

堆高车动力单元 1

FORK LIFT POWER UNITS 1

德力液压 **Deli**

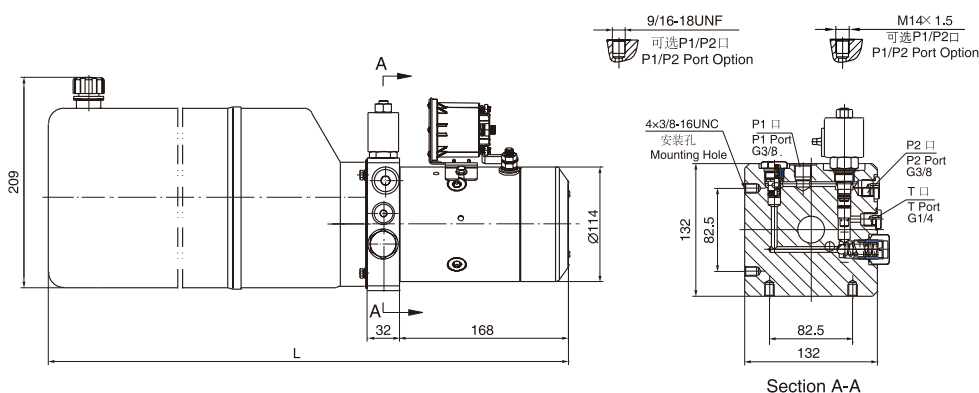
简介 General Description

此液压动力单元由高压齿轮油泵、直流电机、多用集成块、液压阀、油箱等零部件有机结合为一体。系典型的动力上升、重力下降液压回路。启动电机，实现上升，打开电磁卸荷阀，实现下降，下降速度由内置平衡阀自动控制。本系列产品是各种堆高车、小型升降平台等物流设备的理想动力源。

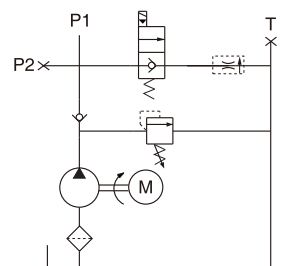
Equipped with a high pressure gear pump, a DC motor, a multi-functional manifold, valves and a tank etc. This power unit features power up gravity down function. Start the motor to lift the machine and the lowering movement is activated by the solenoid valve with the lowering speed controlled by the pressure compensated flow control valve. Products of this series can be widely used in the industry of logistic devices such as fork lift, mini lift table etc.



外形尺寸图 Outline Dimension



系统工作原理 Hydraulic Circuit Diagram



型号规格说明 Model Specifications

Model 型号	Motor Volt 电机电压	Motor Power 电机功率	Nominal Speed 名义转速	Displacement 油泵排量	System Pressure 溢流阀压力	Tank Capacity 油箱容量	Solenoid Valve Volt 电磁阀电压	L(mm)
YBZ5-F1.2A1W2/WUAAD9	12VDC	1.5KW	2500 RPM	1.2ml/r	20MPa	3.5L	12VDC	409
YBZ5-F1.6B1W2/WUAAD9				1.6ml/r		5L		459
YBZ5-F2.1B1W2/WUAAD9				2.1ml/r		5L		459
YBZ5-F2.1B2A2/WUAAD9	24VDC	2KW		2.1ml/r		6L	24VDC	509
YBZ5-F2.5C2A2/WUAAD9				2.5ml/r		8L		579
YBZ5-F2.7C2A2/WUAAD9				2.7ml/r		8L		579

说明：1. 如需不同流量的泵、压力、电机功率等系统参数，请查看液压动力单元型号说明或与销售联系。

2. 如需手动应急放油装置，请在订货时说明。

Remark: 1. Please go to page 3 or consult our sales engineer for the different pump displacement, motor power or tank capacity.

2. The manual override function is available on request.

注意事项 Special Notes

- 此动力单元工作制为S3工作制，不可连续运转，30秒开，270秒停。
- 按装前必须保证油缸、油管、接头等液压元件清洁无任何杂质粘附。
- 液压油粘度应为15~68CST，应清洁无杂质，推荐使用N46号液压油。
- 系统使用第一个100小时后，应更换液压油，以后每3000小时更换一次液压油。
- 本液压动力单元适用于卧式安装。

- The duty of this power unit is S3, i.e., 30 seconds on and 270 seconds off.
- Clean all the hydraulic parts concerned before mounting the power unit.
- Viscosity of the hydraulic oil should be 15~68 cst, which should also be clean and free of impurities. N46 hydraulic oil is recommended.
- Oil changing is required after the initial 100 operation hours, afterwards once every 3000 hours.
- The power unit should be mounted horizontally.

堆高车动力单元 3

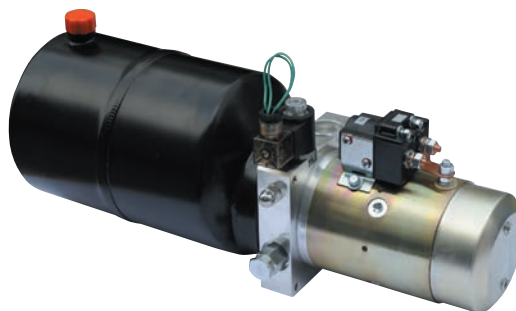
FORK LIFT POWER UNITS 3

德力液压 **Deli**

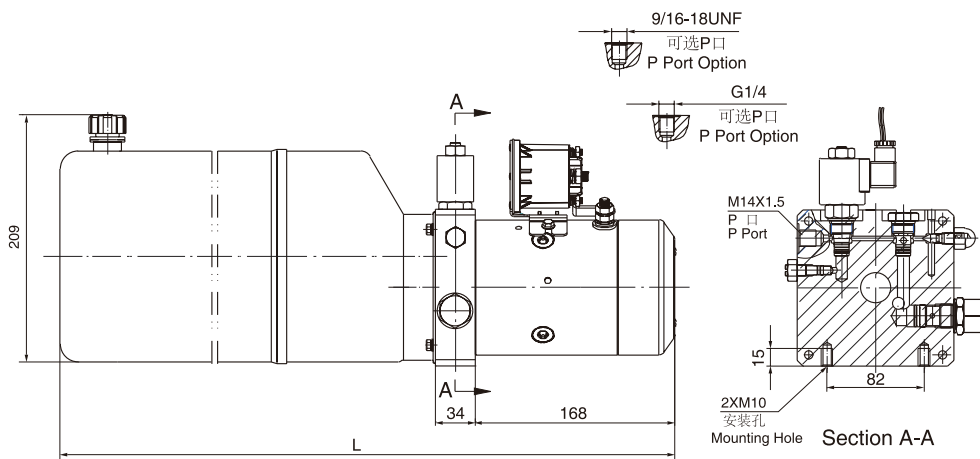
简介 General Description

此液压动力单元由高压齿轮油泵、直流电机、多用集成块、液压阀、油箱等零部件有机结合为一体,广泛应用于堆高车、升降平台。电磁卸荷阀卸荷实现回油,下降速度由可节流阀控制,备用手动卸荷阀用于停电时下降。

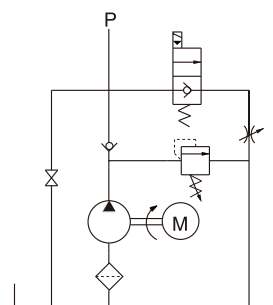
Consisting of high pressure gear pump,DC motor,multi-functional manifold,valves and tank, this power unit has been widely used in the industry of logistic devices such as fork lift, mini lift table and scissors lift. The lowering movement is controlled by the solenoid valve with the lower speed controlled by adjustable throttle valve. The needle release valve is used for lowering movement in case of power failure.



外形尺寸图 Outline Dimension



系统工作原理 Hydraulic Circuit Diagram



型号规格说明 Model Specifications

Model 型号	Motor Volt 电机电压	Motor Power 电机功率	Nominal Speed 名义转速	Displacement 油泵排量	System Pressure 溢流阀压力	Tank Capacity 油箱容量	Solenoid Valve Volt 电磁阀电压	L(mm)
YBZ5-F1.2A1W2/WUAAG9	12VDC	1.5KW	2500RPM	1.2ml/r	20MPa	3.5L	12VDC	411
YBZ5-F1.6B1W2/WUAAG9				1.6ml/r		5L		461
YBZ5-F2.1B1W2/WUAAG9				2.1ml/r		5L		461
YBZ5-F2.1B2A2/WUABG9	24VDC	2KW	2500RPM	2.1ml/r	20MPa	6L	24VDC	511
YBZ5-F2.5C2A2/WUABG9				2.5ml/r		8L		581
YBZ5-F2.7C2A2/WUABG9				2.7ml/r		8L		581

说明: 1. 如需不同流量的泵、压力、电机功率等系统参数, 请查看液压动力单元型号说明或与销售联系。

2. 如需手动应急放油装置, 请在订货时说明。

Remark: 1. Please go to page 3 or consult our sales engineer for the different pump displacement, motor power or tank capacity.

2. The manual override function is available on request.

注意事项 Special Notes

1. 此动力单元为S3工作制, 不可连续运转, 30秒开、270秒停。
2. 按装前必须保证油缸、油管、接头等液压元件清洁无任何杂质粘附。
3. 液压油粘度应为15~68CST, 应清洁无杂质, 推荐使用N46号液压油。
4. 系统使用第一个100小时后, 应更换液压油, 以后每3000小时更换一次液压油。
5. 本液压动力单元适用于卧式安装。

1. The duty of this power unit is S3, i.e., 30 seconds on and 270 seconds off.

2. Clean all the hydraulic parts concerned before mounting the power unit.

3. Viscosity of the hydraulic oil should be 15-68 cst, which should also be clean and free of impurities. N46 hydraulic oil is recommended.

4. Oil changing is required after the initial 100 operation hours, afterwards once every 3000 hours.

5. The power unit should be mounted horizontally.

MOTOR

CENTER BLOCK

PUMP

MOUNTING

OIL TANK

SOLENOID VALVE & COIL

CONTROL VALVE

DIRECTIONAL SANDWICH BLOCK

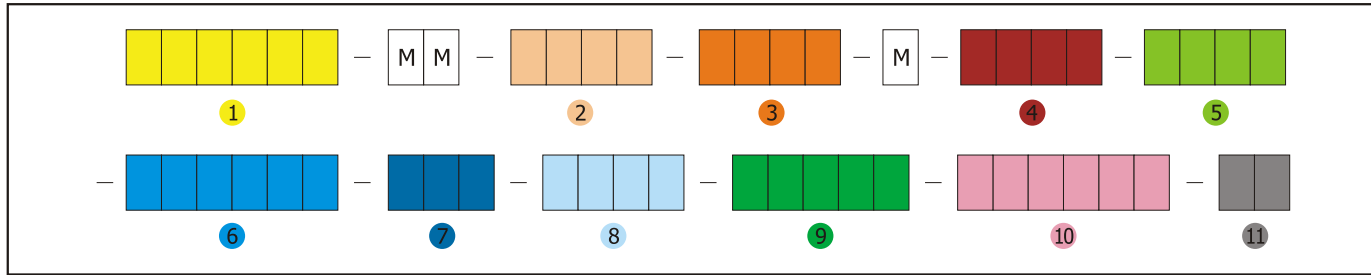
DIRECTIONAL VALVE

SOLENOID SANDWICH VALVE

BOX TYPE POWER PACK

SPECIAL POWER PACK

CODING INDEX



Coding No.	Description	Page
1	Motor [AC-Motor / DC-Motor / Start relay / Flange]	33~68p
2	Center block [M-Center block / X-Center block / C-Center block / Q-Center block / S-Center block / Others]	69~87p
3	Pump [One group / Half group / Bi-direction]	88~89p
4	Mounting 	90p
5	Oil tank [M-tank / X & E-tank / Q-tank / S-tank / Oil gauge / Suction filter / Air breather]	91~99p
6	Solenoid valve & Coil 	100~103p
7	Pressure compensated fixed control valve [F-series / S-series / G-series]	104p
8	Directional sandwich block (for double acting cylinder)..... 	105~107p
9	Directional valve 	108p
10	Solenoid sandwich valve (for single acting cylinder)..... 	109~111p
11	Box type power pack..... 	112~113p
12	Power pack with plastic case 	114p
13	Pump & Motor unit with plastic case..... 	119p
14	Hoist 	122~123p
15	Pump & Motor unit 	131p
16	Pump & Motor unit block 	132p

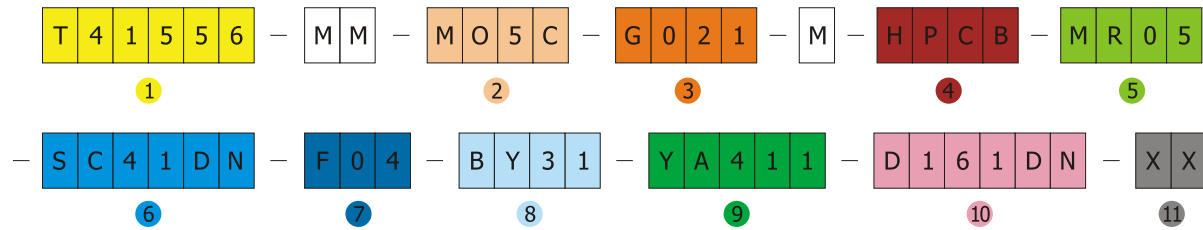
Coding No.	Description	Page
17	<i>Others</i> [Lift valve / Solenoid valve / Line type burst valve / Line type pressure compensated adjustable throttle valve Line type flow control valve / Flow divider / Hand pump / Suction & Return pipe]	134~140p
18	<i>Submersible power pack</i>	141p
19	<i>Dock leveler power pack</i>	143p
20	<i>Wheel chair lift power pack</i>	145p
21	<i>Belt-driven power pack</i>	147p

** No.1 ~ No.11 : Code for building power pack

** No. 12 ~ No.22 : Code for special power pack & accessories

** , : Maker

HOW TO ORDER



AC - Power pack ordering code example

DC - Power pack ordering code example

1 Motor : AC 3phase - 230/400V - 4pole - 1.5kW - 50/60Hz

DC 24V - 2.2kW - Start relay 24V, 150A

2 Center block : 'MO' Center block - Diagram No.5 - Relief valve (setting pressure 180bar)

'MO' Center block - Diagram No.1 - Relief valve (setting pressure 180bar)

3 Pump : Gear pump one group - 2.1cc/rev

Gear pump one group - 2.1cc/rev

4 Mounting : Horizontal mounting - Air breather position is to P,T ports. - Terminal box position is to cartridge- With bracket

Horizontal mounting - Air breather position is to P,T ports. Start relay position is to cartridge - Without bracket

5 Oil tank : Steel material - 'M' center block & Round type - Capacity 5ℓ

Steel material - 'M' center bolck & Square type - Capacity 6ℓ

6 Built-in : Solenoid valve (normally closed) - AC 220V - '01' Cavity - Din connector

Blank

7 Pressure compensated fixed flow control valve : 4 ℓ/min

Blank

8 Directional sandwich block (for double acting cylinder) : Block for Cetop 3 valve

Block for Cetop 3 valve - Quantity 2pcs

9 Directional valve : 'YA' diagram - AC 220V - CETOP 3

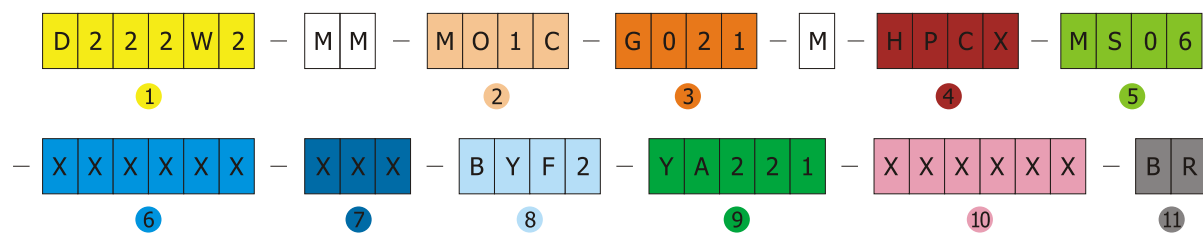
'YA' diagram - DC 24V - CETOP 3 - Quantity 2pcs

10 Solenoid sandwich valve (for single acting cylinder) : One single acting cylinder - AC 220V - Din connector

Blank

11 Unit Box : Blank

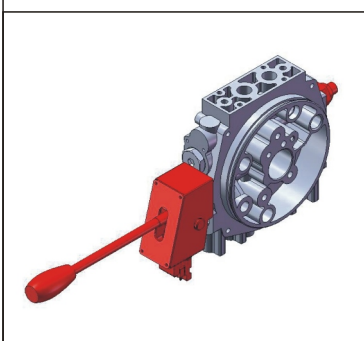
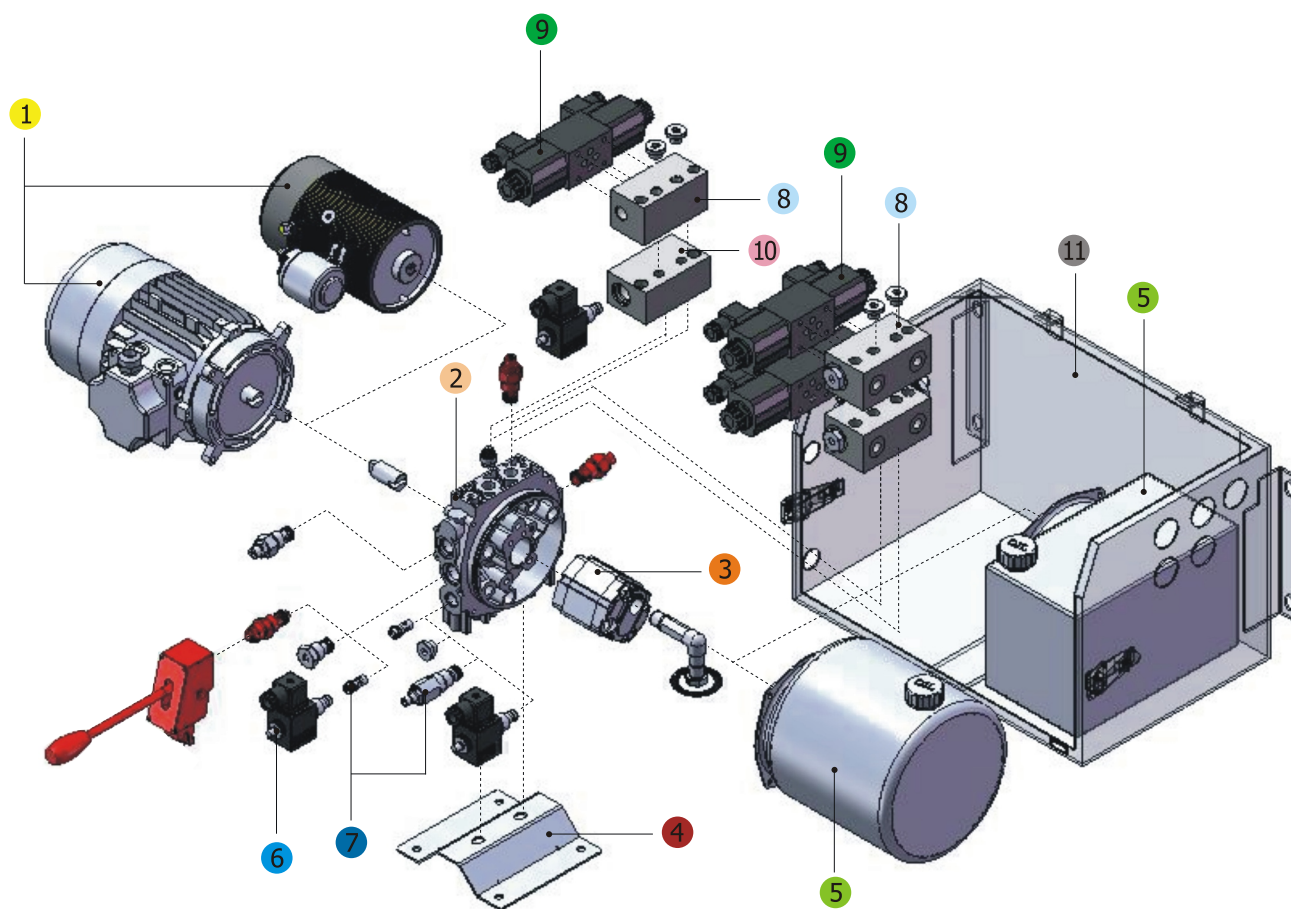
Steel box - 'BR' type



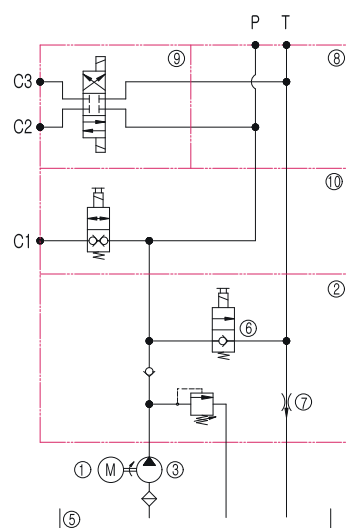
Hydraulic oil specification

Type : Mineral based hydraulic oil (HM or HV)

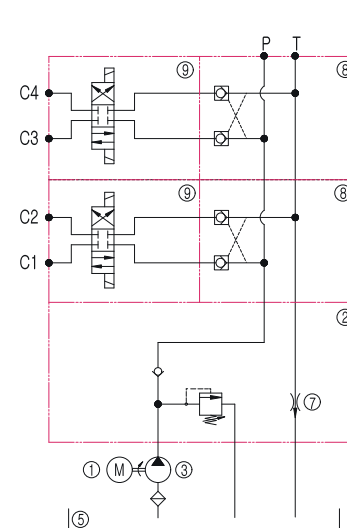
Viscosity : ISO VG22 to 46 (Ambient > 0°C) ISO VG15 (Ambient < 0°C)



One single acting & one double acting



Two double acting



1 - M **DC-MOTOR**
A/ B/ C / D Maker

A	CODE	XXXXXX		D		M		L			
	TYPE	Without motor		Non-ventilation direct current motor		Bi-directional DC permanent magnetic motor		Ventilation direct current motor			
B	CODE	1		A		2		B		4	
	FLANGE	NO		YES		NO		YES		NO	
	VOLTAGE (V)	12				24				48	
	APPLICABLE POWER	200W, 500W, 800W, 1200W, 1600W, 2400W				200W, 500W, 800W, 1200W, 2200W, 3000W				Only 2000W	
C	CODE	02	05	08	12	16	20	22	24	30	
	POWER(W)	200	500	800	1200	1600	2000	2200	2400	3000	
D	START RELAY	Please refer to page 59 for start relay code									

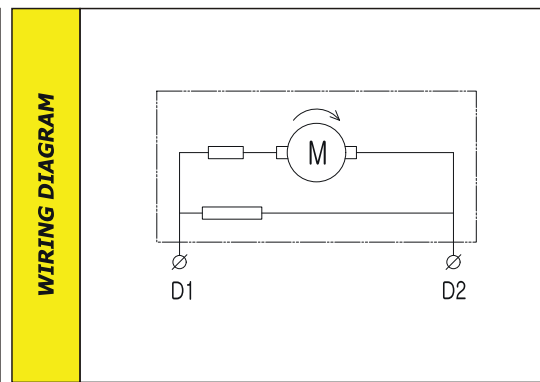
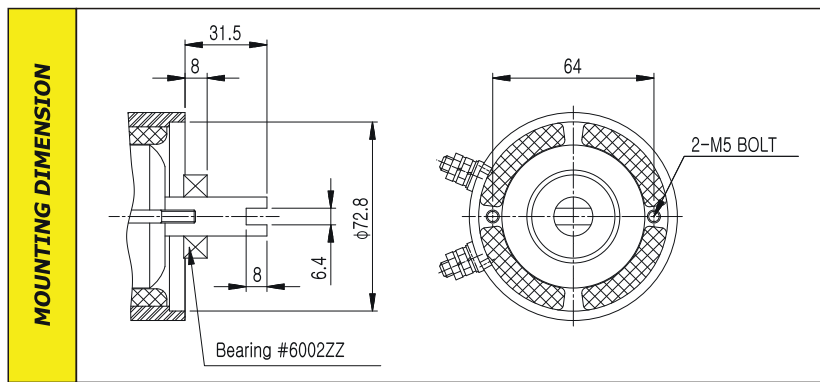
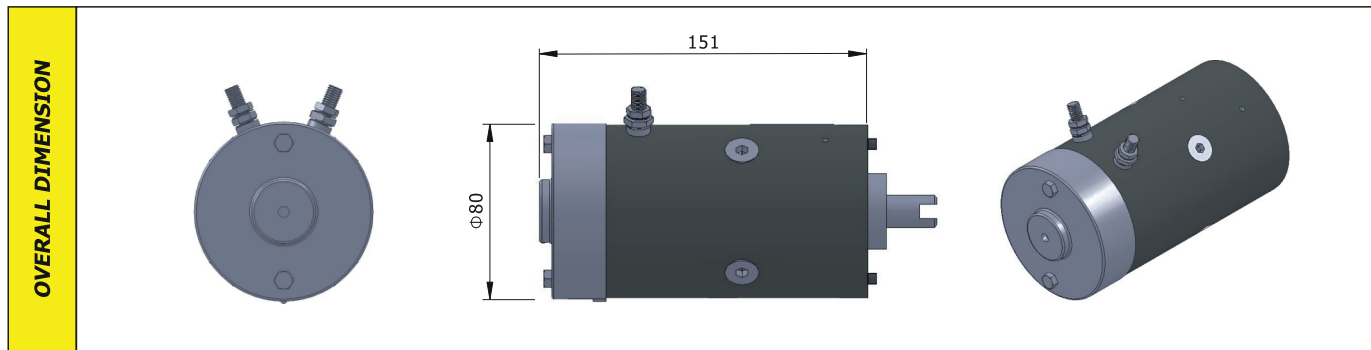
Note. Above B section (Flange or Nonflange) is related to only 500W or 800W motors.

DC - Motor code & Information						
CODE	VOLTAGE (V)	POWER (W)	INSULATION CLASS	ROTATION	FLANGE	PAGE
D102	12	200	F	→	NO	
D202	24	200	F	→	NO	
D105	12	500	F	→	NO	
D205	24	500	F	→	NO	
DA05	12	500	F	→	YES	
DB05	24	500	F	→	YES	
D108	12	800	F	→	NO	
D208	24	800	F	→	NO	
M108	12	800	F	↔	NO	
M208	24	800	F	↔	NO	
DA08	12	800	F	→	YES	
DB08	24	800	F	→	YES	
MA08	12	800	F	↔	YES	
MB08	24	800	F	↔	YES	
D112	12	1200	F	→	NO	
D212	24	1200	F	→	NO	
D116	12	1600	F	→	NO	
D120	12	2000	F	→	NO	
D222	24	2200	F	→	NO	
D420	48	2000	F	→	NO	
D124	12	2400	F	→	NO	
D230	24	3000	F	→	NO	
L116	12	1600	F	→	NO	
L222	24	2200	F	→	NO	
L230	24	3000	F	→	NO	

1 D 1 0 2 X X - M
 A / B / C / D Maker

DC-MOTOR

TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	D102		SH series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
12	200	70	1.8min-7%	F	IP 65	2	C.W. →	3.4



PERFORMANCE CURVE

Please contact Hydro-Tek for technical data.

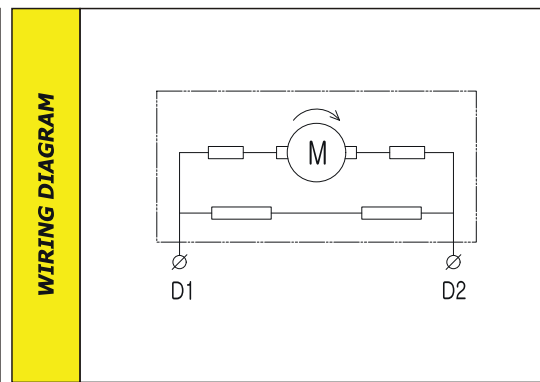
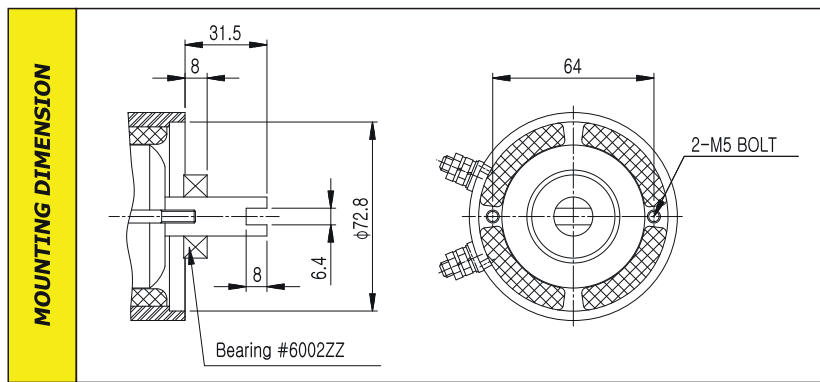
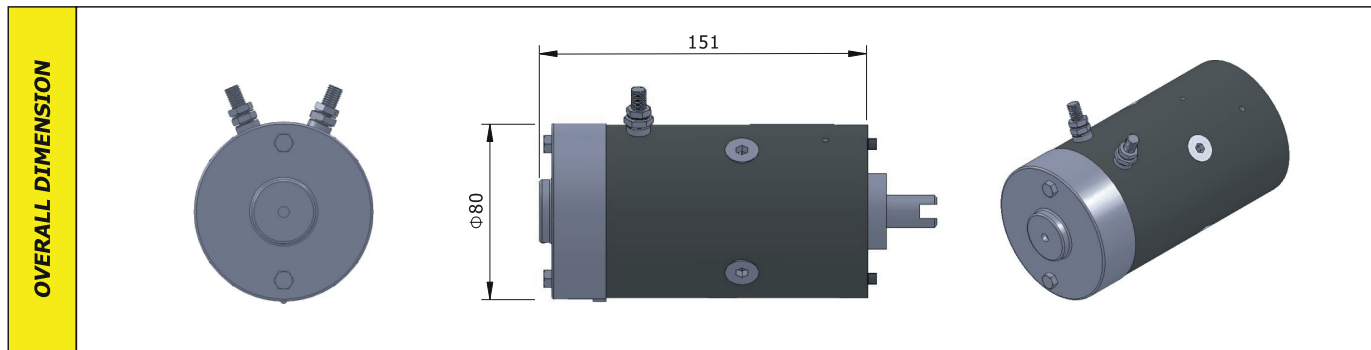
DC-MOTOR

DC-MOTOR

1 **D** **2** **0** **2** X X - M
 A / B / C / D Maker

DC-MOTOR

TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	D202		SH series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
24	200	35	1.8min-7%ED	F	IP 65	2	C.W. →	3.4



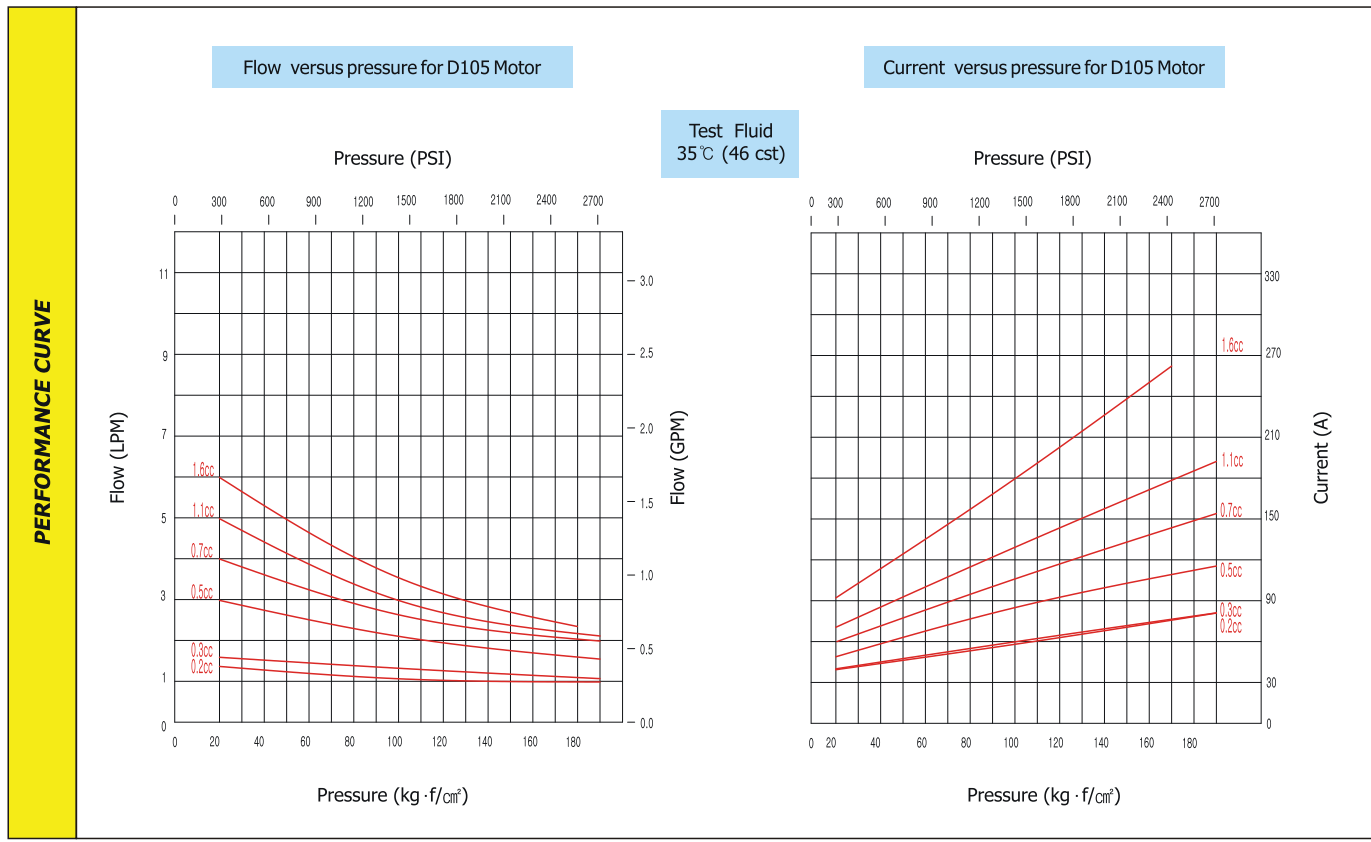
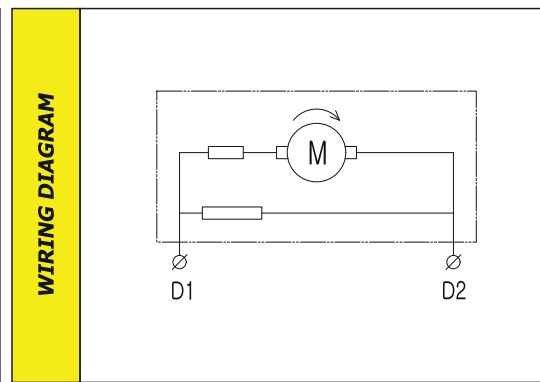
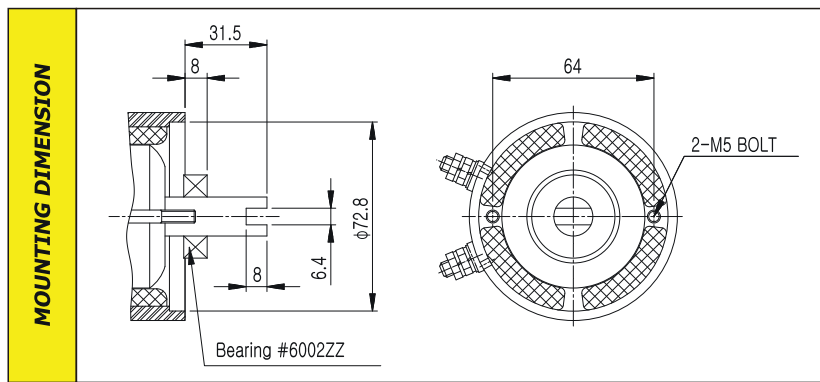
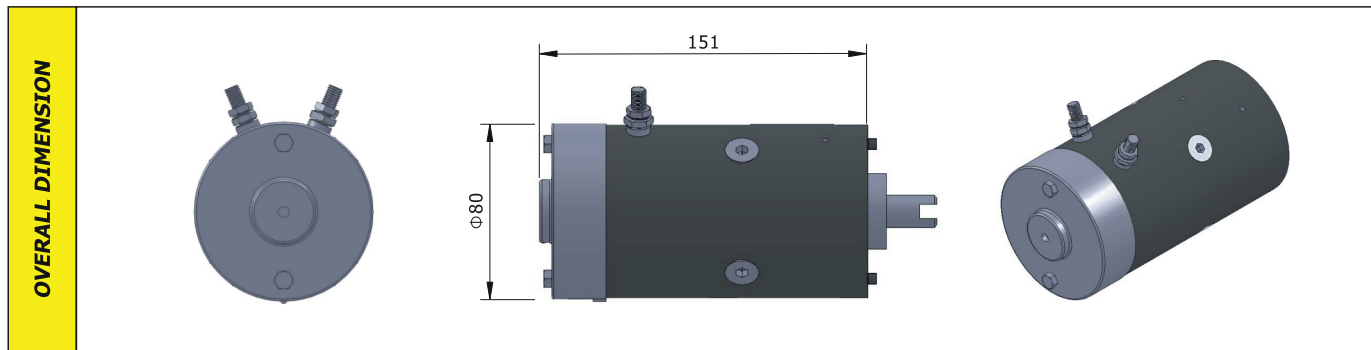
PERFORMANCE CURVE

Please contact Hydro-Tek for technical data.

1 **D 1 0 5** X X - M
 A / B / C / D Maker

DC-MOTOR

TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	D105		SH series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
12	500	70	1.8min-7%ED	F	IP 65	2	C.W. →	3.4

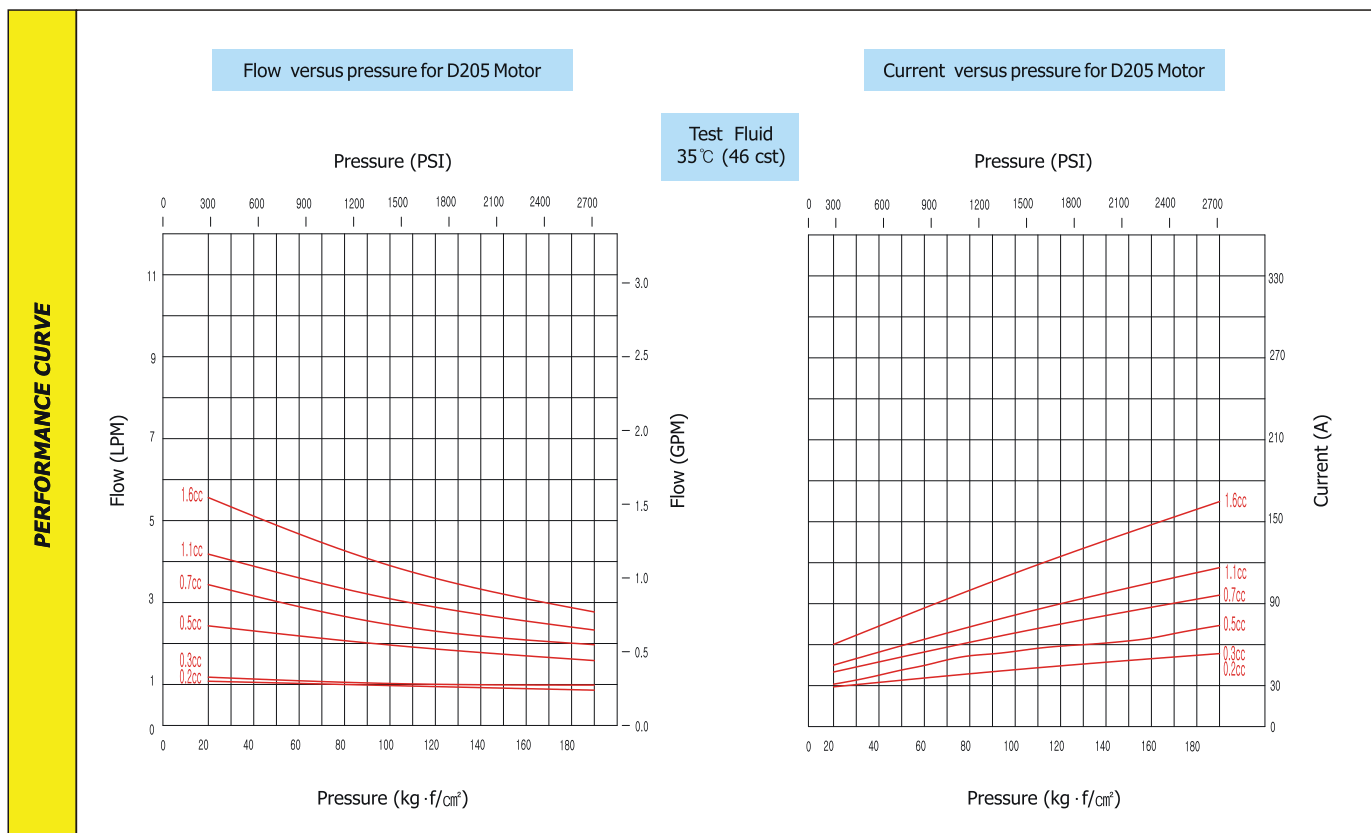
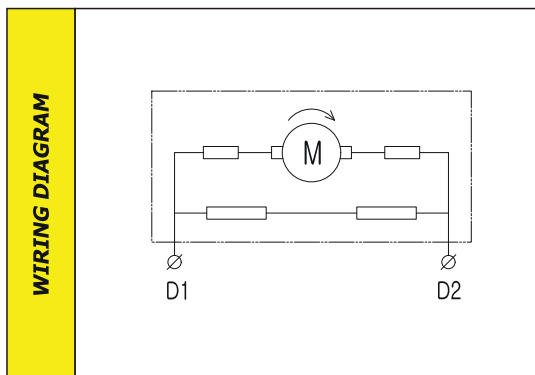
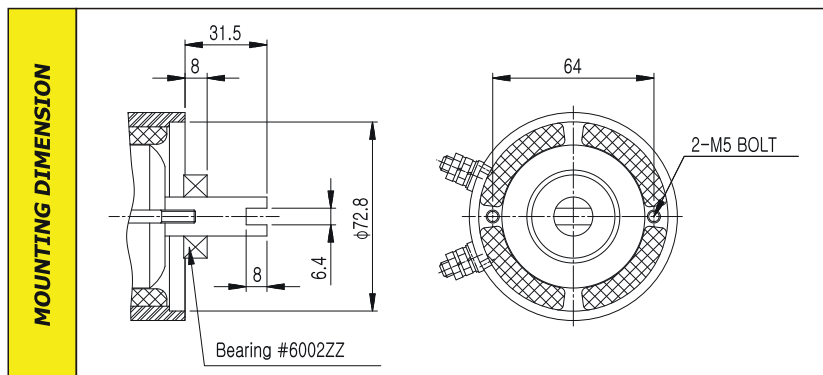
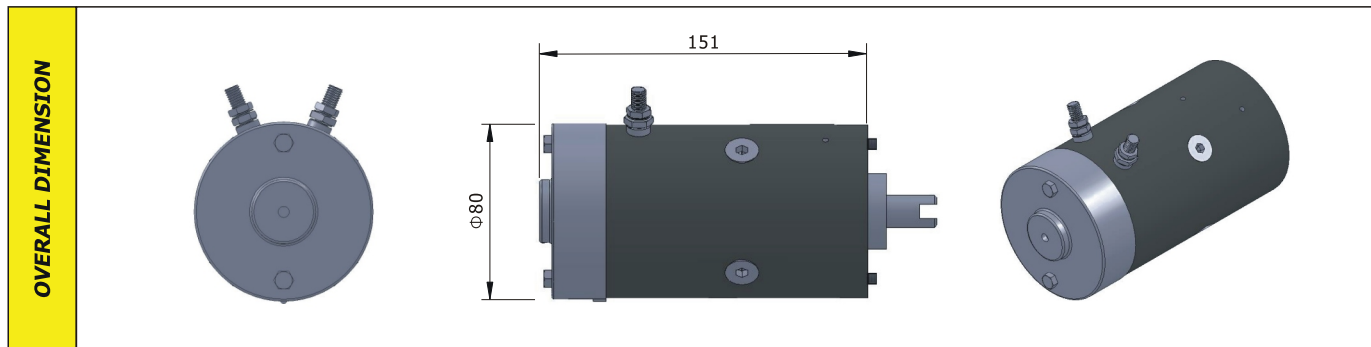


DC-MOTOR

1 **D 2 0 5** X X - M
 A / B / C / D Maker

DC-MOTOR

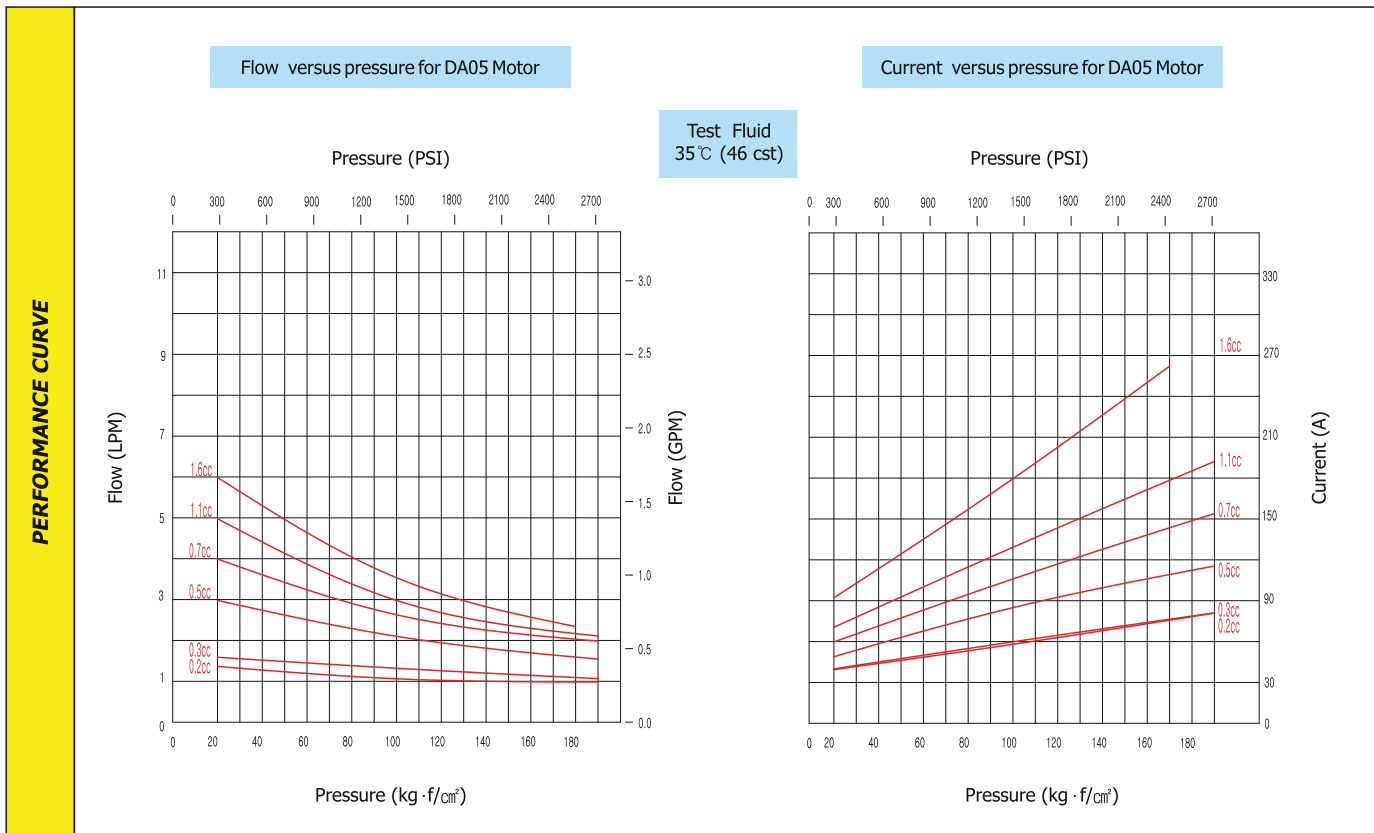
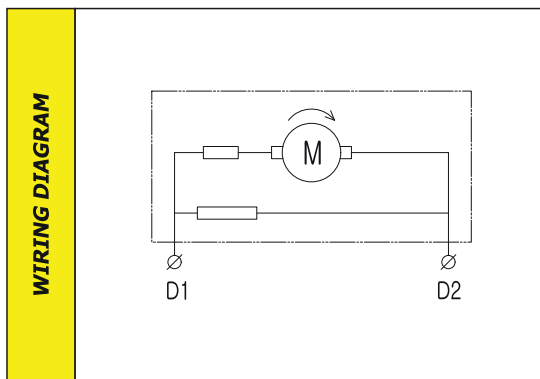
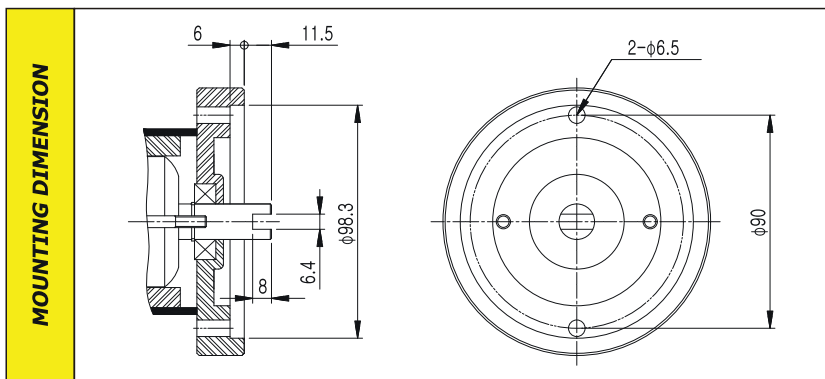
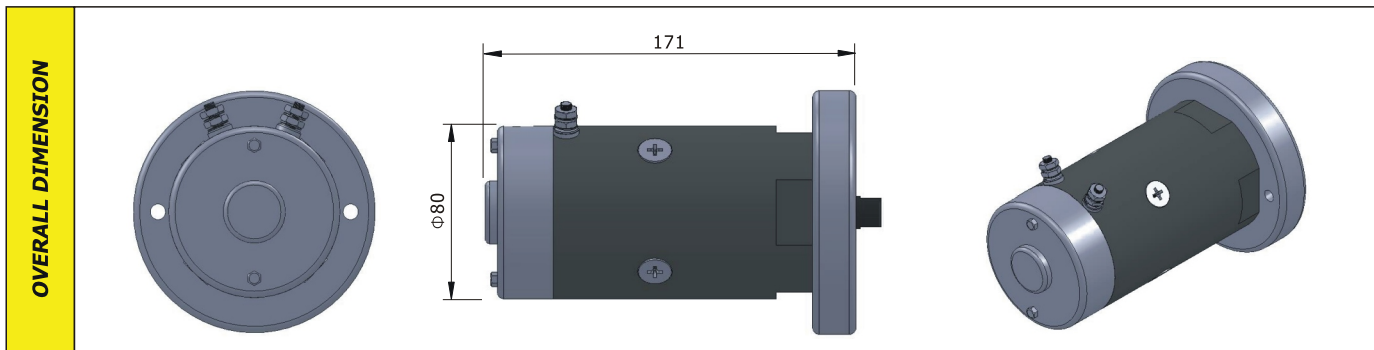
TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	D205		SH series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
24	500	35	1.8min-7%ED	F	IP 65	2	C.W. →	3.4



1 **D A 0 5 X X** - M
 A / B / C / D Maker

DC-MOTOR

TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	DA05		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
12	500	70	1.8min-7%ED	F	IP 65	2	C.W. →	3.7

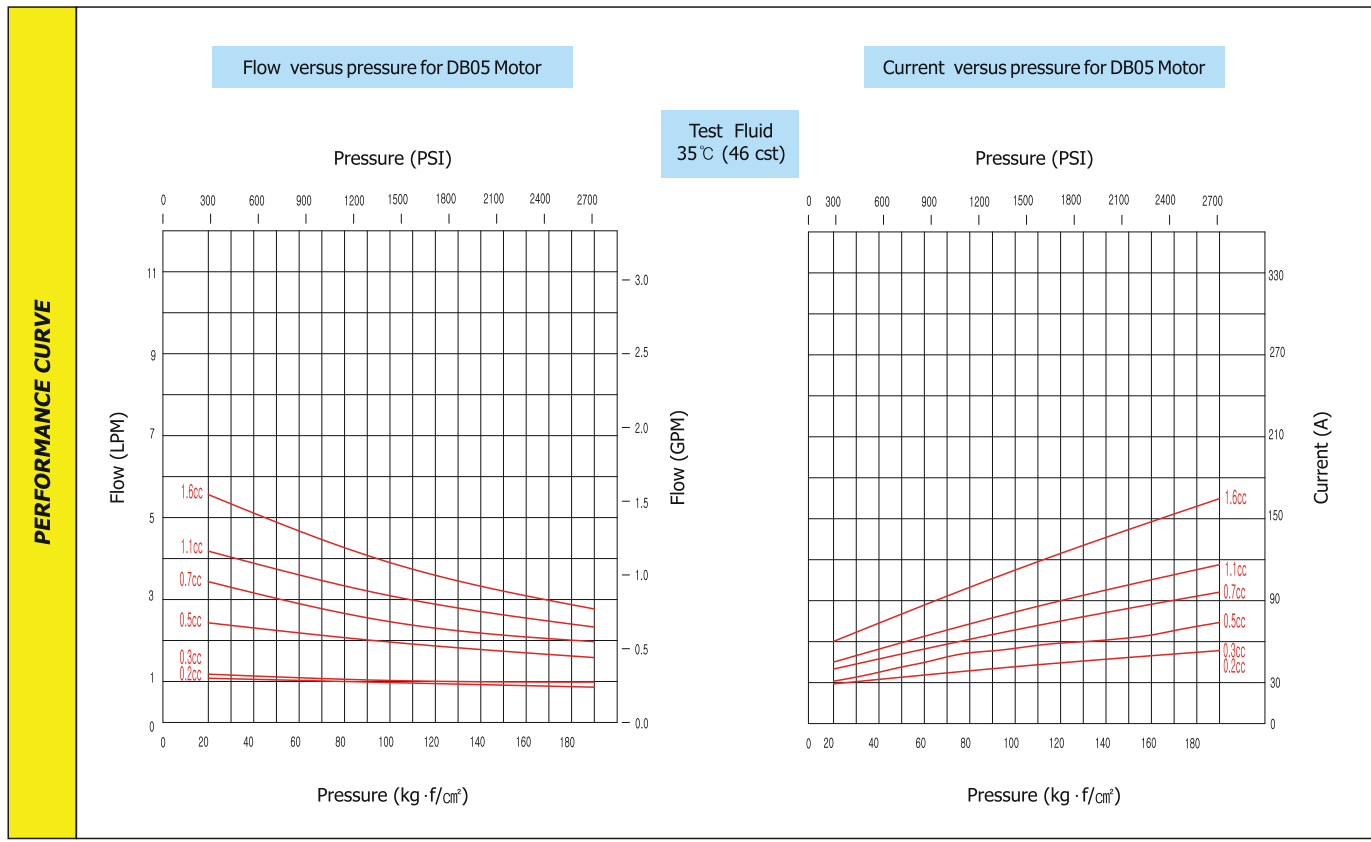
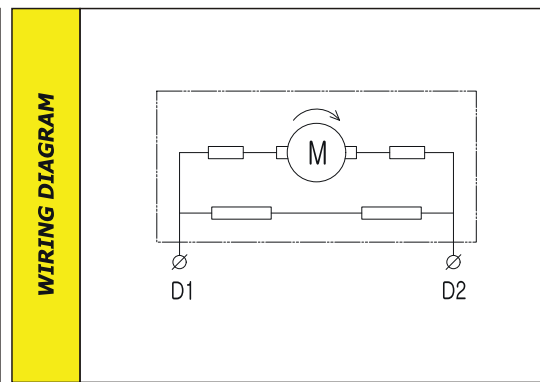
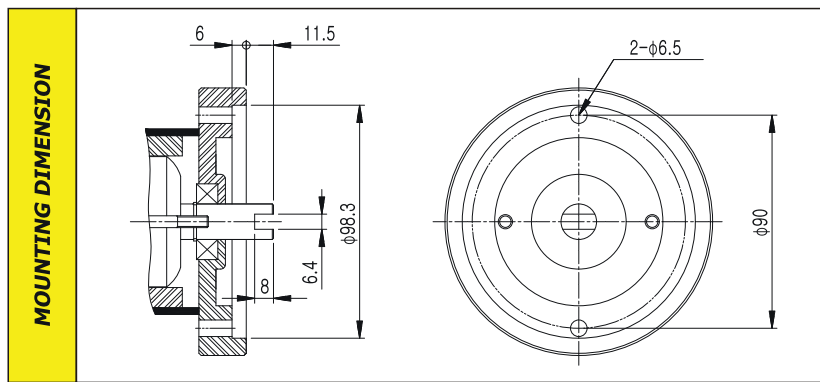
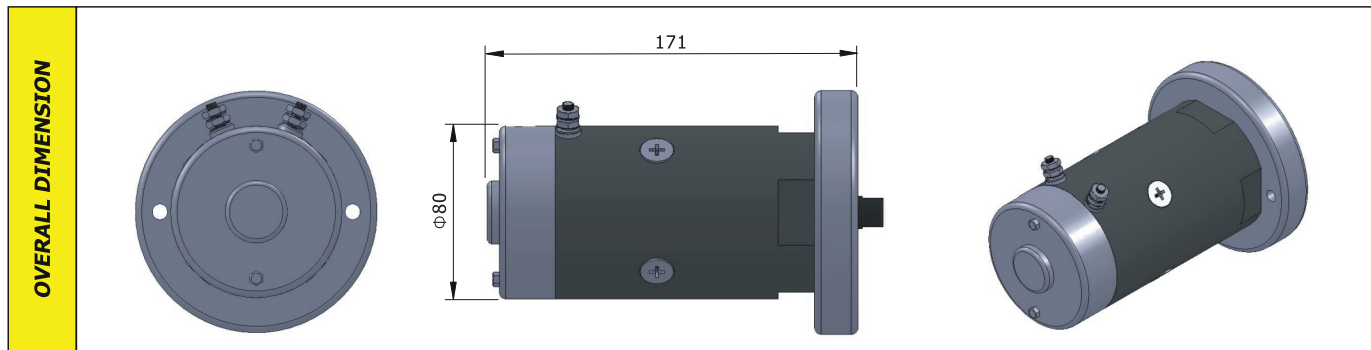


DC-MOTOR

1 **D B 0 5** X X - M
A / B / C / D Maker

DC-MOTOR

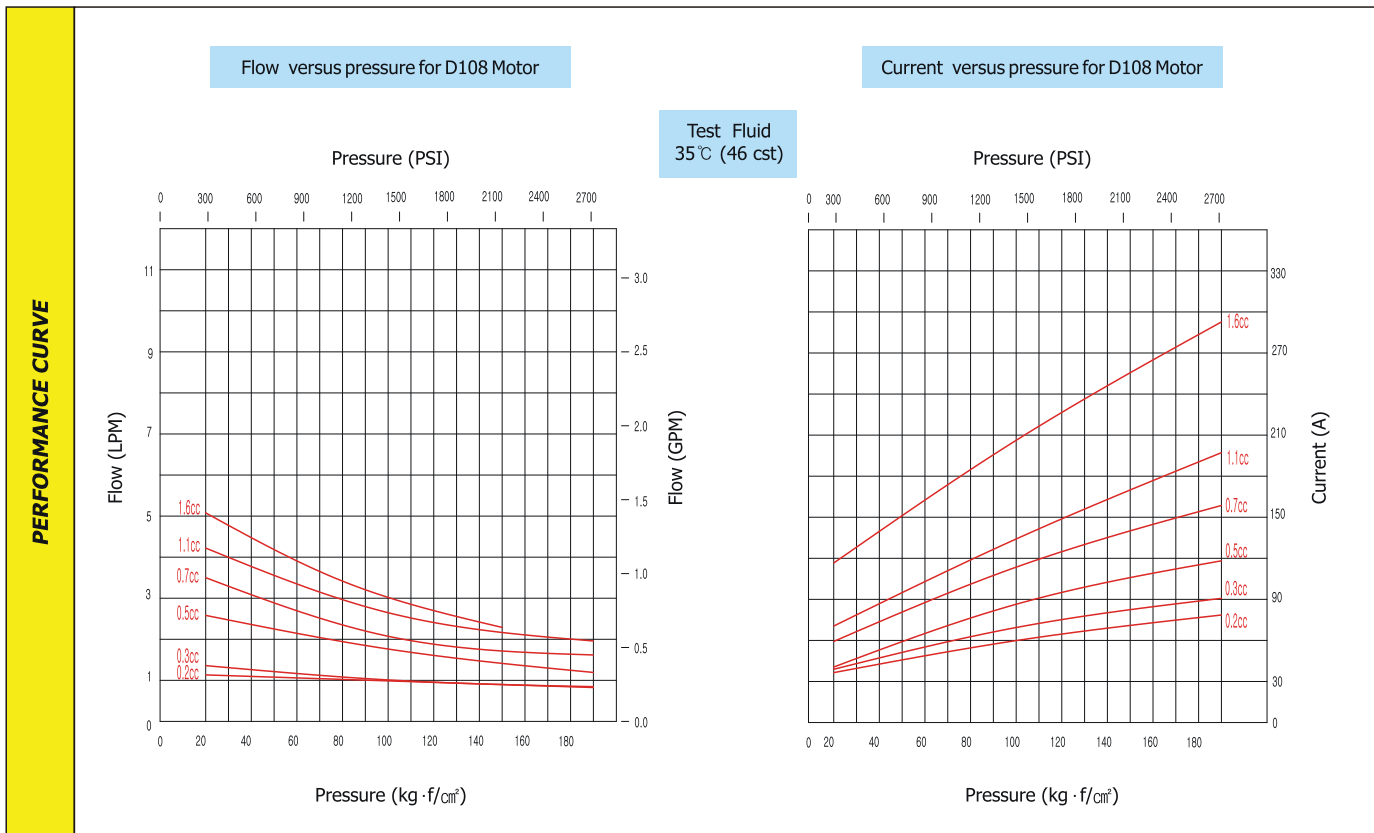
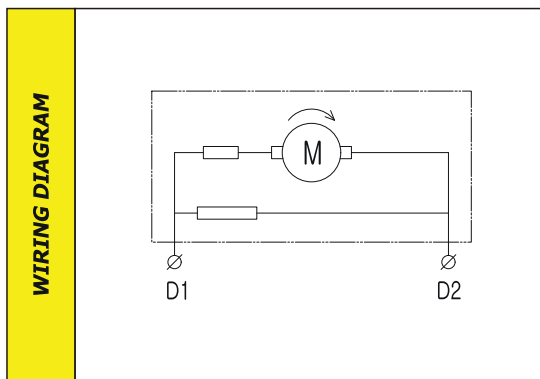
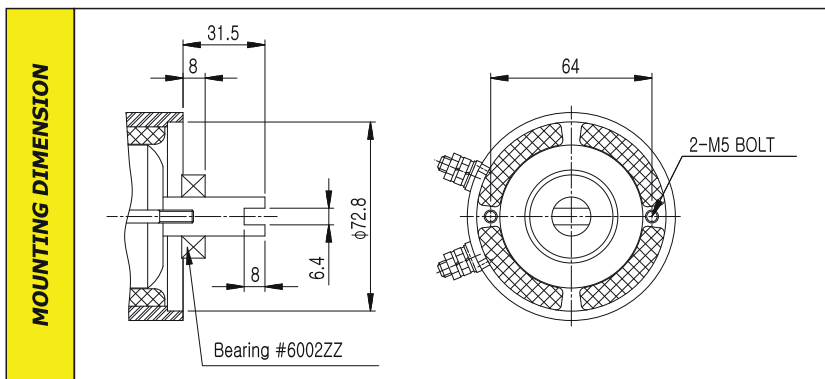
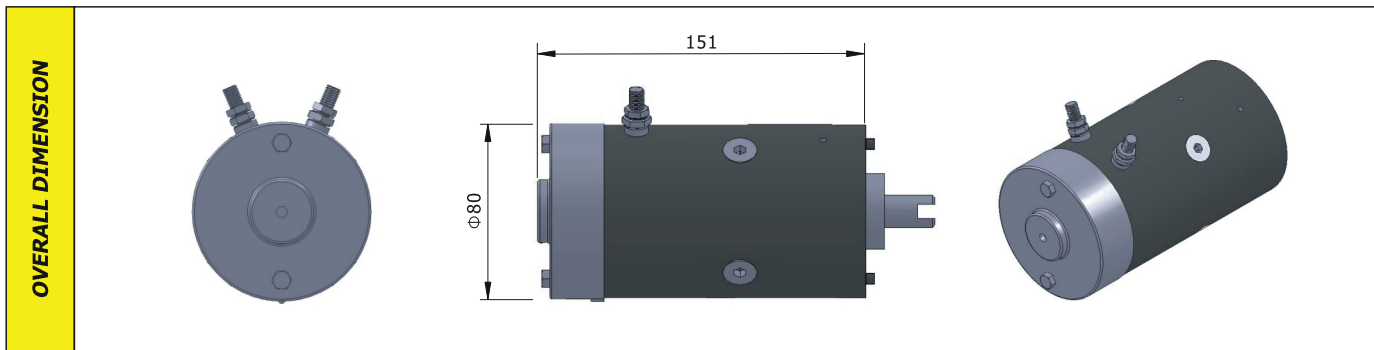
TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	DB05		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
24	500	35	1.8min-7%ED	F	IP 65	2	C.W. →	3.7



1 **D 1 0 8** X X - M
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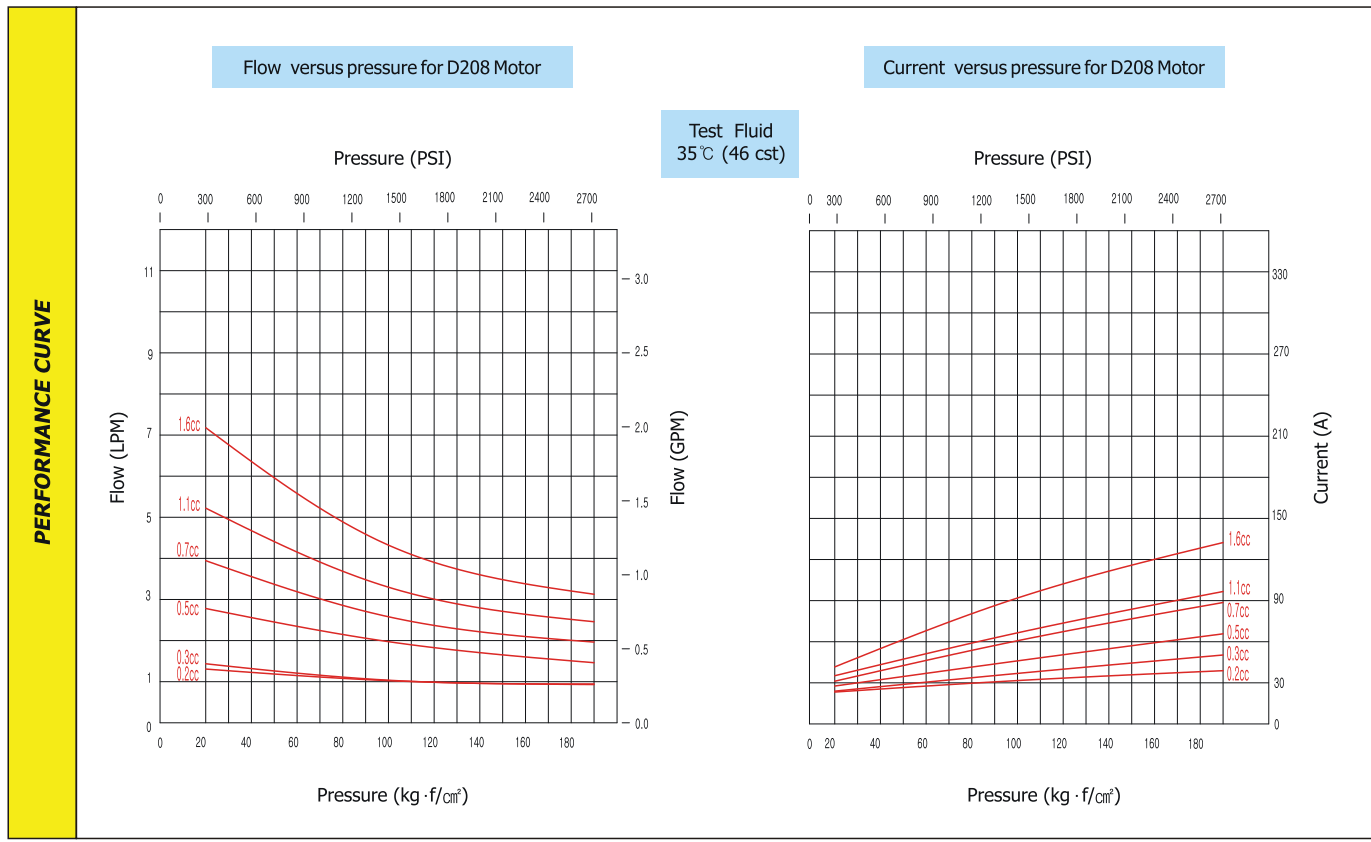
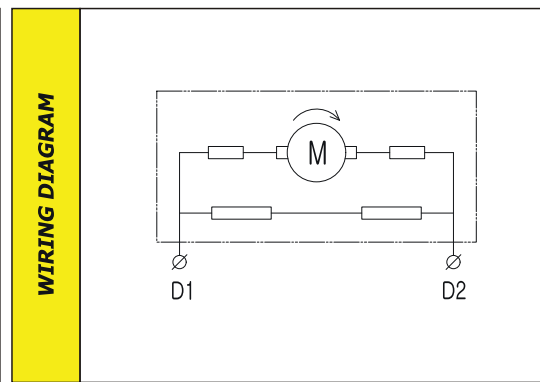
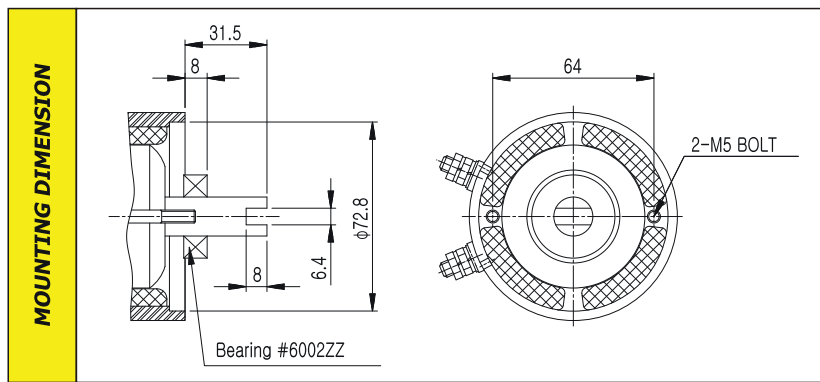
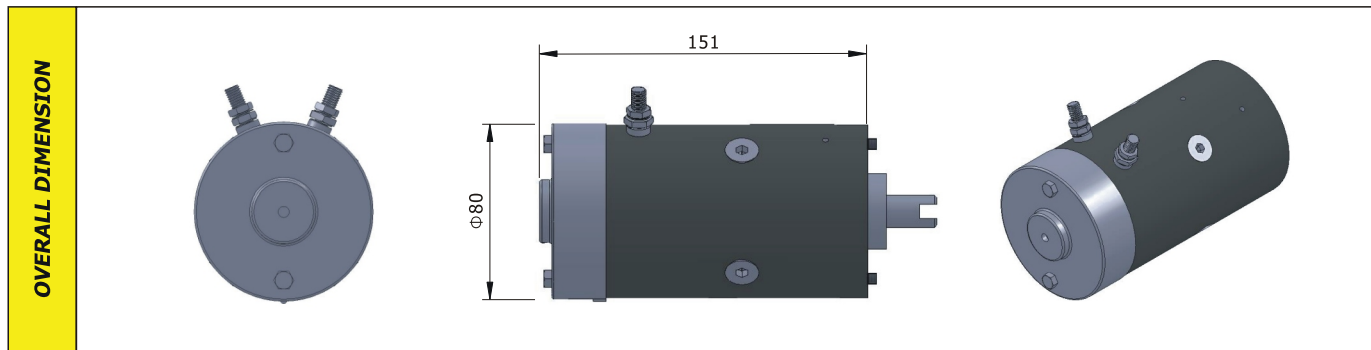
TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	D108		SH series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
12	800	120	1.8min-7%ED	F	IP 65	2	C.W. →	3.4



1 **D 2 0 8** X X - M
 A / B / C / D Maker

DC-MOTOR

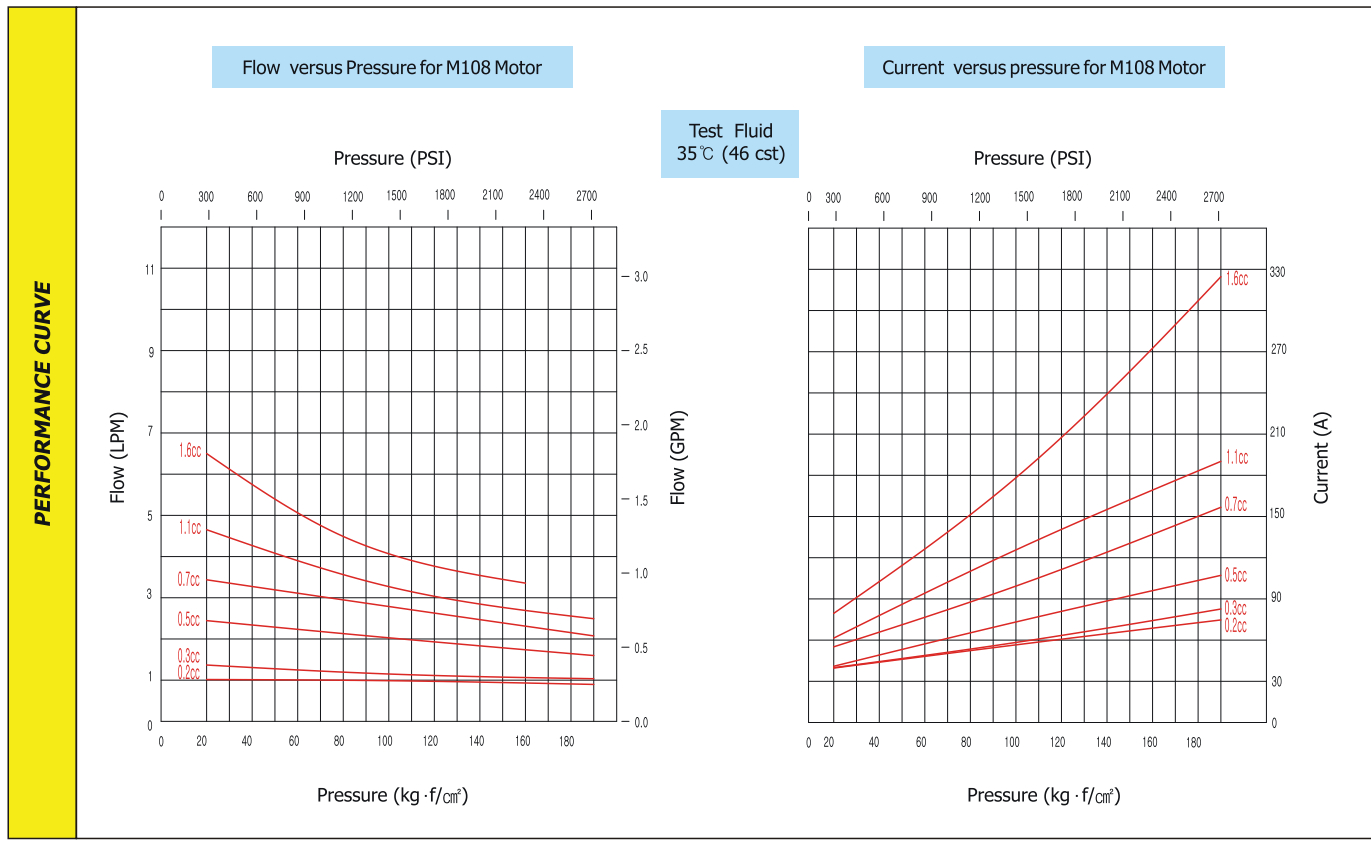
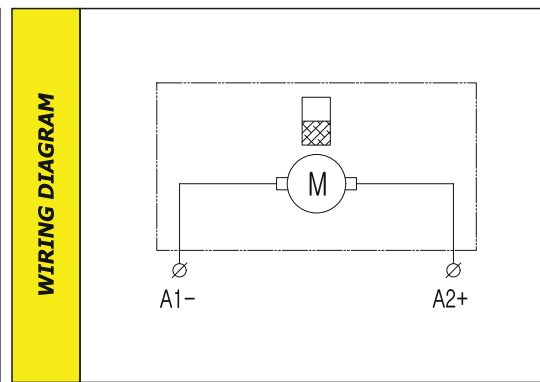
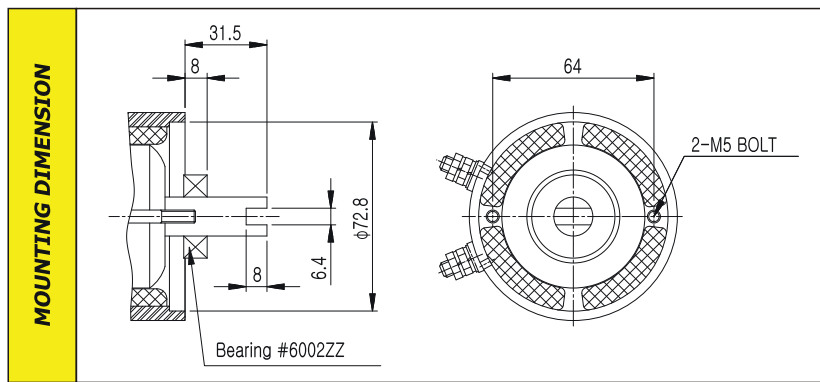
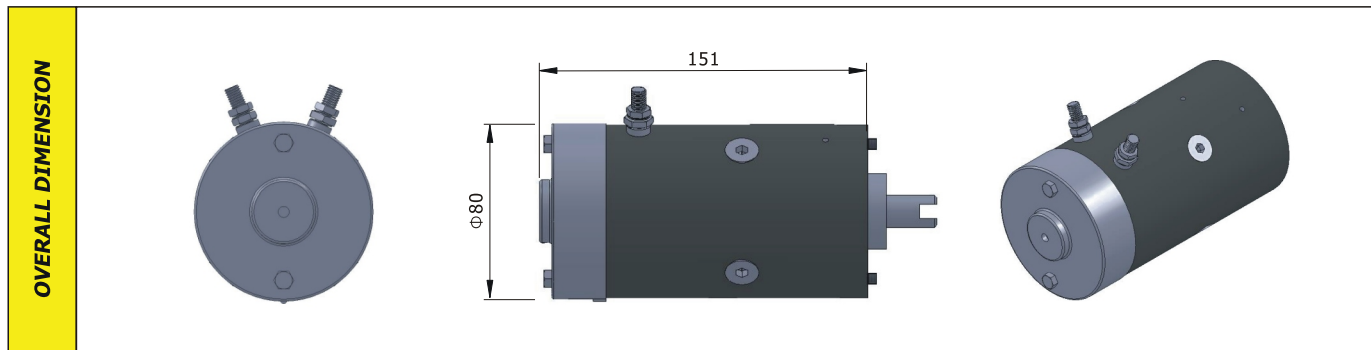
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	D208		SH series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
24	800	60	1.8min-7%ED	F	IP 65	2	C.W. →	3.4



1 M 1 0 8 X X - M
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TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	M108		SH, SD series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
12	800	120	1.1min-10%ED	F	IP 65	2	↔	2.9

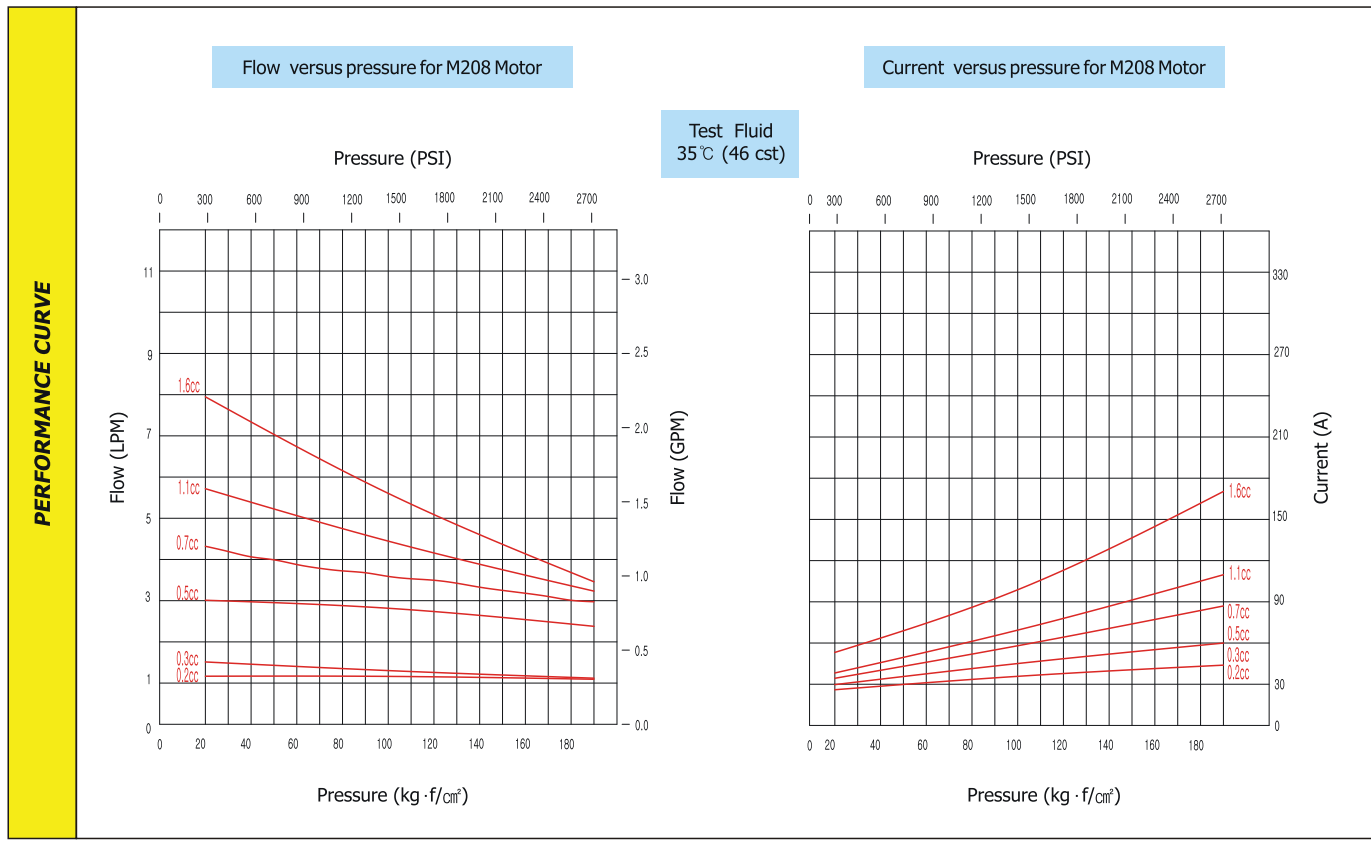
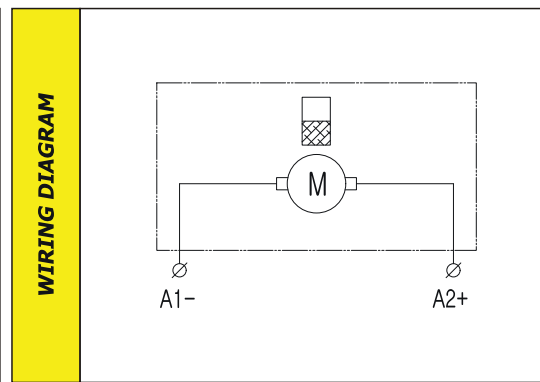
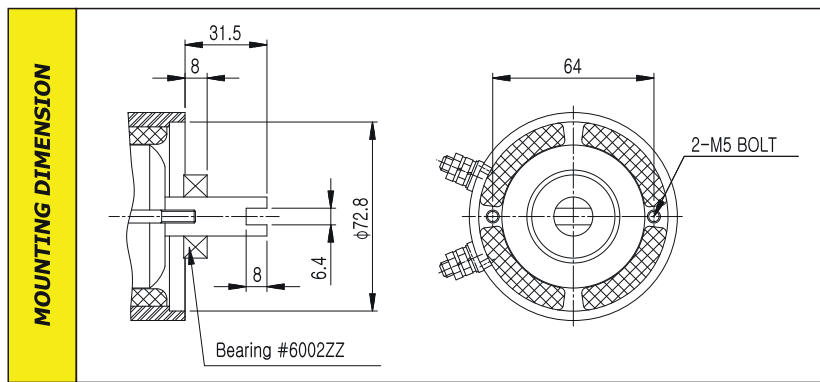
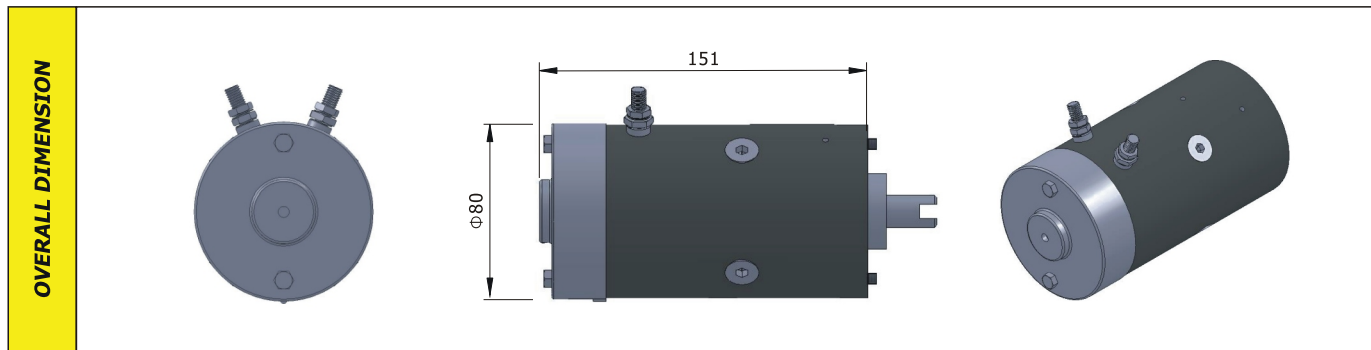


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1 M 2 0 8 X X - M
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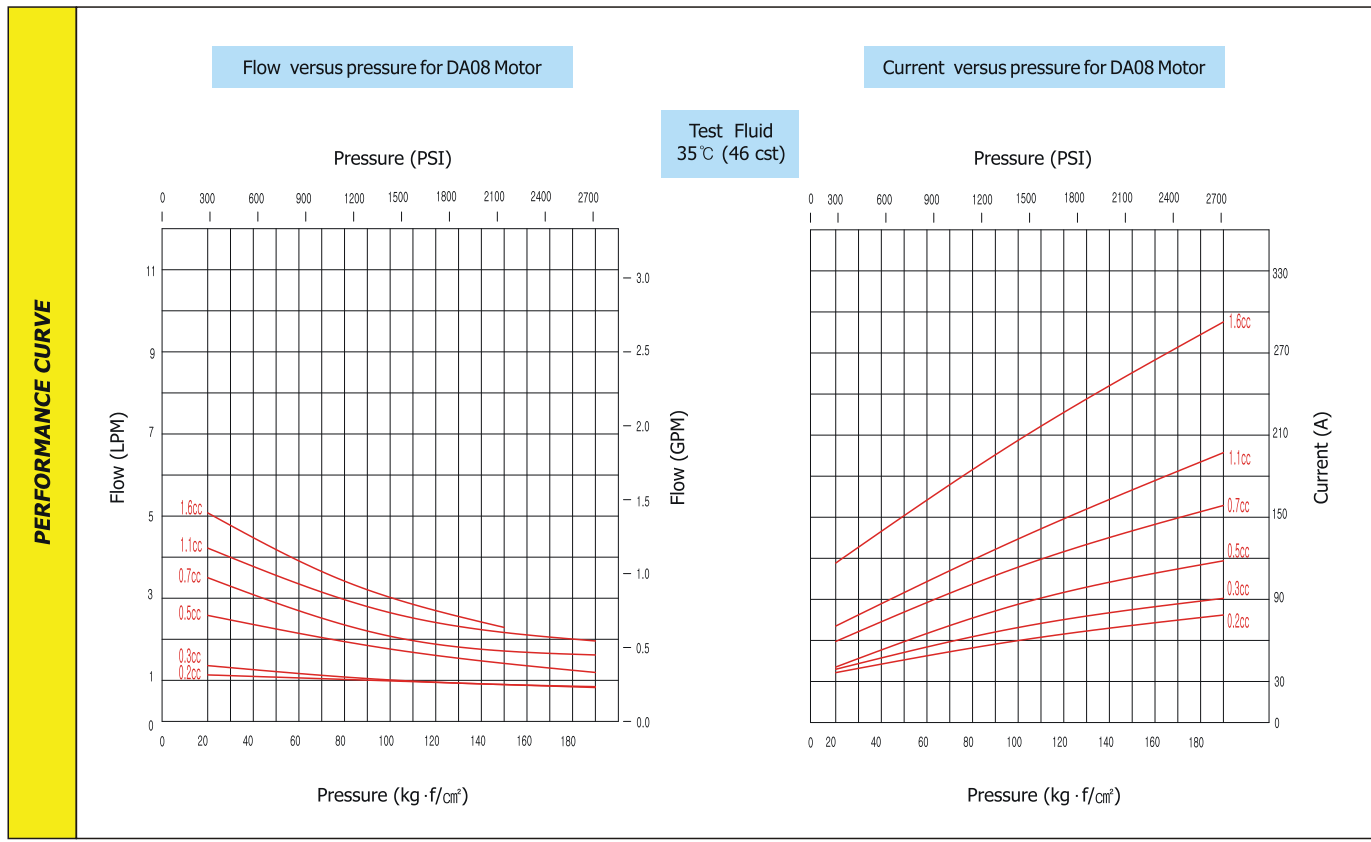
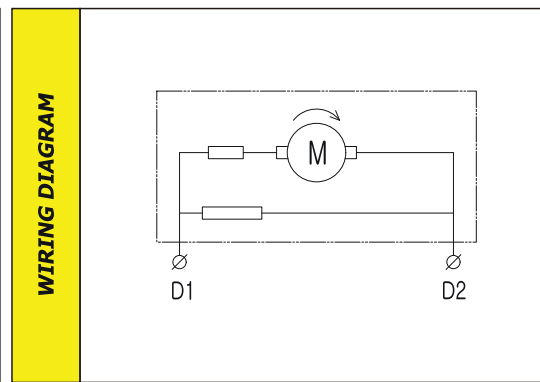
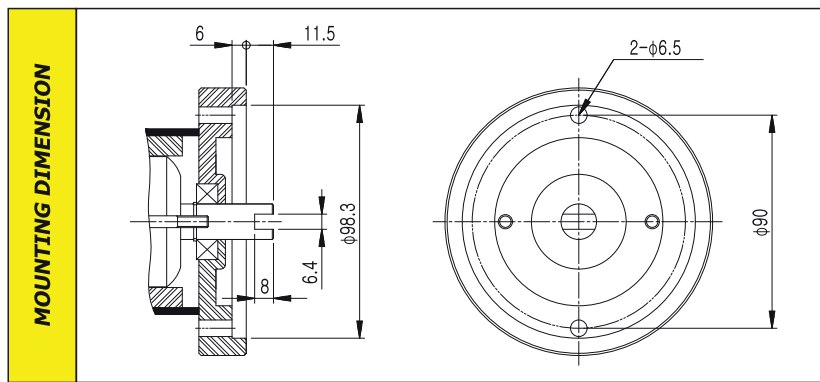
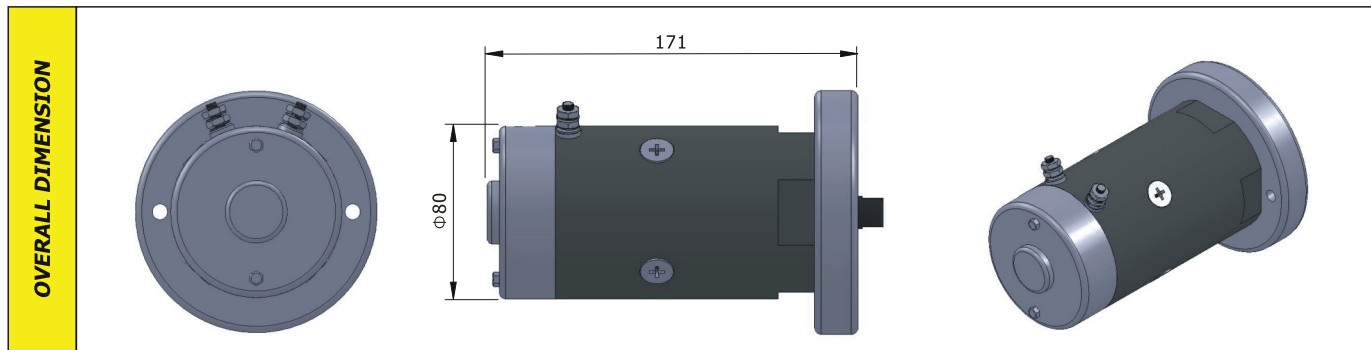
TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	M208		SH, SD series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
24	800	60	1.1min-10%ED	F	IP 65	2	↔	2.9



1 **D A 0 8** X X - M
 A / B / C / D Maker

DC-MOTOR

TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	DA08		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
12	800	120	1.8min-7%ED	F	IP 65	2	C.W. →	3.7

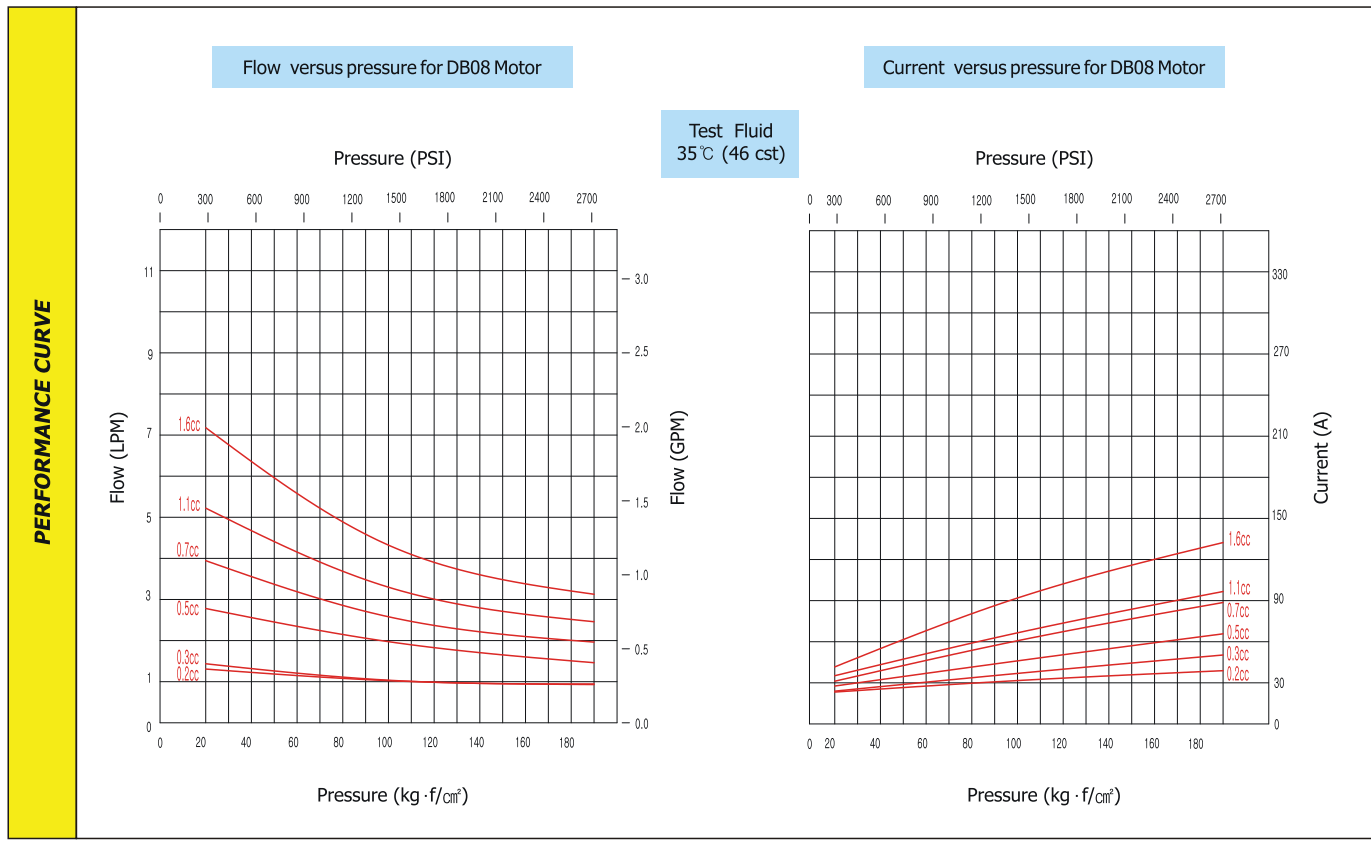
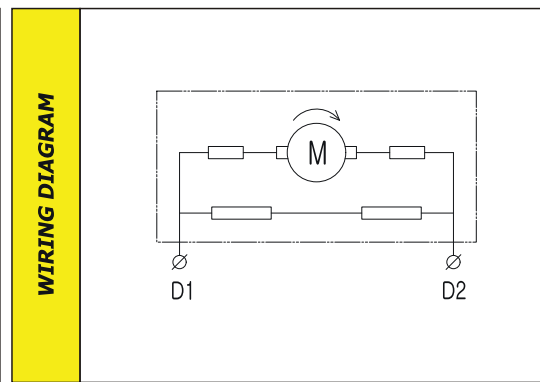
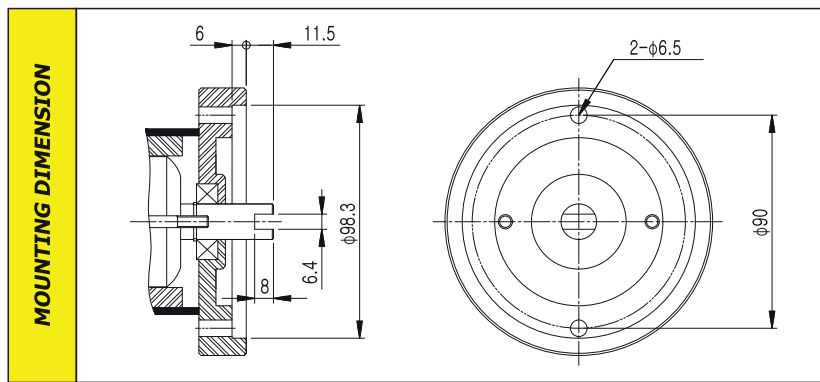
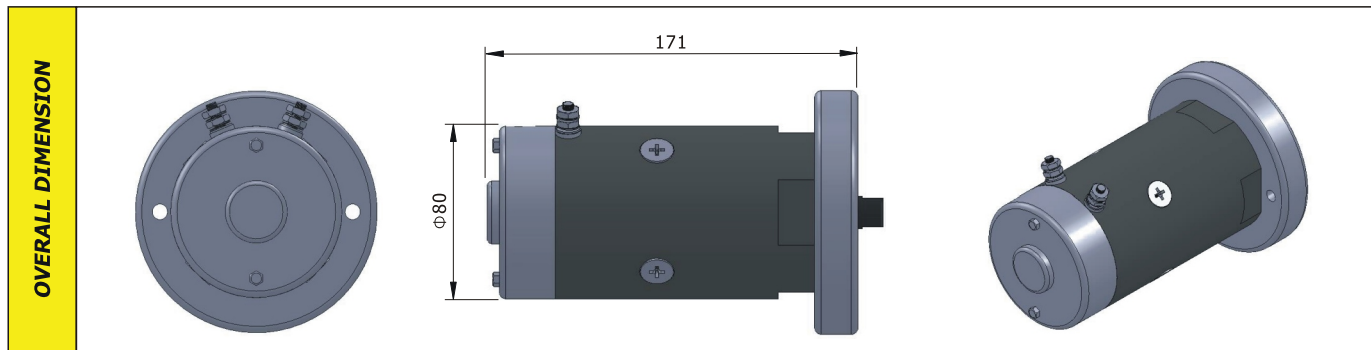


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1 **D B 0 8** X X - M
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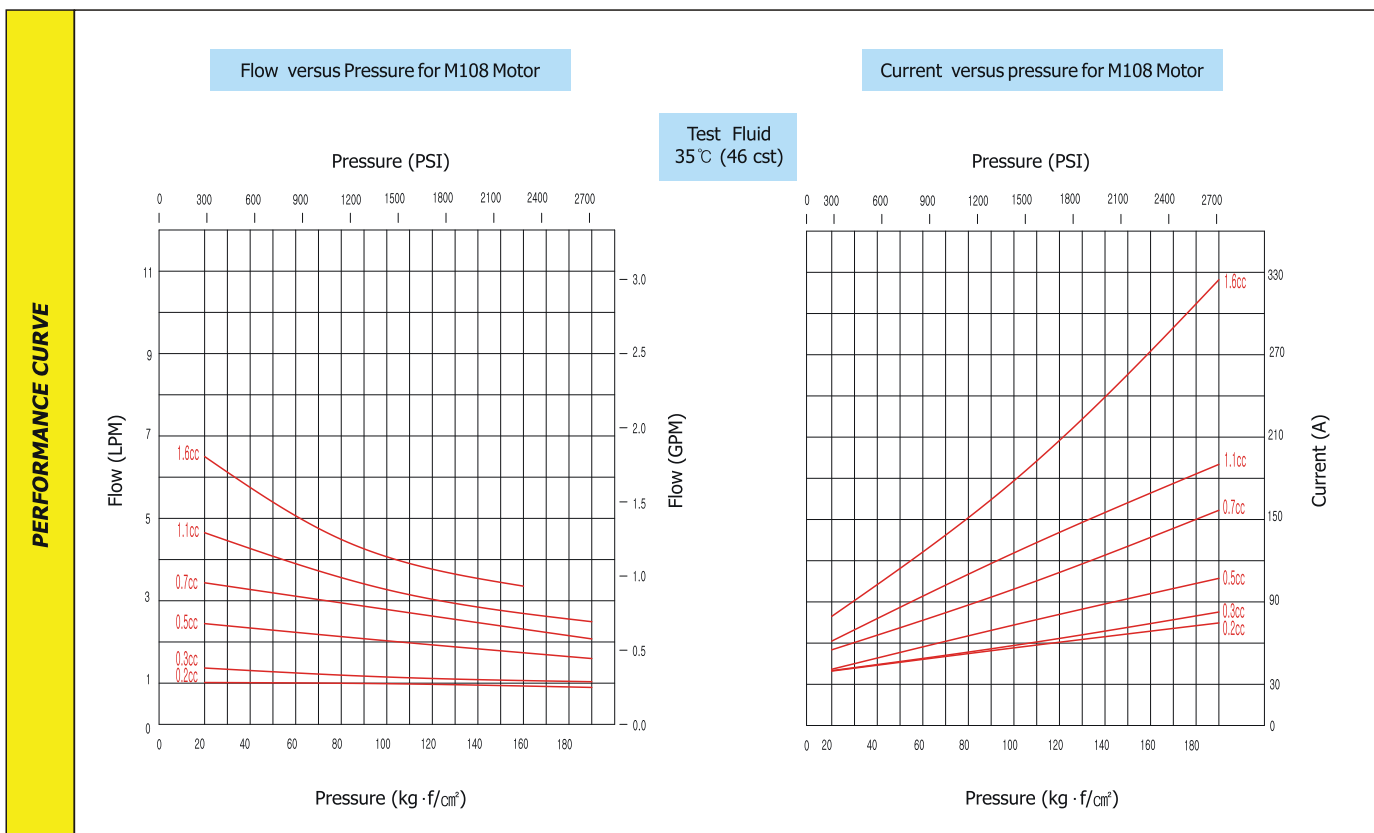
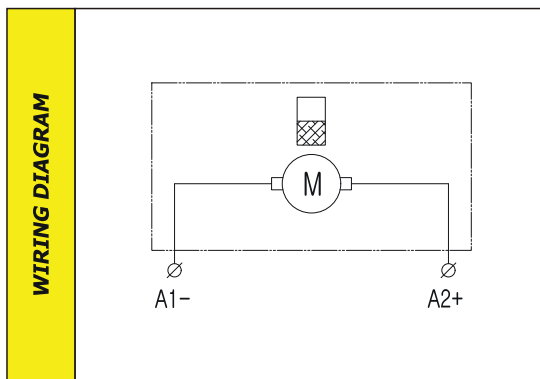
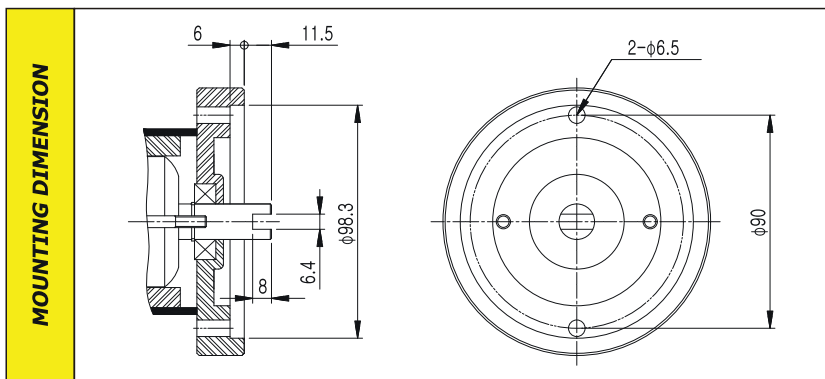
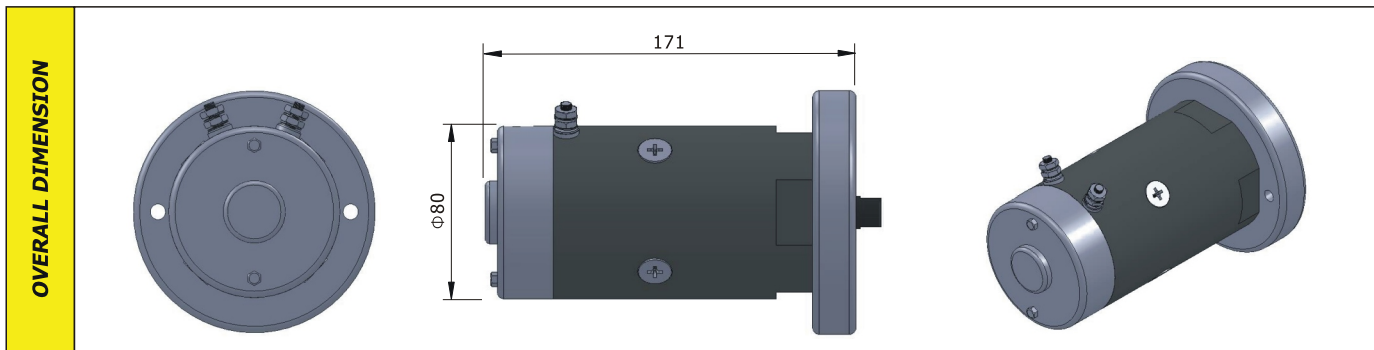
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	DB08		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
24	800	60	1.8min-7%ED	F	IP 65	2	C.W. →	3.7



1 MA08XX - M
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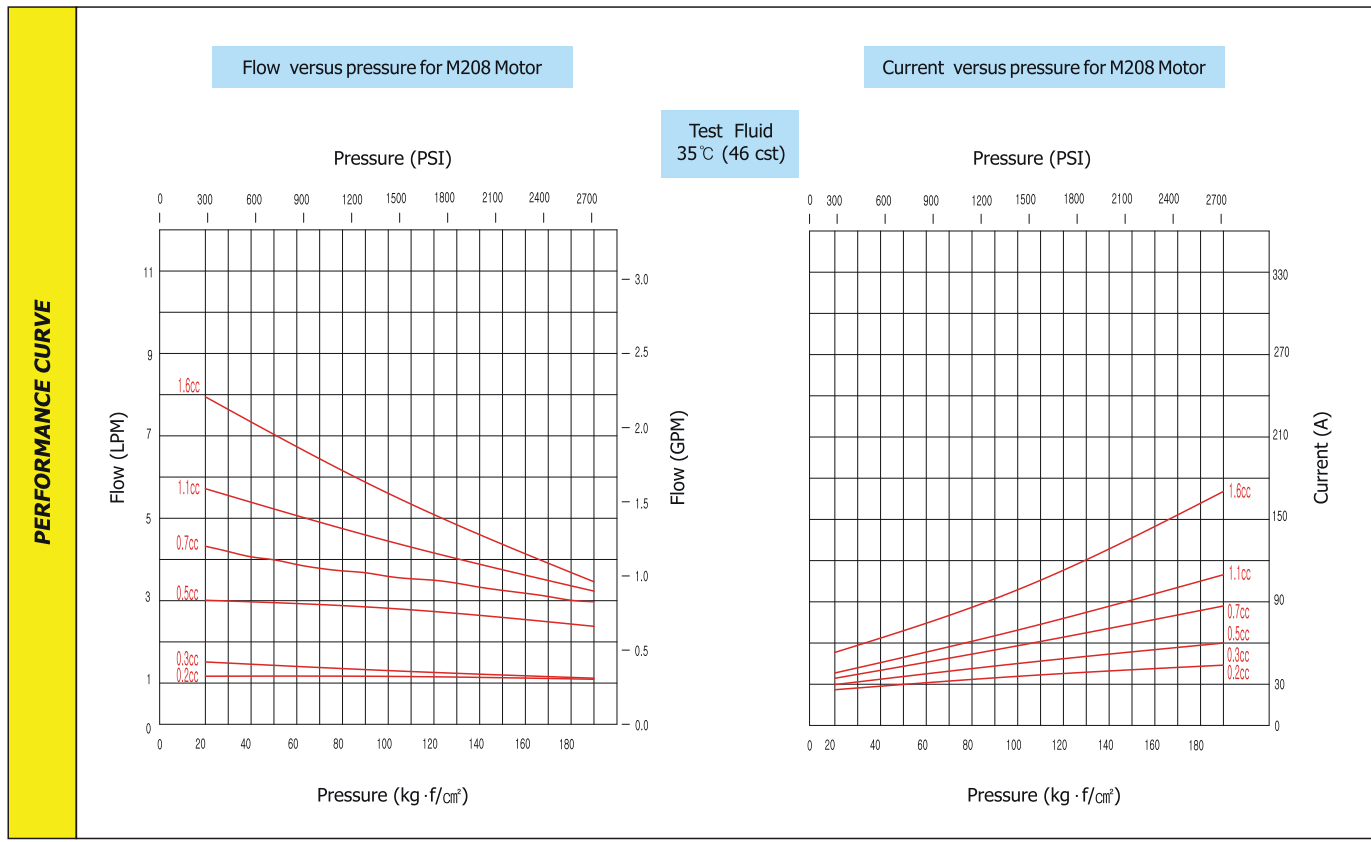
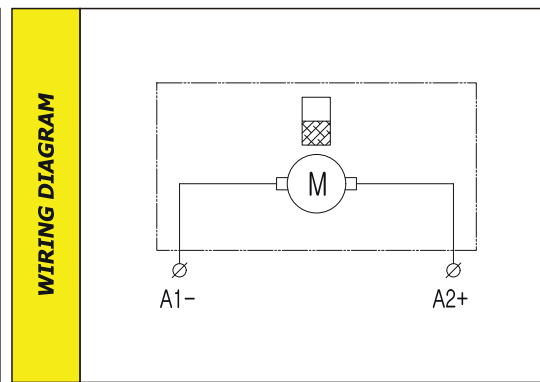
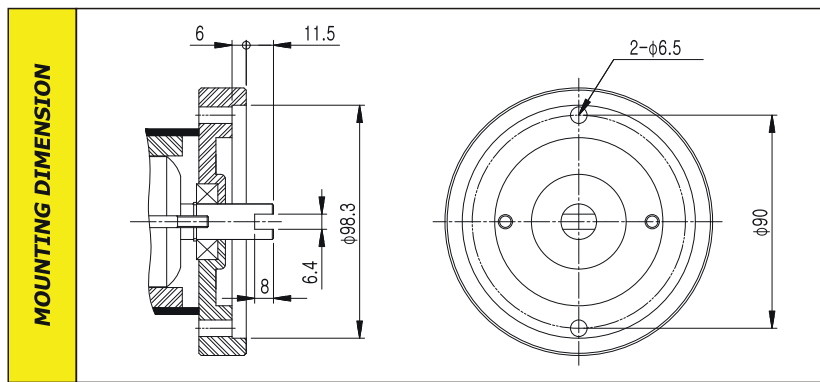
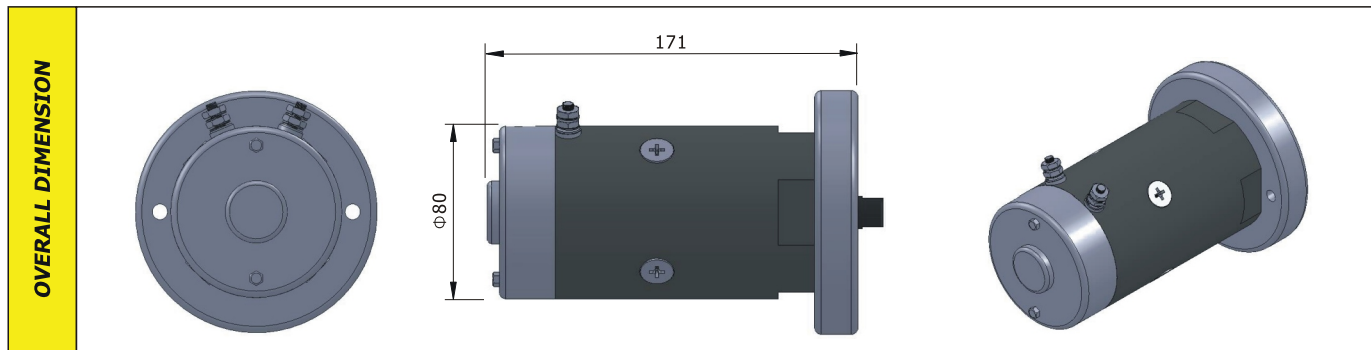
TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	MA08		M, X, Q, QD series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
12	800	120	1.8min-7%ED	F	IP 65	2	↔	3.7



1 **M B 0 8 X X** - M
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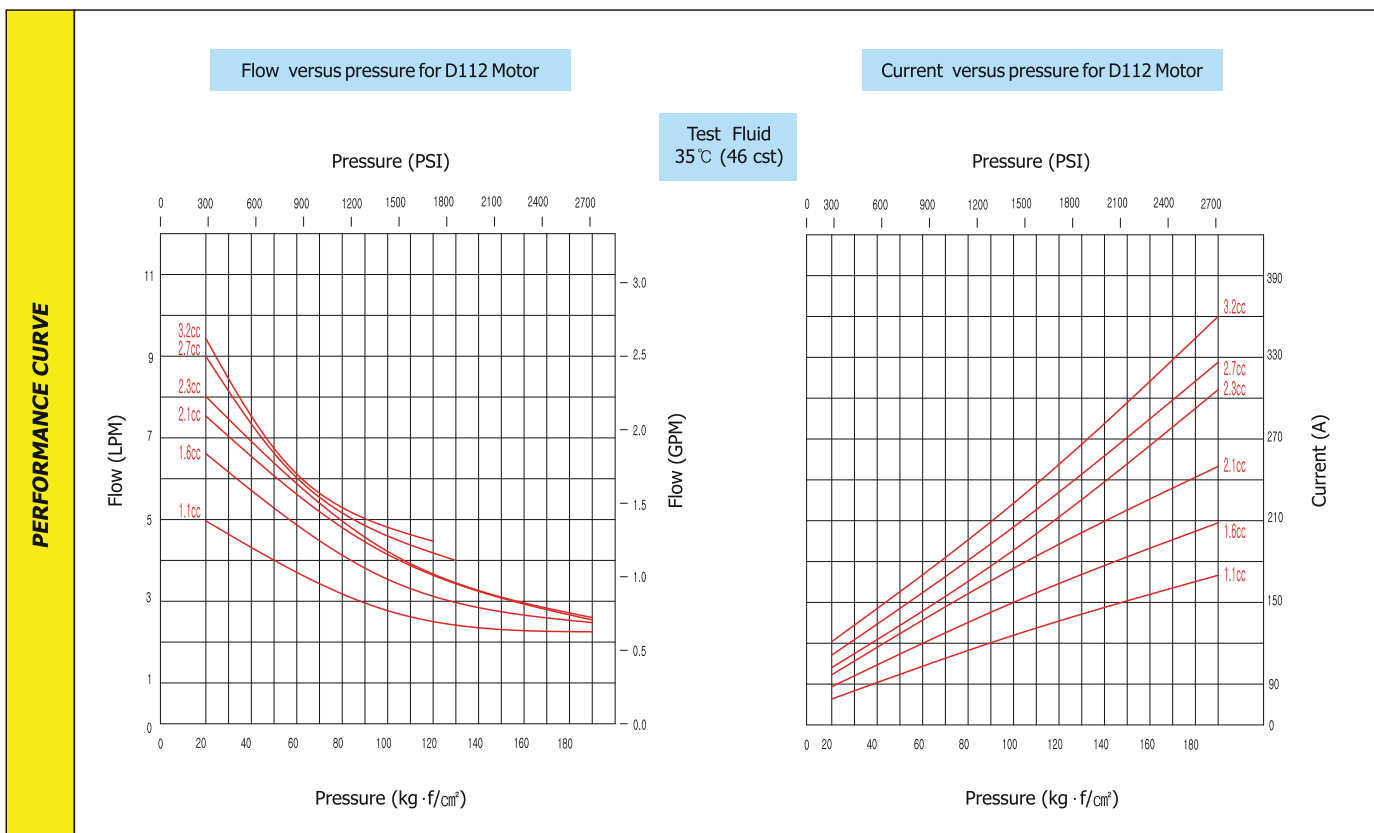
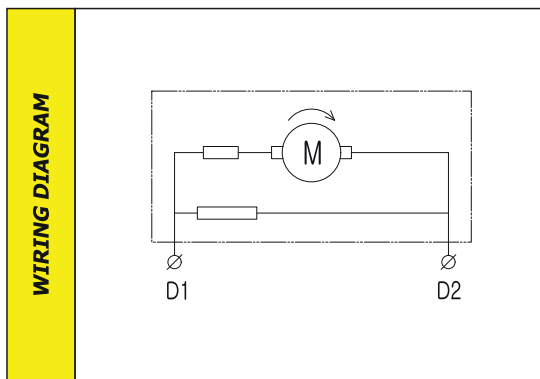
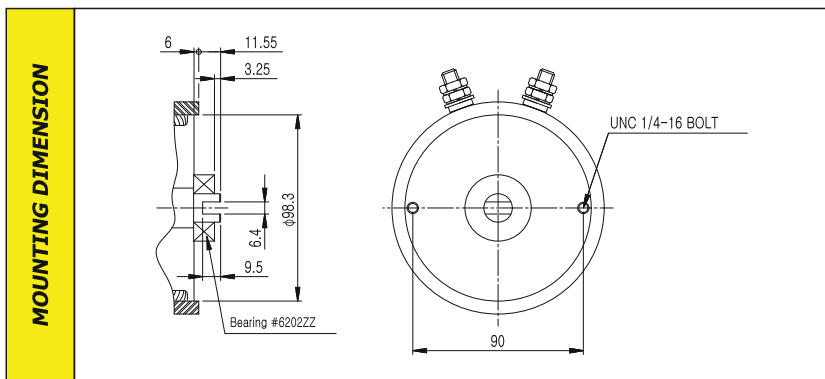
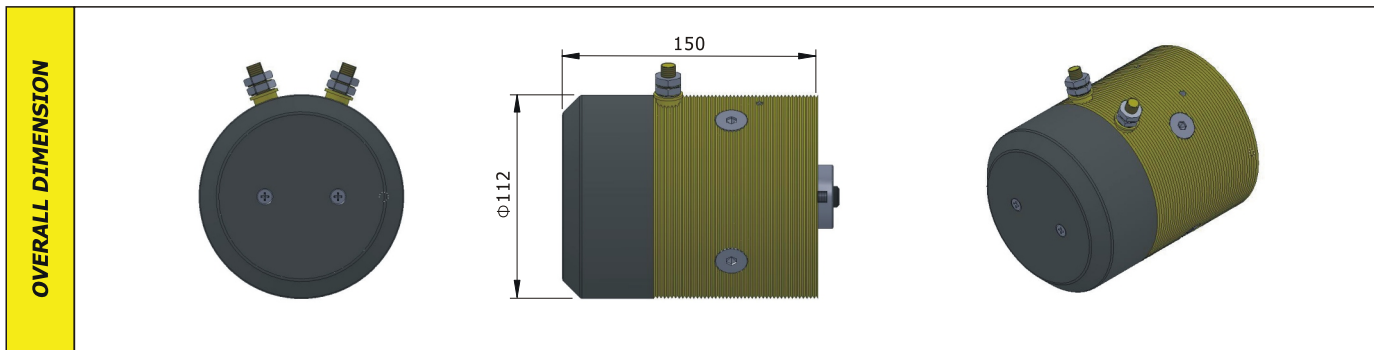
TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	MB08		M, X, Q, QD series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
24	800	60	1.1min-10%ED	F	IP 65	2	↔	3.7



1 D 1 1 2 X X - M
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TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	D112		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
12	1200	180	1.2min-4.5%ED	F	IP 54	2	C.W. →	5.4

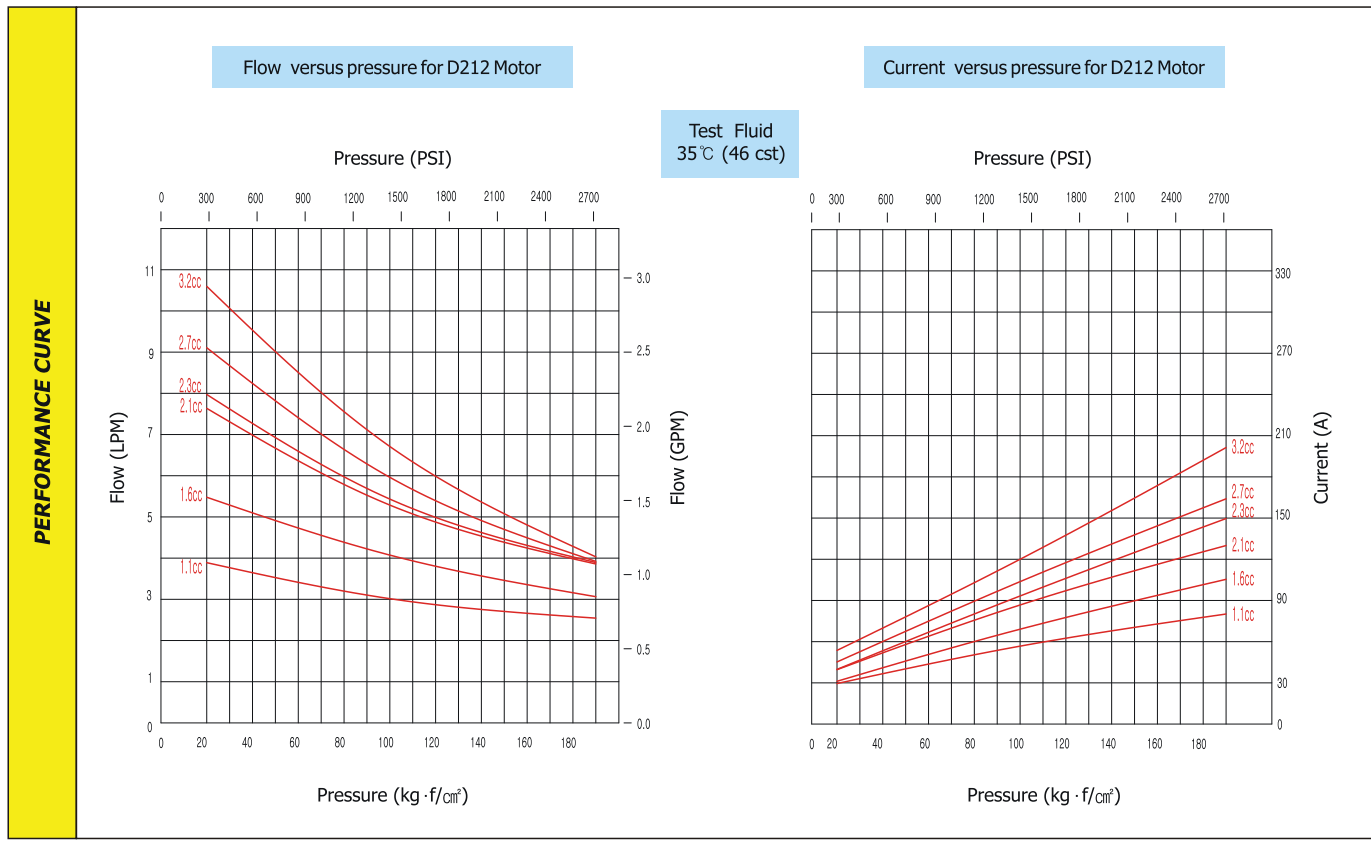
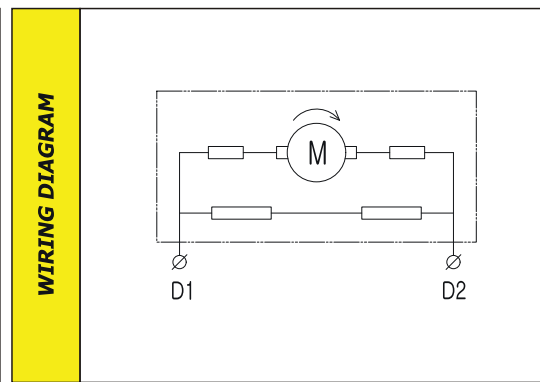
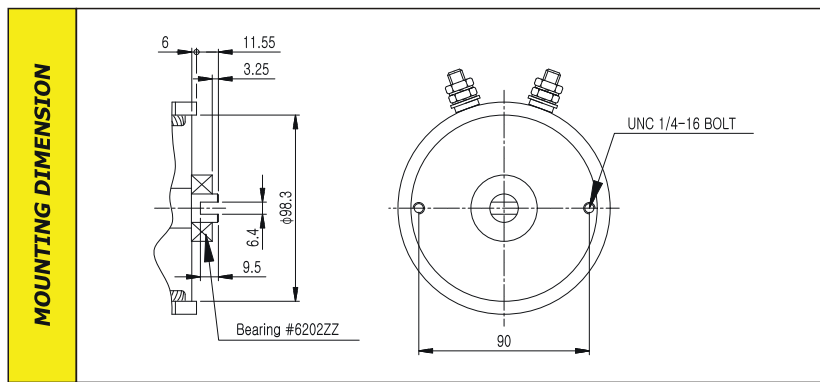
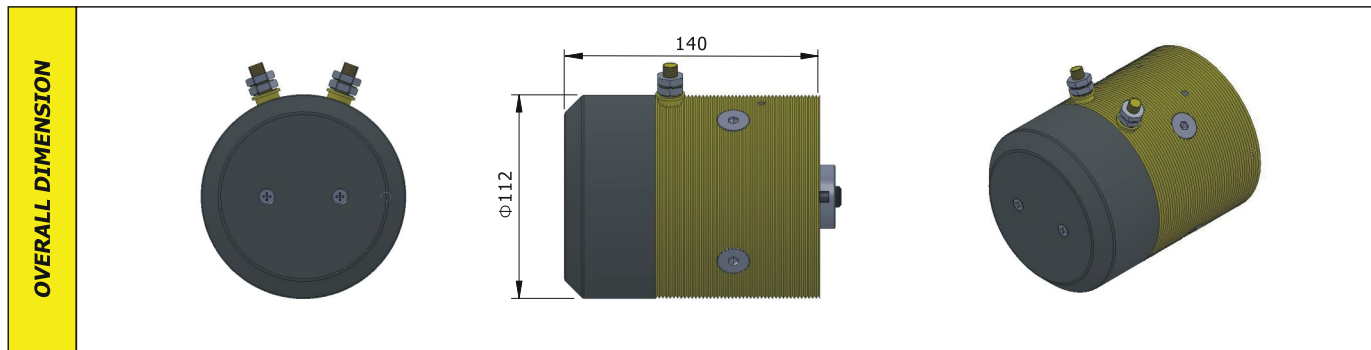


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1 **D 2 1 2** X X — M
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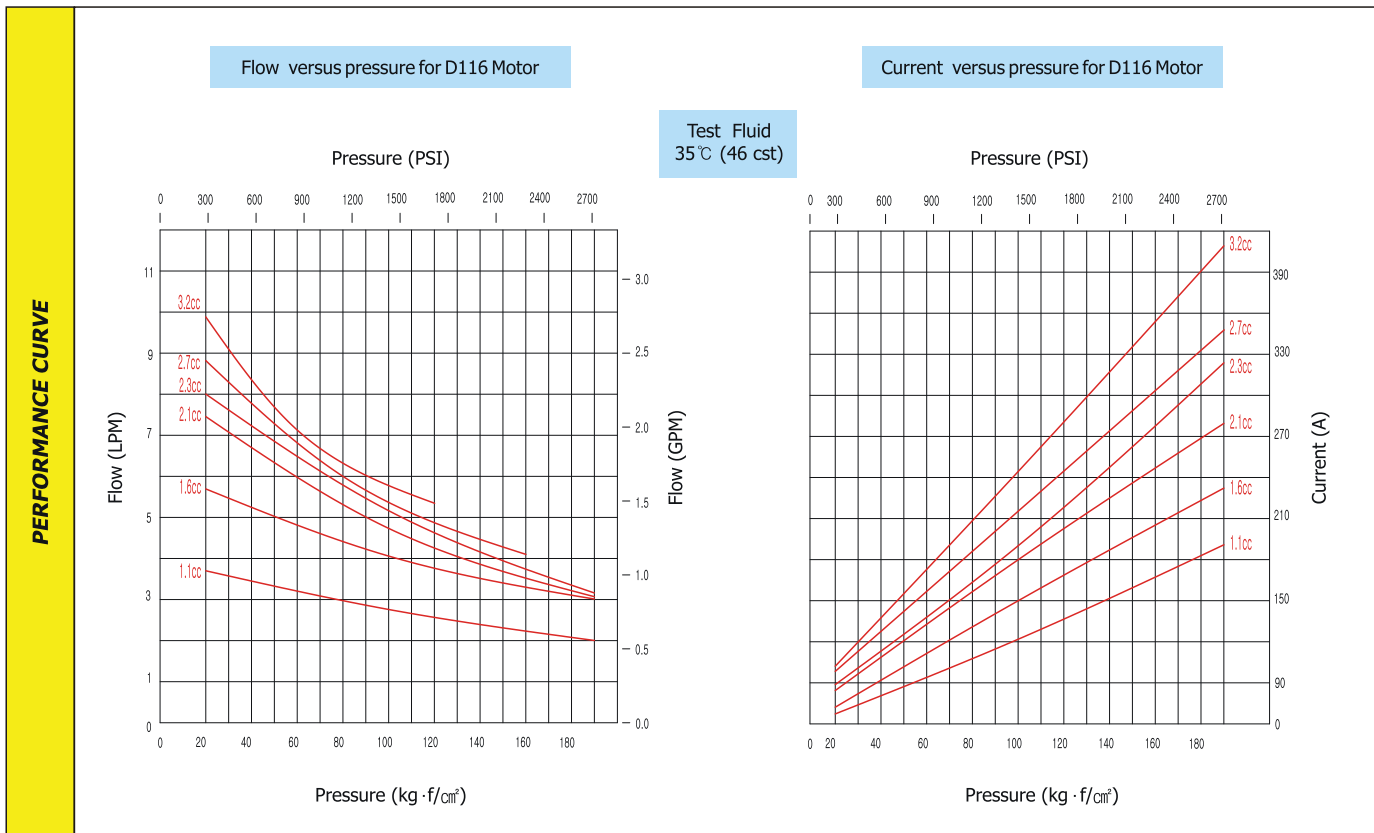
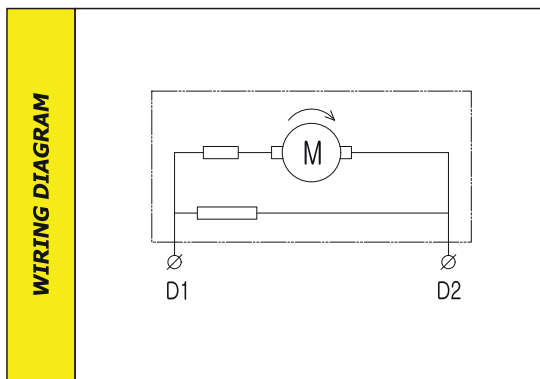
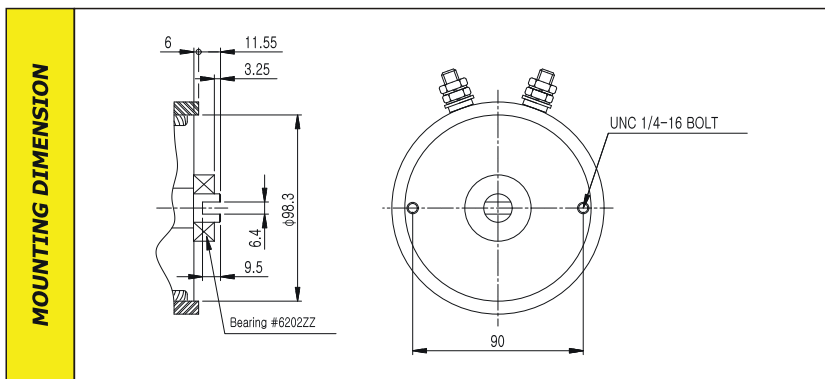
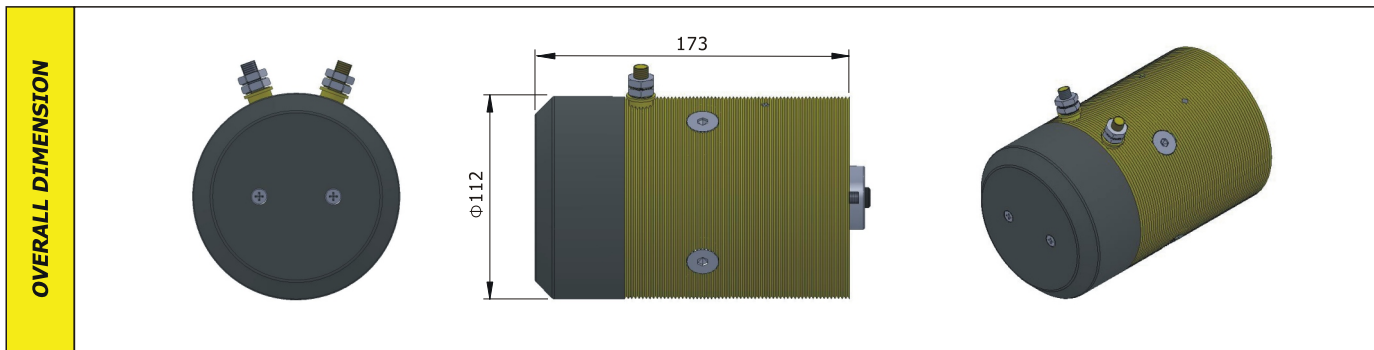
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	D212		M, X, Q series						
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION	WEIGHT (kg)
24	1200	90	1.2min-4.5%ED	F	IP 54	2	C.W. →	5.0	



1 **D 1 1 6** X X - M
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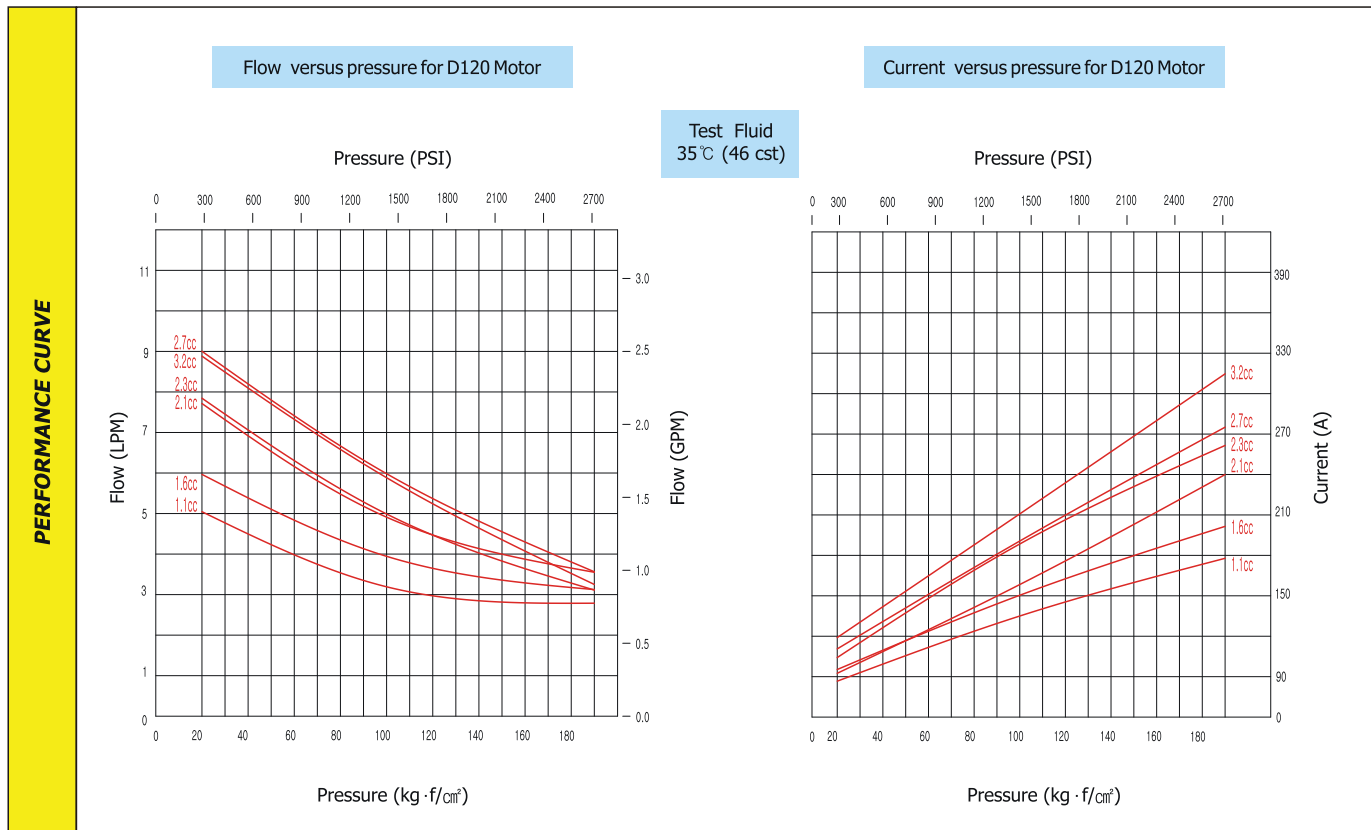
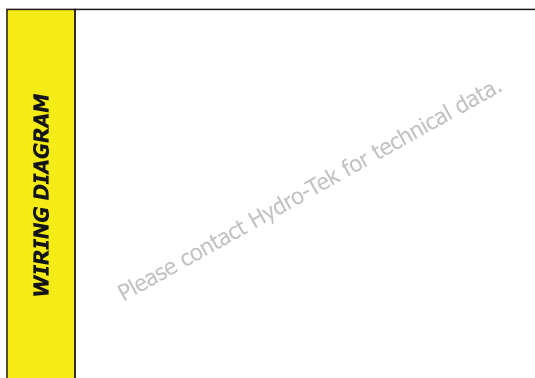
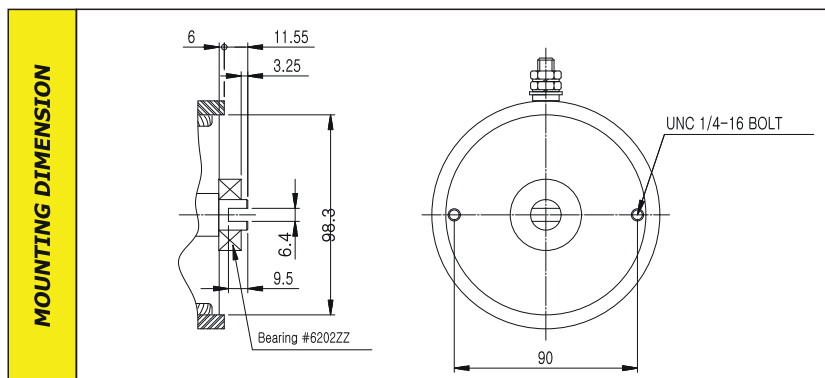
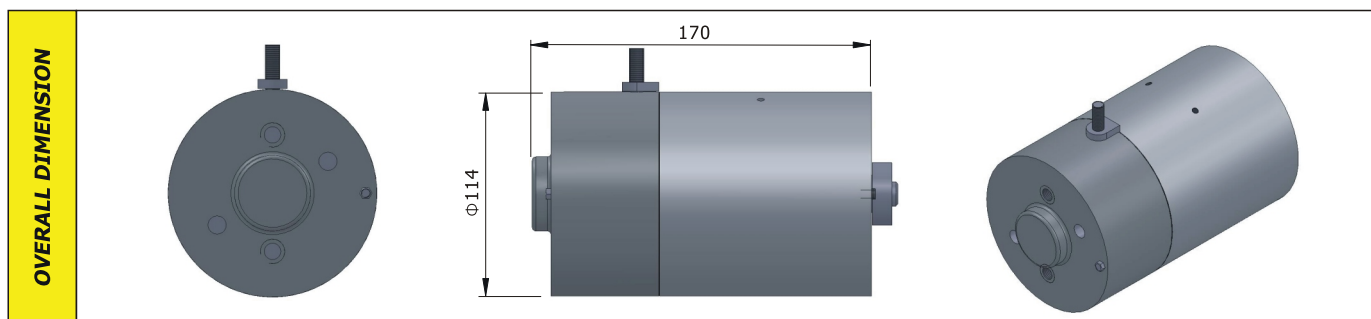
TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	D116		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
12	1600	250	2min-7.5%ED	F	IP 54	2	C.W. →	7.6



1 **D 1 2 0** X X - M
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DC-MOTOR

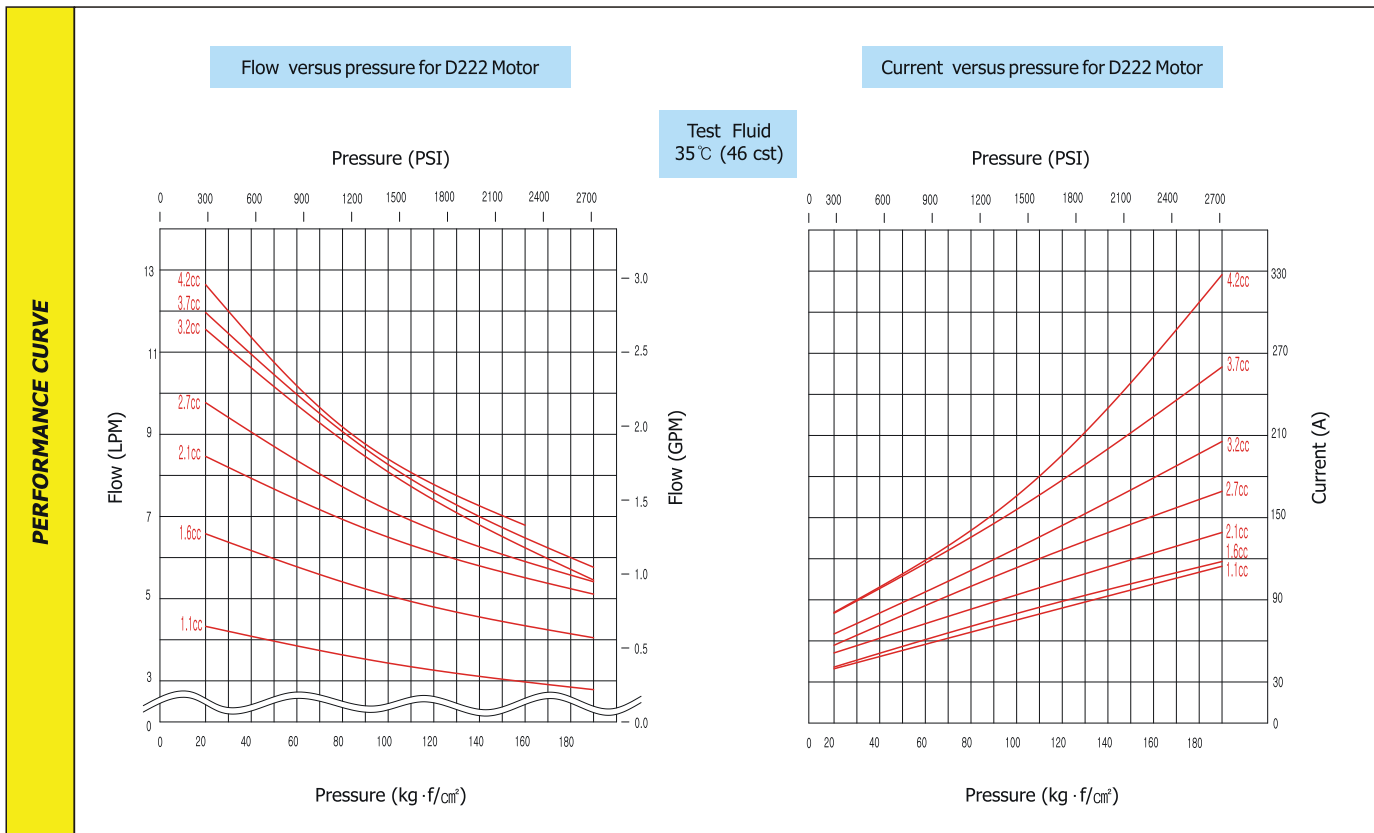
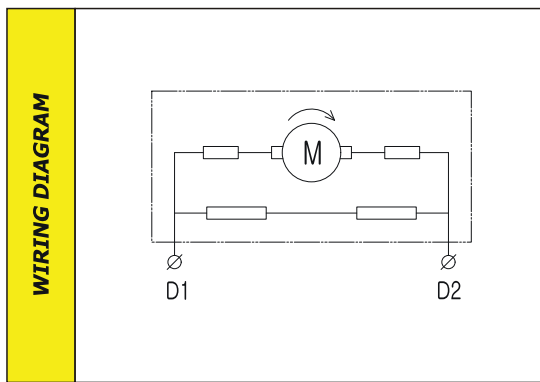
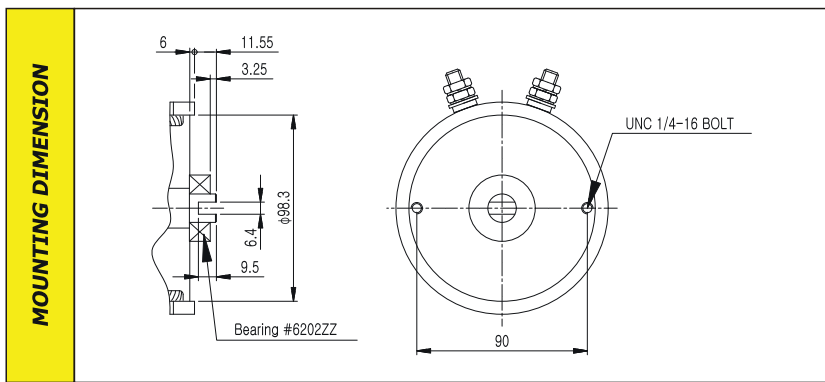
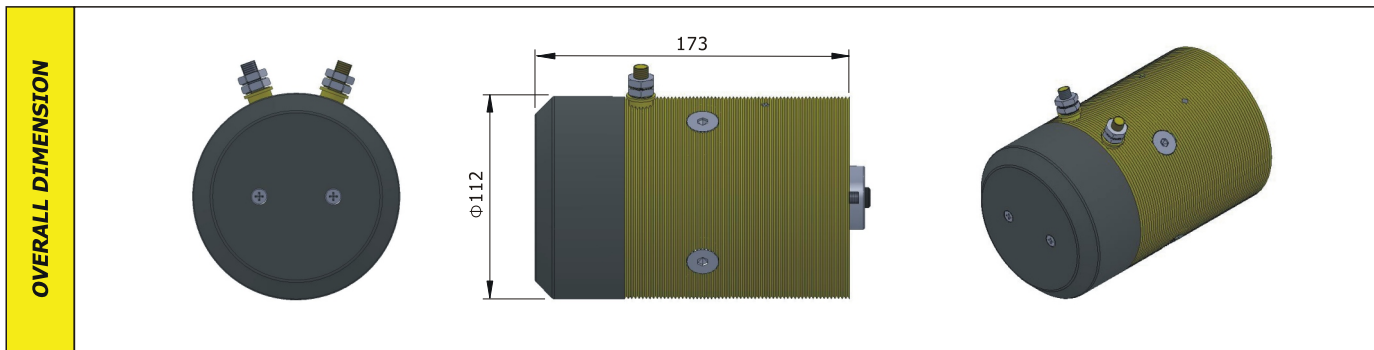
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D120		M, X, Q series						
VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION	WEIGHT (kg)
12	2000	150	22min-34.7%ED	F	IP 54	1	C.W. →	6.0
12	2000	300	5min-14.7%ED	F	IP 54	1	C.W. →	6.0



1 **D** **2** **2** **2** X X — M
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TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	D222		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
24	2200	150	1.2min-4.5%ED	F	IP 54	2	C.W. →	6.6



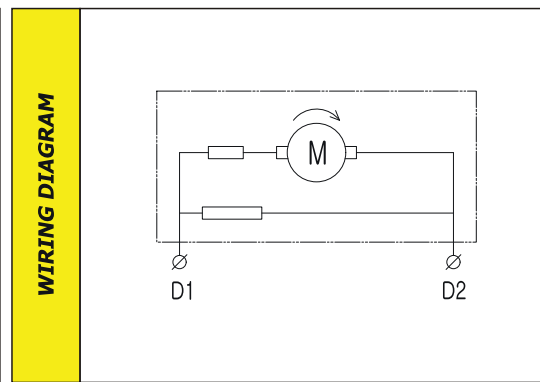
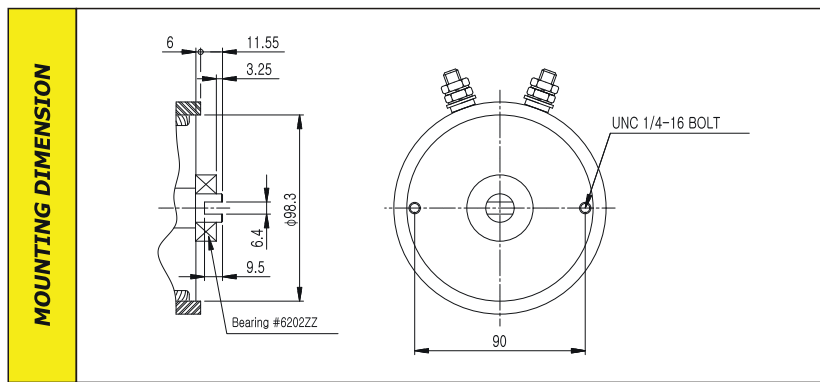
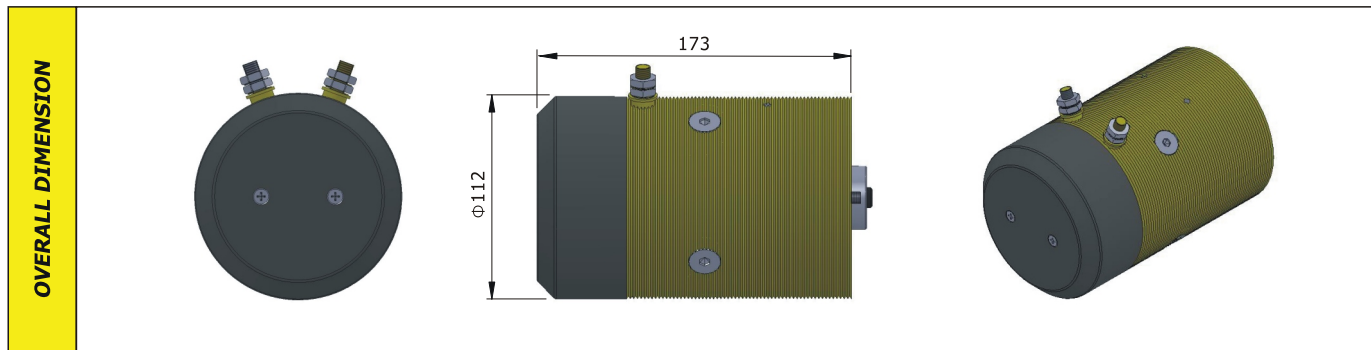
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1 **D** **4** **2** **0** X X — M
 A / B / C / D Maker

DC-MOTOR

TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	D420		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
48	2000	65	3min-12%ED	F	IP 54	2	C.W. →	6.9



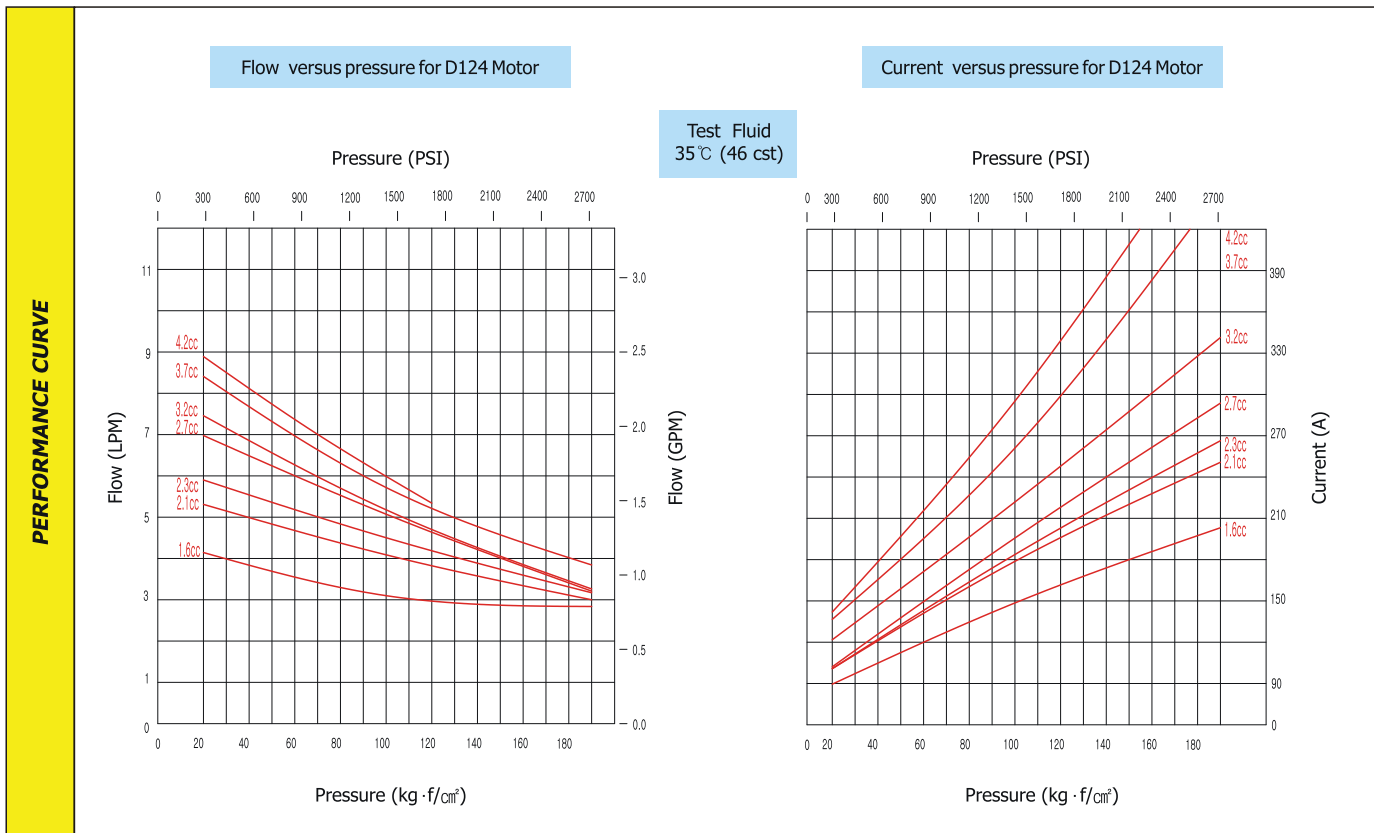
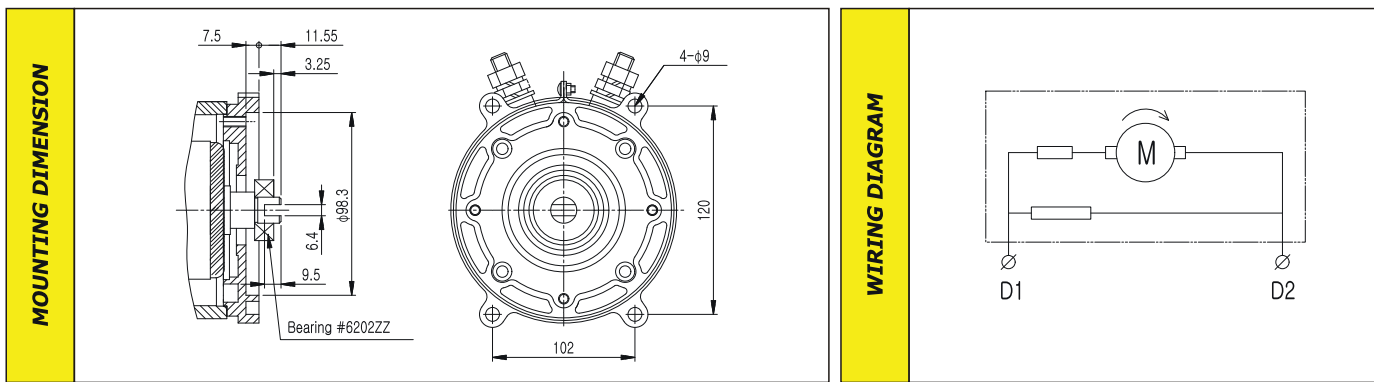
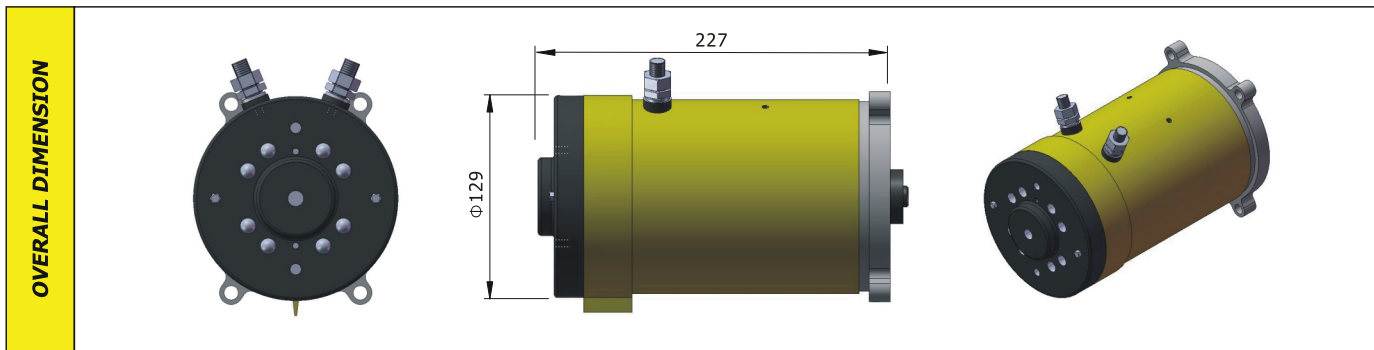
PERFORMANCE CURVE

Please contact Hydro-Tek for technical data.

1 D 1 2 4 X X - M
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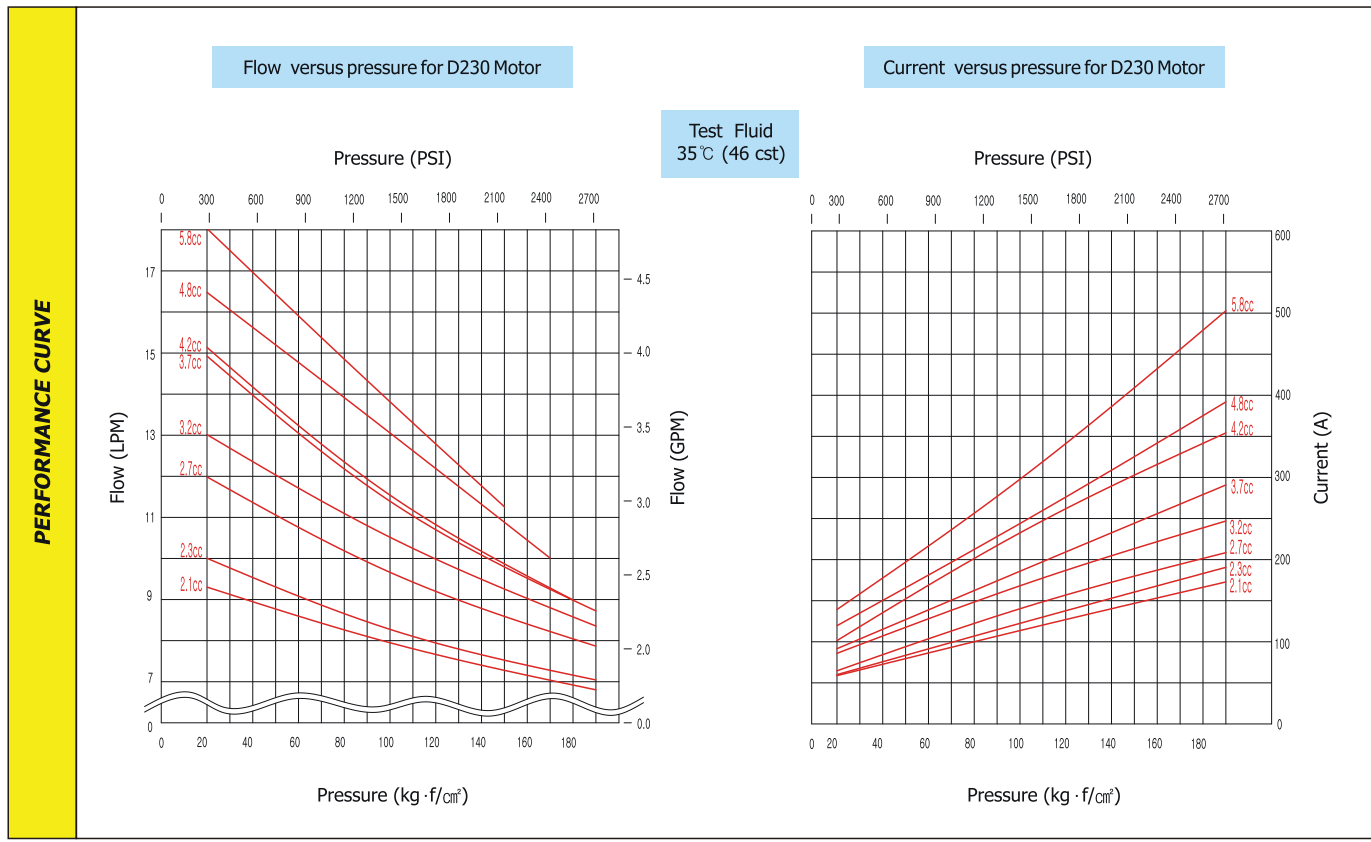
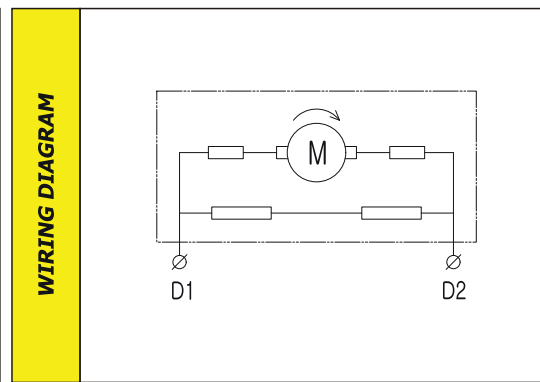
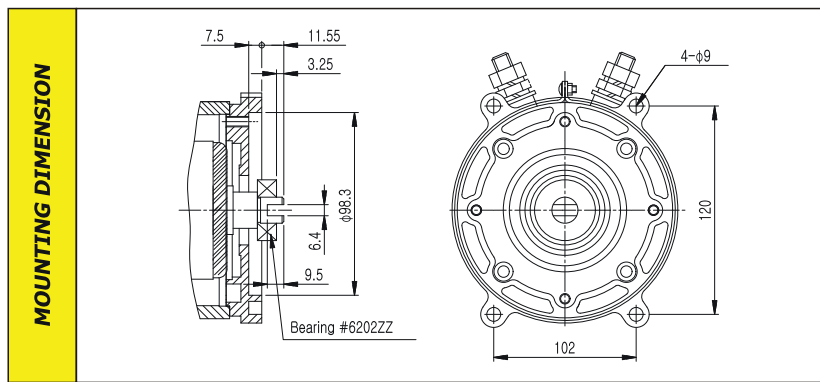
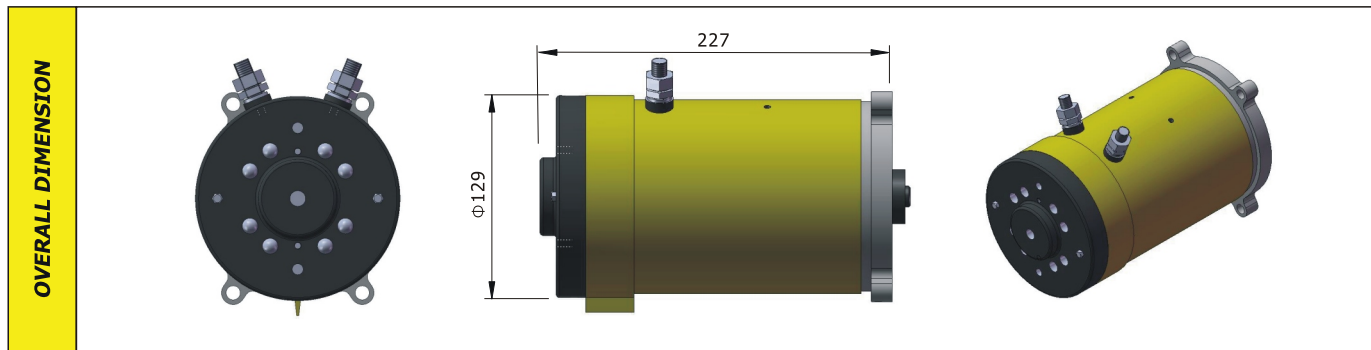
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	D124		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
12	2400	320	1.8min-7%ED	F	IP 54	2	C.W. →	10.5



1 **D 2 3 0** X X — M
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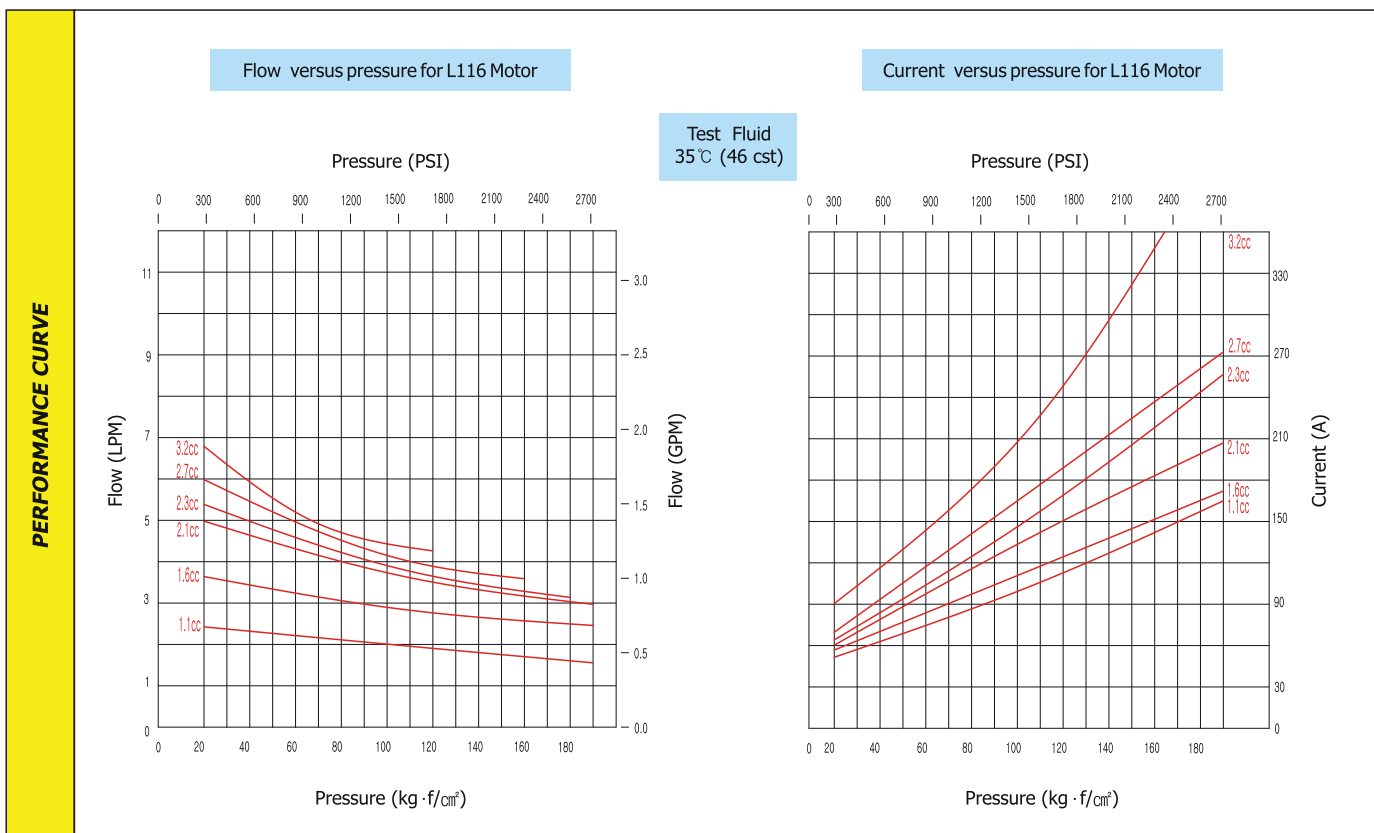
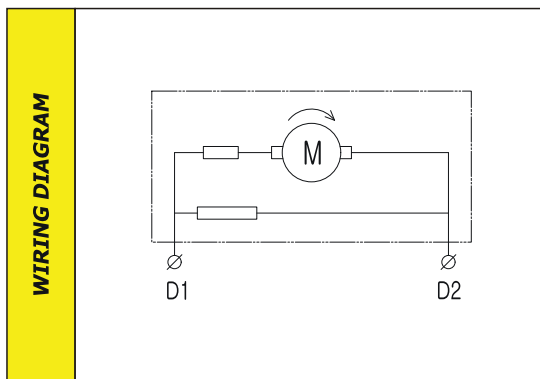
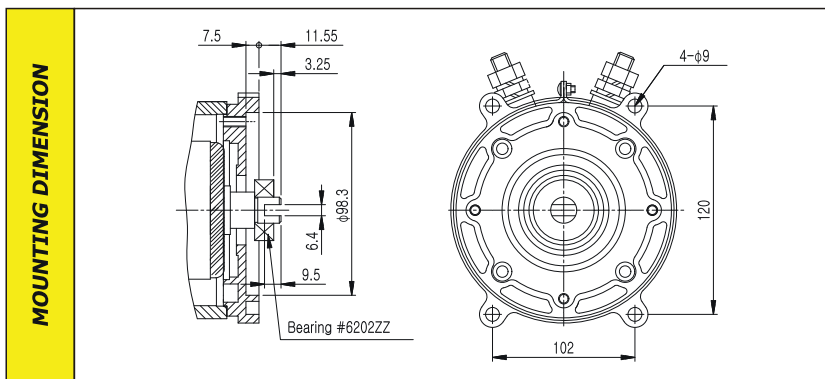
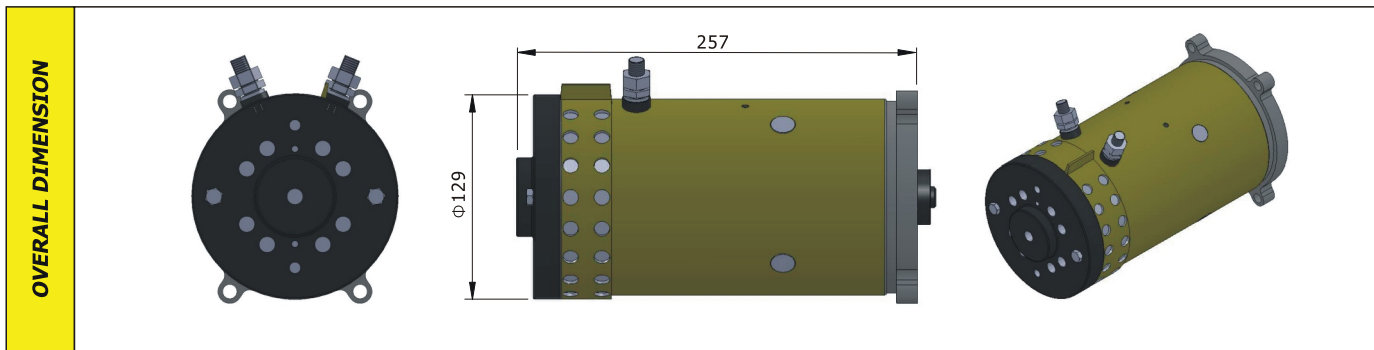
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	D230		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
24	3000	190	4min-15%ED	F	IP 54	2	C.W. →	11.6



1 L 1 1 6 X X - M
 A / B / C / D Maker

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TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	L116		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
12	1600	210	20min-40%ED	F	IP 10	2	C.W. →	11.9

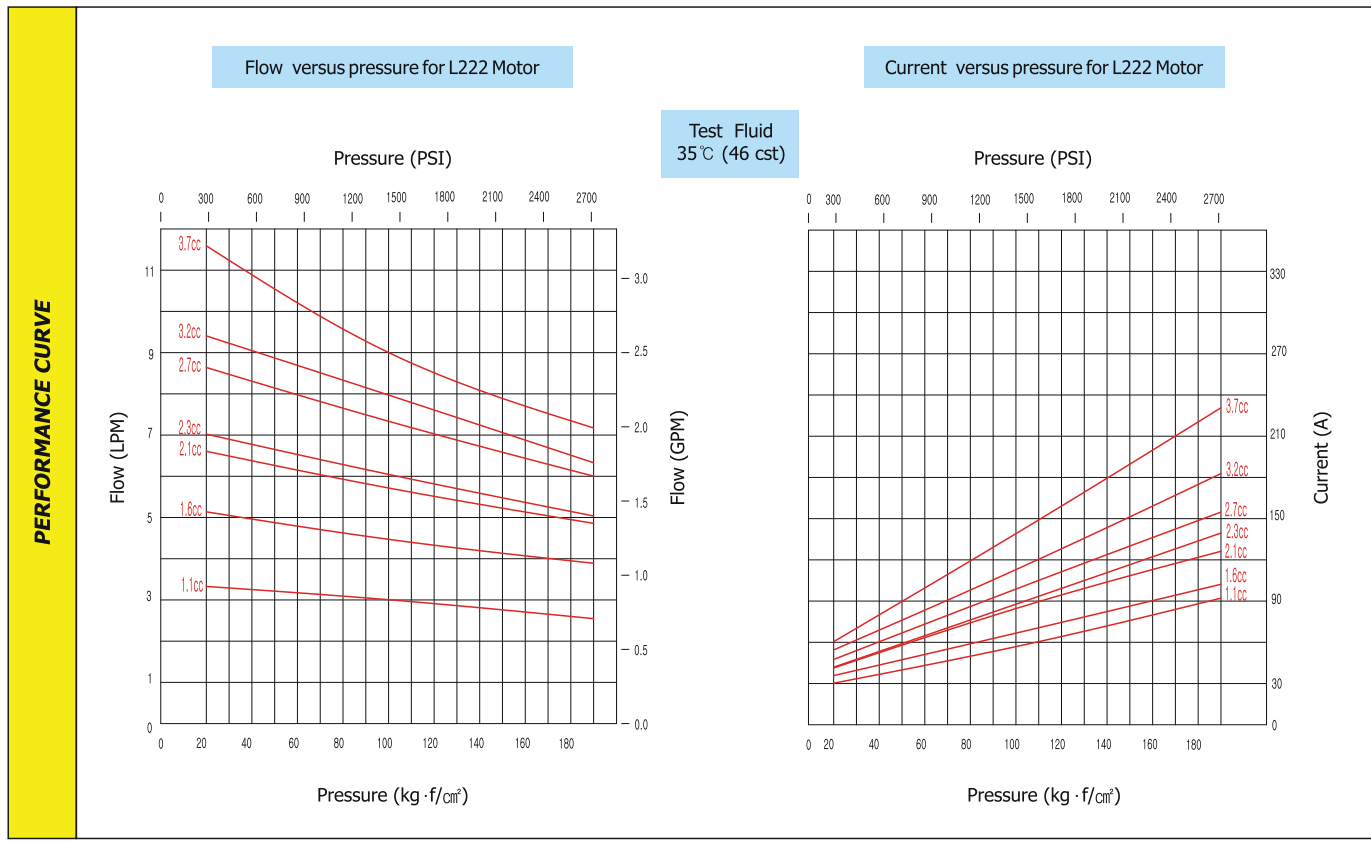
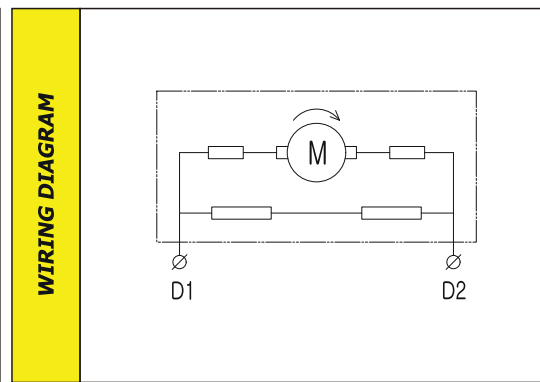
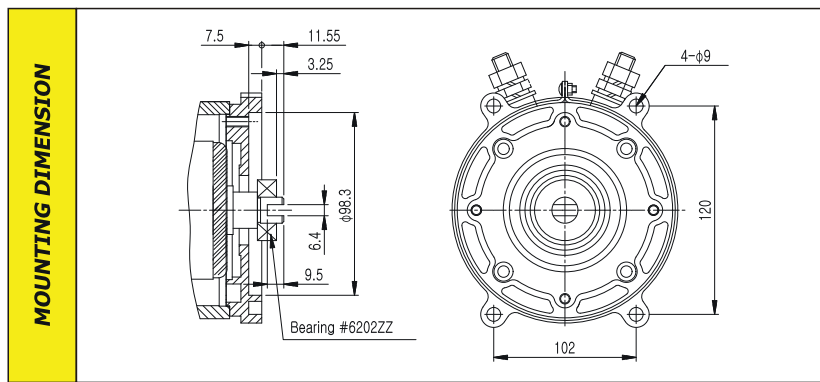
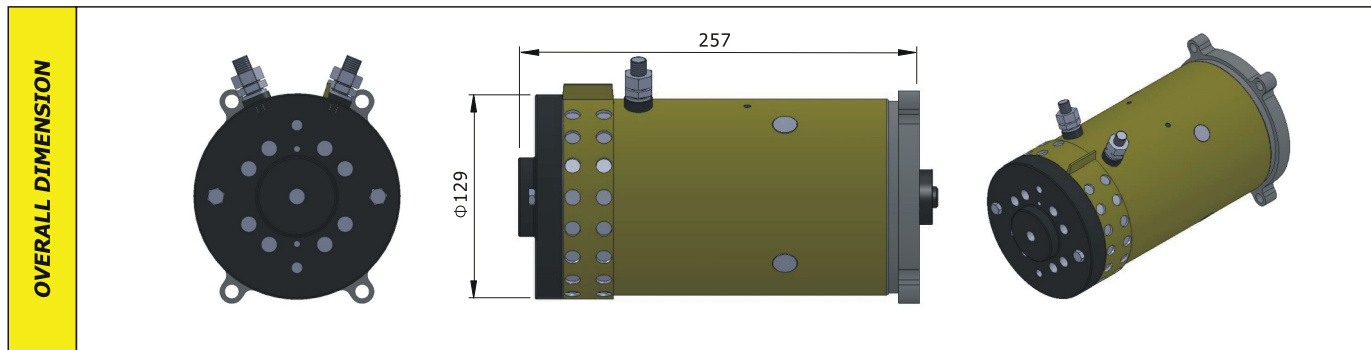


DC-MOTOR

1 L 2 2 2 X X - M
 A / B / C / D Maker

DC-MOTOR

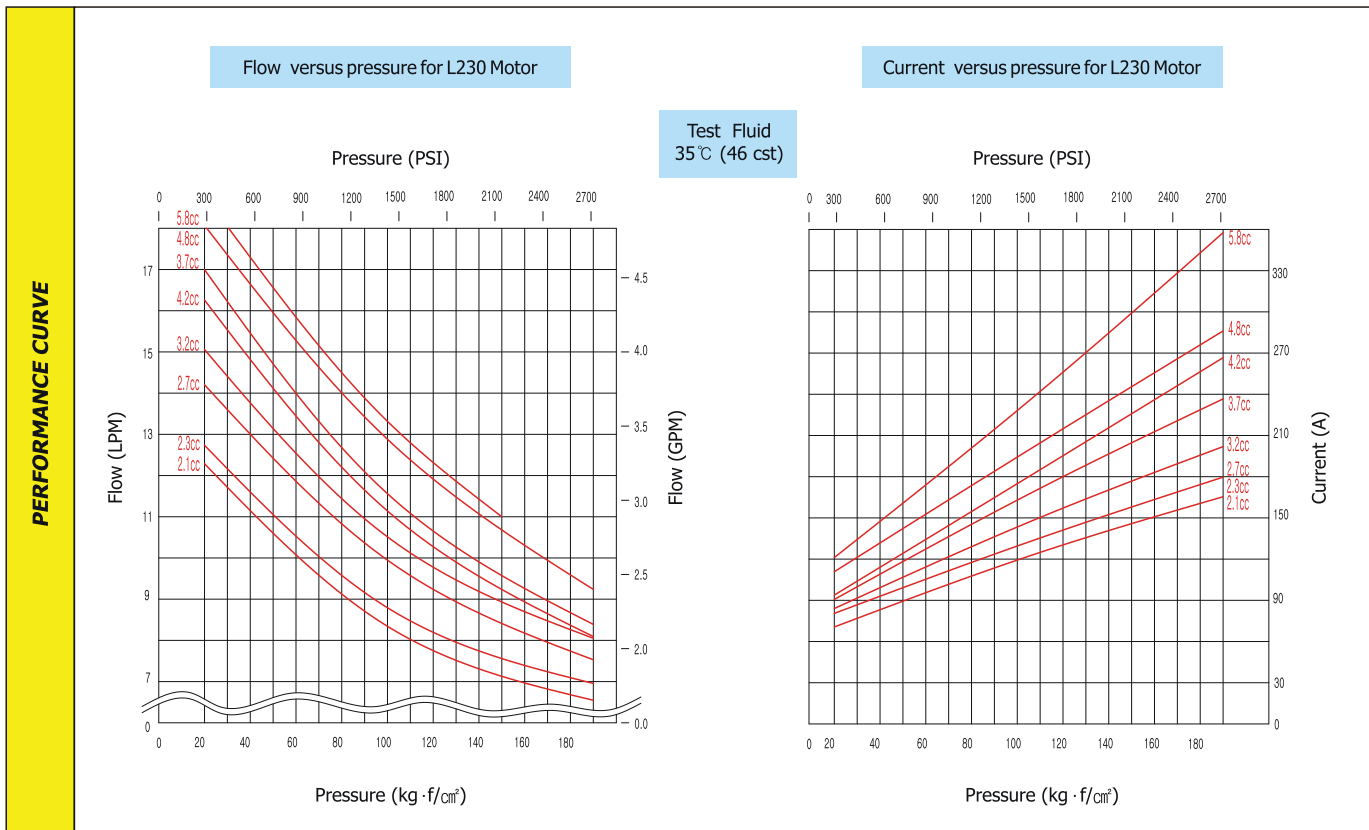
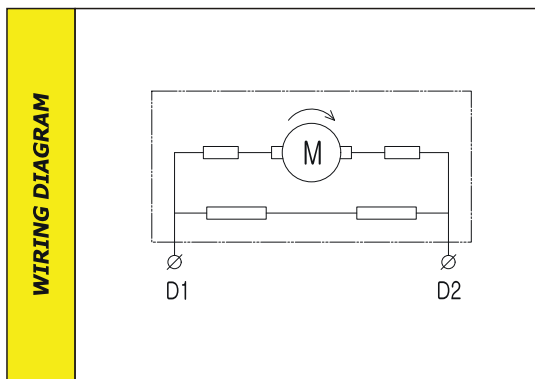
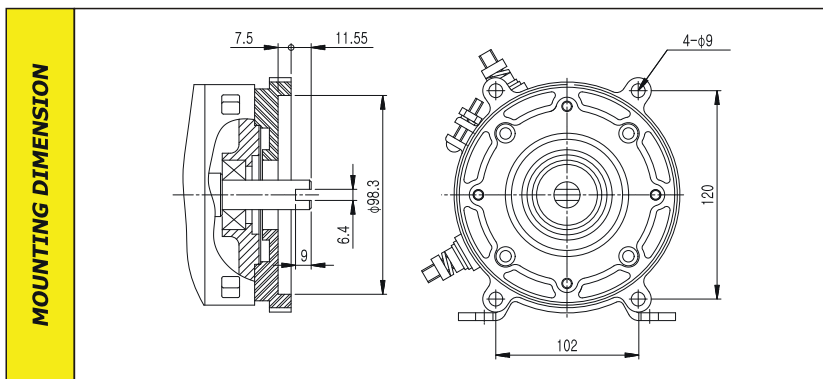
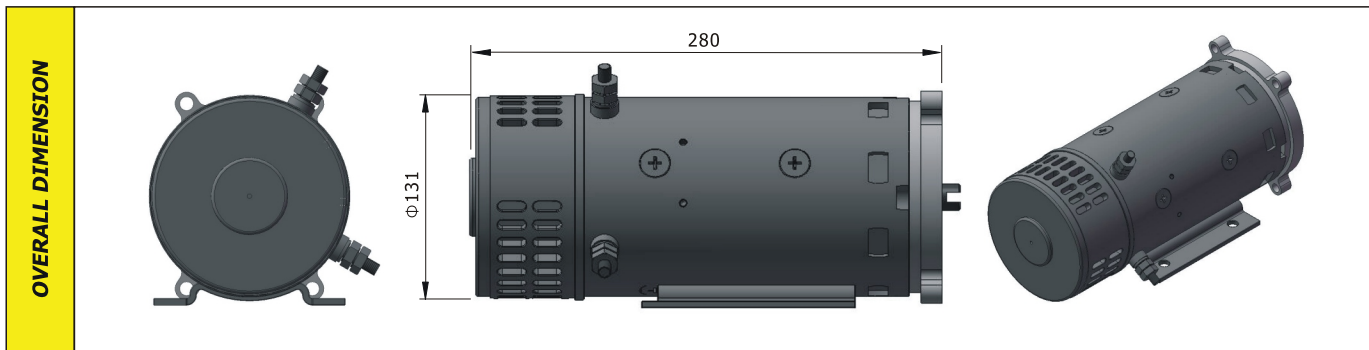
TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	L222		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
24	2200	120	20min-40%ED	F	IP 10	2	C.W. →	12.0



1 L 2 3 0 X X - M
A / B / C / D Maker

DC-MOTOR

TECHNICAL DATA	CODE		APPLICABLE CENTER BLOCK					
	L230		M, X, Q series					
	VOLTAGE (V)	POWER (W)	RATED CURRENT (A)	DUTY CYCLES S2min - S3%	INSULATION CLASS	PROTECTION GRADE	NUMBER OF TERMINALS	ROTATION
24	3000	180	15min-15%ED	F	IP 10	2	C.W. →	16



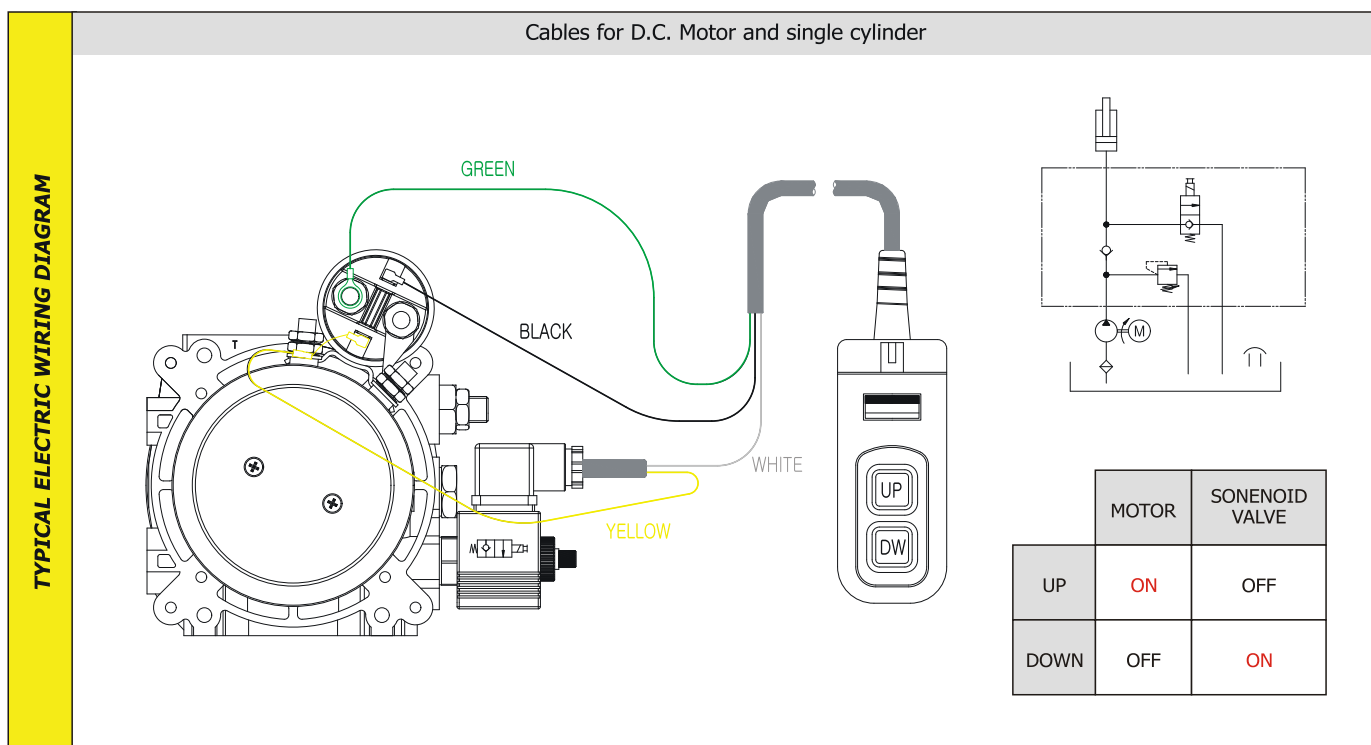
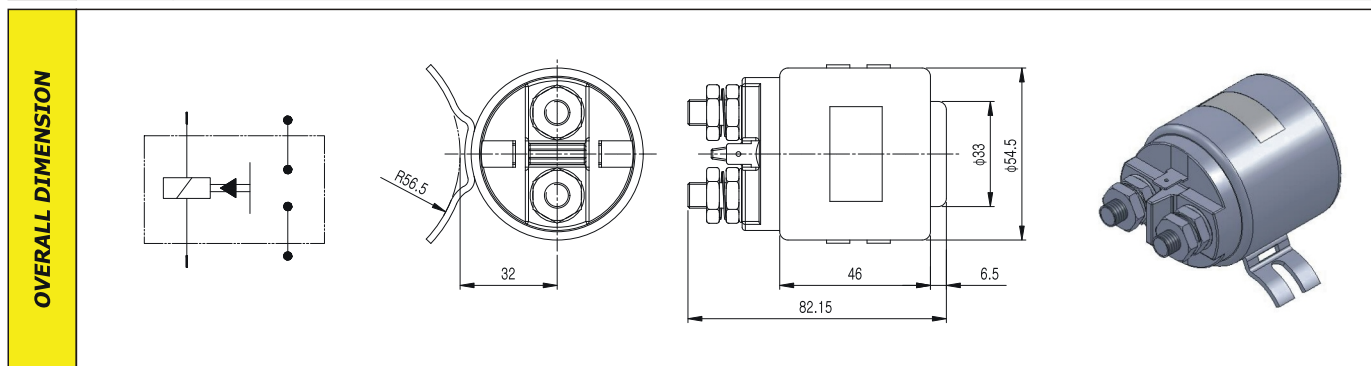
DC-MOTOR

1 X X X X W 2 - M
 A / B / C / D Maker

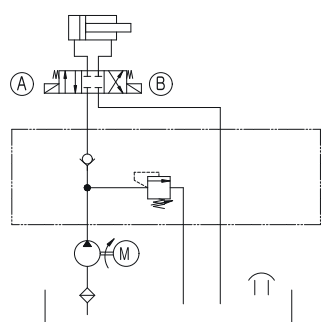
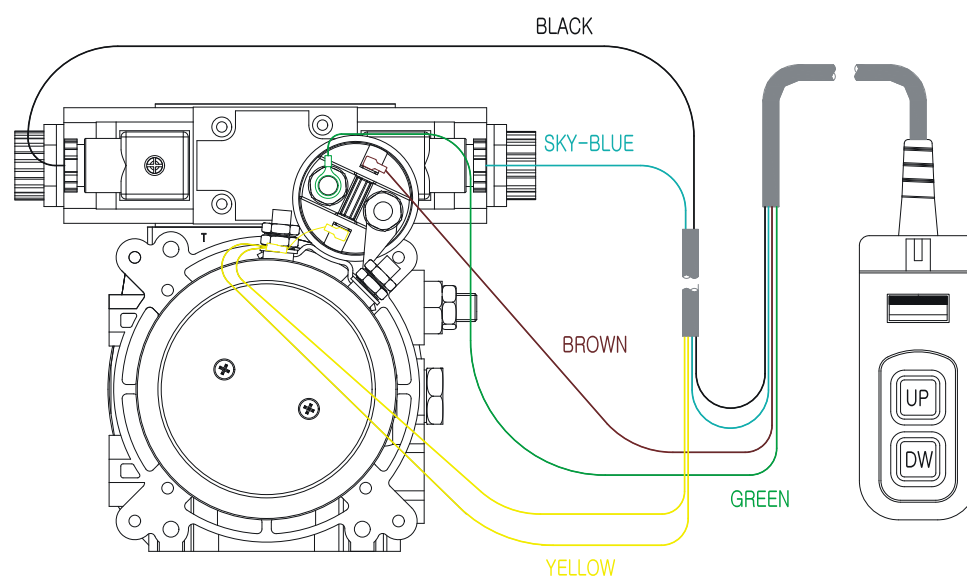
DC-MOTOR

Note. A,B and C sections are DC motor code.

TECHNICAL DATA	CODE	PART NUMBER	VOLTAGE	AMPERE	CURRENT CONSUMPTION	PERMANENT CURENT (Max.)	SHORT TIME CURRENT (Max.)	INSULATION CLASS
	Z1	409244	12V	150A	2.8±0.1A	≤150A	350A-S310%	IP54
	Z2	409245	24V	150A	1.1±0.2A	≤150A	350A-S310%	IP54
	W1	402345	12V	150A	2.8±0.3A	≤150A	350A-S310%	IP54
	W2	402346	24V	150A	1.1±0.2A	≤150A	350A-S310%	IP54
	I1	400941	12V	150A	2.8±0.5A	≤150A	350A-S310%	IP54
	I2	400943	24V	150A	1.1±0.2A	≤150A	350A-S310%	IP54
	L1	412015	12V	80A	2.8±0.7A	≤80A	350A-S310%	IP54
	L2	412016	24V	80A	1.1±0.2A	≤80A	350A-S310%	IP54
	XX	without Start Relay						



Cables for D.C. Motor and double cylinder



	MOTOR	SONENOID VALVE (A)	SONENOID VALVE (B)
UP	ON	ON	OFF
DOWN	ON	OFF	ON



AC-MOTOR

A	CODE	XXXXXX		H	S	T	F			
	VOLTAGE	Without motor		110V	220V	230 / 400V	254 / 440V			
	TYPE	AC Single-phase motor			AC three-phase motor					
B	CODE	2		4		6				
	POLE	2 pole		4 pole		6 pole				
C	CODE	01	03	07	10	15	18	22	30	40
	POWER(kW)	0.18	0.37	0.75	1.0	1.5	1.8	2.2	3.0	4.0
D	CODE	50	60	56	<i>Note.</i> 1. 3-phase motor is double frequency type (50/60Hz) 2. 1-phase motor is single frequency type (50Hz or 60Hz)					
	FREQUENCY	50Hz	60Hz	50/60Hz						

AC - Motor code & Information

CODE	PART NUMBER	VOLTAGE (V)	POWER (kW)	FREQUENCY (Hz)	INSULATION CLASS	FRAME	PAGE
*H40160	*****	110	0.18	60	F	63	
S40160	*****	220	0.18	60	F	63	
T40156	*****	230/400	0.18	50/60	F	63	
F40156	*****	254/440	0.18	50/60	F	63	
*H40360	*****	110	0.37	60	F	71	
S40360	*****	220	0.37	60	F	71	
T40356	*****	230/400	0.37	50/60	F	71	
F40356	*****	254/440	0.37	50/60	F	71	
*H40760	*****	110	0.75	60	F	80	
S40760	*****	220	0.75	60	F	80	
T40756	*****	230/400	0.75	50/60	F	80	
F40756	*****	254/440	0.75	50/60	F	80	
*H41060	*****	110	1.0	60	F	90	
*S41060	*****	220	1.0	60	F	90	
T41056	*****	230/400	1.0	50/60	F	90	
F41056	*****	254/440	1.0	50/60	F	90	
*H41560	*****	110	1.5	60	F	90	
S41560	*****	220	1.5	60	F	90	
T41556	*****	230/400	1.5	50/60	F	90	
F41556	*****	254/440	1.5	50/60	F	90	

Note. '*1' Available on order.

AC-MOTOR

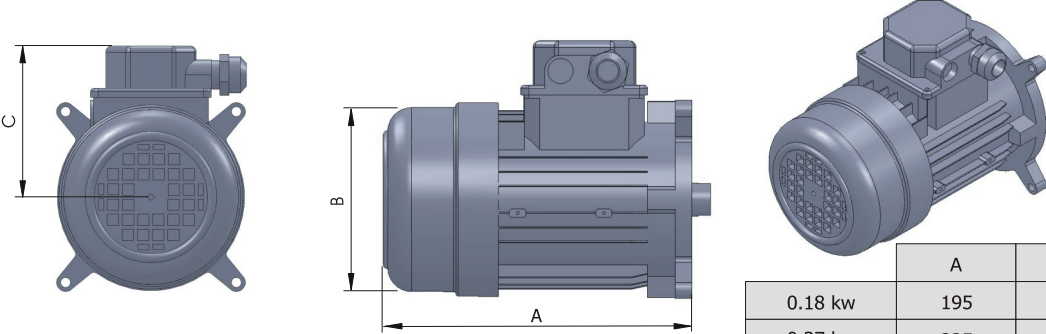
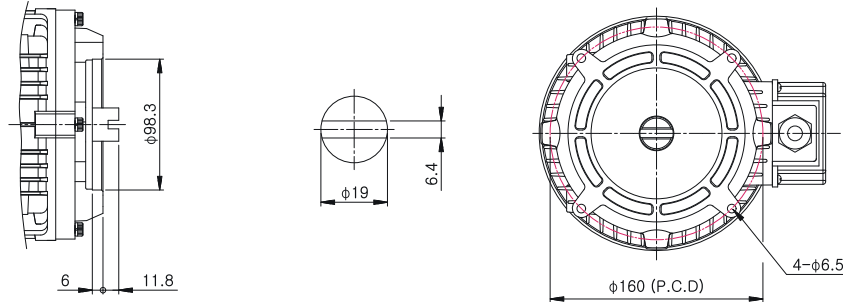
AC-MOTOR

AC - Motor code & Information

CODE	PART NUMBER	VOLTAGE (V)	POWER (kW)	Frequency (Hz)	INSULATION CLASS	FRAME	PAGE
*H41860	*****	110	1.8	60	F	90	
S41860	*****	220	1.8	60	F	90	
T41856	*****	230/400	1.8	50/60	F	90	
F41856	*****	254/440	1.8	50/60	F	90	
*H42260	*****	110	2.2	60	F	90	
S42260	*****	220	2.2	60	F	90	
T42256	*****	230/400	2.2	50/60	F	90	
F42256	*****	254/440	2.2	50/60	F	90	
*H43060	*****	110	3.0	60	F	100	
*S43060	*****	220	3.0	60	F	100	
T43056	*****	230/400	3.0	50/60	F	100	
*F43056	*****	254/440	3.0	50/60	F	100	
*H44060	*****	110	4.0	60	F	112	
*S44060	*****	220	4.0	60	F	112	
T44056	*****	230/400	4.0	50/60	F	112	
F44056	*****	254/440	4.0	50/60	F	112	

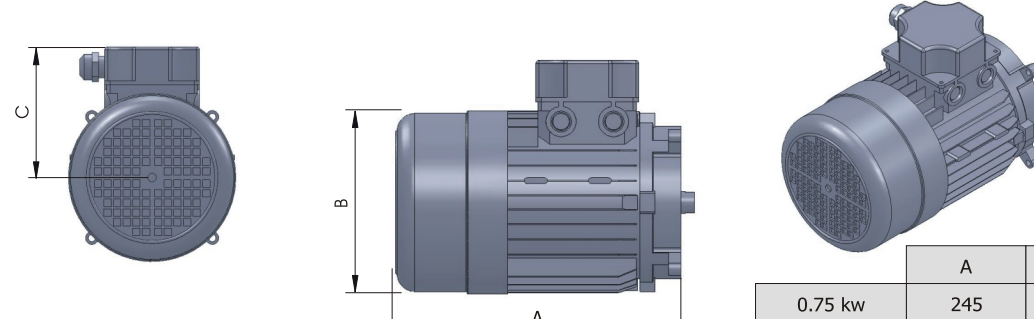
Note. *' Available on order.
 HD : Hydor-Tek design
 B14 : International design

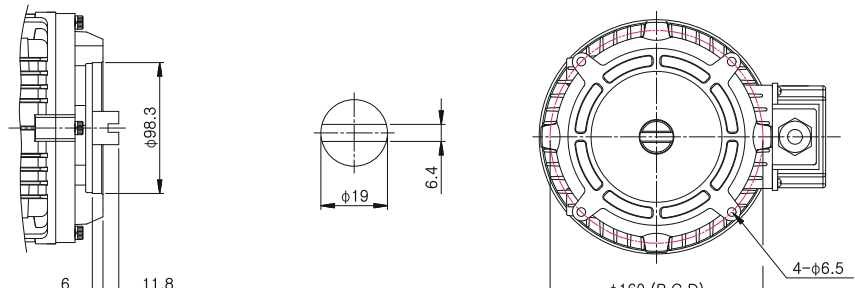
Note. 1. Please contact Hydro-Tek for 2pole, 6pole motors, B14 type motor, over 4kW and custom design motors.
 2. 4kw is international standard. (B14 type motor)

0.18 kw																	
CODE (4POLE)	A		B	C	D	RATED CURRENT (A)	WEIGHT (kg)										
	PHASE	VOLTAGE (V)	POLE	POWER (kw)	FREQUENCY (Hz)												
*H40160	1Φ	110	4	0.18	60	****	****										
S40160		220				1.41	4.7										
T40156	3Φ	230/400			50/60	1.12	4.4										
F40156		254/440				****	****										
R.P.M	INSULATION CLASS	PROTECTION GRADE	EFFICIENCY	DUTY CYCLE		FRAME SIZE	DESIGN	ROTATION									
1610	F	IP 54	55%	S1	S2	63	HD	C.W. →									
0.37 kw																	
CODE (4POLE)	A		B	C	D	RATED CURRENT (A)	WEIGHT (kg)										
PHASE	VOLTAGE (V)	POLE	POWER (kw)	FREQUENCY (Hz)													
*H40360	1Φ	110	0.37	50	****	****											
S40360		220			2.90	7.00											
T40356	3Φ	230/400		50/60	1.75	6.20											
F40356		254/440			1.67	6.20											
R.P.M	INSULATION CLASS	PROTECTION GRADE	EFFICIENCY	DUTY CYCLE		FRAME SIZE	DESIGN	ROTATION									
1610	F	IP 55	67%	S1	S2	71	HD	C.W. →									
OVERALL DIMENSION				<table border="1" style="display: inline-table; border-collapse: collapse;"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>0.18 kw</td> <td>195</td> <td>Φ122</td> <td>100</td> </tr> <tr> <td>0.37 kw</td> <td>225</td> <td>Φ140</td> <td>111</td> </tr> </tbody> </table>			A	B	C	0.18 kw	195	Φ122	100	0.37 kw	225	Φ140	111
		A	B	C													
0.18 kw	195	Φ122	100														
0.37 kw	225	Φ140	111														
DIMENSION																	

Note. Please contact Hydro-Tek for ****.
Please contact Hydro-Tek for single phase 50Hz AC motor.

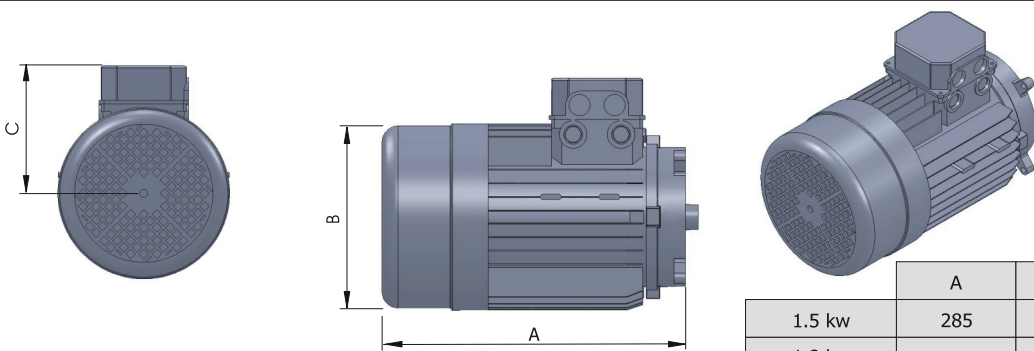
0.75 kw								
CODE (4POLE)	A		B	C	D	RATED CURRENT (A)	WEIGHT (kg)	
	PHASE	VOLTAGE (V)	POLE	POWER (kw)	FREQUENCY (Hz)			
*H40760	1Φ	110	4	0.75	60	****	****	
S40760		220				5.20	11.7	
T40756	3Φ	230/400			50/60	3.50	7.6	
F40756		254/440				3.10	7.6	
R.P.M	INSULATION CLASS	PROTECTION GRADE	EFFICIENCY	DUTY CYCLE		FRAME SIZE	DESIGN	ROTATION
1650	F	IP 55	70%	S1	S2	80	HD	C.W. →
1.0 kw								
CODE (4POLE)	A		B	C	D	RATED CURRENT (A)	WEIGHT (kg)	
PHASE	VOLTAGE (V)	POLE	POWER (kw)	FREQUENCY (Hz)				
*H41060	1Φ	110	1.0	1.0	60	****	****	
*S41060		220				4.47	12.0	
T41056	3Φ	230/400			50/60	4.07	12.2	
F41056		254/440						
R.P.M	INSULATION CLASS	PROTECTION GRADE	EFFICIENCY	DUTY CYCLE		FRAME SIZE	DESIGN	ROTATION
1670	F	IP 55	76%	S1	S2	90	HD	C.W. →

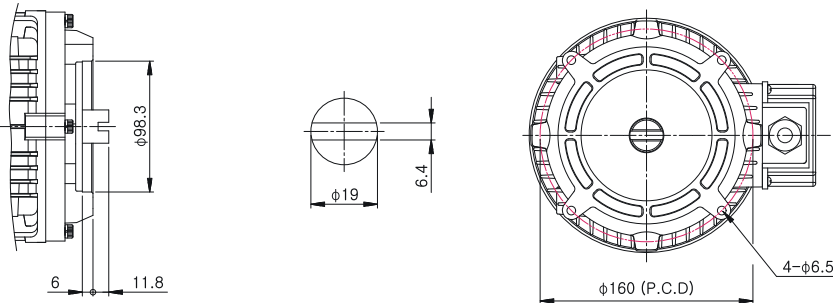
OVERALL DIMENSION			
	A	B	C
	0.75 kw	Φ157	125
	1.0 kw	Φ175	130

DIMENSION			
	98.3	6	11.8
	19	6.4	160 (P.C.D)
	4-6.5		

Note. Please contact Hydro-Tek for ****.
Please contact Hydro-Tek for single phase 50Hz AC motor.

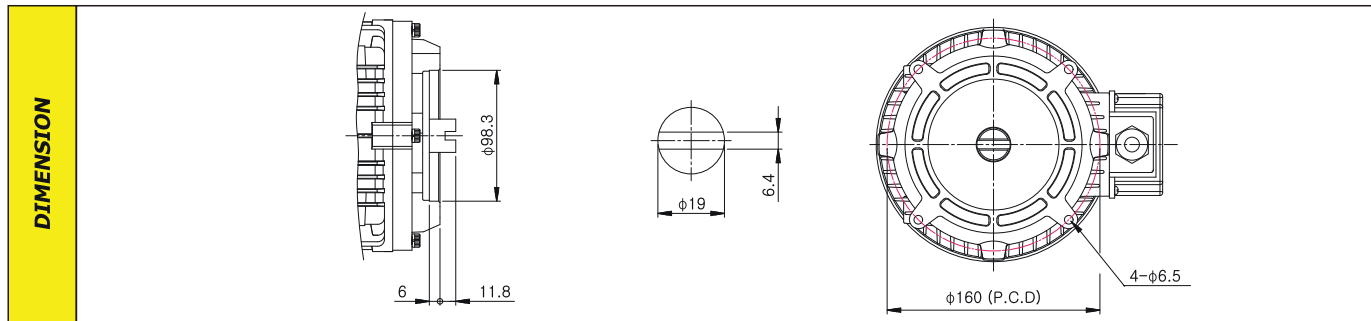
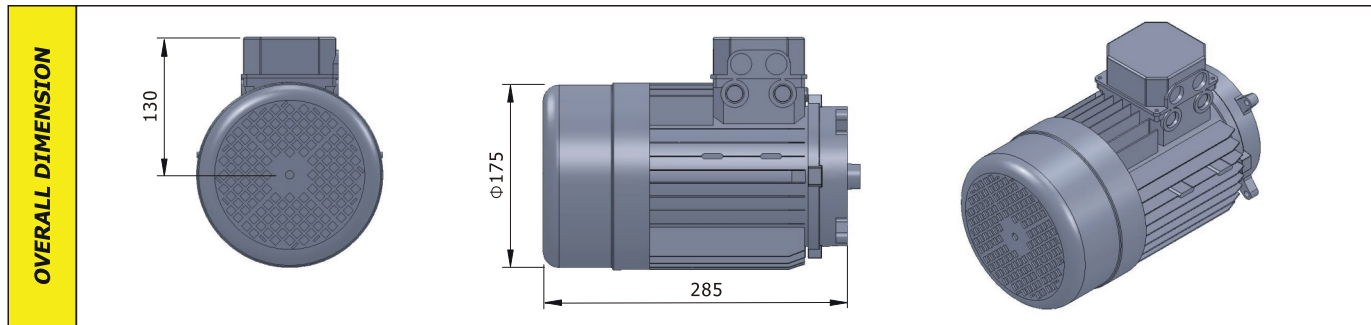
1.5 kw								
CODE (4POLE)	A		B	C	D	RATED CURRENT (A)	WEIGHT (kg)	
	PHASE	VOLTAGE (V)	POLE	POWER (kw)	FREQUENCY (Hz)			
*H41560	1Φ	110	4	1.5	60	****	****	
S41560		220				11.5	16.5	
T41556	3Φ	230/400			50/60	6.23	13.8	
F41556		254/440				5.40	12.0	
R.P.M	INSULATION CLASS	PROTECTION GRADE	EFFICIENCY	DUTY CYCLE		FRAME SIZE	DESIGN	ROTATION
1680	F	IP 55	55%	S1	S2	90	HD	C.W. →
1.8 kw								
CODE (4POLE)	A		B	C	D	RATED CURRENT (A)	WEIGHT (kg)	
PHASE	VOLTAGE (V)	POLE	POWER (kw)	FREQUENCY (Hz)				
*H41860	1Φ	110	1.8	60	****	****		
S41860		220			13.30	16.5		
*T41856	3Φ	230/400		50/60	****	****		
*F41856		254/440			****	****		
R.P.M	INSULATION CLASS	PROTECTION GRADE	EFFICIENCY	DUTY CYCLE		FRAME SIZE	DESIGN	ROTATION
1650	F	IP 55	60%	S1	S2	90	HD	C.W. →

OVERALL DIMENSION			
	A	B	C
	1.5 kw	Φ175	130
	1.8 kw	Φ175	130

DIMENSION			
	6	11.8	φ98.3
	φ19	6.4	φ160 (P.C.D)
			4-φ6.5

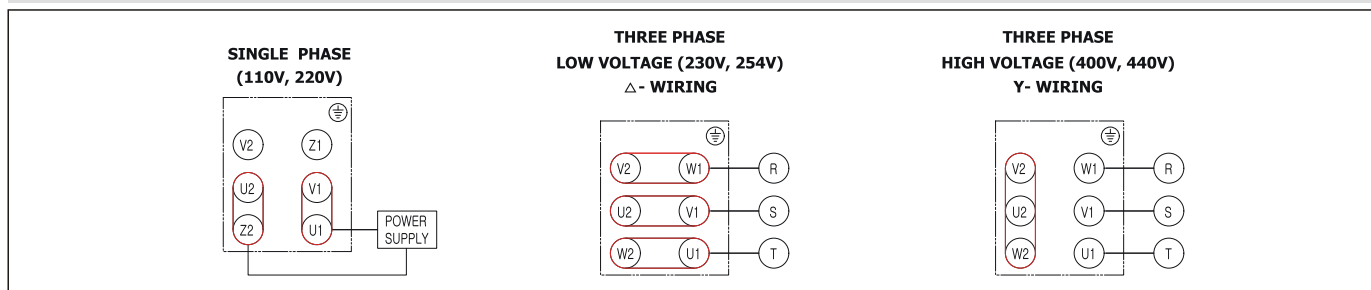
Note. Please contact Hydro-Tek for ****.
Please contact Hydro-Tek for single phase 50Hz AC motor.

2.2 kw								
CODE (4POLE)	A		B	C	D	RATED CURRENT (A)	WEIGHT (kg)	
	PHASE	VOLTAGE (V)	POLE	POWER (kw)	FREQUENCY (Hz)			
*H42260	1Φ	110	4	2.2	50	****	****	
S42260		220				****	****	
T42256	3Φ	230/400			50/60	8.10	15.0	
F42256		254/440				7.40	14.8	
R.P.M	INSULATION CLASS	PROTECTION GRADE	EFFICIENCY	DUTY CYCLE		FRAME SIZE	DESIGN	ROTATION
1695	F	IP 55	82%	S1	S2	90	HD	C.W. →

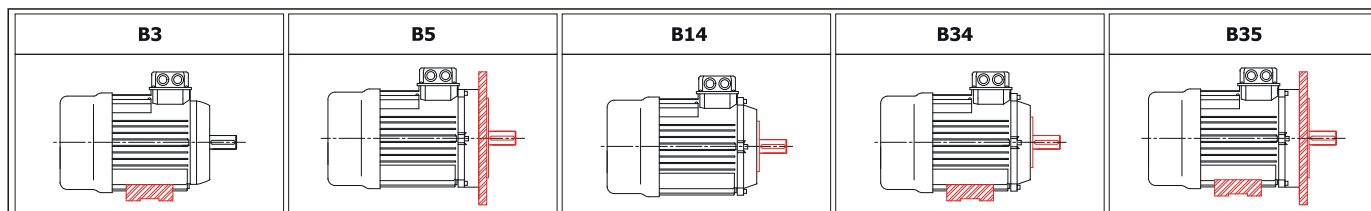


Note. Please contact Hydro-Tek for ****.
Please contact Hydro-Tek for single phase 50Hz AC motor.

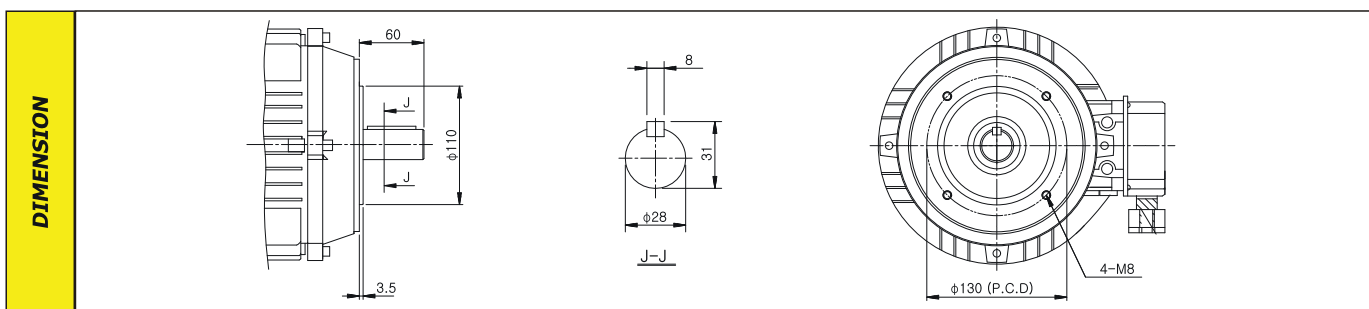
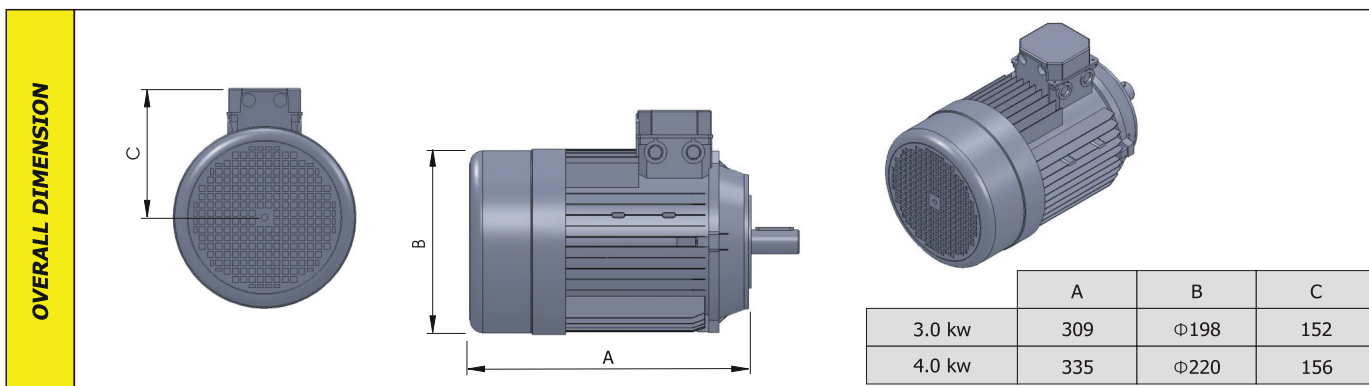
Wiring diagram



International standard motor design



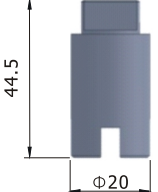
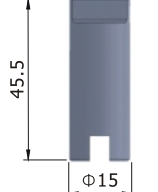
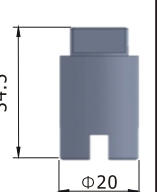
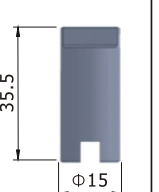
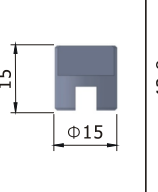
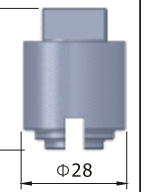
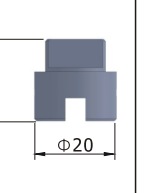
3.0 kw								
CODE (4POLE)	A		B	C	D	RATED CURRENT (A)	WEIGHT (kg)	
	PHASE	VOLTAGE (V)	POLE	POWER (kw)	FREQUENCY (Hz)			
*H43060	1Φ	110	4	3.0	60	****	****	
*S43060		220				****	****	
T43056	3Φ	230/400			50/60	****	22.1	
*F43056		254/440				****	****	
R.P.M	INSULATION CLASS	PROTECTION GRADE	EFFICIENCY	DUTY CYCLE		FRAME SIZE	DESIGN	ROTATION
1700	F	IP 55	80%	S1	S2	100	B14	C.W. →
4.0 kw								
CODE (4POLE)	A		B	C	D	RATED CURRENT (A)	WEIGHT (kg)	
	PHASE	VOLTAGE (V)	POLE	POWER (kw)	FREQUENCY (Hz)			
*H44060	1Φ	110	4	4.0	60	****	****	
*S44060		220				****	****	
T44056	3Φ	230/400			50/60	14.30	27.2	
F44056		254/440				12.10	27.5	
R.P.M	INSULATION CLASS	PROTECTION GRADE	EFFICIENCY	DUTY CYCLE		FRAME SIZE	DESIGN	ROTATION
1710	F	IP 55	83%	S1	S2	112	B14	C.W. →



Note. Please contact Hydro-Tek for ****.
Please contact Hydro-Tek for single phase 50Hz AC motor.

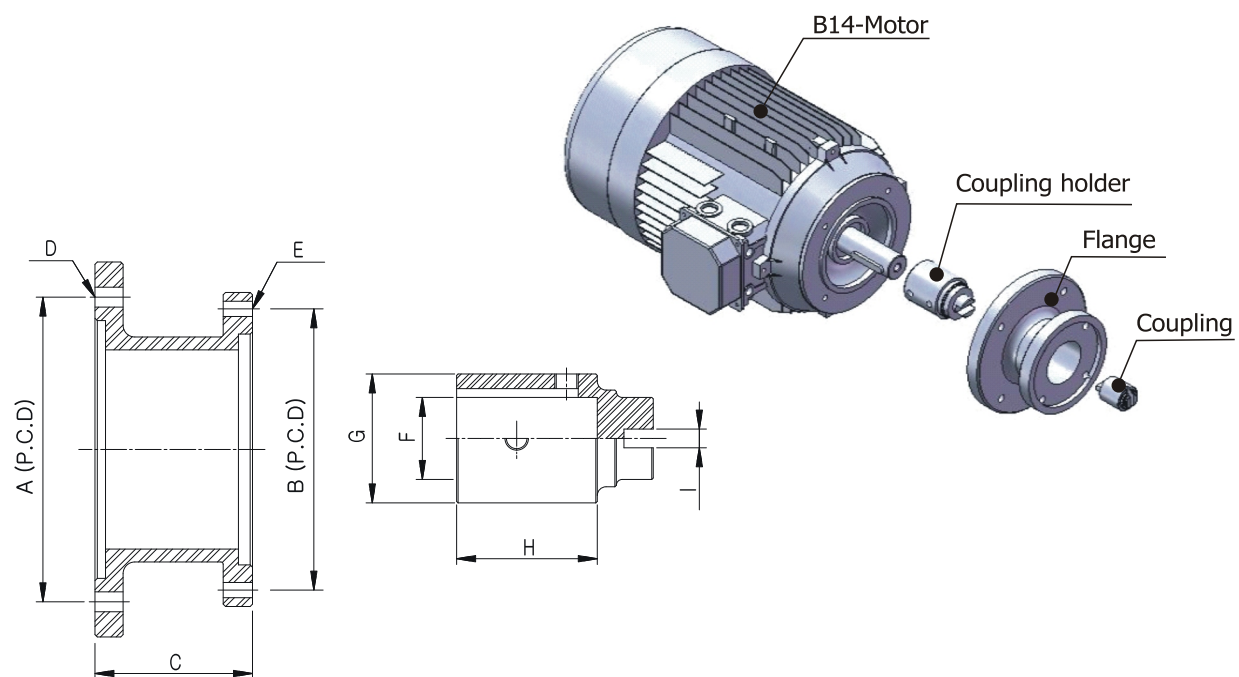
MOTOR FLANGE & COUPLING

Coupling for DC - Motor & AC - Motor

CODE	CP01	CP02	CP03	CP04	CP05	CP06	CP07
APPLICABLE CENTER BLOCK	XO / MO	MH / XH QH / QD	CO	CH	SH / SD	XO / MO (In case of B14-Motor)	DX / DF (P.M.U)
DIMENSION							

Flange & coupling kit for international standard AC - motor (B14 - type)

FLANGE CODE	COUPLING HOLDER CODE	FRAME	A	B	C	D	E	F	G	H	I
F080	C080	80	100	90	59.2	6.5	6.5	19	32	30	6.4
F090	C090	90	115	90	59.2	8.5	6.5	24	40	40	6.4
F112	C112	100/112	130	120	67.2	8.5	6.5	28	44	48	6.4



- Note.**
1. This flange and coupling can be assembled with B14 type motor and Hydro-Tek center block.
 2. You can purchase B14 Motors in your area.

A	ONE GROUP MO, XO, CO	HALF GROUP MH, XH, CH, QH, SH
----------	--------------------------------	---

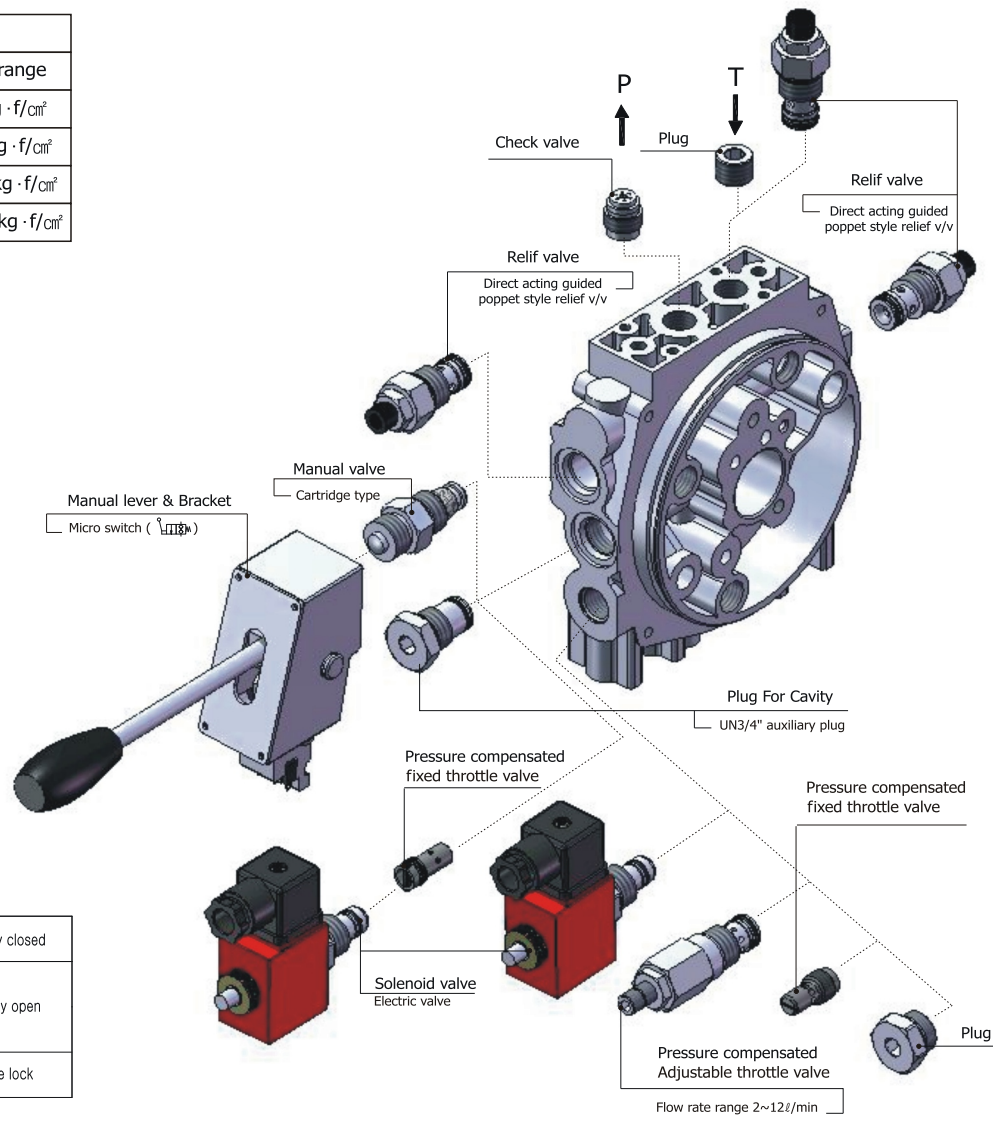
CENTER BLOCK DIAGRAM

B	CODE	1		2	
	DIAGRAM				
	APPLICABLE CENTER BLOCK		MO, MH, XO, XH, CO, CH series & QH, SH		MO, MH, XO, XH, CO, CH series & QH, SH
	CODE	3		4	
	DIAGRAM				
	APPLICABLE CENTER BLOCK		MO, MH, XO, XH, CO, CH series & QH, SH		MO, MH, XO, XH, CO, CH series & QH, SH
	CODE	5		6	
	DIAGRAM				
	APPLICABLE CENTER BLOCK		MO, MH, XO, XH, CO, CH series & QH, SH		MO, MH, XO, XH, CO, CH series & QH, SH
	CODE	7		8	
DIAGRAM					
APPLICABLE CENTER BLOCK		MO, MH, XO, XH, CO, CH series & QH, SH		MO, MH, XO, XH, CO, CH series & QH, SH	
CODE	9		10		
DIAGRAM					
APPLICABLE CENTER BLOCK		MO, MH, XO, XH, CO, CH series		MO, MH, XO, XH, CO, CH series	

RELIEF VALVE PRESSURE RANGE					
C	Code	L	A	B	C
	Pressure range	3 ~ 10 kg · f/cm ²	10 ~ 60 kg · f/cm ²	50 ~ 150 kg · f/cm ²	100 ~ 250 kg · f/cm ²

M SERIES BUILT-IN VALVE

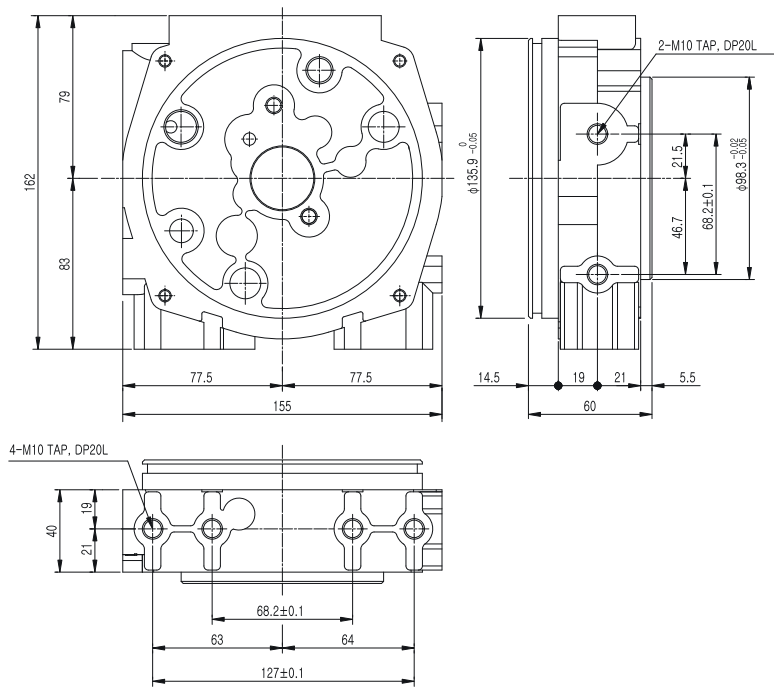
Relief valve	
Code	Pressure range
L	3 ~ 10 kg · f/cm ²
A	10 ~ 60 kg · f/cm ²
B	50 ~ 150 kg · f/cm ²
C	100 ~ 250 kg · f/cm ²



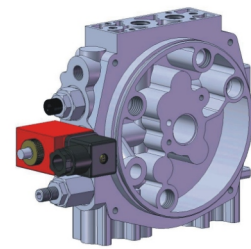
A

	Normally closed
	Normally open
	Double lock

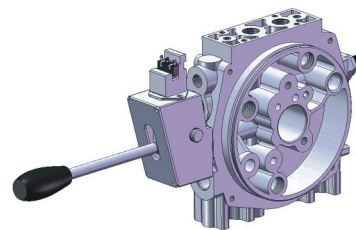
DIMENSION



MH Center block



Micro s/w lever type MHXX



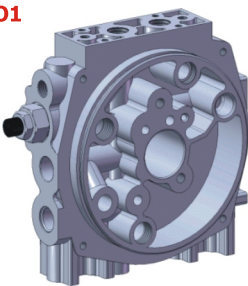
M CENTER BLOCK SPECIFICATION

DESCRIPTION	MAIN SPECIFICATION
<ol style="list-style-type: none"> Made of Aluminum material Outlet port : PF 3/8" (Options : PT, SAE) Return port : PF 3/8" (Options : PT, SAE) Solenoid valve : Normally closed, Normally open, Double lock selectional Pressure adjustable Relief valve Applicable pump displacement : 0.2 cc/rev ~ 9.8 cc/rev Only "M" series oil tank applicable (refer to page 91 for M series oil tank) 	<p>a : Check valve = PF 3/8" (Check Valve Cavity) b : Relief valve = UNF 3/4" (SV09-2 Cavity) c : Solenoid valve = UNF 3/4" (SV08-2 or SV09-2 Cavity) d : Orifice = UNF 3/4" (SV08-2 + orifice Or SV09-2 + orifice Cavity) e : GA = UNF 3/4" (SV09-2) f : Lever valve = UNF 3/4" (SV09-2)</p> <p>P : Primary Work Port = PF 3/8" P2 : Secondary Work Port = PT 1/4" T : Return Port = PF 3/8"</p>

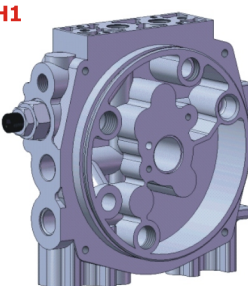
MO1 / MH1 & MO2 / MH2

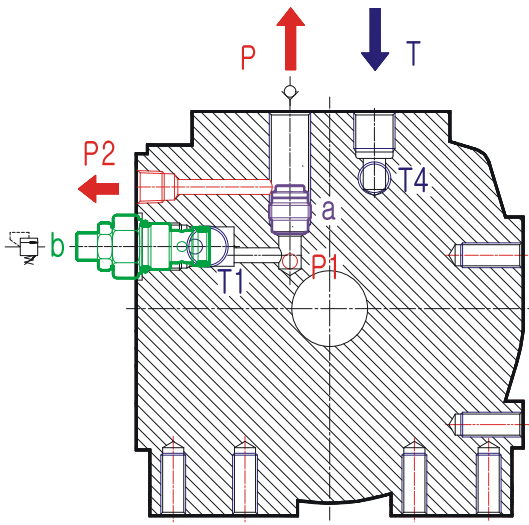
VALVE ASSEMBLY

MO1

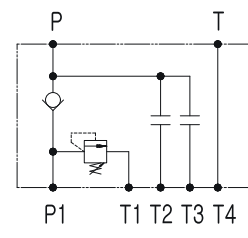


MH1

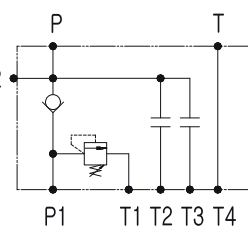




MO1 / MH1



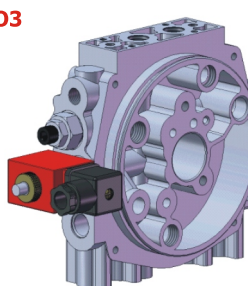
MO2 / MH2



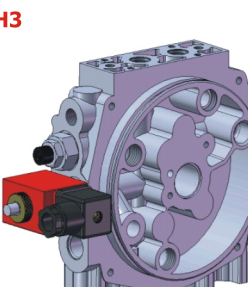
MO3 / MH3 & MO4 / MH4

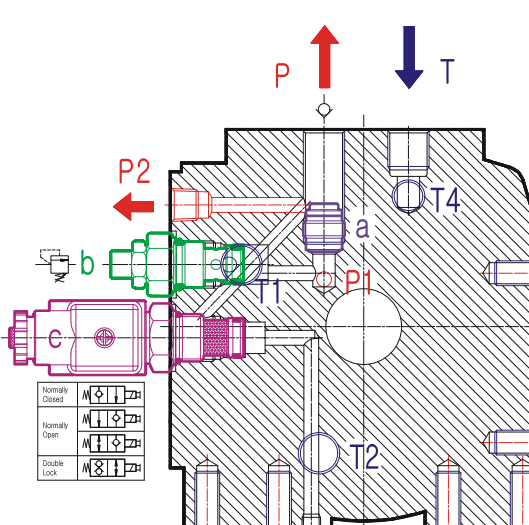
VALVE ASSEMBLY

MO3

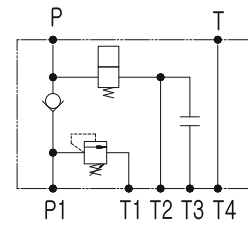


MH3

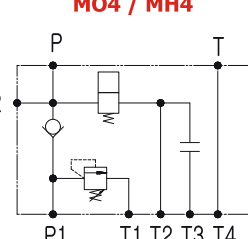


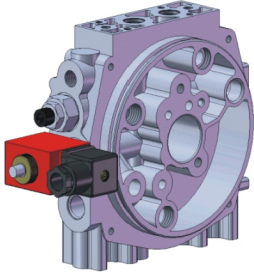
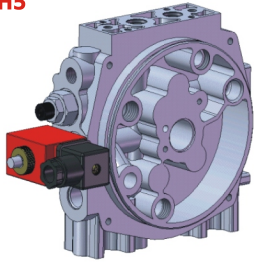
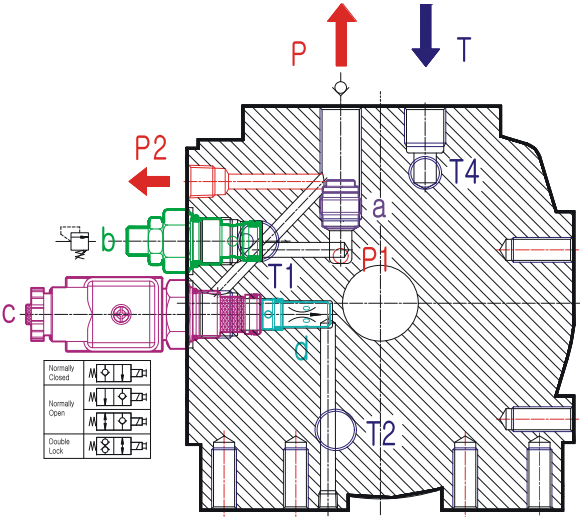
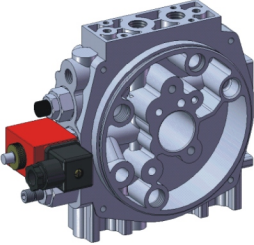
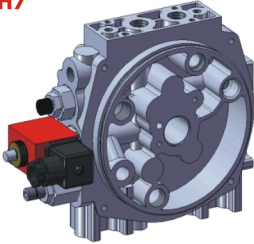
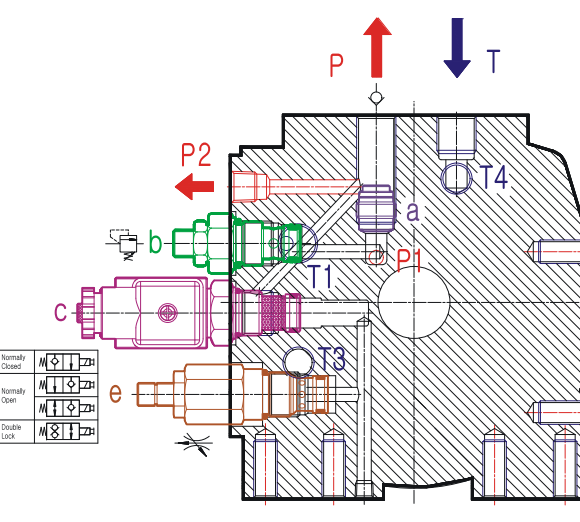
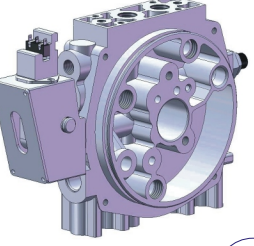
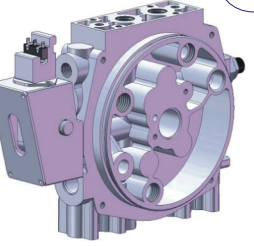
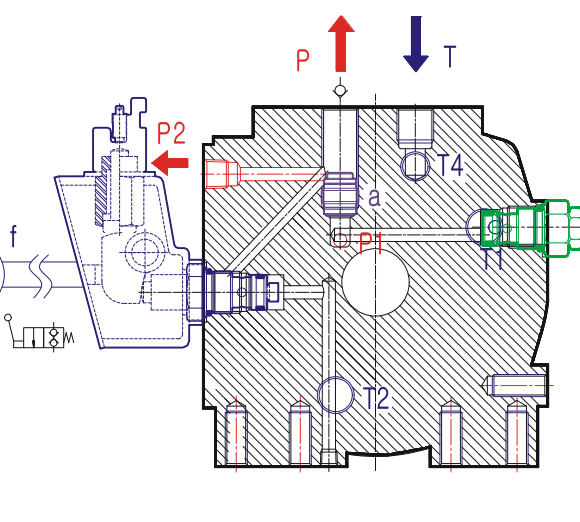


MO3 / MH3



MO4 / MH4



MO5 / MH5 & MO6 / MH6							
<p>MO5</p>  <p>MH5</p> 	 <table border="1" style="margin: 10px auto;"> <tr> <td>Normally Closed</td> <td></td> </tr> <tr> <td>Normally Open</td> <td></td> </tr> <tr> <td>Double Lock</td> <td></td> </tr> </table>	Normally Closed		Normally Open		Double Lock	
Normally Closed							
Normally Open							
Double Lock							
MO7 / MH7 & MO8 / MH8							
<p>MO7</p>  <p>MH7</p> 	 <table border="1" style="margin: 10px auto;"> <tr> <td>Normally Closed</td> <td></td> </tr> <tr> <td>Normally Open</td> <td></td> </tr> <tr> <td>Double Lock</td> <td></td> </tr> </table>	Normally Closed		Normally Open		Double Lock	
Normally Closed							
Normally Open							
Double Lock							
MO9 / MH9 & MO0 / MH0							
<p>MO9</p>  <p>MH9</p> 	 <table border="1" style="margin: 10px auto;"> <tr> <td>Normally Closed</td> <td></td> </tr> <tr> <td>Normally Open</td> <td></td> </tr> <tr> <td>Double Lock</td> <td></td> </tr> </table>	Normally Closed		Normally Open		Double Lock	
Normally Closed							
Normally Open							
Double Lock							

A

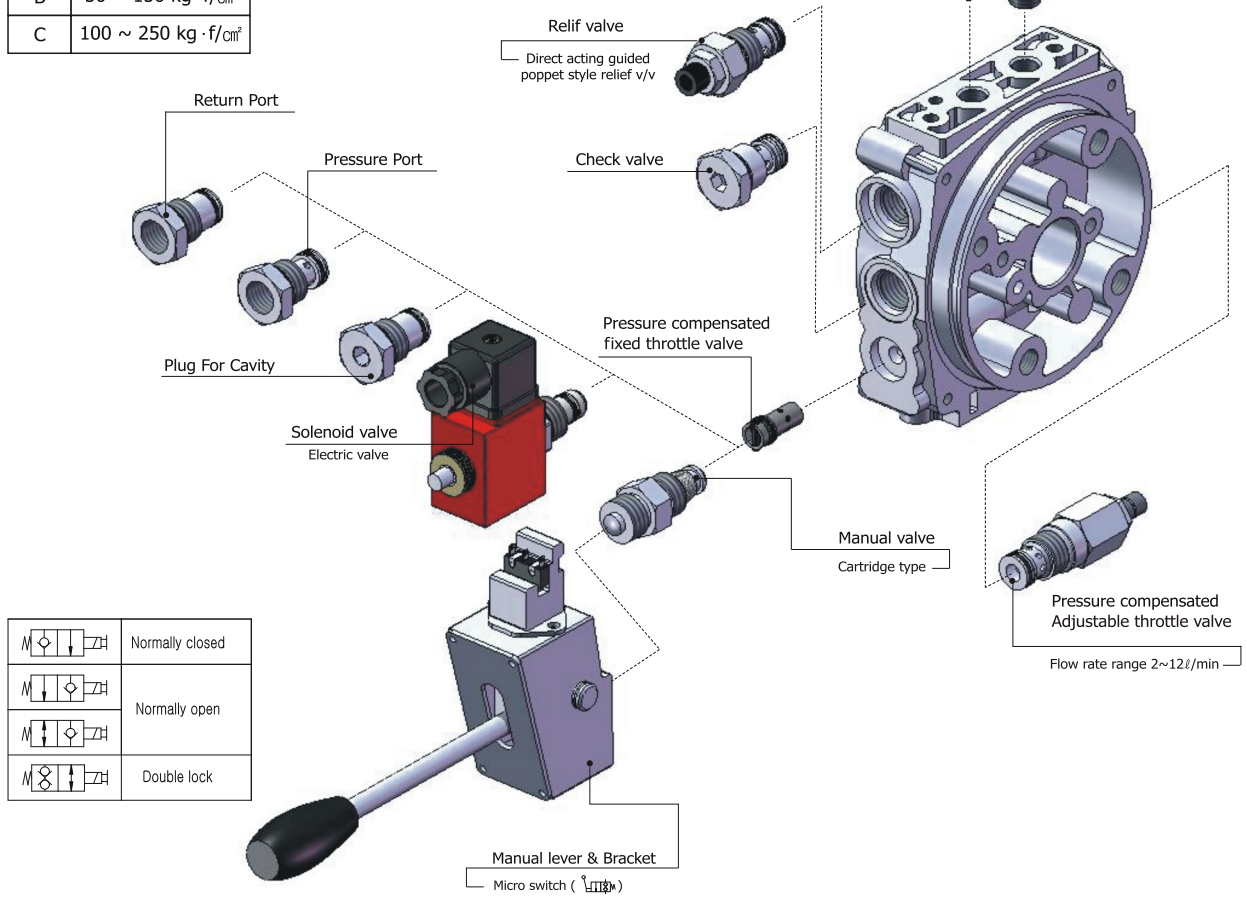
VALVE ASSEMBLY

VALVE ASSEMBLY

VALVE ASSEMBLY

X SERIES BUILT-IN VALVE

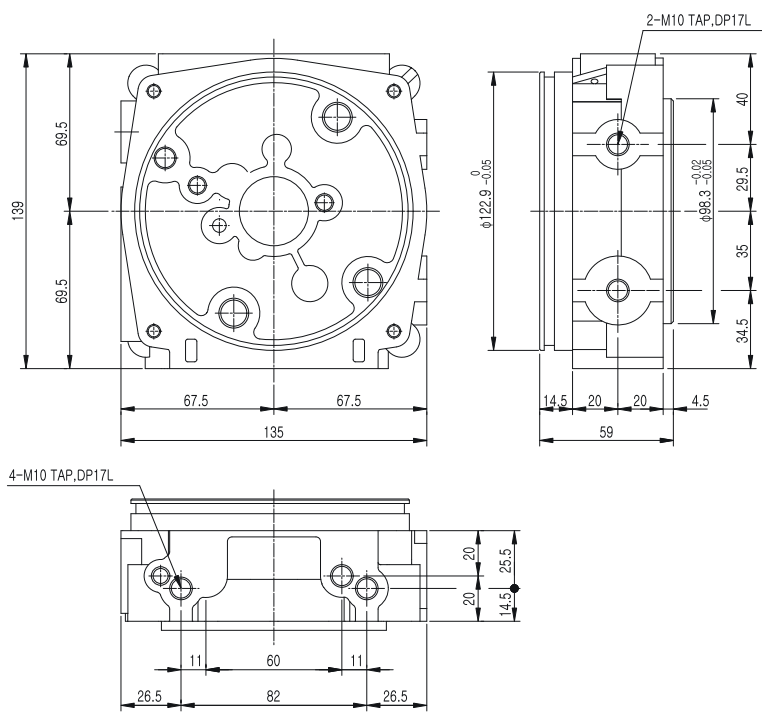
Relief valve	
Code	Pressure range
L	3 ~ 10 kg · f/cm ²
A	10 ~ 60 kg · f/cm ²
B	50 ~ 150 kg · f/cm ²
C	100 ~ 250 kg · f/cm ²



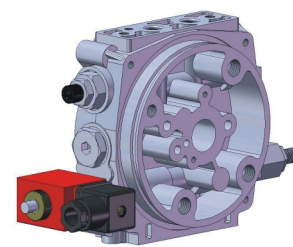
	Normally closed
	Normally open
	Double lock

A

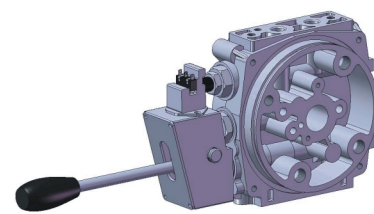
DIMENSION



XH Center block



Micro s/w lever type MHXX



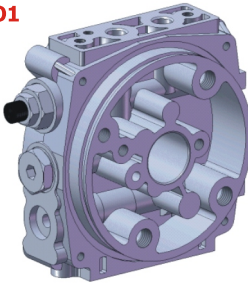
X CENTER BLOCK SPECIFICATION

DESCRIPTION	MAIN SPECIFICATION
1. Made of Aluminum material 2. Outlet port : PF 1/4" (Options : PT, SAE) 3. Return port : PF 1/4" (Options : PT, SAE) 4. Solenoid valve : Normally closed, Normally open, Double lock selectional 5. Pressure adjustable Relief valve 6. Applicable pump displacement : 0.2 cc/rev ~ 9.8 cc/rev 7. Only "X" series oil tank applicable (refer to page 93 for X series oil tank)	a : Check valve = UNF 3/4" (Check Valve Cavity) b : Relief valve = UNF 3/4" (SV09-2 Cavity) c : Solenoid valve = UNF 3/4" (SV08-2 or SV09-2 Cavity) d : Orifice = UNF 3/4" (SV08-2 + orifice or SV09-2 + orifice Cavity) e : GA = UNF 3/4" (SV09-2) f : Lever valve = UNF 3/4" (SV09-2) P : Primary Work Port = PF 1/4" P2 : Secondary Work Port = PT 1/4" T : Return Port = PF 1/4"

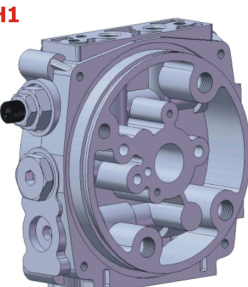
CENTER BLOCK

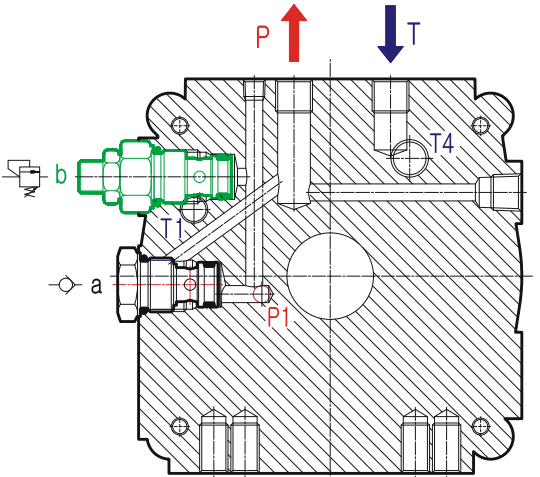
XO1 / XH1 & XO2 / XH2

XO1

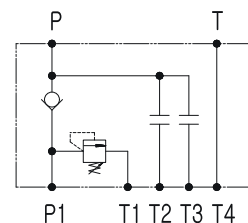


XH1

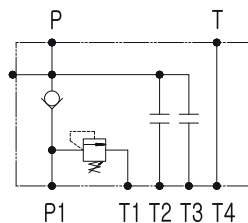




XO1 / XH1

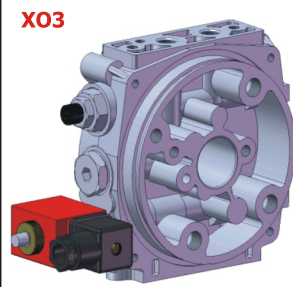


XO2 / XH2

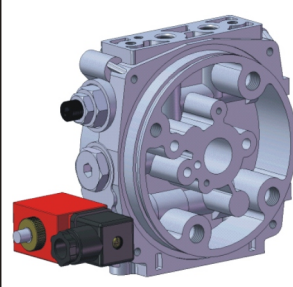


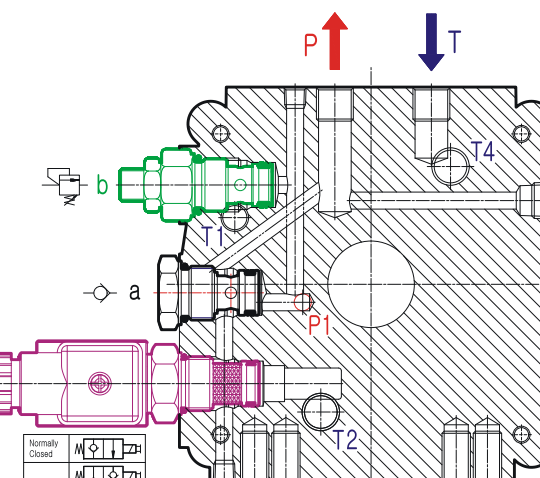
XO3 / XH3 & XO4 / XH4

XO3

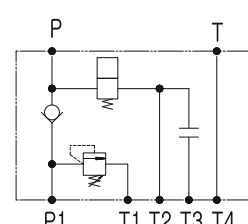


XH3

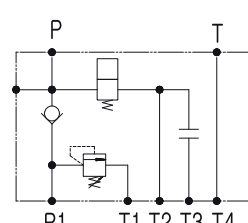




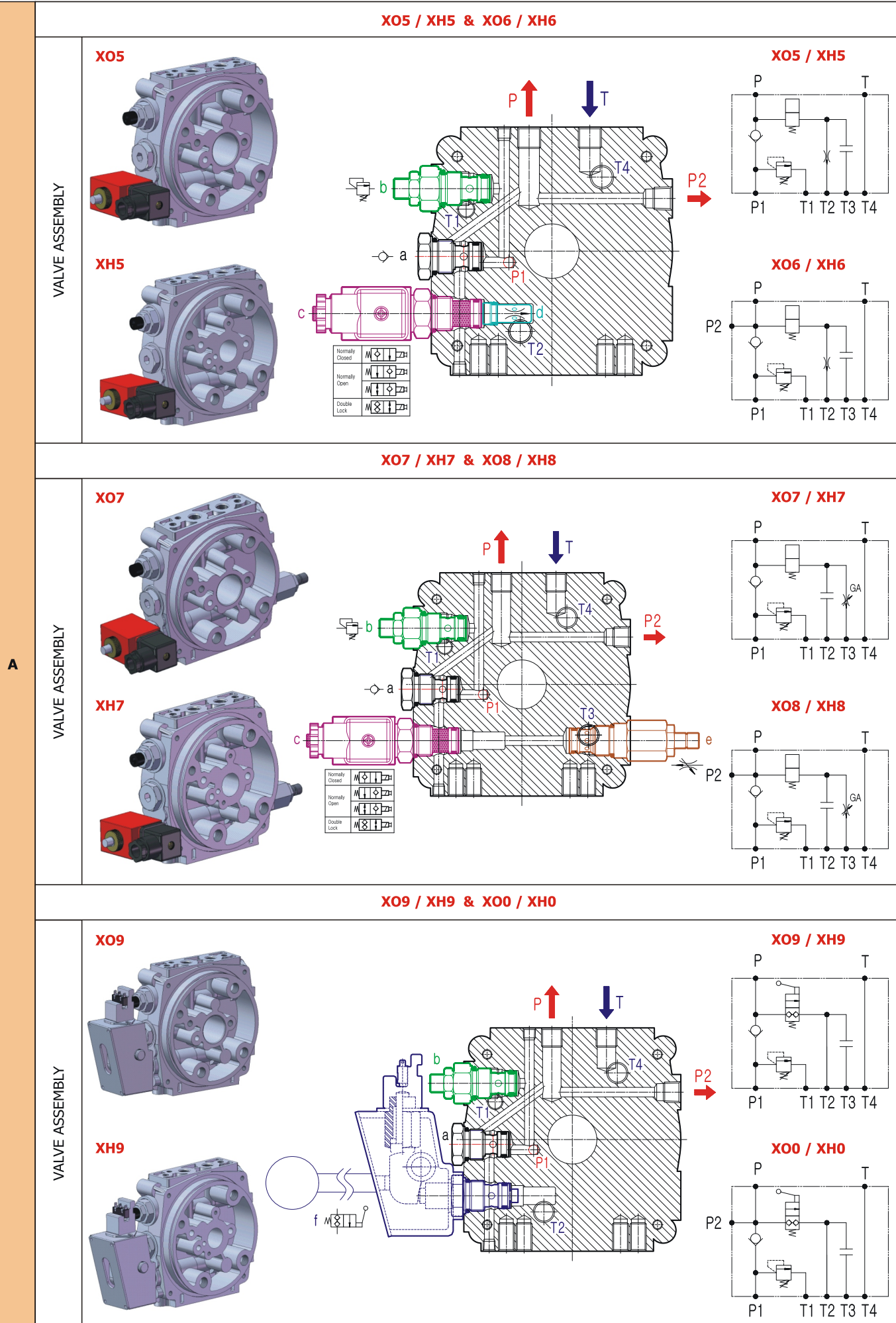
XO3 / XH3



XO4 / XH4

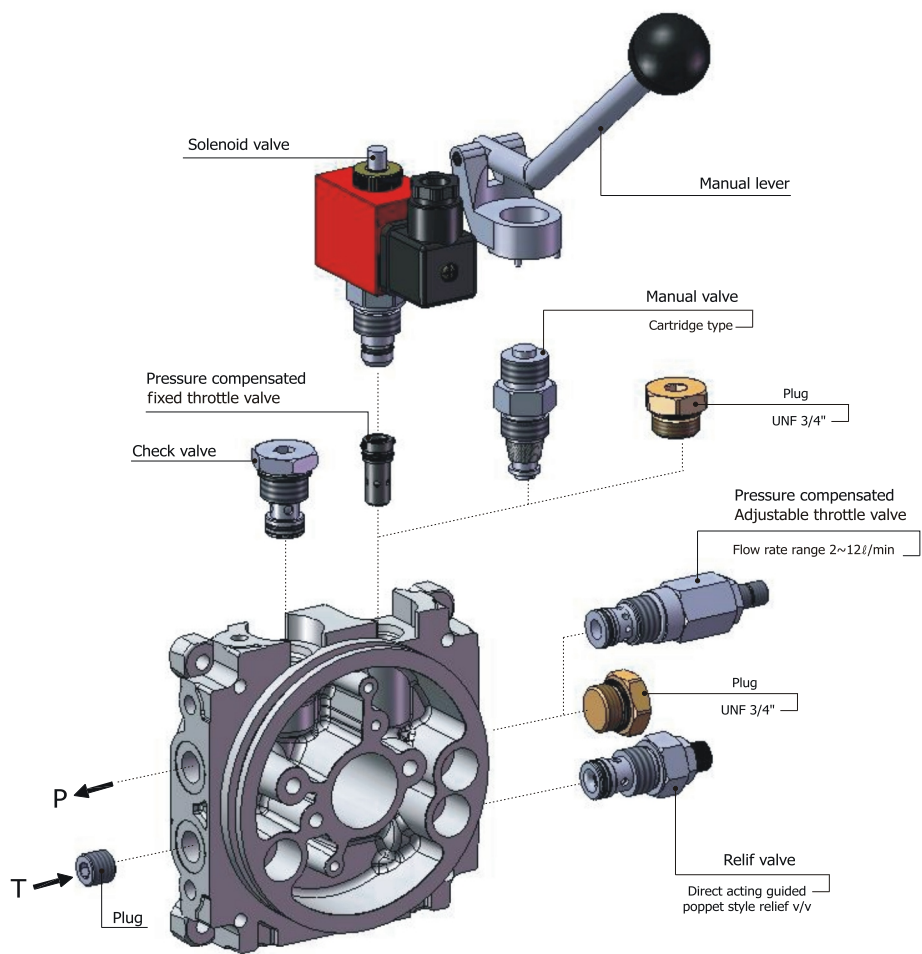


Normally Closed	
Normally Open	
Double Lock	



C SERIES BUILT-IN VALVE

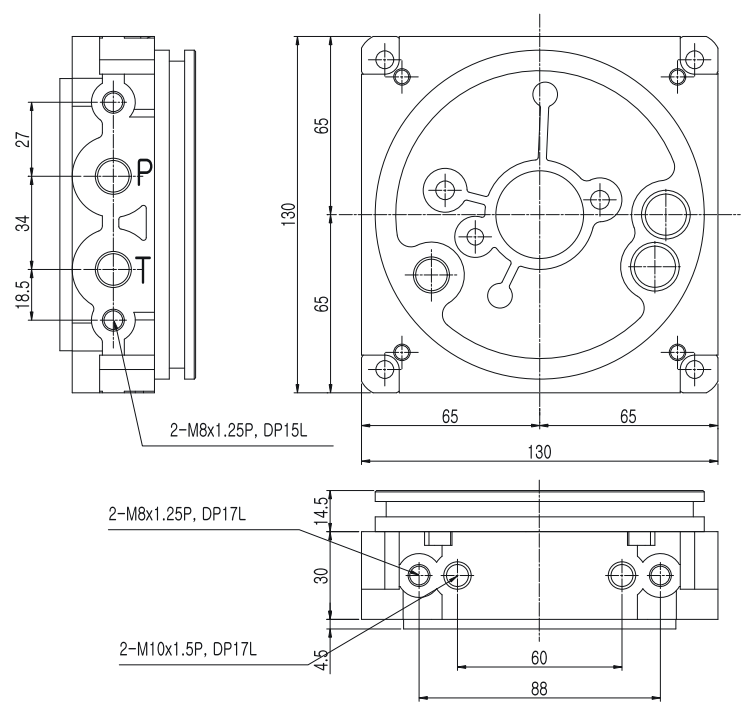
Relief valve	
Code	Pressure range
L	3 ~ 10 kg · f/cm ²
A	10 ~ 60 kg · f/cm ²
B	50 ~ 150 kg · f/cm ²
C	100 ~ 250 kg · f/cm ²



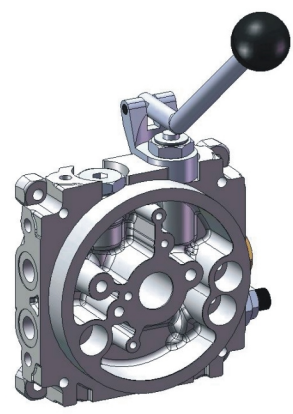
A

	Normally closed
	Normally open
	Double lock

DIMENSION



CH Center block

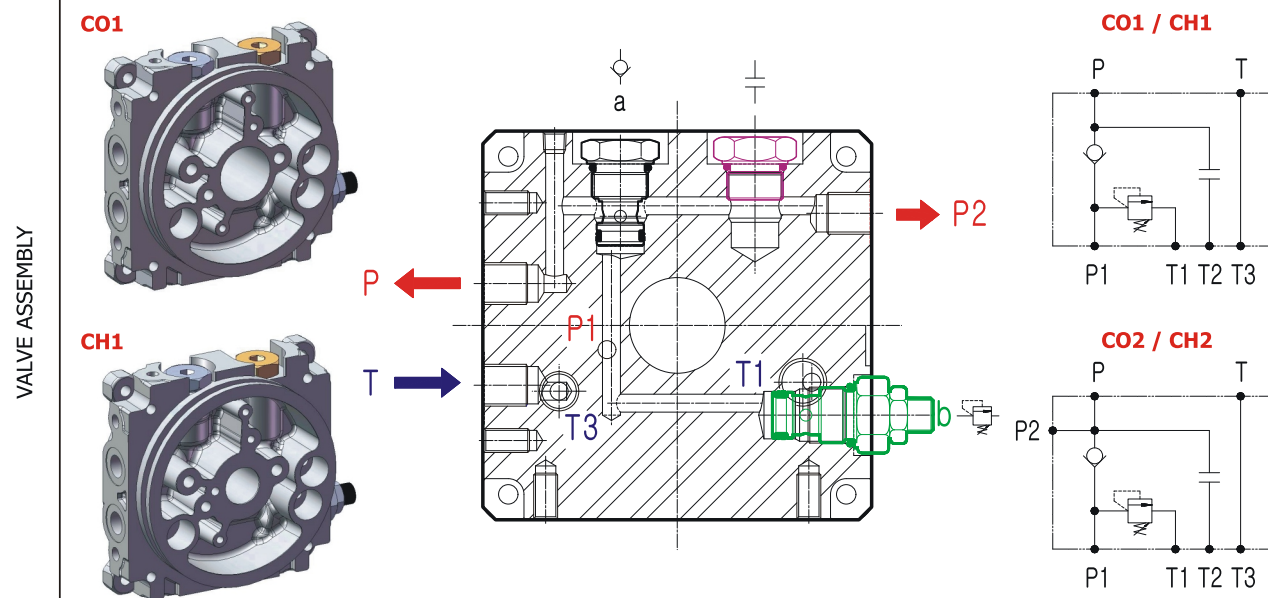


CENTER BLOCK

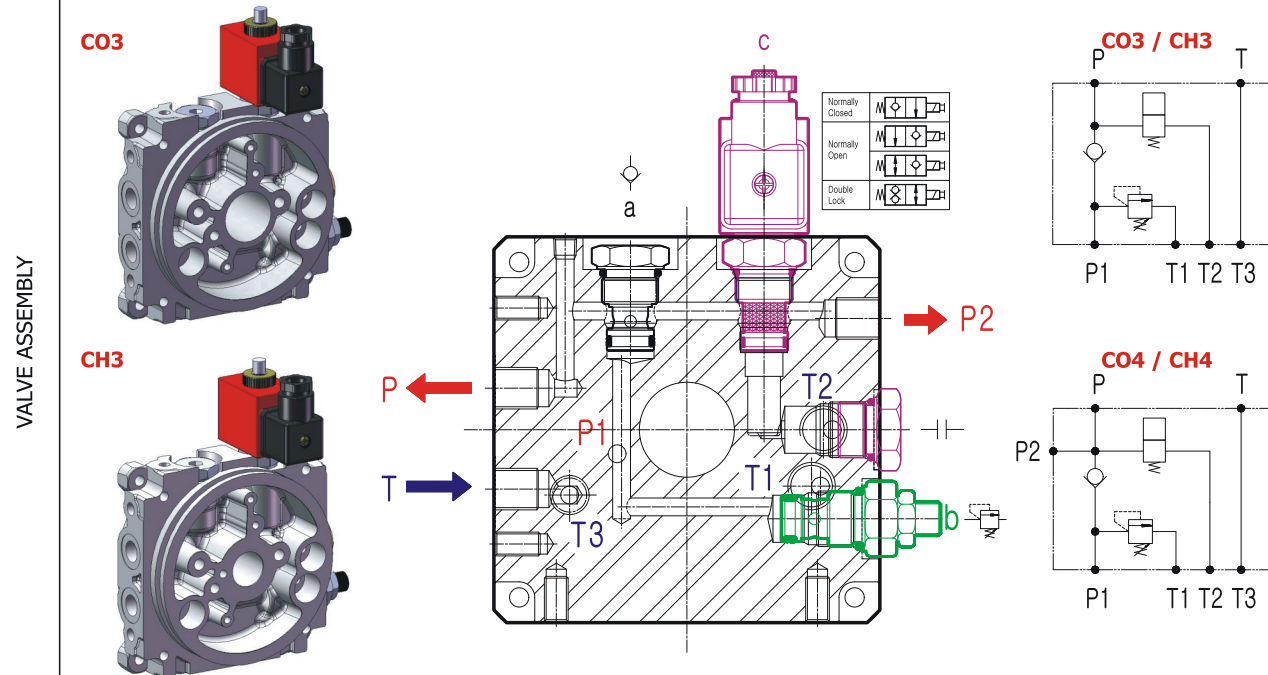
C CENTER BLOCK SPECIFICATION

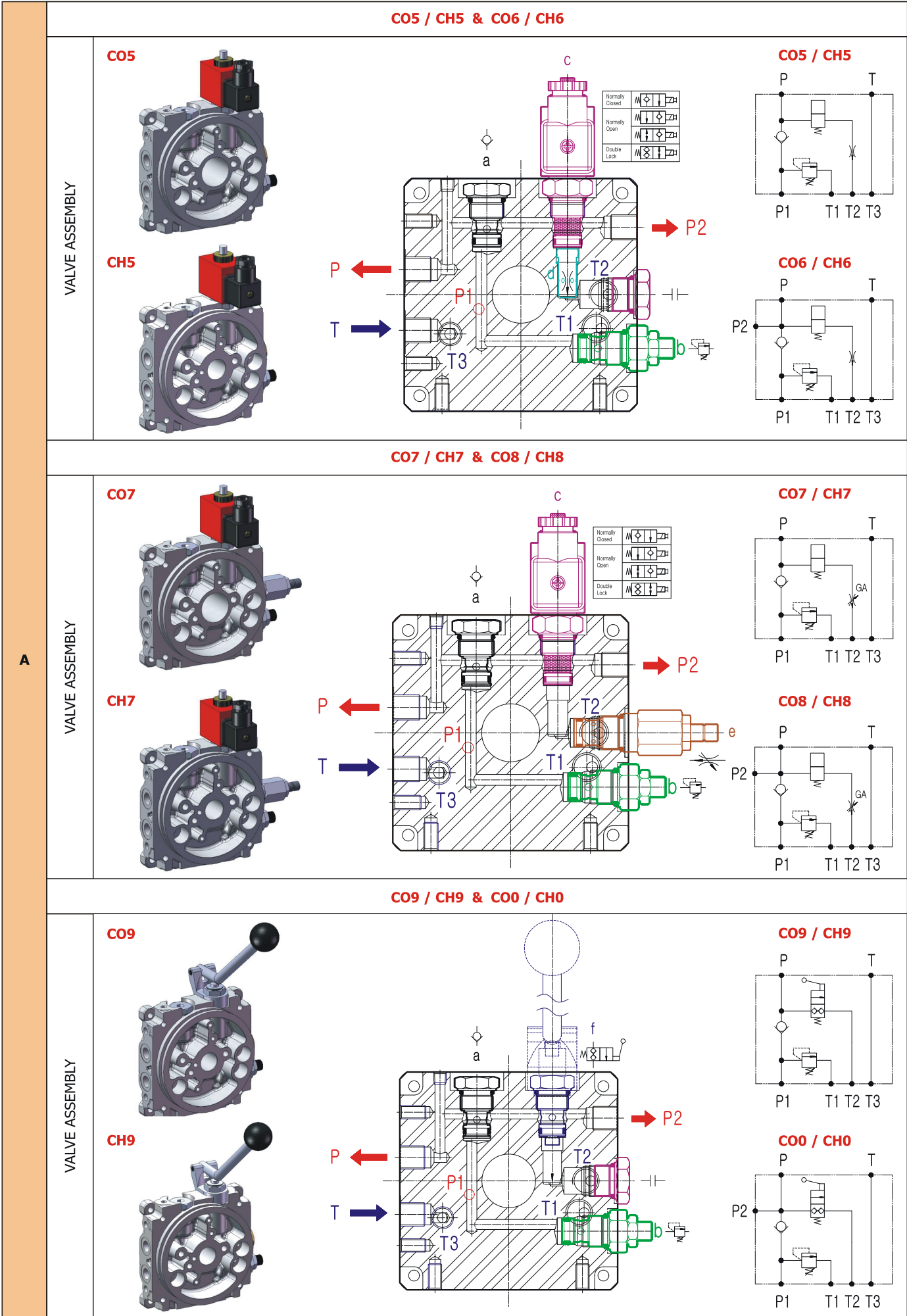
DESCRIPTION	MAIN SPECIFICATION
<ol style="list-style-type: none"> Made of Aluminum material Outlet port : PF 1/4" (Options : PT, SAE) Return port : PF 1/4" (Options : PT, SAE) Solenoid valve : Normally closed, Normally open, Double lock selectional Pressure adjustable Relief valve Applicable pump displacement : 0.2 cc/rev ~ 9.8 cc/rev Only "C" series oil tank applicable (refer to page 99 for C series oil tank) 	<p>a : Check valve = PF 3/4" (Check Valve Cavity)</p> <p>b : Relief valve = UNF 3/4" (SV09-2 Cavity)</p> <p>c : Solenoid valve = UNF 3/4" (SV08-2 or SV09-2 Cavity)</p> <p>d : Orifice = UNF 3/4" (SV08-2 + orifice Or SV09-2 + orifice Cavity)</p> <p>e : GA = UNF 3/4" (SV09-2)</p> <p>f : Lever valve = UNF 3/4" (SV09-2)</p> <p>P : Primary Work Port = PF 1/4"</p> <p>P2 : Secondary Work Port = Pf 1/4"</p> <p>T : Return Port = PF 3/8"</p>

CO1 / CH1 & CO2 / CH2



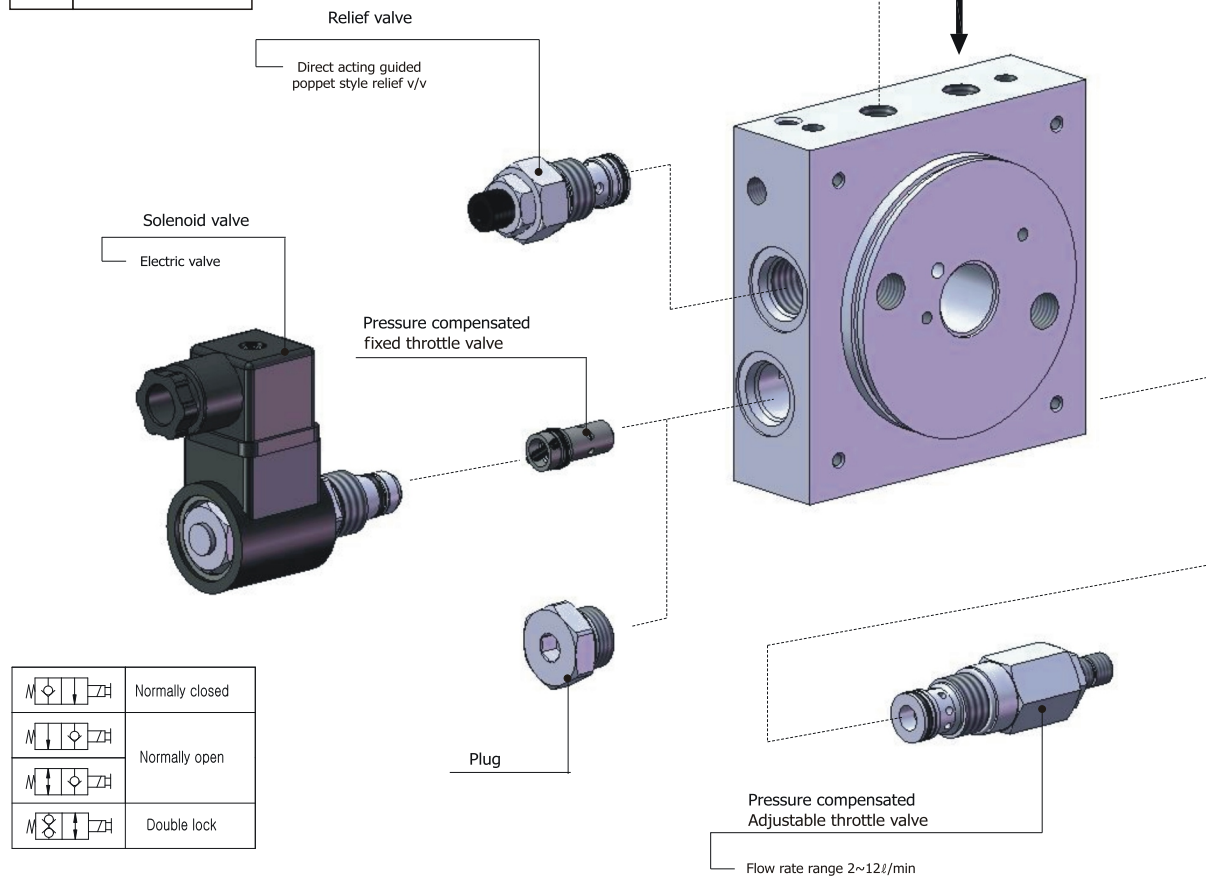
CO3 / CH3 & CO4 / CH4





QH SERIES BUILT-IN VALVE

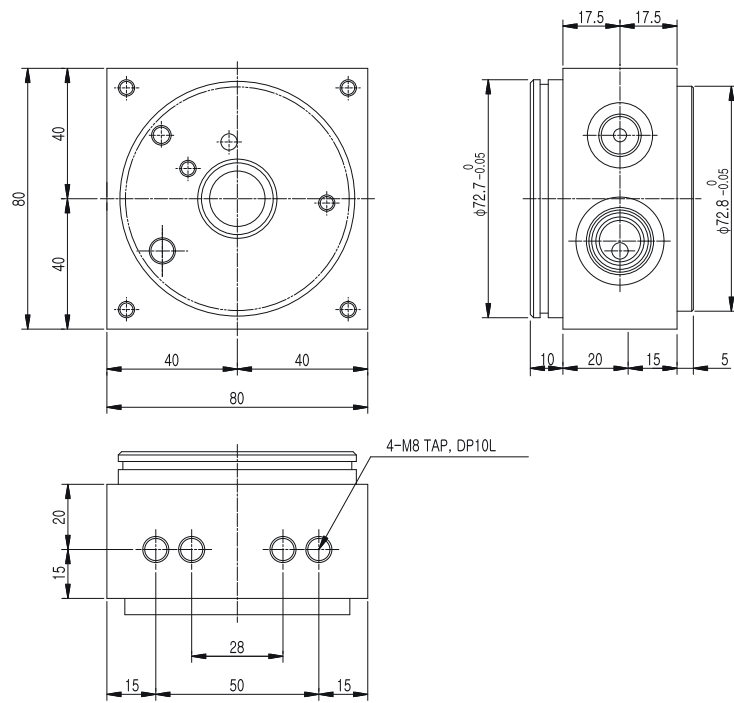
Relief valve	
Code	Pressure range
L	3 ~ 10 kg · f/cm ²
A	10 ~ 60 kg · f/cm ²
B	50 ~ 150 kg · f/cm ²
C	100 ~ 250 kg · f/cm ²



A

	Normally closed
	Normally open
	Double lock

DIMENSION



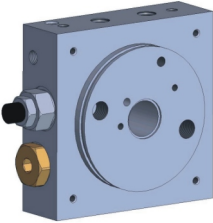
QH CENTER BLOCK SPECIFICATION

DESCRIPTION	MAIN SPECIFICATION
<ol style="list-style-type: none"> Made of Aluminum material Outlet port : PF 1/4" (Options : PT, SAE) Return port : PF 1/4" (Options : PT, SAE) Solenoid valve : Normally closed, Normally open, Double lock selectional Pressure adjustable Relief valve Applicable pump displacement : 0.2 cc/rev ~ 1.6 cc/rev Only "Q" series oil tank applicable (refer to page 96 for Q series oil tank) 	<p>a : Check valve = PF 1/4" (Check Valve Cavity) b : Relief valve = UNF 3/4" (SV09-2 Cavity) c : Solenoid valve = UNF 3/4" (SV08-2 or SV09-2 Cavity) d : Orifice = UNF 3/4" (SV08-2 + orifice or SV09-2 + orifice Cavity) e : GA = UNF 3/4" (SV09-2)</p> <p>P : Primary Work Port = PF 1/4" P2 : Secondary Work Port = PT 1/8" T : Return Port = PF 1/4"</p>

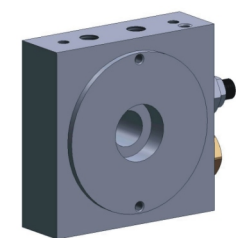
CENTER BLOCK

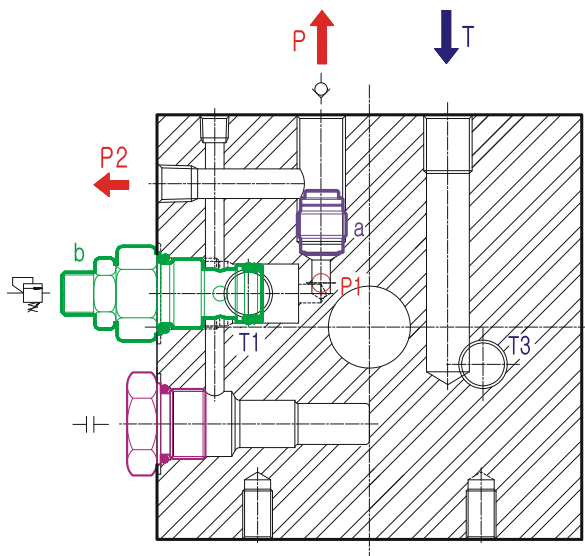
QH1 / QH2

QH1

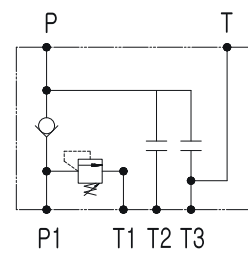


QH2

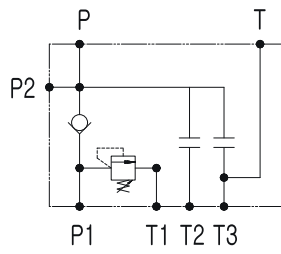




QH1

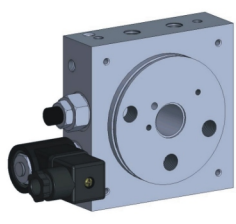


QH2

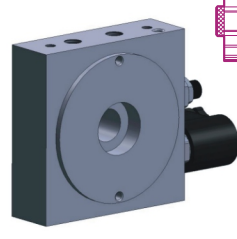


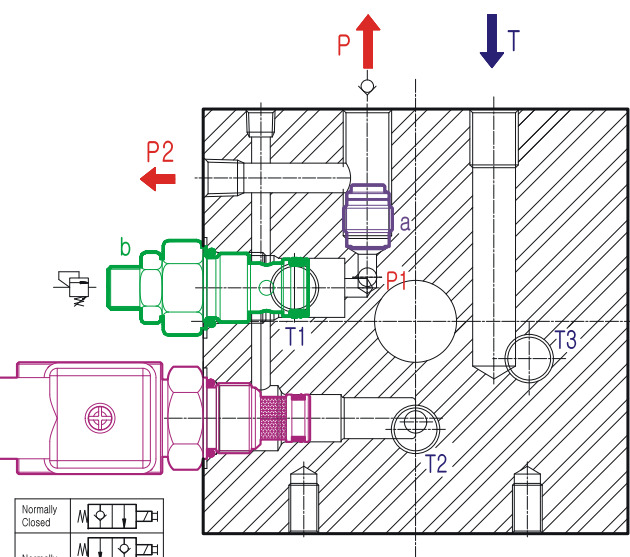
QH3 / QH4

QH3

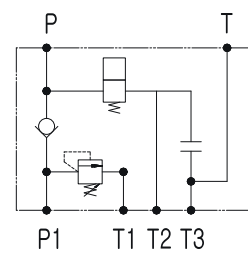


QH4

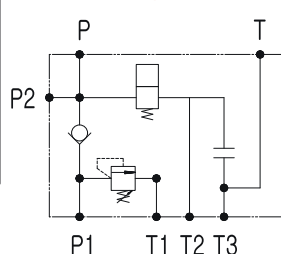







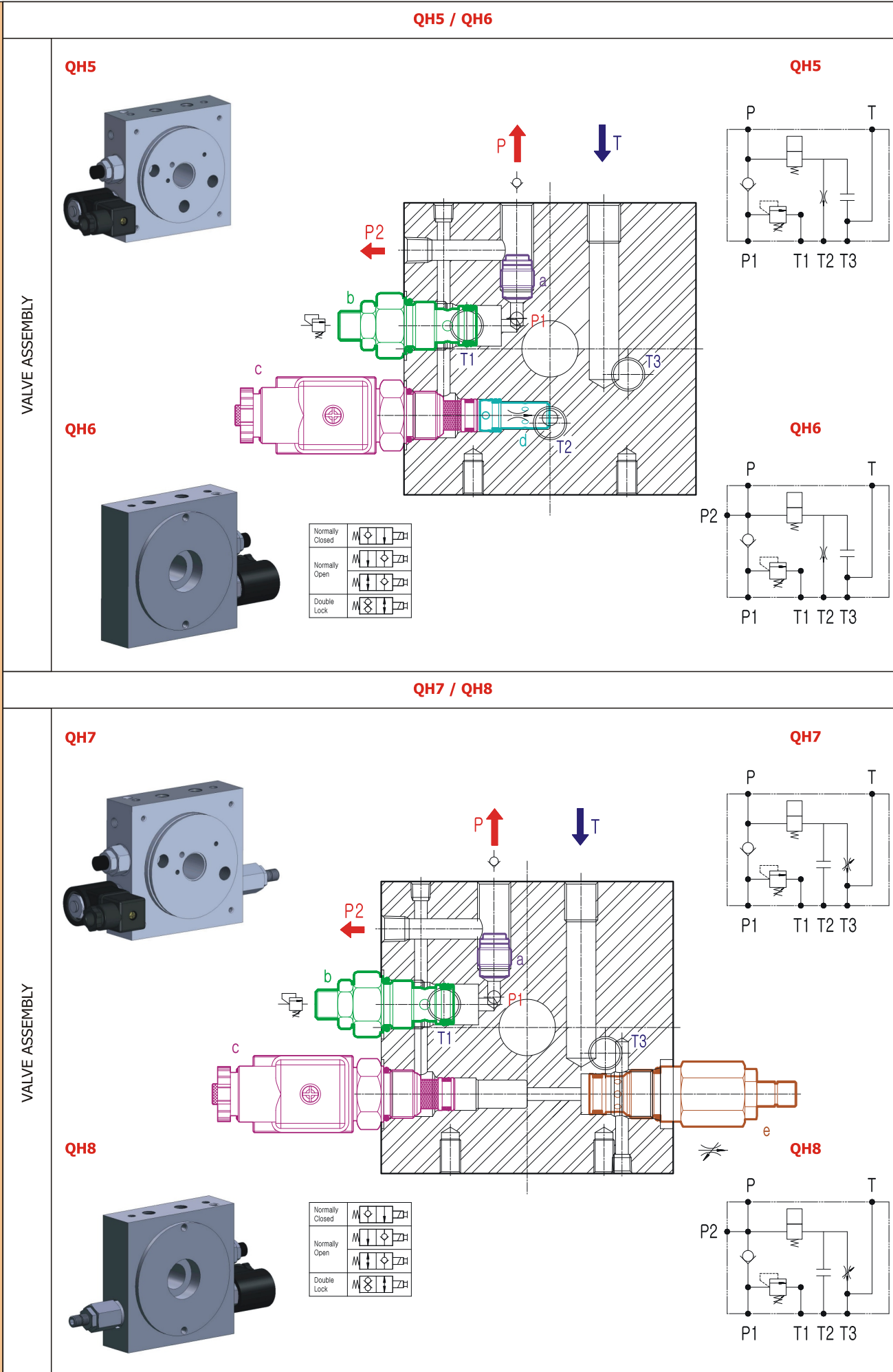
QH3



QH4

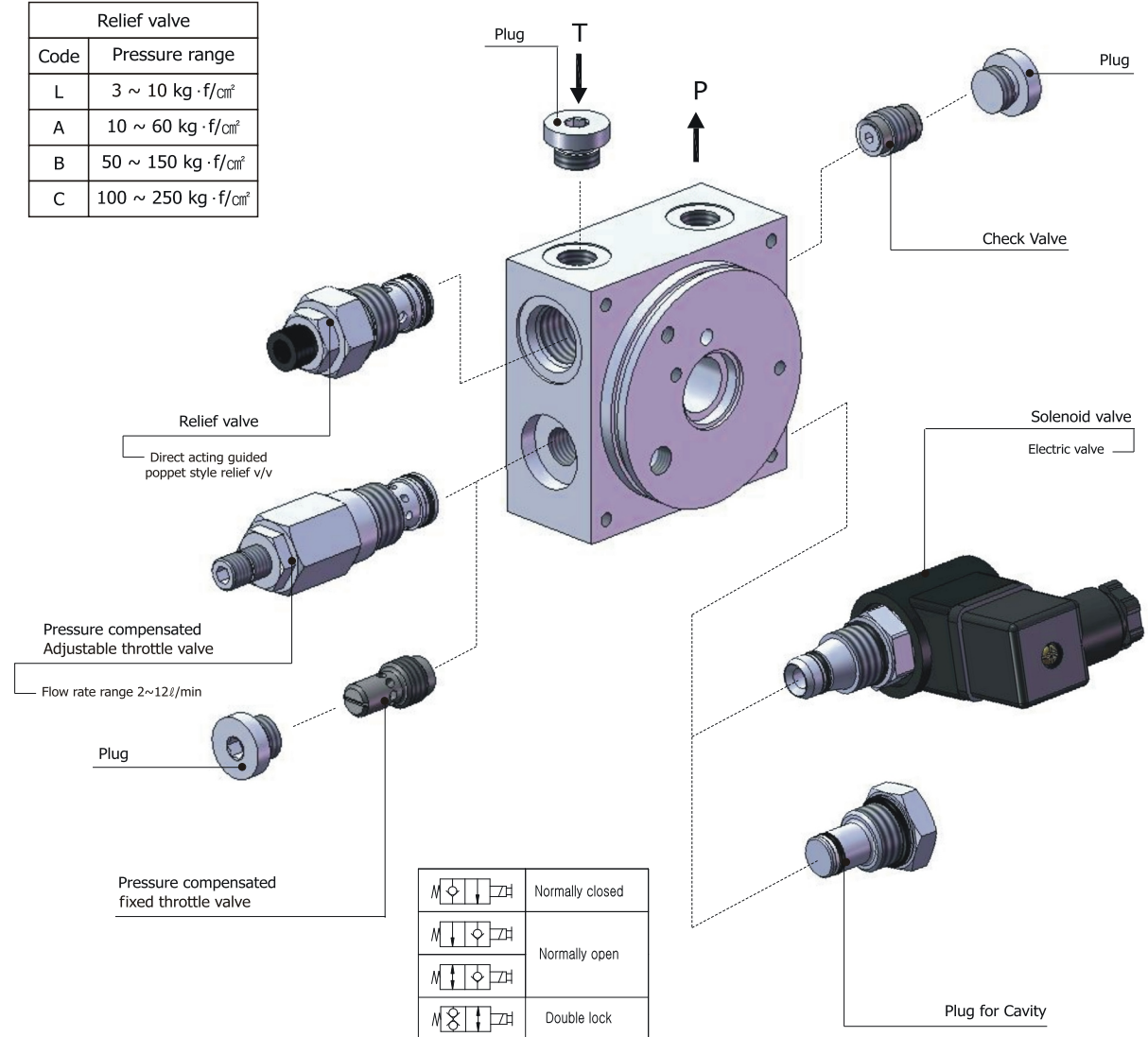


Normally Closed	
Normally Open	
Double Lock	



SH SERIES BUILT-IN VALVE

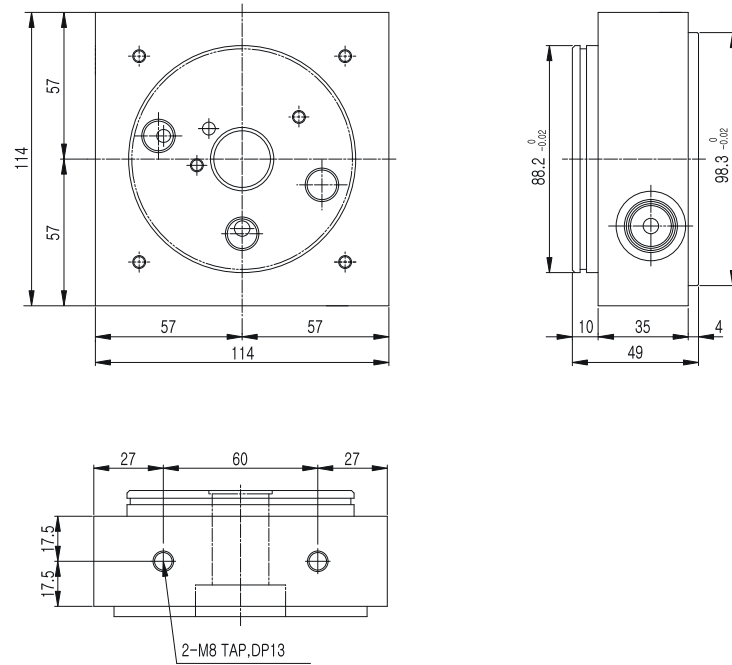
Relief valve	
Code	Pressure range
L	3 ~ 10 kg · f/cm ²
A	10 ~ 60 kg · f/cm ²
B	50 ~ 150 kg · f/cm ²
C	100 ~ 250 kg · f/cm ²



	Normally closed
	Normally open
	Double lock

A

DIMENSION

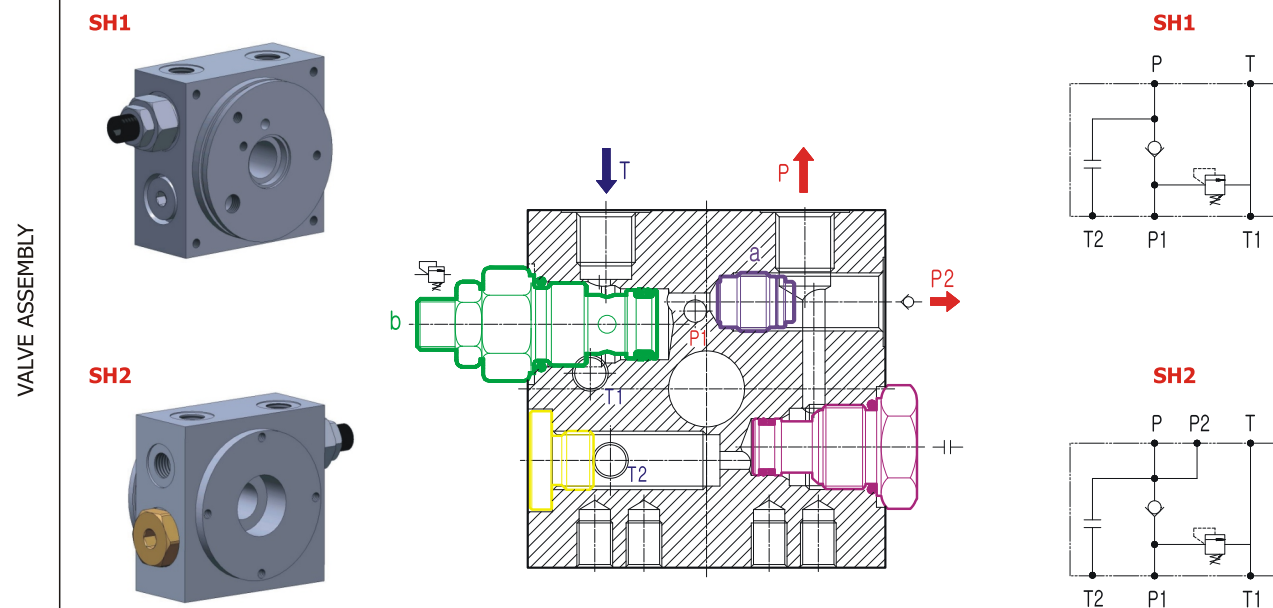


CENTER BLOCK

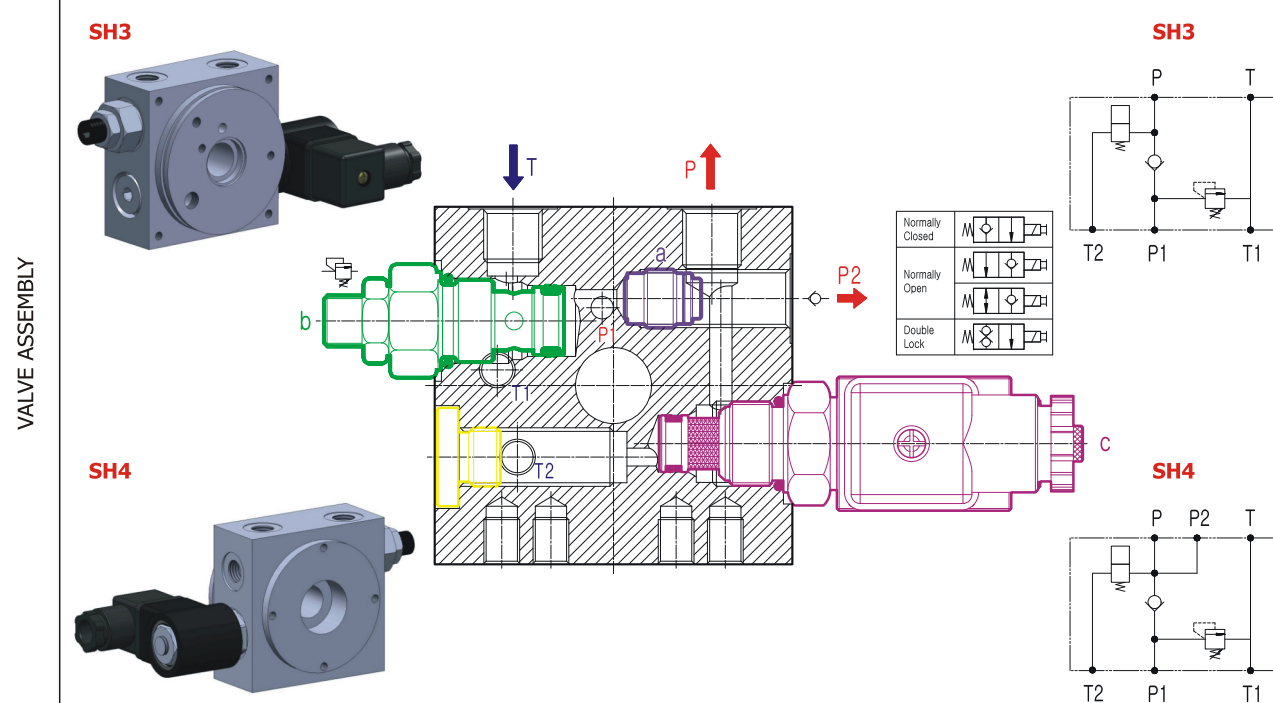
SH CENTER BLOCK SPECIFICATION

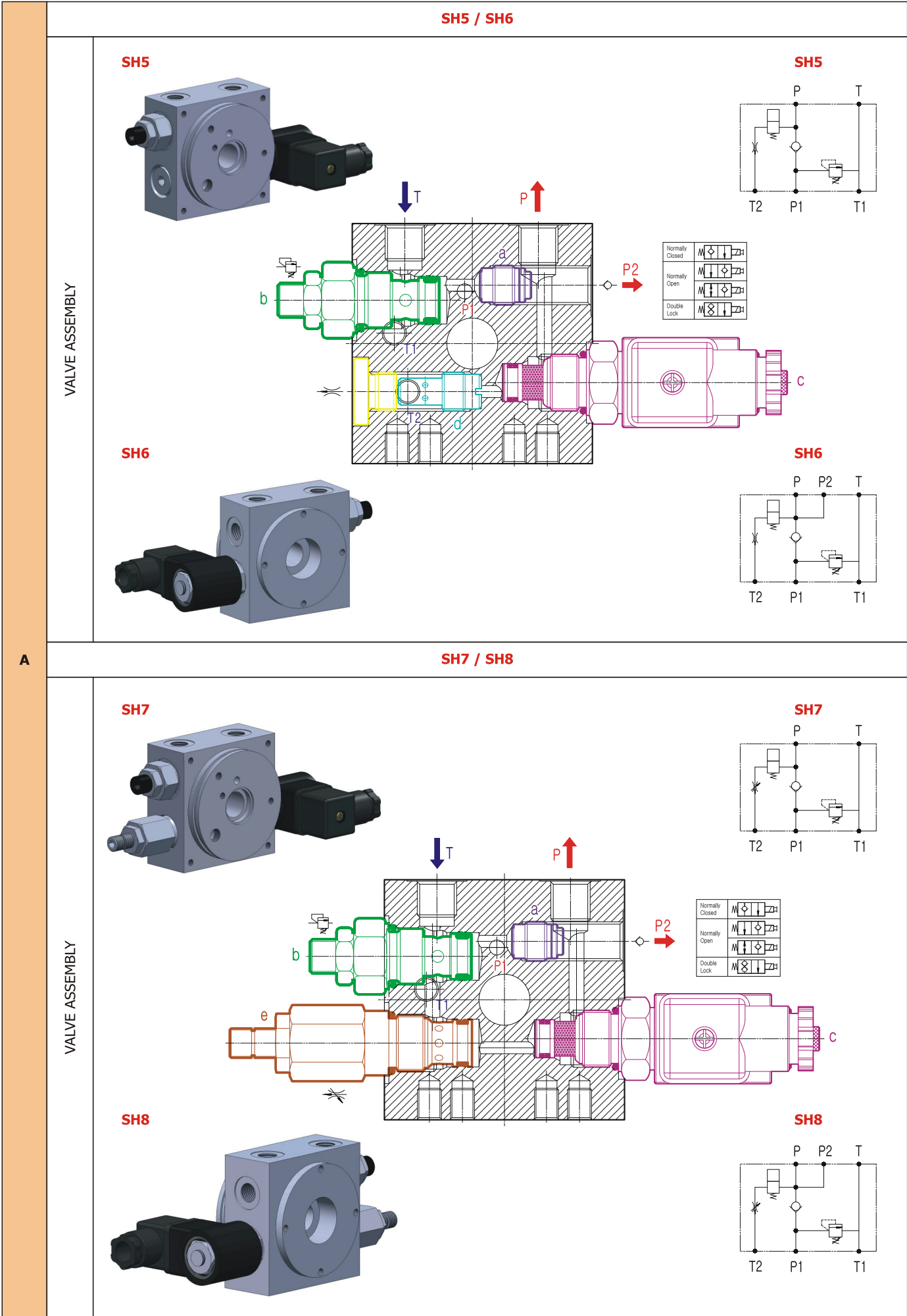
DESCRIPTION	MAIN SPECIFICATION
<ol style="list-style-type: none"> Made of Aluminum material Outlet port : PF 1/4" (Options : PT, SAE) Return port : PF 1/4" (Options : PT, SAE) Solenoid valve : Normally closed, Normally open, Double lock selectional Pressure adjustable Relief valve Applicable pump displacement : 0.2 cc/rev ~ 1.6 cc/rev Only "S" series oil tank applicable (refer to page 97 for S series oil tank) 	<p>a : Check valve = PF 1/4" (Check Valve Cavity)</p> <p>b : Relief valve = UNF 3/4" (SV09-2 Cavity)</p> <p>c : Solenoid valve = UNF 3/4" (SV08-2 or SV09-2 Cavity)</p> <p>d : Orifice = PF 1/4"</p> <p>e : GA = UNF 3/4" (SV09-2)</p> <p>P : Primary Work Port = PF 1/4"</p> <p>P2 : Secondary Work Port = PF 1/4"</p> <p>T : Return Port = PF 1/4"</p>

SH1 / SH2



SH3 / SH4





VALVE ASSEMBLY

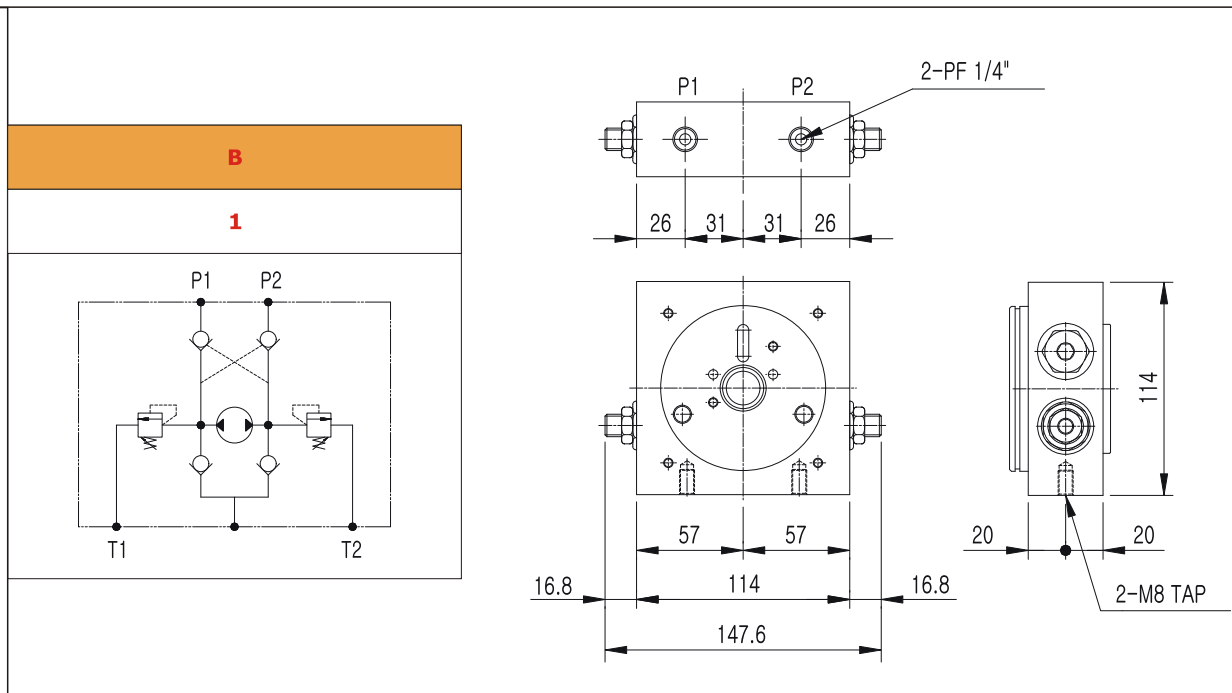
VALVE ASSEMBLY

A

QD CENTER BLOCK SPECIFICATION

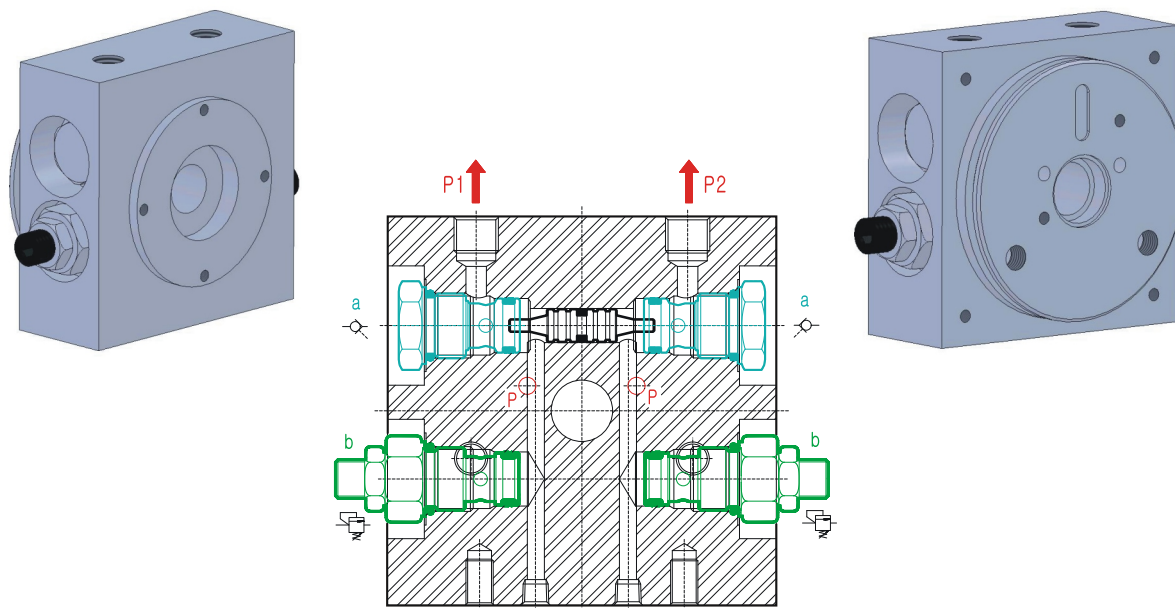
DESCRIPTION	MAIN SPECIFICATION
<ol style="list-style-type: none"> 1. Made of Aluminum material 2. Outlet port : PF 1/4" (Options : PT, SAE) 3. Pressure adjustable Relief valve 4. Applicable pump displacement : 0.2 cc/rev ~ 1.1 cc/rev 5. Only "Q" series oil tank applicable (refer to page 96 for Q series oil tank) 6. This block is available only for bi-directional gear pump 	<p>a : Pilot check valve = UNF 3/4" (Pilot Check Valve Cavity) b : Relief valve = UNF 3/4" (SV09-2 Cavity)</p> <p>P1, P2 : Primary Work Port = PF 1/4"</p>

DIMENSION & DIAGRAM



A

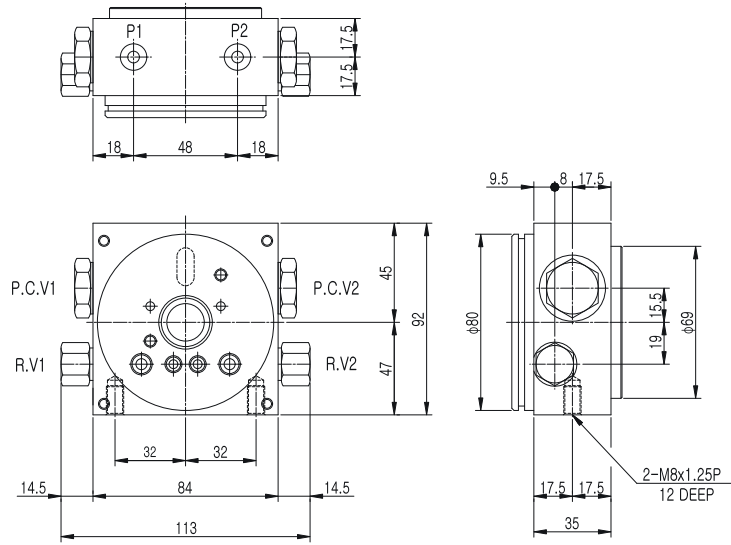
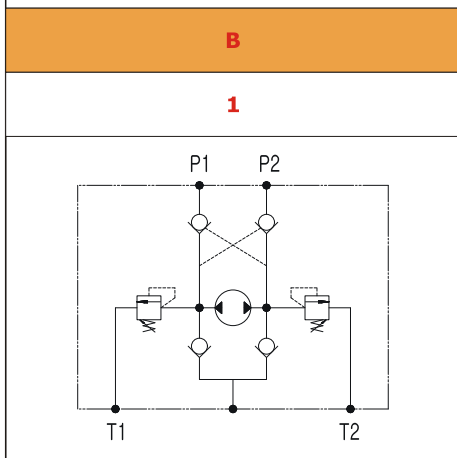
VALVE ASSEMBLY



SD CENTER BLOCK SPECIFICATION

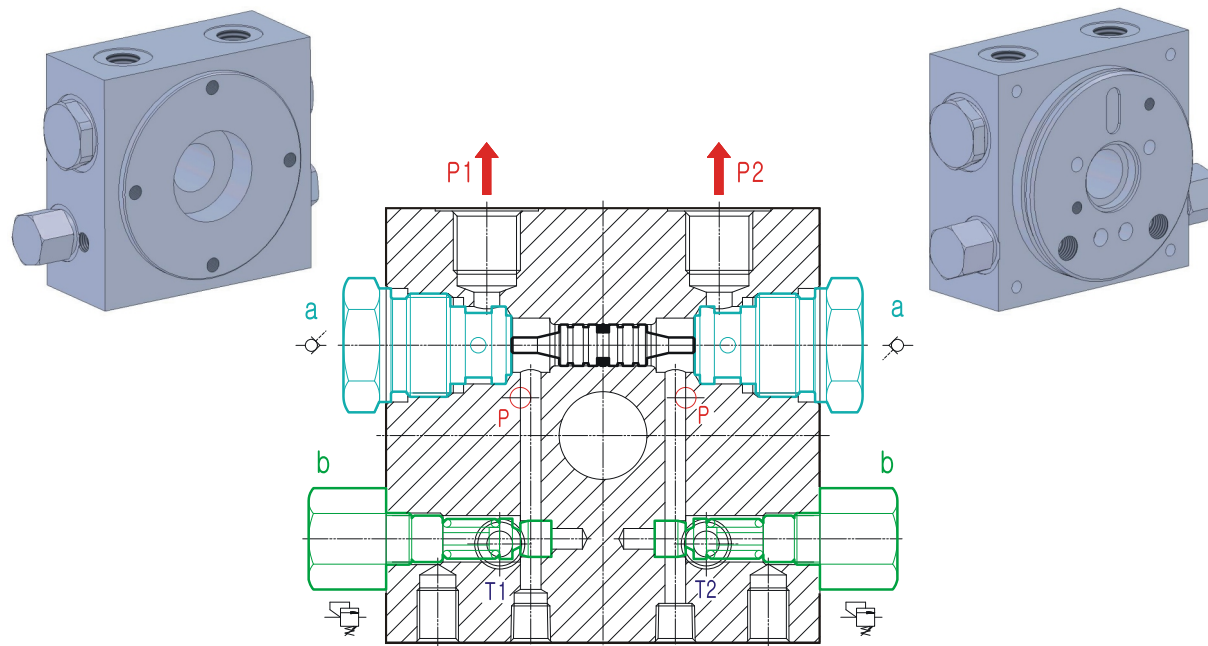
DESCRIPTION	MAIN SPECIFICATION
<ol style="list-style-type: none"> Made of Aluminum material Outlet port : PF 1/4" (Options : PT, SAE) Pressure adjustable Relief valve Applicable pump displacement : 0.2 cc/rev ~ 1.1 cc/rev Only "S" series oil tank applicable (refer to page 97 for S series oil tank) This block is available only for bi-directional gear pump 	<p>a : Pilot check valve = M20x1.5P (Pilot Check Valve Cavity) b : Relief valve = M10x1P (Mini Relief Cavity)</p> <p>P1, P2 : Primary Work Port = PF 1/4"</p>

DIMENSION & DIAGRAM



A

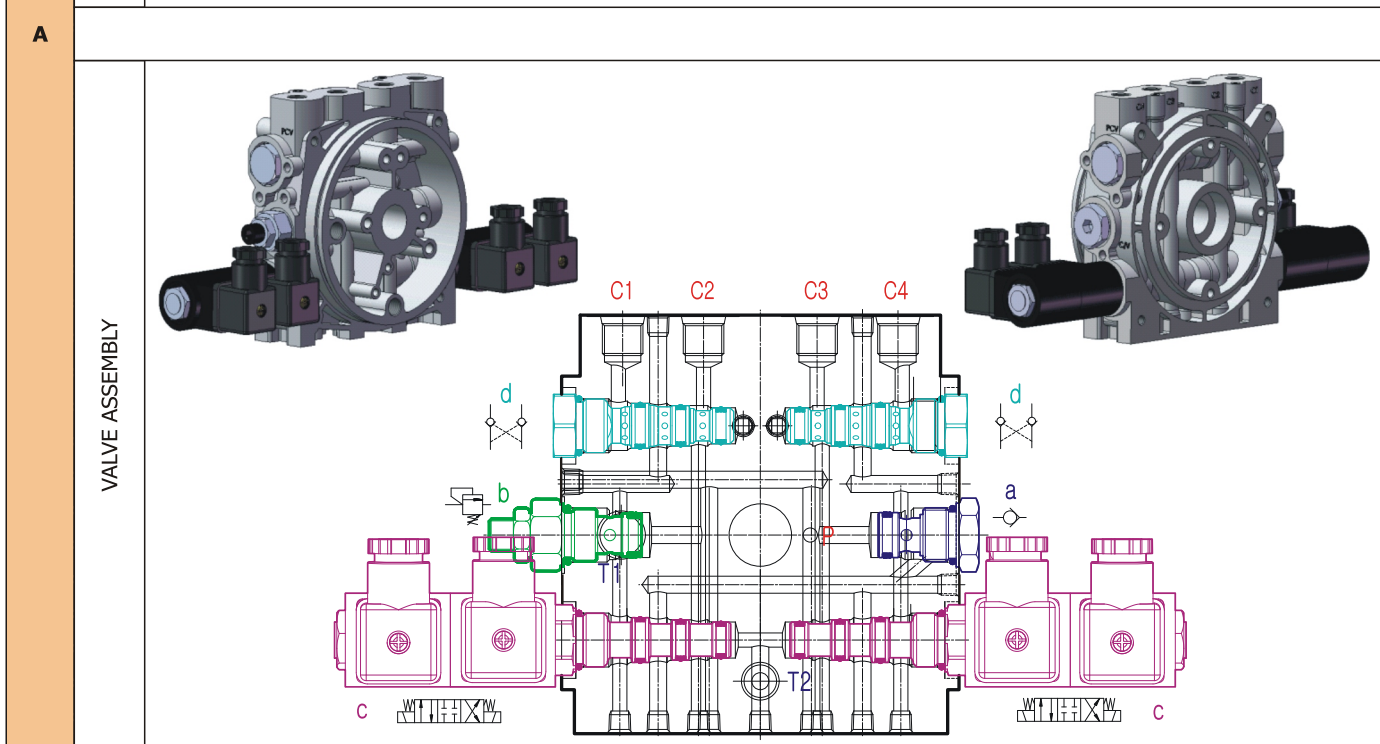
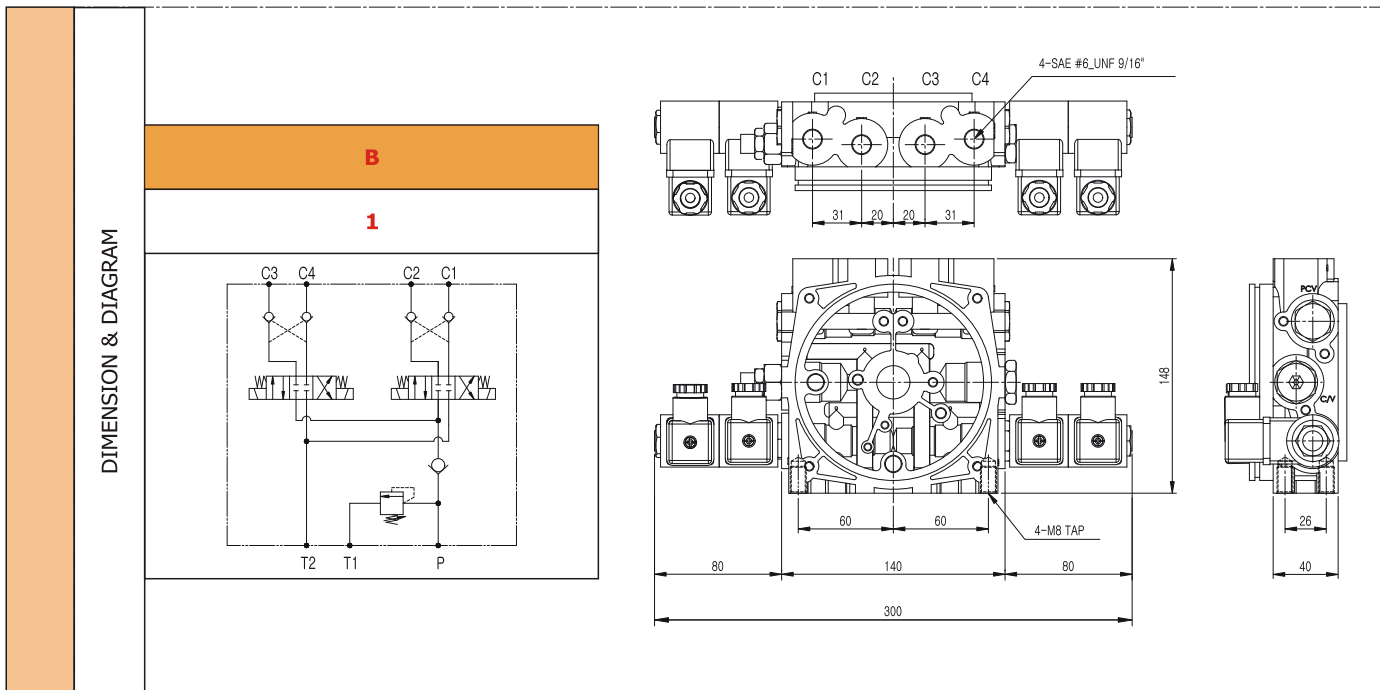
VALVE ASSEMBLY



CENTER BLOCK

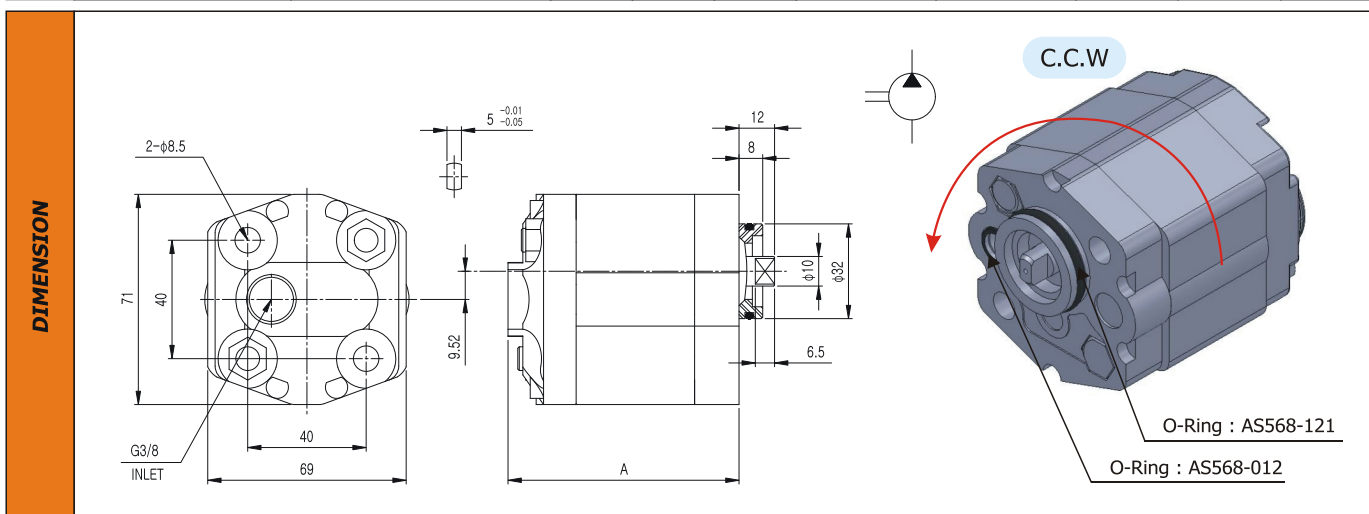
SCB01 CENTER BLOCK SPECIFICATION

DESCRIPTION	MAIN SPECIFICATION
<ol style="list-style-type: none"> 1. Made of Aluminum material 2. Outlet port : SAE #6_UNF 9/16" (Options : PT, PF) 3. Pressure adjustable Relief valve 4. Applicable pump displacement : 0.2 cc/rev ~ 1.6 cc/rev 5. Only "X" series oil tank applicable (refer to page 93 for X series oil tank) 	<p>a : Check valve = UNF 3/4" (Check Valve Cavity)</p> <p>b : Relief valve = UNF 3/4" (SV09-2 Cavity)</p> <p>c : Solenoid valve = UNF 3/4" (SV08-4 Cavity)</p> <p>d : Pilot check valve = UNF 3/4" (SV08-4 Cavity)</p> <p>Port 1,2,3,4 : Primary Work Port = SAE #6_UNF 9/16"</p>

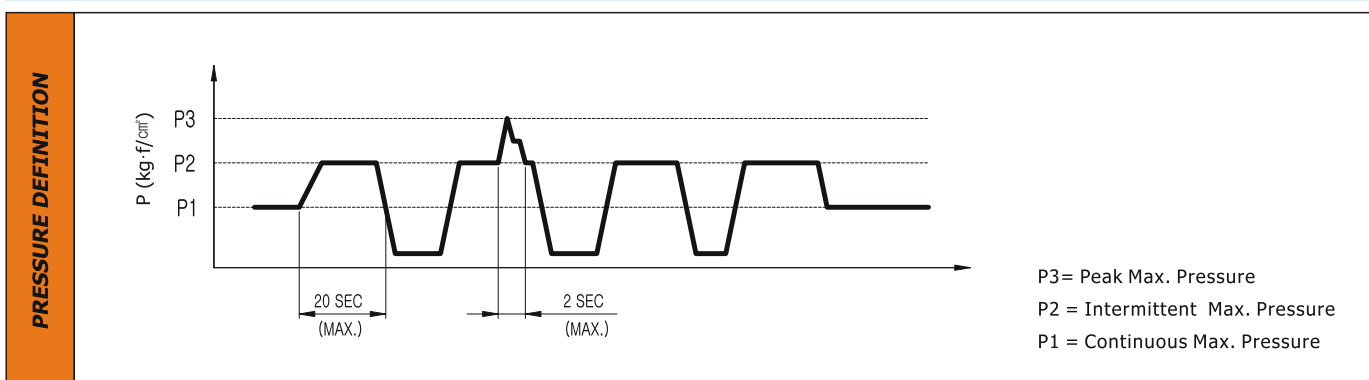


GO One group - Gear pump

CODE	C DISPLACEMENT (cm ³ /rev)	PRESSURE (kg-f/cm ²)			FLOW (l/min)		SPEED (rpm)		A
		P1	P2	P3	DC @2500 rpm	AC @1700 rpm	MAX	MIN	
GO11	1.1	230	250	270	2.7	1.8	6000	1000	74
GO16	1.6				4.0	2.7			76
GO21	2.1				5.2	3.5			78
GO23	2.3				5.7	3.9			79
GO27	2.7				6.7	4.6			80
GO32	3.2	210	230	250	8.0	5.4	5000	800	82
GO37	3.7				9.2	6.2	4500		84
GO42	4.2				10.5	7.1	4000		86
GO48	4.8	190	210	230	12.0	8.1	3500	600	88
GO58	5.8				14.5	9.8	3000		92
GO70	7.0				17.5	11.9	2500		96
GO80	8.0				20.0	13.6	2100		100
GO98	9.8				24.5	16.6	1800		102

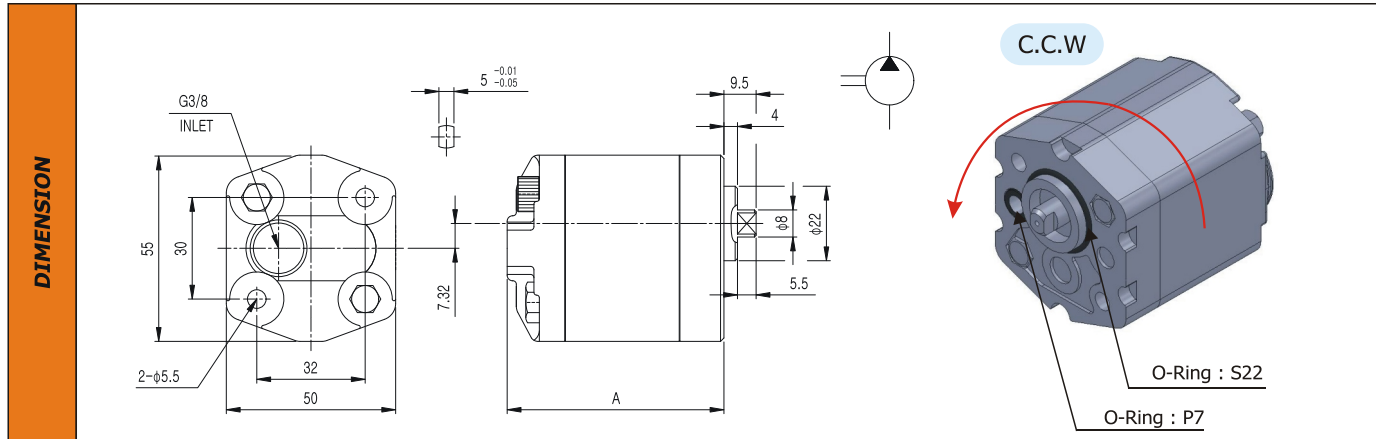


Note. 1. Please contact Hydro-Tek for Group 2, Group 3 pump
2. Please contact Hydro-Tek for tandem pump

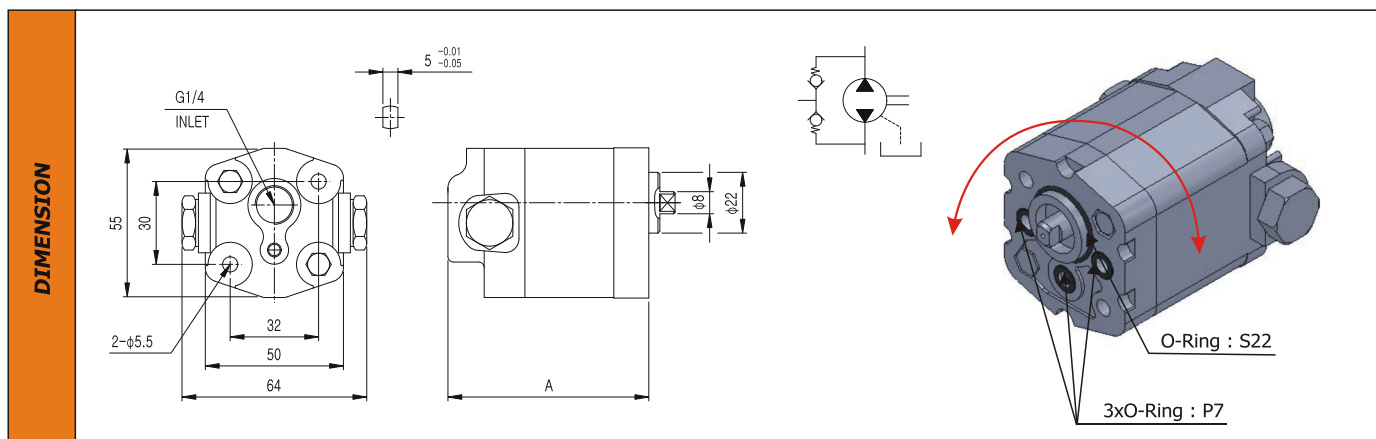


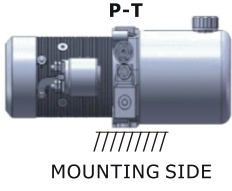
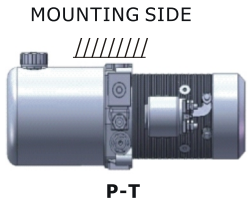
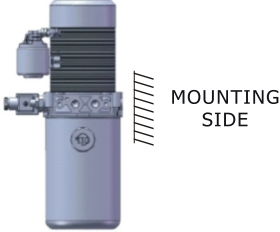

PUMP

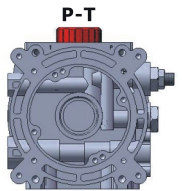
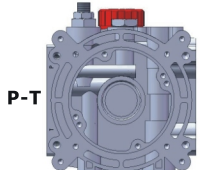
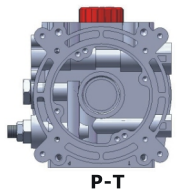
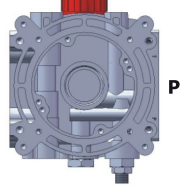
GH Half group - Gear pump									
CODE	C DISPLACEMENT (cm^3/rev)	PRESSURE ($\text{kg}\cdot\text{f}/\text{cm}^2$)			FLOW (l/min)		SPEED (rpm)		A
		P1	P2	P3	DC @2500 rpm	AC @1700 rpm	MAX.	MIN.	
GH02	0.2	200	230	250	0.5	0.3	7000	1000	58
GH03	0.3				0.7	0.5			60
GH05	0.5				1.2	0.8			61
GH07	0.7				1.7	1.1			64
GH11	1.1				2.7	1.8			68
GH16	1.6				4.0	2.7			71

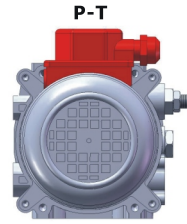
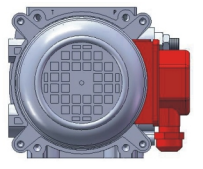
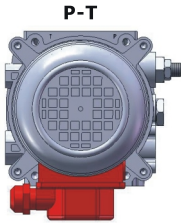
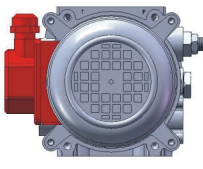
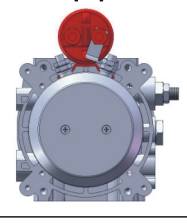
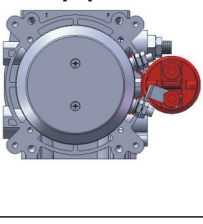
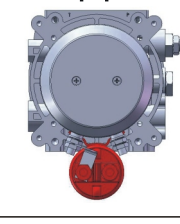
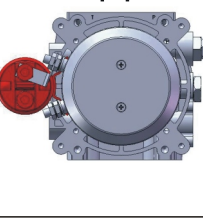


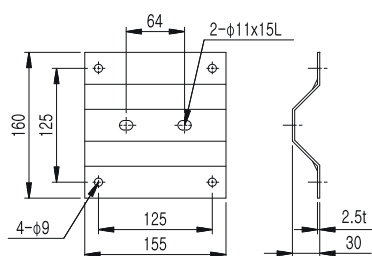
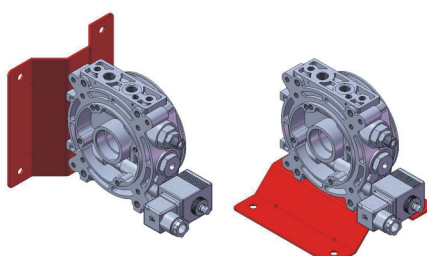
DH Bi-directional - Gear pump									
CODE	C DISPLACEMENT (cm^3/rev)	PRESSURE ($\text{kg}\cdot\text{f}/\text{cm}^2$)			FLOW (l/min)		SPEED (rpm)		A
		P1	P2	P3	DC @2500 rpm	AC @1700 rpm	MAX.	MIN.	
DH02	0.2	150	170	190	0.5	0.3	7000	1000	61.5
DH03	0.3				0.7	0.5			63.5
DH05	0.5				1.2	0.8			66.5
DH07	0.7				1.7	1.1			68.5
DH11	1.1				2.7	1.8			74.5



Mounting position				
H		V		
Horizontal type		Vertical type		
A				

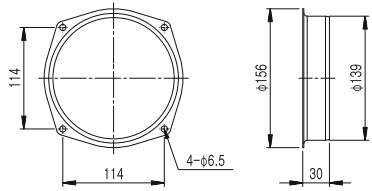

Air breather position				
P	C	M	F	S
P-T port	Cartridge cavity	Base mounting	Flank mounting	Special
				Special mounting

Terminal box (AC) or Start relay (DC) position				
P	C	M	F	S
P-T port	Cartridge cavity	Base mounting	Flank mounting	Special
				Special mounting
				

Mounting bracket	
B	X
 	<p>Without mounting bracket</p> <p>Note. This mounting bracket is only for M and X series center block.</p>

5 M R O S
A / B / C

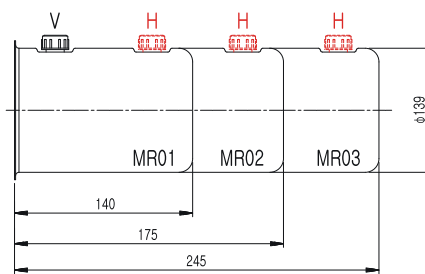
STEEL OIL TANK-M

CODE	PART NUMBER	CAPACITY (ℓ)			
		TANK	USABLE		
XXXX	-	Without Tank			
MSLE	401320	Only Sleeve			

Steel oil tank for 'M' series center block & Round type

CODE	PART NUMBER			CAPACITY (ℓ)	
	Horizontal Mounting	Vertical Mounting	TANK	USABLE	
				Horizontal Mounting	Vertical Mounting
MR01	400607	400606	1	1	1
MR02	400609	400608	2	1.6	1.6
MR03	400611	400610	3	2.2	2.2

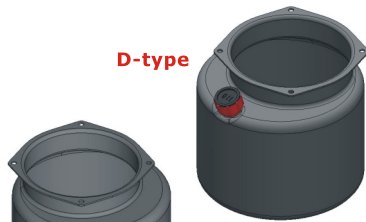
V = Vertical mounting



H = Horizontal mounting

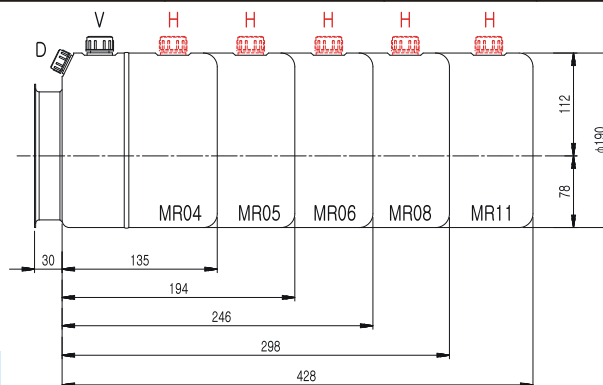
CODE	PART NUMBER			TANK	CAPACITY (ℓ)		
	Horizontal Mounting	Vertical Mounting (V-type)	Diagonal Mounting (D-type)		USABLE		
					Horizontal Mounting	Vertical Mounting	
MR04	400613	400612	400614	4	3	3	3
MR05	400616	400615	400617	5	4	4	4
MR06	400619	400618	412022	6	5	5	5
MR08	400622	400621	400623	8	6	6	6
MR11	400625	400624	400626	11	9.5	9.5	9.5

D-type

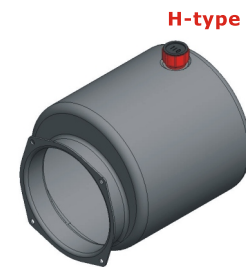


V-type

V = Vertical mounting



H = Horizontal mounting



H-type

- Note.**
1. Please contact Hydro-tek for your original specification and custom design.
 2. Please inform us the air breather position (D, V or H) of air breather, when you select Round-type oil tank.

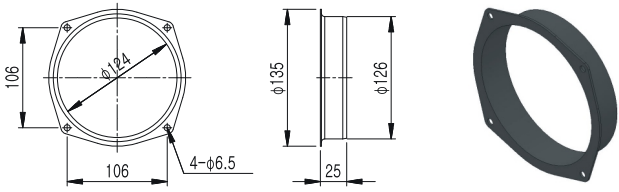
Steel oil tank for 'M' series center block & Square type

CODE	PART NUMBER	CAPACITY (ℓ)		CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE			TANK	USABLE
MS04	400627	4	3	MS06	400628	6	4.5
MS07	400629	7	4.8	MS09	401273	9	7.6
MS12	401290	12	11.7	MS20	400632	20	16
MS15	401959	15	12				
MS25	400633	25	22.5	MS50	400635	50	48
MS30	400634	30	26				

5 X R 0 1
A / B / C

STEEL OIL TANK-X/C

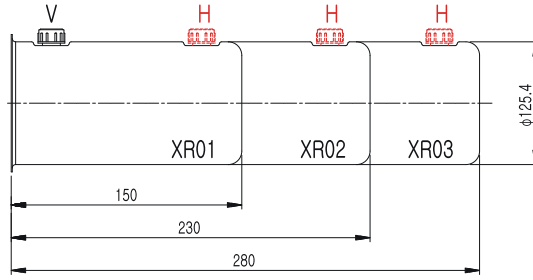
CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE
XXXX	-	Without Tank	
XSLE	401321	Only Sleeve	



Steel oil tank for 'X & C' series center block & Round type

CODE	PART NUMBER			CAPACITY (ℓ)	
	Horizontal Mounting	Vertical Mounting	TANK	USABLE	
				Horizontal Mounting	Vertical Mounting
XR01	400561	400560	1	1	1
XR02	400563	400562	2	1.6	1.6
XR03	400565	400564	3	2.2	2.2

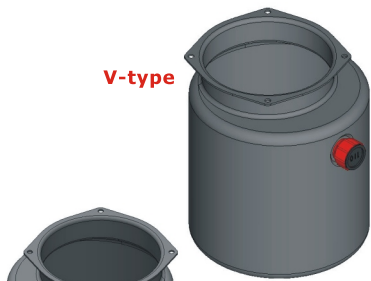
V = Vertical mounting



H = Horizontal mounting

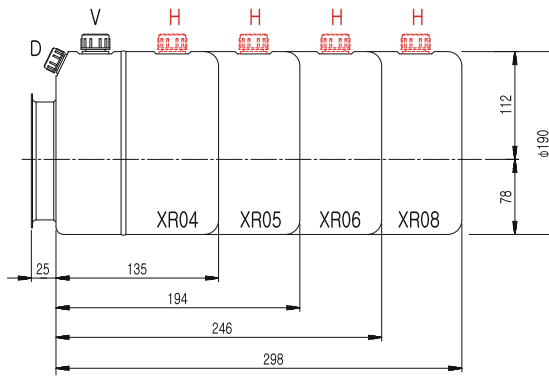
CODE	PART NUMBER			CAPACITY (ℓ)			
	Horizontal Mounting	Vertical Mounting (V-type)	Diagonal Mounting (D-type)	TANK	USABLE		
					Horizontal Mounting	Vertical Mounting	
					V-type	D-type	
XR04	412025	412026	412027	4	3	3	3
XR05	400567	400566	400568	5	4	4	4
XR06	400570	411751	400571	6	5	5	5
XR08	400573	400572	400574	8	6	6	6

V-type



D-type

V = Vertical mounting



H = Horizontal mounting



H-type

CODE	PART NUMBER	TANK	CAPACITY (ℓ)	
			USABLE	
			Horizontal Mounting	Vertical Mounting
XR11	401595	11	9.5	9.5

V = Vertical mounting

H = Horizontal mounting

Note. XR11 can be used for both horizontal and vertical mounting.

Mounting bracket

Note.



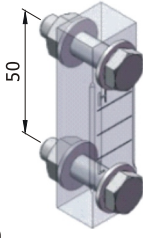
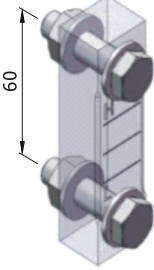
- This mounting bracket is only for '**XR11**' Tank.
- See page 90 for mounting Bracket code

Steel oil tank for ' X & C ' series center block & Square type							
CODE	PART NUMBER	CAPACITY (ℓ)		CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE			TANK	USABLE
XS04	400578	4	3	XS05	400579	5	4.3
XS05S	400594	5	4.3	XS06	400580	6	4.5

OIL TANK

CODE	PART NUMBER	CAPACITY (ℓ)		CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE			TANK	USABLE
XS07	402416	7	4.8	XS09	401291	9	7.6
XS12	401596	12	11.7	XS20	400584	20	16
XS15	401598	15	12				
XS25	400585	25	22.5	XS50	402417	50	48
XS30	400586	30	26				

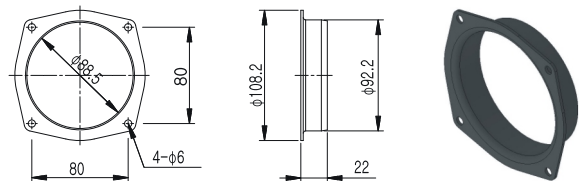
OIL GAUGE

			
PF 3/8"	PF 1/2"	2-M10	2-M10
409241	400902	401272	400721

5 QR10
A / B / C


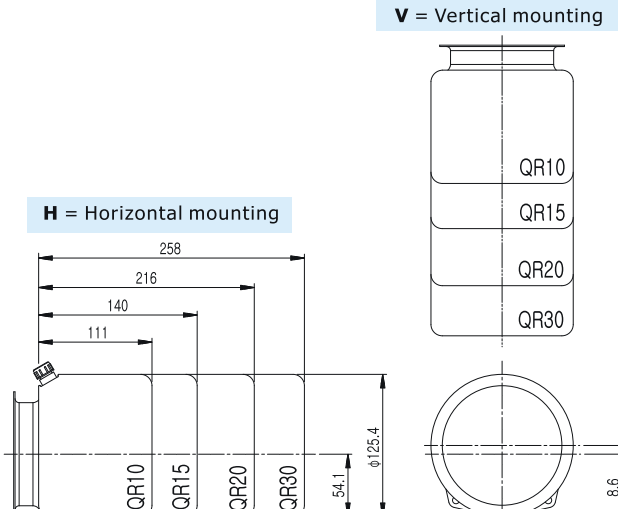
STEEL OIL TANK-Q

CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE
XXXX	-	Without Sleeve	
QSLE	401951	Only Sleeve	



Steel oil tank for 'Q' series center block & Round type

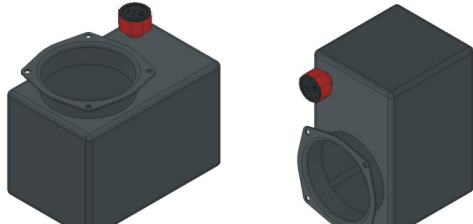
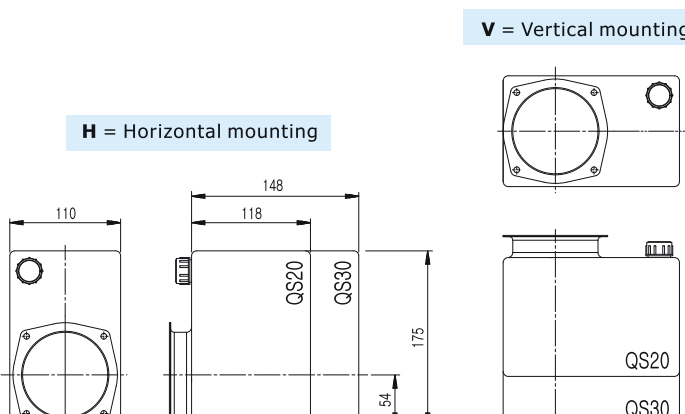
CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE
QR10	400700	1	0.7
QR15	400701	1.5	1.2
QR20	400702	2	1.7
QR30	400703	3	2.3

V = Vertical mounting
H = Horizontal mounting

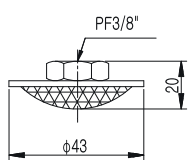
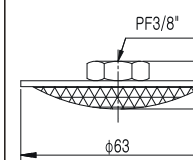
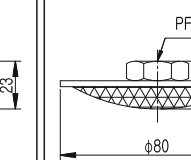
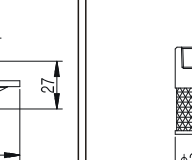
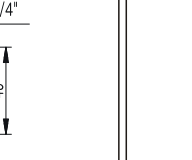
Steel oil tank for 'Q' series center block & Square type

CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE
QS20	400705	2	1.4
QS30	400707	3	2.4

V = Vertical mounting
H = Horizontal mounting

SUCTION FILTER

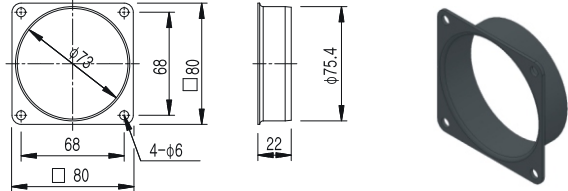
				
SF1	SF2	SF3	SF4	SF5

Note. Filtration 100 Mesh

5 S S 1 0
A / B / C

STEEL OIL TANK-S

CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE
XXXX	-	Without Sleeve	
SSLE	401952	Only Sleeve	

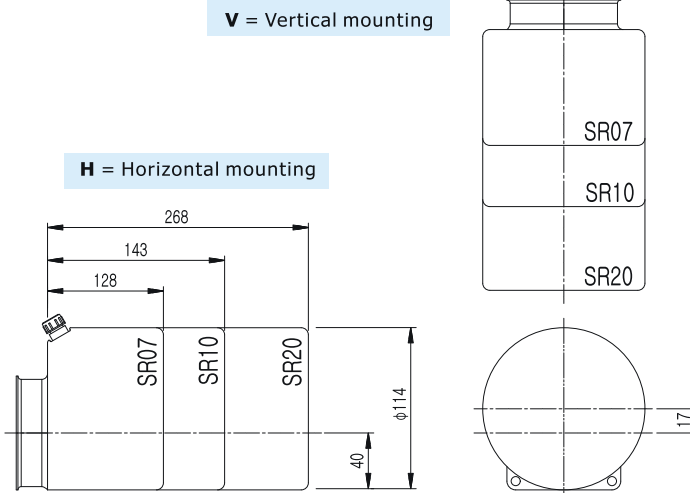


Steel oil tank for 'S' series center block & Round type

CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE
SR07	400722	0.7	1.2
SR10	400723	1	1.4
SR20	400724	2	2.5

V = Vertical mounting

H = Horizontal mounting

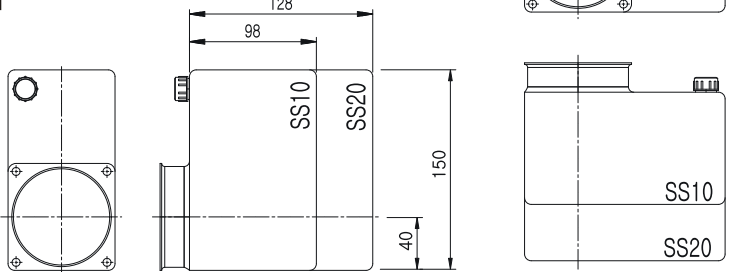


Steel oil tank for 'S' series center block & Square type

CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE
SS10	400725	1	0.7
SS20	400726	2	1.3

V = Vertical mounting

H = Horizontal mounting



AIR BREATHER

					
PF 3/8"	PF 1/2"	PF 3/4"	PF 3/8" Oil check type	PF 1/2" Oil check type	PF 3/4" Oil check type
AB04	AB05	AB06	AB14	AB15	AB16

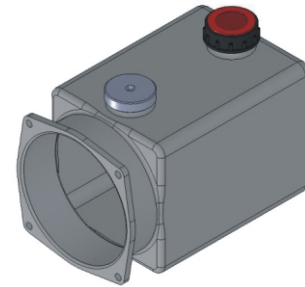
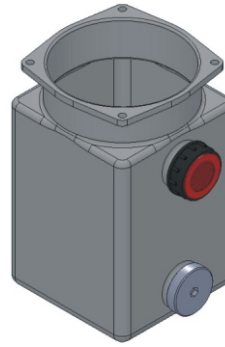
5 P X S O 1
A / B / C

PLASTIC OIL TANK-P

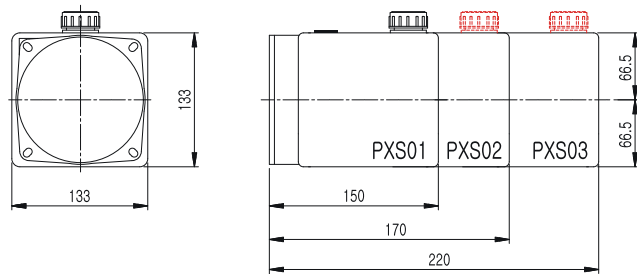
Plastic oil tank for X - series or SCB01 center block & Square type

CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE
PXS01	412012	1	1.3
PXS02	412013	2	1.7
PXS03	412014	3	2.4

V = Vertical mounting



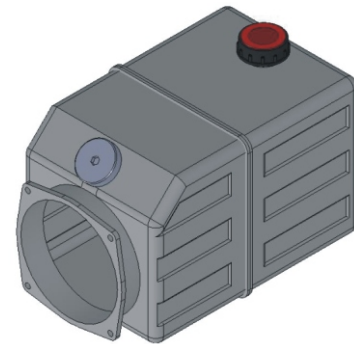
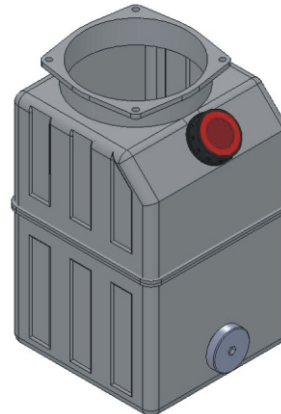
H = Horizontal mounting



Note. Air breather : PF3/4"

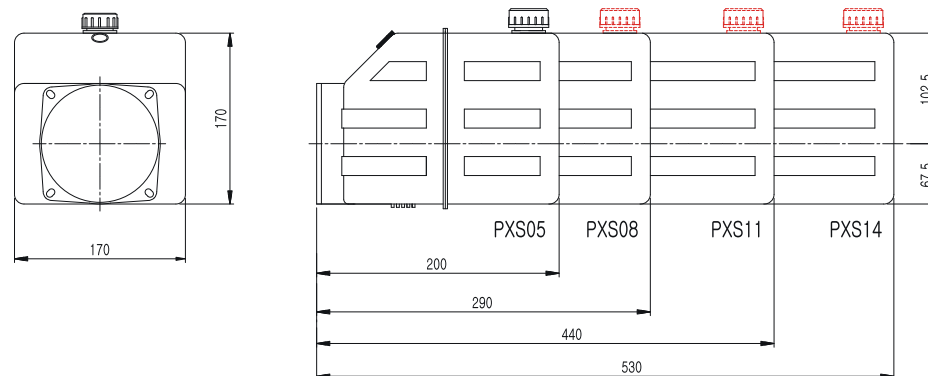
CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE
PXS05	411759	5	4.7
PXS08	411760	8	7.2
PXS11	411761	11	11.4
PXS14	412030	14	13.4

V = Vertical mounting



H = Horizontal mounting

Note. Air breather : PF3/4"



Note. This plastic oil tank is only for ' X or SCB01 center block'

OIL TANK

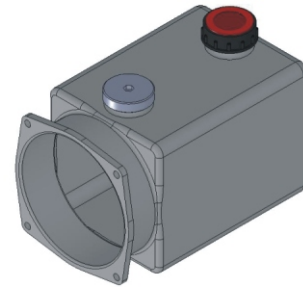
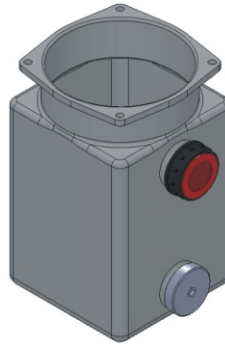
5 P C S 0 1
A / B / C

PLASTIC OIL TANK-P

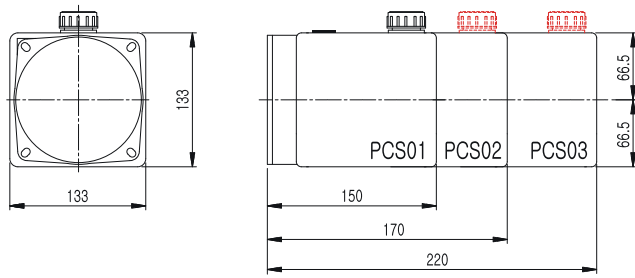
Plastic oil tank for C - series center block & Square type

CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE
PCS01	412151	1	1.3
PCS02	412152	2	1.7
PCS03	412153	3	2.4

V = Vertical mounting



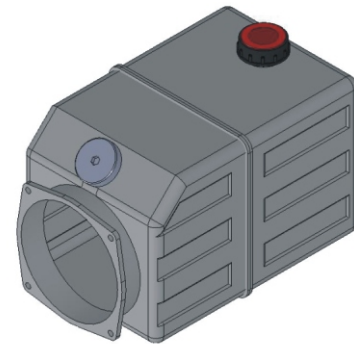
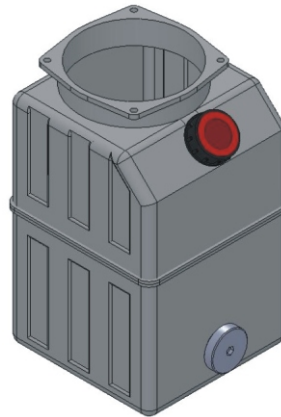
H = Horizontal mounting



Note. Air breather : PF3/4"

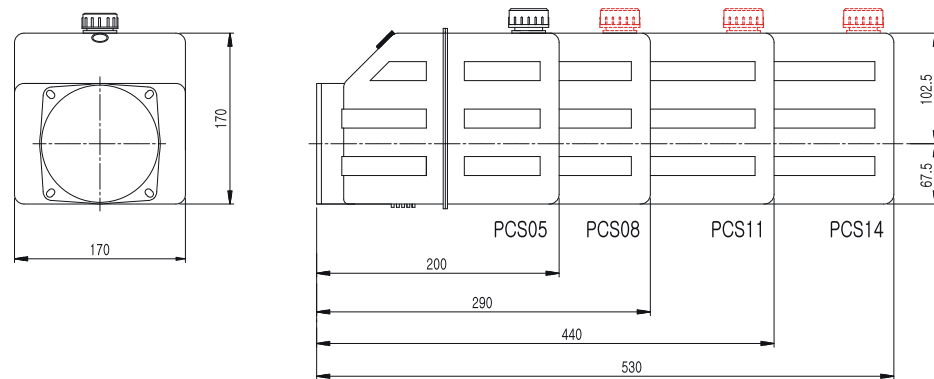
CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE
PCS05	411154	5	4.7
PCS08	411155	8	7.2
PCS11	411156	11	11.4
PCS14	412157	14	13.4

V = Vertical mounting



H = Horizontal mounting

Note. Air breather : PF3/4"



Note. This plastic oil tank is only for 'C center block'

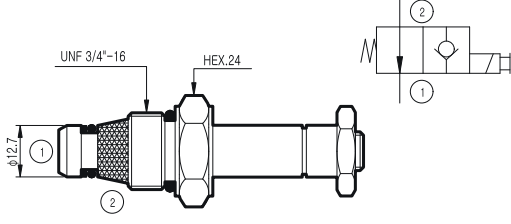
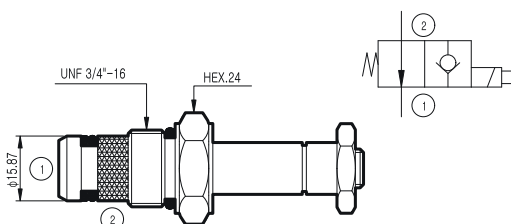
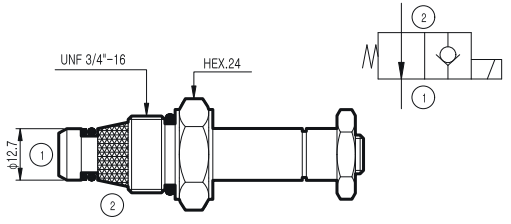
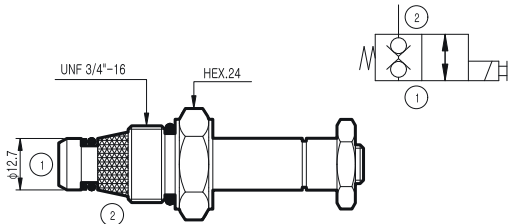
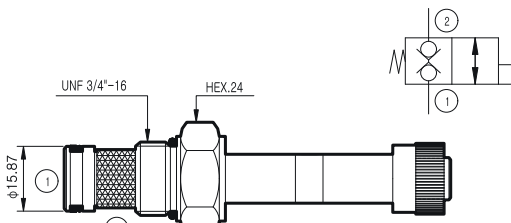
SOLENOID VALVE & COIL

A	CODE	S		MHXX			NNNN	
	TYPE	Solenoid valve		Micro s/w manual			Plug for cavity	
B	CODE	C		O			D	
	DIAGRAM	Normally closed type		Normally open type			Double locking type	
C	CODE	1	2	3	4	5	6	7
	VOLTAGE	DC 12V	DC 24V	AC 110V	AC 220V	AC 110V RAC	AC 220V RAC	AC 24V
D	CODE	Specification						
		Cavity	Working pressure (Max.)	Flow (Max.)	Internal leakage	Thread	Diameter	
	1	09	280 kg · f/cm ²	40 l/min	0.15 cc/min	UNF 3/4	φ15.87	
8	08	280 kg · f/cm ²	40 l/min	0.15 cc/min	UNF 3/4	φ12.7		
E	CODE	DN		DS		DL		DR
	TYPE	DIN Connector		Dual Spades		Lead wire (only DC)		Integral Deutche Connector

Note. Use RAC solenoid for double locking and normally open valves for AC application.

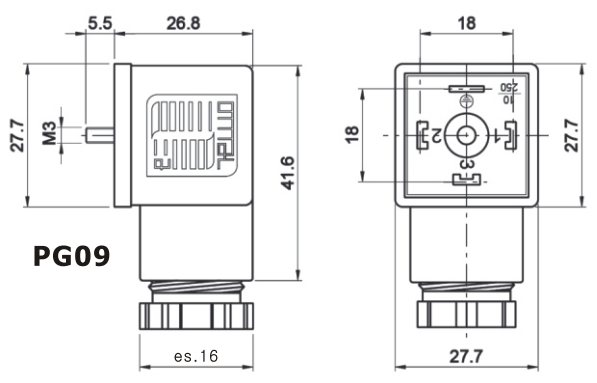
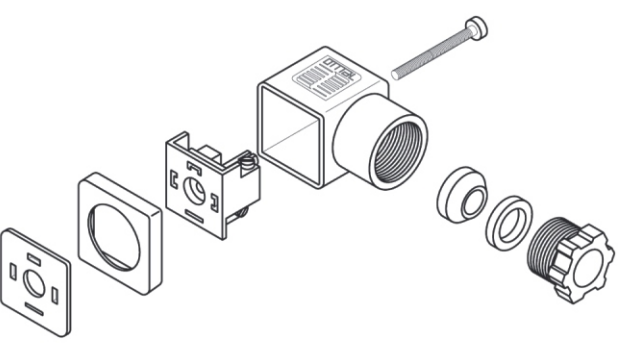
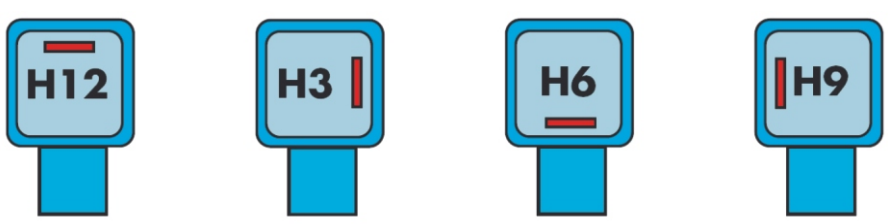
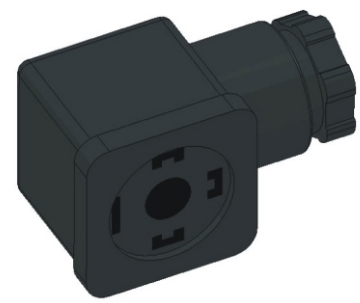

SOLENOID VALVE SPECIFICATION

SOLENOID VALVE : NORMALLY CLOSED	Description	Operation	Ratings
<p>MODEL : SV08-20DM</p>	<p>A solenoid -operated, 2-way, normally closed, poppet-type, screw-in hydraulic cartridge valve, intended to act as a blocking or load-holding device for low flow circuits.</p>	<p>When de-energized, the valve acts as a check valve allowing oil flow only from port ① to port ②. When energized the oil flow is possible from port ② to ① and is restricted from ① to ②.</p>	<ul style="list-style-type: none"> ⊙ Pressure : 280 kg · f/cm² max. ⊙ Flow : 40 l/min ⊙ Filtration : 280 micron or better ⊙ Coil must be ordered separately. ⊙ External valve surface are zinc coated.
<p>MODEL : SV09-20DM</p>			
<p>MODEL : SV08-20D</p>	<p>A solenoid -operated, 2-way, normally closed, poppet-type, screw-in hydraulic cartridge valve, intended to act as a blocking or load-holding device for low flow circuits.</p>	<p>When de-energized, the valve acts as a check valve allowing oil flow only from port ① to port ②. When energized the oil flow is possible from port ② to ① and is restricted from ① to ②.</p>	
<p>MODEL : SV09-20D</p>			

SOLENOID VALVE : NORMALLY OPEN	Description	Operation	Ratings
<p>MODEL : SV08-21DP</p> 	<p>A solenoid -operated, 2-way, piloted, poppet-type, normally open, screw-in, hydraulic cartridge valve designed for low leakage in load-holding applications.</p>	<p>When de-energized, the valve allows flow from ② to ①. Flow from ① to ② is severely restricted in this mode.</p> <p>When energized, the valve's poppet closes on its seat, blocking flow from ② to ①. In this mode the cartridge will allow ① to ② flow after overcoming the solenoid force (requires 3.4 to 10.3 bar).</p> <p>To operate the manual override turn the round knob counterclockwise; to reset the valve for normal operation, turn the knob clockwise.</p>	<ul style="list-style-type: none"> ⊙ Pressure : 207 kg · f/cm² max. ⊙ Internal Leakage : 0.15cc/min max. At 207 kg · f/cm² ⊙ Filtration : 280 micron or better ⊙ Coil must be ordered separately. ⊙ External valve surface are zinc coated.
<p>MODEL : SV09-21DP</p> 			
<p>MODEL : SV08-21D</p> 			
SOLENOID VALVE : DOUBLE LOCKING	Description	Operation	Ratings
<p>MODEL : SV08-28DP</p> 	<p>A solenoid-operated, two-way, normally closed, direct -acting, needle-type, screw-in hydraulic cartridge valve, designed to function as a blocking or load-holding device for low flow circuits.</p>	<p>When de-energized the valve blocks flow in both directions, to pressure rating. If pressure on ① exceeds the rating, flow may pass from ① to ②.</p> <p>When energized, the needle point lifts to open the valve bidirectionally.</p>	<ul style="list-style-type: none"> ⊙ Pressure : 207 kg · f/cm² max. ⊙ Effective Orifice Size : 0.81mm ⊙ Internal Leakage : 0.10cc/min max. at 207 kg · f/cm² ⊙ Filtration : 280 micron or better ⊙ Coil must be ordered separately. ⊙ External valve surface are zinc coated.
<p>MODEL : SV09-28DP</p> 			

STANDARD COILS								
DN								
	12V DC / 24V DC 18W 220V AC		12V DC / 24V DC 22W 220V RAC W22		12V DC / 24V DC 16W 230V AC			
DS			DL			DR		
	12V DC / 24V DC 16W 230V AC			Standard wire length 250mm 			12V DC / 24V DC	
HYDRO-TEK PART NUMBER								
Voltage		12V DC	24V DC	110V AC	220V AC	110V RAC	220V RAC	24V AC
DN	22W	400853	400854	400855	400855	400465	400452	400958
	18W	400469	400467		400456(60Hz) 402139(50Hz)			
	16W	401892	401893		401894			
DS		402296	402297		412053			
DL		411818	411819					
DR		409612	411820					

SOLENOID VALVE & COIL

ELECTRICAL DIN CONNECTOR																							
 <p>PG09</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #e6f2ff;">Housing :</td> <td>Black : PA + 30% GF</td> </tr> <tr> <td style="background-color: #e6f2ff;">Contact holder, Gland nut :</td> <td>PA + 30% FV / PA + 30% GF</td> </tr> <tr> <td style="background-color: #e6f2ff;">Cable diameter :</td> <td>8 ~ 10 mm</td> </tr> <tr> <td style="background-color: #e6f2ff;">Contact material :</td> <td>Cu Zn (Ag)</td> </tr> <tr> <td style="background-color: #e6f2ff;">Max. voltage :</td> <td>250 V AC / 300 V DC</td> </tr> <tr> <td style="background-color: #e6f2ff;">Max. current :</td> <td>16A</td> </tr> <tr> <td style="background-color: #e6f2ff;">Operating current :</td> <td>10A</td> </tr> <tr> <td style="background-color: #e6f2ff;">Spacing :</td> <td>18mm</td> </tr> <tr> <td style="background-color: #e6f2ff;">Max. wire cross-section :</td> <td>1.5 mm²</td> </tr> <tr> <td style="background-color: #e6f2ff;">Insulation class :</td> <td>C - VDE 0110</td> </tr> <tr> <td style="background-color: #e6f2ff;">Working temperature :</td> <td>-40°C / +125°C</td> </tr> </table>	Housing :	Black : PA + 30% GF	Contact holder, Gland nut :	PA + 30% FV / PA + 30% GF	Cable diameter :	8 ~ 10 mm	Contact material :	Cu Zn (Ag)	Max. voltage :	250 V AC / 300 V DC	Max. current :	16A	Operating current :	10A	Spacing :	18mm	Max. wire cross-section :	1.5 mm ²	Insulation class :	C - VDE 0110	Working temperature :	-40°C / +125°C
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Insulation class :	C - VDE 0110																						
Working temperature :	-40°C / +125°C																						
																							
EARTH POSITION																							
																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="text-align: center;">CABLE DIAMETER</td> </tr> <tr> <td style="text-align: center;">DIN</td> <td rowspan="2" style="text-align: center;">CABLE GLAND PG09 (9 mm NOMINAL CABLE DIAMETER)</td> </tr> <tr> <td style="text-align: center;">RAC DIN</td> </tr> </table>		CABLE DIAMETER	DIN	CABLE GLAND PG09 (9 mm NOMINAL CABLE DIAMETER)	RAC DIN																		
	CABLE DIAMETER																						
DIN	CABLE GLAND PG09 (9 mm NOMINAL CABLE DIAMETER)																						
RAC DIN																							

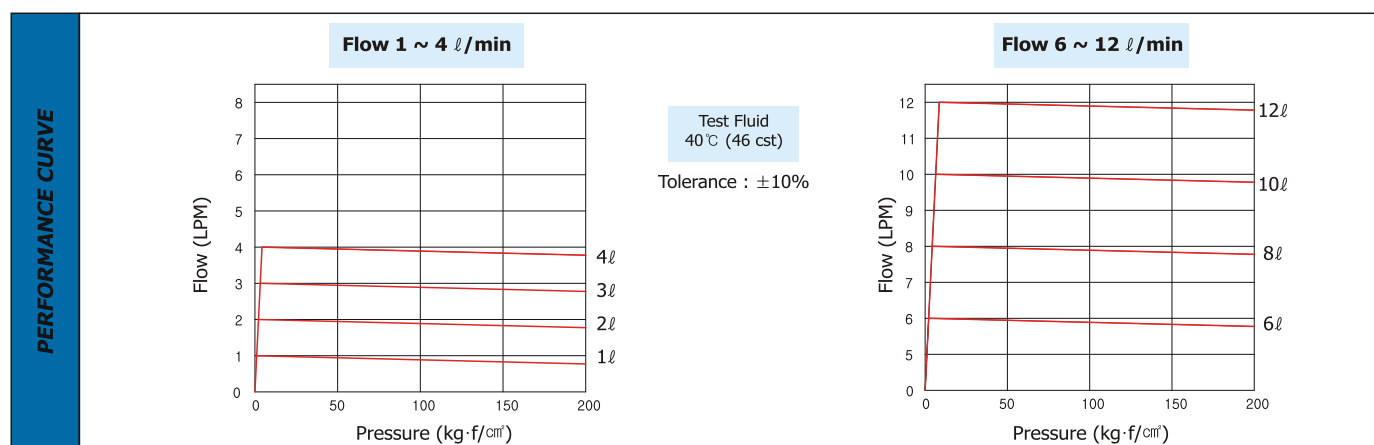
7 F 0 6
A / B

PRESSURE COMPENSATED FIXED CONTROL VALVE

A	CODE	F	S	G
	APPLICABLE CENTER BLOCK	M - X - QH	M - SH	D1 - D3

B	CODE	01	02	03	04	06	08	11	12	Note. Contact Hydro-Tek for other flow control valves.
	FLOW (ℓ/min)	1	2	3	4	6	8	11	12	

DIMENSION	DIAGRAM	F - Series	S - Series	G - Series



PRESSURE COMPENSATED ADJUSTABLE THROTTLE VALVE

A	CODE	GA	FLOW RANGE	2 ~ 20 (ℓ/min)	APPLICABLE CENTER BLOCK	M - X - QH
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DIMENSION	DIAGRAM			
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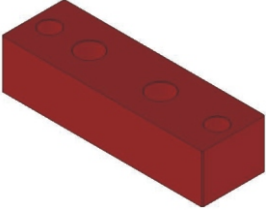
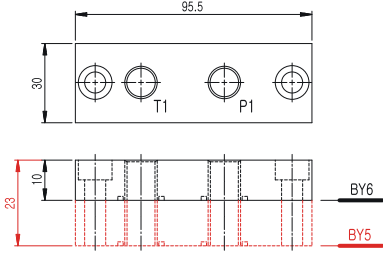
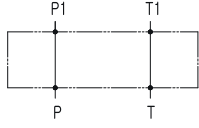
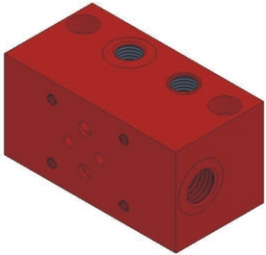
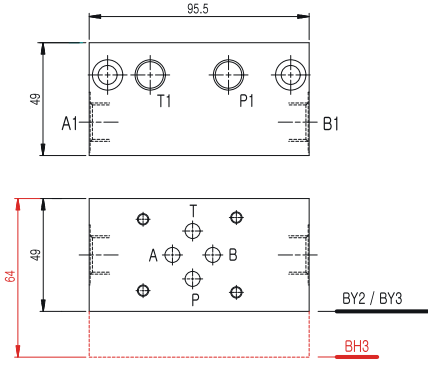
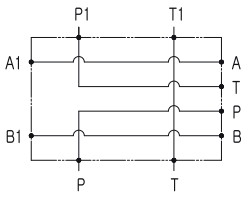
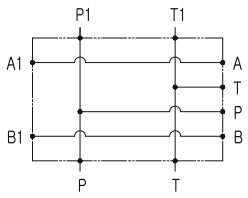
CONTROL VALVE

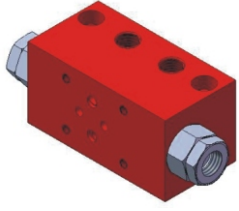
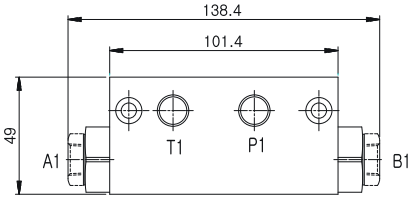
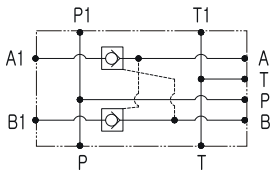
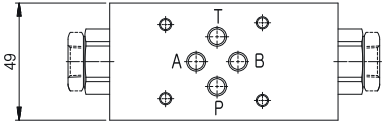
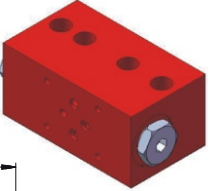
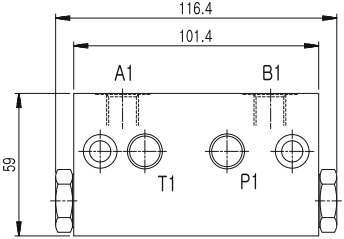
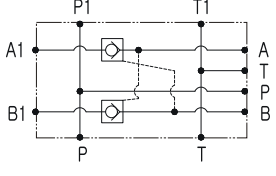
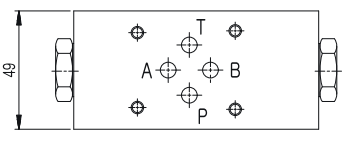
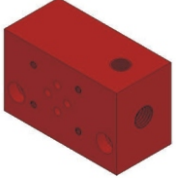
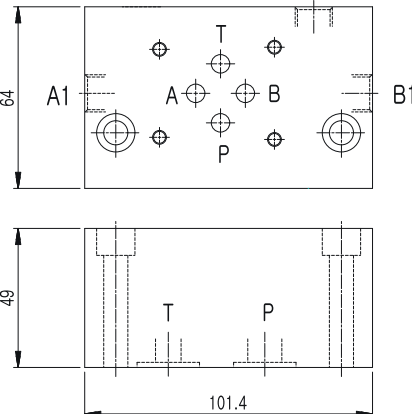
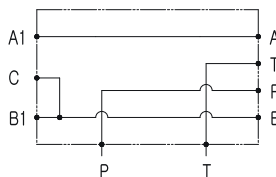
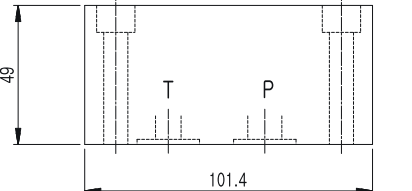
8 B Y 5 1 -
A / B A / B

DIRECTIONAL SANDWICH BLOCK

(for Double Acting Cylinder)

Note. If you need more than 2pcs of different modular blocks, please specify them in next blank
 P & T O-Ring : P14 x 2pcs

	A	Directional sandwich block CODE				
	B	Directional sandwich block QUANTITY				
A	BY6		Spacing Block			
	BY5					
			Working pressure (Max.)	flow (Max.)	Ports size	
					P1	T1
					Φ11.5	Φ11.5
A	BY2		Block for solenoid valves CETOP-3			
	BY3		<p>BY2 : Series circuit BY3 : Parallel circuit BH3 : Parallel circuit - Prevents interference of oil tank and motor. - Higher than BY3 block.</p>			
			BY2		BY3 / BH3	
						
			Working pressure (Max.)	flow (Max.)	Ports size	
					P1	T1
					A1	B1
			250 kg-f/cm ²	40 l/min	PF1/4"	PF1/4"
					PF3/8"	PF3/8"

A	BY4		<p>Block with pilot operated check valve A & B for Cetop-3 valve</p> <p>BH4 : Prevents interference of oil tank and motor. higher than BY4 block.</p>																
	BH4																		
																			
			<table border="1"> <thead> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="4">Ports size</th> </tr> <tr> <th>P1</th> <th>T1</th> <th>A1</th> <th>B1</th> </tr> </thead> <tbody> <tr> <td>250 kg·f/cm²</td> <td>40 l/min</td> <td>PF1/4"</td> <td>PF1/4"</td> <td>PF3/8"</td> <td>PF3/8"</td> </tr> </tbody> </table>	Working pressure (Max.)	flow (Max.)	Ports size				P1	T1	A1	B1	250 kg·f/cm ²	40 l/min	PF1/4"	PF1/4"	PF3/8"	PF3/8"
Working pressure (Max.)	flow (Max.)	Ports size																	
		P1	T1	A1	B1														
250 kg·f/cm ²	40 l/min	PF1/4"	PF1/4"	PF3/8"	PF3/8"														
A	BYF		<p>Block with pilot operated check valve A & B for Cetop-3 valve</p>																
																			
			<table border="1"> <thead> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="4">Ports size</th> </tr> <tr> <th>P1</th> <th>T1</th> <th>A1</th> <th>B1</th> </tr> </thead> <tbody> <tr> <td>250 kg·f/cm²</td> <td>40 l/min</td> <td>PF1/4"</td> <td>PF1/4"</td> <td>PF1/4"</td> <td>PF1/4"</td> </tr> </tbody> </table>	Working pressure (Max.)	flow (Max.)	Ports size				P1	T1	A1	B1	250 kg·f/cm ²	40 l/min	PF1/4"	PF1/4"	PF1/4"	PF1/4"
Working pressure (Max.)	flow (Max.)	Ports size																	
		P1	T1	A1	B1														
250 kg·f/cm ²	40 l/min	PF1/4"	PF1/4"	PF1/4"	PF1/4"														
A	SB16		<p>Block for solenoid valves Cetop-3</p>																
																			
			<table border="1"> <thead> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="3">Ports size</th> </tr> <tr> <th>A1</th> <th>B1</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>250 kg·f/cm²</td> <td>40 l/min</td> <td>PF3/8"</td> <td>PF3/8"</td> <td>PF1/4"</td> </tr> </tbody> </table>	Working pressure (Max.)	flow (Max.)	Ports size			A1	B1	C	250 kg·f/cm ²	40 l/min	PF3/8"	PF3/8"	PF1/4"			
Working pressure (Max.)	flow (Max.)	Ports size																	
		A1	B1	C															
250 kg·f/cm ²	40 l/min	PF3/8"	PF3/8"	PF1/4"															

A	SB12		Block for cartridge solenoid valves .																
			<table border="1"> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="2">Ports size</th> </tr> <tr> <th>A</th> <th>B</th> </tr> <tr> <td>250 kg·f/cm²</td> <td>20 ℓ/min</td> <td>PF1/4"</td> <td>PF1/4"</td> </tr> </table>	Working pressure (Max.)	flow (Max.)	Ports size		A	B	250 kg·f/cm ²	20 ℓ/min	PF1/4"	PF1/4"						
Working pressure (Max.)	flow (Max.)	Ports size																	
		A	B																
250 kg·f/cm ²	20 ℓ/min	PF1/4"	PF1/4"																
A	SB37		Block for solenoid valves Cetop-3																
			<table border="1"> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="2">Ports size</th> </tr> <tr> <th>A</th> <th>B</th> </tr> <tr> <td>250 kg·f/cm²</td> <td>40 ℓ/min</td> <td>PF3/8"</td> <td>PF3/8"</td> </tr> </table>	Working pressure (Max.)	flow (Max.)	Ports size		A	B	250 kg·f/cm ²	40 ℓ/min	PF3/8"	PF3/8"						
Working pressure (Max.)	flow (Max.)	Ports size																	
		A	B																
250 kg·f/cm ²	40 ℓ/min	PF3/8"	PF3/8"																
A	SB38		SB37 : With solenoid valve and relief valve. SB38 : With solenoid valve.																
			<table border="1"> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="2">Ports size</th> </tr> <tr> <th>A</th> <th>B</th> </tr> <tr> <td>250 kg·f/cm²</td> <td>40 ℓ/min</td> <td>PF3/8"</td> <td>PF3/8"</td> </tr> </table>	Working pressure (Max.)	flow (Max.)	Ports size		A	B	250 kg·f/cm ²	40 ℓ/min	PF3/8"	PF3/8"						
Working pressure (Max.)	flow (Max.)	Ports size																	
		A	B																
250 kg·f/cm ²	40 ℓ/min	PF3/8"	PF3/8"																
A	SB13		Block for solenoid valves With two solenoid valve and two Relief valve.																
			<table border="1"> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="4">Ports size</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> <tr> <td>250 kg·f/cm²</td> <td>40 ℓ/min</td> <td>PT3/8"</td> <td>PT3/8"</td> <td>PT3/8"</td> <td>PT3/8"</td> </tr> </table>	Working pressure (Max.)	flow (Max.)	Ports size				A	B	C	D	250 kg·f/cm ²	40 ℓ/min	PT3/8"	PT3/8"	PT3/8"	PT3/8"
Working pressure (Max.)	flow (Max.)	Ports size																	
		A	B	C	D														
250 kg·f/cm ²	40 ℓ/min	PT3/8"	PT3/8"	PT3/8"	PT3/8"														

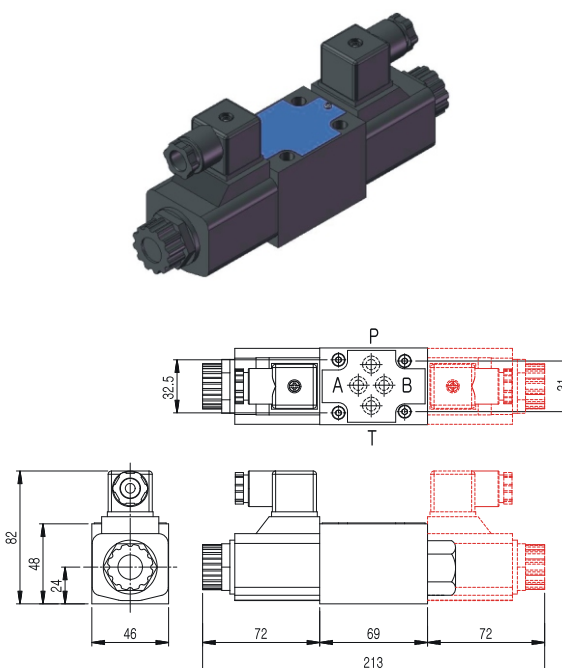
Note. Please contact Hydro-tek for different specification of directional sandwich blocks.

9 Y A 1 1 1 — A / B / C / D A / B / C / D

DIRECTIONAL VALVE

Note. If you need more than 2pcs of different modular blocks, please specify them in next blank

A	Directional valve CODE				
B	CODE	1	2	3	4
	VOLTAGE	DC 12V	DC 24V	AC 110V	AC 220V
C	Directional valve QUANTITY				
D	CODE	PORT TYPE	WORKING PRESSURE (Max.)	FLOW (Max.)	CONNECTING
	1	CETOP-3	315 kg·f/cm ²	63 l/min	Din type Terminal box type
A	YA	YP	YC	YO	YT
	HA	HP	HC	HO	HB

DIMENSION	DIN TYPE	TERMINAL BOX TYPE
		

Note. Please contact Hydro-Tek for detent and manual type

DIRECTIONAL VALVE

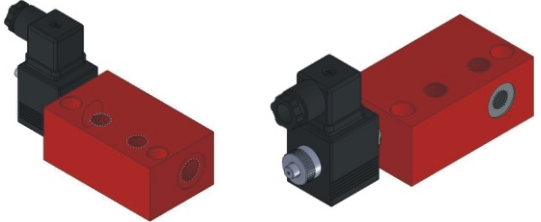

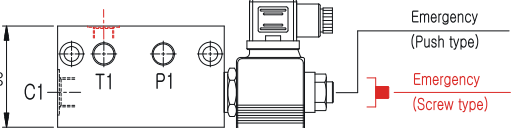
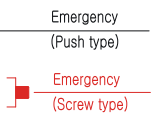
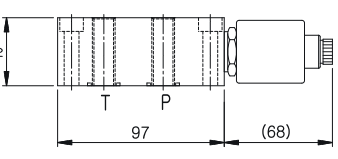
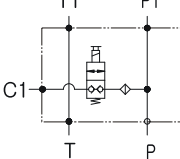
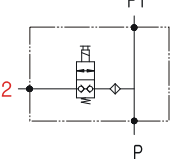
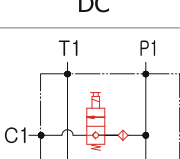
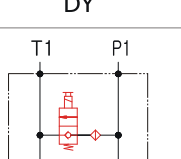
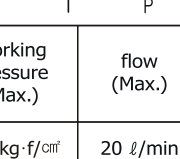
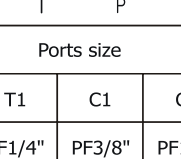
10 D 1 1 1 D N -
 A / B / C / D A / B / C / D

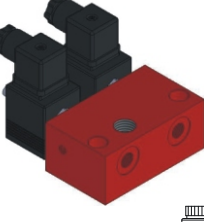
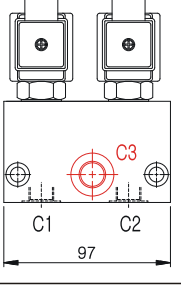
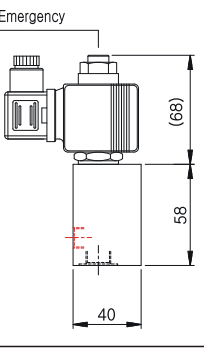
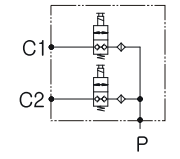
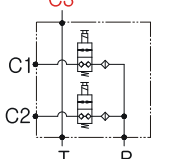
SOLENOID SANDWICH VALVE

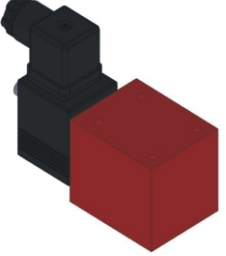
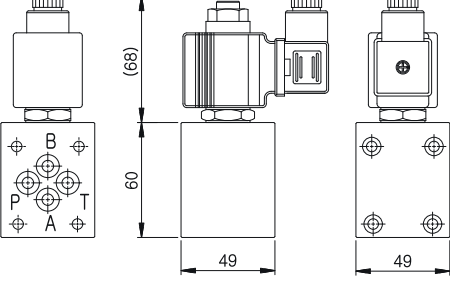
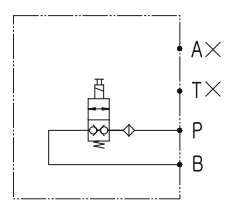
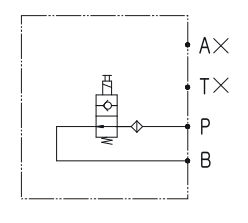
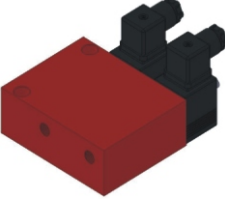
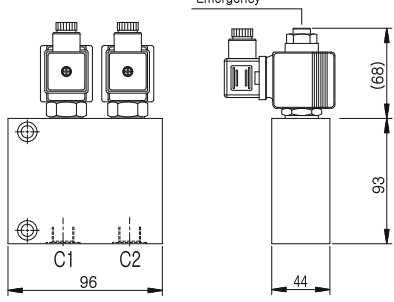
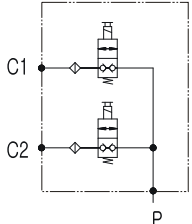
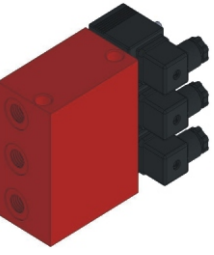
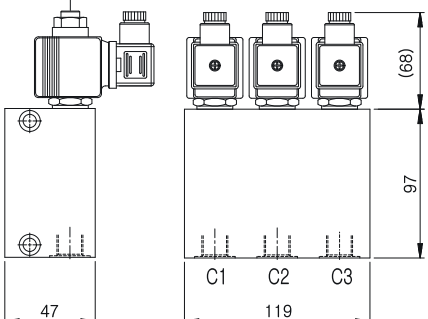
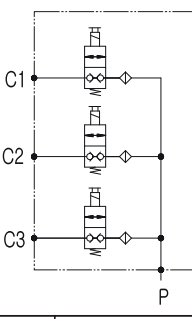
with cartridge solenoid valve

- Note.**
1. If you need more than 2pcs of different modular blocks, please specify them in next blank.
 2. The cavity for solenoid sandwich valve is 09 cavity, and you can insert flow control valve.
 3. Please contact Hydro-Tek for different cavity svch as '08' cavity such as '08' cavity.
 4. P & T O-Ring : P14 x 2pcs

A	Solenoid sandwich valve CODE							
B	CODE	1	2	3	4	5	6	7
	VOLTAGE	DC 12V	DC 24V	AC 110V	AC 220V	AC 110V RAC	AC 220V RAC	AC 24V
C	Solenoid sandwich valve QUANTITY							
D	CODE	DN	DS	DL	DR			
	Type	DIN Connector	Dual Spades	Lead wire	Integral Deutche Connector			

A	D1	 <p style="font-size: small; text-align: center;">Double locking : Push type Normally closed : Screw type</p>     <p style="font-size: x-small; text-align: center;">58 40 97 (68)</p>	Block for double locking (normally closed) 2way poppet solenoid valve				
	DA						
	DC						
	DY						
			Working pressure (Max.)	flow (Max.)	Ports size		
		250 kg·f/cm ²	20 ℓ/min	P1	T1	C1	C2
				PF1/4"	PF1/4"	PF3/8"	PF1/4"



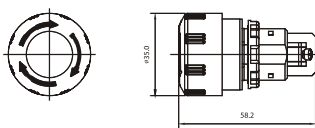

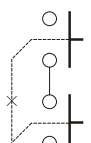
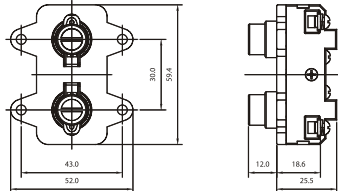

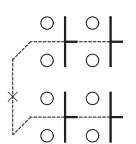
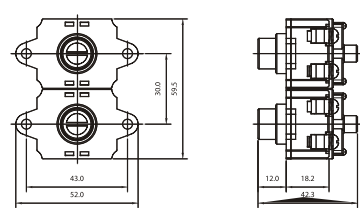

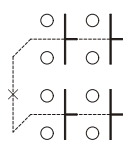
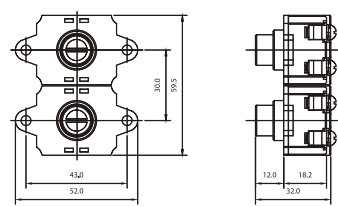
A	D2	   <p style="font-size: x-small; text-align: center;">(68) 58 40 97</p>	Block for 2 double locking 2way poppet solenoid valve					
	DV							
			Working pressure (Max.)	flow (Max.)	Ports size			
			250 kg·f/cm ²	20 ℓ/min	C1	C2	C3	
					PF1/4"	PF1/4"	PF3/8"	

A	DM		Block for double locking or normally open 2way poppet solenoid valve															
	OM					<table border="1"> <thead> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="2">Ports size</th> </tr> <tr> <td></td> <td></td> </tr> </thead> <tbody> <tr> <td>250 kg-f/cm²</td> <td>20 l/min</td> <td></td> <td></td> </tr> </tbody> </table>	Working pressure (Max.)	flow (Max.)	Ports size				250 kg-f/cm ²	20 l/min				
Working pressure (Max.)	flow (Max.)	Ports size																
250 kg-f/cm ²	20 l/min																	
A	DD		Block for 2 double locking 2way poppet solenoid valve															
				<table border="1"> <thead> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="2">Ports size</th> </tr> <tr> <th>C1</th> <th>C1</th> </tr> </thead> <tbody> <tr> <td>250 kg-f/cm²</td> <td>20 l/min</td> <td>PF1/4"</td> <td>PF1/4"</td> </tr> </tbody> </table>	Working pressure (Max.)	flow (Max.)	Ports size		C1	C1	250 kg-f/cm ²	20 l/min	PF1/4"	PF1/4"				
Working pressure (Max.)	flow (Max.)	Ports size																
		C1	C1															
250 kg-f/cm ²	20 l/min	PF1/4"	PF1/4"															
A	D3		Block for 3 double locking 2way poppet solenoid valve															
				<table border="1"> <thead> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="3">Ports size</th> </tr> <tr> <th>C1</th> <th>C2</th> <th>C3</th> </tr> </thead> <tbody> <tr> <td>250 kg-f/cm²</td> <td>20 l/min</td> <td>PF3/8"</td> <td>PF3/8"</td> <td>PF3/8"</td> </tr> </tbody> </table>	Working pressure (Max.)	flow (Max.)	Ports size			C1	C2	C3	250 kg-f/cm ²	20 l/min	PF3/8"	PF3/8"	PF3/8"	
Working pressure (Max.)	flow (Max.)	Ports size																
		C1	C2	C3														
250 kg-f/cm ²	20 l/min	PF3/8"	PF3/8"	PF3/8"														

A	SS		Single acting speed control (CETOP-3)										
			<table border="1"> <thead> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="2">Ports size</th> </tr> <tr> <th>P1</th> <th>T1</th> </tr> </thead> <tbody> <tr> <td>250 kg-f/cm²</td> <td>20 l/min</td> <td>PF1/4"</td> <td>PF1/4"</td> </tr> </tbody> </table>	Working pressure (Max.)	flow (Max.)	Ports size		P1	T1	250 kg-f/cm ²	20 l/min	PF1/4"	PF1/4"
Working pressure (Max.)	flow (Max.)	Ports size											
		P1	T1										
250 kg-f/cm ²	20 l/min	PF1/4"	PF1/4"										
A	DS		Double acting speed control (CETOP-3)										
			<table border="1"> <thead> <tr> <th rowspan="2">Working pressure (Max.)</th> <th rowspan="2">flow (Max.)</th> <th colspan="2">Ports size</th> </tr> <tr> <th>P</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>250 kg-f/cm²</td> <td>20 l/min</td> <td>PF1/4"</td> <td>PF1/4"</td> </tr> </tbody> </table>	Working pressure (Max.)	flow (Max.)	Ports size		P	T	250 kg-f/cm ²	20 l/min	PF1/4"	PF1/4"
Working pressure (Max.)	flow (Max.)	Ports size											
		P	T										
250 kg-f/cm ²	20 l/min	PF1/4"	PF1/4"										

Note. Please contact Hydro-Tek for different specification of solenoid sandwich block.

CONTACT PART COMPOSITION & DIMENSION

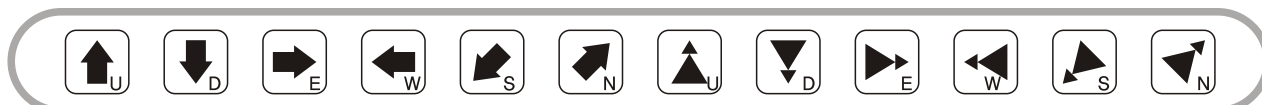
Name	Contact block	Block composition	Rating	Dimensions
HC-HE100 (1b)			6A 250V	
HC-HA100 (1a,-1a, 1stage)			6A 250V	
HC-HC100 (2a,-2a, 1stage)			6A 250V	
HC-HT100 (2a,-2a, 1stage)			6A 250V	

PUSH BUTTON WITH INTERNATIONAL SYMBOLS

■ ENGLISH



■ SYMBOL MARKS



■ KOREAN



ORDER EXAMPLE



HC-02X

(2 BUTTON / WITHOUT CABLE)



HC-02X

(2 BUTTON / WITHOUT CABLE)



HC-02X

(2 BUTTON / WITHOUT CABLE)



HC-02X

(2 BUTTON / WITHOUT CABLE)



HC-02E

(2 BUTTON / WITH EMERGENCY)



HC-02E

(2 BUTTON / WITH EMERGENCY)



HC-02E

(2 BUTTON / WITH EMERGENCY)



HC-02E

(2 BUTTON / WITH EMERGENCY)

SPECIAL POWER PACK



HC-04X

(4 BUTTON / WITHOUT CABLE)



HC-04X

(4 BUTTON / WITHOUT CABLE)



HC-04X

(4 BUTTON / WITHOUT CABLE)



HC-04X

(4 BUTTON / WITHOUT CABLE)



(4 BUTTON / WITH EMERGENCY)



(4 BUTTON / WITH EMERGENCY)



(4 BUTTON / WITH EMERGENCY)



(4 BUTTON / WITH EMERGENCY)



(6 BUTTON / WITHOUT CABLE)



(6 BUTTON / WITHOUT CABLE)



(6 BUTTON / WITHOUT CABLE)



(6 BUTTON / WITHOUT CABLE)

SPECIAL POWER PACK



(6 BUTTON / WITH EMERGENCY)



(6 BUTTON / WITH EMERGENCY)



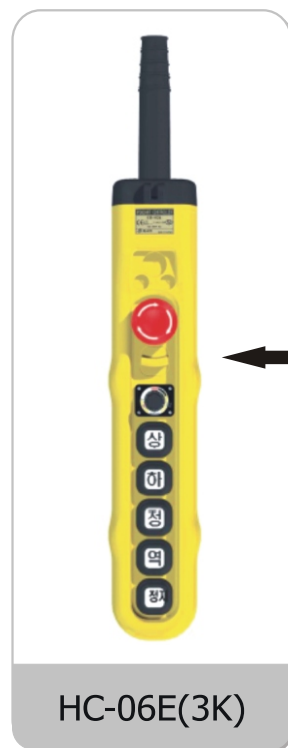
(8 BUTTON / WITHOUT CABLE)



(8 BUTTON / WITHOUT CABLE)

SPECIAL ORDER EXAMPLE


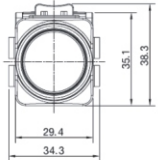
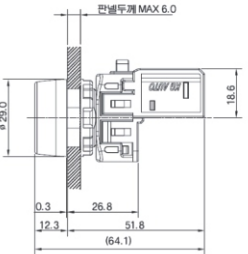

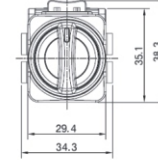
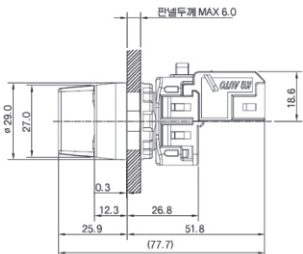

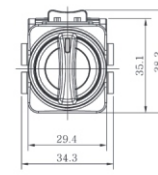
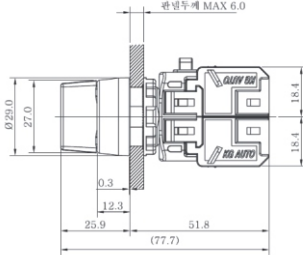

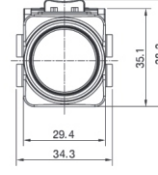
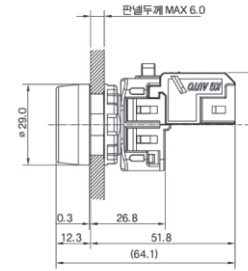
SPECIAL POWER PACK



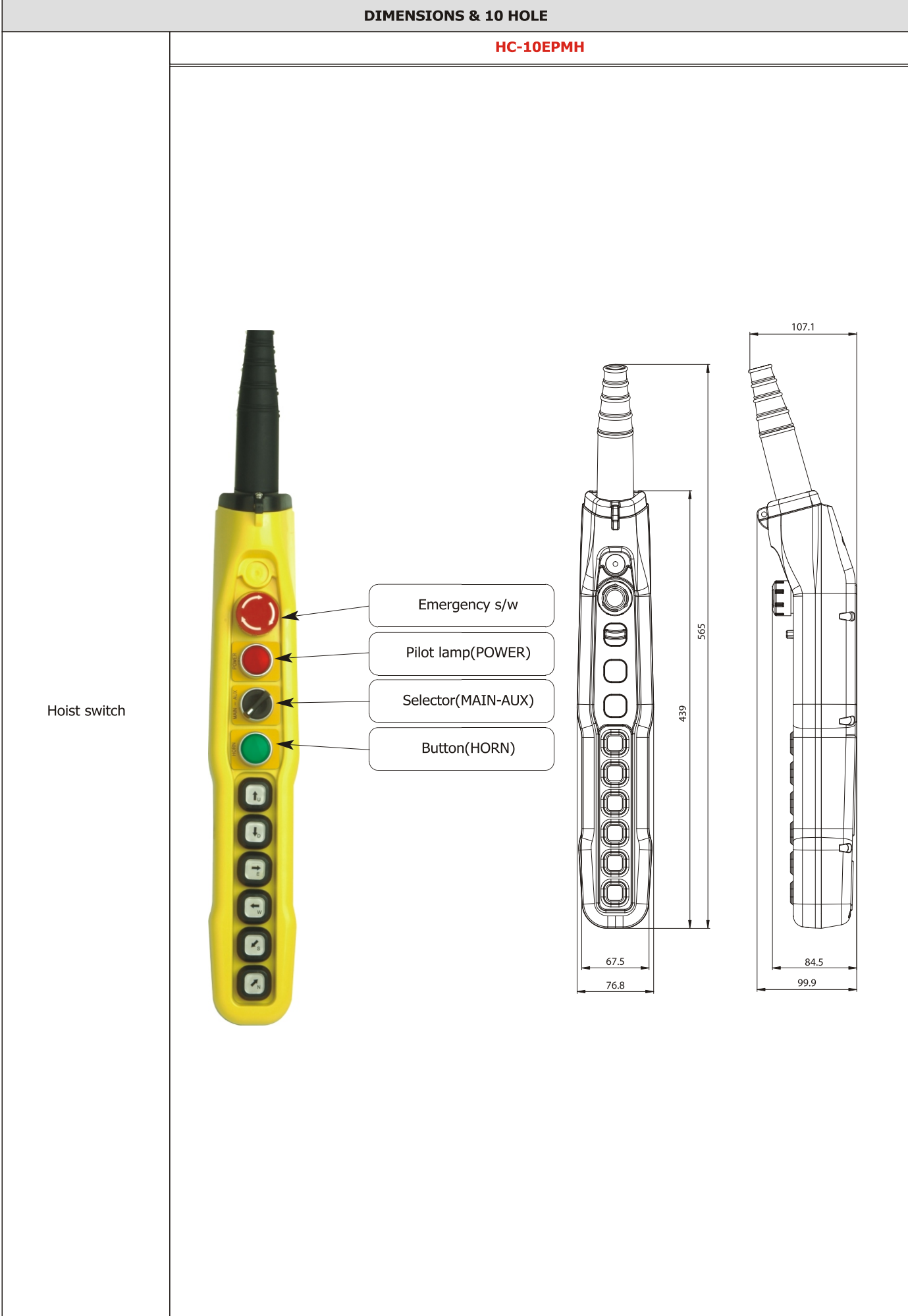
- Speed control volume
- Type of name plates which is various selection
- Volume dosage selection (1K, 3K, 5K)

10 BUTTON HOIST SWITCH

FEATURES	Water-proof structure and outer block case is designed as light and strong by ABS quality of the material that is strong in impact.
	The actuator will be able to operate with button and control switch.
	Preparing various button plates, Use is convenient according to usage.

DIMENSIONS & CONTROL UNIT	
	(HC-V2R) - P(POWER)
	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  </div> <div style="margin-right: 20px;">  </div> <div>  </div> </div>
Selector s/w 2stage	(HC2M1) - M(MAIN-AUX), L(LIGHT)
	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  </div> <div style="margin-right: 20px;">  </div> <div>  </div> </div>
Selector s/w 3stage	(HC-3M2) - Y
	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  </div> <div style="margin-right: 20px;">  </div> <div>  </div> </div>
Push button	(HC-M1G) - H(HORN)
	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;">  </div> <div style="margin-right: 20px;">  </div> <div>  </div> </div>

SPECIAL POWER PACK



15



BUTTON SWITCH CASE

A	CODE	CS			XX		
	TYPE	With connector switch			Without connector switch		
B	CODE	S1	S2	SD	D1	D2	XX
	COVER BUTTON	Single acting	Two single acting	Single & double acting	Double acting	Two double acting	Without button
C	CODE	C		K		X	
	CONTROL	Cut/out switch		Key switch		Without control	
D	CODE	H			X		
	TYPE	Hoist button switch controller			Without hoist button switch controller		

Note. See 122page for the code of hoist button switch controller.

Button Switch Case		
	Hoist button switch controller	Without hoist button switch controller
PICTURE		
DIMENSION		

SPECIAL POWER PACK

15

DC Motor code

(Please refer ① for this code)

A


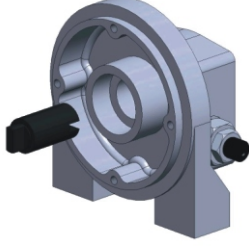
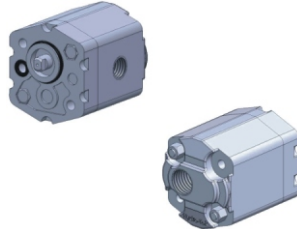

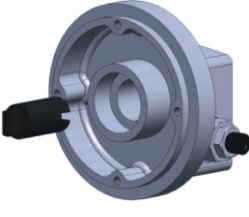
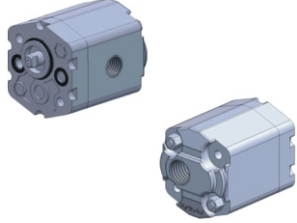

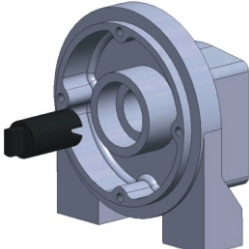
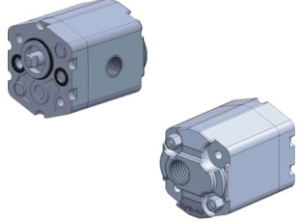
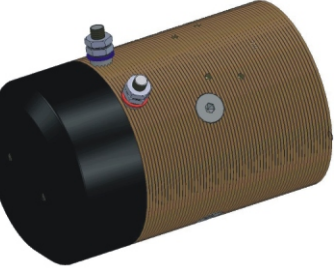
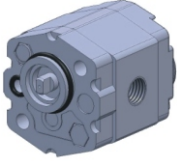
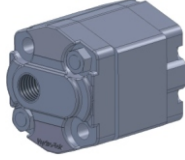

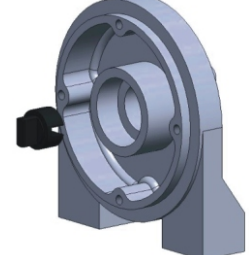
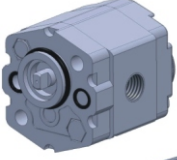

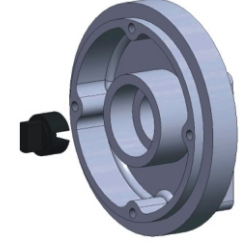
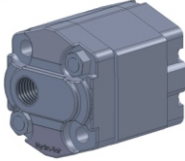
A / B / C

X

Maker

PUMP & MOTOR UNIT

Note. Please refer to "Coding No.1" for DC Motor detail code

Motor	Sub-Plate			PUMP
 DA08 / DB08	FR	FOOT	O	 
		RELIEF	O	
 OR	OR	FOOT	X	 GH02X3 ~ GH11X3 
		RELIEF	O	
 FX	FX	FOOT	O	 GH02X4 ~ GH11X4 
		RELIEF	X	
 D112 / D212	OX	FOOT	X	 
		RELIEF	X	
 D116 / D222	DF	FOOT	O	 GO11X3 ~ GO58X3 
		RELIEF	X	
 D116 / D222	DX	FOOT	X	 GO11X4 ~ GO58X4 
		RELIEF	X	

SPECIAL POWER PACK

PUMP CODE

PUMP & MOTOR UNIT

A		Gear pump G											
B / C	CODE		Specification				B / C	CODE		Specification			
	Group	C	Displacement (cc/rev)	Flow (Liter/min @2500 RPM) DC	Max. operating pressure (kg-f/cm ²)	Max. peak pressure (kg-f/cm ²)		Group	C	Displacement (cc/rev)	Flow (Liter/min @2500 RPM) DC	Max. operating pressure (kg-f/cm ²)	Max. peak pressure (kg-f/cm ²)
B / C	H	02	0.2	0.5	190	230	B / C	O	11	1.1	2.7	230	270
	H	03	0.3	0.7	190	230		O	16	1.6	4.0	230	270
	H	05	0.5	1.2	190	230		O	21	2.1	5.2	230	270
	H	07	0.7	1.7	190	230		O	23	2.3	5.7	230	270
	H	11	1.1	2.7	190	230		O	27	2.7	6.7	230	270
	Please refer to "Coding No.3" for detail dimension (See page 88)							O	32	3.2	8.0	210	250
						O		37	3.7	9.2	210	250	
						O		42	4.2	10.5	210	250	

16



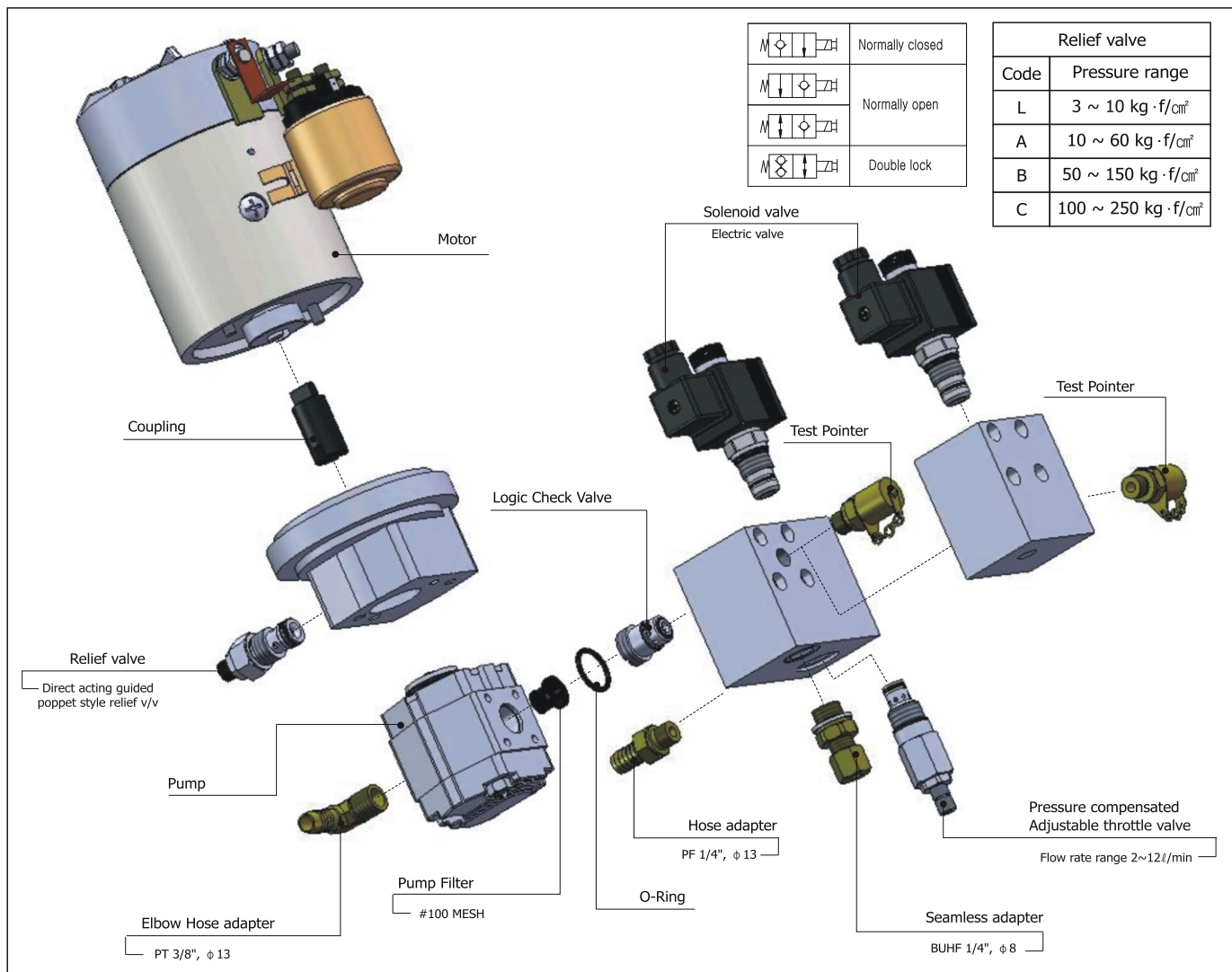
PUMP & MOTOR UNIT BLOCK

Modular block with cartridge solenoid valve for pump & motor unit type		
Function	One single acting cylinder	Two single acting cylinder
Code	T1	T2
Diagram	Dimension	Dimension
<p>A</p>	<p>P.C.V : Pressure compensated adjustable throttle valve S.V : Solenoid valve C port : PF 1/4" P1, T port : PF 3/8"</p>	<p>S.V : Solenoid valve C1 port : PF 1/4"</p>

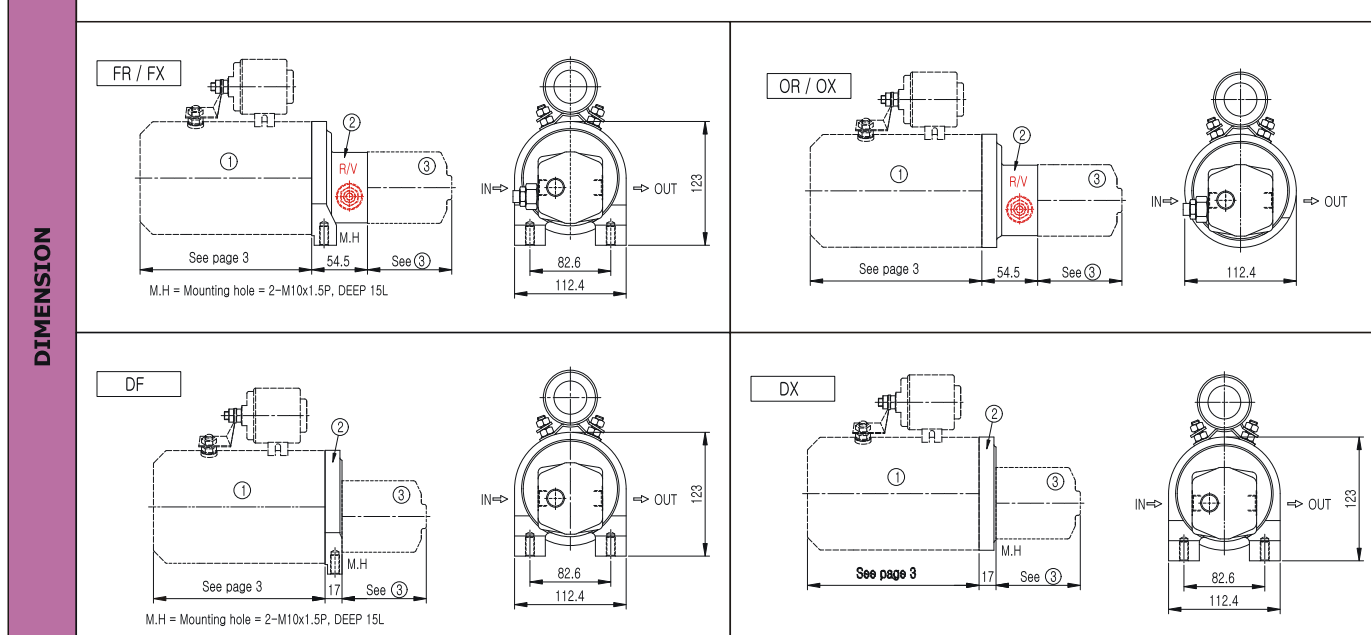
Note. T2 block needs T1 block for its function.

SPECIAL POWER PACK

PUMP & MOTOR UNIT BUILT-IN



PUMP & MOTOR UNIT ASS'Y



Note. APPLICABLE MOTOR CODE : DA05, DB05, MA05, MB05, DA08, DB08, MA08, MB08, D112, D212, D116, D222, D124, D230, D420, L116, L222, L230

SPECIAL POWER PACK

17 L C 2 1 D N
A / B / C / D / E

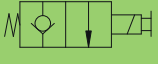
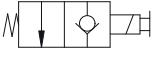
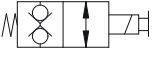
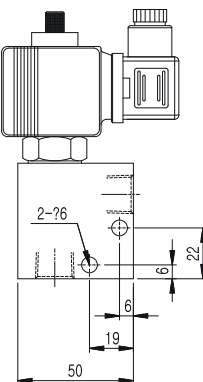
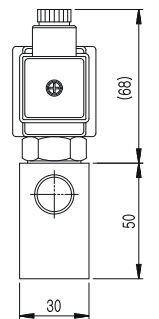
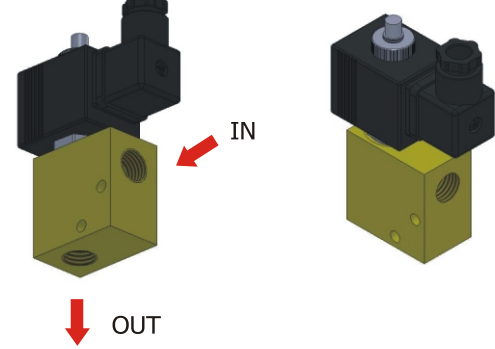
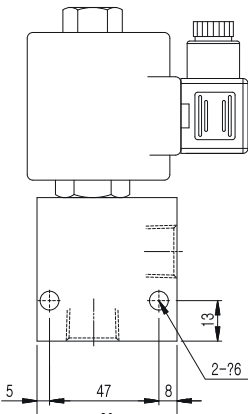
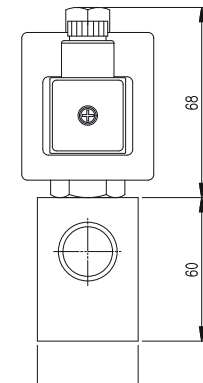
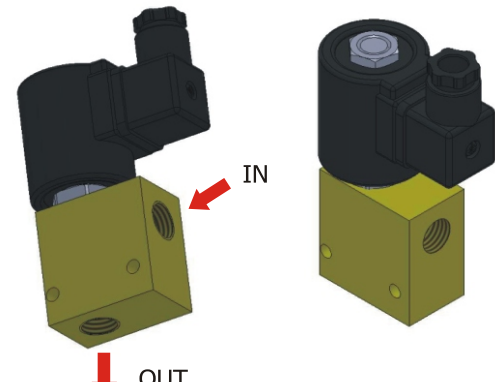
LIFT VALVE

A	LIFT VALVE CODE L											
B	CODE	C		O		D						
	DIAGRAM											
		Normally closed		Normally open		Double locking						
C	CODE	1	2	3	4	5	6	7				
	VOLTAGE	DC 12V	DC 24V	AC 110V	AC 220V	AC 110V RAC	AC 220V RAC	AC 24V				
D	CODE	1										
	SPECIFICATION	CAVITY	09	PRESSURE (Max.)	250 kg-f/cm ²	FLOW (Max.)	40 l/min	PORT SIZE				
								P	T	P1	C	
							PF3/8"	PT3/8"	PT3/8"	PT3/8"		
	<p>C.V = Check valve R.V = Relief valve S.V = Solenoid valve S.C.V = Speel control valve</p>											
D	CODE	3										
	SPECIFICATION	CAVITY	10	PRESSURE (Max.)	350 kg-f/cm ²	FLOW (Max.)	68 l/min	PORT SIZE				
								P	T1	P2	P3	C
							PT1/2"	PT3/4"	PF1/4"	PF1/4"	PT3/8"	PT3/8"
	<p>C.V = Check valve R.V = Relief valve S.V = Solenoid valve S.C.V = Speel control valve</p>											
E	CODE	DN	DS	DL	DR							
	Type	DIN Connector	Dual Spades	Lead wire	Integral Deutche Connector							

SPECIAL POWER PACK

17 **V C 2 1 D N**
A / B / C / D / E

SOLENOID VALVE

A	SOLENOID VALVE CODE V							
B	CODE	C		O	D			
	DIAGRAM							
		Normally closed		Normally open	Double locking			
C	CODE	1	2	3	4	5	6	7
	VOLTAGE	DC 12V	DC 24V	AC 110V	AC 220V	AC 110V RAC	AC 220V RAC	AC 24V
D	CODE	1						
	SPECIFICATION	CAVITY	09	PRESSURE (Max.)	250 kg-f/cm ²	FLOW (Max.)	20 l/min	PORT SIZE
								IN: PT3/8" OUT: PT3/8"
								
D	CODE	3						
	SPECIFICATION	CAVITY	10	PRESSURE (Max.)	350 kg-f/cm ²	FLOW (Max.)	68 l/min	PORT SIZE
								IN: PT1/2" OUT: PT1/2"
								
E	CODE	DN	DS	DL	DR			
	Type	DIN Connector	Dual Spades	Lead wire	Integral Deutche Connector			

SPECIAL POWER PACK

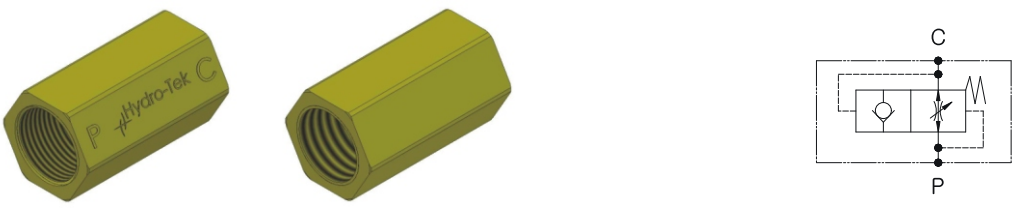
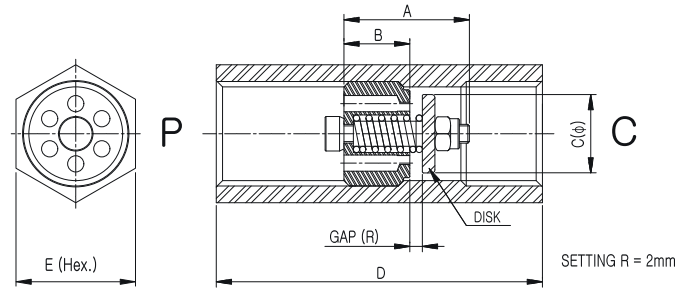
17 **B 4 0 0**
A/ B

LINE TYPE BURST VALVE

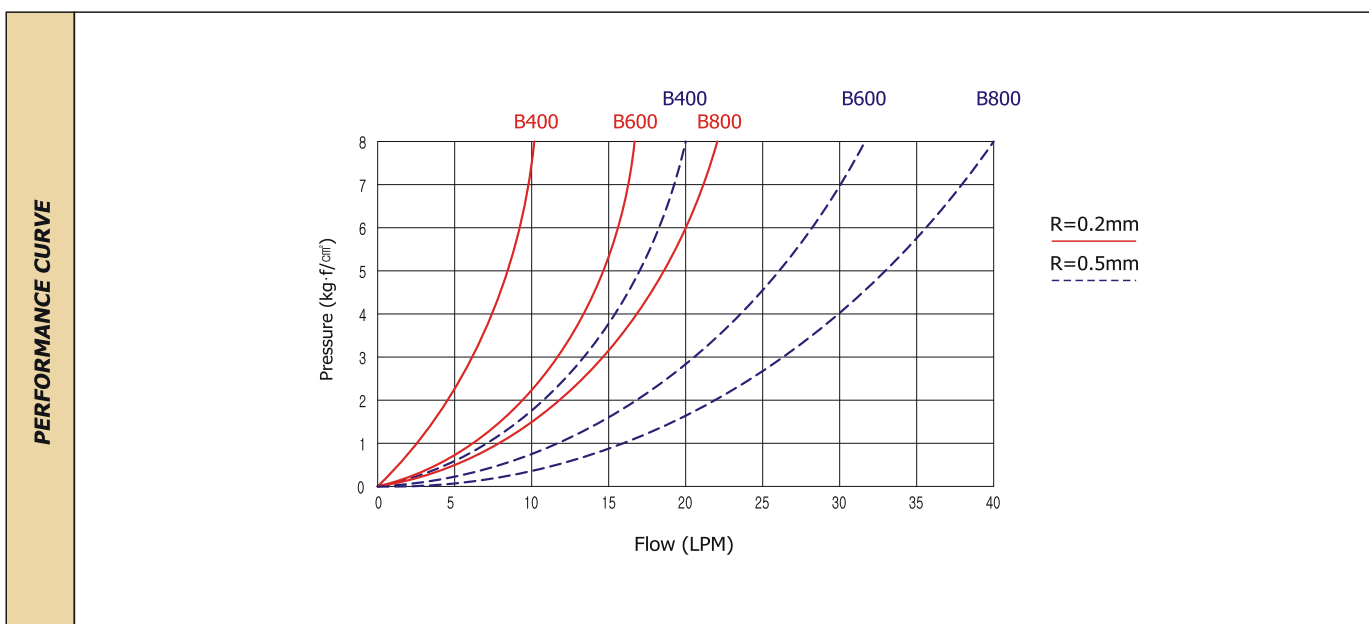
A LINE TYPE BURST VALVE CODE **B**

B	CODE	WORKING PRESSURE (Max.)	FLOW (Min.)	FLOW (Max.)	PORT SIZE	
					P	C
	400	350 kg·f/cm ²	4 ℓ/min	25 ℓ/min	PF1/4"	PF1/4"
	600	350 kg·f/cm ²	6 ℓ/min	50 ℓ/min	PF3/8"	PF3/8"
	800	350 kg·f/cm ²	16 ℓ/min	80 ℓ/min	PF1/2"	PF1/2"

DIMENSION

	B400	B600	B800
A	17.5	23	25
B	8	10.5	12
C	9.5	12.5	15
D	50	52	60
E	19	22	27



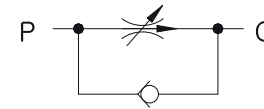
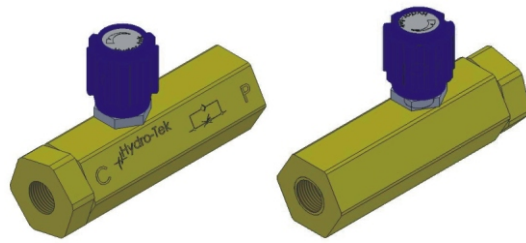
SPECIAL POWER PACK

17 P 4 0 0
A/ B

LINE TYPE PRESSURE COMPENSATED ADJUSTABLE THROTTLE VALVE

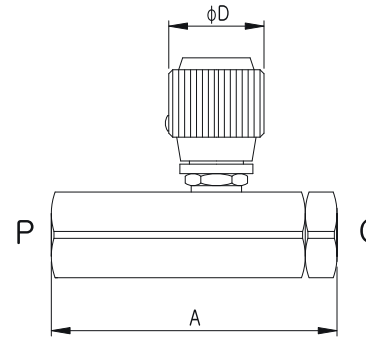
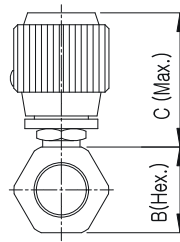
A LINE TYPE PRESSURE COMPENSATED ADJUSTABLE THROTTLE VALVE CODE **P**

B	CODE	WORKING PRESSURE (Max.)	FLOW RANGE (Min.)	PORT SIZE	
				P	C
	400	250 kg-f/cm ²	1 ~ 10 l/min	PT1/4"	PT1/4"
	600	250 kg-f/cm ²	1 ~ 18 l/min	PT3/8"	PT3/8"
	800	250 kg-f/cm ²	1 ~ 33 l/min	PT1/2"	PT1/2"



DIMENSION

	P400	P600	P800
A	90	90	108
B	27	27	36
C	38	38	36
D	24	24	24



PERFORMANCE CURVE

Please contact Hydro-Tek for technical data.

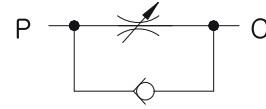
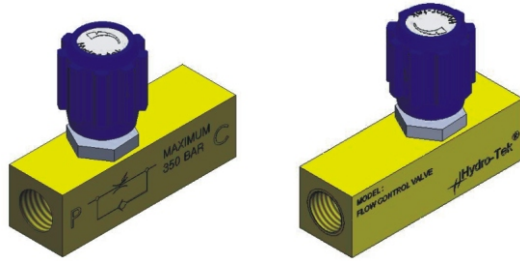
SPECIAL POWER PACK

17 F 4 0 0
A/ B

LINE TYPE FLOW CONTROL VALVE

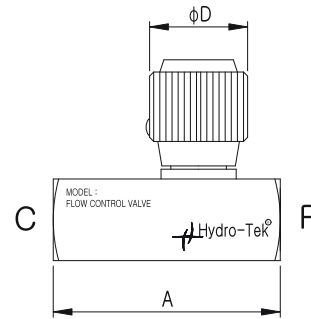
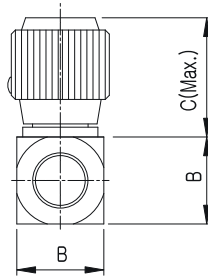
A LINE TYPE FLOW CONTROL VALVE CODE F

B	CODE	WORKING PRESSURE (Max.)	FLOW RANGE (Min.)	PORT SIZE	
				P	C
	400	350 kg-f/cm ²	20 l/min	PT1/4"	PT1/4"
	600	350 kg-f/cm ²	55 l/min	PT3/8"	PT3/8"
	800	350 kg-f/cm ²	110 l/min	PT1/2"	PT1/2"



DIMENSION

	F400	F600	F800
A	65	70	87
B	20	25	32
C	32	41	44
D	24	24	30



PERFORMANCE CURVE

Please contact Hydro-Tek for technical data.

SPECIAL POWER PACK

FLOW DIVIDER

A FLOW DIVIDER CODE **D**

CODE	FLOW (Min.)	OPERATING PRESSURE (Max.)	RATIO	PORT SIZE		
				P	C1	C2
A	7.6 ℓ/min	240 kg-f/cm ²	50 : 50	PF1/4"	PF1/4"	PF1/4"
B	30 ℓ/min	240 kg-f/cm ²	50 : 50	PF3/8"	PF3/8"	PF3/8"
C	60 ℓ/min	240 kg-f/cm ²	50 : 50	PF1/2"	PF1/2"	PF1/2"

B

SPECIAL POWER PACK

Please contact Hydro-Tek for technical data.

HAND PUMP

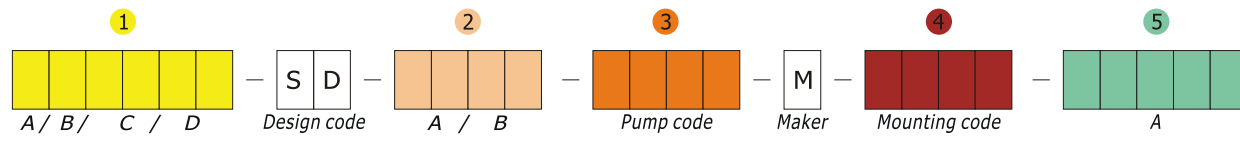
CODE		
HP		
CAPACITY	6 CC	
PORT SIZE	C PF1/4"	

CODE		
KP		
CAPACITY	6 CC	
PORT SIZE	P PF3/8" T PF3/8"	

SUCTION & RETURN PIPE

SUCTION PIPE (STANDARD)	RETURN PIPE (STANDARD)	<p>Note.</p> <p>The length of suction & Return pipe depend on customer's request. (only for straight type pipe)</p> <p>Suction pipe SP □□□</p> <p>Return pipe SP □□□</p> <p>Ex.) Suction pipe 60mm : SP060</p>

SPECIAL POWER PACK



Motor ①

CODE (4POLE)	A		B	C	D	DIMENSION	
	PHASE	VOLTAGE (V)	POLE	POWER (KW)	FREQUENCY (Hz)	A	B
*S40560	1Φ	220	4	0.5	60	133	151
*S40760			4	0.7	60	133	166
*S41160			4	1.1	60	133	181
S41560			4	1.5	60	133	201
*S42260			4	2.2	60	133	236
T40556	3Φ	230/400	4	0.5	50/60	133	151
T40756			4	0.7	50/60	133	166
T41156			4	1.1	50/60	133	181
T41556			4	1.5	50/60	133	201
T42256			4	2.2	50/60	133	236
DESIGN	SD						
FRAME SIZE	80						
INSULATION CLASS	F						

Center Block SM ②

C.V = Check valve
 R.V = Relief valve
 S.V = Solenoid valve
 P.C.T.V = Pressure compensated fixed throttle valve
 GA = Pressure compensated adjustable throttle valve

A

Vertical mounting

Horizontal mounting

P, T = PF3/8" (STANDARD)
 P2 = PT1/4"

B


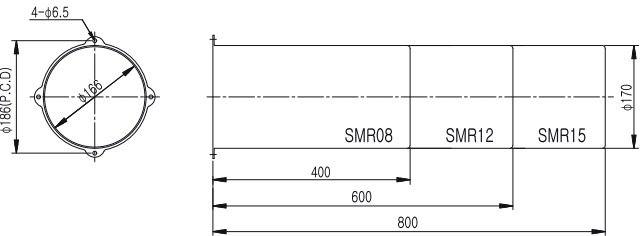

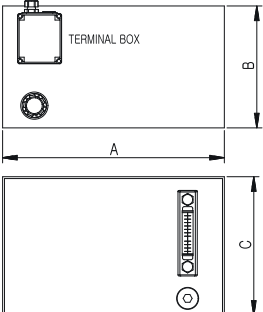
In case of SMR - tank	In case of SMS - tank
Center block diagram (See page *****)	Base block diagram (See page *****)

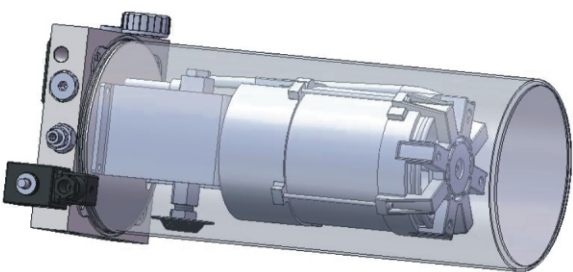
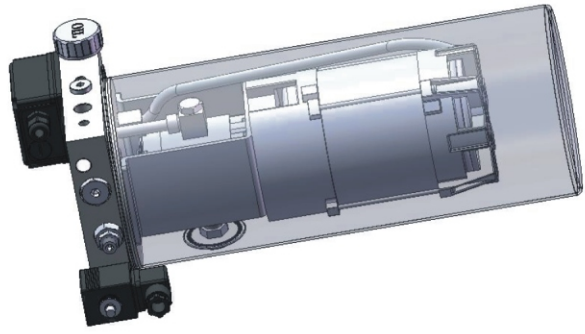
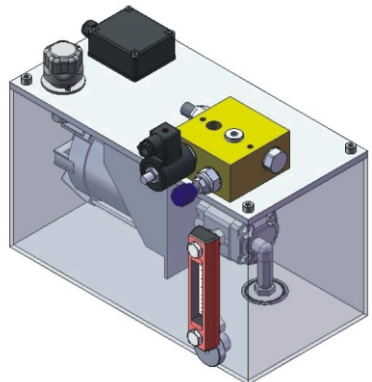
C

Relief valve	
Code	Pressure range
L	3 ~ 10 kg · f/cm ²
A	10 ~ 60 kg · f/cm ²
B	50 ~ 150 kg · f/cm ²
C	100 ~ 250 kg · f/cm ²

Note. '*1' Available on order.

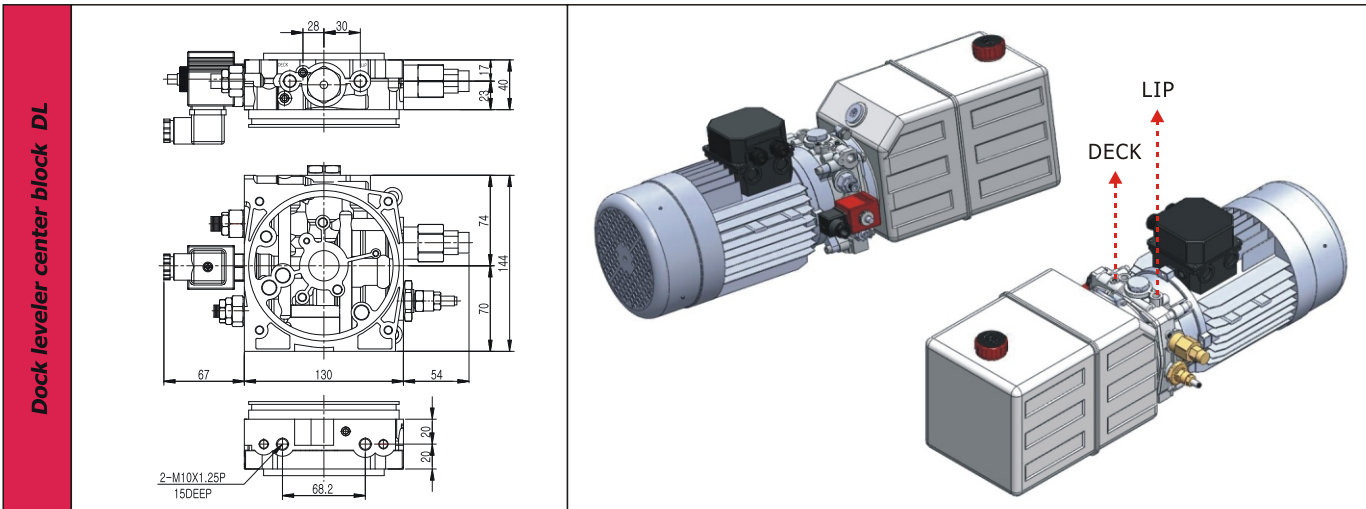
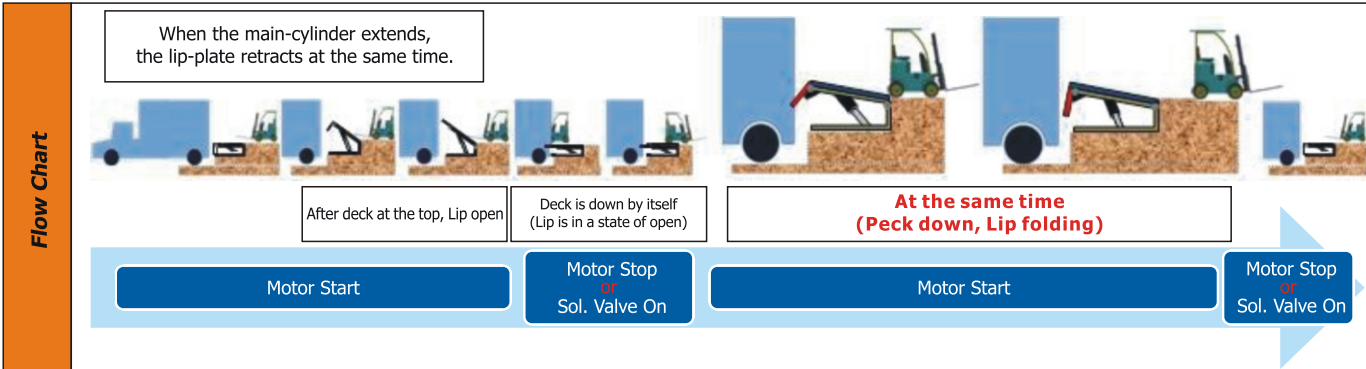
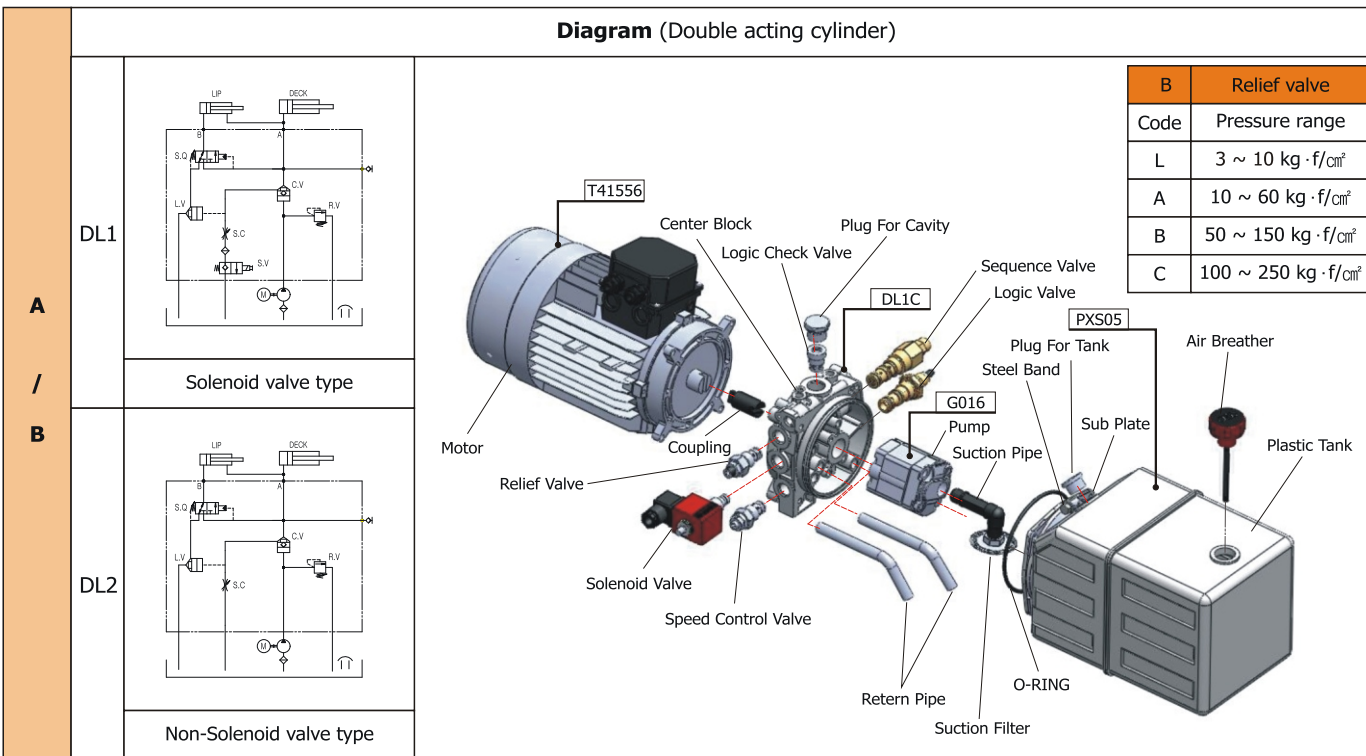
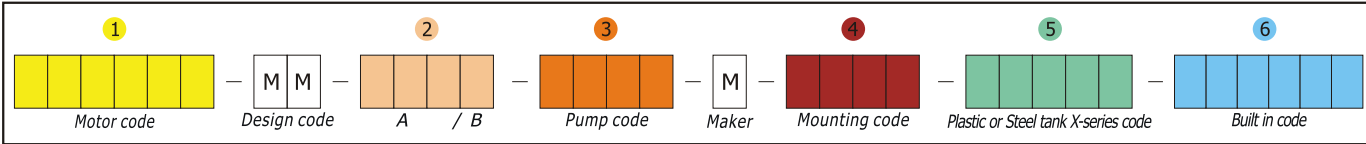
Pump ③							
Pump code (See page 88)							
Mounting ④							
Mounting code (See page 90)							
Tank SM ⑤							
CODE	PART NUMBER	CAPACITY (ℓ)		CODE	PART NUMBER	CAPACITY (ℓ)	
		TANK	USABLE			TANK	USABLE
SMR08	402841	8	5	SMS15	412171	15	12
SMR12	412169	12	8	SMS20	412172	20	18
SMR15	412170	15	12	SMS30	412173	30	25

 	 	<table border="1"> <thead> <tr> <th></th> <th>SMS10</th> <th>SMS20</th> <th>SMS30</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>400</td> <td>400</td> <td>500</td> </tr> <tr> <td>B</td> <td>200</td> <td>250</td> <td>250</td> </tr> <tr> <td>C</td> <td>230</td> <td>250</td> <td>270</td> </tr> </tbody> </table>				SMS10	SMS20	SMS30	A	400	400	500	B	200	250	250	C	230	250	270
			SMS10	SMS20	SMS30															
A	400	400	500																	
B	200	250	250																	
C	230	250	270																	

ROUND TYPE ASSEMBLY		
	SQUARE TYPE ASSEMBLY	

SPECIAL POWER PACK

DOCK LEVELER POWER PACK



Note. Dock leveler power pack can be assembled with only X-series oil tank. (Plastic or steel oil tank)

SPECIAL POWER PACK

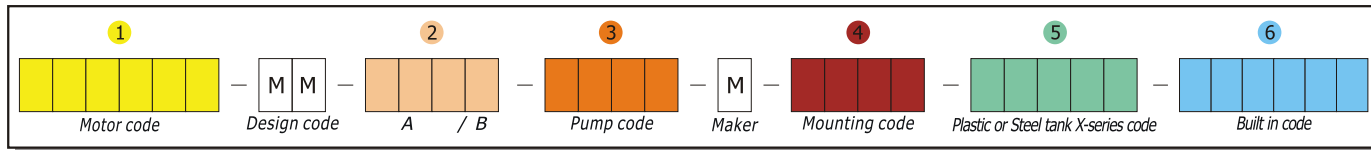
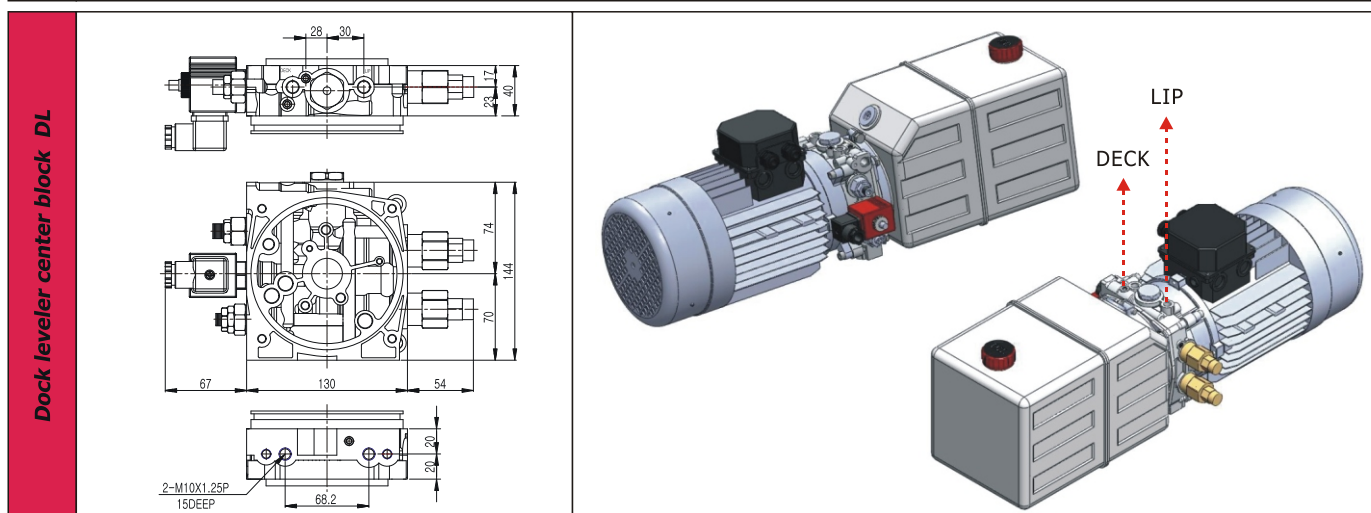
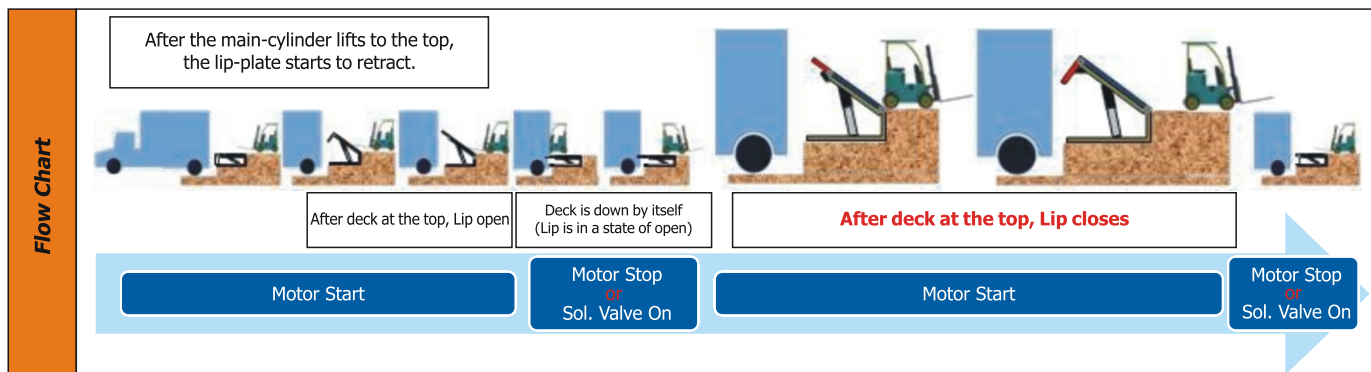
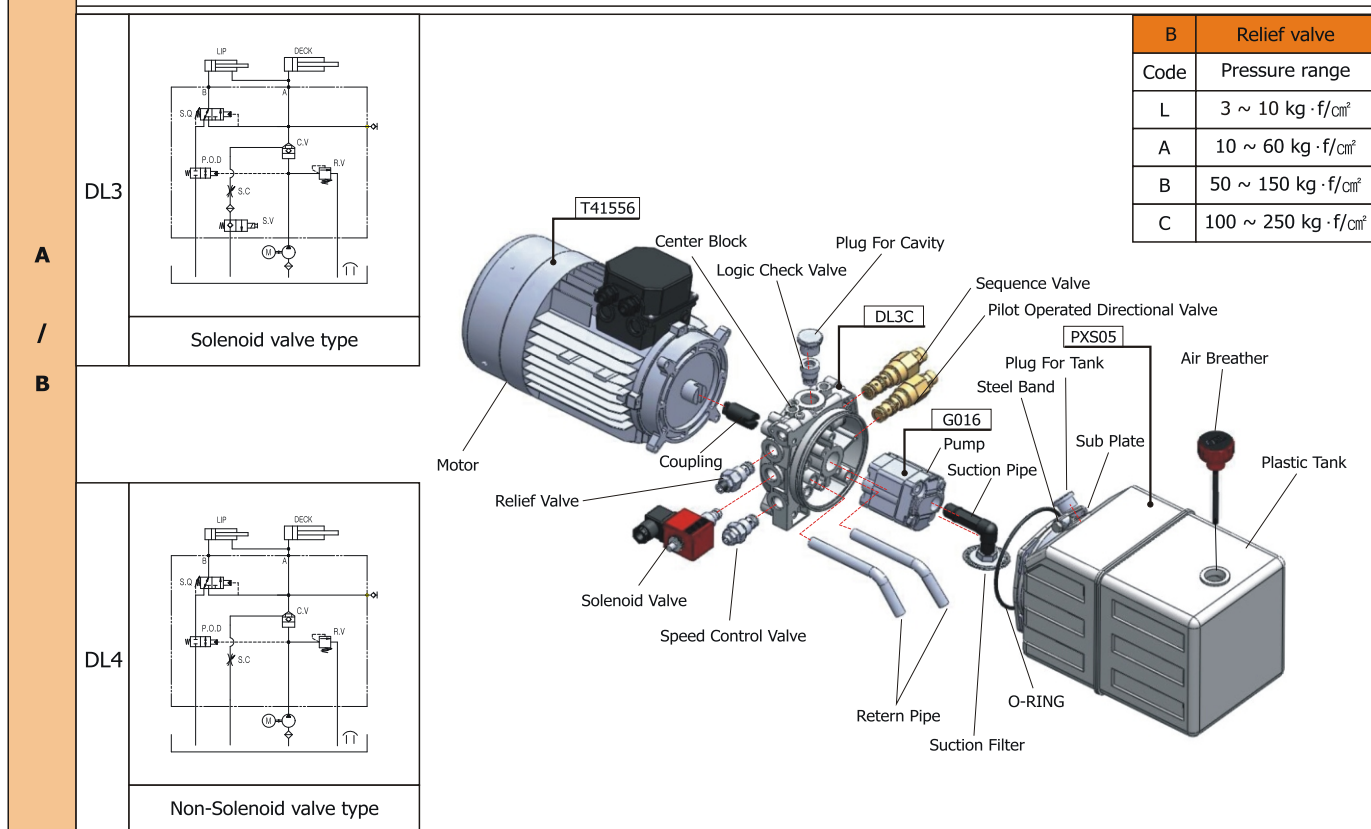


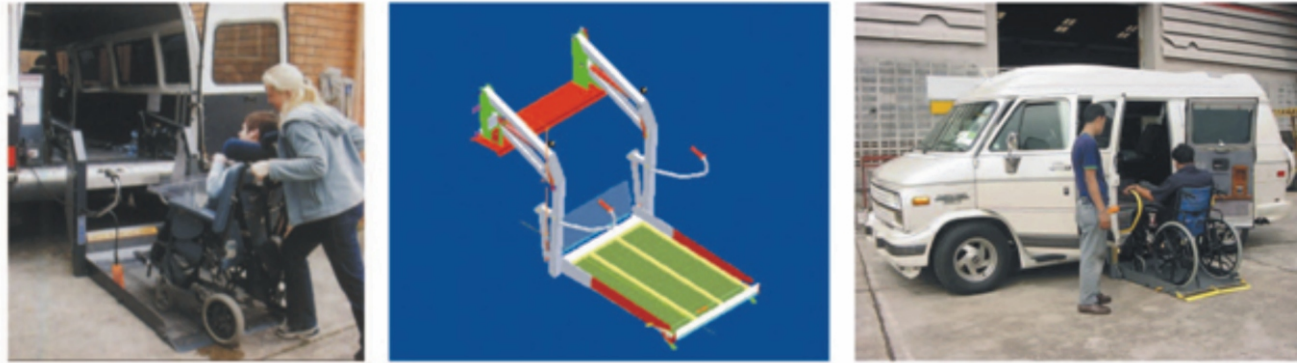
Diagram (Double acting cylinder)



Note. Dock leveler power pack can be assembled with only X-series oil tank. (Plastic or steel oil tank)

SPECIAL POWER PACK

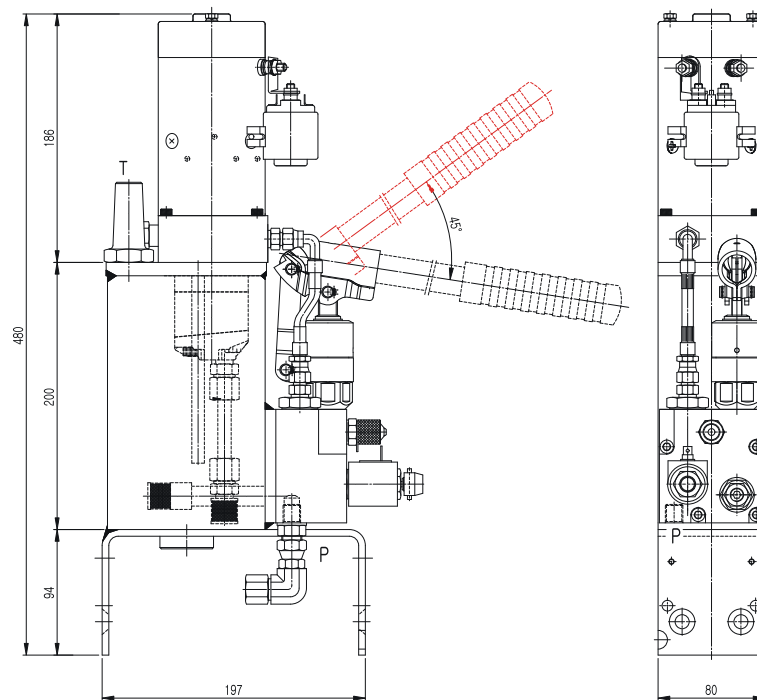
SAMPLE PICTURE



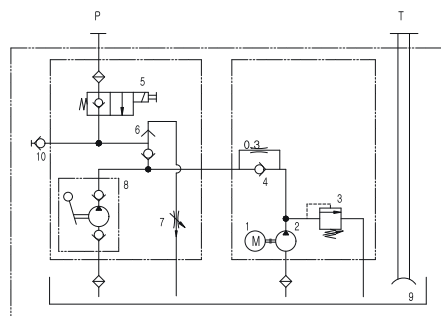
CODE

WS02

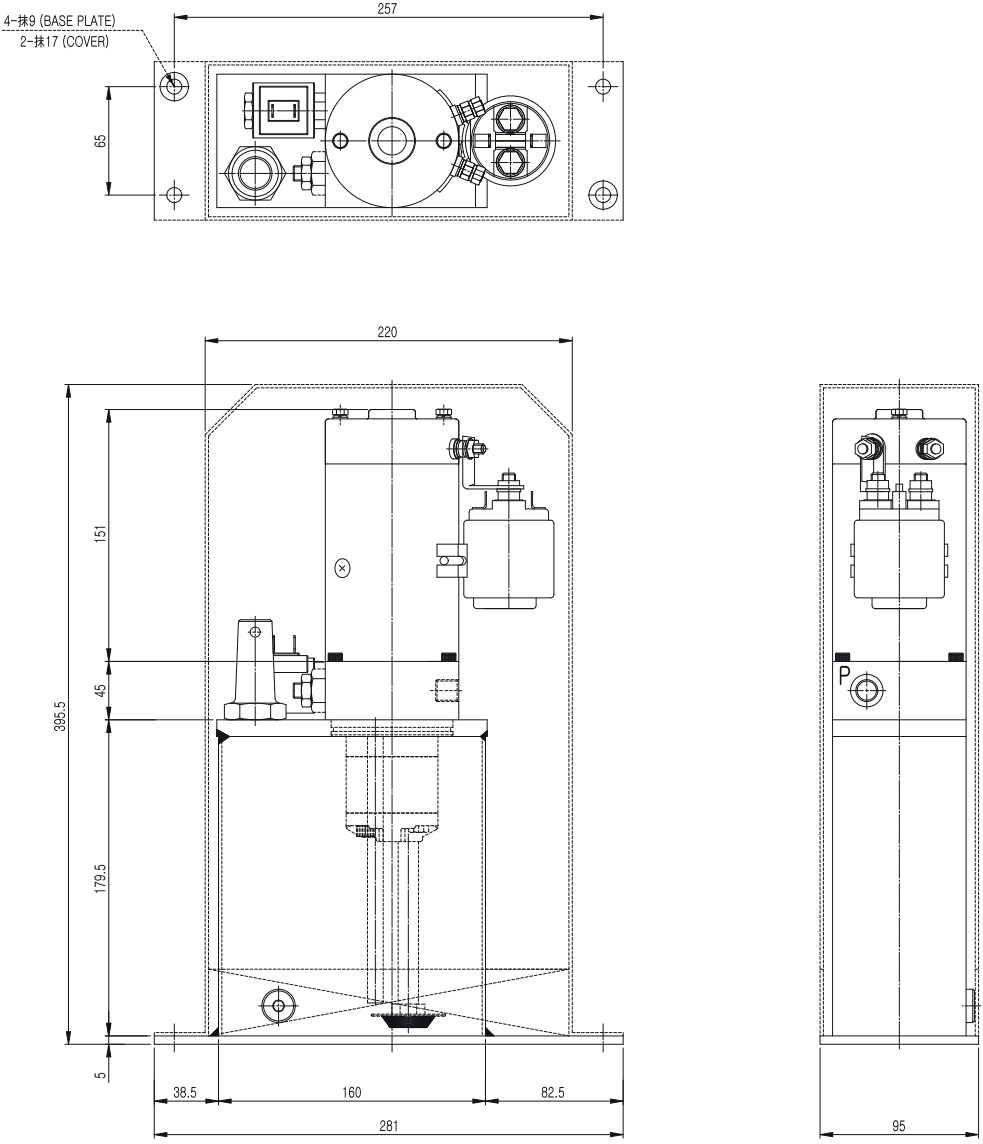
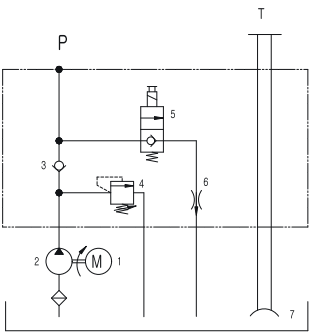
Dimension



Hydraulic Circuit

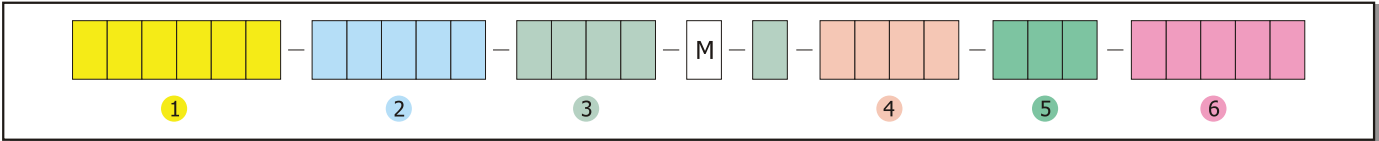


No.	Parts	Specification
1	Motor	0.8kW, 12V
2	Pump	-
3	Relief valve	100 BAR
4	Orifice valve	抜0.3
5	Solenoid valve & Override valve	DC 12V
6	Shuttle valve	-
7	Speed control valve	-
8	Hand pump	8.2 CC/STROKE
9	Oil tank	1.6L (USE : 1.3L)
10	Test point plug	-

CODE	WS20/035																								
Dimension																									
Hydraulic Circuit	 <table border="1" data-bbox="1138 2131 1600 2359"> <thead> <tr> <th>No.</th> <th>Parts</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Motor</td> <td>0.8kW, 12V</td> </tr> <tr> <td>2</td> <td>Pump</td> <td>-</td> </tr> <tr> <td>3</td> <td>Check valve</td> <td>-</td> </tr> <tr> <td>4</td> <td>Relief valve</td> <td>140 BAR</td> </tr> <tr> <td>5</td> <td>Solenoid valve & Override valve</td> <td>DC 12V</td> </tr> <tr> <td>6</td> <td>Pressure compensated valve</td> <td>2.5 L/MIN</td> </tr> <tr> <td>7</td> <td>Oil tank</td> <td>2L (USE : 1.5L)</td> </tr> </tbody> </table>	No.	Parts	Specification	1	Motor	0.8kW, 12V	2	Pump	-	3	Check valve	-	4	Relief valve	140 BAR	5	Solenoid valve & Override valve	DC 12V	6	Pressure compensated valve	2.5 L/MIN	7	Oil tank	2L (USE : 1.5L)
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6	Pressure compensated valve	2.5 L/MIN																							
7	Oil tank	2L (USE : 1.5L)																							

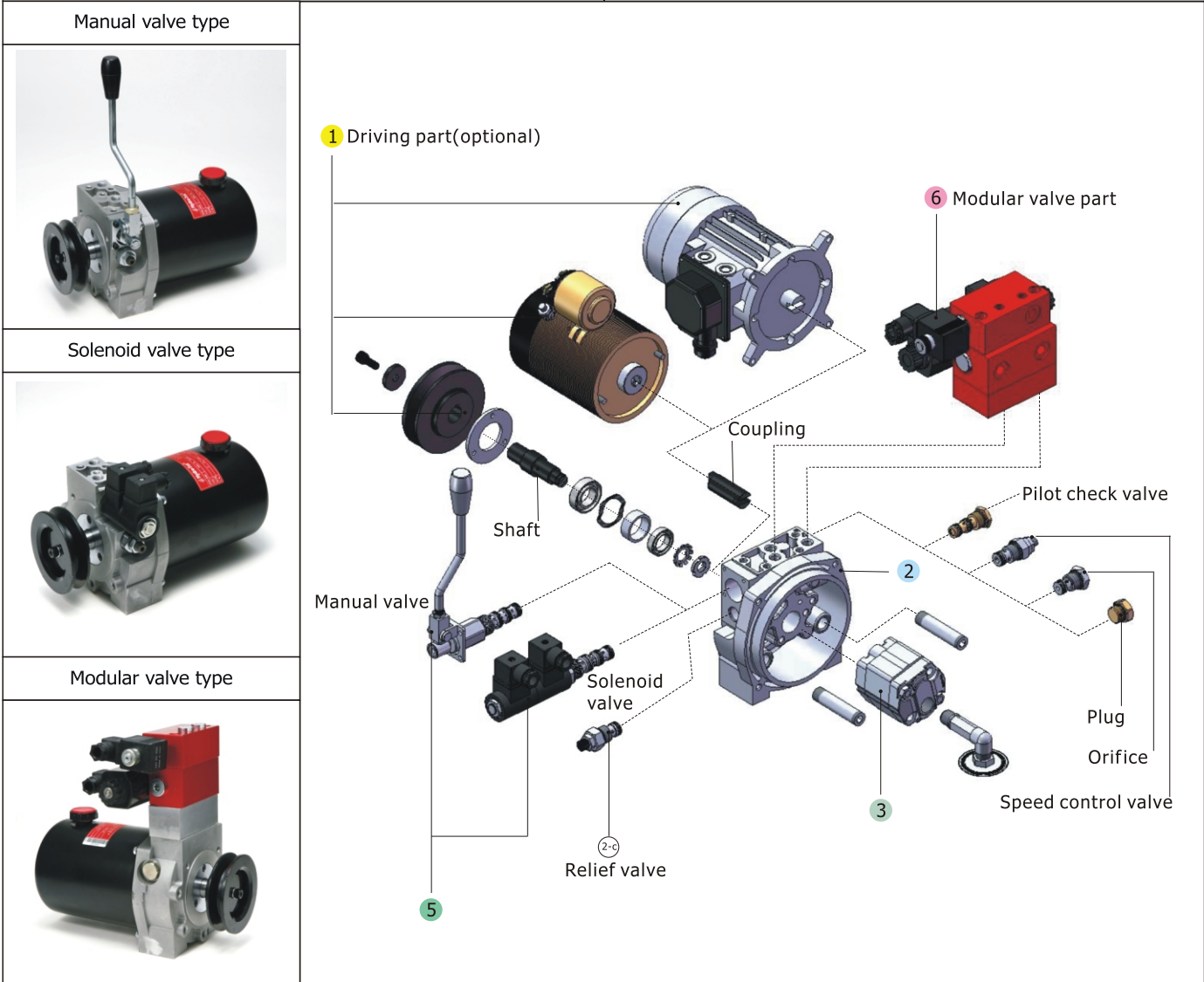
SPECIAL POWER PACK

21 BELT DRIVEN POWER PACK



CODING SYSTEM

① Driving Part	④ Oil Tank
② Center Block	⑤ Built-in Valve
③ Pump	⑥ Modular Valve Part



Order coding example	
Description :	① Driving Part : Without Driving Part ② Center Block : Series-EP, Diagram No.3-type, Relief valve 180 kg·f/cm ² ③ Pump : Gear Pump 1 Group, Clockwise, 3.2cc/rev ④ Tank : Round Type 2 Liter ⑤ Built-in Valve : Manual Valve ⑥ Modular Valve : Without Modular Valve
Example	X X X X X X - E P O 3 C - G O 3 2 - M - R - M R 0 2 - M C X (①) (②) (③) (④) (⑤) - X X X X X (⑥)

1

**DRIVING PART CODE**

CODE	Catalogue mini power pack No. 3	Pulley	XXXXXX
TYPE	Motor (AC / DC)	Pulley	Without Dirving Part

2

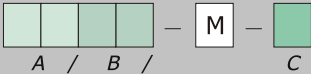


- Circuit Symbol : 01 ~ 06 = Basic circuit
07 = Modular Circuit

CENTER BLOCK CODE

A	CODE	HEP - Series "EP"			
B	Circuit Symbol	01	02	03	04
		05	06	07	
C	CODE	Relief Valve Pressure Range			
		L	A	B	C
		3 ~ 10 kg·f/cm ²	10 ~ 60 kg·f/cm ²	50 ~ 150 kg·f/cm ²	100 ~ 250 kg·f/cm ²

3

**PUMP CODE**

A	Gear pump 1 Group GO						
B	CODE	Displacement (cc/rev)	Flow (Liter/min@ 2500rpm)DC	Flow (Liter/min@ 1700rpm)AC	Max. Operating pressure (kg·f/cm ²)	Max. Peak pressure (bar)	Max. speed (rpm)
	11	1.1	2.7	1.8	230	270	6000
	16	1.6	4.0	2.7	230	270	6000
	21	2.1	5.2	3.5	230	270	6000
	23	2.3	5.7	3.9	230	270	6000
	27	2.7	6.7	4.6	230	270	6000
	32	3.2	8.0	5.4	210	250	5000
	37	3.7	9.2	6.2	210	250	4500
	42	4.2	10.5	7.1	210	250	4000
	48	4.8	12.0	8.1	190	230	3500
	58	5.8	14.5	9.8	190	230	3000
	70	7.0	17.5	11.9	190	230	2500
	80	8.0	20.0	13.6	190	230	2100
98	9.8	24.5	16.6	190	230	1800	
C	CODE	Blank			R		
	Rotation	Counterclockwise			Clockwise		

SPECIAL POWER PACK

4 - (Mini Power pack M series tank)
A / B

OIL TANK CODE

A	CODE	MR (Round)								MS (Square)				
	CODE	01	02	03	04	05	06	08	11	04	06	07	09	12
B	Disp. (Cc/rev)	1	2	3	4	5	6	8	11	4	6	7	9	12

5
A / B / C

BIULT - IN VALVE CODE

A	CODE	M				S			
	TYPE	Manual Valve Code				Cartridge Solenoid Valve Code			
B	CODE	C		O		A		P	
	TYPE								
C	CODE	1	2	3	4	5	6	7	
	Voltage	DC 12V	DC 24V	AC 110V	AC 220V	AC 110V RAC	AC 220V RAC	AC 24V	

6 - (Mini Power pack M series tank)
A / B / C / D

MODULAR VALVE CODE

Please refer to the Catalog (Mini Power pack ⑧, ⑨)

Note. 1. Driving Part, 4. Tank, 6. Modular valve
- Please see Hydro-Tek mini power pack catalog to get more detailed information and specs.

CHARACTERISTIC

1. Easy & Economical maintenance by applying cartridge type valve.
2. Compact size for small space mounting.
3. Belt-driven equipment & DC or AC motor driven equipment applicable.
4. C.W(right side rotation) & C.C.W(left side rotation) pump are applicable.
5. Flexible centerblock design for extending various circuits.
6. V-belt pulley assembly is available.

For further information, contact Hydro-Tek.

Motor Combine Type

