

油慶公司 油壓缸 綜合目錄

GENERAL CATALOGUE OF YOU-CHING HYDRAULIC CYLINDERS

1: 本目錄是各系列油壓缸所生產的總編集,

各HC系列之設計係考慮各種使用用途之不同,針對其使用場合之要求而加強設計

2:記載各系列油壓缸形之特性,並附基本技術,以供參考利用,

決定油缸條件—推力,拉力,流量之速度,活塞桿彎曲強度需了解其要求及限制,
期間若有部分不符計算要求,則需重新調整其要求條件,以達最佳計算

3:可依使用之目的及配置,選擇較理想系列機種,各系列油壓缸之說明,
簡單明瞭,容易理解

特殊要求場合,高衝擊力,高低速度,壓力的大小,低磨擦,緩衝裝置
在使用上有其特殊要求時需事先說明以便壓缸於設計時一併考量

4:各系列之油壓缸,皆有外觀尺寸圖,可參考其尺寸形式,而設計理想之機器

壓缸外型有圓形,四方形,焊接式及固定形式有多種方式可供選擇

5:連結活塞桿方式,依不同環境及需要而選擇

有I接頭,Y接頭,球面軸承,上下左右向及萬向 若有其變化請訂購詳細商榷以免失誤

6:如要訂購,請參考各系列之訂購方法

有部份產品,在製造上較費,時所以交期,會有變化請訂購時詳細商確,以免失誤

7:各系列油壓缸,為求能有更精良理由,設計如有變更時,不預先公佈,敬請見諒

1. This catalogue is a general edition of various series of Hydraulic Cylinders.

--Design of HC series have been intensified for its diversified applications.

2.Characteristics of various Hydraulic Cylinders, with basic technique, are all in this catalogue for references.

--To determine the condition of a Hydraulic Cylinder; i.e., Pushing Force, Pulling Force, Rate of Flow, Strength of Piston Bending Force etc., must be fully comprehended together with its limitations.

In case there is certain point is not in compatible with the calculate requirement, which must be re-calculate in order to achieve the best result

3. Selection of suitable cylinders in accordance with its purpose and set up; and the explanation of varies Cylinders is simple and easy to understand.

--Special requirement as high impact, high/low speed, larger/smaller pressure, low friction, buffer device, etc., in its general applications, should be advised in advance for our consideration in design.

4. External sizes of various Cylinders are attached for your designing convenience.

--Multiple choice of Round and Square shape, welding and fixed types.

5. Method of connecting the Piston Rod is according to your different environment and special needs.

--With choice of Adapter, Y-Adapter, Ball End, Up & Down, and Universal type; please consult with us before you ordered.

6. Please refer to our above ordering method, before place your order.

--To ascertain delivery period is satisfactory to your needs, as some Cylinders may required more time in manufacturing.

7. For the best effect of our products, we reserve the right of any design changes and modifications without prior notice.

HC1系列油壓缸 HC1 Series Hydraulic Cylinders 70/140kgf/cm ² 標準油壓缸 Standard Hyd. Cylinders	13~34
HC2系列油壓缸 HC2 Series Hydraulic Cylinders 70/140kgf/cm ² JIS 規格基準/ JIS Basic Standard Hyd. Cylinders	35~53
HC3系列油壓缸 HC3 Series Hydraulic Cylinders 軋製鋼形 標準油壓缸/ MILL TYPE Standard Hyd. Cylinders	54~81
HC4系列油壓缸 HC4 Series Hydraulic Cylinders 昇降台等特殊用途/ Which employed in elevating platform etc. special applications	82~92
HC5系列油壓缸 HC5 Series Hydraulic Cylinders 車輛等特殊用途Specially employed in the vehicle	93~117
HC6系列油壓缸 HC6 Series Hydraulic Cylinders 軋製鋼形 標準油壓缸/ MILL TYPE Standard Hyd, Cylinders	118~149
HC7系列油壓缸 HC7 Series Hydraulic Cylinders 橡膠加硫機與壓床機械等多種用途/ Which employed in rubber vulcanizing M/C, punching presses etc, machinery	150~158
HC8系列油壓缸 HC8 Series Hydraulic Cylinders 橡膠加硫機與壓床機械等多種用途/ Which employed in rubber vulcanizing M/C, punching presses etc, machinery	159~172
HC9系列油壓缸 HC9 Series Hydraulic Cylinders (軸端出入油口)多節油壓缸/ (Port Postion At Rod End) Multi-Stage Hyd. Cyl.	173~185
HC10系列油壓缸 HC10 Series Hydraulic Cylinders (前後蓋出入油口)多節油壓缸/(Port Postion At Head & Cap)Multi-Stage Hyd. Cyl.	186~198
HC11系列油壓缸 HC11 Series Hydraulic Cylinders 同步雙節油壓缸/ Two Stage & Synchronous Hyd. Cyl.	199~207
HC12系列油壓缸 HC12 Series Hydraulic Cylinders 多節油壓缸/ Multi-Stage Hyd. Cylinders	208~213
HC13系列油壓缸 HC13 Series Hydraulic Cylinders 輕便形,薄型油壓缸 Thin shape flowing tubing head pressure cylinder	214~224

* SI單位換算率表 Exchange Rate of SI Unit.

力 Force.

N	dyn	kgf
1	1×10^5	$1.019\ 72 \times 10^{-1}$
1×10^{-5}	1	$1.019\ 72 \times 10^{-6}$
9.806 65	$9.806\ 65 \times 10^5$	1

壓 力 Pressure.

Pa	MPa	bar	kgf/cm ²	atm	mmH ₂ O	mmHg
1	1×10^{-6}	1×10^{-5}	$1.019\ 72 \times 10^{-5}$	$9.869\ 23 \times 10^{-5}$	$1.019\ 72 \times 10^{-1}$	$7.500\ 62 \times 10^{-3}$
1×10^5	1	1	1.019 72	$9.869\ 23 \times 10^{-1}$	$1.019\ 72 \times 10^4$	$7.500\ 62 \times 10^2$
$9.806\ 65 \times 10^4$	1×10^{-1}	$9.806\ 65 \times 10^{-1}$	1	$9.678\ 41 \times 10^{-1}$	$1.000\ 0 \times 10^4$	$7.355\ 59 \times 10^2$
$1.013\ 25 \times 10^5$	$9.806\ 65 \times 10^{-2}$	1.013 25	1.033 23	1	$1.033\ 23 \times 10^4$	$7.600\ 00 \times 10^2$
9.806 65	$1.013\ 25 \times 10^{-1}$	$9.806\ 65 \times 10^{-5}$	$1.000\ 0 \times 10^{-4}$	$9.678\ 41 \times 10^{-5}$	1	$7.355\ 59 \times 10^{-2}$
$1.333\ 22 \times 10^2$	$1.333\ 22 \times 10^{-1}$	$1.333\ 22 \times 10^{-3}$	$1.359\ 51 \times 10^{-3}$	$1.315\ 79 \times 10^{-3}$	$1.359\ 51 \times 10$	1

注: $1\text{Pa}=1\text{N}/\text{m}^2$, $1\text{MPa}=1\text{N}/\text{mm}^2$
Note

應 力 Stress

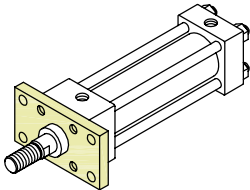
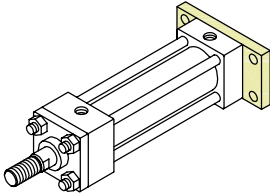
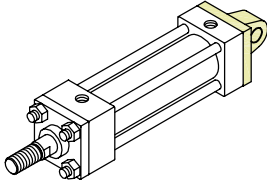
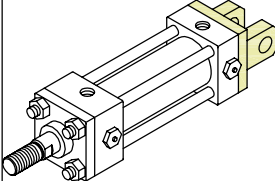
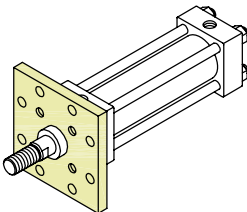
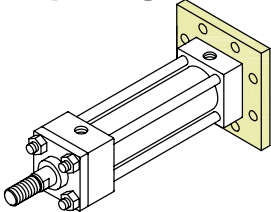
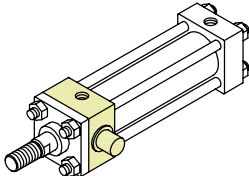
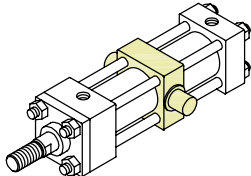
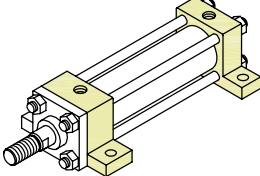
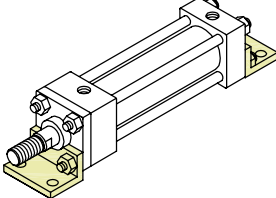
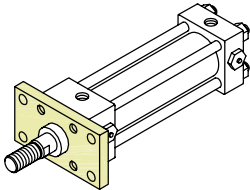
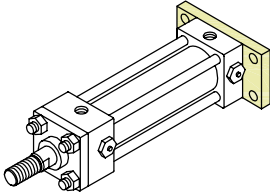
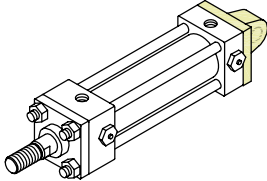
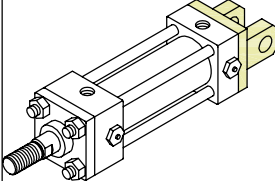
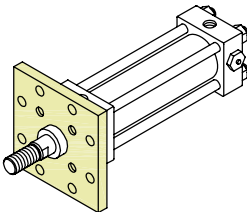
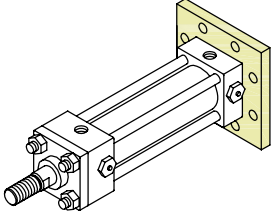
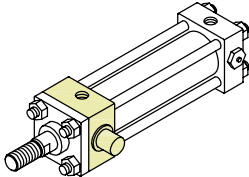
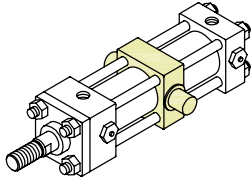
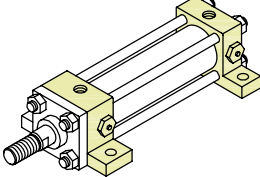
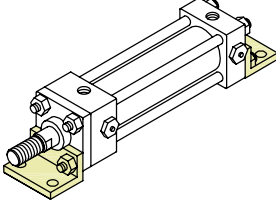
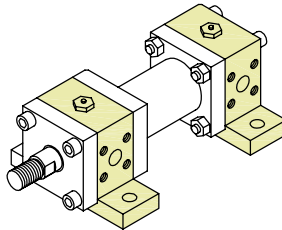
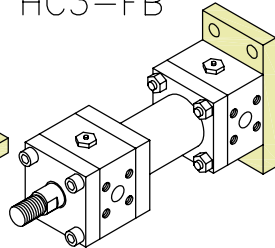
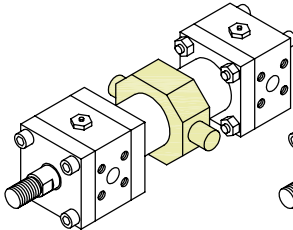
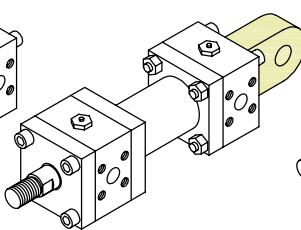
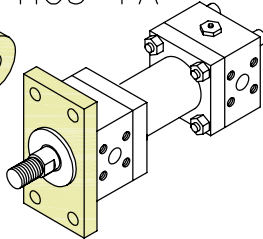
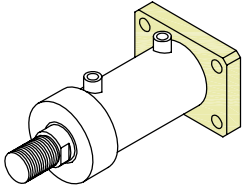
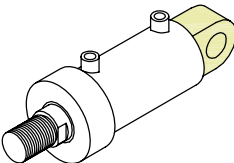
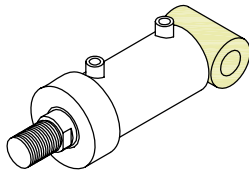
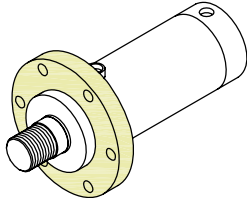
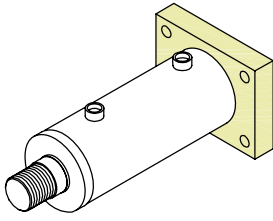
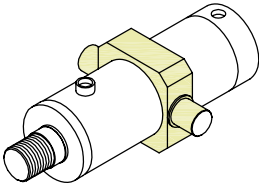
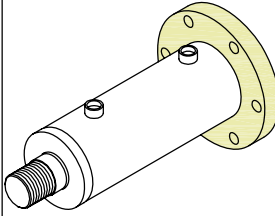
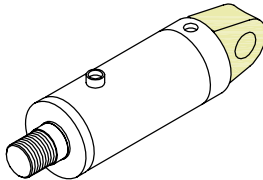
Pa	MPa或N/mm ²	kgf/mm ²	kgf/cm ²
1	1×10^{-5}	$1.019\ 72 \times 10^{-7}$	$1.019\ 72 \times 10^{-5}$
1×10^6	1	$1.019\ 72 \times 10^{-1}$	$1.019\ 72 \times 10$
$9.806\ 65 \times 10^6$	9.806 65	1	1×10^2
$9.806\ 65 \times 10^4$	$9.806\ 65 \times 10^{-2}$	1×10^{-2}	1

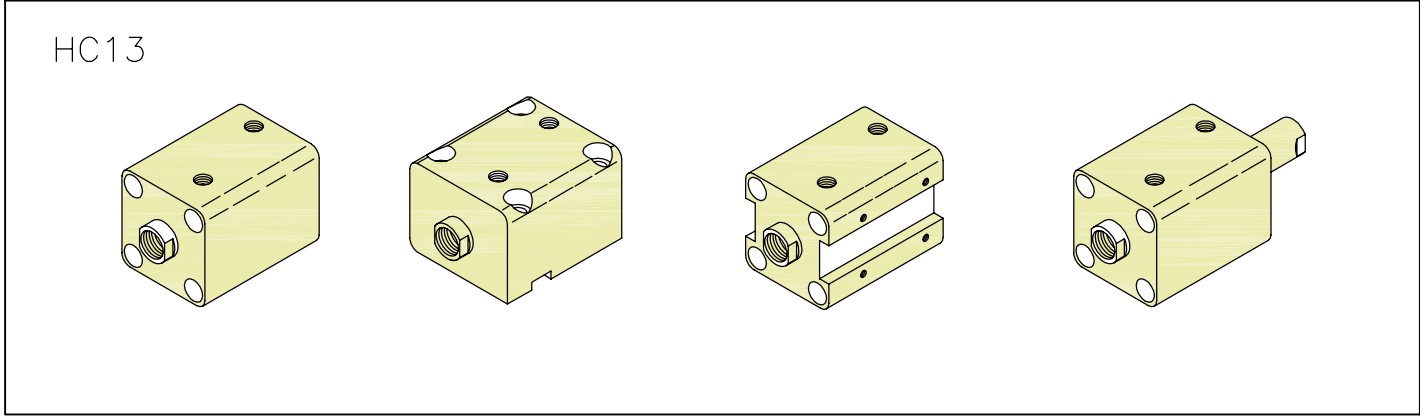
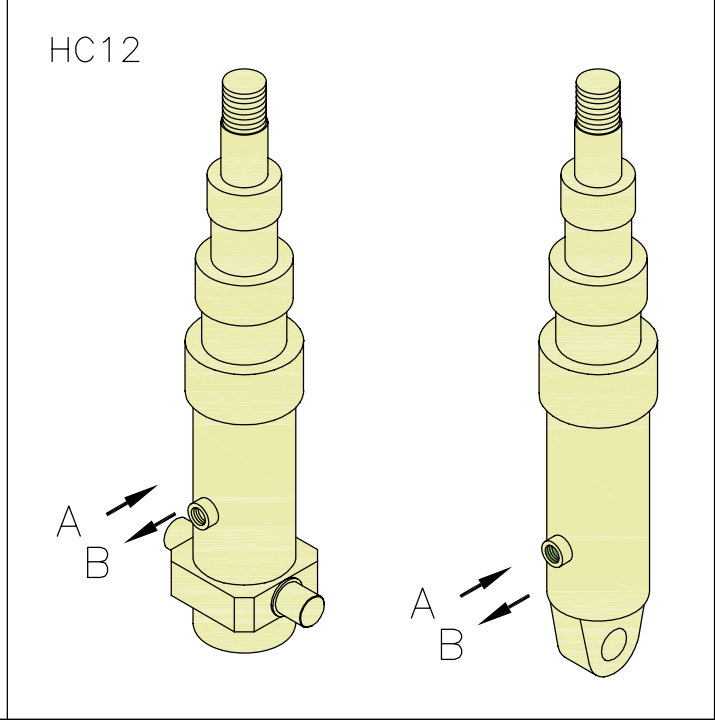
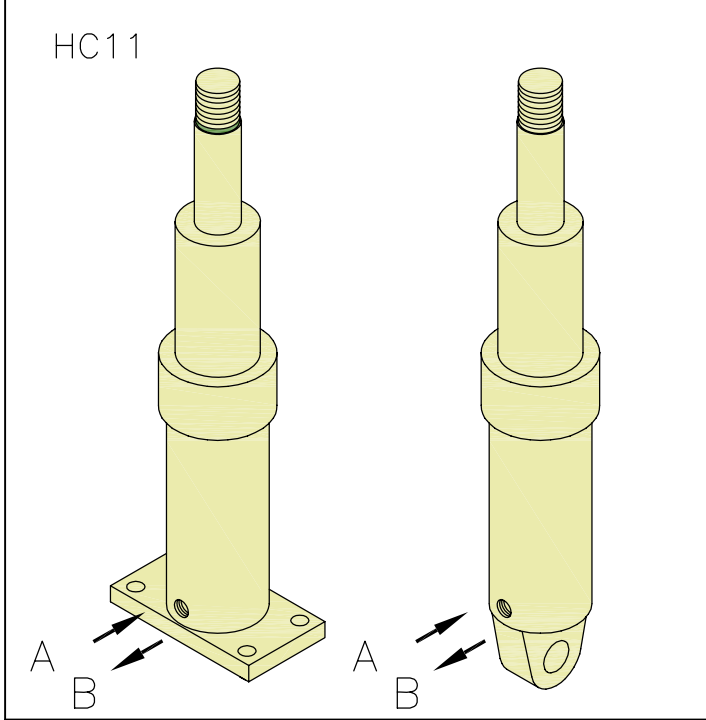
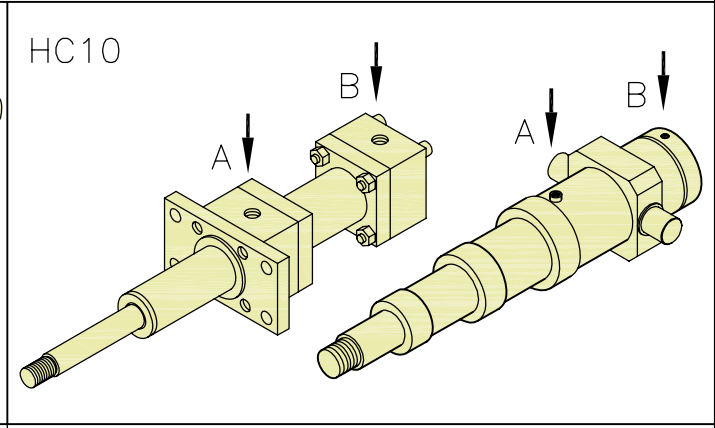
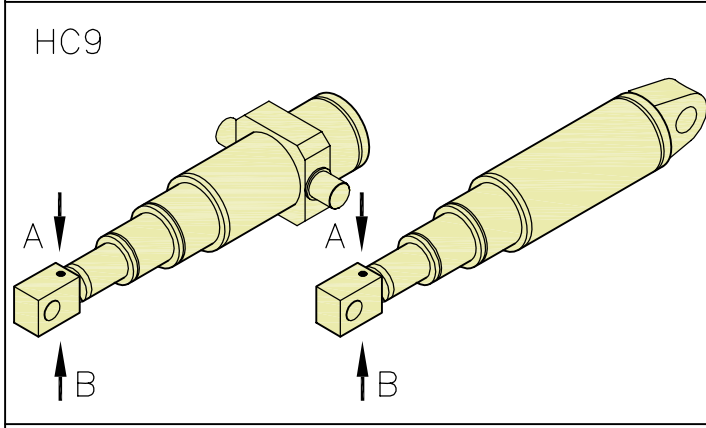
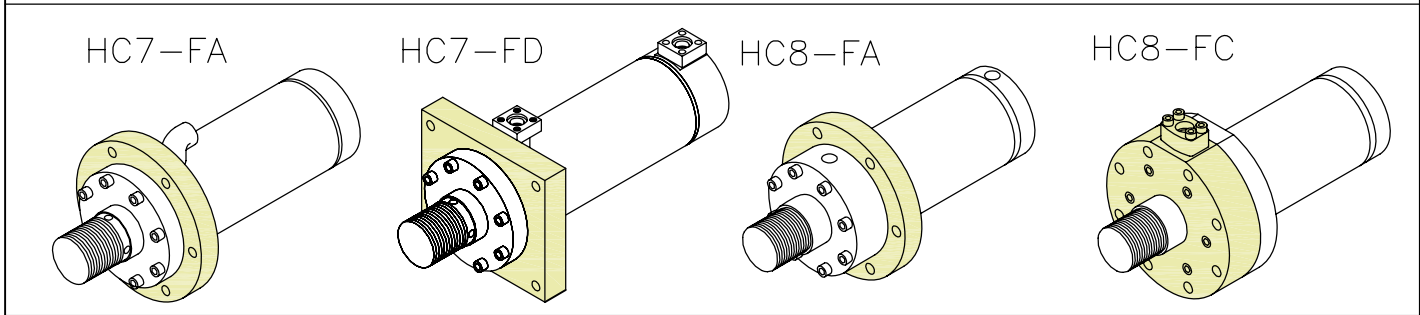
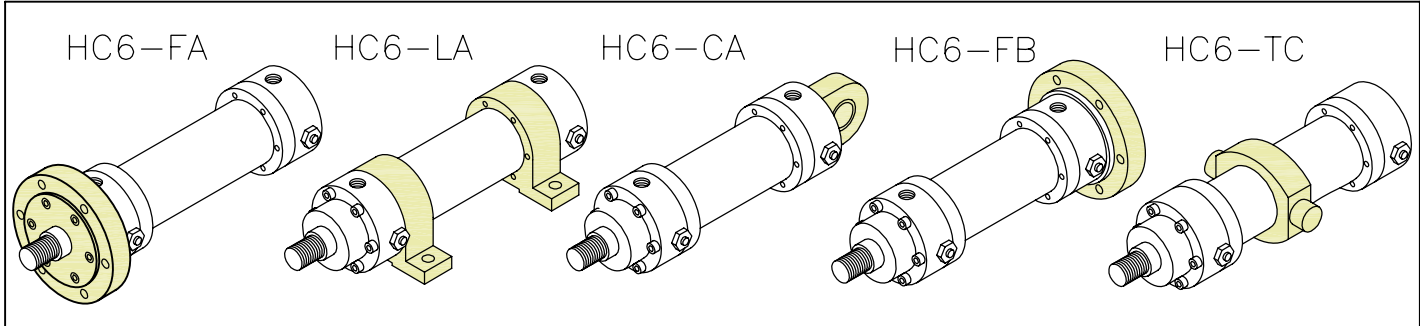
速 度 Speed.

m/sec	m/hr	km/hr	ft/sec	ft/min	mile/hr
1	3.6×10^3	3.6	3.281	$1.968\ 50 \times 10^2$	2.2370
2.778×10^{-4}	1	1×10^{-3}	9.114×10^{-4}	$5.468\ 20 \times 10^{-2}$	6.214×10^{-4}
2.778×10^{-1}	1×10^3	1	9.114×10^{-1}	$5.468\ 20 \times 10$	6.214×10^{-1}
3.048×10^{-1}	$1.097\ 25 \times 10^3$	1.097 25	1	6×10	$6.818\ 20 \times 10^{-1}$
5.08×10^{-3}	$1.828\ 70 \times 10$	$1.828\ 70 \times 10^{-2}$	1.667×10^{-2}	1	1.136×10^{-2}
4.47×10^{-1}	$1.609\ 31 \times 10^3$	1.609 31	1.446 70	8.8×10	1

流 量 Volume of Flow.

l/sec	m ³ /hr	m ³ /sec	gal/min	ft ³ /hr	ft ³ /sec
1	3.6	1×10^{-3}	$1.585\ 14 \times 10$	$1.271\ 40 \times 10^2$	3.532×10^{-2}
2.778×10^{-1}	1	2.778×10^{-4}	$4.403\ 20$	$3.531\ 70 \times 10$	9.801×10^{-3}
1×10^3	3.6×10^3	1	$1.585\ 10 \times 10^4$	$1.271\ 50 \times 10^5$	$3.531\ 65 \times 10$
6.309×10^{-2}	2.271×10^{-1}	6.304×10^{-5}	1	$8.020\ 80$	2.228×10^{-3}
7.865×10^{-3}	2.832×10^{-2}	7.865×10^{-6}	1.247×10^{-1}	1	2.778×10^{-4}
$2.831\ 53 \times 10$	$1.019\ 35 \times 10^2$	2.832×10^{-2}	$4.488\ 33 \times 10^2$	3.6×10^3	1

HC1-FA 	HC1-FB 	HC1-CA 	HC1-CB 	HC1-FC 
HC1-FD 	HC1-TA 	HC1-TC 	HC1-LA 	HC1-LB 
HC2-FA 	HC2-FB 	HC2-CA 	HC2-CB 	HC2-FC 
HC2-FD 	HC2-TA 	HC2-TC 	HC2-LA 	HC2-LB 
HC3-LA 	HC3-FB 	HC3-TC 	HC3-CA 	HC3-FA 
HC4-FB 	HC4-CA 		HC4-CD 	
HC5-FA 	HC5-FD 	HC5-TC 	HC5-FB 	HC5-CA 



DRAW

由彎曲強度限制之最大衝程 Maximum Stroke Refrained by Bending Strength.

1: 活塞桿徑與最大荷重及長度之關係 2: 從安裝型式來看, 目錄之外觀尺寸與最大行程的比較算法 (計算例)

油壓缸內徑100mm, 活塞桿56mm, CA形之HC2標準油壓缸, 荷重7000kgf 兩端插銷連結, 求得最大行程依目錄外型尺寸及前端接頭尺寸表, 最大荷重7000kgf 活塞桿56, L長度如下表 L=1889mm

$$\frac{1889-316-145}{2} = 714\text{mm}$$

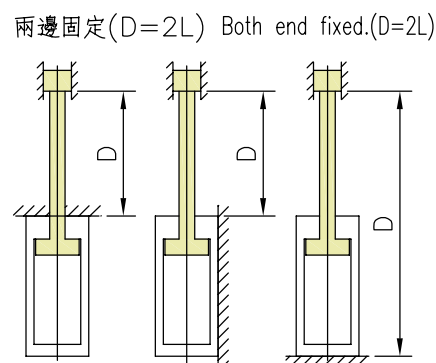
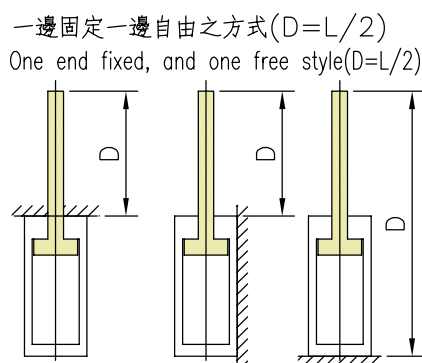
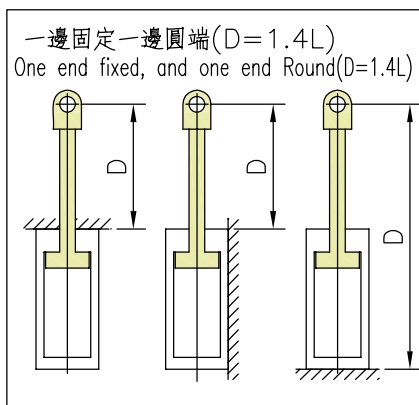
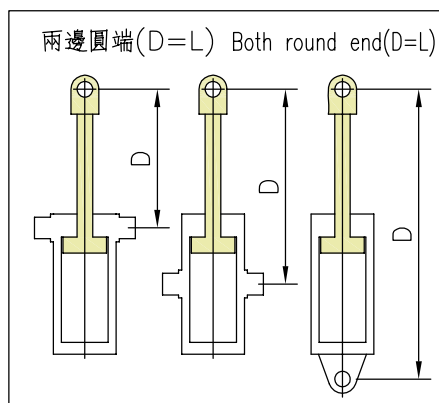
1. Relation between Diameter of Piston Rod and maximum maximum loading and length.

2. By mounting method, this catalogue provided calculation of External Sizes and Maximum Stroke.

(Example:)

Cylinder I.D.100 mm; Rod Dia 56 mm; HC2 of Model CA type standard Hydraulic Cylinder with Loading capacity of 7,000 Kgf-The maximum Stroke, after connected with both top and bottom Pins, which shall be:
Max. Loading: 7,000 Kgf. Length of Piston Rod: 56 mm
Length as following table: L=1,889 mm.

$$\text{Thus: } \frac{1889-316-145}{2} = 714\text{mm}$$



荷重(N) Loading 質量	活塞桿徑 Rod Dia								
	18	22.4	28	35	45	50	56	70	80
350	873								
400	816								
450	770								
500	730	1131							
600	666	1032							
700	617	956							
800	577	894	1397						
900	544	843	1317						
1000	516	800	1249						
1500	330	653	1020	1594					
2000	238	565	883	1380	2282				
2500	116	382	790	1235	2041	2519			
3000	80	309	721	1127	1863	2300	2885		
3500	43	200	668	1043	1725	2129	2671		
4000		123	466	976	1613	1992	2498		
4500		116	407	920	1521	1878	2356		
5000		65	302	873	1443	1781	2235	3492	
6000			187	608	1317	1626	2040	3187	4163
7000			158	512	1220	1506	1889	2951	3854
8000			72	360	1411	1408	1767	2760	3605
9000				270	1076	1328	1666	2603	3399
10000				165	775	1260	1580	2469	3225
15000					338	687	1060	2016	2633
20000					127	270	603	1746	2280
25000						100	309	1165	2040
30000							175	935	1451
35000							136	586	1232
40000								331	892
45000								331	698
50000									489
60000									316
70000									200

荷重(N) Loading 質量	活塞桿徑 Rod Dia						
	90	100	125	140	160	180	220
8000	4563						
9000	4302						
10000	4081	5039					
15000	3332	4114	6428				
20000	2886	3563	5567	6983			
25000	2581	3187	4979	6246	8158		
30000	2356	2909	4546	5702	7447	9426	
35000	2182	2693	4208	5279	6895	8726	
40000	1549	2519	3937	4938	6450	8163	
45000	1361	2375	3711	4656	6081	7696	11491
50000	1189	1699	3521	4417	5769	7301	10907
60000	676	1373	3214	4032	5266	6665	9956
70000	536	883	2976	3733	4875	6171	9218
80000	254	540	2072	3492	4561	5772	8622
90000	227	464	1809	2590	4300	5442	8129
100000		320	1338	2329	4079	5163	7712
110000		251	1088	2092	3889	4922	7353
120000			823	1871	2902	4713	7040
130000			620	1397	2675	4528	6764
140000			520	1173	2465	4363	6518
150000			450	935	2266	4304	6297
160000				755	1788	3099	6097
170000				650	1593	2905	5915
180000				540	1397	2722	5748
190000				470	1195	2547	5595
200000				420	978	2378	5453
250000					544	1163	3612
300000					415	799	2890
350000						448	1780
400000							939
450000							735
500000							536

DRAW

由彎曲強度限制之最大衝程 Maximum Stroke Refrained by Bending Strength.

(例)油壓缸內徑100mm，活塞桿56mm，固定座形式TC形之HC2標準油壓缸，在壓力80kgf/cm²使用時，求得最大衝程之算法:最大衝程根據下表n=1，下圖L÷1980再由HC2標準油壓缸外觀及前端接頭尺寸 -

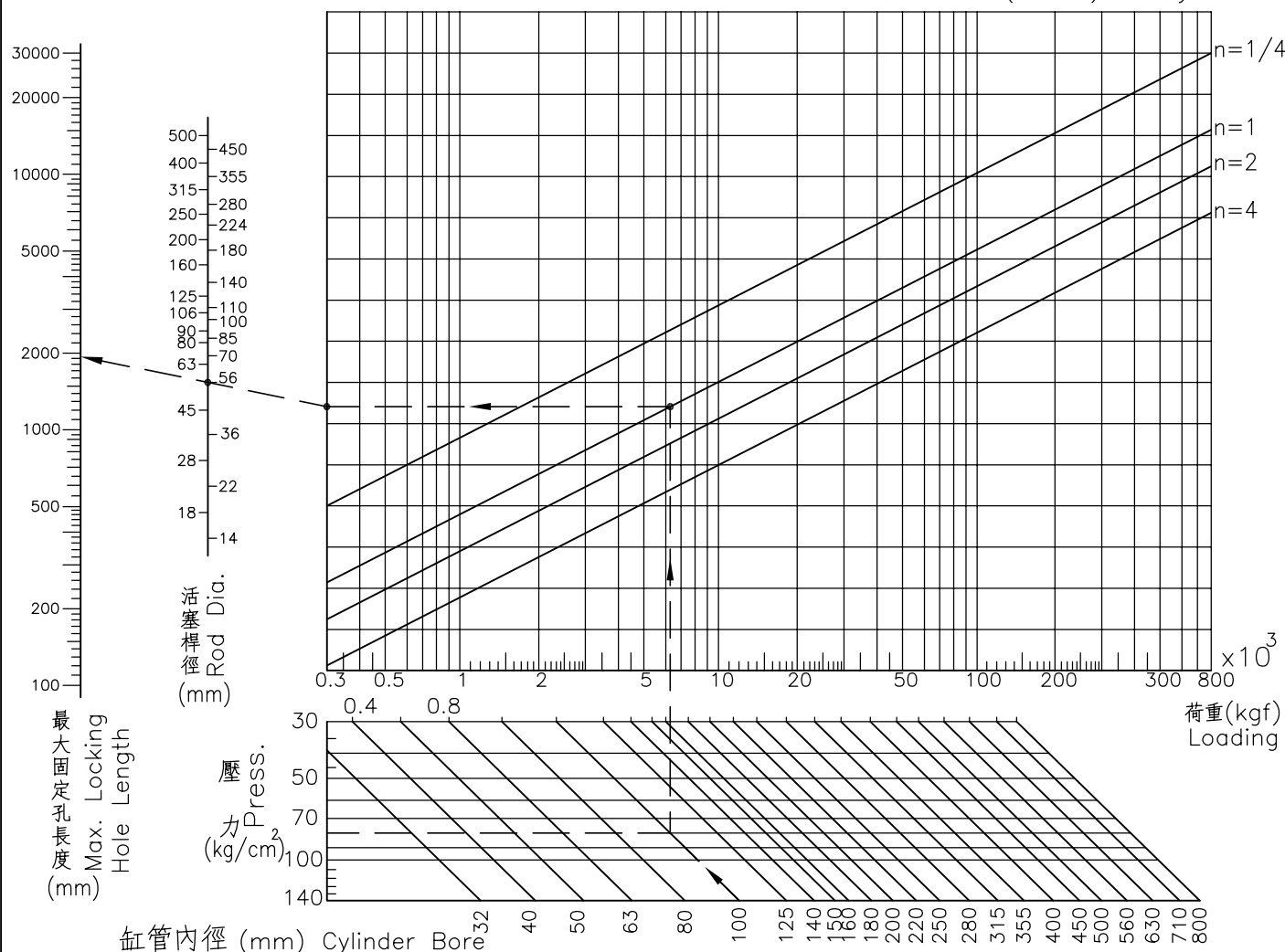
$$L_o = (156 + 145) + S/2 \text{ (TC形要加 } S/2 \text{ 其他不要)} \text{ 因此 } S = L - L_o = 1980 \{ (156 + 145) + S/2 \} S \div 1120$$

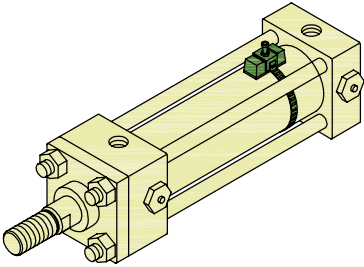
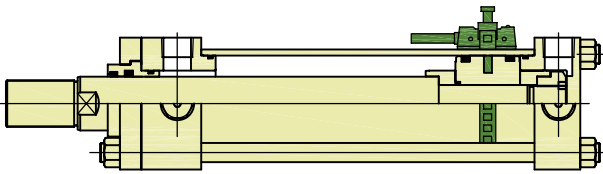
Example: the bore dia:100mm rod dia:56mm and the HC2 standard hyd cylinder with TC mounting which operated at 80kg/cm² the max. stroke can be derived from following table & fig and n:1, L=1980 the exterior dia:156mm, rod end adapter:145mm for HC2 series and then $L_o = (156 + 145) + S/2$ (S/2 is specially for TC mounting and others are excluded) so that $S = L - L_o = 1980 \{ (156 + 145) + S/2 \}$ S=1120mm.

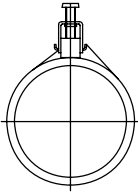
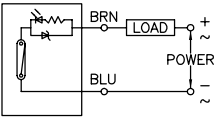
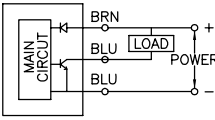
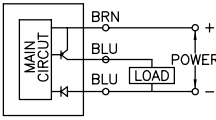
(S=L-L_o), S=衝程mm, L=伸長時固定孔距, L_o=縮回時固定孔距 - 注:L_o之尺寸需要參考各類形油壓缸，外觀尺寸與前端接頭之尺寸
(S=L-L_o) S=Stroke mm L=Locking hole range at extending, L_o=Locking hole range at extracting and L_o size which must refered the hyd cylinder series rod end size and those dimensions.

支持形式	使用條件 Operating Condition	n	支持形式	使用條件 Operating Condition	n	支持形式	使用條件 Operating Condition	n	支持形式	使用條件 Operating Condition	n
Mounting		1/4	Mounting		1/4	Mounting		1/4	TA		1
LA		2	FB		2	FA		2	TC		1
LB		4	FD		4			4	CA		
									CB		
									CD		

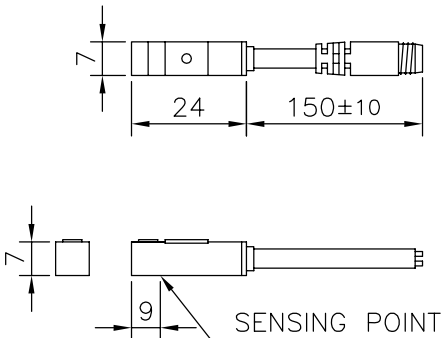
(安全率4) Safety



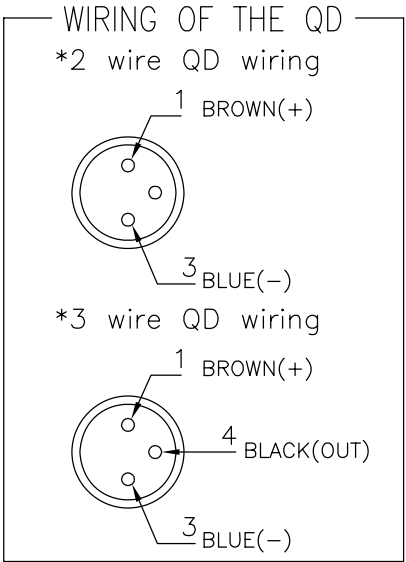
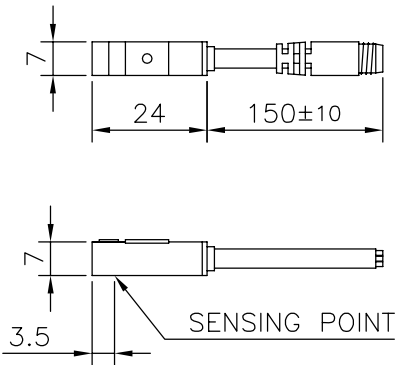


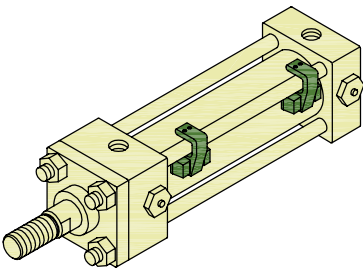
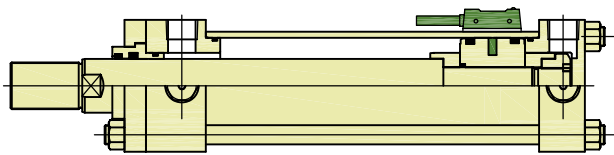
	KT-03R	KT-03N	KT-03P
			
SWITCHING LOGIC	SPST, Normally Open		Solid State Output, Normally Open
感測器型式, SENSOR TYPE	Reed Switch		NPN Current Sinking PNP Current Sourcing
工作電壓 OPERATING VOLTAGE	5~240V DC/AC		5-28V DC
額定電流 SWITCHING CURRENT	100mA max.		200mA max.
最大功率 SWITCHING RATING	10W max.		6W max.
消耗電壓, CURRENT CONSUMPTION	—		20mA@24V max. 20mA@24V max.
出力電壓降 VOLTAGE DROP	3V max.		0.5V @ 200mA max.
洩漏電流 LEAKAGE CURRENT	—		0.01mA max.
動作指示燈 INDICATOR	Red LED		Red LED Green LED
線徑 CABLE	ø2.8 , 2C		ø2.8 , 3C
溫度範圍 TEMPERATURE RANGE	-10~70 °C		
衝擊 SHOCK	30G		50G
振動 VIBRATION	9G		
保護等級 ENCLOSURE CLASSIFICATION	IEC 529 IP67		
保護迴路, PROTECTION CIRCUIT	None		Power Source Reverse Polarity; Surge Suppression

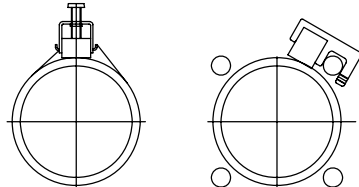
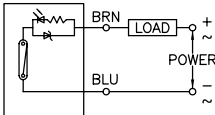
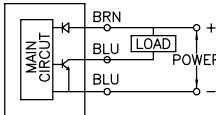
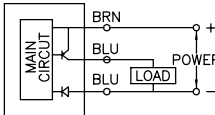
KT-03R,KT-03R-QD



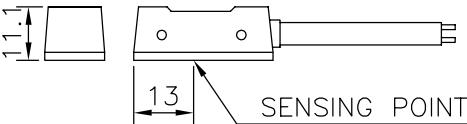
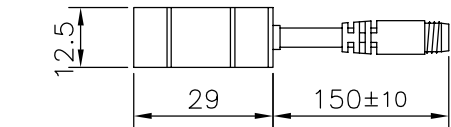
KT-03N,KT-03P
KT-03N-QD,KT-03P-QD



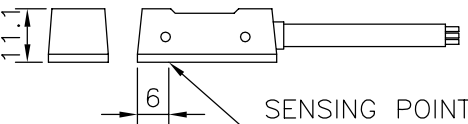
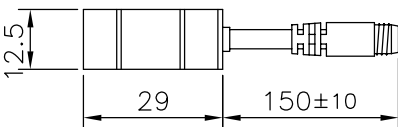


	KT-20R		KT-20N		KT-20P	
						
SWITCHING LOGIC		SPST,Normally Open		Solid State Output,Normally Open		
感測器型式 SENSOR TYPE		Reed Switch		NPN Current Sinking		PNP Current Sourcing
工作電壓 OPERATING VOLTAGE		5~240V DC/AC		5-30V DC		
額定電流 SWITCHING CURRENT		100mA max.		200mA max.		
最大功率 SWITCHING RATING		10W max.		6W max.		
消耗電壓,CURRENT CONSUMPTION		-		20mA@24V max.		20mA@24V max.
出力電壓降 VOLTAGE DROP		3.5V max.		0.5V max.		
洩漏電流 LEAKAGE CURRENT		-		0.01mA max.		
動作指示燈 INDICATOR		Green LED		Red LED		Green LED
線徑 CABLE		ø4 , 2C		ø4 , 3C		
溫度範圍 TEMPERATURE RANGE		-10~70 C °				
衝擊 SHOCK		30G		50G		
振動 VIBRATION		9G				
保護等級 ENCLOSURE CLASSIFICATION		IEC 529 IP67				
保護迴路,PROTECTION CIRCUIT		None		Power Source Reverse Polarity; Surge Suppression		

KT-20R,KT-20R-QD

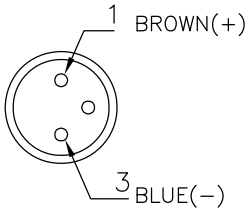


KT-20N,KT-20P
KT-20N-QD,KT-20P-QD

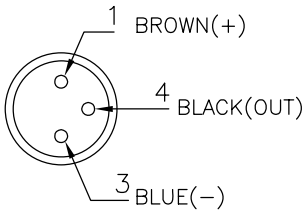


WIRING OF THE QD

*2 wire QD wiring



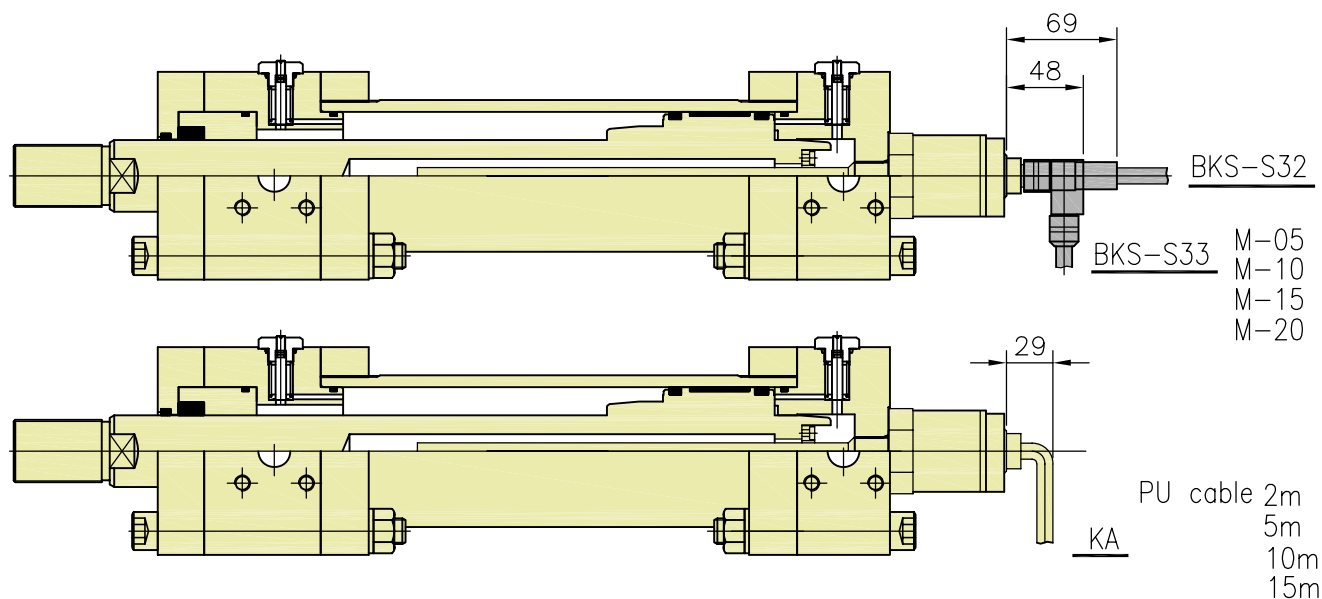
*3 wire QD wiring



* BTL, 線性位移感應尺

Micropulse Transducer

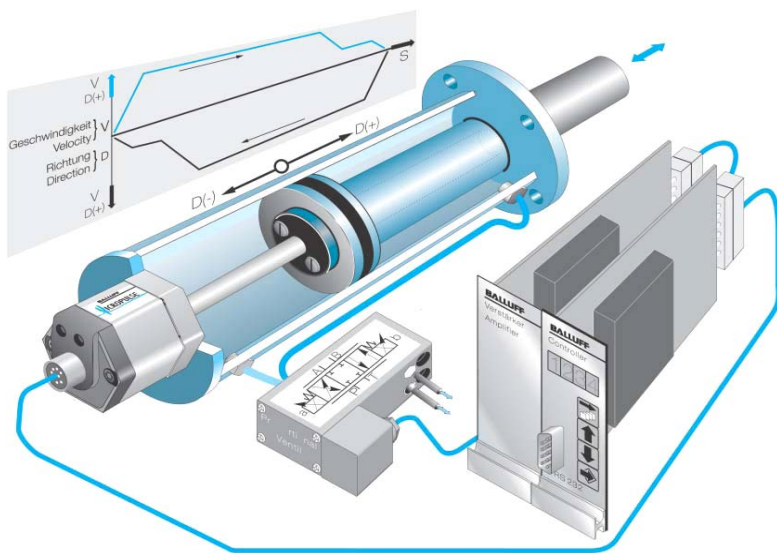
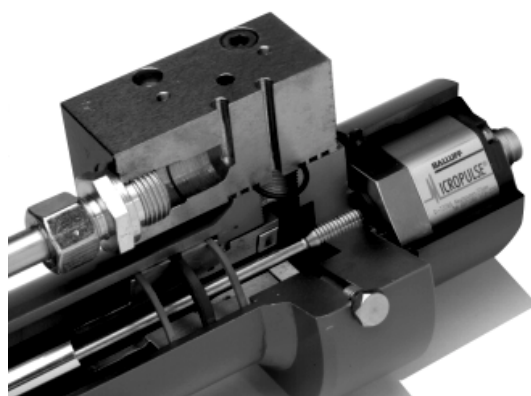
- 1:高精度感應能確實檢測出壓缸位置
- 2:能在壓缸行程中之任何位置設定為原點,不需再做補正值
- 3:感應裝置安裝於油壓缸內不受外在環境影響
- 4:感應回饋快速,在高速度下使用亦非常安定



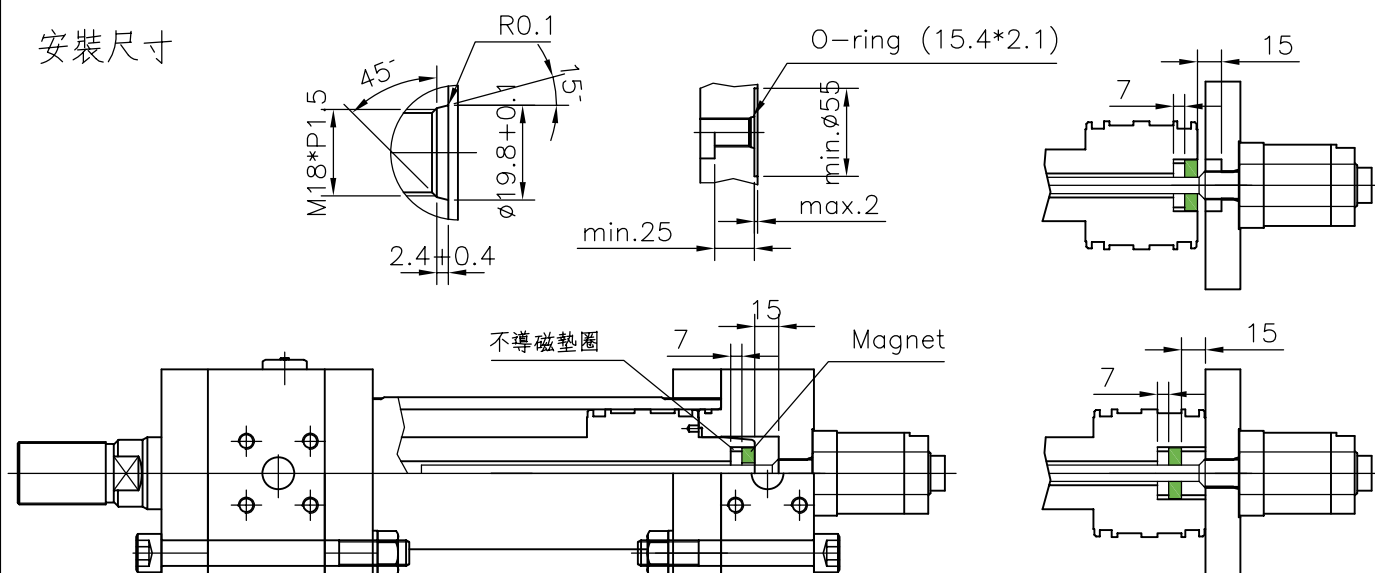
ORDERING CODE	BTL5	
信號類別 Cutput Signal	類比:0~10V, 10~0V, +−10V, 0~20MA,4~20MA	
	數位:P,M,I,Q,SSI(D)	通訊;Canopen,Profibus,Rs485
機械特性;Mechanical Cheratcer		
最大非線性,Max.non−linearity	±100 μm to 500 mm nominal stroke ±0.02% 500 to 3850 mm nominal stroke	
磁滯現象,Hysteresis	≤5 μm/4 μm	
往復精度,Reqeatability	≤10 μm(hysteresis + resolution)/2 μm	
使用溫度範圍,Operating Temperature	−40.....+85°C	
保存溫度範圍,Storage Temperature	−40.....+100°C	
耐壓力,Pressure Rating	600 bar installed in hydraulic cylinder	
耐振動,Vibration	12 g, 10...2000 Hz per IEC 68−2−6	
耐衝擊,Shock Load	100 g/6 ms per IEC 68−2−27 and 100 g/2 ms per IEC 68−2−29	
保護構造 Enclosure Rating per IEC 529	IP 67 (when BKS−S32/33 is installed)	
移動速度 Traverse Velocity of Magnet	any	
電氣特性;Electricai Cheratcer		
操作電壓,Operating Voltage	24V DC ±20%	
內部試驗頻率 Internal Sampling Frequency	f(standare)=2KHz	
消耗電流:Current Traw	≤150mA	
電源流反向保護Polarity Reversal Protected	yes	
負載保護 Overvoltage Protection	Transzord protection diodes	
偵測長度 (mm)	0025, 0050, 0075, 0100, 0125, 0150, 0175, 0200	
Standard	0225, 0250, 0275, 0300, 0325, 0350, 0375, 0400	
nominal stroker (mm)	0425, 0450, 0475, 0500, 0550, 0600, 0650, 0700, 0750, 0800, 0850, 0900, 0950, 1000, 1100, 1200 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000 2250, 2500, 2750, 3000, 3250, 3500, 3750, 3850	

* BTL, 線性位移感應尺

Micropulse Transducer



安裝尺寸



* 作動油與油封材料之配合性 Compatibility of Oil and Seals:

適用作動油 Adequate Oil for Action.

(●)可使用 Can be employed (×)不可使用 Not to be employed (△)尚可使用 Acceptable

記號 Symbol	油封材質 Material of oil sealer	一般礦物性作動油 General mineral oil	水乙二醇系作動油 Water-ethyglycol oil	磷酸酯系作動油 Phosphatide ester oil	W/O作動油 Emul. oil	O/W作動油 Emul. oil
PU	聚氨酯 Polyurethane	●	×	×	△	△
NBR	丁晴橡膠 Nitrile	●	●	×	●	●
VT	氟橡膠 Fluoroc lastomer	●	×	●	●	●
FV	布纖維橡膠 Rubber fabric	●	●	×	●	●
PT	四氟乙烯聚合物 Ptfе base	●	●	●	●	●

* 油封材質

* 油封材質可使用溫度範圍

Temperature Range of Seal Material:

PU	-10~+80
NBR	-10~+100
VT	-10~+140
FV	-10~+100
PT	-10~+180

PU是NBR拉伸強度的2.2倍耐壓性,耐磨性良好,
PU材質如長期遇熱的作動油劣化時會產生變化,NBR材質良好
如有高溫度,低摩擦,高速度,高衝擊力,選擇油封時,需特別註明
,避免發生錯誤

* Packings material quality

PU is NBR longitudinal strength 2.2nd time
Resistance to pressure,The resistance to wear is good
The PU material quality like meets for a long time hot does
moves when the oil deterioration can have the change
The NBR material quality is good like has the high
temperature,Low friction,High velocity,High impulse
When choice packings,Must specially indicate,Avoids having the
mistake

* 內部油漏量表

List of Internal Oil Leakage: 單位: ml/(10min)

使用壓力 Operation Pressure	U.O	S	P
70 kgf/cm ²	≤D×0.01	≤D×0.02	≤D×17
100 kgf/cm ²	≤D×0.01	≤D×0.02	≤D×25
140 kgf/cm ²	≤D×0.015	≤D×0.03	≤D×40
210 kgf/cm ²	≤D×0.025	≤D×0.05	≤D×60

記號 Symbol	油封種類 Seal Type
U	U型油封 U-Packing
O	O型環 O-Ring
S	組合油封 Combination packing
P	柱塞環 Piston packing

* 外部油漏量表

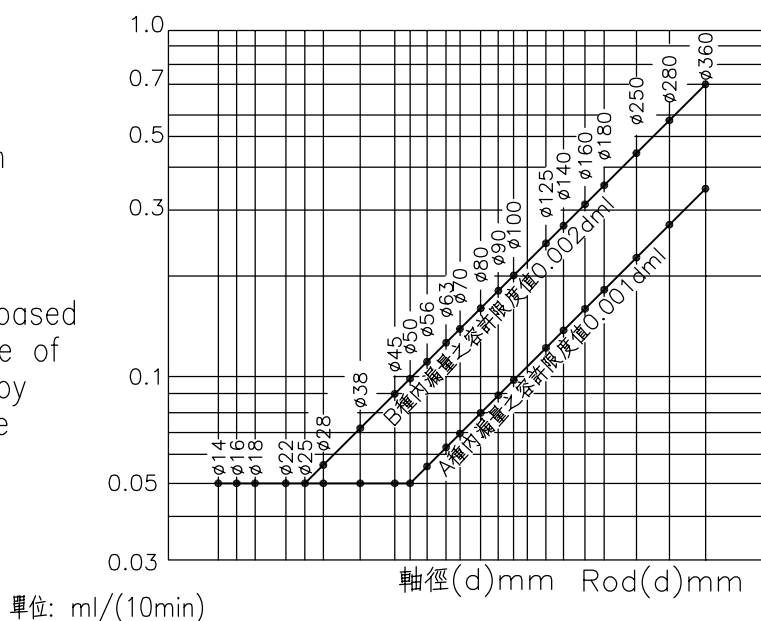
活塞桿洩漏量是根據耐久試驗

試驗距離試驗約300km—800km

一般驗查狀況以目視作確認

* List of External Oil Leakage:

Oil leaking volume of Piston is based upon Endurance Test; at a range of 300 Km to 800 Km, and then by visual inspection to ascertain the leakage.



HC1系列油壓缸 HC1 Series Hydraulic Cylinders

70/140kgf/cm² 標準油壓缸 Standard Hyd. Cylinders

HC1形標準油壓缸,是依據各機械廠商及需求者設計,使用在一般廣汎產業機械,工作機械上

*有多樣的固定座形式 *有低速性優良的高精度動作

The HC1 standard hyd. cylinders which designed accord to comprehensive mechanical plant requirement and can be employed in general production machinery & machine tools. Since there are being with much mounting styles and also with high precision actions at low speed output rating

規範 Specifications

缸管內徑 Cylinder Bore mm	ø40,ø50,ø63,ø70,ø80,ø90,ø100,ø125,ø150
固定座形式 Mounting	LA, LB, FA, FB, FC, FD, CA, SD, TA, TC,
使用壓力 Operating Pressure	70/140 kgf/cm ²
最高使用壓力 Max.Operating Pressure	※1 90/180 kgf/cm ²
最低作動壓力 Min.Operating Pressure	3 kgf/cm ²
最高使用速度 Max.Operating Speed	ø40~ø60=400 ø80~ø125=300 ø140~ø250=200 mm/sec
最低使用速度 Min.Operating Speed	8 mm/sec
最大衝程 Max. Stroke	※2 ø40~ø50=1200, ø60~ø80=1600 ø90~ø150=2000 mm
周圍溫度範圍 Range of Ambient Temperature	-10~+80 °C
關連零件 Related Attachment	I接頭 Y接頭 防塵套 Clevis hand type I or Y dust-protective

* 衝程之容許差

Tolerance of Stroke

衝程 Stroke mm	容許差 Tolerance mm
~100	+0.8
100~250	+1.0
250~630	+1.25
630~1000	+1.4
1000~1600	+1.6
1600~	+1.8

※1.最高使用壓力是指包含瞬間上昇之衝壓,而且強度上可以使用之最高壓力而言 -

The max. operating pressure which means the instantaneous increased pressure and the intensity is indicated the max.operating pressure.

※2.最大衝程是依彎曲強度低值而求得 - 彎曲強度限制衝程;參考(DRAW)

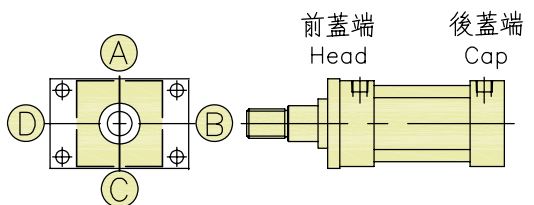
The max. stroke is derived from the lowest value of bending strength refer the max.stroke for which, the cylinder rod will be bended and refer to (DRAW)

* 出入口及排氣孔的方向 Port & Air Vent Positions:

各個之方向是從前蓋端看順時針方向依 (A) (B) (C) (D) 排成
標準之方向是出入口在 (A) 排氣孔在 (D)
註:出入口和排氣孔不可在同一方向

Each position is toward the cylinder head and (A) (B) (C) (D) turn in clockwise so that, the standard port position at (A) and the air vent position will be at (D) as fig shown.

Remarks : The port position & air vent position will not at same side.



大概重量計算:—基本重量及加算重量其數值,記載於各固定座形式之附圖上,所以可在各固定座形式之外觀尺寸圖上計算出 -

Estimated weight calculating : —The basic weight & added weight value which be recorded on the related fig and against to mountings.

HC1

7/14MPa用

* 訂購內容索引 Ordering Index :

1	2	3	4	5	6	7	8	9	10	
140	HC1	FA	080	A	800	A	E		V	
140	HC1R	FA	080	A	800	A	E	R	V	
1	使用壓力 Operating Pressure 70 /140 Kgf/cm ²									
2	HC1 系列 HC1R— 感應開關(間接) HC1D— 雙軸心 HC1 Series HC1R— Sensor HC1D— Double rod									
3	固定座形式 SD, CA, CB , FA, FB, FC, FD, TA, TC, LA, LB Mounting									
4	缸管內徑 ,mm ø40, ø50, ø63, ø70, ø80, ø90, ø100, ø125, ø150 Cylinder Bore, mm									
5	活塞桿徑 A, B 參考(技術參數DRAW) Rod Dia A, B RodRefer Technical DRAW									
6	需要之行程, mm (最大容許行程) stroke, mm Max. Permissible									
7	出入口及排氣孔之方向 A,B,C,D Port & Air Vent Position A, B, C, D									
8	特殊附件: E:活塞桿前端另類螺紋形, L:附I接頭, M:附Y接頭, F:附防塵套, K:附固定螺帽 Optional Attachment: E:Rod end with other threading, L:With I adapter M:With Y adapter, F:With dust-protective cover K:With locking nut									
※	各種特殊附件可以組合使用—將需要之特殊附件之記號記載於特殊附件欄內 - 例如: EKL The optional attachment can be employed in integral as item E shch as EKL for which in necessary.									
9	R—有接點開關 RN— 無接點開關 R—With contact RN— Without contact									
10	NBR,PU, V—為耐熱油封 NBR,PU, V—Viton Seal									
7, 8, 無記號為標準 No symbol:Means standard type										

* 固定座形式 Mounting :

記號 Symbol	名 稱 Description	略 圖 Configuration	記號 Symbol	名 稱 Description	略 圖 Configuration
LA	軸直角方向腳架形 Foot mounting side luge		FC	前蓋端正方形法蘭形 Square flange at cylinder head	
LB	軸方向腳架形 Foot mounting side end angles		FD	後蓋端正方形法蘭形 Square flange at cylinder cap	
FA	前蓋端長方形法蘭形 Rectangular flange at cylinder head		TA	前蓋附支撐形 Trunnion mounting at cylinder head	
FB	後蓋端長方形法蘭形 Rectangular flange at cylinder cap		TC	中間固定支撐形 Centre Trunnion mounting	
CA	山形座(1山形) Plaie clevis at cylinder cap		SD	基本形 Basic type	

HC1

* 固定座形式 Mounting :

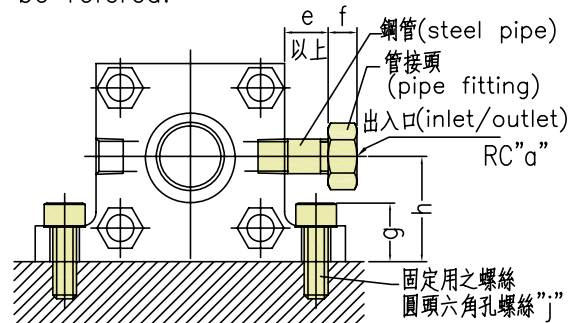
	推出 Extend	拉入 Retract	推出及拉入 Extend & Retract
FA			根據推出或拉入其出力大的一方為基準,請選擇下列之任何二種固定座 - 如果推出及拉入之出力有必要同樣大時,敬請再洽談為宜!
FB			Refer the max. output anyhow, extend or retract please select two mount. in right configurations if want same for extend & retract in necessary, please consult us.
LA LB			
CA	衝程如操超過1000mm以上時,請不要橫向安裝 If the stroke is over than 1000mm for which mounting crossly is prohibited		

* LA形配管上需注意:

Remarks during LA mounting.

LA形缸管內徑40~100而且出入口方向使用在B(右)或者D(左)時,其配管接頭會干涉到油壓缸固定用螺絲而無法配管,在使用這種形式時,請參考下圖之樣式 -

The LA bore dia : 40 ~ 100 and the port position for which at B(right) or D(left) Since, the pipe fitting will be disturbed the mounting screw so that the following fig can be referred.



缸管內徑 Cyl. Bore	a	e	f	g	h	j
40	3/8	27	30	24	32.5	M10
50	3/8	33	30	29	37.5	M12
63	3/8	36	30	31	45	M12
70	1/2	38	40	37	50	M16
80	1/2	40	40	41	55	M16
90	1/2	43	40	43	62.5	M16
100	3/4	46	42	47	67.5	M20

*如使用鎖入形配管接頭時請參照上圖選擇長形種類

If employed the inserted pipe fitting, which can be referred above fig.

* 技術參數 Technical Data :

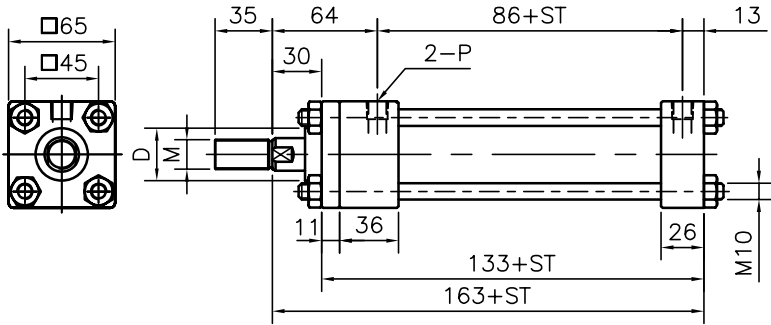
缸管內徑 Cylinder Bore mm	活塞桿徑 Rod Dia. mm	動作 Action	有效面積 Effective Area cm ²	出力 Output Power kgf				流量10L/分 之速度 Flow Rate at Speed 10L/min mm/sec	速度10mm/秒 之流量 Speed at Flow Rate 10mm/sec L/min
				30 kgf/cm ²	70 kgf/cm ²	140 kgf/cm ²	210 kgf/cm ²		
40		推力 Extend	12.6	377	880	1759	2639	132.9	0.8
	20	拉力 Retract	9.4	283	660	1319	1979	177.2	0.6
	25		7.7	230	536	1072	1608	218.1	0.5
50		推力 Extend	19.6	589	1374	2749	4123	85.1	1.2
	25	拉力 Retract	14.7	442	1031	2062	3093	113.4	0.9
	30		12.6	377	880	1759	2639	132.9	0.8
63		推力 Extend	31.2	935	2181	4364	6546	53.6	1.9
	30	拉力 Retract	24.1	723	1687	3375	5062	69.3	1.4
	35		21.6	647	1509	3017	4256	77.5	1.3
70		推力 Extend	38.5	1155	2694	5388	8082	43.4	2.3
	35	拉力 Retract	28.9	866	2020	4041	6061	57.9	1.7
	40		25.9	778	1814	3629	5443	64.4	1.6
80		推力 Extend	50.3	1508	3519	7037	10556	33.2	3.0
	40	拉力 Retract	37.7	1131	2639	5278	7917	44.3	2.3
	45		34.4	1031	2405	4811	7216	48.6	2.1
90		推力 Extend	63.6	1909	4453	8906	13360	26.3	3.8
	45	拉力 Retract	47.7	1431	3340	6680	10020	35.0	2.9
	50		44.0	1319	3079	6158	9236	38.0	2.6
100		推力 Extend	78.5	2356	5495	10996	16493	21.3	4.7
	50	拉力 Retract	58.9	1767	4123	8247	12370	28.4	3.5
	60		50.3	1508	3519	7037	10556	33.2	3.0
125		推力 Extend	122.7	3682	8590	17181	25771	13.6	7.3
	60	拉力 Retract	94.4	2833	6611	13222	19833	17.7	5.7
	70		84.2	2527	5896	11793	17689	19.8	5.0
150		推力 Extend	176.7	5301	12370	24740	37110	9.5	10.6
	70	拉力 Retract	138.2	4147	9676	19352	29028	12.1	8.3
	90		113.1	3393	7917	15834	23750	14.8	6.8

HC1- $\phi 40$

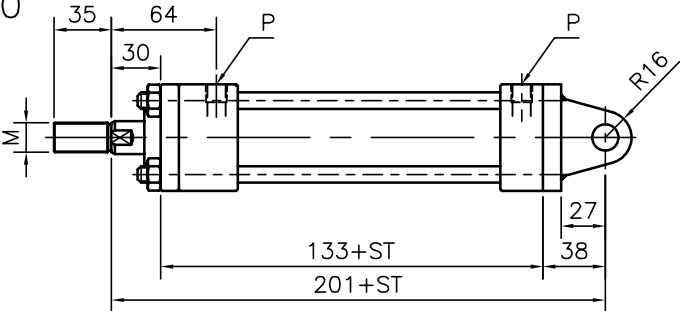
7/14MPa用

SD

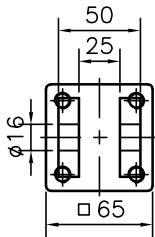
TYPE	ROD	M	D	P
A	$\phi 20$	M18*P1.5	$\phi 32$	Rc1/4"
B	$\phi 25$	M22*P1.5	$\phi 38$	



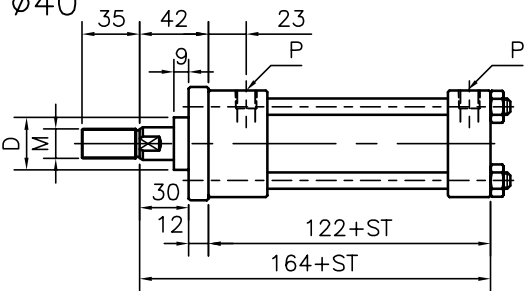
HC1-CA
 $\phi 40$



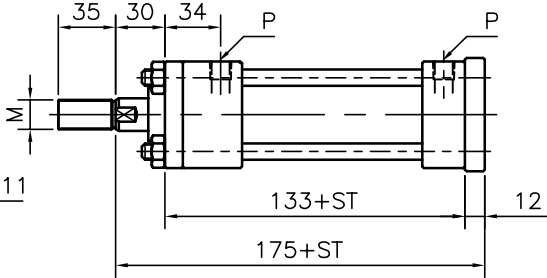
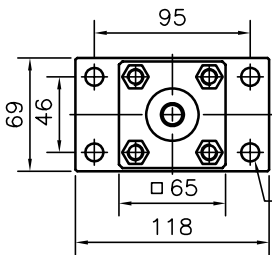
CB



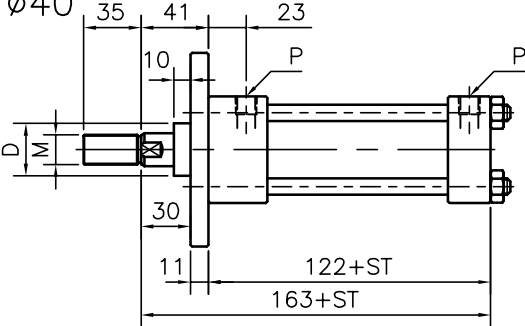
HC1-FA
 $\phi 40$



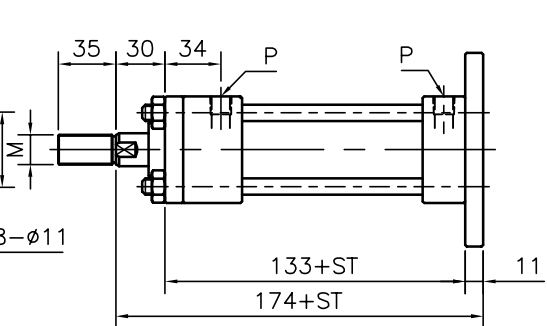
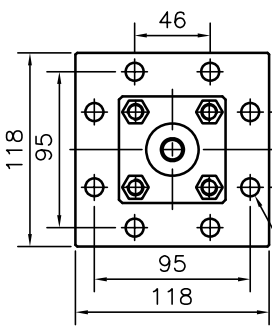
FB



HC1-FC
 $\phi 40$

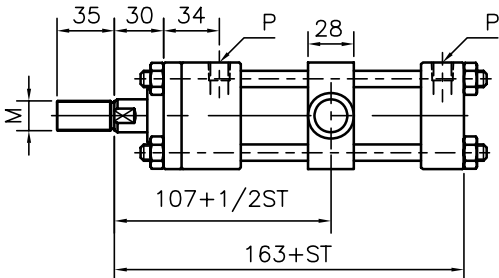
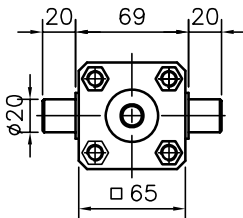
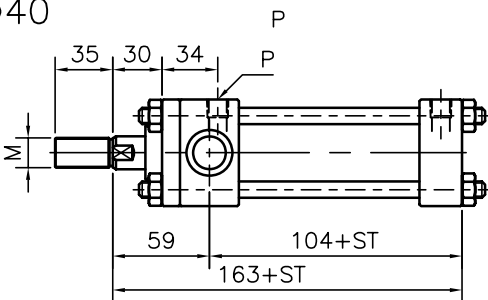


FD



HC1-TA
 $\phi 40$

TC

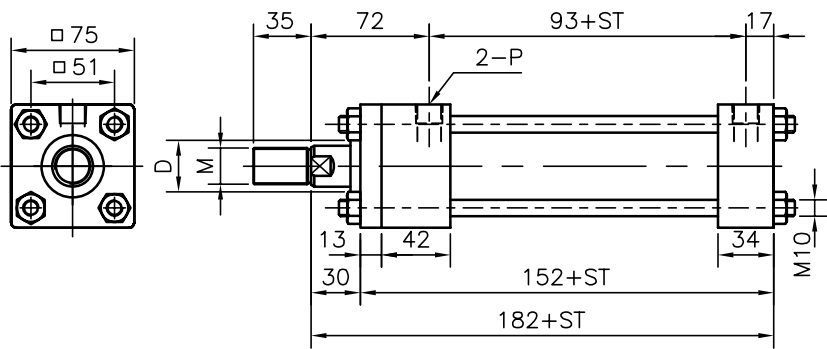


HC1- $\phi 50$

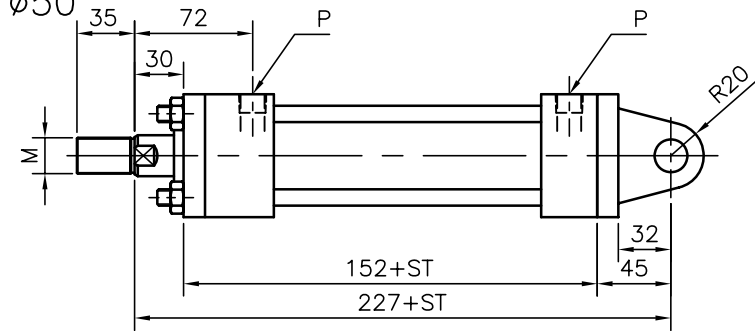
7/14MPa用

SD

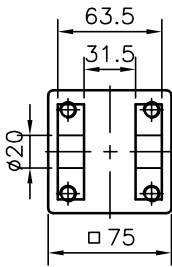
TYPE	ROD	M	D	P
A	$\phi 25$	M22*P1.5	$\phi 38$	Rc3/8"
B	$\phi 30$	M26*P1.5	$\phi 44$	



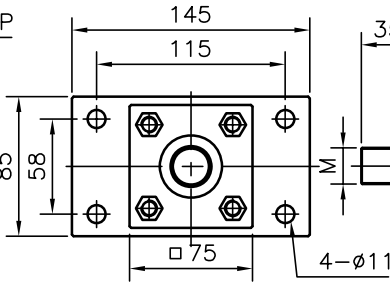
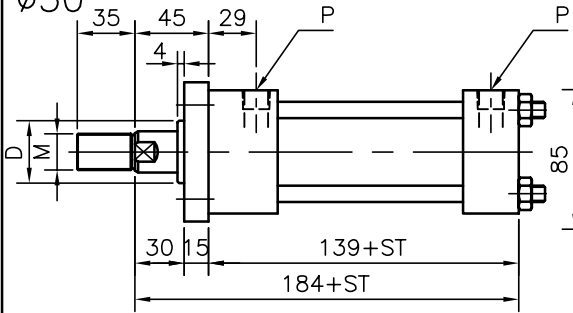
HC1-CA
 $\phi 50$



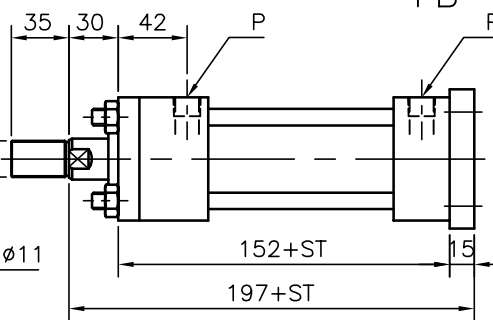
CB



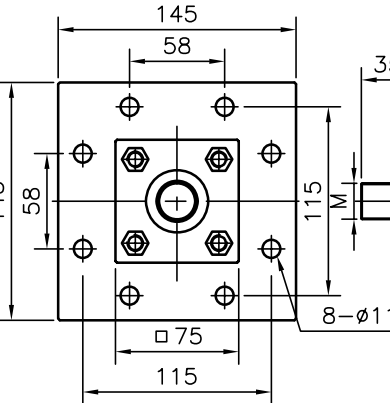
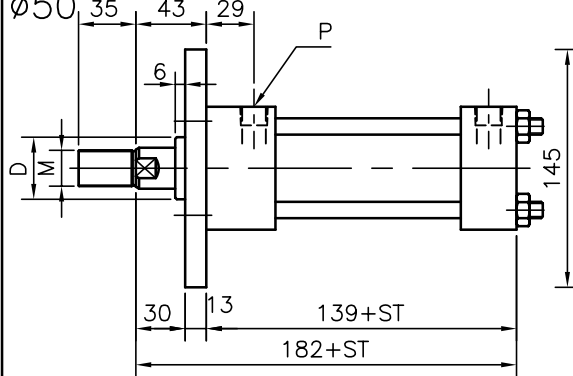
HC1-FA
 $\phi 50$



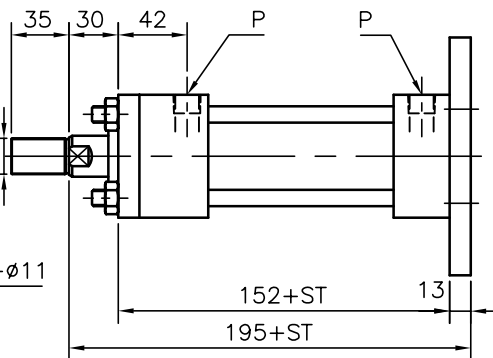
FB



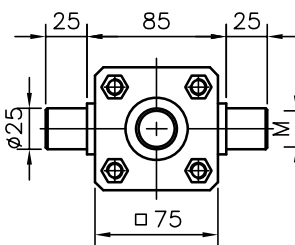
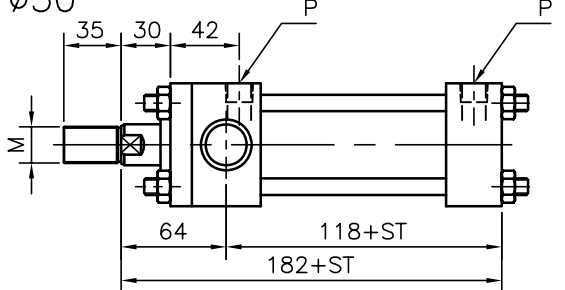
HC1-FC
 $\phi 50$



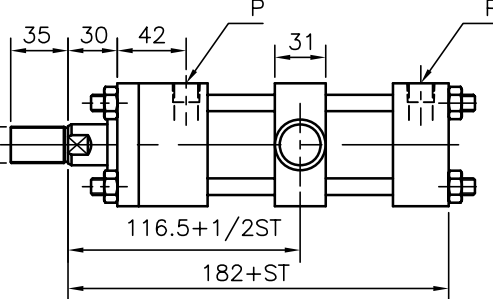
FD



HC1-TA
 $\phi 50$



TC

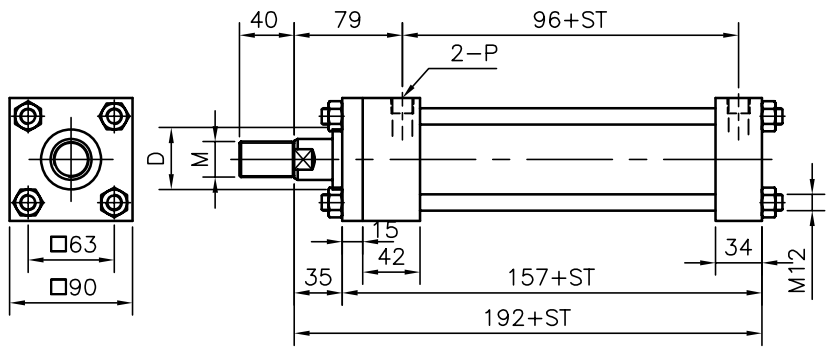


HC1- $\phi 63$

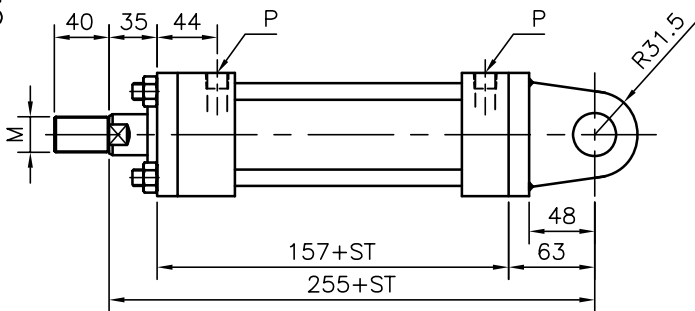
7/14MPa用

SD

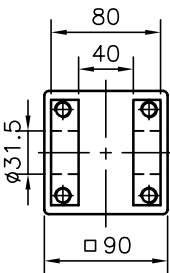
TYPE	ROD	M	D	P
A	$\phi 30$	M26*P1.5	$\phi 44$	Rc3/8"
B	$\phi 35$	M30*P1.5	$\phi 50$	



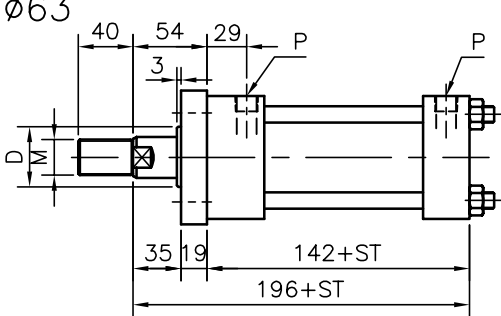
HC1-CA
 $\phi 63$



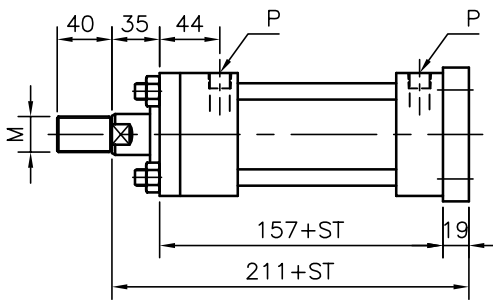
CB



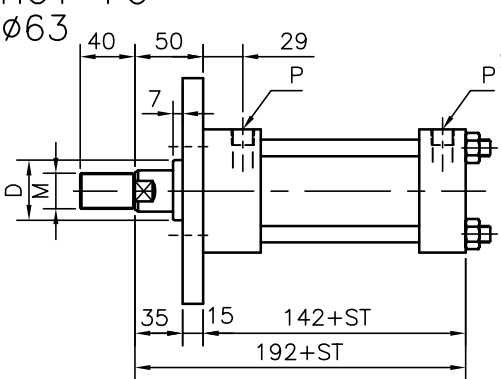
HC1-FA
 $\phi 63$



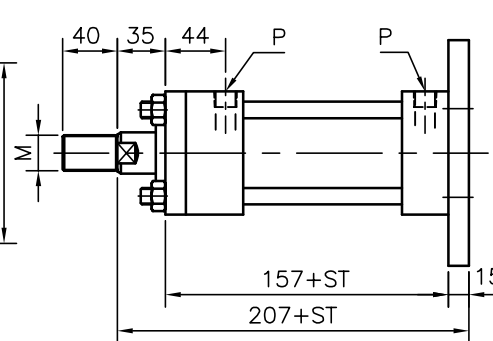
FB



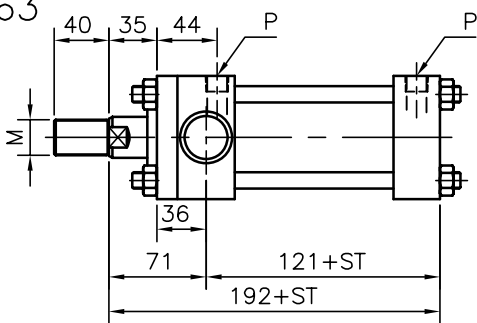
HC1-FC
 $\phi 63$



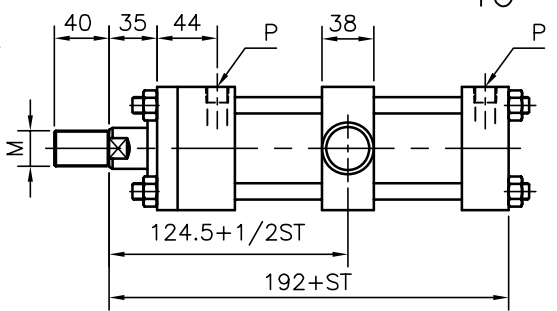
FD



HC1-TA
 $\phi 63$



TC

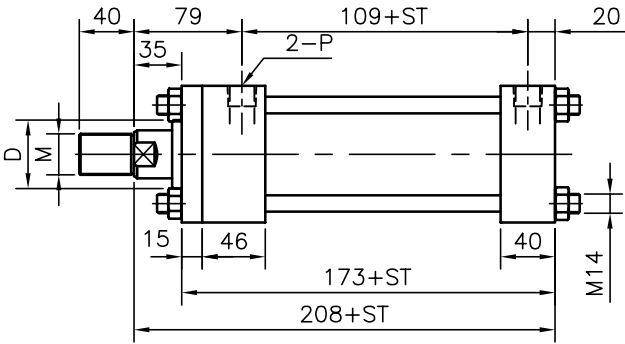
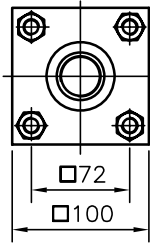


HC1- $\phi 70$

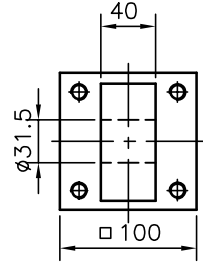
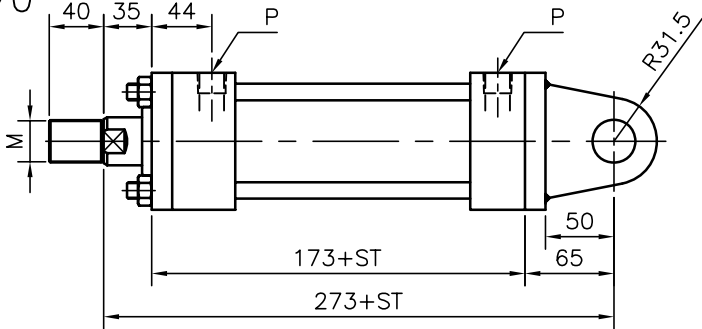
7/14MPa用

SD

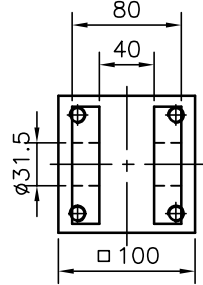
TYPE	ROD	M	D	P
A	$\phi 35$	M30*P1.5	$\phi 50$	Rc1/2"
B	$\phi 40$	M36*P2.0	$\phi 54$	



