

SK-23-0244 - Global Impact STEM Academy



572 E. Leffel Lane
Springfield, Ohio 45505
United States

Marker, Inc.
2011 Riverside Dr
Columbus, Ohio 43221
United States
(614) 754-8349

Title
Hydronic Pumps - O&M Data

Submittal Manager
Andrew Burson

P-1,2 PAGE 4
P-3,4 PAGE 8

Spec Section
23 21 23 - Hydronic Pumps

Type
Closeout/Warranty

Number **Rev**
23 21 23-5 0

Description
4. Operating and Maintenance Data

Contractor's Stamp

MARKER Reviewed Reviewed As Noted
 Rejected Revise & Resubmit

By Andrew Burson Date 2.06.2024

This review is only for general conformance of the project and general compliance. Corrections or comments made during this review does not relieve the Vendor from compliance with the requirements of the plans and specifications. Vendor is responsible for all dimensions and fabrication to be confirmed and correlated at the job site.

WSA

- | | |
|---|--|
| <input checked="" type="checkbox"/> NO EXCEPTIONS | <input type="checkbox"/> REJECTED |
| <input type="checkbox"/> EXCEPTIONS NOTED | <input type="checkbox"/> SUBMIT SPECIFIED ITEM |
| <input type="checkbox"/> REVISE AND RESUBMIT | <input type="checkbox"/> NOT REVIEWED |

Approval is only for general conformance with the design concept of the Project and the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site; information that pertains solely to the fabrication process or to the means and methods of construction; coordination of the work of all trades; and performing all work in a safe and satisfactory manner. This approval does not modify Contractor's duty to comply with the Contract Documents.

Lisa Canfield 02.19.2024
WSA STUDIO DATE

Architect's Stamp

- | | |
|--|---|
| <input checked="" type="checkbox"/> APPROVED | <input type="checkbox"/> FURNISH AS CORRECTED |
| <input type="checkbox"/> REJECTED | <input type="checkbox"/> REVISE AND RESUBMIT |
| <input type="checkbox"/> SUBMIT SPECIFIED ITEM | |

This review was performed only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Modifications or comments made on the shop drawings during this review do not relieve contractor from compliance with the requirements of the plans and specifications. Approval of a specific item does not include approval of the assembly of which the item is a component. Contractor is responsible for dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences, and procedures of construction; coordination of the work of all trades; and for performing all work in a safe and satisfactory manner.

HAWA INCORPORATED
CONSULTING ENGINEERS

Date 02-19-24 By TSK

Engineer's Stamp



SUBMITTAL DATA

Project: Global Impact STEM Academy
Bid Category : HVAC
Project No.: E1152
TP Tab No.: 246, 251
Construction Manager: Marker
Architect/Engineer: WSA/HAWA
Submittal For: Heating Hot Water Pumps, Combination Valves
Specification #: 23 21 23
Manufacturer: Grundfos
Supplier: Weber Huff

The attached submittal data has been reviewed by TP Mechanical Contractors for compliance with the Architect/Engineer's specifications and plan schedule for this project.

In order to maintain the project schedule, we request that this submittal be returned to TP Mechanical Contractors **within 7 days**.

NOTE: Material cannot be released without Architect/Engineer's approval of submittal.

(Please place stamp of approval here)

<u> X </u>	PRODUCT DATA
<u> </u>	DRAWINGS
<u>1/25/24</u>	DATE SUBMITTED
<u> </u>	DATE RESUBMITTED
T. P. MECHANICAL CONTRACTORS	
BY	<u> Bridget Ellis </u>
<p>This drawing or brochure has been checked to quality or proper components only. Approval of this drawing or brochure shall not relieve the supplier of responsibility for accuracy or dimensions of full compliance with plans and specifications and purchase order.</p>	



WEBER-HUFF, INC.

9099 SUTTON PLACE, HAMILTON, OHIO 45011

(513) 874-1911

FAX: (513) 874-3383

email@weber-huff.com

visit us at our website: www.weber-huff.com

SUBMITTAL

PROJECT: GLOBAL IMPACT STEM ACADEMY

CONTRACTOR: TP MECHANICAL

SUBMITTED BY: WEBER-HUFF, INC.

ENGINEER: HAWA ENGINEERS

MANUFACTURER: GRUNDFOS

DATE: January 24, 2024

Submittal Data

PROJECT: Global Impact Stem academy	UNIT TAG: P-1,2	QUANTITY: 2
REPRESENTATIVE: Weber-Huff, Inc.	TYPE OF SERVICE:	DATE: _____
ENGINEER: HAWA Engineers	SUBMITTED BY: PRIMARY	DATE: _____
CONTRACTOR: TP Mechanical	APPROVED BY:	DATE: _____
	ORDER NO.:	DATE: _____

