

## Pump Performance Datasheet

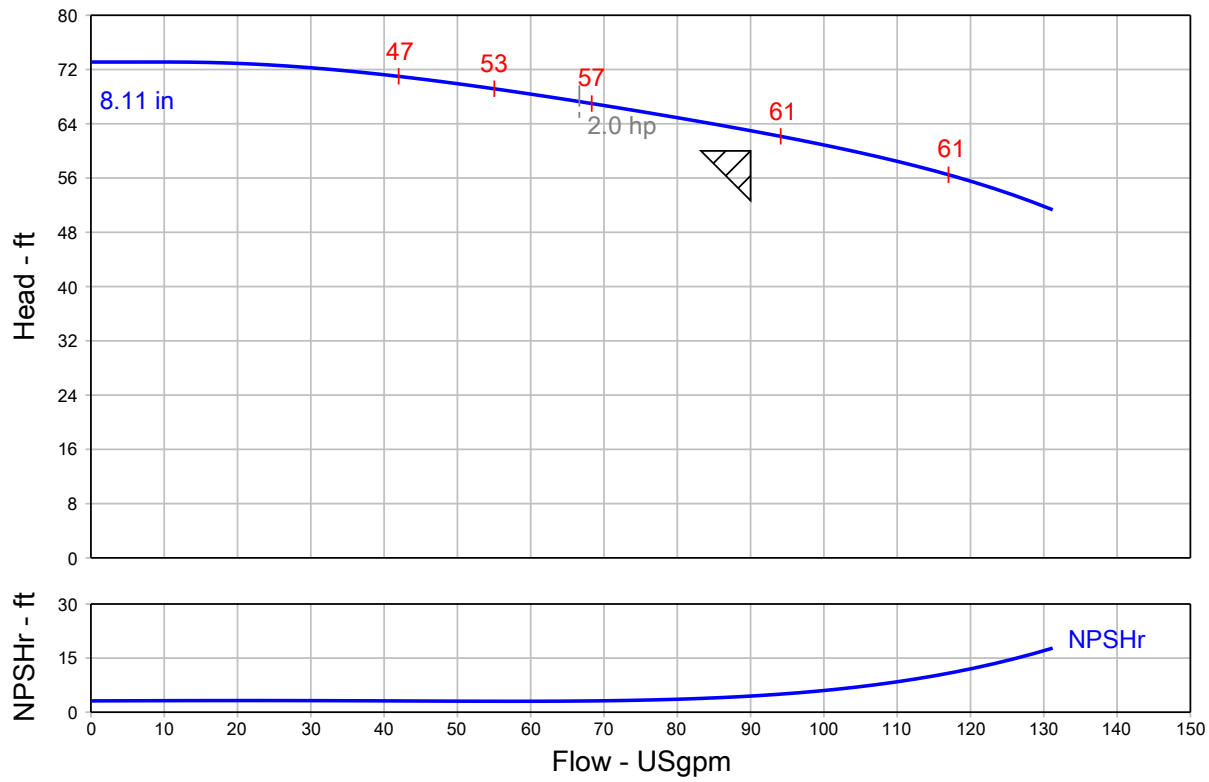
Customer :	Quote Number / ID :	2204586
Customer ref. / PO :	Model :	NBS 015-090-4P
Tag Number : P-7	Stages :	1
Service :	Based on curve number :	015-090-4P-206_Std
Quantity : 1	Basic model number :	-
	Date last saved :	03/20/2024 2:21 PM

Operating Conditions		Liquid	
Flow, rated	: 90.00 USgpm	Liquid type	: Cold Water
Differential head / pressure, rated (requested)	: 60.00 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 62.98 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

Performance		Material	
Speed, rated	: 1765 rpm	Material selected	: Cast iron / 125 Class
Impeller diameter, rated	: 8.11 in		
Impeller diameter, maximum	: 8.11 in		
Impeller diameter, minimum	: 8.11 in		

