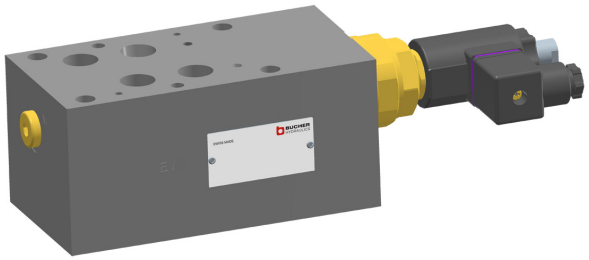
Proportional Pressure-Reducing Valve, ISO Size 07

Q_{max} = 250 l/min, p_{max} = 350 bar
Sandwich design, electrically operated, seated pilot stage
Series SDRPSA-5…



- With cartridge valve, type DRPSB-5…-16…
- Interface to ISO 4401-07-07
- Inline function in the P line
- External pilot-oil drain
- 4 pressure ranges available
- With pressure-gauge port
- Excellent stability over the whole pressure and flow range
- External cartridge parts are zinc plated and chromited (CrVI-free)
- Sandwich body is zinc-phosphated
- The slip-on coil can be rotated, and it can be replaced without opening the hydraulic envelope
- Various plug-connector systems and voltages are available

1 Description

Series SDRPSA-5… sandwich valves are high performance, electrically operated proportional pressure-reducing valves with a size 07 interface to ISO 4401-07-07. The main components of the valves are a sandwich body (stack-mounting body) and the screw-in cartridge (type DRPSB-5…-16…). The pressure-reducing cartridges have a seated pilot stage, and the main stage is designed on the sliding-spool principle. Four pressure ranges are available for this inline function in P with external pilot-oil drain through port Y. These valves reduce the pressure in the secondary side of the P line to a level that is proportional to the solenoid current, which depends on the demand signal to the electronics. Thanks to the external pilot-oil drain, the reduced pressure is unaffected by any pressure fluctuations. A pressure-gauge port M (G1/4”) is also provided in the secondary circuit. These sandwich valves are used to reduce the system pressure in mobile and industrial applications. The sandwich body is zinc-phosphated. All external parts of the cartridge are zinc-nickel plated to DIN 50 979 and are thus suitable for use in the harshest operating environments. The slip-on coils can be replaced without opening the hydraulic envelope and can be positioned at any angle through 360°. The sandwich body is sealed at its manifold side (the connections side) by means of O-rings fitted in counterbores.

2 Technical data

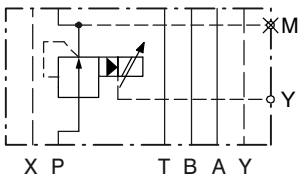
General characteristics	Description, value, unit
Designation	proportional pressure-reducing valve
Design	sandwich design, electrically operated, seated pilot stage
Mounting method	4 x ∅ 10.5 holes for M10 cap screws 2 x ∅ 7 holes for M6 cap screws
Size	size 07 interface to ISO 4401-07-07 / DIN 24 340 A16
Weight	8.75 kg
Mounting attitude	unrestricted
Ambient temperature range	-25 °C … +50 °C

Hydraulic characteristics		Description, value, unit
Maximum operating pressure	- in port P - in port Y	350 bar unpressurised
Flow range		…250 l/min
Nominal pressure ranges		…100 bar, …160 bar, …250 bar, …350 bar
Flow direction		see symbol
Hydraulic fluid		HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER
Hydraulic fluid temperature range		-25 °C … +70 °C
Viscosity range		15…380 mm^2/s (cSt), recommended 20...130 mm^2/s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999		class 18/16/13

Electrical characteristics		Description, value, unit
Supply voltage		12 V DC, 24 V DC
Control current		12 V = 0…1400 mA, 24 V = 0…750 mA
Coil resistance R	- cold value at 20 °C - max. warm value	12 V = 5.8 Ω / 24 V = 21 Ω 12 V = 8.6 Ω / 24 V = 32 Ω
Recommended PWM frequency (dither)		200 Hz
Hysteresis with PWM		2…4 % I_N
Reversal error with PWM		2…5 % I_N
Sensitivity with PWM		≤ 1 % I_N
Reproducibility with PWM		< 1.5 % p_N
Relative duty cycle		100 %
Protection class to ISO 20 653 / EN 60 529		IP 65 / IP 67 / IP 69K, see “Ordering code” (with appropriate mating connector and proper fitting and sealing)
Electrical connection		3-pin square plug to ISO 4400 / DIN 43 650 (standard) for other connectors, see “Ordering code”

