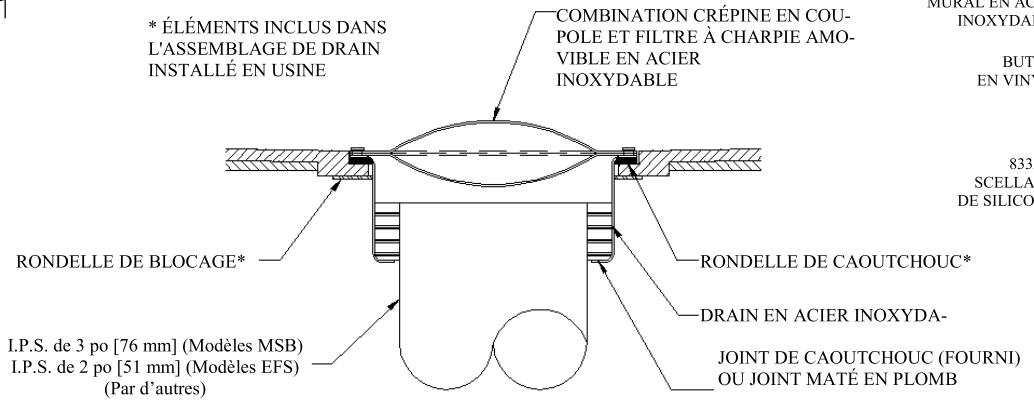


MSB 2424 & 24 EFS

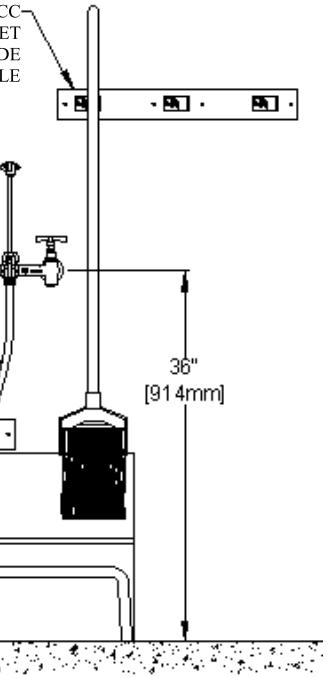


INSTRUCTIONS

1. Mettre la cuve de niveau et caler au besoin.
2. Le drain doit être raccordé à l'I.P.S. de 3 po pour les modèles MSB et à l'I.P.S. de 2 po pour les modèles EFS avec un joint d'étanchéité en caoutchouc (fourni) ou un joint maté en plomb.
3. Appliquez un scellant de silicone à tous les points où la cuve touche au mur.
4. N'installez pas de crépine en coupole et de filtre à charpie jusqu'à ce que la pièce soit prête à être utilisée.



VUE TRANSVERSALE DU RACCORD DE RENVOI



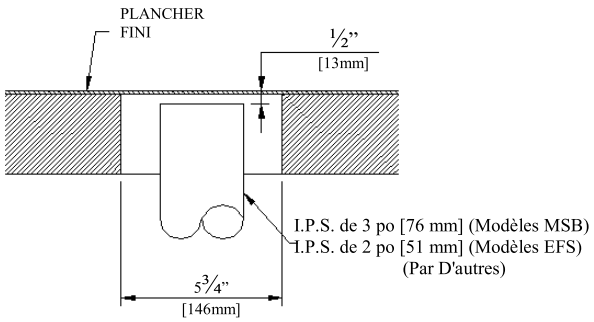
ÉQUIPEMENT FACULTATIF

CONTENU DU MODÈLE MSB

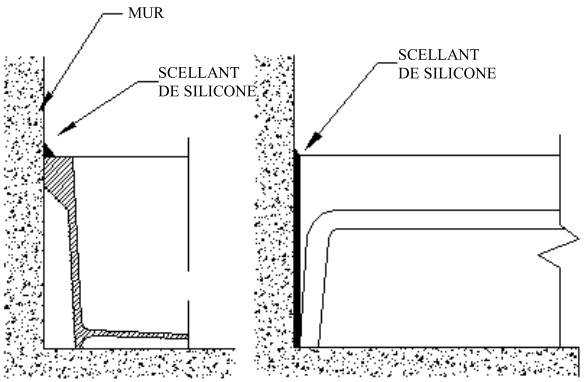
1 - CUVE D'ENTRETIEN DE VADROUILLES
(24 po X 24 po OU 36 po X 24 po)
1 - QDC 3XH
1 - FEUILLE D'INSTRUCTIONS

CONTENU DU MODÈLE EFS

1 - CUVE D'ENTRETIEN DE VADROUILLES
(24 po X 24 po OU 36 po X 24 po)
1 - QDC 32
1 - FEUILLE D'INSTRUCTIONS

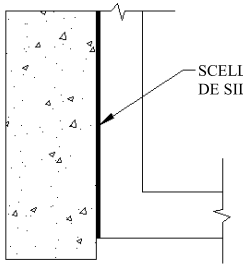


INSTALLATION SUGGÉRÉE PAR LE TUYAU D'ÉVACUATION



CONTRE UN BLOC EN BÉTON OU UNE PLANCHE MURALE (FINIS OU NON FINIS)

VUE DE FACE



VUE DU DESSUS

FIAT PRODUCTS
CUSTOMER SERVICE
833-549-2887
www.fiatproducts.com

FIAT PRODUCTS, LLC. LIMITED ONE YEAR WARRANTY
FOR PERSONAL RESIDENTIAL AND COMMERCIAL USE OF FIAT® PRODUCTS

WARRANTY COVERAGE

FIAT Products warrants products against defects in material and workmanship under both normal residential and commercial use for as long as it is owned by the original purchaser for a period of one (1) year from the date of first purchase.

This warranty is provided for the exclusive benefit of the initial consumer purchaser or owner. This warranty is non-transferable to subsequent purchasers or owners. The sole exception to the non-transferability of this warranty is that if this product is purchased by a plumber, contractor or other service provider, this warranty extends to the first residential or commercial property owner on whose behalf the product was purchased for installation. This warranty applies only to FIAT® Products installed in the United States of America or Canada.

If a defect arises and a valid claim is received, FIAT Products, at its option, will either (1) repair the product, (2) replace the product or any part therein with a FIAT product of equal or similar type and size, or (3) refund to the consumer the wholesale price of the product. If FIAT Products elects to refund the wholesale price to the consumer, FIAT Products shall have no further obligation to its wholesale customer, or any contractor with respect to such product. Goods proven to be defective will be replaced after proper inspection, but no claims for damages incurred or for work done thereon will be allowed. Replacements when supplied will be shipped at no cost to the consumer.

EXCLUSIONS AND LIMITATIONS

1. This warranty only applies to products purchased through an authorized FIAT® Products dealer or re-seller.
2. This warranty does not apply to defects or damage caused by non-genuine FIAT parts, installation error, product abuse, product misuse, improper maintenance, improper care or cleaning, improper repair or installation, and/or movement or transfer of the product from its original installation location (whether performed by you, a plumber, a contractor or a service company). Because improper care and cleaning can cause significant damage to the product, it is strongly recommended that you follow the Care and Cleaning Instructions (as well as the other instructions).
3. FIAT Products is not responsible for labor charges and/or damage incurred during installation, repair, or replacement.
4. FIAT Products does not warrant that this product and/or its installation complies with local code requirements. FIAT Products recommends that you consult with a plumbing contractor about local code requirements.

TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER ORAL OR WRITTEN, STATUTORY, EXPRESS, OR IMPLIED. FIAT PRODUCTS HEREBY EXCLUDES SPECIAL, INCIDENTAL AND CONSEQUENTIAL DAMAGES FOR ANY BREACH OF ANY EXPRESS OR IMPLIED WARRANTY APPLICABLE TO THIS PRODUCT.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state (or province, as applicable).

OBTAINING WARRANTY SERVICE

If you feel you have a warranty claim, contact FIAT Products, either through an authorized FIAT Products dealer or re-seller, or by writing:

In the United States and Canada:
FIAT Products, LLC
4515 E. 139th St.
Grandview, MO 64030

Please be sure to provide all pertinent information regarding your claim, including a complete description of the problem, the product, model number, color, finish, purchase date, and from whom the product was purchased.

For other information, call (833) 549-9244 (in the United States and Canada) or visit www.fiatproducts.com.

Service Sink / Mop Sink Faucets

B-0658

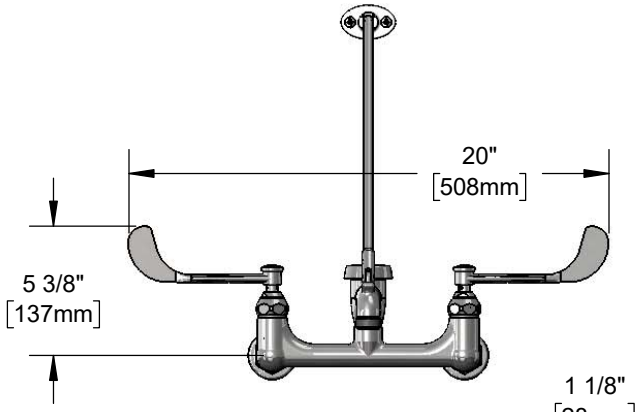
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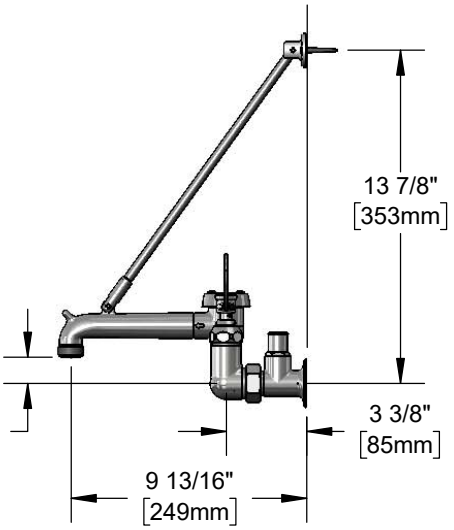
Service Sink Faucet

Architect/Engineering Specifications:

8” wall mount mixing faucet with polished chrome plated brass body, polished chrome plated brass spout with vacuum breaker, pail hook and garden hose male outlet, compression cartridges with spring checks, 6” wrist action handles, 1/2” NPT female inlets, loose key stops, and upper support rod. Certified to ASME A112.18.1/CSA B125.1, NSF 61 Section 9, NSF 372 and ASSE 1001. Meets ADA ANSI/ICC A117.1 requirements.

Job Name_____
Model Specified_____Quantity_____
Variations Specified_____
Date_____







Features & Benefits:

- 8” wall mount mixing faucet with polished chrome plated brass body
- Spout with vacuum breaker, pail hook & 3/4” garden hose male outlet
- 6” chrome plated brass wrist action handles with color coded indexes
- Quarter-turn Eterna compression cartridges with spring checks to prevent cross flow of water
- 1/2" NPT female inlets with Ø 2" flanged loose key stops
- Upper support rod
- Material: Polished chrome plated brass body & spout and handles

Product Compliance:

- ASME A112.18.1 / CSA B125.1
- NSF 61 - Section 9
- NSF 372 (Low Lead Content)
- ANSI A117.1 (ADA)
- ASSE 1001 (VB)

Warranty: One Year (Limited)

Performance Data:

- Pressure: 20 - 125 psi
- Temperature: 40 °F - 140 °F
- Flow Rate: 8.90 GPM @ 60 psi

ADA Compliant

Optional Handles & Optional Cartridges

Optional Handles

- ☐ 4" Wrist Action
- ☐ Lever
- ☐ 4-Arm

Optional Cartridges With Checks

- ☐ Quarter-Turn Cerama w/ Check Valve
- ☐ Quarter-Turn Eterna w/ Spring Check (Standard)

T&S BRASS AND BRONZE WORKS, INC.
• 2 Saddleback Cove • Travelers Rest, SC 29690
Ph 800-476-4103 • Fax 864-834-3518
• Simi Valley, CA • Ph 800-423-0150 • www.tsbrass.com

Date: 11/02/18

RELIABILITY BUILT IN™

Limited One Year Warranty
(Commercial Applications)

T&S warrants to the original purchaser (other than for purposes of resale) that such product is free from defects in material and workmanship for a period of one (1) year from the date of purchase. During this one-year warranty period, if the product is found to be defective, T&S shall, at its options, repair and/or replace it. To obtain warranty service, products must be returned to...

T&S Brass and Bronze Works, Inc.
Attn: Warranty Repair Department
2 Saddleback Cove
Travelers Rest, SC 29690

Shipping, freight, insurance, and other transportation charges of the product to T&S and the return of repaired or replaced product to the purchaser are the responsibility of the purchaser. Repair and/or replacement shall be made within a reasonable time after receipt by T&S of the returned product. This warranty does not cover Items which have received secondary finishing or have been altered or modified after purchase, or for defects caused by physical abuse to or misuse of the product, or shipment of the products.

Any express warranty not provided herein, and any remedy for Breach of Contract which might arise, is hereby excluded and disclaimed. Any implied warranties of merchantability or fitness for a particular purpose are limited to one year in duration. Under no circumstances shall T&S be liable for loss of use or any special consequential costs, expenses or damages.

Some states do not allow limitations on how long and implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. Specific rights under this warranty and other rights vary from state to state.

Attention California Residents:

⚠ **WARNING** This product can expose you to chemicals including Lead, Chromium (hexavalent compounds) and Phthalates (DEHP) which are known to the State of California to cause cancer and birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov.

P/N: 098-009518-45 Rev.4
Date: 11-01-18
Drawn: TEH
Checked: JRM 12-19-18
Approved: JHB 02-14-19

Installation and Maintenance Instructions



Surgical Sink and Service Sink Faucets with Built-In Stops

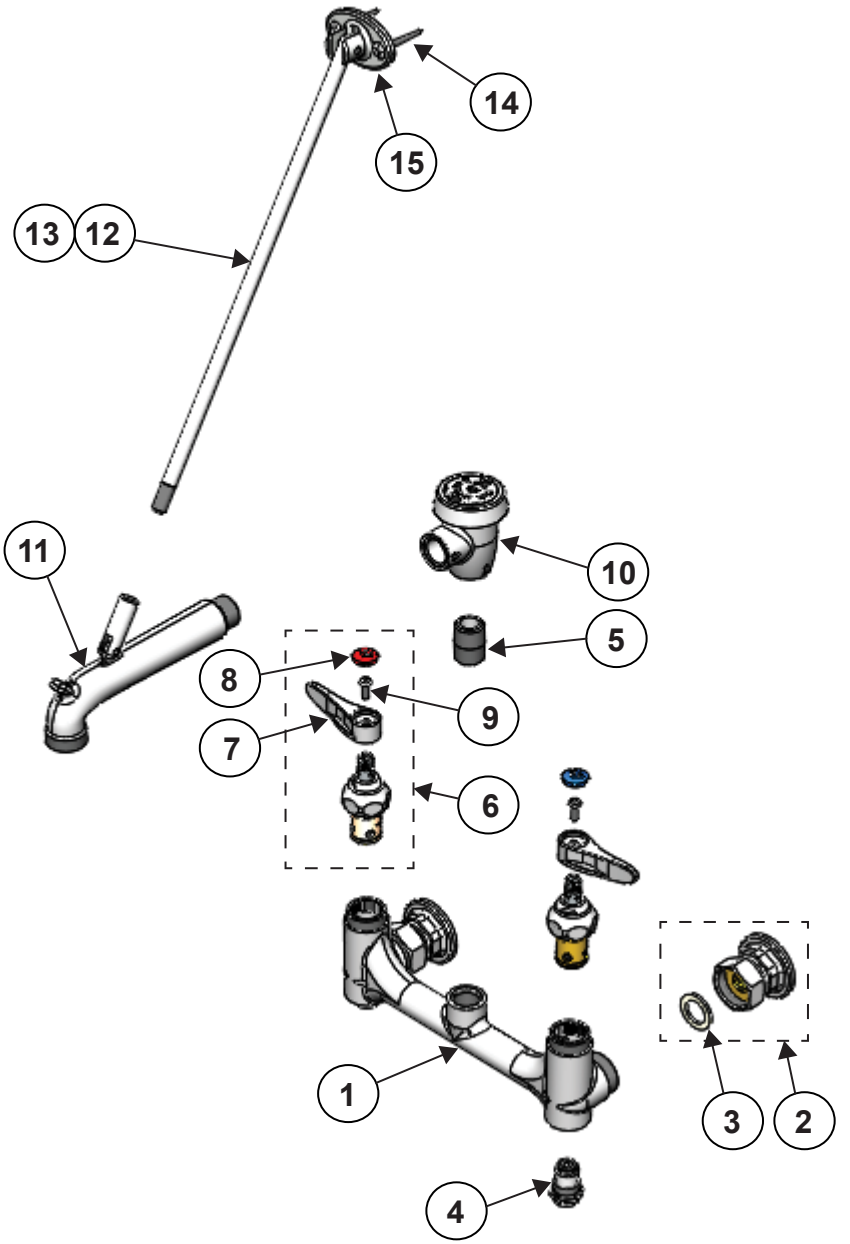
ES **Español:**
Instrucciones de instalación y mantenimiento

FR **Français:**
Instructions pour l'installation et la maintenance

DE **Deutsch:**
Installations- und Wartungsanleitungen

CN **中文:**
安装与维护说明

Exploded View



Part Number Guide

Service Sink Faucet Assemblies

1	Body, Faucet	N/A
2	Asm, Flange Coupling	00AA
3	Washer, Coupling Flange	001019-45
4	Asm, BST Spindle & Insert	163A
5	Nipple, Close 1/2 HWL	002534-25
6	Asm, Eterna w/ Spring Checks & Handle (Cold)	002711-40NS
	Asm, Eterna w/ Spring Checks & Handle (Hot)	002712-40NS
7	Handle, Lever (Blank)	001638-45NS
8	Index, Button (Red / Hot)	001193-19NS
	Index, Button (Blue / Cold)	018506-19NS
9	Screw, Handle	000925-45
10	Asm, Vacuum Breaker, 1/2"	B-0969
11	Spout (BSTR)	009545-25
	Spout (BSTP)	009545-40
12	Asm, Upper Nozzle Support	009546-40
13	Rod, Support	005060-40
14	Screw, Wall Mount (1 each)	000915-45
15	Flange	003007-40

EN ***Note: This is a general instructional example of units using -BST. Nozzles should be installed on unit first.***

ES ***Nota: Esto es un ejemplo general instruccional de unidades que utilizan - BST. (Interceptor Incorporado.) Primero se debe de instalar las boquillas.***

FR ***Celui-ci être un exemple générale et instructif des élément s qui utiliser BST Les ajutages devoir être installer au début.***

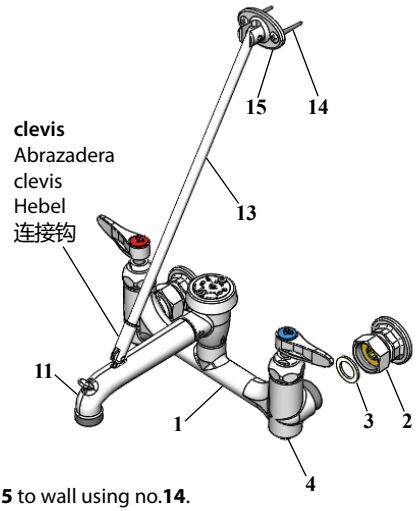
DE ***Anmerkung: Die ist ein allgemeines Installationsbeispiel für Armaturen, die BST verwenden. Düsen sollten zuerst auf die Einheit installiert werden.***

CN 注意：这是-BST系列的常规说明样例。首先应将水嘴安装在装置上。

EN

Faucet Installation:

1. Shut off water supply and drain lines. Drill (2) two 7/8" [2.2 cm] holes in wall or backsplash of sink, 8" [20 cm] center to center, where you are installing no.**1**.
2. Apply teflon tape or pipe joint compound to threads of water supply lines.
3. Remove no.**2** from no.**1** and attach no.**2** to water supply lines flush against wall. Tighten by hand. ***Trim supply lines if necessary.***
4. Attach no.**1** to no.**2**, adjusting center to center fit by turning no.**2** if needed. ***Make sure no.3 remains in place.*** Tighten no.**2** firmly with a wrench.
5. Turn on water supply and check for leaks.



Upper Nozzle Support Installation:

6. Attach no.**13** to no.**11** by screwing no.**13** into ***clevis*** on no.**11**.
7. Position no.**15** against wall. Mark holes and secure no.**15** to wall using no.**14**.

ES

Instalación De La Canilla:

1. Cierre la fuente de agua y desagüe las tuberias. Perfore (2) dos huecos de 2 cm en la pared o el espaldar del lavatorio, con 20 cm de centro a centro donde la parte No.**1** será instalada.
2. Aplique cinta de Teflon o compuesto de coyuntura a las roscas de las lineas de surtido.
3. Remuéva la parte No.**2** de la parte No.**1** y conecte la parte No.**2** a las lineas de surtido pareja con la pared. Aprete a mano. ***Si es necesario recorte las lineas de surtido.***
4. Conecte la parte No.**1** a la parte No.**2**, ajustando la medida de centro a centro girando la parte No.**2** si es necesario. ***Asegúrese que la parte No.3 permanezca situada.*** Con una llave aprete firmemente la parte No.**2**.
5. Abra el surtido de agua e inspeccione por filtraciones.

Instalación De Soporte Superior:

6. Conecte la parte No.**13** a la parte No.**11** atornillando la parte No.**13** dentro de la abrazandera en la parte No.**11**.
7. Coloque la parte No.**15** contra la pared. Señale los huecos y asegure la parte No.**15** a la pared usando la parte No.**14**.

FR

L'Installation du Robinet:

1. Fermer la réserve de l'eau et égoutter la tuyauterie. Percer (2) deux trous de 2.2cm dans le mur ou le garde-boue de l' évier 20cm de centre à centre où vous aller installer Nº.**1**.

2. Appliquer le ruban en Téflon ou le composé pour les tuyaux aux tuyaux qui fournir l'eau.
3. Enlever Nº. **2** de Nº.**1** et attacher Nº.**2** aux tuyaux qui fournir l'eau au même niveau du mur. Resserrer par le main. ***Couper les tuyaux qui fournir l'eau si nécessaire.***
4. Attacher Nº.**1** à Nº.**2**, en réglant l'ajustement centre à centre en tournant Nº.**2** si nécessaire. ***Soyez certain que Nº.3 rester à sa place.*** Resserer Nº.**2** fermement avec une clef anglaise.
5. Recommencer l'eau et vérifier s'il y a des fuites.

L'Installation du Support de L'Ajutage en Haut:

6. Attacher Nº.**13** à Nº.**11** en vissant Nº.**13** dans le clevis sur Nº.**11**.
7. Mettre Nº.**15** contre le mur. Marquer les trous et attacher Nº.**15** au mur en utilisant Nº.**14**.

DE

Einbau des Wasserhahns:

1. Den Wasserzulauf schließen und die Leitungen leeren. Zwei 2 cm Löcher in die Wand oder die Rückwand der Spüle - je nachdem, wo Nr. **1** installiert werden soll - mit einem Mittenabstand von 20 cm bohren.
2. Für die Gewinde der Wasserzuleitungen Teflonband oder Rohrdichtungsmasse verwenden.
3. Nr. **2** von Nr. **1** entfernen und Nr. **2** bündig zur Wand auf die Wasserzulaufleitungen aufdrehen. Mit der Hand festziehen. ***Zulaufleitungen bei Bedarf kürzen.***
4. Nr. **1** an Nr. **2** befestigen, wobei auf mittigen Sitz zu achten ist und bei Bedarf Nr. **2** gedreht werden kann. ***Sicherstellen, daß Nr.3 an Ort und Stelle verbleibt!*** Nr. **2** mit einem Schrauben schlüssel festdrehen.
5. Wasserzulauf andrehen und auf Dichtigkeit überprüfen.

Einbau des oberen Schwenkarms:

6. Nr. **13** an Nr. **11** befestigen, indem Nr. **13** an dem Hebel auf Nr. **11** angeschraubt wird.
7. Nr. **15** an der Wand in Position bringen. Löcher markieren und Nr. **15** mit Hilfe von Nr. **14** an der Wand sichern.

CN

龙头的安装：

1. 关闭供水和排水管道。在墙面或者水槽的防溅挡板上面钻（2）两个7/8" [2.2cm]的孔，中心距为8" [20cm], 在孔上安装1号。
2. 在供水管道的螺纹上缠上胶带或涂上管道胶合剂。
3. 将2号从1号上拆下，把2号平对着墙装在供水管道上，用手拧紧。根据实际情况修整供水管道。
4. 把1号装到2号上，可根据需求旋转2号来调整中心距。请务必确保3号在准确的位置。用扳手将2号牢牢拧紧。
5. 打开供水开关，检查是否漏水。

水嘴上方支架安装：

6. 把13号拧到11号上的连接钩上。
7. 将15号靠墙放好，并做好记号，用14号把15号固定在墙上。

EN

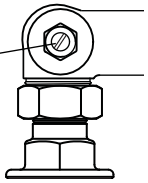
Adjusting Built-in Stops:

Insert a screwdriver to adjust no.**4** at the base of no.**1** on each side. ***Water should be turned on for this procedure.***

Close Stop turn clockwise
Detenedor cerrado gire a la derecha
Fermer l'arrêt tourner dans le sens des aiguilles d'une montre
Anschlag für Geschlossen:
im Uhrzeigersinn drehen
顺时针方向关闭开关



Open Stop turn counterclockwise
Detenedor Abierto gire a la izquierda
Ouvert l'arrêt tourner dans le sens inverse des aiguilles d'une montre
Anschlag für Offen:
gegen den Uhrzeigersinn drehen
逆时针方向打开开



no.4 adjusting screw
Parte no.4 tornillo de ajuste
Nº.4 reglant la vis
Justierschraube Nr. 4
4号调节螺丝

Botton view of faucet body and Built-in Stop
Vista posterior de la canilla y Detenedor incorporado
La vue du fond du corps du robinet et l'arrêt encastré
untere Ansicht des Wasserhahnkörpers und eingebaute Anschläge
龙头本体和内置开关底视图

ES

Ajuste De Los Detenedores Incorporados:

Para ajustar la parte No.**4** insarte un destornillador por debajo de la parte No.**1** en ambos lados. ***El agua debe estar abierta para este proceso.***

FR

La Réglage des Arrêts Encastrés:

Insérer un tournevis pour régler Nº.**4** à la base de Nº.**1** sur chaque côté. ***On devoir déjà recommencer l'eau pour ce processus.***

DE

Eingebaute Anschläge justieren:

Mit einem Schraubenzieher die Nr. **4** an dem Fuß von der Nr. **1** auf beiden Seiten justieren. ***Das Wasser sollte hierfür aufgedreht werden.***

CN

调整内置开关：

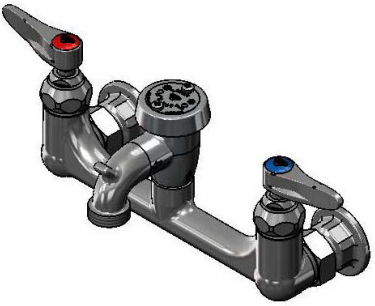
可用螺丝刀调整1号的两侧底部的4号来控制水流大小。在这一步骤中，需要打开供水。

RELATED T&S BRASS PRODUCT LINE



B-0657
Service Sink /
Mop Sink Faucet

B-0674-RGH
Service Sink /
Mop Sink Faucet



T&S BRASS AND BRONZE WORKS, INC.

A firm commitment to application-engineered plumbing products

2 Saddleback Cove, P.O. Box 1088,
Travelers Rest, SC 29690
Phone: (864) 834-4102
Fax: (864) 834-3518
E-mail: tsbrass@tsbrass.com

T & S Brass-Europe
'De Veenhoeve'
Oude Nieuwveenseweg 84
2441 CW Nieuwveen
The Netherlands

RELIABILITY BUILT IN™

Limited Warranty

READ THIS LIMITED WARRANTY BEFORE INSTALLING OR USING THIS PRODUCT. IF THESE TERMS ARE NOT ACCEPTABLE TO YOU, IMMEDIATELY RETURN THIS PRODUCT TO T&S BRASS AND BRONZE WORKS, INC. BEFORE INSTALLING AND/OR USING THIS PRODUCT.

T&S Brass and Bronze Works, Inc. (T&S) warrants to the original purchaser of this product that such product is free from defects in workmanship and materials for the period specified in the chart below beside the product description from the original date of purchase.

Product Description	**Warranty Period**
T&S EasyInstall pre-rinse units	3 years
T&S DuraPull pre-rinse units	7 years
T&S ChekPoint and WaveCrest sensor faucets & accessories	3 years
T&S Hose reels (except B-7161-C hose reel & B-7245 creamery hose reel)	2 years
T&S Hose reel blue hose	1 year
T&S Modular waste drain valve	Lifetime
T&S Cerama ceramic cartridges	Lifetime
T&S Single lever faucet ceramic cartridges	2 years
T&S Flexible stainless steel hose (B-0044-H, etc.)	3 years
T&S Reinforced PVC flex hoses without stainless steel covering (All B-0044-R, etc. models)	2 years
T&S Safe-T-Link gas & water hose connectors	5 years
T&S EverSteel pre-rinse units & faucets	Lifetime
Equip hose reel hose	1 year
All other products (including all equip products)	1 year

During the applicable warranty period, if this product is found to be defective, T&S shall, at its option, repair and/or replace it. To obtain warranty service, products must be returned to T&S Brass and Bronze Works, Inc., 2 Saddleback Cove, Travelers Rest, South Carolina, 29690, clearly marked to the attention of the Warranty Repair Department. Shipping, freight, insurance, and other transportation charges of the returned product to T&S and the return of the repaired or replaced product to the purchaser are the responsibility of the purchaser. Replacement and/or repair under this warranty shall be made within a reasonable time after receipt by T&S of the returned product and T&S' verification of the defect. T&S is not responsible for removal, installation, labor charges, or other incidental or consequential costs.

This warranty does not cover this product (i) if it has received secondary finishing or has been altered or modified after purchase, (ii) for defects caused by physical abuse to or misuse of the product or use with corrosive materials, (iii) for damage or harm occurring in the shipment of the product, (iv) for damage or harm occurring due to environmental conditions, including but not limited to water quality and impurities, or (v) for damages arising from wear to or the failure of replaceable components, including those made out of rubber or plastic. This warranty is provided to the original purchaser only and may not be assigned or transferred by the original purchaser of the product, other than when purchased for resale, in which case the reselling original purchaser may assign the warranty to the purchaser from the reseller who shall be deemed the original purchaser under this limited warranty, but the warranty may not be assigned thereafter.

ANY EXPRESS WARRANTY NOT PROVIDED HEREIN AND ANY REMEDY FOR BREACH OF CONTRACT WHICH BUT FOR THIS PROVISION MIGHT ARISE BY IMPLICATION OR OPERATION OF LAW, IS HEREBY EXCLUDED AND DISCLAIMED.

ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO THE WARRANTY PERIOD PROVIDED ON THE PRODUCT.

UNDER NO CIRCUMSTANCES SHALL T&S BE LIABLE TO PURCHASER OR ANY OTHER PERSON FOR ANY LOSS OF USE OF THE PRODUCT OR ANY SPECIAL OR CONSEQUENTIAL COSTS, EXPENSES OR DAMAGES WHETHER ARISING OUT OF BREACH OF WARRANTY, BREACH OF CONTRACT OR OTHERWISE INCURRED BY THE PURCHASER OR ANY OTHER USER.

SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

THIS WARRANTY GIVES YOU SPECIFIC RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

Zurn® JP1996-MH Mop Hanger With (3) Rubber Tool Grips

Item #: ZURJP1996MH **Brand:** Zurn® **UPC:** 670240542464



DESCRIPTION

Zurn® Mop Hanger, For Use With: Zurn® Z1996 Mop Sink, 26 in L x 3 in W

Features

- Zurn® replacement parts and accessories provide long-lasting durability suitable for commercial application
- Holds up to 3 mops for convenient use and drainage
- Stainless steel mop hanger provides long-lasting performance

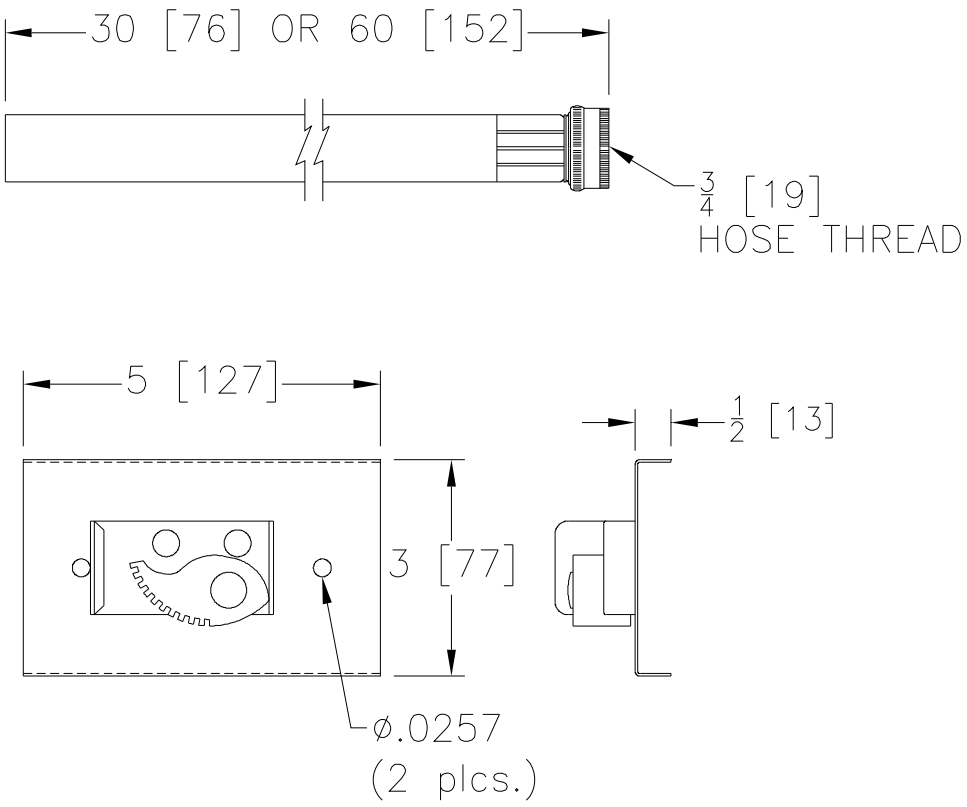
Specs

Dimensions	26 in L x 3 in W
Manufacturer	Zurn Industries
Manufacturer #	JP1996-MH
Suitable For Use With	Zurn® Z1996 Mop Sink

Z1996-HH Mop Basin Hose & Bracket

TAG _____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



ENGINEERING SPECIFICATION: Zurn Light Commercial Z1996-HH
Mop Basin Hose and Hose Bracket. Heavy-Duty 5/8 [16], 30 [76] -long cloth-reinforced flexible rubber hose with 3/4 [19] brass coupling at one end. Bracket is 5 [127] long x 3 [76] wide, 20-gage type 304 stainless steel with rubber grip. Hose also available in 60 [152] length.

ZURN LIGHT COMMERCIAL PLUMBING PRODUCTS ♦ 2640 South Work Street ♦ Falconer, NY 14733
Phone: 1-800/906-5060 ♦ Fax: 716/665-3126 ♦ World Wide Web: www.zurn.com

Rev. A Date: 1/5/07 C.N. 96022
Dwg. No. 83044 Product No. Z1996-HH

FIAT PRODUCTS

MSG SERIES
STAINLESS STEEL SPLASH GUARDS

MSG2424, MSG2828 MSG3232, MSG3636 & MSG3624 Stainless Steel Splash Guards



- FIAT Products Splash Guards are great for containing water splashes within any utility sink area
- Durable and maintenance free, 24 gauge 304 stainless steel material
- Splash Guards play a crucial role in averting potential water damage which can lead to high maintenance costs later on
- Provides for wall protection against everyday use
- Stainless steel if virtually unaffected by most acidic or alkaline substances which may deteriorate guards of other materials
- See back for ordering options
- Custom sized solutions available upon request

FIAT PRODUCTS

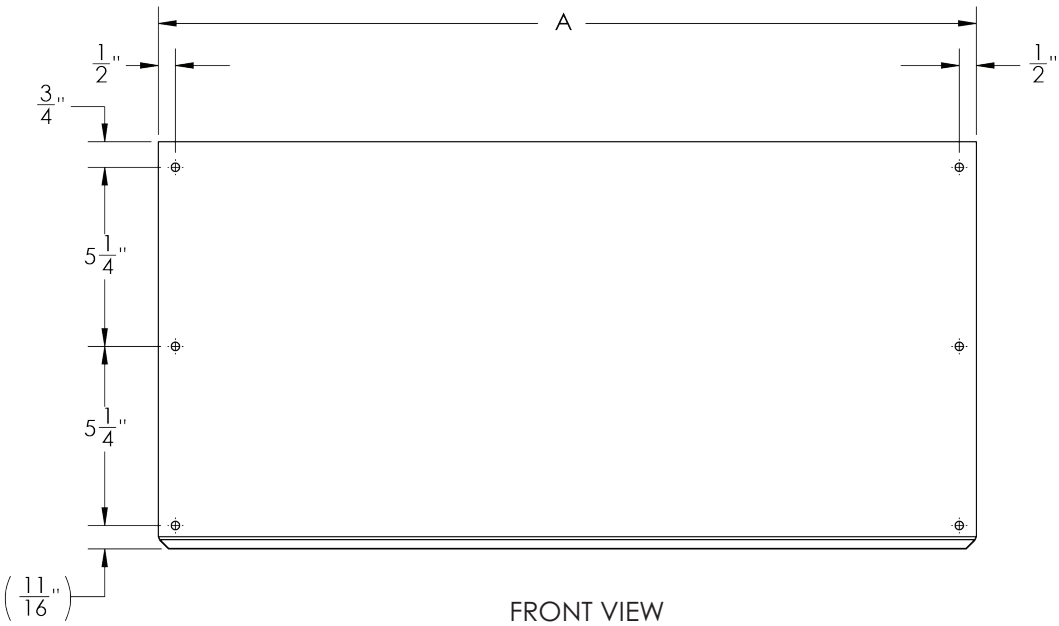
CUSTOMER SERVICE
833-549-2887
www.fiatproducts.com

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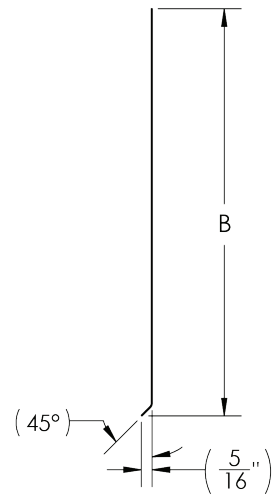
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FIAT PRODUCTS

MSG SERIES
STAINLESS STEEL SPLASH GUARDS

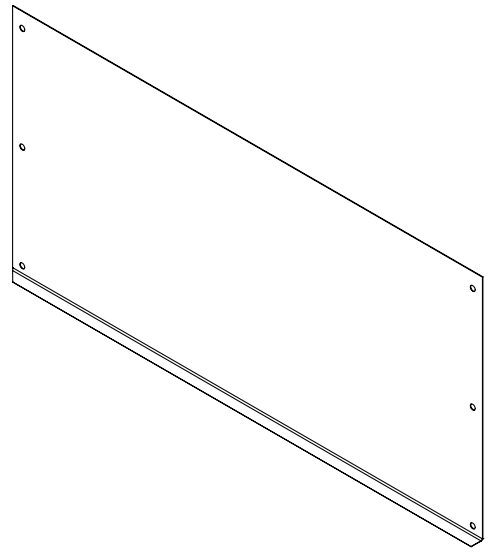


FRONT VIEW



SIDE VIEW

MODEL	DESCRIPTION	A (in)	B (in)
MSG24	Single Panel Stainless Steel Splash Catcher 24” W x 12” H	24" (610 mm)	12" (305 mm)
MSG2424	Two Panel-One Corner Stainless Steel Splash Catcher 24” W x 12” H	24" (610 mm)	12" (305 mm)
MSG28	Single Panel Stainless Steel Splash Catcher 28” W x 12” H	28" (711 mm)	12" (305 mm)
MSG2828	Two Panel-One Corner Stainless Steel Splash Catcher 28” W x 12” H	28" (711 mm)	12" (305 mm)
MSG32	Single Panel Stainless Steel Splash Catcher 32” W x 12” H	32" (813 mm)	12" (305 mm)
MSG3232	Two Panel-One Corner Stainless Steel Splash Catcher 32” W x 12” H	32" (813 mm)	12" (305 mm)
MSG36	Single Panel Stainless Steel Splash Catcher 36” W x 12” H	36" (914 mm)	12" (305 mm)
MSG3636	Two Panel-One Corner Stainless Steel Splash Catcher 36” W x 12” H	36" (914 mm)	12" (305 mm)
MSG3624	Two Panel-One Corner Stainless Steel Splash Catcher 24” W x 36” W x 12” H	24", 36" (610, 914 mm)	12" (305 mm)



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STAR MECHANICAL SUPPLY

TAB-13

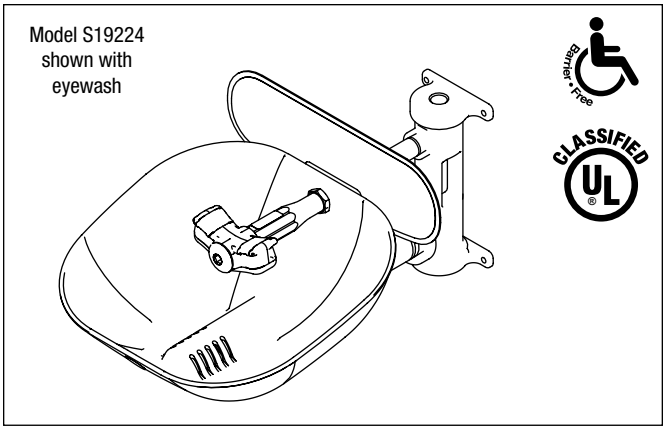
P-708

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

S19224 Series

Wall-Mount Halo™ Eyewash or Eye/Face Wash

- Halo™ Delivers the Most Effective Eye/Face Washdown Coverage and Spray Pattern
- Exceeds ANSI/ISEA Z358.1 Specifications
- Industry's Only Self-Draining Design – The Aquaduct™
- Separate Supply and Waste Pipes – Meets CEN and Plumbing Requirements
- Ergonomic Hand Activation Eyewash Paddle – Easy to Reach from Any Direction
- Barrier Free
- Fully-Assembled and Factory-Tested Eyewash or Eye/Face Wash with Hinged Dust Covers
- Yellow Transparent Plastic and Stainless Steel Bowl Covers Available
- Universal Identification Sign and Inspection Tag Included
- Classified by Underwriters Laboratories Inc. to ANSI/ISEA Z358.1.
- Halo™ is Covered by One or More of the Following Patents: 9,700,484; 9,314,398; D662220; D673298; D662605; D685920; D662219; and D671228. Other Patents Pending.



Specifications

Standard Eyewash or Eye/Face Wash Units save space and fit easily into any work environment. Halo eyewash or eye/face wash, operated by an ergonomic, highly visible push handle, provides effective wash down coverage and spray pattern. Integral strainer reduces debris in the water and also prevents clogging.

This plumbing fixture is not intended to dispense water for human consumption through drinking or for preparation of food or beverages.

Pipe and Fittings

Piping to ½" NPT (BSPP) water supply inlet on unit. Piping to 1¼" NPT (BSPP) drain outlet for eyewash.

1¼" piping assembly manufactured of one of the following materials:

- Galvanized steel with BradTect® safety yellow coating
- Type 304 corrosion resistant stainless steel
- Type 316 corrosion-resistant stainless steel

Ball Valve

½" stay-open eye and eye/face wash valve manufactured of the following materials and supplied with either type 304 or 316 stainless steel pull rod and handle:

- Chrome-plated brass
- Type 316 stainless steel
- Self-closing chrome-plated brass (self closing eyewash valve may not meet local requirements for eyewash activation).

Eyewash

The Halo eyewash system offers a high performance rinsing platform that provides rapid relief to an individual's eyes that have been injured by chemicals or particulate. The eyewash includes an integral 5.1 GPM (19.2 L) flow control, providing water at a safe velocity while maintaining its effectiveness (exceeds minimum water flow of 0.4 GPM (1.5 L) at 30 PSI (2.0 bar)). Eyewash is protected by flip open dust covers that open when product is activated or by a full bowl dust cover that activates the unit when it is opened. Safe, steady water flow under varying water supply conditions from 30–90 PSI (2.0-6.1 bar) is assured by integral flow control in the sprayhead assembly.

Eye/Face Wash

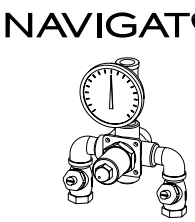
The Halo eye/face wash system offers a high performance rinsing platform that provides rapid relief to an individual's eyes and face that have been injured by chemicals or particulate. This system provides the most complete face wash available in the market. The eye/face wash includes an integral 5.1 GPM (19.2 L) flow control, providing water at a safe velocity while maintaining its effectiveness (exceeds minimum water flow of 3.0 GPM (11.4 L) at 30 PSI (2.0 bar)). Eye/face wash is protected by flip open dust covers that open when product is activated or by a full bowl dust cover that activates the unit when it is opened. Safe, steady water flow under varying water supply conditions from 30–90 PSI (2.0-6.1 bar) is assured by integral flow control in the sprayhead assembly. Sprayheads are made from an impact resistant ABS plastic or from durable 304/316 stainless steel with electro-polished finish.Bowl and Dust Cover Bowl is constructed of yellow impact-resistant plastic, Type 304 corrosion-resistant stainless steel or Type 316 corrosion-resistant stainless steel. Optional dust cover is constructed of transparent yellow impact-resistant plastic, Type 304 corrosion-resistant stainless steel or Type 316 corrosion-resistant stainless steel.

Activation

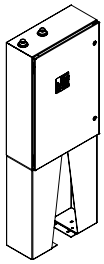
Type 304 stainless steel push handle with optional aluminum or type 304 stainless steel foot pedal. Type 316 stainless steel push handle with optional Type 316 stainless steel foot pedal.

Tepid Water Options

Navigator S19-2000 EFX8
Emergency Thermostatic Mixing Valve



Keltech CLE-Series
Tankless Water Heater



Satisfies ANSI/ISEA Z358.1 tepid water requirements.

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Drench Hose

Perforated sprayhead with protective sprayhead cover is ABS plastic and provides soft spray for cleansing eyes and face. Chrome-plated brass valve with extended handle stays open once handle is squeezed. 8' (2438mm) yellow reinforced thermoplastic hose has ⅜" NPT male thread. Burst strength is 450 PSI (31 bar). Attachment Kit includes ½" NPT supply, fittings and hanger for attaching hose to eyewashes. The sprayhead contains an antimicrobial agent to protect the sprayhead.

Backflow Prevention

Series N9 dual-check backflow preventer has a chrome-nickel plated brass body and includes atmospheric vent for continuous pressure applications. The check valve comes with ⅜" female dual NPT female inlet and outlet connections. It can sustain a maximum pressure of 125 PSI (8.6 bars). The check valve is certified to CSA B64.8.

Series 9D dual-check backflow preventer with intermediate atmospheric vent can be used under continuous pressure. The primary check valve uses a rubber disc seating adjacent to a mating rubber part to ensure tight closing. A second check valve employs a rubber disc-to-metal seating.

Wall Bracket

Heavy-gauge sand cast aluminum protected with BradTect safety yellow coating. Includes three clearance holes for mounting bracket onto wall (mounting hardware not included).

Waste

1¼" drain fitting and tailpiece furnished.

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Halo Configurator

Standard Selections (Must select one from each category)

Configuration

◉ **0**	Standard Wall Mount

Pipe Material

○ **A**	NPT, Yellow BradTect Galvanized Steel
○ **B**	NPT, All 304 Stainless Steel
○ **C**	NPT, All 316 Stainless Steel
○ **D**	NPT, Chrome-Plated
○ **F**	BSPP, Yellow BradTect Galvanized Steel‡
○ **G**	BSPP, All 304 Stainless Steel‡
○ **H**	BSPP, All 316 Stainless Steel‡
○ **J**	BSPP, Chrome-Plated‡

Ball Valve

○ **1**	Stay-Open Eyewash, Chrome-Plated brass
○ **2**	Stay-Open Eyewash, 316 SS

Eyewash – Eye/Face Wash

○ **A**	Halo Eyewash §
○ **B**	Halo Eye/Face Wash §
○ **D**	Halo Eyewash, 304 SS Yoke
○ **E**	Halo Eye/Face Wash, 304 SS Yoke
○ **F**	304 SS Halo Eye/Face Wash, 304 SS Yoke **
○ **G**	Halo Eyewash, 316 SS Yoke
○ **H**	Halo Eye/Face Wash, 316 SS Yoke
○ **J**	316 SS Halo Eye/Face Wash, 316 SS Yoke **

Bowl and Dust Cover

○ **A**	Plastic Bowl, No Dust Cover
○ **B**	Plastic Bowl, Plastic Dust Cover
○ **D**	304 SS, No Dust Cover
○ **E**	304 SS, 304 SS Dust Cover
○ **F**	304 SS, Plastic Dust Cover
○ **G**	316 SS, No Dust Cover
○ **H**	316 SS, 316 SS Dust Cover
○ **J**	316 SS, Plastic Dust Cover
○ **0**	No Bowl or Dust Cover

Activation

○ **A**	304 SS Handle
○ **B**	316 SS Handle
○ **D**	304 SS Handle with Stainless Steel Foot Pedal*

Waste

○ **A**	Tailpiece
○ **D**	P-trap
○ **0**	No Waste

Drench Hose and Backflow Prevention

○ **A**	Drench Hose Kit with Vacuum Breaker
○ **B**	Drench Hose Kit with N9 Backflow Preventer
○ **C**	Drench Hose Kit with 9D Backflow Preventer
○ **D**	Drench Hose Kit without Backflow Preventer
○ **0**	No Drench Hose and No Backflow Prevention

Freeze and Scald Protection

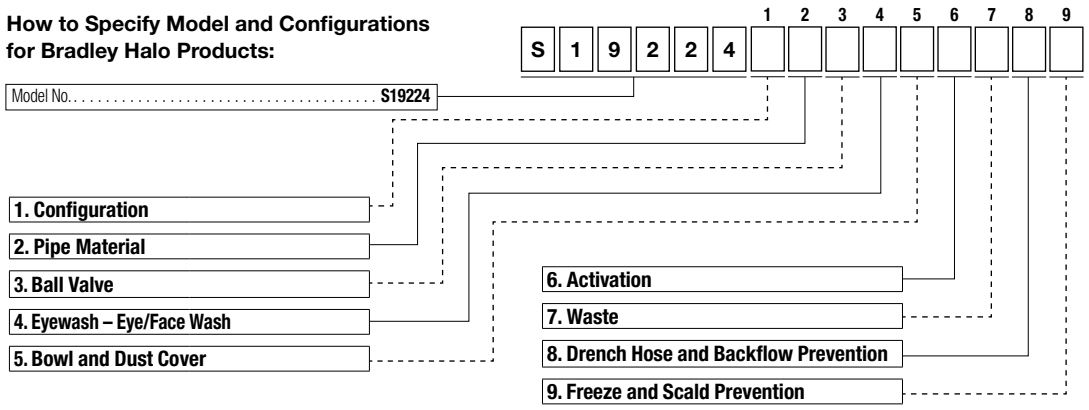
○ **N**	Anti-Freeze Valve†
○ **P**	Anti-Scald Valve
○ **R**	Anti-Freeze and Anti-Scald Valves†
○ **Z**	Anti-Freeze and Anti-Scald Valve Ready†
○ **0**	No Anti-Freeze Valve and No Anti-Scald Valve

* Not available with barrier-free configurations.
** Must select stainless steel pipe and ball valve when stainless steel eye/face wash is required.
‡ Not available in the U.S.
§ Not available with 316 SS Ball Valve (Option 2).
† Includes frost-proof ball valves.

☑ *NPT = National Pipe Thread*

☑ *All selections made through the configurator are only UL certified to ANSI/ISEA Z358.1*

How to Specify Model and Configurations for Bradley Halo Products:



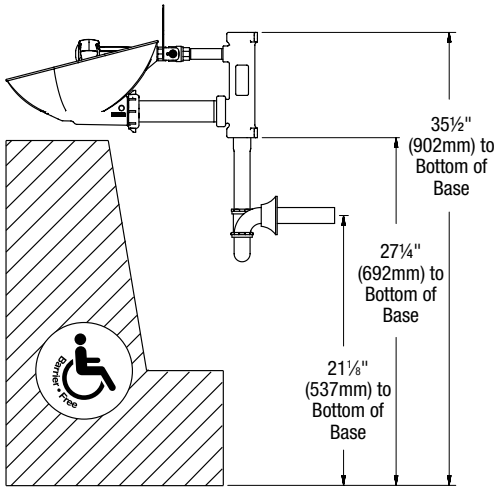
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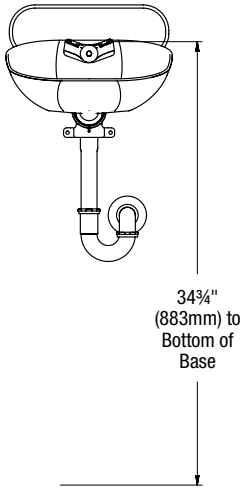
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S19224 shown with Eyewash and Plastic Bowl

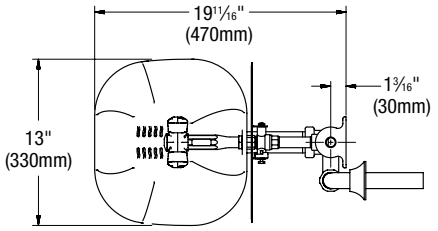
Drawing depicts Eyewash. Eye/Face Wash dimensions are the same.

NPT Connections

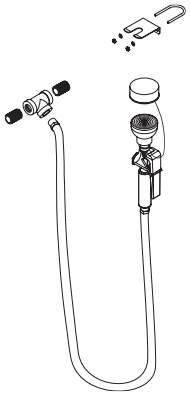




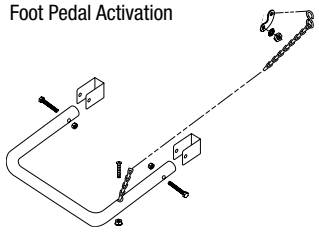
Eyewash Bowl



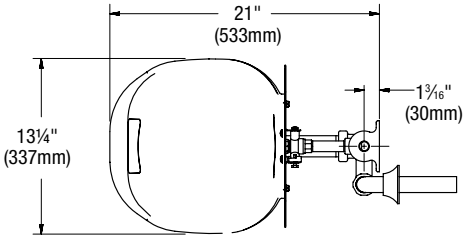
S19-430EH Drench Hose



Foot Pedal Activation



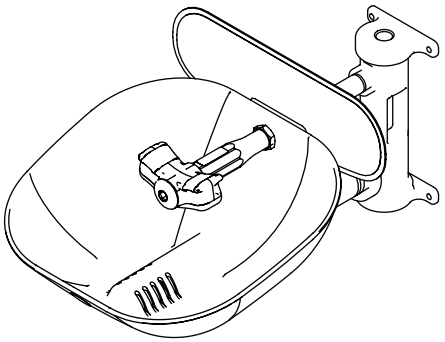
Dust Cover



All dimensions assume standard thread engagement. Variations in manufacturing allow for +/- ⅛" (3mm) per threaded joint. To find the tolerance of a dimension, add the number of thread joints across the length of the dimension and multiply it by ⅛" (3mm).

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Installation



S19224 Series

Halo™ Wall-Mount Eyewash or Eye/Face Wash

215-1686 Rev. S: ECO 23-05-001A
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⚠WARNING

Flush the water supply lines before beginning installation and after installation is complete. Test the unit for leaks and adequate water flow. Main water supply to the eyewash should be "ON" at all times. Provisions shall be made to prevent unauthorized shutoff.

⚠CAUTION

Emergency equipment must be supplied with tepid water (60°F to 100°F/15.6°C to 37.8°C). Any prolonged exposure to near freezing water affects the body's ability to maintain body temperature, increasing the risk of hypothermia.

NOTICE

Before installing this product, ensure that there are adequate clearances around the product and activation of the product does not interfere with other products or obstructions.

Avoid cleaners containing organic solvents, alcohols and hydrocarbons. Rinse with water after cleaning.

IMPORTANT

The installation and location of all safety drench showers, eye and eye/face washes must comply with the requirements of ANSI/ISEA Z358.1.

Read this installation manual completely to ensure proper installation, then file it with the owner or maintenance department. Compliance and conformity to drain requirements and other local codes and ordinances is the responsibility of the installer.

Separate parts from packaging and make sure all parts are accounted for before discarding any packaging material. If any parts are missing, do not begin installation until you obtain the missing parts.

The ANSI/ISEA Z358.1 standard requires an uninterrupted supply of flushing fluid. Bradley plumbed emergency fixtures require a minimum of 30 PSI (0.21MPa) flowing pressure.

Self-closing spring-loaded valves are not UL classified to ANSI/ISEA Z358.1.

Weekly activation must be conducted on all plumbed emergency equipment to ensure a suitable flushing fluid supply is present and any sediment build-up in the supply line is cleared. Emergency equipment should be inspected monthly to address any maintenance issues ensuring the equipment is in good operating condition and that there are no signs of wear.

Workers who may come in contact with potentially hazardous materials should be trained regarding the placement and proper operation of emergency equipment per ANSI/ISEA Z358.1.

For questions regarding the operation or installation of this product, visit www.bradleycorp.com or call 800-BRADLEY (272.3539).

Product warranties and parts information may also be found under "Products" on our web site at bradleycorp.com.

Supplies Required:

- (4) ¼" anchors and bolts
- Teflon tape and pipe sealant
- 30 PSI (2.0 bar) min/90 PSI (6.1 bar) max flow pressure
- 125 PSI (8.6 bar) max static pressure
- Piping to ½" NPT (BSPP) water supply inlet (30–90 psi [2.0-6.1 bar])
- Piping to 1¼” NPT drain outlet on unit (if included with unit)
- OPTIONAL: sign-mounting hardware

Local codes may require the installation of a backflow prevention valve to complete proper installation. Compliance with local codes is the responsibility of the installer. Valve must be tested annually to verify that it is functioning properly. Backflow prevention valves are not included with the fixture and may be supplied by the contractor or purchased from Bradley Corporation.

Halo Pre-Configured Models

Halo Model Number	Description	UL certified to ANSI/ISEA
Eyewashes		
☐ S19224EW	Halo Eyewash, plastic bowl	X
☐ S19224PT	Halo Eyewash, plastic bowl, p-trap	X
☐ S19224B	Halo Eyewash, stainless steel bowl	X
☐ S19224BPT	Halo Eyewash, stainless steel bowl, p-trap	X
Eyewashes with Dust Cover		
☐ S19224PDC	Halo Eyewash, plastic bowl w/ dust cover	X
☐ S19224DC	Halo Eyewash, stainless steel bowl & hinged dust cover	X
☐ S19224DCPT	Halo Eyewash, stainless steel bowl & hinged dust cover, p-trap	X
Eye-Face Washes		
☐ S19224FW	Halo Eye/face wash, plastic bowl	X
☐ S19224FWPT	Halo Eye/face wash, plastic bowl, p-trap	X
☐ S19224T	Halo Eye/face wash, stainless steel bowl	X
☐ S19224P	Halo Eye/face wash, stainless steel bowl w/ hose spray, tailpiece	X
☐ S19224TPT	Halo Eye/face wash, stainless steel bowl, p-trap	X
☐ S19224Y	Halo Eye/face wash, stainless steel bowl, hand/foot operated, tailpiece	X
Eye-Face Washes with Dust Covers		
☐ S19224PDCFW	Halo Eye/face wash, plastic bowl w/ dust cover	X
☐ S19224DCFW	Halo Eye/face wash, stainless steel bowl & hinged dust cover	X
☐ S19224DCRPT	Halo Eye/face wash, stainless steel bowl & hinged dust cover, p-trap	X
All Stainless Steel Eye/Face Wash		
☐ S19224SC	Halo stainless steel eye/face wash, bowl and cover	X
☐ S19224SS	Halo stainless steel eye/face wash and bowl	X

Halo Pre-Configured Models

☑ *All models with AS4775, AS/NZS 4020 Certification include BSPP threading.*

Halo Model Number	Description	IAPMO Oceana certified to AS4775 & AS4020
Eyewashes		
☐ S19224EWZ	Halo Eyewash, plastic bowl	
☐ S19224EWZS	Halo Eyewash, plastic bowl, stainless steel piping	X
☐ S19224PTZ	Halo Eyewash, plastic bowl, p-trap	
☐ S19224PTZS	Halo Eyewash, plastic bowl, p-trap, stainless steel piping	
☐ S19224BZ	Halo Eyewash, stainless steel bowl	
☐ S19224BZS	Halo Eyewash, stainless steel bowl, stainless steel piping	X
☐ S19224BPTZ	Halo Eyewash, stainless steel bowl, p-trap	
☐ S19224BPTZS	Halo Eyewash, stainless steel bowl, p-trap, stainless steel piping	
Eyewashes with Dust Cover		
☐ S19224PDCZ	Halo Eyewash, plastic bowl w/ dust cover	
☐ S19224PDCZS	Halo Eyewash, plastic bowl w/ dust cover, stainless steel piping	X
☐ S19224DCZ	Halo Eyewash, stainless steel bowl & hinged dust cover	
☐ S19224DCZS	Halo Eyewash, stainless steel bowl & hinged dust cover, stainless steel piping	X
☐ S19224DCPTZ	Halo Eyewash, stainless steel bowl & hinged dust cover, p-trap	
☐ S19224DCPTZS	Halo Eyewash, stainless steel bowl & hinged dust cover, p-trap, stainless steel piping	
Eye-Face Washes		
☐ S19224FWZ	Halo Eye/face wash, plastic bowl	
☐ S19224FWZS	Halo Eye/face wash, plastic bowl, stainless steel piping	X
☐ S19224WPTZ	Halo Eye/face wash, plastic bowl, p-trap	
☐ S19224WPTZS	Halo Eye/face wash, plastic bowl, p-trap, stainless steel piping	
☐ S19224TZ	Halo Eye/face wash, stainless steel bowl	
☐ S19224TZS	Halo Eye/face wash, stainless steel bowl, stainless steel piping	X
☐ S19224TPTZ	Halo Eye/face wash, stainless steel bowl, p-trap	
☐ S19224TPTZS	Halo Eye/face wash, stainless steel bowl, p-trap, stainless steel piping	
☐ S19224YZ	Halo Eye/face wash, stainless steel bowl, hand/foot operated, tailpiece	
☐ S19224YZS	Halo Eye/face wash, stainless steel bowl, hand/foot operated, tailpiece, stainless steel piping	X
☐ S19224PZ	Halo Eye/face wash, stainless steel bowl w/ hose spray, tailpiece	
Eye-Face Washes with Dust Cover		
☐ S19224PDCFWZ	Halo Eye/face wash, plastic bowl w/ hinged dust cover	
☐ S19224PDCFWZS	Halo Eye/face wash, plastic bowl w/ hinged dust cover, stainless steel piping	X
☐ S19224DCFWZ	Halo Eye/face wash, stainless steel bowl & hinged dust cover	
☐ S19224DCFWZS	Halo Eye/face wash, stainless steel bowl & hinged dust cover, stainless steel piping	X
☐ S19224DCRPTZ	Halo Eye/face wash, stainless steel bowl & hinged dust cover, p-trap	
☐ S19224DCRPTZS	Halo Eye/face wash, stainless steel bowl & hinged dust cover, p-trap, stainless steel piping	
All Stainless Steel Eye/Face Wash		
☐ S19224SCZ	Halo stainless steel eye/face wash, bowl and cover	X
☐ S19224SSZ	Halo stainless steel eye/face wash and bowl with foot activation	X

Halo Configurator

Standard Selections (Must select one from each category)

Configuration

☐ **0**	Standard Wall Mount

Pipe Material

☐ **A**	NPT, Yellow BradTect Galvanized Steel
☐ **B**	NPT, All 304 Stainless Steel
☐ **C**	NPT, All 316 Stainless Steel
☐ **D**	NPT, Chrome-Plated
☐ **F**	BSPP, Yellow BradTect Galvanized Steel ‡
☐ **G**	BSPP, All 304 Stainless Steel ‡
☐ **J**	BSPP, Chrome-Plated ‡

Ball Valve

☐ **1**	Stay-Open Eyewash, Chrome-Plated brass
☐ **2**	Stay-Open Eyewash, 316 SS

Eyewash – Eye/Face Wash

☐ **A**	Halo Eyewash
☐ **B**	Halo Eye/Face Wash
☐ **D**	Halo Eyewash, 304 SS Yoke
☐ **E**	Halo Eye/Face Wash, 304 SS Yoke
☐ **F**	304 SS Halo Eye/Face Wash, 304 SS Yoke
☐ **G**	Halo Eyewash, 316 SS Yoke
☐ **H**	Halo Eye/Face Wash, 316 SS Yoke
☐ **J**	316 SS Halo Eye/Face Wash, 316 SS Yoke

Bowl and Dust Cover

☐ **A**	Plastic Bowl, No Dust Cover
☐ **B**	Plastic Bowl, Plastic Dust Cover
☐ **D**	304 SS, No Dust Cover
☐ **E**	304 SS, 304 SS Dust Cover
☐ **F**	304 SS, Plastic Dust Cover
☐ **G**	316 SS, No Dust Cover
☐ **H**	316 SS, 316 SS Dust Cover
☐ **J**	316 SS, Plastic Dust Cover
☐ **0**	No Bowl or Dust Cover

Activation

☐ **A**	300 SS Handle
☐ **B**	316 SS Handle
☐ **D**	300 SS Handle with 300 SS Foot Pedal

Waste

☐ **A**	Tailpiece
☐ **D**	P-trap
☐ **0**	No Waste

Drench Hose and Backflow Prevention

☐ **A**	Drench Hose Kit with Vacuum Breaker
☐ **B**	Drench Hose Kit with N9 Backflow Preventer
☐ **C**	Drench Hose Kit with 9D Backflow Preventer
☐ **D**	Drench Hose Kit without Backflow Preventer
☐ **0**	No Drench Hose and No Backflow Prevention

Freeze and Scald Protection

☐ **N**	Anti-Freeze Valve
☐ **P**	Anti-Scald Valve
☐ **R**	Anti-Freeze and Anti-Scald Valves
☐ **0**	No Anti-Freeze Valve and No Anti-Scald Valve

* Not available with barrier-free configurations.

