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P1/PD Medium Pressure Open Circuit Piston Pumps



ENGINEERING YOUR SUCCESS.

P1/PD Open Circuit Piston Pump Series

Compact, Quiet and Efficient Pumps for Mobile and Industrial Use

The Parker P1/PD series of open circuit piston pumps features a rugged cradle-bearing design ideal for optimal performance in medium pressure mobile (P1) and industrial (PD) applications. Boasting a wide range of control and input speeds, the series is available in displacements of 18, 28, 45, 60, 75, 100 and 140cc and is rated for operation at pressures up to 4,000 psi continuous and 5,000 psi peak.

Parker P1/PD series pumps increase productivity with full power through-drive capability and a fast and stable response. The pumps' high operating efficiency and optional torque limiter equate lower electricity/fuel costs. And, with simple hydraulic controls and fewer parts, P1/PD pumps are service-friendly and easy to maintain.

What's more, the compact size and superior design flexibility of the P1/PD series provide mobile and industrial equipment designers with a greater number of mounting options.

Parker P1/PD series pumps operate at the highest total efficiency and serve a diverse range of markets including:

- Mining
- Oil & Gas
- Forestry
- Construction
- Power Gen
- Recycling
- Military
- Industrial
- Utility
- Material Handling

Technical Data

MODEL	P1/PD 018	P1/PD 028	P1/PD 045	P1/PD 060	P1/PD 075	P1/PD 100	P1/PD 140
Maximum Displacement, cm ³ /rev (cu.in./rev)	18 (1.10)	28 (1.71)	45 (2.75)	60 (3.66)	75 (4.58)	100 (6.1)	140 (8.54)
Outlet Pressure – Continuous, bar (psi)	280 (4000)						
Intermittent*, bar (psi)	320 (4500)						
Peak, bar (psi)	350 (5000)						
P1 Maximum Speed (1.3 bar abs inlet), rpm	3600	3400	3100	2800	2700	2500	2400
P1 (1.0 bar abs inlet), rpm	3300	3200	2800	2500	2400	2100	2100
P1 (0.8 bar abs inlet), rpm	2900	2900	2400	2200	2100	1900	1800
PD Maximum Speed (1.0 bar abs inlet), rpm	1800						
PD (0.8 bar abs inlet), rpm	1800						
Minimum Speed, rpm	600						

*Intermittent pressure is defined as less than 10% of operation time, not exceeding 6 consecutive seconds.

P1PD Series Benefits

IMPROVED WORKING ENVIRONMENT

- Low-noise nine-piston design
- “Ripple chamber” for reducing pressure pulsations and improving overall noise level

LONG LIFE AND RELIABILITY

- Rugged hydrostatic cradle-bearing design
- Tapered roller shaft bearings to improve pump life
- High temperature capability
- Lowest viscosity capability

INCREASED PRODUCTIVITY

- Proportional electronic controls to provide flow on demand
- Large stroking pistons for fast and stable response
- Full power through-drive capability
- O-ring seals to eliminate external leaks at adjustment screws

EASE OF SERVICE

- Simple hydraulic controls with “no leak” adjustments
- Spring-loaded shoe hold-down
- Compact size for small space applications

