



Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.

P.O. Box 16620

LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Date: 8/21/2025

Return Request: 9/4/2025

Project: Hot Springs National Park – Rehabilitate Bathhouses – Buckstaff Bathhouse

Supplier: Boone & Boone

Manufacturer: Bell & Gossett

Submittal: Hydronic Pumps (CWP-1, CWP-2, HWP-1, and HWP-2)

Submittal Number: 232123.001

Spec Section: 232123

Drawing # and Installation Location: M4-1

ARCHITECT

Kenneth Hahn Architects, Inc.

1343 S. 75th Street

Omaha, Nebraska 68124

(402)391-2111

GENERAL CONTRACTOR

Tepa, LLC

2345 Grand Blvd, Suite 700

Kansas City, Missouri 64108

(816)708-1110

ENGINEER

Alvine Engineering

1201 Cass Street

Omaha, Nebraska 68102

(402)346-7007

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.

9924 Landers Road

North Little Rock, Arkansas 72117

(501)834-3320

Comments:

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CSUSA PROJECT NO.

25-7065

joe@comfortar.com

9924 Landers Road
No. LittleRock, AR 72117

Job/Project: Buckstaff Bathhouse HVAC	Representative: Boone & Boone Sales	
ESP-Systemwize: WIZE-14D04D59	Created On: 09/09/2025	Phone: 501-940-7747 Mark Eley
Location/Tag: CWP-1, CWP-2	Email: marke@2boonesales.com	
Engineer: Alvine Engineering	Submitted By:	Date:
Contractor: Comfort Systems USA	Approved By:	Date:

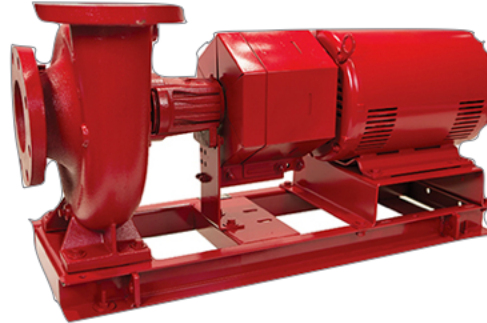
Base Mounted End Suction Pump

Series: e-1510

Model: 1.5BC

Features & Design

ANSI/OSHA Coupling Guard
Center Drop Out Spacer Coupling
Fabricated Heavy Duty Baseplate
Internally Self-Flushing Mechanical Seal



*The Bell & Gossett Series e-1510 is available in 26 sizes and a variety of configuration options that enable customization and flexibility to fit a broad range of operating conditions.

<http://bellgossett.com/pumps-circulators/end-suction-pumps/e-1510/>

Pump Selection Summary

Duty Point Flow	125.0 US gpm
Duty Point Head	80.0 ft
Control Head	30.0 ft
Duty Point Pump Efficiency	62.2 %
Part Load Efficiency Value (PLEV)	0.0 %
Impeller Diameter	9 in
Motor Power	5 hp
Duty Point Power	4.33 bhp
Motor Speed	1800 rpm
RPM @ Duty Point	1750 rpm
NPSHr	8.02 ft
Minimum Shutoff Head	95.6 ft
Minimum Flow at RPM	23.2 US gpm
Flow @ BEP	116 US gpm
Fluid Temperature	68 °F
Fluid Type	Water
Weight (approx. - consult rep for exact)	140 lbs
Pump Floor Space Calculation	3.48 ft²