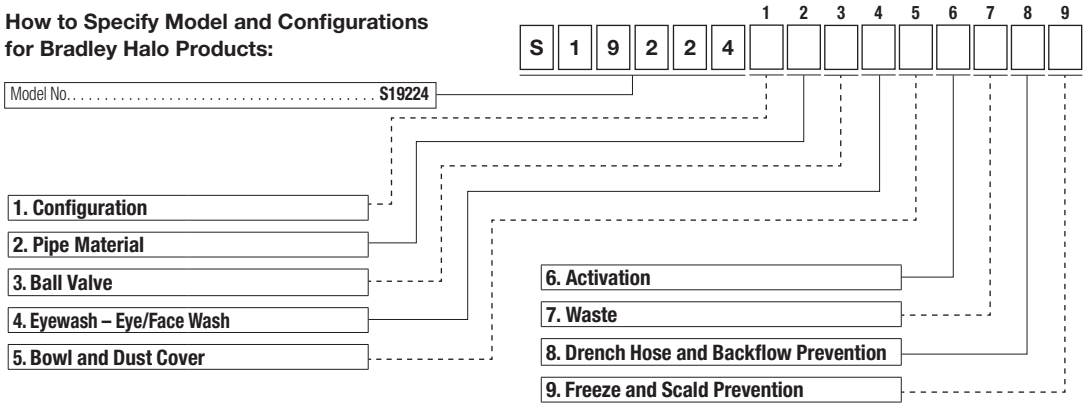
‡ Not available in the U.S.

☑ *NPT = National Pipe Thread*

☑ *BSPP = British Standard Pipe Parallel Thread*

☑ *All selections made through the configurator are only UL certified to ANSI/ISEA Z358.1*

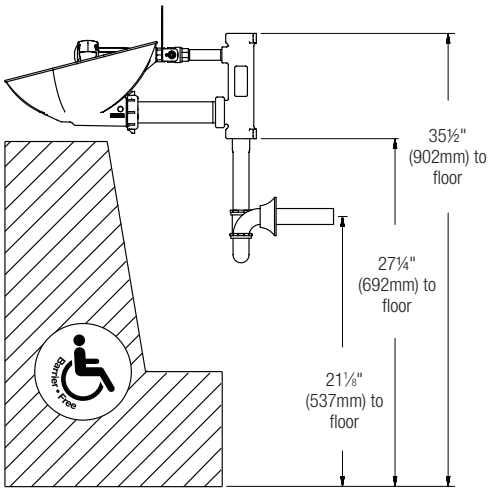
How to Specify Model and Configurations for Bradley Halo Products:



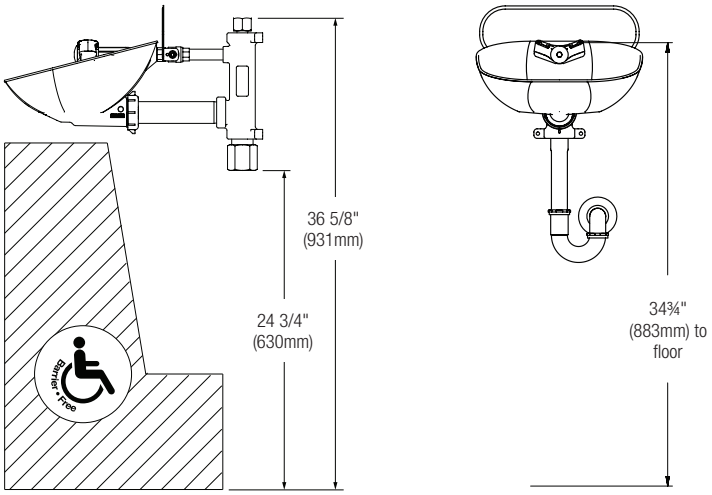
Dimensions

S19224 shown with Eyewash and Plastic Bowl

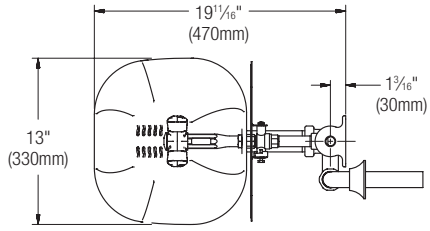
NPT Connections



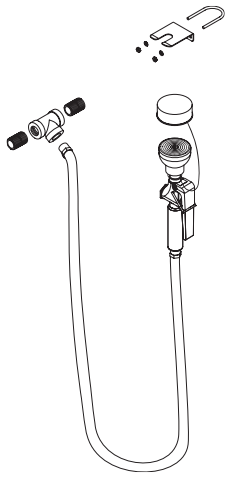
BSPP Connections



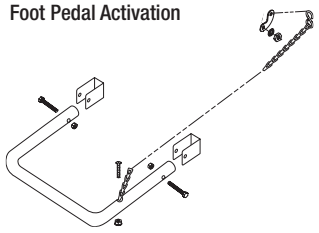
Eyewash Bowl



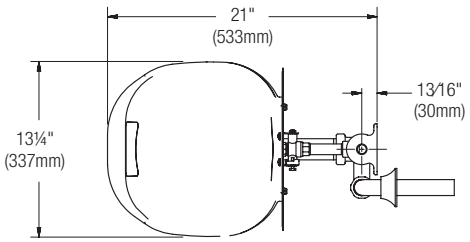
S19-430EH Drench Hose



Foot Pedal Activation



Dust Cover

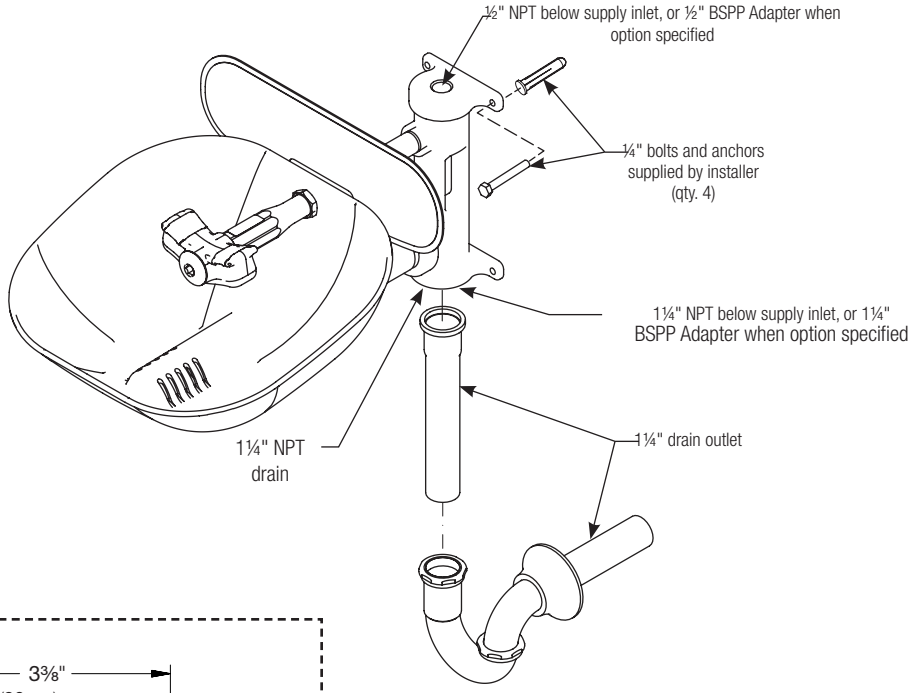


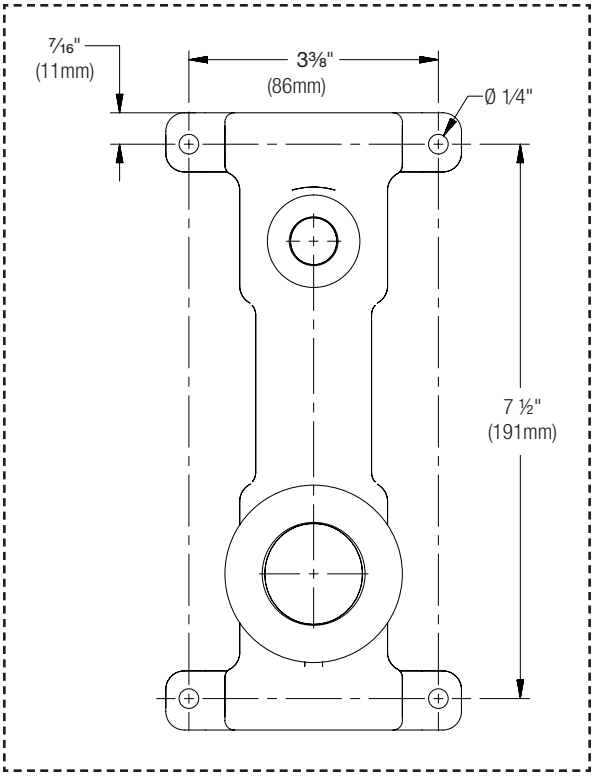
Water Flow Rate	
Eyewash	4–5¼ gpm
Eye/Face Wash	4–5¼ gpm
Body Wash	2–8 gpm

All dimensions assume standard thread engagement. Variations in manufacturing allow for +/- ⅛" (3mm) per threaded joint. To find the tolerance of a dimension, add the number of thread joints across the length of the dimension and multiply it by ⅛" (3mm).

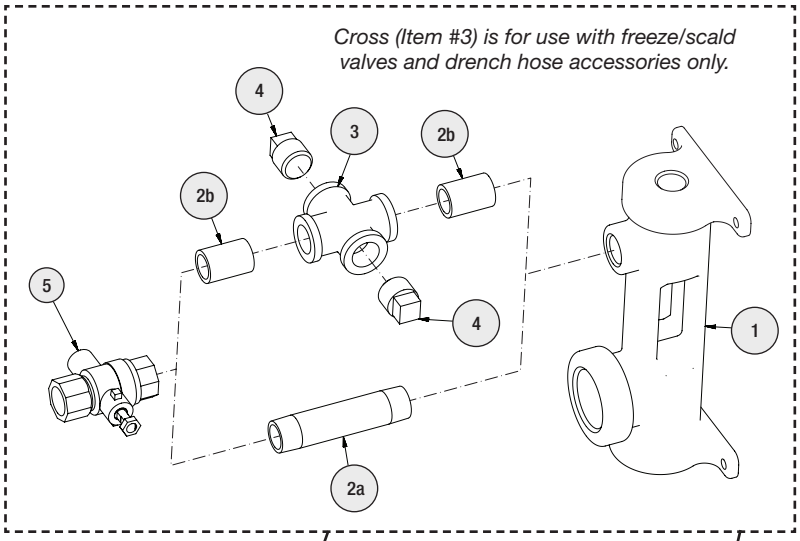
1 Install Eyewash

- ☑ *Standard eyewash unit is shown. Other units are similar.*
- ☑ *When connecting components, use the rubber grip pad (provided) around pipes to prevent marring.*
- ☑ *Apply pipe sealant (supplied by installer) to all male-threaded pipe joints, making sure not to get any excess over the edge of the pipes.*
- ☑ *BSPP = British Standard Pipe Parallel Thread (not available in the U.S.)*

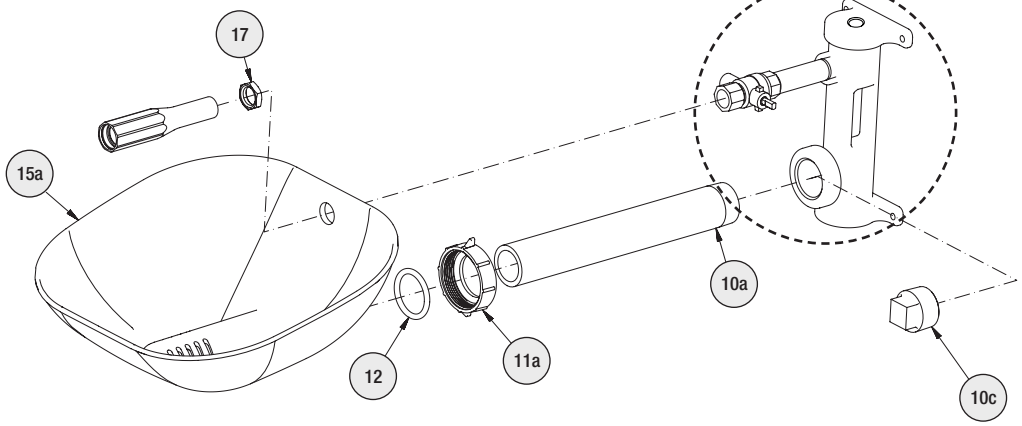




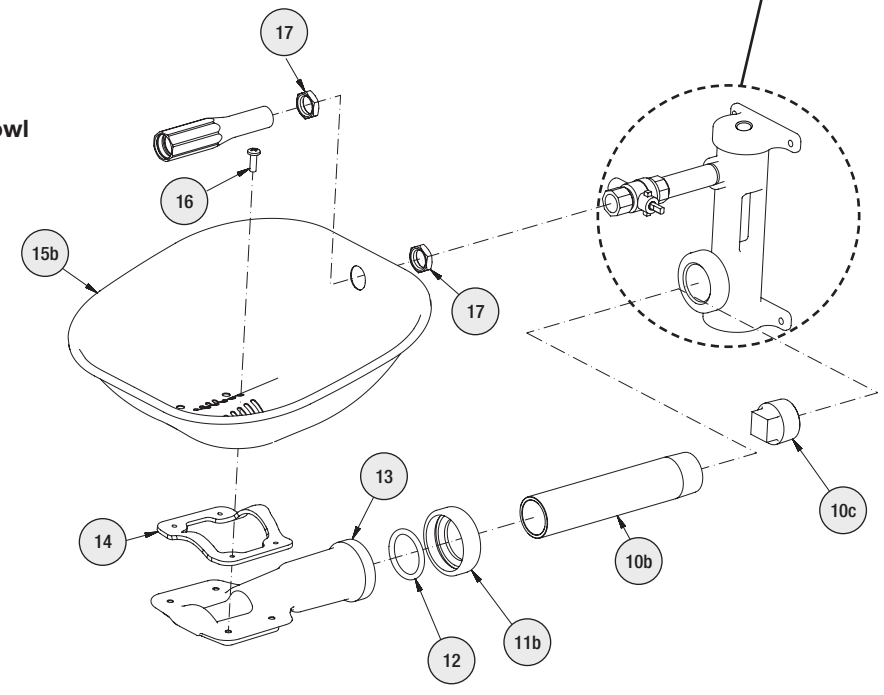
Service Parts - Bowl and Hub



Hub with Plastic Bowl



Hub with Stainless Steel Bowl



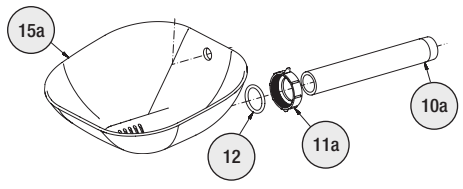
Service Parts List - Bowl and Hub

☑ *BSP = British Standard Pipe Thread (not available in the U.S.)*

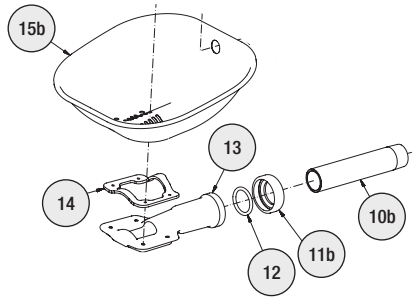
Item	Part No.	Qty	Description
1	111-096	1	Hub
1	111-097	1	Hub stainless steel
1	111-103	1	Hub stainless steel 316
1	111-098	1	Hub stainless steel polish
2a	113-006LQ	1	Pipe ½" x 3½"
2a	113-965	1	Pipe ½" x 3½" stainless steel
2a	113-1211	1	Pipe ½" x 3½" stainless steel 316
2a	113-596	1	Pipe ½" x 3½" chrome
2b	113-006LG	2	Pipe ½" x close
2b	113-867	2	Pipe ½" x close stainless steel
2b	113-1210	2	Pipe ½" x close stainless steel 316
2b	113-006aw	2	Pipe ½" x close chrome
3	169-1090	1	Cross ½"
3	169-1091	1	Cross ½" stainless steel
3	169-1098	1	Cross ½" stainless steel 316
3	169-1097	1	Cross ½" chrome
4	300-0393	2	Plug ½" chrome
4	153-230	2	Plug ½" stainless steel
4	153-460	2	Plug ½" stainless steel 316
5	S27-327	1	Ball valve ½" with nut
5	S27-328	1	Ball valve ½" ss 316 with nut
5	S27-329	1	Ball valve ½" frost proof with nut
5	S27-330	1	Ball valve ½" ss 316 frost proof with nut
5.1	110-215	1	Nut
5.1	110-248	1	Nut stainless steel 316

Item	Part No.	Qty	Description
10a	113-1202	1	Pipe 1¼" x 11" thd. one end
10a	113-1203	1	Pipe 1¼" x 11" thd. one end stn. steel
10b	113-1204	1	Pipe 1¼" x 7" thd. one end
10b	113-1205	1	Pipe 1¼" x 7" thd. one end stainless steel
10b	113-1206	1	Pipe 1¼" x 7" thd. one end chrome
10b	113-1212	1	Pipe 1¼" x 7" thd. one end stn. steel 316
10c	169-724	1	Plug 1¼" painted galvanized
10c	269-251	1	Plug 1¼" chrome
10c	269-238	1	Plug 1¼" stainless steel
10c	269-1402	1	Plug 1¼" stainless steel 316
11a	110-239	1	Nut plastic, slip joint
11b	110-240	1	Nut, stainless steel slip joint
11b	110-242	1	Nut, stainless steel 316 slip joint
12	125-176	1	O-ring
13	111-099	1	Bowl mount aluminum
13	111-100	1	Bowl mount aluminum painted
13	111-101	1	Bowl mount stainless steel
13	111-102	1	Bowl mount stainless steel 316
14	124-082	1	Bowl gasket
15a	187-320	1	Bowl plastic
15b	S90-393	1	Bowl stainless steel (includes Item 14)
15b	S90-394	1	Bowl stn. steel 316 (includes Item 14)
16	160-467	4	Screw
17	110-115a	as req'd.	Nut ½" NPSM chrome brass
17	110-238	as req'd.	Nut ½" NPSM stainless steel
17	110-241	as req'd.	Nut ½" NPSM stainless steel 316

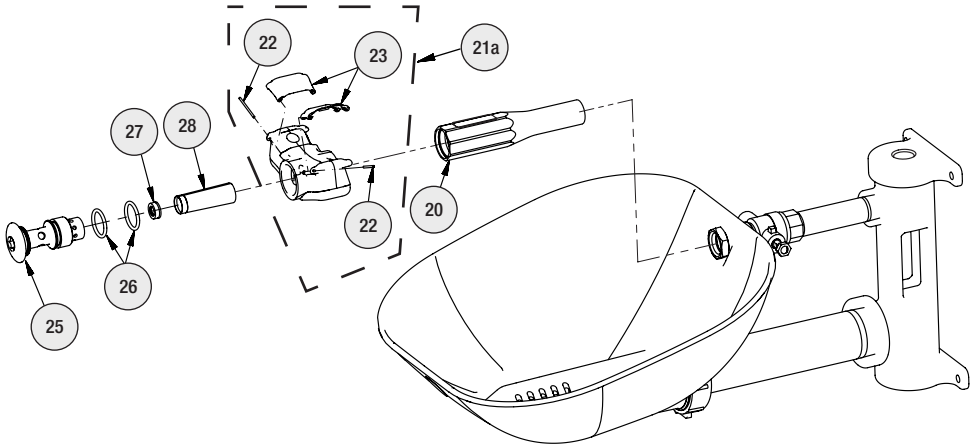
S90-395 Plastic Prepack includes items 10a, 11a, 12, 15a



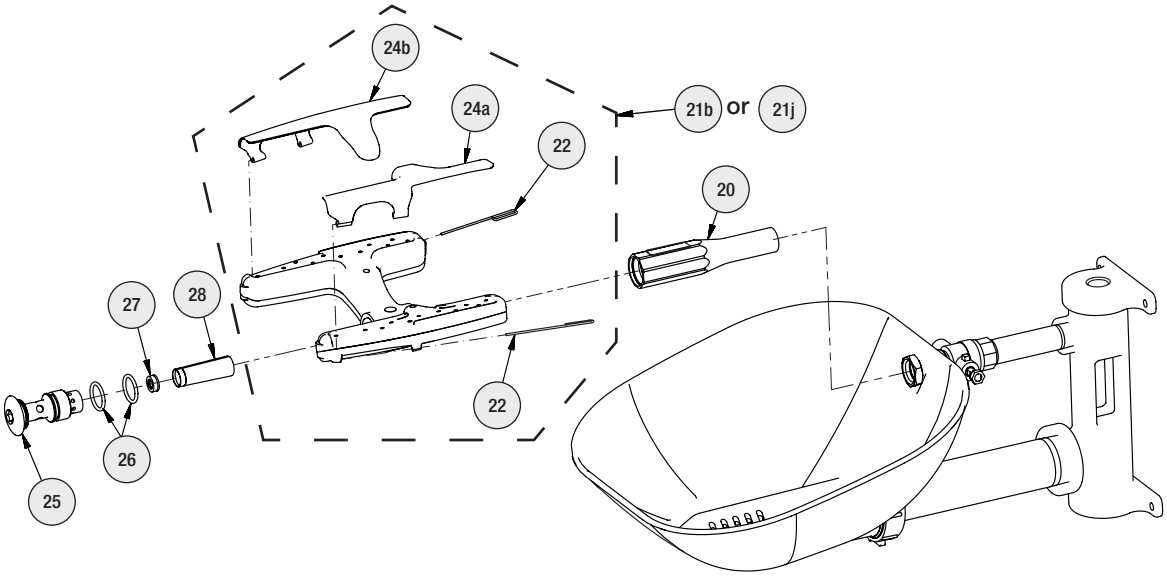
300 Series SS Prepack S90-391 includes items 10b, 11b, 12, 13, 14, 15b
316 Series SS Prepack S90-392 includes items 10b, 11b, 12, 13, 14, 15b



Service Parts — Eyewash



Service Parts — Eye/Face Wash

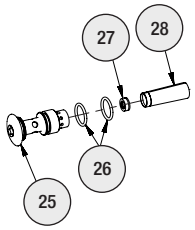


Prepack S65-339 includes items 26, 27, 28

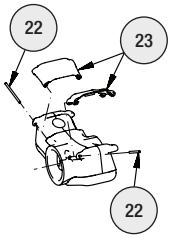
Prepack S88-068 includes items 25, 26, 27, 28

Prepack S88-069 includes items 25, 26, 27, 28 (300 series ss)

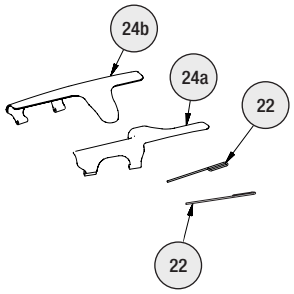
Prepack S88-070 includes items 25, 26, 27, 28 (316 ss)



Eyewash Cover Prepack S45-2675 includes items 22 and 23

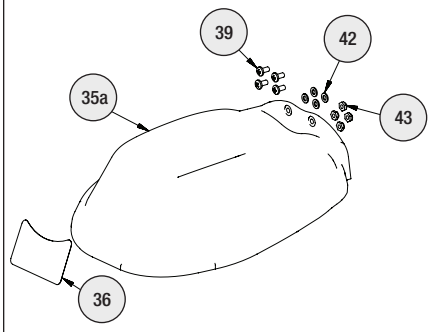


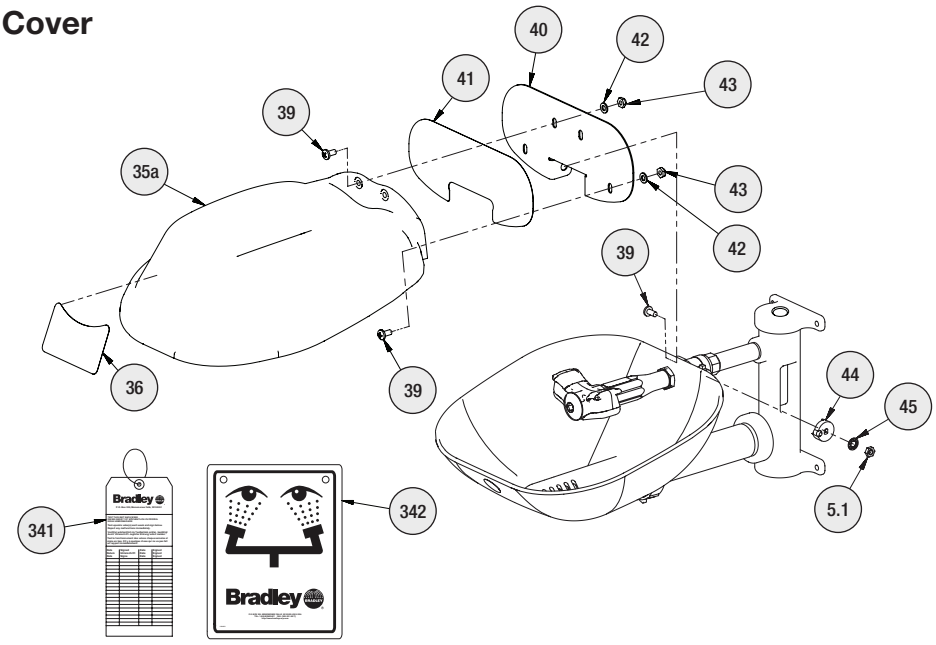
Eye/Face Wash Cover Prepack S45-2676 includes items 22, 24a and 24b



Service Parts — Plastic Bowl Cover

Plastic Bowl Cover Prepack S90-390 includes items 35a, 36, 39, 42, 43

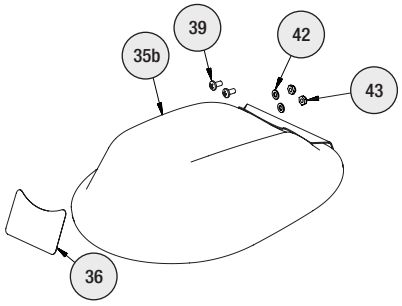


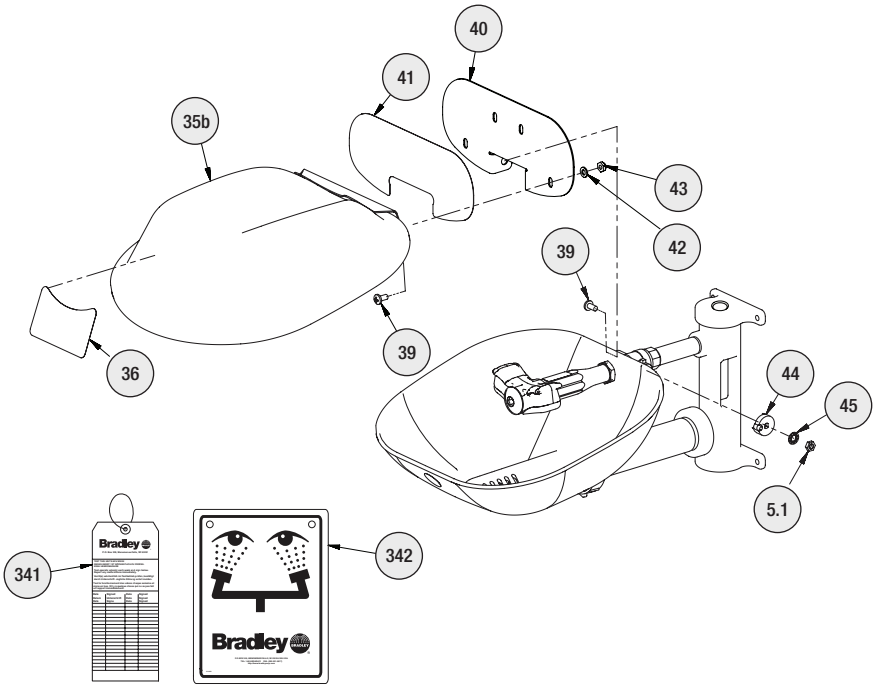


Service Parts — Stainless Steel Bowl Cover

Stainless Steel Bowl Cover Prepack S90-388 includes items 35b, 36, 39, 42, 43

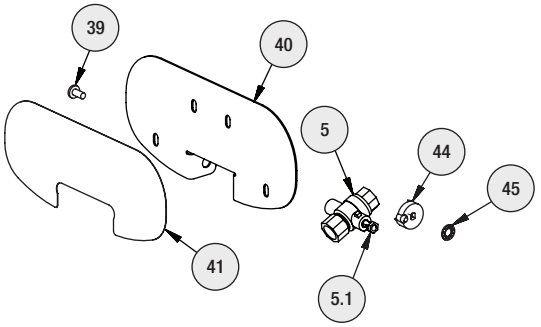
Stainless Steel (316) Bowl Cover Prepack S90-389 includes items 35b, 36, 39, 42, 43





Handle Prepacks include items 39, 40, 41, 44, 45, 5, 5.1

- Prepack S08-390 (for units with brass ball valve)
- Prepack S08-391 (for units with stainless steel ball valve)
- Prepack S08-392 (for units with brass frost-proof ball valve)
- Prepack S08-393 (for units with stainless steel frost-proof ball valve)
- Prepack S08-394 (for units with 316 stainless steel ball valve and handle)
- Prepack S08-395 (for units with 316 stainless steel frost-proof ball valve and handle)

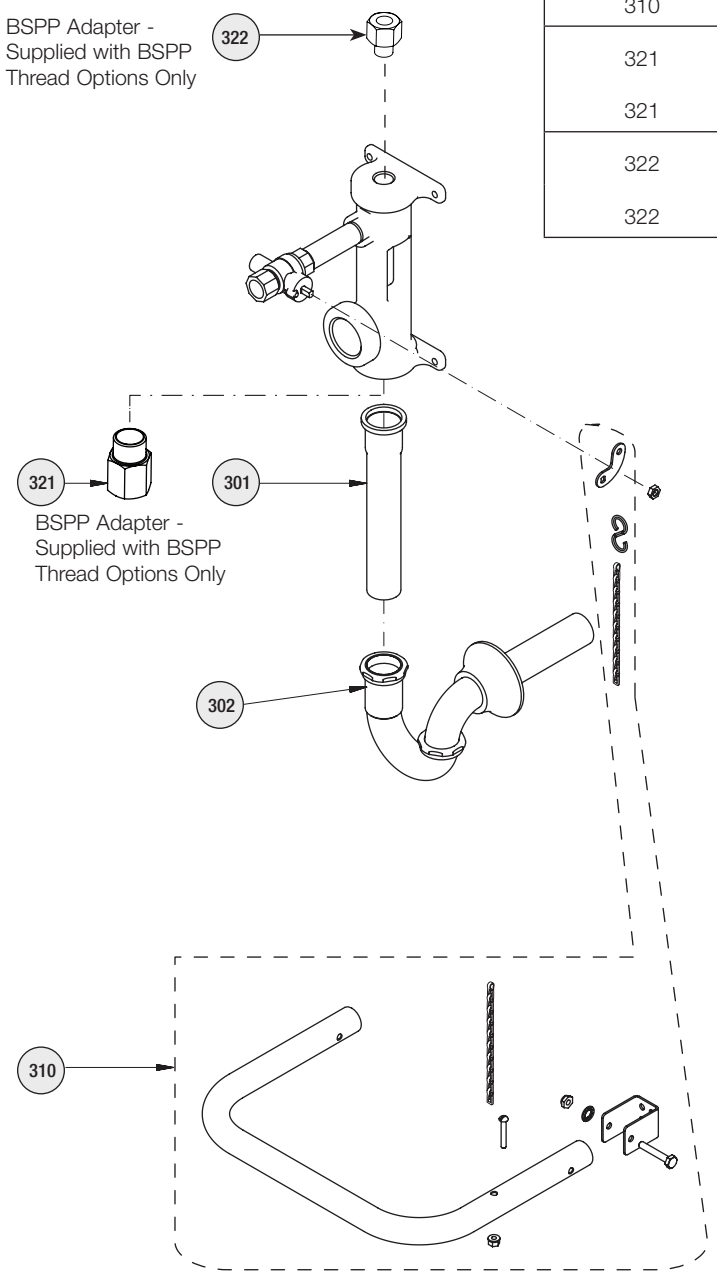


Service Parts List - Eyewash and Eye/Face Wash

Item	Part No.	Qty	Description
20	171-001	1	Body
20	171-002	1	Body stainless steel
20	171-003	1	Body stainless steel 316
20	171-004	1	Body polished
21a	S05-190	1	Sprayhead ass'y. eyewash (includes)
22	in service kit	2	Pivot pin
23	in service kit	2	Flip cover eyewash
21b	S05-192	1	Sprayhead ass'y. eye/face wash (includes)
22	in service kit	2	Pivot pin
24a	in service kit	1	Flip cover right
24b	in service kit	1	Flip cover left
21j	S05-205 (Used on both 304SS and 316SS fixtures)	1	Sprayhead stainless steel 316 ass'y. eye/face (includes)
22	in service kit	2	Pivot pin
24a	in service kit	1	Flip cover right
24b	in service kit	1	Flip cover left
25	115-158	1	Cap
25	115-159	1	Cap stainless steel
25	115-164	1	Cap stainless steel 316
25	115-165	1	Cap polished

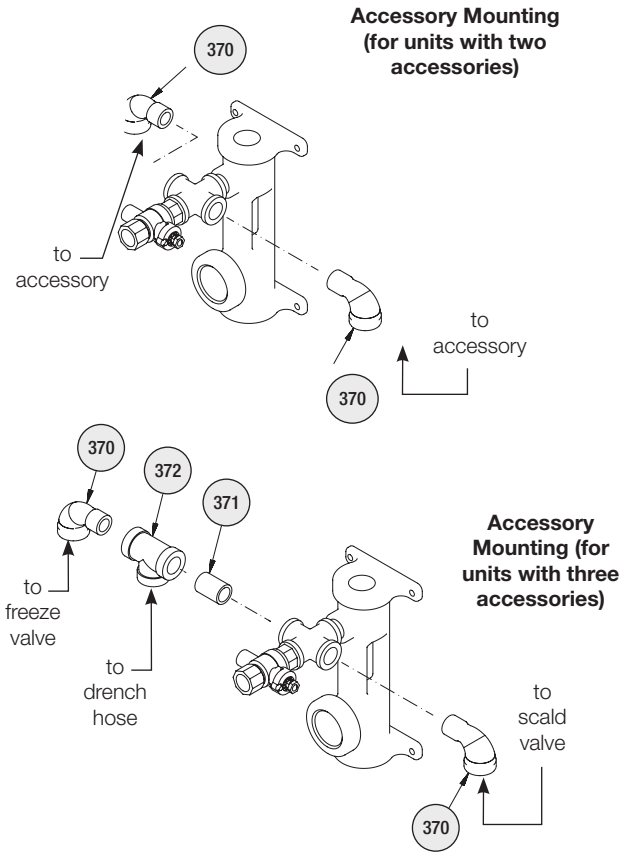
Item	Part No.	Qty	Description
26	125-157	2	O-ring
27	125-175	1	Flow control
28	S65-340	1	Screen (incl. 3 per pack)
35a	in service kit	1	Bowl cover plastic
35b	in service kit	1	Bowl cover stainless steel
35b	in service kit	1	Bowl cover stainless steel 316
36	114-097	1	Bowl cover decal
39	160-389	as req'd.	Screw ¼-20 x ½" stn. steel
39	160-469	as req'd.	Screw ¼-20 x ½" stn. steel 316
40	S08-385	1	Handle ss (incl. items 41, 44, 45, 5.1)
40	S08-388	1	Handle ss 316 (incl. items 41, 44, 45, 5.1)
41	114-096	1	Decal
42	142-002AV	as req'd.	Bowl cover washer
43	161-060	as req'd.	Nut stainless steel
43	161-062	as req'd.	Nut stainless steel 316
44	153-372R	1	Adapter ball valve
44	153-372R316	1	Adapter ball valve stainless steel 316
45	142-002DA	1	Lockwasher
341	204-421	1	Emergency Inspection Tag
342	114-051	1	Eyewash Safety Sign
342	114-051E	1	Eyewash Safety Sign (not available in the U.S.)

Service Parts and Parts List - Drain, P-trap, and Optional Foot Pedal

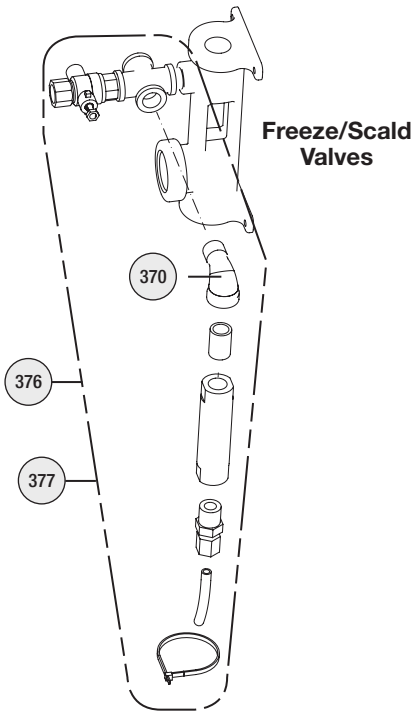


Item	Part No.	Qty	Description
301	269-167	1	Tailpiece
302	269-142	1	P-trap
310	S39-395	1	Foot Pedal Kit
321	169-1117	1	BSPP-NPT 1-1/4" 303SS
321	169-1118	1	BSPP-NPT 1-1/4" 316SS
322	169-1119	1	BSPP-NPT ½" 303SS
322	169-1120	1	BSPP-NPT ½" 316SS

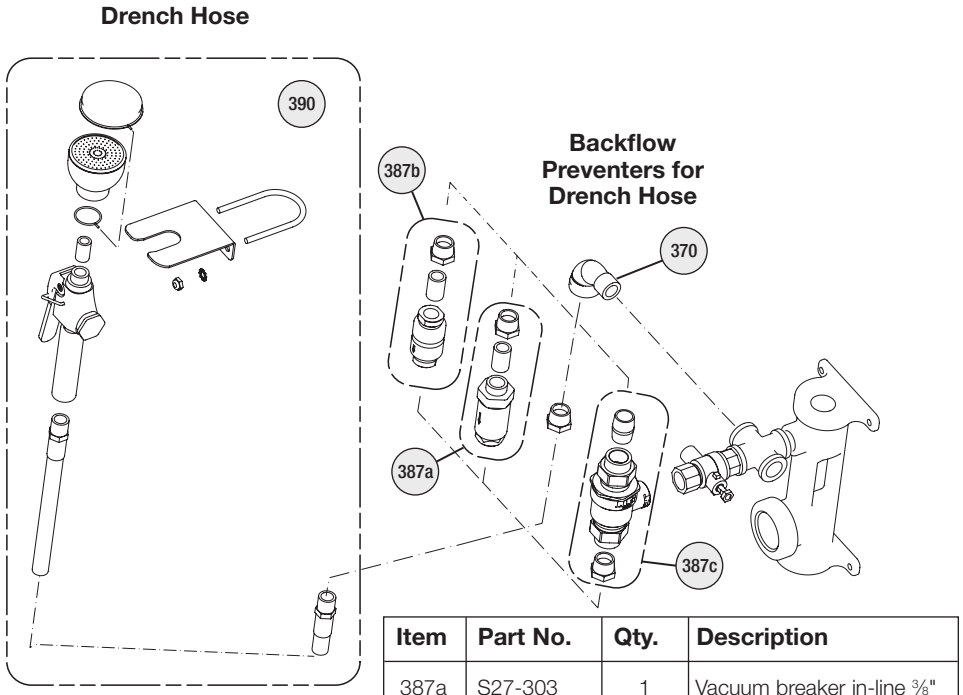
Service Parts and Parts List — Optional Accessories



Item	Part No.	Qty.	Description
370	169-025	as req'd.	Elbow ½"
370	269-241	as req'd.	Elbow ½" stainless steel
370	269-1396	as req'd.	Elbow ½" stainless steel 316
370	169-862	as req'd.	Elbow ½" chrome
371	113-006LG	1	Pipe ½" x close
371	113-867	1	Pipe ½" x close stainless steel
371	113-1210	1	Pipe ½" x close stainless steel 316
371	113-006AW	1	Pipe ½" x close chrome
372	169-838	1	Tee ½"
372	169-1100	1	Tee ½" stainless steel
372	269-280	1	Tee ½" chrome
372	169-1099	1	Tee ½" stainless steel 316



Item	Part No.	Description
376	S45-1986	Freeze Valve kit
377	S45-1989	Scald Valve kit



Item	Part No.	Qty.	Description
387a	S27-303	1	Vacuum breaker in-line ⅜"
387b	S45-2309	1	Backflow preventer N9
387c	S45-2310	1	Backflow preventer 9D
390	S19-430EH	1	Spray Kit

⚠ AVERTISSEMENT

Rincez la conduite d'alimentation avant et apres l'installation. Assurez-vous que le débit d'eau est adéquat et qu'il n'y a pas de fuites. L'alimentation principale en eau doit être toujours OUVERTE. On devra prévoir des dispositions pour empêcher tout arrêt non autorisé.

⚠ ATTENTION

Le matériel d'urgence doit être alimenté en eau tiède (15,6 °C à 37,8 °C/60 °F à 100 °F). Toute exposition prolongée à de l'eau proche de la température de congélation peut altérer la capacité de l'organisme à maintenir la température corporelle, ce qui accroît le risque d'hypothermie.

AVIS

Avant d'installer ce produit, vérifier qu'il y a des dégagements suffisants autour du produit et que l'activation du produit n'est pas entravée par d'autres produits ou obstructions.

Éviter les produits nettoyants qui contiennent des solvants organiques, des alcools et des hydrocarbures. Rincer à l'eau après nettoyage.

IMPORTANT

L'installation et l'emplacement de toutes les douches d'urgence, oculaires et oculaires-faciales doivent être conformes aux exigences d'ANSI/ISEA Z358.1.

Lire ce manuel d'installation dans son intégralité pour garantir une installation appropriée. Une fois celle-ci terminée, classer ce manuel auprès du service à la clientèle ou d'entretien. L'installateur est responsable de la conformité de l'installation aux codes pour des drain et codes et règlements en vigueur.

Assurez-vous que toutes les pièces sont incluses dans l'emballage et qu'il n'en manque aucune avant de jeter l'emballage. Ne commencez pas l'assemblage avant de recevoir les pièces manquantes.

La norme ANSI/ISEA Z358.1 prévoit une alimentation ininterrompue du liquide de rinçage. Les appareils d'urgence Bradley raccordés au réseau nécessitent une pression d'écoulement d'au moins 30 PSI (0,21 MPa).

Les soupapes à ressort à fermeture automatique ne sont pas classifiées UL selon ANSI/ISEA Z358.1.

Une activation hebdomadaire doit être effectuée sur tout le matériel d'urgence à tuyauterie d'alimentation pour vérifier que l'arrivée de liquide de rinçage est suffisante et éliminer tout dépôt de sédiment de la conduite d'alimentation. Le matériel d'urgence doit être contrôlé chaque mois pour régler tout problème d'entretien éventuel et s'assurer que le matériel est en bon état de marche et ne présente aucun signe d'usure.

Les ouvriers susceptibles d'entrer en contact avec des matières potentiellement dangereuses doivent recevoir une formation sur la mise en place et le bon fonctionnement du matériel d'urgence conformément à la norme ANSI/ISEA Z358.1.

Pour toute question concernant le fonctionnement ou l'installation de ce produit, consulter le site www.bradleycorp.com ou appeler le 1-800-BRADLEY.

Les garanties de produits figurent sous la rubrique « Informations techniques » sur notre site Internet à www.bradleycorp.com.

Equipements nécessaires :

- (4) ancrages et boulons de ¼"
- Produit d'étanchéité pour tuyaux
- Pression d'écoulement de 30 PSI (2,0 bar) min/90 PSI (6,1 bar) max
- Pression statique de 125 PSI (8,6 bar) max
- Tuyauterie vers entrée d'alimentation de 1¼ po NPT (BSPP) (30 à 90 psi [2,0 à 6,1 bar])
- Tuyau de vidange de 1¼" NPT (s'il est incluse avec l'unité)
- Quincaillerie pour l'installation de l'enseigne (en option)

Les codes locaux peuvent exiger l' installation d'une soupape de prévention d'écoulement de retour pour réaliser une installation appropriée. L'installateur est responsable de la conformité aux codes locaux. La soupape doit être testée une fois par an pour vérifier qu'elle fonctionne correctement. Les soupapes de prévention d'écoulement de retour ne sont pas fournies avec l'appareil et peuvent être fournies par l'entrepreneur ou achetées auprès de Bradley Corporation..

Modèles préconfigurés Halo

Numéro de modèle Halo	Description	Certifié UL suivant ANSI/ISEA
Douches oculaires		
☐ S19224EW	Douche oculaire Halo, vasque en plastique	X
☐ S19224PT	Douche oculaire Halo, vasque en plastique, siphon en P	X
☐ S19224B	Douche oculaire Halo, vasque en acier inoxydable	X
☐ S19224BPT	Douche oculaire Halo, vasque en acier inoxydable, siphon en P	X
Douches oculaires avec cache-poussière		
☐ S19224PDC	Douche oculaire Halo, vasque en plastique avec cache-poussière	X
☐ S19224DC	Douche oculaire Halo, vasque et cache-poussière à charnières en acier inoxydable	X
☐ S19224DCPT	Douche oculaire Halo, vasque et cache-poussière à charnières en acier inoxydable, siphon en P	X
Douches oculaires-faciales		
☐ S19224FW	Douche oculaire-faciale Halo, vasque en plastique	X
☐ S19224FWPT	Douche oculaire-faciale Halo, vasque en plastique, siphon en P	X
☐ S19224T	Douche oculaire-faciale Halo, vasque en acier inoxydable	X
☐ S19224P	Douche oculaire-faciale Halo, vasque en acier inoxydable avec tuyau de lavage, raccord droit de vidange	X
☐ S19224TPT	Douche oculaire-faciale Halo, vasque en acier inoxydable, siphon en P	X
☐ S19224Y	Douche oculaire-faciale Halo, vasque en acier inoxydable, activation à la main/au pied, raccord droit de vidange	X
Douches oculaires-faciales avec cache-poussière		
☐ S19224PDCFW	Douche oculaire-faciale Halo, vasque en plastique avec cache-poussière	X
☐ S19224DCFW	Douche oculaire-faciale Halo, vasque et cache-poussière à charnières en acier inoxydable	X
☐ S19224DCRPT	Douche oculaire-faciale Halo, vasque et cache-poussière à charnières en acier inoxydable, siphon en P	X
Douche oculaire-faciale tout inox		
☐ S19224SC	Douche oculaire/faciale, bac et capot en acier inoxydable Halo	X
☐ S19224SS	Douche oculaire-faciale et vasque en acier inoxydable Halo	X

Modèles préconfigurés Halo

☑ *Tous les modèles à certification AS4775, AS/NZS 4020 sont à filetage BSPP.*

Numéro de modèle Halo	Description	Certifié IAPMO Oceana suivant AS4775 et AS4020
Douches oculaires		
☐ S19224EWZ	Douche oculaire Halo, vasque plastique	
☐ S19224EWZS	Douche oculaire Halo, vasque plastique, tuyauterie acier inoxydable	X
☐ S19224PTZ	Douche oculaire Halo, vasque plastique, siphon en P	
☐ S19224PTZS	Douche oculaire Halo, vasque plastique, siphon en P, tuyauterie acier inoxydable	
☐ S19224BZ	Douche oculaire Halo, vasque acier inoxydable	
☐ S19224BZS	Douche oculaire Halo, vasque acier inoxydable, tuyauterie acier inoxydable	X
☐ S19224BPTZ	Douche oculaire Halo, vasque acier inoxydable, siphon en P	
☐ S19224BPTZS	Douche oculaire Halo, vasque acier inoxydable, siphon en P, tuyauterie acier inoxydable	
Douches oculaires à cache-poussière		
☐ S19224PDCZ	Douche oculaire Halo, vasque à cache-poussière plastique	
☐ S19224PDCZS	Douche oculaire Halo, vasque à cache-poussière plastique, tuyauterie acier inoxydable	X
☐ S19224DCZ	Douche oculaire Halo, vasque et cache-poussière à charnières en acier inoxydable	
☐ S19224DCZS	Douche oculaire Halo, vasque et cache-poussière à charnières en acier inoxydable, tuyauterie acier inoxydable	X
☐ S19224DCPTZ	Douche oculaire Halo, vasque et cache-poussière à charnières en acier inoxydable, siphon en P	
☐ S19224DCPTZS	Douche oculaire Halo, vasque et cache-poussière à charnières en acier inoxydable, siphon en P, tuyauterie acier inoxydable	
Douches oculaires et faciales		
☐ S19224FWZ	Douche oculaire/faciale Halo, vasque plastique	
☐ S19224FWZS	Douche oculaire/faciale Halo, vasque plastique, tuyauterie acier inoxydable	X
☐ S19224WPTZ	Douche oculaire/faciale Halo, vasque plastique, siphon en P	
☐ S19224WPTZS	Douche oculaire/faciale Halo, vasque plastique, siphon en P, tuyauterie acier inoxydable	
☐ S19224TZ	Douche oculaire/faciale Halo, vasque acier inoxydable	
☐ S19224TZS	Douche oculaire/faciale Halo, vasque acier inoxydable, tuyauterie acier inoxydable	X
☐ S19224TPTZ	Douche oculaire/faciale Halo, vasque acier inoxydable, siphon en P	
☐ S19224TPTZS	Douche oculaire/faciale Halo, vasque acier inoxydable, siphon en P, tuyauterie acier inoxydable	
☐ S19224YZ	Douche oculaire/faciale Halo, vasque acier inoxydable, commande main/pied, rallonge de siphon	
☐ S19224YZS	Douche oculaire/faciale Halo, vasque acier inoxydable, commande main/pied, rallonge de siphon, tuyauterie acier inoxydable	X
☐ S19224PZ	Douche oculaire/faciale Halo, vasque acier inoxydable à douchette, rallonge de siphon	
Douches oculaires et faciales à cache-poussière		
☐ S19224PDCFWZ	Douche oculaire/faciale Halo, vasque à cache-poussière à charnières en plastique	
☐ S19224PDCFWZS	Douche oculaire/faciale Halo, vasque à cache-poussière à charnières en plastique, tuyauterie acier inoxydable	X
☐ S19224DCFWZ	Douche oculaire/faciale Halo, vasque et cache-poussière à charnières en acier inoxydable	
☐ S19224DCFWZS	Douche oculaire/faciale Halo, vasque et cache-poussière à charnières en acier inoxydable, tuyauterie acier inoxydable	X
☐ S19224DCRPTZ	Douche oculaire/faciale Halo, vasque et cache-poussière à charnières en acier inoxydable, siphon en P	
☐ S19224DCRPTZS	Douche oculaire/faciale Halo, vasque et cache-poussière à charnières en acier inoxydable, siphon en P, tuyauterie acier inoxydable	
Douches oculaires et faciales toutes en acier inoxydable		
☐ S19224SCZ	Douche oculaire/faciale, vasque et cache en acier inoxydable Halo	X
☐ S19224SSZ	Douche oculaire/faciale et vasque en acier inoxydable Halo avec commande au pied	X

Configuration du produit

Sélections standard (devez sélectionner un de chaque catégorie)

Configuration

☐ **0**	Support de mur standard

Tuyau

☐ **A**	Acier inox NPT galvanisé avec jaune BradTect®
☐ **B**	Acier inox 304 NPT
☐ **C**	Acier inox 316 NPT
☐ **D**	Laiton chromé NPT
☐ **F**	BSPP, Acier inox galvanisé avec jaune BradTect® ‡
☐ **G**	BSPP, Acier inox 304 ‡
☐ **J**	BSPP, Laiton chromé ‡

Robinet

☐ **1**	Restant ouvert (douche oculaire), laiton chromé
☐ **2**	Restant ouvert (douche oculaire), 316 SS

Douche oculaire – faciale

☐ **A**	Douche oculaire Halo
☐ **B**	Douche oculaire/faciale Halo
☐ **D**	Douche oculaire Halo, guidon acier inox 304
☐ **E**	Douche oculaire/faciale Halo, guidon acier inox 304
☐ **F**	Douche oculaire/faciale inox 304 Halo, guidon acier inox 304
☐ **G**	Douche oculaire Halo, guidon acier inox 316
☐ **H**	Douche oculaire/faciale Halo, guidon acier inox 316
☐ **J**	Douche oculaire/faciale inox 316 Halo, guidon acier inox 316

Récepteur avec couvercle anti-poussières

☐ **A**	Récepteur plastique, sans couvercle anti-poussières
☐ **B**	Récepteur plastique, couvercle anti-poussières plastique
☐ **D**	Récepteur acier inox 304, sans couvercle anti-poussières
☐ **E**	Récepteur acier inox 304, couvercle anti-poussières acier inox 304
☐ **F**	Récepteur acier inox 304, couvercle anti-poussières plastique
☐ **G**	Récepteur acier inox 316, sans couvercle anti-poussières
☐ **H**	Récepteur acier inox 316, couvercle anti-poussières acier inox 316
☐ **J**	Récepteur acier inox 316, couvercle anti-poussières plastique
☐ **0**	Pas de récepteur, pas de couvercle anti-poussières

Activation

☐ **A**	Manette acier inox 300
☐ **B**	Manette acier inox 316
☐ **D**	Manette acier inox 300 avec pédale acier inox 300*

Vidange

☐ **A**	Pièce de raccordement
☐ **D**	Siphon en P
☐ **0**	Pas de vidange

Gicleur et Prévention d'écoulement de retour

☐ **A**	Gicleur avec dispositif la prévention des casse-vide
☐ **B**	Gicleur avec dispositif de prévention d'écoulement de retour N9
☐ **C**	Gicleur avec dispositif de prévention d'écoulement de retour 9D
☐ **D**	Gicleur sans prévention d'écoulement de retour
☐ **0**	Pas de gicleur, pas de prévention d'écoulement de retour

Vanne antigel et vanne anti-échaudage

☐ **N**	Vanne antigel
☐ **P**	Vanne anti-échaudage
☐ **R**	Vanne antigel et vanne anti-échaudage
☐ **0**	Pas de vanne antigel, pas de vanne anti-échaudage

* Non disponible avec configurations sans barrière.
‡ Non disponible aux États-Unis

☑ *NPT = National Pipe Thread*

☑ *BSPP = Filetage British Standard Pipe Parallel (non disponible aux États-Unis)*

☑ *Toutes les sélections effectuées à l'aide du configurateur sont uniquement certifiées UL suivant ANSI/ISEA Z358.1*

Comment spécifier le modèle et les spécifications des produits Bradley :

	1	2	3	4	5	6	7	8	9
S	1	9	2	2	4								

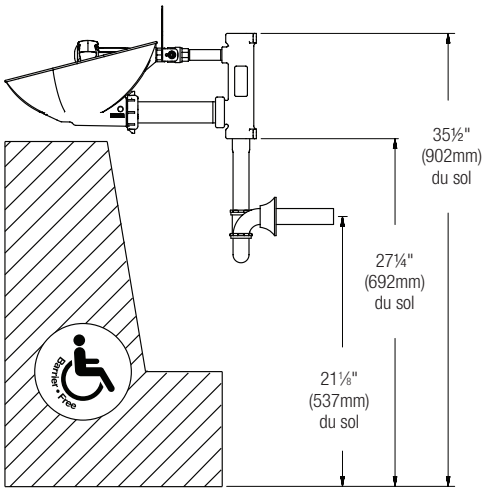
Modèle **S19224**

1. Configuration
2. Tuyau
3. Robinet
4. Douche oculaire – faciale
5. Récepteur avec couvercle anti-poussières
6. Activation
7. Vidange
8. Gicleur et Prévention d'écoulement de retour
9. Vanne antigel et vanne anti-échaudage

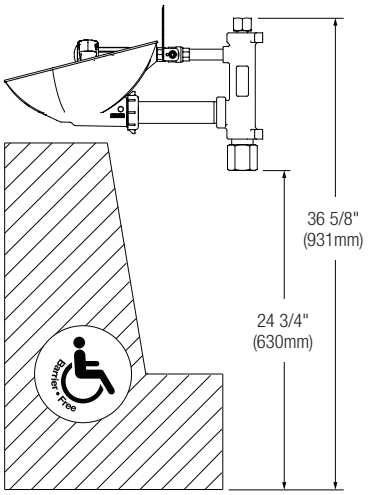
Dimensions

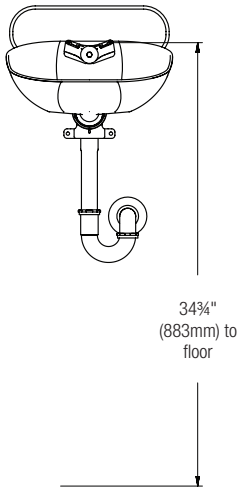
S19224 montré avec récepteur en plastique

NPT Connections

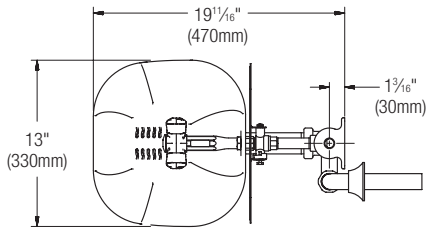


BSPP Connections

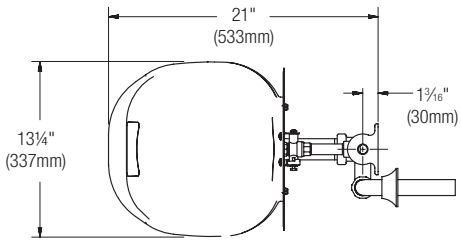




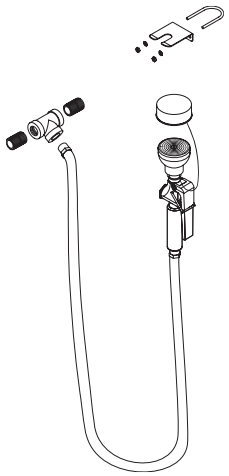
Récepteur



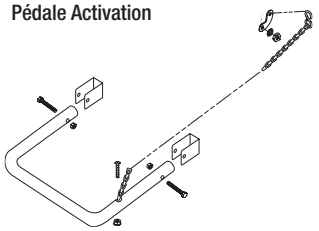
Couvercle anti-poussières



S19-430EH Gicleur



Pédale Activation

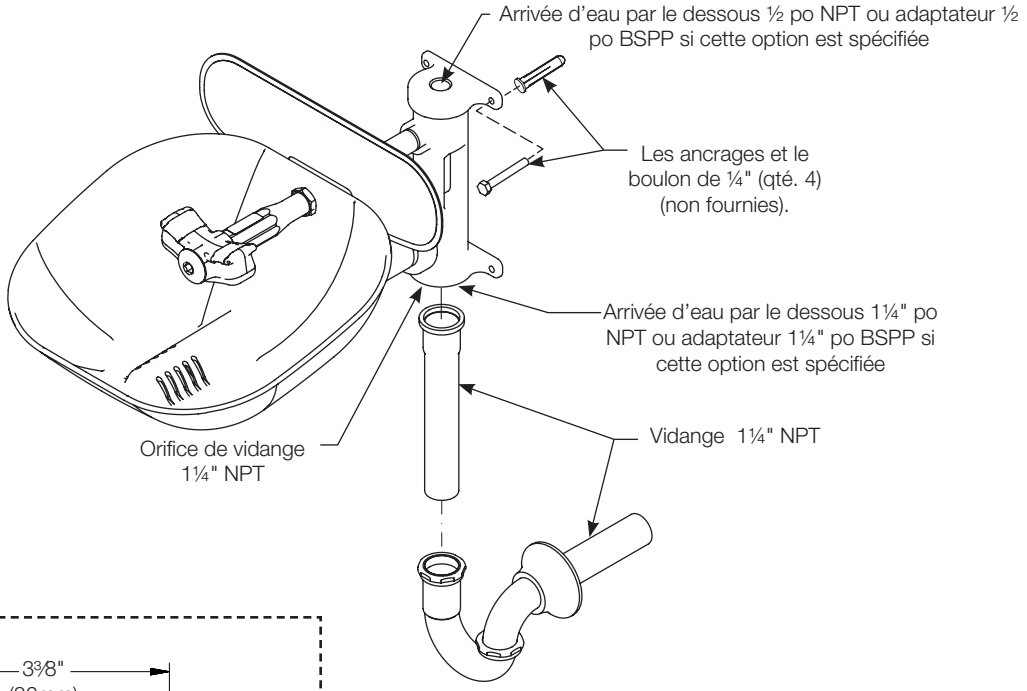


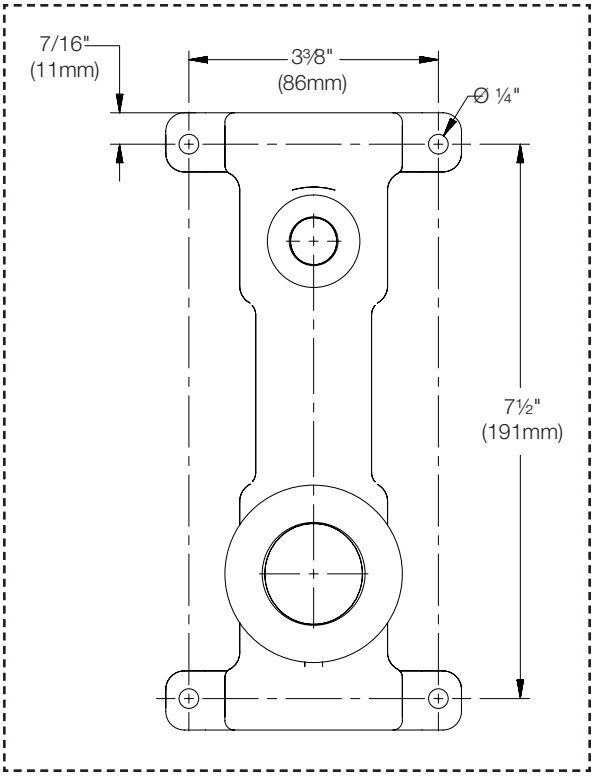
Débit d'eau	
Douche oculaire	4–5¼ gpm
Douche oculaire/faciale	4–5¼ gpm
Douche pour le corps	2–8 gpm

Toutes les dimensions supposent un engagement de filetage standard. Les variations de fabrication prévoient +/- 3,1 mm (⅛") par joint fileté. Pour trouver la tolérance d'une dimension, ajouter le nombre de joints filetés entre une dimension et le multiplier par 3,1 mm (⅛").

