

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: 10/10/2023
Return Request: 10/16/2023
Project: ASU Mid-South RC & UC Chiller Replacement
Supplier: Fluid Solutions
Manufacturer: Various
Submittal: Pumps
Submittal Number: 23 00 00-01
Drawing # and Installation: Mechanical Drawings

ARCHITECT

Witsell Evans Rasco
901 W. Third Street
Little Rock, AR 72201
501-374-5300

ENGINEER

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

GENERAL CONTRACTOR

Baldwin & Shell
3725 Champion Hills Driver, Suite 1300
Memphis, TN 38125
901-755-2952

MECHANICAL SUBCONTRACTOR

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

Notes:

CSUSA PROJECT NO.

23-1024

jon@comfortar.com



SUBMITTAL DATA

Date: August 31, 2023
Project: ASU Midsouth
Contractor: Comfort Systems
Engineer: Pettit & Pettit

PUMPS & ACCESSORIES

Tags: P-1 & 2

Grundfos close coupled pumps complete with bronze impellers, wear rings, mechanical seals, and premium efficient motors.

(2) new 4x3 suction diffusers

(4) new 4" flex connectors

6815 Dewaffelbaker Dr., Maumelle, AR 72113

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

www.fluidsolutionsinc.com

Pump Performance Datasheet

Customer :	Quote Number / ID :	083123
Customer ref. / PO :	Model :	25957 LC
Tag Number : P-1 & 2	Stages :	1
Service : Chilled Water	Based on curve number :	RC9867-1-SS Rev 0
Quantity : 2	Basic model number :	-
	Date last saved :	08/31/2023 1:52 PM

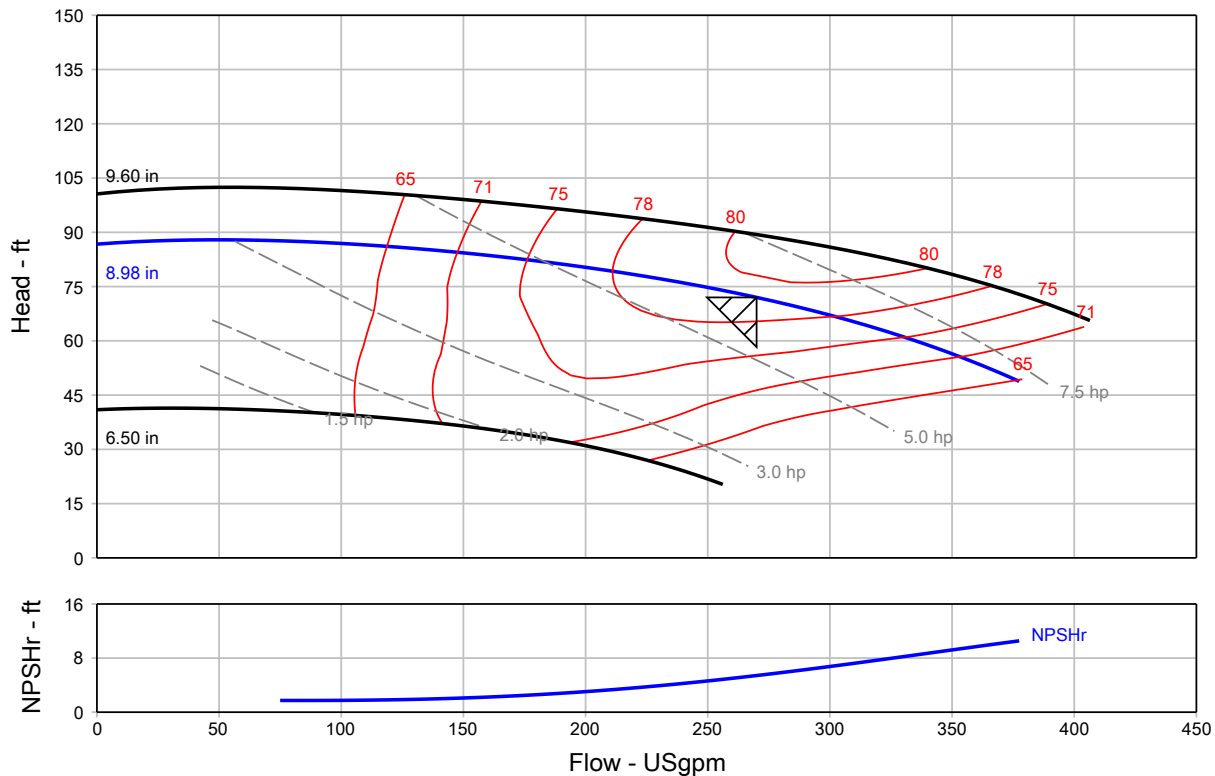
Operating Conditions	Liquid
Flow, rated : 270.0 USgpm	Liquid type : Cold Water
Differential head / pressure, rated (requested) : 72.00 ft	Additional liquid description :
Differential head / pressure, rated (actual) : 72.20 ft	Solids diameter, max : 0.00 in
Suction pressure, rated / max : 0.00 / 0.00 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 : 1775 rpm	Material selected : Cast iron
Impeller diameter, rated : 8.98 in	
Impeller diameter, maximum : 9.60 in	
Impeller diameter, minimum : 6.50 in	
Efficiency : 79.37 %	
NPSH required / margin required : 5.42 / 0.00 ft	
nq (imp. eye flow) / S (imp. eye flow) : 21 / 140 Metric units	
MCSF : 69.94 USgpm	
Head, maximum, rated diameter : 87.92 ft	
Head rise to shutoff : 20.45 %	
Flow, best eff. point : 258.6 USgpm	
Flow ratio, rated / BEP : 104.40 %	
Diameter ratio (rated / max) : 93.54 %	
Head ratio (rated dia / max dia) : 80.56 %	
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 : 38.05 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 : 4.91 hp
Rated power (based on duty point) : 6.18 hp
Max power (non-overloading) : 7.19 hp
Nameplate motor rating : 7.50 hp / 5.59 kW

