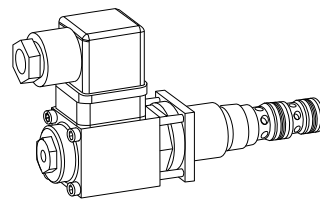


**Proportional pressure reducing valve
Screw-in cartridge**

- Pilot operated
- $Q_{\max} = 20 \text{ l/min}$
- $p_{\max} = 350 \text{ bar}$
- $p_{N \text{ red max}} = 315 \text{ bar}$

M18x1,5
Wandfluh standard


DESCRIPTION

Pilot operated proportional pressure reducing valve as a screw-in cartridge with a thread M18x1,5 for cavity according to Wandfluh standard. 4 standard pressure levels are available: 20, 100, 200 and 315 bar. Adjustment by a Wandfluh proportional solenoid (VDE standard 0580). The cartridge and the solenoid made of steel are zinc coated and therefore rust-protected.

FUNCTION

The proportional pressure regulating valve controls the pressure in port A (1). Proportionally to the solenoid current solenoid force and pressure in port A (1) rise. The valve functions practically independently of pressure in port P (2). A pressure rise in Port A (1) above the set pressure e.g. due to an active oil consumer, will be prevented by relieving excess volume flow to tank via port T (3). With deenergised solenoid the volume flow passes freely from port P to the consumer port A. Design specific a minimum adjustable pressure according characteristic curve cannot be underpassed. To control the valve proportional amplifiers are available from Wandfluh (see register 1.13).

APPLICATION

The valve has its application in hydraulic systems, in which the pressure frequently has to be changed. The facility for remote control and signal processing from process control systems enable elegant, comfortable solutions to problems. Installation of the screw-in cartridge in control blocks as well as in the Wandfluh sandwich plates (vertical stacked systems) and flange valves of the NG3-Mini types. (Please note the separate data sheets in register 2.3). Cavity tools are available for machining the cavities in steel and aluminium (hire or purchase). Please refer to the data sheets in register 2.13.

TYPE CODE

Pressure reducing valve	M	V	P	PM18	-		-		#	
Pilot operated										
Proportional										
Screw-in thread M18x1,5										
Nominal pressure range $p_{N \text{ red}}$	20 bar					20				
	100 bar					100				
	200 bar					200				
	315 bar					315				
Nominal voltage U_N	12 VDC					G12				
	24 VDC					G24				
Design-Index (Subject to change)										

GENERAL SPECIFICATIONS

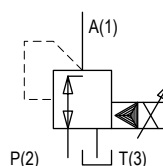
Denomination	Pilot operated proportional pressure reducing valve
Construction	Screw-in cartridge for cavity acc. to Wandfluh standard
Operation	Proportional solenoid
Mounting	Screw in thread M18x1,5
Ambient temperature	-20...+50° C
Mounting position	any
Fastening torque	$M_D = 30 \text{ Nm}$ for screw-in cartridge $M_D = 1,2 \text{ Nm}$ (qual. 8.8) for solenoid screws
Weight	$m = 0,38 \text{ kg}$

ELECTRICAL SPECIFICATIONS

Construction	Proportional solenoid, wet pin push type, pressure tight.	
Standard nominal voltage	U _N = 12 VDC	U _N = 24 VDC
Limiting current	I _G = 1080 mA	I _G = 540 mA
Relative duty factor	100% DF (see date sheet 1.1-430)	
Protection class	IP 65 acc. to EN 60 529	
Connection/Power supply	Over device plug connection to EN175301-803 (DIN43650) ISO4400, form A, (2P+E), other connections on request.	
Other electrical specifications see data sheet 1.1-90 (PI29V)		

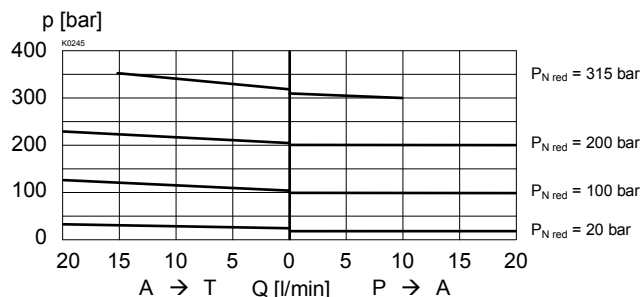
HYDRAULIC SPECIFICATIONS

Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 18/16/13 (Required filtration grade $\beta_{6...10} \geq 75$) refer to data sheet 1.0-50/2
Viscosity range	12 mm ² /s...320 mm ² /s
Fluid temperature	-20...+70° C
Peak pressure	$p_{\max} = 350 \text{ bar}$
Nominal pressure range	$p_{N \text{ red}} = 20 \text{ bar}$, $p_{N \text{ red}} = 100 \text{ bar}$ $p_{N \text{ red}} = 200 \text{ bar}$, $p_{N \text{ red}} = 315 \text{ bar}$ $Q = 0...20 \text{ l/min}$
Volume flow range	see characteristics
Pilot- and leakage volume flow	$\leq 1 \% *$
Repeatability	$\leq 2 \% *$
Hysteresis	* at optimal dither signal