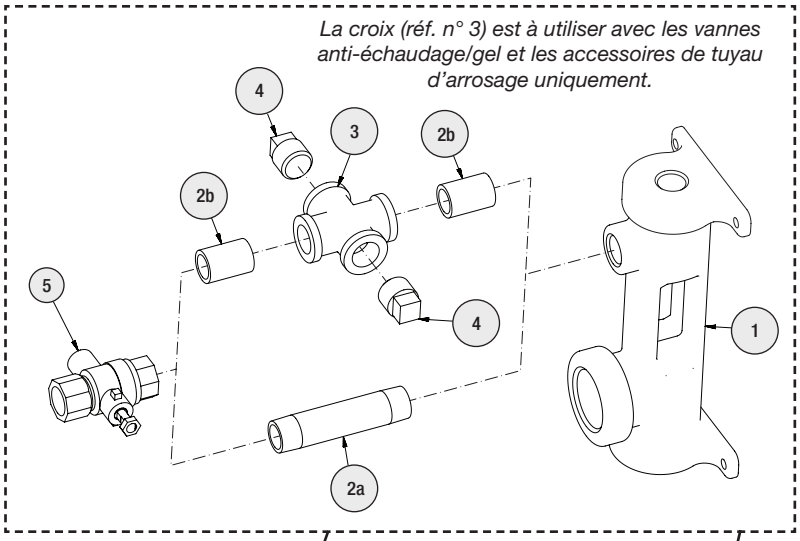
1 Assemblage — Douche oculaire

- ☑ *Douche oculaire standard illustrée. Les autres unités sont similaires.*
- ☑ *Utilisez des tampons autour des tuyaux pour ne pas les endommager lors du serrage.*
- ☑ *Mettez du produit d'étanchéité (non fourni) sur tous les filetages mâles. Ne laissez pas le produit d 'étanchéité à déborder sur le bord des tuyaux.*
- ☑ *BSP = filetage British Standard Pipe (Non disponible aux États-Unis)*

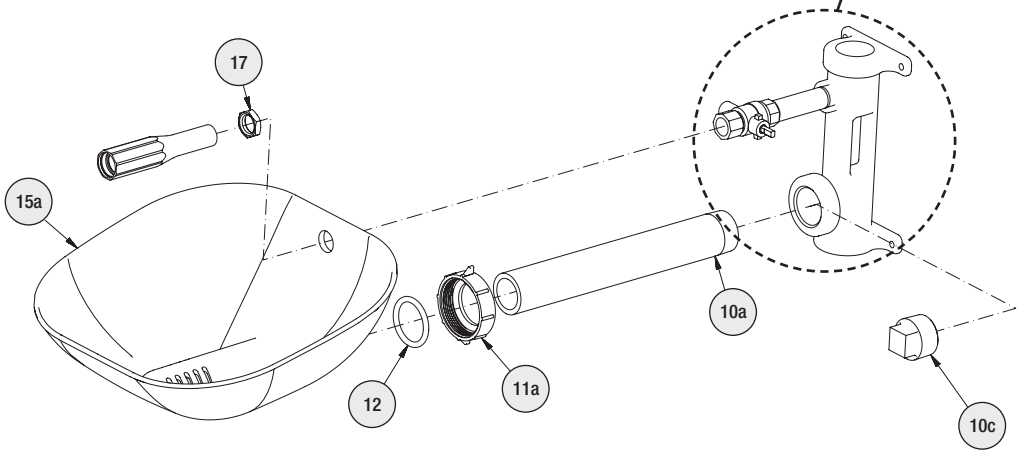




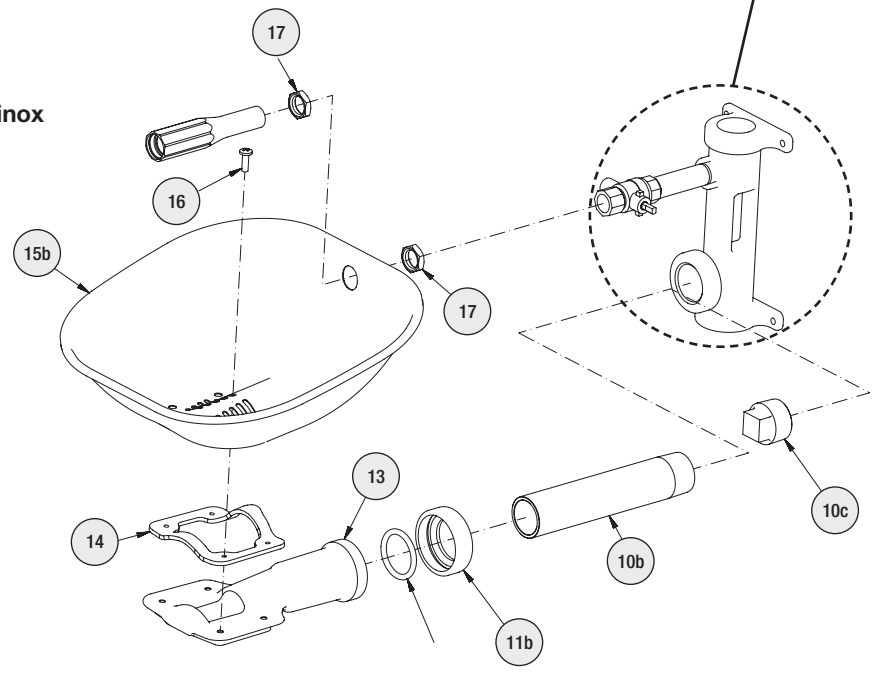
Pièces de remplacement — Récepteur et moyeu



Moyeu avec récepteur en plastique



Moyeu avec récepteur en acier inox

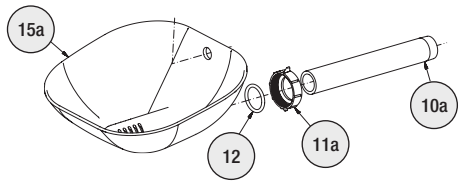


Liste des pièces — Récepteur et moyeu

☑ *BSP = filetage British Standard Pipe (Non disponible aux États-Unis)*

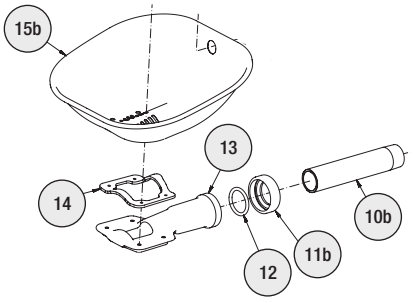
Pièce	Réf.	Qté.	Description
1	111-096	1	Moyeu
1	111-097	1	Moyeu acier inox
1	111-103	1	Moyeu acier inox 316
1	111-098	1	Moyeu acier inox poli
2a	113-006LQ	1	Tuyau ½" x 3½"
2a	113-965	1	Tuyau ½" x 3½" acier inox
2a	113-1211	1	Tuyau ½" x 3½" acier inox 316
2a	113-596	1	Tuyau ½" x 3½" chromé
2b	113-006LG	2	Tuyau ½" x ferme
2b	113-867	2	Tuyau ½" x ferme en acier inox
2b	113-1210	2	Tuyau ½" x ferme en acier inox 316
2b	113-006AW	2	Tuyau ½" x ferme chromé
3	169-1090	1	Croix ½"
3	169-1091	1	Croix ½" acier inox
3	169-1098	1	Croix ½" acier inox 316
3	169-1097	1	Croix ½" chromé
4	300-0393	2	Bouchon ½" chromé
4	153-230	2	Bouchon ½" acier inox
4	153-460	2	Bouchon ½" acier inox 316
5	S27-327	1	Robinet ½" avec écrou
5	S27-328	1	Robinet ½" acier inox 316 avec écrou
5	S27-329	1	Vanne antigel ½" avec écrou
5	S27-330	1	Vanne antigel ½" acier inox 316 avec écrou
5.1	110-215	1	Écrou
5.1	110-248	1	Écrou acier inox 316
10a	113-1202	1	Tuyau 1¼" x 11" extrémité filetée
10a	113-1203	1	Tuyau 1¼" x 11" acier inox extrémité filetée
10b	113-1204	1	Tuyau 1¼" x 7" extrémité filetée
10b	113-1205	1	Tuyau 1¼" x 7" acier inox extrémité filetée
10b	113-1206	1	Tuyau 1¼" x 7" chromé extrémité filetée
10b	113-1212	1	Tuyau 1¼" x 7" acier inox 316 extrémité filetée
10c	169-724	1	Bouchon 1¼" peint galvanisé
10c	269-251	1	Bouchon 1¼" chromé
10c	269-238	1	Bouchon 1¼" acier inox
10c	269-1402	1	Bouchon 1¼" acier inox 316
11a	110-239	1	Écrou, plastique
11b	110-240	1	Écrou, acier inox
11b	110-242	1	Écrou, acier inox 316
12	125-176	1	Bague
13	111-099	1	Support récepteur aluminum
13	111-100	1	Support récepteur peint aluminum
13	111-101	1	Support récepteur acier inox
13	111-102	1	Support récepteur acier inox 316
14	124-082	1	Joint d'etanchéité
15a	187-320	1	Récepteur plastique
15b	S90-393	1	Récepteur acier inox (incl. le élément 14)
15b	S90-394	1	Récepteur acier inox 316 (incl. le élément 14)
16	160-467	4	Vis
17	110-115a		Écrou ½" NPSM laiton chromé (qté. au besoin)
17	110-238		Écrou ½" NPSM acier inox (qté. au besoin)
17	110-241		Écrou ½" NPSM acier inox 316 (qté. au besoin)

Paquet récepteur plastique S90-395 comprend les éléments 10a, 11a, 12, 15a

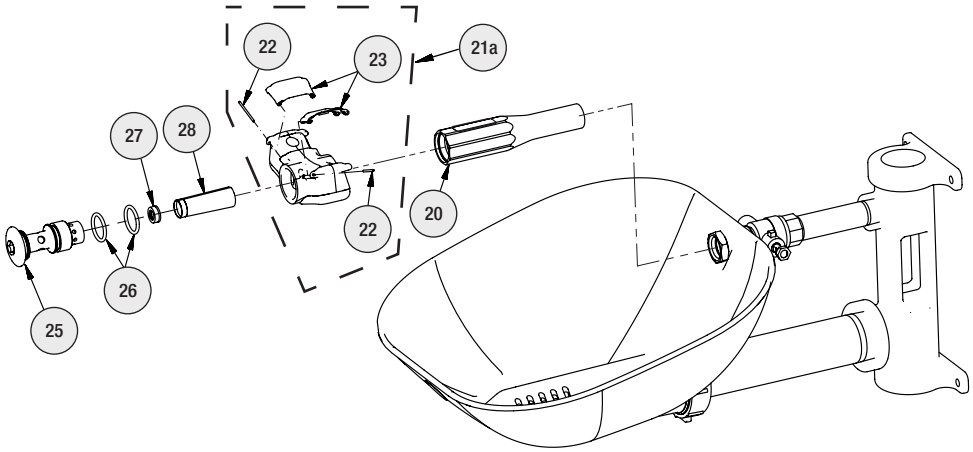


Paquet récepteur acier inox 300 Serie S90-391 comprend les éléments 10b, 11b, 12, 13, 14, 15b

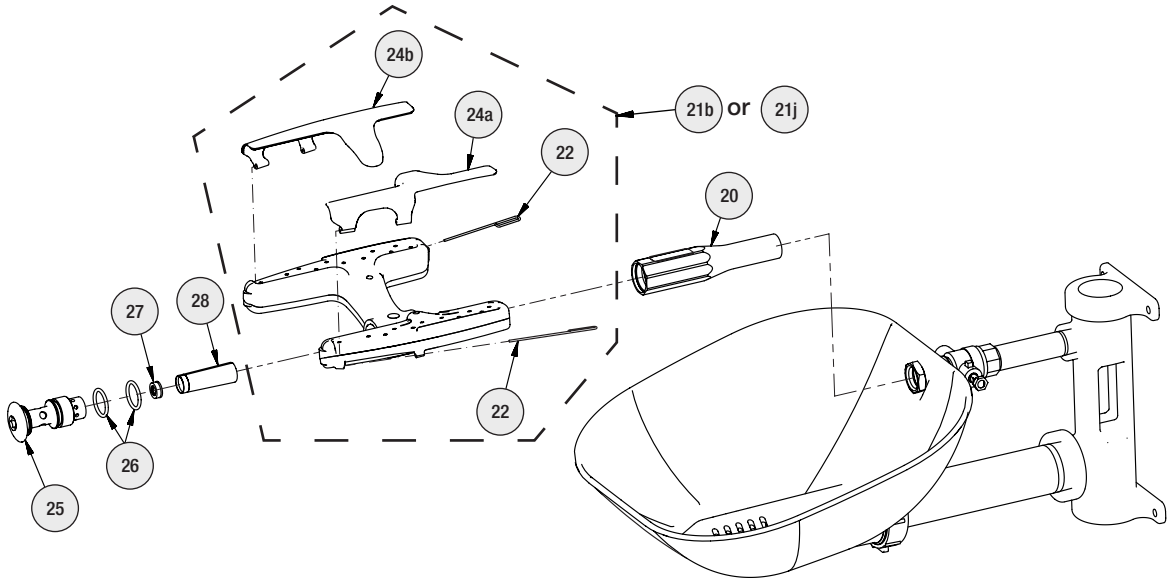
Paquet récepteur acier inox 316 Serie S90-392 comprend les éléments 10b, 11b, 12, 13, 14, 15b



Pièces de remplacement — Douche oculaire



Pièces de remplacement — Douche oculaire/faciale

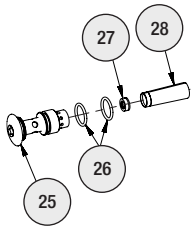


Paquet S65-339 comprend les éléments 26, 27, 28

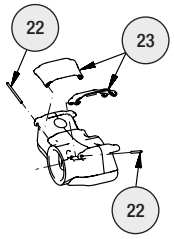
Paquet S88-068 comprend les éléments 25, 26, 27, 28

Paquet S88-069 comprend les éléments 25, 26, 27, 28 (acier inox 300 serie)

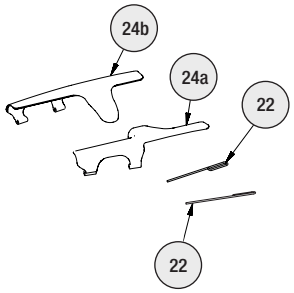
Paquet S88-070 comprend les éléments 25, 26, 27, 28 (acier inox 316)



Paquet couvertures à bascule (douche oculaire) S45-2675 comprend les éléments 22 et 23

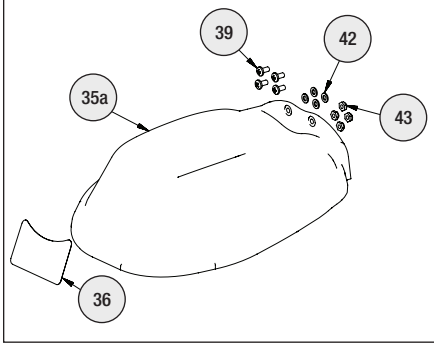


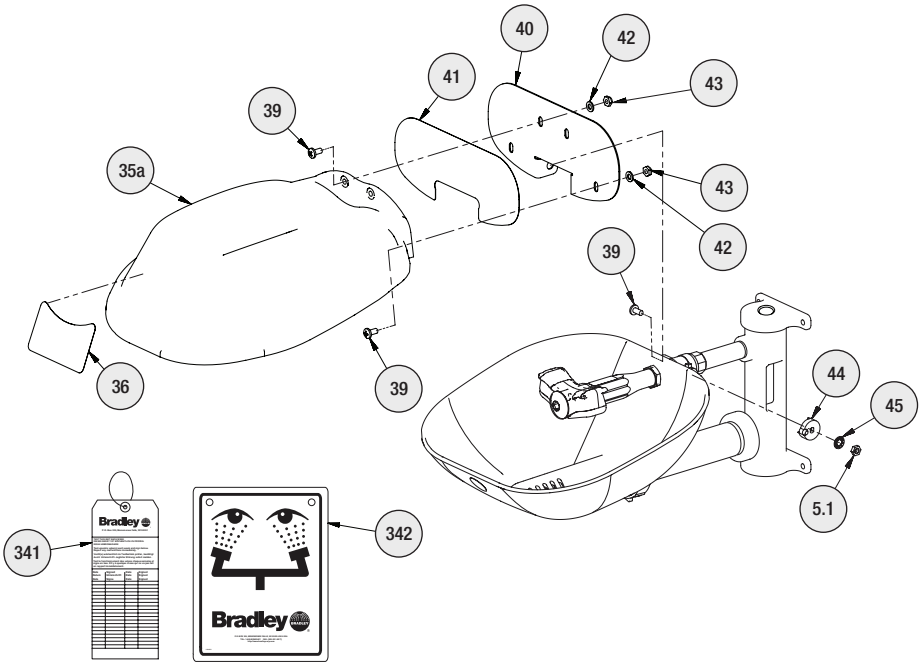
Paquet couvertures à bascule (douche oculaire/faciale) S45-2676 comprend les éléments 22, 24a et 24b



Pièces de remplacement — Couvercle plastique

Paquet couvercle plastique S90-390 comprend les éléments 35a, 36, 39, 42, 43

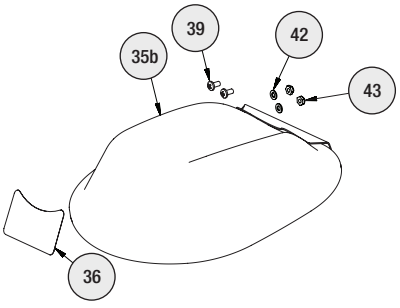


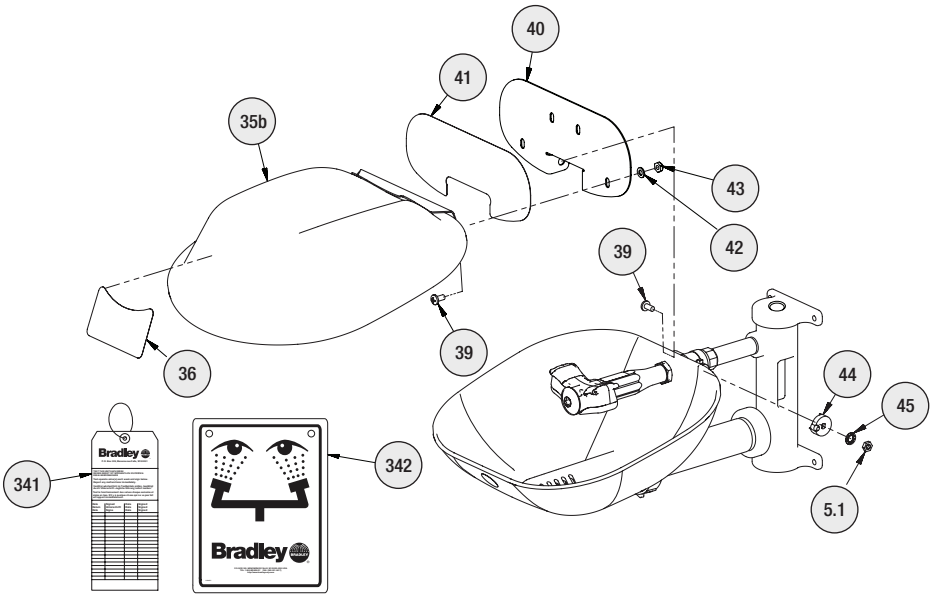


Pièces de remplacement — Couvercle acier inox

Paquet couvercle acier inox S90-388 comprend les éléments 35b, 36, 39, 42, 43

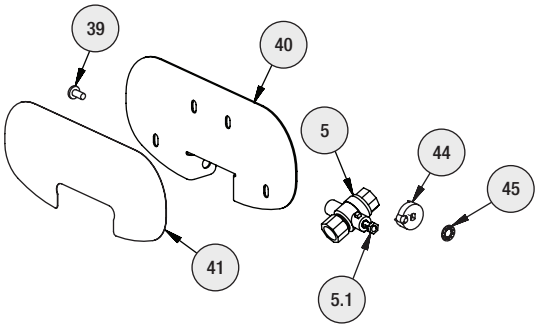
Paquet couvercle acier inox (316) S90-389 comprend les éléments 35b, 36, 39, 42, 43





Paquets manette comprend les éléments 39, 40, 41, 44, 45, 5, 5.1

- Paquet S08-390 (pour les unités avec robinet laiton)
- Paquet S08-391 (pour les unités avec robinet acier inox)
- Paquet S08-392 (pour les unités avec vanne antigel laiton)
- Paquet S08-393 (pour les unités avec vanne antigel acier inox)
- Paquet S08-394 (pour les unités avec robinet et manette acier inox 316)
- Paquet S08-395 (pour les unités avec vanne antigel et manette acier inox 316)

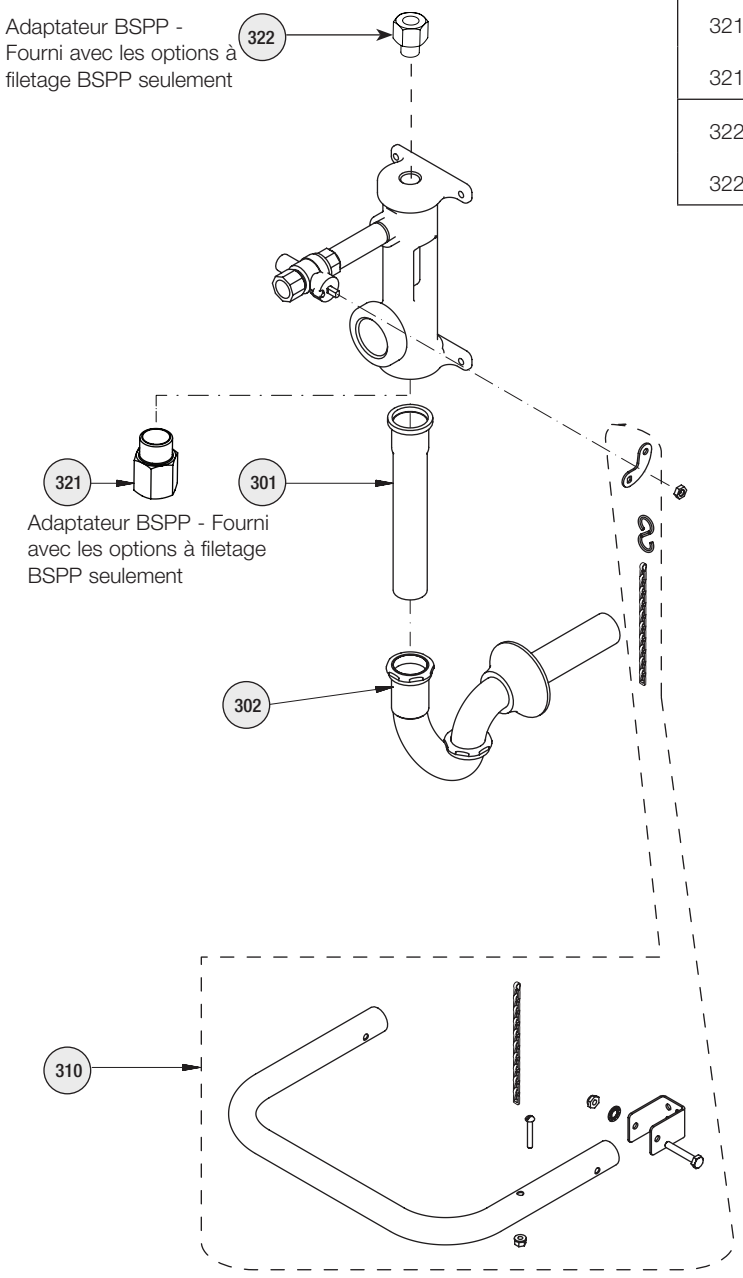


Liste des pièces — Douche oculaire, Douche oculaire/faciale, et couvercle

Pièce	Réf.	Qté.	Description
20	171-001	1	Corps
20	171-002	1	Corps acier inox
20	171-003	1	Corps acier inox 316
20	171-004	1	Corps poli
21a	S05-190	1	Douche oculaire (comprend)
22	kit de remplacement	2	
23	kit de remplacement	2	Axe de pivotement Couverture à bascule
21b	S05-192	1	Douche oculaire (comprend)
22	kit de remplacement	2	
24a	kit de remplacement	1	Axe de pivotement
24b	kit de remplacement	1	Couverture à bascule droite Couverture à bascule gauche
21j	S05-205 (utilisé sur les luminaires 304SS et 316SS)	1	Tête de douche en acier inoxydable 316 oculaire/faciale (comprend)
22	kit de remplacement	2	Axe de pivotement
24a	kit de remplacement	1	Couverture à bascule droite
24b	kit de remplacement	1	Couverture à bascule gauche
25	115-158	1	Bouchon
25	115-159	1	Bouchon acier inox
25	115-164	1	Bouchon acier inox 316
25	115-165	1	Bouchon poli

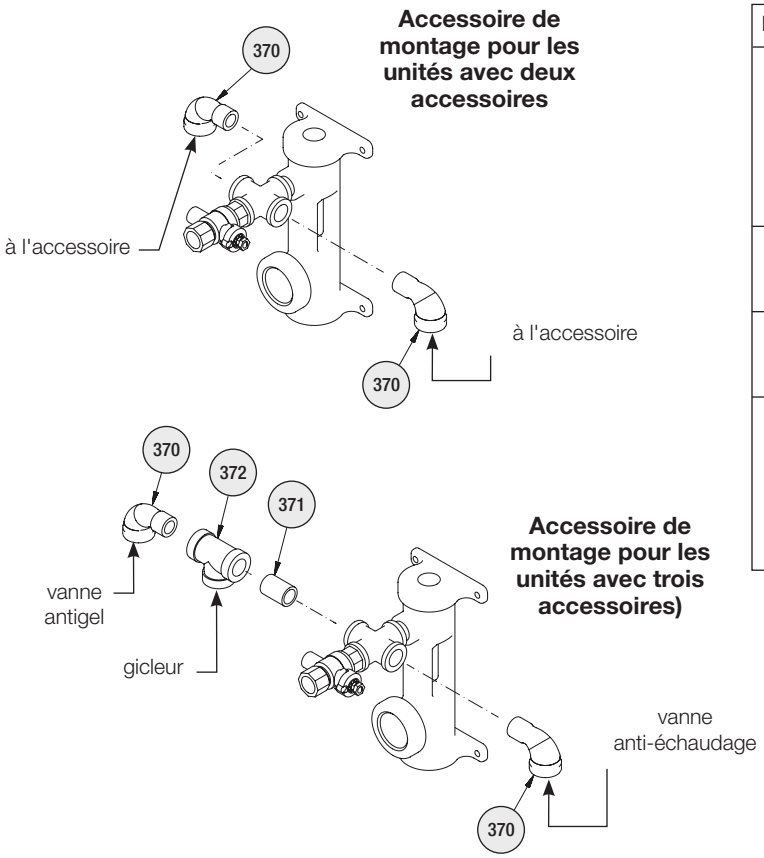
Item	Part No.	Qty	Description
26	125-157	2	Bague
27	125-175	1	Contrôle du débit
28	S65-340	1	Filtrer (paquet de 3)
35a	kit de remplacement	1	Couvercle plastique
35b	kit de remplacement	1	Couvercle acier inox
35b	kit de remplacement	1	Couvercle acier inox 316
36	114-097	1	Étiquette (pour couvercle)
39	160-389	qté. au besoin	Vis ¼-20 x ½" acier inox
39	160-469	qté. au besoin	Vis ¼-20 x ½" acier inox 316
40	S08-385	1	Manette acier inox (incl. les éléments 41, 44, 45, 5.1)
40	S08-388	1	Manette acier inox 316 (incl. les éléments 41, 44, 45, 5.1)
41	114-096	1	Étiquette
42	142-002AV	qté. au besoin	Rondelle
43	161-060	qté. au besoin	Écrou acier inox
43	161-062	qté. au besoin	Écrou acier inox 316
44	153-372R	1	Adaptateur robinet
44	153-372R316	1	Adaptateur robinet acier inox 316
45	142-002DA	1	Rondelle de blocage
341	204-421	1	Etiquette d'inspection
342	114-051	1	Enseigne de sécurité
342	114-051E	1	Enseigne de sécurité (not available in the U.S.)

Pièces de remplacement et liste des pièces –— Drain, siphon en P et pédale en option

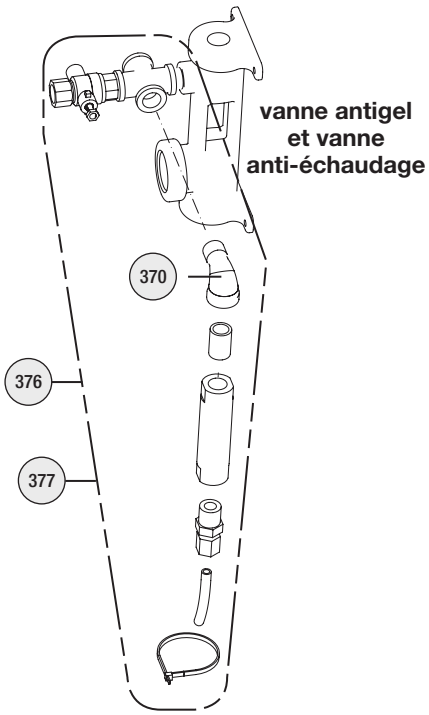


Item	Part No.	Qty	Description
301	269-167	1	Pièce de raccordement
302	269-142	1	Siphon en P
310	S39-395	1	Pédale
321	169-1117	1	BSPP-NPT 1-1/4" 303SS
321	169-1118	1	BSPP-NPT 1-1/4" 316SS
322	169-1119	1	BSPP-NPT ½" 303SS
322	169-1120	1	BSPP-NPT ½" 316SS

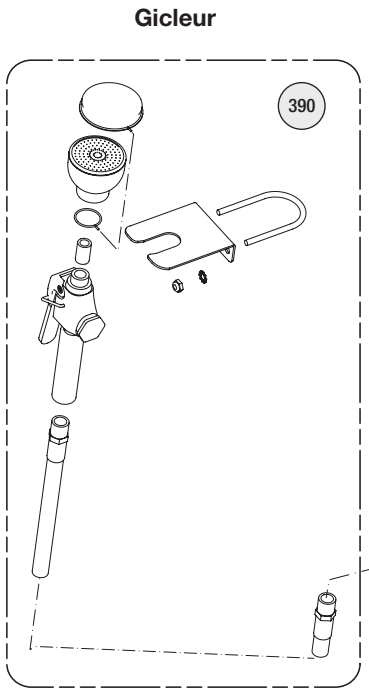
Pièces de remplacement — Accessoires en option

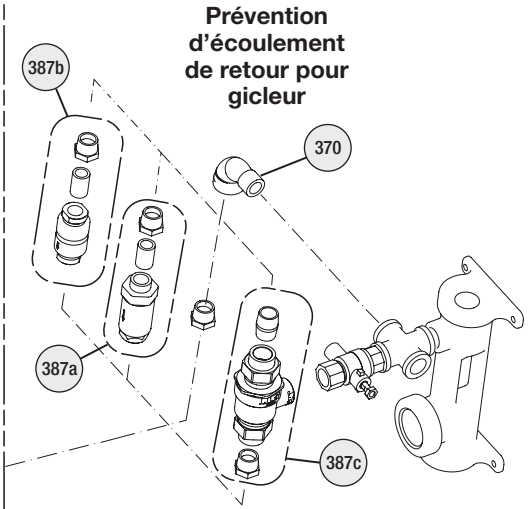


Pièce	Réf.	Qté.	Description
370	169-025		Coude ½" (qté. au besoin)
370	269-241		Coude ½" acier inox (qté. au besoin)
370	269-1396		Coude ½" acier inox 316 (qté. au besoin)
370	169-862		Coude ½" chromé (qté. au besoin)
371	113-006LG	1	Tuyau ½" x ferme
371	113-867	1	Tuyau ½" x ferme acier inox
371	113-1210	1	Tuyau ½" x ferme acier inox 316
371	113-006AW	1	Tuyau ½" x ferme chromé
372	169-838	1	Té ½"
372	169-1100	1	Té ½" acier inox
372	269-280	1	Té ½" chromé
372	169-1099	1	Té ½" acier inox 316



Pièce	Réf.	Description
376	S45-1986	Vanne antigel
377	S45-1989	Vanne anti-échaudage





Pièce	Réf.	Qté.	Description
387a	S27-303	1	Prévention des casse-vide ⅜"
387b	S45-2309	1	Prévention d'écoulement de retour N9
387c	S45-2310	1	Prévention d'écoulement de retour 9D
390	S19-430EH	1	Gicleur

⚠ADVERTENCIA

Aclarar el conducto del suministro de agua antes y después de la instalación. Verificar que no haya fugas y que el flujo de agua sea adecuado. El suministro principal de agua a la unidad debe estar siempre en posición "ON" (abierto). Se deben tomar medidas a fin de evitar el corte no autorizado del suministro.

⚠ATTENCIÓN

Los equipos de emergencia deben contar con agua tibia (entre 15,6 °C y 37,8 °C). Cualquier exposición prolongada a aguas bajo cero afecta la capacidad del cuerpo para mantener su temperatura, lo que incrementa el riesgo de hipotermia.

AVISO

Antes de instalar este producto, asegúrese de que haya espacio adecuado alrededor del producto y de que su activación no interfiera con otros productos u obstrucciones.

Evite los limpiadores que contengan solventes orgánicos, alcoholes e hidrocarburos. Enjuague con agua después de limpiar.

IMPORTANTE

La instalación y ubicación de todas las duchas, lavaojos y lavaojos/lavacara de seguridad deben cumplir con los requisitos de ANSI/ISEA Z358.1.

Lea en su totalidad este manual de instalación para garantizar una instalación adecuada. Una vez que termine la instalación, entregue este manual al propietario o al Departamento de Mantenimiento. Es responsabilidad de quien instale el equipo cumplir con los códigos para desagüe y otra códigos y ordenanzas locales.

Separar todas las piezas del material de embalaje y asegurarse que todas las piezas estén incluídas antes de desechar cualquier material de embalaje.

La norma ANSI/ISEA Z358.1 exige un suministro ininterrumpido de líquido de limpieza. Los equipos de emergencia con tuberías de Bradley requieren una presión de flujo mínima de 0,21 MPa (30 PSI).

Las válvulas con funcionamiento a resorte de autocerrado no cuentan con clasificación UL para ANSI/ISEA Z358.1.

Se deben llevar a cabo activaciones semanales de todos los equipos de emergencia conectados a la plomería para garantizar que hay un suministro de líquido de limpieza adecuado presente y liberar la tubería de suministro de cualquier acumulación de sedimento. Los equipos de emergencia se deben inspeccionar mensualmente para solucionar cualquier problema de mantenimiento; esto garantizará que los equipos están en buenas condiciones de funcionamiento y que no hay señales de desgaste.

Los trabajadores que puedan tener contacto con materiales potencialmente peligrosos deben recibir capacitación sobre la ubicación y operación adecuada de los equipos de emergencia en conformidad con la norma ANSI/ISEA Z358.1.

Para consultas sobre la operación o instalación de este producto, visite www.bradleycorp.com o llame al 1-800-BRADLEY.

Las garantías del producto se pueden encontrar en "Información del producto" o en nuestro sitio Web, www.bradleycorp.com.

Materiales necesarios:

- (4) anclas y pernos de ¼"
- Sellador de tubería
- Presión de flujo mín. de 2,0 bar (30 psi) y máx. de 6,1 bar (90 psi)
- Presión estática máx. de 8,6 bar (125 psi)
- Tubería hacia entrada de suministro de agua de ½" NPT (BSPP) (2,0 – 6,2 bar [30 – 90 psi])
- Tubería a la salida del desagüe NPT a 1¼" (si se incluye con la unidad)
- OPCIONAL: Tornillería para montar el aviso de seguridad

Los códigos locales pueden exigir la instalación de una válvula de prevención de contraflujo para completar la instalación correcta. La conformidad con los códigos locales es de responsabilidad del instalador. La válvula se debe probar anualmente para verificar que funcione de manera correcta. Las válvulas de prevención de contraflujo no se incluyen con el accesorio y las puede proporcionar el contratista o las puede comprar en Bradley Corporation.

Modelos preconfigurados Halo

Número de modelo Halo	Descripción	Certificación UL según ANSI/ISEA
Lavaojos		
☐ S19224EW	Lavaojos Halo, palangana de plástico	X
☐ S19224PT	Lavaojos Halo, palangana de plástico, sifón en P	X
☐ S19224B	Lavaojos Halo, palangana de acero inoxidable	X
☐ S19224BPT	Lavaojos Halo, palangana de acero inoxidable, sifón en P	X
Lavaojos con cubierta contra el polvo		
☐ S19224PDC	Lavaojos Halo, palangana de plástico con cubierta contra el polvo	X
☐ S19224DC	Lavaojos Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras	X
☐ S19224DCPT	Lavaojos Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras, sifón en P	X
Lavaojos/lavacara		
☐ S19224FW	Lavaojos/lavacara Halo, palangana de plástico	X
☐ S19224FWPT	Lavaojos/lavacara Halo, palangana de plástico, sifón en P	X
☐ S19224T	Lavaojos/lavacara Halo, palangana de acero inoxidable	X
☐ S19224P	Lavaojos/lavacara Halo, palangana de acero inoxidable con rociador de manguera, tubo de aspiración	X
☐ S19224TPT	Lavaojos/lavacara Halo, palangana de acero inoxidable, sifón en P	X
☐ S19224Y	Lavaojos/lavacara Halo, palangana de acero inoxidable, operado mediante mano/pie, tubo de aspiración	X
Lavaojos/lavacara con cubiertas contra el polvo		
☐ S19224PDCFW	Lavaojos/lavacara Halo, palangana de plástico con cubierta contra el polvo	X
☐ S19224DCFW	Lavaojos/lavacara Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras	X
☐ S19224DCRPT	Lavaojos/lavacara Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras, sifón en P	X
Lavaojos/lavacara completamente de acero inoxidable		
☐ S19224SC	Lavaojos/lavacara, palangana y cubierta de acero inoxidable Halo	X
☐ S19224SS	Lavaojos/lavacara Halo y palangana de acero inoxidable	X

Modelos preconfigurados Halo

☑ *Todos los modelos con certificación AS4775, AS/NZS 4020 incluyen rosca BSPP.*

Número de modelo Halo	Descripción	Certificación IAPMO Oceana según AS4775 y AS4020
Lavaojos		
☐ S19224EWZ	Lavaojos Halo, palangana de plástico	
☐ S19224EWZS	Lavaojos Halo, palangana de plástico, tubería de acero inoxidable	X
☐ S19224PTZ	Lavaojos Halo, palangana de plástico, sifón en P	
☐ S19224PTZS	Lavaojos Halo, palangana de plástico, sifón en P, tubería de acero inoxidable	
☐ S19224BZ	Lavaojos Halo, palangana de acero inoxidable	
☐ S19224BZS	Lavaojos Halo, palangana de acero inoxidable, tubería de acero inoxidable	X
☐ S19224BPTZ	Lavaojos Halo, palangana de acero inoxidable, sifón en P	
☐ S19224BPTZS	Lavaojos Halo, palangana de acero inoxidable, sifón en P, tubería de acero inoxidable	
Lavaojos con cubierta contra el polvo		
☐ S19224PDCZ	Lavaojos Halo, palangana de plástico con cubierta contra el polvo	
☐ S19224PDCZS	Lavaojos Halo, palangana de plástico con cubierta contra el polvo, tubería de acero inoxidable	X
☐ S19224DCZ	Lavaojos Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras	
☐ S19224DCZS	Lavaojos Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras, tubería de acero inoxidable	X
☐ S19224DCPTZ	Lavaojos Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras, sifón en P	
☐ S19224DCPTZS	Lavaojos Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras, sifón en P, tubería de acero inoxidable	
Lavaojos/lavacara		
☐ S19224FWZ	Lavaojos/lavacara Halo, palangana de plástico	
☐ S19224FWZS	Lavaojos/lavacara Halo, palangana de plástico, tubería de acero inoxidable	X
☐ S19224WPTZ	Lavaojos/lavacara Halo, palangana de plástico, sifón en P	
☐ S19224WPTZS	Lavaojos/lavacara Halo, palangana de plástico, sifón en P, tubería de acero inoxidable	
☐ S19224TZ	Lavaojos/lavacara Halo, palangana de acero inoxidable	
☐ S19224TZS	Lavaojos/lavacara Halo, palangana de acero inoxidable, tubería de acero inoxidable	X
☐ S19224TPTZ	Lavaojos/lavacara Halo, palangana de acero inoxidable, sifón en P	
☐ S19224TPTZS	Lavaojos/lavacara Halo, palangana de acero inoxidable, sifón en P, tubería de acero inoxidable	
☐ S19224YZ	Lavaojos/lavacara Halo, palangana de acero inoxidable, operado mediante mano/pie, tubo de aspiración	
☐ S19224YZS	Lavaojos/lavacara Halo, palangana de acero inoxidable, operado mediante mano/pie, tubo de aspiración, tubería de acero inoxidable	X
☐ S19224PZ	Lavaojos/lavacara Halo, palangana de acero inoxidable con rociador de manguera, tubo de aspiración	
Lavaojos/lavacara con cubierta contra el polvo		
☐ S19224PDCFWZ	Lavaojos/lavacara Halo, palangana de plástico con cubierta contra el polvo con bisagras	
☐ S19224PDCFWZS	Lavaojos/lavacara Halo, palangana de plástico con cubierta contra el polvo con bisagras, tubería de acero inoxidable	X
☐ S19224DCFWZ	Lavaojos/lavacara Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras	
☐ S19224DCFWZS	Lavaojos/lavacara Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras, tubería de acero inoxidable	X
☐ S19224DCRPTZ	Lavaojos/lavacara Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras, sifón en P	
☐ S19224DCRPTZS	Lavaojos/lavacara Halo, palangana de acero inoxidable y cubierta contra el polvo con bisagras, sifón en P, tubería de acero inoxidable	
Lavaojos/lavacara completamente de acero inoxidable		
☐ S19224SCZ	Lavaojos/lavacara, palangana y cubierta de acero inoxidable Halo	X
☐ S19224SSZ	Lavaojos/lavacara Halo y palangana de acero inoxidable con activación mediante pie	X

Configuración del producto

Selecciones estándares (se debe seleccionar una de cada categoría)

Configuración

☐ **0** Soporte en pared estándar

Material de la tubería

☐ **A** Acero inox NPT galvanizado con amarillo BradTect®
☐ **B** Acero inox 304 NPT
☐ **C** Acero inox 316 NPT
☐ **D** Latón cromado NPT
☐ **F** BSPP, Acero inox galvanizado con amarillo BradTect® ‡
☐ **G** BSPP, Acero inox 304 ‡
☐ **J** BSPP, Latón cromado ‡

Válvula

☐ **1** Abertura continua (lavaojos), latón cromado
☐ **2** Abertura continua (lavaojos), acero inox 316

Lavaojos - lavaojos/rostro

☐ **A** Lavaojos Halo
☐ **B** Lavaojos/rostro Halo
☐ **D** Lavaojos Halo, horquilla acero inox 304 NPT
☐ **E** Lavaojos/rostro Halo, horquilla acero inox 304 NPT
☐ **F** Lavado ocular y facial de acero inoxidable 304 Halo, horquilla acero inox 304 NPT
☐ **G** Lavaojos Halo, horquilla acero inox 316 NPT
☐ **H** Lavaojos/rostro Halo, horquilla acero inox 316 NPT
☐ **J** Lavado ocular y facial de acero inoxidable 316 Halo, horquilla acero inox 316 NPT

Receptor y cubierta contrapolvo

☐ **A** Receptor plástico, sin cubierta contrapolvo
☐ **B** Receptor plástico, cubierta contrapolvo plástico
☐ **D** Receptor acero inox 304, sin cubierta contrapolvo
☐ **E** Receptor acero inox 304, cubierta contrapolvo acero inox 304
☐ **F** Receptor acero inox 304, cubierta contrapolvo plástico
☐ **G** Receptor acero inox 316, sin cubierta contrapolvo
☐ **H** Receptor acero inox 316, cubierta contrapolvo acero inox 316
☐ **J** Receptor acero inox 316, cubierta contrapolvo plástico
☐ **0** Sin receptor, sin cubierta contrapolvo

Activación

☐ **A** Manija acero inox 300
☐ **B** Manija acero inox 316
☐ **D** Manija acero inox 300 con pedal acero inox 300*

Desecho

☐ **A** Pièce de raccordement
☐ **D** Siphon en P
☐ **0** Pas de vidange

Rociador y prevención de contraflujo

☐ **A** Rociador con interruptor de vacio
☐ **B** Rociador con prevención de contraflujo N9
☐ **C** Rociador con prevención de contraflujo 9D
☐ **D** Rociador sin prevención de contraflujo
☐ **0** Sin rociador, sin prevención de contraflujo

Protección contra congelamiento y contra quemaduras

☐ **N** Válvulas de protección contra congelamiento
☐ **P** Válvulas de protección contra quemaduras
☐ **R** Válvulas de protección contra congelamiento y contra quemaduras
☐ **0** Sin válvulas de protección contra congelamiento, sin válvulas de protección contra quemaduras

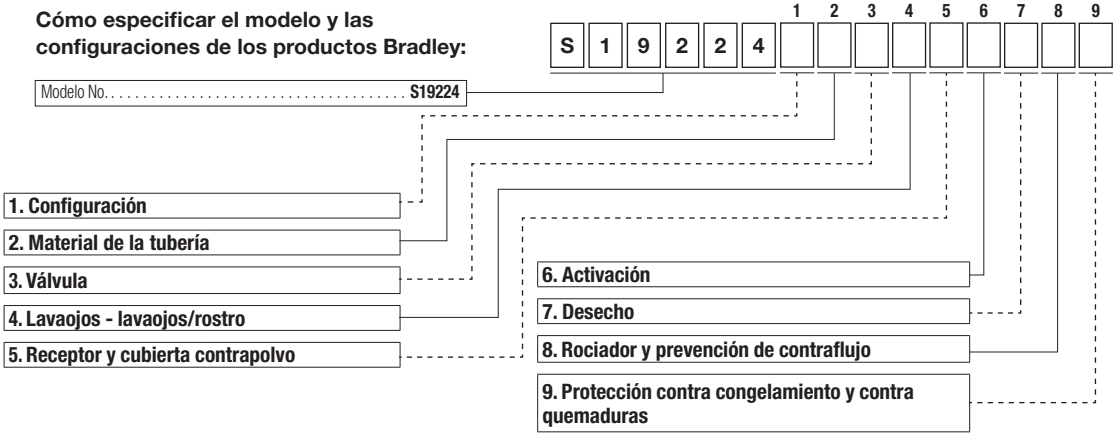
* No disponible con configuraciones de instalaciones para minusválidos.
‡ No disponible en los Estados Unidos.

☑ *NPT = National Pipe Thread (Estándar nacional de roscas para tuberías)*

☑ *BSPP = Estándar británico de roscas paralelas para tuberías (no disponible en los Estados Unidos)*

☑ *Todas las selecciones hechas a través del configurador están únicamente certificadas por UL conforme a la norma ANSI/ISEA Z358.1*

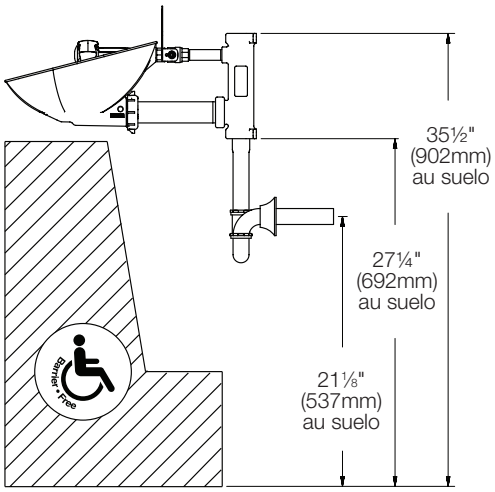
Cómo especificar el modelo y las configuraciones de los productos Bradley:



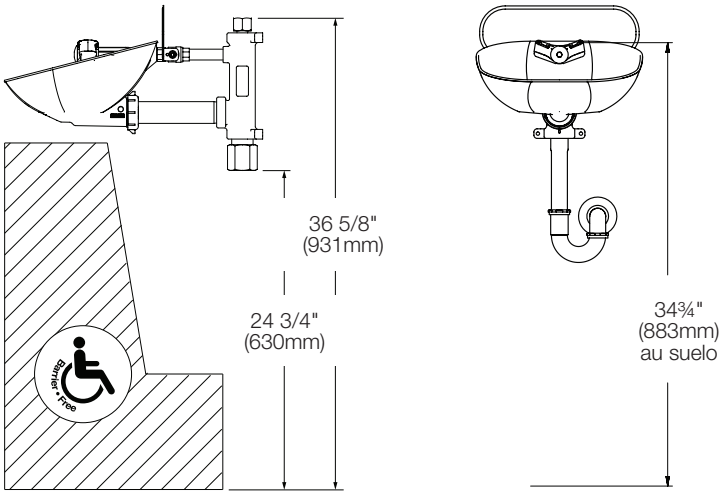
Dimensiones

S19224 se muestra con receptor plástico

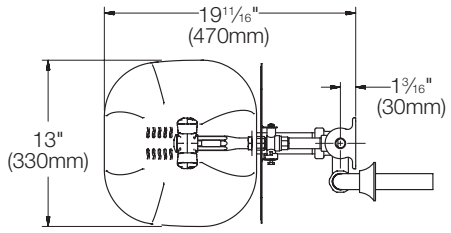
NPT Connections



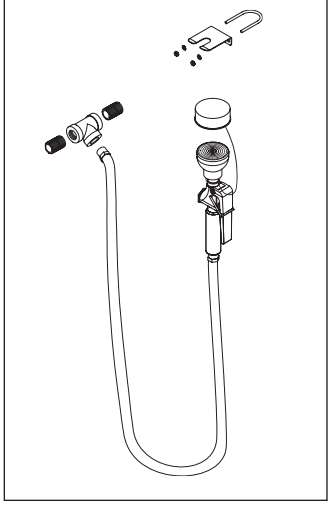
BSPP Connections



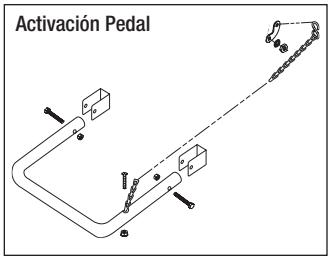
Receptor



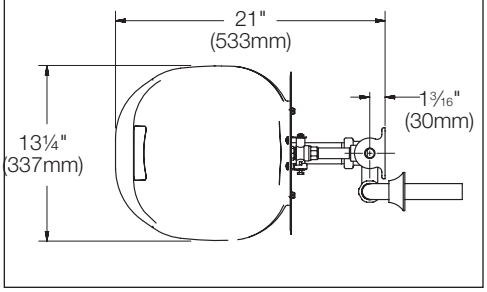
S19-430EH Rociador



Activación Pedal



Cubierta contrapolvo

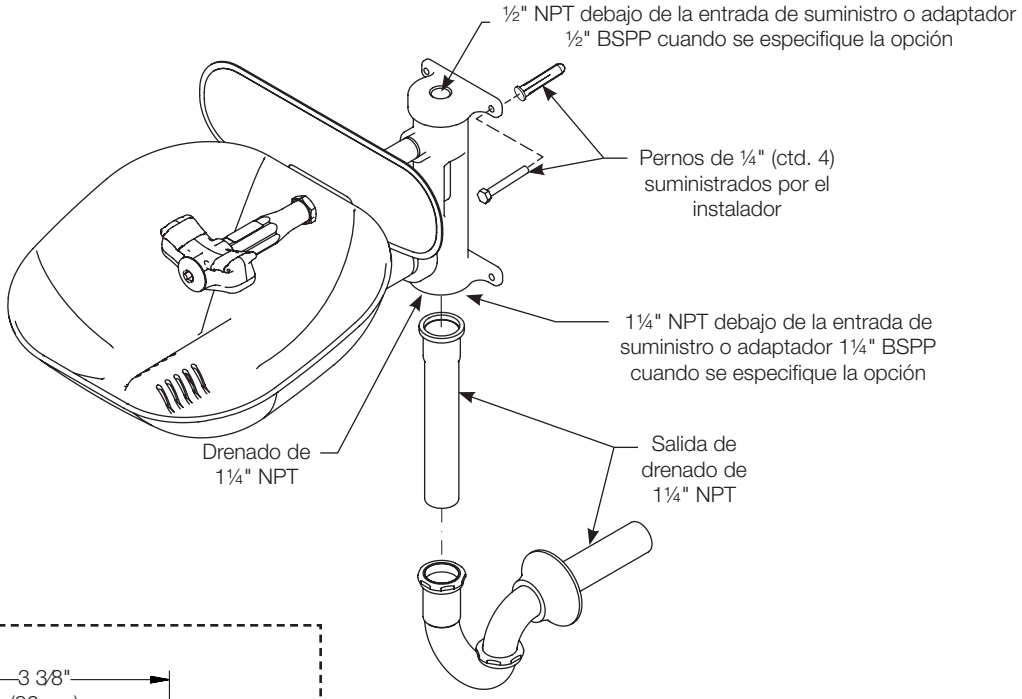


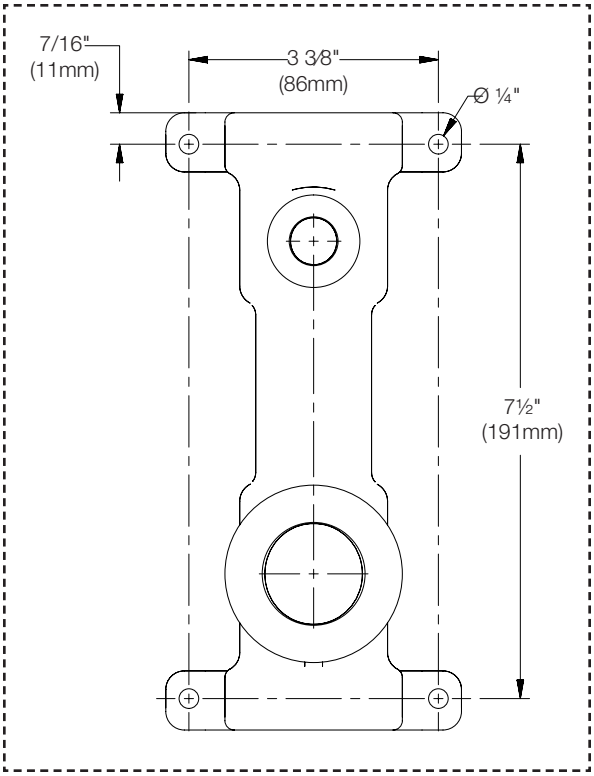
El flujo del agua	
Lavaojos	4–5¼ gpm
Lavaojos/rostro	4–5¼ gpm
Lavado de cuerpo	2–8 gpm

Todas las dimensiones asumen el enganche de rosca estándar. Las variaciones en la fabricación permiten +/- 3,1 mm (⅛") por junta roscada. Para encontrar la tolerancia de una dimensión, agregue el número de juntas roscadas entre una dimensión y multiplíquelo por 3,1 mm (⅛").

1 Montaje — Lavaojos

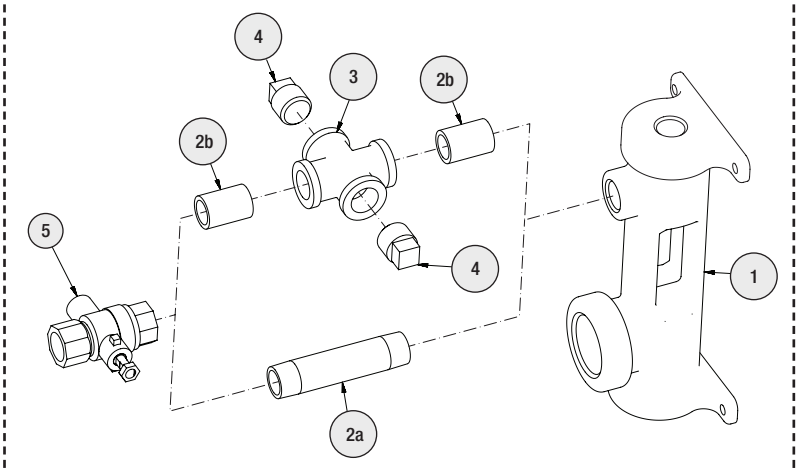
- ☑ *Se muestra una unidad lavaojos estándar. Las otras unidades son similares.*
- ☑ *Usar una almohadilla de agarre alrededor de la tubería al apretar para evitar estropearla.*
- ☑ *Aplicar sellador de tubería a todas las juntas de tubería de rosca macho. No deje que el sellador se derrame sobre el borde de los tubos.*
- ☑ *BSPP = Estándar británico de roscas paralelas para tuberías (no disponible en los Estados Unidos)*



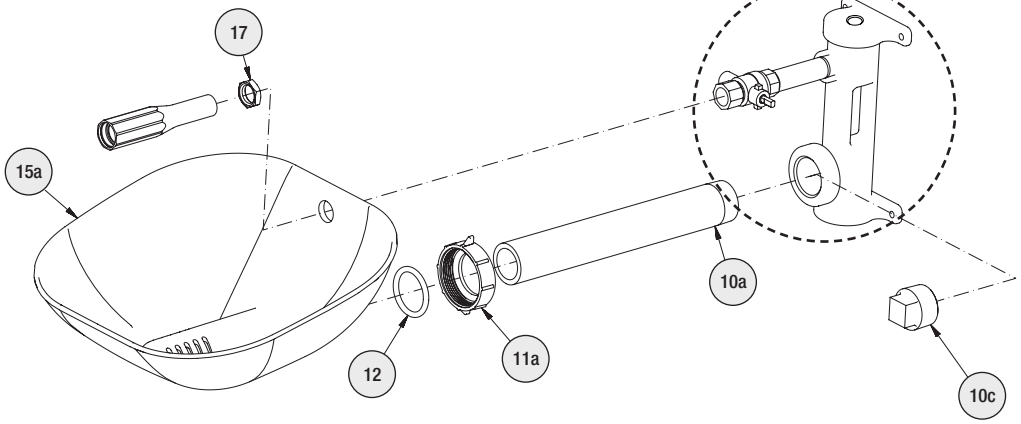


Piezas de repuestor — Receptor y buje

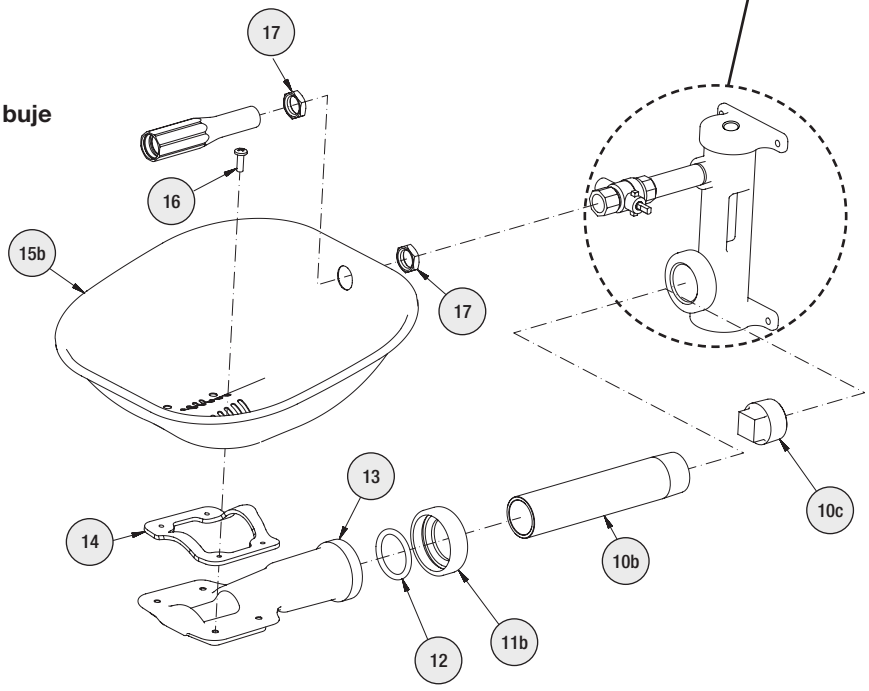
El transversal (artículo nº 3) se usa sólo con válvulas contra congelamiento o quemaduras y accesorios para mangueras.



Receptor plástico con buje



Receptor acero inox con buje



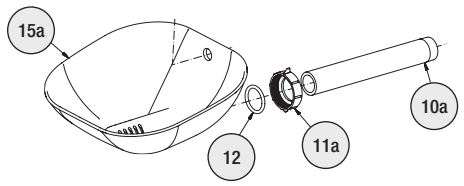
Lista de piezas — Receptor y buje

☑ *BSP = British Standard Pipe Thread (Estándar británico de roscas para tuberías) (No disponible en los Estados Unidos)*

Art.	Pieza No.	Ctd.	Descripción
1	111-096	1	Buje
1	111-097	1	Buje acero inox
1	111-103	1	Buje acero inox 316
1	111-098	1	Buje acero inox pulido
2a	113-006LQ	1	Tubería ½" x 3½"
2a	113-965	1	Tubería ½" x 3½" acero inox
2a	113-1211	1	Tubería ½" x 3½" acero inox 316
2a	113-596	1	Tubería ½" x 3½" cromado
2b	113-006LG	2	Tubería ½" x rosca exterior
2b	113-867	2	Tubería ½" x rosca exterior en acero inox
2b	113-1210	2	Tubería ½" x rosca exterior en acero inox 316
2b	113-006AW	2	Tubería ½" x rosca exterior cromado
3	169-1090	1	Transversal ½"
3	169-1091	1	Transversal ½" acero inox
3	169-1098	1	Transversal ½" acero inox 316
3	169-1097	1	Transversal ½" cromado
4	300-0393	2	Tápon ½" cromado
4	153-230	2	Tápon ½" acero inox
4	153-460	2	Tápon ½" acero inox 316
5	S27-327	1	Válvula ½" con tuerca
5	S27-328	1	Válvula ½" acero inox 316 con tuerca
5	S27-329	1	Válvula de protección contra congelamiento ½" con tuerca
5	S27-330	1	Válvula de protección contra quemaduras ½" con tuerca
5.1	110-215	1	Tuerca
5.1	110-248	1	Tuerca acero inox 316

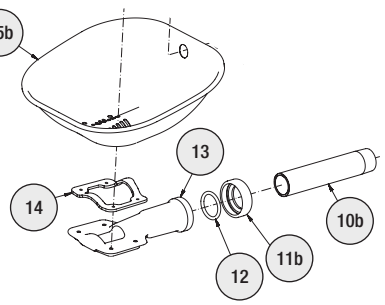
Art.	Pieza No.	Ctd.	Descripción
10a	113-1202	1	Tubería 1¼" x 11" rosca extremo
10a	113-1203	1	Tub. 1¼" x 11" acero inox rosca extremo
10b	113-1204	1	Tubería 1¼" x 7" rosca extremo
10b	113-1205	1	Tubería 1¼" x 7" acero inox rosca extremo
10b	113-1206	1	Tub. 1¼" x 7" cromado rosca extremo
10b	113-1212	1	Tub. 1¼" x 7" acero inox 316 rosca extremo
10c	169-724	1	Tápon 1¼" pintado galvanizado
10c	269-251	1	Tápon 1¼" cromado
10c	269-238	1	Tápon 1¼" acero inox
10c	269-1402	1	Tápon 1¼" acero inox 316
11a	110-239	1	Tuerca, plástico
11b	110-240	1	Tuerca, acero inox
11b	110-242	1	Tuerca, acero inox 316
12	125-176	1	Arosello
13	111-099	1	Soporte Receptor aluminio
13	111-100	1	Soporte Receptor pintado aluminio
13	111-101	1	Soporte Receptor acero inox
13	111-102	1	Soporte Receptor acero inox 316
14	124-082	1	Junta
15a	187-320	1	Receptor plástico
15b	S90-393	1	Receptor acero inox (incluye art. 14)
15b	S90-394	1	Receptor acero inox 316 (incluye art. 14)
16	160-467	4	Tornillo
17	**110-115a**		**Tuerca ½" NPSM latón cromado (ctd. la req.)**
17	**110-238**		**Tuerca ½" NPSM acero inox (ctd. la req.)**
17	**110-241**		**Tuerca ½" NPSM acero inox 316 (ctd. la req.)**

Paquete receptor plástico S90-395 incluye art. 10a, 11a, 12, 15a

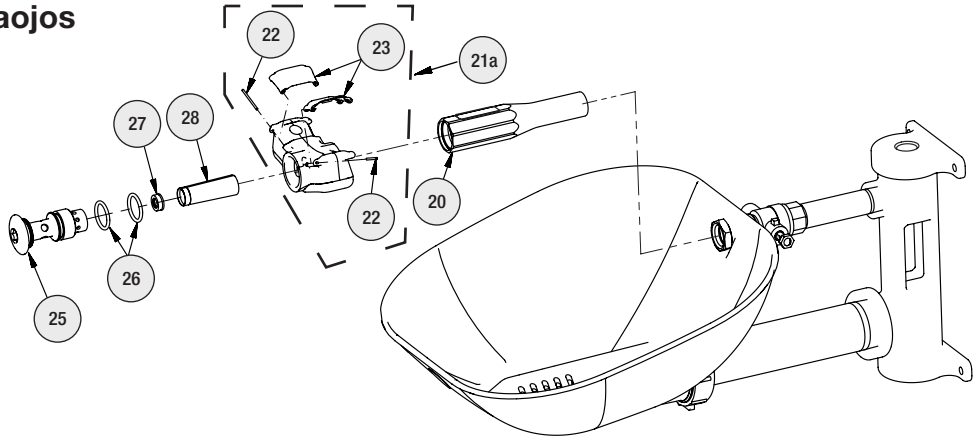


Paquete receptor acero inox 300 Serie S90-391 incluye art. 10b, 11b, 12, 13, 14, 15b

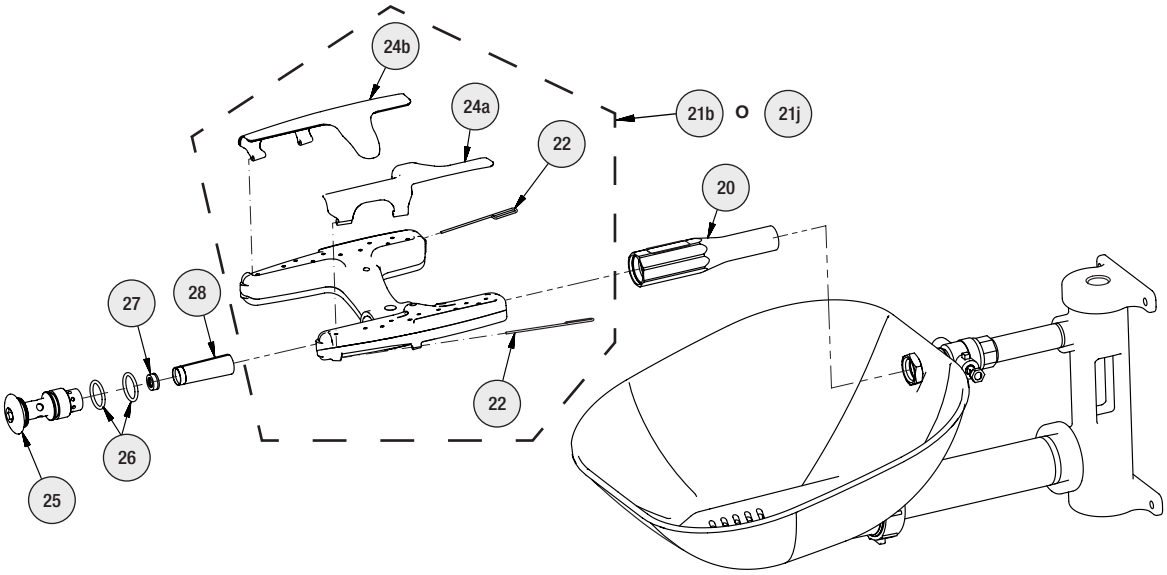
Paquete receptor acero inox 316 Serie S90-392 incluye art. 10b, 11b, 12, 13, 14, 15b



Piezas de repuesto — Lavaojos



Piezas de repuesto — Lavaojos/rostro

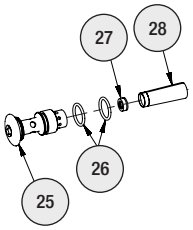


Paquete S65-339 incluye art. 26, 27, 28

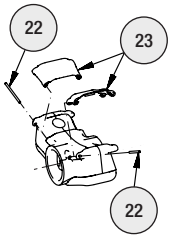
Paquete S88-068 incluye art. 25, 26, 27, 28

Paquete S88-069 incluye art. 25, 26, 27, 28 (300 series ss)

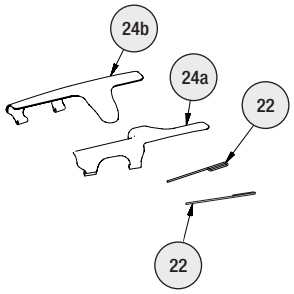
Paquete S88-070 incluye art. 25, 26, 27, 28 (316 ss)



Paquete tapa protectora lavaojos S45-2675 incluye art. 22 and 23

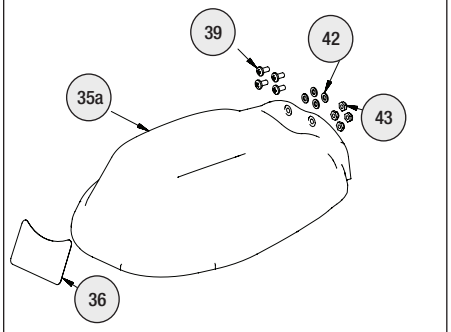


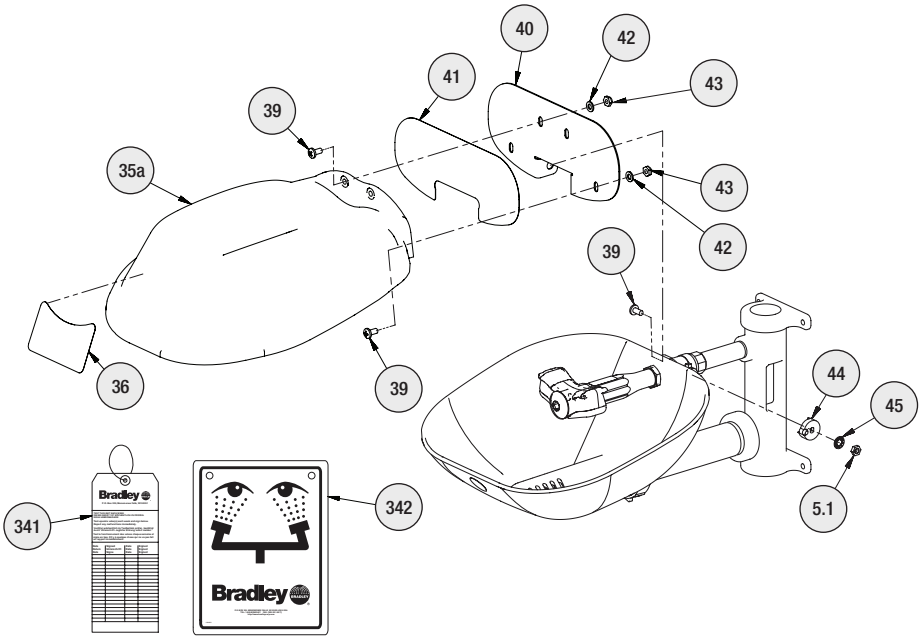
Paquete tapa protectora lavaojos/rostro S45-2676 incluye art. 22, 24a and 24b



