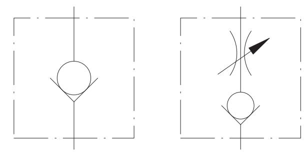
C Series

方向控制閥 Directional Control Valve

單向閥

Check Valve

閥類型符號 SYMBOL
CRG- ※



CRG- ※　　CRG- ※ -M

規格說明 SPECIFICATION

型式 MODEL		最高使用壓力 MAX. OPERATING PRESSURE (kgf/cm²)	開啟壓力 CRACKING PRESSURE kgf/cm²	流量 RATED FLOW L/min	重量 WEIGHT kg	
CRG-03-※-10	CRG-03-※-20	標準型 STD. : 250 H : 350	05 : 0.35 50 : 3.5 75 : 5.0	40	1.7	1.9
CRG-06-※-10	CRG-06-※-20			125	4.2	3.2
CRG-10-※-10	CRG-10-※-20			250	7.7	6.0

型號說明 HOW TO ORDER

H - CR G - 06 - 05 - 10

- 設計編號 DESIGN NUMBER
  10 : 非ISO規格 NO-ISO STANDARD
  20 : 標準ISO規格 ISO STANDARD
- 開啟壓力 CRACKING PRESSURE
  05 : 0.35 kgf/cm²　**50 :** 3.5 kgf/cm²
  75 : 5.0 kgf/cm²
- 閥規格 VALVE SIZE
  03 : 3/8"　**06 :** 3/4"　**10 :** 1-1/4"
- 安裝型式 MOUNTING
  G : 板式安裝 SUB-PLATE MOUNTING
- 系列編號 SERIES NUMBER
- 最大使用壓力 MAX. OPERATING PRESSURE
  無代號 : 標準型 250 kgf/cm²
  NO CODE : STANDARD TYPE 250 kgf/cm²
  H : 350 kgf/cm²

附屬品 ATTACHMENT

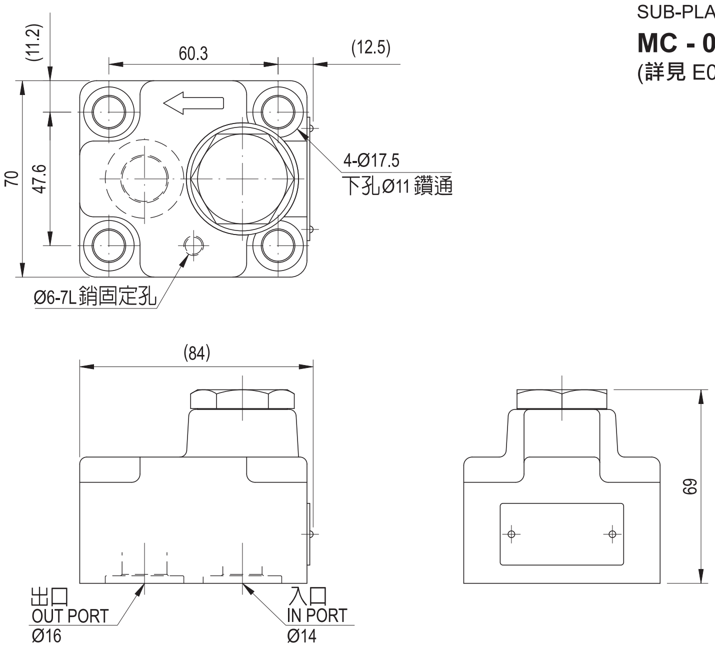
型式 MODEL	安裝螺絲 SOC HOL CAP SCREW	安裝扭矩 MOUNTING TORQUE N.m
CRG-03-10	M10 X 50L.....4pcs	60~74
CRG-06-10	M16 X 60L.....4pcs	253~310
CRG-10-10	M20 X 75L.....4pcs	493~603
CRG-03-20	M10 X 45L.....4pcs	60~74
CRG-06-20	M10 X 50L.....4pcs	
CRG-10-20	M10 X 55L.....6pcs	

單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

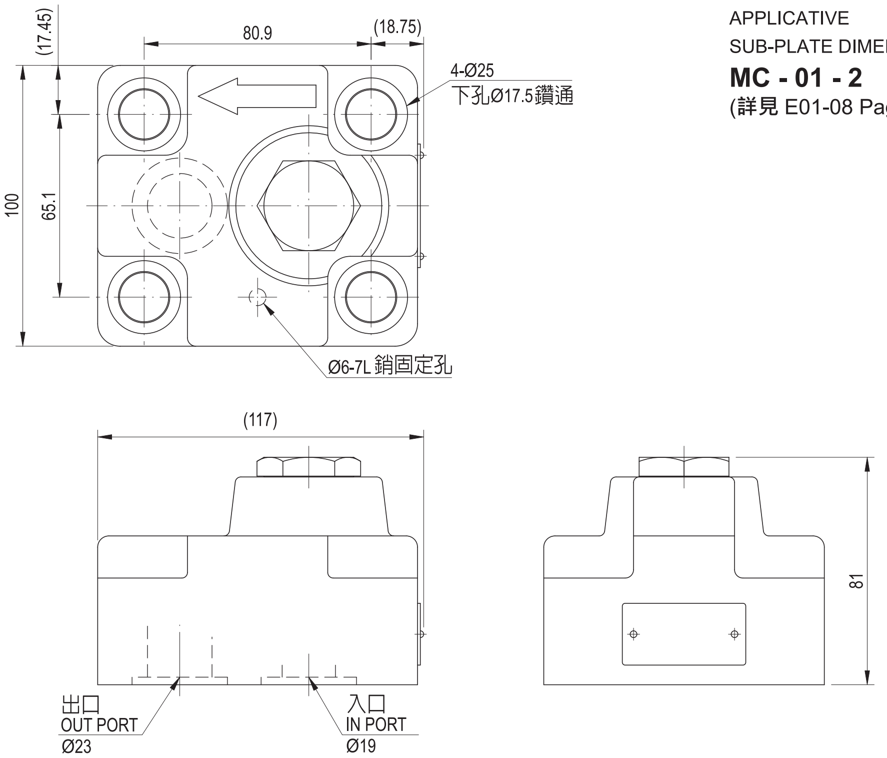
CRG-03-10

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 01 - 1
(詳見 E01-08 Page E01-08)



CRG-06-10

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 01 - 2
(詳見 E01-08 Page E01-08)

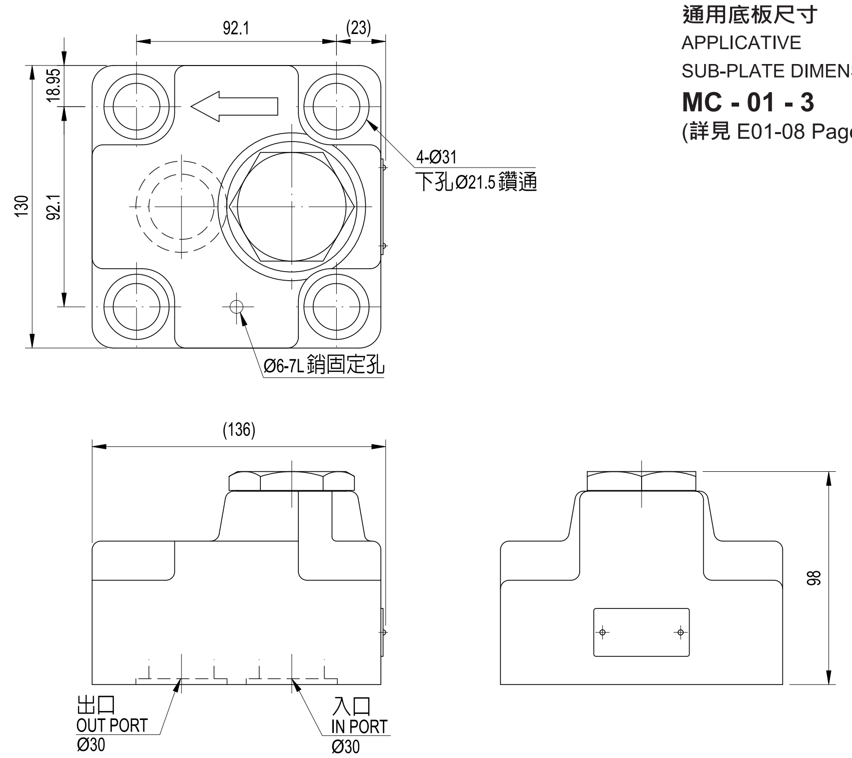


單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

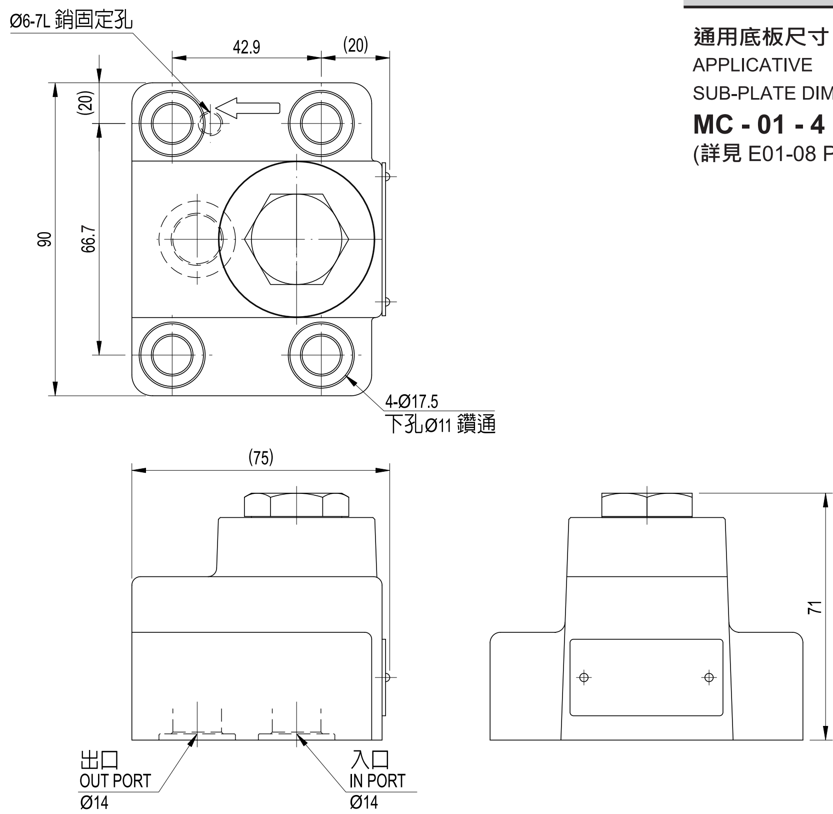
CRG-10-10

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 01 - 3
(詳見 E01-08 Page E01-08)



CRG-03-20

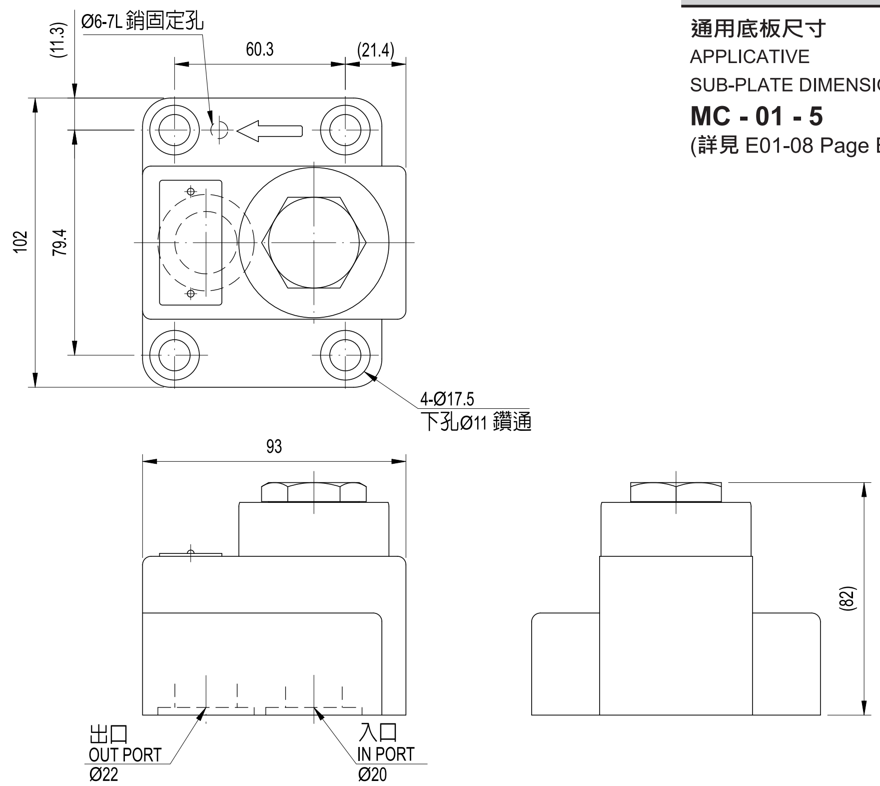
通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 01 - 4
(詳見 E01-08 Page E01-08)



單位 UNIT：mm

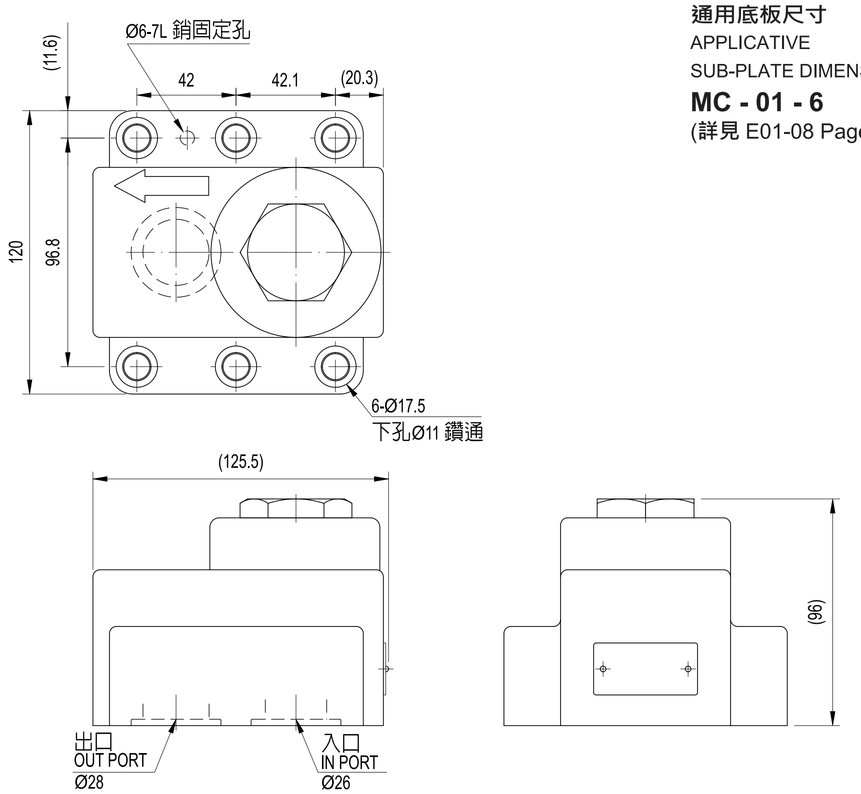
安裝尺寸 INSTALLATION DIMENSIONS

CRG-06-20



通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 01 - 5
(詳見 E01-08 Page E01-08)

CRG-10-20



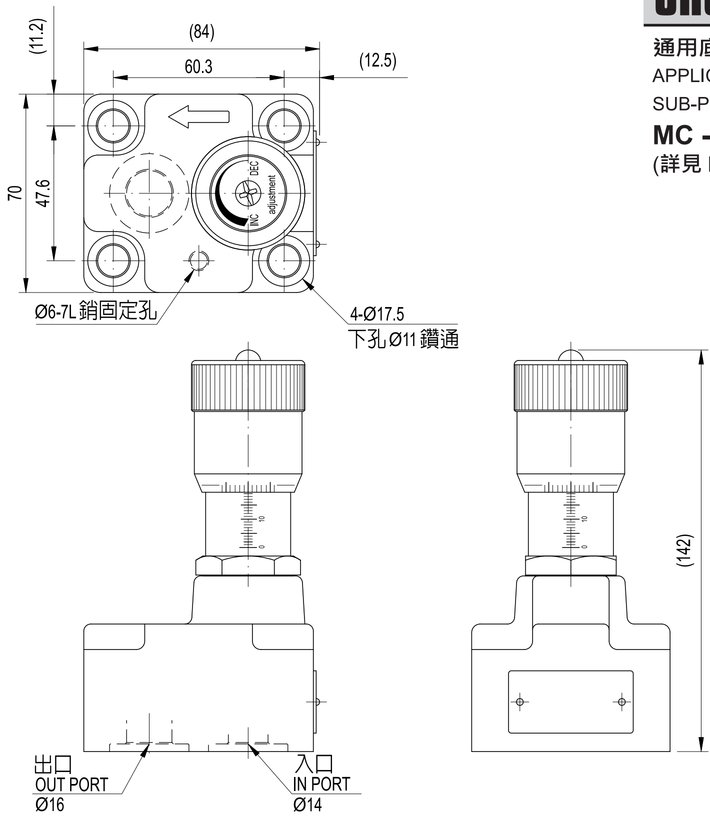
通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 01 - 6
(詳見 E01-08 Page E01-08)

單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

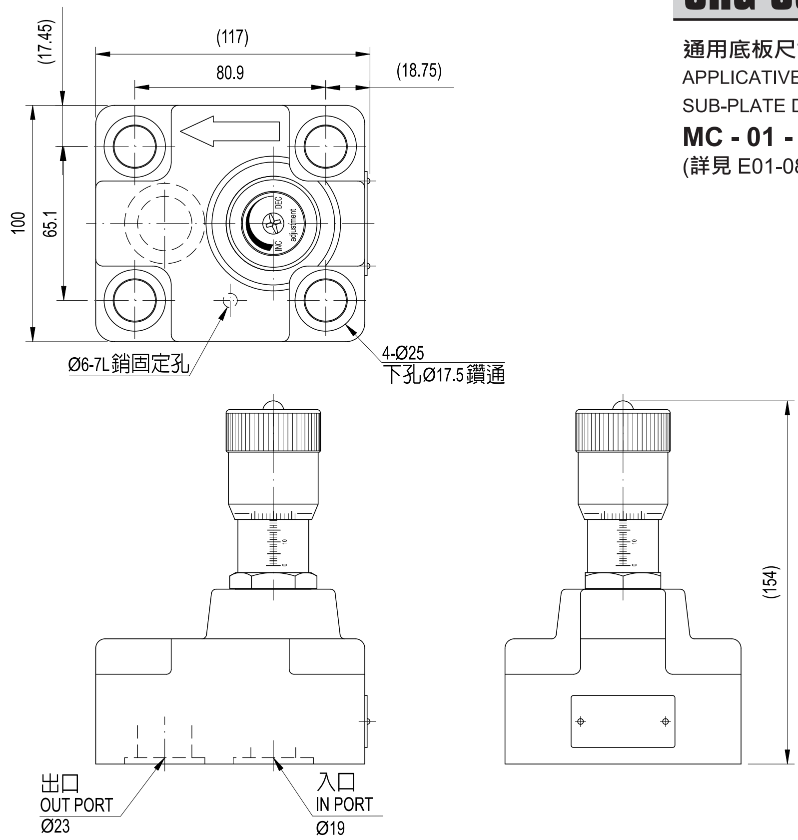
CRG-03-10-M

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 01 - 1
(詳見 E01-08 Page E01-08)



CRG-06-10-M

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 01 - 2
(詳見 E01-08 Page E01-08)

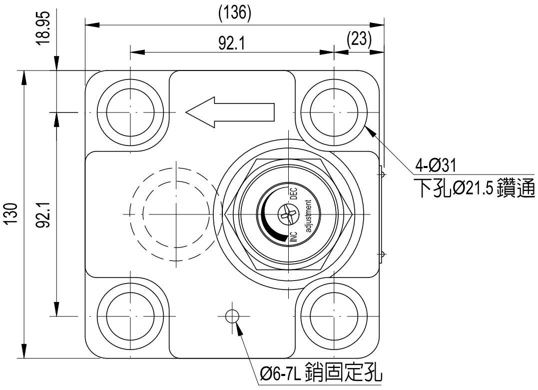


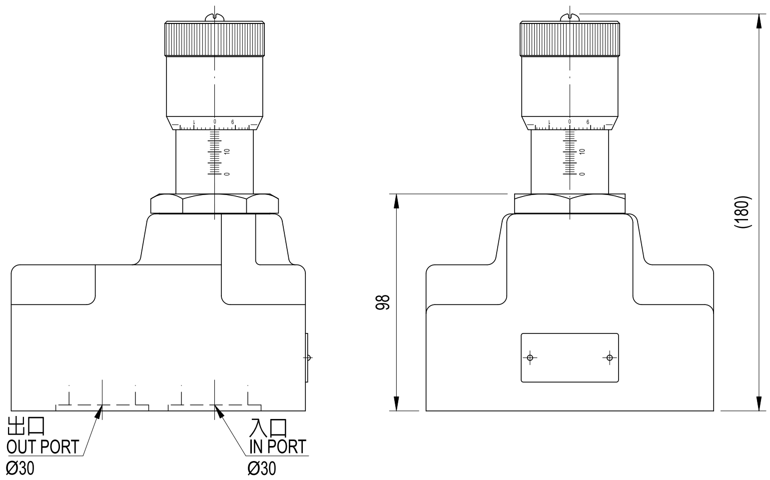
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

CRG-10-10-M

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 01 - 3
(詳見 E01-08 Page E01-08)



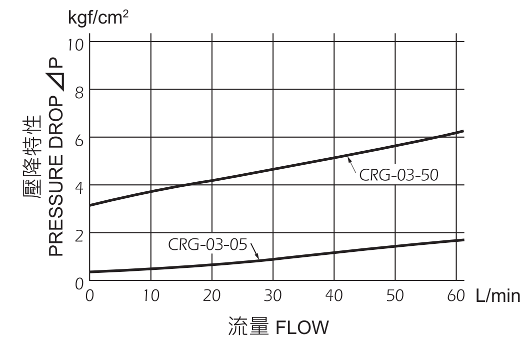


測試條件 PERFORMANCE CURVES

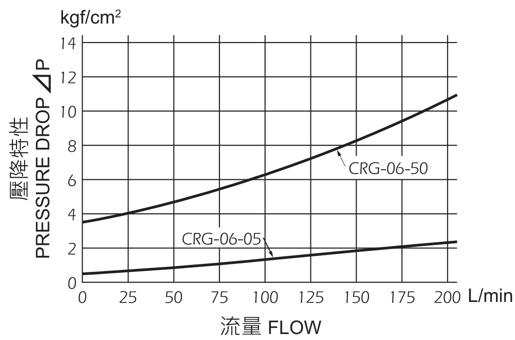
測試油黏度 **TEST FLUID VISCOSITY ： 35cSt**

測試油溫度 **TEST TEMPERATURE ： 50℃**

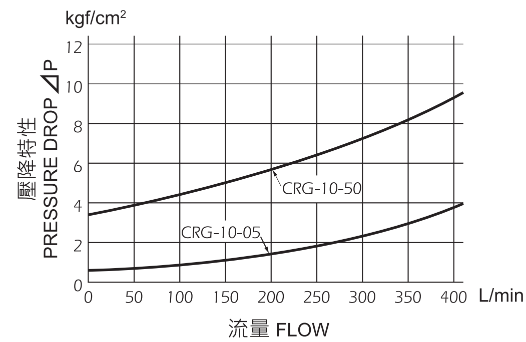
● CRG-03



● CRG-06

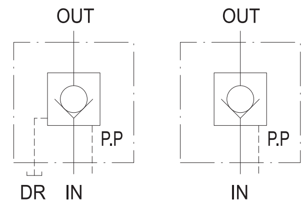


● CRG-10



Pilot Operated Check Valve

閥類型符號 SYMBOL
CPD※ - ※



規格說明 SPECIFICATION

型式 MODEL 板式安裝 SUB-PLATE MOUNTING	型式 MODEL 管式安裝 THREADED CONNECTIONS	最高使用壓力 MAX. OPERATING PRESSURE kgf/cm^2	開啟壓力 CRACKING PRESSURE kgf/cm^2	流量 RATED FLOW L/min	重量 WEIGHT kg	
CPDG-03-※	CPDT-03-※	250	05 : 0.35 50 : 3.5 75 : 5.0	40	4.6	3.8
CPDG-06-※	CPDT-06-※			125	7.5	6.4
CPDG-10-※	CPDT-10-※			250	12.8	12.8
CPDF-10-※				250	15.4	

型號說明 HOW TO ORDER

CPD G - 06 - 05 - E - 10 - FPT

法蘭型式 TYPE OF PIPE FLANG
FPT : PT口法蘭（附高低壓法蘭） PT PORT FLANG
(ADD ACCIDENT PRESSURE PIPE FLANG)
FT : T口法蘭（附低壓法蘭） T PORT FLANG
(ADD LOW PRESSURE PIPE FLANG)
FP : P口法蘭（附高壓法蘭） P PORT FLANG
(ADD HIGH PRESSURE PIPE FLANG)
無代號 NO CODE : 不附法蘭 NOT ADD PIPE FLANG

設計編號 DESIGN NUMBER
10 : 標準型 STANDARD TYPE
20 : 閥規格10唯一型式 ONLY FOR TYPE 10

控油方式 PILOT AND DRAIN TYPE
E : 外部引導內部泄油 EXTERNAL PILOT INTERNAL DRAIN
ET : 外部引導外部泄油 EXTERNAL PILOT & DRAIN

開啟壓力 CRACKING PRESSURE
05 : 0.35 kgf/cm^2 **50 :** 3.5 kgf/cm^2 **75 :** 5.0 kgf/cm^2

閥規格 VALVE SIZE
03 : 3/8" **06 :** 3/4" **10 :** 1-1/4"

安裝型式 MOUNTING
G : 板式安裝 SUB-PLATE MOUNTING
T : 管式安裝 THREADED CONNECTIONS
F : 法蘭安裝 FLANGED CONNECTIONS

系列編號 SERIES NUMBER

附屬品 ATTACHMENT

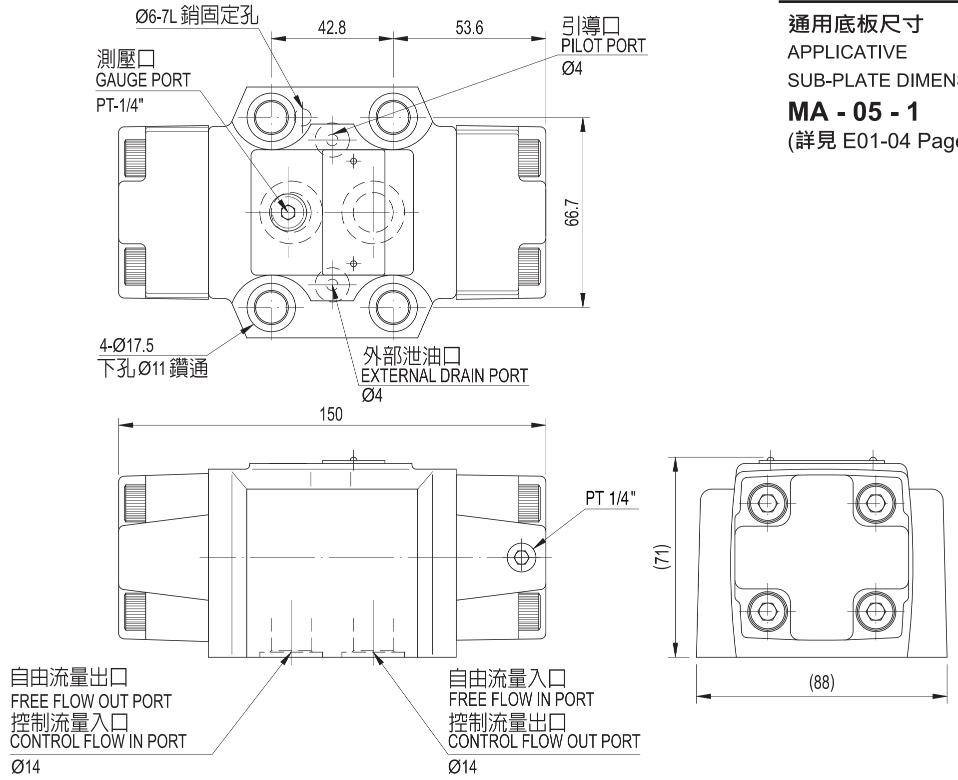
型式 MODEL	安裝螺絲 SOC HOL CAP SCREW	安裝扭矩 MOUNTING TORQUE N·m
CPDG-03	M10 X 70L......4pcs	60~74
CPDG-06	M10 X 80L......4pcs	
CPDG-10	M10 X 90L......6pcs	

單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

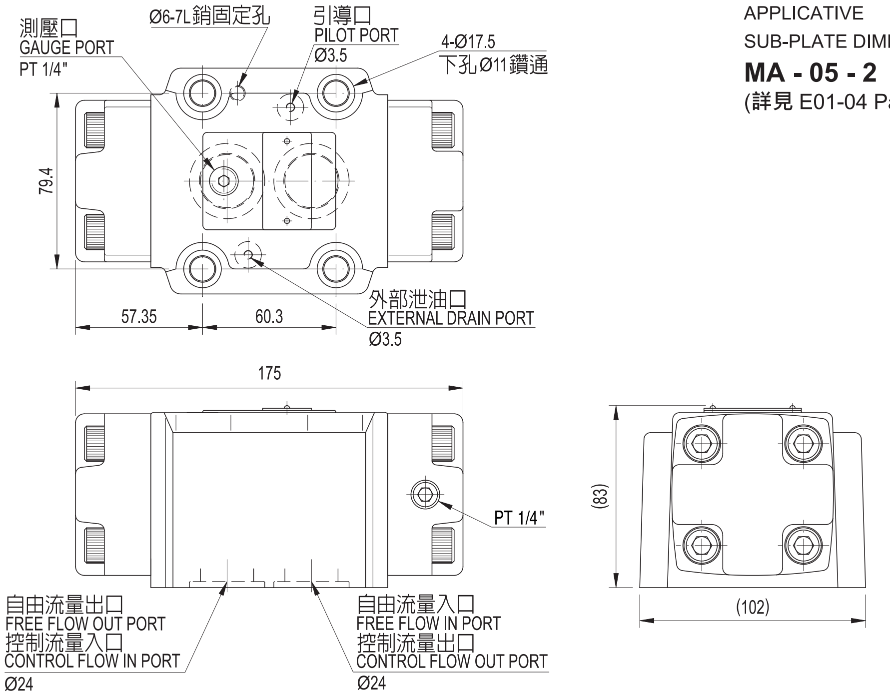
CPDG-03

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MA - 05 - 1
(詳見 E01-04 Page E01-04)



CPDG-06

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MA - 05 - 2
(詳見 E01-04 Page E01-04)

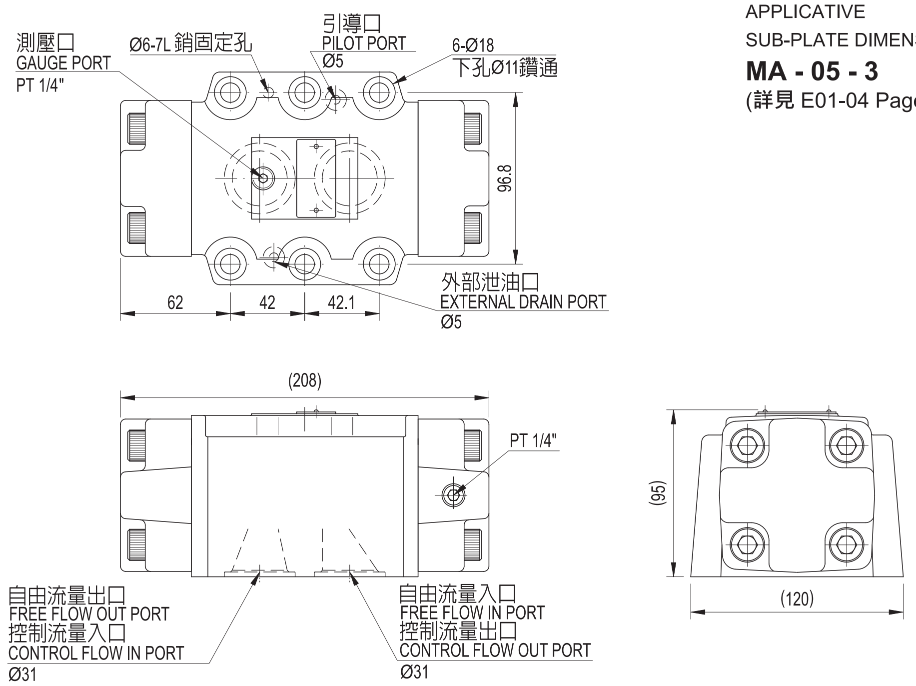


單位 UNIT：mm

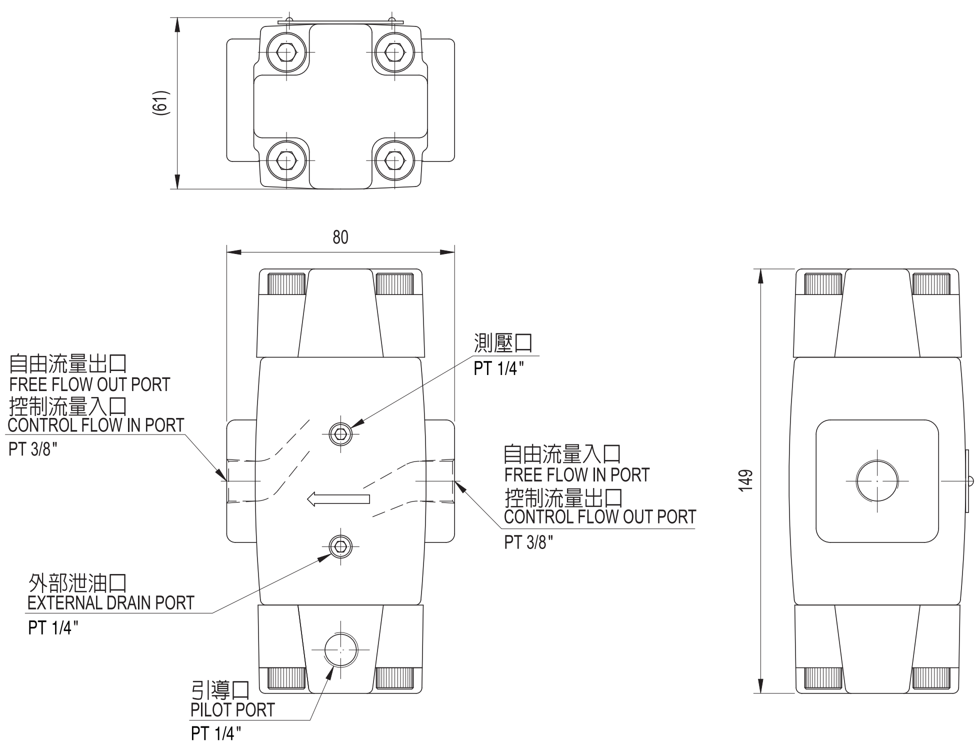
安裝尺寸 INSTALLATION DIMENSIONS

CPDG-10

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MA - 05 - 3
(詳見 E01-04 Page E01-04)