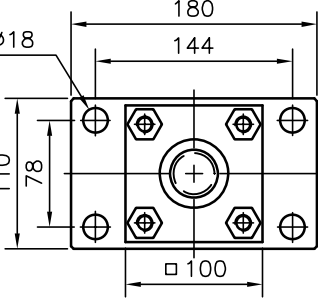
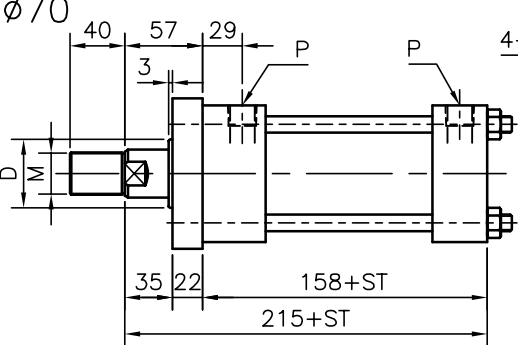
HC1-CA
 $\phi 70$



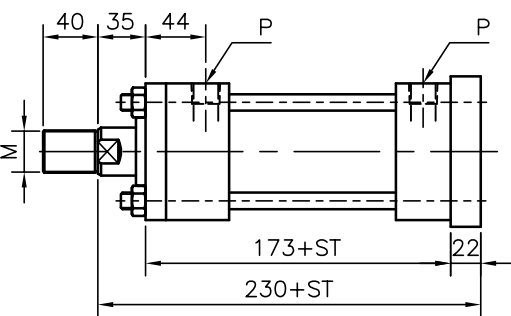
CB



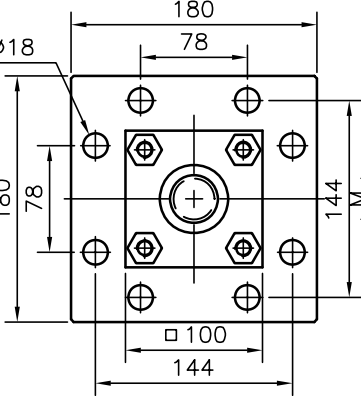
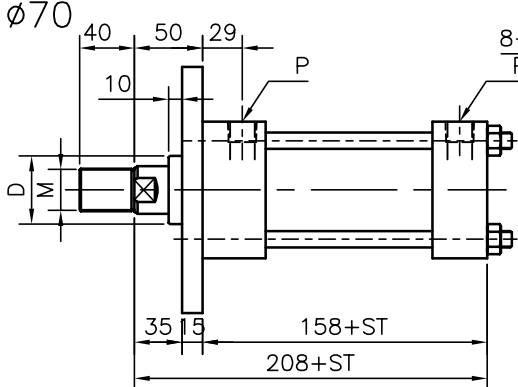
HC1-FA
 $\phi 70$



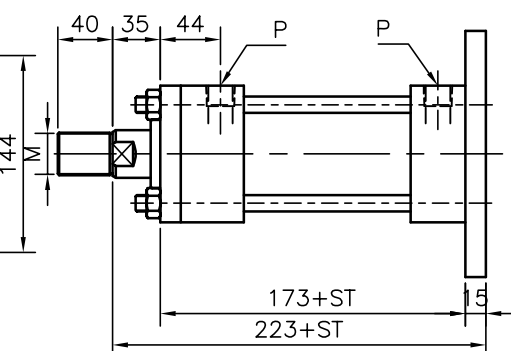
FB



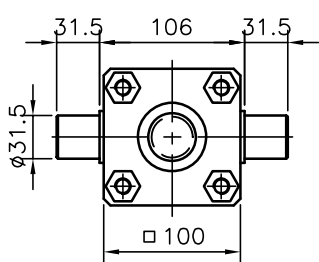
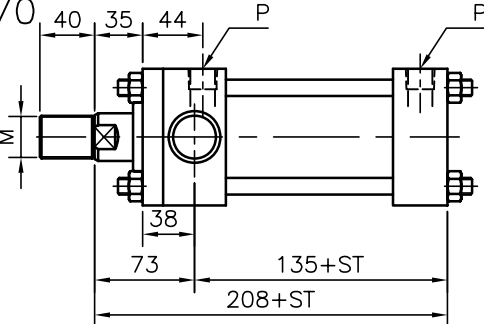
HC1-FC
 $\phi 70$



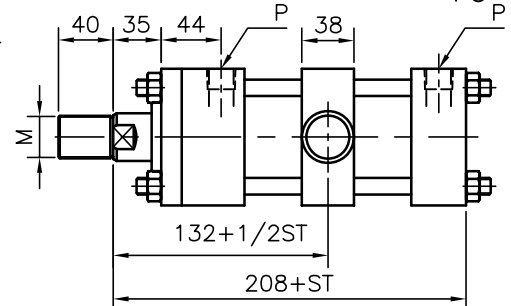
FD



HC1-TA
 $\phi 70$



TC

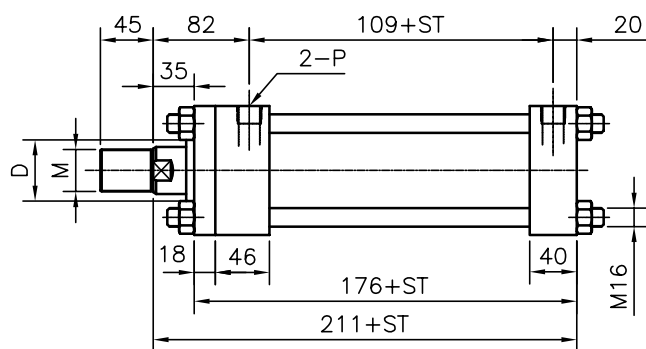
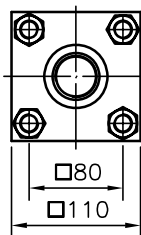


HC1- $\phi 80$

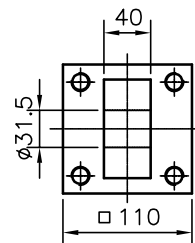
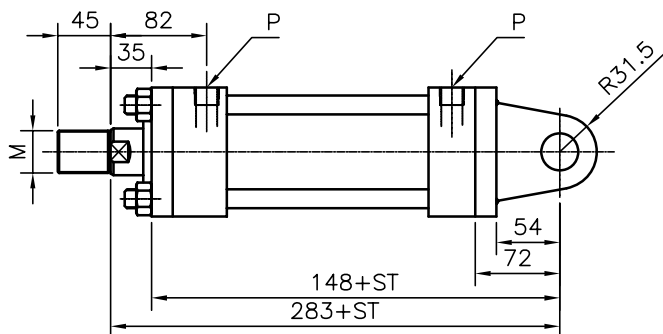
7/14MPa用

SD

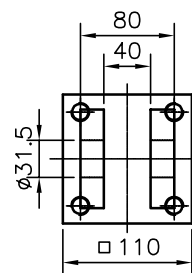
TYPE	ROD	M	D	P
A	$\phi 40$	M36*P1.5	$\phi 54$	Rc1/2"
B	$\phi 45$	M40*P2.0	$\phi 58$	



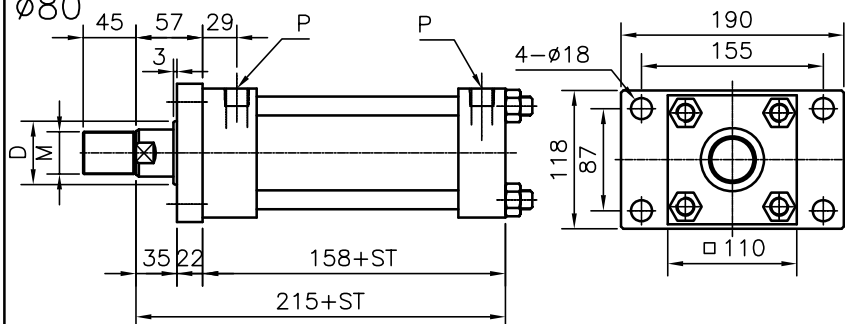
HC1-CA
 $\phi 80$



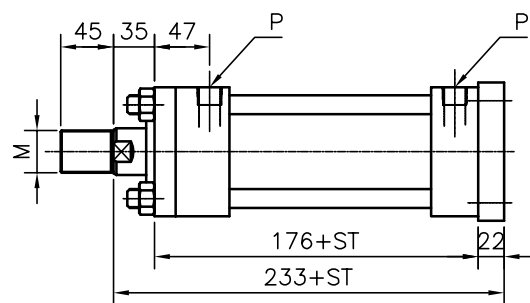
CB



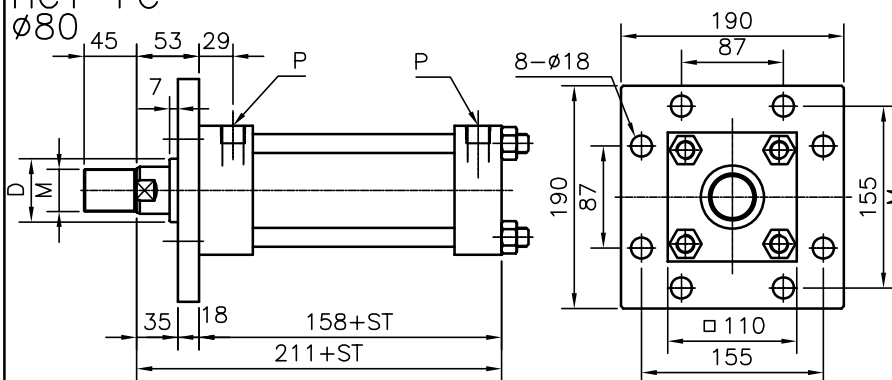
HC1-FA
 $\phi 80$



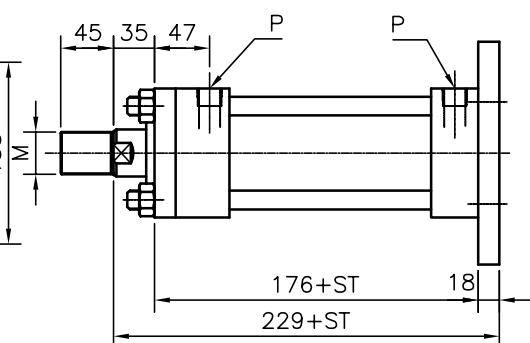
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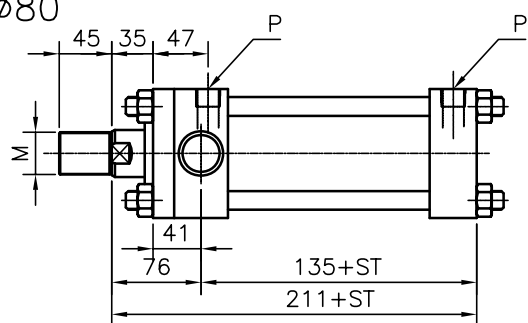
HC1-FC
 $\phi 80$



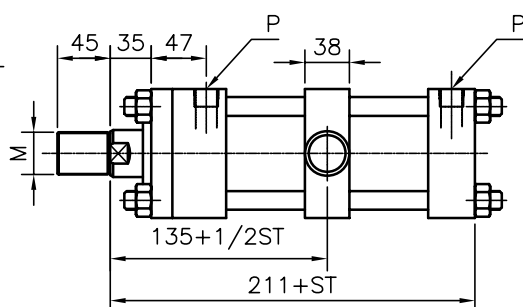
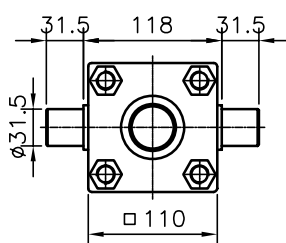
FD



HC1-TA
 $\phi 80$

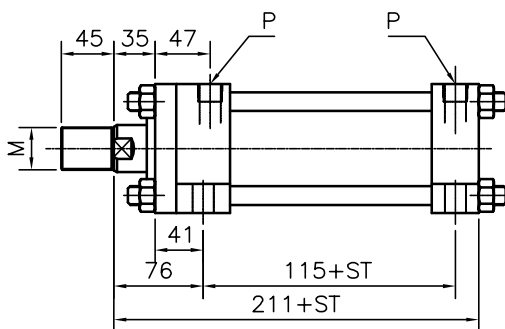
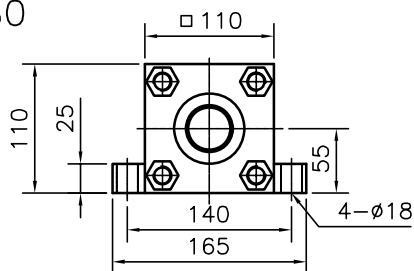


TC

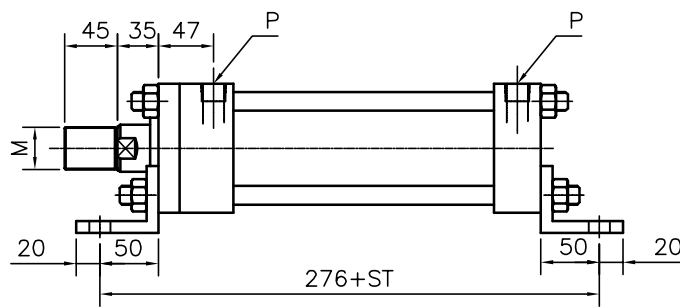


7/14MPa用

TYPE	ROD	M	D	P
A	ø40	M36*P1.5	ø54	Rc1/2"
B	ø45	M40*P2.0	ø58	



Technical drawing of a square flange. The overall dimensions are 110 mm by 110 mm. The central hole has a diameter of 78 mm. There are four corner holes, each with a diameter of 18 mm, indicated by the label 4- $\phi 18$. The distance from the center of the central hole to the center of each corner hole is 72 mm. The thickness of the flange is 10 mm. The drawing shows the front view of the flange.



DOUBLE ROD

Dimensions and labels for the Double Rod End View:

- Top dimensions: 45, 82, 106+ST, 47
- Bottom dimensions: 35, 200+ST, 235+ST, 35+ST, 45
- Labels: P (pointing to the rod ends), D (outer diameter), M (inner diameter)

Technical drawing of a mechanical part, showing front and side views with dimensions.

Front View (Top):

- Overall length: 72
- Overall diameter: $\phi 35$
- Left section length: 40
- Distance from left end to start of thread: 43
- Thread specification: M36*P2.0

Side View (Bottom):

- Overall width: $\phi 62$
- Overall length: 115
- Distance from left end to start of thread: 35
- Distance from left end to center of hole: 15
- Angle of chamfer: 45°
- Distance from center of hole to start of thread: 50

Technical drawing of a mechanical part, showing front and side views with dimensions.

Front View (Top):

- Overall width: 98
- Top flange thickness: 20
- Central hole diameter: $\varnothing 31.5$
- Distance from top flange to center of central hole: 40
- Distance from central hole to right edge of main body: 50
- Distance from central hole to center of right hole: 65
- Right hole diameter: $M36 \times P2.0$
- Overall height of main body: 80

Side View (Bottom):

- Overall height: 60
- Distance from left edge to center of central hole: 30
- Distance from center of central hole to center of right hole: 115
- Top flange thickness: 12
- Top flange angle: 45°

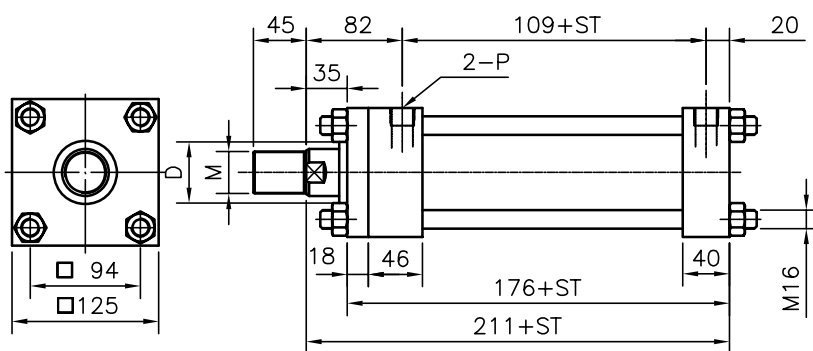
$$\begin{aligned}\text{weight} &= W1 + (W2 * ST) \\ &= 17.8 + (2.68 * 2) \\ &= 23.16 \text{ kg}\end{aligned}$$
[illegible]

HC1- $\phi 90$

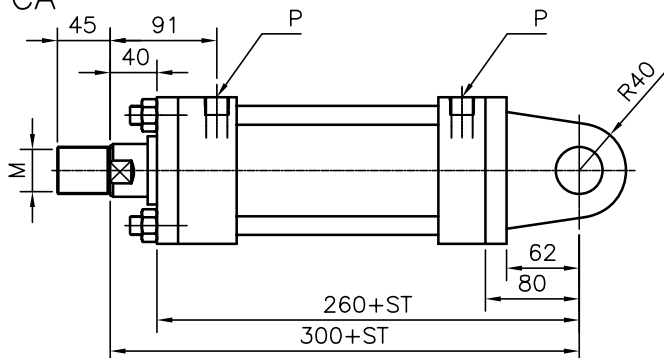
7/14MPa用

SD

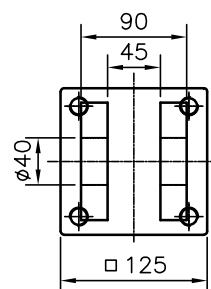
TYPE	ROD	M	D	P
A	$\phi 45$	M40*P2.0	$\phi 58$	Rc1/2"
B	$\phi 50$	M45*P2.0	$\phi 64$	



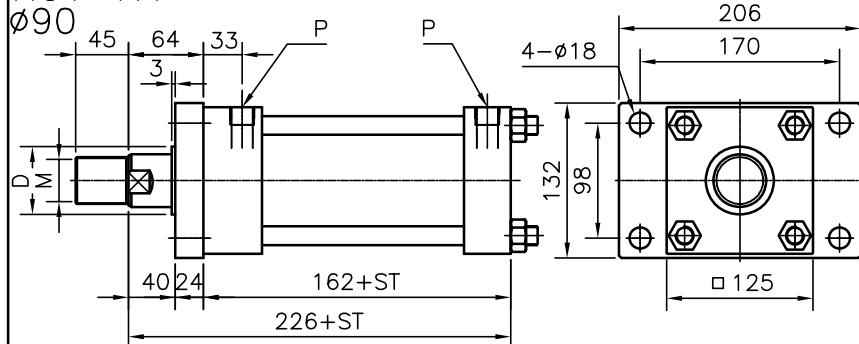
HC1-CA
 $\phi 90$



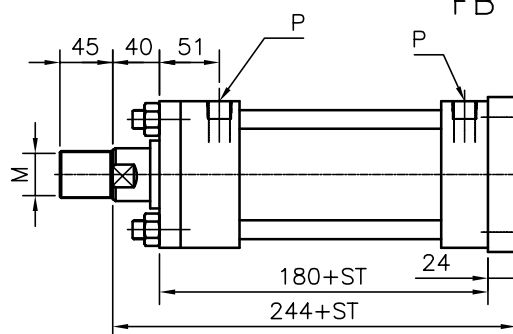
CB



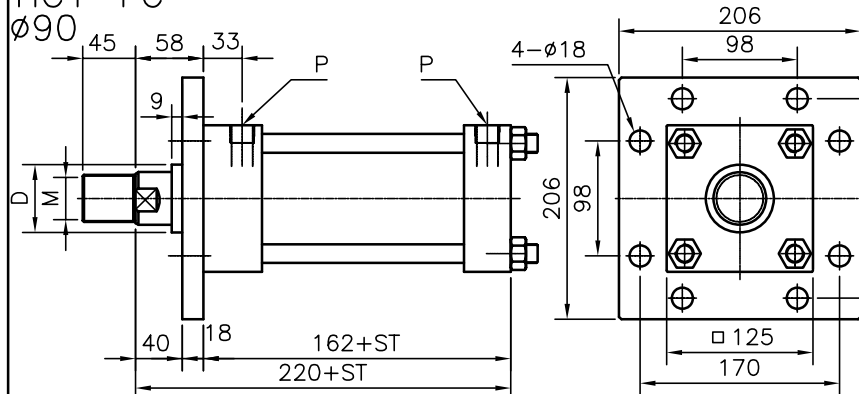
HC1-FA
 $\phi 90$



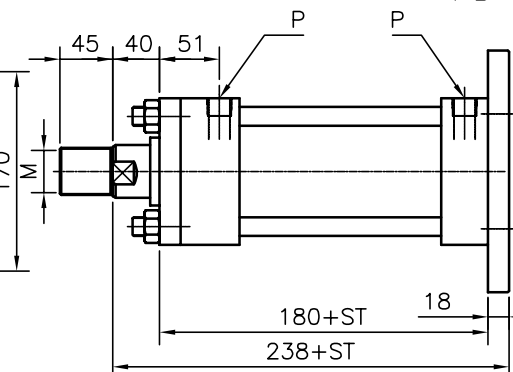
FB



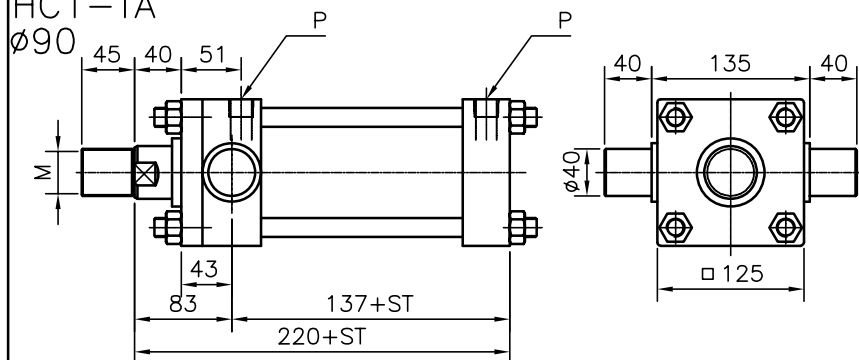
HC1-FC
 $\phi 90$



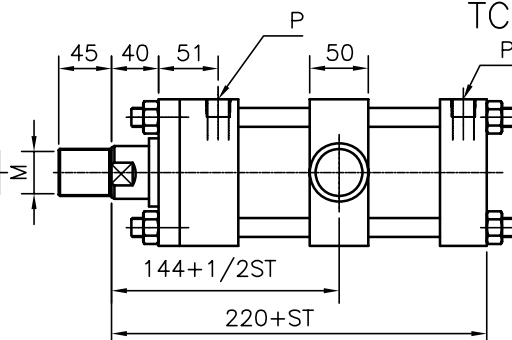
FD



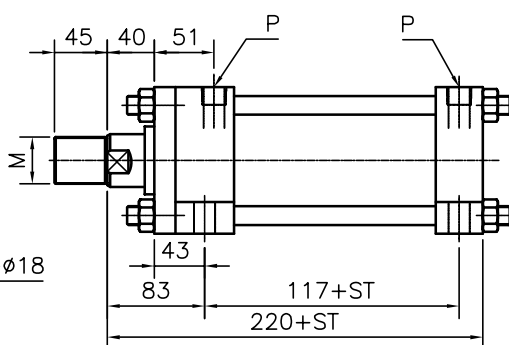
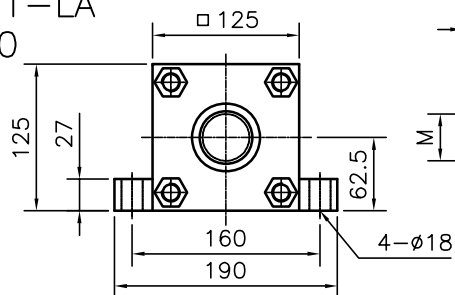
HC1-TA
 $\phi 90$



TC



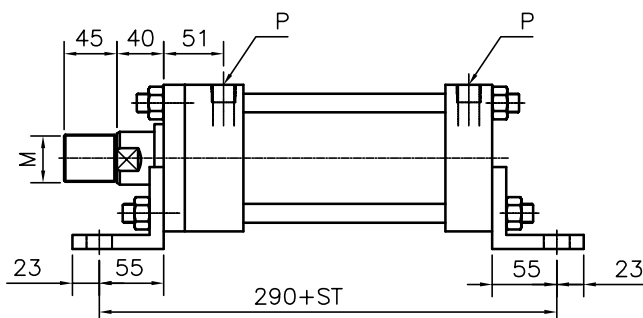
7/14MPa用



TYPE	ROD	M	D	P
A	ø45	M40*P2.0	ø58	Rc1/2"
B	ø50	M45*P2.0	ø64	

Technical drawing of a square flange with the following dimensions:

- Outer square: 125 x 125
- Central hole: 90
- Four mounting holes: 12 x 12
- Four Ø18 holes
- Total height: 140
- Section height: 70
- Offset: 12



Technical drawing of a mechanical part with dimensions and a 45-degree chamfer.

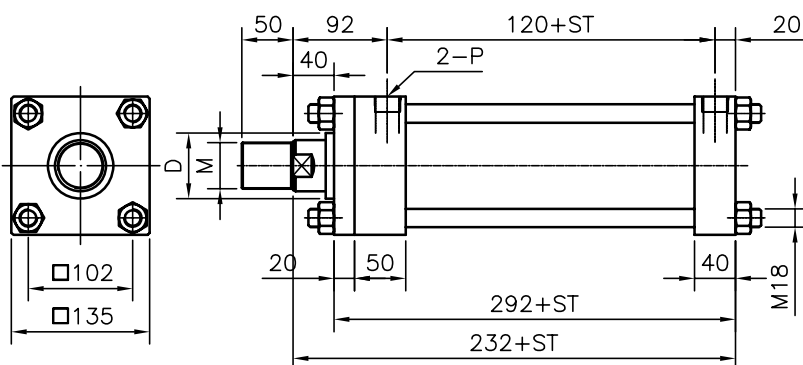
$$\begin{aligned}\text{weight} &= W1 + (W2 * ST) \\ &= 23.0 + (3.1 * 2) \\ &= 29.2 \text{ kg}\end{aligned}$$
[illegible]

HC1- $\phi 100$

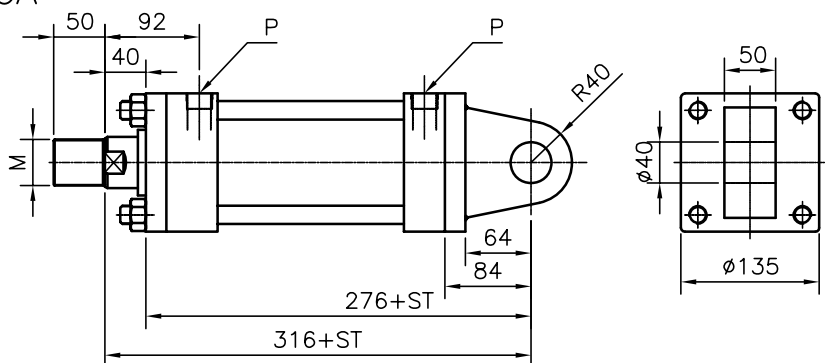
7/14MPa用

SD

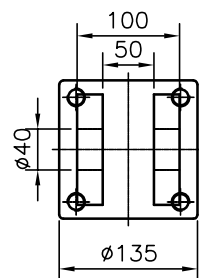
TYPE	ROD	M	D	P
A	$\phi 50$	M45*P2.0	$\phi 64$	Rc3/4"
B	$\phi 60$	M55*P2.0	$\phi 75$	



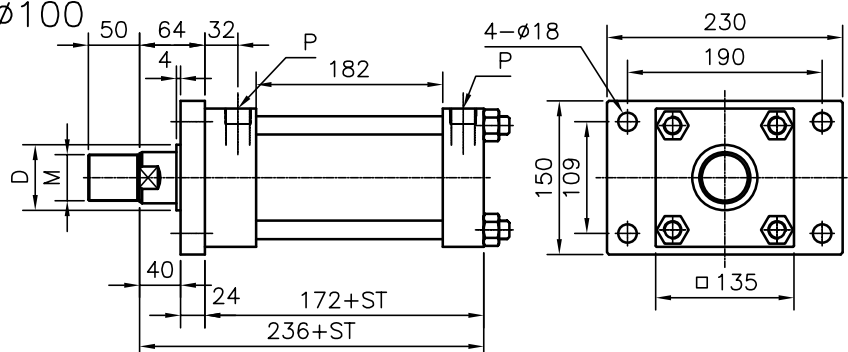
HC1-CA
 $\phi 100$



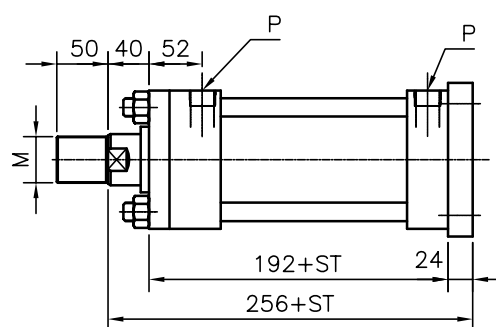
CB



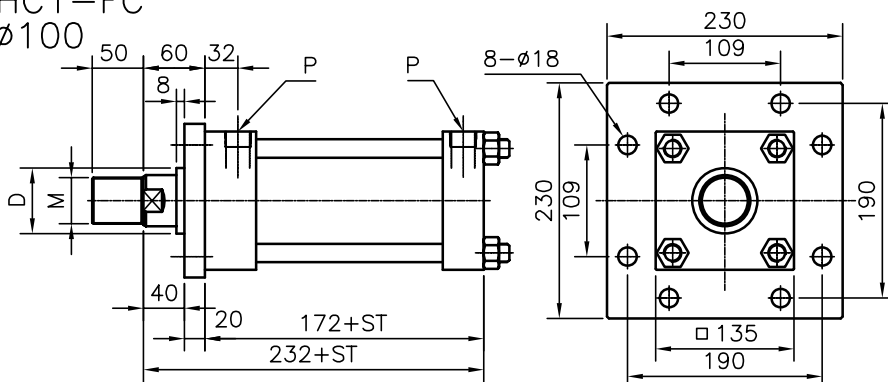
HC1-FA
 $\phi 100$



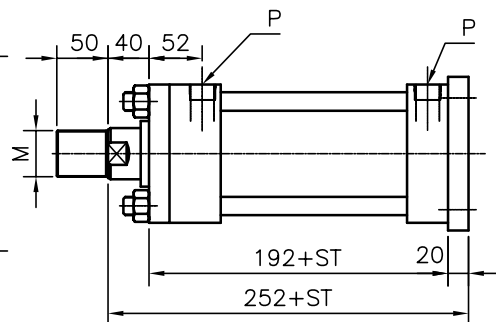
FB



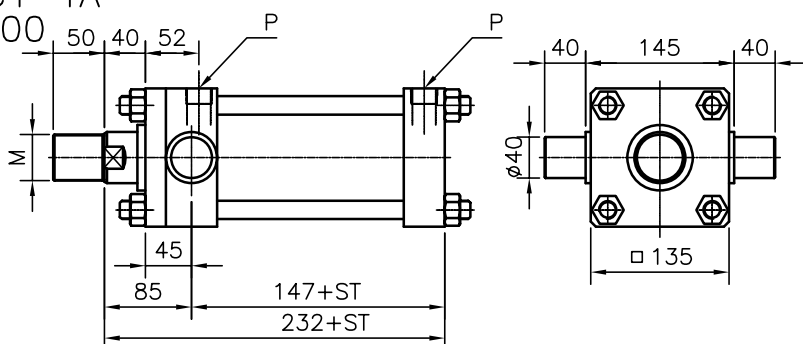
HC1-FC
 $\phi 100$



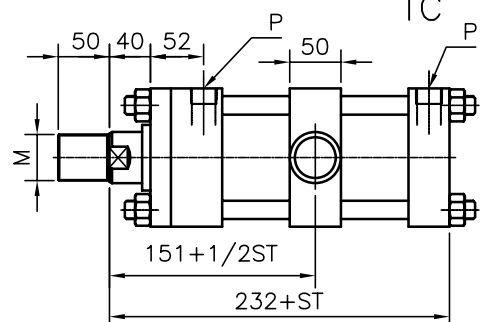
FD



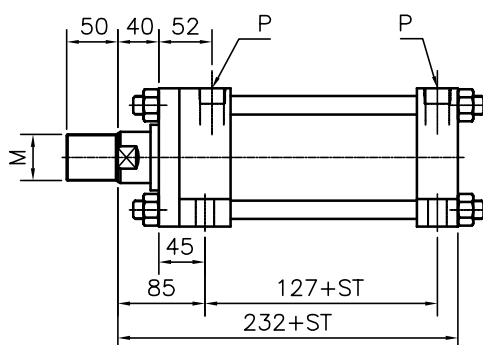
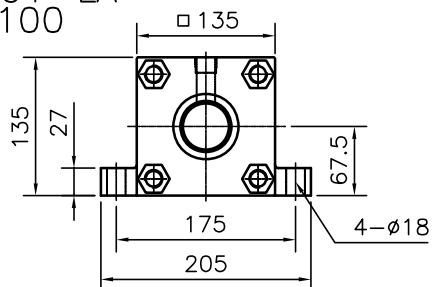
HC1-TA
 $\phi 100$



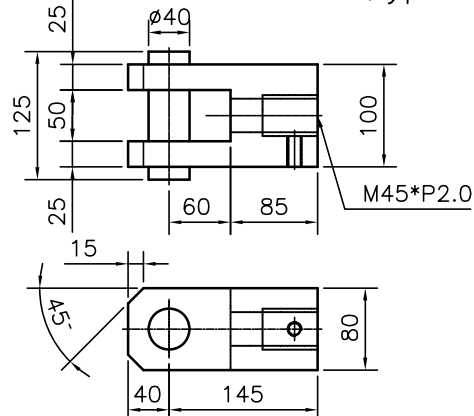
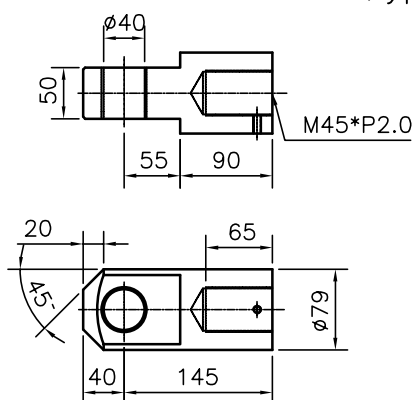
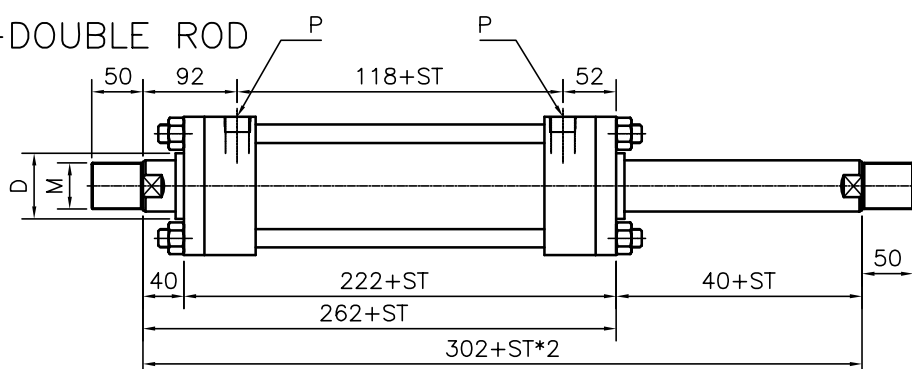
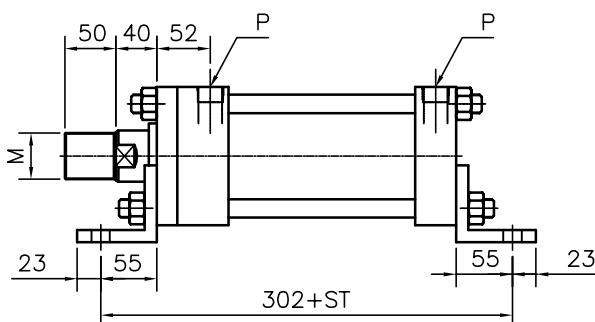
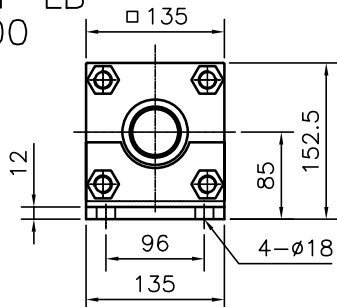
TC



7/14MPa用



TYPE	R0D	M	D	P
A	ø50	M45*P2.0	ø64	Rc3/4"
B	ø60	M55*P2.0	ø75	



Estimated weight of hyd.

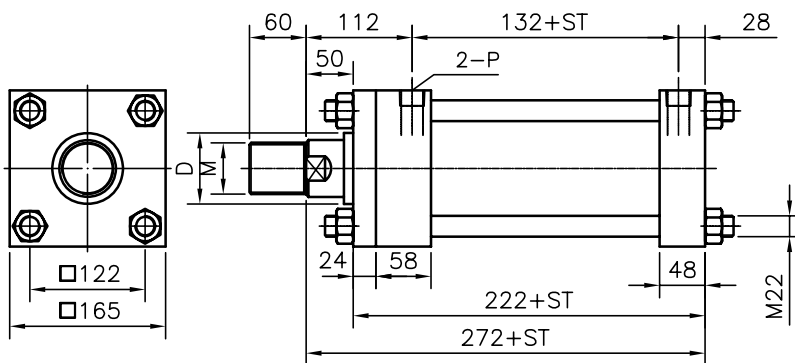
$$\begin{aligned}\text{weight} &= W1 + (W2 * ST) \\ &= 26.6 + (4.2 * 2) \\ &= 35.0 \text{ kg}\end{aligned}$$
[illegible]

HC1- $\phi 125$

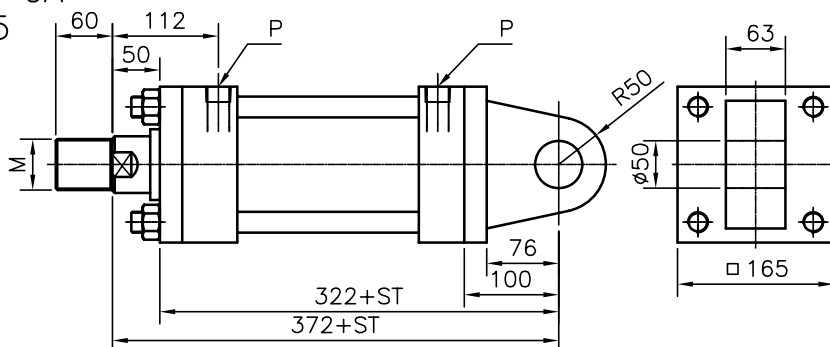
7/14MPa用

SD

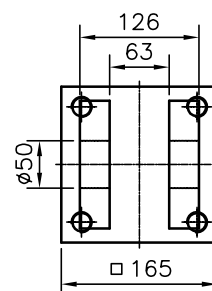
TYPE	ROD	M	D	P
A	$\phi 60$	M55*P2.0	$\phi 75$	Rc3/4"
B	$\phi 70$	M65*P2.0	$\phi 85$	



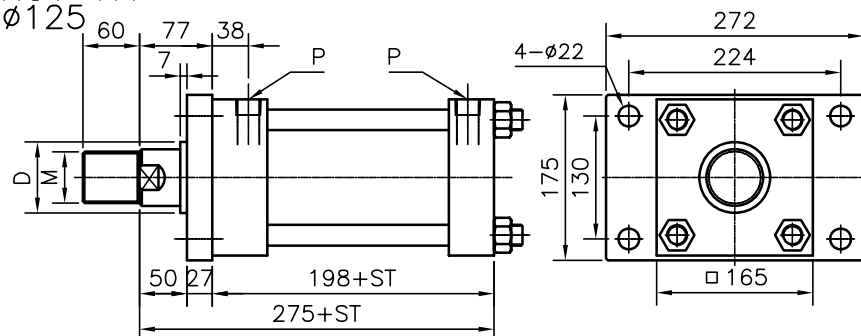
HC1-CA
 $\phi 125$



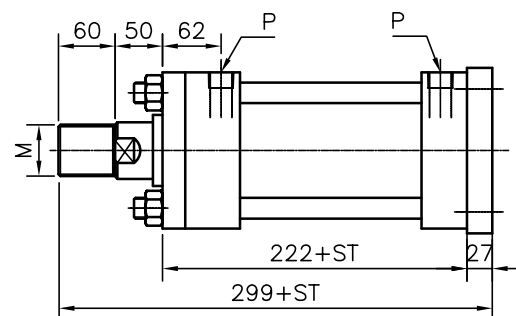
CB



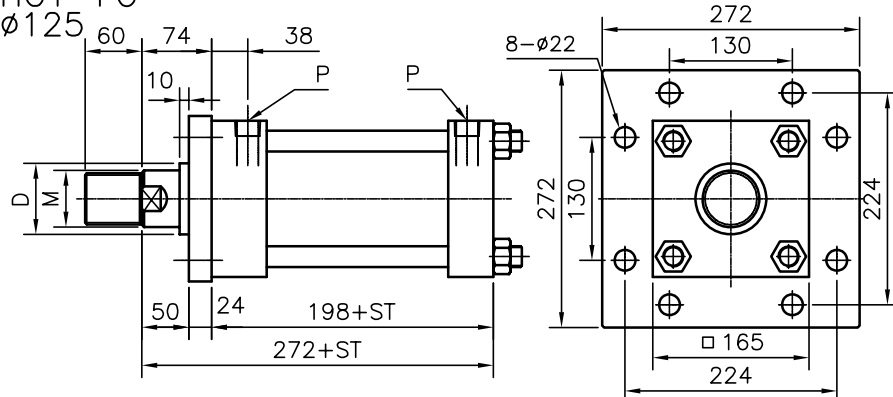
HC1-FA
 $\phi 125$



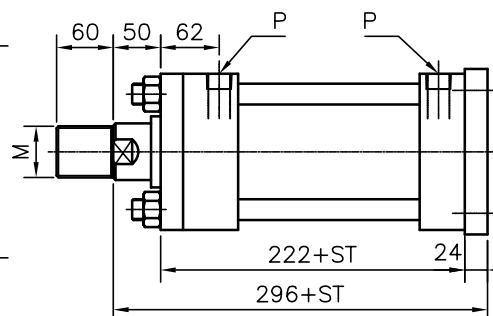
FB



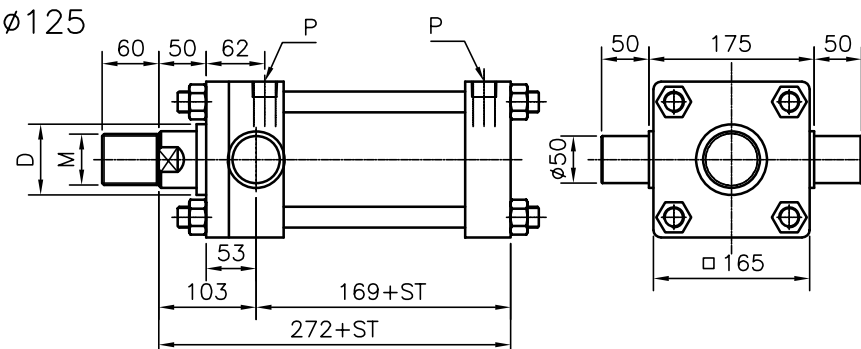
HC1-FC
 $\phi 125$



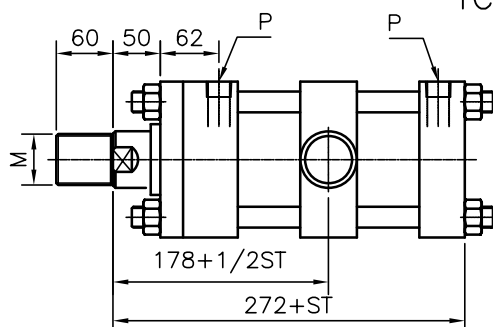
FD



HC1-TA
 $\phi 125$



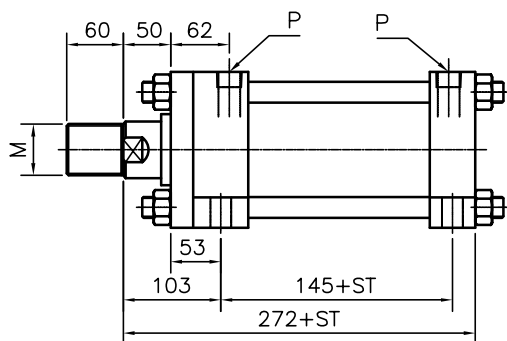
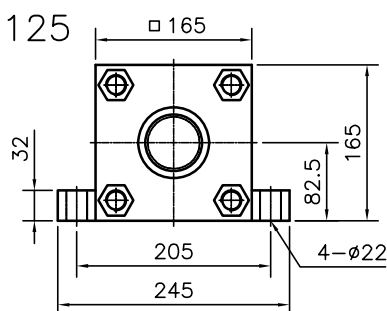
TC



7/14MPa用

HC1-LA

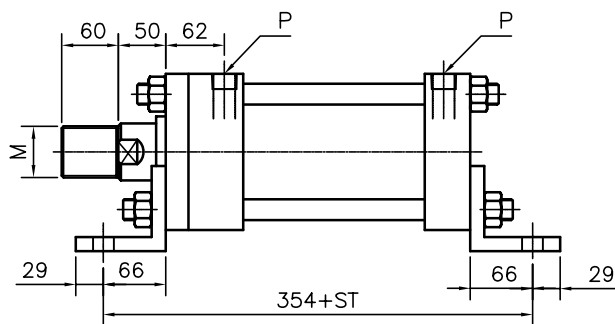
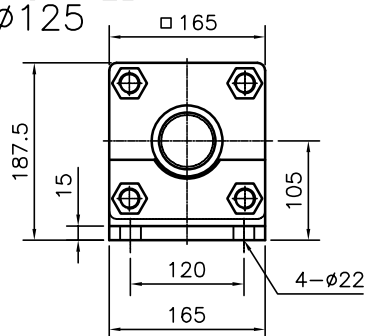
Ø 125



TYPE	ROD	M	D	P
A	ø60	M55*P2.0	ø75	Rc3/4"
B	ø70	M65*P2.0	ø85	

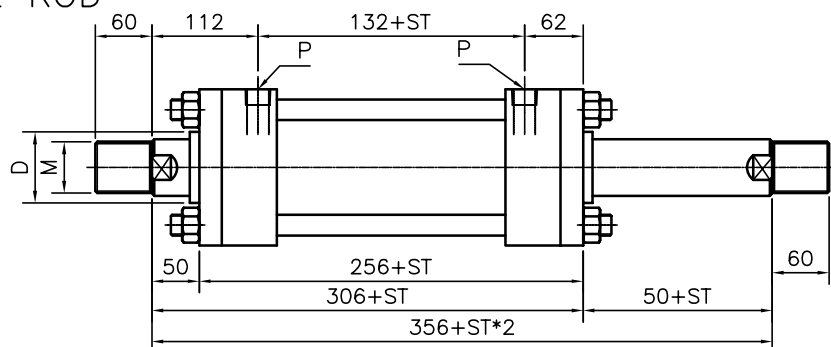
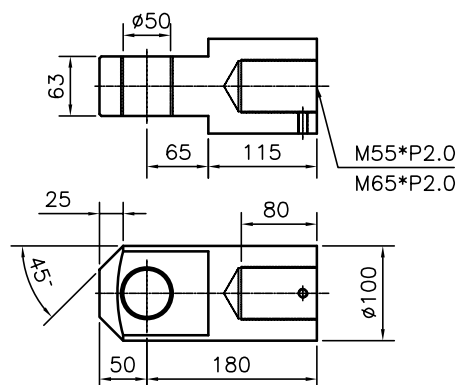
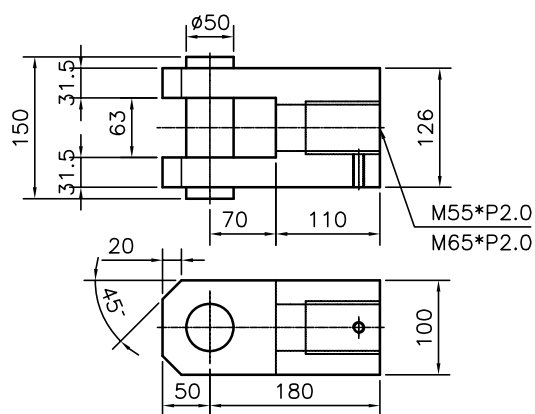
HC1-LB

Ø 125



HC1-DOUBLE ROD

Ø 125

HC1- ϕ 125-|接頭 CLevis head,type I| HC1- $\varnothing$ 125-Y接頭 CLevis head,type Y

油壓缸大概重量計算

Estimated weight of hyd.

EX. : FA , ST=200mm

$$\begin{aligned}\text{weight} &= W1 + (W2 * ST) \\ &= 45.5 + (5.9 * 2) \\ &= 57.3 \text{ kg}\end{aligned}$$

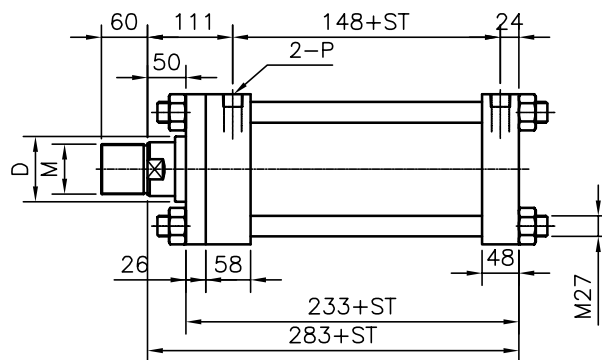
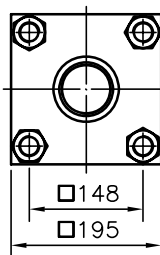
SD	FA	FB	FC	FD	CA	LA	LB	TA	TC	
W1 (kg)	40.7	45.5	50.7	49.4	54.5	51.6	43.0	47.2	42.6	48.2
W2 (kg/100mm)	5.9									

HC1- $\phi 150$

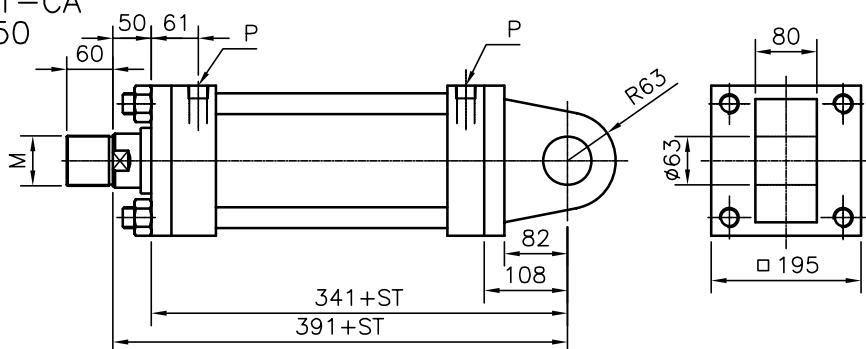
7/14MPa用

SD

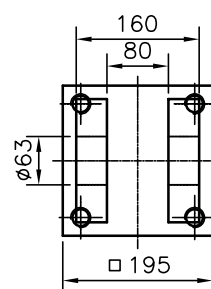
TYPE	ROD	M	D	P
A	$\phi 70$	M65*P2.0	$\phi 85$	Rc3/4"
B	$\phi 90$	M85*P2.0	$\phi 105$	



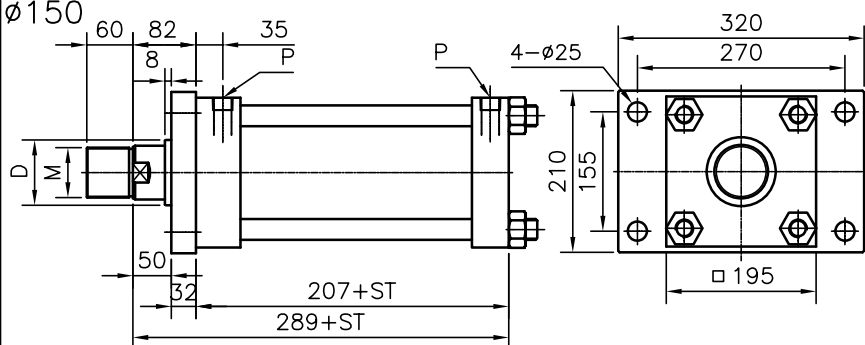
HC1-CA
 $\phi 150$



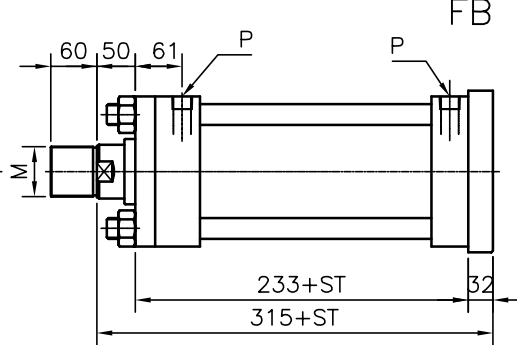
CB



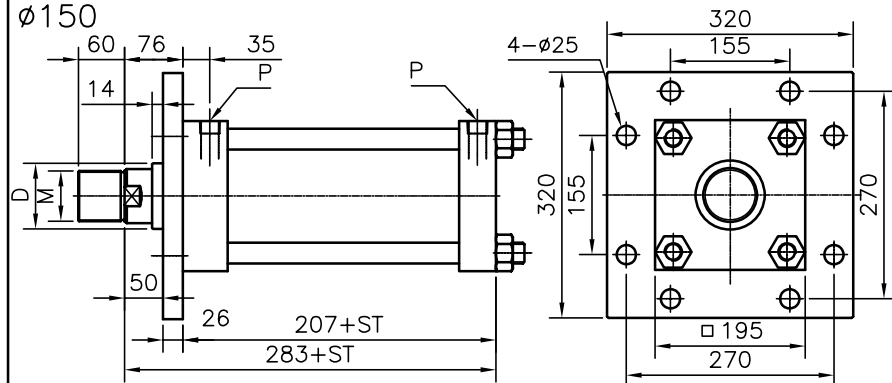
HC1-FA
 $\phi 150$



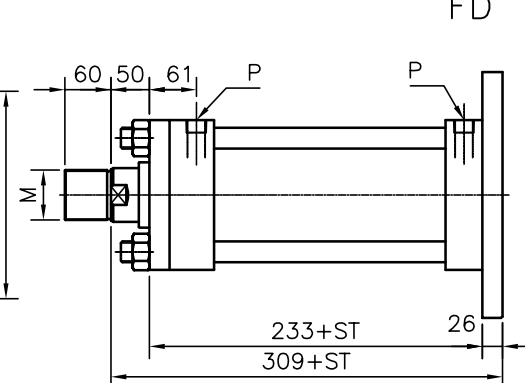
FB



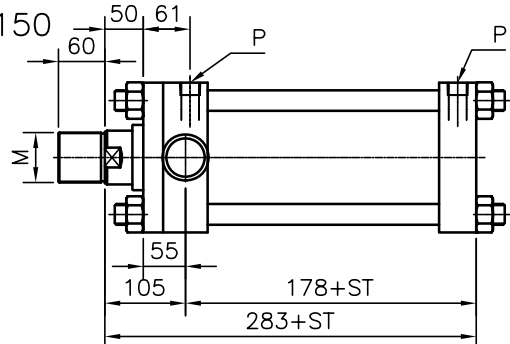
HC1-FC
 $\phi 150$



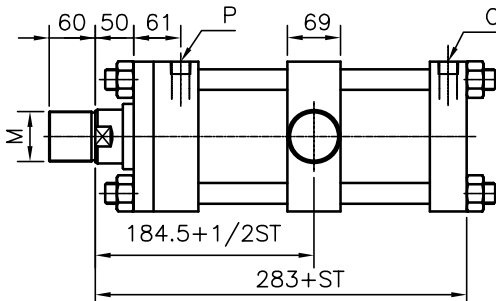
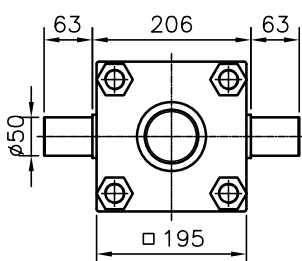
FD



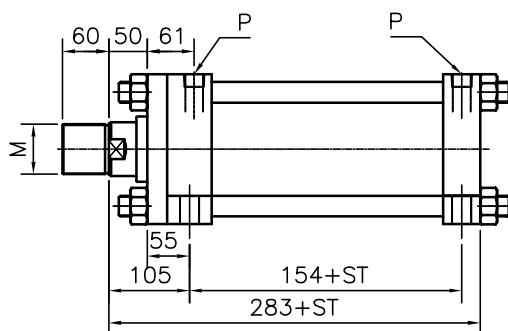
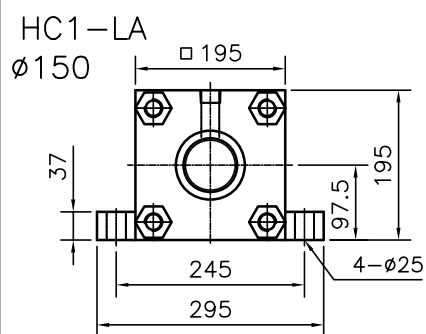
HC1-TA
 $\phi 150$



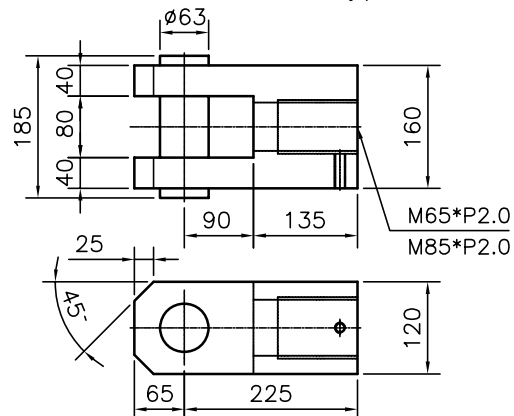
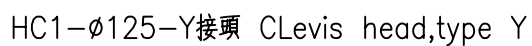
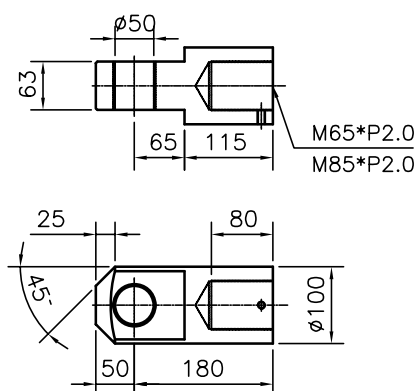
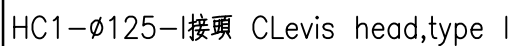
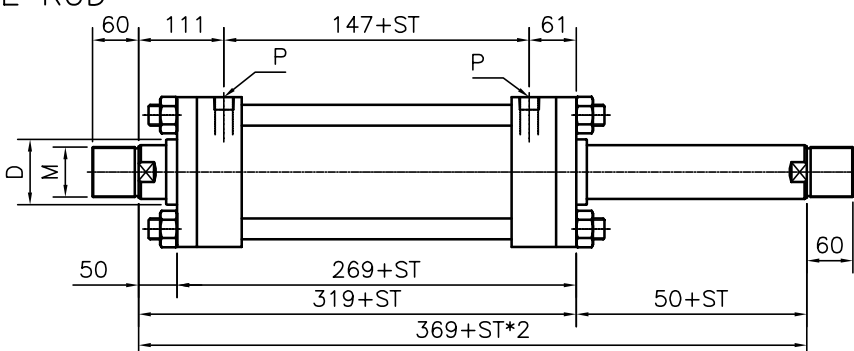
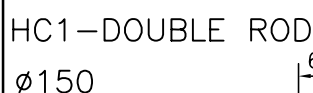
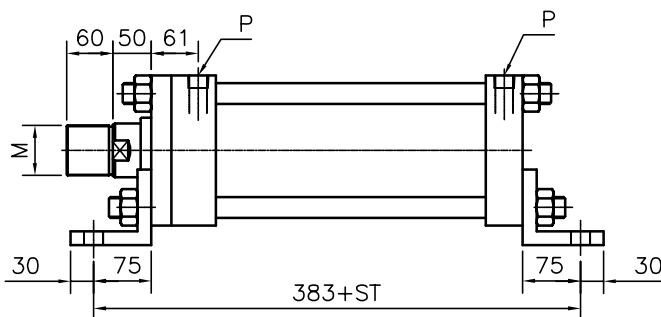
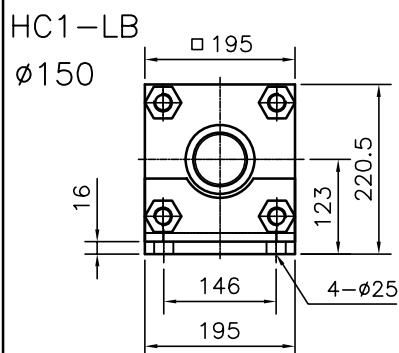
TC



7/14MPa用



TYPE	ROD	M	D	P
A	ø70	M65*P2.0	ø85	Rc3/4"
B	ø90	M85*P2.0	ø105	



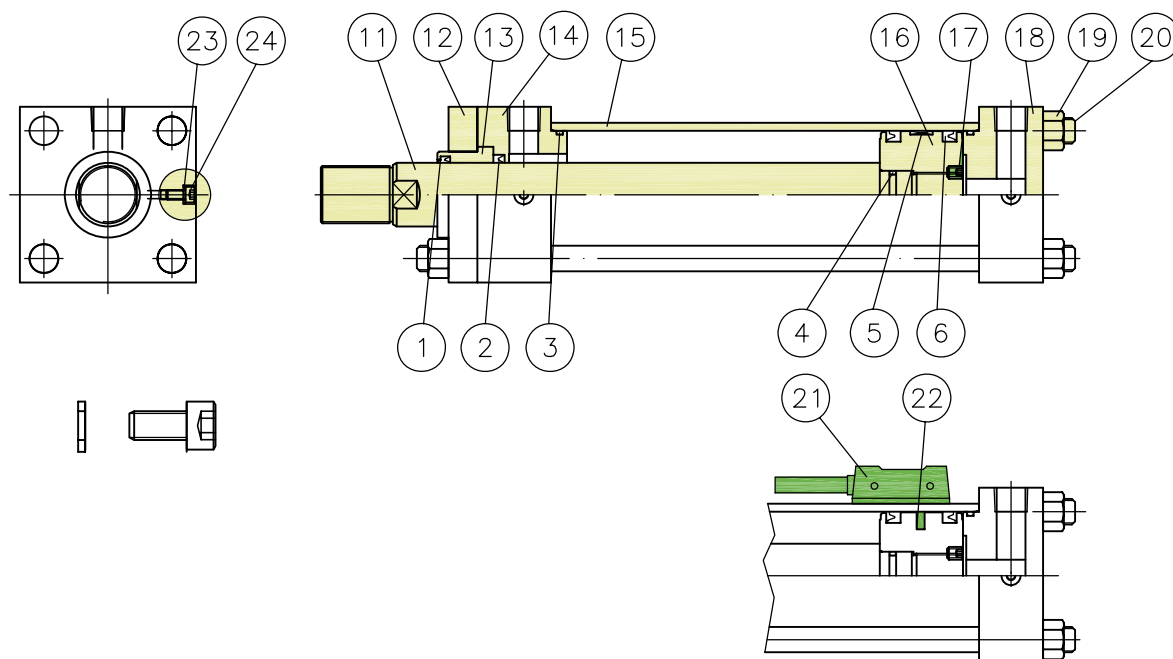
油壓缸大概重量計算

Estimated weight of hyd.

EX. : FA , ST=200mm

$$\begin{aligned}\text{weight} &= W1 + (W2 * ST) \\ &= 66.5 + (8.2 * 2) \\ &= 82.9 \text{ kg}\end{aligned}$$

9 kg											
	SD	FA	FB	FC	FD	CA	LA	LB	TA	TC	
W1 (kg)	57.7	66.5	74.2	70.5	77.9	74.6	43.0	47.2	42.6	48.2	
W2 (kg/100mm)	8.2										



零件名稱及材質表 Parts Description & Material List:

NO	名稱 Description.	材質 Material.	Q'TY	NO	名稱 Description.	材質 Material.	Q'TY
11	活塞桿 Piston Rod	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1	18	後蓋 Cylinder Cap	一般構造用軋鋼 Rolled Steel for General Structure	1
12	壓板 Cover	一般構造用軋鋼 Rolled Steel for General Structure	1	19	六角螺帽 Tie Rod Nut	一般構造用軋鋼 Rolled Steel for General Structure	4
13	銅襯 Bush	銅合金 Brass Alloy.	1	20	支桿 Tie Rod	機械構造用碳鋼 Carbon Steel for Mechanical Structure	4
14	前蓋 Head	一般構造用軋鋼 Rolled Steel for General Structure	1	21	感測器 Senser		*
15	缸管 Cylinder Tube	機械構造用碳鋼鋼管 Carbon Steel Pipe for Mechanical Structure.	1	22	磁石 Magnet		*
16	活塞 Piston	一般構造用軋鋼 Rolled Steel for General Structure	1	23	銅墊片 Washer	銅合金	2
17	防鬆螺絲 Set Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1	24	六角承窩螺絲 Scket Head Cap Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	2

油封規格表 Specifications of Oil Seal:

NO	1	2	3	4	5	6
名稱	防塵油封 Dust Sear	軸心油封 Rod Seal	O型環 O Ring	O型環 O Ring	耐磨片 Wear Ring	活塞油封 Piston Seal
材質	PU	PU	NBR	NBR	PTFE	PU
數量	1	1	2	1	1	2
內徑	mm	mm				mm
	A B	A B				φ, φ.-
φ40	20-28-6 25-33-6	20-28-5 25-33-5	G-35	P-12	40-2.5	40-30-6
φ50	25-33-6 30-38-6.5	25-33-5 30-40-6	G-45	P-16	50-2.5	50-40-6
φ63	30-38-6.5 35-43-6.5	30-40-6 35-45-6	G-58	P-18	63-2.5	63-53-6
φ70	35-43-6.5 40-48-6.5	35-45-6 40-50-6	G-65	P-22	70-2.5	70-60-6
φ80	40-48-6.5 45-53-6.5	40-50-6 45-55-6	G-75	P-25	80-2.5	80-70-6
φ90	45-53-6.5 50-58-6.5	45-55-6 50-60-6	G-85	G-30	90-2.5	90-80-6
φ100	50-58-6.5 60-68-6.5	50-60-6 60-70-6	G-95	G-35	100-2.5	100-85-9
φ125	60-68-6.5 70-80-8	60-70-6 70-80-6	G-125	G-45	125-2.5	125-112-9
φ150	70-80-8 90-100-8	70-80-6 90-105-9	G-145	G-55	150-2.5	150-136-9

HC2系列油壓缸 HC2 Series Hydraulic Cylinders

70/140kgf/cm² JIS 規格基準/ JIS Basic Standard Hyd. Cylinders

油慶公司之HC2形標準油壓缸,是依據JIS B8354規格的油壓缸,使用於一般產業機械及工作機械上,廣泛用途之油壓缸,而且製造多種固定座形式,特別是因為將緩衝構造加以改良,得到沒有衝擊樣而緩慢停止之特性 -

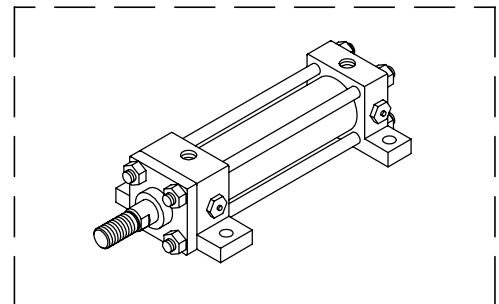
The HC2 standard hyd cylinders which manufactured accord to JIS B 8354 specifications and can be employed in general production machinery & machine tools. Wide applications, Since, there are being with much mounting styles Especially those series hyd cylinders have reformed the cushioning structure so that, there are being with no impulse and slowly stopped features.

- * 有多樣的固定座形式
- * 有低速性優良的高精度動作
- * 有緩慢順滑之緩衝效果

- * There are being with much mounting styles.
- * There are being with high precision at low speed output rating.
- * There is moved slowly,slide smoothly and also being with cushioning effectness.

規範 Specifications

項目 Item	型式 Model	HC2 70	HC2 140
缸管內徑 Cylinder Bore mm		ø40, ø50, ø63, ø80 ø100, ø125, ø150	
固定座形式 Mounting		LA, LB, FA, FB, FC, FD, CA, CA, SD, TA, TC,	
※ 1 使用壓力 Operating Pressure		70	140
最高使用壓力 Max.Operating Pressure kgf/cm ²	後蓋端內壓 Intensify press.	90	180
	前蓋端內壓 Rod Side	135	180
	活塞桿 徑記號 Rod Type	B 110	C 140
最低作動壓力 Min Operating Pressure		3kgf/cm ² 以下 Less than 3 kgf/cm ²	
最高使用速度 Max. Operating Speed mm/sec	缸管內徑 Cylinder Bore	40~63	400
		80~125	300
		140~150	200
最低使用速度 Min Operating Speed		8	
※ 2 最大衝程 Max. Stroke mm	缸管內徑 Cylinder Bore	40, 50	1200
		63, 80	1600
		100~150	2000
衝程之容許差 Tolerance of Stroke		JIS B 8354 A級 Refer to Righ Table	
活塞桿前端螺紋精度 Accuracy of Threading at Rod End		JIS B 0211-6g(2級)	
周圍溫度範圍 Range of Ambient Temperature		-10~+80	



- ※1.最高使用壓力是指包含瞬間上昇之衝壓,而且強度上可以使用之最高壓力而言 -
The max. operating pressure which means the instantaneous increased pressure and the intensity is indicated the max. operating pressure.

- ※2.最大衝程是依彎曲強度低值而求得 - 彎曲強度限制衝程;參考(DRAW)
The max. stroke is derived from the lowest value of bending strength refer the max.stroke for which the cylinder rod will be bended.and refer to (DRAW)

* 衝程之容許差

Tolerance of Stroke

衝程 Stroke mm	容許差 Tolerance mm
~100	+0.8
100~250	+1.0
250~630	+1.25
630~1000	+1.4
1000~1600	+1.6
1600~	+1.8

依公式計算出大概重量
基本重量及加算重量其數值,因記載於各固定座形式之外觀尺寸圖上,所以可在各固定座形式之外觀尺寸圖上計算

Estimated weight calculating :

The basic weight & added weight value which be recorded on the related fig and against to mountings. since. those can be calculated from mountings dimensions.

HC2

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*訂購內容索引 Ordering Index :

1	2	3	4	5	6	7	8	9	10	11	12	13
140	HC1	LA	125	B	100	B	A	B	D	E		V
140	HC1R	LA	125	B	100	B	A	B	D	E	R	V
1	使用壓力 Operating Pressure 70 /140 Kgf/cm ²											
2	HC2 系列 HC1R— 感應開關(間接) HC1D— 雙軸心 HC1 Series HC1R— Sensor HC1D— Double rod											
3	固定座形式 SD, CA, CB , FA, FB, FC, FD, TA, TC, LA, LB Mounting											
4	缸管內徑 ,mm $\phi 40, \phi 50, \phi 63, \phi 70, \phi 80, \phi 90, \phi 100, \phi 125, \phi 150$ Cylinder Bore, mm											
5	活塞桿徑 A, B 參考(技術參數DRAW) Rod Dia A, B RodRefer Technical DRAW											
6	需要之行程, mm (最大容許行程) stroke, mm Max. Permissible											
7	緩衝閥型式: B—前後蓋緩衝 N—沒有緩衝 R—前蓋端緩衝 H—後蓋端緩衝 Location of Cushioning: B— The head and cap with cushioning N— No cushioning 											

*固定座形式 Mounting :

記號 Symbol	名 稱 Description	略 圖 Configuration	記號 Symbol	名 稱 Description	略 圖 Configuration
FC	前蓋端正方形法蘭形 Square flange at cylinder head		FD	後蓋端正方形法蘭形 Square flange at cylinder cap	
LA	軸直角方向腳架形 Foot mounting side luge		CB	山形座(2山形) clevis fork at cylinder cap	
LB	軸方向腳架形 Foot mounting side end angles		TA	前蓋附支撐形 Trunnion mounting at cylinder head	
FA	前蓋端長方形法蘭形 Rectangular flange at cylinder head		TC	中間固定支撐形 Centre Trunnion mounting	
FB	後蓋端長方形法蘭形 Rectangular flange at cylinder cap		SD	基本形 Basic type	
CA	山形座(1山形) Plaie clevis at cylinder cap				

HC2

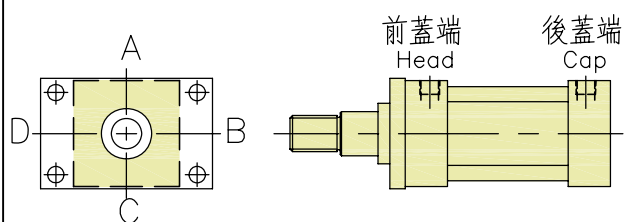
70/140kgf/cm² HC2

形標準油壓缸使用上注意事項

70/140kgf/cm² HC2 Care in Application

* 出入口緩衝調整器及排氣孔的方向

Port Cushioning & Air Vent Positions



各個之方向是從前蓋端看順時針方向依 A B C D 排成標準之方向是出入口在 A 緩衝調整器在 B 排氣孔在 D

註:出入口和緩衝調整器不可在同一方向 -

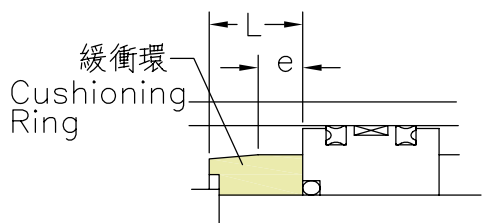
Each position is toward the cylinder head and A B C D turn in clockwise so that the standard port position at A and the cushioning regulator at B air vent position will be at D as fig shown.

Remarks : The port position & cushioning regulator will not at same side.

* 緩衝 Cushioning:

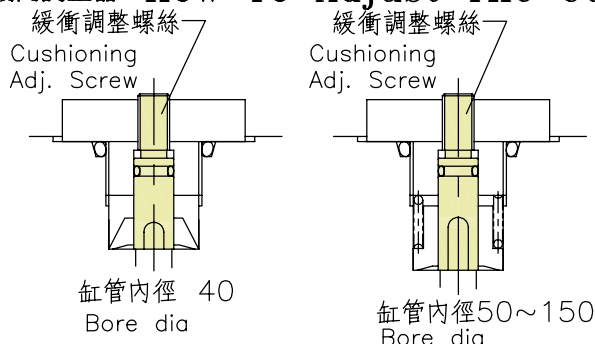
因為緩衝環是經過特殊之節流加工，使得有緩慢順滑之緩衝效果 - 如在各端面距離3mm左右停止，其緩衝效果會很不良，請要注意 - 然而，緩衝環平行處(e尺寸)如要較長可以製造，請再詳細商談 -

Because the cushioning ring is processed by special throttle processing so that, there are being with moved slowly & smoothly effectness if those stopped for from end about 3mm and will be formed illness Since, if want more longer cushioning ring(e) which must be consult us.



缸管內徑 Bore Dia.	緩衝環之長度(L)	平行處之長度(e)
32,40	20	10
50,63	20	8
80~160	25	8

* 緩衝調整器 How To Adjust The Cushioning Regulator:



* 請配合機械作動而調整 -

During making adjusting which must be coupled with mechanical action.

* 順時針方向旋轉調整螺絲的話，緩衝時間就較長 -

The cushioning time will be prolonged when turn the adjusting screw in clock-wise.

* 調整螺絲正逆旋轉都會停止(不用擔心調整螺絲掉落) -

The adjusting screw will be stopped when turn in clock wise or counter clock wise But never mind the adjusting screw dropped

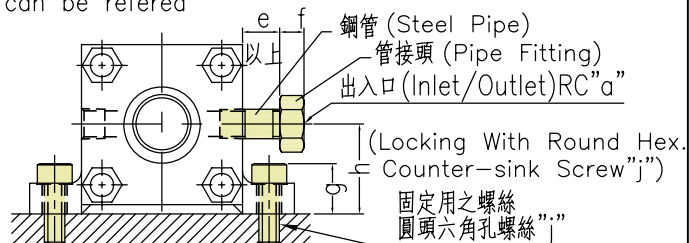
* 固定座形式 Mounting :

* 軸直角腳架形(LA形)配管上需注意:

Remarks during LA mounting.

LA形缸管內徑40~100出入口方向使用在B(右)或D(左)其配管接頭會干涉到油壓缸固定用螺絲而無法配管,在使用這種形式時,請參考下圖之樣式

The LA bore dia : 40 ~100 and the port position for which at B(right)or D(left)since,the pipe fitting will be disturbed them outting screw so that the following fig can be refered



缸管內徑 Bore dia	a	e	f	g	h	j
40	3/8	27	30	24	37.5	M10
50	1/2	33	40	29	45	M12
63	1/2	36	40	35	50	M16
80	3/4	40	42	41	60	M16
100	3/4	46	42	47	71	M20

如果使用鎖入形配管接頭時,請參照上圖選擇長形之種類 -

If employed the inserted pipe fitting, which can be refered above fig.

