ROBINS & MORTON

SUBMITTAL COVER SHEET

Project: Westover Hills Baptist Hospital (R&M Job #2270)
Date: 1/3/23
Submittal #: 232123-1
Submittal Title: HVAC Pumps - PD
Subcontractor/Manufacture: Gowan-Garrett

PROJECT TEAM

Owner: Tenet Healthcare

Construction Team:
Robins & Morton

Design Team:

Architect:	Earl Swensson Associates
Civil:	Pape Dawson
Structural:	Structural Design Group
MEPF & LV:	SSR

SUBMITTAL ITEMS

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

STAMPS

THESE DRAWINGS OR BROCHURES HAVE BEEN REVIEWED FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS AND CHECKED FOR COMPLETENESS AND FIELD DIMENSIONS.

THIS REVIEW DOES NOT RELIEVE THE SUBCONTRACTOR OR VENDOR OF RESPONSIBILITY FOR COMPLIANCE WITH CONTRACT DOCUMENTS.

- [x] No Exceptions Taken
- [ ] Make Corrections Noted
- [ ] Revise and Resubmit
- [ ] Rejected

ROBINS & MORTON

DATE	REVIEWED BY
1/3/23	Andrew Anders

SSR

Review is for general compliance with the design concept of the project and, unless expressly noted otherwise, does not supersede the requirements of the plans, specifications, and other contract documents.

- [ ] NO EXCEPTIONS TAKEN
- [x] MAKE CORRECTIONS NOTED
- [ ] RESUBMIT REQUESTED INFORMATION
- [ ] AMEND AND RESUBMIT
- [ ] REJECTED
- [ ] RECEIVED FOR RECORD ONLY

Reviewed By: Julianna Price
Date Received: 1/4/2023
Date Reviewed: 1/31/2023

SSR Comments:
1. Coordinate increase horsepowers for CWP-1, -2, and -3 with electrical subcontractor.

ROBINS & MORTON

SUBMITTAL COVER SHEET

STAMPS (cont.)

SUBMITTAL DATA

WESTOVER HILLS BAPTIST HOSPITAL

SAN ANTONIO, TEXAS

SUBMITTAL # 23 21 23-1
HVAC PUMPS

OWNER	TENET HEALTHCARE CORPORATION 14201 DALLAS PARKWAY DALLAS, TEXAS 75254 469-893-2000
ARCHITECT	EARL SWENSSON ASSOCIATES, INC. 1033 DEMONBRUEN ST. # 800 NASHVILLE, TN 37203 615-329-9445
MEP ENGINEER	SMITH SECKMAN REID, INC. 3700 WEST SAM HOUSTON PKWY S. STE 200 HOUSTON, TEXAS 77042 713-784-8211
GENERAL CONTRACTOR	ROBINS & MORTON. 9601 McALLISTER FREEWAY, SUITE 221 SAN ANTONIO, TEXAS 78216 210-874-4330
MECHANICAL CONTRACTOR	GOWAN GARRETT INC. 424 MARINO RD. BRYAN, TEXAS 77808 979-778-3279

GOWAN - GARRETT
7205 S. WW White Rd.
San Antonio, Texas 78222
(210) 616-0125 • Fax (210) 616-0124

WESTOVER HILLS BAPTIST HOSPITAL

SAN ANTONIO, TEXAS

SUBMITTAL DATA NO. 23 21 23-1

ITEM	MANUFACTURER	SPEC NO.	DRWG. NO.
HVAC PUMPS		23 21 23	
HVAC PUMPS	ARMSTRONG		M0.04
NOTE			

GARRETT MECHANICAL, INC.

Has reviewed only as to general design and requirements of the contract documents of this project. Subcontractor/Vendor to verify dimensions, quantities and field conditions for proper and complete installation of this work. Approval does not relieve subcontractors or supplier from responsibility for errors, omissions or deviations from the contract documents.

By: SKT Date: 01/03/2023

GMI SUBMITTAL NO: 232123-1

TEXAS AIRSYSTEMS

SUBMITTAL
REVIEW & APPROVAL

Armstrong Pump Submittal

FOR

Westover Hills Baptist Church

Owner:	Westover Hills Baptist Church
Mechanical Engineer:	SSR
Mechanical Contractor:	Gowan, Inc.
Date:	12.22.2022
Revision:	00 – For Review & Approval
Submitted By:	Joel Nealy
Equipment Manufacturer:	Armstrong
Equipment Type:	Vertical Inline Pumps
Unit Tags:	CHP-1,-2,-3; CWP-1,-2-,3; HWP-1,-2,-3; PHP-G-1,-2,-3; PHP-1-2,-3,-4; PHP-3-1, -4-1; PHP-1
Notes:	Plans Dated 7.15.22 – Addendum Rev 3

TEXAS AIRSYSTEMS

SUBMITTAL
FOR RECORD

TABLE OF CONTENTS

Specificaiton Compliance

SECTION 23 21 23
HVAC PUMPS

PART 1 - GENERAL

1.01 SECTION INCLUDES:

A. In-Line Centrifugal Pumps - Pipe mounted

B. Vertical In-Line Pumps - Floor supported

1.02 RELATED REQUIREMENTS

A. Section 23 05 00 - Common Work Results for HVAC

B. Section 23 05 13 - Common Motor Requirements for HVAC Equipment

C. Section 23 05 23 - General-Duty Valves for HVAC Piping

D. Section 23 07 00 - HVAC INSULATION

E. Section 23 21 13 - HVAC Piping

1.03 SUBMITTALS

A. Submit manufacturer's product data for review in accordance with the provisions of Division 01.

B. Submit certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable. Pump curves shall indicate the complete family of impellers available for pump.

1.04 WARRANTY

Comply

A. Manufacturer shall warrant equipment for a period of 18 months from date of shipment or 12 month from date of substantial completion.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

Comply

A. Grundfos, Armstrong, Aurora, Bell & Gossett, Goulds, Paco, Patterson, Peerless, Taco, or Weinman. Grundfos, Armstrong, Aurora, Bell & Gossett, Goulds, Paco, Patterson, Peerless, Taco, or Weinman

B. Substitutions: Refer to Division 01.

2.02 GENERAL REQUIREMENTS

Comply

A. Statically and dynamically balance rotating parts.

B. Construction to permit complete servicing without breaking piping connections.

C. Provide flanged pump connections, tapped with pressure gauge ports.

D. Provide heating pumps suitable for handling water at 230 degrees F.

Deviation 1: Providing bronze impeller and 316 stainless steel shaft sleeve.

Deviation 1

E. Construct pumps of bronze fitted construction with Stainless steel impeller and carbon steel shafts. Ensure shaft deflection does not exceed 0.002" at sealing faces at maximum load.

Comply

F. Hydrostatic test pump casings at one and one-half times the design working pressure.

G. Construct pump casings of cast iron with replaceable bronze wearing rings and rated for 150 psig working pressure.

H. Supplied impeller diameter shall not to exceed 95% of the maximum diameter for which pump curves are published.

I. Coupling and Base Plate:

1. Mount pump and motor on common steel base plate furnished by pump manufacturer.

2. Manufacturer to furnish and mount steel flexible coupling. Fasten metal coupling guard to pump base plate.

J. Nameplate:

1. Stainless steel on pump and motor securely fastened to casings.

2. Provides data necessary for equipment identification and replacement.

2.03 IN-LINE CENTRIFUGAL PUMPS - PIPE MOUNTED

Comply

A. Type: Centrifugal, single stage, close coupled.

B. Casing: Cast iron, with suction and discharge gauge ports.

C. Bearings: Bronze bearings, oil lubricated

D. Seals: Mechanical seal with carbon seal face rotating against a ceramic seat.

2.04 VERTICAL IN-LINE PUMPS - FLOOR SUPPORTED

Comply

A. Type: Vertical, single stage, radially or horizontally split casing, for in-line mounting, for 175 psi (1200 kPa) working pressure.

B. Casing: Cast iron, with suction and discharge gauge port, casing wear ring, seal flush connection, drain plug, flanged suction and discharge.

Deviation 1

C. Impeller: AISI 304 stainless steel, fully enclosed, keyed directly to motor shaft or extension.

D. Shaft: Carbon steel with stainless steel impeller cap screw or nut and bronze sleeve.

Comply

E. Seal: Mechanical seal, 225 degrees F (107 degrees C) maximum continuous operating temperature.

F. Coupling: Flexible type with OSHA coupling guard

PART 3 - EXECUTION

3.01 INSTALLATION

Comply

A. Install pumps in accordance with manufacturer's instructions.

Comply

B. Provide pumps with soleplates, bedplates, or base plates carefully leveled, grouted, and bolted in place on concrete pads or foundations as shown on drawings. Grout to be expanding type containing catalyzed metallic aggregate. After grout has set, cut flush with bedplate and seal to prevent fraying deterioration at edges. Refer to drawings and Section 23 05 48 - (DO NOT USE) Vibration and Seismic Controls for HVAC for further requirements for piping, pumps, and vibration isolation.

Noted

C. Pump manufacturer's authorized representative shall make hot alignment check on couplings between motors and pumps. Operate equipment until components have reached operating temperature before hot check is made. Reposition equipment as required and repeat hot alignment check until parallel and angular alignments in both plan and elevation are within limits set by equipment manufacturers. Alignment to be accomplished with dial indicator.

Comply

D. Provide strainer or suction diffuser on each pump as specified in Section 23 21 16.

E. Provide air ventcock in high point of casing.

F. Provide OSHA coupling guard if not furnished by the manufacturer.

G. Refer to Section 23 07 00 - HVAC INSULATION for insulation requirements. Insulate all parts subject to heat and condensation. Apply insulation after final alignment and adjustment.

Comply

3.02 TESTING, START-UP, DEMONSTRATION

A. Test pumps, valves, piping, and fittings for mechanical tightness, both before start-up and after start-up.

B. Furnish electrical connections for motor drive and to verify proper phasing under Division 26.

C. Start-up pumps, test individually and as a part of the system they serve.

D. Prepare pumps for test and balance as required by Section 23 05 93**.** Correct deficiencies found and retest.

E. Demonstrate and instruct maintenance personnel in the operation of pumps and systems.

END OF SECTION 23 21 23

Schedule Compliance

Pump Schedule Compliance

DESIGNATION		SERVICE	MANUFACTURER & SERIES	TYPE	SIZE	IMPELLER I	GPM	HEAD (FT.)	MOTOR RPM	BHP	HP	VOLT/PH	STARTER TYPE	LOCATION
CHP-1	SCHEDULED	CH-1	B&G e-80SC	IL	6x6x7B	6.75	1000	150	3600	49.5	60	460/3	VFD	SEE DIV 26
CHP-1	**SUBMITTED**	**CH-1**	**Armstrong 4300**	**IL**	**4x4x8**	**7.02**	**1000**	**150**	**3580**	**49.73**	**60**	**460/3**	**By Others**	**By Others**
CHP-2	SCHEDULED	CH-2	B&G e-80SC	IL	6x6x7B	6.75	1000	150	3600	49.5	60	460/3	VFD	SEE DIV 26
CHP-2	**SUBMITTED**	**CH-2**	**Armstrong 4300**	**IL**	**4x4x8**	**7.02**	**1000**	**150**	**3580**	**49.73**	**60**	**460/3**	**By Others**	**By Others**
CHP-3	SCHEDULED	CH-3	B&G e-80SC	IL	6x6x7B	6.75	1000	150	3600	49.5	60	460/3	VFD	SEE DIV 26
CHP-3	**SUBMITTED**	**CH-3**	**Armstrong 4300**	**IL**	**4x4x8**	**7.02**	**1000**	**150**	**3580**	**49.73**	**60**	**460/3**	**By Others**	**By Others**
CWP-1	SCHEDULED	CH-1	B&G e-80SC	IL	6x6x9.5B	9	1000	55	1800	17.2	20	460/3	VFD	SEE DIV 26
CWP-1	**SUBMITTED**	**CH-1**	**Armstrong 4300**	**IL**	**6x6x10**	**10.19**	**1000**	**55**	**1780**	**23.05**	**25**	**460/3**	**By Others**	**By Others**
CWP-2	SCHEDULED	CH-2	B&G e-80SC	IL	6x6x9.5B	9	1000	55	1800	17.2	20	460/3	VFD	SEE DIV 26
CWP-2	**SUBMITTED**	**CH-2**	**Armstrong 4300**	**IL**	**6x6x10**	**10.19**	**1000**	**55**	**1780**	**23.05**	**25**	**460/3**	**By Others**	**By Others**
CWP-3	SCHEDULED	CH-3	B&G e-80SC	IL	6x6x9.5B	9	1000	55	1800	17.2	20	460/3	VFD	SEE DIV 26
CWP-3	**SUBMITTED**	**CH-3**	**Armstrong 4300**	**IL**	**6x6x10**	**10.19**	**1000**	**55**	**1780**	**23.05**	**25**	**460/3**	**By Others**	**By Others**
HWP-1	SCHEDULED	HWB-1	B&G e-80SC	IL	3x3x7C	6.75	400	150	3600	19.5	25	460/3	VFD	SEE DIV 26
HWP-1	**SUBMITTED**	**HWB-1**	**Armstrong 4300**	**IL**	**3x3x8**	**6.61**	**400**	**150**	**3580**	**21.26**	**25**	**460/3**	**By Others**	**By Others**
HWP-2	SCHEDULED	HWB-2	B&G e-80SC	IL	3x3x7C	6.75	400	150	3600	19.5	25	460/3	VFD	SEE DIV 26
HWP-2	**SUBMITTED**	**HWB-2**	**Armstrong 4300**	**IL**	**3x3x8**	**6.61**	**400**	**150**	**3580**	**21.26**	**25**	**460/3**	**By Others**	**By Others**
HWP-3	SCHEDULED	HWB-3	B&G e-80SC	IL	3x3x7C	6.75	400	150	3600	19.5	25	460/3	VFD	SEE DIV 26
HWP-3	**SUBMITTED**	**HWB-3**	**Armstrong 4300**	**IL**	**3x3x8**	**6.61**	**400**	**150**	**3580**	**21.26**	**25**	**460/3**	**By Others**	**By Others**
PHP-G-1	SCHEDULED	AHU-G-1	B&G e-80	IL	3x3x11B	10.4	157	30	1200	1.93	3	460/3	MAG-X-L	SEE DIV 26
PHP-G-1	**SUBMITTED**	**AHU-G-1**	**Armstrong 4380**	**IL**	**3x3x6**	**6.16**	**157**	**30**	**1760**	**1.57**	**3**	**460/3**	**By Others**	**By Others**
PHP-G-2	SCHEDULED	AHU-G-2	B&G e-80	IL	2x2x7B	6.63	131	30	1800	1.54	2	460/3	MAG-X-L	SEE DIV 26
PHP-G-2	**SUBMITTED**	**AHU-G-2**	**Armstrong 4380**	**IL**	**3x3x6**	**5.99**	**131**	**30**	**1760**	**1.37**	**2**	**460/3**	**By Others**	**By Others**
PHP-G-3	SCHEDULED	AHU-G-3	B&G e-80	IL	4x4x11B	10.63	304	30	1200	3.29	5	460/3	MAG-X-L	SEE DIV 26
PHP-G-3	**SUBMITTED**	**AHU-G-3**	**Armstrong 4380**	**IL**	**4x4x6**	**6.19**	**304**	**30**	**1765**	**2.98**	**5**	**460/3**	**By Others**	**By Others**
PHP-1-2	SCHEDULED	AHU-1-2	B&G e-80	IL	4x4x7B	6.13	200	30	1800	2.17	3	460/3	MAG-X-L	SEE DIV 26
PHP-1-2	**SUBMITTED**	**AHU-1-2**	**Armstrong 4360**	**IL**	**3x3x7**	**6.84**	**200**	**30**	**1760**	**2.35**	**3**	**460/3**	**By Others**	**By Others**
PHP-1-3	SCHEDULED	AHU-1-3	B&G e-80	IL	4x4x7B	6.13	204	30	1800	2.2	3	460/3	MAG-X-L	SEE DIV 26
PHP-1-3	**SUBMITTED**	**AHU-1-3**	**Armstrong 4360**	**IL**	**3x3x7**	**6.89**	**204**	**30**	**1760**	**2.4**	**3**	**460/3**	**By Others**	**By Others**
PHP-1-4	SCHEDULED	AHU-1-4	B&G e-80	IL	5x5x11	9.75	388	30	1200	3.77	5	460/3	MAG-X-L	SEE DIV 26
PHP-1-4	**SUBMITTED**	**AHU-1-4**	**Armstrong 4380**	**IL**	**5x5x8**	**6.96**	**388**	**30**	**1765**	**3.99**	**5**	**460/3**	**By Others**	**By Others**
PHP-3-1	SCHEDULED	AHU-3-1	B&G e-80	IL	4x4x11B	10.63	223	30	1200	2.32	5	460/3	MAG-X-L	SEE DIV 26
PHP-3-1	**SUBMITTED**	**AHU-3-1**	**Armstrong 4380**	**IL**	**4x4x8**	**8.19**	**223**	**30**	**1170**	**2.42**	**5**	**460/3**	**By Others**	**By Others**
PHP-4-1	SCHEDULED	AHU-4-1	B&G e-80	IL	4x4x11B	10.63	226	30	1200	2.34	5	460/3	MAG-X-L	SEE DIV 26
PHP-4-1	**SUBMITTED**	**AHU-4-1**	**Armstrong 4380**	**IL**	**4x4x8**	**8.19**	**226**	**30**	**1170**	**2.44**	**5**	**460/3**	**By Others**	**By Others**
PHP-1	SCHEDULED	DOAS-1	B&G e-80	IL	4x4x7B	6.13	202	30	1800	2.18	3	460/3	MAG-X-L	SEE DIV 26
PHP-1	**SUBMITTED**	**DOAS-1**	**Armstrong 4360**	**IL**	**3x3**	**6.86**	**202**	**30**	**1760**	**2.38**	**3**	**460/3**	**By Others**	**By Others**

