OILGEAR™

XD5 PUMPS

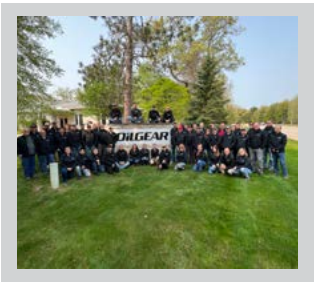
AXIAL PISTON PUMPS

High-performance solution for demanding mobile applications

XD5-100 shown

WHO WE ARE

For more than a century, Oilgear has been devoted to developing innovative solutions that help our customers increase productivity. We are committed to creating sustainable products and services that benefit everyone. Our durable, reliable, and high-performance products make us a leader in the oil and gas, mobile, and industrial markets. Our engineering team is dedicated to providing economic and sustainable value to our customers. Our products and solutions are easy to maintain and are designed to deliver exceptional results on the job site. We are dedicated to providing customer support throughout the lifespan of our products, so you can count on us to deliver value every step of the way.



PARTNERSHIP APPROACH

Our engineering teams thrive on challenges and always enjoy collaborating closely with customers to develop innovative solutions that help businesses succeed in today's competitive environment. With their curious and forward-thinking approach, they constantly push the boundaries to deliver results that exceed expectations.

COMMITMENT TO QUALITY

At Oilgear, we prioritize quality in everything we do. Our products are designed to withstand the toughest environments on the planet, and we're proud to say that they meet ISO and API standards. We offer an extensive selection of hydraulic control products and systems and have earned certifications from respected institutions like ABS, DNV, and Lloyds.

COMMUNITY PARTNERSHIPS

The Oilgear Company is committed to making a positive impact globally through innovation, dedication to our customers, and investment in our team members.

- **Supporting the community where we live and work**
- **Provide a safe work environment**
- **Taking steps to reduce our environmental footprint**

GLOBAL SERVICE NETWORK

No matter where you are, Oilgear can provide service to you.

| TRAVERSE CITY

| FREMONT

| LEEDS, U.K.

| KOREA

| CHINA

| SPAIN

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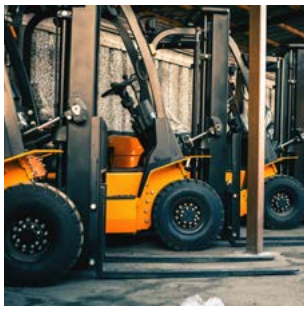
Industries Served:


Construction


Trucks


Material Handling


Agriculture


Military


Marine


Mining


Energy

XD5 DELIVERS INDUSTRY LEADING POWER DENSITY

20% MORE SPEED WITHOUT SUPERCHARGING

Certain powertrains require higher RPM, and the XD5 is designed to meet these requirements to ensure optimal performance of your system.

20% MORE FLOW

XD5 can deliver more power to your system at higher speed and flow, without requiring a change in powertrain.

40% HIGHER CONTINUOUS RATED PRESSURE

High pressure offers more power, greater flexibility in circuit design.

WEAR RESISTANT TECHNOLOGY FOR MORE DURABILITY

Oilgear's proprietary Hard-on-Hard Technology eliminates soft metals from pump design, making the pump more resistant to heat, contamination, and shock load.

MOBILE APPLICATIONS

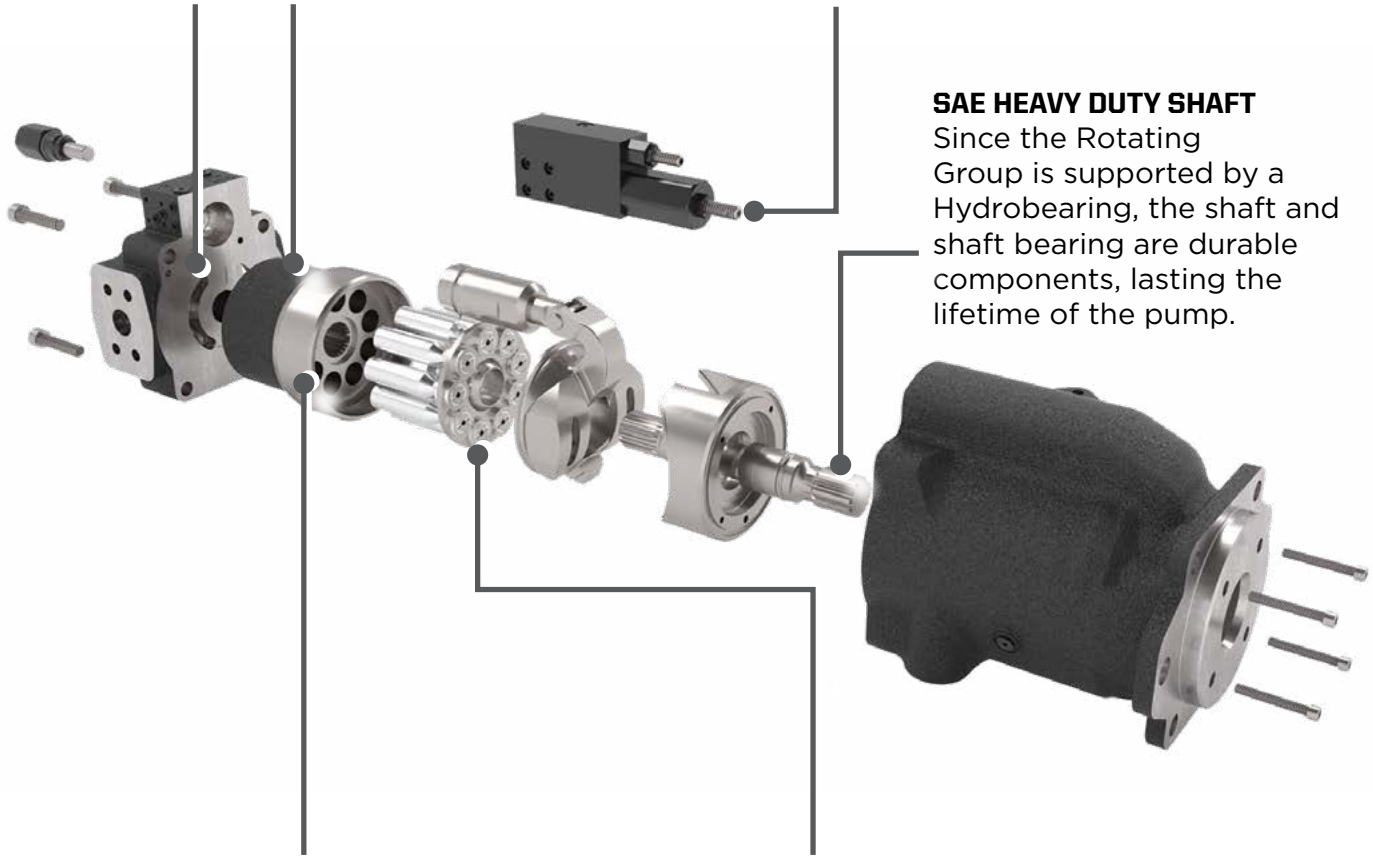
- **OFF-HIGHWAY CONSTRUCTION**
  Mining trucks, Haulers, Dozers, Excavators, Trenchers, and many more
- **ON-HIGHWAY VEHICLES**
  Municipal Service and Construction Vehicles
- **OFF-SHORE MARINE AND ENERGY**

Oilgear's Best Ideas, in a Mobile Pump

XD5 takes Oilgear reliability and performance, and wraps it in a small mobile package. Like PVWJ and PVG, the XD5 series uses Hard-on-Hard and hydrobearing design philosophies, and combines those features into a small, light, mobile pump housing.

HARDENED VALVE PLATE/CYLINDER BARREL INTERFACE allows Oilgear to design pumps without using soft metals, which makes Oilgear pumps more resistant to damage from contamination, heat, and hydraulic shock.

THREE-WAY DIRECT ACTING CONTROL
An effective control mechanism, designed for stability, durability, and contamination resistance.



SAE HEAVY DUTY SHAFT
Since the Rotating Group is supported by a Hydrobearing, the shaft and shaft bearing are durable components, lasting the lifetime of the pump.

RUGGED CYLINDER BARREL/HYDROBEARING DESIGN
A hardened Cylinder Barrel is more resistant to damage from contamination, low lubricity, and hydraulic shock. The Cylinder Barrel is supported by a Hydrobearing leading to longer shaft and bearing life.

HARDENED SHOE/SWASHBLOCK INTERFACE eliminates more soft metals, which makes Oilgear pumps more resistant to damage from contamination, heat, and hydraulic shock.

XD5 FAMILY SPECIFICATIONS

			B-FRAME			C-FRAME
	FRAME SIZE / MODEL		XD5-050	XD5-065	XD5-075	XD5-100
DRIVE	Maximum (RPM)		2700	2700	2700	2600
	Minimum (RPM)		600	600	600	600
	Rotational Moment of Inertia (lbs.-in^2)		23	23	23	47
OUTPUT[1]	Pressure (PSIA)	Peak	5801	5801	5801	5801
		Continuous	5000	5000	5000	5000
		Minimum	100	100	100	100
	Nominal Volume at 1800 RPM, Rated Pressure, and Full Displacement (GPM)		22.0	28.8	33.3	42.4
CASE	Maximum Pressure (PSI) w/ Standard Shaft Seal		25	25	25	25
	Case Drain Port Size		#10 SAE	#10 SAE	#10 SAE	#12 SAE
CONTROLS[2]	Pressure Compensator	Pressure Controls (PSI) - Minimum Compensator Setting	500	500	500	500
		On-Stroke Time (ms) Simulating a step function at 1800 RPM, Continuous Rated Pressure, 500 psi P$_\Delta$	60	60	60	80
		Off-Stroke Time (ms) Simulating a step function at 1800 RPM, Continuous Rated Pressure, 500 psi P$_\Delta$	40	40	40	40
	Load Sense	Minimum Setting (PSI)	200	200	200	200
		Maximum Setting (PSI)	500	500	500	500
FLUID[3]	Viscosity (SSU)	Minimum	65	65	65	65
		Maximum	2000	2000	2000	2000
TEMPERATURE[4]	Fluid Operating Range (F°)		14 to 190	14 to 190	14 to 190	14 to 190
	Fluid Minimum Starting (F°)		-40	-40	-40	-40
	Fluid Maximum at Case Drain Port (F°)		230	230	230	230

1. Pumps should not be run at neutral for more than 30 consecutive minutes. For longer times, a 10% minimum stroke should be maintained. Be sure system and pumps are protected against overloads with high pressure relief valves. Peak pressure is the maximum pressure the unit can be operated at for 1% or less of every minute.
2. Fastest possible time, stroking times may be slower depending on conditions. Consult Oilgear Technical Sales.
3. See "Additional Notes" in Technical Bulletin 847019-C for filtration and contamination levels.
4. Minimum and maximum viscosities must be observed.

