Auxiliary Valves
PLD6 and PLD130
Direct-Acting Pressure Relief Valves

Catalogue HY17-8701/UK
June 2003
Applications
The PLD6 is a direct operated pressure relief valve, adjustable within 4 different pressure ranges.
With its exceptionally good opening and closing characteristics, the PLD6 is intended primarily for use in pilot circuits in hydraulic and electro-hydraulic remote control systems. It can, however, be used to advantage in any hydraulic circuit where a pressure relief valve of this size is required.

Construction and function
The valve housing is of nodular iron, with two (alternative) pressure ports and one tank port.
The direct-acting pressure-relief insert is of a well-proven design used in many Parker directional valves.
Pressure setting is effected easily by means of an external hexagonal sleeve. The valve housing and hexagonal sleeve are furnished with holes to enable sealing with wire.
The valve can be supplied factory-set at the desired pressure level, and factory-sealed if required. In either case, the pressure setting is stated on a sticker on the valve.

Technical data

<table>
<thead>
<tr>
<th>Pressure setting ranges</th>
<th>Working pressure</th>
<th>15-70 bar</th>
<th>217-1015 psi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>71-150 bar</td>
<td>1016-2175 psi</td>
<td></td>
</tr>
<tr>
<td></td>
<td>151-210 bar</td>
<td>2176-3045 psi</td>
<td></td>
</tr>
<tr>
<td></td>
<td>211-300 bar</td>
<td>3046-4350 psi</td>
<td></td>
</tr>
</tbody>
</table>

| Pressure-setting flow   | The pressure is set at a flow of 20 l/min (5.3 USgpm) through the pressure relief valve. |

Recommended flow rates
Max. 25 l/min at settings below 100 bar.
(6.6 USgpm at settings below 1450 psi)
Max. 40 l/min at settings above 100 bar.
(10.6 USgpm at settings below 1450 psi)

Connection ports
All connections are available in two versions:
- G version (BSP pipe thread) for flat seal (type Tredo) according to ISO 228/1.
- UN version for O-ring seal according to SAE J1926/1.

Weight
Approx. 0.3 kg (0.7 lb).

Hydraulic fluids
Best performance is obtained using mineral-base oil of high quality and cleanliness in the hydraulic system.
HLP hydraulic fluids (DIN 51524), automatic-gearbox oil type A and API CD engine oils can be used. Synthetic, fire-resistant and environmentally friendly fluids can also be used. Please contact VOAC for further information.
For best function, fluid viscosity should be between 15 and 45 mm²/s (cSt).

Filtration
Filtration should be arranged so that Target Contamination Class 20/18/14 according to ISO 4406 is not exceeded.

Temperature
Temperature range (fluid):
-20 to +70 °C (-4 to 158 °F).
Temperature range (ambient):
-40 °C to +60 °C (-40 to 140 °F).
Temperature change: max. 100 °C/s (212 °F).

Features and benefits
- Small dimensions - easy to install
- Very tight - no unnecessary leakage losses
- Very good pressure override characteristic - minimal pressure change between different flows
- Very good opening and closing characteristics - right pressure regardless of flow
- Low hysteresis - good pressure-maintaining precision
- Fast acting - quick response to pressure surges
- Great adjustability - only four different pressure ranges, from 15 to 300 bar
- Tolerates high pressure surges in tank port (up to 300 bar) - long service life
- Sealable - discourages unauthorized intervention and shows evidence of tampering

General
The data given is applicable at a fluid temperature of 50 °C (122 °F) and viscosity of 30 mm²/s (cSt) using mineral-base oil according to DIN 51524.
Pressure Relief Valve
PLD6

Pressure override characteristics for PLD6

Functional symbol for PLD6

Dimensions in mm, ( ) in inch
1 inch = 25.4 mm

Dimensional drawing - PLD6
Applications
The PLD130 is a direct operated pressure relief valve of the cartridge-valve type and is adjustable within 8 different pressure ranges.

The valve is primarily intended for use as a main pressure relief valve in directional valves, but is also very well suited to installation in pumps, motors and function blocks.

Construction and function
The PLD130 is constructed as a cartridge valve, made up of a number of components such as poppet, seat, spring, spring housing and adjustment screw, which are of high quality, surface hardened steel that is very resistant to corrosion.

The design is such that each adjustment range has a maximal pressure value that is higher than the working pressure. This enables the pressure to be "over-set" during tuning and testing.

The PLD130 is of well-proven design and is used as the main pressure relief valve in several Parker directional valves (a function on which there are great demands). Adjustment is by means of a hexagonal screw with lock-nut.