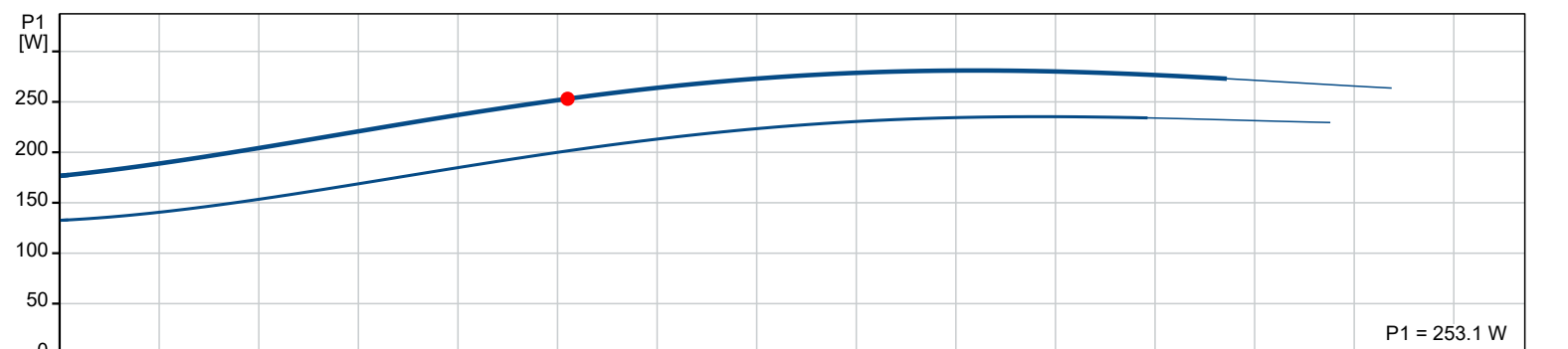
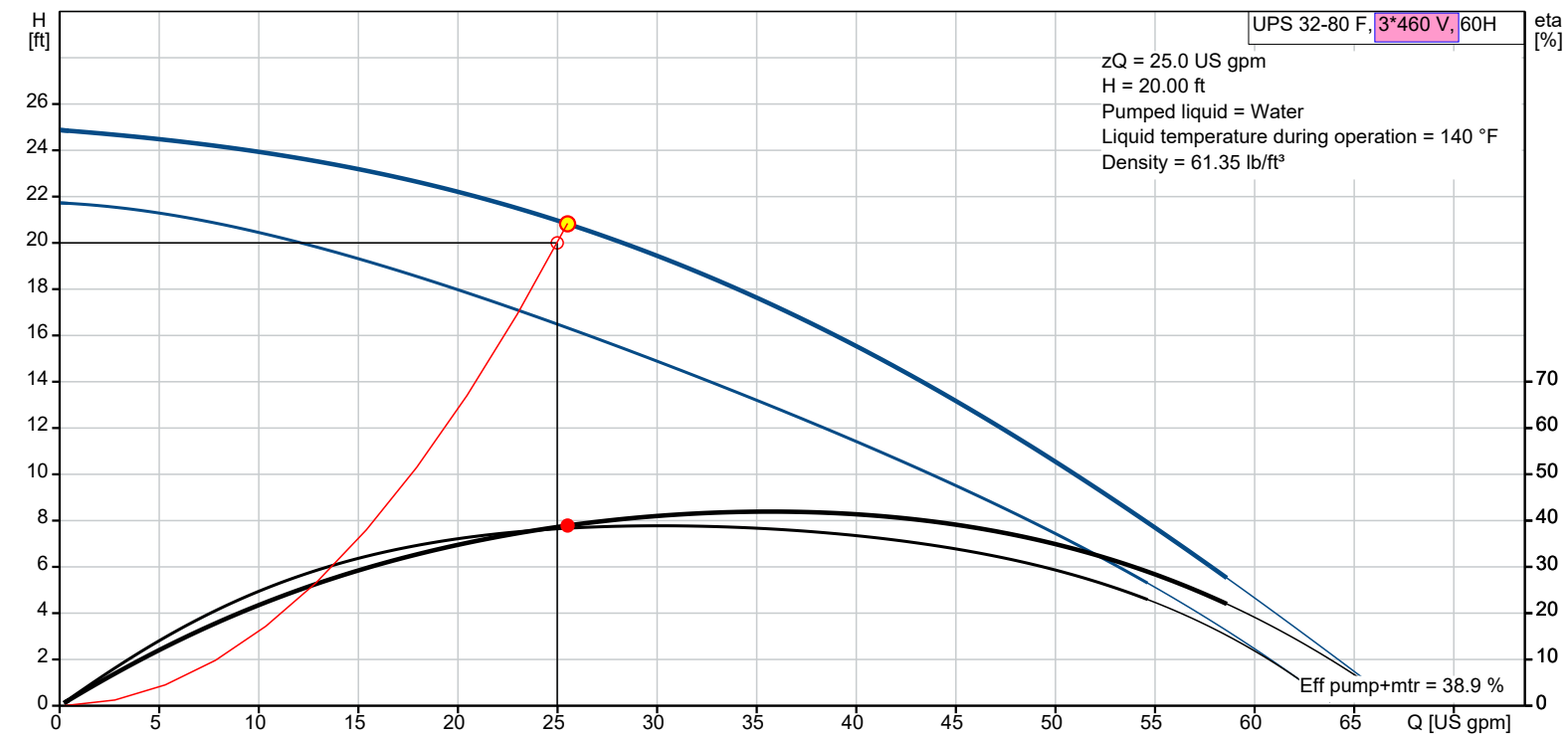


