

The PLC series auxiliary valves are direct-acting, factory-set pressure relief valves of the cartridge type that can be supplied with or without a threaded plug. They can also be supplied with housings to facilitate in-line installation.

PLC valves are intended primarily to act as combined pressure-relief and anti-cavitation valves - otherwise known as port relief valves - in the service ports of our directional valves. However, they can also be used to advantage in other situations where pressure relief valves in this size range are required. Indeed, PLC cartridge valves are purchased in great quantities by several of the world's leading pump and transmission manufacturers.

### Construction and function

PLC pressure relief valves are made of high-strength steel and consist of a seat, poppet, spring and nut. After the pressure setting has been made, the damper nut is locked against the poppet by welding, in order to prevent the factory-set opening value from changing. When the cartridge is supplied with a plug, a spring is included to enable the cartridge to function as an anti-cavitation valve. An anti-cavitation valve is essentially a check valve that enables oil to be sucked from the tank line in order to prevent cavitation in a consumer. The plug is fitted with an O-ring of nitrile rubber.

Poppets without a pressure relief function are also available. They are used when only a 'check valve' is required to perform an anti-cavitation function.

### Technical data

#### Flow capacity

The flow capacities of the respective PLC valves are dependent on the extent of pressure increment that can be accepted,

and are illustrated in the typical graphs that begin overleaf. The nominal flow capacities, however, are as follows:

|        |           |
|--------|-----------|
| PLC053 | 50 l/min  |
| PLC082 | 80 l/min  |
| PLC182 | 180 l/min |
| PLC280 | 280 l/min |

#### Pressure-setting flow

As standard, the desired pressure is set with a flow of 20 l/min passing through the pressure relief valve. The exception is the PLC053, for which the pressure setting is made with a flow of 10 l/min passing through the valve.

#### Weights

|        |          |
|--------|----------|
| PLC053 | 0,06 kg  |
| PLC082 | 0,11 kg  |
| PLC182 | 0,165 kg |
| PLC280 | 0,39 kg  |

The PLC valves are all supplied with a threaded plug.

|   |        |
|---|--------|
| Housing for PLC082 cartridge (inclusive of cartridge)       | 1,6 kg |
| Housing for two PLC082 cartridges (inclusive of cartridges) | 2,8 kg |

#### Hydraulic fluids

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

Hydraulic fluids of type HLP (DIN 51524), oil for automatic gearboxes Type A and engine oil type API CD can be used.

Synthetic, fire-resistant and environmentally friendly oils can also be used. If in doubt about the suitability of an oil, please contact your nearest Parker representative for advice.

For best function, oil viscosity should be between 15 and 45 mm<sup>2</sup>/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 °C to +90 °C

Temperature range, ambient:

-40 °C to +60 °C

Temperature shock resistance:

