**Low Profile Power Units**  
**Series V-Paks**

### Introduction

- **Low Profile Tank Size Pump Flow Electrical Motors Maximum**

<table>
<thead>
<tr>
<th>V-Pak</th>
<th>Liters (Gallon)</th>
<th>LPM (GPM) @ 1800 RPM</th>
<th>KW (HP)</th>
<th>BAR (PSI)</th>
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</thead>
<tbody>
<tr>
<td>V6</td>
<td>227.1 (60)</td>
<td>42.0 (11.0) to</td>
<td>5.6-29.8</td>
<td>207</td>
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<tr>
<td>V8</td>
<td>302.8 (80)</td>
<td>136.7 (36.1)</td>
<td>(7 1/2 - 40)</td>
<td>(3000)</td>
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</tbody>
</table>

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**Quick Reference Data Chart**

**Standard Features**

- Vertical Design
- Submerged Pump
- Precision Pump Mounting Adapters
- Suction Strainer
- Glycerine Filled Pressure Gage with Shut Off
- Oil Level Gage with Thermometer
- Remote Compensator and Safety Relief
- Breather and Fill Cap
- 1800 RPM Motor
- Drain Plug
- Clean Out Cover
- Single Removable Topplate

**Benefits**

- Saves Floor Space
- Positive Pump Inlet
- Longer Pump Life
- Protects Pump from Contamination
- Improved Diagnostics
- Helps to Maintain Trouble-Free Performance
- Protects Against System Shock
- Easy to Fill Tank, Control Ingression of Airborne Contaminants
- More Flow at Less Cost
- Allows Drainage of Fluid
- Easy Access to Inside of Reservoir
- Easy Servicability of Internal Components
Performance Data

Standard Features
- Vertical Design
- Submerged Pump
- Precision Pump Mounting Adapters
- Suction Strainer
- Glycerine Filled Pressure Gage with Shut Off
- Oil Level Gage with Thermometer
- Relief Valve
- External Pump Compensator Control
- Breather and Fill Cap
- 1800 RPM TEFC Motor
- Cleanout Cover
- Pressure and Return Port Block with Safety Relief
- Remote Pump Compensator Control Valve

Options
- D05 (D02), D05H (D02H), D08 (D06) Single Station Manifold with Safety Relief
- D05 (D02), D05H (D02H), D08 (D06) Multi-Station Manifold with Safety Relief
- Pressure & Return Filters (10 Micron)
- Immersion Heater
- Variety of Manapak Sandwich Valves
- Heat Exchangers (Air/Oil, Water/Oil)
- Pressure Switch-Fixed
- Temperature Switch-Adjustable
- Combination Temp/Float Switch-Fixed
- Pressure Switch-Adjustable
- Single Pressure Remote Compensator
- Single Pressure Remote Compensator with Low Pressure Standby
- Bi-Pressure Remote Compensator
- Bi-Pressure Remote Compensator with Low Pressure Standby
- Electro Hydraulic Pressure Control-Consult Factory
- Load Sensing (Flow Control)-Consult Factory
- Horsepower Limiting-Consult Factory

Warranty
The hydraulic components on these Parker Power Units are warranteed for one year. This warranty may be extended to three years by using and properly maintaining Parker filters.

Schematic Symbol
(Basic Unit)

Introduction

Specifications
Parker “V-Pak” Hydraulic Power Units are vertical design, 227 or 303 liter (60 or 80 gallon) reservoirs utilizing Parker Variable Volume Piston Pumps.

