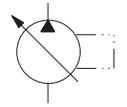


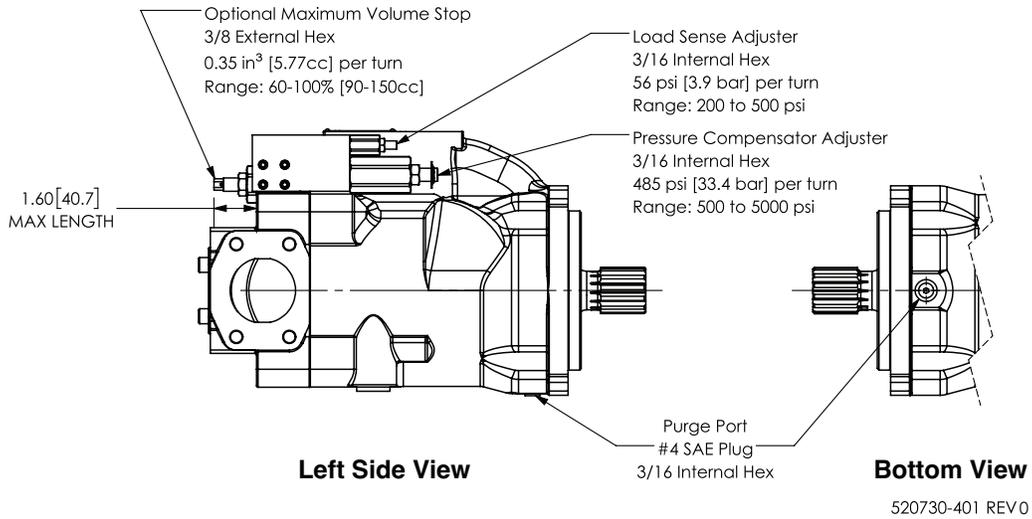
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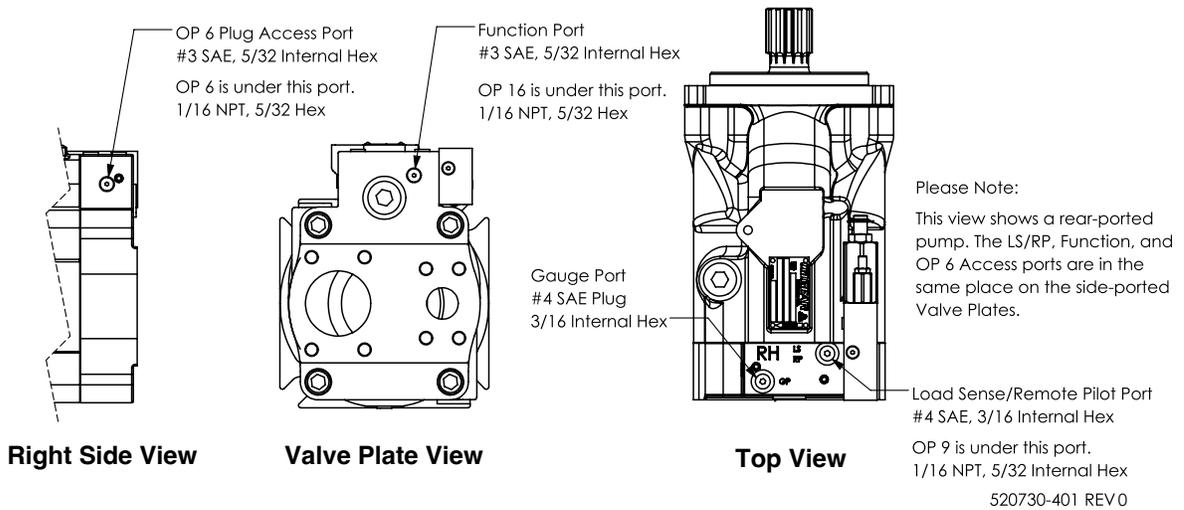
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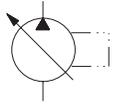