Performance		Pressure Data	
Efficiency	: 60.63 %	Maximum working pressure	: 31.64 psi.g
NPSH required / margin required	: 4.46 / 0.00 ft	Maximum allowable working pressure	: 175.0 psi.g
Ns (imp. eye flow) / Nss (imp. eye flow)	: 849 / 4,071 US Units	Maximum allowable suction pressure	: 130.0 psi.g
MCSF	: 10.84 USgpm	Hydrostatic test pressure	: 263.0 psi.g
Head, maximum, rated diameter	: 73.10 ft		
Head rise to shutoff	: 16.07 %		
Flow, best eff. point	: 106.1 USgpm		
Flow ratio, rated / BEP	: 84.81 %		
Diameter ratio (rated / max)	: 100.00 %		
Head ratio (rated dia / max dia)	: 100.00 %		
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00		
Selection status	: Acceptable		

Energy Indexes		Driver & Power Data (@Max density)	
PEI (CL)	: 0.83	Motor sizing specification	: Max power (non-overloading)
ER (CL)	: 17	Margin over specification	: 0.00 %
		Service factor	: 1.15 (used)
		Power, hydraulic	: 1.43 hp
		Rated power (based on duty point)	: 2.36 hp
		Max power (non-overloading)	: 2.91 hp
		Nameplate motor rating	: 3.00 hp / 2.24 kW



### Construction Datasheet

Project name	Boiling Springs Middle	Tag Number	P-7
Consulting engineer		Service	
Customer		Model	NBS 015-090-4P
Customer ref. / PO		Quantity	1
Quote Number / ID	2204586	Quoted By (Sales Office)	Thermal Resource Sales
Date last saved	03/20/2024 2:21 PM	Quoted By (Sales Engineer)	Christina Dusinberre

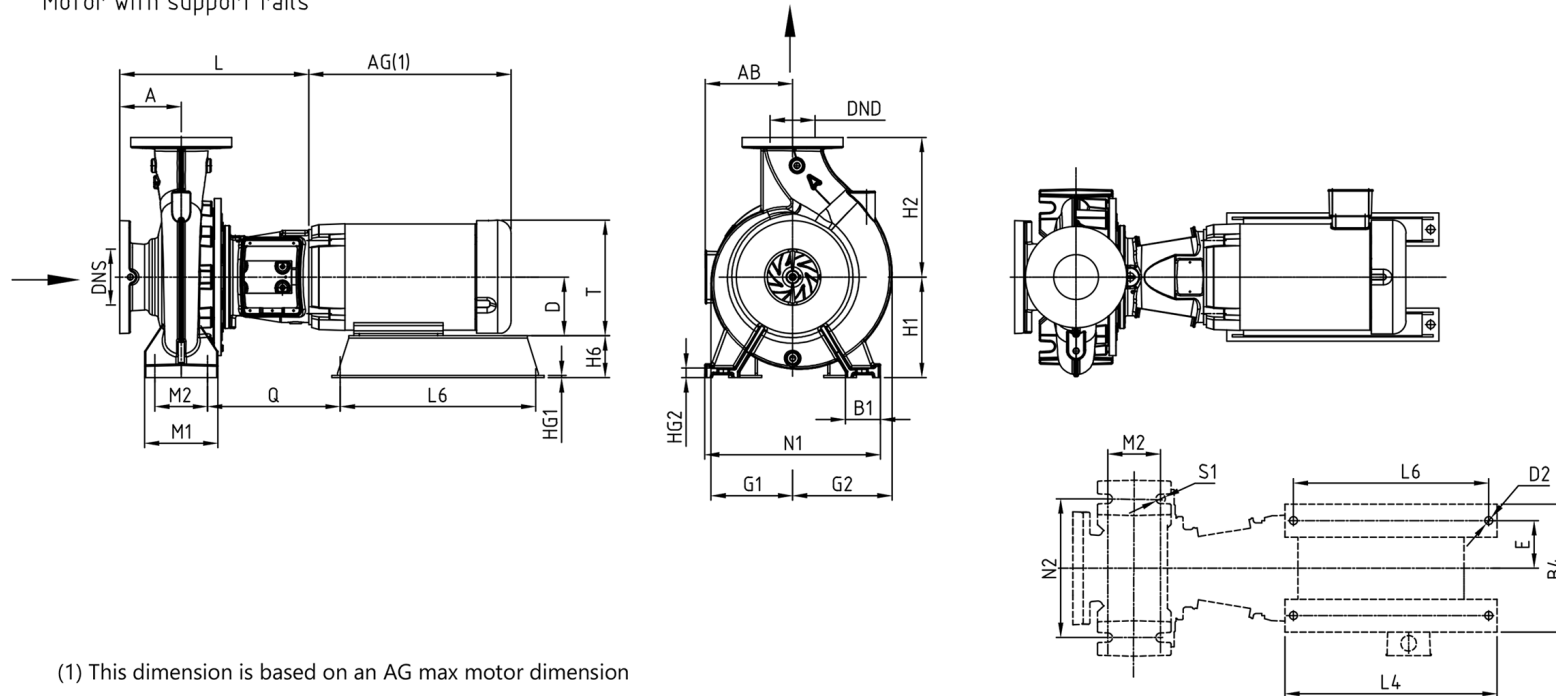
#### Construction Code : NBS 015-090/8.11AASG6S2ESBQQEIX4

