



**REXPOWER**



**QUALITY HYDRAULIC COMPONENTS**



[www.rexpower.com](http://www.rexpower.com)

## **PREFACE**

**REXPOWER HYDRAULIC & PNEUMATIC CO., LTD.** Founded in 1980 located at Taipei, Taiwan. During then, our core business was to supply pneumatic and hydraulic components and system designs to Taiwanese local machine makers.

In 1987, we started producing our own Hydraulic Solenoid Valves with the brand name "REXPOWER", kicking off our overseas marketing program.

In 1990, consolidated some of the quality local hydraulic component OEM manufacturers, jointly produced wider range of hydraulic products in order to satisfy the increasing customer's needs.

In 2000, we started producing DMT pneumatic components in Ningbo, China. Supply economical and quality pneumatic products.

REXPOWER products are mainly marketed in Asian region such as Europe, United States of America, Central and South America. In order to further enhance better after sales service and stock supplies, the following REXPOWER branches were established:

**KOREA REXPOWER CORP. (SEOUL, KOREA)**

**REXPOWER THAI CO., LTD. (BANGKOK, THAILAND)**

**REXPOWER SDN. BHD. (MELAKA, MALAYSIA)**

**SHANGHAI REXPOWER MECHINERY & ELECTRON CO., LTD.(SHANGHAI, CHINA)**

**NINGBO DEMATIC MACHINERY & ELECTRON CO., LTD. (NINGBO, CHINA)**

Besides constantly improving the products quality, as far as automation components are concerned, REXPOWER incorporates with other decent manufacturers, offers more product options so as to fulfill various customer's requirements.

### **MAJOR PRODUCTS TO BE MARKETED:-**

**REXPOWER Hydraulic Components**

**DMT Pneumatic Components**

**YEONG DIEN Centralized Lubricating System**

<b>(A) DIRECTIONAL CONTROL VALVES</b>		<b>1</b>
Solenoid operated directional valves	<b>SHD</b>	<b>2</b>
Solenoid operated hydraulic pilot directional valves	<b>SWDH</b>	<b>7</b>
Mechanically operated directional valves	<b>DCG</b>	<b>11</b>
Manually operated directional valves	<b>DMT. DMG. DRT</b>	<b>12</b>
Check valves	<b>CIT. CRG. CRNG</b>	<b>14</b>
Pilot operated check valves	<b>CPDT. CPDG</b>	<b>16</b>
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Low noise type relief valves	<b>SBG. SBSG</b>	<b>25</b>
H series pressure control valves	<b>HT. HCT. HG. HCG</b>	<b>26</b>
Pressure reducing valves	<b>RT. RCT. RG. RCG</b>	<b>29</b>
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<b>(H) CYLINDER</b>		<b>90</b>
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# HYDRAULIC SOLENOID OPERATED DIRECTIONAL VALVES

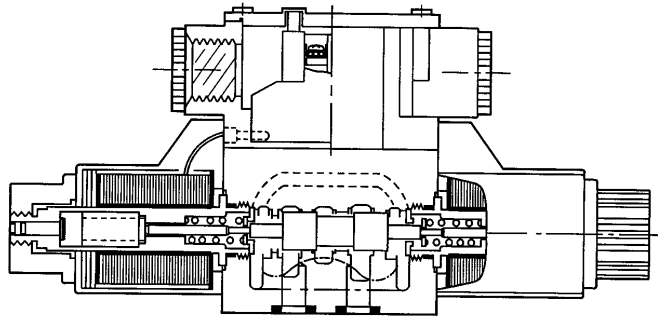
## FEATURES :

1. High pressure high flow rating provides low pressure drop performance.
2. All spools and bodies are interchangeable.
3. Wet armature solenoid provides low noise, leakage free and longer life.
4. Plug-in solenoid for easy maintenance.
5. Moulded coil construction is weather proof and impervious to dirt environment.
6. Indicating lamp is standard.
7. Solenoid can be used at the rated voltage -15% ~ +10%.
8. Withstand voltage 1500 v/min.
9. Insulation resistance exceeds 100mΩ.
10. A momentary signal of only 0.1 second is required for shifting action.

## SPOOL TYPE

Double solenoid		Single solenoid					
Three position spring centered	Two position detent	Two position spring offset					
3C2	2D2	2B2	2B2B	2B2A			
3C3	2D3	2B3	2B3B	2B3A			
3C4		2B2S	2B4B	2B4A			
3C40		2B3S	2B40B	2B40A			
3C5			2B5B	2B5A			
3C6			2B6B	2B6A			
3C7			2B7B	2B7A			
3C8	2D8	2B8	2B8B	2B8A			
3C9		2B8S	2B9B	2B9A			
3C10			2B10B	2B10A			
3C11			2B11B	2B11A			
3C12			2B12B	2B12A			

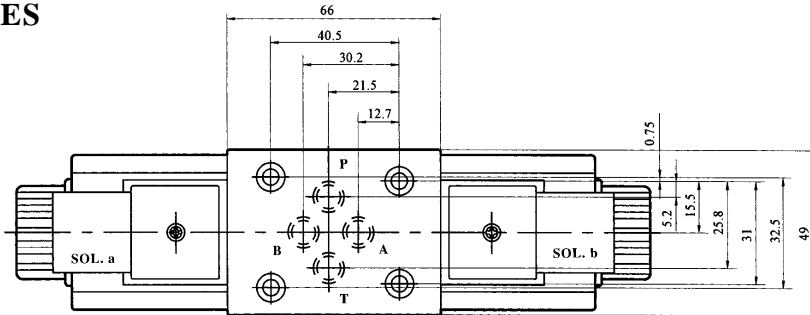
# SOLENOID VALVE INTRODUCTION



## ORDERING CODE

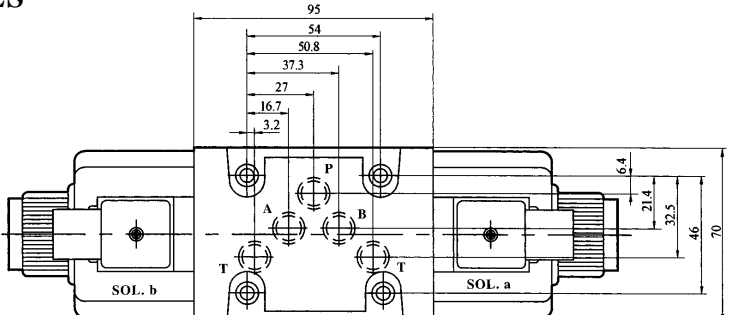
<b>SHD</b>	<b>02G</b>	<b>3C2</b>	<b>A22</b>	*
High pressure. High flow. Solenoid directional valve.	Valve size : 02G, 03G.	Spool type.	Coil voltage A24 : AC240V, 60HZ/AC220V, 50HZ. A22 : AC220V, 60HZ/AC200V, 50HZ. A12 : AC120V, 60HZ/AC110V, 50HZ. A11 : AC110V, 60HZ/AC100V, 50HZ. D12 : DC12V. D24 : DC 24V. R11 : AC 110V (Rectifier inside). R22 : AC 220V (Rectifier inside).	Wiring. Omit : Terminal box with indicating lamp. D : DIN plug-in connector.

## SHD-02G SERIES



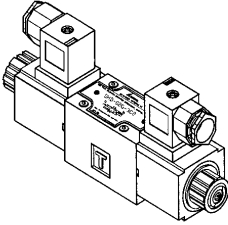
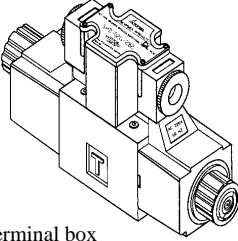
- Mounting bolt kits are supplied with valve socket head cap screws M5 × 45 L. 4 pieces.
- O-ring P9 ( 8.8 I.D. × 12.6 O.D. ) 4 pieces.

## SHD-03G SERIES



- Mounting bolt kits are supplied with valve socket head cap screws M6 × 35 L. 4 pieces.
- O-ring P12 ( 11.8 I.D. × 16.6 O.D. ) 5 pieces.

# SHD - 02G SERIES

<b>SHD-02G SERIES</b>	
 <p>DIN-plug in connector</p>	 <p>Terminal box</p>
<b>SPECIFICATIONS</b>	
Maximum operating pressure :	315 kg/cm <sup>2</sup> (Spool 6 type 250 kg/cm <sup>2</sup> only).
Rated flow capacity :	63 l/min.
Maximum T line back pressure :	140 kg/cm <sup>2</sup>
Maximum frequency of operation :	160 cycle/min.
Filtration :	25 Micron.
Ambient temperature range :	-5°C~60°C.
Weight :	Double solenoid AC 2 kgs/DC 2.3 kgs. Single solenoid AC 1.7 kgs/DC 1.8 kgs.

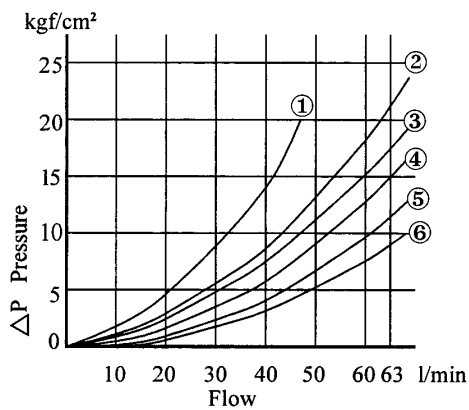
## PERFORMANCE CHART

SPOOL TYPE	C 2	C 3	C 4	C 40	C 5	C 6	C 7	C 8	C 9	C 10	C 11	C 12	D 2	D 3	B 2	B 3
P → A	5	6	5	5	1	1	6	5	6	5	6	5	5	6	2	3
B → T	5	6	6	5	1	1	5	5	5	6	5	5	2	3	2	3
P → B	5	6	5	5	1	1	6	5	6	5	5	5	5	5	5	5
A → T	5	6	6	5	1	1	5	6	5	5	5	6	2	3	5	5
P → T	-	4	-	-	4	4	-	-	-	-	-	-	-	-	-	-

## PERFORMANCE CURVES

Test fluid viscosity : 35 cst (175 ssu)

Test temperature : 50°C (122°F)

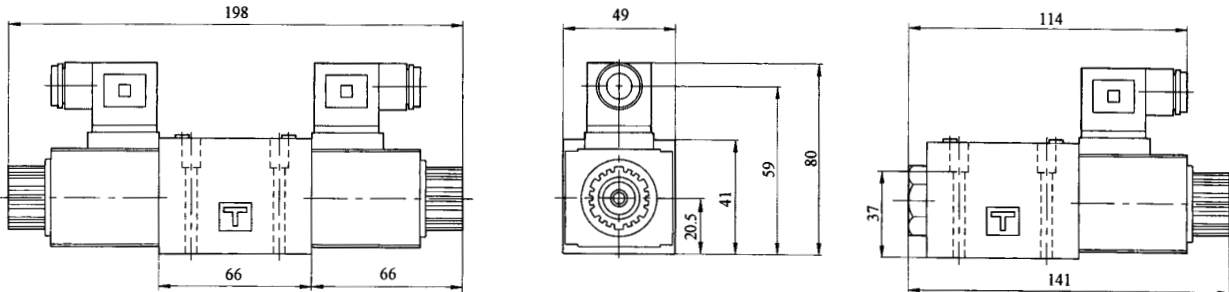


## SOLENOID RATING

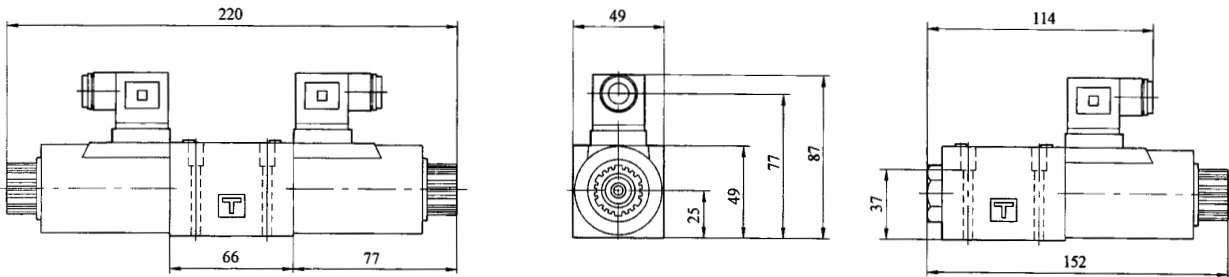
POWER	COIL VOLTAGE	HZ	CURRENT AT RATED VOLTAGE				
			IN-RUSH CURRENT (A)	HOLDING CURRENT (A)	POWER REQUIREMENT (W)		
AC	A110	50	1.6	0.46	26		
		60	1.4	0.32			
	A120	50	1.3	0.38			
		60	1.2	0.27			
	A220	50	0.80	0.23			
		60	0.70	0.16			
			0.75	0.19			
	A240	50	0.67	0.19			
		60	0.59	0.13			
	DC	D12				2.2	26
		D24				1.1	

# SHD - 02G SERIES

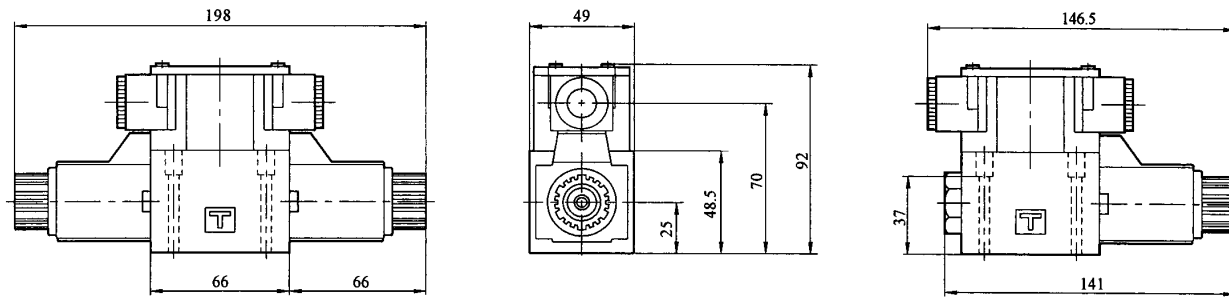
## DIN PLUG-IN CONNECTOR AC SOLENOID



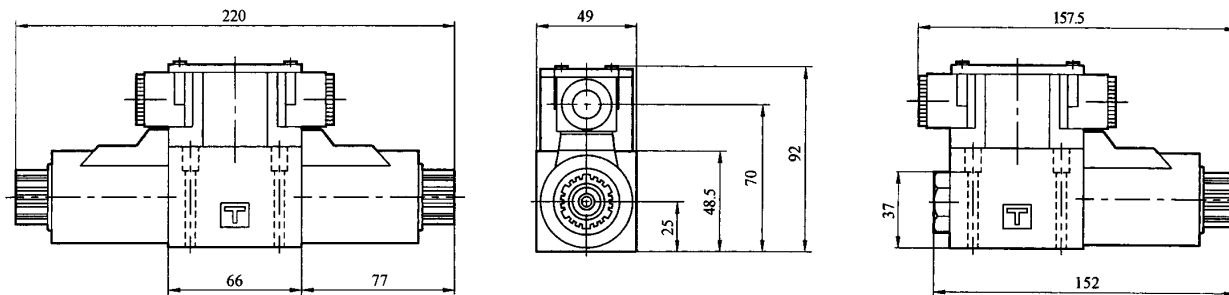
## DC SOLENOID



## TERMINAL BOX AC SOLENOID

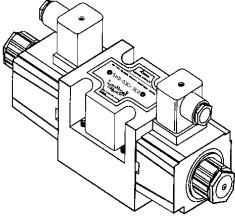
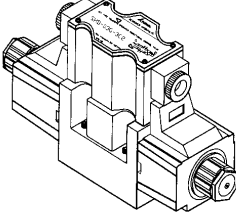


## DC SOLENOID





# SHD - 03G SERIES

<b>SHD-03G SERIES</b>	
 <p>DIN-plug in connector</p>	 <p>Terminal box</p>
<b>SPECIFICATIONS</b>	
Maximum operating pressure :	315 kg/cm <sup>2</sup> (Spool 6 type 250 kg/cm <sup>2</sup> only).
Rated flow capacity :	100 l/min.
Maximum T line back pressure :	140 kg/cm <sup>2</sup> .
Maximum frequency of operation :	160 cycle/min.
Filtration :	25 Micron.
Ambient temperature range :	-5°C~60°C.
Weight :	Double solenoid AC 4.6 kgs/DC 5.8 kgs. Single solenoid AC 3.8 kgs/DC 4.4 kgs.

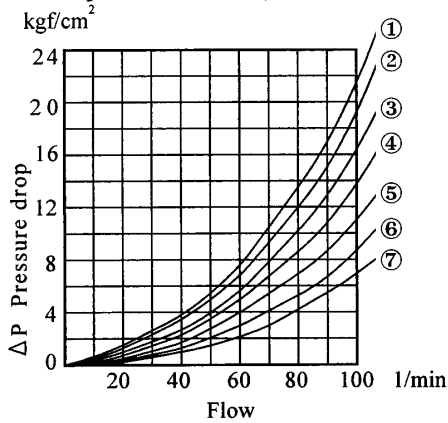
## PERFORMANCE CHART

SPOOL TYPE	C 2	C 3	C 4	C 40	C 5	C 6	C 7	C 8	C 9	C 10	C 11	C 12	D 2	D 3	B 2	B 3
P → A	4	6	4	4	6	5	6	4	6	5	6	4	3	3	2	2
B → T	5	6	7	5	5	5	5	5	5	6	5	5	3	3	2	2
P → B	4	6	4	4	4	5	6	4	4	4	4	4	4	5	4	5
A → T	5	6	7	5	6	5	5	7	5	5	5	7	5	5	5	6
P → T	-	6	-	-	2	1	-	-	-	-	-	-	-	-	-	-

## PERFORMANCE CURVES

Test fluid viscosity : 35 cst (175 ssu)

Test temperature : 50°C (122° F)



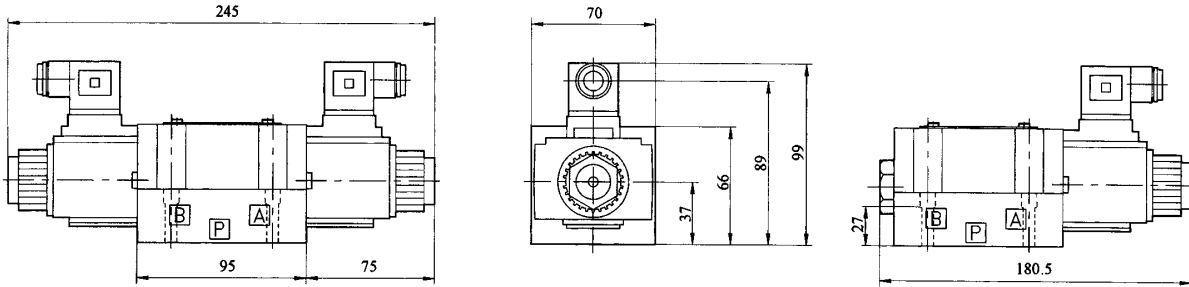
## SOLENOID RATING

POWER	COIL VOLTAGE	HZ	CURRENT AT RATED VOLTAGE			
			IN-RUSH CURRENT (A)	HOLDING CURRENT (A)	POWER REQUIREMENT (W)	
AC	A110	50	3.20	0.80	38	
			2.90	0.65		
		60	3.10	0.70		
	A120	50	3.50	0.84		
		60	2.97	0.64		
	A220	50	1.72	0.42		
		60	1.47	0.32		
	A240	50	1.73	0.42		
		60	1.47	0.32		
	DC	D12				3.1
		D24				1.6

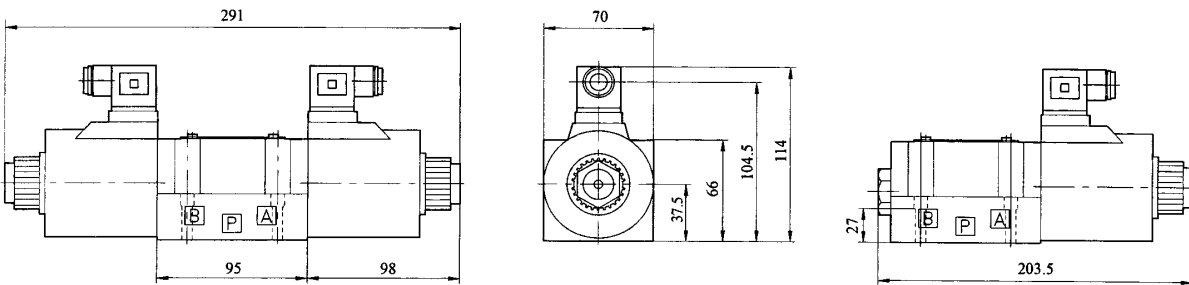
# SHD- 03G SERIES

## DIN PLUG-IN CONNECTOR

### AC SOLENOID

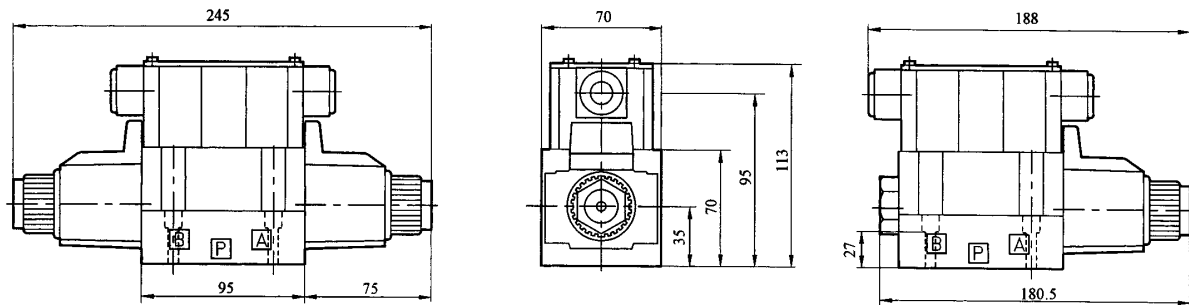


### DC SOLENOID

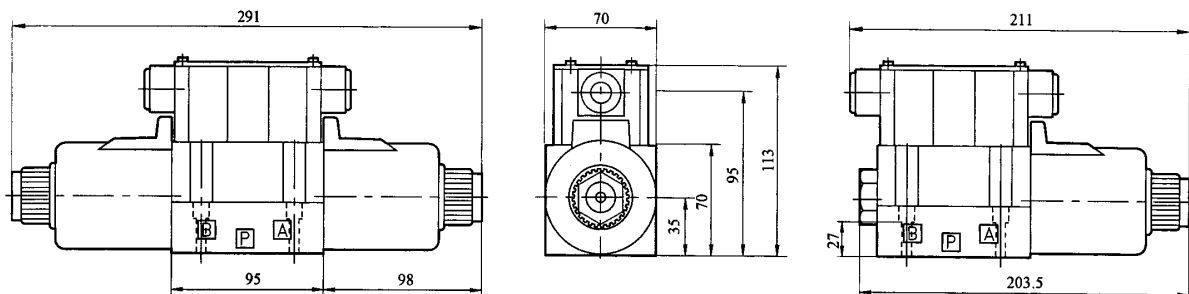


## TERMINAL BOX

### AC SOLENOID

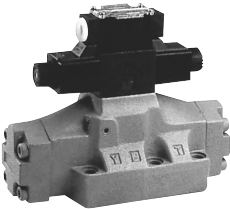


### DC SOLENOID

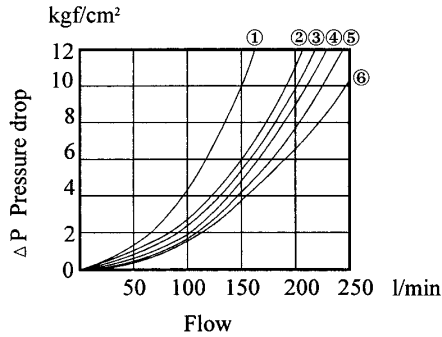


# SOLENOID OPERATED HYDRAULIC PILOT DIRECTIONAL VALVE

## SWDH-04/06/10G SERIES

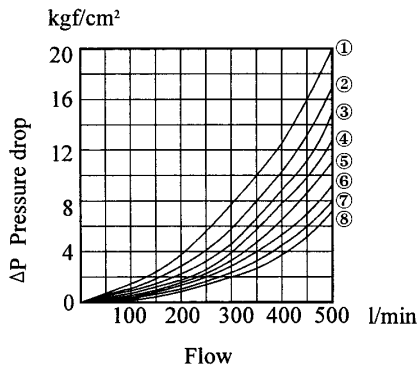
	SPECIFICATIONS	
	Maximum operating pressure :	250 kg/cm <sup>2</sup> (Spool 6 type 210 kg/cm <sup>2</sup> only).
	Rated flow capacity :	04-150 l/min. 06-300 l/min. 10-800 l/min.
	Max. flow capacity :	04-250 l/min. 06-500 l/min. 10-1100 l/min.
	Minimum pilot pressure :	4.5 kg/cm <sup>2</sup> .
	Maximum T line back pressure :	140 kg/cm <sup>2</sup> .
	Maximum frequency of operation :	120 cycle/min.
	Filtration :	25 Micron.
Ambient temperature range :	-5°C~60°C.	

### SWDH-04



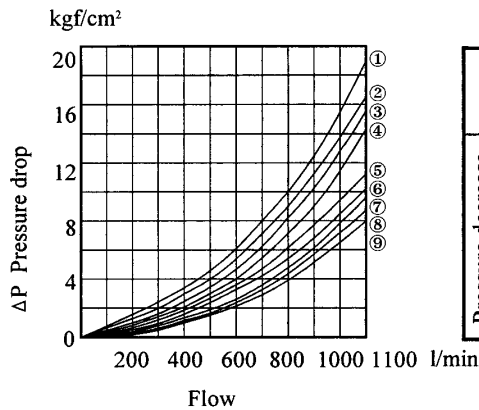
SPOOL TYPE		2	3	4	40	5	6	7	9	10	11	12
Pressure decrease curve number	P → A	5	6	5	5	5	2	5	6	5	5	5
	B → T	2	3	4	4	2	3	2	2	4	4	3
	P → B	5	6	5	5	4	4	5	6	5	5	5
	A → T	4	5	5	5	5	2	5	5	5	5	5
	P → T	-	3	-	-	1	1	-	-	-	-	-

### SWDH-06



SPOOL TYPE		2	3	4	40	5	6	7	9	10	11	12
Pressure decrease curve number	P → A	8	6	8	8	8	5	6	6	8	8	8
	B → T	5	4	5	5	4	1	4	5	5	4	5
	P → B	8	6	8	8	5	5	6	6	8	5	8
	A → T	7	7	7	7	7	4	7	7	7	7	7
	P → T	-	6	-	-	2	3	-	-	-	-	-

### SWDH-10



SPOOL TYPE		2	3	4	40	5	6	7	9	10	11	12
Pressure decrease curve number	P → A	9	7	9	9	9	5	7	7	9	9	9
	B → T	6	6	6	6	6	3	6	6	5	6	7
	P → B	9	7	9	9	8	5	7	7	9	8	9
	A → T	8	7	6	8	6	4	7	8	8	7	6
	P → T	-	5	-	-	1	2	-	-	-	-	-

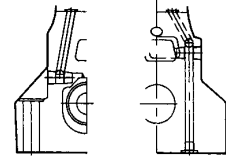
# SWDH - 04 / 06 / 10 SERIES

## SPECIAL FEATURE

Change of external or internal pilot and drain can be easily accomplished by plugging unplugging.

(see illustration X-pilot Y- drain).

For valve with by pass spool internal pilot supply is necessary to obtain the minimum pilot pressure required at tank line.

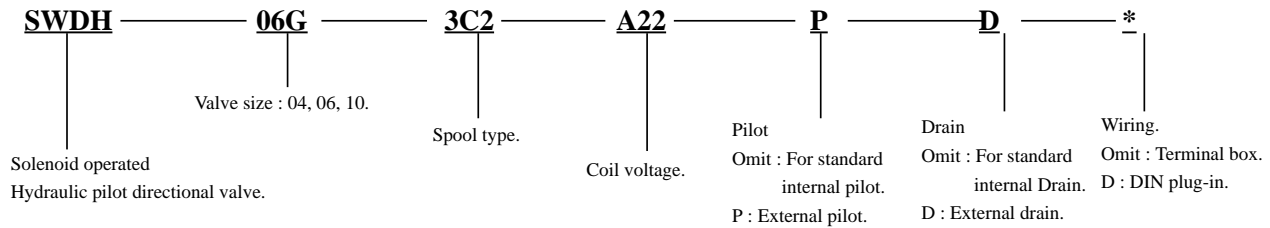


Y-Y SECTION X-X SECTION

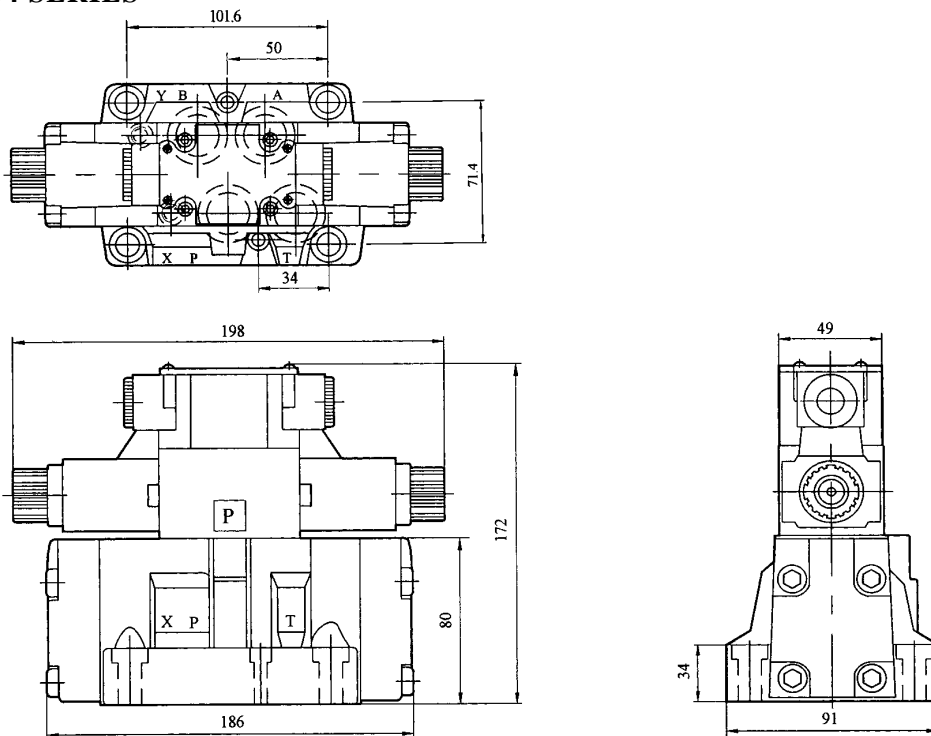
\*Weight ( kgs )

		04	06	10
Double solenoid	AC	8.3	13.7	44.9
	DC	8.6	14	45.2
Single solenoid	AC	8	13.4	44.6
	DC	8	13.5	44.7

## ORDERING CODE

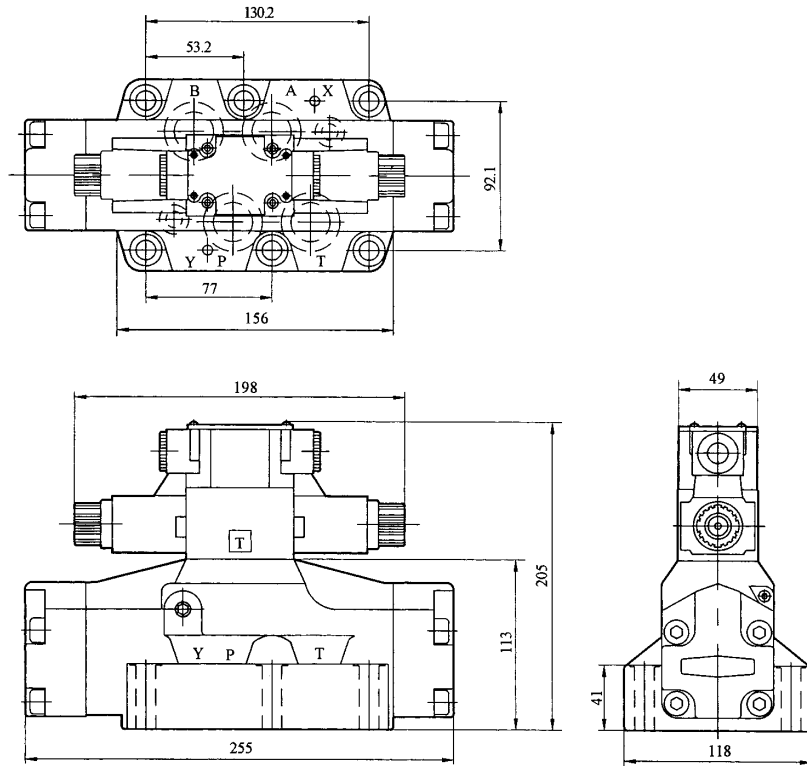


## SWDH-04 SERIES

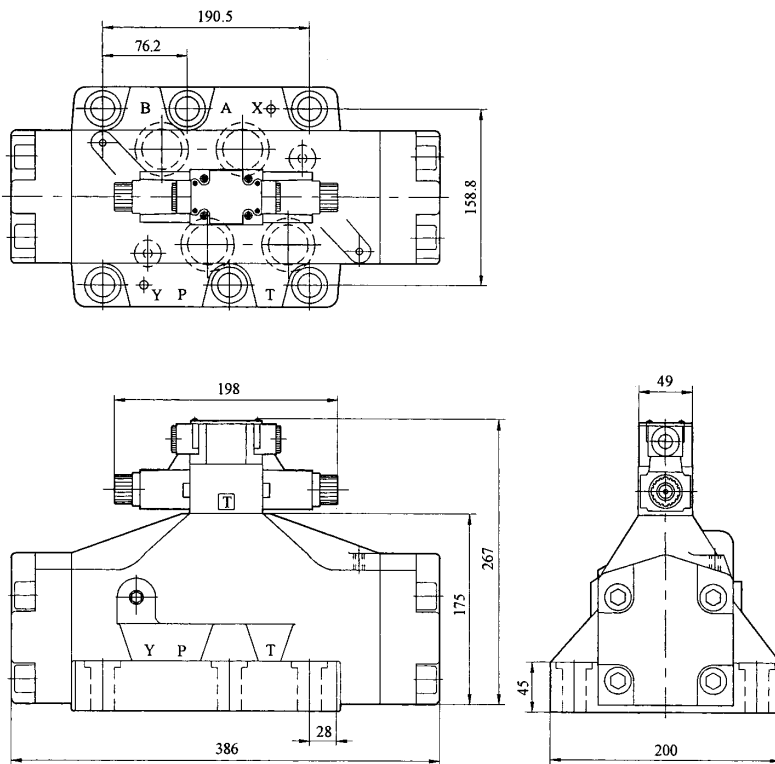


# SWDH - 06 / 10 SERIES

## SWDH-06 SERIES

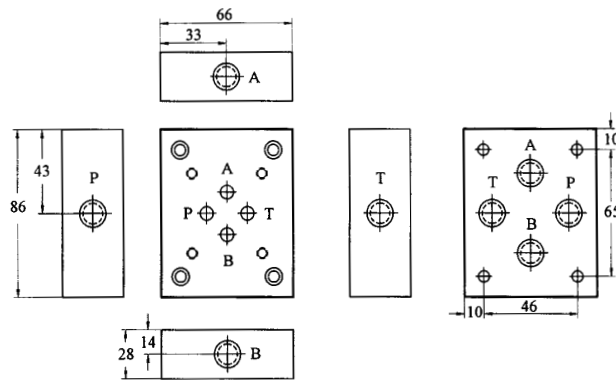


## SWDH-10 SERIES



# 02 / 03 / 04 / 06 SERIES SUBPLATE

SP-02



Port Position

S : Side port

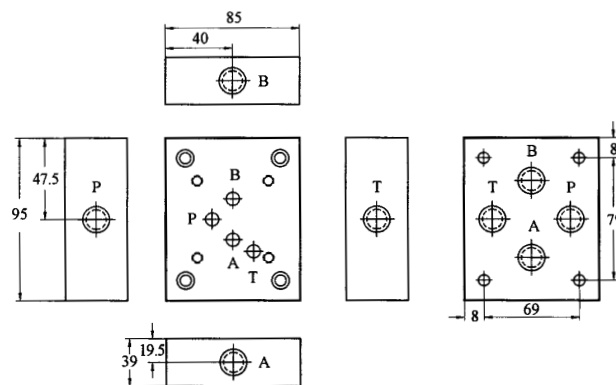
B : Bottom port

Port Size

Standard : 1/4 " PT

X : 3/8 " PT

SP-03

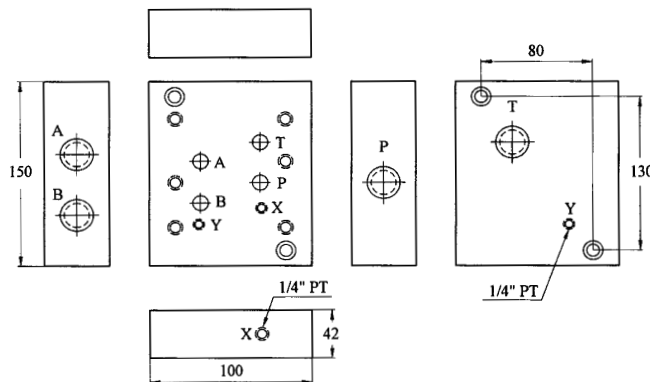


Port Size

Standard : 3/8 " PT

X : 1/2 " PT

SP-04

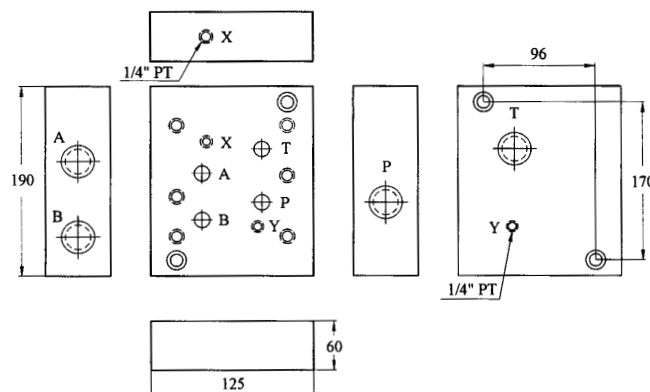


Port Size

Standard : 1/2 " PT

X : 3/4 " PT

SP-06



Port Size

Standard : 3/4 " PT

X : 1 " PT

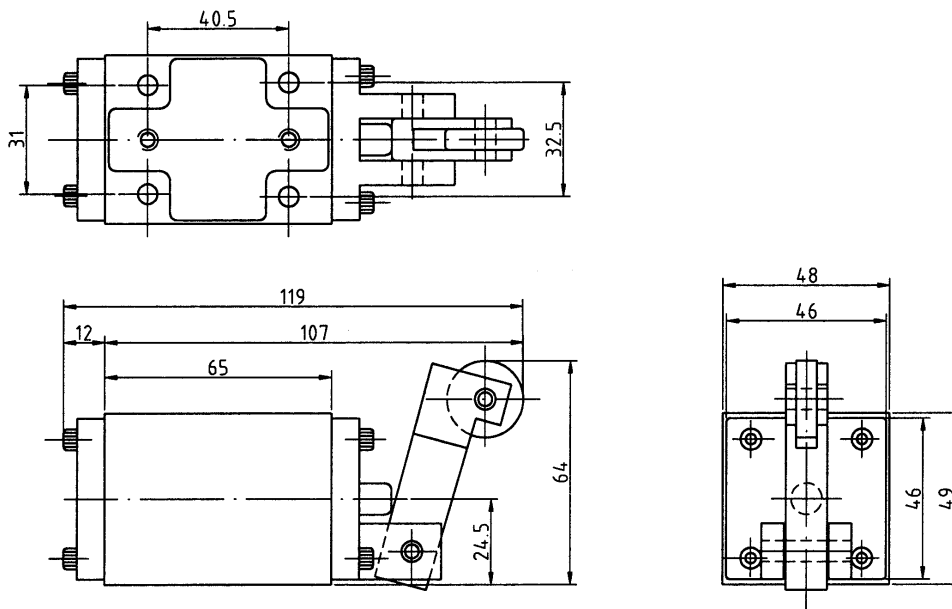
## MECHANICALLY OPERATED DIRECTIONAL VALVES

This valve spool Mechanically moved by cams, to change flow direction.