<table>
<thead>
<tr>
<th>Pump Model</th>
<th>Tank Size Liters (Gallon)</th>
<th>Pump Flow LPM (GPM) @ 1800 RPM</th>
<th>Electrical Motors KW (HP)</th>
<th>Maximum BAR (PSI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>V-Paks</td>
<td>227.1 (60)</td>
<td>42.0-136.1</td>
<td>5.6-29.8</td>
<td>207</td>
</tr>
<tr>
<td></td>
<td>302.8 (80)</td>
<td>(11.0-36.1)</td>
<td>(7 ½ - 40)</td>
<td>(3000)</td>
</tr>
</tbody>
</table>

Installation Data:
See page 20 of this catalog or Parker Installation/Maintenance Manual for specific recommendations pertaining to start-up, system cleanliness, fluids, temperatures and other important factors relative to proper installation and use of these power units.
Dimensions – Basic
Shown with “Omit” Option Manifold
Inch equivalents for millimeters dimensions are shown in (**)
S5, S6, & S8 Option Manifolds
Inch equivalents for millimeters dimensions are shown in (**)
M5, M6 & M8 Option Manifolds

Inch equivalents for millimeters dimensions are shown in (**)

"M5 Option"

M5* MULTISTATION MANIFOLD OPTION FOR USE WITH D3W VALVES (NFPA D05)

UP TO 5 STATIONS

82.6 (3.25) PER STATION

165.1 (6.50)

26.9 (1.06)

39.6 (1.56)

46.0 (1.81)

"M6 Option"

M6* MULTISTATION MANIFOLD OPTION FOR USE WITH D31VW VALVES (NFPA D05, NO "X" & "Y" PORTS)

UP TO 5 STATIONS

82.6 (3.25) PER STATION

165.1 (6.50)

25.4 (1.00)

57.2 (2.25)

133.4 (5.25)

"M8 Option"

M8* MULTISTATION MANIFOLD OPTION FOR USE WITH D61VW VALVES (NFPA D08, NO "X" PORT SAE-8 "Y" PORT)

UP TO 3 STATIONS

266.7 (10.50)

133.4 (5.25)

26.9 (1.06)

66.8 (2.63)

50.8 (2.00)
V-Pak - Compensator Options
Inch equivalents for millimeters dimensions are shown in (**)

- **"Omit" Option**
  - Single Pressure Remote Compensator
  - Pump Case Pre-Fill Port
  - Pump Compensator Control Adjustment
  - Aux. Vent Port (SAE-6)

- **"B" Option**
  - Single Pressure Remote Compensator w/Low Press Standby
  - Pump Case Pre-Fill Port
  - Pump Compensator Control Adjustment
  - Low Press. Standby (N.O.)

- **"C" Option**
  - Bi-Pressure Remote Compensator
  - Pump Case Pre-Fill Port
  - Pump Compensator High Press. Control
  - High Press. Solenoid (N.O.) Energize for High Pressure

- **"D" Option**
  - Bi-Pressure Remote Compensator w/Low Press Standby
  - Pump Case Pre-Fill Port
  - Pump Compensator Low Press. Control
  - Low Press. Standby (N.O.)

- **"E" Option**
  - Provision for Customer Supplied Remote Compensator
  - Pump Compensator Pressure (Inlet) Port
  - Tank (Return) Port
  - SAE-6 3/8" Flare "P" & "T" Ports
  - Attach Points for Customer Supplied Remote Compensator
Accessory Options

Low Profile Power Units
Series V-Paks

HEAT EXCHANGER
RETURN FILTER
BREATHER
PRESSURE FILTER
TEMP. SWITCH

SCHEMATIC - BASIC UNIT WITH ACCESSORIES

EXAMPLE OF VARIOUS ACCESSORIES INSTALLED FOR REFERENCE ONLY

ACCESSORY OPTIONS - V PAKS

OPTION A CASE COOLING LOOP
OPTION B CASE COOLING LOOP
OPTION C SYSTEM COOLING/FILTER LOOP
OPTION D RETURN LINE WATER/OIL HEAT EXCHANGER
OPTION E RETURN LINE WATER/OIL HEAT EXCHANGER
OPTION F WATER TEMPERATURE MODULATING VALVE
OPTION G RETURN LINE AIR/OIL HEAT EXCHANGER
OPTION H PRESSURE FILTER
OPTION I IMMERSION HEATER
OPTION J PUMP OUTLET CHECK VALVE
OPTION K BYPASS CHECK-RETURN HT. EX. ONLY
OPTION L RETURN FILTER-SINGLE ELEMENT
OPTION M RETURN FILTER-DUAL ELEMENT
OPTION N COMBINATION LEVEL/Temperature SWITCH
OPTION O FILTER RESERVOIR BREATHER
OPTION P SPIN-ON RETURN FILTER
OPTION Q PRESSURE SWITCH
OPTION R LEVEL SWITCH
OPTION S TEMPERATURE SWITCH

