

Power Valve LA

RE 95514/04.10 1/4
Replaces: 09.99

Data sheet

Series 10
Size 6
Nominal pressure 350 bar
Maximum pressure 400 bar
External power limiting of variable pumps



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Description

The LA power valve is used for the external power limiting of variable pumps with hydraulic proportional control (pilot-pressure related, HD or HP).

It controls variable pump displacement depending on the operating pressure so that a specified drive power is not exceeded at a constant speed. The power characteristic is tangentially approximated to the hyperbolic characteristic by adjusting the pre-tension of 2 springs in the power valve.

Via a piston, the springs act on the valve spring of a pressure reduction valve. Operating pressure is applied at the opposite end of the piston. Below the start of control the variable pump's pilot pressure-actuated control unit is supplied with max. 18 bar pilot pressure via port A of the power valve. If the operating pressure exceeds the start of control specified by the power characteristic, the pilot pressure is reduced on port A and the pump swiveled back. At constant drive speed, this is the equivalent of power controlling.

Optionally, the pilot pressure can be reduced again via a separate pressure reduction valve and the pump swiveled to a lower displacement volume (stroke limiter).

Ordering code for standard program

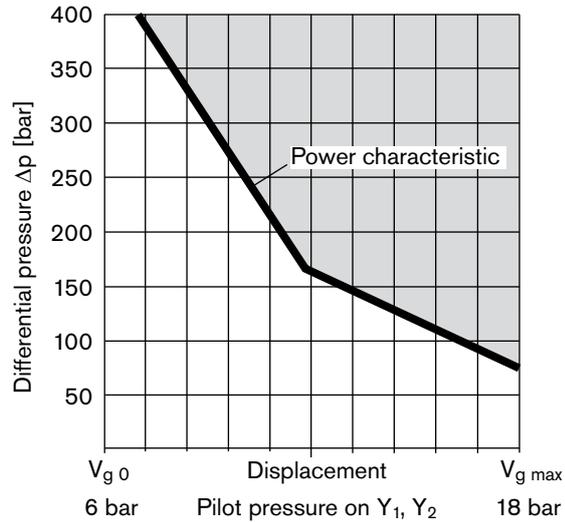
LA	6	/	10	M	P	-	
01	02		03	04	05	06	07

Valve type	
01 Power valve	LA
Control range	
02 Pilot pressure $6 < p_{St} < 18$ bar	6
Series	
03 Series 1, index 0	10
Version of port and fixing threads	
04 Metric	M
Seals	
05 NBR (nitrile-caoutchouc)	P
Port plate	
06 Without	0
with port plate	A
Standard / special version	
07 Standard version	0
Special version	S

When ordering, state in clear text:

- Type name and size of the implemented axial piston variable pump from Rexroth with pilot-pressure related adjustment HD or HP
- Pump operating speed
- Specified drive power

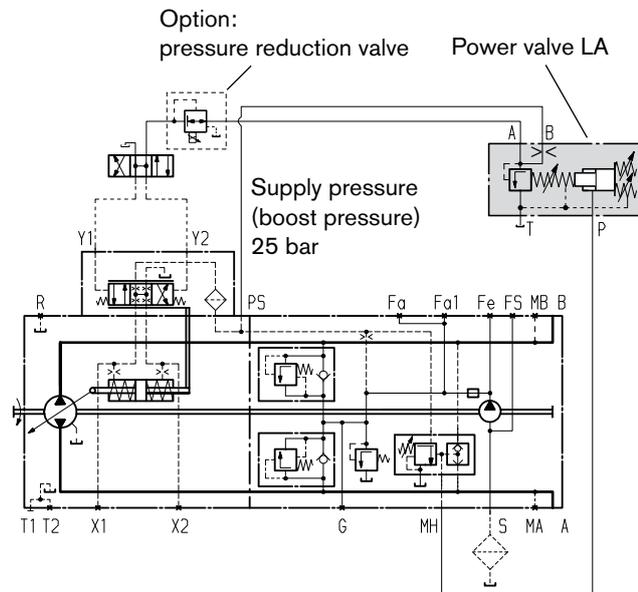
Characteristic



Circuit diagram

Example:

LA power valve with axial piston variable pump A4VG...HD (version with pressure reduction valve)



Technical data

Table of values

	NG	6
Nominal pressure p_{nom}	bar	350
Maximum pressure p_{max}	bar	400
Pilot pressure range on port A	bar	$6 < p_{St} < 18$ bar
Supply pressure on port B	bar	25
Minimum start of control high-pressure variable pump	bar	70
Maximum flow on LA with orifice $\varnothing 1.2$ and 18 bar	l/min	4
Hydraulic fluid temperature range	$^{\circ}C$	-20 to +80
Viscosity range	mm^2/s	5 to 1600
Installation position		any
Mass	without plate	kg 2.0
	with plate	kg 2.6

Note

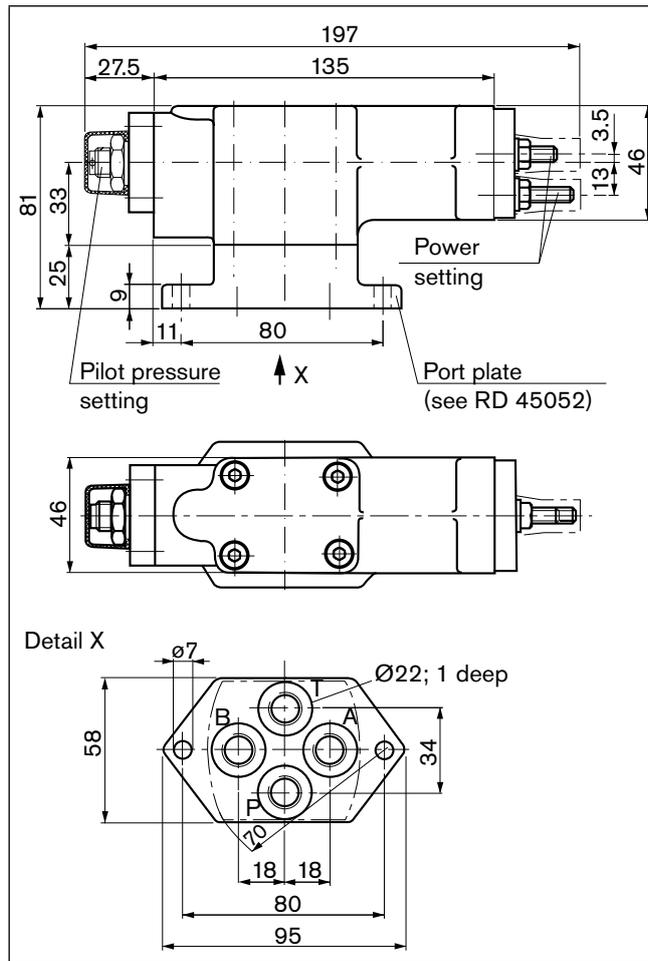
The power valve is always supplied with an orifice ($\varnothing 1.2$) in port B. If the orifice is outside the power valve, port B is plugged.

Full functional capability of the power valve is achieved in the viscosity range from 10 to 30 mm^2/s .

