

Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc. P.O. Box 16620 Little Rock, AR 72231 Phone 501-834-3320 Fax 501-834-5416

Date: 2/4/2025 Return Request: 2/14/2025 Project: City Of Sherwood Public Works (Administration Building) Supplier: Comfort Systems USA (Arkansas), Inc. Manufacturer: Various Submittal: Plumbing Piping Submittal Number: 22 10 05-01 Drawing # and Installation: Plumbing Drawings

ARCHITECT

Cromwell 1300 East 6th Street Little Rock, AR 72202 501-372-2900

GENERAL CONTRACTOR

Baldwin & Shell 1000 W. Capitol Ave. Little Rock, AR 72201 501-374-8677

Notes:

ENGINEER

Cromwell 1300 East 6th Street Little Rock, AR 72202 501-372-2900

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc. 9924 Landers Rd. N. Little Rock, AR 72117 501-834-3320

CSUSA PROJECT NO. 24-6084 sean@comfortar.com

> 9924 Landers Rd. No. Little Rock, AR 72117

		Pipe Valve & Fitting Schedule - City of Sherv	vood (Administration Bldg.)	
System	Spec Section	Pipe	Fittings	Joint
Sanitary Sewer - Below Grade	22 10 05, 2.02	Schedule 40 PVC DWV; ASTM D2655	PVC DWV; ASTM D2655/ASTM D3311	Solvent Weld (Glue & Primer); ASTM D2564
Sanitary Sewer - Above Grade	22 10 05, 2.03	Schedule 40 PVC DWV; ASTM D2655	PVC DWV; ASTM D2655/ASTM D3311	Solvent Weld (Glue & Primer); ASTM D2564
Domestic Water - Below Grade	22 10 05, 2.05	Type K Hard Copper; ASTM B42	Wrought Copper; ASME B.16.22	Silfos; AWS A5.8 BCuP
Domestic Water - Above Grade	22 10 05, 2.06	Type L Hard Copper; ASTM B88	Wrought Copper; ASME B.16.22	Lead-Free Solder; ASTM B32
Natural Gas - Below Grade	22 10 05, 2.08	Schedule 40 Steel; ASTM A53/A53M	Wrought Steel; ASTM A234/A234M	Welded
Natural Gas - Above Grade	22 10 05, 2.09	Schedule 40 Steel; ASTM A53/A53M	Wrought Steel; ASTM A234/A234M & Malleable Irc	Welded/Threaded
Condensate Drain - Below Grade	22 10 05, 2.10	Schedule 40 PVC DWV; ASTM D2655	PVC DWV; ASTM D2655/ASTM D3311	Solvent Weld (Glue & Primer); ASTM D2564
Condensate Drain - Above Grade	22 10 05, 2.11	Copper DWV; ASTM B306	Wrought Copper; ASME B16.29	Lead-Free Solder; ASTM B32



Lead-Free Bronze Ball Valves

AHEAD OF THE FLOW

Features: Silicon Performance Bronze[®] Alloy • Two-Piece Body • Full Port • Blowout-Proof Stem

Approvals: MSS-SP110/145 • IAPMO/ANSI Z1157 • ASME A112.4.14/CSA B125.14 • NSF/ANSI/CAN 61/372-8 Commercial Hot 180° F • ICC-ES PMG

Size range: 1/4" - 3"

NIBCO

Pressure rating: 600 PSI non-shock cold working pressure Maximum pressure / temperature: 100 PSI at 300° F

Lead-free markings: Double oval in body casting, white handle and blue hang tag

		MATERIAL LIST
PART		SPECIFICATION
1.	Handle Nut	Zinc Plated Steel
2.	Stem	Silicon Bronze ASTM B371 Alloy C69300
3.	Pack Gland	Brass ASTM B16 Alloy C36000
4.	Packing, Stem	Virgin PTFE
5.	Washer, Thrust	Reinforced PTFE
6.	Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
7.	End Piece	Silicon Bronze ASTM B584 Alloy C87600
8.	Seat Ring (2)	Reinforced PTFE
0	Pall	DZR Brass SAE J461 C46500 (1/4"-1")
9.	Ddll	Stainless Steel ASTM A276 S31600 or ASTM A351CF8M (11/4"-3")
10.	Body	Silicon Bronze ASTM B584 Alloy C87600

T-585-80-LF NPT x NPT $\widehat{}$

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DIMENSIONS—WEIGHTS—QUANTITIES

								Dime	nsion	S										
		T-585	-80-LF	S-585	-80-LF							T-585	-80-LF	S-585	-80-LF					
S	ZE		A		4		В		C		D		E		E	T-585	-80-LF	S-585	-80-LF	Master
In.	mm.	In.	mm.	In.	mm.	ln.	mm.	ln.	mm.	ln.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.	Ctn. Qty.
1⁄4	8	1.78	45	1.83	46	3.96	101	1.86	47	0.31	8	1.00	25	1.21	31	0.43	0.19	0.40	0.18	24
3/8	10	1.79	45	1.97	50	3.96	101	1.85	47	0.38	10	1.80	46	1.21	31	0.44	0.20	0.41	0.19	24
1/2	15	2.23	57	2.4	61	3.96	101	1.96	50	0.5	13	1.16	29	1.40	36	0.65	0.30	0.56	0.25	80
3⁄4	20	2.78	71	3.16	80	4.76	121	2.28	58	0.75	19	1.68	43	1.66	42	1.20	0.55	1.02	0.46	60
1	25	3.34	85	3.99	101	4.76	121	2.48	63	1	25	2.00	51	2.17	55	1.63	0.74	1.50	0.68	40
1¼	32	3.75	95	4.13	105	6.75	171	3.10	79	1.25	32	2.39	61	2.19	56	2.87	1.30	2.41	1.09	20
1½	40	4.26	108	4.97	126	6.75	171	3.32	84	1.5	38	2.89	73	2.79	71	3.83	1.74	3.62	1.64	10
2	50	4.80	122	6.02	153	6.75	171	3.56	90	2	51	3.40	86	3.34	85	5.57	2.53	5.54	2.51	6
21/2	65	6.00	152	7.21	183	8.06	205	4.40	112	2.50	64	4.12	105	4.27	108	13.70	6.21	12.80	5.80	2
3	76	6.5	165	8	202	8.06	205	4.65	118	2.95	75	4.46	113	4.62	117	14.30	6.49	12.50	5.67	2

Handle Options:

- Stainless Steel Lever •
- NIB-Seal® •
- NIB-Seal[®] Locking Lever .
- Locking Lever •
- Stainless Steel Locking Lever
- Memory Stop
- . Extended Lever w/ Memory Stop •
 - Round
- Wing
- Horizontal and Vertical Chain

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.





T-585-80-LF Threaded



NSE/ANSI/CAN 61 & 373





IAPMO/ANSI Z1157 ASMF A112.4.14



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Y-Pattern • Renewable Seat and Disc Approvals: Conforms to MSS SP-139 • NSF/ANSI-61-8 Commercial Hot 180°F (includes annex F and G) and NSF/ANSI-372

Lead-Free Bronze Check Valves

Features: Silicon Performance Bronze® Alloy • Horizontal Swing • Regrinding Type •

Size Range: 1/4" - 2"

NIBC

Pressure Rating: 200 PSI Non-Shock Cold Working Pressure Maximum Pressure / Temperature: 100 PSI at 300° F

Lead-free marking: Double oval in body casting

AHEAD OF THE FLOW

MATERIAL LIST								
PART	SPECIFICATION							
1. Hinge Pin	316SS or 304SS							
2. Hinge Pin Plug	Silicon Bronze ASTM B283 Alloy C69300							
3. Bonnet	Silicon Bronze ASTM B584 Alloy C87850							
4. Nut (2)	316SS or 304SS							
5. Disc Hanger	Silicon Bronze ASTM B584 Alloy C87850 or MPIF SS-316NI-25							
6. Seat Disc	PTFE							
7. Seat Disc Washer *	304SS or 316SS							
8. Disc Holder	Silicon Bronze ASTM B283 Alloy C69300							
9. Body	Silicon Bronze ASTM B584 Alloy C87850							
* Sizes 3/" 1" 11/" 11/" and 2" only								

izes ¾", 1", 1¼", 1½" and 2" only.