ADJUSTER AND PURGE PORT LOCATIONS

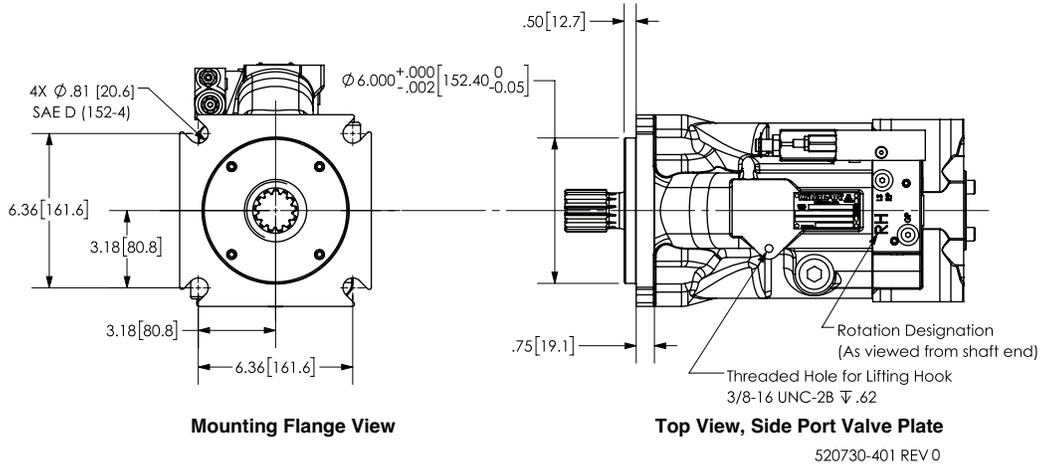


CONTROL PORT LOCATIONS

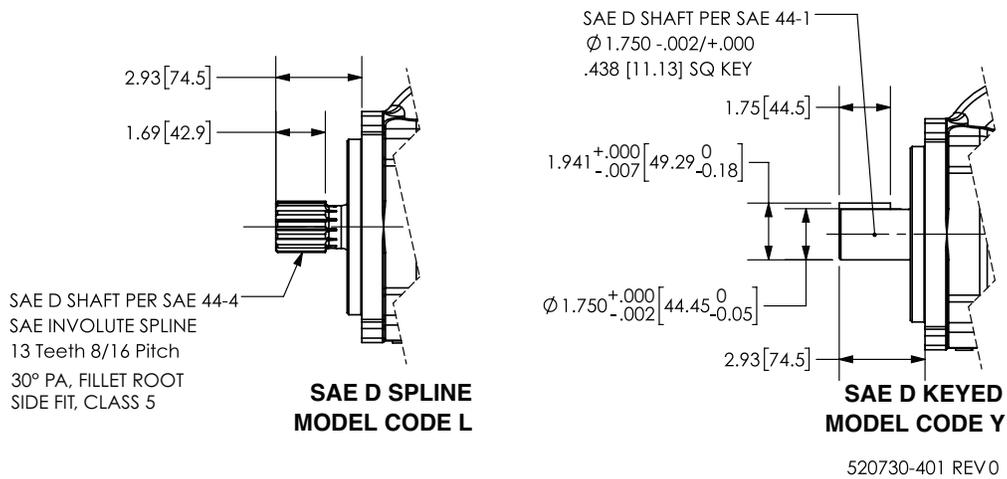




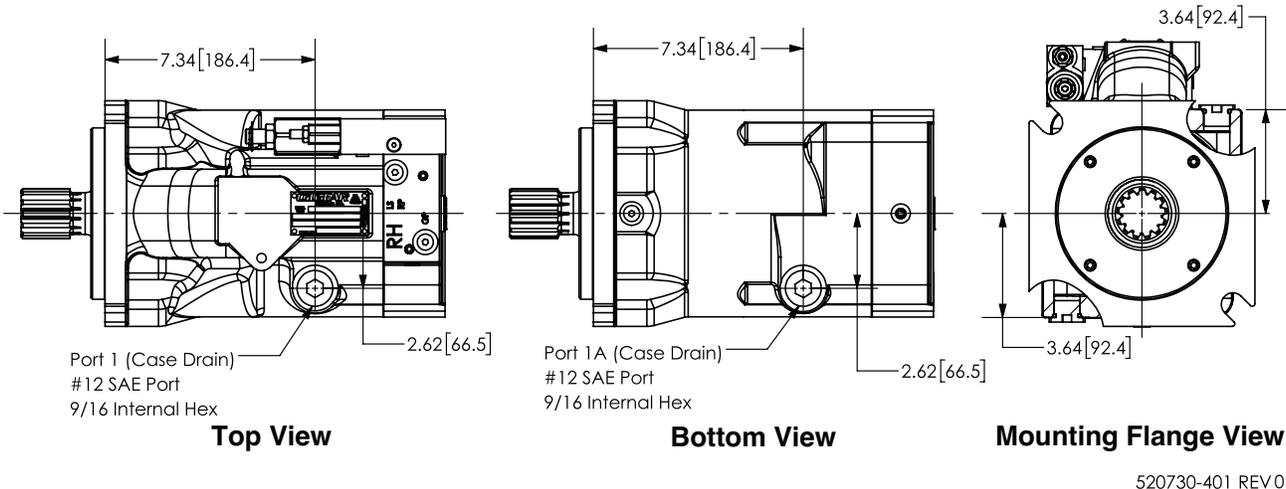
MOUNTING FLANGE, LIFTING HOOK, AND ROTATION DESIGNATION

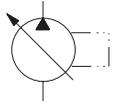


DRIVESHAFTS

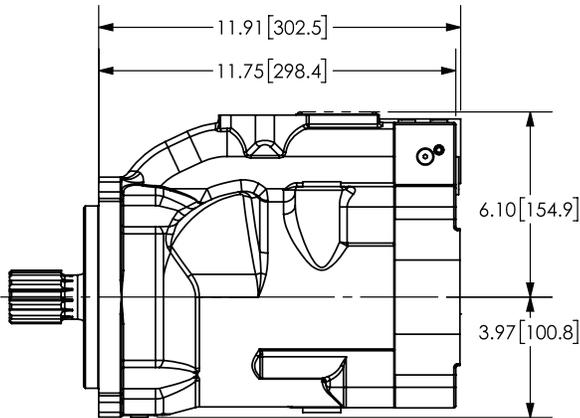


CASE DRAIN LOCATIONS

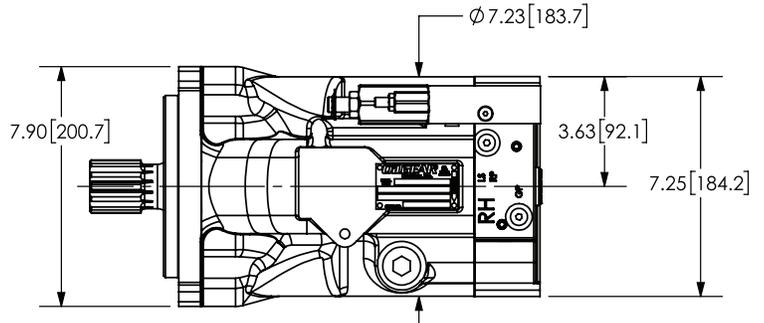




CLEARANCE DIMENSIONS

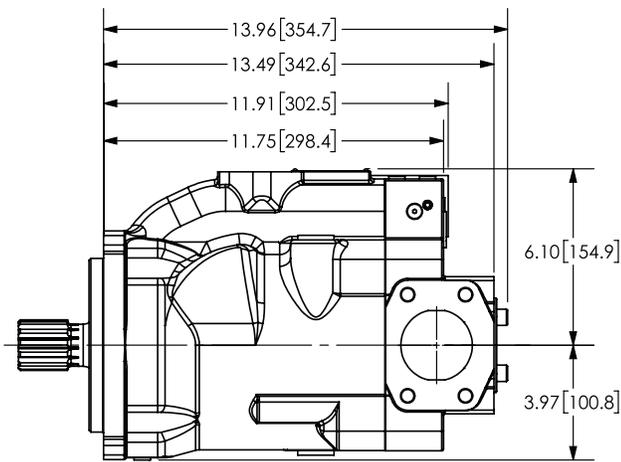


Right Side View, Rear Ported Valve Plate

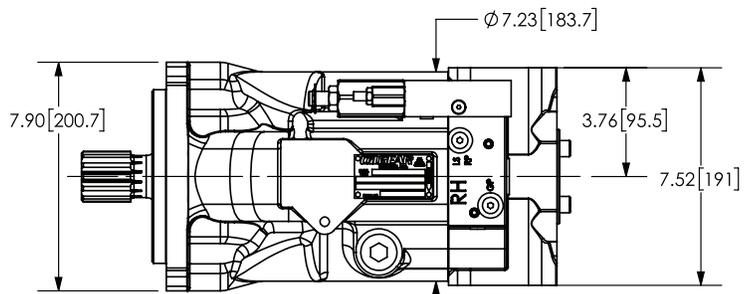


Top View, Rear Ported Valve Plate

520730-401 REV 0



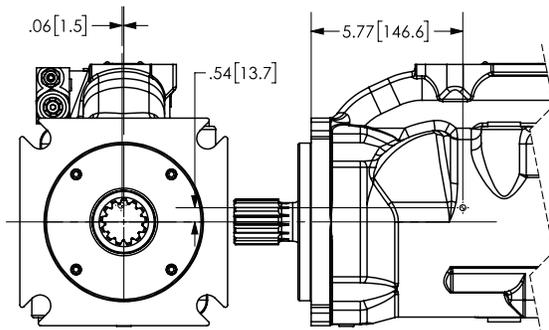
Right Side View, Side Ported Valve Plate



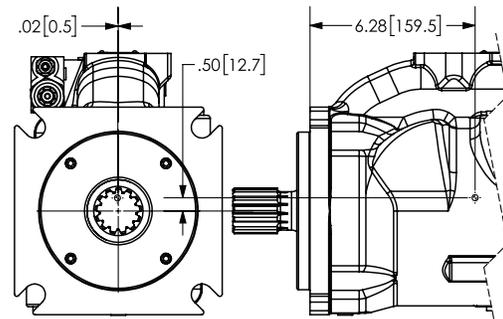
Top View, Side Ported Valve Plate