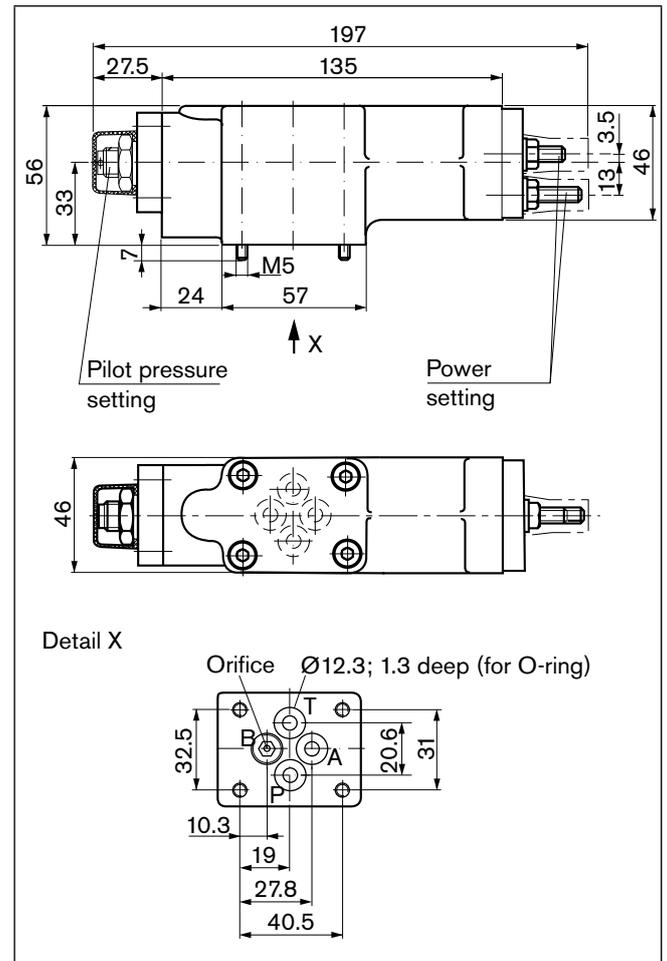
Dimensions

Before finalizing your design, request a binding installation drawing. Dimensions in mm.

Version with port plate



Version without port plate



Ports

Version with port plate

Designation	Port for	Standard	Size ¹⁾	Maximum pressure [bar] ²⁾	State
A	Pilot pressure output	DIN ISO 228	G1/4 in; 13 deep	30	O
B	Pilot pressure input (in front of orifice)	DIN ISO 228	G1/4 in; 13 deep	30	O ³⁾
P	Pump operating pressure	DIN ISO 228	G1/4 in; 13 deep	400	O
T	Tank	DIN ISO 228	G1/4 in; 13 deep	5	O

1) Observe the general instructions on page 8 for the maximum tightening torques.

2) Short-term pressure spikes may occur depending on the application. Keep this in mind when selecting measuring devices and fittings.

3) If the orifice is outside the power valve, port B is plugged.

O = Must be connected (plugged on delivery)

X = Plugged (in normal operation)

Version without port plate

Designation	Port for	Size	Maximum pressure [bar]	State
A	Pilot pressure output	Ø6	30	O
B	Pilot pressure input (in front of orifice) (fitted with orifice, thread M6)	Ø6	30	O
P	Pump operating pressure	Ø6	400	O
T	Tank	Ø6	5	O

General instructions

- The LA power valve is designed to be used in open and closed circuits.
- Project planning, assembly and commissioning of the components for the axial piston unit require the involvement of qualified personnel.
- The service line ports and function ports are only designed to accommodate hydraulic lines.
- During and shortly after operation, there is a risk of burns on the power valve. Take appropriate safety measures (e.g. by wearing protective clothing).
- Depending on the operational state of the axial piston unit or power valve (operating pressure, fluid temperature) the characteristic may shift.
- Pressure ports:
The ports and fixing threads are designed for the specified maximum pressure. The machine or system manufacturer must ensure that the connecting elements and lines correspond to the specified operating conditions (pressure, flow, hydraulic fluid, temperature) with the necessary safety factors.
- The data and notes contained herein must be adhered to.
- The following tightening torques apply:
 - Threaded hole of the power valve:
The maximum permissible tightening torques $M_{G \max}$ are maximum values of the threaded holes and must not be exceeded. For values, see the following table.
 - Fittings:
Observe the manufacturer's instruction regarding the tightening torques of the used fittings.
- The product is not approved as a component for the safety concept of a general machine according to DIN EN ISO 13849.

Ports		Maximum permissible tightening torque of the threaded holes $M_{G \max}$	Required tightening torque of the locking screws M_V	WAF hexagon socket of the locking screws
Standard	Threaded size			
DIN ISO 228	G1/4	70 Nm	–	–