



SUBMITTAL DATA SHEET

To:

Project:

Architect:

Engineer:

Product:


Supplier:

Spec Section:

Drawing:

Submittal Notes:

APPROVAL STAMPS

<p>East Bound Mechanical 3195-B Airport Blvd. Wilson, NC 27896</p>  <p>Reviewed - Furnish Pending A/E Approval/Review</p> <p>Notes Indicated</p> <p>Resubmittal - See Comments</p> <p>Reviewed By:</p> <p>Date:</p> <p>Review of this drawing and or data does not indicate approval of variations to the contract documents or coordination with other trades as may be required.</p>	<p>General Contractor</p>	<p>Architect/Engineer</p>
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BALANCE VALVE TABLE IS ON PAGE 27



133 Southcenter Ct #1000
Morrisville, NC 27560
919-789-9750
InsightUSA.com

SUBMITTAL

Wednesday, October 5, 2022

REVISION 1 - December 8, 2022

Project: NC026 81st Readiness

Mechanical Contractor: East Bound Mechanical

Mechanical Engineer: US Army Corps of Engineers

Specification Section: 236426

Equipment: Chilled Water Piping Systems - Air Control, Pumps, & Balancing Pkgs

Insight Partners Contact: Christopher Little
Email: clittle@insightusa.com
Cell: 910-431-4847

REVISION 1 - December 8, 2022:

1. Air & Dirt separator changed to include removable end. Also includes skim valve and blowdown valve.
2. Three pump selection options are included to try best to meet intent with some incorporating the VFD to balance at lower rpm to further increase efficiency by using less horsepower. Please feel free to reach to discuss concerns and explore other options.

Air Control System

- (1) American Wheatley WPR 075 Pressure Reducing Valve size: 3/4" (10-70psi set pressure) **Tag: CHW**
- (1) American Wheatley RV0075 Pressure Relief Valve size: 3/4" (75# relief) **Tag: CHW**
- (1) Spirovent Coalescing Air & Dirt Separator Model: VDT 600 FA size: 6" **Tag: AS-01**
- (1) Armstrong Model A200-L Bladder-Type Expansion Tank size: 53 gallons **Tag: ET-01**
- (1) Armstrong Model AVA-075 Automatic Air Vent size: 3/4" **Tag: ET-01**

Pumps & Accessories

Tag: CP-01, CP-02

- (2) Armstrong 4030 Separately-Coupled Base Mounted End Suction Pump (3x2.5x10)
 348 GPM @ 80 FT HD | 1800 RPM | Bronze Fitted | Drain Pan
 15 HP Premium Efficient | ODP Enclosure | 460V/3P
- (2) Armstrong SG-63 Suction Diffuser size: 6" x 3"

Automatic Balance Coil Piping Packages

PRO Hydronic Specialties Automatic Balance Coil Piping Package

Supply: Y-Type Strainer w/ Shutoff, Drain Valve, PT & Union End

Return: Automatic Balance Valve w/ Shutoff, 2-PT's & Union End

Accessory Union Piece w/ PT & Manual Air Vent

Items individually bagged and tagged with unit ID | Control Valves Provided and Installed by Others

Packages 2-1/2" & Larger will be FLG Components w/ BFV's

Tag: CC-XXX (Chilled Water Coils)

- (1) Size: 3/4" | A2S Kit w/Ext + AFLI
- (1) Size: 1-1/4" | A2I Kit w/Ext + AFLR
- (1) Size: 2" | A2I Kit w/Ext
- (1) Size: 2-1/2" | SWY Kit
- (1) Size: 4" | SWY Kit

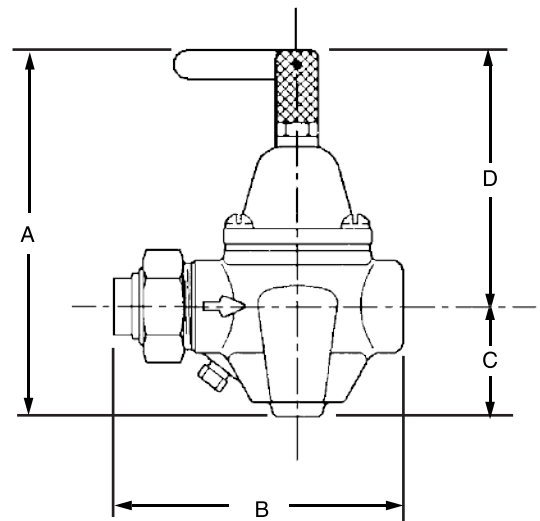
Tag: FCU-XX (Fan Coil Cooling Coils)

- (9) Size: 3/4" | A2S Kit w/AFLI+Ext
- (1) Size: 2" | A2I Kit w/Ext

Water Pressure Reducing Valve

Features:

- Reduces city water pressure to desired system pressure
- Automatically feeds water when pressure in a system drops below the setting of the valve
- Bronze or brass construction
- Easily and quickly serviced without removing valve from line
- Integral strainer
- Adjustable pressure range of 10-70 psig; factory set at 45 psig
- Maximum working pressure of 400 psig
- Maximum Temperature 180° F



Optional Features:

- Larger sizes available

PART NUMBER	NPT SIZE	HEIGHT A (IN.)	WIDTH B (IN.)	CTR LINE 2 BTM C (IN.)	TOP LINE 2 CTR D (IN.)	WEIGHT (LBS.)
WPR-050	1/2"	5 2/5"	4 5/16"	1 3/64"	4 11/32"	2.5
WPR-075	3/4"	5 2/5"	4 15/32"	1 3/64"	4 11/32"	2.5
WPR-100	1"	5 2/5"	5 11/64"	1 3/64"	4 11/32"	2.5

All packaging materials, thread protectors, plastic plugs and caps must be removed before installation.

Dimensions are subject to change without notice, please confirm actual dimensions with factory at time of order.

JOB NAME _____ LOCATION _____ _____ _____ CONTRACTOR _____ CONTRACTOR P.O. NO. _____	<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 50%;">ITEMS</th> <th style="width: 50%;">QUANTITY</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>	ITEMS	QUANTITY													<p style="text-align: center;">A GFP COMPANY</p> 2701 W. Concord Street Broken Arrow, OK 74012 Toll Free: 866-204-5229 PH: 918-317-0401 FAX: 918-317-0407 www.wheatleyhvac.com e-mail: sales@globalflowproducts.com
ITEMS	QUANTITY															

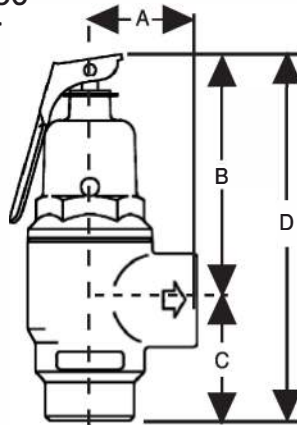


ASME Relief Valve

The American Wheatley RV series is designed to relieve pressure at a pre-determined set in hot water heating systems. Intended for liquid systems, or emergency steam relief only.

Features:

- Constructed in accordance with ASME Section IV, Latest Edition, rated for emergency steam discharge by the National Board of Boiler and Pressure Vessel Inspectors
- Test lever standard on all models
- Available in 3/4" through 2"
- All sizes have female inlet and outlet; 3/4" has an optional male inlet
- Available pressure settings - 30, 50, 75, 100, 125 & 150
- Please specify pressure requirements at time of order
- Bronze body, heat resistant silicone set disc, stainless steel pressure springs, EP diaphragms and brass internal parts
- Completely automatic, re-seating after pressure relief
- Compact design

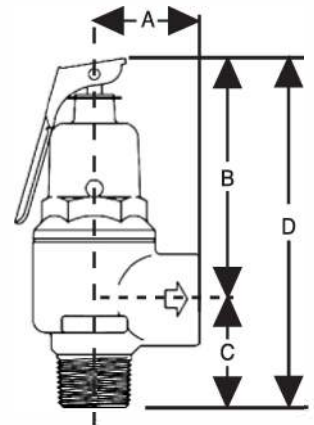


Optional Features:

- 3/4" available with male or female inlet

75 psi setpoint

PART NUMBER	INLET SIZE (NPS) FEMALE (IN.)	OUTLET SIZE (NPS) FEMALE (IN.)	CENTER 2 OUTLET A (IN.)	CENTER 2 TOP B (IN.)	CENTER 2 BOTTOM C (IN.)	TOTAL HEIGHT D (IN.)
RV0075	3/4"	3/4"	1 1/2"	3 1/2"	1 11/16"	5 3/16"
*RV0075	3/4"	3/4"	1 1/2"	3 1/2"	1 11/16"	5 1/32"
RV0100	1"	1"	1 3/4"	4 11/16"	1 7/64"	5 51/64"
RV0125	1 1/4"	1 1/4"	2 1/16"	5 9/16"	1 1/2"	7 1/16"
RV0150	1 1/2"	1 1/2"	2 15/32"	5 7/8"	1 21/32"	7 17/32"
RV0200	2"	2"	3"	7 1/2"	2 5/32"	9 21/32"



*RV0075 with Male Optional NPT Inlet

All packaging materials, thread protectors, plastic plugs and caps must be removed before installation.

Dimensions are subject to change without notice, please confirm actual dimensions with factory at time of order.

JOB NAME _____
LOCATION _____
CONTRACTOR _____
CONTRACTOR P.O. NO. _____

ITEMS	QUANTITY



2701 W. Concord Street
 Broken Arrow, OK 74012
 Toll Free: 866-204-5229
 PH: 918-317-0401
 FAX: 918-317-0407
 www.wheatleyhvac.com
 e-mail: sales@globalflowproducts.com



Submittal Data

VDN 2-12

Spirovent® Drain
Air Eliminator and Dirt Separator

Job Name:
Engineer:
Contractor:
Representative:

Tag	Model	Flow	Size	Location

Specifications:

Shell	Steel
Vent Head	Brass
Float	Non-Ferrous
Seal	Viton
O Ring	Viton
Skim Valve	Brass
Coalescing Medium	Copper
Ball Valve	Brass
Max. Working Pressure	150 psig
Max. Operating Temperature	270°F

Notes:
Removable lower portion to facilitate cleaning if required.
(bc: Minimum bundle removal clearance)

blowdown valve

PS - Pipe Size	2"	2 ½"	3"	4"	5"	6"	8"	10"	12"
D (inches)	6.3	6.3	8.6	8.6	12.8	12.8	16.0	20.0	24.0
H2 (inches)	25.3	25.3	31.4	31.4	41.7	41.7	51.8	67.5	79.7
h2 (inches)	10.4	10.4	13.6	13.6	18.9	18.9	24.2	32.1	38.2
LF (inches)	15.2	15.7	20.2	20.6	27.7	27.7	33.6	37.5	42.5
DF (inches)	11	11	14	14	19	19	24	28	32
e (inches)	1	1	1	1	1	1	1	1	1
bc (inches)	12	12	16	16	25	25	33	44	54
Dry Weight (lbs)	107	150	202	233	325	355	636	990	1,483
Volume (gallons)	1.8	1.8	6.6	6.6	20	20	40	79	132
Rec. Flow (gpm)	60	90	140	240	370	540	940	1,470	2,090
Model	VDN---FA 200	250	300	400	500	600	800	1000	1200

(Dimensions for reference only)

Flanged ASME Section VIII, Division 1 Stamped and Registered

Submittal

Ref. #: SQJPE003387_2

Product: Expansion**Model:** A200-L

Project name:	Representative: Anthony.Gomez
Location:	Phone number:
Date submitted: 9/12/2022 8:37 PM	e-mail: agomez@insightusa.com
Engineer:	Submitted by: Gomez, Anthony

System Data

Tag Num:	ET-01	Service:	
Location:		Qty:	1

Application: N/A

Selected by manual selection therefore no system details available

Expansion Tank

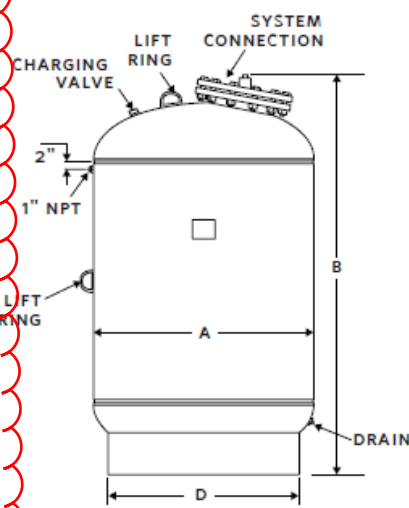
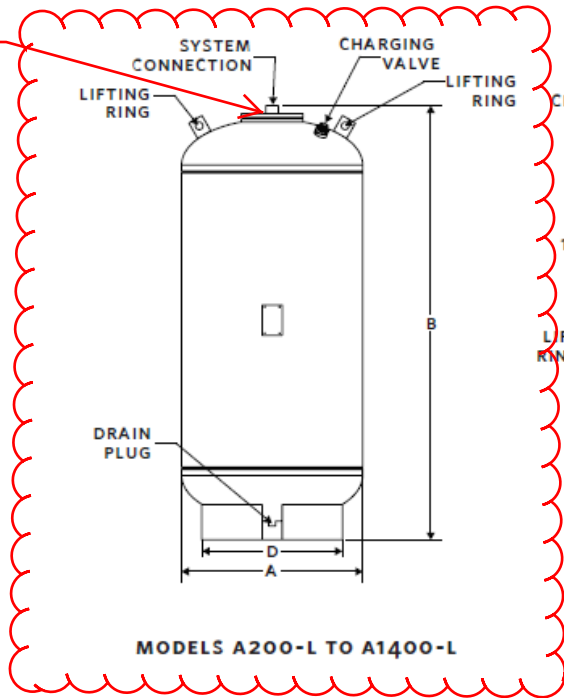
Tank Model:	A200-L	Max. Working Pres.:	125 psi
Standard factory charge is 12 psi (83 kPa) unless otherwise specified.		<ul style="list-style-type: none"> ▪ Not for Domestic Potable Water Systems. ▪ Designed and constructed per ASME, Section VIII, Division 1. ▪ California Code Sight-glass available upon request. ▪ Allow a minimum of 18" (457 mm) clearance for system piping. 	
Shell:	Carbon Steel	Working Temperature:	35°F - 240°F (1.7°C - 115°C)
Bladder:	Heavy Duty Butyl	Working Pressure:	125 psi (862 kPa)