DIMENSIONS—WEIGHTS—QUANTITIES

SI	ZE		A		B		C		D	E		F	:	(3	T-413	-Y-LF	Master
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Ctn Qty
1/4	8	2.12	53.85	1.31	33.27	1.37	34.79	0.67	17	1.57	40	1.401	27	0.26	7	0.508	0.23	50
3/8	10	2.12	53.85	1.31	33.27	1.31	33.27	0.67	17	1.40	36	1.401	27	0.35	9	0.478	0.22	50
1/2	15	2.44	62	1.66	42	2.31	59	0.81	21	1.61	41	1.401	33	0.42	11	0.55	0.25	50
3/4	20	2.9	74	1.88	48	2.67	68	1.04	26	2.06	52	1.702	40	0.42	11	0.90	0.41	50
1	25	3.56	90	2.27	58	3.29	84	1.26	32	2.44	62	1.953	52	0.55	14	1.46	0.66	30
1-1/4	32	4.18	106	2.73	69	3.93	100	1.59	40	3.00	76	2.179	60	0.59	15	2.17	0.99	20
1-1/2	40	4.48	114	3.08	78	4.44	113	1.86	47	3.39	86	2.430	70	0.57	13	2.95	1.34	10
2	50	5.29	134	3.84	98	5.48	139	2.29	58	3.74	95	3.067	83	0.76	19	4.79	2.17	10

	SI	ZE		Α		В	(C)	E		F		(3	S-413	-Y-LF	Master
	ln.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Ctn Qty.
	1/4	8	2.12	53.85	1.31	33.27	1.37	34.79	0.67	17	1.57	40	1.401	27	0.26	7	0.508	0.23	50
	3/8	10	2.12	53.85	1.31	33.27	1.31	33.27	0.67	17	1.40	36	1.401	27	0.35	9	0.478	0.22	50
	1/2	15	2.52	64	1.540	42	1.940	49	0.54	14	1.52	39	1.416	20	0.50	13	0.55	0.25	50
	3/4	20	3.34	85	1.861	48	2.410	61	0.78	20	1.84	47	1.717	28	0.75	19	0.88	0.40	50
	1	25	4.06	103	2.206	29	2.880	73	1.02	26	2.25	57	1.947	34	0.91	23	1.48	0.67	30
1	-1/4	32	4.69	119	2.737	38	3.520	89	1.26	32	2.75	70	2.178	40	0.97	25	2.22	1.01	20
1	-1/2	40	5.28	134	3.030	44	3.950	100	1.51	38	3.09	78	2.429	47	1.09	28	3.00	1.36	10
_	2	50	6.44	164	3.640	98	4.863	123	1.98	50	3.74	95	3.073	62	1.34	34	4.87	2.21	10

NIBCO check valves may be installed in both horizontal and vertical lines with upward flow or in any intermediate position. They will operate satisfactorily in a declining plane (no more than 15°). Install check valves as far from pump discharge or line direction change as possible and at a minimum length of 5 times the pipe diameter.

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.

Do not use for reciprocating air compressor service.

LEAD-FREE: Weighted average lead content ≤ 0.25%

6 T-413-Y-LF NPT x NPT

S-413-Y-LF Solder













Threaded









Lead-Free Bronze Gate Valves

Features: Silicon Performance Bronze[®] Alloy • Screw-In Bonnet • Non-Rising Stem

Approvals: Conforms to MSS SP-139 • Solid Wedge • NSF/ANSI-61-8 Commercial Hot 180°F (includes annex F and G) and NSF/ANSI-372

Size range: 1/4" - 3"

Pressure rating: 300 PSI non-shock cold working pressure Maximum pressure / temperature: 100 PSI at 300° F

Lead-free markings: Double oval in body casting, white handle and blue hang tag

	MATERIAL LIST							
	PART	SPECIFICATION						
1.	Handwheel Nut	300 Series Stainless Steel						
2.	Identification Plate	Aluminum						
3.	Handwheel	Malleable Iron ASTM A47 (T-113)						
4.	Stem	ASTM B99 Alloy C65100						
5.	Packing Nut	Bronze ASTM B62 or ASTM B584 Alloy C84400 or Brass ASTM B16						
6.	Packing Gland	Bronze ASTM B62 or ASTM B584 Alloy C84400 or Brass ASTM B16						
7.	Packing	Aramid Fibers with Graphite						
8.	Stuffing Box	Silicon Bronze ASTM B584 Alloy C87850						
9.	Bonnet	Silicon Bronze ASTM B584 Alloy C87850						
10.	Body	Silicon Bronze ASTM B584 Alloy C87850						
11.	Wedge	Silicon Bronze ASTM B584 Alloy C87850						



T-113-LF Threaded

DIMENSIONS—WEIGHTS—QUANTITIES

SI	ZE		A	E	3	(;	I)		Ξ		F		H	T-11	3-LF	Master
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Ctn Qty.
1/4†	8	1.68	43	3.44	87	0.88	22	3.06	78	3.95	100	0.4	10	1.95	50	0.70	0.31	50
3/8†	10	1.68	43	3.44	87	0.84	21	3.95	100	3.95	100	0.42	11	1.95	50	0.67	0.30	50
1/2†	15	1.94	49	3.66	93	0.88	22	4.24	108	4.24	108	0.54	14	1.95	50	0.78	0.35	50
3/4	20	2.06	52	3.94	100	0.92	23	4.64	118	4.64	118	0.57	14	1.95	50	1.00	0.48	50
1	25	2.44	62	4.62	117	1.04	26	5.52	140	5.52	140	0.7	18	2.56	65	1.73	0.78	30
1-1/4	32	2.62	67	5.19	132	1.21	31	6.25	159	6.25	159	0.7	18	2.56	65	2.28	1.04	20
1-1/2	40	2.88	73	6.3	160	1.38	35	7.5	191	7.5	191	0.75	19	3.55	90	3.33	1.51	10
2	50	3.06	78	7.09	180	1.48	38	8.59	218	8.59	218	0.79	20	3.55	90	4.68	2.13	10
2-1/2	65	4.12	105	8.88	226	1.84	47	10.69	272	10.69	272	1.14	29	3.55	90	9.46	4.29	5
3	80	4.5	114	10.24	260	2.1	53	12.5	318	12.5	318	1.2	30	4.23	107	13.70	6.20	4

SI	ZE		A	E	3	(0		D		E		F		н	S-11	3-LF	Master
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Ctn Qty.
1/2†	15	1.76	45	3.66	93	0.75	19	3.26	83	4.16	106	0.5	13	2.08	53	0.69	0.29	50
3/4	20	2.38	60	3.84	98	0.88	22	3.7	94	4.53	115	0.75	19	2.08	53	0.94	0.43	50
1	25	2.82	72	4.66	118	1	25	4.57	116	5.5	140	0.91	23	2.64	67	1.50	0.68	30
1-1/4	32	3.12	79	5.01	127	1.18	30	5.16	131	6.05	154	0.97	25	2.8	71	2.14	0.97	20
1-1/2	40	3.42	87	6.2	157	1.24	31	6	152	7.37	187	1.09	28	3.83	97	3.01	1.37	10
2	50	4	102	7.06	179	1.31	33	7.24	184	8.52	216	1.34	34	4.69	119	4.40	1.99	10

†No packing gland, packing only in this size.

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.



NSF/ANSI 61 NSF/ANSI 372





S-113-LF Solder







S-113-LF C x C

LEAD-FREE: Weighted average lead content $\leq 0.25\%$

Bronze Ball Valves

Two-Piece Body • Full Port • Bronze Trim • Blowout-Proof Stem

600 PSI/41.4 bar non-shock cold working pressure 150 PSI/10.3 bar saturated steam*

CONFORMS TO MSS SP-110

MATERIAL LIST

	PART	SPECIFICATION
1.	Handle Nut	Zinc Plated Steel
2.	Handle	Zinc Plated Steel Clear Chromate Plastisol Coated
3.	Threaded Pack Gland	Brass ASTM B 16 Alloy C36000
4.	Packing	PTFE
5.	Stem	Silicon Bronze ASTM B 371 Alloy C69300 or ASTM B 99 Alloy C65100
6.	Thrust Washer	Reinforced PTFE
7.	Ball	Brass ASTM B 124 Alloy C37700 or ASTM B16 Alloy C36000 EACH with Hard Chrome Plate
8.	Seat Ring (2)	Reinforced PTFE
9.	Body	Cast Red Bronze ASTM B 584 Alloy C84400
10.	Body End Piece	Cast Red Bronze ASTM B 584 Alloy C84400