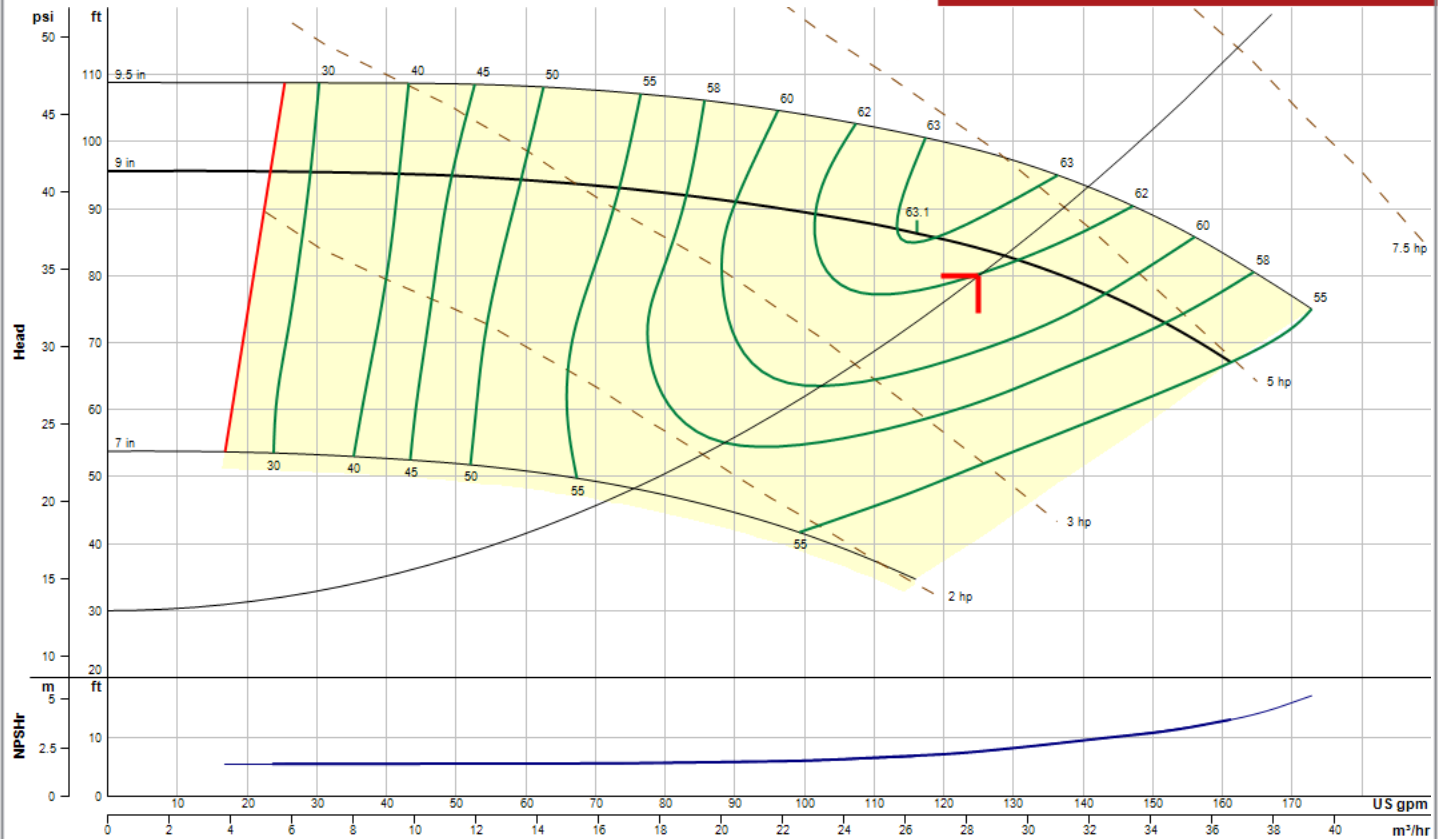
Performance Curve

Energy Efficiency Ratings:

Pump & Motor PEIcl: 0.83 ERcl: 17
Pump, Motor & Drive: PEIvl: 0.42 ERvl: 58

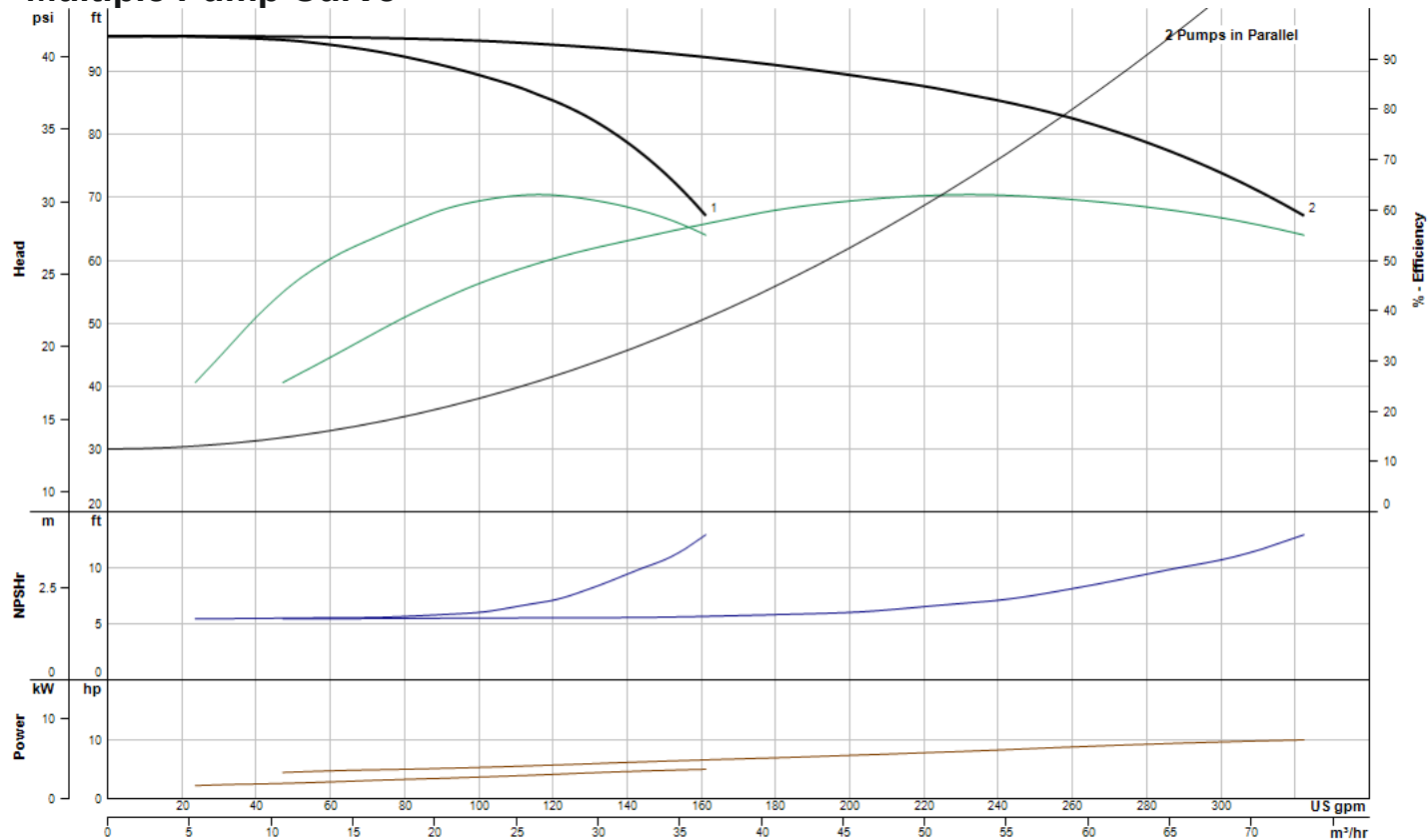


e-1510
1.5BC
1750 RPM



Performance curve meets 14.6 / ISO 9906 acceptance criteria

Multiple Pump Curve



Materials Of Construction

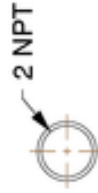
Pump Information\Construction	
Pump Series	e1510
Pump Size	1.5 BC
Seal Type	Standard Seal
Seal Material	STD-Buna/Carbon/Ceramic/SS/Bronze
Material of Construction	Stainless Steel Fitted
Impeller Diameter	9 inches
Sleeve Material	Stainless Steel Sleeve