Parker Hannifin Corporation
Hydraulic Pump/Motor Division
Greeneville, TN 37745 USA
## Dimensions - Accessories

**V8 reservoir with "Omit" manifold shown**

Inch equivalents for millimeters dimensions are shown in (**)

**Ordering Note:** Units with PVP76 pumps and requiring options "A", "B" or "C" can only be ordered with V8 (302.8 L/80 Gal.) reservoir.

<table>
<thead>
<tr>
<th>HEAT REMOVAL</th>
<th>OPTION A</th>
<th>.6 KW (.80 HP*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAT REMOVAL</td>
<td>OPTION B</td>
<td>1.1 KW (1.5 HP*)</td>
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</tbody>
</table>

*Performance data are based on 100SSU oil leaving the cooler 4°C (40°F) higher than the ambient air temperature used for cooling.*

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**Option "A" Case Cooling Loop**

5.6 KW - 18.6 KW (7.5 HP - 25 HP) ONLY

**Option "B" Case Cooling Loop**

129.8 (5.11)
Dimensions - Accessories
V8 reservoir with "Omit" manifold shown
Inch equivalents for millimeters dimensions are shown in (**)
Ordering Note: Units with PVP76 pumps and requiring options "A", "B" or "C" can only be ordered with V8 (302.8 L/80 Gal.) reservoir.

| HEAT REMOVAL | OPTION C | 3.4 KW (4.5 HP*) |

*Performance data are based on 100SSU oil leaving the cooler 4°C (40°F) higher than the ambient air temperature used for cooling.

Option "C" System Cooling/Filter Loop
Dimensions - Accessories
V8 reservoir with "Omit" manifold shown
Inch equivalents for millimeters dimensions are shown in (**)

- "S1" OPTION 12 AT FILTER
- "S2" OPTION 12 AT FILTER
- OPTION "G" HEAT EXCH.
- AIR FLOW
- OPTION "D" OR "E" WATER/OIL HEAT EXCHANGER
- OPTION "R" OR "Y" COMBINATION TEMP/LEVEL SWITCH (1/2 NPT ELEC. CONN.)
- "OPTION W" PRESSURE SWITCH
- OPTION "M", "N", OR "V" RETURN FILTER
- OPTION "Z" TEMPERATURE SWITCH 60°-90°F ADJ.
- OPTION "H" PRESSURE FILTER
- OPTION "F" WATER TEMP ODULATING VALVE
- OPTION "J" IMMERSION HEATER
- 195.6 (7.7)
Performance Data - Maximum Working Pressure

**** Represents maximum operating pressure with pump/motor combination. This will be the maximum relief valve or compensator setting.

**** Represents maximum operating pressure with pump/motor combination. When used on power unit products this will represent a 207 bar (3000 psi) relief valve or compensator setting.

