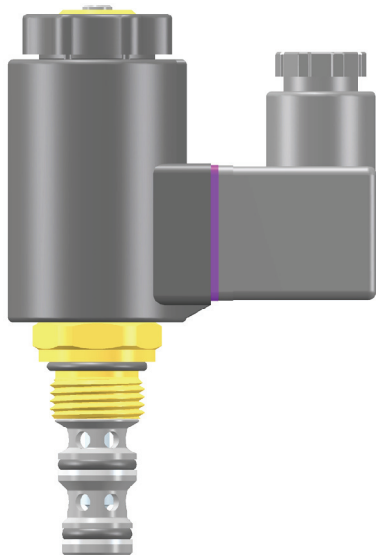


3/2 Solenoid Cartridge Valve 5 mm Seated Design, Direct Acting Series WS32GNA5



- Pmax 250 bar / Qmax 22 l/min
- Wet-armature solenoid with high-pressure core tube and slip-on coil

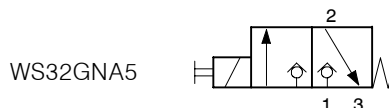
- Coils can be changed without opening hydraulic envelope
- All exposed steel parts are corrosion-proofed to ISO 4042-A3C
- 3/4"-16 UNF Mounting Thread
- BUCHER Cavity AM
- Line mounting body (G 3/8") is available
- Can be fitted in "VV" stacking assemblies

1. Description

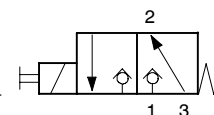
Series WS32GNA5... directional valves are 3/2 solenoid operated screw-in cartridges, nominal size 5 mm. They are direct acting seat valves. The mounting thread is the well-known 3/4"-16 UNF pattern. The straightforward design delivers an outstanding Price/Performance ratio. All exposed steel parts are corrosion-proofed to

ISO 4042, grade A3C, and the valves are suitable for use in the harshest operating environments. The core tube / slip-on coil design allows coils to be changed without opening the hydraulic envelope, even when the valve is under pressure. Coils can be secured at any angle through 360° and are available with most of the common electrical connectors. Using normal OE spanners (24 A/F), the valves can be fitted in the BUCHER type AM cavity and also in some other makes of 3/4"-16 UNF cavity. For customers who manufacture their own manifold blocks, we offer form tool sets for sale or hire. The GAMA body with G 3/8" port threads is available for line mounting applications. The valves can be fitted in "VV" stacking assemblies in combination with cartridges from the W1... and WK...-6 series.

2. Symbols



A "normally open" function can also be created by using the appropriate port connections (see Performance data)



3. Characteristics

Type		3/2 solenoid directional valve
Design		direct acting, seat type
Mounting method		screw-in cartridge
Size		5 mm nominal size, BUCHER cavity AM
Mass	kg	0.38
Mounting attitude		unrestricted
Flow direction		see symbols
Operating pressure	bar	to 250 in 1, 2 and 3
Flow rate Q max.	l/min	22
Fluids		Hydraulic oils HL and HLP to DIN 51 524 other fluids - contact BUCHER
Fluid temperature range	°C	-25 ... +80
Ambient temperature range	°C	-25 ... +50
Viscosity range	cSt	10 ... 500, recommended 15 ... 250
Minimum fluid cleanliness		18/14 to ISO 4406 /CETOP RP70H 8 ... 9 to NAS 1638
Standard voltages	VAC	115, 230
	VDC	50 ... 60 Hz 12, 24
Nom. voltage tolerance	%	± 10
Nom. power consumption	W	VAC: 25, VDC: 27
Duty cycle	% ED	100 % energisation

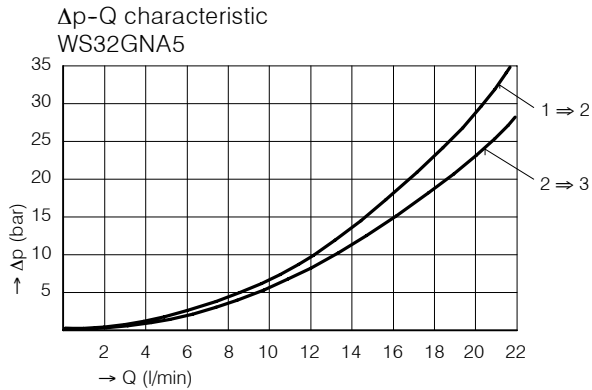
Enclosure protection
Electrical connection

IP 65 to DIN 40050

3-pin square plug to DIN 43 650 / ISO 4400 (standard)
other connectors - see data sheet ..120110..