MODEL ORDERING INFORMATION

VARIABLE PUMP EXAMPLE	XD5	—	100	—	A1	U	V	—	L	D	F	K	—	P	—	1NN/F	SN	—	AN	—	10
BLOCK NUMBER	1	—	2	—	3	4	5	—	6	7	8	9	—	10	—	11	12	—	13	—	14

11a 11b 11c /11d

11 = CONTROL MODIFIER

1 = UNIT, TYPE & DESIGN SERIES	
XD5	XD5 Variable Displacement Pump

2 = UNIT TYPE	
050	50 ml/rev. (3.05 cipr)
065	65 ml/rev. (3.97 cipr)
075	75.4 ml/rev. (4.60 cipr)
100	98.4 ml/rev. (6.00 cipr)

3 = DESIGN SERIES	
A1	Current for all displacement

4 = DESIGN SERIES MODIFIER	
U	SAE Connections & Mounting

5 = SEALS	
V	Viton (Standard)
B	Buna Nitrile
P	EPR

6 = ROTATION	
L	Left Hand (CCW)
R	Right Hand (CW)

7 = VALVE PLATE TYPE	
D	Side Ported (thru-shaft)
S	Rear Ported

8 = CONNECTION TYPE	
F	SAE Flange

9 = INPUT SHAFT TYPE, XD5-050, 065, -075	
K	Splined SAE B, 13 Tooth, 16/32 Pitch
S	Splined SAE B-B, 15 Tooth, 16/32 Pitch
R	Splined SAE C, 14 Tooth, 12/24 Pitch

9 = INPUT SHAFT TYPE, XD5-100	
K	Splined SAE C, 14 Tooth, 12/24 Pitch
S	Splined SAE C-C, 17 Tooth, 12/24 Pitch
Z	Keyed (SAE C-C, 1.50" DIA.)

10 = CONTROL TYPE	
P	Pressure Compensating

11a = CONTROL OPTIONS	
1	Single Setting
R	Remote Control

11b = SOLENOID VOLTAGE	
N	Non-Electrical Control

11c = CONNECTOR	
N	Non-electrical Control

11d = MODULE	
Blank unless required option	
F	Load Sense
B	Load Sense w/ Bleed Orifice

12 = VOLUME STOPS	
NN	No Volume Stop
SN	Adjustable Maximum Volume Stop

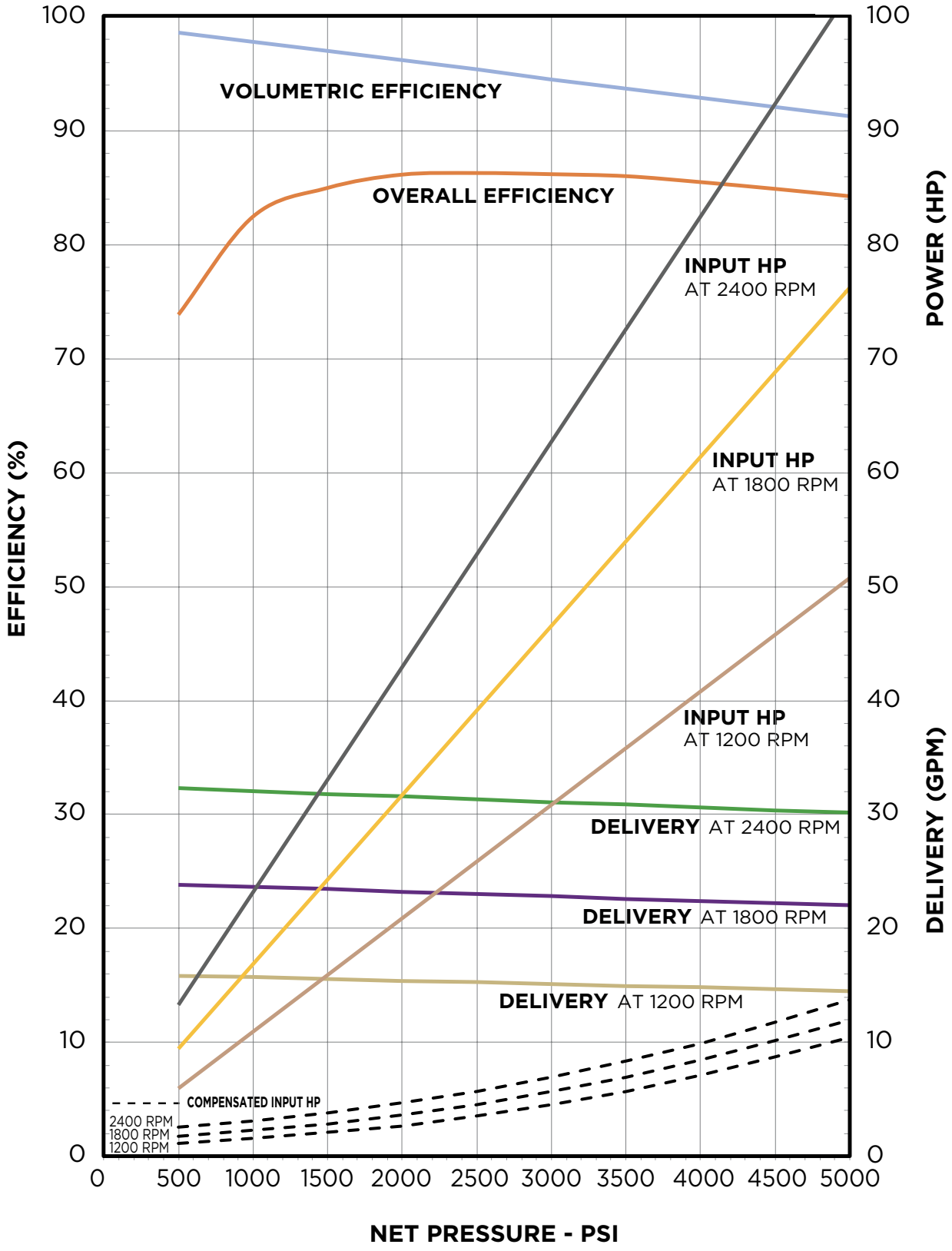
13 = AUXILIARY ADAPTERS	
Required for Valve Plate Option "D." Blank for Valve Plate Option "S."	
NN	None
CP	Cover Plate
A2	SAE A, 2-Bolt Adapter SAE A Splined Coupling, 9 Tooth
B2	SAE B, 2-Bolt Adapter SAE B Splined Coupling, 13 Tooth
C2*	SAE C 2-Bolt Adapter SAE C Splined Coupling, 14 Tooth
C4*	SAE C 4-Bolt Adapter SAE C Splined Coupling, 14 Tooth

*Availalble in only XD5-100

14 = GEAR PUMPS	
Blank unless required option Requires A2 Adapter	
05	8 ml/rev. (0.488 cipr)
07	11 ml/rev. (0.671 cipr)
10	16 ml/rev. (0.976 cipr)
14	23 ml/rev. (1.404 cipr)
20	33 ml/rev. (2.014 cipr)

For non-standard requests, please contact technical sales. Subject to change without notice.

PERFORMANCE DATA



CONNECTION TABLE

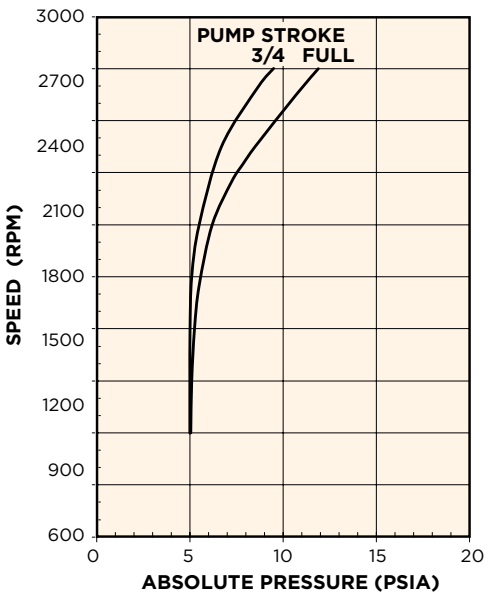
PORT	FITTING
INLET	2″ SAE Code 61 Flange
OUTLET	1″ SAE Code 62 Flange
CASE DRAIN (2 LOCATIONS)	#10 SAE Port
LOAD SENSE / REMOTE PILOT PORT	#4 SAE Port
GAUGE PORT	#4 SAE Port

SHAFT TORQUE RATINGS

MODEL CODE DESIGNATOR	SHAFT SIZE	ALLOWABLE INPUT TORQUE, IN - LBS
K	SAE B Spline - 13 Tooth, 16/32 Pitch	3,500
S	SAE B-B Spline - 15 Tooth, 16/32 Pitch	7,000
R	SAE C Spline - 14 Tooth, 12/24 Pitch	7,000

3,500 IN-LBS = MAXIMUM ALLOWABLE TORQUE APPLIED TO REAR OUTPUT

INLET DATA



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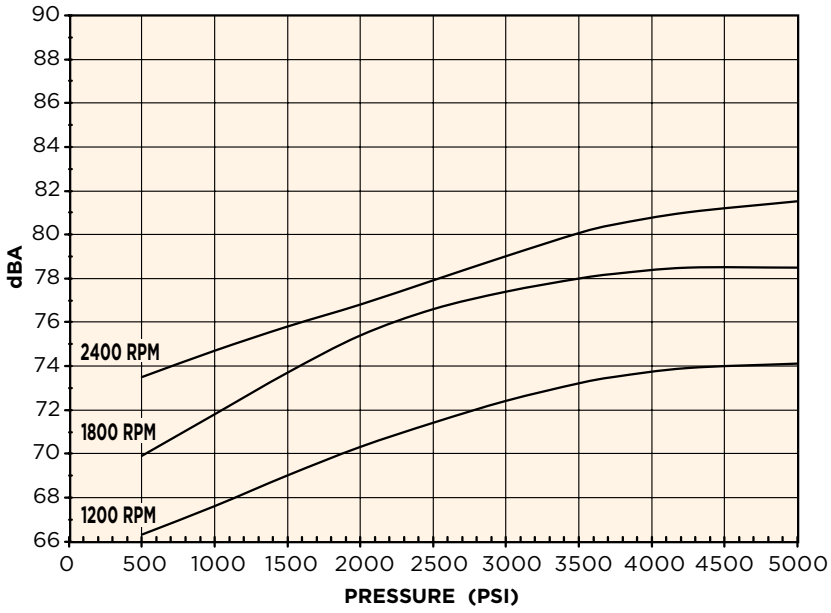
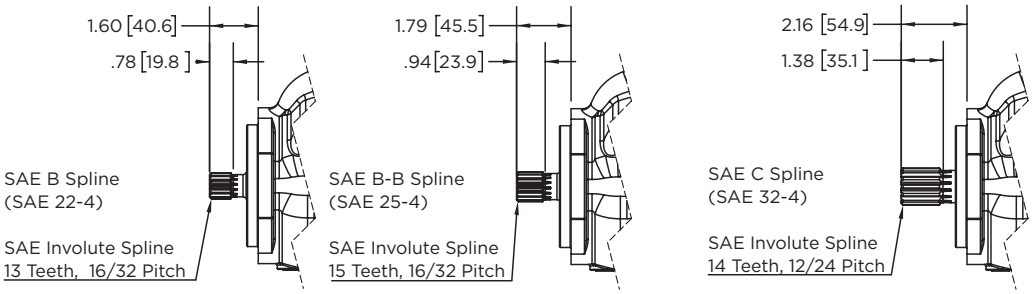