Piezas de repuesto — Cubierta contrapolvo plástico

Paquete cubierta contrapolvo plástico S90-390 incluye art. 35a, 36, 39, 42, 43

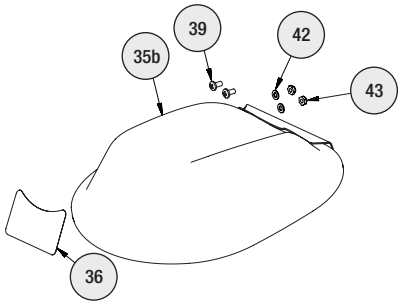


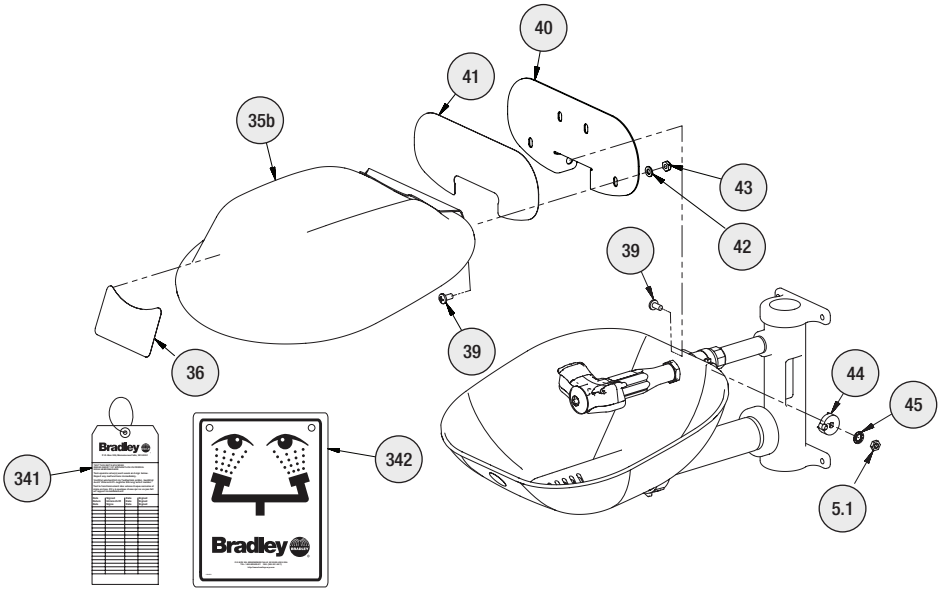


Piezas de repuesto — Cubierta contrapolvo acero inox

Paquete cubierta contrapolvo acero inox S90-388 incluye art. 35b, 36, 39, 42, 43

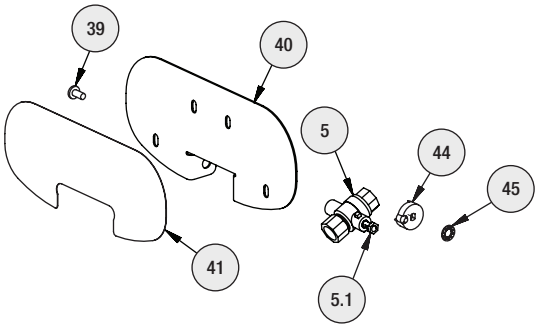
Paquete cubierta contrapolvo acero inox (316) S90-389 incluye art. 35b, 36, 39, 42, 43





Paquete Manija incluye art. 39, 40, 41, 44, 45, 5, 5.1

- Paquete S08-390 (para las unidades con válvula de latón)
- Paquete S08-391 (para las unidades con válvula de acero inox)
- Paquete S08-392 (para las unidades con válvula de protección contra congelamiento de latón)
- Paquete S08-393 (para las unidades con válvula de protección contra congelamiento de acero inox)
- Paquete S08-394 (para las unidades con válvula de acero inox 316 y manija)
- Paquete S08-395 (para las unidades con válvula de protección contra congelamiento de acero inox 316 y manija)

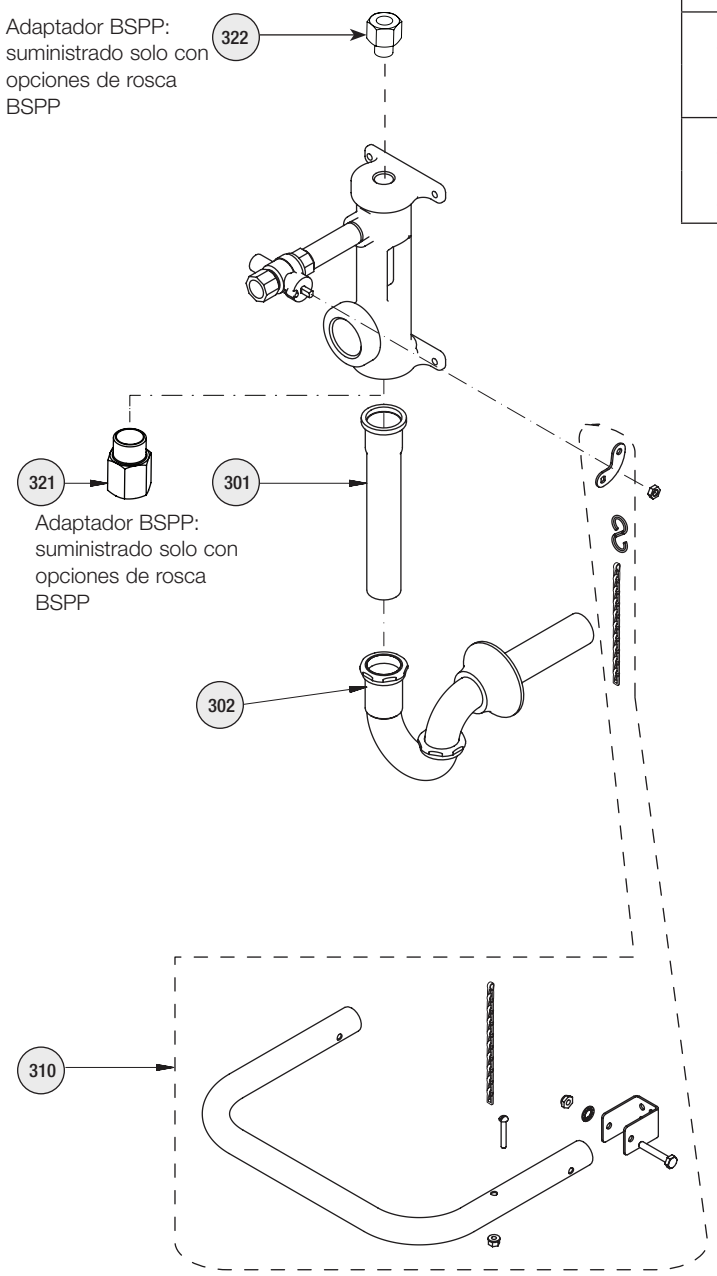


Lista de piezas — Lavaojos, lavaojos/rostro y cubierta

Art.	Pieza No.	Ctd.	Descripción
20	171-001	1	Cuerpo
20	171-002	1	Cuerpo acero inox
20	171-003	1	Cuerpo acero inox 316
20	171-004	1	Cuerpo pulido
21a	S05-190	1	Lavaojos (incluye)
22	juego de repuesto	2	Pasador de pivote
23	juego de repuesto	2	Tapa protectora
21b	S05-192	1	Lavaojos/rostro (incluye)
22	juego de repuesto	2	Pasador de pivote
24a	juego de repuesto	1	Tapa protectora derecha
24b	juego de repuesto	1	Tapa protectora izquierda
21j	S05-205 (utilizado en accesorios 304SS y 316SS)	1	Conjunto de boquillas rociadoras de acero inoxidable 316 para ojos y cara (incluye)
22	juego de repuesto	2	Pasador de pivote
24a	juego de repuesto	1	Tapa protectora derecha
24b	juego de repuesto	1	Tapa protectora izquierda
25	115-158	1	Tapa
25	115-159	1	Tapa acero inox
25	115-164	1	Tapa acero inox 316
25	115-165	1	Tapa pulido

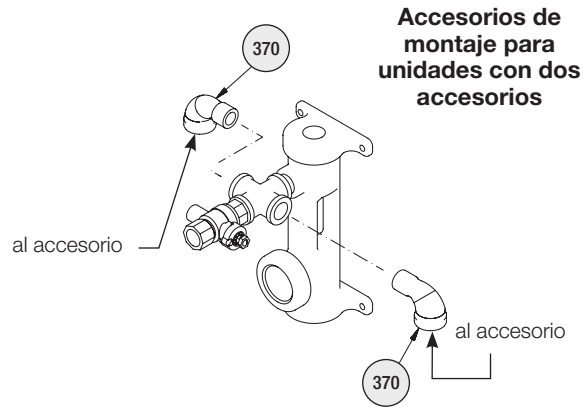
Art.	Pieza No.	Ctd.	Descripción
26	125-157	2	Arosello
27	125-175	1	Control del flujo
28	S65-340	1	Filtro (paquete de 3)
35a	juego de repuesto	1	Cubierta plástico
35b	juego de repuesto	1	Cubierta acero inox
35b	juego de repuesto	1	Cubierta acero inox 316
36	114-097	1	Etiqueta (cubierta)
39	160-389	ctd. la req.	Tornillo ¼-20 x ½" acero inox
39	160-469	ctd. la req.	Tornillo ¼-20 x ½" acero inox 316
40	S08-385	1	Manija acero inox (incluye art.) 41, 44, 45, 5.1)
40	S08-388	1	Manija acero inox 316 (incluye art.) 41, 44, 45, 5.1)
41	114-096	1	Etiqueta
42	142-002AV	ctd. la req.	Arandela
43	161-060	ctd. la req.	Tuerca acero inox
43	161-062	ctd. la req.	Tuerca acero inox 316
44	153-372R	1	Adaptador Válvula
44	153-372R316	1	Adaptador Válvula acero inox 316
45	142-002DA	1	Rondana de seguridad
341	204-421	1	Etiqueta de emergencia
342	114-051	1	Aviso de seguridad
342	114-015E	1	Aviso de seguridad (No disponible en los Estados Unidos)

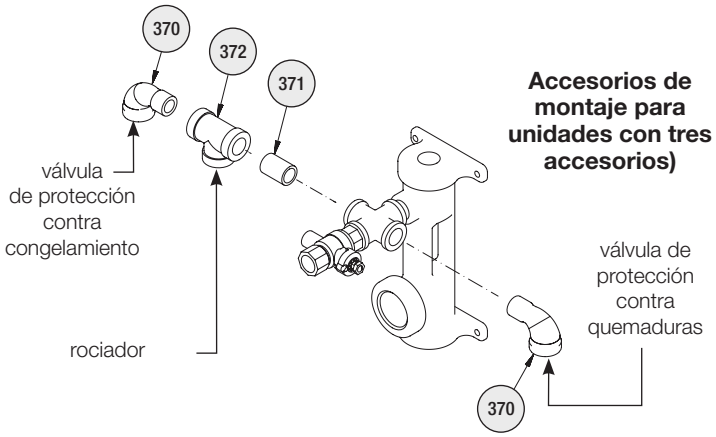
Piezas de repuesto y ista de piezas –— Drenaje, sifón en P y pedal



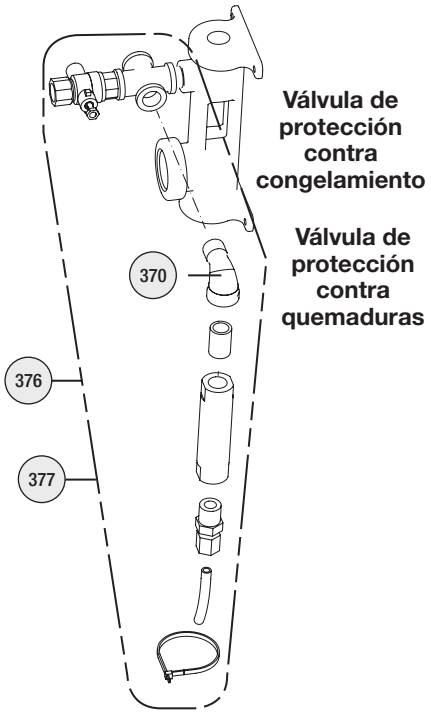
Art.	Pieza No.	Ctd.	Descripción
301	269-167	1	Tubo de aspiración
302	269-142	1	P-trap
310	S39-395	1	Pedal
321	169-1117	1	BSPP-NPT 1-1/4" 303SS
321	169-1118	1	BSPP-NPT 1-1/4" 316SS
322	169-1119	1	BSPP-NPT ½" 303SS
322	169-1120	1	BSPP-NPT ½" 316SS

Piezas de repuesto — Accessorios opcionales

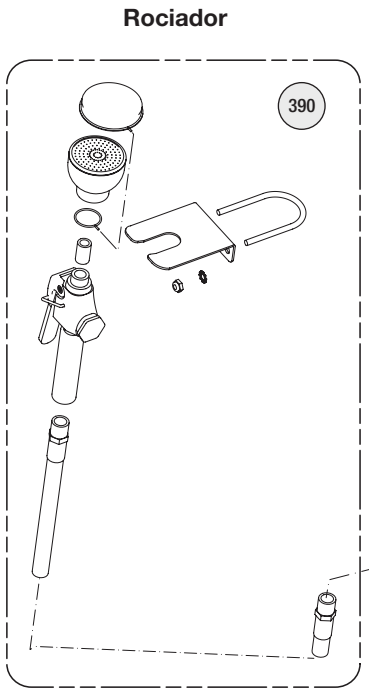


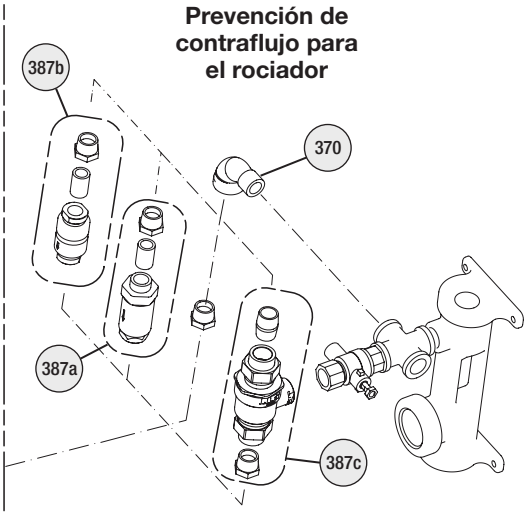


Art.	Pieza No.	Cant.	Descripción
370	169-025	la req.	Codo ½"
370	269-241	la req.	Codo ½" acero inox
370	269-1396	la req.	Codo ½" acero inox 316
370	169-862	la req.	Codo ½" cromado
371	113-006LG	1	Tubería ½" x cierre
371	113-867	1	Tubería ½" x cierre acier inox
371	113-1210	1	Tubería ½" x cierre acier inox 316
371	113-006AW	1	Tubería ½" x cierre cromado
372	169-838	1	T ½"
372	169-1100	1	T ½" acero inox
372	269-280	1	T ½" cromado
372	169-1099	1	T ½" acero inox 316



Art.	Pieza No.	Descripción
376	S45-1986	Válvula de protección contra congelamiento
377	S45-1989	Válvula de protección contra quemaduras





Art.	Pieza No.	Cant.	Descripción
387a	S27-303	1	Interruptor de vacio ⅜"
387b	S45-2309	1	Prevención de contraflujo N9
387c	S45-2310	1	Prevención de contraflujo 9D
390	S19-430EH	1	Rociador

S19-2000 (EFX8), S19-2000EFX
Emergency Fixture Thermostatic Mixing Valves

- Exceeds ANSI Z358.1
- ASSE 1071 Certified
- Reliable Liquid-Filled Thermostat with 10-Year Warranty
- Checkstops on Inlets
- Adjustable Set Point within Temperature Range
- Accurate Temperature Control to within ±3° F
- Built-in Cold Water Bypass, Assuring Cold Flow
- Positive Shutoff of Hot Supply When Cold Supply is Lost
- Easy Installation and Serviceability
- Dirt and Lime Resistant
- Dial Thermometer
- Factory Assembled and Tested
- Universal Mounting Capability
- Cabinet Features:
  - — 18 Gauge Body & Door
  - — Left-Hand Hinge
  - — Cylinder Lock
  - — Inlet/Outlet Knock-Out Holes for Mounting Flexibility
  - — Stainless Steel or Baked White Enamel Finishes
  - — Surface-Mounted or Recessed Style with Flange

Valve Specifications

Maximum Operating Pressure
125 PSI (860 kPA)

Maximum Inlet Temperature
180° F (82° C)

Recommended Inlet Temperature
120° F (49° C) – 140° F (60° C)

Temperature Range		Set Point
Std.	65° F (18° C) to 90° F (32° C)	85° F (29° C)

Flow Capacities – GPM

Model	Min. Flow	Pressure Drop – PSI						
		5	**10**	**15**	**20**	**30**	**45**	**60**
S19-2000	1.5	3.0	4.0	5.0	6.0	7.3	9.0	10.5
Cold Bypass Only		2.3	3.2	4.0	4.6	5.6	6.8	7.7

Flow Capacities – L/Min

Model	Min. Flow	Pressure Drop – Bar						
		.5	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**4.0**
S19-2000	5.5	13.5	19.0	23.5	27.0	30.5	33.5	38.5
Cold Bypass Only		10.5	14.5	18.0	21.0	23.5	25.5	29.5

☑ *This plumbing fixture is not intended to dispense water for human consumption through drinking or for preparation of food or beverages.*

Product Compliance

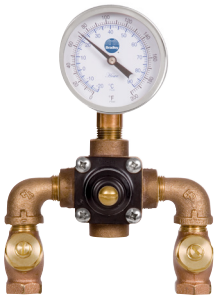
Listed by IAPMO R&T to

- ASSE 1071
- Uniform Plumbing Code (UPC)
- National Plumbing Code of Canada
- International Plumbing Code (IPC)

Listed by ASSE International to

- ASSE 1071

Engineer's Approval _____



S19-2000

Valve Model

Model	Description
☐ **S19-2000**	Emergency Fixture Thermostatic Mixing Valve
☐ **S19-2000EFX**	Emergency Fixture Thermostatic Mixing Valve for S19294JB & S19294JBT Only

Configurable Valve Model (select one)

Model	Description
☐ **EFX8**	EFX8 Thermostatic Mixing Valve with Options
☐ **CAB-EFX8**	EFX8 Thermostatic Mixing Valve **Cabinet Only**

Optional Valve Selections

Finish

☐ **R**	Rough Brass (standard)
☐ **C**	Chrome Plated

Bracket

☐ **B**	Wall Mounting Bracket
☐ **0**	None

Optional Cabinet Selections

Cabinets (includes bracket)

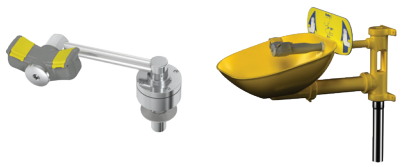
☐ **SS**	Surface Mount Stainless Steel
☐ **RS**	Recessed Stainless Steel
☐ **SE**	Surface Mount White Enamel
☐ **RE**	Recessed White Enamel
☐ **0**	None

Window

☐ **W**	Plexi-Glass Window in Door
☐ **0**	None

Application

Eye or Eye/Face Wash

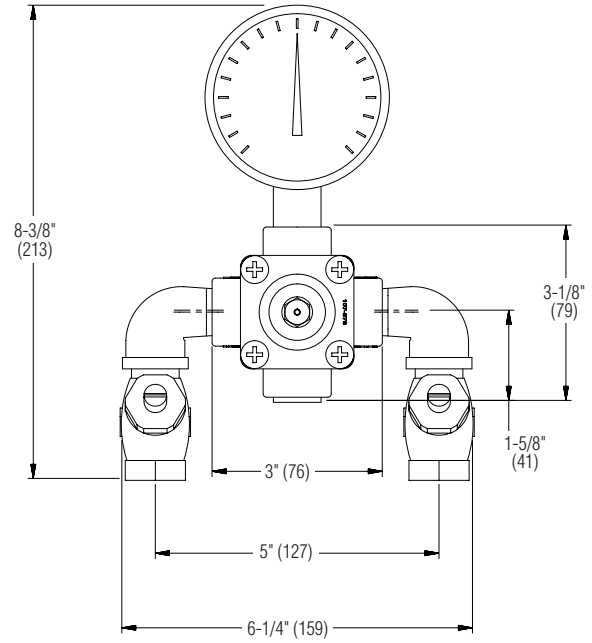


Complies with ANSI/ISEA Z358.1

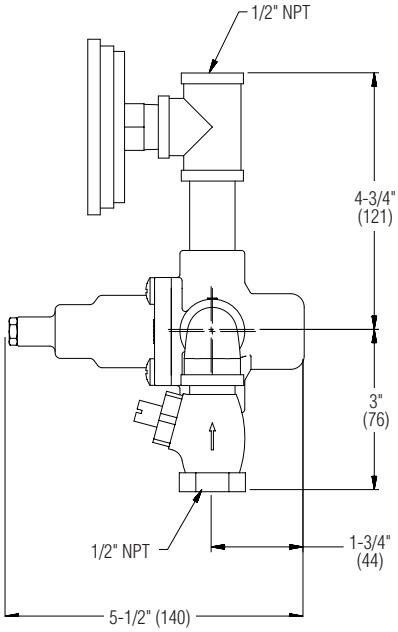
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Dimensions **(mm)**

Front View

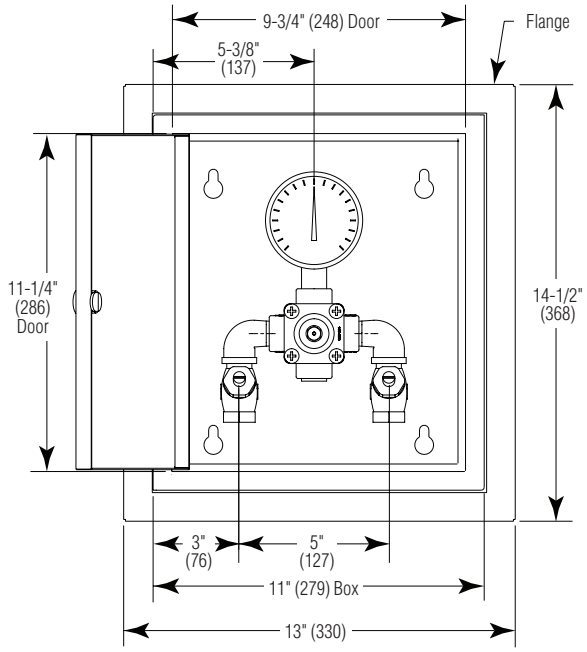


Side View

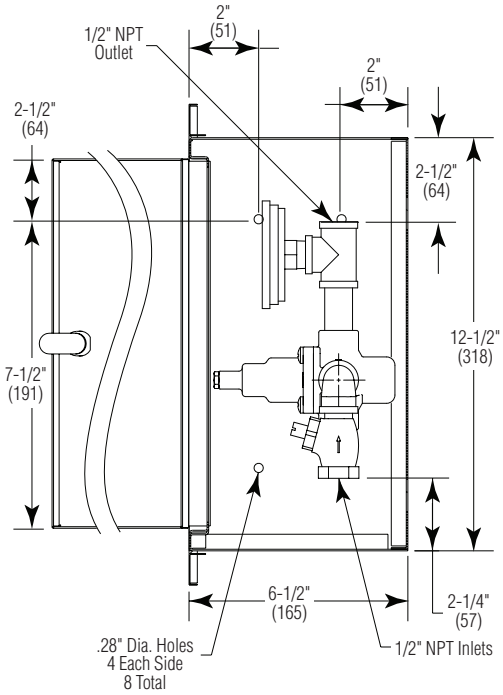


Dimensions — S19-2000 Recessed Cabinet

Front View



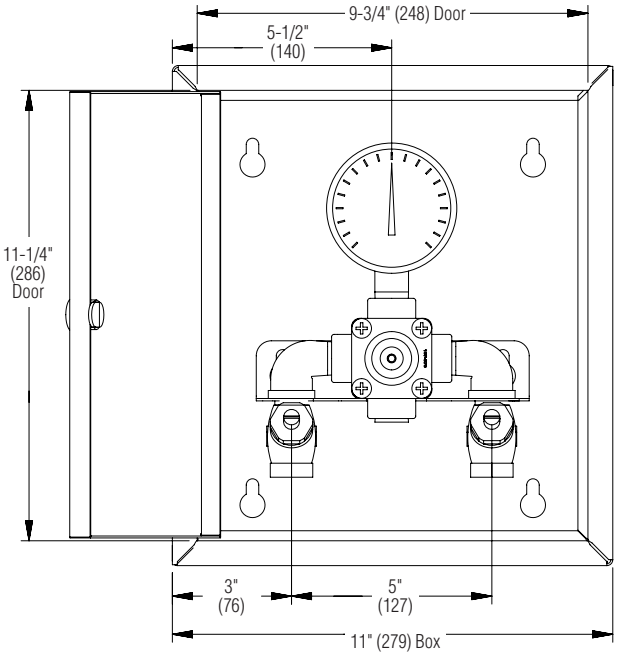
Side View



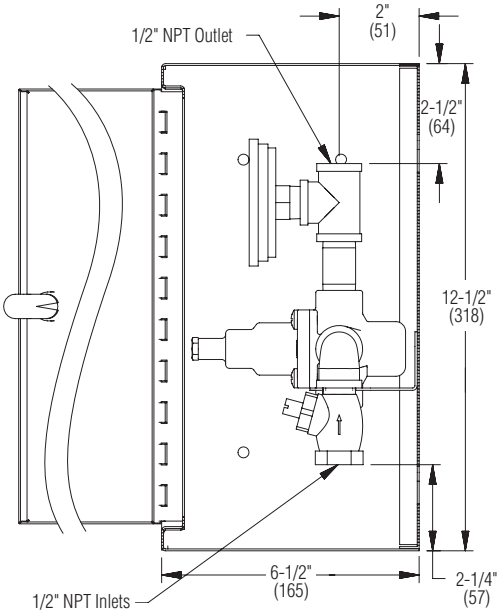
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Dimensions — S19-2000 Surface-Mounted Cabinet (mm)

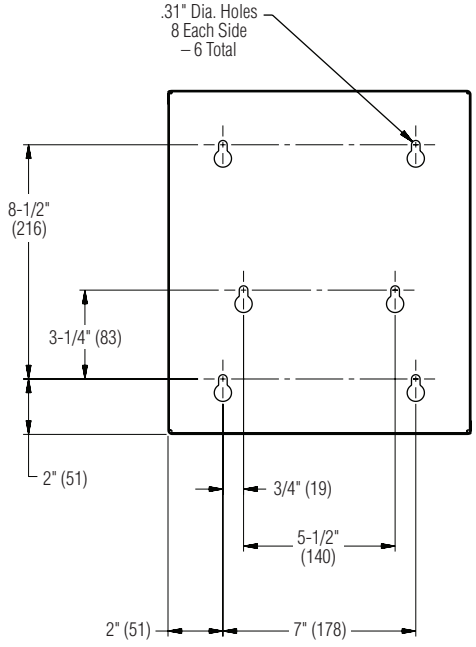
Front View



Side View

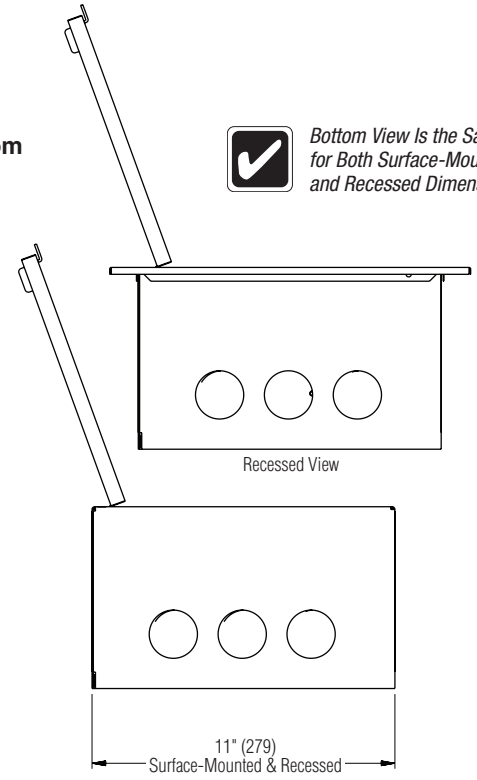


Back View



Bottom View

Bottom View Is the Same for Both Surface-Mounted and Recessed Dimensions.



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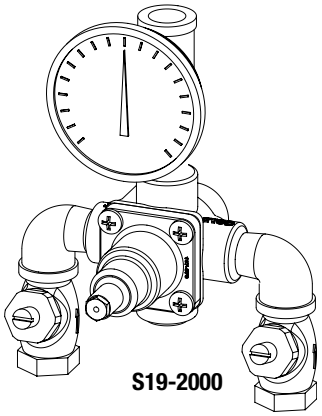
Installation

EFX8/S19-2000, S19-2000EFX Series

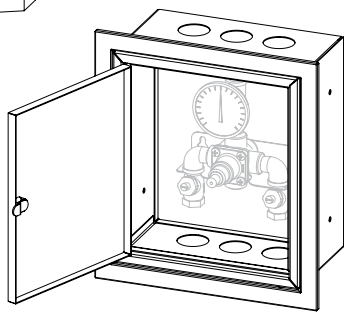
Thermostatic Mixing Valve with Optional Cabinet

Robinet thermostatique mélangeur avec cabinet facultatif

Válvula mezcladora termostática con armario opcional

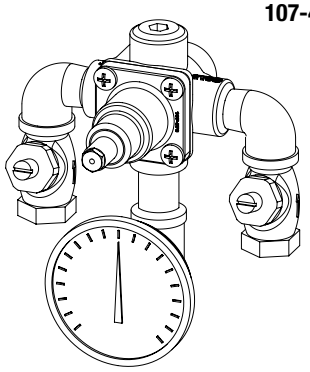


S19-2000

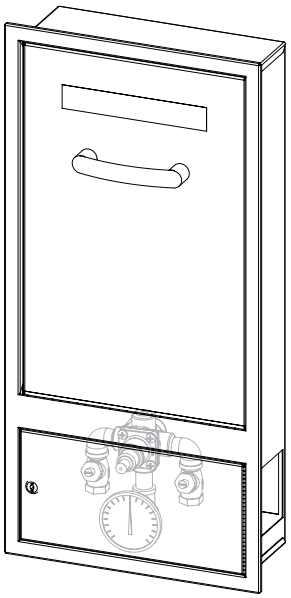


S86-066 Stainless Cabinet
107-492 Stainless Flange for Recessed Mounting
(Cabinet and Flange for S19-2000 Only)

(Valve Only)



S19-2000EFX



S19294JB, S19294JBT
(Cabinet for S19-2000EFX Only)

Read the instructions in this manual before beginning installation. Save these instructions and refer to them for inspection, maintenance, and troubleshooting information.

For questions regarding the operation, installation or maintenance of this product, visit bradleycorp.com or call 800.BRADLEY (800.272.3539).

Product warranties and parts information may also be found under “Resources” on our website at bradleycorp.com.

215-1291 Rev. V: ECO 26-09-001
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A WATTS Brand

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Troubleshooting 8
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Specifications

Inlet Connections: 1/2" NPT
Outlet Connection: 1/2" NPT
Temperature Range: 65–95°F
Maximum Pressure: 125 PSI
Inlet Temperature Hot: 120–180°F
Inlet Temperature Cold: 33–80°F
Minimum Temperature Differential
(between hot supply & valve set point): 20°F
Flow at 30 psi: 7.3 gpm
Minimum Cold Water Bypass at 30 psid: 5.6 gpm
Minimum Flow: 1.5 gpm
Maximum Flow with Cold Water Shut-Off: 0.5 gpm

Especificaciones

Conexiones de entrada: NPT de 1/2 pulg.
Conexión de salida: NPT de 1/2 pulg.
Rango de temperaturas: 65 – 95 °F
Presión máxima: 125 PSI
Temperatura de entrada, caliente: 120 – 180 °F
Temperatura de entrada, fría: 33 – 80 °F
Diferencial de temperatura mínima
(entre suministro de agua caliente y punto de
referencia de la válvula): 20 °F
Flujo a 2,1 bar: 7.3 gpm
Derivación mínima de agua fría a 2,1 bar: 5.6 gpm
Flujo mínimo: 1.5 gpm
Flujo máximo con retención de agua fría: 0.5 gpm

Caractéristiques

Raccords d'arrivée : 1/2 po NPT
Raccord de sortie : 1/2 po NPT
Plage de température : 65 – 95 °F
Pression maximum : 125 lb/po^2
Température d'arrivée, eau chaude : 120 – 180 °F
Température d'arrivée, eau froide : 33 – 80 °F
Différentiel minimal de température
(entre arrivée d'eau chaude et réglage du mitigeur: 20 °F
Débit à 30 psi : 7.3 gpm
Dérivation d'eau froide minimum à 30 psid : 5.6 gpm
Débit minimum : 1.5 gpm
Débit maximum avec arrêt d'eau froide : 0.5 gpm

Safety Information

To ensure proper operation:

Installation

Failure to comply with proper installation and maintenance instructions could contribute to a valve failure resulting in severe bodily injury including scalding, chilling and/or death depending upon system water pressure changes and/or supply water temperature changes.

Use this thermostatic mixing valve in accordance with ASSE standard 1071.

When installed in accordance with ASSE standard 1071, the valve is designed to be installed at fixtures such as emergency eyewash and eye/face wash applications only. When installed as an ASSE 1071 valve, the valve does not function as an ASSE 1016, ASSE 1017, ASSE 1069, or ASSE 1070 valve.

This valve should not be used where ASSE standard 1016 devices are required.

Operation of emergency thermostatic mixing valves and fixtures must be tested weekly per ANSI/ISEA Z358.1.

This valve does not provide protection from pipe freezing.

Valve shall be accessible for testing, adjusting, and maintenance in the installed position.

If shut-off valves are installed for maintenance purposes, provisions shall be made to prevent unauthorized shut-off.

Installation of this system must be completed by a qualified plumber in compliance with all national and local codes. Compliance and conformity to local codes and ordinances is the responsibility of the installer. Should these codes differ from the information in the manual, follow the local codes. Inquire with governing authorities for additional local requirements.

Inspection

Regular checking and cleaning of the valve's internal components and check stops is necessary for maximum life and proper product function. Periodic inspection and yearly maintenance by a licensed contractor is required. Corrosive water conditions and/or unauthorized adjustments or repairs could render the valve ineffective for it's intended service. Frequency of cleaning and inspection depends upon local water conditions.

Output temperature of the valve must be checked and adjusted at initial installation and on a quarterly basis.

Water Temperature

Final temperature adjustment is the responsibility of the installer.

Supplies Recommended for Installation

- Lockable shut-off on the outlet if tempered water is supplied to one or more emergency fixtures
- Lockable shut-off on the inlets/supplies
- (6) 1/4" wall anchors and fasteners for surface-mounted cabinet
- (4) 1/4" fasteners (and wall anchors, if necessary) for recess-mounted cabinet
- Unions on all connections to facilitate removal of valve

Tools Required for Temperature Adjustment

- 5/64" Allen wrench
- Blade screwdriver

1 Install Optional Cabinet (If not installing cabinet, skip to Step 2)

If installing S19-2000EFX into Dropdown Eyewash Cabinet S19294JB, S19294JBT, please see mounting instructions supplied with cabinet.

Recessed Cabinet:

1. Rough-in wall opening 11-1/2" W x 13" H.
2. Insert the cabinet and secure to wall with four 1/4" fasteners properly anchored (supplied by installer.)
3. Install two anchors and screws through the valve bracket in back of the cabinet into a secure brace (supplied by installer) or into wall. This will support the valve.
4. Install the valve nipples and one-half of the union ball valve using pipe sealant or teflon tape. Install the other half of the union ball valve onto inlet and outlet pipe.
5. Insert the valve into the bracket in the cabinet (right side goes in first). Continue with the valve installation procedure.
6. Position the wall flange tight to the wall and caulk in place.

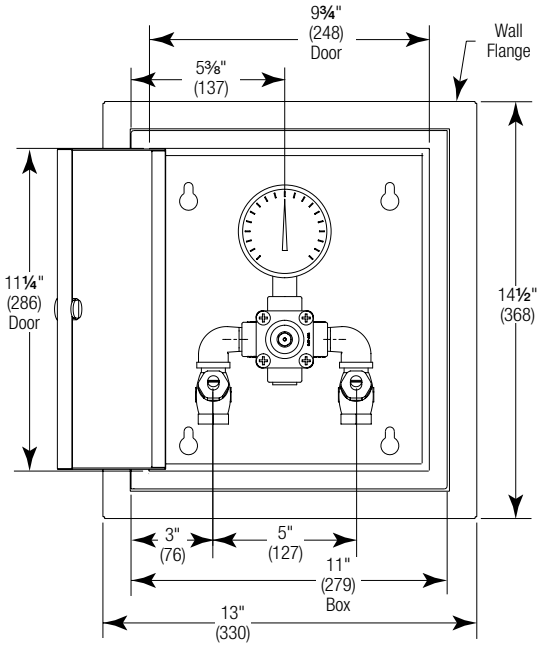
Surface-Mounted Cabinet:

1. Measure and mark the cabinet mounting hole locations at the dimensions shown on next page. Install six 3/8" wall anchors (supplied by installer).
2. Position the cabinet onto the wall and secure into place with six 3/8" wall fasteners (supplied by installer).
3. Install the valve nipples and one-half of the union ball valve using pipe sealant or teflon tape. Then install the other half of the union ball valve onto the inlet and outlet piping.
4. Insert the valve into the bracket in the cabinet (right side of the valve goes in first). Continue with the valve installation procedure.

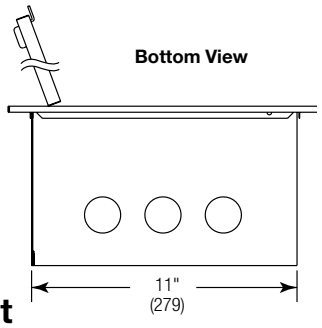
Optional Recessed Cabinet

(mm)

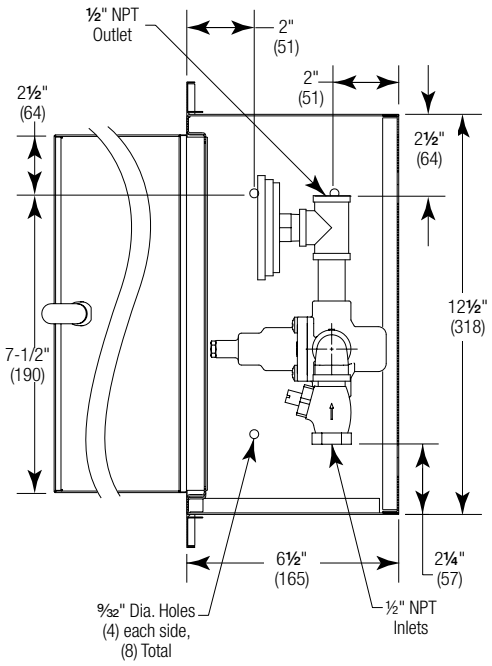
Front View



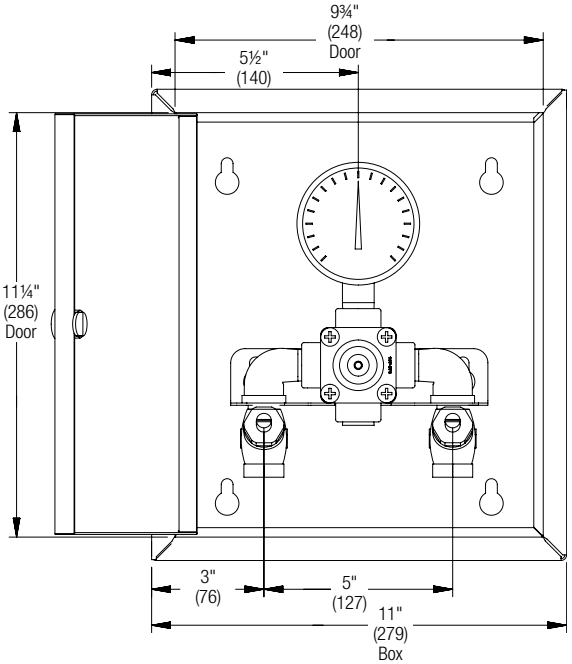
Bottom View

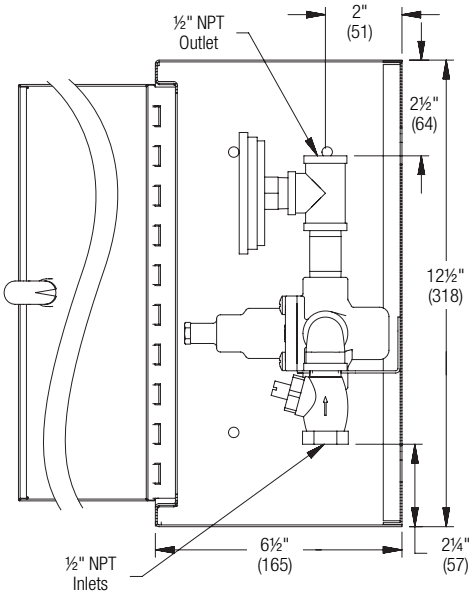


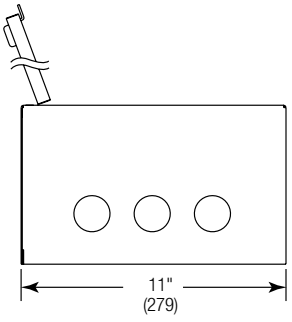
Side View



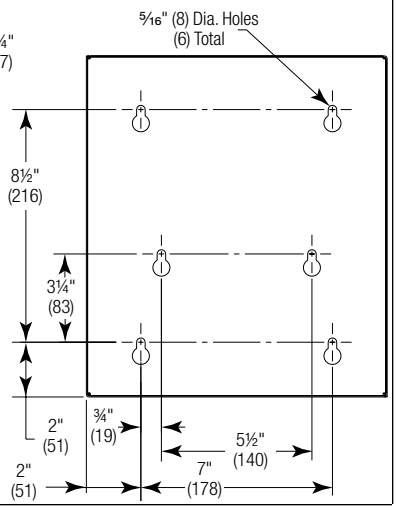
Optional Surface-Mounted Cabinet





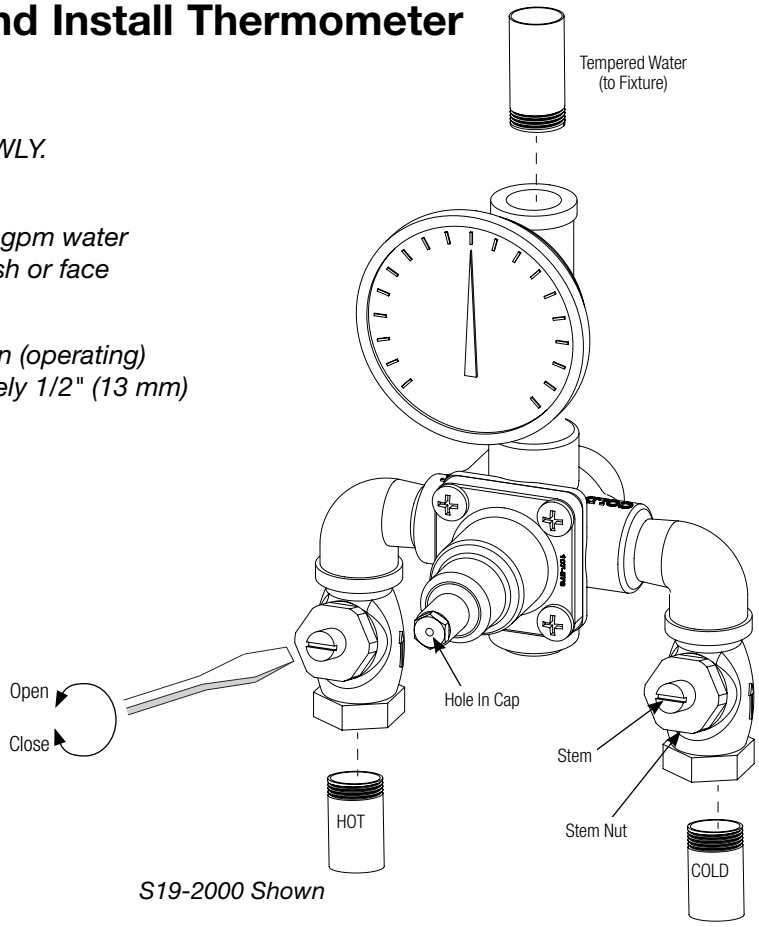


Mounting Hole Locations



2 Connect Supply Lines and Install Thermometer

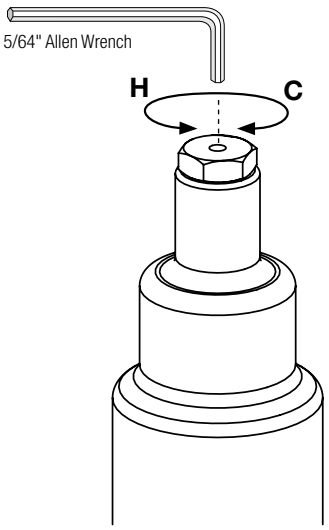
- ☑ *Check for leaks by pressurizing unit SLOWLY.*
- ☑ *Check the temperature when approx. 3-5 gpm water flow is reached (equivalent to one eye wash or face wash) and adjust if necessary.*
- ☑ *When the check stops are in the fully open (operating) position, the stem will extend approximately 1/2" (13 mm) from the stem nut.*



S19-2000 Shown

3 Adjust Temperature with Water Running

- ☑ *Check the temperature when approximately 3 – 5 gpm water flow is reached (equivalent to one eye wash).*
- ☑ *No single emergency fixture supplied by this device shall have a minimum flow rate less then 1.5 gpm.*
- ☑ *This device must be checked for final temperature and adjusted as necessary. The standard preset factory temperature setting is 85°F (29°C) [the range of the valve is 65°F–90°F (18°C–32°C)]. Insert Allen Wrench through the hole in the cap and into the set screw to adjust. Consult proper medical and/or safety authorities for the optimum temperature recommended for your particular application.*



4 Test Unit

⚠ **DO NOT SKIP THIS STEP!!!**

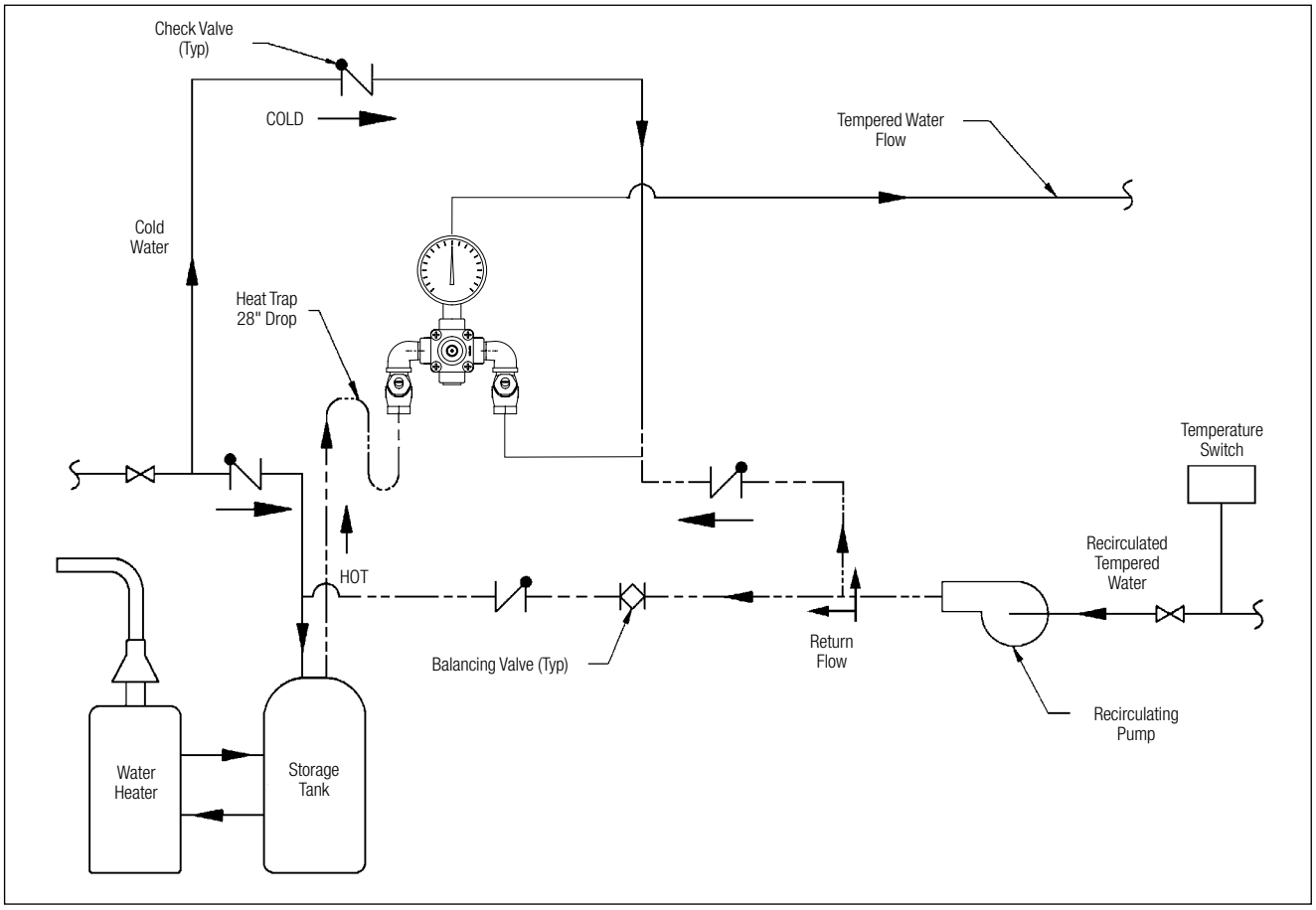
Shut the hot water supply off by closing hot water inlet valve or supply check valve. While the hot water supply is turned off, check to make sure the cold water continues to flow. If the cold water is flowing properly, reopen the hot water supply.

Shut the cold water supply off by closing the cold water inlet valve or supply check valve. While the cold water supply is off, check to make sure that the hot water flow has shut down to less then 0.5 gpm. If hot water is shut down, fully reopen cold water supply.

- ☑ *Test the system weekly (turn on the water supply and check for constant control of the desired set temperature).*

5 Optional Water Recirculation Setup

Recirculating the water in the system provides constant regulation of the water temperature. Flush the supply lines thoroughly after completing installation. Close off all fixtures and label them as not available for use during the recirculating process.



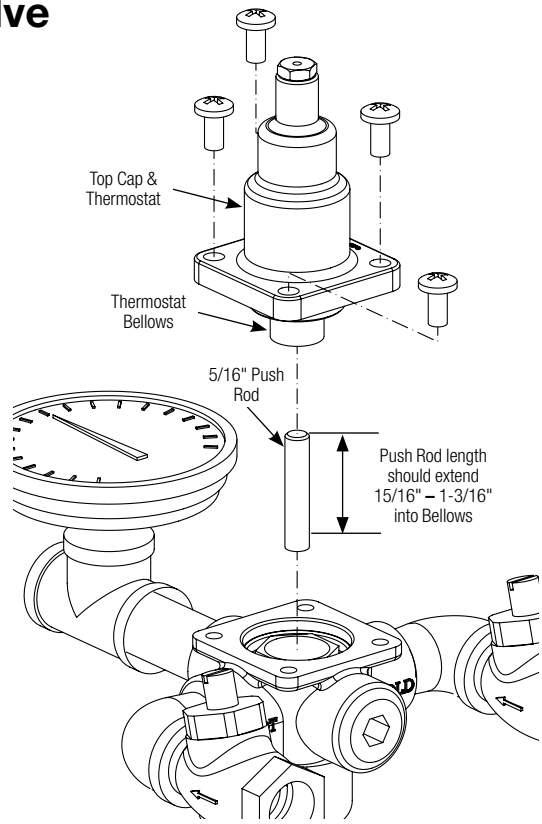
1. Turn off the recirculating pump and turn on the water supply at emergency fixture (a water flow rate of 3 – 5 gpm is required).
2. Let the water run through the system until a consistent temperature is obtained. If you do not obtain the required temperature, refer to step #3 on previous page for temperature readjustment.
3. As soon as the water reaches the proper temperature, turn on the recirculating pump (make certain the proper system temperature has been achieved before proceeding).
4. Check the water temperature at the return pump. If the temperature exceeds the appropriate level by 2°F, adjust the temperature high-limit switch (this will turn off the pump). Wait until the return water temperature is 5°F below the appropriate level and adjust the low-limit switch (this will turn the pump back on).
5. Open the balancing valve completely.
6. Turn off all fixtures and make sure there is no water running through the system (the cold inlet pipe should feel warm to the touch).
7. Let the system run for 30 minutes or longer without water. If, after thirty minutes, the water temperature increases, you may readjust the temperature by slowly closing the balancing valve until the appropriate temperature is reached.

Troubleshooting: Thermostatic Mixing Valve

Before attempting to troubleshoot the valve or disassemble the components, check for the following:

- Stop/check valves are fully open (the slotted stem extends approximately 1/2" from the stem nut) and that all inlet and outlet shut-off valves are open
- Hot and cold inlet pipes are connected properly, and that there are no cross-connections or leaking stop/check valves
- Water heater output is at least 20°F above the set temperature.

Be sure to close the appropriate shut-off valves prior to disassembly of the valve and reopen the valves after inspection and repair is complete.

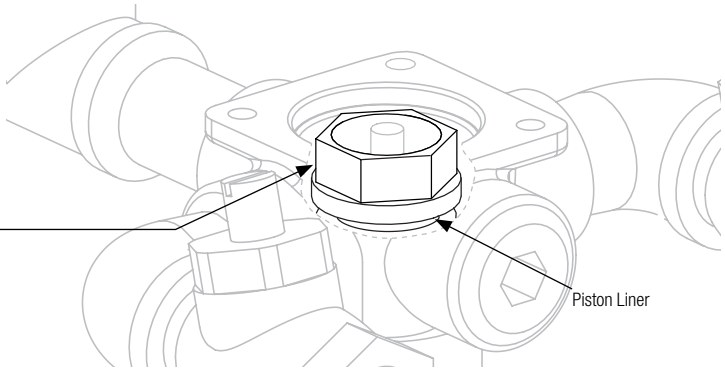


Problem	Cause	Solution
External leaks in the system	Either the NPT joints or the O-rings have been damaged.	Replace the NPT joints and/or O-rings where necessary. For replacement of O-rings, contact your Bradley representative and ask for O-Ring Seal Kit (S65-170).
No hot water flow (cold water flow only)	The thermostat has failed and, subsequently, the safety shut-off has engaged.	**Inspect Thermostat:** 1. Remove the top cap and thermostat. 2. Insert the 5/16" dia. push rod into the thermostat bellows. 3. Mark the length the push rod extends into the bellows (at room temperature, with 10 lb. of force. the length should be approx. 15/16" – 1-3/16"). 4. If the push rod length is not in the proper range, the thermostat must be replaced (it cannot be repaired). Contact your Bradley representative and ask for Thermostat Kit (S65-171).
Limited water flow	The inlet shut-off valve may be partially closed or there has been a significant decrease in water pressure.	
	Dirt and debris have collected on the check screen or seat, limiting the movement of the stop and checks.	**Clean Stop and check Valves:** Remove the stop and checks, clean the seat and reassemble the valve. Do not remove the seat. The components may be brushed with a small wire brush to remove debris. A pair of tweezers works well for pulling debris out from the seat. If the stop and checks need to be replaced, contact your Bradley representative and ask for Check/Stop Kit (S27-102-Rough Brass, or S27-292A-Chrome).
Temperature fluctuation or improper Temperature	The stop and check sections of the valve do not move freely.	Clean Stop and Check Valves as described above.
	Thermostat is slowly failing.	Check Thermostat as described above, or replace.
	Inlet supply line to the mixing valve is being shared by other pieces of equipment that are used only periodically, such as laundry appliances or washdown stations. It may reduce the inlet pressure to the mixing valve to less than 3 PSI. The supply line size may not be large enough to supply both the valve and the other appliances.	Enlarge the supply line size, reconfigure the supply line or regulate the supply usage.
	Recirculation is not balanced.	Review recirculation set up on page 6.
	Piston does not move freely and must be cleaned.	See next page for piston disassembly and cleaning directions.

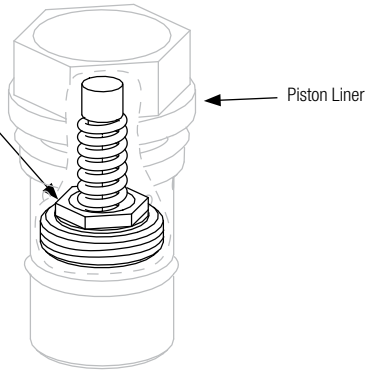
Troubleshooting: Piston Disassembly and Cleaning

A Remove the Top Cap and Thermostat Assembly as shown on Page 6. Set the 5/8" Push Rod aside.

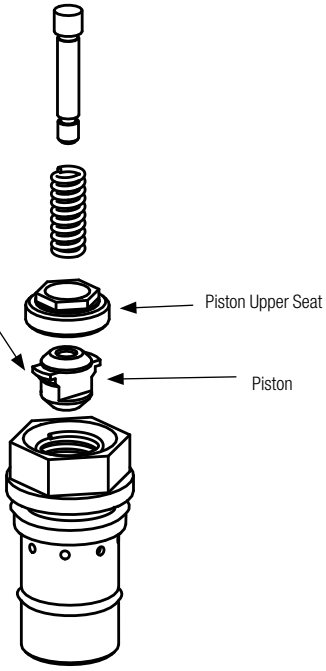
B Using a 15/16" socket wrench, loosen the piston liner from the valve body and lift out with a needle-nose pliers.



C Using a 1/2 deep socket wrench, loosen the piston upper seat from the piston liner and lift out parts with a needle-nose pliers.

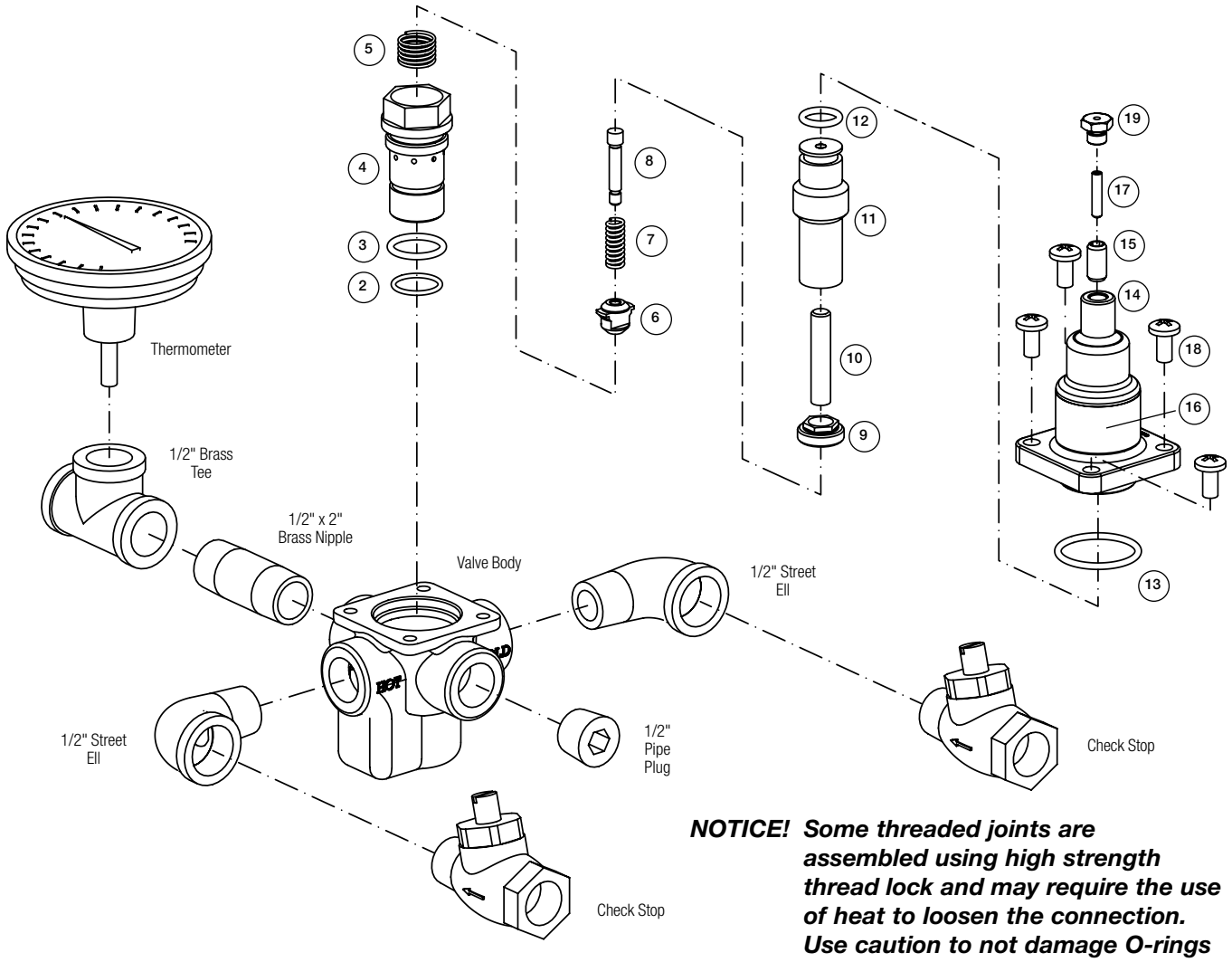


D Dissamble and clean the piston assembly parts with any cleaner suitable for brass and stainless steel. (if necessary, use a 400-grit sandpaper to polish and hone the piston and liner.)



E Re-assemble the piston assembly. Push the mechanism up and down several times to make sure the piston moves smoothly and consistently. If it is not consistent, repeat Procedure D until it moves freely, or replace. Contact your Bradley representative and ask for Piston/Liner Kit (part number S65-172).

Parts Breakdown



NOTICE! Some threaded joints are assembled using high strength thread lock and may require the use of heat to loosen the connection. Use caution to not damage O-rings or other components.

Thermostat Kit S65-171

Item	Qty.	Description
11	1	Thermostat
12	1	O-Ring
13	1	O-Ring

Piston & Liner Kit S65-172

Item	Qty.	Description
2	1	O-Ring
3	1	O-Ring
4	1	Liner
5	1	Spring
6	1	Piston
7	1	Spring
8	1	Overheat Screw
9	1	Upper Seat

O-Ring Kit S65-170

Item	Qty.	Description
2	1	O-Ring
3	1	O-Ring
12	1	O-Ring
13	1	O-Ring

Center Section Kit S65-303

Item	Qty.	Description
2	1	O-Ring
3	1	O-Ring
4	1	Liner
5	1	Spring
6	1	Piston
7	1	Spring
8	1	Overheat Screw
9	1	Upper Seat
10	1	Push Rod
11	1	Thermostat
12	1	O-Ring
13	1	O-Ring
14	1	Control Cap
15	1	Set Screw
16	1	Label
17	1	Set Screw
18	4	1/4 Screw
19	1	Cap

Kit numbers for rough brass finish. Contact Bradley for other configurations.

As of November 2001, the piston (Item 7) has replaced the seal holder and seal as a direct replacement.

As of June 2008, the brass control cap (item 15) has been replaced by a plastic cap. All internal components are identical.

As of July 2012, the Temperature Adjustment Control (items 15, 17 and 19) have been updated and are compatible with all units using the plastic Control Cap (June 2008 to present).

Flexible Connection Lines for S19-2000EFX

When used with S19294JB, S19294JBT, order Part No. 269-653 (3 supplied with unit).

Consignes de sécurité

Pour assurer un bon fonctionnement :

Installation

Tout manquement à respecter les instructions d'installation et d'entretien peut contribuer à une défaillance du robinet et provoquer des blessures graves voire mortelles, notamment par la chaleur ou le froid, en fonction des variations de pression d'eau du système ou des variations de température de l'alimentation en eau.

Utiliser ce mitigeur thermostatique conformément à la norme ASSE 1071.

Lorsqu'il est installé conformément à la norme ASSE 1071, le robinet est conçu pour être utilisé sur des appareils d'urgence tels que des douches oculaires et des douches oculaires et faciales seulement. S'il est installé en tant que robinet ASSE 1071, il ne fonctionne pas en tant que robinet ASSE 1016, ASSE 1017, ASSE 1069 ou ASSE 1070.

Ne pas utiliser ce robinet si des appareils conformes à la norme ASSE 1016 sont exigés.

Le fonctionnement des mitigeurs thermostatiques et appareils sanitaires d'urgence doit être contrôlé chaque semaine conformément à la norme ANSI/ISEA Z358.1.

Ce robinet ne protège pas les conduites contre le gel.

Dans sa position installée, le robinet doit être accessible pour les essais, les réglages et l'entretien.

Si des robinets d'arrêt sont installés à des fins d'entretien, prendre les mesures nécessaires pour empêcher les fermetures non autorisées.

L'installation de ce système doit être effectuée par un plombier qualifié conformément à tous les codes en vigueur. La mise en conformité et le respect des codes et règlements en vigueur relèvent de la responsabilité de l'installateur. Si ces codes diffèrent des informations figurant dans le manuel, suivre les codes en vigueur. S'informer auprès des autorités compétentes s'il existe des exigences locales supplémentaires.

Inspection

Le contrôle et le nettoyage réguliers des éléments internes et des clapets d'arrêt du robinet sont nécessaires pour assurer une durabilité maximale et un bon fonctionnement du produit. Prévoir obligatoirement des contrôles périodiques et un entretien annuel par un professionnel agréé. Les eaux corrosives et les réglages ou réparations non autorisés peuvent empêcher le robinet de fonctionner comme prévu. La fréquence de nettoyage et de contrôle dépend des conditions locales d'alimentation en eau.

La température de sortie du robinet doit être contrôlée et réglée lors de l'installation initiale puis chaque trimestre.

Température de l'eau

Le réglage final de la température relève de la responsabilité de l'installateur.

Fournitures requises pour l'installation :

- Robinet d'arrêt verrouillable sur la sortie en cas d'alimentation d'eau tempérée vers un ou plusieurs appareils d'urgence
- Robinet d'arrêt verrouillable sur les arrivées/alimentations
- (6) Ancrages muraux et fixations 3/8 po pour armoire montée en surface
- (4) Fixations 1/4 po (et ancrages muraux, si nécessaire) pour armoire encastrée
- Raccords sur toutes les connexions pour faciliter la dépose du robinet

Outils requis pour réglage de température

- Clé Allen 5/64 po
- Tournevis à lame

1 Installer l'armoire en option (si l'installation d'une armoire n'est pas requise, passer à l'étape 2).

En cas de pose du S19-2000EFX dans l'armoire de douche oculaire escamotable S19-294JB, S19284JBT, voir les instructions de montage fournies avec l'armoire.