Equipment Summary

TEXAS AIRSYSTEMS

SUBMITTAL
FOR REVIEW

EQUIPMENT SUMMARY

ARMSTRONG VERTICAL INLINE PUMPS

Qty. (3) Armstrong 4300 Split Coupled Vertical Inline Pumps Complete as Follows:
- 60hp, ODP, NEMA Premium Inverted Duty Motor
- 1000gpm @ 150' TDH, 3580RPM
- 460V/3Ph/60Hz
- ANSI 125 PSIG Rated
- 416 SST Shaft
- ANSI 125 Suction Guide
- Baldor Motor

TAG: CHP-1,-2,-3

Qty. (3) Armstrong 4300 Split Coupled Vertical Inline Pumps Complete as Follows:
- 25hp, ODP, NEMA Premium Inverted Duty Motor
- 1000gpm @ 55' TDH, 1780RPM
- 460V/3Ph/60Hz
- ANSI 125 PSIG Rated
- 416 SST Shaft
- ANSI 125 Suction Guide
- Baldor Motor

TAG: CWP-1,-2,-3

Qty. (3) Armstrong 4300 Split Coupled Vertical Inline Pumps Complete as Follows:
- 25hp, ODP, NEMA Premium Inverted Duty Motor
- 400gpm @ 150' TDH, 3580RPM
- 460V/3Ph/60Hz
- ANSI 125 PSIG Rated
- 416 SST Shaft
- ANSI 125 Suction Guide
- Baldor Motor

TAG: HWP-1,-2,-3

Qty. (9) Armstrong 4380/4360 Close Coupled Vertical Inline Pumps Complete as Follows:
- 2-5hp, ODP, NEMA Premium Inverted Duty Motor
- Scheduled gpm @ Scheduled TDH, 1760RPM
- 460V/3Ph/60Hz
- ANSI 125 PSIG Rated
- 416 SST Shaft
- Baldor Motor

TAG: PHP-G-1,-2,-3; PHP-1-2,-3,-4; PHP-3-1, -4-1; PHP-1

NOT QUOTING: VFDs, Rigging or Hoisting, Piping or Electrical Wiring, Factory Mounted & Programmed Controls, Flex Connectors, Inertia Bases, VFD Disconnects/Bypass, Basket Strainer, Check Valves, Butterfly Valves, Triple Duty Valves, Suction Guides Unless Listed in Scope, Valves of Any Kind Not Mentioned in Scope, Extended Parts Warranty, Labor Warranty

CHP-1,2,3

Technical Data & Drawings

Submittal

split-coupled vertical in-line pump

Model: Series 4300 - 4x4x8 - 2p - 60 hp - (Customer Choice Motor) with Suction Guide

Project name: **Representative:**

Location: **Phone number:**

Date submitted: **e-mail:**

Engineer: **Submitted by:**

Application design data

Tag number:	CHP-1,2,3	Configuration:	Single
Service:	CH-1,2,3	Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 ˚F
Total system flow:	1000 USgpm	Duty flow per pump:	1000 USgpm
System head:	150 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	30.85 ft	Absorbed Power/BHP:	49.73 hp
%Mtr Safety*:	20.66%	Efficiency at Design:	76.17 %
Outlet velocity:	25.2 ft/s	Impeller diameter:	7.02 in
PEIcl:	0.97	ERcl:	3
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Pump shaft:	416 Stainless Steel
Connections:	Inlet: 4 in, Outlet: 4 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron, E-coated	Casing gasket:	Confined Non-Asbestos Fiber
Casing wear ring:	Bronze (NOT E-COATED)		

Note: Surface behind the casing wear ring and casing wear ring are not E-coated.

Mechanical seal data

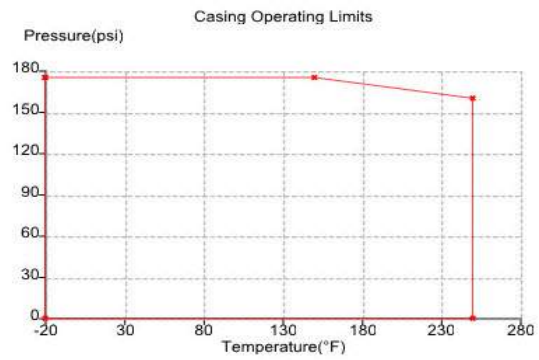
Seal type:	Outside Balanced	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-SSC AB2	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	Viton
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

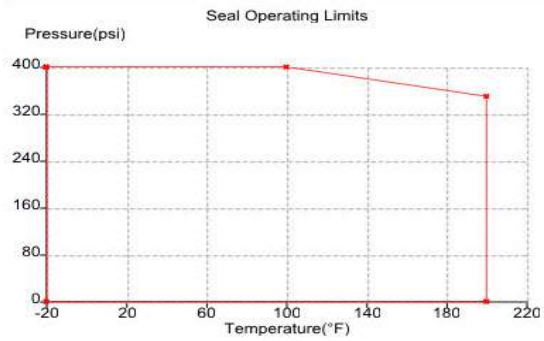
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	326TSC	Motor type:	Induction
Speed:	3580 rpm	Size:	60 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



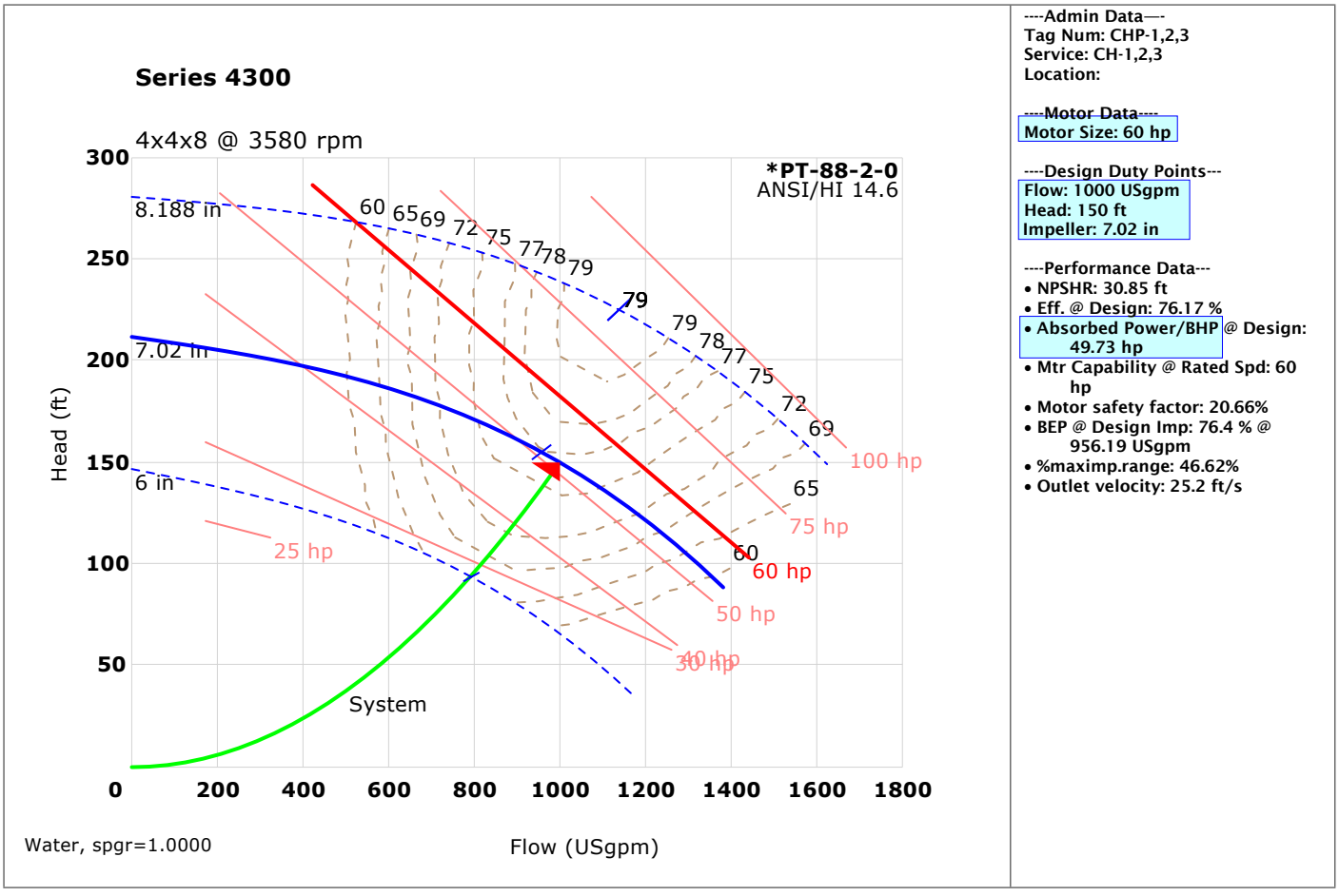


Maximum pressure: 175 psi

Maximum temperature: 200 F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data----
Tag Num: CHP-1,2,3
Service: CH-1,2,3
Location:

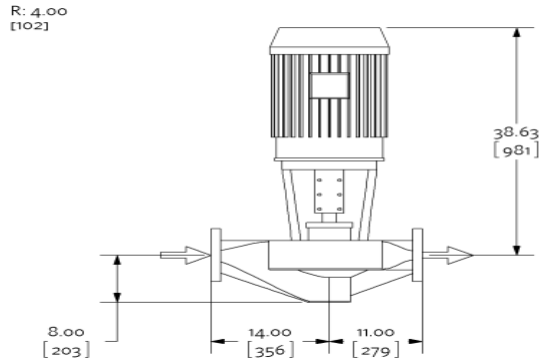
----Motor Data----
Motor Size: 60 hp

----Design Duty Points---
Flow: 1000 USgpm
Head: 150 ft
Impeller: 7.02 in

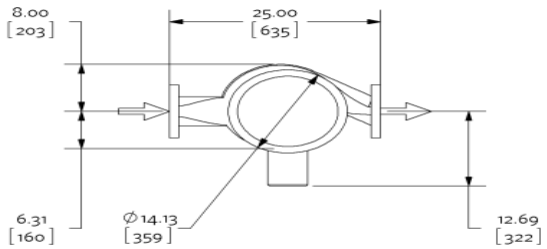
----Performance Data---
- NPSHR: 30.85 ft
- Eff. @ Design: 76.17 %
- Absorbed Power/BHP @ Design: 49.73 hp
- Mtr Capability @ Rated Spd: 60 hp
- Motor safety factor: 20.66%
- BEP @ Design Imp: 76.4 % @ 956.19 USgpm
- %maximp.range: 46.62%
- Outlet velocity: 25.2 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 898 lb [407.33 kg], Units of measure: inches [millimeters]
- Not to scale
- R = minimum lifting clearance required above motor
- Coupling guard and flush line (not shown) are supplied
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped drain plug and ¼ inch NPT suction with casing and discharge gauge ports

Connection details

Connection	Size	Rating	OD	Bolt quantity*	BCD	Bolt size
Inlet	4	ANSI-125	9.00	8	7.50	0.625
Outlet	4	ANSI-125	9.00	8	7.50	0.625

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Pre-Wired Control Bridge: No
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No
Bearing Current Handling: Armstrong Choice Shaft Ground

Submittal

Suction guide

Model: SG-64

Project name: **Representative:**

Location: **Phone number:**

Date submitted: **e-mail:**

Engineer: **Submitted by:**

Application design data

Tag	Qty	Model	Pipe Conn.size	Pump Conn.size	Design flowrate	Pressure Drop*	Associated pump
CHP-1,2,3	1	SG-64	6 in	4 in	1000 USgpm	11.58 ft	4300 - 4x4x8 - 2p - 60 hp - (Customer Choice Motor)

*at design flow

Materials of construction

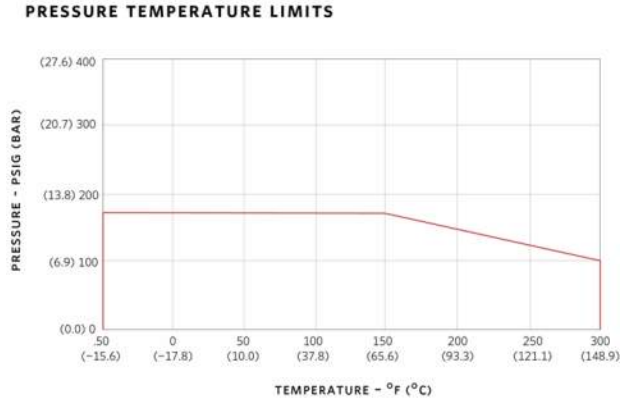
SG-64

Body:	Cast iron	Cover gasket:	Synthetic fiber
Guide vanes:	Cast iron	Strainer:	Stainless Steel,0.125"(3mm)Perf..
Cover plate:	Cast iron	Start-up strainer*:	Fine Mesh Galvanized Steel

*Remove start up strainer after 24 hours of pump operation

Operating limits (temperature - pressure)

SG-64-Suction Guide-ANSI-125

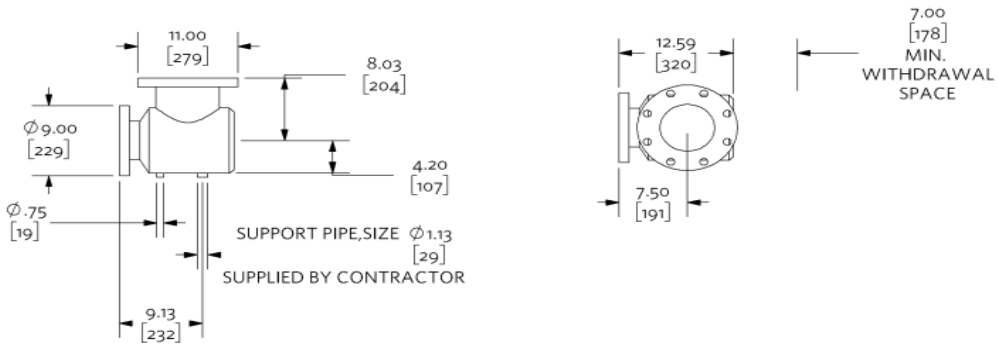


Maximum pressure: 175 psi
Maximum temperature: 300 F

Units are hydrostatically tested to 150% of maximum working pressure

Dimensional data (not for construction)

SG-64	Weight: 87 lb [39.46 kg]
Side view	Top view



Not to scale
Units of measure: inches [millimeters]
Tolerance of +/- 0.125 inch (+/- 3 mm) should be used
For certified dimensions, please contact your Armstrong representative

CWP-1,2,3

Technical Data & Drawings

Submittal

split-coupled vertical in-line pump

Model: Series 4300 - 6x6x10 - 4p - 25 hp - (Customer Choice Motor) with Suction Guide

Project name:	Enter Project Name	**Representative:**	User
Location:		**Phone number:**	
Date submitted:		**e-mail:**	
Engineer:		**Submitted by:**	

Application design data

Tag number:	**CWP-1, CWP-2, CWP-3**	Configuration:	Single
Service:	**CH-1, CH-2, CH-3**	Suction pressure:	0 ft
Location:	Location	Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 ˚F
Total system flow:	1000 USgpm	Duty flow per pump:	1000 USgpm
System head:	55 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	27.47 ft	Absorbed Power/BHP:	23.05 hp
%Mtr Safety*:	8.44%	Efficiency at Design:	60.24 %
Outlet velocity:	11.11 ft/s	Impeller diameter:	10.19 in
PEIcl:	0.96	ERcl:	4
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Pump shaft:	416 Stainless Steel
Connections:	Inlet: 6 in, Outlet: 6 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron, E-coated	Casing gasket:	Confined Non-Asbestos Fiber
Casing wear ring:	Bronze (NOT E-COATED)		

Note: Surface behind the casing wear ring and casing wear ring are not E-coated.