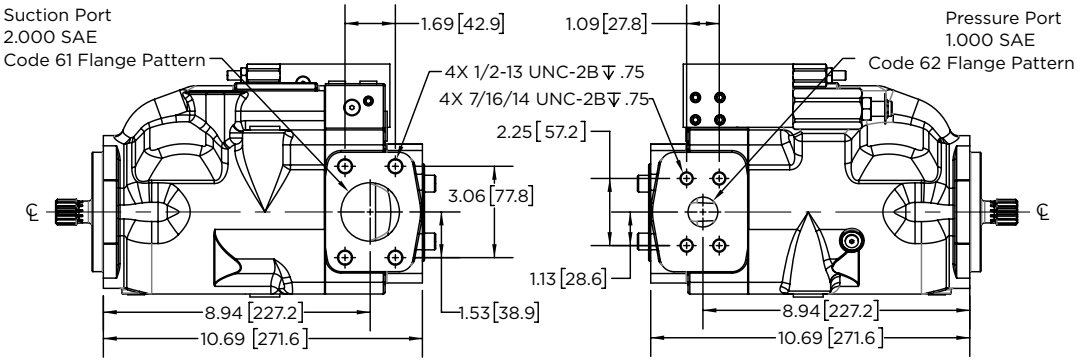
INSTALLATION DRAWING: BASIC PUMP • SIDE PORTED - THRU SHAFT

Driveshaft Drawing

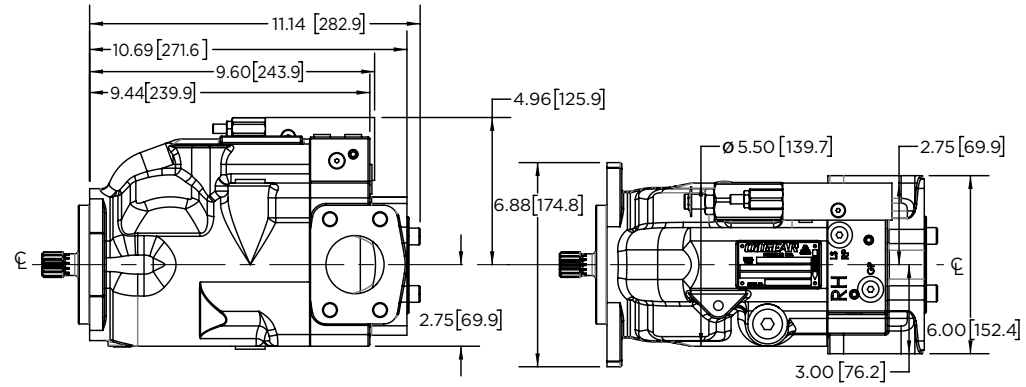


SAE B Spline Model Code K | **SAE B-B Spline Model Code S** | **SAE C Spline Model Code R**

Valve Plate Views - Side Ported, Right Hand Rotation (CW), Ports reversed for CCW pump

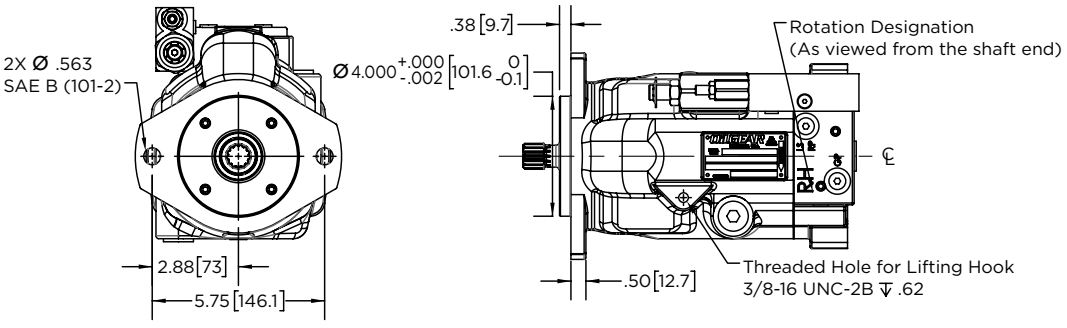


Clearance Dimensions



Right Side View, Side Ported Valve Plate | **Top View, Side Port Valve Plate**

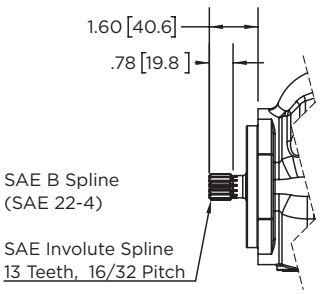
Mounting Flange, Lifting Hook, and Rotation



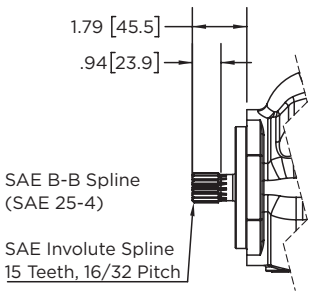
Mouting Flange View | **Top View**

INSTALLATION DRAWING: BASIC PUMP • REAR PORTED

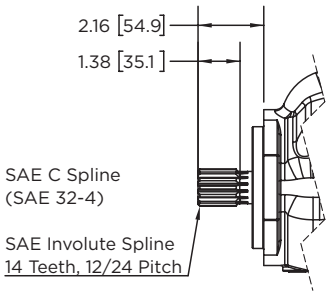
Driveshaft Drawing



SAE B Spline
Model Code K

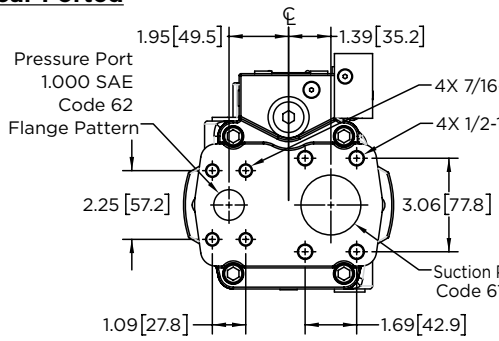


SAE B-B Spline
Model Code S

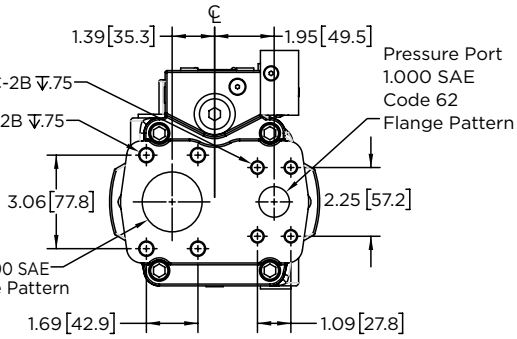


SAE C Spline
Model Code R

Valve Plate Views - Rear Ported

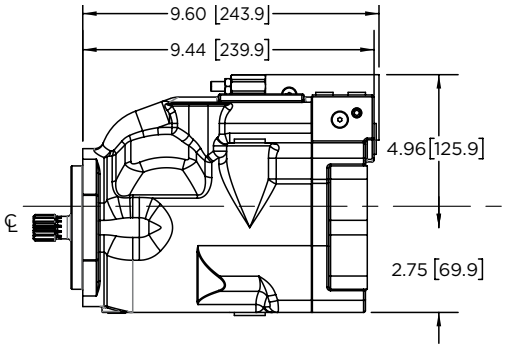


Rear Port Valve Plate
LH Rotation (CCW)

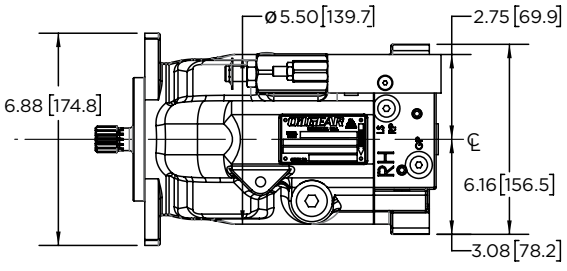


Rear Port Valve Plate
RH Rotation (CW)

Clearance Dimensions

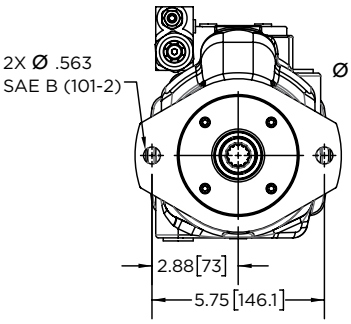


Right Side View, Rear Ported Valve Plate

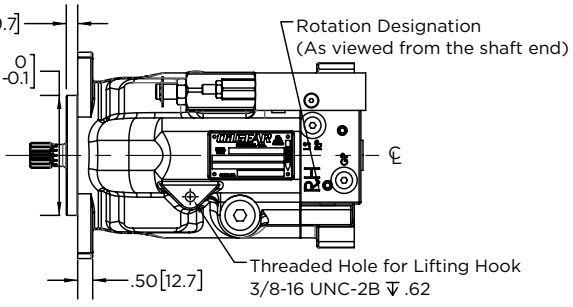


Top View, Rear Port Valve Plate

Mounting Flange, Lifting Hook, and Rotation

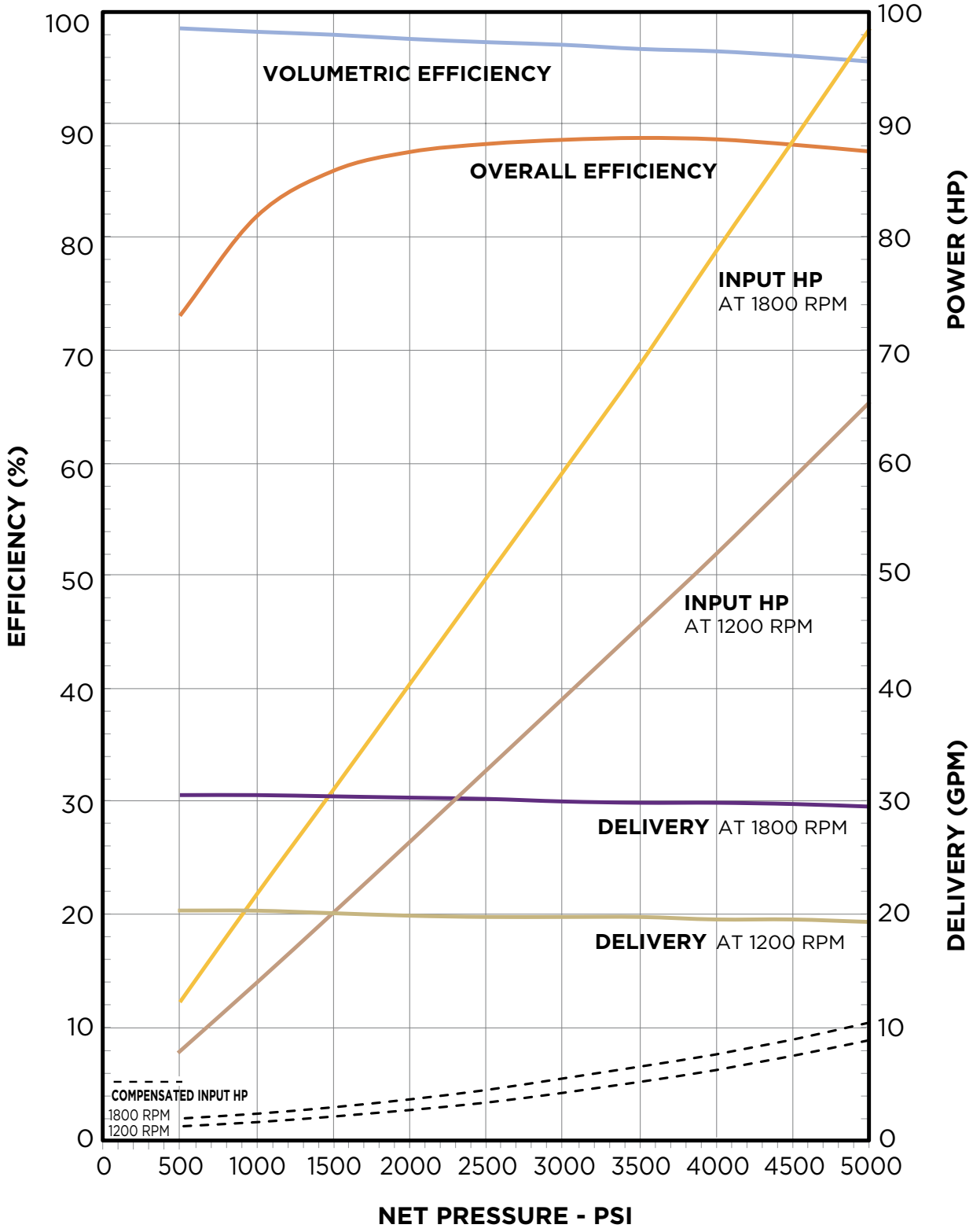


Mouting Flange View



Top View

PERFORMANCE DATA



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SHAFT TORQUE RATINGS

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R	SAE C Spline - 14 Tooth, 12/24 Pitch	7,000