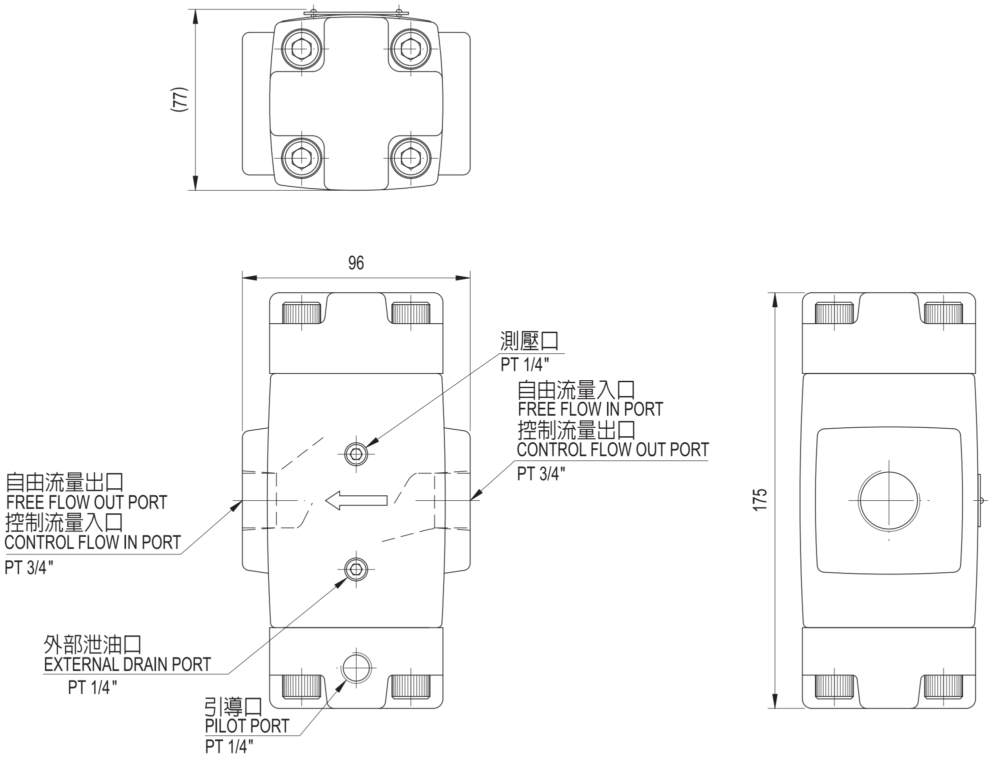
CPDT-03



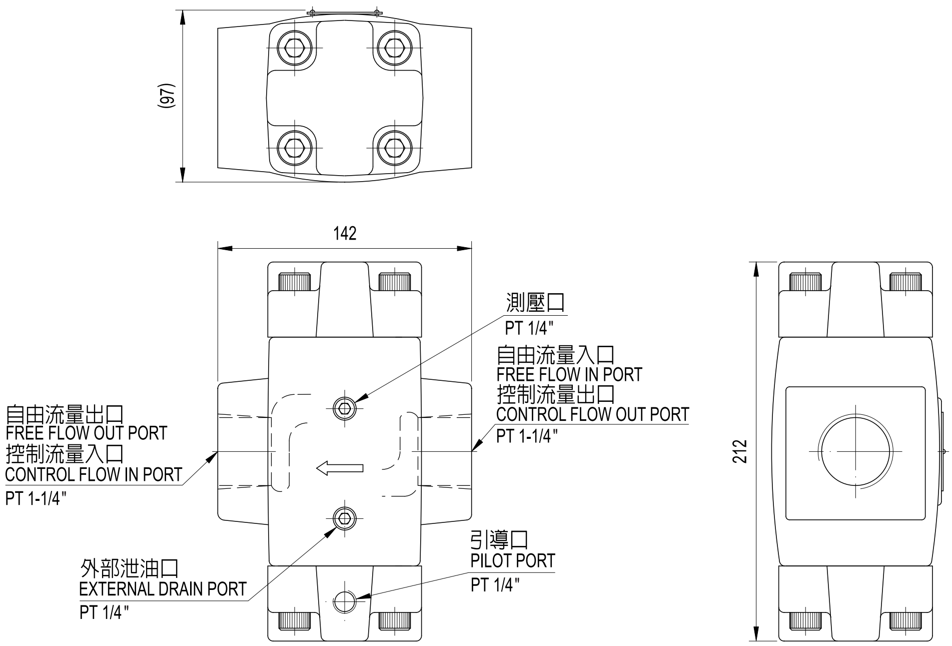
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

CPDT-06



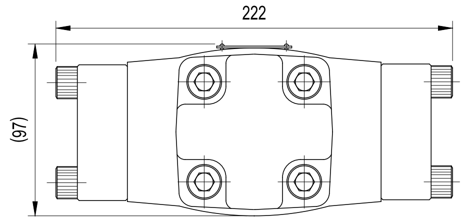
CPDT-10

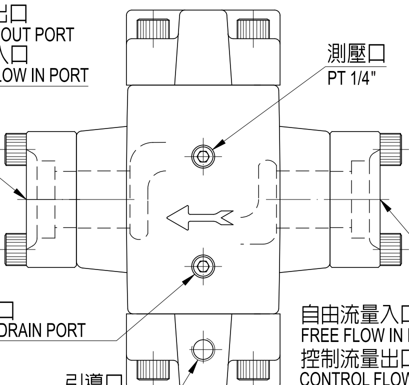


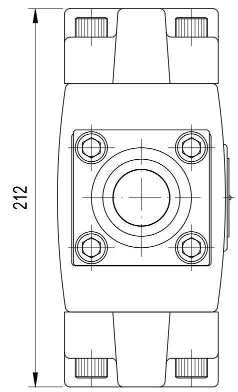
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

CPDF-10





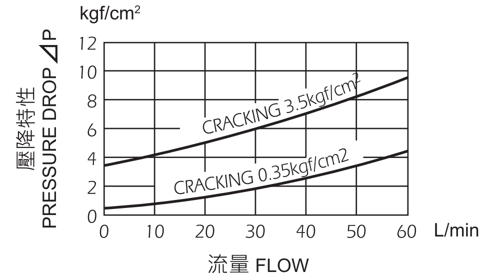


測試條件 PERFORMANCE CURVES

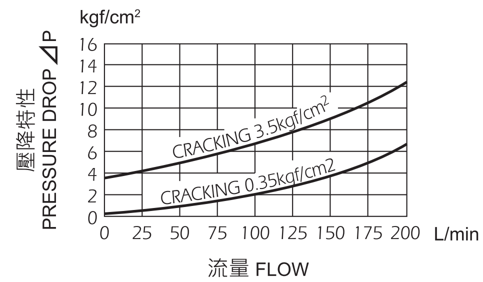
測試油黏度 TEST FLUID VISCOSITY ： 35cSt   測試油溫度 TEST TEMPERATURE ： 50℃

壓力降特性 PRESSURE DROP

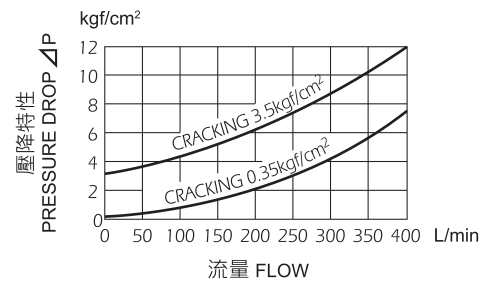
● **CPDG, CPDT-03**



● **CPDG, CPDT-06**

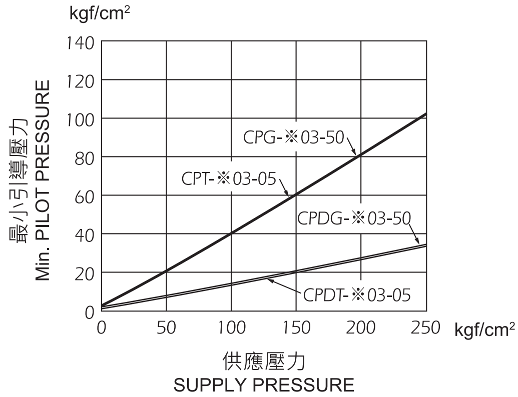


● **CPDG, CPDT-10**

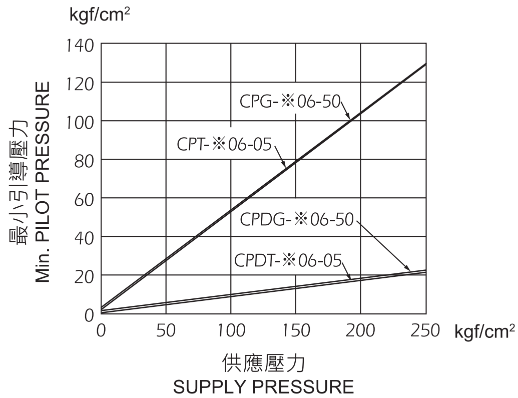


最小引導壓力特性 Min. PILOT PRESSURE

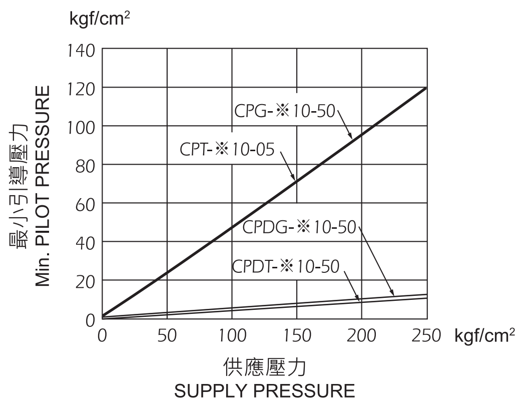
● **CPDG, CPDT-03**



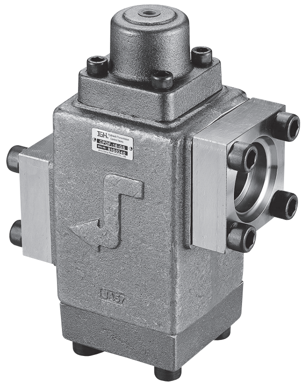
● **CPDG, CPDT-06**



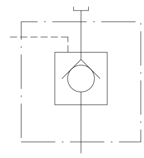
● **CPDG, CPDT-10**



Prefill Valve



閥類型符號 SYMBOL
CPDF- ※



規格說明 SPECIFICATION

型式 MODEL	最高使用壓力 MAX. OPERATING PRESSURE kgf/cm²	最大流量 MAX. FLOW L/min	開啟壓力 CRACKING PRESSURE kgf/cm²	重量(含法蘭) WEIGHT (ADD PIPE FLANG) kg
CPDF-16-※	250	400	0.12	31
CPDF-24-※		900	0.14	54.2

型號說明 HOW TO ORDER

CPD F - 16 - 90° - R - FPT

法蘭型式 TYPE OF PIPE FLANG
FPT : PT口法蘭(附高低壓法蘭) PT PORT FLANG
(ADD ACCIDENT PRESSURE PIPE FLANG)
FT : T口法蘭(附低壓法蘭) T PORT FLANG
(ADD LOW PRESSURE PIPE FLANG)
FP : P口法蘭(附高壓法蘭) P PORT FLANG
(ADD HIGH PRESSURE PIPE FLANG)
無代號 **NO CODE :** 不附法蘭 NOT ADD PIPE FLANG

油口方向 PORT DIRECTION
R : 從回油口側,看壓力口在右
PRESSURE AT RIGHT SIDE FROM TANK PORT
L : 從回油口側,看壓力口在左
PRESSURE AT LEFT SIDE FROM TANK PORT

閥型式 VALVE TYPE
90° : ANGLE TYPE **180° :** INLINE TYPE

閥規格 VALVE SIZE
16 : 2" **24 :** 3"

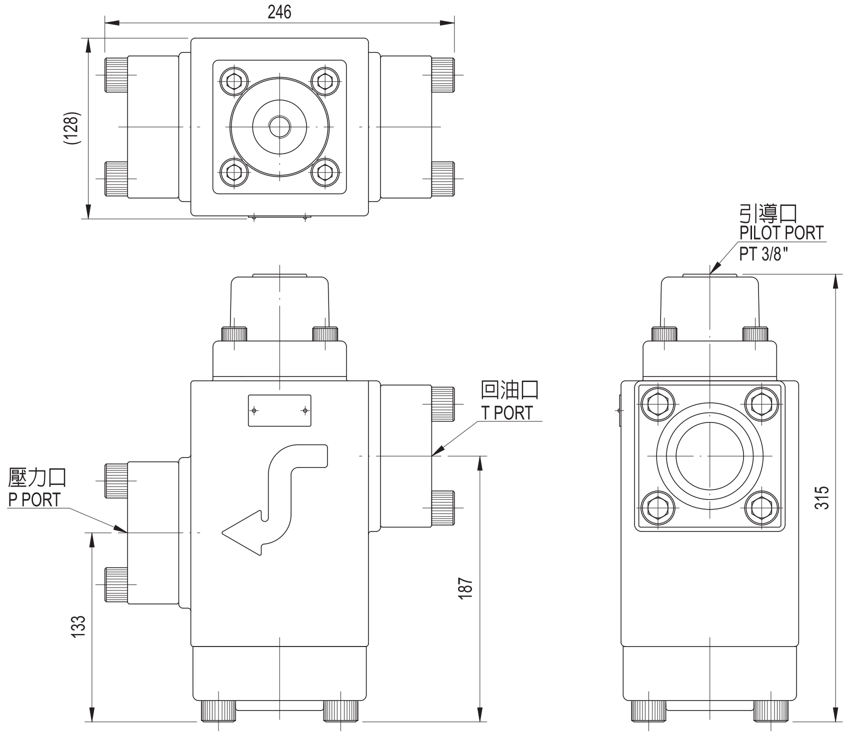
安裝型式 MOUNTING
F : 法蘭安裝 FLANGED CONNECTIONS

系列編號 SERIES NUMBER

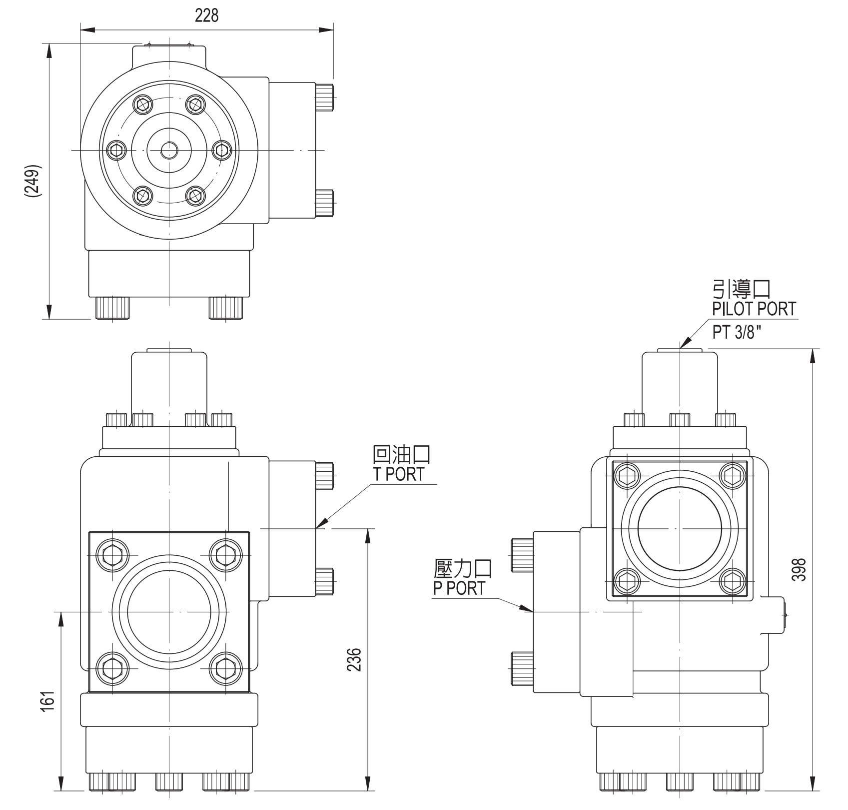
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

CPDF-16



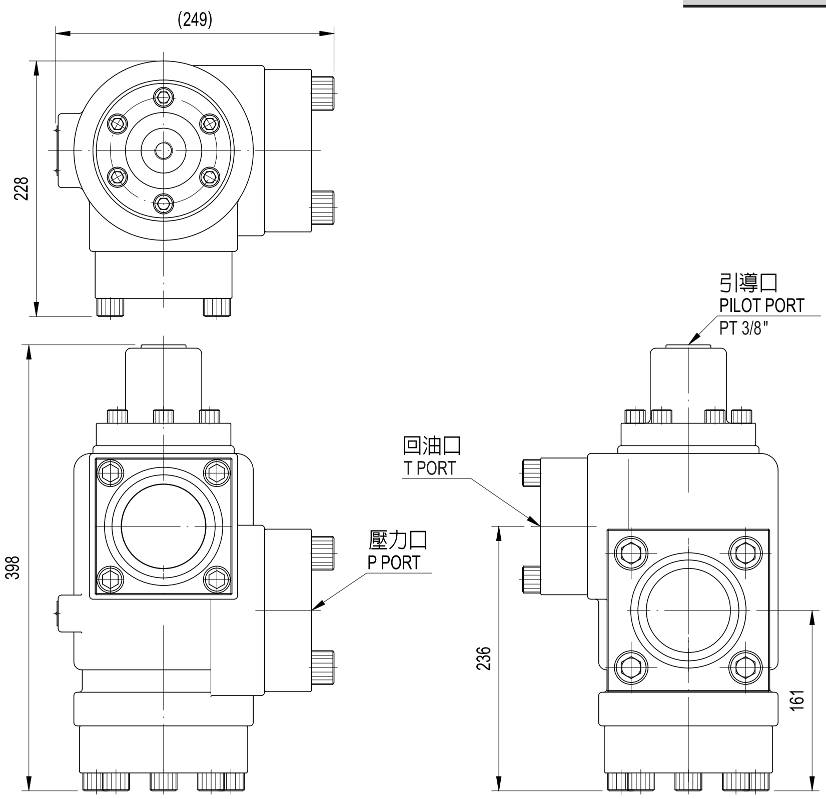
CPDF-24-90°-L



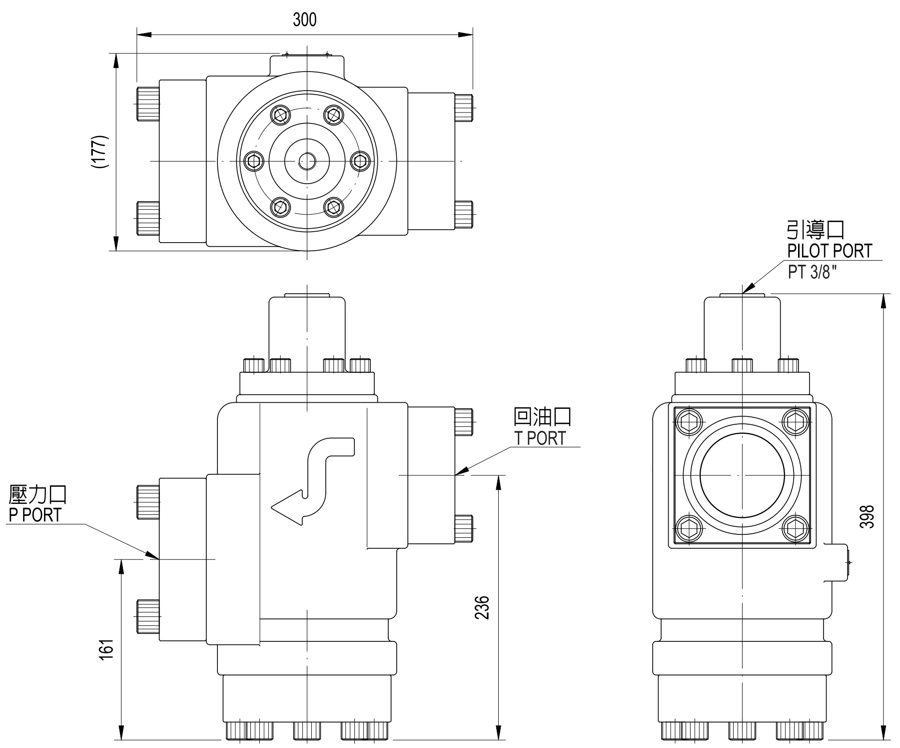
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

CPDF-24-90°-R

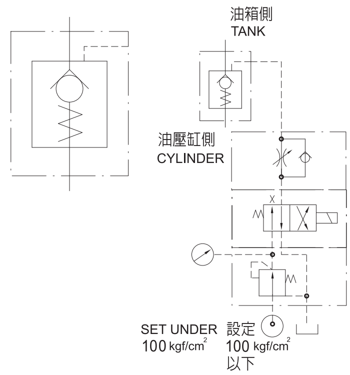


CPDF-24-180°



Prefill Valve

閥類型符號 SYMBOL
PDF-※-20 範例 EXAMPLE



規格說明 SPECIFICATION

型式 MODEL	口徑 PORT	最大流量 MAX. FLOW L/min	最高使用壓力 MAX. OPERATING PRESSURE kgf/cm²	最高先導壓力 MAX. PILOT PRESSURE kgf/cm²	先導壓力 PILOT PRESSURE kgf/cm²	重量（無法蘭） WEIGHT (NOT ADD PIPE FLANG) kg	重量（含法蘭） WEIGHT (ADD PIPE FLANG) kg
PF-50-20-※	2"	250	250	100	(註4 Note4)	3.5	4.5
PDF-80-20-※	3"	400			35.34	8.5	10.5
PDF-90-20-※	3-1/2"	630			40.72	12	14.5
PDF-100-20-※	4"	1000			37.81	15.5	18
PDF-125-20-※	5"	1600			36.1	26	30
PDF-150-20-※	6"	2500			30.63	42.5	47

註： 1.實務上因高差壓不易形成，選用上以計算值為最大流量的7成以上為佳
2.表面最大流量時，壓力下降值約為0.3 kgf/cm²
3.先導壓力值為最高工作壓力狀況下(250 kgf/cm²)
4.PF-50-20-*引導比例3.4 : 1
5.內六角螺絲強度區分為12.9T

Note: 1.The high pressure drop is not easy to happen in renlity selecting according to the calculation 70% of the Max.
2.While the Max. flow rate showed in the above table,the pressure drop is about 0.3 kgf/cm²
3.The Max. pilot pressure shall be under 250 kgf/cm²
4.PF-50-20-* Pilot ratio 3.4 : 1
5.Use high tension bolts of which stren gth are 12.9T

型號說明 HOW TO ORDER

PDF - 80 - 20 - FT

法蘭型式 TYPE OF PIPE FLANG
FT : T口法蘭 (附低壓法蘭)
T PORT FLANG (ADD LOW PRESSURE PIPE FLANG)
無代號 : 不附法蘭 **NO CODE :** NOT ADD PIPE FLANG

引導型式 PILOT TYPE
20 : 彈簧式 SPRING TYPE

閥規格 VALVE SIZE
50 : 2" **80 :** 3" **90 :** 3-1/2"
100 : 4" **125 :** 5" **150 :** 6"

系列編號(法蘭連接)
SERIES NUMBER (FLANG CONNECTION)
PF : 單段式 NON-DECOMPRESSION
PDF : 雙段式 DECOMPRESSION

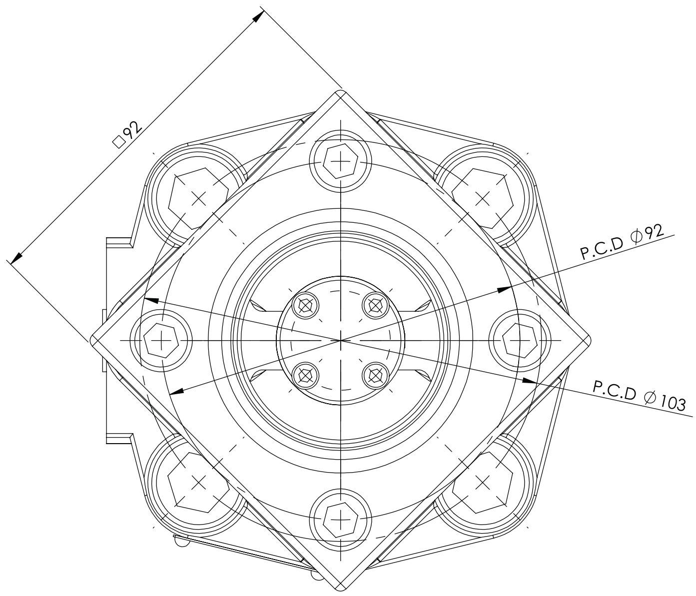
附屬品 ATTACHMENT

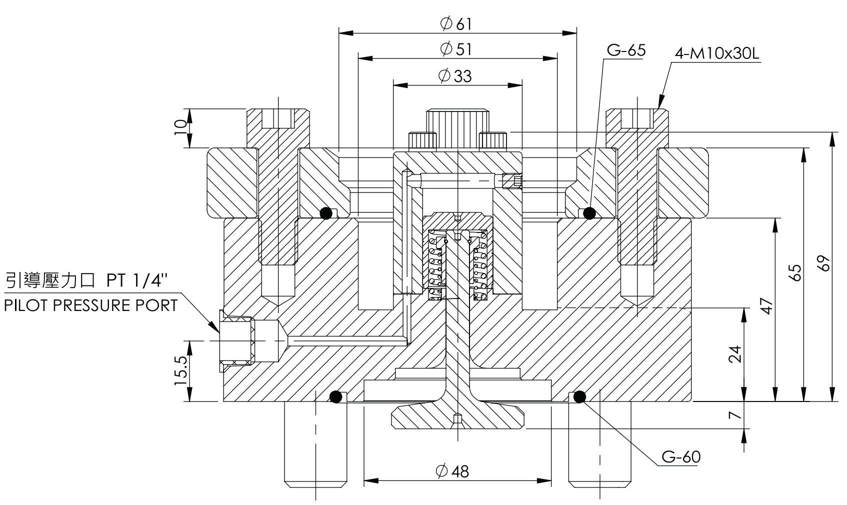
型式 MODEL	安裝螺絲 SOC HOL CAP SCREW	安裝扭矩 MOUNTING TORQUE N·m
PF-50	M16 X 45L......4pcs	253~310
PDF-80	M16 X 55L......6pcs	
PDF-90	M18 X 65L......6pcs	352~430
PDF-100	M20 X 70L......6pcs	493~603
PDF-125	M20 X 80L......12pcs	
PDF-150	M20 X 95L......16pcs	

單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

PF-50-20-※

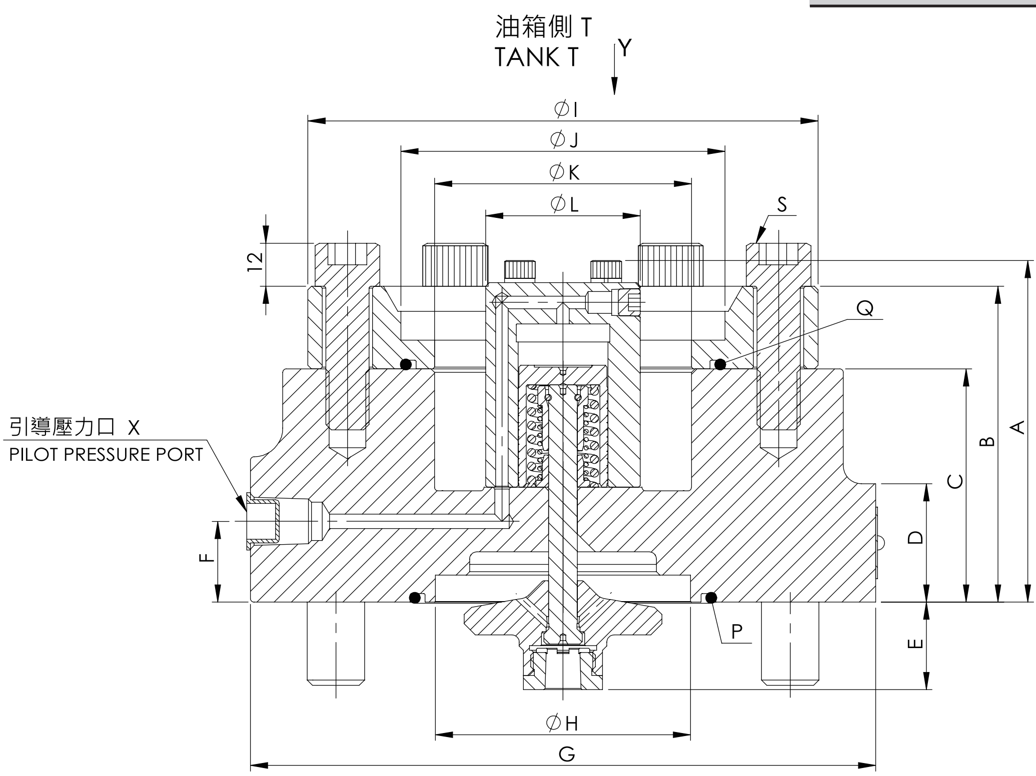


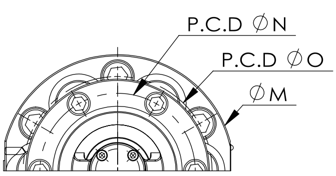


單位 UNIT：mm

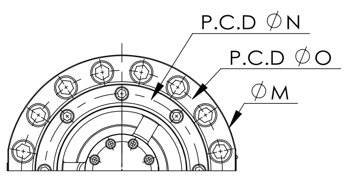
安裝尺寸 INSTALLATION DIMENSIONS

PDF-※-20-※

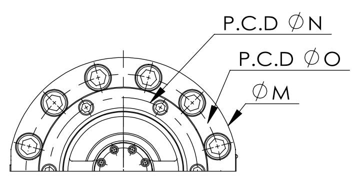




PDF-80,90,100-20
Y 視圖



PDF-150-20
Y 視圖



PDF-125-20
Y 視圖

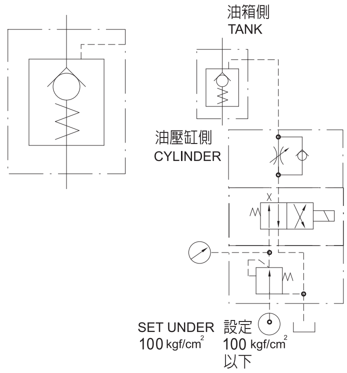
型式 MODEL	口徑 PORT	A	B	C	D	E	F	G	ØH	ØI	ØJ	ØK
PDF-80-20-※	3"	95	88	65	33	24.5	22.5	174	71	142	90	71.5
PDF-90-20-※	3-1/2"	119	95	75	41.5	29.5	27	193	88	160	101.5	89
PDF-100-20-※	4"	134	97	74	44	35	32	225	106	170	115.5	108
PDF-125-20-※	5"	166	116	85	52	44	43	265	130	200	141	130.5
PDF-150-20-※	6"	205	136	105	64	48	45	295	168	225	167	155

型式 MODEL	口徑 PORT	ØL	ØM	ØN	ØO	P	Q	S	安裝扭矩 MOUNTING TORQUE N·m	X
PDF-80-20-※	3"	43	180	120	146	G-80	G-85	6-M12X40	104~127	PT 1/4"
PDF-90-20-※	3-1/2"	50	200	135	165	G-100	G-105			
PDF-100-20-※	4"	56	230	148	191	G-115	G-120			
PDF-125-20-※	5"	69	270	175	200	G-140	G-145	6-M12X50		
PDF-150-20-※	6"	96	300	230	260	G180	G-170	8-M12X50		PT 3/8"

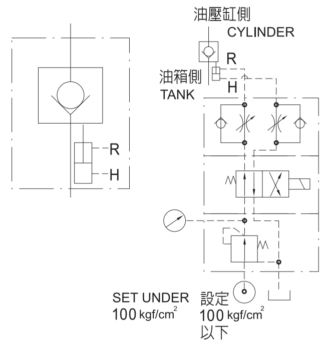
滿油閥

Prefill Valve

閥類型符號 SYMBOL
PF-※-20　範例 EXAMPLE



閥類型符號 SYMBOL
PF-※-30　範例 EXAMPLE



規格說明 SPECIFICATION

型式 MODEL	口徑 PORT	最大流量 MAX. FLOW L/min	最高使用壓力 MAX. OPERATING PRESSURE kgf/cm²	最高先導壓力 MAX. PILOT PRESSURE kgf/cm²	引導比例 PILOT RATIO	重量（無法蘭） WEIGHT (NOT ADD PIPE FLANG) kg	重量（含法蘭） WEIGHT (ADD PIPE FLANG) kg
PF-200-20-※	8"	4000	250	100	4.1 : 1	98	112
PF-200-30-※					4.8 : 1	99	113
PF-300-20-※	12"	7000			5.3 : 1	156	178
PF-300-30-※					5.1 : 1	158	180
PF-400-30-※	16"	14000			8 : 1	280	317
PF-500-30-※	20"	19000			8 : 1	709	775

註： 1.實務上因高差壓不易形成，選用上以計算值為最大流量的7成以上為佳
2.表面最大流量時，壓力下降值約為0.3 kgf/cm²
3.開啟本閥前務必先泄壓，否則無法開啟
4.內六角螺絲強度區分為12.9T

Note: 1.The high pressure drop is not easy to happen in renlity selecting according to the calculation 70% of the Max.
2.While the Max. flow rate showed in the above table,the pressure drop is about 0.3 kgf/cm²
3.To avoid possible shock,decompress the pressure in the cylinder line first before the valve operates,other wise the valve does not perform well(The pilot pressure should be 4.5 times more higher than the main pressure)
4.Use high tension bolts of which stren gth are 12.9T

型號說明 HOW TO ORDER

PF - 200 - 20 - FT

法蘭型式 TYPE OF PIPE FLANG
FT : T口法蘭 (附低壓法蘭)
T PORT FLANG (ADD LOW PRESSURE PIPE FLANG)
無代號 : 不附法蘭 **NO CODE :** NOT ADD PIPE FLANG

引導型式 PILOT TYPE
20 : 彈簧式 SPRING TYPE
30 : 活塞式 CYLINDER TYPE

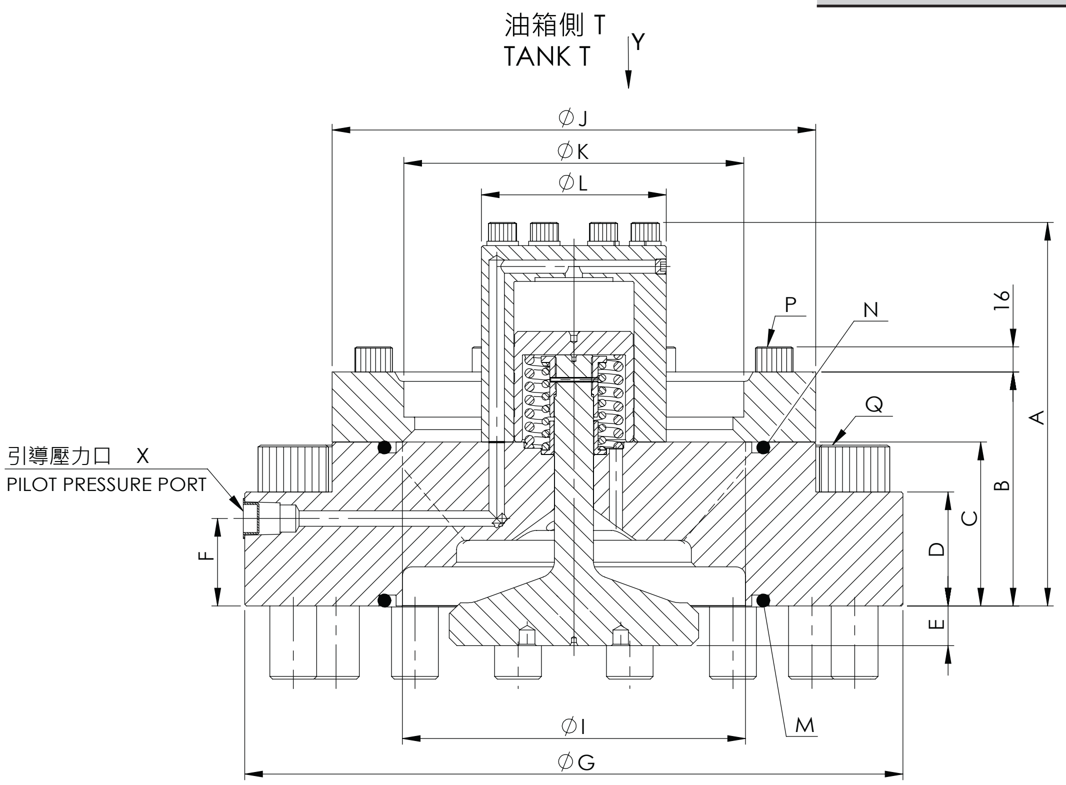
閥規格 VALVE SIZE
200 : 8"　**300 :** 12"　**400 :** 16"　**500 :** 20"

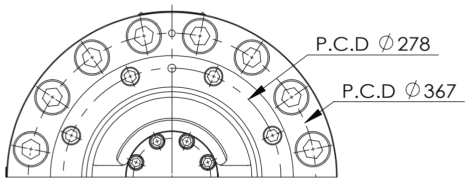
系列編號(法蘭連接)
SERIES NUMBER (FLANG CONNECTION)
PF : 單段式 NON-DECOMPRESSION