Mechanical seal data

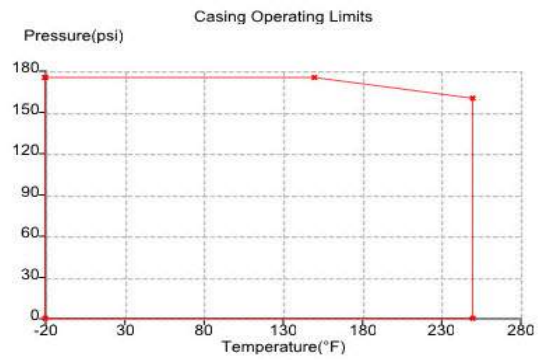
Seal type:	Outside Balanced	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-SSC AB2	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	Viton
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

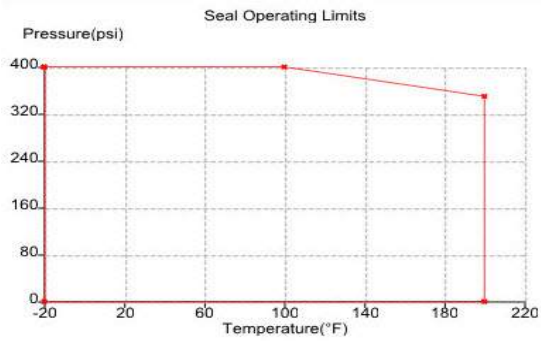
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	284TC	Motor type:	Induction
Speed:	1780 rpm	Size:	25 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



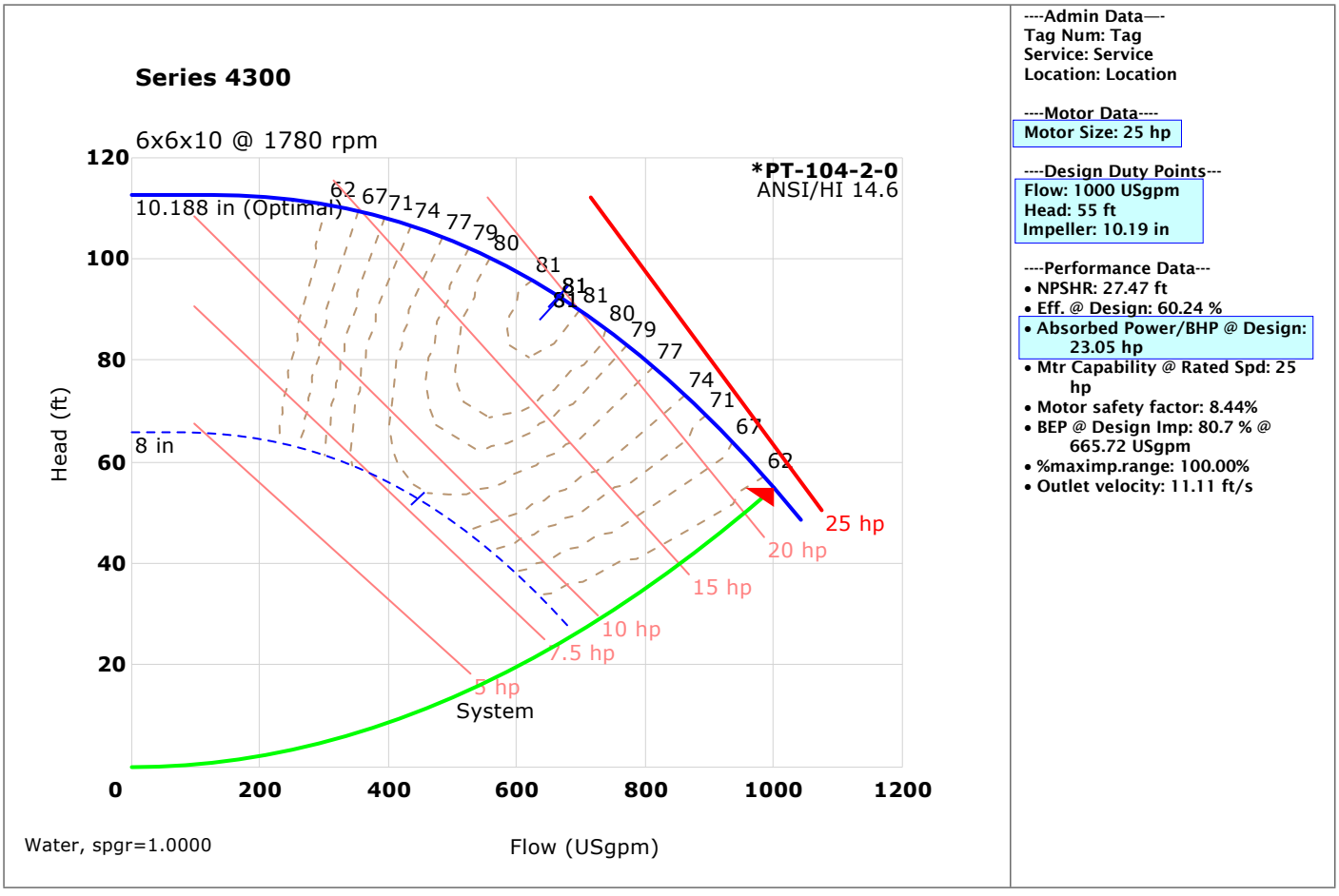


Maximum pressure: 175 psi

Maximum temperature: 200 F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data---
Tag Num: Tag
Service: Service
Location: Location

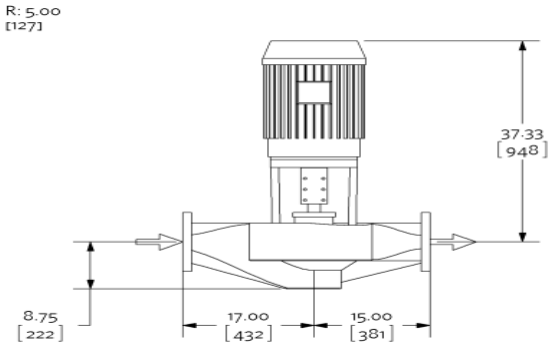
----Motor Data----
Motor Size: 25 hp

----Design Duty Points---
Flow: 1000 USgpm
Head: 55 ft
Impeller: 10.19 in

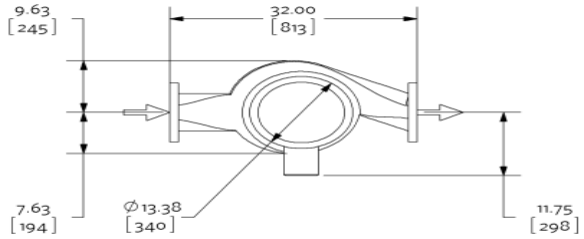
----Performance Data---
- NPSHR: 27.47 ft
- Eff. @ Design: 60.24 %
- Absorbed Power/BHP @ Design: 23.05 hp
- Mtr Capability @ Rated Spd: 25 hp
- Motor safety factor: 8.44%
- BEP @ Design Imp: 80.7 % @ 665.72 USgpm
- %maximp.range: 100.00%
- Outlet velocity: 11.11 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 791 lb [358.79 kg], Units of measure: inches [millimeters]
- Not to scale
- R = minimum lifting clearance required above motor
- Coupling guard and flush line (not shown) are supplied
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped drain plug and ¼ inch NPT suction with casing and discharge gauge ports

Connection details

Connection	Size	Rating	OD	Bolt quantity*	BCD	Bolt size
Inlet	6	ANSI-125	11.00	8	9.50	0.75
Outlet	6	ANSI-125	11.00	8	9.50	0.75

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Pre-Wired Control Bridge: No
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No
Bearing Current Handling: Armstrong Choice Shaft Ground

Submittal

Suction guide

Model: SG-66

Project name:	Enter Project Name	**Representative:**	User
Location:		**Phone number:**	
Date submitted:		**e-mail:**	
Engineer:		**Submitted by:**	

Application design data

Tag	Qty	Model	Pipe Conn.size	Pump Conn.size	Design flowrate	Pressure Drop*	Associated pump
Tag	1	SG-66	6 in	6 in	1000 USgpm	2.98 ft	4300 - 6x6x10 - 4p - 25 hp - (Customer Choice Motor)

*at design flow

Materials of construction

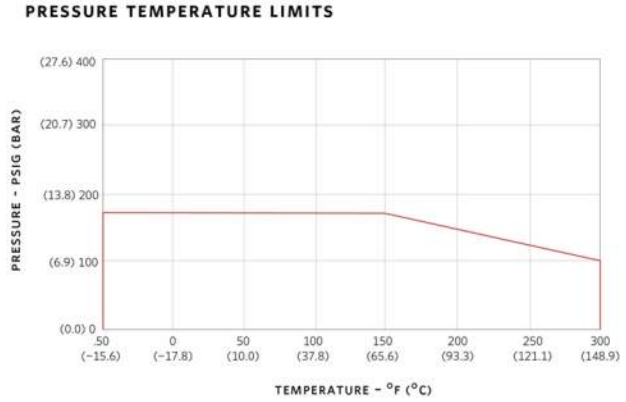
SG-66

Body:	Cast iron	Cover gasket:	Synthetic fiber
Guide vanes:	Cast iron	Strainer:	Stainless Steel,0.125"(3mm)Perf..
Cover plate:	Cast iron	Start-up strainer*:	Fine Mesh Galvanized Steel

*Remove start up strainer after 24 hours of pump operation

Operating limits (temperature - pressure)

SG-66-Suction Guide-ANSI-125

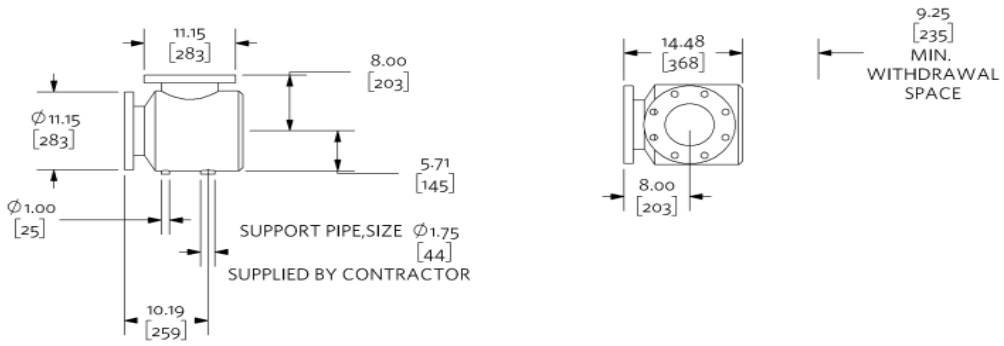


Maximum pressure: 175 psi
Maximum temperature: 300 F

Units are hydrostatically tested to 150% of maximum working pressure

Dimensional data (not for construction)

SG-66	Weight: 141 lb [63.96 kg]
Side view	Top view



Not to scale
Units of measure: inches [millimeters]
Tolerance of +/- 0.125 inch (+/- 3 mm) should be used
For certified dimensions, please contact your Armstrong representative

HWP-1,2,3

Technical Data & Drawings

Submittal

split-coupled vertical in-line pump

Model: Series 4300 - 3x3x8 - 2p - 25 hp - (Customer Choice Motor) with Suction Guide

Project name: **Representative:**

Location: **Phone number:**

Date submitted: **e-mail:**

Engineer: **Submitted by:**

Application design data

Tag number:	HWP-1,2,3	Configuration:	Single
Service:	HWB-1,2,3	Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 ˚F
Total system flow:	400 USgpm	Duty flow per pump:	400 USgpm
System head:	150 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	17.13 ft	Absorbed Power/BHP:	21.26 hp
%Mtr Safety*:	17.57%	Efficiency at Design:	71.25 %
Outlet velocity:	17.36 ft/s	Impeller diameter:	6.61 in
PEIcl:	0.93	ERcl:	7
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Pump shaft:	416 Stainless Steel
Connections:	Inlet: 3 in, Outlet: 3 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron, E-coated	Casing gasket:	Confined Non-Asbestos Fiber
Casing wear ring:	Bronze (NOT E-COATED)		

Note: Surface behind the casing wear ring and casing wear ring are not E-coated.