### DCG-02-2B\*

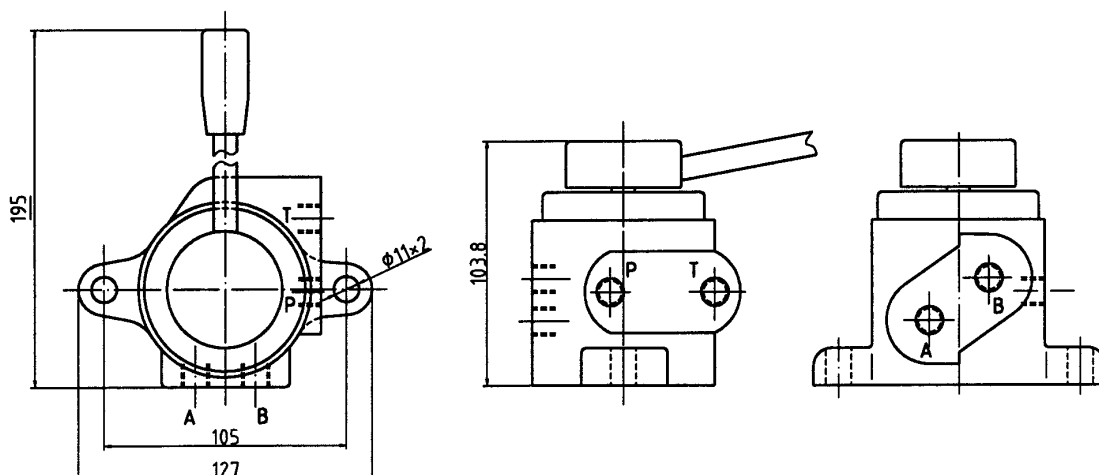
Subplate type	Spool type	Max. flow rate l/min	Max. pressure kg/cm <sup>2</sup>	Max. back pressure kg/cm <sup>2</sup>	Weight kg
DCG-02-2B*	2B2 2B3 2B8	30	250	100	1.1

### DCG-02-2B\*



## ROTARY MANUALLY VALVE

### DRT-03

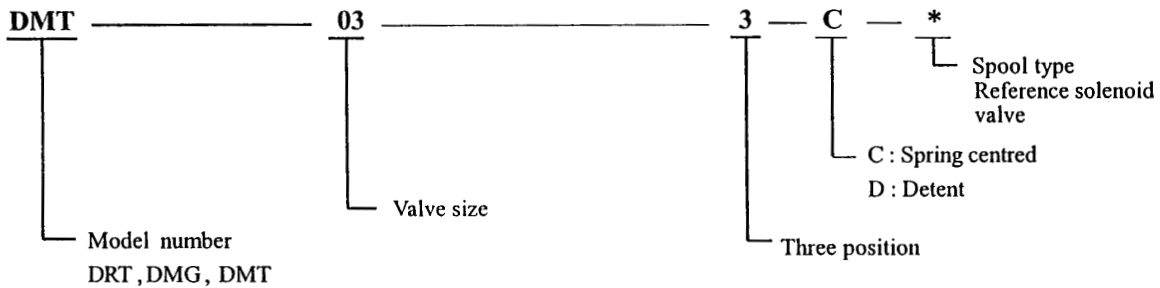


# MANUALLY OPERATED DIRECTIONAL VALVES

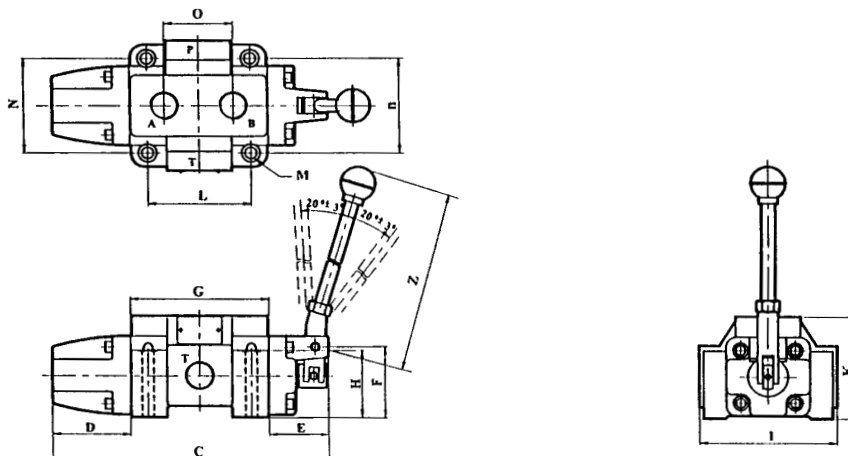
Manually operated directional valve are know as 4-ways valve. Spool movement by hand level, have rotary and level two type.

	Model	Max. flow l/min	Max. pressure kg/cm <sup>2</sup>	Spool	Weight kg
Rotary type thread connection	DRT-03-..	50	70	3C2	3.4
Level type thread connection	DMT-03-..	100	250	3C2 、 3C3 3C4 、 3C6 3D2 、 3D3 3D4 、 3D6	5.0
	DMT-04-..	200			7.6
	DMT-06-..	300			11.1
	DMT-10-..	500			23.1
Level type subplate connection	DMG-02-..	60	250		1.6
	DMG-03-..	100			4.0
	DMG-06-..	500	315		15.0

## ORDERING CODE



DMT - 03 , 04 , 06 , 10

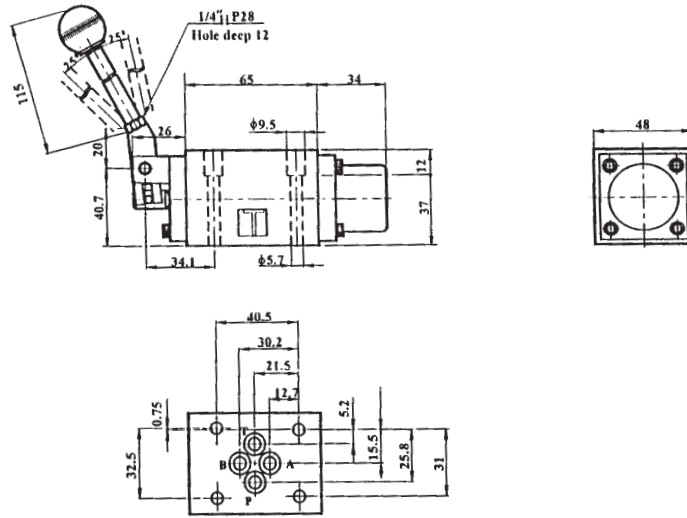


Model	A PT	B PT	C mm	D mm	E mm	F mm	G mm	H mm	I mm	K mm	L mm	M mm	N mm	n mm	O mm	P PT	T PT	Z mm
DMT-03	3/8"		174.0	46.0	36	63.0	92	75	78	87.0	56.2	ε 7H 4	49.0	—	45.5	3/8"		203
DMT-04	1/2"		227.5	63.5	46		118	59	107	88.5	80.5	ε 9H 4	82.5	—	50.0	1/2"		230
DMT-06	3/4"		258.0	72.0	56	69.0	130	65	128	99.0	97.0	ε 11H 4	94.4	93.2	64.8	3/4"		240
DMT-10	1 1/4"		335.0	94.0	70	88.5	171	83	163	121.0	132.3	ε 13H 4	126.0	—	79.0	1 1/4"		307

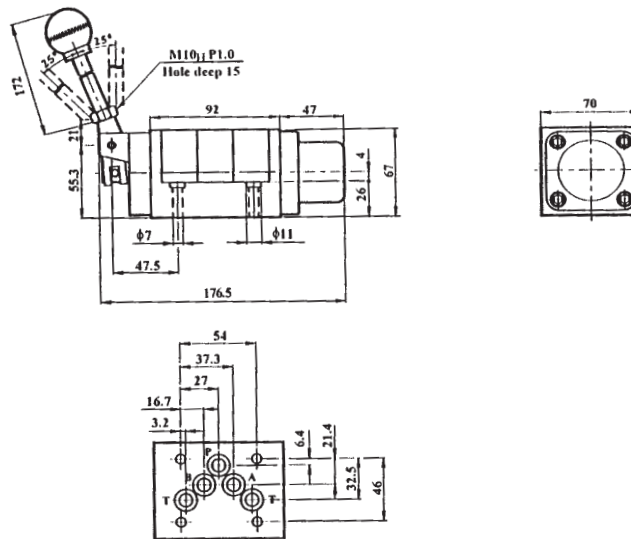


# MANUALLY OPERATED DIRECTIONAL VALVES

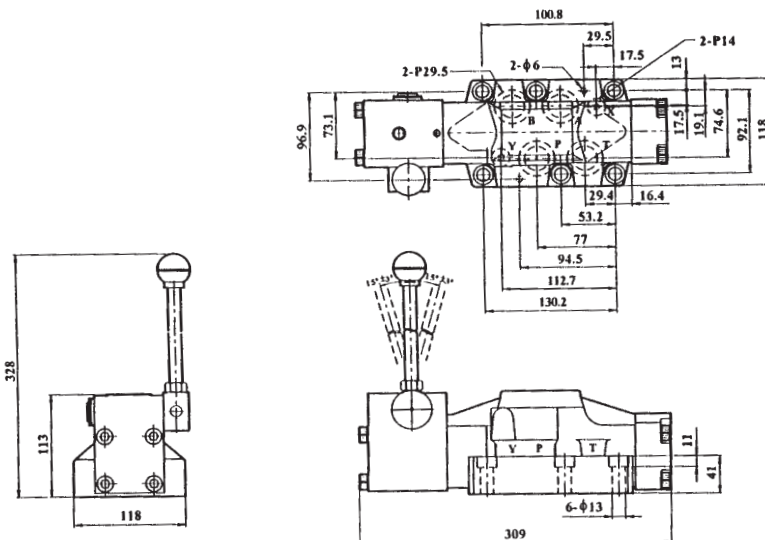
DMG - 02



DMG - 03



DMG - 06

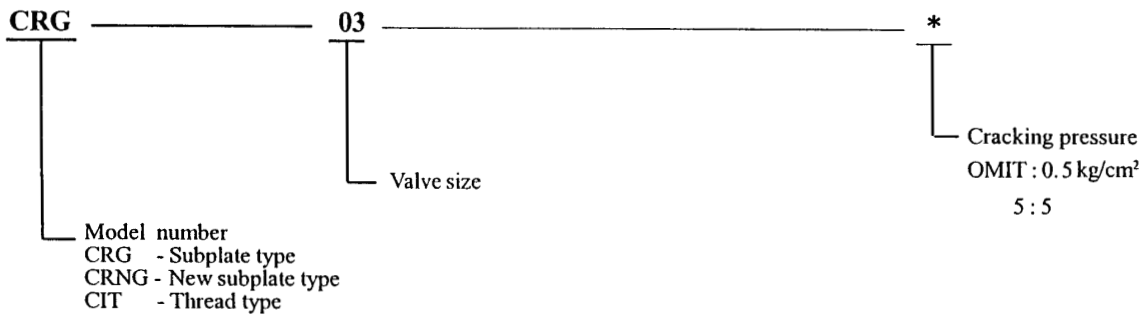


# CHECK VALVES

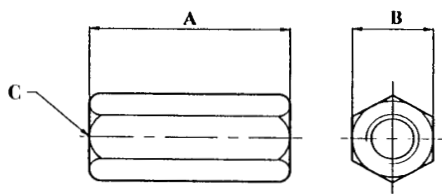
Check valves are used to direct flow in one direction and prevent flow in the other direction.

Model	Subplate type	Thread type	Max. flow		Max. pressure kg/cm <sup>2</sup>	Cracking pressure kg/cm <sup>2</sup>	Weight	
			l/min				kg	
CHECK VALVE	CRG-03-*	CIT-03-*	40	40	250	OMIT : 0.5 5 : 5	2.3	0.18
	—	CIT-04-*	—	60			—	0.31
	CRG-06-*	CIT-06-*	125	100			4.4	0.48
	—	CIT-08-*	—	150			—	1.07
	CRG-10-*	CIT-10-*	250	200			7.8	1.75
	—	CIT-12-*	—	280			—	2.60
	—	CIT-16-*	—	400			—	3.35

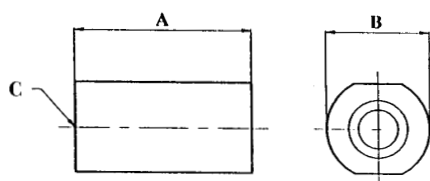
## ORDERING CODE



CIT - 03 , 04 , 06 , 08



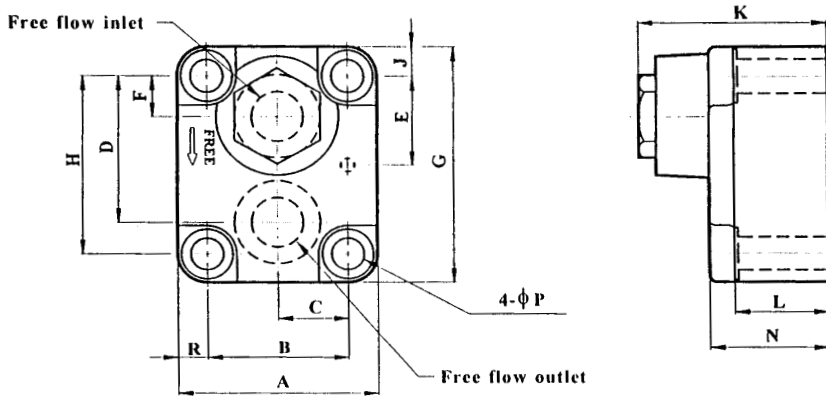
CIT - 10 , 12 , 16



Model	Port (C) PT	A	B	Weight kg
CIT-03	3/8"	70.0	26.0	0.2
CIT-04	1/2"	82.0	29.0	0.4
CIT-06	3/4"	91.5	44.5	0.7
CIT-08	1"	112.0	51.0	1.0
CIT-10	1 1/4"	132.0	58.0	2.1
CIT-12	1 1/2"	140.0	64.0	3.2
CIT-16	2"	156.0	80.0	4.8

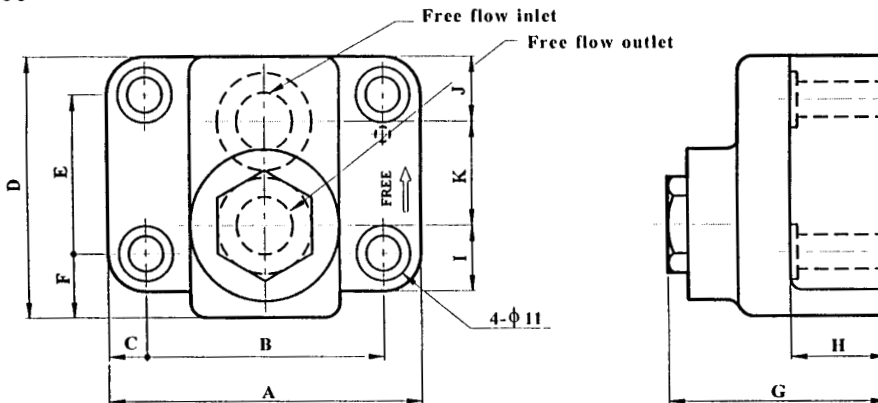
# CHECK VALVES

CRG - 03 , 06 , 10 - \*



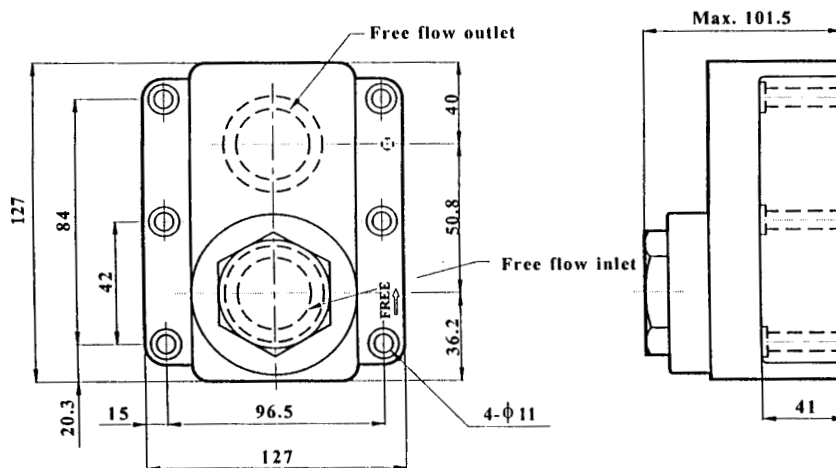
Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	N mm	P mm	Q mm	R mm	Mounting bolt
CRG-03	68	47.6	23.8	47.6	30.1	12.7	80	60.3	10.0	70	36	46	11.0	17.5	10.20	4-M10 <sub>H</sub> 50L
CRG-06	101	65.2	32.6	68.2	40.5	22.2	114	80.9	16.5	81	38	54	17.5	26.0	16.45	4-M16 <sub>H</sub> 55L
CRG-10	130	92.1	46.1	71.4	46.0	20.6	130	92.1	19.0	100	50	67	21.5	30.0	18.95	4-M20 <sub>H</sub> 70L

CRNG - 03 , 06 - \*



Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm
CRNG-03	90	66.7	12.5	76	42.9	18.5	70.5	31.5	25.6	21.8	28.6
CRNG-06	106	79.4		96	60.3	23.5	84.0	36.5	34.6	23.3	38.1

CRNG -10 - \*

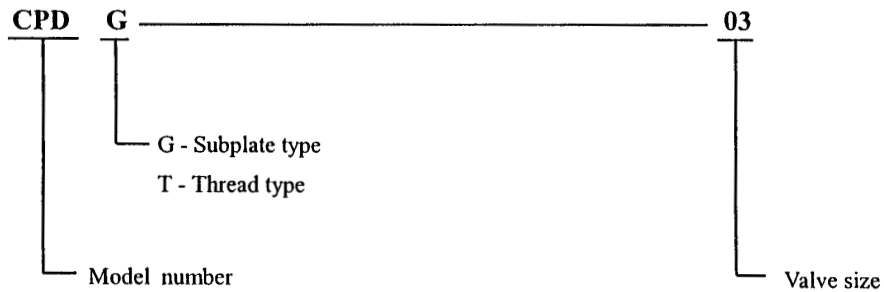


# PILOT OPERATED CHECK VALVES

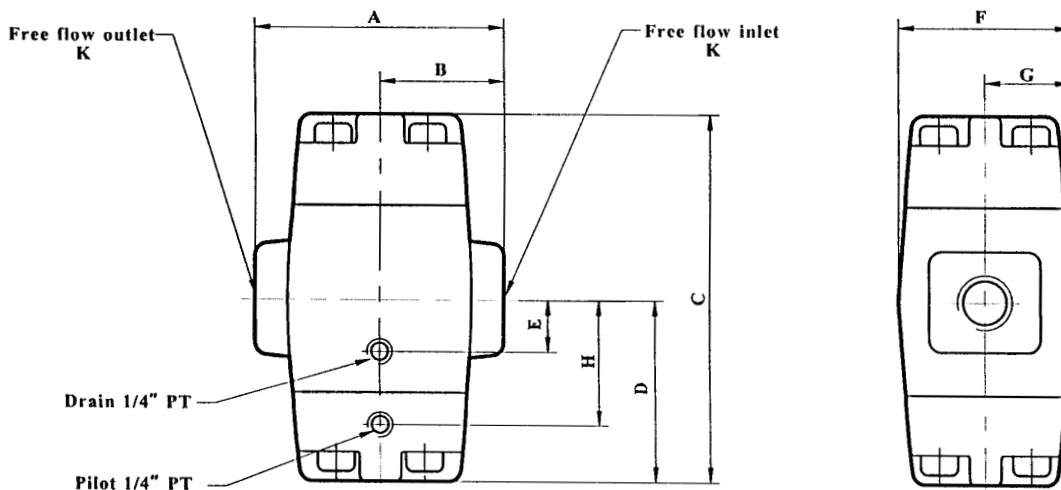
Pilot operated check valves are used to direct free flow in one direction. Flow may pass in the opposite direction when pilot pressure unseats the poppet.

Pilot operated check valve		Max. flow rated l/min	Max. working pressure kg/cm <sup>2</sup>	Weight kg	
Subplate type	Thread type				
CPDG-03	CPDT-03	50	210	4.5	3.4
CPDG-06	CPDT-06	125		7.0	5.2
CPDG-10	CPDT-10	300		12.0	11.6

## ORDERING CODE



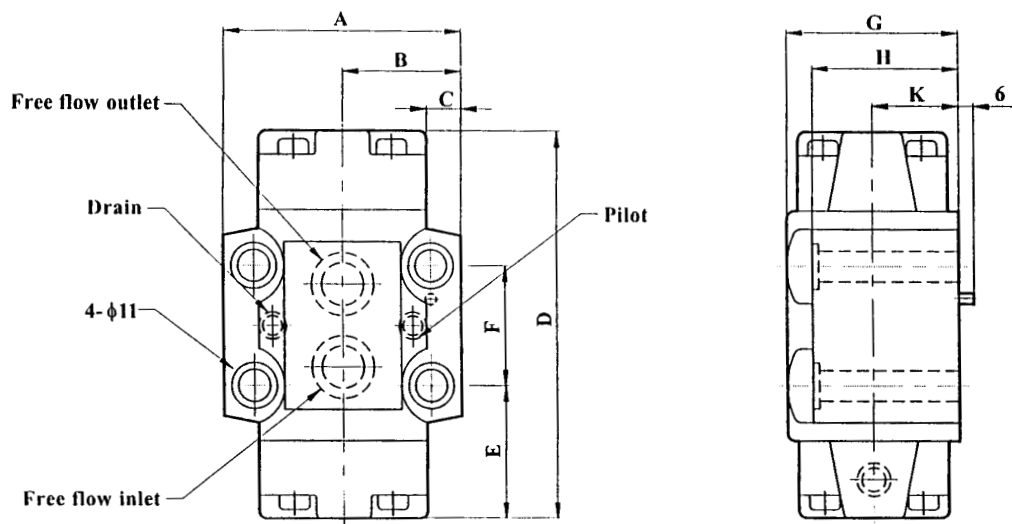
CPDT - 03 , 06 , 10



Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K PT	Weight kg
CPDT-03	80	40	150.5	75	21	68	35.5	58	3/8"	3.4
CPDT-06	96	48	168.0	84	26	78	38.0	70	3/4"	5.2
CPDT-10	140	70	208.0	104	35	92	45.0	84	1 1/4"	11.6

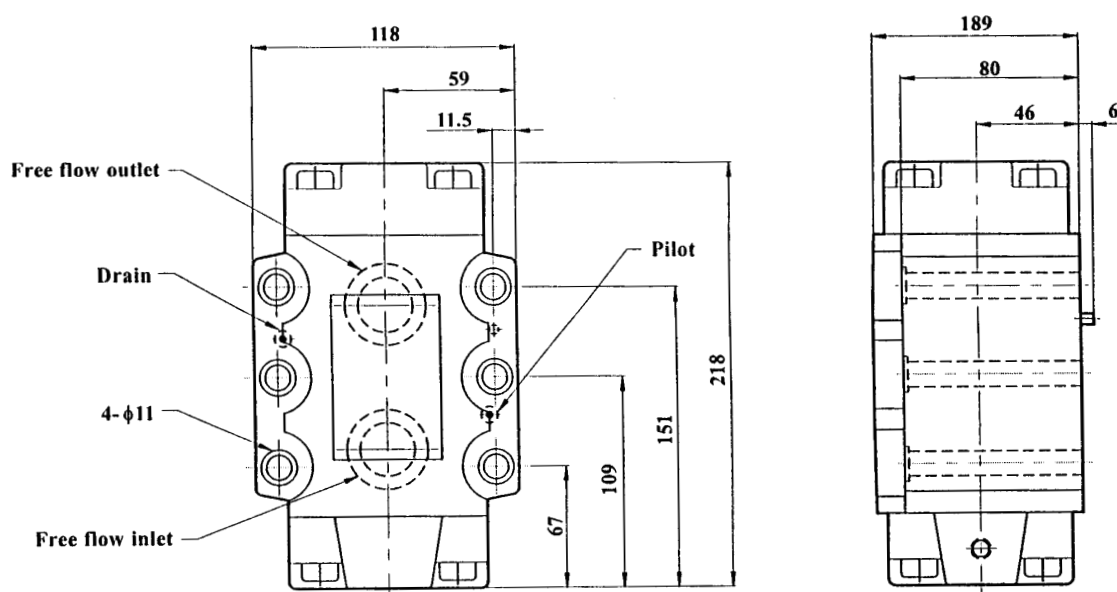
# PILOT OPERATED CHECK VALVES

CPDG - 03 , 06



Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	Mounting bolt mm	Weight kg
CPDG-03	92	46.0	13.6	150.5	54	42.9	70.5	59	34.5	4-M10 X 70L	5.0
CPDG-06	103	51.5	11.5	174.0	57	60.3	85.0	68	40.0	4-M10 X 80L	7.8

CPDG - 10

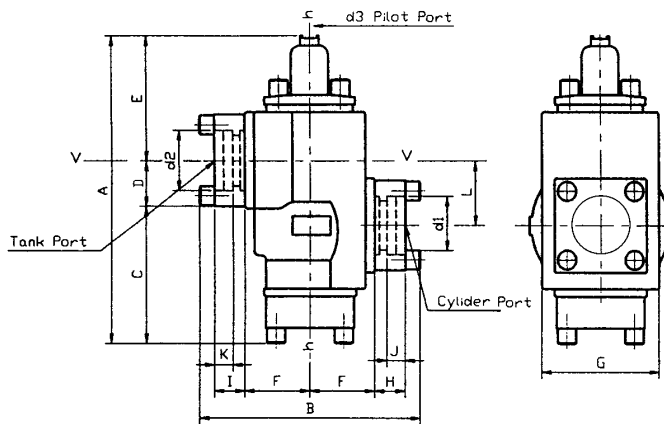


# PREFILL VALVES

Prefill valve is the valve between oil-tank and cylinder, provide big flow rate from tank to cylinder or from cylinder back to tank Non-leakage prevent cylinder oil back when system pressurizing.

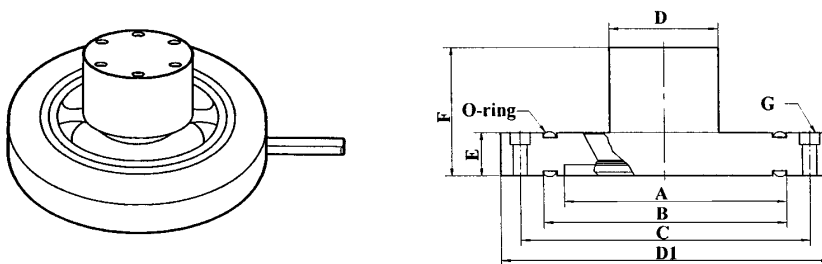
## Thread type

Model No.	Max. Working Pressure kg/cm <sup>2</sup>	Max. Flow l/min		Cracking Pressure kg/cm <sup>2</sup>	Weight kg
		Suction	Pilot		
SG-16	210	300	450	0.12	30
SG-24		600	900	0.14	55
SG-32		1100	1600	0.16	100



Model	A	B	C	D	E	F	G	H	I	J	K	L	d1	d2	d3
SG-16	320	238	136	53	131	70	120	33	33	20	20	50	61	61	PT3/8"
SG-24	394	294	165	64	165	93	170	42	30	22	18	75	92	92	PT3/8"
SG-32	547	350	210	102	235	120	220	42	30	25	18	105	116	116	28

## Disk type



Model	Size	A mm	B mm	C mm	DI mm	D mm	E mm	F mm	G	Flow l/min	O-Ring	Weight kg	
SVF-32	SCF-32	2"	48	63.0	0	82	32	28.0	54.5	0	1517-6	1.2	
SVF-50	SCF-50	3"	72	90.0	112	128	45	29.0	72.0	φ4x30 x 2P	400	G85	2.9
SVF-63	SCF-63	3 1/2"	87	105.0	125	143	50	33.5	83.5	φ5x35 x 2P	600	P95	4.5
SVF-80	SCF-80	4"	108	130.5	150	169	57	38.5	100.0	φ5x40 x 2P	1000	P120	6.2
SVF-100	SCF-100	5"	130	155.0	185	212	70	44.0	122.0	φ6x45 x 2P	1600	P145	12.3
SVF-125	SCF-125	6"	170	200.0	226	248	89	51.0	155.0	φ6x50 x 2P	2500	P185	23.0
SVF-160		8"	218	250.0	284	310	120	70.0	233.0	φ8x70 x 2P	4000	P235	50.0

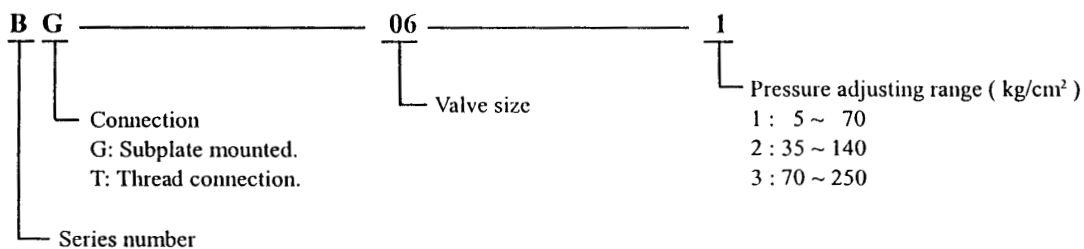
# PRESSURE CONTROL VALVES

## RELIEF VALVES

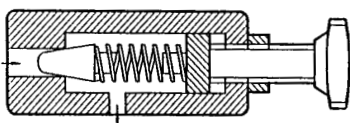
Relief valves limit system pressure by opening to tank when system pressure reaches the valve setting. Relief valves will keep stable pressure in system and avoid pump overload.

	Subplate type	Thread type	Port PT	Pressure adjusting range kg/cm <sup>2</sup>	Max. flow l/min	Weight kg	
Remote control relief valve	DG-01	DT-01	1/8"	10 ~ 250	2	1.4	1.6
Direct operated relief valve	DG-02	DT-02	1/4"		1 : 5 ~ 70 2 : 35 ~ 140 3 : 70 ~ 250	12	1.5
Pilot operated relief valve	BG-03	BT-04	1/2"	100		4.7	5.0
	BG-06	BT-06	3/4"	180		5.6	5.0
	BG-10	BT-10	1 1/4"	400		8.7	8.5
Pilot operated low noise type relief valve	SBG-03	—	3/8"	100		4.1	
	SBG-06		3/4"	200		5.0	
	SBG-10		1 1/4"	400		10.5	
Solenoid operated relief valve	BSG-03	—	3/8"	100		6.5	
	BSG-06	BST-06	3/4"	180		7.4	6.8
	BSG-10	BST-10	1 1/4"	400		10.7	10.5
	SBSG-03	—	3/8"	100	5.8		
	SBSG-06		3/4"	200	6.7		
	SBSG-10		1 1/4"	400	12.2		

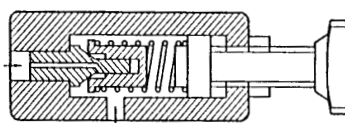
## ORDERING CODE



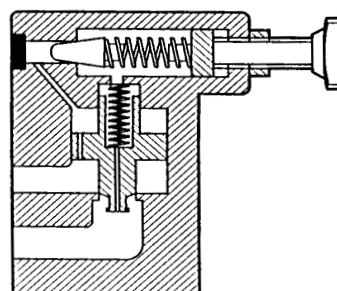
Remote control relief valve



Direct operated relief valve



Pilot operated relief valve



# PRESSURE CONTROL VALVES

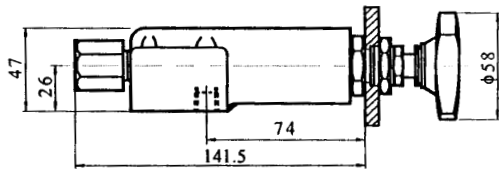
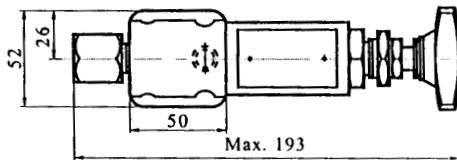
## REMOTE CONTROL RELIEF VALVES

Remote control relief valve is connected to the vent port of the main relief valve for remote adjustment.

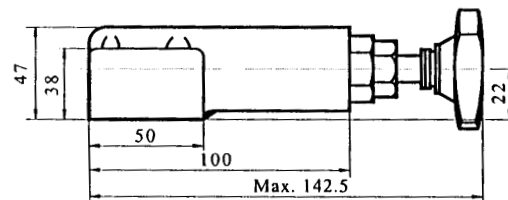
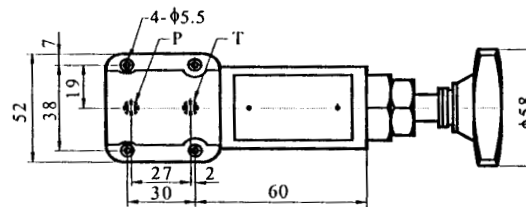
Max. working pressure : 250 kg/cm<sup>2</sup>

Max. flow : 2 l/min

### DT-01



### DG-01



## DIRECT TYPE RELIEF VALVES

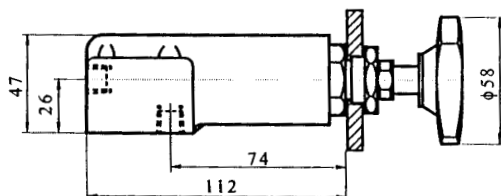
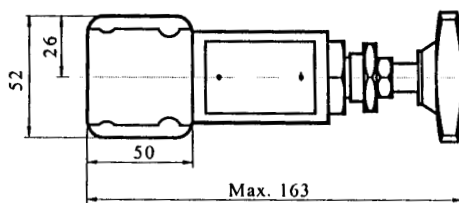
This relief valve use in small flow system or lower pressure required system.

Max. operating pressure : 210 kg/cm<sup>2</sup>.

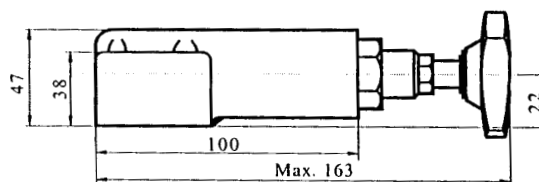
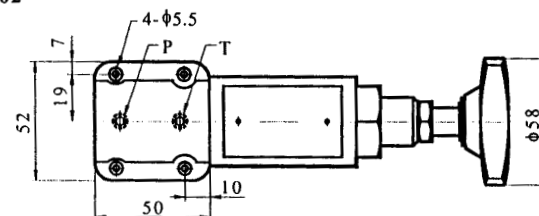
Min. pressure setting : 5 kg/cm<sup>2</sup> (flow below 9 l/min).

Max. flow : 16 l/min.

### DT-02

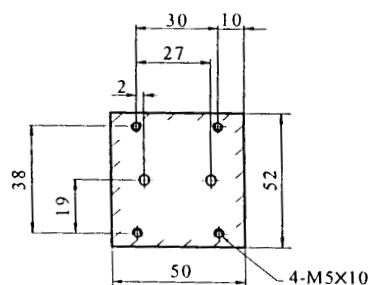


### DG-02



## DG-01, 02 SUBPLATE DIMENSIONS

- Mounting bolt kits are supply with valve socket head screws M5 × 45L 4 pieces.
- O-ring P9 ( 8.8 I.D. × 12.6 O.D. ) 2 pieces





# PRESSURE CONTROL VALVES

## PILOT OPERATED RELIEF VALVES

**B** Series relief valve use in hydraulic system to limit system pressure, and protect pump against over pressure .

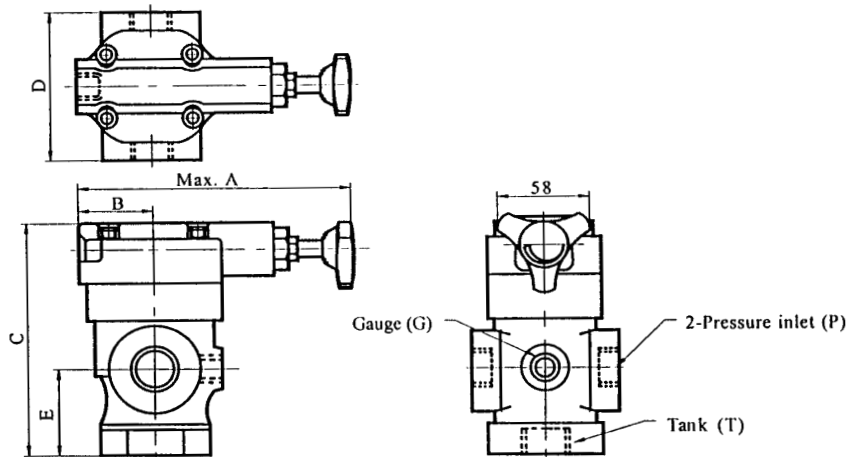
Max. working pressure : 250 kg/cm<sup>2</sup>

Max. flow : 04 – 100 l/min.

06 – 180 l/min.

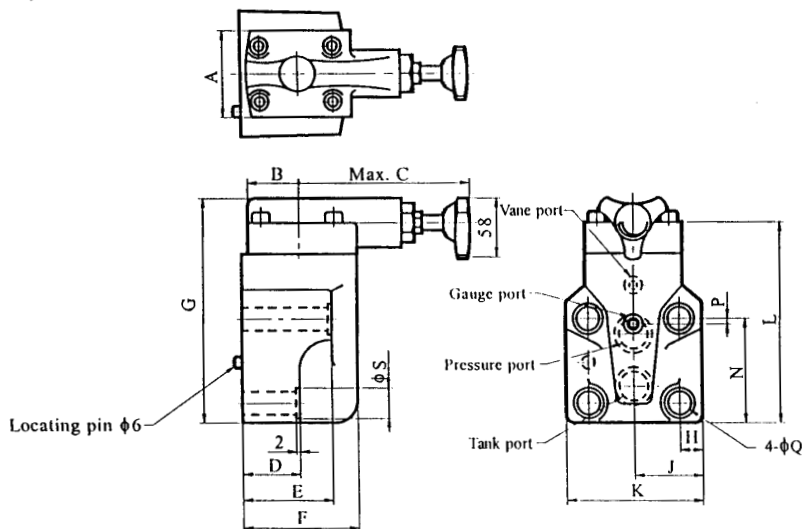
10 – 400 l/min.

BT - 04 ,06 ,10



Model	A mm	B mm	C mm	D mm	E mm	P port	T port	G port
BT-04	142	33.0	111	84.5	42	1/2"	1/2"	1/4"
BT-06	165	38.5	140	103.0	51	3/4"	3/4"	
BT-10			183	130.0	68	1 1/4"	1 1/4"	

BG - 03 ,06 ,10



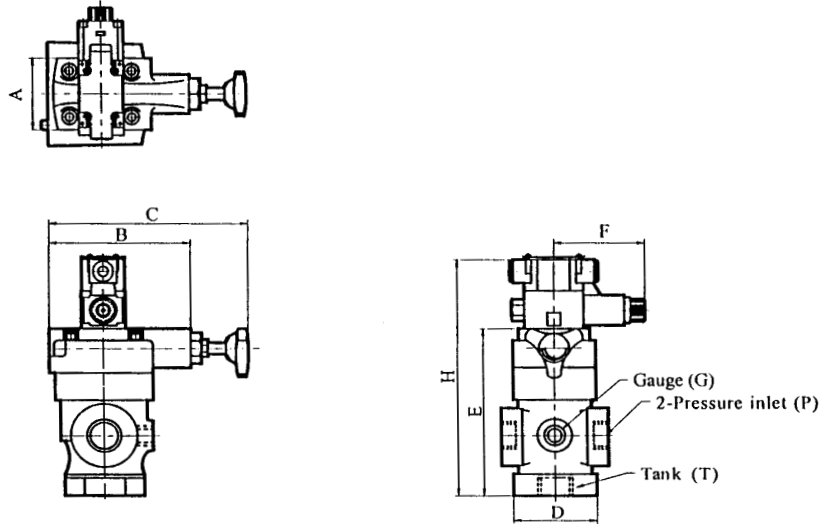
Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	N mm	P mm	Q mm	S mm
BG-03	75	40	105	57	78	78.0	137	14.1	41	82	117	77.0	22.0	13.5	21
BG-06				40	60		161	17.0	52	104	141	83.5	4.5	17.5	26
BG-10	85	45	103	47	67	87.5	195	20.7	62	124	175	110.0	6.0	21.5	32

# PRESSURE CONTROL VALVES

## SOLENOID CONTROLLED RELIEF VALVES

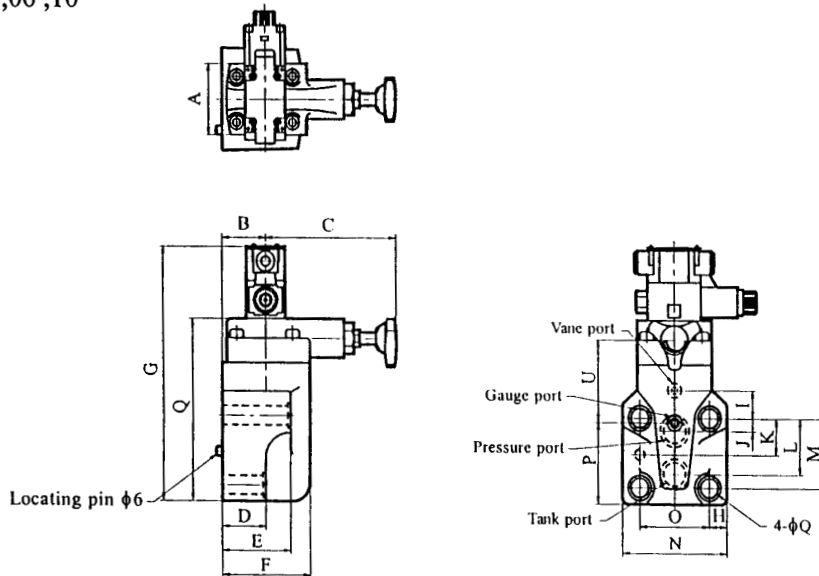
**BS** Series valve is the combination of solenoid valve and relief valve .Use in hydraulic system to limit system pressure and unloading pressure by solenoid valve, can offer two or more different pressure in system.

BST - 06 ,10



Model	A mm	B mm	C mm	D mm	E mm	F mm	H mm	Port size
BST-06	77	105	165	100	141	105	230	3/4"
BST-10	88			130	172		261	1 1/4"

BSG - 03 ,06 ,10



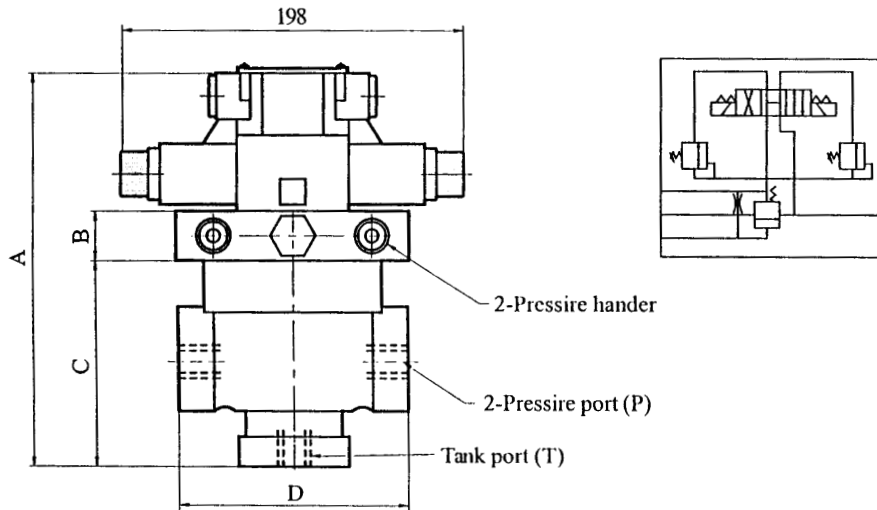
Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M mm	N mm	O mm	P mm	Q mm	R mm	U mm
BSG-03	77	40.0	126.5	58	78	78	229.0	14.5	0	22.0	22.0	47.4	53.8	83.0	53.8	56.0	140.0	105.0	63.3
BSG-06	77	40.5	126.5	41	61	78	256.5	17.0	23.8	11.0	33.4	55.5	66.7	104.0	70.0	83.5	167.5	105.0	63.3
BSG-10	88	45.0	121.0	49	69	84	287.0	21.7	31.8	12.7	44.5	76.2	88.9	126.0	82.6	104.0	198.0	105.0	72.0

# PRESSURE CONTROL VALVES

## SOLENOID CONTROLLED RELIEF VALVES

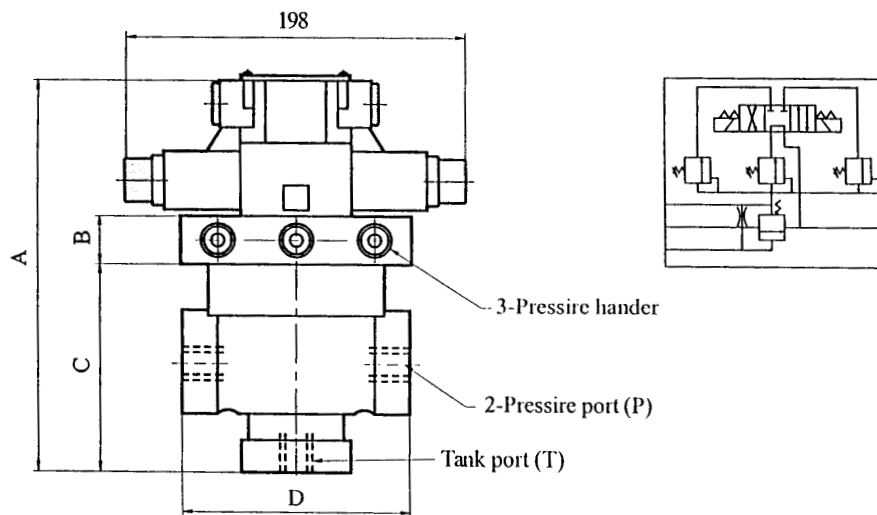
**BS** Series valve is the combination of solenoid valve and relief valve .Use in hydraulic system to limit system pressure and unloading pressure by solenoid valve, can offer two or more different pressure in system.