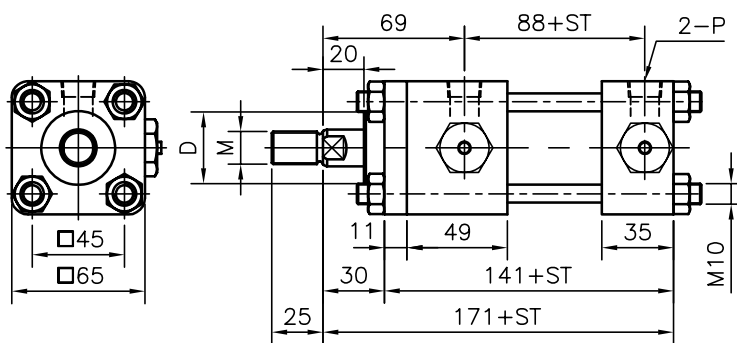
	推出 Extend	拉入 Retract
FA		
FB		
LA		
LB		
	根據推出或拉入出力大的一方為基準選擇下列任何二種固定座同樣大時,請洽談為宜 Refer the max. output anyhow, extend or retract please select two mountings in right configurations if want same for extend & retract in necessary please consult with us.	
CA	衝程如操超過1000mm以上時請不要橫向安裝 IF the stroke is over than 1000mm for which mounting crossly is prohibited	
CB		

HC2- $\phi 40$

7/14MPa用

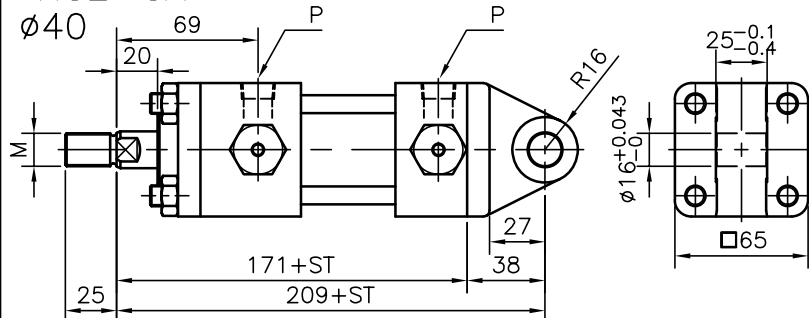
SD

TYPE	ROD	M	D	P
A	$\phi 18$	M16*P1.5	$\phi 36$	Rc3/8"
B	$\phi 22.4$	M20*P1.5	$\phi 40$	G 3/8"

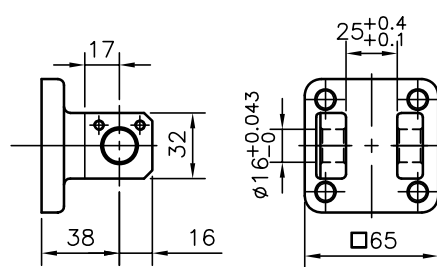


HC2-CA

$\phi 40$

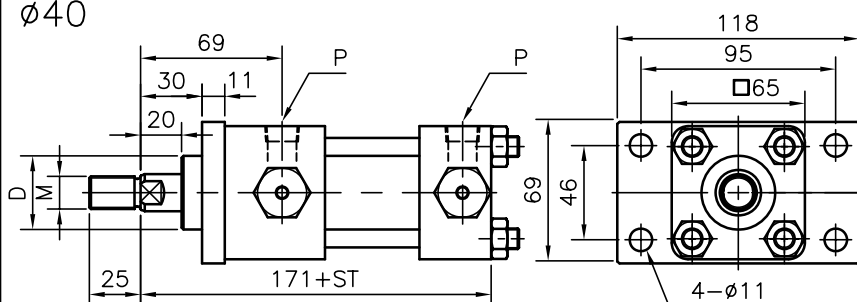


CB

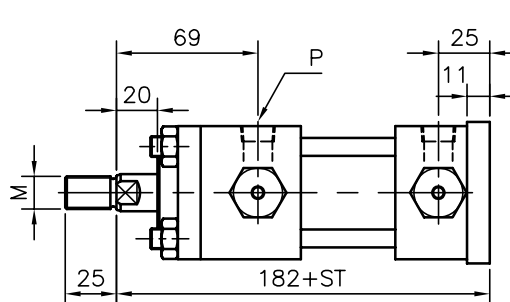


HC2-FA

$\phi 40$

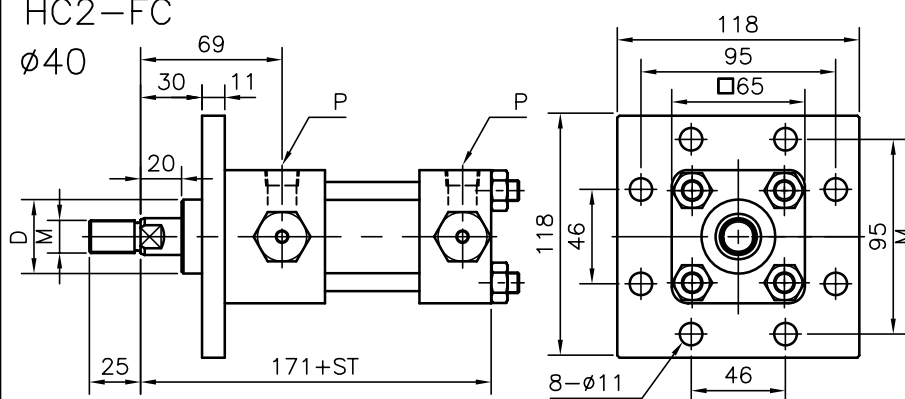


FB

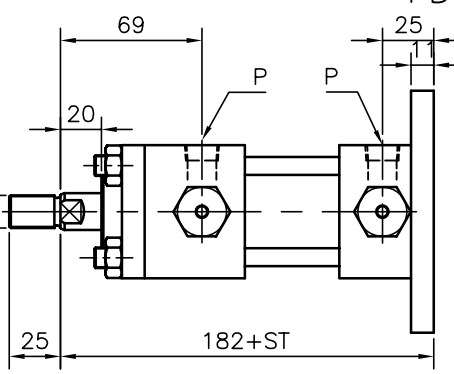


HC2-FC

$\phi 40$

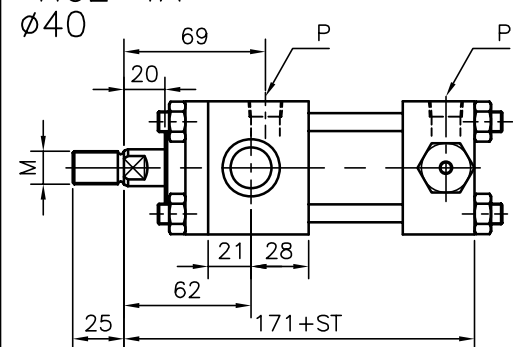


FD

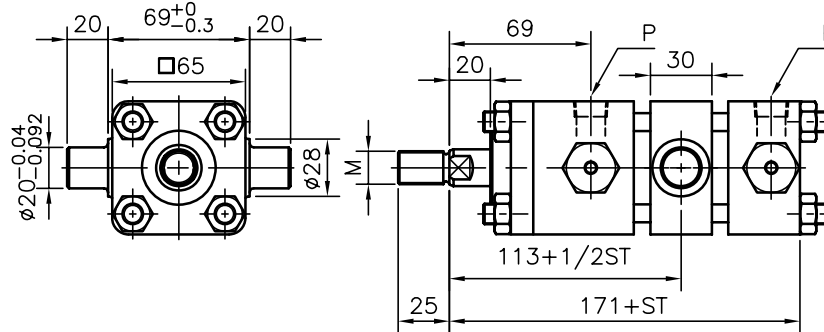


HC2-TA

$\phi 40$



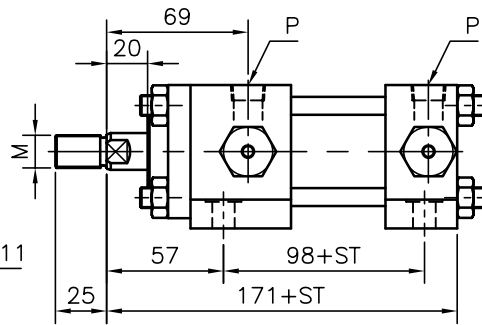
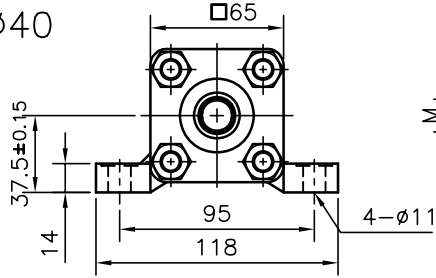
TC



HC2- $\phi 40$

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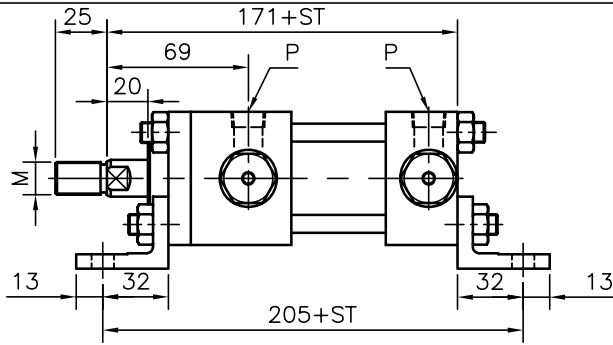
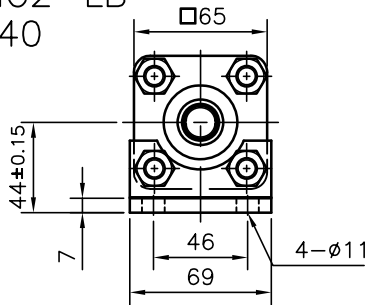
HC2-LA
 $\phi 40$



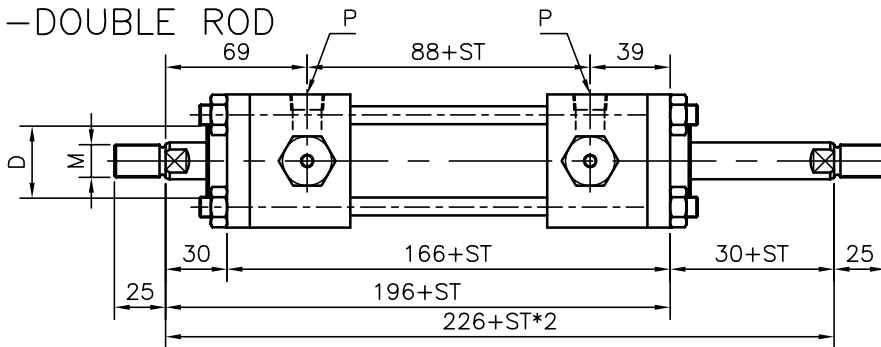
TYPE	ROD	M	D
A	$\phi 18$	M16*P1.5	$\phi 36$
B	$\phi 22.4$	M20*P1.5	$\phi 40$

P
Rc3/8"
G 3/8"

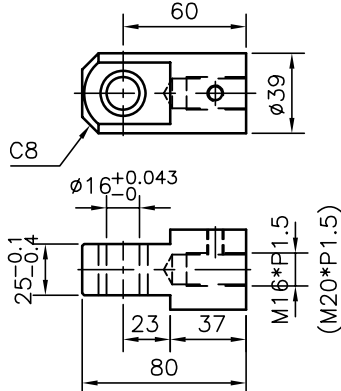
HC2-LB
 $\phi 40$



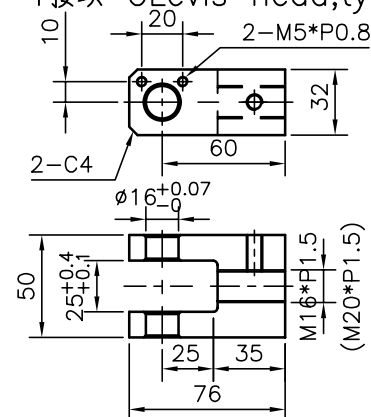
HC2-DOUBLE ROD
 $\phi 40$



HC2- $\phi 40$ -I接頭 Clevis head, type I



HC2- $\phi 40$ -Y接頭 Clevis head, type Y



油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm
weight= W1 + (W2 * ST)
= 4.4 + (0.9 * 2)
= 6.2 kg

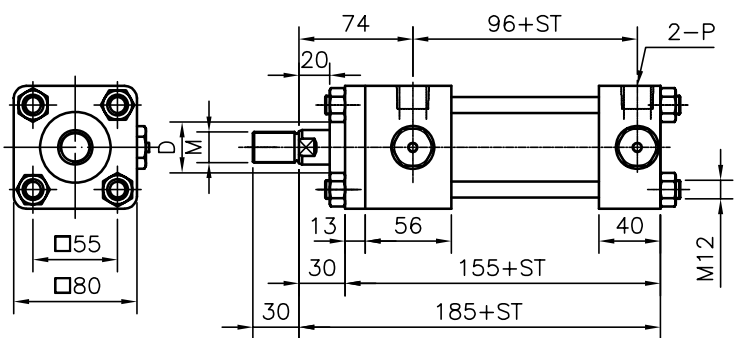
	SD	FA	FB	FC	FD	CA	CB	LA	LB	TA	TC
ROD $\phi 18$ =W1 (kg)	4.1	4.4	4.7	4.9	5.2	4.7	4.8	4.5	4.6	4.2	4.7
ROD $\phi 22.4$ =W1 (kg)	4.2	4.5	4.8	5.0	5.3	4.8	4.9	4.6	4.7	4.3	4.8
W2 (kg/100mm)	ROD $\phi 18$ =0.9					ROD $\phi 22.4$ =1.0					

HC2- $\phi 50$

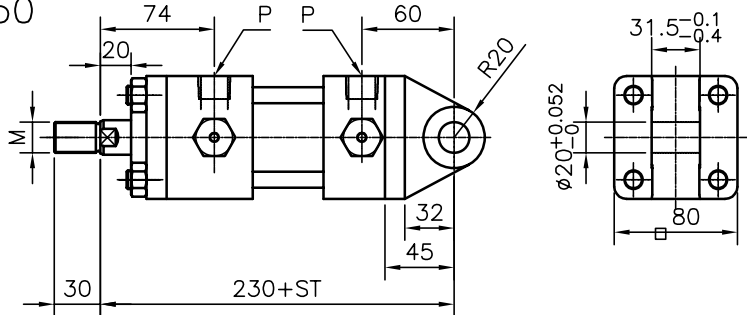
7/14MPa用

SD

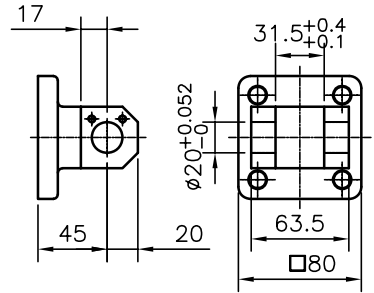
TYPE	ROD	M	D	P
A	$\phi 22.4$	M20*P1.5	$\phi 40$	Rc1/2"
B	$\phi 28$	M24*P1.5	$\phi 46$	G 1/2"



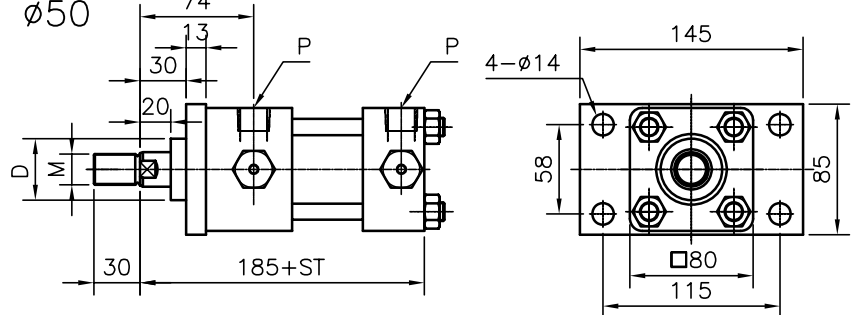
HC2-CA $\phi 50$



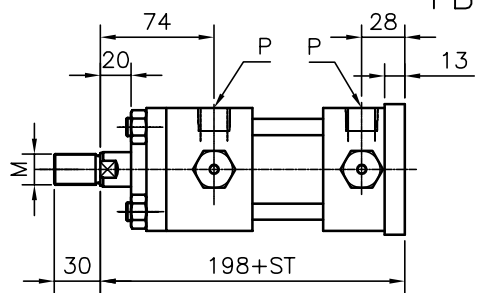
CB



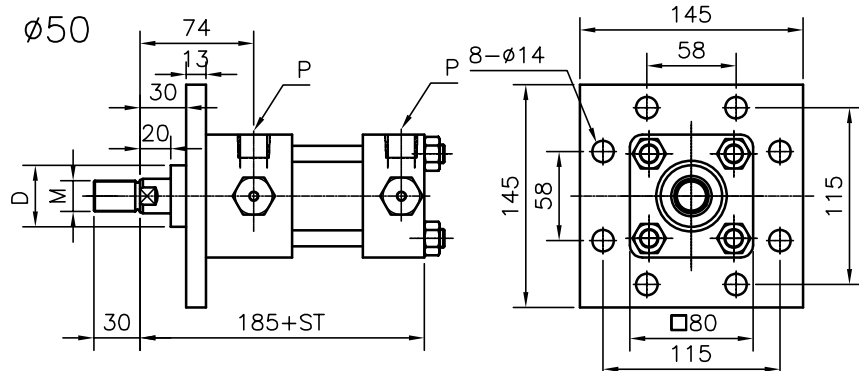
HC2-FA $\phi 50$



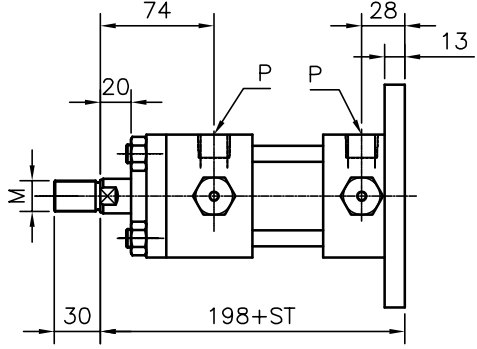
FB



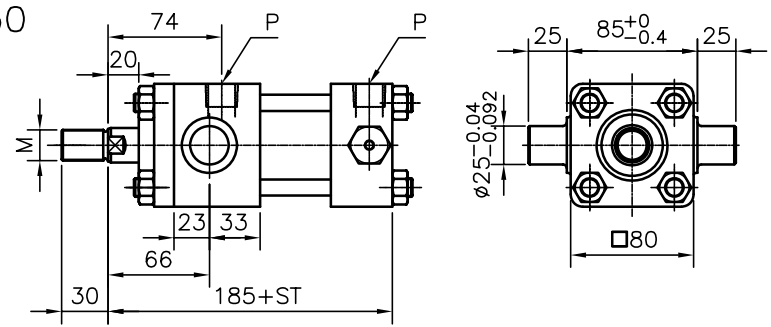
HC2-FC $\phi 50$



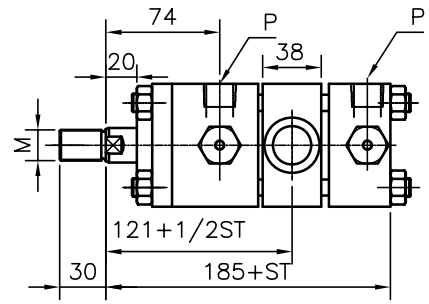
FD



HC2-TA $\phi 50$



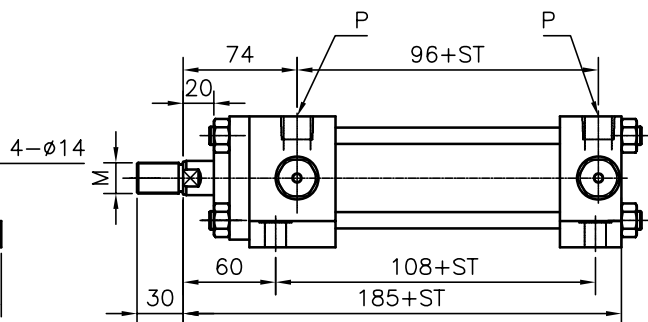
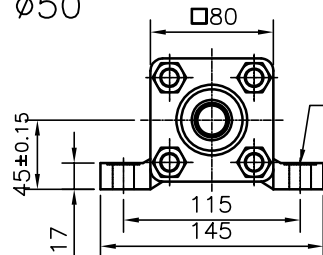
TC



HC2- $\phi 50$

7/14MPa用

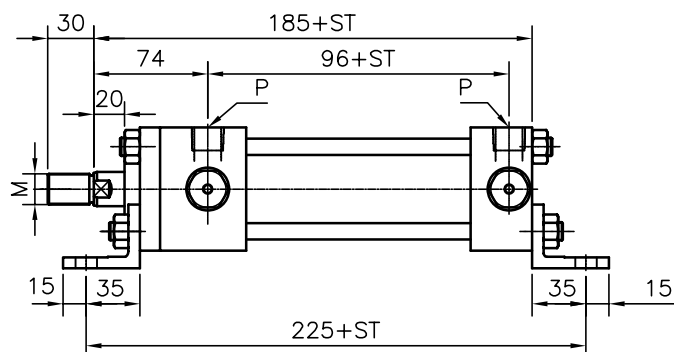
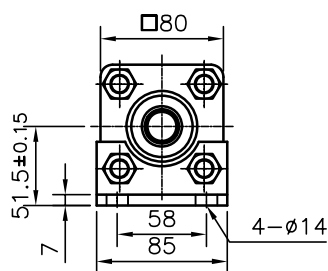
HC2-LA
 $\phi 50$



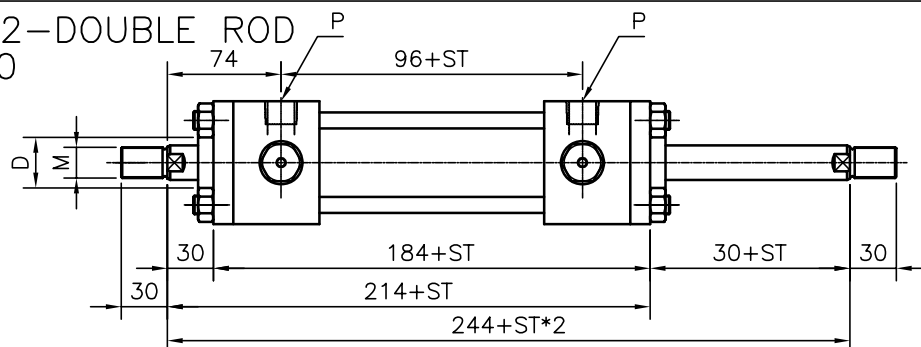
TYPE	ROD	M	D
A	$\phi 22.4$	M20*P1.5	$\phi 40$
B	$\phi 28$	M24*P1.5	$\phi 46$

P
Rc1/2" G 1/2"

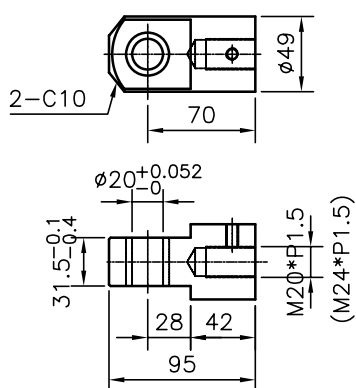
HC2-LB
 $\phi 50$



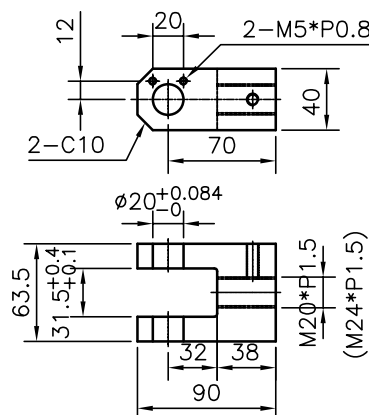
HC2-DOUBLE ROD
 $\phi 50$



HC2- $\phi 50$ -I接頭 CLevis head,type I



HC2- $\phi 50$ -Y接頭 CLevis head,type Y



油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm

weight= W1 + (W2 * ST)

= 7.2 + (1.2 *2)

= 9.6 kg

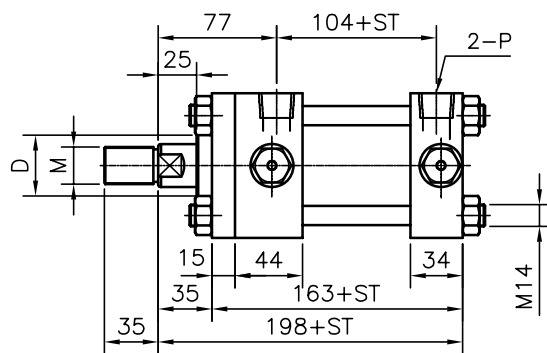
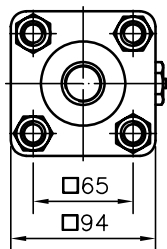
	SD	FA	FB	FC	FD	CA	CB	LA	LB	TA	TC
ROD $\phi 22.4$ =W1 (kg)	6.7	7.2	7.8	8.0	8.6	7.7	7.9	7.5	7.5	6.8	7.7
ROD $\phi 28$ =W1 (kg)	6.6	7.3	7.9	8.1	8.7	7.8	8.0	7.6	7.6	6.9	7.8
W2 (kg/100mm)	ROD $\phi 22.4$ =1.2					ROD $\phi 28$ =1.3					

HC2- $\phi 63$

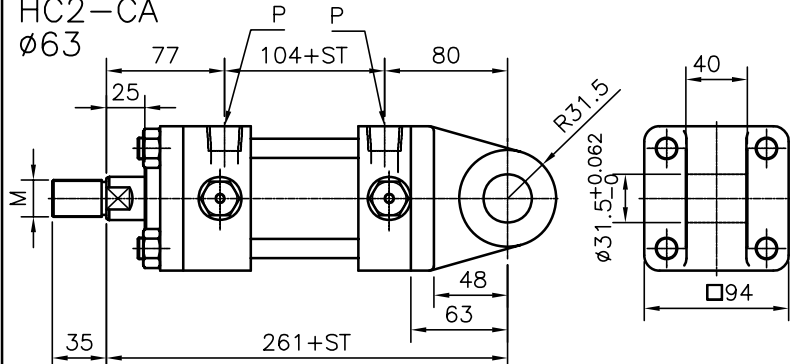
7/14MPa用

SD

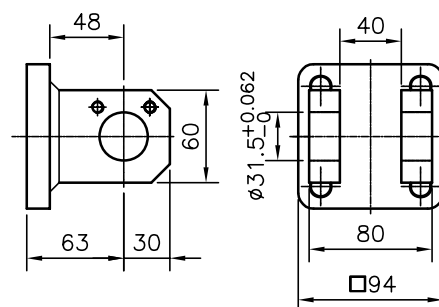
TYPE	ROD	M	D	P
A	$\phi 28$	M24*P1.5	$\phi 46$	Rc1/2"
B	$\phi 35.5$	M30*P1.5	$\phi 55$	G 1/2"



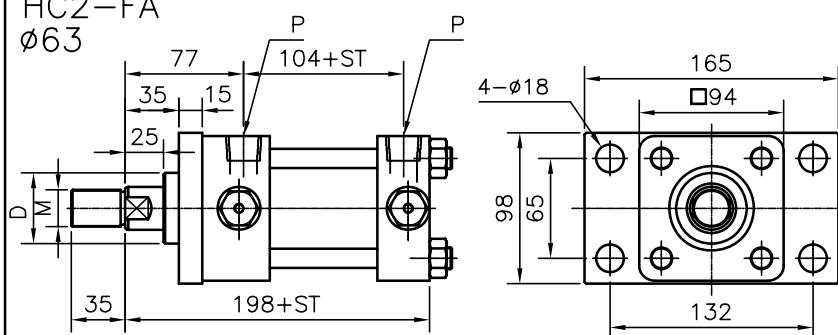
HC2-CA
 $\phi 63$



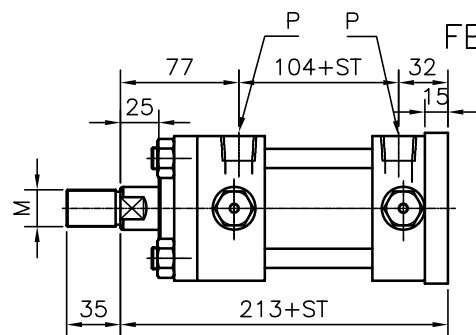
CB



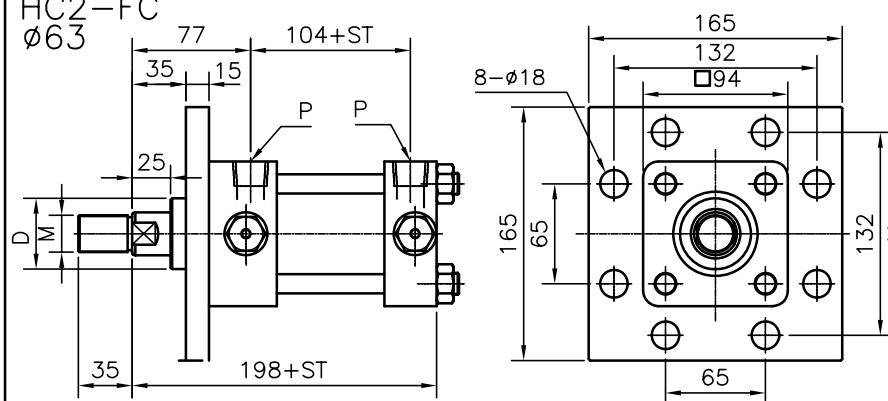
HC2-FA
 $\phi 63$



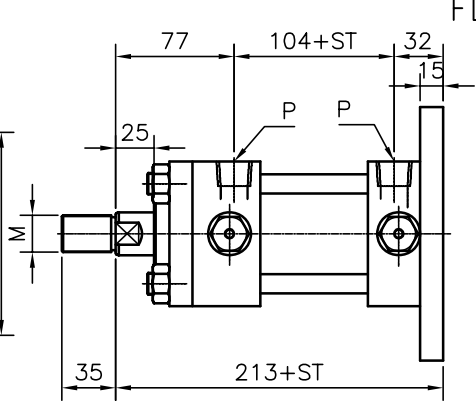
FB



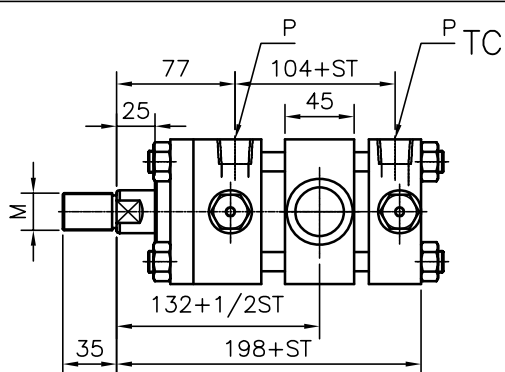
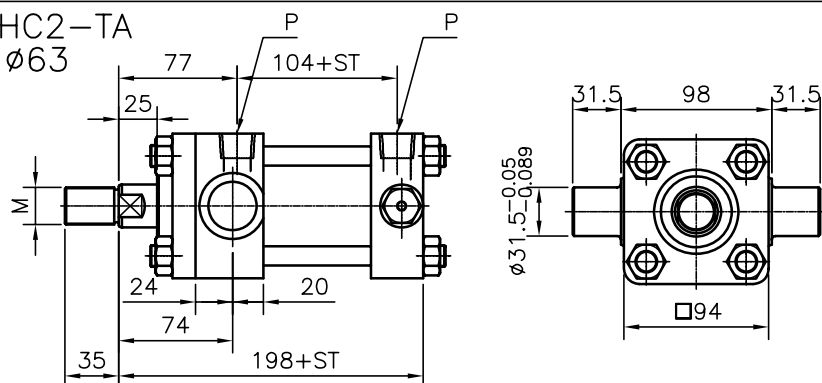
HC2-FC
 $\phi 63$



FD



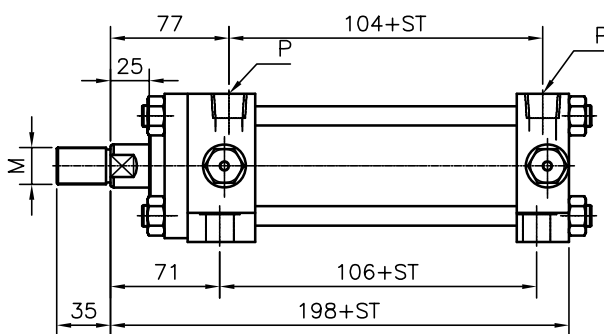
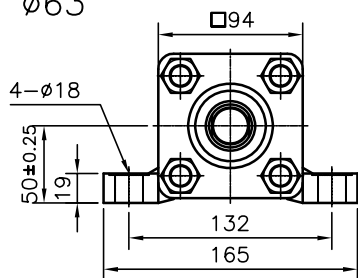
HC2-TA
 $\phi 63$



HC2-ø63

7/14MPa用

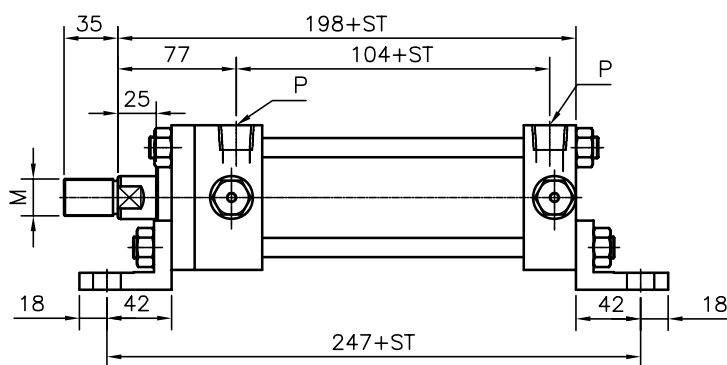
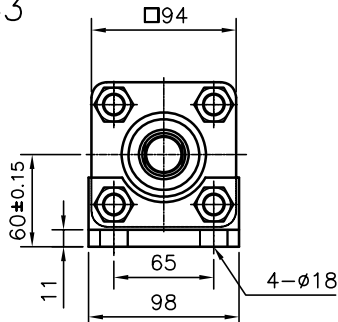
HC2-LA ø63



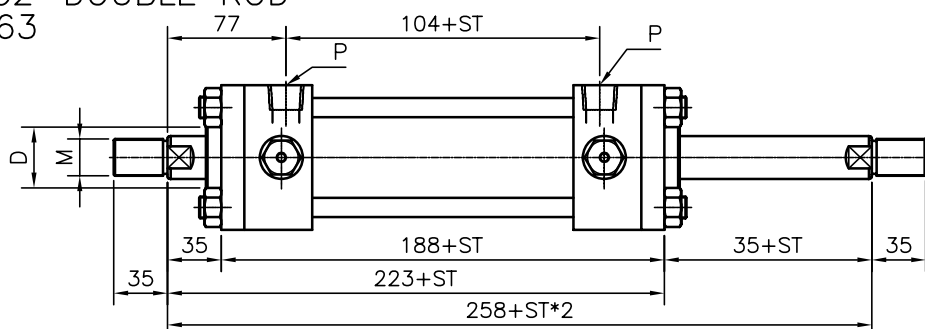
TYPE	ROD	M	D
A	ø28	M24*P1.5	ø46
B	ø35.5	M30*P1.5	ø55

P
Rc 1/2"
G 1/2"

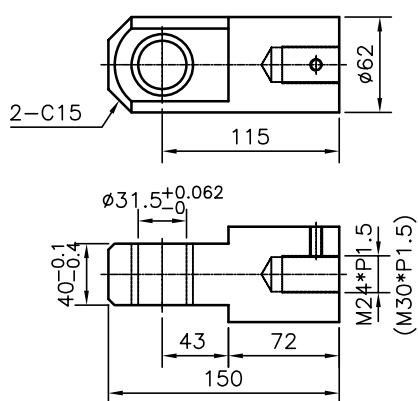
HC2-LB ø63



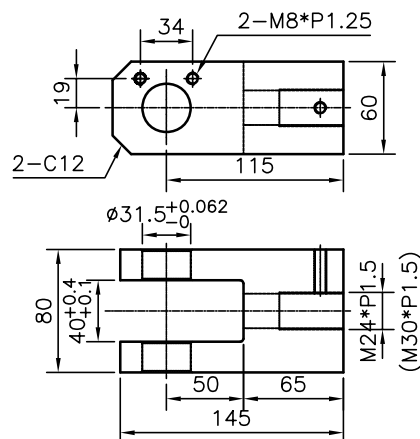
HC2-DOUBLE ROD ø63



HC2-ø63-I接頭 CLevis head,type I



HC2-ø63-Y接頭 CLevis head,type Y



油壓缸大概重量計算

Estimted weight of hyd.

EX. : FA , ST=200mm

$$\text{weight} = W1 + (W2 * ST)$$

$$= 10.5 + (1.6 * 2)$$

$$= 13.7 \text{ kg}$$

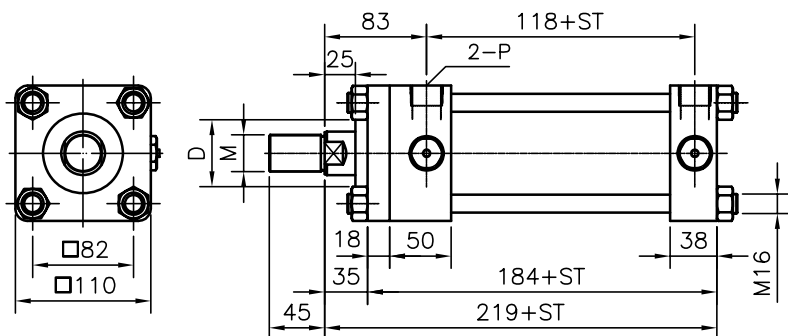
	SD	FA	FB	FC	FD	CA	CB	LA	LB	TA	TC
RODø28=W1 (kg)	9.8	10.5	11.6	11.7	12.8	12.1	12.8	10.8	11.5	10.3	11.7
RODø35.5=W1 (kg)	9.9	10.6	11.7	11.8	12.9	12.1	12.8	10.9	11.6	10.4	11.8
W2 (kg/100mm)	RODø28=1.6					RODø35.5=1.9					

HC2- $\phi 80$

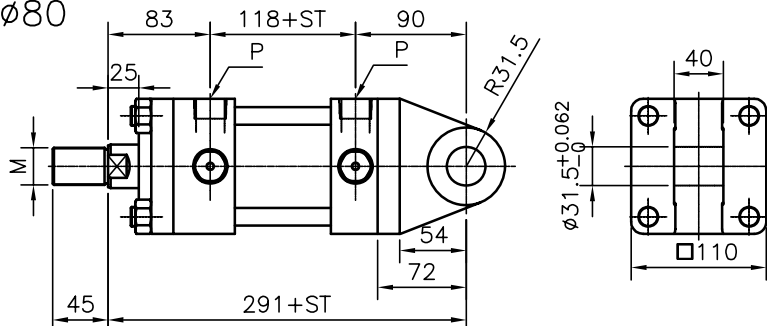
7/14MPa用

SD

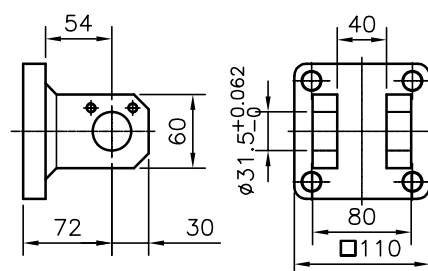
TYPE	ROD	M	D	P
A	$\phi 35.5$	M30*P1.5	$\phi 55$	Rc3/4"
B	$\phi 45$	M39*P1.5	$\phi 65$	G 3/4"



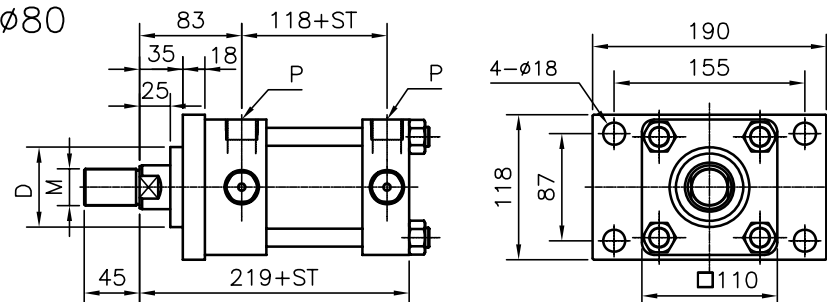
HC2-CA
 $\phi 80$



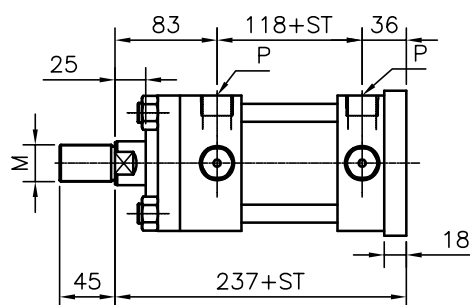
CB



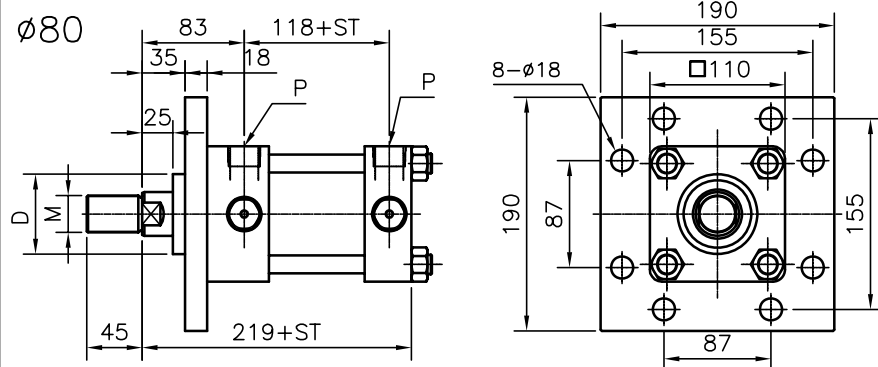
HC2-FA
 $\phi 80$



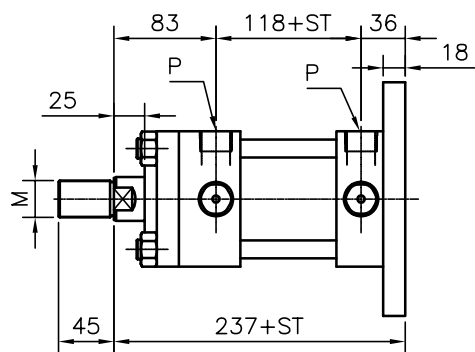
FB



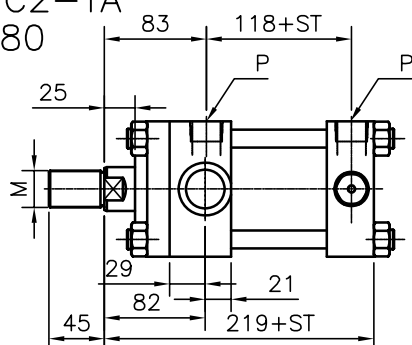
HC2-FC
 $\phi 80$



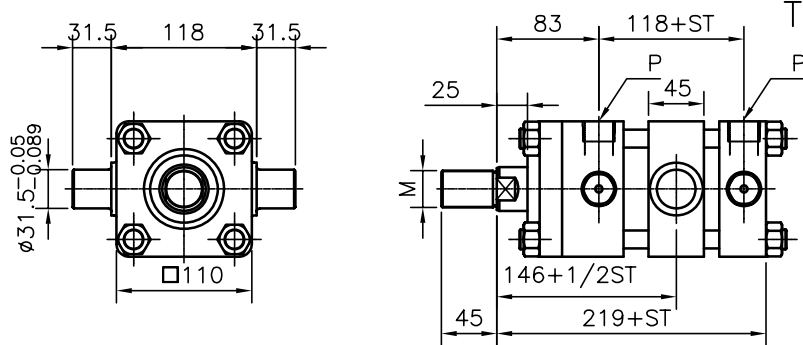
FD



HC2-TA
 $\phi 80$



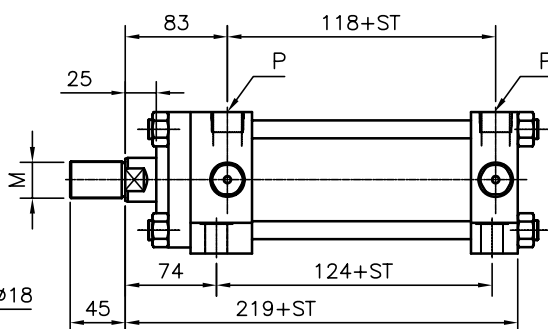
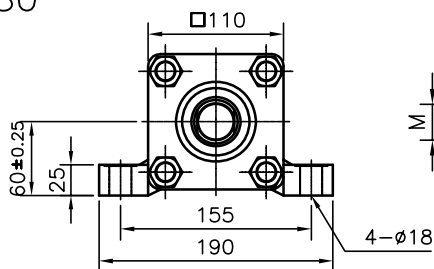
TC



HC2- $\phi 80$

7/14MPa用

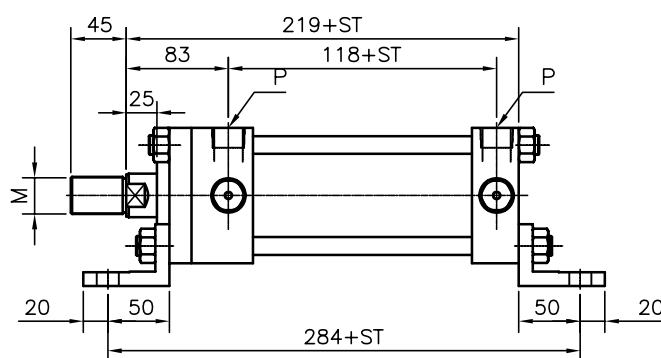
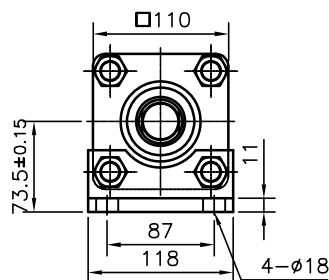
HC2-LA
 $\phi 80$



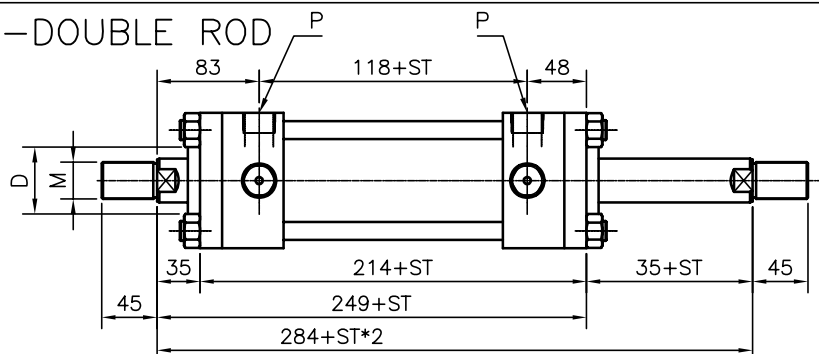
TYPE	ROD	M	D
A	$\phi 35.5$	M30*P1.5	$\phi 55$
B	$\phi 45$	M39*P1.5	$\phi 65$

P
Rc3/4"
G 3/4"

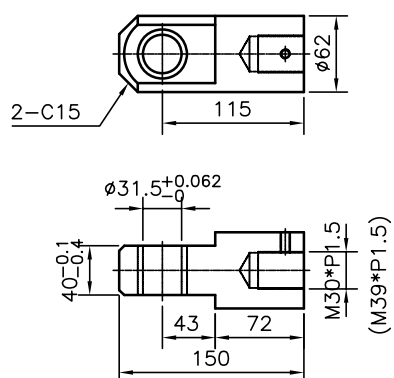
HC2-LB
 $\phi 80$



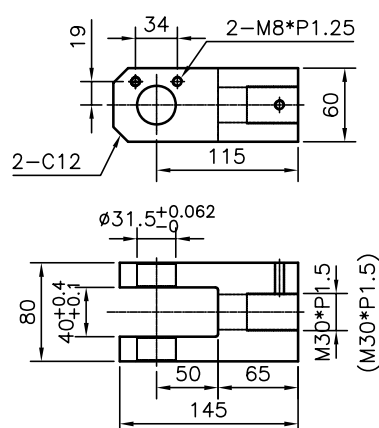
HC2-DOUBLE ROD
 $\phi 80$



HC2- $\phi 80$ -I接頭 CLevis head,type I



HC2- $\phi 80$ -Y接頭 CLevis head,type Y



油壓缸大概重量計算

Estimted weight of hyd.

EX. : FA , ST=200mm

weight= W1 + (W2 * ST)

= 16.2 + (2.4 *2)

= 21 kg

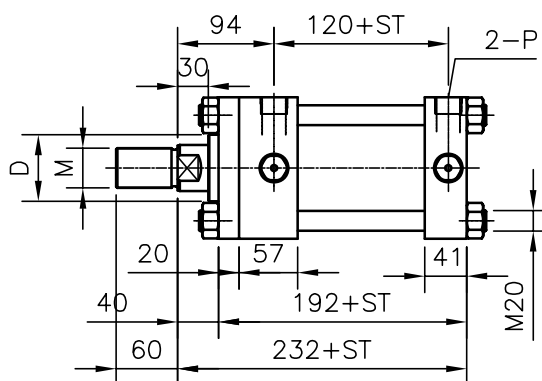
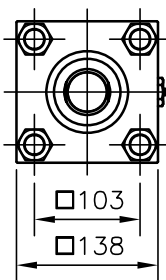
	SD	FA	FB	FC	FD	CA	CB	LA	LB	TA	TC
ROD $\phi 35.5$ =W1 (kg)	14.9	16.2	18.0	18.0	19.8	18.0	18.9	16.0	17.3	15.6	17.4
ROD $\phi 45$ =W1 (kg)	15.1	16.4	18.4	18.2	20.0	18.4	19.3	16.4	17.7	16.0	17.8
W2 (kg/100mm)	ROD $\phi 35.5$ =2.4					ROD $\phi 45$ =2.9					

HC2- $\phi 100$

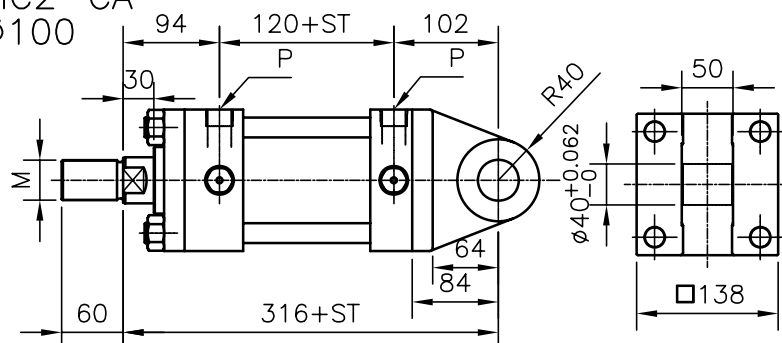
7/14MPa用

SD

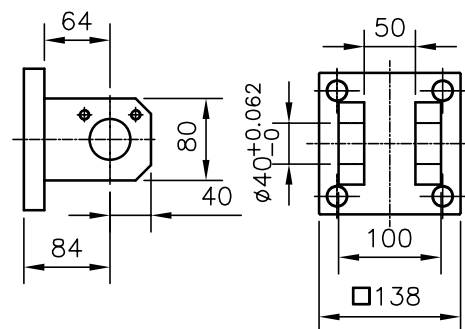
TYPE	ROD	M	D	P
A	$\phi 45$	M39*P1.5	$\phi 65$	Rc3/4"
B	$\phi 56$	M48*P1.5	$\phi 80$	G 3/4"



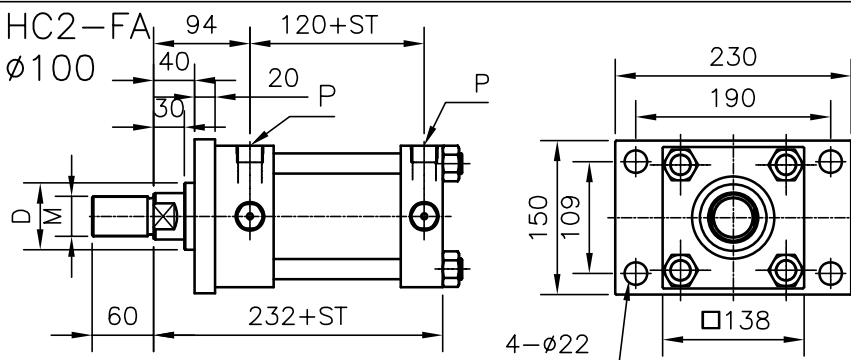
HC2-CA
 $\phi 100$



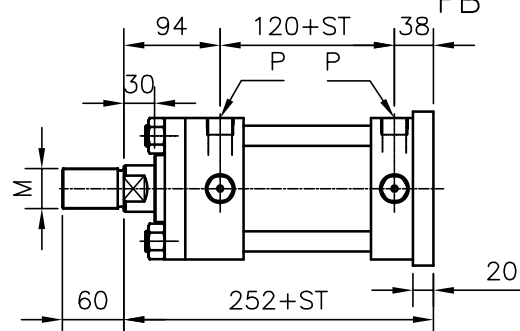
CB



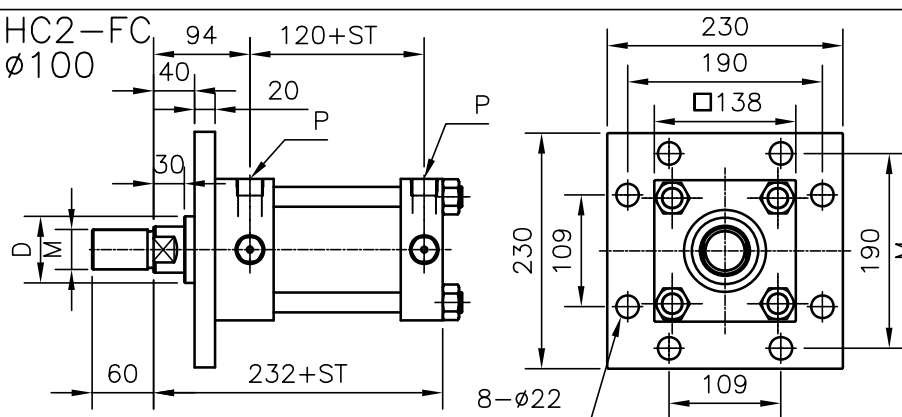
HC2-FA
 $\phi 100$



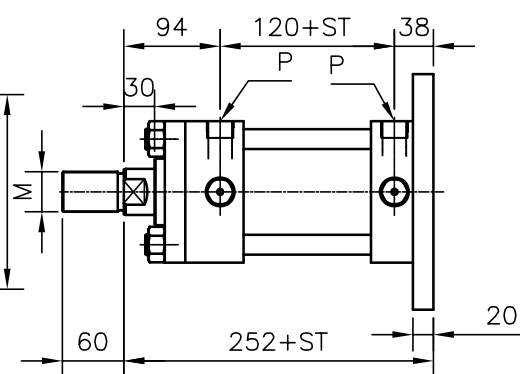
FB



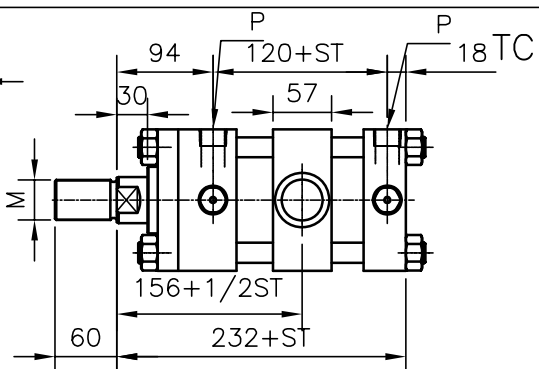
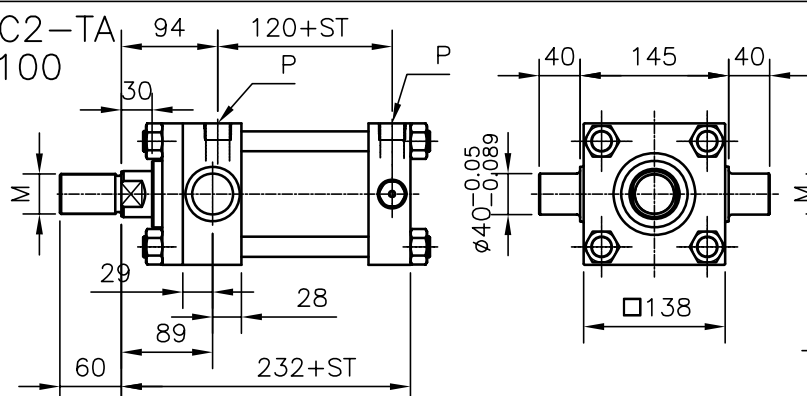
HC2-FC
 $\phi 100$



FD



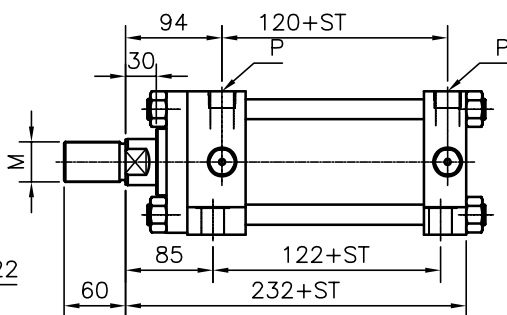
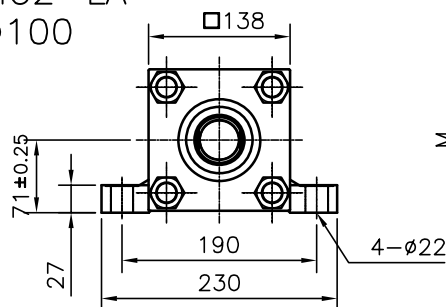
HC2-TA
 $\phi 100$



HC2- $\phi 100$

7/14MPa用

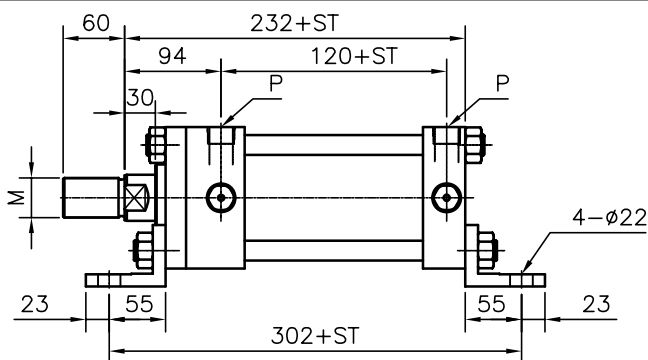
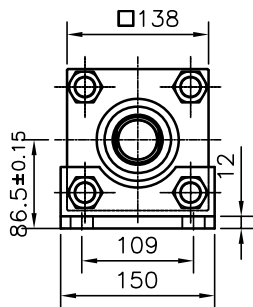
HC2-LA
 $\phi 100$



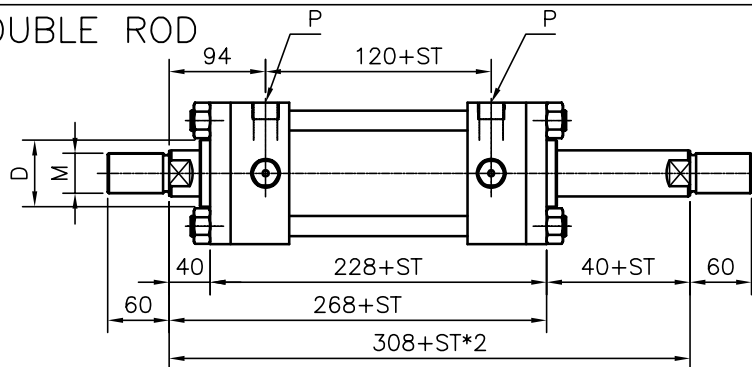
TYPE	ROD	M	D
A	$\phi 45$	M39*P1.5	$\phi 65$
B	$\phi 56$	M48*P1.5	$\phi 80$

P
Rc3/4"
G 3/4"

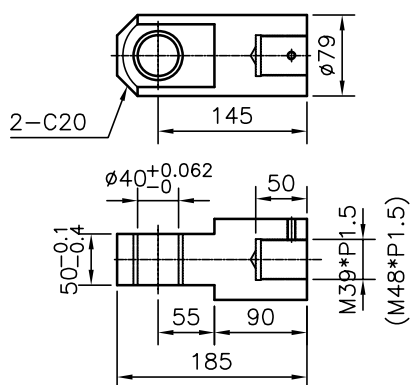
HC2-LB
 $\phi 100$



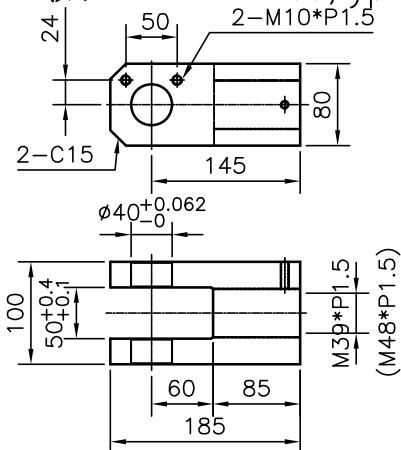
HC2-DOUBLE ROD
 $\phi 100$



HC2- $\phi 100$ -I接頭 CLevis head,type I



HC2- $\phi 100$ -Y接頭 CLevis head,type Y



油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm

weight= W1 + (W2 * ST)

= 27.3 + (3.8 *2)

= 34.9Kg

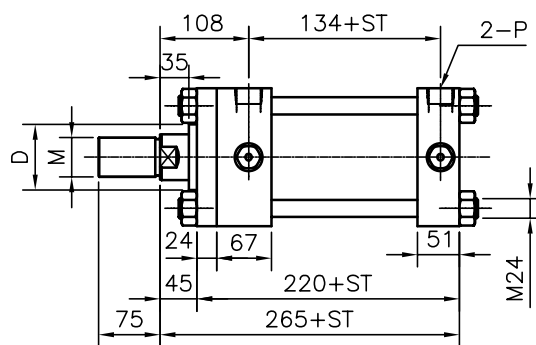
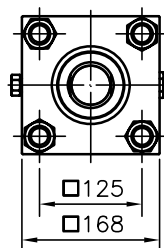
	SD	FA	FB	FC	FD	CA	CB	LA	LB	TA	TC
ROD $\phi 45$ =W1 (kg)	25.1	27.3	30.3	30.0	33.0	31.3	32.8	26.9	29.0	26.5	30.4
ROD $\phi 56$ =W1 (kg)	25.5	27.7	30.7	30.4	33.4	31.7	33.2	27.3	29.4	26.9	30.8
W2 (kg/100mm)		ROD $\phi 45$ =3.8					ROD $\phi 56$ =4.4				

HC2- $\phi 125$

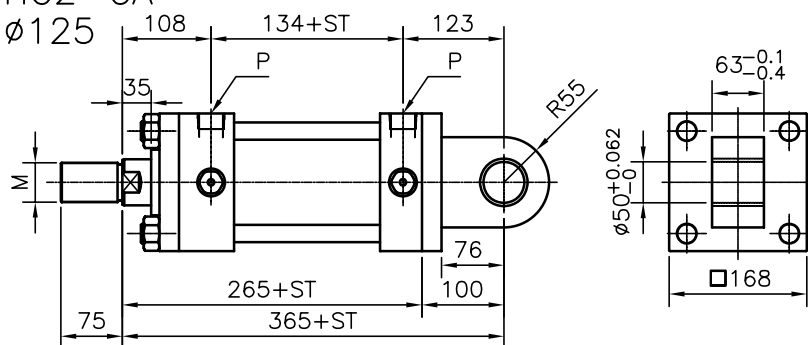
7/14MPa用

SD

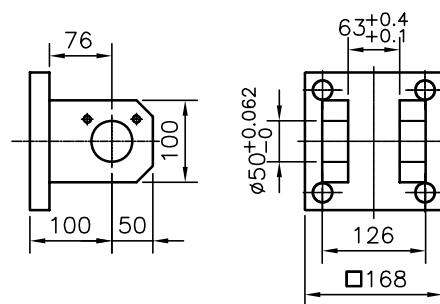
TYPE	ROD	M	D	P
A	$\phi 56$	M48*P1.5	$\phi 80$	Rc 1"
B	$\phi 70$	M64*P2.0	$\phi 95$	G 1"



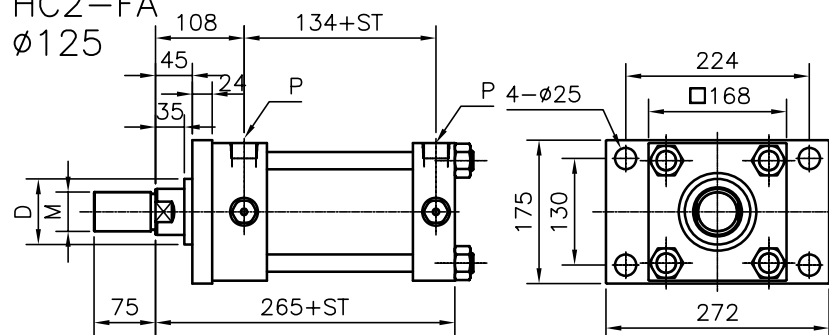
HC2-CA
 $\phi 125$



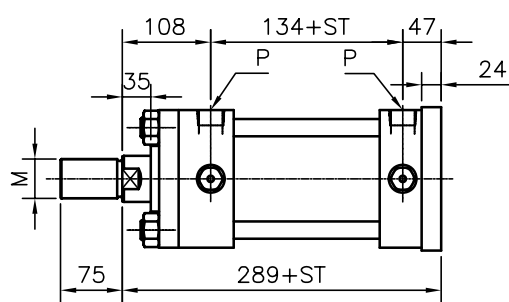
CB



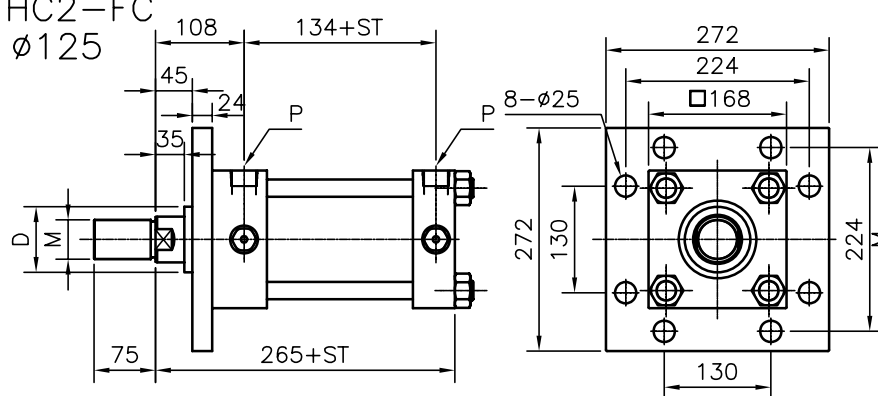
HC2-FA
 $\phi 125$



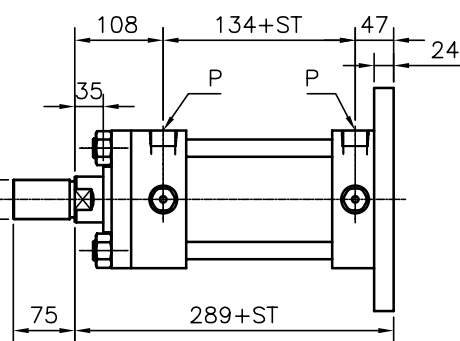
FB



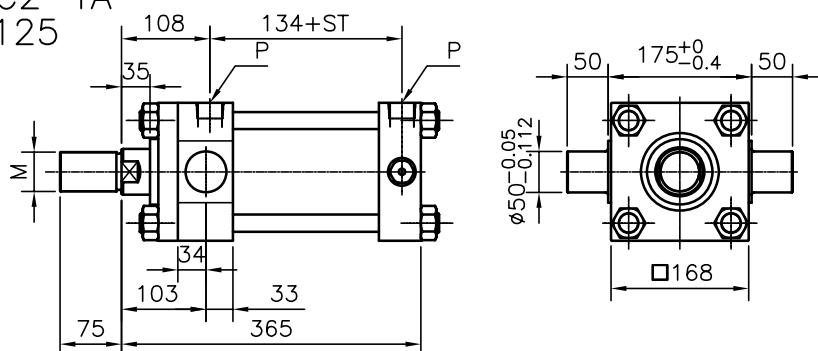
HC2-FC
 $\phi 125$



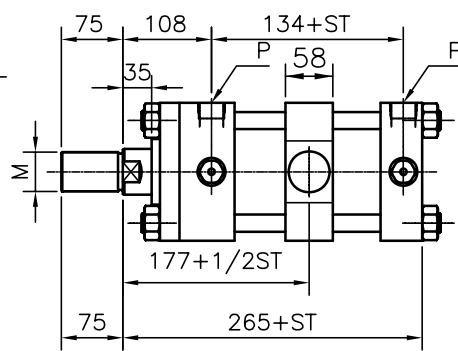
FD



HC2-TA
 $\phi 125$



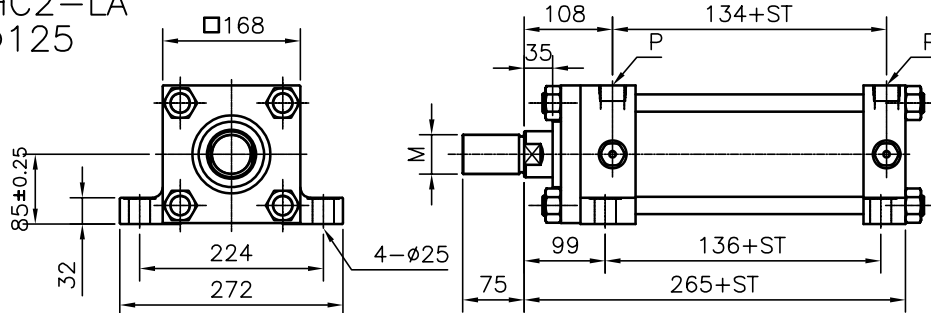
TC



HC2- $\phi 125$

7/14MPa用

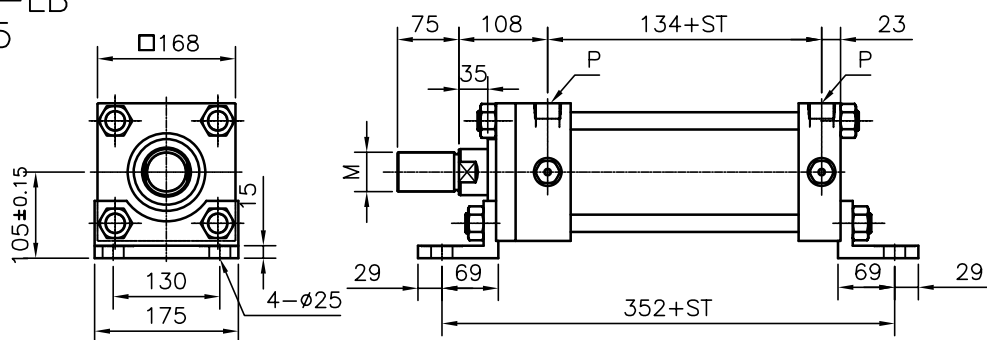
HC2-LA
 $\phi 125$



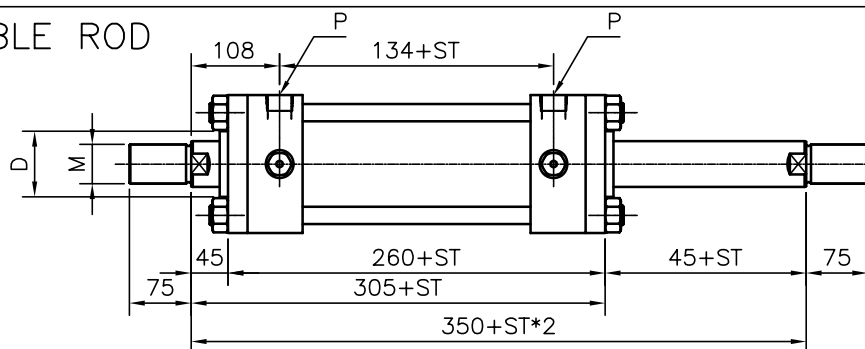
TYPE	ROD	M	D
A	$\phi 56$	M48*P1.5	$\phi 80$
B	$\phi 70$	M64*P2.0	$\phi 95$

P
Rc 1"
G 1"

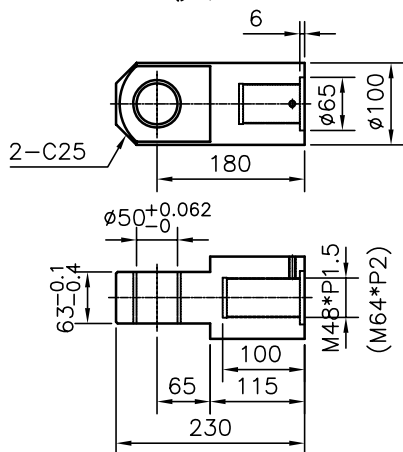
HC2-LB
 $\phi 125$



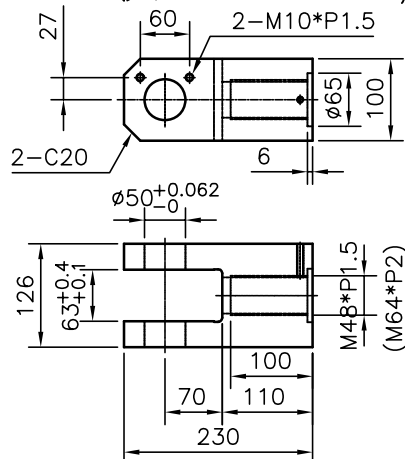
HC2-DOUBLE ROD
 $\phi 125$



HC2- $\phi 125$ -I接頭 Clevis head, type I



HC2- $\phi 125$ -Y接頭 Clevis head, type Y



油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm
weight= W1 + (W2 * ST)
= 49.7 + (6.6 * 2)
= 62.9Kg

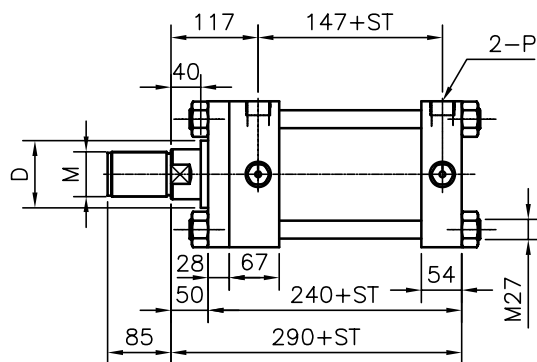
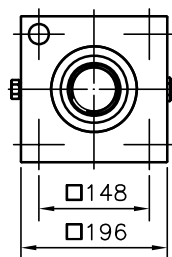
	SD	FA	FB	FC	FD	CA	CB	LA	LB	TA	TC
ROD $\phi 56$ =W1 (kg)	46.4	49.7	55.1	54.3	59.7	57.2	60.2	49.3	56.3	47.8	54.3
ROD $\phi 70$ =W1 (kg)	46.0	50.1	55.5	54.7	60.3	57.8	60.6	49.7	56.7	48.2	54.7
W2 (kg/100mm)	ROD $\phi 56$ =6.6					ROD $\phi 70$ =7.8					

HC2- $\phi 150$

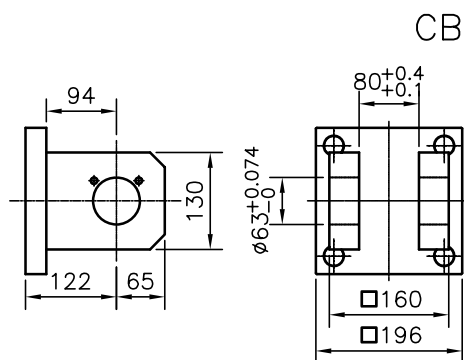
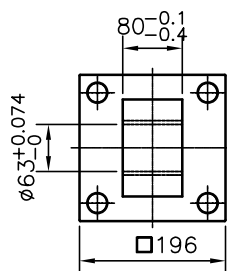
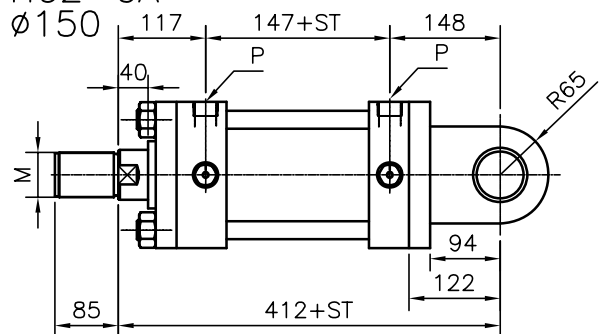
7/14MPa用

SD

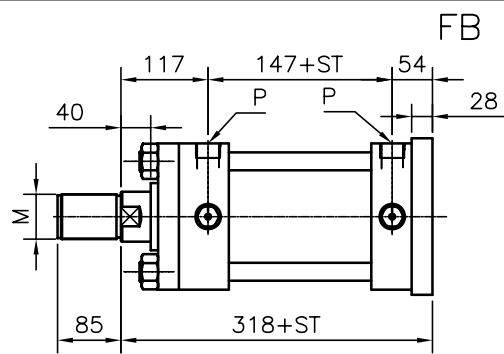
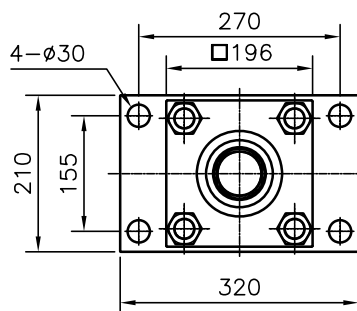
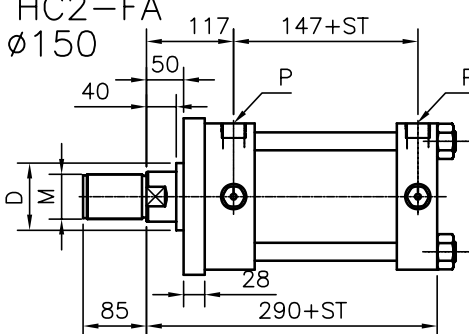
TYPE	ROD	M	D	P
A	$\phi 67$	M60*P2.0	$\phi 90$	Rc 1"
B	$\phi 85$	M76*P2.0	$\phi 110$	G 1"



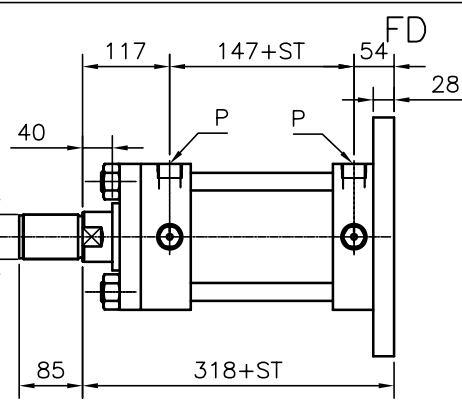
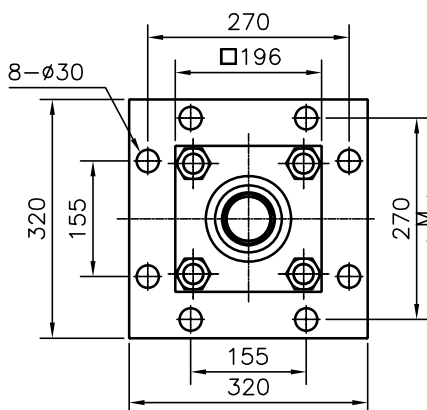
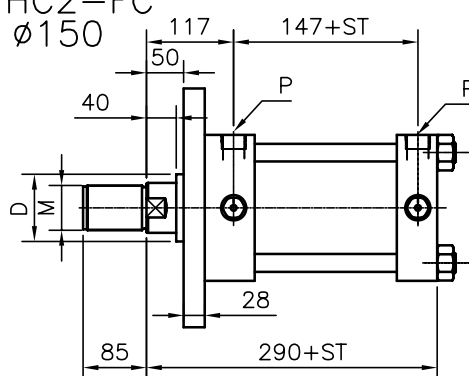
HC2-CA
 $\phi 150$



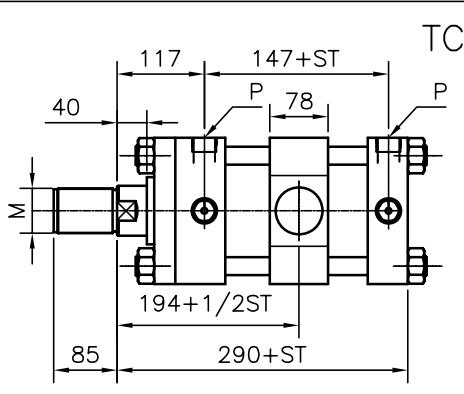
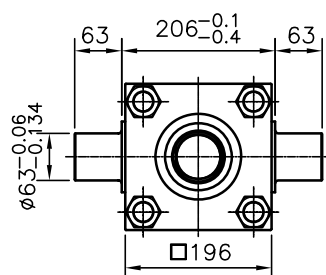
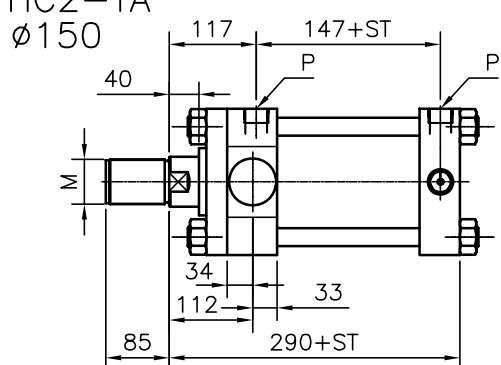
HC2-FA
 $\phi 150$



HC2-FC
 $\phi 150$



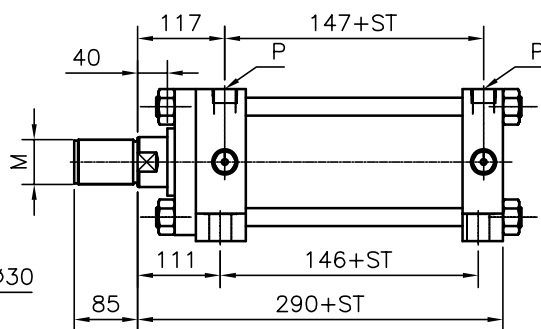
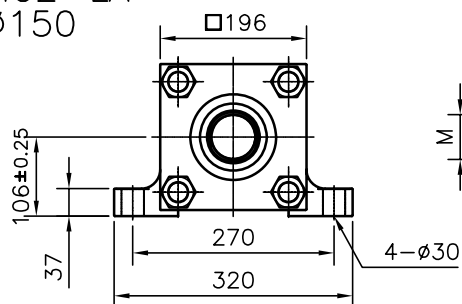
HC2-TA
 $\phi 150$



HC2-ø150

7/14MPa用

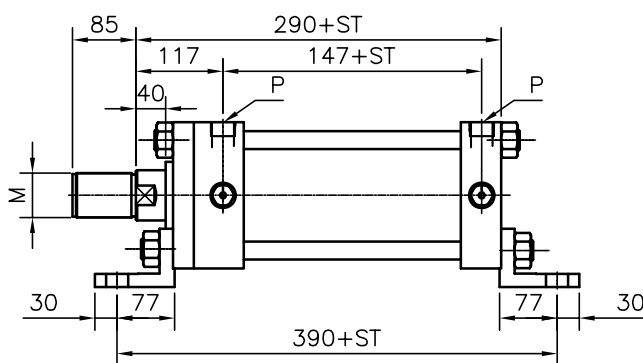
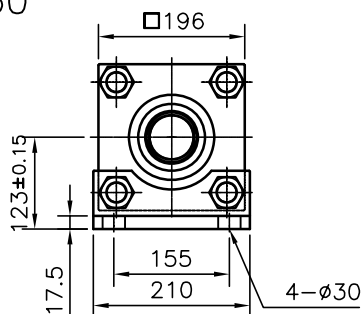
HC2-LA ø150



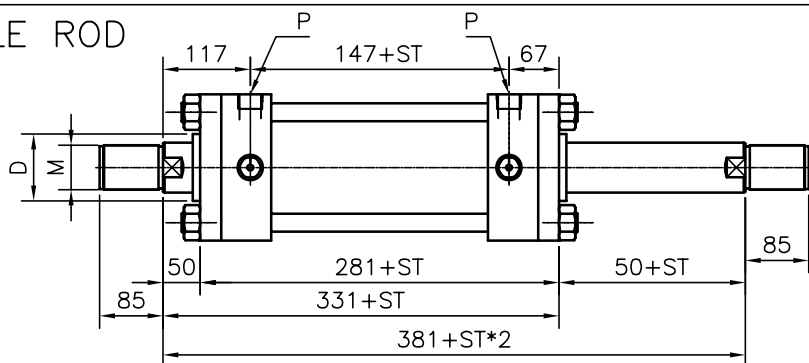
TYPE	ROD	M	D
A	ø67	M60*P2.0	ø90
B	ø85	M76*P2.0	ø110

P
Rc 1"
G 1"

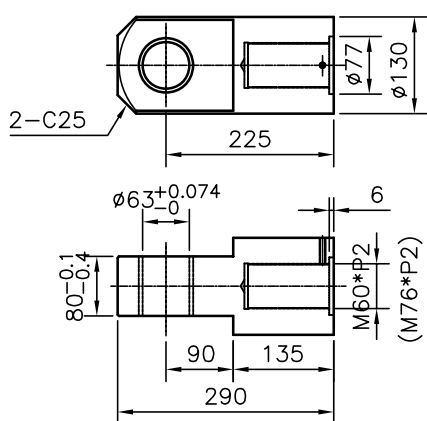
HC2-LB ø150



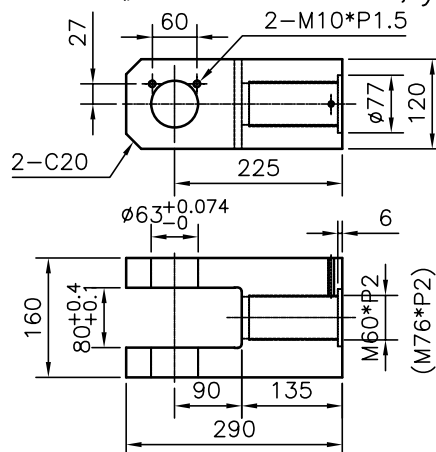
HC2-DOUBLE ROD ø150



HC2-ø150-I接头 CLevis head,type I



HC2-ø150-Y接头 CLevis head,type Y



油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm

weight= W1 + (W2 * ST)

= 76.2 + (9.6 * 2)

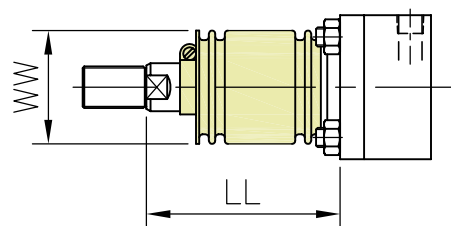
= 95.4Kg

	SD	FA	FB	FC	FD	CA	CB	LA	LB	TA	TC
RODø67=W1 (kg)	70.5	76.2	84.9	83.3	90.4	87.3	92.0	72.2	88.5	76.4	84.1
RODø85=W1 (kg)	84.1	79.8	88.5	86.9	95.6	90.9	95.6	80.2	92.1	80.0	87.7
W2 (kg/100mm)		RODø67=9.6					RODø85=11.2				

HC2

防塵套尺寸

ø40,ø50	1/2.5ST+X
ø63~ø100	1/3ST+X
ø125,ø150	1/3.5ST+X



內徑	ø40	ø50	ø63	ø70	ø80	ø90	ø100	ø125	ø150
WW	ø50	ø63	ø71	ø71	ø80	ø90	ø100	ø125	ø130
LL	47	50	61	61	55	60	60	69	70

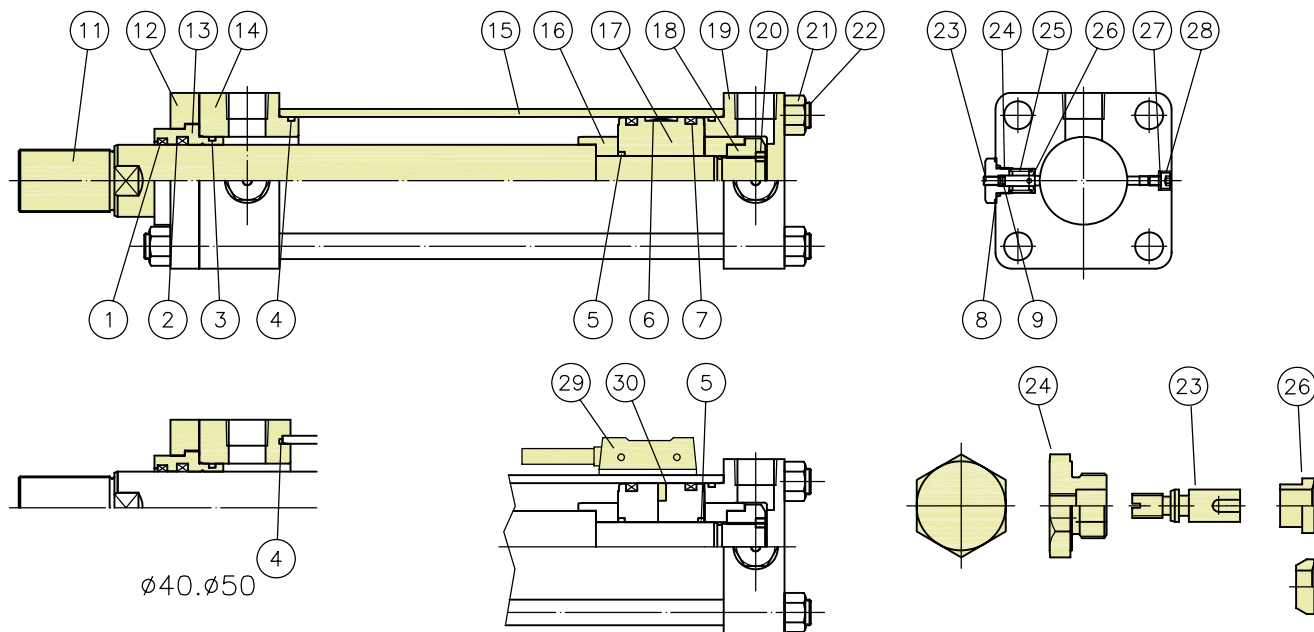
* 技術參數 Technical Data :

缸管内徑 Cylinder Bore mm	活塞桿徑 Rod Dia. mm	動 作 Action	有效面積 Effective Area cm ²	出 力 Output Power kgf				流量10L/分 之速度 Flow Rate at Speed 10L/min mm/sec	速度10mm/秒 之流量 Speed at Flow Rate 10mm/sec L/min
				30 kgf/cm ²	70 kgf/cm ²	140 kgf/cm ²	210 kgf/cm ²		
40		推力 Extend	12.6	377	880	1759	2639	132.9	0.8
	18	拉力 Retract	10.0	301	702	1403	2105	166.6	0.6
	22.4		8.6	259	604	1208	1811	193.6	0.5
50		推力 Extend	19.6	589	1374	2749	4123	85.1	1.2
	22.4	拉力 Retract	15.7	471	1099	2197	3296	106.4	0.9
	28		13.5	404	943	1887	2830	123.9	0.8
63		推力 Extend	31.2	935	2182	4364	6546	53.6	1.9
	28	拉力 Retract	25.0	750	1751	3502	5253	66.8	1.5
	35.5		21.3	638	1489	2978	4468	78.5	1.3
80		推力 Extend	50.3	1508	3519	7037	10556	33.2	3.0
	35.5	拉力 Retract	40.4	1211	2826	5651	8477	41.4	2.4
	45		34.4	1031	2045	4811	7216	48.6	2.1
100		推力 Extend	78.5	2356	5498	10996	16493	21.3	4.7
	45	拉力 Retract	62.6	1879	4384	8769	13153	26.7	3.8
	56		53.9	1671	3774	7547	11321	31.0	3.2
125		推力 Extend	122.7	3682	8590	17181	25771	13.6	7.3
	56	拉力 Retract	98.1	2943	6866	13732	20599	17.0	5.9
	70		84.2	2527	5896	11793	17689	19.8	5.0
150		推力 Extend	176.7	5301	12370	24740	37110	9.5	10.6
	67	拉力 Retract	141.5	4244	9902	19804	29706	11.8	8.5
	85		120.0	3599	8398	16796	25194	13.9	7.2
180		推力 Extend	254.5	7634	17813	35626	53438	6.6	15.2
	80	拉力 Retract	204.2	6126	14294	28588	42883	8.2	12.2
	100		175.9	5278	12315	24630	36945	9.5	10.5
200		推力 Extend	314.2	9425	21991	43982	65973	5.3	18.8
	90	拉力 Retract	250.5	7516	17538	35076	52614	6.7	15.0
	110		219.1	6574	15339	30678	46016	7.6	13.1
250		推力 Extend	490.9	14726	34361	68722	103084	3.4	29.4
	110	拉力 Retract	395.8	11875	27709	55418	83127	4.2	23.7
	140		336.9	10108	23586	47171	70757	5.0	20.2

上表中,HC2系列缸管內徑ø180,ø200,ø250無目錄如欲訂購,敬請洽詢

There will no ø180,ø200,ø250 bore dia etc., related data.

If want above mentioned size cylinder, please consult us.



* 零件名稱及材質表 Parts Description & Material List:

NO	名稱 Description.	材質 Material.	Q'TY	NO	名稱 Description.	材質 Material.	Q'TY
11	活塞桿 Piston Rod	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1	21	六角螺帽 Tie Rod Nut	一般構造用軋鋼 Rolled Steel for General Structure	4
12	壓板 Cover	一般構造用軋鋼 Rolled Steel for General Structure	1	22	支桿 Tie Rod	一般構造用軋鋼 Rolled Steel for General Structure	4
13	銅襯 Bush	銅合金 Brass Alloy.	1	23	緩衝針 Cushion Adjustment	機械構造用碳鋼 Carbon Steel for Mechanical Structure	2
14	前蓋 Head	一般構造用軋鋼 Rolled Steel for General Structure	1	24	緩衝本體 Cushion Body	機械構造用碳鋼 Carbon Steel for Mechanical Structure	2
15	缸管 Cylinder Tube	機械構造用碳鋼管 Carbon Steel Pipe for Mechanical Structure.	1	25	彈簧 Spring	琴鋼線 Qin Steel Wire	1
16	緩衝環 Cushion Bush	球狀黑鉛鑄鐵 Black Lead Spherical Cast Iron	2	26	襯套 Bush	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1
17	活塞 Piston	一般構造用軋鋼 Rolled Steel for General Structure	1	27	銅墊片 Washer	銅合金 Brass Alloy.	2
18	緩衝螺帽 Cushion Nut	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1	28	六角承窩螺絲 Soket Head Cap Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	2
19	後蓋 Cylinder Cap	一般構造用軋鋼 Rolled Steel for General Structure	1	29	感測器 Sensor		
20	防鬆螺絲 Set Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1	30	磁石 Magnet		

油封規格表 Specifications of Oil Seal:

NO	1	2	3	4	5	6	7	8	9
名稱	防塵油封 Dust Seal	軸心油封 Rod Seal	O型環 O Ring	O型環 O Ring	O型環 O Ring	耐磨片 Wear Ring	活塞油封 Piston Seal	O型環 O Ring	O型環 O Ring
材質	PU	PU	NBR	NBR	NBR	PTFE	PU	NBR	NBR
數量	1	1	1	2	1	1	2	1	1
內徑	ø,ø.w mm	ø,ø.w mm					ø,ø.w mm		
	A B	A B							
ø40	18-24-6	22.4-30.4-6	18-24-5	22.4-30-5	G-25	□40	P-16	40-2.5	40-30-6 P-14 P-5
ø50	22.4-30.4-6	28-36-6	22.4-30-5	28-35.5-5	G-30	□50	P-20	50-2.5	50-40-6 P-14 P-5
ø63	28-36-6	35.5-43.5-6	28-35.5-5	35.5-45-6	G-40	G-58	G-25	63-2.5	63-53-6 P-14 P-5
ø80	35.5-43.5-6	45-53-6.5	35.5-45-6	45-55-6	G-50	G-75	G-30	80-2.5	80-70-6 P-14 P-5
ø100	45-53-6.5	56-64-6.5	45-55-6	56-66-6	G-60	G-95	P-38	100-2.5	100-85-9 P-14 P-5
ø125	56-64-6.5	70-80-8	56-66-6	70-80-6	G-75	G-120	G-45	125-.25	125-112-9 P-18 P-7
ø150	67-75-6.5	85-95-8	67-77-6	85-100-9	G-90	G-145	G-55	150-2.5	150-136-9 P-18 P-7

HC3系列油壓缸 HC3 Series Hydraulic Cylinders

軋製鋼形 標準油壓缸 MILL TYPE Standard Hyd. Cylinders

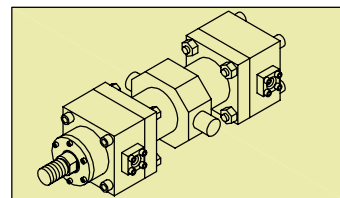
油慶公司之HC3形標準油壓缸,是著重於製鐵機械等,在較其嚴酷之條件使用為目的,而設計製造適用於,苛酷的環境,重負荷及高壓衝擊的油壓缸

- * 加工精度,表面處理,油封材質等各零件都極為考慮的高性能油壓缸
- * 振動,衝擊和瞬間極壓等均安全,且具有緩慢順滑之緩衝效果

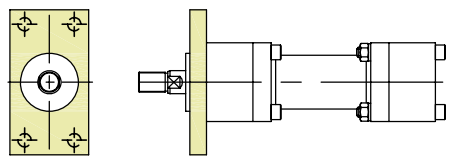
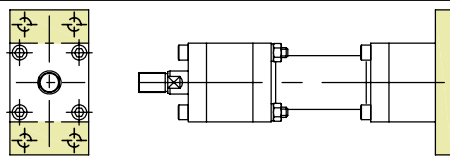
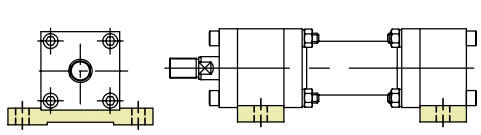
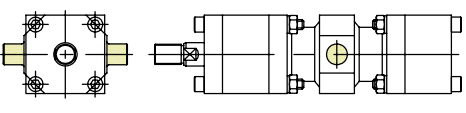
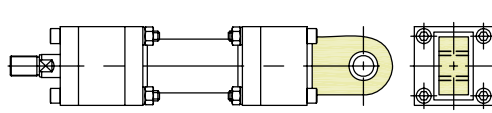
HC3 Mill Type hyd cylinders are specially employed in steel mill plant and designed which meet strictly environmental condition application, heavy load and anti impulse burst pressure etc.,

- * Those are emphasised on processing precision surface treatment & oil sealer's material and for which high performance hyd cylinder.
- * Vibration resistant, impulse resistant and anti instantaneous burst pressure especially for which being with moved slowly & smoothly etc., cushioning effectness.

* 規範 Specifications



* 固定座形式 Mounting :

名稱	前蓋端長方形法蘭形	Rectangular flange at cylinder head
FA		
名稱	後蓋端長方形法蘭形	Rectangular flange at cylinder cap
FB		
名稱	軸直角方向腳架形	Foot mounting
LA		
名稱	中間固定支撐形	Centre Trunnion mounting
TC		
名稱	山形座(1山形)	Plain clevis at cylinder cap
CA		

除固定形式TC外,行程未超過100MM必須全部使用繫桿式螺絲如下圖

Besides the TC mountings if the stroke is less than 100mm which all must used intensified screw bolt.

缸管內徑 mm Cylinder Bore	行程 Stroke	缸管內徑 mm Cylinder Bore	行程 Stroke
50~80	未滿 100	140~200	未滿 200
100~150	未滿 150	224~250	未滿 250

項目 Item	型式 Model	HC3系列 HC3 Series
缸管內徑 Cylinder Bore	mm	50, 63, 80, 100 125, 140, 160, 180 200, 224, 250
固定座形式 Mounting		FA, FB, LA, TC, CA
使用壓力 Operating Pressure		140kgf/cm ²
* 1 最高使用壓力 Max. Operating Press.		230kgf/cm ²
最低作動壓力 Min Operating Pres		5 kgf/cm ²
* 2 最高使用速度 Max. Operating Speed		800mm/sec
最低使用速度 Min Operating	缸管內徑 50~140	30 mm/sec
* 3 Speed	160~250	20 mm/sec
最大衝程 Max. Stroke	mm	參考彎曲強度限制值(DRAW)
* 4 周圍溫度範圍 Range of Ambient Temperature	℃	-10~+80
衝程之容許差 Tolerance of Stroke		JIS B 8354 A級 Refer to Righ Table
活塞桿前端螺紋精度 Accuracy of Threading at Rod End		JIS B 0211-6g(2級)

- 1.最高使用壓力是含瞬間上擠壓,強度上可使用最高壓力
- 2:負載之貫性而使缸管發生壓力,請使用在最高壓力值下
- 3:最低使用速度值,不包含緩衝之行程
- 4:油封如果使用氟素橡膠VITON材質其溫度可使用至+160℃

- 1;The max. operating pressure which means the max. operating pressure at instantaneous bursting intensity.
- 2;The max. operating pressure which no initera loading pressure included.
- 3;The lowest speed value which no cushioning stroke included.
- 4;if employed the VITON oil sealer and the temp can be reached +160℃

* 衝程之容許差 Tolerance of Stroke

衝程 mm Stroke	容許差mm Tolerance	衝程 mm Stroke	容許差mm Tolerance
~100	+0.8	1000~1600	+1.6
100~250	+1.0	1600~2000	+1.8
250~630	+1.25	2000~2500	+2
630~1000	+1.4	2500~3000	+2.5

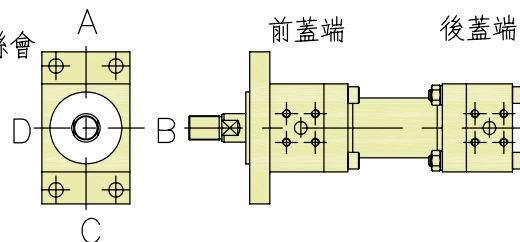
HC3 訂購內容索引 Ordering Index :

140	HC3	LA	125	A	100	N	BAD	S	K	V
使用壓力140/230 kgf/cm ² Max. Operating Pres.	HC3:系列 HC3:Series Number	固定座形式 Mounting FA, FB, LA, TC, CA	缸管內徑 Cylinder Bore mm 50, 63, 80, 100, 125, 140 160, 180, 200, 224, 250	活塞桿徑記號 Rod Type A:系列 B:系列	衝程 Stroke mm 要考慮最大容許衝程 Max. Permissible stroke	緩衝形式 Location of Cushioning B:前後蓋緩衝 B:The head and cap with cushioning R:前蓋緩衝 R:The head with cushioning H:後蓋緩衝 H:The cap with cushioning N:沒有緩衝 N:No cushioning	油封材質PU,NBR,VITON Seal PU NBR VITON	特殊附件 Optionals F:附防塵套K:附固定螺帽 L:附I接頭 F:With dust-protective cover K:With locking nut L:With I adapter	出入口型式 Port Type SSA, SSA-B, LSA, RC	B出入口之方向 B:Port Position A緩衝調整器方向 A:Cushioning Valve Position D排氣孔之方向 D:Air Vent Position 從前蓋端看 B:右(標準)A:上(標準)D:左(標準) View from cylinder head B:Right std, A:Up std,D: Left std, N:沒有調整器 N:No regulator

* 各種特殊附件可以組合使用 - 例如:FKL
The optional attachment can be employed in integral as item E such as FKL

* 出入口緩衝調整器及排氣孔的方向 Port Cushioning & Air Vent Positions

- 1:FA和FB形須注意之出入油口位置,缸管內徑50-80mm之固定座螺絲會與出入口用法蘭接觸到,所以出入油口之位置避免設置於(A)上及(C)下
- 2:標準之位置,出入油口在(B)緩衝調整器在(A)
- 3:出入口位置及緩衝調整器位置不可以在同方向 -
- 4:出入口油口,緩衝調整器及排氣孔方向,各自之方向表示,是從前蓋端看依順時針方向(A)(B)(C)(D)排成



- 1:FA,FB Type which must cared port position and the bore dia: 50~80mm for which the mounting screw may be disturbed with the flange of port so that,the port position must avoided set at up of (A) or lower of (C).
- 2:The standard position of port at (B)and cushioning regulator's position at (A).
- 3:Especially the port position & cushioning regulator will not at same direction.
- 4:As for the port position,cushioning regulator and air vent position etc., directioning which toward the cylinder head and turn in clockwise (A)(B)(C)(D)in series.