The setting can be sealed by means of a special plastic cap that is pressed over the adjustment mechanism of the valve. The cap is then sealed by means of sealing wire and lead.

The valve can be supplied factory-set at the desired pressure level, in which case the set values are stated on a sticker on the valve.

Technical data
Hydraulic fluids
Best performance is obtained using mineral-base oil of high quality and cleanliness in the hydraulic system.

HLP hydraulic fluids (DIN 51524), automatic-gearbox oil type A and API CD engine oils can be used. Synthetic, fire-resistant and environmentally friendly fluids can also be used. Please contact Parker for further information.

For best function, fluid viscosity should be between 15 and 45 mm²/s (cSt).

General
The data given is applicable at a fluid temperature of 50 °C (122 °F) and viscosity of 30 mm²/s using mineral-base oil according to DIN 51524, and when the cartridge valve is mounted in a well defined master block.

Pressure setting ranges

<table>
<thead>
<tr>
<th>Working pressure bar/(psi)</th>
<th>Pressure setting bar/(psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-125</td>
<td>Max. pressure bar/(psi)</td>
</tr>
<tr>
<td>(1160-1813)</td>
<td>155</td>
</tr>
<tr>
<td>126-140</td>
<td>170</td>
</tr>
<tr>
<td>(1814-2030)</td>
<td>2485</td>
</tr>
<tr>
<td>141-160</td>
<td>190</td>
</tr>
<tr>
<td>(2031-2320)</td>
<td>2755</td>
</tr>
<tr>
<td>161-210</td>
<td>240</td>
</tr>
<tr>
<td>(2321-3046)</td>
<td>3840</td>
</tr>
<tr>
<td>211-250</td>
<td>280</td>
</tr>
<tr>
<td>(3047-3626)</td>
<td>4060</td>
</tr>
<tr>
<td>251-280</td>
<td>310</td>
</tr>
<tr>
<td>(3627-4060)</td>
<td>4496</td>
</tr>
<tr>
<td>281-320</td>
<td>350</td>
</tr>
<tr>
<td>(4061-4640)</td>
<td>5076</td>
</tr>
<tr>
<td>321-350</td>
<td>380</td>
</tr>
<tr>
<td>(4641-5076)</td>
<td>5510</td>
</tr>
</tbody>
</table>

Filtration
Filtration should be arranged so that Target Contamination Class 20/18/14 according to ISO 4406 is not exceeded.

Temperature
Temperature range (fluid): -20 °C to +70 °C (-4 to 158 °F).
Temperature range (ambient): -40 °C to +60 °C (-40 to 140 °F).
Temperature change: max. 100 °C/s (212 °F).

Pressure-setting flow
The pressure-setting flow can be either 20 or 60 l/min (5.3 or 15.9 USgpm) through the pressure relief valve (to be specified when ordering).

Recommended flow rate
Max. 130 l/min (34.3 USgpm).

Weight
Approx. 0.3 kg (0.7 lb).

Features and benefits
- Small dimensions - easy to install
- Correct gallery placement - only one tank and one pump gallery needed
- Very tight - no unnecessary leakage losses
- Very good opening and closing characteristics - right pressure regardless of flow
- Very good pressure override characteristics - minimal pressure change between different flows
- Low hysteresis - good pressure-maintaining precision
- Fast acting - quick response to pressure surges
- Built-in maximum pressure setting - greater safety
- Sealable - discourages unauthorized intervention and shows evidence of tampering
Pressure override characteristics for PLD130

![Pressure override characteristics for PLD130](image)

Functional symbol for PLD130

![Functional symbol for PLD130](image)

Dimensional and cavity drawing for PLD130 with tightening torques (Mv). Tank line should have area of >250 mm² at q = 130 l/min (0.39 in² at 34.3 USgpm).

![Dimensional and cavity drawing for PLD130](image)

Dimensions in mm, ( ) in inch
1 inch = 25.4 mm

Catalogue HY17-8701/UK
Technical Information

Pressure Relief Valve
PLD130

Parker Hannifin
Mobile Controls Division
Borås, Sweden
A series of codes have been established to help customers to specify the desired properties when ordering the PLD6 pressure relief valve. The code is incorporated into the basic valve designation as an identifying suffix, e.g. PLD6G-150-P (see "Ordering code" below).

To make ordering easier, certain standard variants have been given 10-digit ordering numbers, as detailed in the table below.

