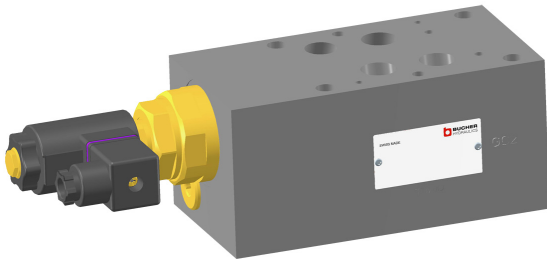


2/2 Solenoid Operated Seat Valve, ISO Size 07

$Q_{\max} = 300 \text{ l/min}$, $p_{\max} = 350 \text{ bar}$

Sandwich design, bidirectional seat-valve shut-off, electrically operated, two stage
 Series SWS22...



- With cartridge valve, type WS22G / O...-16...
- Interface to ISO 4401-07-07
- With bidirectional seat-valve shut-off
- No external pilot drain required
- Inline or bypass models
- De-energized open or closed
- "Low watt" model (8 W) is available
- 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
- External cartridge parts are zinc plated and chromited (CrVI-free)

1 Description

Series SWS22... sandwich valves are high performance, 2/2 solenoid operated seat 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 WS22G / O...-16...). The 2/2 solenoid operated cartridge seat valve is designed on the poppet/seat principle, and is therefore virtually leak-free in both directions of flow (bidirectional seat-valve shut-off). These sandwich valves can be supplied as de-energized-closed or de-energized-open models, and as inline (in P) or bypass (in PT, AT, or BT) functions. These 2/2 solenoid operated seat

valves are predominantly used in certain mobile and industrial applications where leak-tight shut-off functions are crucially important. Examples are where loads, tensions, or clamping forces must be held without leakage. All external parts of the cartridge are zinc-nickel plated according to DIN EN ISO 19 598 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

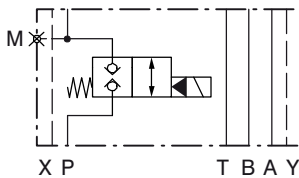
General characteristics	Description, value, unit
Designation	2/2 solenoid operated seat valve
Design	sandwich design, bidirectional seat-valve shut-off, electrically operated, two stage
Mounting method	4 x Ø 10.5 holes for M10 cap screws 2 x Ø 7 holes for M6 cap screws
Size	size 07 interface to ISO 4401-07-07 / DIN 24 340 A16
Weight	8.65 kg
Mounting attitude	unrestricted
Ambient temperature range	-25 °C ... +50 °C
Surface corrosion protection	without
Hydraulic characteristics	Description, value, unit
Maximum operating pressure	350 bar
Maximum flow rate	300 l/min
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER

Reference: 400-P-240101-EN-01

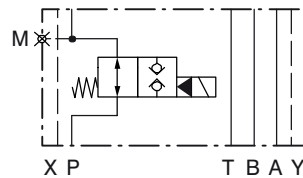
Hydraulic characteristics	Description, value, unit
Hydraulic fluid temperature range	-25 °C ... +80 °C
Viscosity range	10...500 mm ² /s (cSt), recommended 15...250 mm ² /s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999	class 20/18/15
Electrical characteristics	Description, value, unit
Supply voltage	12 V DC, 24 V DC 115 V AC, 230 V AC (50 ... 60 Hz)
Supply voltage tolerance	± 10 %
Nominal power consumption	V DC = 27 W (Typ SWS22GN... / SWS22ON...) V AC = 25 W (Typ SWS22GN... / SWS22ON...) V DC = 8 W (Typ SWS22GL... / SWS22OL...)
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	DIN EN 175301-803, 3-pin 2 P+E (standard) for other connectors, see "Ordering code"

3 Symbol

Function in P (inline model)

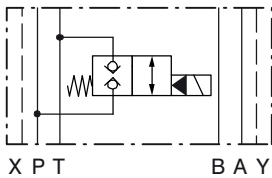


SWS22G...-P-16...