* 固定座形式 Mounting :

要推出或拉入原則上以出力大的一方為基準,參照下表選擇適當的固定方法如果推出及拉入有必要同樣大時,敬請再再洽談為宜
Refer following configuration to select the suitable mounting and the retracting and extending for which emphasised at big output As for,in same output which must consult us.

推出 Extending		拉入 Retracting	
FA	FB	FA	FB

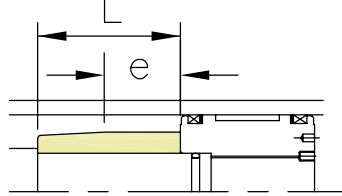
緩衝 Cushioning:

*缸管內徑50，60mm活塞桿記號為A時，其前蓋端無法設置緩衝器

*在緩衝環上，因有加工特殊節流之特性，所以有緩順之緩衝效果，但須注意再最最終行程3mm左右，其緩衝效果漸漸變弱，因此這樣之緩衝平行處(L尺寸)如需加長，也可以如有需要請與油慶公司連絡

There are bore dia 50,60mm and rod type is A thus those will not installed the cushioning device at cylinder head.

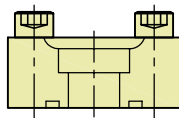
Because there is processed of throttling on cushioning ring so that there is being with cushioning effect but the range is just 3mm if want more wider of cushioning journal please consult us.



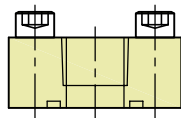
缸管內徑 Cylinder Bore		50 63		80 100		125		140		160		180		200		224 250	
活塞桿徑 Rod Dia		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
前蓋端 Head	緩衝長度(L) Cushion Length	—	35	40		45		50		50		55		65		75	
	平行處長度(e) Parallel Lenght	—	15	15	10	15	10	15	10	15	10	15	10	15	10	15	10
後蓋端 Cap	緩衝長度(L) Cushion Length	30		35		35		35		40		40		40		55	
	平行處長度(e) Parallel Lenght	10		10		10		10		10		10		10		10	

出入口油壓凸緣 Port Flange Kite

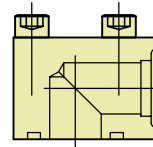
SSA



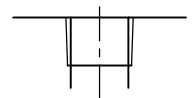
SSA-B



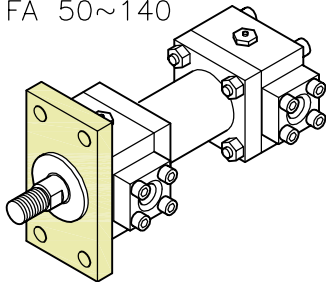
LSA



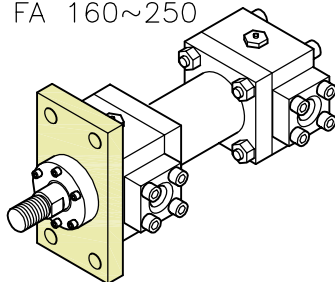
RC

**固定座形式 Mounting :**

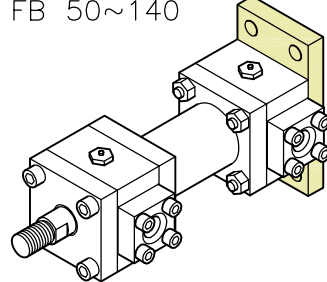
FA 50~140



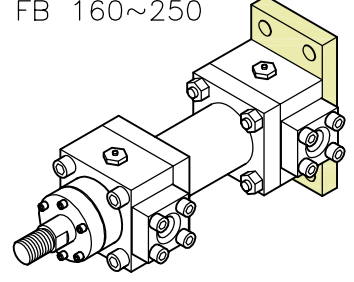
FA 160~250



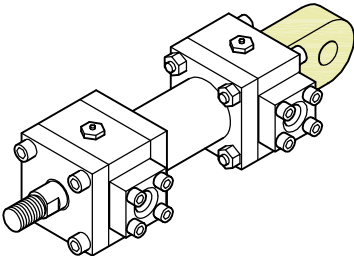
FB 50~140



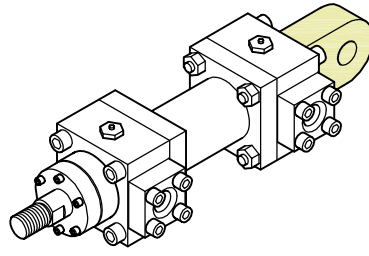
FB 160~250



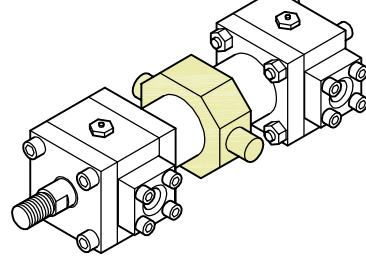
CA 50~140



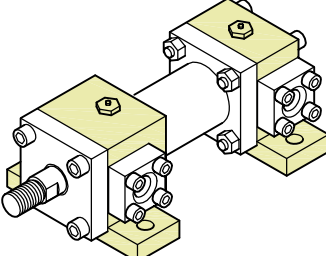
CA 160~250



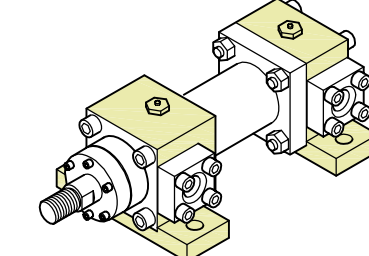
TC 50~140



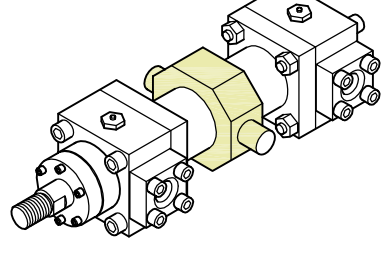
LA 50~140



LA 160~250

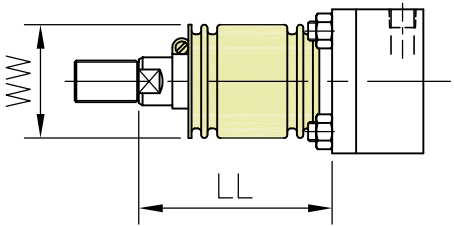


TC 160~250



HC3

防塵套尺寸



內徑	ø50		ø63		ø80		ø100		ø125		ø140	
	A	B	A	B	A	B	A	B	A	B	A	B
WW	ø63	ø71	ø71	ø80	ø80	ø100	ø100	ø125	ø125	ø140	ø125	ø160
LL	1/3.5ST+57		1/4 ST+60		1/4 ST+54		1/4 ST+64		1/5 ST+64		1/5 ST+69	

內徑	ø160		ø180		ø200		ø224		ø250	
	A	B	A	B	A	B	A	B	A	B
WW	ø140	ø180	ø160	ø180	ø180	ø200	ø180	ø220	ø200	ø240
LL	1/5 ST+60		1/5 ST+80		1/5 ST+83		1/6 ST+87		1/6 ST+83	

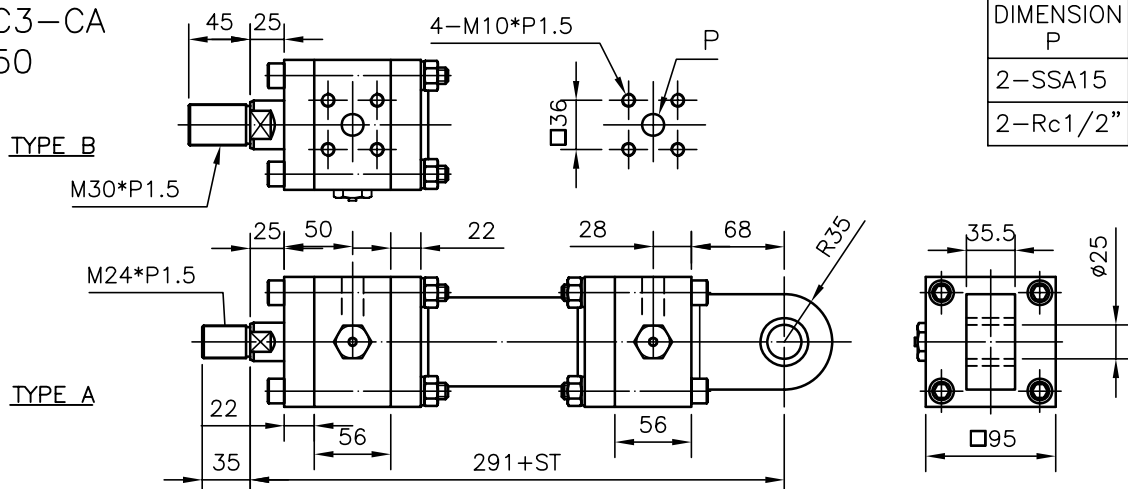
* 技術參數
 Technical Data
 :

缸管內徑 Cylinder Bore mm	活塞桿徑 Rod Dia. mm	動 作 Action	有效面積 Effective Area cm²	出 力 Output Power kgf				流量10L/分 之速度 Flow Rate at Speed 10L/min mm/sec	速度10mm/秒 之流量 Speed at Flow Rate 10mm/sec L/min
				30 kgf/cm ²	70 kgf/cm ²	140 kgf/cm ²	210 kgf/cm ²		
50		推力 Extend	19.6	589	1374	2748	4123	85.1	1.2
	B=35.5	拉力 Retract	9.7	292	681	1362	2045	171.5	0.6
	A=28		13.5	404	943	1886	2830	123.9	0.8
63		推力 Extend	31.2	935	2181	4362	6546	53.6	1.9
	B=45	拉力 Retract	15.3	458	1068	2138	3206	109.4	0.9
	A=35.5		21.3	638	1489	2978	4468	78.5	1.3
80		推力 Extend	50.3	1507	3517	7034	10556	33.2	3.0
	B=56	拉力 Retract	25.6	769	1794	3587	5383	65.1	1.5
	A=45		34.4	1030	2404	4811	7216	48.6	2.1
100		推力 Extend	78.5	2355	5498	10990	16493	21.3	4.7
	B=71	拉力 Retract	38.9	1168	2725	5453	8179	42.9	2.3
	A=56		53.9	1617	3772	7547	11321	31.0	3.2
125		推力 Extend	122.7	3680	8590	17181	25771	13.6	7.4
	B=90	拉力 Retract	59.1	1772	4135	8270	12411	28.3	3.5
	A=71		83.1	2493	5816	11638	17457	20.1	5.0
140		推力 Extend	153.9	4616	10776	21551	32327	10.8	9.2
	B=100	拉力 Retract	75.4	2261	5275	10556	15834	22.1	4.5
	A=80		103.7	3109	7253	14514	21771	16.1	6.2
160		推力 Extend	201	6029	14074	28149	42223	8.3	12.1
	B=112	拉力 Retract	102.5	3075	7174	14349	21534	16.3	6.1
	A=90		137.4	4121	9616	19242	28863	12.2	8.2
180		推力 Extend	254.5	7630	17813	35626	53438	6.6	15.3
	B=125	拉力 Retract	131.8	3951	9218	18445	27668	1.3	7.9
	A=100		175.9	5275	12309	24630	36945	9.5	10.6
200		推力 Extend	314.2	9425	21991	43982	65973	5.3	18.8
	B=140	拉力 Retract	160.1	4804	11210	22431	33646	10.4	9.6
	A=112		215.5	6466	15087	30189	45284	7.7	13
224		推力 Extend	394.1	11822	27586	55171	82757	4.2	23.6
	B=160	拉力 Retract	193.0	5788	13505	27023	40534	8.7	11.6
	A=125		271.4	8141	18986	37991	56956	6.2	16.3
250		推力 Extend	490.9	14726	34361	68722	103084	3.4	29.4
	B=180	拉力 Retract	236.4	7089	16548	33097	49645	7.1	14.2
	A=140		336.9	10108	23586	47171	70757	5.0	20.2

HC3-ø50

7/21MPa用

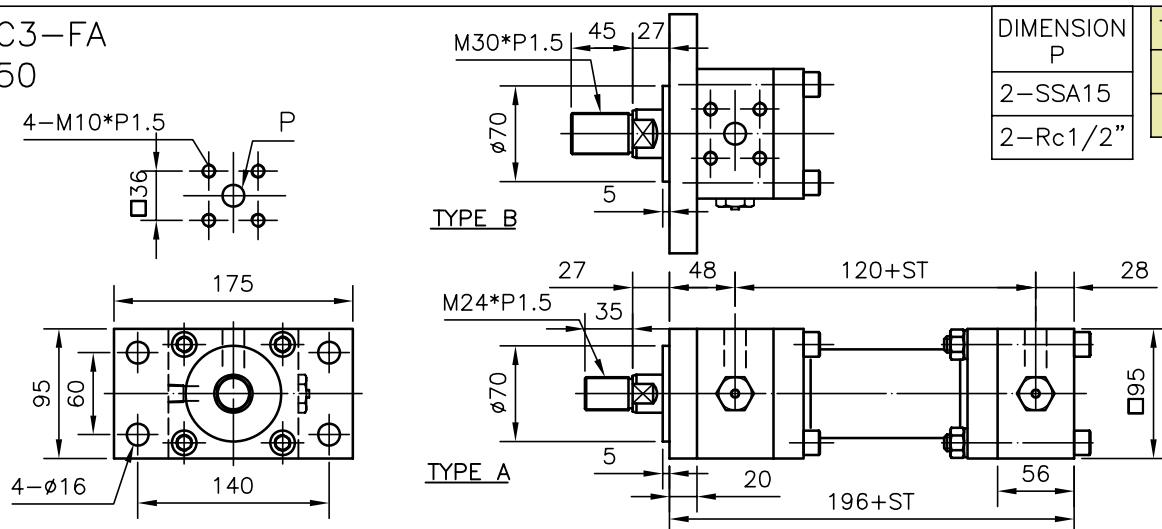
HC3-CA ø50



DIMENSION P
2-SSA15
2-Rc1/2"

TYPE	ROD
B	ø35.5
A	ø28

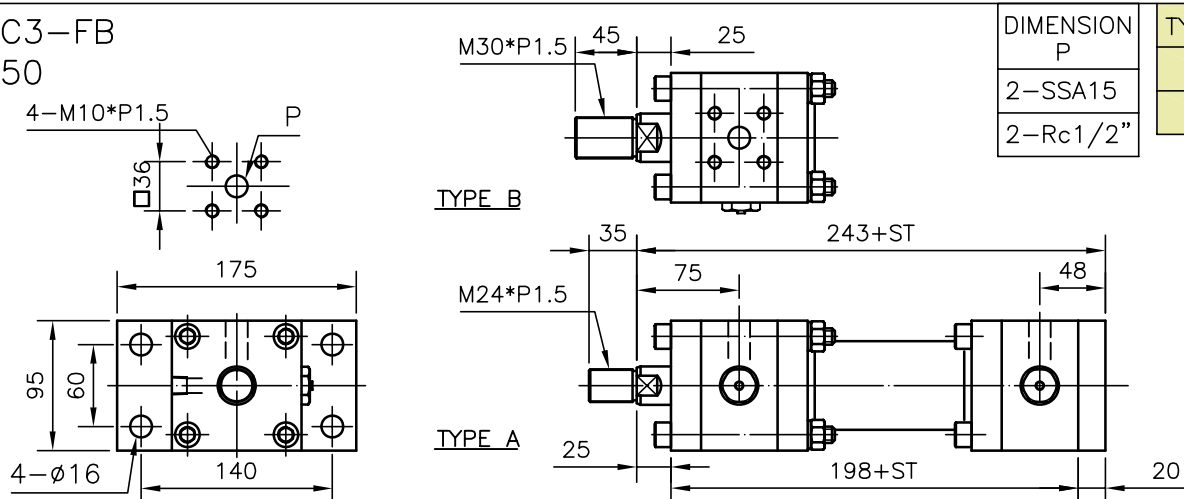
HC3-FA ø50



DIMENSION P
2-SSA15
2-Rc1/2"

TYPE	ROD
B	ø35.5
A	ø28

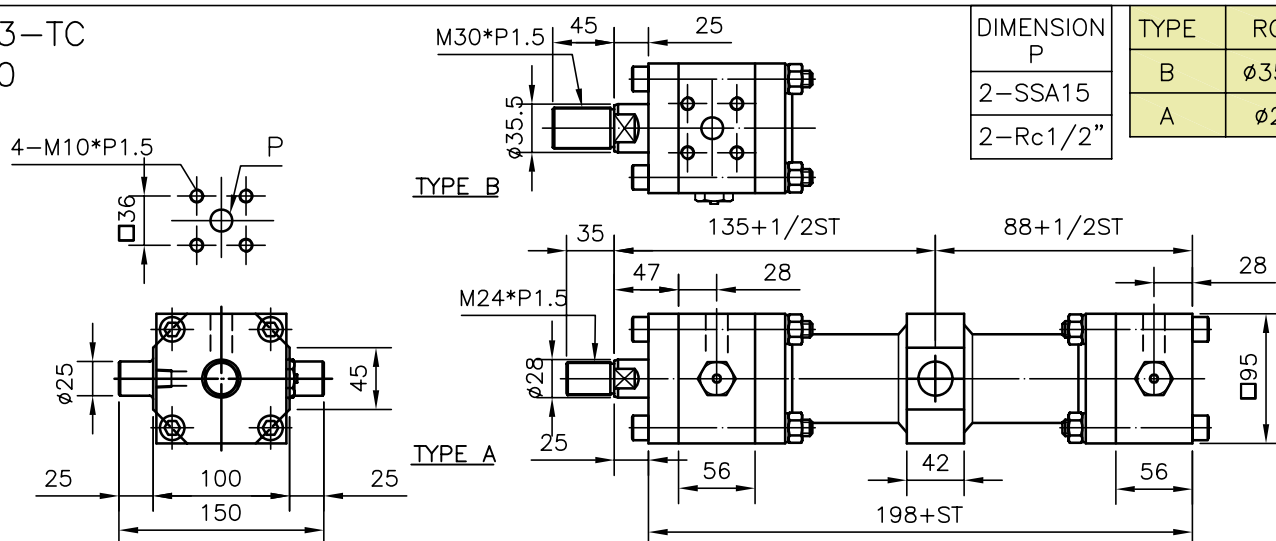
HC3-FB ø50



DIMENSION P
2-SSA15
2-Rc1/2"

TYPE	ROD
B	ø35.5
A	ø28

HC3-TC ø50



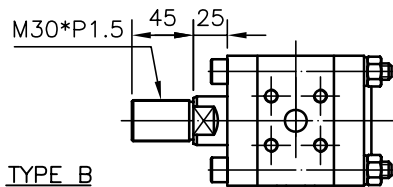
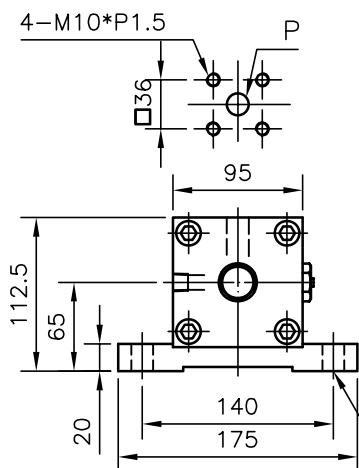
DIMENSION P
2-SSA15
2-Rc1/2"

TYPE	ROD
B	ø35.5
A	ø28

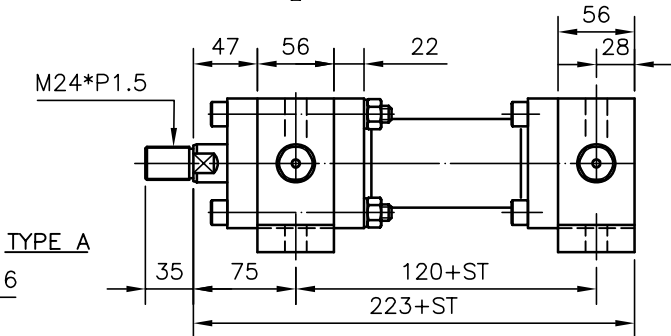
HC3- $\phi 50$

7/21MPa用

HC3-LA
 $\phi 50$



TYPE B

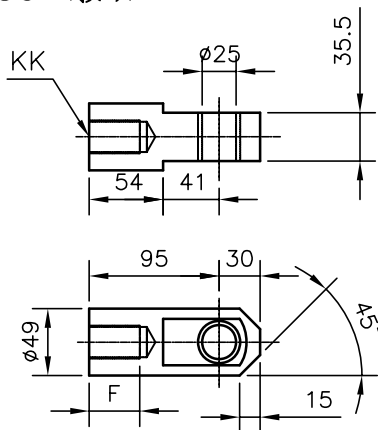


TYPE A

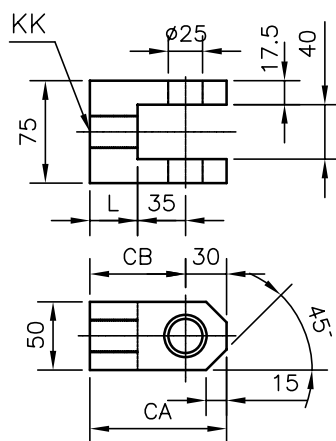
DIMENSION P
2-SSA15
2-Rc1/2"

TYPE	ROD
B	$\phi 35.5$
A	$\phi 28$

HC3- $\phi 50$ -I接头 Clevis head, type I



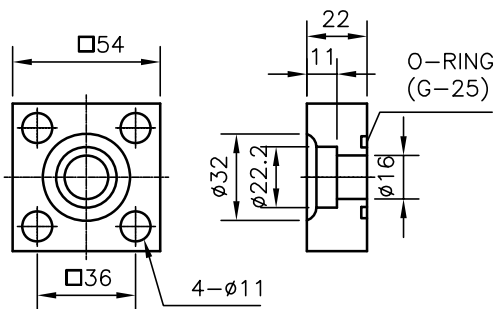
HC3- $\phi 50$ -Y接头 Clevis head, type Y



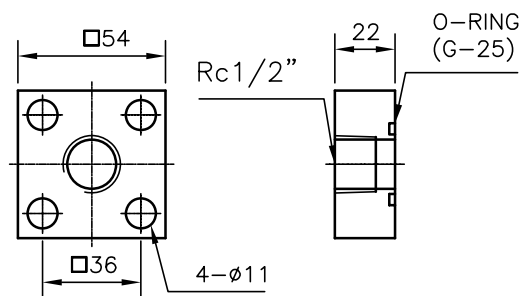
	KK	F	Weigh (kg)
TYPE A	M24x1.5	37	1.3
TYPE B	M30x1.5	47	1.2

	KK	L	CA	CB	Weigh (kg)
TYPE A	M24x1.5	35	100	70	1.7
TYPE B	M30x1.5	45	110	80	1.6

SSA凸緣 (Port Flange Kits)



Rc凸緣 (Port Flange Kits)



油壓缸大概重量計算

Estimted weight of hyd.

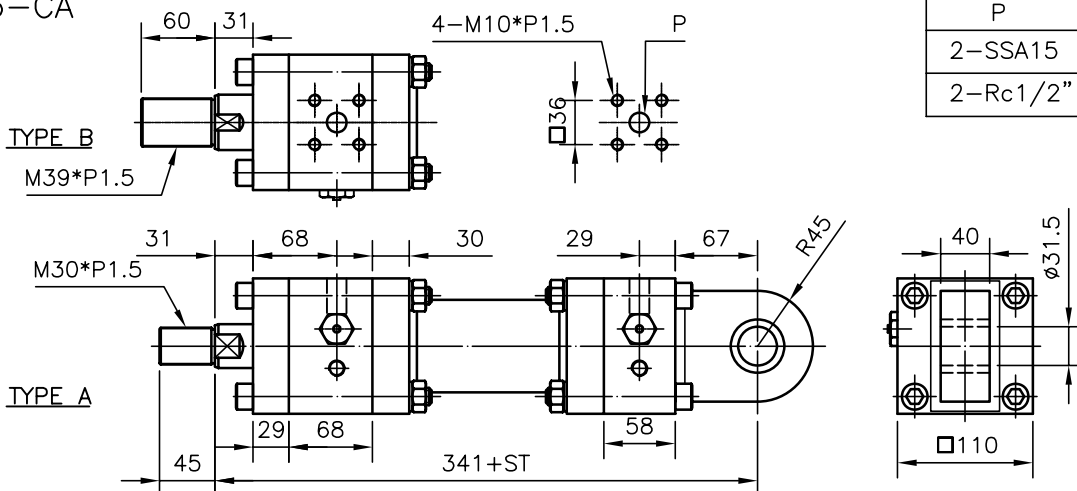
FA, ST=200mm, Type A
 $\text{weight} = W1 + (W2 * ST)$
 $= 15.6 + (1.15 * 2)$
 $= 17.9 \text{ kg}$

	FA	FB	CA	LA	TC
ROD $\phi 28$ =W1 (kg)	15.6	16.9	16.5	15.6	15.4
ROD $\phi 35.5$ =W1 (kg)	15.9	17.2	16.8	15.9	15.7
W2 (kg/100mm)	ROD $\phi 28$ =1.15		ROD $\phi 35.5$ =1.45		

HC3-ø63

7/21MPa用

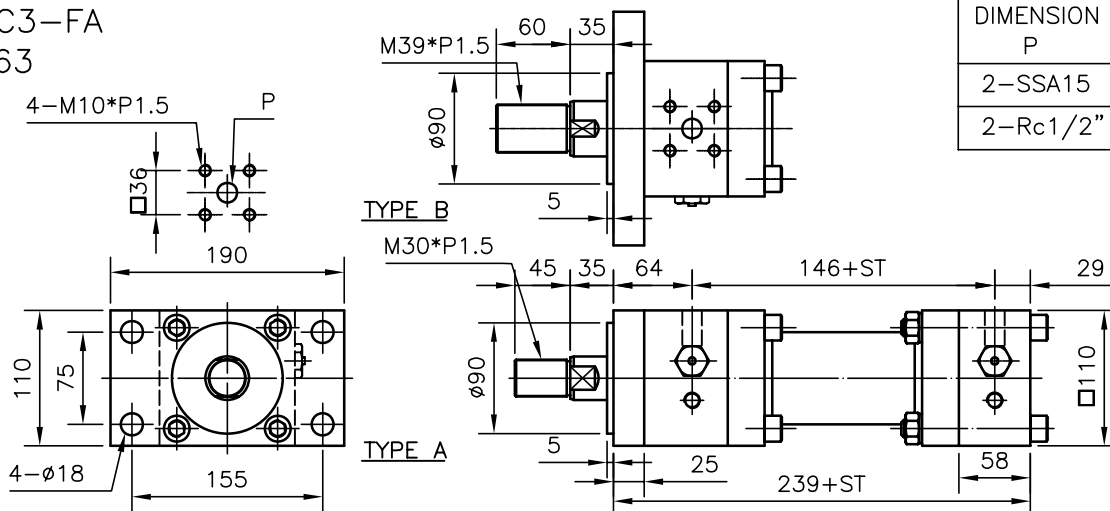
HC3-CA ø63



DIMENSION P
2-SSA15
2-Rc1/2"

TYPE	ROD
B	ø45
A	ø35.5

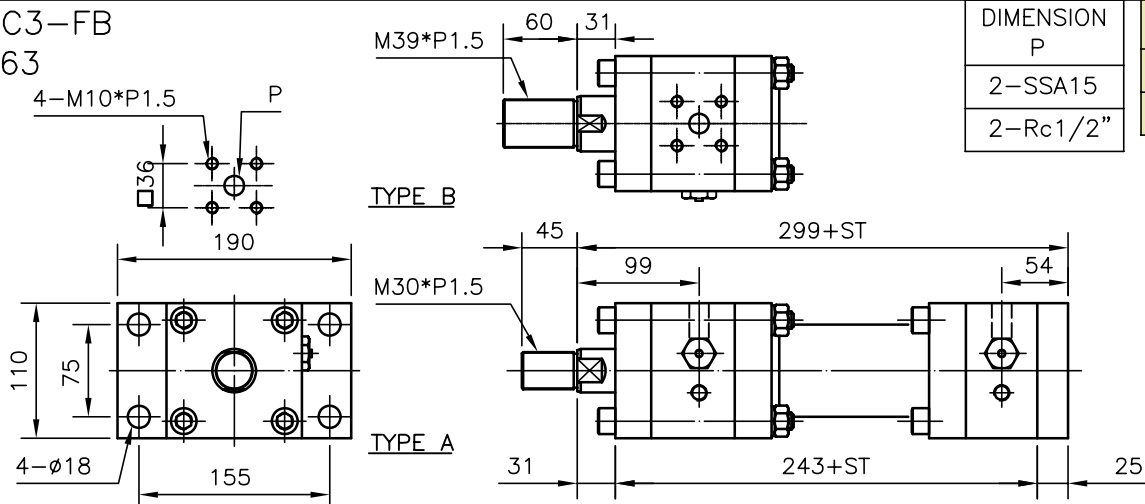
HC3-FA ø63



DIMENSION P
2-SSA15
2-Rc1/2"

TYPE	ROD
B	ø45
A	ø35.5

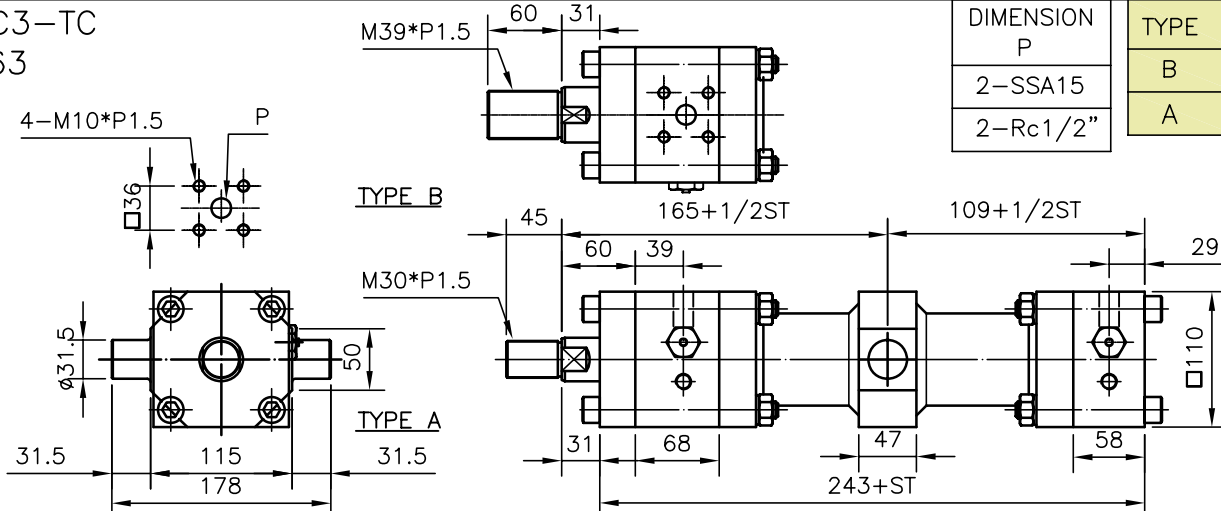
HC3-FB ø63



DIMENSION P
2-SSA15
2-Rc1/2"

TYPE	ROD
B	ø45
A	ø35.5

HC3-TC ø63



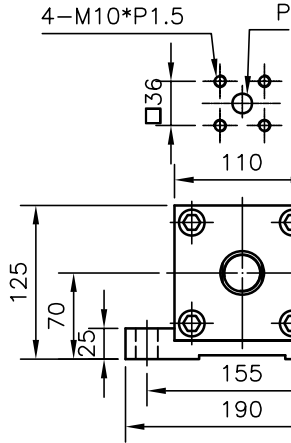
DIMENSION P
2-SSA15
2-Rc1/2"

TYPE	ROD
B	ø45
A	ø35.5

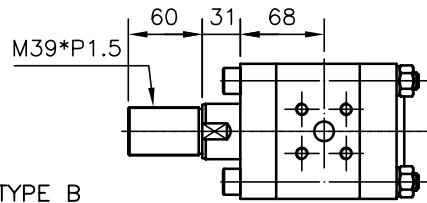
HC3-ø63

7/21MPa用

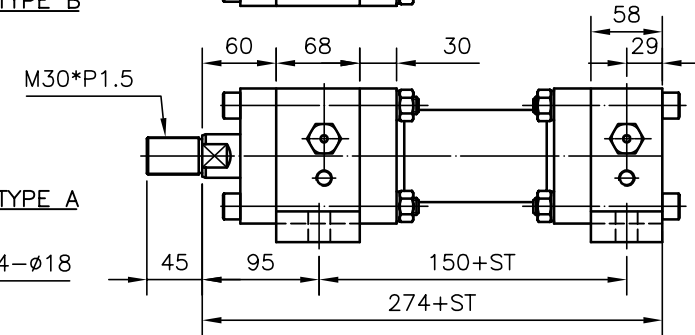
HC3-LA
ø63



TYPE B



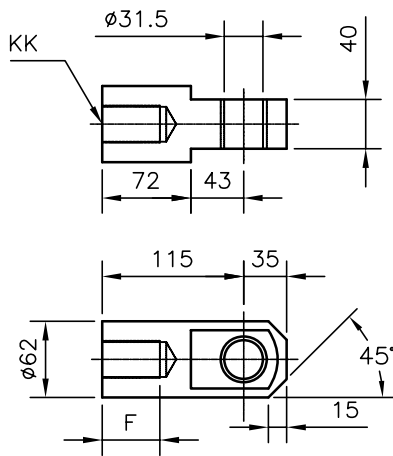
TYPE A



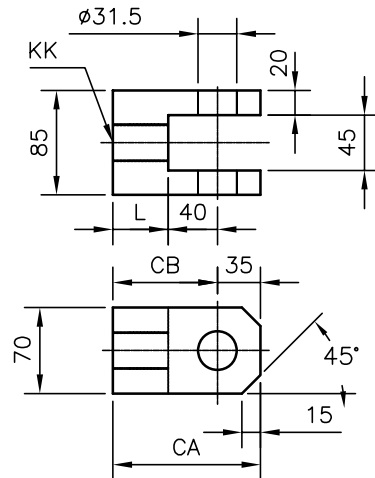
DIMENSION P
2-SSA15
2-Rc1/2"

TYPE	ROD
B	ø45
A	ø35.5

HC3-ø63-I接頭 Clevis head, type I



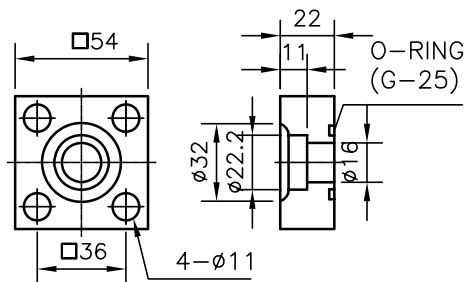
HC3-ø63-Y接頭 Clevis head, type Y



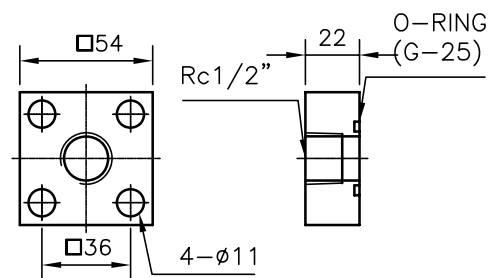
	KK	F	Weigh (kg)
TYPE A	M30x1.5	47	2.6
TYPE B	M39x1.5	62	2.2

	KK	L	CA	CB	Weigh (kg)
TYPE A	M30x1.5	45	120	85	3.7
TYPE B	M39x1.5	60	135	100	3.4

SSA凸緣 (Port Flange Kits)



Rc凸緣 (Port Flange Kits)



油壓缸大概重量計算

Estimted weight of hyd.

EX. : FA , ST=200mm ,Type A

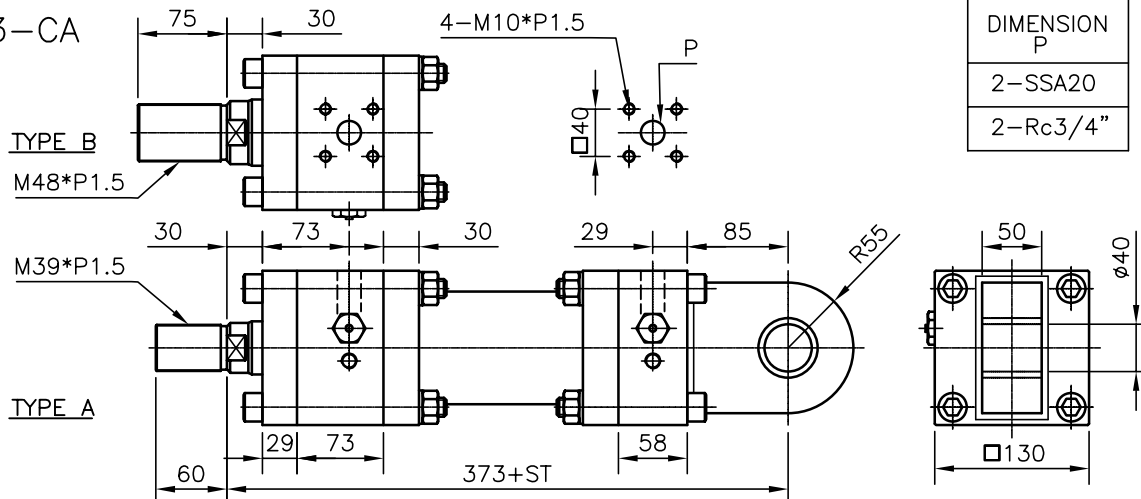
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 24.7 + (1.6 * 2) \\ &= 27.9 \text{ kg} \end{aligned}$$

	FA	FB	CA	LA	TC
RODø35.5=W1 (kg)	24.7	26.2	25.7	24.0	25.2
RODø45=W1 (kg)	25.2	26.7	26.2	24.5	25.7
W2 (kg/100mm)	RODø35.5=1.6		RODø45=2.0		

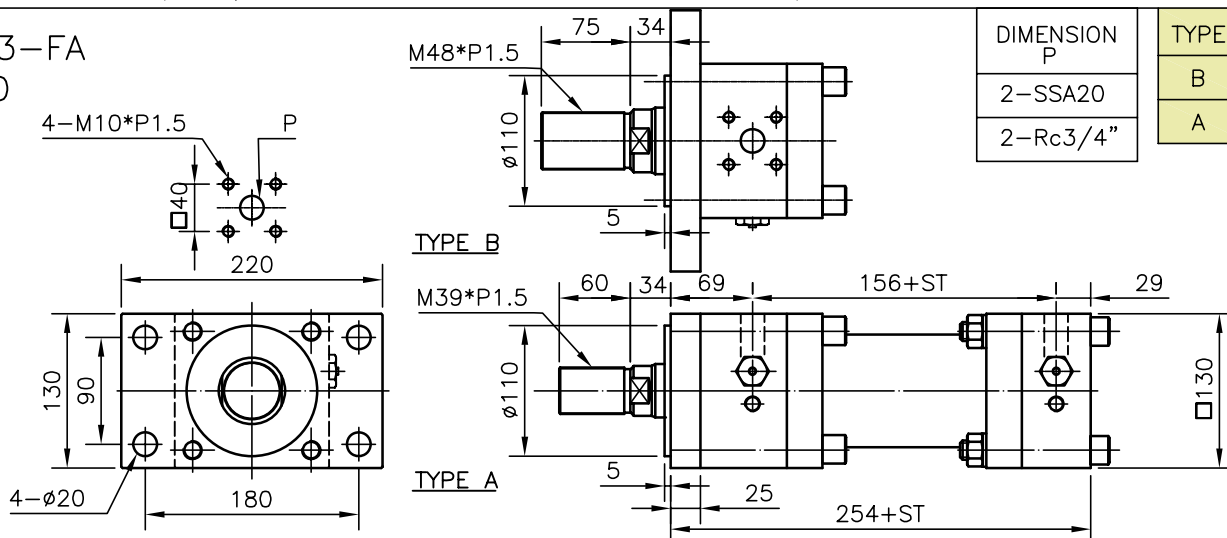
HC3-ø80

7/21MPa用

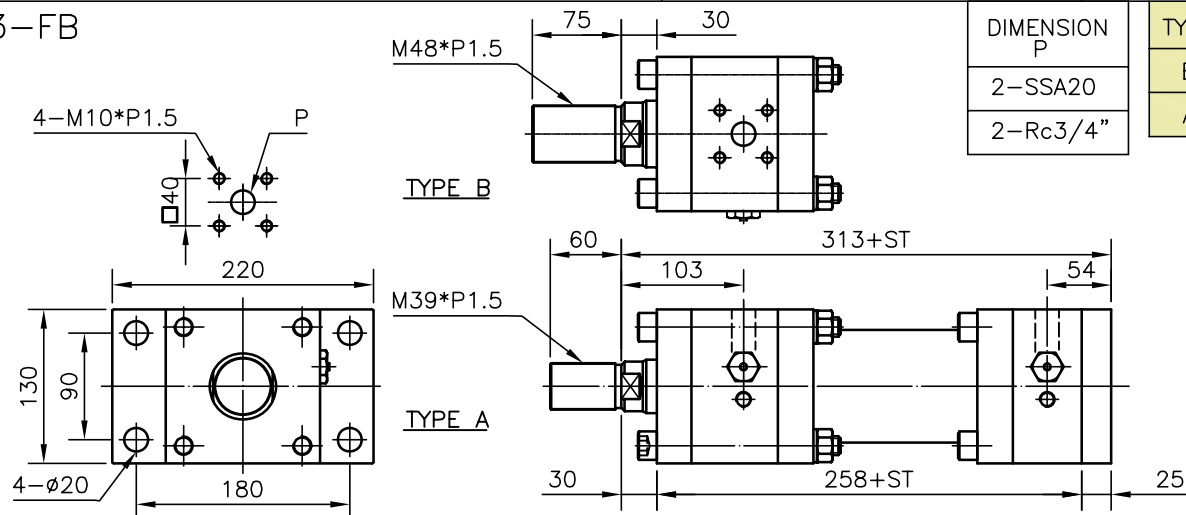
HC3-CA
ø80



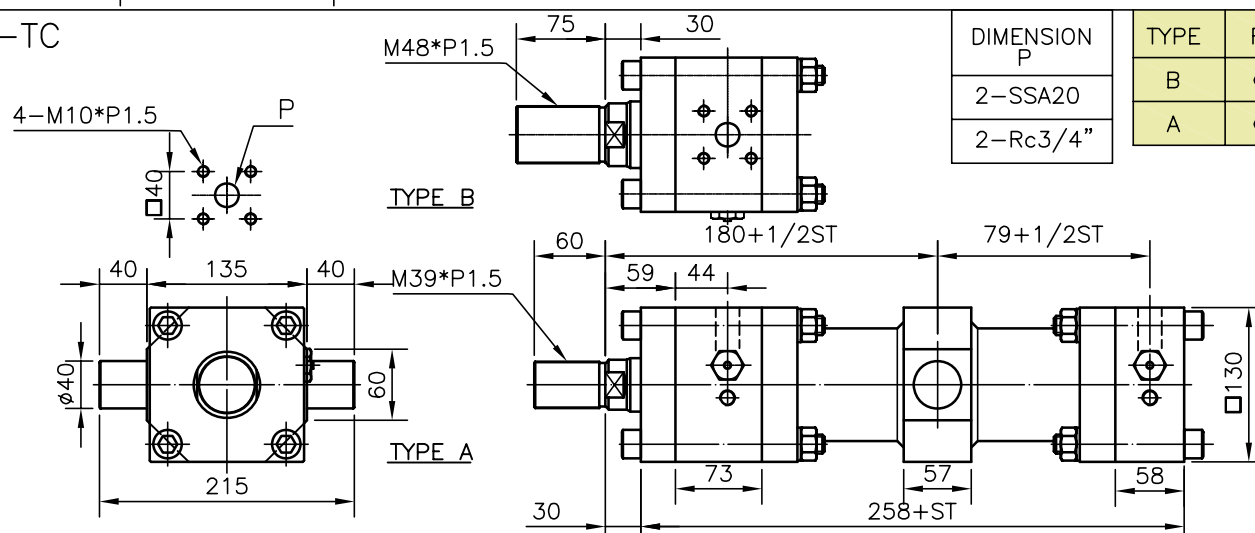
HC3-FA
ø80



HC3-FB
ø80



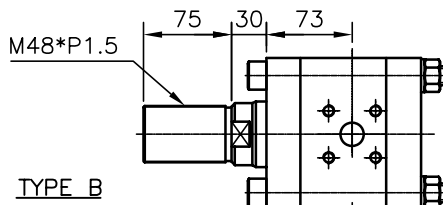
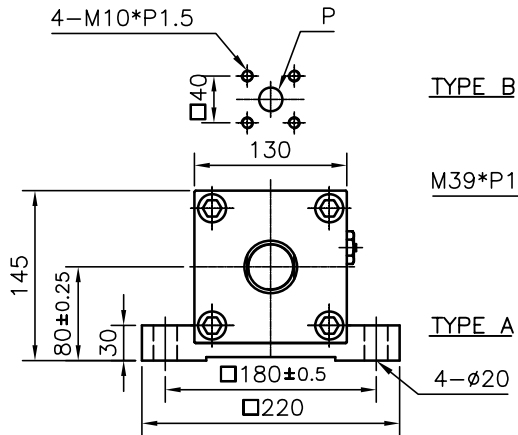
HC3-TC
ø80



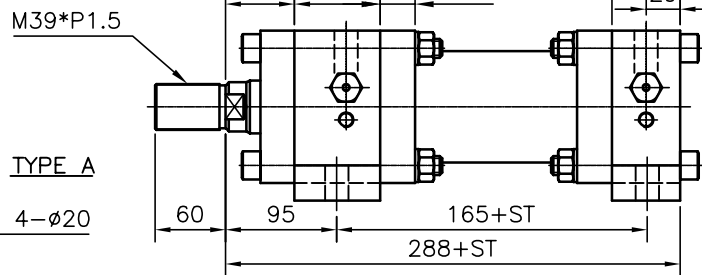
HC3- $\phi 80$

7/21MPa用

HC3-LA
 $\phi 80$



TYPE B

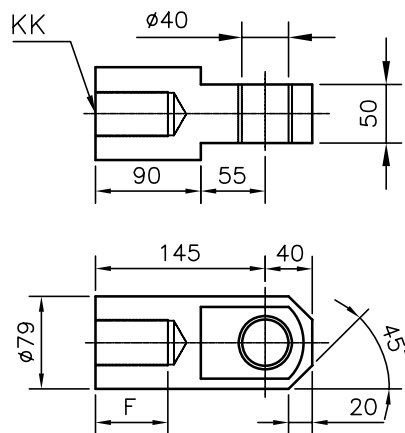


TYPE A

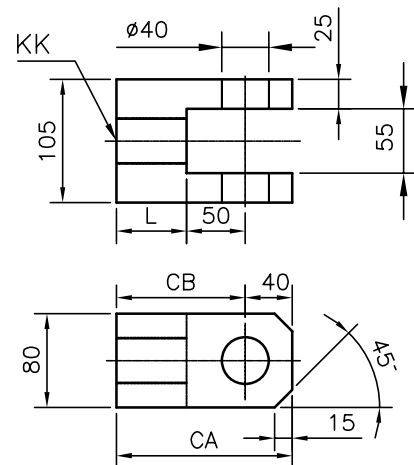
DIMENSION P
2-SSA20
2-Rc3/4"

TYPE	ROD
B	$\phi 56$
A	$\phi 45$

HC3- $\phi 80$ -I 接頭 Clevis head, type I



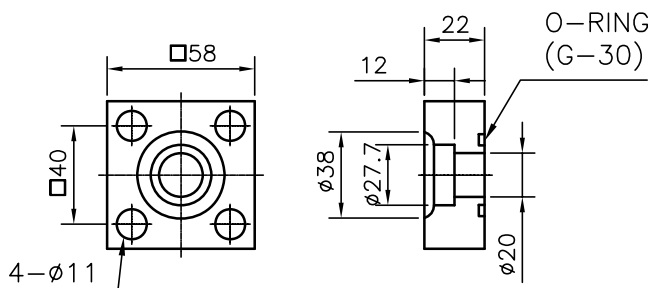
HC3- $\phi 80$ -Y 接頭 Clevis head, type Y



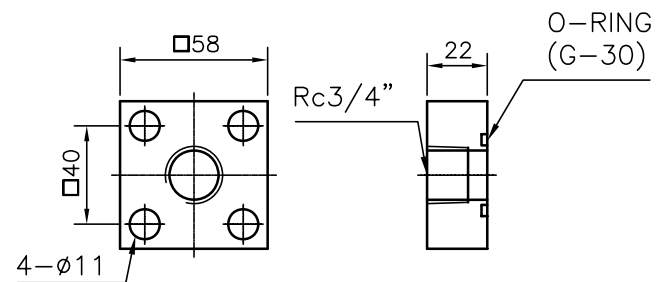
	KK	F	Weigh (kg)
TYPE A	M39x1.5	62	5.6
TYPE B	M48x1.5	77	5.0

	KK	L	CA	CB	Weigh (kg)
TYPE A	M39x1.5	60	150	110	5.9
TYPE B	M48x1.5	75	165	125	5.4

SSA凸緣 (Port Flange Kits)



Rc凸緣 (Port Flange Kits)



油壓缸大概重量計算

Estimted weight of hyd.

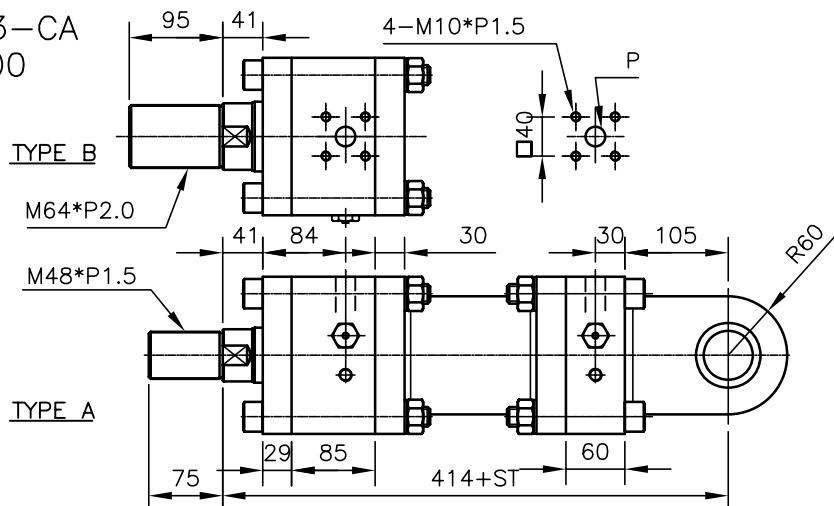
FA, ST=200mm, Type A
 weight= W1 + (W2 * ST)
 = 35.6 + (2.6 * 2)
 = 40.8 kg

	FA	FB	CA	LA	TC
ROD $\phi 45$ =W1 (kg)	35.6	38.7	39.8	35.9	36.9
ROD $\phi 56$ =W1 (kg)	36.5	39.6	40.4	36.9	37.7
W2 (kg/100mm)	ROD $\phi 45$ =2.6		ROD $\phi 56$ =3.3		

HC3- $\phi 100$

7/21MPa用

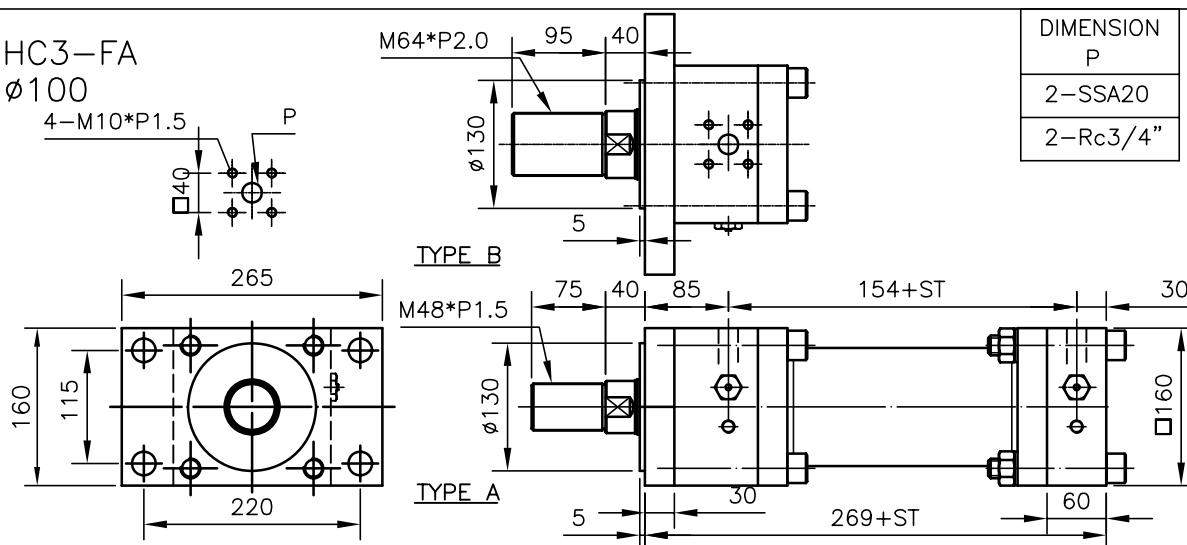
HC3-CA
 $\phi 100$



DIMENSION P
2-SSA20
2-Rc3/4"

TYPE	ROD
B	$\phi 71$
A	$\phi 56$

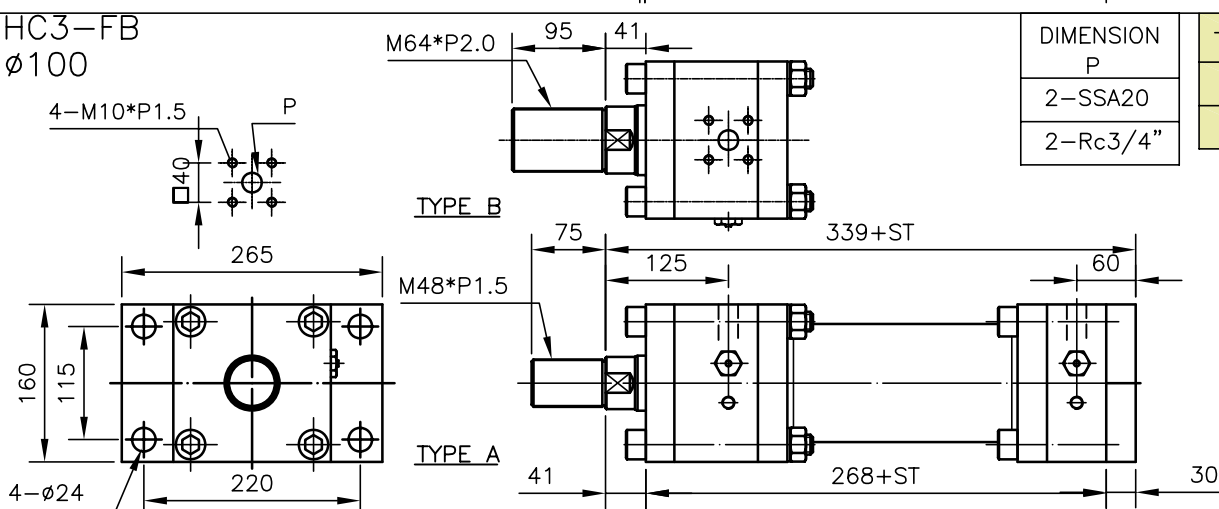
HC3-FA
 $\phi 100$



DIMENSION P
2-SSA20
2-Rc3/4"

TYPE	ROD
B	$\phi 71$
A	$\phi 56$

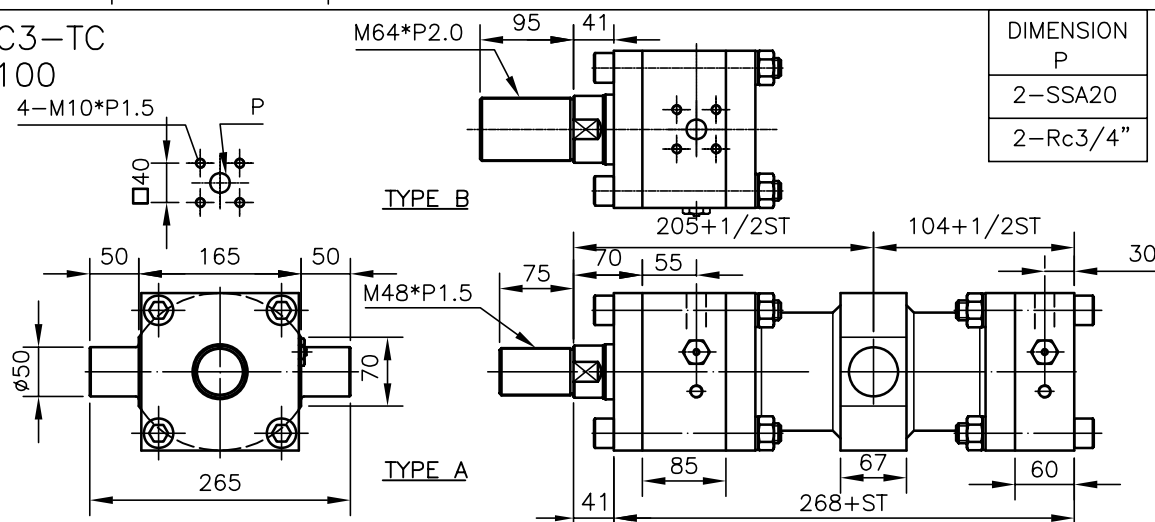
HC3-FB
 $\phi 100$



DIMENSION P
2-SSA20
2-Rc3/4"

TYPE	ROD
B	$\phi 71$
A	$\phi 56$

HC3-TC
 $\phi 100$



DIMENSION P
2-SSA20
2-Rc3/4"

TYPE	ROD
B	$\phi 71$
A	$\phi 56$

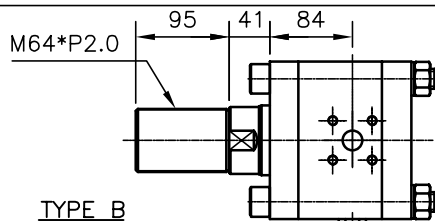
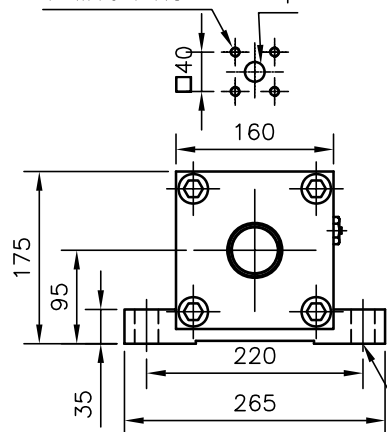
HC3- $\phi 100$

7/21MPa用

HC3-LA
 $\phi 100$

4-M10*P1.5

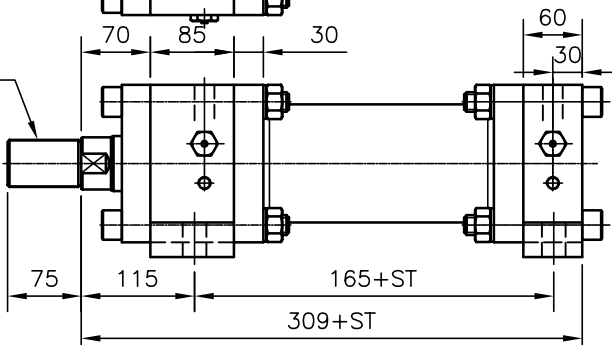
P



TYPE B

M48*P1.5

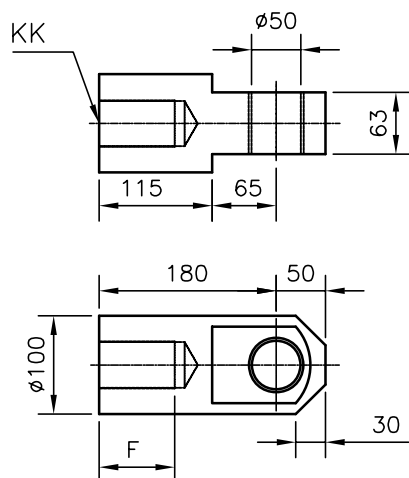
TYPE A



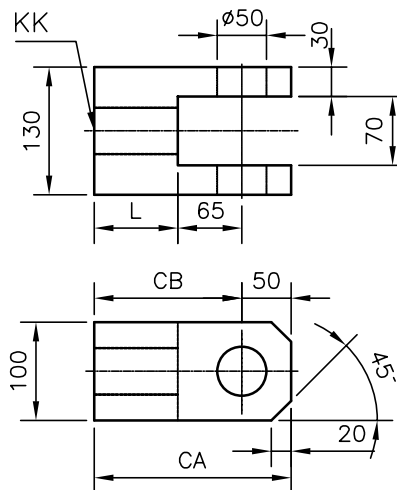
DIMENSION P
2-SSA20
2-Rc3/4"

TYPE	ROD
B	$\phi 71$
A	$\phi 56$

HC3- $\phi 100$ -I接頭 Clevis head,type I



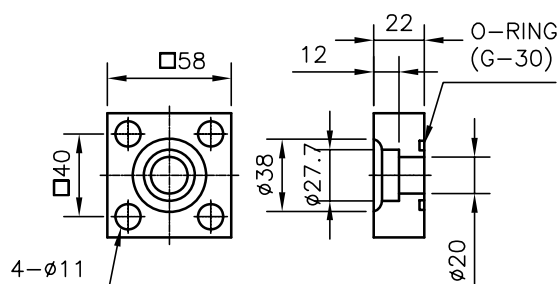
HC3- $\phi 100$ -Y接頭 Clevis head,type Y



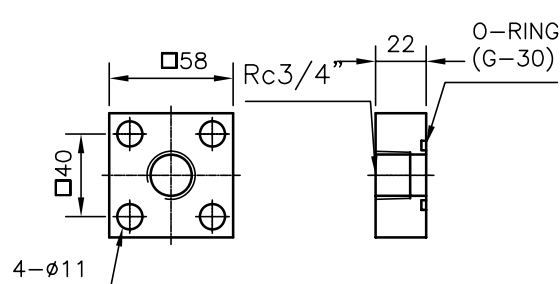
	KK	F	Weigh (kg)
TYPE A	M48x1.5	77	10.3
TYPE B	M64x2	97	8.1

	KK	L	CA	CB	Weigh (kg)
TYPE A	M48x1.5	80	195	145	11.5
TYPE B	M64x2	95	210	160	11.7

SSA凸緣 (Port Flange Kits)



Rc凸緣 (Port Flange Kits)



油壓缸大概重量計算

Estimted weight of hyd.

EX. : FA , ST=200mm ,Type A

weight= W1 + (W2 * ST)

= 58.4 + (4.0 * 2)

= 66.4 kg

	FA	FB	CA	LA	TC
ROD $\phi 56$ =W1 (kg)	58.4	64.4	66.4	59.4	63.4
ROD $\phi 71$ =W1 (kg)	60.4	66.4	68.4	61.4	65.4
W2 (kg/100mm)	ROD $\phi 56$ =4.0		ROD $\phi 71$ =5.2		

HC3- $\phi 125$

7/21MPa用

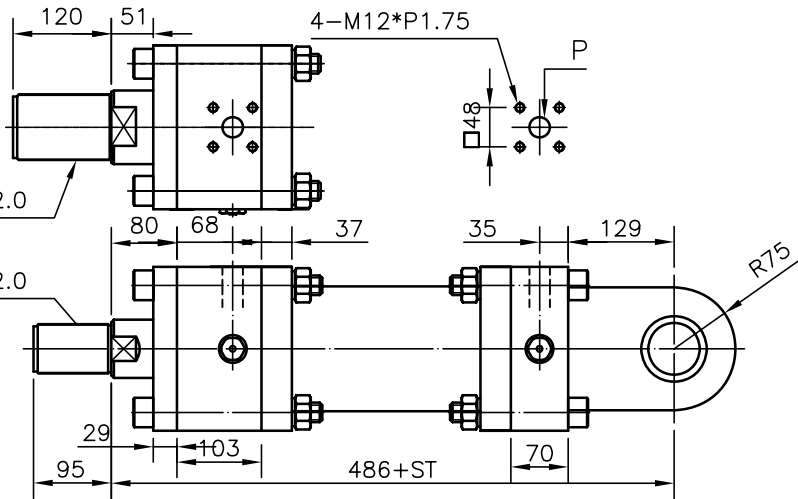
HC3-CA
 $\phi 125$

TYPE B

M80*P2.0

M64*P2.0

TYPE A



DIMENSION P
2-SSA25
2-Rc 1"

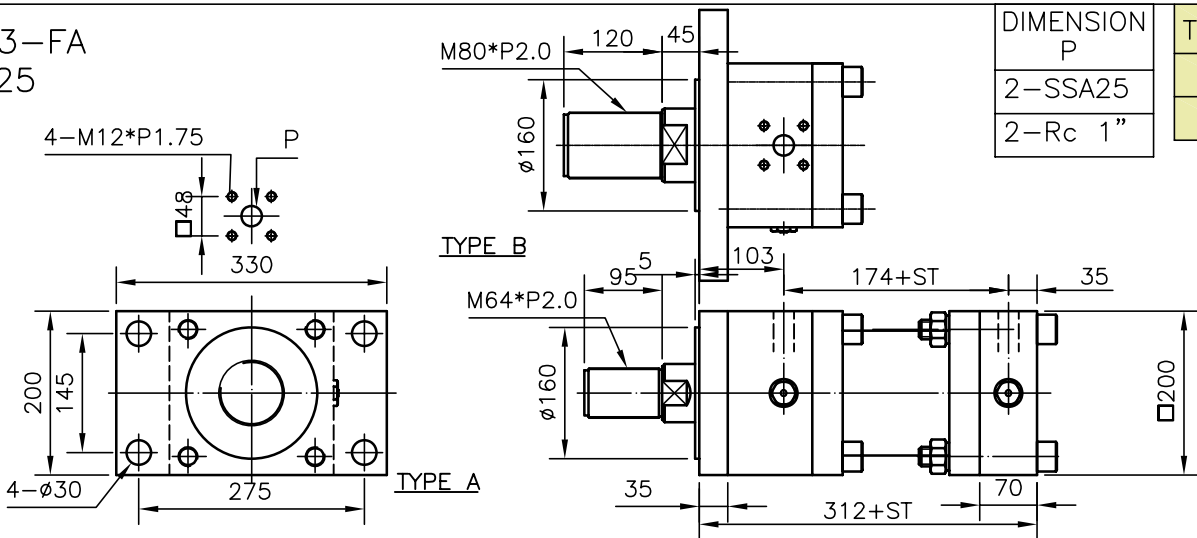
TYPE	ROD
B	$\phi 90$
A	$\phi 71$

HC3-FA
 $\phi 125$

TYPE B

M64*P2.0

TYPE A



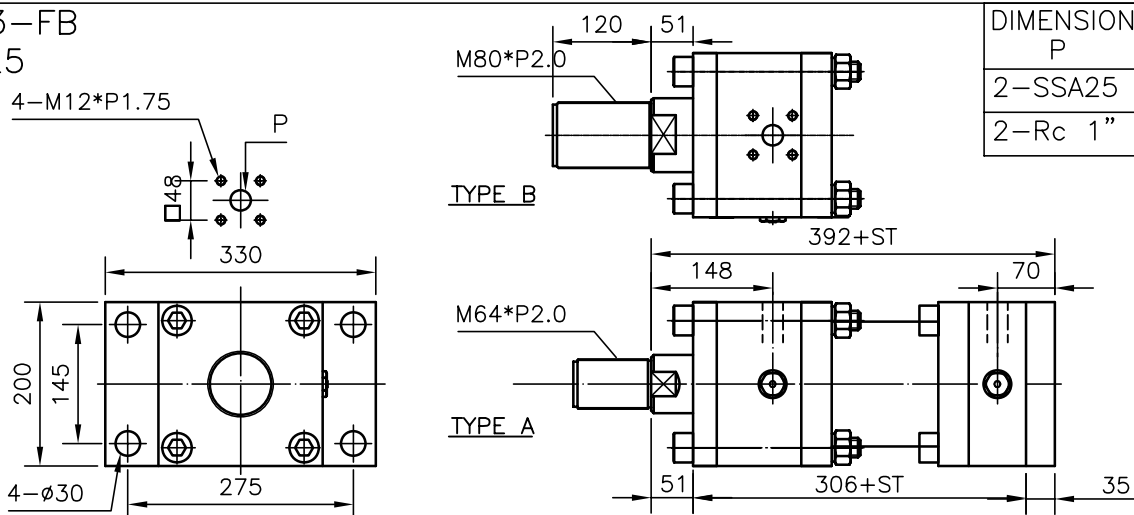
DIMENSION P
2-SSA25
2-Rc 1"

TYPE	ROD
B	$\phi 90$
A	$\phi 71$

HC3-FB
 $\phi 125$

TYPE B

TYPE A



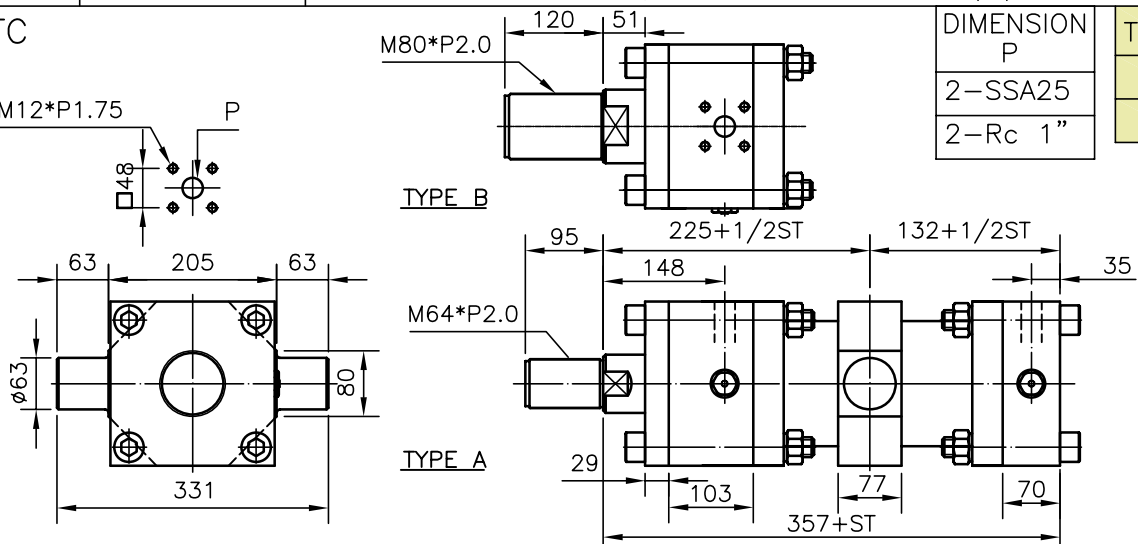
DIMENSION P
2-SSA25
2-Rc 1"

TYPE	ROD
B	$\phi 90$
A	$\phi 71$

HC3-TC
 $\phi 125$

TYPE B

TYPE A



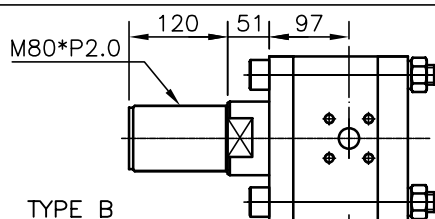
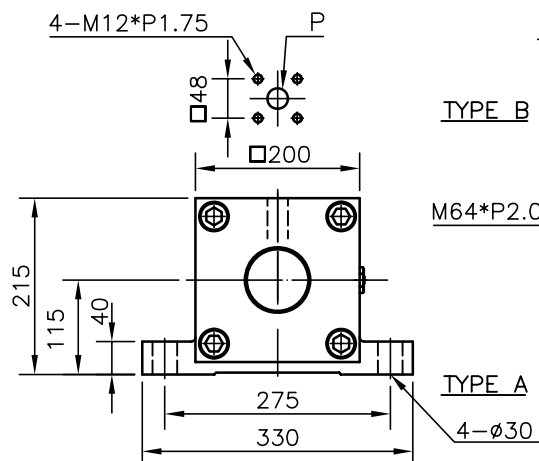
DIMENSION P
2-SSA25
2-Rc 1"

TYPE	ROD
B	$\phi 90$
A	$\phi 71$

HC3-ø125

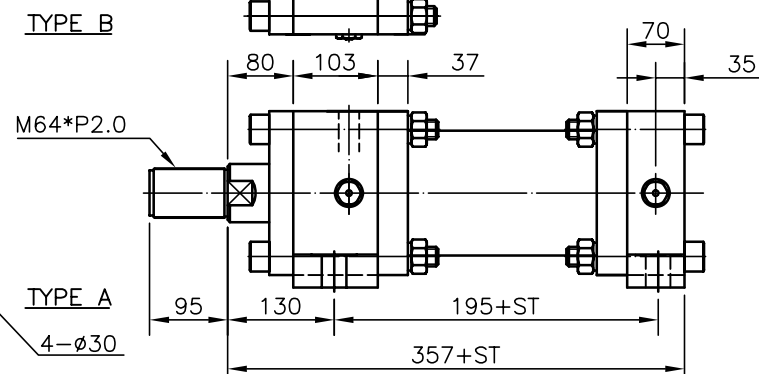
7/21MPa用

HC3-LA ø125

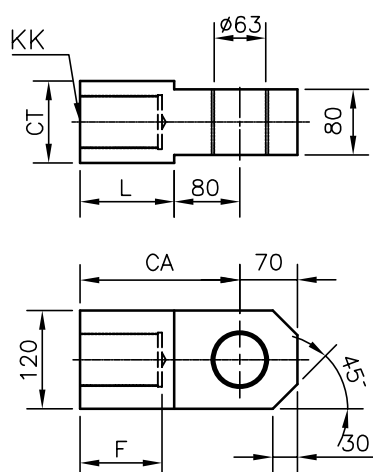


DIMENSION P
2-SSA25
2-Rc 1"

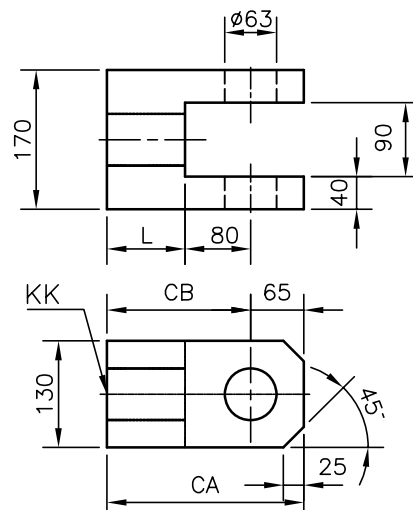
TYPE	ROD
B	ø90
A	ø71



HC3-ø125-I接頭 Clevis head,type I



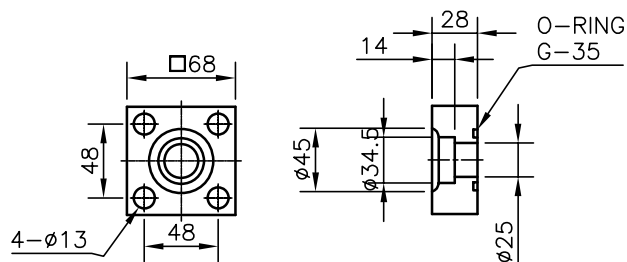
HC3-ø125-Y接頭 Clevis head,type Y



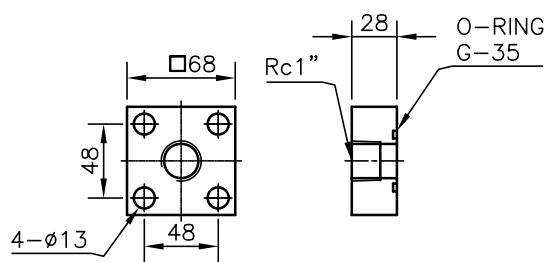
	KK	F	L	CA	CT	Weigh (kg)
TYPE A	M64x2	100	115	195	90	16.3
TYPE B	M80x2	125	140	220	110	18.6

	KK	L	CA	CB	Weigh (kg)
TYPE A	M64x2	95	240	175	22
TYPE B	M80x2	120	265	200	25

SSA凸緣 (Port Flange Kits)



Rc凸緣 (Port Flange Kits)



油壓缸大概重量計算

Estimted weight of hyd.

EX. : FA , ST=200mm ,Type A

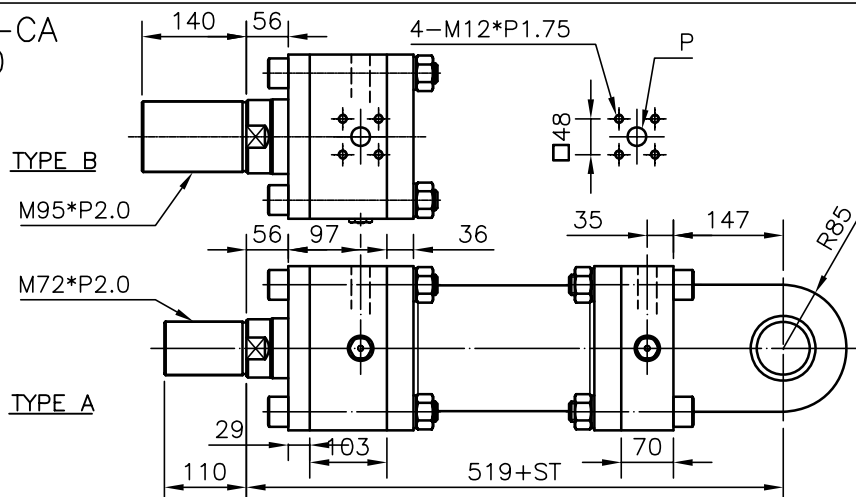
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 102 + (6.4 * 2) \\ &= 114.8 \text{ kg} \end{aligned}$$

	FA	FB	CA	LA	TC
RODø71=W1 (kg)	102	112	116	101	110
RODø90=W1 (kg)	106	116	120	107	114
W2 (kg/100mm)	RODø71=6.4		RODø90=8.3		

HC3- $\phi 140$

7/21MPa用

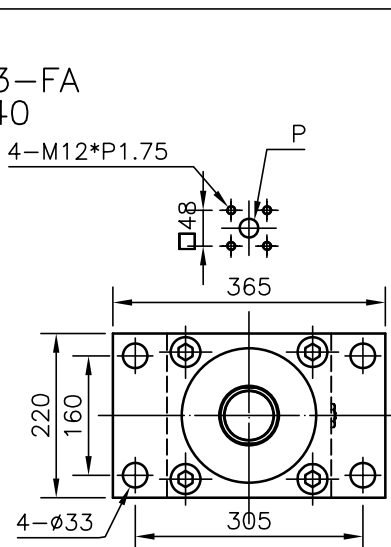
HC3-CA
 $\phi 140$



DIMENSION P
2-SSA25
2-Rc 1"

TYPE	ROD
B	$\phi 100$
A	$\phi 80$

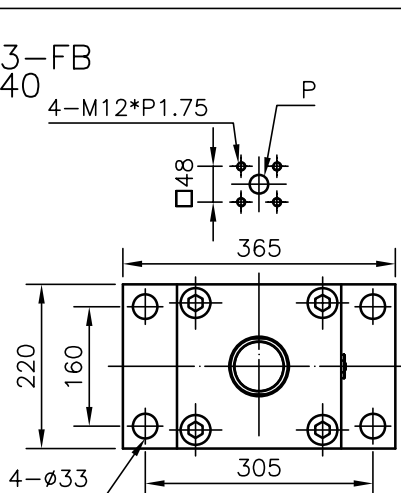
HC3-FA
 $\phi 140$



DIMENSION P
2-SSA25
2-Rc 1"

TYPE	ROD
B	$\phi 100$
A	$\phi 80$

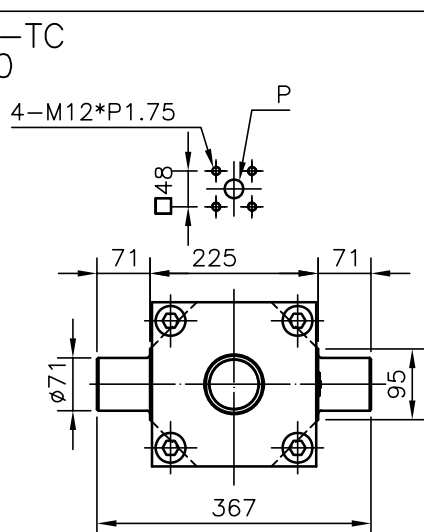
HC3-FB
 $\phi 140$



DIMENSION P
2-SSA25
2-Rc 1"

TYPE	ROD
B	$\phi 100$
A	$\phi 80$

HC3-TC
 $\phi 140$



DIMENSION P
2-SSA25
2-Rc 1"

TYPE	ROD
B	$\phi 100$
A	$\phi 80$

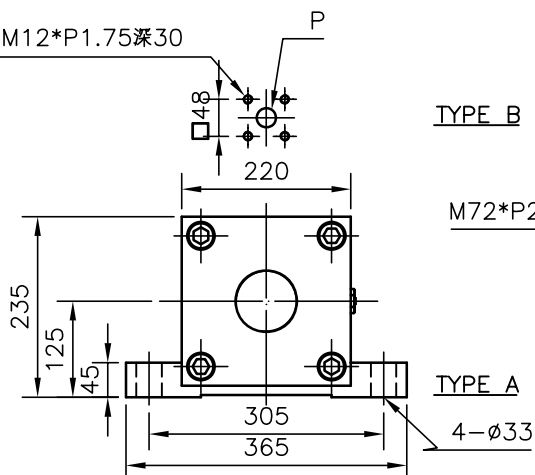
HC3-ø140

7/21MPa用

HC3-LA

ø140

4-M12*P1.75深30



TYPE B

M72*P2.0

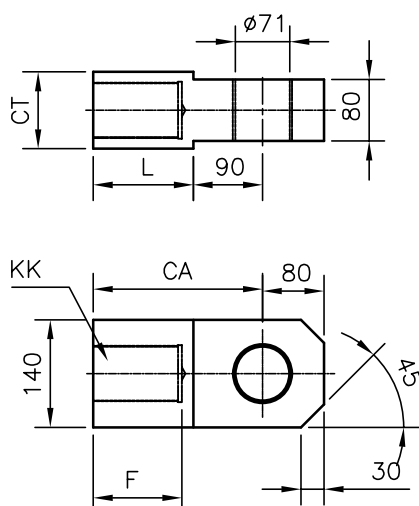
TYPE A

4-ø33

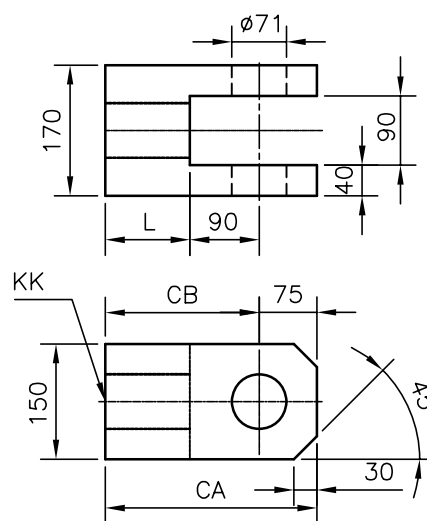
DIMENSION P
2-SSA25
2-Rc 1"

TYPE	ROD
B	ø100
A	ø80

HC3-ø140-I接头 Clevis head,type I



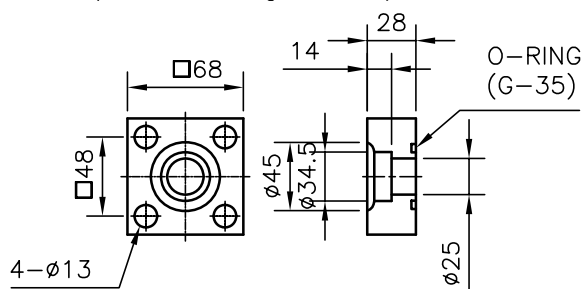
HC3-ø140-Y接头 Clevis head,type Y



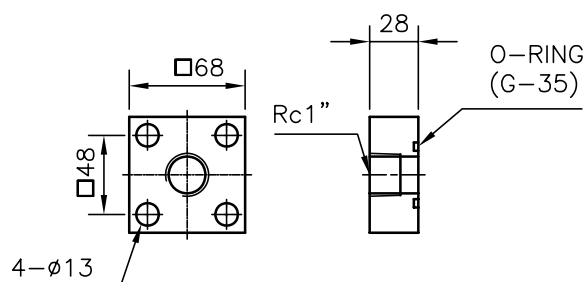
	KK	F	L	CA	CT	Weigh (kg)
TYPE A	M72x2	115	130	220	100	22.8
TYPE B	M95x2	145	165	255	130	27.5

	KK	L	CA	CB	Weigh (kg)
TYPE A	M72x2	110	275	200	32
TYPE B	M95x2	140	305	230	33

SSA凸缘 (Port Flange Kits)



Rc凸缘 (Port Flange Kits)



油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm ,Type A

weight= W1 + (W2 * ST)

= 135 + (8.6 * 2)

= 152.2 kg

	FA	FB	CA	LA	TC
RODø80=W1 (kg)	135	149	151	133	146
RODø100=W1 (kg)	140	154	157	138	151
W2 (kg/100mm)	RODø80=8.6 RODø100=10.8				

7/21MPa用

[illegible]

TYPE	ROD
B	ø112
A	ø90

Technical drawing of the 250mm diameter version of the 2-SSA25 flange. The drawing includes a top view (TYPE A) and a side view (TYPE B).

Top View (TYPE A):

- Outer diameter: 250
- Inner diameter: 185
- Mounting holes: 4-M12*P1.75
- Central bore: 4- $\phi 36$
- Overall width: 405
- Overall height: 250
- Distance from center to mounting hole: 48
- Distance from center to central bore: 340

Side View (TYPE B):

- Flange thickness: 150
- Mounting hole diameter: $\phi 185$
- Distance from flange face to mounting hole: 45
- Distance from flange face to central bore: 3
- Distance from flange face to mounting hole: 120
- Distance from flange face to central bore: 82
- Distance from flange face to central bore: 80
- Distance from flange face to central bore: 214+ST
- Distance from flange face to central bore: 35
- Distance from flange face to central bore: 3
- Distance from flange face to central bore: 45
- Distance from flange face to central bore: 329+ST
- Distance from flange face to central bore: 74

Table:

DIMENSION
P
2-SSA25
2-Rc 1"

TYPE	ROD
B	ø112
A	ø90

[illegible]

TYPE	ROD
B	ø112
A	ø90

Technical drawing of a 4-way valve assembly, showing dimensions and specifications for Type A and Type B configurations.