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CENTER OF GRAVITY AND DRY WEIGHT

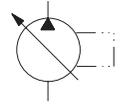


Rear Port Valve Plate - 131 lbs [59.4 kg]

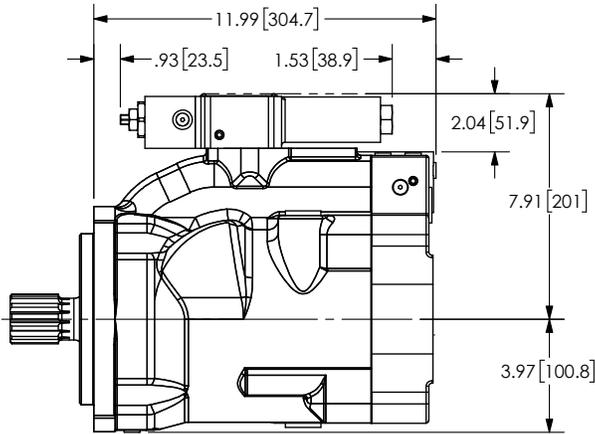


Side Port Valve Plate - 142 lbs [64.4 kg]

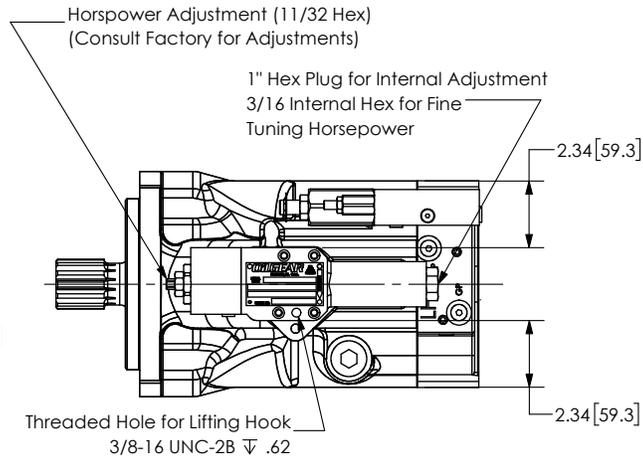
Rotational Moment of Inertia: 150 lb*in² [439 kg*cm²]



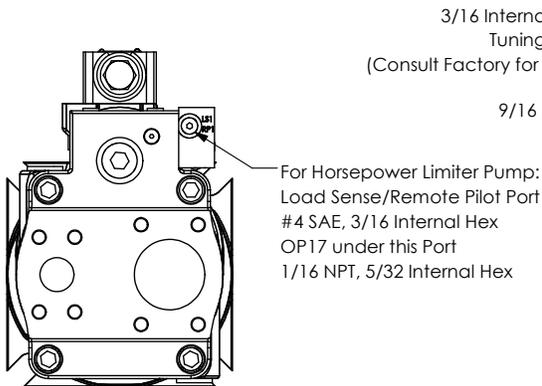
CLEARANCE DIMENSIONS-HORSEPOWER LIMITER CONTROL



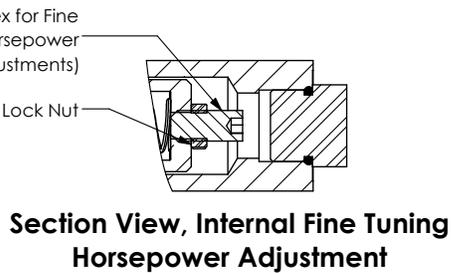
Right Side View, Rear Ported Valve Plate
(Reference Previous Views for all other Dimensions)



Top View, Rear Ported Valve Plate
(Reference Previous Views for all other Dimensions)



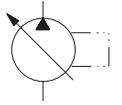
Rear View, Rear Ported Valve Plate
(Reference Previous Views for all other Notes)



