

Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
P.O. Box 16620
Little Rock, AR 72231
Phone 501-834-3320
Fax 501-834-5416

Date: 11/9/2023

Return Request: 11/19/2023

Project: UCA Snow – Fine Arts Center

Supplier: Fluid Solutions

Manufacturer: Grundfos

Submittal: Hydronic Specialties

Submittal Number: 23 21 14-01

Drawing # and Installation: Mechanical Drawings

ARCHITECT

H+N Architects
1009 Main Street
Conway, AR 72032
501-327-7525

ENGINEER

Pettit & Pettit
201 E. Markham St. #400
Little Rock, AR 72201
501-374-3731

GENERAL CONTRACTOR

Wagner General Contractors
600 W. Race Ave.
Searcy, AR 72143
501-203-0704

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.
9924 Landers Rd.
N. Little Rock, AR 72117
501-834-3320

Notes:

CSUSA PROJECT NO.

23-2020

chowell@comfortar.com



SUBMITTAL DATA

Date: November 6, 2023
Project: UCA Snow Fine Arts
Contractor: Comfort Systems USA
Engineer: Pettit & Pettit Engineers

PUMPS & ACCESSORIES

P-1A, P-1B, P-2A, P-2B

Grundfos vertical in line split coupled pumps complete with bronze impellers, wear rings, coupling, coupling guard, mechanical seals, and premium efficient motors.

- 4 – Suction Diffusers
- 8 – Flexible Pump Connectors
- 2 – Expansion Tanks
- 2 – Air/Dirt Separators
- 2 – Pressure Reducing Valves
- 2 – Pressure Relief Valves

6815 Dewaffelbaker Dr., Maumelle, AR 72113

Phone (501) 663-8886 • Fax (501) 663-8738

www.fluidsolutionsinc.com

Pump Performance Datasheet

Customer :	Quote Number / ID : 110623
Customer ref. / PO :	Model : 40959 VLS
Tag Number : P-1A, 1B	Stages : 1
Service :	Based on curve number : VLS_40959_4P Rev Aug21
Quantity : 2	Basic model number : -
	Date last saved : 11/06/2023 1:52 PM

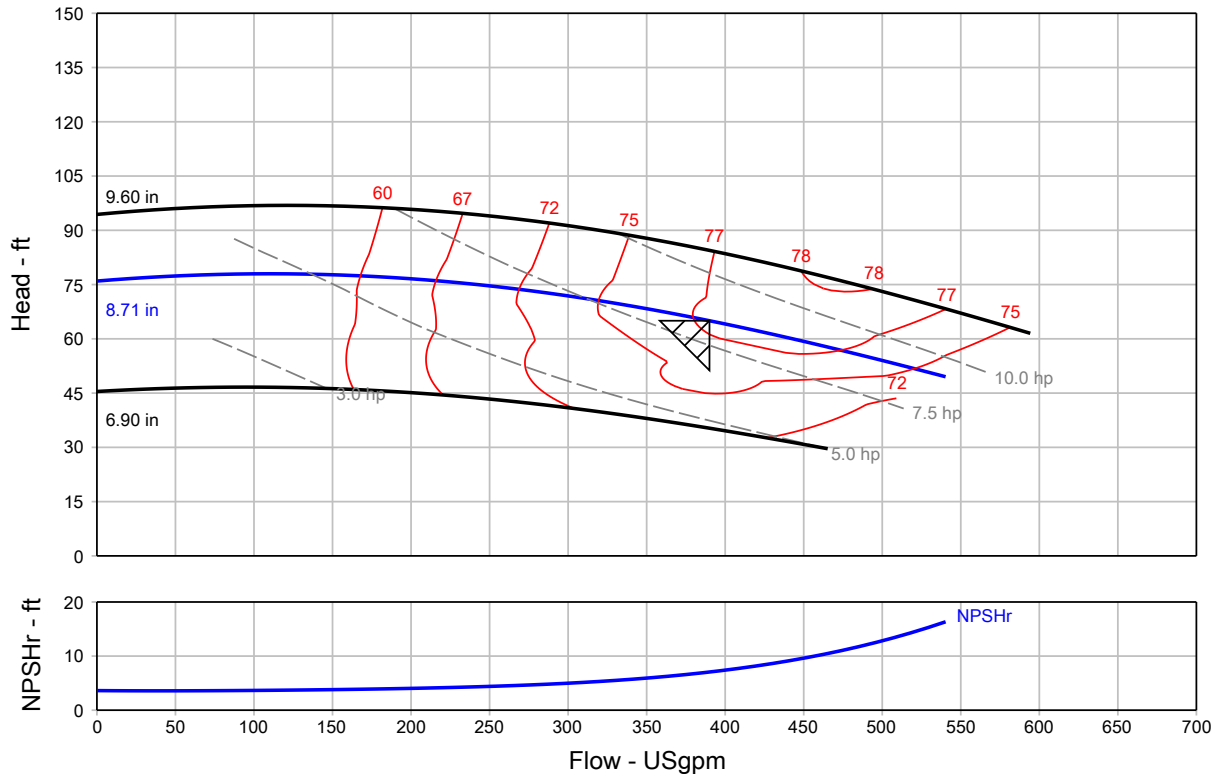
Operating Conditions	Liquid
Flow, rated : 390.0 USgpm	Liquid type : Hot Water
Differential head / pressure, rated (requested) : 65.00 ft	Additional liquid description :
Differential head / pressure, rated (actual) : 65.15 ft	Solids diameter, max : 0.00 in
Suction pressure, rated / max : 0.00 / 0.00 psi.g	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 : 8.71 in	
Impeller diameter, maximum : 9.60 in	
Impeller diameter, minimum : 6.90 in	
Efficiency : 77.20 %	
NPSH required / margin required : 7.05 / 0.00 ft	
nq (imp. eye flow) / S (imp. eye flow) : 29 / 124 Metric units	
MCSF : 132.3 USgpm	
Head, maximum, rated diameter : 77.98 ft	
Head rise to shutoff : 16.87 %	
Flow, best eff. point : 428.8 USgpm	
Flow ratio, rated / BEP : 90.94 %	
Diameter ratio (rated / max) : 90.73 %	
Head ratio (rated dia / max dia) : 76.97 %	
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] : 1.00 / 1.00 / 1.00 / 1.00	
Selection status : Acceptable	

Pressure Data
Maximum working pressure : 33.75 psi.g
Maximum allowable working pressure : 175.0 psi.g
Maximum allowable suction pressure : 175.0 psi.g
Hydrostatic test pressure : 263.0 psi.g

Driver & Power Data (@Max density)
Motor sizing specification : Max power (non-overloading)
Margin over specification : 0.00 %
Service factor : 1.00
Power, hydraulic : 6.40 hp
Rated power (based on duty point) : 8.29 hp
Max power (non-overloading) : 9.18 hp
Nameplate motor rating : 10.00 hp / 7.46 kW