單位 UNIT : mm

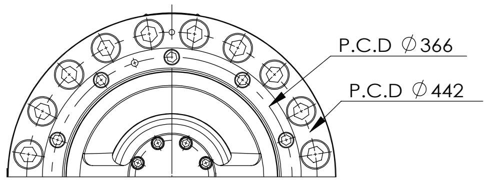
安裝尺寸 INSTALLATION DIMENSIONS

PF-※-20-※





PF-200-20
Y視圖



PF-300-20
Y視圖

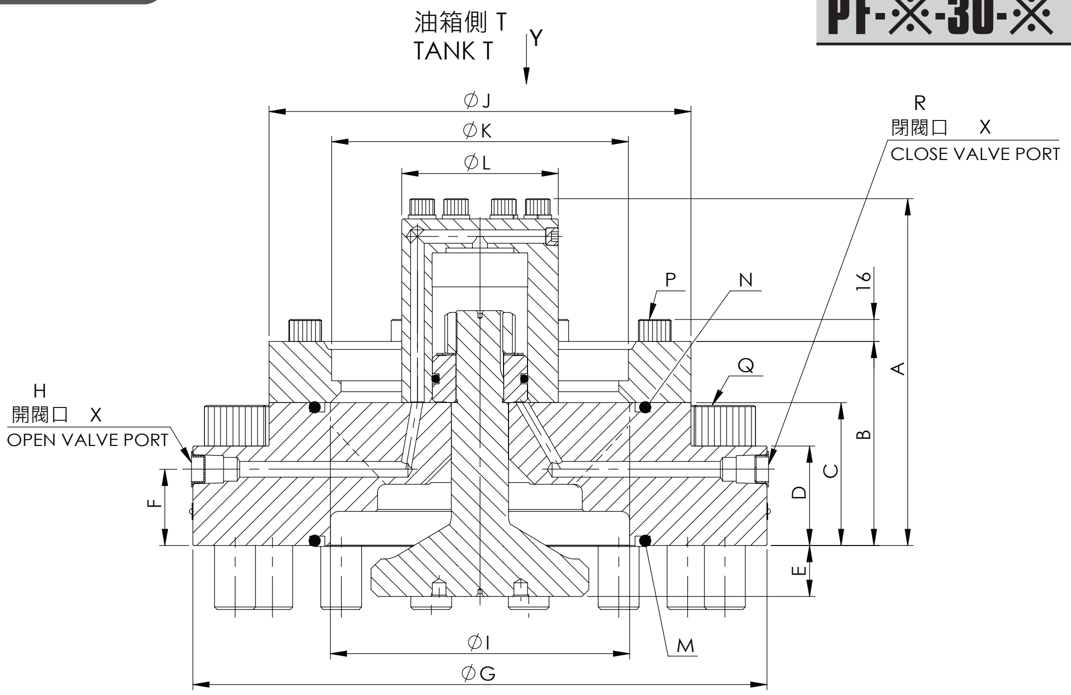
型式 MODEL	口徑 PORT	A	B	C	D	E	F	ØG	ØI	ØJ	ØK
PF-200-20-※	8"	246	150	105	73	25.5	56	422	220	310	218
PF-300-20-※	12"	191	175	120	88	29	70	500	280	394	321

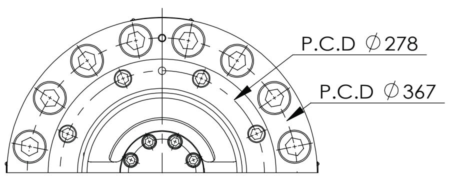
型式 MODEL	口徑 PORT	ØL	M	N	P	安裝扭矩 MOUNTING TORQUE N·m	Q	安裝扭矩 MOUNTING TORQUE N·m	X
PF-200-20-※	8"	118.5	P-235	P-235	8-M16X70	253~310	16-M30X120	1420~1735	PT 1/2"
PF-300-20-※	12"	134	P-335	P-295	10-M16X80		20-M30X130		

單位 UNIT：mm

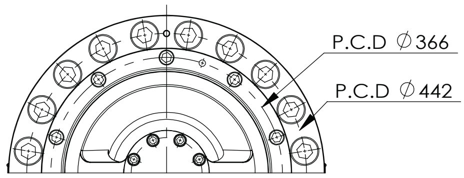
安裝尺寸 INSTALLATION DIMENSIONS

PF-※-30-※

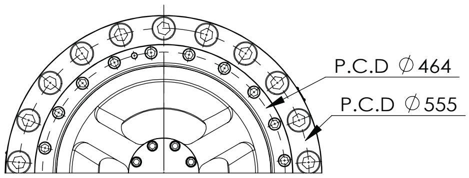




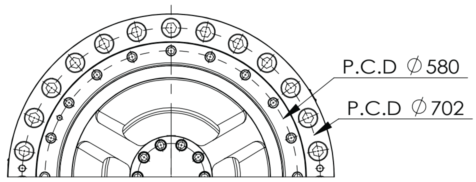
PF-200-30
Y視圖



PF-300-30
Y視圖



PF-400-30
Y視圖



PF-500-30
Y視圖

型式 MODEL	口徑 PORT	A	B	C	D	E	F	ØG	ØI	ØJ	ØK
PF-200-30-※	8"	255	150	105	73	37.5	56	422	220	310	218
PF-300-30-※	12"	278	175	120	88	45	70	500	280	394	321
PF-400-30-※	16"	303	204	140	110	68	85	615	360	494	409
PF-500-30-※	20"	444.5	293	220	170	89	120	785	455	620	511

<table>
<tr><th>型式
MODEL</th><th>口徑
PORT</th><th>ØL</th><th>M</th><th>N</th><th>P</th><th>安裝扭矩
MOUNTING TORQUE
N·m</th><th>Q</th><th>安裝扭矩
MOUNTING TORQUE
N·m</th><th>X</th></tr>
<tr><td>PF-200-30-※</td><td>8"</td><td>115</td><td>P-235</td><td>P-235</td><td>8-M16X70</td><td rowspan="4">253~310</td><td>16-M30X120</td><td rowspan="2">1420~1735</td><td rowspan="2">PT 1/2"</td></tr>
<tr><td>PF-300-30-※</td><td>12"</td><td>135.5</td><td>P-335</td><td>P-295</td><td>10-M16X80</td><td>20-M30X130</td></tr>
<tr><td>PF-400-30-※</td><td>16"</td><td>135.5</td><td>P-385</td><td>P-385</td><td>20-M16X90</td><td>21-M36X170</td><td>2475~3020</td><td rowspan="2">PT 3/4"</td></tr>
<tr><td>PF-500-30-※</td><td>20"</td><td>190</td><td>P-475</td><td>P-475</td><td>20-M16X100</td><td>27-M42X240</td><td>3965~4840</td></tr>
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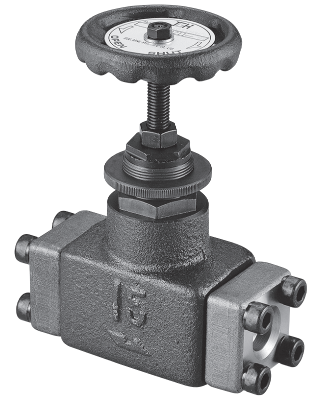
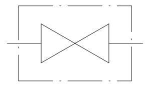
Stop Valve



閥類型符號 SYMBOL
H※-4211- ※



規格說明 SPECIFICATION

型式 MODEL			口徑 PORT	最高使用壓力 MAX. OPERATING PRESSURE kgf/cm^2	定格流量 RATED FLOW L/min
板式安裝 SUB-PLATE MOUNTING	管式安裝 THREADED CONNECTIONS	法蘭安裝 FLANGED CONNECTIONS			
HG- 4211-10-23	HT- 4211-10-23	HF- 4211-10-23	3/8"	315	30
-	HT- 4211-15-23	HF- 4211-15-23	1/2"		60
HG- 4211-20-23	HT- 4211-20-23	HF- 4211-20-23	3/4"		100
-	HT- 4211-25-23	HF- 4211-25-23	1"		220
HG- 4211-32-23	HT- 4211-32-23	HF- 4211-32-23	1-1/4"		280
-	-	HF- 4211-40-23	1-1/2"		500
-	-	HF- 4211-50-23	2"		800

型號說明 HOW TO ORDER

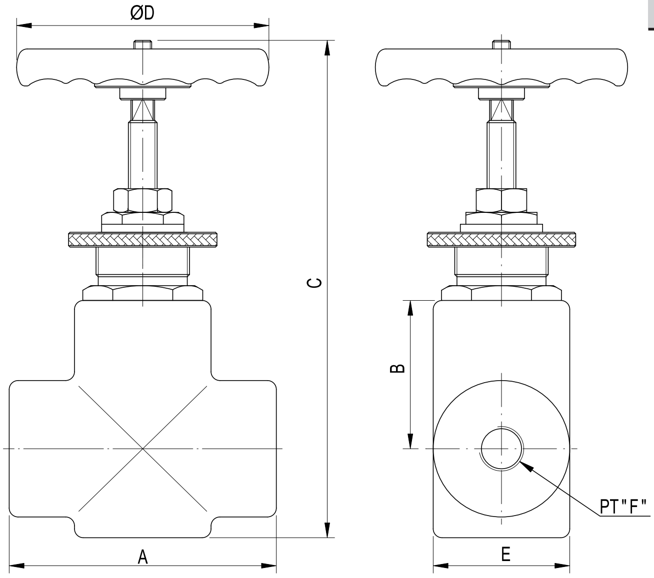
H G - 4211 - 32 - 23

- 23: 設計編號 DESIGN NUMBER
- 32: 閥規格 VALVE SIZE
- 4211: 系列編號 SERIES NUMBER
- G: 安裝型式 MOUNTING
  - G : 板式安裝 SUB-PLATE MOUNTING
  - T : 管式安裝 THREADED CONNECTIONS
  - F : 法蘭安裝 FLANGED CONNECTIONS
- H: 系列編號 SERIES NUMBER

單位 UNIT：mm

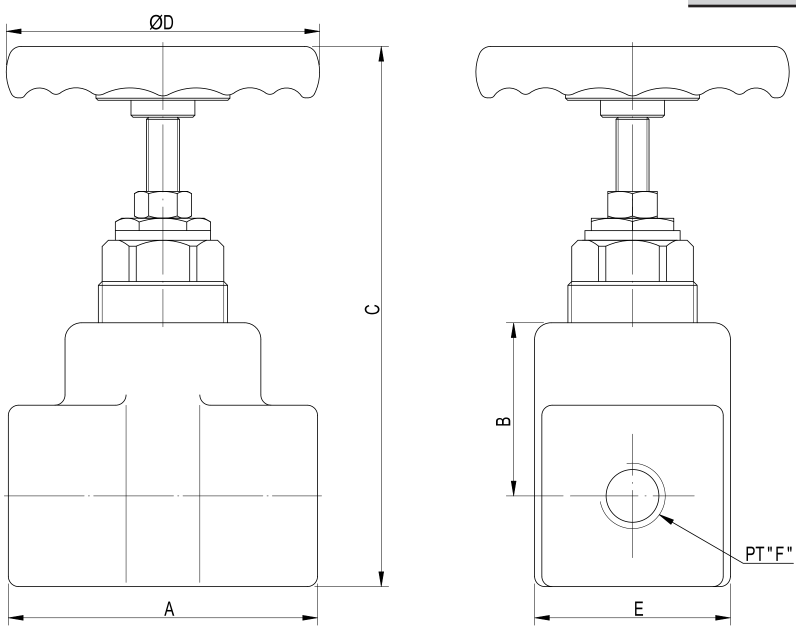
安裝尺寸 INSTALLATION DIMENSIONS

HT-4211-10~20



型式 MODEL	A	B	C	D	E	F	重量 WEIGHT kg
HT- 4211-10	90	50	167.5	85	46	3/8"	2.1
HT- 4211-15	90	64	195.5	130	60	1/2"	3.9
HT- 4211-20	100	75	209	130	60	3/4"	4.8

HT-4211-25~32

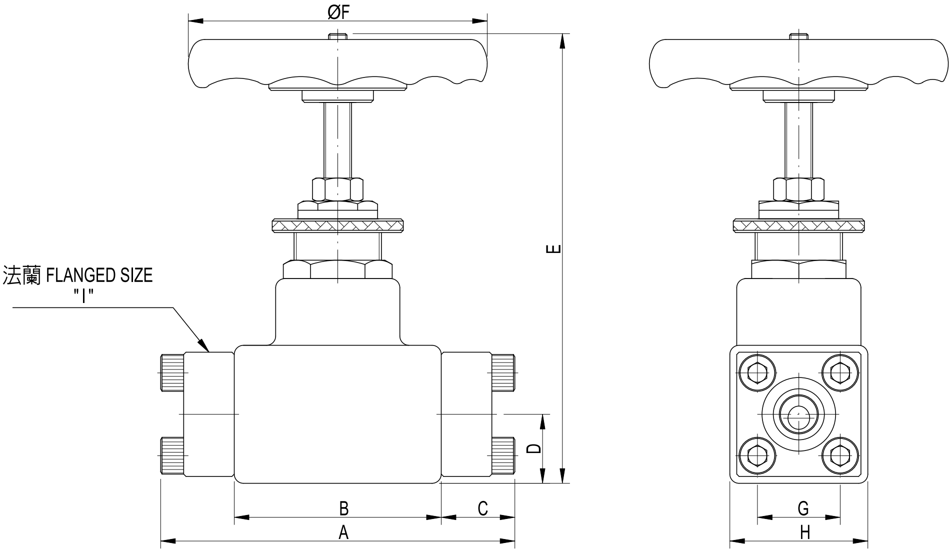


型式 MODEL	A	B	C	D	E	F	重量 WEIGHT kg
HT- 4211-25	135	78.5	228.5	130	92	1"	8.4
HT- 4211-32	150	84	263	152	95	1-1/4"	11.2

單位 UNIT：mm

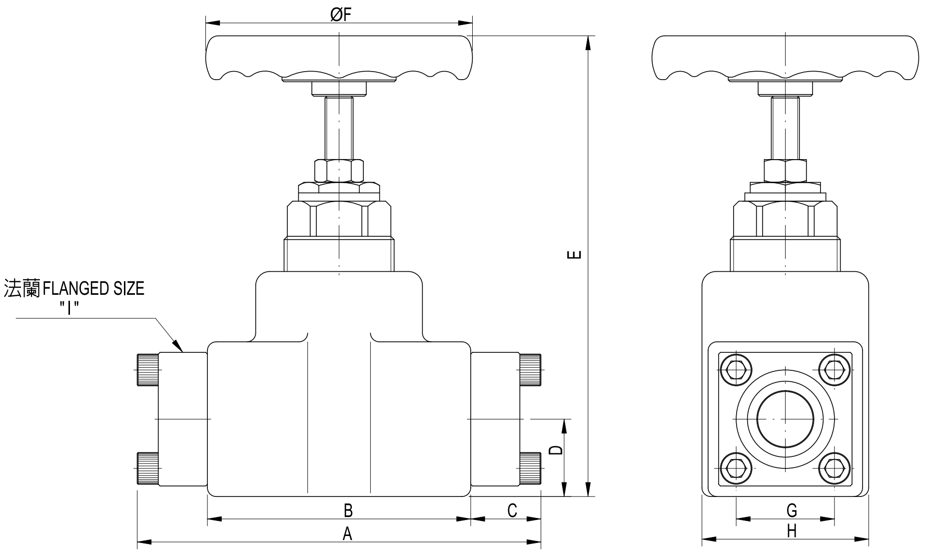
安裝尺寸 INSTALLATION DIMENSIONS

HF-4211-10~20



型式 MODEL	A	B	C	D	E	F	G	H	I	重量 WEIGHT kg
HF- 4211-10	124	60	22	32	167.5	85	36	60	SSA15	4.2
HF- 4211-15	154	90	22	30	195.5	130	36	60	SSA15	4.5
HF- 4211-20	164	100	22	30	209	130	40	60	SSA20	5.7

HF-4211-25~50

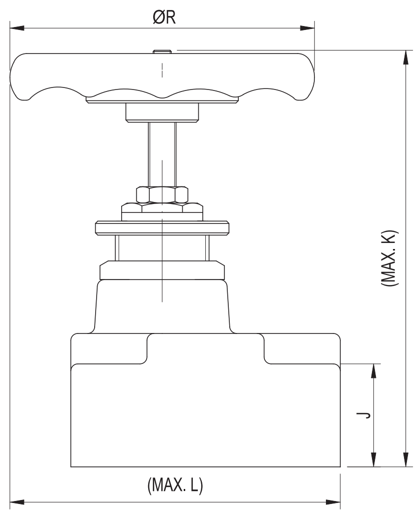


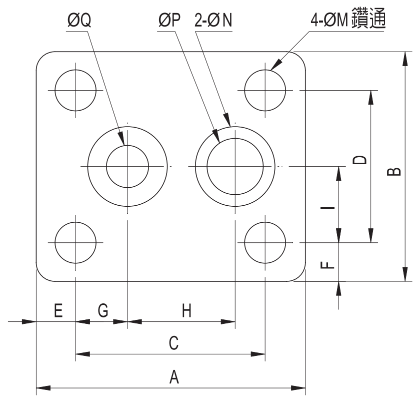
型式 MODEL	A	B	C	D	E	F	G	H	I	重量 WEIGHT kg
HF- 4211-25	215	135	28	38.5	228.5	130	48	92	SSA25	11
HF- 4211-32	230	150	28	44	263	152	56	95	SSA32	13.7
HF- 4211-40	264	160	36	48	284	190	65	117	SSA40	21.5
HF- 4211-50	279	175	33	58	332	190	73	131	SSA50	29.2

單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

HG-4211-10, 20. 32

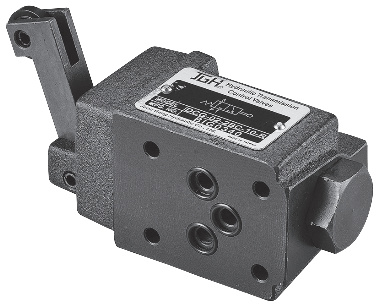




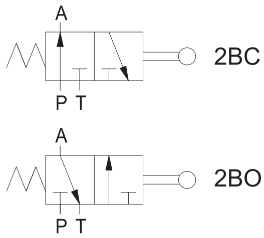
型式 MODEL	A	B	C	D	E	F	G	H	I	J
HG- 4211-10	(88)	(73)	65	50	(14.5)	(11.5)	18.5	28	25	(34)
HG- 4211-20	(115)	(98)	81	65	(16.5)	(16.8)	22.2	46	32.5	(44)
HG- 4211-32	(127)	(127)	92	92	(17.5)	(17.5)	20.6	50.8	46	(71)

型式 MODEL	K	L	M	N	P	Q	R	安裝螺絲 SOC HOL CAP SCREW	安裝扭矩 MOUNTING TORQUE N·m	重量 WEIGHT kg
HG- 4211-10	172.9	130	9	22	16	16	85	4-M8x45L	31~38	2.4
HG- 4211-20	192.7	141	17.5	34	24	18	130	4-M16x65L	253~310	5.4
HG- 4211-32	261	152	21.5	45	30	30	152	4-M20x100L	493~603	13.5

Cam Operated Directional Valve



閥類型符號 SYMBOL
DCG-02-※-10-※



規格說明 SPECIFICATION

型式 MODEL	最高使用壓力 MAX. OPERATING PRESSURE kgf/cm²	最大容許背壓 MAX. BACK PRESSURE kgf/cm²	最大流量 MAX. FLOW L/min	重量 WEIGHT kg
DCG-02-※-10-※	210	70	30	1.4

型號說明 HOW TO ORDER

DC G - 02 - 2BC - 10 - R

- **R** — 輪轉方向 RELLER POSITION (O型環固定面為基準)
  R : 左側 LEFT **S :** 右側 RIGHT
  Y : 上側 UPSIDE
- **10** — 設計編號 DESIGN NUMBER
- **2BC** — 閥型式 VALVE TYPE
  2BC : 常態P通A (壓桿在B側) 切換A通T
  USED TO FROM P TUNG A,
  (PRESS POLE IN B SIDE) ALT A TUNG T.
  2BO : 常態A通T (壓桿在B側) 切換P通A
  USED TO FROM A TUNG T,
  (PRESS POLE IN B SIDE) ALT P TUNG A.
- **02** — 閥規格 VALVE SIZE
  02 : 20 L/min
- **G** — 安裝型式 MOUNTING
  G : 板式安裝 SUB-PLATE MOUNTING
- **DC** — 系列編號 SERIES NUMBER

附屬品 ATTACHMENT

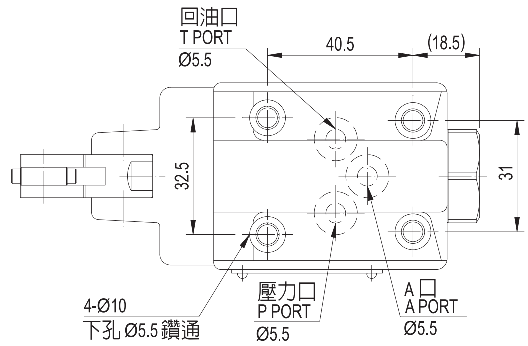
型式 MODEL	安裝螺絲 SOC HOL CAP SCREW	安裝扭矩 MOUNTING TORQUE N·m
DCG-02-※-10-※	M5 X 45L.....4pcs	8~9

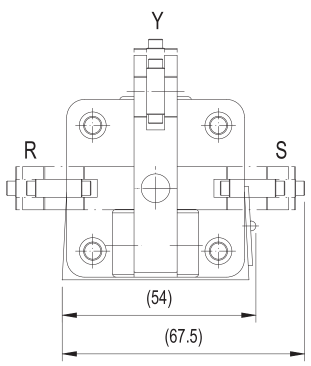
單位 UNIT：mm

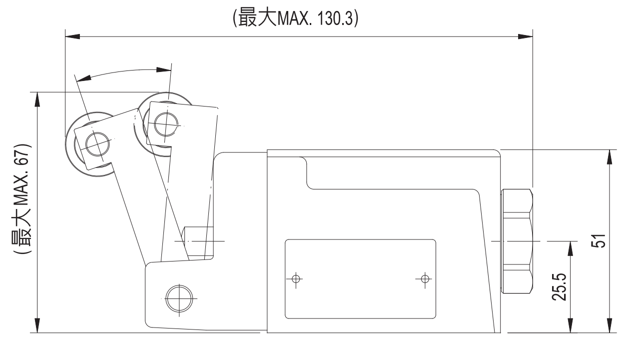
安裝尺寸 INSTALLATION DIMENSIONS

DCG-02-※-10

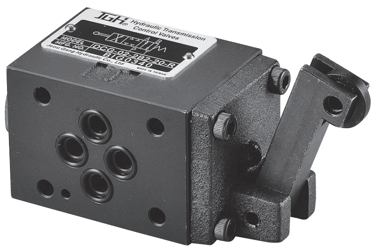
通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 02 - 1
(詳見 E01-09 Page E01-09)



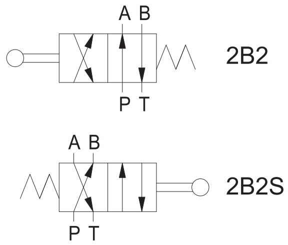




Cam Operated Directional Valve



閥類型符號 SYMBOL
DCG-02-※-20-※



規格說明 SPECIFICATION

型式 MODEL	最高使用壓力 MAX. OPERATING PRESSURE kgf/cm²	最大容許背壓 MAX. BACK PRESSURE kgf/cm²	最大流量 MAX. FLOW L/min	重量 WEIGHT kg
DCG-02-※-20-※	210	70	30	1.4

型號說明 HOW TO ORDER

DC G - 02 - 2B2 - 20 - R

- **DC** — 系列編號 SERIES NUMBER
- **G** — 安裝型式 MOUNTING
  G : 板式安裝 SUB-PLATE MOUNTING
- **02** — 閥規格 VALVE SIZE
  02 : 20 L/min
- **2B2** — 閥型式 VALVE TYPE
  2B2 : 常態P通A，B通T (壓桿在A側) 切換P通B，A通T
  USED TO FROM P TUNG A, B TUNG T
  (PRESS POLE IN A SIDE) ALT P TUNG B, A TUNG T.
  2B2S : 常態P通B，A通T (壓桿在B側) 切換P通A，B通T
  USED TO FROM P TUNG B, A TUNG T
  (PRESS POLE IN B SIDE) ALT P TUNG A, B TUNG T.
- **20** — 設計編號 DESIGN NUMBER
- **R** — 輪轉方向 RELLER POSITION (O型環固定面為基準)
  R : 左側 LEFT **S :** 右側 RIGHT
  Y : 上側 UPSIDE

附屬品 ATTACHMENT

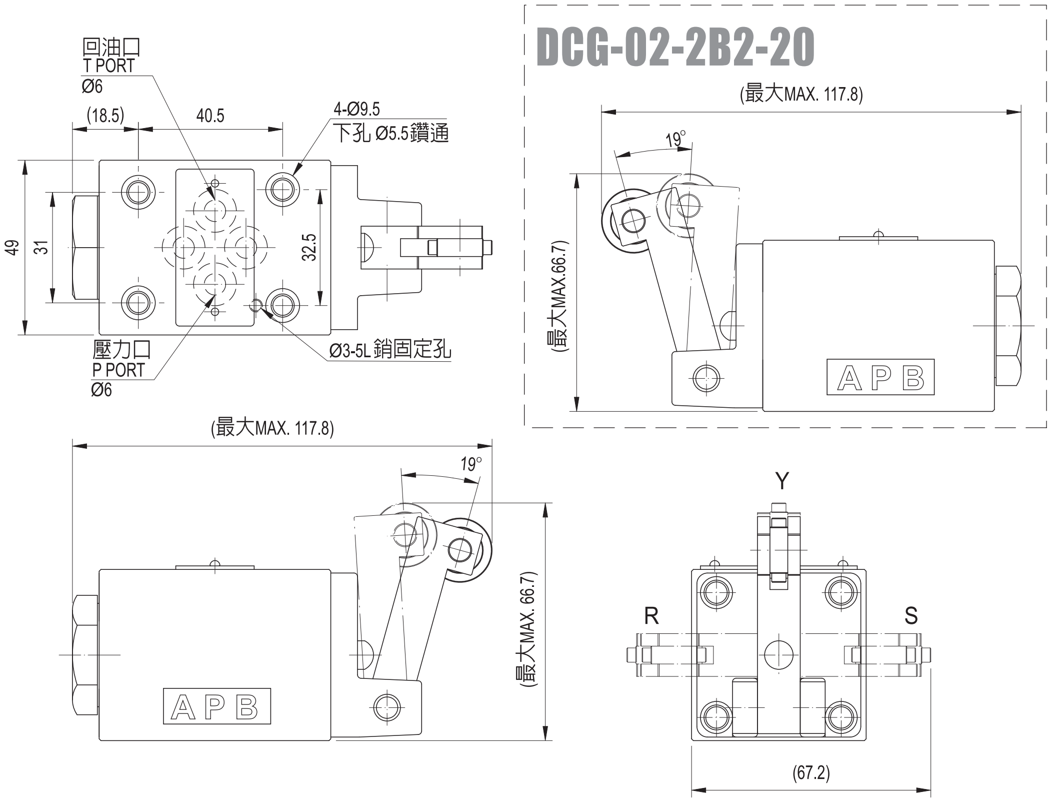
型式 MODEL	安裝螺絲 SOC HOL CAP SCREW	安裝扭矩 MOUNTING TORQUE N·m
DCG-02-※-20-※	M5 X 50L.....4pcs	8~9

單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

DCG-02-2B2S-20

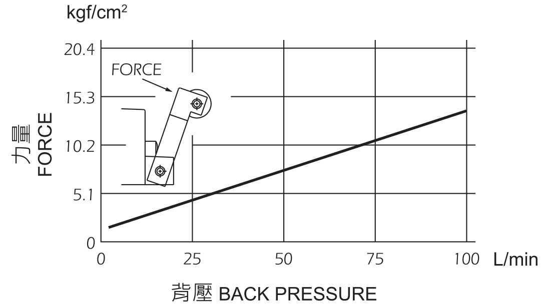
通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 02 - 1
(詳見 E01-09 Page E01-09)



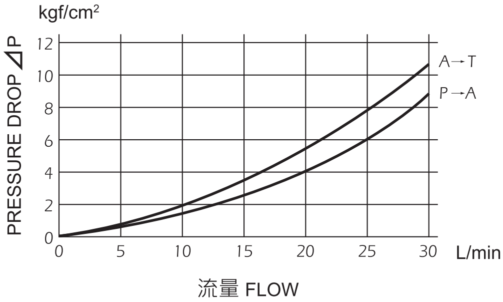
測試條件 PERFORMANCE CURVES

測試油黏度 TEST FLUID VISCOSITY ： 35cSt　　測試油溫度 TEST TEMPERATURE ： 50℃

● DCG-02-2B※-※



● DCG-02-2B※-※



Manually Operated Directional Valve

規格說明 SPECIFICATION

型式 MODEL		最高使用壓力 MAX. OPERATING PRESSURE kgf/cm²	容許背壓 BACK PRESSURE kgf/cm²	最大流量 MAX. FLOW L/min	重量 WEIGHT kg	
板式安裝 SUB-PLATE MOUNTING	管式安裝 THREADED CONNECTIONS					
DMG-03-※	DMT-03-※	250	100	50	4	4.5
	DMT-04-※		140	100		7.0
	DMT-06-※			180		11.5
	DMT-10-※			300		22.9

型號說明 HOW TO ORDER

DM T - 03 - 3 - C 6

- **6**: 主軸型式，見C11-03頁 SPOOL TYPE (AS C11-03)
- **C**: 中立定位 CENTERED LOOKING
  - **C :** 彈簧定位 SPRING LOCKING
  - **D :** 鋼珠定位 BALL LOCKING
- **3**: 閥位數 NUMBER OF VALVE POSITION
  - **2 :** 2 POSITION
  - **3 :** 3 POSITION
- **03**: 閥規格 VALVE SIZE
  - **03 :** 3/8" **04 :** 1/2"
  - **06 :** 3/4" **10 :** 1-1/4"
- **T**: 安裝型式 MOUNTING
  - **G :** 板式安裝 SUB-PLATE MOUNTING
  - **T :** 管式安裝 THREADED CONNECTIONS
- **DM**: 系列編號 SERIES NUMBER

附屬品 ATTACHMENT

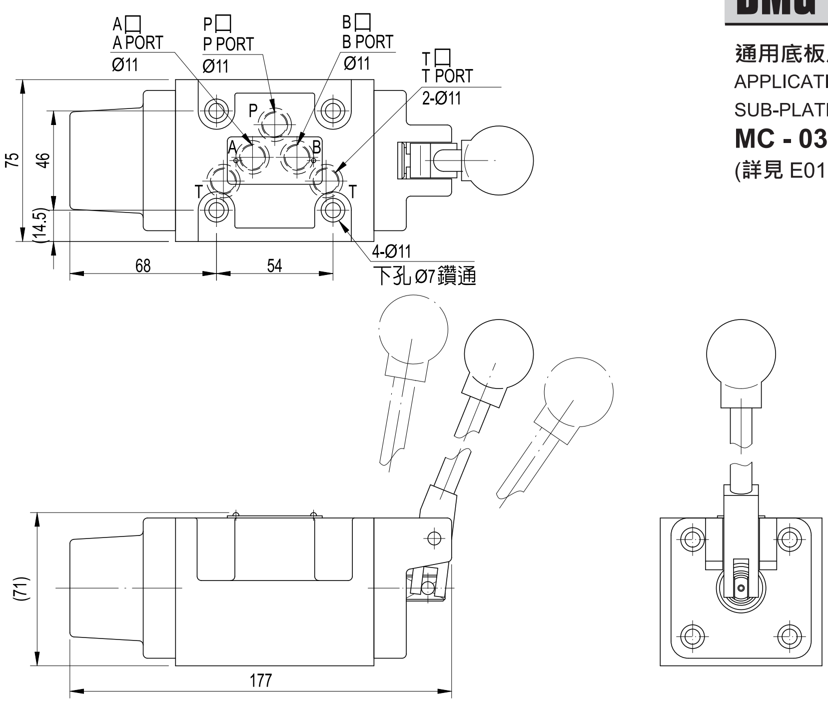
型式 MODEL	安裝螺絲 SOC HOL CAP SCREW	安裝扭矩 MOUNTING TORQUE N·m
DMG-03	M6 X 45L.....4pcs	12~15

單位 UNIT：mm

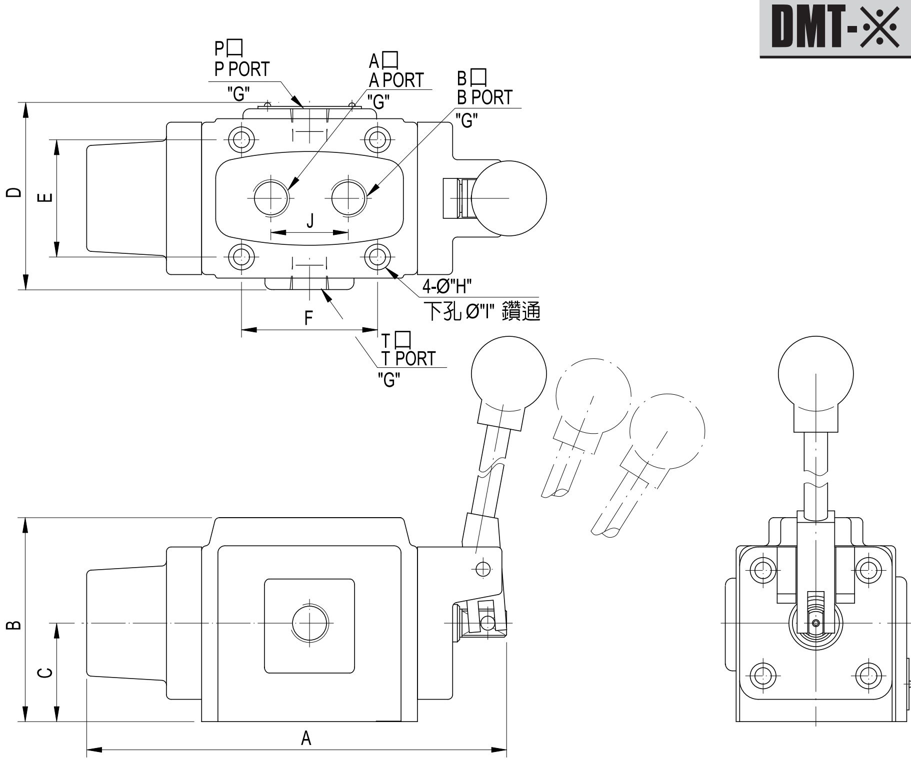
安裝尺寸 INSTALLATION DIMENSIONS

DMG-03-※

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 03 - 1
(詳見 E01-09 Page E01-09)



DMT-※



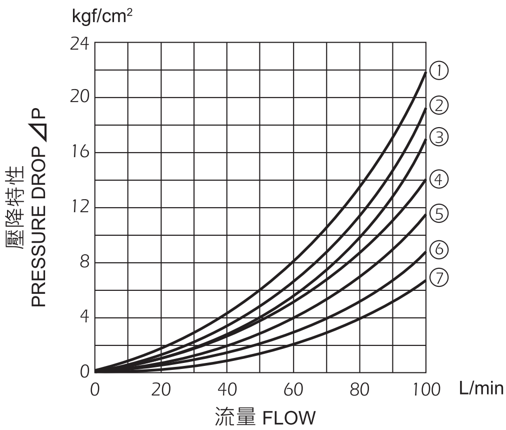
型式 MODEL	A	B	C	D	E	F	G	H	I	J
DMT-03	179	84	40	77	50	58	PT 3/8"	11	7	33
DMT-04	203	94	42	111	85	80	PT 1/2"	14	9	53
DMT-06	261	99	41	127	98	100	PT 3/4"	18	11	66
DMT-10	320	124	50	162	125	134	PT 1-1/4"	20	13	80

測試條件 PERFORMANCE CURVES

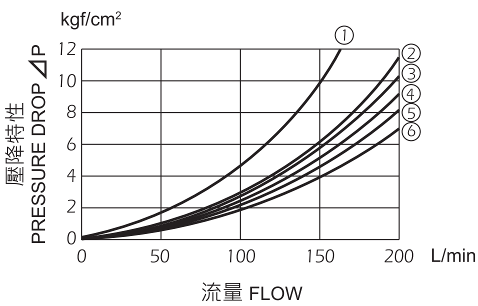
測試油黏度 TEST FLUID VISCOSITY ： 35cSt　　測試油溫度 TEST TEMPERATURE ： 50℃

壓力降特性 PRESSURE DROP

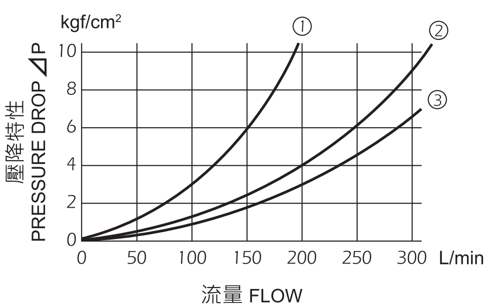
● DMG, DMT-03



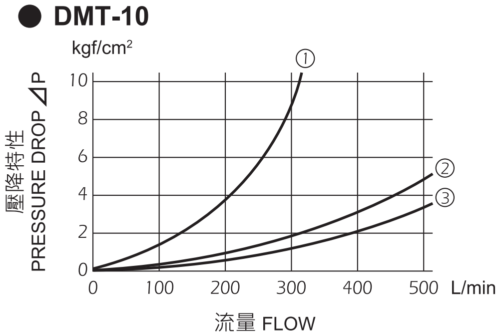
● DMT-04



● DMT-06



● DMT-10



特性圖 PERFORMANCE CHART

● DMG, DMT-03

滑軸型式 SPOOL TYPE	壓力降曲線代碼 PRESSURE DROP LINE NUMBER				
	P→A	B→T	P→B	A→T	P→T
C2	④	⑤	④	⑤	-
C3	⑥	⑥	⑥	⑥	⑥
C4	④	⑦	④	⑦	-
C5	⑥	⑤	④	⑥	②
C6	⑤	⑤	⑤	⑤	①
C60	⑤	⑤	⑤	⑤	①

