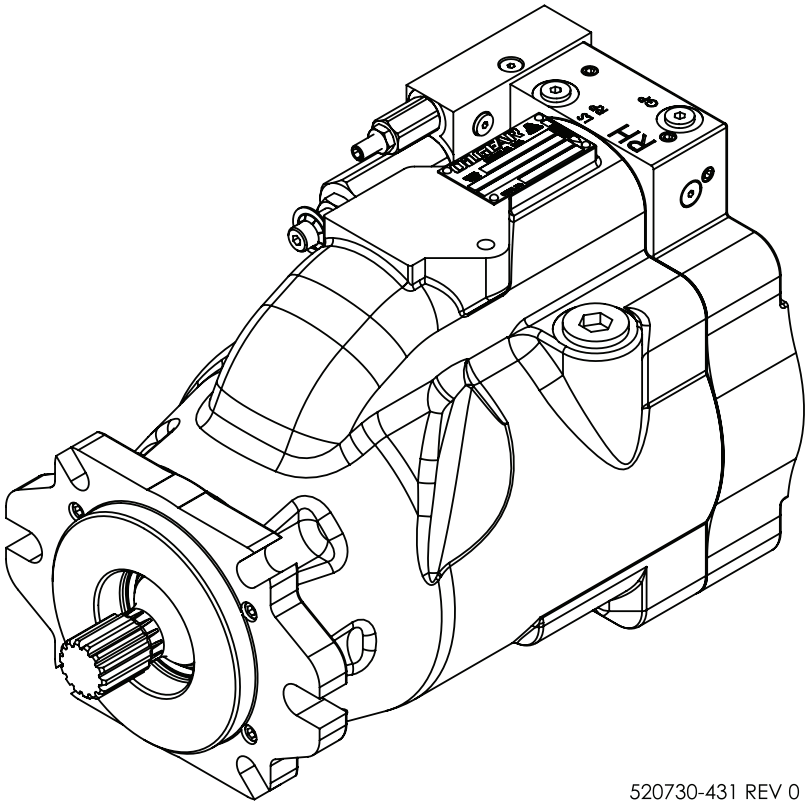
# Installation Bulletin

## XD5-150-C1

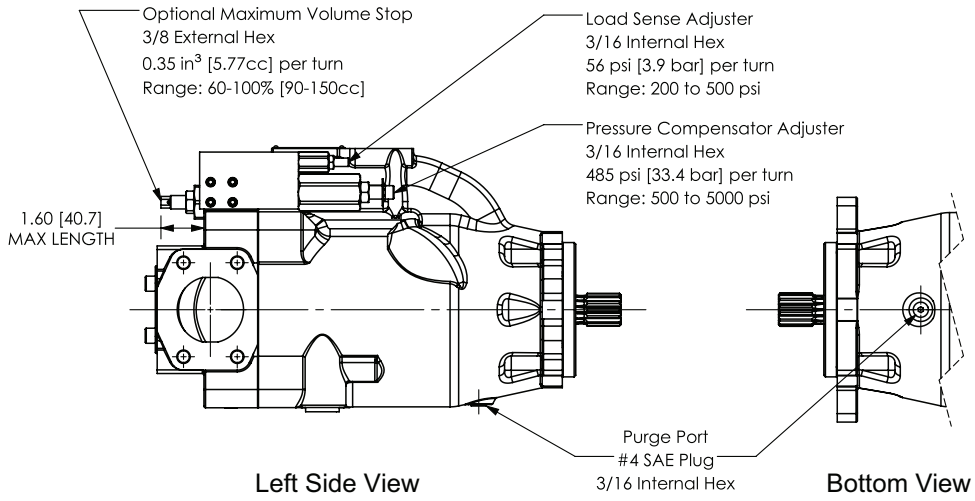
Variable Displacement Pump



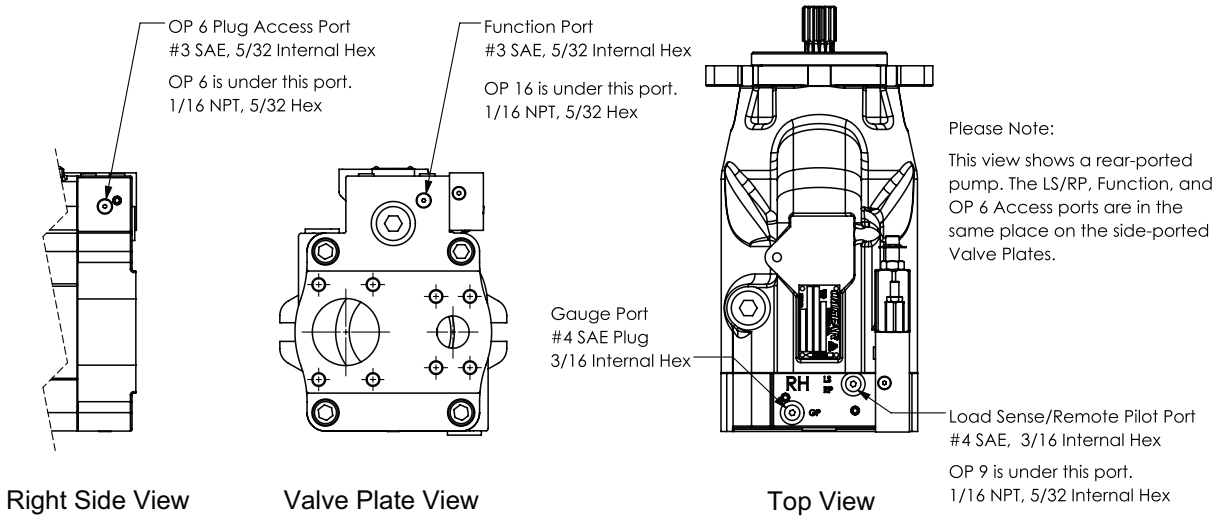

520730-431 REV 0

## Table of Contents

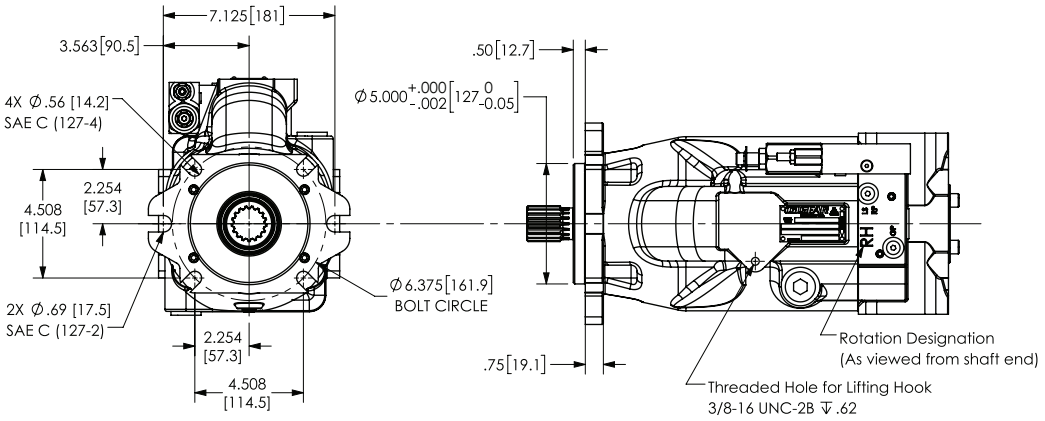
## ADJUSTER AND PURGE PORT LOCATIONS




## CONTROL PORT LOCATIONS



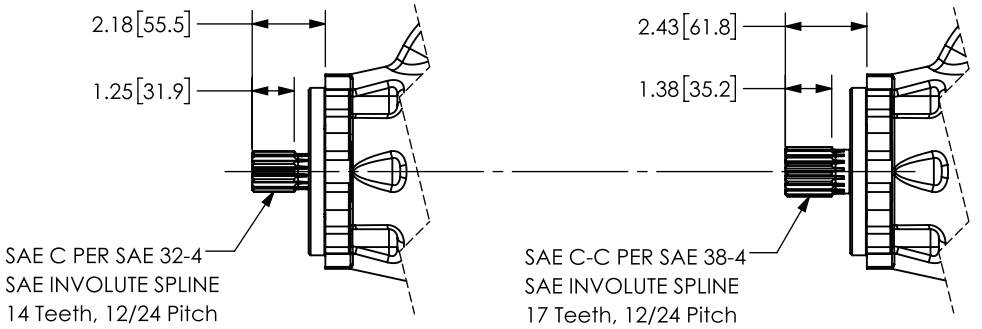
