Bulletin HY14-2103/US

Series MV3
Midget Directional Control Valves

Effective: February 1, 2004
Supersedes: Cat. No. PMF 1002 dated 10/99

Description
The Parker Series MV3 Midget Directional Control Valves provide multiple-function directional control in series, parallel and series-parallel circuits. Proven for more than 30 years in thousands of mobile and industrial hydraulic systems, these Parker Midget Valves are modular in design and can be assembled in a wide variety of circuit configurations.

Features
- Superior versatility
- Both open and closed center configurations
- Excellent metering characteristics
- Inlet load drop checks
- Optional high flow inlets (low ∆P)
- Fourth position float
- Combinable with Parker Mini-Pak solenoid operated directional control valves
- Power beyond feature

Specifications

**Operating Pressure:** 3000 PSI (207 Bar) maximum.
**Power Beyond Pressure Capability:** 3000 PSI (207 Bar).
**Operating Fluid:** Standard petroleum-based.
**Leakage C-T at 3000 PSI (207 Bar):** 5.4 in³/min. (88.5 cc/min.) at 100°F (38°C), 150 SSU (32 cSt).
**Handle Pull Force at 3000 PSI (207 Bar):** 15 lbs. (66.6 N) maximum, spring centered or detent.
**Filtration Requirement:** Recommend 25 micron (nominal). Class 18/15 according to ISO 4406, or cleaner.
PERFORMANCE

NOTE: SAE 10 oil at 100°F (38°C), Viscosity 150 SSU (32 cSt)

MATERIALS

Construction: Hard chrome-plated precision spool, high-strength alloy cast iron body, standard Buna "N" seals.
Porting: SAE-6 (9/16" x 18 thread)
Stacking Limitation: Recommended to 5 sections at maximum rated flow and pressure. For additional sections consult factory.
Tie Rod Torque Specification: 115-125 lb. in. (13.0-14.1 N-m)
Shipping Weight Per Section: 6 lbs. (2.7 kg) approx.
DIMENSIONS

DIMENSIONS ARE IN INCHES (MILLIMETERS) AND ARE FOR REFERENCE ONLY.
OPTIONS

- Spring-centered or detented spools in any combination.
- Integral, adjustable inlet relief valve.
- Priority inlet with direct-acting relief valve; available in 50 - 3,000 psi (3.5 - 207 BAR).
- Power beyond outlet sections.
- Electric limit switches for DC power unit switching with 1/4" (6.35 mm) spade connectors.
- Open center series conversion.
- Closed center parallel circuit stack conversion.

**A**
Spring Center/Detent Position Cap

**K**
2K, 2-Position Detented Cap
3K, 3-Position Detented Cap

**PB**
Power Beyond Outlet Section

**SP**
Series Conversion Plate

**IP**
Isolator Plate

**R**
Direct Acting Relief Valve
Adjustable in 2 Pressure Ranges 50-500/500-3000 psi (3.5-35/35-207 BAR)

**L, M**
Electric Limit Switch on Spool Cap
1/4" (6.35 mm) Spade Adaptors
L - 3 position
M - 2 position

**NI**
Load Drop Checks

**NPR**
Priority Inlet with Direct Acting Relief
Adjustable in 2 Pressure Ranges 50-500/500-3000 psi (3.5-35/35-207 BAR)

**MI/O**
Mid Inlet/Outlet

**F**
Forked End Spool
### ORDER CODE

**MV3 - Table One: XXXX - Table Two - Table Three - Table Four - Repeat Tables Two, Three and Four as needed for additional valve sections - Table Five - Table Six**

**Example:** MV3-NR2000-10A-IP-10FM-SO

#### TABLE ONE

<table>
<thead>
<tr>
<th>INLET OPTIONS</th>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI</td>
<td><img src="image" alt="NI" /></td>
<td>Inlet w/Load Checks</td>
</tr>
<tr>
<td>NRI</td>
<td><img src="image" alt="NRI" /></td>
<td>Reverse Ported Inlet w/Load Checks</td>
</tr>
<tr>
<td>NDIP</td>
<td><img src="image" alt="NDIP" /></td>
<td>Dual Ported Inlets w/Load Checks</td>
</tr>
<tr>
<td>NR</td>
<td><img src="image" alt="NR" /></td>
<td>Inlet w/Load Checks and Adjustable Direct Acting Relief</td>
</tr>
<tr>
<td>NPR</td>
<td><img src="image" alt="NPR" /></td>
<td>Inlet w/Load Checks, Priority Flow and Direct Acting Relief</td>
</tr>
</tbody>
</table>

Specify pressure setting on NR. Specify pressure and flow on NPR.