DIMENSIONS—WEIGHTS—QUANTITIES

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								DIIIIC	5113101	13									
			<u>T-58</u>	5-70	<u>S-58</u>	<u>85-70</u>			<u>T-58</u>	35-70	<u>S-58</u>	5-70							
	Si	ze		A		Α	Ē	3		C		C	[)	<u>T-58</u>	5-70	<u>S-58</u>	<u> 35-70</u>	Master
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.	Lbs.	Kg.	<u>Ctn. Uty</u>
	1⁄4	8	2.00	51	1.75	44	1.75	44	5.00	127	4.75	121	.38	10	.45	.21	.42	.19	100
	3⁄8	10	2.00	51	1.84	47	1.75	44	5.00	127	4.81	122	.38	10	.45	.21	.42	.19	100
	1/2	15	2.44	62	2.56	65	1.88	48	5.19	132	5.25	133	.50	13	.64	.29	.60	.27	100
	3⁄4	20	2.94	75	3.25	82	2.25	57	6.25	159	6.25	159	.75	19	1.33	.60	1.27	.58	50
	1	25	3.34	85	3.75	95	2.38	60	6.44	164	6.63	168	1.00	25	1.79	.81	1.72	.78	40
	1 1⁄4	32	4.19	106	5.06	128	3.00	76	6.75	171	7.19	183	1.25	32	3.12	1.41	3.18	1.44	20
	11⁄2	40	4.72	120	5.99	151	3.16	80	9.06	230	9.69	246	1.50	38	4.78	2.17	5.12	2.32	10
	2	50	5.16	131	6.72	170	3.50	89	9.25	235	10.06	256	2.00	51	6.68	3.03	7.10	3.22	8
2														1.1				-	

Note: solder end is designed to be soft-soldered into lines using solders with the melting point not exceeding 500°F. Higher temperature solders will damage the seat material. See installation sheet packaged with valves.

*For detailed operating pressure, refer to pressure temperature chart on page 41.

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.

*Weighted average lead content $\leq 0.25\%$





Revised 7/19/2018

Dezincification Resistant

Visit our website for the most current information.

For Liquid and Steam Service

Job Name	Contractor
Job Location	Approval
Engineer	Contractor's P.O. No.
Approval	Representative



Series LF777SI, LFS777SI Wye-Pattern, Lead Free Cast Strainers NSF Certified to NSF 61 Annex G

Sizes: 3/8" - 3" (10-75mm)

Series LF777SI, LFS777SI Wye-Pattern, Lead Free* cast strainers are designed to protect plumbing system components from dirt, rust and other damaging debris. The Series LF777SI and LFS777SI feature Lead Free* construction to comply with Lead Free* installation requirements.

Features

- NSF 61 Annex G certified
- Lead Free* cast copper silicon alloy body and cap
- Wye-pattern
- Tapped retainer cap
- Closure plug
- Special flared screen opening on upstream end to provide unrestricted flow through the strainer

Models

LF777SI – ³[®] – 3[®] (10 – 80mm) threaded connections

LFS777SI –½" – 2" (15 – 50mm) solder connections†

Specifications

A wye-pattern, Lead Free* cast strainer to be installed as indicated on the plans. The strainer must have a tapped retainer cap and closure plug. Strainer shall be rated to 400psi (27.6 bar) WOG; 125psi (8.6 bar) WSP for sizes 3%"-2" (10-50mm) and 300psi (20.7 bar) @ 210°F (99°C); 125psi (8.6 bar) WSP @ 353°F (178°C) for sizes 2½"-3" (65-80mm). The strainer shall be constructed using Lead Free* cast copper silicon alloy. Lead Free* strainers shall comply with state codes and standards, where applicable, requiring reduced lead content. Strainer shall be a Watts Series LF777SI (threaded ends) or LFS777SI (solder ends).

Materials

Body:	Lead Free* cast copper silicon alloy
Retainer Cap:	Lead Free* cast copper silicon alloy
Plug	Lead Free* brass
Gasket:	NBR
Standard Screen:	#20 mesh, 304 stainless steel



Pressure – Temperature

Maximum Working Pressure:

³/8"-2" (10-50mm)

400psi (27.6 bar) WOG @ 210°F (99°C)

125psi (8.6 bar) WSP @ 353°F (178°C)

21/2"-3" (65-80mm)

300psi (20.7 bar) WOG @ 210°F (99°C) 125psi (8.6 bar) WSP @ 353°F (178°C)

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

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.



Performance Data



Flow curves show flows (gpm) and pressure drop (psig) through Watts Series 777SI, S777SI using standard 20 mesh screen.

Dimensions – Weights

LF77	77SI								
SIZE	(DN)		WE	GHT					
			A	I	3		С		
in.	mm	in.	тт	in.	тт	in.	тт	lbs.	kgs.
3⁄8	10	23/8	60	1 5⁄16	33	1⁄4	6	0.4	0.18
1/2	15	23/4	70	13/8	35	1⁄4	6	0.5	0.23
3⁄4	20	3 ³ ⁄16	81	15/8	42	1⁄4	6	0.6	0.27
1	25	33⁄4	95	21/8	54	1/2	13	1.1	0.50
11/4	32	47⁄16	113	2 ¹ / ₂	64	1/2	13	1.9	0.86
1 ½	40	47⁄8	124	3	76	3⁄4	19	2.4	1.09
2	50	5 ¹⁵ ⁄16	151	3 %16	91	1	25	4.4	2.00
2 ¹ / ₂	65	9 ¹ / ₁₆	230	57/8	149	1/2	13	9.8	4.44
3	80	10 ³ ⁄16	259	61⁄4	159	1/2	13	13.2	5.99

LFS7	777SI									
SIZE	(DN)		DIMENSIONS							
			A	E	3		С			
in.	тт	in.	тт	in.	тт	in.	тт	lbs.	kgs.	
1/2	15	23/4	70	13/8	35	1⁄4	6	0.4	0.18	
3⁄4	20	33/8	86	15⁄8	42	1⁄4	6	0.6	0.27	
1	25	33⁄4	95	21/8	54	1/2	13	0.9	0.41	
11/4	32	4%16	116	2 ½	64	1/2	13	1.5	0.68	
11/2	40	55⁄16	135	3	76	3⁄4	19	1.9	0.86	
2	50	61/8	156	3 %16	91	1	25	3.3	1.50	







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DRAWING NO. AL 731745

BODY PRESSURE & TEMPERATURE RATINGS – NON SHOCK						
NOM. RATING MEDIA 2" to 12" 14" and UP						
250# R.F.& D.	STEAM	250 PSI @ 450°F	200 PSI @ 406°F			
(EX. HEAVY FLANGE)	W.O.G.	500 PSI @ 150°F	300 PSI @ 150°F			

PARTS LIST					
ITEM	DESCRIPTION	MATERIAL			
1	BODY	CAST IRON (ASTM A 126, CLASS B)			
2	SCREEN	STAINLESS STEEL (304)			
3	GASKET	COMPOSITION			
4	COVER	CAST IRON (ASTM A 126, CLASS B)			
5	HEX HEAD CAP SCREWS	STEEL			

Optional: Blow-off Plug, Malleable Iron

	SI7E	DIMENSIONS (in)		COVER		WEIGHT		
Product Number [†]	JILL	Α	В	E	No. of Bolts	Size of Bolts	(lbs)	
23RFY-CI062P34-FB	2	9-7/8	6-1/4	1/2	4	5/8-11 x 1-1/2	33	
21/23RFY-CI-062P34-FB	2-1/2	11-1/4	7-3/4	1	4	5/8-11 x 1-1/2	49	
33RFY-CI06234-FB	3	12-1/2	8-1/4	1	4	5/8-11 x 1-1/2	57	
43RFY-CI062P34-FB	4	14-5/8	10-1/8	1-1/4	8	5/8-11 x 1-3/4	106	
53RFY-CI125P34-FB	5	18	12-1/2	1-1/4	8	3/4-10 x 2	157	
63RFY-CI125P34-FB	6	20-3/8	14-3/8	1-1/2	8	3/4-10 x 2	215	
83RFY-CI125P34-FB	8	23-7/8	17-1/2	1-1/2	8	3/4-10 x 2-1/4	315	
103RFY-CI125P34-FB	10	29-5/8	21	2	12	7/8-9 x 2-1/4	525	
123RFY-CI125P34-FB	12	33-3/4	23-5/8	2	12	7/8-9 x 2-1/2	700	
143RFY-CI125P34-FB	14	38	27-1/8	2	-	-	1400	
163RFY-CI125P34-FB	16	42-3/8	29-1/4	2	-	-	1850	
See "Style A Product Number Configuration" for additional options.								



SI7E		SCREEN PERFORATION					
SIZE	SCREEN	FOR STEAM	OPEN	FOR LIQUID	OPEN		
in	GAGE	in	AREA	in	AREA		
2 to 4	28	3/64	33%	1/16	30%		
5 to 10	24	3/64	33%	1/8	43%		
12	24	1/16	30%	1/8	43%		
14 & UP	20	1/8	43%	1/8	43%		

Standard screens supplied are for **liquid service**, unless otherwise specified. Options: Other perforations, meshes, and screen materials are available.