SUBMITTAL L series
Pre-charged (ASME) expansion tank

2

MODEL	TANK VOLUME	MAXIMUM ACCEPTANCE VOLUME	A	B	D	SYSTEM CONNECTION NPT	DRAIN PLUG	SHIPPING WEIGHT
	gal.(L)		inches (mm)			inches (mm)		lbs.(kg)
A200-L	53 (200)	53 (200)	24.00 (610)	38.40 (1475)	19.00 (483)	1.50 (38)	0.75 (19)	225 (102.1)
A300-L	80 (300)	80 (300)	24.00 (610)	52.27 (1328)	19.00 (483)	1.50 (38)	0.75 (19)	285 (129.3)
A400-L	106 (400)	106 (400)	24.00 (610)	66.14 (1680)	19.00 (483)	1.50 (38)	0.75 (19)	350 (158.8)
A500-L	132 (500)	132 (500)	24.00 (610)	80.14 (2036)	19.00 (483)	1.50 (38)	0.75 (19)	410 (186.0)
A600-L	158 (600)	158 (600)	30.00 (762)	64.75 (1645)	24.00 (610)	1.50 (38)	0.75 (19)	430 (195.0)
A800-L	211 (800)	211 (800)	30.00 (762)	82.44 (2094)	24.00 (610)	1.50 (38)	0.75 (19)	525 (238.1)
A1000-L	264 (1000)	264 (1000)	36.00 (914)	73.90 (1877)	28.00 (711)	1.50 (38)	0.75 (19)	565 (256.3)
A1200-L	317 (1200)	317 (1200)	36.00 (914)	86.00 (2184)	28.00 (711)	1.50 (38)	0.75 (19)	680 (308.4)
A1400-L	370 (1400)	370 (1400)	36.00 (914)	98.50 (2502)	28.00 (711)	1.50 (38)	0.75 (19)	750 (340.2)
1600-L	422 (1600)	422 (1600)	48.00 (1219)	74.00 (1880)	42.00 (1067)	1.50 (38)	0.75 (19)	1100 (498.9)
2000-L	528 (2000)	528 (2000)	48.00 (1219)	87.00 (2210)	42.00 (1067)	1.50 (38)	0.75 (19)	1280 (580.6)
2500-L	660 (2495)	660 (2495)	48.00 (1219)	102.00 (2591)	42.00 (1067)	2.00 (51)	0.75 (19)	1435 (652)
3000-L	792 (2994)	792 (2994)	48.00 (1219)	122.00 (3099)	42.00 (1067)	2.00 (51)	0.75 (19)	1550 (705)
4000-L	1056 (3992)	1056 (3992)	60.00 (1524)	102.00 (2591)	54.00 (1372)	2.00 (51)	0.75 (19)	2638 (1199)
5000-L	1320 (4997)	1320 (4997)	60.00 (1524)	125.00 (3175)	54.00 (1372)	2.00 (51)	0.75 (19)	3246 (1472)

replaceable bladder access





FILE NO:	11.574
DATE:	June 17, 2005
SUPERSEDES:	11.574
DATE:	May 28, 2004

Automatic Air Vents

SUBMITTAL

JOB: _____	REPRESENTATIVE: _____
_____	_____
ENGINEER: _____	ORDER NO: _____ DATE: _____
CONTRACTOR: _____	SUBMITTED BY: _____ DATE: _____
_____	APPROVED BY: _____ DATE: _____

Quantity	TAG No.	Model No.	Comments

AUTOMATIC AIR VENT APPLICATIONS

Armstrong AVA and AVV automatic air vents continuously remove air that can accumulate in a Hydronic system. Effective air elimination helps to reduce system operating noise caused by entrained air in the hydronic fluid and also helps to extend system component life by reducing the risk of corrosion or cavitation. AVA and AVV automatic air vents may be used on their own, or with Armstrong air removal traps for maximum air elimination performance.

In operation, when sufficient air is accumulated in the air vent chamber, the float mechanism opens the vent valve, and system pressure expels the air to the atmosphere. When the air is expelled the float closes the vent, and the cycle repeats. Additionally, these valves help serve as a vacuum break when the system is drained. All vents are equipped with a manual shut-off. Models supplied with service check valves may be removed for service or replacement while the hydronic system is operating.



TECHNICAL DATA	
Maximum Working Pressure	150 psi (1034 kPa)
Maximum Working Temperature	248°F (120°C)
Minimum Working Temperature	15°F (-10°C)

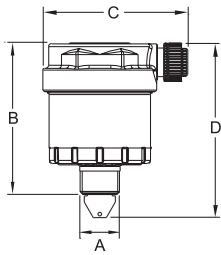
MATERIALS OF CONSTRUCTION	
Body and Cover	Brass
Internal Components	Non-Ferrous



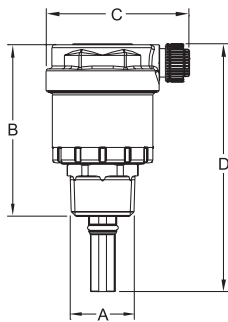
DIMENSIONS and WEIGHTS

Model	Description	A	B	C	D	Weight
AVA-013	Automatic Air Vent w/Angled Discharge	1/8" NPT	2-1/16 (52)	1-7/8 (48)	2-1/4 (57)	0.20 (0.10)
AVA-025		1/4" NPT	2-1/16 (52)	1-7/8 (48)	2-1/4 (57)	0.20 (0.10)
AVA-038		3/8" NPT	2-1/16 (52)	1-7/8 (48)	2-1/4 (57)	0.20 (0.10)
AVA-050	Automatic Air Vent w/Angled Discharge and Service Check Valve	1/2" NPT	2-1/4 (57)	1-7/8 (48)	3-3/16 (81)	0.20 (0.10)
AVA-075	Automatic Air Vent w/Angled Discharge and M/F adapter	3/4" MPT 1/2" FPT	3-1/4 (83)	1-7/8 (48)	—	0.50 (0.28)
AVV-038	High Capacity Automatic Air Vent w/Vertical Discharge	3/8" NPT	2-15/16 (75)	1-7/8 (48)	3-1/4 (83)	0.35 (0.16)
AVV-050	High Capacity Automatic Air Vent w/Vertical Discharge and Service Check Valve	1/2" NPT	3-1/4 (83)	1-7/8 (48)	4-3/16 (106)	0.35 (0.16)
AVV-075	High Capacity Automatic Air Vent w/Vertical Discharge and M/F adapter	3/4" MPT 1/2" FPT	4 (100)	1-7/8 (48)	—	0.60 (0.22)

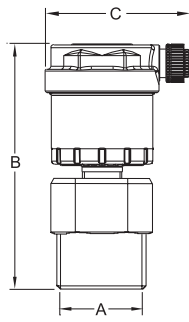
Note: All dimensions are in inches (mm) and weights are in lbs. (kg)



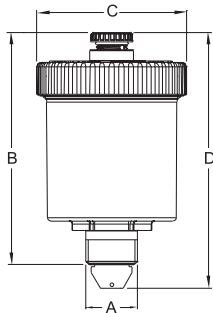
Models AVA
-013, -025 & -038



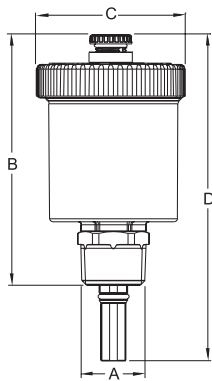
Model AVA-050
w/Service Check Valve



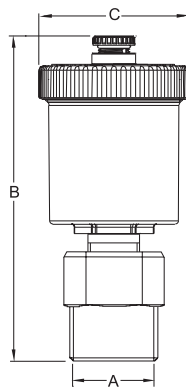
Model AVA-075



Model AVV-038



Model AVV-050
w/Service Check Valve



Model AVV-075

S. A. Armstrong Limited
23 Bertrand Avenue
Toronto, Ontario
Canada, M1L 2P3
T: (416) 755-2291
F (Main): (416) 759-9101

Armstrong Pumps Inc.
93 East Avenue
North Tonawanda, New York
U.S.A. 14120-6594
T: (716) 693-8813
F: (716) 693-8970

Armstrong Holden Brooke Pullen
Wenlock Way
Manchester
United Kingdom, M12 5JL
T: +44 (0) 1612 232223
F: +44 (0) 1612 209660



Submittal

Ref. #: SQJPE003387_2

long-coupled horizontal base-mounted end suction pump

Model: Series 4030 - 4x3x10 - 4p - 15 hp - (Factory Choice Motor)

Project name:	Representative: Anthony Gomez
Location:	Phone number:
Date submitted: 12/8/2022 1:15 PM	e-mail: agomez@insightusa.com
Engineer:	Submitted by: Gomez, Anthony

Application design data

Tag number:	CP-01,02 - OPTION 1	Configuration:	Single + Standby
Service:		Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	2	Operating temperature:	60 °F
Total system flow:	348 USgpm	Duty flow per pump:	348 USgpm
System head:	80 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	7.5 ft	Absorbed Power/BHP:	9.39 hp
Outlet velocity:	15.1 ft/s	Impeller diameter:	10.19 in
PEIcl:	0.49	ERcl:	51
Standby qty:	1	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Pump shaft:	Carbon Steel
Connections:	Inlet: 4 in, Outlet: 3 in	Shaft sleeve:ea	304 SS
Casing (volute):	Cast Iron, E-coated	Flexible coupling:	Duraflex coupling
Bearings:	Anti-Friction Grease Lubricated	Casing gasket:	Confined Non-Asbestos Fiber
Drip pan:	Yes		

Mechanical seal data

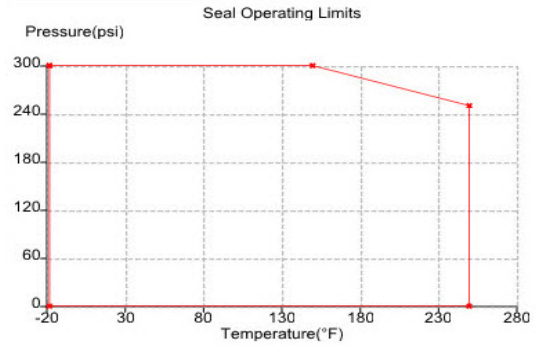
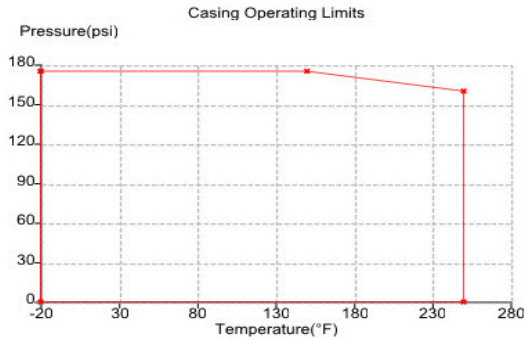
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

*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:	Factory Choice	Insulation class:	Class F Insulation
Frame size:	254TC	Motor type:	Inverter Duty
Speed:	1633 rpm	Size:	15 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)