<table>
<thead>
<tr>
<th>Valve designation</th>
<th>Ordering number</th>
<th>Valve designation</th>
<th>Ordering number</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLD6G-15/70-O</td>
<td>8234 8910 45</td>
<td>PLD6U-15/70-O</td>
<td>8234 0016 51</td>
</tr>
<tr>
<td>PLD6G-71/150-O</td>
<td>8234 8910 11</td>
<td>PLD6U-71/150-O</td>
<td>8234 0016 52</td>
</tr>
<tr>
<td>PLD6G-151/210-O</td>
<td>8234 8910 29</td>
<td>PLD6U-151/210-O</td>
<td>8234 0016 53</td>
</tr>
<tr>
<td>PLD6G-211/300-O</td>
<td>8234 8910 37</td>
<td>PLD6U-211/300-O</td>
<td>8234 0016 54</td>
</tr>
<tr>
<td>PLD6G-50-P</td>
<td>8234 0006 05</td>
<td>PLD6U-50-P</td>
<td>8234 0016 05</td>
</tr>
<tr>
<td>PLD6G-63-P</td>
<td>8234 0006 06</td>
<td>PLD6U-63-P</td>
<td>8234 0016 06</td>
</tr>
<tr>
<td>PLD6G-80-P</td>
<td>8234 0006 08</td>
<td>PLD6U-80-P</td>
<td>8234 0016 08</td>
</tr>
<tr>
<td>PLD6G-100-P</td>
<td>8234 0006 10</td>
<td>PLD6U-100-P</td>
<td>8234 0016 10</td>
</tr>
<tr>
<td>PLD6G-125-P</td>
<td>8234 0006 12</td>
<td>PLD6U-125-P</td>
<td>8234 0016 12</td>
</tr>
<tr>
<td>PLD6G-140-P</td>
<td>8234 0006 14</td>
<td>PLD6U-140-P</td>
<td>8234 0016 14</td>
</tr>
<tr>
<td>PLD6G-160-P</td>
<td>8234 0006 16</td>
<td>PLD6U-160-P</td>
<td>8234 0016 16</td>
</tr>
<tr>
<td>PLD6G-175-P</td>
<td>8234 0006 17</td>
<td>PLD6U-175-P</td>
<td>8234 0016 17</td>
</tr>
<tr>
<td>PLD6G-190-P</td>
<td>8234 0006 19</td>
<td>PLD6U-190-P</td>
<td>8234 0016 19</td>
</tr>
<tr>
<td>PLD6G-210-P</td>
<td>8234 0006 21</td>
<td>PLD6U-210-P</td>
<td>8234 0016 21</td>
</tr>
<tr>
<td>PLD6G-230-P</td>
<td>8234 0006 23</td>
<td>PLD6U-230-P</td>
<td>8234 0016 23</td>
</tr>
<tr>
<td>PLD6G-250-P</td>
<td>8234 0006 25</td>
<td>PLD6U-250-P</td>
<td>8234 0016 25</td>
</tr>
<tr>
<td>PLD6G-280-P</td>
<td>8234 0006 28</td>
<td>PLD6U-280-P</td>
<td>8234 0016 28</td>
</tr>
</tbody>
</table>

### Ordering code

- **PLD**  
  - Connection: **G** G1/4 (BSP) thread  
  - **U** 9/16-18 UNF-2B thread

- **Pressure setting**
  - **15/70** Valve not pre-set. Adjustable between 15 and 70 bar.
  - **71/150** Valve not pre-set. Adjustable between 71 and 150 bar.
  - **151/210** Valve not pre-set. Adjustable between 151 and 210 bar.
  - **211/300** Valve not pre-set. Adjustable between 211 and 300 bar.

- **Sealing**
  - **O** Not sealed.
  - **P** Valve sealed with sealing wire and seal (factory-set valves only)
A series of codes have been established to help customers to specify the desired properties when ordering the PLD130 pressure relief valve. The code is incorporated into the basic valve designation as an identifying suffix, e.g. PLD130-150/20 (see "Ordering code" below).

To make ordering easier, certain standard variants have been given 10-digit ordering numbers, as detailed in the table below.