3,500 IN-LBS = MAXIMUM ALLOWABLE TORQUE APPLIED TO REAR OUTPUT

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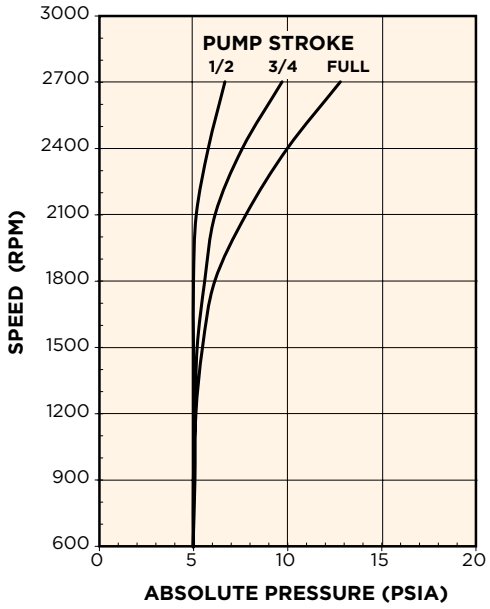

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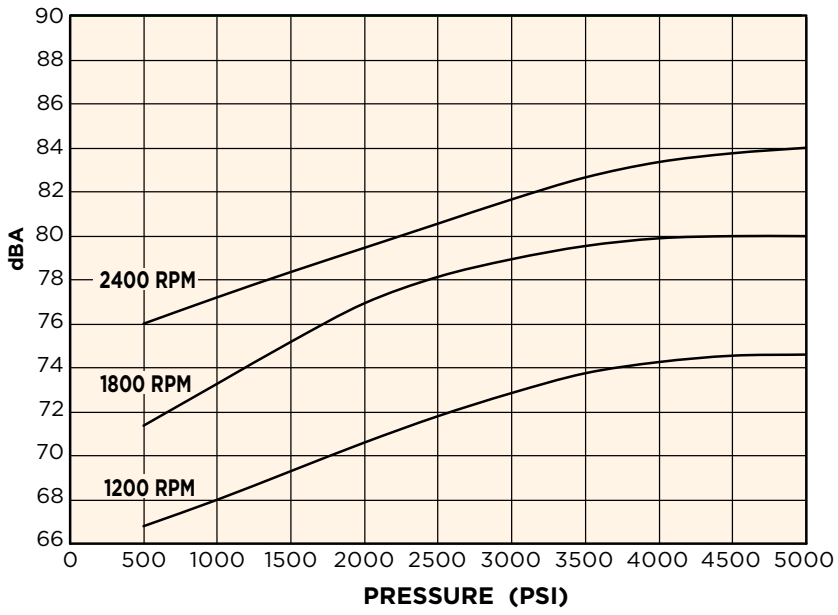
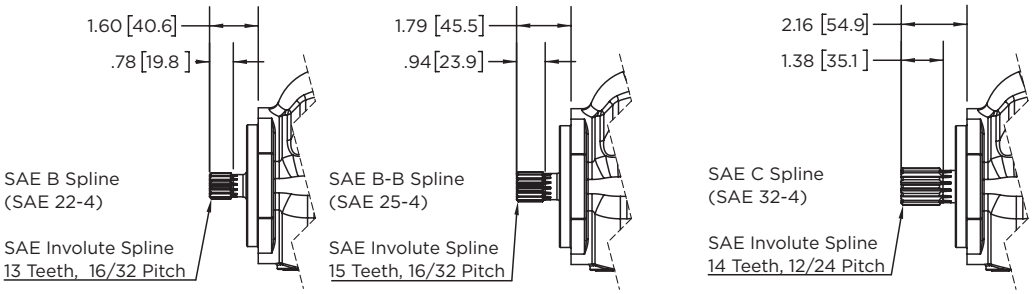


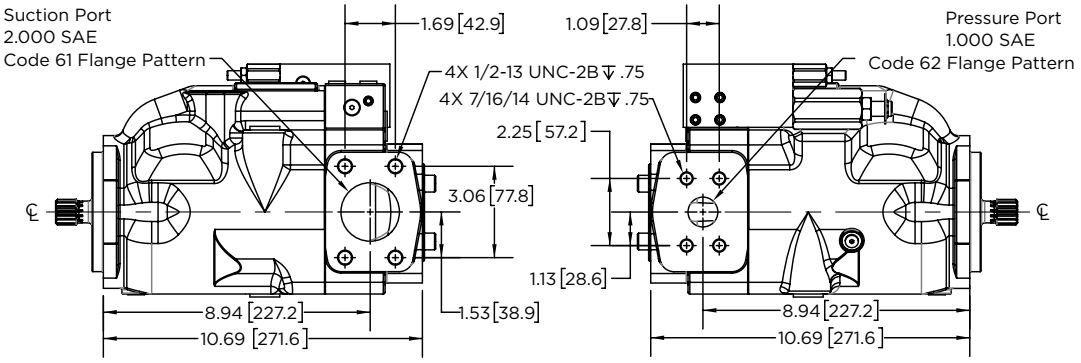
INSTALLATION DRAWING: BASIC PUMP • SIDE PORTED - THRU SHAFT

Driveshaft Drawing

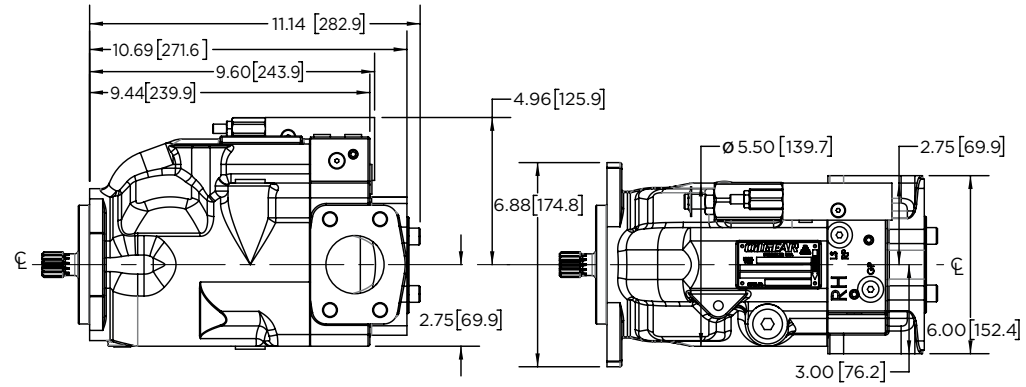


SAE B Spline Model Code K | **SAE B-B Spline Model Code S** | **SAE C Spline Model Code R**

Valve Plate Views - Side Ported, Right Hand Rotation (CW), Ports reversed for CCW pump

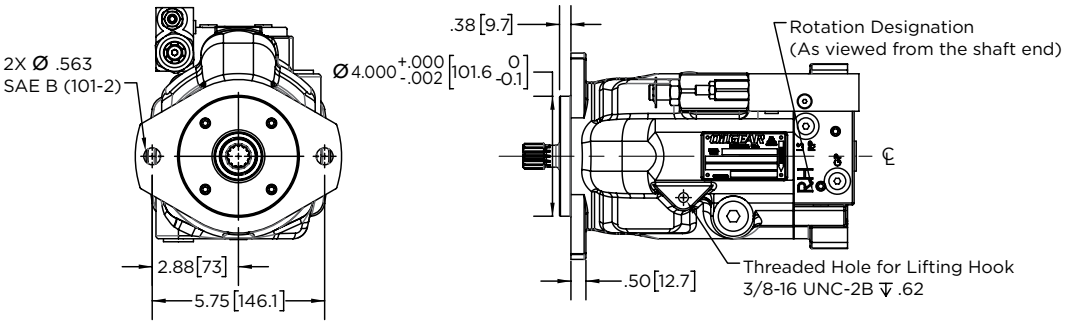


Clearance Dimensions



Right Side View, Side Ported Valve Plate | **Top View, Side Port Valve Plate**

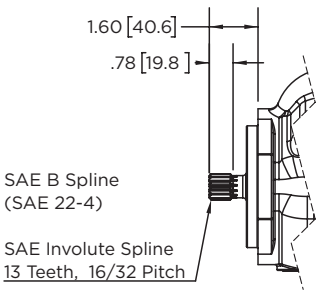
Mounting Flange, Lifting Hook, and Rotation



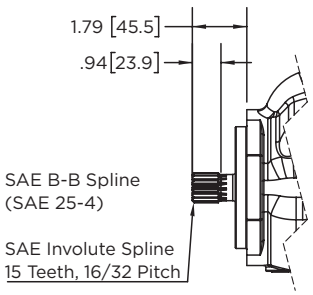
Mouting Flange View | **Top View**

INSTALLATION DRAWING: BASIC PUMP • REAR PORTED

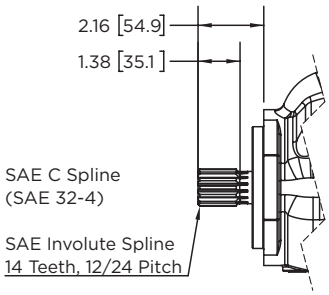
Driveshaft Drawing



SAE B Spline
Model Code K

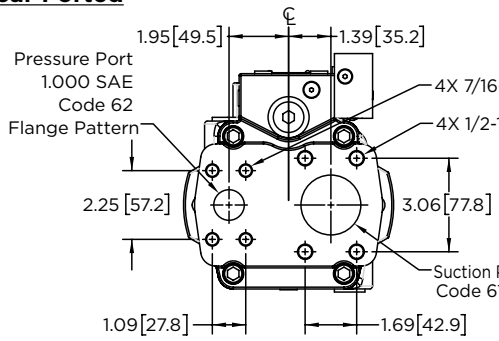


SAE B-B Spline
Model Code S

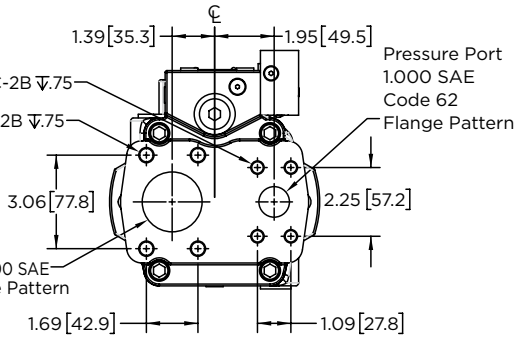


SAE C Spline
Model Code R

Valve Plate Views - Rear Ported

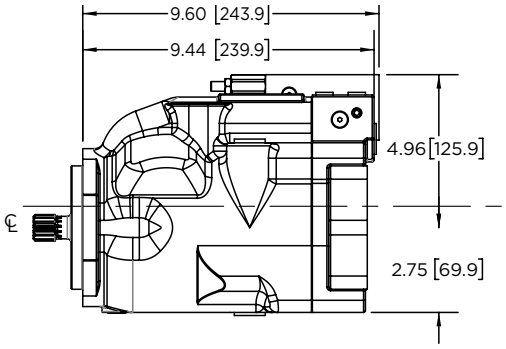


Rear Port Valve Plate
LH Rotation (CCW)