Dimensions:

- Overall width: 415
- Overall height: 110
- Port diameter: $\phi 80$
- Port spacing: 80
- Port diameter: $\phi 48$
- Port spacing: 255
- Port diameter: $\phi 180$
- Port spacing: 150
- Port diameter: $\phi 127$
- Port spacing: 35
- Port diameter: $\phi 105$
- Port spacing: 74
- Port diameter: $\phi 250$
- Port spacing: 284+ST
- Port diameter: $\phi 144+1/2ST$
- Port spacing: 35

Specifications:

- 4-M12*P1.75
- M100*P2.0
- M80*P2.0
- 2-SSA25
- 2-Rc 1"

Labels:

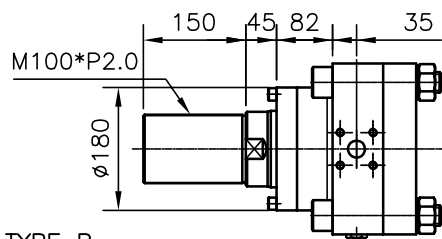
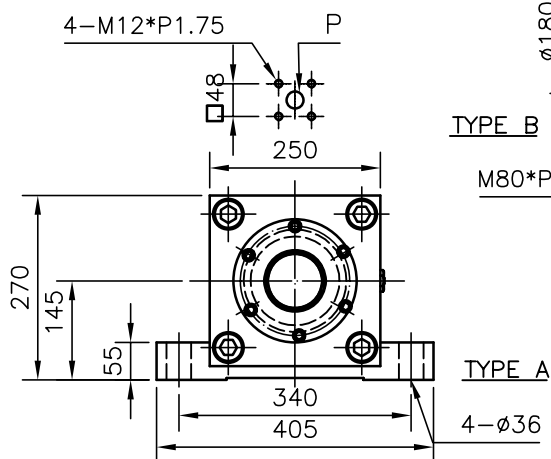
- TYPE A
- TYPE B

TYPE	ROD
B	ø112
A	ø90

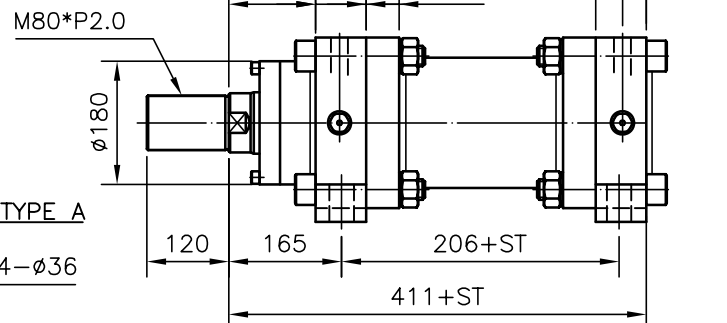
HC3-ø160

7/21MPa用

HC3-LA
ø160



TYPE B

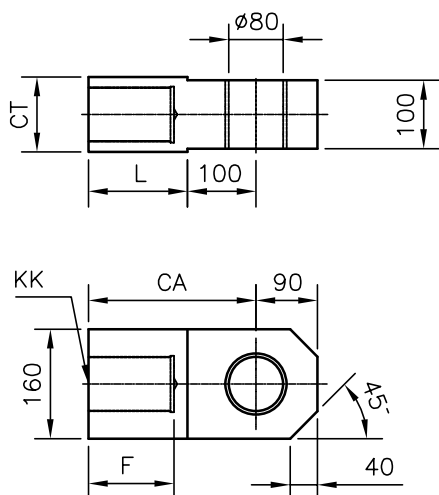


TYPE A

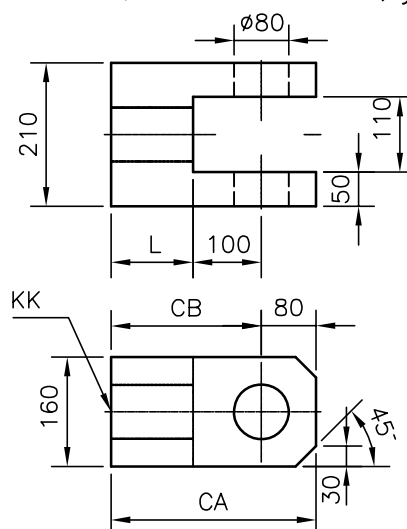
DIMENSION P
2-SSA25
2-Rc 1"

TYPE	ROD
B	ø112
A	ø90

HC3-ø160-I接頭 Clevis head,type I



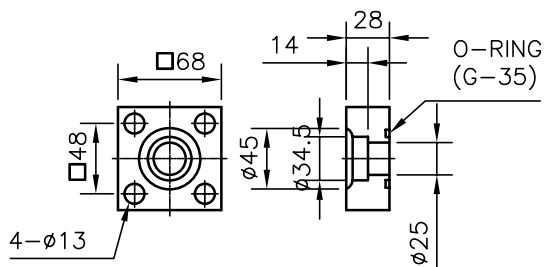
HC3-ø160-Y接頭 Clevis head,type Y



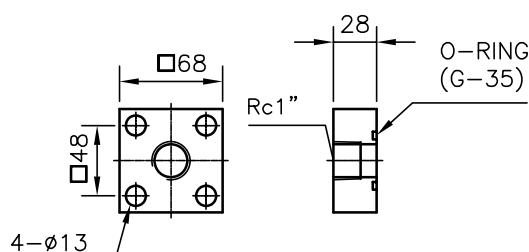
	KK	F	L	CA	CT	Weigh (kg)
TYPE A	M80x2	125	145	245	110	34.6
TYPE B	M100x2	155	175	275	140	40.6

	KK	L	CA	CB	Weigh (kg)
TYPE A	M80x2	120	300	220	46
TYPE B	M100x2	150	330	250	49

SSA凸緣 (Port Flange Kits)



Rc凸緣 (Port Flange Kits)



油壓缸大概重量計算

Estimted weight of hyd.

EX. : FA , ST=200mm ,Type A

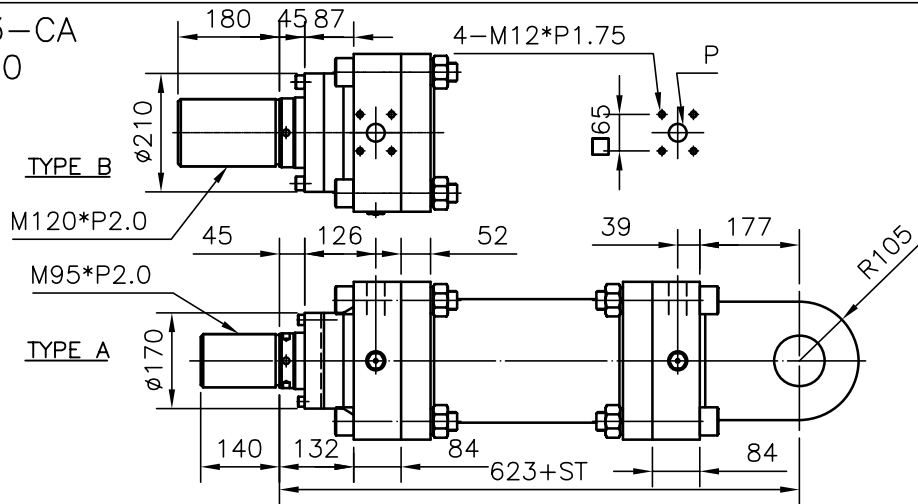
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 176 + (10.3 * 2) \\ &= 196.6 \text{ kg} \end{aligned}$$

	FA	FB	CA	LA	TC
RODø90=W1 (kg)	176	182	193	162	180
RODø112=W1 (kg)	185	193	204	173	191
W2 (kg/100mm)	RODø90=10.3		RODø112=13.0		

HC3- $\phi 180$

7/21MPa用

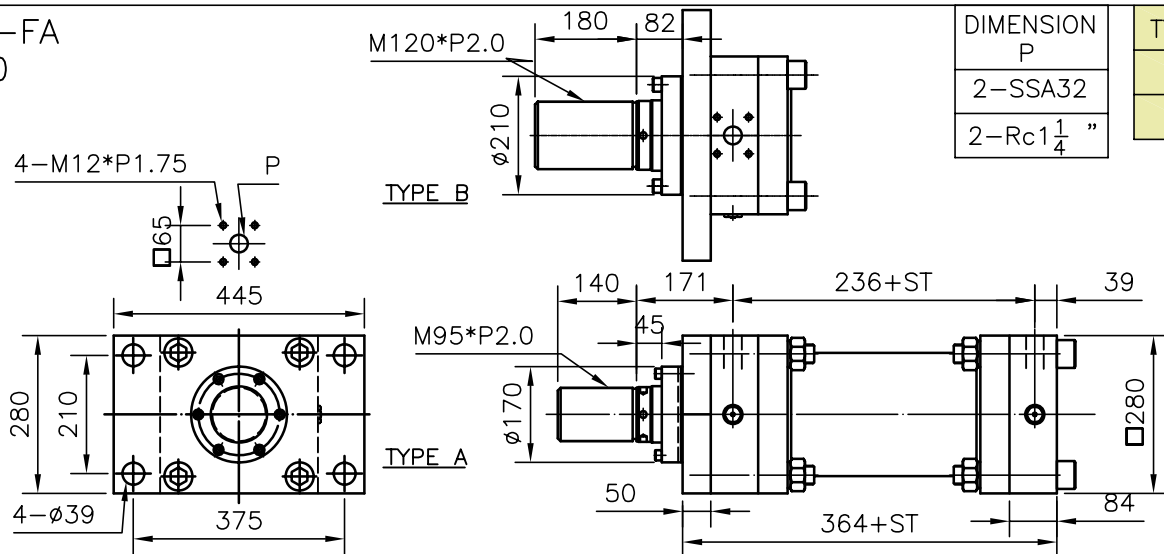
HC3-CA
 $\phi 180$



DIMENSION P
2-SSA32
2-Rc1 $\frac{1}{4}$ "

TYPE	ROD
B	$\phi 125$
A	$\phi 100$

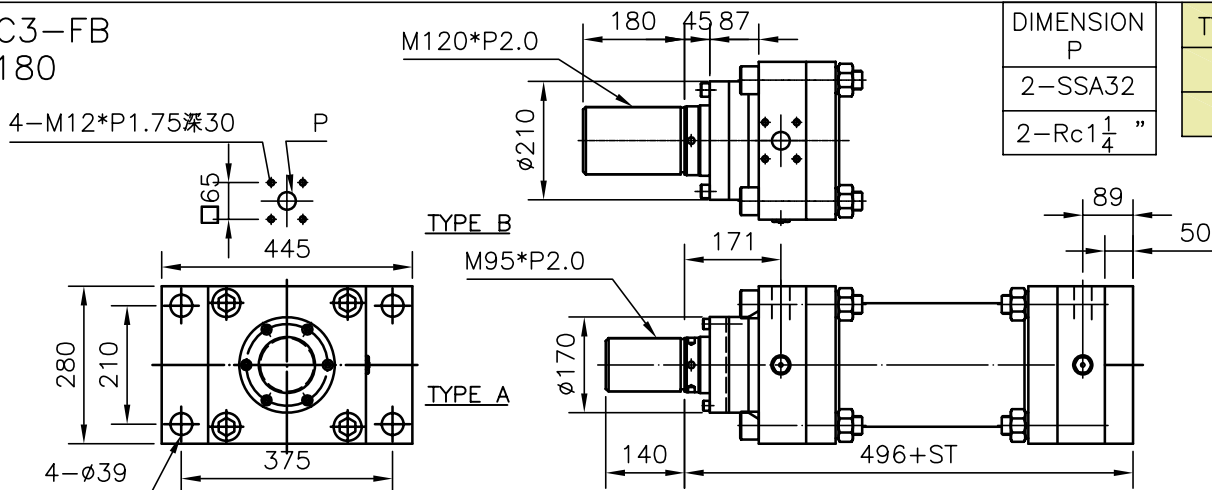
HC3-FA
 $\phi 180$



DIMENSION P
2-SSA32
2-Rc1 $\frac{1}{4}$ "

TYPE	ROD
B	$\phi 125$
A	$\phi 100$

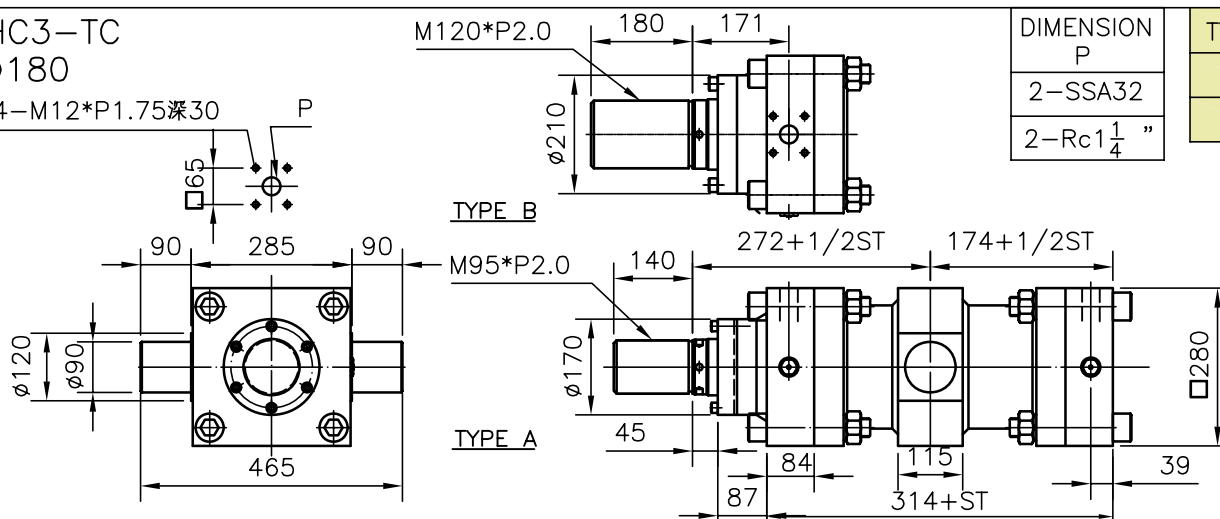
HC3-FB
 $\phi 180$



DIMENSION P
2-SSA32
2-Rc1 $\frac{1}{4}$ "

TYPE	ROD
B	$\phi 125$
A	$\phi 100$

HC3-TC
 $\phi 180$



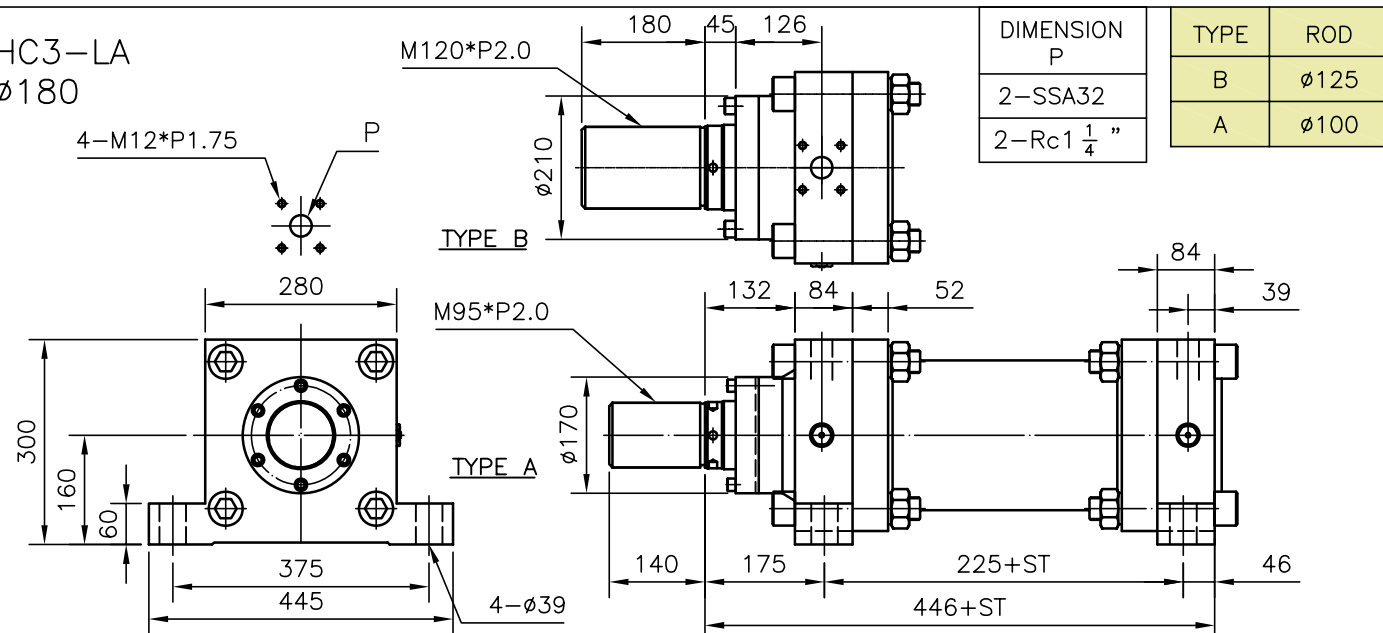
DIMENSION P
2-SSA32
2-Rc1 $\frac{1}{4}$ "

TYPE	ROD
B	$\phi 125$
A	$\phi 100$

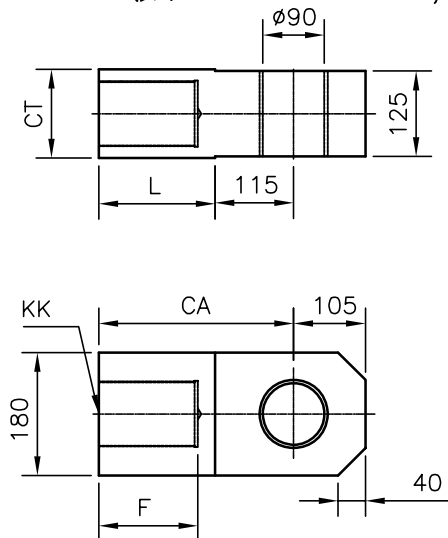
HC3- $\phi 180$

7/21MPa用

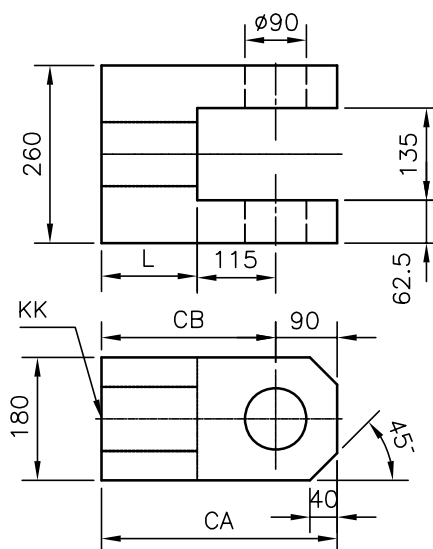
HC3-LA
 $\phi 180$



HC3- $\phi 180$ -I接頭 Clevis head, type I



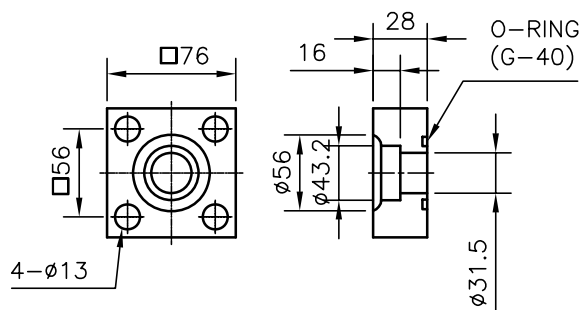
HC3- $\phi 180$ -Y接頭 Clevis head, type Y



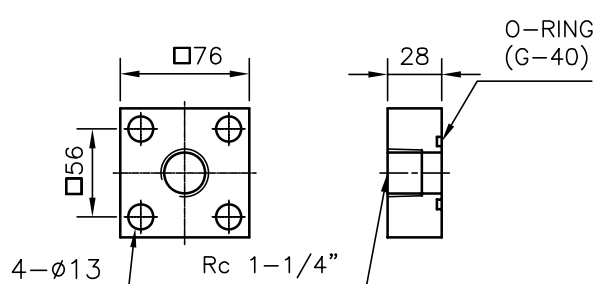
	KK	F	L	CA	CT	Weigh (kg)
TYPE A	M95x2	145	170	285	130	55
TYPE B	M120x2	185	210	325	170	69

	KK	L	CA	CB	Weigh (kg)
TYPE A	M95x2	140	345	255	74
TYPE B	M120x2	180	385	295	80

SSA凸緣 (Port Flange Kits)



Rc凸緣 (Port Flange Kits)



油壓缸大概重量計算

Estimated weight of hyd.

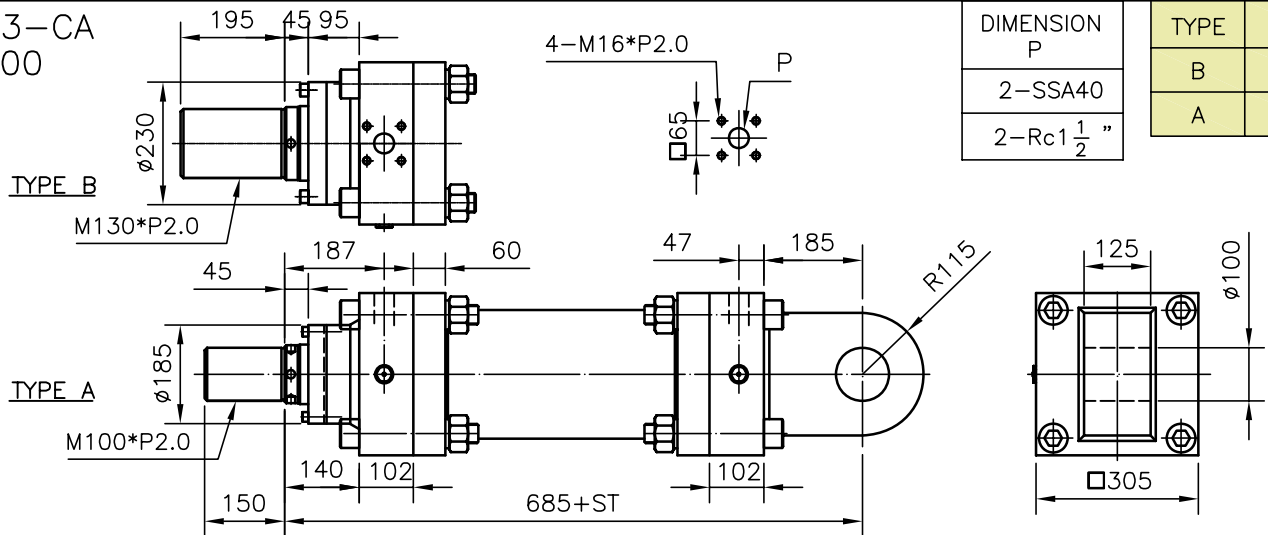
EX. : FA , ST=300mm , Type A
weight= W1 + (W2 * ST)
= 253 + (14.0 * 3)
= 295 kg

	FA	FB	CA	LA	TC
ROD $\phi 100$ =W1 (kg)	253	260	282	230	257
ROD $\phi 125$ =W1 (kg)	266	278	300	248	275
W2 (kg/100mm)	ROD $\phi 100$ =14.0		ROD $\phi 125$ =17.5		

HC3- $\phi 200$

7/21MPa用

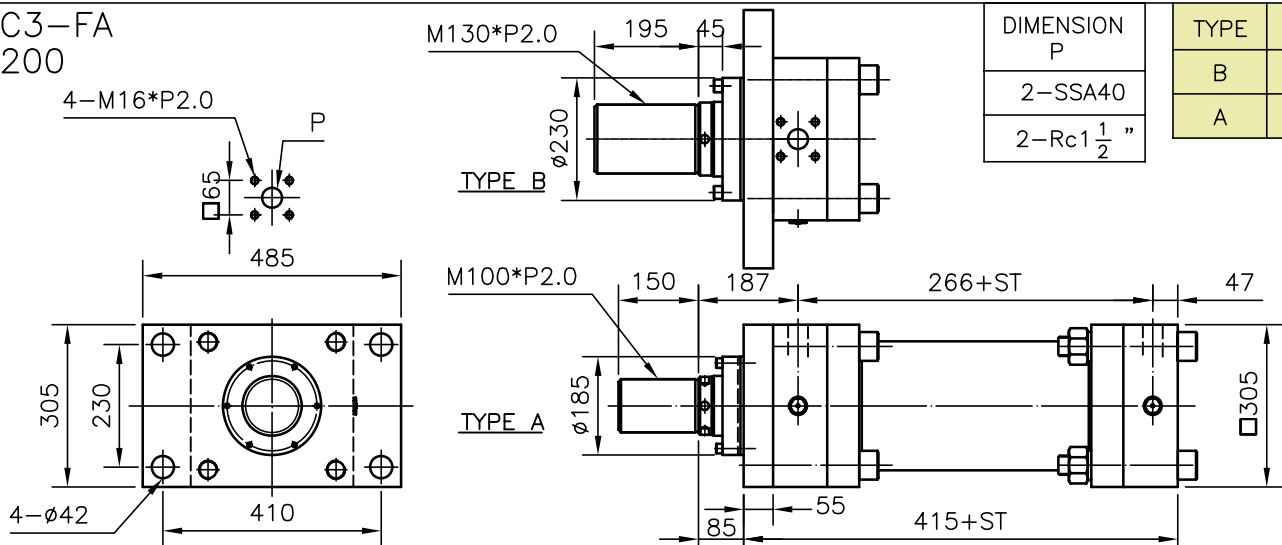
HC3-CA $\phi 200$



DIMENSION P
2-SSA40
2-Rc1 $\frac{1}{2}$ "

TYPE	ROD
B	$\phi 140$
A	$\phi 112$

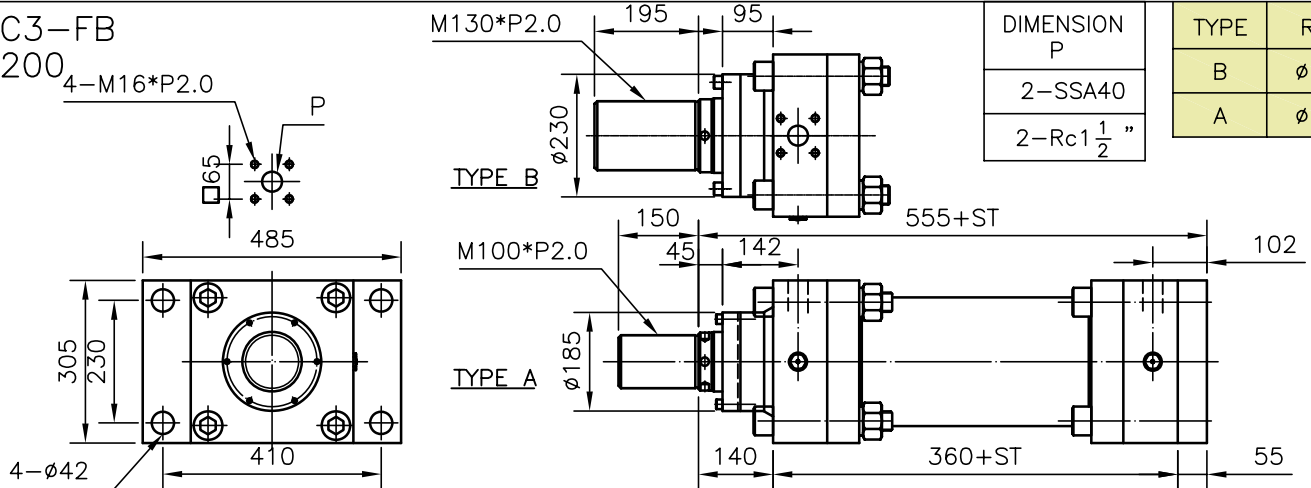
HC3-FA $\phi 200$



DIMENSION P
2-SSA40
2-Rc1 $\frac{1}{2}$ "

TYPE	ROD
B	$\phi 140$
A	$\phi 112$

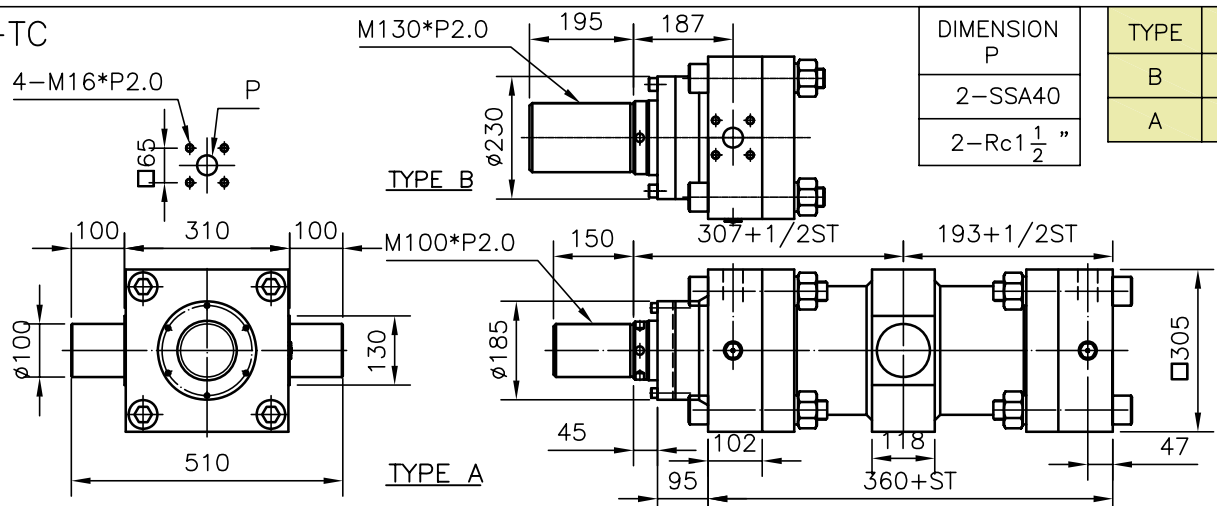
HC3-FB $\phi 200$



DIMENSION P
2-SSA40
2-Rc1 $\frac{1}{2}$ "

TYPE	ROD
B	$\phi 140$
A	$\phi 112$

HC3-TC $\phi 200$



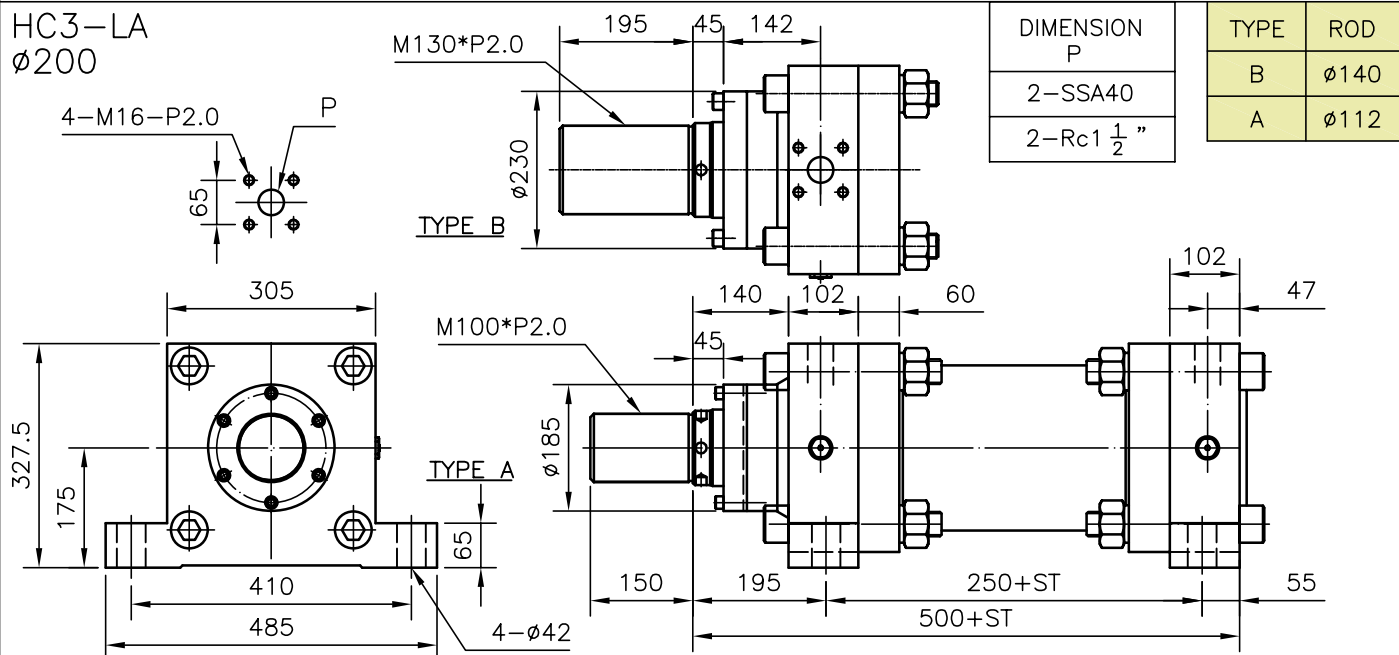
DIMENSION P
2-SSA40
2-Rc1 $\frac{1}{2}$ "

TYPE	ROD
B	$\phi 140$
A	$\phi 112$

HC3- $\phi 200$

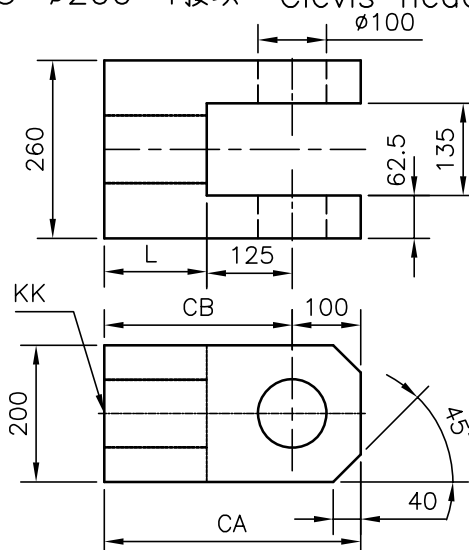
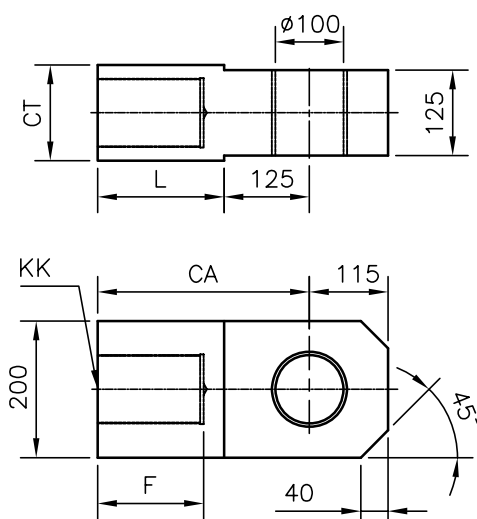
7/21MPa用

HC3-LA
 $\phi 200$



HC3- $\phi 200$ -I接頭 Clevis head, type I

HC3- $\phi 200$ -Y接頭 Clevis head, type Y

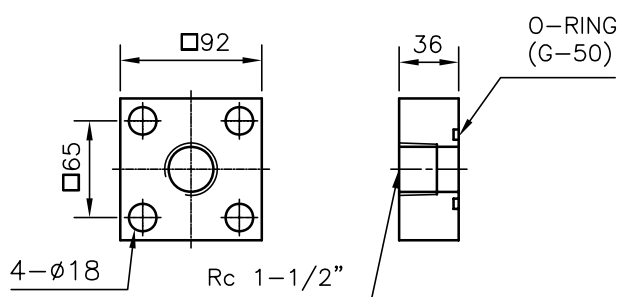
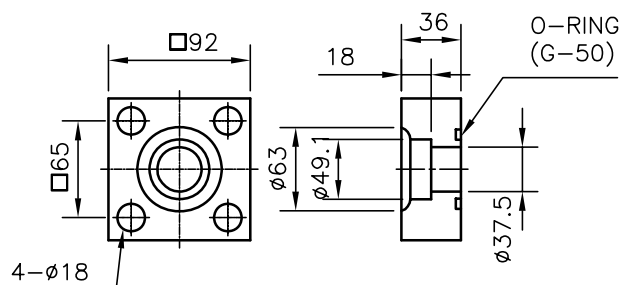


	KK	F	L	CA	CT	Weigh (kg)
TYPE A	M100x2	155	185	310	140	70
TYPE B	M130x3	200	230	355	180	82

	KK	L	CA	CB	Weigh (kg)
TYPE A	M100x2	150	375	275	94
TYPE B	M130x3	195	420	320	101

SSA凸縁 (Port Flange Kits)

Rc凸縁 (Port Flange Kits)



油壓缸大概重量計算

Estimted weight of hyd.

EX. : FA , ST=300mm , Type A

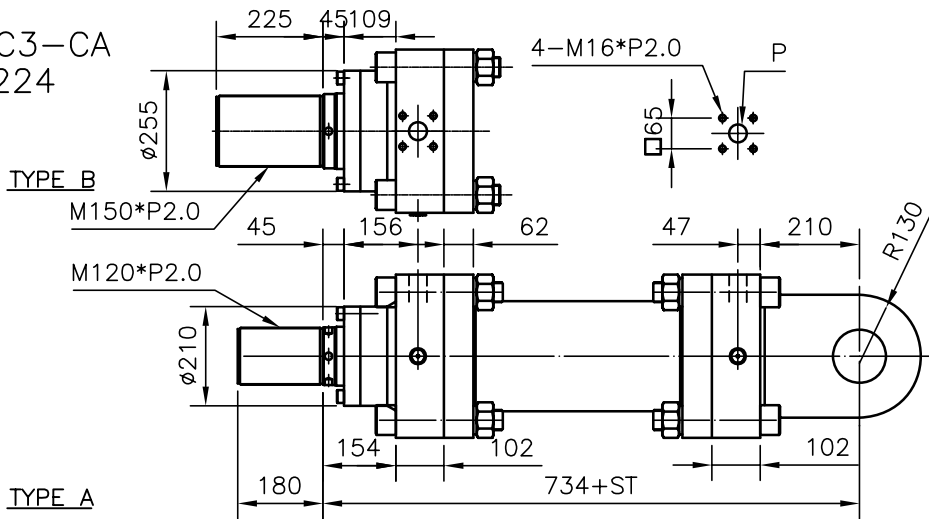
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 342 + (18.7 * 3) \\ &= 398.1 \text{ kg} \end{aligned}$$

	FA	FB	CA	LA	TC
ROD $\phi 112$ =W1 (kg)	342	352	374	315	348
ROD $\phi 140$ =W1 (kg)	362	377	399	340	373
W2 (kg/100mm)	ROD $\phi 112$ =18.7		ROD $\phi 140$ =23.0		

HC3- $\phi 224$

7/21MPa用

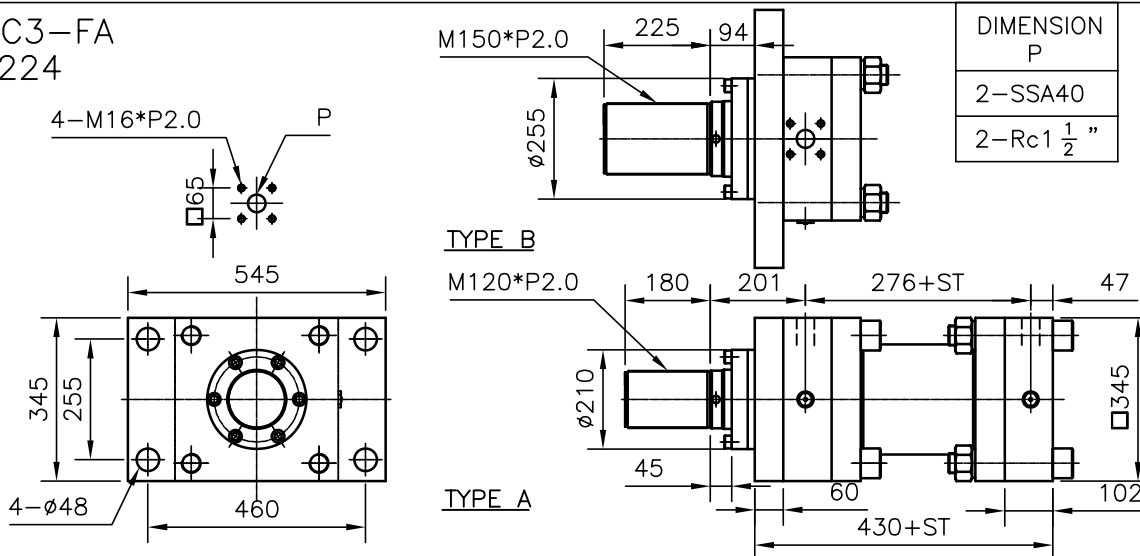
HC3-CA
 $\phi 224$



DIMENSION P
2-SSA40
2-Rc1 $\frac{1}{2}$ "

TYPE	ROD
B	$\phi 160$
A	$\phi 125$

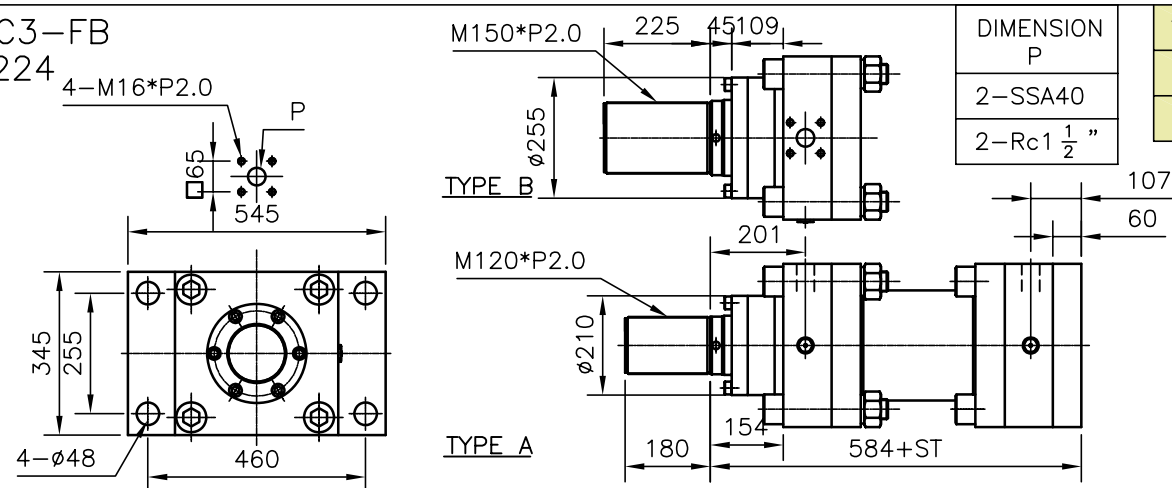
HC3-FA
 $\phi 224$



DIMENSION P
2-SSA40
2-Rc1 $\frac{1}{2}$ "

TYPE	ROD
B	$\phi 160$
A	$\phi 125$

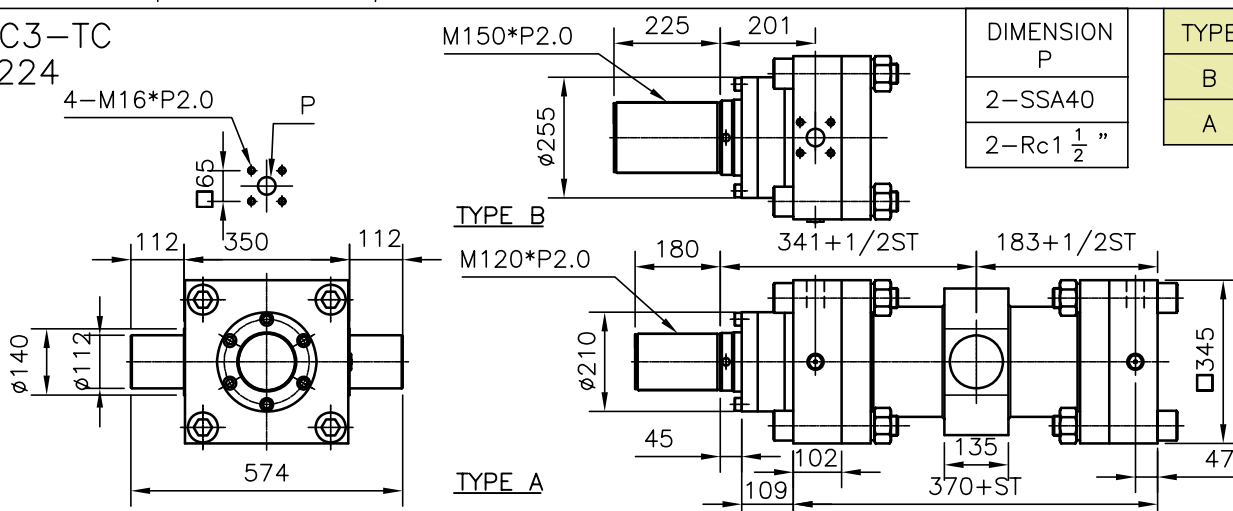
HC3-FB
 $\phi 224$



DIMENSION P
2-SSA40
2-Rc1 $\frac{1}{2}$ "

TYPE	ROD
B	$\phi 160$
A	$\phi 125$

HC3-TC
 $\phi 224$

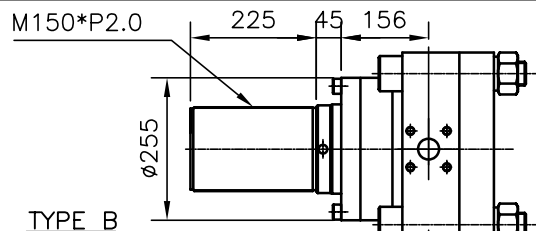
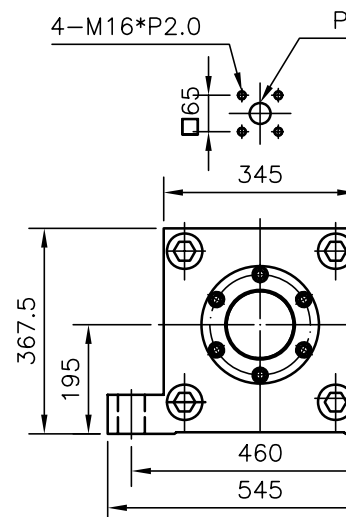


DIMENSION P
2-SSA40
2-Rc1 $\frac{1}{2}$ "

TYPE	ROD
B	$\phi 160$
A	$\phi 125$

HC3- $\phi 224$

7/21MPa用

HC3-LA
 $\phi 224$ 

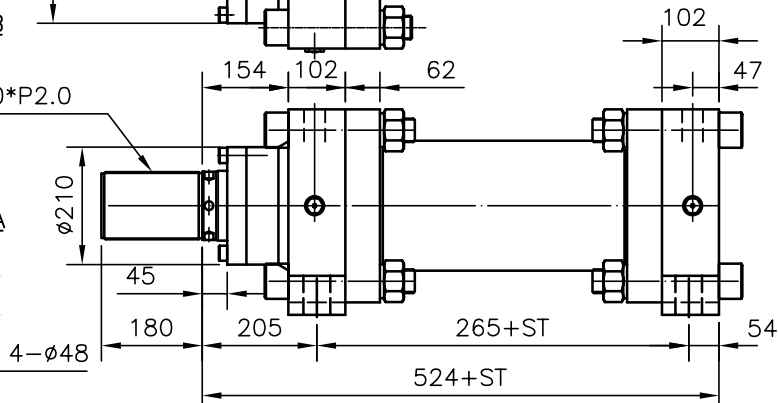
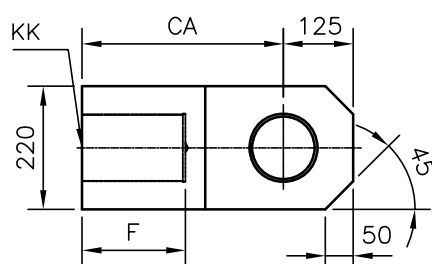
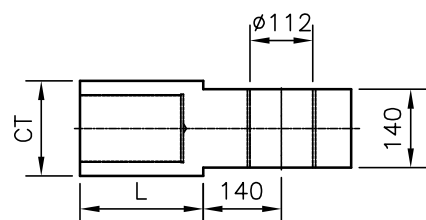
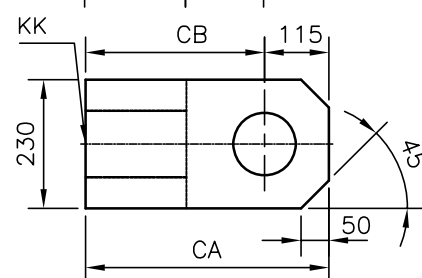
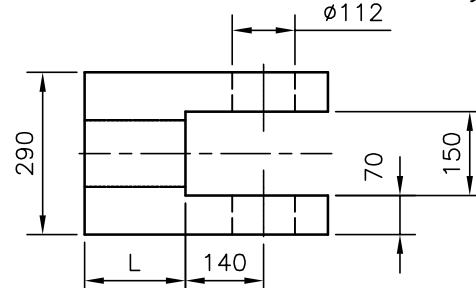
DIMENSION P
2-SSA40
2-Rc1 $\frac{1}{2}$ "

TYPE	ROD
B	$\phi 160$
A	$\phi 125$

TYPE B

M120*P2.0

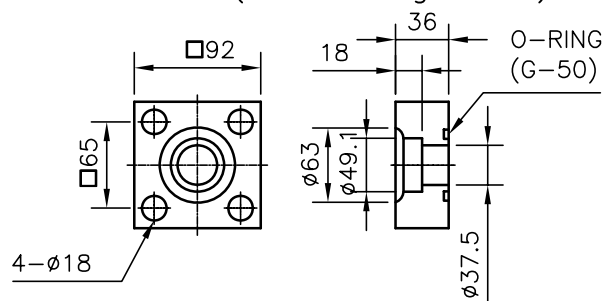
TYPE A

HC3- $\phi 224$ -I接頭 Clevis head,type IHC3- $\phi 224$ -Y接頭 Clevis head,type Y

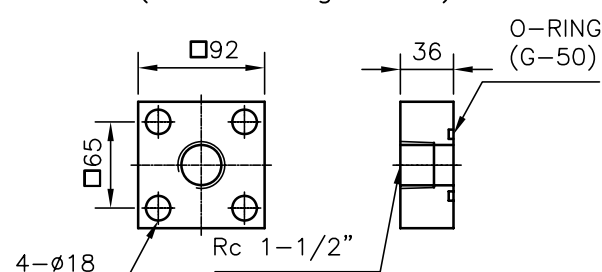
	KK	F	L	CA	CT	Weigh (kg)
TYPE A	M120x2	185	220	360	170	100
TYPE B	M150x2	230	265	405	210	129

	KK	L	CA	CB	Weigh (kg)
TYPE A	M120x2	180	435	320	130
TYPE B	M150x2	225	480	365	153

SSA凸緣 (Port Flange Kits)



Rc凸緣 (Port Flange Kits)



油壓缸大概重量計算

Estimted weight of hyd.

EX. :

FA , ST=300mm ,Type A

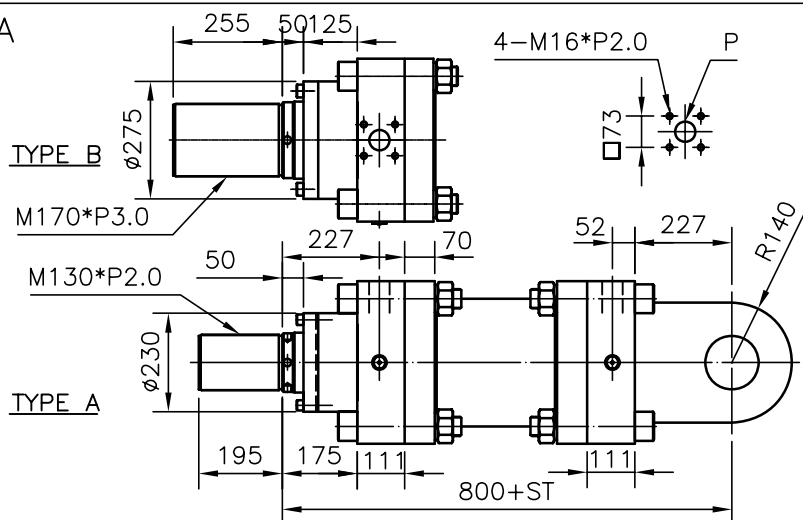
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 440 + (22.7 * 3) \\ &= 508.1 \text{ kg} \end{aligned}$$

	FA	FB	CA	LA	TC
ROD $\phi 125$ =W1 (kg)	440	455	485	399	445
ROD $\phi 160$ =W1 (kg)	468	490	520	434	480
W2 (kg/100mm)	ROD $\phi 125$ =22.7		ROD $\phi 165$ =28.8		

HC3- $\phi 250$

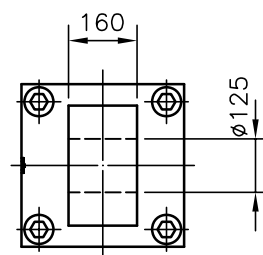
7/21MPa用

HC3-CA $\phi 250$

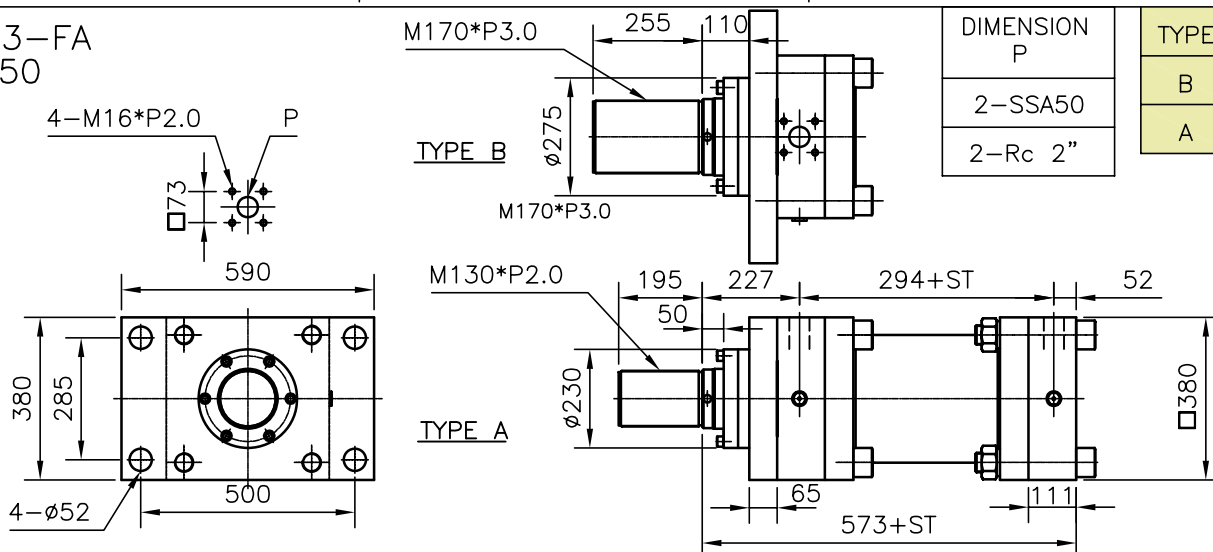


DIMENSION P
2-SSA50
2-Rc 2"

TYPE	ROD
B	$\phi 180$
A	$\phi 140$



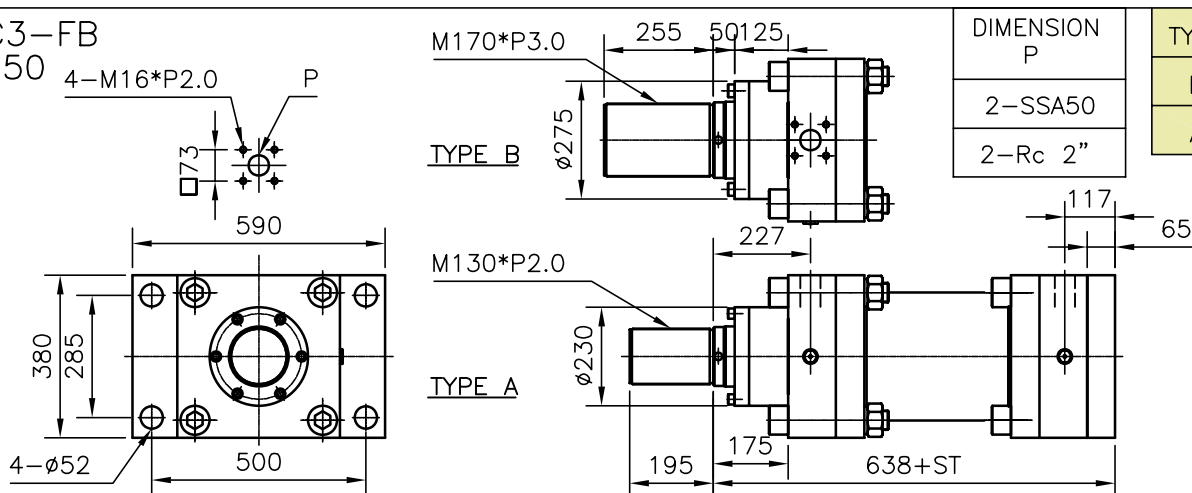
HC3-FA $\phi 250$



DIMENSION P
2-SSA50
2-Rc 2"

TYPE	ROD
B	$\phi 180$
A	$\phi 140$

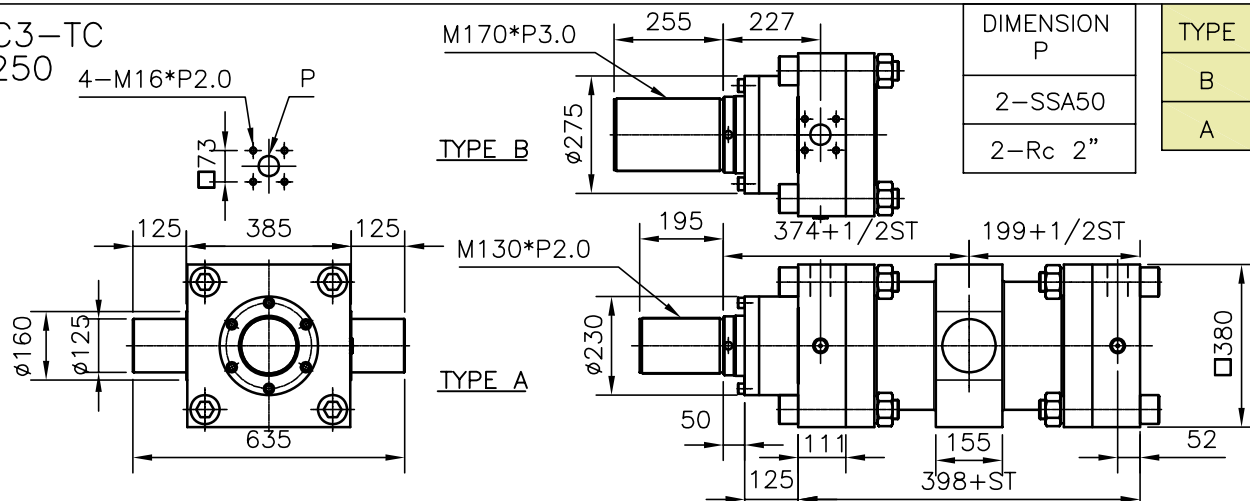
HC3-FB $\phi 250$



DIMENSION P
2-SSA50
2-Rc 2"

TYPE	ROD
B	$\phi 180$
A	$\phi 140$

HC3-TC $\phi 250$

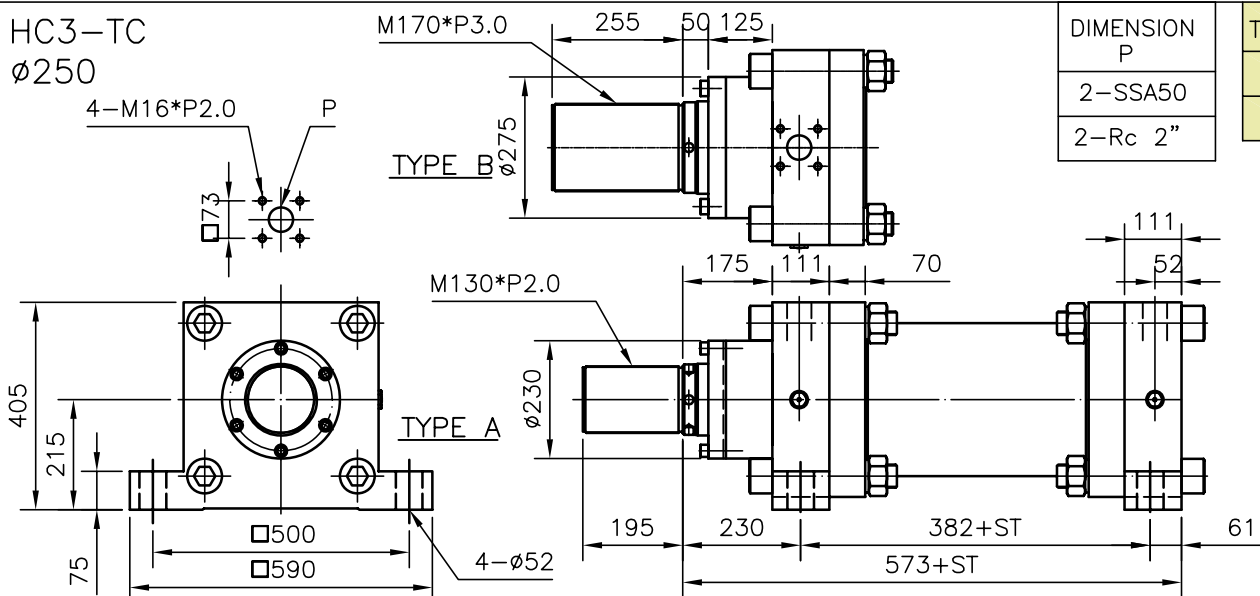


DIMENSION P
2-SSA50
2-Rc 2"

TYPE	ROD
B	$\phi 180$
A	$\phi 140$

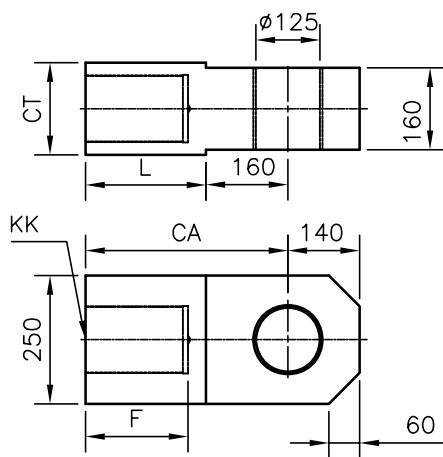
HC3- $\phi 250$

7/21MPa用

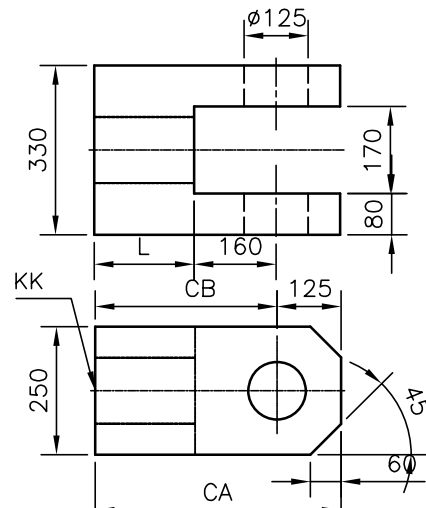
HC3-TC
 $\phi 250$ 

DIMENSION P
2-SSA50
2-Rc 2"

TYPE	ROD
B	$\phi 180$
A	$\phi 140$

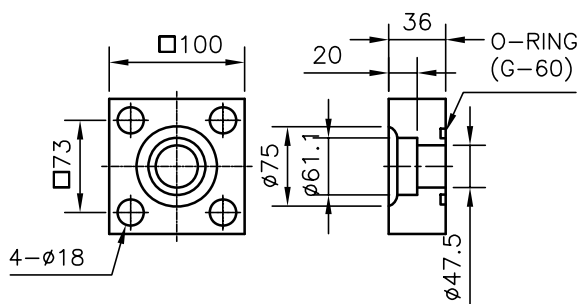
HC3- $\phi 250$ -I接頭 Clevis head,type I

	KK	F	L	CA	CT	Weigh (kg)
TYPE A	M130x2	200	235	395	180	140
TYPE B	M170x3	260	295	455	240	169

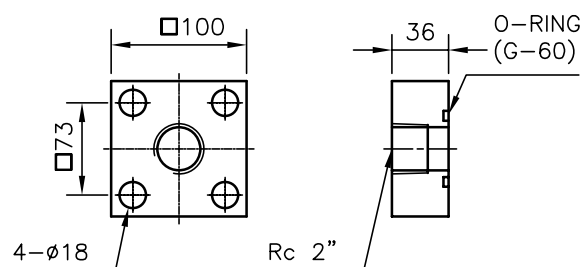
HC3- $\phi 250$ -Y接頭 Clevis head,type Y

	KK	L	CA	CB	Weigh (kg)
TYPE A	M130x2	195	480	355	176
TYPE B	M170x3	255	540	415	189

SSA凸緣 (Port Flange Kits)



Rc凸緣 (Port Flange Kits)



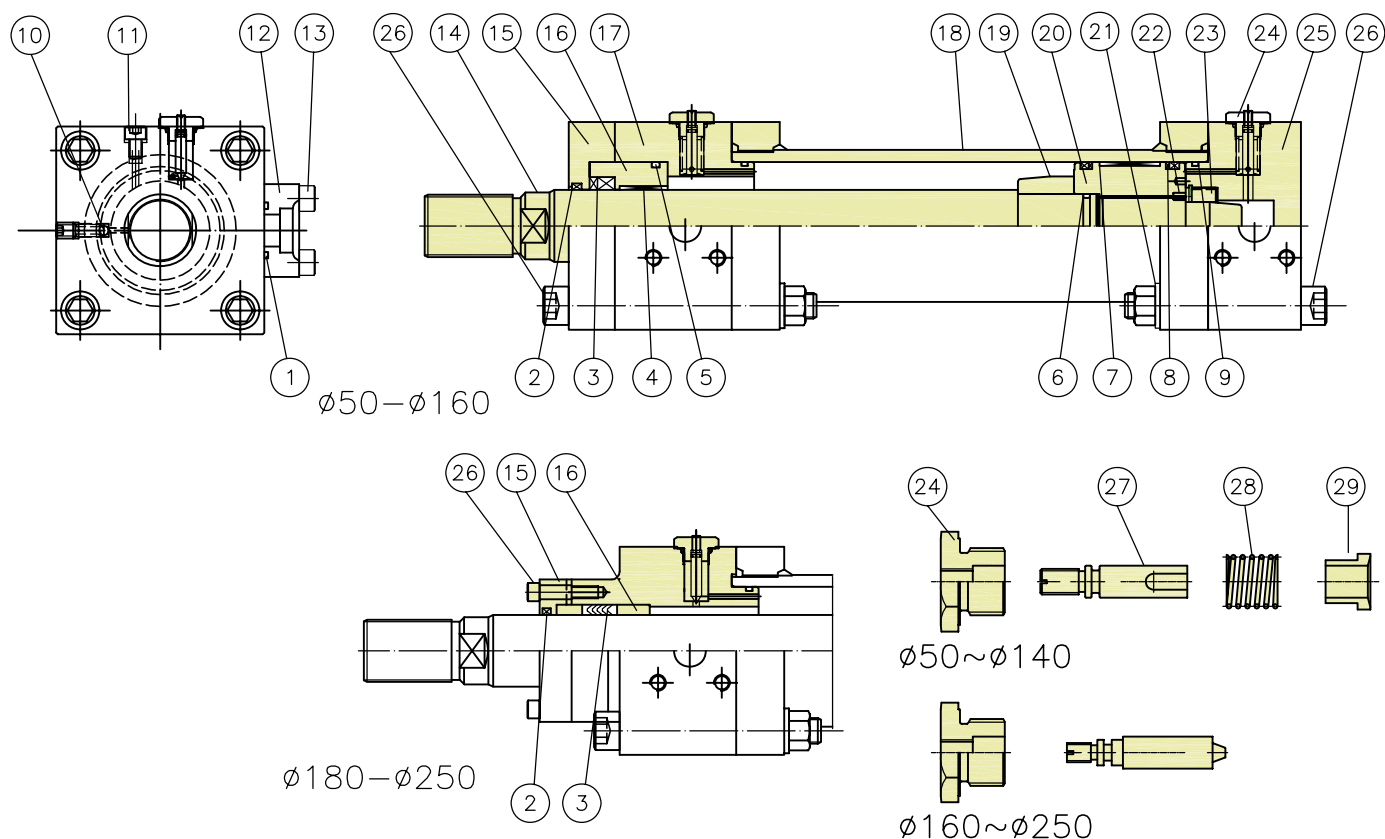
油壓缸大概重量計算 Estimated weight of hyd.

EX. :

FA , ST=300mm ,Type A

$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 578 + (28.3 * 3) \\ &= 662.9 \text{ kg} \end{aligned}$$

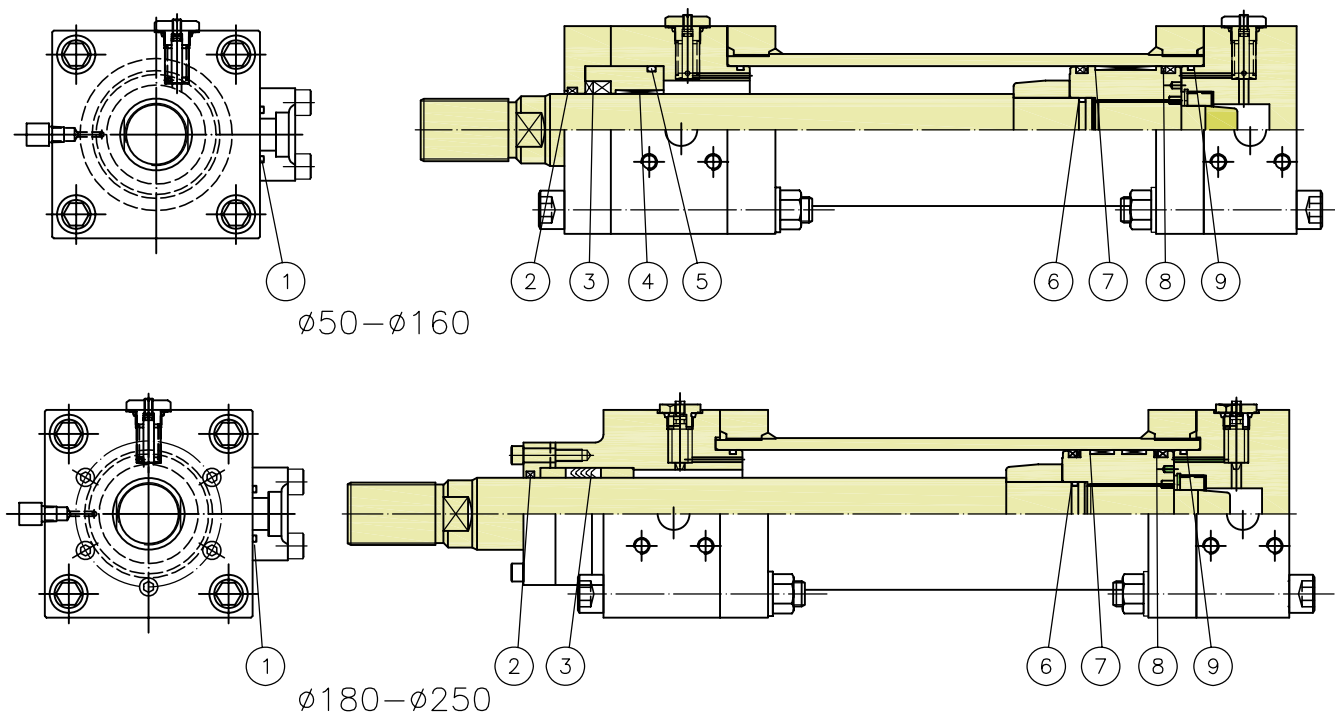
	FA	FB	CA	LA	TC
ROD $\phi 140$ =W1 (kg)	578	595	645	523	589
ROD $\phi 180$ =W1 (kg)	620	648	698	576	642
W2 (kg/100mm)	ROD $\phi 140$ =28.3		ROD $\phi 180$ =36.2		



* 零件名稱及材質表

Parts Description & Material List:

NO	名稱Description.	材質Material.	Q'TY	NO	名稱Description.	材質Material.	Q'TY
1	O型環 O Ring	NBR	2	16	導襯套 Guide bush	機械構造用碳鋼 Carbon Steel for Mechanical Structure	2
2	防塵油封 Dust Seal	NBR	1	17	前蓋 Head	一般構造用軋鋼 Rolled Steel for General	1
3	軸心油封 Rod Seal	NBR	1	18	缸管 Cylinder Tube	機械構造用碳鋼管 Carbon Steel Pipe for Mechanical Structure.	1
4	耐磨片 Wear Ring	PTFE	1	19	緩衝環 Cushion Bush	球狀黑鉛鑄鐵 Black Lead Spherical Cast Iron	2
5	O型環 O Ring	NBR	1	20	活塞 Piston	一般構造用軋鋼 Rolled Steel for General	1
6	O型環 O Ring	NBR	1	21	六角螺帽 Tie Rod Nut	一般構造用軋鋼 Rolled Steel for General	4
7	耐磨片 Wear Ring	PTFE	2	22	防鬆螺絲 Set Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1
8	活塞油封 Piston Seal	NBR	2	23	緩衝環 Cushion Bush	球狀黑鉛鑄鐵 Black Lead Spherical Cast Iron	1
9	O型環 O Ring	NBR	2	24	緩衝本體 Cushion Body	機械構造用碳鋼 Carbon Steel for Mechanical Structure	2
10	止逆閥 Non return valve and bleed	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1	25	後蓋 Cylinder Cap	一般構造用軋鋼 Rolled Steel for General	1
11	六角承窩螺絲 Scket Head Cap Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	2	26	六角承窩螺絲 Scket Head Cap Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	4
12	凸緣法蘭 Flange	一般構造用軋鋼 Rolled Steel for General	1	27	緩衝針 Cushion Adjustment	機械構造用碳鋼 Carbon Steel for Mechanical Structure	2
13	六角承窩螺絲 Scket Head Cap Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	4	28	彈簧 Spring	琴鋼線 Qin Steel Wire	2
14	活塞桿 Piston Rod	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1	29	襯套 Bush	機械構造用碳鋼 Carbon Steel for Mechanical Structure	2
15	壓板 Cover	一般構造用軋鋼 Rolled Steel for General	1	30			



油封規格表 Specifications of Oil Seal:

NO	1	2	3	4	5	6	7	8	9
名 稱	O型環 O Ring	防塵油封 Dust Seal	軸心油封 Rod Seal	耐磨片 Wear Ring	O型環 O Ring	O型環 O Ring	耐磨片 Wear Ring	活塞油封 Piston Seal	O型環 O Ring
材質	NBR	PU	PU	PTFE	NBR	NBR	PTFE	PU	NBR
數 量 內徑	2	1 $\phi, \phi.w$ mm	$\phi, \phi.w$ 1 mm +Backup ring	1	2	1	2	$\phi, \phi.w$ 2 mm +Backup ring	1
$\phi 50$ $\frac{A}{B}$	G-25	28-36-6 35.5-43.5-6	28-41-13 35.5-51.5-13	28-2.5 35.5-2.5	G-45 G-55	P-20	50-2.5	50-40-8.5	G□-50
$\phi 63$ $\frac{A}{B}$	G-25	35.5-43.5-6 45-53-6.5	35.5-51.5-13 45-61-16	35.5-2.5 45-2.5	G-65	P-22	63-2.5	63-53-8.5	G-58
$\phi 80$ $\frac{A}{B}$	G-30	45-53-6.5 56-64-6.5	45-61-16 56-72-16	45-2.5 56-2.5	G-75	G-35	80-2.5	80-60-13	G-75
$\phi 100$ $\frac{A}{B}$	G-30	56-64-6.5 71-81-8	56-72-16 71-91-16	56-2.5 71-2.5	G-95	G-45	100-2.5	100-80-16	G-95
$\phi 125$ $\frac{A}{B}$	G-35	71-81-8 90-100-8	71-91-16 90-110-16	71-2.5 90-2.5	G-115	G-60	125-2.5	125-105-16	G-120
$\phi 140$ $\frac{A}{B}$	G-35	80-90-8 100-110-8	80-100-16 100-120-16	80-2.5 100-2.5	G-125	G-65	140-2.5	140-120-19	G-135
$\phi 160$ $\frac{A}{B}$	G-35	90-100-8 112-122-8	90-110-16 112-132-19	90-2.5 112-2.5	G-135	G-75	160-2.5	160-135-24	G-150
$\phi 180$ $\frac{A}{B}$	G-40	100-110-8 125-138-9.5	100-120-33.5 125-150-33.5	—	—	G-85	180-2.5	180-155-24	G170
$\phi 200$ $\frac{A}{B}$	G-50	112-122-8 140-153-9.5	112-132-38 140-165-45.5	—	—	G-95	200-2.5	200-175-24	G-190
$\phi 224$ $\frac{A}{B}$	G-50	125-138-9.5 160-174-9.5	125-150-45.5 160-185-45.5	—	—	G-105	224-2.5	224-199-24	G-210
$\phi 250$ $\frac{A}{B}$	G-60	140-153-9.5 180-194-9.5	140-165-45.5 180-205-45.5	—	—	G-120	250-2.5	250-225-24	G-240

HC4系列油壓缸

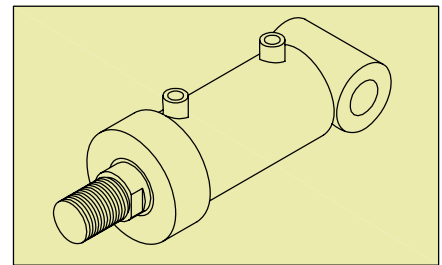
HC4 Series Hydraulic Cylinders

昇降台等特殊用途 Which employed in elevating platform etc. special applications

- * HC4形油壓缸之設計,適用於昇降台,車輛或停車場等機械,在任何嚴酷的環境中使用,如振動,衝擊和瞬間極壓等均安全的強力形油壓缸
- * 本形式是以推出力為主要目的,後蓋面積為前蓋面積約2倍,所以使用時,前蓋端之出入口要注意背壓之問題
- * 加工精度,表面處理,油封材料等各零件之設計均朝向,特殊用途為基準的高性能油壓缸
- * The HC4 hyd cylinders which designed and employed in elevating platform, vehicle & parking equipments etc., Since those are employed at strictly environmental condition and with vibration resistant impulse resistant & anti-instantaneous burst pressure are very effective
- * This series hyd cylinder is aim at extending force and the cylinder cap area is double of cylinder head so that, the back pressure must emphasized at inlet/outlet of cylinder head during operating.
- * The processing accuracy, surface treatment & oil sealer's material etc., selecting & manufacturing are emphasised on special applications.

規範 Specifications

項 目 Item	型 式 Model	HC4系列 HC4 Series
缸管內徑 Cylinder Bore	mm	ø50,ø63,ø80,ø90 ø100,ø125
固定座形式 Mounting		FB , CA , CD
使用壓力 Operating Pressure		180 kgf/cm ²
測試壓力 Testing Pressure		230 kgf/cm ²
最低作動壓力 Min. Operating Press.		3 kgf/cm ²
適用作動油 Fluid		一般礦物性作動油 Mineral oil
最高使用速度 Max Operating Speed		500 mm/sec
最低使用速度 Min Operating Speed		10 mm/sec
周圍溫度範圍 Range of Ambient Temperature		-10 ⁰ C ~ +80 ⁰ C
推桿前端形式 Rod End Type		A TYPE 與 B TYPE
關連零件 Related Attachment		I接頭 (A TYPE使用) Clevis hand type I
最大行程 Max. Stroke		參考彎曲強度低值 (DRAW)
行程容許差 Tolerance of Stroke		JIS B 8354 A級



* 活塞桿前端形式 Rod End Type :

略 圖			
TYPE A		TYPE B	

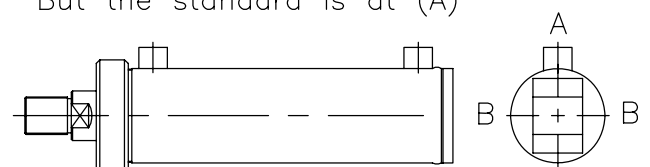
* 固定座形式 Mounting

記號 Symbol	名 稱 Description	略 圖 Configuration
FB	後蓋端法蘭形 Rectangular flange at cylinder cap	
CA	山形座(1山) Plate clevis at cylinder cap	
CD	後蓋端圓筒形 Tube clevis at cylinder cap	

* 出入油孔方向 Port Position :

油孔方向分 ① ② —標準方向為 ①

The port position is divided into(A)(B)
But the standard is at (A)



- * 本油壓缸之油封因較為特殊其材質無氟素橡膠,故作動油不得使用磷酸酯系之作動油
The oil sealer of this series are very special and the material (VITON). So that, the fluid will not be phosphatide ester oil.

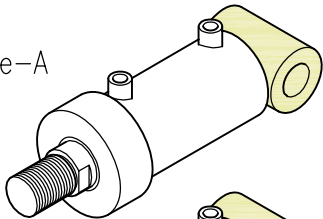
HC4

訂購內容索引 Ordering Index :

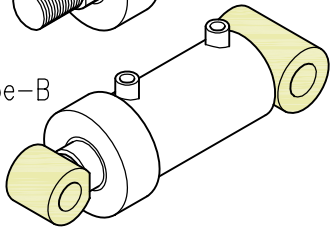
210	HC4	FB	125	90	100	B	A	E	U
使用壓力140/230 kgf/cm ² Max. Operating Pres.	HC4:系列 HC4:Series Number	固定座形式 Mounting FB, TC, CA, CD	缸管內徑 Cylinder Bore mm ø50,ø63,ø80,ø90,ø100,ø125	活塞桿徑 Rod Dia mm ø35,ø40,ø55,ø65,ø70,ø90	衝程 Stroke mm 要考慮最大容許衝程 Max. Permissible stroke	U-活塞用U型油封 T-活塞用T型油封 U-Piston seal for mode U T-Piston seal for mode T	特殊附件-TYPE-A E:活塞桿前端另類螺紋形 K:附固定螺帽 L:接頭,LO,GF Optionals-TYPE-A	出入口之方向 Port Position A:標準 B:右 A:Standard B:Right or Left	活塞桿前端形式 Rod End Type Type-A Type-B

* 固定座形式 Mounting

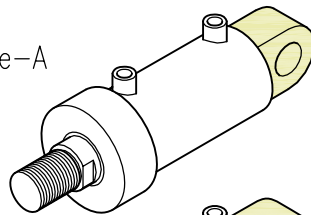
CD
Type-A



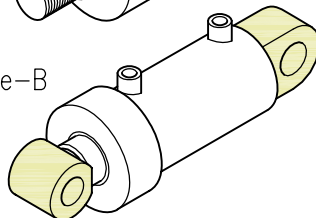
Type-B



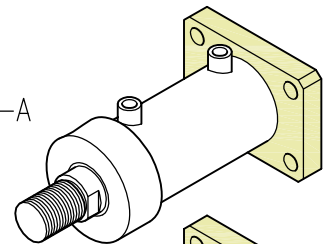
CA
Type-A



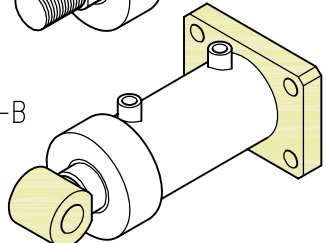
Type-B



FB
Type-A



Type-B

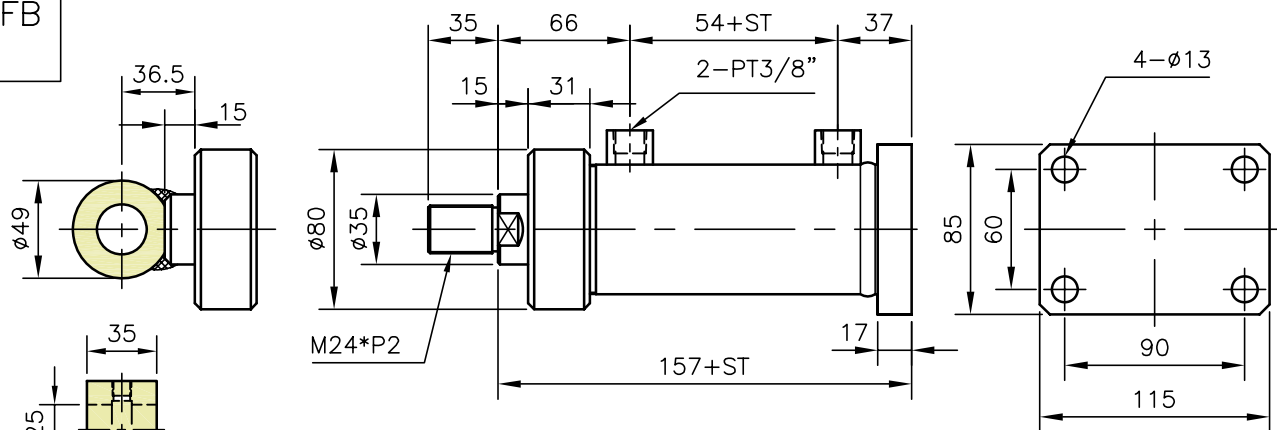


* 技術參數 Technical Data :

缸管內徑 Cylinder Bore mm	活塞桿徑 Rod Dia. mm	面積比 HA RA	動作 Action	有效面積 Effective Area cm ²	出力 Output Power kgf			流量10L/分 之速度 Flow Rate at Speed 10L/min mm/sec	速度10mm/秒 之流量 Speed at Flow Rate 10mm/sec L/min
					70 kgf/cm ²	140 kgf/cm ²	230 kgf/cm ²		
50	35	1.9	推力 Extend	19.6	1374	2748	4516	85	1.2
		1	拉力 Retract	10	700	1400	2303	167	0.6
63	40	1.8	推力 Extend	31.2	2181	4362	7170	53	1.9
		1	拉力 Retract	18.6	1302	2604	4279	90	1.1
80	55	1.9	推力 Extend	50.3	3517	7034	11561	33	3.0
		1	拉力 Retract	26.5	1855	3711	6097	63	1.6
90	65	2	推力 Extend	63.6	4451	8906	14632	26	3.8
		1	拉力 Retract	30.4	2129	4261	7000	55	1.8
100	70	2	推力 Extend	78.5	5495	10996	18064	21	4.7
		1	拉力 Retract	40.1	2804	5608	9213	42	2.3
125	90	2	推力 Extend	122.7	8586	17181	28225	14	7.4
		1	拉力 Retract	59.1	4135	8270	13593	28	3.5

HC4-ø50

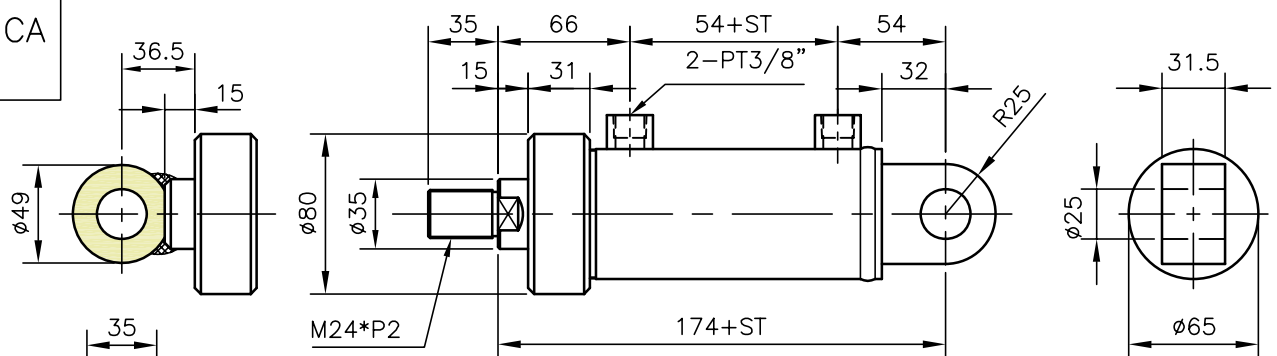
HC4-FB ø50



TYPE A

TYPE B

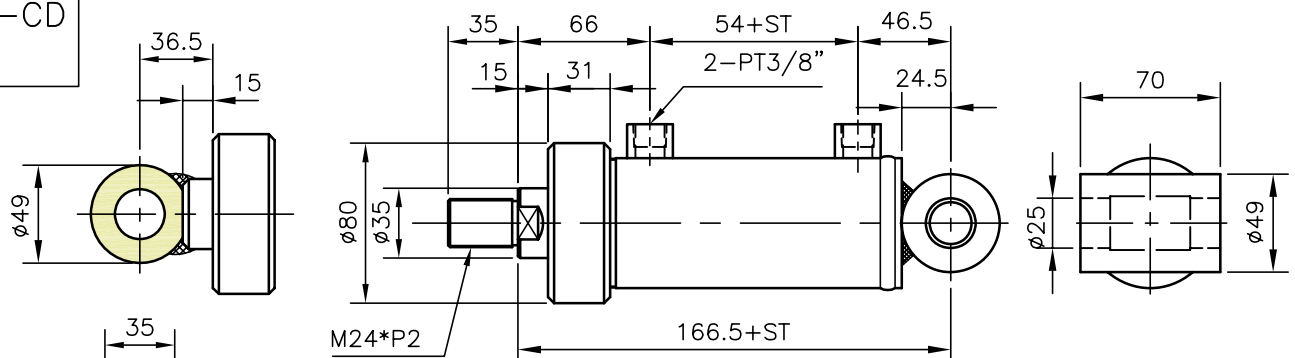
HC4-CA ø50



TYPE A

TYPE B

HC4-CD ø50



TYPE A

TYPE B

油壓缸大概重量計算 Estimated weight of hyd.