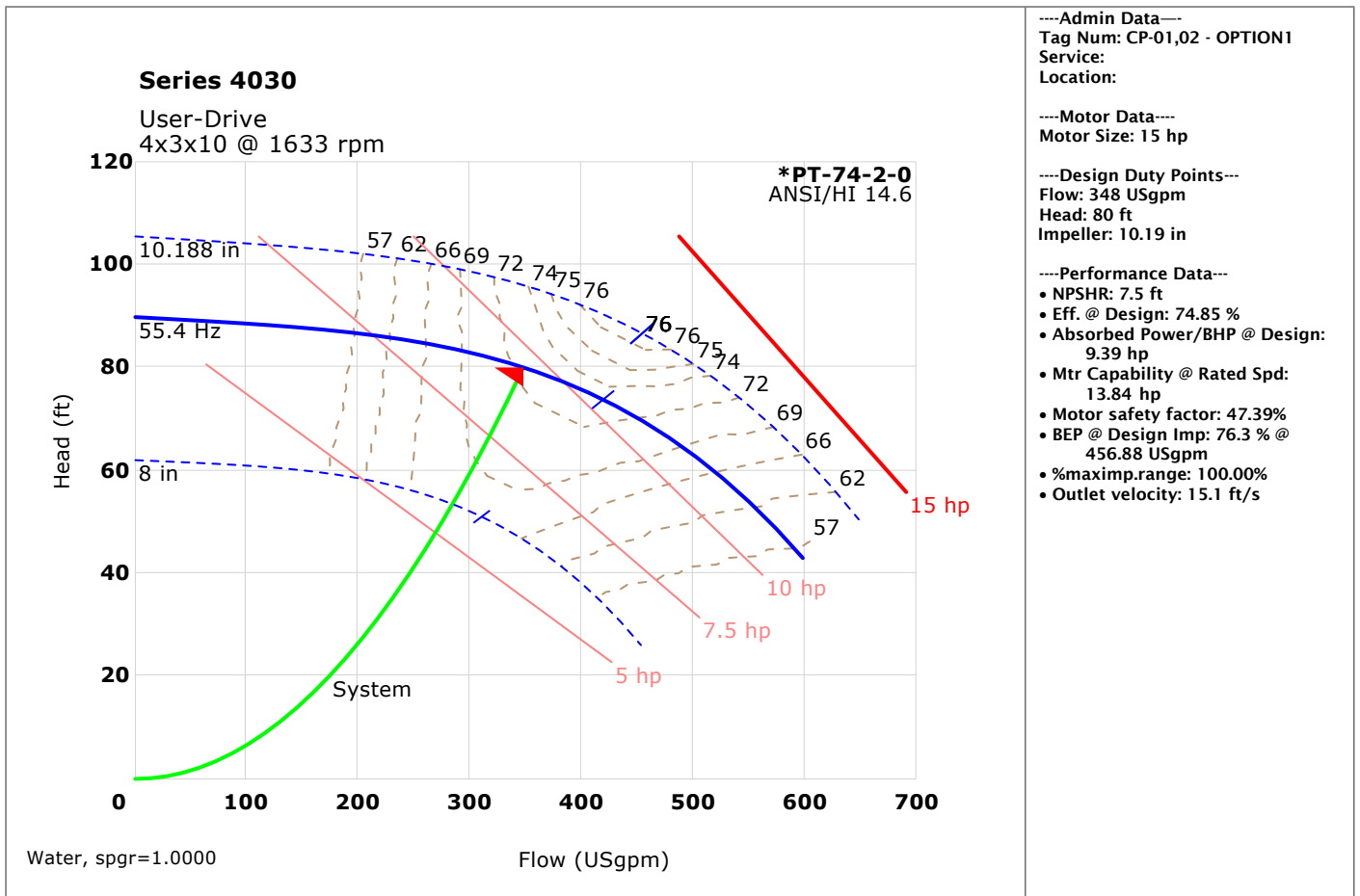


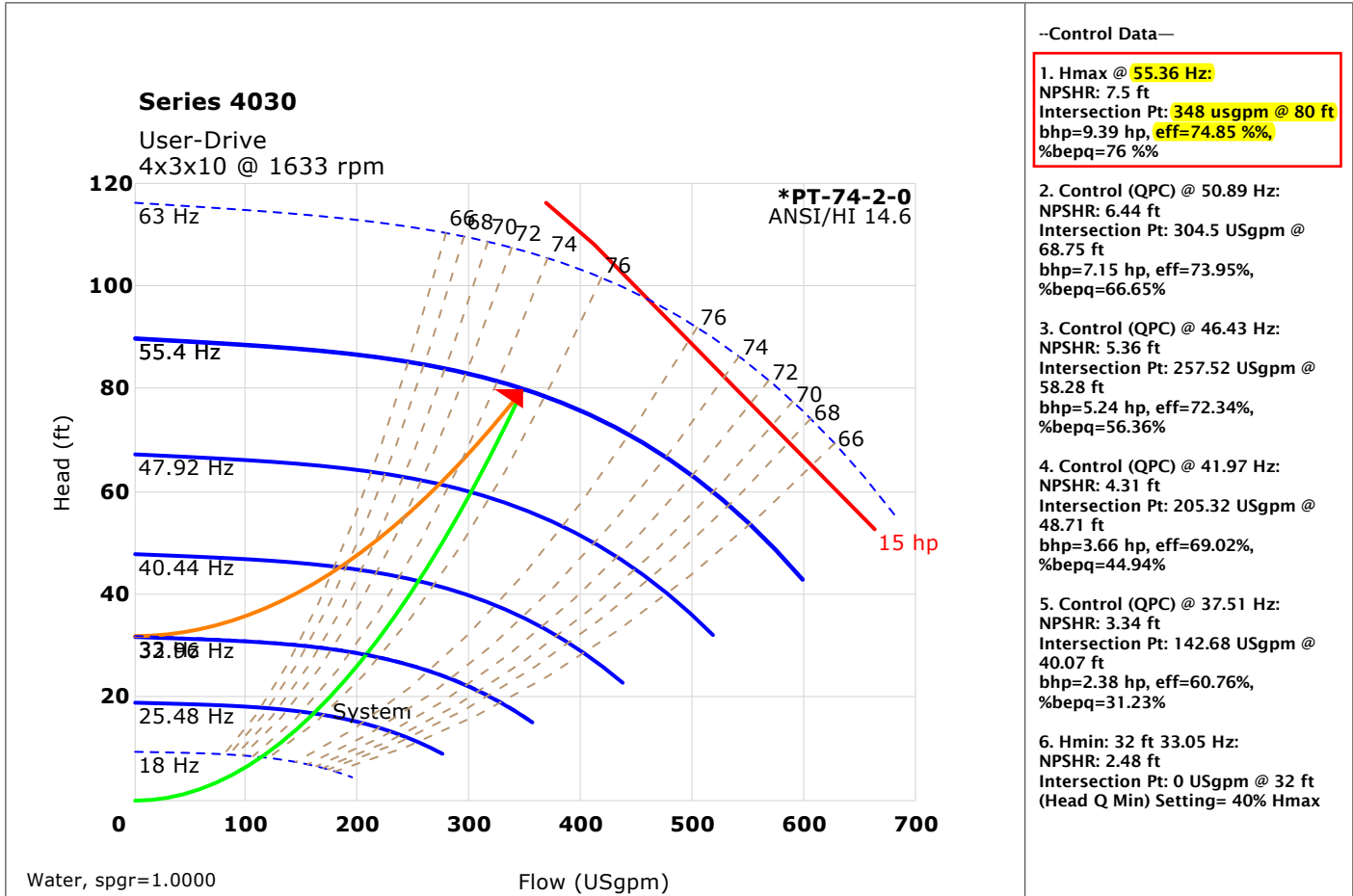
Maximum pressure: 175 psi

Maximum temperature: 250 F

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

Performance curve

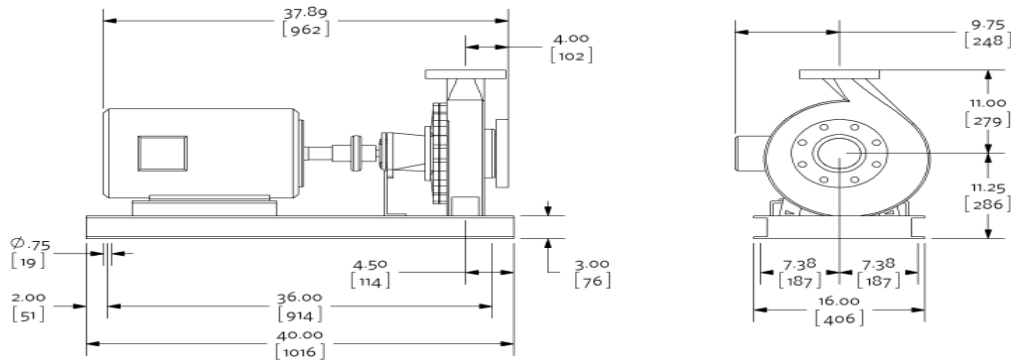




Dimensional data (not for construction)

Side view

Top view



Inverter motor type: Inverter duty

Weight: 446 lb [202.3 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 $\frac{1}{4}$ 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	3	ANSI-125	7.50	4	6.00	0.625

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

The program has defaulted to a NEMA Premium Efficiency motor supplied with NEMA MG-1 Part 31.4.4.2 insulation standards for inverter-fed polyphase motors.

Selected options

Testing: No Test Certification Required

Seal Environment Accessories: None

Couplings: Duraflex coupling

Space Heater: No

Motor Thermistor: No Thermistors

Wye-Delta Starting: No

Drip Pan: Yes

Submittal

Ref. #: SQJPE003387_2

long-coupled horizontal base-mounted end suction pump

Model: Series 4030 - 5x4x10 - 4p - 15 hp - (Factory Choice Motor)

Project name:	Representative: Anthony Gomez
Location:	Phone number:
Date submitted: 12/8/2022 1:15 PM	e-mail: agomez@insightusa.com
Engineer:	Submitted by: Gomez, Anthony

Application design data

Tag number:	CP-01,02-OPTION2	Configuration:	Single + Standby
Service:		Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	2	Operating temperature:	60 °F
Total system flow:	348 USgpm	Duty flow per pump:	348 USgpm
System head:	80 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	9.3 ft	Absorbed Power/BHP:	9.41 hp
Outlet velocity:	8.77 ft/s	Impeller diameter:	8.91 in
PEIcl:	0.94	ERcl:	6
Standby qty:	1	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Pump shaft:	Carbon Steel
Connections:	Inlet: 5 in, Outlet: 4 in	Shaft sleeve:ea	304 SS
Casing (volute):	Cast Iron, E-coated	Flexible coupling:	Duraflex coupling
Bearings:	Anti-Friction Grease Lubricated	Casing gasket:	Confined Non-Asbestos Fiber
Drip pan:	Yes		

Mechanical seal data

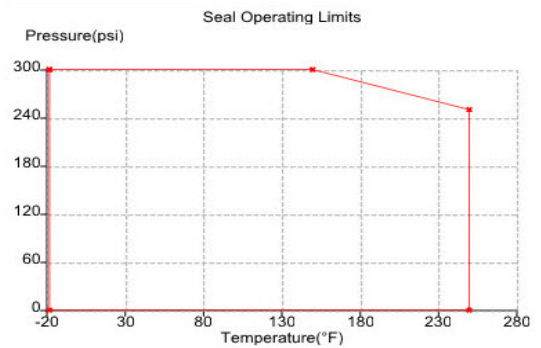
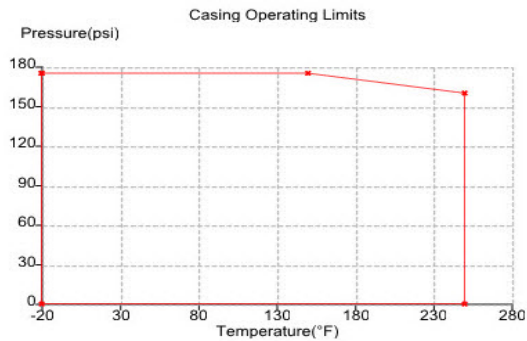
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

*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:	Factory Choice	Insulation class:	Class F Insulation
Frame size:	254TC	Motor type:	Induction
Speed:	1780 rpm	Size:	15 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)

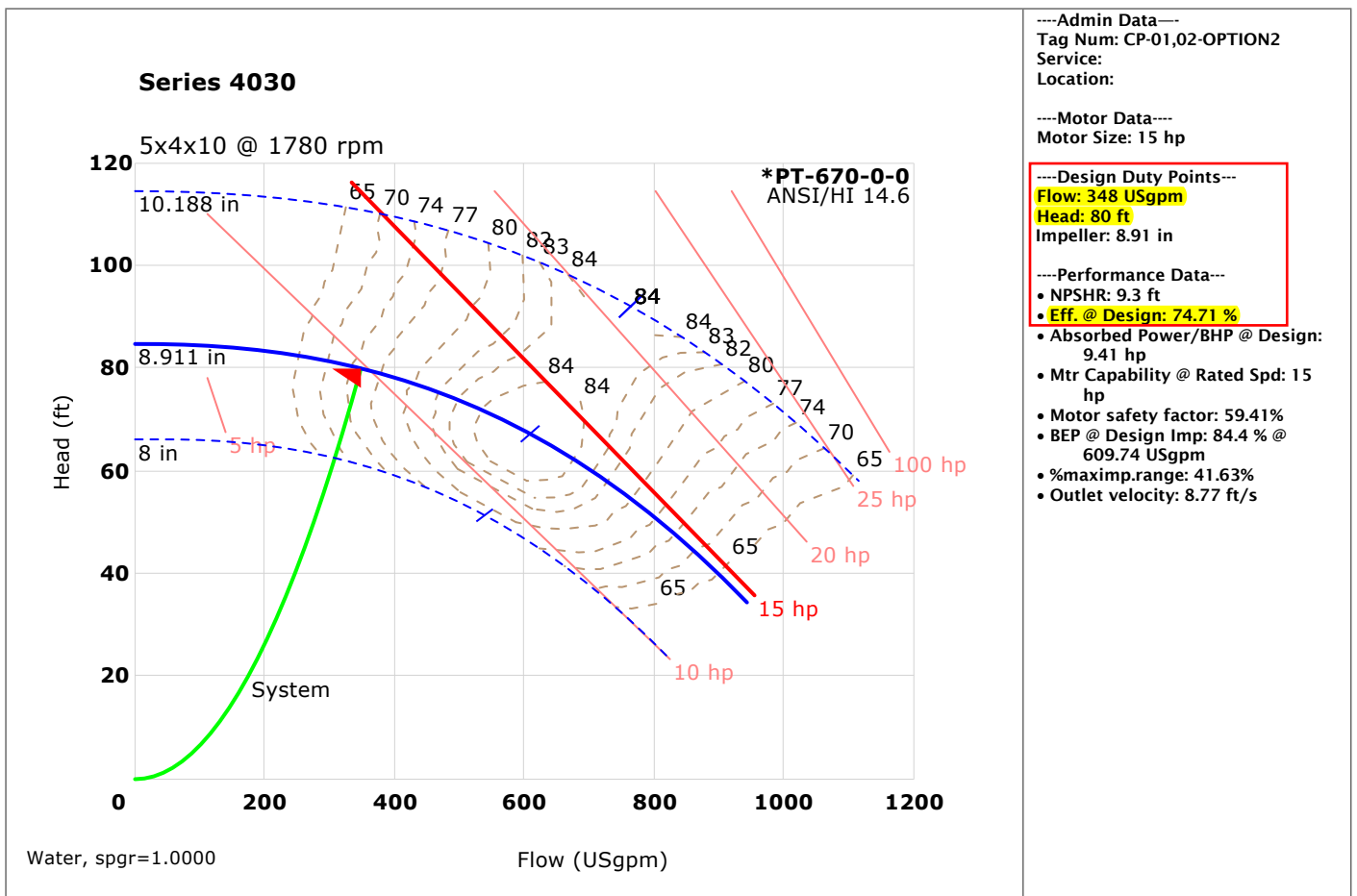


Maximum pressure: 175 psi

Maximum temperature: 250 F

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

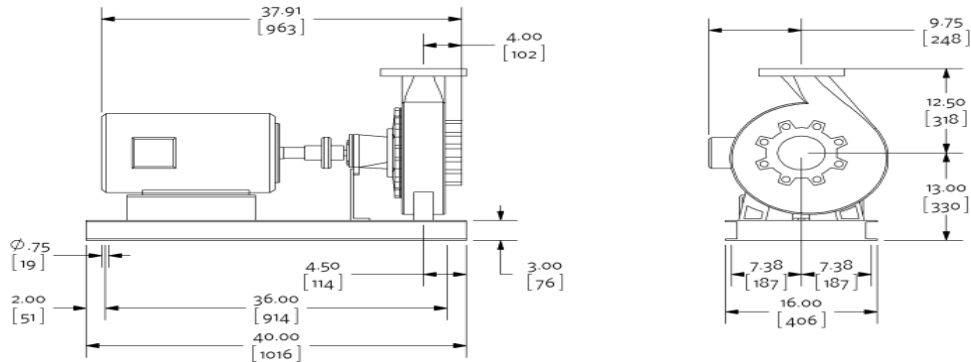
Performance curve



Dimensional data (not for construction)