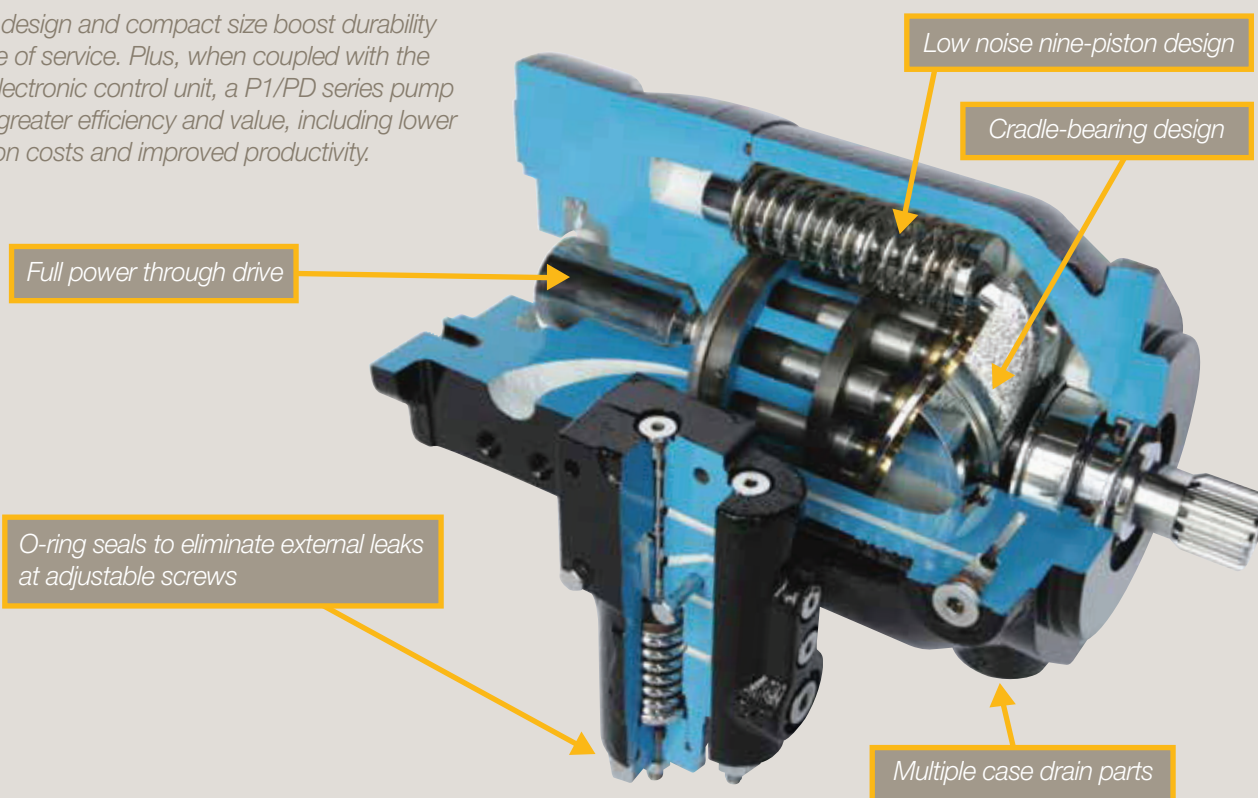
DESIGN FLEXIBILITY

- Case drain port for horizontal or vertical shaft-up mounting
- Optional maximum and minimum volume stops
- Smallest envelope size
- Wide range of controls

COMPATIBILITY AND COMPLIANCE

- SAE, ISO and BSPP standard mounting flanges and ports
- End or side inlet and outlet ports for flexible installation

Rugged design and compact size boost durability and ease of service. Plus, when coupled with the Parker electronic control unit, a P1/PD series pump delivers greater efficiency and value, including lower installation costs and improved productivity.



Proven Performances for Medium-Pressure Applications



P1 MOBILE APPLICATIONS AND MARKETS	
MARKET	APPLICATION
Forestry	Feller Bunchers, Knuckle Boom Loader, Skidder, Forwarder, Fan Drives
Construction	Wheel Loader, Crawler Dozer, Backhoe Loaders/Cranes, Horizontal Directional Drills, Fan Drives
Mining	Drill Rigs, Top Drives, Loaders, Articulated Dump Trucks, Tunneling Equipment, Roof Bolters, Fan Drives, Crushers
Recycling	Shredders, Balers, Compactors, Vacuum Truck Systems, Refuse Trucks – ASL, Rear Loaders
Material Handling	Cranes, Digger Derricks, Man Lifts, Cable Placers, Horizontal Directional Drills, Forklift, Reachstacker
PD INDUSTRIAL APPLICATIONS AND MARKETS	
MARKET	APPLICATION
Industrial	Power Units, Industrial Molding, Press, Waterjet Cutting
Oil & Gas	Oil Lift Pumps, Top Drive, Pipe Handler, Offshore Cranes
Material Handling	Conveyor Drives
Power Gen	CNG, Lube Oil Skids

P1/PD Technology Works Smarter

Electronic Controls Optimize Hydraulic Performance

When coupled with electronic control technologies, Parker P1/PD series pumps deliver notably greater efficiencies, performances and value.