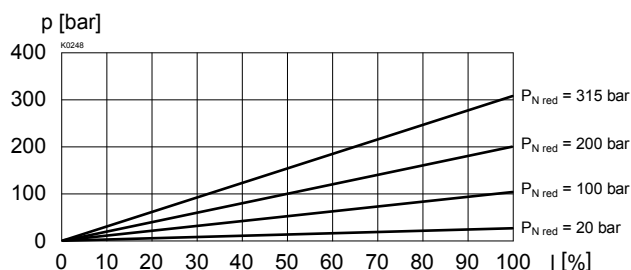
SYMBOL


CHARACTERISTICS oil viscosity $\nu = 30 \text{ mm}^2/\text{s}$

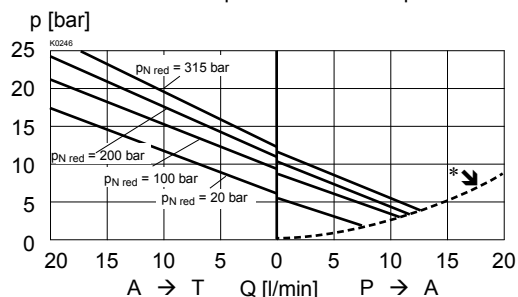
$p_{\text{red}} = f(Q)$ Pressure volume flow characteristics
(Maximal adjustable pressure)



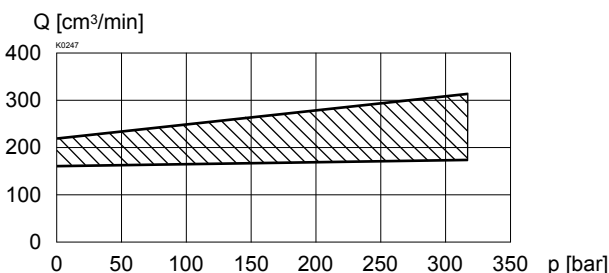
$p_{\text{red}} = f(I)$ Pressure adjustment characteristics
[at $Q = 0 \text{ l/min}$ (static)]



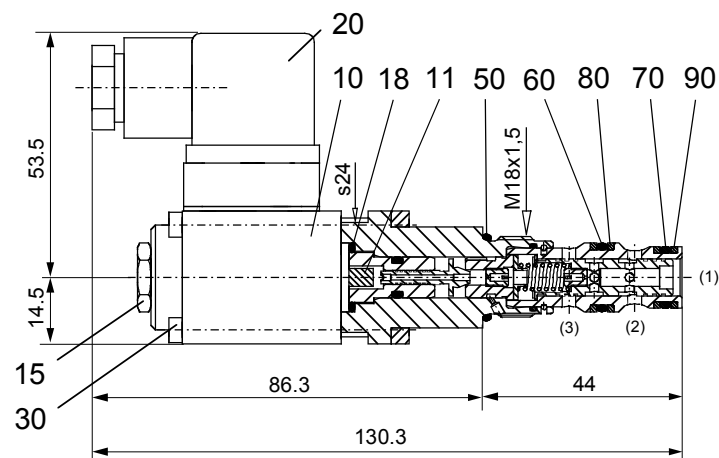
$p_{\text{red}} = f(Q)$ Pressure volume flow characteristics
(Minimal adjustable pressure)
* Consumption resistance dependent on system



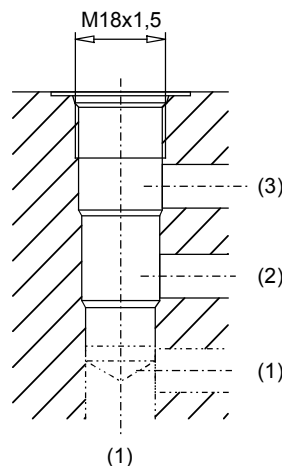
$Q_{\text{st}+L} = f(p_{\text{red}})$ Pilot- and leakage volume flow characteristic [A(1)→T (3)]



DIMENSIONS/SECTIONAL DRAWINGS



Cavity drawing acc. to
Wandfluh standard



For detailed cavity drawing
and cavity tools see data
sheet 2.13-1020

PARTS LIST

Position	Article	Description
10	256.2453 256.2418	Proportional solenoid PI29V-G24 Proportional solenoid PI29V-G12
11	034.0111	Pin RD 4x10,1
15	253.8000	Mounted screw with integrated manual override HB4,5
18	160.2120	O-ring ID 12,42x1,78
20	219.2002	Plug (black)
30	246.0151	Socket head cap screw M3x50 DIN912
50	160.2156	O-ring ID 15,6x1,78
60	160.2111	O-ring ID 11,11x1,78
70	160.2093	O-ring ID 9,25x1,78
80	049.3156	Back-up ring RD 12,1x15x1,4
90	049.3137	Back-up ring RD 10,6x13,5x1,4

ACCESSORIES

Flange-/sandwich plate NG3-Mini	Data sheet 2.3-800
Line mount body	Data sheet 2.9-210
Proportional amplifier	Register 1.13
Mating connector EN 175301-803	Article Nr. 219.2002

Technical explanation see data sheet 1.0-100