Energy Indexes
PEI (CL) : 0.92
ER (CL) : 8

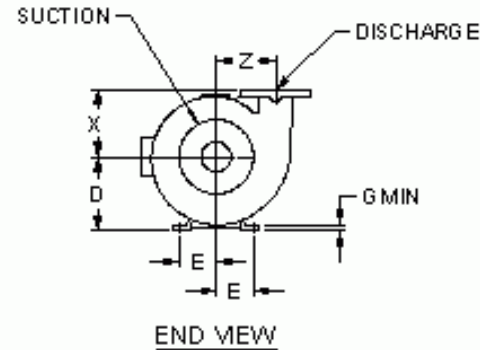
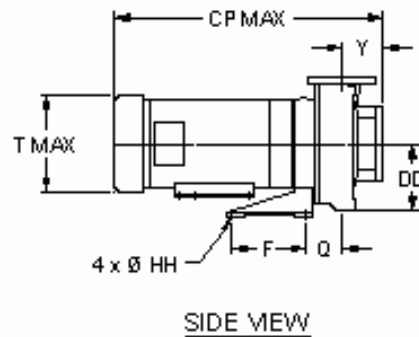
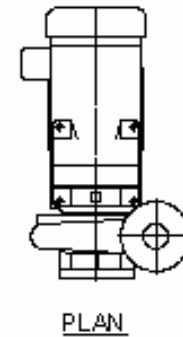


Construction Datasheet

Project name	: ASU Mldsouth	Tag Number	: P-1 & 2
Consulting engineer	:	Service	: Chilled Water
Customer	: FLUID SOLUTIONS INC	Model	: 25957 LC
Customer ref. / PO	:	Quantity	: 2
Quote Number / ID	: 083123	Quoted By (Sales Office)	: FLUID SOLUTIONS INC
Date last saved	: 08/31/2023 1:52 PM	Quoted By (Sales Engineer)	: James Dayer
Construction		Motor Information	
Nozzle	Size (in.)	Nozzle Configuration	Pos'n
Suction	3	125# ANSI	End
Discharge	2.5	125# ANSI	Top
Orientation / Configuration	: Horizontal	Manufacturer	: Baldor
Rotation	: Clockwise	Frame Size	: 213JM
Wear Ring Configuration	: Single - Case	Power	: 7.50 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	: -	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	: 10-25957-130008-1742P	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	: -	Impeller wear ring	: -
Guard	: Not Applicable	Pump Shaft	: Steel, AISI-1040
Seal & Packing Construction		Sleeve	: Bronze, III932, C89835
Sealing Method	: Single Seal, Type 21S	Line Shaft	: -
Seal Material	: Buna Carbon Ceramic SS-Spring and Hardware	Column	: -
Packing Gland	: -	Discharge Pipe	: -
Lantern Ring	: -	Discharge Elbow	: -
Recirculation Lines	: None	Suction Elbow	: -
Weights (Approx.)		Subplate	: -
Pump	: 95.00 lb	Hardware	: Steel, Grade 5
Baseplate	: -	O Rings	: Buna N
Driver	: 123.0 lb	Pump Coatings	: Standard Manufacturer's Paint
Estimated Shipping gross weight	: 218.0 lb		