Customer-cited benefits include:

- Improved machine productivity, response and stability
- Reduced hydraulic complexity
- Low installation cost
- Improved product quality through better process control
- Machine tamper resistance
- Energy recovery capability of the over center version
- Easy setup and operation
- Package size advantage versus comparable competitors' controls









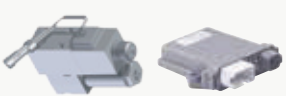
"The electronic pressure control... more than pays for itself through component elimination and simplification. The result was a very smooth-acting, highly repeatable, simplified machine."

– Parker ECU Customer

AM, C00

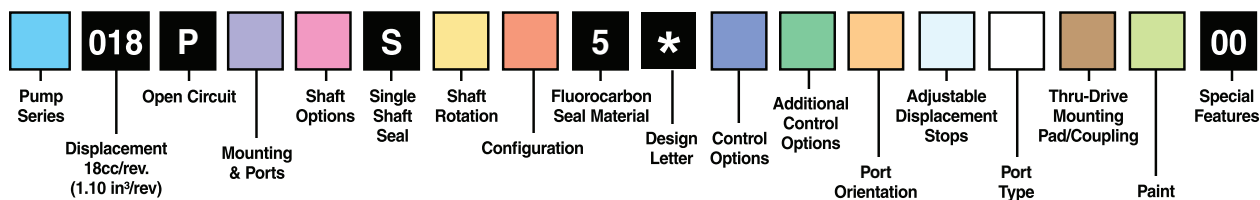
Control Options for Every Application

The Parker P1/PD series functions with a variety of control options, allowing pumps to provide precise and long-lasting performance in a diverse range of applications.

TRADITIONAL HYDROMECHANICAL CONTROLS		
PRESSURE LIMITER	C10	
PRESSURE LIMITER/LOAD SENSE	C00, AM, L00, L20	
REMOTE PRESSURE LIMITER	AN	
TORQUE LIMITER OPTION	LOT, AMT, ALT	
ELECTRONIC CONTROLS		
REMOTE PRESSURE LIMITER WITH PROPORTIONAL ELECTRONIC ADJUSTMENT	AE, AF	
PROPORTIONAL DIAPLACEMENT CONTROL WITH OPTIONAL MECHANICAL PRESSURE LIMITER WITHOUT ECU	P02, S02, T02, U02	
PROPORTIONAL DISPLACEMENT & PRESSURE CONTROLS WITH ECU OPTIONAL PRESSURE LIMITER OPTIONAL CANBUS	Q, PQ	

P1/PD 18cc, Model Ordering Code

Medium Pressure Axial Piston Pumps P1/PD Series



Pump Series	
P1	Mobile
PD	Industrial

Mounting & Ports	
S	SAE A Pilot SAE Threaded Work Ports with SAE Aux Ports
A	SAE A Pilot Metric Work Ports with BSPP Aux Ports
M	ISO - 80mm Pilot Metric Work Ports with Metric Aux Ports
B	ISO - 80mm Pilot Metric Work Ports with BSPP Aux Ports

Shaft Options	
01	Splined shaft - SAE 19-4 11T
02	Keyed shaft - SAE 19-1 .75" Dia.
04	ISO keyed 20MM Dia.
06	Splined shaft - SAE A 9T*
08	SAE B Splined shaft 13T

*Not available with Thru-Drive

Shaft Rotation	
R	Clockwise
L	Counterclockwise

Configuration	
M	Mobile (P1)
S	Industrial (PD)