Mechanical seal data

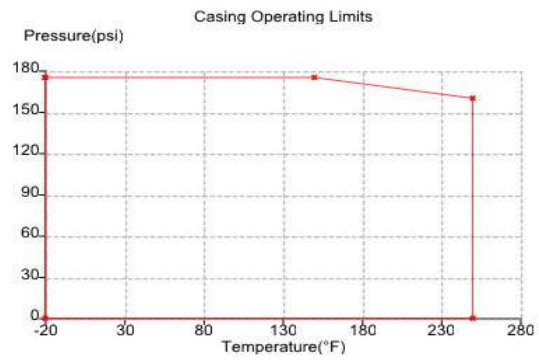
Seal type:	Outside Balanced	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-SSC AB2	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	Viton
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

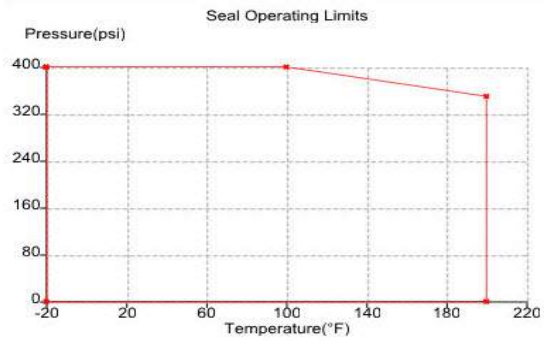
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	256TC	Motor type:	Induction
Speed:	3580 rpm	Size:	25 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



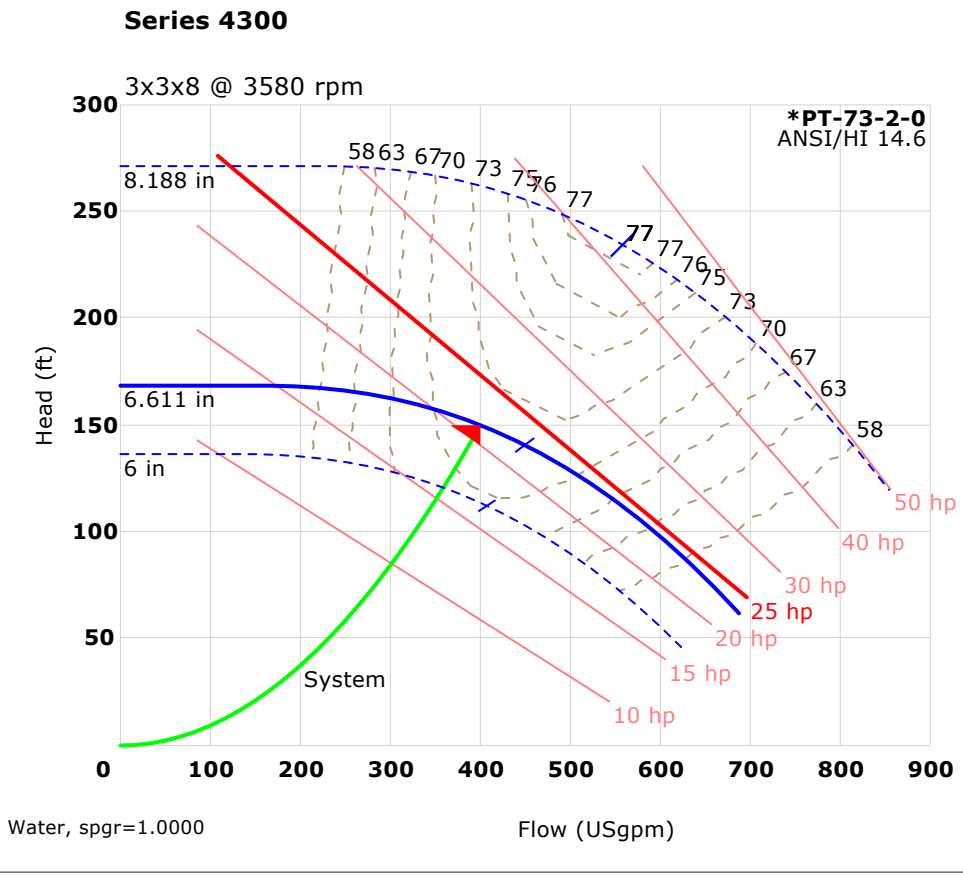


Maximum pressure: 175 psi

Maximum temperature: 200 F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data—-
Tag Num: HWP-1,2,3
Service: HWB-1,2,3
Location:

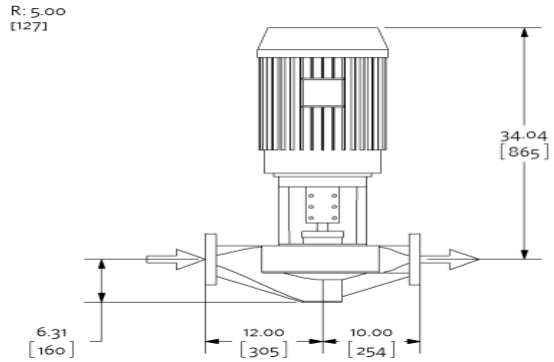
----Motor Data----
Motor Size: 25 hp

----Design Duty Points---
Flow: 400 USgpm
Head: 150 ft
Impeller: 6.61 in

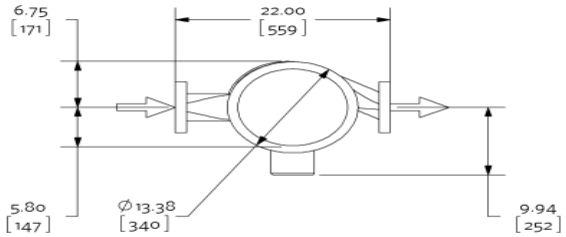
----Performance Data---
- NPSHR: 17.13 ft
- Eff. @ Design: 71.25 %
- Absorbed Power/BHP @ Design: 21.26 hp
- Mtr Capability @ Rated Spd: 25 hp
- Motor safety factor: 17.57%
- BEP @ Design Imp: 71.6 % @ 450.22 USgpm
- %maximp.range: 27.95%
- Outlet velocity: 17.36 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 498 lb [225.89 kg], Units of measure: inches [millimeters]
- Not to scale
- R = minimum lifting clearance required above motor
- Coupling guard and flush line (not shown) are supplied
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped drain plug and ¼ inch NPT suction with casing and discharge gauge ports

Connection details

Connection	Size	Rating	OD	Bolt quantity*	BCD	Bolt size
Inlet	3	ANSI-125	7.50	4	6.00	0.625
Outlet	3	ANSI-125	7.50	4	6.00	0.625

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Pre-Wired Control Bridge: No
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No
Bearing Current Handling: Armstrong Choice Shaft Ground

Submittal

Suction guide

Model: SG-33

Project name: **Representative:**

Location: **Phone number:**

Date submitted: **e-mail:**

Engineer: **Submitted by:**

Application design data

Tag	Qty	Model	Pipe Conn.size	Pump Conn.size	Design flowrate	Pressure Drop*	Associated pump
HWP-1,2,3	1	SG-33	3 in	3 in	400 USgpm	7.11 ft	4300 - 3x3x8 - 2p - 25 hp - (Customer Choice Motor)

*at design flow

Materials of construction

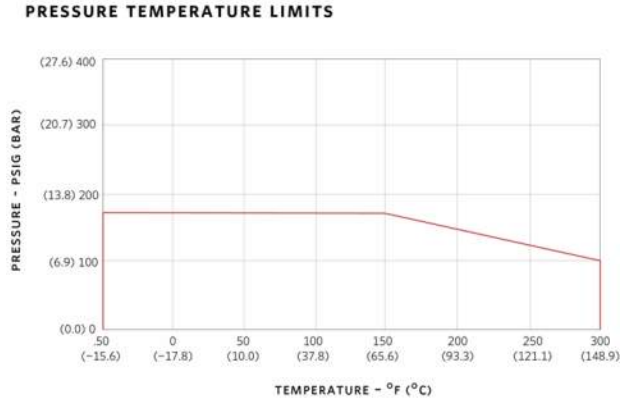
SG-33

Body:	Cast iron	Cover gasket:	Synthetic fiber
Guide vanes:	Cast iron	Strainer:	Stainless Steel,0.125"(3mm)Perf..
Cover plate:	Cast iron	Start-up strainer*:	Fine Mesh Galvanized Steel

*Remove start up strainer after 24 hours of pump operation

Operating limits (temperature - pressure)

SG-33-Suction Guide-ANSI-125

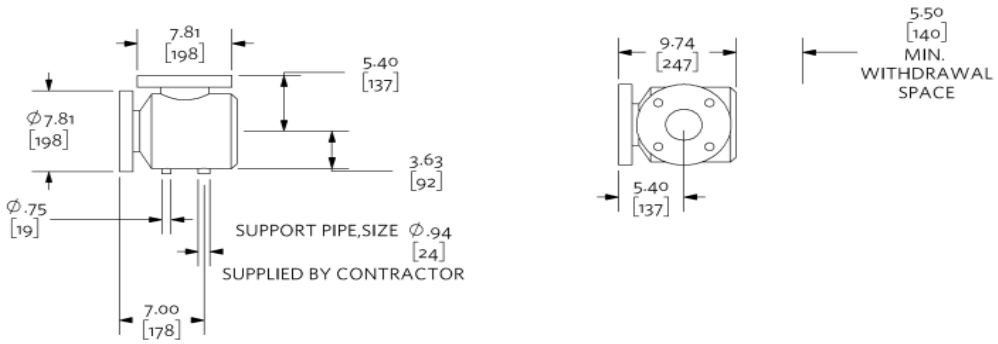


Maximum pressure: 175 psi
Maximum temperature: 300 F

Units are hydrostatically tested to 150% of maximum working pressure

Dimensional data (not for construction)

SG-33	Weight: 45 lb [20.41 kg]
Side view	Top view



Not to scale
Units of measure: inches [millimeters]
Tolerance of +/- 0.125 inch (+/- 3 mm) should be used
For certified dimensions, please contact your Armstrong representative

PHP-G-1

Technical Data & Drawings

Submittal

close-coupled vertical in-line pump

Model: Series 4380 - 3x3x6 - 4p - 3 hp - (Customer Choice Motor)

Project name: **Representative:**

Location: **Phone number:**

Date submitted: **e-mail:**

Engineer: **Submitted by:**

Application design data

Tag number:	PHP-G-1	Configuration:	Single
Service:	**AHU-G-1**	Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 ˚F
Total system flow:	157 USgpm	Duty flow per pump:	157 USgpm
System head:	30 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	9.41 ft	Absorbed Power/BHP:	1.57 hp
%Mtr Safety*:	91.24%	Efficiency at Design:	75.82 %
Outlet velocity:	6.81 ft/s	Impeller diameter:	6.16 in
PEIcl:	0.95	ERcl:	5
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Casing gasket:	Confined Non-Asbestos Fiber
Connections:	Inlet: 3 in, Outlet: 3 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron, E-coated	Shaft sleeve:	316 Stainless Steel

Mechanical seal data

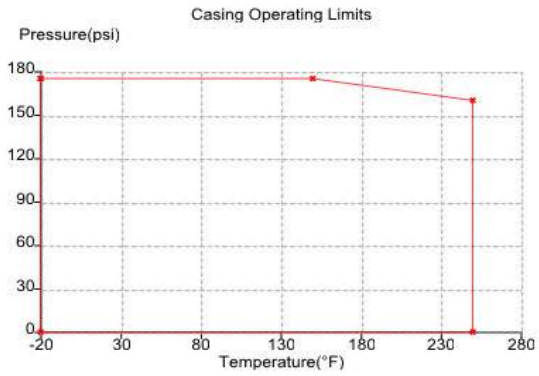
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

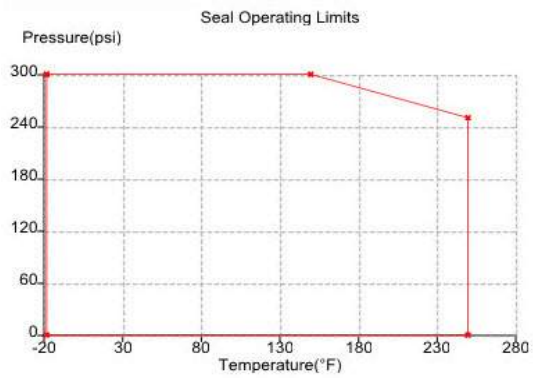
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	182JM	Motor type:	Induction
Speed:	1760 rpm	Size:	3 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



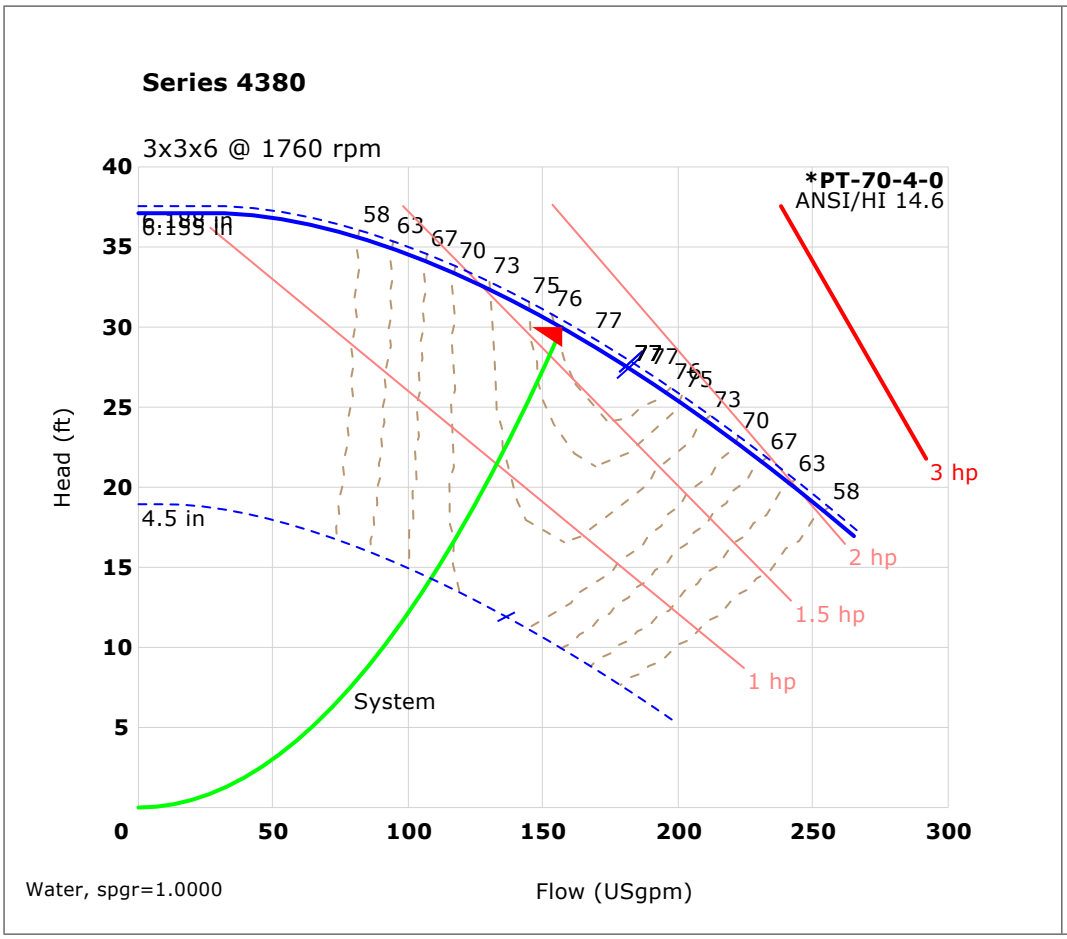


Maximum pressure: 175 psi

Maximum temperature: 250F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data—-
Tag Num: PHP-G-1
Service:
Location:

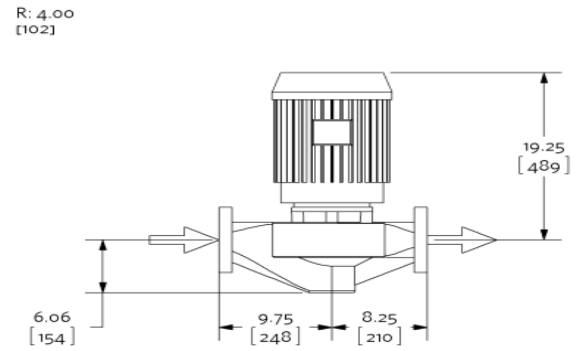
----Motor Data----
Motor Size: 3 hp

----Design Duty Points---
Flow: 157 USgpm
Head: 30 ft
Impeller: 6.16 in

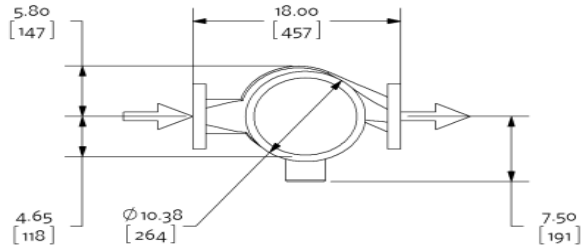
----Performance Data---
- NPSHR: 9.41 ft
- Eff. @ Design: 75.82 %
- Absorbed Power/BHP @ Design: 1.57 hp
- Mtr Capability @ Rated Spd: 3 hp
- Motor safety factor: 91.24%
- BEP @ Design Imp: 76.7 % @ 182.81 USgpm
- %maximp.range: 98.05%
- Outlet velocity: 6.81 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 239 lb [108.41 kg], Units of measure: inches [millimeters]
- Not to scale
- R = minimum lifting clearance required above motor
- Coupling guard and flush line (not shown) are supplied
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped with casing drain plug and ¼ inch NPT suction and discharge gauge ports

