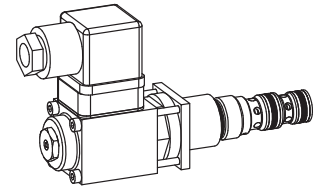


**Proportional pressure reducing valve  
Screw-in cartridge**

- 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 deneergised 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.

**CONTENT**

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**TYPE CODE**

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

**GENERAL SPECIFICATIONS**

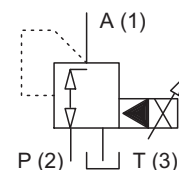
Denomination	Pilot operated proportional pressure reducing valve	
Construction	Screw-in cartridge for cavity acc. to Wandfluh standard	
Operation	Proportional solenoid	
Mounting	Screw in thread M18x1,5	
Ambient temperature	-20...+50° C	
Mounting position	any	
Fastening torque	$M_D = 30 \text{ Nm}$ for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

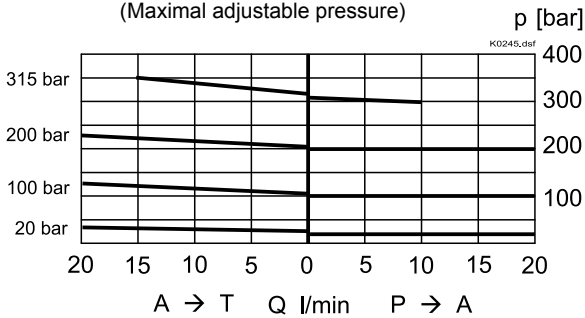
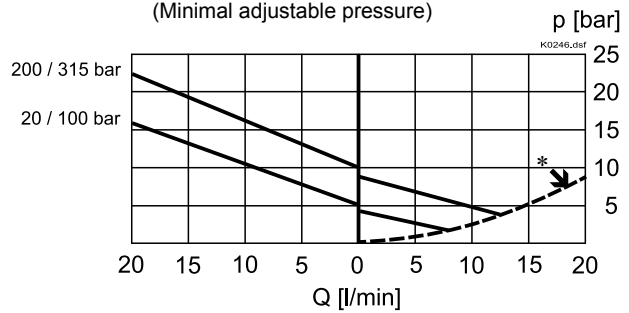
**HYDRAULIC SPECIFICATIONS**

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 <sup>2</sup> /s...320 mm <sup>2</sup> /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	
Pilot- and leakage volume flow	see characteristics
Repeatability	≤ 1 % *
Hysteresis	≤ 2 % *
	* at optimal dither signal

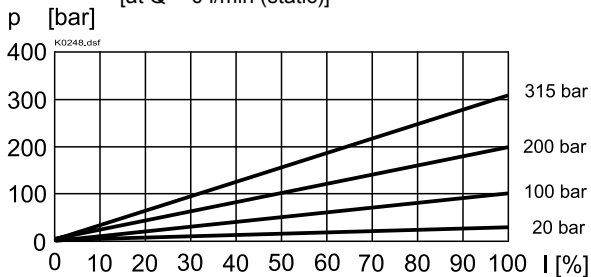
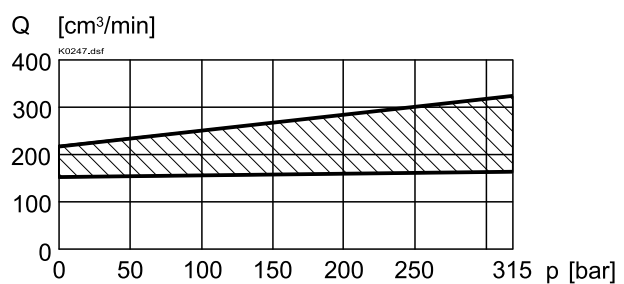
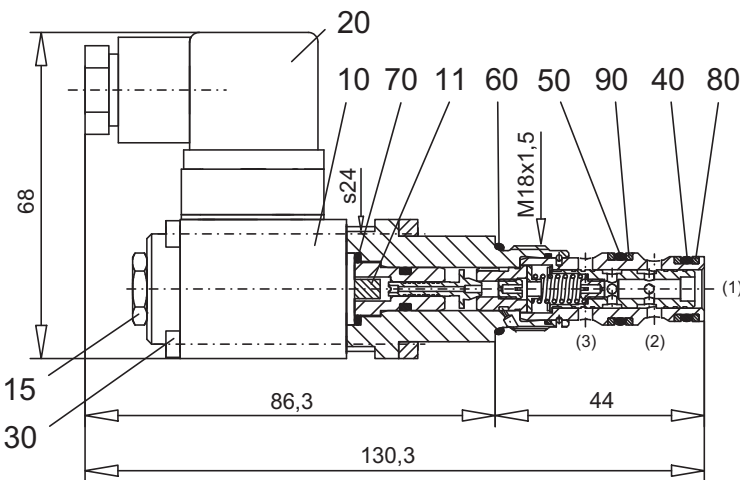
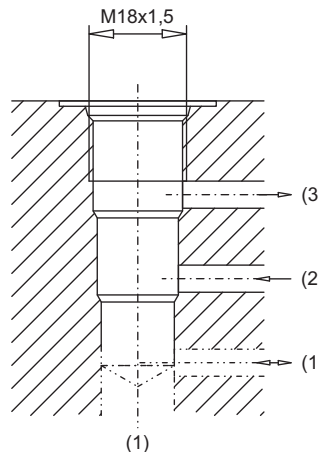
**ELECTRICAL SPECIFICATIONS**

Construction	Proportional solenoid, wet pin push type, pressure tight.	
Standard nominal voltage	$U_N = 12 \text{ VDC}$	$U_N = 24 \text{ VDC}$
Limiting current	$I_G = 1080 \text{ mA}$	$I_G = 540 \text{ mA}$
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)	

**SYMBOL**


**CHARACTERISTICS** oil viscosity  $\nu = 30 \text{ mm}^2/\text{s}$ 
 $p_{\text{red}} = f(Q)$  Pressure volume flow characteristics  
 (Maximal adjustable pressure)

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


\* Consumption resistance dependent on system

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

 $Q_{\text{st+L}} = f(p_{\text{red}})$  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
20	219.2002	Plug (black)
30	246.0151	Socket head cap screw M3x50 DIN912
40	160.2093	O-ring ID 9,25x1,78
50	160.2111	O-ring ID 11,11x1,78
60	160.2156	O-ring ID 15,6x1,78
70	160.2120	O-ring ID 12,42x1,78
80	049.3137	Back-up ring RD 10,6x13,5x1,4
90	049.3156	Back-up ring RD 12,1x15x1,4

**ACCESSORIES**

 Cartridge built-in flange- or sandwich body  
 Flange body / sandwich plate  
 Proportional amplifier

 register 2.3  
 register 1.13

Technical explanation see data sheet 1.0-100E