max. 100 °C/second

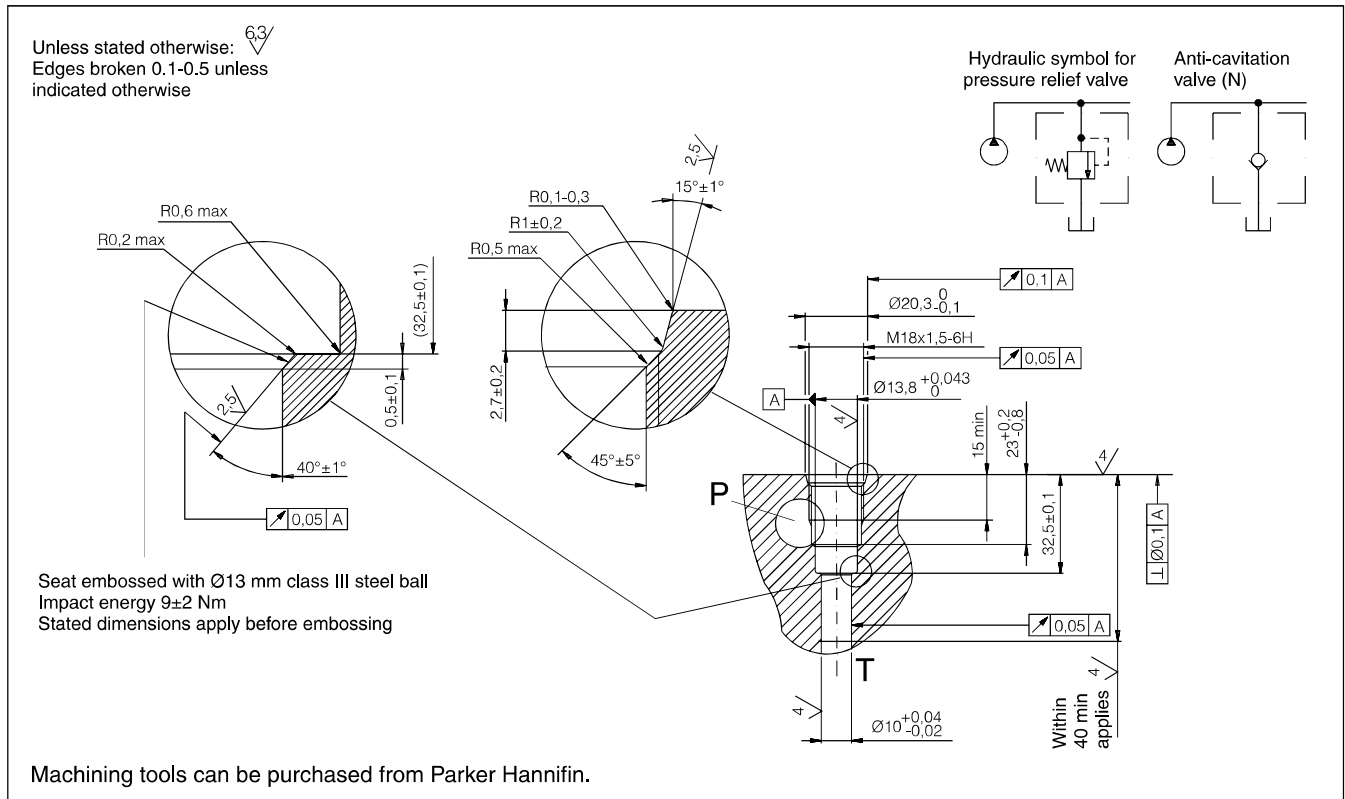
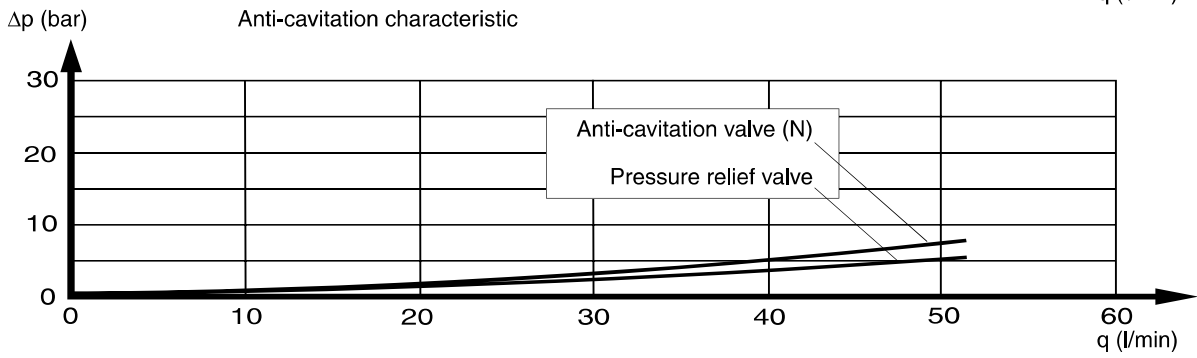
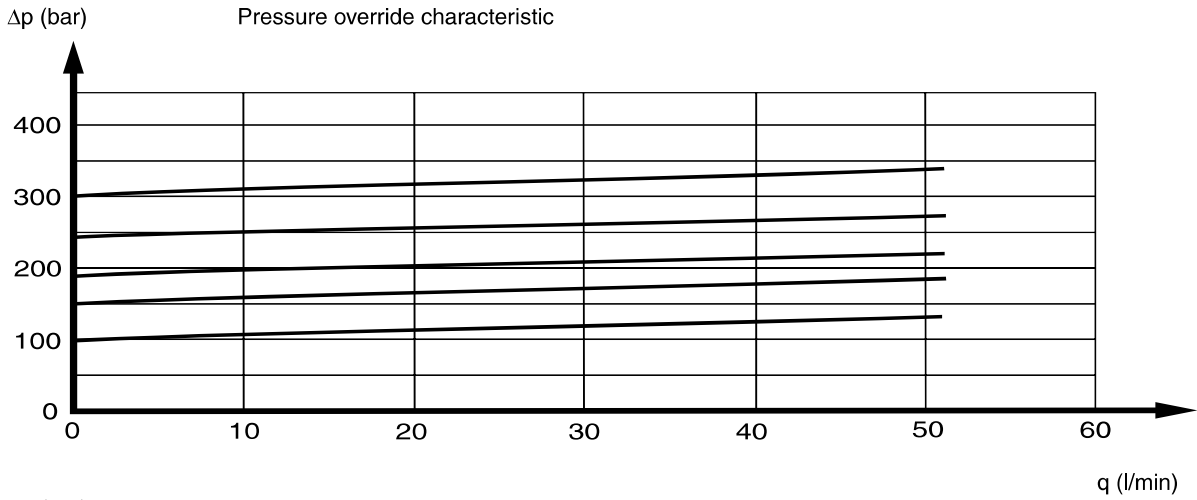
#### General

The data given in this catalogue is applicable at an oil temperature of 50 °C and viscosity of 30 mm<sup>2</sup>/s (cSt) using mineral-base oil complying with DIN 51524, when the cartridge valve is installed in a master manifold.