3 Symbol

Function in P (inline model), **with external pilot-oil drain through Y**



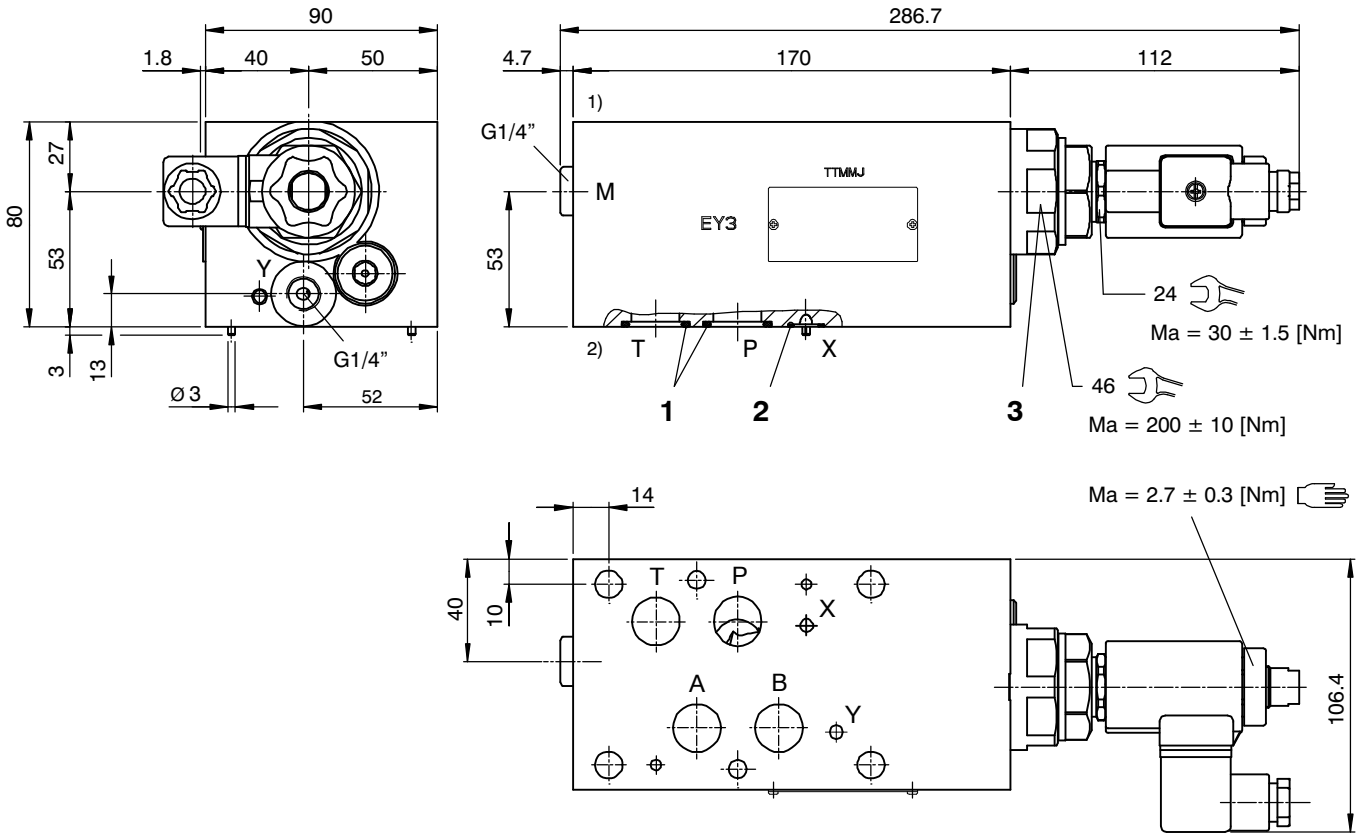
SDRPSA-5…-P-16…

4 Performance graphs

IMPORTANT!
Detailed performance data and other hydraulic characteristics can be found in the data sheet for the proportional pressure-reducing cartridge that is fitted (data sheet ref. no. 400-P-581701-E).

ATTENTION!
The performance figures in the data sheet for the cartridge valve refer just to the cartridge itself. Take into account the additional pressure drop in the body into which it is fitted.

5 Dimensions & sectional view



1) Valve side
2) Connections side (manifold side)

6 Installation information

IMPORTANT!
When installing the valve, make sure that the mating face (the manifold interface) aligns with the valve interface. Do not confuse the sandwich valve's manifold side and directional-valve side. No adjustments are necessary, since the cartridges are set in the factory.

ATTENTION!
Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

ATTENTION!
To achieve the proportional pressure-reducing cartridge's maximum performance rating, fit the solenoid coil as shown (with the plug pins at the right). Use the specified tightening torque when fitting the cartridge.