## MOUNTING FLANGE, LIFTING HOOK, AND ROTATION DESIGNATION




Mounting Flange View

Top View, Side Port Valve Plate

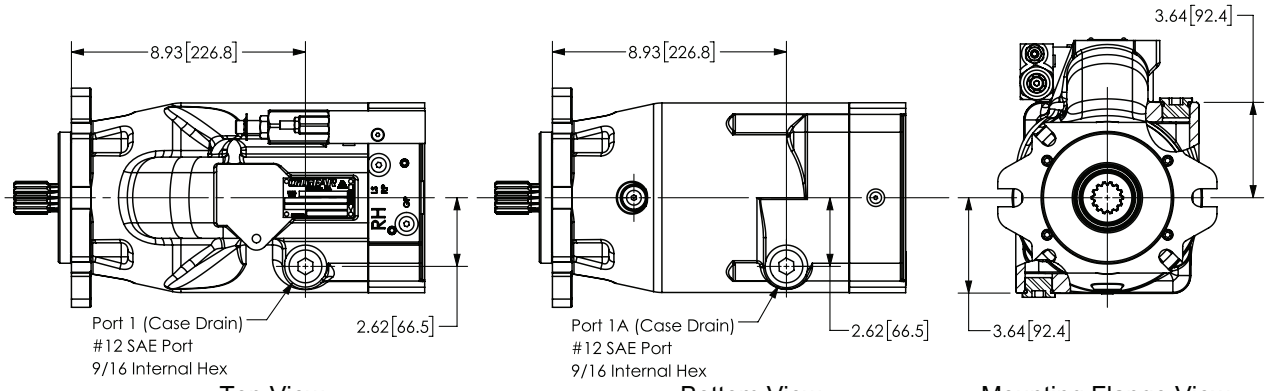
## DRIVESHAFTS




SAE C Spline
Model Code K

SAE C-C Spline
Model Code S

## CASE DRAIN LOCATIONS

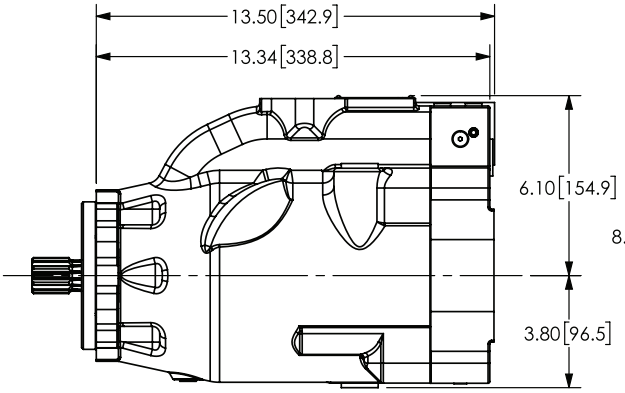



Top View

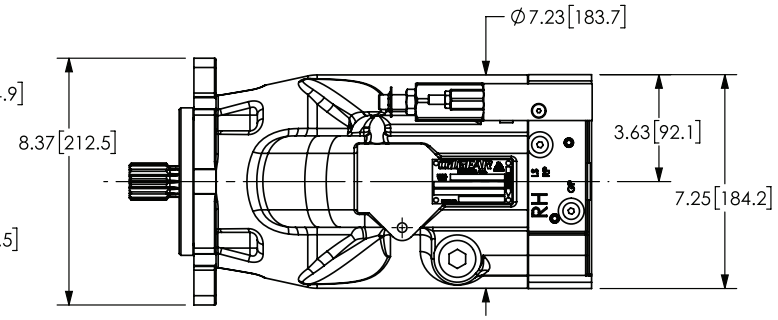
Bottom View

Mounting Flange View

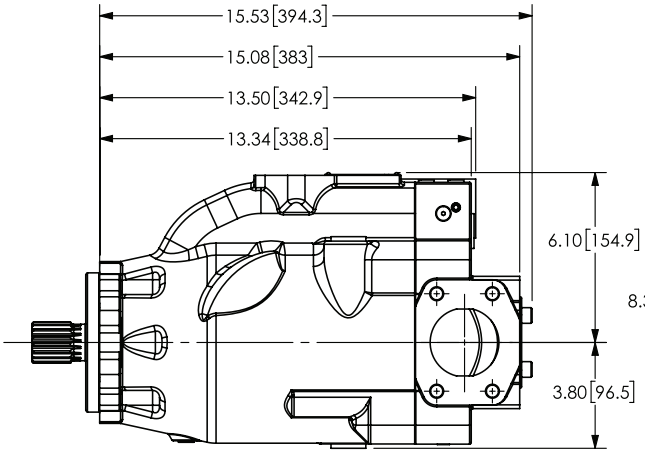
