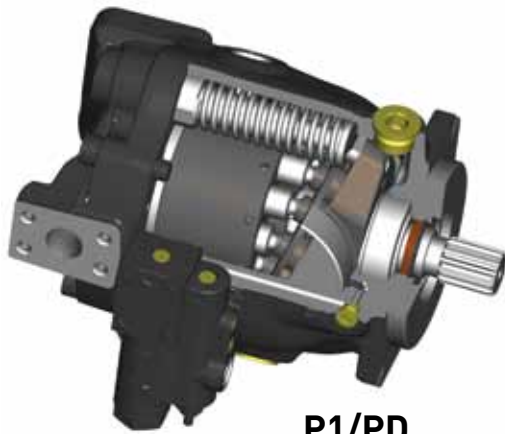




# Piston Pumps (Mobile or Industrial)

## P1/PD Medium Pressure Mobile Piston Pumps

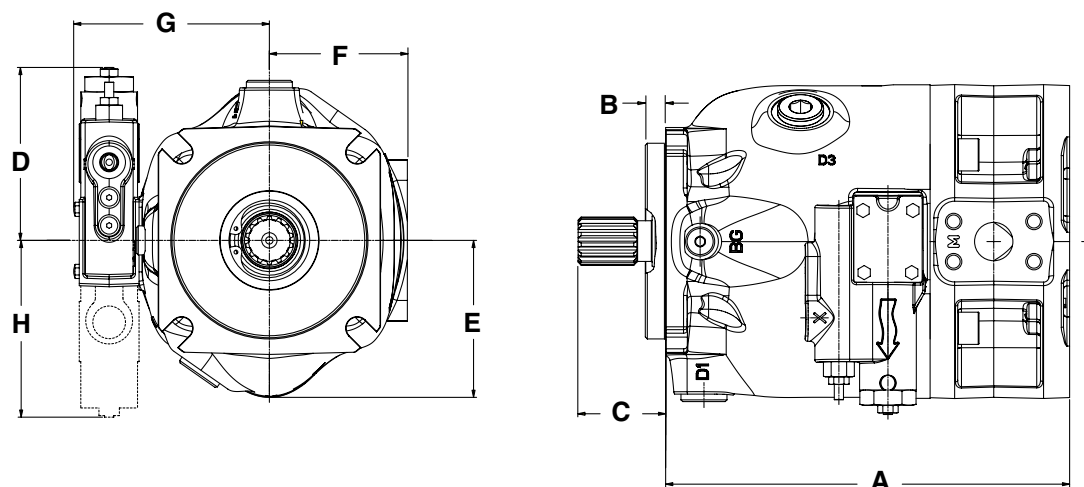


**P1/PD**

### Benefits/Features

- Compact overall package size
- Quiet operation
- Low flow ripple to further reduce noise
- Elastomer seals that eliminate gaskets and external leakage
- High operating efficiency for lower power consumption and reduced heat generation
- Simple hydraulic controls with “no-leak” adjustments
- SAE and ISO standard mounting flanges and ports
- Long life, tapered-roller shaft bearings
- Long life, low friction, hydrostatically balanced cam bearings
- Full power through-drive capability
- End or side inlet and outlet ports
- Case drain ports for horizontal or vertical, shaft-up mounting
- Optional minimum and maximum displacement adjustments
- Optional case-to-inlet check valve to extend shaft seal life
- Easy to service