Side view

Top view



Inverter motor type: Inverter duty

Weight: 544 lb [246.75 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	OD	Bolt quantity*	BCD	Bolt size
Inlet	5	ANSI-125	10.00	8	8.50	0.75
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
- Couplings: Duraflex coupling
- Space Heater: No
- Motor Thermistor: No Thermistors
- Wye-Delta Starting: No
- Drip Pan: Yes

Submittal

Ref. #: SQJPE003387_2

long-coupled horizontal base-mounted end suction pump

Model: Series 4030 - 3x2.5x6 - 2p - 15 hp - (Factory Choice Motor)

Project name:	Representative: Anthony Gomez
Location:	Phone number:
Date submitted: 12/8/2022 1:15 PM	e-mail: agomez@insightusa.com
Engineer:	Submitted by: Gomez, Anthony

Application design data

Tag number:	CP-01,02-OPTION3	Configuration:	Single + Standby
Service:		Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	2	Operating temperature:	60 °F
Total system flow:	348 USgpm	Duty flow per pump:	348 USgpm
System head:	80 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	12.59 ft	Absorbed Power/BHP:	9.36 hp
Outlet velocity:	23.32 ft/s	Impeller diameter:	6.02 in
PEIcl:	0.5	ERcl:	50
Standby qty:	1	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Pump shaft:	Carbon Steel
Connections:	Inlet: 3 in, Outlet: 2.5 in	Shaft sleeve:ea	304 SS
Casing (volute):	Cast Iron, E-coated	Flexible coupling:	Duraflex coupling
Bearings:	Anti-Friction Grease Lubricated	Casing gasket:	Confined Non-Asbestos Fiber
Drip pan:	Yes		

Mechanical seal data

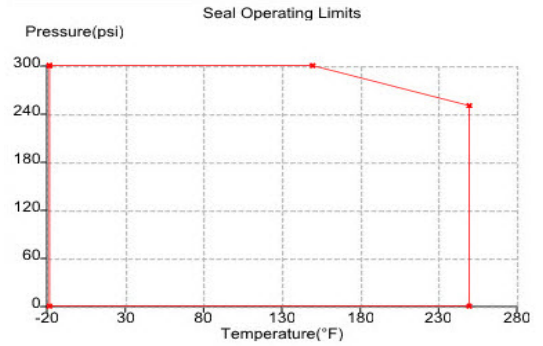
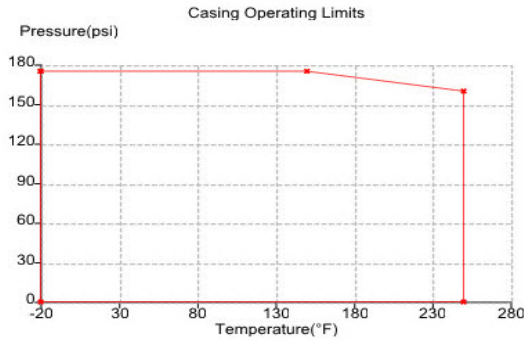
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

*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:	Factory Choice	Insulation class:	Class F Insulation
Frame size:	215TC	Motor type:	Inverter Duty
Speed:	3060 rpm	Size:	15 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)

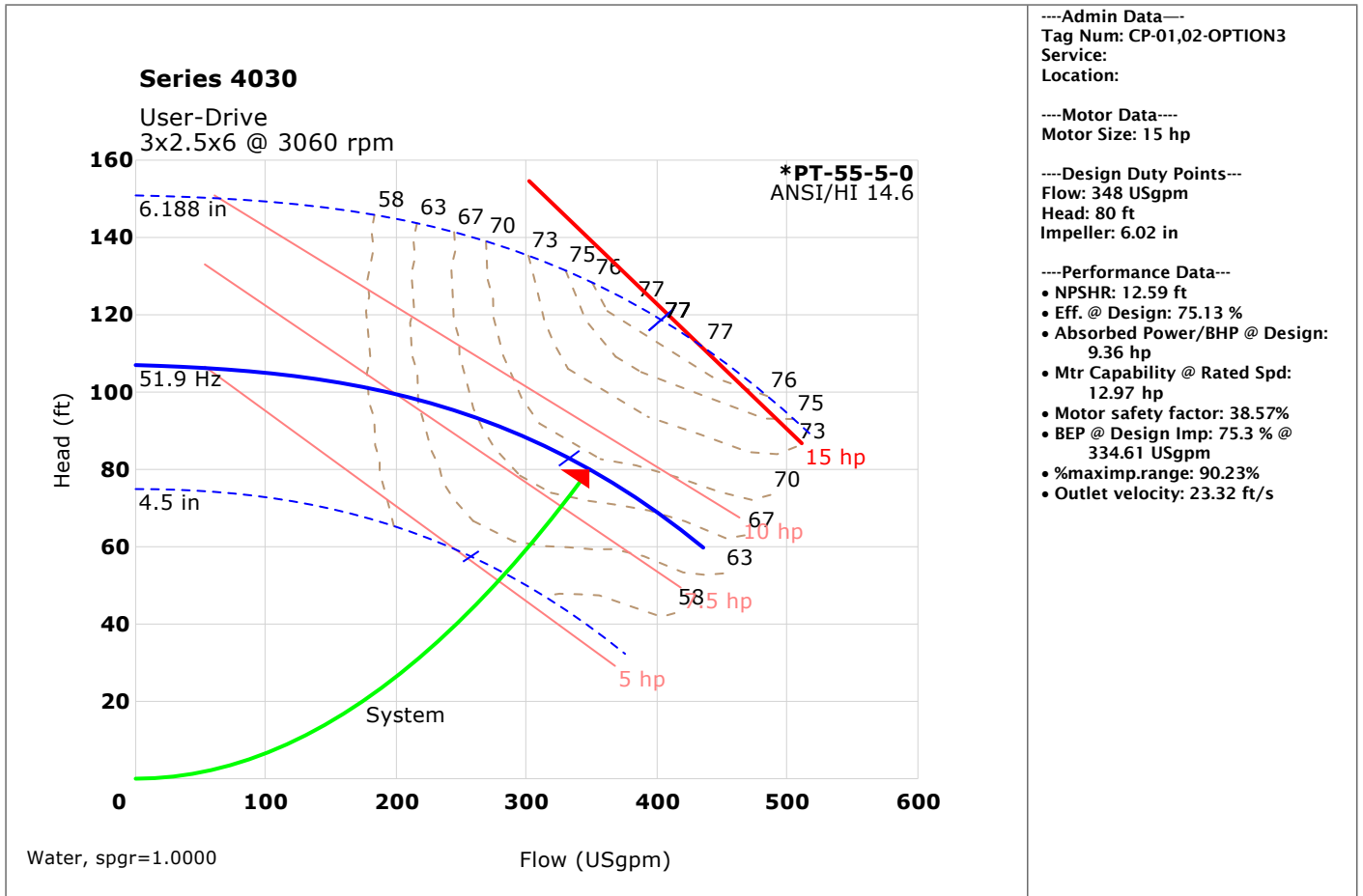


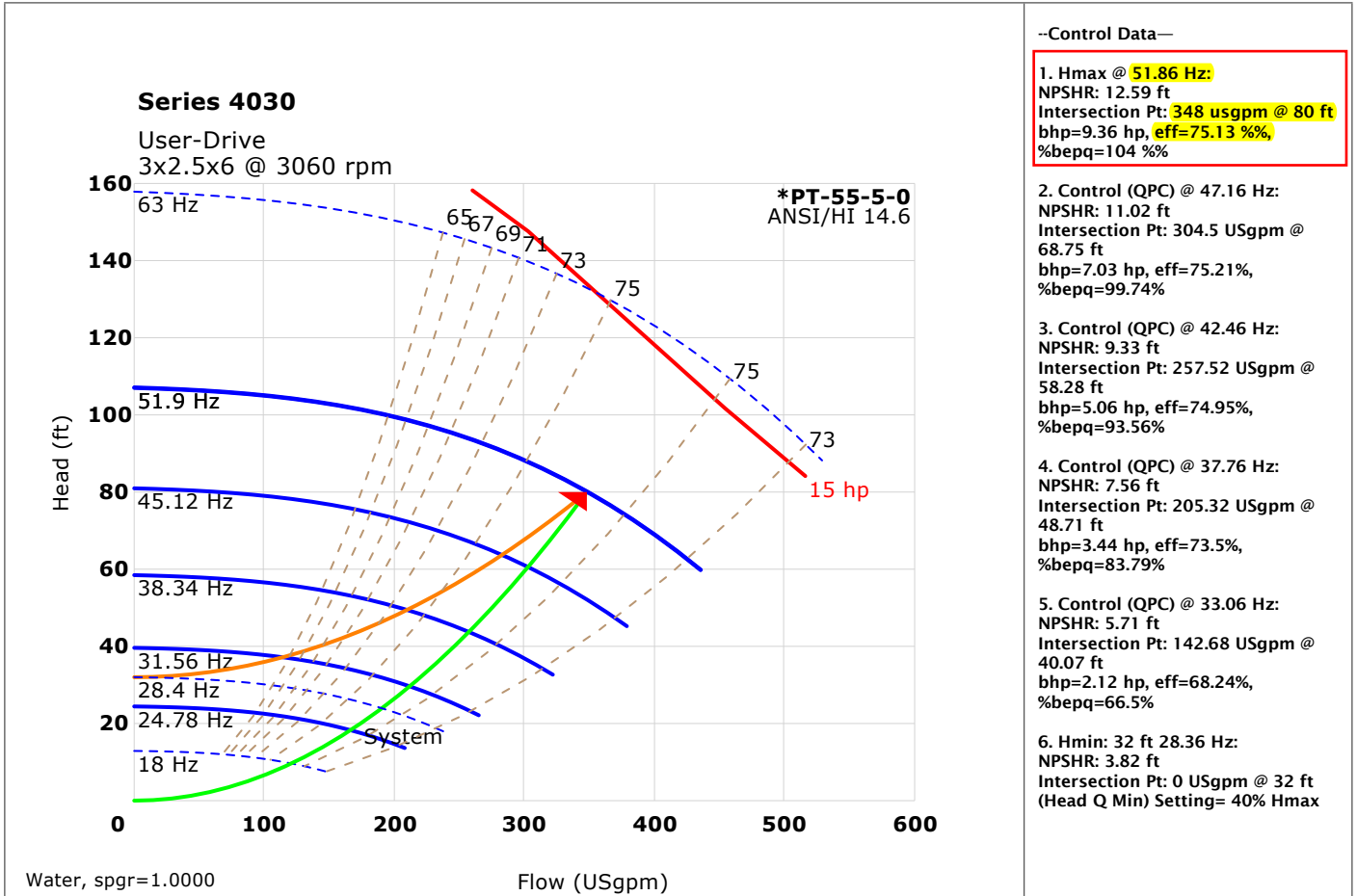
Maximum pressure: 175 psi

Maximum temperature: 250 F

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

Performance curve

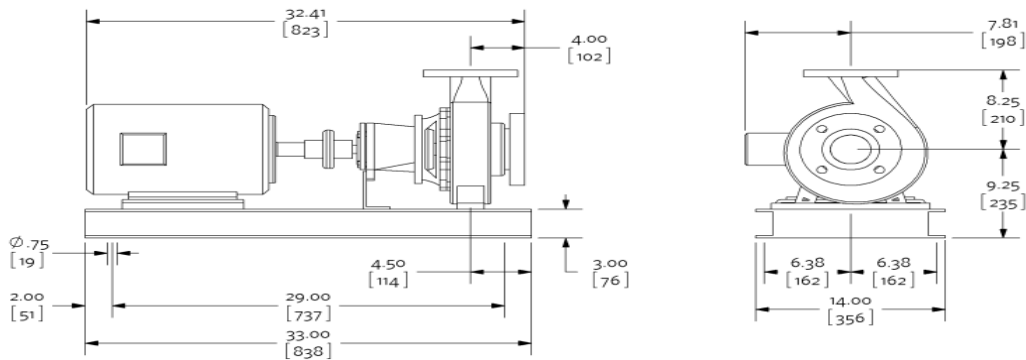




Dimensional data (not for construction)

Side view

Top view



Inverter motor type: Inverter duty

Weight: 292 lb [132.45 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	OD	Bolt quantity*	BCD	Bolt size
Inlet	3	ANSI-125	7.50	4	6.00	0.625
Outlet	2.5	ANSI-125	7.00	4	5.50	0.625

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

The program has defaulted to a NEMA Premium Efficiency motor supplied with NEMA MG-1 Part 31.4.4.2 insulation standards for inverter-fed polyphase motors.

Selected options

Testing: No Test Certification Required

Seal Environment Accessories: None

Couplings: Duraflex coupling

Space Heater: No

Motor Thermistor: No Thermistors

Wye-Delta Starting: No

Drip Pan: Yes

Submittal

Ref. #: SQJPE003387_2

long-coupled horizontal base-mounted end suction pump

Model: Series 4030 - 3x2.5x10 - 4p - 15 hp - (Factory Choice Motor) with Suction Guide

Project name:	Representative: Anthony Gomez
Location:	Phone number:
Date submitted: 9/12/2022 8:37 PM	e-mail: agomez@insightusa.com
Engineer:	Submitted by: Gomez, Anthony

Application design data

Tag number:	CP-01,02	Configuration:	Single + Standby
Service:		Suction pressure:	0 ft
Location:		Fluid:	Non-Potable Fluid - Water
Qty:	2	Operating temperature:	60 °F
Total system flow:	348 USgpm	Duty flow per pump:	348 USgpm
System head:	80 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	5.58 ft	Absorbed Power/BHP:	10.01 hp
Outlet velocity:	23.32 ft/s	Impeller diameter:	10.19 in
PEIcl:	0.48	ERcl:	52
Standby qty:	1	Pump/motor run qty:	1

*Motor safety factor above duty point.