Connection details

Connection	Size	Rating	OD	Bolt quantity*	BCD	Bolt size
Inlet	3	ANSI-125	7.50	4	6.00	0.625
Outlet	3	ANSI-125	7.50	4	6.00	0.625

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No

PHP-G-2

Technical Data & Drawings

Submittal

close-coupled vertical in-line pump

Model: Series 4380 - 3x3x6 - 4p - 2 hp - (Customer Choice Motor)

Project name:	**Representative:**
Location:	**Phone number:**
Date submitted:	**e-mail:**
Engineer:	**Submitted by:**

Application design data

Tag number:	PHP-G-2	Configuration:	Single
Service:	**AHU-G-2**	Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 ˚F
Total system flow:	131 USgpm	Duty flow per pump:	131 USgpm
System head:	30 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	8.07 ft	Absorbed Power/BHP:	1.37 hp
%Mtr Safety*:	46.18%	Efficiency at Design:	72.54 %
Outlet velocity:	5.69 ft/s	Impeller diameter:	5.99 in
PEIcl:	0.95	ERcl:	5
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Casing gasket:	Confined Non-Asbestos Fiber
Connections:	Inlet: 3 in, Outlet: 3 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron, E-coated	Shaft sleeve:	316 Stainless Steel

Mechanical seal data

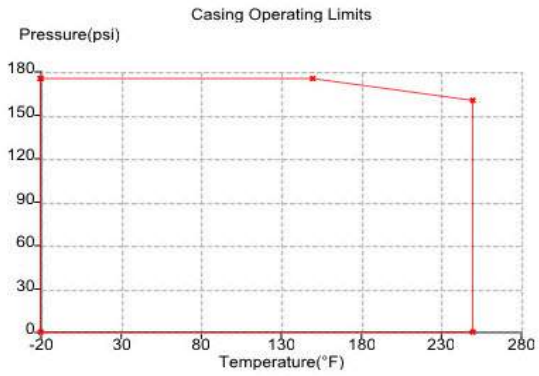
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

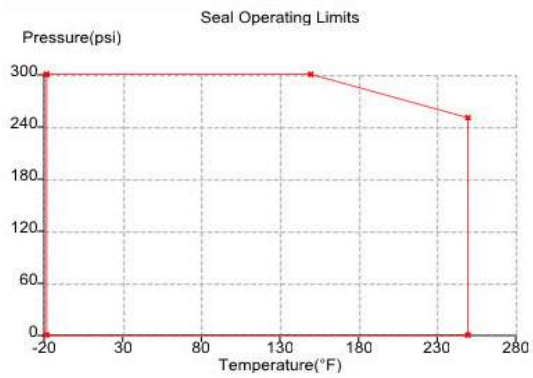
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	145JM	Motor type:	Induction
Speed:	1760 rpm	Size:	2 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



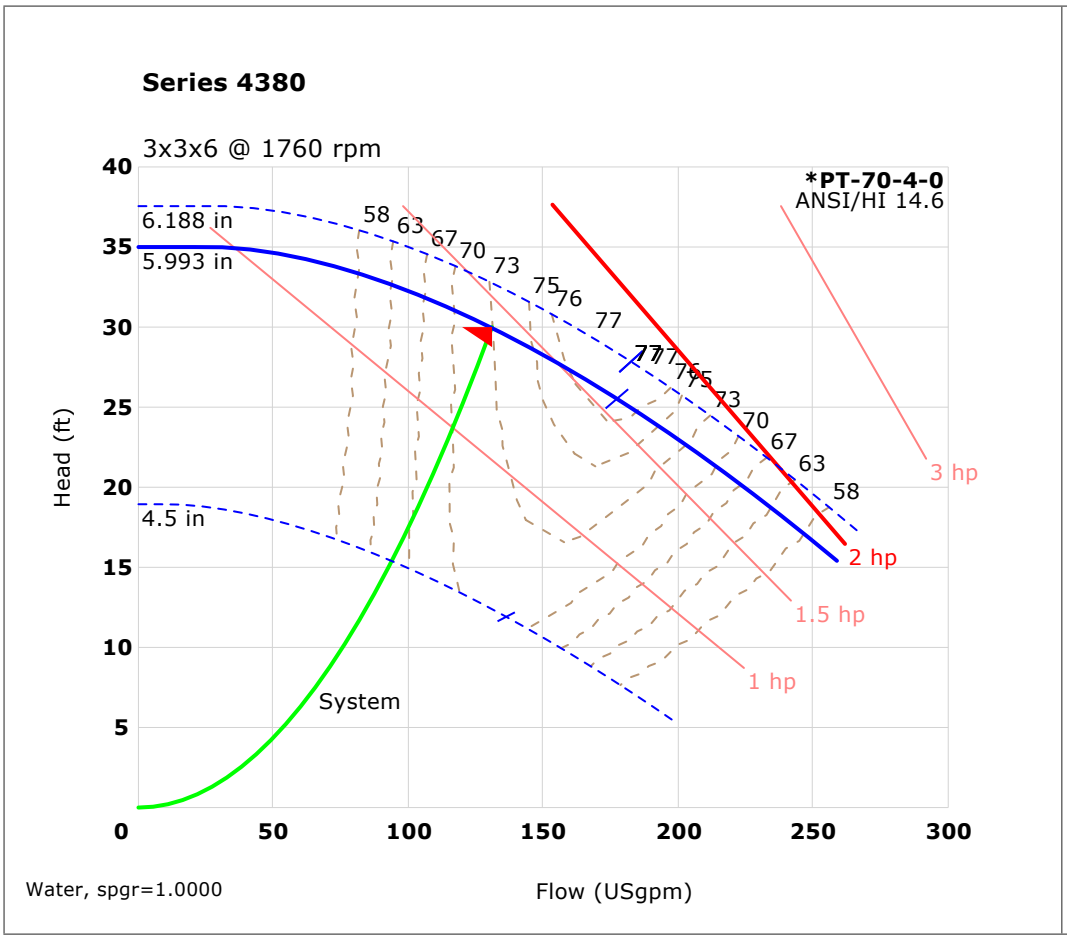


Maximum pressure: 175 psi

Maximum temperature: 250F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data—-
Tag Num: PHP-G-2
Service:
Location:

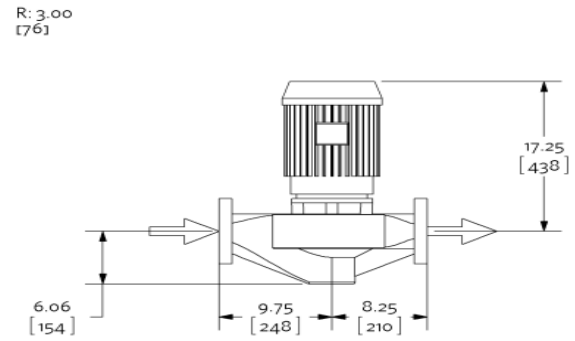
----Motor Data----
Motor Size: 2 hp

----Design Duty Points---
Flow: 131 USgpm
Head: 30 ft
Impeller: 5.99 in

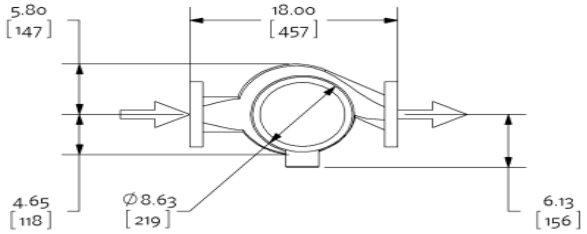
----Performance Data---
- NPSHR: 8.07 ft
- Eff. @ Design: 72.54 %
- Absorbed Power/BHP @ Design: 1.37 hp
- Mtr Capability @ Rated Spd: 2 hp
- Motor safety factor: 46.18%
- BEP @ Design Imp: 76 % @ 178.47 USgpm
- %maximp.range: 88.48%
- Outlet velocity: 5.69 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 209 lb [94.8 kg], Units of measure: inches [millimeters]
- Not to scale
- R = minimum lifting clearance required above motor
- Coupling guard and flush line (not shown) are supplied
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped with casing drain plug and ¼ inch NPT suction and discharge gauge ports

Connection details

Connection	Size	Rating	OD	Bolt quantity*	BCD	Bolt size
Inlet	3	ANSI-125	7.50	4	6.00	0.625
Outlet	3	ANSI-125	7.50	4	6.00	0.625

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No

PHP-G-3

Technical Data & Drawings

Submittal

close-coupled vertical in-line pump

Model: Series 4380 - 4x4x6 - 4p - 5 hp - (Customer Choice Motor)

Project name:	**Representative:**
Location:	**Phone number:**
Date submitted:	**e-mail:**
Engineer:	**Submitted by:**

Application design data

Tag number:	PHP-G-3	Configuration:	Single
Service:	**AHU-G-3**	Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 ˚F
Total system flow:	304 USgpm	Duty flow per pump:	304 USgpm
System head:	30 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	7.54 ft	Absorbed Power/BHP:	2.98 hp
%Mtr Safety*:	67.94%	Efficiency at Design:	77.35 %
Outlet velocity:	7.66 ft/s	Impeller diameter:	6.19 in
PEIcl:	0.98	ERcl:	2
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Casing gasket:	Confined Non-Asbestos Fiber
Connections:	Inlet: 4 in, Outlet: 4 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron, E-coated	Shaft sleeve:	316 Stainless Steel

Mechanical seal data

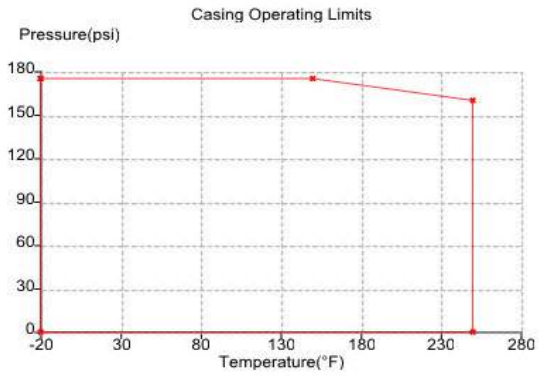
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

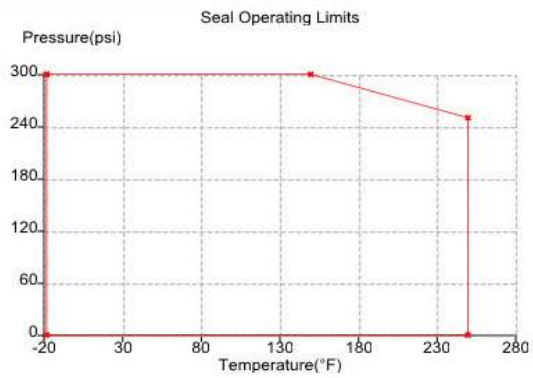
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	184JM	Motor type:	Induction
Speed:	1765 rpm	Size:	5 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



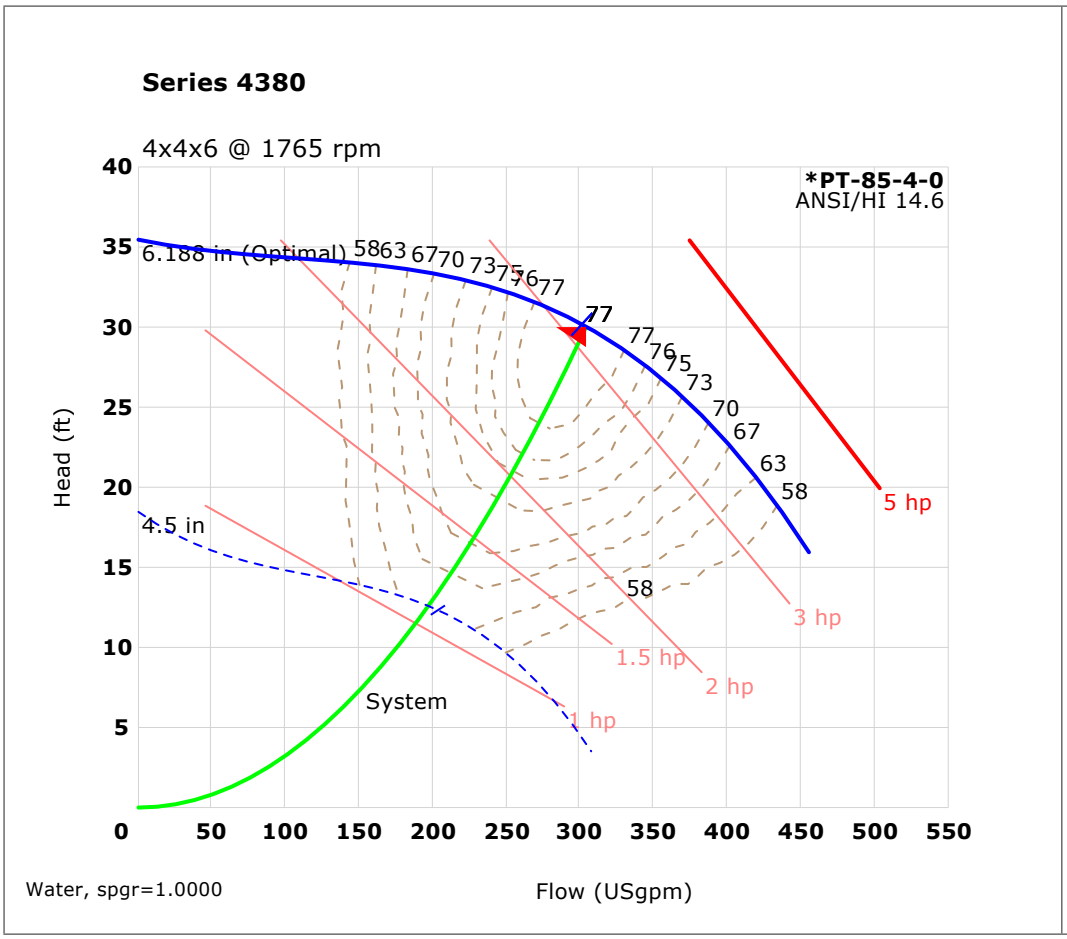


Maximum pressure: 175 psi

Maximum temperature: 250F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data—-
Tag Num: PHP-G-3
Service:
Location:

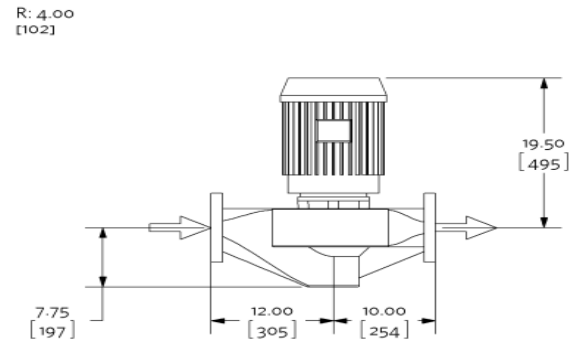
----Motor Data----
Motor Size: 5 hp

----Design Duty Points---
Flow: 304 USgpm
Head: 30 ft
Impeller: 6.19 in

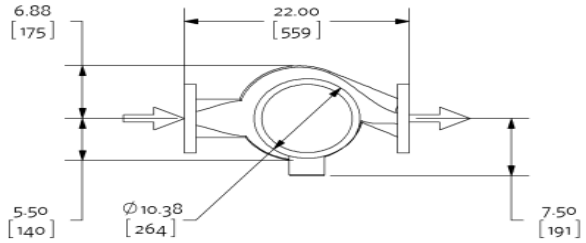
----Performance Data---
- NPSHR: 7.54 ft
- Eff. @ Design: 77.35 %
- Absorbed Power/BHP @ Design: 2.98 hp
- Mtr Capability @ Rated Spd: 5 hp
- Motor safety factor: 67.94%
- BEP @ Design Imp: 77.4 % @ 298.37 USgpm
- %maximp.range: 100.00%
- Outlet velocity: 7.66 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 289 lb [131.09 kg], Units of measure: inches [millimeters]
- Not to scale
- R = minimum lifting clearance required above motor
- Coupling guard and flush line (not shown) are supplied
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped with casing drain plug and ¼ inch NPT suction and discharge gauge ports