Energy Indexes
PEI (CL) : 0.96
ER (CL) : 4

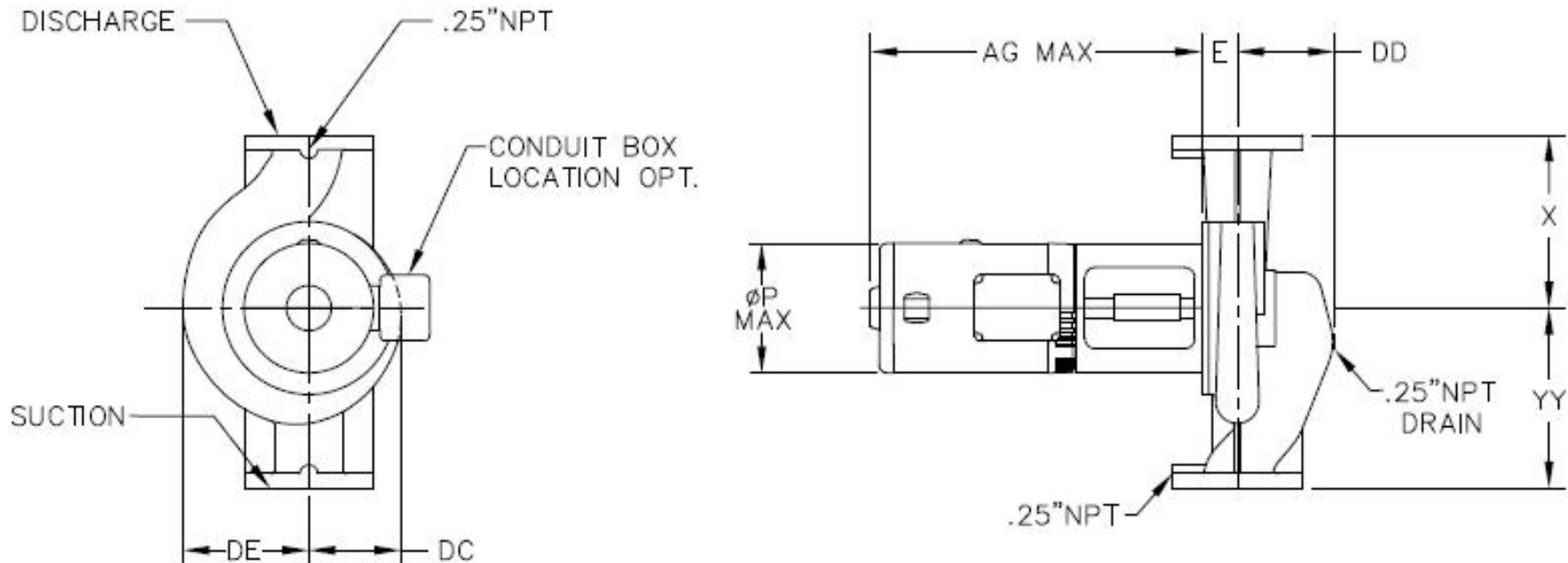


Construction Datasheet

Project name	: UCA Snow Fine Arts	Tag Number	: P-1A, 1B	
Consulting engineer	:	Service	:	
Customer	: FLUID SOLUTIONS INC	Model	: 40959 VLS	
Customer ref. / PO	:	Quantity	: 2	
Quote Number / ID	: 110623	Quoted By (Sales Office)	: FLUID SOLUTIONS INC	
Date last saved	: 11/06/2023 1:52 PM	Quoted By (Sales Engineer)	: James Dayer	
Construction		Motor Information		
Nozzle	Size (in.)	Nozzle Configuration	Pos'n	
Suction	4	125# ANSI	Side	
Discharge	4	125# ANSI	Side	
Orientation / Configuration	: Vertical		Manufacturer	: Baldor
Rotation	: Clockwise		Frame Size	: 215TC
Wear Ring Configuration	: Single - Case		Power	: 10.00 hp
Discharge Elbow Size	: -		RPM	: 1800 rpm
Subplate	: -		Enclosure	: ODP
Sump Depth (feet)	: -		Operating Power Supply	: 230/460/3/60
Bearing Frame	: -		Efficiency	: Premium
Bearing Frame Foot	: -		Service factor	: 1.15
Bearing Type (Radial/Thrust)	: In motor		Motor Application	: General Purpose
Bearing Lubrication	: Regreasable		Motor Options/Accessories	: -
Thrust Bearing	: -		Cord Length (feet)	: -
Intermediate Bearing	: -		Materials	
Lower Bearing	: -		Case	: Cast Iron, ASTM A48 - Class 30
Bearing Housing Accessories	: -		Motor Bracket	: Cast Iron, ASTM-A48, CL 30
PACO Construction code	: 17-40959-130268-1782P		Impeller	: Stainless Steel, AISI-304 (H304)
Baseplate, Coupling and Guard		Impeller Cap Screw and Washer	: Stainless Steel, AISI-303	
Baseplate	: Not Applicable		Impeller Key	: Stainless Steel, AISI 316
Drip Pan	: -		Case wear ring	: Tin Bronze, ASTM B584-90500 (B18)
Coupling	: Rigid, Axial Split Coupling (aluminum) RASC2		Impeller wear ring	: -
Guard	: OSHA Approved		Pump Shaft	: Stainless Steel, AISI-303
Seal & Packing Construction		Sleeve	: -	
Sealing Method	: Single Seal, Type 21		Line Shaft	: -
Seal Material	: Buna Carbon Ceramic SS-Spring and Hardware		Column	: -
Packing Gland	: -		Discharge Pipe	: -
Lantern Ring	: -		Discharge Elbow	: -
Recirculation Lines	: Nylon Tubing with Brass Fittings		Suction Elbow	: -
Weights (Approx.)		Subplate	: -	
Pump	: 497.0 lb		Hardware	: Steel, Grade 5
Baseplate	: -		O Rings	: Buna N
Driver	: 133.0 lb		Pump Coatings	: Standard Manufacturers Paint
Estimated Shipping gross weight	: 630.0 lb			

General Arrangement

Project name	: UCA Snow Fine Arts	Tag Number	: P-1A, 1B
Consulting engineer	:	Service	:
Customer	:	Model	: 40959 VLS
Customer ref. / PO	:	Quantity of pumps	: 2
Quote Number / ID	: 110623	Quoted By (Sales Office)	: FLUID SOLUTIONS INC
Date last saved	: 11/06/2023 1:52 PM	Quoted By (Sales Engineer)	: James Dayer



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	215TC	4 X 4	30.00	6.63	6.75	8.88	1.78	14.75	12.00	12.50	630.0
Conditions of Service				Motor Data							
Flow: 390.0 USgpm	Fluid: Hot Water	HP: 10	Encl: ODP	Phase: 3	Efficiency: Premium						
TDH: 65.00 ft	Temp.: 68.00 deg F	RPM: 1760 rpm	Hz: 60	Voltage: 230/460	S.F.: 1.15						

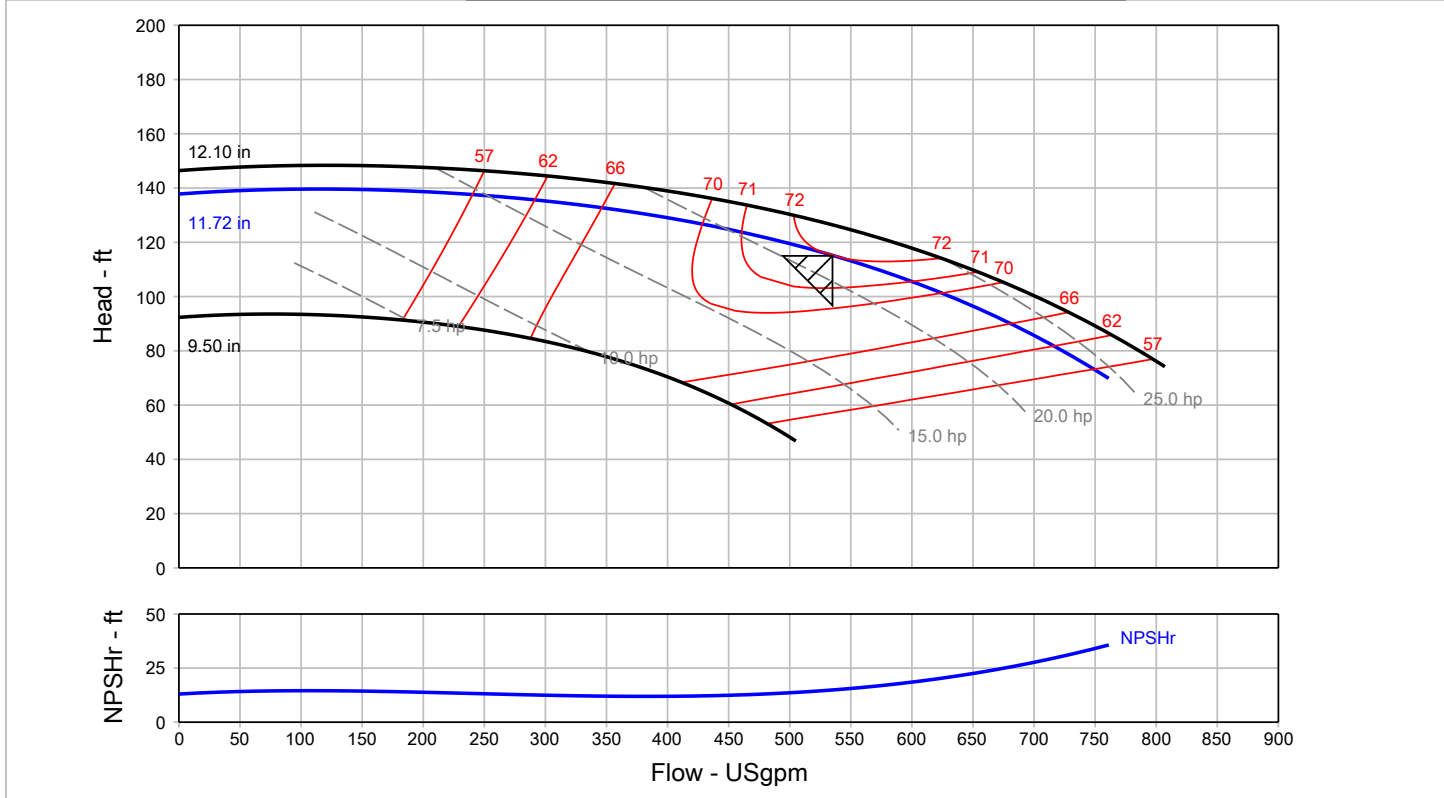
Pump Performance Datasheet

Customer :	Quote Number / ID :	110623
Customer ref. / PO :	Model :	40129 VLS
Tag Number : P-2A, 2B	Stages :	1
Service :	Based on curve number :	VLS_40129_4P Rev Aug21
Quantity : 2	Basic model number :	-
	Date last saved :	11/06/2023 1:58 PM

