



SUBMITTAL SHEET

Edifice, LLC

NC4205 . - CMS New Elementary School Hidden Valley JW Grier Newell (17)

Project: NC4205 .
CMS New Elementary School Hidden Valley JW Grier
Newell (17)
7515 The Plaza
Charlotte, NC
28215

Spec Section Num: 232123
Submittal: 232123.002
Revision: 0
Package:
Date: 6/27/2022 EDT

Submittal Title: Hydronic Pumps Resubmittal Based on Review Comments
Submittal Detail:
Response Due By:

Contractor:

Contractor's Stamp

THIS REVIEW IS FOR GENERAL COMPLIANCE WITH THE DESIGN CONCEPT THE SUBCONTRACTOR / VENDOR IS RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND COORDINATED IN THE FIELD AND REMAINS RESPONSIBLE FOR VERIFICATION OF ALL QUANTITIES. EDIFICE IS NOT RESPONSIBLE FOR ANY DEVIATION FROM THE CONTRACT DOCUMENTS. DEVIATIONS AND / OR SUBSTITUTIONS MUST BE CLEARLY IDENTIFIED. APPROVAL OF ANY DEVIATIONS / SUBSTITUTIONS MUST BE MADE BY OWNER OR DESIGN TEAM.

Architect:

Architect's Stamp

Response:
Comment:

ARMSTRONG SUBMITTAL DATA

FOR

CMS Hidden Valley/Grier/Newell Relief Elementary School

Charlotte, NC

Mechanical Engineer:	Optima Engineering
Mechanical Contractor:	Superior Mechanical Systems
Date:	6/9/2022
Revision:	1
Submitted By:	Adam Parker, Insight Partners
Equipment Type:	Hydronic Pumps, Suction Guide & Triple Duty Valve
Specification Section:	232123

Submittal Comment Responses:

Hydronic Pumps (232123):

- **(Chilled water pumps (4) Flow rate of 495 GPM shall be adjusted up to match substituted equipment flow rate of 517 GPM (Carrier Chiller). Verify updated impeller size or other modifications needed to achieve this flow rate)**
 - The Flow rate for these pumps has been changed to 517 GPM. This only changed impeller diameter and did not change the horsepower requirement.
- **(Coordinate motor HP requirements with VFD/Starter provided and electrical contractor.)**
 - To Be Coordinated by Mechanical contractor as this was out of Insight Partners Scope.
- **(Verify Shaft Grounding Rings provided for pumps)**
 - Shaft Grounding Rings are typically provided on VFD-Fed motors to protect from bearing damage by discharging shaft voltage, diverting harmful current away from the bearings. Shaft grounding rings are provided on all VFD-fed pumps- BCWP-1, BCWP-2, BHWP-1 & BHWP-2
- **(Verify electrical components have minimum SCCR Ratings of 10 KAIC.)**
 - Not applicable to Insight Partners' scope as all motor control components are by others.
- **(Verify coupling guard on base mounted pumps complies with specifications)**
 - Coupling guards on all base-mounted split -coupled Armstrong pumps comply with the specification in section 232123-2.4.D
- **(Provide drain pan on all base mounted pumps per detail 8/M501)**
 - Drain Pans have been added to BHWP-1 & BHWP-2 to comply with drain pans on all base mounted pumps
- **(Verify Warranty Requirements comply with specification)**
 - Insight Partners verifies that warranties comply with specification Section 232123-1.5.
- **(Verify operating temperature at 160F)**
 - All Armstrong pumps in this submittal are rated for water operating temperatures up to 225F.
- **(Provided Premium Efficiency Motor as Specified.)**
 - All motors for pumps BCWP-1, BCWP-2, BHWP-1, BHWP-2, CWP-1, CWP-2 are provided as premium efficiency motors complying with IEEE 112 polyphase motor requirements and specification section 230513-2.4. Single phase motors for pumps HWP-1, HWP-2 are in compliance with specification section 230513-2.5.

Submittal Scope

Pumps, Suction Guides & Triple Duty Valves (Spec. Section: 232123)

To: Superior Mechanical Systems, Inc.
Attn: Ben Wyke

Date: June 9, 2022

Project Name: CMS Hidden Valley/Grier/Newell
Charlotte, NC

Engineer: Optima Engineering
Charlotte, North Carolina

LI#	Product	Description
1	Armstrong – Pumps	<p>Base-Mounted End Suction Pumps</p> <p>(QTY: 2) Model: 4030 Pump Size: 5x4x8 Tagged: CWP-1 & CWP-2 517 GPM @ 34' TDH 460/3/60 7.5 HP Premium Efficient 1800 RPM ODP Motor Drain Pan Included</p> <p>(QTY: 2) Model: 4030 Pump Size: 4x3x6 Tagged: BCWP-1 & BCWP-2 517 GPM @ 98' TDH 460/3/60 20 HP Premium Efficient 3600 RPM ODP Motor Drain Pan Included</p> <p>(QTY: 2) Model: 4030 Pump Size: 1.5x1x6 Tagged: BHWP-1 & BHWP-2 82 GPM @ 93' TDH 460/3/60 5 HP Premium Efficient 3600 RPM ODP Motor Drain Pan Included</p> <p>(QTY: 2) Vertical Inline Close-Coupled Pumps Model: 4360 Pump Size: 3D Tagged: HWP-1 & HWP-2 79 GPM @ 27' TDH 460/3/60 1.5 HP Premium Efficient 1800 RPM ODP Motor</p>
2	Armstrong – Suction Guides	<p>(QTY: 2) 6" x 5" Suction Guide for Pumps CWP-1 & CWP-2 (QTY: 2) 6" x 4" Suction Guide for Pumps BCWP-1 & BCWP-2 (QTY: 2) 2.5" x 1.5" Suction Guide for Pumps BHWP-1 & BHWP-2</p>
3	Armstrong – Triple Duty Valves	<p>(QTY: 2) 6" Triple Duty Valve for Pumps CWP-1 & CWP-2 (QTY: 2) 6" Triple Duty Valve for Pumps BCWP-1 & BCWP-2 (QTY: 2) 2" Triple Duty Valve for Pumps BHWP-1 & BHWP-2 (QTY: 2) 3" Triple Duty Valve for Pumps HWP-1 & HWP-2</p>

Submittal

Ref. #: SQJPE002322_4

long-coupled horizontal base-mounted end suction pump

Model: Series 4030 - 5x4x8 - 4p - 7.5 hp - (Factory Choice Motor) with Suction Guide and Flo-Trex Valve

Project name: CMS Hidden Valey,Grier,Newell School
Representative: Adam Parker
Location:
Date submitted: 6/8/2022 3:19 PM
Phone number:
Engineer:
e-mail: aparker@insightusa.com
Submitted by: Parker, Adam

Application design data

Tag number:	CWP-1 & CWP-2	Configuration:	Single
Service:	Chiller Loop	Suction pressure:	0 ft
Location:	Mechanical Room	Fluid:	Non-Potable Fluid - Water
Qty:	2	Operating temperature:	60 °F
Total system flow:	517 USgpm	Duty flow per pump:	517 USgpm
System head:	34 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	10.3 ft	Absorbed Power/BHP:	5.7 hp
%Mtr Safety*:	40.09%	Efficiency at Design:	77.94 %
Outlet velocity:	13.03 ft/s	Impeller diameter:	7.01 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:	Carbon Steel
Connections:	Inlet: 5 in, Outlet: 4 in	Shaft sleeve:ea	304 SS
Casing (volute):	Cast Iron, E-coated	Flexible coupling:	Sureflex
Bearings:	Anti-Friction Grease Lubricated	Casing gasket:	Confined Non-Asbestos Fiber
Drip pan:	Yes		