EX. : FB , ST=200mm

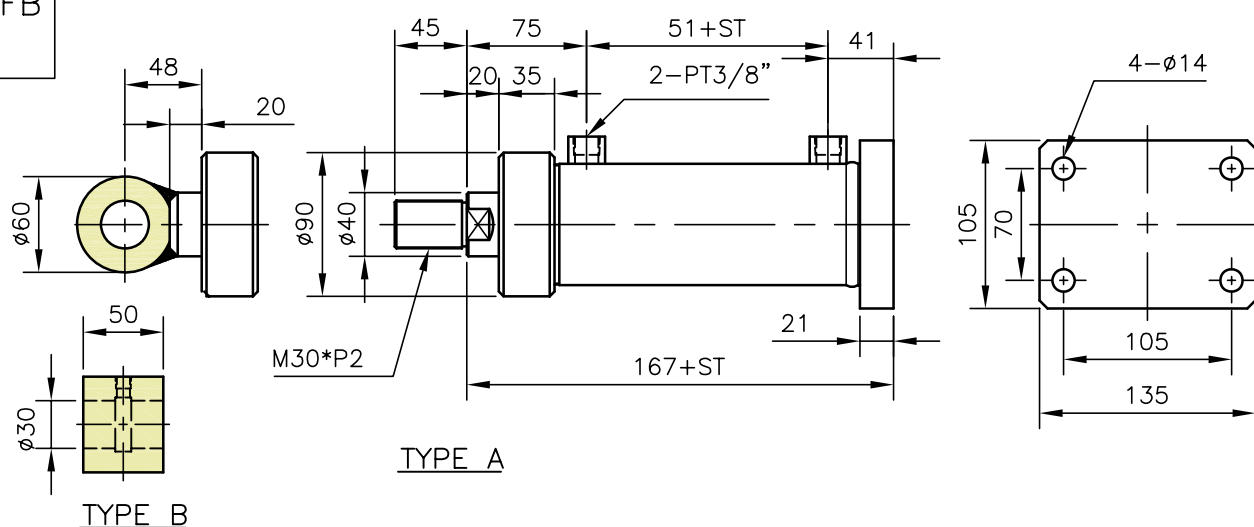
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 5.5 + (1.83 * 2) \\ &= 9.16 \text{ kg} \end{aligned}$$

	W1 (kg)	W2 (kg/100mm)
FB	5.5	1.83
CA	4.5	
CD	4.8	

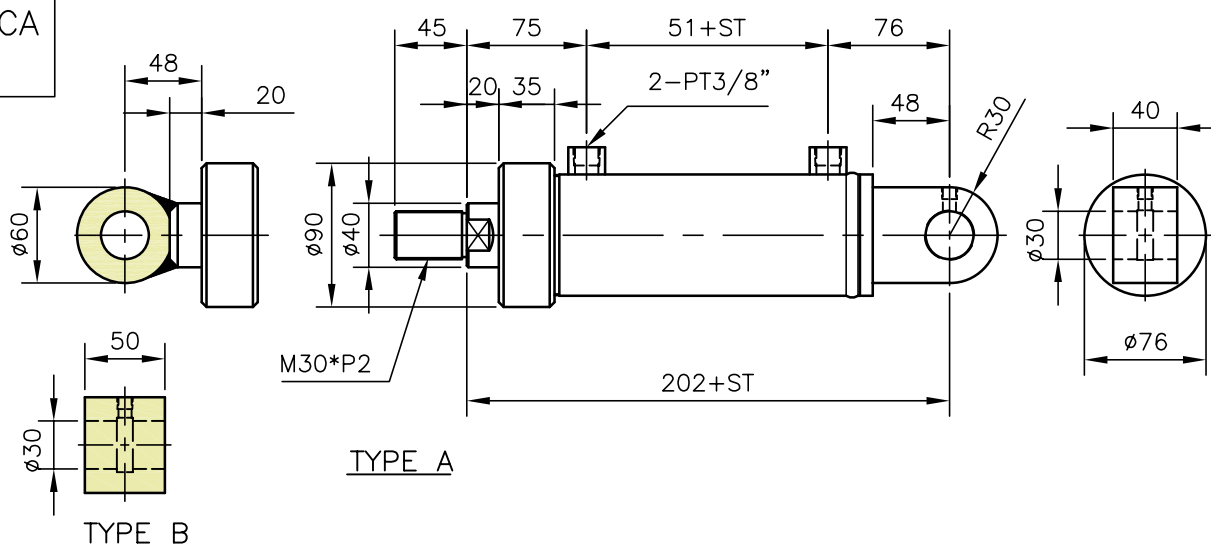
HC4- $\phi 63$

23 MPa

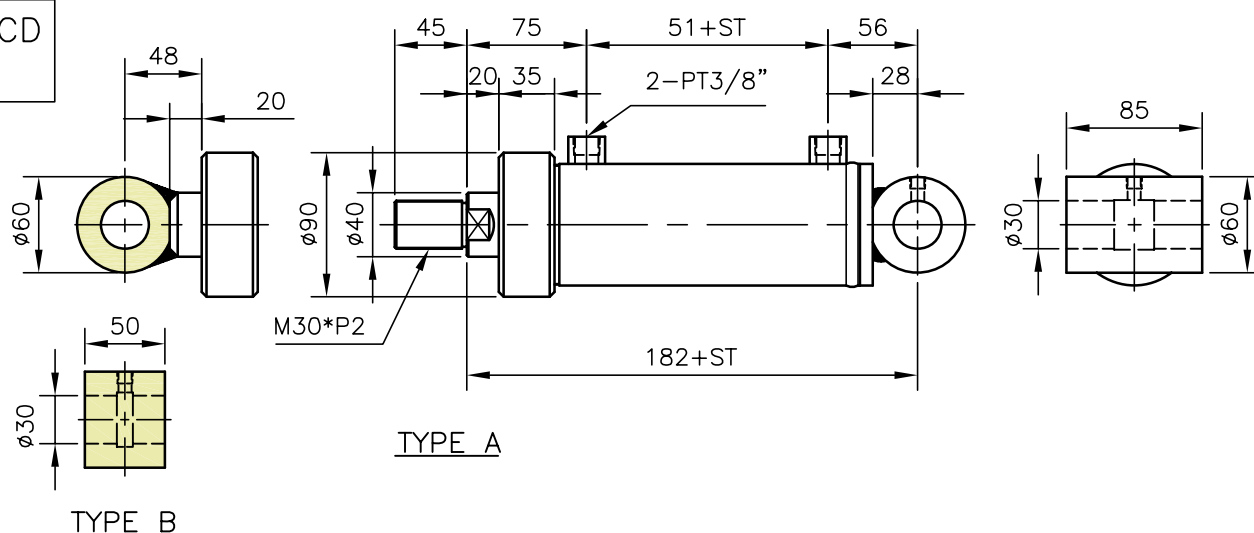
HC4-FB
 $\phi 63$



HC4-CA
 $\phi 63$



HC4-CD
 $\phi 63$



油壓缸大概重量計算

Estimated weight of hyd.

EX. : FB , ST=200mm

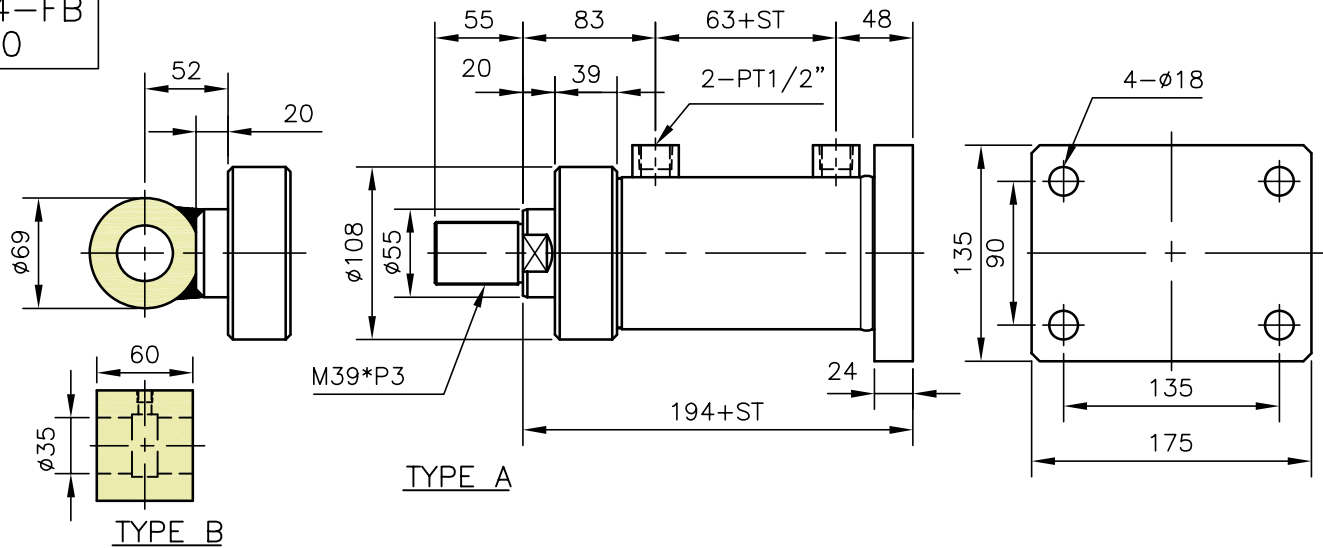
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 8.2 + (2.1 * 2) \\ &= 12.4 \text{ kg} \end{aligned}$$

	W1 (kg)	W2 (kg/100mm)
FB	8.2	2.1
CA	7.2	
CD	7.5	

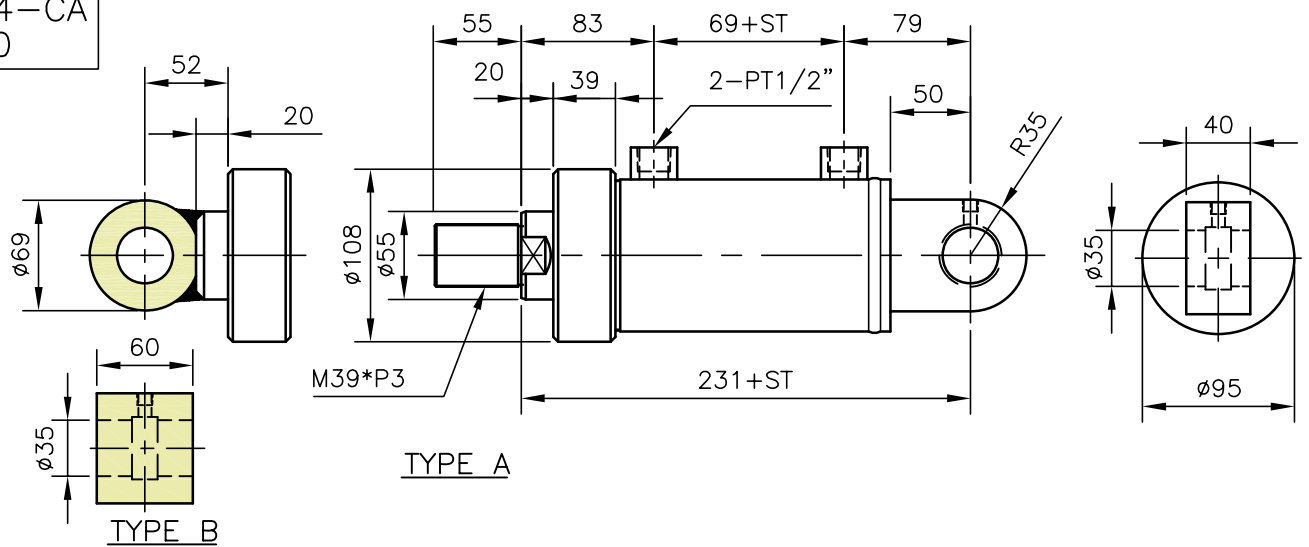
HC4- $\phi 80$

23 MPa

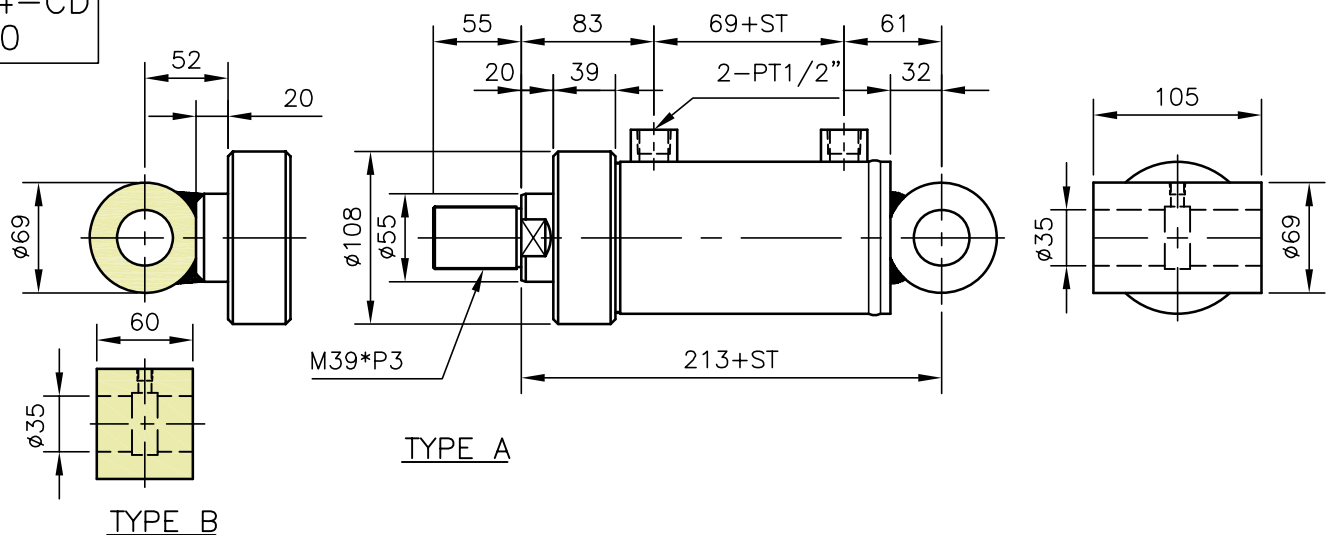
HC4-FB
 $\phi 80$



HC4-CA
 $\phi 80$



HC4-CD
 $\phi 80$



油壓缸大概重量計算

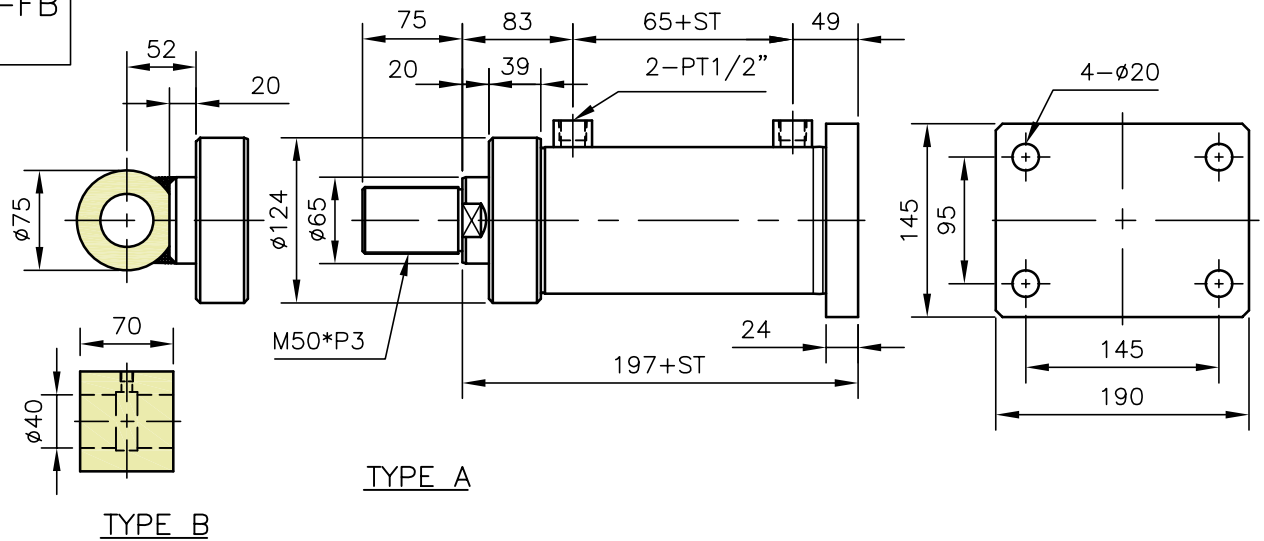
Estimated weight of hyd.

EX. : FB , ST=200mm

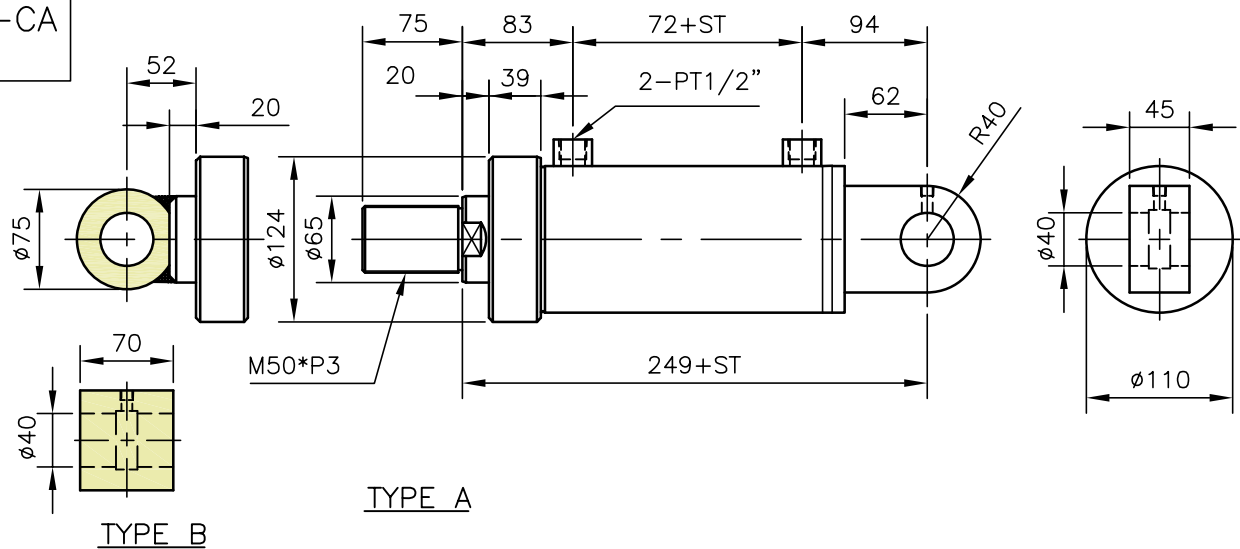
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 14.4 + (3.5 * 2) \\ &= 21.4 \text{ kg} \end{aligned}$$

	W1 (kg)	W2 (kg/100mm)
FB	14.4	3.5
CA	12.1	
CD	13	

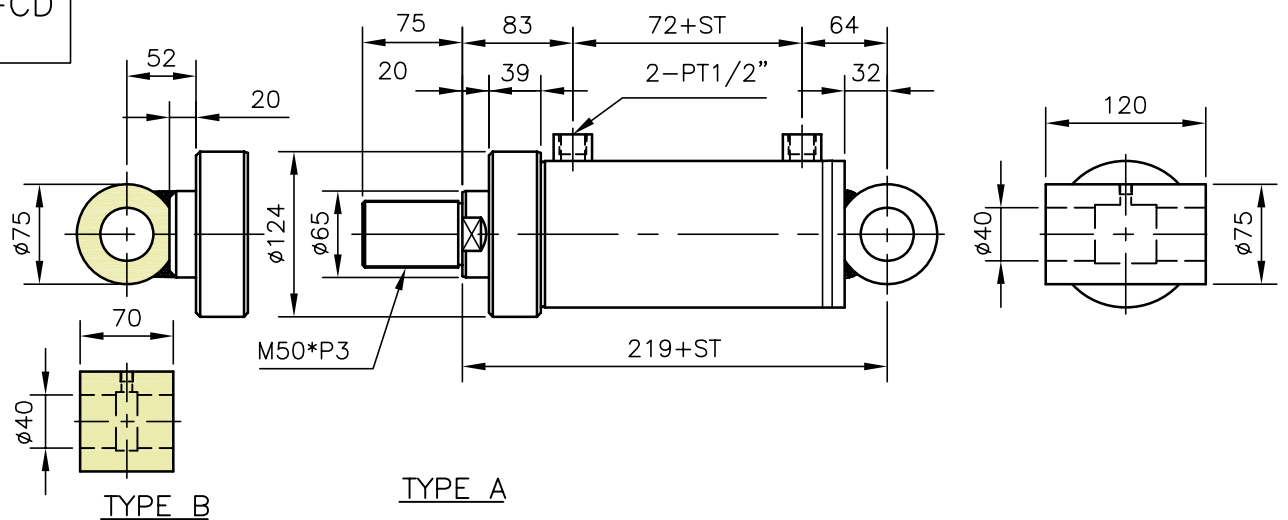
HC4-FB
ø90



HC4-CA
ø90



HC4-CD
ø90



油壓缸大概重量計算 Estimated weight of hyd.

EX. : FB , ST=200mm

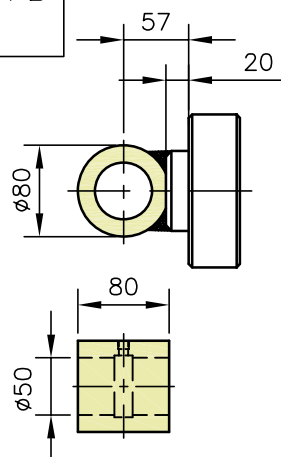
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 18.8 + (5.1 * 2) \\ &= 29 \text{ kg} \end{aligned}$$

	W1 (kg)	W2 (kg/100mm)
FB	18.8	5.1
CA	17	
CD	17.8	

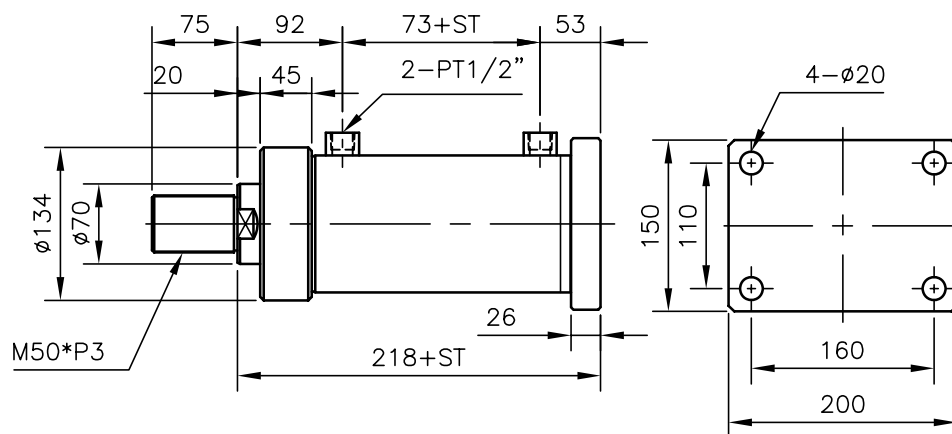
HC4- $\phi 100$

23 MPa

HC4-FB
 $\phi 100$

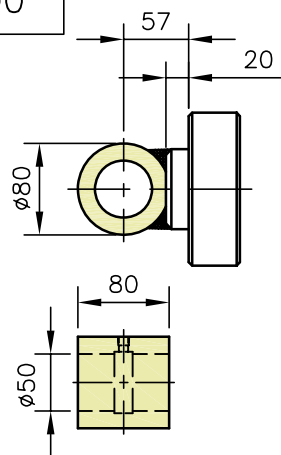


TYPE B

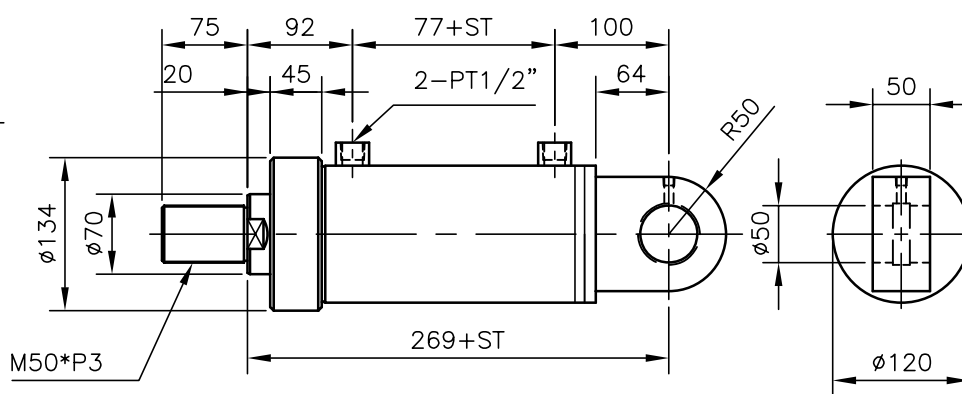


TYPE A

HC4-CA
 $\phi 100$

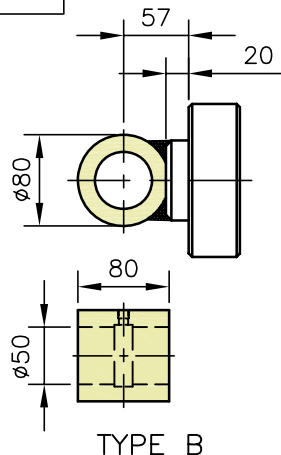


TYPE B

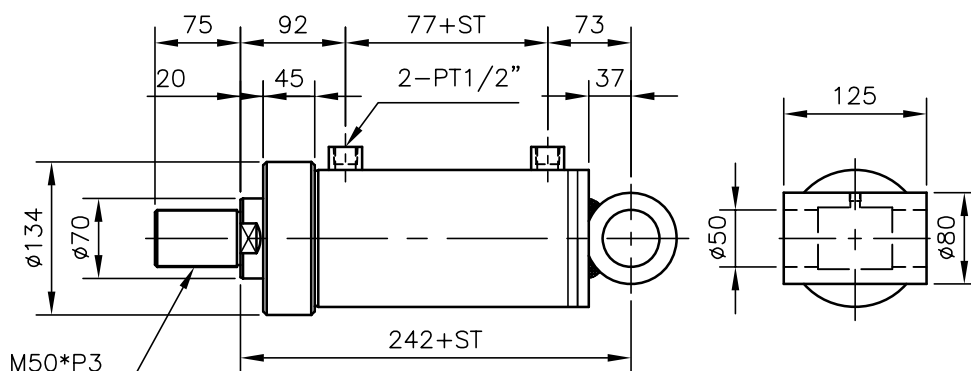


TYPE A

HC4-CD
 $\phi 100$



TYPE B



TYPE A

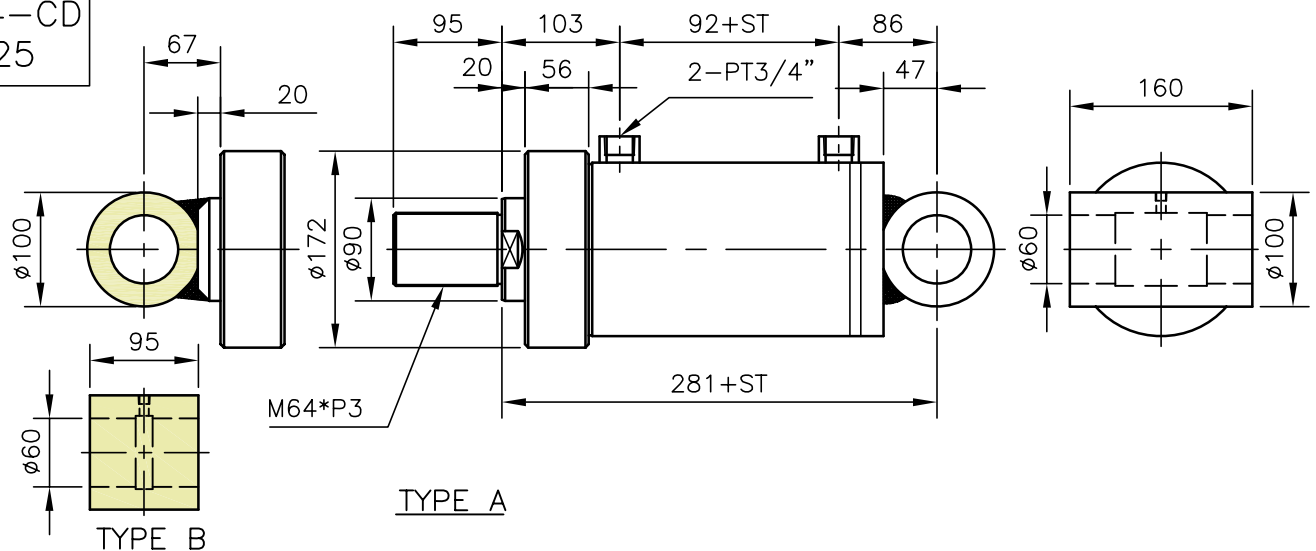
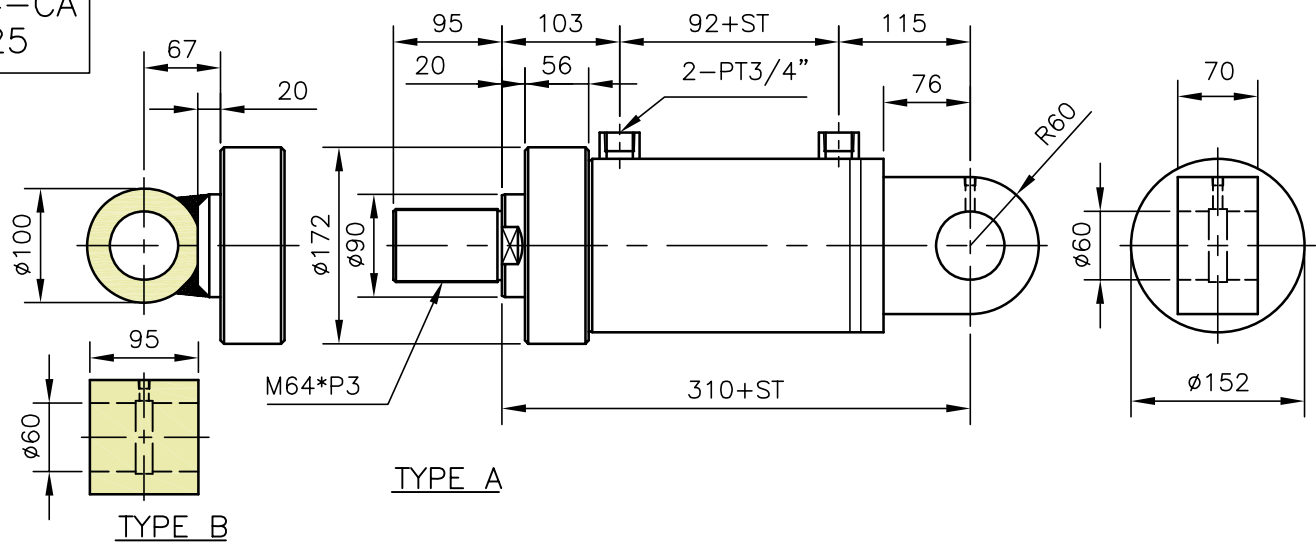
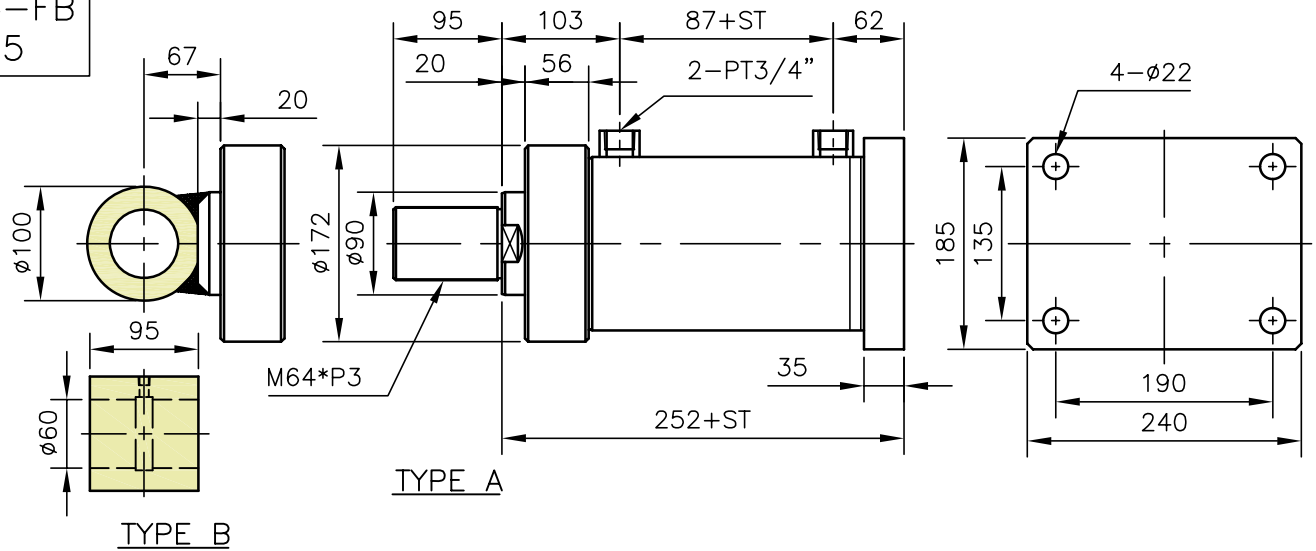
油壓缸大概重量計算 Estimated weight of hyd.

EX. : FB , ST=200mm

$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 23.9 + (5.8 * 2) \\ &= 35.5 \text{ kg} \end{aligned}$$

	W1 (kg)	W2 (kg/100mm)
FB	23.9	5.8
CA	22.8	
CD	22.3	

23 MPa



油壓缸大概重量計算 Estimated weight of hyd.

EX. : FB , ST=200mm

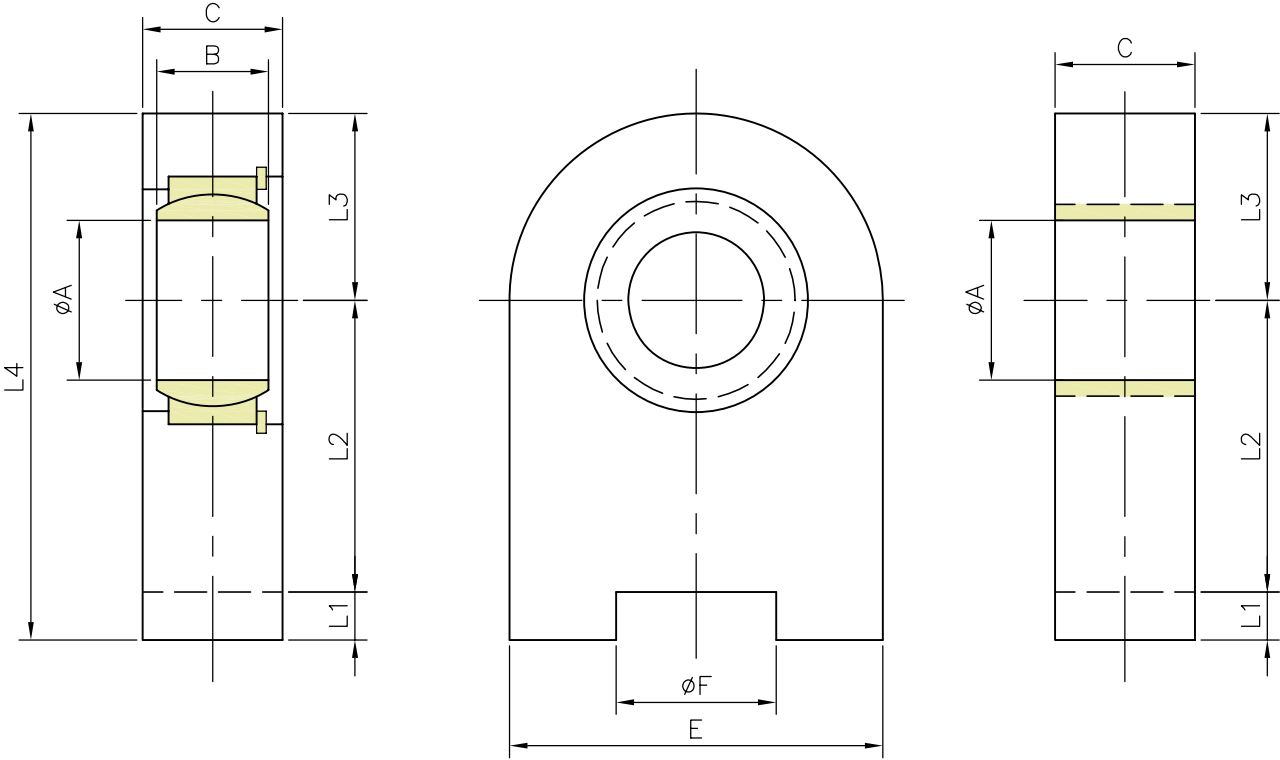
$$\begin{aligned}\text{weight} &= W1 + (W2 * ST) \\ &= 45.8 + (9.7 * 2) \\ &= 65.2 \text{ kg}\end{aligned}$$

	W1 (kg)	W2 (kg/100mm)
FB	45.8	9.7
CA	42.6	
CD	42.3	

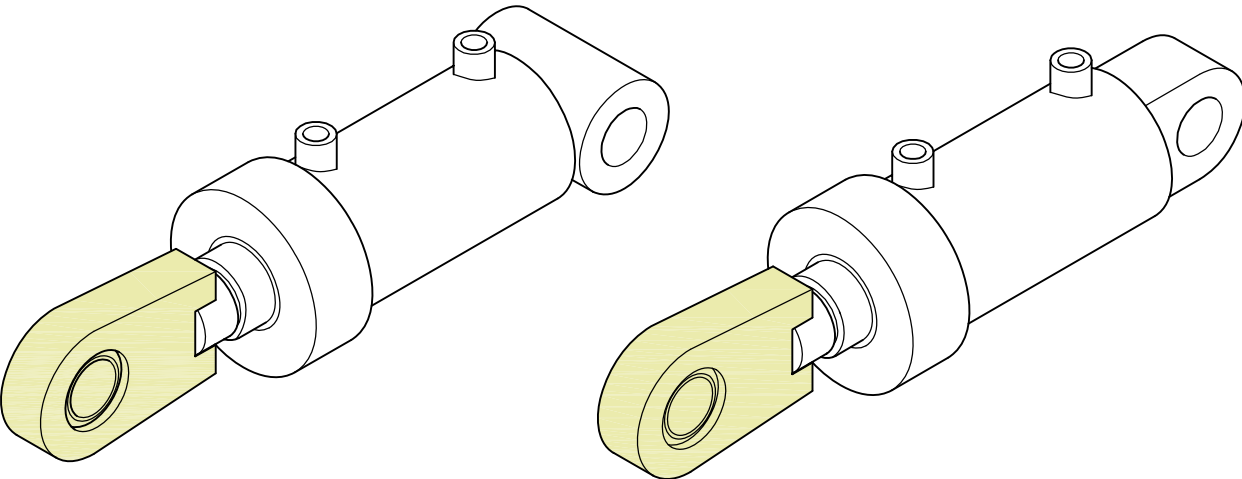
接頭 Clevis Head— GF

前端球面軸承接頭— GF1
Spherical Rod End Type— GF1

前端平行接頭— GF2
Plain Rod End Type— GF2



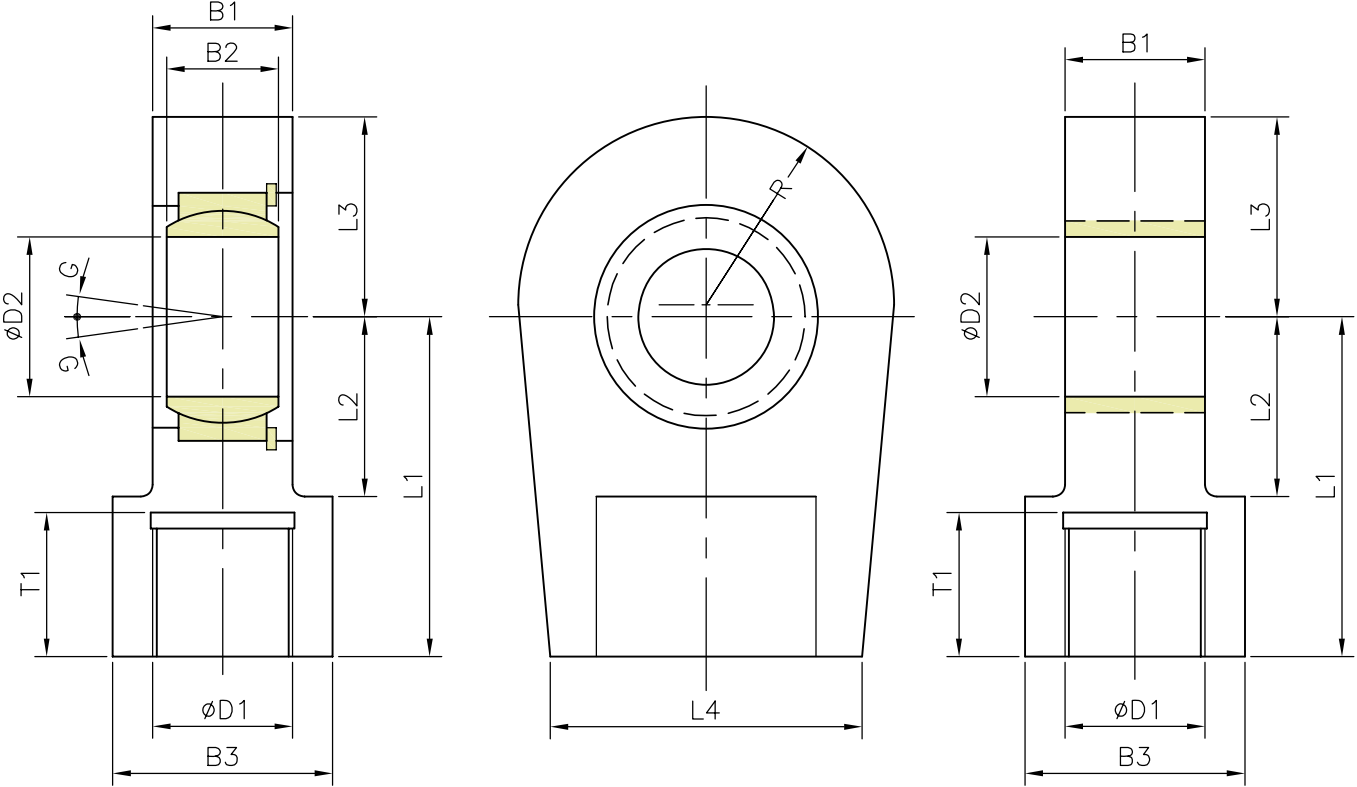
Piston Dia.	øA	B	C	E	øF	L1	L2	L3	L4	R
50	30	22	28	65	28	14	51	32.5	97.5	32.5
63	35	25	30	83	30	15	61	41.5	117.5	41.5
80	40	28	35	100	45	23	69	50.0	142	50.0
90	50	35	40	123	50	30	88	61.5	179.5	61.5
100	50	35	40	123	55	35	88	61.5	184.5	61.5
125	60	44	50	140	65	40	100	70.0	210	70.0



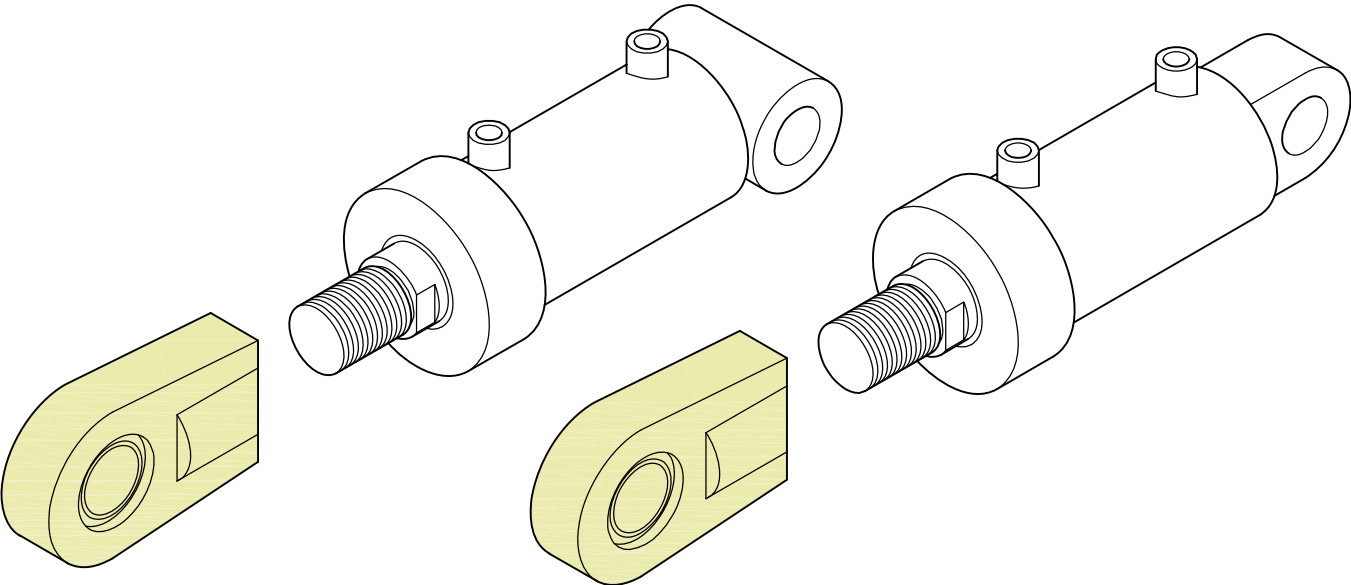
接頭 Clevis Head— L0

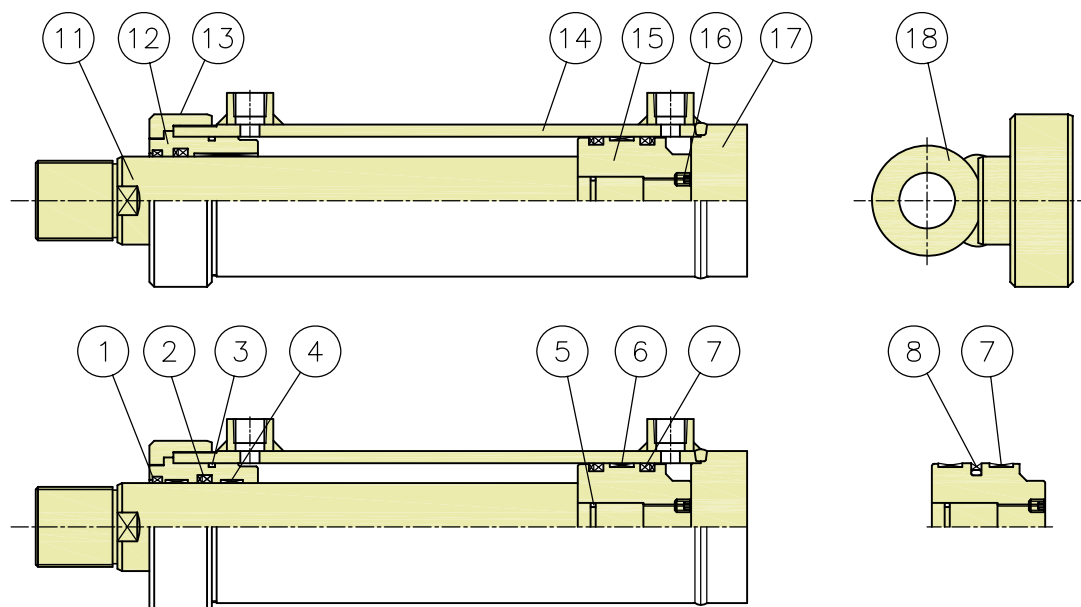
前端球面軸承接頭— L01
Spherical Rod End Type— L0

前端平行接頭— L02
Plain Rod End Type— L0



Piston Dia.	B1 ⁰ _{-0.4}	B2	B3	D1	øD2	L1	L2	L3	L4	R	T1	G	Weigh(kg)
50	28	22 ⁰ _{-0.12}	34	M 24x2	30 ⁰ _{-0.012}	75	30	34.0	27	32.0	35	7°	1.0
63	30	25 ⁰ _{-0.15}	44	M 30x2	35 ⁰ _{-0.015}	90	40	42.0	33	65.0	45	7°	2.4
80	35	28 ⁰ _{-0.12}	55	M 39x3	40 ⁰ _{-0.012}	105	45	50.0	78	47.0	55	7°	2.4
90	40	35 ⁰ _{-0.12}	70	M 50x3	50 ⁰ _{-0.012}	135	55	63.0	90	58.0	75	7°	4.1
100	40	35 ⁰ _{-0.12}	70	M 50x3	50 ⁰ _{-0.012}	135	55	63.0	90	58.0	75	7°	4.1
125	50	44 ⁰ _{-0.15}	87	M 64x3	60 ⁰ _{-0.015}	170	65	70.0	118	65.0	95	7°	6.5





零件名稱及材質表 Parts Description & Material List:

NO	名 稱Description.	材 質 Material.	Q'TY	NO	名 稱Description.	材 質 Material.	Q'TY
11	活塞桿 Piston Rod	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1	15	活塞 Piston	一般構造用軋鋼 Rolled Steel for General Structure	1
12	前蓋 Head	一般構造用軋鋼 Rolled Steel for General Structure	1	16	防鬆螺絲 Set Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1
13	壓板 Cover	一般構造用軋鋼 Rolled Steel for General Structure	1	17	後蓋 Cylinder Cap	一般構造用軋鋼 Rolled Steel for General Structure	1
14	缸管 Cylinder Tube	機械構造用碳鋼鋼管 Carbon Steel Pipe for Mechanical Structure.	1	18	前端接頭 Clevis head	一般構造用軋鋼 Rolled Steel for General Structure	1

油封規格表 Specifications of Oil Seal:

NO	1	2	3	4	5	6	7	8
名 稱	防塵油封 Dust Seal	軸心油封 Rod Seal	O型環 O Ring	耐磨片 Wear Ring	O型環 O Ring	耐磨片 Wear Ring	活塞油封 Piston Seal	活塞用T型油封 Piston seal for mode T
材質	PU	PU	NBR	PTFE	NBR	PTFE	PU	PTFE+NBR
數 量 內徑	1 φ, φ.w mm	φ, φ.w 1 mm +Backup ring	1	2	1	1	φ, φ.w 2 mm +Backup ring	1 φ, φ.w mm
φ50	35-43-6.5	35-45-9	G-45	35-2.5	P-18	50-2.5	50-40-9	50-39-4.2
φ63	40-48-6.5	40-50-9	G-58	40-2.5	P-21	63-2.5	63-53-9	63-52-4.2
φ80	55-63-6.5	55-65-9	G-75	55-2.5	G-25	80-2.5	80-70-9	80-64.5-6.3
φ90	65-73-6.5	65-75-9	G-85	65-2.5	G-35	90-2.5	90-80-9	90-74.5-6.3
φ100	70-80-8	70-80-9	G-95	70-2.5	G-45	100-2.5	100-85-13	100-84.5-6.3
φ125	90-100-8	90-105-13	G-120	90-2.5	G-60	125-2.5	125-112-13	125-109.5-6.3

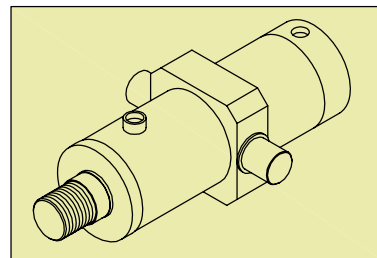
HC5系列油壓缸 HC5 Series Hydraulic Cylinders

車輛等特殊用途 Specially employed in the vehicle

- * HC5形油壓缸以無繫柱螺桿,圓形且後蓋以焊接式為準,適用於車輛,停車場或專用機械上等,在嚴酷之環境中使用,振動,衝擊和瞬間極限壓力等均安全,且據有多種固定形式的強力油壓缸
- * 加工精度,表面處理,油封材料等各零件之設計均朝向,特殊用途為基準的高性能油壓缸
 - * Owing to the HC5 hyd cylinders there are being with no reinforced screwbolt, round profile structure and cylinder cap welded. Especially suited for vehicle parking system and special purpose machinery etc., Because, those are employed at strictly environmental condition and with vibration resistan, impulse resistant & anti-instantaneous burst pressure are very effectively furthermore, there are also being with much mountings and a powerful hyd cylinders.
 - * The processing accuracy, surface treatment & oil sealer's material etc., selecting & manufacturing are all emphasised in special applications.

規範 Specifications

項目 Item	型式 Model	HC5系列 HC5 Series
缸管內徑 Cylinder Bore	mm	ø40,ø50,ø60,ø63,ø70,ø80 ø90,ø100,ø110,ø125
固定座形式 Mounting		FA,FB,FD,TC,CA,CD
使用壓力 Operating Pressure		140 kgf/cm ²
測試壓力 Testing pressure		210 kgf/cm ²
最低作動壓力 Min. Operating Pres.		3 kgf/cm ²
適用作動油 Fluid		一般礦物性作動油 Mineral oil
最高使用速度 Max. Operating Speed		500 mm/sec
最低使用速度 Min. Operating Speed		10 mm/sec
使用溫度範圍 Range of Ambient Temperoutre		-10°C~+80°C
推桿前端形式 Rod End Type		A TYPE & B TYPE
最大行程 Max. Stroke		參考彎曲強度低值 (DRAW)



* 活塞桿前端形式 Rod End Type

略圖 Configuration	
TYPE A	TYPE B

* 行程容許差 Tolerance of Stroke

行程 mm Stroke	容許差 mm Tolerance
~ 100	+0.8
100 ~ 250	+1.0
250 ~ 630	+1.25
630 ~ 1000	+1.4
1000 ~ 1600	+1.6
1600 ~	+1.8

* 固定座形式 Mounting

記號 Symbol	名稱 Description	略圖 Configuration	記號 Symbol	名稱 Description	略圖 Configuration
FA	前蓋端法蘭形 Flange at cylinder head		TC	中間固定支撐形 Centre Trunnion mounting	
FB	後蓋端法蘭形 Flange at cylinder cap		CA	山形座(1山形) Plaie clevis at cylinder cap	
FD	後蓋端長方形法蘭形 Rectangular flange at cylinder cap		CD	後蓋端圓筒形 Tube clevis at cylinder cap	

HC5

訂購內容索引 Ordering Index :

180 HC5 CA 100 55 100 B A E U

使用壓力 180 kgf/cm²
Max. Operating Pres.

HC5:系列
HC5:Series Number

固定座形式 Mounting
FA, FB, FD, TC, CA, CD

缸管內徑 Cylinder Bore mm
ø40, ø50, ø60, ø63, ø70,
ø80, ø90, ø100, ø110, ø125

活塞桿徑 Rod Dia mm
ø22.4 ø30, ø35, ø40, ø45
ø50, ø55, ø65, ø70,

衝程 Stroke mm
要考慮最大容許衝程
Max. Permissible stroke

U-活塞用U型油封
T-活塞用T型油封
U-Piston seal for mode U
T-Piston seal for mode T

特殊附件-TYPE-A

E:活塞桿前端另類螺紋形

K:附固定螺帽 L:附I接頭,BAI
Optionals-TYPE-A

E:Rod end with other threading
K:With locking nut L:With I adapter
BAI

出入口之方向 Port Position
A:標準 B:右 A:Standard
B:Right or Left

活塞桿前端形式 Rod End Type
Type-A Type-B

特殊附件記載於件欄 例如:EK

* The optional attachment is recorded an L item such as EK.

* 技術參數 Technical Data :

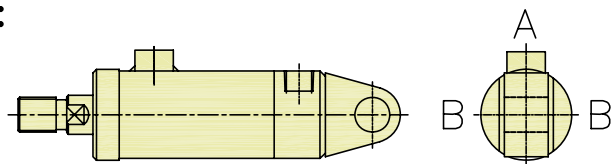
缸管內徑 Cylinder Bore mm	活塞桿徑 Rod Dia. mm	動 作 Action	有效面積 Effective Area cm ²	出 力 Output Power kgf					流量10L/分 之速度 Flow Rate at Speed 10L/min mm/sec	速度10mm/秒 之流量 Speed at Flow Rate 10mm/sec L/min
				10 kgf/cm ²	30 kgf/cm ²	70 kgf/cm ²	105 kgf/cm ²	140 kgf/cm ²		
40	22.4	推力 Extend	12.6	126	377	879	1319	1758	132	0.8
		拉力 Retract	8.6	86	259	603	905	1207	193	0.5
50	30	推力 Extend	19.6	196	589	1374	2061	2748	85	1.2
		拉力 Retract	12.6	126	377	879	1319	1758	132	0.8
60	30	推力 Extend	28.3	283	848	1978	2967	3956	59	1.7
		拉力 Retract	21.2	212	636	1484	2225	2967	79	1.3
63	35	推力 Extend	31.2	312	935	2181	3271	4362	53	1.9
		拉力 Retract	21.5	215	646	1508	2262	3016	77	1.3
70	40	推力 Extend	38.5	385	1154	2693	4039	5385	43	2.3
		拉力 Retract	25.9	259	777	1813	2720	3627	64	1.6
80	45	推力 Extend	50.3	503	1507	3517	5275	7034	33	3.0
		拉力 Retract	34.3	343	1030	2404	3606	4808	49	2.1
90	50	推力 Extend	63.6	636	1908	4451	6676	8902	26	3.8
		拉力 Retract	44.0	440	1319	3077	4616	6154	38	2.6
100	55	推力 Extend	78.5	785	2355	5495	8243	10990	21	4.7
		拉力 Retract	54.8	548	1643	3833	5749	7666	30	3.3
110	65	推力 Extend	95.0	950	2850	6649	9973	13298	18	5.7
		拉力 Retract	61.8	618	1855	4327	6491	8655	27	3.7
125	70	推力 Extend	122.7	1227	3680	8586	12879	17172	14	7.4
		拉力 Retract	84.2	842	2526	5893	8840	11787	20	5.0

HC5

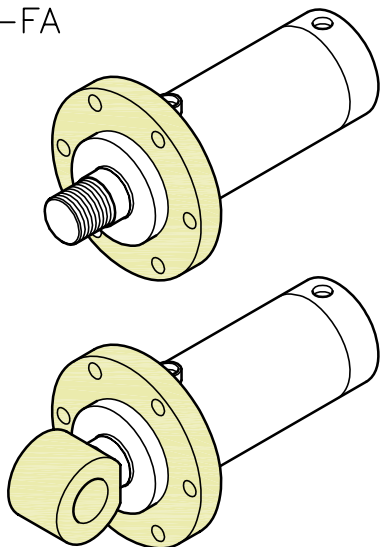
* 出入油孔方向 Oil Posit Position:

油孔方向分 ① ② —標準方向為 ①

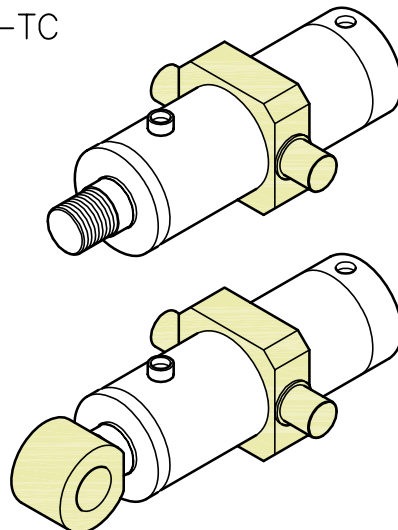
The port position is divided into(A)(B)
But the is at standard(A)



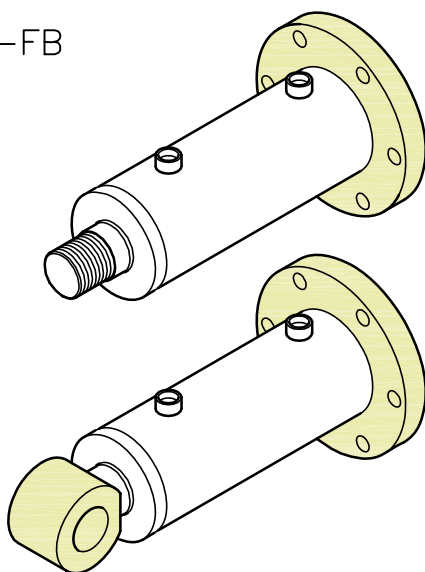
HC5-FA



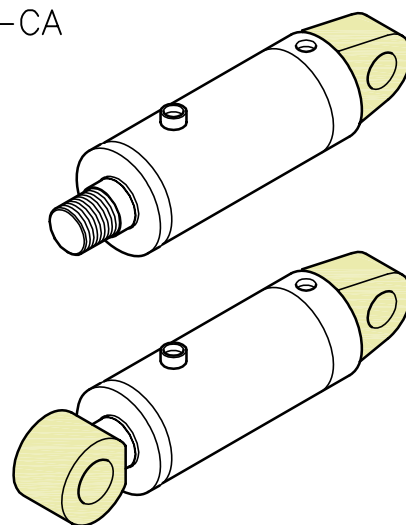
HC5-TC



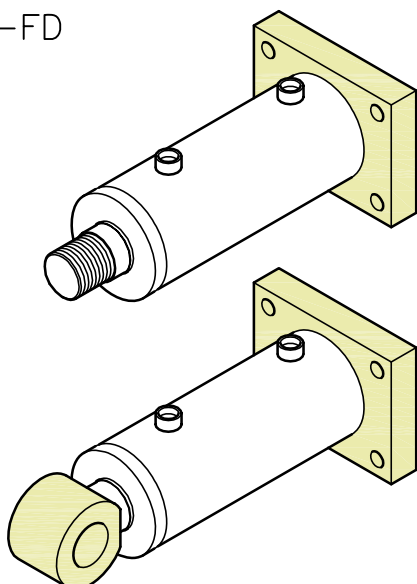
HC5-FB



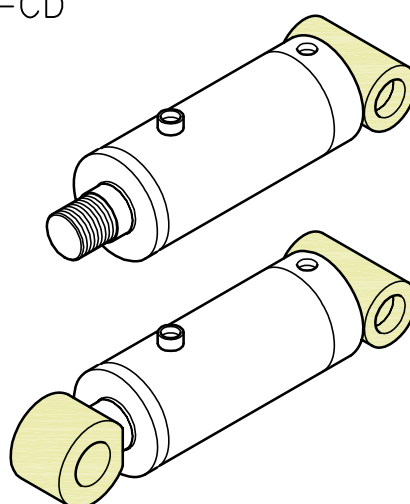
HC5-CA



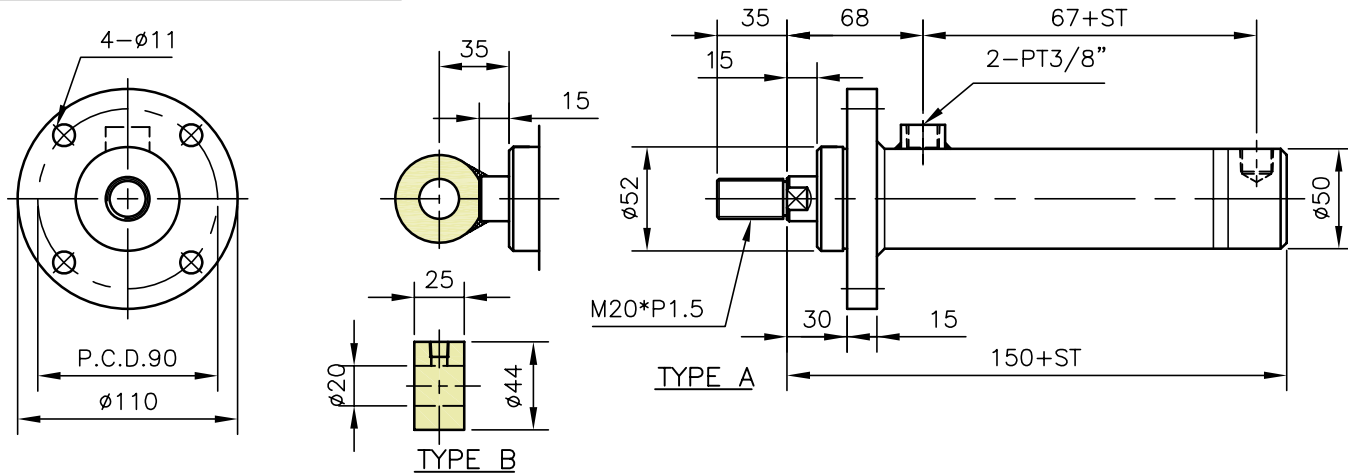
HC5-FD



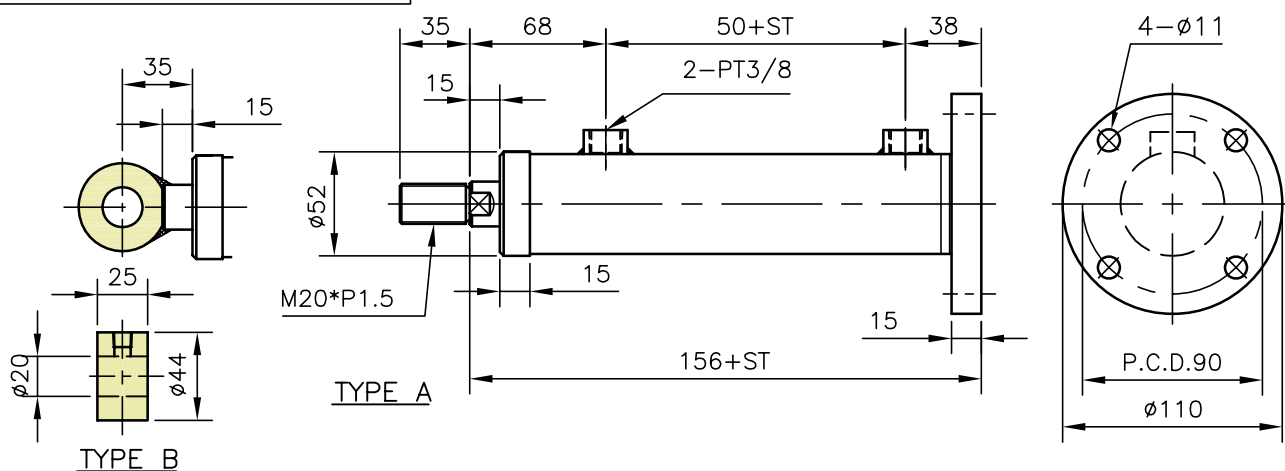
HC5-CD



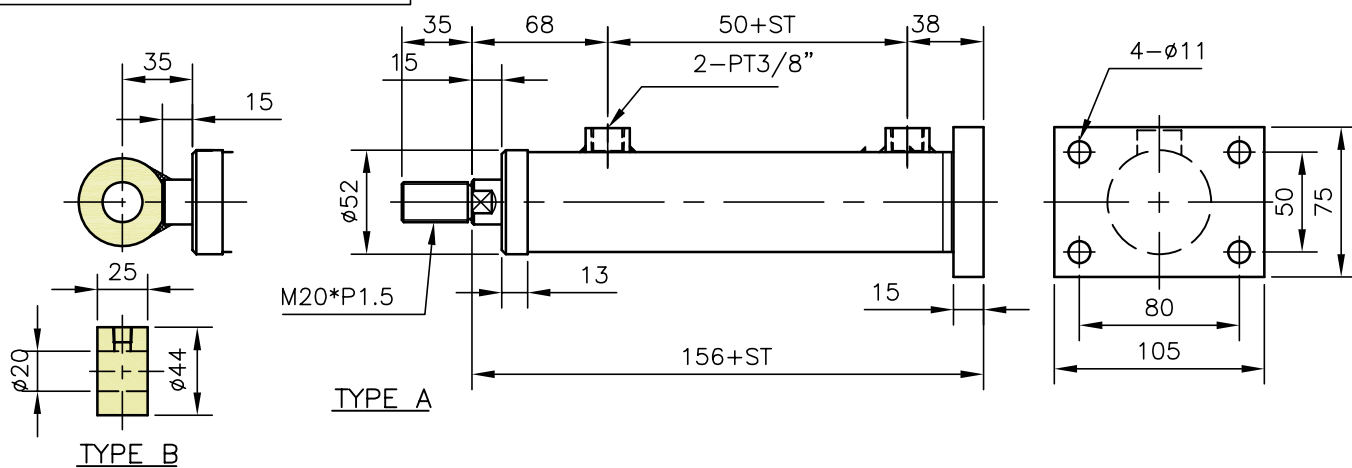
HC5-FA $\phi 40/\phi 22.4$



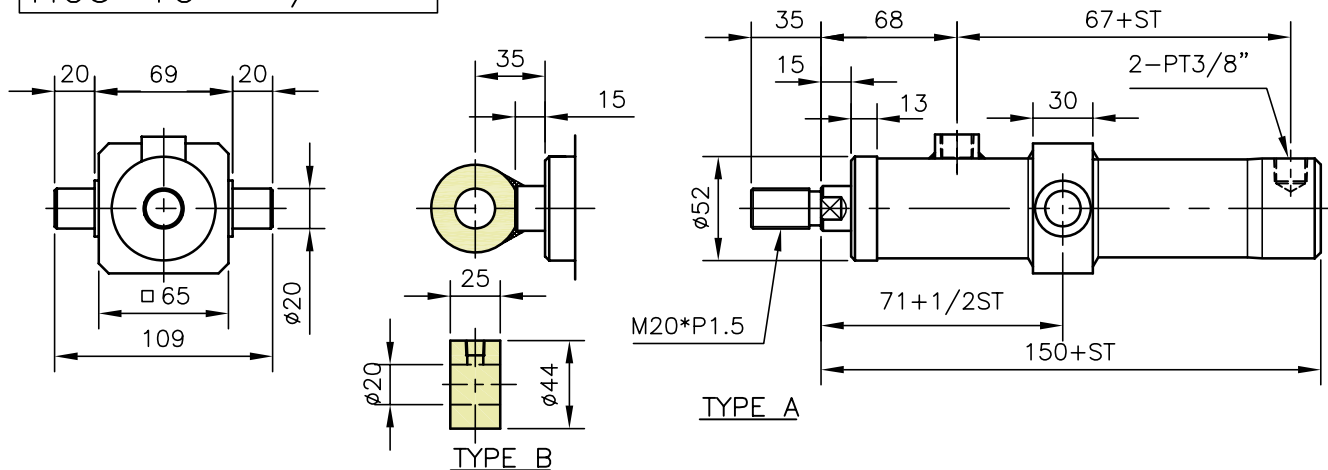
HC5-FB $\phi 40/\phi 22.4$



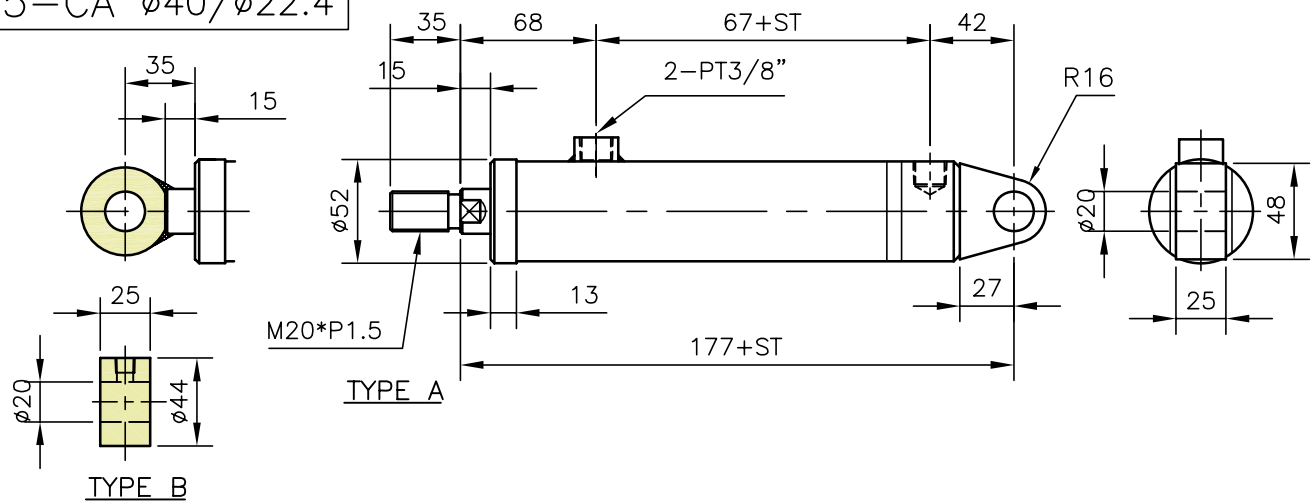
HC5-FD $\phi 40/\phi 22.4$



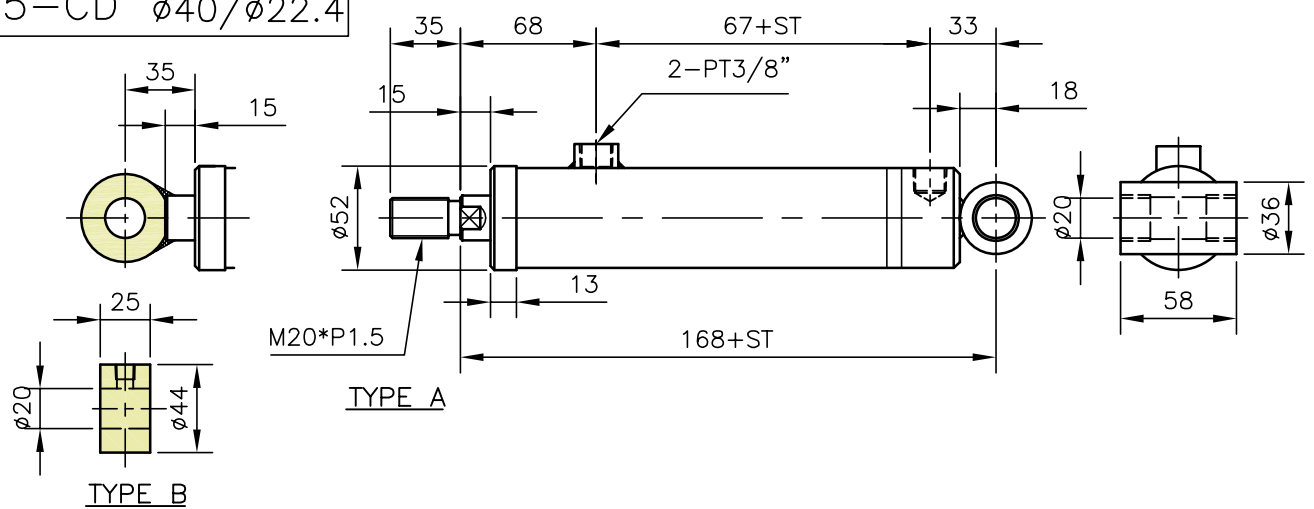
HC5-TC $\phi 40/\phi 22.4$



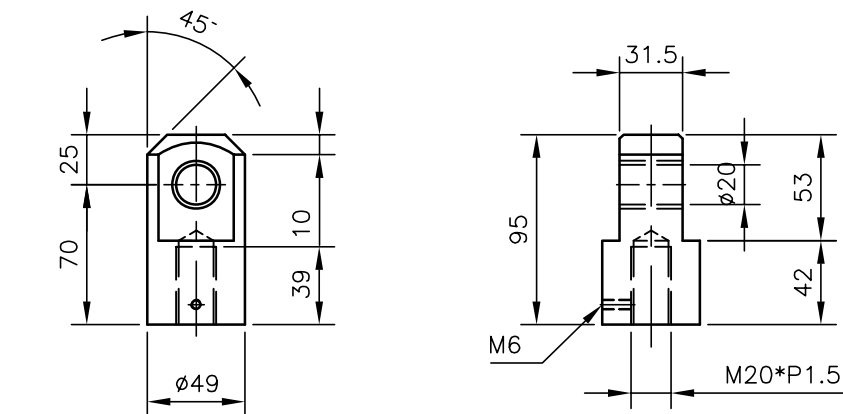
HC5-CA $\phi 40/\phi 22.4$



HC5-CD $\phi 40/\phi 22.4$



HC5- $\phi 40$ -I接頭



weigh=1kg

油壓缸大概重量計算

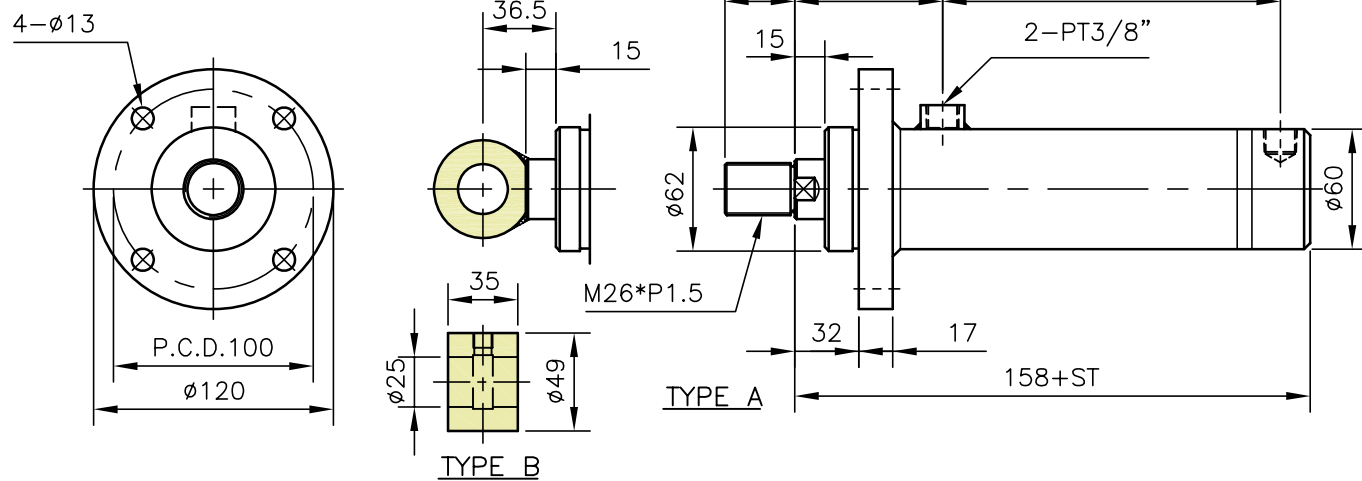
Estimated weight of hyd.

EX. : FA , ST=200mm , Type A

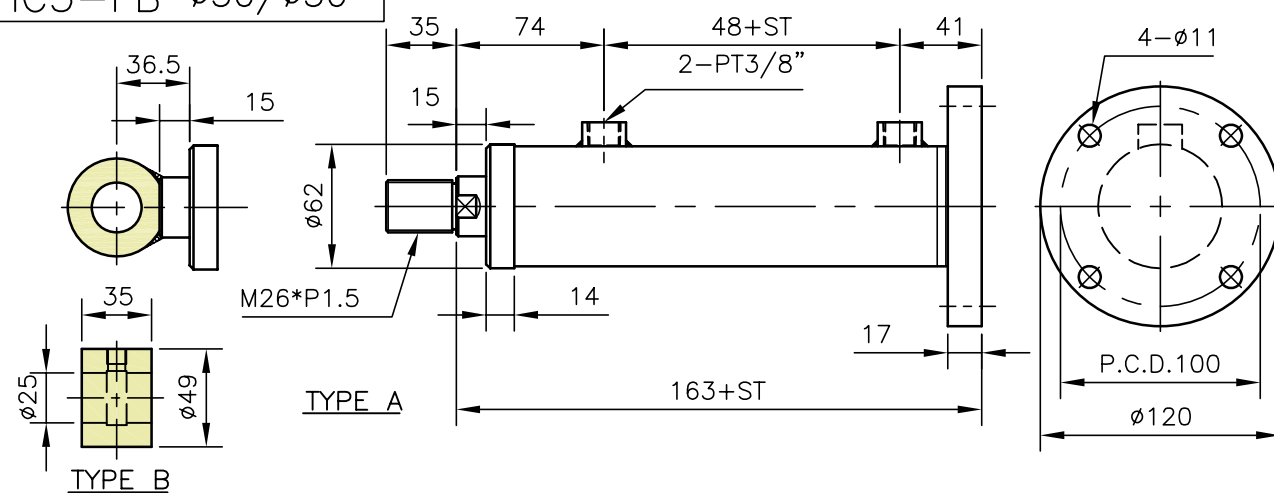
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 3.2 + (0.9 * 2) \\ &= 5.0 \text{ kg} \end{aligned}$$

	W1 (kg)		W2 (kg/100mm)
	Type A	Type B	
FA	3.2	3.5	0.9
FB	3.1	3.4	
FD	2.9	3.2	
TC	2.8	3.1	
CA	2.5	2.8	
CD	2.5	2.8	

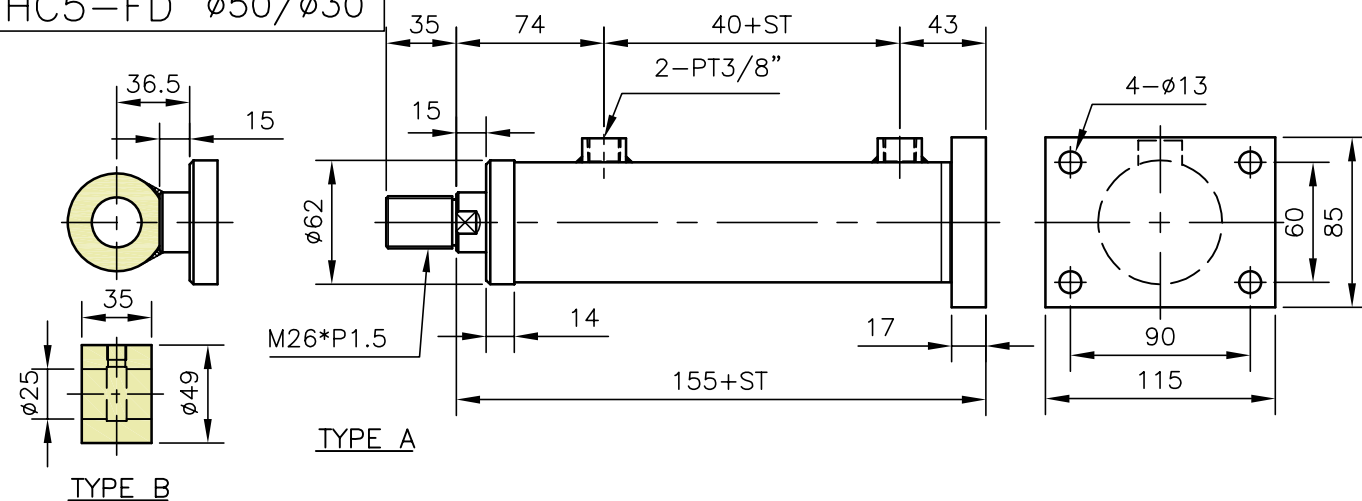
HC5-FA $\phi 50/\phi 30$



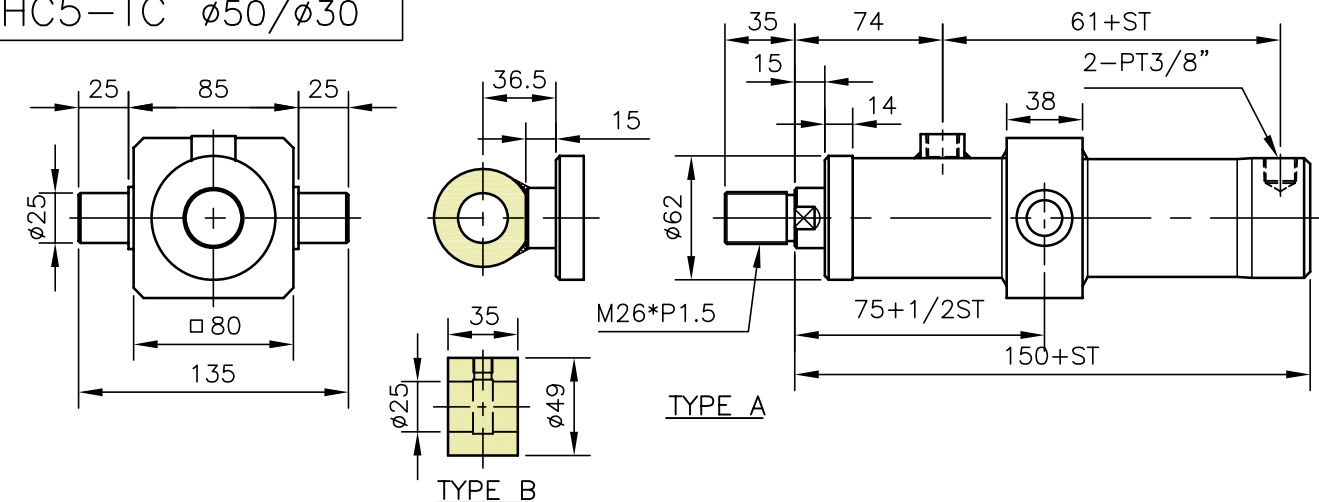
HC5-FB $\phi 50/\phi 30$



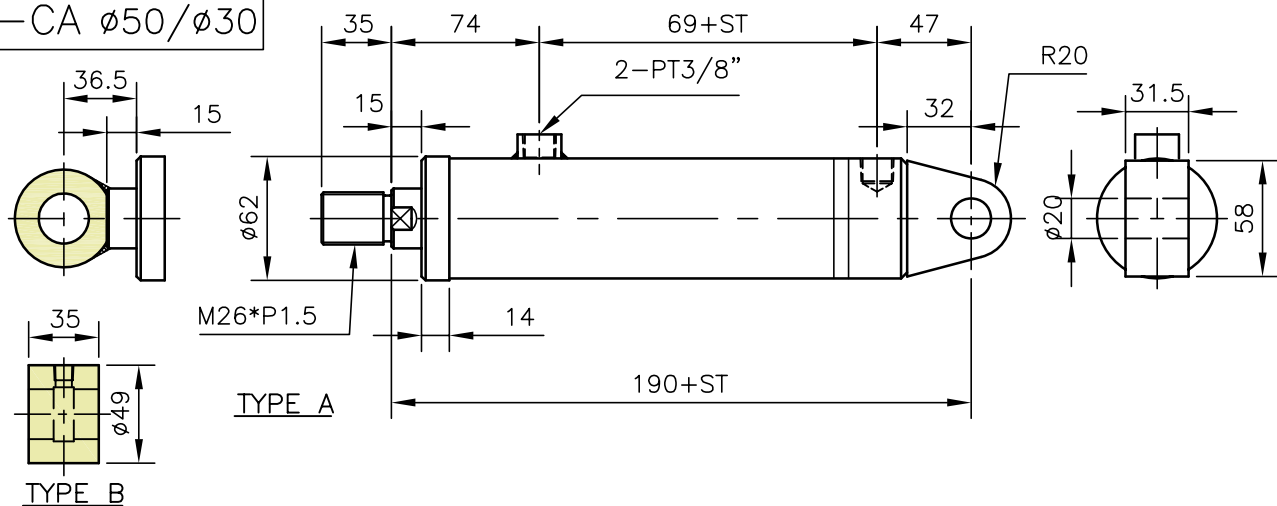
HC5-FD $\phi 50/\phi 30$



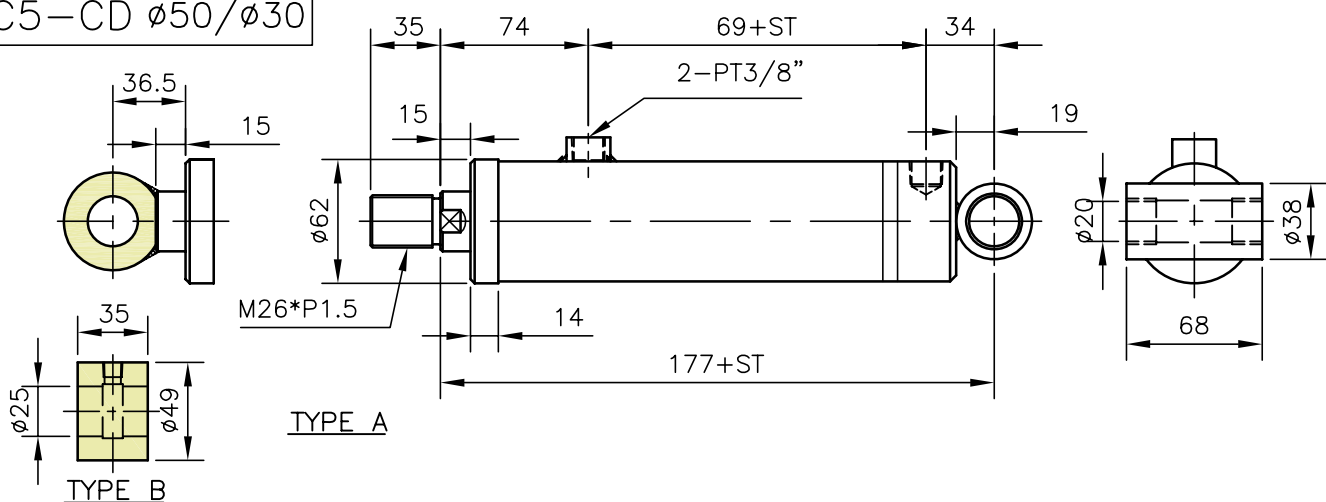
HC5-TC $\phi 50/\phi 30$



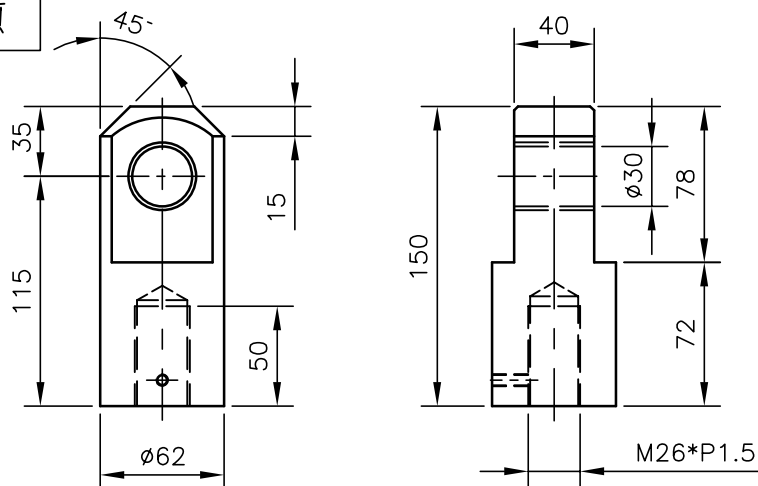
HC5-CA $\phi 50/\phi 30$



HC5-CD $\phi 50/\phi 30$



HC5- $\phi 50$ -I接頭



weigh=2.7kg

油壓缸大概重量計算

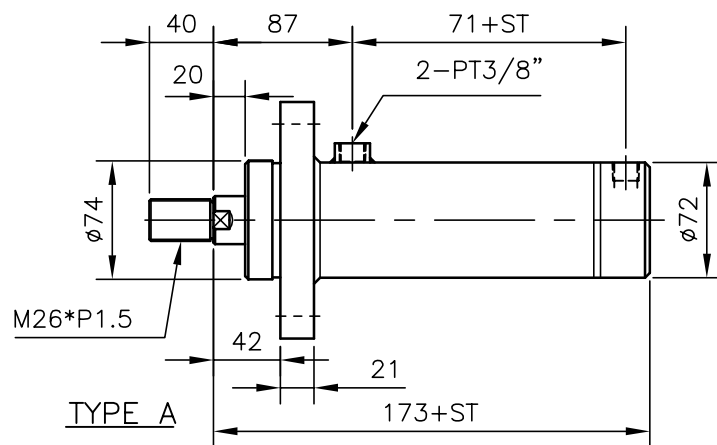
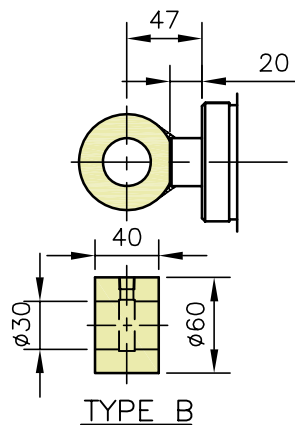
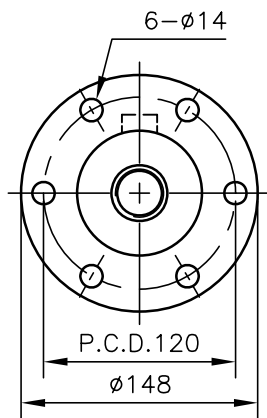
Estimated weight of hyd.