## CLEARANCE DIMENSIONS



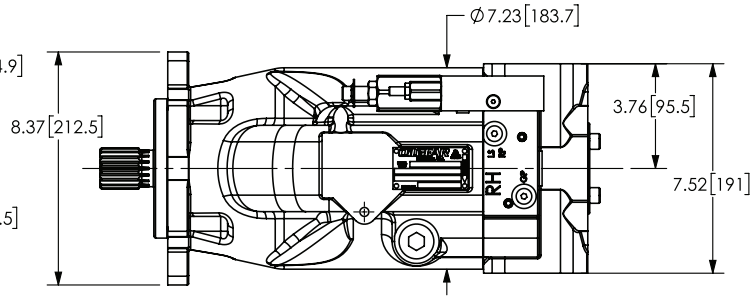

Right Side View, Rear Ported Valve Plate




Top View, Rear Ported Valve Plate

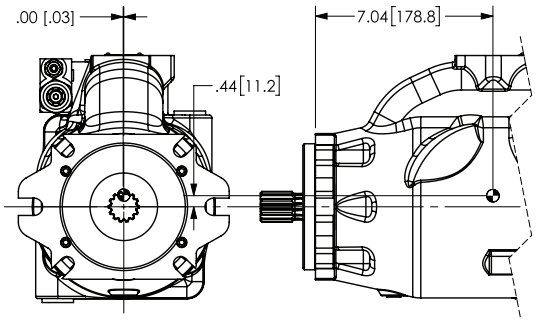



Right Side View, Side Ported Valve Plate

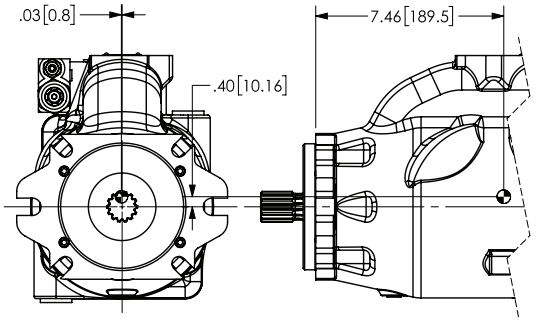



Top View, Side Ported Valve Plate

## CENTER OF GRAVITY AND DRY WEIGHT



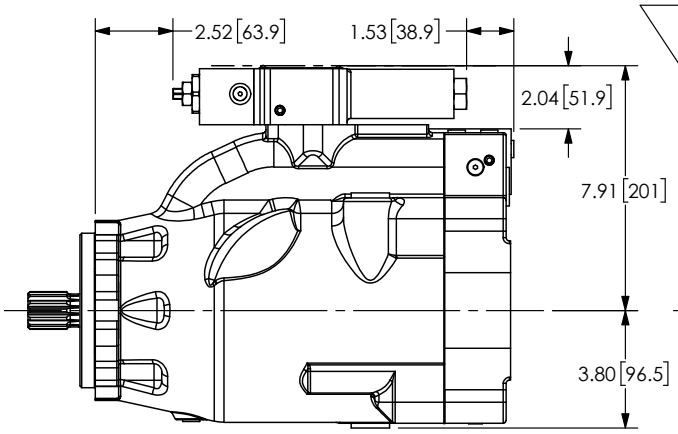

Rear Port Valve Plate - 132 lbs [59.9 kg]