Connection details

Connection	Size	Rating	OD	Bolt quantity*	BCD	Bolt size
Inlet	4	ANSI-125	9.00	8	7.50	0.625
Outlet	4	ANSI-125	9.00	8	7.50	0.625

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No

PHP-1-2

Technical Data & Drawings

Submittal

close-coupled vertical in-line 4360 pump

Model: Series 4360 - 3D - 4p - 3 hp - (Customer Choice Motor)

Project name:	**Representative:**
Location:	**Phone number:**
Date submitted:	**e-mail:**
Engineer:	**Submitted by:**

Application design data

Tag number:	PHP-1-2	Configuration:	Single
Service:	**AHU-1-2**	Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 °F
Total system flow:	200 USgpm	Duty flow per pump:	200 USgpm
System head:	30 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	22.89 ft	Absorbed Power/BHP:	2.35 hp
%Mtr Safety*:	27.71%	Efficiency at Design:	64.5 %
Outlet velocity:	8.68 ft/s	Impeller diameter:	6.84 in
PEIcl:	0.99	ERcl:	1
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Casing gasket:	Confined Non-Asbestos Fiber
Connections:	Inlet: 3 in, Outlet: 3 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron	Shaft sleeve:	316 Stainless Steel

Mechanical seal data

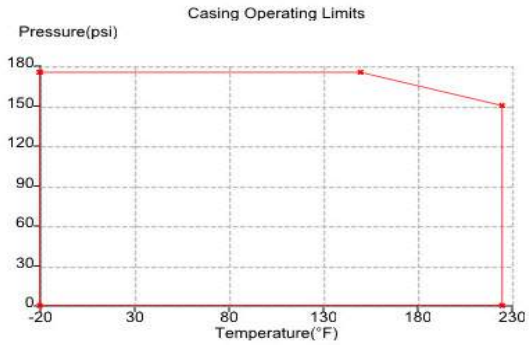
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

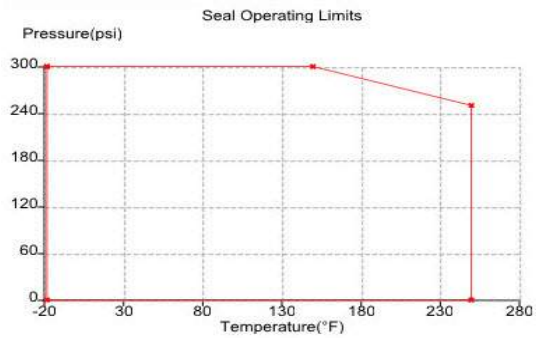
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	182JM	Motor type:	Induction
Speed:	1760 rpm	Size:	3 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



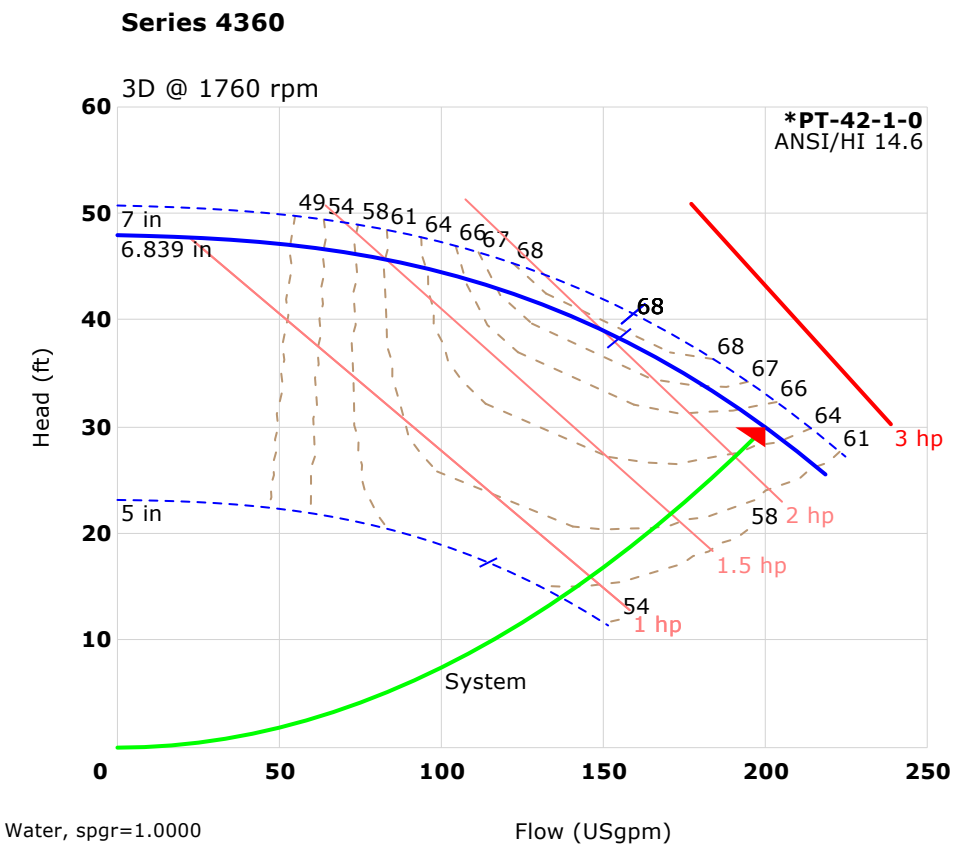


Maximum pressure: 175psi

Maximum temperature: 225F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data—-
Tag Num: PHP-1-2
Service: AHU-1-2
Location:

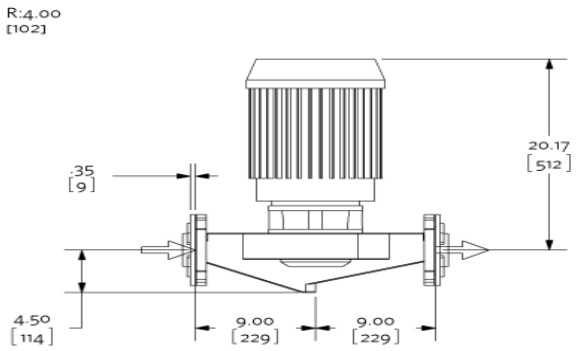
----Motor Data----
Motor Size: 3 hp

----Design Duty Points---
Flow: 200 USgpm
Head: 30 ft
Impeller: 6.84 in

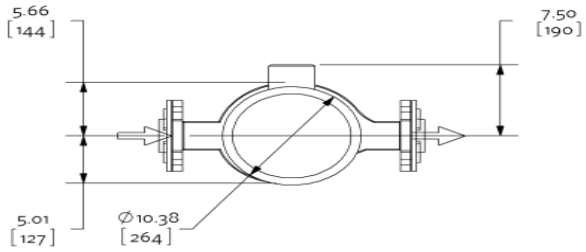
----Performance Data---
- NPSHR: 22.89 ft
- Eff. @ Design: 64.5 %
- Absorbed Power/BHP @ Design: 2.35 hp
- Mtr Capability @ Rated Spd: 3 hp
- Motor safety factor: 27.71%
- BEP @ Design Imp: 67.3 % @ 145.72 USgpm
- %maximp.range: 91.94%
- Outlet velocity: 8.68 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 205 lb [92.99 kg], Units of measure: inches [millimeters]
- Not to scale
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped with casing drain plug and ¼ inch NPT suction and discharge gauge ports

Connection details

Connection	Size	Rating	Type
Inlet	3	NPT	Female
Outlet	3	NPT	Female

Special instructions

Reference Motor Specification AES 05007.
This selection is non-compliant with sensorless quadratic curve control, but will indicate flow and pressure, and can operate in constant pressure and constant flow modes when flow is less than best efficiency point flow at that speed.
Pump (Customer Choice Motor)

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Pre-Wired Control Bridge: No
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No

PHP-1-3

Technical Data & Drawings

Submittal

close-coupled vertical in-line 4360 pump

Model: Series 4360 - 3D - 4p - 3 hp - (Customer Choice Motor)

Project name:	**Representative:**
Location:	**Phone number:**
Date submitted:	**e-mail:**
Engineer:	**Submitted by:**

Application design data

Tag number:	PHP-1-3	Configuration:	Single
Service:	**AHU-1-3**	Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 °F
Total system flow:	204 USgpm	Duty flow per pump:	204 USgpm
System head:	30 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	23.27 ft	Absorbed Power/BHP:	2.4 hp
%Mtr Safety*:	24.78%	Efficiency at Design:	64.28 %
Outlet velocity:	8.85 ft/s	Impeller diameter:	6.89 in
PEIcl:	0.99	ERcl:	1
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Casing gasket:	Confined Non-Asbestos Fiber
Connections:	Inlet: 3 in, Outlet: 3 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron	Shaft sleeve:	316 Stainless Steel

Mechanical seal data

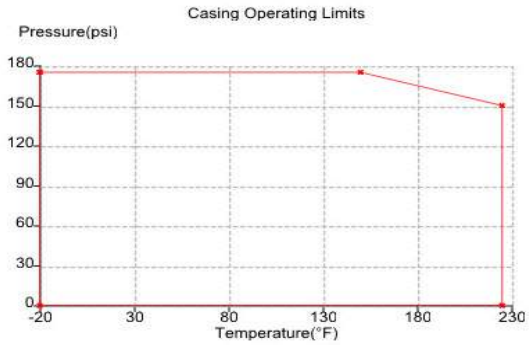
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

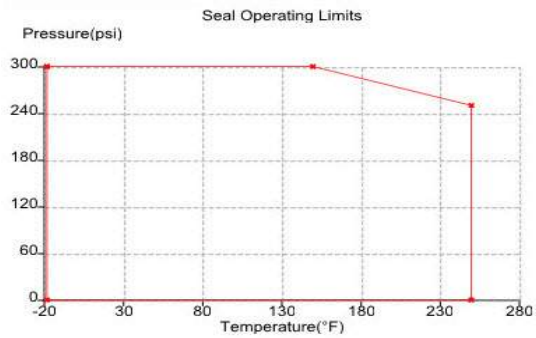
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	182JM	Motor type:	Induction
Speed:	1760 rpm	Size:	3 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



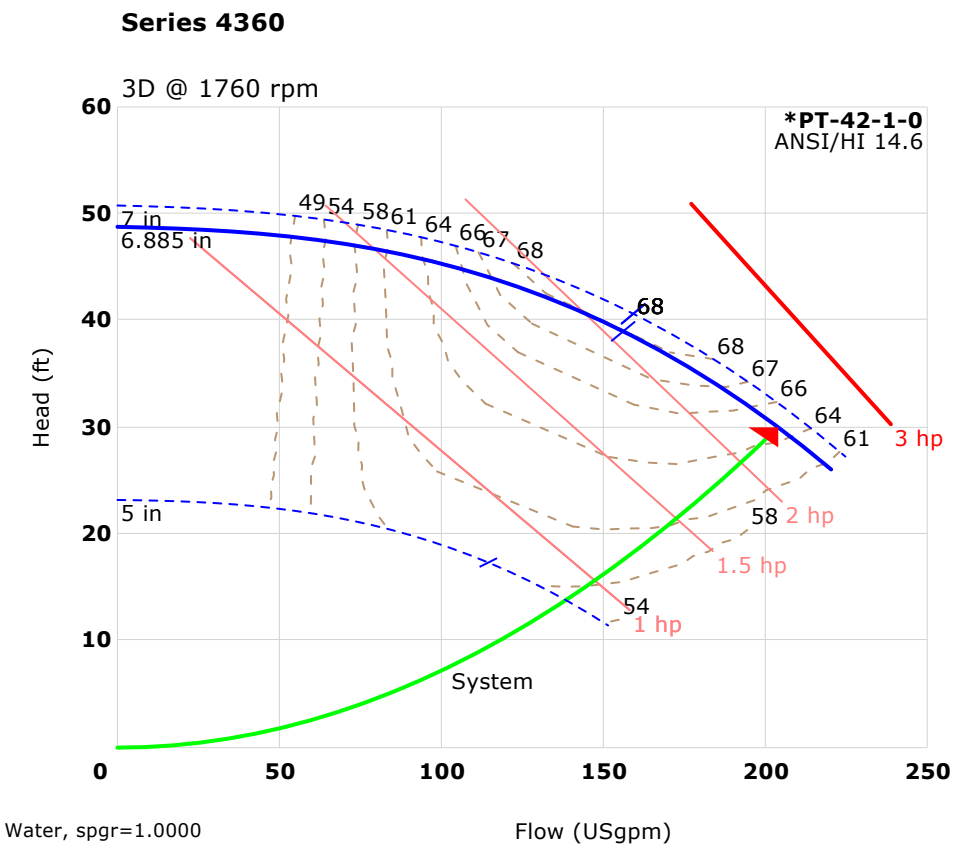


Maximum pressure: 175psi

Maximum temperature: 225F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data—-
Tag Num: PHP-1-3
Service: AHU-1-3
Location:

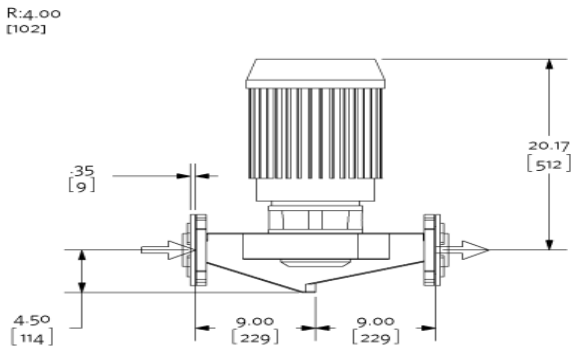
----Motor Data----
Motor Size: 3 hp

----Design Duty Points---
Flow: 204 USgpm
Head: 30 ft
Impeller: 6.89 in

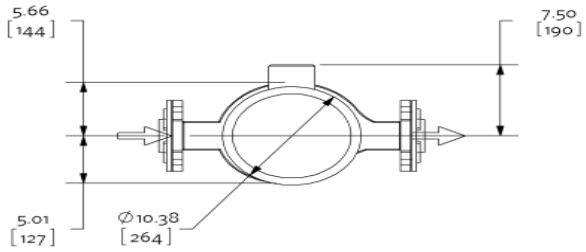
----Performance Data---
- NPSHR: 23.27 ft
- Eff. @ Design: 64.28 %
- Absorbed Power/BHP @ Design: 2.4 hp
- Mtr Capability @ Rated Spd: 3 hp
- Motor safety factor: 24.78%
- BEP @ Design Imp: 67.5 % @ 146.89 USgpm
- %maximp.range: 94.25%
- Outlet velocity: 8.85 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 205 lb [92.99 kg], Units of measure: inches [millimeters]
- Not to scale
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped with casing drain plug and ¼ inch NPT suction and discharge gauge ports

Connection details

Connection	Size	Rating	Type
Inlet	3	NPT	Female
Outlet	3	NPT	Female

Special instructions

Reference Motor Specification AES 05007.
This selection is non-compliant with sensorless quadratic curve control, but will indicate flow and pressure, and can operate in constant pressure and constant flow modes when flow is less than best efficiency point flow at that speed.
Pump (Customer Choice Motor)

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Pre-Wired Control Bridge: No
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No

PHP-1-4

Technical Data & Drawings

Submittal

close-coupled vertical in-line pump

Model: Series 4380 - 5x5x8 - 4p - 5 hp - (Customer Choice Motor)

Project name: **Representative:**

Location: **Phone number:**

Date submitted: **e-mail:**

Engineer: **Submitted by:**

Application design data

Tag number:	PHP-1-4	Configuration:	Single
Service:	**AHU-1-4**	Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 ˚F
Total system flow:	388 USgpm	Duty flow per pump:	388 USgpm
System head:	30 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	10.75 ft	Absorbed Power/BHP:	3.99 hp
%Mtr Safety*:	25.28%	Efficiency at Design:	73.65 %
Outlet velocity:	6.22 ft/s	Impeller diameter:	6.96 in
PEIcl:	1	ERcl:	0
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Casing gasket:	Confined Non-Asbestos Fiber
Connections:	Inlet: 5 in, Outlet: 5 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron, E-coated	Shaft sleeve:	316 Stainless Steel