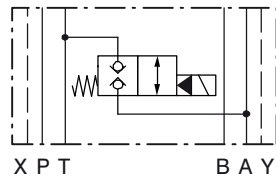


SWS22O...-P-16

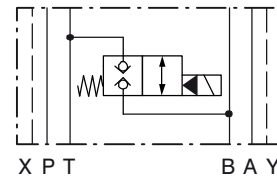
Function in PT, AT or BT (bypass model)



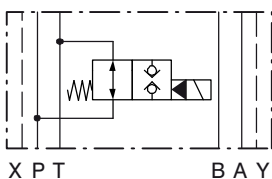
SWS22G...-PT-16...



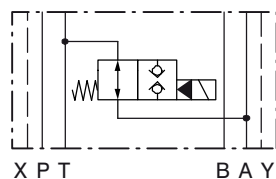
SWS22G...-AT-16...



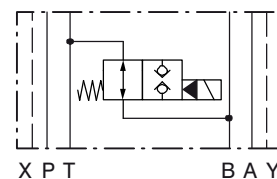
SWS22G...-BT-16...



SWS22O...-PT-16...



SWS22O...-AT-16...



SWS22O...-BT-16...

4 Performance graphs



IMPORTANT!

Detailed performance figures and other hydraulic characteristics can be found in the data sheet for the 2/2 solenoid operated cartridge valve that is fitted (Ref. No. 400-P-150101-E).