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 **

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

Electronic Control Options	
#	#

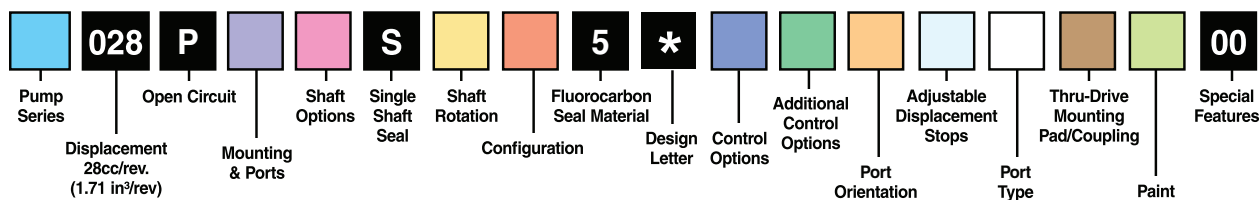
0	No ECU
D	Proportional displacement control
Y	Proportional pressure and displacement control

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"

P1/PD 28cc, Model Ordering Code

Medium Pressure Axial Piston Pumps P1/PD Series



Pump Series	
P1	Mobile
PD	Industrial

Mounting & Ports	
S	SAE B Pilot SAE Work Ports with SAE Aux Ports
A	SAE B Pilot Metric Work Ports with BSPP Aux Ports
M	ISO - 100MM Pilot Metric Work Ports with Aux Ports
B	ISO - 100MM Pilot Metric Work Ports with BSPP Aux Ports

Shaft Options	
01	Splined shaft - SAE B-B 15T
02	Keyed shaft - SAE B-B 1" Dia.
04	ISO keyed 25MM Dia.
08	Splined shaft - SAE B 13T

Shaft Rotation	
R	Clockwise
L	Counterclockwise

Configuration	
M	Mobile (P1)
S	Industrial (PD)

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 **

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

Port Orientation	
E	End Ports
R	Side ported with ripple chamber
T	Side ported with through drive

Adjustable Displacement Stops* (For E & R 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

Port Type	
0	Flange Ports
2	Threaded Ports

Thru-Drive Mounting Pad/Coupling	
0	No Thru-Drive
A	SAE 82-2 (A), 16 (A), 9T coupling
H	SAE 82-2 (A), 19 (-), 11T coupling
B	SAE 101-2 (B), 22 (B), 13T coupling
Q	SAE 101-2 (B), 25 (B-B), 15T coupling

Paint	
00	No Paint
PB	Black Paint

Electronic Control Options	
#	#

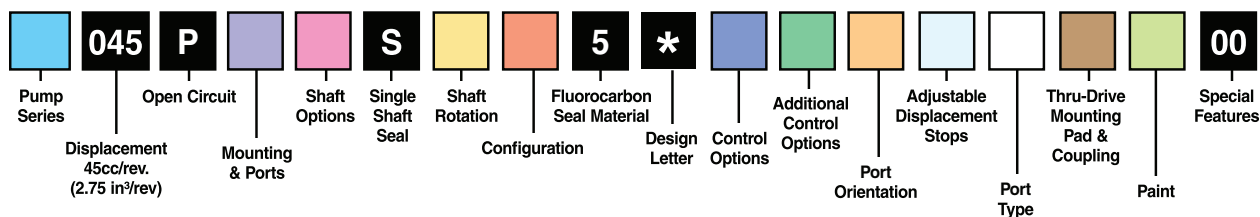
0	No ECU
D	Proportional displacement control
Y	Proportional pressure and displacement control

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*"

P1/PD 45cc, Model Ordering Code

Medium Pressure Axial Piston Pumps P1/PD Series



Pump Series	
P1	Mobile
PD	Industrial

Mounting & Ports	
S	SAE B Pilot with SAE Threaded or Flange Work Ports with SAE Aux Ports
A	SAE B Pilot with Metric Threaded or Metric Flange Work Ports with BSPP Aux Ports
M	ISO - 100MM Pilot Metric Threaded or Metric Flange Work Ports with Aux Ports
B	ISO - 100MM Pilot Metric Threaded or Metric Flange Work Ports with Aux Ports