		DRAWING NO.
K/KEGK	LEY	AL 731745
3400 CLEVELAND SKO		
DIMENSIONAL ASSI	PART NO.	
2" to 16" 250# Flg S	SCALE: NTS	
	DATE: 12/28/2016	
MAT'L: Cast Iron	DR. BY DSF	



SUBMITTAL DATA SHEET

Iron Body Gas Plug Valves less Lockwing –559 Series

FNPT x FNPT



SIZE	А	В	С	D	E	F	G
1/2	3.14	3.16	1.66	. 59	1.62	1/2	1/2
3/4	3.14	3.16	1.66	. 59	1.62	3/4	3/4
1	3.36	3.53	1.86	. 59	1.94	1	1
1 1/4	3.88	4.38	2.38	. 65	2.31	1 1/4	1 1/4
1 1/2	4.66	4,99	2.66	. 62	2.62	1 1/2	1 1/2
2	5.60	5.57	2.96	. 59	3.D0	2	2





SUBMITTAL INFORMATION

- Manufactured in compliance with ANSI/ASME B16.33 (latest revision)
- Brass castings conform to ASTM B584, UNS C83600 or C84400 (latest revision)
- Iron castings conform to ASTM A126 Class B Iron
- Optional Armorgalv ® coating per ASTM A1059 (latest revision)
- Rated for 175 PSIG natural, manufactured, or LP gas pressure
- Valve can be re-lubricated while in service and under pressure
- Plug rotates 360°
- Tamper-resistant design prevents disassembly with normal household tools
- Port opening sized to accommodate the best-known stop changers



A.Y. McDonald Mfg. Co. 4800 Chavenelle Rd Dubuque, IA 52002 **Toll Free:** 1-800-292-2737 sales@aymcdonald.com <u>aymcdonald.com</u>

A.Y. McDonald considers the information on this assembly drawing correct when published. Item and option availability, including specifications, are subject to change without notice.

Submitted by:



Specifications Materials: Zinc Plated Steel Part Numbers:

05-470-00 05-471-00

05-472-00

Use With: 05-475-00

Setting Tool 05-474-00

Setting Tool 05-476-00

Setting Tool

³/8"

¹/₂"

³/8"

¹/2"

³/8", mini

³/8", mini

Drop-in Anchors Fig. 05-470



Description

FPPI Drop–In Anchors and Mini Drop–In Anchors are UL listed in accordance with NFPA requirements. Zinc plating provides corrosion resistance. Follow NFPA requirements and installation instructions for proper use.

Installation

STEP 1: Using a masonry bit suitable for the material being drilled, drill an appropriate diameter hole at the correct depth according to the table below.

Anchor Size	Drill Size	Minimum Hole Depth
³/₃" Standard	¹ / ₂ "	1 ⁹ / ₁₆ "
¹ / ₂ " Standard	⁵ /8"	2"
³/8" Mini	1/2"	³ /4"

STEP 2: Insert the anchor into the hole until the edge of the anchor is flush* with the surface of the material the anchor is being installed in. *The Anchor may be installed at a greater depth by drilling the hole to the desired depth and threading the correct size bolt for the size anchor being installed and tapping the anchor into the drilled hole.

STEP 3: After inserting the anchor to the desired depth, insert the correct size setting tool into the anchor and drive the plug into the anchor until the shoulder of the setting tool meets the edge of the anchor. The anchor is now installed and ready to be used.

Note: It is recommended that when used in cinder block, that the anchor be placed between the cells.

Average Pullout Values For 4000psi Concrete						
Part Number	Bolt Size	Pullout Value				
Standard Drop–In						
05-470-00	³ /8"	5,530 lbs				
05-471-00	¹ / ₂ "	8,080 lbs				
Mini Drop-In						
05-472-00	³ /8"	1,980 lbs				



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	

Universal C-type Clamp (Standard Throat) Fig. 92 (Formerly Afcon Fig. 100)



Dimensions (In) - Load (Lbs) - Torque (In-Lbs) - Weight (Lbs)

Rod Size A	Set	Torque	Max Loads ■		Weight	С	D	F	F	C	ц
	Size	Value	Тор	Bottom	weight	U	U	Ē	Г	0	п
In.	In.	InLbs.	Lbs.	Lbs.	Lbs.	In.	ln.	ln.	In.	ln.	ln.
3/8	3/8	60	500	250	0.34	1 ⁵ / ₁₆	1 % ₁₆	^{9/} 16	¹³ / ₁₆	3/8	1/2
1/2	1/2	125	950	760	0.63	1 3/8	1 ¹³ / ₁₆	1/2	1 1/16	7/16	23/32

Note:

Maximum temperature of 450° F

Engineered Solutions

Material Specifications

Size Range

3/8" and 1/2

Material

Ductile iron, hardened steel cup point set screw and locknut.

Finish

Plain

Zinc Plated (Hot-Dip Galvanized optional)

Service

Recommended for use under roof installations with bar joist type construction, or for attachment to the top or bottom flange of structural shapes where the vertical hanger rod is required to be offset from the edge of the flange and where the thickness of joist or flange does not exceed 3/4".

Approvals

Complies with Federal Specification A-A-1192A (Type 19 & 23), WW-H-171-E (Type 23), ANSI/MSS SP-69 and MSS SP-58 (Type 19 & 23).

UL, ULC Listed and FM Approved.

How to size

Size of clamp is determined by size of rod to be used.

Installation

Follow recommended set screw torque values per MSS-SP-69.

Features

- They may be attached to horizontal flanges of structural members in either the top beam or bottom beam positions.
- Secured in place by a cup-pointed Set Screw tightened against the flange. A Jam Nut is provided for tightening the Set Screw against the Body Casting.
- Thru tapping of the body casting permits extended adjustment of the threaded rod.
- Can be used with Fig 89X retaining clip for seismic applications.

Ordering

Specify rod size, figure number, name of clamp and finish.

Available with oversized tapped rod hole for Hot Dip Galvanized finish.



PROJECT INFORMATION	APPROVAL STAMP
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Engineer:	Remarks:
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Notes 1:	
Notes 2:	

Wide Throat Top Beam C–Clamp Fig. 94





Features:

- Provides clamping to bar joists which are directly under roof installations.
- Provides for vertical hanger rod installed offset from the edge of the beam flange.
- Ductile iron body assures full thread engagement of rod.



Material Specifications

Size Range ⁵/8" and ³/4"

Material

Ductile iron body, hardened steel cup point set screw and locknut.

Finish

Plain or

Zinc Plated (Hot-Dip Galvanized optional)

Service

Recommended for use under roof installations with bar joist type construction, or for attachment to the top flange of structural shapes where the vertical hanger rod is required to be offset from the edge of the flange and where the thickness of joists or flange does not exceed 15/16".

Approvals

Complies with Federal Specification A-A-1192A (Type 19)

WW-H-171-E (Type 19), ANSI/MSS SP-69 and MSS SP-58 (Type 19), UL Listed.

How to size

Size of clamp is determined by size of rod to be used.

Installation

Follow maximum recommended set screw torque values per MSS-SP-69.

Ordering

Specify rod size, figure number, name of clamp and finish.

Available with oversized tapped rod hole for Hot Dip Galvanized finish.



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	



Wide Throat Top Beam C–Clamp **Fig. 94**







Dimensions (In) • Load (Lbs) • Torque (In-Lbs) • Weight (Lbs)

Rod Size A	Set Screw Size	Torque Value	Max Loads*	Weight	В	С	D	E	F
5/8	3/8	60	1,200	0.66	13⁄4	21/4	2.	11⁄4	1
3/4	3/8	60	1,600	0.83	17/8	2 ³ /8	3/4	13/8	1 ³ / ₁₆

Note:

* Maximum temperature of 450° F



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Building connections that last "



Copper Tubing Riser Clamp Fig. CT-121





Size Range: ½" through 4" Material: Carbon steel Finish: Copper plated

Service: Recommended for support and steadying of copper tube risers, either insulated or non-insulated. This product is not intended for use with hanger rods.

Approvals: Complies with Federal Specification A-A-1192A (Type 8), WW-H-171-E (Type 8), ANSI/MSS SP-69 and MSS SP-58 (Type 8).

Service: For support and steadying of copper tubing risers.

Installation: Clamp is fitted and bolted preferably below a coupling or fitting on the tubing. Do not over tighten bolts.

Features: Rounded ears provide greater safety for personnel.

Ordering: Specify tube size, figure number, and name.