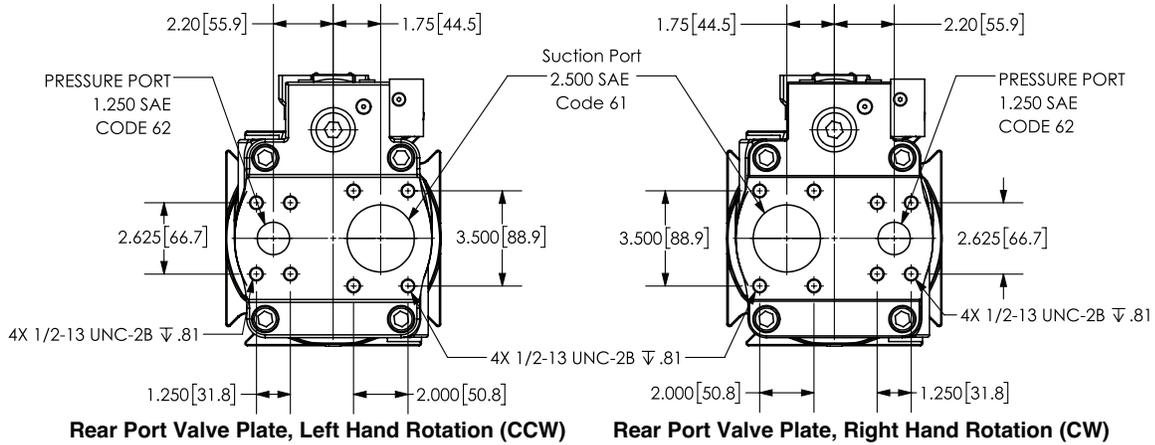
Please Note

These views show a rear-ported pump. These dimensions and descriptions apply to all Horsepower pumps of this size.

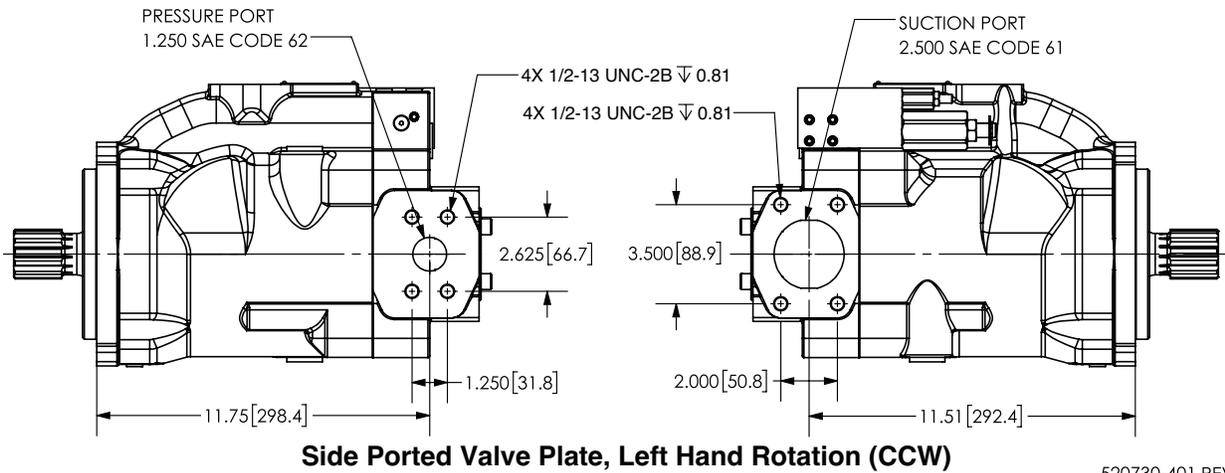
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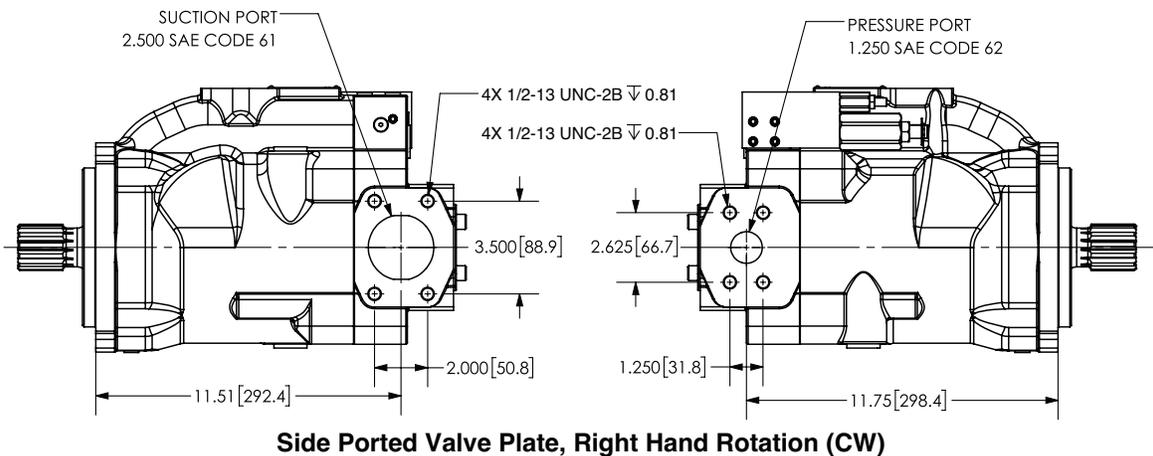
VALVE PLATE VIEWS