General Arrangement

Project name	: ASU Mldsouth	Tag Number	: P-1 & 2
Consulting engineer	:	Service	: Chilled Water
Customer	:	Model	: 25957 LC
Customer ref. / PO	:	Quantity of pumps	: 2
Quote Number / ID	: 083123	Quoted By (Sales Office)	: FLUID SOLUTIONS INC
Date last saved	: 08/31/2023 1:52 PM	Quoted By (Sales Engineer)	: James Dayer



NOT FOR CONSTRUCTION, UNLESS CERTIFIED AND REFERENCED ON ORDER

Units	Frame	Suct(in)	Disch(in)	CP	D	DD	E	F	G	HH	Q	T	X	Y	Z	Weight ea
inches	213JM	3	2.5	26.00	7.50	6.75	3.75	7.50	0.63	0.44	3.50	9.56	6.75	4.13	6.00	218.0
Conditions of Service				Motor Data												
Flow: 270.0 USgpm	Fluid: Cold Water	HP: 7.5	Encl: ODP	Phase: 3	Efficiency: Premium											
TDH: 72.00 ft	Temp.: 68.00 deg F	RPM: 1775 rpm	Hz: 60	Voltage: 230/460	S.F.: 1.15											

Project name	: ASU Mldsouth	Tag Number	: P-1 & 2
Consulting engineer	:	Service	: Suction Diffusers
Customer	: FLUID SOLUTIONS INC	Model	: SD4030-125
Customer ref. / PO	:	Quantity	: 2
Quote Number / ID	: 083123	Quoted By (Sales Office)	: FLUID SOLUTIONS INC
Date last saved	: 08/31/2023 1:51 PM	Quoted By (Sales Engineer)	: James Dayer

Construction

Nozzle	Size (in.)	Nozzle Configuration	Pos'n
Inlet	4	-	Top
Outlet	3	-	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	: 97523151

Weights (Approx.)

Estimated Shipping gross weight	: 60.00 lb
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Grundfos Suction Diffusers



Description

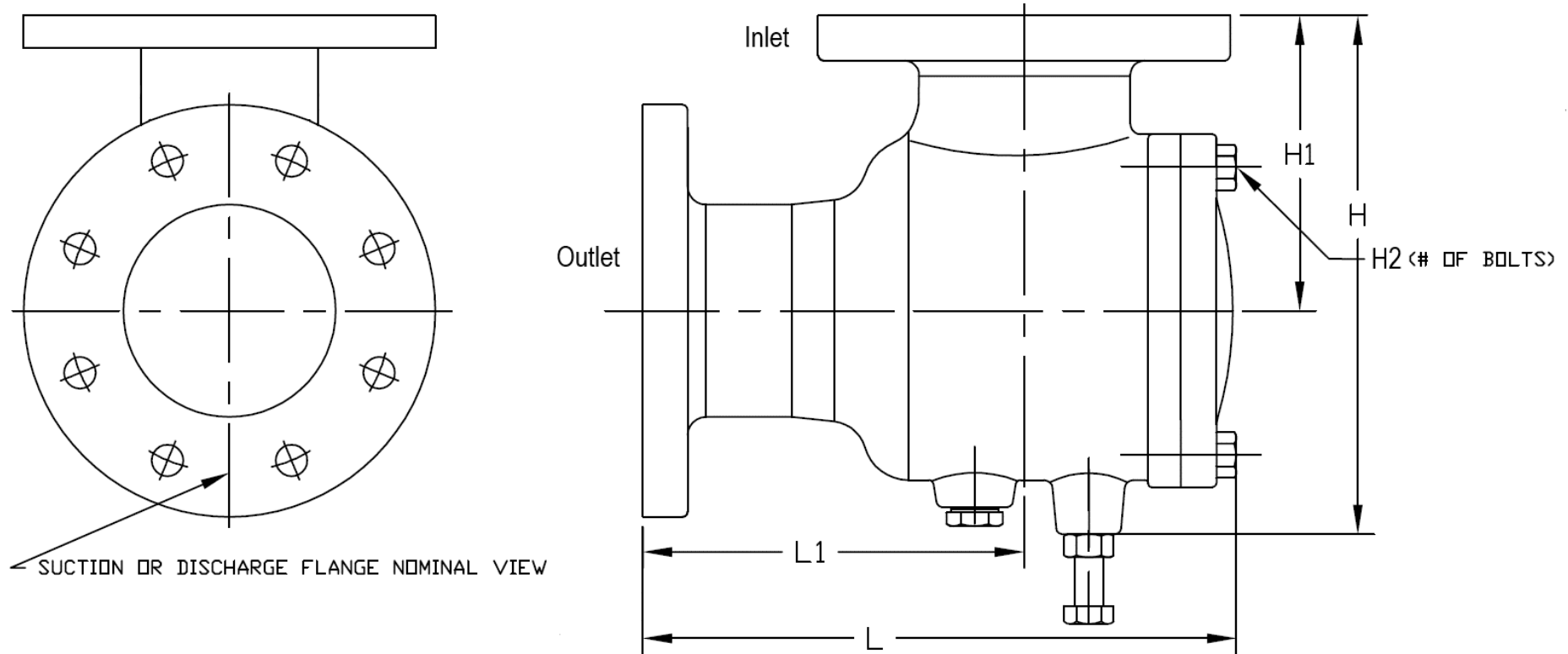
Grundfos Series SD, Suction diffuser provides and ensures a uniform flow pattern to the suction side of the pump ensuring a stable NPSH. Suction diffuser makes it possible to install the pump in a very narrow spacing as no long bends are necessary.