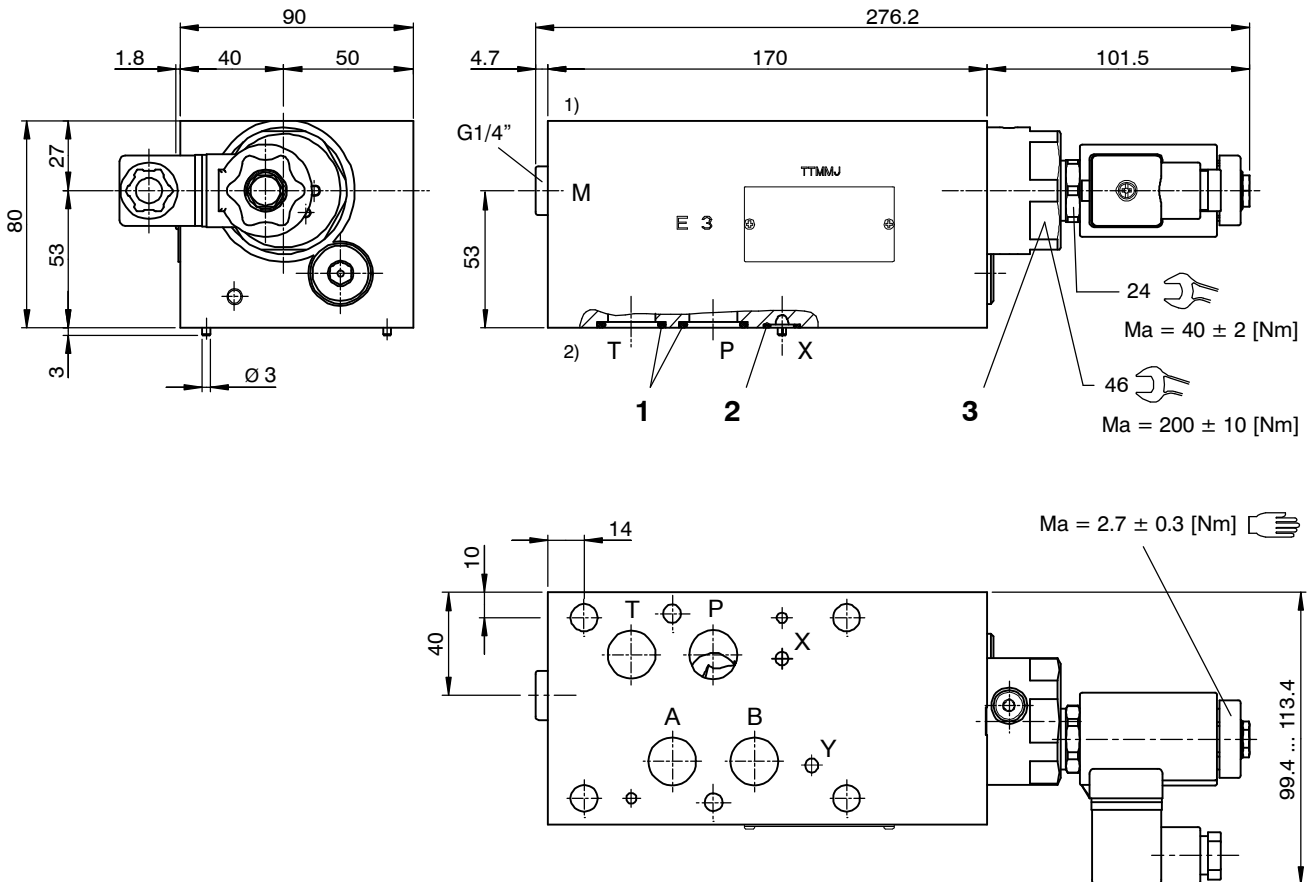


ATTENTION!

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

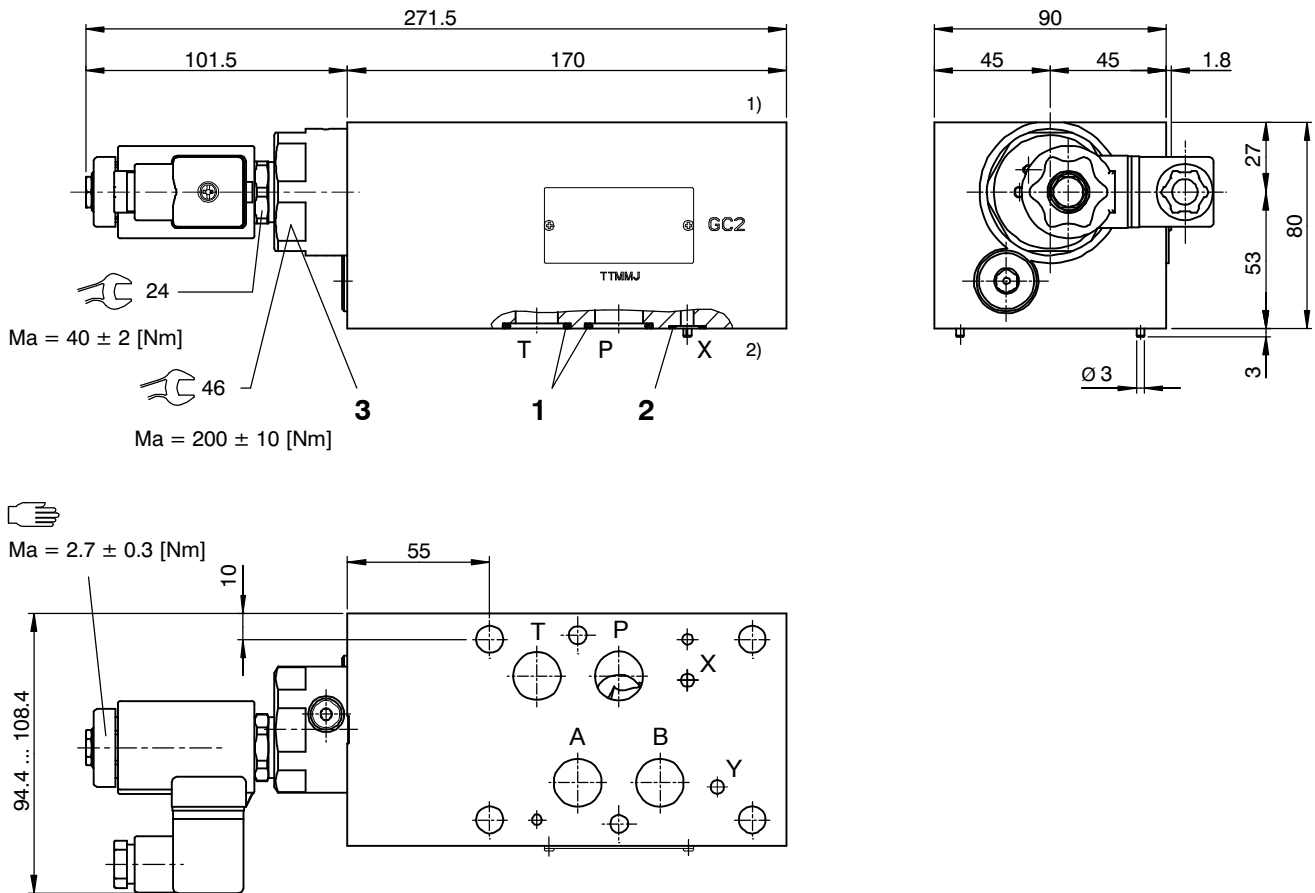
5.1 Solenoid operated seat valve, function in P (inline model)