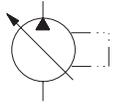
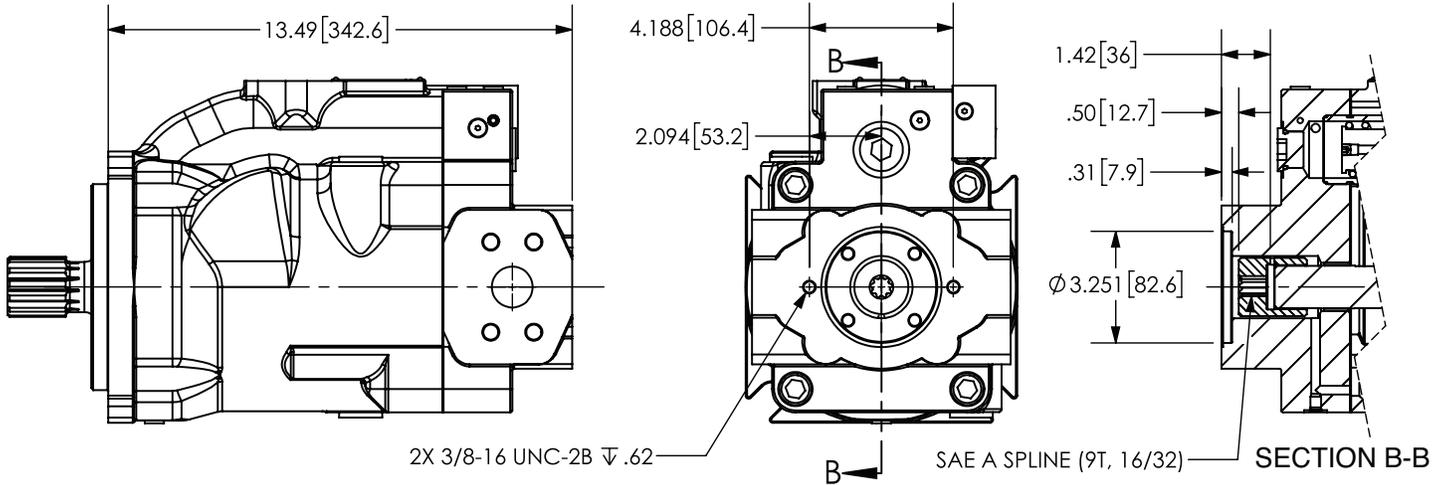
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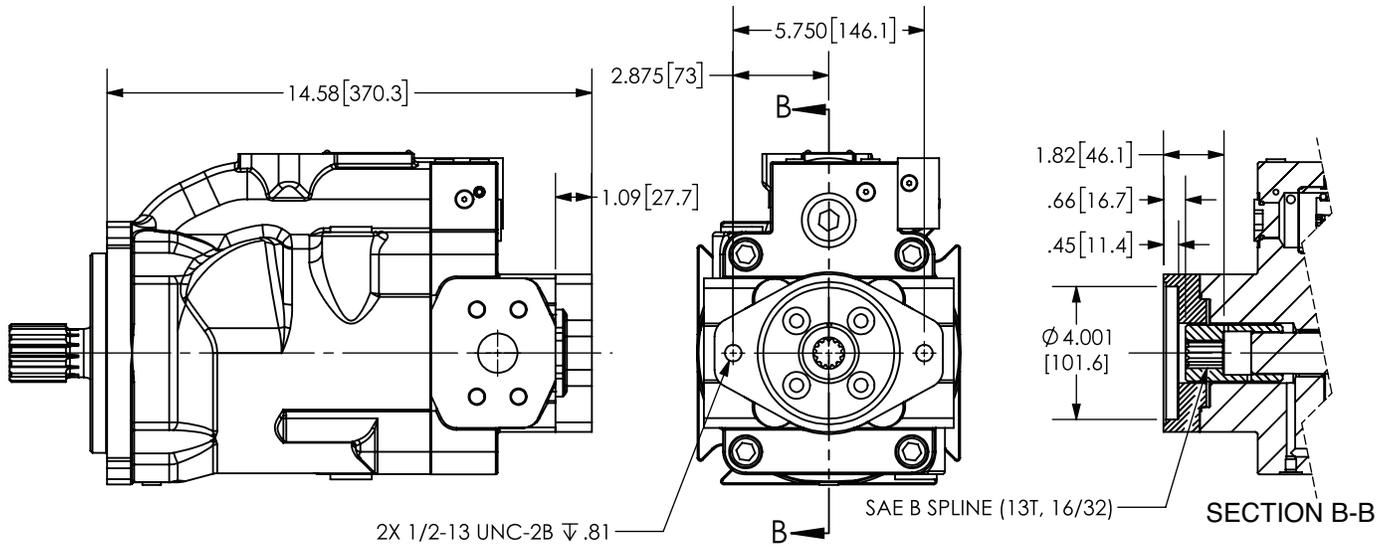
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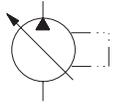
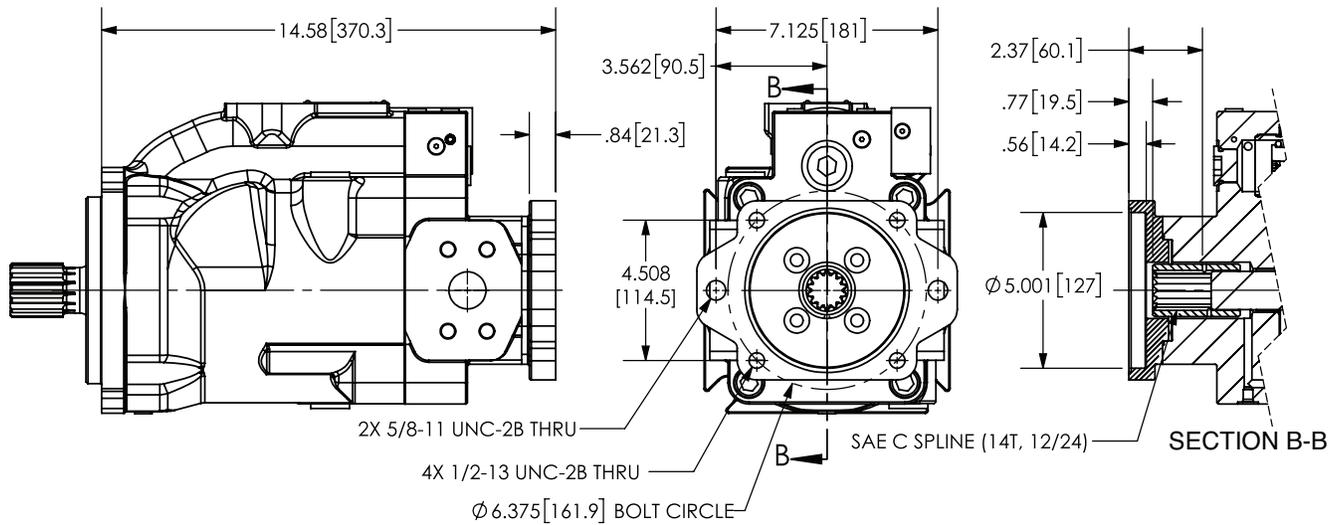
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**TANDEM PUMP ADAPTERS****SAE A (82-2) MOUNTING ADAPTER**