Fig. CT-121: Dimensions (in) • Loads (lbs) • Torque (ft-lbs) • Weight (lbs)

Tube Size	Max Load	Weight	L	G Width	В	С	Bolt Size	Torque Values
1/2	75	0.52	61/2	1	77/		57	11
3/4	/5	0.56	7	-	278		716	11
1	120	0.94	9 ³ / ₈		31/8	3/8		
11/4		0.98	95/8		31/2			
11/2	150	1.50	10		37/8			21
2		1.50	10 ³ /8	11⁄4	41/4			
2 ¹ / ₂		1.70	11 ¹³ /16		4 ³ / ₄			
3	300	1.80	1111/2		5½	1/2		
31/2		1.90	12		61/2			
4		2.60	13	1	7		1/2	46

Note: Minimum loads per MSS SP only applicable to 11/4" and up.

PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	



Extension Pipe or Riser Clamp **Fig. 261** (Formerly Afcon Fig. 400)



Size Range: ³/₄" through 24"

Material: Carbon steel

Finish:Plain,Hot-Dip Galvanized with Zinc PlatedBolts & Nuts,Epoxy Coated orPainted.

Service: For support of stationary steel pipe risers, cast iron pipe or conduit. This product is not intended for use with hanger rods. For this application refer to Fig. 40 Riser Clamp.

Maximum Temperature: Plain 650° F, Galvanized and Epoxy 450° F

Approvals: Complies with Federal Specification A-A-1192A (Type 8) WW-H-171-E (Type 8), ANSI/MSS SP-69 and MSS SP-58 (Type 8). UL, ULC Listed (Sizes 1½" - 8").

Installation: Clamp is fitted and bolted preferably below a coupling, hub or welded lugs on steel pipe. Bolt torques should be per industry standards (see page 248). Clamp is designed for standard steel pipe O.D. and this must be considered in sizing the riser for other types of piping.

Ordering: Specify pipe size, figure number, name and finish.

Note: Refer to Technical Data Section of the Pipe Hanger Catalog for cast iron soil pipe data.

Fig. 261: Dimensions (in) • Loads (lbs) • Torque (ft-lbs) • Weight (lbs)

Pipe Size	Max Load	Weight	L	G Width	В	С	Bolt Diameter	Torque Values	
¹ /2 & ³ /4	220	1.1	07/		27/8				
1	220	1.1	878		31/8	37	37	71	
11/4	250	1.6	10	-	31/2	-78	-78	21	
11/2	250	1.6	101/		37/8				
2	300	1.7	1074	C Width	41/4				
2 ¹ / ₂	400	1.9	111/4		4 ³ / ₄	1/2	7/16	32	
3	500	1.9	113/8	/s	51/2				
31/2	600	2.3	177/		61/2			46	
4	750	2.4	1278		7	17	17		
5	1,500	3.6	133/4	1½	8	72	72		
6	1,600	4.0	143/4		9				
8	2 5 0 0	7.6	18 ¹ / ₂		12				
10	2,500	11.1	201/4	$ \begin{array}{c} $	133/4	57	57	10.0	
12	2,700	16.5	22 ³ /4	2	15 ³ /4	78	5/8	100	
14	2,700	17.7	24		171/4				
16		30.4	26		19 ³ / ₄				
18	2,900	33.8	28	2 ¹ / ₂	213/4	3/4	3/4	150	
20		35.0	30	_	233/4				
24	3,200	82.0	363/4	3	30	1	7/8	190	

PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	



Adjustable Clevis Hanger Fig. 260 (Formerly Afcon Fig. 371)

Size Range: 1/2" through 30"

Material: Carbon Steel

 Finish: Plain, 8" & Smaller: Zinc Plated (Hot–Dip Galvanized optional), 10" & Larger: Hot–Dip Galvanized with Zinc Plated Bolts & Nuts, or Primed, also available in Plastic or Epoxy Coated.

Service: Recommended for the suspension of stationary pipe lines.

Maximum Temperature: Plain 650° F, Galvanized and Epoxy 450° F

Approvals: Complies with Federal Specification A-A-1192A (Type 1), WW-H-171-E (Type 1), ANSI/MSS SP-69 and MSS SP-58 (Type 1). FM Approved (Sizes ¾" through 8"), UL and ULC Listed (Sizes ½" through 8").

Installation: Hanger load nut above clevis must be tightened securely to assure proper hanger performance.

Adjustment: Vertical adjustment without removing pipe may be made from ³/₈" through 5¹/₈", varying with the size of clevis. Tighten upper nut after adjustment.

Features:

- Design has yoke on outside of lower U-strap so yoke cannot slide toward center of bolt, thus bending of bolt is minimized.
- Sizes 5" and up have rod and two nuts instead of bolt and nut; thread length on clevis rod is such that the thread locks the nuts in place, and threads are not in shear plane.

Ordering:

Specify pipe size, figure number, name and finish.

Notes:

- Punched forming holes may be present on certain sizes of this clevis hanger. These holes are solely for the purpose of manufacturing, and do not effect the structural integrity or load carrying capacities of these hangers.
- For insulated line options without shields, see Figures 260 ISS and Figure 300. For insulated line options with shields, see Figures 167 and 168. For ductile iron pipe sizes, see Figure 590.
- Fig. 260F (Felt lined) available for use for suspension of copper (or other material) so as to prevent electrolysis between the dissimilar metals of the hanger and the pipe, tube or conduit.

Caution:

When an oversize clevis is used, a pipe spacer or multispacer should be placed over clevis bolt to ensure that the lower U-strap will not move in on the bolt.



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	



(ŲL)_{US}



Adjustable Clevis Hanger (Cont.) Fig. 260 (Formerly Afcon Fig. 371)





Pipe Size 1/2" to 3/4"

Pipe Sizes 1" and Larger

			F	ig. 260: Dim	e <mark>nsions</mark> (in)	• Loads (lbs	i) • Weight (lbs)			
Pipe Size	Max Load	Span Ft.	Weight	Rod Size A	В	С	Rod Take Out E	Adjust. F	G	H Width Lower
1/2	(10		0.34		23/16	211/	111/2			
3/4	610	7*	0.34		2	Ζ''/16	15/16			
1		1	0.35	37	25/16	3	15/8	5/8		
11/4	720		0.40	78	2 ³ / ₈	31/4	111/16		1/4	1
11/2	730	9*	0.45		2 ¹³ /16	313/16	21/8	7/8		I
2	-	10*	10* 0.50		3 ⁵ / ₁₆	41/2	25/8	11/8		
2 ¹ / ₂		11*	0.65		41/16	51/2	33/16	15/16		
3	1,350	12*	0.85	1/2	4 ³ / ₄	61/2	4 ¹ / ₁₆	15/8	³ /8	
31/2	-	13*	1.10		5 ¹ / ₁₆	71/16	4 ³ / ₁₆	1 ¹³ /16		11/
4	1 420	14*	1.51	57	5 ⁹ /16	7 ¹³ /16	41/2	111/16	37	174
5	1,430	16*	1.70	- 78	6%/16	815/16	51/2	115/16	3/8	13/16
6	1,940	17*	3.10	37	615/16	101/4	5 ³ /4	111/16	1/	17/
8	2,000	19*	4.75	- 74	8³/8	1211/16	7 ³ / ₁₆	2	72	I'/16
10	3,600	22*	8.60	7/	9 ⁷ / ₈	15 ¹ /4	87/16	21/8	57	1 ³ / ₄
12	3,800	23*	11.20	- 78 -	11 ⁹ /16	1715/16	101/8	213/16	-78	2
14	4,200	25*	12.50		12 ⁹ /16	19 ⁹ /16	1011/16	211/16	3/4	2
16	4,600	27	19.85	1	14	22	12	2 ³ / ₄	1	
18	4,800	28	22.25		15 ¹⁵ /16	24 ¹⁵ /16	1315/16	313/16	I	2.72
20	4,800	30	40.33		17 ⁹ /16	27 ⁹ /16	15 ³ / ₁₆	27/	11/4	11/4
24**	4,800	32	49.83	11/4	19 ¹³ /16	3113/16	17 ⁵ / ₁₆	578	7/8*	3
30***	6,000	33	70.18		24 ³ /16	39 ³ / ₁₆	219/16	5 ¹ / ₈	11/4	

"Span" represents the maximum recommended distance between hangers on a continuous and straight run of horizontal standard weight steel pipe filled with water. In all cases, verify that chosen location of hangers does not subject hangers to a load greater than the maximum recommended load shown above. *Indicates that span represents the maximum span for water filled pipe. **The 24" pipe size assembly includes a 1¼" SCH 40 pipe spacer over the 7%" threaded rod. ***The 30" pipe size assembly includes a 1¼" SCH 40 pipe spacer over the 1¼" threaded rod.