Construction		Motor Information	
Product Family	NBS_Fixed_Trim	Manufacturer	Baldor
Suction Size	2.5 in.	Frame Size	182TC
Discharge Size	1.5 in.	Power	3 HP
Flange Rating	Class 125	RPM	1800
Orientation	Horizontal	Enclosure	ODP
Rotation	Clockwise	Operating Power Supply	230/460/3/60
Pump Housing	Cast Iron, ASTM A48 - Class 35	Efficiency	Premium
O-Ring	EPDM	Service Factor	1.15
Plug	Galvanized	Motor Application	General Purpose
		Weight (Approx.)	
Impeller	Stainless Steel, AISI-304 / EN 1.430	Pump	195.0 lb
Impeller Nut	Stainless Steel, AISI-304	Support Rail	16.00 lb
Shaft	Stainless Steel, AISI 420	Base Plate	-
Cover	Ductile Cast Iron, ASTM 70-50-05	Driver	97.00 lb
Seal Type	Rubber bellows seal	Estimated Shipping Gross Weight	308.0 lb
Shaft Seal	BQQE - Silicon carbide / Silicon carbide / EPDM		
Seal Cap	Ductile Cast Iron, ASTM 70-50-05		
Motor Stool	Gray Cast Iron, ASTM Class 30		
Recirculation Line	None		
Coupling	Rigid, Axial Split Coupling (aluminum)		
Support Rail	Support Rail		

## General Arrangement

Project name	: Boiling Springs Middle	Tag Number	: P-7
Consulting engineer	:	Service	:
Customer	:	Model	: NBS 015-090-4P
Customer ref. / PO	:	Quantity of pumps	: 1
Quote Number / ID	: 2204586	Quoted By (Sales Office)	: Thermal Resource Sales
Date last saved	: 03/20/2024 2:21 PM	Quoted By (Sales Engineer)	: Christina Dusinberre

Mounting design B  
Centre-line outlet  
Motor with support rails



**NOT FOR CONSTRUCTION, UNLESS CERTIFIED AND REFERENCED ON ORDER**

Units	Frame	DNS	DND	Class	A	AB	AG	B1	B4	D	D2	E	G1	G2	H1	H2	H6	HG1	HG2	L	L4	L6	M1	M2	N1	N2	Q	S1	T	Weight
inches	182TC	2.5	1.5	125	4.00	5.88	15.63	2.56	10.45	4.50	0.69	3.75	5.71	6.22	7.00	9.00	2.50	0.20	0.67	15.52	14.66	13.16	4.92	3.74	12.60	9.84	10.81	0.67	8.69	308.0
Conditions of Service												Motor Data																		
Flow: 90.00 USgpm				Fluid: Cold Water				HP: 3				Encl: ODP				Phase: 3				Efficiency: Premium										
TDH: 60.00 ft				Temp.: 68.00 deg F				RPM: 1765 rpm				Hz: 60				Voltage: 230/460				S.F.: 1.15										

Project name	: Boiling Springs Middle	Tag Number	: 002
Consulting engineer	:	Service	:
Customer	: Thermal Resource Sales Inc	Model	: CV25-125
Customer ref. / PO	:	Quantity	: 1
Quote Number / ID	: 2204586	Quoted By (Sales Office)	: Thermal Resource Sales
Date last saved	: 03/20/2024 2:22 PM	Quoted By (Sales Engineer)	: Christina Dusinberre