UPS 32-80 F GRUNDFOS

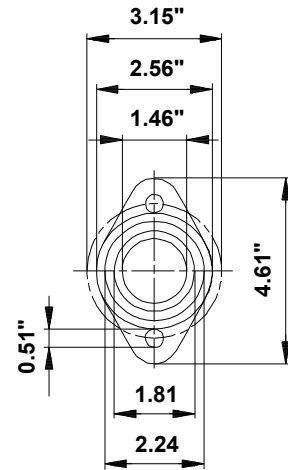
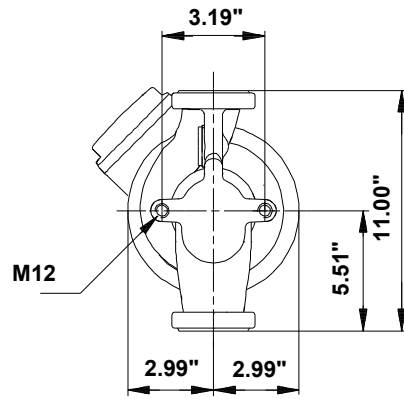
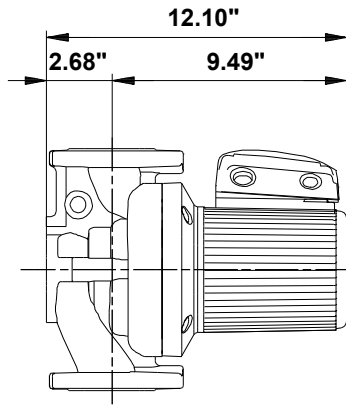
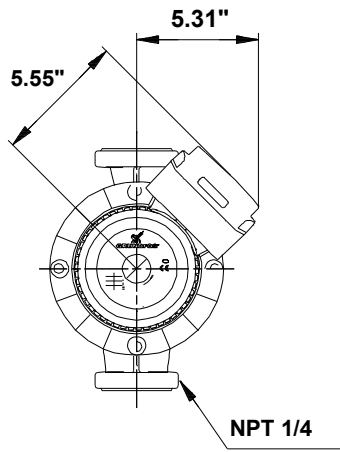
UPS is a three-speed circulator pump designed for heating and air-conditioning systems and is also used for central and district heating systems. The pump provides reliable and maintenance-free operation.

Product photo could vary from the actual product

Conditions of Service		Pump Data		Motor Data	
Flow:	25.0 US gpm	Liquid temperature range:	14 .. 248 °F	Max. power input:	280 W
Head:	20. ft	Maximum ambient temperature:	104 °F	Rated voltage:	460 V
Efficiency:	38.9 %	Pipe connection:	GF 15/26	Main frequency:	60 Hz
Liquid:	Water	Product number:	96402711	Enclosure class:	X4D
Temperature:	140 °F			Thermal protection:	EXT.
NPSH required:	ft				
Specific Gravity:	0.985				

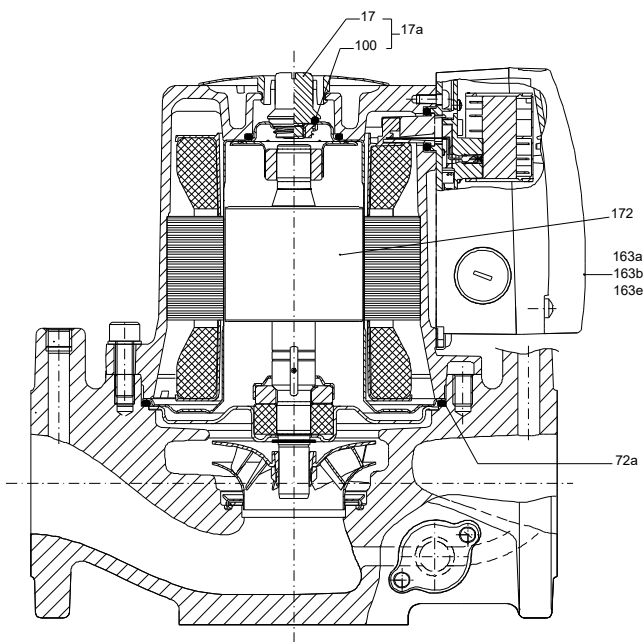


Submittal Data

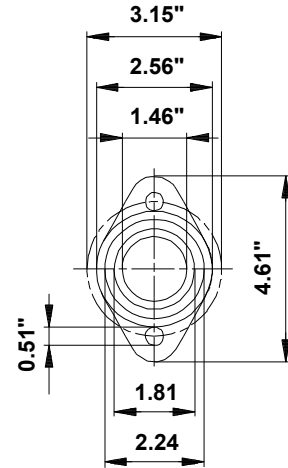
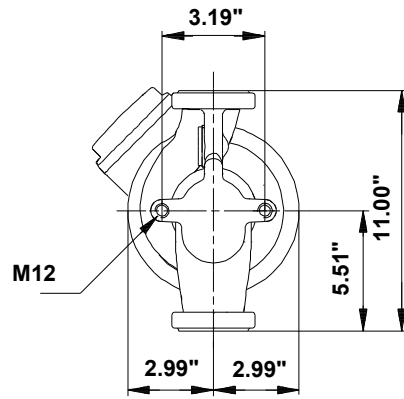
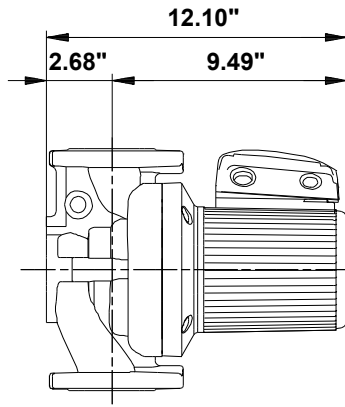
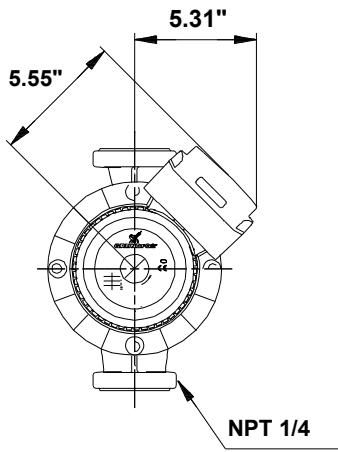


