

Directional Valve Size 06 WL 4.06

Installation dimensions ISO 4401/DIN 24340 A6

Functional Description

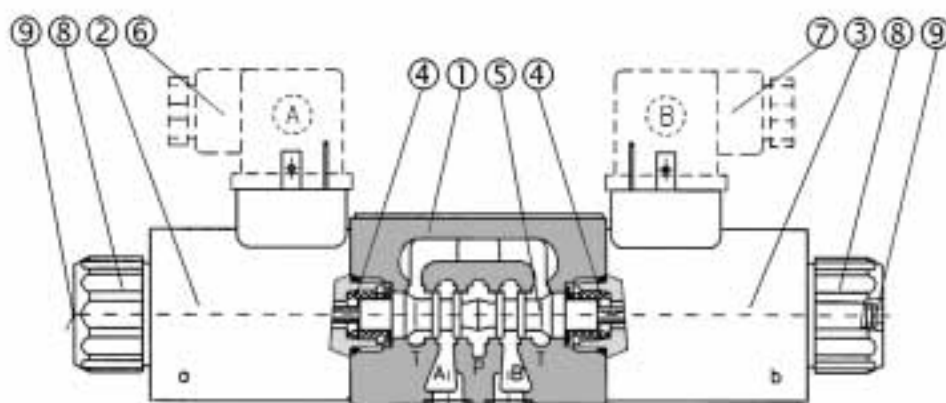
The directional control valves WL 4/06 consists of housing (1), a control spool (5) with two centering springs (4) and cylindrical operating solenoids (2, 3).

The three-position directional valves are fitted with two solenoids and two springs. Two-position directional valves have either one solenoid and one return spring or two solenoids and a detent assembly.

The operating solenoids are D.C. solenoids. For AC supply the solenoids are provided with a rectifier, which is integrated directly into the connector. The plug connectors (6, 7) can be turned by 90°. By loosening the fixing nut (8), the

solenoids can be turned arbitrarily in the range of 360°, or replaced. This enables the operating coils to be replaced without opening the pressure-tight spaces.

In the case of solenoid malfunction or power failure, the spool of the valve can be repositioned by manual override (9), provided the pressure in T-port does not exceed 25 bar. The basic surface treatment of the valve housing (1) is phosphate coated and the operating solenoids (2, 3) are zinc coated.