Mechanical seal data

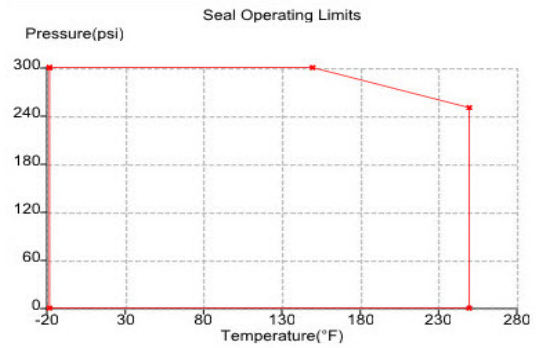
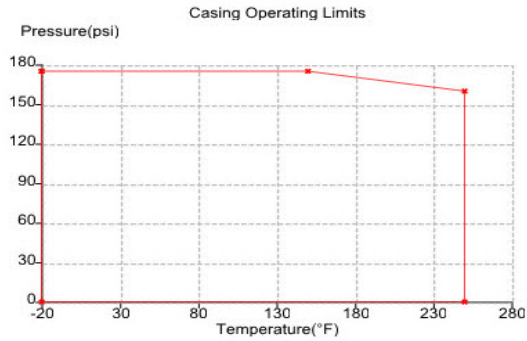
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

*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:	213TC	Motor type:	Induction
Speed:	1770 rpm	Size:	7.5 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)

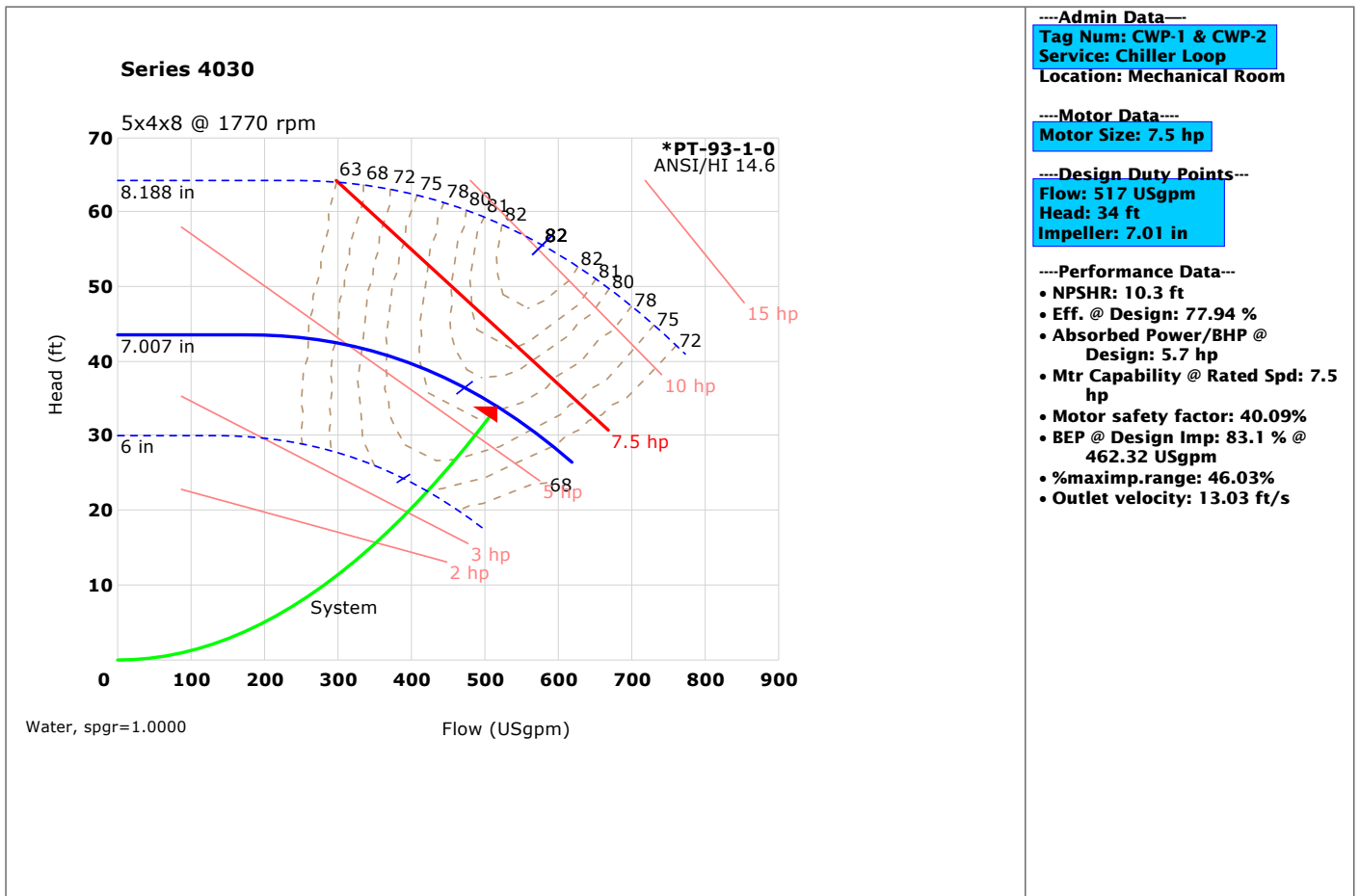


Maximum pressure: 175 psi

Maximum temperature: 250 F

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

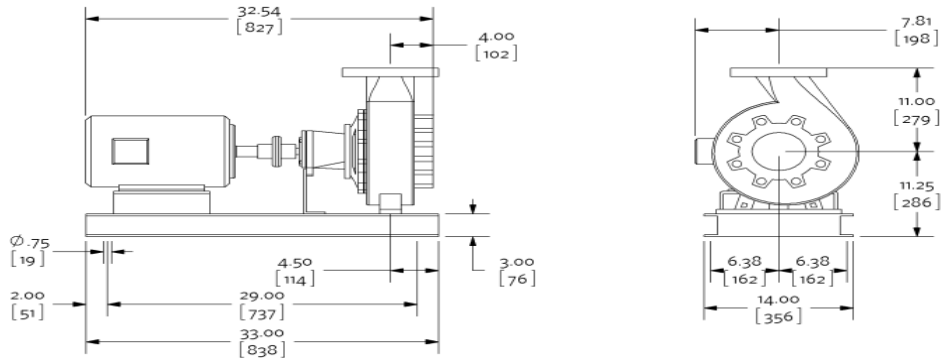
Performance curve



Dimensional data (not for construction)

Side view

Top view



Inverter motor type: Inverter duty

Weight: 322 lb [146.06 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	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: Sureflex
 Space Heater: No
 Motor Thermistor: No Thermistors
 Wye-Delta Starting: No
 Drip Pan: Yes

Submittal

Ref. #: SQJPE002322_4

Suction guide

Model: SG-65

Project name:	CMS Hidden Valley,Grier,Newell School	Representative:	Adam Parker
Location:		Phone number:	
Date submitted:	6/8/2022 3:19 PM	e-mail:	aparker@insightusa.com
Engineer:		Submitted by:	Parker, Adam

Application design data

Tag	Qty	Model	Pipe Conn.size	Pump Conn.size	Design flowrate	Pressure Drop*	Associated pump
CWP-1 & CWP-2	2	SG-65	6 in	5 in	517 USgpm	1.67 ft	4030 - 5x4x8 - 4p - 7.5 hp - (Factory Choice Motor)

*at design flow

Materials of construction

SG-65

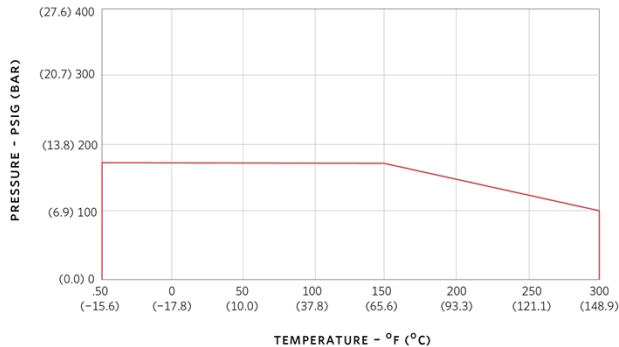
Body:	Cast iron	Cover gasket:	Synthetic fiber
Guide vanes:	Cast iron	Strainer:	Stainless Steel,0.125"(3mm)Perf..
Cover plate:	Cast iron	Start-up strainer*:	Fine Mesh Galvanized Steel