Pipe Hangers & Supports



Description

Anvil–Strut channels are manufactured by a series of forming dies, or rolls, which progressively cold work the strip steel into the desired channel configuration. This method produces a cross section of uniform dimensions within a tolerance of plus or minus 0.015", on outside dimensions.



Specifications

Size:

1⁵/8" X 1⁵/8" (41.3 x 41.3mm) 12 Gauge Channel • wt./100 ft. – 194 lbs.

Materials:

Carbon Steel Stainless Steel Aluminum

Finishes

Pre-Galvanized Hot Dip Galvanized - Post Fabrication Supr-Green Powder Coated Zinc Trivalent Chromium PVC



LEGEND: GR: Powder Coated Supr-Green EG: Electro-Galvanized PG: Pre-Galvanized AL: Aluminum HG: Hot Dipped Galvanized PL: Plain SS: Stainless Steel ZTC: Zinc Trivalent Chromium Stainless Steel (SS), Zinc Trivalent Chromium (ZTC) and Hot Dipped Galvanized (HG) are specialty finishes. Pricing is located in the Specialty Strut Section of the Anvil-Strut price book.



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	_
Notes 1:	_
Notes 2:	

Channel Fig. AS 200

1⁵/8" X 1⁵/8" (41.3 x 41.3mm) 12 Gauge Channel • wt./100 ft. - 194 lbs Stocked in pre-galvanized, plain, powder coated Supr-Green, zinc trivalent chromium, and hot dipped galvanized, in 10 & 20 ft. lengths. Note: Also available in Stainless Steel 304 & 316 Alloys. Other materials, finishes & lengths are available upon request.

Properties of Section

Catalog	Wt.	Wt./Ft. Area of Selection				X-X Axis						Y-Y Axis				
Number	Lbs.	Kg.	Sq. In.	Sq. CM	l in ⁴	I cm ⁴	S in ³	S cm ³	r in	r cm	l in⁴	I cm ⁴	S in ³	S cm ³	r in	r cm
AS 200	1.94	2.9	0.552	3.561	0.188	7.825	0.208	3.409	0.584	1.483	0.236	9.823	0.290	4.752	0.654	1.661

I = Moment of Inertia S = Section Modulus r = Radius of Gyration

Beam and Column Loads

		Static Beam Load (X-X Axis)						Column Loading Data			
Span or Unbraced Height	Мах		Uniform Load at Deflection			Мох	Max. Column Load Applied at C.G.				
	Allowable Uniform Load	Deflection at Uniform Load	Span/180 Deflection	Span/240 Deflection	Span/360 Deflection	Weight of Channel	Allowable Load at Slot Face	k=.65	k=.80	k=1.0	k=1.2
In	Lbs	In	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs	Lbs
12	3,480	0.01	3.480	3,480	3,480	1.9	3,850	12,240	11,940	11,480	10,960
18	2,320	0.03	2,320	2,320	2,320	2.9	3,710	11,540	10,960	10,130	9,290
24	1,740	0.06	1,740	1,740	1,740	3.9	3,530	10,690	9,850	8,740	7,710
30	1,390	0.09	1,390	1,390	1,310	4.9	3,330	9,780	8,740	7,470	6,380
36	1,160	0.13	1,160	1,160	910	5.8	3,120	8,880	7,710	6,380	5,310
42	990	0.17	990	990	670	6.8	2,910	8,020	6,800	5,470	4,430
48	870	0.23	870	770	510	7.8	2,710	7,240	6,000	4,690	3,810
60	700	0.35	660	490	330	9.7	2,340	5,910	4,690	3,630	2,960
72	580	0.51	460	340	230	11.6	2,040	4,840	3,810	2,960	2,400
84	500	0.69	340	250	170	13.6	1,800	4,040	3,200	2,480	1,980
96	430	0.90	260	190	130	15.5	1,600	3,480	2,750	2,110	1,670
108	390	1.14	200	150	100	17.5	1,440	3,050	2,400	1,820	**
120	350	1.41	160	120	80	19.4	1,290	2,700	2,110	**	**
144	290	2.03	110	90	60	23.3	1,060	2,180	1,670	**	**
168	250	2.77	80	60	40	27.2	**	1,790	**	**	**
180	230	3.18	70	50	40	29.1	**	**	**	**	**
192	220	3.61	60	50	NR	31.6	**	**	**	**	**
216	190	4.57	50	40	NR	34.9	**	**	**	**	**
240	170	5.65	40	NR	NR	38.8	**	**	**	**	**

Bearing Load may limit load ** Not recommended – KL/r exceeds 200

Notes

1. The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these

capacities to arrive at the net beam capacity. 2. Allowable beam loads are based on a uniformly loaded, simply supported beam. For capacities of a beam loaded at midspan

at a single point, multiply the beam capacity by 50% and deflection by 80%. 3. The above chart shows beam capacities for strut without holes. For strut with holes, multiply by the following: EH by 88%, S by 90%,

H (%/% holes) by 88%, KO by 82%. 4. Refer to the Anvil-Strut Catalog for reduction factors for unbraced lengths.



Channel Fig. AS 200

Beam and Column Loads - Metric

			Static Bean	n Load (X-X A	xis)				Column Lo	oading Data	
	Мах			Uniform Lo	ad at Deflectio	n	Max		Max. Column Lo	ad Applied at C.G	
Span or Unbraced Height	Allowable Uniform Load	Deflection at Uniform Load	Span/180 Deflection	Span/240 Deflection	Span/360 Deflection	Weight of Channel	Allowable Load at Slot Face	k=.65	k=.80	k=1.0	k=1.2
mm	Kn	mm	Kn	Kn	Kn	Kg	Kn	Kn	Kn	Kn	Kn
305	15.5	0.3	15.5	15.5	15.5	0.9	17.1	54.4	53.1	51.1	48.8
457	10.3	0.8	10.3	10.3	10.3	1.3	16.5	51.3	48.8	45.1	41.3
610	7.7	1.5	7.7	7.7	7.7	1.8	15.7	47.6	43.8	38.9	34.3
762	6.2	2.3	6.2	6.2	5.8	2.2	14.8	43.5	38.9	33.2	28.4
914	5.2	3.3	5.2	5.2	4.0	2.6	13.9	39.5	34.3	28.4	23.6
1,067	4.4	4.3	4.4	4.4	3.0	3.1	12.9	35.7	30.2	24.3	19.7
1,219	3.9	5.8	3.9	3.4	2.3	3.5	12.1	32.2	26.7	20.9	16.9
1,524	3.1	8.9	2.9	2.2	1.5	4.4	10.4	26.3	20.9	16.1	13.2
1,829	2.6	13.0	2.0	1.5	1.0	5.3	9.1	21.5	16.9	13.2	10.7
2,134	2.2	17.5	1.5	1.1	0.8	6.2	8.0	18.0	14.2	11.0	8.8
2,438	1.9	22.9	1.2	0.8	0.6	7.0	7.1	15.5	12.2	9.4	7.4
2,743	1.7	29.0	0.9	0.7	0.4	7.9	6.4	13.6	10.7	8.1	**
3,048	1.6	35.8	0.7	0.5	0.4	8.8	5.7	12.0	9.4	**	**
3,658	1.3	51.6	0.5	0.4	0.3	10.6	4.7	9.7	7.4	**	**
4,267	1.1	70.4	0.4	0.3	0.2	12.3	**	8.0	**	**	**
4,572	1.0	80.8	0.3	0.2	0.2	13.2	**	**	**	**	**
4,877	1.0	91.7	0.3	0.2	**	14.1	**	**	**	**	**
5,486	0.8	116.1	0.2	0.2	**	15.8	**	**	**	**	**
6,096	0.8	143.5	0.2	**	**	17.6	**	**	**	**	**



Channel Fig. AS 200

Materials

Carbon Steel: Channels are formed from high–quality, structural grade carbon steel which has been manufactured in accordance with ASTM A-1011–04– SS Grade 33 (hot rolled), or ASTM 366 (cold rolled), with mechanical properties of 33 ksi minimum yield and 52 ksi minimum tensile strength. The precision roll–forming process by which the channels are formed "cold works" the steel, thereby increasing its mechanical properties.

Stainless Steel: Channels are formed from chromium–nickel stainless steel sheet manufactured in accordance with ASTM A–240 specification, offered in both AISI Type 304 and 316 material to provide protection in varying corrosive conditions.

Aluminum: Extruded aluminum channel is produced from 6063–T6 alloy, and fittings are produced from 5052–H32 alloy, both in accordance with ASTM B–221 specifications. Aluminum is suitable for use in various corrosive environments.