### V-Pak - Pump/Motor Combinations Maximum Operating Pressure

<table>
<thead>
<tr>
<th>PUMP</th>
<th>FLOW LPM (GPM) @ 1725 RPM</th>
<th>5.6 KW (7.5 HP)</th>
<th>7.5 KW (10 HP)</th>
<th>11.2 KW (15 HP)</th>
<th>14.9 KW (20 HP)</th>
<th>18.6 KW (25 HP)</th>
<th>22.3 KW (30 HP)</th>
<th>29.8 KW (40 HP)</th>
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<tbody>
<tr>
<td>PVP33</td>
<td>41.6 (11.0)</td>
<td>813 (1090)</td>
<td>1066 (1430)</td>
<td>1588 (2130)</td>
<td>2103 (2820)</td>
<td>2583 (3470)</td>
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<td>PVP33</td>
<td>43.5 (11.5)</td>
<td>783 (1050)</td>
<td>1029 (1380)</td>
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<td>2021 (2710)</td>
<td>2491 (3340)</td>
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<td>PVP33</td>
<td>45.4 (12.0)</td>
<td>793 (1010)</td>
<td>992 (1330)</td>
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<td>2401 (3220)</td>
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<td>PVP33</td>
<td>47.3 (12.5)</td>
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<td>954 (1280)</td>
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<td>PVP33</td>
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<td>701 (940)</td>
<td>925 (1240)</td>
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<td>1812 (2430)</td>
<td>2237 (3000)</td>
<td>2677 (3590)</td>
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<td>PVP33</td>
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<td>678 (910)</td>
<td>895 (1200)</td>
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<td>1752 (2350)</td>
<td>2163 (2900)</td>
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<td>PVP33</td>
<td>52.9 (14.0)</td>
<td>656 (880)</td>
<td>865 (1160)</td>
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<td>1700 (2280)</td>
<td>2095 (2810)</td>
<td>2513 (3370)</td>
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<td>PVP33</td>
<td>54.8 (14.5)</td>
<td>641 (860)</td>
<td>843 (1130)</td>
<td>1245 (1670)</td>
<td>1648 (2210)</td>
<td>2036 (2730)</td>
<td>2431 (3260)</td>
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<tr>
<td>PVP33</td>
<td>56.7 (15.0)</td>
<td>619 (830)</td>
<td>619 (1090)</td>
<td>1208 (1620)</td>
<td>1596 (2140)</td>
<td>1976 (2650)</td>
<td>2364 (3170)</td>
<td></td>
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</tbody>
</table>
## Performance Data- Maximum Working Pressure

- Represents maximum operating pressure with pump/motor combination. This will be the maximum relief valve or compensator setting.
- Represents maximum operating pressure with pump/motor combination. When used on power unit products this will represent a 207 bar (3000 psi) relief valve or compensator setting.