#### TABLE TWO

<table>
<thead>
<tr>
<th>SPOOL CONFIGURATION</th>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td><img src="image" alt="10" /></td>
<td>3 position 4 way N/C (C1 and C2 Blocked)</td>
</tr>
<tr>
<td>14</td>
<td><img src="image" alt="14" /></td>
<td>3 position 4 way Motor (C1 and C2 Open to Tank)</td>
</tr>
<tr>
<td>17</td>
<td><img src="image" alt="17" /></td>
<td>3 position 3 way (C2 Blocked)</td>
</tr>
<tr>
<td>20</td>
<td><img src="image" alt="20" /></td>
<td>2 position 4 way C1 and C2 Blocked)</td>
</tr>
<tr>
<td>34</td>
<td><img src="image" alt="34" /></td>
<td>4 position 4 way (Float) (C1 and C2 Blocked)</td>
</tr>
<tr>
<td>35</td>
<td><img src="image" alt="35" /></td>
<td>Tool Priority Selector (Must be used with IP plate)</td>
</tr>
</tbody>
</table>

#### TABLE THREE

<table>
<thead>
<tr>
<th>SPOOL OPTIONS</th>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td><img src="image" alt="A" /></td>
<td>Detented (Spool In) Spring Centered</td>
</tr>
<tr>
<td>B</td>
<td><img src="image" alt="B" /></td>
<td>Detented (Spool Out) Spring Centered</td>
</tr>
<tr>
<td>C</td>
<td><img src="image" alt="C" /></td>
<td>Forked End Spool</td>
</tr>
<tr>
<td>D</td>
<td><img src="image" alt="D" /></td>
<td>Detented In Both Operating Positions</td>
</tr>
<tr>
<td>E</td>
<td><img src="image" alt="E" /></td>
<td>Micro-Switch Operated in 3 Positions</td>
</tr>
<tr>
<td>F</td>
<td><img src="image" alt="F" /></td>
<td>Micro-Switch Operated in 2 Positions</td>
</tr>
<tr>
<td>FM</td>
<td><img src="image" alt="FM" /></td>
<td>Fine Metering available on #10 and #14 spools only. Designed to give the operator some touch and feel. (As a Meter-Out device it is not recommended to be used with Isolating valves.)</td>
</tr>
</tbody>
</table>

#### TABLE FOUR

<table>
<thead>
<tr>
<th>CONVERSION PLATES</th>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td><img src="image" alt="SP" /></td>
<td>Series Conversion Plate (Not to be used w/Inlet relief)</td>
</tr>
<tr>
<td>IP</td>
<td><img src="image" alt="IP" /></td>
<td>Isolator Plate</td>
</tr>
</tbody>
</table>

#### TABLE FIVE

<table>
<thead>
<tr>
<th>OUTLET OPTIONS</th>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO</td>
<td><img src="image" alt="SO" /></td>
<td>Standard Outlet (Open Circuit)</td>
</tr>
<tr>
<td>SC</td>
<td><img src="image" alt="SC" /></td>
<td>Standard Outlet (Closed Circuit)</td>
</tr>
<tr>
<td>PB</td>
<td><img src="image" alt="PB" /></td>
<td>Power beyond (Open Circuit)</td>
</tr>
<tr>
<td>DTO</td>
<td><img src="image" alt="DTO" /></td>
<td>Dual tank Outlet (Open Circuit)</td>
</tr>
<tr>
<td>DTC</td>
<td><img src="image" alt="DTC" /></td>
<td>Dual tank Outlet (Closed circuit)</td>
</tr>
<tr>
<td>NO</td>
<td><img src="image" alt="NO" /></td>
<td>Standard Outlet w/reverse check (Open Circuit only)</td>
</tr>
</tbody>
</table>

#### TABLE SIX

<table>
<thead>
<tr>
<th>BANKING KITS</th>
<th>Figure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BK1</td>
<td><img src="image" alt="BK1" /></td>
<td>1 spool section=Inlet/outlet</td>
</tr>
<tr>
<td>BK2</td>
<td><img src="image" alt="BK2" /></td>
<td>2 spool section=Inlet/outlet</td>
</tr>
<tr>
<td>BK3</td>
<td><img src="image" alt="BK3" /></td>
<td>3 spool section=Inlet/outlet</td>
</tr>
<tr>
<td>BK4</td>
<td><img src="image" alt="BK4" /></td>
<td>4 spool section=Inlet/outlet</td>
</tr>
<tr>
<td>BK5</td>
<td><img src="image" alt="BK5" /></td>
<td>5 spool section=Inlet/outlet</td>
</tr>
</tbody>
</table>

### HOW TO ORDER:
Parker Mini-Pak Valves are coded by the assembled stack configuration (Left to Right) in a sequential order from inlet to outlet. Please refer to the ordering tables, to select a circuit type, inlet options, spool configuration, spool options, circuit conversion options as they apply to your application.

### ACCESSORIES

- Handle Kits order separately
- MV3-H1: Right Angle Handle
- MV3-H2: Straight Handle

Please Note: Mylar shims and "O" rings are shipped with each valve section.

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Parker Hannifin Corporation
Hydraulic Valve Division
Elyria, Ohio, USA
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