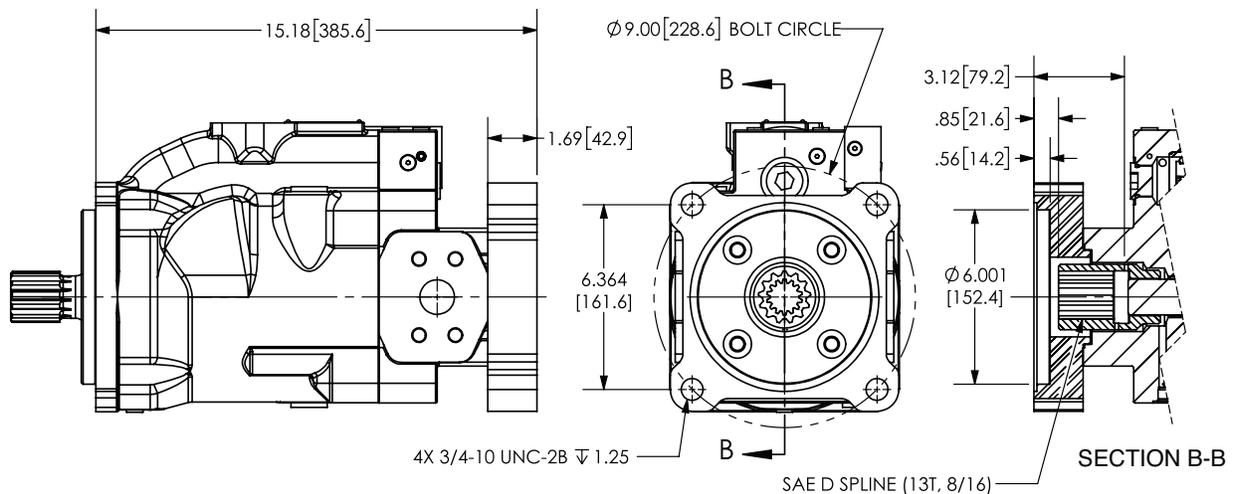
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**SAE B (101-2) MOUNTING ADAPTER**

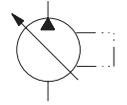
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**TANDEM PUMP ADAPTERS****SAE C (127-2/4) MOUNTING ADAPTER**

520730-401 REV 0

**SAE D (152-4) MOUNTING ADAPTER**

520730-401 REV 0



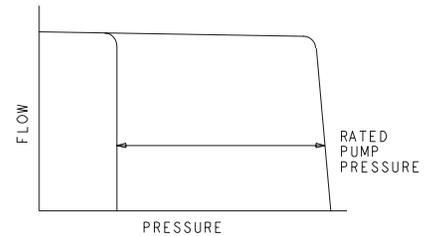
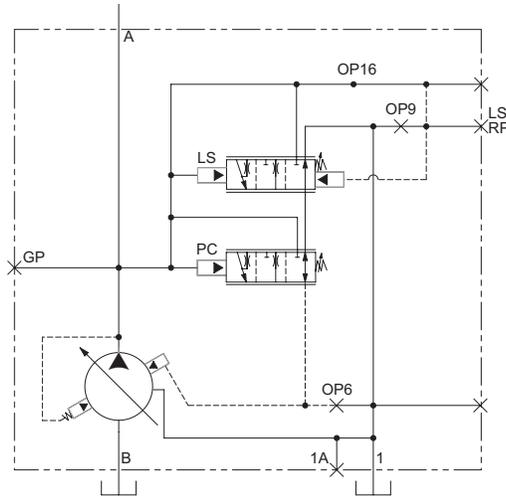
CIRCUIT DIAGRAMS

■ 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.

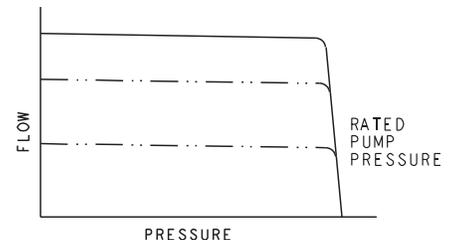
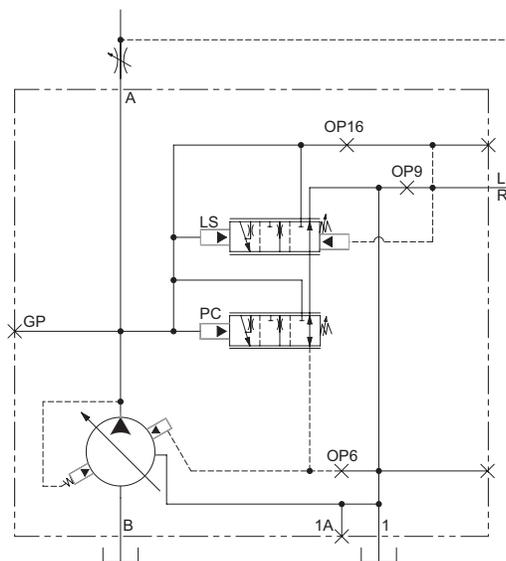


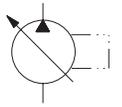
■ Pressure Compensator and Load Sense: P-1NN/F or P-1NN/B

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.





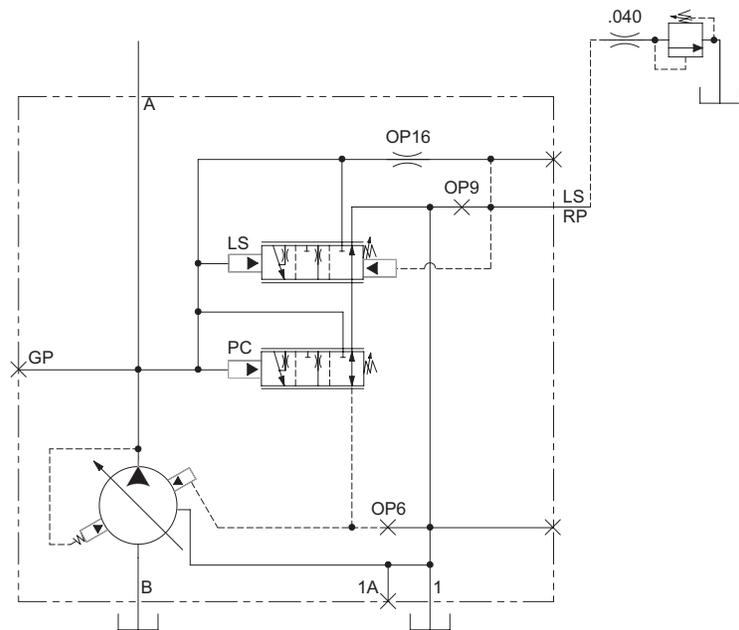
CIRCUIT DIAGRAMS

■ Remote Pressure Compensator: P-RNN

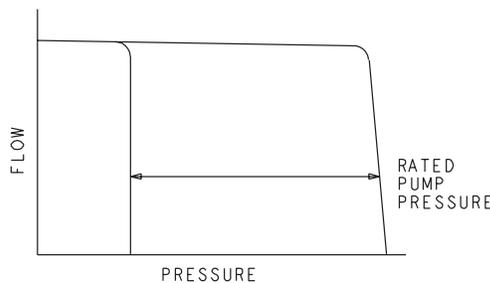
A customer-supplied remote compensator circuit is plumbed into the LS/RP port on the pump. If the remote compensator opens to vent fluid, then the pump will compensate as if the pump's integral compensator reached its pressure setting.