● DMT-04

滑軸型式 SPOOL TYPE	壓力降曲線代碼 PRESSURE DROP LINE NUMBER				
	P→A	B→T	P→B	A→T	P→T
C2	⑤	②	⑤	④	-
C3	⑥	③	⑥	⑤	③
C4	⑤	④	⑤	⑤	-
C40	⑤	④	⑤	⑤	-
C5	⑤	②	④	⑤	①
C6	②	③	④	②	①
C60	②	③	④	②	①

● DMT-06

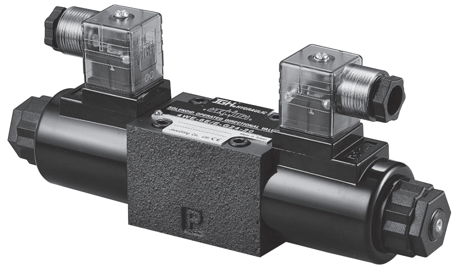
滑軸型式 SPOOL TYPE	壓力降曲線代碼 PRESSURE DROP LINE NUMBER				
	P→A	B→T	P→B	A→T	P→T
C2	②	②	②	②	-
C3	③	②	③	②	②
C4	②	③	②	②	-
C5	③	②	②	②	-
C6	③	②	③	②	①
C60	③	②	③	②	①

● DMT-10

滑軸型式 SPOOL TYPE	壓力降曲線代碼 PRESSURE DROP LINE NUMBER				
	P→A	B→T	P→B	A→T	P→T
C2	③	②	③	②	-
C3	③	②	③	②	②
C4	③	③	③	②	-
C5	③	②	③	②	-
C6	③	③	③	③	①
C60	③	③	③	③	①

Solenoid Operated Directional Valve

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
- 附可拆卸濕式交/直流線圈及電磁鐵
- 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 pattem 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

4 WE - 6 D / 0 E - W220/50 - 20

接線方式 WIRING
10 : 帶燈的集中連接盒 WITH LAMP CENTRAL CONNECTION
20 : 插入式接頭帶密封套 PLUG-IN CONNECTION

線圈電壓 COIL VOLTAGE
G12 : 12V DC　**G24 :** 24V DC
W110 : 110/50/60Hz　**W220 :** 220/50/60Hz

E : 高性能電磁鐵 HIGH POWER SOLENOID
附可拆卸濕式線圈及電磁鐵
WET PIN (OIL IMMERSED) WITH REMOVABLE COIL

無代號：彈簧復位 **NO CODE :** SPRING RETURN
O : 無彈簧復位 WITHOUT SPRING RETURN
OF : 無彈簧復位，帶定位機構
WITHOUT SPRING RETURN BUT WITH DETENT

主軸型式，見C07-03**頁**
SPOOL TYPE (AS C07-03)

閥規格 VALVE SIZE
6 : 通徑6mm SIZE 6mm

閥類型 VALVE TYPE
WE : 方向閥 DIRECTIONAL VALVE

工作口數量 NUMBER OF MAIN PORTS
3 : 三個工作口 3 SERVICE PORTS
4 : 四個工作口 4 SERVICE PORTS

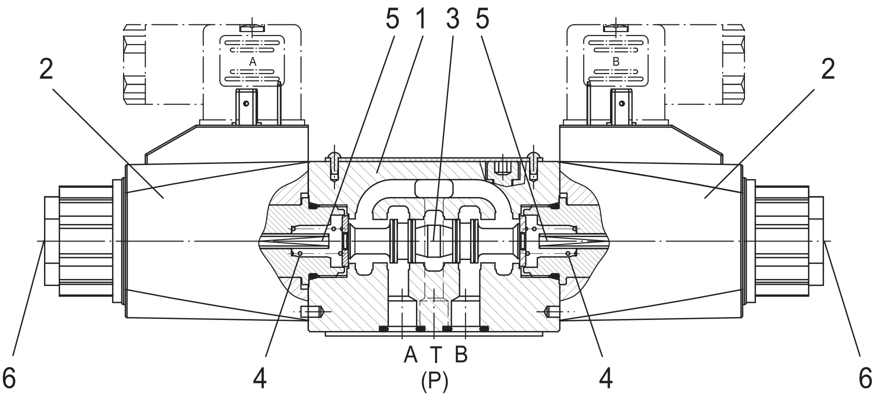
功能說明 FUNCTIONAL DESCRIPTION

- WE型方向控制閥是電磁鐵操作的換向滑閥，用以控制油液的開啟、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)的力量經過推杆(5)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。
- 可選的手動應急操作(6)在電磁鐵不通電的情況下可控制閥芯(3)運動。
- 型號4WE 6../OF... (脈沖閥，僅限於符號A,C,D)。
- 這一型號包括帶二個切換位置、二個電磁鐵和一個定位機構的方向控制閥。兩個切換位分別固定，因此沒有必要使電磁鐵一直通電。

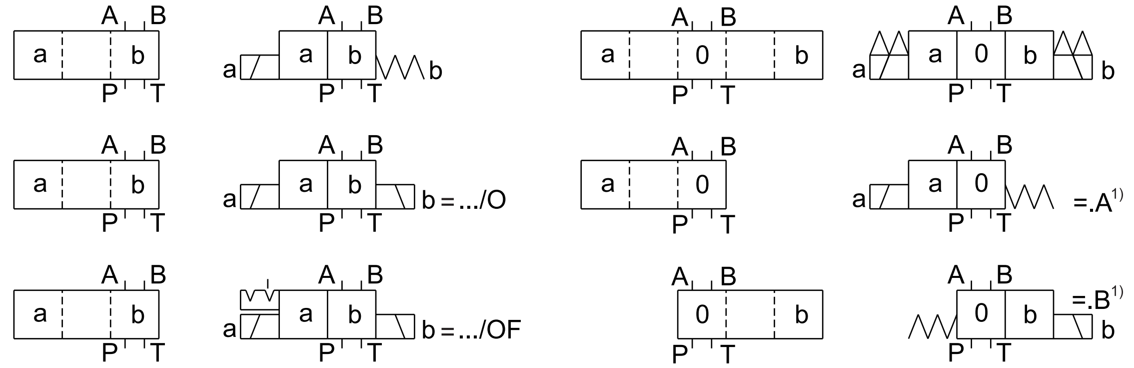
- Type WE directional control valve are solenoid operated directional spool valve. They control the start, stop and direction of flow.
- Essentially the directional control valve consist of housing (1), one or two solenoids (2), the control spool (3), and one or two retum springs (4).
- In the de-energised condition the control spool (3) is held in the neutral or initial position by means of retum springs (4) (except for impulse spool). The control spool (3) is operated by wet pin solenoids (2).
- To guarantee satisfactory operation care shoud 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 retumed to its neutral position by means of retum springs (4).
- An optional hand emergercy (6), allows movement of the control spool (3) without energising the solenoid.
- Type 4WE 6../OF... (impulse spool, only for symbols A, Cand D)
  This design incorporates directional control valve with 2 switching positions, 2 solenoids and a detent. Both switching positions are thus fixed altemately and there is no need to continually energise the solenoid.

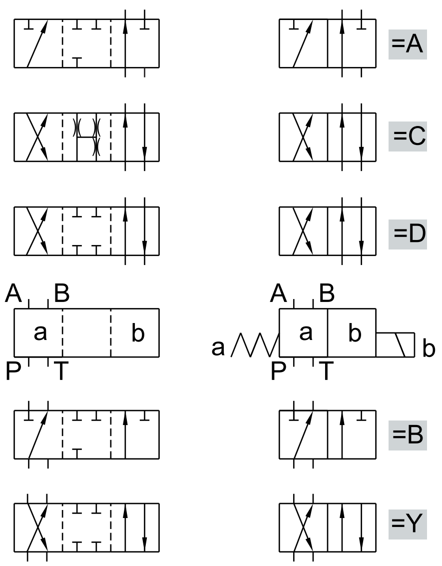
剖 面 圖 SECTION

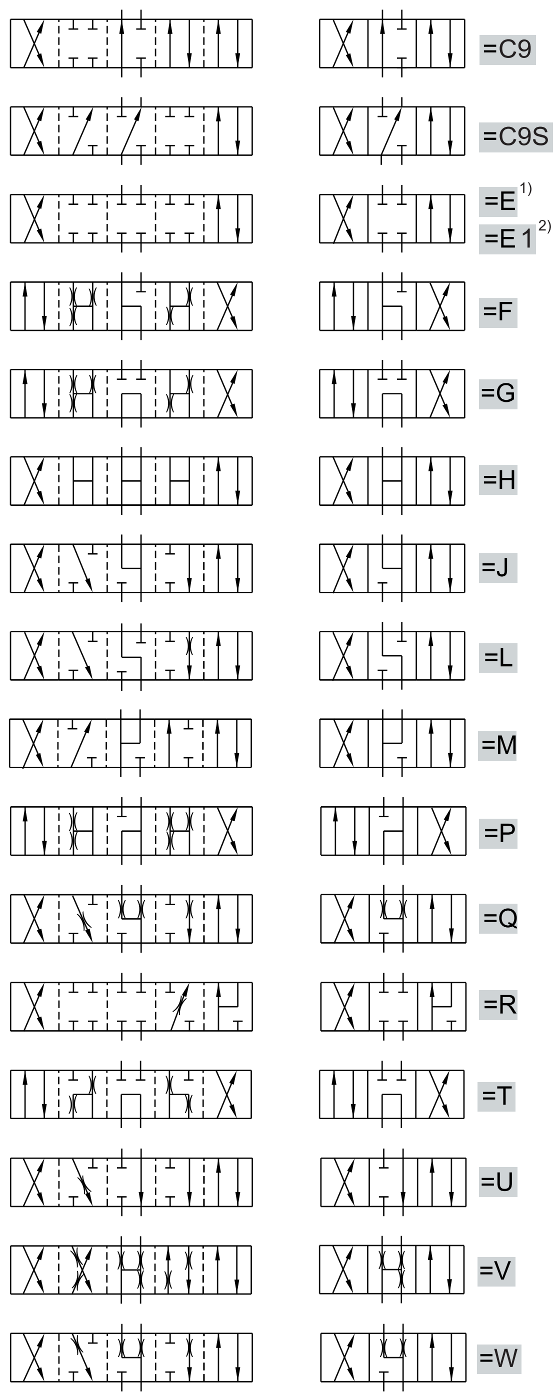
型號：4WE-6(AC)　　　TYPE:4WE-6(AC)



閥類型符號 STMBOL







1)範例: **Example:**

- ▶▶ 符號E · 閥芯位置"a"訂貨代碼..EA ..
  Symbol E with spool position "a"
  ordering code ..EA..
- ▶▶ 符號E · 閥芯位置"b"訂貨代碼..EB ..
  Symbol E with spool position "b"
  ordering code ..EB..

2) 符號E1：P → A/B預開口。
Symbol E1：P → A/B pre-opening

注意！ Notices！

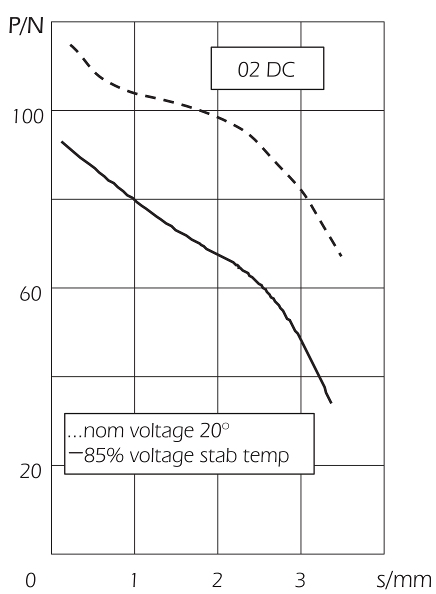
▶ 符合DIN ISO 1219-1標準。
液壓中間位置用虛線表示。
Representation according to DIN ISO 1219-1.
Hydraulic interim positions are shown by dashes.

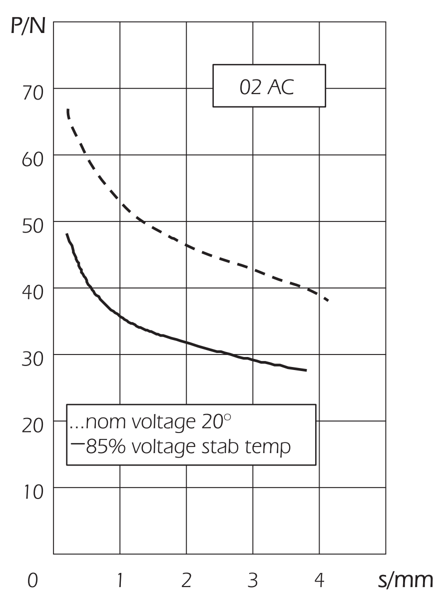
技術參數 TECHNICAL DATA

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 coil *m* kg	1.6	1.7
	帶2個電磁鐵閥 Two coils *m* kg	2.1	2.1
液壓數據 Hydraulic			
最高工作壓力 Operating pressure	油口A, B, P Port A, B, P *p* kgf/cm^2	至350 350	
	油口T Port T *p* kgf/cm^2	至160 如果工作壓力超過油箱允許壓力，對於閥芯A和B的閥門，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 pemitted tank pressure.	
最大流量 Flow, max. *qv* L/min		至60 up to 60	
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； 快速生物解降油液按VDMA 24 568 HEPG (聚乙二醇)；HEES (合成脂)；其他油液按要求 Mineral oil (HL, HLP) to DIN 51 524; Fast bil-degradable pressure fluids to VDMA 24 568; HEPG (polyglycol); HEES (synthetic ester); other fluids on request.	
油液 Pressure fluid *t* °C 溫度變化範圍 Temperature range		-30至+80 （帶丁腈橡膠密封） -30 to +80 (NBR seals)	
		-20至+80 （帶氟橡膠密封） -20 to +80 (FPM seals)	
粘度範圍 Viscosity range *v* mm^2/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NAS1638第9級。 因而我們推薦過濾器最小過濾精度 β 10≧75 Maximum permissible degree of contamination of the fluid is to NAS 1638 class 9. We, therefore, recommend a filter with a minmum retention rate of β 10≧75	

電器數據 Electrial

電壓類型 Type of voltage	直流 DC voltage	交流 AC voltage
可用電壓 Type of voltage *t* °C (交流電磁鐵訂貨細節見下) (For ordering details of AC/DC solenoid see below)	12.24	110, 220V/50Hz 110, 220V/60Hz
額定吸力 Rated force (N)	50	30
額定行程 Rated stroke (mm)	3	3
全行程 Total stroke (mm)	6.5	≧6.5
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)	32	≦66
消耗功率 Power consumption (W)	32	≦28
工作壽命 Working life (t)	10×10^6	10×10^7



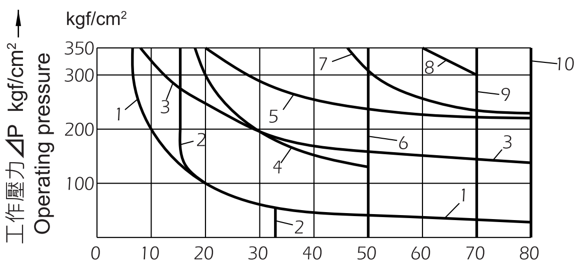


切換性能極限 (在 v =41 mm2/s and t=50°C 時測得)
Switching power limits (measured at v =41 mm2/s and t=50°C)

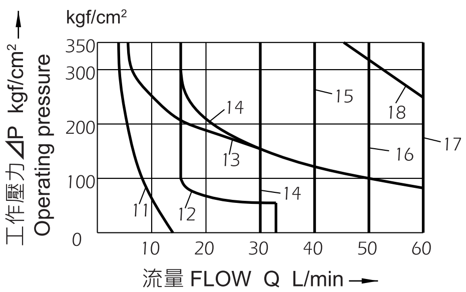
⚠注意！
所給的工作極限僅用於兩個方向流動的情況（如同時有B至T回流的P至A流向）。
在單向流動時（如從P至A，B口被堵塞），由於閥內的流動力量，允許的切換極限可能降低。

⚠**Attention**
The switching power limits given are for applications featuring two flow directions (e.g. from P to A and simultaneous retum flow from B to T). Due to the flow forces active within the valves the pemitted power limit for directional valves may be considerably less where there is only one direction of flow (e.g. from P to A and port B blocked)! (Please consult us for applications of this kind.)

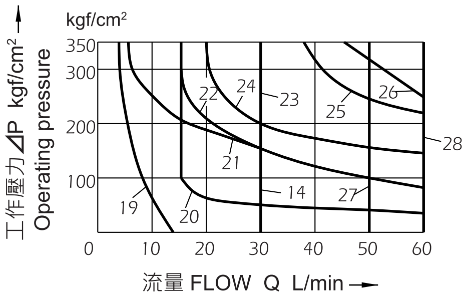
直流電磁鐵 示例：G24:24V DC solenoid e.g. G24:24v		交流電磁鐵 示例：W240:240V, 60Hz（見以下） AC solenoid e.g. W240:240V,60Hz (see below)		交流電磁鐵 示例：W220:220V, 60Hz（見以下） AC solenoid e.g. W220:220V,60Hz (see below)	
曲線 Curve	符號 Symbol	曲線 Curve	符號 Symbol	曲線 Curve	符號 Symbol
1	A, B	11	A, B	19	A, B
2	V	12	V	20	V
3	A, B	13	A, B	21	A, B
4	F, P	14	F, P	22	F, P
5	J	15	G, T	23	G, T
6	G, H, T	16	H	24	J, L, U
7	A/O, A/OF, L, U	17	A/O, A/OF, C/O, C/OF D/O, D/OF, E, J, L M, Q, R, U, W	25	A/O, A/OF, Q, W
8	C, D, Y			26	C, D, Y
9	M			27	H
10	E, R, C/O, C/OF D/O, D/OF, Q, W	18	C, D, Y	28	C/O, C/OF, D/O, D/OF E, M, R



直流電磁鐵
曲線1至10
DC solenoid
Curves 1 to 10



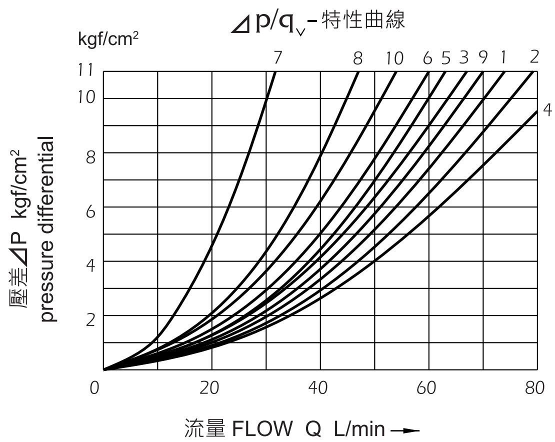
交流電磁鐵 **AC solenoid**		
曲線 Curve	電磁鐵對照 Solenoid Cross reference	
11 to 18	**W110**	110V, 50Hz
	W240	220V, 50Hz



交流電磁鐵 **AC solenoid**		
曲線 Curve	電磁鐵對照 Solenoid Cross reference	
19 to 28	**W110**	110V, 60Hz
	W220	220V, 60Hz

特性曲線 (在 v =41 mm²/s 及t=50°C時測得)

Characteristic Curves (measured at v =41 mm2/s and t=50°C)



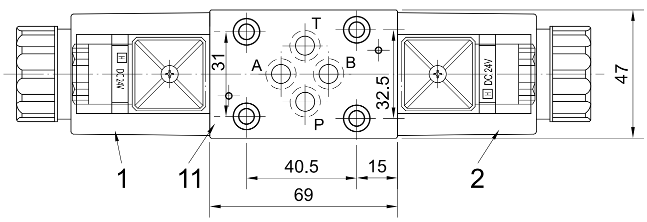
符號 Symbol	流動方向 Flow direction			
	P→A	P→B	A→T	B→T
A, B	3	3	-	-
C	1	1	3	1
D, Y	5	5	3	3
E	3	3	1	1
F	1	3	1	1
T	10	10	9	9
H	2	4	2	2
J, Q	1	1	2	1
L	3	3	4	9
M	2	4	3	3
P	3	1	1	1
R	5	5	4	-
V	1	2	1	1
W	1	1	2	2
U	3	3	9	4
G	6	6	9	9

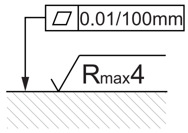
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

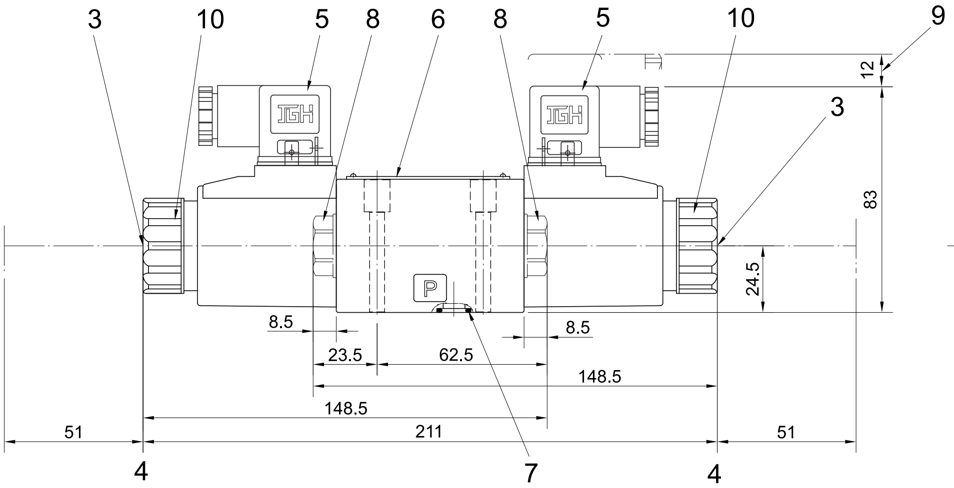
直流電磁閥 VALVE WITH DC SOLENOIDS

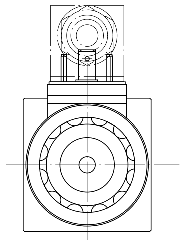
通用底板尺寸
APPLICATIVE SUB-PLATE DIMENSIONS
MC - 02 - 1
(詳見 E01-09 Page E01-09)





要求配合件部表面精加工
Required surtace finish of maing piece





集中連接的插頭排列方式:
帶1個電磁鐵:
電磁鐵在終端1和2
地線接終端⊜PE
帶2個電磁鐵:
電磁鐵"a"在終端1和2
電磁鐵"b"在終端3和4
地線接終端⊜PE

Pin allocation for central connections:
with 1 solenoid:
solenoid always on teminals 1 and 2
Earth on teminal ⊜PE
with 2 solenoid:
solenoid "a" on teminals 1 and 2
solenoid "b" on teminals 3 and 4
Earth on teminal ⊜PE

1 電磁鐵"a"
2 電磁鐵"b"
3 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！
4 取下電磁鐵所需空間
5 插入式接頭按 DIN 43650
6 鋁牌
7 O-形圈 AS-568-012
8 用於1個電磁鐵閥的塞頭
9 取下插入式接頭所需空間
10 固定螺母安裝扭矩 4 N·m
11 安裝面按 DIN 24 340 A型
ISO 4401 和 CETOP-RP 121 H
按數據活頁 RC45 052
閥固定螺钉M5x45 DIN 912-10.9
安裝扭矩 8~9 N·m

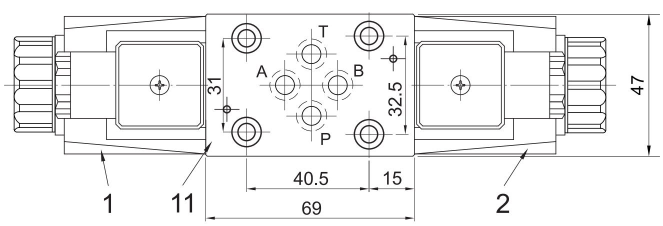
1 Solenoid "a"
2 Solenoid "b"
3 Hand emergency (Standard)
-The hand emergency can only be operated up to a tankpressure of approx. 50 kgf/cm²
Avoid damage to hand emergency pin hole
4 Space required to remove solenoid
5 Plug-in connector DIN 43650
6 Name plate
7 O-ring AS-568-012
8 Plug for valves with one solenoid
9 Space required to remove plug-in connector
10 Securing nut, Mounting torque 4 N·m
11 Mounting face according to DIN 24 340 type A
ISO 4401 and CETOP-RP 121H
to data sheet RE 45 052 and valve fixing screw
M5x45 DIN 912-10.9
Mounting torque 8~9 N·m

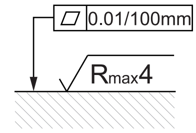
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

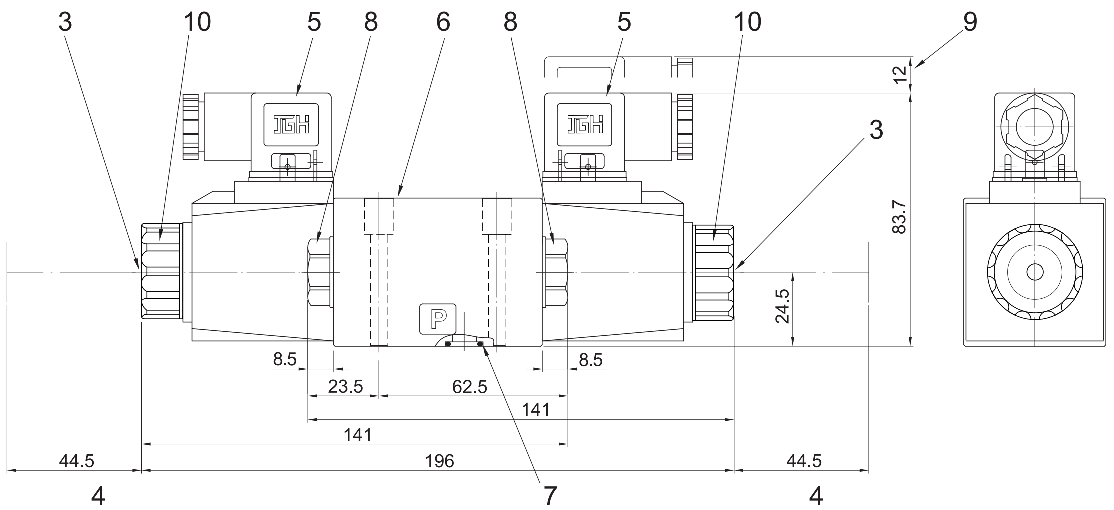
交流電磁閥 VALVE WITH AC SOLENOIDS

通用底板尺寸
APPLICATIVE SUB-PLATE DIMENSIONS
MC - 02 - 1
(詳見 E01-09 Page E01-09)





要求配合件部表面精加工
Required surtace finish of maing piece



集中連接的插頭排列方式:
帶1個電磁鐵:
電磁鐵在終端1和2
地線接終端⊜PE
帶2個電磁鐵:
電磁鐵"a"在終端1和2
電磁鐵"b"在終端3和4
地線接終端⊜PE

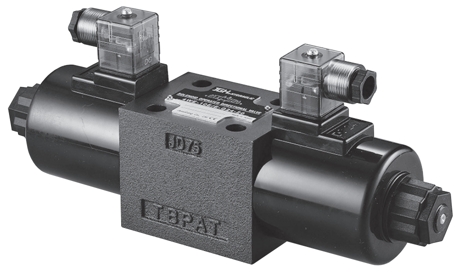
Pin allocation for central connections:
with 1 solenoid:
solenoid always on teminals 1 and 2
Earth on teminal ⊜PE
with 2 solenoid:
solenoid "a" on teminals 1 and 2
solenoid "b" on teminals 3 and 4
Earth on teminal ⊜PE

1 電磁鐵"a"
2 電磁鐵"b"
3 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！
4 取下電磁鐵所需空間
5 插入式接頭按 DIN 43650
6 鋁牌
7 O-形圈 AS-568-012
8 用於1個電磁鐵閥的塞頭
9 取下插入式接頭所需空間
10 固定螺母安裝扭矩 4 N·m
11 安裝面按 DIN 24 340 A型
ISO 4401 和 CETOP-RP 121 H
按數據活頁 RC45 052
閥固定螺钉M5x45 DIN 912-10.9
安裝扭矩 8~9 N·m

1 Solenoid "a"
2 Solenoid "b"
3 Hand emergency (Standard)
-The hand emergency can only be operated up to a tankpressure of approx. 50 kgf/cm²
Avoid damage to hand emergency pin hole
4 Space required to remove solenoid
5 Plug-in connector DIN 43650
6 Name plate
7 O-ring AS-568-012
8 Plug for valves with one solenoid
9 Space required to remove plug-in connector
10 Securing nut, Mounting torque 4 N·m
11 Mounting face according to DIN 24 340 type A
ISO 4401 and CETOP-RP 121H
to data sheet RE 45 052 and valve fixing screw
M5x45 DIN 912-10.9
Mounting torque 8~9 N·m

Solenoid Operated Directional Valve

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
- 附可拆卸濕式交/直流線圈及電磁鐵
- 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 pattem 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

4 WE - 10 D / O E - W220/50 - 20

接線方式 WIRING
10 : 帶燈的集中連接盒 WITH LAMP CENTRAL CONNECTION
20 : 插入式接頭帶密封套 PLUG-IN CONNECTION

線圈電壓 COIL VOLTAGE
G12 : 12V DC　**G24 :** 24V DC
W110 : 110/50/60Hz　**W220 :** 220/50/60Hz

E : 高性能電磁鐵 HIGH POWER SOLENOID
附可拆卸濕式線圈及電磁鐵
WET PIN (OIL IMMERSED) WITH REMOVABLE COIL

無代號 : 彈簧復位 **NO CODE :** SPRING RETURN
O : 無彈簧復位 WITHOUT SPRING RETURN
OF : 無彈簧復位，帶定位機構
WITHOUT SPRING RETURN BUT WITH DETENT

主軸型式，見C07-03**頁**
SPOOL TYPE (AS C07-03)

閥規格 VALVE SIZE
10 : 通徑10mm SIZE 10mm

閥類型 VALVE TYPE
WE : 方向閥 DIRECTIONAL VALVE

工作口數量 NUMBER OF MAIN PORTS
3 : 三個工作口 3 SERVICE PORTS
4 : 四個工作口 4 SERVICE PORTS

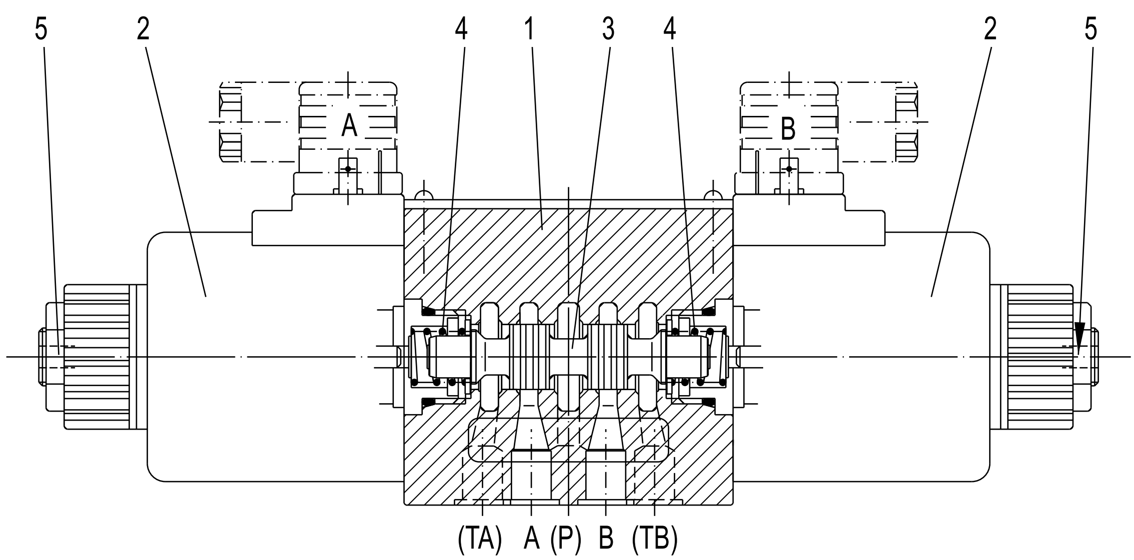
功能說明 FUNCTIONAL DESCRIPTION

- WE型方向控制閥是電磁鐵操作的換向滑閥，用以控制油液的開啟、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 valve are solenoid operated directional spool valve. They control the start, stop and direction of flow.
- Essentially the directional control valve consist of housing (1), one or two solenoids (2), the control spool (3), and one or two retum springs (4).
- In the de-energised condition the control spool (3) is held in the neutral or initial position by means of retum springs (4) (except for impulse spool). The control spool (3) is operated by wet pin solenoids (2).
- To guarantee satisfactory operation care shoud 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 retumed to its neutral position by means of retum springs (4).
- An optional hand emergercy (5), allows movement of the control spool (3) without energising the solenoid.