Shaft Options	
01	Splined shaft - SAE B-B 15T
02	Keyed shaft - SAE B-B 1" Dia.
04	ISO keyed 25MM Dia.
08	Splined shaft - SAE B 13T

Shaft Rotation	
R	Clockwise
L	Counterclockwise

Configuration	
M	Mobile (P1)
S	Industrial (PD)
U	Universal (SAE Mounting Option, S, Only)

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
AL	Pilot operated pressure limiter with Load sensing (only available with "T" Torque Limiter option, i.e. "ALT ")
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 AL control options)

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

Port Orientation	
E	End Ports
R	Side ported with ripple chamber
T	Side ported with through drive

Adjustable Displacement Stops* (For E & R 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

Port Type	
0	Flange Ports
2	Threaded Ports

Thru-Drive Mounting Pad/Coupling	
0	No Thru-Drive
A	SAE 82-2 (A), 16 (A), 9T coupling
H	SAE 82-2 (A), 19 (-), 11T coupling
B	SAE 101-2 (B), 22 (B), 13T coupling
Q	SAE 101-2 (B), 25 (B-B), 15T coupling

Paint	
00	No Paint
PB	Black Paint

Electronic Control Options	
#	#

0	No ECU
D	Proportional displacement control
Y	Proportional pressure and displacement control

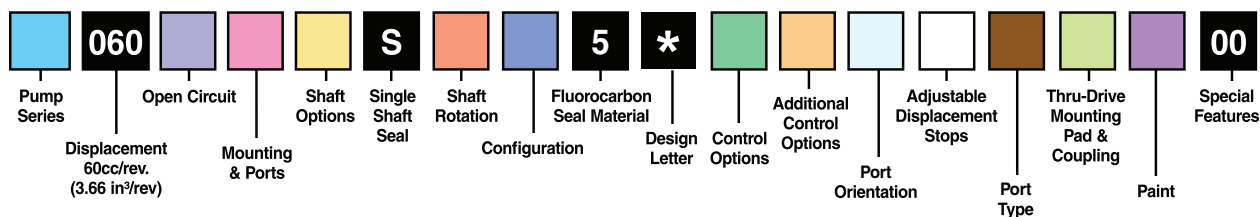
P	Electronic valve with zero displacement default
T	Electronic valve with max displacement default
S	Electronic valve with zero displacement default and hydromechanical Pmax
U	Electronic valve with max displacement default and hydromechanical Pmax
W	Electronic valve with zero displacement default (CANBUS 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"



P1/PD 60cc, Model Ordering Code

Medium Pressure Axial Piston Pumps P1/PD Series



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 C Pilot SAE Flange Connection Ports with SAE Aux Ports
A	SAE C Pilot Metric Flange Connection Ports with BSPP Aux Ports
M	ISO - 125MM Pilot Metric Flange Connection Ports with Metric Aux Ports
B	ISO - 125MM Pilot, Metric Flange Connection Ports with BSPP Aux Ports
C	SAE C 2-Bolt Pilot SAE Flange Connection Ports with SAE Aux Ports
D	SAE C 2-Bolt Pilot SAE Flange Connection Ports with BSPP Aux Ports
J	(060) 2-Bolt SAE B Pilot SAE Flange Connection w/ SAE Aux Ports
K	(060) 2-Bolt SAE B Pilot METRIC Flange Connection w/ BSPP Aux Ports
L	(060) 2-Bolt ISO 100mm Pilot Metric Flange Ports W/ Metric Aux Ports

Shaft Options	
01	Spined shaft - SAE C 14T
02	Keyed shaft - SAE C 32-1 KEY
04	Keyed shaft - ISO / DIN KEY 32MM Dia.
09	Spined shaft SAE B - B 15T
10	Spined shaft SAE B 13T