## P1/PD Medium Pressure Mobile Piston Pumps



### Dimensions, inch (mm)

| Series   | A             | B           | C Max.      | D          | E            | F           | G            | H Max.     |
|----------|---------------|-------------|-------------|------------|--------------|-------------|--------------|------------|
| P1/PD018 | 6.46 (164.2)  | 0.24 (6.2)  | 1.29 (32.8) | 4.72 (120) | 2.97 (75.5)  | 2.60 (66)   | 4.24 (107.7) | 4.80 (122) |
| P1/PD028 | 9.25 (235.5)  | 0.37 (9.5)  | 1.84 (46.8) | 4.72 (120) | 3.21 (81.5)  | 2.93 (74.5) | 4.48 (113.8) | 4.80 (122) |
| P1/PD045 | 9.00 (228.7)  | 0.37 (9.5)  | 1.84 (46.8) | 4.72 (120) | 3.63 (92.3)  | 2.92 (74.2) | 4.75 (120.7) | 4.80 (122) |
| P1/PD060 | 9.96 (253.0)  | 0.50 (12.7) | 2.24 (56.8) | 4.72 (120) | 3.98 (101.2) | 3.23 (82)   | 4.88 (123.9) | 4.80 (122) |
| P1/PD075 | 10.37 (263.5) | 0.50 (12.7) | 2.24 (56.8) | 4.72 (120) | 4.09 (103.8) | 3.54 (90)   | 5.03 (127.7) | 4.80 (122) |
| P1/PD100 | 13.37 (339.6) | 0.50 (12.7) | 2.47 (62.8) | 4.72 (120) | 4.61 (117.1) | 3.98 (101)  | 5.66 (143.7) | 4.80 (122) |
| P1/PD140 | 14.34 (364.3) | 0.50 (12.7) | 2.97 (75.5) | 4.72 (120) | 5.24 (133)   | 4.45 (113)  | 6.13 (155.7) | 4.80 (122) |

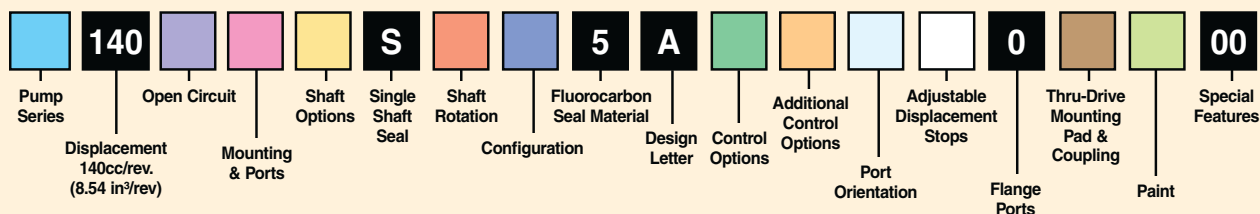
### SAE Flanges & Shafts

|                         | PD018      | PD028, PD045     | PD060, PD075   | PD100            | PD140         |
|-------------------------|------------|------------------|----------------|------------------|---------------|
| Mounting flange, SAE    | 82-2 (A)   | 101-2 (B)        | 127-4 (C)      | 127-4 (C)        | 152-4 (D)     |
| Pilot diameter, in (mm) | 3.2 (82.5) | 4.0 (101.6)      | 5.0 (127)      | 5.0 (127)        | 6.0 (152.4)   |
| Keyed shaft, SAE        | 19-1 (A)   | 25-1 (B-B)       | 32-1 (C)       | 38-1 (C-C)       | 44-1 (D)      |
| Spline shaft, SAE       | 11T-16/32P | 15T-16/32P (B-B) | 14T-12/24P (C) | 17T-12/24P (C-C) | 13T-8/16P (D) |



# Piston Pumps

## P1/PD 140cc, Model Ordering Code



| Pump Series |            |
|-------------|------------|
| P1          | Mobile     |
| PD          | Industrial |

| Open Circuit |                                   |
|--------------|-----------------------------------|
| P            | Open Circuit (One Side of Center) |
| X            | Open Circuit (100% over Center)   |

| Mounting & Ports |                                                                        |
|------------------|------------------------------------------------------------------------|
| S                | SAE D Pilot SAE Flange Connection Ports with SAE Aux Ports             |
| A                | SAE D Pilot BSPP Flange Connection Ports with BSPP Aux Ports           |
| M                | ISO - 180MM Pilot Metric Flange Connection Ports with Metric Aux Ports |
| B                | ISO - 180MM Pilot Metric Flange Connection Ports with BSPP Aux Ports   |

| Shaft Options |                                   |
|---------------|-----------------------------------|
| 01            | Splined shaft - SAE D 13T         |
| 02            | Keyed shaft - SAE D 44-1          |
| 04            | Keyed shaft - ISO / DIN 50MM Dia. |

| Shaft Rotation |                  |
|----------------|------------------|
| R              | Clockwise        |
| L              | Counterclockwise |

| Configuration |                 |
|---------------|-----------------|
| M             | Mobile (P1)     |
| S             | Industrial (PD) |
| U             | Universal       |