### V-Pak - Pump/Motor Combinations Maximum Operating Pressure

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<tr>
<th>PUMP</th>
<th>FLOW LPM (GPM) @1725 RPM</th>
<th>5.6 KW (7.5 HP)</th>
<th>7.5 KW (10 HP)</th>
<th>11.2 KW (15 HP)</th>
<th>14.9 KW (20 HP)</th>
<th>18.6 KW (25 HP)</th>
<th>22.3 KW (30 HP)</th>
<th>29.8 KW (40 HP)</th>
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</thead>
<tbody>
<tr>
<td>PVP48</td>
<td>58.6 (15.5)</td>
<td>581.6 (780)</td>
<td>760.6 (1020)</td>
<td>1118.5 (1500)</td>
<td>1491.4 (2000)</td>
<td>1841.9 (2470)</td>
<td>2199.8 (2950)</td>
<td>2923.1 (3920)</td>
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<td>PVP48</td>
<td>60.5 (16.0)</td>
<td>574.1 (770)</td>
<td>745.7 (1000)</td>
<td>1096.2 (1470)</td>
<td>1446.7 (1940)</td>
<td>1797.1 (2410)</td>
<td>2147.6 (2880)</td>
<td>2848.6 (3820)</td>
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<td>PVP48</td>
<td>62.4 (16.5)</td>
<td>559.2 (750)</td>
<td>730.8 (980)</td>
<td>1066.4 (1430)</td>
<td>1409.3 (1890)</td>
<td>1752.4 (2350)</td>
<td>2087.9 (2800)</td>
<td>2774.0 (3720)</td>
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<td>64.3 (17.0)</td>
<td>544.3 (730)</td>
<td>708.4 (950)</td>
<td>1043.9 (1400)</td>
<td>1372.1 (1840)</td>
<td>1707.6 (2290)</td>
<td>2035.8 (2730)</td>
<td>2699.4 (3620)</td>
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<td>66.2 (17.5)</td>
<td>529.4 (710)</td>
<td>693.5 (930)</td>
<td>1014.2 (1360)</td>
<td>1342.3 (1800)</td>
<td>1662.9 (2230)</td>
<td>1983.6 (2660)</td>
<td>2632.3 (3530)</td>
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<td>PVP48</td>
<td>68.1 (18.0)</td>
<td>521.9 (700)</td>
<td>678.6 (910)</td>
<td>991.8 (1330)</td>
<td>1312.4 (1760)</td>
<td>1625.6 (2180)</td>
<td>1938.8 (2600)</td>
<td>2572.7 (3450)</td>
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<td>70.0 (18.5)</td>
<td>507.0 (680)</td>
<td>663.6 (890)</td>
<td>969.4 (1300)</td>
<td>1282.6 (1720)</td>
<td>1588.3 (2130)</td>
<td>1894.1 (2540)</td>
<td>2513.0 (3370)</td>
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<td>71.9 (19.0)</td>
<td>499.6 (670)</td>
<td>648.7 (870)</td>
<td>947.0 (1270)</td>
<td>1252.8 (1680)</td>
<td>1551.1 (2080)</td>
<td>1849.3 (2480)</td>
<td>2453.4 (3290)</td>
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<td>73.8 (19.5)</td>
<td>492.1 (660)</td>
<td>633.8 (850)</td>
<td>932.1 (1250)</td>
<td>1222.9 (1640)</td>
<td>1513.8 (2030)</td>
<td>1812.1 (2430)</td>
<td>2401.2 (3220)</td>
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<td>75.7 (20.0)</td>
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<td>618.9 (830)</td>
<td>909.8 (1220)</td>
<td>1193.1 (1600)</td>
<td>1483.9 (1990)</td>
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<td>77.6 (20.5)</td>
<td>468.9 (630)</td>
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<td>887.4 (1190)</td>
<td>1170.7 (1570)</td>
<td>1454.1 (1950)</td>
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<td>2296.8 (3080)</td>
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<td>PVP48</td>
<td>79.4 (21.0)</td>
<td>462.3 (620)</td>
<td>596.5 (800)</td>
<td>872.5 (1170)</td>
<td>1148.4 (1540)</td>
<td>1424.3 (1910)</td>
<td>1700.1 (2280)</td>
<td>2237.1 (3000)</td>
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<td>PVP48</td>
<td>81.3 (21.5)</td>
<td>454.8 (610)</td>
<td>589.1 (790)</td>
<td>857.6 (1150)</td>
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<td>1394.5 (1870)</td>
<td>1662.4 (2230)</td>
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<td>PVP48</td>
<td>83.2 (22.0)</td>
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<td>1103.6 (1480)</td>
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<td>PVP48</td>
<td>85.1 (22.5)</td>
<td>439.6 (590)</td>
<td>566.7 (760)</td>
<td>820.3 (1100)</td>
<td>1081.3 (1450)</td>
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<td>805.4 (1080)</td>
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<td>1312.4 (1760)</td>
<td>1565.9 (2100)</td>
<td>2073.0 (2780)</td>
</tr>
</tbody>
</table>
**Performance Data - Maximum Working Pressure**

- ***** Represents maximum operating pressure with pump/motor combination. This will be the maximum relief valve or compensator setting.
- ****** Represents maximum operating pressure with pump/motor combination. When used on power unit products this will represent a 207 bar (3000 psi) relief valve or compensator setting.