Operating Conditions		Liquid	
Flow, rated	: 535.0 USgpm	Liquid type	: Cold Water
Differential head / pressure, rated (requested)	: 115.0 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 115.2 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	: 11.72 in		
Impeller diameter, maximum	: 12.10 in		
Impeller diameter, minimum	: 9.50 in		
Efficiency	: 72.02 %		
NPSH required / margin required	: 14.88 / 0.00 ft		
nq (imp. eye flow) / S (imp. eye flow)	: 22 / 99 Metric units		
MCSF	: 161.5 USgpm		
Head, maximum, rated diameter	: 139.6 ft		
Head rise to shutoff	: 19.61 %		
Flow, best eff. point	: 534.5 USgpm		
Flow ratio, rated / BEP	: 100.09 %		
Diameter ratio (rated / max)	: 96.86 %		
Head ratio (rated dia / max dia)	: 91.11 %		
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00		
Selection status	: Acceptable		

Energy Indexes	
PEI (CL)	: 1.00
ER (CL)	: 0

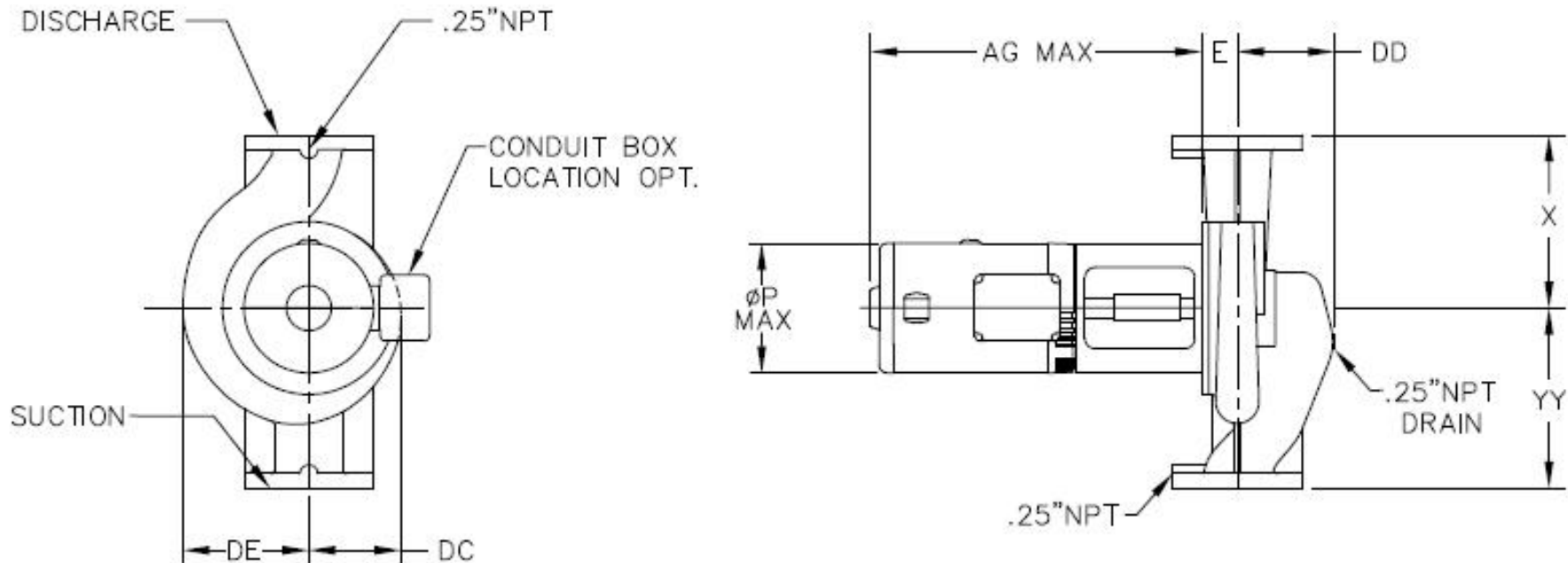


Construction Datasheet

Project name : UCA Snow Fine Arts		Tag Number : P-2A, 2B	
Consulting engineer :		Service :	
Customer : FLUID SOLUTIONS INC		Model : 40129 VLS	
Customer ref. / PO :		Quantity : 2	
Quote Number / ID : 110623		Quoted By (Sales Office) : FLUID SOLUTIONS INC	
Date last saved : 11/06/2023 1:58 PM		Quoted By (Sales Engineer) : James Dayer	
Construction		Motor Information	
Nozzle	Size (in.)	Nozzle Configuration	Pos'n
Suction	4	125# ANSI	Side
Discharge	4	125# ANSI	Side
Orientation / Configuration : Vertical		Manufacturer : Baldor	
Rotation : Clockwise		Frame Size : 284TC	
Wear Ring Configuration : Single - Case		Power : 25.00 hp	
Discharge Elbow Size : -		RPM : 1800 rpm	
Subplate : -		Enclosure : ODP	
Sump Depth (feet) : -		Operating Power Supply : 230/460/3/60	
Bearing Frame : -		Efficiency : Premium	
Bearing Frame Foot : -		Service factor : 1.15	
Bearing Type (Radial/Thrust) : In motor		Motor Application : General Purpose	
Bearing Lubrication : Regreasable		Motor Options/Accessories : -	
Thrust Bearing : -		Cord Length (feet) : -	
Intermediate Bearing : -		Materials	
Lower Bearing : -		Case : Cast Iron, ASTM A48 - Class 30	
Bearing Housing Accessories : -		Motor Bracket : Cast Iron, ASTM-A48, CL 30	
PACO Construction code : 17-40129-1A0268-1872P		Impeller : Stainless Steel, AISI-304 (H304)	
Baseplate, Coupling and Guard		Impeller Cap Screw and Washer : Stainless Steel, AISI-303	
Baseplate : Not Applicable		Impeller Key : Stainless Steel, AISI 316	
Drip Pan : -		Case wear ring : Tin Bronze, ASTM B584-90500 (B18)	
Coupling : Rigid, Axial Split Coupling (aluminum) RASC5		Impeller wear ring : -	
Guard : OSHA Approved		Pump Shaft : Stainless Steel, AISI-303	
Seal & Packing Construction		Sleeve : -	
Sealing Method : Single Seal, Type 21		Line Shaft : -	
Seal Material : Buna Carbon Ceramic SS-Spring and Hardware		Column : -	
Packing Gland : -		Discharge Pipe : -	
Lantern Ring : -		Discharge Elbow : -	
Recirculation Lines : Nylon Tubing with Brass Fittings		Suction Elbow : -	
Weights (Approx.)		Subplate : -	
Pump : 362.0 lb		Hardware : Steel, Grade 5	
Baseplate : -		O Rings : Buna N	
Driver : 330.0 lb		Pump Coatings : Standard Manufacturers Paint	
Estimated Shipping gross weight : 692.0 lb			

General Arrangement

Project name	: UCA Snow Fine Arts	Tag Number	: P-2A, 2B
Consulting engineer	:	Service	:
Customer	:	Model	: 40129 VLS
Customer ref. / PO	:	Quantity of pumps	: 2
Quote Number / ID	: 110623	Quoted By (Sales Office)	: FLUID SOLUTIONS INC
Date last saved	: 11/06/2023 1:58 PM	Quoted By (Sales Engineer)	: James Dayer



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	284TC	4 X 4	39.50	7.72	6.63	9.56	1.94	18.50	13.00	13.00	692.0
Conditions of Service				Motor Data							
Flow: 535.0 USgpm	Fluid: Cold Water	HP: 25	Encl: ODP	Phase: 3	Efficiency: Premium						
TDH: 115.0 ft	Temp.: 68.00 deg F	RPM: 1760 rpm	Hz: 60	Voltage: 230/460	S.F.: 1.15						