*Remove start up strainer after 24 hours of pump operation

Operating limits (temperature - pressure)

SG-65-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

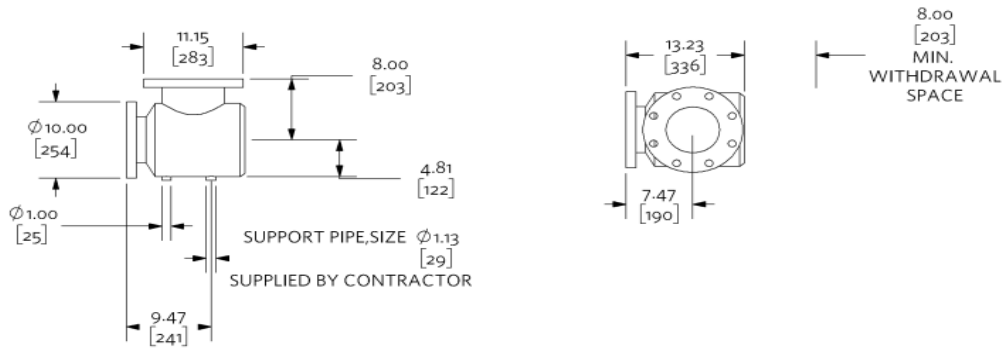
Dimensional data (not for construction)

SG-65

Weight: 103 lb [46.72 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

Submittal

Ref. #: SQJPE002322_4

Flo-trex valve

Model: FTV-6FS-Flo-Trex Valve-ANSI-125-Straight

Project name: CMS Hidden Valley, Grier, Newell School	Representative: Adam Parker
Location:	Phone number:
Date submitted: 6/8/2022 3:19 PM	e-mail: aparker@insightusa.com
Engineer:	Submitted by: Parker, Adam

Application design data

Tag	Qty	Model	Size Inlet/Outlet	Config	Pipe Type	Design flowrate	Pressure Drop*	Associated pump
CWP-1 & CWP-2	2	FTV-6FS	6 in	Straight	Flanged	517 USgpm	2.84 ft	4030 - 5x4x8 - 4p - 7.5 hp - (Factory Choice Motor)

*at design flow

Materials of construction

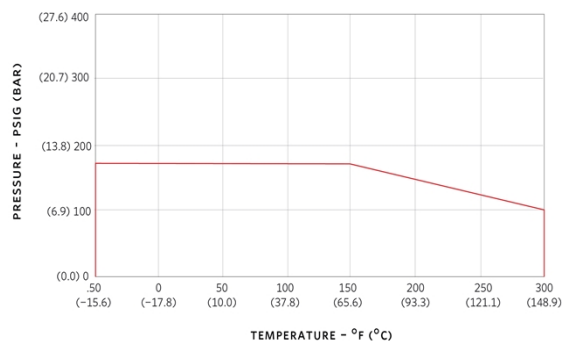
FTV-6FS-Flo-Trex Valve-ANSI-125-Straight

Body:	Cast Iron	Spring:	302 Stainless Steel
Disc:	Brass	O rings:	BUNA N
Seat:	EPDM	2 metering ports:	NPT Brass Body with EPT Check and Gasketed Cap
Stem:	416 Stainless Steel	2 drain tappings:	1/4in with Brass Plug

Operating limits (temperature - pressure)

FTV-6FS-Flo-Trex Valve-ANSI-125-Straight

PRESSURE TEMPERATURE LIMITS



Maximum pressure: 175 psi
Maximum temperature: 300 F

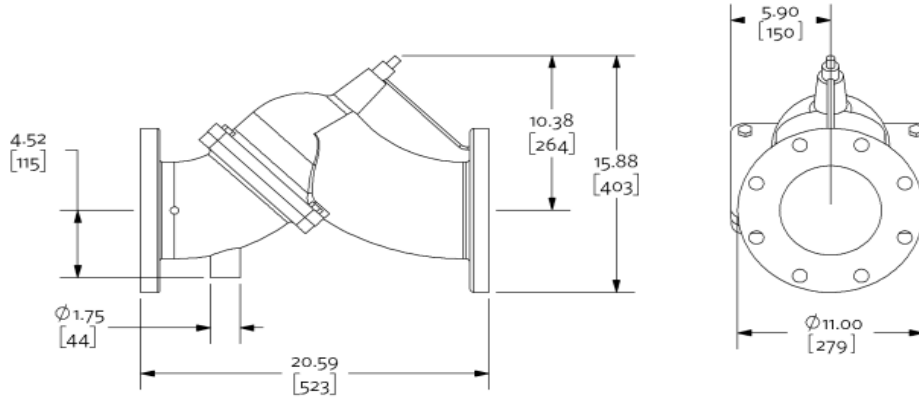
Dimensional data (not for construction)

Model: FTV-6FS-Flo-Trex Valve-ANSI-125-Straight

Weight: 167 lb [75.75 kg]

Side view

Front 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

Submittal

Ref. #: SQJPE002322_4

long-coupled horizontal base-mounted end suction pump

Model: Series 4030 - 4x3x6 - 2p - 20 hp - (Factory Choice Motor) with Suction Guide and Flo-Trex Valve

Project name: CMS Hidden Valey,Grier,Newell School
Representative: Adam Parker
Location:
Date submitted: 6/8/2022 3:19 PM
Phone number:
Engineer:
e-mail: aparker@insightusa.com
Submitted by: Parker, Adam

Application design data

Tag number:	BCWP-1 & BCWP-2	Configuration:	Single
Service:	Chilled Water Loop	Suction pressure:	0 ft
Location:	Mechanical Room	Fluid:	Non-Potable Fluid - Water
Qty:	2	Operating temperature:	60 °F
Total system flow:	517 USgpm	Duty flow per pump:	517 USgpm
System head:	98 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	16.27 ft	Absorbed Power/BHP:	16.76 hp
%Mtr Safety*:	19.67%	Efficiency at Design:	76.32 %
Outlet velocity:	22.44 ft/s	Impeller diameter:	5.75 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	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

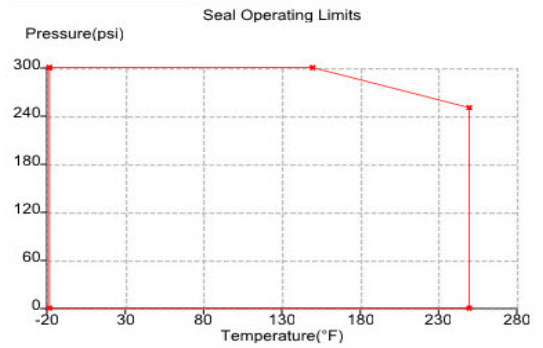
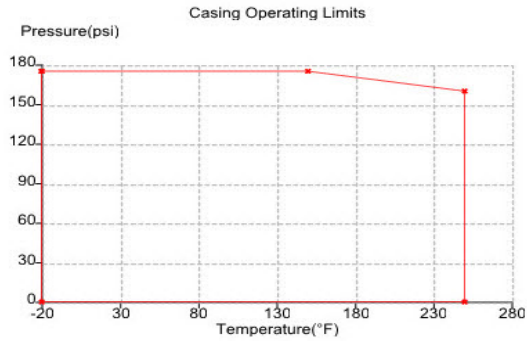
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

*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:	Induction
Speed:	3560 rpm	Size:	20 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)