BST - 06 - 2P



Model	A mm	B mm	C mm	D mm	F mm
BST-06-2P	222	96	38	100	3/4"

BST - 06 - 3P

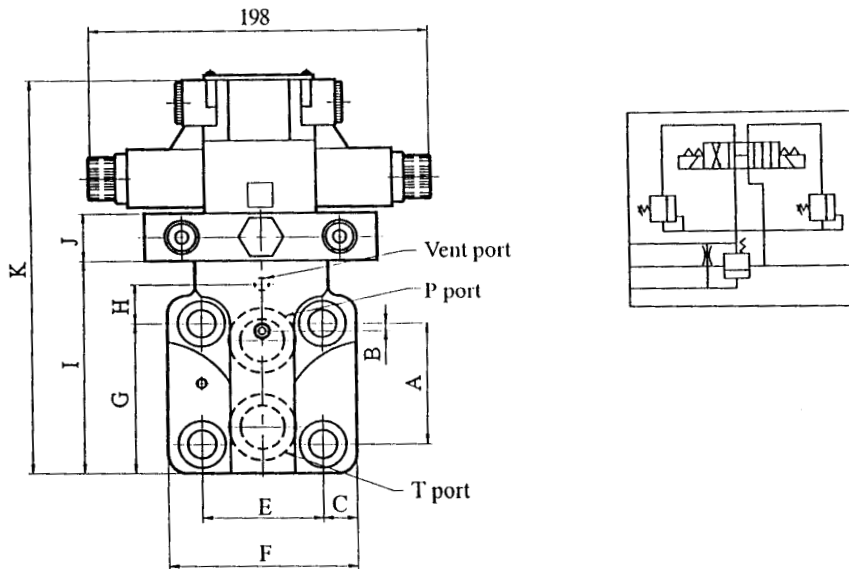


Model	A mm	B mm	C mm	D mm	F mm
BST-06-3P	222	96	38	100	3/4"

# PRESSURE CONTROL VALVES

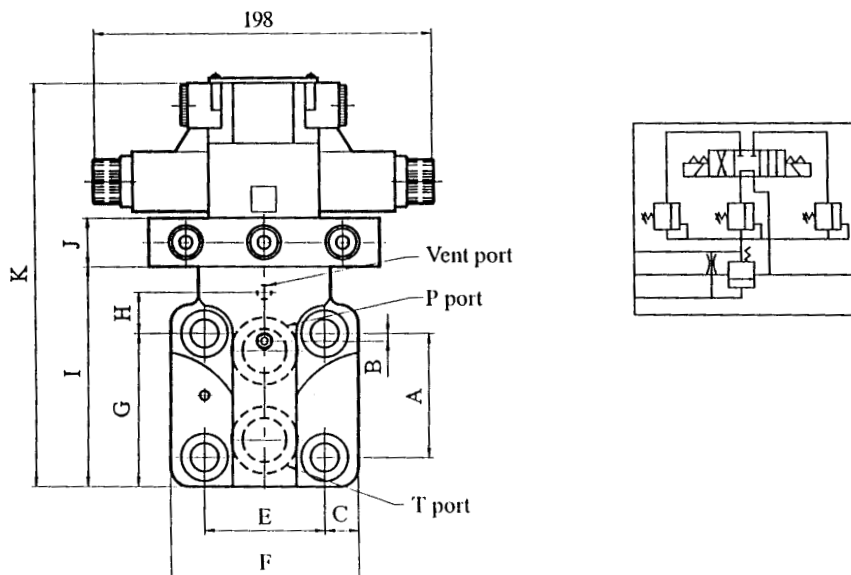
## SOLENOID CONTROLLED RELIEF VALVES

BSG - \*\* - 2P



Model	A mm	B mm	C mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm
BSG-03-2P	53.8	22	14.5	53.8	83	77.5	0	95.0	38	222.0
BSG-06-2P	66.7	11	17.0	70.0	104	86.0	23.8	122.5		249.5

BSG - \*\* - 3P



Model	A mm	B mm	C mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm
BSG-03-3P	53.8	22	14.5	53.8	83	77.5	0	95.0	38	222.0
BSG-06-3P	66.7	11	17.0	70.0	104	86.0	23.8	122.5		249.5

# PRESSURE CONTROL VALVES

## LOW NOISE TYPE PILOT OPERATED RELIEF VALVES

**SBG** Series relief valve .Low noise design use in hydraulic system to limit system pressure, and protect pump against over pressure. SBSG can unloading pressure by solenoid valve.

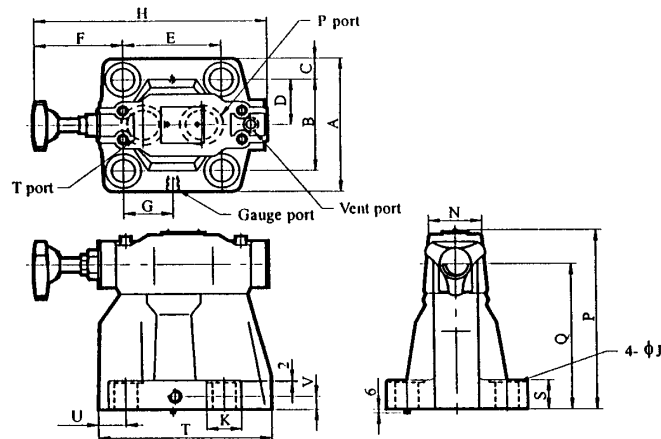
Max. working pressure : 250 kg/cm<sup>2</sup>

Max. flow : 03 – 100 l/min.

06 – 280 l/min.

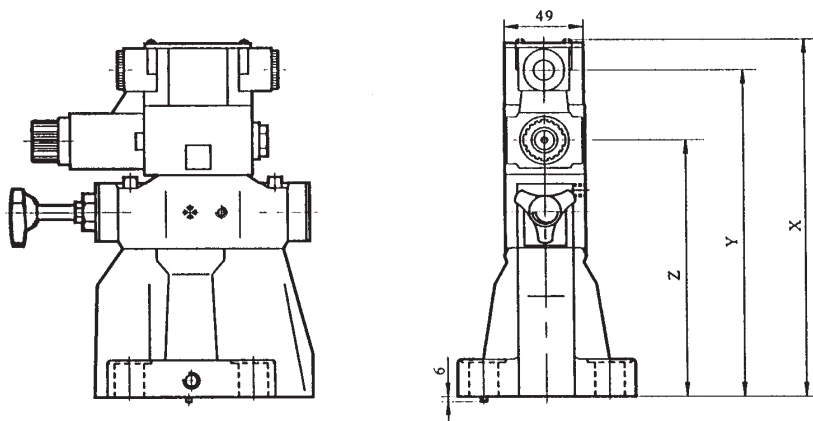
10 – 400 l/min.

SBG - 03 ,06 ,10



Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	N mm	P mm	Q mm	S mm	T mm	U mm	V mm
SBG-03	76	53.8	11.1	26.9	53.8	73.6	26.9	163.5	13.5	21	50	130	103	21.5	106	26.1	13
SBG-06	98	70.0	14.0	35.0	66.7	58.8	33.7	17.5	26					26.0	122	19.3	
SBG-10	120	82.6	18.7	41.3	88.9	50.6	44.9	180.0	21.5	32	65	167	135	33.5	155	21.1	18

SBSG - 03 ,06 ,10



Model	X mm	Y mm	Z mm
SBSG-03	217.3	200	153
SBSG-06			
SBSG-10	254.3	237	190

# PRESSURE CONTROL VALVES

## H SERIES PRESSURE CONTROL VALVES

H Series valve are direct type pressure control , operate by internal or external pilot . Differ internal or external pilot & drain can be difference function for sequence , unloading , counter balance or low pressure relief valves.

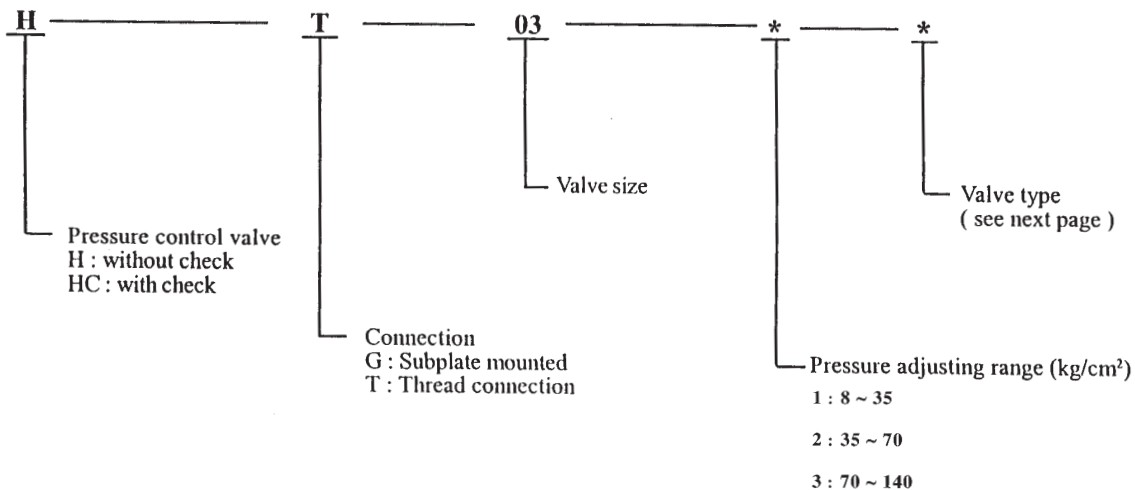
	Subplate type	Thread type	Max. flow rate l/min	Max. working pressure kg/cm <sup>2</sup>	Weight		Pressure adjust range kg/cm <sup>2</sup>
					kg		
H type pressure control valve	HG-03-**	HT-03-**	50	210	4.0	3.7	1 : 8 ~ 35
	HG-06-**	HT-06-**	125		6.1	6.2	
	HG-10-**	HT-10-**	250		11.0	12.0	
HC type pressure control valve with check	HCG-03-**	HCT-03-**	50		4.8	4.1	2 : 35 ~ 70
	HCG-06-**	HCT-06-**	125		7.4	7.1	
	HCG-10-**	HCT-10-**	250		13.8	13.8	

**SEQUENCE VALVE** – Limit flow after pilot pressure reach the setting pressure. A set pressure must be reached and maintained in primary circuit leg before flow is mode available to a secondary leg.

**UNLOADING VALVE** – It be used to divert pump flow to tank. Unloading valve is normally closed, pilot pressure from external source, is required must exceed the setting pressure to shift the valve spool to open.

**COUNTERBALANCE VALVE** – Provide resistance in circuit leg to balance inertia or static weight , Cylinder which lower heavy loads and motor driving large masses usually require counterbalance valves.

## ORDERING CODE

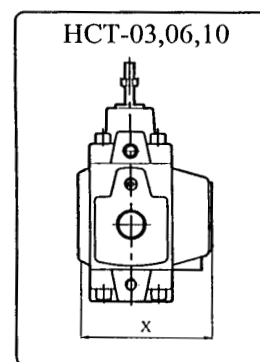
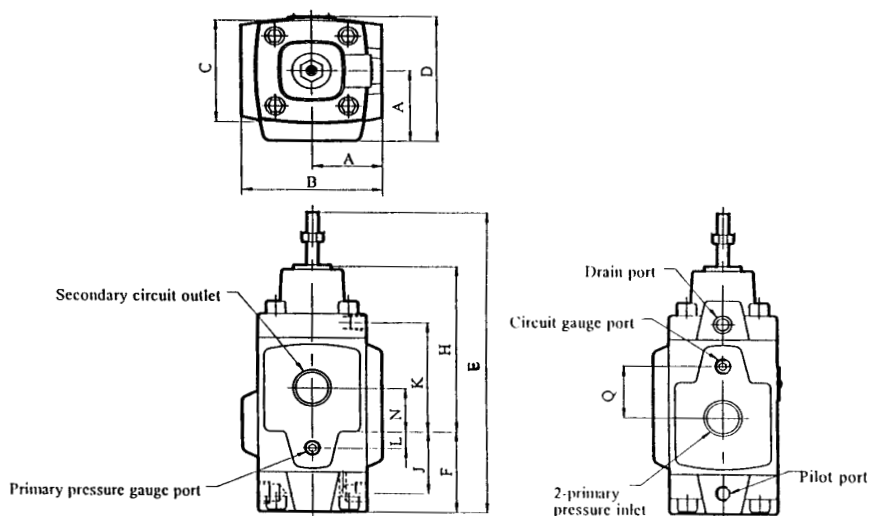


# PRESSURE CONTROL VALVES

## SEQUENCE VALVE / COUNTERBALANCE VALVE / UNLOADING VALVE

Type 1 - Internal pilot Internal drain	Type 2 - Internal pilot External drain	Type 3 - External pilot External drain	Type 4 - External pilot Internal drain
Relief valve	Sequence valve	Sequence valve	Unloading valve
Counterbalance valve	Sequence and Check valve	Sequence and Check valve	Counterbalance valve

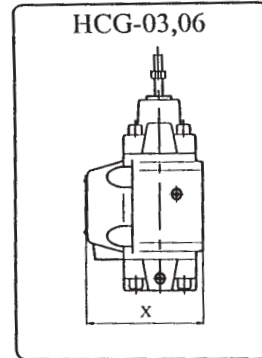
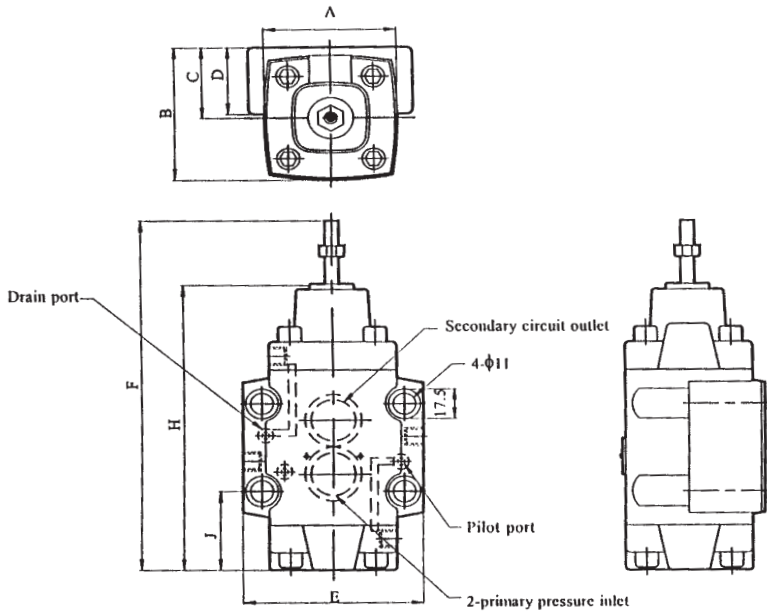
HT - 03,06,10



Model	A mm	B mm	C mm	D mm	E mm	F mm	H mm	J mm	K mm	L mm	N mm	Q mm	S PT	X mm
HT-03	41	82	60	74	191	57.0	106.0	43.0	70.0	0	28	28	1/8"	96
HT-06	48	96	73	87	221	64.5	123.5	50.5	80.5	9	33	42	3/4"	116
HT-10	66	122	86	112	272	84.0	149.0	66.0	98.0	12	40	52	1 1/4"	152

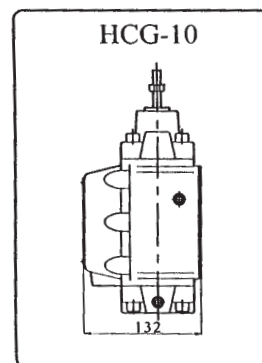
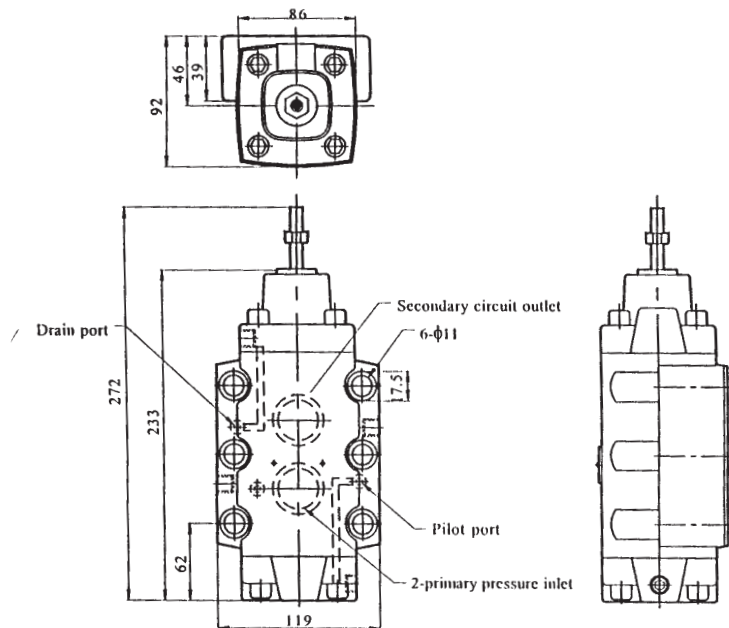
# PRESSURE CONTROL VALVES

HG - 03,06



Model	A mm	B mm	C mm	D mm	E mm	F mm	H mm	J mm	X mm
HG-03	60	67	35	39	89	191	163	49.6	90
HG-06	73	79	40		102	221	188	51.0	108

HG - 10



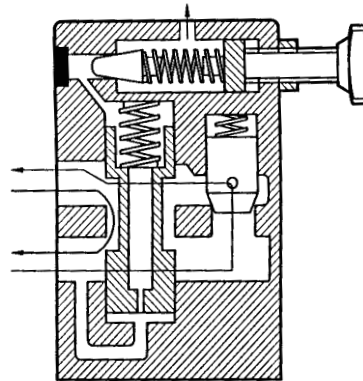


# PRESSURE CONTROL VALVES

## PRESSURE REDUCING VALVE

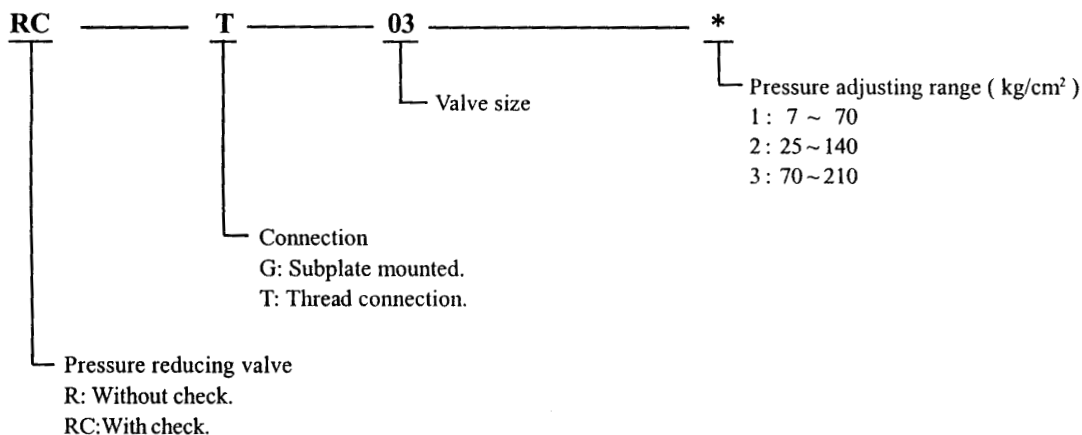
**R** Series pressure reducing valve are used to regulate pressure of main pressure. Remote control are available .

**RC** Series pressure reducing valve are check build - in type , allow free flow from reduced pressure port to high pressure port.



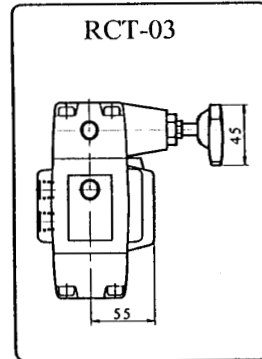
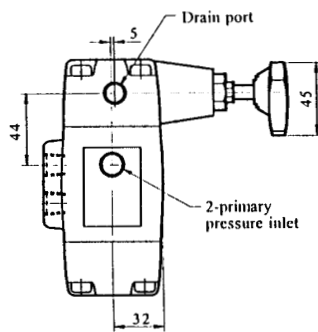
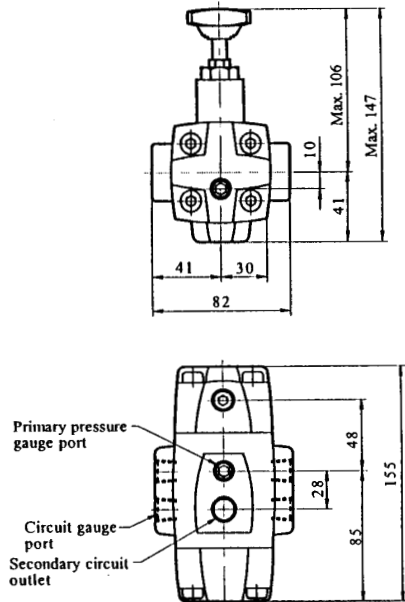
Model	Subplate type	Thread type	Port size	Max. flow rated l/min	Max. working pressure kg/cm <sup>2</sup>	Weight kg		Pressure adjust range kg/cm <sup>2</sup>
Pressure reducing valve	RG-03-**	RT-03-**	3/8"	40	210	4.5	4.3	1: 7 ~ 70 2: 25 ~ 140 3: 70 ~ 210
	RG-06-**	RT-06-**	3/4"	100		6.8	6.9	
	RG-10-**	RT-10-**	1 1/4"	200		11.0	12.0	
Pressure reducing valve with check	RCG-03-**	RCT-03-**	3/8"	40		5.4	4.8	
	RCG-06-**	RCT-06-**	3/4"	100		8.1	7.8	
	RCG-10-**	RCT-10-**	1 1/4"	250		13.8	13.8	

## ORDERING CODE

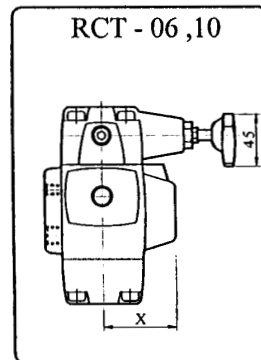
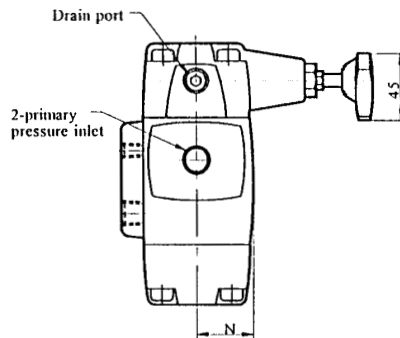
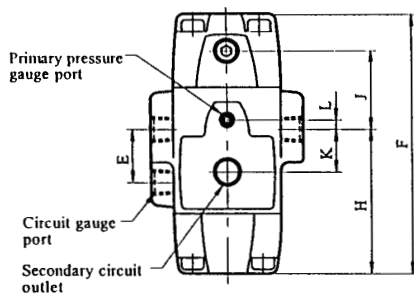
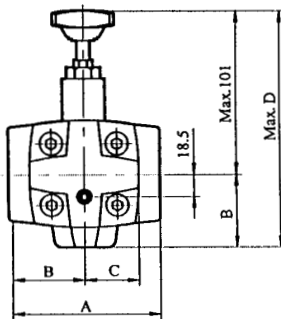


# PRESSURE CONTROL VALVES

RT - 03



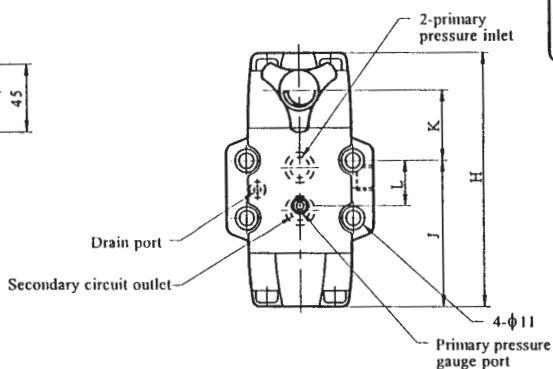
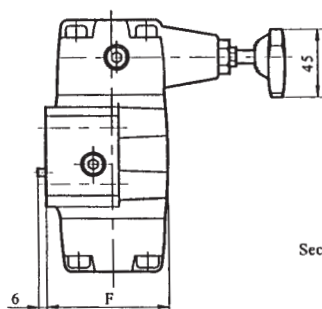
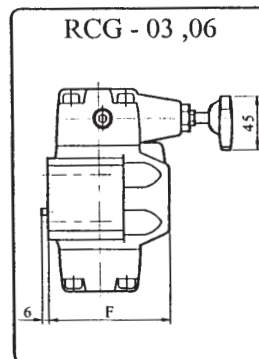
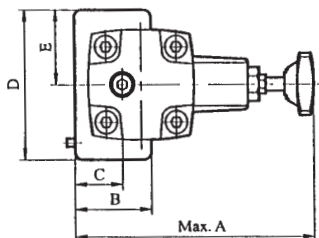
RT - 06,10



Model	A mm	B mm	C mm	D mm	E mm	F mm	H mm	J mm	K mm	L mm	N mm	Q	X mm
RT-06	96	48	36.5	149	42	179	97.5	53.5	33	9	39	3/4"	68
RT-10	132	66	43.0	167	52	216	124.0	64.0	40	12	46	1 1/4"	86

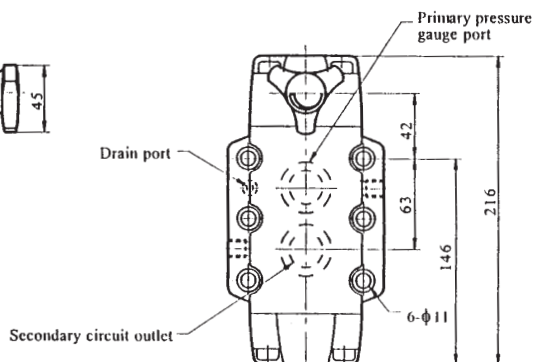
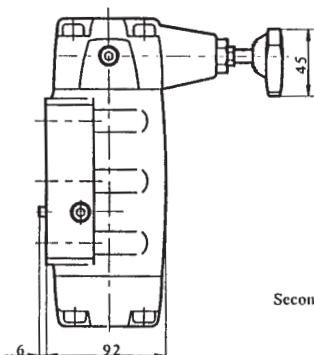
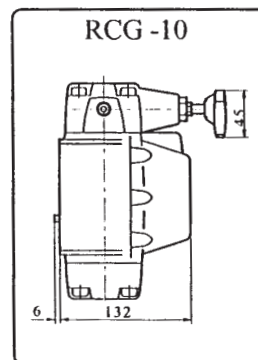
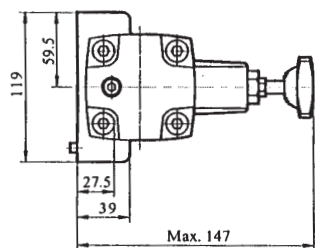
# PRESSURE CONTROL VALVES

RG - 03 ,06



Model	A mm	B mm	C mm	D mm	E mm	F mm	H mm	J mm	K mm	L mm
RG-03	142	39	25.0	89	44.5	67	155.5	92.4	40.6	34.9
RCG-03		59				90				
RG-06	141	39	21.5	102	51.0	79	179.0	111.0	40.0	48.0
RCG-06		69				108				

RG - 10



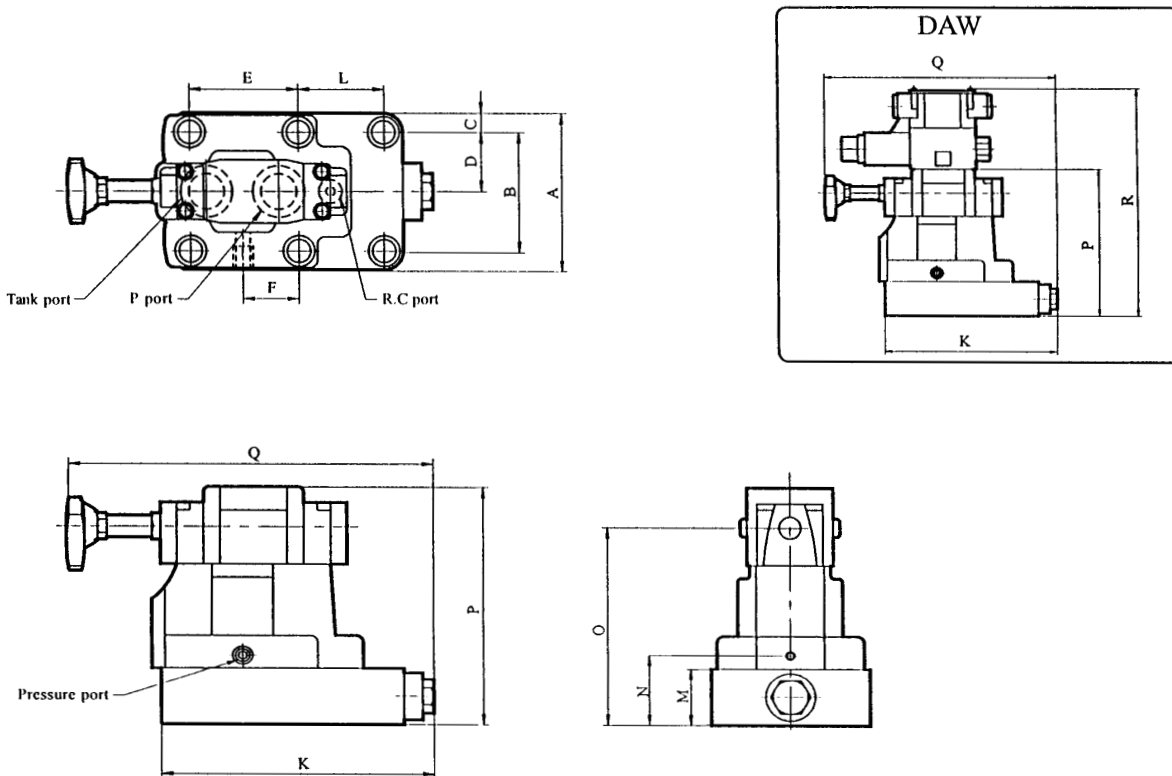
# PRESSURE CONTROL VALVES

## UNLOADING RELIEF VALVES

DA Series unloading relief valves are used to divert pump flow to tank for pump lower load operation, use in Hi-Lo pump and accumulator circuit.

Model	Subplate type	Port	Max. flow l/min	Pressure adjusting range kg/cm <sup>2</sup>	Max. working pressure kg/cm <sup>2</sup>	Weight kg
Unloading relief valve	DA-03	3/8"	40	1: 5~70 2: 35~140 3: 70~210	210	8
	DA-06	3/4"	100			11.2
	DA-10	1 1/4"	250			19
Solenoid unloading relief valve	DAW-03	3/8"	40			9.8
	DAW-06	3/4"	100			13
	DAW-10	1 1/4"	250			20.8

DA



Model	A mm	B mm	C mm	D mm	E mm	F mm	K mm	L mm	M mm	N mm	O mm	P mm	Q mm	R mm
DA-03	83	53.8	12.1	26.9	53.8	24.0	113	0	45	67.0	149.2	173	192.3	263
DA-06	102	70.0	16.0	35.0	66.7	27.5	168	46.0	50	73.5	155.2	179	223.3	269
DA-10	122	82.6	22.8	41.3	88.9	0	209	50.8	67	104.5	185.0	209	251.0	299

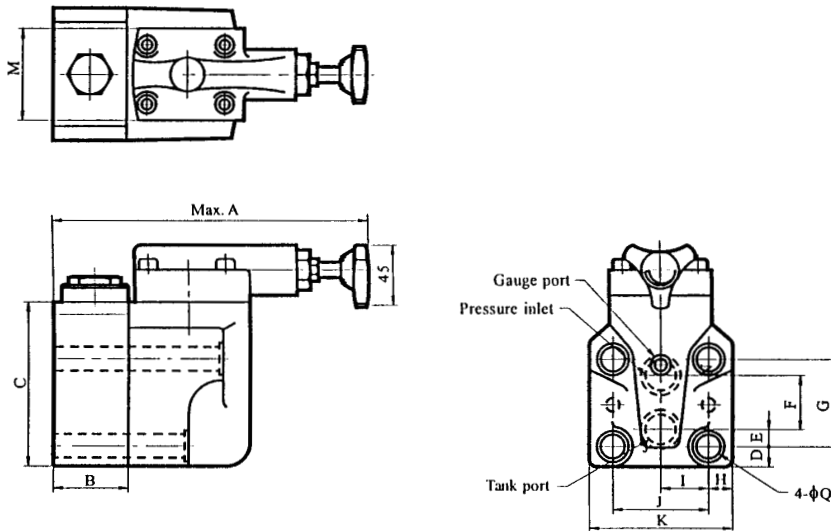
# PRESSURE CONTROL VALVES

## BACK PRESSURE VALVES

**RFB** Series back pressure valves are used to keep required back pressure prevent decending by gravity force build-in pass check for free return.

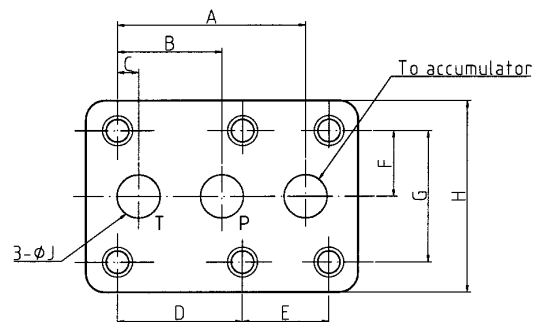
Model	Subplate type	Port	Max. flow l/min	Pressure adjusting range kg/cm <sup>2</sup>	Max. working pressure kg/cm <sup>2</sup>	Weight kg
Back Pressure Valve	RFB-06	$\frac{3}{4}$ "	120	1: 25 ~ 70 2: 35 ~ 140 3: 70 ~ 210	210	11
	RFB-10	$1\frac{1}{4}$ "	250			18

RFB - 06,10



Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M mm	Q mm
RFB-06	205	60	122.5	16.8	11.2	55.7	66.7	17.75	35	70.0	105	17.5	62	17.5
RFB-10	217	72	156.0	21.8	12.7	76.2	88.9	20.00	41	82.5	122	21.5	76	21.5

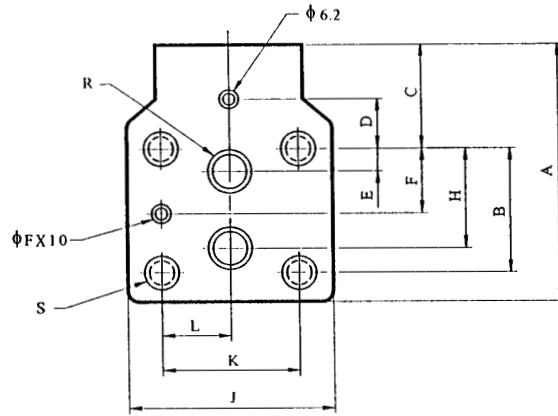
## DA-06/10 SUBPLATE DIMENSIONS



	A	B	C	D	E	F	G	H	J
DA-06	100.2	55.7	11.2	66.7	46	35	70	102	23
DA-10	126.9	77.2	12.7	88.9	50.8	41.3	82.6	122	28

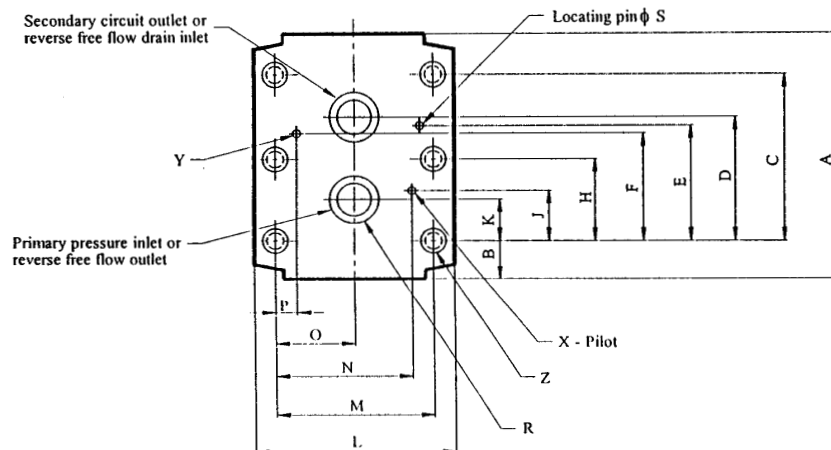
# PRESSURE CONTROL VALVES

## BG-03/06/10 SUBPLATE DIMENSIONS



Model	A mm	B mm	C mm	D mm	E mm	F mm	H mm	J mm	K mm	L mm	R mm	S	U
BG-03	97	53.8	19	0	22.0	22.0	47.4	86	53.8	26.9	14.5	M12 x 20	7 x 10
BG-06	121	66.7	37	23.8	11.0	33.4	55.5	108	70.0	35.0	23.0	M16 x 25	
BG-10	154	88.9	42	31.8	12.7	44.5	76.2	126	82.6	41.3	41.3	M20 x 28	

## H(C)G-03/06/10 SUBPLATE DIMENSIONS



Model	A mm	B mm	C mm	D mm	E mm	F mm	H mm	J mm	K mm	L mm	M mm	N mm	O mm	P mm	R	S	X mm	Y mm	Z
HG-03	75	16.0	42.8	35.7	31.8	21.4	—	21.4	7.1	89	66.7	58.7	33.3	7.9	φ13	φ7 x 10	4	4	4M10 x 20
HG-06	93	16.5	60.3	49.2	44.5	39.7	—	24.6	11.1	102	79.4	73.0	39.7	6.4	φ22		5	5	6M10 x 20
HG-10	117		84.1	67.5	62.7	59.5	42.1		16.7	119	96.8	92.9	48.4	4.0	φ28				

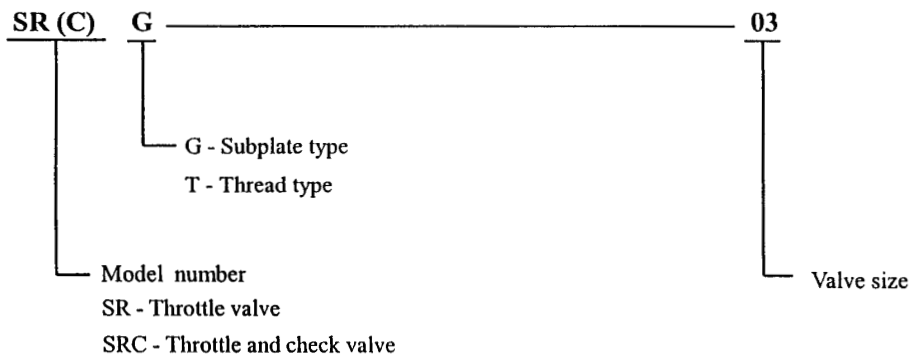
# THROTTLE (FLOW CONTROL) VALVES

**Throttle** valve consist of a valve body and a adjustable orifice can be used to restrict flow.

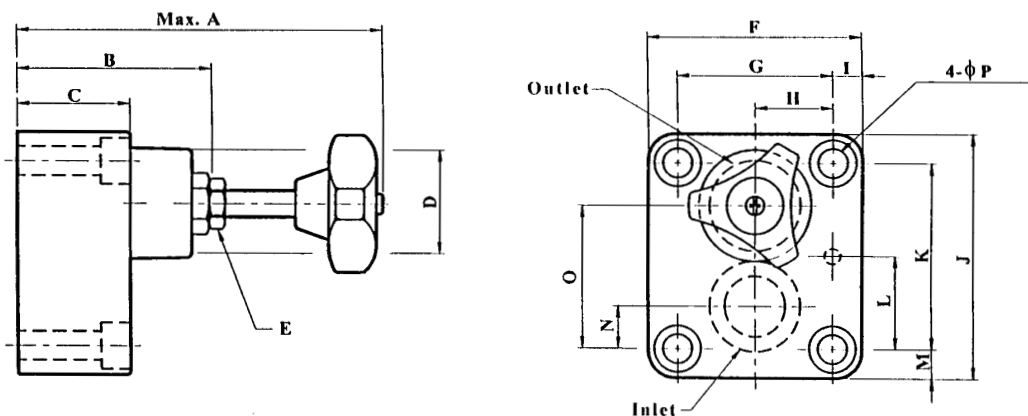
**Flow control** valve consist of a check poppet in addition to an adjustable orifice can be used to restrict flow in one direction and allow free flow in the other direction.