剖 面 圖 SECTION

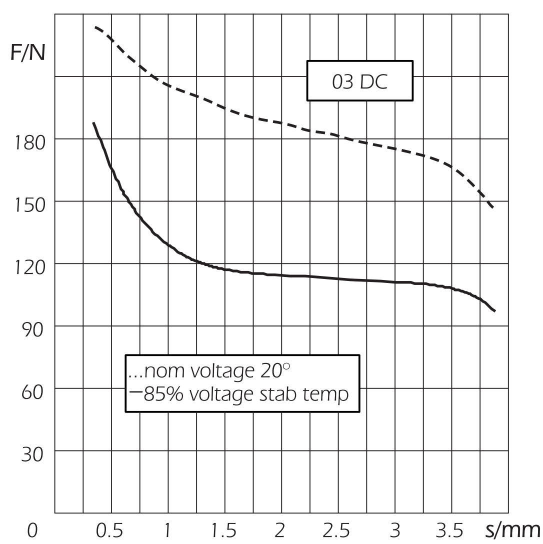
型號：4WE-10(DC) TYPE:4WE-10(DC)

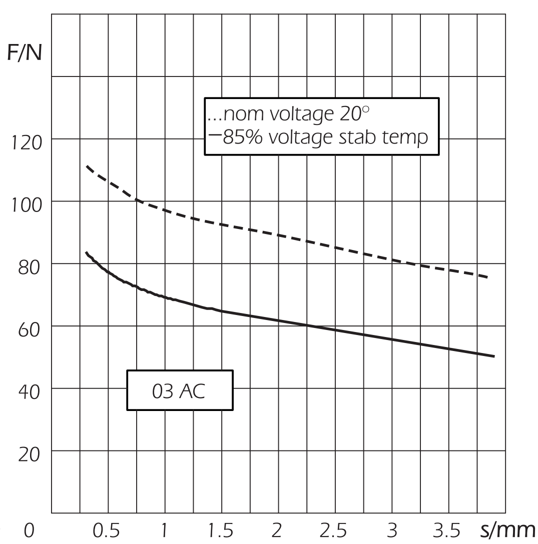


技術參數 TECHNICAL DATA

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 coil m kg	3.6	4.3
	帶2個電磁鐵閥 Two coils 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/cm^2	至315 315	
最高工作壓力 Operating pressure	油口T Port T p kgf/cm^2	至160 如果工作壓力超過油箱允許壓力，對於閥芯A和B的閥門，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 pemitted tank pressure.	
最大流量 Flow, max. qv L/min		至120 up to 120	
液壓油 Hydraulic fluid 1) 適用於丁腈橡膠密封和氟橡膠密圈 Suitable for NBR and FPM seals 2) 只用於氟橡膠密封 only suitable for FPM seals		礦物油(HL, HLP)；按DIN 51 524； 快速生物解降油液按VDMA 24 568 HETG (菜籽油)；HEPG (聚乙二醇)； HEES (合成脂)；其他油液按要求 Mineral oil (HL, HLP) to DIN 51 524; Fast bil-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 溫度變化範圍 Temperature range		-30至+80 （帶丁腈橡膠密封） -30 to +80 (NBR seals)	
		-20至+80 （帶氟橡膠密封） -20 to +80 (FPM seals)	
粘度範圍 Viscosity range v mm^2/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NAS1638第9級。 因而我們推薦過濾器最小過濾精度 β 10≧75 Maximum permissible degree of contamination of the fluid is to NAS 1638 class 9. We, therefore, recommend a filter with a minmum retention rate of β 10≧75	

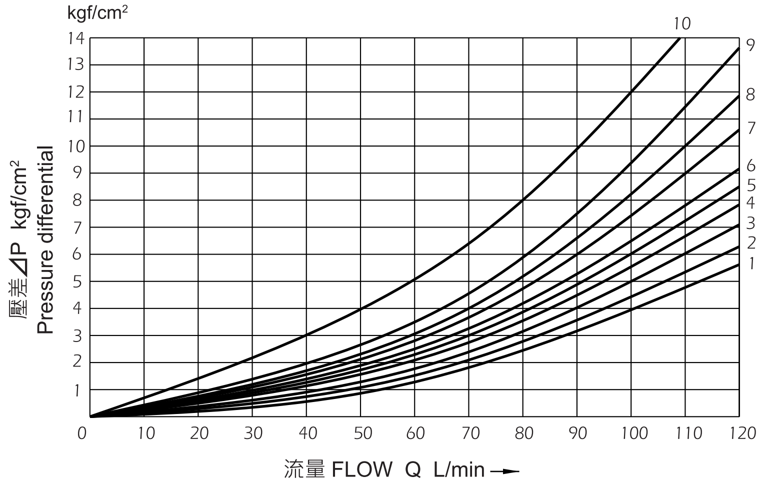
電器數據 Electrial		
電壓類型 Type of voltage	直流 DC voltage	交流 AC voltage
可用電壓 Type of voltage *t* °C (交流電磁鐵訂貨細節見下) (For ordering details of AC/DC solenoids see below)	12.24	110, 220V/50Hz 110, 220V/60Hz
額定吸力 Rated force (N)	100	54
額定行程 Rated stroke (mm)	3.6	4
全行程 Total stroke (mm)	8.5	8.5
工作循環 Duty cycle (%)	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 x 10^6	10 x 10^7





特性曲線 (在 v =41 mm²/s 及t=50°C時測得)

Characteristic Curves (measured at v =41 mm2/s and t=50°C)



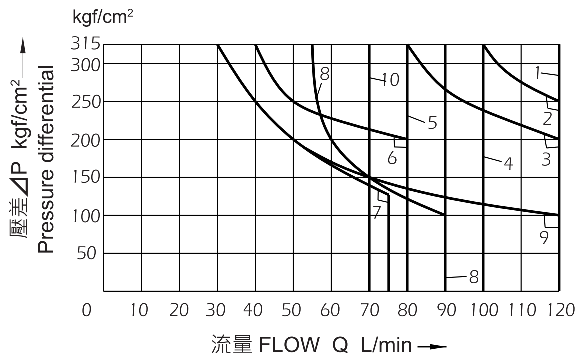
符號 Symbol	流動方向 Flow direction			
	P→A	P→B	A→T	B→T
A, B	3	3	-	-
C	3	3	4	5
D, Y	5	5	6	6
E	1	1	4	4
F	2	3	7	4
G	3	3	6	7
H	1	1	6	7
J	1	1	3	3
L	2	2	3	5
M	1	1	4	5
P	4	2	5	7
Q	1	2	1	3
R	3	6	4	-
T	3	3	6	7
U, V	2	2	3	3
W	2	2	4	5

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

性能極限 (在 v =41 mm²/s 及t=50°C時測得)

Switching power limits (measured at v =41 mm2/s and t=50°C)

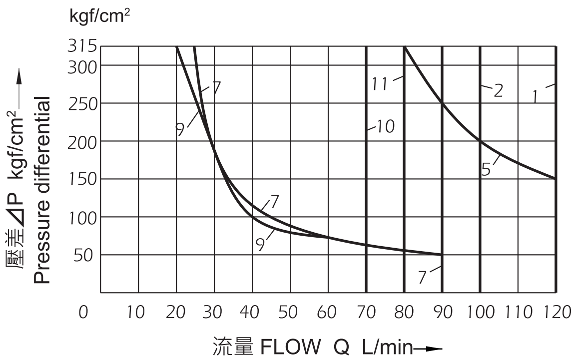


曲線 Curve	符號 Symbol
1	C, C/O, C/OF
	D, D/O, D/OF
	T, M
2	E
3	A/O, A/OF
	L, U, J, Q, W
4	H
5[1)]	R
6	G
7	T
8	F, P
9	A, B
10	V

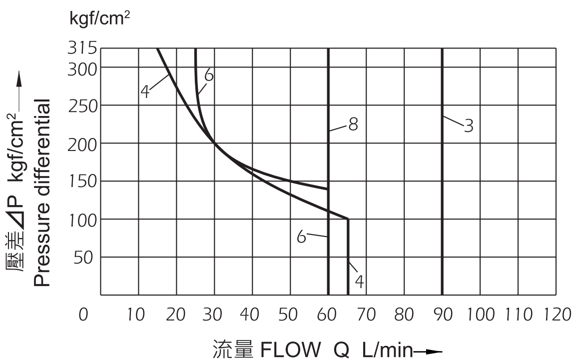
回油（與面積比無關）
Retum flow (independent of area ratio)

性能極限 (在 v =41 mm²/s 及t=50°C時測得)

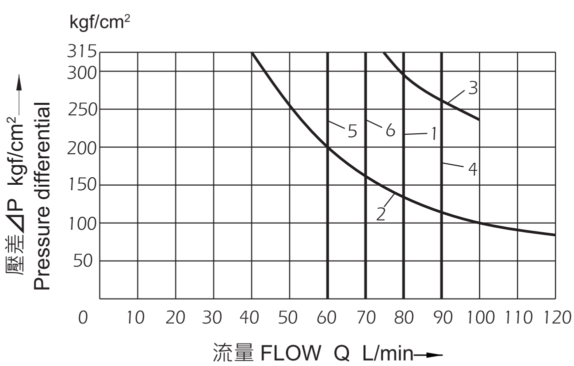
Switching power limits (measured at v =41 mm2/s and t=50°C)



110V, 60Hz; 120V, 60Hz; 220V, 60 Hz; 240V, 60Hz	
曲線 Curve	符號 Symbol
1	C, C/O, C/OF D, D/O, D/OF Y
2	E, L U, Q, W
3	M
4	A, B
5	A/O, A/OF, J
6	G
7	F, P
8	V
9	T
10	H
11	R



110V, 60Hz 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

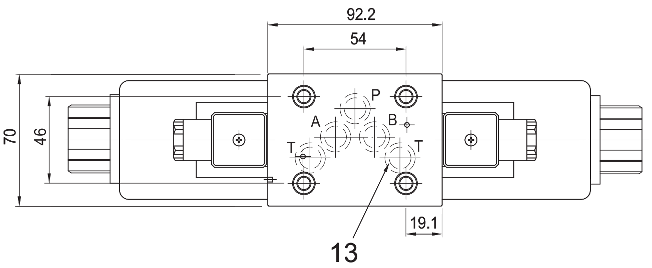


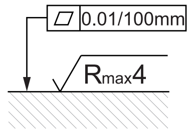
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

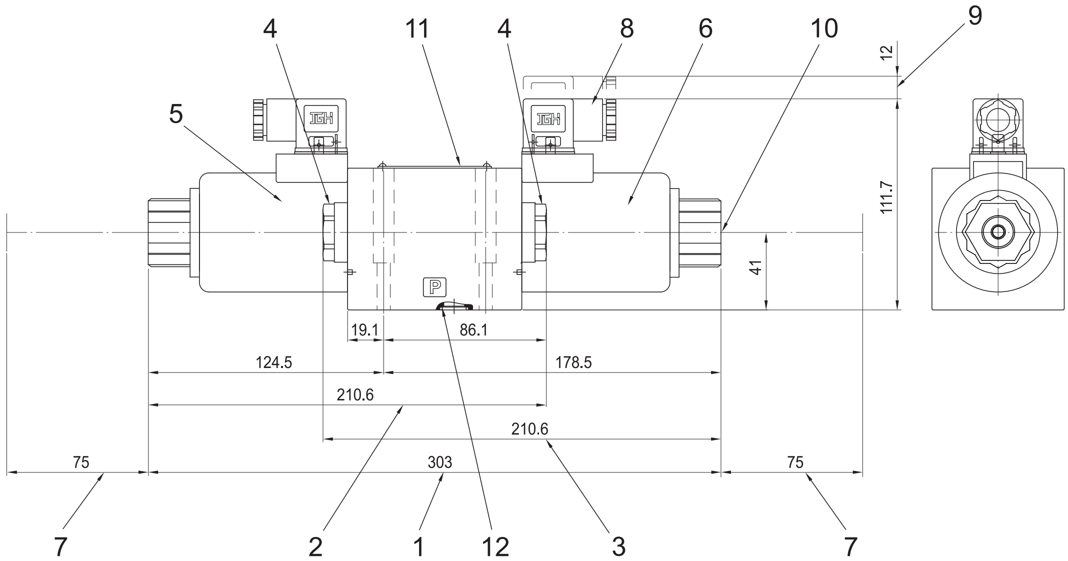
直流電磁閥 VALVE WITH DC SOLENOIDS

通用底板尺寸
APPLICATIVE SUB-PLATE DIMENSIONS
MC - 03 - 1
(詳見 E01-09 Page E01-09)





要求配合件部表面精加工
Required surtace finish of
maing piece



1 3一位閥
2 2一位閥,帶1個電磁鐵(A, C, D, DA...)
3 2一位閥,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 鋁牌
12 O-形圈 AS-568-014
13 安裝面按 DIN 24 340 A型，
ISO 4401和 CETOP-RP 121H
閥固定螺钉 M6x35 DIN912-10.9，
安裝扭矩 12~15N·m

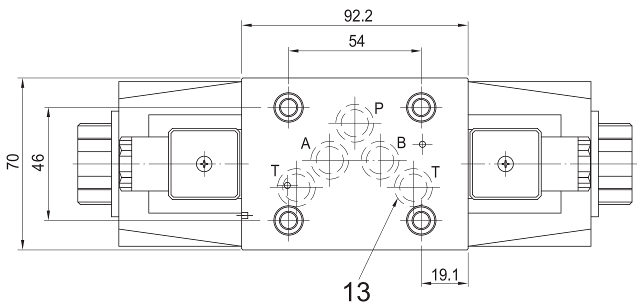
1 3-position
2 2-position valve with 1 solenoid (A, C, D, DA...)
3 2-position valve with 1 solenoid (B, Y, EB...)
4 Plug for valve with 1 solenoid
5 Solenoid "a"
6 Solenoid "b"
7 Space required to remove solenoid
8 Plug-in connector to DIN 43650
(can be rotated in 90° increments)
9 Space required to 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 face acording to DIN 24 340 type A,
ISO 4401 and CETOP-RP 121 H
valve fixing screws M6x35 DIN 912-10.9
Mounting torque 12~15N·m

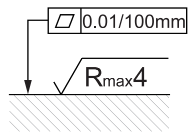
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

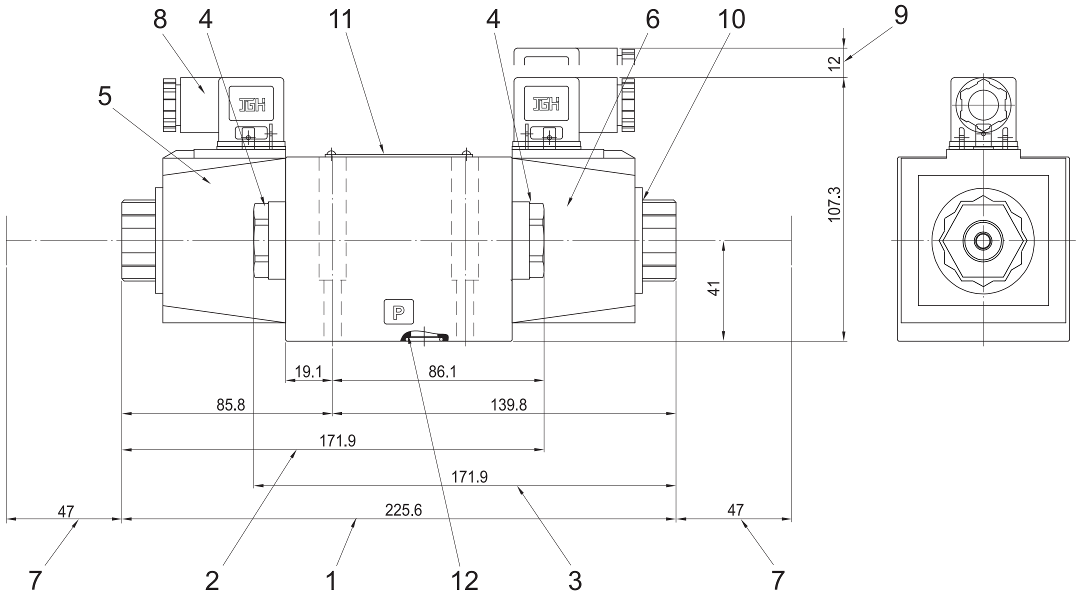
交流電磁閥 VALVE WITH AC SOLENOIDS

通用底板尺寸
APPLICATIVE SUB-PLATE DIMENSIONS
MC - 03 - 1
(詳見 E01-09 Page E01-09)





要求配合件部表面精加工
Required surtace finish of
maing piece

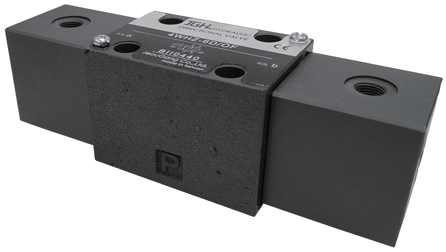


1 3一位閥
2 2一位閥,帶1個電磁鐵(A, C, D, DA...)
3 2一位閥,帶1個電磁鐵 (B, Y, EB...)
4 帶1個電磁鐵的閥塞頭
5 電磁鐵"a"
6 電磁鐵"b"
7 取下電磁鐵所需空間
8 插入式接頭按DIN 43650(可旋轉90度)
9 取下插入式接頭所需空間
10 手動應急操作(標準)
手動應急操作僅在油壓力約為50 kgf/cm² 時
才有可能。
不要對手動應急操作孔造成損害！
11 鋁牌
12 O-形圈 AS-568-014
13 安裝面按 DIN 24 340 A型，
ISO 4401和 CETOP-RP 121H
閥固定螺钉 M6x35 DIN912-10.9，
安裝扭矩 12~15N·m

1 3-position
2 2-position valve with 1 solenoid (A, C, D, DA...)
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 face acording to DIN 24 340 type A,
ISO 4401 and CETOP-RP 121 H
valve fixing screws M6x35 DIN 912-10.9
Mounting torque 12~15N·m

Directional Valve With Fluidic Actuation

特 點 CHARACTERISTICS



- 直動式方向滑閥。
- 液壓操作。
- 安裝面按DIN 24 340 A型，ISO 4401 和 CETOP-RP 121 H。
- 彈簧或壓力對中，彈簧或壓力復位。

- Direct operated directional spool valve.
- Operating methods: Hydraulic
- Porting pattern according to DIN 24340 form A, ISO 4401 and CETOP-RP 121H
- Spring or pressure-centred, spring or pressure return.

規格說明 SPECIFICATION

型式 MODEL	最高使用壓力 MAX. OPERATING PRESSURE kgf/cm^2	最大流量 MAX. FLOW L/min	重量 WEIGHT kg
4WH-6※	315	60	2.2
4WHZ-6※			2.4

型號說明 HOW TO ORDER

4 W H Z - 6 D / OF - B12

無代號 : 無節流塞頭
NO CODE : WITHOUT THROTTLE PLUG
B08 : 節流 0.8mm THROTTLING 0.8mm
B10 : 節流 10 mm THROTTLING 10 mm
B12 : 節流 12 mm THROTTLING 12 mm

無代號 : 彈簧復位 **NO CODE :** SPRING RETURN
O : 無彈簧復位 WITHOUT SPRING RETURN
OF : 無彈簧復位，帶定位機構
WITHOUT SPRING RETURN BUT WITH DETENT

主軸型式，見C07-03**頁**
SPOOL TYPE (AS C07-03)

閥規格 VALVE SIZE
6 : 通徑6mm SIZE 6mm

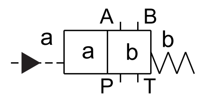
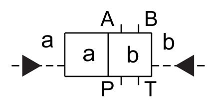
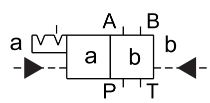
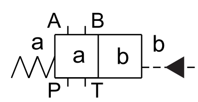
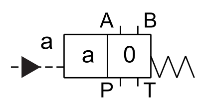
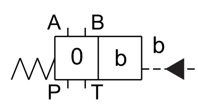
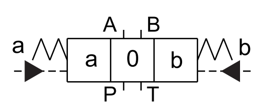
控制方向 CONTROL DIRECTION
無代號 : 徑向連接 **NO CODE :** RADIAL CONNECTIONS
Z : 徑向或軸向連接 **Z :** RADIAL OR AXIAL CONNECTIONS

操作方式 TYPES OF OPERATION
H : 液壓 HYDRAULC

閥類型 VALVE TYPE
W : 方向閥 DIRECTIONAL VALVE

工作口數量 NUMBER OF MAIN PORTS
4 : 四個工作口 4 MAIN PORTS

啓動類型 ACTUATION TYPES

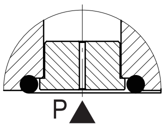
閥芯符號 Spool symbol	型號定義 Codification		啓動類型 Type of actuation
	啓動側 Actuation side	閥芯復位 Spool return	H (液壓) H (Hydraulic)
A, C, D			
		.../O...	
		.../OF...	
B, Y			
C9, C9S E, E1 F, G H, J L, M P, Q R, U	“a”[1] =.A		
	“b”[1] =.B		
			

[1] 請參照第2頁的符號　See symbols page 2.

功能說明 FUNCTIONAL DESCRIPTION

- WH型閥門是具有流體邏輯啓動的方向滑閥；這些閥控制流體的啓動、停止和方向。
- 這種方向控制閥主要包括閥體(1)、一個或兩個啓動元件(2) (液壓啓動液壓缸)、控制閥芯(3)和一個或兩個復位彈簧(4)。用於控制連接以逕向(型號“WH”) (5)或軸向(型號“WHZ”) (6)方式排列。
- 在斷電的狀態下，控制閥芯(3)由復位彈簧(4)保持在中間或初始位置(脈衝閥芯除外)。控制閥芯(3)借助啓動元件移動到所需的閥芯位置。
- 不帶帶有制動器的彈簧復位，型號..OF/..
  帶液壓啓動的方向閥還可作為帶制動器的2閥芯位置閥(7)提供。如果使用帶制動器的啓動元件，則每個閥芯位置均可鎖定。
- 不帶彈簧復位，型號..O/..
  如果使用不帶復位彈簧且不帶制動器的啓動元件，在未通電的情況下將不會給出一個定義的閥芯位置。

- Valve of type WH are directional spool valves with fluid logics actuation.They control the start, stop and direction of a flow.
- The directional valves basically consist of housing (1), one or two actuation elements (2) (hydraulic actuation cylinder), control piston (3), and one or two return springs (4). The connections for control are arranged in a radial (model “WH”) (5) or axial(model “WHZ”) (6) way.
- In the de-energized condition, control piston (3) is held in the central position or in the initial position by the return springs (4) (except for impulse spool). The control spool (3) is moved to the required spool position by means of the actuation elements.
- Without spring return with detent, model ..OF/..
  Directional valves with hydraulic or pneumatic actuation are also available as 2-spool position valve with detent (7). If using actuation elements with detent, every spool position can be locked.
- Without spring return, model ..O/..
  If using actuation elements without return springs and without detent, a defined spool position is not given in the de-energized condition.



節流插件

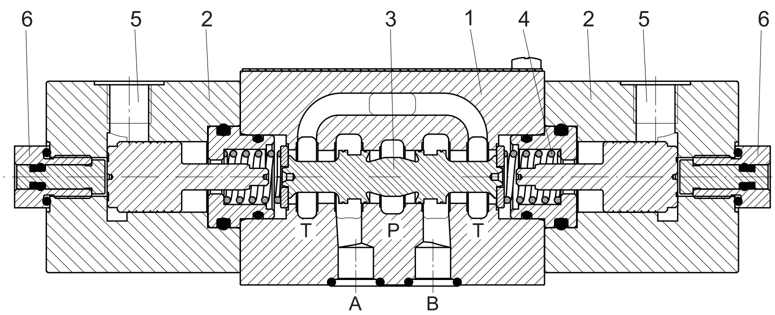
根據主要工作條件，如果在切換過程中可能出現流量超過閥的性能限制情形，就需要使用節流插件。安裝位置在方向閥的通道P中。

Throttle insert

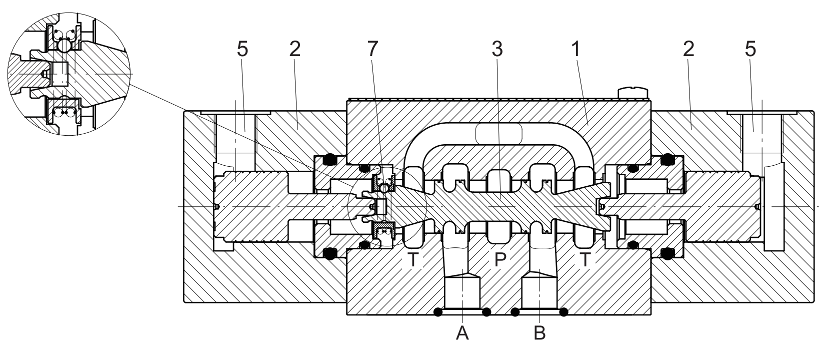
The use of a throttle insert is required when due to prevailing operating conditions, flows can occur during the switching processes, which exceed the performance limit of the valve.It is inserted in channel P of the directional valve.

剖 面 圖 SECTION

型號：4WHZ-6J　　TYPE:4WHZ-6J



型號：4WH-6D/OF　　TYPE:4WH-6D/OF



技術參數 TECHNICAL DATA

一般數據 General			
安裝位置 Installation Position		可選擇 optional [1]	
最高周圍溫度範圍 Ambient temperature, max.	°C	-30~+80 (NBR seals) -20~+80 (FPM seals)	
重量 Weight		WH	WHZ
帶1個啓動液壓缸的閥 One actuation cylinder	kg	2.0	2.2
帶2個啓動液壓缸的閥 Two actuation cylinder	kg	2.2	2.4
液壓數據 Hydraulic			
最高工作壓力 Operating pressure — 油口A, B, P Port A, B, P	kgf/cm^2	至315 315	
最高工作壓力 Operating pressure — 油口T Port T	kgf/cm^2	至160 如果工作壓力超過油箱允許壓力，對於閥芯A和B的閥門，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 pemitted tank pressure.	
最大流量 Flow, max.	L/min	至60 up to 60	
流通截面（閥芯位置 0） Flow cross-section (spool position 0)	mm^2	符號 Q Symbol Q	約為額定截面的 6% Approx. 6 % of nominal cross-section
最小先導壓力 Minimum pilot pressure	kgf/cm^2	4 (參閱 C09-06 特性曲線) (see characteristic curve C09-06)	6 至 10 > 油箱壓力 6 to 10 > tank pressure [2]
最大先導壓力 Maximum pilot pressure	kgf/cm^2	10	200
先導流量 Pilot volume	cm^3	4.24	1.23
液壓油 Hydraulic fluid		見表 (參閱 C09-05) See table (C09-05)	
溫度範圍 Temperature range	°C	-30~+80 (NBR seals) -20~+80 (FPM seals)	
粘度範圍 Viscosity range	mm^2/s	2.8至500 2.8 to 500	
油液清潔度 Degree of fluid contamination		等級 20/18/15 Class 20/18/15 [3]	
最大切換頻率 Maximum switching frequency	1/h	7200	

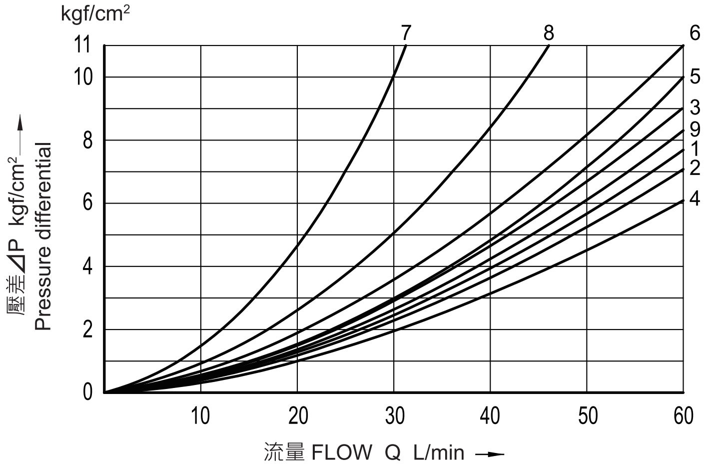
液壓油 Hrdraulic fluid		分類 Classification	適合的密封材料 Suitable sealing materials	標準 Standards
礦物油 Mineral oils		HL, HLP, HLPD, HVLP, HVLPD	NBR, FPM	DIN 51524
生物降解 Bio-degradable	不溶於水 insoluble in water	HETG (菜籽油)	NBR, FPM	VDMA 24568
		HEES (合成脂)	FPM	
	可溶於水 soluble in water	HEPG (聚乙二醇)	FPM	VDMA 24568
耐火 Flame-resistant	無水 water-free	HFDU, HFDR	FPM	ISO 12922
	含水 containing water	HFC (Fuchs Hydrotherm 46M, Petrofer Ultra Safe 620)	NBR	ISO 12922

1) 用於型號 ../O.. (A, C和D)：水平。
For models ../O.. (A, C, and D): Horizontal.
2) 取決於最小先導壓力的性能極限，請參閱C09-07。
Performance limit depending on the minimum pilot pressure, see C09-07.
3) 在液壓系統中必須遵守規定的組件清潔度等級；有效的過濾可防止發生故障，同時還可增加組件的使用壽命。
The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the life cycle of the components.

特性曲線 (使用 HLP46 及 ϑ 油 = 40 ± 5 °C 測得)

Characteristic Curves (measured with HLP46, ϑOil = 40 ± 5 °C)

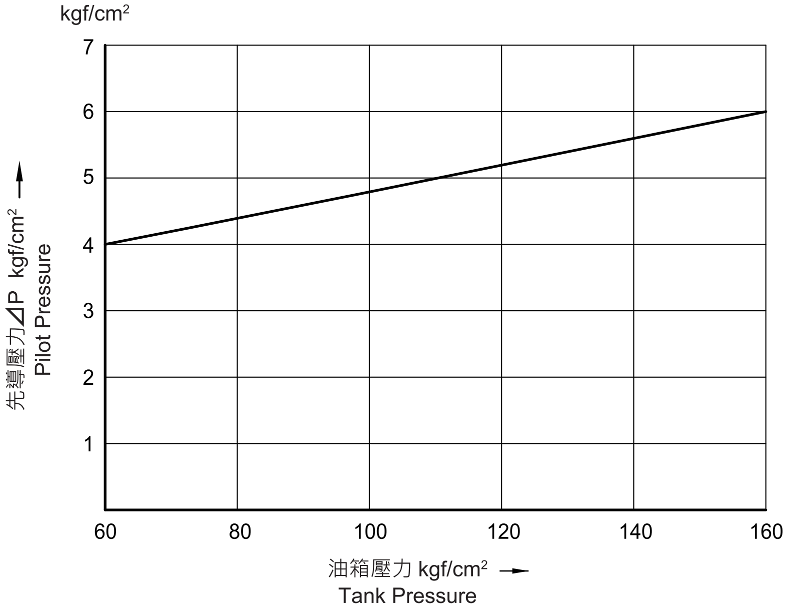
⊿p-qv 特性曲線 Characteristic curves



符號 Symbol	流動方向 Flow direction			
	P→A	P→B	A→T	B→T
A, B	3	3	-	-
C	1	1	3	1
D, Y	5	5	3	3
E	3	3	1	1
F	1	3	1	1
G	6	6	9	9
H	2	4	2	2
J,Q	1	1	2	1
L	3	3	4	9
M	2	4	3	3
P	3	1	1	1
R	5	5	4	-
U	3	3	9	4
C9				
C9S				

7 符號"R"，閥芯位置為B→A
Symbol "R" in spool position B→A
8 符號"G"及"T"，中央位置為P→T
Symbol "G" and "T" in central position P→T
9 符號"H"，中央位置為P→T
Symbol "H" in central position P→T

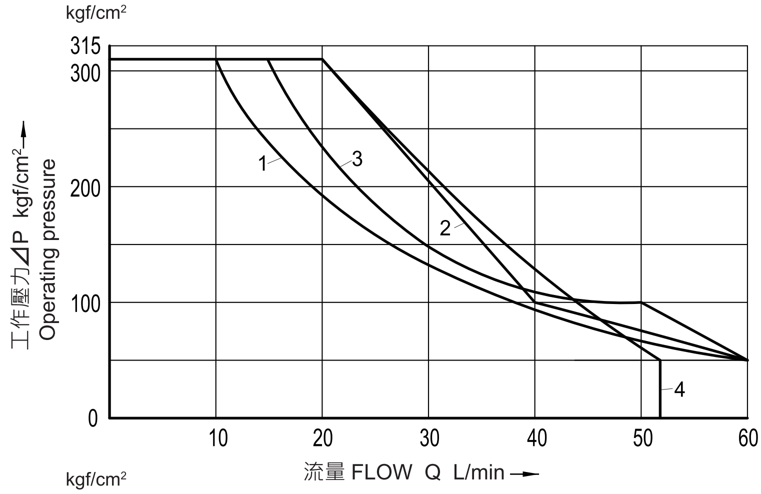
最小先導壓力隨油箱壓力變化曲線
Minimum pilot pressure depending on tank pressure

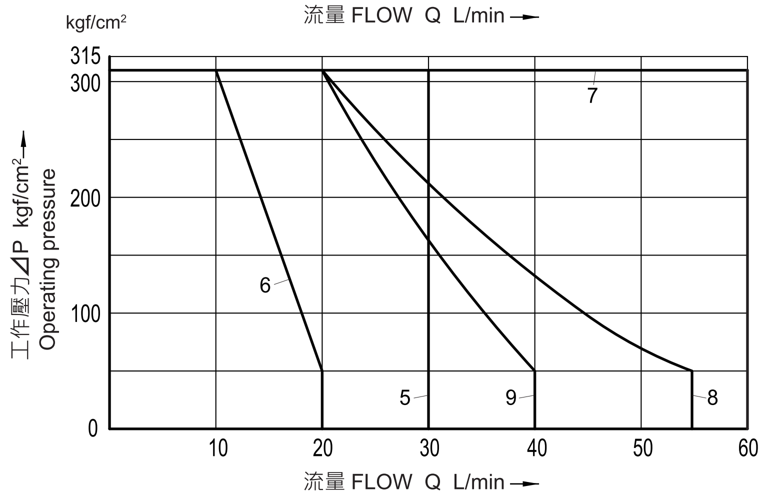


如果油箱壓力更高，則必須依照此圖增加最小先導壓力。
In case of a higher tank pressure, the minimum pilot pressure has to be increased according to this diagram.

性能極限：(使用 HLP46 及 ϑ 油 = 40 ± 5 °C 測得)

Switching power limits (measured with HLP46, ϑ_{Oil} = 40 ± 5 °C)





彈簧復位 Spring return	曲線 Curve	先導壓力6kgf/cm² >油箱壓力 Pilot pressure 6 kgf/cm² > tank pressure
		符號 Symbol
"無代號" (帶彈簧復位) "No code" (with spring return)	1 2 3 4 5 6	A, B C, D, Y C9, C9S, E, E1, J, L, U, M, Q F, P G, H R
../O.. ../OF..	7	A, C, D

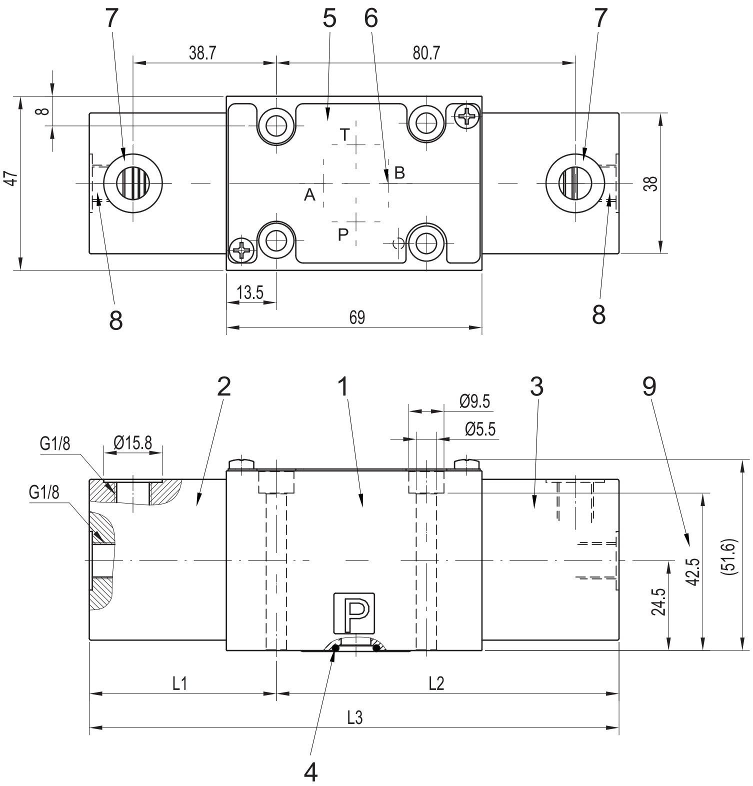
彈簧復位 Spring return	曲線 Curve	先導壓力10kgf/cm² >油箱壓力 Pilot pressure 10 kgf/cm² > tank pressure
		符號 Symbol
"無代號" (帶彈簧復位) "No code" (with spring return)	1 7 8 9	A, B C, C9, C9S, D, Y, E, E1, G, H, J, L, U, M, Q F, P R
../O.. ../OF..	7	A, C, D

注意！ Noties！

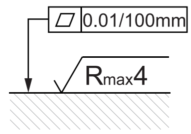
- 由於黏性效應，閥的切換功能取決於過濾過程，為實現指定的允許流量值，我們建議使用 25 μm 的全流過濾，作用於閥內的液動力同樣會影響流量性能。
  Because of the adhesive effect, the switching function of the valves depends on the filtration. In order to achieve the specified admissible flow values, we recommend full flow filtration with 25 μm. The flow forces acting within the valves also affect the flow performance.
- 使用四通閥，指定的流量數據適用於具有 2 個流動方向的正常運行（例如，從 P 至 A 並同時從 B 至 T 回流）（請參見表格）。如果在臨界情況下僅有一個流動方向可用，允許的流量會顯著降低（例如，由於連接 A 或 B 堵塞，將四通閥作為三通閥使用時）。
  With 4 way valves the specified flow data thus apply to normal operation with 2 volume flow directions (e.g. from P to A and at the same time return flow from B to T) (see table). If only one flow direction is available, in critical cases, the admissible flow can be significantly smaller (e.g. when using a 4 way valve as 3 way valve, due to blocked connection A or B).