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
AL	Pilot operated pressure limiter with Load sensing (only available with "T" Torque Limiter option, i.e. "ALT ")
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 AL control options)

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

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)
X	Electronic valve with max displacement default (CANBUS compatible)
Y	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"

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

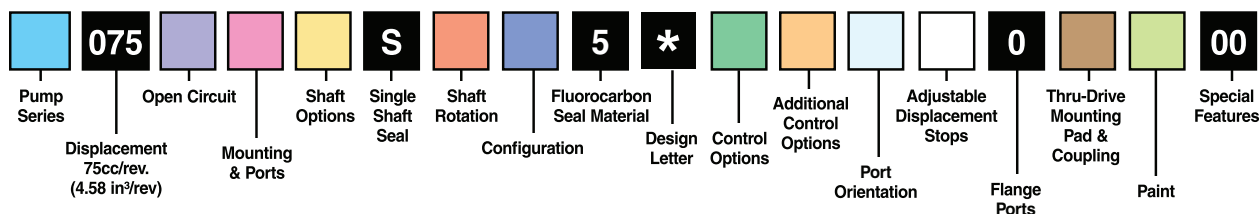
Port Type	
0	Flange Ports
2	SAE Threaded Ports (Available only on "E" port and "S" or "C" mount)
4	BSPP Threaded Ports (Available only on "E" port and "D" mount)

Thru-Drive Mounting Pad/Coupling	
0	No Thru-Drive
A	SAE 82-2 (A), 16 (A), 9T coupling
H	SAE 82-2 (A), 19 (-), 11T coupling
B	SAE 101-2 (B), 22 (B), 13T coupling
Q	SAE 101-2 (B), 25 (B-B), 15T coupling
J	SAE 101-2 (B), rotated 45 degrees, 22 (B), 13T coupling
K	SAE 101-2 (B), rotated 45 degrees, 25 (B-B), 15T coupling
C	SAE 127-4 (C), 32 (C), 14T coupling

Paint	
00	No Paint
PB	Black Paint

P1/PD 75cc, Model Ordering Code

Medium Pressure Axial Piston Pumps P1/PD Series



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 C Pilot SAE Flange Connection Ports with SAE Aux Ports
A	SAE C Pilot Metric Flange Connection Ports with BSPP Aux Ports
M	ISO - 125MM Pilot Metric Flange Connection Ports with Metric Aux Ports
B	ISO - 125MM Pilot, Metric Flange Connection Ports with BSPP Aux Ports
C	SAE C 2-Bolt Pilot SAE Flange Connection Ports with SAE Aux Ports
D	SAE C 2-Bolt Pilot SAE Flange Connection Ports with BSPP Aux Ports

Shaft Options	
01	Splined shaft - SAE C 14T
02	Keyed shaft - SAE C 32-1 KEY
04	Keyed shaft - ISO / DIN KEY 32MM 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***" and "D***"

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
H	SAE 82-2 (A), 19 (-), 11T coupling
B	SAE 101-2 (B), 22 (B), 13T coupling
Q	SAE 101-2 (B), 25 (B-B), 15T coupling
J	SAE 101-2 (B), rotated 45 degrees, 22 (B), 13T coupling
K	SAE 101-2 (B), rotated 45 degrees, 25 (B-B), 15T coupling
C	SAE 127-4 (C), 32 (C), 14T coupling