Project name	: UCA Snow Fine Arts	Tag Number	: Suction Diffuser
Consulting engineer	:	Service	: HW
Customer	: FLUID SOLUTIONS INC	Model	: SD4040-125
Customer ref. / PO	:	Quantity	: 2
Quote Number / ID	: 110623	Quoted By (Sales Office)	: FLUID SOLUTIONS INC
Date last saved	: 11/06/2023 2:05 PM	Quoted By (Sales Engineer)	: James Dayer

Construction

Nozzle	Size (in.)	Nozzle Configuration	Pos'n
Inlet	4	-	Top
Outlet	4	-	Side

Difuser Body	: Cast Iron, ASTM-A126, CL B
Hardware	: Steel, ASTM A-283C
Internal Magnet	: -
Strainer	: SS 304, ASTM-A240, 3.5MM Holes
Mesh Grid (Startup strainer)	: SS 304, ASTM-A240, (#20 Mesh)
Strainer Cover	: Cast Iron, ASTM-A126, CL B
O Rings	: EPDM
Coating	: Standard Manufacturers Paint
Construction Code/Part Number	: 96877830

Weights (Approx.)

Estimated Shipping gross weight	: 64.00 lb
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Grundfos Suction Diffusers



Description

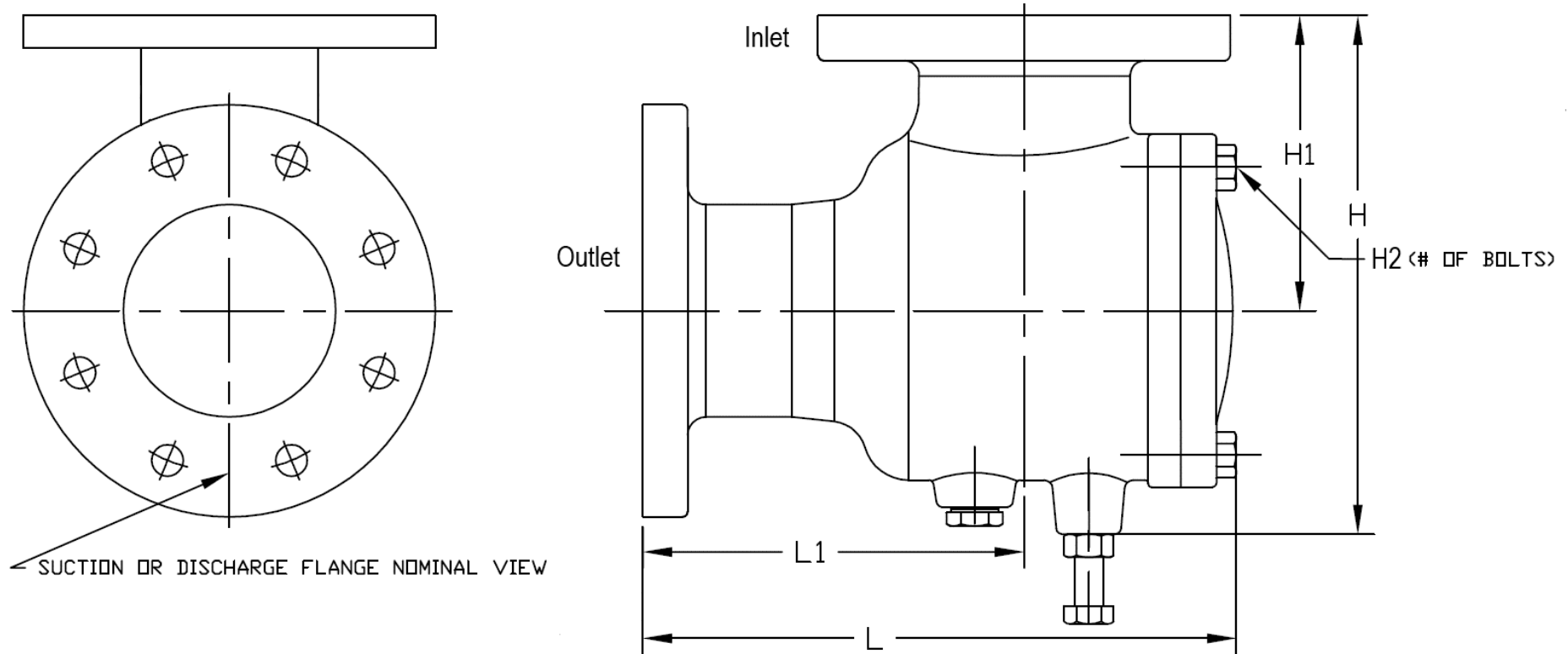
Grundfos Series SD, Suction diffuser provides and ensures a uniform flow pattern to the suction side of the pump ensuring a stable NPSH. Suction diffuser makes it possible to install the pump in a very narrow spacing as no long bends are necessary.

The suction diffuser incorporates a cylindrical strainer preventing impurities from entering the pump. Additional feature includes an adjustable support for mounting.

-

General Arrangement

Project name	: UCA Snow Fine Arts	Tag Number	: Suction Diffuser
Consulting engineer	:	Service	: HW
Customer	:	Model	: SD4040-125
Customer ref. / PO	:	Quantity of pumps	: 2
Quote Number / ID	: 110623	Quoted By (Sales Office)	: FLUID SOLUTIONS INC
Date last saved	: 11/06/2023 2:05 PM	Quoted By (Sales Engineer)	: James Dayer



NOT FOR CONSTRUCTION, UNLESS CERTIFIED AND REFERENCED ON ORDER

Units	Inlet (in)	Outlet (in)	Strainer Area (sq in)	L (in)	L1 (in)	H1 (in)	H (in)	H2 (qty)	Weight (lbs)
inches	4	4	78	12.90	8.30	6.50	11.40	6.00	64

Project name	: UCA Snow Fine Arts	Tag Number	: Suction Diffuser
Consulting engineer	:	Service	: CW
Customer	: FLUID SOLUTIONS INC	Model	: SD6040-125
Customer ref. / PO	:	Quantity	: 2
Quote Number / ID	: 110623	Quoted By (Sales Office)	: FLUID SOLUTIONS INC
Date last saved	: 11/06/2023 2:06 PM	Quoted By (Sales Engineer)	: James Dayer

Construction

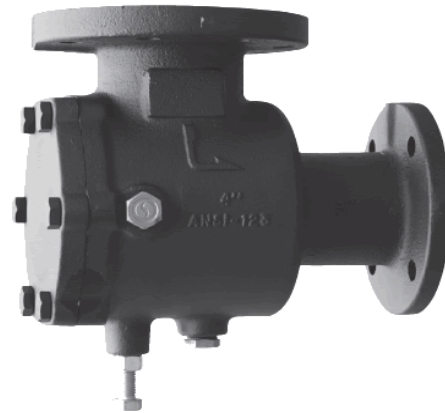
Nozzle	Size (in.)	Nozzle Configuration	Pos'n
Inlet	6	-	Top
Outlet	4	-	Side

Difuser Body	: Cast Iron, ASTM-A126, CL B
Hardware	: Steel, ASTM A-283C
Internal Magnet	: -
Strainer	: SS 304, ASTM-A240, 3.5MM Holes
Mesh Grid (Startup strainer)	: SS 304, ASTM-A240, (#20 Mesh)
Strainer Cover	: Cast Iron, ASTM-A126, CL B
O Rings	: EPDM
Coating	: Standard Manufacturers Paint
Construction Code/Part Number	: 99329685

Weights (Approx.)