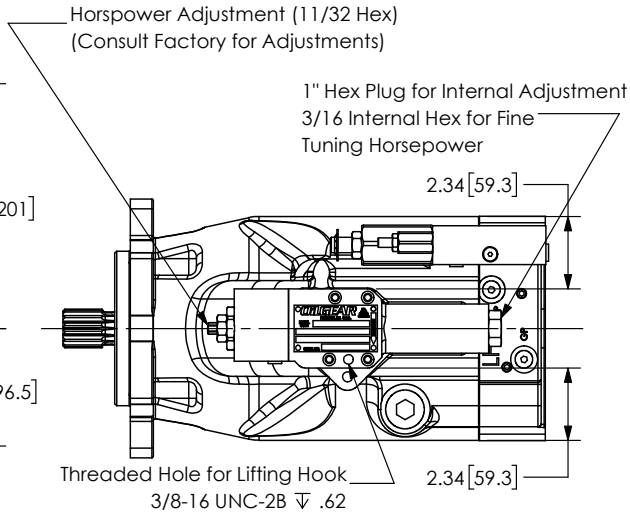

Side Port Valve Plate - 143 lbs [64.9 kg]

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

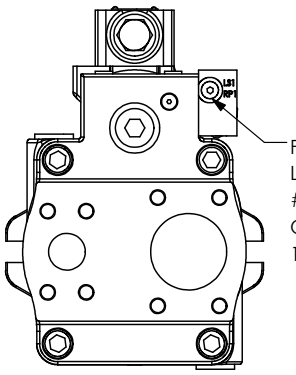
## CLEARANCE DIMENSIONS-HORSEPOWER LIMITER CONTROL



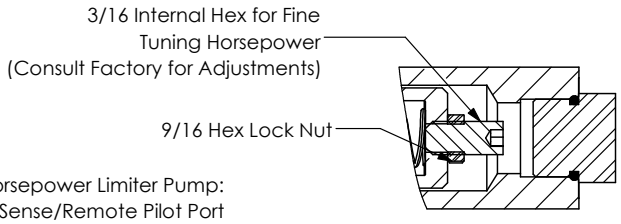

**Right Side View, Rear Ported Valve Plate**
(Reference Previous Views for all other Dimensions)




**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)



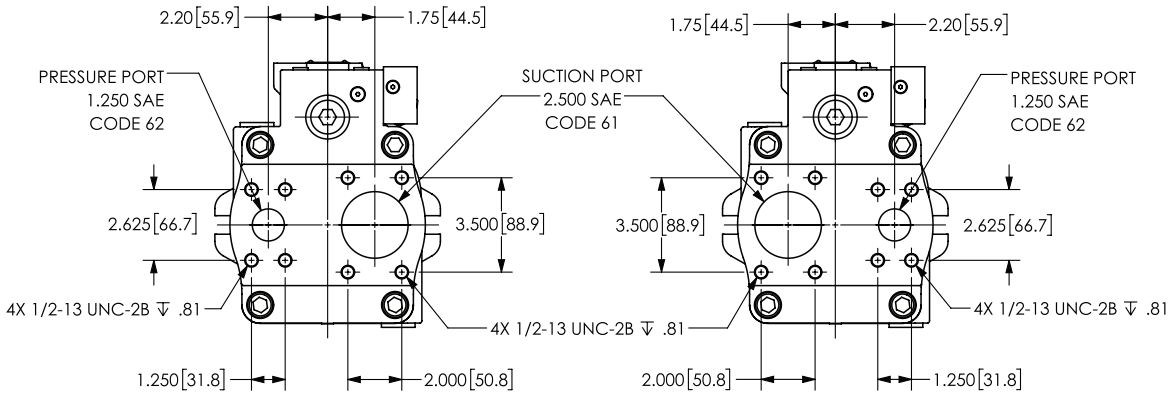

**Section View, Internal Fine Tuning Horsepower Adjustment**

### Please Note

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

520730-431 REV 1

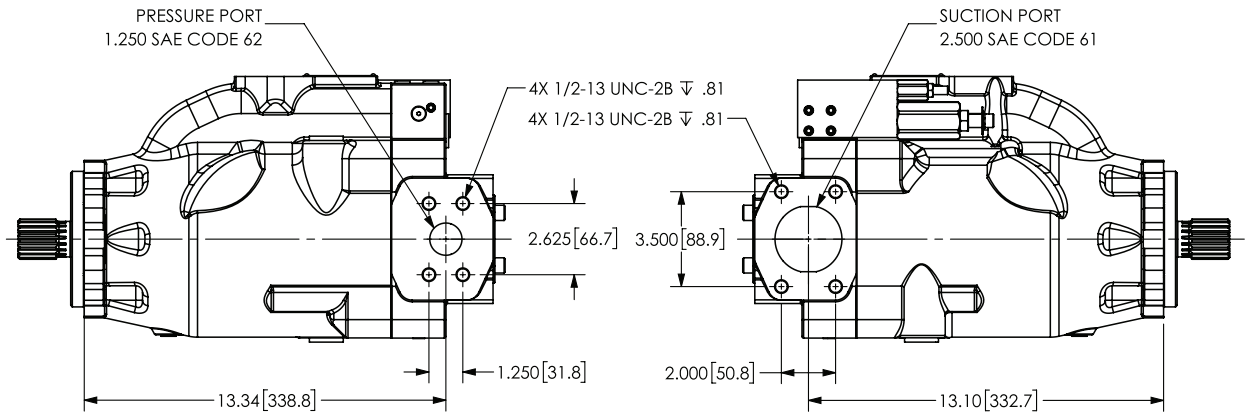
## VALVE PLATE VIEWS




Rear Port Valve Plate, Left Hand Rotation (CCW)