**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**

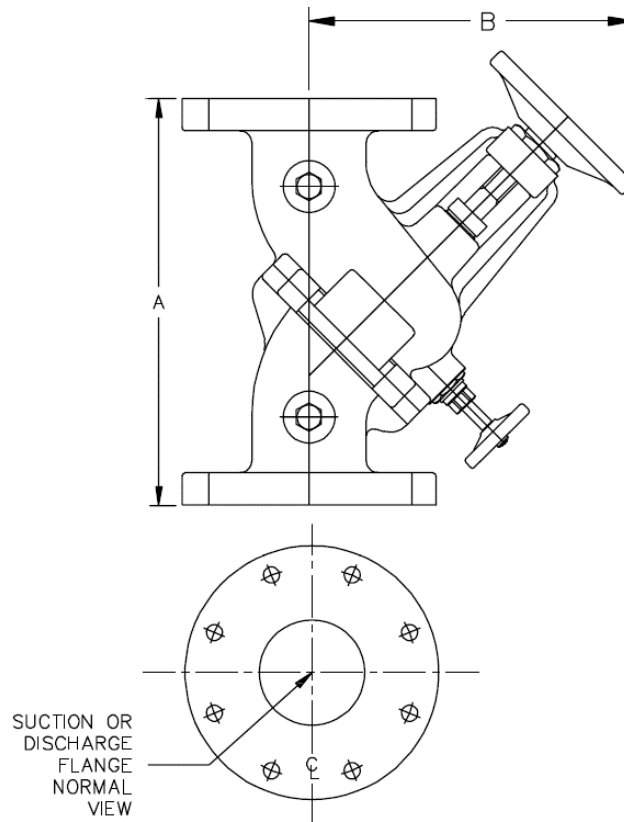
Grundfos Series CV, Combination valve combines three valves in one: shut-off valve, balancing valve, and check valve. The combination valve makes it possible to reduce the overall system pressure drop since fewer individual components are needed when installing a pump.

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	: Boiling Springs Middle	Tag Number	: 002
Consulting engineer	:	Service	:
Customer	:	Model	: CV25-125
Customer ref. / PO	:	Quantity of pumps	: 1
Quote Number / ID	: 2204586	Quoted By (Sales Office)	: Thermal Resource Sales
Date last saved	: 03/20/2024 2:22 PM	Quoted By (Sales Engineer)	: Christina Dusinberre



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Units	Inlet (in)	Outlet (in)	A (in)	B (in)	Weight (lbs)
<b>inches</b>	<b>2.5</b>	<b>2.5</b>	<b>11.02</b>	<b>8.82</b>	<b>42.00</b>

Project name	: Boiling Springs Middle	Tag Number	: 003
Consulting engineer	:	Service	:
Customer	: Thermal Resource Sales Inc	Model	: SD2525-125
Customer ref. / PO	:	Quantity	: 1
Quote Number / ID	: 2204586	Quoted By (Sales Office)	: Thermal Resource Sales
Date last saved	: 03/20/2024 2:23 PM	Quoted By (Sales Engineer)	: Christina Dusingberre

**Construction**

Nozzle	Size (in.)	Nozzle Configuration	Pos'n
Inlet	2.5	-	Top
Outlet	2.5	-	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	: 97523148

**Weights (Approx.)**

Estimated Shipping gross weight	: 34.00 lb
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**Grundfos Suction Diffusers**