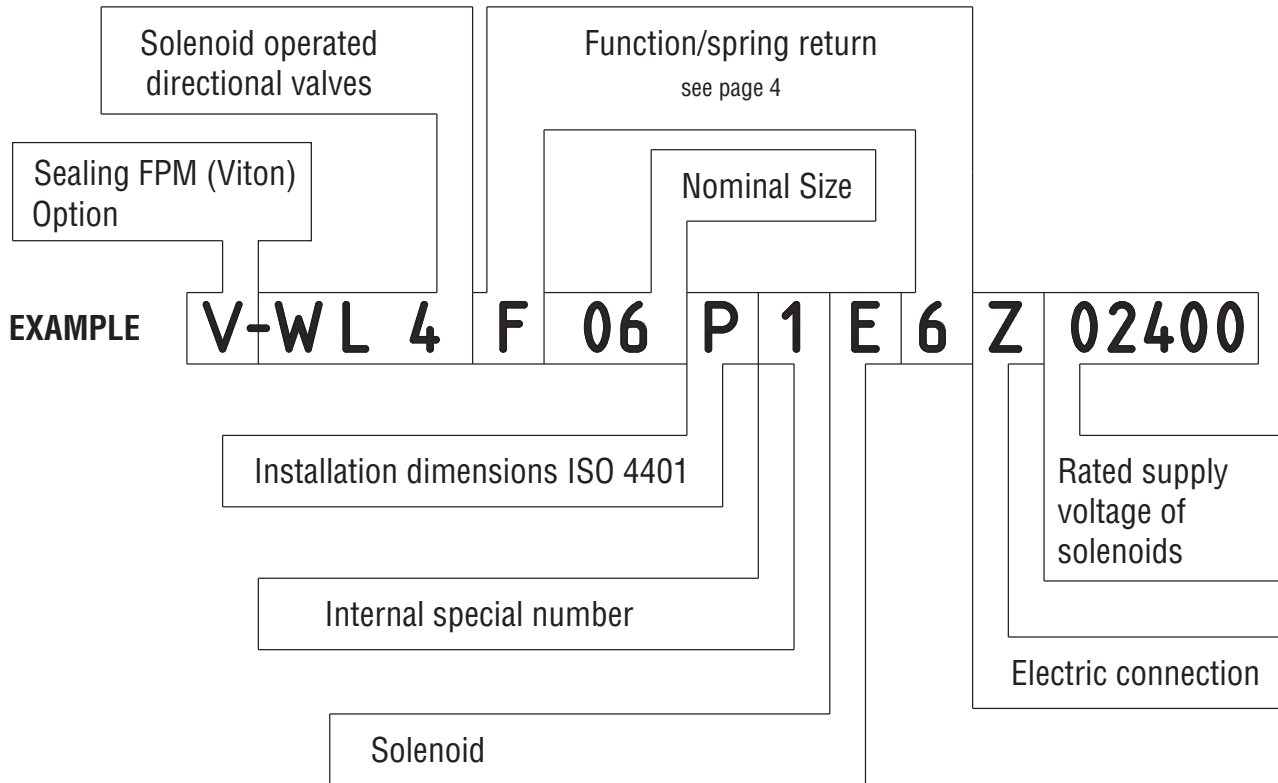


Technical Data

Nominal size	6	Permissible rated voltage variation	DC: -10 ... +6% AC: ±10%
Maximum flow	see p-Q characteristics	Max. switching frequency	15000 1/h
Max. operating pressure at ports P, A, B	4641 psi (320 bar)	Switching time, on; at v = 98 SUS (20 mm ² /s)	DC: 30 ... 50 ms AC: 30 ... 40ms
Max. operating pressure at port T	2320 psi (160 bar)	Switching time, off; at v = 98 SUS (20 mm ² /s)	DC: 10 ... 50 ms AC: 30 ... 70ms
Pressure losses	see Δp-Q characteristics	Duty cycle	100%
Hydraulic fluid	Hydraulic oils of DIN 51254/25 other Hydraulic fluids on request	Service life	10 ⁷ cycles
Fluid temperature range (NBR)	-22 ... +176 °F (-30 ... +80 °C)	Enclosure type to DIN 40 050	IP 65
Ambient temperature range	... +122 °F (... +50 °C)	Weight-valve with 1 Solenoid valve with 2 Solenoids	3.52 Lb (1.6 kg) 4.84 Lb (2.2 kg)
Viscosity range	98 ... 1840 SUS (20 ... 400 mm ² /s)	Mounting position	optional
Maximum degree of fluid contamination	Class 18/15 to ISO 4406. Therefore we recommend a filter with a retention rate β ₁₀ ≥ 75.		

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Ordering Code



Solenoid	
E	Coil of solenoid equipped with standard plug-in electrical connector DIN 43 650
EG	Coil of solenoid with integrated rectifier equipped with standard plug-in electrical connector DIN 43 650

Rated supply voltage of solenoids	
01200	12V DC / 2,72 A
02400	24V DC / 1,29A
11550	115V AC / 0,35 A / 50(60) Hz
23050	230V AC / 0,17 A / 50(60) Hz
other voltages on request	

Electric connection		DIN 43 650, Protection IP 65, (DIN 40 050)
Y	without electrical plug	
Z	with electrical plug (Pg 11)	
L	with electrical plug and signal lights in conduit adapter (Pg 11)	

Directional valves with damping on request: T2 = nozzle Ø 0,6
T3 = throttle screw

Directional valves with manual override on request: N2 = covered with rubber protective.

Functional Symbols

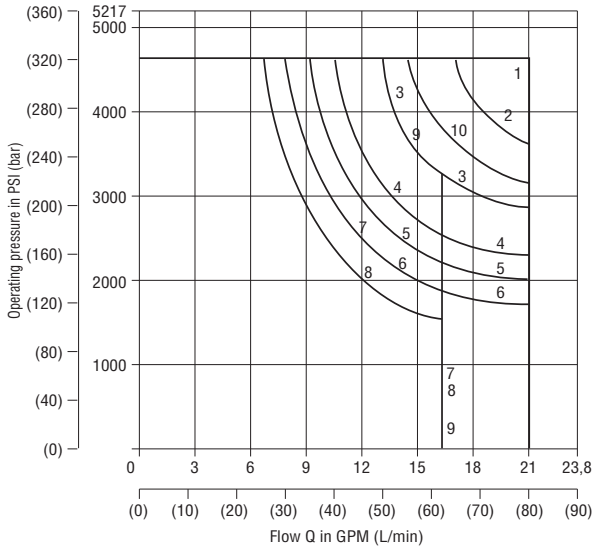
Function	Spring return	Symbol	Function	Spring return	Symbol	Function	Spring return	Symbol
F ...6			AP...0*			F ...1		
EN...6**			AN...0**			BP...1*		
SE...6			U ...0			BN...1**		
KF...6			KF...0			EN...1**		
SF...6			SF...0			SE...1		
AE...6			EN...0**			F ...4		
HF...6			F ...0			AF...1		
FV...6			F ...8			HE...1		
HE...6			SE ...0			F ...31		
AF...6			AE...0			AE...1		
			AF...0			HF...1		
			HF...0			SF...1		

* P ≙ Overlap (positive)
 ** N ≙ Overlap (negative)

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p-Q Characteristics Measured at $v = 166 \text{ SUS (35 mm}^2/\text{s)}$ and $t = 104 \text{ }^\circ\text{F (40 }^\circ\text{C)}$

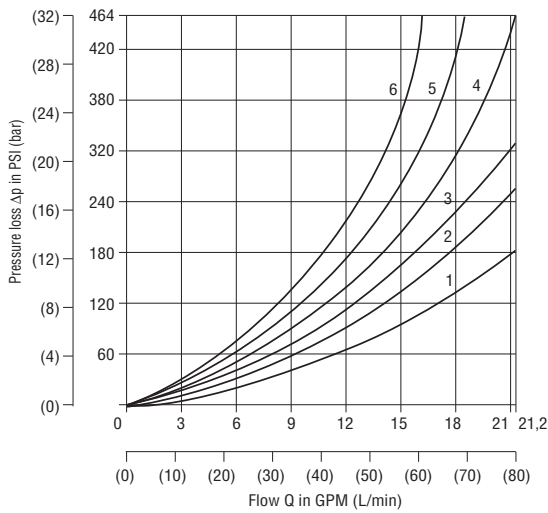
Operating limits for maximum hydraulic power transferred by the directional valve.



F ...6	1	F ...8	6
EN ...6	7	SE ...0	8
SE ...6	4	AE ...0	6
KF ...6	1	AF ...0	9
SF ...6	3	HF ...0	9
AE ...6	6	F ...1	1
HF ...6	9	BP ...1	5
FV ...6	1	BN ...1	4
HE ...6	6	EN ...1	7
AF ...6	9	SE ...1	8
AP ...0	4	F ...4	8
AN ...0	5	AF ...1	8
U ...0	6	HE ...1	6
KF ...0	1	F ...31	1
SF ...0	3	AE ...1	1
EN ...0	7	HF ...1	9
F ...0	1	SF ...1	3

Δp -Q Characteristics Measured at $v = 166 \text{ SUS (35 mm}^2/\text{s)}$ and $t = 104 \text{ }^\circ\text{F (40 }^\circ\text{C)}$

Pressure loss Δp related to flow rate.

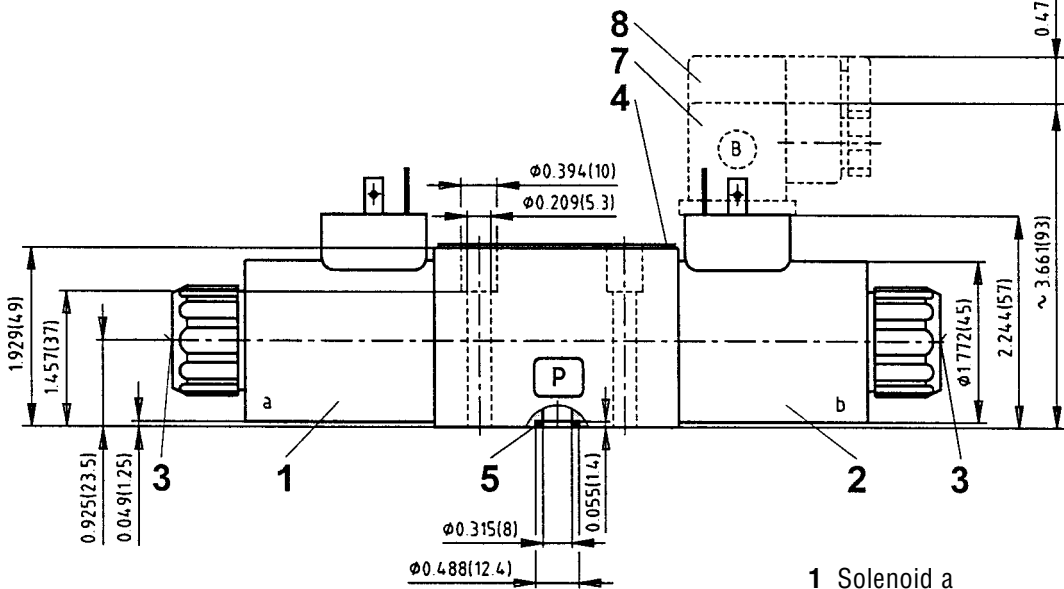
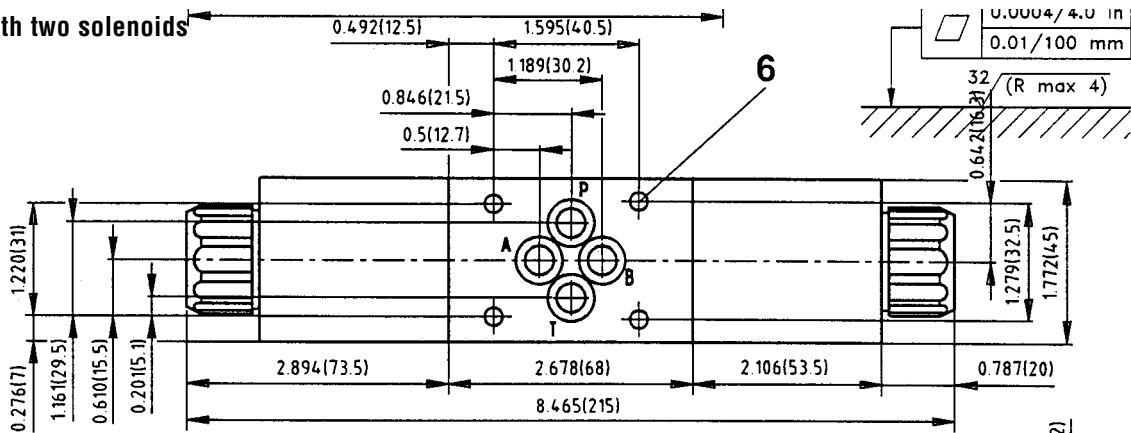


	P-A	P-B	A-T	B-T	P-T
F ...6	2	2	3	3	-
EN ...6	5	5	5	6	3
SE ...6	2	2	2	2	3
KF ...6	1	1	3	3	-
SF ...6	2	2	2	2	-
AE ...6	2	2	3	3	3
HF ...6	2	2	3	3	-
FV ...6	-	2	3	-	-
HE ...6	1	2	3	3	3
AF ...6	2	2	3	3	-
AP ...0	2	2	3	3	-
AN ...0	2	2	3	3	-
U ...0	2	2	-	-	-
KF ...0	-	1	3	-	-
SF ...0	-	2	2	-	-
EN ...0	5	-	-	6	4
F ...0	-	-	2	3	-
F ...8	2	-	-	3	-
SE ...0	-	2	3	-	3
AE ...0	2	2	3	-	3
AF ...0	-	2	3	-	-
HF ...0	-	2	3	3	-
F ...1	2	-	-	3	-
BP ...1	2	2	3	3	-
BN ...1	2	2	3	3	-
EN ...1	-	5	5	-	4
SE ...1	2	-	-	2	3
F ...4	-	2	3	-	-
AF ...1	2	-	3	3	-
HE ...1	1	-	-	3	3
F ...31	2	2	3	3	-
AE ...1	2	-	3	3	3
HF ...1	2	-	-	3	-
SF ...1	2	-	2	2	-

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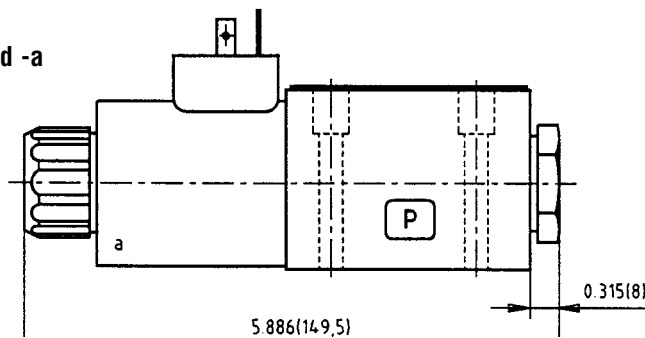
Valve dimensions Dimensions in inches and milimetres (in brackets)

Valve with two solenoids



- 1 Solenoid a
- 2 Solenoid b
- 3 Manual override
- 4 Name plate
- 5 Square Ring 9.25 x 1.68 x 1.68 mm supplied in delivery packet
- 6 4 mounting holes
- 7 Conector plug to DIN 43650
- 8 Distance required to remove plug

Valve with one solenoid - a



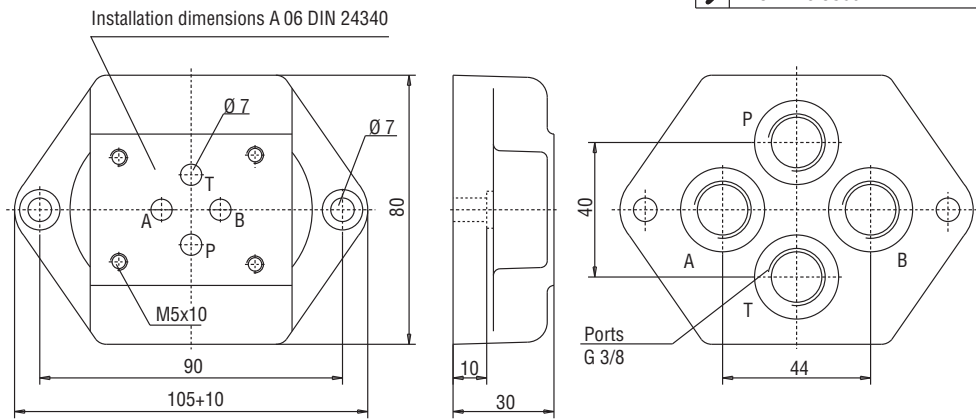
Required surface finish of interface

Single-subplates for **WL4/06** installation dimensions ISO 4401 / DIN 24340 A6

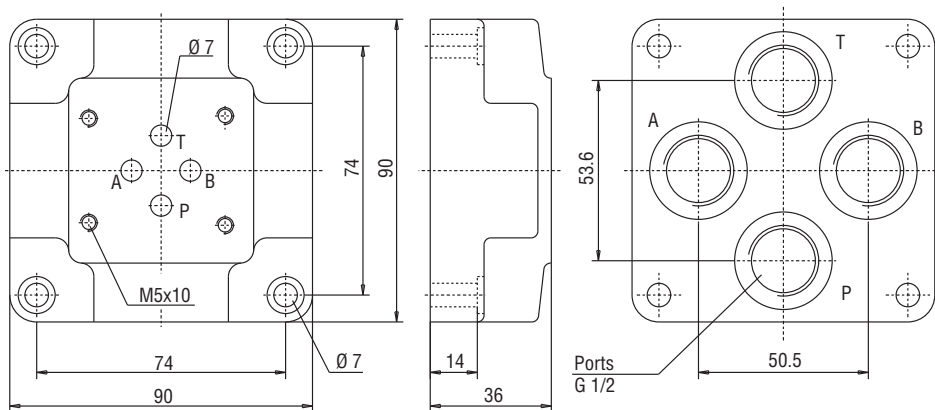
Ordering code

Size		internal special number	
MWL 4	.	R	.
06	.	3	A
Ports G 3/8	06	3	A
Ports G 1/2	08	2	A

Code no.	
0	All 4 ports open
1	Port A closed
2	Port B closed
3	Port P closed
4	Ports A+B closed
5	Ports B+P closed
6	Ports A+P closed
7	Ports A+T closed
8	Ports B+T closed
9	Port T closed



Ordering code: **MWL 4 06 R3A .**



Ordering code: **MWL 4 08 R2A .**

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WL4.06.e.05.2000