### V-Pak - Pump/Motor Combinations Maximum Operating Pressure

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<tr>
<th>PUMP</th>
<th>FLOW LPM (GPM) @ 1725 RPM</th>
<th>5.6 KW (7.5 HP)</th>
<th>7.5 KW (10 HP)</th>
<th>11.2 KW (15 HP)</th>
<th>14.9 KW (20 HP)</th>
<th>18.6 KW (25 HP)</th>
<th>22.3 KW (30 HP)</th>
<th>29.8 KW (40 HP)</th>
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<tbody>
<tr>
<td>PVP76</td>
<td>90.8 (24.0)</td>
<td>223.7 (300)</td>
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<td>335.6 (450)</td>
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<td>201.3 (270)</td>
<td>320.6 (430)</td>
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<td>797.9 (1070)</td>
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<td>1230.4 (1650)</td>
<td>1685.3 (2260)</td>
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<td>PVP76</td>
<td>102.2 (27.0)</td>
<td>193.9 (260)</td>
<td>316.9 (425)</td>
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<td>768.1 (1030)</td>
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<td>1193.1 (1600)</td>
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<td>PVP76</td>
<td>106.0 (28.0)</td>
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<td>298.3 (400)</td>
<td>521.9 (700)</td>
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<td>954.5 (1280)</td>
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<td>PVP76</td>
<td>109.8 (29.0)</td>
<td>186.4 (250)</td>
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<td>503.3 (675)</td>
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<td>939.6 (1260)</td>
<td>1129.7 (1515)</td>
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<td>290.8 (390)</td>
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<td>1431.7 (1920)</td>
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<td>PVP76</td>
<td>121.1 (32.0)</td>
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<td>268.5 (360)</td>
<td>462.3 (620)</td>
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<td>850.1 (1140)</td>
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<td>223.7 (300)</td>
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<td>574.2 (770)</td>
<td>745.7 (1000)</td>
<td>917.2 (1230)</td>
<td>1200.6 (1610)</td>
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</table>
Performance Data

Fluid Standard Hydraulics Oil 100 SSU @ 49°C (120°F)

Flow, Horsepower and Efficiency Charts

NOTE: The efficiencies and data in the graph are good only for pumps running at 1800 RPM and stroked to maximum. To calculate approximate horsepower for the other conditions, use the following formula:

\[
HP = \left( \frac{Q \times (PSI)}{1714} \right) + (CHp)
\]

Actual GPM is directly proportional to drive speed and maximum volume setting. Flow loss, however, is a function of pressure only.

WHERE:
- \(Q\) = Actual Output Flow in GPM
- \(PSI\) = Pressure at Pump Outlet
- \(CHp\) = Input Horsepower @ Full Compensation @ 1800 RPM (from graph read at operating pressure)

NOTE: Maximum input HP to the pump may exceed electric motor drive capability. Select motor size (HP) to exceed application requirements (HP).
Performance data is based on 100 SSU oil leaving the cooler 4.4°C (40°F) higher than the ambient air temperature used for cooling.

Heat removal is based on 4.4°C (40°F) differential between transfer medium using 29°C (85°F) cooling water.

The oil/water ratio 2:1 means that for every 7.5 liters (2 gallons) of oil through the cooler, a minimum of 3.8 liters (1 gallon) of 29°C (85°F) water must be circulated to achieve curve results.

Heat removal is based on static ambient air of 29°C (85°F) and max. oil temperature of 57°C (135°F).
null
### Ordering Information

**Vol. 1**

#### Directional Control Valve

- **Valve Model Number**: FM3DDKN
- **NOMINAL Flow LPM (GPM)**: 45 (12)

#### Manakap Control Valves

- **Valve Model Number**: CPOM6DDN
- **NOMINAL Flow LPM (GPM)**: 189 (50)