Materials of construction

Construction:	Bronze Fitted	Impeller:	Bronze
Rating:	ANSI-125	Pump shaft:	Carbon Steel
Connections:	Inlet: 3 in, Outlet: 2.5 in	Shaft sleeve:ea	304 SS
Casing (volute):	Cast Iron, E-coated	Flexible coupling:	Duraflex coupling
Bearings:	Anti-Friction Grease Lubricated	Casing gasket:	Confined Non-Asbestos Fiber
Drip pan:	Yes		

Mechanical seal data

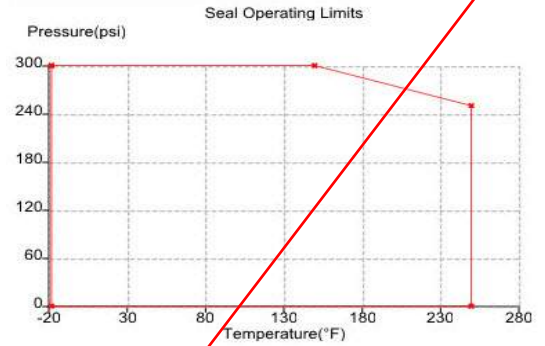
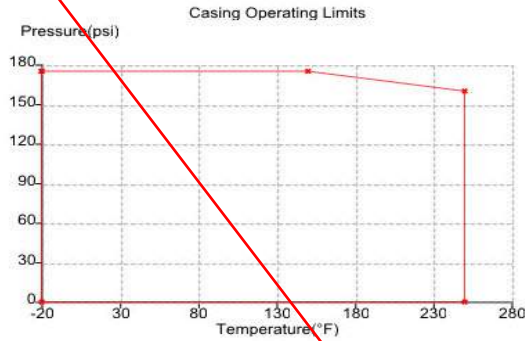
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

*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:	Factory Choice	Insulation class:	Class F Insulation
Frame size:	254TC	Motor type:	Inverter Duty
Speed:	1755 rpm	Size:	15 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)

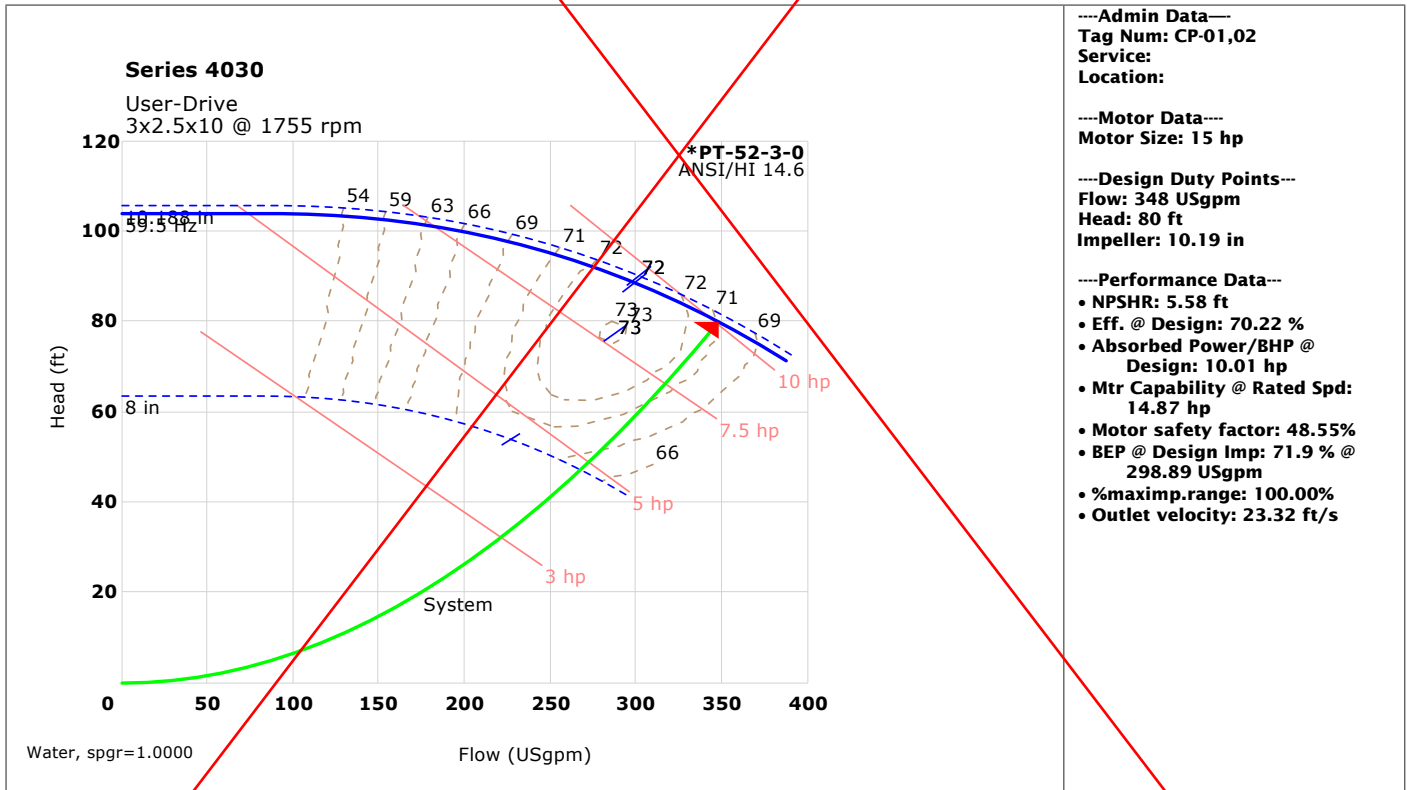


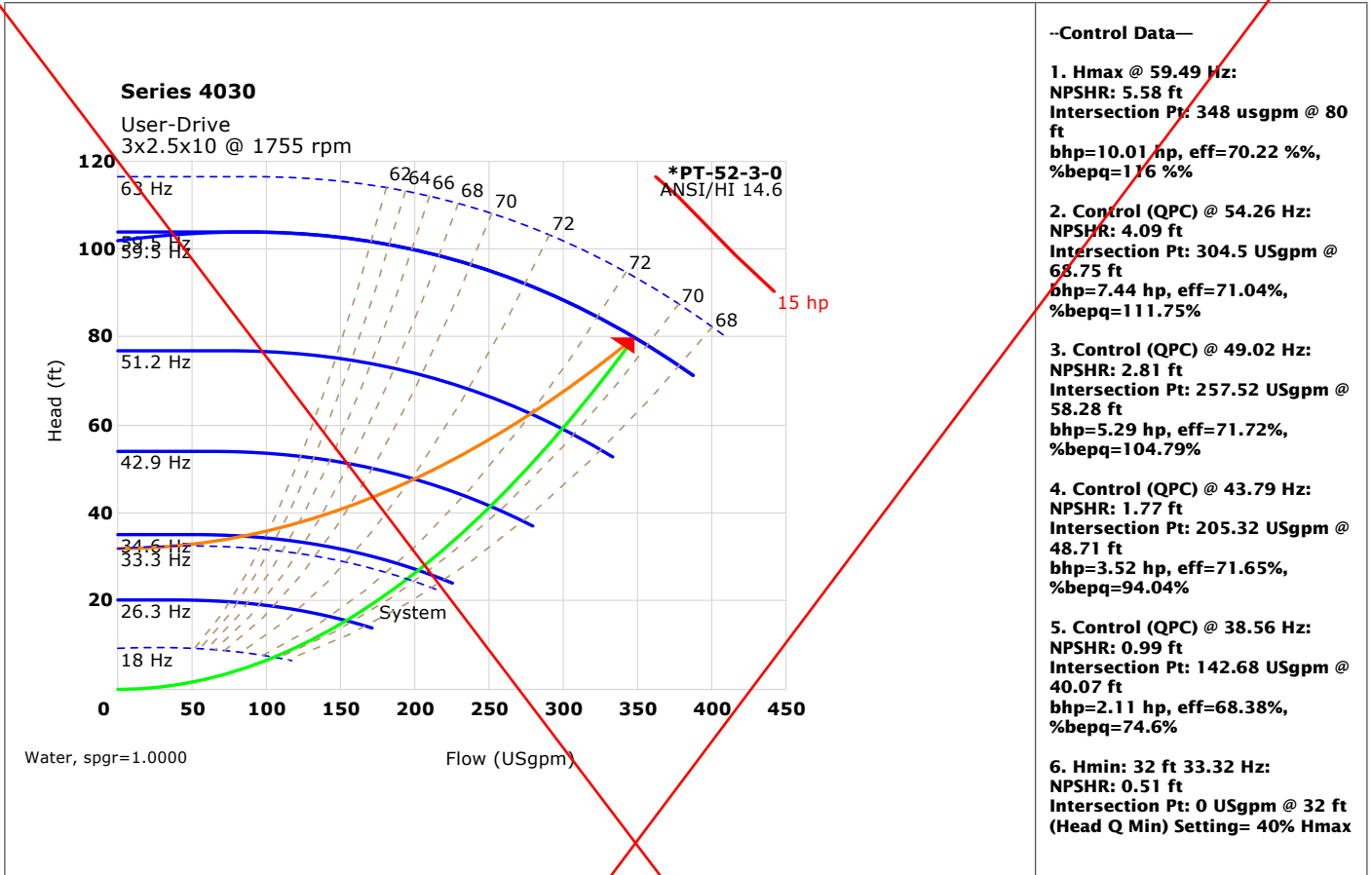
Maximum pressure: 175 psi

Maximum temperature: 250 F

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

Performance curve

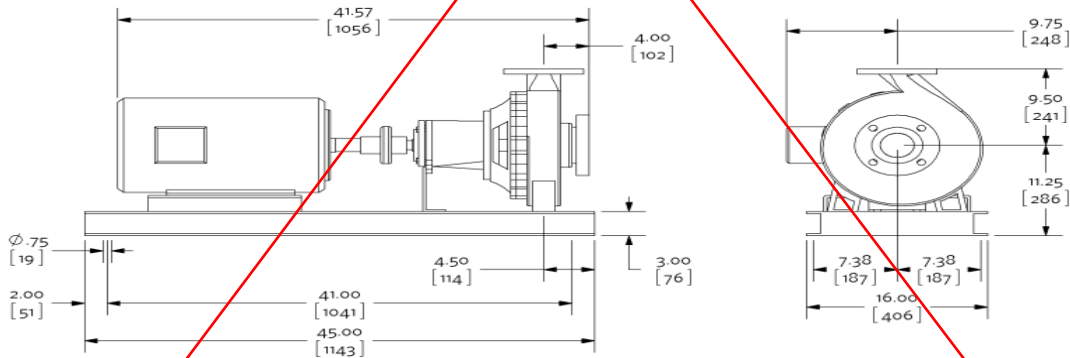




Dimensional data (not for construction)

Side view

Top view



Inverter motor type: inverter duty

Weight: 445 lb [201.85 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	OD	Bolt quantity*	BCD	Bolt size
------------	------	--------	----	----------------	-----	-----------

Inlet	3	ANSI-125	7.50	4	6.00	0.625
Outlet	2.5	ANSI-125	7.00	4	5.50	0.625

*Equally spaced straddling centreline

Special instructions

Reference Motor Specification AES 05007.

The program has defaulted to a NEMA Premium Efficiency motor supplied with NEMA MG-1 Part 31.4.4.2 insulation standards for inverter-fed polyphase motors.

Selected options

Testing: No Test Certification Required

Seal Environment Accessories: None

Couplings: Duraflex coupling

Space Heater: No

Motor Thermistor: No Thermistors

Wye-Delta Starting: No

Drip Pan: Yes

Submittal

Ref. #: SQJPE003387_2

Suction guide

Model: SG-63

Project name:	Representative: Anthony Gomez
Location:	Phone number:
Date submitted: 9/12/2022 8:37 PM	e-mail: agomez@insightusa.com
Engineer:	Submitted by: Gomez, Anthony

Application design data

Tag	Qty	Model	Pipe Conn.size	Pump Conn.size	Design flowrate	Pressure Drop*	Associated pump
CP-01,02	2	SG-63	6 in	3 in	348 USgpm	0.54 ft	4030 - 3x2.5x10 - 4p - 15 hp - (Factory Choice Motor)

*at design flow

Materials of construction

SG-63

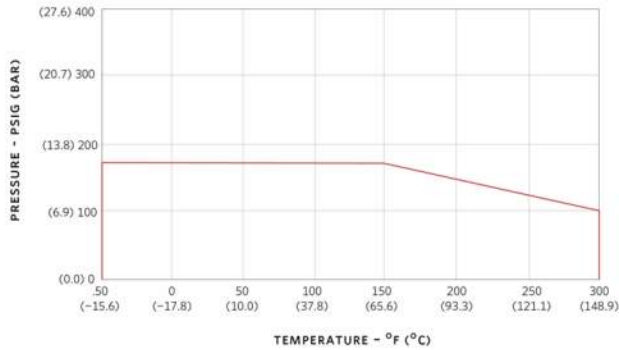
Body:	Cast Iron	Cover gasket:	Synthetic fiber
Guide vanes:	Cast Iron	Strainer:	Stainless Steel,0.188"(5mm)Perf..
Cover plate:	Cast Iron	Start-up strainer*:	Fine Mesh Galvanized Steel

*Remove start up strainer after 24 hours of pump operation

Operating limits (temperature - pressure)

SG-63-Suction Guide-ANSI-125

PRESSURE TEMPERATURE LIMITS



Maximum pressure: 175 psi
Maximum temperature: 300 F

Units are hydrostatically tested to 150% of maximum working pressure

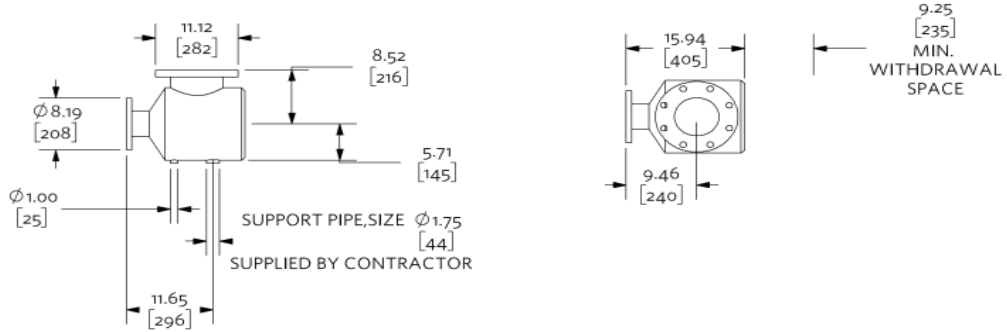
Dimensional data (not for construction)

SG-63

Weight: 107.45 lb [48.74 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

Job Name: NC026 81st Readiness - Chilled Water Coils
 Contractor: Eastbound Mechanical