Finishes

Pre–Galvanized: Hot dip, mill galvanized coating produced through a process of continuously passing the steel through a bath of molten zinc. This process is performed in accordance with ASTM A–653. The thickness of the zinc coating conforms with ASTM G–90 which represents a coating thickness of .90 ounces of zinc per square foot. This coating is applied to the steel master coils prior to slitting and fabrication.

Hot Dip Galvanized – Post Fabrication: The finished channel is completely immersed in a bath of molten zinc, resulting in the complete coating of all surfaces of the product, including edges and welds. Strut channels that are hot dip galvanized, have a total coating weight of 3.0 ounces of zinc per square foot in accordance with ASTM A-123 specification. This coating provides superior results in applications calling for prolonged outdoor exposure.

Supr–Green Powder Coating: Strut channels are coated after fabrication with polyester powder finish. This coating is applied using an electrostatic spray process, beginning with cleaning and phosphating, through a bonderite pretreatment process, and ending with oven curing. The resulting finish provides a high quality appearance and durability. Powder Coating is in accordance with ASTM B–117 (standard practice for operating salt spray (fog) apparatus) to 500 hours with less than 1/8" scribe creep.

Zinc Trivalent Chromium: The finished channel undergoes a multi-step process consisting of electrogalvanizing, in accordance with ASTM B-633-85, followed by an application of zinc trivalent chromium, which provides the distinctive gold coloration of the finish. All surfaces are coated because the process is performed after fabrication.

PVC: A corrosive resistant PVC (polyvinyl chloride) coating is applied over the completed strut channel. The coating process consists of surface pretreatment, followed by preheating of the part, which is then passed through a fluidized bed of vinyl plastic powder. The powder melts onto the heated channel forming a smooth coating which undergoes a final heat curing.







Description

Anvil–Strut Pipe Clamps are all manufactured to fit into the standard openings of 15/8" channel to support runs of piping where desired, to secure the pipe in place.

AS 0040D Thru AS 106P EG, 304SS, 316SS, ZTC

LEGEND:

GR: Powder Coated Supr-Green **EG**: Electro-Galvanized **PG**: Pre-Galvanized **AL**: Aluminum **HG**: Hot Dipped Galvanized **PL**: Plain SS: Stainless Steel

ZTC: Zinc Trivalent Chromium Stainless Steel (SS), Zinc Trivalent Chromium (ZTC) and Hot Dipped Galvanized (HG) are specialty finishes. Pricing is located in the Specialty Strut Section of the Anvil–Strut price book.

PROJECT INFORMATION APPROVAL STAMP Project: Approved Address: Approved as noted Contractor: Not approved Engineer: Submittal Date: Notes 1: Notes 2:

Specifications

Materials:

Clamp: 1008-1018 Carbon Steel Cushion: High Strength TPE Locknut: Nylon Insert

Service Temperature: -65°F to 275°F

Approvals:

UL 2043 Fire Test for Heat and Visible Smoke Release 25/50 Flame Spread/Smoke Development Index











Tube Series

Part Number	0.D. Size	А	В	С	Std Pkg	Wt/100 pcs
AS 0040D	1/4"	0.25	0.62	0.98	25	10
AS 0060DN	3/8"	0.37	0.82	1.13	25	11
AS 0080DN	1/2"	0.50	0.94	1.34	25	13
AS 0100DN	5/8"	0.62	1.06	1.54	25	14
AS 0120DN	3/4"	0.75	1.20	1.68	25	14
AS 0140DN	7/8"	0.87	1.31	1.82	25	15
AS 0160D	1"	1.00	1.44	1.95	25	17
AS 0180DN	1 1⁄8"	1.12	1.57	2.08	20	18
AS 0200D	1 1⁄4"	1.25	1.70	2.21	20	18
AS 0220DN	1 ³⁄8"	1.37	1.82	2.34	20	20
AS 0240D	1 1/2"	1.50	1.95	2.47	20	33
AS 0260DN	1 5⁄8"	1.62	2.07	2.60	20	35
AS 0280D	1 3⁄4"	1.75	2.20	2.73	20	37
AS 0320D	2"	2.00	2.45	3.04	10	41
AS 0340D	2 1⁄8"	2.12	2.57	3.23	10	46
AS 0400D	2 1/2"	2.50	2.94	3.79	10	49
AS 0420D	2 5⁄8"	2.62	3.07	3.92	5	51
AS 0480D	3"	3.00	3.57	4.42	5	57
AS 0500D	3 1⁄8"	3.12	3.57	4.42	5	60
AS 0580D	3 5⁄8"	3.62	4.20	5.11	5	70
AS 0660D	4 1⁄8"	4.12	4.57	5.54	5	94
AS 0820D	5 1⁄8"	5.12	5.57	6.54	5	125
AS 0980D	6 1⁄8"	6.12	6.57	7.54	5	130

Std Pkg & Wt/100 pcs: See charts above.

Specifications

Materials:

Clamp: 1008–1018 Carbon Steel Cushion: High Strength TPE Locknut: Nylon Insert

Service Temperature:

-65°F to 275°F

Approvals:

UL 2043 Fire Test for Heat and Visible Smoke Release 25/50 Flame Spread/Smoke Development Index









Tube Series

Copper & Steel Tube O.D. Size	Design Load 1 (lbs)	Design Load 2 (lbs)	Design Load 3 (lbs)
1/4"	400	50	50
3/8"	400	50	50
1/2"	400	50	50
⁵ /8"	400	50	50
3/4"	600	75	75
7/8"	600	75	75
1"	600	75	75
1 1/8"	600	75	75
1 1/4"	600	75	75
1 3⁄8"	600	75	75
1 1/2"	600	75	75
1 5⁄8"	600	75	75
1 3⁄4"	800	125	125
1 7⁄8"	800	125	125
2"	800	125	125
2 1/8"	800	125	125
2 1/4"	800	125	125
2 ³ /8"	800	125	125
2 1/2"	800	125	125
2 5/8"	800	125	125
3"	800	125	125
3 1/8"	800	125	125
3 5⁄8"	1000	200	150
4 ¹ /8"	1000	200	150
6 1⁄8"	1000	200	150

Std Pkg & Wt/100 pcs: See charts above.



Specifications

Materials:

Clamp: 1008-1018 Carbon Steel Cushion: High Strength TPE Locknut: Nylon Insert

Service Temperature:

-65°F to 275°F

Approvals:

UL 2043 Fire Test for Heat and Visible Smoke Release 25/50 Flame Spread/Smoke Development Index











Pipe Series

Part Number	O.D. Size	А	В	С	Std Pkg	Wt/100 pcs
AS 009P	1/4" Pipe	0.54	0.98	1.34	25	13
AS 011P	³⁄₀" Pipe	0.67	1.13	1.54	25	14
AS 014P	¹⁄₂" Pipe	0.84	1.29	1.82	25	15
AS 017P	³ ⁄4" Pipe	1.05	1.50	2.08	20	17
AS 021P	1" Pipe	1.31	1.76	2.34	20	19
AS 027P	1 1⁄4" Pipe	1.66	2.17	2.73	20	35
AS 0300DP	1 1⁄2" Pipe	1.90	2.35	2.86	20	39
AS 0380DP	2" Pipe	2.37	2.82	3.67	10	47
AS 0460DP	2 1⁄2" Pipe	2.87	3.32	4.17	5	55
AS 0560DP	3" Pipe	3.50	3.95	4.79	5	55
AS 0640DP	3 1⁄2" Pipe	4.00	4.45	5.42	5	88
AS 0720DP	4" Pipe	4.50	4.95	5.92	5	110
AS 089P	5" Pipe	5.56	6.01	6.92	5	130
AS 106P	6" Pipe	6.62	7.07	8.23	5	140

Pipe Series

Pipe Sizes (Nominal)	Design Load 1 (lbs)	Design Load 2 (lbs)	Design Load 3 (lbs)
1⁄4"	400	50	50
3/8"	600	75	75
1/2"	600	75	75
3/4"	600	75	75
1"	600	75	75
1 1⁄4"	800	125	125
1 1⁄2"	800	125	125
2"	800	125	125
2 1/2"	800	125	125
3"	1000	200	150
3 1/2"	1000	200	150
4"	1000	200	150
5"	1000	200	150
6"	1000	200	150

Std Pkg & Wt/100 pcs: See charts above.

Specifications

Materials:

Clamp: 1008-1018 Carbon Steel Cushion: High Strength TPE Locknut: Nylon Insert

Service Temperature: -65°F to 275°F

051 10 275

Approvals: UL 2043 Fire Test for Heat and Visible Smoke Release 25/50 Flame Spread/Smoke Development Index











Continuous Threaded Rod Fig. 146 (Formerly Afcon Fig. 650)



Size Range: ¼" through 1½" stocked in six, ten, and twelve foot lengths. Other even foot lengths can be furnished to order.