Materials:

- Pump housing: Cast iron
- Pump housing: ASTM 35 B - 40 B
- Impeller: Stainless steel
- Impeller: AISI 304
- Impeller: EN 1.4301

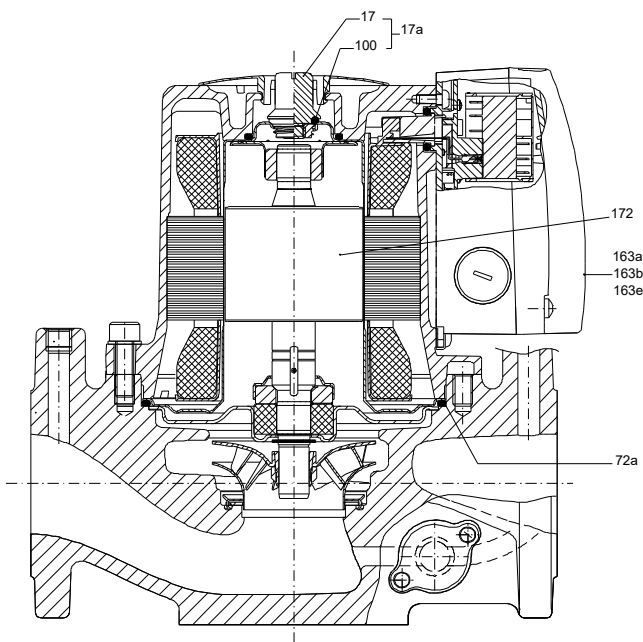


Submittal Data

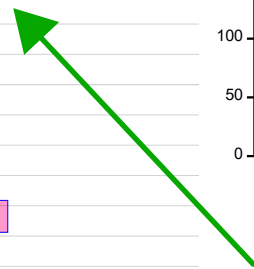
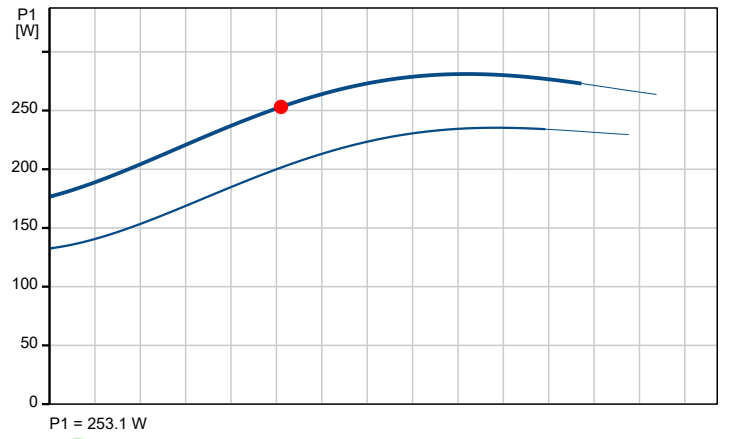
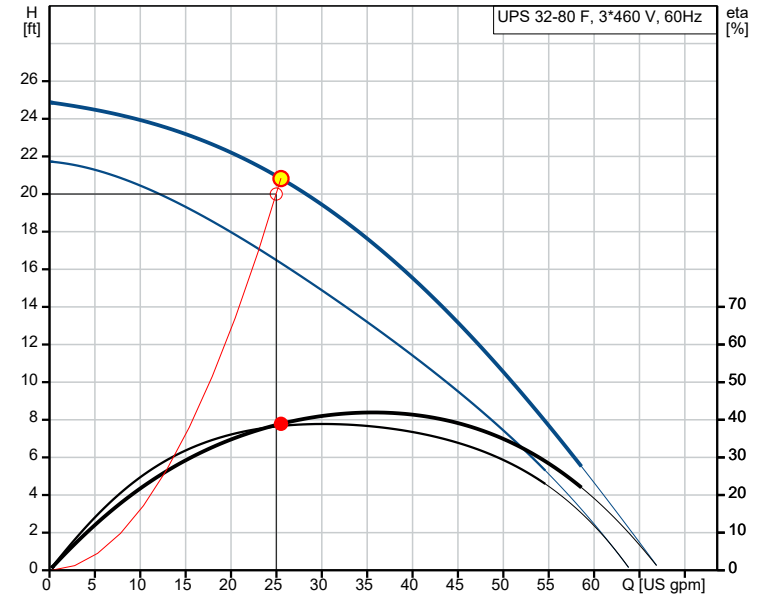


Materials:

- Pump housing: Cast iron
- Pump housing: ASTM 35 B - 40 B
- Impeller: Stainless steel
- Impeller: AISI 304
- Impeller: EN 1.4301



Description	Value
General information:	
Product name:	UPS 32-80 F
Product No.:	96402711
EAN:	5700390678494
Price:	
Technical:	
Speed Number:	2
Actual calculated flow:	25.0 US gpm
Resulting head of the pump:	20.00 ft
Maximum head:	26.25 ft
Approvals:	CCSAUS
Model:	C
Materials:	
Pump housing:	Cast iron
Pump housing:	EN 1561 EN-GJL-250
Pump housing:	ASTM 35 B - 40 B
Impeller:	Stainless steel
Impeller:	EN 1.4301
Impeller:	AISI 304
Installation:	
Range of ambient temperature:	32 .. 104 °F
Maximum operating pressure:	145.04 psi
Type of connection:	DIN
Pipe connection:	GF 15/26
Pressure rating for connection:	PN 10
Port-to-port length:	11 in
Connect code:	F
Liquid:	
Pumped liquid:	Water
Liquid temperature range:	14 .. 248 °F
Selected liquid temperature:	140 °F
Density:	61.35 lb/ft³
Electrical data:	
Power input in speed 2:	235 W
Max. power input:	280 W
Main frequency:	60 Hz
Rated voltage:	3 x 460 V
Current in speed 2:	0.36 A
Current in speed 3:	0.55 A
Cos phi in speed 2:	0.82
Cos phi:	0.64
Enclosure class (IEC 34-5):	X4D
Insulation class (IEC 85):	F
Built-in motor protection:	CONTACT
Thermal protec:	EXT.
Winding resistance:	83.5 - 110.0 ohm
Controls:	
Relay:	N
Others:	
Terminal box position:	1.30H
Net weight:	33.7 lb
Gross weight:	38.8 lb
Shipping volume:	2.08 ft³



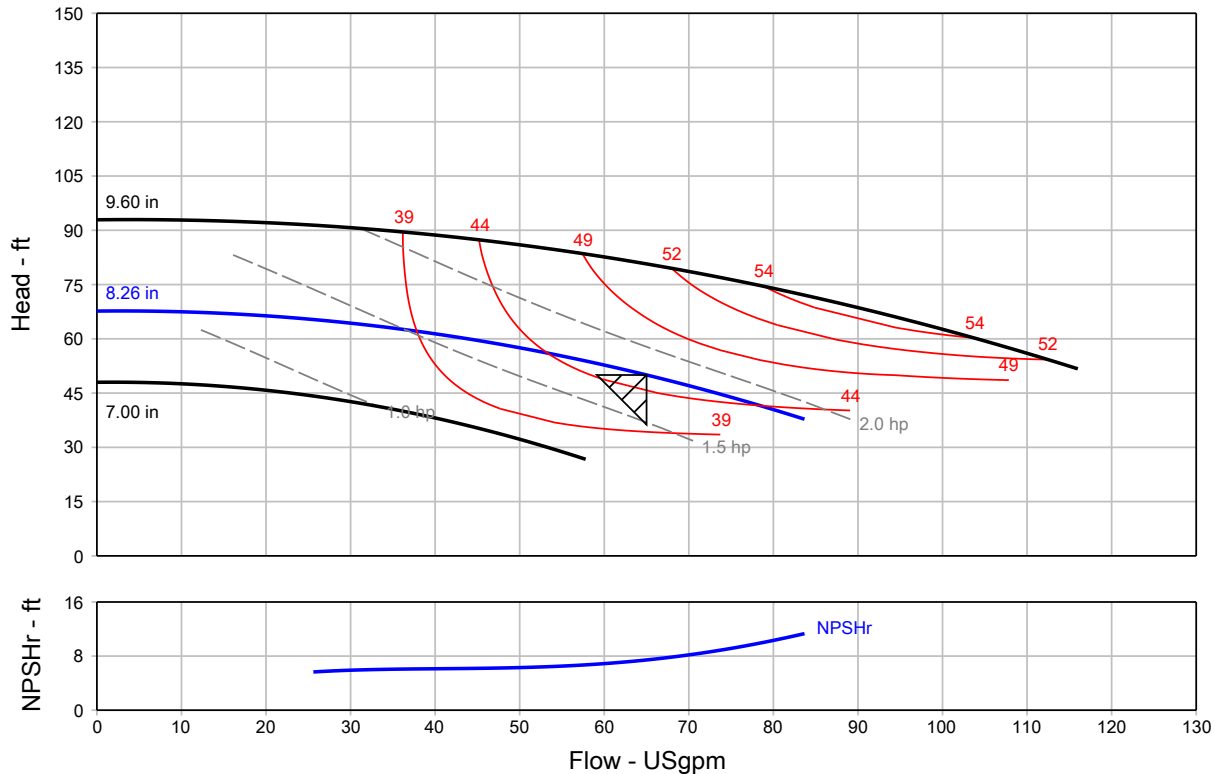
Specifications call for 250 F for temperature range. AE to confirm.

Acceptable.