4. Performance data

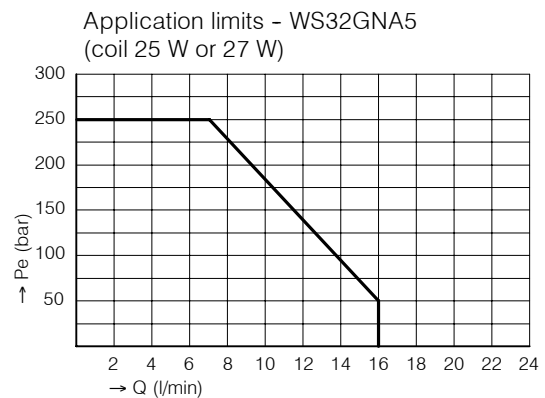
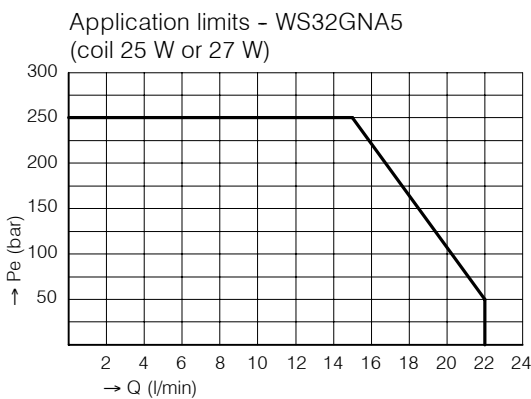
Oil viscosity 33 cSt solenoid at steady-state temperature, 10% under-voltage



Switching times: Flow direction 1 \Rightarrow 2 and 2 \Rightarrow 3

Solenoid ON	34 ... 300 ms
Solenoid OFF	10 ... 30 ms

These times are strongly influenced by fluid pressure, flow rate and viscosity.

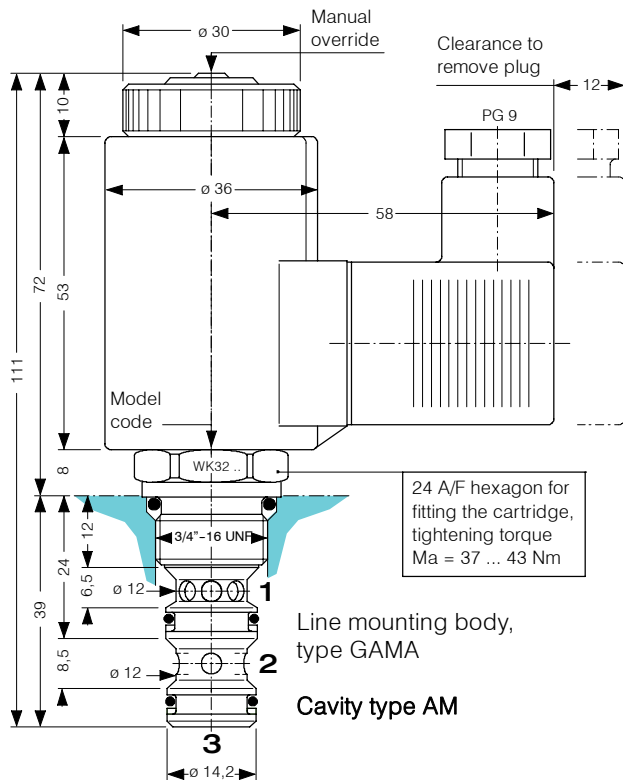


Valid for:

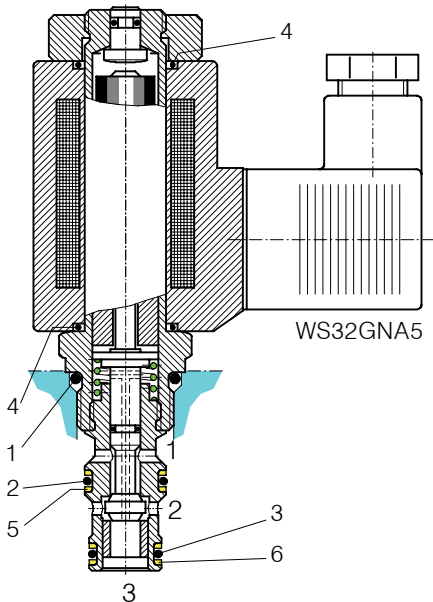
Flow directions: 1 \Rightarrow 2 and 2 \Rightarrow 3 3 \Rightarrow 2 and 2 \Rightarrow 1 unrestricted