EXP : FA , ST=200mm , Type A

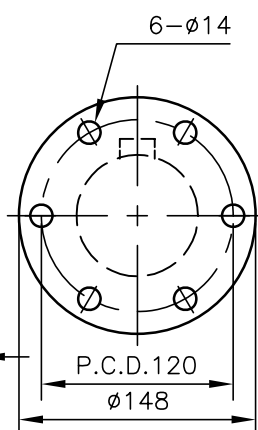
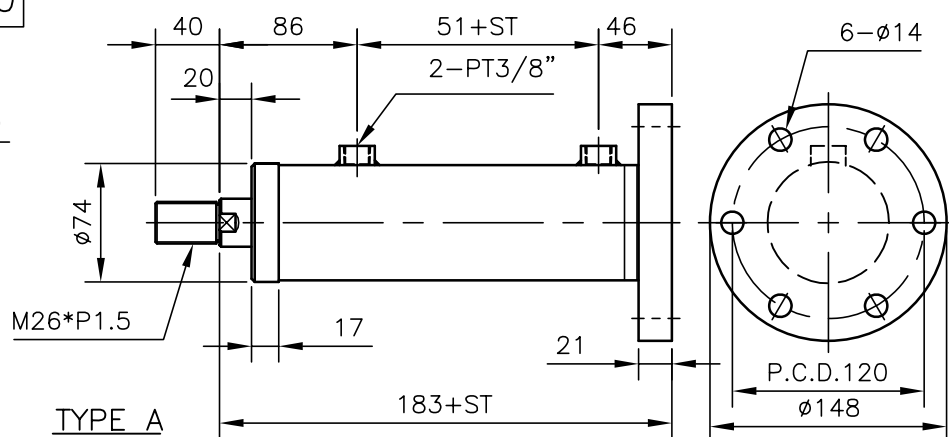
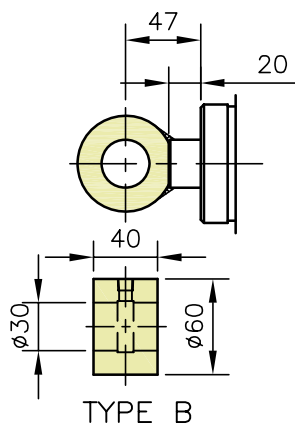
$$\begin{aligned} \text{weigh} &= W1 + (W2 * ST) \\ &= 5.0 + (1.3 * 2) \\ &= 7.6 \text{ kg} \end{aligned}$$

	W1 (kg)		W2 (kg/100mm)
	Type A	Type B	
FA	5.0	5.3	1.3
FB	5.3	5.6	
FD	4.7	5.0	
TC	5.0	5.3	
CA	4.5	4.8	
CD	4.4	4.7	

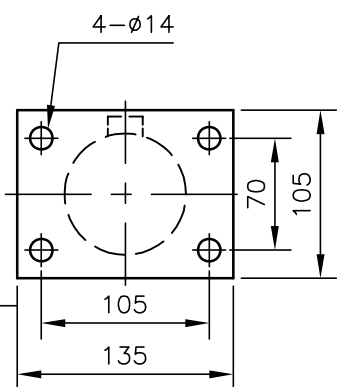
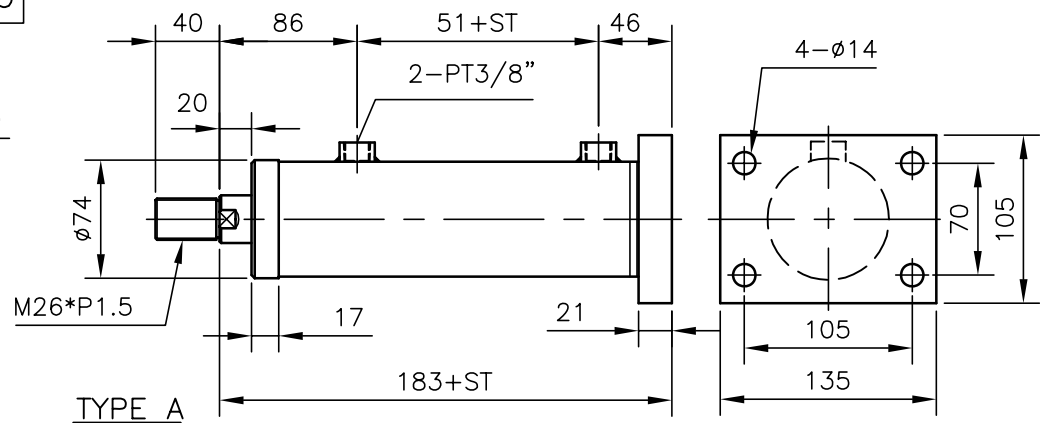
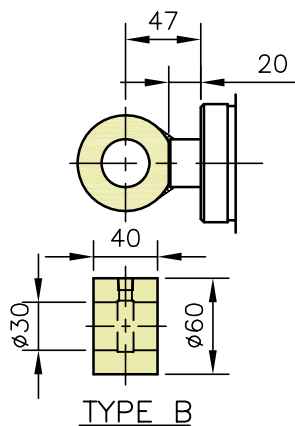
HC5-FA $\phi 60/\phi 30$



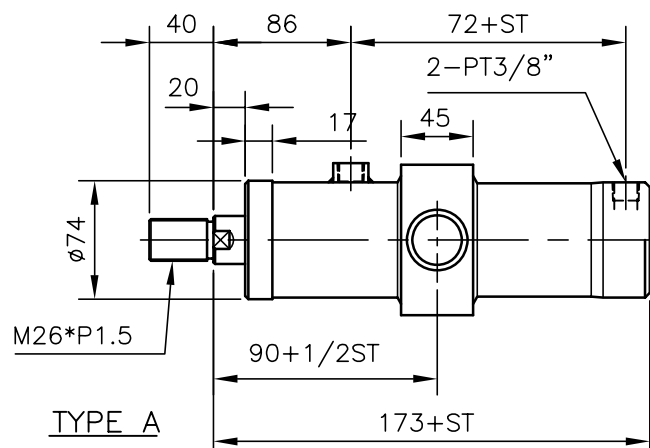
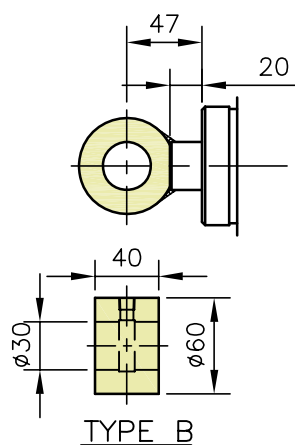
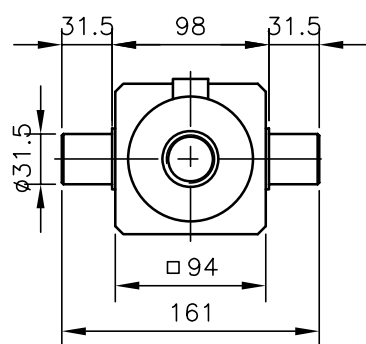
HC5-FB $\phi 60/\phi 30$

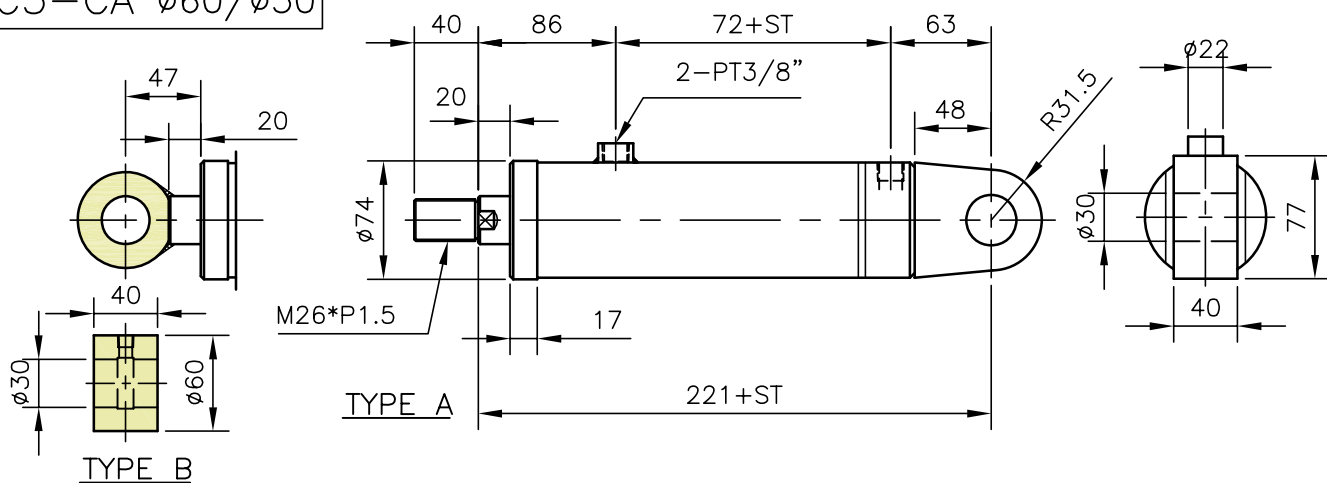


HC5-FD $\phi 60/\phi 30$

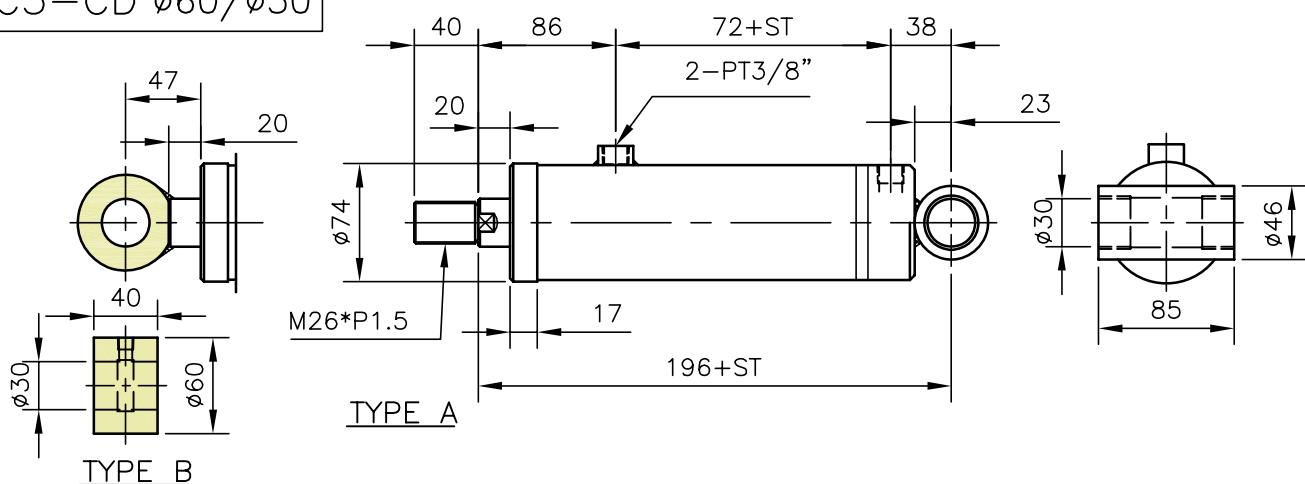
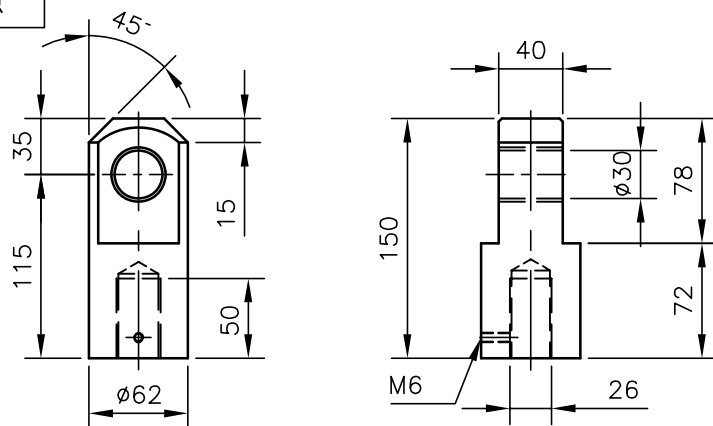


HC5-TC $\phi 60/\phi 30$



HC5-CA $\varnothing 60/\varnothing 30$ 

HC5-CD $\phi 60/\phi 30$

HC5- ϕ 60-1接頭

weigh=2.7kg

油壓缸大概重量計算

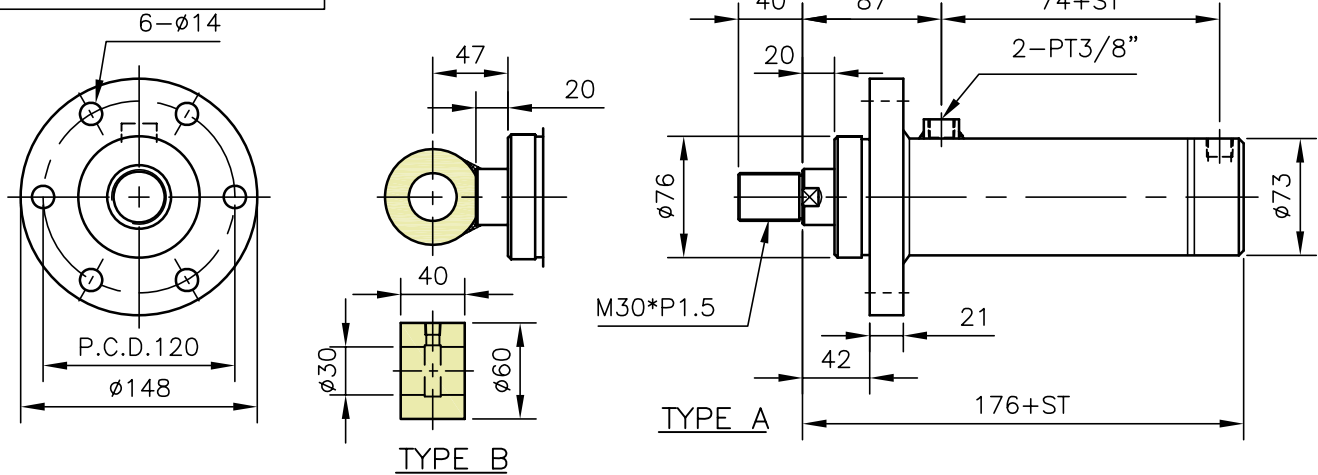
Estimated weight of hyd.

EX. : FA , ST=200mm , Type A

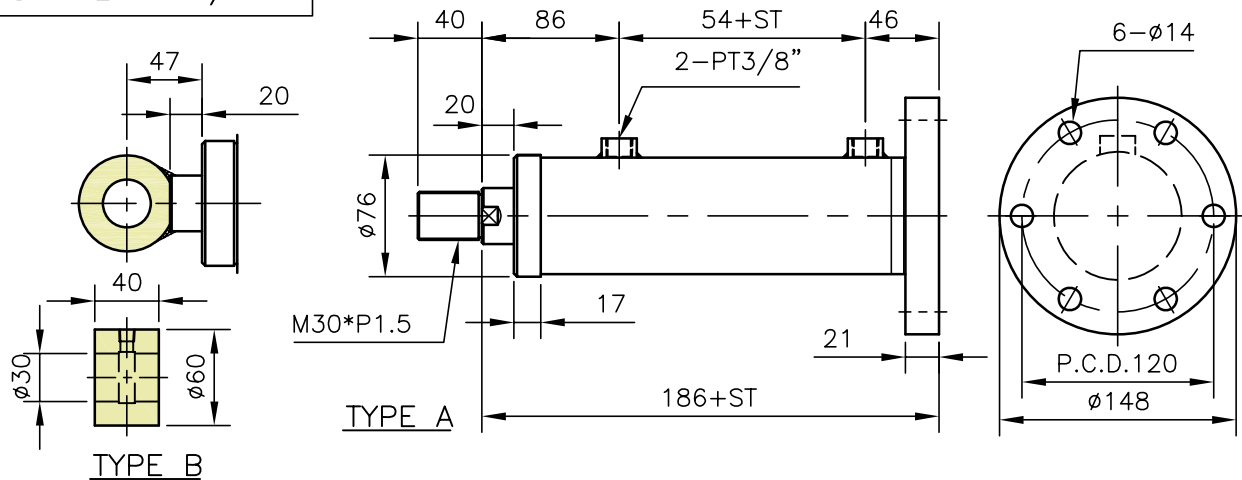
$$\begin{aligned}\text{weight} &= W1 + (W2 * ST) \\ &= 7.5 + (1.5 * 2) \\ &= 10.5 \text{ kg}\end{aligned}$$

	W1 (kg)		W2 (kg/100mm)
	Type A	Type B	
FA	7.5	8.0	1.5
FB	7.0	7.5	
FD	7.4	7.9	
TC	7.5	8.0	
CA	6.6	7.1	
CD	5.9	6.4	

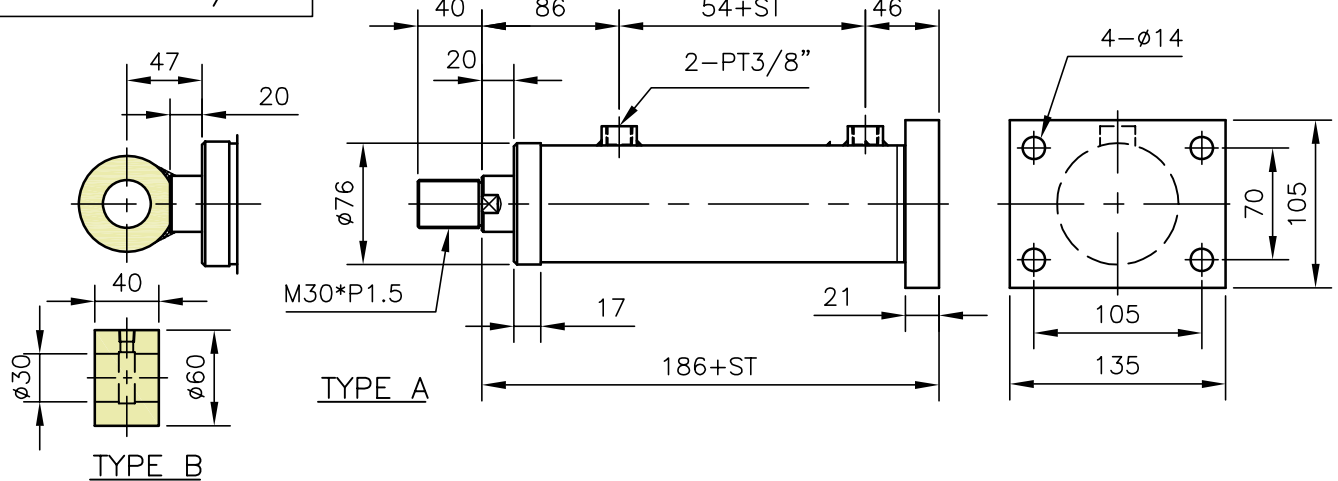
HC5-FA $\phi 63/\phi 35$



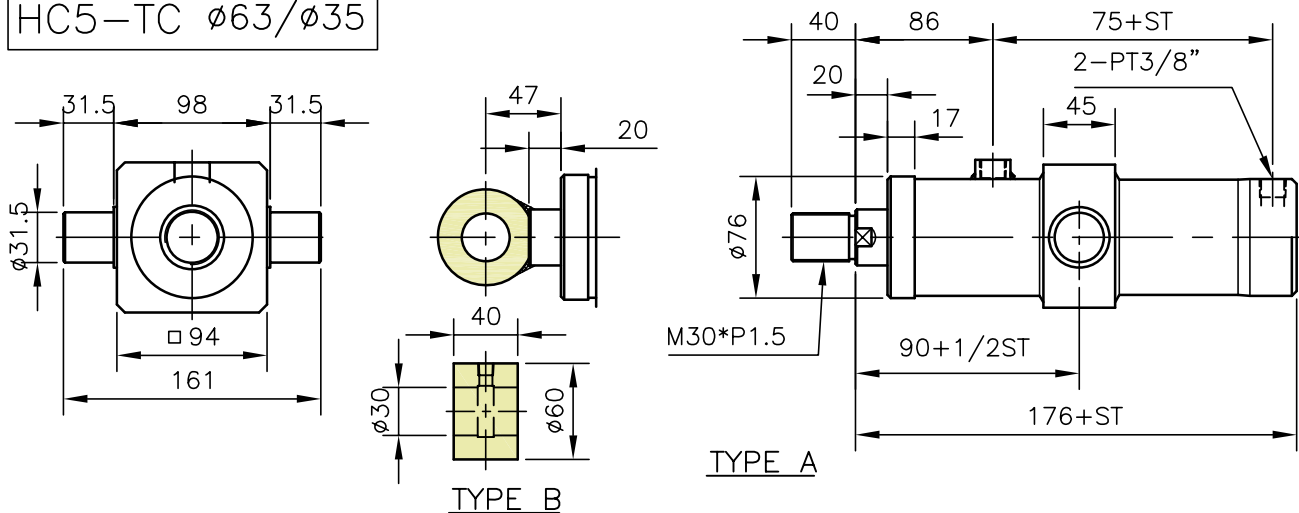
HC5-FB $\phi 63/\phi 35$



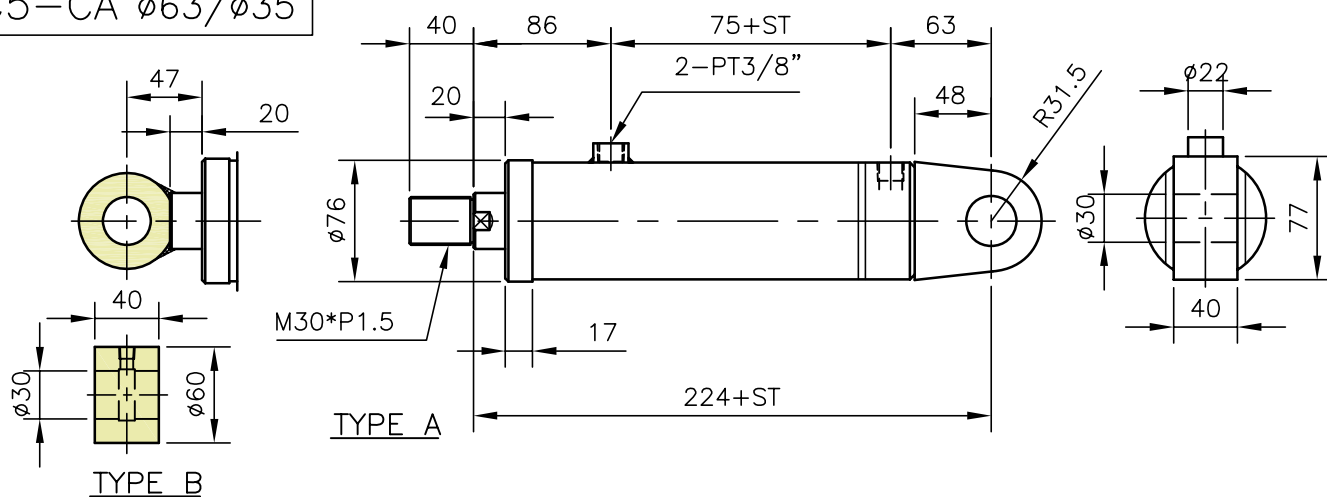
HC5-FD $\phi 63/\phi 35$



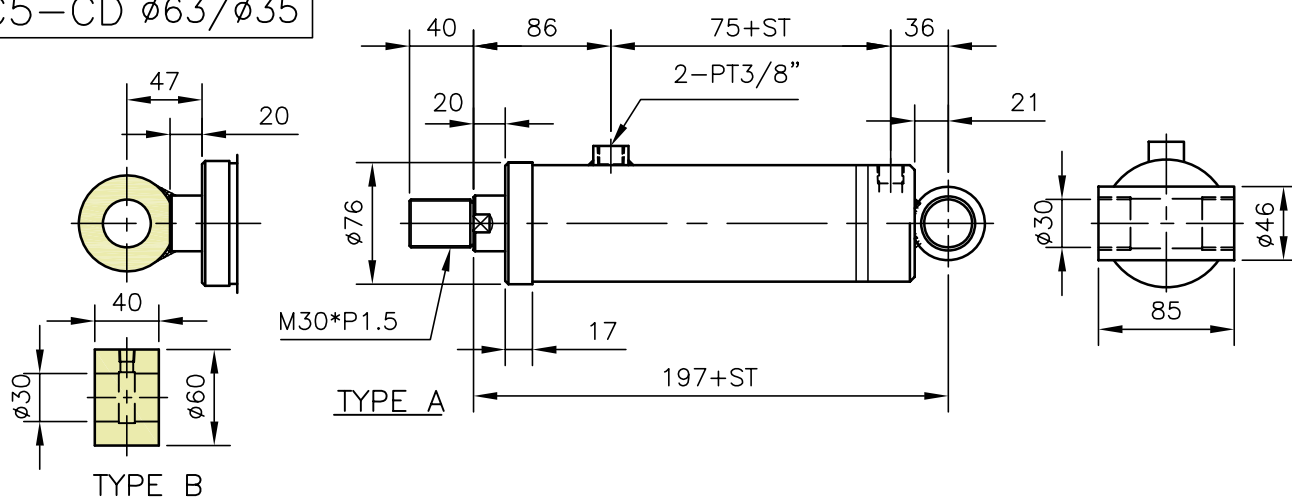
HC5-TC $\phi 63/\phi 35$



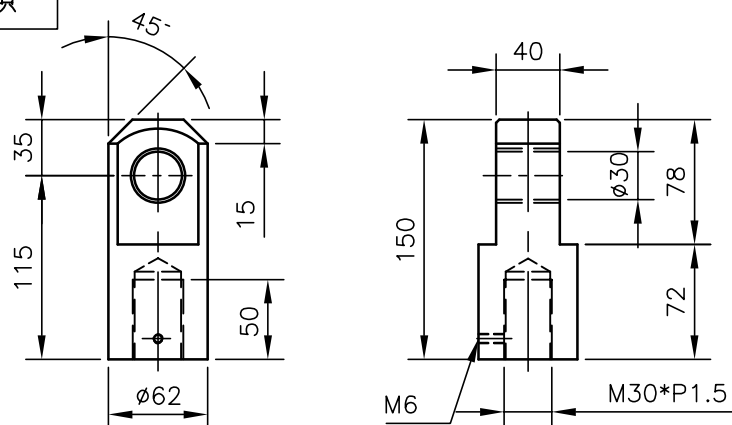
HC5-CA $\phi 63/\phi 35$



HC5-CD $\phi 63/\phi 35$



HC5- $\phi 63$ -I 接頭



weigh=2.6kg

油壓缸大概重量計算

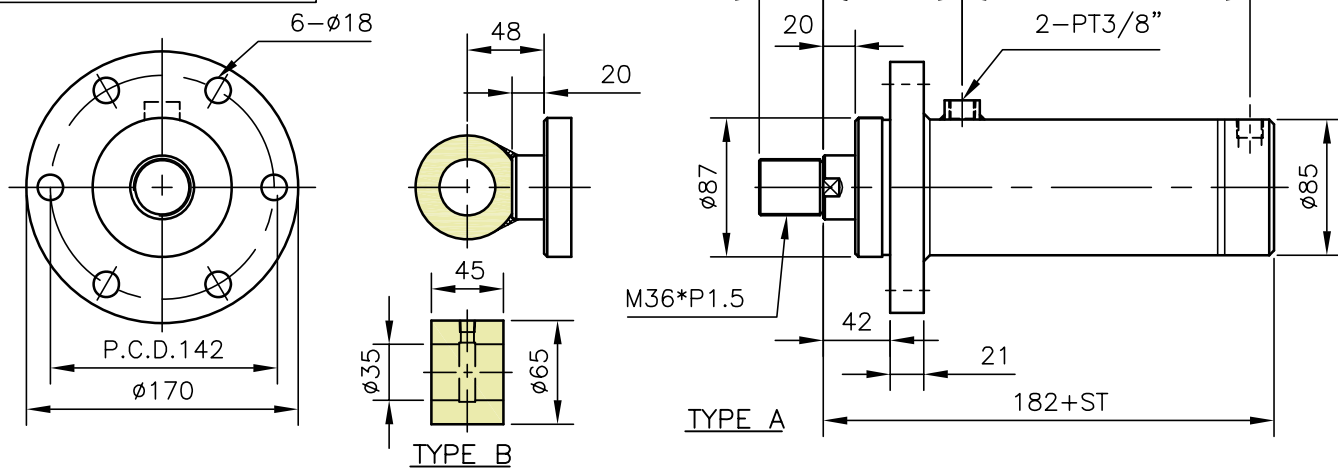
Estimated weight of hyd.

EX. : FA , ST=200mm , Type A

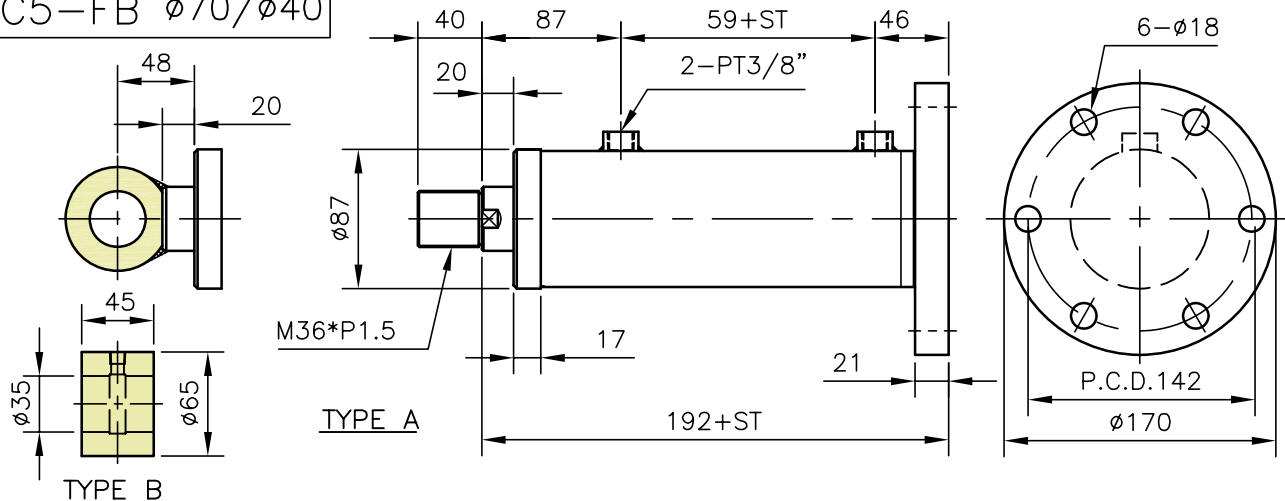
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 8.3 + (1.9 * 2) \\ &= 12.1 \text{ kg} \end{aligned}$$

	W1 (kg)		W2 (kg/100mm)
	Type A	Type B	
FA	8.3	8.8	1.9
FB	8.2	8.7	
FD	7.7	8.2	
TC	8.1	8.6	
CA	7.4	7.9	
CD	6.7	7.2	

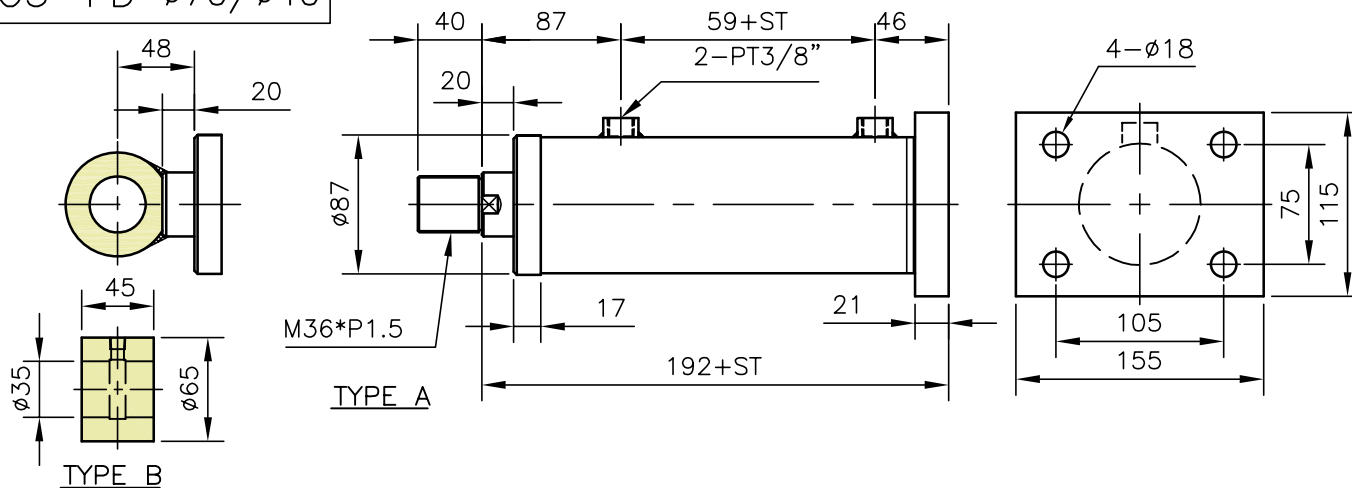
HC5-FA $\phi 70/\phi 40$



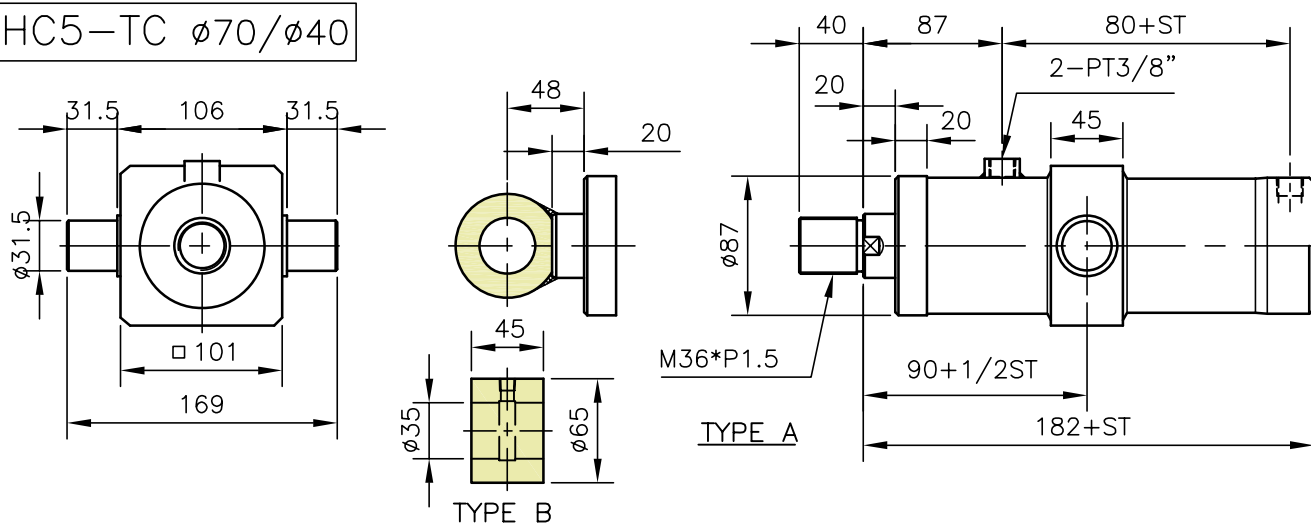
HC5-FB $\phi 70/\phi 40$



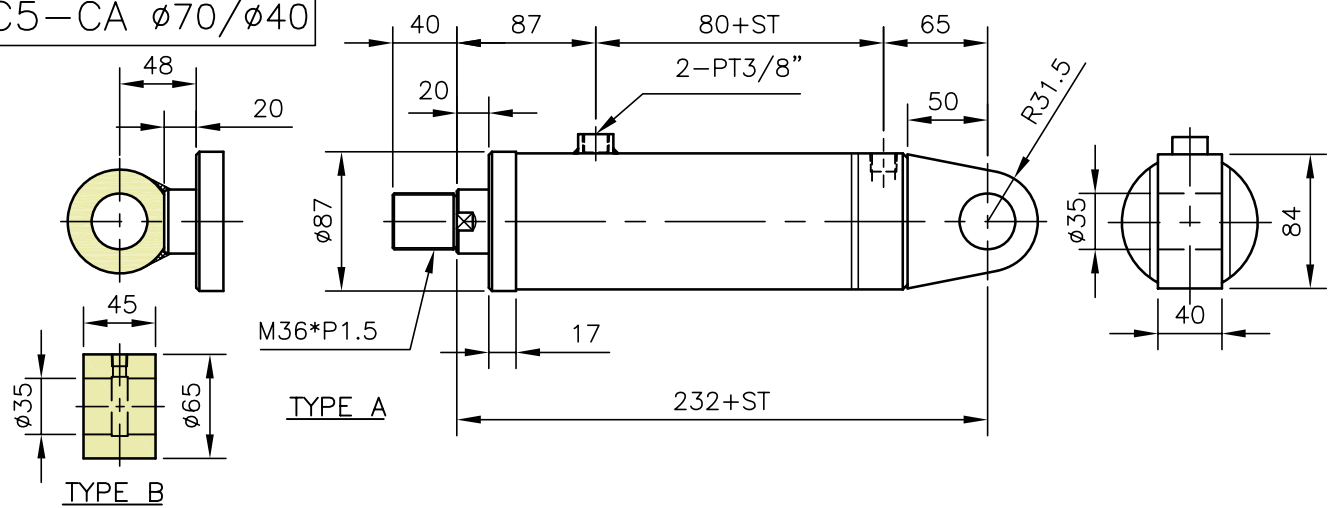
HC5-FD $\phi 70/\phi 40$



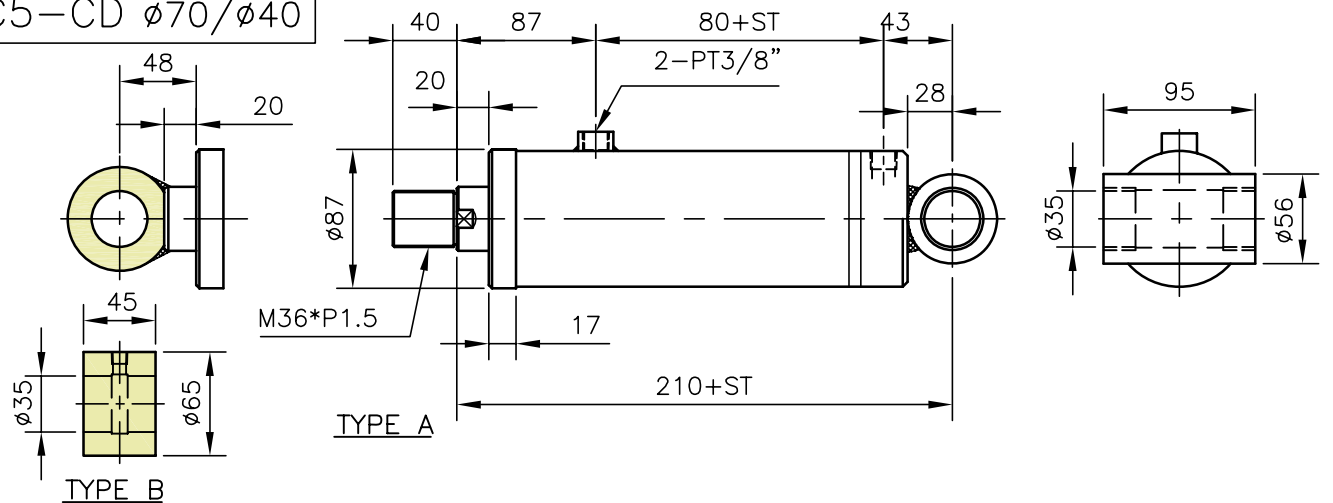
HC5-TC $\phi 70/\phi 40$



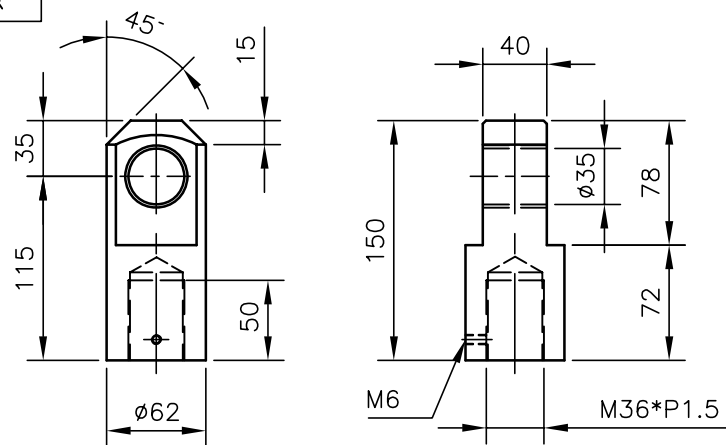
HC5-CA $\phi 70/\phi 40$



HC5-CD $\phi 70/\phi 40$



HC5- $\phi 70$ -I 接頭



weigh=2.4kg

油壓缸大概重量計算

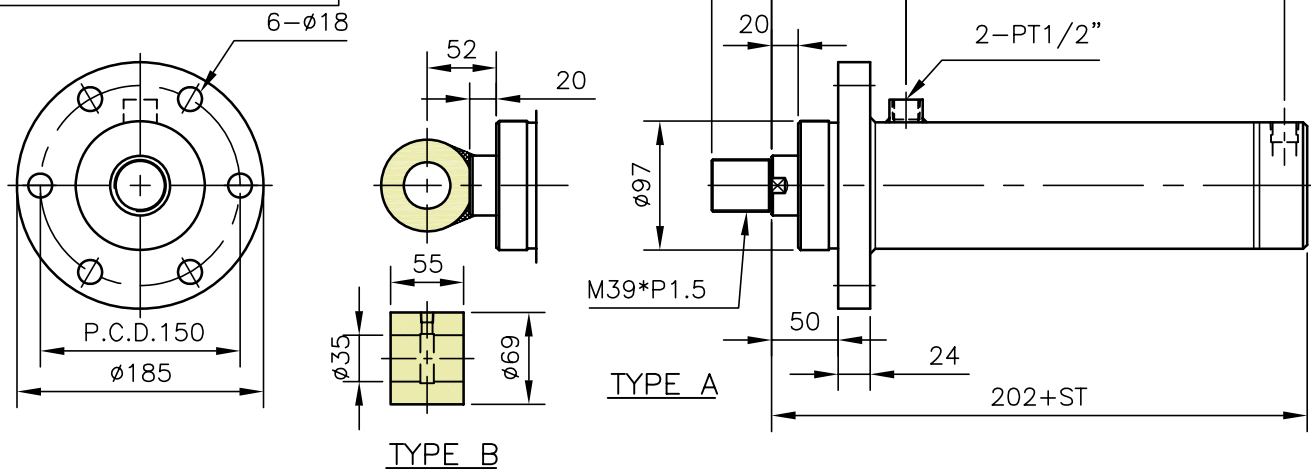
Estimated weight of hyd.

EX. : FA , ST=200mm , Type A

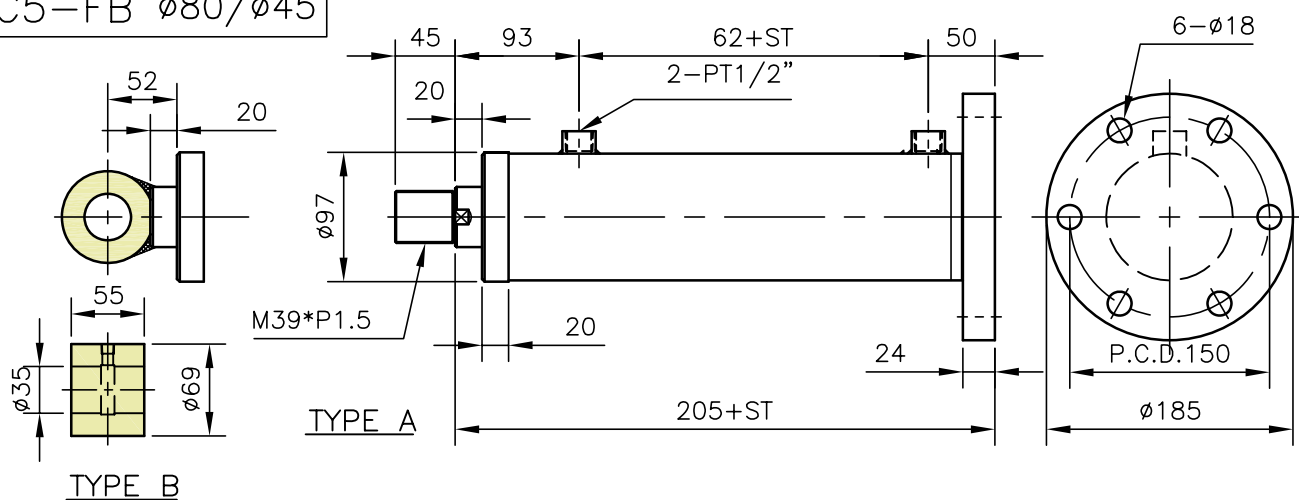
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 10.7 + (2.5 * 2) \\ &= 15.7 \text{ kg} \end{aligned}$$

	W1 (kg)		W2 (kg/100mm)
	Type A	Type B	
FA	10.7	11.1	2.5
FB	10.7	11.1	
FD	9.9	10.3	
TC	9.9	10.3	
CA	9.6	10.0	
CD	8.9	9.3	

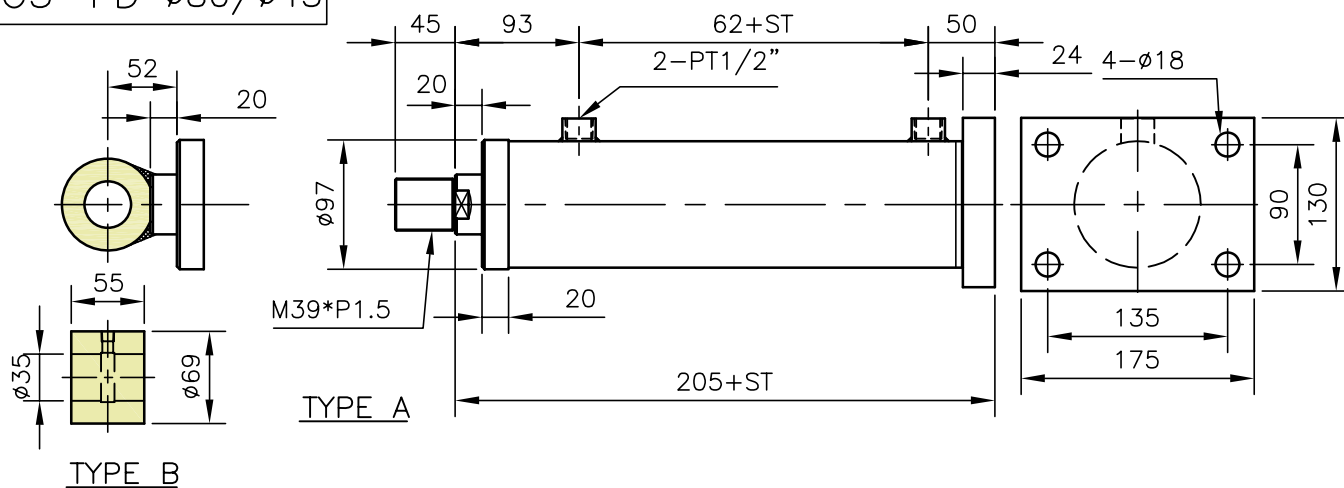
HC5-FA $\phi 80/\phi 45$



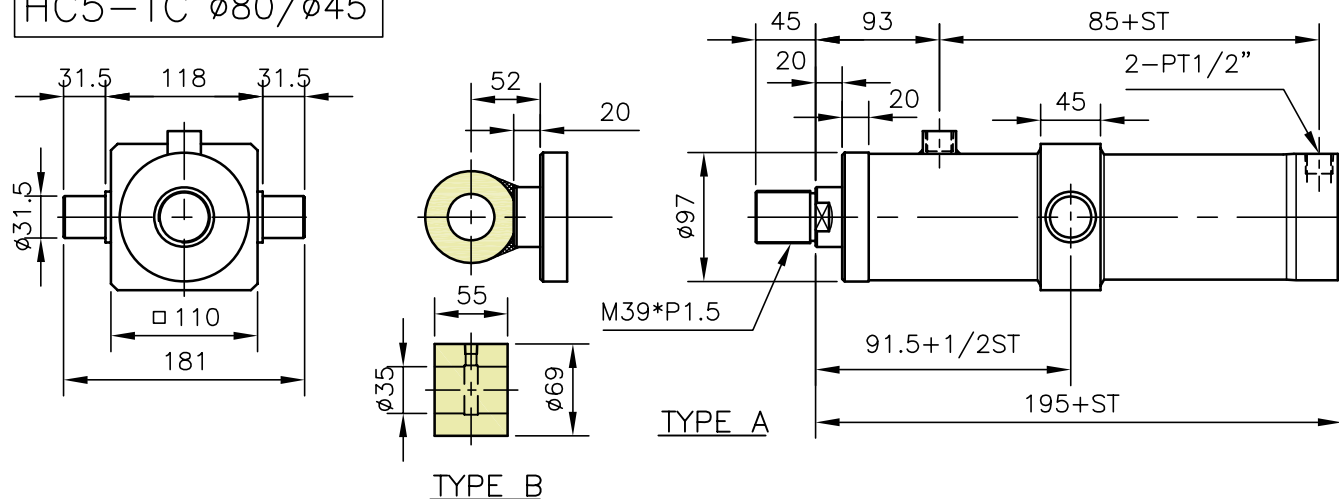
HC5-FB $\phi 80/\phi 45$

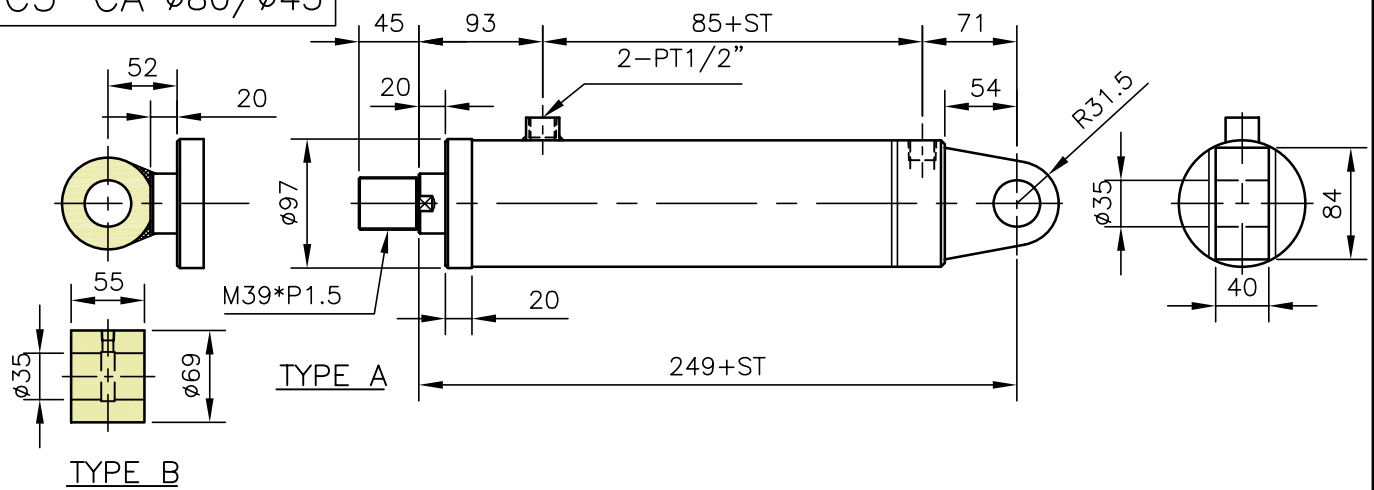
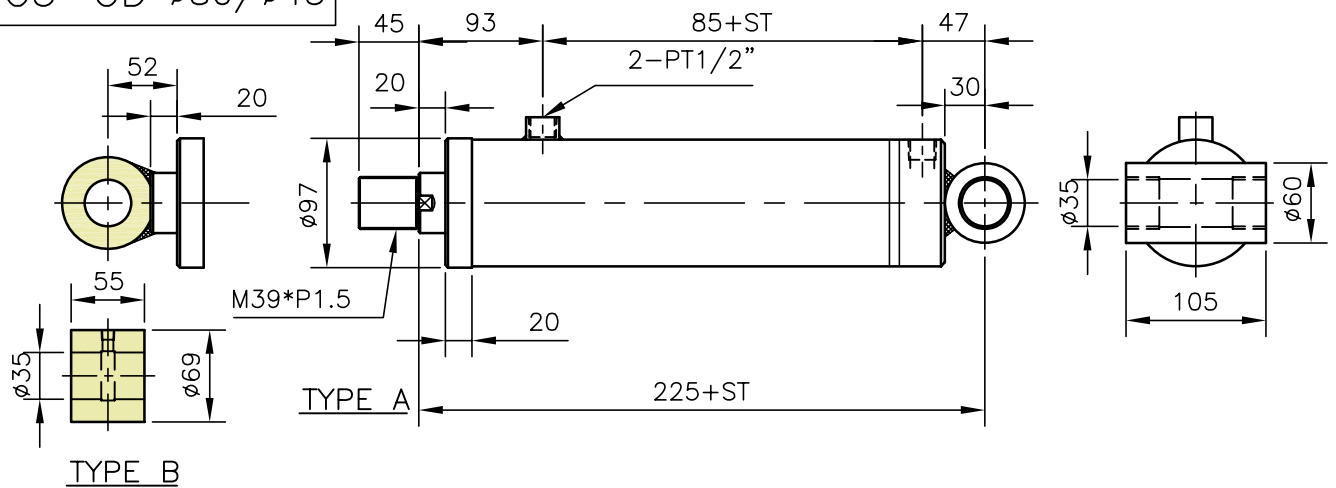
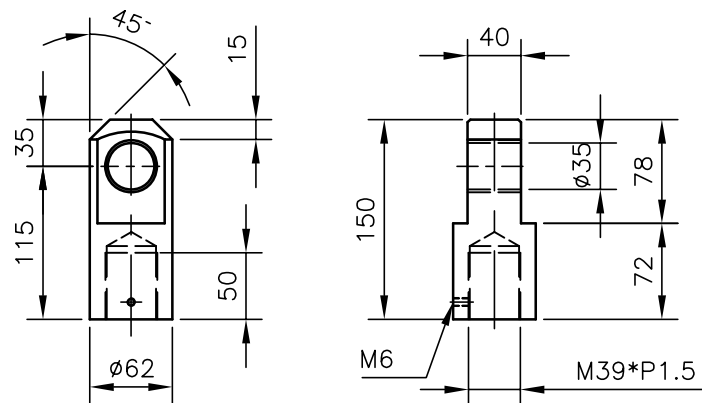


HC5-FD $\phi 80/\phi 45$



HC5-TC $\phi 80/\phi 45$



HC5-CA $\phi 80/\phi 45$ HC5-CD $\phi 80/\phi 45$ HC5- ϕ 80-1接頭

weigh=2.4kg

油壓缸大蓋重量計算

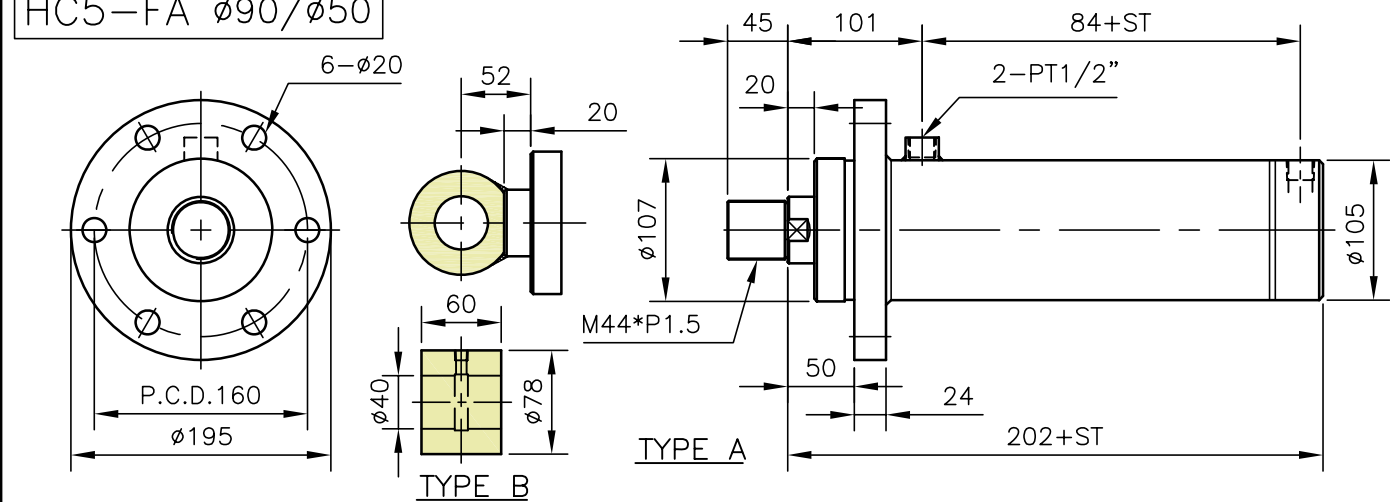
Estimated weight of hyd.

EX. : FA , ST=200mm , Type A

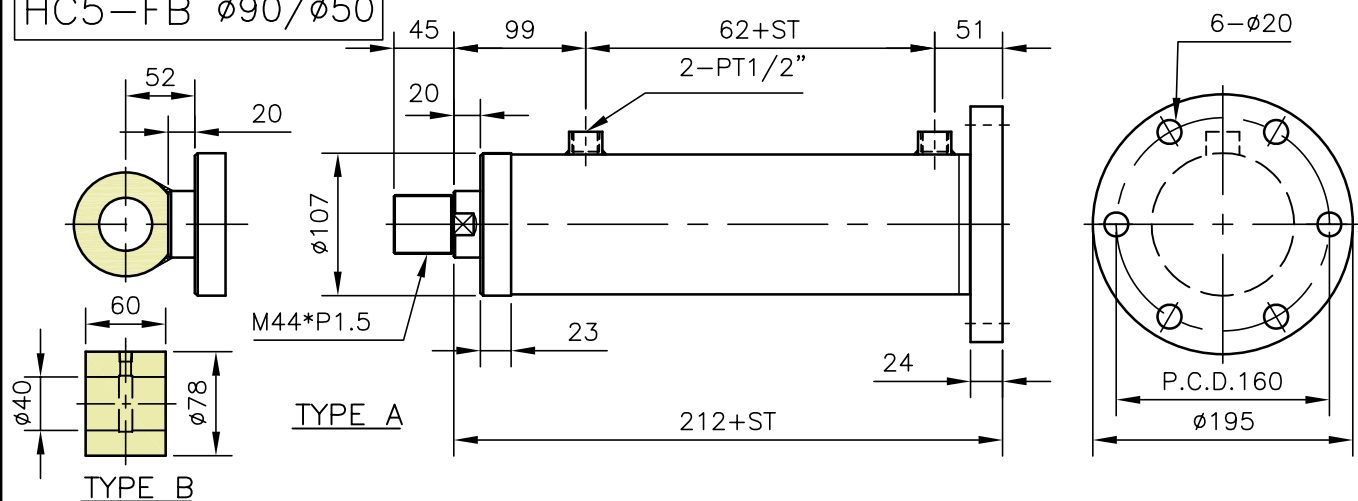
$$\begin{aligned}\text{weight} &= W1 + (W2 * ST) \\ &= 15.0 + (2.8 * 2) \\ &= 20.6 \text{ kg}\end{aligned}$$

	W1 (kg)		W2
	Type A	Type B	(kg/100mm)
FA	15.0	15.7	2.8
FB	14.4	15.1	
FD	13.8	14.5	
TC	13.2	13.9	
CA	12.9	13.6	
CD	12.5	13.2	

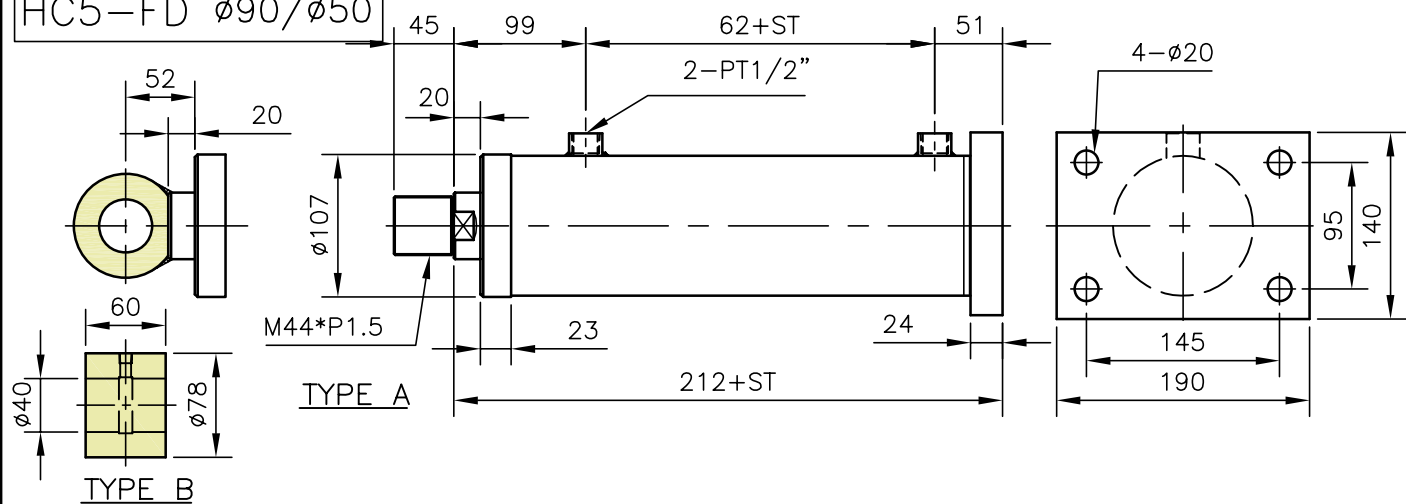
HC5-FA $\phi 90/\phi 50$



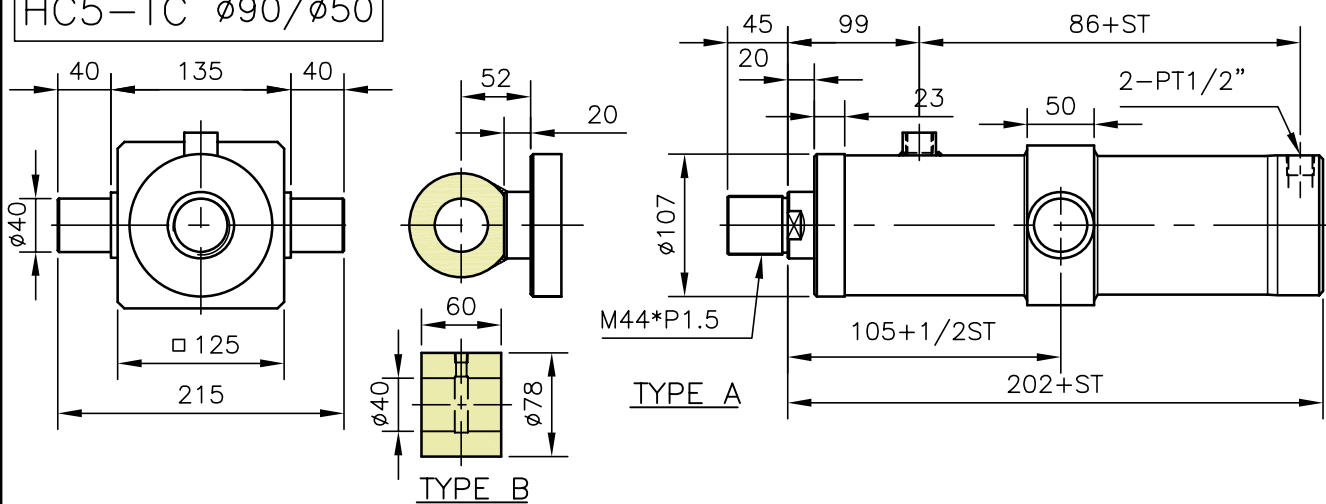
HC5-FB $\phi 90/\phi 50$



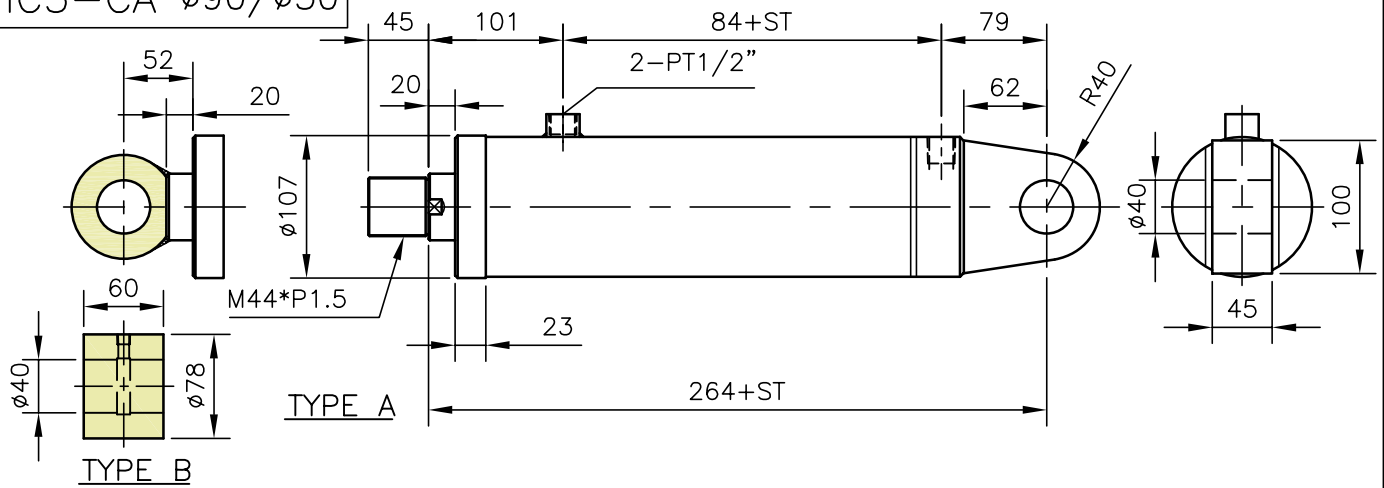
HC5-FD $\phi 90/\phi 50$



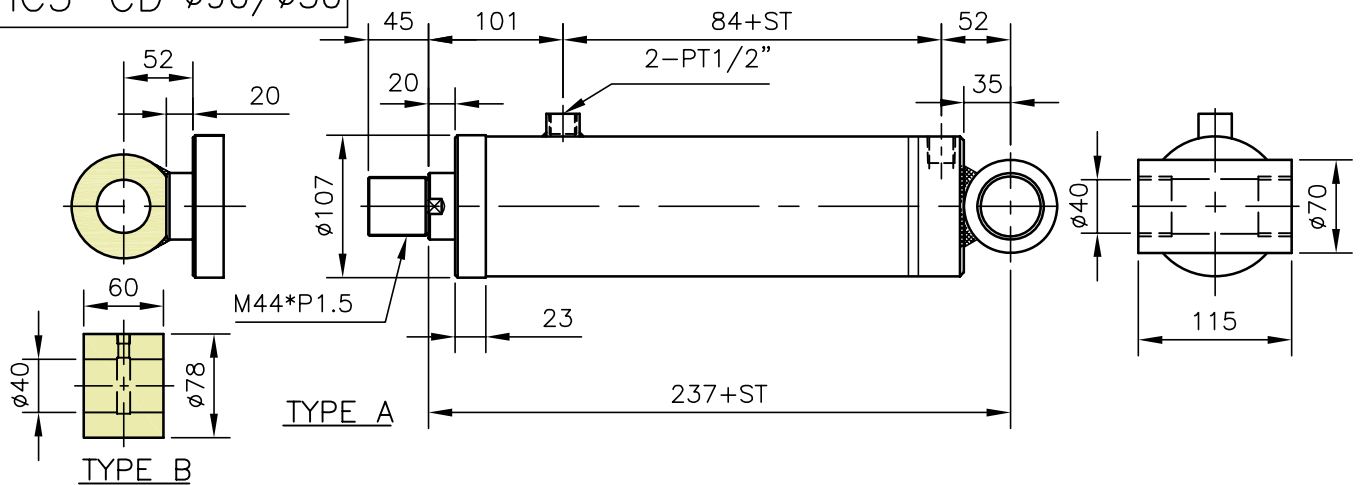
HC5-TC $\phi 90/\phi 50$



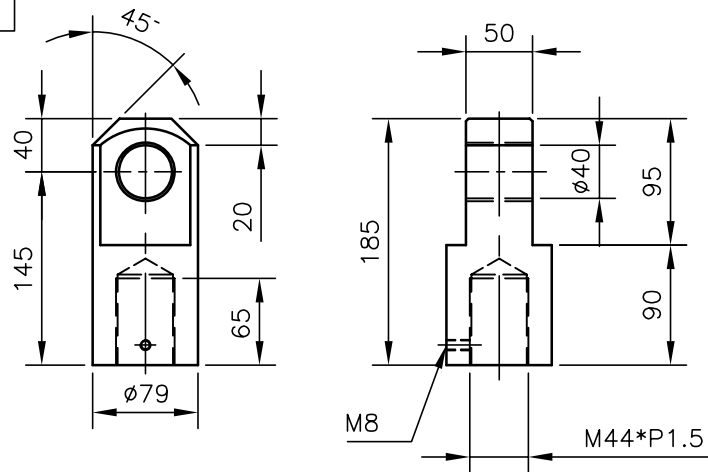
HC5-CA $\phi 90/\phi 50$



HC5-CD $\phi 90/\phi 50$



HC5- $\phi 90$ -I 接頭



weigh=4.4kg

油壓缸大概重量計算

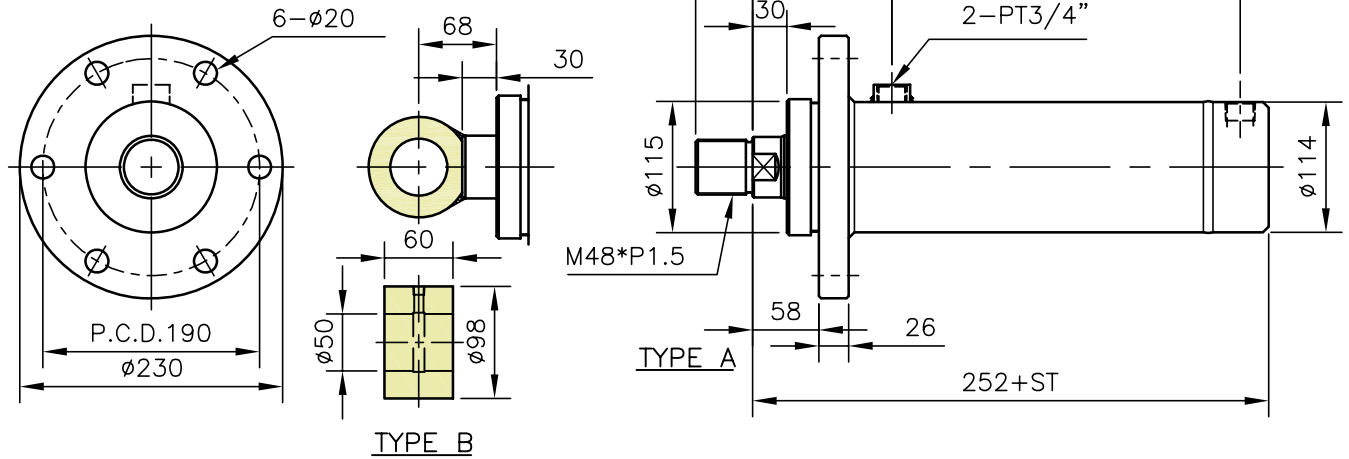
Estimated weight of hyd.

EX. : FA , ST=200mm , Type A

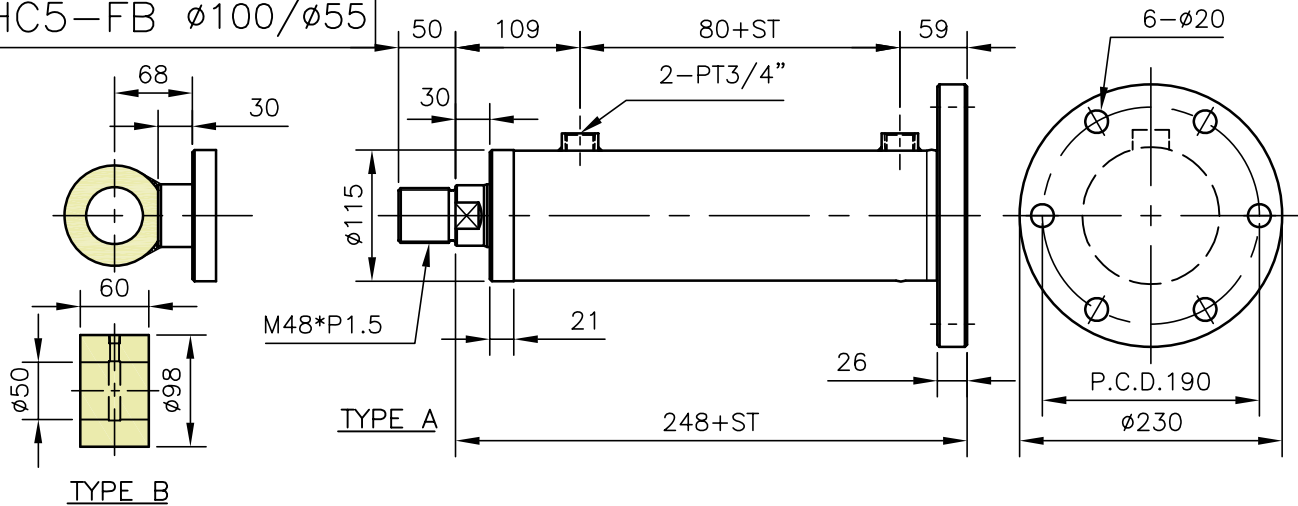
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 21.0 + (3.3 * 2) \\ &= 27.6 \text{ kg} \end{aligned}$$

	W1 (kg)		W2 (kg/100mm)
	Type A	Type B	
FA	21.0	22.1	3.3
FB	20.8	21.9	
FD	20.4	21.5	
TC	20.3	21.4	
CA	20.0	21.1	
CD	19.4	20.5	

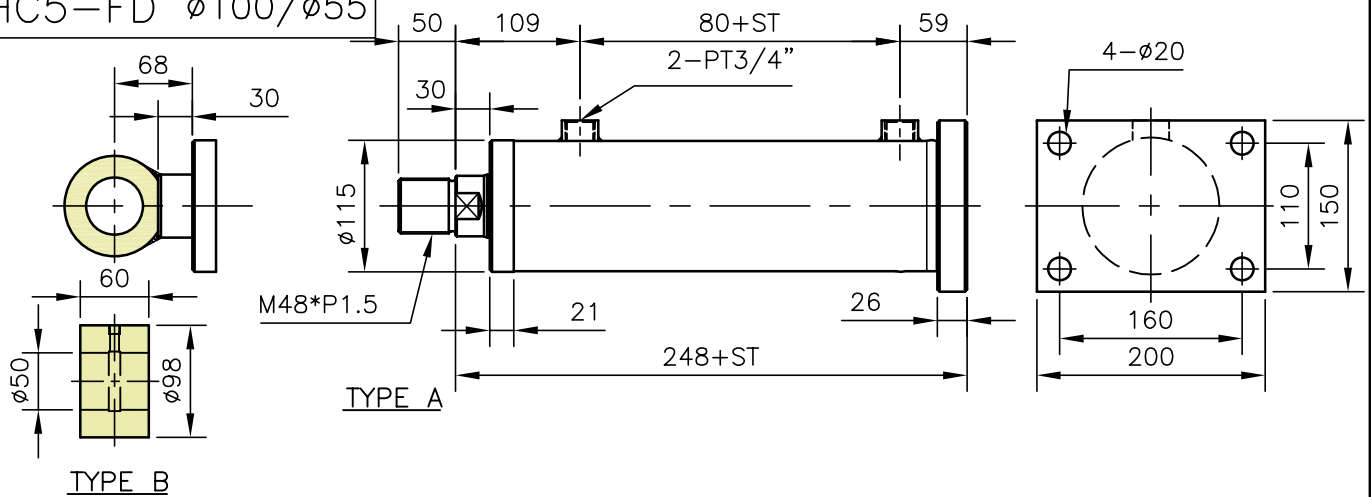
HC5-FA $\phi 100/\phi 55$



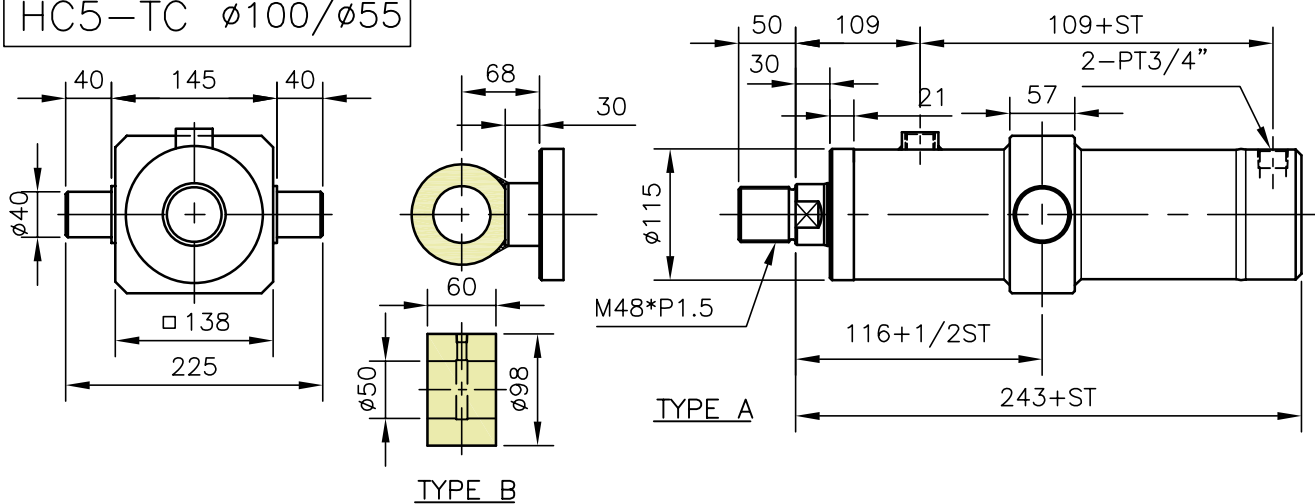
HC5-FB $\phi 100/\phi 55$



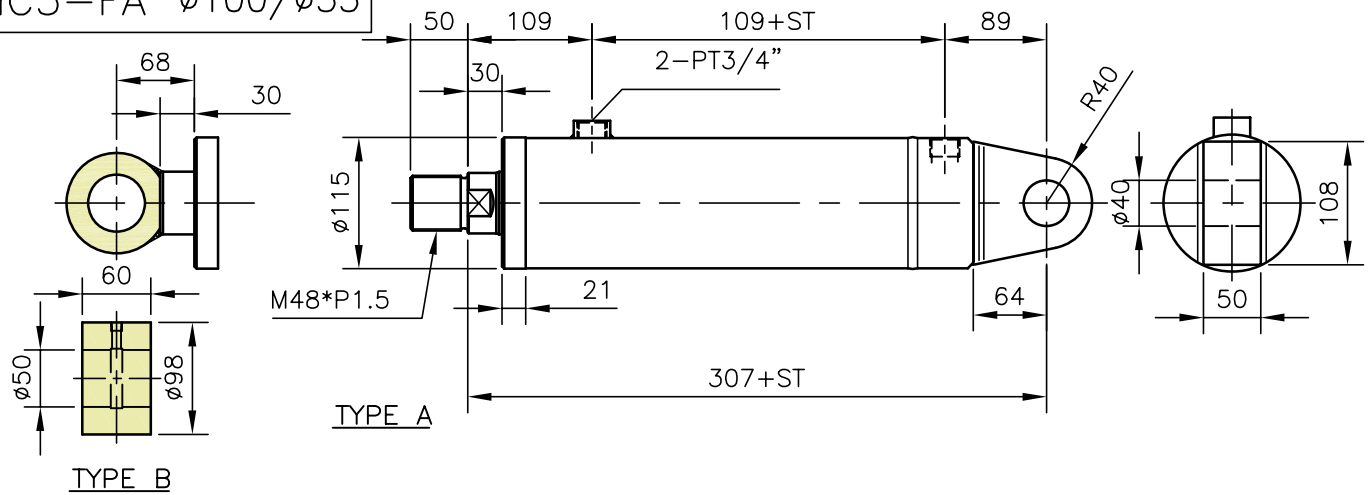
HC5-FD $\phi 100/\phi 55$



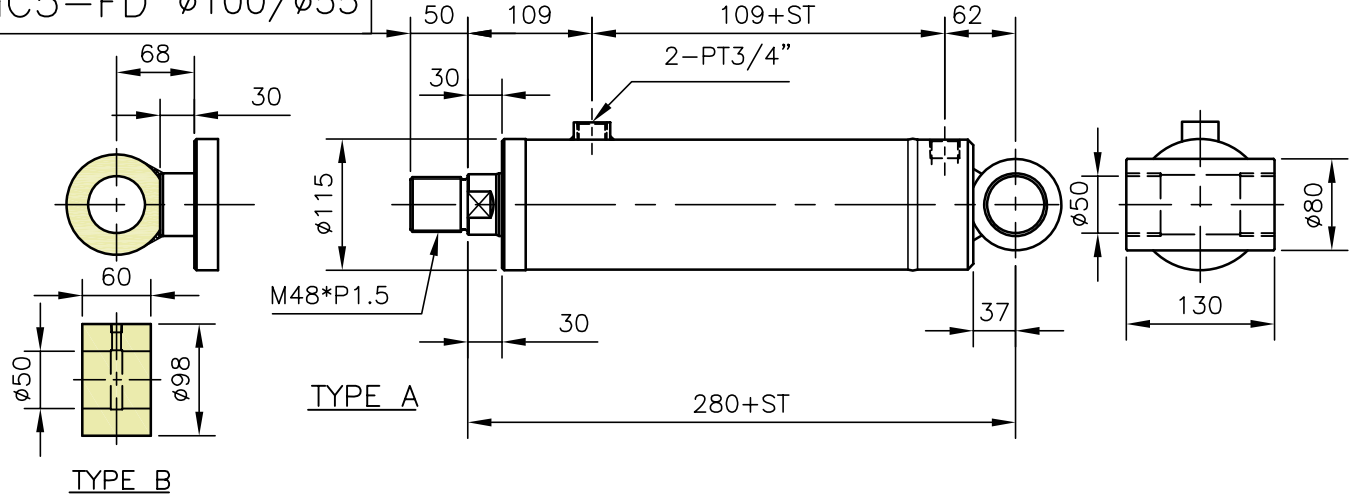
HC5-TC $\phi 100/\phi 55$



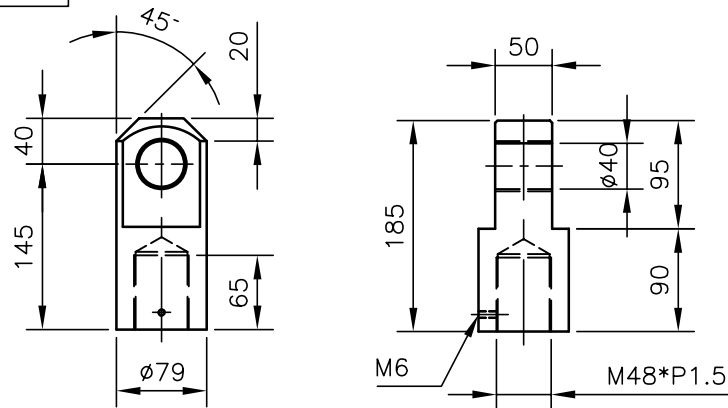
HC5-FA $\phi 100/\phi 55$



HC5-FD $\phi 100/\phi 55$



HC5- $\phi 100$ -I接頭



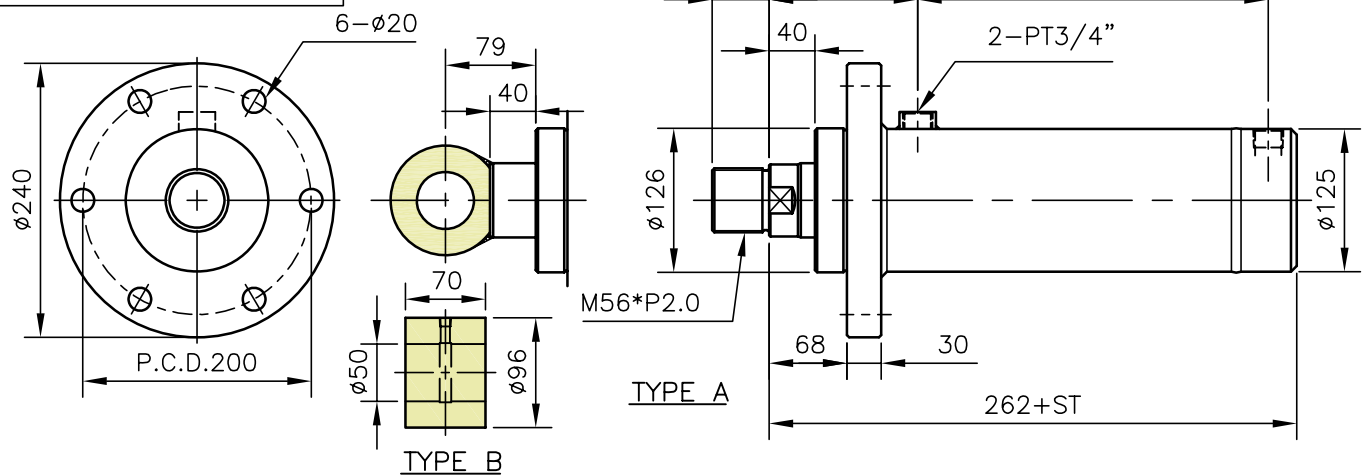
油壓缸大蓋重量計算
Estimated weight of hyd.