#### Features and benefits

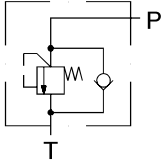
- Small dimensions - easy to install
- Single unit - facilitates installation
- Very tight - no unnecessary leakage losses
- Good characteristic – small pressure change between different flows
- Good opening and closing characteristics – distinct opening and closing
- Low hysteresis – good precision in pressure maintenance
- Fast acting – reacts quickly to pressure surges
- Setting locked by welding – prevents undesirable changing of pressure setting

**Diagram for PLC053 pressure relief valve**

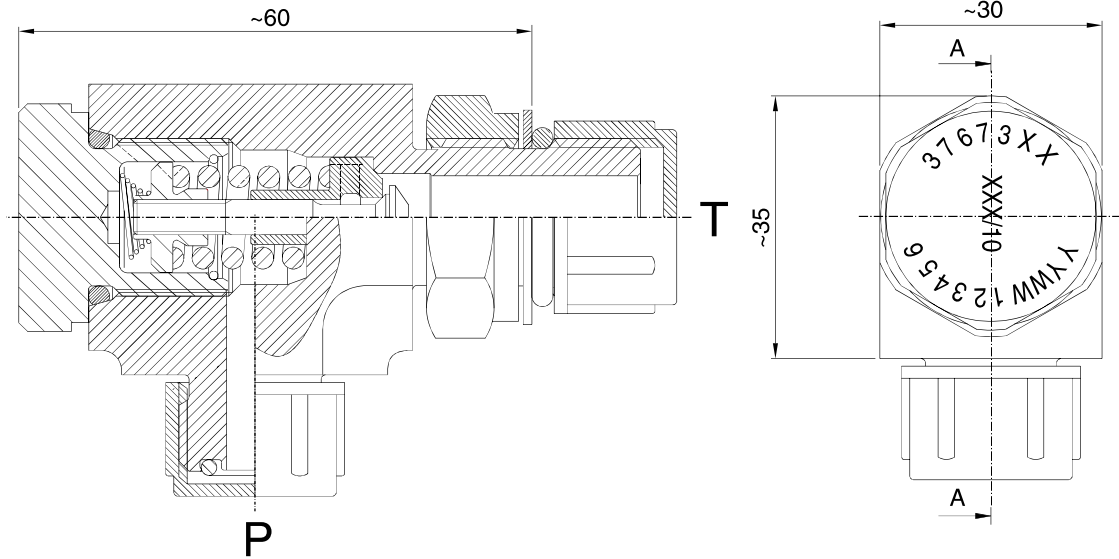


Cavity drawing, PLC053

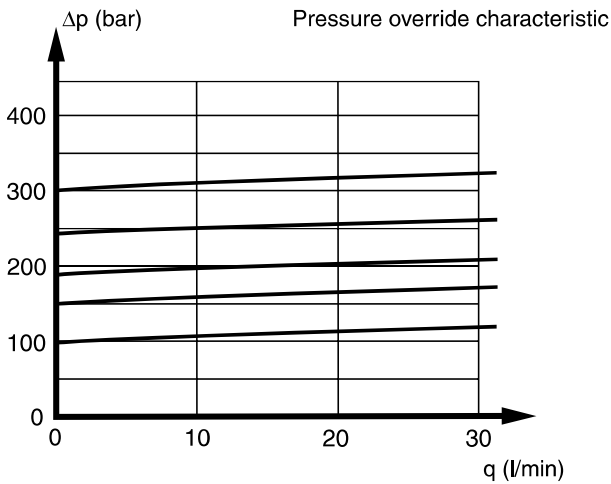
**Single housing**



Hydraulic symbol for single housing



**Diagram for PLC053 pressure relief valve**



**Ordering**

**PLC053 mounted in single housing**

The PLC053 mounted in a single housing can be ordered using the ordering numbers below. Should you require a pressure setting not listed in the table, please contact your Parker Hannifin representative.

| Pressure [bar] | Ordering No |
|----------------|-------------|
| 50             | 3767317     |
| 63             | 3767318     |
| 80             | 3767319     |
| 100            | 3767320     |
| 125            | 3767321     |
| 140            | 3767322     |
| 160            | 3767323     |
| 175            | 3767324     |
| 190            | 3767325     |
| 210            | 3767326     |
| 230            | 3767327     |
| 240            | 3767328     |
| 250            | 3767329     |
| 260            | 3767330     |
| 270            | 3767331     |
| 280            | 3767332     |