Paint	
00	No Paint
PB	Black Paint

Electronic Control Options	
#	#

0	No ECU
D	Proportional displacement control
Y	Proportional pressure control

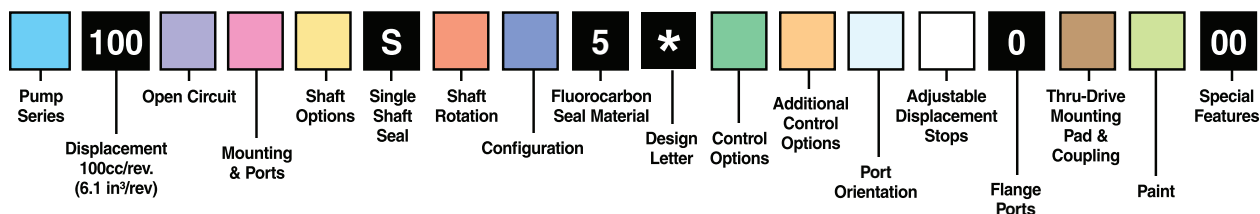
P	Electronic valve with zero displacement default
T	Electronic valve with max displacement default
S	Electronic valve with zero displacement default and hydromechanical Pmax
U	Electronic valve with max displacement default and hydromechanical Pmax
W	Electronic valve with zero displacement default (CANBUS 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"



P1/PD 100cc, Model Ordering Code

Medium Pressure Axial Piston Pumps P1/PD Series



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 C Pilot SAE Flange Connection Ports with SAE Aux Ports
A	SAE C Pilot Metric Flange Connection Ports with BSPP Aux Ports
M	ISO - 125MM Pilot Metric Flange Connection Ports with Metric Aux Ports
B	ISO - 125MM Pilot, Metric Flange Connection Ports with BSPP Aux Ports
J	(100) 2-Bolt SAE C Pilot SAE Flange Connection w/ SAE Aux Ports
K	(100) 2-Bolt SAE C Pilot METRIC Flange Connection w/ BSPP Aux Ports
L	(100) 2-Bolt ISO ISO 125mm Pilot Metric Flange Ports W/ Metric Aux Ports

Shaft Options	
01	Splined shaft - SAE C-C 17T
02	Keyed shaft - SAE C-C 38-1
04	Keyed shaft - ISO / DIN 40MM Dia.
06	Splined shaft - SAE C 14T

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***" and "D***" and "Y***"

Electronic Control Options	
#	#

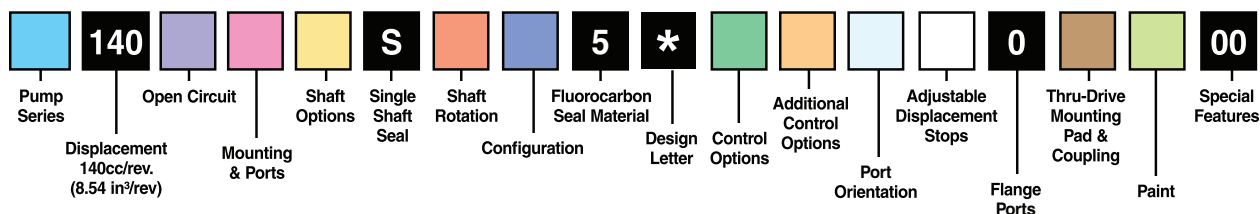
0	No ECU
D	Proportional displacement control
Y	Proportional pressure control

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"

P1/PD 140cc, Model Ordering Code

Medium Pressure Axial Piston Pumps P1/PD Series



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"