<table>
<thead>
<tr>
<th>Valve designation</th>
<th>Ordering number</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLD130-80/20</td>
<td>8234 0130 08</td>
</tr>
<tr>
<td>PLD130-100/20</td>
<td>8234 0130 10</td>
</tr>
<tr>
<td>PLD130-125/20</td>
<td>8234 0130 12</td>
</tr>
<tr>
<td>PLD130-140/20</td>
<td>8234 0130 14</td>
</tr>
<tr>
<td>PLD130-160/20</td>
<td>8234 0130 16</td>
</tr>
<tr>
<td>PLD130-175/20</td>
<td>8234 0130 17</td>
</tr>
<tr>
<td>PLD130-190/20</td>
<td>8234 0130 19</td>
</tr>
<tr>
<td>PLD130-210/20</td>
<td>8234 0130 21</td>
</tr>
<tr>
<td>PLD130-230/20</td>
<td>8234 0130 23</td>
</tr>
<tr>
<td>PLD130-250/20</td>
<td>8234 0130 25</td>
</tr>
<tr>
<td>PLD130-280/20</td>
<td>8234 0130 28</td>
</tr>
<tr>
<td>PLD130-320/20</td>
<td>8234 0130 32</td>
</tr>
<tr>
<td>PLD130-350/20</td>
<td>8234 0130 35</td>
</tr>
<tr>
<td>Plastic cap for sealing</td>
<td>9120 0999 68</td>
</tr>
</tbody>
</table>

**Ordering code**

<table>
<thead>
<tr>
<th>Code</th>
<th>Pressure-setting flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Pressure set at flow of 20 l/min through valve</td>
</tr>
<tr>
<td>60</td>
<td>Pressure set at flow of 60 l/min through valve</td>
</tr>
</tbody>
</table>

**Code**

Valve pre-set at stated pressure (pressure pre-set range: 80-350 bar)

Subject to alteration without prior notice. The curves and diagrams in the catalogue show typical curves only. While the contents of the catalogue are updated continuously, the validity of the information given should always be confirmed. For more detailed product information, please contact Parker.
Hydraulics Group
Sales Offices

Europe

Austria
Wiener Neustadt
Tel: +43 (0)2622 23501
Fax: +43 (0)2622 68212

Belgium
Nivelles
Parc Industriel Sud-Zone II
Tel: +32 (0)67 280 900
Fax: +32 (0)67 280 999

Czech Republic
Prague
Tel: +420 2 830 85 221
Fax: +420 2 830 85 360

Denmark
Ishøj
Tel: +45 4356 0400
Fax: +45 4373 8431

Finland
Vantaa
Tel: +358 (0)9 4767 31
Fax: +358 (0)9 4767 3200

France
Contamine-sur-Arve
Tel: +33 (0)450 25 80 25
Fax: +33 (0)450 03 67 37

Germany
Kaarst
Tel: +49 (0)2131 4016 0
Fax: +49 (0)2131 4016 9199

Hungary
Budapest
Tel: +36 (0)1 220 4155
Fax: +36 (0)1 422 1525

Ireland
Clonee
Tel: +353 (0)1 801 4010
Fax: +353 (0)1 801 4132

Italy
Corsico (MI)
Tel: +39 02 45 19 21
Fax: +39 02 4 47 93 40

The Netherlands
Oldenzaal
Tel: +31 (0)541 585000
Fax: +31 (0)541 585459

Norway
Ski
Tel: +47 64 91 10 00
Fax: +47 64 91 10 90

Poland
Warsaw
Tel: +48 (0)22 863 49 42
Fax: +48 (0)22 863 49 44

Portugal
Leca da Palmeira
Tel: +351 22 9997 360
Fax: +351 22 9961 527

Slovakia
Ref. Czech Republic

Spain
Madrid
Tel: +34 91 675 73 00
Fax: +34 91 675 77 11

Sweden
Spånga
Tel: +46 (0)8 597 950 00
Fax: +46 (0)8 597 951 10

United Kingdom
Watford (industrial)
Tel: +44 (0)1923 492 000
Fax: +44 (0)1923 256 059
Ossett (mobile)
Tel: +44 (0)1924 282 200
Fax: +44 (0)1924 282 299

International

Australia
Castle Hill
Tel: +61 (0)2-9634 7777
Fax: +61 (0)2-9899 6184

Canada
Milton, Ontario
Tel: +1 905-693-3000
Fax: +1 905-876-0788

China
Beijing
Tel: +86 10 6561 0520
Fax: +86 10 6561 0526

Asia Pacific Group
Hong Kong, Kowloon
Tel: +852 2226 8008
Fax: +852 2226 8968

India
Mumbai
Tel: +91 22 7907081
Fax: +91 22 7907080

Japan
Tokyo
Tel: +81 (0)3 6408 3900
Fax: +81 (0)3 5449 7201

Latin America Group
Brazil
Tel: +55 13 3954-5100
Fax: +55 13 3954-5266

South Africa
Kempton Park
Tel: +27 (0)11-392 7280
Fax: +27 (0)11-392 7213

USA
Cleveland (industrial)
Tel: +1 216-896-3000
Fax: +1 216-896-4031
Lincolnshire (mobile)
Tel: +1 847-821-1200
Fax: +1 847-821-7600

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