單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS



通用底板尺寸
APPLICATIVE SUB-PLATE DIMENSIONS
MC - 02 - 1
(詳見 E01-09 Page E01-09)



要求配合件部表面精加工
Required surtace finish of maing piece

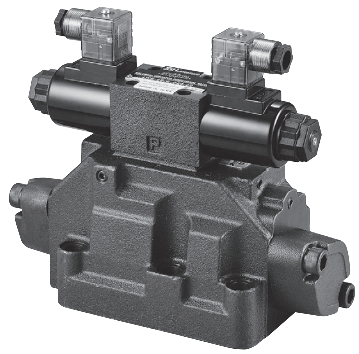
類型	L1	L2	L3
WH	50.5	92.5	143
WHZ	57.5	99.5	157

1. 帶2個閥芯位置和2個啓動液壓缸的閥
   帶3個閥芯位置和2個啓動液壓缸的閥
2. 啓動液壓缸 "a"
3. 啓動液壓缸 "b"
4. O型環AS-568-012
5. 銘牌
6. 安裝面按DIN 24 340 A型，
   ISO 4401和CETOP-RP 121 H
   閥固定螺釘 M5x50 ISO 4762-10.9，
   安裝扭矩 8~9 N·m
7. 與型號 "WH" 的連接
8. 與型號 "WHZ" 的連接
9. 夾持長度

1. With 2 spool positions and 2 start hydraulic cylinders
   With 3 spool positions and 2 start hydraulic cylinders
2. Start hydraulic cylinder "a"
3. Start hydraulic cylinder "b"
4. O-ring AS-568-012
5. Name plate
6. Mounting face according to DIN 24 340 type A
   ISO 4401 and CETOP-RP 121 H
   Valve fixing screw M5x50 ISO 4762-10.9,
   Mounting torque 8~9 N·m
7. Connection to model "WH"
8. Connection to model "WHZ"
9. Clamping length

Solenoid Control Pilot Operated Directional Valve

特 點 CHARACTERISTICS



- ●此系統閥用於控制液流的開啟、停止和方向
- ●電液操作(WEH)，液壓(液控) (WH)
- ●安裝面按DIN 24340 A型,ISO 4401 和 CETOP-RP 121 H
- ●彈簧或壓力對中,彈簧或壓力復位
- ●濕式直流或交流電磁鐵
- ●可選的手動應急操作器

- ●Valve used to control the start, stop and direction of a fluid flow.
- ●Electro-hydauilic operation (WEH), hydraulic operation (WH)
- ●For subplates mounting,
- ●Porting pattem to DIN 24340 form A, ISO 4401 and CETOP-RP 121H
- ●Spring or pressure-centred, spring or hydrauilic offset
- ●Wet-pin DC or AC solenoids, optional
- ●Manual override, optional

型號說明 HOW TO ORDER

H - 4 WEH - 16 H E - ET / O E - W220/50 - 20

接線方式 WIRING
10 : 帶燈的集中連接盒 WITH LAMP CENTRAL CONNECTION
20 : 插入式接頭帶密封套 PLUG-IN CONNECTION

線圈電壓 COIL VOLTAGE
G12 : 12V DC　**G24 :** 24V DC
W110 : 110/50/60Hz　**W220 :** 220/50/60Hz

E : 高性能電磁鐵 HIGH POWER SOLENOID
附可拆卸濕式線圈及電磁鐵
WET PIN (OIL IMMERSED) WITH REMOVABLE COIL

O : 無彈簧復位 WITHOUT SPRING RETURN
雙電磁鐵二位閥先導閥芯復位,僅對閥芯C、D、K、Z
而言以及主閥中液壓閥芯復位
SPOOL RETURN IN THE PILOT VALVE FOR 2-POSITION VALVE AND 2 SOLENOIDS
ONLY POSSIBLE WITH SPOOLS C, D, K, Z
AND HYDRAUILIC SPOOL RETUM IN THE MAIN VALVE
OF : 無彈簧帶定位機構 (在先導閥中)
WITHOUT SPRING RETURN WITH DETENT
(IN THE PILOT VALVE)

控油方式 PILOT AND DRAIN TYPE
無代號 : 內部引導內部泄油
NO CODE : INTERNAL PILOT & DRAIN
ET : 外部引導外部泄油 EXTERNAL PILOT & DRAIN
E : 外部引導內部泄油 EXTERNAL PILOT INTERNAL DRAIN
T : 內部引導外部泄油 INTERNAL PILOT EXTERNAL DRAIN

主軸型式，見C07-03**頁**
SPOOL TYPE (AS C07-03)

閥芯復位 SPOOL RETURN
無代號 : 彈簧　**NO CODE:** BY MEANS OF SPRING
H : 液壓 HYDRAULIC

閥規格 VALVE SIZE
16 : 1/2"　**25 :** 3/4"　**32 :** 1-1/4"

操作方式 TYPES OF OPERATION
WEH : 電液 ELECTRO-HYDRAUILIC
WH : 液壓 HYDRAUILIC

工作數量 NUMBER OF MAIN PORTS
4 : 四個工作口 4 MAIN PORTS

最高使用壓力 MAX. OPERATING PRESSURE
H : 350 kgf/cm²

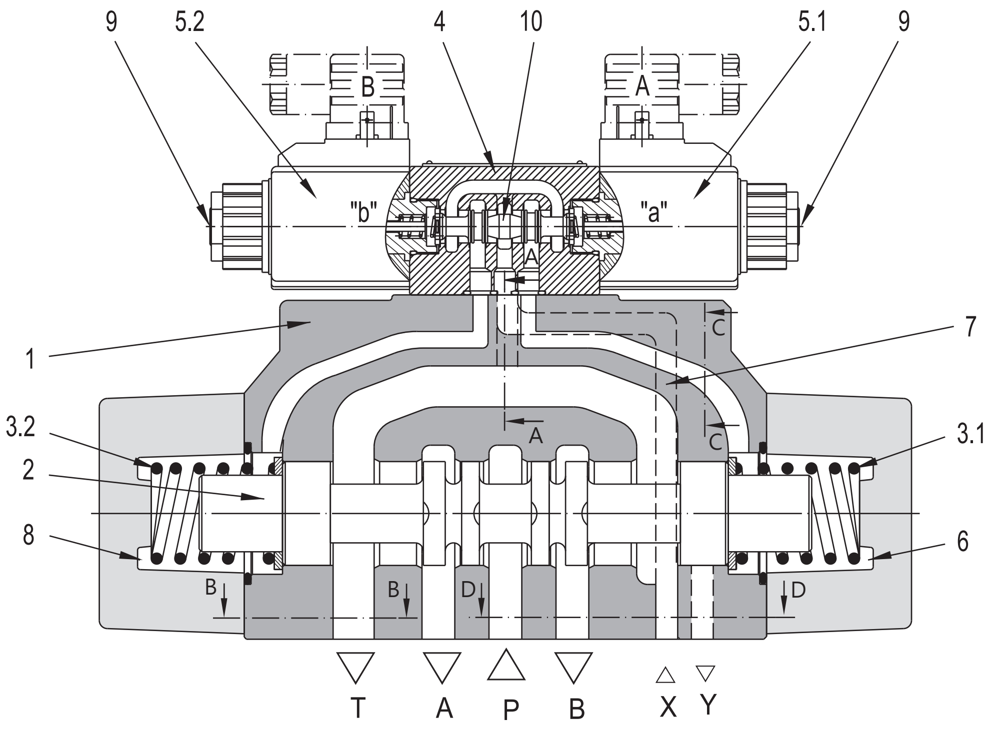
功能說明 FUNCTIONAL DESCRIPTION

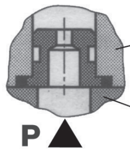
- WEH型方向閥是帶電一液操作的方向滑閥，用以控制液流的開啟、停止和方向。
- 此類閥組成主要包括閥體(1)、控制閥芯(2)和一個或二個復位彈簧(3.1)和(3.2)的主閥及帶一個或二個電磁"a"(5.1)，電磁閥"b" (5.2)的先導閥(4)。
- 主閥閥芯由彈簧或壓力保持在中位或初始位置。
- 在彈簧對中的閥中，兩個彈簧腔(6)和(8) 通過處於初始位置的先導閥與油箱連通。經過控制油路(7)向先導閥(4)供油。控制油可以由內部或外部供給(外部供給經油口X)。
- 主閥閥芯(2)由先導閥(4)液壓操作。
- 當先導閥操作，施壓於主閥芯的一端，移動閥芯至操作位置。根據操作方向，閥開啟，液流由P至A和B至T或P至B和A至T。
- 當電磁鐵斷電，先導閥復位至靜態位置(脈沖閥除外、彈簧的油箱卸荷。控制油從彈簧腔經先導閥排入Y口。
- 控制油可內部或外部泄油(外部經油口Y)。
- 可選的手動應急操作器(9)，在電磁鐵不通電情況下。可對先導閥(4)中的控制閥芯(10)進行操作。

- Valves of type WEH are derectional spool valves with electrohydraulic operation.
- They control the start, stop and derection of a fluid flow.
- The directional valves basically consist of the main valve with housing (1), main control spool (2), one or two return springs (3.1)and (3.2) and the pilot valve (4) with one or two solenoids "a" (5.1) and for"b" (5.2).
- The main control spool (2) in the main valve is held in the neutral or in the initial position either by the springs or by means of pressure.
- In the initial position, the two spring chambers(6) and (8) are connected to the tank without pressure via the pilot valve (4). The pilot valve is supplied with pilot fluid via the pilot line (7). The pilot oil supply can be either intemal or extemal (extemal via port X). When the pilot valve is operated, e.g. solenoid "a", the pilot spool (10) is shifted to the left and thus spring chamber (8) is pressurised with pilot pressure. Spring chamber (6) remains unpressurised.
- The pilot pressure acts on the left side of the main control spool (2) and pushes it against the spring (3.1). As aconsequence, the ports P to B and A to T are connected in the main valve.
  When the solenoid is de-energized, the pilot spool retums to its initial position (exception: detented spool).
  The spring chamber (8) is unloaded to tank.
  The pilot oil is expelled from the spring chamber via the pilot valve into the Y channel.
  The pilot oil supply and drain are internal or extemal (extemal via port Y).
  An optional manual override (9) pemits pilot spool (10) to be operated without energising the solenoid.

剖 面 圖 SECTION

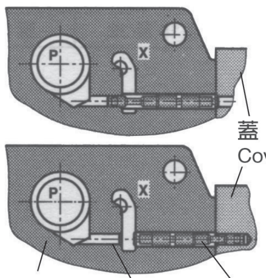
型號：4WEH 25　　　TYPE:4WEH 25



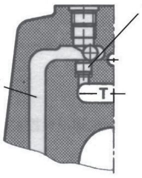


規格16 Size 16

剖面圖 D–D
Section D–D



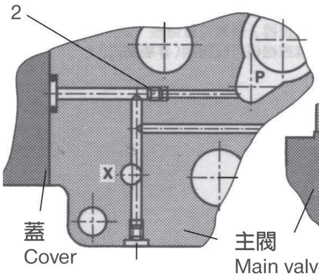
剖面圖 C–C
Section C–C



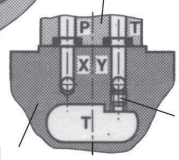
控制油供給	**Pilot oil supply**
外部：2堵死	extemal : 2 plugged
內部：2打開	intemal : 2 open
控制油洩油	**Pilot oill drain**
外部：1堵死	extemal : 1 plugged
內部：1打開	intemal : 1 open

規格 25 Size 25

剖面圖 B–B
Section B–B



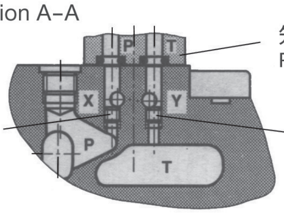
剖面圖 A–A
Section A–A



控制油供給	**Pilot oil supply**
外部：2堵死	extemal : 2 plugged
內部：2打開	intemal : 2 open
控制油洩油	**Pilot oill drain**
外部：1堵死	extemal : 1 plugged
內部：1打開	intemal : 1 open

規格 32 Size 32

剖面圖 A–A
Section A–A



控制油供給	**Pilot oil supply**
外部：2堵死	extemal : 2 plugged
內部：2打開	intemal : 2 open
控制油洩油	**Pilot oill drain**
外部：1堵死	extemal : 1 plugged
內部：1打開	intemal : 1 open

控制油供給 PILOT OIL SUPPLY

4WEH... 和 4WE...ET
控制油供給從單獨的回路經油口X由外部提供。
控制油洩油經油口Y由外部引回油箱。

4WEH...T...
控制油供給從主閥經油口P由內部提供。
控制油洩油經油口Y由外部流回油箱。底板中油口X堵死。
由內控至外控或由外控至內控轉換（規格16）：拆下電磁鐵側端蓋，拔下插塞，兩端換位。插入插塞，把端蓋復位。

4WEH...
控制油供給從主閥經油口P由內部提供。
控制油洩油經油口T由內部流回油箱。底板中油口X和Y堵死。

4WEH...E...
控制油供給從單獨的回路經油口X由外部提供。
控制油洩油經油口T由內部流回油箱。底板中油口Y堵死。
元件1螺紋堵,M6 DIN 906-8.8.3 對邊寬。
元件2螺紋堵,M6 DIN 906-8.8,3對邊寬。
端蓋固定螺釘安裝扭矩：規格16 : 31~38N·m
規格25 : 60~74N·m
先導閥固定螺釘安裝扭矩：規格16至32 : 8~9N·m

插裝式節流塞
如果先導閥P口控制油流量必須加以限制,需採用插裝式節流塞。
插裝式節流塞安裝在先導閥P口。

4WEH... and 4WH...ET
The pilot oil supply is sourced externally via channel X from a separate circuit.
The pilot oil drain is led externally via channel Y to tank.

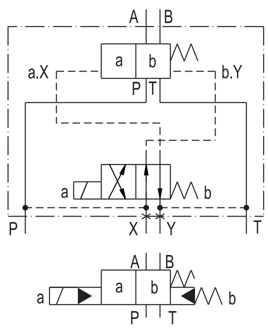
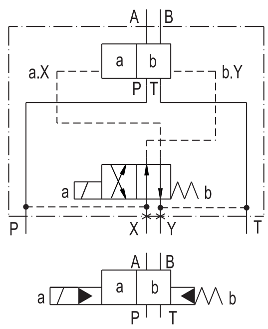
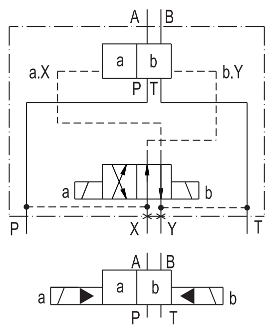
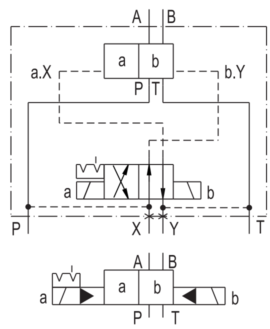
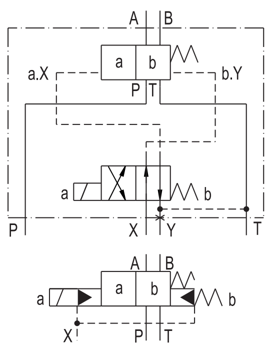
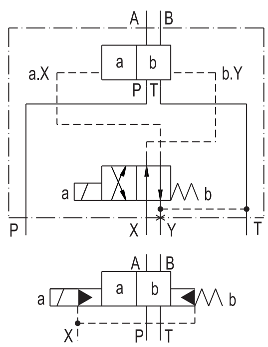
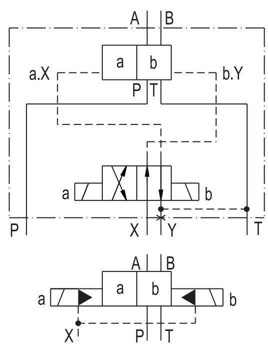
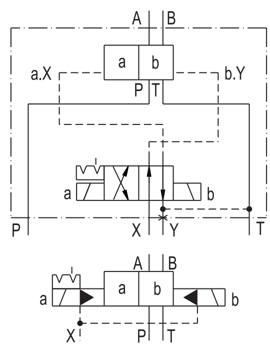
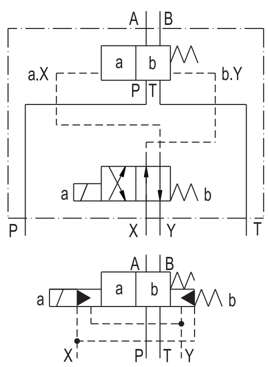
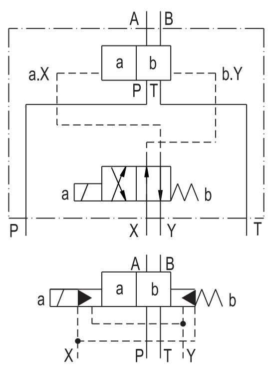
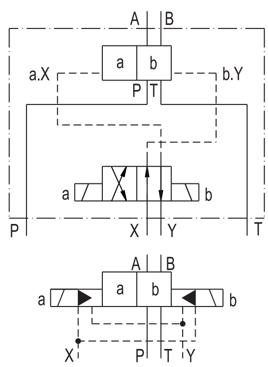
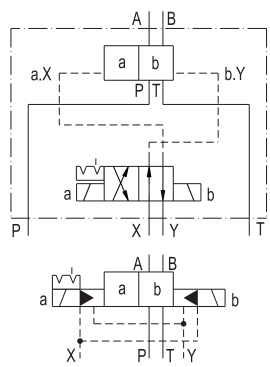
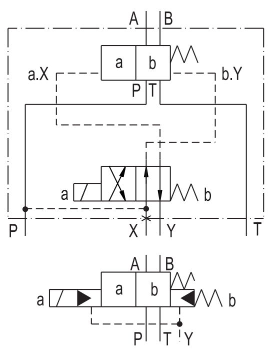
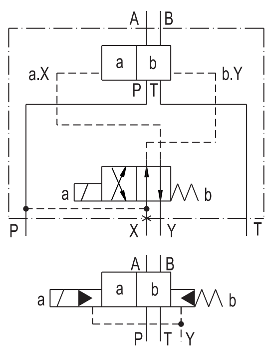
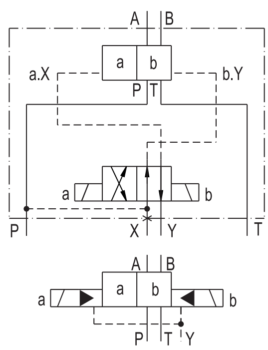
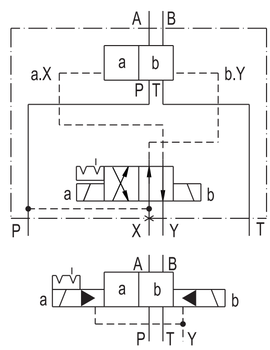
4WEH...T...
The pilot oil supply is sourced internally from channel P of the main valve.
The pilot oil drain is led externally via channel Y to tank. Port X in the subplate is plugged.
Changeover from extemal to internal or from internal to extemal pilot oil supply (size 16) : Remove the cover on the solenoid side "a", remove the plugs and tum end-for-end, insert plugs and replace the cover.

4WEH...
The pilot oil supply is sourced internally from channel P of the main valve.
The pilot oil drain is led intemally via channel T to tank. Ports X and Y in the supblate are plugged.

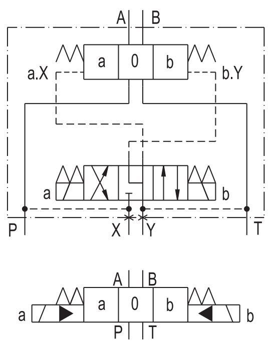
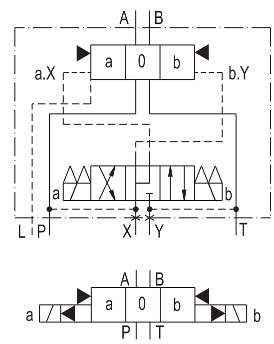
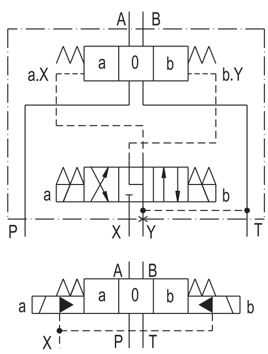
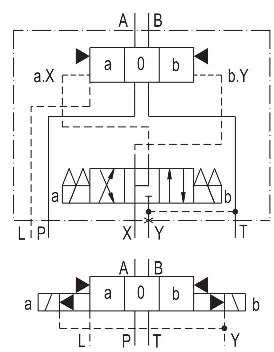
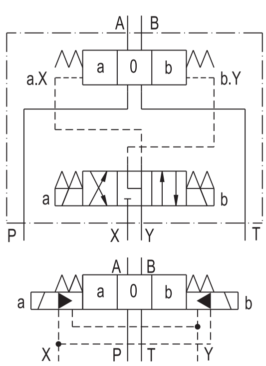
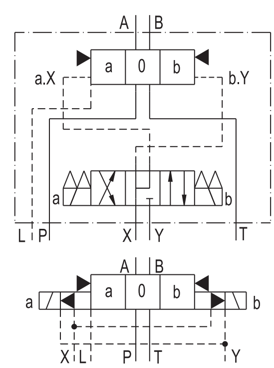
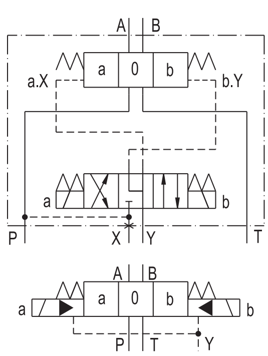
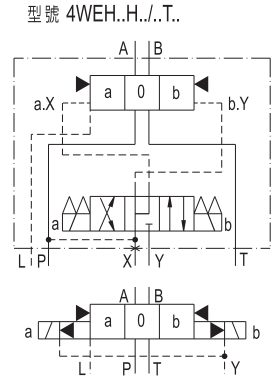
4WE...E
The pilot oil supply is sourced externally via channel X from a separate circuit. The pilot oil drain is led internally via channel T to tank. Port Y in the subplate is plugged.
1.Plug Screw M6 DIN 906-8.8.3 A/F-Pilot oil drain
2.Plug Screw M6 DIN 906-8.8.3 A/E-Pilot oil supply
3.Plug Screw M8x1 DIN 906-8.8,4 A/F-
Mounting torque for cover fixing screws: Size 16 : 31~38N·m
Size 25 : 60~74N·m
Mounting torque for pilot valve fixing screws: Size 16 to 32 : 8~9N·m

Throttle Insert
The use of a throttle insert is required if the pilot oil supply in the P channel of the pilot valve is to be limited.
This throttle is inserted in the P channel of the pilot valve.

二位閥的詳細與簡化符號 Symbols for valves with 2 spool positions（按**DIN ISO 1219**）

	彈簧復位閥 Valve with spring end position	液壓復位閥 Valve with hydraulic end position		
X：內部 ；Y：內部 X : internal ; Y : internal	型號 4WEH../.. 	型號 4WEH..H../.. 	型號 4WEH..H../O.. 	型號 4WEH..H../OF.. 
X：外部 ；Y：內部 X : external ; Y : internal	型號 4WEH../..E.. 	型號 4WEH..H../..E.. 	型號 4WEH..H../O..E.. 	型號 4WEH..H../OF..E.. 
X：外部 ；Y：外部 X : external ; Y : external	型號 4WEH../..ET.. 	型號 4WEH..H../..ET.. 	型號 4WEH..H../O..ET.. 	型號 4WEH..H../OF..ET.. 
X：內部 ；Y：外部 X : internal ; Y : external	型號 4WEH../..T.. 	型號 4WEH..H../..T.. 	型號 4WEH../O..T.. 	型號 4WEH..H/OF..T.. 

三位閥的詳細與簡化符號 Symbols for valves with 3 spool positions（按**DIN ISO 1219**）

	彈簧對中閥 Valve with spring-centered zero position	壓力對中閥 (僅規格16, 25 ("W.H 25") 和 32) Valve with pressure-centered zero position 【Only NG16, 25 ("W.H 25") and 32】
X：內部 ；Y：內部 X：internal ; Y：internal	型號 4WEH../.. 	型號 4WEH..H../.. 
X：外部 ；Y：內部 X：external ; Y：internal	型號 4WEH../..E.. 	型號 4WEH..H../..E.. 
X：外部 ；Y：外部 X：external ; Y：external	型號 4WEH../..ET.. 	型號 4WEH..H../..ET.. 
X：內部 ；Y：外部 X：internal ; Y：external	型號 4WEH../..T.. 	型號 4WEH..H../..T.. 

技術參數 TECHNICAL DATA

規格（訂貨型號） **Sizes (ordering code)**			**16**	**25**	**32**
最高公稱壓力 Operating pressure, max. - 油口P、A、B - Port P、A、B	4WEH型 Type 4WEH	kgf/cm^2	280	280	280
	H-4WEH型 Type H-4WEH	kgf/cm^2	350	350	350
	外部Y口控制油泄油 Pilot oil drain Y extemal	kgf/cm^2		250	250
	內部Y口控制油泄油 Pilot oil drain Y extemal	kgf/cm^2		160 / 210 DC 100 / 160 AC	
	外部控制油泄油 - 直流電磁鐵 DC	kgf/cm^2	160 / 210		
	- 交流電磁鐵 AC	kgf/cm^2	100 / 160		
	用於4WH型 with version 4WH	kgf/cm^2	250	250	250
最高控制壓力 （對於高的控制壓力，需要一個壓力比閥） Pilot pressure, max. (With higher pilot pressures, a pressure reducing valve is required.)		kgf/cm^2	250	250	250
最低控制壓力 - 外部X口控制油供給，內給X口控制油供給 （不用於閥芯：C, F, G, H, P, T, V, Z, S） Pilot pressure, min. Pilot oil supply X extemal, pilot oil supply X intermal (not with spools: C, F, G, H, P, T, V, Z, S)					
	彈簧對中三位閥 3-osition valve, spring-centred	kgf/cm^2	12	13	8.5
	壓力對中三位閥 3-osition valve, pressure-centred	kgf/cm^2	12	18	8.5
	彈簧復位二位閥 2-osition valve, with spring offset	kgf/cm^2	12	13	10
	液壓復位二位閥 2-osition valve, with hydraulic offset	kgf/cm^2	12	8	5
		kgf/cm^2	4.5	4.5	4.5

1) 在三位閥中，壓力對中可能的條件：$P_{Pilot} \geq 2X\ P_{tank} + P_{Pilot\ min}$.
2) 閥芯S僅用於規格16
3) 對閥芯C, F, G, H, P, T, V, Z,，如果在中位由P至T（三位閥）或當閥經中位（二位閥）運動時，流量足夠確保由P至T的壓降為6.5 bar，才能用內部控制油供給。
4) 對閥芯C, F, G, H, P, T, V, Z, S2)（借助於預載閥或足夠大的流量）
5) 高性能閥"6E" (RC 23 178)

1) As 3-position valve with spring-entring only possible if $P_{Pilot} \geq 2X\ P_{tank} + P_{Pilot\ min}$.
2) Spool S only for size 16
3) For symbols C, F, G, H, P, T, V, Z intemal pilot oil supply is only possible, if the flow from P to T in the neutral position (in a 3-position valve) or when the valve is moving through the neutral position (in a 2-position valve) is large enough to ensure a min. pressure differential of 6.5 bar from P to T
4) For spools C, F, G, H, P, T, V, Z, S2) (by means of a preload valve or a sufficiently large flow)
5) High-Performance valve "6E" (RE 23 178)

液壓油 Hydraulic fluid 1) 適用於丁睛橡膠密封和氟橡膠密圈 Suitable for NBR and FPM seals 2) 只用於氟橡膠密封 Only suitable for FPM seals		礦物油(HL, HLP)按 DIN 51524 ; 快速生物解降油液按 VDMA 24 568 HETG(菜籽油) ; HEPS(聚乙二醇) ; HEES(合成酯) ; 其他油液按要求 Mineral oil (HL, HLP) to DIN 51 524 ; Fast bio-egradable hydraulic fluids to VDMA 24 568 HETG (rape seed oil) ; HEPG (polyglycols) ; HEES (synthetic esters) ; other hydraulic fluids on enquiry					
油液 Pressure fluid 溫度變化範圍 Temperature range	*t* °C	-30至+80（帶丁睛橡膠密封） -30 to +80 (for NBR seals) -20至+80（帶氟橡膠密封） -20 to +80 (for FPM seals)					
粘度範圍 VIscosity range	*v* mm^2/s	28至500 28 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 $\beta_{10}\geqq75$。 Maximum permissible degree of contamination of the hydraulic fluid to NAS 1638 class 9. We therefore recommend a filter with a minimum retention rate of $\beta_{10}\geqq75$.					
用於閥操作的控制油容量 Pilot oil volume for shifting operation							
- 三位閥彈簧對中 - 3-position valve, spring-centred	cm^3	5.72		14.2		29.4	
- 二位閥 - 2-position valve	cm^3	11.45		28.4		58.8	
- 三位閥，液壓對中 - 3-position valve, pressure-centred	cm^3	WH	WEH	WH	WEH	WH	WEH
從中位至位置a from neutral position to shifted position "a"	cm^3	2.83	2.83	7.15	7.15	14.4	14.4
從位置a至中位 from shifted position "a" to neutral position	cm^3	2.9	5.73	14.18	7.0	29.4	15.1
從中位至位置b from neutral position to shifted position "b"	cm^3	5.72	5.73	14.18	14.15	29.4	29.4
從位置b至中位 from shifted position "b" to neutral position	cm^3	2.83	8.55	19.88	5.73	43.8	14.4
用於更短操作時間的控制油流量 Pilot oil flow for shortest shifting time		大約35 approx. 35		大約35 approx. 35		大約35 approx. 35	
重量 Weight 單電磁鐵閥 Valve with one solenoid	kg	大約8.3 approx. 8.3		大約17.6 approx. 17.6		大約40.5 approx. 40.5	
雙電磁鐵閥，彈簧對中 Valve with two solenoids, spring-centred	kg	大約8.6 approx. 8.6		大約18.0 approx. 18.0		大約41.0 approx. 41.0	
雙電磁鐵閥，液壓對中 Valve with two solenoid, pressure-centred	kg	大約8.6 approx. 8.6		大約19.0 approx. 19.0		大約41.0 approx. 41.0	
液控閥 Valve with hydraulic operation (4 WH...)	kg	大約7.3 approx. 7.3		大約16.5 approx. 16.5		大約39.5 approx. 39.5	
液控阻尼調整 Shifting time adjustment	kg	大約0.8 approx. 0.8		大約0.8 approx. 0.8		大約0.8 approx. 0.8	
壓力比閥 Pressure reducing valve	kg	大約0.4 approx. 0.4		大約0.4 approx. 0.4		大約0.4 approx. 0.4	
安裝位置 Installation position		可選擇：液壓復位閥"H"，(閥芯C, D, K, Z, Y)水平 Optional: valve with hydraulic spool return "H" (spools C, D, K, Z, Y) horizontal					

操作時期[1)] Shifting times[1)]

1) 操作時間=從電磁鐵通電到主閥芯的控制台肩開啟的時間。
1) Shifting time = Contacting at the pilot valve up to start of opening of the control land in the main valve

規格 16（先導閥6X系列E）
Size 16 (Pilot valve series 6X/E)

閥從中位至操作位置的操作時間（用於直流（DC）和交流（AC）操作） Shifting time of the valve from neutral position to shifted position with AC and DC operation													
在控制壓力下 at pilot pressure	kgf/cm²	AC 50 DC				AC 150 DC				AC 250 DC			
- 三位閥，彈簧對中 - 3-position valve, spring-centred	ms	35		65		30		60		30		58	
- 二位閥 - 2-position valve	ms	45		65		35		55		30		50	
- 三位閥 - 3-position valve	電磁鐵操作 Solenoid operated	a	b	a	b	a	b	a	b	a	b	a	b
壓力對中 pressure-centred	ms	30	30	65	65	25	25	55	63	20	25	55	60
閥從操作位置至中位的操作時間 Shifting time of the valve from shifted position to neutral position													
- 三位閥 - 3-position valve	ms	30至45用於DC /30用於AC 30 to 45 for DC /30 for AC											
- 二位閥 - 2-position valve	ms	45...60		45		35...50		35		30...45		30	
- 三位閥 - 3-position valve	從— From—	a	b	a	b	a	b	a	b	a	b	a	b
壓力對中 pressure-centred	ms	20...35		20		20...35		20		20...35		20	

規格 25（先導閥6X系列E）
Size 25 (Pilot valve series 6X/E)

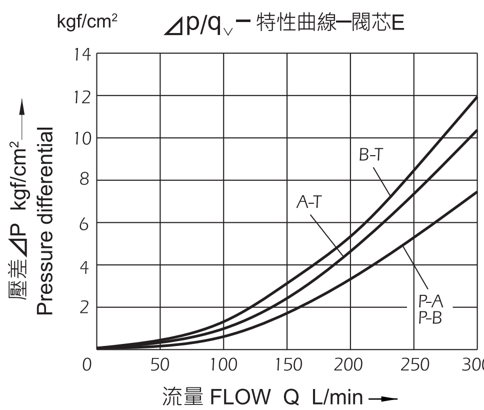
閥從中位至操作位置的操作時間（用於直流（DC）和交流（AC）操作） Shifting time of the valve from neutral position to shifted position with AC and DC operation																	
在控制壓力下 at pilot pressure	kgf/cm²	AC 70 DC				AC 140 DC				AC 210 DC				AC 250 DC			
- 三位閥，彈簧對中 - 3-position valve, spring-centred	ms	50		85		40		75		35		70		30		65	
- 二位閥 - 2-position valve	ms	120		160		100		130		85		120		70		105	
- 三位閥 - 3-position valve	電磁鐵操作 Solenoid operated	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
壓力對中 pressure-centred	ms	30	35	55	65	30	35	55	65	25	30	50	60	25	30	50	60
閥從操作位置至中位的操作時間 Shifting time of the valve from shifted position to neutral position																	
- 三位閥，彈簧對中 - 3-position valve, spring-centred	ms	40至55用於DC /40用於AC 40 to 55 for DC /40 for AC															
- 二位閥 - 2-position valve	ms	120		125		85		100		85		90		75		80	
- 三位閥 - 3-position valve	從— From—	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
壓力對中 pressure-centred	ms	30...50		30	35	30...50		30	35	30...50		30	35	30...50		30	35

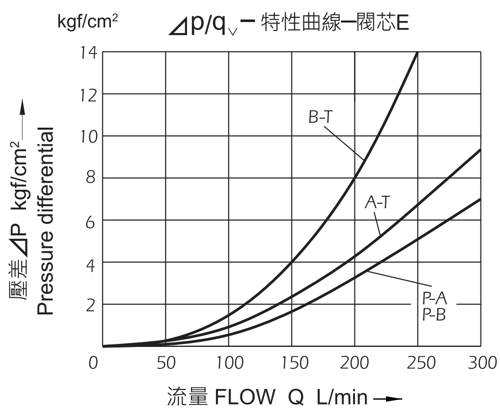
操作時期[1] Shifting times[1]													
1) 操作時間=從電磁鐵通電到主閥芯的控制台肩開啟的時間。 1) Shifting time = Contacting at the pilot valve up to start of opening of the control land in the main valve													
規格 32（先導閥6X系列E） Size 32 (Pilot valve series 6X/E)													
閥從中位至操作位置的操作時間（用於直流（DC）和交流（AC）操作） Shifting time of the valve from neutral position to shifted position with AC and DC operation													
在控制壓力下 at pilot pressure	kgf/cm²	AC 50 DC				AC 150 DC				AC 250 DC			
- 三位閥，彈簧對中 - 3-position valve, spring-centred	ms	65		80		50		90		35		105	
- 二位閥 - 2-position valve	ms	100		130		75		100		60		115	
- 三位閥 電磁鐵操作 - 3-position valve Solenoid operated		a	b	a	b	a	b	a	b	a	b	a	b
壓力對中 pressure-centred	ms	55	60	100	105	40	45	85	95	35	40	85	95
閥從操作位置至中位的操作時間 Shifting time of the valve from shifted position to neutral position													
- 三位閥 - 3-position valve	ms	60至75用於DC /50用於AC 60 to 75 for DC /50 for AC											
- 二位閥 - 2-position valve	ms	115...130		90		85...100		70		65...80		65	
- 三位閥 從─ - 3-position valve From─		a	b	a	b	a	b	a	b	a	b	a	b
壓力對中 pressure-centred	ms	30...65		30	40	60...90		30	30	105...155		50	50

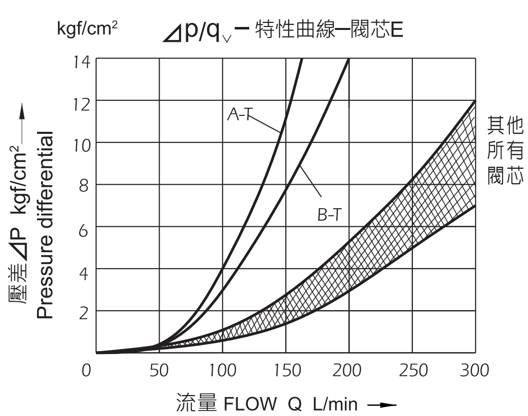
特性曲線 (在 v =41 mm²/s 及t=50°C時測得)

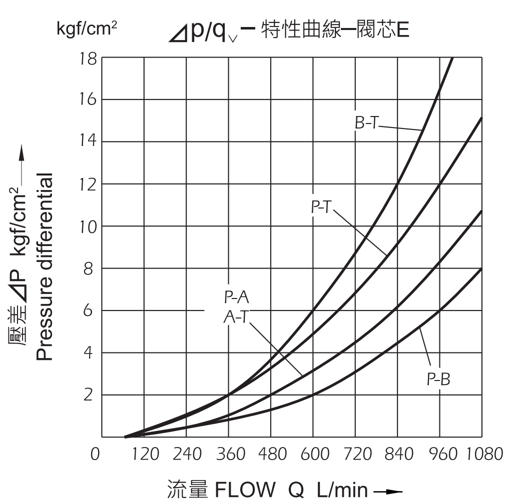
Switching power limits (measured at v =41 mm2/s and t=50°C)

●4WEH-16...型









性能極限：4WEH-16...型 (在 v =41 mm²/s 及t=50°C時測得)

Performance limits: Type 4WEH-16... (measured at v =41 mm2/s and t=50°C)

二位閥（允許流量 q_v L/min） 2-position valve (Pemissible flow q_v L/min)						需帶X內控預載閥 X＝內控 Pre-load valve, required for X=intermal
閥芯 Spool	公稱壓力⊿P kgf/cm² Operating pressure P_{max} in kgf/cm²					
	70	140	210	280	350	
主閥彈簧復位 with spring offset in the main valve						
C,D,K,Z,Y	300	300	300	300	300	閥芯C和Z大約至160 L/min Spools C, Z up to approx. 160 L/min
主閥彈簧復位 with spring offset in the main valve						
C	300	300	300	300	300	
D,Y	300	270	260	250	230	
K	300	250	240	230	210	
Z	300	260	190	180	160	
主閥液壓復位 with hydraulic offset in the main valve						
HC,HD,HK	300	300	300	300	300	
HZ,HY	300	300	300	300	300	

1) 當最低控制壓力12 kgf/cm² 存在時，可達到所給流量值。
2) 當控制功力降低時，流量值受復位彈簧能使閥復位的流量值的限制。

1) The flow valves given are achieved when the minimum pilot pressure of 12 kgf/cm² is present.
2) The flow valves given are limiting valves at which the retum spring can retum the valve whin the pilot pressure fails.