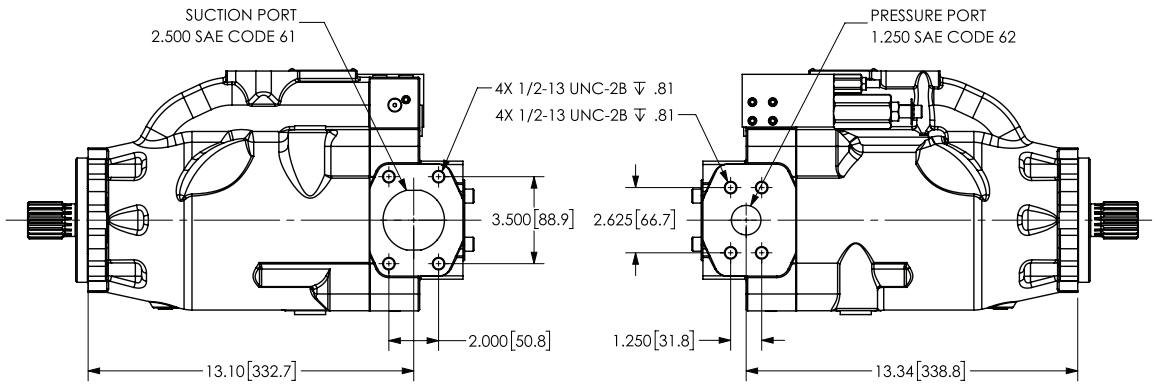
Rear Port Valve Plate, Right Hand Rotation (CW)

520730-431 REV 0




Side Ported Valve Plate, Left Hand Rotation (CCW)

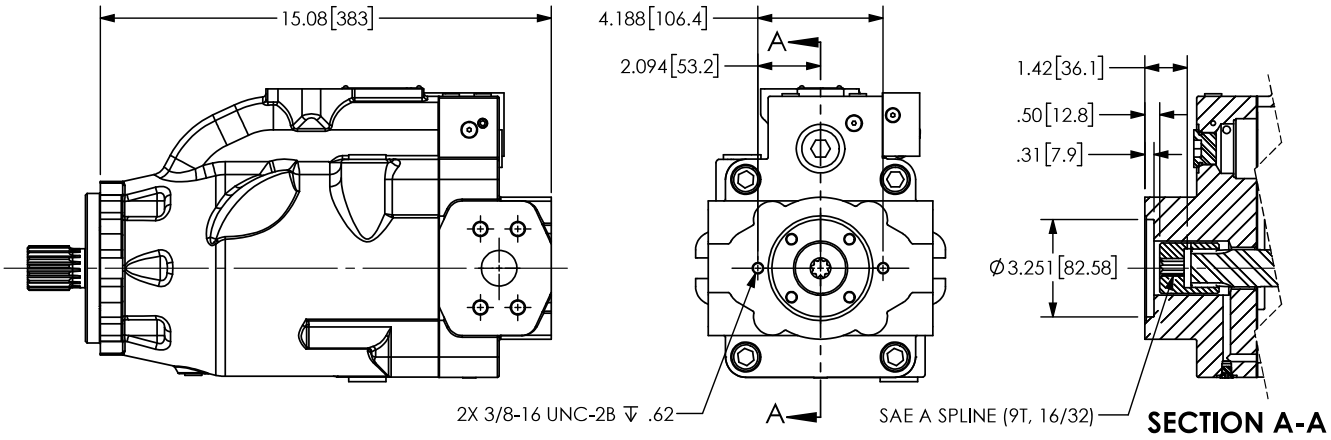
520730-431 REV 0



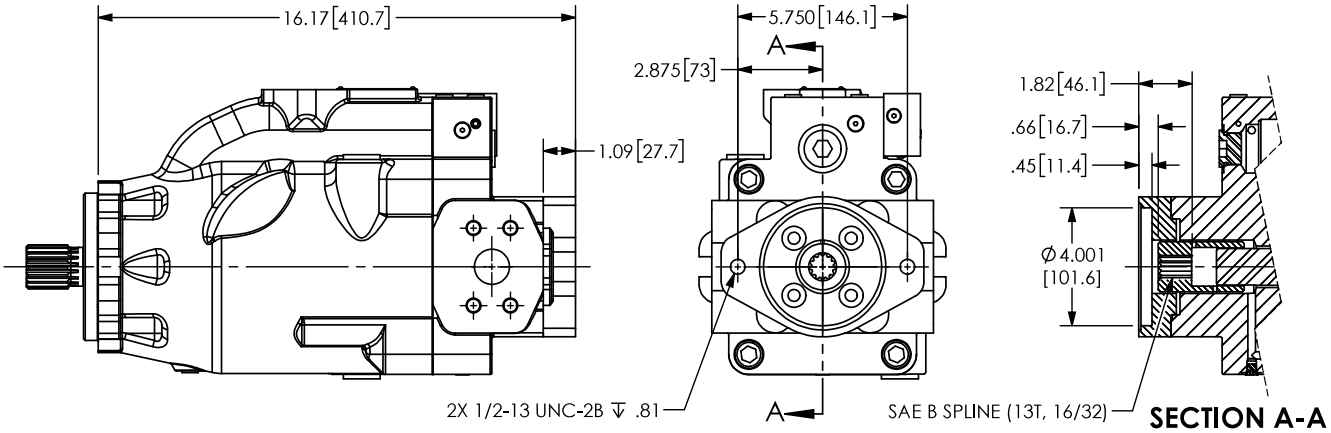

Side Ported Valve Plate, Right Hand Rotation (CW)