Estimated Shipping gross weight	: 120.0 lb
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Grundfos Suction Diffusers



Description

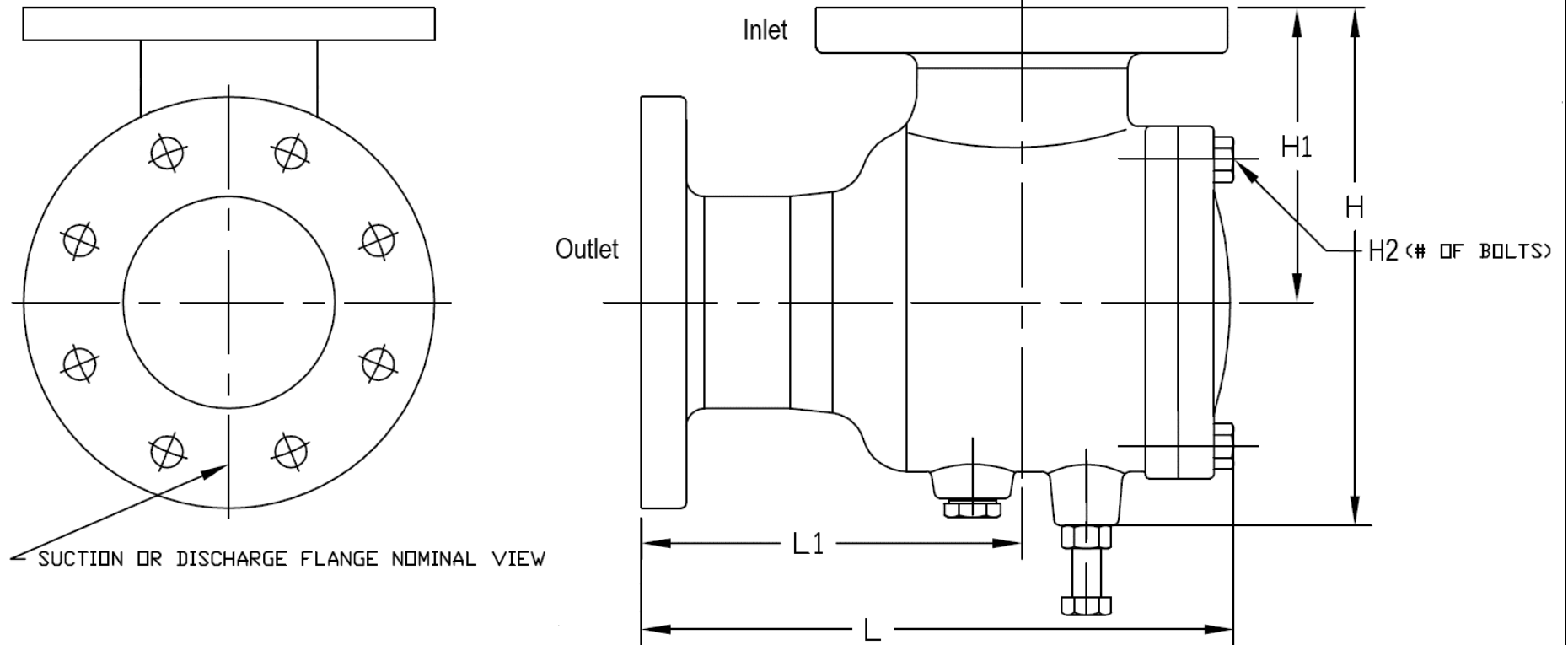
Grundfos Series SD, Suction diffuser provides and ensures a uniform flow pattern to the suction side of the pump ensuring a stable NPSH. Suction diffuser makes it possible to install the pump in a very narrow spacing as no long bends are necessary.

The suction diffuser incorporates a cylindrical strainer preventing impurities from entering the pump. Additional feature includes an adjustable support for mounting.

-

General Arrangement

Project name	: UCA Snow Fine Arts	Tag Number	: Suction Diffuser
Consulting engineer	:	Service	: CW
Customer	:	Model	: SD6040-125
Customer ref. / PO	:	Quantity of pumps	: 2
Quote Number / ID	: 110623	Quoted By (Sales Office)	: FLUID SOLUTIONS INC
Date last saved	: 11/06/2023 2:06 PM	Quoted By (Sales Engineer)	: James Dayer



NOT FOR CONSTRUCTION, UNLESS CERTIFIED AND REFERENCED ON ORDER

Units	Inlet (in)	Outlet (in)	Strainer Area (sq in)	L (in)	L1 (in)	H1 (in)	H (in)	H2 (qty)	Weight (lbs)
inches	6	4	78	15.40	10.10	8.00	13.90	6.00	120

TAG: AS-1

Standard Features

1. Air Vent
2. Flanged Connections
3. Blow Down Valve
4. Skim Valve
5. Removable or Fixed Head
6. ASME Nameplate
7. Sight Glass (4)*
8. Gauge Tap (2)*

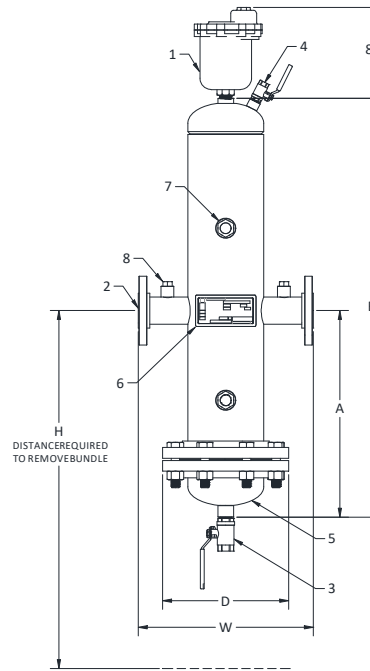
***Less Options:**

- Minus Sight Glass x4
- Minus Gauge Tap x2

MATERIALS OF CONSTRUCTION

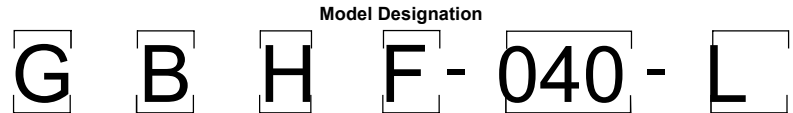
Coalescing Media	Stainless Steel
Shell	Carbon Steel
Blow Down Valve	Bronze
Skim Valve	Bronze
Air Vent	Thrush Model 720

NOTE: IF REQUIRED, THE LOWER HEAD AND COALESCING MEDIA ARE REMOVABLE FOR CLEANING ON THE 'R' TYPE HEAD.



MAXIMUM OPERATING CONDITIONS

Maximum Working Pressure (2"-12")	175 PSIG
Maximum Working Pressure (14"-24")	150 PSIG
Maximum Working Temperature	375° F



Grundfos **Separation Type**
A=Air Only
D=Dirt Only
B=Both Air and Dirt
4=Hydraulic Separator

Velocity
S=Standard Velocity
H=High Velocity

Head Type
R=Removable
F=Fixed

Connection Size
 example: 025 = 2.5" or 100 = 10.0"

Options
W=with options
*X=less options**

DIMENSIONS

MODEL	CONNECTION SIZE**	(INCHES)					FLOW (GPM)	WEIGHT (LBS.) GBHR	WEIGHT (LBS.) GBHF
		A	B	D	W	H			
GBH*-020-*	2"	18.00	36.50	11.00	15.25	44.50	105	125	
GBH*-025-*	2.5"	18.00	36.50	11.00	15.75	44.50	155	125	
GBH*-030-*	3"	18.00	36.50	11.00	20.25	44.50	225	150	
→ GBH*-040-*	4"	21.00	41.00	13.50	20.63	51.00	405	225	
GBH*-050-*	5"	28.00	57.00	16.00	27.75	71.00	630	410	
GBH*-060-*	6"	28.00	59.00	19.00	27.75	71.00	910	460	
GBH*-080-*	8"	37.25	73.50	23.50	33.63	91.50	1610	675	
GBH*-100-*	10"	44.00	87.00	27.50	37.50	110.00	2450	1000	
GBH*-120-*	12"	55.00	114.00	32.00	42.50	145.00	3500	1675	
GBH*-140-*	14"	58.00	118.00	35.00	45.00	143.00	4650	2170	
GBH*-160-*	16"	79.00	166.00	35.00	50.00	212.00	6050	2945	
GBH*-180-*	18"	82.00	169.00	41.62	56.00	213.00	7600	3900	
GBH*-200-*	20"	98.00	205.00	41.62	61.50	265.00	9400	5825	
GBH*-240-*	24"	109.00	222.00	55.00	72.00	284.00	13500	9070	

**ANSI B16.5 150 PSI FLANGE

DESIGNED AND CONSTRUCTED PER ASME SECTION VIII, DIV. 1

Job Name UCA Snow Fine Arts

Location _____

Engineer Pettit & Pettit Engineers

Architect _____

Sales Rep. Fluid Solutions

Contractor Comfort Systems USA

Model Number GBHF-040-L

Temperature _____

Capacity 405 GPM

Liquid _____

Notes _____

TAG: AS-2

Standard Features

1. Air Vent
2. Flanged Connections
3. Blow Down Valve
4. Skim Valve
5. Removable or Fixed Head
6. ASME Nameplate
7. Sight Glass (4)*
8. Gauge Tap (2)*