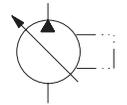
The on-board compensator is still active, and will independently respond to compensate.

- OP 16 has a \varnothing 0.031" 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" stability orifice.
- If a 1/4" 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" 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.





CIRCUIT DIAGRAMS

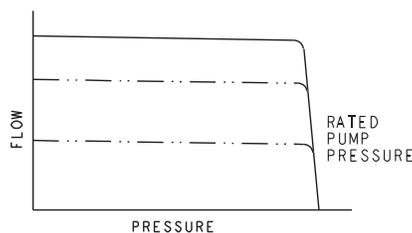
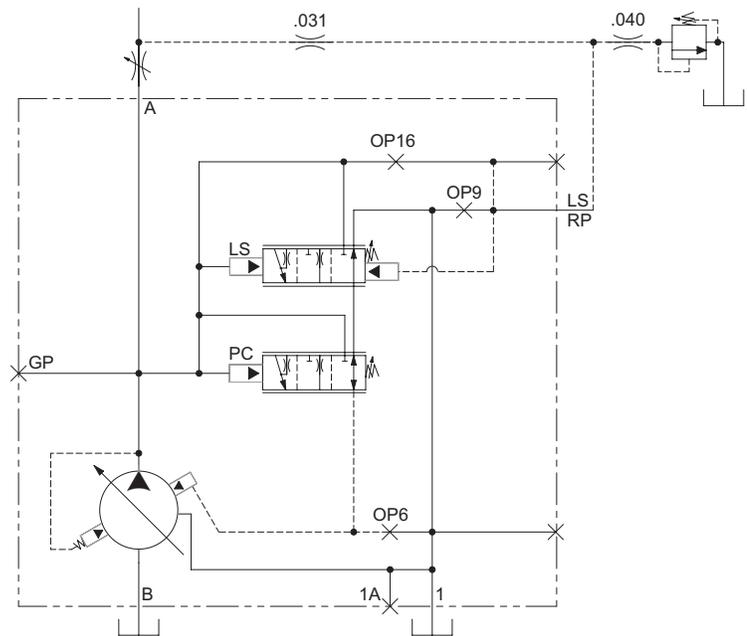
■ Remote Pressure Compensator and Load Sense: P-1NN/F

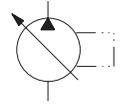
A customer-supplied remote compensator circuit is plumbed into the LS/RP port on the pump. If the remote compensator opens to vent fluid, then the pump will compensate.

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 \varnothing 0.031" 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" stability orifice.
- If a 1/4" 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" 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.





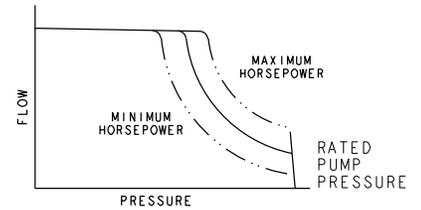
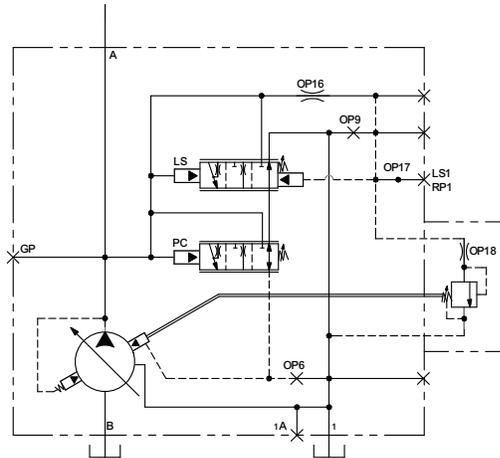
CIRCUIT DIAGRAMS

■ Horsepower Limiter w/Pressure Compensator: P-1NN/H

Automatically reduces delivery as unit pressure rises to limit horsepower consumption. The pressure compensator control overrides the horsepower control when the system pressure reaches the preset control pressure.

- OP 18 has a Ø 0.040" ORIFICE
- OP 17 is OPEN
- OP 16 has a Ø 0.031" ORIFICE
- OP 9 is PLUGGED
- OP 6 is PLUGGED
- The LS1/RP1 Port is PLUGGED

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

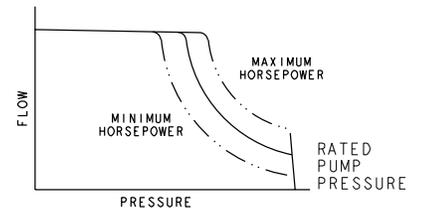
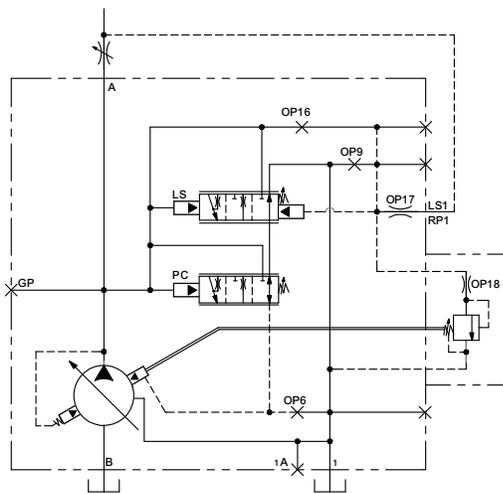


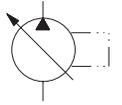
■ Horsepower Limiter w/Load Sense: P-1NN/G

A constant flow output is maintained for a given flow control valve setting, regardless of changes in drive speed and/or working pressure, until (limited) horsepower setting is reached. Control then automatically reduces delivery, as unit pressure rises, to limit horsepower consumption.