**Description**

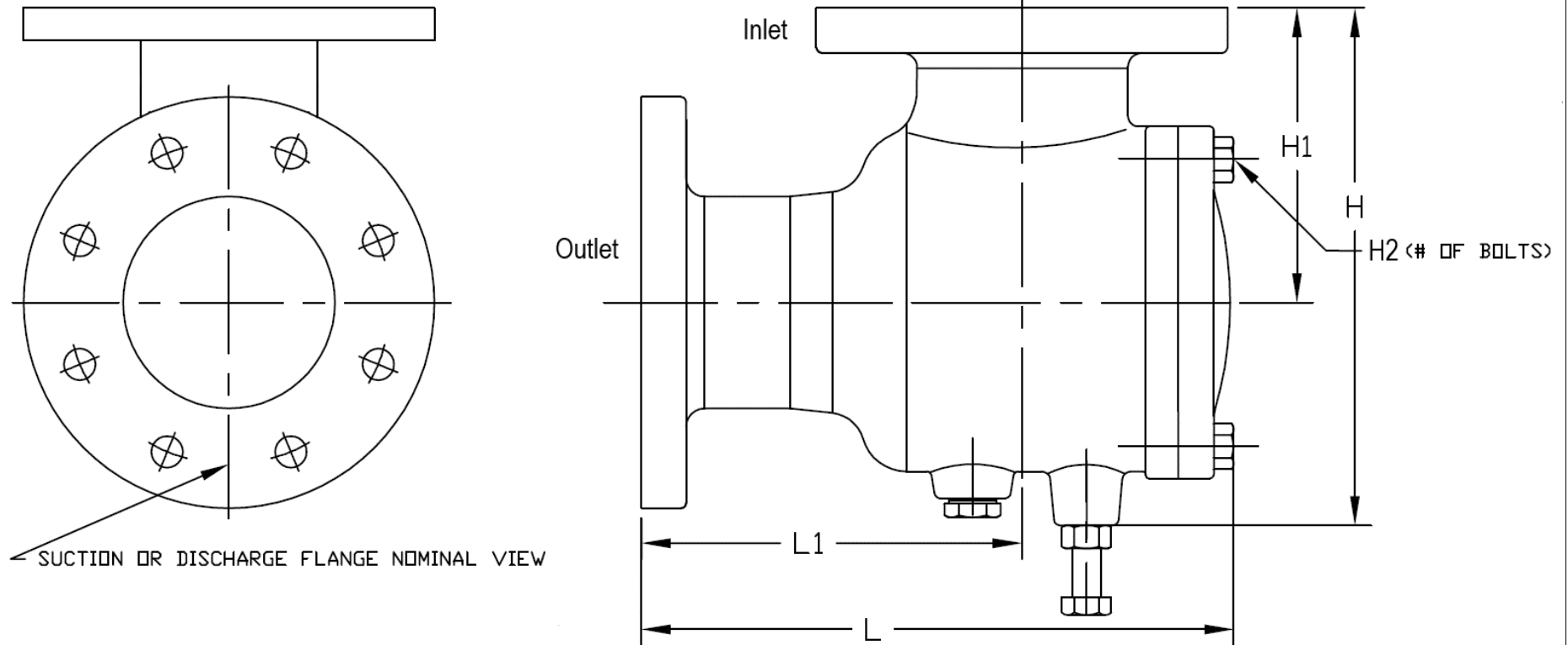
Grundfos Series SD, Suction diffuser provides and ensures a uniform flow pattern to the suction side of the pump ensuring a stable NPSH. Suction diffuser makes it possible to install the pump in a very narrow spacing as no long bends are necessary.

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	: Boiling Springs Middle	Tag Number	: 003
Consulting engineer	:	Service	:
Customer	:	Model	: SD2525-125
Customer ref. / PO	:	Quantity of pumps	: 1
Quote Number / ID	: 2204586	Quoted By (Sales Office)	: Thermal Resource Sales
Date last saved	: 03/20/2024 2:23 PM	Quoted By (Sales Engineer)	: Christina Dusinberre