520730-431 REV 0

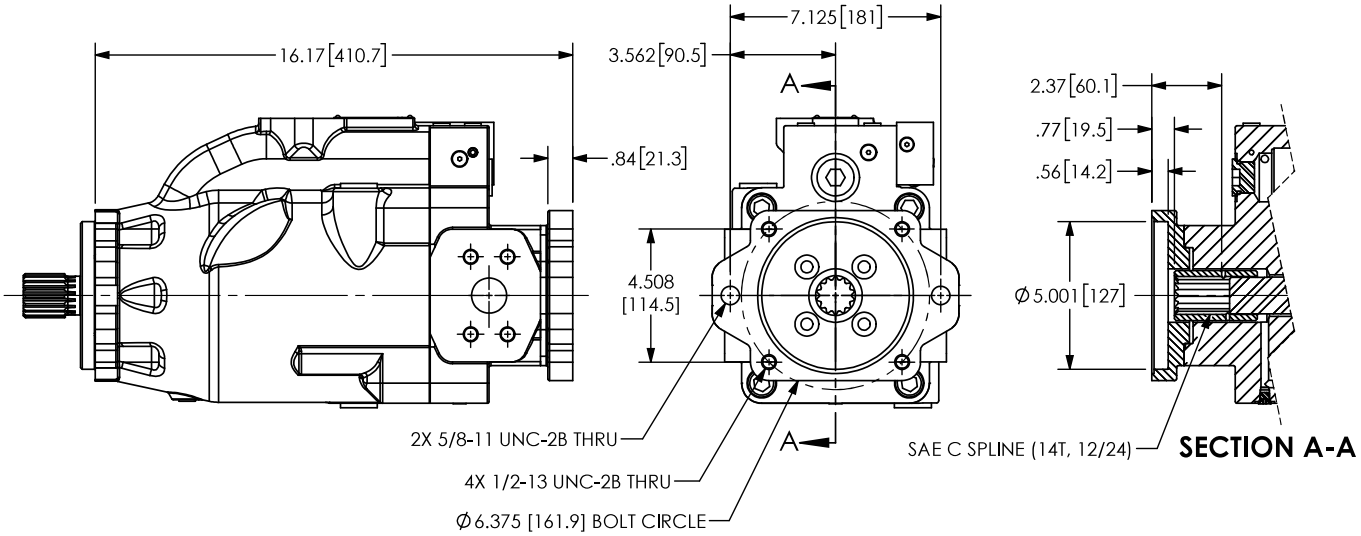
## TANDEM PUMP ADAPTERS




**SAE A (82-2) MOUNTING ADAPTER** 520730-431 REV 0




**SAE B (101-2) MOUNTING ADAPTER** 520730-431 REV 0




**SAE C (127-2/4) MOUNTING ADAPTER** 520730-431 REV 0

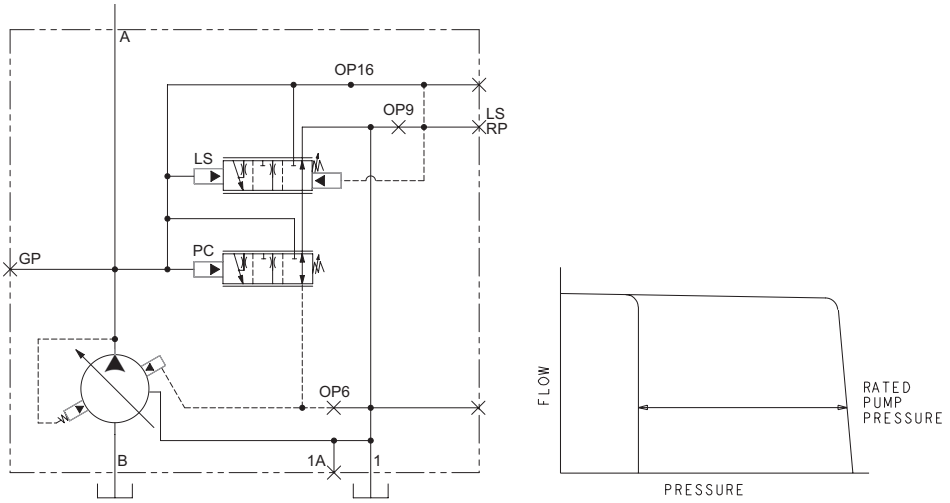
## CIRCUIT DIAGRAMS

### ■ 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.*

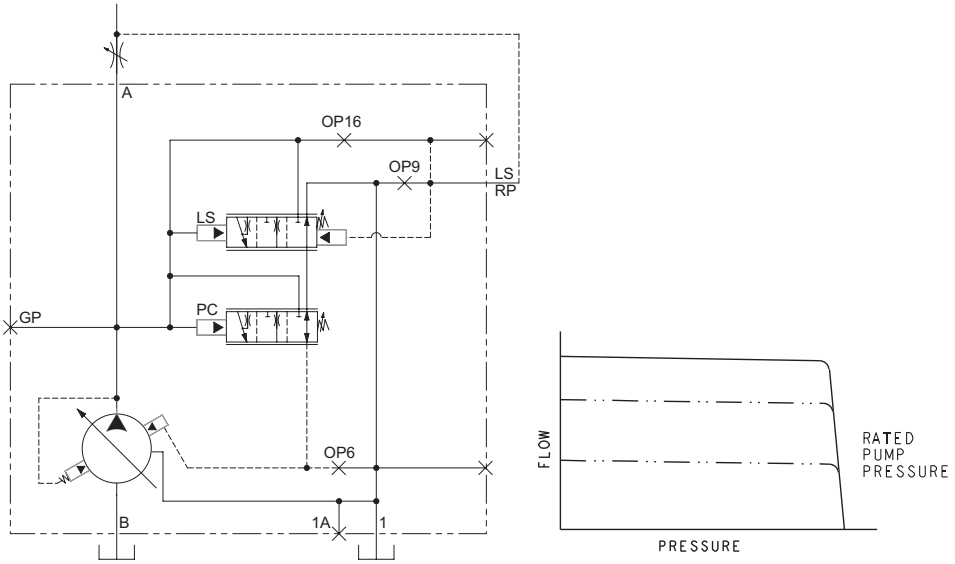



### ■ Pressure Compensator and Load Sense: **P-1NN/F or P-1NN/B**

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

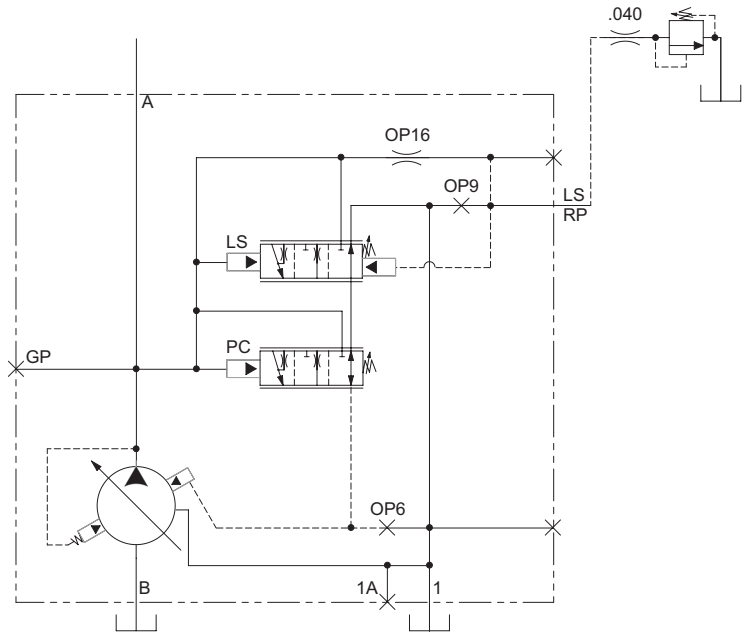
### ■ Remote Pressure Compensator: P-RNN

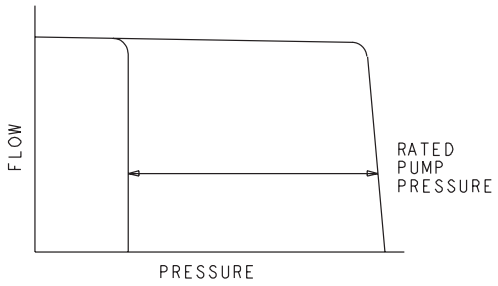