Armoire encastrée :

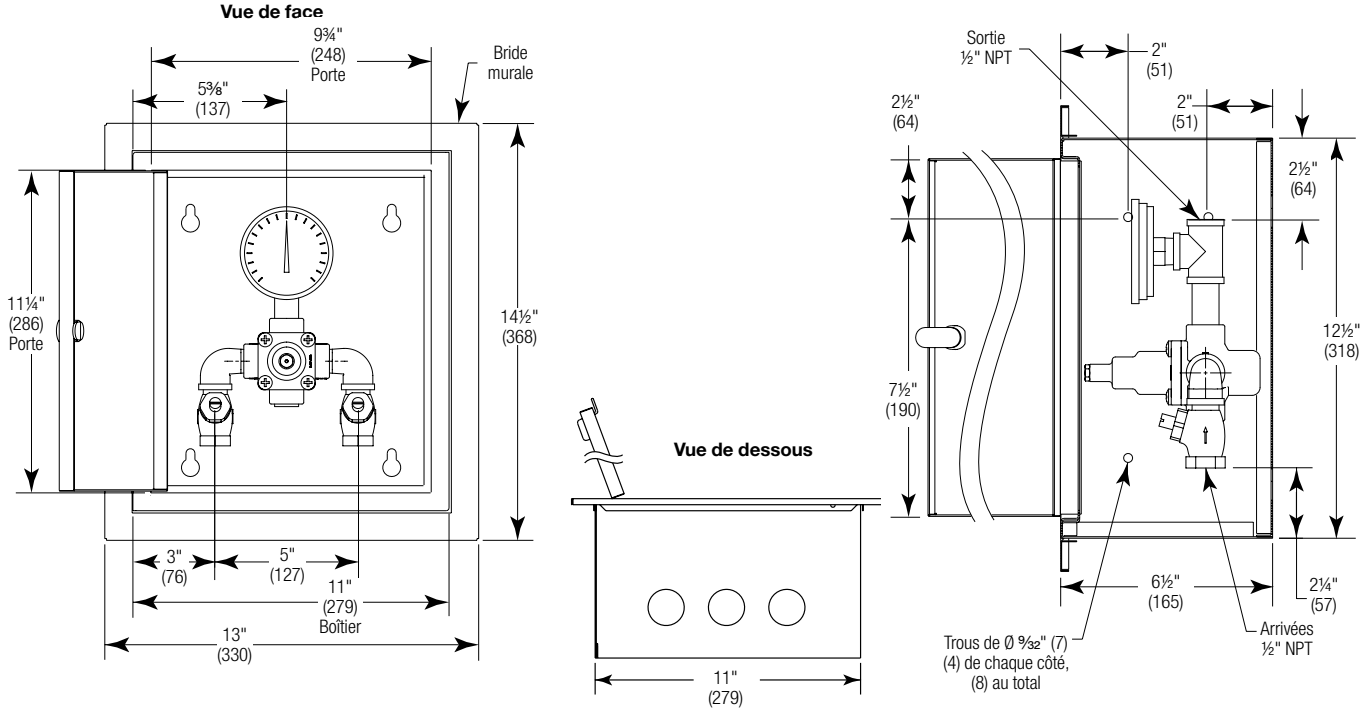
1. Ouverture murale pour plomberie brute 292 mm L x 330 mm H (11-1/2 po L x 13 po H).
2. Insérer l'armoire et la fixer au mur avec quatre fixations 1/4 po adéquatement ancrées (fournies par l'installateur).
3. Installer deux ancrages et vis à travers le support de robinet à l'arrière de l'armoire et dans un contrevent sécuritaire (fourni par l'installateur) ou dans un mur. Cela soutiendra le robinet.
4. Installer les raccords filetés du robinet et la moitié du clapet à bille du raccord en utilisant un produit d'étanchéité pour tuyaux ou du ruban téflon. Installer l'autre moitié du clapet à bille du raccord sur le tuyau d'entrée et de sortie.
5. Insérer le robinet dans le support dans l'armoire (le côté droit entre en premier). Continuer avec la procédure d'installation du robinet.
6. Positionner la rosace murale tout contre le mur et colmater en place.

Armoire montée en surface :

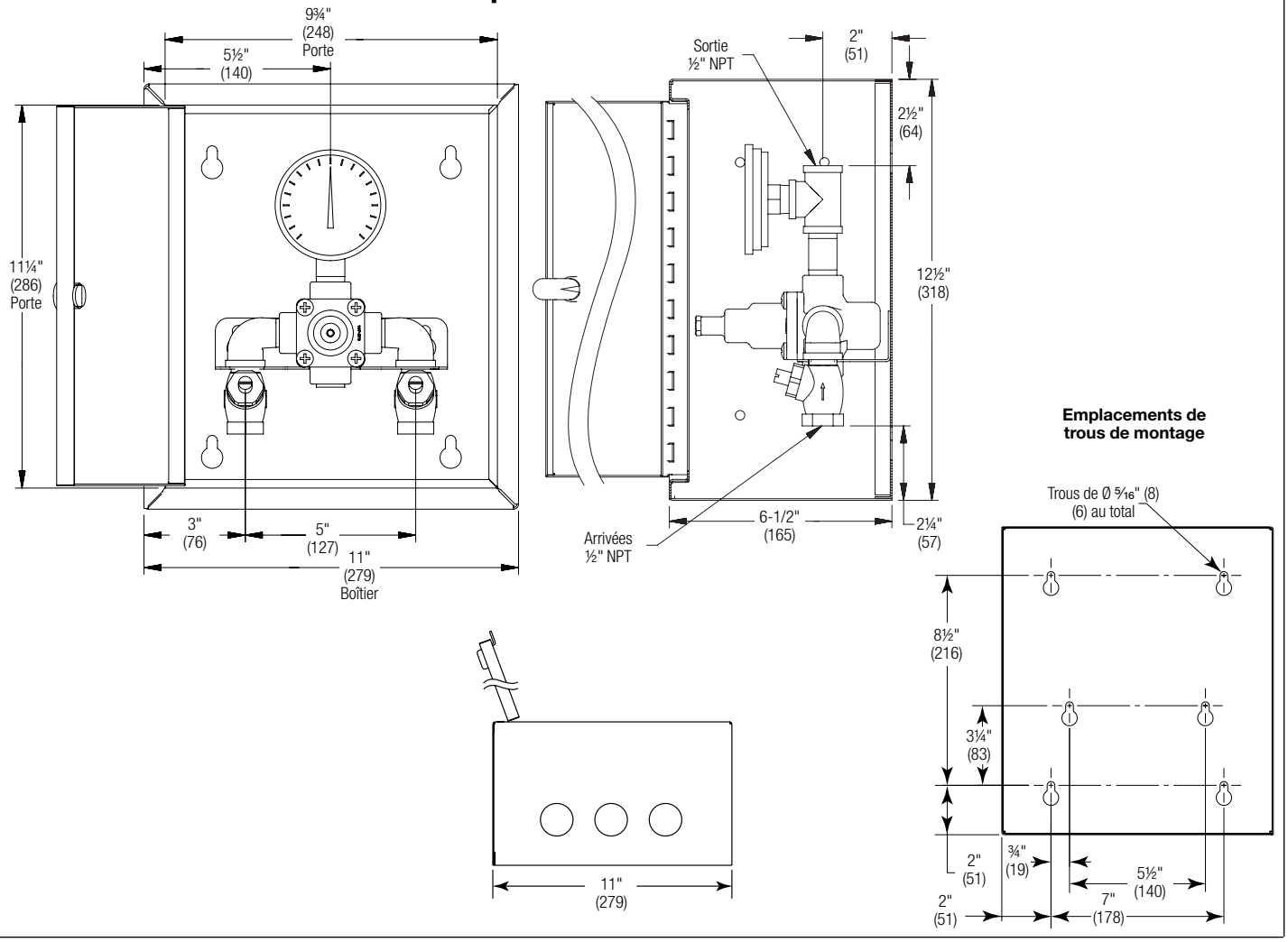
1. Mesurer et marquer les emplacements des trous de montage de l'armoire selon les dimensions indiquées à la page suivante. Installer six ancrages muraux de 3/8 po (fournis par l'installateur).
2. Positionner l'armoire dans le mur et fixer en place avec six fixations murales de 3/8 po (fournies par l'installateur).
3. Installer les raccords filetés du robinet et la moitié du clapet à bille du raccord en utilisant un produit d'étanchéité pour tuyaux ou du ruban téflon. Puis installer l'autre moitié du clapet à bille du raccord sur le tuyau d'entrée et de sortie.
4. Insérer le robinet dans le support dans l'armoire (le côté droit du robinet entre en premier). Continuer avec la procédure d'installation du robinet.

Armoire encastrée en option

(mm)

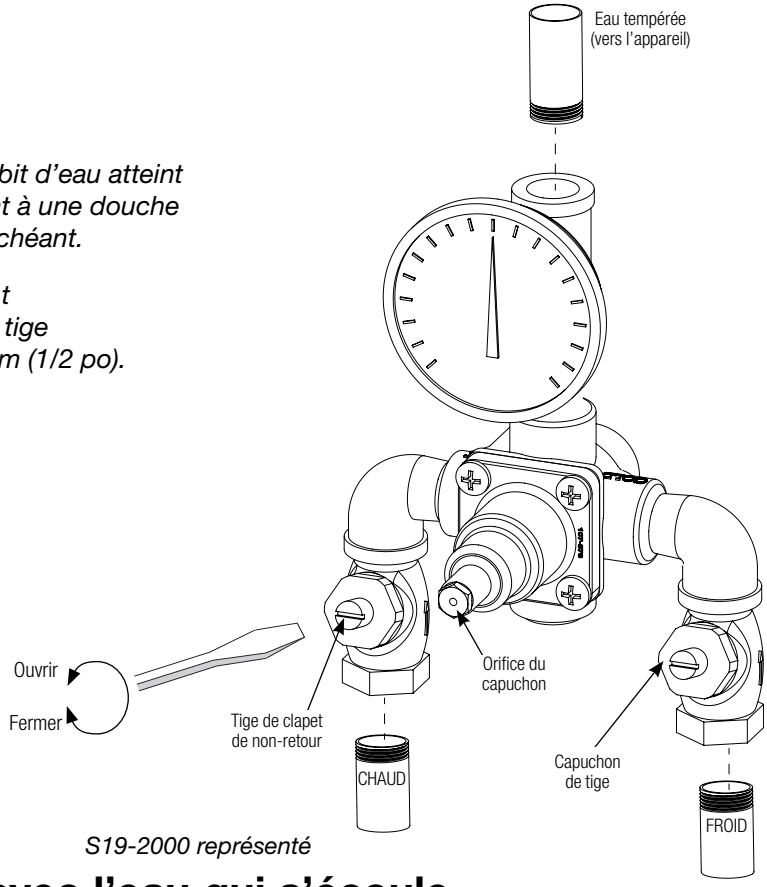


Armoire montée en surface en option



2 Connecter les conduites d'alimentation et installer le thermostat

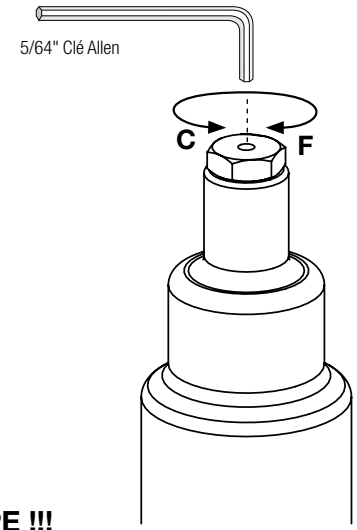
- ☑ *Mettre LENTEMENT sous pression pour vérifier l'étanchéité.*
- ☑ *Contrôler la température lorsque le débit d'eau atteint 11 à 19 l/min (3 à 5 gal/min) (équivalent à une douche oculaire ou faciale) et l'ajuster le cas échéant.*
- ☑ *Lorsque les clapets de non-retour sont complètement ouverts (en marche), la tige dépasse du capuchon d'environ 13 mm (1/2 po).*



S19-2000 représenté

3 Régler la température avec l'eau qui s'écoule

- ☑ *Contrôler la température lorsque le débit d'eau atteint 11 à 19 l/min (3 à 5 gal/min) (équivalent à une douche oculaire).*
- ☑ *Aucun dispositif d'urgence fourni par ce dispositif a n'a un débit minimum inférieur à 1,5 GPM (5,7 L/min).*
- ☑ *Contrôler la température finale du dispositif et l'ajuster le cas échéant. La température de consigne standard préréglée à l'usine est de 29 °C (85 °F) [la plage du robinet est de 18 à 32 °C (65 à 90 °F)]. Insérez la clé Allen à travers l'orifice du capuchon et dans la vis de calage pour régler. Consulter les autorités médicales et/ou de sécurité appropriées pour connaître la température optimale recommandée pour l'application en question.*



4 Tester unité

⚠ **NE PAS SAUTER CETTE ÉTAPE !!!**

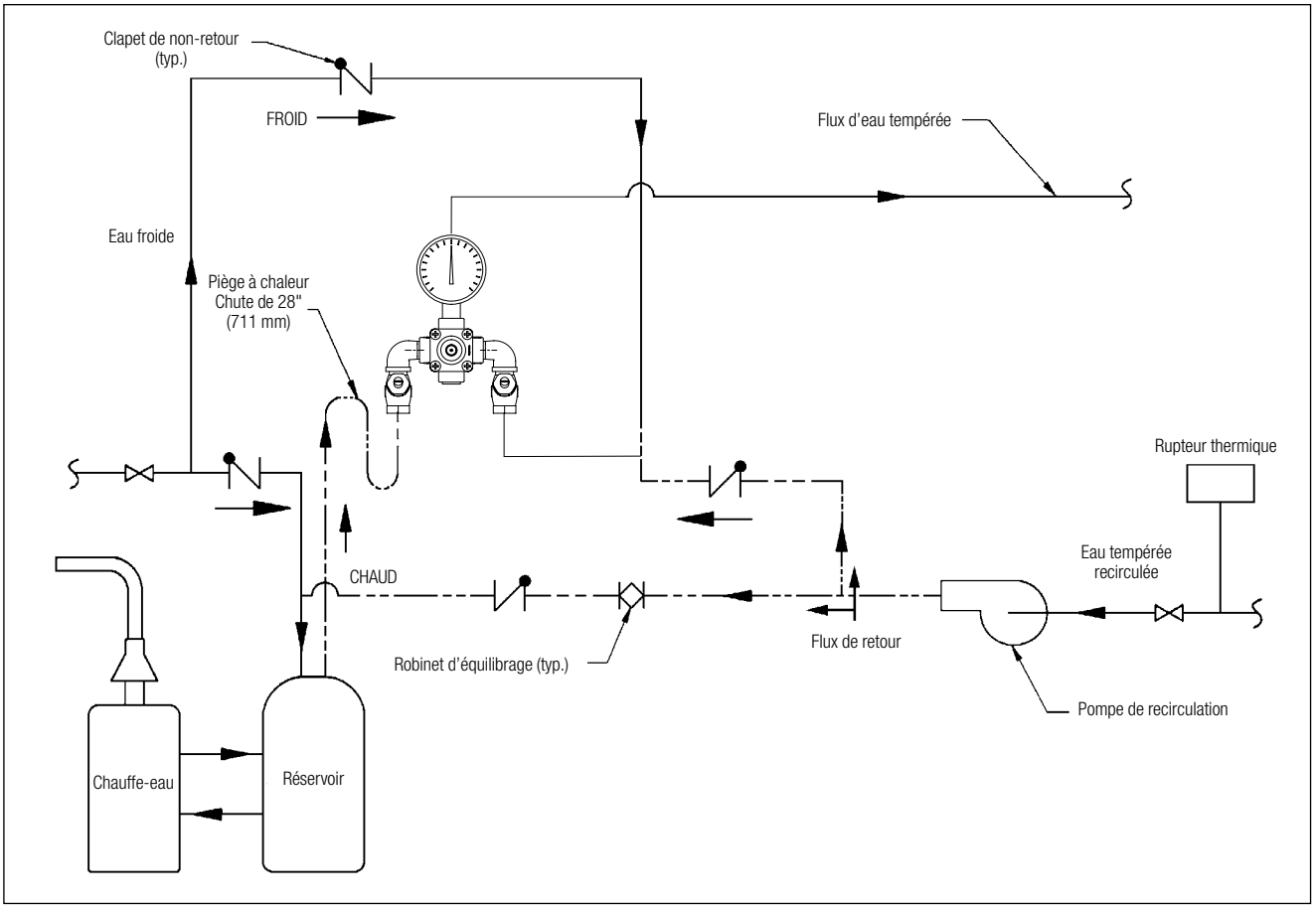
Fermer l'alimentation d'eau chaude en fermant le clapet ou le robinet d'arrivée d'eau chaude. Pendant que l'alimentation d'eau chaude est coupée, vérifier que l'eau froide continue de s'écouler. Si l'eau froide s'écoule correctement, rouvrir l'alimentation d'eau chaude.

Fermer l'alimentation d'eau froide en fermant le clapet ou le robinet d'arrivée d'eau froide. L'arrivée d'eau froide étant coupée, s'assurer que le débit d'eau chaude a été réduit jusqu'à moins de 0,5 gal/min (1,9 l/min). Si l'eau chaude est coupée, rouvrir complètement l'arrivée d'eau froide.

- ☑ *Effectuer un essai du système chaque semaine (ouvrir l'arrivée d'eau et vérifier la bonne régulation à la température de consigne souhaitée).*

5 Configuration de recirculation d'eau optionnelle

La recirculation de l'eau dans le circuit assure une régulation constante de la température de l'eau. Purger les conduites d'alimentation avec soin après avoir terminé l'installation. Fermer tous les appareils et les condamner provisoirement durant le processus de recirculation.



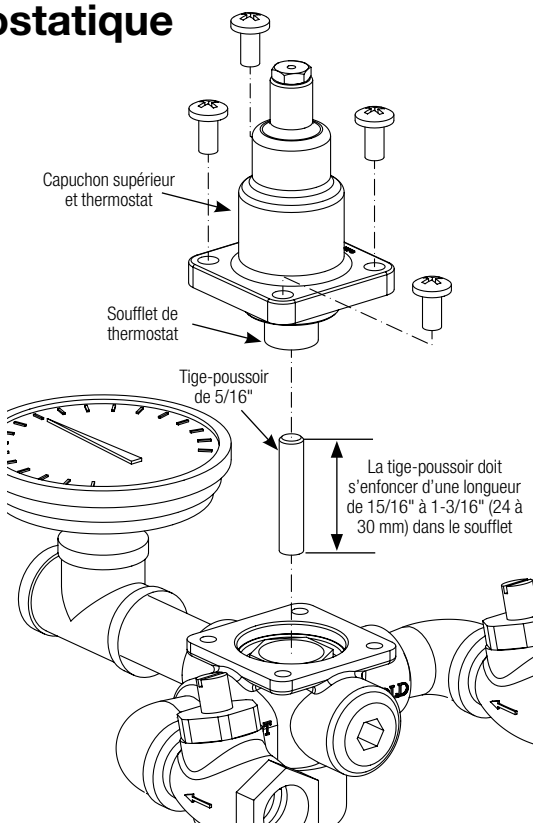
1. **Couper la pompe de recirculation et ouvrir l'alimentation d'eau au niveau de l'appareil d'urgence (un débit d'eau de 11 à 19 l/min [3 à 5 gal/min] est requis).**
2. **Laisser l'eau s'écouler à travers le système jusqu'à obtenir une température constante. Si la température souhaitée n'est pas obtenue, réajuster la température comme indiqué à l'étape 3 à la page précédente.**
3. **Dès que l'eau atteint la bonne température, activer la pompe de recirculation (vérifier que la température correcte a été obtenue dans le système avant de poursuivre).**
4. **Contrôler la température de l'eau au niveau de la pompe de retour. Si la température dépasse le niveau approprié de 1 °C (2 °F), ajuster le rupteur thermique haut (pour arrêter la pompe). Attendre que la température de retour de l'eau soit de 3 °C (5 °F) en dessous du niveau approprié puis ajuster le rupteur thermique bas (pour remettre la pompe en marche).**
5. **Ouvrir complètement le robinet d'équilibrage.**
6. **Couper tous les appareils et vérifier qu'aucune eau ne circule à travers le système (le tuyau d'arrivée d'eau froide doit être tiède au toucher).**
7. **Laisser le système fonctionner pendant 30 minutes ou plus sans eau. Si, au bout de trente minutes, la température de l'eau augmente, elle peut être réajustée en fermant lentement le robinet d'équilibrage jusqu'à atteindre la température qui convient.**

Dépannage du robinet mélangeur thermostatique

Avant d'essayer de dépanner le robinet ou de démonter les composantes, vérifier ce qui suit :

- **Les clapets de non-retour sont totalement ouverts (la tige fendue dépasse d'environ 13 mm (1/2 po) du capuchon et tous les robinets d'arrêt d'arrivée et de sortie sont ouverts.**
- **Les conduites d'arrivée d'eau chaude et froide sont correctement raccordées et il n'existe ni de raccordements croisés ni de fuite des clapets de non-retour.**
- **La sortie du chauffe-eau est d'au moins 11 °C (20 °F) au-dessus de la température de consigne.**

Veiller à bien fermer les robinets d'arrêt adéquats avant de démonter le robinet et de les rouvrir après inspection et une fois la réparation terminée.

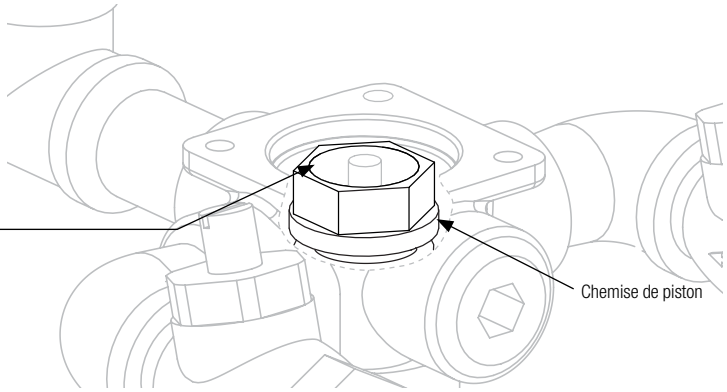


Problème	Cause	Solution
Fuites externes dans le système	Les joints NPT ou les joints toriques sont endommagés.	Remplacer les joints NPT et/ou joints toriques le cas échéant. Pour tout remplacement de joints toriques, contacter le représentant Bradley et lui demander un Kit de joint torique (S65-170).
Pas de circulation d'eau chaude (eau froide seulement)	Défaillance du thermostat suivie de l'activation de la vanne d'arrêt de sécurité.	**Contrôler le thermostat :** 1. Déposer le capuchon supérieur et le thermostat. 2. Enfiler la tige-poussoir de Ø 5/16 po dans le soufflet de thermostat. 3. Marquer la longueur dont la tige s'enfonce dans le soufflet (à température ambiante, sous une force de 45 N [10 lb], cette longueur doit être d'environ 24 à 30 mm [15/16 à 1-3/16 po]). 4. Si la longueur de tige-poussoir n'est pas dans l'intervalle correct, le thermostat doit être changé (il n'est pas réparable). Contacter le représentant Bradley et lui demander un Kit de thermostat (S65-171).
Débit d'eau limité	Le robinet d'arrêt d'arrivée est partiellement fermé ou la pression d'eau a fortement chuté.	
	Accumulation de saleté et de débris sur le tamis ou le siège de clapet, ce qui limite le mouvement des clapets de non-retour.	**Nettoyer les clapets de non-retour :** démonter les clapets de non-retour, nettoyer le siège et remonter. Ne pas déposer le siège. Brosser les pièces avec une petite brosse métallique pour éliminer les débris. Utiliser une pince à épiler pour extraire les débris du siège. Si le clapet de non-retour doit être changé, contacter le représentant Bradley et lui demander un Kit de clapet de non-retour (S27-102 - Laiton brut ou S27-292A - Chrome).
Fluctuation de température ou température incorrecte	Les sections de clapet de non-retour du robinet ne bougent pas librement.	Nettoyer les clapets de non-retour comme décrit ci-dessus.
	Lente défaillance du thermostat.	Contrôler le thermostat comme décrit plus haut ou le changer.
	La conduite d'alimentation d'arrivée vers le robinet mélangeur est partagée avec d'autres machines qui ne sont utilisées que périodiquement, telles que des machines à laver ou des stations à grand débit. Cela peut réduire la pression d'arrivée au robinet mélangeur à moins de 3 PSI. La section de la conduite d'alimentation peut être insuffisante pour alimenter à la fois le robinet et les autres appareils.	Augmenter la section de la conduite d'alimentation, reconfigurer l'alimentation ou réguler l'usage de l'alimentation.
	La recirculation est déséquilibrée.	Examiner la configuration de recirculation à la page 12.
	Le piston ne bouge pas librement et doit être nettoyé.	Voir les instructions de démontage et de nettoyage du piston à la page suivante.

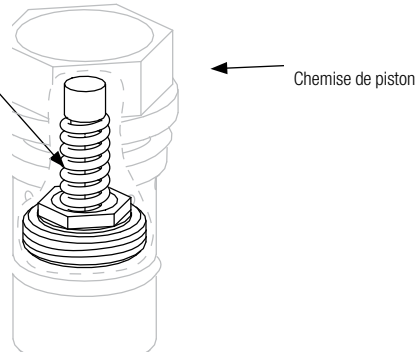
Dépannage : Démontage du piston et nettoyage

A Déposer le capuchon supérieur et le thermostat comme indiqué à la page 13. Mettre la tige-poussoir de 5/8 po de côté.

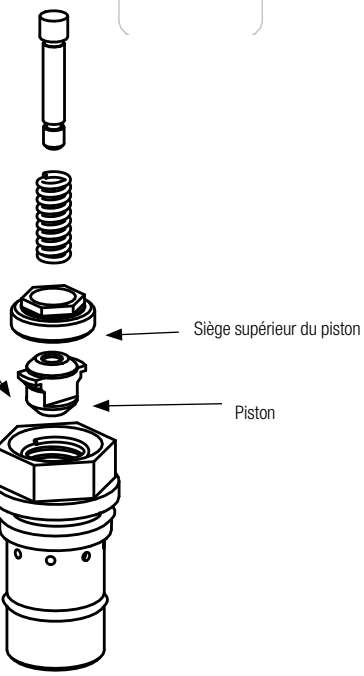
B À l'aide d'une clé à douille de 15/16 po, desserrer la chemise de piston du corps de robinet et l'extraire avec une pince à becs fins.



C À l'aide d'une clé à douille longue de 1/2 po, desserrer le siège supérieur du piston de la chemise de piston et extraire les pièces avec une pince à becs fins.

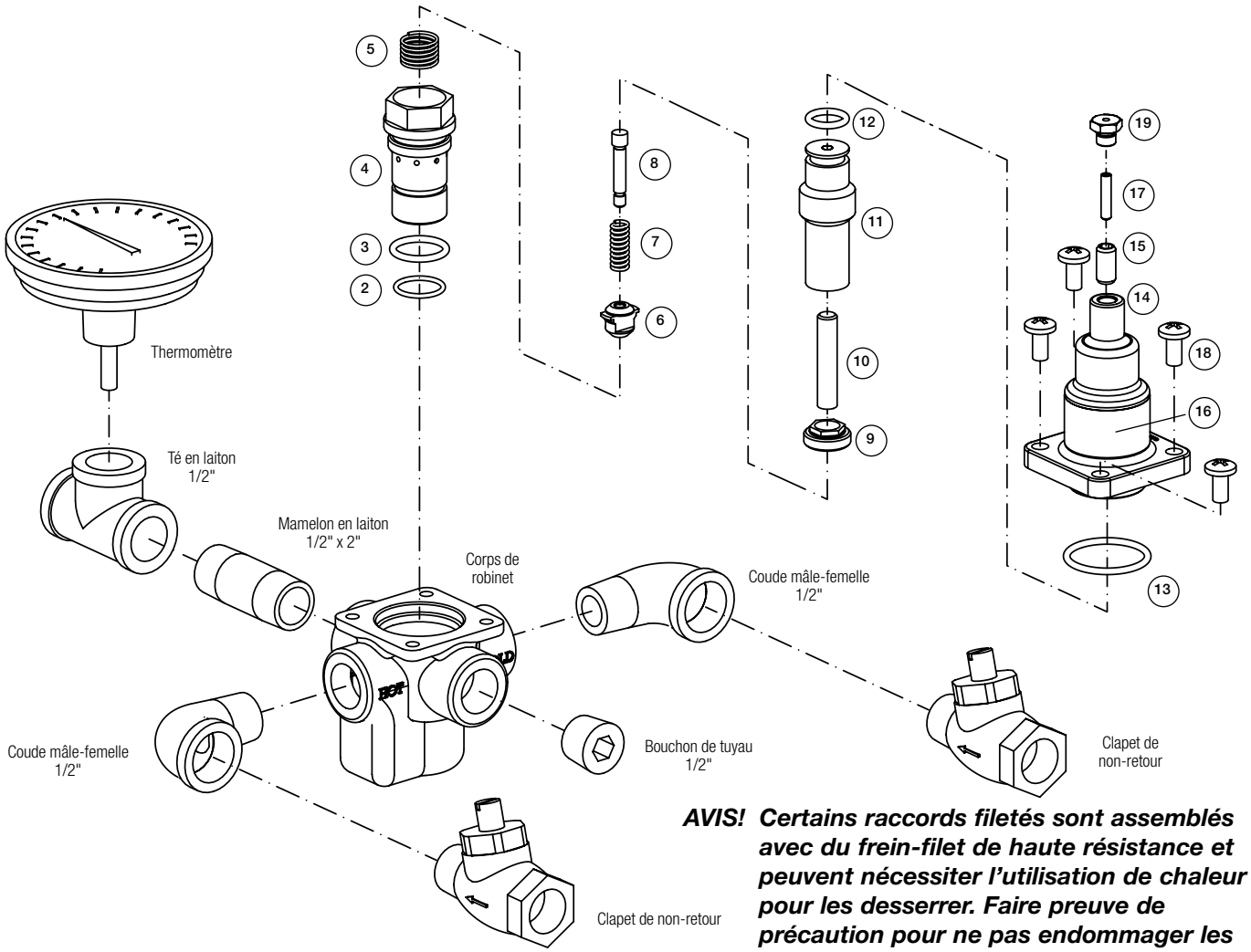


D Démonter et nettoyer les pièces du piston avec tout produit nettoyant convenant pour le laiton et l'acier inoxydable (le cas échéant, utiliser du papier de verre 400 grains pour polir et rectifier le piston et la chemise).



E Remonter le piston. Pousser le mécanisme vers le haut et la bas à plusieurs reprises pour vérifier que le piston bouge régulièrement et sans grippage. Si le mouvement n'est pas régulier, répéter la procédure D jusqu'à ce qu'il bouge librement ou le changer. Contacter le représentant Bradley et lui demander un Kit de piston/chemise (réf. S65-172).

Liste des pièces



AVIS! Certains raccords filetés sont assemblés avec du frein-filet de haute résistance et peuvent nécessiter l'utilisation de chaleur pour les desserrer. Faire preuve de précaution pour ne pas endommager les joints toriques et autres pièces.

Kit Thermostat S65-171

Repère	Qté	Désignation
11	1	Thermostat
12	1	Joint torique
13	1	Joint torique

Kit Piston et chemise S65-172

Repère	Qté	Désignation
2	1	Joint torique
3	1	Joint torique
4	1	Chemise
5	1	Ressort
6	1	Piston
7	1	Ressort
8	1	Vis de surchauffe
9	1	Siège supérieur

Kit Joint torique S65-170

Repère	Qté	Désignation
2	1	Joint torique
3	1	Joint torique
12	1	Joint torique
13	1	Joint torique

Kit Portion centrale S65-303

Repère	Qté	Désignation
2	1	Joint torique
3	1	Joint torique
4	1	Chemise
5	1	Ressort
6	1	Piston
7	1	Ressort
8	1	Vis de surchauffe
9	1	Siège supérieur
10	1	Tige-poussoir
11	1	Thermostat
12	1	Joint torique
13	1	Joint torique
14	1	Capuchon de commande
15	1	Vis calante
16	1	Étiquette
17	1	Vis calante
18	4	Vis 1/4
19	1	Capuchon

Conduites de raccordement flexibles pour S19-2000EFX

Pour une utilisation avec S19294JB, S19294JBT, commander réf. 269-653 (3 fournis avec le robinet).

Numéros de kit pour la finition en laiton brut. Contacter Bradley pour toute autre configuration.

À compter de novembre 2001, le piston (repère 7) remplace directement le support de joint et le joint.

À compter de juin 2008, le capuchon de commande en laiton (repère 15) est remplacé par un capuchon en plastique. Toutes les pièces internes sont identiques.

À compter d'juillet 2012, la commande de réglage de température (repères 15, 17 et 19) est reconfigurée et compatible avec tous les modèles à capuchon de commande en plastique (juin 2008 à actuel).

Información de seguridad

Para garantizar el funcionamiento correcto:

Instalación

No realizar una instalación correcta ni seguir las instrucciones de mantenimiento podría contribuir a una falla de la válvula, lo que puede provocar lesiones corporales graves como quemaduras, lesiones por frío o la muerte, dependiendo de los cambios de presión del agua del sistema y los cambios de temperatura del agua del sistema.

Use esta válvula mezcladora termostática de acuerdo con la norma ASSE 1071.

Cuando se instala de acuerdo con la norma ASSE 1071, la válvula está diseñada para instalarla solo en aplicaciones de accesorios, como lavaojos y lavaojos/lavacara de emergencia. Cuando se instala como una válvula ASSE 1071, la válvula no funciona como una válvula ASSE 1016, ASSE 1017, ASSE 1069 o ASSE 1070.

Esta válvula no se debe usar donde se exijan dispositivos de la norma ASSE 1016.

El funcionamiento de los accesorios y las válvulas mezcladoras termostáticas se debe probar semanalmente conforme a ANSI/ISEA Z358.1.

Esta válvula no ofrece protección contra el congelamiento de las tuberías.

Deberá ser posible acceder a las válvulas para realizar pruebas, ajustes y mantenimiento en la posición instalada.

Si se instalan válvulas de retención para fines de mantenimiento, se deben tomar medidas para evitar el corte no autorizado.

La instalación de este sistema la debe realizar un plomero calificado según los códigos nacionales y locales. Es responsabilidad del instalador cumplir cabalmente los códigos y las ordenanzas locales. Si estos códigos difieren de la información en este manual, siga los códigos locales. Consulte con las autoridades locales si existen requisitos locales adicionales.

Inspecciones

Es necesario revisar y limpiar regularmente los componentes internos y los topes de retención de la válvula para extender al máximo la vida útil de esta y el funcionamiento adecuado del producto. Se necesita una inspección periódica y el mantenimiento anual por parte de un contratista con licencia. Las condiciones corrosivas del agua y los ajustes o reparaciones no autorizados podrían dejar a la válvula inservible para el servicio que debe proporcionar. La frecuencia de limpieza e inspección depende de las condiciones locales del agua.

La temperatura de salida de la válvula se debe revisar y ajustar en la instalación inicial y luego, cada tres meses.

Temperatura del agua

El ajuste final de temperatura es responsabilidad del instalador.

Materiales recomendados para la instalación

- Cierre bloqueable en la salida si se suministra agua temperada a uno o más accesorios de emergencia.
- Cierre bloqueable de las entradas o de los suministros.
- (6) anclajes y sujetadores de pared de 1/4 pulg. para el gabinete montado en la superficie.
- (4) sujetadores de 1/4 pulg. (y anclajes de pared, si fuera necesario) para el gabinete empotrado.
- Uniones en todas las conexiones para facilitar el retiro de la válvula.

Herramientas necesarias para el ajuste de temperatura

- Llave Allen de 5/64 pulg.
- Destornillador de paleta.

1 Instale el gabinete opcional (si no va a instalar el gabinete, siga con el Paso 2)

Si se instala el modelo S19-2000EFX en el gabinete lavaojos desplegable S19294JB, S19294JBT, consulte las instrucciones de montaje que se suministran con el gabinete.

Gabinete empotrado:

1. Orificio de colocación en la pared de 292 mm (11-1/2 pulg.) de ancho x 330 mm (13 pulg.) de alto.
2. Inserte y fije el gabinete con cuatro sujetadores de 1/4 pulg. (proporcionado por el instalador) anclados apropiadamente a la pared.
3. Instale los dos anclajes y tornillos a través del soporte de la válvula en la parte trasera del gabinete en una abrazadera firme (proporcionada por el instalador) o en la pared. Esto servirá de apoyo a la válvula.
4. Instale los niples de la válvula y la mitad de la válvula de bolas de la unión, usando sellador para tubos o cinta de teflón. Instale la otra mitad de la válvula de bolas de la unión en el tubo de entrada y salida.
5. Inserte la válvula en el soporte del gabinete (primero el lado derecho). Continúe con el procedimiento de instalación de la válvula.
6. Ponga firmemente la brida de pared en la pared y aplique masilla para fijarla en su lugar.

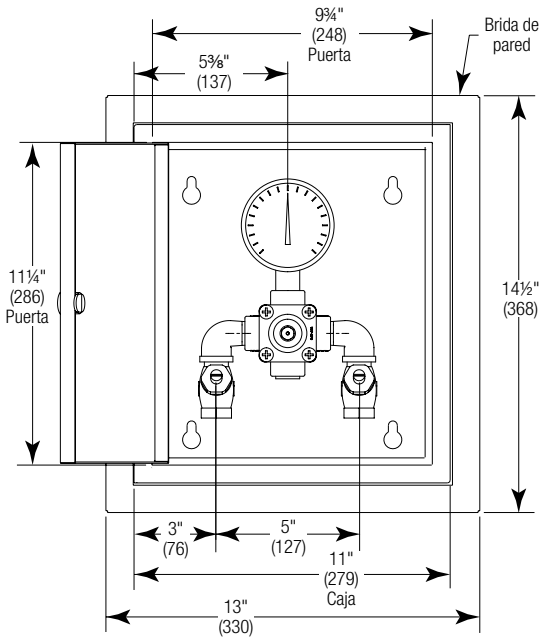
Gabinete montado en la superficie:

1. Mida y marque la ubicación de los orificios de montaje del gabinete en las dimensiones que se muestran en la siguiente página. Instale seis anclajes de pared de 3/8 pulg. (proporcionados por el instalador).
2. Ponga el gabinete en la pared y fíjelo en su lugar con seis sujetadores de pared de 3/8 pulg. (proporcionados por el instalador).
3. Instale los niples de la válvula y la mitad de la válvula de bolas de la unión, usando sellador para tubos o cinta de teflón. Luego, instale la otra mitad de la válvula de bolas de la unión en el tubo de entrada y salida.
4. Inserte la válvula en el soporte del gabinete (primero el lado derecho de la válvula). Continúe con el procedimiento de instalación de la válvula.

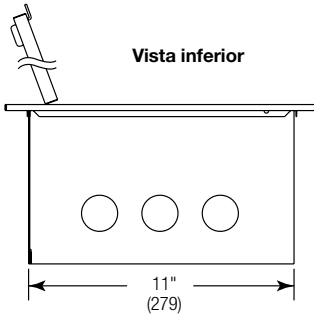
Gabinete empotrado opcional

(mm)

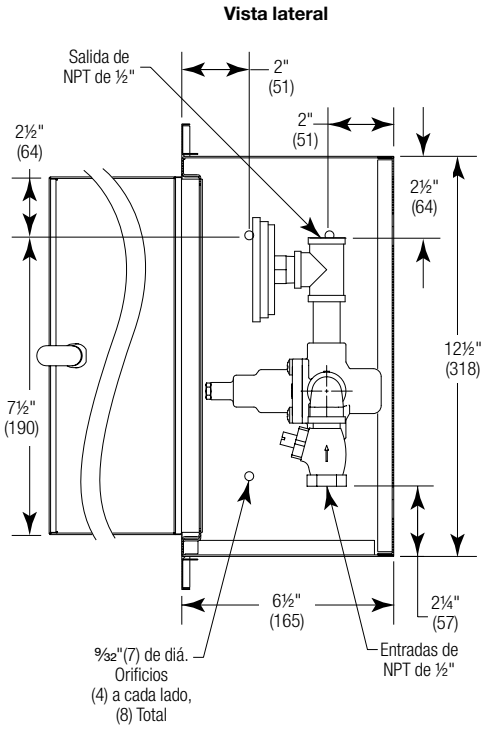
Vista frontal



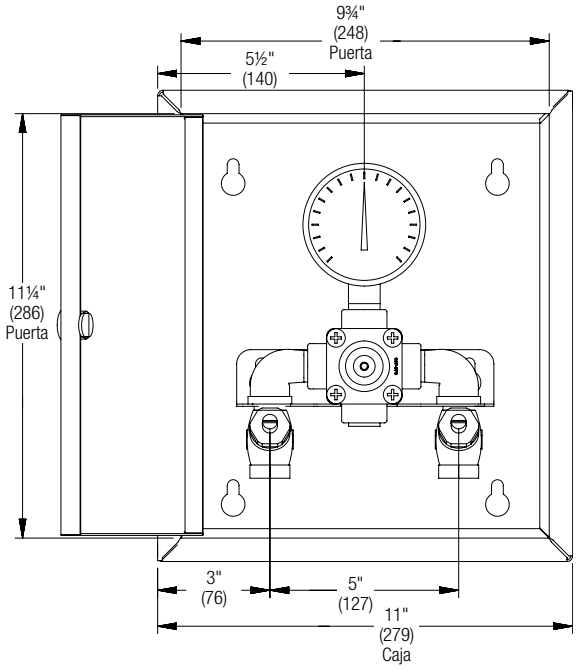
Vista inferior

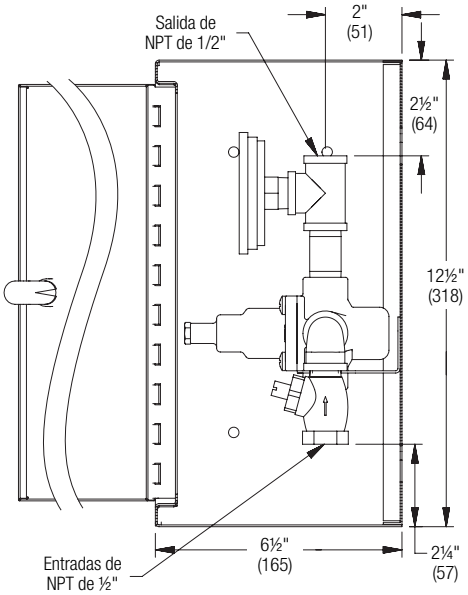


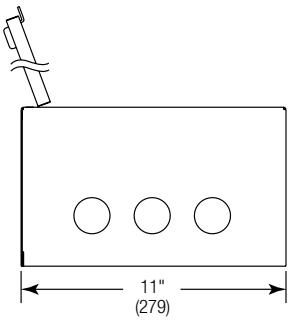
Vista lateral



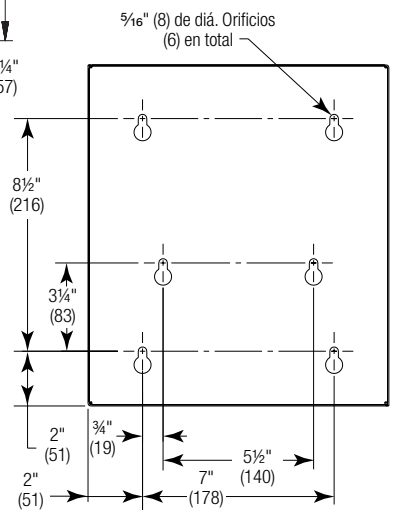
Gabinete opcional montado en la superficie





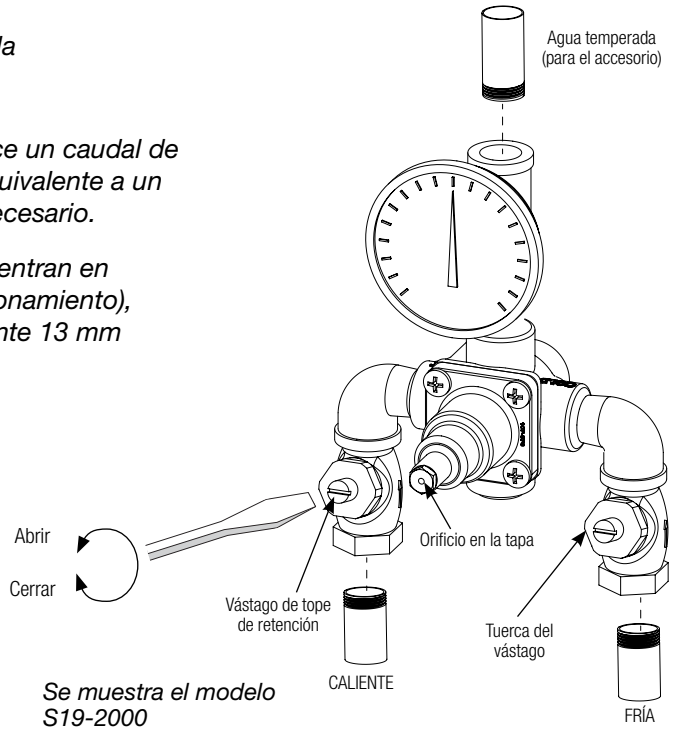


Ubicación de los orificios de montaje



2 Conecte las tuberías de suministro e instale el termómetro

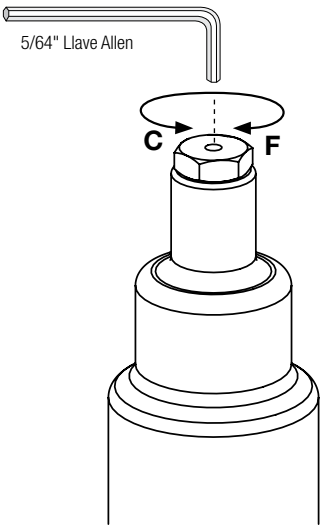
- ☑ *Revise si hay filtraciones, presurizando la unidad LENTAMENTE.*
- ☑ *Revise la temperatura cuando se alcance un caudal de agua de 11 a 19 LPM (3 a 5 gpm) (lo equivalente a un lavado ocular o facial) y ajuste de ser necesario.*
- ☑ *Cuando los topes de retención se encuentran en la posición de abertura completa (funcionamiento), el vástago se extenderá aproximadamente 13 mm (1/2 pulg.) desde la tuerca.*



Se muestra el modelo S19-2000

3 Ajuste la temperatura con el agua corriendo

- ☑ *Revise la temperatura cuando se alcance aproximadamente un caudal de agua de 11 a 19 LPM (3 a 5 gpm) (lo equivalente a un lavado ocular).*
- ☑ *Ningún accesorio de emergencia que proporcione este dispositivo tiene un caudal mínimo inferior a 5,7 L/min.*
- ☑ *Se debe revisar la temperatura final de este dispositivo y ajustarla, según sea necesario. La configuración estándar de la temperatura predeterminada de fábrica es de 29 °C (85 °F) (el rango de la válvula es de 18 °C a 32 °C [65 °F a 90 °F]). Para ajustar, inserte la llave Allen a través del orificio en la tapa, en el tornillo de ajuste. Consulte a las autoridades médicas o de seguridad correspondientes sobre la temperatura óptima recomendada para la aplicación en particular.*



4 Unidad de prueba ⚠ ¡NO SE SALTE ESTE PASO!

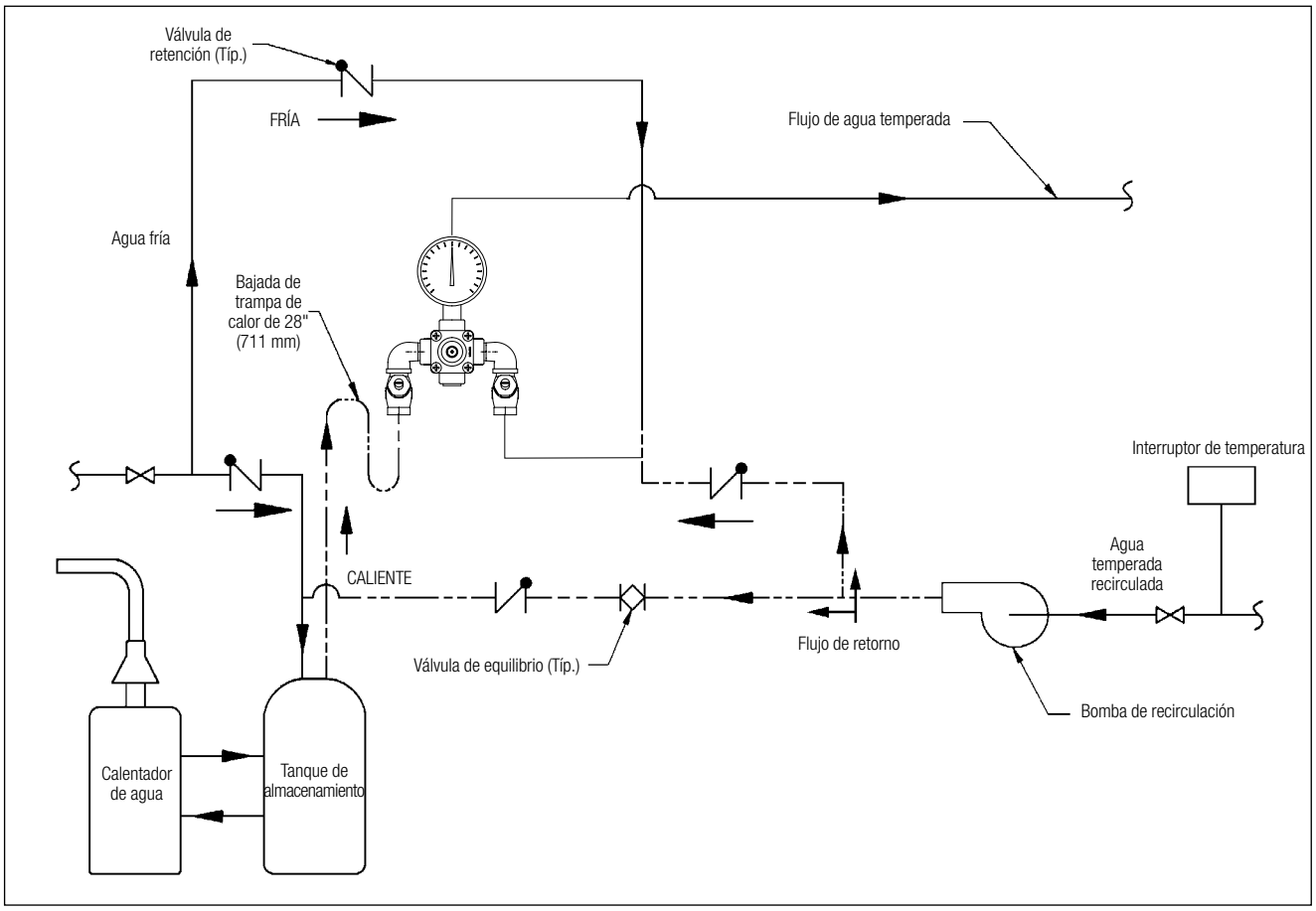
Cierre la válvula de entrada de agua caliente o la válvula de retención de suministro para cortar el suministro de agua caliente. Con el suministro de agua caliente cerrado, verifique que siga fluyendo agua fría. Si el agua fría fluye correctamente, vuelva a abrir el suministro de agua caliente.

Cierre la válvula de entrada de agua fría o la válvula de retención de suministro para cortar el suministro de agua fría. Con el suministro de agua fría cerrado, verifique que se haya detenido el flujo de agua caliente a menos de 1,9 LPM (0,5 gpm). Si se detiene el agua caliente, vuelva a abrir completamente el suministro de agua fría.

- ☑ *Pruebe el sistema semanalmente (abra el suministro de agua y verifique que el control de la temperatura establecida que se desea sea constante).*

5 Instalación de recirculación opcional de agua

La recirculación del agua en el sistema proporciona regulación constante de la temperatura del agua. Purgue las tuberías de suministro completamente antes de terminar la instalación. Cierre todos los accesorios y etiquételos como no disponibles para usarse durante el proceso de recirculación.



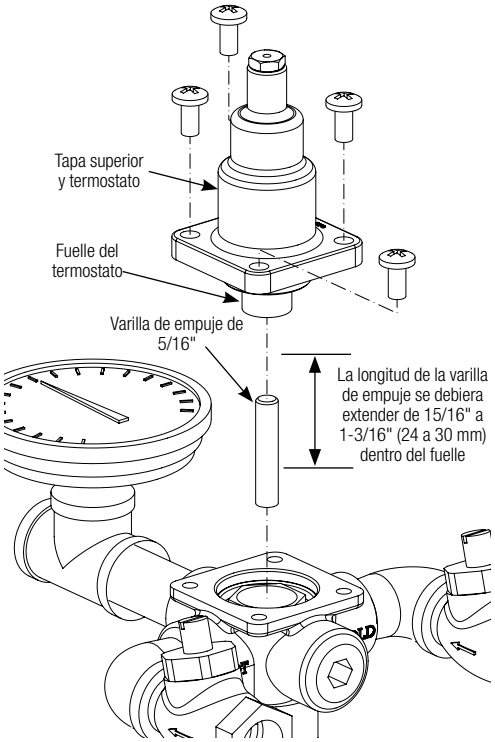
1. Apague la bomba de recirculación y abra el suministro de agua en los accesorios de emergencia (se requiere un caudal de agua de 11 a 19 LPM [3 – 5 GPM]).
2. Deje que el agua corra a través del sistema hasta que alcance una temperatura constante. Si no obtiene la temperatura necesaria, consulte el paso n.° 3 en la página anterior para volver a ajustar la temperatura.
3. Tan pronto como el agua alcance la temperatura apropiada, encienda la bomba de recirculación (antes de proceder, asegúrese de que se haya alcanzado la temperatura adecuada en el sistema).
4. Revise la temperatura del agua en la bomba de retorno. Si la temperatura excede el nivel apropiado en 1 °C (2 °F), ajuste el interruptor del límite superior de temperatura (esto apagará la bomba). Espere hasta que la temperatura del agua de retorno esté a 3 °C (5 °F) por debajo del nivel apropiado y ajuste el interruptor del límite inferior (esto volverá a encender la bomba).
5. Abra completamente la válvula de equilibrio.
6. Desconecte todos los accesorios y asegúrese de que no fluya agua por el sistema (el tubo de entrada de agua fría debe sentirse tibio al tacto).
7. Deje que el sistema funcione sin agua durante 30 minutos o más. Si, después de treinta minutos, aumenta la temperatura del agua, puede volver a ajustar la temperatura cerrando lentamente la válvula de equilibrio hasta que se alcance la temperatura adecuada.

Solución de problemas de la válvula mezcladora termostática

Antes de intentar solucionar problemas de la válvula o desensamblar los componentes, revise lo siguiente:

- Que las válvulas de cierre o retención estén completamente abiertas (el vástago ranurado se extienda aproximadamente 13 mm (1/2 pulg.) a partir de la tuerca del vástago) y que estén abiertas todas las válvulas de retención de entrada y salida
- Que los tubos de entrada de agua caliente y fría estén conectados correctamente y que no existan conexiones cruzadas ni válvulas de cierre o retención con filtraciones.
- La salida del calentador de agua esté al menos a 11 °C (20 °F) por sobre la temperatura establecida.

Asegúrese de cerrar las válvulas de retención correspondientes antes de desensamblar la válvula, y vuelva a abrir las válvulas después de completar la inspección y la reparación.

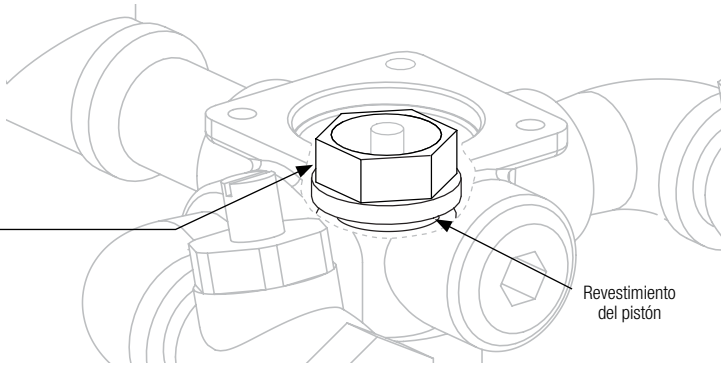


Problema	Causa	Solución
Filtraciones externas en el sistema	Es posible que se hayan dañado las juntas NPT o las juntas tóricas.	Remplace las juntas NPT o las juntas tóricas, donde sea necesario. Para el reemplazo de las juntas tóricas, comuníquese con el representante local de Bradley y consulte por el kit (S65-170) de sellos de juntas tóricas.
No fluye agua caliente (fluye solamente agua fría)	Falló el termostato y, en consecuencia, se activó la retención de seguridad.	**Inspección del termostato:** 1. Retire el termostato y la tapa superior. 2. Inserte una varilla de empuje de 5/16 pulg. de diá. en el fuelle del termostato. 3. Marque la distancia en que la varilla de empuje se extiende dentro del fuelle (a temperatura ambiente, con 45 N [10 lb] de fuerza, la distancia debiera ser aproximadamente de 24 a 30 mm [15/16 pulg. a 1-3/16 pulg.]). 4. Si la longitud de la varilla de empuje no está en el rango apropiado, se debe reemplazar el termostato (no se puede reparar). Comuníquese con el representante local de Bradley y consulte por el Kit (S65-171) del termostato.
Flujo limitado de agua	Es posible que la entrada de la válvula de retención esté parcialmente cerrada o haya disminuido significativamente la presión de agua.	
	Se acumuló suciedad y desechos en la rejilla o asiento de retención, limitando el movimiento de cierre y retenciones.	**Limpie las válvulas de cierre y retención:** Retire el cierre y las retenciones, limpie el asiento y vuelva a ensamblar la válvula. No retire el asiento. Los componentes se pueden cepillar con un cepillo de alambre de tamaño pequeño para eliminar los desechos. Un par de pinzas funciona bien para sacar los desechos del asiento. Si es necesario reemplazar el cierre y las retenciones, comuníquese con el representante local de Bradley y consulte por el kit (S27-102: Bronce áspero o S27-292A: Cromo) de retención/cierre.
Fluctuación de la temperatura o temperatura incorrecta	Las secciones de cierre y retención de la válvula no se mueven libremente.	Limpie las válvulas de cierre y retención como se describe anteriormente.
	El termostato lentamente comienza a fallar.	Revise el termostato como se describe anteriormente o reemplácelo.
	La tubería de suministro de entrada hacia la válvula mezcladora se comparte con otras piezas del equipo que se usan solamente en forma periódica, tales como aparatos de lavandería o estaciones de flujo. Esto puede reducir la presión de entrada hacia la válvula mezcladora a menos de 3 PSI. Es posible que el tamaño de la tubería de suministro no sea lo suficientemente grande para dar suministro a la válvula y a los otros aparatos.	Aumente el tamaño de la tubería de suministro, vuelva a configurar la tubería de suministro o regule el uso del suministro.
	La recirculación no está equilibrada.	Revise la instalación de la recirculación en la página 19.
	El pistón no se mueve libremente y se debe limpiar.	Consulte la página siguiente para ver las instrucciones de desensamble y limpieza.

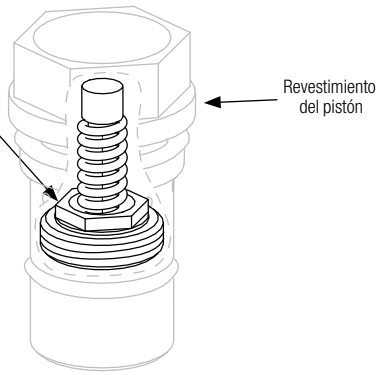
Solución de problemas: Desensamble y limpieza del pistón

A Retire la tapa superior y el conjunto del termostato según se muestra en la Página 20. Ponga la varilla de empuje de 5/8 pulg. a un costado.

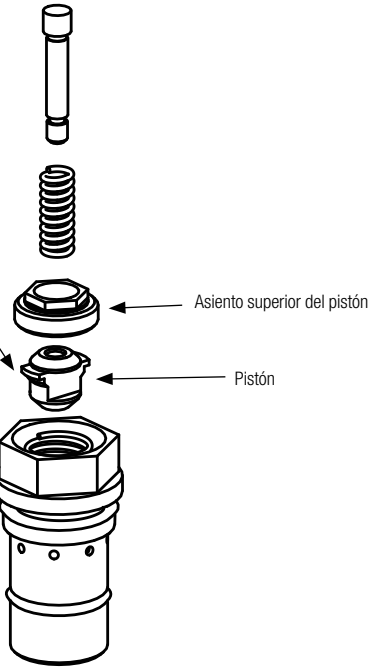
B Con una llave de cubo de 15/16 pulg., afloje el revestimiento del pistón del cuerpo de la válvula y saque las piezas con un alicate de punta de aguja.



C Con una llave de cubo de 1/2 pulg., afloje el asiento superior del pistón del revestimiento del pistón y saque las piezas con un alicate de punta de aguja.

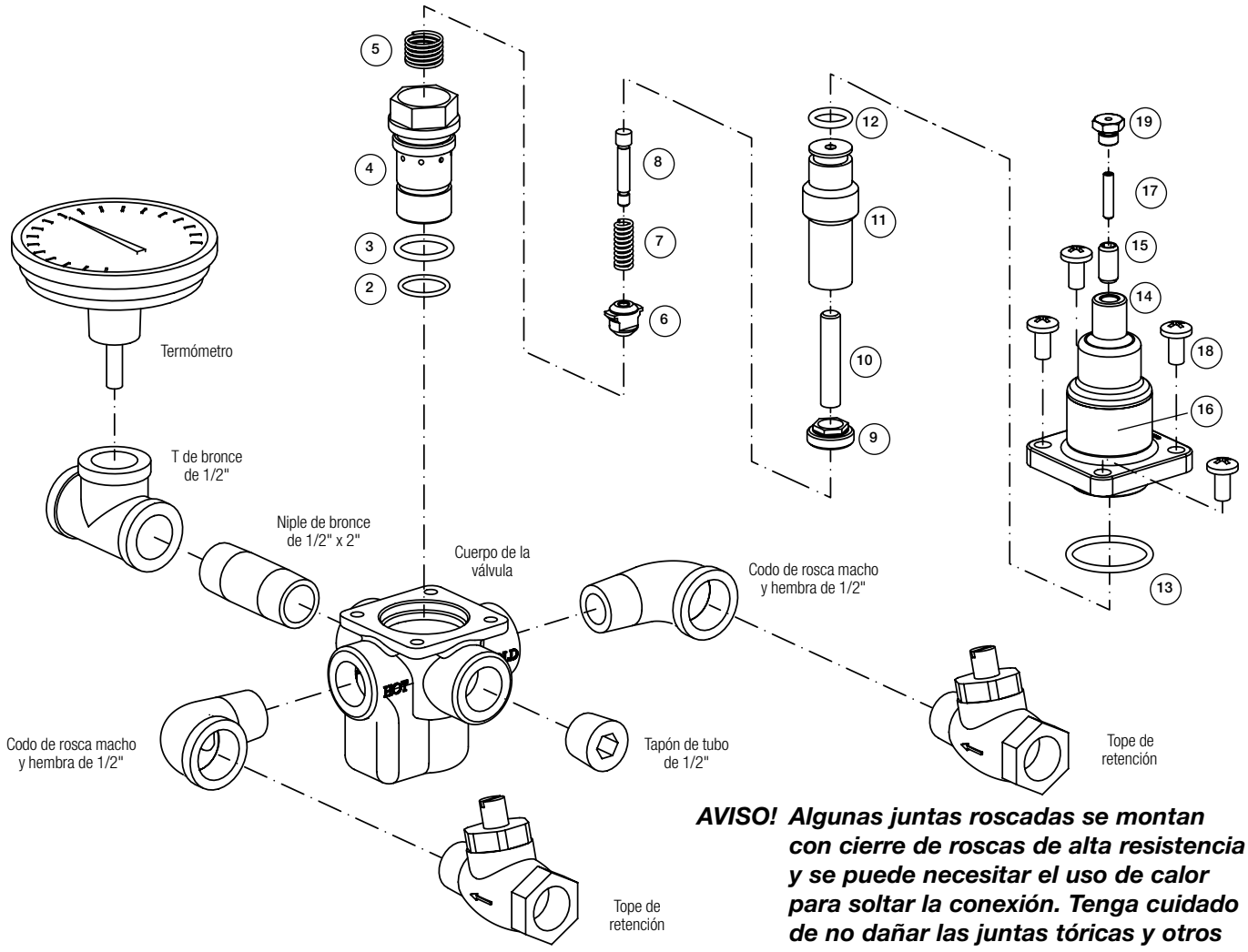


D Desmonte y limpie las piezas del conjunto del pistón con cualquier limpiador adecuado para la limpieza de bronce y acero inoxidable (de ser necesario, use una lija de grano 400 para pulir y afinar tanto el pistón como el revestimiento).



E Vuelva a ensamblar el conjunto del pistón. Empuje el mecanismo hacia arriba y hacia abajo varias veces para asegurarse de que el pistón se mueva suave y constantemente. Si es constante, repita el Procedimiento D hasta que se mueva libremente o cámbielo. Comuníquese con el representante local de Bradley y consulte por el Kit del pistón y revestimientos (número de pieza S65-172).

Desglose de piezas



AVISO! Algunas juntas roscadas se montan con cierre de roscas de alta resistencia y se puede necesitar el uso de calor para soltar la conexión. Tenga cuidado de no dañar las juntas tóricas y otros componentes.

Kit S65-171 del termostato

Artículo	Cantidad	Descripción
11	1	Termostato
12	1	Junta tórica
13	1	Junta tórica

Kit S65-172 del pistón y revestimientos

Artículo	Cantidad	Descripción
2	1	Junta tórica
3	1	Junta tórica
4	1	Revestimiento
5	1	Resorte
6	1	Pistón
7	1	Resorte
8	1	Tornillo de sobre-calentamiento
9	1	Asiento superior

Kit S65-170 de juntas tóricas

Artículo	Cantidad	Descripción
2	1	Junta tórica
3	1	Junta tórica
12	1	Junta tórica
13	1	Junta tórica

Kit S65-303 de la sección central

Artículo	Cantidad	Descripción
2	1	Junta tórica
3	1	Junta tórica
4	1	Revestimiento
5	1	Resorte
6	1	Pistón
7	1	Resorte
8	1	Tornillo de sobre-calentamiento
9	1	Asiento superior
10	1	Varilla de empuje
11	1	Termostato
12	1	Junta tórica
13	1	Junta tórica
14	1	Tapa de control
15	1	Tornillo de ajuste
16	1	Etiqueta
17	1	Tornillo de ajuste
18	4	Tornillo de 1/4
19	1	Tapa

Tuberías flexibles de conexión para el modelo S19-2000EFX

Cuando se usa con el modelo S19294JB, S19294JBT, el n.° de solicitud de pieza es 269-653 (se suministran 3 con la unidad).

Números de kit para acabado de bronce áspero. Comuníquese con Bradley para consultar por otras configuraciones.

A partir de noviembre de 2001, el pistón (artículo 7) reemplaza al soporte del sello y al sello como un repuesto directo.

A partir de junio de 2008, la tapa de control de bronce (artículo 15) se reemplazó por una tapa de plástico. Todos los componentes internos son idénticos.

A partir de julio de 2012, se ha actualizado el control de ajuste de temperatura (artículos 15, 17 y 19) y con compatibles con todas las unidades que usen la tapa de control plástica (junio de 2008 hasta la actualidad).