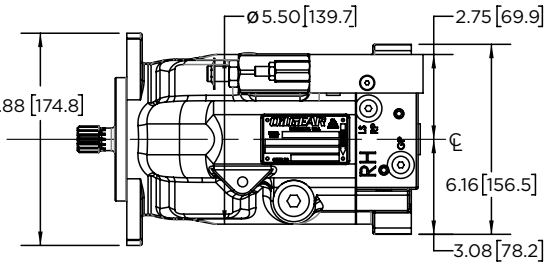


Rear Port Valve Plate
RH Rotation (CW)

Clearance Dimensions

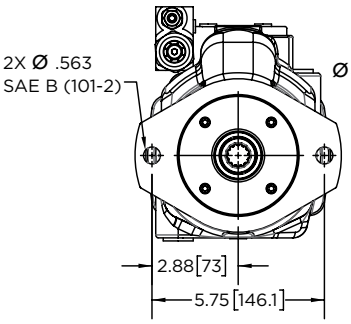


Right Side View, Rear Ported Valve Plate

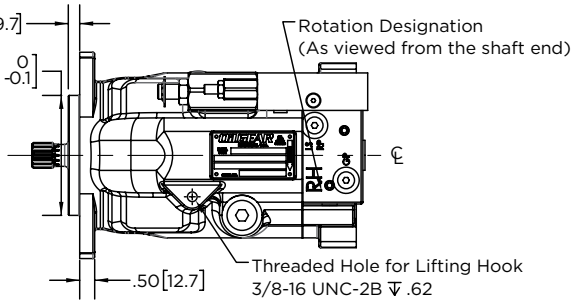


Top View, Rear Port Valve Plate

Mounting Flange, Lifting Hook, and Rotation

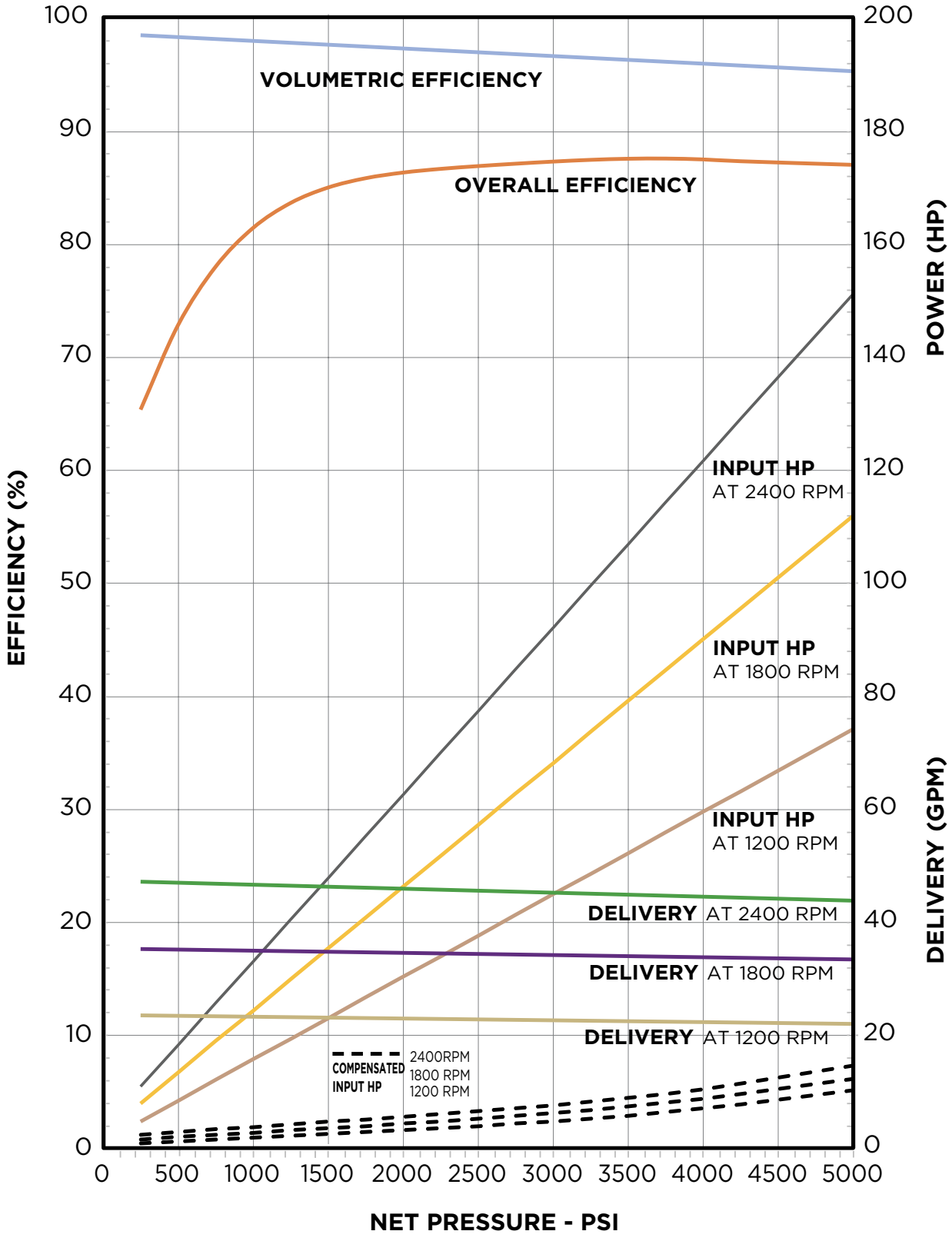


Mouting Flange View



Top View

PERFORMANCE DATA



CONNECTION TABLE

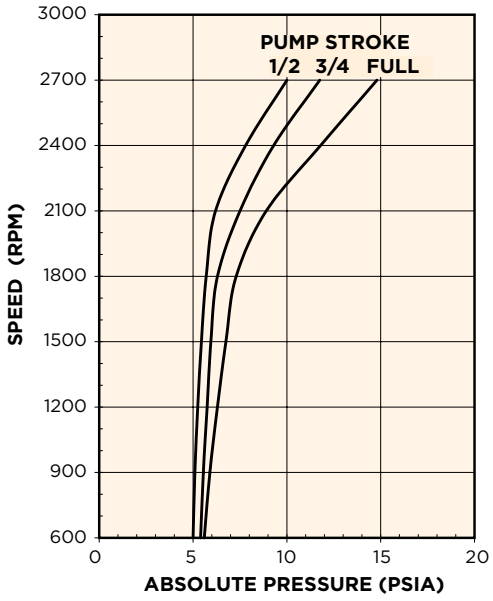
PORT	FITTING
INLET	2″ SAE Code 61 Flange
OUTLET	1″ SAE Code 62 Flange
CASE DRAIN (2 LOCATIONS)	#10 SAE Port
LOAD SENSE / REMOTE PILOT PORT	#4 SAE Port
GAUGE PORT	#4 SAE Port

SHAFT TORQUE RATINGS

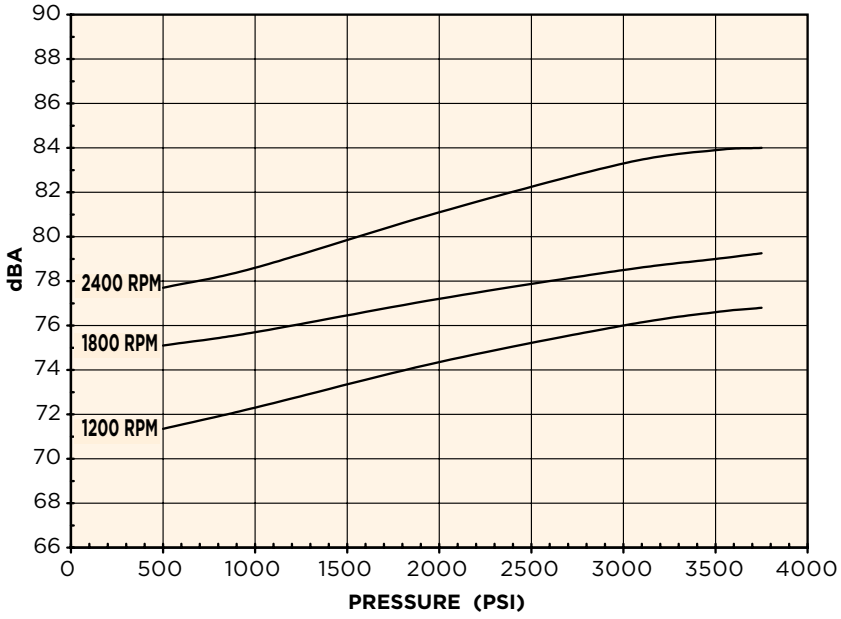
MODEL CODE DESIGNATOR	SHAFT SIZE	ALLOWABLE INPUT TORQUE, IN - LBS
K	SAE B Spline - 13 Tooth, 16/32 Pitch	3,500
S	SAE B-B Spline - 15 Tooth, 16/32 Pitch	7,000
R	SAE C Spline - 14 Tooth, 12/24 Pitch	7,000