| Control Options |                                                                                                                     |
|-----------------|---------------------------------------------------------------------------------------------------------------------|
| C0              | Pressure limiter 1160.30 - 4061.05 PSI (80 - 280 bar)                                                               |
| C1              | Pressure limiter 290.08 - 1160.30 PSI (20 - 80 bar)                                                                 |
| L0              | Load sensing 145.04-435.11 PSI ΔP (10-30 bar ΔP) with pressure limiter 1160.30 - 4061.05 PSI (80 - 280 bar)         |
| L2              | Load sensing 145.04-435.11 PSI ΔP (10-30 bar ΔP) with bleed & pressure limiter 1160.30 - 4061.05 PSI (80 - 280 bar) |
| AN*             | Pilot operated pressure limiter with ISO4401 interface & SAE 4 Vent Port                                            |
| AM              | Pilot operated pressure limiter with mechanical adjustment and SAE 4 Vent Port                                      |
| AE              | Pilot operated pressure limiter with mechanical and electrical adjustment 12 VDC                                    |
| AF              | Pilot operated pressure limiter with mechanical and electrical adjustment 24 VDC                                    |
| ##              | See chart below for electronic control options                                                                      |

\*Not functional control as such

| Additional Control Options |                                                                 |
|----------------------------|-----------------------------------------------------------------|
| 0                          | No other options                                                |
| 2                          | Displacement sensor **                                          |
| T                          | Torque Limiter Control (Used with AM, AN or L0 control options) |

\*\* mandatory with "W\*\*\*", "X\*\*\*", "Y\*\*\*", "Z\*\*\*" "D\*" and "Y"

| Port Orientation |                            |
|------------------|----------------------------|
| E                | End Ports                  |
| S                | Side Ports                 |
| T                | Side Ports with Thru-Drive |

| Adjustable Displacement Stops* (For E & S Port Orientation Only) |                                                  |
|------------------------------------------------------------------|--------------------------------------------------|
| 0                                                                | None                                             |
| 1                                                                | Adjustable maximum displacement stop             |
| 2                                                                | Adjustable minimum displacement stop             |
| 3                                                                | Adjustable maximum and minimum displacement stop |

\*Not available with Thru-Drive

| Thru-Drive Mounting Pad/Coupling |                                                           |
|----------------------------------|-----------------------------------------------------------|
| 0                                | No Thru-Drive                                             |
| A                                | SAE 82-2 (A), 16 (A), 9T coupling                         |
| B                                | SAE 101-2 (B), 22 (B), 11T coupling                       |
| Q                                | SAE 101-2 (B), 25 (B-B), 13T coupling                     |
| J                                | SAE 101-2 (B), rotated 45 degrees, 22 (B), 15T coupling   |
| K                                | SAE 101-2 (B), rotated 45 degrees, 25 (B-B), 13T coupling |
| C                                | SAE 127-4 (C), 32 (C), 14T coupling                       |
| N                                | SAE 127-4 (C), 38 (C-C), 17T coupling                     |
| D                                | SAE 152-4 (D), 44 (D), 13T coupling                       |

| Paint |             |
|-------|-------------|
| 00    | No Paint    |
| PB    | Black Paint |

| Electronic Control Options |   |
|----------------------------|---|
| #                          | # |

|   |                                   |
|---|-----------------------------------|
| 0 | No ECU                            |
| D | Proportional displacement control |
| Y | Proportional pressure control     |

|   |                                                                                              |
|---|----------------------------------------------------------------------------------------------|
| P | Electronic valve with zero displacement default                                              |
| T | Electronic valve with max displacement default                                               |
| S | Electronic valve with zero displacement default and hydromechanical Pmax                     |
| U | Electronic valve with max displacement default and hydromechanical Pmax                      |
| W | Electronic valve with zero displacement default (CANBUS compatible)                          |
| Y | Electronic valve with max displacement default (CANBUS compatible)                           |
| X | Electronic valve with zero displacement default and hydromechanical Pmax (CANBUS compatible) |
| Z | Electronic valve with max displacement default and hydromechanical Pmax (CANBUS compatible)  |

\*\*\* W, X, Y and Z only available with "D\*" and "Y"