A customer-supplied remote compensator circuit is plumbed into the LS/RP port on the pump. If the remote compensator opens to vent fluid, then the pump will compensate as if the pump's integral compensator reached its pressure setting.

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

- OP 16 has a Ø 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

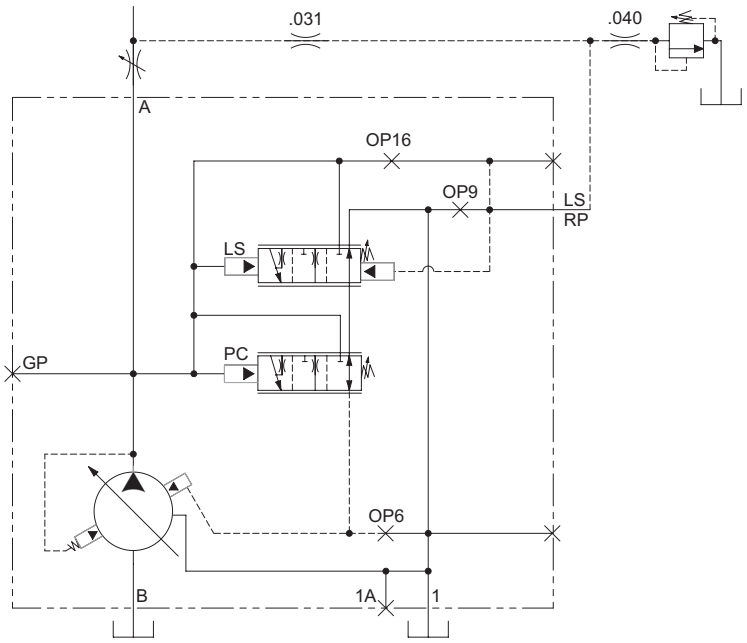
### ■ Remote Pressure Compensator and Load Sense: P-1NN/F

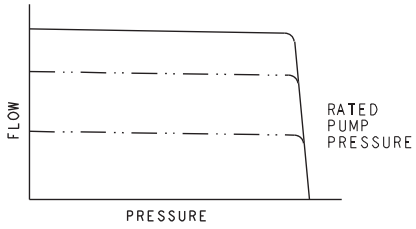
A customer-supplied remote compensator circuit is plumbed into the LS/RP port on the pump. If the remote compensator opens to vent fluid, then the pump will compensate.