*Less Options:

- Minus Sight Glass x4
- Minus Gauge Tap x2

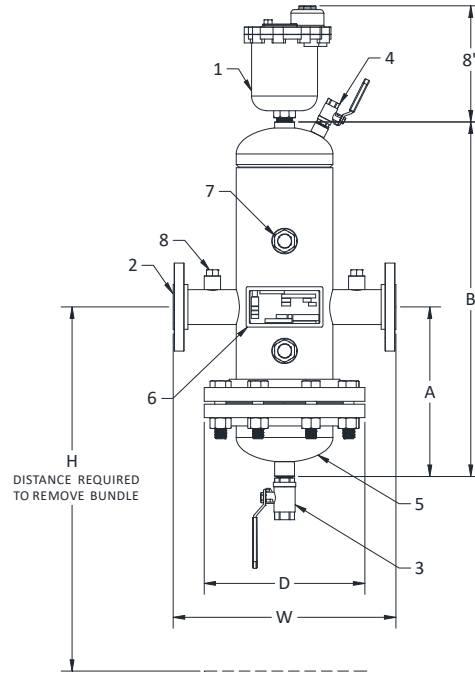
MATERIALS OF CONSTRUCTION

Coalescing Media	Stainless Steel
Shell	Carbon Steel
Blow Down Valve	Bronze
Skim Valve	Bronze
Air Vent	Thrush Model 720

NOTE: IF REQUIRED, THE LOWER HEAD AND COALESCING MEDIA ARE REMOVABLE FOR CLEANING ON THE 'R' TYPE HEAD.

MAXIMUM OPERATING CONDITIONS

Maximum Working Pressure (2"-12")	175 PSIG
Maximum Working Pressure (14"-24")	150 PSIG
Maximum Working Temperature	375° F



Model Designation

G **B** **S** **R** - **060** - **L**

Grundfos

Separation Type

A=Air Only
D=Dirt Only
B=Both Air and Dirt
4=Hydraulic Separator

Velocity

S=Standard Velocity
H=High Velocity

Head Type

R=Removable
F=Fixed

Connection Size

example: 025 = 2.5"
or 100 = 10.0"

Options

W=with options
X=less options*

DIMENSIONS

MODEL	CONNECTION SIZE**	(INCHES)					FLOW (GPM)	WEIGHT (LBS.) GBSR	WEIGHT (LBS.) GBSF
		A	B	D	W	H			
GBS*-020-*	2"	12.00	24.50	11.00	15.25	26.50	65	150	120
GBS*-025-*	2.5"	12.00	24.50	11.00	15.75	26.50	95	150	120
GBS*-030-*	3"	12.00	24.50	11.00	20.25	26.50	150	150	120
GBS*-040-*	4"	15.00	29.00	13.50	20.63	33.00	250	250	200
GBS*-050-*	5"	19.00	39.00	16.00	27.75	44.00	380	310	240
GBS*-060-*	6"	19.00	41.00	19.00	27.75	44.00	560	375	265
GBS*-080-*	8"	24.25	49.50	23.50	33.63	54.50	970	700	530
GBS*-100-*	10"	33.00	63.00	27.50	37.50	75.00	1510	1000	730
GBS*-120-*	12"	38.00	78.00	32.00	42.50	90.00	2130	1500	1110
GBS*-140-*	14"	43.00	94.00	35.00	45.00	104.00	2880	1950	1670
GBS*-160-*	16"	56.00	118.00	35.00	50.00	141.00	3760	2325	2045
GBS*-180-*	18"	55.00	121.00	41.62	56.00	138.00	4760	3250	2800
GBS*-200-*	20"	68.00	145.00	41.62	61.50	175.00	5880	4575	4125
GBS*-240-*	24"	73.00	150.00	55.00	72.00	175.00	8460	7250	6370

**ANSI B16.5 150 PSI FLANGE

DESIGNED AND CONSTRUCTED PER ASME SECTION VIII, DIV. 1

Job Name UCA Snow Fine Arts
 Location _____
 Engineer Pettit & Pettit Engineers
 Architect _____
 Sales Rep. Fluid Solutions
 Contractor Comfort Systems USA

Model Number GBSR-060-L
 Temperature _____
 Capacity 560 GPM
 Liquid _____
 Notes _____



SUBMITTAL

GNLA-SERIES

HVAC EXPANSION TANKS

Models: GNLA-35 to GNLA-800L

Rev: G1 3/25/2020

Job Name	UCA Snow Fine Arts	Submitted By	_____	Date	_____
Location	_____	Approved By	_____	Date	_____
Engineer	Pettit & Pettit Engineers	Order No.	_____	Date	_____
Contractor	Comfort Systems USA	Notes	_____		
Sales Rep.	Fluid Solutions	_____			

Description:

GNLA tanks are ASME removeable bladder type pre-charged HVAC expansion tanks. They are designed to absorb the expansion forces and control the pressure in heating/cooling systems. The system's expanded water (fully compatible with water/glycol mixtures) is contained in a full acceptance heavy-duty butyl bladder that prevents tank corrosion and waterlogging problems. All GNLA expansion tanks can be installed vertically or horizontally.

Construction:

Shell: Carbon Steel
 Heads: Carbon Steel
 Exterior: Carbocoat 140 - Harvester Red
 Interior: Heavy Duty Butyl Bladder

Design Parameters:

Maximum Design Pressure: 125 PSIG*
 Temperature Range: -20°F to 240°F

*150, 200 & 250 PSIG available

Model Number	Part Number	Tank Volume (Gallons)	Tagging Information	Quantity
GNLA-35	99397643	10		
GNLA-50	99397644	13		
GNLA-85	99397645	23		
GNLA-130	99397646	35		
GNLA-200	99397647	53		
GNLA-300	99397648	79		
GNLA-400	99397649	106		
GNLA-500	99397650	132	ET-1	
GNLA-600	99397651	158		
GNLA-800L	99397652	211		

Typical Specification

Furnish and install, as shown on plans, a _____ gallon _____" diameter X _____" (high) pre-charged steel HVAC expansion tank with heavy-duty butyl bladder. The tank shall have multiple water-side connections to eliminate stagnate water within the tank, a 0.302"-32 charging valve connection (standard tire valve) to facilitate the on-site charging of the tank to meet system requirements, a pressure gauge, and bladder integrity monitor. The tank must be constructed in accordance with the most recent addendum of Section VIII Division 1 of the ASME Boiler and Pressure Vessel Code and rated for 125 psig.

Each tank shall be model number GNLA-_____ or approved equal.