Mechanical seal data

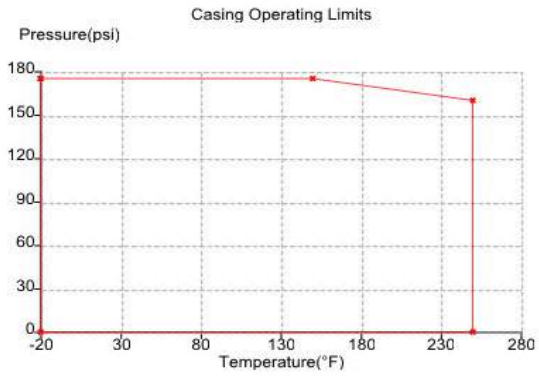
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

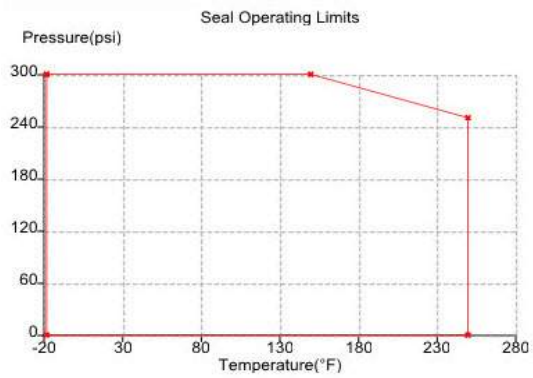
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	184JM	Motor type:	Induction
Speed:	1765 rpm	Size:	5 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



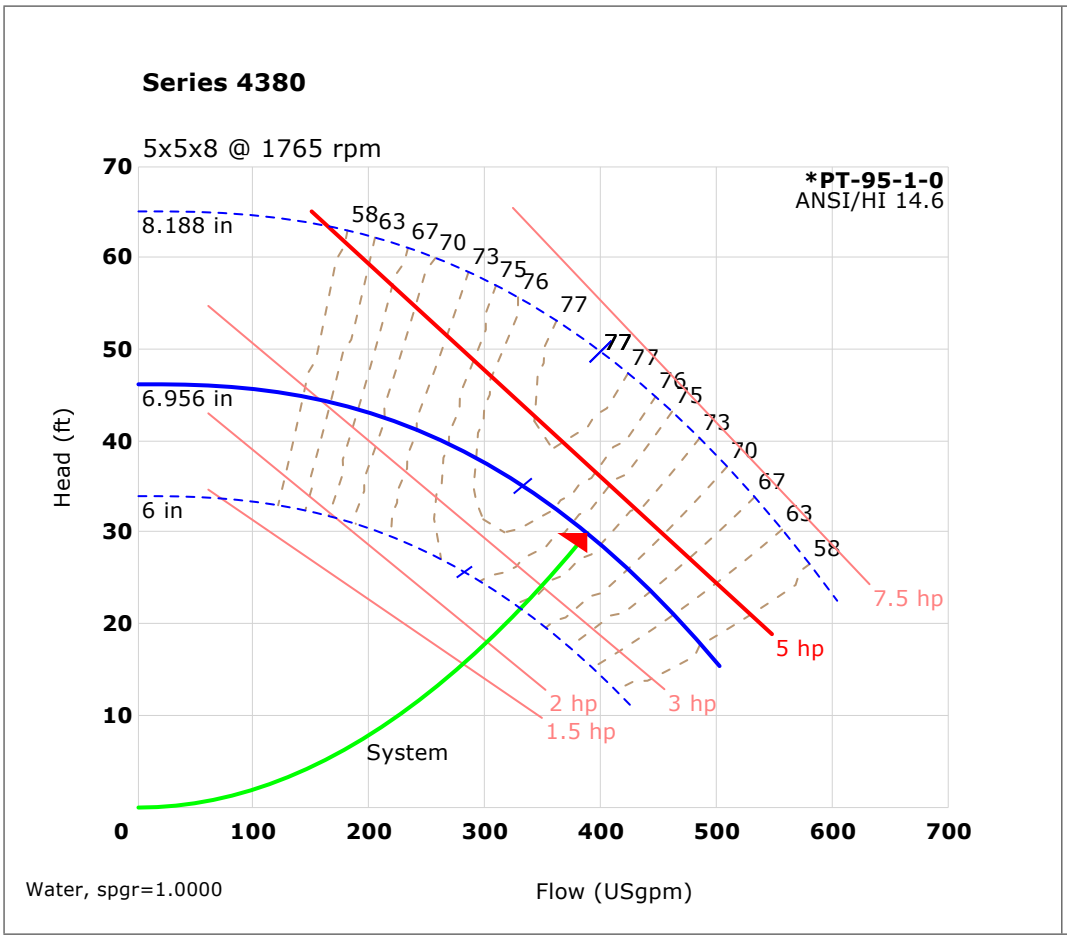


Maximum pressure: 175 psi

Maximum temperature: 250F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data—-
Tag Num: PHP-1-4
Service:
Location:

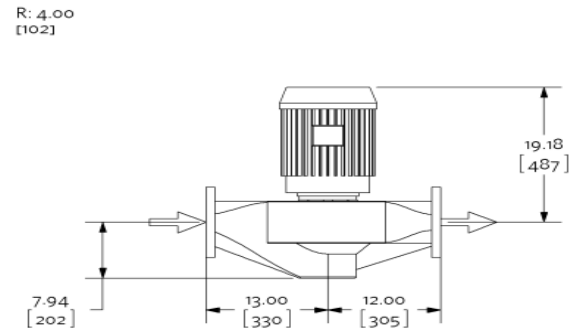
----Motor Data----
Motor Size: 5 hp

----Design Duty Points---
Flow: 388 USgpm
Head: 30 ft
Impeller: 6.96 in

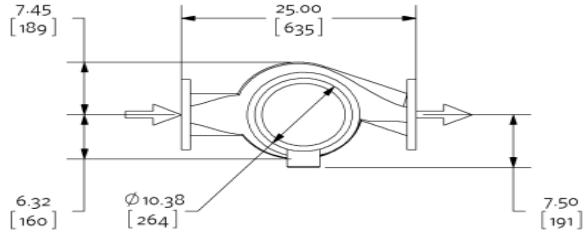
----Performance Data---
- NPSHR: 10.75 ft
- Eff. @ Design: 73.65 %
- Absorbed Power/BHP @ Design: 3.99 hp
- Mtr Capability @ Rated Spd: 5 hp
- Motor safety factor: 25.28%
- BEP @ Design Imp: 76.1 % @ 342.35 USgpm
- %maximp.range: 43.70%
- Outlet velocity: 6.22 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 374 lb [169.64 kg], Units of measure: inches [millimeters]
- Not to scale
- R = minimum lifting clearance required above motor
- Coupling guard and flush line (not shown) are supplied
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped with casing drain plug and ¼ inch NPT suction and discharge gauge ports

Connection details

Connection	Size	Rating	OD	Bolt quantity*	BCD	Bolt size
Inlet	5	ANSI-125	10.00	8	8.50	0.75
Outlet	5	ANSI-125	10.00	8	8.50	0.75

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No

PHP-3-1

Technical Data & Drawings

Submittal

close-coupled vertical in-line pump

Model: Series 4380 - 4x4x8 - 6p - 5 hp - (Customer Choice Motor)

Project name: **Representative:**

Location: **Phone number:**

Date submitted: **e-mail:**

Engineer: **Submitted by:**

Application design data

Tag number:	PHP-3-1	Configuration:	Single
Service:	**AHU-3-1**	Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 ˚F
Total system flow:	223 USgpm	Duty flow per pump:	223 USgpm
System head:	30 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	5.36 ft	Absorbed Power/BHP:	2.42 hp
%Mtr Safety*:	106.9%	Efficiency at Design:	69.91 %
Outlet velocity:	5.62 ft/s	Impeller diameter:	8.19 in
PEIcl:	Not applicable	ERcl:	Not applicable
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Casing gasket:	Confined Non-Asbestos Fiber
Connections:	Inlet: 4 in, Outlet: 4 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron, E-coated	Shaft sleeve:	316 Stainless Steel

Mechanical seal data

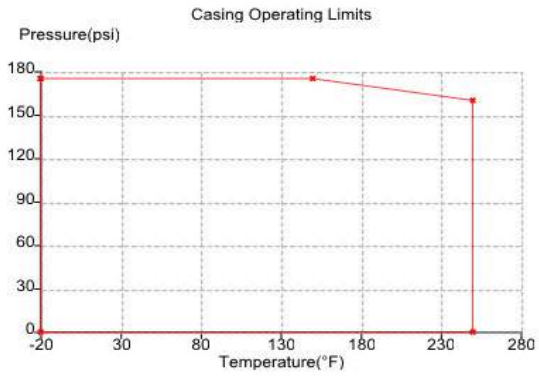
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

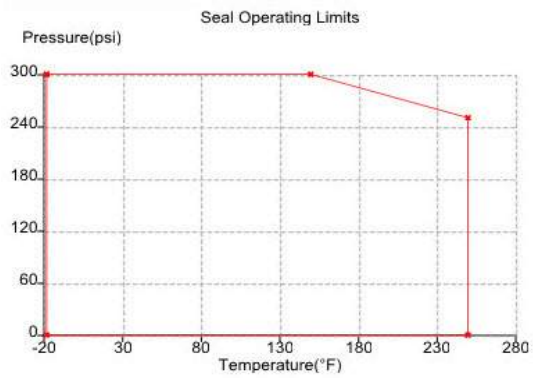
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	215JP	Motor type:	Induction
Speed:	1170 rpm	Size:	5 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



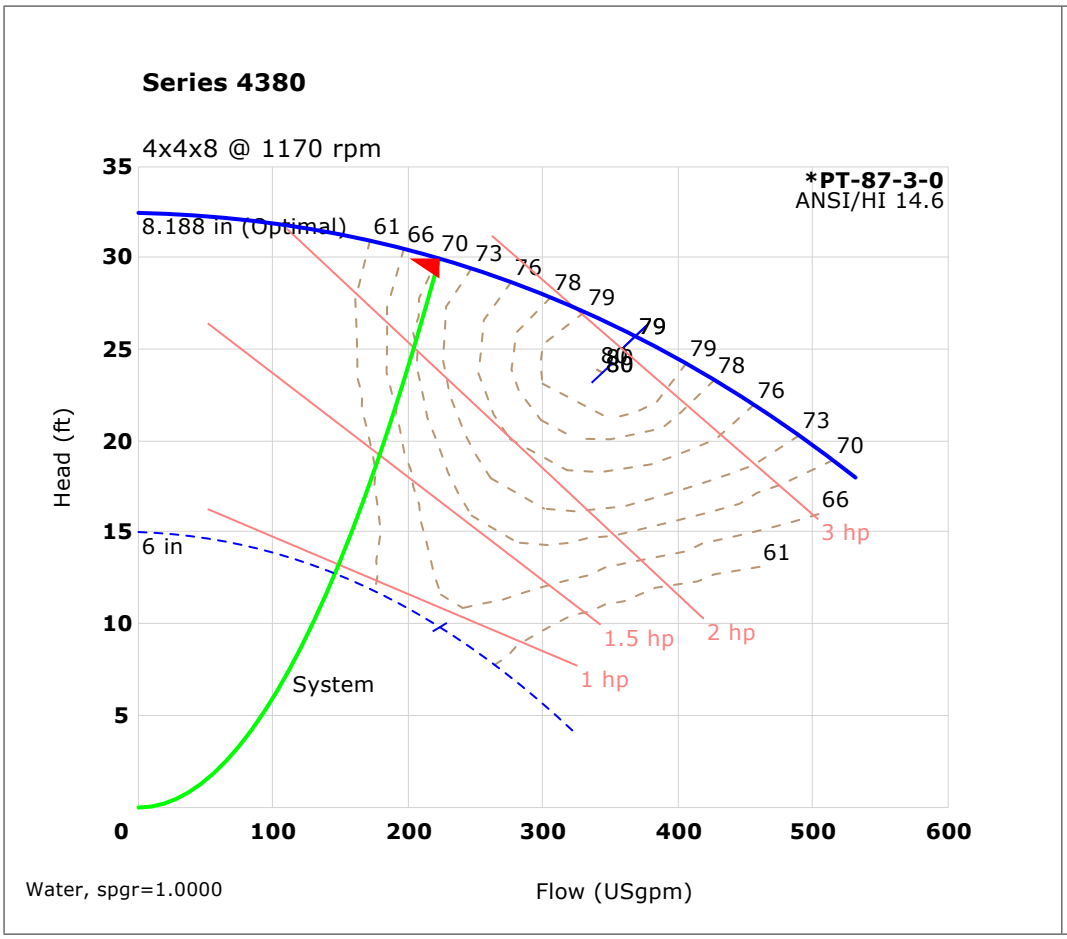


Maximum pressure: 175 psi

Maximum temperature: 250F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data—-
Tag Num: PHP-3-1
Service:
Location:

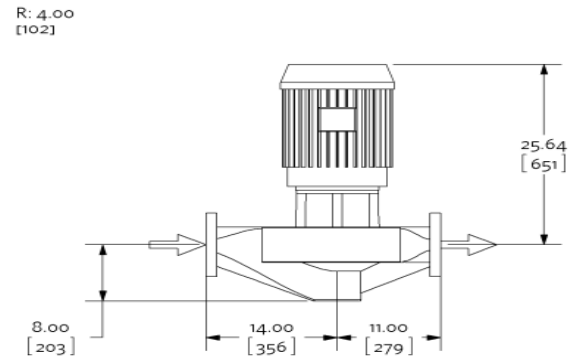
----Motor Data----
Motor Size: 5 hp

----Design Duty Points---
Flow: 223 USgpm
Head: 30 ft
Impeller: 8.19 in

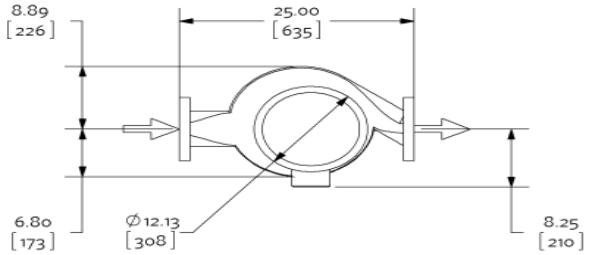
----Performance Data---
- NPSHR: 5.36 ft
- Eff. @ Design: 69.91 %
- Absorbed Power/BHP @ Design: 2.42 hp
- Mtr Capability @ Rated Spd: 5 hp
- Motor safety factor: 106.9%
- BEP @ Design Imp: 79.5 % @ 355.29 USgpm
- %maximp.range: 100.00%
- Outlet velocity: 5.62 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 414 lb [187.79 kg], Units of measure: inches [millimeters]
- Not to scale
- R = minimum lifting clearance required above motor
- Coupling guard and flush line (not shown) are supplied
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped with casing drain plug and ¼ inch NPT suction and discharge gauge ports

Connection details

Connection	Size	Rating	OD	Bolt quantity*	BCD	Bolt size
Inlet	4	ANSI-125	9.00	8	7.50	0.625
Outlet	4	ANSI-125	9.00	8	7.50	0.625

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No

PHP-4-1

Technical Data & Drawings

Submittal

close-coupled vertical in-line pump

Model: Series 4380 - 4x4x8 - 6p - 5 hp - (Customer Choice Motor)

Project name:	**Representative:**
Location:	**Phone number:**
Date submitted:	**e-mail:**
Engineer:	**Submitted by:**