Throttle valve		Max. flow rated l/min	Max. working pressure kg/cm <sup>2</sup>	Weight kg	
Subplate type	Thread type				
SRG-03	SRT-03	30	210	1.5	1.4
SRG-06	SRT-06	80		2.7	2.6
SRG-10	SRT-10	200		5.2	6.1
SRCG-03	SRCT-03	30		2.1	1.5
SRCG-06	SRCT-06	80		4.0	3.5
SRCG-10	SRCT-10	200		8.1	7.4

## ORDERING CODE



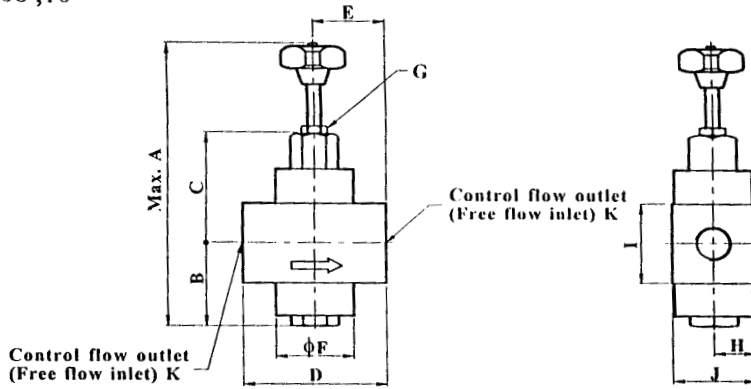
SRG - 03 ,06 ,10



Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M mm	N mm	O mm	P mm	Q mm	R mm
SRG-03	117	63	30	40	19.0	60	40	20	10	80	60	30	10	15	45	9	14.0	7.0
SRG-06	137	72	42	42		80	58	29	11	92	70	35	11	16	54	11	17.5	11.0
SRG-10	162	92	55	57	23.5	100	72	36	14	120	92	46	14	21	71	13	21.0	13.5

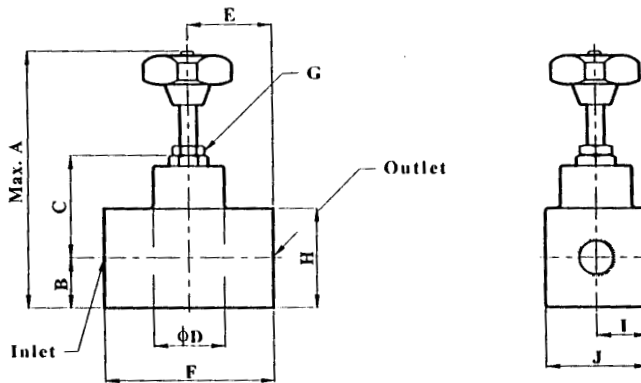
# THROTTLE (FLOW CONTROL) VALVES

SRCT - 03,06,10



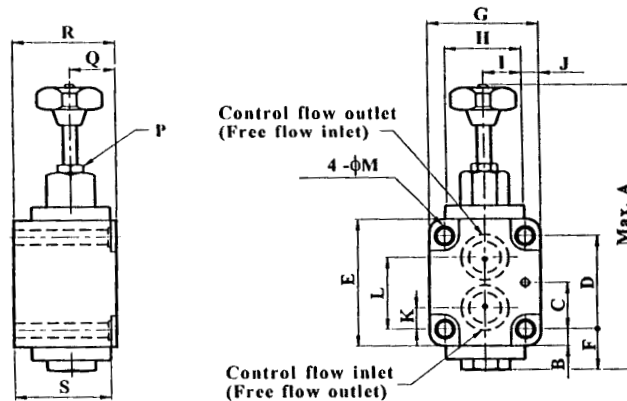
Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K PT
SRCT-03	178	60.0	60	70	35.0	42	17	21	42	43	3/4"
SRCT-06	216	65.5	84	105	52.5	57	19	30	63	62	3/4"
SRCT-10	262	77.0	110	130	65.0	72	23	40	80	83	1 1/4"

SRT - 03,06,10



Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K PT
SRT-03	133.0	23.5	56.0	41.0	35.5	71	19	41	20.5	44	3/4"
SRT-06	156.5	30.0	62.5	42.0	50.0	100		60	30.0	62	3/4"
SRT-10	188.0	42.0	81.0	58.0	66.5	133	24	82	40.5	84	1 1/4"

SRCG - 03,06,10



Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M mm	N mm	O mm	P mm	Q mm	R mm	S mm
SRCG-03	178	10.0	30	60	80	30.0	60	40	20	10	15	45	9	14.0	1.0	17	35.5	64	56
SRCG-06	217	12.5	35	70	95	30.5	80	58	29	11	16	54	11	14.5	1.5	19	41.0	77	70
SRCG-10	265	14.0	46	92	120	33.0	100	72	36	14	21	71	13	19.5	3.5	23	50.0	97	82

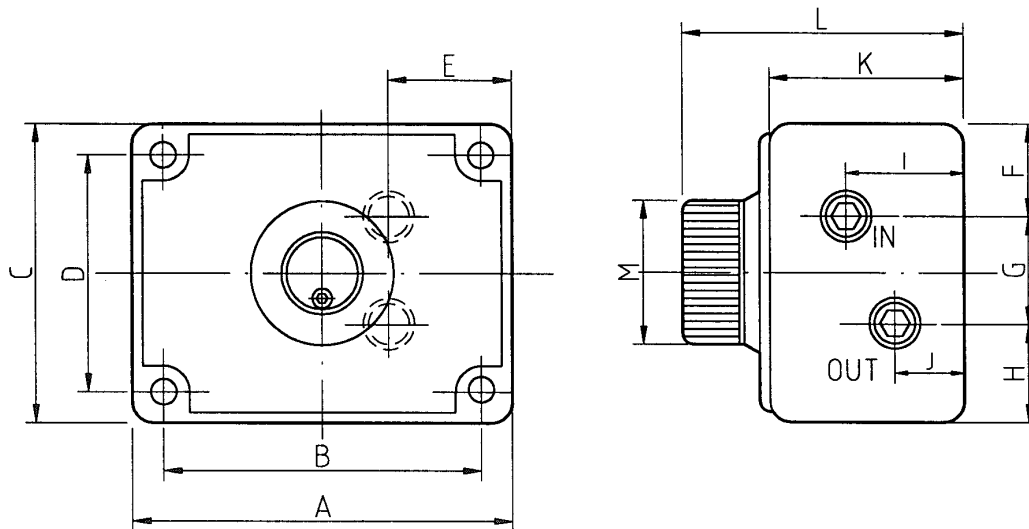


## DECELERATION VALVES

This deceleration valve consist of mechanically or solenoid operated two-way valve and a adjustable orifice with chech valve. This valve allows to a cylinder to be slowed down in mid-stroke where cylinder cushions are not effect.

		Model No.	Free flow l/min	Max. working pressure kg /cm <sup>2</sup>	Adjusting flow l/min	Weight kg
<b>One-way controlled</b>		FNC-G02	20	70	0.01~8	1.2
		FNC-G03	30		0.01~15	2.0
		THF-G06	120	210	0~120	5.0
		THF-G10	240		0~240	8.4
<b>Mechanically</b>	<b>Cam</b>	FKC-G02	20	70	0.01~8	1.3
		FKC-G03	30		0.01~15	2.0
	<b>Roller</b>	FYC-G02	20		0.01~8	1.3
		FYC-G03	30		0.01~15	2.0
<b>Solenoid operated</b>		FSC-G02	20	70	0.01~8	1.6
		FSC-G03	30		0.01~15	2.6
		SF-G06	120	210	0~120	6.4
		SF-G10	240		0~240	9.9
		SDF-G06	120		0~120	6.4
		SDF-G10	240		0~240	9.9
		SFD-G06	120		0~120	6.7
		SFD-G10	240		0~240	10.4
		SKF-G06	120		0~120	7.5
		SKF-G10	240		0~240	11.2
<b>Solenoid modular</b>		MFS-02	30	70	0.01~4	2.3
		MFS-03	50		0.01~8	3.3

### One-way controlled

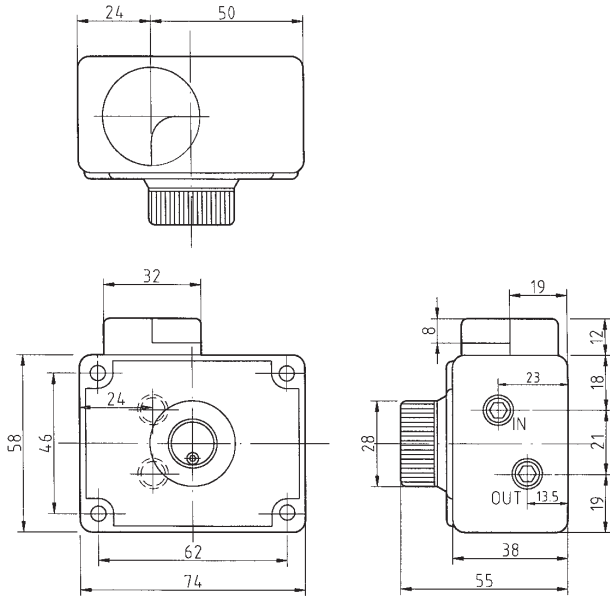


Model	A	B	C	D	E	F	G	H	I	J	K	L	M
FNC-G02	74	62	58	46	24	18	21	19	23	13.5	38	55	28
FNC-G03	90	74	70	54	26	22	26	22	20	17	42	59	36

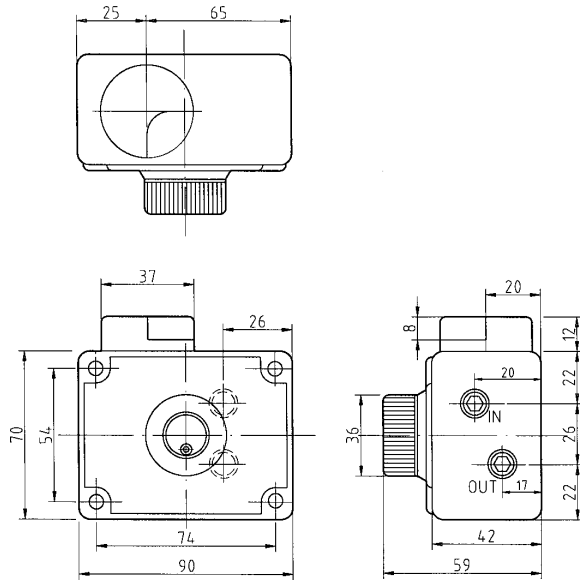
# DECELERATION VALVES

## Cam operated

### FKC-G02

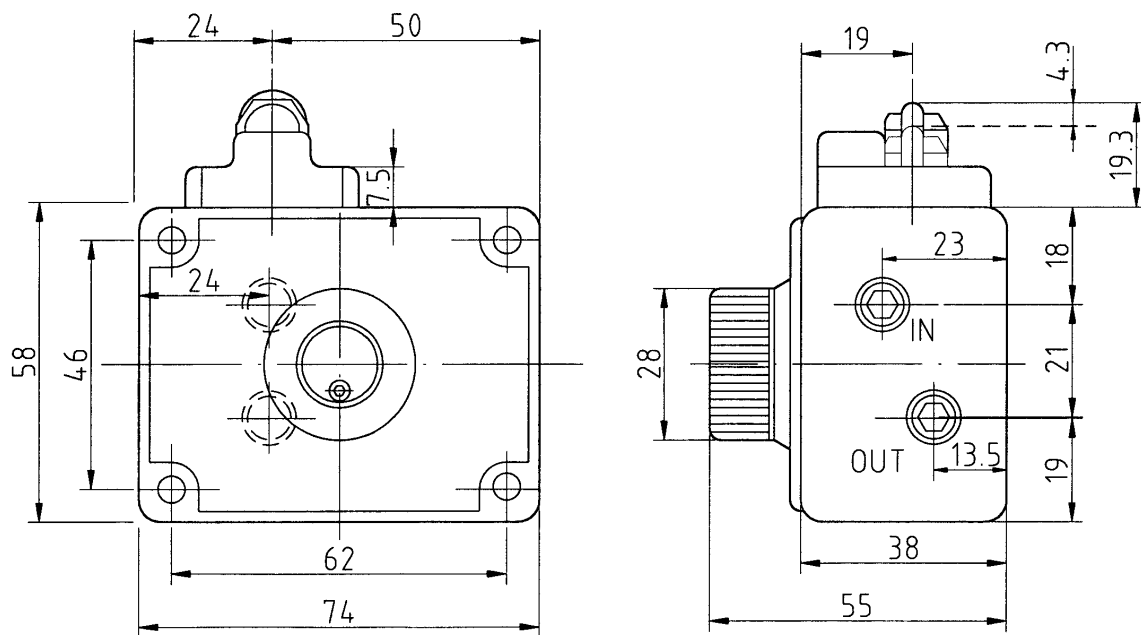


### FKC-G03



## Roller operated

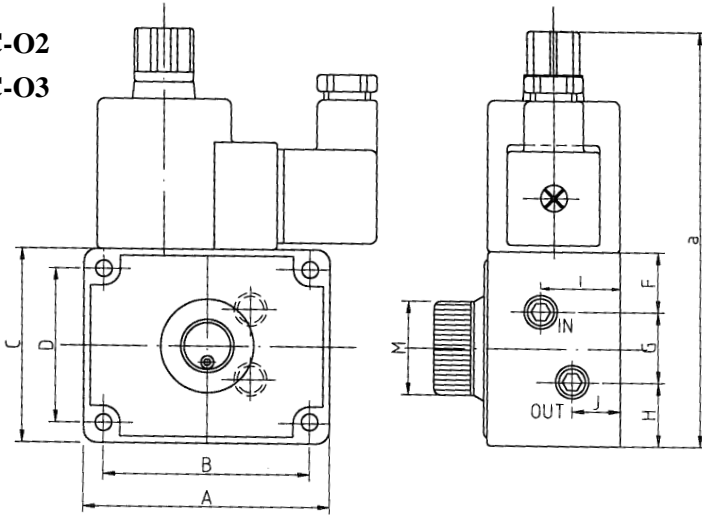
### FYC-G02



# DECELERATION VALVES

## Solenoid operated

FSC-O2  
FSC-O3

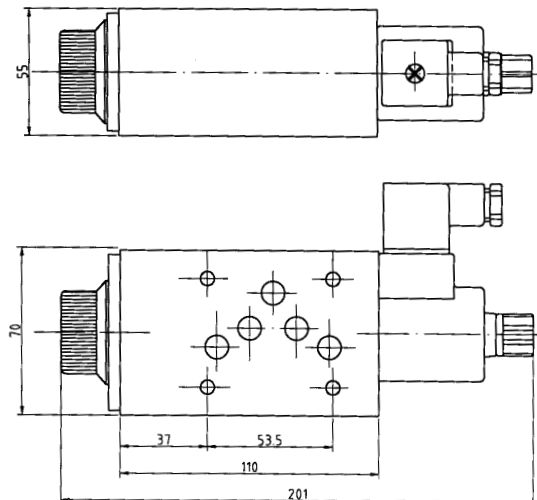
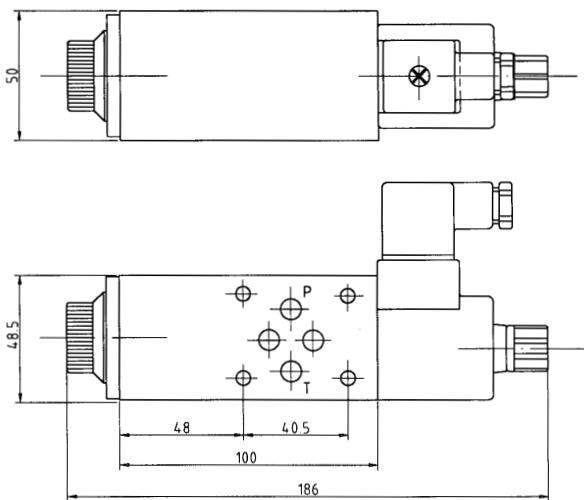


	a	
	AC	DC
FSC-O2	128	135.5
FSC-O3	140	147.5

## Solenoid operated modular type.

MFS-O2

MFS-O3



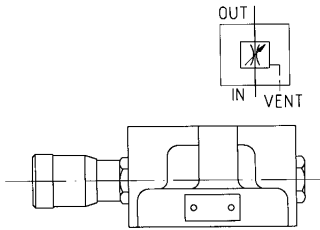
## ORDERING CODE

FNC ————— G 0 2 ————— \* \* \*

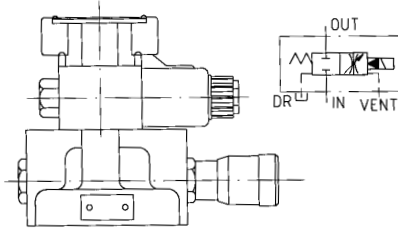
One-way controlled	FNC. THF	Valve size	Voltage for coil
Cam operated	FKC		or
Roller operated	FYC		Controller type of FKC
Solenoid controlled	FSC. SF. SDF		
Solenoid modular	MFS.		

# DECELERATION VALVES

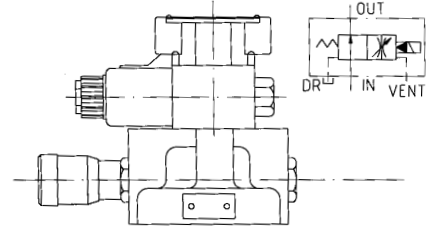
**THF-06/10**



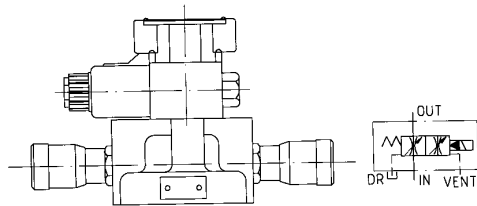
**SDF-G06/G10**



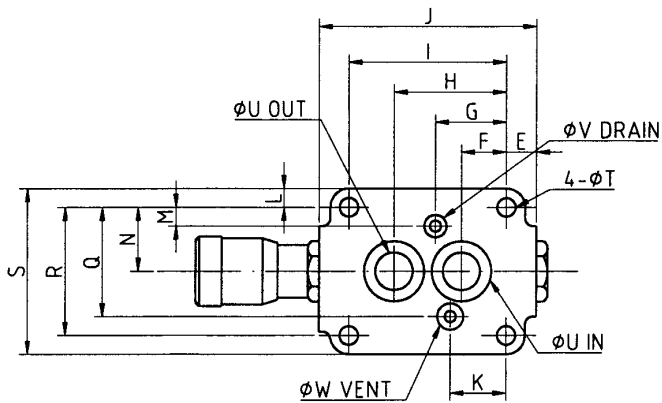
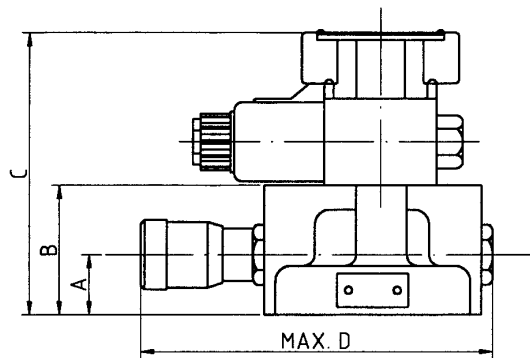
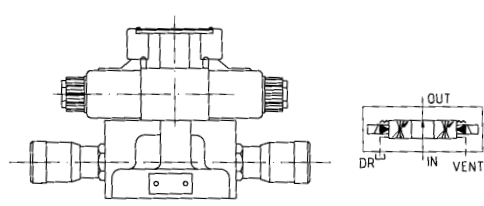
**SF-G06/G10**



**SFD-G06/G10**



**SKF-G06**



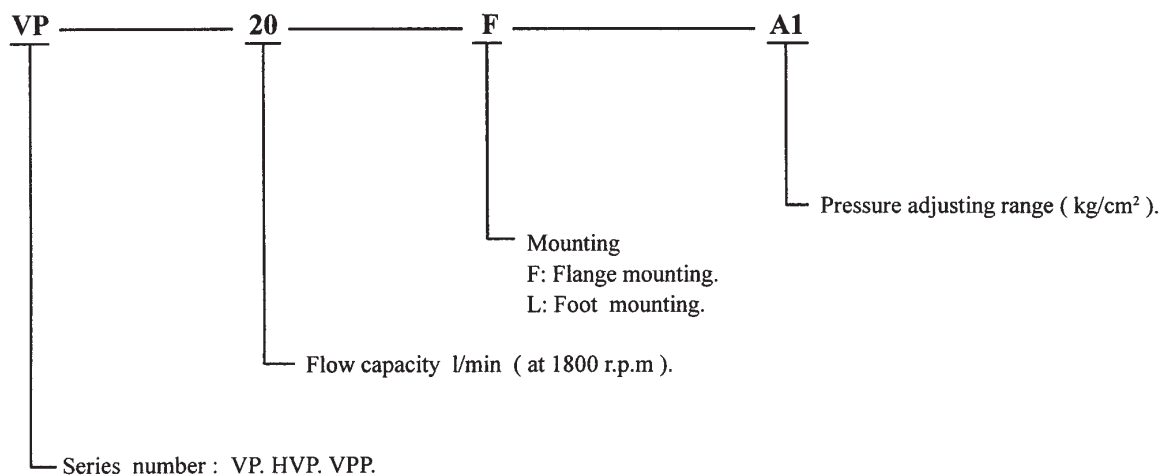
Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Q	R	S	T	U	V	W
SF-06	35.2	75	167	221.5	17	26	40.5	64	90	125	31.7	11	10	37	64	74	96.5	11	24	6.5	16
SF-10	39.5	85	177	246.5	19	34	46.5	79	112	150	37.7	15	11	43	75	86	115.5	13.5	29	6	16

## VARIABLE DISPLACEMENT VANE PUMPS

VP Series pump possesses vane construction with pressure compensated units. The design is to provide only the flow required by the system. Pump output flow is controlled by cam ring . Cam ring is controlled by the compensating mechanism of the pump. They are designed for low noise , high efficiency and longer life-span.

Model	Max. pressure kg/cm <sup>2</sup>	Pressure adjusting range kg/cm <sup>2</sup>	Drive speed (rpm)		Flow at 1800 r.p.m l/m in
			Max	Min	
VP-12	70	A1: 8 ~ 35 A2: 30 ~ 70	1800	800	12
VP-15					15
VP-20					20
VP-30					30
VP-40					40
VPP-20/20					20+20
VPP-30/30					30+30
VPP-40/40					40+40
HVP-30	140	A3: 30 ~ 140			30
HVP-40					40

### ORDERING CODE



# VARIABLE DISPLACEMENT VANE PUMPS

## VP SERIES

Maximum pressure : 70 kg/cm<sup>2</sup>

Flow capacity : VP-12 : 12 l/min. ( at 1800 r.p.m. / 3.5 kg/cm<sup>2</sup> )

15 : 15

20 : 20

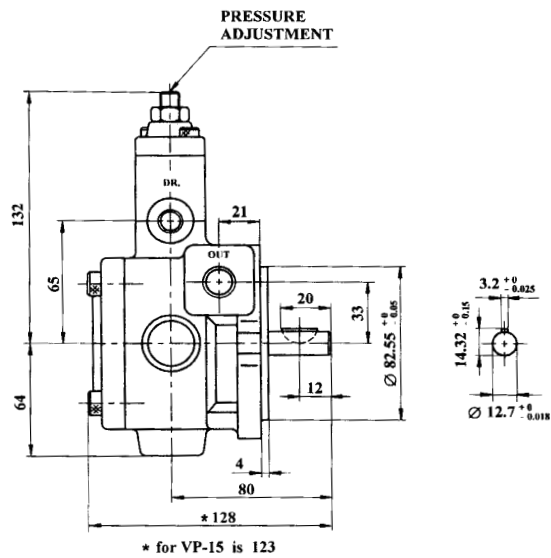
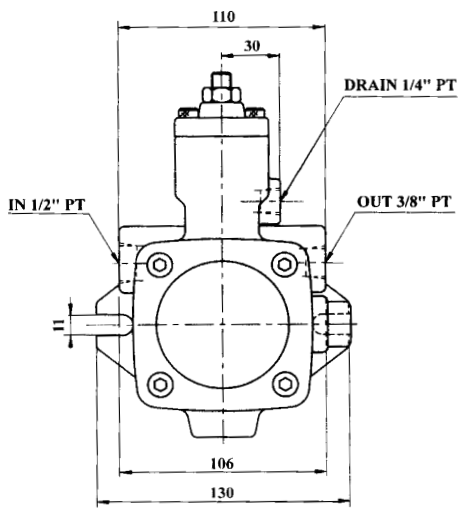
30 : 30

40 : 40

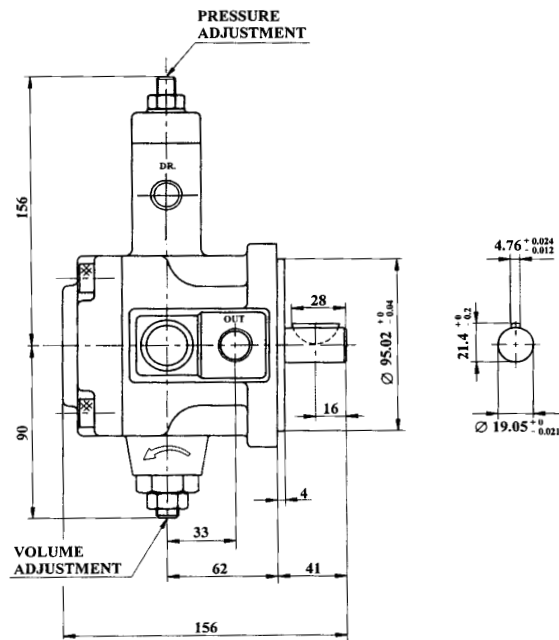
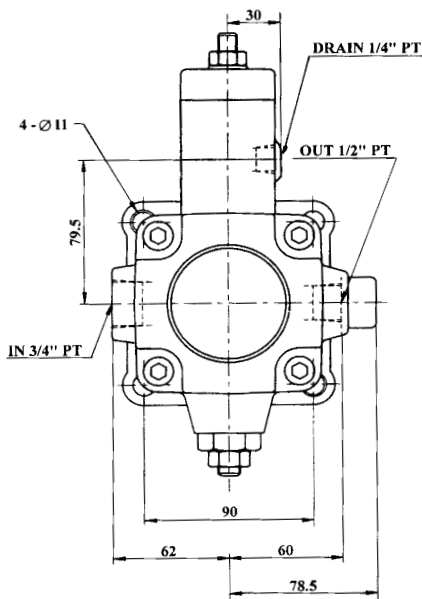
Weight : Foot type VP-12/15/20 : 6.0 kgs.  
30/40 : 12.5 kgs.

Flange type VP-12/15/20 : 5.0 kgs.  
30/40 : 9.5 kgs.

### VP-12/15/20

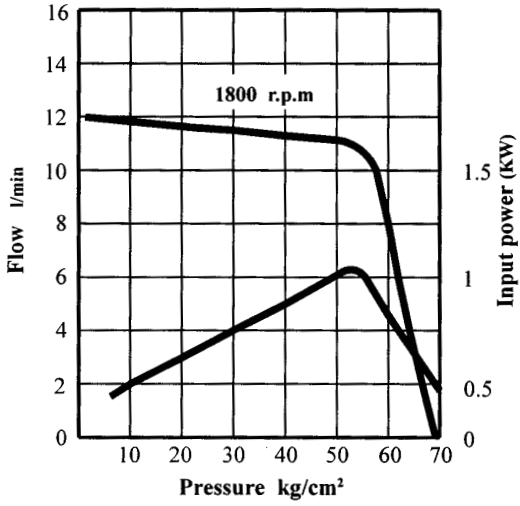


### VP-30/40

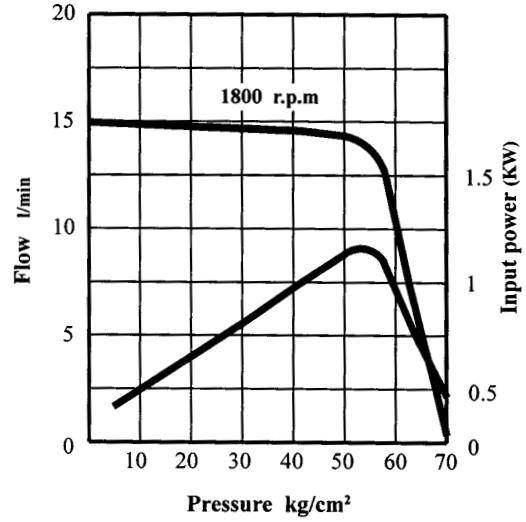


# VARIABLE DISPLACEMENT VANE PUMPS

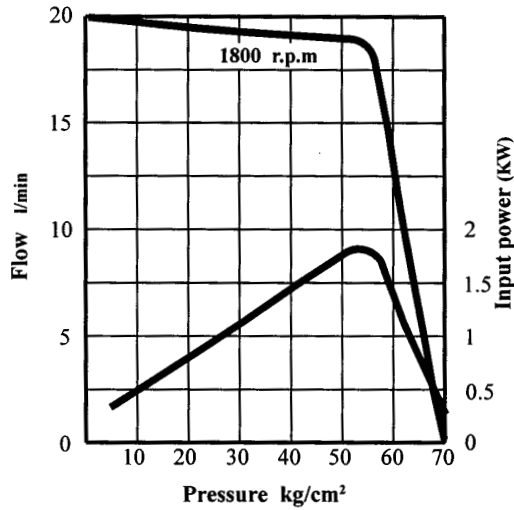
VP-12-A2



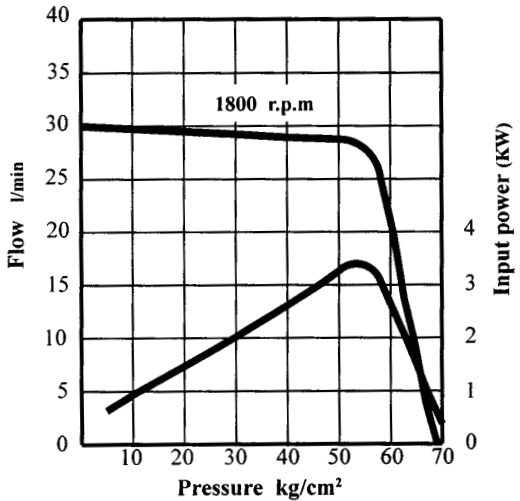
VP-15-A2



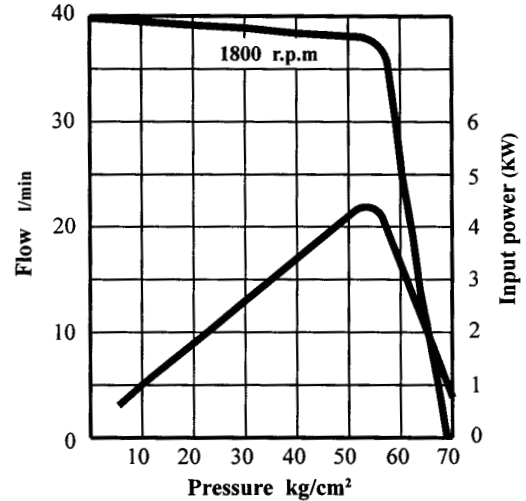
VP-20-A2



VP-30-A2



VP-40-A2



# DOUBLE VARIABLE DISPLACEMENT VANE PUMPS

## VPP SERIES

Maximum pressure : 70 kg/cm<sup>2</sup>

Rated capacity : VPP-20/20 : 20+20 l/min. ( at 1800 r.p.m. / 3.5 kg/cm<sup>2</sup> )

30/30 : 30+30

40/40 : 40+40

Weight : Foot type VPP-20/20 : 10.5 kgs.

30/30 : 19.0 kgs.

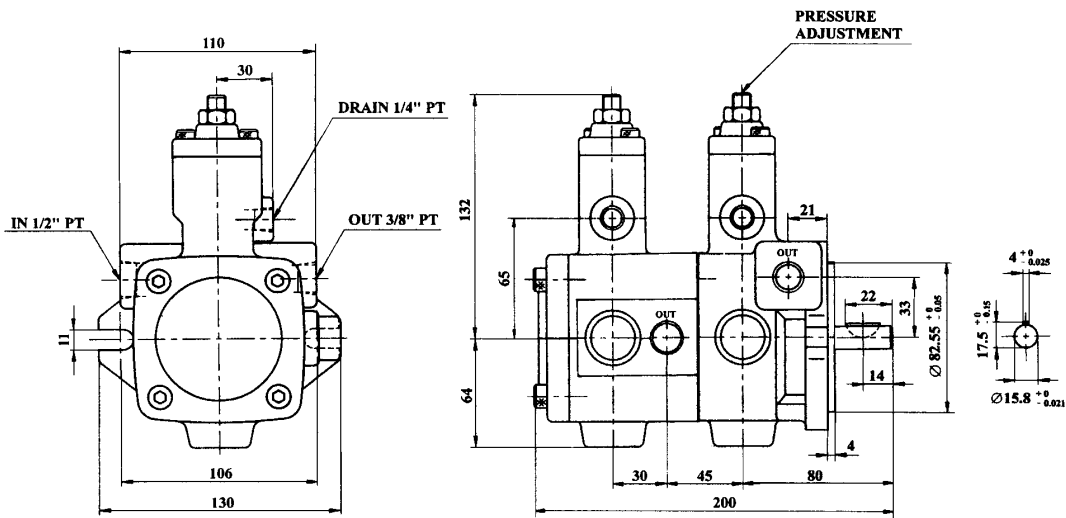
40/40 : 19.0 kgs.

Flange type VPP-20/20 : 9.5 kgs.

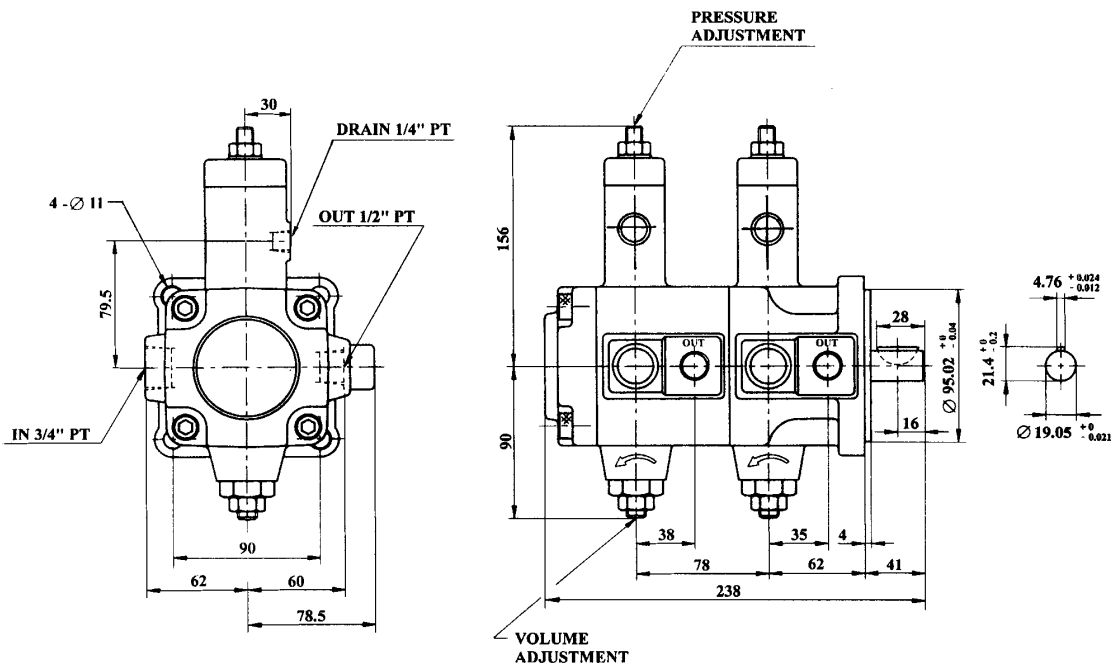
30/30 : 16.0 kgs.

40/40 : 16.0 kgs.

### VPP-20/20



### VPP-30/30, 40/40





# VARIABLE DISPLACEMENT VANE PUMPS

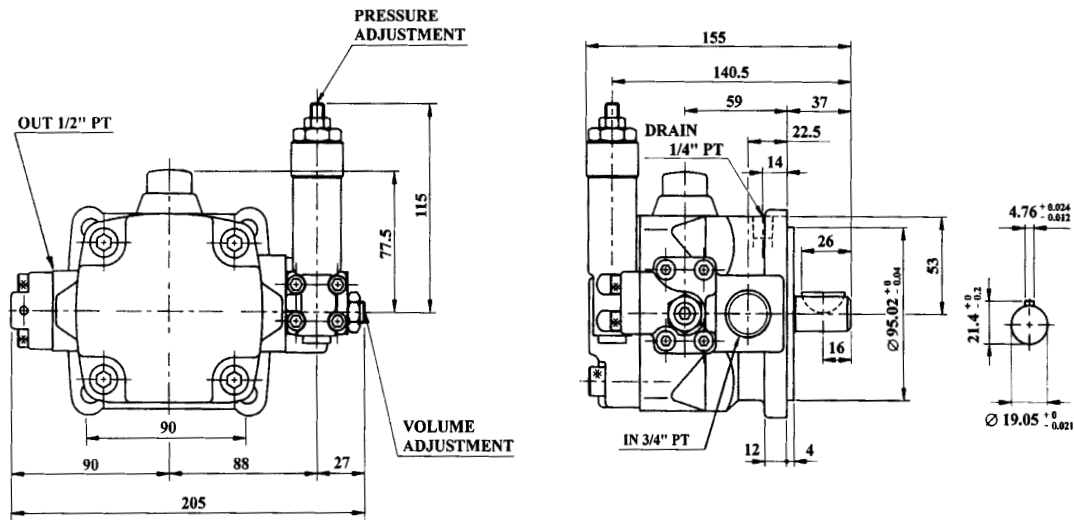
## HVP SERIES

Maximum pressure : 140 kg/cm<sup>2</sup>

Flow capacity : HVP-30 : 30 l/min. ( at 1800 r.p.m. / 3.5 kg/cm<sup>2</sup> )  
40 : 40

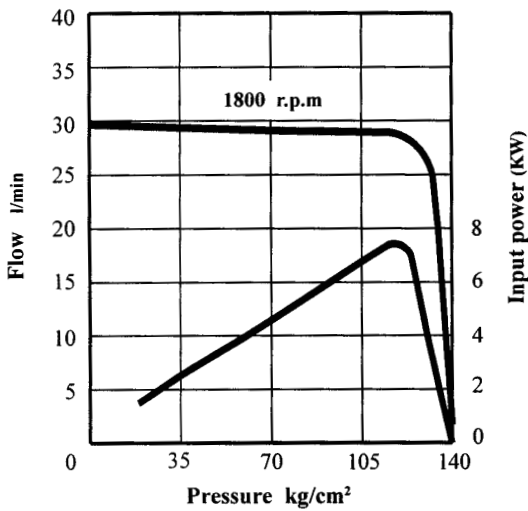
Weight : Foot type : 12.5 kgs. Flange type : 9.5 kgs.

### HVP-30/40

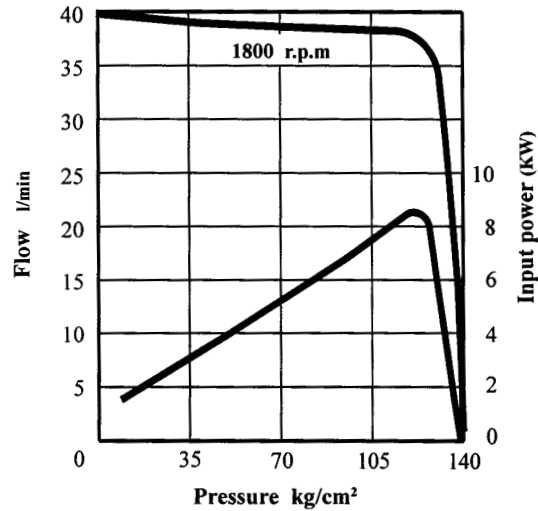


## PERFORMANCE CURVES

HVP-30-A3



HVP-40-A3



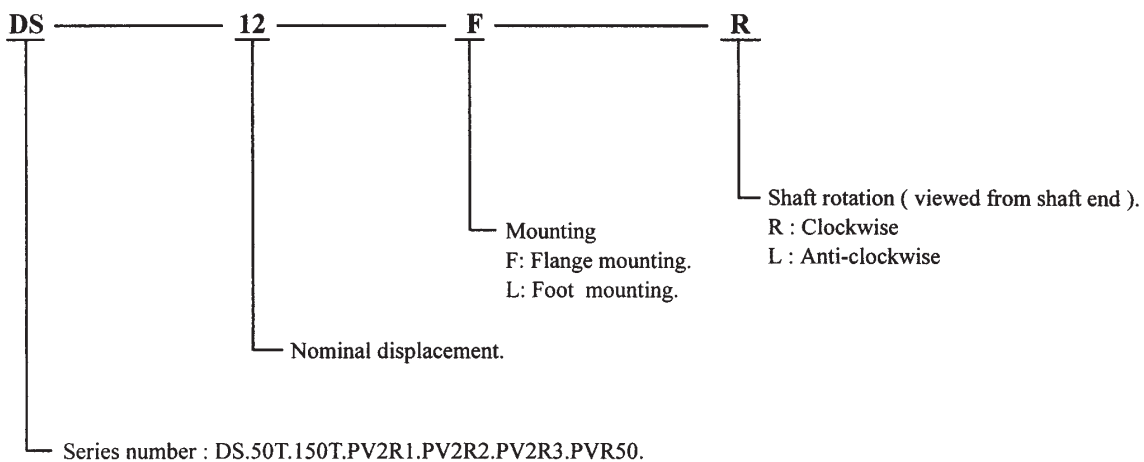
# FIXED DISPLACEMENT VANE PUMPS

This series pump possesses vane construction with special cam ring for low noise, high efficiency longer life-span and more stable performance.

Model	Flow cc/rev	Drive speed		Max. pressure kg/cm <sup>2</sup>	Model	Flow cc/rev	Drive speed		Max. pressure kg/cm <sup>2</sup>	
		Max.	Min.				Max.	Min.		
DS-12	4.2	2200	600	70	PV2R1-08	8.0	750		210	
DS-13	7.0				PV2R1-10	9.4				
DS-14	12.2				PV2R1-12	12.2				
50T-07	6.8	PV2R1-14			13.7					
50T-12	11.6	PV2R1-19			18.6					
50T-17	16.5	PV2R1-23			22.7					
50T-23	22.9	PV2R1-25			25.3	1800	600	210		
50T-26	25.9	PV2R1-31			31.0					
50T-36	36.0	PV2R2-26			25.8					
50T-39	38.8	PV2R2-33			33.1					
150T-48	47.7	PV2R2-41			41.3					
150T-61	61.1	PV2R2-47			47.2					
150T-75	74.9	1200	800	140	PV2R2-53	52.5			210	
150T-94	93.6				PV2R2-59	58.2				
150T-116	115.6				PV2R2-65	64.7				
PVR50-20	16.6	PV2R3-76			76.0	160				
PVR50-23	18.6	PV2R3-94			93.6					
PVR50-26	22.2	PV2R3-116			115.6					
PVR50-30	25.0									
PVR50-36	30.6									

## ORDERING CODE

### FIXED DISPLACEMENT VANE PUMP



# FIXED DISPLACEMENT VANE PUMPS

## DS SERIES

Maximum pressure : 70 kg/cm<sup>2</sup>

Flow capacity : DS-12 : 7.7 l/min. ( at 1800 r.p.m. / 0 kg/cm<sup>2</sup> )

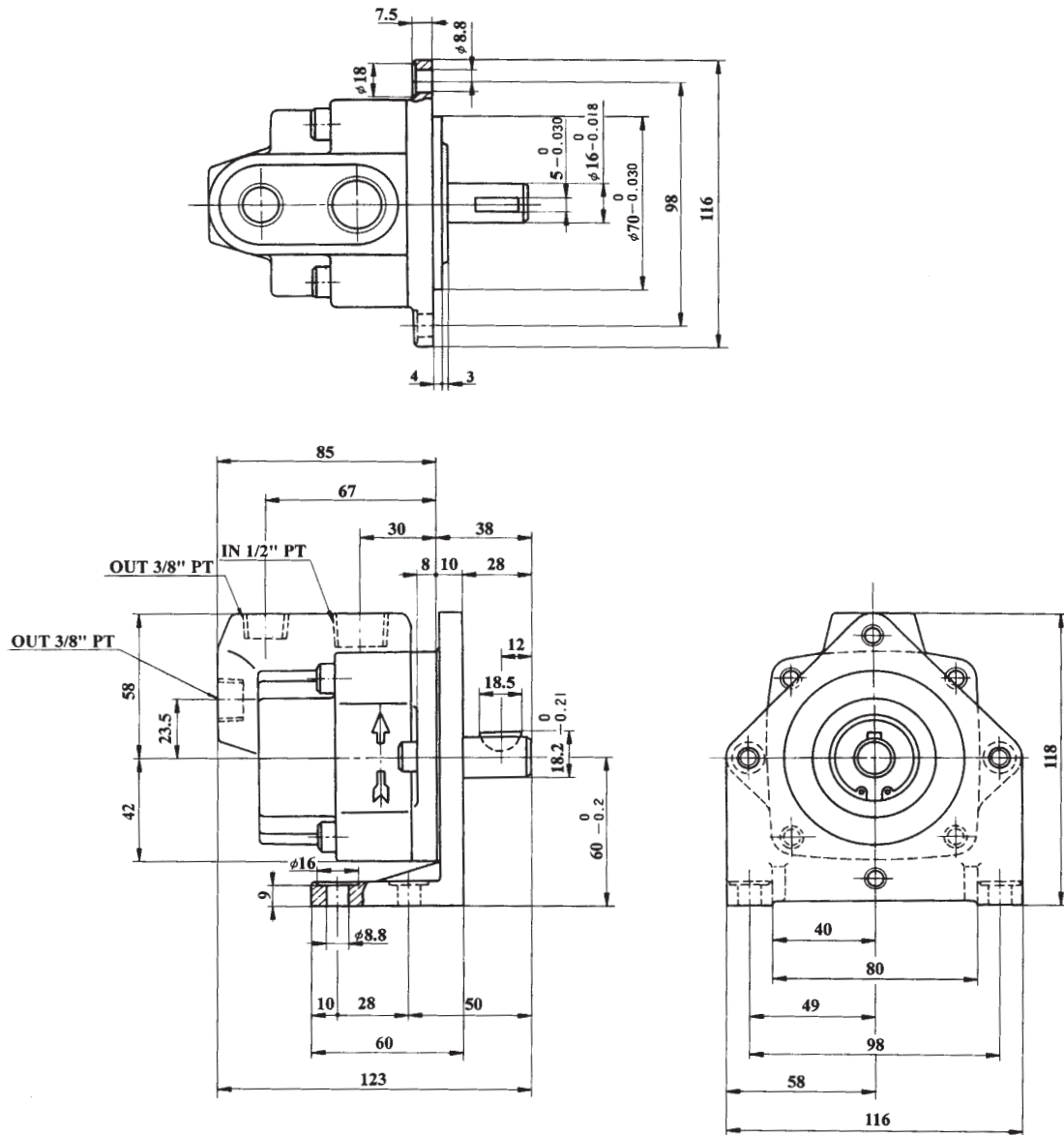
13 : 12.6

14 : 22.1

Weight : Foot type 4.4 kgs.

Flange type 3.0 kgs.

### DS



# FIXED DISPLACEMENT VANE PUMPS

## 50T/150T SERIES

Maximum pressure : 70 kg/cm<sup>2</sup>

Flow capacity : 50T-07 : 6.8 l/min.    150T-48 : 47.7 l/min ( at 1000 r.p.m. )

12 : 11.6                                    61 : 61.1

17 : 16.5                                    75 : 74.9

23 : 22.9                                    94 : 93.6

26 : 25.9                                    116 : 115.6

36 : 36.0

39 : 38.8

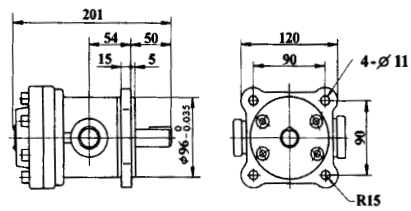
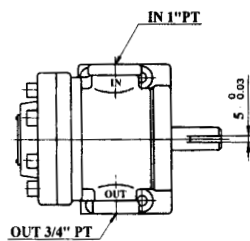
Weight : Foot type    50T : 10.5 kgs.

150T : 26.1 kgs.

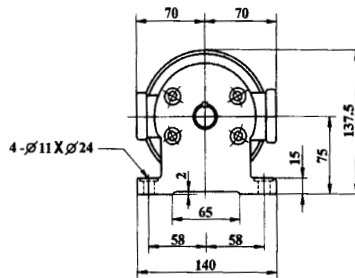
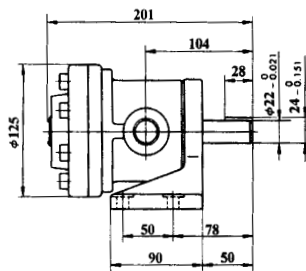
Flange type    50T : 9.0 kgs.

150T : 25.0 kgs.

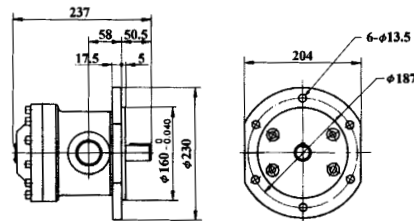
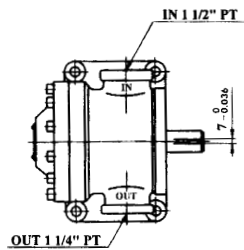
### 50T



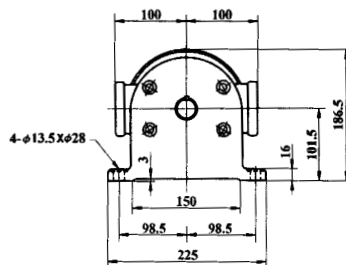
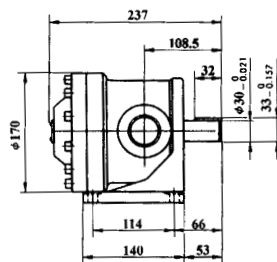
Flange type



### 150T

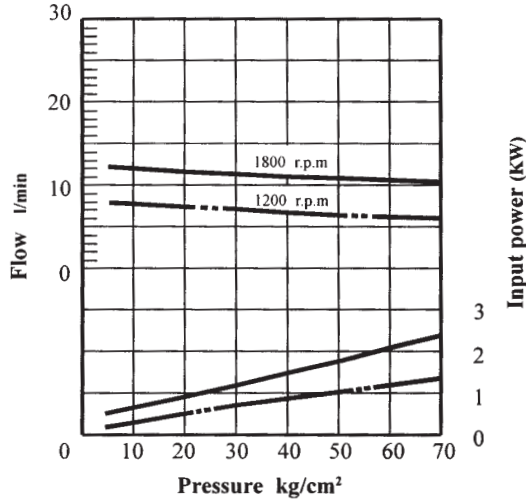


Flange type

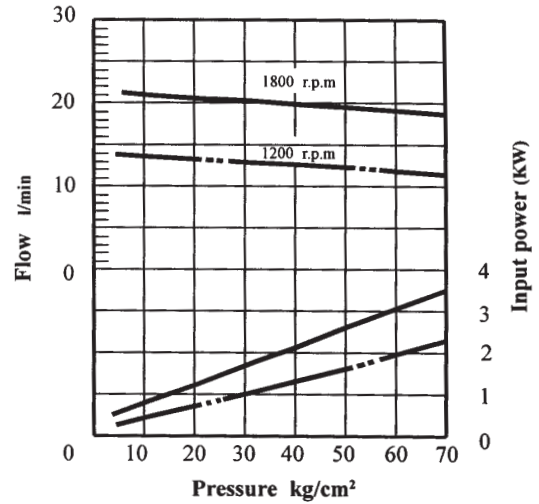


# FIXED DISPLACEMENT VANE PUMPS

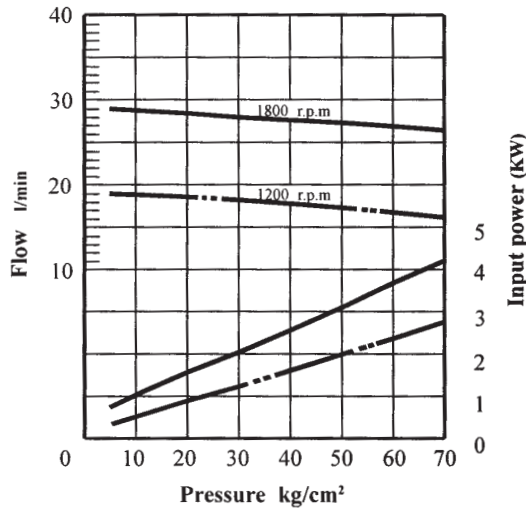
50T-07



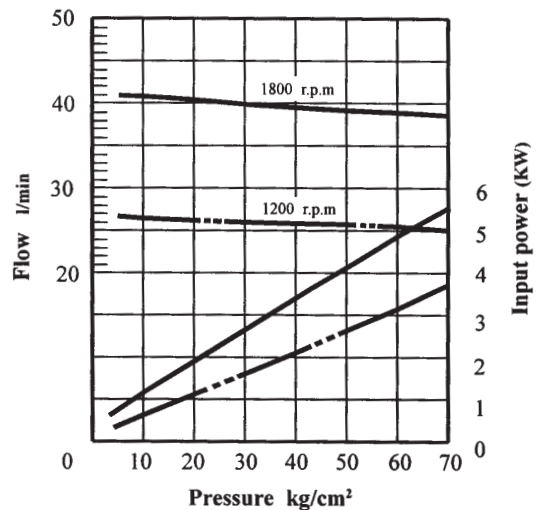
50T-12



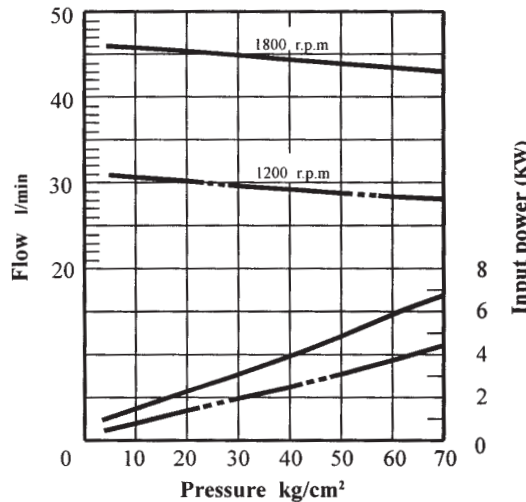
50T-17



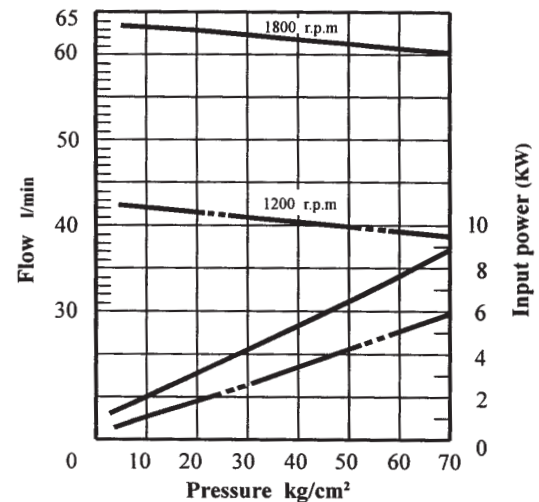
50T-23



50T-26

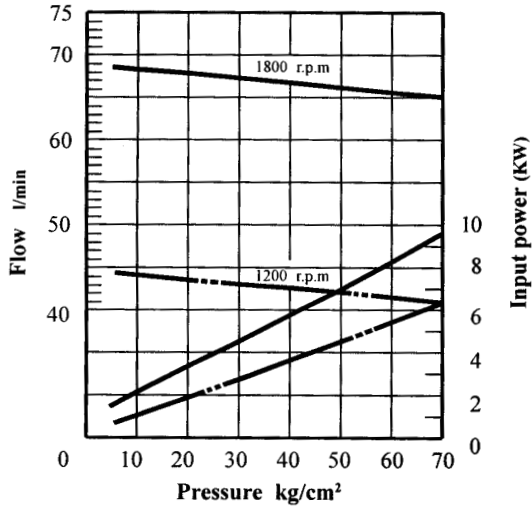


50T-36

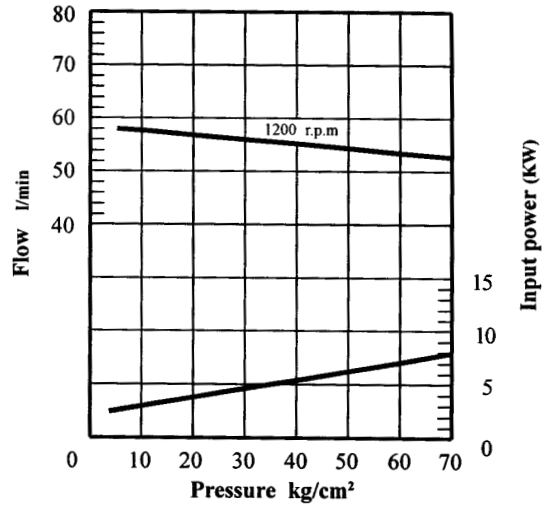


# FIXED DISPLACEMENT VANE PUMPS

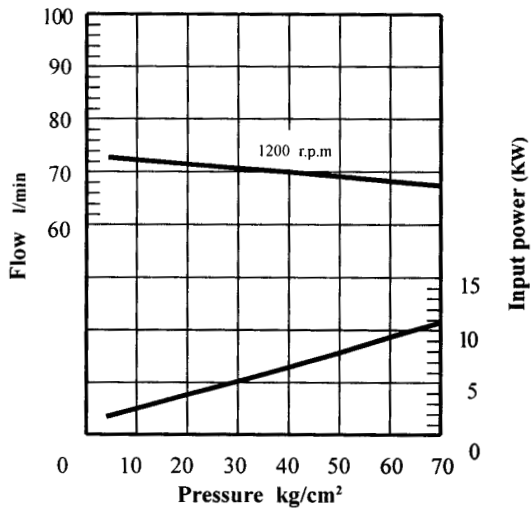
50T-39



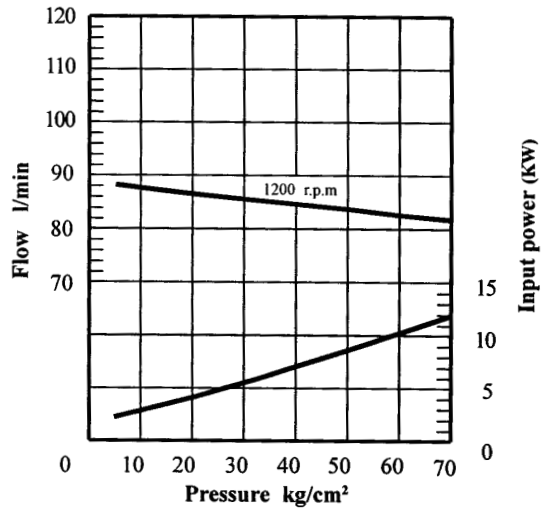
150T-48



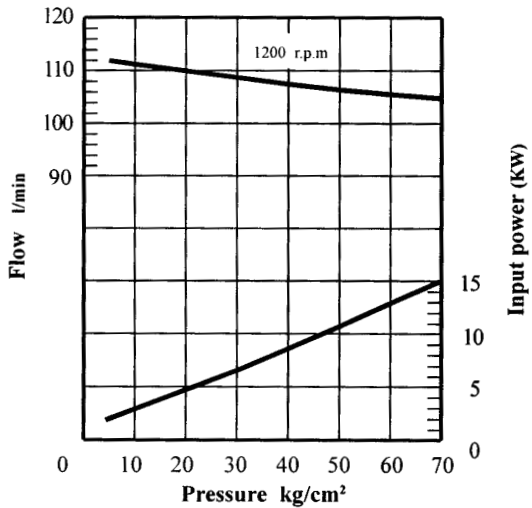
150T-61



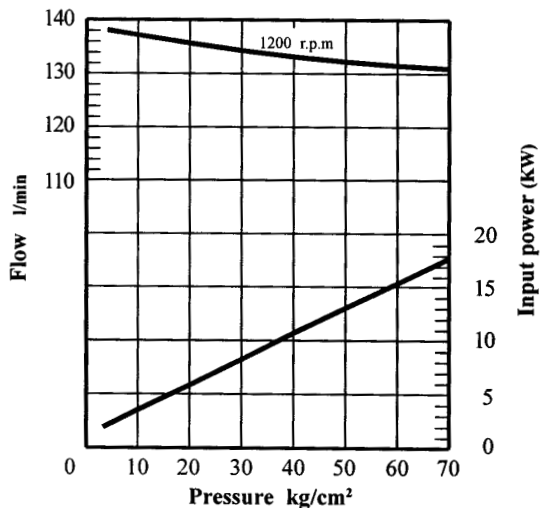
150T-75



150T-94



150T-116



# FIXED DISPLACEMENT VANE PUMPS

## PV2R\* SERIES

Maximum pressure : 210 kg/cm<sup>2</sup>

Flow capacity : PV2R1 - 08 : 8.0 l/min

10 : 9.4

12 : 12.2

14 : 13.7

19 : 18.6

23 : 22.7

25 : 25.3

31 : 31.0

PV2R2 - 26 : 25.8 l/min ( at 1000 r.p.m. )

33 : 33.1

41 : 41.3

47 : 47.2

53 : 52.5

59 : 58.2

65 : 64.7

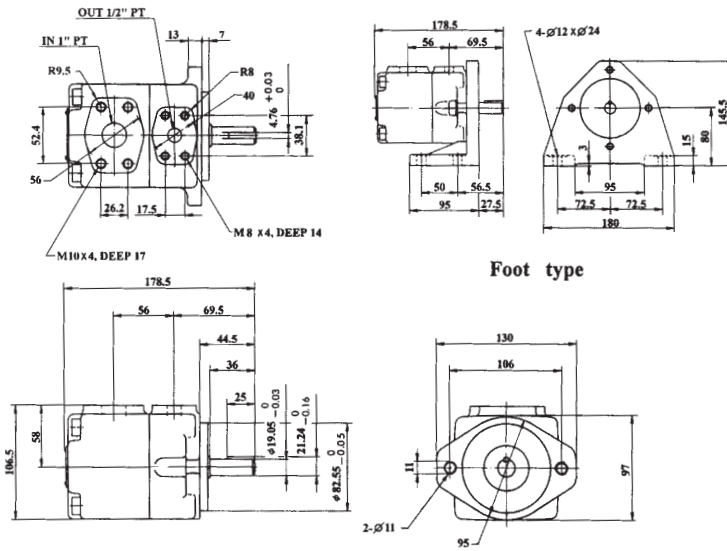
Weight : Foot type PV2R1 : 12.5 kgs.

PV2R2 : 24.5 kgs.

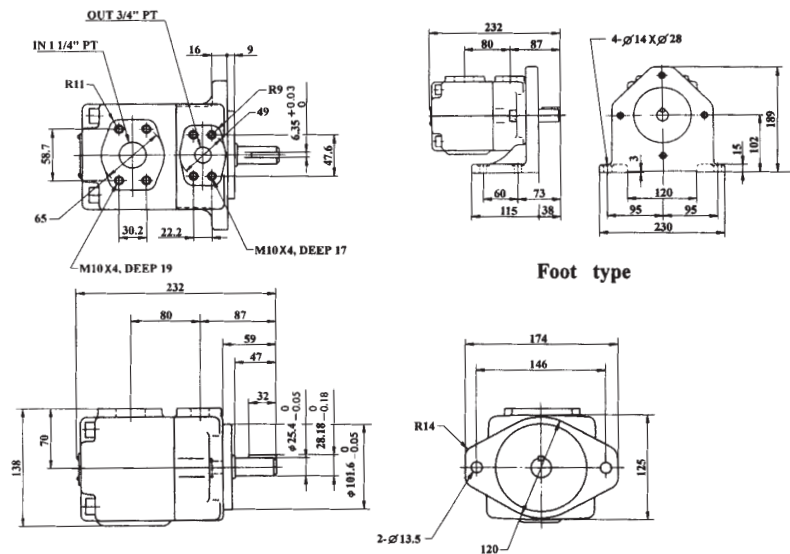
Flange type PV2R1 : 10.0 kgs.

PV2R2 : 19.0 kgs.

### PV2R1

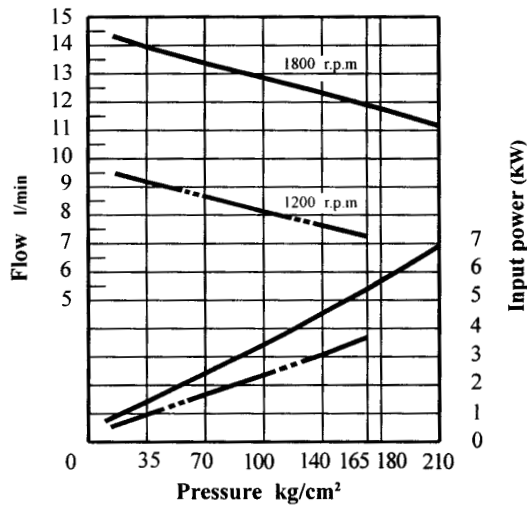


### PV2R2

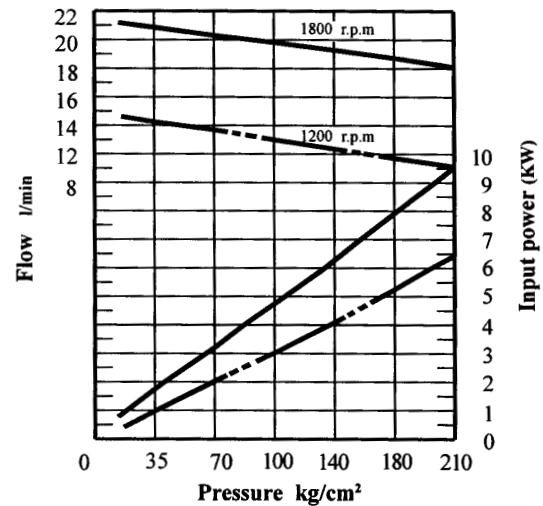


# FIXED DISPLACEMENT VANE PUMPS

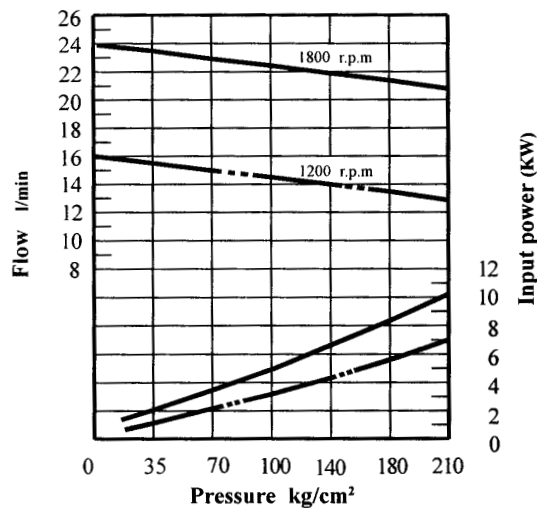
**PV2R1-08**



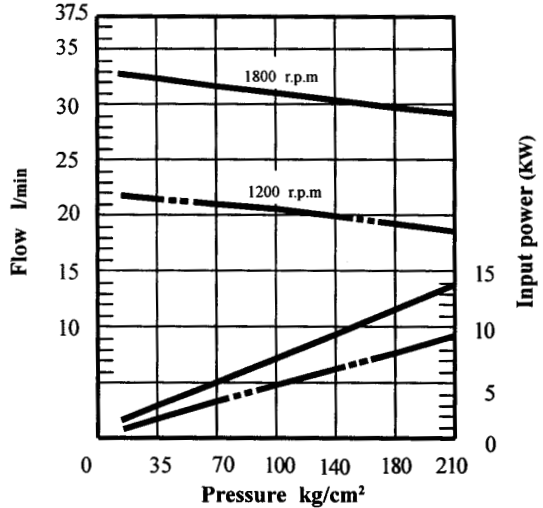
**PV2R1-12**



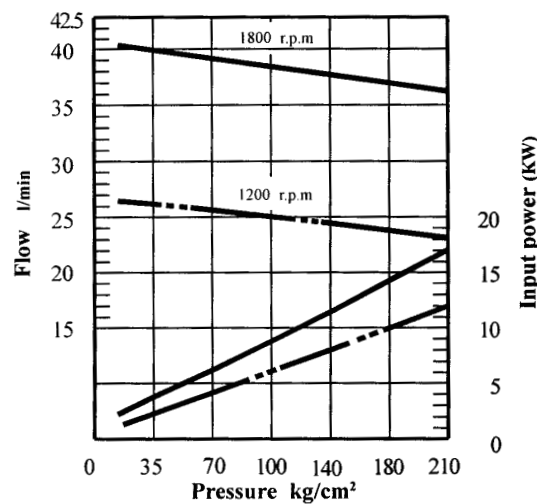
**PV2R1-14**



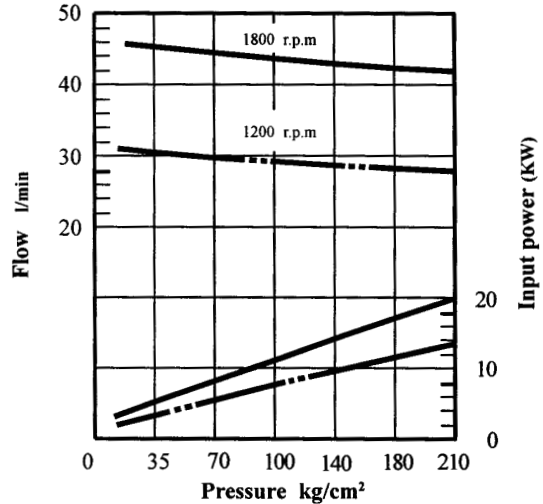
**PV2R1-19**



**PV2R1-23**



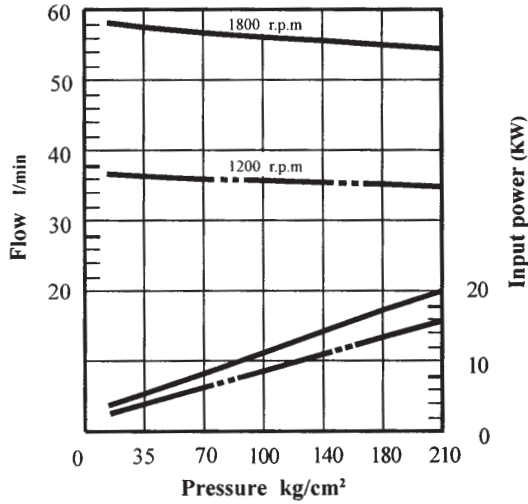
**PV2R2-26**



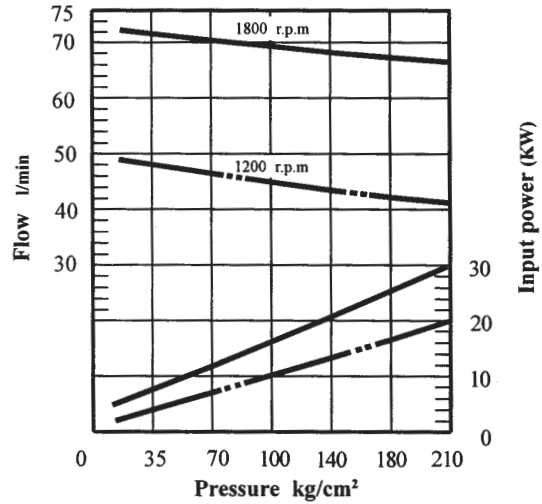


# FIXED DISPLACEMENT VANE PUMPS

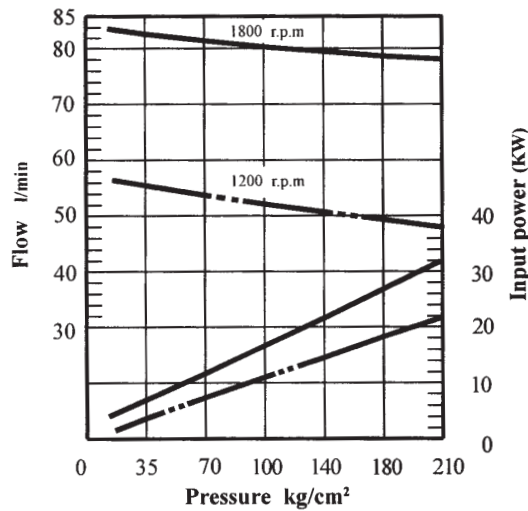
PV2R2-33



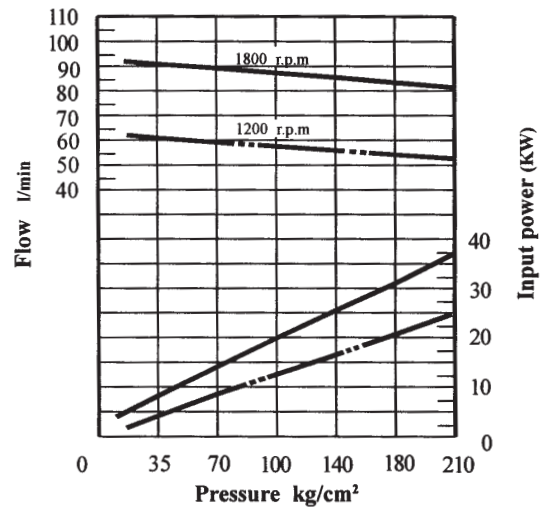
PV2R2-41



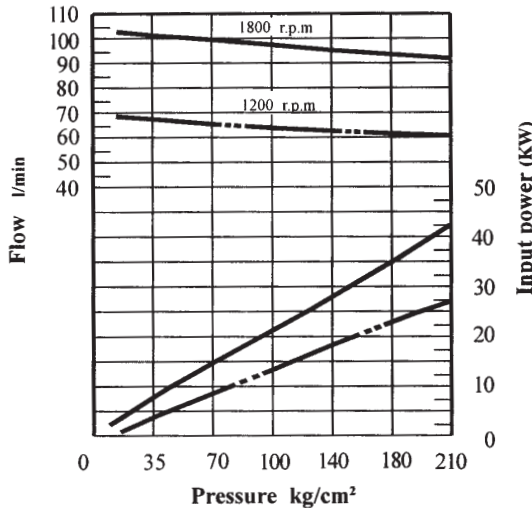
PV2R2-47



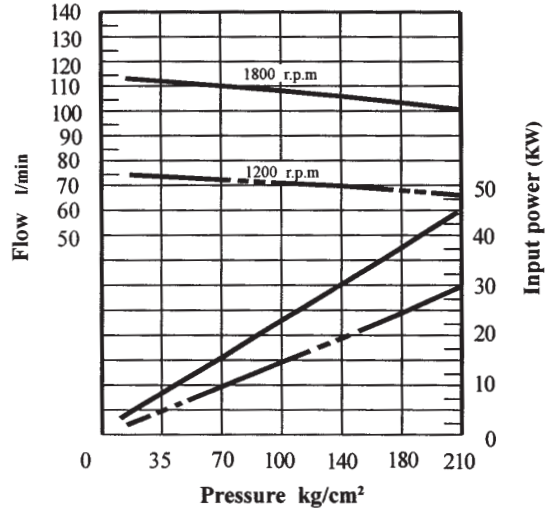
PV2R2-53



PV2R2-59



PV2R2-65



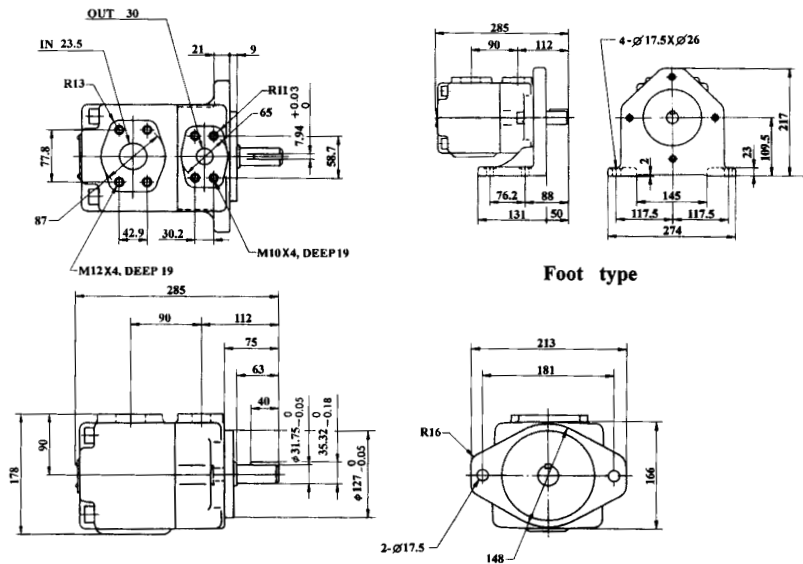
# FIXED DISPLACEMENT VANE PUMPS

## PV2R3 SERIES

Maximum pressure : 210 kg/cm<sup>2</sup>  
 Flow capacity : PV2R3 - 76 : 76.0 l/min (at 1000 r.p.m.)  
                           94 : 93.6  
                           116 : 115.6

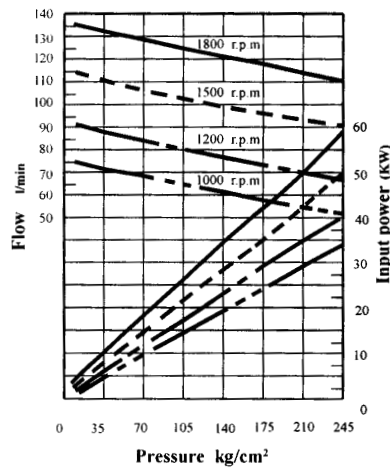
Weight : Foot type    PV2R3 : 46.7 kgs.                      Flange type    PV2R3 : 36.7 kgs.

## PV2R3

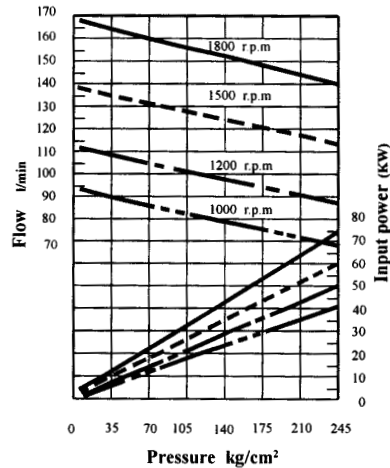


## PERFORMANCE CURVES

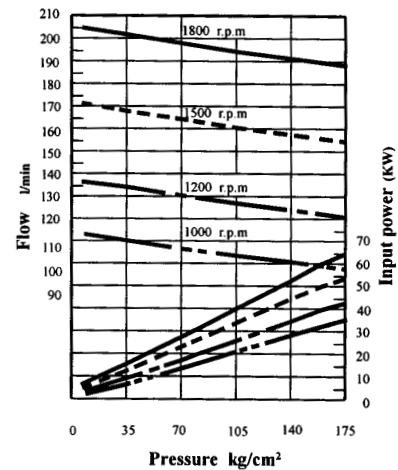
PV2R3-76



PV2R3-94



PV2R3-116



# FIXED DISPLACEMENT VANE PUMPS

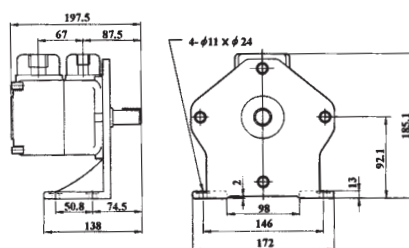
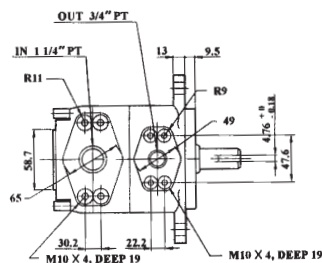
## PVR50 SERIES

Maximum pressure : 140  $\text{kg/cm}^2$   
Flow capacity : PVR50 - 20 : 16.6 l/min (at 1000 r.p.m.)  
                                      23 : 18.6  
                                      26 : 22.2  
                                      30 : 25.0  
                                      36 : 30.6

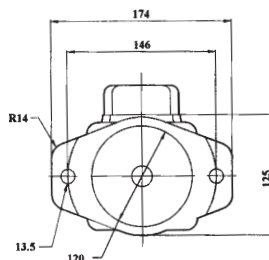
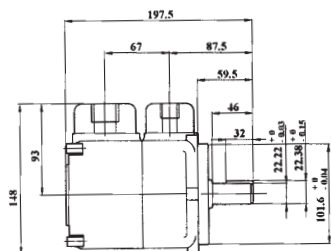
Weight : Foot type    PVR50 : 14.7 kgs.

Flange type    PVR50 : 12.0 kgs.

### PVR50

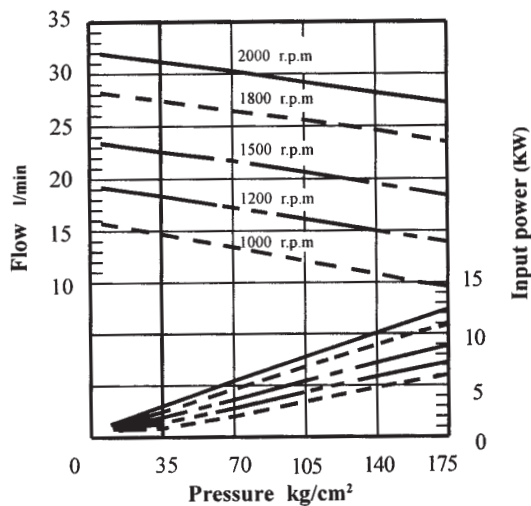


Foot type

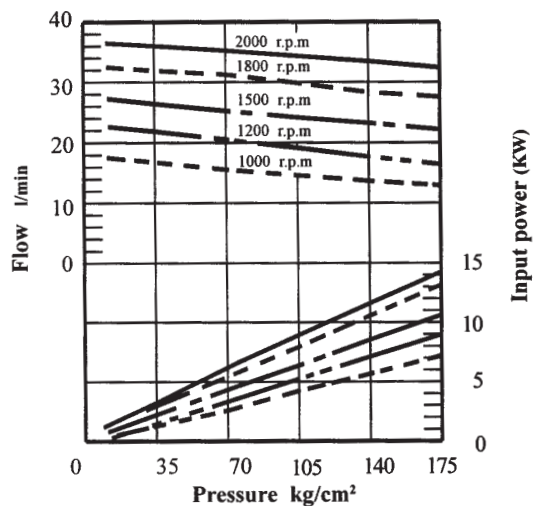


## PERFORMANCE CURVES

### PVR50-20



### PVR50-23

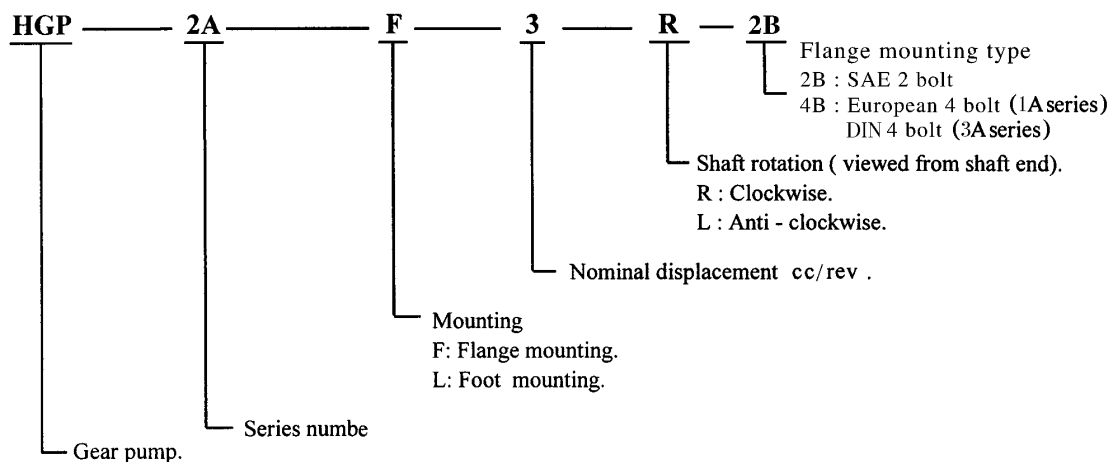


# GEAR PUMPS

HGP Series gear pump was designed to maintain high efficiency and longer life-span. HGP gear pump was made from die casting aluminum provide compact and light weight.

Model	Flow cc/rev	Speed drive		A	B	C		Max. pressure kg/cm <sup>2</sup>	Working pressure kg/cm <sup>2</sup>	Weight kg		
		Max.	Min.			Inlet	Outlet					
HGP-1A-F1	1.0	4500	1000	77	38.5	3/8"	3/8"	250	210	1.00		
HGP-1A-F2	2.0		80.5	40.25	1.05							
HGP-1A-F3	3.0		600	86	43					1.15		
HGP-1A-F4	4.0	4000		88	44					1.18		
HGP-1A-F5	5.0	3200	500	92	46	1/2"	3/8"	250	210	1.20		
HGP-1A-F6	6.0			96	48					1.30		
HGP-1A-F7	7.0			102	51					1.30		
HGP-1A-F8	7.8											
HGP-2A-F2	2.0	5000	900	/	/	250	210	250	210	1.63		
HGP-2A-F3	3.0		850							1.65		
HGP-2A-F4	4.0	4500	800							1.67		
HGP-2A-F6	6.0	3500	700							1.69		
HGP-2A-F8	7.5	3000	600							1.72		
HGP-2A-F9	9.0	2500	550							1.75		
HGP-2A-F11	10.5	2000	500			210	175	1.77				
HGP-2A-F12	12.0					1.80						
HGP-3A-F6	6.0	3000	700			93.3	46.5	1/2"	3/8"	250	210	2.25
HGP-3A-F8	8.4					97.3	48.5					2.40
HGP-3A-F11	11.0					101.3	50.5					2.55
HGP-3A-F13	13.0		600			105.0	52.35	3/4"	1/2"			250
HGP-3A-F14	14.3			107.2	53.45	2.85						
HGP-3A-F17	16.5			110.9	55.3	3.05						
HGP-3A-F19	19.2			115.3	57.5	3.20						
HGP-3A-F23	23.0		400	121.76	60.7	1"	3/4"	175	140	3.35		
HGP-3A-F25	25.0			125.1	62.4					3.50		
HGP-3A-F28	28.0			131.1	64.9					3.60		

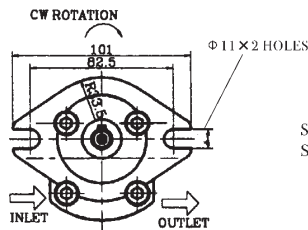
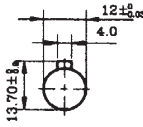
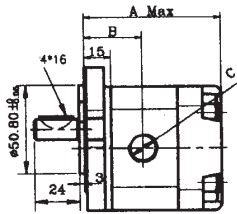
## ORDERING CODE



# GEAR PUMPS

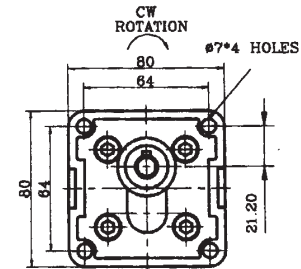
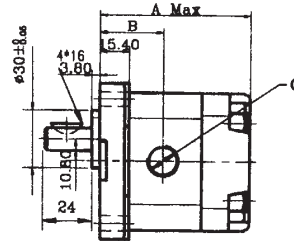
HGP-1A-\*

2 Bolts

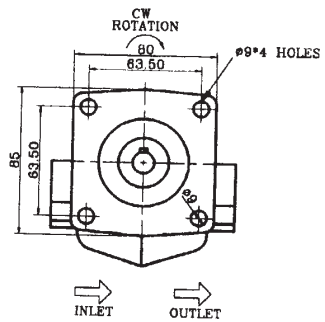
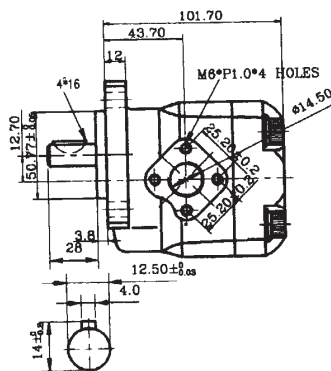
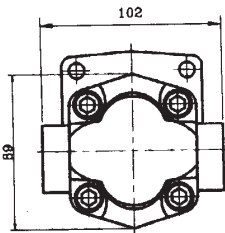


Standard type:  $\phi 12$   
Special type:  $\phi 10, \phi 12.7$

4 Bolts

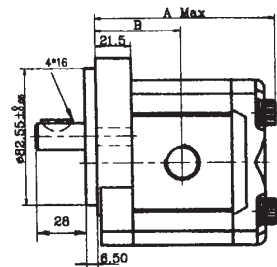


HGP-2A-\*

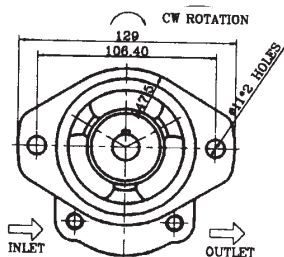
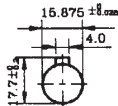


HGP-3A-\*

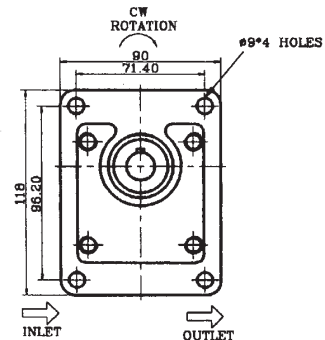
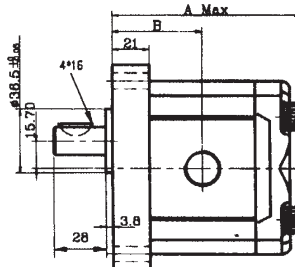
2 Bolts



\* SHAFT TYPE



4 Bolts

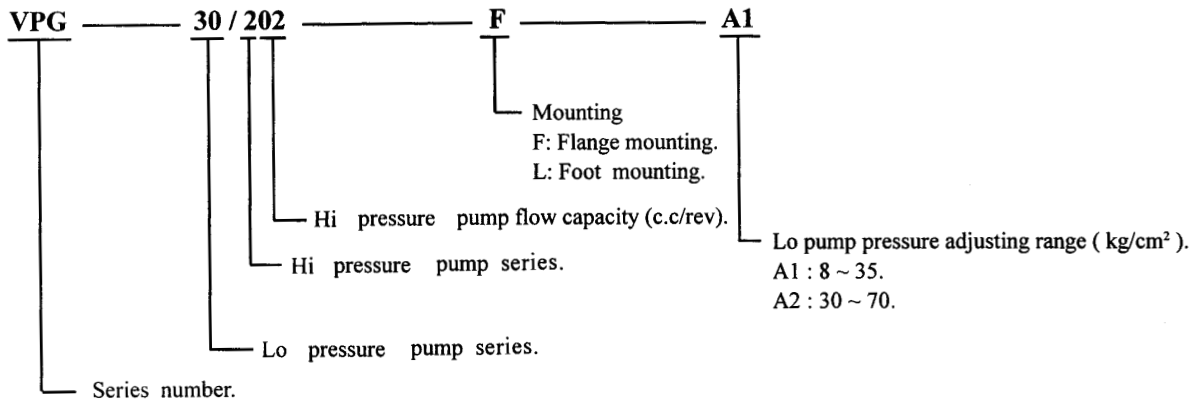


# DOUBLE (VARIABLE VANE & GEAR) PUMPS

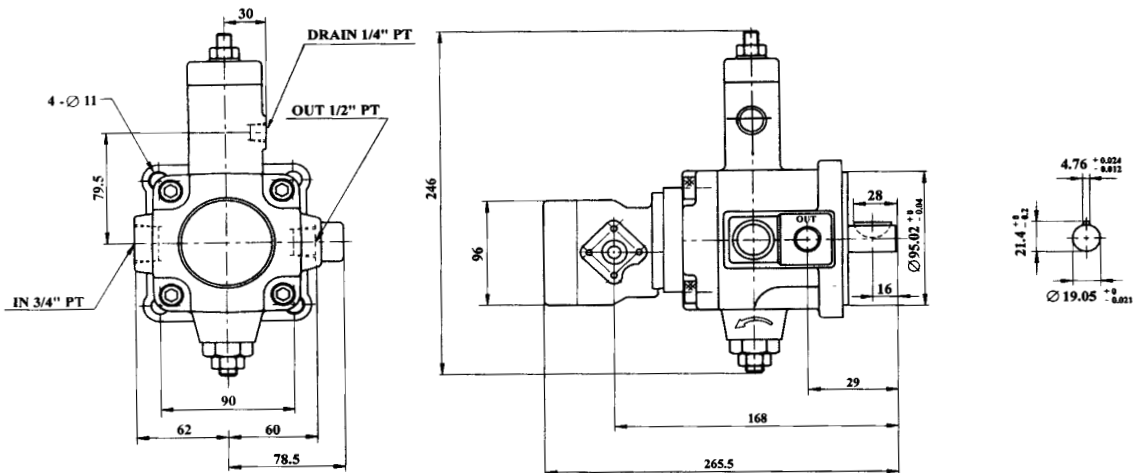
VPG Series pump is the combination of variable vane pump and gear pump, it offers two difference pressure and flow for Hi - Lo system .

Model	Lo - pump at 1800 r.p.m		Hi - pump at 1800 r.p.m		Weight kgs
	Pressure kg/cm <sup>2</sup>	Flow l/min	Pressure kg/cm <sup>2</sup>	Flow l/min	
VPG-30/202	70	30	210	3.6	11.63
VPG-30/203				5.4	11.65
VPG-30/204				7.2	11.67
VPG-30/206				10.8	11.69
VPG-40/208	70	40	210	13.5	11.72
VPG-40/209			175	16.2	11.75
VPG-40/211				18.9	11.77
VPG-40/212				21.6	11.80

## ORDERING CODE

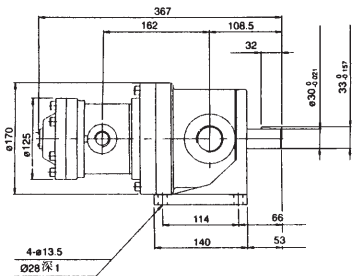


## VPG SERIES

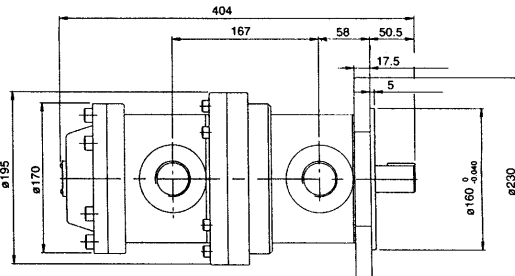


# DOUBLE PUMPS

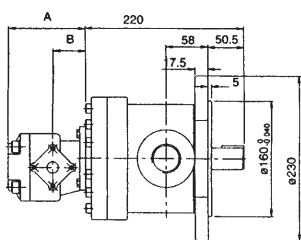
50T 150T-※-※-L-※ / 50T-※ + PV2R1-※



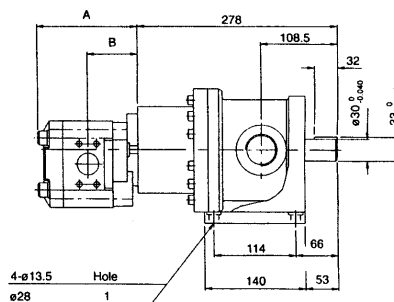
150T150T-※-※-F-※ / 150T-※ + PV2R2-※



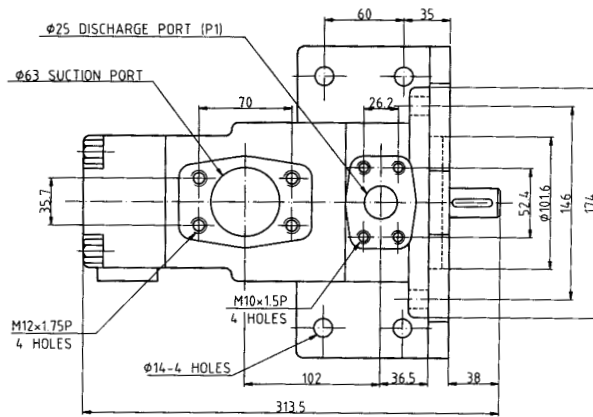
50T-※-F + HGP



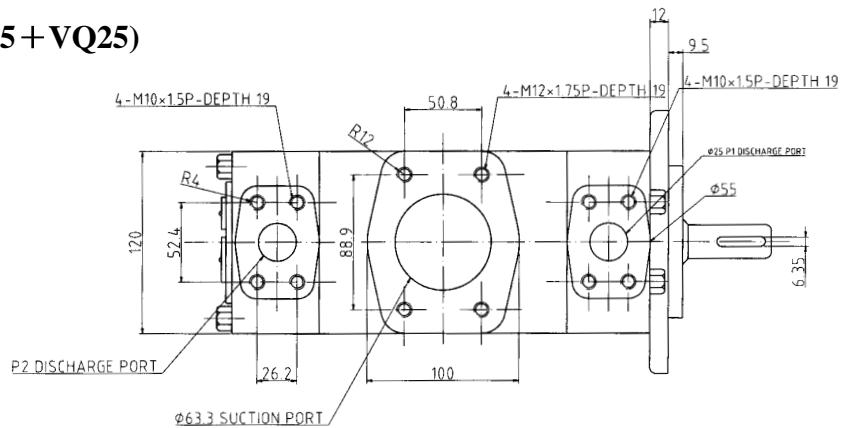
150T-※-L + HGP



VQ215 (VQ25 + PV2R1)



VQ225 (VQ25 + VQ25)

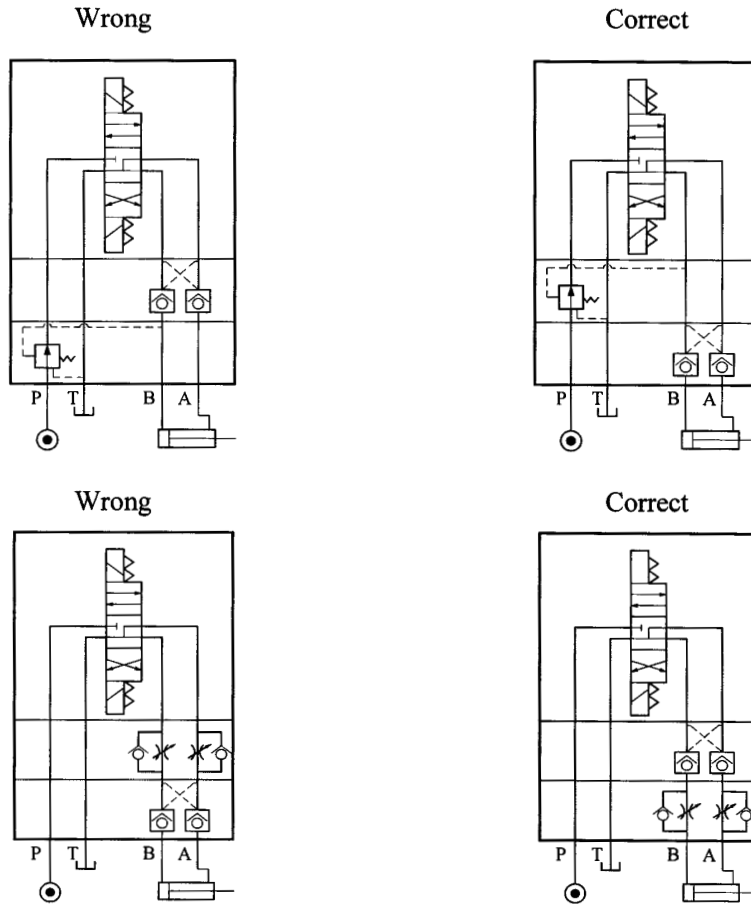


# HYDRAULIC MODULAR VALVES

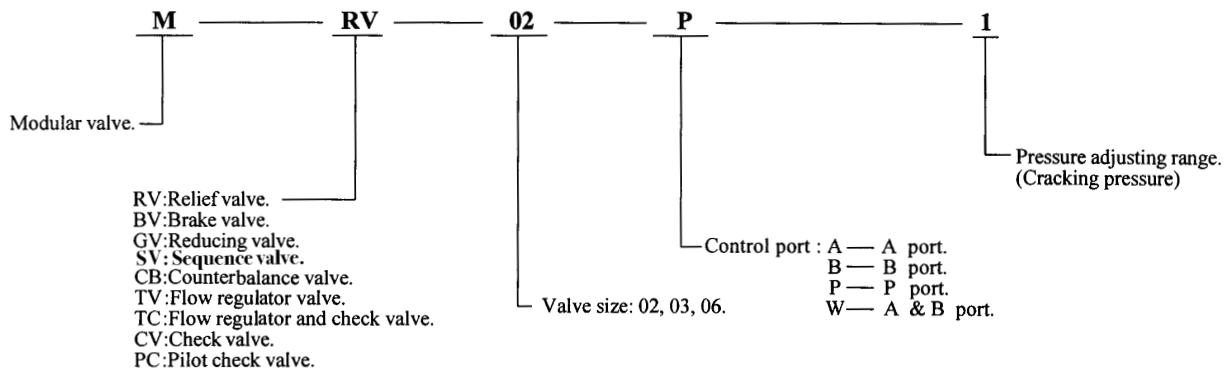
## FEATURES

- High pressure : 250 kgf/cm<sup>2</sup>.
- High flow : 02 series 40 l/min, 03 series 80 l/min, 06 series 160 l/min.
- System design flexibility.
- Simply compact installation.
- Scant risk of leakage, noise and vibration.
- Easy maintenance.

## APPLICATION EXAMPLE

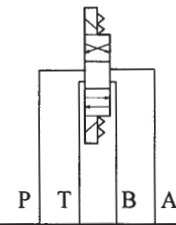




































## ORDERING CODE





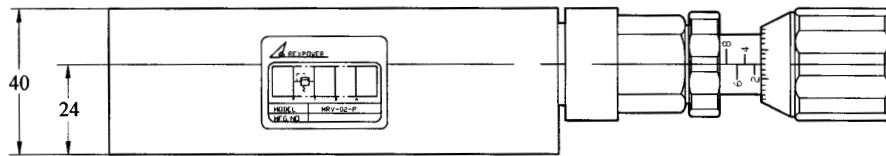
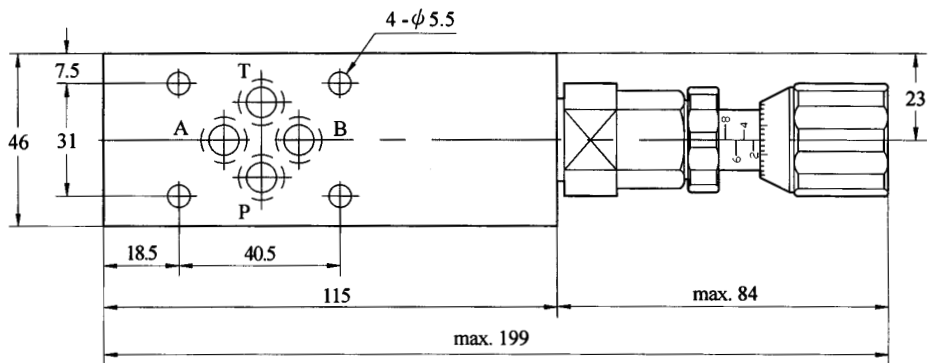
# HYDRAULIC MODULAR VALVES

solenoid directional control valve	SHD - * G - *					counterbalance valve	MCB - * - A - *				
		MCB - * - B - *									
relief valve (balance type)	MRV - * - P - *					meter-out flow regulator valve	MTV - * - P				
	MRV - * - W - *						MTV - * - T				
	MRV - * - A - *						MTC - * - W - 0				
	MRV - * - B - *					MTC - * - A - 0					
brake valve (direct type)	MBV - * - W - *					meter-in flow regulator valve	MTC - * - W - I				
	MBV - * - A - *						MTC - * - A - I				
	MBV - * - B - *						MTC - * - B - I				
pressure reducing valve	MGV - * - P - *						check valve	MCV - * - P - *			
	MGV - * - A - *					MCV - * - T - *					
	MGV - * - B - *					MCV - * - A - *					
	sequence valve	MSV - * - P - *						MCV - * - B - *			
manifold block		MSP - * - *					pilot check valve	MPC - * - W - *			
			MPC - * - A - *					MPC - * - B - *			

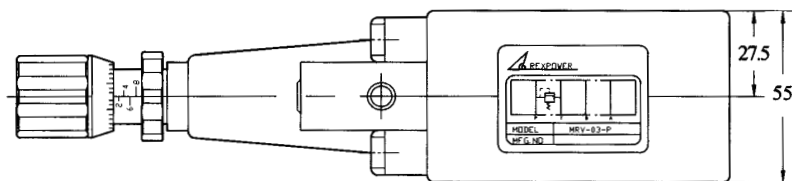
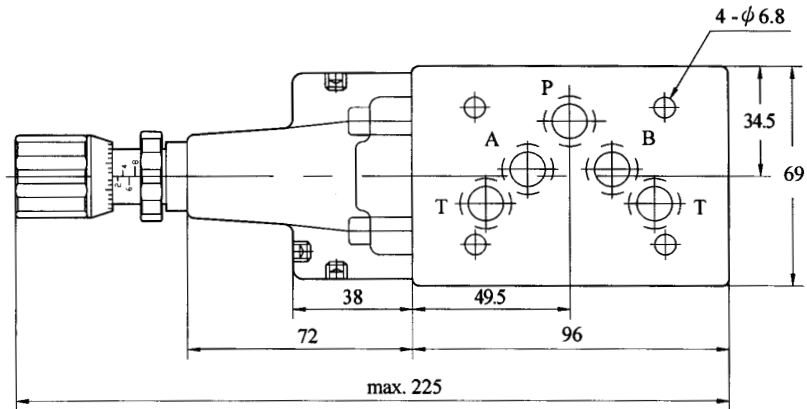
## RELIEF VALVE - 02 / 03 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Flow rated l/min	Pressure adjusting kg/cm <sup>2</sup>	Weight kgs
MRV-02-P-*	02	250	40	1 : 8 ~ 70 2 : 7 ~ 160 3 : 35 ~ 250	1.5
MRV-02-A/ B-*					1.6
MRV-02-W-*					2.3
MRV-03-P-*	03		50		3.1
MRV-03-A/ B-*					

MRV-02-P-\*



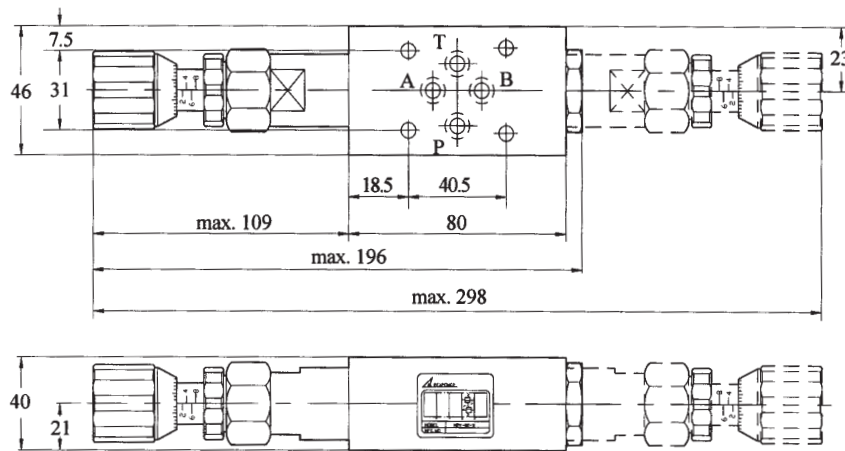
MRV-03-P-\*



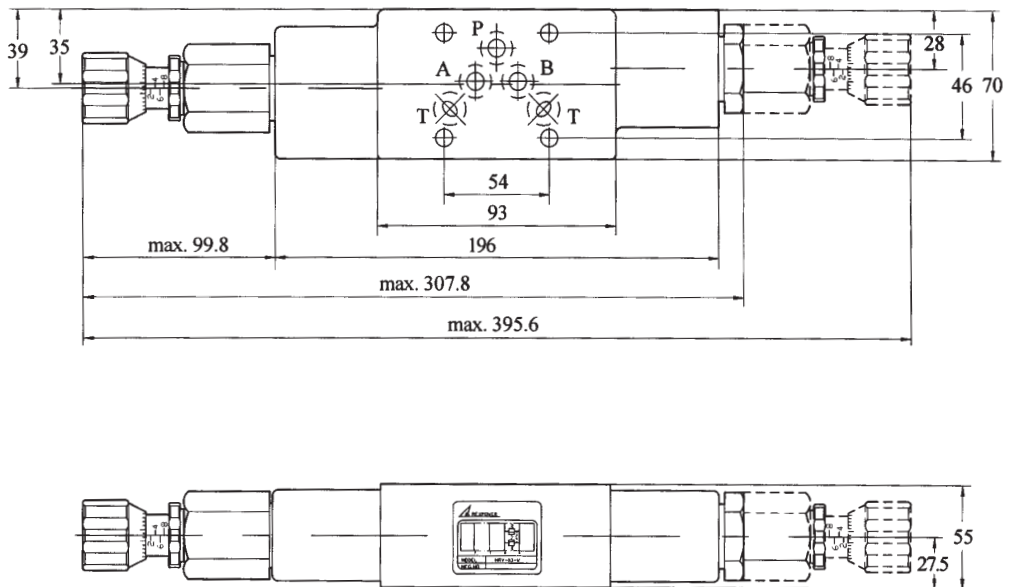
# BRAKE VALVE - 02 / 03 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Flow rated l/min	Pressure adjusting kg/cm <sup>2</sup>	Weight kgs
MBV-02- W -*	02	250	40	1 : 8 ~ 70	1.5
MBV-02- A/ B -*					1.4
MBV-03- W -*	03		50	3 : 35 ~ 210	4.8
MBV-03- A/ B -*					4.0

MBV-02-W-\*



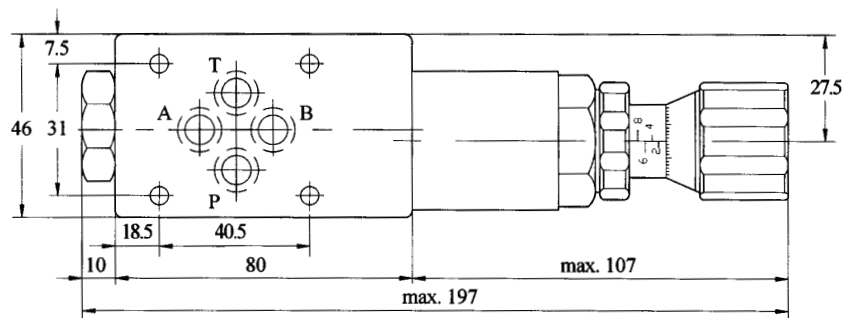
MBV-03-W-\*



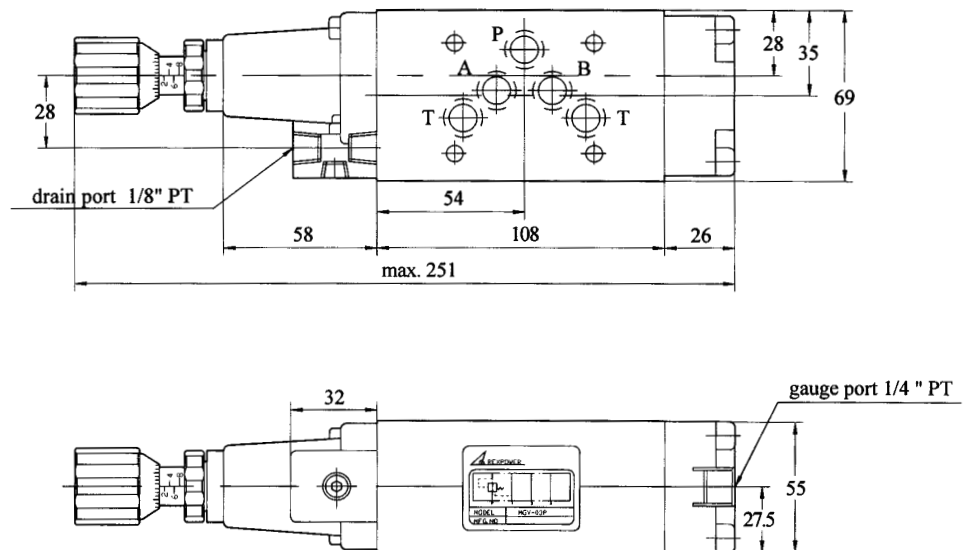
## PRESSURE REDUCING VALVE - 02 / 03 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Flow rated l/min	Pressure adjusting kg/cm <sup>2</sup>	Weight kgs
MGV-02- P -*	02	250	40	0 : 1.5 ~ 35	1.3
MGV-02- A/ B -*					
MGV-03- P -*	03	250	50	1 : 8 ~ 70	3.8
MGV-03- A/ B -*					

MGV-02-P-\*



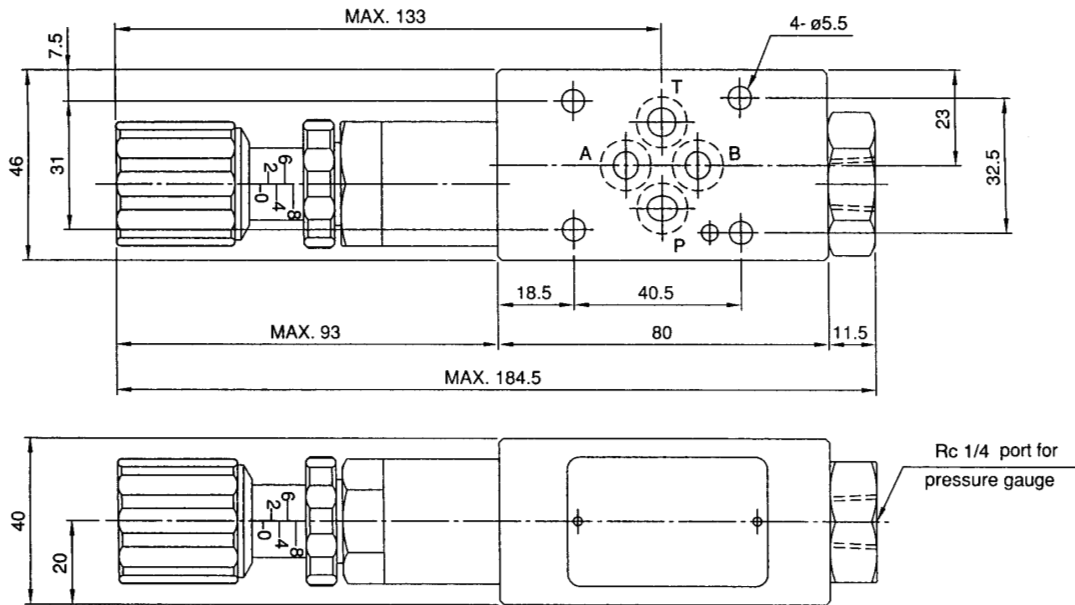
MGV-03-P-\*



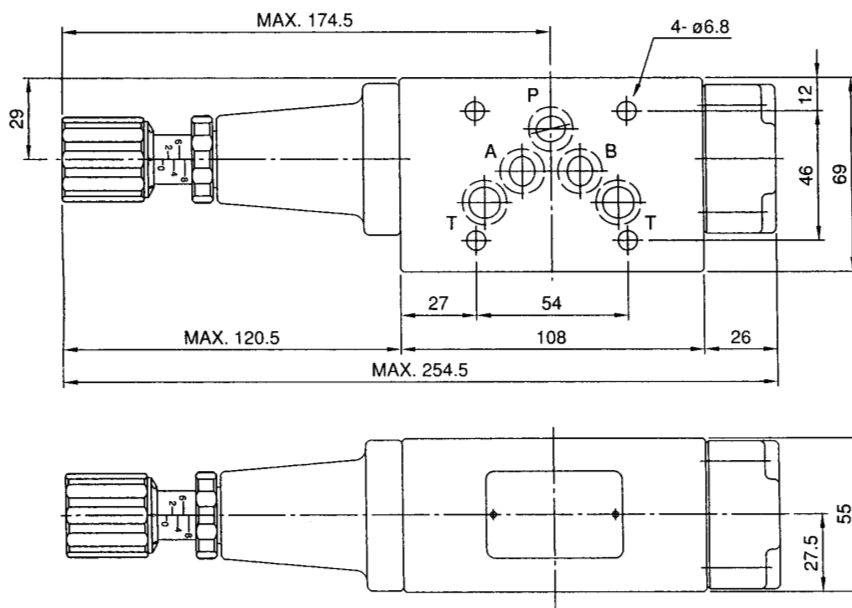
# SEQUENCE VALVE - 02 / 03 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Max. flow l/min	Pressure adjusting kg/cm <sup>2</sup>	Weight kgs
MSV-02-P-*	02	320	50	1: 8 ~ 70 2: 35 ~ 140	1.3
MSV-03-P-*	03		80	3: 35 ~ 210	3.5

## MSV-02-P-\*



## MSV-03-P-\*

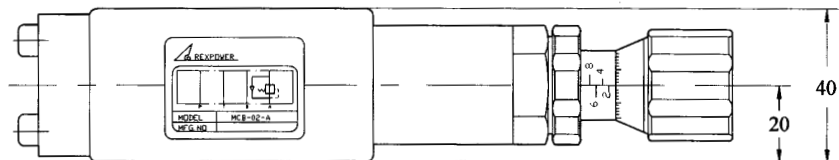
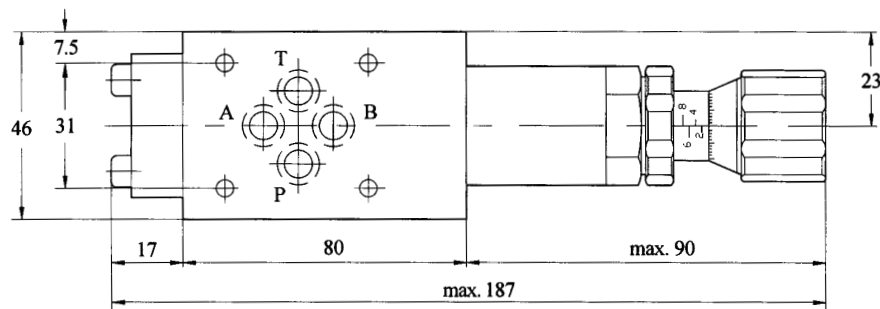


## COUNTERBALANCE VALVE - 02 / 03 SERIES

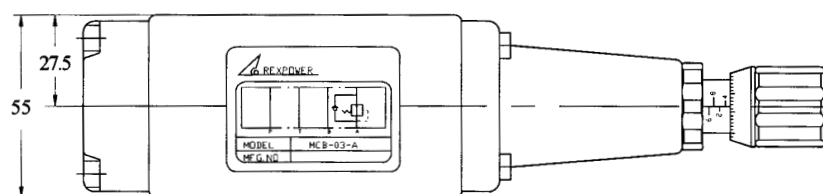
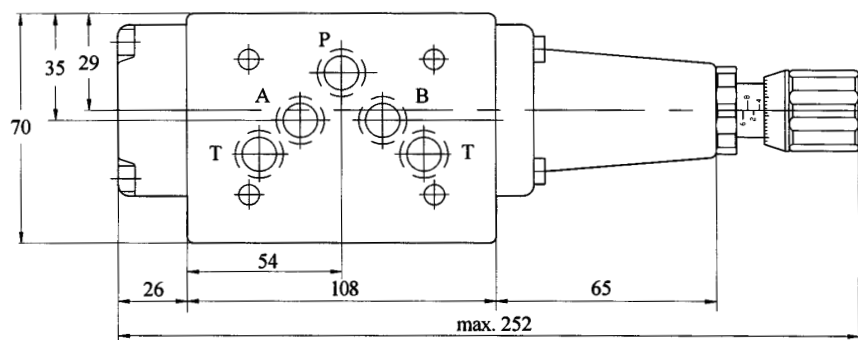
Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Flow rated l/min	Pressure adjusting kg/cm <sup>2</sup>	Weight kgs
MCB-02- A -*	02	250	40	1: 8 ~ 70	1.1
MCB-02- B -*					
MCB-03- A -*	03		50	2:35 ~ 140	3.5
MCB-03- B -*					

\* Internal pilot ,internal drain. cracking pressure : 0.8 kg/cm<sup>2</sup>.

MCB-02-A-\*



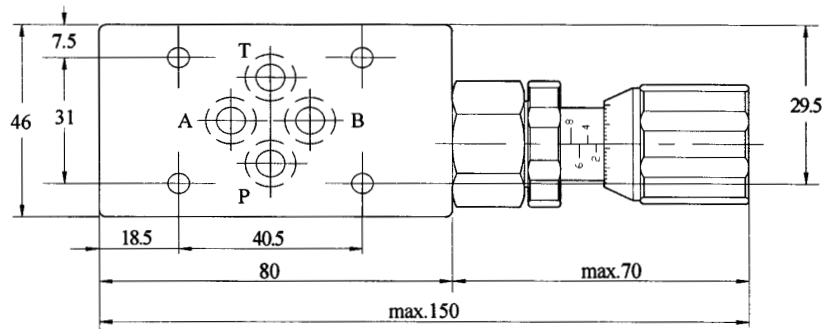
MCB-03-A-\*



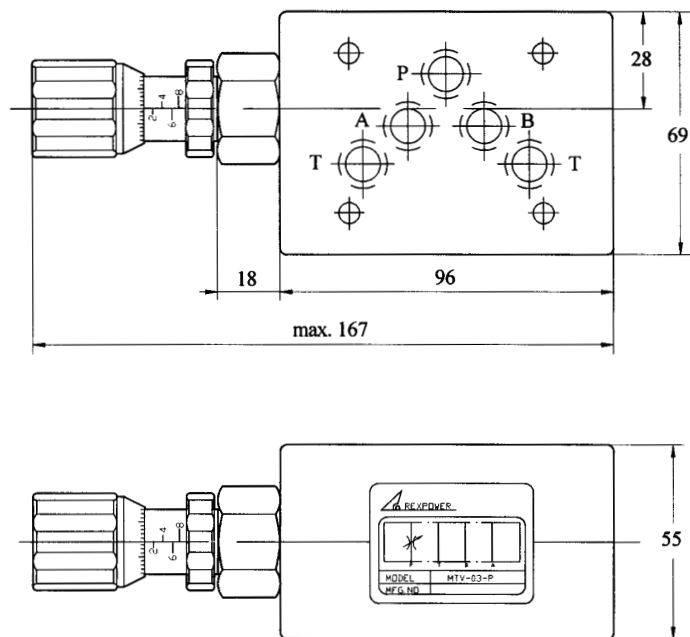
## FLOW CONTROL VALVE - 02 / 03 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Max. flow l/min	Weight kgs
MTV-02-P -*	02	250	40	0.99
MTV-02-T -*				0.99
MTV-03-P -*	03		50	2.8
MTV-03-T -*				2.8

MTV-02-P-\*



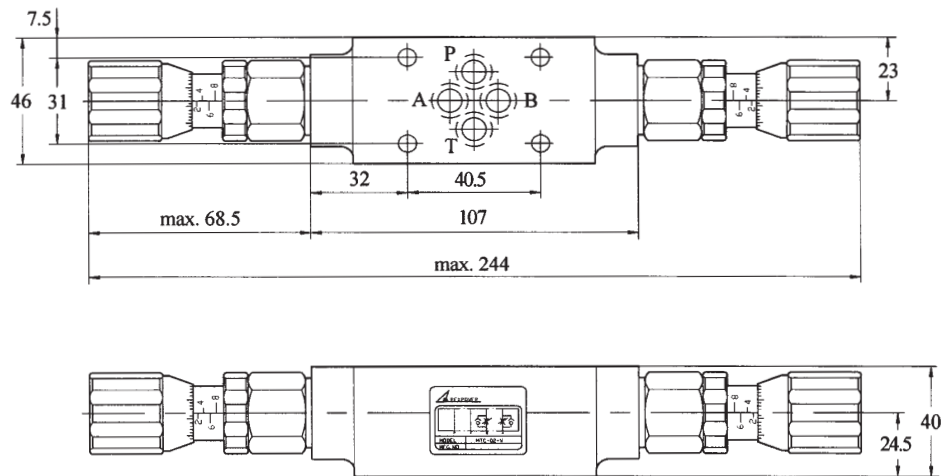
MTV-03-P-\*



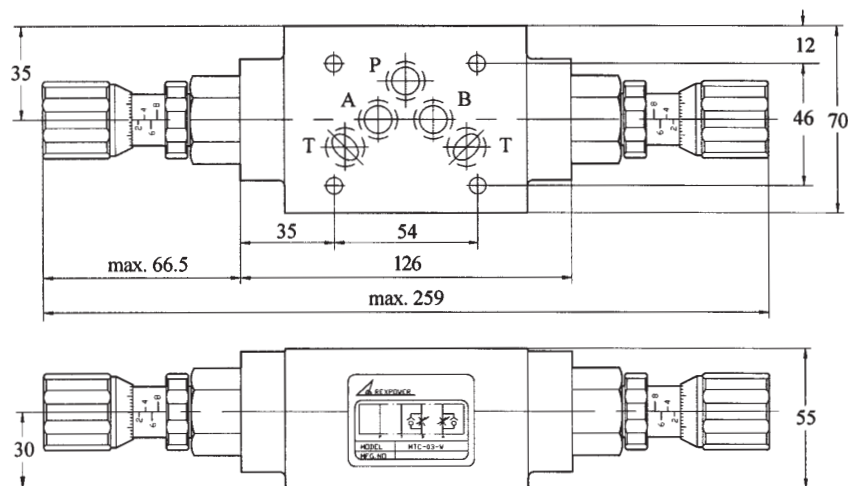
## FLOW CONTROL VALVE - 02 / 03 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Max. Flow l/min	Cracking pressure kg/cm <sup>2</sup>	Remark	Weight kgs
MTC-02-W -*	02	250	40	0.8	* O: Meter-out I: Meter-in	1.3
MTC-02-A/ B -*						1.2
MTC-03-W -*	03		50			3.1
MTC-03-A/ B -*						3.0

MTC-02-W-O



MTC-03-W-O

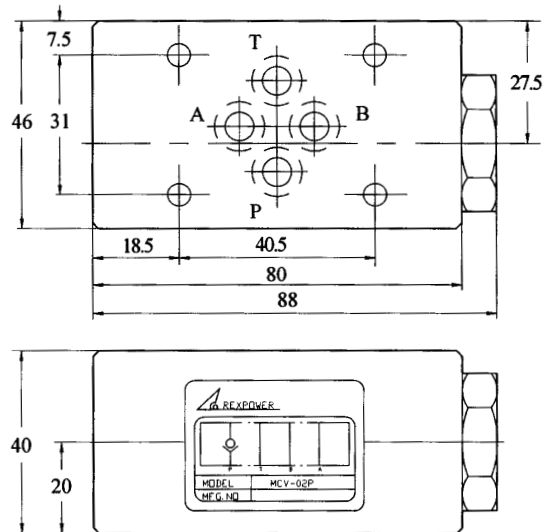




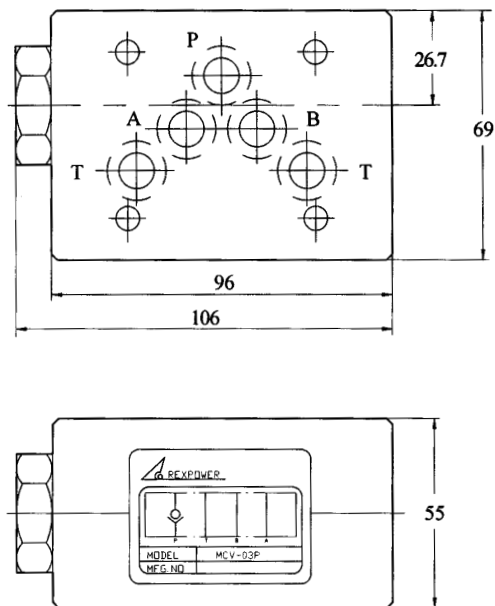
## CHECK VALVE - 02 / 03 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Flow rated l/min	Cracking pressure kg/cm <sup>2</sup>	Weight kgs
MCV-02- P -*	02	250	40	* 1 : 0.4	0.97
MCV-02- A/B -*					1.2
MCV-02- T -*					0.97
MCV-03- P -*	03	250	50	2 : 3.5 3 : 5.0	2.8
MCV-03 A/B -*					3.6
MCV-03- T -*					2.8

MCV-02-P / T-\*

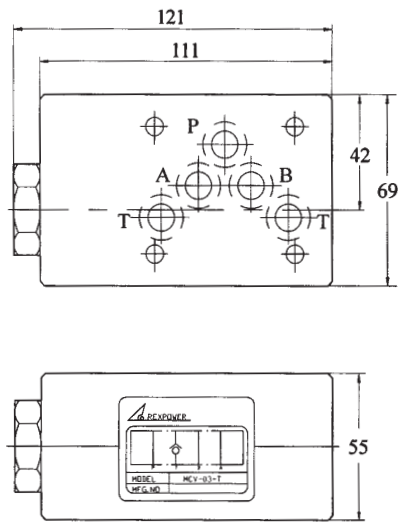


MCV-03-P-\*

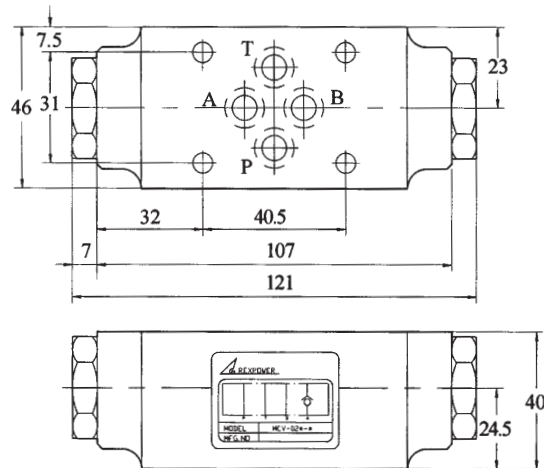


# CHECK VALVE - 02 / 03 SERIES

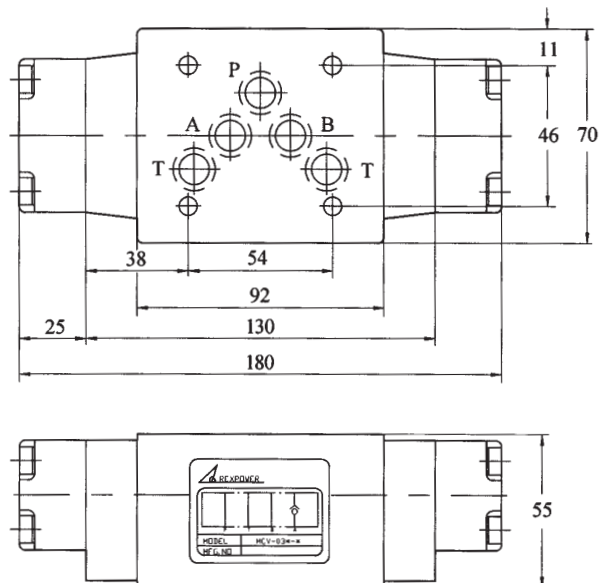
MCV-03-T-\*



MCV-02-A/B-\*



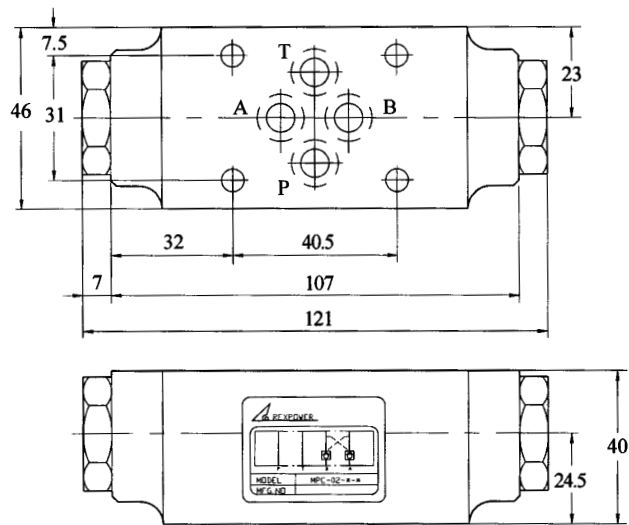
MCV-03-A/B-\*



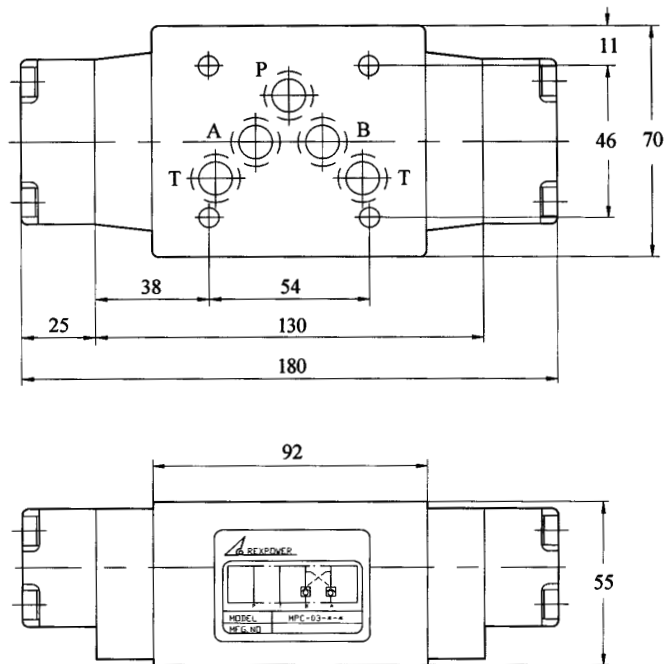
## PILOT CHECK VALVE - 02 / 03 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Flow rated l/min	Cracking pressure kg/cm <sup>2</sup>	Weight kgs
MPC-02- W -*	02	250	40	1 : 2	1.2
MPC-02- A/B -*					
MPC-03- W -*	03	250	50	2 : 5	3.6
MPC-03- A/B -*					

MPC-02-W-\*



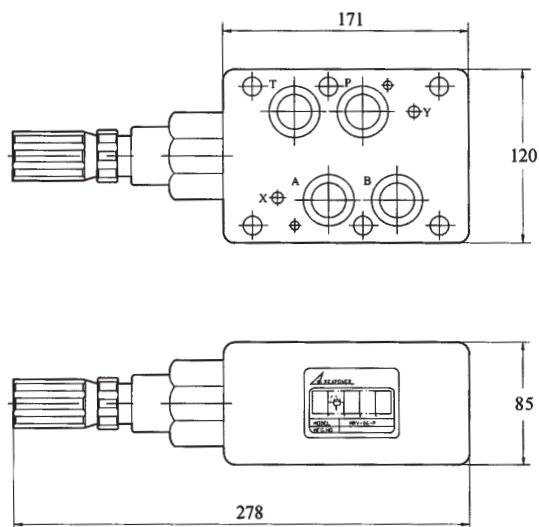
MPC-03-W-\*



## RELIEF VALVE - 06 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Flow rated l/min	Pressure adjusting kg/cm <sup>2</sup>	Weight kgs
MRV-06- P-*	06	210	160	* 1 : 70	11.1
MRV-06- A / B-*				2 : 140	

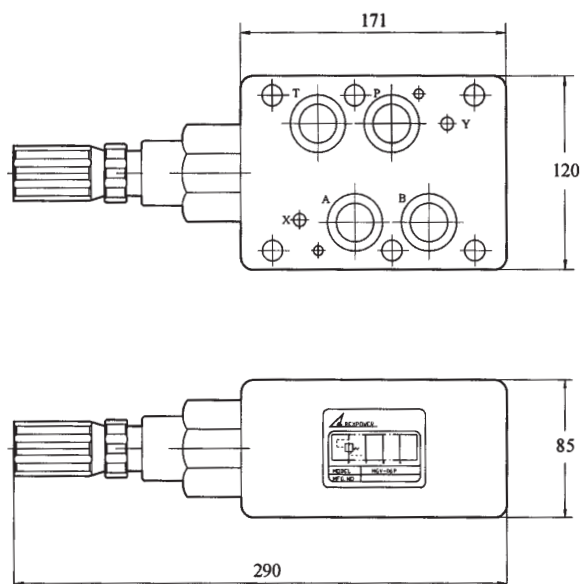
MRV-06-P-\*



## PRESSURE REDUCING VALVE - 06 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Flow rated l/min	Pressure adjusting kg/cm <sup>2</sup>	Weight kgs
MGV-06- P-*	06	210	160	* 1 : 70	11.1
MGV-06- A-*				2 : 140	

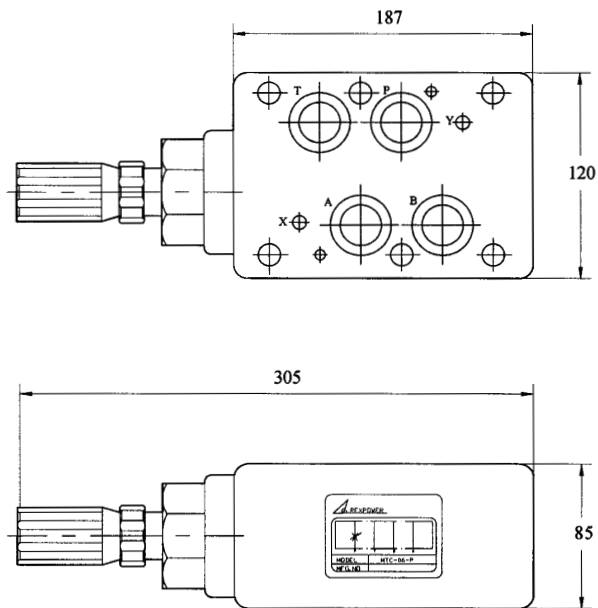
MGV-06-P-\*



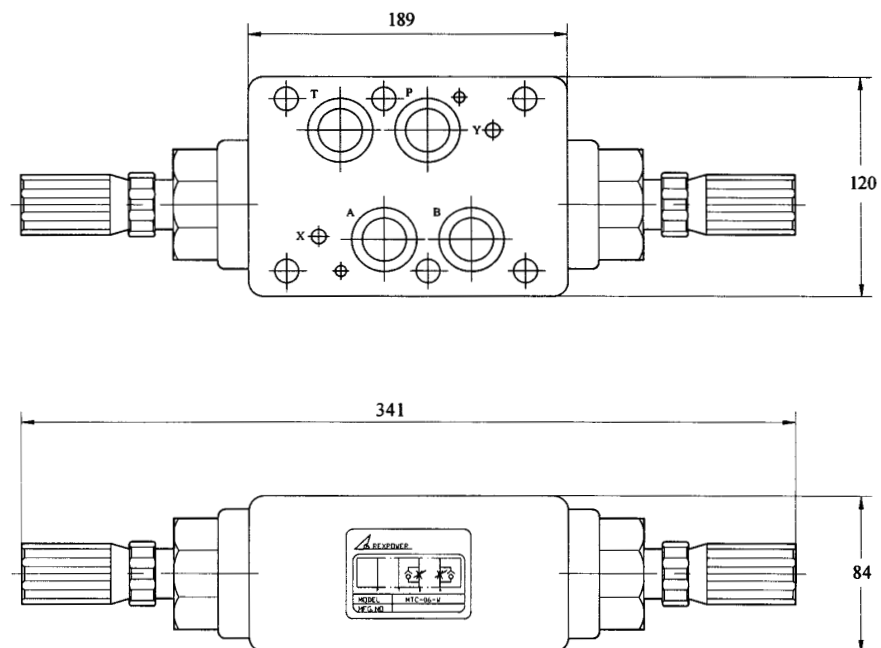
## FLOW CONTROL VALVE - 06 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Max. flow l/min	Remark	Weight kgs
MTV-06- P-*	06	210	160	* O : Meter-out I : Meter-in	12.4
MTC-06- W-*					12.3
MTC-06- A/ B-*					

MTV-06-P-\*



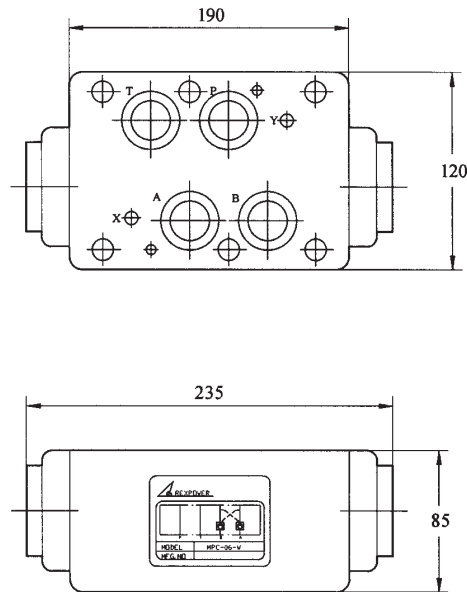
MTC-06-W-\*



## PILOT CHECK VALVE - 06 SERIES

Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Flow rated l/min	Cracking pressure kg/cm <sup>2</sup>	Weight kgs
MPC-06- W-*	06	210	160	0.5	12.5
MPC-06- A\ B-*					

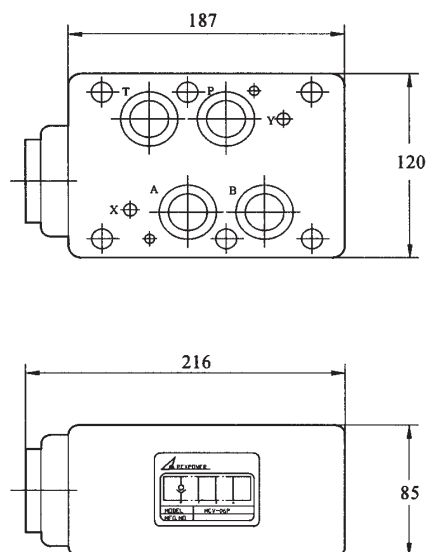
MPC-06-W-\*



## CHECK VALVE - 06 SERIES

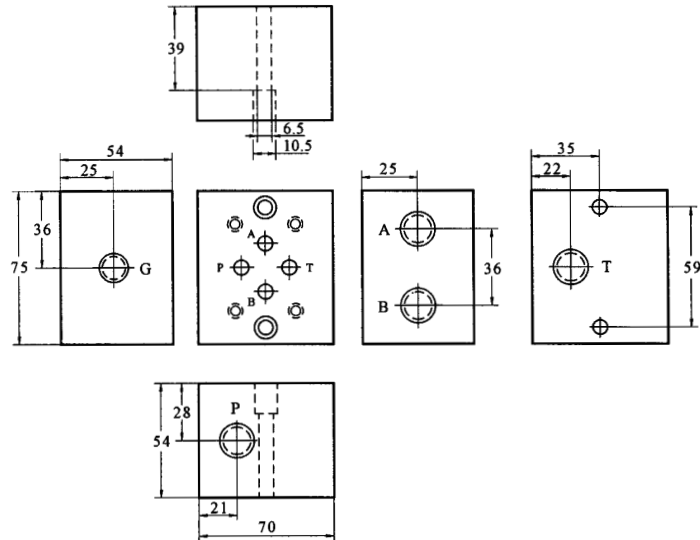
Model	Valve size	Max. pressure kg/cm <sup>2</sup>	Flow rated l/min	Cracking pressure kg/cm <sup>2</sup>	Weight kgs
MCV-06- P-*	06	210	160	* OMIT : 0.5 5 : 4.5	11.6
MCV-06- T-*					

MCV-06-P-\*

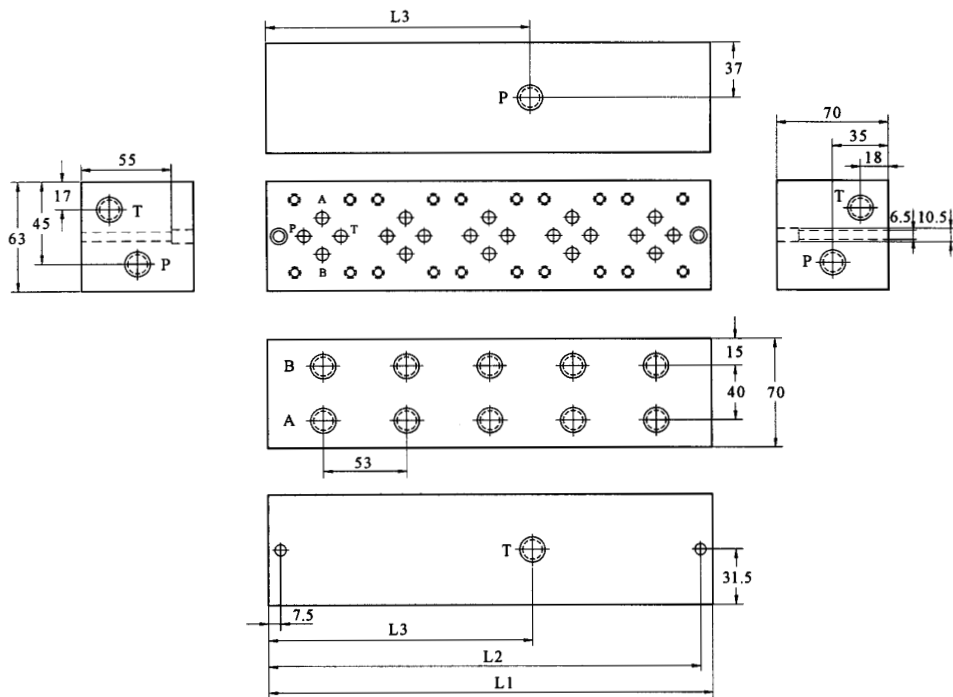


## 02 SERIES MANIFOLD

MSP-02-1



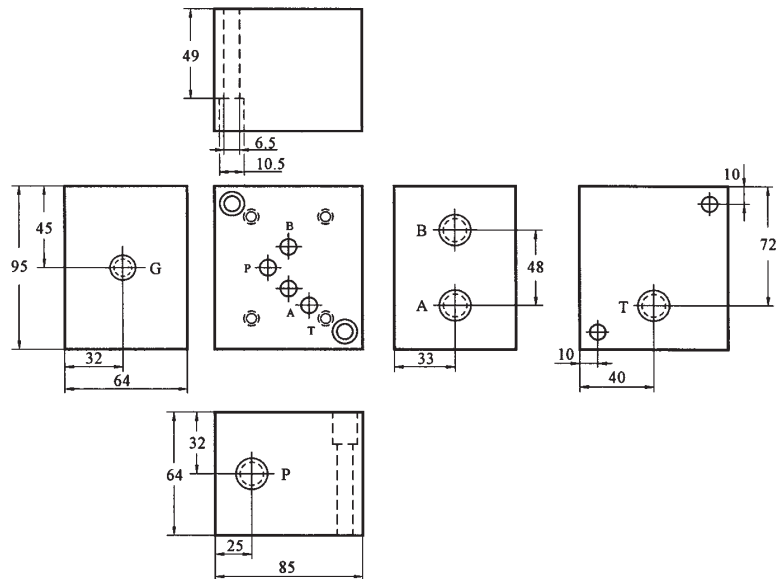
MSP-02-\*



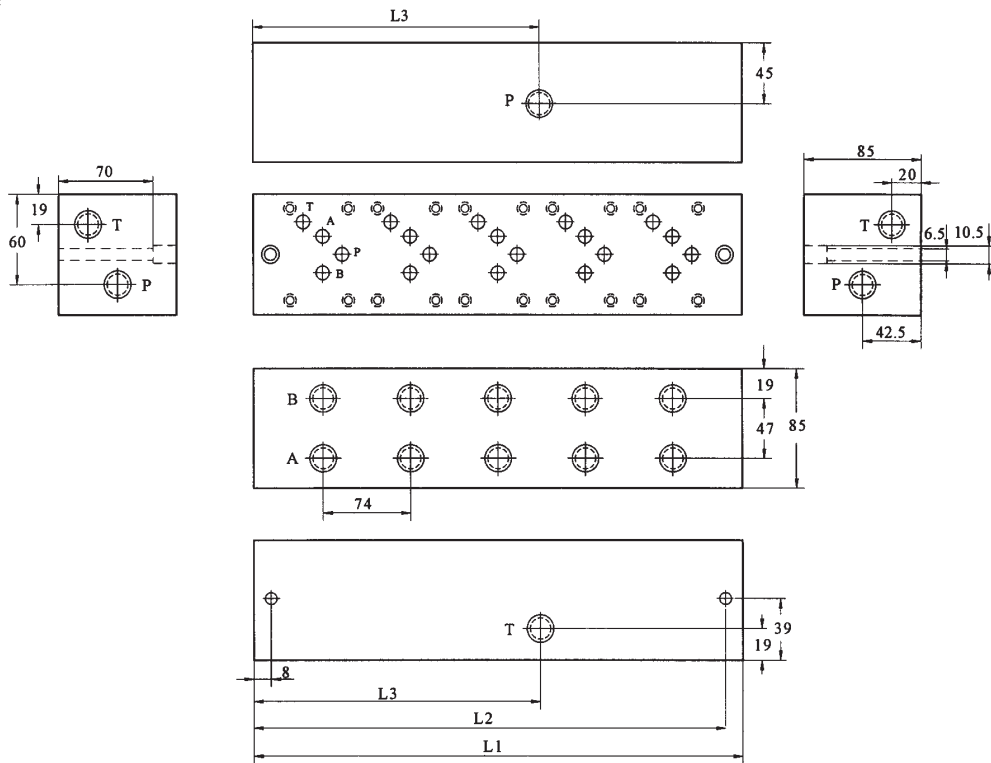
Model	L1	L2	L3	Weight kgs	Port size
MSP-02-2	129	121	64	3.7	3/8" PT
MSP-02-3	182	174	117	5.7	
MSP-02-4	235	227	117	7.6	
MSP-02-5	288	280	170	9.5	
MSP-02-6	341	333	170	11.4	
MSP-02-7	394	386	223	13.3	
MSP-02-8	447	439	223	15.2	
MSP-02-9	500	492	276	17.1	
MSP-02-10	553	545	276	19	

# 03 SERIES MANIFOLD

MSP-03-1



MSP-03-\*

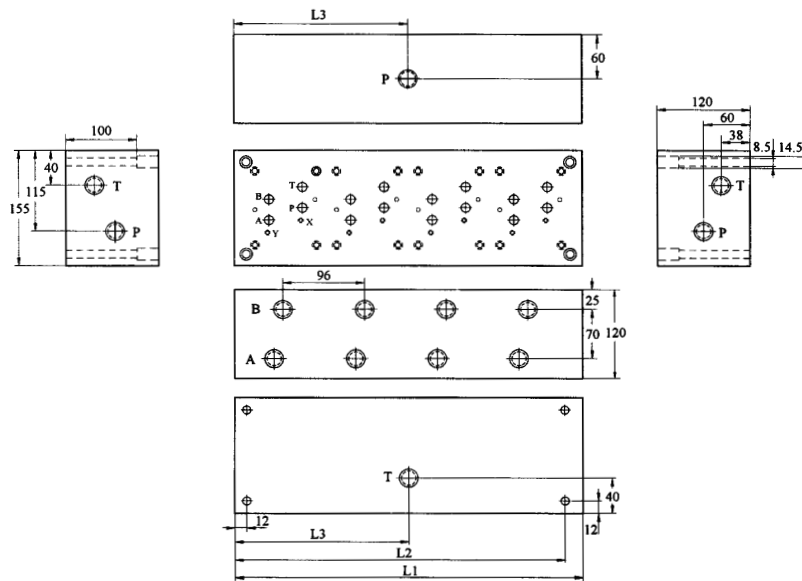


Model	L1	L2	L3	Weight kgs	Port size
MSP-03-2	172	162.5	86.5	6.8	1/2" PT
MSP-03-3	246	236.5	160.5	10.2	
MSP-03-4	320	310.5	160.5	13.6	
MSP-03-5	394	384.5	234.5	17	
MSP-03-6	468	458.5	234.5	20.4	
MSP-03-7	542	532.5	308.5	23.8	
MSP-03-8	616	606.5	308.5	27.2	
MSP-03-9	690	680.5	382.5	30.6	
MSP-03-10	764	754.5	382.5	34	



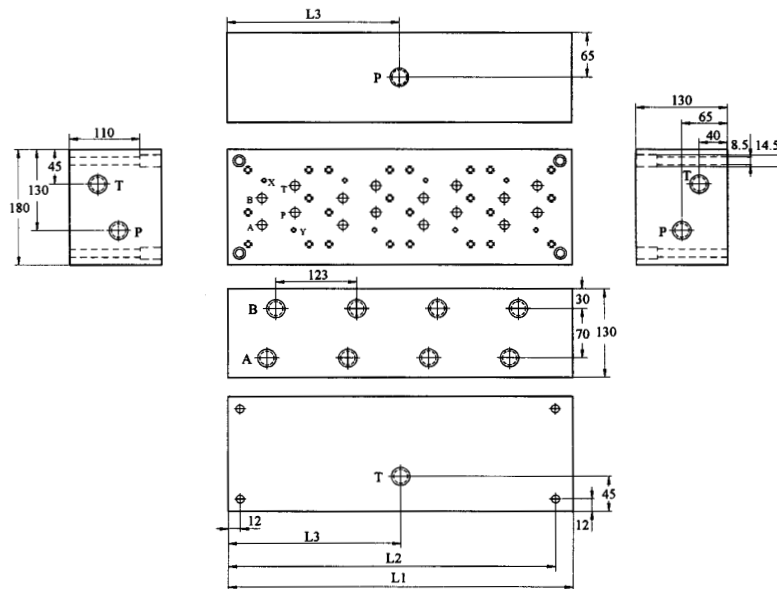
# 04 / 06 SERIES MANIFOLD

## MSP-04-\*



Model	L1	L2	L3	Weight kgs	Port size
MSP-04-1	130	118	86	15	3/4" PT
MSP-04-2	226	214	113	24	
MSP-04-3	322	310	209	34	
MSP-04-4	418	406	209	43	
MSP-04-5	514	502	305	53	
MSP-04-6	610	598	305	63	
MSP-04-7	706	694	401	72	
MSP-04-8	802	790	401	83	

## MSP-06-\*



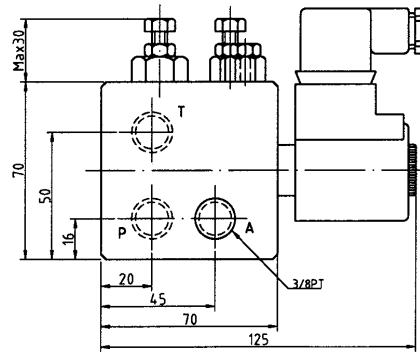
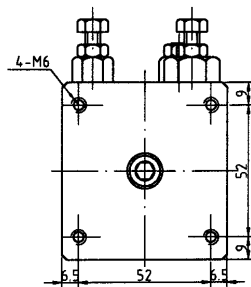
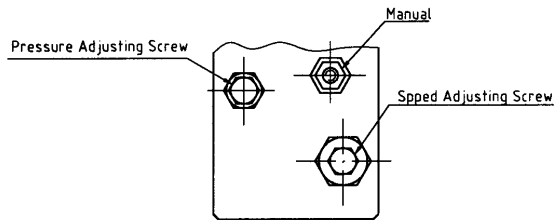
Model	L1	L2	L3	Weight kgs	Port size
MSP-06-1	158	146	102	27	1" PT
MSP-06-2	281	269	140.5	39	
MSP-06-3	404	392	263.5	56	
MSP-06-4	527	515	263.5	72	
MSP-06-5	650	638	386.5	88	
MSP-06-6	773	761	386.5	105	
MSP-06-7	896	884	509.5	121	
MSP-06-8	1019	1007	509.5	138	

# LIFT VALVES

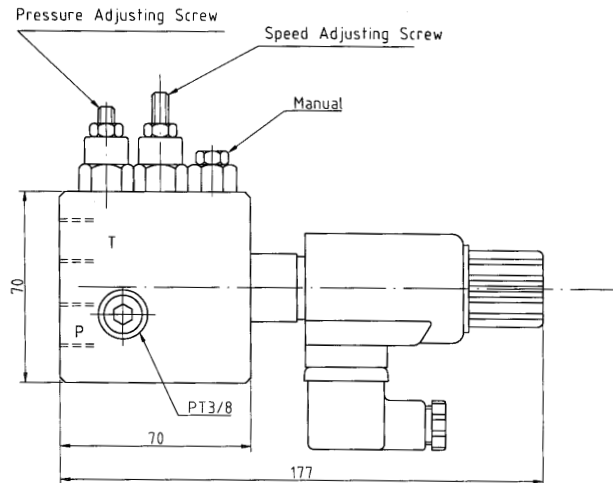
This is a combination valve suitable for the lifters. This valve includes relief valve, check valve, throttle valve and two ways no-leakage solenoid valve.

Model	Max. Pressure kg/cm <sup>2</sup>	Max. flow rate 1/min		Weight kgs	
LVS-03TR	210	20	Thread type. Cast iron body	2.8	
KVS-03TL		20	Thread type. Aluminum body	1.3	
KVS-04TL		40		1.6	
KVS-03M		20	Pump outlet mounting. Alum.body	1.0	

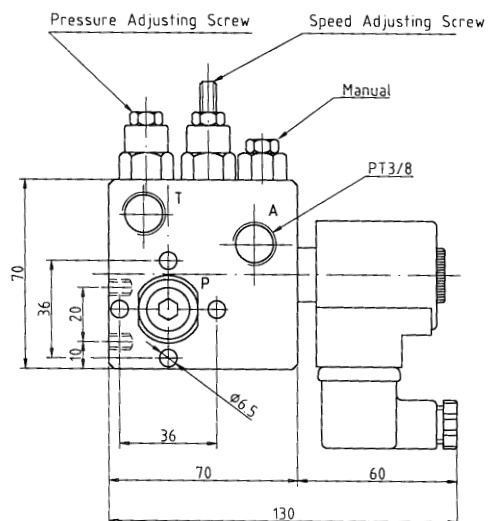
## LVS-03 TR



## KVS-03/04 TL



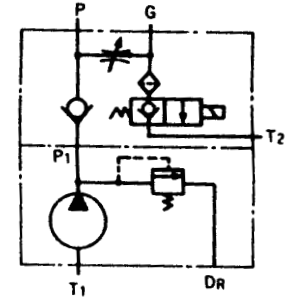
## KVS-03 M



# GEAR PUMP WITH LIFT VALVES

This is a unit include gear pump and lift valve, with direct connection motor complete a compact unit and no extra piping, particular for scissors lifter.

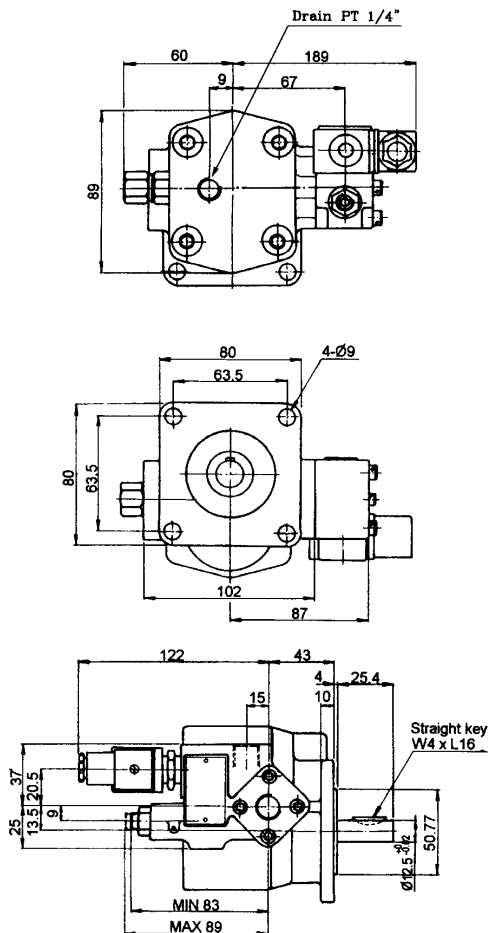
Model	Displacement cc/rev	Model	Displacement cc/rev	Pressure kg/cm <sup>2</sup>		Speed rpm
				Working	Max.	
PR1-020	2	PR2-010	1	175	210	1800
PR1-030	3	PR2-020	2			
PR1-040	4	PR2-030	3			
PR1-060	6	PR2-040	4			
PR1-075	7.5	PR2-055	5			
PR1-090	9	PR2-060	6			
PR1-105	10.5	PR2-080	7.8			
PR1-120	12					



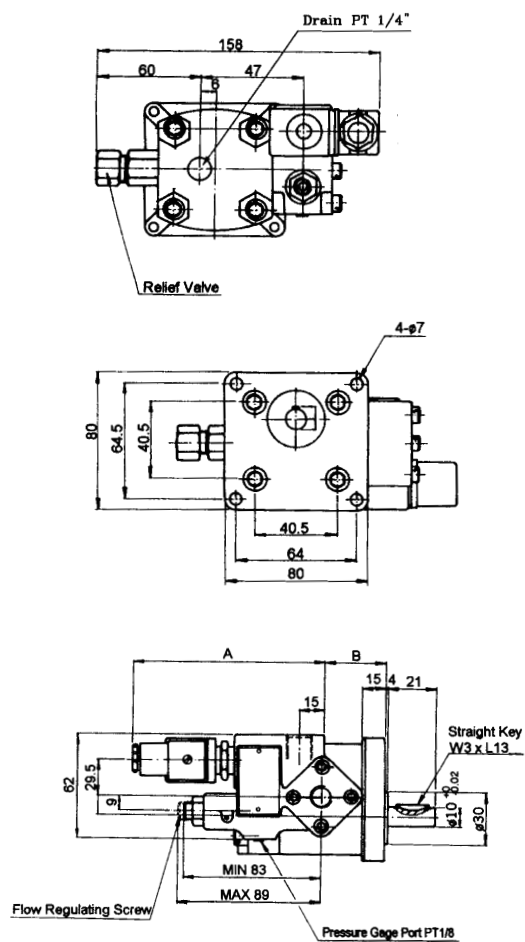
PR \* - \* \* \* + V2064

PR \* is pump with relief valve only.

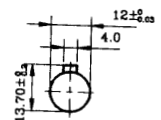
## PR1 + V2064



## PR2 + V2064



Model	A mm	B mm
PR2-010	81	14.8
PR2-020	85.6	14.8
PR2-030	91	14.8
PR2-040	97	17.5
PR2-060	103	17.5
PR2-080	109	17.5

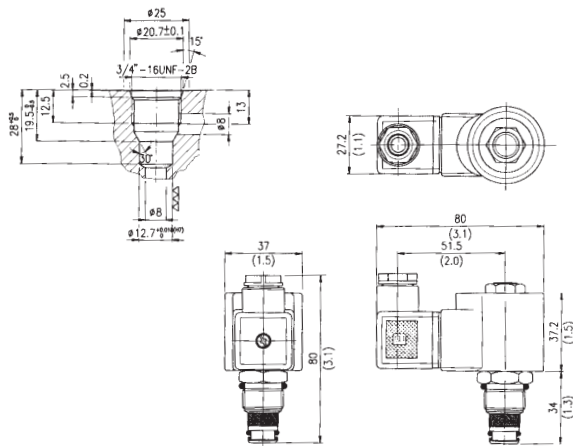


# CARTRIDGE VALVES

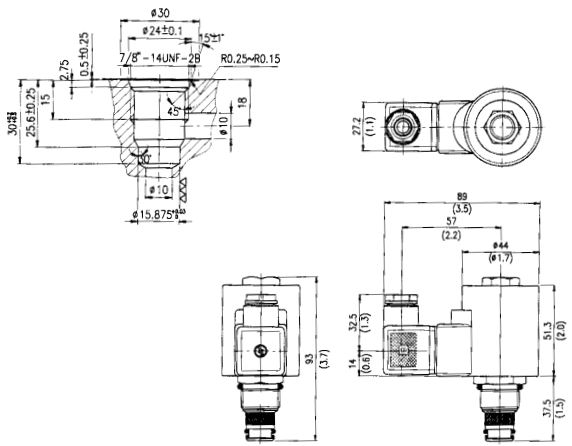
Solenoid check valve is a two-ways solenoid valve with no-leakage design.

Model	Coil	Max Pressure kg/cm <sup>2</sup>	Max flow l/min	Specification	Remark	Weight kg
V2066	D12 : DC12V	210	20	Cartridge type	OMIT : Standard M : With Manual NC : Normally close NO : Normally open NG : DIN DL : Lead wires	0.2
V3066			40			0.4
V2068	D24 : DC24V		20	Thread type		0.5
V3068			40			0.5
V6068	A11 : AC110V		80	Subplate type		0.8
V2067	A22 : AC220V		20			0.5
V3067			40			0.7
V6067	A38 : AC380V		80	Thread type		1.6
V2070		25	1.5			

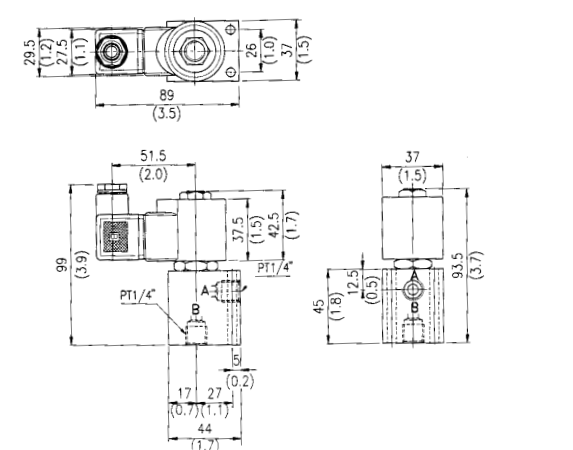
2066



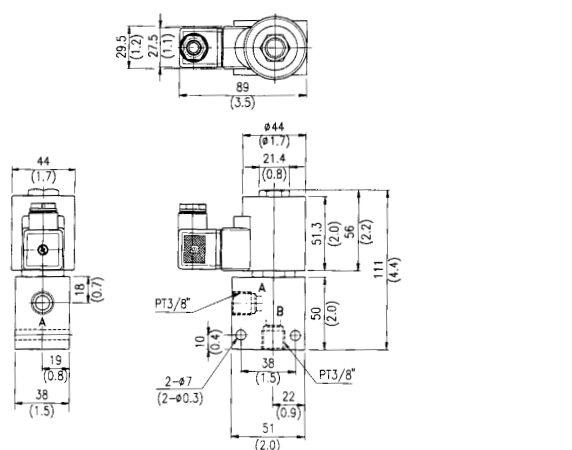
3066



2068



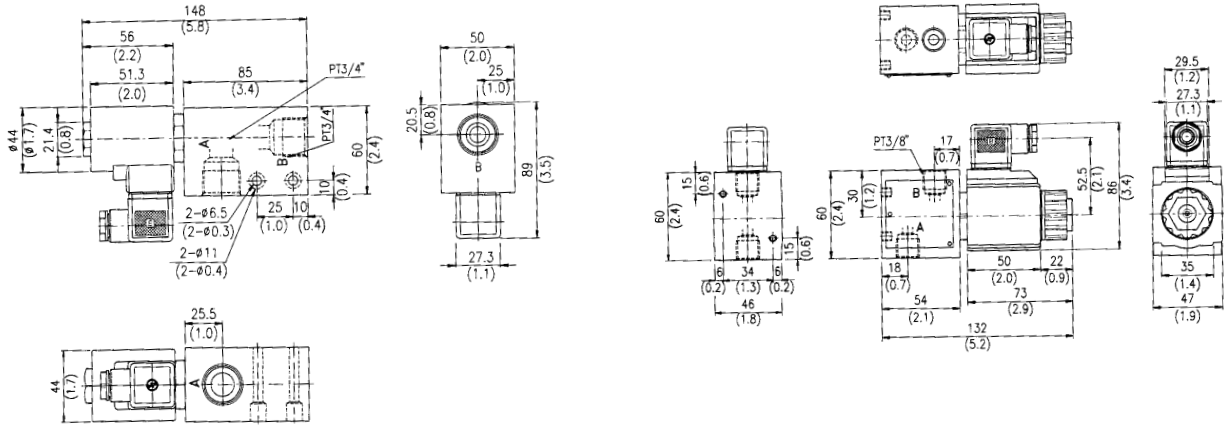
3068



# CARTRIDGE VALVES

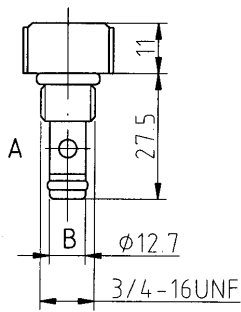
6068

2070

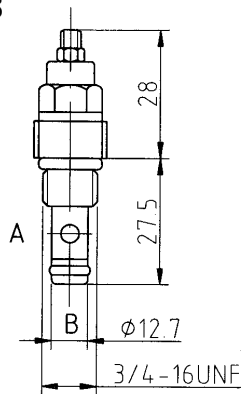


	Model	Max flow l/min	Max Pressure kg/cm <sup>2</sup>	
Check valve	KV - 08	20	210	Cartridge type
	KV - 10	40		
Relief valve	KT - 08	20		
	KT - 10	40		
Flow control valve	KL - 08	20		
	KL - 10	40		

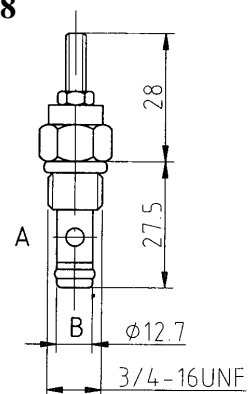
**KV - 08**



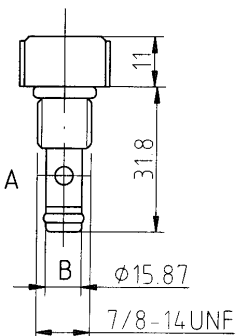
**KT - 08**



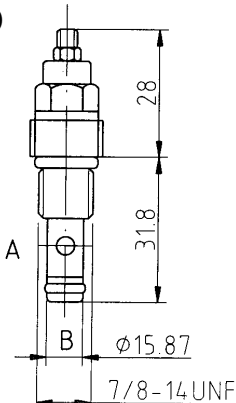
**KL - 08**



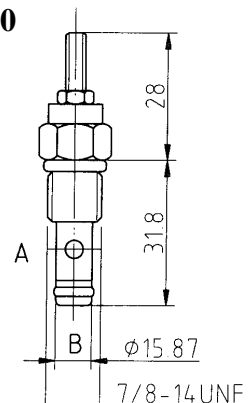
**KV - 10**



**KT - 10**



**KL - 10**



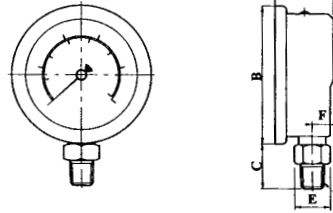
# HYDRAULIC ACCESSARY

## GLYCERIN BATH TYPE PRESSURE GAUGES

Stainless steel case



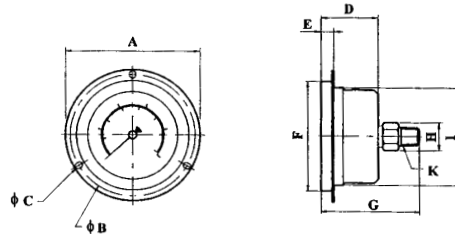
PGF-63/100A



Model	A mm	B mm	C mm	D mm	E mm	F mm
PGF - 63A	33	71.3	20.9	1/4"	14	11
PGF - 100A	36	110.0	26.3	3/8", 1/2"	22	



PGF-63/100B



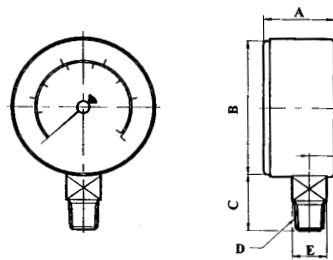
Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	K mm
PGF - 63 B	87.5	80.5	4.5	33.0	7.2	71.3	58.0	14	64.6	1/4"
PGF - 100 B	132.0	117.0	6.0	36.0	7.7	110.0	74.0	22	100.0	1/2"
PGF - 40 D	—	—	—	26.6	—	48.0	42.6	11	41.5	1/8"

## GENERAL TYPE PRESSURE / VACUUM GAUGE

Steel case - Lacquered (PGDL) or chrome plated (PGD)



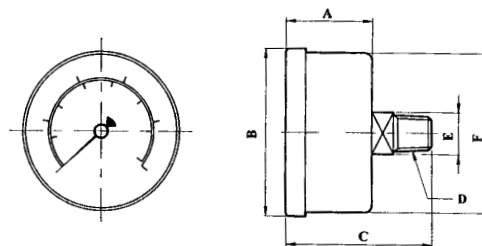
PGD-\* A



Model	A mm	B mm	C mm	D mm	E mm	F mm
PGD (L) - 40 A	24	42	16	1/8"	12	9.0
PGD (L) - 50 A	27	53	14	1/8", 1/4"	14	10.0
PGD (L) - 63 A	32	71		1/4"		11.5



PGD-\* D



Model	A mm	B mm	C mm	D mm	E mm	F mm
PGD (L) - 40 D	21.5	42	40	1/8"	11	41
PGD (L) - 50 D	27.0	53	48	1/8", 1/4"	14	52

# HYDRAULIC ACCESSARY

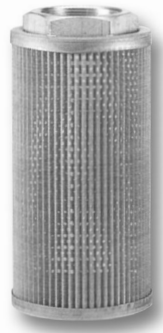
## SUCTION STRAINER



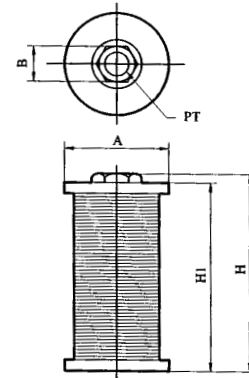
N TYPE



W TYPE



MF TYPE



Model	Size PT	A mm	B mm	H1 mm	H mm	Flow l/min	Filtration mesh	Weight kg
N-04	1/2"	64	30	153	160	35	150	0.27
N-06	3/4"		34		166	46		0.28
N-08	1"	85	42	198	210	90		0.48
N-10	1 1/4"	103	54	215	231	150		0.77
N-12	1 1/2"	120	65	232	246	205		0.96
N-16	2"		75	317	332	320		1.27
N-20	2 1/2"	148	97	419	434	550		2.00
N-24	3"		110			600		2.68
W-02S	1/4"	40	22	53	53	12	120	0.05
W-02	3/8"	55		100	109	14		0.13
W-03	1/2"		30	113	20	0.14		
W-04S	3/4"	65	34	145	163	50		0.16
W-04	1"	87	42	188	208	100		0.19
W-06	1 1/4"	106	54	208	230	180		0.35
W-08	1 1/2"	126	65	228	247	246		0.50
W-10	2"		75	300	330	384		0.70
W-12	2 1/2"	157	97	390	414	700	0.82	
W-16	3"		110	435	458	800	1.36	
W-20	4"	208	142	357	380	1000	1.47	
W-24							2.45	
MF-02	1/4"	58	22	90	96	20	100	0.09
MF-03	3/8"		30	90	100	32		
MF-04	1/2"		34	124	137	56		
MF-06	3/4"		42	155	170	110		
MF-08	1"		71	54	170	186		210
MF-10	1 1/4"	85	65	182	196	285		0.35
MF-12	1 1/2"	103	75	202	215	395		0.49
MF-16	2"		97	252	274	750		0.65
MF-20	2 1/2"	148	110	419	434	800	1.20	
MF-24	3"		110			800	1.21	
MF-32	4"	208	142	357	380	1000	2.45	

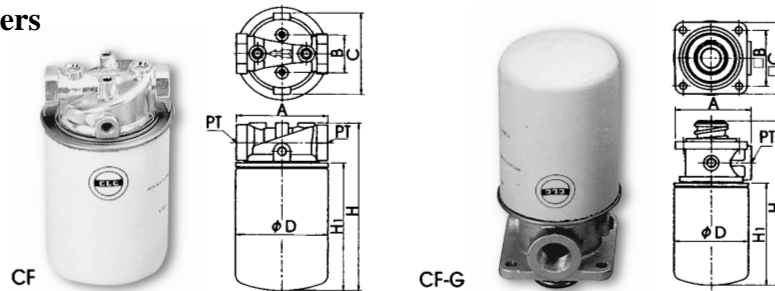
# HYDRAULIC ACCESSARY

## TANK CLEANING COVER



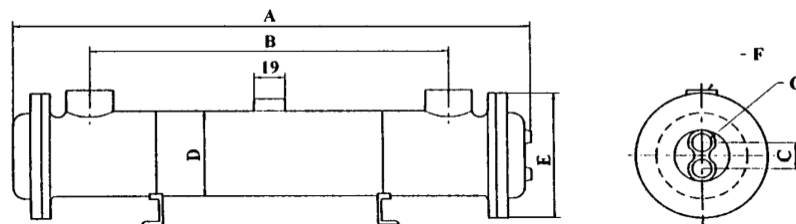
Model	A inch	B mm	C mm	D mm	Tank hole	Weight kg
CR-10	10"	17	1.0	35	8"	1.09
CR-12	12"		43	10"	2.87	
CR-14	14"		53	12"	3.82	
CR-18	18"		64	16"	6.80	

## Spin - on return filters



Model	PT	A mm	B mm	C mm	D mm	H1 mm	H mm	Flow l/min	Mounted	Weight kg
CF - 06	3/4"	92	38	82	93	127	170	60	60	0.62
CF - 06G	3/4"	97	70	90	93	127	207	60	60	0.87
CF - 10	1 1/4"	137	48	136	128	167	236	144	144	1.84

## OIL COOLER



Model	A mm	B mm	C mm	D mm	E mm	F	G	Exchange tube	Flow l/min	Weight kg
OR - 60L	465	295	40	89.1	120	3/4"	3/4"	22	60	8
OR - 100L	540	370	55	114.3	140			26	100	12
OR - 150L	580	375	65	139.8	170			1 1/4"	58	42
OR - 250L	800	600				250	22			
OR - 350L	1205	1000				350	30			
OR - 600L	1225	970	85	165.2	196	2"	1 1/2"	600	40	
OR - 800L	1725	1470						800	50	
OR - 1000L	2140	1890						1000	60	
OR - 1200L	2520	2270						1200	70	



# HYDRAULIC ACCESSARY

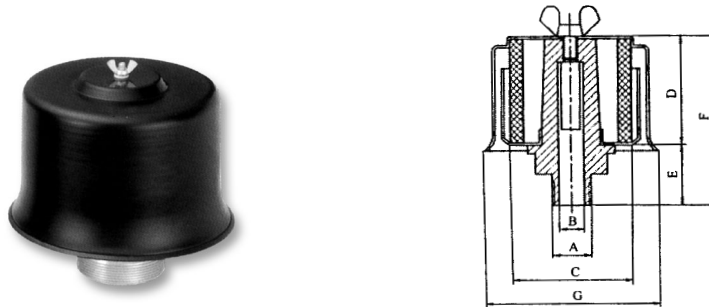
## AIR BREATHER WITH FILLER



Model	A mm	B mm	C mm	D mm	E mm	F mm	G mm	Cutting hole mm	H	Filtration mesh	Weight kg
SY-06S	53	31	65	34	99	45.5	53	32	3 - $\phi$ 6	400	0.09
SY-08	80	48	95	50	147	71.0	82	50	6 - $\phi$ 6		0.26
SY-08S											

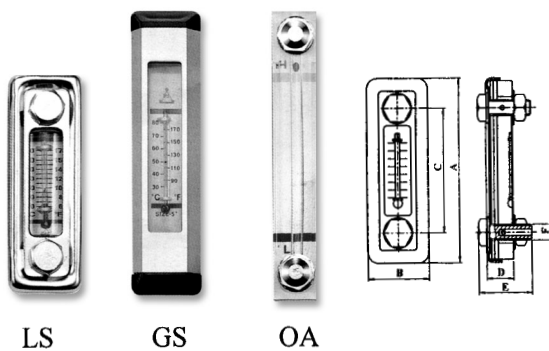
S: Filler with stainless net, Omit: Filler with plastic net.

## AIR BREATHER CAP



Model	A PT	B mm	C mm	D mm	E mm	F mm	G mm	Filtration mesh
AB-06	3/4"	19	51	41	27	68	67	40
AB-08	1"	25	65	45	26	74	100	
AB-16	2"	48	92	90	37	130	130	
AB-20	2 1/2"	61	150	115	59	174	187	
AB-32	4"	113	165	140	50	193	210	

## LEVEL INDICATORS WITH THERMOMETER



Model	A mm	B mm	C mm	D mm	E mm	F mm	Weight kg	
LS-3"	118	41	80	18	37	M10	0.20	
LS-5"	180	52	127	19.5	46	M12	0.35	
GS-3"	102	38	76	20	39	3/8"	0.11	
GS-5"	153		127				0.15	
OA-3"	105	25	76	13	46.5	M10	0.12	
OA-5"	155		127				0.14	
OA-200	230	28	200	25	54	M12	0.29	
OA-300	330		300				63	0.38
OA-400	430		400				54	0.44
OA-500	530		500					0.52

# HYDRAULIC ACCESSARY

## STOP VALVE & GAUGE COCK

GCT



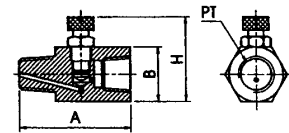
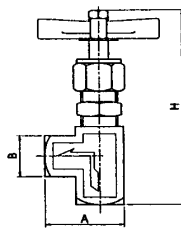
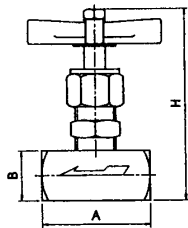
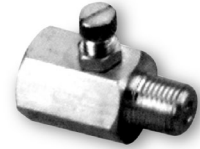
AL



AL (90°)

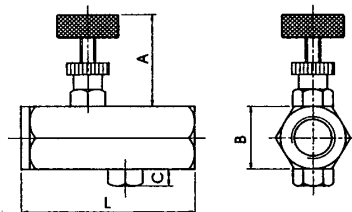


SB



	Model	Size	A mm	B mm	H mm	Flow l/min	Max. pressure kg/cm <sup>2</sup>	Weight kg
Stop valve	GCT-02	1/4"	51	22	95	3	350	0.33
	GCT-03	3/8"	61	25	100	21		0.43
	GCT-04	1/2"	62	32	114	30		0.65
	GCT-06	3/4"	90	38	148	100		1.46
	GCT-08	1"	102	50	164	300		2.50
Gauge cock	AL-02	1/4"	50	25	99	3	210	0.28
	AL-02(90°)		41	22	108			0.29
	SB-02	1/4"	43	21	35	0.5	70	0.10

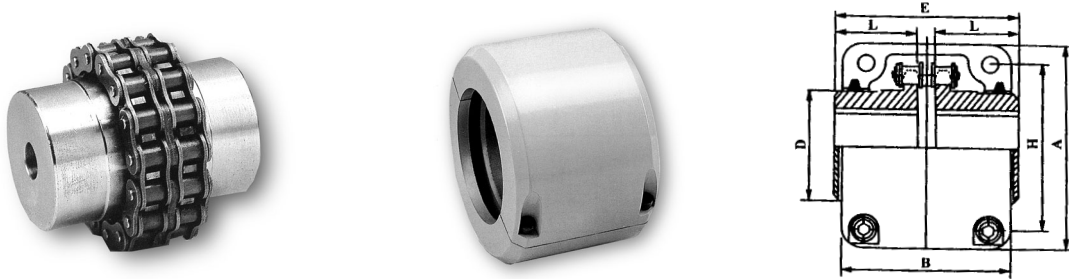
## THROTTLE & CHECK VALVE



Model	Size	A mm	B mm	C mm	L mm	Material	Max. pressure kg/cm <sup>2</sup>	Weight kg
PT-02	1/4"	40	23	7	62	Steel	210	0.24
PT-03	3/8"	38	26		70			0.30
PT-04	1/2"	43	32	10	81			0.50
PT-06	3/4"	47	41	12	92			0.92
PT-02N	1/4"	40	23	/	62			0.24
PT-03N	3/8"	38	26		70			0.30

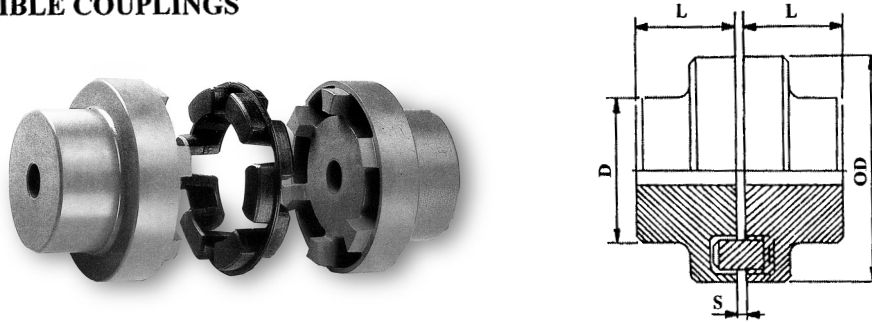
# HYDRAULIC ACCESSARY

## ROLLER CHAIN FLEXIBLE COUPLINGS



Coupling Port							Casing Port				
Model	Bore diam.		E mm	L mm	D mm	Weight kg	Model	A mm	B mm	H mm	Weight kg
	Min.	Max.									
HT-4012	11	22	80	36	35	0.8	HT-4012	75	75	61	0.3
HT-4016	15	30			50	1.4	HT-4016	92		77	0.4
HT-5016		19	40	100	45	60	2.6	HT-5016	111	85	96
HT-5018	45		70			3.5	HT-5018	122	106		0.7
HT-6018	22	55	120	54	85	6.2	HT-6018	142	106	128	1.0
HT-6022	25	75			110	9.8	HT-6022	167		152	1.2
HT-8018	30	78	150	67	115	13.9	HT-8018	186	130	170	2.3
HT-8022	35	95			140	20.2	HT-8022	220		202	2.4
HT-10020		48	110	201	91	160	34.0	HT-10020	248	152	228
HT-12018	120		170			51.0	HT-12018	305	180		252
HT-12022	58	150	261	119	210	66.0	HT-12022	355	180	300	7.1

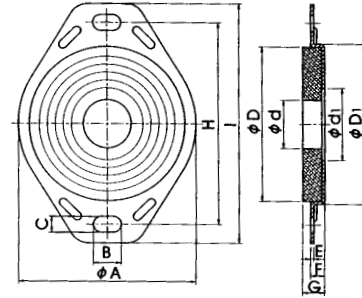
## SUPER FLEXIBLE COUPLINGS



Model	Torque		Max. speed rpm	Bore diam.		D mm	OD mm	L mm	Tolerance S	Weight kg
	Normal kg-m	Max. kg-m		Min.	Max.					
NM-50	1.3	2.3	13500	7	19	33	50	25	2.0±0.5	0.48
NM-67	2.2	4.0	10000	9	28	46	67	30	2.5±0.5	1.02
NM-82	5.0	9.0	8000	10	32	53	82	40	3.0±0.5	1.88
NM-97	10.5	19.0	7000	12	42	69	97	50		3.54
NM-112	16.7	30.0	6000	14	48	79	112	60	3.5±0.5	5.40
NM-128	26.7	48.0	5000	18	55	90	128	70		8.10
NM-148	41.7	75.0	4500	22	65	107	148	80		13.50
NM-168	69.5	125.0	4000	28	75	126	170	90		19.30
NM-194	112.0	200.0	3500	32	85	140	194	100	4.0±0.5	26.30
NM-214	167.0	300.0	3000	45	95	157	214	110		35.70
NM-240	267.0	480.0	2750	60	110	179	240	120	5.5±0.5	46.70
NM-265	417.0	750.0	2500	70	120	198	265	140		66.30

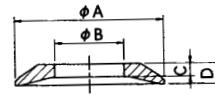
# HYDRAULIC ACCESSARY

## TANK FLANGE FOR SUCTION FILTER



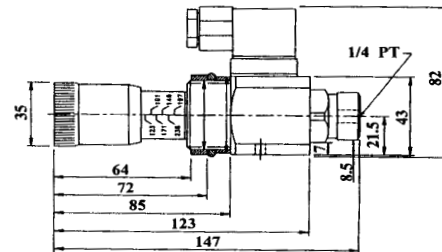
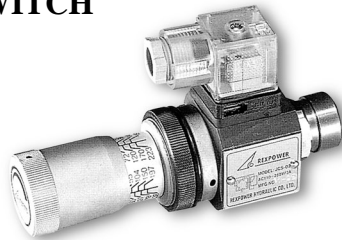
Model	$\phi A$ mm	B mm	C mm	$\phi D$ mm	$\phi D1$ mm	$\phi d$ mm	$\phi d1$ mm	E mm	F mm	G mm	H mm	I mm
PL-04	89	14	8	78.5	81.7	18.5	36.5	1.6	7	11	102	121
PL-06						24.5						

## DUST SEAL FOR PIPING



Model	Dia inch	A mm	B mm	C mm	D mm	Usage
CN-02	1/4"	23	6	3	5	Tube
CN-03	3/8"	25	9			
CN-04	1/2"	38	12			
ST-03	3/8"	42	16	5	7	Pipe
ST-04	1/2"	45	21			
ST-06	3/4"	56	26			
ST-08	1"	64	33			
ST-10	1 1/4"	76	42			
ST-12	1 1/2"	85	47			
ST-16	2"	110	60		6	
ST-20	2 1/2"	127	74			
ST-24	3"	139	87			

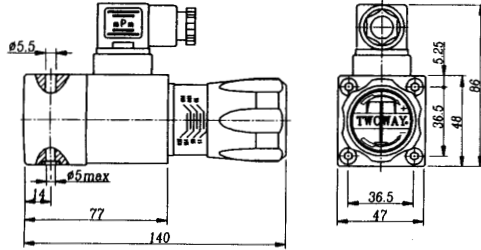
## PRESSURE SWITCH



Model	Working pressure kg/cm <sup>2</sup>	Max. pressure kg/cm <sup>2</sup>	Weight kg	Current: AC250V,3A Differential pressure: within 5% of Max. pressure
JCS-02N	30~210	210	1	
JCS-02NL	15~60			
JCS-02NLL	5~60	70		

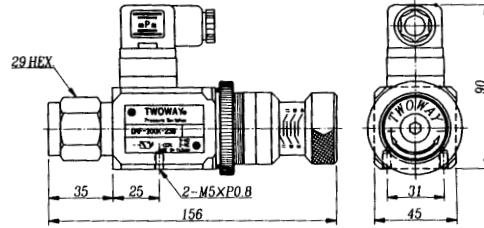
# HYDRAULIC ACCESSARY

## DNL SUBPLATE MOUNTING



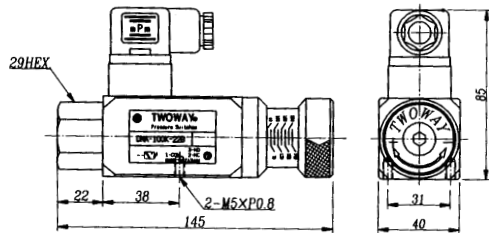
Model	Pressure Adj. Range kg/cm <sup>2</sup>	Max. working Pressure kg/cm <sup>2</sup>	Weight kg
DNL-050K	6~50	200	1.0
DNL-100K	15~100	300	1.0
DNL-200K	30~200	300	1.0
DNL-280K	40~280	350	1.0
DNL-400K	50~400	400	1.0

## DNF PANEL MOUNTING



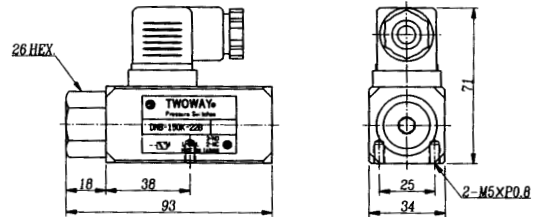
Model	Pressure Adj. Range kg/cm <sup>2</sup>	Max. working Pressure kg/cm <sup>2</sup>	Weight kg
DNF-040K	6~40	200	1.2
DNF-100K	15~100	350	1.2
DNF-250K	40~250	350	1.2
DNF-360K	50~360	400	1.2

## DNA STANDARD THREAD TYPE



Model	Pressure Adj. Range kg/cm <sup>2</sup>	Max. working Pressure kg/cm <sup>2</sup>	Weight kg
DNA-040K	6~40	150	1.0
DNA-100K	15~100	250	1.0
DNA-250K	40~250	300	1.0
DNA-360K	50~360	400	1.0

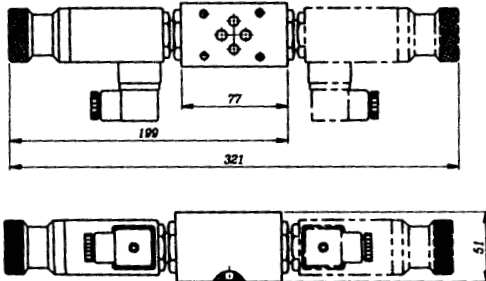
## DNB COMPACT THREAD TYPE



Model	Pressure Adj. Range kg/cm <sup>2</sup>	Max. working Pressure kg/cm <sup>2</sup>	Weight kg
DNB-040K	6~40	150	0.6
DNB-070K	5~70	200	0.6
DNB-150K	30~150	300	0.6
DNB-250K	40~250	300	0.6

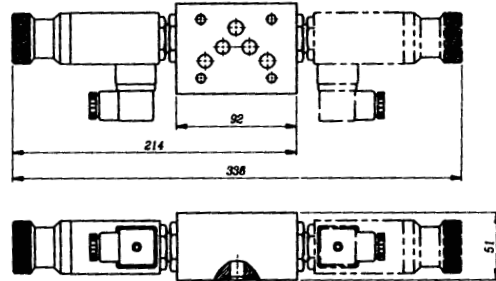
## DNM MODULAR TYPE

### ● DNM - 02 \*



Model	Pressure Adj. Range kg/cm <sup>2</sup>	Max. working Pressure kg/cm <sup>2</sup>
DNM - * - 040K	6~40	200
DNM - * - 100K	15~100	350
DNM - * - 250K	40~250	350

### ● DNM - 03 \*



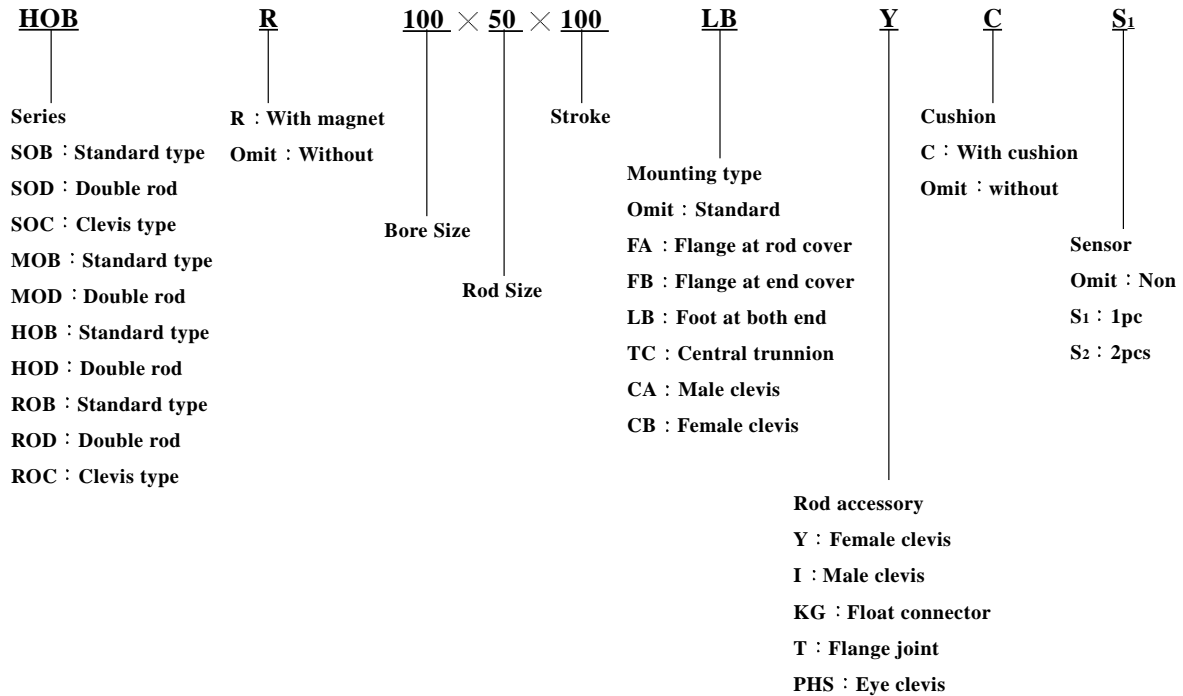
Type	Weight kgs
DNM-02P(A,B)	2.1
DNM-02W	3.1
DNM-03P(A,B)	3.1
DNM-03W	4.1

# HYDRAULIC CYLINDER

The cylinder have 70, 140, 210kg/cm<sup>2</sup> different working pressure, please specify max working pressure when you place order.

Series	Barrel material	Working pressure kg/cm <sup>2</sup>		Bore size range mm										
		Max	Min	20	30	40	50	63	80	125	150	180	200	
SOB	Carbon steel STKM-13C	70	3											
SOBR	Aluminium extrusion tube													
MOB	Carbon steel STKM-13C	70												
MOBR	Stainless steel SUS 304													
HOB	Carbon steel STKM-13C	140												
HOBR	Stainless steel SUS 304	210												
ROB	Carbon steel STKM-13C	140												
ROBR	Stainless steel SUS 304	210												

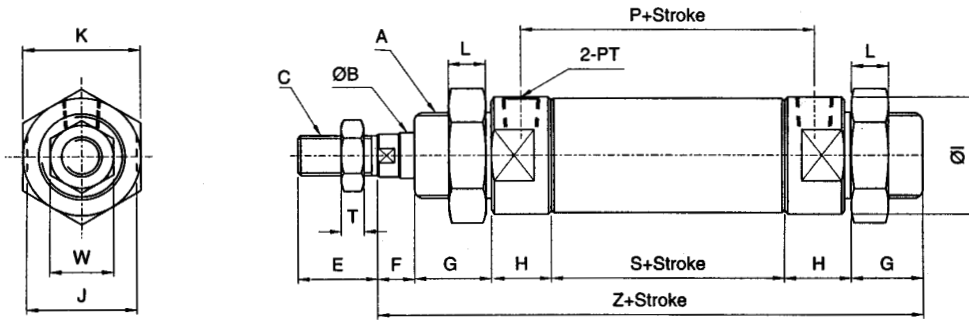
## ORDERING CODE



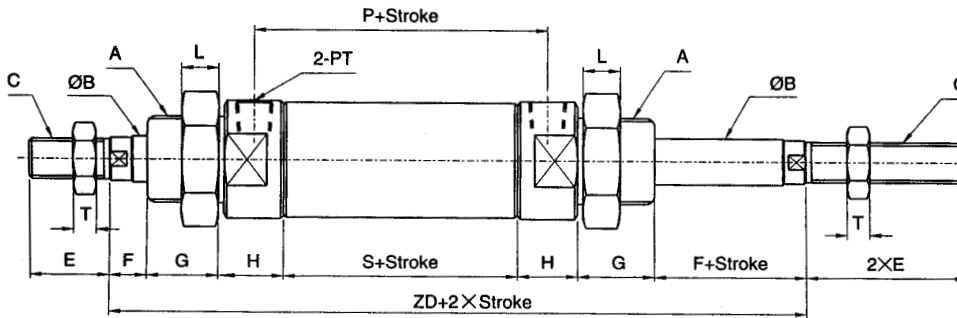
# HYDRAULIC CYLINDER

SO series 70kg/cm<sup>2</sup>, round type cylinder.

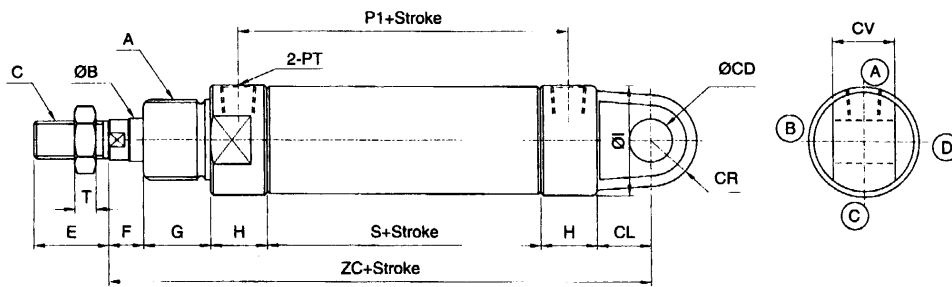
● SOB



● SOD



● SOC

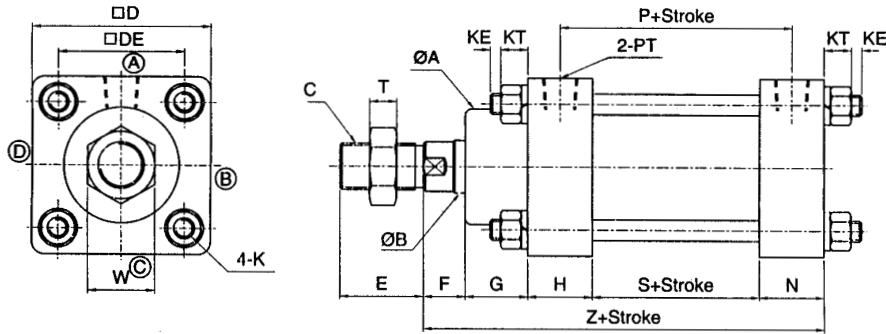


BORE SIZE	SOB-SOD TYPE														SOC TYPE										
	A	ØB	C	E	F	G	H	ØI	J	K	L	P	PM	PT	PT	S	W	T	Z	ZD	ZC	ØCD	CL	CR	CV
Ø20	M26XP1.5	12	M10XP1.25	25	12	25	15	32	27	35	13	69	24	24	1/8	54	16	8	146	158	136	10	15	10	15
Ø30	M30XP1.5	16	M14XP1.5	28	13	25	21	41	37	41	13	83	30	30	1/4	62	22	8	167	180	162	16	20	17	23
Ø40	M40XP2.0	20	M16XP1.5	28	17	25	25	50	47	55	15	87	30	30	3/8	62	23.5	8	179	196	179	16	25	18	25

# HYDRAULIC CYLINDER

MO series 70kg/cm<sup>2</sup>, cast-iron cover tie-rod cylinder.

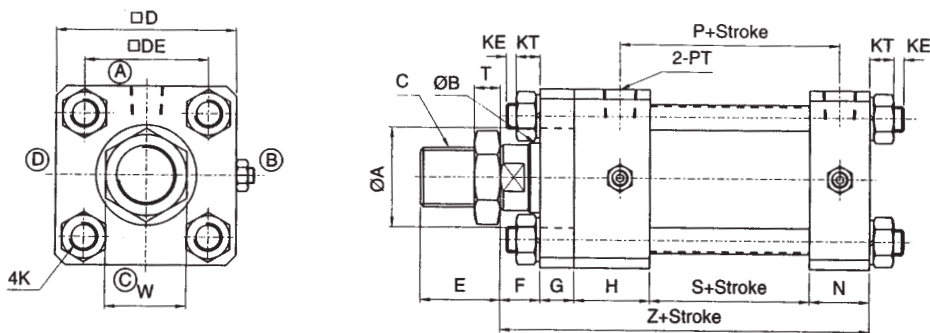
● MOB



		MOB TYPE																					
BORE	SIZE	$\textcircled{A}$	$\textcircled{B}$	C	$i\text{...}D$	$i\text{...}DE$	E	F	G	H	N	P	P1	PM	PT	K	KE	KT	S	W	T	Z	
$\textcircled{30}$	30	16	M14XP1.5	50	34	28	13	15	25	25	75	75	30	1/4	M8XP1.25	8	8.5	50	22	8	128		
$\textcircled{40}$	40	20	M16XP1.5	64	45	28	17	20	30	30	80	80	30	3/8	M8XP1.25	8	8.5	50	23.5	8	147		
$\textcircled{50}$	45	20	M16XP1.5	70	50	28	17	20	30	28	79	80	30	3/8	M10XP1.25	10	10.5	50	23.5	8	145		
$\textcircled{50A}$	55	25	M22XP1.5	70	50	40	20	30	30	28	79	80	30	3/8	M10XP1.25	10	10.5	50	32	13	158		
$\textcircled{63}$	55	25	M22XP1.5	85	60	40	20	30	31	31	81	81	30	3/8	M10XP1.25	10	10.5	50	32	13	162		
$\textcircled{80}$	62	30	M26XP1.5	106	74	40	20	32	37	35	91	92	35	1/2	M12XP1.5	10	13	55	35	13	179		
$\textcircled{100}$	78	35	M30XP1.5	122	89	45	25	32	37	37	117	117	50	1/2	M14XP1.5	10	14.5	80	41	13	206		
$\textcircled{125}$	85	50	M40XP2.0	147	110	55	25	31	40	40	120	120	50	1/2	M16XP1.5	10	17	80	55	15	216		

HO series 140kg/cm<sup>2</sup>, tie-rod cylinder.

● HOB



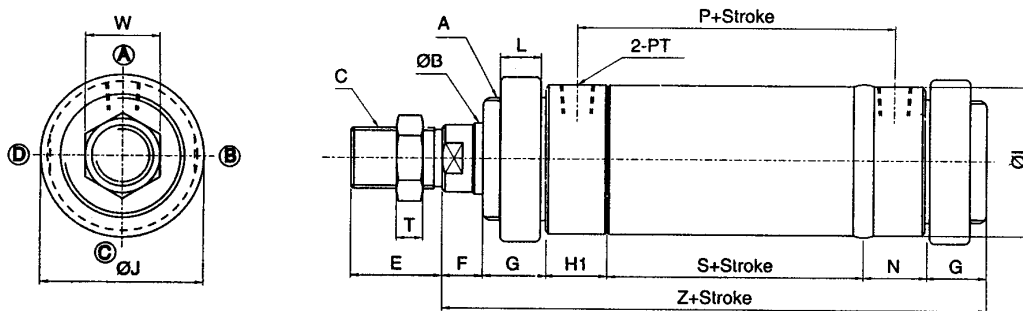
		HOB TYPE																					
BORE	SIZE	$\textcircled{A}$	$\textcircled{B}$	C	$i\text{...}D$	$i\text{...}DE$	E	F	G	H	N	P	P1	PM	PT	K	KE	KT	S	T	W	Z	
$\textcircled{40}$	40	25	M22XP1.5	65	45	40	20	17	33	28	76	74	30	3/8	M10XP1.25	10	10.5	50	13	32	148		
$\textcircled{50}$	50	30	M26XP1.5	80	56	40	20	17	38	30	85	85	35	3/8	M12XP1.5	10	13	55	13	35	160		
$\textcircled{63}$	50	35	M30XP1.5	90	62	45	20	17	38	30	85	85	35	3/8	M14XP1.5	10	14.5	55	13	41	160		
$\textcircled{80}$	60	40	M30XP1.5	110	80	45	20	20	38	35	107	105	50	1/2	M16XP1.5	10	17	75	13	41	188		
$\textcircled{100}$	80	50	M40XP2.0	131	95	55	25	20	41	37	123.5	120	60	1/2	M18XP1.5	10	19.5	90	15	55	213		
$\textcircled{125}$	90	60	M50XP2.0	162	122	70	35	30	57	47	143	140	70	3/4	M22XP1.5	10	23.5	100	15	65	269		
$\textcircled{150}$	110	80	M70XP2.0	195	144	80	35	30	60	50	135	130	60	3/4	1"-8UNC	15	31	90	20	90	265		
$\textcircled{180}$	135	100	M90XP2.0	235	175	100	35	40	65	55	172	170	70	1	1,1/4"-8UNC	20	39	120	20	110	315		
$\textcircled{125}$	135	100	M90XP2.0	262	193	100	40	40	65	60	175	170	70	1	1,1/4"-8UNC	20	39	120	20	110	325		



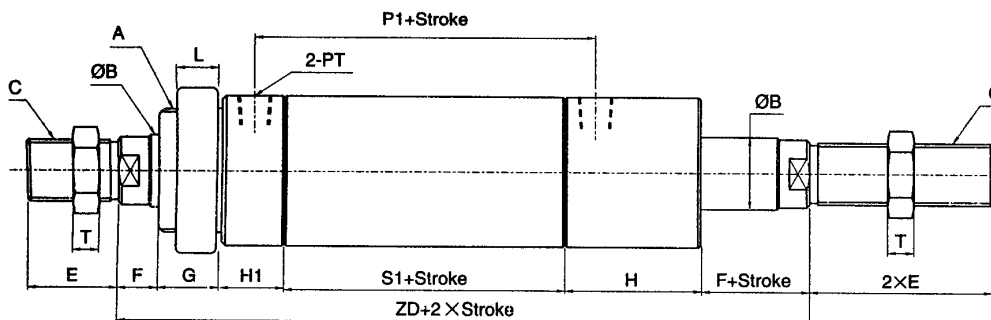
# HYDRAULIC CYLINDER

RO series 140kg/cm<sup>2</sup> round type, end cover welded cylinder.

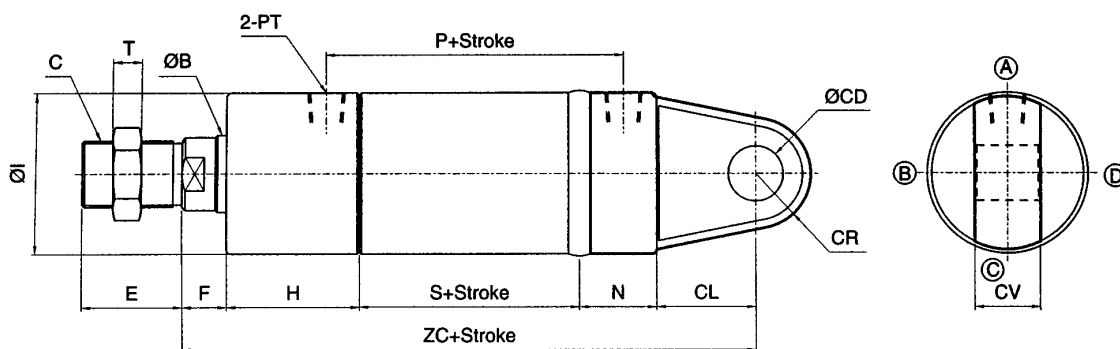
● ROB



● ROD



● ROC



		ROB-ROD TYPE																	CA TYPE									
BORE	SIZE	A	ØB	C	E	F	G	H	H1	ØI	J	L	N	P	P1	PM	PT	S	S1	T	W	Z	ZD	ZC	ØCD	CL	CR	CV
Ø40	M40XP2.0	20	M16XP1.5	28	17	25	50	25	50	55	15	25	86	107	30	3/8	61	82	8	23.5	178	216	178	16	25	18	25	
Ø50	M50XP2.0	25	M22XP1.5	40	20	25	50	25	60	65	15	30	96	112	35	3/8	66	87	13	32	191	227	201	20	35	25	25	
Ø63	M60XP2.0	35	M30XP1.5	45	20	30	60	30	73	80	20	35	105	125	35	3/8	70	95	13	41	215	255	230	25	45	30	30	
Ø80	M70XP2.0	40	M30XP1.5	45	20	30	60	30	95	90	20	40	127.5	150	50	1/2	90	120	13	41	240	280	260	30	50	30	35	
Ø100	M90XP2.0	50	M40XP2.0	55	25	30	60	30	114	110	20	40	147.5	180	60	1/2	110	150	15	55	265	320	295	35	60	35	40	
Ø125	M120XP2.0	60	M50XP2.0	70	30	30	70	40	140	150	20	50	172.5	210	70	3/4	125	170	15	65	305	370	345	50	70	50	55	