Material: Carbon steel or Stainless Steel Gr 304

Threads: National Coarse (USS), rod threaded complete length.

Finish: Plain or Zinc Plated (Hot–Dip Galvanized optional)

Maximum Temperature:

Zinc Plated 450°F, Stainless Steel 650°F Approvals: Complies with MSS SP–58.

Ordering: Specify rod diameter and length,

figure number, name and finish.

Note: The acceptability of galvanized coatings at temperatures above $450^\circ F$ is at the discretion of the end user.



Fig. 146: Dimensions (in) • Loads (lbs) • Weight (lbs)

Pod Sizo A	Throads our loch	Max Load	Waight par Et	
		650° F	weight per Ft.	
1/4	20	240	0.12	
3/8	16	730	0.30	
1/2	13	1,350	0.53	
5/8	11	2,160	0.84	
3/4	10	3,230	1.20	
7/8	9	4,480	1.70	
1	8	5,900	2.30	
11/4	7	9,500	3.60	
11/2	6	13,800	5.10	

PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	





Description

Anvil-Strut Hardware, when used in conjunction with Anvil-Strut Channel and Nuts, provides a superior grip between channels and fittings.

Seismic Rod Stiffener

AS 3500 EG, ZTC



Size	Wt./100 Pcs.
³ / ₈ " - ⁵ / ₈ "	16

Std Pkg: 25 · Wt/100 pcs: See chart above.

Lock Washer

AS 211 EG



Size	Wt./100 Pcs.
1/4"	0.3
3/8"	0.7
1/2"	1.5

Std Pkg: 100 · Wt/100 pcs: See chart above.

LEGEND:

GR: Powder Coated Supr-Green EG: Electro-Galvanized PG: Pre-Galvanized AL: Aluminum

HG: Hot Dipped Galvanized PL: Plain SS: Stainless Steel

ZTC: Zinc Trivalent Chromium Stainless Steel (**SS**), Zinc Trivalent Chromium (**ZTC**) and Hot Dipped Galvanized (**HG**) are specialty finishes. Pricing is located in the Specialty Strut Section of the Anvil–Strut price book.



PROJECT INFORMATION	APPROVAL STAMP
Project:	Approved
Address:	Approved as noted
Contractor:	Not approved
Engineer:	Remarks:
Submittal Date:	
Notes 1:	
Notes 2:	



Flat Washer Figs. AS 209, AS 3500, AS 211, AS 83, AS 209, AS 6108, AS 230

Hexagon Nut

AS 83 EG



Size	Std. Pkg.	Wt./100 Pcs.
1/4"	500	0.6
3/8"	500	1.6
1/2"	100	4.8
5/8"	50	7.0
3/4"	50	12.0

Std Pkg & Wt/100 pcs: See chart above.

Flat Washer AS 209 EG



Size	Std. Pkg.	Wt./100 Pcs.
1/4"	200	0.7
3/8"	100	1.5
1/2"	100	3.5
5/8"	100	8.0
3/4"	100	11.0

Std Pkg & Wt/100 pcs: See chart above.

Square Nut

AS 6108 EG



Size	Std. Pkg.	Wt./100 Pcs.
1/4"	100	0.9
⁵ / ₁₆ "	100	1.6
3/8"	100	2.7
1/2"	100	5.8

Std Pkg & Wt/100 pcs: See chart above.

Square Nut

AS 230 EG



Size	Std. Pkg.	Wt./100 Pcs.
1/4"	100	3.3
3/8"	100	3.0
1/2"	100	2.8

Std Pkg & Wt/100 pcs: See chart above.

LEGEND:

GR: Powder Coated Supr-Green EG: Electro-Galvanized PG: Pre-Galvanized AL: Aluminum
 HG: Hot Dipped Galvanized PL: Plain SS: Stainless Steel
 ZTC: Zinc Trivalent Chromium Stainless Steel (SS), Zinc Trivalent Chromium (ZTC) and Hot Dipped Galvanized (HG) are specialty finishes. Pricing is located in the Specialty Strut Section of the Anvil-Strut price book.



DURA-BLOK Rooftop Supports



DURA-BLOK[™] is made from 100% recycled rubber and qualifies for LEED credits. Reflective strips on both sides allow for easy product visibility.

Channels are through bolted on all sizes for added strength and a 1" (25.4mm) gap between blocks allows water to flow freely around longer assemblies.

Product composition is not sharp or abrasive, helping to extend the roof life and no penetration through the roof is required.

The DURA-BLOK dampens vibration, needs no supplemental rubber pad, and will not float or blow away.

The DURA-BLOK is UV resistant and is suitable for any type roofing material or other flat surface. For sloped surfaces see page 289 for adjustable hinge fitting (B634).

The open ends allow for easier adjustments to DBE, DBR, and DBM series supports. A drainage channel through the center of the block keeps water from pooling under the support.

DURA-BLOK can be used to support piping, HVAC/Ducts, roof walkways, conduit and cable tray.

DURA-BLOK Rooftop Supports

DB - Series

Base with Galv. Channel - 1" (25.4mm) high

Dimensions - 5" (127mm) High x 6" (152mm) Wide x Length (overall length) Material - 100% recycled rubber, UV resistant Ultimate Load Capacity - (uniform load) *

> DB5 = 500 lbs. (2.22kN) DB10 = 500 lbs. (2.22kN) DB20 = 1,000 lbs. (4.45kN) DB30 = 1,500 lbs. (6.67kN) DB40 = 2,000 lbs. (8.89kN) DB48 = 2,500 lbs. (11.12kN)



DURA-BLOK[™] DB-Series channel support is designed for superior support of piping systems, cable tray, HVAC equipment, walkway systems and many other applications. The DURA-BLOK is UV resistant and suitable for installation on any type of roofing material or other flat surfaces. For sloped roofs see adjustable hinge fitting (B634).



Part No.	Height in. (mm)	Width in. (mm)	Overall Length in. (mm)	Weight Each Ibs. (kg)
DB5	5″ (127)	6" (152)	4.8" (122)	2.75 (1.25)
DB10	5″ (127)	6″ (152)	9.6" (244)	5.28 (2.39)
DB20	5″ (127)	6" (152)	20.2" (513)	10.63 (4.82)
DB30	5″ (127)	6″ (152)	30.8" (782)	15.99 (7.25)
DB40	5″ (127)	6″ (152)	41.4" (1052)	21.34 (9.68)
DB48	5″ (127)	6" (152)	52.0" (1321)	26.70 (12.4)

For pipe straps/clamps, rollers and roller supports that can be used with these DURA-BLOK supports, see page 302.

* For Roof Loading, Consult Roofing Manufacturer or Engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.

DB6 - Series

Base with Galv. Channel - 27/16" (62mm) high

Dimensions - 6⁷/16" (163mm) High x 6" (152mm) Wide x Length (overall length) **Material -** 100% recycled rubber, UV resistant **Ultimate Load Capacity -** (uniform load) *

> DB610 = 500 lbs. (2.22kN) DB620 = 1,000 lbs. (4.45kN) DB630 = 1,500 lbs. (6.67kN) DB640 = 2,000 lbs. (8.89kN) DB648 = 2,500 lbs. (22.12kN)



DURA-BLOK[™] DB6-Series channel support is designed for superior support of piping systems, cable tray, HVAC equipment, walkway systems and many other applications. The DURA-BLOK is UV resistant and suitable for installation on any type of roofing material or other flat surfaces. For sloped roofs see adjustable hinge fitting (B634).



Part No.	Height in. (mm)	Width in. (mm)	Overall Length in. (mm)	Weight Each Ibs. (kg)
DB610	6 ⁷ /16″ (167)	6" (152)	9.6" (244)	6.36 (2.88)
DB620	6 ⁷ /16″ (167)	6" (152)	20.2" (513)	12.90 (5.85)
DB630	6 ⁷ /16″ (167)	6" (152)	30.8" (782)	19.45 (8.82)
DB640	6 ⁷ /16″ (167)	6" (152)	41.4" (1052)	26.00 (11.79)
DB648	6 ⁷ /16″ (167)	6" (152)	52.0" (1321)	32.55 (14.76)

For pipe straps/clamps, rollers and roller supports that can be used with these DURA-BLOK supports, see page 302.

* For Roof Loading, Consult Roofing Manufacturer or Engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

All dimensions in charts and on drawings are in inches. Dimensions shown in parentheses are in millimeters unless otherwise specified.