STAR MECHANICAL SUPPLY

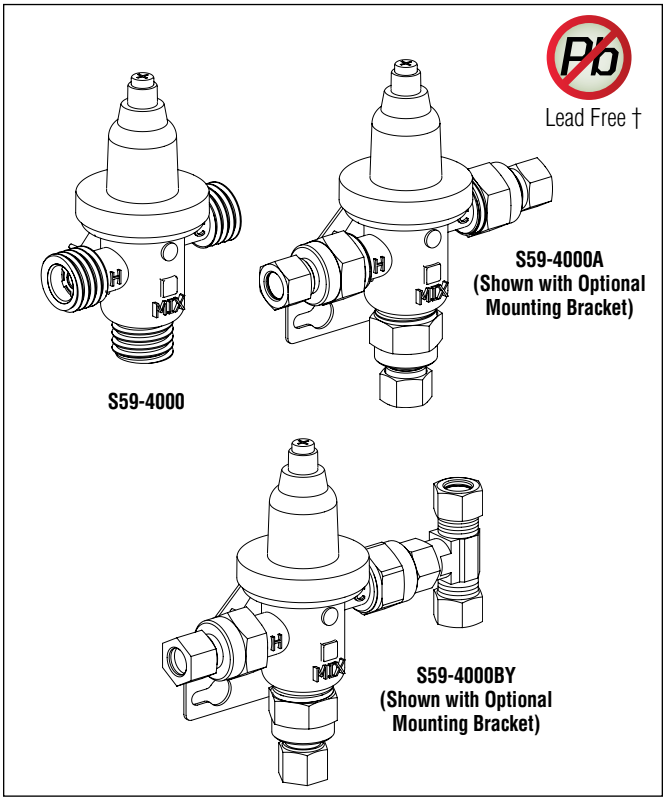
TAB-14

TV-1

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

S59-4000, S59-4000A, S59-4000BY
Navigator® Thermostatic Mixing Valves

- Lead-free design †
- Glass-filled polysulfone valve body
- Thermoplastic polymer cartridge
- Reliable wax-filled thermostat
- Adjustable set point within temperature range
- Easy installation and serviceability
- Universal mounting capability
- Integral check valves and strainers
- Factory assembled and tested
- Optional mounting bracket



Valve Specifications

Maximum Operating Pressure
125 PSI (860 kPA)

Maximum Inlet Temperature
180° F (82° C)

Temperature Range

Std. 95° F (35° C) to 120° F (49° C)

Temperature Differential – Hot to Mix
10° F (5.6°C)

Flow Capacities – GPM (L/Min)

Min. Flow	Pressure Drop – PSI (Bar)						
	5 (.5)	10 (1.0)	15 (1.5)	20 (2.0)	30 (2.5)	45 (3.0)	60 (4.0)
0.2 (0.8)	2.0 (7.5)	2.5 (9.0)	3.0 (11.0)	3.5 (13.0)	4.5 (17.0)	5.5 (19.0)	6.5 (24.5)

Product Compliance

Listed by IAPMO R&T to
- ASSE 1070/ASME A112.1070/CSA B125.70
- Uniform Plumbing Code (UPC)
- National Plumbing Code of Canada
- International Plumbing Code (IPC)

Listed by ASSE International to
- ASSE 1070

Listed by NSF International to
- NSF/ANSI 372

† Wetted surface contains less than .25% lead

Models (Must select one)

Model	Description
○ **S59-4000**	Navigator® Thermostatic Mixing Valve with 1/2" male NPT connection
○ **S59-4000A**	Navigator Thermostatic Mixing Valve with 3/8" Compression Fittings
○ **S59-4000BY**	Navigator Thermostatic Mixing Valve with 3/8" Compression Cold Side Bypass
○ **S45-2456**	Optional Mounting Bracket

☑ *Standard product selections contained within this document are third party LISTED to NSF/ANSI 372 meeting the Lead-Free content requirement. Any product configured with custom options will be COMPLIANT with NSF/ANSI 372 meeting the Lead-Free content requirement.*

Engineer's Approval_____

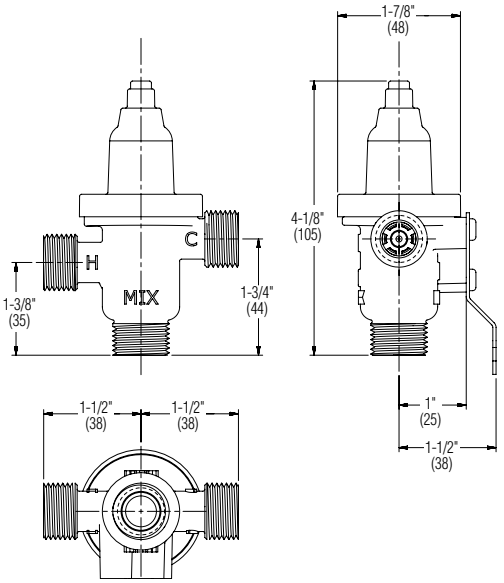
Consult local and national codes. Conformity and compliance to local and national codes is the responsibility of the installer.

This information is subject to change without notice.

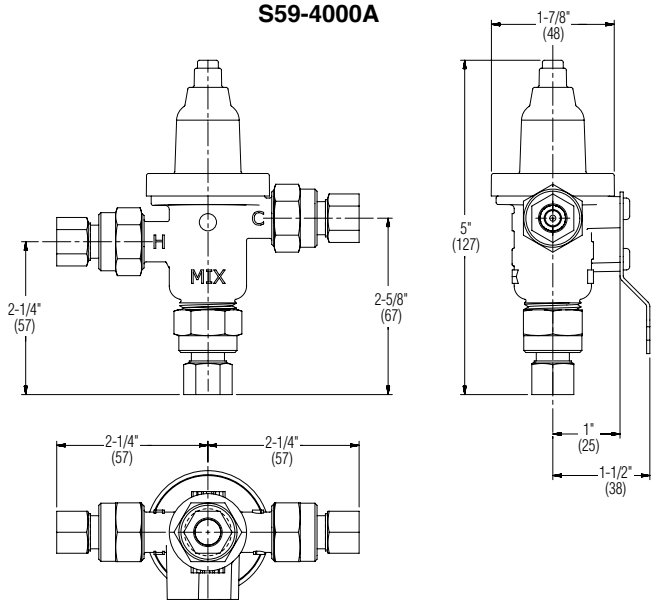
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Dimensions (mm)

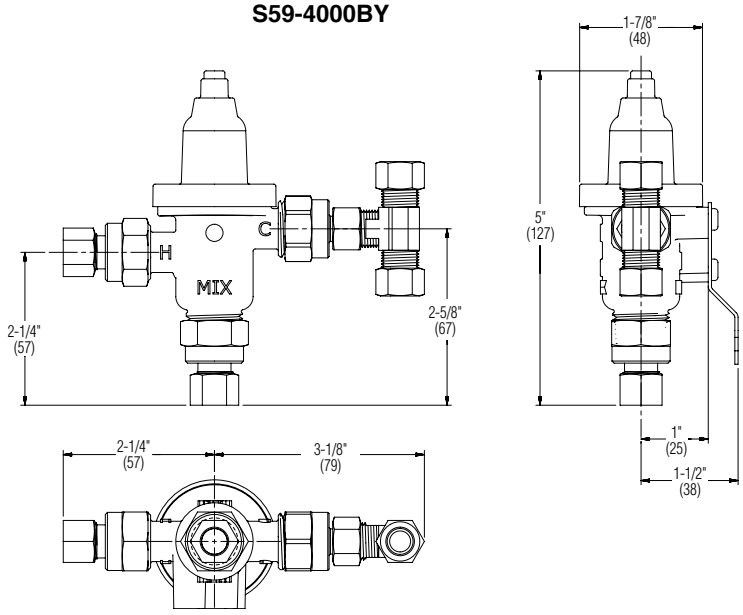
S59-4000



S59-4000A



S59-4000BY



Consult local and national codes. Conformity and compliance to local and national codes is the responsibility of the installer.

This information is subject to change without notice.

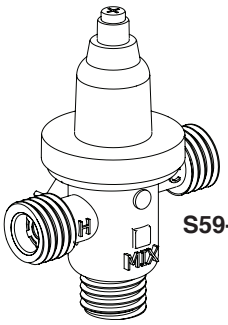
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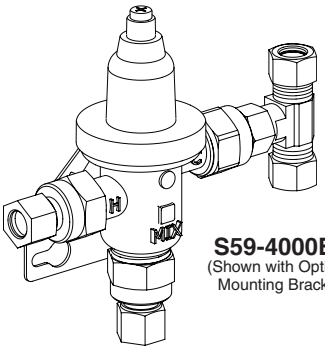
Installation

S59-4000
S59-4000A
S59-4000BY

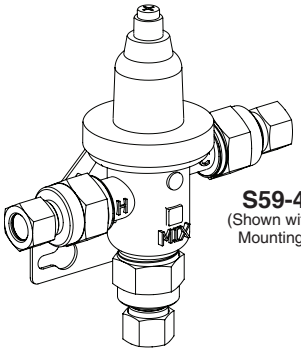
Navigator® Thermostatic Mixing Valve for Sinks/Faucets



S59-4000



S59-4000BY
(Shown with Optional Mounting Bracket)



S59-4000A
(Shown with Optional Mounting Bracket)

Table of Contents

Safety Information 2
Supplies and Tools Required 3
Connect Supply Lines 3
Adjust Temperature with Running Water: 3
Test Unit 3
Troubleshooting: Thermostatic Mixing Valve 4
Parts List 4

Inlet Connections: 1/2" NPT or 3/8" Compression

Outlet Connection: 1/2" NPT or 3/8" Compression

Temperature Range: 95–120°F

Maximum Pressure: 125 PSIG

Inlet Temperature, Hot: 120–180°F

Inlet Temperature, Cold: 33–80°F

Minimum Temperature Differential (from valve set point): 10°F

Read the instructions in this manual before beginning installation. Save these instructions and refer to them for inspection, maintenance and troubleshooting information.

For questions regarding the operation, installation or maintenance of this product, visit bradleycorp.com or call 800.BRADLEY (800.272.3539).

Product warranties and parts information may also be found under "Resources" on our website at bradleycorp.com.

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Safety Information

To ensure proper operation:

Installation

Failure to comply with proper installation and maintenance instructions could contribute to a valve failure resulting in severe bodily injury including scalding, chilling, and/or death depending upon system water pressure changes and/or supply water temperature changes.

Use this thermostatic mixing valve in accordance with ASSE standard 1070.

When installed in accordance with ASSE standard 1070, the valve is designed to be installed at fixtures such as sinks, bidets, lavatories, and bathtubs. When installed as an ASSE 1070 valve, the valve does not function as an ASSE 1016, ASSE 1017, or ASSE 1069 valve.

This valve should not be used where ASSE 1016 devices are required.

This valve does not provide protection from pipe freezing.

Installation of this system must be completed by a qualified plumber in compliance with all national and local codes. Compliance and conformity to local codes and ordinances is the responsibility of the installer. Should these codes differ from the information in the manual, follow the local codes. Inquire with governing authorities for additional local requirements.

Inspection

Regular checking and cleaning of the valve's internal components and check valves is necessary for maximum life and proper product function. Periodic inspection and yearly maintenance by a licensed contractor is required. Corrosive water conditions and/or unauthorized adjustments or repairs could render the valve ineffective for its intended service. Frequency of cleaning and inspection depends upon local water conditions.

Output temperature of each valve section must be individually checked and adjusted at initial installation and on a quarterly basis.

Water Temperature

Final temperature adjustment is the responsibility of the installer.

Supplies Required

- Shut-off on the outlet if tempered water is supplied to a remote location
- Shut-off on the inlets/supplies
- (2) #10 fasteners (and wall anchors, if necessary) for wall bracket

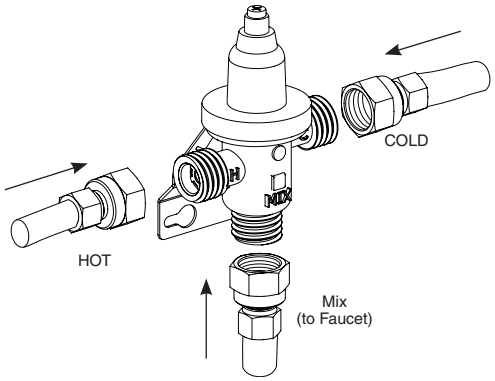
Tools Required

- Adjustable Wrench
- Needle Nose Pliers
- Phillips-Head Screwdriver

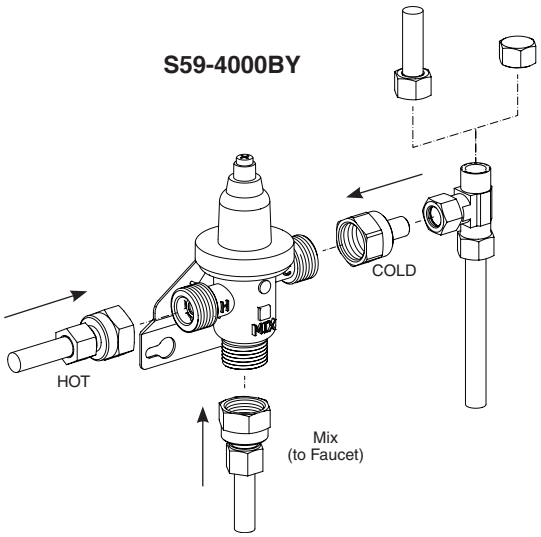
1 Connect Supply Lines

Use only teflon tape or sealant appropriate for plastic threads. Do not use pipe dope or thread lock.

S59-4000, S59-4000A



S59-4000BY

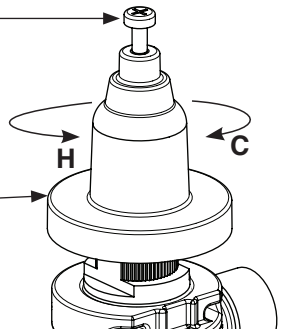


2 Adjust Temperature with Water Running

This valve is NOT factory preset. Upon installation, the temperature of this valve must be checked and adjusted to ensure delivery of a safe water temperature. Water in excess of 110°F (43°C) may cause scalding.

A Loosen Cap Screw about 1/4" (4-6 turns) and lift up cover (do not remove).

B Using cover, turn cartridge gently until desired water temperature is reached. Do not turn past stops as this may damage unit. Push cover down and tighten screw.



3 Test Unit

DO NOT SKIP THIS STEP!!!

Shut the hot water inlet off by closing hot water inlet valve. While the hot water supply is turned off, check to make sure the cold water flow is reduced. If the cold water is reduced properly, reopen the hot water supply.

Shut the cold water inlet off by closing the cold water inlet valve. While the cold water supply is off, check to make sure that the hot water flow has shut down.

Troubleshooting: Thermostatic Mixing Valve

Before attempting to troubleshoot the valve or disassemble the components, check for the following conditions:

- **If stop valves are used, make sure that they are fully open.**
- **Make sure that the hot and cold inlet pipes are connected properly, and that there are no cross-connections or leaking stop valves.**
- **Check the hot water heater output to make sure that it is at least 10°F above the set temperature.**

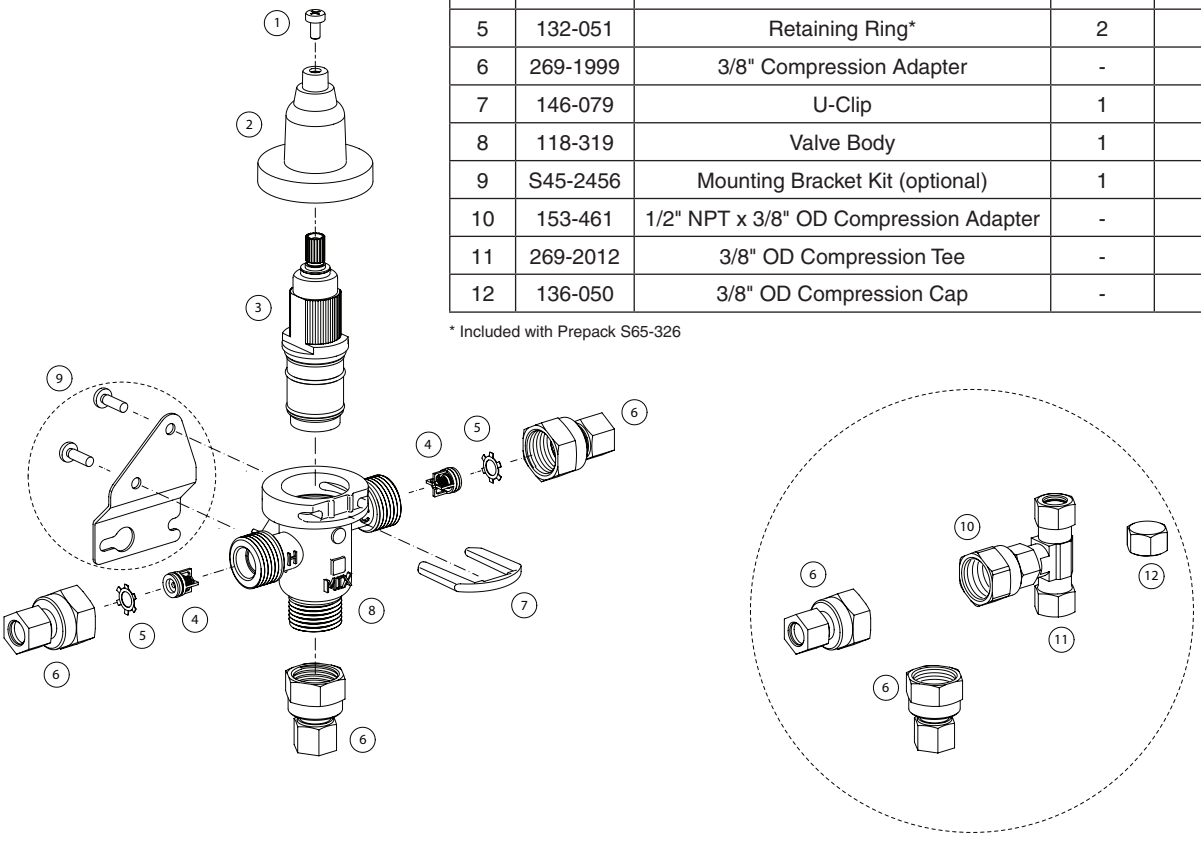
Be sure to close the appropriate shut-off valves prior to disassembly of the valve and reopen the valves after inspection and repair is complete.

Problem	***Cause***	***Solution***
External leaks.	*Damaged cartridge or O-rings.*	Replace cartridge with part number 269-1927
Improper water temperature or temperature fluctuation.	*Hot water supply is not 10° above desired set point.*	Increase hot water supply temperature
	Valve temperature is not properly set.	Adjust the temperature as shown on page 3 step 2.
Limited water flow.	*Dirt and debris have built up in the valve or strainer.*	1. Check to make sure both hot and cold supplies are connected to the Navigator mixing valve and that they have water flow. 2. Remove cover and U-clip. Remove the cartridge and clean the strainer. It is not required to grease cartridge, however if desired, use silicone grease only. Do not use grease on check valves.

Parts List

Item	Part No.	Description	Quantity		
			S59-4000	S59-4000A	S59-4000BY
1	160-463	Cap Screw	1	1	1
2	107-582	Cover	1	1	1
3	269-1927	Thermostatic Cartridge	1	1	1
4	198-014	Check Valve*	2	2	2
5	132-051	Retaining Ring*	2	2	2
6	269-1999	3/8" Compression Adapter	-	3	2
7	146-079	U-Clip	1	1	1
8	118-319	Valve Body	1	1	1
9	S45-2456	Mounting Bracket Kit (optional)	1	1	1
10	153-461	1/2" NPT x 3/8" OD Compression Adapter	-	-	1
11	269-2012	3/8" OD Compression Tee	-	-	1
12	136-050	3/8" OD Compression Cap	-	-	1

* Included with Prepack S65-326



STAR MECHANICAL SUPPLY

TAB-15

TV-2

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

S19-2000 (EFX8), S19-2000EFX
Emergency Fixture Thermostatic Mixing Valves

- Exceeds ANSI Z358.1
- ASSE 1071 Certified
- Reliable Liquid-Filled Thermostat with 10-Year Warranty
- Checkstops on Inlets
- Adjustable Set Point within Temperature Range
- Accurate Temperature Control to within ±3° F
- Built-in Cold Water Bypass, Assuring Cold Flow
- Positive Shutoff of Hot Supply When Cold Supply is Lost
- Easy Installation and Serviceability
- Dirt and Lime Resistant
- Dial Thermometer
- Factory Assembled and Tested
- Universal Mounting Capability
- Cabinet Features:
  - — 18 Gauge Body & Door
  - — Left-Hand Hinge
  - — Cylinder Lock
  - — Inlet/Outlet Knock-Out Holes for Mounting Flexibility
  - — Stainless Steel or Baked White Enamel Finishes
  - — Surface-Mounted or Recessed Style with Flange

Valve Specifications

Maximum Operating Pressure
125 PSI (860 kPA)

Maximum Inlet Temperature
180° F (82° C)

Recommended Inlet Temperature
120° F (49° C) – 140° F (60° C)

Temperature Range		Set Point
Std.	65° F (18° C) to 90° F (32° C)	85° F (29° C)

Flow Capacities – GPM

Model	Min. Flow	Pressure Drop – PSI						
		5	10	15	20	30	45	60
S19-2000	1.5	3.0	4.0	5.0	6.0	7.3	9.0	10.5
Cold Bypass Only		2.3	3.2	4.0	4.6	5.6	6.8	7.7

Flow Capacities – L/Min

Model	Min. Flow	Pressure Drop – Bar						
		.5	1.0	1.5	2.0	2.5	3.0	4.0
S19-2000	5.5	13.5	19.0	23.5	27.0	30.5	33.5	38.5
Cold Bypass Only		10.5	14.5	18.0	21.0	23.5	25.5	29.5

This plumbing fixture is not intended to dispense water for human consumption through drinking or for preparation of food or beverages.

Product Compliance

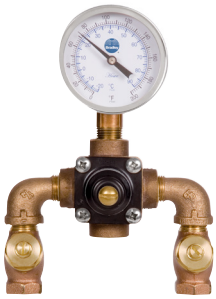
Listed by IAPMO R&T to

- ASSE 1071
- Uniform Plumbing Code (UPC)
- National Plumbing Code of Canada
- International Plumbing Code (IPC)

Listed by ASSE International to

- ASSE 1071

Engineer's Approval _____



S19-2000

Valve Model

Model	Description
☐ **S19-2000**	Emergency Fixture Thermostatic Mixing Valve
☐ **S19-2000EFX**	Emergency Fixture Thermostatic Mixing Valve for S19294JB & S19294JBT Only

Configurable Valve Model (select one)

Model	Description
☐ **EFX8**	EFX8 Thermostatic Mixing Valve with Options
☐ **CAB-EFX8**	EFX8 Thermostatic Mixing Valve **Cabinet Only**

Optional Valve Selections

Finish

☐ **R**	Rough Brass (standard)
☐ **C**	Chrome Plated

Bracket

☐ **B**	Wall Mounting Bracket
☐ **0**	None

Optional Cabinet Selections

Cabinets (includes bracket)

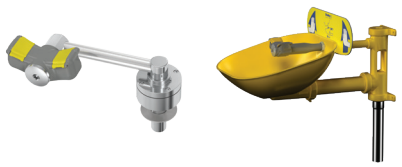
☐ **SS**	Surface Mount Stainless Steel
☐ **RS**	Recessed Stainless Steel
☐ **SE**	Surface Mount White Enamel
☐ **RE**	Recessed White Enamel
☐ **0**	None

Window

☐ **W**	Plexi-Glass Window in Door
☐ **0**	None

Application

Eye or Eye/Face Wash

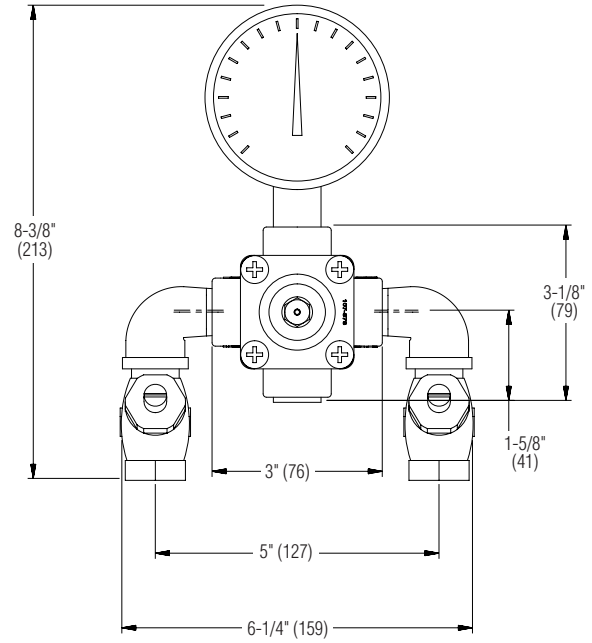


Complies with ANSI/ISEA Z358.1

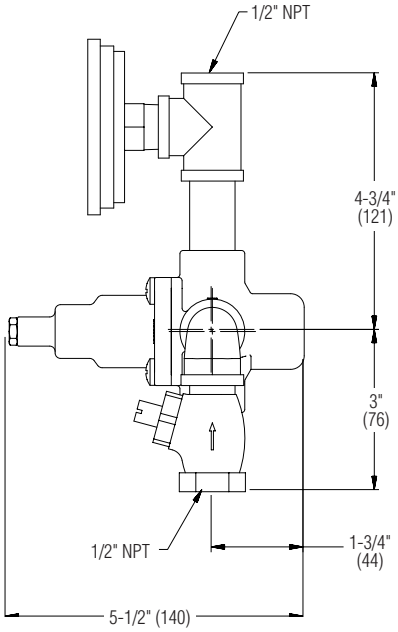
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Dimensions **(mm)**

Front View

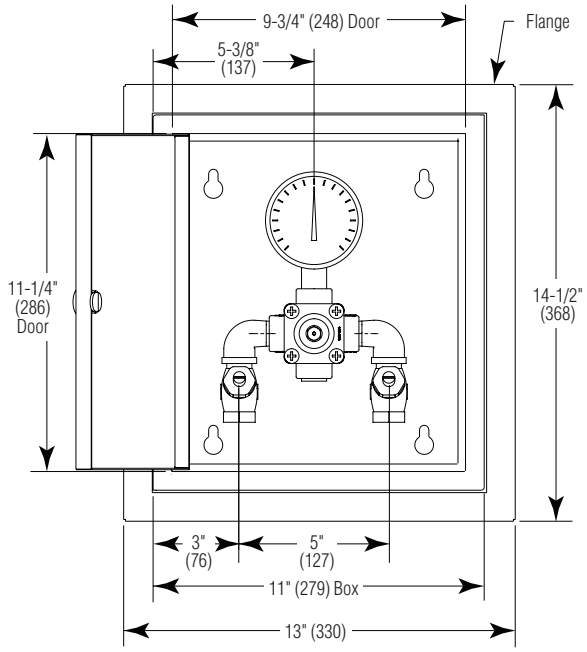


Side View

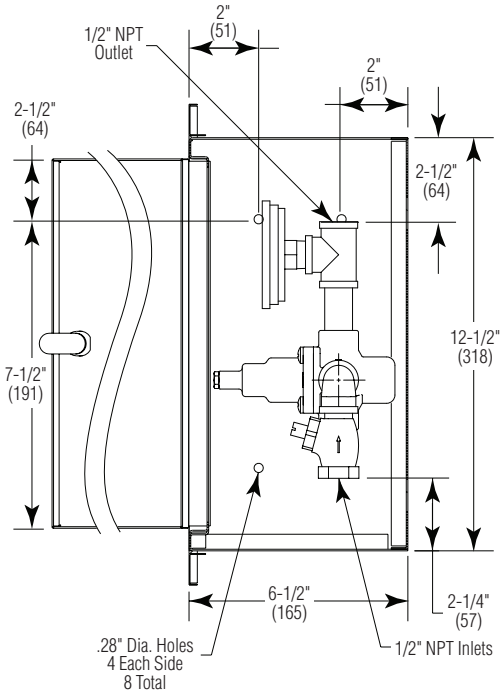


Dimensions — S19-2000 Recessed Cabinet

Front View



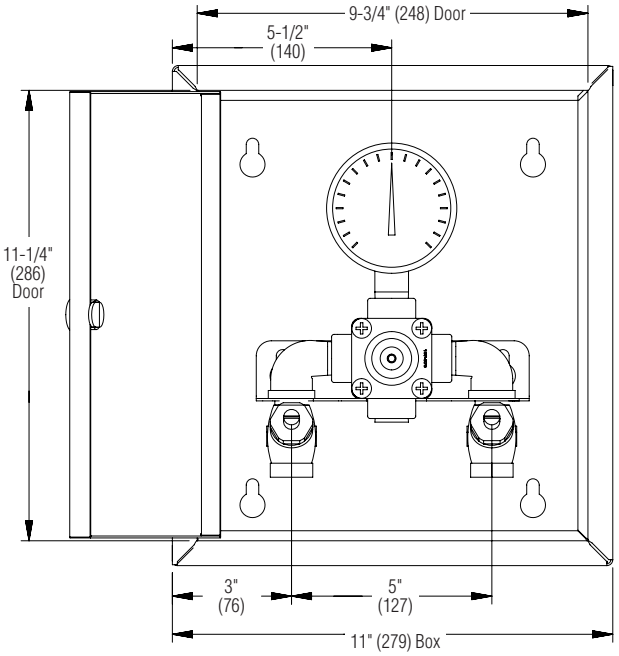
Side View



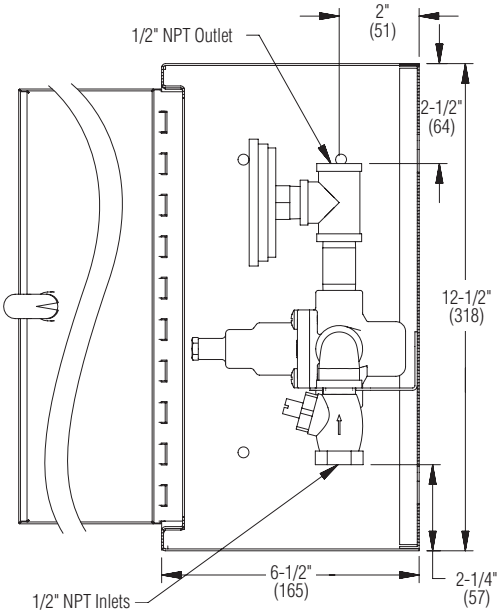
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Dimensions — S19-2000 Surface-Mounted Cabinet (mm)

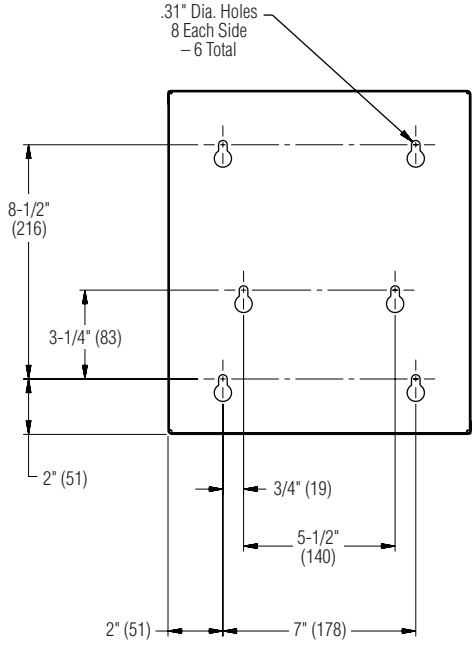
Front View



Side View

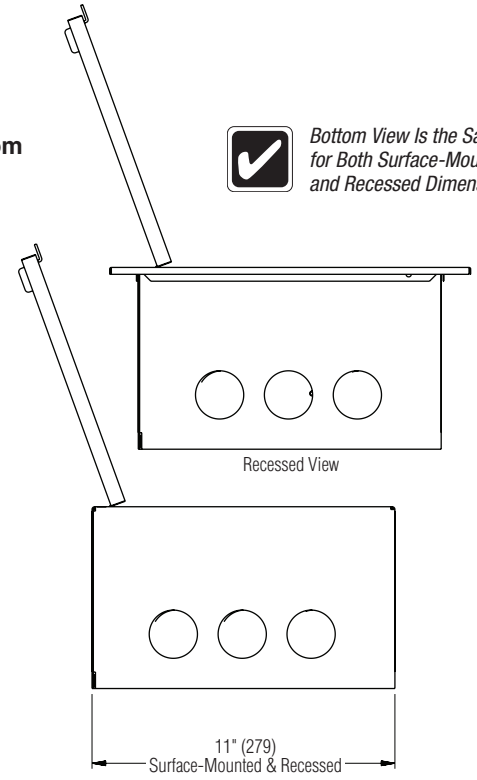


Back View



Bottom View

Bottom View Is the Same for Both Surface-Mounted and Recessed Dimensions.



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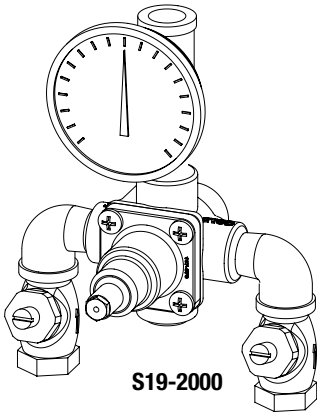
Installation

EFX8/S19-2000, S19-2000EFX Series

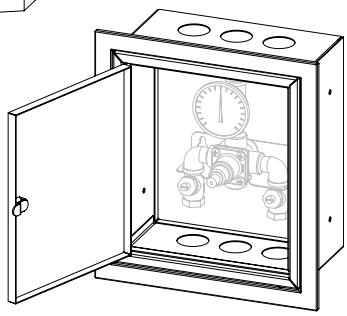
Thermostatic Mixing Valve with Optional Cabinet

Robinet thermostatique mélangeur avec cabinet facultatif

Válvula mezcladora termostática con armario opcional

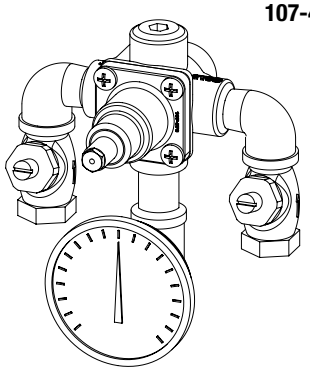


S19-2000

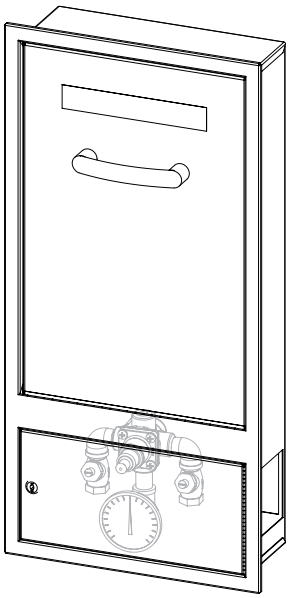


S86-066 Stainless Cabinet
107-492 Stainless Flange for Recessed Mounting
(Cabinet and Flange for S19-2000 Only)

(Valve Only)



S19-2000EFX



S19294JB, S19294JBT
(Cabinet for S19-2000EFX Only)

Read the instructions in this manual before beginning installation. Save these instructions and refer to them for inspection, maintenance, and troubleshooting information.

For questions regarding the operation, installation or maintenance of this product, visit bradleycorp.com or call 800.BRADLEY (800.272.3539).

Product warranties and parts information may also be found under “Resources” on our website at bradleycorp.com.

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A WATTS Brand

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Desglose de piezas 26

Specifications

Inlet Connections: 1/2" NPT
Outlet Connection: 1/2" NPT
Temperature Range: 65–95°F
Maximum Pressure: 125 PSI
Inlet Temperature Hot: 120–180°F
Inlet Temperature Cold: 33–80°F
Minimum Temperature Differential
(between hot supply & valve set point): 20°F
Flow at 30 psi: 7.3 gpm
Minimum Cold Water Bypass at 30 psid: 5.6 gpm
Minimum Flow: 1.5 gpm
Maximum Flow with Cold Water Shut-Off: 0.5 gpm

Especificaciones

Conexiones de entrada: NPT de 1/2 pulg.
Conexión de salida: NPT de 1/2 pulg.
Rango de temperaturas: 65 – 95 °F
Presión máxima: 125 PSI
Temperatura de entrada, caliente: 120 – 180 °F
Temperatura de entrada, fría: 33 – 80 °F
Diferencial de temperatura mínima
(entre suministro de agua caliente y punto de
referencia de la válvula): 20 °F
Flujo a 2,1 bar: 7.3 gpm
Derivación mínima de agua fría a 2,1 bar: 5.6 gpm
Flujo mínimo: 1.5 gpm
Flujo máximo con retención de agua fría: 0.5 gpm

Caractéristiques

Raccords d'arrivée : 1/2 po NPT
Raccord de sortie : 1/2 po NPT
Plage de température : 65 – 95 °F
Pression maximum : 125 lb/po^2
Température d'arrivée, eau chaude : 120 – 180 °F
Température d'arrivée, eau froide : 33 – 80 °F
Différentiel minimal de température
(entre arrivée d'eau chaude et réglage du mitigeur: 20 °F
Débit à 30 psi : 7.3 gpm
Dérivation d'eau froide minimum à 30 psid : 5.6 gpm
Débit minimum : 1.5 gpm
Débit maximum avec arrêt d'eau froide : 0.5 gpm

Safety Information

To ensure proper operation:

Installation

Failure to comply with proper installation and maintenance instructions could contribute to a valve failure resulting in severe bodily injury including scalding, chilling and/or death depending upon system water pressure changes and/or supply water temperature changes.

Use this thermostatic mixing valve in accordance with ASSE standard 1071.

When installed in accordance with ASSE standard 1071, the valve is designed to be installed at fixtures such as emergency eyewash and eye/face wash applications only. When installed as an ASSE 1071 valve, the valve does not function as an ASSE 1016, ASSE 1017, ASSE 1069, or ASSE 1070 valve.

This valve should not be used where ASSE standard 1016 devices are required.

Operation of emergency thermostatic mixing valves and fixtures must be tested weekly per ANSI/ISEA Z358.1.

This valve does not provide protection from pipe freezing.

Valve shall be accessible for testing, adjusting, and maintenance in the installed position.

If shut-off valves are installed for maintenance purposes, provisions shall be made to prevent unauthorized shut-off.

Installation of this system must be completed by a qualified plumber in compliance with all national and local codes. Compliance and conformity to local codes and ordinances is the responsibility of the installer. Should these codes differ from the information in the manual, follow the local codes. Inquire with governing authorities for additional local requirements.

Inspection

Regular checking and cleaning of the valve's internal components and check stops is necessary for maximum life and proper product function. Periodic inspection and yearly maintenance by a licensed contractor is required. Corrosive water conditions and/or unauthorized adjustments or repairs could render the valve ineffective for it's intended service. Frequency of cleaning and inspection depends upon local water conditions.

Output temperature of the valve must be checked and adjusted at initial installation and on a quarterly basis.

Water Temperature

Final temperature adjustment is the responsibility of the installer.

Supplies Recommended for Installation

- Lockable shut-off on the outlet if tempered water is supplied to one or more emergency fixtures
- Lockable shut-off on the inlets/supplies
- (6) 1/4" wall anchors and fasteners for surface-mounted cabinet
- (4) 1/4" fasteners (and wall anchors, if necessary) for recess-mounted cabinet
- Unions on all connections to facilitate removal of valve

Tools Required for Temperature Adjustment

- 5/64" Allen wrench
- Blade screwdriver

1 Install Optional Cabinet (If not installing cabinet, skip to Step 2)

If installing S19-2000EFX into Dropdown Eyewash Cabinet S19294JB, S19294JBT, please see mounting instructions supplied with cabinet.

Recessed Cabinet:

1. Rough-in wall opening 11-1/2" W x 13" H.
2. Insert the cabinet and secure to wall with four 1/4" fasteners properly anchored (supplied by installer.)
3. Install two anchors and screws through the valve bracket in back of the cabinet into a secure brace (supplied by installer) or into wall. This will support the valve.
4. Install the valve nipples and one-half of the union ball valve using pipe sealant or teflon tape. Install the other half of the union ball valve onto inlet and outlet pipe.
5. Insert the valve into the bracket in the cabinet (right side goes in first). Continue with the valve installation procedure.
6. Position the wall flange tight to the wall and caulk in place.

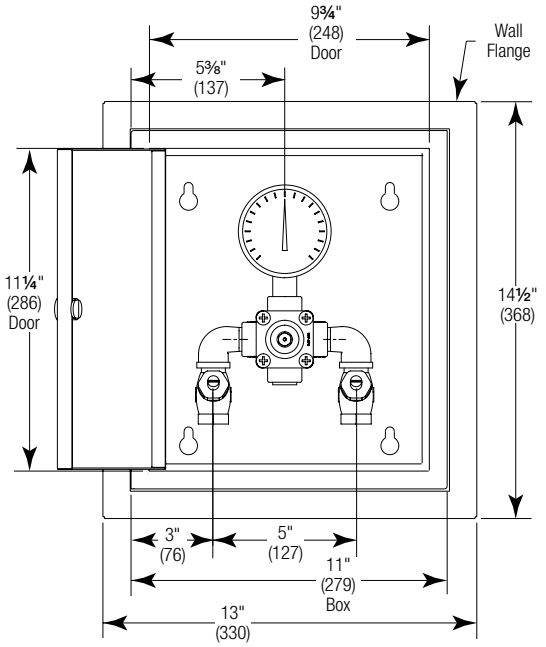
Surface-Mounted Cabinet:

1. Measure and mark the cabinet mounting hole locations at the dimensions shown on next page. Install six 3/8" wall anchors (supplied by installer).
2. Position the cabinet onto the wall and secure into place with six 3/8" wall fasteners (supplied by installer).
3. Install the valve nipples and one-half of the union ball valve using pipe sealant or teflon tape. Then install the other half of the union ball valve onto the inlet and outlet piping.
4. Insert the valve into the bracket in the cabinet (right side of the valve goes in first). Continue with the valve installation procedure.

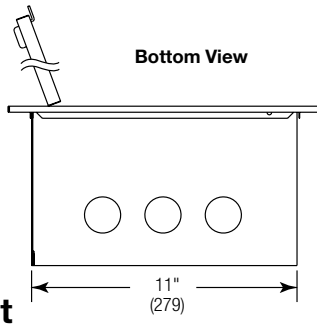
Optional Recessed Cabinet

(mm)

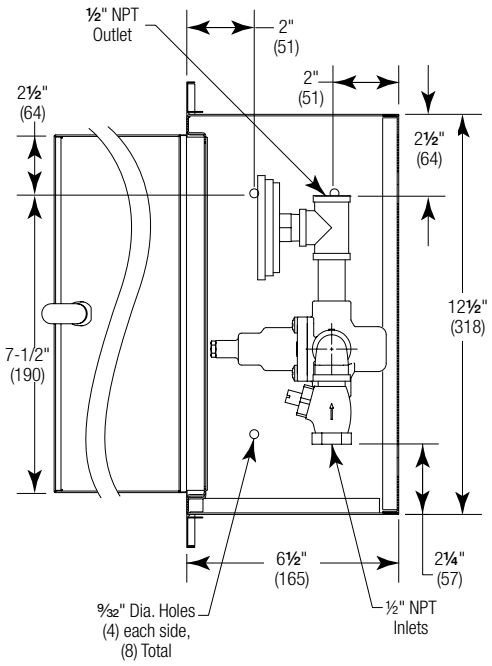
Front View



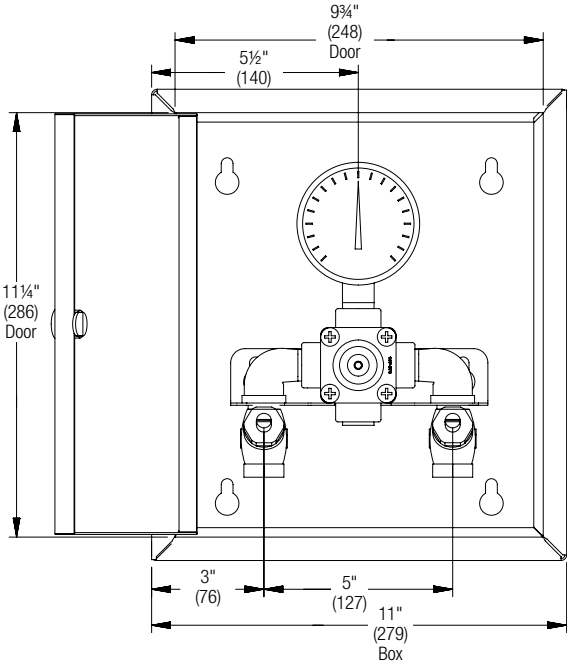
Bottom View

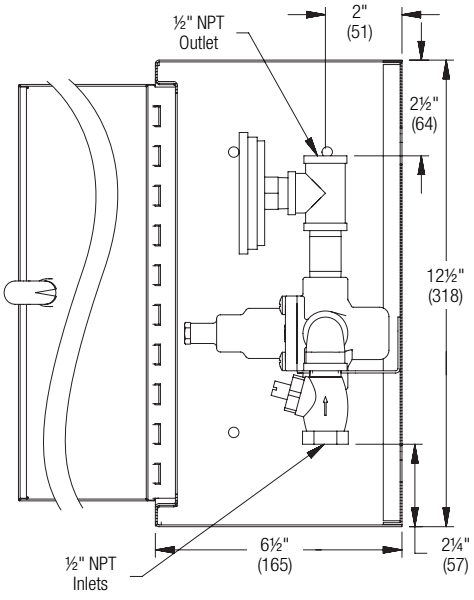


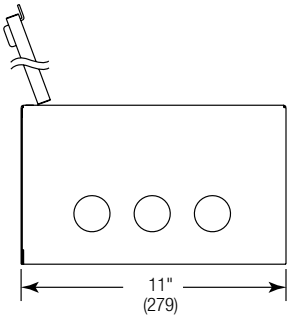
Side View



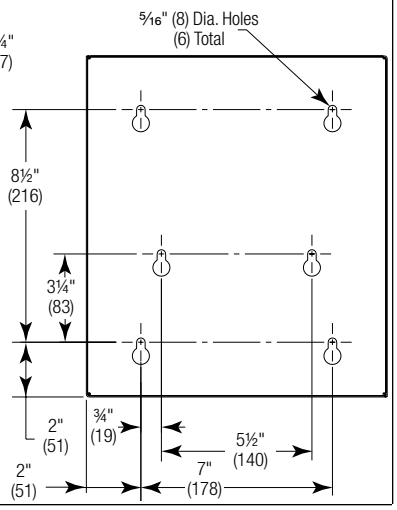
Optional Surface-Mounted Cabinet





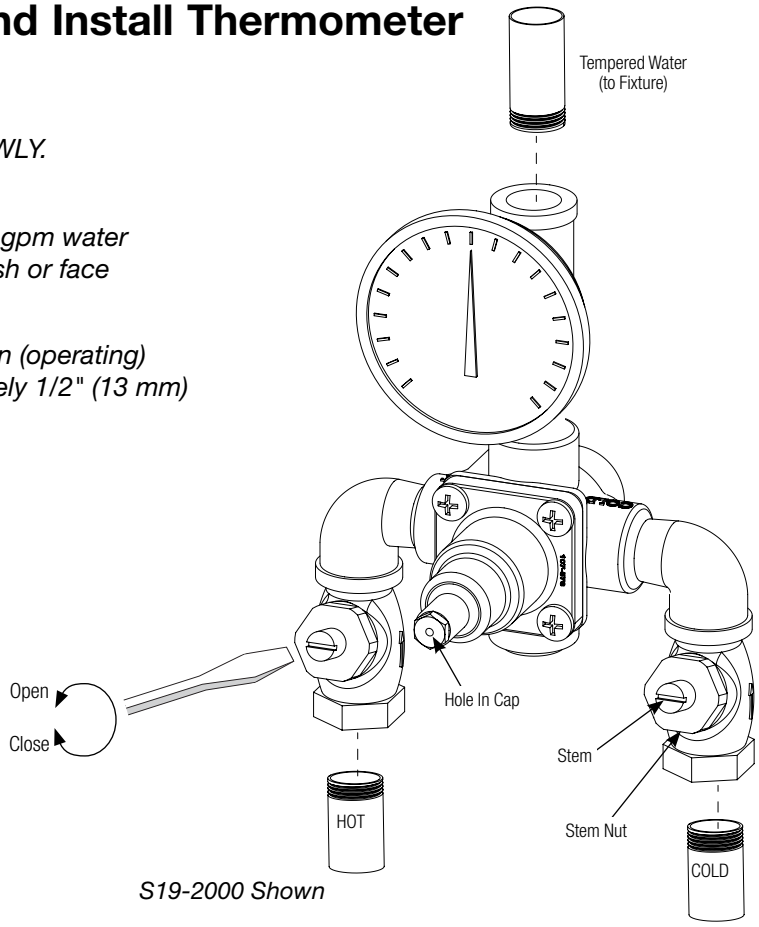


Mounting Hole Locations



2 Connect Supply Lines and Install Thermometer

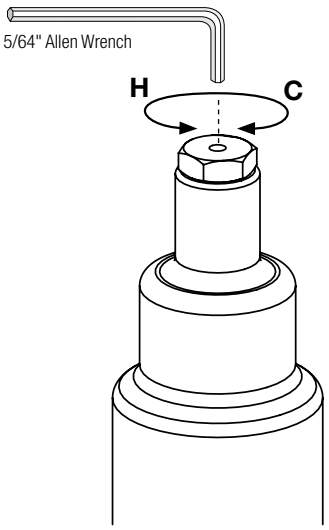
- ☑ *Check for leaks by pressurizing unit SLOWLY.*
- ☑ *Check the temperature when approx. 3-5 gpm water flow is reached (equivalent to one eye wash or face wash) and adjust if necessary.*
- ☑ *When the check stops are in the fully open (operating) position, the stem will extend approximately 1/2" (13 mm) from the stem nut.*



S19-2000 Shown

3 Adjust Temperature with Water Running

- ☑ *Check the temperature when approximately 3 – 5 gpm water flow is reached (equivalent to one eye wash).*
- ☑ *No single emergency fixture supplied by this device shall have a minimum flow rate less then 1.5 gpm.*
- ☑ *This device must be checked for final temperature and adjusted as necessary. The standard preset factory temperature setting is 85°F (29°C) [the range of the valve is 65°F–90°F (18°C–32°C)]. Insert Allen Wrench through the hole in the cap and into the set screw to adjust. Consult proper medical and/or safety authorities for the optimum temperature recommended for your particular application.*



4 Test Unit

⚠ **DO NOT SKIP THIS STEP!!!**

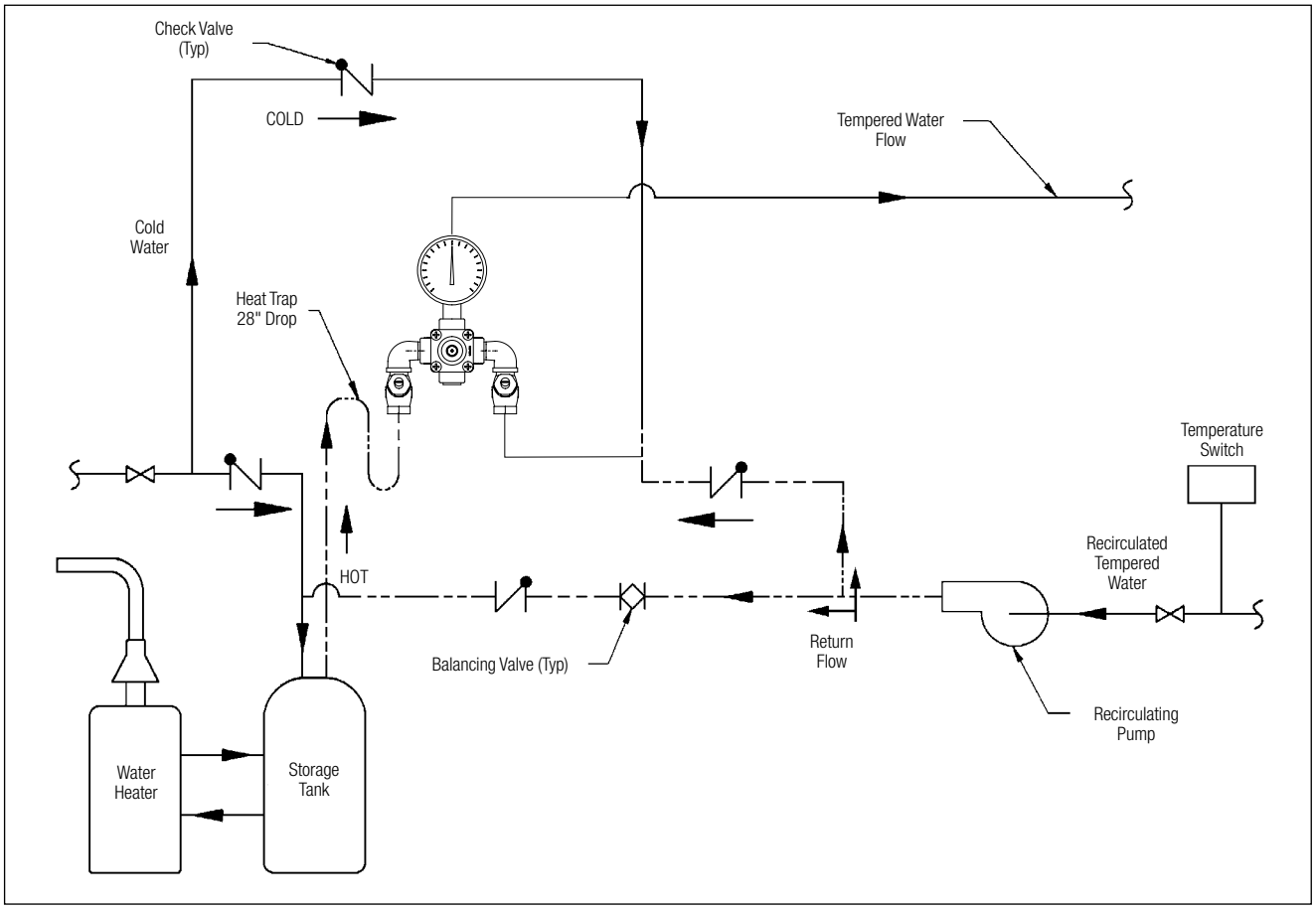
Shut the hot water supply off by closing hot water inlet valve or supply check valve. While the hot water supply is turned off, check to make sure the cold water continues to flow. If the cold water is flowing properly, reopen the hot water supply.

Shut the cold water supply off by closing the cold water inlet valve or supply check valve. While the cold water supply is off, check to make sure that the hot water flow has shut down to less then 0.5 gpm. If hot water is shut down, fully reopen cold water supply.

- ☑ *Test the system weekly (turn on the water supply and check for constant control of the desired set temperature).*

5 Optional Water Recirculation Setup

Recirculating the water in the system provides constant regulation of the water temperature. Flush the supply lines thoroughly after completing installation. Close off all fixtures and label them as not available for use during the recirculating process.



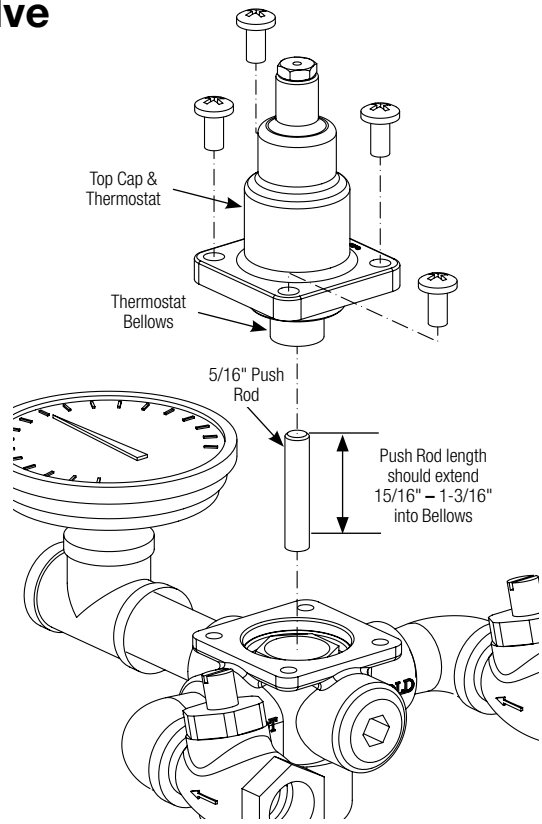
1. Turn off the recirculating pump and turn on the water supply at emergency fixture (a water flow rate of 3 – 5 gpm is required).
2. Let the water run through the system until a consistent temperature is obtained. If you do not obtain the required temperature, refer to step #3 on previous page for temperature readjustment.
3. As soon as the water reaches the proper temperature, turn on the recirculating pump (make certain the proper system temperature has been achieved before proceeding).
4. Check the water temperature at the return pump. If the temperature exceeds the appropriate level by 2°F, adjust the temperature high-limit switch (this will turn off the pump). Wait until the return water temperature is 5°F below the appropriate level and adjust the low-limit switch (this will turn the pump back on).
5. Open the balancing valve completely.
6. Turn off all fixtures and make sure there is no water running through the system (the cold inlet pipe should feel warm to the touch).
7. Let the system run for 30 minutes or longer without water. If, after thirty minutes, the water temperature increases, you may readjust the temperature by slowly closing the balancing valve until the appropriate temperature is reached.

Troubleshooting: Thermostatic Mixing Valve

Before attempting to troubleshoot the valve or disassemble the components, check for the following:

- Stop/check valves are fully open (the slotted stem extends approximately 1/2" from the stem nut) and that all inlet and outlet shut-off valves are open
- Hot and cold inlet pipes are connected properly, and that there are no cross-connections or leaking stop/check valves
- Water heater output is at least 20°F above the set temperature.

Be sure to close the appropriate shut-off valves prior to disassembly of the valve and reopen the valves after inspection and repair is complete.

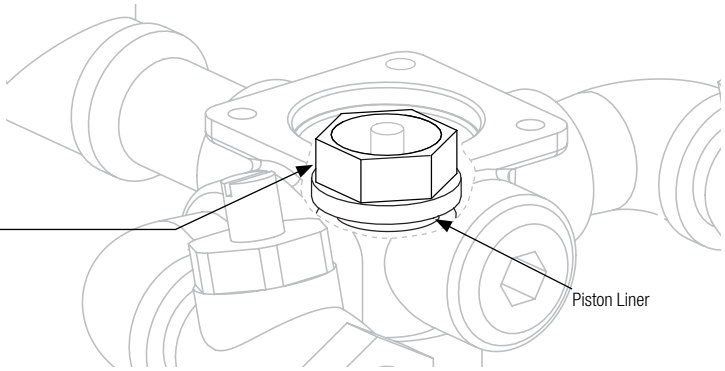


Problem	Cause	Solution
External leaks in the system	Either the NPT joints or the O-rings have been damaged.	Replace the NPT joints and/or O-rings where necessary. For replacement of O-rings, contact your Bradley representative and ask for O-Ring Seal Kit (S65-170).
No hot water flow (cold water flow only)	The thermostat has failed and, subsequently, the safety shut-off has engaged.	**Inspect Thermostat:** 1. Remove the top cap and thermostat. 2. Insert the 5/16" dia. push rod into the thermostat bellows. 3. Mark the length the push rod extends into the bellows (at room temperature, with 10 lb. of force. the length should be approx. 15/16" – 1-3/16"). 4. If the push rod length is not in the proper range, the thermostat must be replaced (it cannot be repaired). Contact your Bradley representative and ask for Thermostat Kit (S65-171).
Limited water flow	The inlet shut-off valve may be partially closed or there has been a significant decrease in water pressure.	
	Dirt and debris have collected on the check screen or seat, limiting the movement of the stop and checks.	**Clean Stop and check Valves:** Remove the stop and checks, clean the seat and reassemble the valve. Do not remove the seat. The components may be brushed with a small wire brush to remove debris. A pair of tweezers works well for pulling debris out from the seat. If the stop and checks need to be replaced, contact your Bradley representative and ask for Check/Stop Kit (S27-102-Rough Brass, or S27-292A-Chrome).
Temperature fluctuation or improper Temperature	The stop and check sections of the valve do not move freely.	Clean Stop and Check Valves as described above.
	Thermostat is slowly failing.	Check Thermostat as described above, or replace.
	Inlet supply line to the mixing valve is being shared by other pieces of equipment that are used only periodically, such as laundry appliances or washdown stations. It may reduce the inlet pressure to the mixing valve to less than 3 PSI. The supply line size may not be large enough to supply both the valve and the other appliances.	Enlarge the supply line size, reconfigure the supply line or regulate the supply usage.
	Recirculation is not balanced.	Review recirculation set up on page 6.
	Piston does not move freely and must be cleaned.	See next page for piston disassembly and cleaning directions.

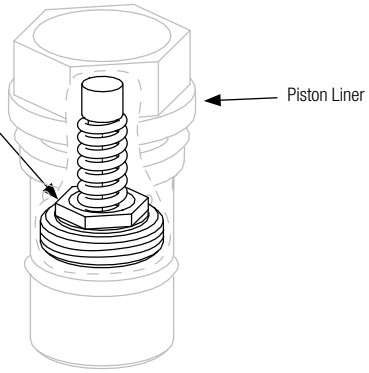
Troubleshooting: Piston Disassembly and Cleaning

A Remove the Top Cap and Thermostat Assembly as shown on Page 6. Set the 5/8" Push Rod aside.

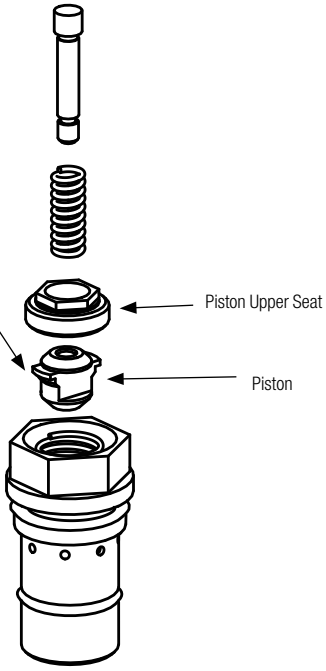
B Using a 15/16" socket wrench, loosen the piston liner from the valve body and lift out with a needle-nose pliers.



C Using a 1/2 deep socket wrench, loosen the piston upper seat from the piston liner and lift out parts with a needle-nose pliers.

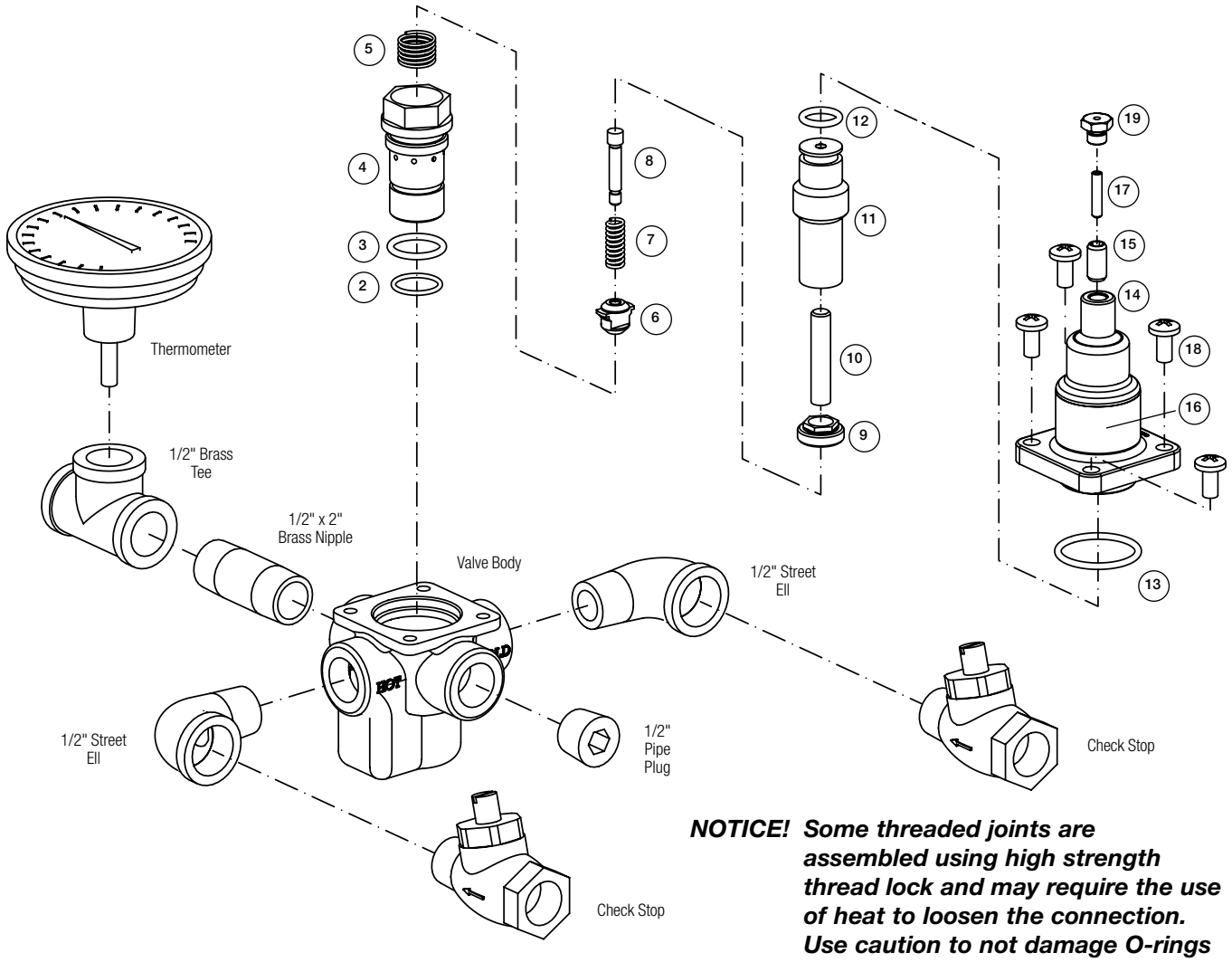


D Dissamble and clean the piston assembly parts with any cleaner suitable for brass and stainless steel. (if necessary, use a 400-grit sandpaper to polish and hone the piston and liner.)



E Re-assemble the piston assembly. Push the mechanism up and down several times to make sure the piston moves smoothly and consistently. If it is not consistent, repeat Procedure D until it moves freely, or replace. Contact your Bradley representative and ask for Piston/Liner Kit (part number S65-172).

Parts Breakdown



NOTICE! Some threaded joints are assembled using high strength thread lock and may require the use of heat to loosen the connection. Use caution to not damage O-rings or other components.

Thermostat Kit S65-171

Item	Qty.	Description
11	1	Thermostat
12	1	O-Ring
13	1	O-Ring

Piston & Liner Kit S65-172

Item	Qty.	Description
2	1	O-Ring
3	1	O-Ring
4	1	Liner
5	1	Spring
6	1	Piston
7	1	Spring
8	1	Overheat Screw
9	1	Upper Seat

O-Ring Kit S65-170

Item	Qty.	Description
2	1	O-Ring
3	1	O-Ring
12	1	O-Ring
13	1	O-Ring

Center Section Kit S65-303

Item	Qty.	Description
2	1	O-Ring
3	1	O-Ring
4	1	Liner
5	1	Spring
6	1	Piston
7	1	Spring
8	1	Overheat Screw
9	1	Upper Seat
10	1	Push Rod
11	1	Thermostat
12	1	O-Ring
13	1	O-Ring
14	1	Control Cap
15	1	Set Screw
16	1	Label
17	1	Set Screw
18	4	1/4 Screw
19	1	Cap

Kit numbers for rough brass finish. Contact Bradley for other configurations.