Parker Hannifin Corporation
Hydraulic Pump Division
Marysville, Ohio USA

Technical Information

Medium Pressure Axial Piston Pumps P1/PD Series

Technical Data

Model	P1/PD 018	P1/PD 028	P1/PD 045	P1/PD 060	P1/PD 075	P1/PD 100	P1/PD 140
Maximum Displacement, cm ³ /rev cu.in./rev	18 1.10	28 1.71	45 2.75	60 3.66	75 4.58	100 6.1	140 8.54
Outlet Pressure – Continuous, bar psi	280 4000						
Intermittent*, bar psi	320 4500						
Peak, bar psi	350 5000						
P1 Maximum Speed (1.3 bar abs inlet), rpm	3600	3400	3100	2800	2700	2500	2400
P1 (1.0 bar abs inlet), rpm	3300	3200	2800	2500	2400	2100	2100
P1 (0.8 bar abs inlet), rpm	2900	2900	2400	2200	2100	1900	1800
PD Maximum Speed (1.0 bar abs inlet), rpm	1800						
PD (0.8 bar abs inlet), rpm	1800						
Minimum Speed, rpm	600						
Inlet Pressure – Maximum, bar psi	10 (gage) 145						
Rated, bar psia	1.0 absolute (0.0 gage) 14.5						
Minimum, bar psia	0.8 absolute (-0.2 gage) 11.6						
Case Pressure – Peak, bar	4.0 absolute (3.0 gage) and less than 0.5 bar above inlet pressure						
Rated, bar	2.0 absolute (1.0 gage) and less than 0.5 bar above inlet pressure						
Fluid Temperature Range, °C °F	-40 to +95 -40 to +203						
Fluid Viscosity – Rated, cSt	6 to 160						
Max. Intermittent, cSt	5000 (for cold starting)						
Min. Intermittent, cSt	5						
Fluid Contamination – Rated, ISO	20/18/14						
Maximum, ISO	21/19/16						
SAE Mounting – Flange	82-2 (A)	101-2 (B)	101-2 (B)	102-2 (B), 127-2 (C) or 127-4 (C)	127-2/4 (C)	152-4 (D)	
ISO Mounting - Flange	80 mm	100 mm	100 mm	125 mm	125 mm	180 mm	
SAE Keyed Shafts	19-1, A	25-1, BB	25-1, BB	32-1, C	32-1, C	38-1, CC	44-1, D
ISO Keyed Shafts	20 mm	25 mm	25 mm	32 mm	32 mm	40 mm	50 mm
SAE Spline Shafts	9T, A 11T, A 13T, B	13T, B 15T, BB	13T, B 15T, BB	13T, B 14T, C 15T, BB	13T, B 14T, C 15T, BB	17T, CC	13T, D
Weight – End Port, kg (lb)	13.4 (29.5)	17.7 (39.0)	23 (50)	29 (64)	30 (66)	51 (112)	66 (145)
Side Port, kg (lb)	14.2 (31.3)	18.1 (40.0)	24 (52)	30 (67)	31 (68)	53 (117)	67 (147)
Thru-Drive, kg (lb)	—	—	27 (59)	34 (75)	35 (77)	55 (121)	82 (180)
Moment of Inertia kg·mm ²	760	1555	3208	4548	5041	12027	21400
Moment of Inertia Thru-Drive kg·mm ²	NA	1618	3268	4687	5207	12402	22343

*Intermittent pressure is defined as less than 10% of operation time, not exceeding 6 successive seconds.

Typical Control Response Times*

Control Description	Pump Operating Condition	Typical Control Response Time (ms)						
		018	028	045	060	075	100	140
"C" Pressure Limiter	Maximum Displacement to Zero	25	25	25	37	21	26	30
	Zero Displacement to Maximum	80	80	106	119	89	108	125
"L" Load Sensing	Maximum Displacement to Zero	40	40	30	54	40	43	45
	Zero Displacement to Maximum	70	70	120	186	97	189	280
"A" Pilot Operated Control	Maximum Displacement to Zero	25	25	46	43	37	39	40
	Zero Displacement to Maximum	80	80	131	125	115	123	130

* Based on NFPA testing standards

For max volume stops:

Pump Size % Stroke reduction per turn

P*060	6.76	P*018	9
P*075	6.2	P*028	8.2
P*100	5.5	P*045	7.5
P*140	4.8		

Control Adjustment Sensitivity:

- Load Sense 28 Bar/Turn
- Pressure Compensator 80 to 280 bar range (C0) = 40 Bar/Turn
- Pressure Compensator 20 to 80 bar range (C1) = 18.6 Bar/Turn
- A Compensator 100 Bar/Turn
- A Compensator Differential 20 Bar/Turn

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Great Lakes Region

Fairlawn, OH
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Northeast Region

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Southern Region

Alpharetta, GA
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Canada

Milton, Ontario
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México

Toluca, Edo. de México
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Mobile

USA

Global Mobile

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Central Region

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Eastern Region

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Klecany
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Ballerup
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Vantaa
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Oldenzaal
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Ski
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