### Technical Data

<table>
<thead>
<tr>
<th>Ordering Code</th>
<th>Function</th>
<th>Model Number</th>
<th>Technical Data</th>
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<tbody>
<tr>
<td>A**</td>
<td>Continuous Pump Case Cooling</td>
<td>RM-08-2-2</td>
<td>*Air/Oil: Max Oil Flow 17 LPM (4.5 GPM)</td>
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<td>B**</td>
<td>Continuous Pump Case Cooling</td>
<td>RM-19-2-2</td>
<td>*Air/Oil: Max Oil Flow 17 LPM (4.5 GPM)</td>
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<td>C**</td>
<td>Filter Cooling Loop</td>
<td>AOC-22-2-1PH 40CN205Q</td>
<td>*Air/Oil W1 PH Motor Max Oil Flow 32 LPM (8.5 GPM)</td>
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<td>D</td>
<td>Oil/Water Heat Exchanger</td>
<td>N70188F</td>
<td>Max.95 LPM (25 GPM)</td>
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<tr>
<td>E</td>
<td>Oil/Water Heat Exchanger</td>
<td>EKS-708-T</td>
<td>Max.144 LPM (38 GPM)</td>
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<td>F</td>
<td>Water Temp. Modulating Valve</td>
<td>V47AC-6</td>
<td>24°-57°C (75°F-155°F) Adj. Range Cross Ambient Sensing 3/4&quot; NPT Inlet</td>
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<td>G</td>
<td>Air Cooled Oil Heat Exchanger</td>
<td>AVOH-15-3PH</td>
<td>Air Cooled-3 Phase Motor 9 kW (12 HP) Removal @ Max. 136 LPM (36 GPM)</td>
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<td>H</td>
<td>Pressure Filter</td>
<td>3IP2100M2050N-1</td>
<td>10 Micron-Microgla Dual Element Mech. Indicator</td>
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<td>I</td>
<td>Immersion Heater</td>
<td>KB-372-0193-M1</td>
<td>3KW-480V-3PH -17°-38°C (0°-100°F) Adj. W/Thermostat</td>
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<tr>
<td>J</td>
<td>Check Valve</td>
<td>493-16-D1-2</td>
<td>.3 BAR (5 PSI) Cracking Pressure</td>
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<td>K</td>
<td>Bypass Check</td>
<td>C2020665</td>
<td>4.5 BAR (65 PSI) Cracking Pressure</td>
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<td>877501</td>
<td>Fixed Temp @ 65°C (149°F) Close @ Low Level and/or 65°C (149°F) (N.C.)</td>
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<td>R2</td>
<td>Combination Float/Temp. SW N.O. Float Up</td>
<td>877502</td>
<td>Fixed Temp. @ 65°C (149°F) Open @ Low Level and/or 65°C (149°F) (N.C.)</td>
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<td>S1</td>
<td>12AT Cartrig Breather</td>
<td>926189</td>
<td>2 Micron Cellulose Media</td>
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<td>S2</td>
<td>Triceptor Breather</td>
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<td>Silica Gel Desiccant</td>
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<td>V</td>
<td>Return Filter</td>
<td>55AT10CN1500L</td>
<td>Cellulose Element Ind. Guage-1 BAR (15 PSI) Bypass 120 LPM (25 GPM) Max. Oil Flow</td>
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<td>W1</td>
<td>Pressure Switch</td>
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<td>N.O. &amp; N.C. Contacts (SPDT Switch) DIN 43650 Connector</td>
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<td>W2</td>
<td>Pressure Switch</td>
<td>876731-02</td>
<td>N.O. &amp; N.C. Contacts (SPDT Switch) DIN 43650 Connector</td>
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<td>Y</td>
<td>Level Switch</td>
<td>877004</td>
<td>Open @ Low Level</td>
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<tr>
<td>Z</td>
<td>Adjustable Temperature Switch</td>
<td>837-A4A NEMA 1</td>
<td>16°-88°C (60°F-190°F) Range Adjust. Differential N.O. &amp; N.C. Contacts</td>
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</table>

* Heat rejection data are based on 100SSU oil leaving the cooler 4°C (40°F) higher than the ambient air temperature used for cooling.

**Units with PVP76 pumps and requiring options “A,” “B” or “C” can only be ordered with V8 (302.8 L/80 Gal.) reservoir.

Option “A” available from 5.6 kW (7.5 HP) thru 18.5 kW (25 HP)

Option “C” not available with option “A” or “B”.