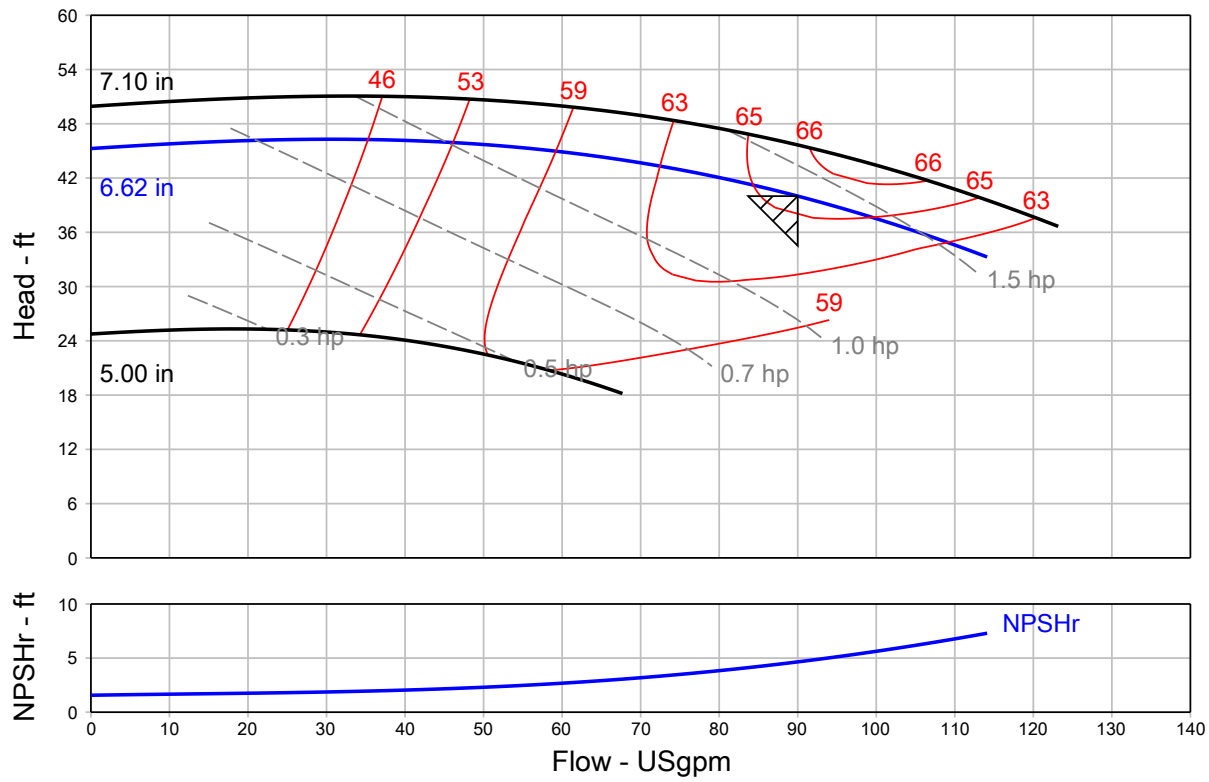
**NOT FOR CONSTRUCTION, UNLESS CERTIFIED AND REFERENCED ON ORDER**

Units	Inlet (in)	Outlet (in)	Strainer Area (sq in)	L (in)	L1 (in)	H1 (in)	H (in)	H2 (qty)	Weight (lbs)
inches	2.5	2.5	40	9.70	6.00	5.00	8.60	4.00	34

## Pump Performance Datasheet

Customer :		Quote Number / ID :	2204586
Customer ref. / PO :	<b>Gym</b>	Model :	20705 VL
Tag Number :	P-9	Stages :	1
Service :		Based on curve number :	VL_20705_4P Rev Aug21
Quantity :	1	Basic model number :	-
		Date last saved :	03/20/2024 2:25 PM

Operating Conditions		Liquid	
Flow, rated	: 90.00 USgpm	Liquid type	: Cold Water
Differential head / pressure, rated (requested)	: 40.00 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 40.06 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	: 1730 rpm	Material selected	: Cast iron - 125#
Impeller diameter, rated	: 6.62 in	Pressure Data	
Impeller diameter, maximum	: 7.10 in	Maximum working pressure	: 20.03 psi.g
Impeller diameter, minimum	: 5.00 in	Maximum allowable working pressure	: 175.0 psi.g
Efficiency	: 65.38 %	Maximum allowable suction pressure	: 175.0 psi.g
NPSH required / margin required	: 4.65 / 0.00 ft	Hydrostatic test pressure	: 263.0 psi.g
Ns (imp. eye flow) / Nss (imp. eye flow)	: 1,017 / 4,764 US Units	Driver & Power Data (@Max density)	
MCSF	: 26.49 USgpm	Motor sizing specification	: Max power (non-overloading)
Head, maximum, rated diameter	: 46.29 ft	Margin over specification	: 0.00 %
Head rise to shutoff	: 13.14 %	Service factor	: 1.00
Flow, best eff. point	: 92.17 USgpm	Power, hydraulic	: 0.91 hp
Flow ratio, rated / BEP	: 97.65 %	Rated power (based on duty point)	: 1.39 hp
Diameter ratio (rated / max)	: 93.24 %	Max power (non-overloading)	: 1.57 hp
Head ratio (rated dia / max dia)	: 87.61 %	Nameplate motor rating	: 2.00 hp / 1.49 kW
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)	: 0.93		
ER (CL)	: 7		