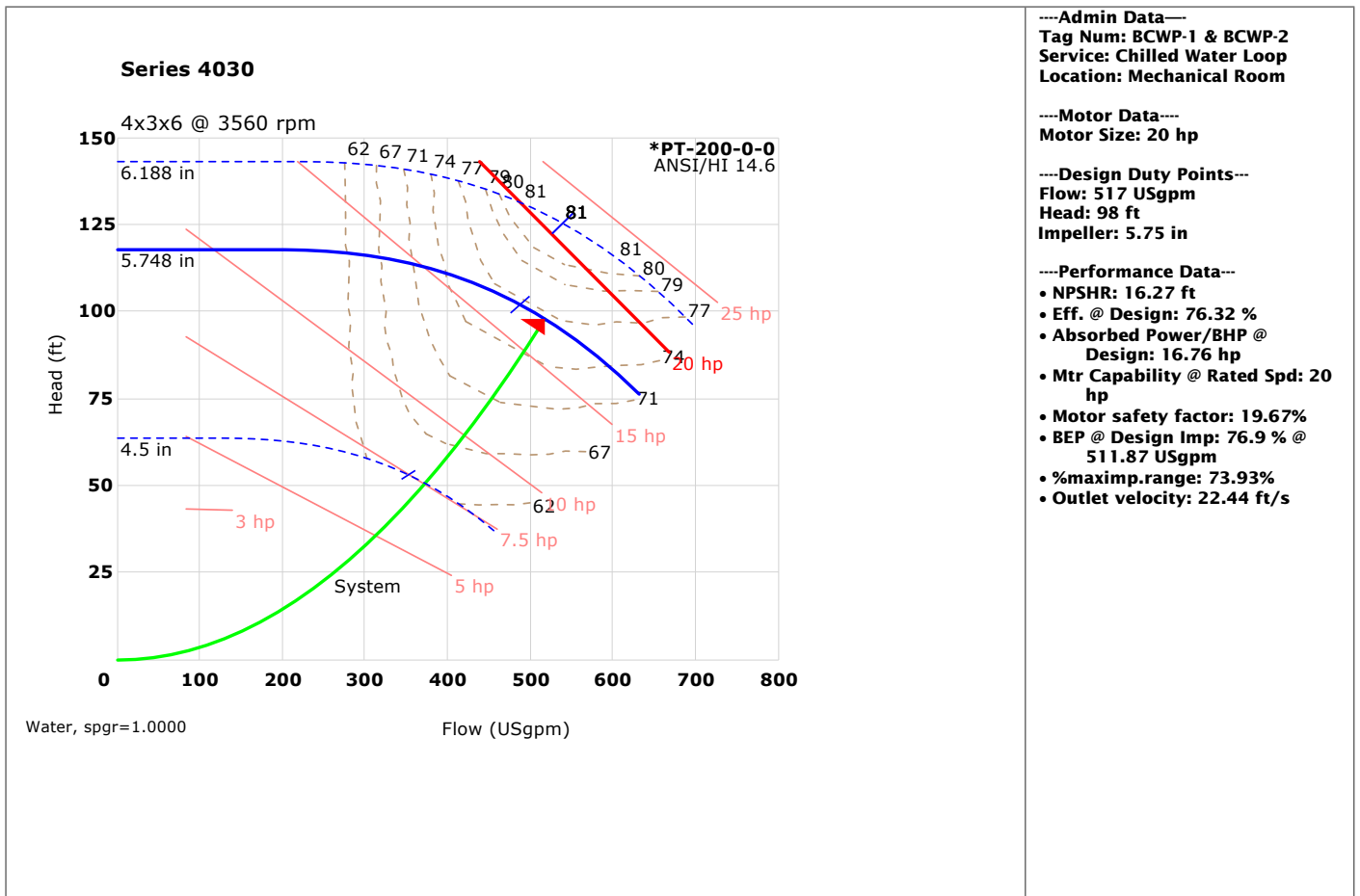


Maximum pressure: 175 psi

Maximum temperature: 250 F

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

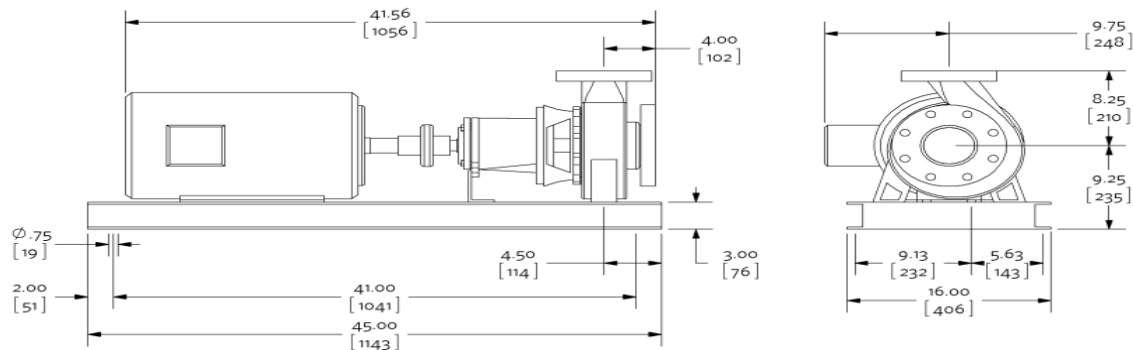
Performance curve



Dimensional data (not for construction)

Side view

Top view



Inverter motor type: Inverter duty

Weight: 391 lb [177.35 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.

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

Bearing Current Handling: Armstrong Choice Shaft Ground

Submittal

Ref. #: SQJPE002322_4

Suction guide

Model: SG-64

Project name: CMS Hidden Valley, Grier, Newell School	Representative: Adam Parker
Location:	Phone number:
Date submitted: 6/8/2022 3:19 PM	e-mail: aparker@insightusa.com
Engineer:	Submitted by: Parker, Adam

Application design data

Tag	Qty	Model	Pipe Conn.size	Pump Conn.size	Design flowrate	Pressure Drop*	Associated pump
BCWP-1 & BCWP-2	2	SG-64	6 in	4 in	517 USgpm	3.09 ft	4030 - 4x3x6 - 2p - 20 hp - (Factory Choice Motor)

*at design flow

Materials of construction

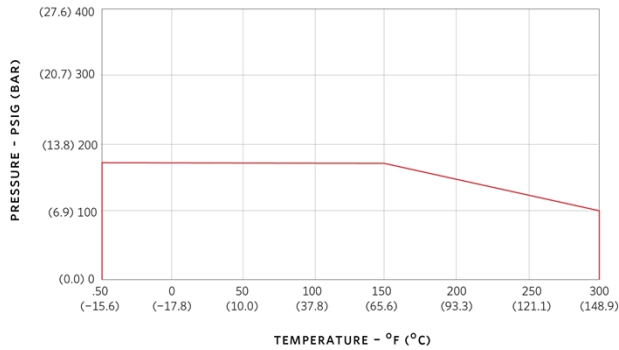
SG-64

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
PRESSURE TEMPERATURE LIMITS



Maximum pressure: 175 psi
Maximum temperature: 300 F

Units are hydrostatically tested to 150% of maximum working pressure

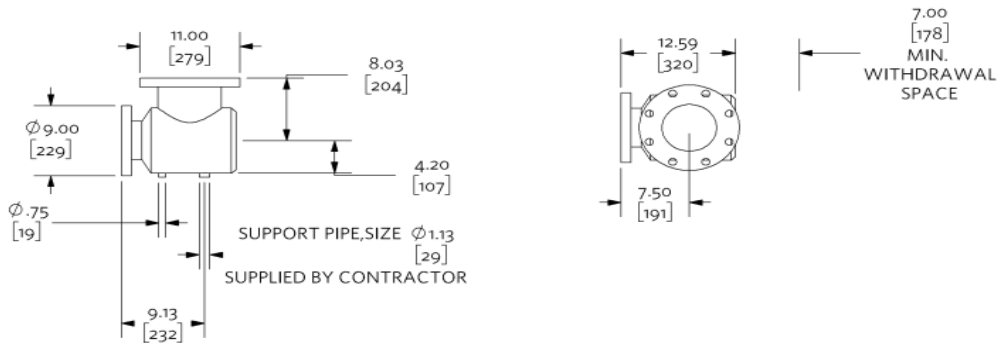
Dimensional data (not for construction)