VFD Details	
VFD_Nema	None
Variable_Speed	1800

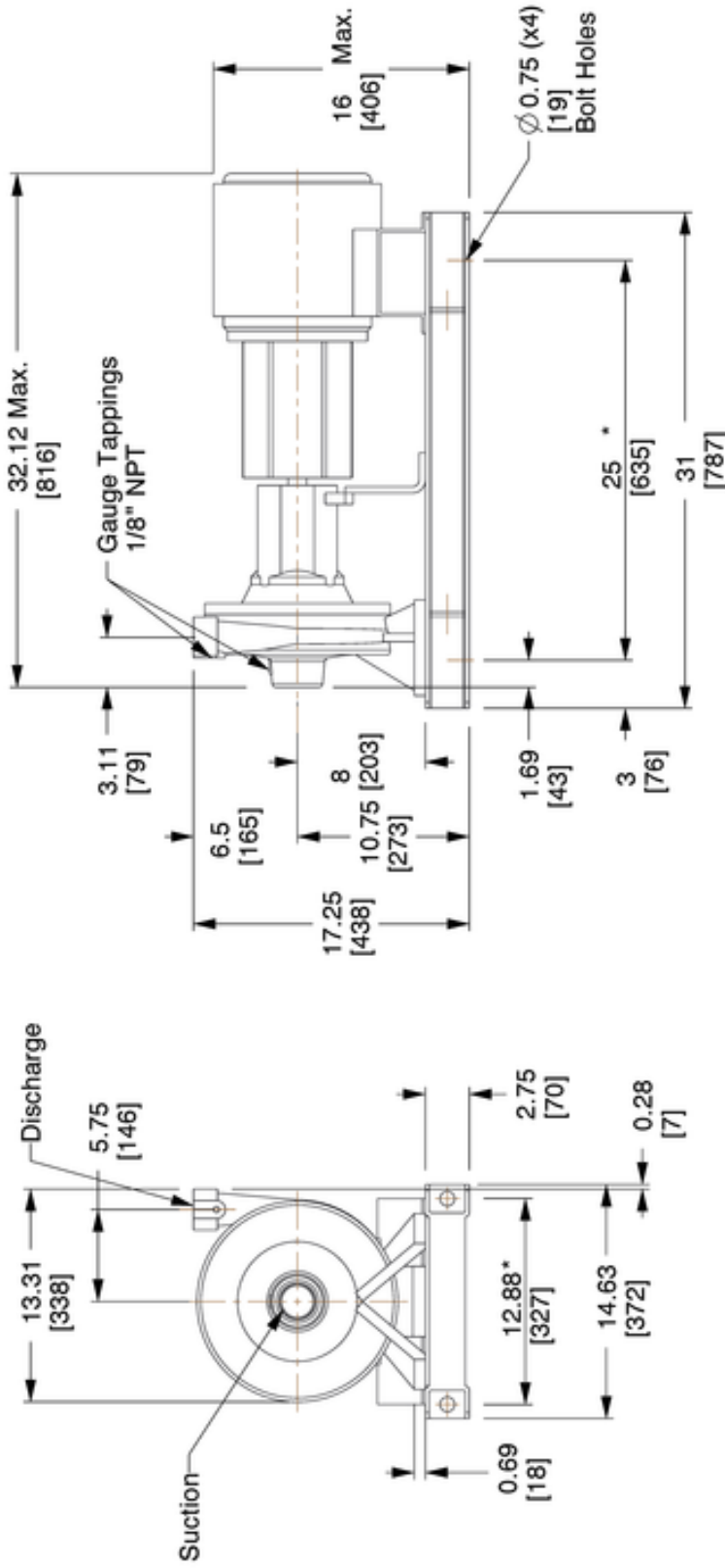
Motor Details	
Motor Power	5
Motor Speed	1800
Frequency	60
Phase	3
Voltage	200
Frame	182T
Enclosure	ODP
Motor Manufacturer	BG Choice
Motor Status	STK
Motor Comments	w/ internal SGR



1-1/2 NPT DISCHARGE
DETAILS



2 NPT SUCTION
DETAILS



* Dist. Between Bolt Holes

 Bell & Gossett a xylem brand 8200 N. Austin Ave. Morton Grove, IL 60053, USA	This drawing and the information depicted therein is the property of Xylem. Copies are issued in strict confidence and shall not be reproduced or copied, or used as the basis for the manufacture or sale of products without prior written permission of Xylem. Dimensions are subject to change Not to be used for construction unless certified
BG-E1510-1P5BC-SS-182T-S Series e-1510 Centrifugal Pumps - Base Mounted Seal Type: Standard Seal Motor Frame: 182T Frame Type: S	Dimensions : IN (mm) Scale : N.T.S. Submittal # : B-880.16C

Standard Mechanical Configuration

Standard Mechanical Seal	SM, LG, & XL Bearing Frames	ES Bearing Frame
Temperature Range	-20 to 225°F	-20 to 225°F
Maximum Pressure	175 PSI	175 PSI
pH Limitations	7.0 - 9.0	7.0 - 9.0
Elastomer	Buna	Buna
Rotating Face	Carbon	Carbon
Stationary Face	Ceramic	Silicon Carbide
Hardware	Stainless Steel / Brass	Stainless Steel

Mechanical Seal Options	SM, LG, & XL Bearing Frames		
Temperature Range	-20 to 250°F	-10 to 225°F	-20 to 250°F
Maximum Pressure	175 PSI	175 PSI	175 PSI
pH Limitations	7.0 - 11.0	7.0 - 9.0	7.0 - 12.5.0
Elastomer	EPR (Ethylene Propylene Rubber)	FKM (Viton™ or Fluoroelastomer)	EPR (Ethylene Propylene Rubber)
Rotating Face	Carbon	Carbon	Silicon Carbide
Stationary Face	Tungsten Carbide	Ceramic	Silicon Carbide
Hardware	Stainless Steel / Brass	Stainless Steel	Stainless Steel