Pump Performance Datasheet

Customer	: Global Impact Stem Academy	Quote Number / ID	: 2001785
Customer ref. / PO	:	Model	: 2095A VL
Tag Number	: P-3, 4	Stages	: 1
Service	:	Based on curve number	: VL_2095A_4P Rev 0
Quantity	: 2	Basic model number	: -
		Date last saved	: 12/27/2023 8:56 AM

Operating Conditions		Liquid	
Flow, rated	: 65.00 USgpm	Liquid type	: Cold Water
Differential head / pressure, rated (requested)	: 50.00 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 50.24 ft	Solids diameter, max	: 0.00 in
Suction pressure, rated / max	: 0.00 / 0.00 psi.g	Solids concentration, by volume	: 0.00 %
NPSH available, rated	: Ample	Temperature, max	: 68.00 deg F
Site Supply Frequency	: 60 Hz	Fluid density, rated / max	: 1.000 / 1.000 SG
		Viscosity, rated	: 1.00 cP
		Vapor pressure, rated	: 0.34 psi.a
Performance		Material	
Speed, rated	: 1760 rpm	Material selected	: Cast iron - 125#
Impeller diameter, rated	: 8.26 in	Pressure Data	
Impeller diameter, maximum	: 9.60 in	Maximum working pressure	: 29.30 psi.g
Impeller diameter, minimum	: 7.00 in	Maximum allowable working pressure	: 175.0 psi.g
Efficiency	: 45.41 %	Maximum allowable suction pressure	: 175.0 psi.g
NPSH required / margin required	: 7.43 / 0.00 ft	Hydrostatic test pressure	: 263.0 psi.g
Ns (imp. eye flow) / Nss (imp. eye flow)	: 716 / 2,337 US Units	Driver & Power Data (@Max density)	
MCSF	: 20.59 USgpm	Motor sizing specification	: Max power (non-overloading)
Head, maximum, rated diameter	: 67.71 ft	Margin over specification	: 0.00 %
Head rise to shutoff	: 35.29 %	Service factor	: 1.00
Flow, best eff. point	: 66.61 USgpm	Power, hydraulic	: 0.82 hp
Flow ratio, rated / BEP	: 97.58 %	Rated power (based on duty point)	: 1.81 hp
Diameter ratio (rated / max)	: 86.04 %	Max power (non-overloading)	: 1.89 hp
Head ratio (rated dia / max dia)	: 61.97 %	Nameplate motor rating	: 3.00 hp / 2.24 kW
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 0.99 / 1.00		
Selection status	: Acceptable		
Energy Indexes			
PEI (CL)	: 0.94		
ER (CL)	: 6		



Construction Datasheet

Project name	: Global Impact Stem Academy	Tag Number	: P-3, 4
Consulting engineer	:	Service	:
Customer	: Weber-Huff Inc.	Model	: 2095A VL
Customer ref. / PO	:	Quantity	: 2
Quote Number / ID	: 2001785	Quoted By (Sales Office)	: Weber-Huff Inc.
Date last saved	: 12/27/2023 8:56 AM	Quoted By (Sales Engineer)	: Angel Collins

Construction				Motor Information	
Nozzle	Size (in.)	Nozzle Configuration	Pos'n	Manufacturer	: Baldor
Suction	2	125# ANSI	Side	Frame Size	: 182JM
Discharge	2	125# ANSI	Side	Power	: 3.00 hp

Orientation / Configuration	: Vertical	RPM	: 1800 rpm
Rotation	: Clockwise	Enclosure	: ODP
Wear Ring Configuration	: Single - Case	Operating Power Supply	: 230/460/3/60
Discharge Elbow Size	: -	Efficiency	: Premium
Subplate	: -	Service factor	: 1.15
Sump Depth (feet)	: -	Motor Application	: General Purpose
Bearing Frame	: -	Motor Options/Accessories	: -
Bearing Frame Foot	: -	Cord Length (feet)	: -
Bearing Type (Radial/Thrust)	: In motor		
Bearing Lubrication	: Regreasable		
Thrust Bearing	: -		
Intermediate Bearing	: -		
Lower Bearing	: -		
Bearing Housing Accessories	: -		
PACO Construction code	: 16-2095A-130108-1622P		

Materials	
Case	: Cast Iron, ASTM A48 - Class 30
Motor Bracket	: Cast Iron, ASTM-A48, CL 30
Impeller	: Stainless Steel, AISI-304 (H304)
Impeller Cap Screw and Washer	: Stainless Steel, AISI-303
Impeller Key	: Stainless Steel, AISI 316
Case wear ring	: Tin Bronze, ASTM B584-90500 (B18)
Impeller wear ring	: -
Pump Shaft	: Steel, AISI-1040
Sleeve	: Bronze, III932, C89835
Line Shaft	: -
Column	: -
Discharge Pipe	: -
Discharge Elbow	: -
Suction Elbow	: -
Subplate	: -
Hardware	: Steel, Grade 5
O Rings	: Buna N
Pump Coatings	: Standard Manufacturers Paint

Baseplate, Coupling and Guard	
Baseplate	: Not Applicable
Drip Pan	: -
Coupling	: -
Guard	: OSHA Approved

Seal & Packing Construction	
Sealing Method	: Single Seal, Type 21S
Seal Material	: Buna Carbon Ceramic SS-Spring and Hardware
Packing Gland	: -
Lantern Ring	: -
Recirculation Lines	: Copper Tubing with Brass Fittings

Weights (Approx.)	
Pump	: 119.0 lb
Baseplate	: -
Driver	: 98.00 lb
Estimated Shipping gross weight	: 217.0 lb

Includes spare seals

Includes shaft grounding rings

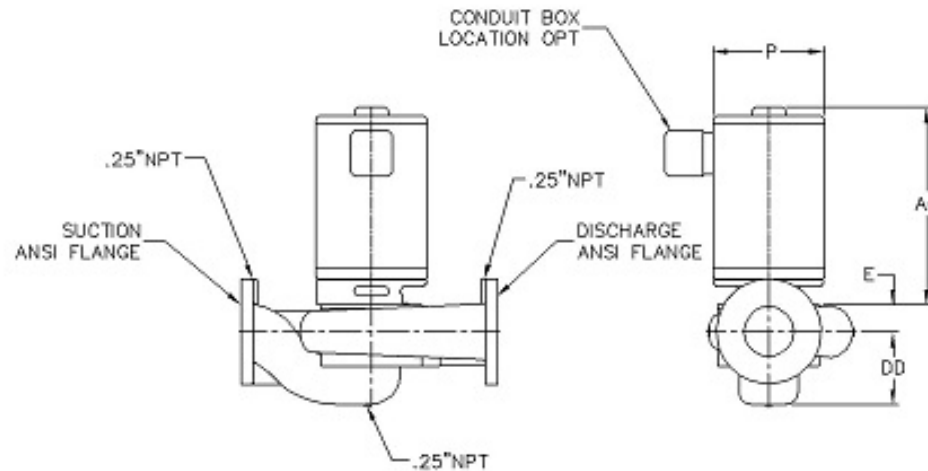
General Arrangement

Project name : Global Impact Stem Academy	Tag Number : P-3, 4
Consulting engineer :	Service :
Customer :	Model : 2095A VL
Customer ref. / PO :	Quantity of pumps : 2
Quote Number / ID : 2001785	Quoted By (Sales Office) : Weber-Huff Inc.
Date last saved : 12/27/2023 8:56 AM	Quoted By (Sales Engineer) : Angel Collins

Do not install pump larger than 215JM in vertical piping.

Pressure and drain tap locations are approximate.

Suction and discharge flanges, are cast per 250# ANSI thickness and diameter. All flanges are flat face. Some holes may be threaded because of nut clearances.



NOT FOR CONSTRUCTION, UNLESS CERTIFIED AND REFERENCED ON ORDER

Units	Frame	S x D (in.)	AG (Max)	DC	DD	DE	E	P (Max)	X	YY	Weight ea
inches	182JM	2 X 2	20.00	6.00	4.88	6.25	1.50	10.00	9.00	9.00	217.0
Conditions of Service			Motor Data								
Flow: 65.00 USgpm	Fluid: Cold Water	HP: 3	Encl: ODP			Phase: 3			Efficiency: Premium		
TDH: 50.00 ft	Temp.: 68.00 deg F	RPM: 1760 rpm	Hz: 60			Voltage: 230/460			S.F.: 1.15		

Project name	: Global Impact Stem Academy	Tag Number	: P-1,2
Consulting engineer	:	Service	:
Customer	: Weber-Huff Inc.	Model	: CV20-125
Customer ref. / PO	:	Quantity	: 2
Quote Number / ID	: 2001785	Quoted By (Sales Office)	: Weber-Huff Inc.
Date last saved	: 01/05/2024 2:08 PM	Quoted By (Sales Engineer)	: Angel Collins

Construction

Nozzle	Size (in.)	Nozzle Configuration	Pos'n
Inlet	2	-	Side
Outlet	2	-	Side

Valve Body	: ASTM A395
Seat Guide	: -
Disc	: Bronze ASTM B124 C37700
Spring	: Stainless Steel, ASTM A240-304
Packing Gland	: Bronze ASTM B124 C37700
Stem Packing	: -
Yoke	: Steel ASTM A283-C
Indicator	: -
Hand wheel	: Ductile iron A395
Construction Code/Part Number	: 97523122

Weights (Approx.)

Estimated Shipping gross weight	: 36.00 lb
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Grundfos Combination Valves



Description

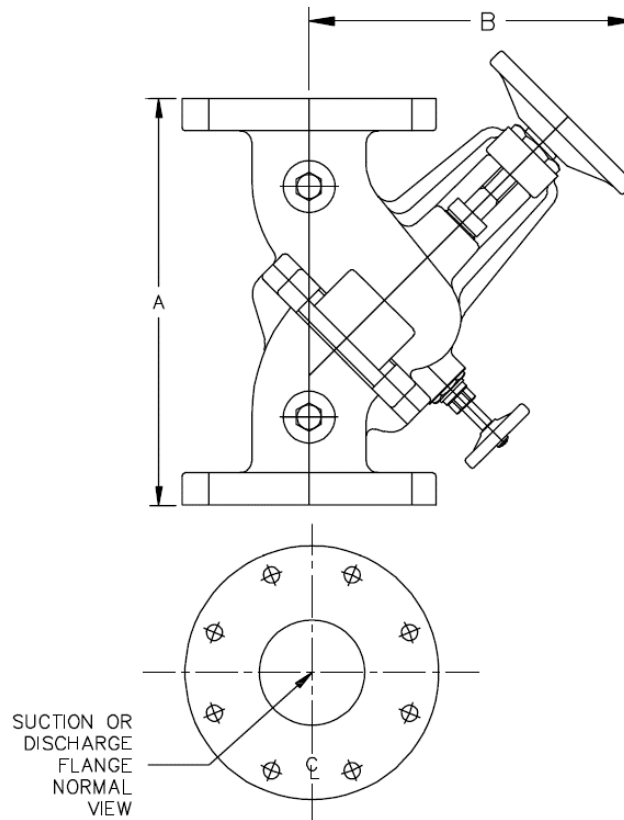
Grundfos Series CV, Combination valve combines three valves in one: shut-off valve, balancing valve, and check valve. The combination valve makes it possible to reduce the overall system pressure drop since fewer individual components are needed when installing a pump.