**Construction Datasheet**

Project name	: Boiling Springs Middle	Tag Number	: P-9
Consulting engineer	:	Service	:
Customer	: Thermal Resource Sales Inc	Model	: 20705 VL
Customer ref. / PO	:	Quantity	: 1
Quote Number / ID	: 2204586	Quoted By (Sales Office)	: Thermal Resource Sales
Date last saved	: 03/20/2024 2:25 PM	Quoted By (Sales Engineer)	: Christina Dusinberre

Construction				Motor Information	
Nozzle	Size (in.)	Nozzle Configuration	Pos'n	Manufacturer	: Baldor
Suction	2	125# ANSI	Side	Frame Size	: 145JM
Discharge	2	125# ANSI	Side	Power	: 2.00 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)	: -

		Materials	
Bearing Type (Radial/Thrust)	: In motor	Case	: Cast Iron, ASTM A48 - Class 30
Bearing Lubrication	: Regreasable	Motor Bracket	: Cast Iron, ASTM-A48, CL 30
Thrust Bearing	: -	Impeller	: Stainless Steel, AISI-304 (H304)
Intermediate Bearing	: -	Impeller Cap Screw and Washer	: Stainless Steel, AISI-303
Lower Bearing	: -	Impeller Key	: Stainless Steel, AISI 316
Bearing Housing Accessories	: -	Case wear ring	: Tin Bronze, ASTM B584-90500 (B18)
PACO Construction code	: 16-20705-130108-1562P	Impeller wear ring	: -

Baseplate, Coupling and Guard			
Baseplate	: Not Applicable	Pump Shaft	: Steel, AISI-1040
Drip Pan	: -	Sleeve	: Bronze, III932, C89835
Coupling	: -	Line Shaft	: -
Guard	: OSHA Approved	Column	: -

Seal & Packing Construction			
Sealing Method	: Single Seal, Type 21S	Discharge Pipe	: -
Seal Material	: Buna Carbon Ceramic SS-Spring and Hardware	Discharge Elbow	: -
Packing Gland	: -	Suction Elbow	: -
Lantern Ring	: -	Subplate	: -
Recirculation Lines	: Nylon Tubing with Brass Fittings	Hardware	: Steel, Grade 5
		O Rings	: Buna N
		Pump Coatings	: Standard Manufacturers Paint

Weights (Approx.)	
Pump	: 90.00 lb
Baseplate	: -
Driver	: 44.00 lb
Estimated Shipping gross weight	: 134.0 lb

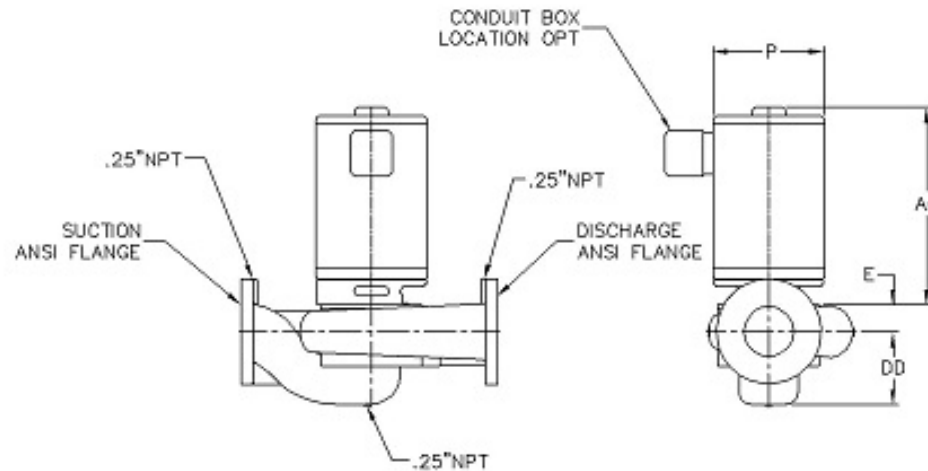
## General Arrangement

Project name	: Boiling Springs Middle	Tag Number	: P-9
Consulting engineer	:	Service	:
Customer	:	Model	: 20705 VL
Customer ref. / PO	:	Quantity of pumps	: 1
Quote Number / ID	: 2204586	Quoted By (Sales Office)	: Thermal Resource Sales
Date last saved	: 03/20/2024 2:25 PM	Quoted By (Sales Engineer)	: Christina Dusinberre

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.