Mechanical Seal Options	ES Bearing Frame		
Temperature Range	-20 to 250°F	-10 to 225°F	-20 to 250°F
Maximum Pressure	175 PSI	175 PSI	175 PSI
pH Limitations	7.0 - 11.0	7.0 - 9.0	7.0 - 12.5.0
Elastomer	EPR (Ethylene Propylene Rubber)	FKM (Viton™ or Fluoroelastomer)	EPR (Ethylene Propylene Rubber)
Rotating Face	Silicon Carbide	Carbon	Silicon Carbide
Stationary Face	Tungsten Carbide	Silicon Carbide	Silicon Carbide
Hardware	Stainless Steel / Brass	Stainless Steel	Stainless Steel

Stuffing Box Configuration

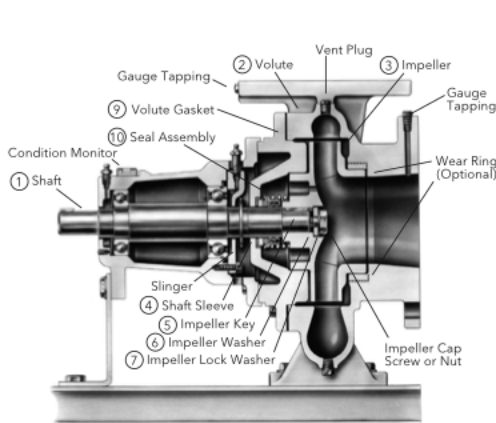
Mechanical Seal	SM, LG, & XL Bearing Frames
Temperature Range	-20 to 250°F*
Maximum Pressure	175 PSI (Optional 250 PSI)
pH Limitations	7.0 - 11.0
Elastomer	EPR (Ethylene Propylene Rubber)
Rotating Face	Tungsten Carbide
Stationary Face	Carbon
Hardware	Stainless Steel

Packing Option	
Temperature Range	0 to 250°F
Maximum Pressure	175 PSI
pH Limitations	7.0 - 9.0
Material	Braided Graphite Impregnated PTFE

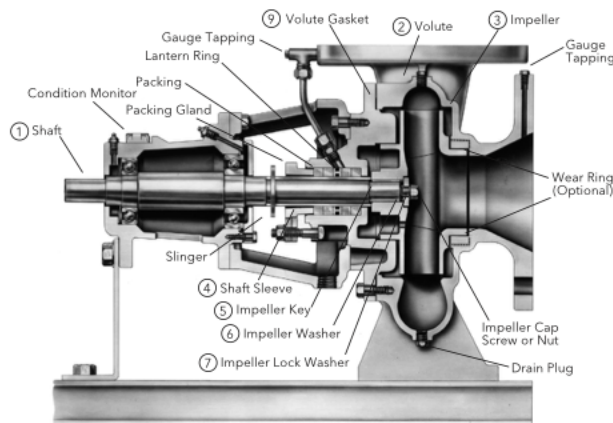
* For operating temperatures above 250°F a cooled flush is required and is recommended for temperatures above 225°F for optimum seal life. On closed systems cooling is accomplished by inserting a small heat exchanger in the flush line to cool the seal flushing fluid.

Flush-line Filters and Sediment Separators are available on special request.

Materials of Construction



Standard Configuration



Optional - S Configuration

Description	SM, LG, & XL Bearing Frames	ES Bearing Frame
1 Shaft	ASTM 108 Grade 1144	ASTM 108 Grade 1144
2 Volute	Cast Iron ASTM A48 Class 30B	Cast Iron ASTM A48 Class 30B
3 Impeller	ASTM A743 Grade CF8 - 304 Stainless Steel	ASTM A743 Grade CF8 - 304 Stainless Steel
4 Shaft Sleeve	ASTM 312 Grade TP304 - 304 Stainless Steel	ASTM 312 Grade TP304 - 304 Stainless Steel
5 Impeller Key	#304 Stainless Steel	NA
6 Impeller Washer	Steel	NA
7 Impeller Lock Washer	#304 Stainless Steel (18-8 XL FRM)	NA
8 Impeller Cap Screw	#304 Stainless Steel	NA
8 Impeller Nut	NA	316 Stainless Steel
9 Volute Gasket	Cellulose Fiber	Cellulose Fiber
10 Seal Assembly	Reference Seal Data Tables	Reference Seal Data Tables

Pump Options

- Stainless Steel Volute Wear Ring
- Galvanized Steel Drip Pan
- Stainless Steel Shaft
- Rexnord Omega Spacer Coupling
- Falk T31 Spacer Coupling
- External Flush Line
- Stuffing Box Configuration
- Epoxy Coated Internal Cast Iron Components
- Special Impeller Balancing (ISO 1940 G2.5 or G1.0)
- Certified Performance Tests (Per HI Standard 14.6)
- 250 PSI Working Pressure

Job/Project: Buckstaff Bathhouse HVAC	Representative: Boone & Boone Sales	
ESP-Systemwize: WIZE-14D04D59	Created On: 09/09/2025	Phone: 501-940-7747 Mark Eley
Location/Tag: HWP-1, HWP-2	Email: marke@2boonesales.com	
Engineer: Alvine Engineering	Submitted By:	Date:
Contractor: Comfort Systems USA	Approved By:	Date:

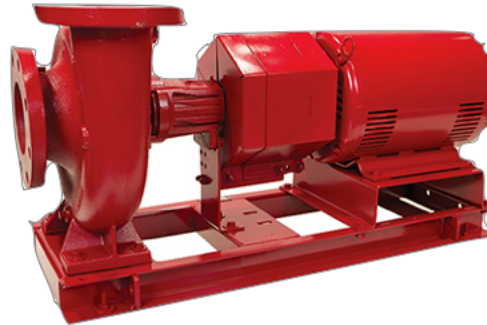
Base Mounted End Suction Pump

Series: e-1510

Model: 1.25BC

Features & Design

ANSI/OSHA Coupling Guard
Center Drop Out Spacer Coupling
Fabricated Heavy Duty Baseplate
Internally Self-Flushing Mechanical Seal



*The Bell & Gossett Series e-1510 is available in 26 sizes and a variety of configuration options that enable customization and flexibility to fit a broad range of operating conditions.