The combination valve provides the feature of changing the flange orientation to allow 90° pipe connection. Additional feature includes a built-in bypass valve allowing for drainage of water upstream of the check valve.

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General Arrangement

Project name	: Global Impact Stem Academy	Tag Number	: P-1,2
Consulting engineer	:	Service	:
Customer	:	Model	: CV20-125
Customer ref. / PO	:	Quantity of pumps	: 2
Quote Number / ID	: 2001785	Quoted By (Sales Office)	: Weber-Huff Inc.
Date last saved	: 01/05/2024 2:08 PM	Quoted By (Sales Engineer)	: Angel Collins



NOT FOR CONSTRUCTION, UNLESS CERTIFIED AND REFERENCED ON ORDER

Units	Inlet (in)	Outlet (in)	A (in)	B (in)	Weight (lbs)
inches	2	2	9.37	7.91	36.00

Project name	: Global Impact Stem Academy	Tag Number	: P-3,4
Consulting engineer	:	Service	:
Customer	: Weber-Huff Inc.	Model	: CV25-125
Customer ref. / PO	:	Quantity	: 2
Quote Number / ID	: 2001785	Quoted By (Sales Office)	: Weber-Huff Inc.
Date last saved	: 01/05/2024 2:08 PM	Quoted By (Sales Engineer)	: Angel Collins

Construction

Nozzle	Size (in.)	Nozzle Configuration	Pos'n
Inlet	2.5	-	Side
Outlet	2.5	-	Side

Valve Body	: ASTM A395
Seat Guide	: -
Disc	: Bronze ASTM B124 C37700
Spring	: Stainless Steel, ASTM A240-304
Packing Gland	: Bronze ASTM B124 C37700
Stem Packing	: -
Yoke	: Steel ASTM A283-C
Indicator	: -
Hand wheel	: Ductile iron A395
Construction Code/Part Number	: 97523123

Weights (Approx.)

Estimated Shipping gross weight	: 42.00 lb
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Grundfos Combination Valves



Description

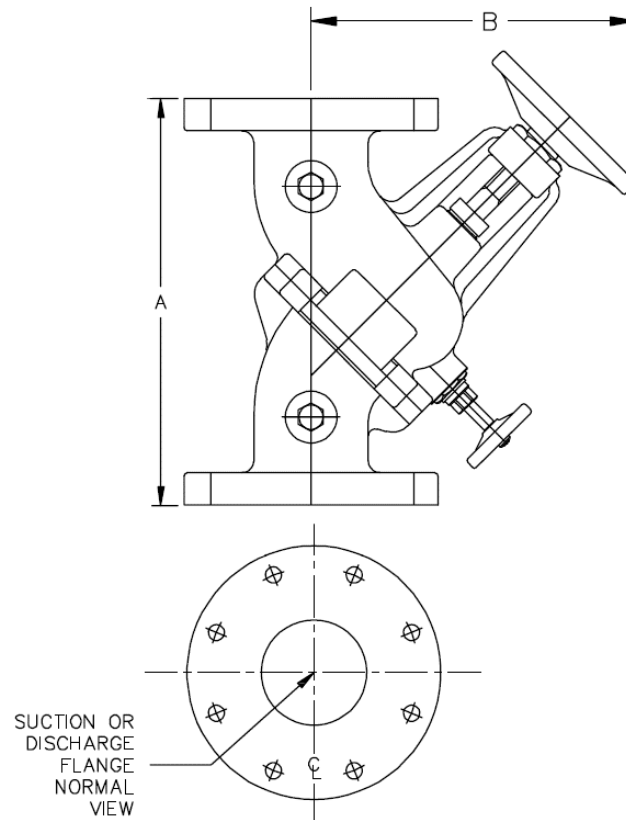
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The combination valve provides the feature of changing the flange orientation to allow 90° pipe connection. Additional feature includes a built-in bypass valve allowing for drainage of water upstream of the check valve.

-

General Arrangement

Project name	: Global Impact Stem Academy	Tag Number	: P-3,4
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Customer	:	Model	: CV25-125
Customer ref. / PO	:	Quantity of pumps	: 2
Quote Number / ID	: 2001785	Quoted By (Sales Office)	: Weber-Huff Inc.
Date last saved	: 01/05/2024 2:08 PM	Quoted By (Sales Engineer)	: Angel Collins



NOT FOR CONSTRUCTION, UNLESS CERTIFIED AND REFERENCED ON ORDER

Units	Inlet (in)	Outlet (in)	A (in)	B (in)	Weight (lbs)
inches	2.5	2.5	11.02	8.82	42.00