三位閥（允許流量 q_v L/min） 3-position valve (Pemissible flow q_v L/min)						需帶X內控預載閥 X＝內控 Pre-load valve, required for X=intermal
閥芯 Spool	公稱壓力⊿P kgf/cm² Operating pressure P_{max} in kgf/cm²					
	70	140	210	280	350	
彈簧對中 spring-centred						
E,H,J,L,M Q,U,W,R	300	300	300	300	300	通常閥芯F, G, H, P和S Spools F, G, H, P and S in general
C	300	300	300	300	300	
D,Y	300	270	260	250	230	
K	300	250	240	230	210	
Z	300	260	190	180	160	
壓力對中(最低控制壓力16 kgf/cm²) Pressure-centred (at min. pilot pressure of 16 kgf/cm²)						閥芯大約至160 L/min Spools V up to approx. 160 L/min
所有閥芯 for all Spools	300	300	300	300	300	

⚠ 注意！

當使用一個主閥芯壓力對中的三位四通閥超出所給的性能極限時，要求控制壓力更高。
因而，如果回路公稱壓力為350 kgf/cm²，流量為300L/min，則要求控制壓力為16 kgf/cm²。
因而，此閥的最大流量只取決於經過閥的可接受的壓降。

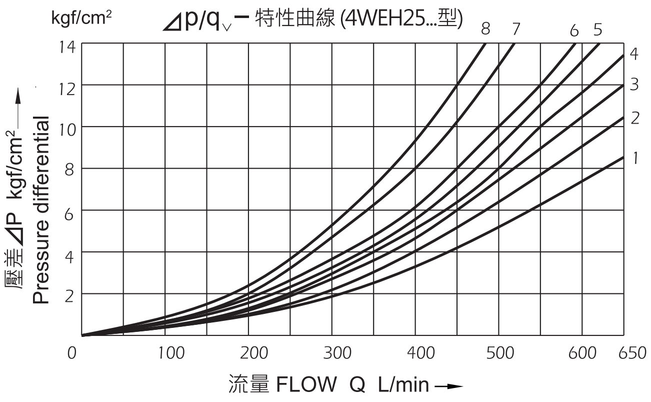
⚠ Attention

When using 4/3-way directional valves with spring-centring of the control spool in the main valve, which exceeds the given performance limits, a higher pilot pressure is required.
Example: At an operating pressure of Pmax = 350 kgf/cm2 and a flow of qv = 300 L/min, a pilot pressure of 16 kgf/cm2 is required.
The maximum flow for those valves is therefore only dependent on the⊿P valve which is acceptable for the system.

特性曲線 (在 v =41 mm²/s 及t=50°C時測得)

Switching power limits (measured at v =41 mm2/s and t=50°C)

●4WEH-25...型



閥芯 Spool	操作位置 Shifted position			
	P→A	P→B	A→T	B→T
E	1	1	1	3
F	1	4	3	3
G	3	1	2	4
H	4	4	3	4
J	2	2	3	5
L	2	2	3	3
M	4	4	1	4
P	4	1	1	5
Q	2	2	3	5
R	2	1	1	-
U	2	1	1	6
V	4	4	3	6
W	1	1	1	3
T	3	1	2	4

性能極限：4WEH-25...型 (在 v =41 mm²/s 及t=50°C時測得)

Performance limits: Type 4WEH-25... (measured at v =41 mm2/s and t=50°C)

二位閥（允許流量 q_v L/min） 2-position valve (Pemissible flow q_v L/min)						需帶X內控預載閥 X = 內控 Pre-load valve, required for X=intermal
閥芯 Spool	公稱壓力⊿P kgf/cm² Operating pressure P_{max} in kgf/cm²					
	70	140	210	280	350	
主閥彈簧復位 with spring offset in the main valve						
C,D,K,Z,Y	700	700	700	700	650	
主閥彈簧復位 with spring offset in the main valve						閥芯C和Z 大約至 160 L/min Spools C, Z up to approx. 160 L/min
C	700	700	700	700	650	
D,Y	700	650	400	350	300	
K	700	650	420	370	320	
Z	700	700	650	480	400	
主閥液壓復位 with hydraulic offset in the main valve						閥芯HC和HZ 大約至 180 L/min Spools HC, HZ up to approx. 180 L/min
HC,HD,HK	700	700	700	700	700	
HZ,HY	700	700	700	700	700	
HC../O..	700	700	700	700	700	
HD../O..	700	700	700	700	700	
HK../O..	700	700	700	700	700	
HZ../O..	700	700	700	700	700	
HC../OF..	700	700	700	700	700	
HD../OF..	700	700	700	700	700	
HK../OF..	700	700	700	700	700	
HZ../OF..	700	700	700	700	700	

三位閥（允許流量 q_v L/min） 3-position valve (Pemissible flow q_v L/min)						需帶X內控預載閥 X = 內控 Pre-load valve, required for X=intermal
閥芯 Spool	公稱壓力⊿P kgf/cm² Operating pressure P_{max} in kgf/cm²					
	70	140	210	280	350	
彈簧對中 spring-centred						
E,L,M Q,U,W	700	700	700	700	650	閥芯F, G, H, P和T 大約至 180 L/min Spools F, G, H, P and T in general, Spools V up to approx. 180 L/min
G,T	400	400	400	400	400	
F	650	550	430	330	300	
H	700	650	550	400	360	
J	700	700	650	600	520	
P	650	550	430	330	300	
V	650	550	400	350	310	
R	700	700	700	650	580	
壓力對中(最低控制壓力18 kgf/cm²) Pressure-centred (at min. pilot pressure of 18 kgf/cm²)						
E,F,H,J	700	700	700	700	650	
L,M,P,Q	700	700	700	700	650	
R,U,V,W	700	700	700	700	650	
G,T	400	400	400	400	400	
在高於30 kgf/cm² 時控制壓力 at>30 kgf/cm² pilot pressure						
G,T	700	700	700	700	650	

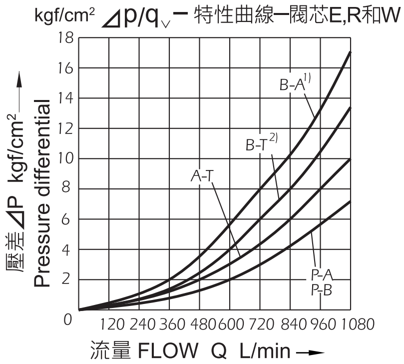
1) 當最低控制壓力13 kgf/cm² 存在時，可達到所給流量值。
2) 當控制功力降低時，流量值受復位彈簧能使閥復位的流量值的限制。

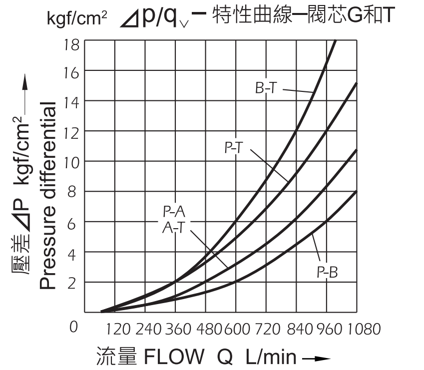
1) The flow valves given are achieved when the minimum pilot pressure of 13 kgf/cm² is present.
2) The flow valves given are limiting valves at which the retum spring can retum the valve whin the pilot pressure fails.

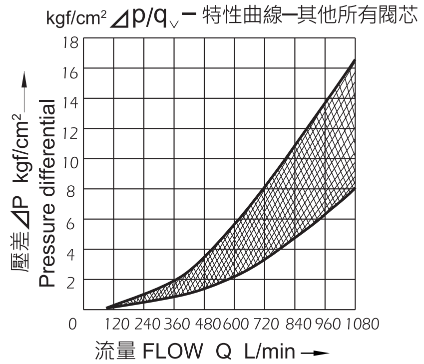
特性曲線 (在 v =41 mm²/s 及t=50°C時測得)

Switching power limits (measured at v =41 mm2/s and t=50°C)

●4WEH-32...型







性能極限：4WEH-32...型 (在 v =41 mm²/s 及t=50°C時測得)

Performance limits: Type 4WEH-32... (measured at v =41 mm2/s and t=50°C)

二位閥 (允許流量 q_v L/min) 2-position valve (Pemissible flow q_v L/min)						需帶X內控預載閥 X＝內控 Pre-load valve, required for X=internal
閥芯 Spool	公稱壓力⊿P kgf/cm² Operating pressure P_{max} in kgf/cm² 70	140	210	280	350	
主閥彈簧復位 with spring offset in the main valve						
C,D,K,Z,Y	1100	1040	800	750	680	
主閥彈簧復位 with spring offset in the main valve						閥芯C和Z大約至160 L/min Spools C, Z up to approx. 160 L/min
C	1100	1040	860	800	700	
D,Y	1100	1040	540	480	420	
K	1100	1040	860	500	450	
Z	1100	1040	860	700	650	
主閥液壓復位 with hydraulic offset in the main valve						閥芯HC和HZ大約至180 L/min Spools HC, HZ up to approx. 180 L/min
HC,HD,HK	1100	1040	860	750	680	
HZ,HY	1100	1040	860	750	680	

1) 當最低控制壓力10 kgf/cm² 存在時，可達到所給流量值。
2) 當控制功力降低時，流量值受復位彈簧能使閥復位的流量值的限制。
1) The flow valves given are achieved when the minimum pilot pressure of 10 kgf/cm² is present.
2) The flow valves given are limiting valves at which the retum spring can retum the valve whin the pilot pressure fails.

三位閥 (允許流量 q_v L/min) 3-position valve (Pemissible flow q_v L/min)						需帶X內控預載閥 X＝內控 Pre-load valve, required for X=internal
閥芯 Spool	公稱壓力⊿P kgf/cm² Operating pressure P_{max} in kgf/cm² 70	140	210	280	350	
彈簧對中 spring-centred						
E,J,L,M Q,R,U,W	1100	1040	860	750	680	通常閥芯 F, G, H, P和T 閥芯V大約至 180 L/min Spools F, G, H, P and T in general, Spool V up to approx. 180 L/min
G,T,H,F,P	900	900	800	650	450	
V	1100	1000	680	500	450	
壓力對中(最低控制壓力8.5 kgf/cm²) Pressure-centred (at min. pilot pressure of 8.5 kgf/cm²)						
所有閥芯 for all Spools	1100	1040	860	750	680	

⚠注意！
當使用一個主閥芯壓力對中的三位四通閥超出所給的性能極限時，要求控制壓力更高。
因而，如果回路公稱壓力為P*max* = 350 kgf/cm²，流量為qv=1100L/min，則要求控制壓力為15 kgf/cm²。
因而，此閥的最大流量只取決於經過閥的可接受的壓降。

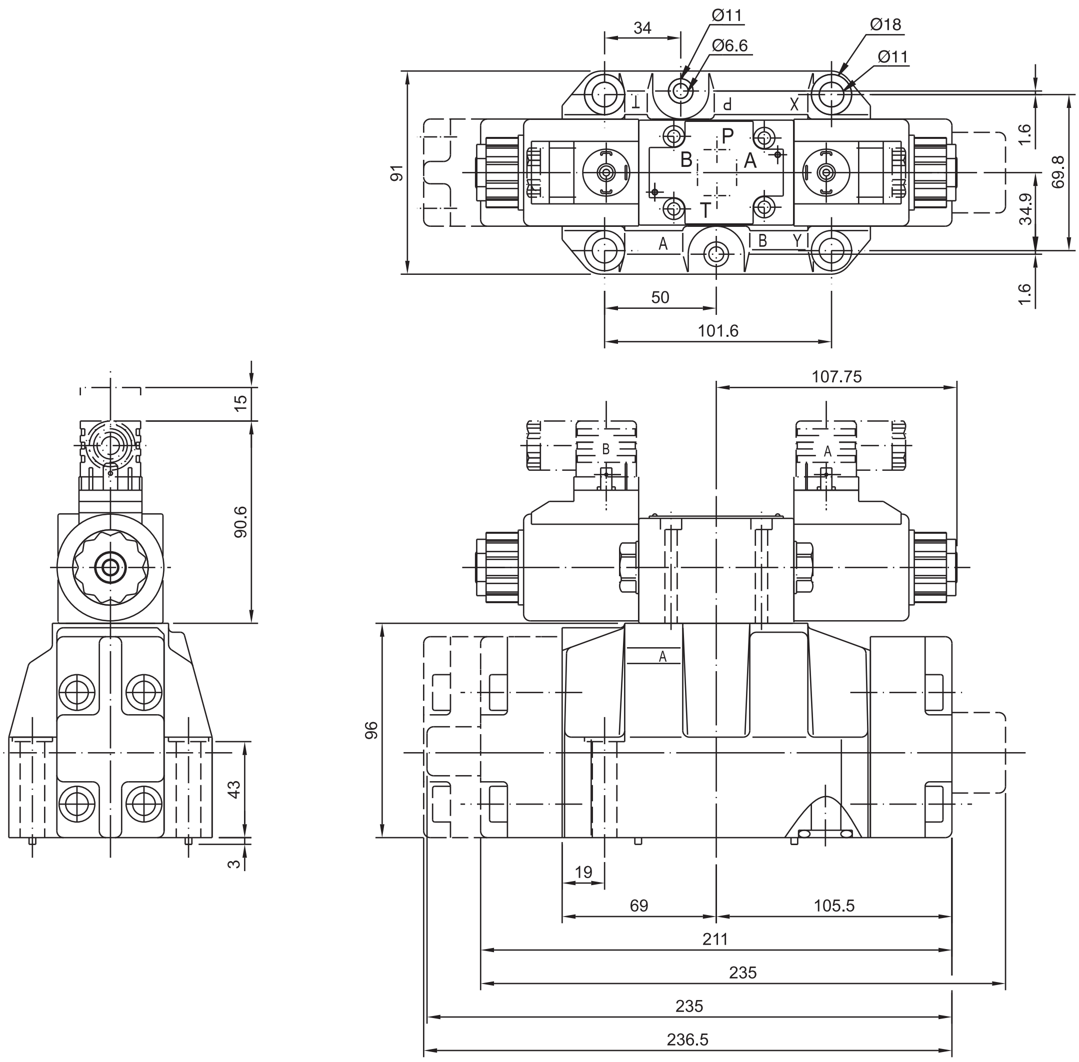
⚠Attention
When using 4/3-way directional valves with spring-centring of the control spool in the main valve, which exceeds the given performance limits, a higher pilot pressure is required.
Example: At an operating pressure of P*max* = 350 kgf/cm2 and a flow of qv = 1100 L/min, a pilot pressure of 15 kgf/cm2 is required.
The maximum flow for those valves is therefore only dependent on the △P valve which is acceptable for the system.

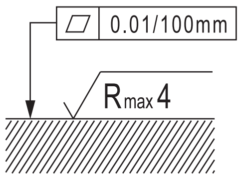
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

4WEH-16...型

通用底板尺寸
APPLICATIVE SUB-PLATE DIMENSIONS
MC - 04 - 1
(詳見 E01-10 Page E01-10)





要求配合件部表面精加工
Required surface finish of the mating piece

Valve fixing screws

閥固定螺釘 4個M10x60 DIN 912-10.9，安裝扭矩 60~74N·m
2個M6x50 DIN 912-10.9，安裝扭矩 12~15N·m

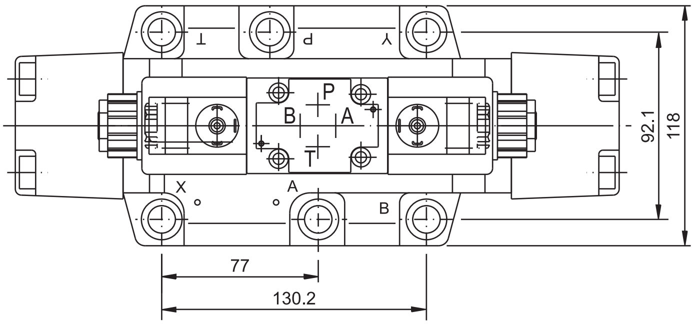
4 off M10x60 DIN 912-10.9, Mounting torque 60~75N·m
2 off M6x50 DIN 912-10.9, Mounting torque 12~15N·m

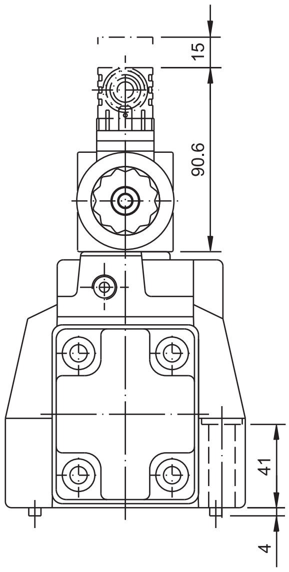
單位 UNIT：mm

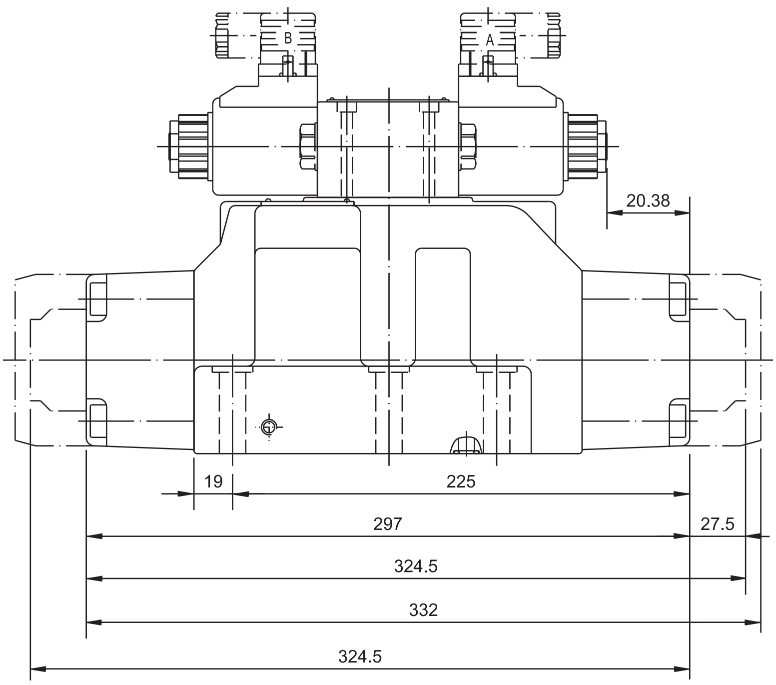
安裝尺寸 INSTALLATION DIMENSIONS

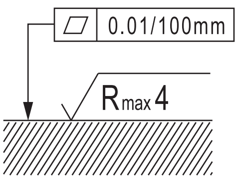
4WEH-25...型

通用底板尺寸
APPLICATIVE SUB-PLATE DIMENSIONS
MC - 04 - 2
(詳見 E01-10 Page E01-10)









要求配合件部表面精加工
Required surface finish of the mating piece

閥固定螺釘
6個M12x60 DIN 912-10.9，安裝扭矩 104~127N·m

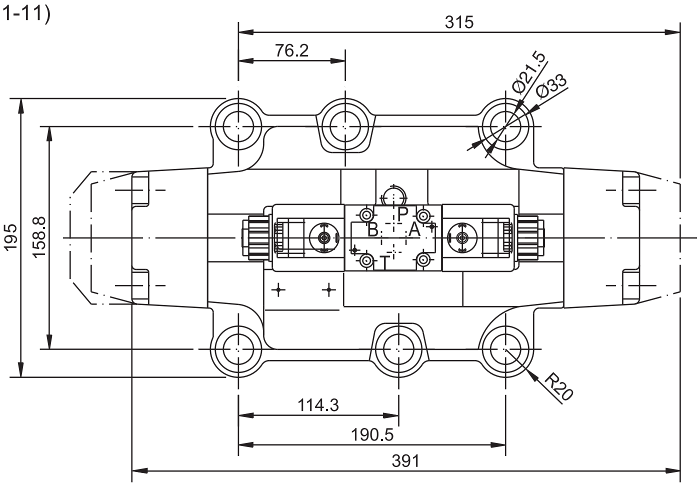
Valve fixing screws
6 off M12x60 DIN 912-10.9, Mounting torque 104~127N·m

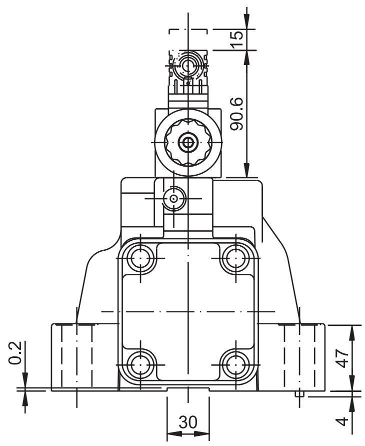
單位 UNIT：mm

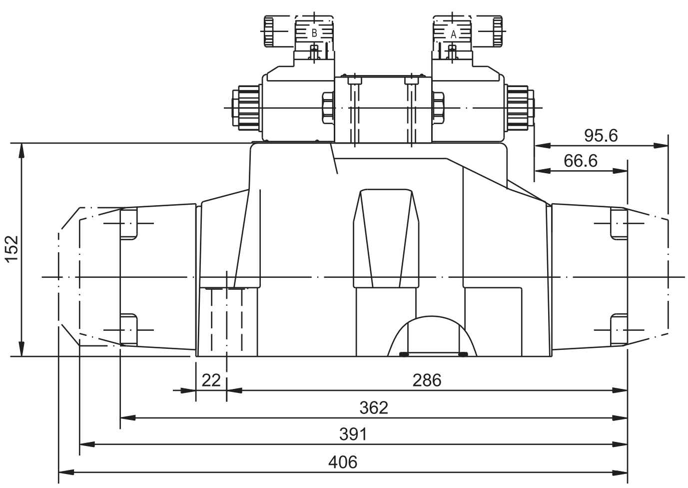
安裝尺寸 INSTALLATION DIMENSIONS

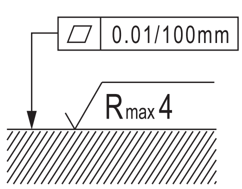
4WEH-32...型

通用底板尺寸
APPLICATIVE SUB-PLATE DIMENSIONS
MC - 04 - 3
(詳見 E01-11 Page E01-11)







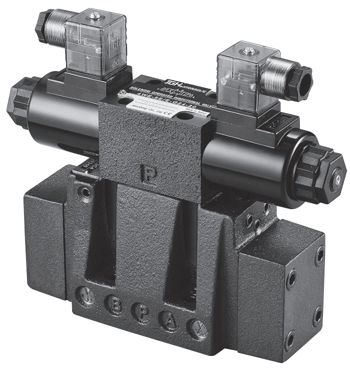


要求配合件部表面精加工
Required surface finish of the mating piece

閥固定螺釘
6個M20x80 DIN 912-10.9，安裝扭矩 493~603N·m

Valve fixing screws
6 off M20x80 DIN 912-10.9, Mounting torque 493~603N·m

Solenoid Control Pilot Operated Directional Valve



規格說明 SPECIFICATION

型式 MODEL	最大流量 MAX. FLOW L/min	最高作動壓力 MAX. OPERATED kgf/cm²	最高引導壓 MAX. PILOT kgf/cm²	最低引導壓 MIN. PILOT kgf/cm²	回油孔容許最高背壓 MAX. T-LINE BACK PRES. (kgf/cm²)		最高換向頻率 MAX. CHANGE OVER FREQUENCY (Cycles/min)		
					外部洩油 EXT. DRAIN	內部洩油 INT. DRAIN	AC	DC	R
DHG-03-※	150	315	250	8	210	140	120	120	120
DHG-04-※	300			8	210	140	120	120	120
DHG-06-※	500			8	210	140	120	120	120
DHG-10-※	1100			8	210	140	120	120	120

型式 MODEL	重量(不含電磁閥) WEIGHT(NO CONTAIN ELECTRO MAGNETIC VALVE) (kg)					
		AK	ABK	50	AK-50	ABK-50
DHG-03-※	5.4					
DHG-04-※	6.4	6.9	7.4	7.6	8.1	8.6
DHG-06-※	11.7	12.7	13.2			
DHG-10-※	52.5					

附屬品 ATTACHMENT

型式 MODEL	安裝螺絲 SOC HOL CAP SCREW	安裝扭矩 MOUNTING TORQUE N·m
DHG-03	M6 X 35L 4pcs	12~15
DHG-04	M6 X 40L.......2pcs M10 X 45L.....4pcs	12~15 60~74
DHG-06	M12 X 45L.....6pcs	104~127
DHG-10	M20 X 75L.....6pcs	493~603

4WE-06電磁閥重量 SOLENOID WEIGHT (kg)		
	AC	DC
帶1個電磁鐵 Single coil	1.6	1.7
帶2個電磁鐵 Two coils	2.1	2.1

型號說明 HOW TO ORDER

DH G - 06 - 3C2 - ET - 50 - W220/50 - 10 - AB - K

旋轉型式 KNOB TYPE
無代號：無調整把手 **NO CODE :** FOR WITHOUT KNOB
K : 附調整把手 WITHOUT KNOB

把手方向 DIRECTION OF KNOB
無代號：標準型 **NO CODE :** STANDARD TYPE
AB : AB側加可調整把手
WITH STROKE ADJUSTMENT BOTH ENDS
A : A側加可調整把手
WITH STROKE ADJUSTMENT PORT"A" END
B : B側加可調整把手
WITH STROKE ADJUSTMENT PORT"B" END

接線方式 WIRING
10 : 帶燈的集中連接盒 WITH LAMP CENTRAL CONNECTION
20 : 插入式接頭帶密封套 PLUG-IN CONNECTION

線圈電壓 COIL VOLTAGE
G12 : 12V DC **G24 :** 24V DC
W110 : 110/50/60Hz **W220 :** 220/50/60Hz

設計編號 DESIGN NUMBER
50 : 閥規格04唯一型式 ONLY FOR 04 TYPE

控油方式 PILOT AND DRAIN TYPE
無代號：內部引導內部泄油
NO CODE : INTERNAL PILOT & DRAIN
ET : 外部引導外部泄油
EXTERNAL PILOT & DRAIN
E : 外部引導內部泄油
EXTERNAL PILOT INTERNAL DRAIN
T : 內部引導外部泄油
INTERNAL PILOT EXTERNAL DRAIN

主軸型式，見 C11-03 **頁**
SPOOL TYPE (AS C11-03)

閥規格 VALVE SIZE
03 : 3/8" **04 :** 1/2" **06 :** 3/4" **10 :** 1-1/4"

安裝型式 MOUNTING
G : 板式安裝 SUB-PLATE MOUNTING

系列編號 SERIES NUMBER

主軸型式 SPOOL TYPE

類別 APPLOCATION	型式 TYPE	GRAPHIC SYMBOLS
三位置 彈簧中立 THREE POSITION SPRING CENTERED	C2	
	C3	
	C4	
	C40	
	C5	
	C6	
	C60	
	C7	
	C8	
	C9	
二位置 彈簧復位 TWO POSITION SPRING OFFSET (SOLENOID b)	C2B	
	C3B	
	C4B	
	C40B	
	C5B	
	C6B	
	C60B	
	C7B	
	C8B	
	C9B	
	C5SB	
	C8SB	
	C9SB	

類別 APPLOCATION	型式 TYPE	GRAPHIC SYMBOLS
二位置無彈簧復位 TWO POSITION WITHOUT SPRING WITHOUT CENTERING	N2	
	N3	
二位置鋼珠定位 TWO POSITION DETENT	D2	
	D3	
二位置 彈簧復位 TWO POSITION SPRING OFFSET (SOLENOID b)	B2	
	B3	
	B20	
	B2S	
	B3S	
	B20S	
二位置 彈簧復位 TWO POSITION SPRING OFFSET (SOLENOID a)	C2BS	
	C3BS	
	C4BS	
	C40BS	
	C5BS	
	C6BS	
	C60BS	
	C7BS	
	C8BS	
	C9BS	
三位置 彈簧中立 THREE POSITION SPRING CENTERED	C5S	
	C8S	
	C9S	
	CS	

PORT INTERCONNECTION

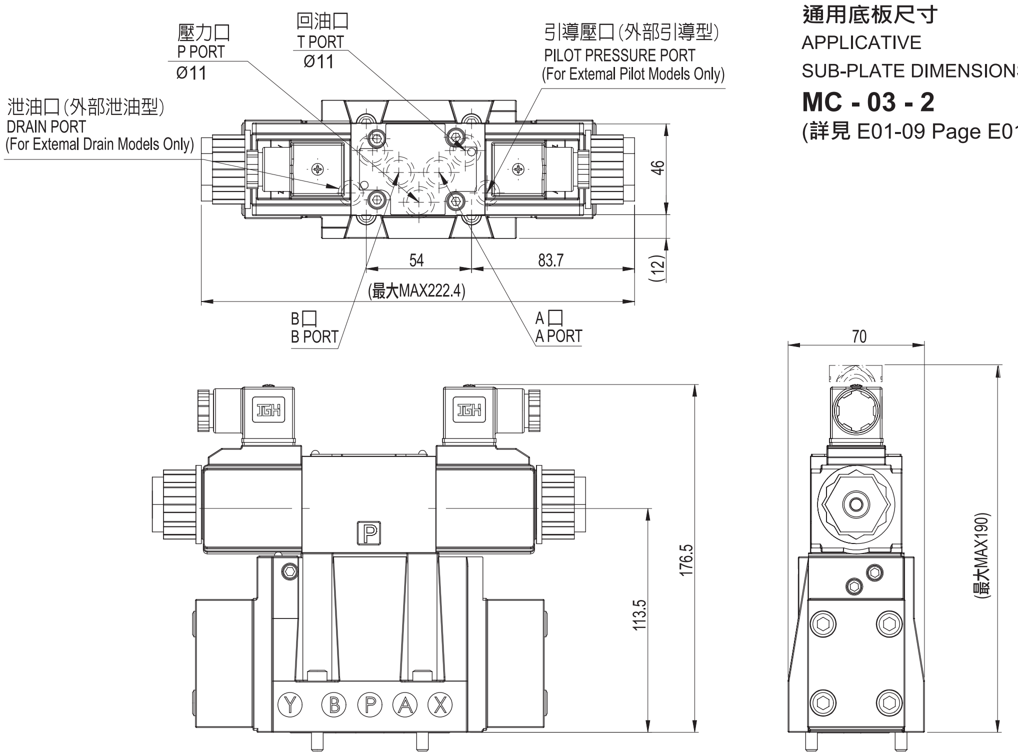
- 和電磁閥 "a" 通電 P→A B→T With solenoid "a" energized P→A B→T
- 和電磁閥 "b" 通電 P→B A→T With solenoid "b" energized P→B A→T
- 但是主軸型式C5, C6, C60的連接口方向相反 But port interconnections are reversed for C5, C6, C60 type.

單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

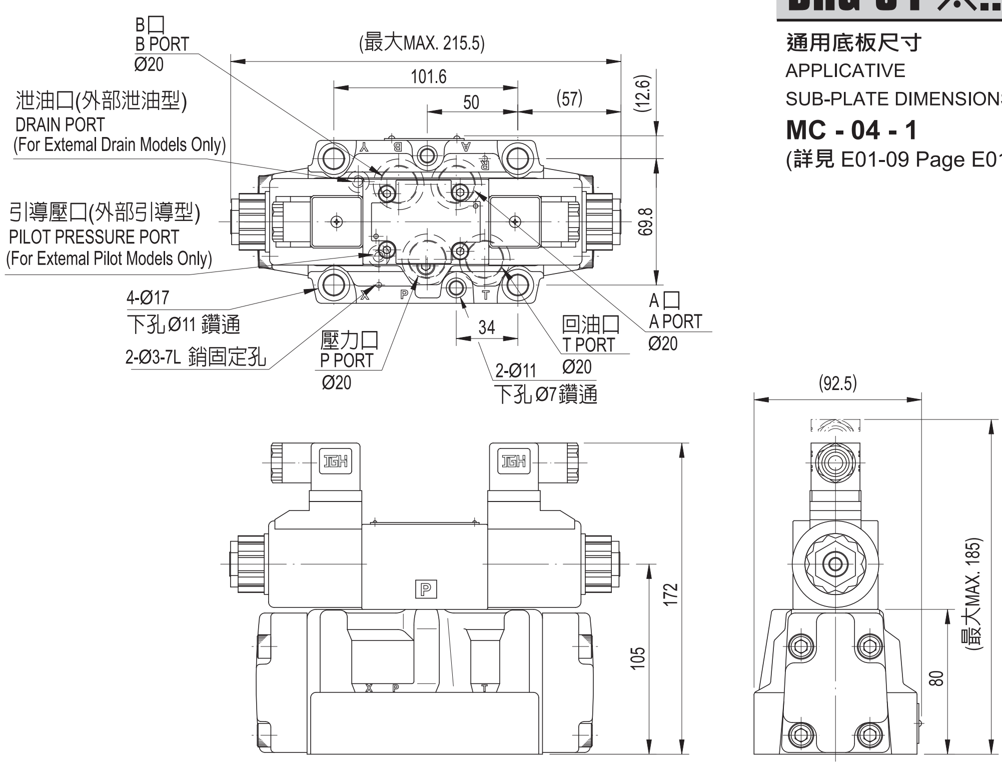
DHG-03-※...AC

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 03 - 2
(詳見 E01-09 Page E01-09)



DHG-04-※...DC

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 04 - 1
(詳見 E01-09 Page E01-09)

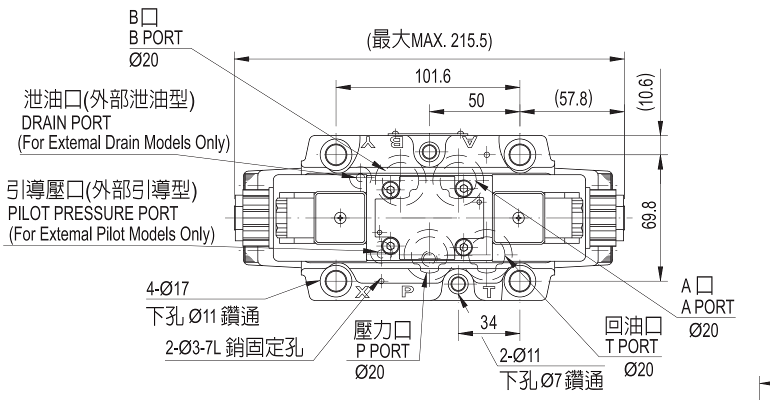


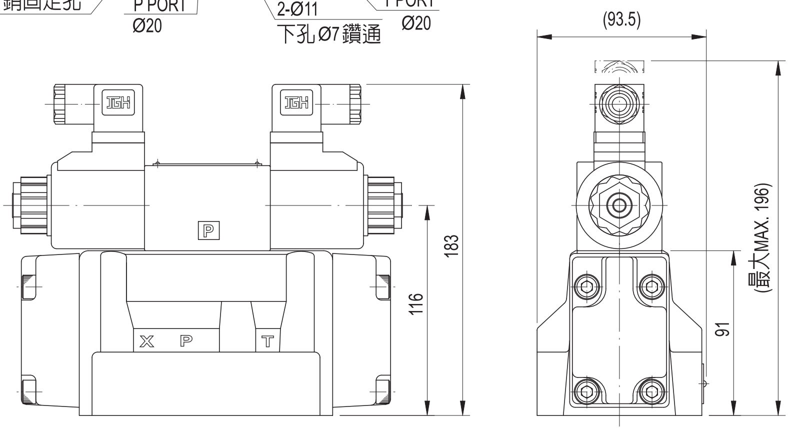
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

DHG-04-※-50...DC

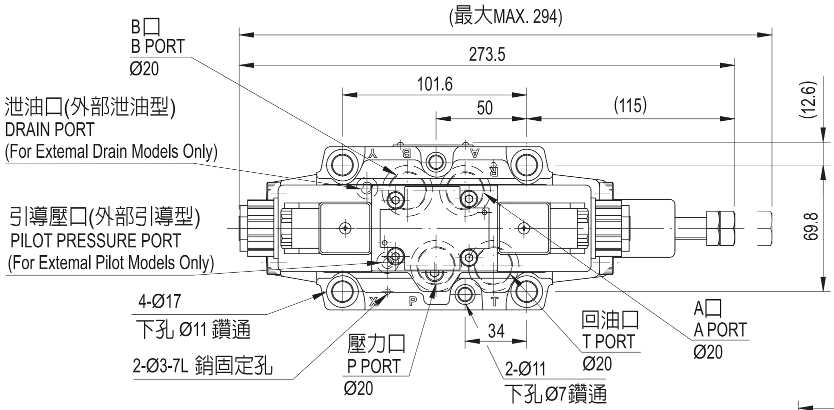
通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 04 - 1
(詳見 E01-10 Page E01-10)