SG-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

Submittal

Ref. #: SQJPE002322_4

Flo-trex valve

Model: FTV-6FS-Flo-Trex Valve-ANSI-125-Straight

Project name: CMS Hidden Valey,Grier,Newell School	Representative: Adam Parker
Location:	Phone number:
Date submitted: 6/8/2022 3:19 PM	e-mail: aparker@insightusa.com
Engineer:	Submitted by: Parker, Adam

Application design data

Tag	Qty	Model	Size Inlet/Outlet	Config	Pipe Type	Design flowrate	Pressure Drop*	Associated pump
BCWP -1 & BCWP -2	2	FTV-6FS	6 in	Straight	Flanged	517 USgpm	2.84 ft	4030 - 4x3x6 - 2p - 20 hp - (Factory Choice Motor)

*at design flow

Materials of construction

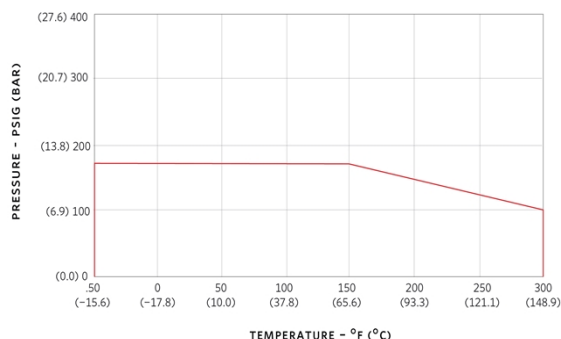
FTV-6FS-Flo-Trex Valve-ANSI-125-Straight

Body:	Cast Iron	Spring:	302 Stainless Steel
Disc:	Brass	O rings:	BUNA N
Seat:	EPDM	2 metering ports:	NPT Brass Body with EPT Check and Gasketed Cap
Stem:	416 Stainless Steel	2 drain tappings:	1/4in with Brass Plug

Operating limits (temperature - pressure)

FTV-6FS-Flo-Trex Valve-ANSI-125-Straight

PRESSURE TEMPERATURE LIMITS



Maximum pressure: 175 psi
Maximum temperature: 300 F

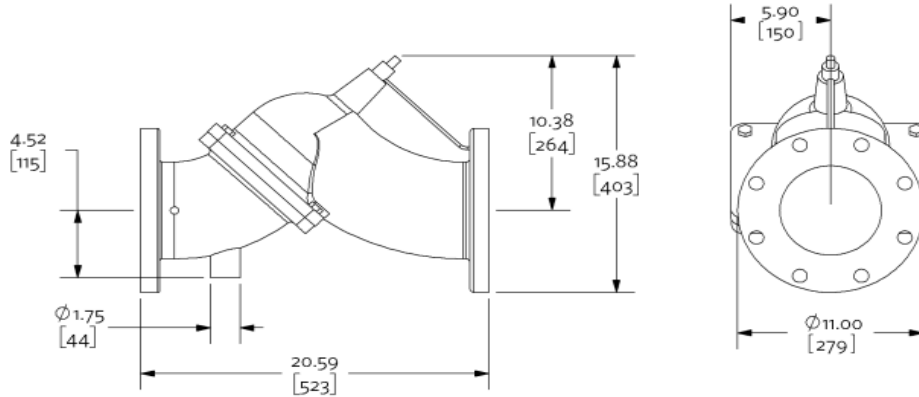
Dimensional data (not for construction)

Model: FTV-6FS-Flo-Trex Valve-ANSI-125-Straight

Weight: 167 lb [75.75 kg]

Side view

Front 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

Submittal

Ref. #: SQJPE002322_4

long-coupled horizontal base-mounted end suction pump

Model: Series 4030 - 1.5x1x6 - 2p - 5 hp - (Factory Choice Motor) with Suction Guide

Project name: CMS Hidden Valey,Grier,Newell School
Representative: Adam Parker
Location:
Date submitted: 6/8/2022 3:19 PM
Phone number:
Engineer:
e-mail: aparker@insightusa.com
Submitted by: Parker, Adam

Application design data

Tag number:	BHWP-1 & BHWP-2	Configuration:	Single
Service:	Hot Water Loop	Suction pressure:	0 ft
Location:	Mechanical Room	Fluid:	Non-Potable Fluid - Water
Qty:	2	Operating temperature:	60 °F
Total system flow:	82 USgpm	Duty flow per pump:	82 USgpm
System head:	93 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	11.23 ft	Absorbed Power/BHP:	3.51 hp
%Mtr Safety*:	42.37%	Efficiency at Design:	54.83 %
Outlet velocity:	30.44 ft/s	Impeller diameter:	5.17 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:	Carbon Steel
Connections:	Inlet: 1.5 in, Outlet: 1 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

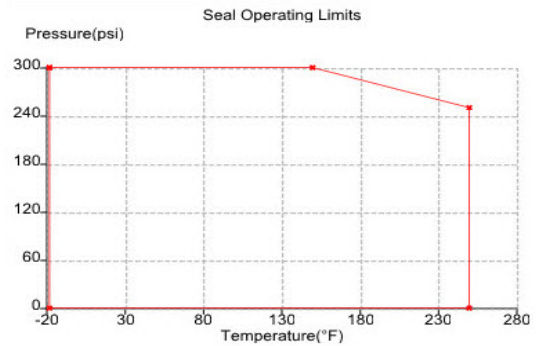
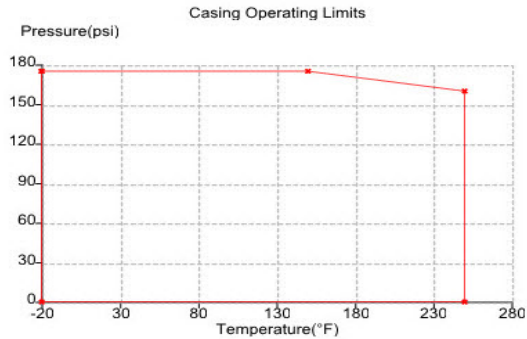
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

*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:	182TC	Motor type:	Induction
Speed:	3530 rpm	Size:	5 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)