As of November 2001, the piston (Item 7) has replaced the seal holder and seal as a direct replacement.

As of June 2008, the brass control cap (item 15) has been replaced by a plastic cap. All internal components are identical.

As of July 2012, the Temperature Adjustment Control (items 15, 17 and 19) have been updated and are compatible with all units using the plastic Control Cap (June 2008 to present).

Flexible Connection Lines for S19-2000EFX

When used with S19294JB, S19294JBT, order Part No. 269-653 (3 supplied with unit).

Consignes de sécurité

Pour assurer un bon fonctionnement :

Installation

Tout manquement à respecter les instructions d'installation et d'entretien peut contribuer à une défaillance du robinet et provoquer des blessures graves voire mortelles, notamment par la chaleur ou le froid, en fonction des variations de pression d'eau du système ou des variations de température de l'alimentation en eau.

Utiliser ce mitigeur thermostatique conformément à la norme ASSE 1071.

Lorsqu'il est installé conformément à la norme ASSE 1071, le robinet est conçu pour être utilisé sur des appareils d'urgence tels que des douches oculaires et des douches oculaires et faciales seulement. S'il est installé en tant que robinet ASSE 1071, il ne fonctionne pas en tant que robinet ASSE 1016, ASSE 1017, ASSE 1069 ou ASSE 1070.

Ne pas utiliser ce robinet si des appareils conformes à la norme ASSE 1016 sont exigés.

Le fonctionnement des mitigeurs thermostatiques et appareils sanitaires d'urgence doit être contrôlé chaque semaine conformément à la norme ANSI/ISEA Z358.1.

Ce robinet ne protège pas les conduites contre le gel.

Dans sa position installée, le robinet doit être accessible pour les essais, les réglages et l'entretien.

Si des robinets d'arrêt sont installés à des fins d'entretien, prendre les mesures nécessaires pour empêcher les fermetures non autorisées.

L'installation de ce système doit être effectuée par un plombier qualifié conformément à tous les codes en vigueur. La mise en conformité et le respect des codes et règlements en vigueur relèvent de la responsabilité de l'installateur. Si ces codes diffèrent des informations figurant dans le manuel, suivre les codes en vigueur. S'informer auprès des autorités compétentes s'il existe des exigences locales supplémentaires.

Inspection

Le contrôle et le nettoyage réguliers des éléments internes et des clapets d'arrêt du robinet sont nécessaires pour assurer une durabilité maximale et un bon fonctionnement du produit. Prévoir obligatoirement des contrôles périodiques et un entretien annuel par un professionnel agréé. Les eaux corrosives et les réglages ou réparations non autorisés peuvent empêcher le robinet de fonctionner comme prévu. La fréquence de nettoyage et de contrôle dépend des conditions locales d'alimentation en eau.

La température de sortie du robinet doit être contrôlée et réglée lors de l'installation initiale puis chaque trimestre.

Température de l'eau

Le réglage final de la température relève de la responsabilité de l'installateur.

Fournitures requises pour l'installation :

- Robinet d'arrêt verrouillable sur la sortie en cas d'alimentation d'eau tempérée vers un ou plusieurs appareils d'urgence
- Robinet d'arrêt verrouillable sur les arrivées/alimentations
- (6) Ancrages muraux et fixations 3/8 po pour armoire montée en surface
- (4) Fixations 1/4 po (et ancrages muraux, si nécessaire) pour armoire encastrée
- Raccords sur toutes les connexions pour faciliter la dépose du robinet

Outils requis pour réglage de température

- Clé Allen 5/64 po
- Tournevis à lame

1 Installer l'armoire en option (si l'installation d'une armoire n'est pas requise, passer à l'étape 2).

En cas de pose du S19-2000EFX dans l'armoire de douche oculaire escamotable S19-294JB, S19284JBT, voir les instructions de montage fournies avec l'armoire.

Armoire encastrée :

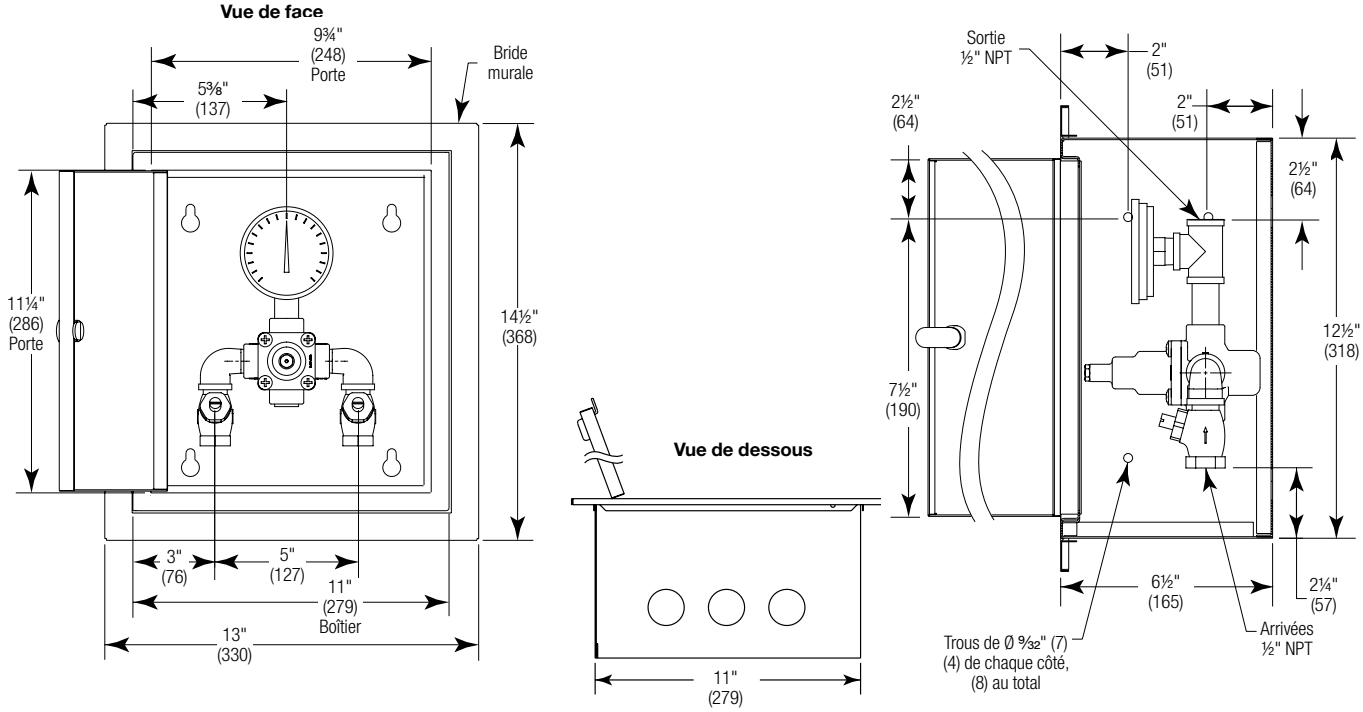
1. Ouverture murale pour plomberie brute 292 mm L x 330 mm H (11-1/2 po L x 13 po H).
2. Insérer l'armoire et la fixer au mur avec quatre fixations 1/4 po adéquatement ancrées (fournies par l'installateur).
3. Installer deux ancrages et vis à travers le support de robinet à l'arrière de l'armoire et dans un contrevent sécuritaire (fourni par l'installateur) ou dans un mur. Cela soutiendra le robinet.
4. Installer les raccords filetés du robinet et la moitié du clapet à bille du raccord en utilisant un produit d'étanchéité pour tuyaux ou du ruban téflon. Installer l'autre moitié du clapet à bille du raccord sur le tuyau d'entrée et de sortie.
5. Insérer le robinet dans le support dans l'armoire (le côté droit entre en premier). Continuer avec la procédure d'installation du robinet.
6. Positionner la rosace murale tout contre le mur et colmater en place.

Armoire montée en surface :

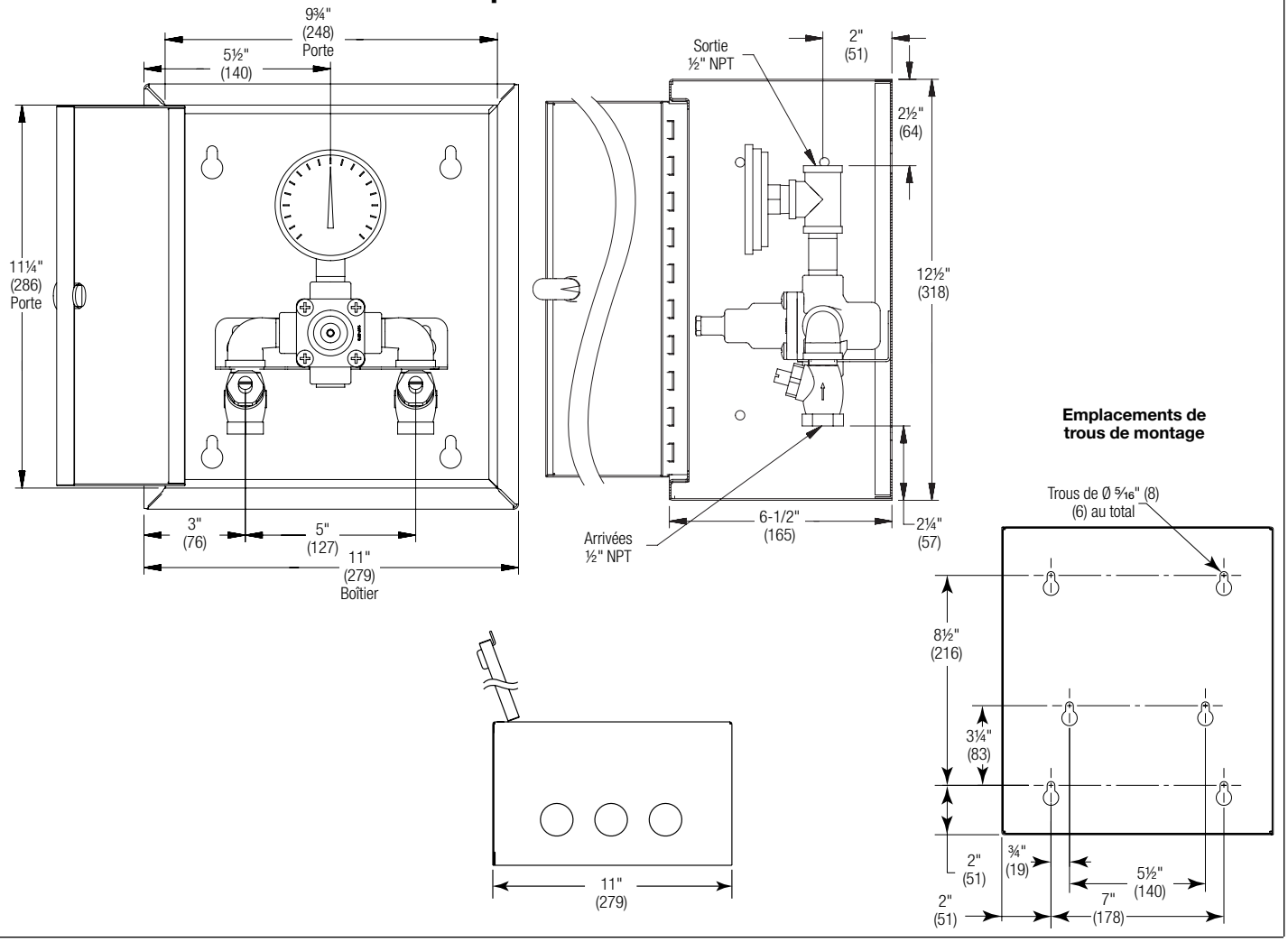
1. Mesurer et marquer les emplacements des trous de montage de l'armoire selon les dimensions indiquées à la page suivante. Installer six ancrages muraux de 3/8 po (fournis par l'installateur).
2. Positionner l'armoire dans le mur et fixer en place avec six fixations murales de 3/8 po (fournies par l'installateur).
3. Installer les raccords filetés du robinet et la moitié du clapet à bille du raccord en utilisant un produit d'étanchéité pour tuyaux ou du ruban téflon. Puis installer l'autre moitié du clapet à bille du raccord sur le tuyau d'entrée et de sortie.
4. Insérer le robinet dans le support dans l'armoire (le côté droit du robinet entre en premier). Continuer avec la procédure d'installation du robinet.

Armoire encastrée en option

(mm)

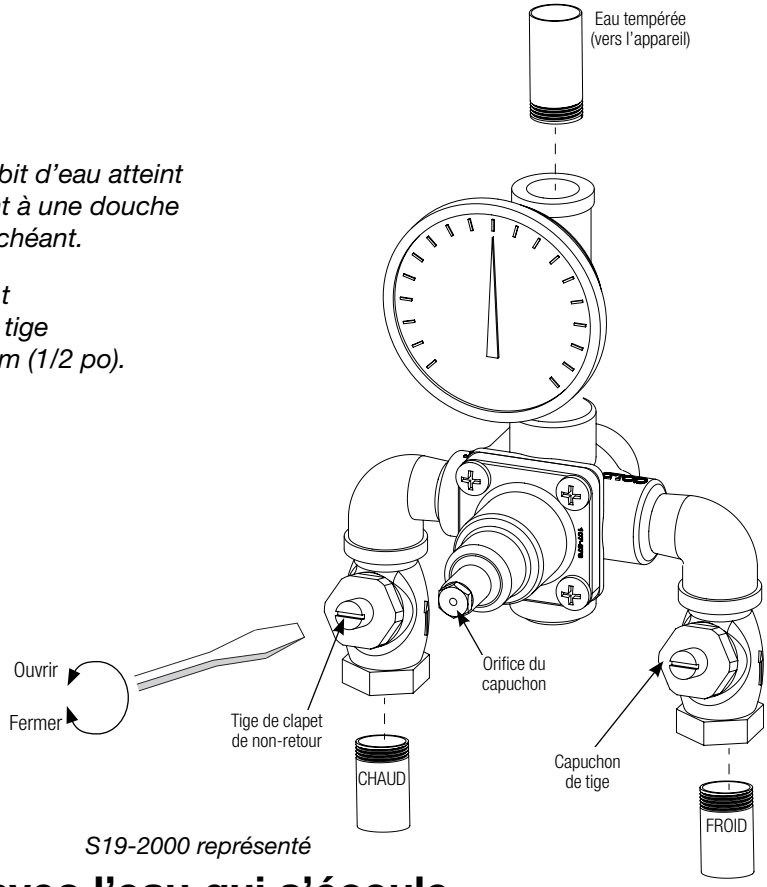


Armoire montée en surface en option



2 Connecter les conduites d'alimentation et installer le thermostat

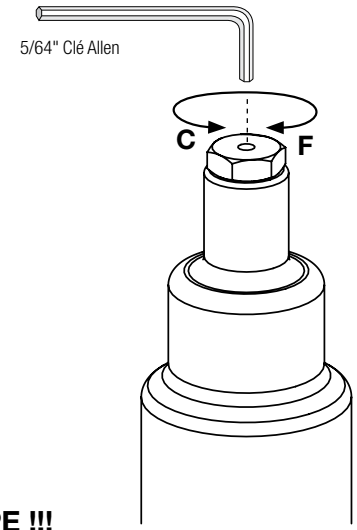
- ☑ *Mettre LENTEMENT sous pression pour vérifier l'étanchéité.*
- ☑ *Contrôler la température lorsque le débit d'eau atteint 11 à 19 l/min (3 à 5 gal/min) (équivalent à une douche oculaire ou faciale) et l'ajuster le cas échéant.*
- ☑ *Lorsque les clapets de non-retour sont complètement ouverts (en marche), la tige dépasse du capuchon d'environ 13 mm (1/2 po).*



S19-2000 représenté

3 Régler la température avec l'eau qui s'écoule

- ☑ *Contrôler la température lorsque le débit d'eau atteint 11 à 19 l/min (3 à 5 gal/min) (équivalent à une douche oculaire).*
- ☑ *Aucun dispositif d'urgence fourni par ce dispositif a n'a un débit minimum inférieur à 1,5 GPM (5,7 L/min).*
- ☑ *Contrôler la température finale du dispositif et l'ajuster le cas échéant. La température de consigne standard préréglée à l'usine est de 29 °C (85 °F) [la plage du robinet est de 18 à 32 °C (65 à 90 °F)]. Insérez la clé Allen à travers l'orifice du capuchon et dans la vis de calage pour régler. Consulter les autorités médicales et/ou de sécurité appropriées pour connaître la température optimale recommandée pour l'application en question.*



4 Tester unité

⚠ **NE PAS SAUTER CETTE ÉTAPE !!!**

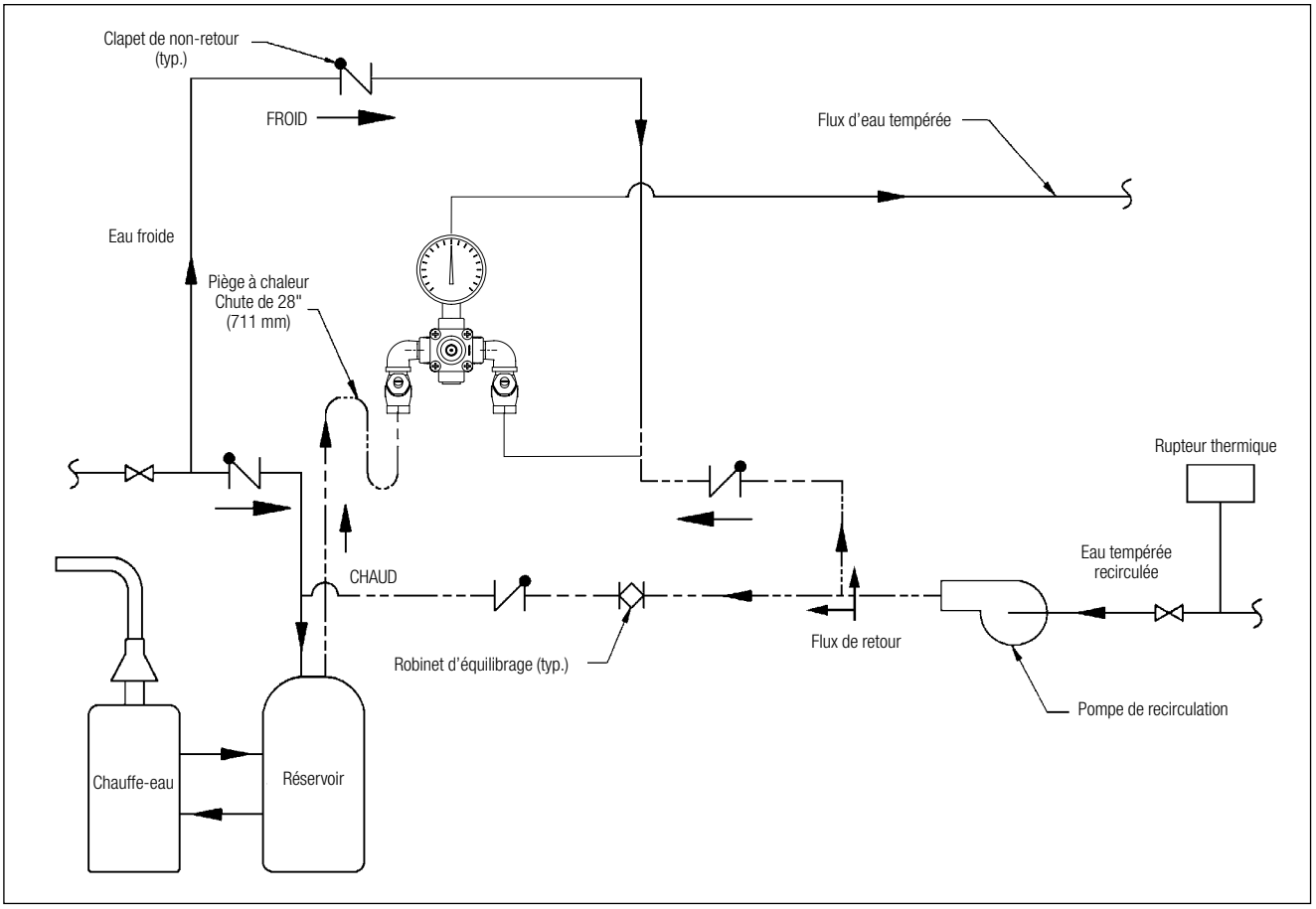
Fermer l'alimentation d'eau chaude en fermant le clapet ou le robinet d'arrivée d'eau chaude. Pendant que l'alimentation d'eau chaude est coupée, vérifier que l'eau froide continue de s'écouler. Si l'eau froide s'écoule correctement, rouvrir l'alimentation d'eau chaude.

Fermer l'alimentation d'eau froide en fermant le clapet ou le robinet d'arrivée d'eau froide. L'arrivée d'eau froide étant coupée, s'assurer que le débit d'eau chaude a été réduit jusqu'à moins de 0,5 gal/min (1,9 l/min). Si l'eau chaude est coupée, rouvrir complètement l'arrivée d'eau froide.

- ☑ *Effectuer un essai du système chaque semaine (ouvrir l'arrivée d'eau et vérifier la bonne régulation à la température de consigne souhaitée).*

5 Configuration de recirculation d'eau optionnelle

La recirculation de l'eau dans le circuit assure une régulation constante de la température de l'eau. Purger les conduites d'alimentation avec soin après avoir terminé l'installation. Fermer tous les appareils et les condamner provisoirement durant le processus de recirculation.



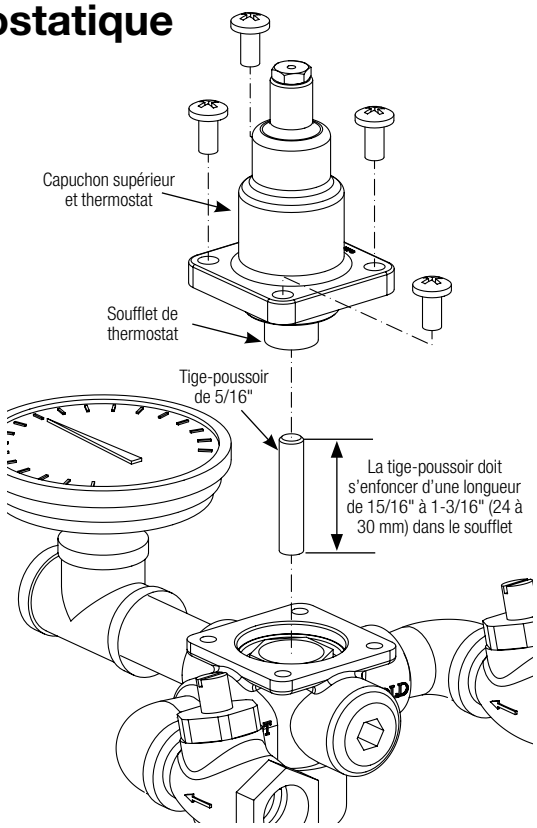
1. **Couper la pompe de recirculation et ouvrir l'alimentation d'eau au niveau de l'appareil d'urgence (un débit d'eau de 11 à 19 l/min [3 à 5 gal/min] est requis).**
2. **Laisser l'eau s'écouler à travers le système jusqu'à obtenir une température constante. Si la température souhaitée n'est pas obtenue, réajuster la température comme indiqué à l'étape 3 à la page précédente.**
3. **Dès que l'eau atteint la bonne température, activer la pompe de recirculation (vérifier que la température correcte a été obtenue dans le système avant de poursuivre).**
4. **Contrôler la température de l'eau au niveau de la pompe de retour. Si la température dépasse le niveau approprié de 1 °C (2 °F), ajuster le rupteur thermique haut (pour arrêter la pompe). Attendre que la température de retour de l'eau soit de 3 °C (5 °F) en dessous du niveau approprié puis ajuster le rupteur thermique bas (pour remettre la pompe en marche).**
5. **Ouvrir complètement le robinet d'équilibrage.**
6. **Couper tous les appareils et vérifier qu'aucune eau ne circule à travers le système (le tuyau d'arrivée d'eau froide doit être tiède au toucher).**
7. **Laisser le système fonctionner pendant 30 minutes ou plus sans eau. Si, au bout de trente minutes, la température de l'eau augmente, elle peut être réajustée en fermant lentement le robinet d'équilibrage jusqu'à atteindre la température qui convient.**

Dépannage du robinet mélangeur thermostatique

Avant d'essayer de dépanner le robinet ou de démonter les composantes, vérifier ce qui suit :

- **Les clapets de non-retour sont totalement ouverts (la tige fendue dépasse d'environ 13 mm (1/2 po) du capuchon et tous les robinets d'arrêt d'arrivée et de sortie sont ouverts.**
- **Les conduites d'arrivée d'eau chaude et froide sont correctement raccordées et il n'existe ni de raccordements croisés ni de fuite des clapets de non-retour.**
- **La sortie du chauffe-eau est d'au moins 11 °C (20 °F) au-dessus de la température de consigne.**

Veiller à bien fermer les robinets d'arrêt adéquats avant de démonter le robinet et de les rouvrir après inspection et une fois la réparation terminée.

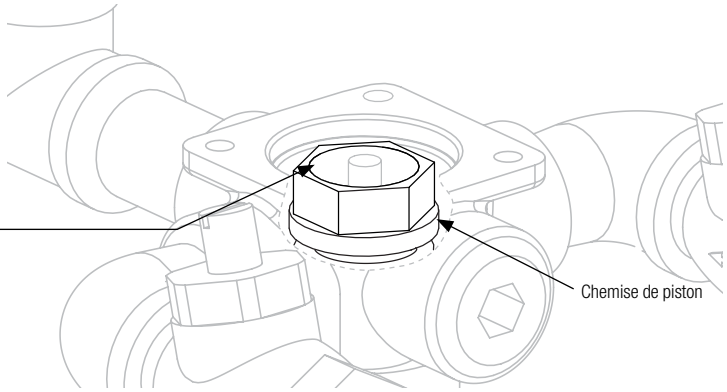


Problème	Cause	Solution
Fuites externes dans le système	Les joints NPT ou les joints toriques sont endommagés.	Remplacer les joints NPT et/ou joints toriques le cas échéant. Pour tout remplacement de joints toriques, contacter le représentant Bradley et lui demander un Kit de joint torique (S65-170).
Pas de circulation d'eau chaude (eau froide seulement)	Défaillance du thermostat suivie de l'activation de la vanne d'arrêt de sécurité.	**Contrôler le thermostat :** 1. Déposer le capuchon supérieur et le thermostat. 2. Enfiler la tige-poussoir de Ø 5/16 po dans le soufflet de thermostat. 3. Marquer la longueur dont la tige s'enfonce dans le soufflet (à température ambiante, sous une force de 45 N [10 lb], cette longueur doit être d'environ 24 à 30 mm [15/16 à 1-3/16 po]). 4. Si la longueur de tige-poussoir n'est pas dans l'intervalle correct, le thermostat doit être changé (il n'est pas réparable). Contacter le représentant Bradley et lui demander un Kit de thermostat (S65-171).
Débit d'eau limité	Le robinet d'arrêt d'arrivée est partiellement fermé ou la pression d'eau a fortement chuté.	
	Accumulation de saleté et de débris sur le tamis ou le siège de clapet, ce qui limite le mouvement des clapets de non-retour.	**Nettoyer les clapets de non-retour :** démonter les clapets de non-retour, nettoyer le siège et remonter. Ne pas déposer le siège. Brosser les pièces avec une petite brosse métallique pour éliminer les débris. Utiliser une pince à épiler pour extraire les débris du siège. Si le clapet de non-retour doit être changé, contacter le représentant Bradley et lui demander un Kit de clapet de non-retour (S27-102 - Laiton brut ou S27-292A - Chrome).
Fluctuation de température ou température incorrecte	Les sections de clapet de non-retour du robinet ne bougent pas librement.	Nettoyer les clapets de non-retour comme décrit ci-dessus.
	Lente défaillance du thermostat.	Contrôler le thermostat comme décrit plus haut ou le changer.
	La conduite d'alimentation d'arrivée vers le robinet mélangeur est partagée avec d'autres machines qui ne sont utilisées que périodiquement, telles que des machines à laver ou des stations à grand débit. Cela peut réduire la pression d'arrivée au robinet mélangeur à moins de 3 PSI. La section de la conduite d'alimentation peut être insuffisante pour alimenter à la fois le robinet et les autres appareils.	Augmenter la section de la conduite d'alimentation, reconfigurer l'alimentation ou réguler l'usage de l'alimentation.
	La recirculation est déséquilibrée.	Examiner la configuration de recirculation à la page 12.
	Le piston ne bouge pas librement et doit être nettoyé.	Voir les instructions de démontage et de nettoyage du piston à la page suivante.

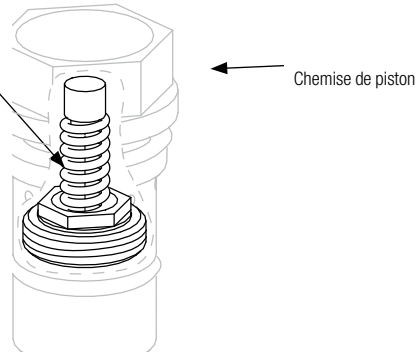
Dépannage : Démontage du piston et nettoyage

A Déposer le capuchon supérieur et le thermostat comme indiqué à la page 13. Mettre la tige-poussoir de 5/8 po de côté.

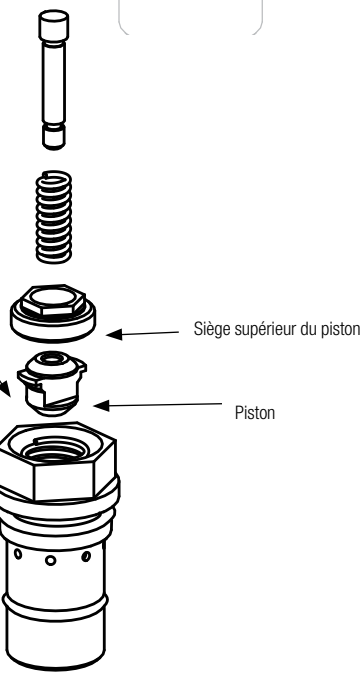
B À l'aide d'une clé à douille de 15/16 po, desserrer la chemise de piston du corps de robinet et l'extraire avec une pince à becs fins.



C À l'aide d'une clé à douille longue de 1/2 po, desserrer le siège supérieur du piston de la chemise de piston et extraire les pièces avec une pince à becs fins.

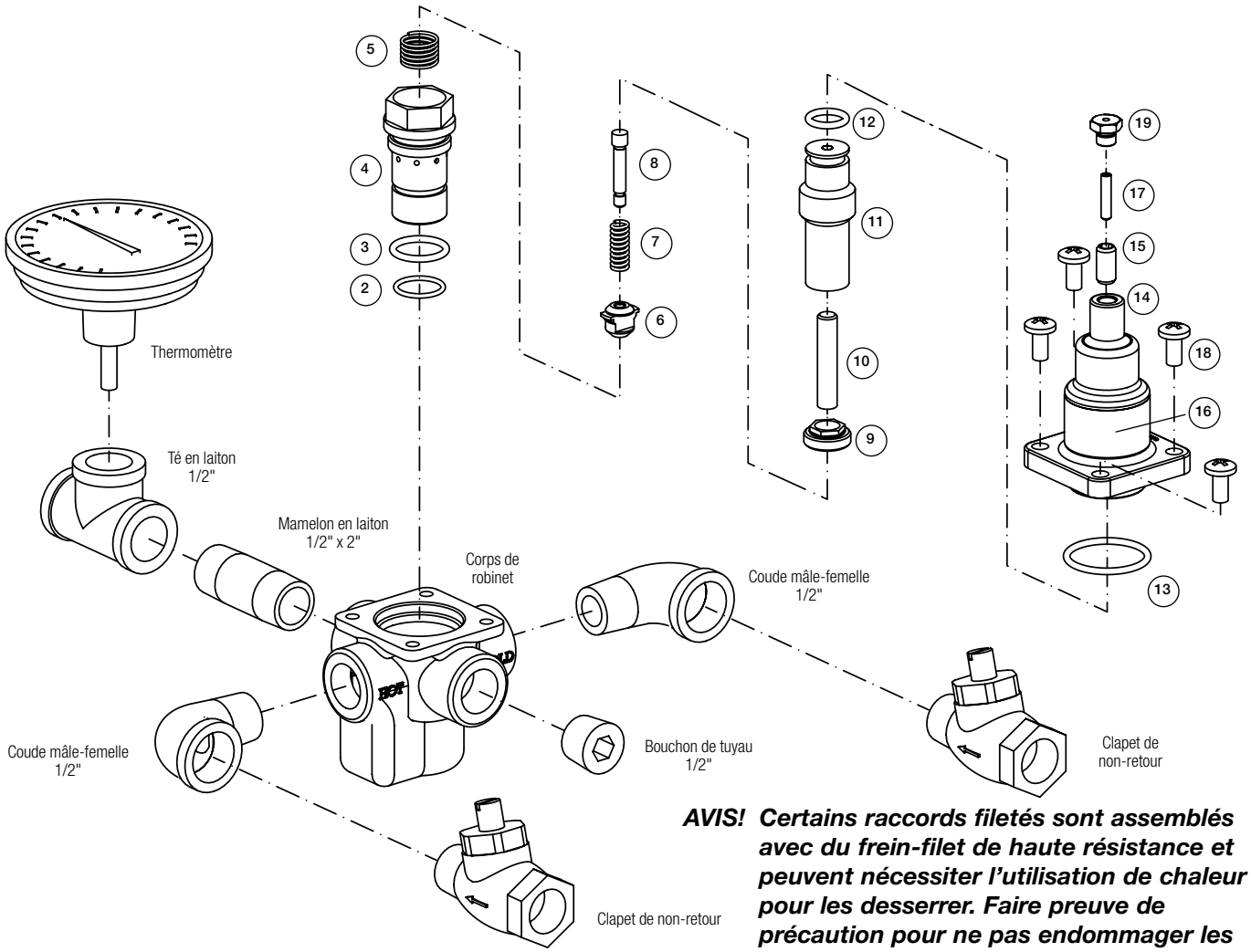


D Démonter et nettoyer les pièces du piston avec tout produit nettoyant convenant pour le laiton et l'acier inoxydable (le cas échéant, utiliser du papier de verre 400 grains pour polir et rectifier le piston et la chemise).



E Remonter le piston. Pousser le mécanisme vers le haut et la bas à plusieurs reprises pour vérifier que le piston bouge régulièrement et sans grippage. Si le mouvement n'est pas régulier, répéter la procédure D jusqu'à ce qu'il bouge librement ou le changer. Contacter le représentant Bradley et lui demander un Kit de piston/chemise (réf. S65-172).

Liste des pièces



AVIS! Certains raccords filetés sont assemblés avec du frein-filet de haute résistance et peuvent nécessiter l'utilisation de chaleur pour les desserrer. Faire preuve de précaution pour ne pas endommager les joints toriques et autres pièces.

Kit Thermostat S65-171

Repère	Qté	Désignation
11	1	Thermostat
12	1	Joint torique
13	1	Joint torique

Kit Piston et chemise S65-172

Repère	Qté	Désignation
2	1	Joint torique
3	1	Joint torique
4	1	Chemise
5	1	Ressort
6	1	Piston
7	1	Ressort
8	1	Vis de surchauffe
9	1	Siège supérieur

Kit Joint torique S65-170

Repère	Qté	Désignation
2	1	Joint torique
3	1	Joint torique
12	1	Joint torique
13	1	Joint torique

Kit Portion centrale S65-303

Repère	Qté	Désignation
2	1	Joint torique
3	1	Joint torique
4	1	Chemise
5	1	Ressort
6	1	Piston
7	1	Ressort
8	1	Vis de surchauffe
9	1	Siège supérieur
10	1	Tige-poussoir
11	1	Thermostat
12	1	Joint torique
13	1	Joint torique
14	1	Capuchon de commande
15	1	Vis calante
16	1	Étiquette
17	1	Vis calante
18	4	Vis 1/4
19	1	Capuchon

Conduites de raccordement flexibles pour S19-2000EFX

Pour une utilisation avec S19294JB, S19294JBT, commander réf. 269-653 (3 fournis avec le robinet).

Numéros de kit pour la finition en laiton brut. Contacter Bradley pour toute autre configuration.

À compter de novembre 2001, le piston (repère 7) remplace directement le support de joint et le joint.

À compter de juin 2008, le capuchon de commande en laiton (repère 15) est remplacé par un capuchon en plastique. Toutes les pièces internes sont identiques.

À compter d'juillet 2012, la commande de réglage de température (repères 15, 17 et 19) est reconfigurée et compatible avec tous les modèles à capuchon de commande en plastique (juin 2008 à actuel).

Información de seguridad

Para garantizar el funcionamiento correcto:

Instalación

No realizar una instalación correcta ni seguir las instrucciones de mantenimiento podría contribuir a una falla de la válvula, lo que puede provocar lesiones corporales graves como quemaduras, lesiones por frío o la muerte, dependiendo de los cambios de presión del agua del sistema y los cambios de temperatura del agua del sistema.

Use esta válvula mezcladora termostática de acuerdo con la norma ASSE 1071.

Cuando se instala de acuerdo con la norma ASSE 1071, la válvula está diseñada para instalarla solo en aplicaciones de accesorios, como lavaojos y lavaojos/lavacara de emergencia. Cuando se instala como una válvula ASSE 1071, la válvula no funciona como una válvula ASSE 1016, ASSE 1017, ASSE 1069 o ASSE 1070.

Esta válvula no se debe usar donde se exijan dispositivos de la norma ASSE 1016.

El funcionamiento de los accesorios y las válvulas mezcladoras termostáticas se debe probar semanalmente conforme a ANSI/ISEA Z358.1.

Esta válvula no ofrece protección contra el congelamiento de las tuberías.

Deberá ser posible acceder a las válvulas para realizar pruebas, ajustes y mantenimiento en la posición instalada.

Si se instalan válvulas de retención para fines de mantenimiento, se deben tomar medidas para evitar el corte no autorizado.

La instalación de este sistema la debe realizar un plomero calificado según los códigos nacionales y locales. Es responsabilidad del instalador cumplir cabalmente los códigos y las ordenanzas locales. Si estos códigos difieren de la información en este manual, siga los códigos locales. Consulte con las autoridades locales si existen requisitos locales adicionales.

Inspecciones

Es necesario revisar y limpiar regularmente los componentes internos y los topes de retención de la válvula para extender al máximo la vida útil de esta y el funcionamiento adecuado del producto. Se necesita una inspección periódica y el mantenimiento anual por parte de un contratista con licencia. Las condiciones corrosivas del agua y los ajustes o reparaciones no autorizados podrían dejar a la válvula inservible para el servicio que debe proporcionar. La frecuencia de limpieza e inspección depende de las condiciones locales del agua.

La temperatura de salida de la válvula se debe revisar y ajustar en la instalación inicial y luego, cada tres meses.

Temperatura del agua

El ajuste final de temperatura es responsabilidad del instalador.

Materiales recomendados para la instalación

- Cierre bloqueable en la salida si se suministra agua temperada a uno o más accesorios de emergencia.
- Cierre bloqueable de las entradas o de los suministros.
- (6) anclajes y sujetadores de pared de 1/4 pulg. para el gabinete montado en la superficie.
- (4) sujetadores de 1/4 pulg. (y anclajes de pared, si fuera necesario) para el gabinete empotrado.
- Uniones en todas las conexiones para facilitar el retiro de la válvula.

Herramientas necesarias para el ajuste de temperatura

- Llave Allen de 5/64 pulg.
- Destornillador de paleta.

1 Instale el gabinete opcional (si no va a instalar el gabinete, siga con el Paso 2)

Si se instala el modelo S19-2000EFX en el gabinete lavaojos desplegable S19294JB, S19294JBT, consulte las instrucciones de montaje que se suministran con el gabinete.

Gabinete empotrado:

1. Orificio de colocación en la pared de 292 mm (11-1/2 pulg.) de ancho x 330 mm (13 pulg.) de alto.
2. Inserte y fije el gabinete con cuatro sujetadores de 1/4 pulg. (proporcionado por el instalador) anclados apropiadamente a la pared.
3. Instale los dos anclajes y tornillos a través del soporte de la válvula en la parte trasera del gabinete en una abrazadera firme (proporcionada por el instalador) o en la pared. Esto servirá de apoyo a la válvula.
4. Instale los niples de la válvula y la mitad de la válvula de bolas de la unión, usando sellador para tubos o cinta de teflón. Instale la otra mitad de la válvula de bolas de la unión en el tubo de entrada y salida.
5. Inserte la válvula en el soporte del gabinete (primero el lado derecho). Continúe con el procedimiento de instalación de la válvula.
6. Ponga firmemente la brida de pared en la pared y aplique masilla para fijarla en su lugar.

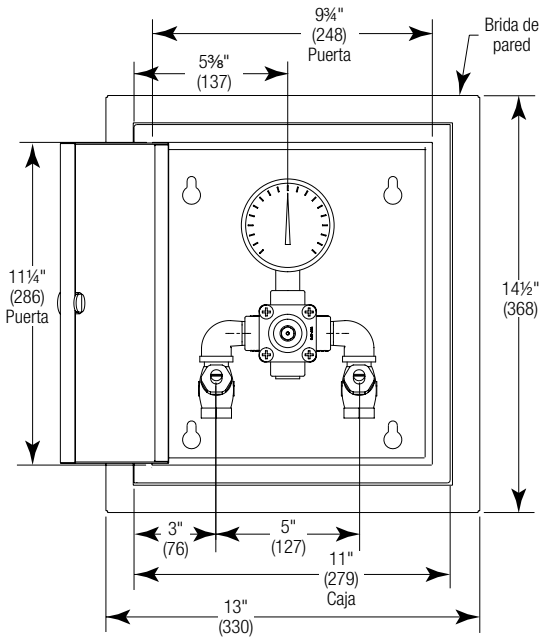
Gabinete montado en la superficie:

1. Mida y marque la ubicación de los orificios de montaje del gabinete en las dimensiones que se muestran en la siguiente página. Instale seis anclajes de pared de 3/8 pulg. (proporcionados por el instalador).
2. Ponga el gabinete en la pared y fíjelo en su lugar con seis sujetadores de pared de 3/8 pulg. (proporcionados por el instalador).
3. Instale los niples de la válvula y la mitad de la válvula de bolas de la unión, usando sellador para tubos o cinta de teflón. Luego, instale la otra mitad de la válvula de bolas de la unión en el tubo de entrada y salida.
4. Inserte la válvula en el soporte del gabinete (primero el lado derecho de la válvula). Continúe con el procedimiento de instalación de la válvula.

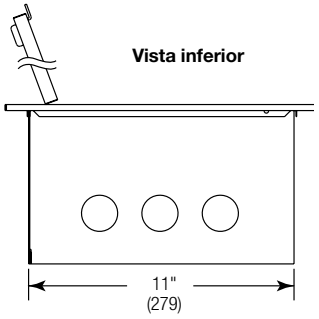
Gabinete empotrado opcional

(mm)

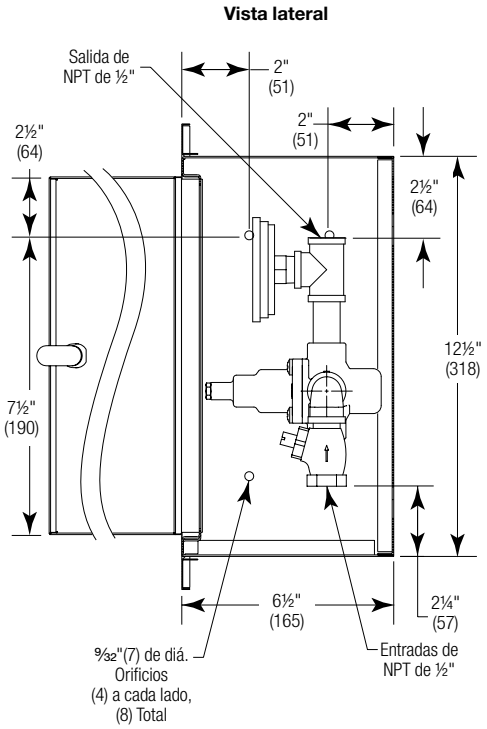
Vista frontal



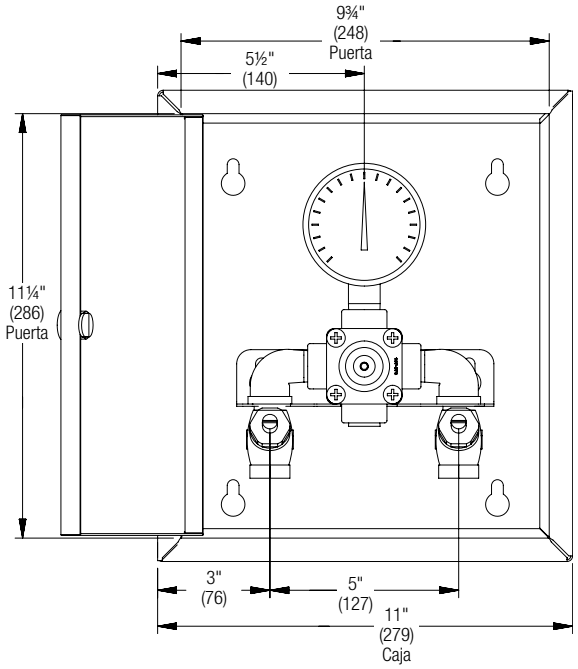
Vista inferior

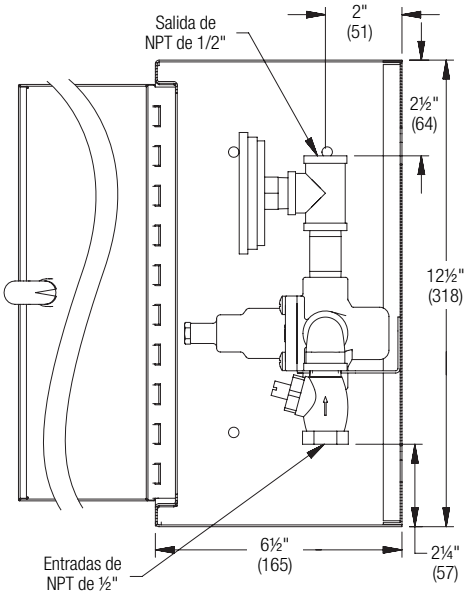


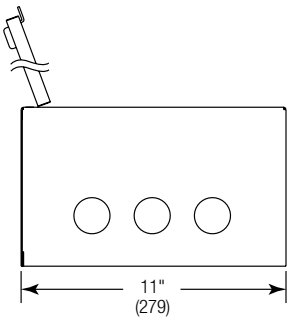
Vista lateral



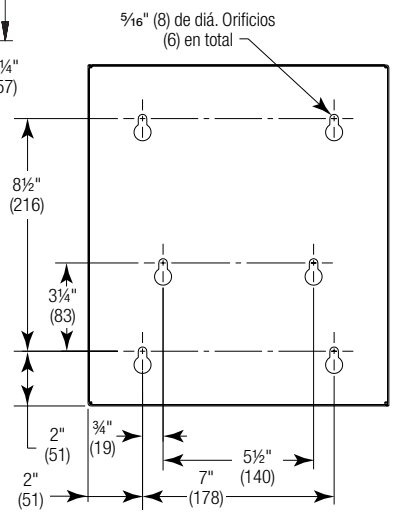
Gabinete opcional montado en la superficie





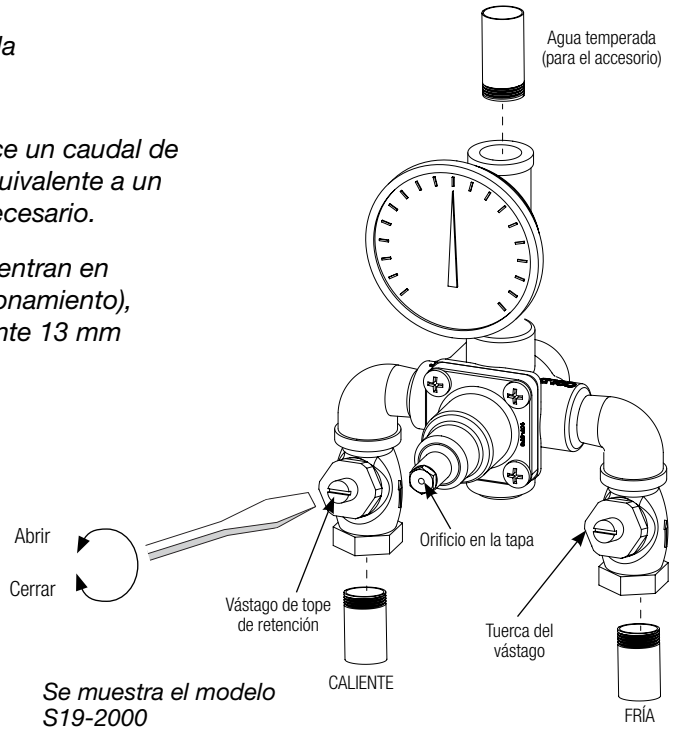


Ubicación de los orificios de montaje



2 Conecte las tuberías de suministro e instale el termómetro

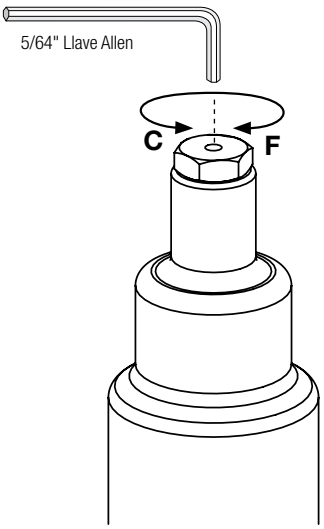
- ☑ *Revise si hay filtraciones, presurizando la unidad LENTAMENTE.*
- ☑ *Revise la temperatura cuando se alcance un caudal de agua de 11 a 19 LPM (3 a 5 gpm) (lo equivalente a un lavado ocular o facial) y ajuste de ser necesario.*
- ☑ *Cuando los topes de retención se encuentran en la posición de abertura completa (funcionamiento), el vástago se extenderá aproximadamente 13 mm (1/2 pulg.) desde la tuerca.*



Se muestra el modelo S19-2000

3 Ajuste la temperatura con el agua corriendo

- ☑ *Revise la temperatura cuando se alcance aproximadamente un caudal de agua de 11 a 19 LPM (3 a 5 gpm) (lo equivalente a un lavado ocular).*
- ☑ *Ningún accesorio de emergencia que proporcione este dispositivo tiene un caudal mínimo inferior a 5,7 L/min.*
- ☑ *Se debe revisar la temperatura final de este dispositivo y ajustarla, según sea necesario. La configuración estándar de la temperatura predeterminada de fábrica es de 29 °C (85 °F) (el rango de la válvula es de 18 °C a 32 °C [65 °F a 90 °F]). Para ajustar, inserte la llave Allen a través del orificio en la tapa, en el tornillo de ajuste. Consulte a las autoridades médicas o de seguridad correspondientes sobre la temperatura óptima recomendada para la aplicación en particular.*



4 Unidad de prueba ⚠ ¡NO SE SALTE ESTE PASO!

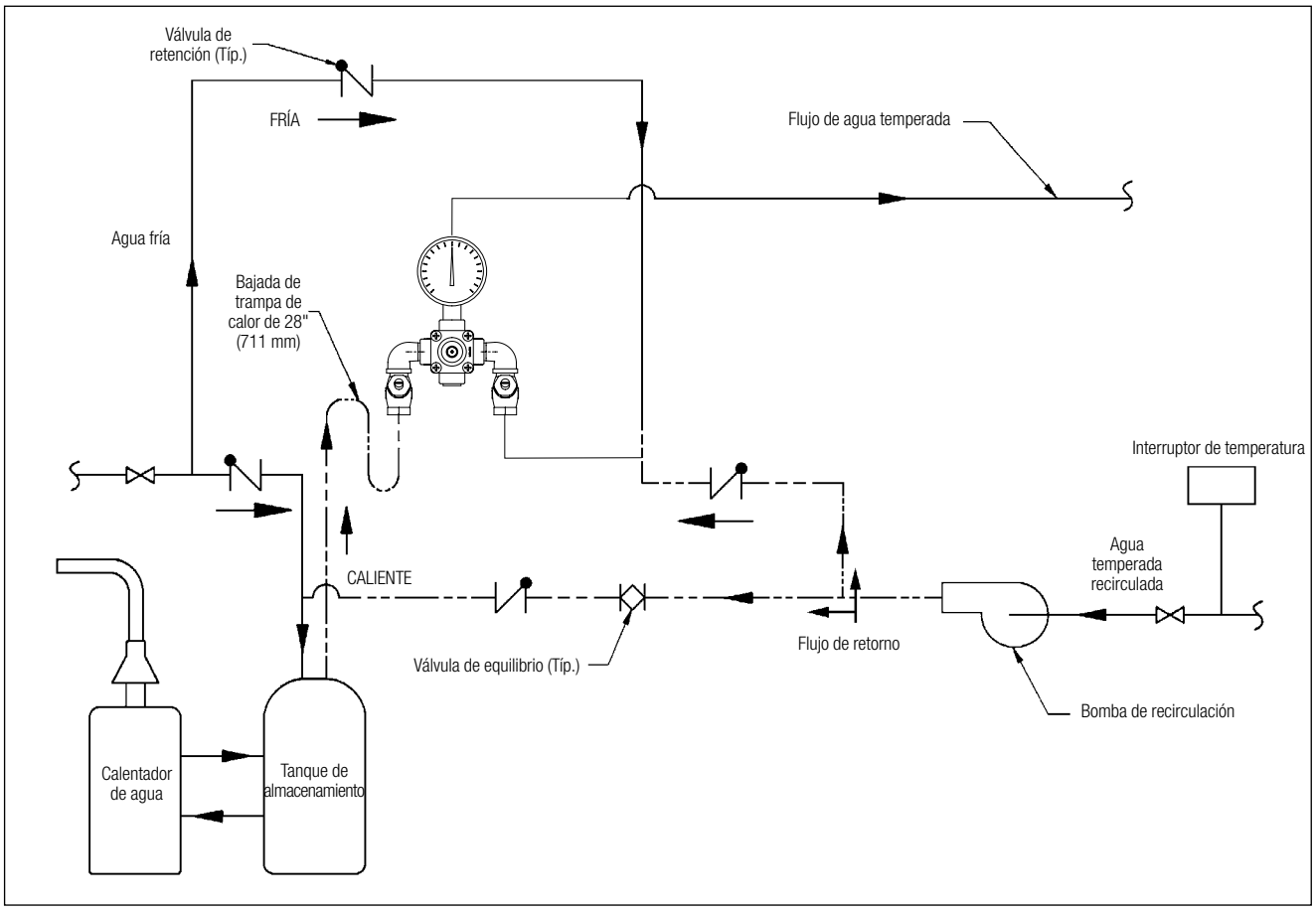
Cierre la válvula de entrada de agua caliente o la válvula de retención de suministro para cortar el suministro de agua caliente. Con el suministro de agua caliente cerrado, verifique que siga fluyendo agua fría. Si el agua fría fluye correctamente, vuelva a abrir el suministro de agua caliente.

Cierre la válvula de entrada de agua fría o la válvula de retención de suministro para cortar el suministro de agua fría. Con el suministro de agua fría cerrado, verifique que se haya detenido el flujo de agua caliente a menos de 1,9 LPM (0,5 gpm). Si se detiene el agua caliente, vuelva a abrir completamente el suministro de agua fría.

- ☑ *Pruebe el sistema semanalmente (abra el suministro de agua y verifique que el control de la temperatura establecida que se desea sea constante).*

5 Instalación de recirculación opcional de agua

La recirculación del agua en el sistema proporciona regulación constante de la temperatura del agua. Purgue las tuberías de suministro completamente antes de terminar la instalación. Cierre todos los accesorios y etiquételos como no disponibles para usarse durante el proceso de recirculación.



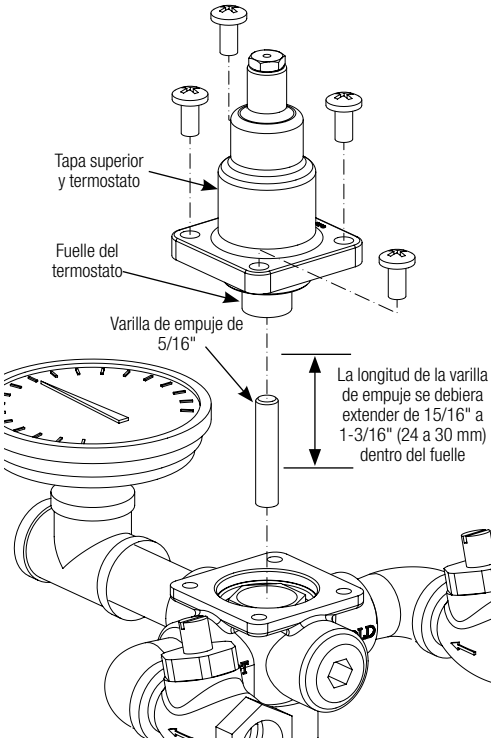
1. Apague la bomba de recirculación y abra el suministro de agua en los accesorios de emergencia (se requiere un caudal de agua de 11 a 19 LPM [3 – 5 GPM]).
2. Deje que el agua corra a través del sistema hasta que alcance una temperatura constante. Si no obtiene la temperatura necesaria, consulte el paso n.° 3 en la página anterior para volver a ajustar la temperatura.
3. Tan pronto como el agua alcance la temperatura apropiada, encienda la bomba de recirculación (antes de proceder, asegúrese de que se haya alcanzado la temperatura adecuada en el sistema).
4. Revise la temperatura del agua en la bomba de retorno. Si la temperatura excede el nivel apropiado en 1 °C (2 °F), ajuste el interruptor del límite superior de temperatura (esto apagará la bomba). Espere hasta que la temperatura del agua de retorno esté a 3 °C (5 °F) por debajo del nivel apropiado y ajuste el interruptor del límite inferior (esto volverá a encender la bomba).
5. Abra completamente la válvula de equilibrio.
6. Desconecte todos los accesorios y asegúrese de que no fluya agua por el sistema (el tubo de entrada de agua fría debe sentirse tibio al tacto).
7. Deje que el sistema funcione sin agua durante 30 minutos o más. Si, después de treinta minutos, aumenta la temperatura del agua, puede volver a ajustar la temperatura cerrando lentamente la válvula de equilibrio hasta que se alcance la temperatura adecuada.

Solución de problemas de la válvula mezcladora termostática

Antes de intentar solucionar problemas de la válvula o desensamblar los componentes, revise lo siguiente:

- Que las válvulas de cierre o retención estén completamente abiertas (el vástago ranurado se extienda aproximadamente 13 mm (1/2 pulg.) a partir de la tuerca del vástago) y que estén abiertas todas las válvulas de retención de entrada y salida
- Que los tubos de entrada de agua caliente y fría estén conectados correctamente y que no existan conexiones cruzadas ni válvulas de cierre o retención con filtraciones.
- La salida del calentador de agua esté al menos a 11 °C (20 °F) por sobre la temperatura establecida.

Asegúrese de cerrar las válvulas de retención correspondientes antes de desensamblar la válvula, y vuelva a abrir las válvulas después de completar la inspección y la reparación.

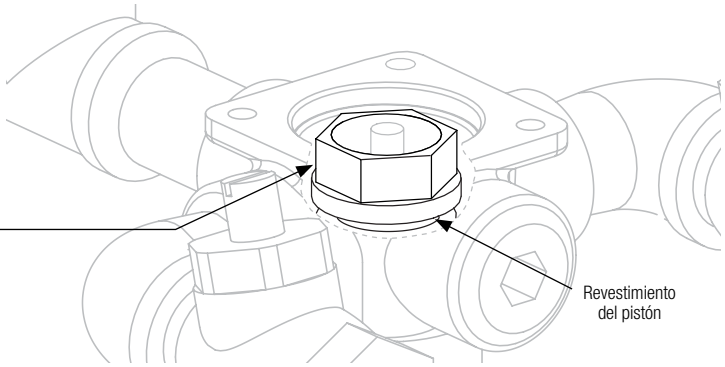


Problema	Causa	Solución
Filtraciones externas en el sistema	Es posible que se hayan dañado las juntas NPT o las juntas tóricas.	Remplace las juntas NPT o las juntas tóricas, donde sea necesario. Para el reemplazo de las juntas tóricas, comuníquese con el representante local de Bradley y consulte por el kit (S65-170) de sellos de juntas tóricas.
No fluye agua caliente (fluye solamente agua fría)	Falló el termostato y, en consecuencia, se activó la retención de seguridad.	**Inspección del termostato:** 1. Retire el termostato y la tapa superior. 2. Inserte una varilla de empuje de 5/16 pulg. de diá. en el fuelle del termostato. 3. Marque la distancia en que la varilla de empuje se extiende dentro del fuelle (a temperatura ambiente, con 45 N [10 lb] de fuerza, la distancia debiera ser aproximadamente de 24 a 30 mm [15/16 pulg. a 1-3/16 pulg.]). 4. Si la longitud de la varilla de empuje no está en el rango apropiado, se debe reemplazar el termostato (no se puede reparar). Comuníquese con el representante local de Bradley y consulte por el Kit (S65-171) del termostato.
Flujo limitado de agua	Es posible que la entrada de la válvula de retención esté parcialmente cerrada o haya disminuido significativamente la presión de agua.	
	Se acumuló suciedad y desechos en la rejilla o asiento de retención, limitando el movimiento de cierre y retenciones.	**Limpie las válvulas de cierre y retención:** Retire el cierre y las retenciones, limpie el asiento y vuelva a ensamblar la válvula. No retire el asiento. Los componentes se pueden cepillar con un cepillo de alambre de tamaño pequeño para eliminar los desechos. Un par de pinzas funciona bien para sacar los desechos del asiento. Si es necesario reemplazar el cierre y las retenciones, comuníquese con el representante local de Bradley y consulte por el kit (S27-102: Bronce áspero o S27-292A: Cromo) de retención/cierre.
Fluctuación de la temperatura o temperatura incorrecta	Las secciones de cierre y retención de la válvula no se mueven libremente.	Limpie las válvulas de cierre y retención como se describe anteriormente.
	El termostato lentamente comienza a fallar.	Revise el termostato como se describe anteriormente o reemplácelo.
	La tubería de suministro de entrada hacia la válvula mezcladora se comparte con otras piezas del equipo que se usan solamente en forma periódica, tales como aparatos de lavandería o estaciones de flujo. Esto puede reducir la presión de entrada hacia la válvula mezcladora a menos de 3 PSI. Es posible que el tamaño de la tubería de suministro no sea lo suficientemente grande para dar suministro a la válvula y a los otros aparatos.	Aumente el tamaño de la tubería de suministro, vuelva a configurar la tubería de suministro o regule el uso del suministro.
	La recirculación no está equilibrada.	Revise la instalación de la recirculación en la página 19.
	El pistón no se mueve libremente y se debe limpiar.	Consulte la página siguiente para ver las instrucciones de desensamble y limpieza.

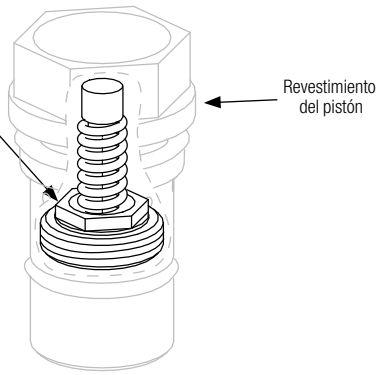
Solución de problemas: Desensamble y limpieza del pistón

A Retire la tapa superior y el conjunto del termostato según se muestra en la Página 20. Ponga la varilla de empuje de 5/8 pulg. a un costado.

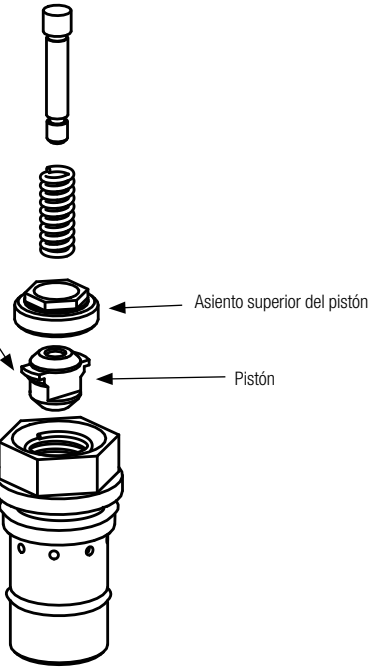
B Con una llave de cubo de 15/16 pulg., afloje el revestimiento del pistón del cuerpo de la válvula y saque las piezas con un alicate de punta de aguja.



C Con una llave de cubo de 1/2 pulg., afloje el asiento superior del pistón del revestimiento del pistón y saque las piezas con un alicate de punta de aguja.

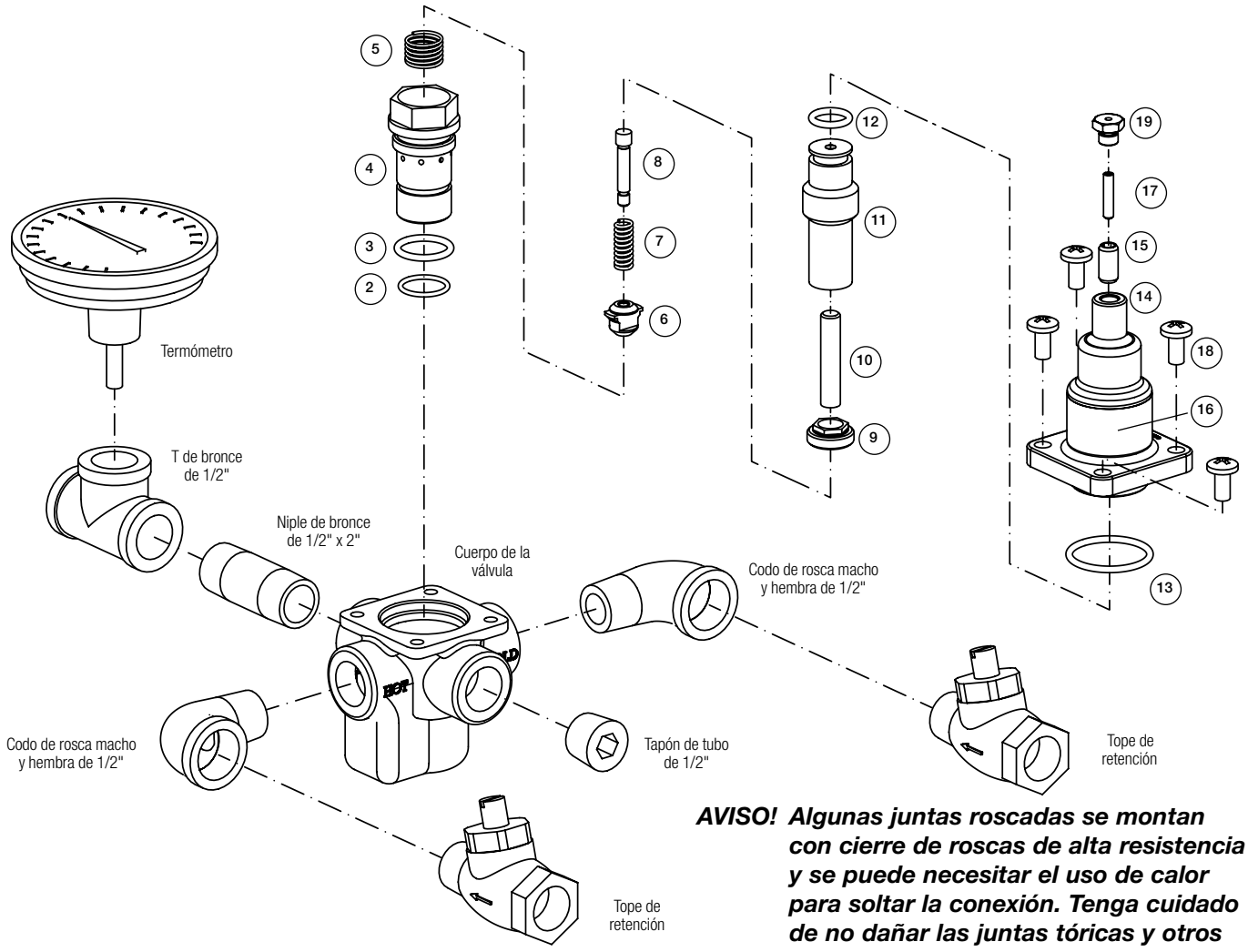


D Desmonte y limpie las piezas del conjunto del pistón con cualquier limpiador adecuado para la limpieza de bronce y acero inoxidable (de ser necesario, use una lija de grano 400 para pulir y afinar tanto el pistón como el revestimiento).