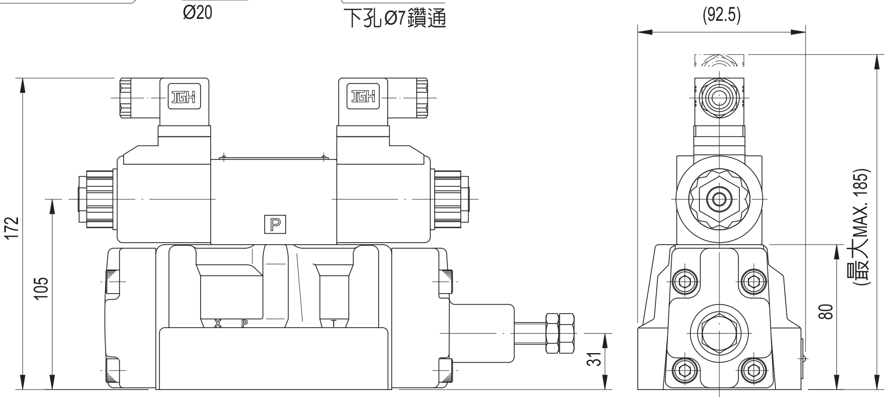




DHG-04-※-BK...DC

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 04 - 1
(詳見 E01-10 Page E01-10)



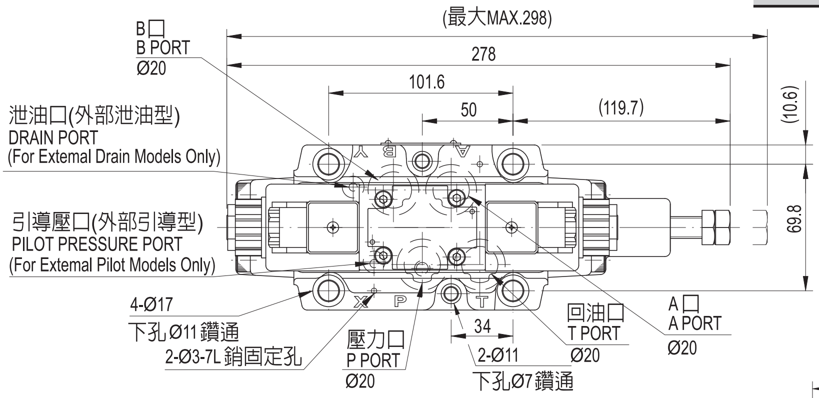


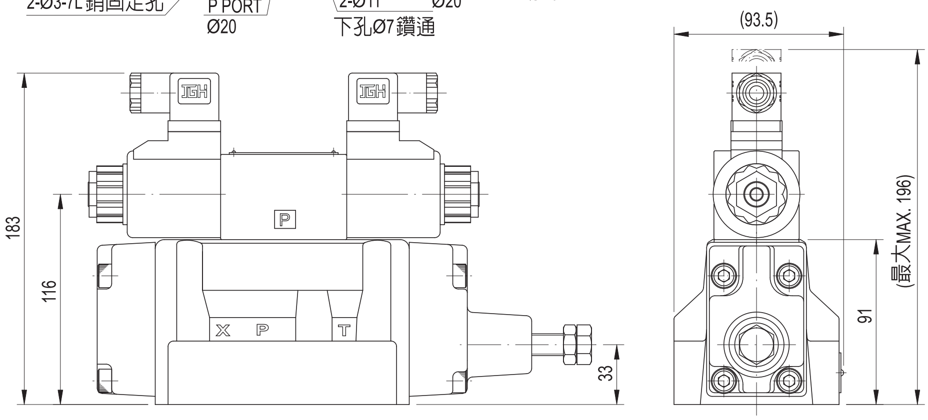
單位 UNIT：mm

安裝尺寸 INSTALLATION DIMENSIONS

DHG-04-※-BK-50...DC

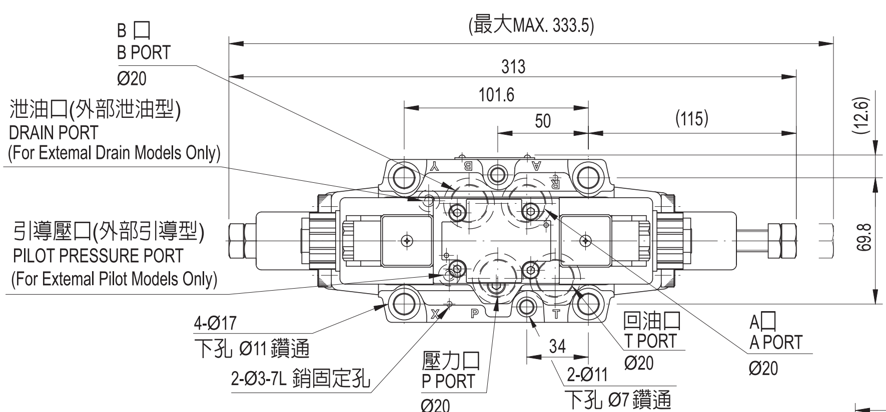
通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 04 - 1
(詳見 E01-10 Page E01-10)

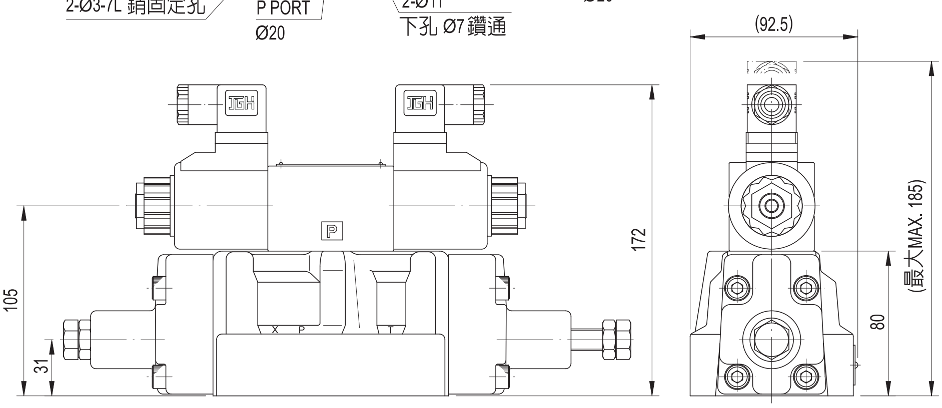




DHG-04-※-ABK...DC

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 04 - 1
(詳見 E01-10 Page E01-10)



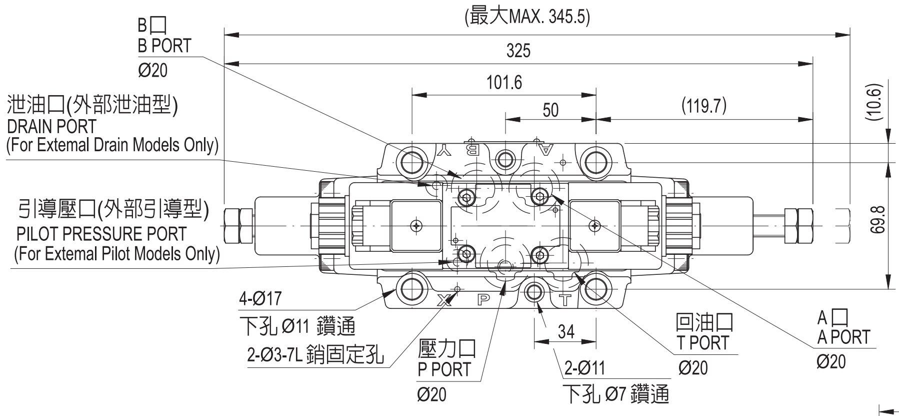


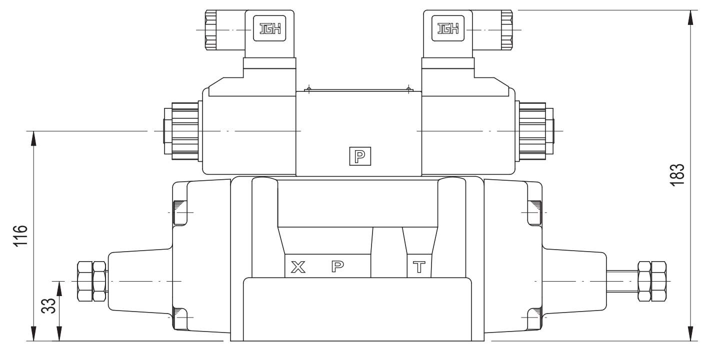
單位 UNIT：mm

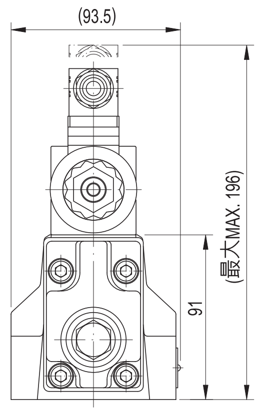
安裝尺寸 INSTALLATION DIMENSIONS

DHG-04-※-ABK-50...DC

通用底板尺寸
APPLICATIVE
SUB-PLATE DIMENSIONS
MC - 04 - 1
(詳見 E01-10 Page E01-10)

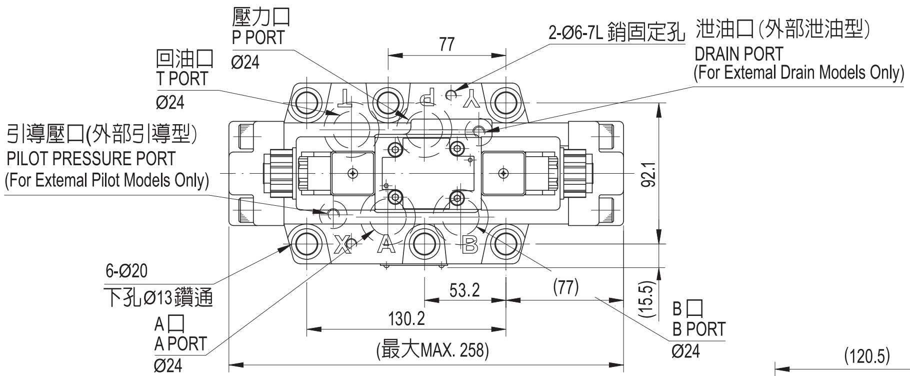


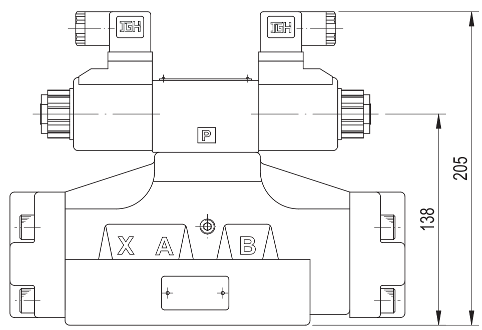


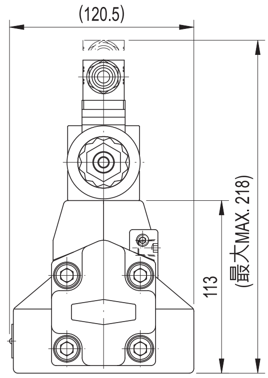


DHG-06-※...DC

通用底板尺寸
APPLICATIVE SUB-PLATE DIMENSIONS
MA - 04 - 2 (詳見 E01-10 Page E01-10)





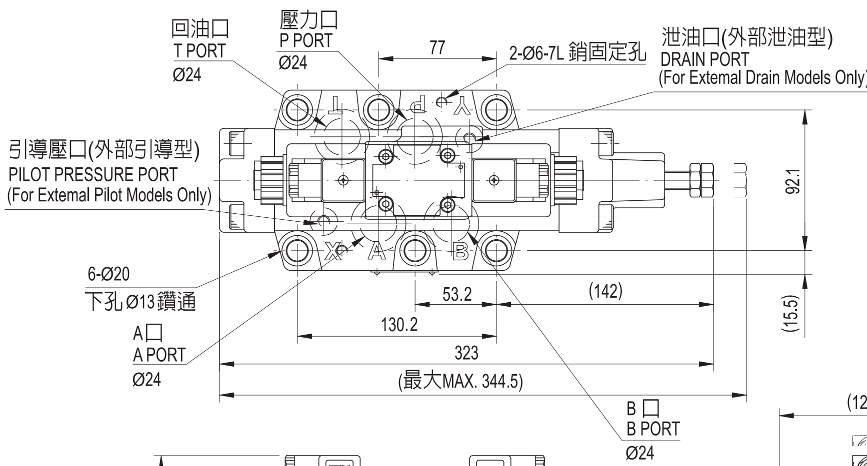


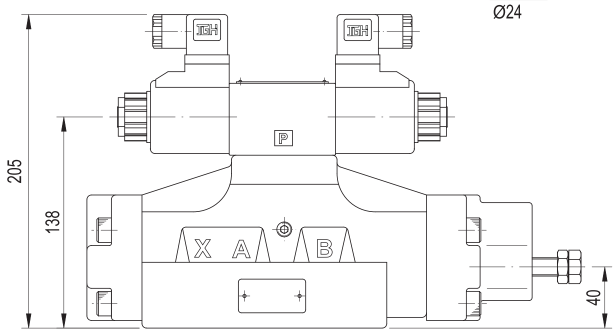
單位 UNIT：mm

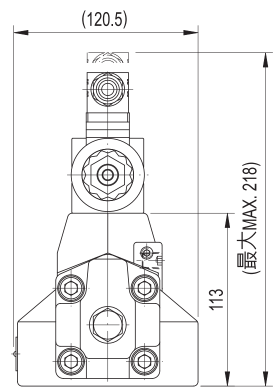
安裝尺寸 INSTALLATION DIMENSIONS

DHG-06-※-BK...DC

通用底板尺寸
APPLICATIVE SUB-PLATE DIMENSIONS
MC - 04 - 2 (詳見 E01-10 Page E01-10)

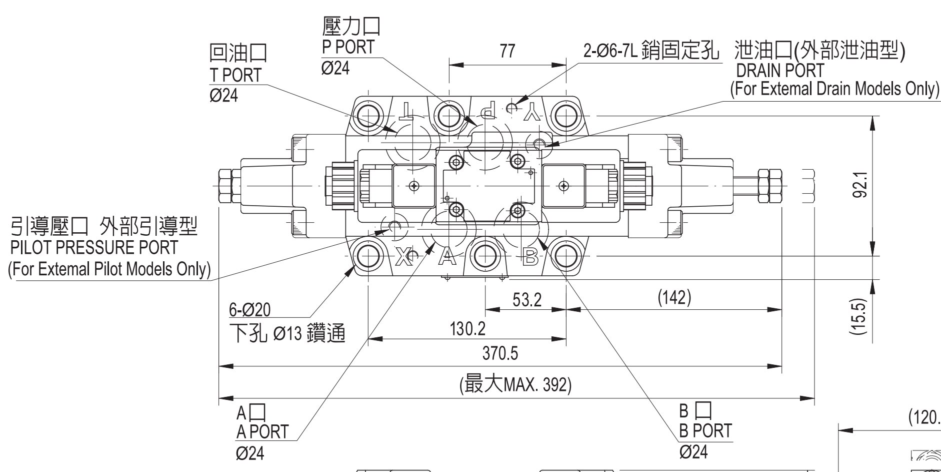


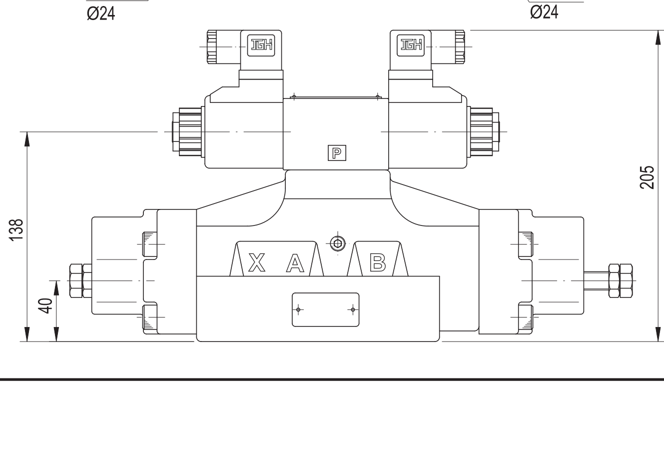


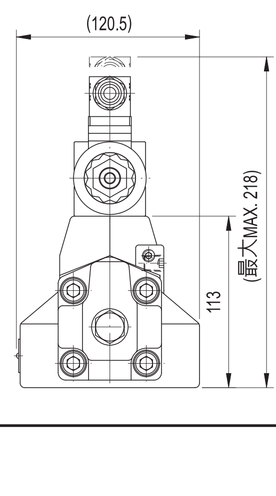


DHG-06-※-ABK...DC

通用底板尺寸
APPLICATIVE SUB-PLATE DIMENSIONS
MC - 04 - 2 (詳見 E01-10 Page E01-10)







單位 UNIT：mm

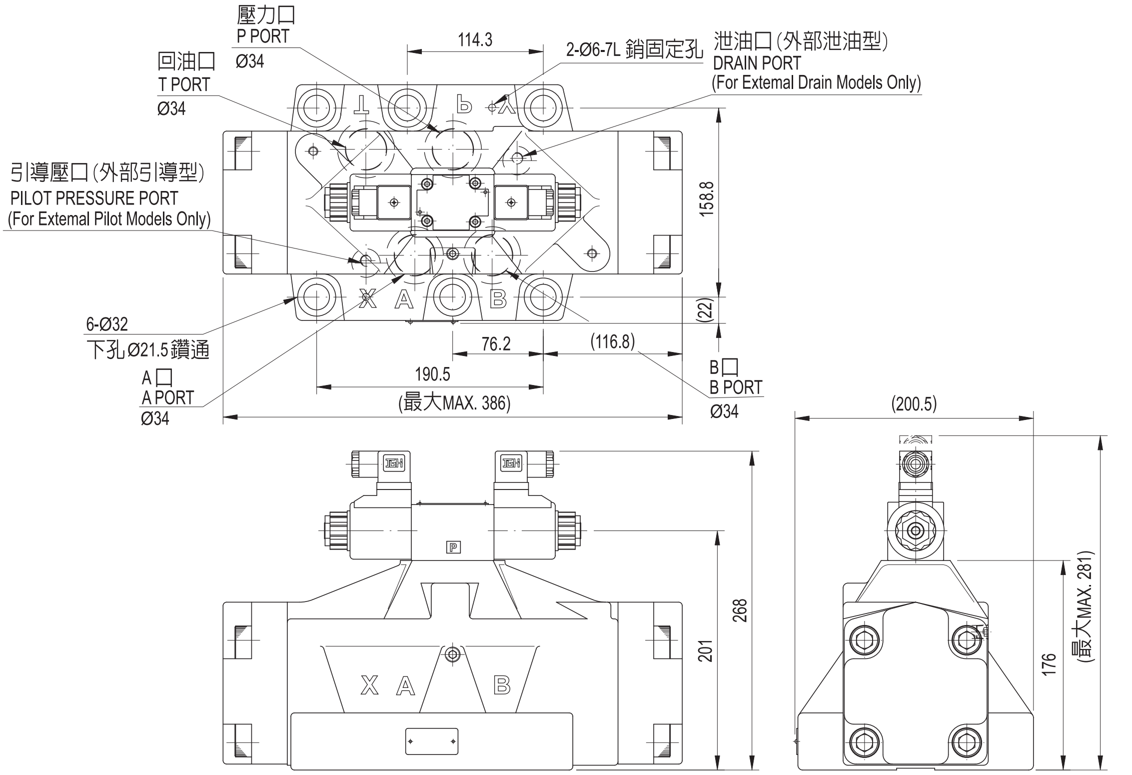
安裝尺寸 INSTALLATION DIMENSIONS

DHG-10-※...DC

通用底板尺寸

APPLICATIVE SUB-PLATE DIMENSIONS

MC - 04 - 3 (詳見 E01-10 Page E01-10)

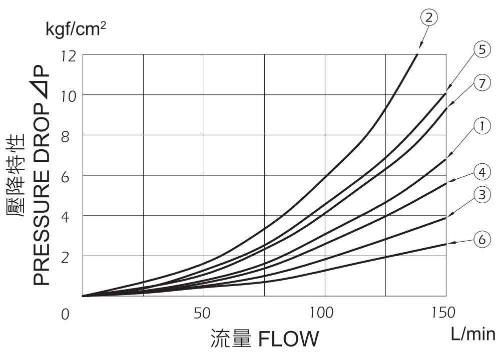


壓降特性 PRESSURE DROP

下列壓降特性是在油液黏度 35 cSt (mm/s) 和比重 0.850 條件下測得

Pressure drop curves based on viscosety of 35 cSt (160 SSU) and specific gravity of 0.850

● **DHG-03**



閥芯型式 SPOOL TYPE	壓降曲線號 PRESSURE DROP CURVE NUMBERS P→A	B→T	P→B	A→T	P→T	閥芯型式 SPOOL TYPE	PRESSURE DROP CURVE NUMBERS P→A	B→T	P→B	A→T	P→T
2	⑤ (②)	④ (②)	⑤ (②)	⑥ (④)	—	60	⑦	⑤	⑦	⑦	②
3	⑤	③	⑤	⑤	⑦	7	⑤	④	⑤	⑥	—
4	⑤ (②)	③ (③)	⑤ (②)	⑤ (⑤)	—	9	⑤	④	⑤	⑥	—
40	⑤ (②)	④ (④)	⑤ (②)	⑥ (⑥)	—	10	⑤ (②)	② (②)	⑤ (②)	⑥ (④)	—
5	⑦	④	⑤	⑤	⑤	11	⑥	④	⑤	⑥	—
6	⑤ (⑥)	③ (④)	⑤ (⑥)	⑥ (⑦)	① (②)	12	⑤ (②)	④ (②)	⑤ (②)	⑤ (⑤)	—

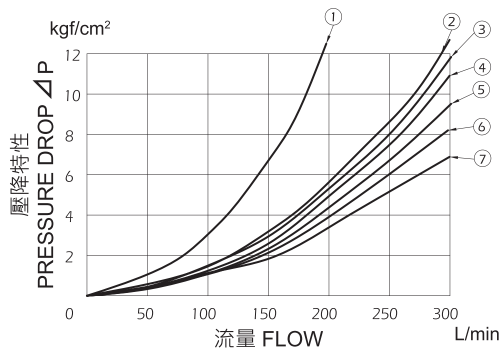
註：( ) 內數字表示無衝擊型 (DHG-03) 曲線號

Note : Figures enclosed ( ) shows curve number for shock-less type (DHG-03)

壓降特性 PRESSURE DROP

下列壓降特性是在油液黏度 35 cSt (mm/s) 和比重 0.850 條件下測得
Pressure drop curves based on viscosety of 35 cSt (160 SSU) and specific gravity of 0.850

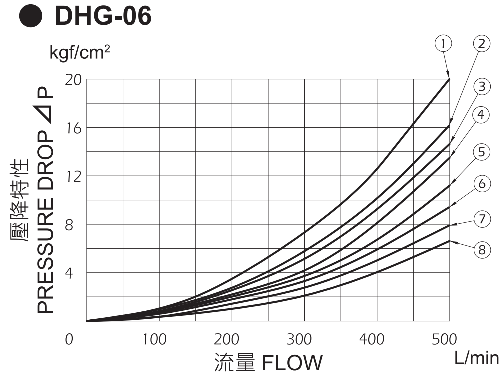
● DHG-04



閥芯型式 SPOOL TYPE	壓降曲線號 PRESSURE DROP CURVE NUMBERS P→A	B→T	P→B	A→T	P→T	閥芯型式 SPOOL TYPE	PRESSURE DROP CURVE NUMBERS P→A	B→T	P→B	A→T	P→T
2	⑤ (②)	④ (②)	⑤ (②)	⑥ (④)	–	60	⑦	⑤	⑦	⑦	②
3	⑤	③	⑤	⑤	⑦	7	⑤	④	⑤	⑥	–
4	⑤ (②)	③ (③)	⑤ (②)	⑤ (⑤)	–	9	⑤	④	⑤	⑥	–
40	⑤ (②)	④ (④)	⑤ (②)	⑥ (⑥)	–	10	⑤ (②)	② (②)	⑤ (②)	⑥ (④)	–
5	⑦	④	⑤	⑤	⑤	11	⑥	④	⑤	⑥	–
6	⑤ (⑥)	③ (④)	⑤ (⑥)	⑥ (⑦)	① (②)	12	⑤ (②)	④ (②)	⑤ (②)	⑤ (⑤)	–

註： ( ) 內數字表示無衝擊型 (DHG-04) 曲線號
Note : Figures enclosed ( ) shows curve number for shock-less type (DHG-04)

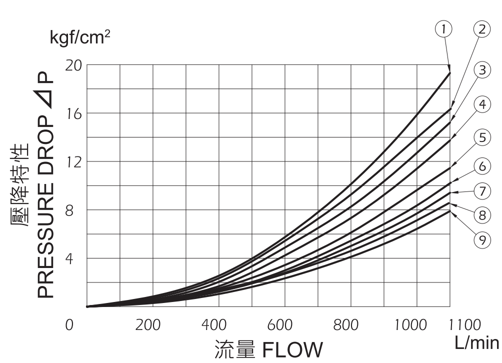
● DHG-06



閥芯型式 SPOOL TYPE	壓降曲線號 PRESSURE DROP CURVE NUMBERS P→A	B→T	P→B	A→T	P→T	閥芯型式 SPOOL TYPE	PRESSURE DROP CURVE NUMBERS P→A	B→T	P→B	A→T	P→T
2	⑧ (⑥)	⑤ (①)	⑧ (⑥)	⑦ (②)	–	60	⑥ (⑥)	⑤ (②)	⑥ (⑥)	⑦ (③)	③ (①)
3	⑥	④	⑥	⑦	⑥	7	⑥	④	⑥	⑦	–
4	⑧ (⑥)	⑤ (②)	⑧ (⑥)	⑦ (②)	–	9	⑥	⑤	⑥	⑦	–
40	⑧	⑤	⑧	⑦	–	10	⑧	⑤	⑧	⑦	–
5	⑧	④	⑤	⑦	②	11	⑧	④	⑤	⑦	–
6	⑤	①	⑤	④	③	12	⑧	⑤	⑧	⑦	–

註： ( ) 內數字表示無衝擊型 (DHG-06) 曲線號
Note : Figures enclosed ( ) shows curve number for shock-less type (DHG-06)

● DHG-10



閥芯型式 SPOOL TYPE	壓降曲線號 PRESSURE DROP CURVE NUMBERS P→A	B→T	P→B	A→T	P→T	閥芯型式 SPOOL TYPE	PRESSURE DROP CURVE NUMBERS P→A	B→T	P→B	A→T	P→T
2	⑨ (⑧)	⑥ (③)	⑨ (⑧)	⑧ (④)	–	60	⑧ (⑧)	⑤ (④)	⑧ (⑧)	⑤ (④)	③ (②)
3	⑦	⑥	⑦	⑦	⑤	7	⑦	⑥	⑦	⑦	–
4	⑨ (⑧)	⑥ (⑤)	⑨ (⑧)	⑥ (⑥)	–	9	⑦	⑥	⑦	⑧	–
40	⑨	⑥	⑨	⑧	–	10	⑨	⑤	⑨	⑧	–
5	⑨	⑥	⑧	⑥	①	11	⑨	⑥	⑧	⑦	–
6	⑤	③	⑤	④	②	12	⑨	⑦	⑨	⑥	–

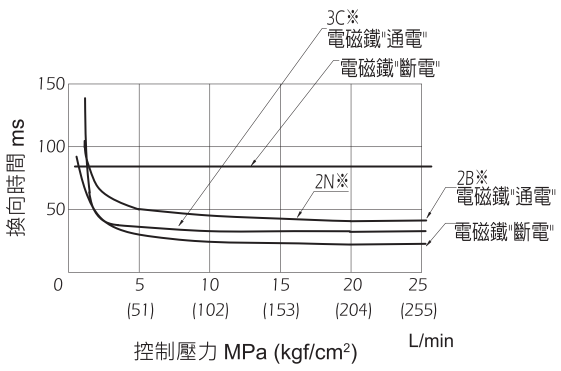
註： ( ) 內數字表示無衝擊型 (DHG-10) 曲線號
Note : Figures enclosed ( ) shows curve number for shock-less type (DHG-10)

換向時間（典型例）

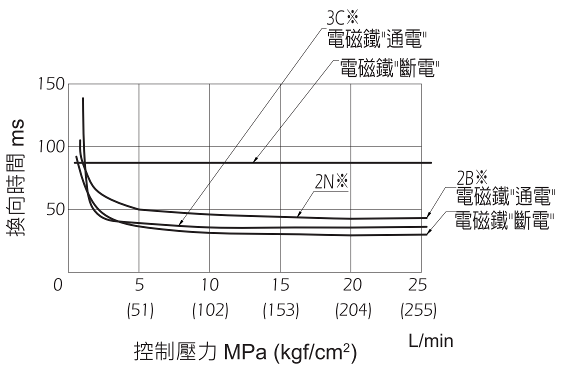
換向時間依油液黏度、閥芯機能和液壓迴路而異。

測試條件　線圈標記：DC
電　　壓：額定電壓
油液黏度：35 cSt (160SSU)

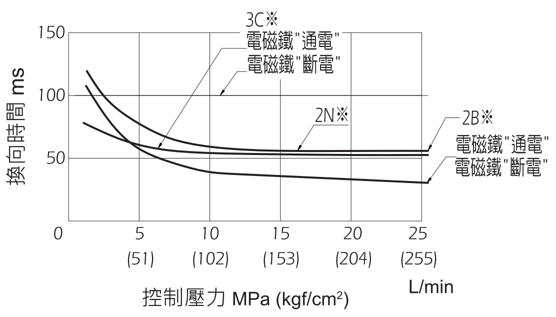
● DHG-03



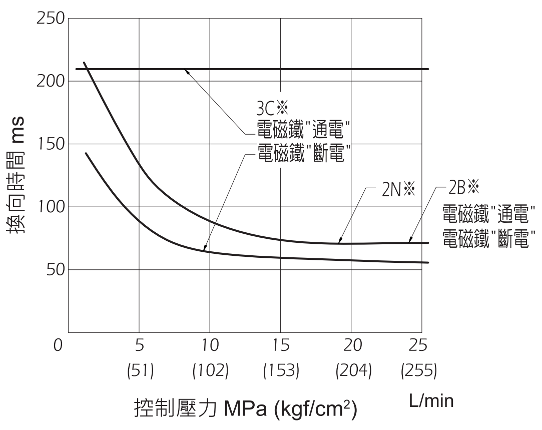
● DHG-04



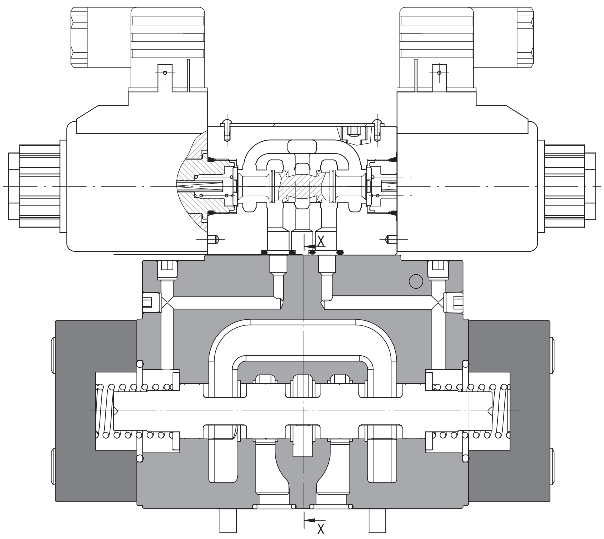
● DHG-06



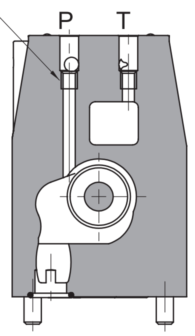
● DHG-10



● **DHG-03**

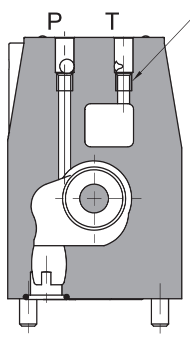


沒有螺塞是內部引導
Without Plug When valve
Is Internally Piloted.



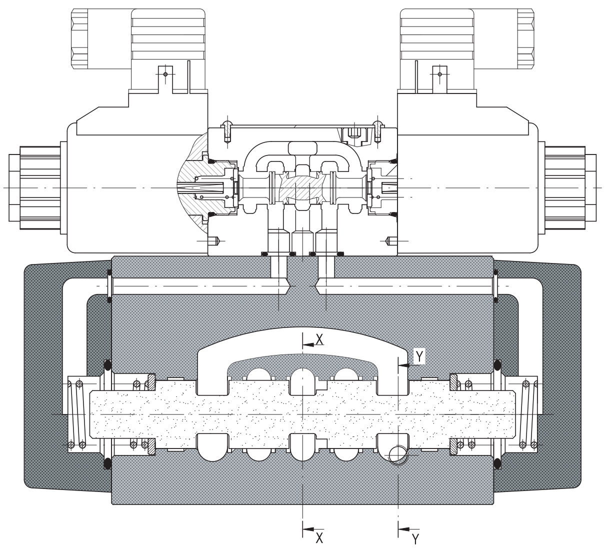
X-X 剖面

沒有螺塞是內部泄油
Without Plug When valve
Is Internally Drained.



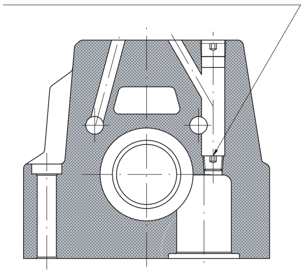
X-X 剖面

● **DHG-04**

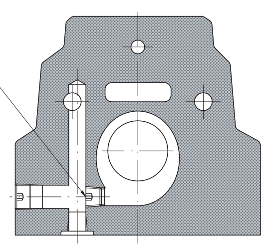


沒有螺塞是內部引導
Without Plug When valve
Is Internally Piloted.

沒有螺塞是內部泄油
Without Plug When valve
Is Internally Drained.



X-X 剖面

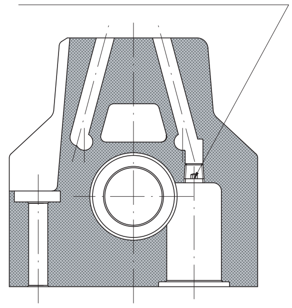


Y-Y 剖面

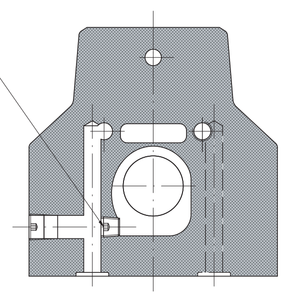
● **DHG-04-50**

沒有螺塞是內部引導
Without Plug When valve
Is Internally Piloted.

沒有螺塞是內部泄油
Without Plug When valve
Is Internally Drained.

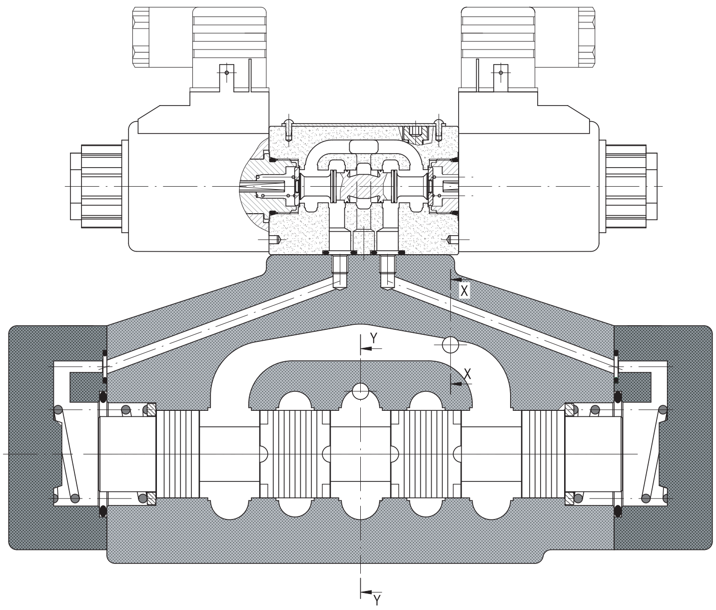


X-X 剖面

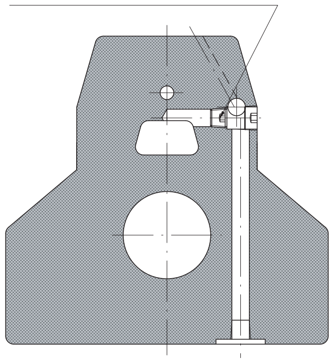


Y-Y 剖面

● DHG-06, 10

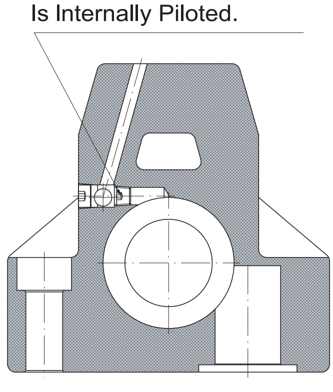


沒有螺塞是內部泄油
Without Plug When valve
Is Internally Drained.



X-X 剖面

沒有螺塞是內部引導
Without Plug When valve
Is Internally Piloted.



Y-Y 剖面