TAG Schedule

Tag	Model	Scheduled Flow	Cartridge Flow	Runout Connection Size	Runout Connection Type	Coil Connection Size	Coil Connection Type	Control Valve Size	Configuration (2 or 3 Way)	Extended Handles & PT Extensions	Flush Kits / Bypass Valve Kits
CC-AH01	SWY	208.0	N/A	4"	FLG	4"	FLG		2-Way or 3- Way	No	No
CC-AH03	SWY	62.1	65	2-1/2"	FLG	2-1/2"	FLG		2-Way or 3- Way	No	No
CC-DOAS01	A2I	30.3	32	2"	SWT	2"	SWT		2-Way	Yes	Yes
CC-ERV01	A2I	10.7	11	1-1/4"	SWT	1-1/4"	SWT		2-Way	Yes	Yes
CC-ERV02	A2SF	4.2	4.5	3/4"	SWT	3/4"	SWT		2-Way	Yes	Yes
FCU-01	A2SF	3.07	3.5	3/4"	SWT	3/4"	SWT		2-Way	Yes	Yes
FCU-02	A2SF	2.39	2.5	3/4"	SWT	3/4"	SWT		2-Way	Yes	Yes
FCU-03	A2SF	2.08	2.25	3/4"	SWT	3/4"	SWT		2-Way	Yes	Yes
FCU-04	A2SF	2.39	2.5	3/4"	SWT	3/4"	SWT		2-Way	Yes	Yes
FCU-05	A2SF	2.39	2.5	3/4"	SWT	3/4"	SWT		2-Way	Yes	Yes
FCU-06	A2SF	2.92	3	3/4"	SWT	3/4"	SWT		2-Way	Yes	Yes
FCU-07	A2SF	2.02	2.25	3/4"	SWT	3/4"	SWT		2-Way	Yes	Yes
FCU-08	A2SF	1.74	1.75	3/4"	SWT	3/4"	SWT		2-Way	Yes	Yes
FCU-09	A2I	30.34	32	2"	SWT	2"	SWT		2-Way	Yes	Yes
FCU-10	A2SF	4.32	4.5	3/4"	SWT	3/4"	SWT		2-Way	Yes	Yes

Control valve & connection types to be coordinated with contractor prior to release

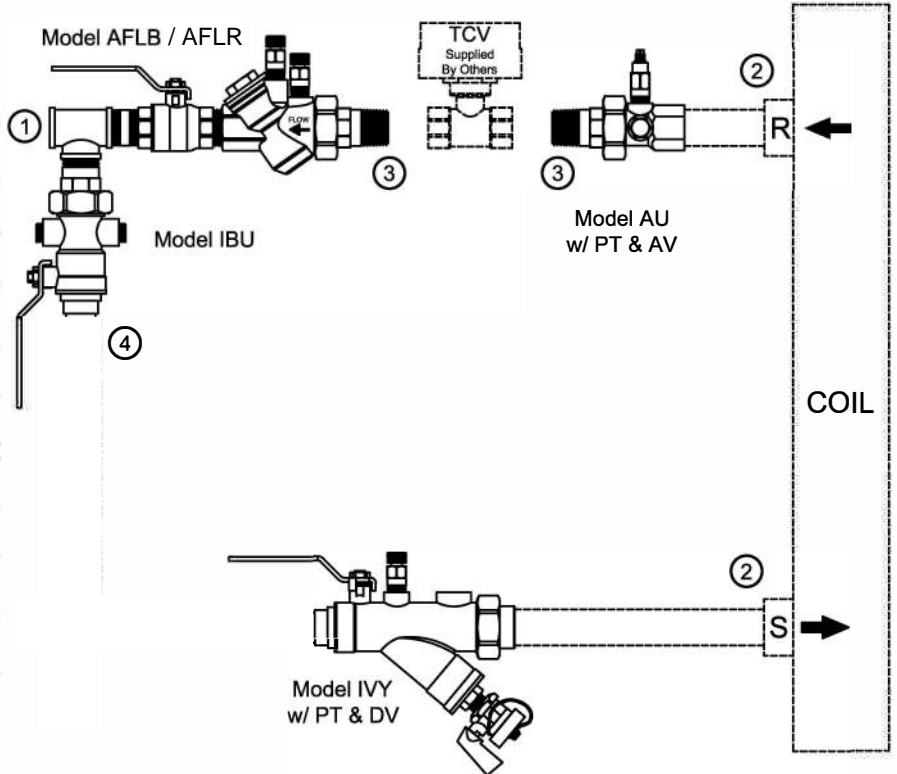
PRO Hydronic Specialties

Automatic Balancing 2-Way Flush Kit - A2IF Submittal

	#	Size	Connection Type
Runout	1		
Coil	2		
TCV	3		MPT
Flush Inlet	4		
<i>Services provided for additional fee:</i>			
Extended Components	<input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Factory Mounted TCV	<input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Stainless Steel Trim	<input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Bag N Tag	<input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	

* 3/8" Coil Size available in SWT ONLY.

** ProPress fittings supplied for additional fee.

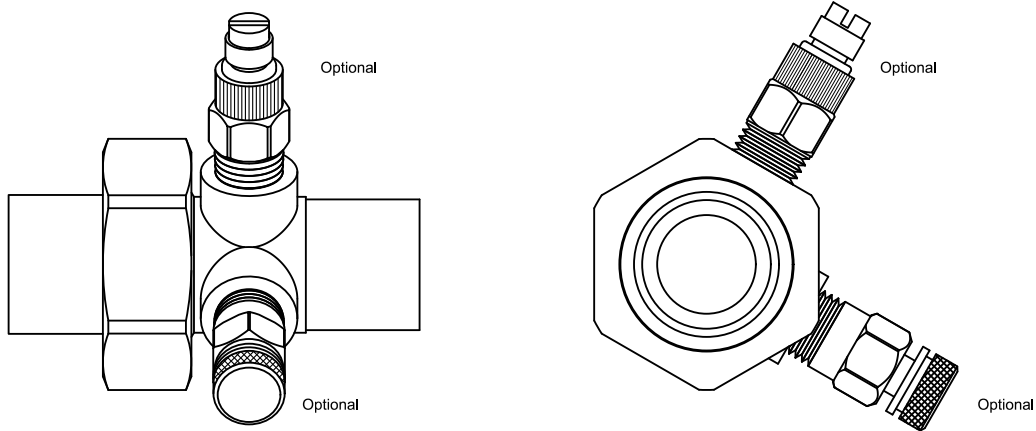


PRODUCT DESCRIPTION: The Automatic Balancing Valve Flush Kit is a packaged and partially preassembled grouping of components required to complete installation of a terminal unit. Temperature control valves, piping, and coils are supplied "by others". Mounting and testing of the customer supplied TCV is available at an additional charge.

QUANTITY	GPM	TAGGING INFORMATION			
JOB NAME		REPRESENTATIVE			
ENGINEER		REF/PO#		DATE	
CONTRACTOR		SUBMITTED BY		DATE	



AU Series Specifications Accessory Union



Product Description: The AU brass accessory union provides for component isolation. Port section contains two 1/4" ports that come predrilled from the factory and are positioned 90° apart. The union side incorporates an o-ring for maximum sealing protection. Accessory union comes standard with 1/4" plugs installed in the ports. Union side and port side connections available in NPTM, NPTF, and SWT. Rated at 600 WOG @ 250° F.

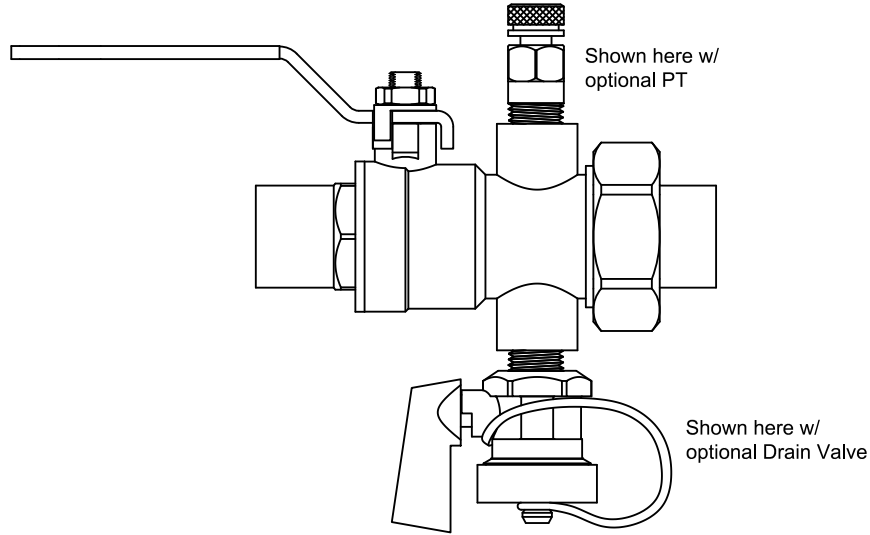
STANDARD MATERIAL SPECIFICATIONS	
Accessory Union	Forged Brass ASTM B283-06
O-Ring	EPDM
Tail Piece	Brass ASTM B124-09, B228-06, or B763-08A
Specification information is provided to assist and is given without obligation or warranty. The Company reserves the right to make changes in design, materials, and/or specifications without notice or liability.	

PRODUCT SPECIFICATIONS:

- 1/4" ports shall be located 90° distal on a rotational axis
- Integrated ports shall provide functionality for numerous options



IBU Series Specifications
Integral Ball Valve/Union



PRODUCT DESCRIPTION: The IBU is an integral ball valve and union. The IBU uses a full-port ball valve with a union ended brass body that provides two (2) ¼" taps for accessories to be installed. All taps are plugged unless otherwise specified. Memory stops are available upon request. Fixed end connections may be SWT or FNPT. Union side connections available include MNPT, FNPT, and SWT, and a variety of reductions.

STANDARD MATERIAL SPECIFICATIONS	
Body	Forged Brass ASTM B283-06 or ASTM B763-08A
O-Ring	EPDM
Tail Piece	Brass ASTM B124-09, B228-06, or B763-08A
Union Nut	Brass ASTM B455
Handle	Chrome Plated Steel
Stem	Brass ASTM B124-09 - Blow-Out Proof
Ball	Chrome Plated Brass - Full Port
Ball Seat	Teflon
STANDARD OPERATING SPECIFICATIONS	
Maximum Working Pressure:	600 WOG / CWP
Maximum Operating Temperature:	250° F
Specification information is provided to assist and is given without obligation or warranty. The Company reserves the right to make changes in design, materials, and/or specifications without notice or liability.	

PRODUCT SPECIFICATIONS:

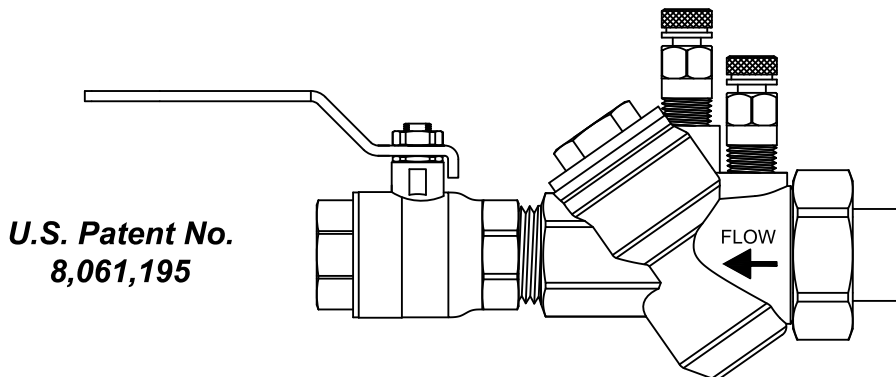
- Devices shall have a full port isolation valve to provide unrestricted flow
- Devices shall be designed to accept a memory stop
- Devices shall have a union end which allows for quick and convenient connection



AFLB Series Specifications

Automatic Pressure Independent Flow Limiter w/ Ball Valve

- A: AFLB - ½" - 1" High
- B: AFLB - 1" High - 1½" Low
- C: AFLB - 1½" High - 2"



PRODUCT DESCRIPTION: The AFLB is an Automatic Pressure Independent Flow Limiting device, male ended by union with a brass ball valve attached, rated at 600 WOG / CWP @ 250° F. The AFLB is supplied with a stainless steel flow limiting cartridge that can be removed for cartridge exchange, if necessary. The AFLB comes standard with two pressure/temperature ports and a hanging identification tag. The ball valve end, or run-out side, is available in FNPT or SWT. The union side connections available include MNPT, FNPT, SWT, and a variety of reductions.

STANDARD MATERIAL SPECIFICATIONS		STANDARD OPERATING SPECIFICATIONS	
Body	Forged Brass ASTM B283-06 or Cast Brass ASTM B763-08A	Control Range:	2 psi - 60+ psi
O-Ring	EPDM	Accuracy:	±5%
Tail Piece, Packing Nut	Brass ASTM B124-09, B228-06, or B763-08A	Max Working Pressure:	600 WOG / CWP
Union Nut	Brass ASTM B455	Max Operating Temperature:	40°F to 250°F
Flow Cartridge	ASTM A582 Type 303 Stainless Steel	Start-Up Head Loss:	5 Feet of H ₂ O
Diaphragm	EPDM	Specification information is provided to assist and is given without obligation or warranty. The Company reserves the right to make changes in design, materials, and/or specifications without notice or liability.	
Spring	302 Stainless Steel		
PT Port	EPDM Dual Durometer Core		
Ball Valve	Forged Brass ASTM B283-06		
Stem	Brass ASTM B124-09 - Blow-Out Proof		
Ball	Chrome Plated Brass		
Ball Seat, Packing Gland	Teflon		
Handle	Chrome Plated Steel w/ Vinyl Cover		

Valve Size	FLOW RATES (GPM) * CONTROL RANGE 2 - 60+ PSID **																									
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A ½" - 1" L	.33	.50	.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	9	10	11	12
B 1" H - 1½" L	5	5.5	6	6.5	7	8	9	10	12	13	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	42
C 1½" H - 2"	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	130	140	150	160	170	180

* Custom flow rates can be calibrated at the factory for an additional charge.
Unless confirmed as special, flow rates will default to standard flow rate.