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

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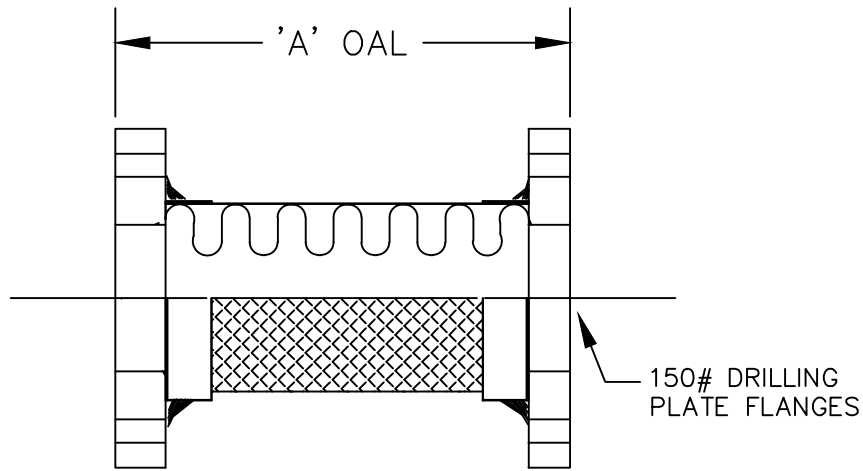
General Arrangement

Project name	: ASU Mldsouth	Tag Number	: P-1 & 2
Consulting engineer	:	Service	: Suction Diffusers
Customer	:	Model	: SD4030-125
Customer ref. / PO	:	Quantity of pumps	: 2
Quote Number / ID	: 083123	Quoted By (Sales Office)	: FLUID SOLUTIONS INC
Date last saved	: 08/31/2023 1:51 PM	Quoted By (Sales Engineer)	: James Dayer



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Units	Inlet (in)	Outlet (in)	Strainer Area (sq in)	L (in)	L1 (in)	H1 (in)	H (in)	H2 (qty)	Weight (lbs)
inches	4	3	50	12.90	8.30	6.50	11.40	6.00	60



BILL OF MATERIAL:

HOSE: T-321 STN STL
 BRAID: T-304 STN STL
 FLANGE: CARBON STEEL

MAXIMUM LATERAL DEFLECTION = 1/8"

FOR TEMP. ABOVE 70°F	
TEMP. F	FACTOR
70	1.00
200	0.94
300	0.88
400	0.83
500	0.78
600	0.74

TAG #	Qty/ LOCATION	HOSE DIA[IN]	KEFLEX PART #	PRES @ 70°F	'A' OAL
		2"	F020SKSSPCF	400	9"
		2 1/2"	F024SKSSPC	320	9"
		3"	F030SKSSPC	310	9"
P-1 & 2	6	4"	F040SKSSPC	250	9"
		5"	F050SKSSPC	185	11"
		6"	F060SKSSPC	165	11"
		8"	F080SKSSPC	150	12"
		10"	F100SKSSPC	150	13"
		12"	F120SKSSPC	120	14"

NOTE: FOR SAFE WORKING PRESSURE MULTIPLY PRESSURE RATING AT 70 F° BY THE APPLICABLE CORRECTION FACTOR.

CUSTOMER: CSUSA
 PROJECT : ASU MidSouth
 ENGINEER: Pettit & Pettit
 ARCHITECT: _____

DRAWN	DG	KEFLEX PRODUCTS 1425 LAKE AVENUE WOODSTOCK, ILLINOIS 60098			
DATE	12 NOV 01				
CHECKED		TITLE SILVER SERIES – STAINLESS STEEL PUMP CONNECTOR 150# PLATE FLANGES			
APPROVED	DG	SIZE	FSCM NO.	DWG NO.	REV
QC		A	87738	SUBMITTAL DRAWING	—
FILE	SUBSFLG4.DWG	SCALE NONE		SHEET 1 OF 1	
JOB	SUBMITTAL				