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Units	Frame	S x D (in.)	AG (Max)	DC	DD	DE	E	P (Max)	X	YY	Weight ea
inches	145JM	2 X 2	18.00	4.75	5.50	5.25	1.91	8.00	8.00	8.00	134.0
Conditions of Service			Motor Data								
Flow: 90.00 USgpm	Fluid: Cold Water	HP: 2	Encl: ODP	Phase: 3	Efficiency: Premium						
TDH: 40.00 ft	Temp.: 68.00 deg F	RPM: 1730 rpm	Hz: 60	Voltage: 230/460	S.F.: 1.15						

Project name	: Boiling Springs Middle	Tag Number	: 005
Consulting engineer	:	Service	:
Customer	: Thermal Resource Sales Inc	Model	: CV25-125
Customer ref. / PO	:	Quantity	: 1
Quote Number / ID	: 2204586	Quoted By (Sales Office)	: Thermal Resource Sales
Date last saved	: 03/20/2024 2:26 PM	Quoted By (Sales Engineer)	: Christina Dusinberre

**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**

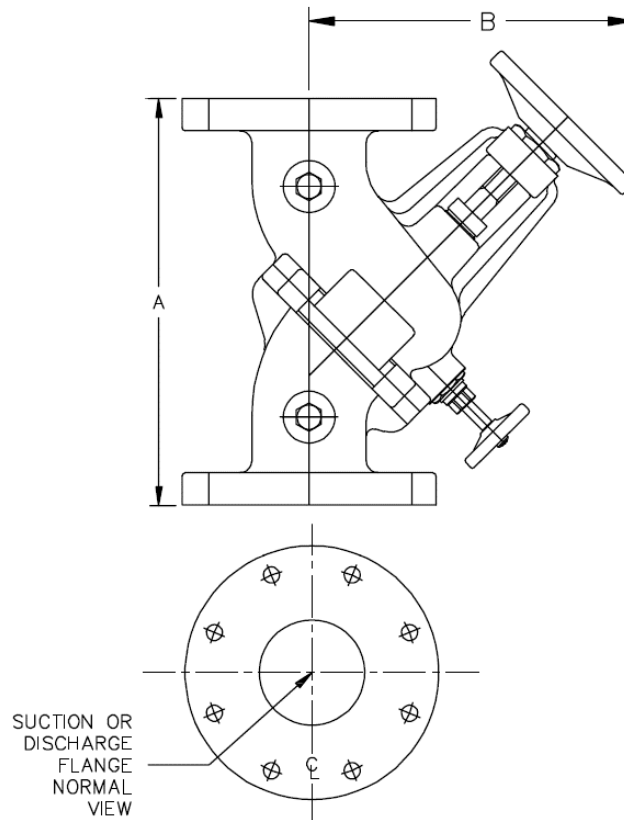
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The combination valve provides the feature of changing the flange orientation to allow 90° pipe connection. Additional feature includes a built-in bypass valve allowing for drainage of water upstream of the check valve.

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## General Arrangement

Project name	: Boiling Springs Middle	Tag Number	: 005
Consulting engineer	:	Service	:
Customer	:	Model	: CV25-125
Customer ref. / PO	:	Quantity of pumps	: 1
Quote Number / ID	: 2204586	Quoted By (Sales Office)	: Thermal Resource Sales
Date last saved	: 03/20/2024 2:26 PM	Quoted By (Sales Engineer)	: Christina Dusinberre



**NOT FOR CONSTRUCTION, UNLESS CERTIFIED AND REFERENCED ON ORDER**

Units	Inlet (in)	Outlet (in)	A (in)	B (in)	Weight (lbs)
<b>inches</b>	<b>2.5</b>	<b>2.5</b>	<b>11.02</b>	<b>8.82</b>	<b>42.00</b>