PRODUCT SPECIFICATIONS:

- The Automatic Flow Limiter with Ball Valve (AFLB) shall have flow measurement capability
- The AFLB shall have a static orifice to control flow
- The AFLB Cartridge shall be permanently marked with the letter that corresponds to the factory preset GPM
- All flow cartridge wear surfaces shall be stainless steel
- The AFLB shall have a 2 PSID start up rating
- The AFLB Cartridge shall have a large operational differential range
- The AFLB Cartridge shall provide continual flow at differential pressures above design limits
- The AFLB Cartridge shall be removable for cleaning or exchange if required

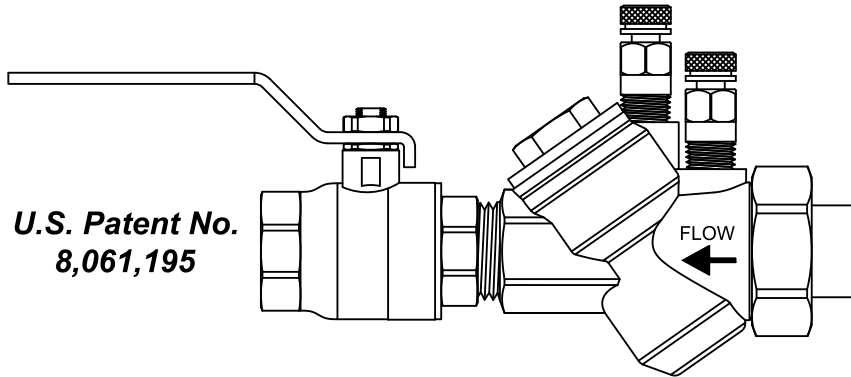


AFLR Series Specifications

Automatic Pressure Independent Flow Limiter w/ Reduced Balancing

A: AFLR - 3/4" - 1 1/4"

B: AFLR - 1 1/2" - 2"



PRODUCT DESCRIPTION: The AFLR is an Automatic Pressure Independent Flow Limiting device, male ended by union with a brass ball valve attached, rated at 600 WOG / CWP @ 250° F. The AFLR is supplied with a stainless steel flow limiting cartridge that can be removed for cartridge exchange, if necessary. The AFLR comes standard with two pressure/temperature ports and a hanging identification tag. The ball valve end, or run-out side, is available in FNPT or SWT. The union side connections available include MNPT, FNPT, SWT, and a variety of reductions.

STANDARD MATERIAL SPECIFICATIONS		STANDARD OPERATING SPECIFICATIONS	
Body	Forged Brass ASTM B283-06 or Cast Brass ASTM B763-08A	Control Range:	2 psi - 60+ psi
O-Ring	EPDM	Accuracy:	±5%
Tail Piece, Packing Nut	Brass ASTM B124-09, B228-06, or B763-08A	Max Working Pressure:	600 WOG / CWP
Union Nut	Brass ASTM B455	Max Operating Temperature:	40°F to 250°F
Flow Cartridge	ASTM A582 Type 303 Stainless Steel	Start-Up Head Loss:	5 Feet of H ₂ O
Diaphragm	EPDM	Specification information is provided to assist and is given without obligation or warranty. The Company reserves the right to make changes in design, materials, and/or specifications without notice or liability.	
Spring	302 Stainless Steel		
PT Port	EPDM Dual Durometer Core		
Ball Valve	Forged Brass ASTM B283-06		
Stem	Brass ASTM B124-09 - Blow-Out Proof		
Ball	Chrome Plated Brass		
Ball Seat, Packing Gland	Teflon		
Handle	Chrome Plated Steel w/ Vinyl Cover		

Valve Size	FLOW RATES (GPM) * CONTROL RANGE 2 - 60+ PSID **																									
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A 3/4" - 1 1/4"	.33	.50	.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	9	10	11	12
B 1 1/2" - 2"	5	5.5	6	6.5	7	8	9	10	12	13	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	42

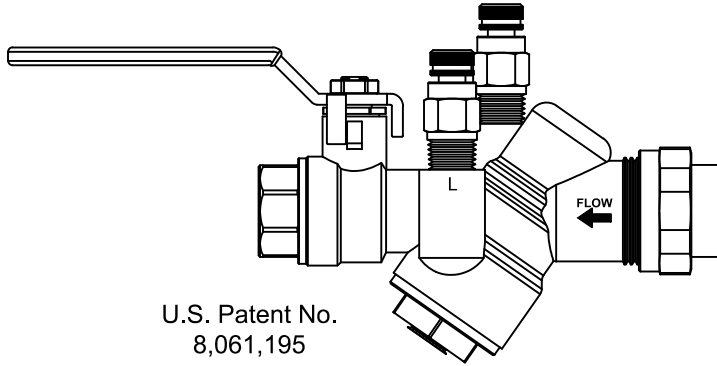
* Custom flow rates can be calibrated at the factory for an additional charge.
Unless confirmed as special, flow rates will default to standard flow rate.

PRODUCT SPECIFICATIONS:

- The Automatic Flow Limiter with Ball Valve (AFLR) shall have flow measurement capability
- The AFLR shall have a static orifice to control flow
- The AFLR Cartridge shall be permanently marked with the letter that corresponds to the factory preset GPM
- All flow cartridge wear surfaces shall be stainless steel
- The AFLR shall have a 2 PSID start up rating
- The AFLR Cartridge shall have a large operational differential range
- The AFLR Cartridge shall provide continual flow at differential pressures above design limits
- The AFLR Cartridge shall be removable for cleaning or exchange if required



AFLI Series Specifications
Automatic Flow Limiter w/ Integral Ball Valve
A: AFLI - 1/2" - 1" L



PRODUCT DESCRIPTION: The AFLI is an Automatic Flow Limiting device, union end by fixed end, with an integral full port ball valve, rated at 600 WOG @ 250°F. The AFLI is supplied with a stainless steel flow limiting cartridge that can be removed for cleaning, inspection, and cartridge exchange, if necessary. The AFLI comes standard with two pressure/temperature ports and a hanging ID tag for easy identification. The fixed end system or, pipe run-out side, is available in SWT or FNPT. The union side connections available include MNPT, FNPT, SWT, and a variety of reductions.

STADARD MATERIAL SPECIFICATIONS		STANDARD OPERATING SPECIFICATIONS	
Body	Forged Brass ASTM B283-06	Control Range:	2 psi - 60+ psi
O-Ring	EPDM	Accuracy:	±5%
Tail Piece	Brass ASTM B124-09, B228-06, or B763-08A	Max Working Pressure:	600 WOG
Flow Cartridge	ASTM A582 Type 303 Stainless Steel	Max Operating Temperature:	40°F to 250°F
Diaphragm	EPDM	Start-Up Head Loss:	5 Feet of H ₂ O
Spring	Stainless Steel		
PT Port	EPDM Dual Durometer Core		
Ball Valve	Forged Brass ASTM B283-06		
Stem	Brass ASTM B124-09 - Explosion Proof		
Ball	Chrome Plated Brass - Full Port		
Ball Seat	Teflon		
Handle	Chrome Plated Steel		

Valve Size	Flow Rates (GPM)*																			Control Range 2 - 60+ PSID											
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z					
A 1/2" - 1" L	.33	.50	.75	1	1.25	1.5	1.75	2	2.25	2.5	2.75	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	9	10	11	12					

* Custom flow rates can be calibrated at the factory for an additional charge.

PRODUCT SPECIFICATIONS:

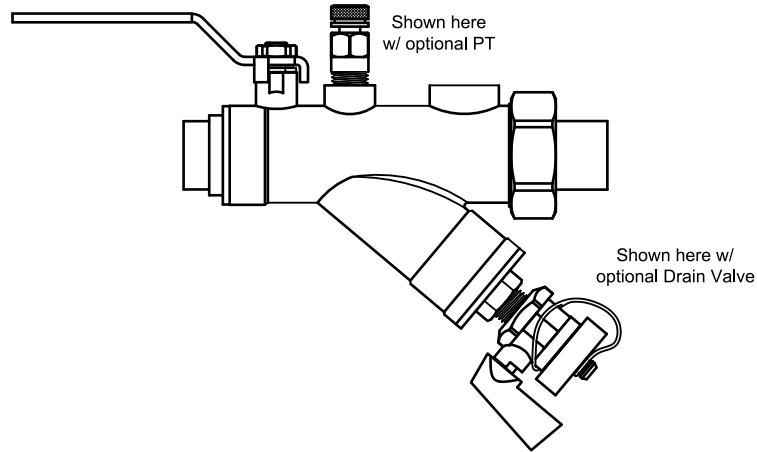
- Flow measurement capability for problematic systems, high performance coils, or projects where verifiable sustainable energy savings is desirable
- Stainless steel construction on all flow cartridge wear surfaces
- Static orifice design that maximizes the size of the flow orifice across large pressure differentials
- Large operational differential range across the flow cartridge
- Provides continual flow at differential pressures above design limits
- Removable cartridge for cleaning or exchange if required
- Flushing through the cartridge body in case debris gets inside the cartridge (optional drain/flush valve available)
- Low start-up pressure to operate with low energy requirements

The information presented on this submittal is correct at the time of publication. US Industrial Sourcing, L.L.C. reserves the right to change design, and/or material specifications without notice.



IVY Series Specifications

Integral Ball Valve/Wye Strainer/Union



PRODUCT DESCRIPTION: The IVY is an integral ball valve, wye-strainer and union. The IVY uses a full-port ball valve for positive shut-off and offers two (2) predrilled ¼" taps for accessories to be installed. A ¼" standard port and by-pass tap are provided at the forward 12:00 position. The bypass port comes tapped and plugged for 2-way control valve configurations. The bypass port remains open on 3-way control valve configurations to install a bypass valve. (See *IVY Series Dimensions* page for bypass valve sizes.) An additional side port is available for factory drilling and tapping a ¼" port. The strainer has a 20-mesh stainless steel screen to aid in debris removal. The strainer cap has a ¼" tap for a hose-end drain valve. The ball valve has a PTFE packing gland, brass packing nut, and blow-out proof double o-ring stem seal. The fixed end connections may be FNPT or SWT. The union side connections include MNPT, FNPT, SWT, and a variety of reductions.

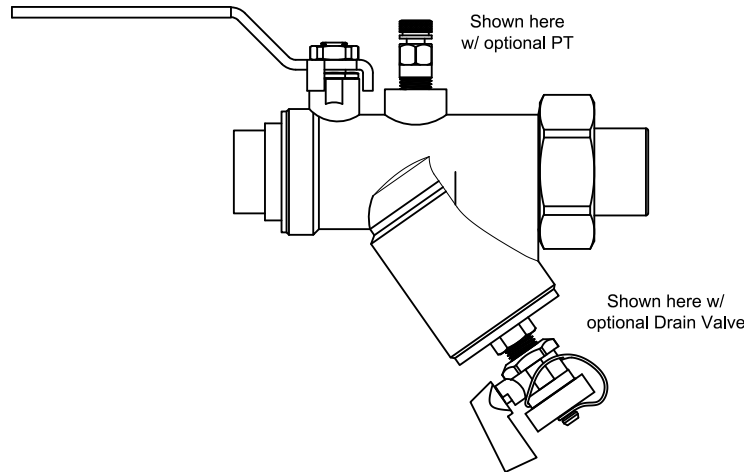
STANDARD MATERIAL SPECIFICATIONS		PORT LOCATIONS
Body	Forged Brass ASTM B283-06, or cast Brass ASTM B763-08A	<p>Side Port (Optional)</p> <p>Standard</p> <p>By-pass (Optional)</p> <p>Drain</p>
O-Ring	EPDM	
Tail Piece	Brass ASTM B124-09, B228-06, or B763-08a	
Union Nut	Brass ASTM B455	
PT Seal	EPDM Dual Durometer Core	
Handle	Chrome Plated Steel	
Stem	Brass ASTM B124-09 - Blow-Out Proof	
Ball	Chrome Plated Brass - Full Port	
Ball Seat	Teflon	
Packing Gland	Teflon	
Packing Nut	Brass ASTM B124-09, B228-06, or B763-08a	
STANDARD OPERATING SPECIFICATIONS		
Maximum Working Pressure: 600 WOG / CWP		
Maximum Operating Temperature: 40° F to 250° F		
<p>Specification information is provided to assist and is given without obligation or warranty. The Company reserves the right to make changes in design, materials, and/or specifications without notice or liability.</p>		

PRODUCT SPECIFICATIONS:

- Device shall have a full port isolation valve
- Device shall have a 20 mesh accessible strainer sleeve
- Device shall have a blow down for debris removal
- Device shall have a functional by-pass
- The strainer screen shall have a minimum 8:1 ratio of total area against the internal pipe diameter



IVS Series Specifications
Integral Ball Valve/Wye Strainer/Union



PRODUCT DESCRIPTION: The IVS is an integral ball valve, wye-strainer and union. The IVY uses a full-port ball valve for positive shut-off and offers two (2) predrilled 1/4" taps for accessories to be installed. The strainer has a 20-mesh stainless steel screen to aid in debris removal. The strainer cap has a 1/4" tap for a hose-end drain valve. The ball valve has a PTFE packing gland, brass packing nut, and blow-out proof double o-ring stem seal. The fixed end connections may be FNPT or SWT. The union side connections include MNPT, FNPT, SWT, and a variety of reductions.

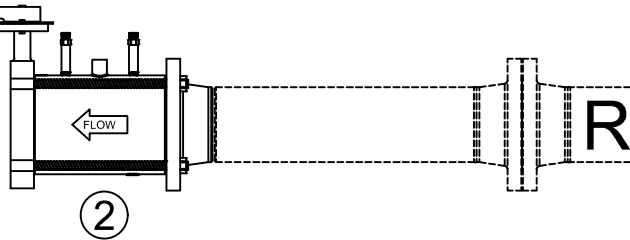
STANDARD MATERIAL SPECIFICATIONS		PORT LOCATIONS
Body	Forged Brass ASTM B283-06, or cast Brass ASTM B763-08A	<p>Standard</p> <p>Drain</p>
O-Ring	EPDM	
Tail Piece	Brass ASTM B124-09, B228-06, or B763-08a	
Union Nut	Brass ASTM B455	
PT Seal	EPDM Dual Durometer Core	
Handle	Chrome Plated Steel	
Stem	Brass ASTM B124-09 - Blow-Out Proof	
Ball	Chrome Plated Brass - Full Port	
Ball Seat	Teflon	
Packing Gland	Teflon	
Packing Nut	Brass ASTM B124-09, B228-06, or B763-08a	
STANDARD OPERATING SPECIFICATIONS		
Maximum Working Pressure: 600 WOG / CWP		
Maximum Operating Temperature: 40° F to 250° F		
Specification information is provided to assist and is given without obligation or warranty. The Company reserves the right to make changes in design, materials, and/or specifications without notice or liability.		