3,500 IN-LBS = MAXIMUM ALLOWABLE TORQUE APPLIED TO REAR OUTPUT

INLET DATA

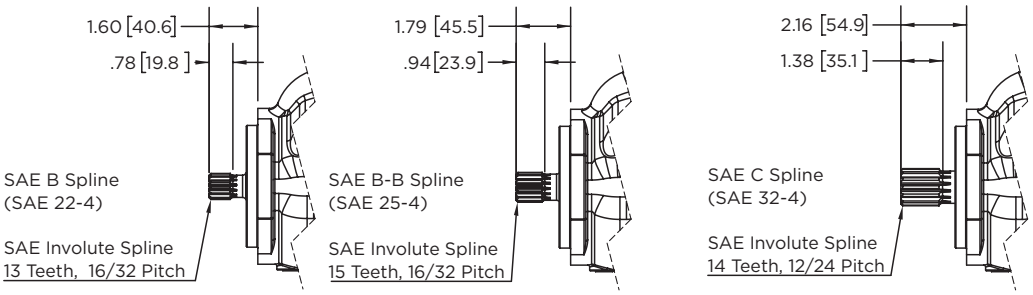


SOUND DATA



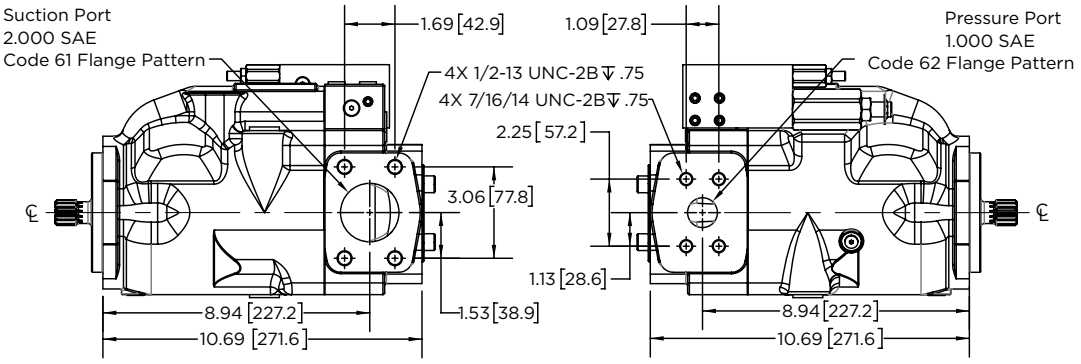
INSTALLATION DRAWING: BASIC PUMP • SIDE PORTED - THRU SHAFT

Driveshaft Drawing

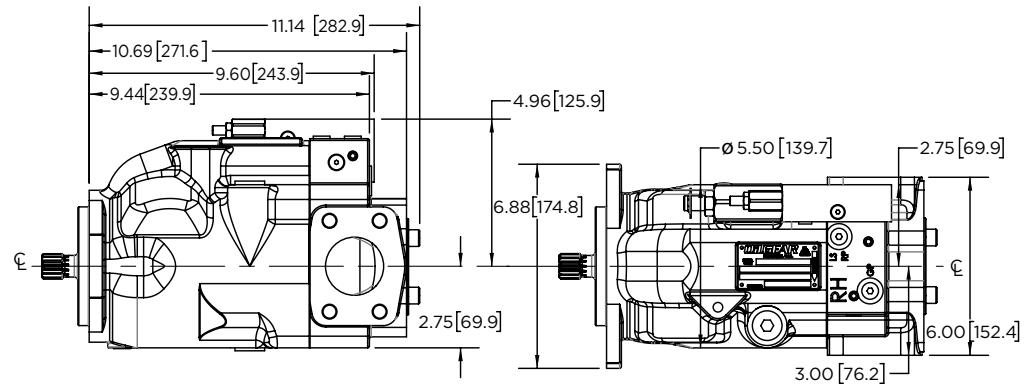


SAE B Spline Model Code K | **SAE B-B Spline Model Code S** | **SAE C Spline Model Code R**

Valve Plate Views - Side Ported, Right Hand Rotation (CW), Ports reversed for CCW pump

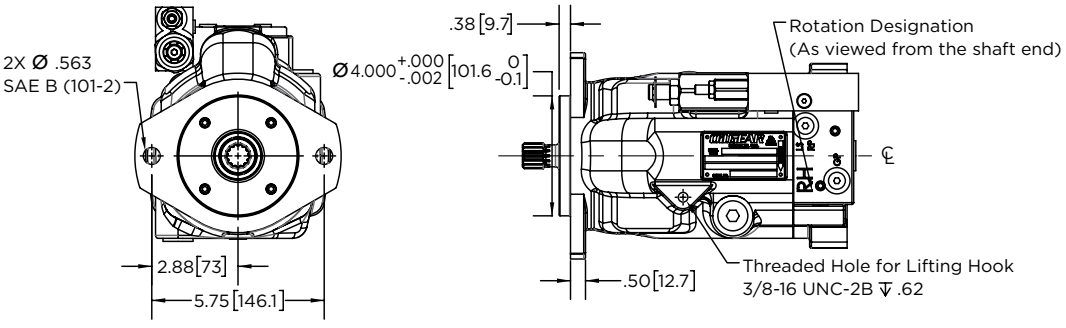


Clearance Dimensions



Right Side View, Side Ported Valve Plate | **Top View, Side Port Valve Plate**

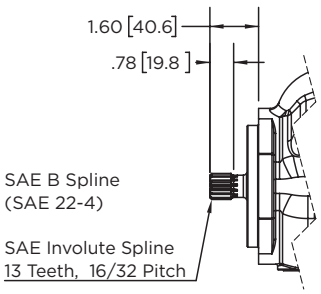
Mounting Flange, Lifting Hook, and Rotation



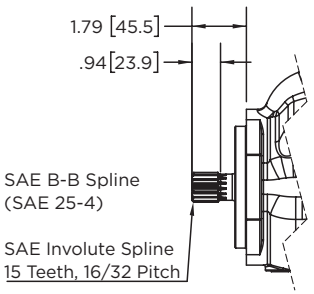
Mouting Flange View | **Top View**

INSTALLATION DRAWING: BASIC PUMP • REAR PORTED

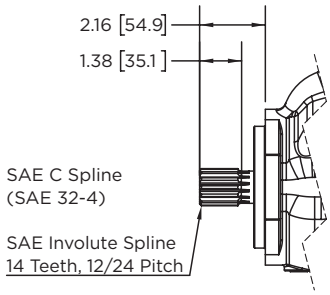
Driveshaft Drawing



SAE B Spline
Model Code K

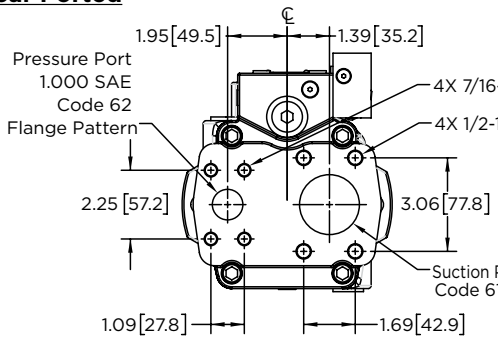


SAE B-B Spline
Model Code S

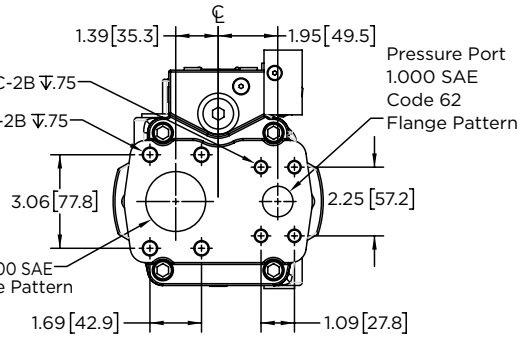


SAE C Spline
Model Code R

Valve Plate Views - Rear Ported

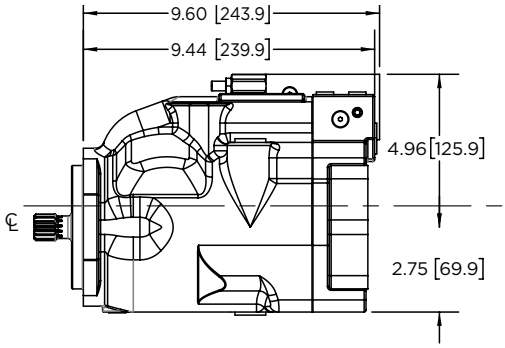


Rear Port Valve Plate
LH Rotation (CCW)

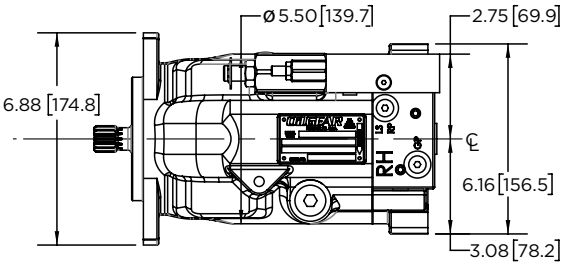


Rear Port Valve Plate
RH Rotation (CW)