- OP 18 has a Ø 0.040" ORIFICE
- OP 17 has a Ø 0.031" ORIFICE
- OP 16 is PLUGGED
- OP 9 is PLUGGED
- OP 6 is PLUGGED
- The customer-supplied Load Sense circuit is plumbed into the LS1/RP1 PORT.

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





CIRCUIT DIAGRAMS

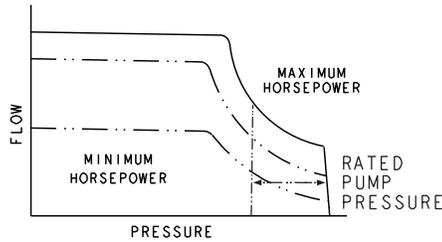
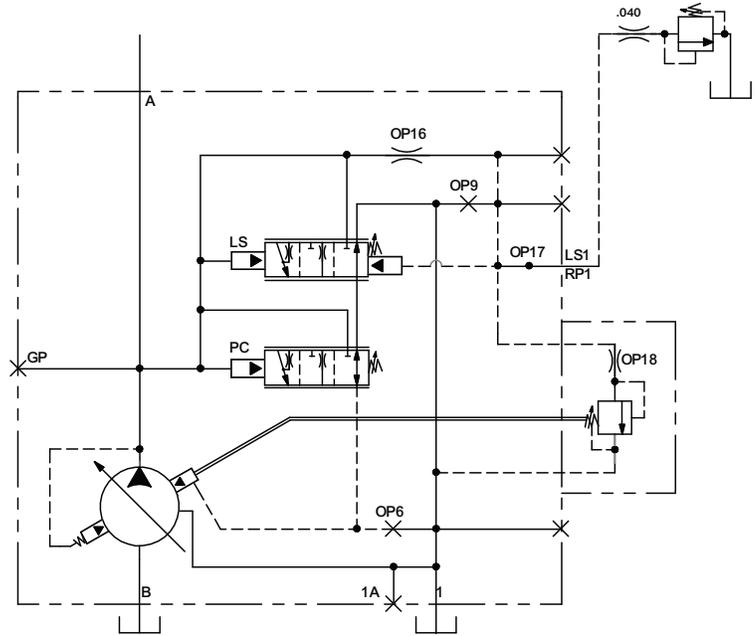
■ Horsepower Limiter w/Remote Pressure Compensator: P-RNN/H

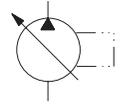
Automatically reduces delivery as unit pressure rises to limit horsepower consumption.

A customer-supplied remote compensator circuit is plumbed into the LS1/RP1 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.

- OP 18 has a \varnothing 0.040" ORIFICE
- OP 17 is OPEN
- OP 16 has a \varnothing 0.031" ORIFICE
- OP 9 is PLUGGED
- OP 6 is PLUGGED
- The customer-supplied Remote Compensator circuit is plumbed into the LS1/RP1 Port.
- The Remote Compensator requires a flow rate of approximately 0.25 GPM.
- The remote pilot relief valve requires a 0.040" stability orifice.
- If a 1/4" line is used to connect the remote compensator to the LS1/RP1 port, then the recommended line length is 6 to 30 feet.
- If a 3/8" line is used to connect the remote compensator to the LS1/RP1 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.





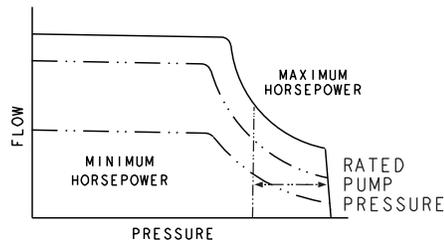
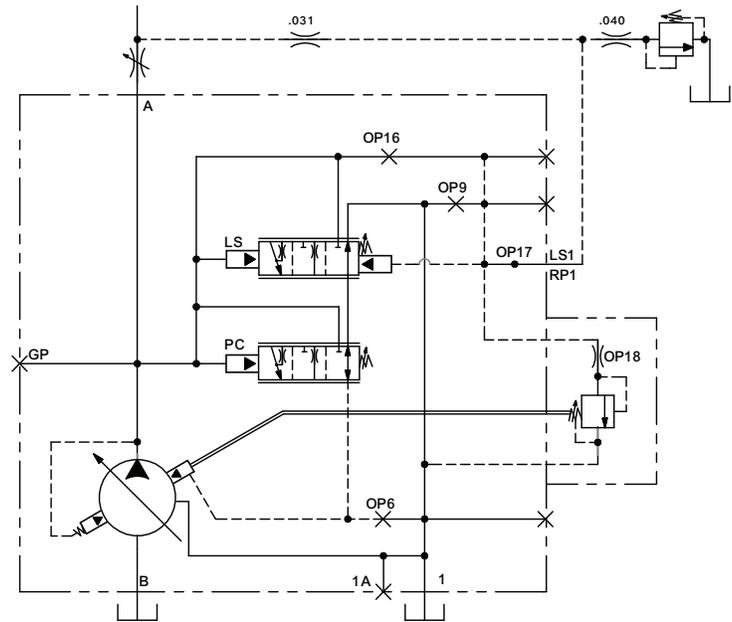
CIRCUIT DIAGRAMS

■ Horsepower Limiter w/Load Sensing w/Remote Pressure Compensator: P-RNN/G

Load sensing control matches flow and pressure to load demand until (*limited*) horsepower setting is reached. Control then automatically reduces delivery as system pressure rises.

A customer-supplied remote compensator circuit is plumbed into the LS1/RP1 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.

- OP 18 has a Ø 0.040" ORIFICE
- OP 17 is OPEN
- OP 16 is PLUGGED
- OP 9 is PLUGGED
- OP 6 is PLUGGED
- The customer-supplied Remote Compensator/Load Sense circuit is plumbed into the LS1/RP1 Port. The circuit requires a Ø 0.031" 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" stability orifice.
- If a 1/4" line is used to connect the remote compensator to the LS1/RP1 port, then the recommended line length is 6 to 30 feet.
- If a 3/8" line is used to connect the remote compensator to the LS1/RP1 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.