<http://bellgossett.com/pumps-circulators/end-suction-pumps/e-1510/>

Pump Selection Summary

Duty Point Flow	30.0 US gpm
Duty Point Head	70.0 ft
Control Head	30.0 ft
Duty Point Pump Efficiency	44.6 %
Part Load Efficiency Value (PLEV)	0.0 %
Impeller Diameter	8.75 in
Motor Power	3 hp
Duty Point Power	1.62 bhp
Motor Speed	1800 rpm
RPM @ Duty Point	1750 rpm
NPSHr	6.23 ft
Minimum Shutoff Head	84.4 ft
Minimum Flow at RPM	11.6 US gpm
Flow @ BEP	77.5 US gpm
Fluid Temperature	68 °F
Fluid Type	Water
Weight (approx. - consult rep for exact)	145 lbs
Pump Floor Space Calculation	3.4 ft²

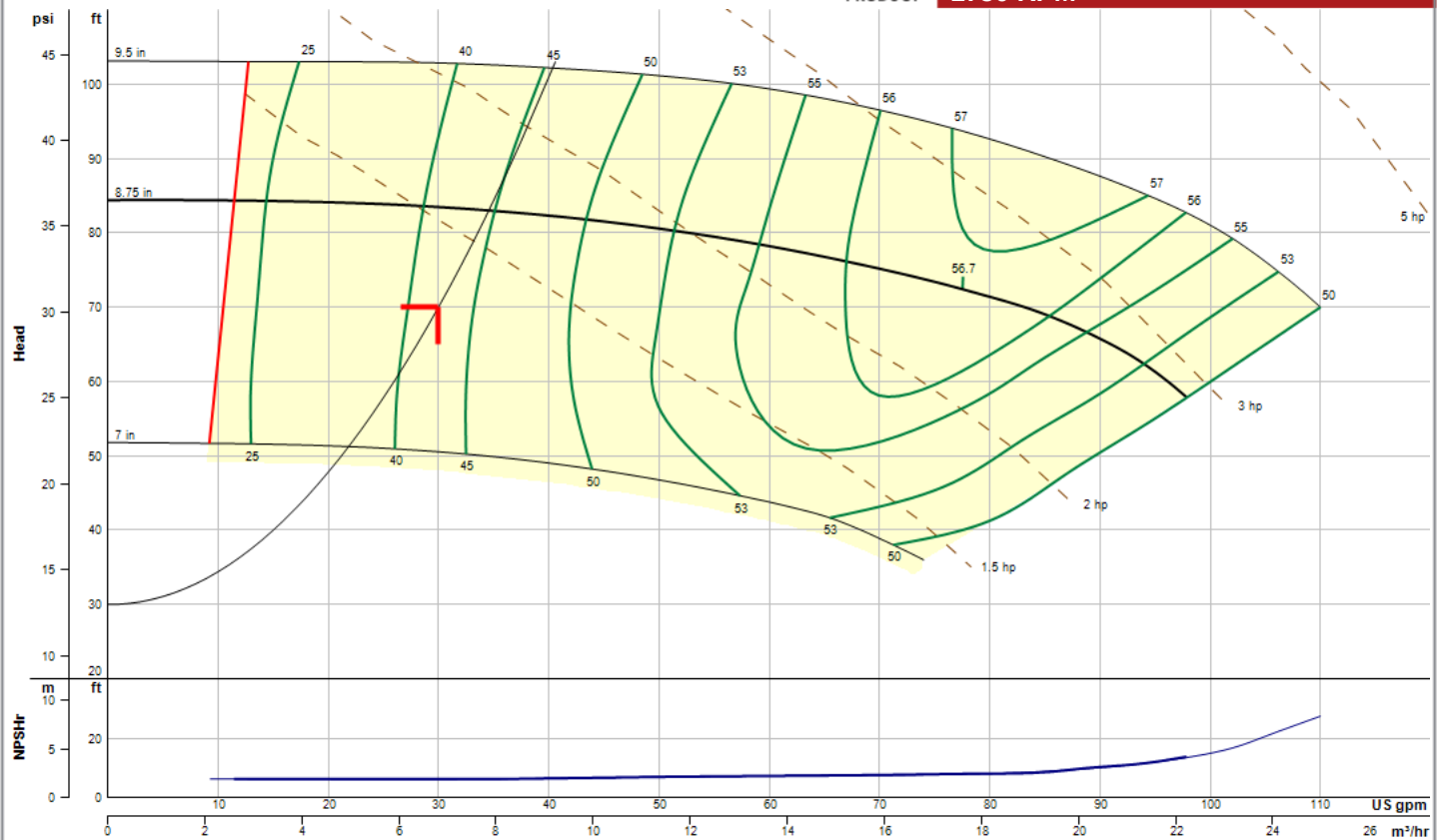
Performance Curve

Energy Efficiency Ratings:

Pump & Motor PEIcl: 0.81 ERcl: 19
Pump, Motor & Drive: PEIvl: 0.43 ERvl: 57

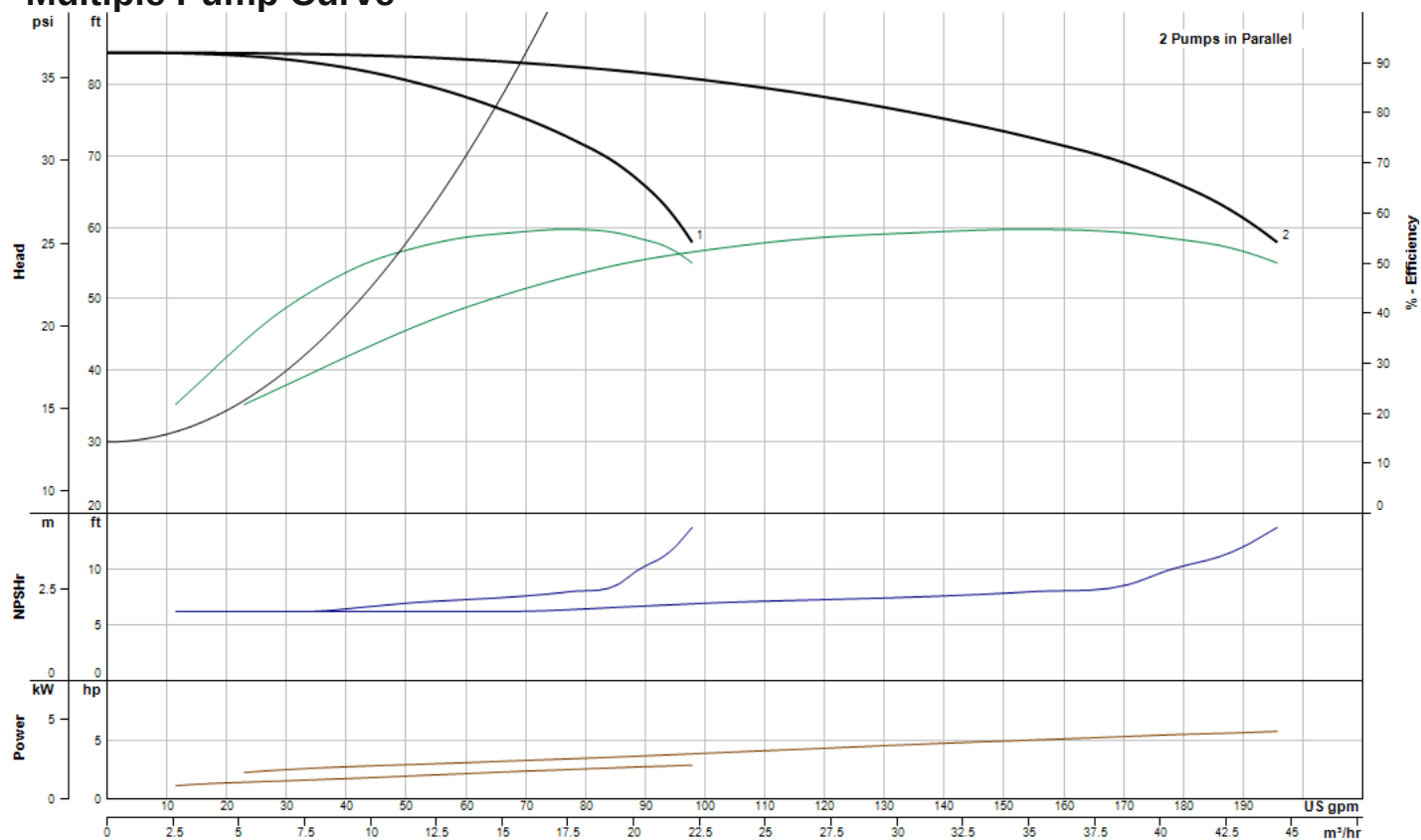


e-1510
1.25BC
1750 RPM



Performance curve meets 14.6 / ISO 9906 acceptance criteria

Multiple Pump Curve



Materials Of Construction

Pump Information\Construction	
Pump Series	e1510
Pump Size	1.25 BC
Seal Type	Standard Seal
Seal Material	STD-Buna/Carbon/Ceramic/SS/Bronze
Material of Construction	Stainless Steel Fitted
Impeller Diameter	8.75 inches
Sleeve Material	Stainless Steel Sleeve

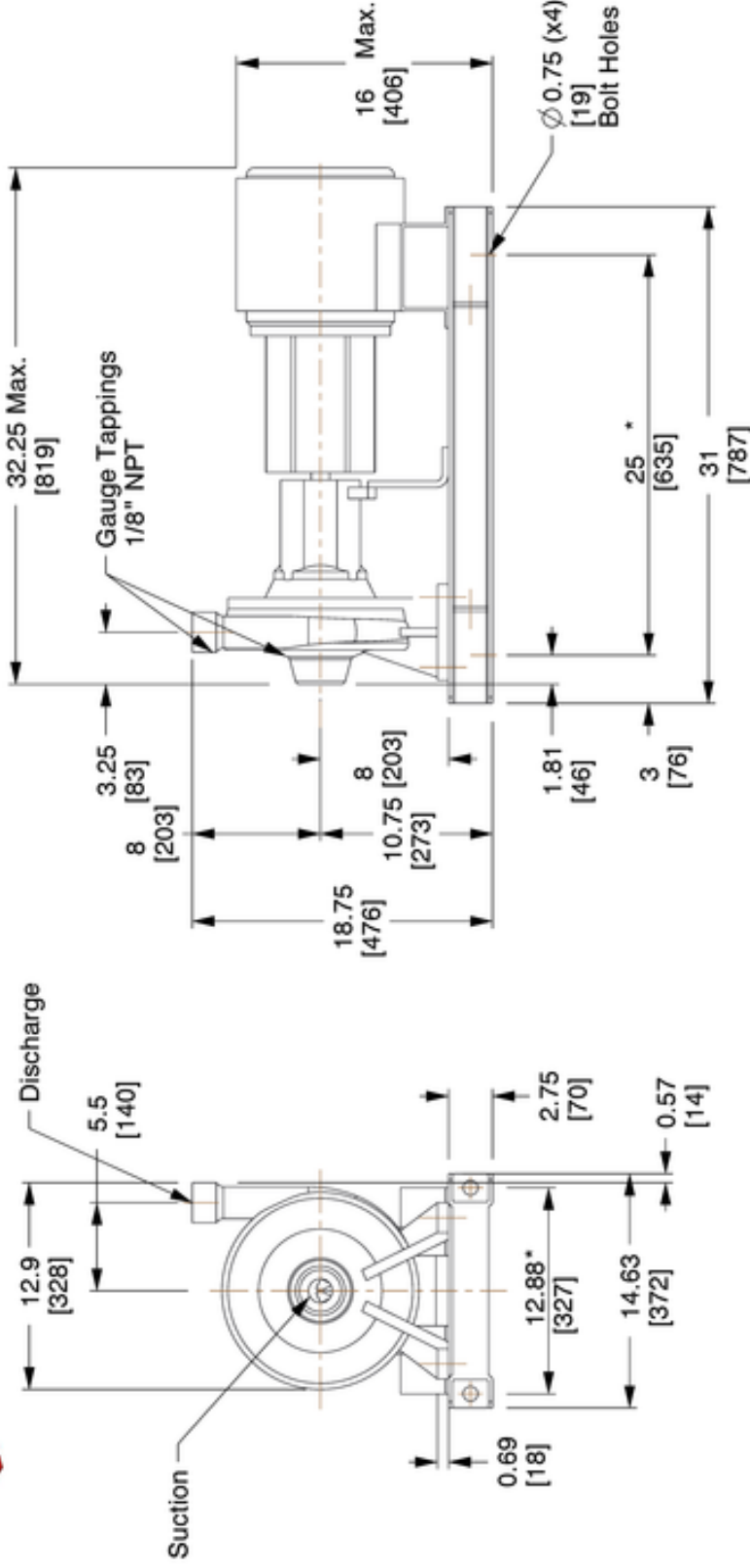
VFD Details	
VFD_Nema	None
Variable_Speed	1800