Clearance Dimensions

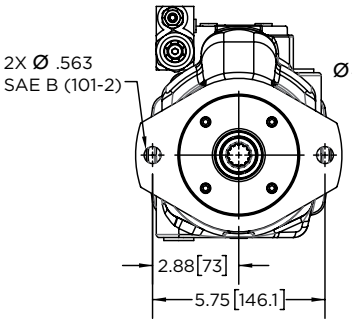


Right Side View, Rear Ported Valve Plate

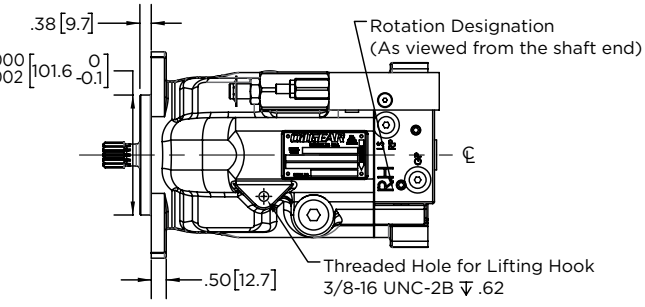


Top View, Rear Port Valve Plate

Mounting Flange, Lifting Hook, and Rotation

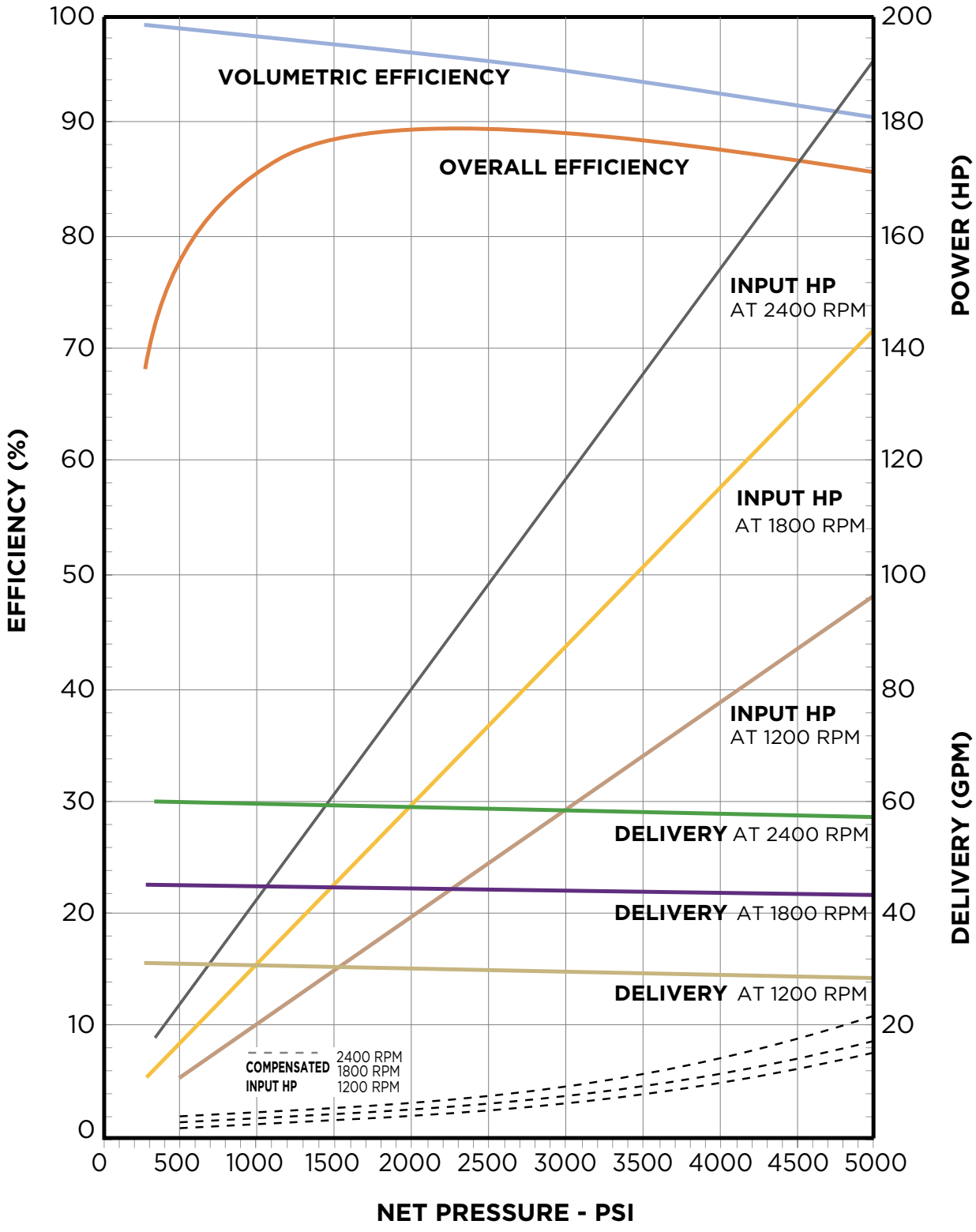


Mouting Flange View



Top View

PERFORMANCE DATA



CONNECTION TABLE

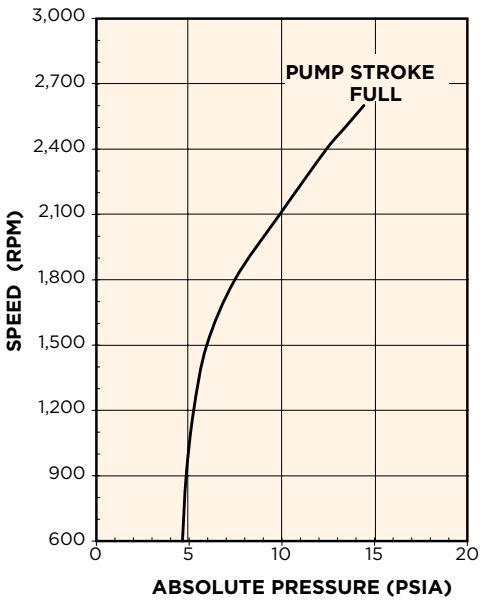
PORT	FITTING
INLET	2″ SAE Code 61 Flange
OUTLET	1″ SAE Code 62 Flange
CASE DRAIN (2 LOCATIONS)	#12 SAE Port
LOAD SENSE / REMOTE PILOT PORT	#4 SAE Port
GAUGE PORT	#4 SAE Port

SHAFT TORQUE RATINGS

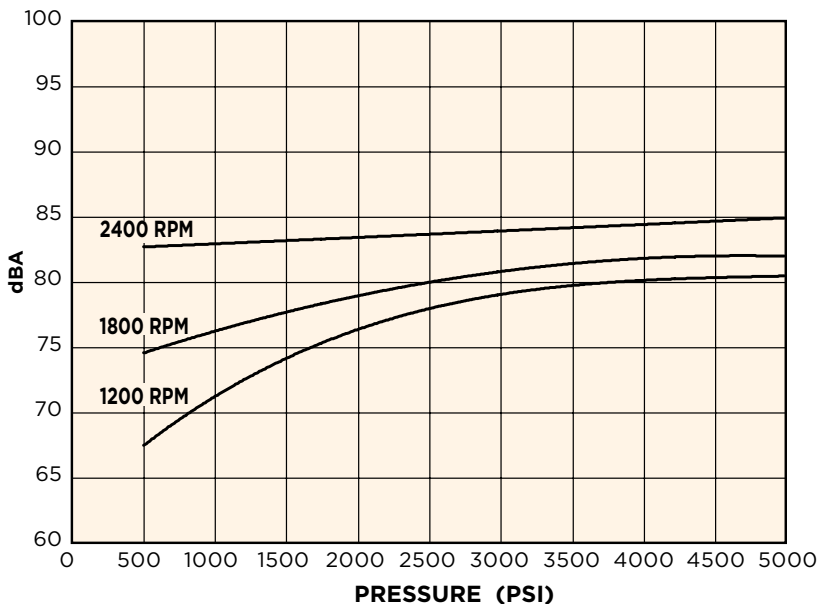
MODEL CODE DESIGNATOR	SHAFT SIZE	ALLOWANCE INPUT TORQUE, IN - LBS
K	SAE C Spline - 14 Tooth, 12/24 Pitch	7,000
S	SAE C-C Spline - 17 Tooth, 12/24 Pitch	10,500
Z	SAE C-C Keyed - 1.50″ Diameter	6,000

5,250 IN-LBS = MAXIMUM ALLOWABLE TORQUE APPLIED TO REAR OUTPUT

INLET DATA

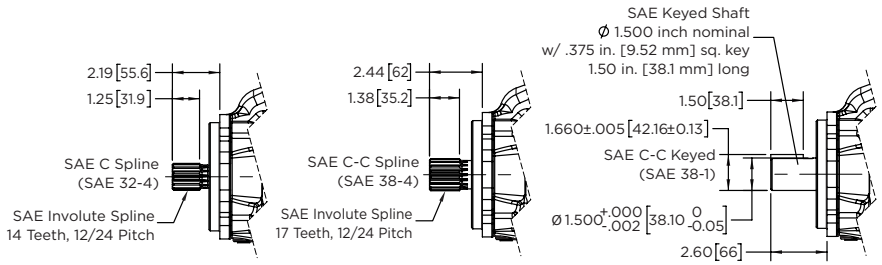


SOUND DATA



INSTALLATION DRAWING: BASIC PUMP • SIDE PORTED - THRU SHAFT

Driveshaft Drawing

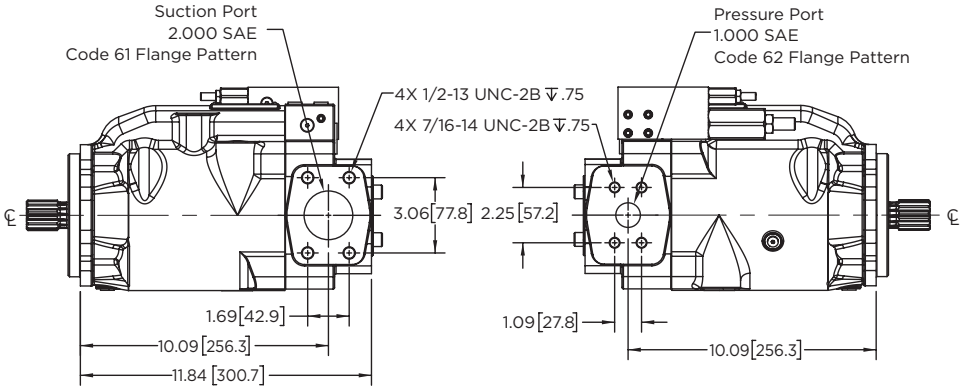


SAE C Spline
Model Code K

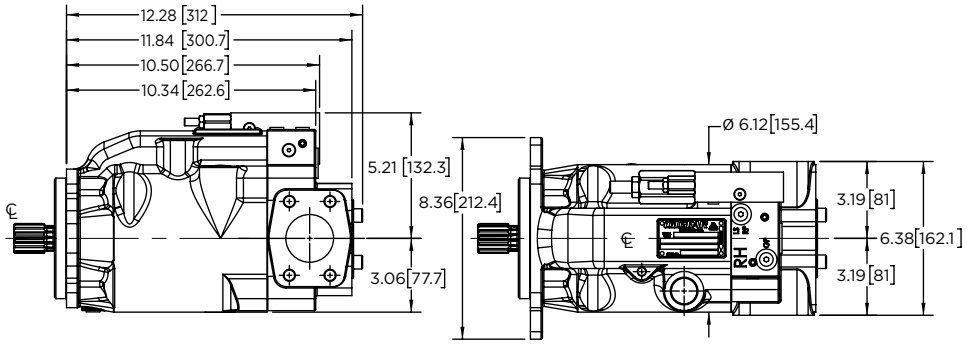
SAE C-C Spline
Model Code S

SAE C-C Keyed
Model Code Z

Valve Plate Views - Side Ported, Right Hand Rotation (CW), Ports reversed for CCW pump