Application design data

Tag number:	PHP-4-1	Configuration:	Single
Service:	**AHU-4-1**	Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 ˚F
Total system flow:	226 USgpm	Duty flow per pump:	226 USgpm
System head:	30 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	5.36 ft	Absorbed Power/BHP:	2.44 hp
%Mtr Safety*:	105.11%	Efficiency at Design:	70.23 %
Outlet velocity:	5.7 ft/s	Impeller diameter:	8.19 in
PEIcl:	Not applicable	ERcl:	Not applicable
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Casing gasket:	Confined Non-Asbestos Fiber
Connections:	Inlet: 4 in, Outlet: 4 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron, E-coated	Shaft sleeve:	316 Stainless Steel

Mechanical seal data

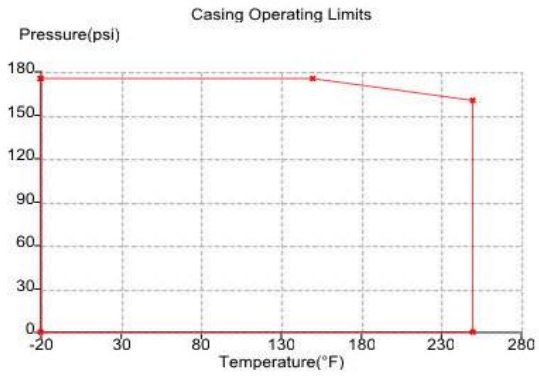
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

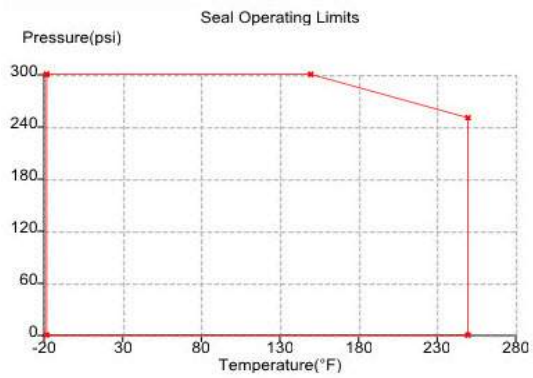
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	215JP	Motor type:	Induction
Speed:	1170 rpm	Size:	5 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



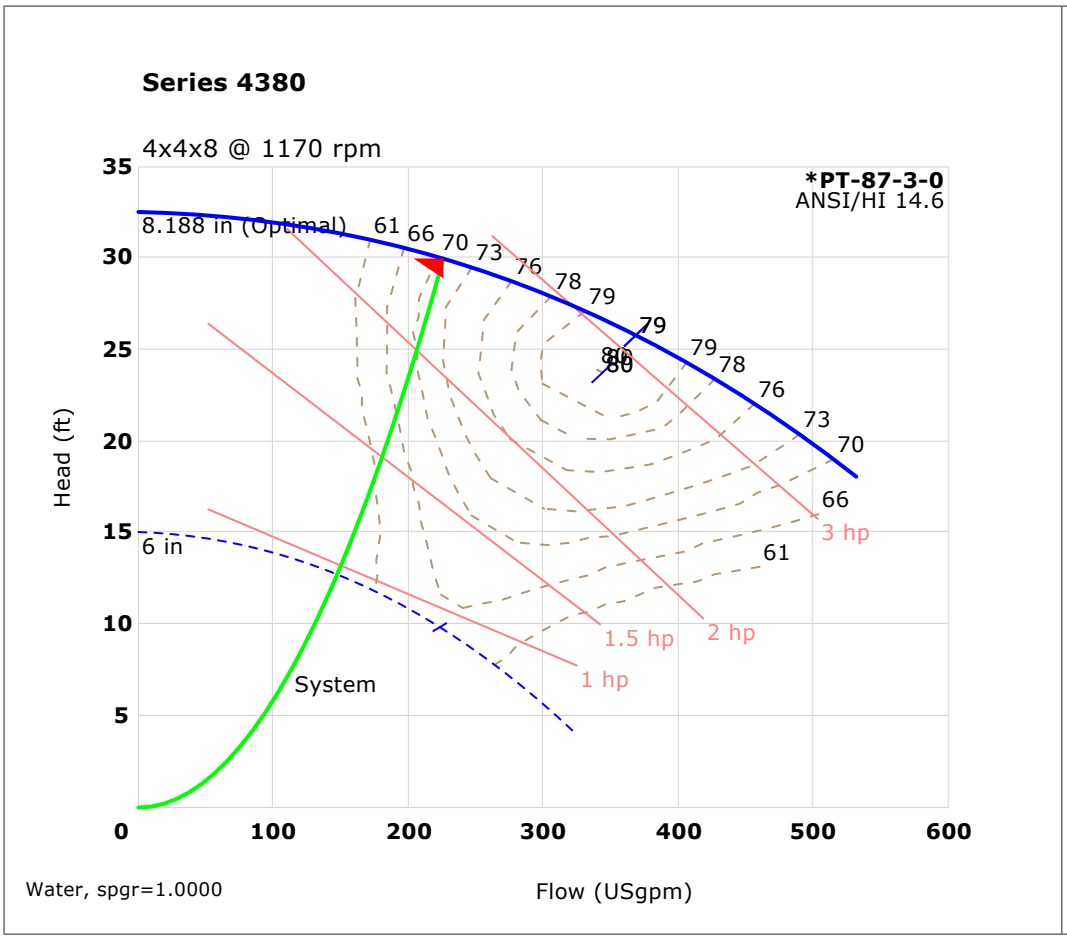


Maximum pressure: 175 psi

Maximum temperature: 250F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data—-
Tag Num: PHP-4-1
Service:
Location:

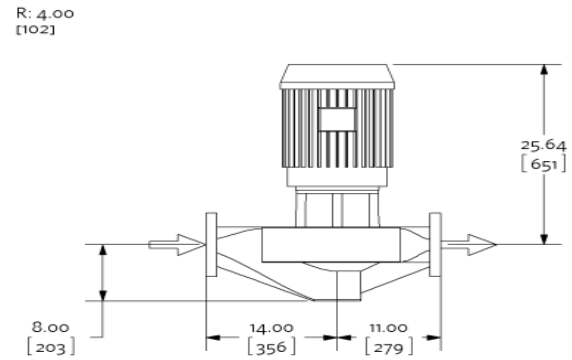
----Motor Data----
Motor Size: 5 hp

----Design Duty Points---
Flow: 226 USgpm
Head: 30 ft
Impeller: 8.19 in

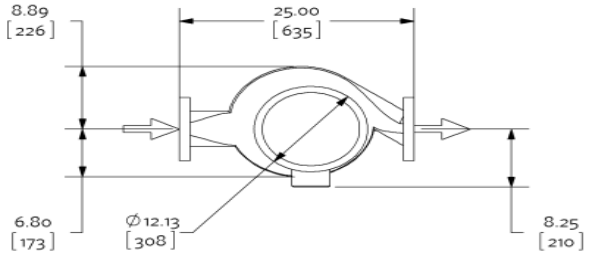
----Performance Data---
- NPSHR: 5.36 ft
- Eff. @ Design: 70.23 %
- Absorbed Power/BHP @ Design: 2.44 hp
- Mtr Capability @ Rated Spd: 5 hp
- Motor safety factor: 105.11%
- BEP @ Design Imp: 79.5 % @ 355.29 USgpm
- %maximp.range: 100.00%
- Outlet velocity: 5.7 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 414 lb [187.79 kg], Units of measure: inches [millimeters]
- Not to scale
- R = minimum lifting clearance required above motor
- Coupling guard and flush line (not shown) are supplied
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped with casing drain plug and ¼ inch NPT suction and discharge gauge ports

Connection details

Connection	Size	Rating	OD	Bolt quantity*	BCD	Bolt size
Inlet	4	ANSI-125	9.00	8	7.50	0.625
Outlet	4	ANSI-125	9.00	8	7.50	0.625

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No

PHP-1

Technical Data & Drawings

Submittal

close-coupled vertical in-line 4360 pump

Model: Series 4360 - 3D - 4p - 3 hp - (Customer Choice Motor)

Project name:	**Representative:**
Location:	**Phone number:**
Date submitted:	**e-mail:**
Engineer:	**Submitted by:**

Application design data

Tag number:	PHP-1	Configuration:	Single
Service:	**DOAS-1**	Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	1	Operating temperature:	60 °F
Total system flow:	202 USgpm	Duty flow per pump:	202 USgpm
System head:	30 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	23.08 ft	Absorbed Power/BHP:	2.38 hp
%Mtr Safety*:	26.25%	Efficiency at Design:	64.4 %
Outlet velocity:	8.77 ft/s	Impeller diameter:	6.86 in
PEIcl:	0.99	ERcl:	1
Standby qty:	0	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Casing gasket:	Confined Non-Asbestos Fiber
Connections:	Inlet: 3 in, Outlet: 3 in	Flush line:	Braided Stainless Steel
Casing (volute):	Cast Iron	Shaft sleeve:	316 Stainless Steel

Mechanical seal data

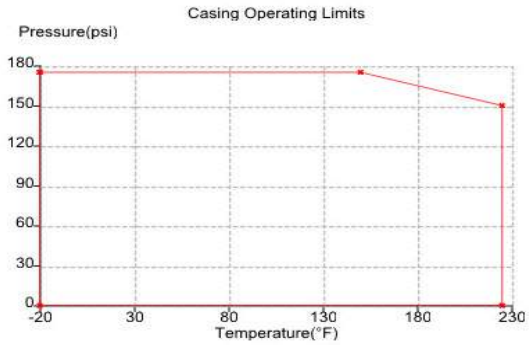
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

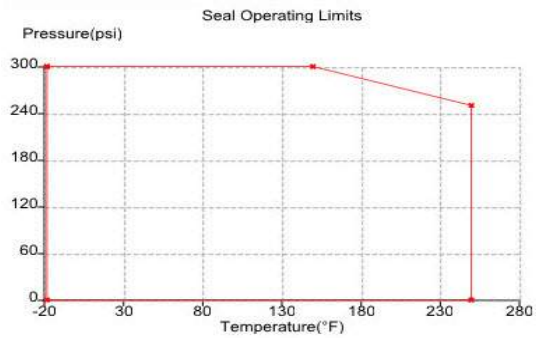
*Note: Please ensure proper seal is selected by inputting Total Dissolved Solids (TDS) in PPM in ADEPT if water quality is poor at site. Also select Flush Line Filter or Cyclone Separator if there are other contaminants in the fluid.

Electrical data

Supplier:	Baldor	Insulation class:	Class F Insulation
Frame size:	182JM	Motor type:	Induction
Speed:	1760 rpm	Size:	3 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)



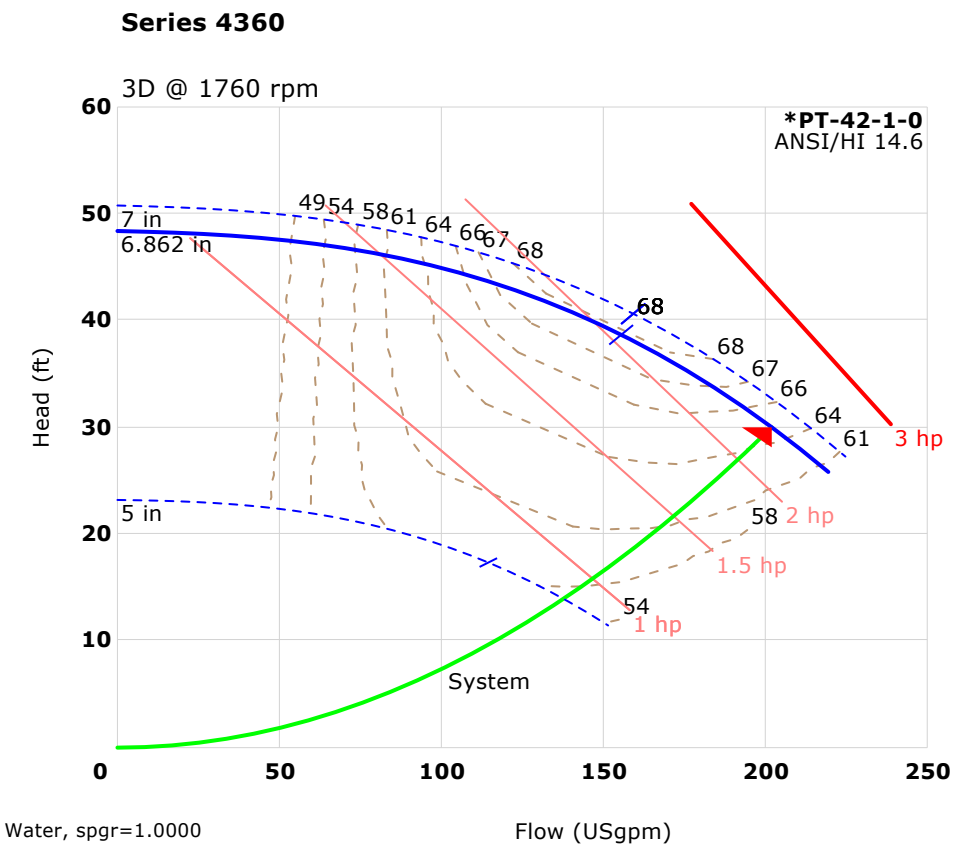


Maximum pressure: 175psi

Maximum temperature: 225F

All Pump casings are hydrostatically tested to requirements of ANSI/HI 14.6 standard.

Performance curve



----Admin Data—-
Tag Num: PHP-1
Service: AHU-1-2
Location:

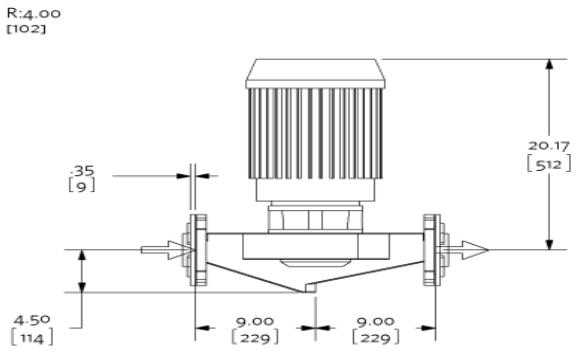
----Motor Data----
Motor Size: 3 hp

----Design Duty Points---
Flow: 202 USgpm
Head: 30 ft
Impeller: 6.86 in

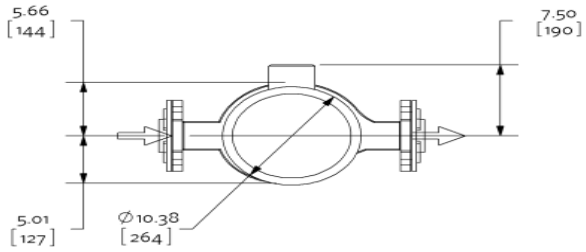
----Performance Data---
- NPSHR: 23.08 ft
- Eff. @ Design: 64.4 %
- Absorbed Power/BHP @ Design: 2.38 hp
- Mtr Capability @ Rated Spd: 3 hp
- Motor safety factor: 26.25%
- BEP @ Design Imp: 67.4 % @ 146.3 USgpm
- %maximp.range: 93.09%
- Outlet velocity: 8.77 ft/s

Dimensional data (not for construction)

Side view



Top view



Inverter motor type: Inverter duty

Weight: 205 lb [92.99 kg], Units of measure: inches [millimeters]
- Not to scale
- Tolerance of ± 0.125 inch (± 3 mm) should be used
- For certified dimensions, please contact your Armstrong representative
- Pump equipped with casing drain plug and ¼ inch NPT suction and discharge gauge ports

Connection details

Connection	Size	Rating	Type
Inlet	3	NPT	Female
Outlet	3	NPT	Female

Special instructions

Reference Motor Specification AES 05007.
This selection is non-compliant with sensorless quadratic curve control, but will indicate flow and pressure, and can operate in constant pressure and constant flow modes when flow is less than best efficiency point flow at that speed.
Pump (Customer Choice Motor)

Selected options

Testing: No Test Certification Required
Seal Environment Accessories: None
Pre-Wired Control Bridge: No
Space Heater: No
Motor Thermistor: No Thermistors
Wye-Delta Starting: No

IOM

(Digital Copy Available Upon Request)