E Vuelva a ensamblar el conjunto del pistón. Empuje el mecanismo hacia arriba y hacia abajo varias veces para asegurarse de que el pistón se mueva suave y constantemente. Si es constante, repita el Procedimiento D hasta que se mueva libremente o cámbielo. Comuníquese con el representante local de Bradley y consulte por el Kit del pistón y revestimientos (número de pieza S65-172).

Desglose de piezas



AVISO! Algunas juntas roscadas se montan con cierre de roscas de alta resistencia y se puede necesitar el uso de calor para soltar la conexión. Tenga cuidado de no dañar las juntas tóricas y otros componentes.

Kit S65-171 del termostato

Artículo	Cantidad	Descripción
11	1	Termostato
12	1	Junta tórica
13	1	Junta tórica

Kit S65-172 del pistón y revestimientos

Artículo	Cantidad	Descripción
2	1	Junta tórica
3	1	Junta tórica
4	1	Revestimiento
5	1	Resorte
6	1	Pistón
7	1	Resorte
8	1	Tornillo de sobre-calentamiento
9	1	Asiento superior

Kit S65-170 de juntas tóricas

Artículo	Cantidad	Descripción
2	1	Junta tórica
3	1	Junta tórica
12	1	Junta tórica
13	1	Junta tórica

Kit S65-303 de la sección central

Artículo	Cantidad	Descripción
2	1	Junta tórica
3	1	Junta tórica
4	1	Revestimiento
5	1	Resorte
6	1	Pistón
7	1	Resorte
8	1	Tornillo de sobre-calentamiento
9	1	Asiento superior
10	1	Varilla de empuje
11	1	Termostato
12	1	Junta tórica
13	1	Junta tórica
14	1	Tapa de control
15	1	Tornillo de ajuste
16	1	Etiqueta
17	1	Tornillo de ajuste
18	4	Tornillo de 1/4
19	1	Tapa

Tuberías flexibles de conexión para el modelo S19-2000EFX

Cuando se usa con el modelo S19294JB, S19294JBT, el n.° de solicitud de pieza es 269-653 (se suministran 3 con la unidad).

Números de kit para acabado de bronce áspero. Comuníquese con Bradley para consultar por otras configuraciones.

A partir de noviembre de 2001, el pistón (artículo 7) reemplaza al soporte del sello y al sello como un repuesto directo.

A partir de junio de 2008, la tapa de control de bronce (artículo 15) se reemplazó por una tapa de plástico. Todos los componentes internos son idénticos.

A partir de julio de 2012, se ha actualizado el control de ajuste de temperatura (artículos 15, 17 y 19) y con compatibles con todas las unidades que usen la tapa de control plástica (junio de 2008 hasta la actualidad).

STAR MECHANICAL SUPPLY

TAB-16

DCWRP-1

122 W Randall Rd.
Springdale AR, 72764
Phone: 479-756-2055

Bell & Gossett
a xylem brand

SUBMITTAL A-ECO20-18

LISTED

JOB: **REPRESENTATIVE:**

UNIT TAG:	ORDER NUMBER:	DATE:
ENGINEER:	SUBMITTED BY:	DATE:
CONTRACTOR:	APPROVED BY:	DATE:



ecocirc® 20-18 | ecocirc+ 20-18

High Efficiency Wet Rotor Circulator with Electronically Commutated Motor (ECM)

DESCRIPTION

The ecocirc 20-18 circulators are designed with a highly efficient electronically commutated permanent magnet motor (ECM Technology). Cast iron flanged models are designed for closed loop hydronic heating and cooling systems, and stainless steel flanged and union body pumps for plumbing systems or open loop heating and cooling systems.

CONSTRUCTION MATERIALS

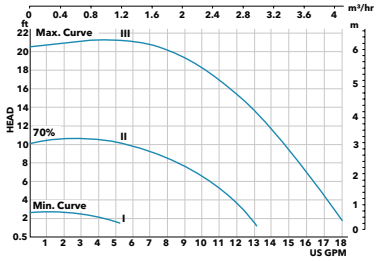
Pump Body: Cast Iron or Stainless Steel
Impeller: Impact Modified PPE
Shaft: Ceramic/Alumina
Rotor Can: 316 Stainless Steel
Bearings: Ceramic/Alumina
O-Ring: EPDM
All Other Wetted Parts: 304 or 316 Stainless Steel
Motor Type: Electronically Commutated Permanent Magnet Motor
Insulation Class: F
Check Valve: 1" Noryl Check Valve shipped loose for field installation

OPERATING DATA

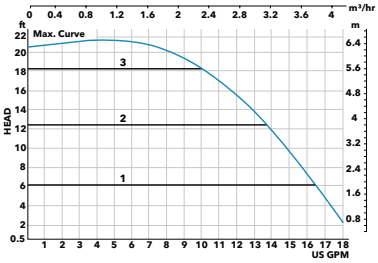
Maximum Working Pressure: 145 psi (10 Bar)
Minimum Working Temperature: 14°F (-10°C)
Maximum Working Temperature: 230°F (110°C)
Ambient Temperature Range: 32°F - 104°F (0°C - 40°C)

PERFORMANCE

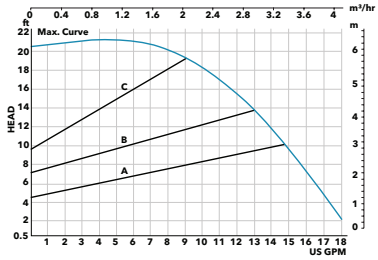
Fixed Speed Curve



Constant Pressure Curve



Proportional Pressure Curve



SCHEDULE ecocirc 20-18

CAST IRON BODY (Flanged)		STAINLESS STEEL BODY (Flanged and Union)		RATED MOTOR CHARACTERISTICS				
MODEL NUMBER	PART NUMBER	MODEL NUMBER	PART NUMBER	VOLTAGE	PHASE	Hz	WATTS RANGE	AMP RANGE
ecocirc 20-18 flanged	60B0B1000	ecocirc 20-18 stainless steel flanged	60B0B1001	115V	1	50/60	0-70	.06-1.02
		ecocirc 20-18 stainless steel union	60B0B1002	115V	1	50/60	0-70	.06-1.02

Note: Where potable water is pumped, use a stainless steel circulator. ecocirc 20-18 and ecocirc+ 20-18 circulators are recommended for indoor use only.

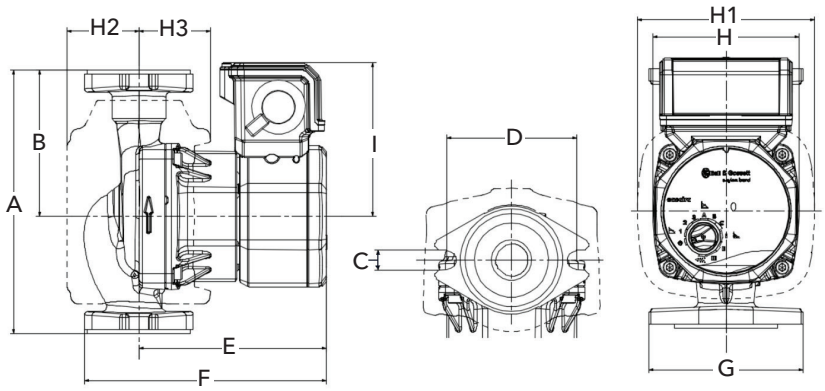
SCHEDULE ecocirc+ 20-18

CAST IRON BODY (Flanged)		STAINLESS STEEL BODY (Flanged and Union)		RATED MOTOR CHARACTERISTICS				
MODEL NUMBER	PART NUMBER	MODEL NUMBER	PART NUMBER	VOLTAGE	PHASE	Hz	WATTS RANGE	AMP RANGE
ecocirc+ 20-18 flanged	60B0B1003	ecocirc+ 20-18 stainless steel flanged	60B0B1004	115V	1	50/60	0-70	.06-1.02
		ecocirc+ 20-18 stainless steel union	60B0B1005	115V	1	50/60	0-70	.06-1.02

Note: Where potable water is pumped, use a stainless steel circulator. ecocirc 20-18 and ecocirc+ 20-18 circulators are recommended for indoor use only.

xylem

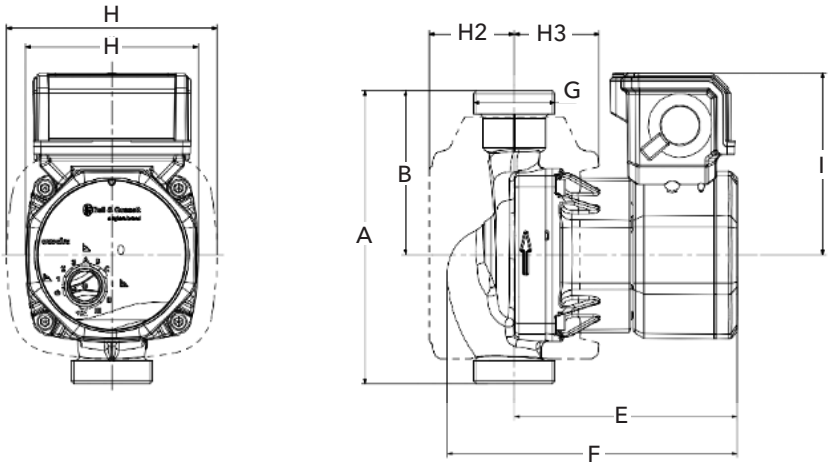
ecocirc/ecocirc+ 20-18 PUMP DIMENSIONS (FLANGED)



MODEL NUMBER	DIMENSIONS - INCHES (mm)									APPROX. SHIPPING WEIGHT LB. (KG)	
	A	B	E	F	H	H1	H2	H3	I	CAST IRON	STAINLESS STEEL
ecocirc 20-18 flanged	6.38" (162)	3.54" (90)	4.57" (116)	5.9" (150)	3.54" (90)	4.29" (109)	1.73" (44)	1.73" (44)	3.74" (95)	6.2 lb. (2.81)	5.86 lb. (2.66)
ecocirc+ 20-18 flanged	6.38" (162)	3.54" (90)	4.57" (116)	5.9" (150)	3.54" (90)	4.29" (109)	1.73" (44)	1.73" (44)	3.74" (95)	6.2 lb. (2.81)	5.86 lb. (2.66)

MODEL NUMBER	FLANGED SIZE INCHES - NPT	# OF BOLTS	DIMENSIONS - INCHES (mm)			COMPANION FLANGE PART NUMBERS	
			C	D	G	CAST IRON PN	STAINLESS STEEL PN
ecocirc 20-18 flanged	¾", 1", 1-¼", 1-½"	2	.47" (12)	3.15" (80)	3.74" (95)	101201-101204	101501LF - 101504LF
ecocirc+ 20-18 flanged	¾", 1", 1-¼", 1-½"	2	.47" (12)	3.15" (80)	3.74" (95)	101201-101204	101501LF - 101504LF

ecocirc/ecocirc+ 20-18 PUMP DIMENSIONS (UNION)



MODEL NUMBER	DIMENSIONS - INCHES (mm)									APPROX. SHIPPING WEIGHT LB. (KG)	
	A	B	E	F	H	H1	H2	H3	I	CAST IRON	STAINLESS STEEL
ecocirc 20-18 union	6" (152.4)	3.36" (85.4)	4.57" (116)	5.9" (150)	3.54" (90)	4.29" (109)	1.73" (44)	1.73" (44)	3.74" (95)	N/A	4.61 lb. (2.09)
ecocirc+ 20-18 union	6" (152)	3.36" (85.4)	4.57" (116)	5.9" (150)	3.54" (90)	4.29" (109)	1.73" (44)	1.73" (44)	3.74" (95)	N/A	4.61 lb. (2.09)

MODEL NUMBER	UNION TAILPIECE SIZE INCHES - NPT	# OF BOLTS	DIMENSIONS - INCHES (mm)		UNION CONNECTOR KIT PART NUMBERS
			G	CAST IRON PN	BRONZE PN
ecocirc 20-18 union	½" Sweat, ¾" Sweat, ¾" NPT	0	1 ¼" NPSM	N/A	113203LF, 113201LF, 113202LF
ecocirc+ 20-18 union	½" Sweat, ¾" Sweat, ¾" NPT	0	1 ¼" NPSM	N/A	113203LF, 113201LF, 113202LF

SAFETY STANDARDS AND PROTECTION

Enclosure: Class 1, IP44 (equivalent to NEMA Type 2)
UL Listed to UL 778; UL 1004-1, 1004-7; and UL 60730-1
cUL Listed to C22.2 #108
Electronically Thermally Protected (Integrated Motor Protection)
Motor Insulation Class: F
Stainless steel models are NSF/ANSI-61 certified

STANDARD OPERATING MODES

CONSTANT SPEED



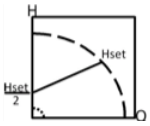
The pump maintains a constant speed at any flow rate. The desired speed is set on the interface panel of the pump.

CONSTANT PRESSURE (Δp-c)



The pump maintains a constant differential pressure at any flow demand until the maximum speed is reached. The desired head of the pump can be set via user interface. Recommended for use in systems with small or constant pressure losses.

PROPORTIONAL PRESSURE (Δp-v)



The differential pressure continuously increases or deceases based on the flow demand. The set point head can be set on the pump user interface. Use for systems with large pressure losses.

NIGHT MODE (ecocirc+ 20-18 only)

The pump will automatically reduce speed when there is an abrupt change in fluid temperature. The change in fluid temperature is from a boiler operating in night time setback mode. The external temperature sensor is used. (Fixed Speed, Constant Pressure, Proportional Pressure)

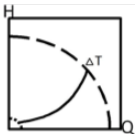
TEMPERATURE DEPENDENT OPERATING MODES (ecocirc+ 20-18 only)

SET POINT TEMPERATURE (Δp-T) (ecocirc+ 20-18 only)



The nominal differential pressure set point is modified based on the fluid temperature. Uses an external temperature sensor.

SET POINT TEMPERATURE (T) (ecocirc+ 20-18 only)



The pump maintains a constant temperature in a system, such as domestic hot water system or a single temperature heating system. Uses an external temperature sensor.

eAdapt (ecocirc+ 20-18 only)

The pump will optimize the energy consumption by identifying the ideal duty point.

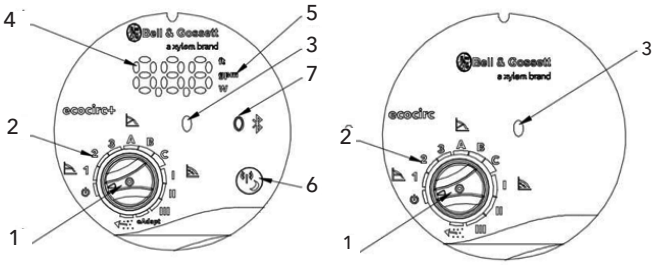
Air Purge

Air purge will remove the dissolved gases from the pump.

INPUT SIGNALS (ecocirc+ 20-18 only)

One 0-10V (Analog): Speed Control by external controller
One external temperature sensor input for temperature modes. **Sensor Type:** KYT38, P/N: 104502

ONBOARD USER INTERFACE



1	Control mode knob
2	Control mode indicators
3	Status/Fault indicators
4	Numeric display
5	Parameter indicators
6	Control mode button
7	Remote control status indicator

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www.xylem.com/bellgossett

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xylem
Let's Solve Water

Installation, Operation, and Maintenance Manual

671075208_2.0



Ecocirc+ 20-18

Bell & Gossett
a xylem brand

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1 Introduction and Safety

1.1 Introduction

Purpose of the manual

The purpose of this manual is to provide the necessary information for working with the unit. Read this manual carefully before starting work.

Read and keep the manual

Save this manual for future reference, and keep it readily available at the location of the unit.

Intended use



WARNING:

Operating, installing, or maintaining the unit in any way that is not covered in this manual could cause death, serious personal injury, or damage to the equipment and the surroundings. This includes any modification to the equipment or use of parts not provided by Xylem. If there is a question regarding the intended use of the equipment, please contact a Xylem representative before proceeding.



WARNING: Risk Of Electric Shock

This Pump Has Not Been Investigated For Use In Swimming Pool Or Marine Areas.



CAUTION:

The ULus listed pumps are tested and evaluated with water only.

Other manuals

See also the safety requirements and information in the original manufacturer's manuals for any other equipment furnished separately for use in this system.

1.2 Safety terminology and symbols

About safety messages

It is extremely important that you read, understand, and follow the safety messages and regulations carefully before handling the product. They are published to help prevent these hazards:

- Personal accidents and health problems
- Damage to the product and its surroundings
- Product malfunction

Hazard levels

Hazard level	Indication
 DANGER:	A hazardous situation which, if not avoided, will result in death or serious injury
 WARNING:	A hazardous situation which, if not avoided, could result in death or serious injury
 CAUTION:	A hazardous situation which, if not avoided, could result in minor or moderate injury
NOTICE:	Notices are used when there is a risk of equipment damage or decreased performance, but not personal injury.

Special symbols

Some hazard categories have specific symbols, as shown in the following table.

Electrical hazard	Magnetic fields hazard
 Electrical Hazard:	 CAUTION:

1.3 User safety

All regulations, codes, and health and safety directives must be observed.

The site

- Observe lockout/tagout procedures before starting work on the product, such as transportation, installation, maintenance, or service.
- Pay attention to the risks presented by gas and vapors in the work area.
- Always be aware of the area surrounding the equipment, and any hazards posed by the site or nearby equipment.

Qualified personnel

This product must be installed, operated, and maintained by qualified personnel only.

Protective equipment and safety devices

- Use personal protective equipment as needed. Examples of personal protective equipment include, but are not limited to, hard hats, safety goggles, protective gloves and shoes, and breathing equipment.
- Make sure that all safety features on the product are functioning and in use at all times when the unit is being operated.

1.4 Protecting the environment

Emissions and waste disposal

Observe the local regulations and codes regarding:

- Reporting of emissions to the appropriate authorities
- Sorting, recycling and disposal of solid or liquid waste
- Clean-up of spills

Exceptional sites



CAUTION: Radiation Hazard

Do NOT send the product to Xylem if it has been exposed to nuclear radiation, unless Xylem has been informed and appropriate actions have been agreed upon.

1.5 Spare parts



CAUTION:

Only use the manufacturer's original spare parts to replace any worn or faulty components. The use of unsuitable spare parts may cause malfunctions, damage, and injuries as well as void the warranty.

2 Transportation and Storage

2.1 Examine the delivery

2.1.1 Examine the package

1. Examine the package for damaged or missing items upon delivery.
2. Record any damaged or missing items on the receipt and freight bill.
3. If anything is out of order, then file a claim with the shipping company.

   If the product has been picked up at a distributor, make a claim directly to the distributor.

2.1.2 Examine the unit

1. Remove packing materials from the product.

   Dispose of all packing materials in accordance with local regulations.
2. To determine whether any parts have been damaged or are missing, examine the product.
3. If applicable, unfasten the product by removing any screws, bolts, or straps.

   Use care around nails and straps.
4. If there is any issue, then contact a sales representative.

2.2 Storage guidelines

Storage location

The product must be stored in a covered and dry location free from heat, dirt, and vibrations.

NOTICE:

Protect the product against humidity, heat sources, and mechanical damage.

NOTICE:

Do not place heavy weights on the packed product.

3 Product Description

3.1 Product design

Usage

Ecocirc+ 20–18 is a wet rotor pump that uses permanent magnet and synchronous motor technology.

The pump is used for systems with variable flow rates to optimize the pump operation and decrease energy consumption.

Applications

- Potable water system with a stainless steel body
- Heating for hot water
- Cooling for cold water
- Solar water heating
- Geothermal energy

3.2 Features and functions

- Has electronic control
- Energy-efficient
- Has built-in electrical overload and dry-run protection to keep the pump safe
- Uses the Bluetooth®/MD [1] wireless technology to communicate

Software

The following features in the software protect the pump and motor:

- Anti-lock functionality
- Generator mode management
- Overtemperature
- Overvoltage and overcurrent
- Motor overload
- Motor fault

3.2.1 Operating modes

- Standby
- Constant pressure with three curves
- Proportional pressure with three curves
- Fixed speed with three curves
- Air purge
- Night setback
- eAdapt
- Bluetooth®/MD Low Energy 5.0 wireless technology to communicate with mobile phone application

[1] The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Xylem Service Italia S.r.l. is under license.

- Single temperature heating or cooling setpoint
- External temperature sensor compatibility
- External 0–10 VDC voltage
- Working log history

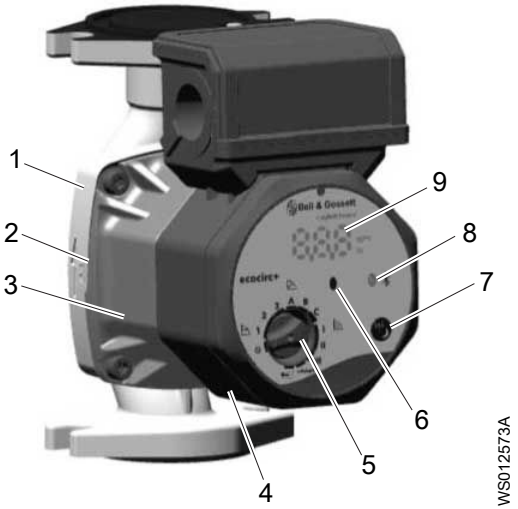
3.2.2 My ecocirc application

This application is used to interact with the pump with the following functions:

- Extracts data during installation and maintenance
- Gets technical information and supporting documentation
- Generates work reports
- Identifies an applicable model for a specific system
- Allows the activation of temperature control modes and 0-10 V control mode

The application is available for iOS® and Android™ mobile devices[2].

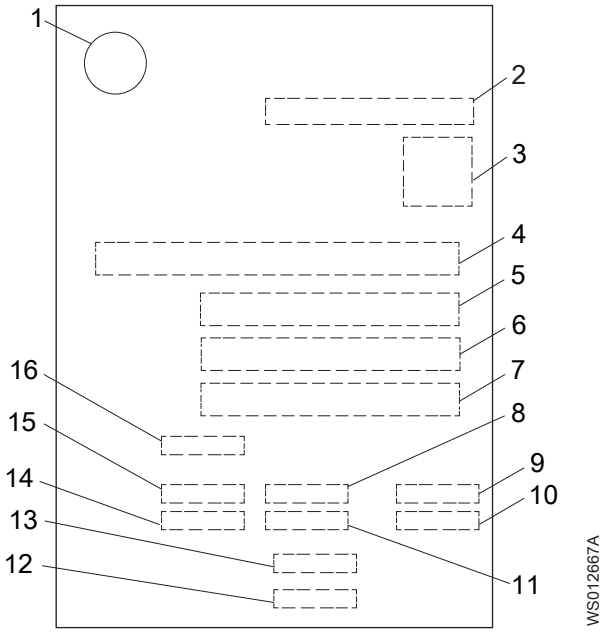
3.3 Parts



1. Pump body
2. Condensation drain
3. Motor body
4. Electric drive system
5. Selector
6. LED status indicator
7. Night mode button
8. LED wireless communication indicator
9. Digital display

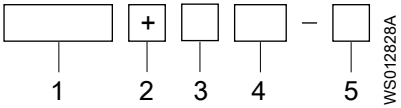
[2] IOS® is a registered trademark of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries, used under license by Apple Inc.. Android is a trademark of Google LLC.

3.4 Data plate



1. UL listing mark
2. UL control number
3. QR code
4. Product name
5. Product code
6. Serial number
7. Date
8. Minimum input power
9. Degree of protection
10. Enclosure type
11. Maximum input power
12. Maximum operating pressure
13. Maximum liquid operating temperature
14. Maximum input current
15. Minimum input current
16. Input voltage range

Identification code



1. Series name
2. Display present or not present
3. Maximum head, feet
4. Maximum flow, gallons (US) per minute
5. Pump body, cast iron or stainless steel

4 Installation

4.1 Mechanical installation

4.1.1 Precautions

Before starting work, make sure that the safety instructions in the chapter *Introduction and Safety* on page 3 have been read and understood.



WARNING:

Do not operate the unit in an area where explosive gases are present.



WARNING:

The heating of water and other fluids causes volumetric expansion. The associated forces can cause the failure of system components and the release of high-temperature fluids. In order to prevent this, install properly sized and located compression tanks and pressure-relief valves. Failure to follow these instructions can result in serious personal injury or death, or property damage.



WARNING:

California Proposition 65 warning! This product contains chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.



WARNING:

Do not install this pump in submersible locations. This is a non-submersible pump.



WARNING:

Do not install this pump in outdoor locations. This is an indoor use only pump.



DANGER: Do not install this pump in swimming pools or marine areas. Failure to follow these instructions could result in serious personal injury, death and/or property damage.



CAUTION:

CAUTION: PROPERTY DAMAGE HAZARD. It is not advisable to install circulators in an attic or upper floor over finished living space. If the circulator must be installed over head, or over expensive equipment, provide adequate drainage in the event of leakage. Failure to follow these instructions could result in property damage.



CAUTION:

Read this manual carefully before installing and using the product. Improper use of the product can cause personal injury and damage to property, and may void the warranty.



CAUTION:

The operator must be aware of safety precautions to prevent physical injury.

NOTICE:

Do not use this pump to handle liquids containing abrasive, solid or fibrous substances, toxic or corrosive liquids, potable liquids other than water or liquids not compatible with the pump construction material. Water pH must be maintained between 7–9 and water hardness must not exceed 14 grains/gallon, with suspended solids less than 100 PPM. An improper use of the product leads to the loss of the warranty.

4.1.2 Requirements

- The pump must not be installed at the lowest point in the system.
- The pump must not touch other pumps.
- The pipes must be supported independently to prevent them from weighing on the pump.
- Before the pipes are connected to the pump, they must be cleaned of unwanted material and welding residue.
- If a check valve is used, it must be installed in the discharge nozzle of the pump.

4.1.3 Install the pump

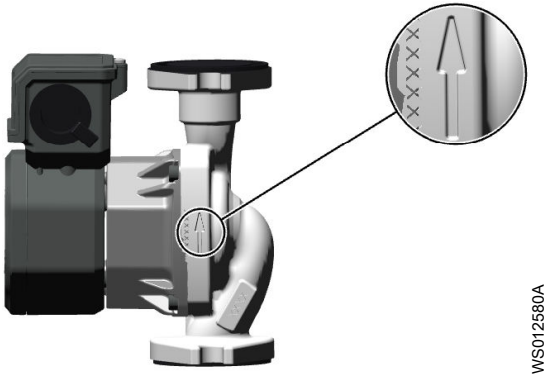
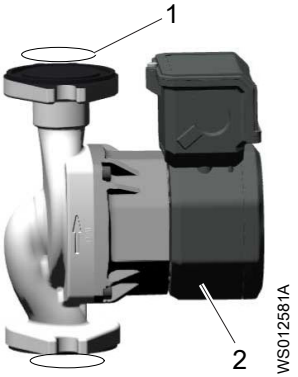


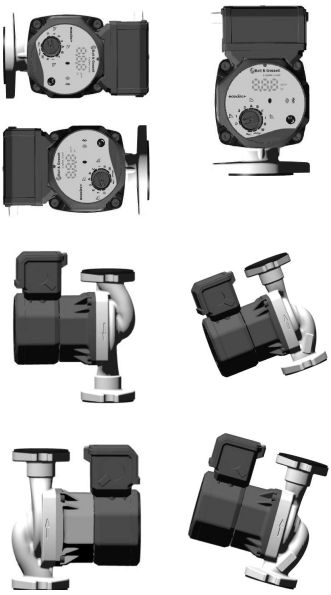
Figure 1: Correct direction of the liquid flow

1. Install the pump with new gaskets.
   The gaskets must be between the pipe flanges.



1. Gasket
2. Pump

2. Install the pump in one of the following correct positions.

Correct	Incorrect
	

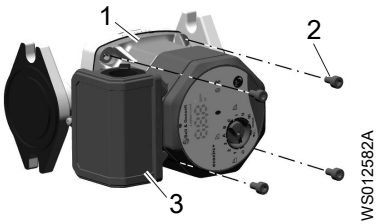
3. Use a torque wrench to tighten the nuts on the companion flange fasteners.

Fasteners	Torque
Companion flange fasteners	13 Nm (115 lbf.in)
Union threaded ring nuts	See *Torque specification* on page 31

4.1.4 Rotate the motor body of the pump

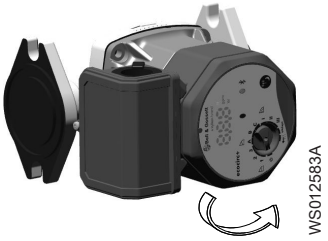
The motor assembly of the pump can be rotated to ±90°.

1. Remove the screws from the pump body.



1. Pump body
2. Screw
3. Junction box

2. Rotate the pump housing.



3. Install the junction box in one of the following correct positions.

Correct	Incorrect
	

4. Use a torque wrench to tighten the screws of the pump body.
   The torque must be 5 Nm (44 lbf.in).



4.1.5 Insulation housing

4.1.5.1 Requirements

NOTICE:

Improper installations shown above can cause the pump to fail prematurely and create an electrical hazard and/or damage caused by water leakage.

- Only use the pump thermal shells that are included in the delivery. Do not insulate the motor housing, the electronics can overheat and cause the pump to thermally overload.
- The thermal shells that are included with the pump must only be used in hot water circulation applications with fluid temperature above 68°F (20°C). The thermal shells are permeable to water vapor.
- The pump housing must not be insulated past the motor flange. If the vapor barrier insulation is used for cold water applications, the flange drain path must remain open to allow for condensation to drain out of the motor housing.

4.1.5.2 Install the insulation housing

Install the insulation housing on the pump.



WS012682A

4.2 Electrical installation

4.2.1 Precautions

Before starting work, make sure that the safety instructions have been read and understood.

DANGER: Electrical Hazard

Before starting work on the unit, make sure that the unit and the control panel are isolated from the power supply and cannot be energized. This applies to the control circuit as well.

DANGER: Crush Hazard

Moving parts can entangle or crush. Always disconnect and lock out power before servicing to prevent unexpected startup. Failure to do so could result in death or serious injury.



WARNING: Electrical Hazard

Risk of electrical shock or burn. A certified electrician must supervise all electrical work. Comply with all local codes and regulations.



WARNING: Electrical Hazard

There is a risk of electrical shock or explosion if the electrical connections are not correctly carried out, or if there is fault or damage on the product. Visually inspect equipment for damaged cables, cracked casings or other signs of damage. Make sure that electrical connections have been correctly made.



WARNING:

To Reduce The Risk of Electric Shock, See Instruction Manual for Proper Installation



CAUTION: Electrical Hazard

Prevent cables from becoming sharply bent or damaged.

4.2.1.1 Grounding (earthing)

Grounding (earthing) must be done in compliance with all local codes and regulations.

If necessary, a grounded metal conduit must be used.



DANGER: Electrical Hazard

All electrical equipment must be grounded (earthed). Test the ground (earth) lead to verify that it is connected correctly and that the path to ground is continuous.



WARNING: Electrical Hazard

If the power cable is jerked loose, then the ground (earth) conductor must be the last conductor to come loose from its terminal. Make sure that the ground (earth) conductor is longer than the phase conductors at both ends of the cable.

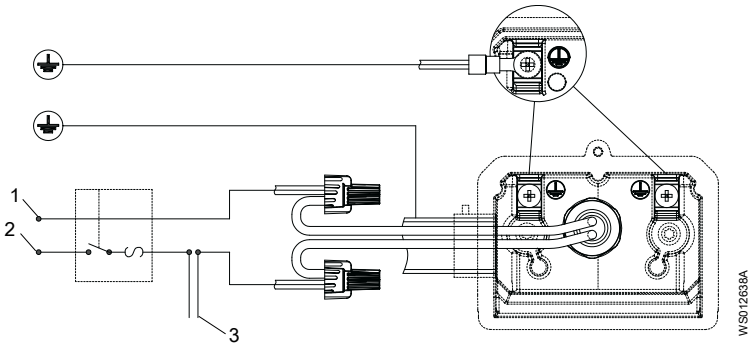
4.2.2 Requirements

- The National Electrical Code (NEC), Canadian Electrical Code (CEC), and local codes must be followed.
- If the branch circuit is fitted with a ground fault circuit interrupter, it must be applicable to use with the inverter-driven appliances.
- The electrical cables must be protected from high temperature and vibration.
- The current type and voltage of the power supply connection must follow the specifications on the nameplate of the pump.
- The electrical wires must be 14 AWG or larger.
- The high-voltage wires and low-voltage wires must be routed in separate conduit.
- Before connecting the power supply wiring, check that the power supply is switched off.

4.2.3 Connect the pump to the power supply

1. Remove the screw from the cover of the terminal box.
2. Remove the cover from the terminal box.
3. Put the high-voltage wires through the conduit fitting.

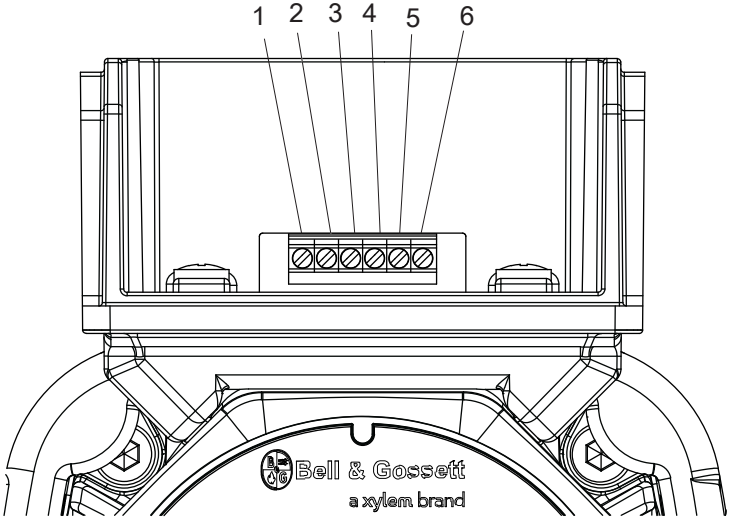
   The conduit fitting must be ½ in trade size (12.7 mm).
4. Connect the wires according to the wiring diagram by using the UL certified wire nut connectors.
   a) If applicable, connect the ground wire.
   b) If applicable, put all the low voltage wires through the separate conduit fitting.



1. Neutral
2. Line
3. Remote control (If necessary)

5. Put the cover on the terminal box.
6. Tighten the screw of the cover.

4.2.4 I/O terminals



Terminal	Parameter	Description
1	Temp IN+	External temperature sensor input
2	Temp IN-	External temperature sensor input
3	0-10V IN+	0-10V constant speed input
4	0-10V IN-	0-10V constant speed reference
5	Not used	Not used
6	Not used	Not used

4.2.4.1 Control mode for water temperature

Control modes for water temperature can be activated only by using the application **MY ecocirc**.

Mode	Description
Constant absolute temperature, ConstT	Controls the speed of motor to maintain a constant water temperature in the system This mode uses the external temperature sensor for heating and cooling applications.

Mode	Description
Constant pressure that depends on the water temperature, ConstΔP/T	Changes the setpoint of the differential constant pressure according to the measured water temperature This mode is used in the following applications: • Uses the external temperature sensor for positive relation, P/T • Uses the external temperature sensor for negative relation, P/T • Uses the external temperature sensor for positive relation, P/T • Uses the external temperature sensor for negative relation, P/T
Proportional pressure that depends on the water temperature	Changes the setpoint of the differential proportional pressure according to the measured fluid temperature This mode is used in the following applications: • Uses the external temperature sensor for positive relation, P/T • Uses the external temperature sensor for negative relation, P/T • Uses the external temperature sensor for positive relation, P/T • Uses the external temperature sensor for negative relation, P/T

Alarm code

When there is a fault in the temperature sensor, the following alarm code is shown in the user interface:

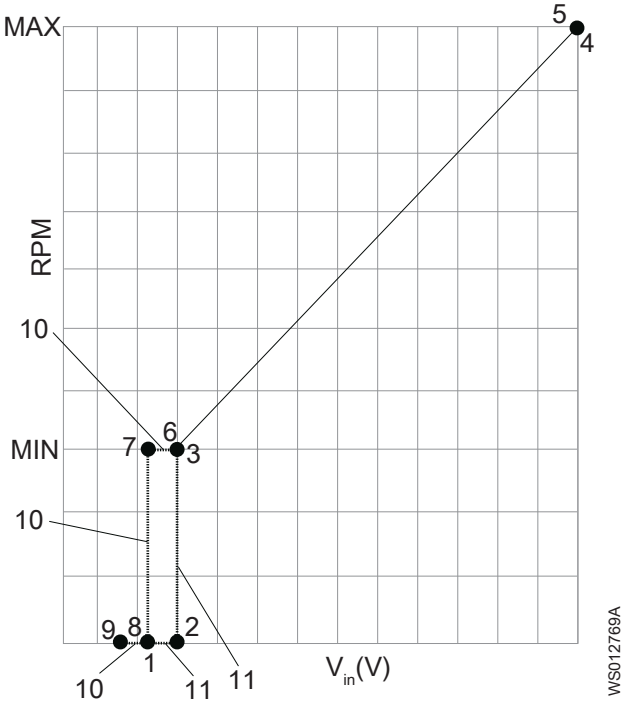
Sensor	Alarm code
Water temperature	A06

4.2.4.2 Control mode for analog voltage input

Analog Voltage input recognizes automatically the presence of a valid 0-10V signal (see thresholds, referred to pump status, on the table below).

Mode	Description
Rotational speed that the VDC input controls at terminals 3 and 4	Uses the external control voltage input to control the speed of the pump The speed of the pump is maximum at 10 VDC and minimum at 1.5 VDC. For more information, see *Pump status* on page 20.

Pump status



Position	Control voltage input (V_{in}), thresholds (V)	V_{in}, increases		V_{in}, decreases	
		Speed setpoint (rpm)	Pump status	Speed setpoint (rpm)	Pump status
1 and 7	1.20	0	**OFF**	**MIN**	**RUN**
2	1.49	0	**OFF**	**MIN**	**RUN**
3 and 6	1.50	**MIN**	**RUN**	**MIN**	**RUN**
4 and 5	10	**MAX**	**RUN**	**MAX**	**RUN**
8	1.19	-	Input is disabled	0	**OFF**
9	0.8	-	Input is disabled	0	**OFF**

Position	rpm
10	V_{in}, decreases
11	V_{in}, increases

5 Operation

5.1 Precautions

Before starting work, make sure that the safety instructions in the chapter *Introduction and Safety* on page 3 have been read and understood.

WARNING: Crush Hazard

Risk of automatic restart.

CAUTION:

Do not exceed the maximum working pressure of the pump. This information is listed on the nameplate of the pump.

5.2 Requirements

Before starting the pump, follow all the instructions in the chapter *Installation* on page 10.

The pump must be vented fully.

The minimum suction pressure for the pump must be set as given in the table *Minimum suction pressure* on page 31.

5.3 Start the pump

Turn on the power supply.

On the user interface, the blinking yellow light shows that the pump has started.

5.4 Operating modes

The user interface has the following operating modes:



Position	Operating mode	LED status	Description
⏻	Standby	Blinks yellow	The pump is on standby

Position	Operating mode	LED status	Description
Performance curve: • 1. Low • 2. Intermediate • 3. High	Operation at constant pressure	-	This position is selected for in-floor heating systems. The pressure stays constant, when the water flow is increased or decreased.
Performance curve: • A. Low • B. Intermediate • C. High	Operation at proportional pressure	-	This position is selected for two-pipe heating systems. The pressure changes according to the actual demand for heat. The performance is selected according to the features of the system or heat demand.
Constant pump speed: • I. Low • II. Intermediate • III. High	Operation at constant pump speed	-	This position is selected for one-pipe heating systems. The speed stays constant, when the water flow is increased or decreased. The speed is selected according to the features of the system or number of valves that can be opened at the same time.
eAdapt	**eAdapt**	Green	This position is selected to optimize the energy consumption by identifying the ideal duty point.
	Air purge	Blinks green	This position is selected to remove the dissolved gases from the pump. The air purge must be done for 3 minutes. If necessary, allow the air purge for more than 3 minutes according to the features of the system.
	Night	-	This position is selected to decrease the energy consumption of the pump, when the heating system is switched off. The pump returns to the original duty point when the system restarts and the water temperature increases. For more information, see *Set the night mode* on page 23.

5.5 Set the night mode

If the night mode is active when the power is off, it is deactivated when the power is turned on.

1. Select one of these operating modes 1, 2, 3, A, B, C, I, II, and III on the user interface.
2. Press and hold the night mode button to activate the night mode.

   The yellow light shows that the night mode is on.

   The green light shows that the night mode is off.



3. Press and hold the night mode button to deactivate the night mode.

5.6 Reset the error

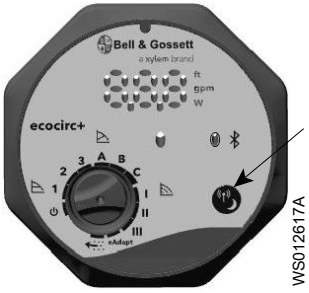
1. Disconnect the power supply to the pump.
2. Wait for 1 minute.
3. Turn on the power supply.

5.7 Connect a mobile phone to the pump

The **MY ecocirc** application is installed in the mobile phone.

1. Open the **MY ecocirc** application on the mobile phone.
2. Turn on communication via Bluetooth® wireless technology in the mobile phone.
3. Press and hold the night mode button, on the user interface of the pump.

   The LED light blinks shows that the pump is ready to connect.



4. Select the ecocirc+ from list of the devices that are detected in the device connectivity of the mobile phone.
5. Press and hold the night mode button on the user interface.

   The digital display shows the three-digit personal identification number (PIN).
6. Note the three-digit PIN.
7. Repeat the steps *5* on page 24 and *6* on page 24 to obtain the last 3 digits of the PIN.
8. Enter the six-digit PIN number into the mobile phone.

   The six-digit PIN number consists of two sets of three-digit numbers that are taken from the pump user interface.

6 Maintenance

6.1 Precautions

Before starting work, make sure that the safety instructions in the chapter *Introduction and Safety* on page 3 have been read and understood.



Electrical Hazard:

Disconnect and lock out electrical power before installing or servicing the unit.



WARNING:

- Always wear protective gloves when handling the pumps and motor. When pumping hot liquids, the pump and its parts may exceed 40°C (104°F).
- Maintenance and service must be performed by skilled and qualified personnel only.
- Observe accident prevention regulations in force.

6.2 Examine the pump

Visually examine the pump for leaks.

If there are leaks, the pump must be replaced.

7 Troubleshooting

7.1 Precautions

Before starting work, make sure that the safety instructions in the chapter *Introduction and Safety* on page 3 have been read and understood.



DANGER: Electrical Hazard

Troubleshooting a live control panel exposes personnel to hazardous voltages. Electrical troubleshooting must be done by a qualified electrician.



DANGER: Crush Hazard

Moving parts can entangle or crush. Always disconnect and lock out power before servicing to prevent unexpected startup. Failure to do so could result in death or serious injury.

7.2 Insufficient cooling or heating of the pump

LED status	Cause	Remedy
Green	The performance of the pump is low.	1. Do one of the following methods to start the pump: – Increase the speed of the pump to increase the head – Select another operating mode 2. If the problem continues, replace the pump.
Yellow	The night mode is activated.	1. Deactivate the night mode. 2. If the problem continues, replace the pump.
Blinks red	The dry run of the pump is detected.	1. Check that the pump does not contain air. 2. Check that the liquid pressure of the pump is according to the working limits. 3. Check that the pump is installed correctly. 4. Start the air purge process. 5. If the problem continues, replace the pump.

7.3 The pump does not start

The LED is on.

LED status	Error	Cause	Remedy
Blinks yellow	**Off**	The selector is set to the standby mode.	Select one of these operating modes 1, 2, 3, A, B, C, I, II and III.
Red	**E02**	The supply of current to the motor is too high.	1. Reset the error. For more information, see *Reset the error* on page 23. 2. If the problem continues, replace the pump.

LED status	Error	Cause	Remedy
	E03	The supply voltage is too high.	1. Check that the grid voltage is in accordance with the rated values. 2. Reset the error. For more information, see *Reset the error* on page 23. 3. If the problem continues, replace the pump.
	E03 or **E06**	The regeneration effect occurs because the other equipment generates the water flow.	1. Remove the source of the flow. 2. Reset the error. For more information, see *Reset the error* on page 23. 3. If the problem continues, replace the pump.
	E04	• The motor is stalled. • The rotor is blocked or loss of speed.	1. The unit automatically carries out several high-torque startup attempts. 2. If the problem continues, do the following methods: – Check that the pumped liquid is in accordance with the working limits. – Clean the system. – Reset the error. For more information, see *Reset the error* on page 23. 3. If the problem continues, replace the pump.
	E05	The motor control shows error.	1. Reset the error. For more information, see *Reset the error* on page 23. 2. If the problem continues, replace the pump.
	E06	The supply voltage is too low.	1. Check that the grid voltage is in accordance with the rated values. 2. Reset the error. For more information, see *Reset the error* on page 23. 3. If the problem continues, replace the pump.
	E07	The motor is overload.	1. Reset the error. For more information, see *Reset the error* on page 23. 2. Check that the pumped liquid is in accordance with the working limits. 3. If the problem continues, replace the pump.
	E08	The motor gets overheated.	1. Reset the error. For more information, see *Reset the error* on page 23. 2. Check that the ambient and pumped liquid temperature is in accordance with the working limits. 3. Check that the unit is installed according to the instructions in the manual. 4. If the problem continues, replace the pump.
	E09	The electrical motor fails.	1. Reset the error. For more information, see *Reset the error* on page 23. 2. If the problem continues, replace the pump.

LED status	Error	Cause	Remedy
	E10	The protection against dry run of motor	1. Reset the error. For more information, see *Reset the error* on page 23. 2. If the problem continues, replace the pump.

7.4 The pump does not start

The LED and the user interface are switched off.

LED status	Error	Cause	Remedy
Off	**None**	The following electric safety devices are open: • System fuse • Circuit breaker of thermal magnetic device • Ground fault circuit interrupter	1. Reset the electric safety devices. 2. Replace the fuse for the pump. 3. Reset the ground fault circuit interrupter.
		The power supply is disconnected.	1. Check that the connector is connected correctly to the pump. 2. Turn on the power supply.
		The wiring is incorrect.	Reset the electrical connections of the connector.
		The pump is defective.	Replace the pump.

7.5 Loss of functionality in the pump

LED status	Error	Cause	Remedy
Green	**A11** or **OFF**	The communication of the printed circuit board fails.	1. Reset the error. For more information, see *Reset the error* on page 23. 2. If the problem continues, replace the pump.

7.6 Communication via Bluetooth®/MD wireless technology failure

LED status		Error	Cause	Remedy
State	**Wireless**			
Green	Off	**None**	The night mode button fails.	1. Reset the error. For more information, see *Reset the error* on page 23. 2. Press and hold the night mode button for more than 4 seconds. 3. If the problem continues, replace the pump.
Blinks green		**Air**		
Blinks yellow		**OFF**		
Red		**E01** to **E10**		
Blinks red		**None**	The wireless function module fails	

LED status		Error	Cause	Remedy
State	Wireless			
-	Blinks fast	-	The wireless function is not connected to the mobile device.	Connect the wireless function with the mobile device.
		-	The incorrect pairing of PIN the mobile device	1. Generate a new PIN. 2. Connect the mobile device. 3. Reset the error. For more information, see *Reset the error* on page 23. 4. If the problem continues, replace the pump.
	Steady light	-	The communication error	1. Reset the error. For more information, see *Reset the error* on page 23. 2. If the problem continues, replace the pump.

7.7 Noise from the system

LED status	Error	Cause	Remedy
Blinks green	**Air**	The air purge is active.	1. Select one of these operating modes 1, 2, 3, A, B, C, I, II, and III. 2. Wait for 3 minutes to complete the air purge process.
Green	**None**	The air in the system	1. Release the air in the system. 2. Start the air purge process. 3. Wait for 3 minutes to complete the air purge process.
		The flow rate is too high. The turbulence is too high.	Do one of the following methods to start the pump: • Decrease the head speed of the pump to decrease the head • Select a different operating mode
		The following systems are blocked: • Piping • Air elimination • Valves	Examine the systems.

7.8 Noise from the pump

LED status	Error	Cause	Remedy
Blinks green	**Air**	The air purge is active.	1. Select one of these operating modes 1, 2, 3, A, B, C, I, II, and III. 2. Wait for 3 minutes to complete the air purge process.

LED status	Error	Cause	Remedy
Green	**None**	Air in the pump	1. Check that the pump is not installed at the highest point of the system. 2. Start the air purge process. 3. Wait for 3 minutes to complete the air purge process.
		Cavitation	1. Do one of the following methods to decrease the cavitation: – Increase the system pressure according to the working limits. – Select a different operating mode. – Decrease the head speed of the pump to decrease the head 2. If the problem continues, replace the pump.
		Unwanted materials in the pump	1. Clean the pump. 2. If the problem continues, replace the pump.

8 Technical Specification

8.1 Environmental requirements

Feature	Value
Operating environment	Non-aggressive, nonexplosive atmosphere, and no frost
Operating temperature	-10°C to 40°C (14°F to 104°F)
Relative humidity	< 95% at 40°C (104°F), non-condensing

8.2 Torque specification

Joint size	Pipe material	Torque, Nm (lbf.ft)
G1	Plastic	50 (37)
G1	Cast iron	85 (63)
G1¼	Cast iron	105 (78)
G1½	Cast iron	125 (92)
G2	Cast iron	165 (122)

8.3 Minimum suction pressure

Pressure, MPa (psi)	Head, m (ft)	Temperature, °C (°F)
0.005 (0.725)	0.5 (1.6)	50 (122)
0.03 (4.35)	3 (10)	95 (203)
0.1 (14.5)	10 (33)	110 (230)

8.4 Electrical data

Feature	Description
Power supply voltage	115 V ±10%, 50/60 Hz
Insulation class	155 F
Degree of protection	IP44

8.4.1 I/O device

Device	Description
Temperature sensor	1 kilohm at 25°C (77°F)

8.5 Pumped liquid

Feature	Description
Temperature	-10°C to 110°C (14°F to 230°F)
Concentration of glycol mixture	≤50%

The pump can be used with water/propylene glycol mixtures up to 50% with a maximum viscosity of 50cST at 14°F (-10°C). The pump has built-in overload and thermal protection to protect the pump from overload due to increased fluid viscosity. Pump performance is based on 77°F (25°C). Therefore pumping of glycol mixtures will affect max performance, depending on mixture concentration and temperature.

8.6 Maximum operating pressure

- 1 MPa (145 psi)

8.7 Sound pressure

- ≤43 dBA ±2

dBA is measured in free field at a distance of 1 meter from the pump.

8.8 Radio data

Band	Frequency
ISM	2.4 GHz
RF	≤ 2.5 mW (+ 4 dBm)

9 Product Warranty

Commercial warranty

Warranty. For goods sold to commercial buyers, Seller warrants the goods sold to Buyer hereunder (with the exception of membranes, seals, gaskets, elastomer materials, coatings and other "wear parts" or consumables all of which are not warranted except as otherwise provided in the quotation or sales form) will be (i) be built in accordance with the specifications referred to in the quotation or sales form, if such specifications are expressly made a part of this Agreement, and (ii) free from defects in material and workmanship for a period of thirty (30) months from the date of installation or thirty-six (36) months from the date of shipment (which date of shipment shall not be greater than thirty (30) days after receipt of notice that the goods are ready to ship), whichever shall occur first, unless a longer period is specified in the product documentation (the "Warranty").

Except as otherwise required by law, Seller shall, at its option and at no cost to Buyer, either repair or replace any product which fails to conform with the Warranty provided Buyer gives written notice to Seller of any defects in material or workmanship within ten (10) days of the date when any defects or non-conformance are first manifest. Under either repair or replacement option, Seller shall not be obligated to remove or pay for the removal of the defective product or install or pay for the installation of the replaced or repaired product and Buyer shall be responsible for all other costs, including, but not limited to, service costs, shipping fees and expenses. Seller shall have sole discretion as to the method or means of repair or replacement. Buyer's failure to comply with Seller's repair or replacement directions shall terminate Seller's obligations under this Warranty and render the Warranty void. Any parts repaired or replaced under the Warranty are warranted only for the balance of the warranty period on the parts that were repaired or replaced. Seller shall have no warranty obligations to Buyer with respect to any product or parts of a product that have been: (a) repaired by third parties other than Seller or without Seller's written approval; (b) subject to misuse, misapplication, neglect, alteration, accident, or physical damage; (c) used in a manner contrary to Seller's instructions for installation, operation and maintenance; (d) damaged from ordinary wear and tear, corrosion, or chemical attack; (e) damaged due to abnormal conditions, vibration, failure to properly prime, or operation without flow; (f) damaged due to a defective power supply or improper electrical protection; or (g) damaged resulting from the use of accessory equipment not sold or approved by Seller. In any case of products not manufactured by Seller, there is no warranty from Seller; however, Seller will extend to Buyer any warranty received from Seller's supplier of such products.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, GUARANTEES, CONDITIONS OR TERMS OF WHATEVER NATURE RELATING TO THE GOODS PROVIDED HEREUNDER, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED AND EXCLUDED. EXCEPT AS OTHERWISE REQUIRED BY LAW, BUYER'S EXCLUSIVE REMEDY AND SELLER'S AGGREGATE LIABILITY FOR BREACH OF ANY OF THE FOREGOING

WARRANTIES ARE LIMITED TO REPAIRING OR REPLACING THE PRODUCT AND SHALL IN ALL CASES BE LIMITED TO THE AMOUNT PAID BY THE BUYER FOR THE DEFECTIVE PRODUCT. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY OTHER FORM OF DAMAGES, WHETHER DIRECT, INDIRECT, LIQUIDATED, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY OR SPECIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF PROFIT, LOSS OF ANTICIPATED SAVINGS OR REVENUE, LOSS OF INCOME, LOSS OF BUSINESS, LOSS OF PRODUCTION, LOSS OF OPPORTUNITY OR LOSS OF REPUTATION.

Limited consumer warranty

Warranty. For goods sold for personal, family or household purposes, Seller warrants the goods purchased hereunder (with the exception of membranes, seals, gaskets, elastomer materials, coatings and other "wear parts" or consumables all of which are not warranted except as otherwise provided in the quotation or sales form) will be free from defects in material and workmanship for a period of thirty (30) months from the date of installation or thirty-six (36) months from the product date code, whichever shall occur first, unless a longer period is provided by law or is specified in the product documentation (the "Warranty").

Except as otherwise required by law, Seller shall, at its option and at no cost to Buyer, either repair or replace any product which fails to conform with the Warranty provided Buyer gives written notice to Seller of any defects in material or workmanship within ten (10) days of the date when any defects or non-conformance are first manifest. Under either repair or replacement option, Seller shall not be obligated to remove or pay for the removal of the defective product or install or pay for the installation of the replaced or repaired product and Buyer shall be responsible for all other costs, including, but not limited to, service costs, shipping fees and expenses. Seller shall have sole discretion as to the method or means of repair or replacement. Buyer's failure to comply with Seller's repair or replacement directions shall terminate Seller's obligations under this Warranty and render this Warranty void. Any parts repaired or replaced under the Warranty are warranted only for the balance of the warranty period on the parts that were repaired or replaced. The Warranty is conditioned on Buyer giving written notice to Seller of any defects in material or workmanship of warranted goods within ten (10) days of the date when any defects are first manifest.

Seller shall have no warranty obligations to Buyer with respect to any product or parts of a product that have been: (a) repaired by third parties other than Seller or without Seller's written approval; (b) subject to misuse, misapplication, neglect, alteration, accident, or physical damage; (c) used in a manner contrary to Seller's instructions for installation, operation and maintenance; (d) damaged from ordinary wear and tear, corrosion, or chemical attack; (e) damaged due to abnormal conditions, vibration, failure to properly prime, or operation without flow; (f) damaged due to a defective power supply or improper electrical protection; or (g) damaged resulting from the use of accessory equipment not sold or approved by Seller. In any case of products not manufactured by Seller, there is no warranty from Seller; however, Seller will extend to Buyer any warranty received from Seller's supplier of such products.

THE FOREGOING WARRANTY IS PROVIDED IN PLACE OF ALL OTHER EXPRESS WARRANTIES. ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

PARTICULAR PURPOSE, ARE LIMITED TO THIRTY (30) MONTHS FROM THE DATE OF INSTALLATION OR THIRTY-SIX (36) MONTHS FROM THE PRODUCT DATE CODE , WHICHEVER SHALL OCCUR FIRST. EXCEPT AS OTHERWISE REQUIRED BY LAW, BUYER'S EXCLUSIVE REMEDY AND SELLER'S AGGREGATE LIABILITY FOR BREACH OF ANY OF THE FOREGOING WARRANTIES ARE LIMITED TO REPAIRING OR REPLACING THE PRODUCT AND SHALL IN ALL CASES BE LIMITED TO THE AMOUNT PAID BY THE BUYER FOR THE DEFECTIVE PRODUCT. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY OTHER FORM OF DAMAGES, WHETHER DIRECT, INDIRECT, LIQUIDATED, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY OR SPECIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF PROFIT, LOSS OF ANTICIPATED SAVINGS OR REVENUE, LOSS OF INCOME, LOSS OF BUSINESS, LOSS OF PRODUCTION, LOSS OF OPPORTUNITY OR LOSS OF REPUTATION.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

To make a warranty claim, check first with the dealer from whom you purchased the product or visit www.xyleminc.com for the name and location of the nearest dealer providing warranty service.

10 Certifications

10.1 FCC 15.247

The 2AYCGXSI01 is compliant to Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This device has been designed and complies with the safety requirements for portable (<20cm) RF exposure in accordance with FCC rule part 2.1093 and KDB 447498 D01 as demonstrated in the RF exposure analysis. Installers must ensure that this device must not be co-located or operated in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

Unauthorized repairs, changes or modifications could result in permanent damage to the equipment and void your warranty and your authority to operate this device under Part 15 of the FCC Rules.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

10.2 RSS 102 and RSS-247

The 26881-XSI01 is compliant to RSS 102 and RSS-247

The 26881-XSI01 device complies with the safety requirements for RF exposure in accordance with RSS-102 Issue 5 for portable use conditions.

This device complies with ISED's license-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause harmful interferences.
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Xylem |ˈzīləm|

1) The tissue in plants that brings water upward from the roots;
2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xylem.com

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Let's Solve Water

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Visit our Web site for the latest version of this document and more information

The original instruction is in English. All non-English instructions are translations of the original instruction.

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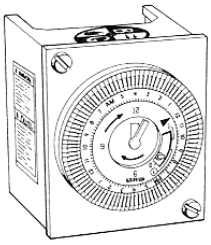
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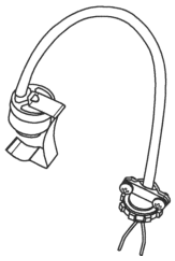
Bell & Gossett
a xylem brand

SUBMITTAL

A-128D

JOB:	**REPRESENTATIVE:**	
UNIT TAG:	**ORDER NO.**	**DATE:**
ENGINEER:	**SUBMITTED BY:**	**DATE:**
CONTRACTOR:	**APPROVED BY:**	**DATE:**





Automatic Timer Kit

Model TC-1

Aquastat

Models: AQS-1/2, AQS-3/4

DESCRIPTION

TC-1 AUTOMATIC TIMER KIT - To increase the overall efficiency of a hot water recirculation system, the TC-1 timer control kit can be installed for use on any B&G NBF/NRF/SSF/PL and most 3-piece circulators. The TC-1 timer control is programmable to turn the circulator ON and OFF automatically at preset times. This permits the user to have the pump circulate hot water only during those times when high usage can be expected throughout the day.

AQS-1/2 and AQS-3/4 AQUASTAT - are designed to thermostatically turn any B&G NBF/NRF/SSF circulator ON and OFF. The AQS-1/2 or AQS-3/4 will switch the pump OFF at 120ºF (48.9ºC) and ON at 100ºF (37.8ºC). The aquastats are available in separate models that will sense the temperature for either 1/2" or 3/4" copper pipe.

AUTOMATIC TIMER KIT and AQUASTAT COMBINATION - The automatic timer and aquastat kits can be used in combination. When they are used together, the pump will only circulate water when the ON time conditions are met and when water temperature is low enough to cause the aquastat to switch ON.

OPERATIONAL LIMITS

TC-1 AUTOMATIC TIMER KIT:

Power Supply: 115/120 VAC, 60 HZ, 1Ø

Minimum Switch Interval: 15 minutes

Run Modes: ON (continuous run), OFF (at all times), TIMER (run at programmed intervals)

Maximum Switch Current: 16 amps

AQS-1/2, AQS-3/4 AQUASTATS

Thermostatic Switch Modes: OFF (open) at 120°F (48.9°C) and ON (closed) at 100°F (37.8°C) operation of the aquastat is dependent on ambient settings. In setting where there is excessive heat loss or in installations where heat from the boiler or other components can affect the aquastat, the actual on and off temperatures may vary.

Thermostatic Element: Bimetal, senses surface temperature of outside diameter of pipe.

Pipe Size: AQS-1/2 clips onto 1/2" copper pipe or 3/8" steel pipe (OD of pipe 5/8"). AQS-3/4 clips onto 3/4" copper pipe or 1/2" steel pipe (OD of pipe 7/8").

Mounting: May be installed to sense temperature at the suction or discharge pipe of the pump.

CONSTRUCTION MATERIALS

TC-1 AUTOMATIC TIMER KIT:

Timer Body: Noryl Plastic

AQS-1/2, AQS-3/4 AQUASTATS:

Thermostat Covering: Epoxy (Environmentally Sealed)
Pipe Clip: Stainless Steel
Sensing Element: Bimetal
Wire Leads: Insulated 18" (457mm) #18 AWG

APPROX. SHIPPING WEIGHT

TC-1: 11oz. (.31Kg)
AQS-1/2: 5oz. (.14Kg)
AQS-3/4: 5oz. (.14Kg)

SCHEDULE

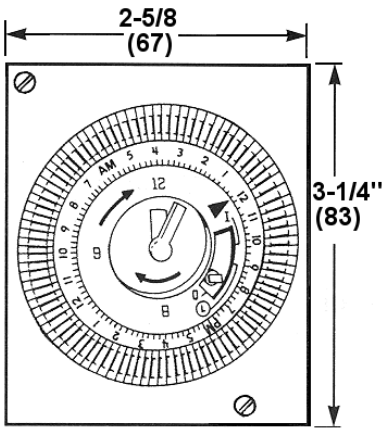
MODEL NUMBER	PART NUMBER	SIZE INCHES	VOLTAGE RATING 60 HZ 1Ø	TAGGING INFORMATION	QUANTITY
TC-1	113210	–	115-120		
AQS-1/2	113223	1/2	115-120		
AQS-3/4	113224	3/4	115-120		

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Let's Solve Water

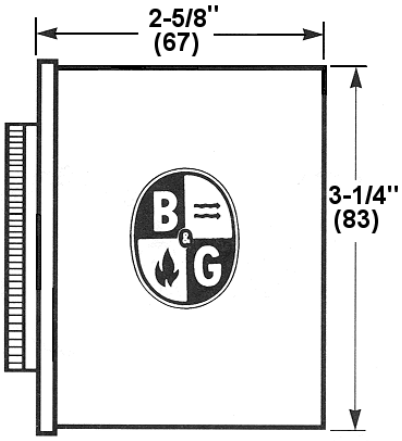
AUTOMATIC TIMER KIT AQUASTATS

A-128D

TIMER KIT DIMENSION IN INCHES (MM)



FRONT VIEW



SIDE VIEW

TYPICAL SPECIFICATIONS

Furnish and install as shown on the circulator plans and in accordance with the following specifications:

AUTOMATIC TIMER KIT:

1. The timer kit shall be UL approved.
2. The timer kit shall be installed on the connection box of any Bell & Gossett NBF/NRF/SSF system lubricated circulator.
3. The timer kit will be suitable for 115/120V, 60 HZ operation.
4. The timer shall provide automatic ON-OFF control at minimum interval of every 15 minutes. It shall also have the option of providing manual ON-OFF control.

All units shall be Xylem - Bell & Gossett Model No.: TC-1

AQUASTATS:

1. The aquastat shall be UL approved.
2. The aquastat shall be connected to the lead wires in the connection box of any Bell & Gossett NBF/NRF/SSF system lubricated circulator.
3. The aquastat will be suitable for 115/120V, 60 HZ operation.
4. The aquastat shall provide thermostat control to the circulator. It will turn OFF (open) at 120ºF (48.9ºC) and ON (closed) at 100ºF (37.8ºC) the use of insulation in installation with excessive heat or cooling may be necessary. Use of fiberglass insulation with R-values greater than 1.6 is recommended.

All units shall be Xylem - Bell & Gossett Model No.:
(Choose: AQS-1/2 or AQS-3/4).

AUTOMATIC TIMER KIT AND AQUASTAT COMBINATION:

1. The automatic timer kit and either aquastat model can be combined to provide automatic time and temperature control to any Bell & Gossett NBF/NRF/SSF circulator.
2. When the automatic timer and the aquastat are used together, the pump will only circulate water when the ON time conditions are met and when the water temperature is low enough to cause the aquastat to switch ON.

All units shall be Xylem - Bell & Gossett Model No.: TC-1 and Bell & Gossett Model No.: (Choose: AQS-1/2 or AQS-3/4).

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