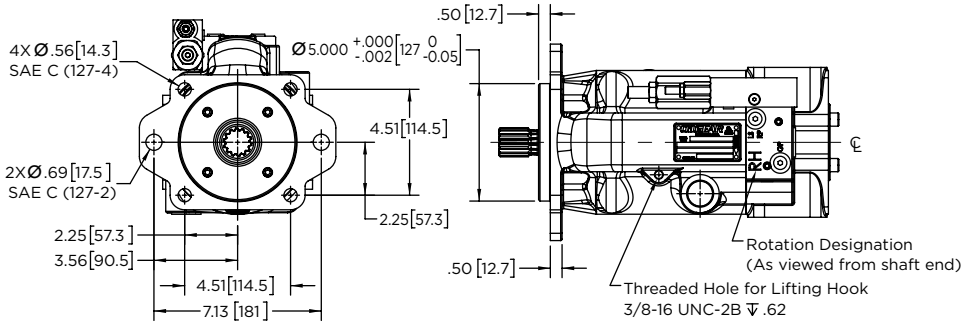
Clearance Dimensions



Right Side View, Side Ported Valve Plate

Top View, Side Port Valve Plate

Mounting Flange, Lifting Hook, and Rotation

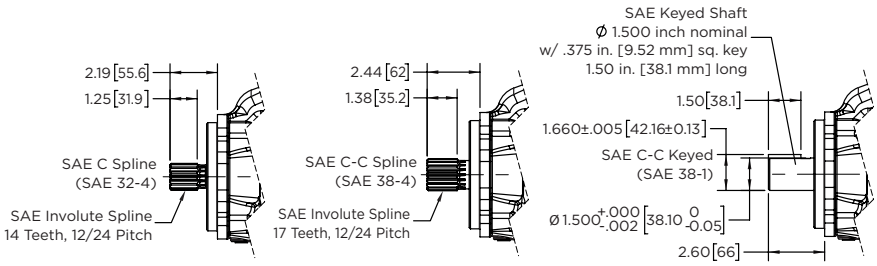


Mouting Flange View

Top View

INSTALLATION DRAWING: BASIC PUMP • REAR PORTED

Driveshaft Drawing

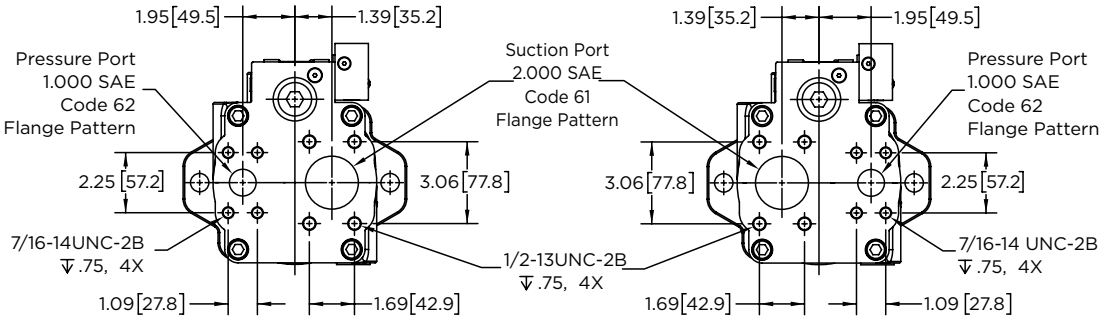


SAE C Spline
Model Code K

SAE C-C Spline
Model Code S

SAE C-C Keyed
Model Code Z

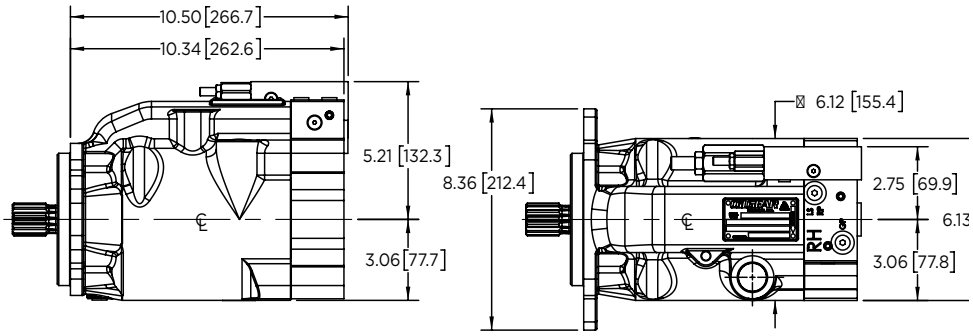
Valve Plate Views - Rear Ported



Rear Port Valve Plate
LH Rotation (CCW)

Rear Port Valve Plate
RH Rotation (CW)

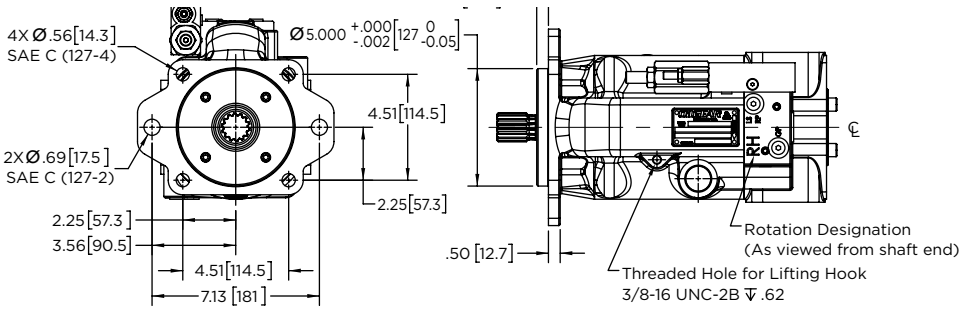
Clearance Dimensions



Right Side View, Rear Ported Valve Plate

Top View, Rear Port Valve Plate

Mounting Flange, Lifting Hook, and Rotation



Mouting Flange View

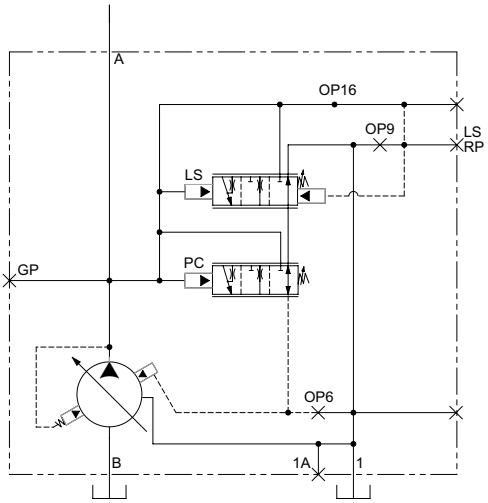
Top View

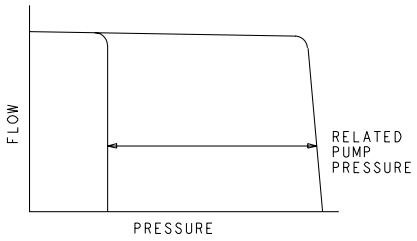
PRESSURE COMPENSATOR ONLY P-1NN

Ensures maximum pump flow until outlet pressure reaches preset control pressure setting, then regulates output flow to match the requirements of the system while maintaining preset output pressure.

- OP 16 is OPEN
- OP 9 is PLUGGED
- OP 6 is PLUGGED
- The LS/RP Port is PLUGGED

All internal plugs and orifices use 1/16 NPT plugs and 5/32 internal hex wrenches.



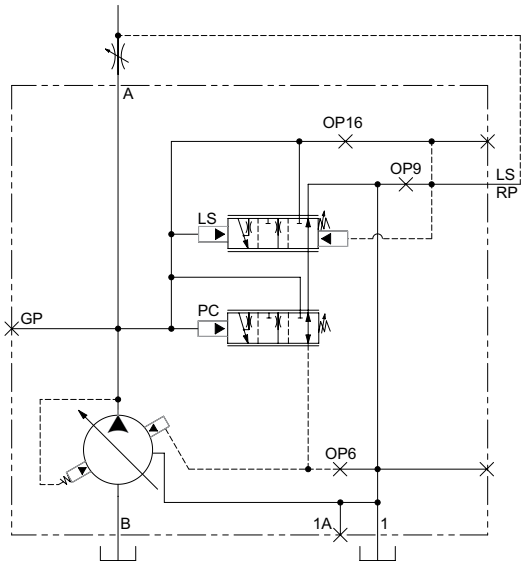


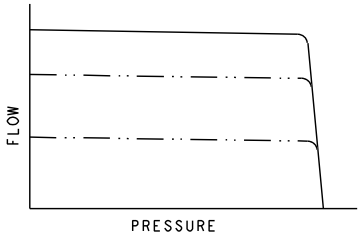
PRESSURE COMPENSATOR AND LOAD SENSE P-1NN/F OR P-1NN/B

A constant flow output is maintained for a given flow control valve setting regardless of changes in drive speed and/or working pressure.

- OP 16 is PLUGGED
- OP 9 is PLUGGED in P-1NN/F, or uses optional orifice in P-1NN/B
- OP 6 is PLUGGED
- The customer-supplied Load Sense circuit is plumbed into the LS/RP Port.

All internal plugs and orifices use 1/16 NPT plugs and 5/32 internal hex wrenches.





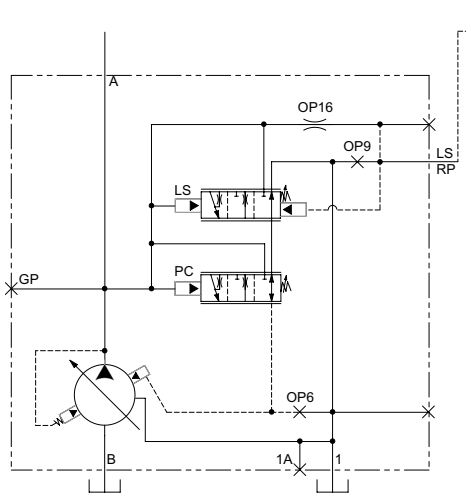
REMOTE PRESSURE COMPENSATOR P-RNN

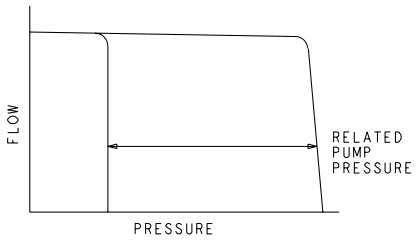
A customer-supplied remote compensator circuit is plumbed into the LS/RP port on the pump. If the remote compensator opens to vent fluid, then the pump will compensate as if the pump's integral compensator reached its pressure setting.

The on-board compensator is still active, and will independently respond to compensate.

- OP 16 has a Ø 0.031 in ORIFICE
- OP 9 is PLUGGED
- OP 6 is PLUGGED
- The customer-supplied Remote Compensator circuit is plumbed into the LS/RP Port.
- The Remote Compensator requires a flow rate of approximately 0.25 GPM.
- The remote pilot relief valve requires a 0.040 inch stability orifice.
- If a 1/4 inch line is used to connect the remote compensator to the LS/RP port, then the recommended line length is 6 to 30 feet.
- If a 3/8 inch line is used to connect the remote compensator to the LS/RP port, then the recommended line length is 3 to 30 feet.

All internal plugs and orifices use 1/16 NPT plugs and 5/32 internal hex wrenches.





* Chart for on-board control mechanism.

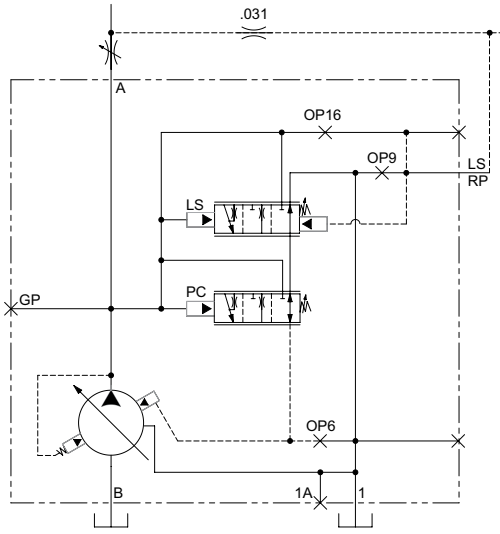
REMOTE PRESSURE COMPENSATOR AND LOAD SENSE P-1NN/F

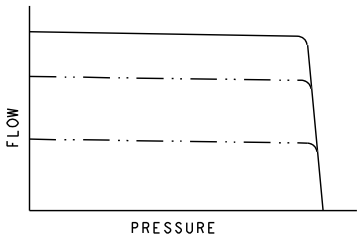
A customer-supplied remote compensator circuit is plumbed into the LS/RP port on the pump. If the remote compensator opens to vent fluid, then the pump will compensate.

The on-board compensator and load sense functions are still active, and will independently respond to regulate flow.

- OP 16 is PLUGGED
- OP 9 is PLUGGED
- OP 6 is PLUGGED
- The customer-supplied Remote Compensator/Load Sense circuit is plumbed into the LS/RP Port. The circuit requires a Ø 0.031 in. orifice between the Remote Compensator and Load Sense components.
- The Remote Compensator requires a flow rate of approximately 0.25 GPM.
- The remote pilot relief valve requires a 0.040 inch stability orifice.
- If a 1/4 inch line is used to connect the remote compensator to the LS/RP port, then the recommended line length is 6 to 30 feet.
- If a 3/8 inch line is used to connect the remote compensator to the LS/RP port, then the recommended line length is 3 to 30 feet.

All internal plugs and orifices use 1/16 NPT plugs and 5/32 internal hex wrenches.





* Chart for on-board control mechanism.

CONTROL OPTION	DISPLACEMENT			
	B-FRAME			C-FRAME
	XD5-050	XD5-065	XD5-075	XD5-100
P-1NN	√	√	√	√
P-1NN/F	√	√	√	√
P-1NN/B	√	√	√	√
P-RNN	√	√	√	√

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