Motor Details	
Motor Power	3
Motor Speed	1800
Frequency	60
Phase	3
Voltage	200
Frame	182T
Enclosure	ODP
Motor Manufacturer	BG Choice
Motor Status	STK
Motor Comments	w/ internal SGR



1-1/4 NPT DISCHARGE
DETAILS

1-1/2 NPT SUCTION
DETAILS



* Dist. Between Bolt Holes



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Dimensions are subject to change
Not to be used for construction unless certified

BG-E1510-1P25BC-SS-182T-S

Series e-1510 Centrifugal Pumps - Base Mounted

Seal Type: Standard Seal | Motor Frame: 182T | Frame Type: S

Dimensions : IN (mm)

Scale : N.T.S.

Submittal # : B-880.14B

Standard Mechanical Configuration

Standard Mechanical Seal	SM, LG, & XL Bearing Frames	ES Bearing Frame
Temperature Range	-20 to 225°F	-20 to 225°F
Maximum Pressure	175 PSI	175 PSI
pH Limitations	7.0 - 9.0	7.0 - 9.0
Elastomer	Buna	Buna
Rotating Face	Carbon	Carbon
Stationary Face	Ceramic	Silicon Carbide
Hardware	Stainless Steel / Brass	Stainless Steel

Mechanical Seal Options	SM, LG, & XL Bearing Frames		
Temperature Range	-20 to 250°F	-10 to 225°F	-20 to 250°F
Maximum Pressure	175 PSI	175 PSI	175 PSI
pH Limitations	7.0 - 11.0	7.0 - 9.0	7.0 - 12.5.0
Elastomer	EPR (Ethylene Propylene Rubber)	FKM (Viton™ or Fluoroelastomer)	EPR (Ethylene Propylene Rubber)
Rotating Face	Carbon	Carbon	Silicon Carbide
Stationary Face	Tungsten Carbide	Ceramic	Silicon Carbide
Hardware	Stainless Steel / Brass	Stainless Steel	Stainless Steel

Mechanical Seal Options	ES Bearing Frame		
Temperature Range	-20 to 250°F	-10 to 225°F	-20 to 250°F
Maximum Pressure	175 PSI	175 PSI	175 PSI
pH Limitations	7.0 - 11.0	7.0 - 9.0	7.0 - 12.5.0
Elastomer	EPR (Ethylene Propylene Rubber)	FKM (Viton™ or Fluoroelastomer)	EPR (Ethylene Propylene Rubber)
Rotating Face	Silicon Carbide	Carbon	Silicon Carbide
Stationary Face	Tungsten Carbide	Silicon Carbide	Silicon Carbide
Hardware	Stainless Steel / Brass	Stainless Steel	Stainless Steel

Stuffing Box Configuration

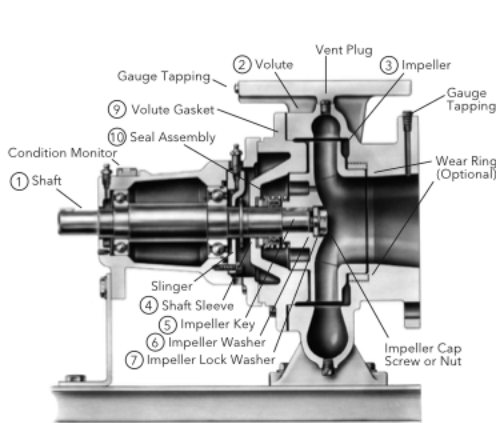
Mechanical Seal	SM, LG, & XL Bearing Frames
Temperature Range	-20 to 250°F*
Maximum Pressure	175 PSI (Optional 250 PSI)
pH Limitations	7.0 - 11.0
Elastomer	EPR (Ethylene Propylene Rubber)
Rotating Face	Tungsten Carbide
Stationary Face	Carbon
Hardware	Stainless Steel

Packing Option	
Temperature Range	0 to 250°F
Maximum Pressure	175 PSI
pH Limitations	7.0 - 9.0
Material	Braided Graphite Impregnated PTFE

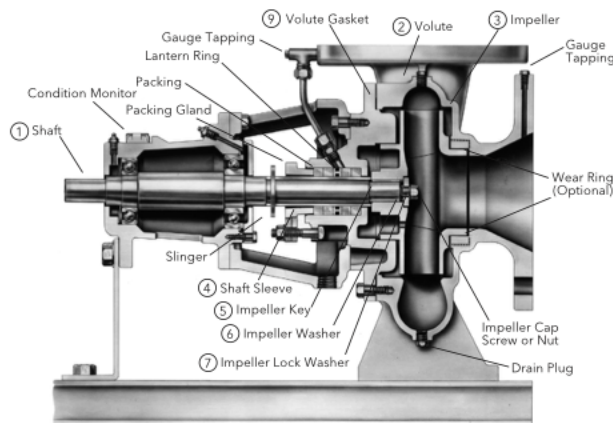
* For operating temperatures above 250°F a cooled flush is required and is recommended for temperatures above 225°F for optimum seal life. On closed systems cooling is accomplished by inserting a small heat exchanger in the flush line to cool the seal flushing fluid.

Flush-line Filters and Sediment Separators are available on special request.