***Based on max 136 LPM (36 GPM) w/ 150 SSU oil.
Operating Notes

- Jog the electric motor once and verify that the electric motor is rotating in the same direction as the arrow on the electric motor housing. If direction is incorrect, reverse two of the three leads on a 3-phase electric motor.

- V-Pak power units are tested and pressure control valves are factory preset. If adjustments are needed, follow the procedure below: Begin adjusting relief valve and pump compensator control valve to increase pressure gradually. (NOTE: Always set relief valve 28-31 bar (400-450 psi) higher than pump compensator pressure control valve or severe overheating will occur.)

- If pump fails to prime, vent pump discharge to atmosphere to establish fluid flow.

- Reservoir temperature should not exceed 66°C (150°F). System reliability and component service life will be reduced when system is operated at higher temperature.

- Clean fluid = improved system reliability and longer component service life, change filter elements whenever filter indicators indicate a dirty element condition.

- It is recommended that every 4,000 operating hours or once a year, whichever occurs first, the filler/breather cap and suction strainer should be replaced.

Fluid Recommendations

Premium quality hydraulic oil with a viscosity range between 150-250 SSU (30-50 cst.) at 38°C (100°F). Normal operating viscosity range between 80-1000 SSU (17-180 cst.). Maximum start-up viscosity is 4000 SSU (1000 cst.).

NOTE: Consult Parker when exceeding 71°C (160°F) operation. Oil should have maximum anti-wear properties, rust and oxidation treatment.

Filtration

For maximum pump and system component life, the system should be protected from contamination at a level not to exceed 125 particles greater than 10 microns per milliliter of fluid. (SAE Class 4 / ISO 16/13.) Due to the nature of variable displacement pumps, variations in pump inlet conditions, fluid acceleration losses, system aeration, and duty cycle must be carefully considered before specifying suction line filtration. Contact your Parker representative for assistance.
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1. Terms and Conditions of Sale: All descriptions, quotations, proposals, offers, acknowledgments, acceptances and sales of Seller’s products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer’s acceptance of any offer to sell including these terms and conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller’s acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer’s assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained herein. Acceptance of Seller’s products shall in all events constitute such assent.

2. Payment: Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for such periods at the rate of 1% per month. If Seller fails to deliver on time, delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

3. Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 5 years from date of shipment from Parker Hannifin Corporation. THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS SOLD HEREUNDER. SELLER MAKES NO WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED. NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER’S DESIGNS OR SPECIFICATIONS.

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5. Changes, Reschedules and Cancellations: Buyer may request to modify the designs or specification for items sold hereunder as well as quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between buyer and Seller unless accepted by Seller in written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller’s discretion, and shall be upon such terms and conditions as Seller may require.

6. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be returnable in Seller’s property notwithstanding payment of any charges by Buyer, in no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer.

Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

6. Buyer’s Property: Any designs, tools, patterns, materials, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract, shall be returnable in Seller’s property notwithstanding payment of any charges by Buyer, or any other items which become Buyer’s property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall be liable for any loss or damage to such property while it is in Seller’s possession or control.

7. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of sales and use taxes, property, occupation taxes, or any other taxes, which may be imposed by taxing authorities of any kind or nature whatsoever. Including but not limited to, sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

8. Indemnity For Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. Patents, U.S. Trademarks, copyrights, trade dress and trade secrets (hereinafter the “Intellectual Property Rights”). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller’s obligation to defend and indemnify Buyer is conditional on Buyer notifying Seller of such allegations within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it may infringe any patent, copyright, trademark, or trade secret or is alleged to infringe any patent, copyright, trademark, or trade secret, Buyer shall notify Seller and Seller shall have the right to modify or cancel the contract, or Seller shall have the right to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller’s sole and exclusive liability to Buyer for any alleged infringement or claims of any alleged infringement or claims of infringement of Intellectual Property Rights. If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, buyer shall defend and indemnify Seller for all costs, expenses or of judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

9. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller’s obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter “Events of Force Majeure”). Events of Force Majeure shall include without limitation, accidents, acts of god, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller’s control.

10. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.