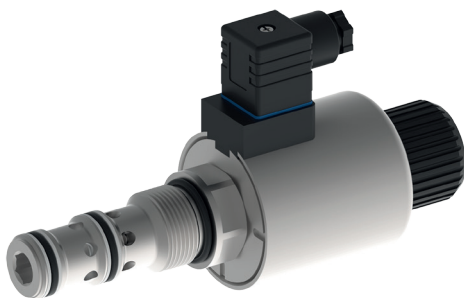


# Directional valve 3-way/2-position

$Q_{\max} = 60 \text{ l/min}$ ,  $p_{\max} = 315 \text{ bar}$

direct acting, seat design, switching solenoid with emergency override

Type series: WSP32GA10-...



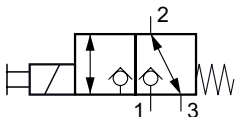
- Screw-in cartridge valve
- For cavity DN
- All external parts with zinc-nickel plating according to DIN EN ISO 19598
- Low head loss
- Compact construction
- Installation in threaded port body type GCBA
- The slip-on coil can be rotated, and it can be replaced without opening the hydraulic envelope
- High pressure wet-armature solenoids
- Various plug-connector systems and voltages are available

## Description

The 3-way/2-position solenoid operated directional valves, series WSP32G..., are size 10, screw-in valves with an M33×2 mounting thread. They are direct-acting seat valves. Thanks to their closed-crossover (overlap) feature, there is no connection between ports 1, 2 and 3 while the valves are switching. The valves are therefore ideally suited for use with pres-

sure accumulators. All external parts of the screw-in valves are zinc-nickel plated 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°. For self-assembly, please refer to the section related data sheets.

## Symbol



## Technical data

General characteristics	Description, value, unit
Function group	Directional valve
Function	3-way/2-position
Design	Screw-in cartridge valve
Controls	switching solenoid with emergency override
Characteristic	direct acting, seat design
Construction size	NG 10
Thread size	M33×2
Mounting attitude	unrestricted
Weight	1.2 kg
Cavity acc. factory standard	For cavity DN
Tightening torque steel	150 Nm
Minimum ambient temperature	- 30 °C
Maximum ambient temperature	+ 50 °C
Surface protection	All external parts with zinc-nickel plating according to DIN EN ISO 19598
Sealing material	see ordering code
Seal kit order number	NBR: DS-336-N / FKM: DS-336-V

Hydraulic characteristics	Description, value, unit
Maximum operating pressure	315 bar
Restriction of the operating pressure	210 bar
Maximum flow rate	60 l/min
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 30 °C
Maximum fluid temperature	+ 80 °C
Viscosity range	10 ... 500 mm <sup>2</sup> /s (cSt)
Recommended viscosity range	15 ... 250 mm <sup>2</sup> /s (cSt)
Minimum fluid cleanliness (cleanliness class according to ISO 4406:1999)	class 20/18/15

Electric characteristics	Description, value, unit
Actuator type	solenoid coil
Solenoid coils type	D65/31
Supply voltage DC	24 V DC
Supply voltage tolerance	± 5 %
Nominal power consumption	39 W
Switching time	50 ... 300 ms (energizing), 30 ... 100 ms (de-energizing)
Relative duty cycle	100 %
Electrical connection coil	several connection types available, see ordering code
Protection class solenoid coil to ISO 20 653 / EN 60 529	several classes of protection available, see ordering code (with appropriate mating connector and proper fitting and sealing)

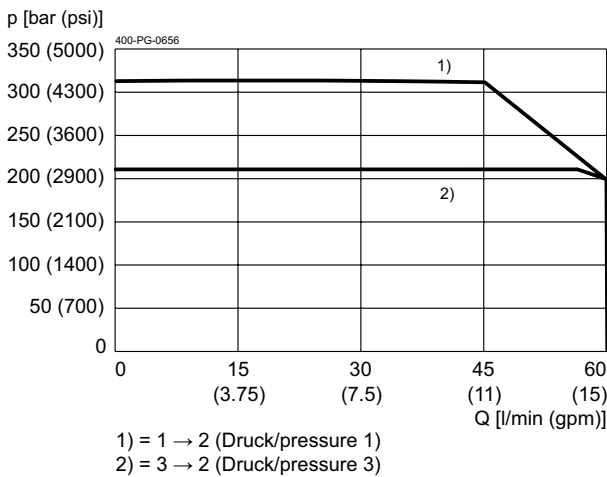
**NOTE!** The switching time can be strongly influenced by flow rate, pressure, viscosity, and the dwell period under pressure. In practice, the switching time may therefore deviate from the specified value range.

**NOTE!** The less favorable values from the general, hydraulic and electrical characteristics determine the temperature range of the whole valve.

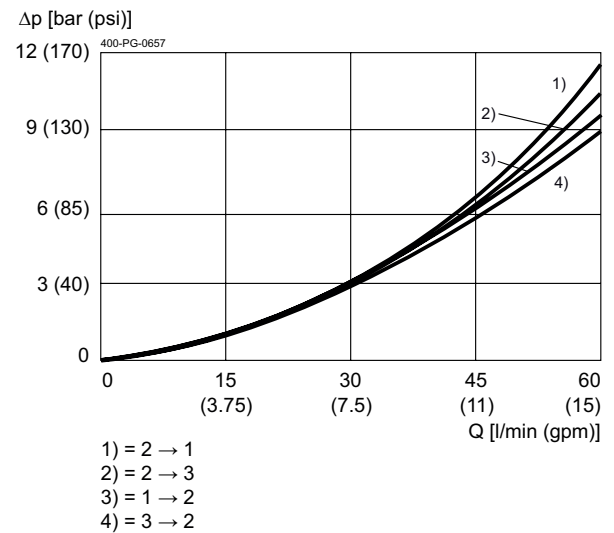
## Performance graphs

measured with oil viscosity 33.0 mm<sup>2</sup>/s (cSt)

$p = f(Q)$  Performance limit



$\Delta p = f(Q)$  Pressure drop-flow rate characteristic





Ordering code

Ex. 

W	S	P	32G	A	10	_	-	1	24	D	_
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- W = directional valve
- S = seat-valve, direct acting
- P = closed crossover (overlap)
- 32G = 3-way/2-position function, de-energized closed
- A ... Q = standard model - see relevant data sheets
- Y... R = special features on request
- 10 = nominal size 10
- blank = NBR (nitril-butadien-rubber / BUNA) seals **(standard)**
- V = FKM (fluorocarbon rubber / VITON) seals (special seals on request)
- 1 ... 9 = design stage (omit when ordering)
- 24 = voltage 24 V
- D = current DC
- blank = DIN EN 175301-803 connection, 3-pole 2 P+E with mating plug, IP 65 **(standard)**
- M100 = DIN EN 175301-803 connection, 3-pole 2 P+E  
the following plug-variants on request:
- JT = Junior Timer radial plug connection (with protection diode, IP65)
- DT = Deutsch plug connection (with protection diode, IP 67/69K) (only 12 and 24 V DC)

} mating plug not supplied

Related data sheets

Reference	Description
400-P-040011	Form tools
400-P-060191	Cavity DN
400-P-740141	Threaded port body GCBA