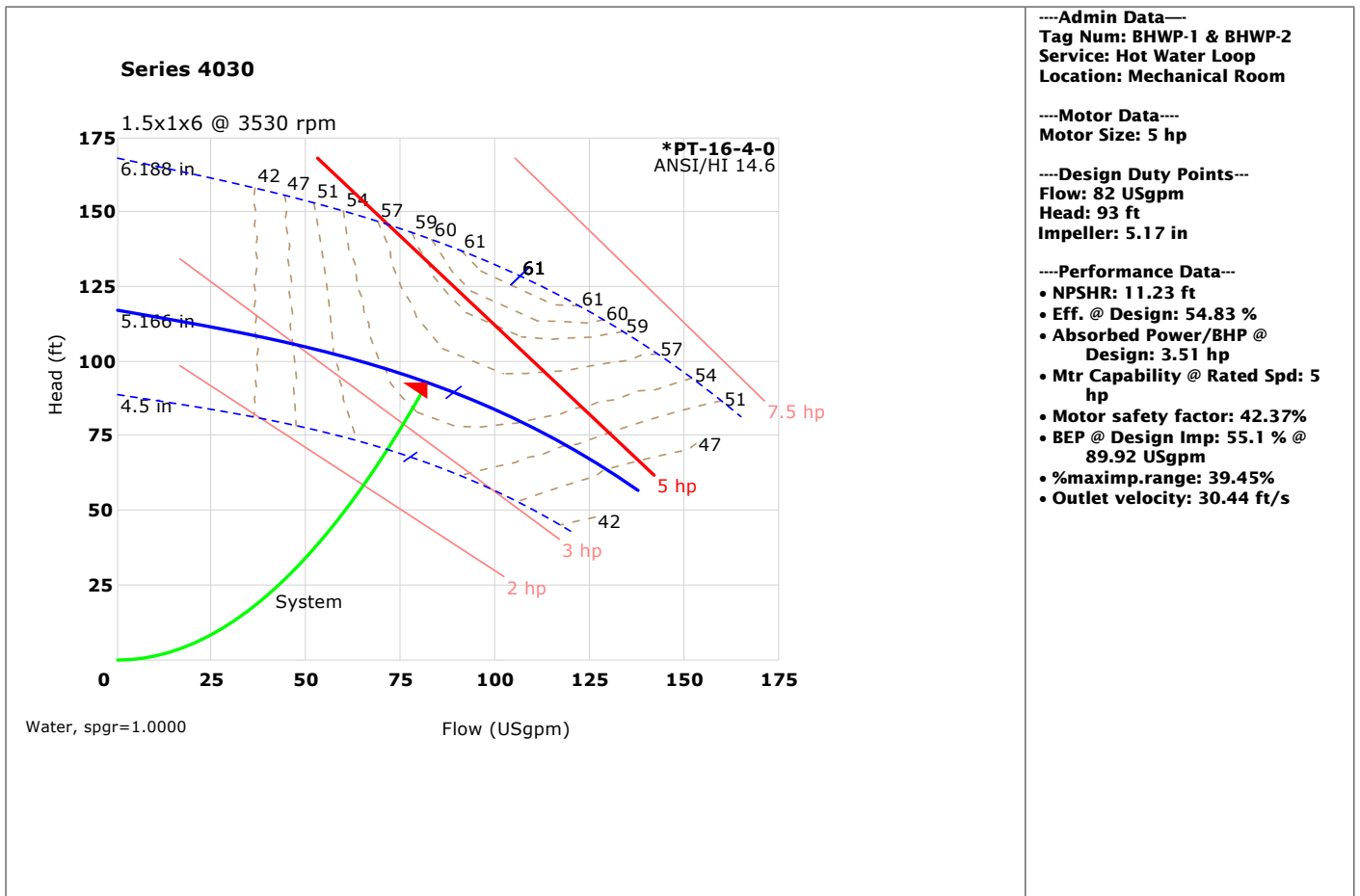


Maximum pressure: 175 psi

Maximum temperature: 250 F

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

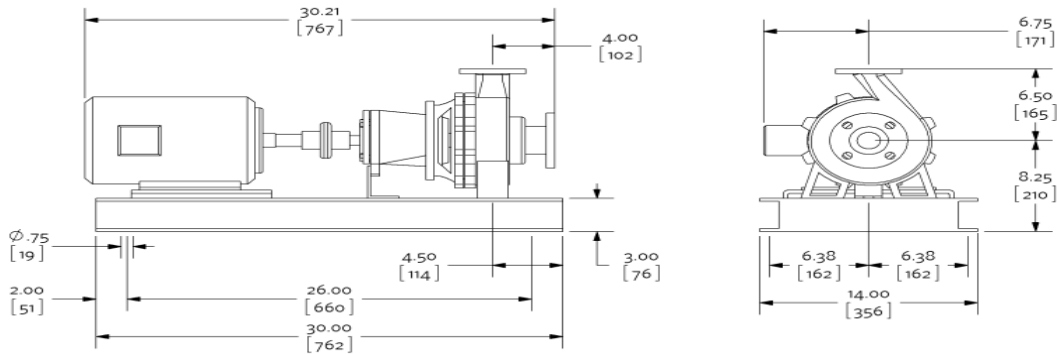
Performance curve



Dimensional data (not for construction)

Side view

Top view



Inverter motor type: Inverter duty

Weight: 184 lb [83.46 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	1.5	ANSI-125	5.00	4	3.88	0.5
Outlet	1	ANSI-125	4.25	4	3.13	0.5

*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

Bearing Current Handling: Armstrong Choice Shaft Ground

Submittal

Ref. #: SQJPE002322_4

Suction guide

Model: SG-2515

Project name: CMS Hidden Valley, Grier, Newell School	Representative: Adam Parker
Location:	Phone number:
Date submitted: 6/8/2022 3:19 PM	e-mail: aparker@insightusa.com
Engineer:	Submitted by: Parker, Adam

Application design data

Tag	Qty	Model	Pipe Conn.size	Pump Conn.size	Design flowrate	Pressure Drop*	Associated pump
BHWP-1 & BHWP-2	2	SG-2515	2.5 in	1.5 in	82 USgpm	0.37 ft	4030 - 1.5x1x6 - 2p - 5 hp - (Factory Choice Motor)

*at design flow

Materials of construction

SG-2515

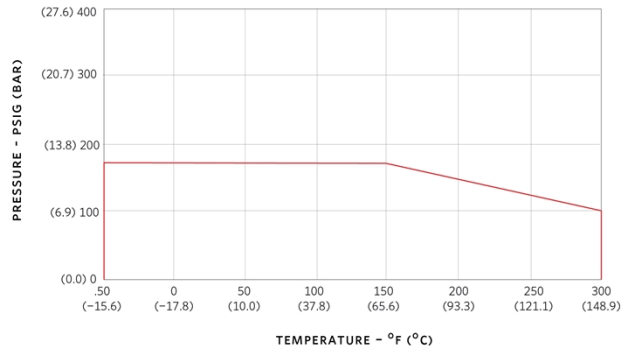
Body:	Cast Iron	Cover gasket:	Synthetic fiber
Guide vanes:	Cast Iron	Strainer:	Stainless Steel, 0.188"(5mm)Perf..
Cover plate:	Cast Iron	Start-up strainer*:	Fine Mesh Galvanized Steel

*Remove start up strainer after 24 hours of pump operation

Operating limits (temperature - pressure)

SG-2515-Suction Guide-ANSI-125

PRESSURE TEMPERATURE LIMITS



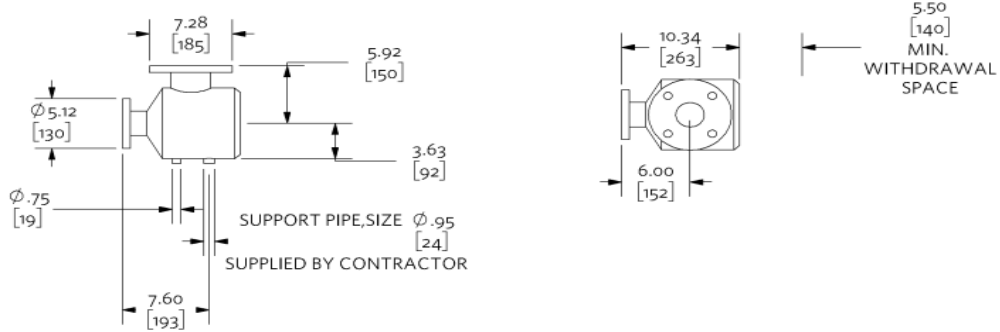
Maximum pressure: 175 psi
Maximum temperature: 300 F

Units are hydrostatically tested to 150% of maximum working pressure

Dimensional data (not for construction)

SG-2515
Side view

Weight: 26.31 lb [11.93 kg]
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

Submittal

Ref. #: SQJPE002322_4

Flo-trex valve

Model: FTV-2TS-Flo-Trex Valve-Straight

Project name: CMS Hidden Valey,Grier,Newell School

Representative: Adam Parker

Location:

Phone number:

Date submitted: 6/8/2022 3:19 PM

e-mail: aparker@insightusa.com

Engineer:

Submitted by: Parker, Adam

Application design data

Tag	Qty	Model	Size Inlet/Outlet	Config	Pipe Type	Design flowrate	Pressure Drop*	Associated pump
BHWP -1 & BHWP -2	1	FTV-2TS	2 in	Straight	NPT	82 USgpm	4.27 ft	N/A

*at design flow

Materials of construction

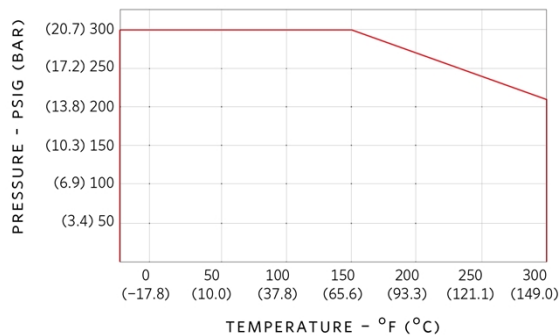
FTV-2TS-Flo-Trex Valve-Straight

Body:	304 Stainless Steel	Spring:	304 Stainless Steel
Disc:	Brass	O rings:	EPDM
Seat:	Not Applicable	2 metering ports:	Brass Body with EPDM Check and Gasketed Cap
Stem:	Brass	2 drain tappings:	1/4in NPT with SS 304 Plug

Operating limits (temperature - pressure)

FTV-2TS-Flo-Trex Valve-Straight

PRESSURE TEMPERATURE LIMITS



Maximum pressure: 300 psi
Maximum temperature: 300 F



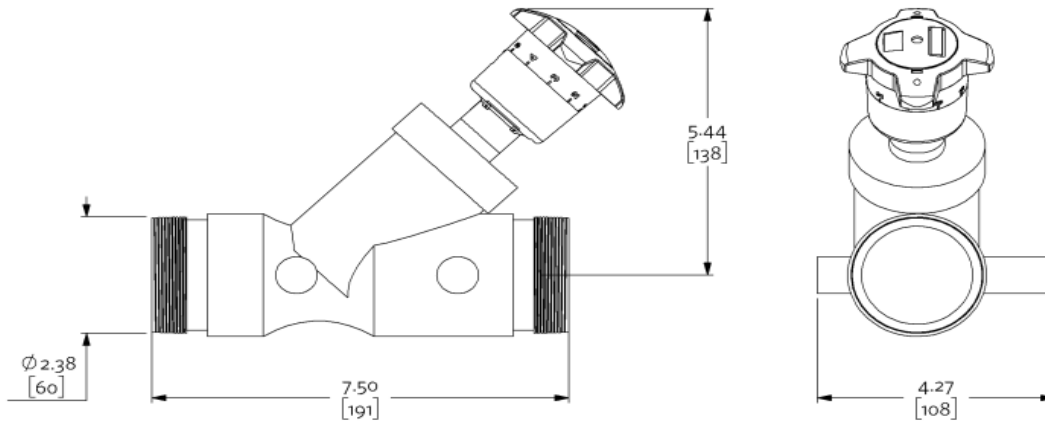
Dimensional data (not for construction)

Model: FTV-2TS-Flo-Trex Valve-Straight

Weight: 6 lb [2.72 kg]

Side view

Front 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

Submittal

Ref. #: SQJPE002322_4

close-coupled vertical in-line 4360 pump

Model: Series 4360 - 3D - 4p - 1.5 hp - (Factory Choice Motor) with Flo-Trex Valve

Project name:	CMS Hidden Valey,Grier,Newell School	Representative:	Adam Parker
Location:		Phone number:	
Date submitted:	6/8/2022 3:19 PM	e-mail:	aparker@insightusa.com
Engineer:		Submitted by:	Parker, Adam

Application design data

Tag number:	HWP-1 & HWP-2	Configuration:	Single
Service:	Boiler Loops	Suction pressure:	0 ft
Location:	Mechanical Room	Fluid:	Non-Potable Fluid - Water
Qty:	2	Operating temperature:	60 °F
Total system flow:	79 USgpm	Duty flow per pump:	79 USgpm
System head:	27 ft	Viscosity:	31 SSU
Total dissolved solids:	0 ppm	Specific gravity:	1.0000
NPSHR:	11.59 ft	Absorbed Power/BHP:	0.92 hp
%Mtr Safety*:	62.83%	Efficiency at Design:	58.47 %
Outlet velocity:	3.43 ft/s	Impeller diameter:	5.54 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

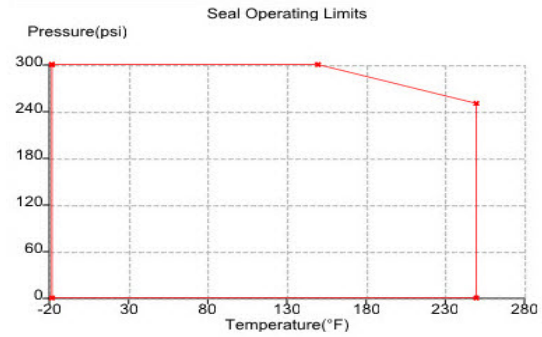
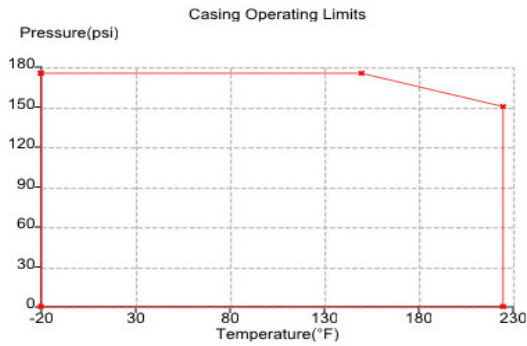
Seal type:	Inside Single Spring	Rotating face:	Resin Bonded Carbon
Manufacturer code:	C-ssc L EPSS 2A	Stationary seat:	Sintered Silicon Carbide
Springs:	Stainless Steel	Secondary seal:	EPDM
Rotating hardware:	Stainless Steel	Maximum total dissolved solids (TDS)*:	2000 PPM

*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:	Factory Choice	Insulation class:	Class F Insulation
Frame size:	145JM	Motor type:	Induction
Speed:	1760 rpm	Size:	1.5 hp
Enclosure:	ODP	Efficiency:	NEMA Premium 12.12
Power supply:	460/3/60		

Operating limits (temperature - pressure)

