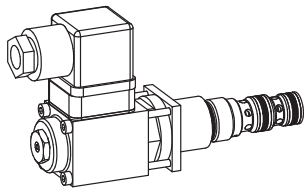
Proportional pressure reducing valve
Screw-in cartridge
- **Pilot operated**
- **Q_{max} = 20 l/min**
- **p_{max} = 350 bar**
- **$p_{N\ red\ max}$ = 315 bar**

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 con-trols 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 reliefing 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 sy-stems enable elegant, comfortable solutions to problems. Installation of the screw-in cart-ridge in control blocks as well as in the Wanfluh 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 pur-chase). Please refer to the data sheets in register 2.13.

CONTENT

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ELECTRICAL SPECIFICATIONS 1
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PARTS LIST 2
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TYPE CODE

M V P PM18 - [ ] - [ ] # [ ]

Pressure reducing valve		
Pilot operated		
Proportional		
Screw-in thread M18x1,5		
Standard nominal pressure range:	$p_{N\ red}$ = 20 bar	20
	$p_{N\ red}$ = 100 bar	100
	$p_{N\ red}$ = 200 bar	200
	$p_{N\ red}$ = 315 bar	315
Standard nominal voltage:	U_N = 12 VDC	G12
	U_N = 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 Nm for screw-in cartridge M_D = 1,2 Nm (qual. 8.8) for solenoid screws
Weight	m = 0,38 kg

HYDRAULIC SPECIFICATIONS

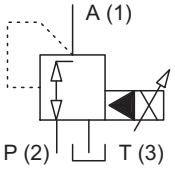
Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 18/16/13 (Required filtration grade ß 6…10≥75) refer to data sheet 1.0-50/2
Viscosity range	12 mm²/s…320 mm²/s
Fluid temperature	-20…+70° C
Peak pressure	p_{max} = 350 bar
Nominal pressure range	$p_{N\ red}$ = 20 bar, $p_{N\ red}$ = 100 bar $p_{N\ red}$ = 200 bar, $p_{N\ red}$ = 315 bar
Volume flow range	Q = 0…20 l/min
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 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.	

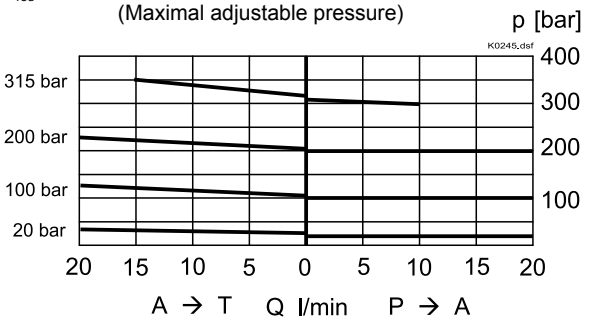
Other electrical specifications see data sheet 1.1-90 (PI29V)

SYMBOL

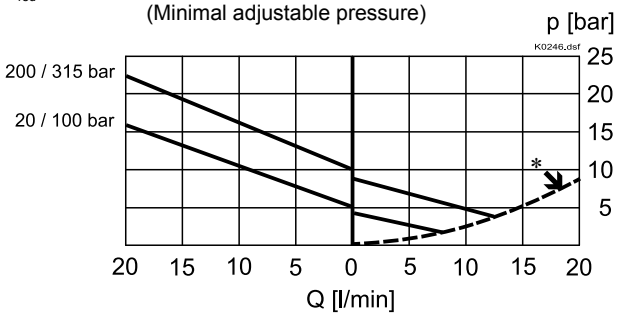


CHARACTERISTICS oil viscosity υ = 30 mm²/s

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

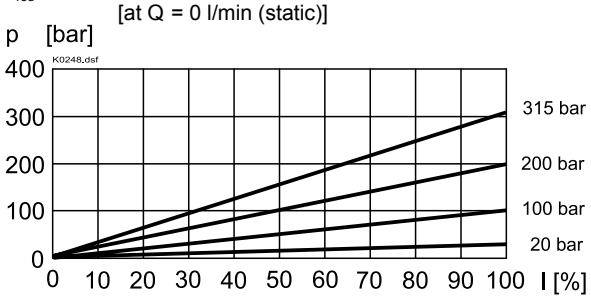


p_{red} = f (Q) Pressure volume flow characteristics
(Minimal adjustable pressure)

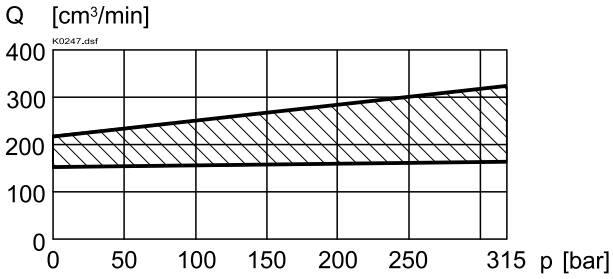


∗ Consumption resistance dependent on system

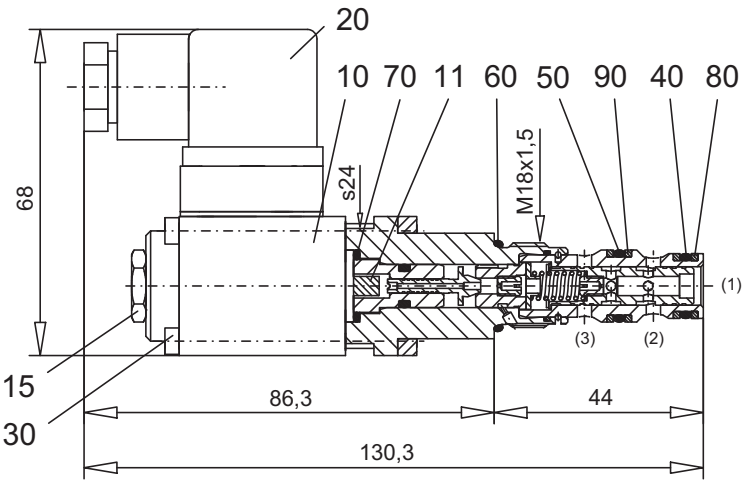
p_{red} = f (I) Pressure adjustment characteristics
[at Q = 0 l/min (static)]



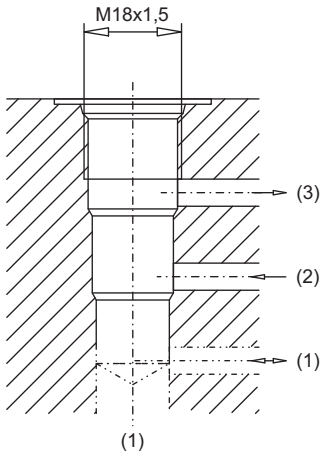
Q_{st+L} = f (p_{red}) Pilot- and leakage volume flow characteristic [A (1) → T (3)]



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 register 2.3
Proportional amplifier register 1.13

Technical explanation see data sheet 1.0-100E