NBR seal kit no. DS-382-N [3)]

Item	Qty.	Description
1	4	O-ring no. 118 ∅ 21.89 x 2.62 N90
2	2	O-ring no. 013 ∅ 10,82 x 1,78 N90
3	1	NBR seal kit no. DS-358-N for pressure-reducing cartridge DRPSB-5B…

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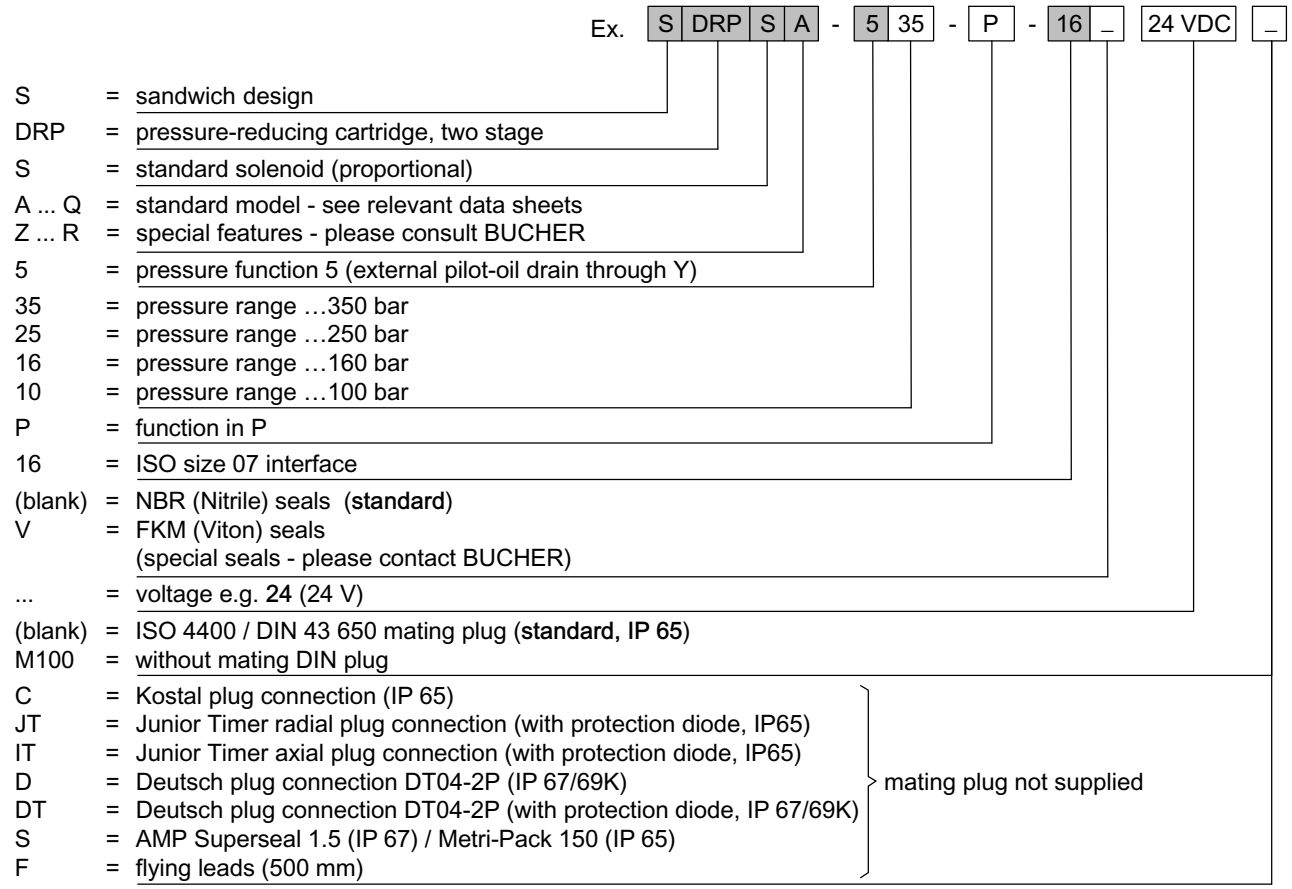
IMPORTANT!

3) Seal kit with FKM (Viton) seals, no. DS-382-V

7 Ordering code



8 Related data sheets

Reference	(Old no.)	Description
400-P-070101	(i-51)	Size 07 interface to ISO 4401-07-07
400-P-120110	(W-2.141)	Coils for screw-in cartridge valves
400-P-581701	(P-51.5 A2)	Proportional pressure-reducing cartridge, size 16, series DRPSB-5…
400-P-580101		Pilot pressure-relief cartridge, size 1, series DVSA-1L…

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Classification: