

電磁閥

Solenoid Operated Directional Valves

特點 CHARACTERISTICS :

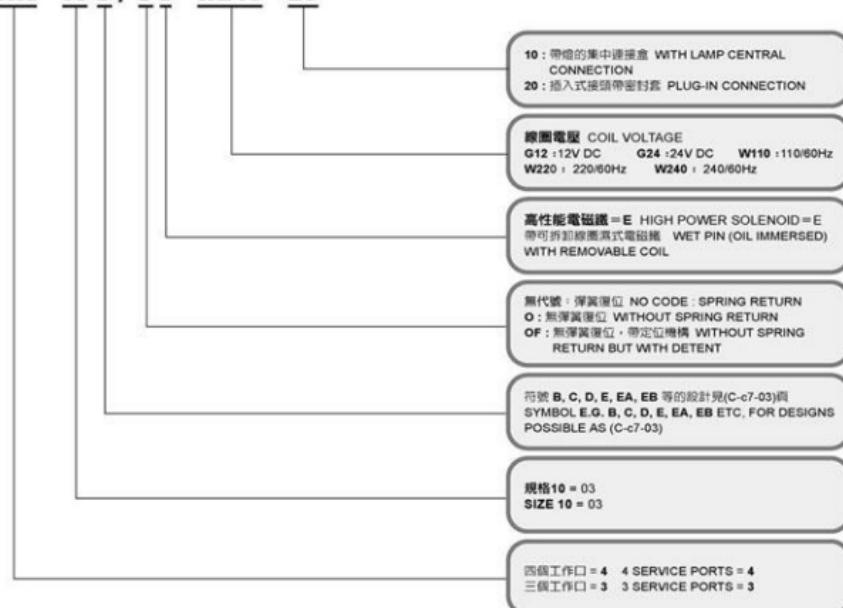
- 以直動式電磁鐵操作方向滑閥作為標準類型
- 安裝面按DIN 24 340 A型, ISO 4401 和 CETOP-RP 121 H
- 濕式直流或附可拆卸線圈的交流電磁鐵
- 電磁鐵可旋轉90度
- 可不放油液更換線圈
- 可選擇單個或集中連接
- 可選的手動應急操作



- Direct operated, solenoid actuated directional spool valve high performance version.
- Porting pattern to DIN 24 340 form A, ISO 4401 and CETOP-RP 121 H
- Wet pin AC or DC solenoids with removable coil.
- Solenoid coil can be rotated through 90°
- Coils can be replaced without releasing any fluid.
- Choice of either central or individual electrical connections.
- Optional hand emergency.

型號說明 HOW TO ORDER :

4WE - 10 D / 0 E - W240 - 20



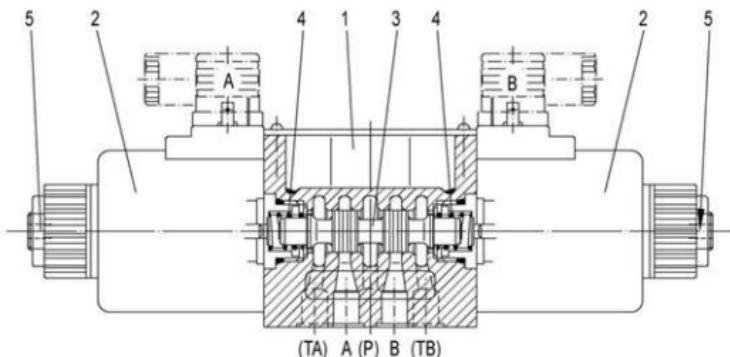
功能說明 FUNCTIONAL DESCRIPTION :

- WE型方向控制閥是電磁鐵操作的換向滑閥，用以控制油液的開啓、停止和方向。
- 這種方向控制閥主要包括閥體(1)、一個或二個電磁鐵(2)、控制閥芯(3)和一個或二個復位彈簧(4)。
- 在未通電的狀態下，控制閥芯(3)由復位彈簧(4)保持在中間或初始位置(脈沖閥除外)。控制閥芯(3)由濕式電磁鐵(2)操作。
- 為了保證獲得滿意的操作，務必使電磁鐵的壓力腔充滿油液。
- 電磁鐵(2)的作用在控制閥芯(3)上，將其由靜止推向所需位置。這就使油液從P至A，B至T，P至B或A至T自由流動。
- 當電磁鐵(2)斷電時，控制閥芯(3)被復位彈簧(4)推向初始位置。
- 可選的應急操作(5)在電磁鐵不通電的情況下可控制閥芯(3)運動。

- Type WE directional control valves are solenoid operated directional spool valves. They control the start, stop and direction of flow.
- Essentially the directional control valves consist of housing (1), one or two solenoids (2), the control spool (3), and one or two return springs (4).
- In the de-energised condition the control spool (3) is held in the neutral or initial position by means of return springs (4) (except for impulse spool). The control spool (3) is operated by wet pin solenoids (2).
- To guarantee satisfactory operation care should be taken to ensure that the solenoid pressure chamber is filled with oil.
- The force of the solenoid (2) acts via the plunger (5) on the control spool (3) and pushes this from its neutral position to the required end position. This gives free flow from P to A and B to T or P to B and A to T.
- When solenoid (2) is de-energised, the control spool (3) is returned to its neutral position by means of return springs (4).
- An optional hand emergency (5), allows movement of the control spool (3) without energising the solenoid.

剖面圖 SECTION :

型 號 : 4WE-10(DC) TYPE : 4WE-10(DC)



技術參數 TECHNICAL DATA

對於超出這些參數的應用，請詢問本公司 For applications outside these parameters, please consult us!

一般數據 General			
安裝位置 Installation Position		可選擇 optional	
最高周圍溫度範圍 Ambient temperature, max.		t °C	50
重量 Weight		AC	DC
帶1個電磁鐵閥 Single solenoid valve	m kg	3.6	4.3
帶2個電磁鐵閥 Valves with 2 solenoid	m kg	4.3	5.5
液壓數據 Hydraulic			
最高工作壓力 Operating pressure	油口A, B, P Port A, B, P	p kgf/cm²	至315 315
	油口T Port T	p kgf/cm²	至160 如果工作壓力超過油箱允許壓力，對於閘芯A和B的閘門，油口T須用作泄油口。 up to 160 With symbols A and B, port T must be used as a drain port if the operating pressure is above the permitted tank pressure.
最大流量 Flow, max.	qv	L/min	至120 up to 120
液壓油 1) 適用於丁腈橡膠密封和氟橡膠密圈 Suitable for NBR and FPM seals 2) 只適用於氟橡膠密封 only suitable for FPM seals		礦物油(HL, HLP)：按DIN 51 524： 快速生物降解油液按VDMA 24 568 HETG (菜籽油) : HEPG (聚乙二醇) : HEES (合成酯) : 其他油液按要求 Mineral oil (HL, HLP) to DIN 51 524; Fast bi-degradable pressure fluids to VDMA 24 568; HETG (rape seed oil); HEPG (polyglycol); HEES (synthetic ester); other fluids on request.	
油液 Pressure fluid	t	°C	-30至+80 (帶丁腈橡膠密封) -30 to +80 (NBR seals)
溫度變化範圍 Temperature range		-20至+80 (帶氟橡膠密封) -20 to +80 (FPM seals)	
粘度範圍 Viscosity range	ν	mm²/s	2.8至500 2.8 to 500
油液清潔度 Degree of fluid contamination		油液最高污染等級按NAS 1638第9級。 因而我們推薦過濾器最小過濾精度 $\beta_{10} \geq 75$ 。 Maximum permissible degree of contamination of the fluid is to NAS 1638 class 9. We, therefore, recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$.	

Solenoid Operated Directional Valves

電器數據 Electrical			
電壓類型 Type of voltage		直流 DC voltage	交流 AC voltage
可用電壓 Type of voltage (交流電磁鐵訂貨細節見下) (For ordering details of AC solenoids see below)	t °C	12.24	110, 220V 50Hz 120, 240V 60Hz
額定吸力 Rated force	(N)	100	54
額定行程 Rated stroke	(mm)	3.6	4
全行程 Total stroke	(mm)	8.5	8.5
工作循環 Duty cycle	(%)	100	100
絕緣等級 Insulation class		B	H
最高操作頻率 Max operation frequency	(t/h)	12000	12000
允許電壓波動範圍 Supply voltage tolerance	(%)	+10 ~ -15	+10 ~ -15
防護等級 Protection class		IP65	IP65
工作壓力 Working Pressure	(Mpa)	21	21
流入電流 Inrush VA	(VA)	36	71
消耗功率 Power consumption	(W)	36	38
工作壽命 Working life	(t)	10 × 10 ⁶	10 × 10 ⁷

F/N

0.3 DC

nom voltage 20°
-85% voltage stab temp

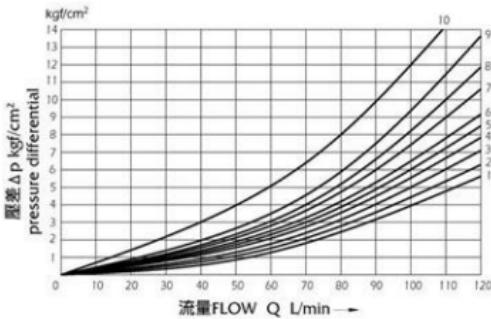
s/mm	F/N (nom 20°)	F/N (-85% stab)
0.5	180	150
1.0	120	100
2.0	90	80
3.5	90	70

F/N

0.3 AC

nom voltage 20°
-85% voltage stab temp

s/mm	F/N (nom 20°)	F/N (-85% stab)
0.5	120	100
1.0	80	70
2.0	50	45
3.5	50	40

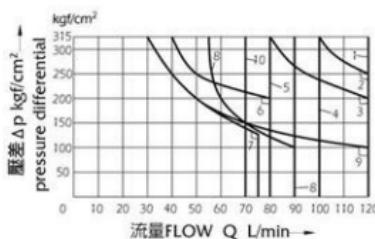


符号 Symbol	流动方向 Flow direction			
	P→A	P→B	A→T	B→T
A, B	3	3	-	-
C	3	3	4	5
D,Y	5	5	6	6
E	1	1	4	4
F	2	3	7	4
G	3	3	6	7
H	1	1	6	7
J	1	1	3	3
L	2	2	3	5
M	1	1	4	5
P	4	2	5	7
Q	1	2	1	3
R	3	6	4	-
T	3	3	6	7
U,V	2	2	3	3
W	2	2	4	5

選擇位 Op.pos.	P→A	P→B	A→T	B→T
	R	-	9	-

中位 Mid.pos.	P→A	P→B	B→T	A→T	P→T	
	F	4	-	-	9	9
P	-	5	8	-	-	10
G,T			-	-	-	9
H			-	-	-	3

性能极限【在 $\nu = 41 \text{ mm}^2/\text{s}$ 及 $t = 50^\circ\text{C}$ 时测得】
Switching power limits (measured at $\nu = 41 \text{ mm}^2/\text{s}$ and $t = 50^\circ\text{C}$)



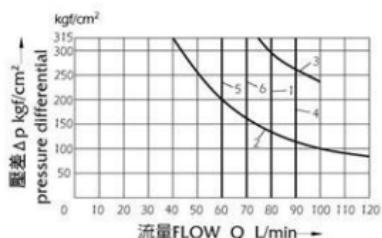
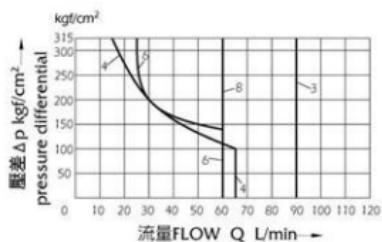
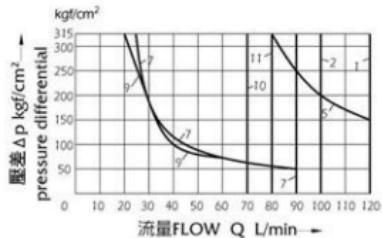
曲线 Curve	符号 Symbol
1	C, C/O, C/OF D, D/O, D/OF Y, M
2	E
3	A/O, A/OF L, U, J, Q, W
4	H
5 ¹⁾	R
6	G
7	T
8	F, P
9	A, B
10	V

回油 (與面積比無關)
Return flow (independent of area ratio)

Solenoid Operated Directional Valves

性能極限【在 $\nu = 41 \text{ mm}^2/\text{s}$ 及 $t = 50^\circ\text{C}$ 時測得】

Switching power limits (measured at $\nu = 41 \text{ mm}^2/\text{s}$ and $t = 50^\circ\text{C}$)



110V, 60 Hz; 120V, 60 Hz;
220V, 60 Hz; 240V, 60 Hz

曲線 Curve	符號 Symbol
1	C, C/O, C/OF D, D/O, D/OF Y
2	E, L
3	U, Q, W
4	M
5	A, B
6	A/O, A/OF, J
7	G
8	F, P
9	V
10	T
11	H
	R

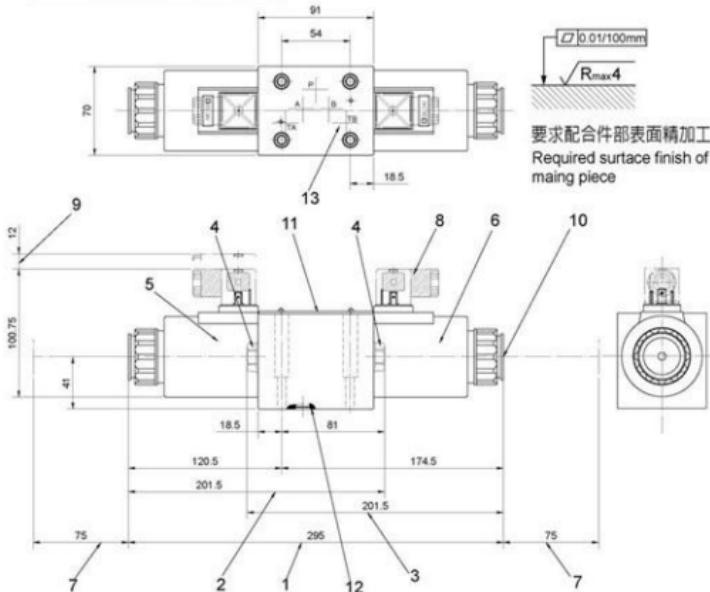
110V, 60 Hz
220V, 60 Hz

曲線 Curve	符號 Symbol
1	C, C/O, C/OF D, D/O, D/OF Y
2	A/O, A/OF
3	E
4	M
5	V
6	H

安裝尺寸 INSTALLATION DIMENSIONS

單位 UNIT : mm

直角電磁閥 VALVES WITH DC SOLENOIDS

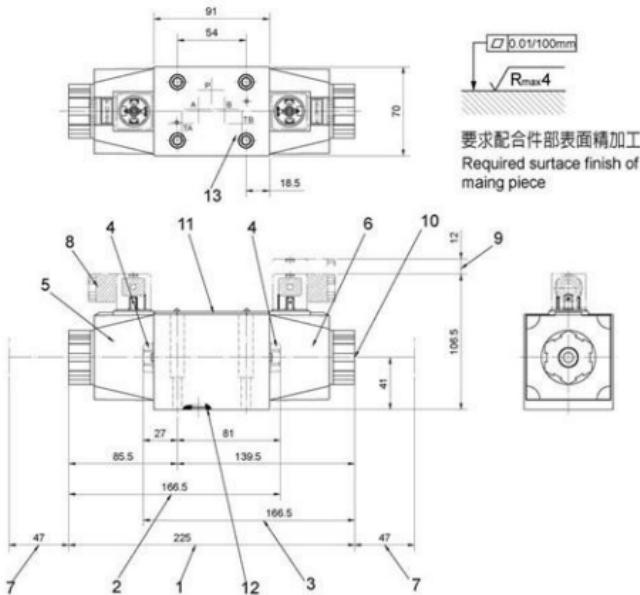


1. 3-位置閥
2. 2-位置閥，帶1個電磁鐵(A, C, D, DA...)
3. 2-位置閥，帶1個電磁鐵(B, Y, EB...)
4. 帶1個電磁鐵的閥塞頭
5. 電磁鐵 "a"
6. 電磁鐵 "b"
7. 取下電磁鐵所需空間
8. 插入式接頭按DIN 43650 (可旋轉90度)
9. 取下插入式接頭所需空間
10. 手動應急操作 (標準)
手動應急操作僅在油壓力約為50 kgf/cm²時
才有可能。
不要對手動應急操作孔造成損害！
11. 級牌
12. O-形圈 AS-568-014
13. 安裝面按 DIN 24 340 A型，
ISO 4401 和 CETOP-RP 121 H
閥固定螺栓 M6x35 DIN 912-10.9 ·
擰緊扭矩 MA=15.5Nm
1. 3-position valve
2. 2-position valve with 1 solenoid (A, C, D, EA...)
3. 2-position valve with 1 solenoid (B, Y, EB...)
4. Plug for valve with 1 solenoid
5. Solenoid "a"
6. Solenoid "b"
7. Space required to remove solenoid
8. Plug-in connector to DIN 43650
(can be rotated in 90° increments)
9. Space required to remove plug-in connector
10. Hand emergency (standard)
-The hand emergency can only be operated up to a
tank pressure of max. 50 kgf/cm²
Avoid damage to the hand emergency pin hole
11. Name plate
12. O-ring AS-568-014
13. Mounting pattern to DIN 24 340 form A,
ISO 4401 and CETOP-RP 121 H
valve fixing screws M6x35 DIN 912-10.9
MA=15.5 Nm.

單位UNIT : mm

安裝尺寸 INSTALLATION DIMENSIONS

交流電磁閥 VALVES WITH AC SOLENOIDS



1. 3-位置閥
2. 2-位置，帶1個電磁鐵 (A, C, D, DA...)
3. 2-位置，帶1個電磁鐵 (B, Y, EB...)
4. 帶1個電磁鐵的閥頭
5. 電磁鐵 "a"
6. 電磁鐵 "b"
7. 取下電磁鐵所需空間
8. 插入式接頭按 DIN 43650 (可旋轉90度)
9. 取下插入式接頭所需空間
10. 手動應急操作 (標準)
 - 手動應急操作僅在油壓力約為 50 kgf/cm² 時才有可能。
 - 不要對手動應急操作亂造成損害！
11. 號牌
12. O-形圈 AS-568-014
13. 安裝面按 DIN 24 340 A型，
ISO 4401 和 CETOP-RP 121 H
閥固定螺釘 M6x35 DIN 912-10.9，
扭緊扭矩 Ma=15.5Nm
1. 3-position valve
2. 2-position valve with 1 solenoid (A, C, D, EA...)
3. 2-position valve with 1 solenoid (B, Y, EB...)
4. Plug for valve with 1 solenoid
5. Solenoid "a"
6. Solenoid "b"
7. Space required to remove solenoid
8. Plug-in connector to DIN 43650
(can be rotated 90° increments)
9. Space required to remove plug-in connector
10. Hand emergency (standard)
 - The hand emergency can only be operated up to a tank pressure of max. 50 kgf/cm²
 - Avoid damage to the hand emergency pin hole
11. Name plate
12. O-ring AS-568-014
13. Mounting pattern to DIN 24 340 form A,
ISO 4401 and CETOP-RP 121 H
valve fixing screws M6x35 DIN 912-10.9
Ma=15.5 Nm.