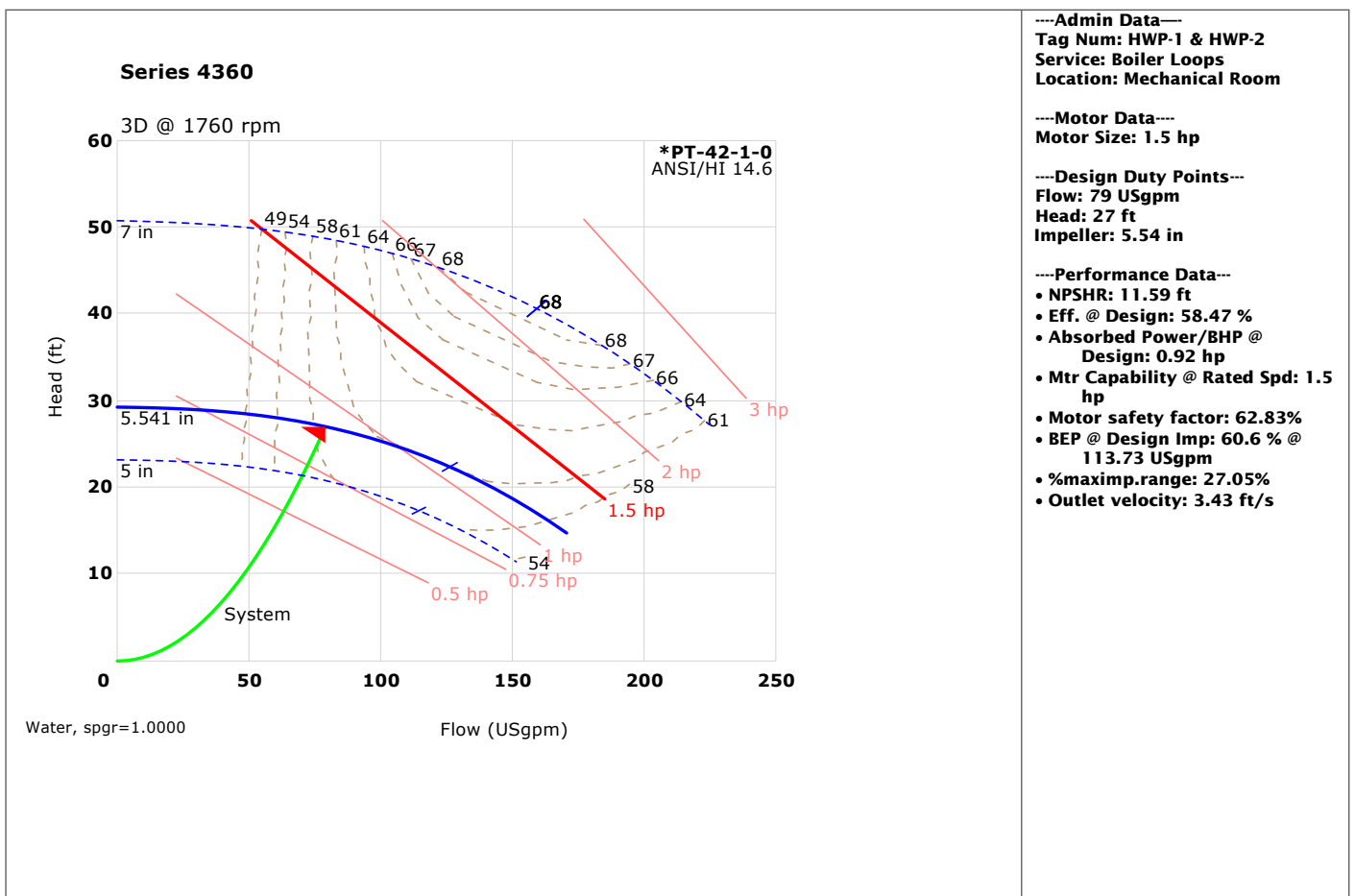


Maximum pressure: 175psi

Maximum temperature: 225F

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

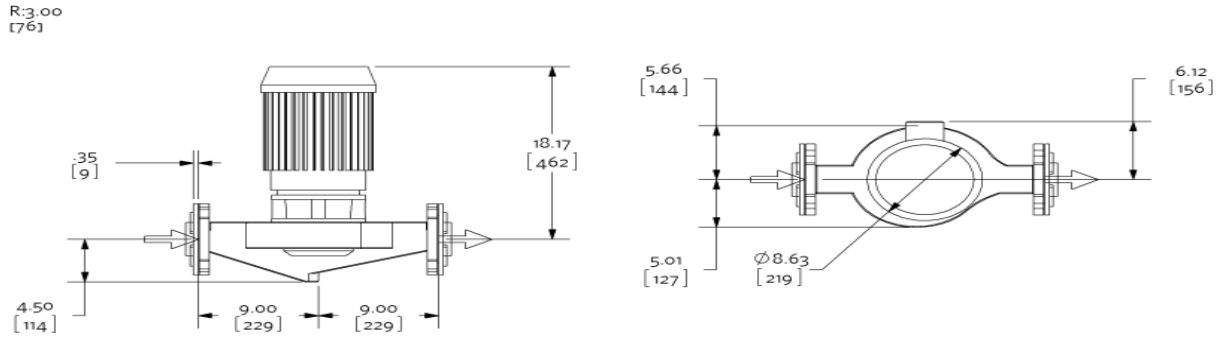
Performance curve



Dimensional data (not for construction)

Side view

Top view



Inverter motor type: Inverter duty

Weight: 175 lb [79.38 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	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 (Factory 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

Submittal

Ref. #: SQJPE002322_4

Flo-trex valve

Model: FTV-3FS-Flo-Trex Valve-ANSI-125-Straight

Project name: CMS Hidden Valley, Grier, Newell School	Representative: Adam Parker
Location:	Phone number:
Date submitted: 6/8/2022 3:19 PM	e-mail: aparker@insightusa.com
Engineer:	Submitted by: Parker, Adam

Application design data

Tag	Qty	Model	Size Inlet/Outlet	Config	Pipe Type	Design flowrate	Pressure Drop*	Associated pump
HWP-1 & HWP-2	2	FTV-3FS	3 in	Straight	Flanged	79 USgpm	3 ft	4360 - 3D - 4p - 1.5 hp - (Factory Choice Motor)

*at design flow

Materials of construction

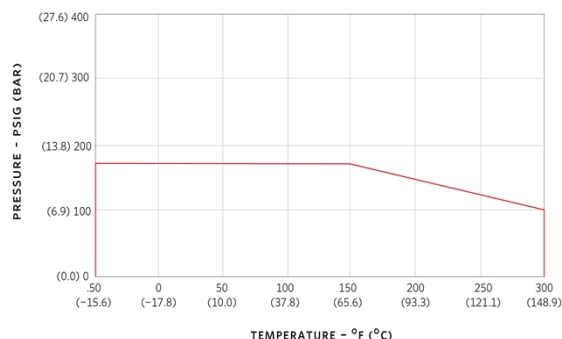
FTV-3FS-Flo-Trex Valve-ANSI-125-Straight

Body:	Cast Iron	Spring:	302 Stainless Steel
Disc:	Brass	O rings:	BUNA N
Seat:	EPDM	2 metering ports:	NPT Brass Body with EPT Check and Gasketed Cap
Stem:	416 Stainless Steel	2 drain tappings:	1/4in with Brass Plug

Operating limits (temperature - pressure)

FTV-3FS-Flo-Trex Valve-ANSI-125-Straight

PRESSURE TEMPERATURE LIMITS



Maximum pressure: 175 psi
Maximum temperature: 300 F

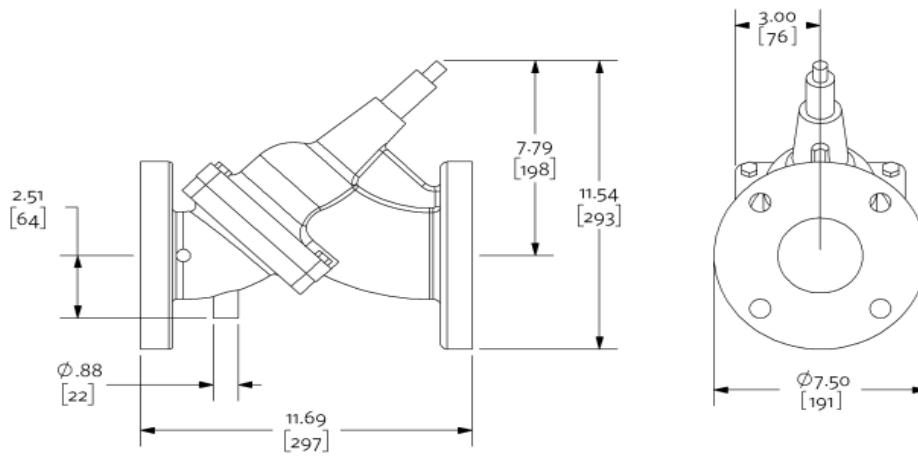
Dimensional data (not for construction)

Model: FTV-3FS-Flo-Trex Valve-ANSI-125-Straight

Weight: 39 lb [17.69 kg]

Side view

Front 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