1) Valve side

2) Connections side (manifold side)

5.2 Solenoid operated seat valve, function in PT, AT, or BT (bypass model)



- 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.

NBR seal kit no. DS-381-N ³⁾

Item	Qty.	Description
1	4	O-ring no. 118 \varnothing 21.89 x 2.62 N90
2	2	O-ring no. 110 \varnothing 9,19 x 2,62 N90
3	1	NBR seal kit no. DS-351-N for 2/2 cartridge seat valve, type WS22G.../ WS22O...



IMPORTANT!

- ³⁾ Seal kit with FKM (Viton) seals, no. DS-381-V

7 Ordering code

Ex.	S	W	S	22G	N	B	A	-	P	-	16	-	24 VDC	-
S	= sandwich design													
W	= directional valve													
S	= seat-valve design (bidirectional shut-off)													
22G	= 2/2 function, de-energized closed													
22O	= 2/2 function, de-energized open													
N	= solenoid operated, V DC = 27 W / V AC = 25 W													
L	= solenoid operated, V DC = 8 W													
B	= cavity type EB													
A ... Q	= standard model - see relevant data sheets													
Z ... R	= special features - please consult BUCHER													
P	= function in P													
PT	= function in P and T													
AT	= function in A and T													
BT	= function in B and T													
16	= ISO size 07 interface													
(blank)	= NBR (Nitrile) seals (standard)													
V	= FKM (Viton) seals (special seals - please contact BUCHER)													
...	= voltage e.g. 24 (24 V)													
(blank)	= DIN EN 175301-803 connection with mating plug (standard, IP 65)													
M100	= DIN EN 175301-803 connection without mating plug													
<i>for 8 W coils with the following plug variants, please consult Bucher:</i>														
C	= Kostal plug connection (IP 65)													
JT	= Junior Timer radial plug connection (with protection diode, IP65)													
IT	= Junior Timer axial plug connection (with protection diode, IP65)													
D	= Deutsch plug connection 45° DT04-2P (IP67/69K)													
DT	= Deutsch plug connection 45° DT04-2P (with protection diode, IP67/69K)													
S	= AMP Superseal 1.5 (IP67) / Metri-Pack 150 (IP65) plug connection													
F	= flying leads (500 mm)													
														} mating plug not supplied

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-120601		Solenoid cartridge pilot valve, size 1, series WSP22GLA1.../ WSP22OLA1
400-P-120801		Solenoid cartridge pilot valve, size 3, series WSP22GNA3.../ WSP22ONA3
400-P-150101		2/2 cartridge seat valve, size 16, series WS22G.../ WS22O...

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Classification: 430.300. - .330.330.300