PRODUCT SPECIFICATIONS:

- Device shall have a full port isolation valve
- Device shall have a 20 mesh accessible strainer sleeve
- Device shall have a blow down for debris removal
- Device shall have a functional by-pass
- The strainer screen shall have a minimum 8:1 ratio of total area against the internal pipe diameter

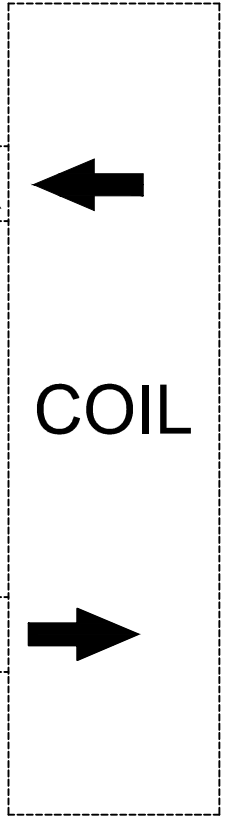
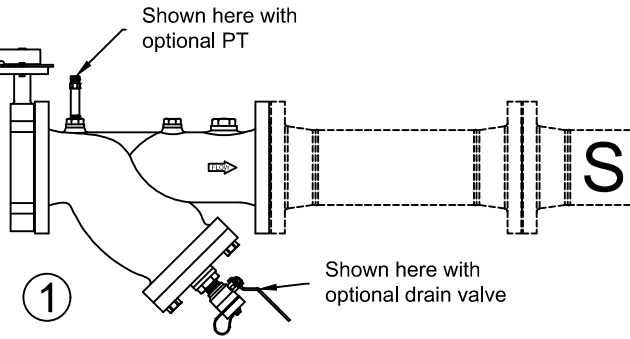
PRO *Hydronic* *Specialties* Automatic Steel Balancing Kit - SWY Submittal

Model AFLWF
(comes with two PTs)



#	Model	Size
1	CBYS	
2	AFLWF	

Model CBYS
(accessories provided for additional cost and must be specified at time of order)



PRODUCT DESCRIPTION: The Automatic Balancing Valve Kit is a packaged and partially preassembled grouping of components required to complete installation of a terminal unit. Temperature control valves, piping, and coils are supplied "by others". Mounting and testing of the customer provided TCV is available at an additional charge. Parts for reductions in line size are available for an additional charge. Consult with factory for information and pricing.

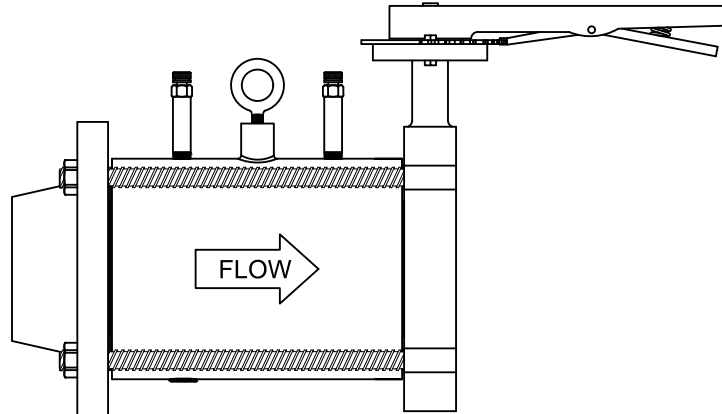
QUANTITY	GPM	TAGGING INFORMATION

JOB NAME:	REPRESENTATIVE:	
ENGINEER:	REF/PO#:	DATE:
CONTRACTOR:	SUBMITTED BY:	DATE:



AFLWF Series Specifications

Automatic Pressure Independent Flow Limiter Wafer w/ Flange



U.S. Patent No. 8,061,195

PRODUCT DESCRIPTION: The AFLWF is a combination butterfly valve, wafer style automatic pressure independent flow limiting device, and an ANSI Class 150# weld neck flange. The full flange face wafer contains one or more stainless steel flow limiting cartridges that are preset at the factory for a specific flow. The cartridges can be removed for cleaning, and if necessary, cartridge exchange. The cast iron butterfly valve has a combination infinite/10 position memory stop plate, a one piece disc/shaft, a triple shaft bearing, an aluminum-bronze disc for sizes 2½" - 8", and an EPDM liner.

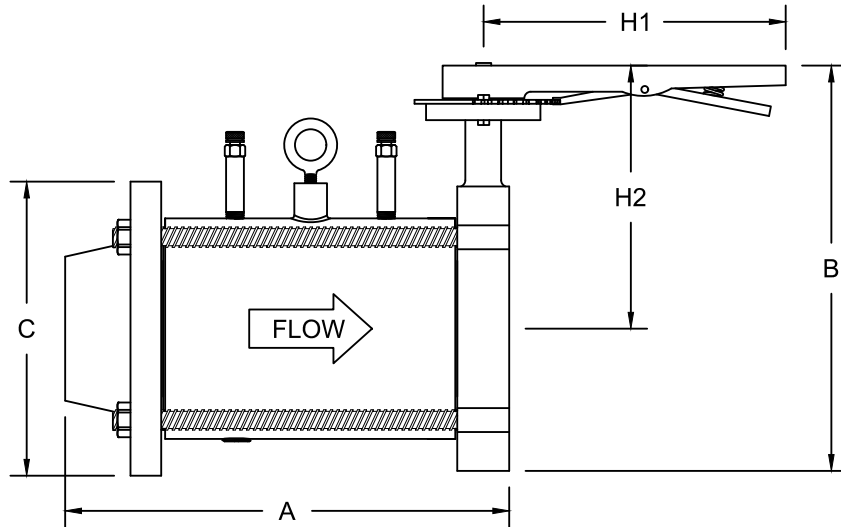
STANDARD MATERIAL SPECIFICATIONS	
Wafer	ASTM A536 Ductile Iron
O-Ring	EPDM
Flow Cartridge	ASTM A582 Type 303 Stainless Steel
Diaphragm	EPDM
Spring	302 Stainless Steel
PT Port	EPDM Dual Durometer Core
Lifting Lug	ASTM F541 Steel
Flange	Forged Carbon Steel ASTM A105
Bolts	ASTM A193 Steel
Butterfly Valve *	Body Seat Disc (2½" - 8") Shaft O-Ring Bearing Bearing Bush Hand Lever
	Nodular Cast Iron ASTM A536 60-4-18 EPDM Rubber Aluminum-Bronze Sand Casting, ASTM B148 C95400 Stainless Steel AISI 410 EPDM Rubber Copper ASTM B45 PTFE Nodular Cast Iron ASTM A536 60-4-18
* Butterfly valve is rated at 200 PSIG and is suitable for dead-end service	
PRODUCT SPECIFICATIONS	
Cartridge Control range:	2 psi - 60+ psi
Accuracy:	±5%
Start-Up Head Loss:	5 Feet of H ₂ O
Specification information is provided to assist and is given without obligation or warranty. The Company reserves the right to make changes in design, materials, and/or specifications without notice or liability.	

NOTE: The specific ASTM standard may vary and should be confirmed at time of order.



AFLWF Series Dimensions

Automatic Pressure Independent Flow Limiter Wafer w/ Flange



U.S. Patent No. 8,061,195

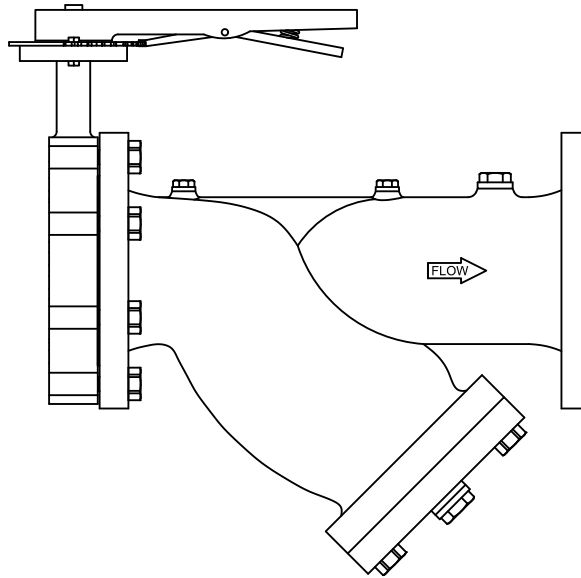
SIZE	MODEL	A	B	C	H1	H2	WEIGHT	# OF AFL CARTRIDGES	MAX GPM FLOW
2½"	AFLWF250	12.56	11.50	7.00	10.25	8.01	36	1	150
3"	AFLWF300	12.56	12.00	7.50	10.25	8.38	42	1	150
4"	AFLWF400	14.06	13.50	9.00	10.25	9.13	65	2	300
5"	AFLWF500	14.69	14.63	10.00	10.25	9.63	81	3	450
6"	AFLWF600	14.69	15.50	11.00	10.25	10.13	101	4	600
8"	AFLWF800	15.38	20.50	13.50	*	13.63	162	7	1050
10"	AFLWF1000	18.69	22.00	16.00	*	14.63	228	12	1800

* Denotes a gear operated valve.

Note: All dimensions, weights, and materials are subject to minor variations. Consult with factory for confirmation of dimensions, weights, and material specifications at the time of order.



CBYS Series Specifications
Combination Butterfly Valve & Wye Strainer



PRODUCT DESCRIPTION: The CBYS is a combination butterfly valve and flange x flange end wye strainer. The cast iron wye strainer has standard ANSI Class 125 pound flange ends that connect to a lug type butterfly valve for throttling/isolation. The cast iron butterfly valve has a one piece disc/shaft, a triple shaft bearing, an aluminum-bronze disc for sizes 2½" - 8", a nickel plated disc for the 10" and 12" sizes, and an EPDM liner. The strainer comes with a stainless steel perforated filter element, a (2) ¼" plugs, (1) ½" plug, (1) ¾" blow-off connection, and a flanged blow-off cover with an EPDM o-ring. Accessories are available for an additional charge.

STANDARD MATERIAL SPECIFICATIONS			
WYE STRAINER		BUTTERFLY VALVE	
Body & Cap (2 ½", 3", 4" & 6")	Nodular Cast Iron	Body	Nodular Cast Iron ASTM A536 60-4-18
Body & Cap (8")	Gray Iron Casting ASTM A126 Class B	Seat	EPDM Rubber
Filter (Screen)	Stainless Steel A276	Disc (2½" - 8")	Aluminum-Bronze Sand Casting, ASTM B148 C95400
O-Rings	EPDM Rubber	Shaft	Stainless Steel AISI 410
Bolt & Nut	Carbon Steel ASTM A307	O-Ring	EPDM Rubber
		Bearing	Copper ASTM B45
		Bearing Bush	PTFE
		Hand Lever	Nodular Cast Iron ASTM A536 60-4-18

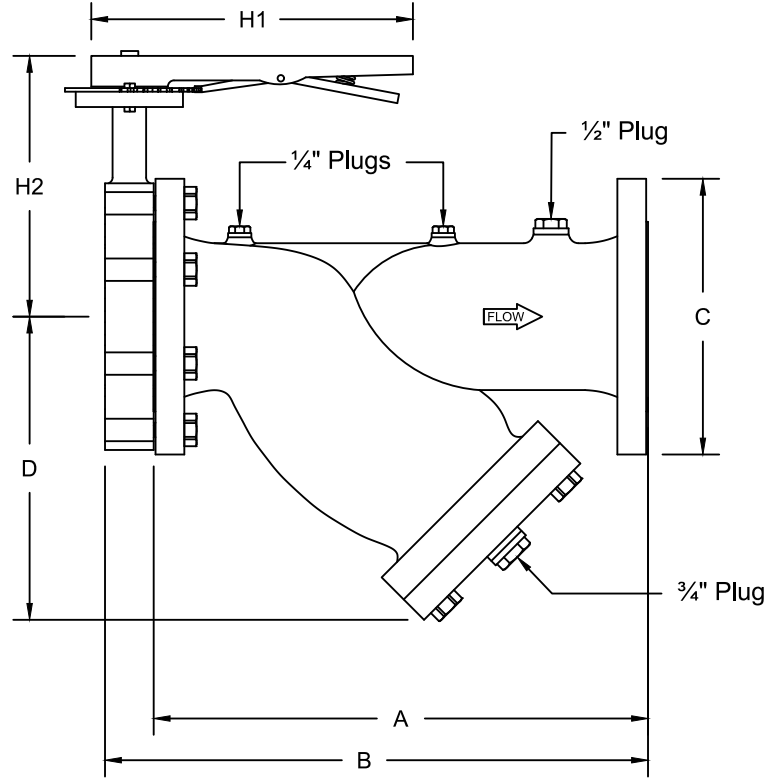
Specification information is provided to assist and is given without obligation or warranty. The Company reserves the right to make changes in design, materials, and/or specifications without notice or liability.

PRODUCT SPECIFICATIONS:

- Butterfly valve is rated at 150 PSIG and is suitable for dead-end service
- Stainless steel screen aids in filtering dirt, rust, and debris in the piping system and may be removed for cleaning



CBYS Series Dimensions
Combination Butterfly Valve & Wye Strainer



SIZE	MODEL	A	B	D	C	H1	H2	Weight	Perforations
2½"	CBYS250	11.25	13.06	7.00	7.00	10.25	8.01	33	⅛"
3"	CBYS300	12.50	14.31	8.00	7.50	10.25	8.38	43	⅛"
4"	CBYS400	14.88	16.94	9.50	9.00	10.25	9.13	69	⅛"
6"	CBYS600	18.50	20.69	13.00	11.00	10.25	10.13	163	⅛"
8"	CBYS800	21.75	24.13	15.00	13.50	*	*	203	⅛"

* Denotes a gear operated valve.

Note: All dimensions and materials are subject to minor variations. Consult with factory for confirmation of dimensions and material specifications at the time of order.