Materials of Construction



Standard Configuration



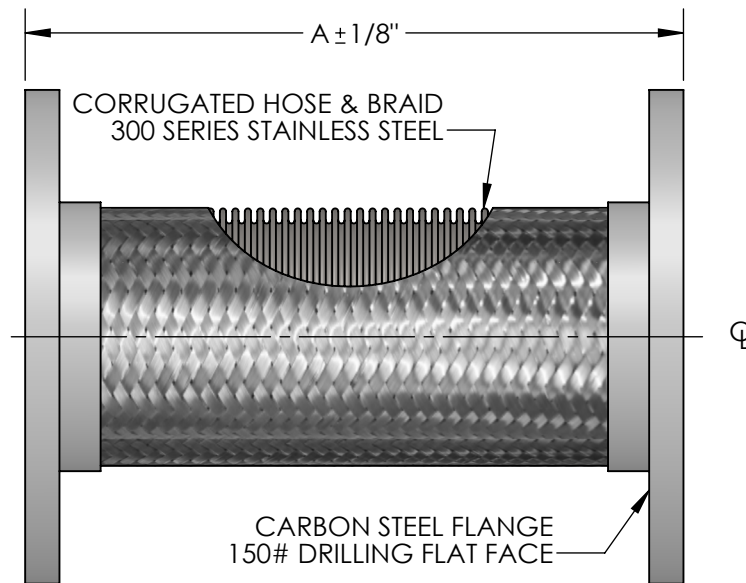
Optional - S Configuration

Description	SM, LG, & XL Bearing Frames	ES Bearing Frame
1 Shaft	ASTM 108 Grade 1144	ASTM 108 Grade 1144
2 Volute	Cast Iron ASTM A48 Class 30B	Cast Iron ASTM A48 Class 30B
3 Impeller	ASTM A743 Grade CF8 - 304 Stainless Steel	ASTM A743 Grade CF8 - 304 Stainless Steel
4 Shaft Sleeve	ASTM 312 Grade TP304 - 304 Stainless Steel	ASTM 312 Grade TP304 - 304 Stainless Steel
5 Impeller Key	#304 Stainless Steel	NA
6 Impeller Washer	Steel	NA
7 Impeller Lock Washer	#304 Stainless Steel (18-8 XL FRM)	NA
8 Impeller Cap Screw	#304 Stainless Steel	NA
8 Impeller Nut	NA	316 Stainless Steel
9 Volute Gasket	Cellulose Fiber	Cellulose Fiber
10 Seal Assembly	Reference Seal Data Tables	Reference Seal Data Tables

Pump Options

- Stainless Steel Volute Wear Ring
- Galvanized Steel Drip Pan
- Stainless Steel Shaft
- Rexnord Omega Spacer Coupling
- Falk T31 Spacer Coupling
- External Flush Line
- Stuffing Box Configuration
- Epoxy Coated Internal Cast Iron Components
- Special Impeller Balancing (ISO 1940 G2.5 or G1.0)
- Certified Performance Tests (Per HI Standard 14.6)
- 250 PSI Working Pressure

MODEL METRAMINI (MMCC) **FLANGED FLEXIBLE PUMP CONNECTOR**



QTY	PART NUMBER	PIPE SIZE		A	PRESSURE RATING (PSI)*	WEIGHT (LBS)	PROJECT INFORMATION
		INCH	MM				
4	MMCC0200	2"	50	9"	516	9	HWP-1, HWP-2
4	MMCC0250	2-1/2"	65	9"	387	13	CWP-1, CWP-2
	MMCC0300	3"	80	9"	316	14	
	MMCC0400	4"	100	9"	232	18	
	MMCC0500	5"	125	11"	191	25	
	MMCC0600	6"	150	11"	165	28	
	MMCC0800	8"	200	12"	234	52	
	MMCC1000	10"	250	13"	230	75	
	MMCC1200	12"	300	14"	161	105	
	MMCC1400	14"	350	14"	150	115	
	MMCC1600	16"	400	14"	110	145	
	MMCC1800	18"	450	14"	85	165	

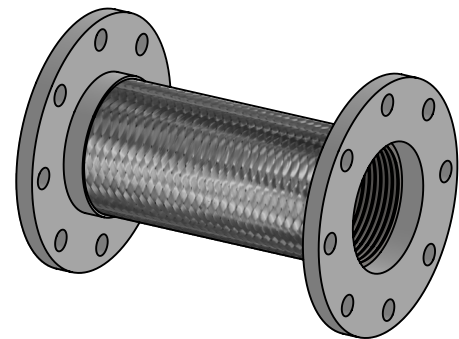
*FOR SAFE WORKING PRESSURE ABOVE 70°F, MULTIPLY THE PRESSURE SHOWN AT 70°F TIMES THE CORRECTION FACTOR OF THE REQUIRED TEMPERATURE.

MAX INTERMITTENT OFFSET FROM CENTERLINE 1/8"
 MAX PERMANENT OFFSET FROM CENTERLINE 3/8"

TEMPERATURE (°F)	FACTOR
70	1.0
200	.91
300	.85
400	.78
500	.77
600	.76

NSF 372 - LEAD FREE

The wetted surface of this product contacted by consumable water contains less than one quarter of one percent (0.25%) of lead by weight. Material complies with state codes and standards, where applicable, requiring reduced lead content. Not suitable for potable water systems due to materials of construction.



CUSTOMER: **Comfort Systems, USA**

PROJECT: **Buckstaff Bathhouse HVAC**

ENGINEER: **Alvine Engineering**

2	16" & 18" ADDED	9/21/2017
REV.	1	TEMP FACTOR UPDATED DATE 12/28/2016
		
MODEL METRAMINI (MMCC) FLANGED FLEXIBLE PUMP CONNECTOR		
DRAWN BY: DKISH	DATE:	
APPROVED: JC	DATE:	
SCALE: N/A	DRAWING NUMBER: MMCC-2	

2323 W. HUBBARD ST.
 CHICAGO, IL 60612
 TEL: 312-738-3800
 FAX: 312-738-0415
 WWW.METRAFLEX.COM