Maximum pressures: in 1 and 2 = 250 bar in 2 and 3 = 250 bar all ports = 250 bar
in 3 = 20 bar in 1 = 20 bar

5. Dimensions



6. Schematic section



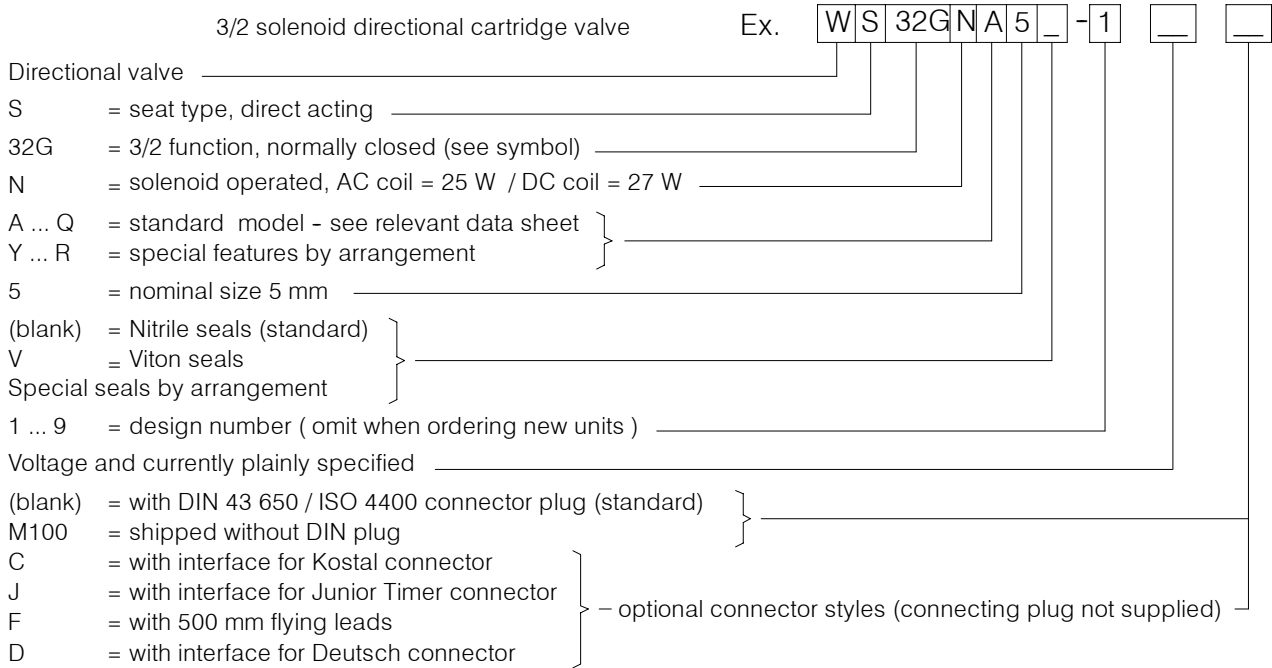
Seal kit no. DS-247, comprising:

Itm.	Qty.	Description	Dimension
1	1	O-ring no. 017	$\varnothing 17,17 \times 1,78 \text{ N90}$
2	1	O-ring no. 014	$\varnothing 12,42 \times 1,78 \text{ N90}$
3	1	O-ring no. 013	$\varnothing 10,82 \times 1,78 \text{ N90}$
4	2	O-ring	$\varnothing 16,00 \times 2,00 \text{ Viton}$
5	2	Backup ring	$\varnothing 10,7 \times 1,45 \times 1,0$
6	2	Backup ring	$\varnothing 9,4 \times 1,45 \times 1,0$

7. Installation and servicing

All installation and servicing must be carried out with care, and by qualified personnel only. When changing seals, the new seals must be thoroughly oiled or greased before they are fitted. Use the specified tightening torque when fitting the cartridge.

8. Model code key



9. Related data sheets

Old no.	New no.	
W-2.140	400-P-120100-E	Solenoid directional cartridge valves, 5 mm (overview)
W-2.141	400-P-120110-E	Optional coils for solenoid operated directional valves
G-4.20	400-P-720101-E	Line mounting body, type GAMA (G 3/8")
i-33.11	400-P-040181-E	BUCHER cavity type AM

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