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 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 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.*



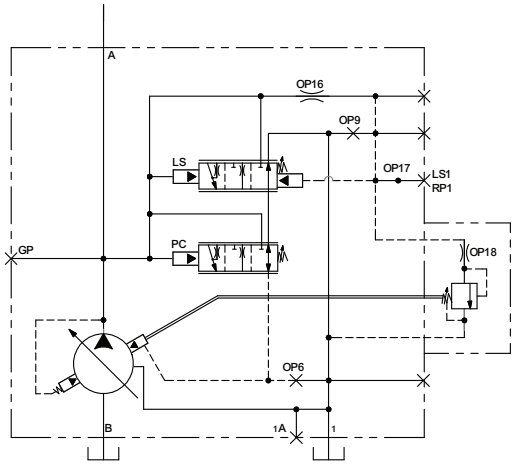
## CIRCUIT DIAGRAMS

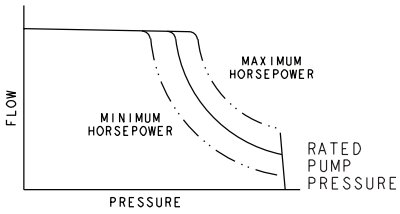
### ■ Horsepower Limiter w/Pressure Compensator: P-1NN/H

Automatically reduces delivery as unit pressure rises to limit horsepower consumption. The pressure compensator control over rides 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.*



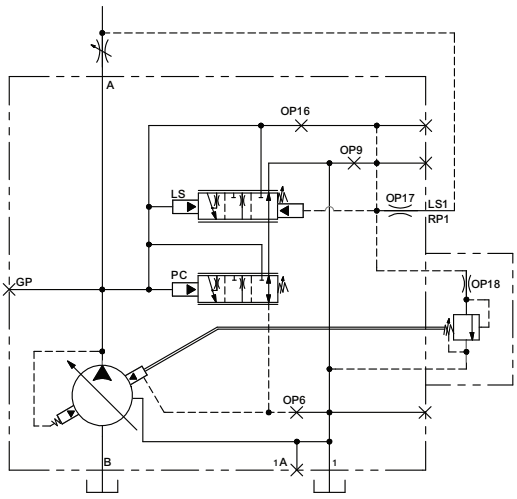



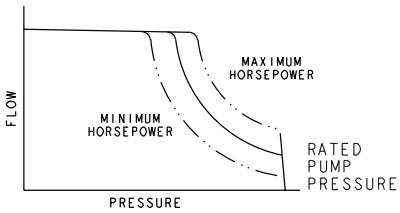

### ■ Horsepower Limiter w/Load Sense: P-1NN/G

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

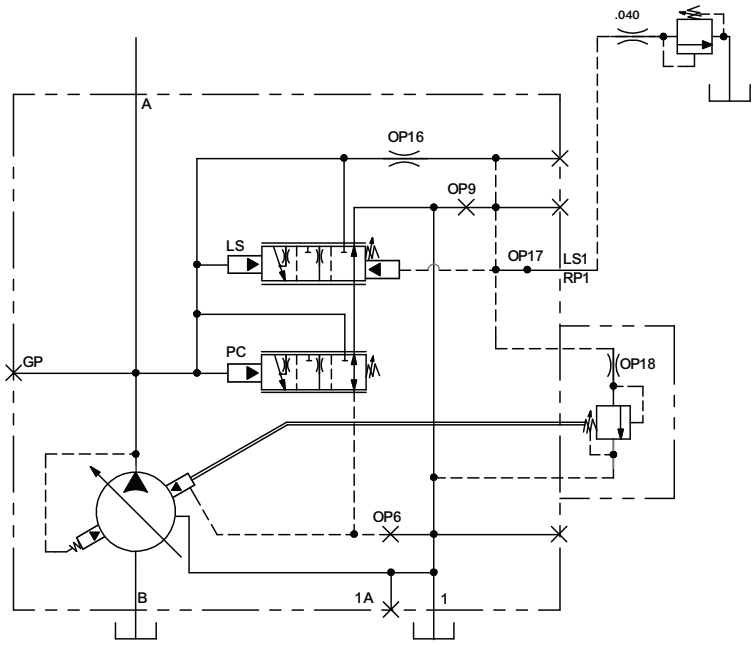
### ■ Horsepower Limiter w/Remote Pressure Compensator: P-RNN/H

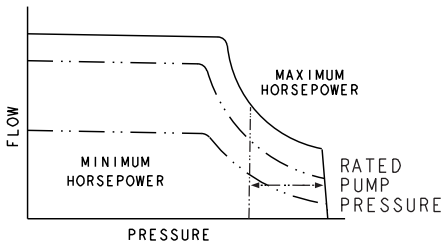
Automatically reduces delivery as unit pressure rises to limit horsepower consumption.

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 reavched its pressure setting.

- 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 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 av 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.*