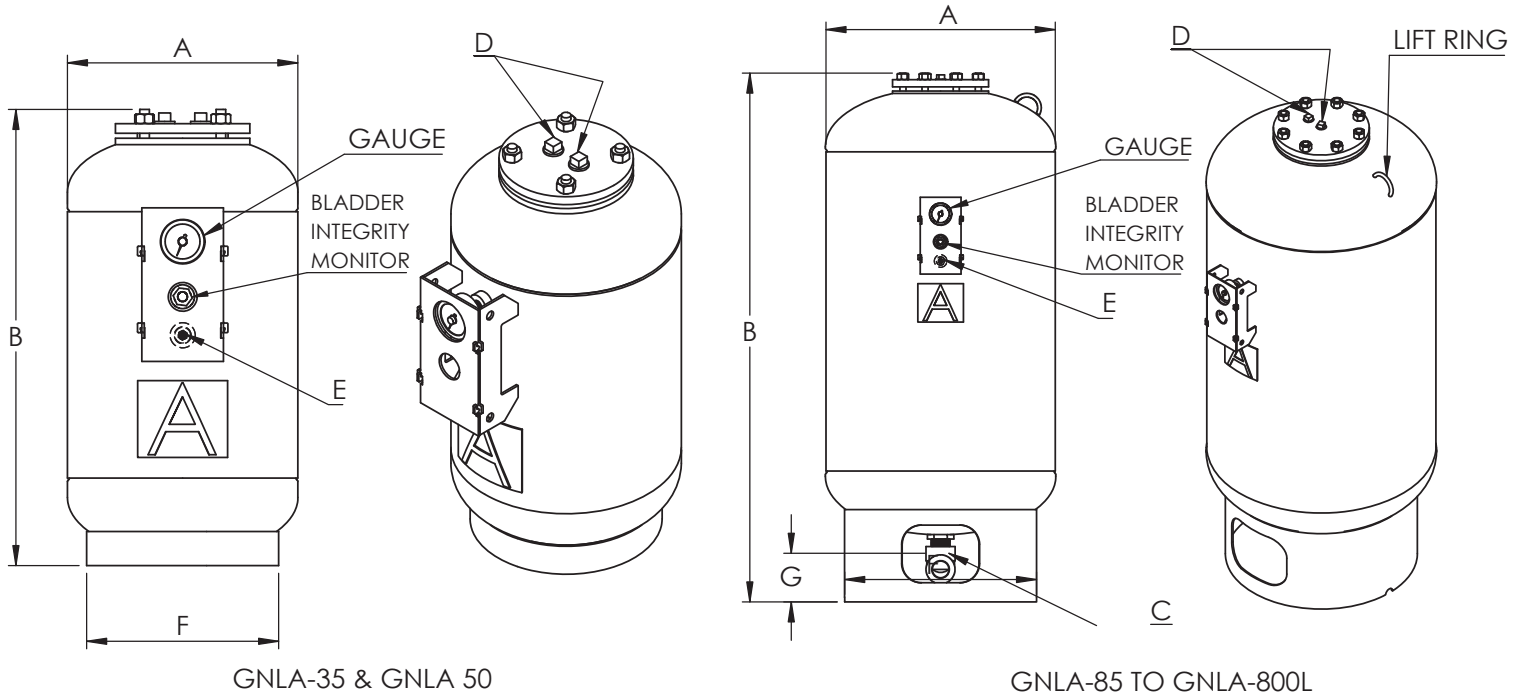
SUBMITTAL

GNLA-SERIES

HVAC EXPANSION TANKS

Models: GNLA-35 to GNLA-800L

Rev: G1 3/25/2020



Dimensions & Weights:

Model Number	Dimensions in Inches						Approx. Shipping Weight (lbs)	
	A	B	System Connection		Charging Valve	F		G
			C	D	E			
GNLA-35	12	23 1/2	-			10	-	40
GNLA-50	14	24				10		50
GNLA-85	16	37	1 NPT	3/4 NPT	0.302"-32NC	12	5 1/2	90
GNLA-130	20					16		125
GNLA-200	24	43	1 1/2 NPT	3/4 NPT	0.302"-32NC	20	5 1/4	210
GNLA-300		55						225
GNLA-400		49						300
GNLA-500	30	57	2 NPT			24		335
GNLA-600		65						360
GNLA-800L	32	76				28		475

Notes:

- Tanks are factory pre-charged at 40 psig and field adjustable.
- California code-sight glass is available upon request.
- Both top and bottom connections (C & D) access the bladder.
- Mounting clips are available upon request.



SUBMITTAL

GNLA-SERIES

HVAC EXPANSION TANKS

Models: GNLA-1000 to GNLA-15000

Rev. G1 3/26/2020

Job Name	UCA Snow Fine Arts	Submitted By	_____	Date	_____
Location	_____	Approved By	_____	Date	_____
Engineer	Pettit & Pettit Engineers	Order No.	_____	Date	_____
Contractor	Comfort Systems USA	Notes	_____		
Sales Rep.	Fluid Solutions	_____			

Description:

GNLA Tanks are ASME removable bladder type pre-charged HVAC expansion tanks. They are designed to absorb the expansion forces and control the pressure in heating/cooling systems. The system's expanded water (fully compatible with water/glycol mixtures) is contained in a full acceptance heavy-duty butyl bladder that prevents tank corrosion and waterlogging problems. All GNLA expansion tanks can be installed vertically or horizontally.

Construction:

Shell: Carbon Steel
 Heads: Carbon Steel
 Exterior: Carbocoat 140 - Harvester Red
 Interior: Heavy Duty Butyl Bladder

Design Parameters:

Maximum Design Pressure: 125 PSIG*
 Temperature Range: -20°F to 240°F

*150 PSIG and up are available

Model Number	Part Number	Tank Volume (Gallons)	Tagging Information	Quantity
GNLA-1000	99397653	264	ET-2	
GNLA-1200	99397654	317		
GNLA-1400	99397655	370		
GNLA-1600	99397656	422		
GNLA-2000	99397657	528		
GNLA-2500	99397658	660		
GNLA-3000L	99397659	792		
GNLA-3000S	99397660	792		
GNLA-4000	99397661	1056		
GNLA-5000	99397662	1320		
GNLA-7500	99397663	1980		
GNLA-10000	99397664	2640		
GNLA-15000	99397665	3963		

Typical Specification

Furnish and install, as shown on plans, a _____ gallon _____" diameter X _____" (high) pre-charged steel HVAC expansion tank with heavy-duty butyl bladder. The tank shall have an NPT water side system connection, a 0.302"-32 charging valve connection (standard fire valve) to facilitate the on-site charging of the tank to meet system requirements, a pressure gauge, and bladder integrity monitor. The tank must be constructed in accordance with the most recent addendum of Section VIII Division 1 of the ASME Boiler and Pressure Vessel Code and rated for 125 psig.

Each tank shall be model number GNLA-_____ or approved equal.

SUBMITTAL

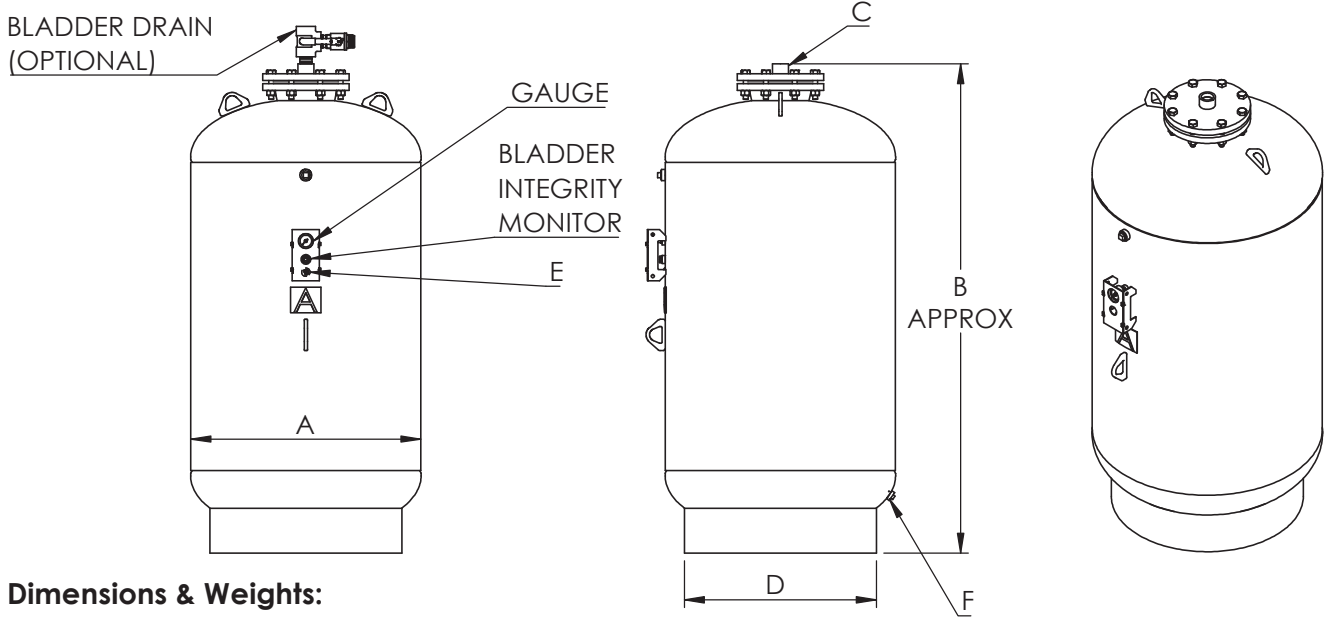


GNLA-SERIES

HVAC EXPANSION TANKS

Models: GNLA-1000 to GNLA-15000

Rev. G1 3/26/2020



Dimensions & Weights:

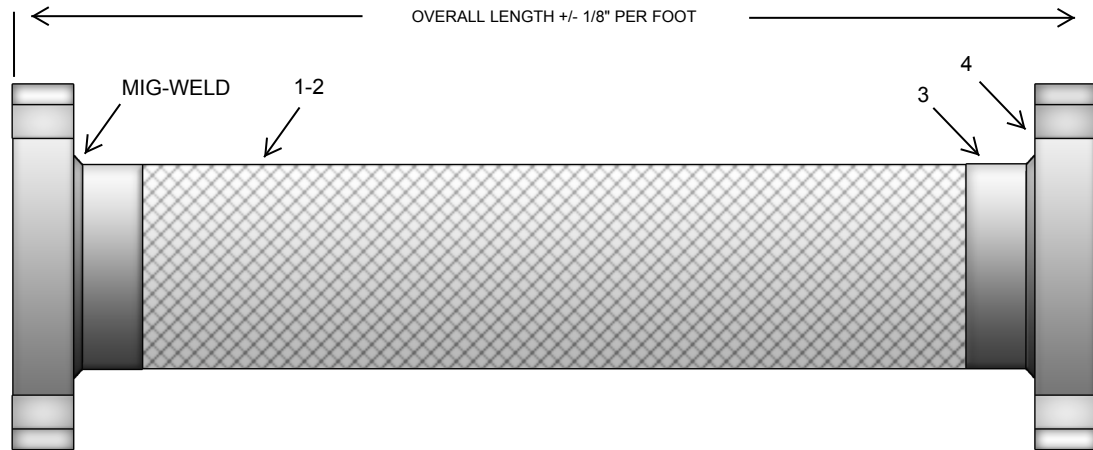
Model Number	Dimensions in Inches						Approx. Shipping Weight (lbs)	
	A	B	System Connection	D	Charging Valve	Plug		
			C		E	F		
→ GNLA-1000	36	76	1 1/2 NPT	30	0.302"-32NC	3/4 NPT	552	
GNLA-1200		88					679	
GNLA-1400		100					688	
GNLA-1600	74	1046						
GNLA-2000	86	1150						
GNLA-2500	104	1444						
GNLA-3000L	48	124	2 NPT	42		3/4 NPT	1658	
GNLA-3000S		83					1868	
GNLA-4000		105					2238	
GNLA-5000	128	2617						
GNLA-7500	60	131	3 NPT	54			1 NPT	3768
GNLA-10000	72	162						4628
GNLA-15000	233	5925						

Notes:

- Tanks are factory pre-charged at 40 psig and field adjustable.
- California code-sight glass is available upon request.
- Mounting clips are available upon request.
- Bladder drain is available upon request.
- Tanks installed horizontally must have the system connection below the horizontal centerline of the tank.
- Plug (F) is on the air side of the tank. Do not remove.

PUMP FLEXIBLE CONNECTORS

TCHS - FLG



MATERIALS

- #1-2 HOSE: T-321 STAINLESS STEEL HOSE 1-LAYER T-304 BRAID
- #3 BRAID BAND: T-304 STAINLESS STEEL
- #4 END FITTING: CARBON STEEL PLATE FLANGES 150# DRILL

QTY	MODEL NUMBER	SIZE	OAL	MAX O.D.	WRK. PSIG	MAX TEST	@ TEMP.	LATERAL OFFSET	WT. LBS.
	TCHS-150-FLG	1 1/2"	9"	1.91"	370	555	70° F	1/16"	7
	TCHS-200-FLG	2"	9"	2.46"	370	555	70° F	1/16"	9
	TCHS-250-FLG	2 1/2"	9"	3.45"	400	600	70° F	1/16"	12
	TCHS-300-FLG	3"	9"	4.01"	288	431	70° F	1/16"	13
	TCHS-400-FLG	4"	9"	5.03"	250	375	70° F	1/16"	18
	TCHS-500-FLG	5"	11"	6.10"	200	300	70° F	1/16"	25
	TCHS-600-FLG	6"	11"	7.15"	220	330	70° F	1/16"	28
	TCHS-800-FLG	8"	12"	9.44"	215	323	70° F	1/16"	52
	TCHS-1000-FLG	10"	13"	11.49"	200	350	70° F	1/16"	65
	TCHS-1200-FLG	12"	14"	13.51"	160	240	70° F	1/16"	105
	TCHS-1400-FLG	14"	14"	15.67"	150	225	70° F	1/16"	115
	TCHS-1600-FLG	16"	14"	17.31"	110	165	70° F	1/16"	235

TEMPERATURE DERATING FACTORS: MULTIPLY X WRK. PSIG

200° F	250° F	300° F	350° F	400° F	500° F	600° F	700° F
0.94	0.92	0.88	0.86	0.83	0.78	0.74	0.7

DRAWN BY:

DRAWING NUMBER:

REV:

SIGNATURE:

DATE:

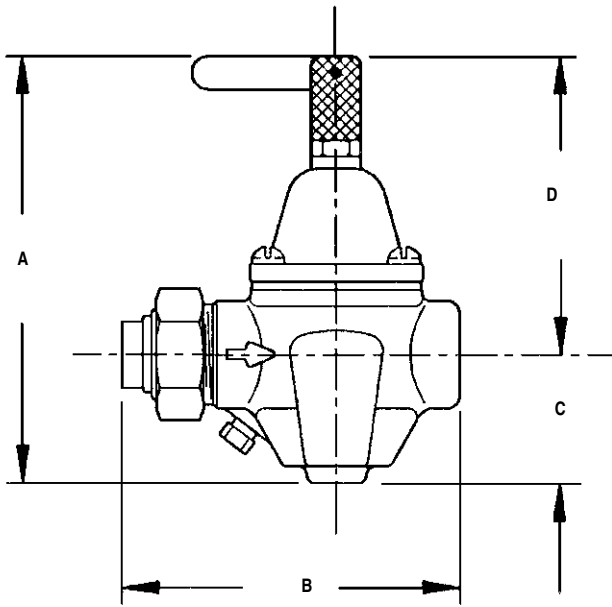
PO NUMBER:

PROJECT:

CUSTOMER:

NOTES:

Water Pressure Reducing Valve



Model WPR0050

Features:

- Reduces city water pressure to desired system pressure
- Automatically feeds water when pressure in a system drops below the setting of the valve
- Brass or bronze 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 operating temperature of 180°F

Dimensions:

Model	Material	Size	A	B	C	D	Wt. (lbs.)
WPR0050	Bronze	1/2" NPT	5.40	4.31	1.05	4.35	2.5
WPR0075	Bronze	3/4" NPTF	5.40	4.47	1.05	4.35	2.5
WPR0110	Bronze	1" NPTF	5.40	5.17	1.05	4.35	2.5

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

JOB NAME _____
 LOCATION _____

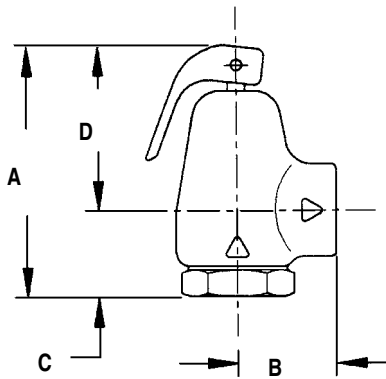
 CONTRACTOR _____
 CONTRACTOR P.O. NO. _____

ITEMS	QUANTITY
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____



1005 E. Houston
 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

ASME Relief Valve



Features:

- Relieves pressure in hot water heating systems
- Eight available pressure settings as listed below. Please specify with order.
- Test lever standard on all models
- ASME listed, rated and stamped
- Bronze body, heat resistant silicone seat disc, stainless steel springs and NPT end connections

ASME Relief Capacities at Standard Settings—BTU/hr. Steam Relief

Setting	3/4"	1"	1 1/4"	1 1/2"	2"
30 PSI	717,400	1,025,000	1,704,000	2,085,000	3,902,000
35 PSI	800,100	1,143,000	1,900,000	2,325,000	4,352,000
45 PSI	965,600	1,380,000	2,293,000	2,806,000	5,252,000
50 PSI	1,048,300	1,498,000	2,490,000	3,047,000	5,701,000
75 PSI	1,461,900	2,090,000	3,472,000	4,249,000	7,951,000
100 PSI	1,875,500	2,680,000	4,454,000	5,451,000	10,200,000
125 PSI	2,289,100	3,271,000	5,437,000	6,653,000	12,450,000
150 PSI	2,702,700	3,862,000	6,419,000	7,855,000	14,700,000

Dimensional Data:

Model	Size	A	B	C	D	Weight (lbs.)
RV0075	3/4"	5"	1 1/2"	1 3/4"	3 1/4"	1.25
RV0100	1"	5 9/16"	1 5/8"	1 1/8"	4 7/16"	2.25
RV0125	1 1/4"	7 3/8"	2 1/16"	1 1/2"	5 7/8"	3.25
RV0150	1 1/2"	7 1/2"	2 15/32"	1 5/8"	5 7/8"	4.37
RV0200	2"	9 7/8"	3"	2 7/8"	7"	9.00

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
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____



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