EX. : FA , ST=200mm , Type A

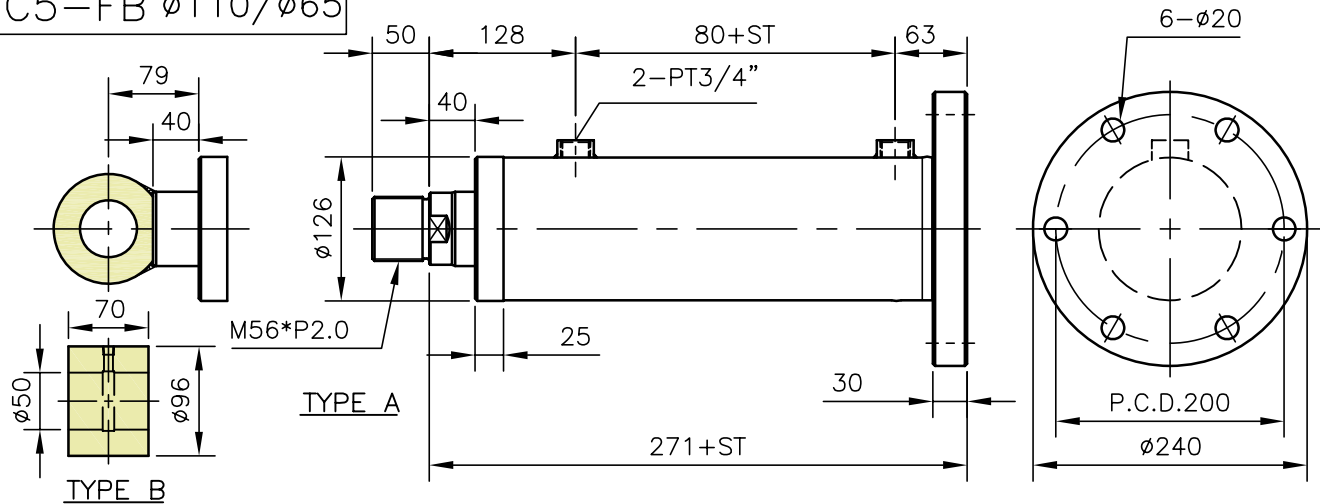
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 26.7 + (4.5 * 2) \\ &= 35.7 \text{ kg} \end{aligned}$$

	W1 (kg)		W2 (kg/100mm)
	Type A	Type B	
FA	26.7	27.9	4.5
FB	25.8	27.0	
FD	23.5	24.7	
TC	24.4	25.6	
CA	23.1	24.3	
CD	23.0	24.2	

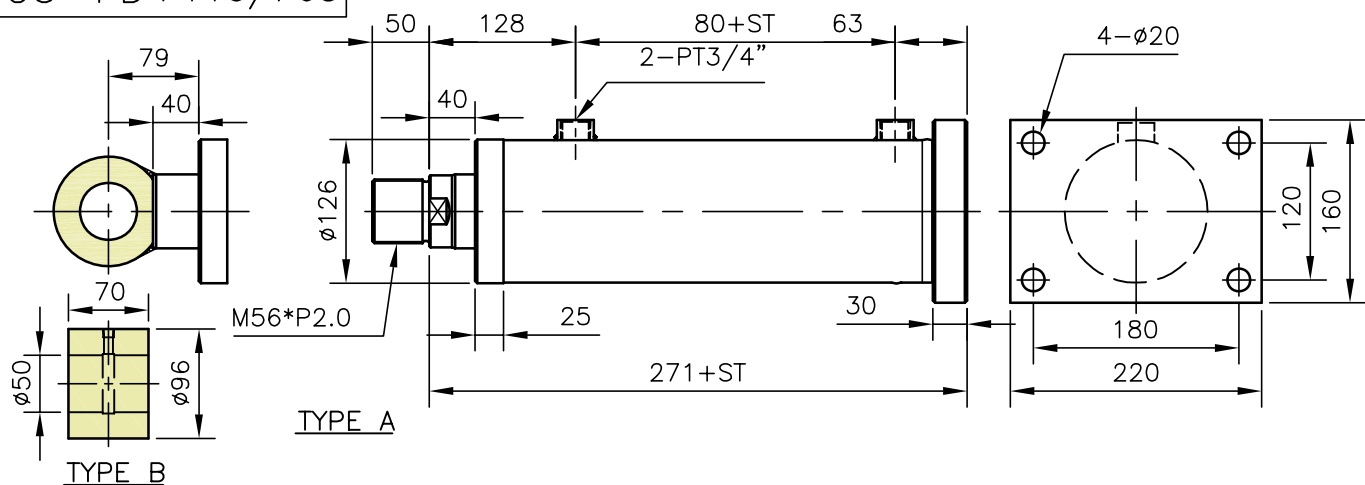
HC5-FA $\phi 110/\phi 65$



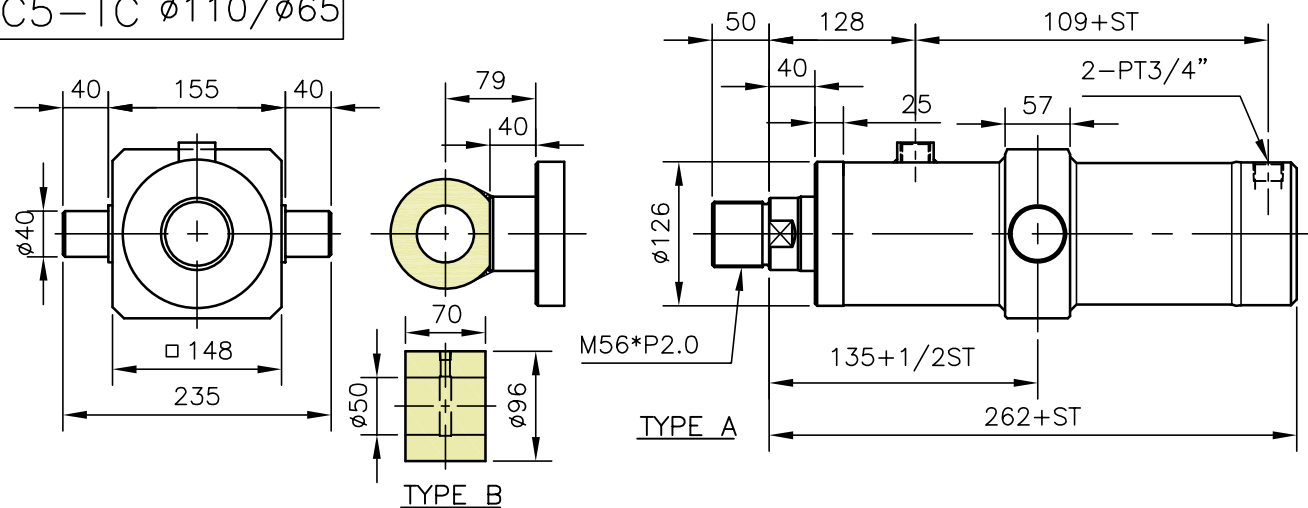
HC5-FB $\phi 110/\phi 65$



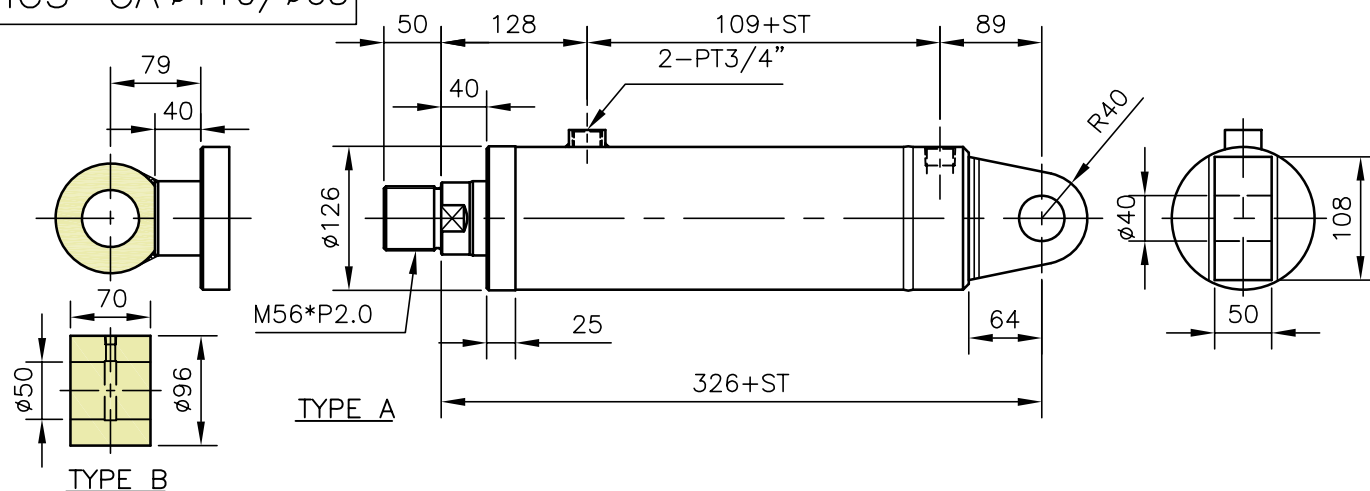
HC5-FD $\phi 110/\phi 65$



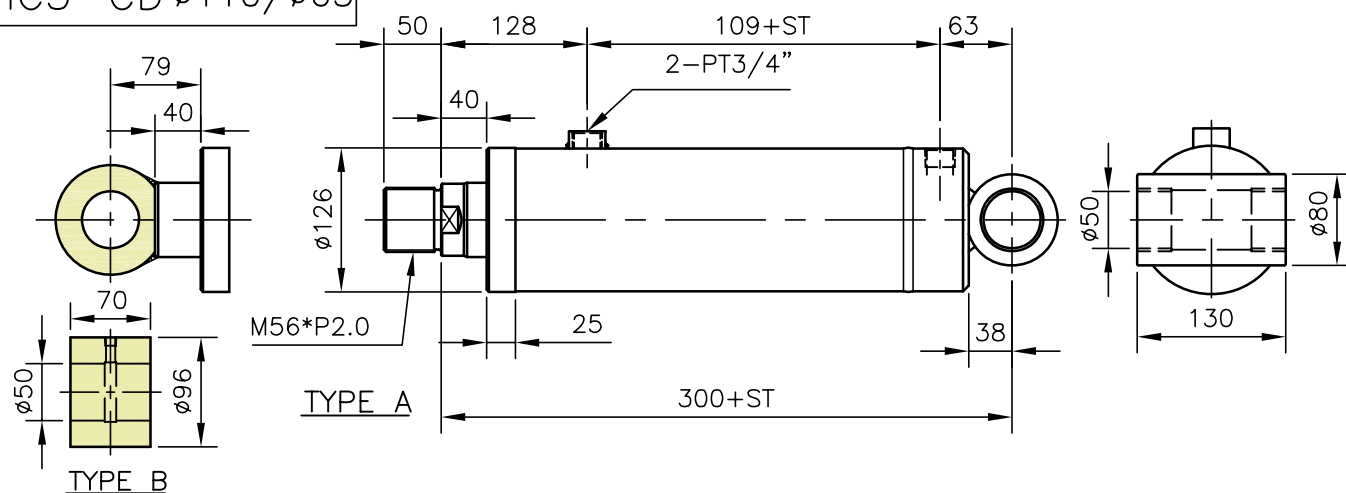
HC5-TC $\phi 110/\phi 65$



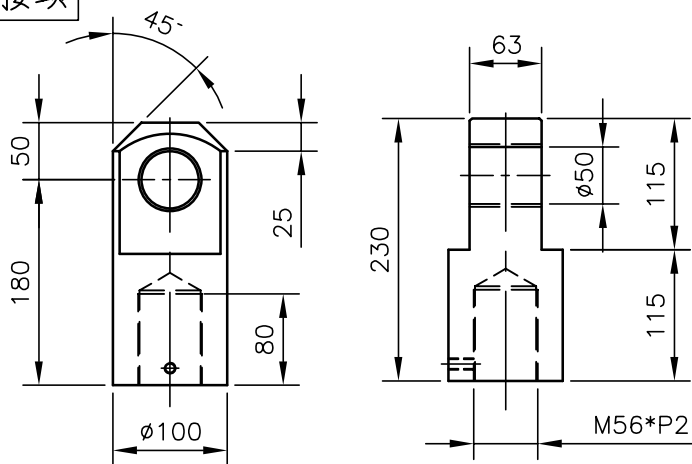
HC5-CA $\phi 110/\phi 65$



HC5-CD $\phi 110/\phi 65$



HC5- $\phi 110$ -I 接頭



weigh=9.8kg

油壓缸大概重量計算

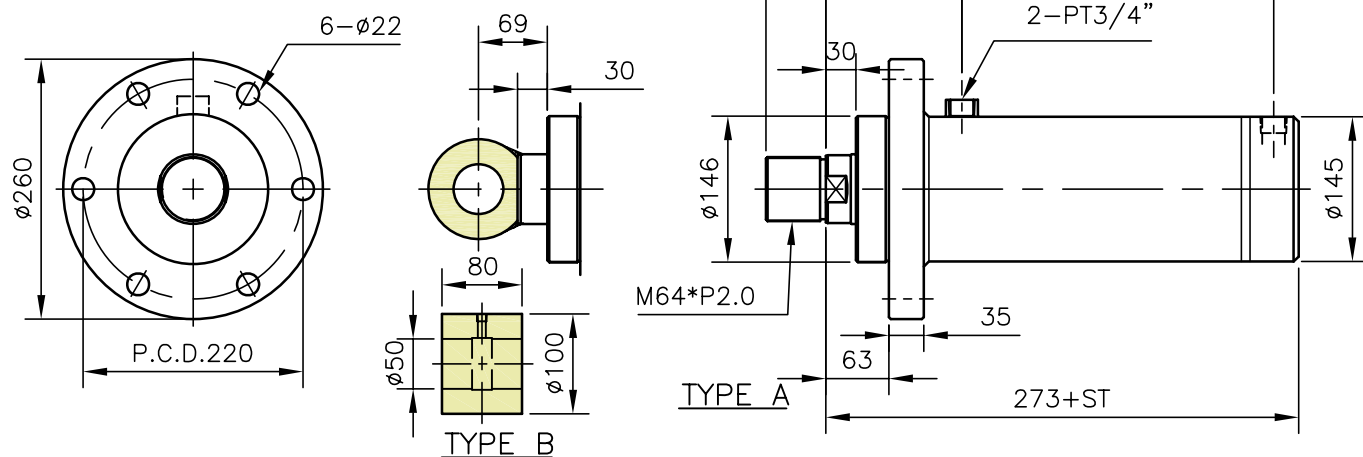
Estimated weight of hyd.

EXP : FA , ST=200mm , Type A

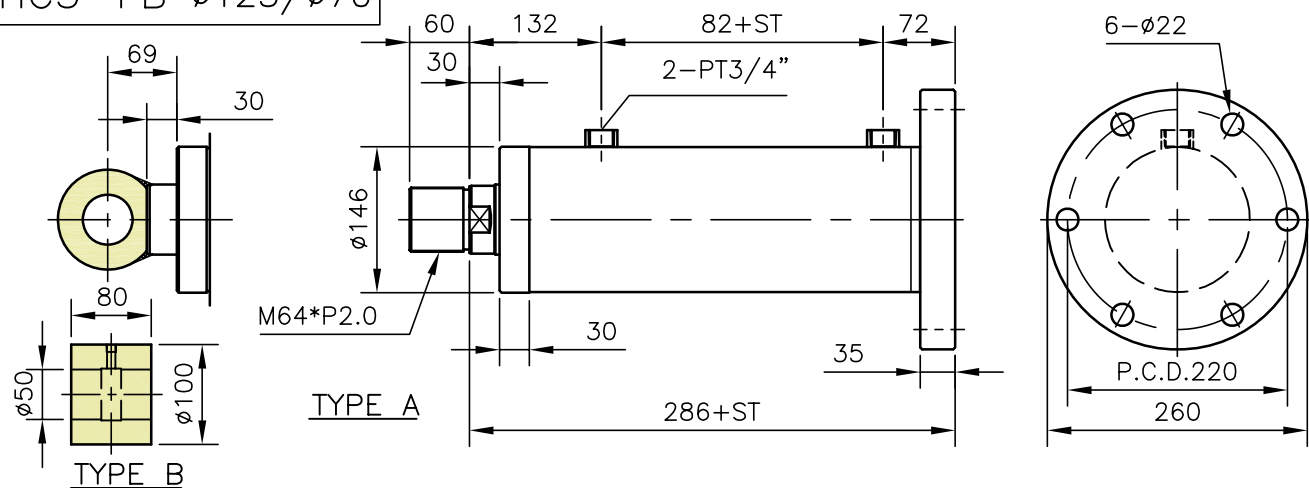
$$\begin{aligned} \text{weigh} &= W1 + (W2 * ST) \\ &= 32.2 + (5.6 * 2) \\ &= 43.4 \text{ kg} \end{aligned}$$

	W1 (kg)		W2 (kg/100mm)
	Type A	Type B	
FA	32.2	34.1	5.6
FB	32.8	34.7	
FD	30.4	32.3	
TC	29.5	31.4	
CA	27.9	29.8	
CD	27.7	29.6	

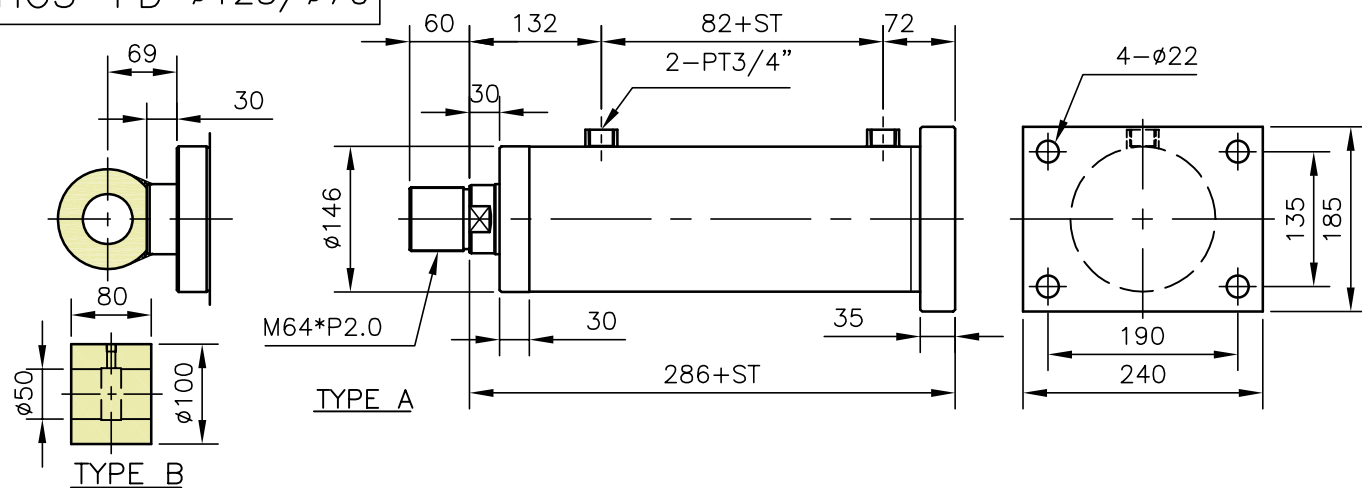
HC5-FA $\phi 125/\phi 70$



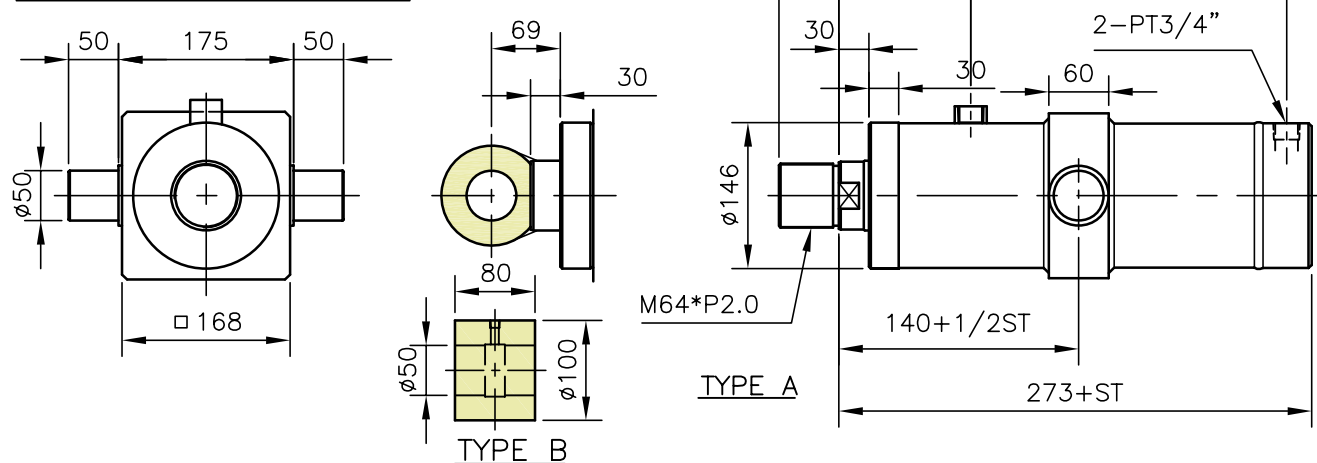
HC5-FB $\phi 125/\phi 70$



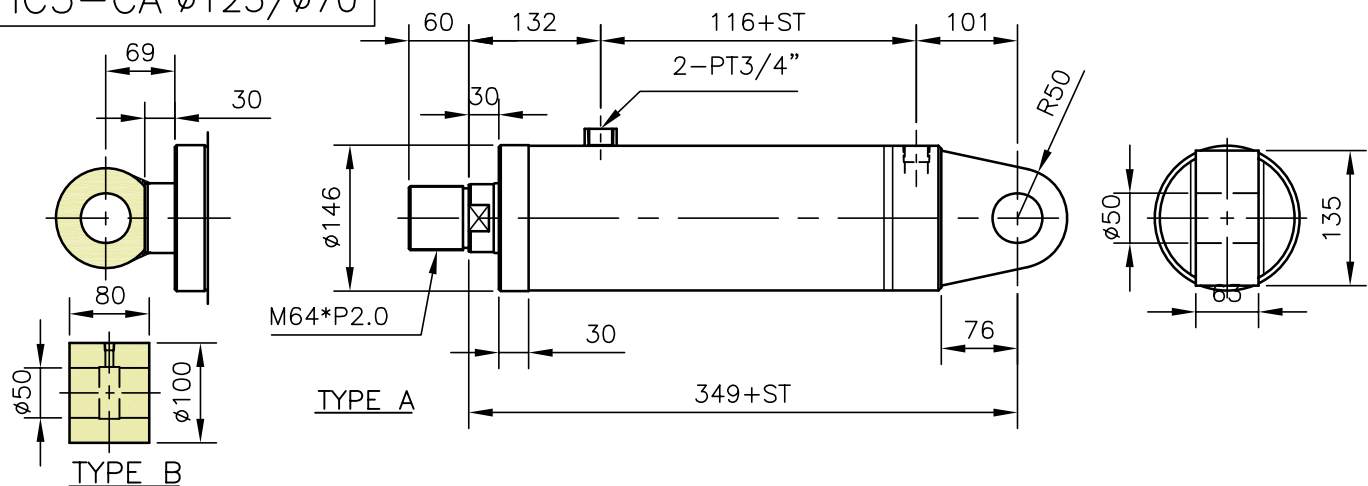
HC5-FD $\phi 125/\phi 70$



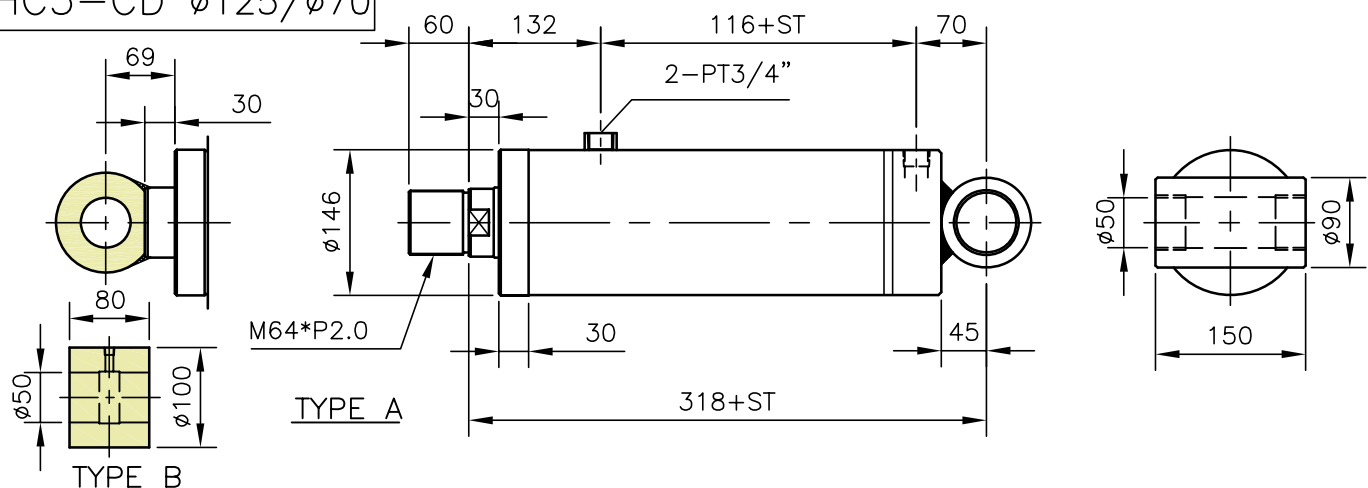
HC5-TC $\phi 125/\phi 70$



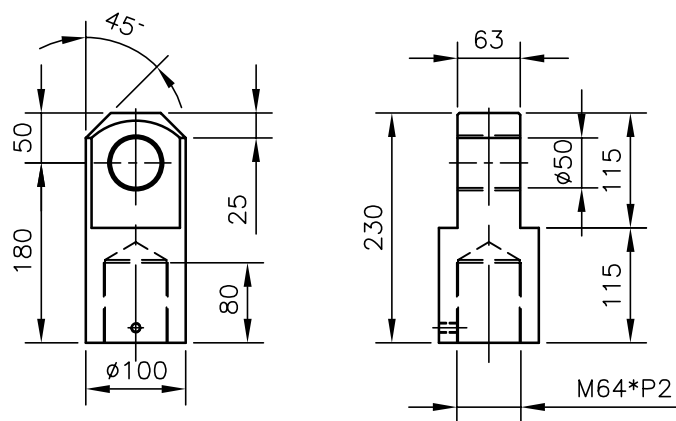
HC5-CA $\phi 125/\phi 70$



HC5-CD $\phi 125/\phi 70$



HC5- $\phi 125$ -I接頭



weigh=9.3kg

油壓缸大概重量計算

Estimated weight of hyd.

EX. : FA , ST=200mm , Type A

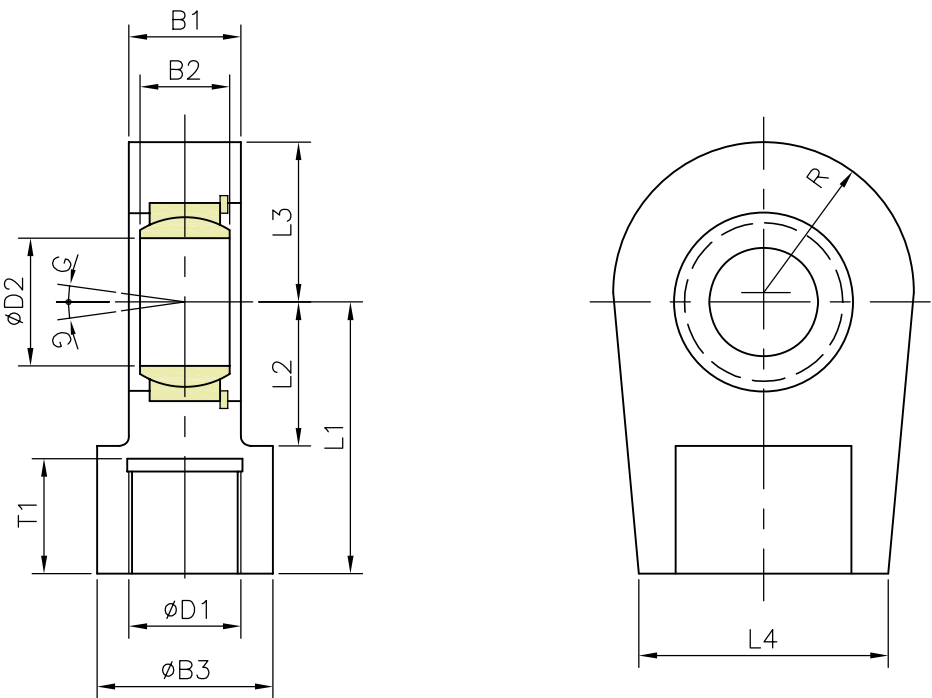
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 42.3 + (6.3 * 2) \\ &= 54.9 \text{ kg} \end{aligned}$$

	W1 (kg)		W2 (kg/100mm)
	Type A	Type B	
FA	42.3	44.4	6.3
FB	42.3	44.4	
FD	40.1	42.2	
TC	39.1	41.2	
CA	38.1	40.2	
CD	37.0	39.1	

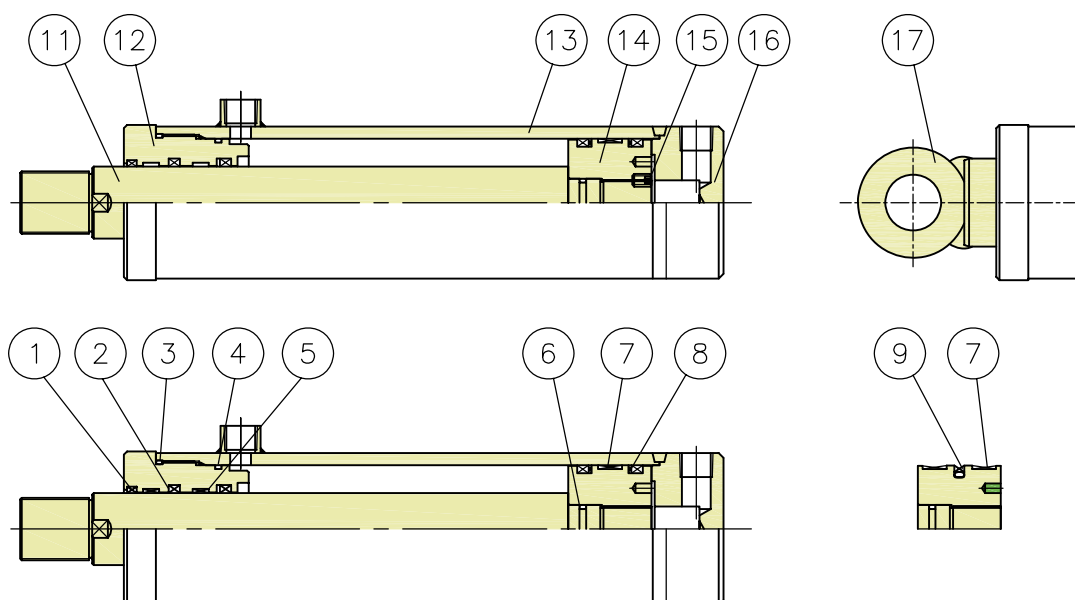
接頭 Clevis Head— BAI

前端球面軸承接頭— BAI

Spherical Rod End Type— BAI



Piston Dia.	$B1 \begin{smallmatrix} 0 \\ -0.02 \end{smallmatrix}$	$B2$	$B3$	$D1$	$\phi D2$	$L1$	$L2$	$L3$	$L4$	R	$T1$	G	Weigh(kg)
40	19	$16 \begin{smallmatrix} 0 \\ -0.12 \end{smallmatrix}$	25	M 20*1.5	$20 \begin{smallmatrix} 0 \\ -0.01 \end{smallmatrix}$	50	25	30	48	28	17	9°	0,43
50	23	$20 \begin{smallmatrix} 0 \\ -0.12 \end{smallmatrix}$	28	M 26*1.5	$25 \begin{smallmatrix} 0 \\ -0.01 \end{smallmatrix}$	50	25	30	48	28	17	7°	0,48
60	28	$22 \begin{smallmatrix} 0 \\ -0.12 \end{smallmatrix}$	34	M 26*1.5	$30 \begin{smallmatrix} 0 \\ -0.01 \end{smallmatrix}$	60	30	34	54	32	23	6°	0,74
63	28	$22 \begin{smallmatrix} 0 \\ -0.12 \end{smallmatrix}$	34	M 30*1.5	$30 \begin{smallmatrix} 0 \\ -0.012 \end{smallmatrix}$	60	30	34	54	32	23	6°	0,74
70	30	$25 \begin{smallmatrix} 0 \\ -0.12 \end{smallmatrix}$	44	M 36*1.5	$35 \begin{smallmatrix} 0 \\ -0.012 \end{smallmatrix}$	70	38	42	66	39	29	6°	1,2
80	30	$25 \begin{smallmatrix} 0 \\ -0.12 \end{smallmatrix}$	44	M 39*1.5	$35 \begin{smallmatrix} 0 \\ -0.012 \end{smallmatrix}$	70	38	42	66	39	29	6°	1,2
90	35	$28 \begin{smallmatrix} 0 \\ -0.12 \end{smallmatrix}$	55	M 44*1.5	$40 \begin{smallmatrix} 0 \\ -0.012 \end{smallmatrix}$	85	45	50	78	47	36	7°	2,0
100	40	$35 \begin{smallmatrix} 0 \\ -0.12 \end{smallmatrix}$	70	M 48*1.5	$50 \begin{smallmatrix} 0 \\ -0.015 \end{smallmatrix}$	105	55	58	90	58	46	6°	3,8
110	40	$35 \begin{smallmatrix} 0 \\ -0.12 \end{smallmatrix}$	70	M 56*2.0	$50 \begin{smallmatrix} 0 \\ -0.015 \end{smallmatrix}$	105	55	58	90	58	46	6°	3,8
125	50	$44 \begin{smallmatrix} 0 \\ -0.15 \end{smallmatrix}$	87	M 64*2.0	$60 \begin{smallmatrix} 0 \\ -0.015 \end{smallmatrix}$	130	65	70	118	65	59	6°	5,4



零件名稱及材質表 Parts Description & Material List:

NO	名 稱Description.	材 質 Material.	Q'TY	NO	名 稱Description.	材 質 Material.	Q'TY
11	活塞桿 Piston Rod	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1	15		Carbon Steel for Mechanical Structure	1
12	前蓋 Head	一般構造用軋鋼 Rolled Steel for General Structure	1	16		Rolled Steel for General Structure	1
13	上	Carbon Steel Pipe for Mechanical Structure.	1	17	Clevis head	一般構造用軋鋼 Rolled Steel for General Structure	1
14		Rolled Steel for General Structure	1				

油封規格表 Specifications of Oil Seal:

NO	1	2	3	4	5	6	7	8	9
名 稱	防塵油封 Dust Seal	軸心油封 Rod Seal	O型環 O Ring	O型環 O Ring	耐磨片 Wear Ring	O型環 O Ring	耐磨片 Wear Ring	活塞油封 Piston Seal	活塞用T型油封 Piston seal for mode T
材質	PU	PU	NBR	NBR	PTFE	NBR	PTFE	PU	PTFE+NBR
數 量	1	1	1	1	2	1	1	2	1
內徑	ø,ø.w mm	ø,ø.w mm						ø,ø.w mm	ø,ø.w mm
ø40	22.4-30.4-6	22.4-30-5	G-40	G-35	22.4-2.5	P-12	40-2.5	40-30-6	40-29-4.2
ø50				G-45		P-16	50-2.5	50-40-6	50-39-4.2
ø60	30-38-6.5	30-40-6	G-60	G-55	30-2.5	P-18	60-2.5	60-50-6	60-49-4.2
ø63				G-58		P-18	63-2.5	63-53-6	63-52-4.2
ø70	40-48-6.5	40-50-6	G-70	G-65	40-2.5	P-22	70-2.5	70-60-6	70-59-4.2
ø80				G-75		G-25	80-2.5	80-70-6	80-64.5-6.3
ø90	50-58-6.5	50-60-6	G-90	G-85	50-2.5	G-30	90-2.5	90-80-6	90-74.5-6.3
ø100	55-63-6.5	55-65-6	G-100	G-95	55-2.5	G-35	100-2.5	100-85-9	100-84.5-6.3
ø110	65-73-6.5	65-75-6	G-110	G-105	65-2.5	G-45	110-2.5	110-95-9	110-94.5-6.3
ø125	70-80-8	70-80-6	G-125	G-120	70-2.5	G-45	125-2.5	125-112-9	125-109.5-6.3

HC6系列油壓缸 HC6 Series Hydraulic Cylinders

軋製鋼形 標準油壓缸 MILL TYPE Standard Hyd, Cylinders

油慶公司之HC6形標準油壓缸,是參照ISO而設計,著重於製鐵機械等,在較其嚴酷之條件使用為目的,適用於苛酷的環境,重覆荷及高壓衝擊的油壓缸

* 加工精度,表面處理,油封材質等各零件都極為考慮的高性能油壓缸

* 振動,衝擊和瞬間極壓等均安全,且具有緩慢順滑之緩衝效果

HC6 Mill Type hyd cylinders are designed according to ISO specifications and specially employed in steel mill plant which meet strictly environmental condition application, heavy load and high pressure impulse resistant etc.,

* Those are emphasised on processing precision surface treatment & oil sealer's material and for which high performance hyd. cylinder.

* Vibration resistant impulse resistant and anti instantaneous burst pressure especially for which being with moved slowly & smoothly etc., cushioning effectmess.

* 規範 Specifications

項目 Item	型式 Model	HC6系列 HC6 Series
缸管內徑 Cylinder Bore	mm	80, 100, 125, 140 160, 180, 200, 220 250, 280, 300, 320
固定座形式 Mounting		FA, FB, LA, TC, CA
使用壓力 Operating Pressure	kgf/cm ²	160kgf/cm ²
* 1 最高使用壓力 Max. Operating Pres.	kgf/cm ²	230kgf/cm ²
最低作動壓力 Min Operating Pres,	kgf/cm ²	5 kgf/cm ²
* 2 最高使用速度 Max, Operating speed	mm/sec	800mm/sec
最低使用速度 Min Operating	缸管內徑 80~140 Cylinder Bore	30 mm/sec
* 3 Speed	mm/sec 160~320	20 mm/sec
最大衝程 Max. Stroke	mm	參考彎曲強度限制值 (DRAW)
* 4 周圍溫度範圍 Range of Ambient Temperature	℃	-10~+80
衝程之容許差 Tolerance of Stroke		JIS B 8354 A級 Refer to Righ Table
活塞桿前端螺紋精度 Accuracy of Threading at Rod End		JIS B 0211-6g(2級)

* 1. 最高使用壓力是含瞬間上擠壓,強度上可使用最高壓力

* 2: 負載之貫性而使缸管發生壓力,請使用在最高壓力值下

* 3: 最低使用速度值,不包含緩衝之行程

* 4: 油封如果使用氟素橡膠VITON材質其溫度可使用至+160℃

1: The max. operating pressure which means the max. operating pressure at instantaneous bursting intensity.

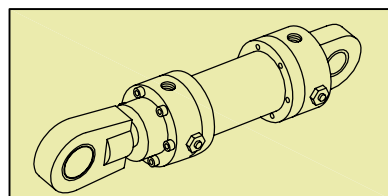
2: The max. operating pressure which no initera loading pressure included.

3: The low speed value which no cushioning stroke included.

If employed the VITON oil sealer and the temp can be reached +160℃

* 衝程之容許差 Tolerance of Stroke

衝程 mm Stroke	容許差 mm Tolerance	衝程 mm Stroke	容許差 mm Tolerance
~100	+0.8	1000~1600	+1.6
100~250	+1.0	1600~2000	+1.8
250~630	+1.25	2000~2500	+2
630~1000	+1.4	2500~3000	+2.5



* 固定座形式 Mounting :

名稱 Description	前蓋端法蘭形 flange at cylinder head
略圖 記號 Symbol FA	
名稱 Description	後蓋端法蘭形 flange at cylinder cap
略圖 記號 Symbol FB	
名稱 Description	軸直角方向腳架形 Foot mounting
略圖 記號 Symbol LA	
名稱 Description	中間固定支撐形 Centre Trunnion mounting
略圖 記號 Symbol TC	
名稱 Description	山形座(1山形) Plae clevis at cylinder cap
略圖 記號 Symbol CA	

除固定形式TC外,行程未超過100MM必須全部使用繫桿式螺絲如下圖

Besides the TC mountings if the stroke is less than 100mm which all must used intensified screw bolt.

缸管內徑 mm Cylinder Bore	衝程 Stroke	缸管內徑 mm Cylinder Bore	衝程 Stroke
50~80	未滿 100	140~200	未滿 200
100~150	未滿 150	224~250	未滿 250

HC6

* 訂購內容索引 Ordering Index :

210

HC6

FA

00/00

500

N

BAD

S

L-DO,F

使用壓力140/230 kgf/cm²
Max. Operating Pres.

HC6:系列
HC6:Series Number

固定座形式 Mounting
FA, FB, LA, TC, CA

缸管內徑
Cylinder
Bore

活塞桿徑記號
Rod Type

ø80

ø45

80/45

ø56

80/56

ø100

ø56

100/56

ø70

100/70

ø125

ø70

125/70

ø90

125/90

ø140

ø90

140/90

ø100

140/100

ø160

ø100

160/100

ø110

160/110

ø180

ø110

180/110

ø125

180/125

ø200

ø125

200/125

ø140

200/140

ø220

ø140

220/140

ø160

220/160

ø250

ø160

250/160

ø180

250/180

ø280

ø180

280/180

ø200

280/200

ø300

ø180

300/180

ø200

300/200

ø320

ø200

320/200

ø220

320/220

特殊附件 Optionals

E:活塞桿前端另類螺紋形

L:前端平行接頭-DO,LO

M:前端球面軸承接頭

-DO,LO

F:附防塵套

K:附固定螺帽

E:Rod end with other
threading,L:Plain Rod End Adapter
DO,LOM:Spherical Rod End
Adapter-DO,LOF:With dust-protective
cover

K:With locking nut

出入口型式 Port Type

SSA, SSA-B, LSA, RC, F5

B出入口之方向 B:Port Position

A緩衝調整器方向 A:Cushioning Valve
Position

D排氣孔之方向 D:Air Vent Position

從前蓋端看出入口和緩衝及排氣孔各
成多少度The above mentioned for which
viewed from cyl. head

緩衝形式 Location of Cushioning

B:前後蓋緩衝 B:The head and cap with
cushioning

R:前蓋緩衝 R:The head with cushioning

H:後蓋緩衝 H:The cap with cushioning

N:沒有緩衝 N:No cushioning

衝程 Stroke mm

要考慮最大容許衝程

Max. Permissible stroke

* 出入口緩衝調整器及排氣孔的方向 Port Cushioning & Air Vent Positions

1:缸體和後蓋相繫分為焊接和螺繫兩種

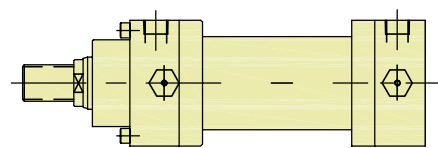
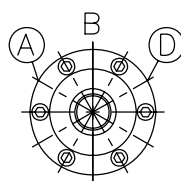
如後蓋無緩衝以焊接為主

2:油孔和緩衝器(A)及排氣孔(D)相關位置

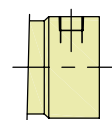
從前蓋端看所成的度數 - 無特別註明以標準為主

1:Those are divided into cap screwed &
cap welded which against the cylinder
and cap assembled but those will be
welded for cap no cushioning.

2:As for, the related position refer to port
cushioning (A) & air vent (D) etc., position which
can be specified by cylinder head formed
angle as fig shown if those are no specified
which means standard.



Cap screwed



Cap welded

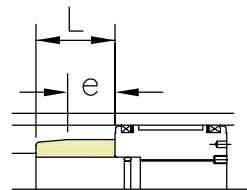
HC6

* 緩衝 Cushioning:

因為緩衝環是經過特殊之節流加工，使得有緩慢順滑之緩衝效果 - 如在各端面距離3mm左右停止，其緩衝效果會很不良，請要注意 - 然而，緩衝環平行處(L尺寸)如要較長可以製造，請再詳細商談 -

Because the cushioning ring is processed by special throttle processing so that there are being with moved slowly & smoothly effectiveness if those stopped far from end about 3mm and will be formed illness since if want more longer cushioning ring (L) which must be consult us.

缸管內徑 cylinder bore		50 63		80 100		125		140		160		180		200		224 250	
活塞桿徑 rod dia		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
前蓋端 cyl. head	緩衝長度(L) cushion length	—	35	40		45		50		50		55		65		75	
	平行處長度(e) parallel length	—	15	15	10	15	10	15	10	15	10	15	10	15	10	15	10
後蓋端 cap end	緩衝長度(L) cushion length	30		35		35		35		40		40		40		55	
	平行處長度(e) parallel length	10		10		10		10		10		10		10		10	



技術參數 Technical Data

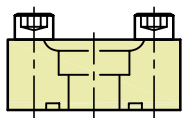
缸管內徑 Cylinder Bore mm	活塞桿徑 Rod Dia. mm	動作 Action	有效面積 Effective Area cm ²	出力 Output Power kgf				流量10L/分 之速度 Flow Rate at Speed 10L/min mm/sec	速度10mm/秒 之流量 Speed at Flow Rate 10mm/sec L/min
				70 kgf/cm ²	105 kgf/cm ²	140 kgf/cm ²	210 kgf/cm ²		
80		推力 Extend	50.3	3517	5275	7034	10550	33	3.0
	56	拉力 Retract	25.6	1794	2690	3587	5376	65	1.5
	45		34.3	2404	3606	4808	7203	49	2.1
100		推力 Extend	78.5	5495	8243	10990	16485	21	4.7
	70	拉力 Retract	40.0	2800	4200	5600	8400	41	2.4
	56		53.9	3772	5658	7544	11319	31	3.2
125		推力 Extend	122.7	8586	12879	17172	25767	14	7.4
	90	拉力 Retract	59.1	4135	6202	8270	12411	28	3.5
	70		84.3	5901	8852	11802	17703	20	5.1
140		推力 Extend	153.9	10770	16155	21540	32319	11	9.2
	100	拉力 Retract	75.4	5275	7913	10550	15834	22	4.5
	90		90.3	6321	9482	12642	18963	18	5.4
160		推力 Extend	201.0	14067	21101	28134	42210	8	12.1
	110	拉力 Retract	106.0	7420	11130	14840	22260	16	6.4
	100		122.5	8575	12863	17150	25725	14	7.4
180		推力 Extend	254.3	17804	26706	35608	53403	6.6	15.3
	125	拉力 Retract	131.7	9218	138267	18436	27657	13	7.9
	110		159.3	11151	16727	22302	33453	10	9.6
200		推力 Extend	314	21980	32970	43960	65940	5.3	18.8
	140	拉力 Retract	160.1	11210	16815	22420	33621	10	9.6
	125		191.3	13391	20087	26762	40173	8.7	11.5
220		推力 Extend	379.4	26558	39837	53116	79674	4.3	22.8
	160	拉力 Retract	178.4	12495	18743	24990	37465	9.3	10.7
	140		225.5	15785	23677	31570	47355	7.4	13.5
250		推力 Extend	490.6	34344	51516	68688	103026	3.4	29.4
	180	拉力 Retract	236.3	16540	24810	33080	49623	7.0	14.2
	160		289.6	20275	30412	40549	60824	5.8	17.4
280		推力 Extend	615.4	43078	64617	86156	129234	2.7	36.9
	200	拉力 Retract	301.4	21098	31647	42196	63294	5.5	18.1
	180		361.0	25270	37905	50540	75810	4.6	21.7
300		推力 Extend	706.5	49455	74182	98910	148365	2.4	42.4
	200	拉力 Retract	392.5	27475	41212	54950	82425	4.2	24.6
	180		452.2	31654	47481	63308	94962	3.7	27.1
320		推力 Extend	803.8	56266	84399	112532	168798	2.1	48.2
	220	拉力 Retract	423.9	29673	45095	59346	89019	3.9	25.4
	200		489.8	34286	51429	68572	102858	3.4	29.4

HC6

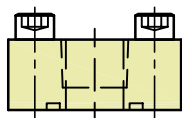
出入口油壓凸緣

Port Flange Kite

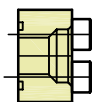
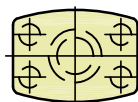
SSA



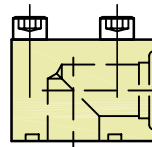
SSA-B



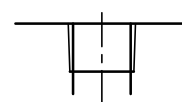
F5



LSA

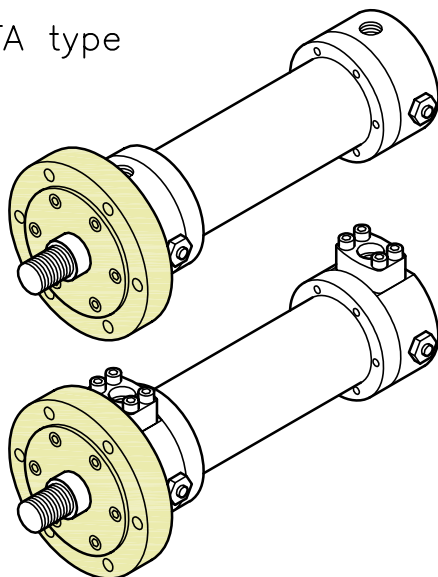


RC

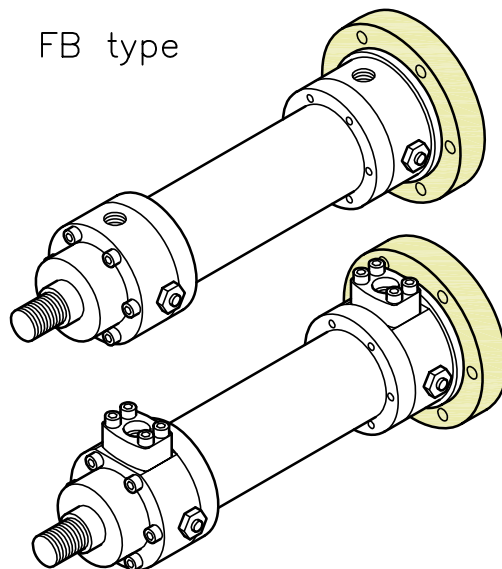


固定座形式 Mounting :

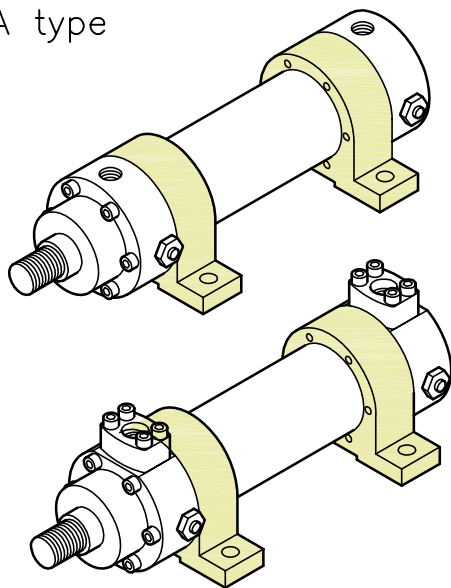
FA type



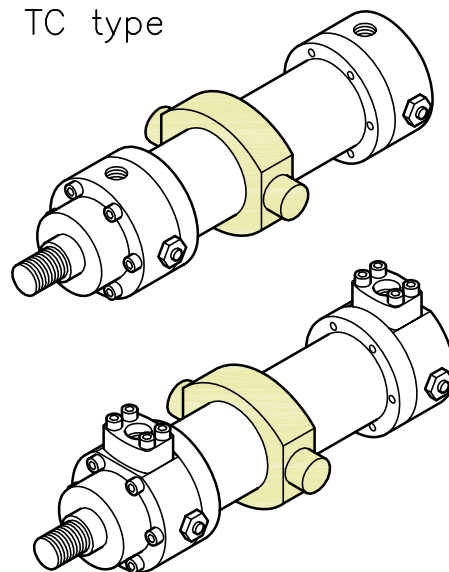
FB type



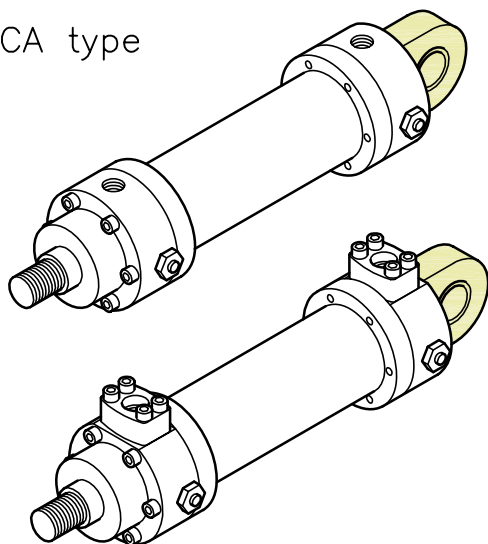
LA type



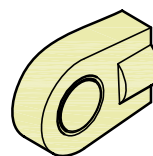
TC type



CA type

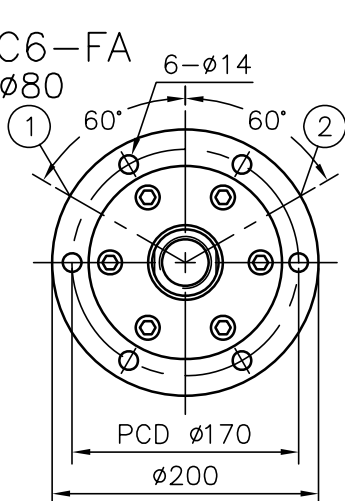


軸承接頭 Swivel clevis head

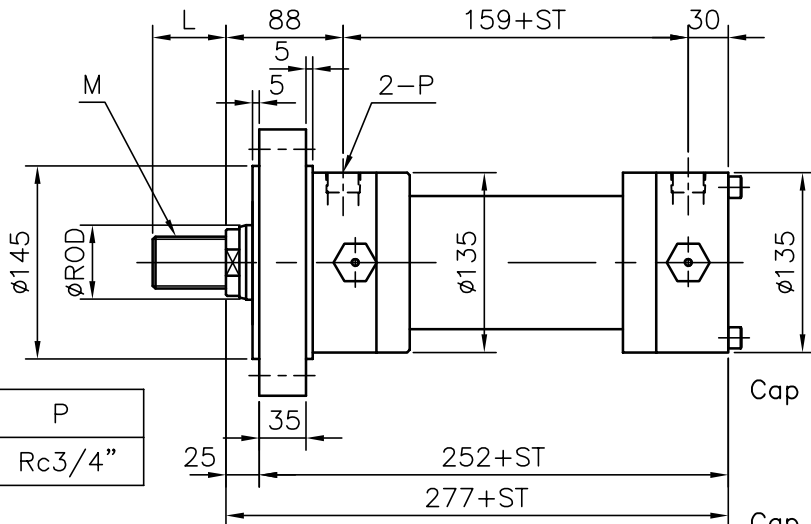


HC6-FA

Ø80



P
Rc3/4"

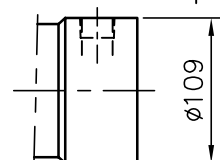


Cap screwed

Cap welded

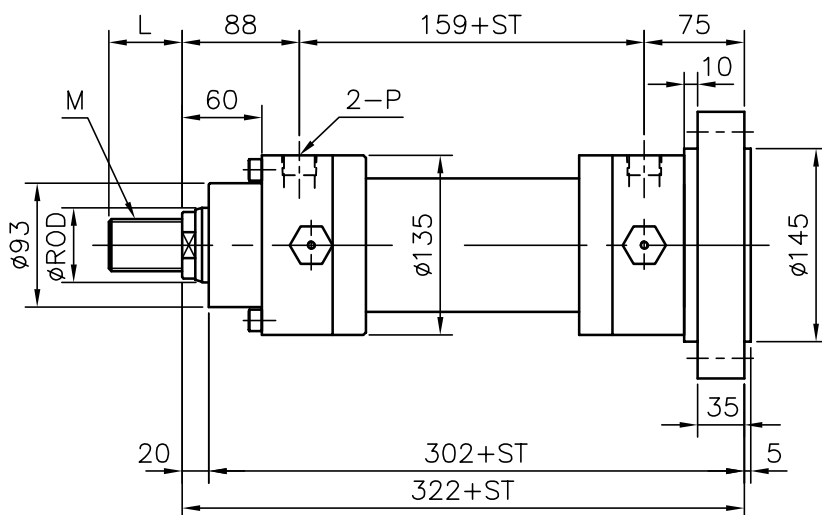
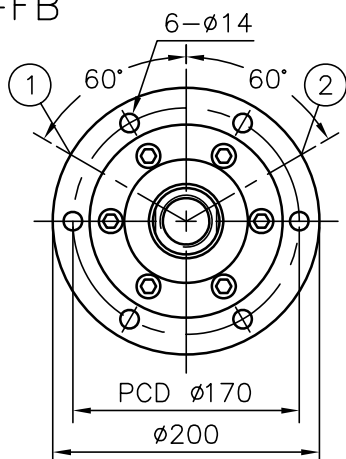
ROD	M		L	
	B	A	B	A
45	M35xP1.5	M39xP3.0	35	55
56				

- 1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve



HC6-FB

Ø80



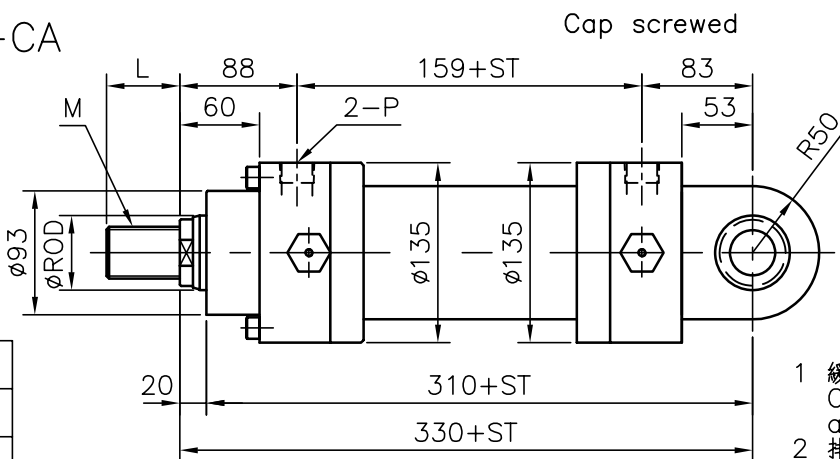
ROD	M		L	
	B	A	B	A
45	M35xP1.5	M39xP3.0	35	55
56				

P
Rc3/4"
F5-06-A

- 1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve

HC6-CA

Ø80

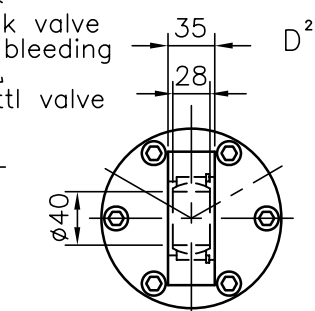
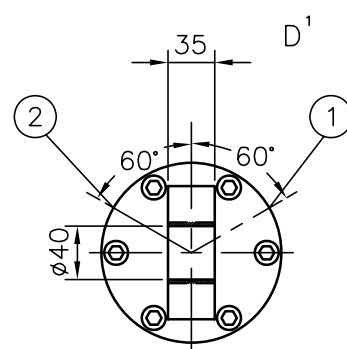
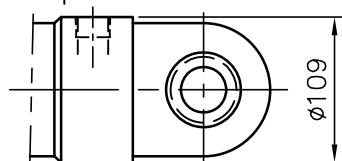


P
Rc3/4"
F5-06-A

- 1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve

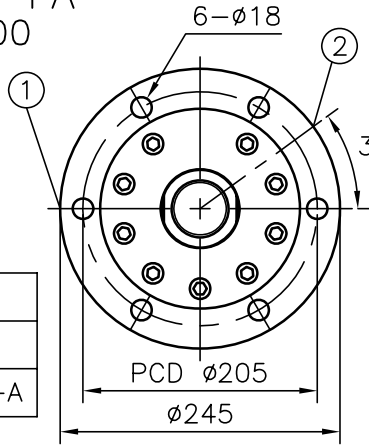
ROD	M		L	
	B	A	B	A
45	M35xP1.5	M39xP3.0	35	55
56				

Cap welded

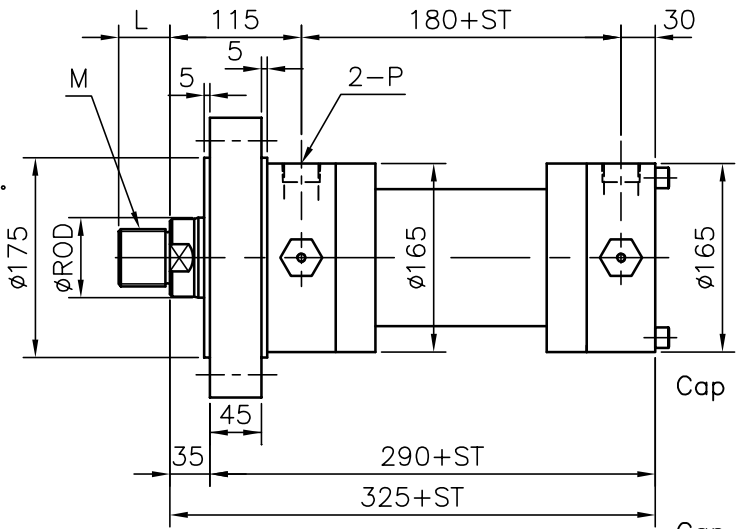


	FA	FB	TC	LA	CA
W1 (kg)	30.9	33.1	27.1	31.38	26.23
W2 (kg/100mm)	ø56=4.1		ø45=3.4		

HC6-FA ø100



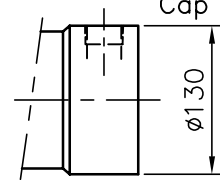
P
Rc 1"
F5-08-A



Cap screwed

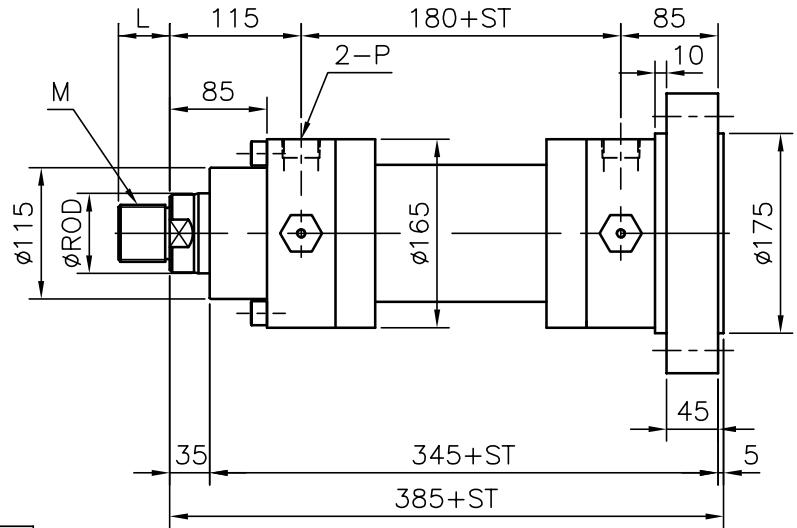
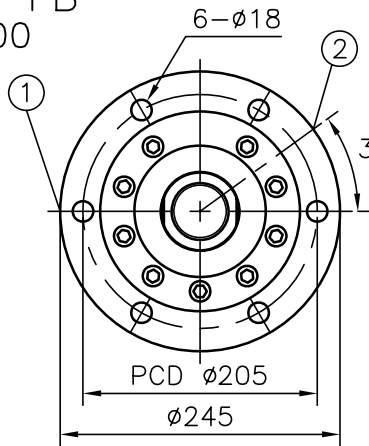
Cap welded

- 1 緩衝器
Check valve
and bleeding
2 排氣孔
Thrott valve



ROD	M		L	
	B	A	B	A
56	M45xP1.5	M50xP3.0	45	75
70				

HC6-FB ø100

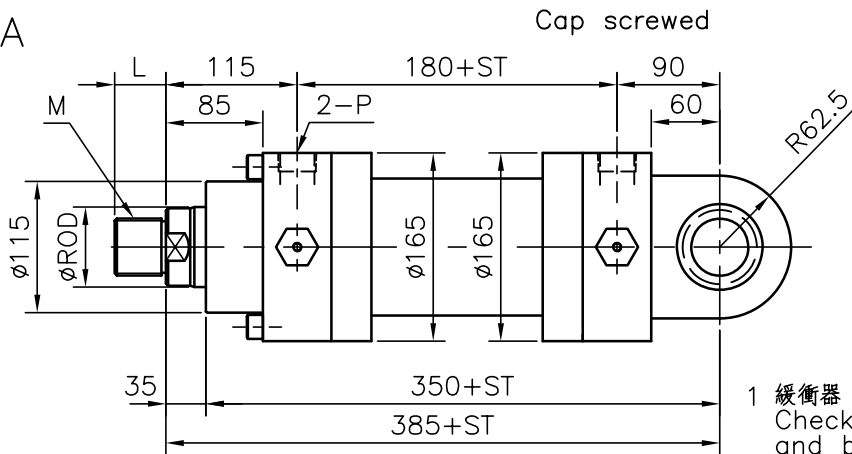


ROD	M		L	
	B	A	B	A
56	M45xP1.5	M50xP3.0	45	75
70				

P
Rc 1"
F5-08-A

- 1 緩衝器
Check valve
and bleeding
2 排氣孔
Thrott valve

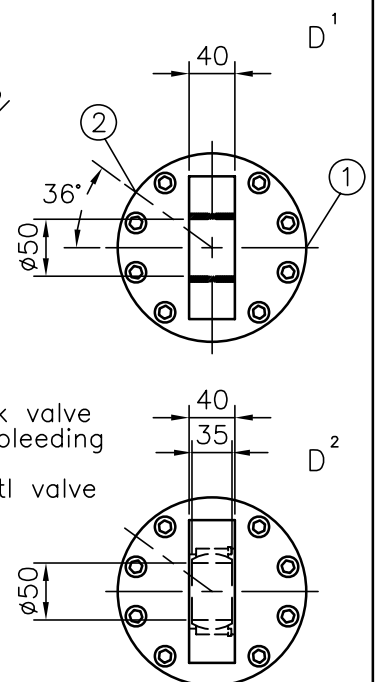
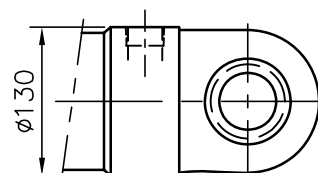
HC6-CA ø100



P
Rc 1"
F5-08-A

- 1 緩衝器
Check valve
and bleeding
2 排氣孔
Thrott valve

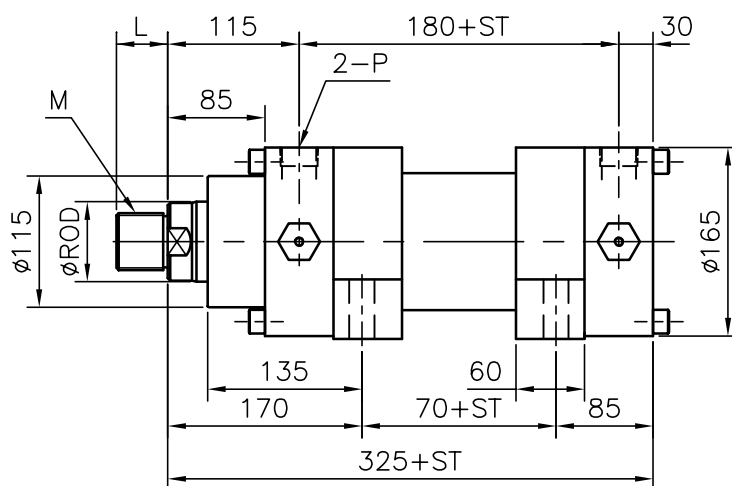
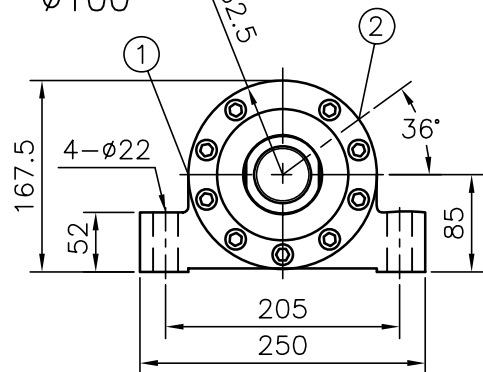
Cap welded



ROD	M		L	
	B	A	B	A
56	M45xP1.5	M50xP3.0	45	75
70				

HC6-LA

ø100



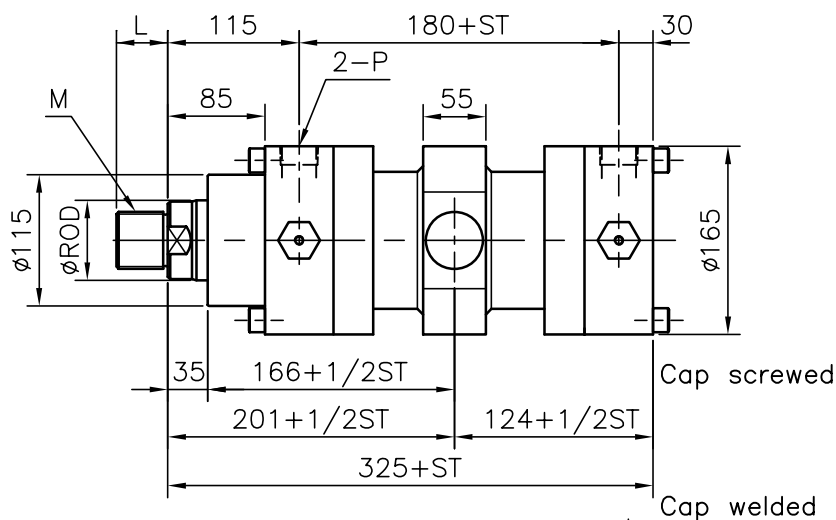
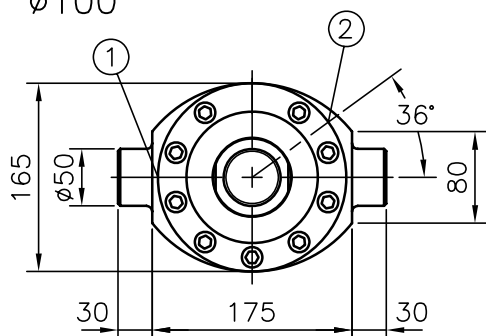
ROD	M		L	
	B	A	B	A
56	M45xP1.5	M50xP3.0	45	75
70				

P
Rc 1"
F5-08-A

- 1 緩衝器
Check valve and bleeding
2 排氣孔
Throttl valve

HC6-TC

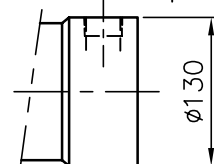
ø100



ROD	M		L	
	B	A	B	A
56	M45xP1.5	M50xP3.0	45	75
70				

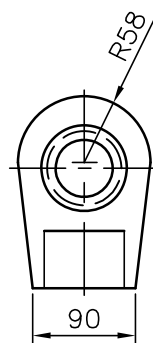
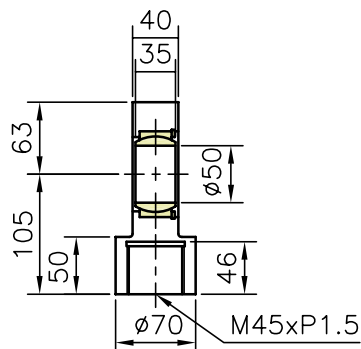
P
Rc 1"
F5-08-A

- 1 緩衝器
Check valve and bleeding
2 排氣孔
Throttl valve

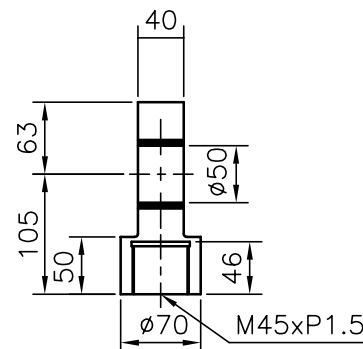


HC6-ø100 接頭 clevis head-D0

前端球面軸承接頭-D0
Spherical Rod End-D0



前端平行接頭-D0
Plain Rod End-D0



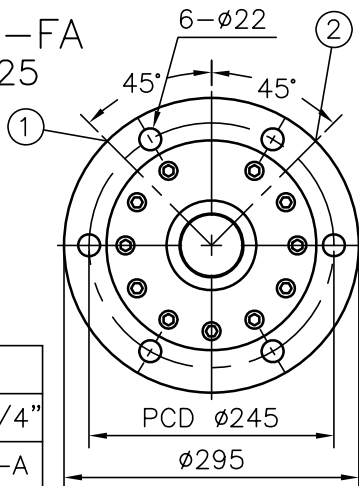
油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm

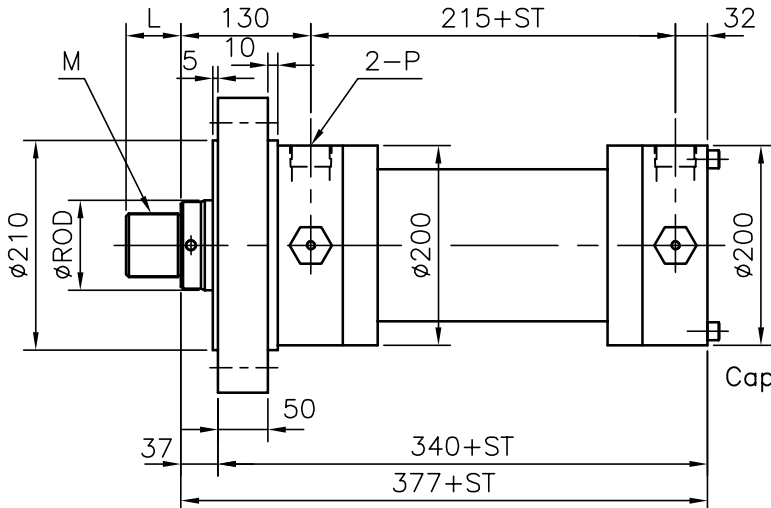
$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 53.9 + (5.4 * 2) \\ &= 64.7 \text{ kg} \end{aligned}$$

	FA	FB	TC	LA	CA
W1 (kg)	53.9	58	46.7	51.7	43.6
W2 (kg/100mm)	ø70=5.4		ø56=4.6		

HC6-FA
ø125



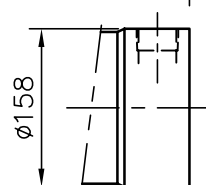
P
Rc1-1/4"
F5-10-A



Cap screwed

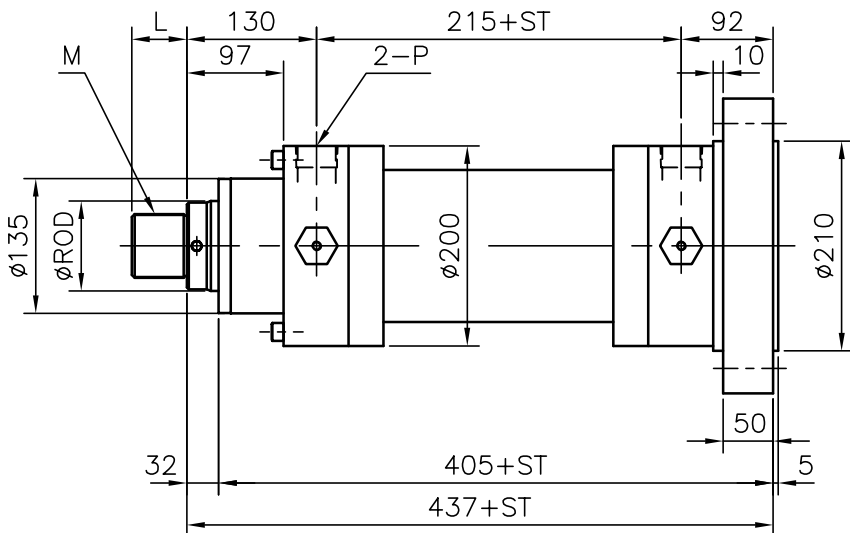
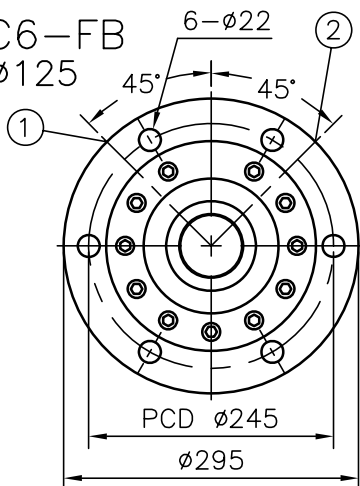
ROD	M		L	
	B	A	B	A
70	M58xP1.5	M64xP3.0	58	95
90				

1 緩衝器
Check valve
and bleeding
2 排氣孔
Thrott valve



Cap welded

HC6-FB
ø125

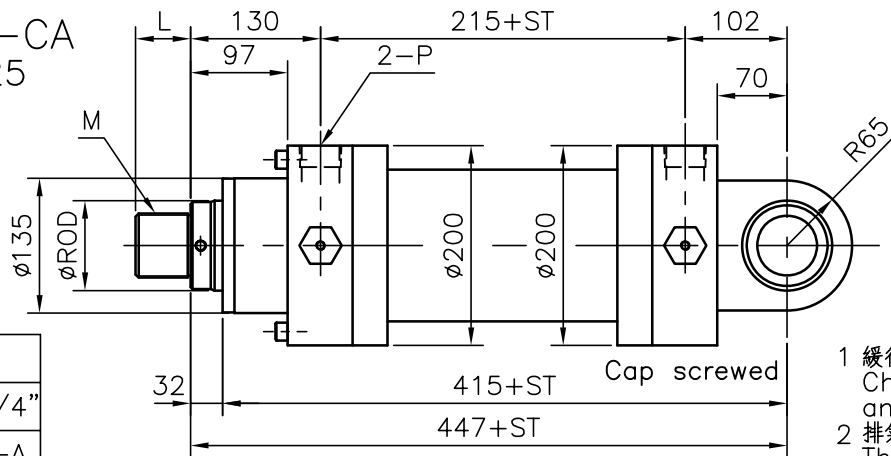


ROD	M		L	
	B	A	B	A
70	M58xP1.5	M64xP3.0	58	95
90				

P
Rc1-1/4"
F5-10-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Thrott valve

HC6-CA
ø125

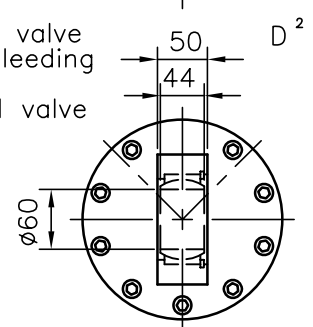
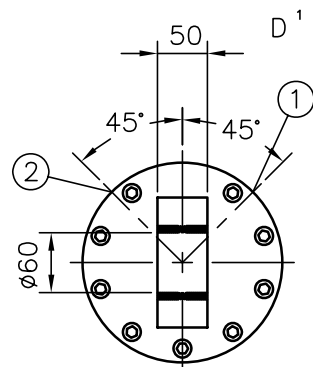
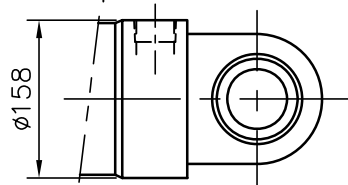


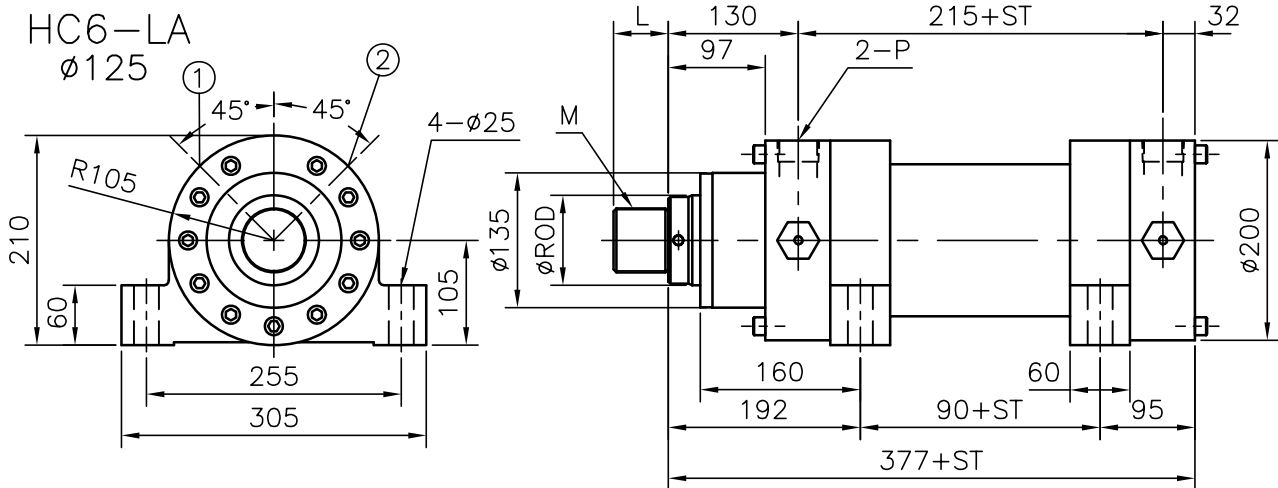
Cap welded

P
Rc1-1/4"
F5-10-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Thrott valve

ROD	M		L	
	B	A	B	A
70	M58xP1.5	M64xP3.0	58	95
90				

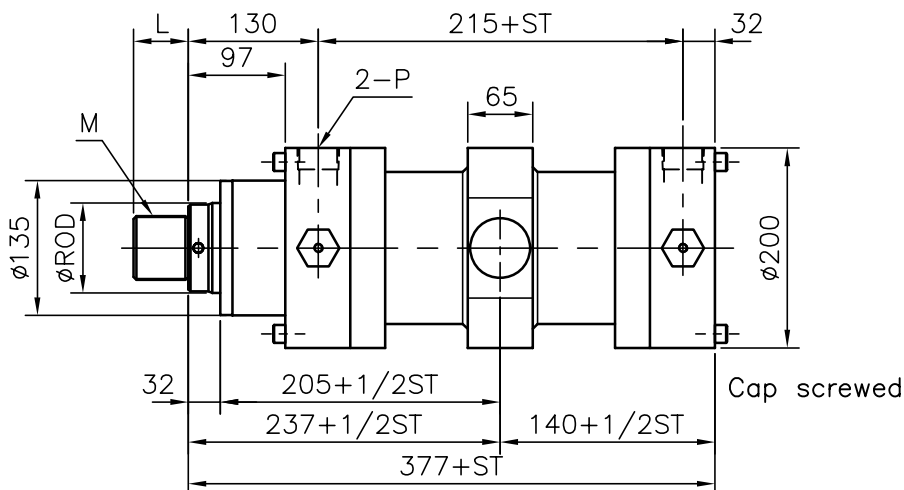
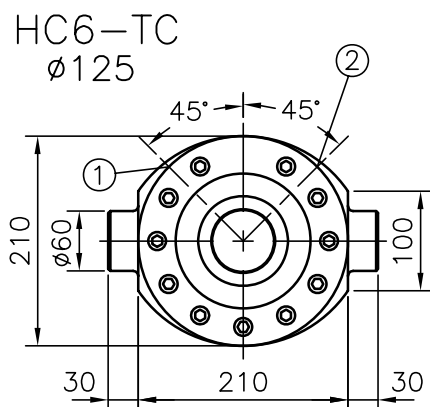




ROD	M		L	
	B	A	B	A
70	M58xP1.5	M64xP3.0	58	95
90				

P
Rc1-1/4"
F5-10-A

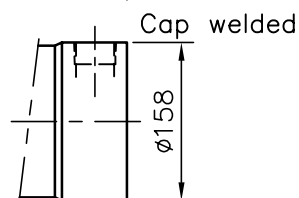
- 1 緩衝器
Check valve and bleeding
2 排氣孔
Throttl valve



ROD	M		L	
	B	A	B	A
70	M58xP1.5	M64xP3.0	58	95
90				

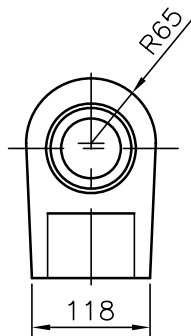
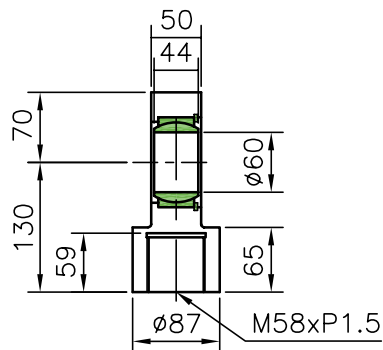
P
Rc1-1/4"
F5-10-A

- 1 緩衝器
Check valve and bleeding
2 排氣孔
Throttl valve

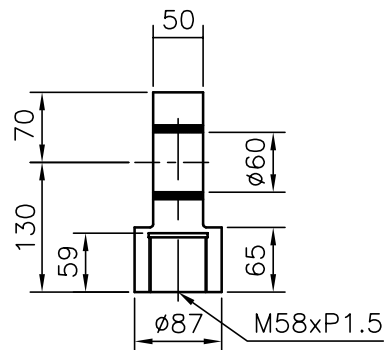


HC6-ø125 接頭 clevis head-D0

前端球面軸承接頭- D0
Spherical Rod End-D0



前端平行接頭- D0
Plain Rod End-D0

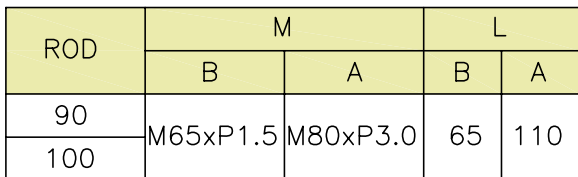


油壓缸大概重量計算 Estimated weight of hyd.

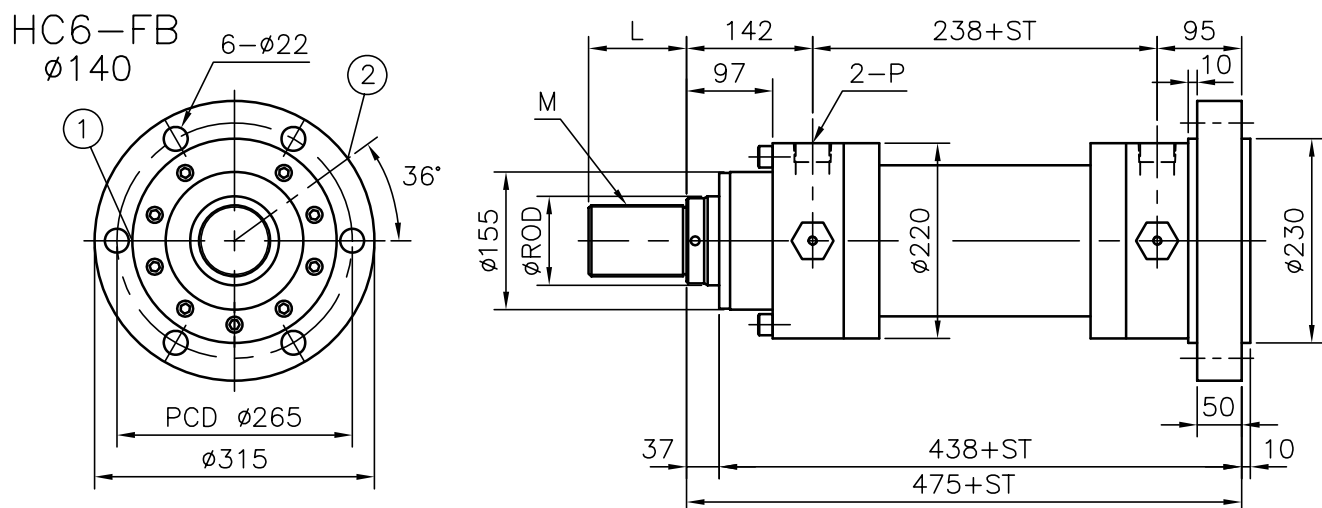
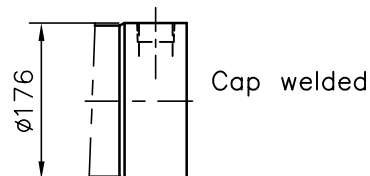
EX. : FA , ST=200mm

$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 90.2 + (9.5 * 2) \\ &= 109.2 \text{ kg} \end{aligned}$$

	FA	FB	TC	LA	CA
W1 (kg)	90.2	97.5	78.8	85.5	74.7
W2 (kg/100mm)	ø90=9.5		ø70=7.6		



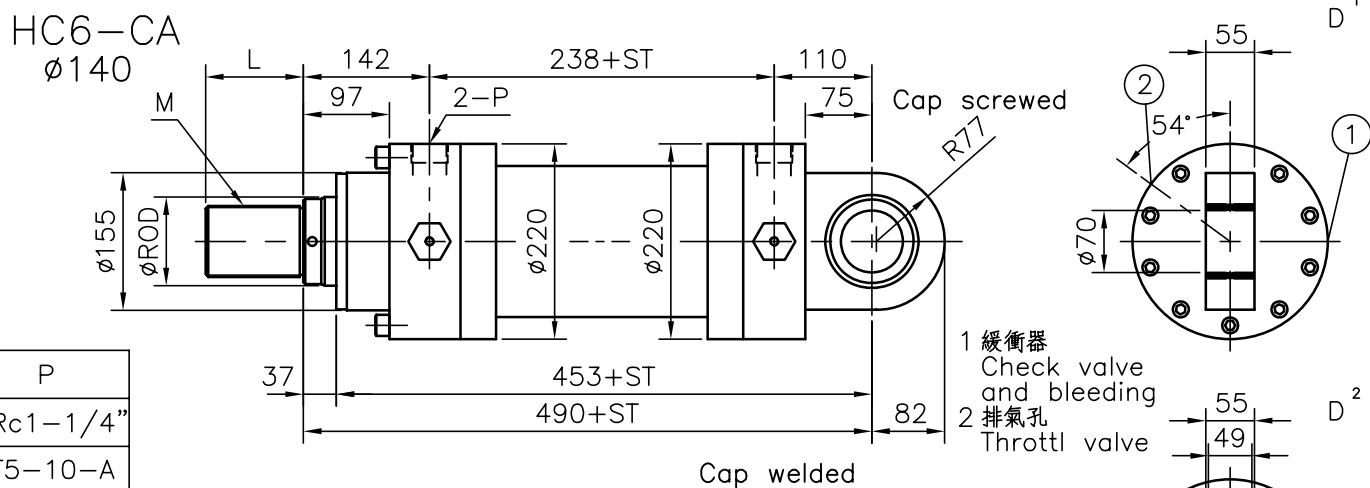
P
Rc1-1/4'
F5-10-A



ROD	M		L	
	B	A	B	A
90	M65xP1.5	M80xP3.0	65	110
100				

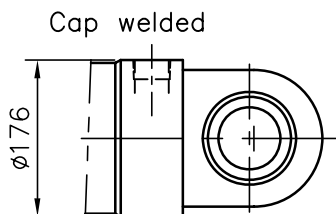
P
Rc1-1/4'
F5-10-A

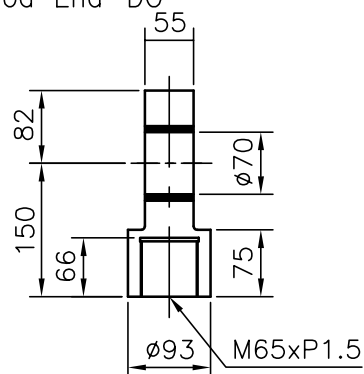
1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve



P
Rc1-1/4"
F5-10-A

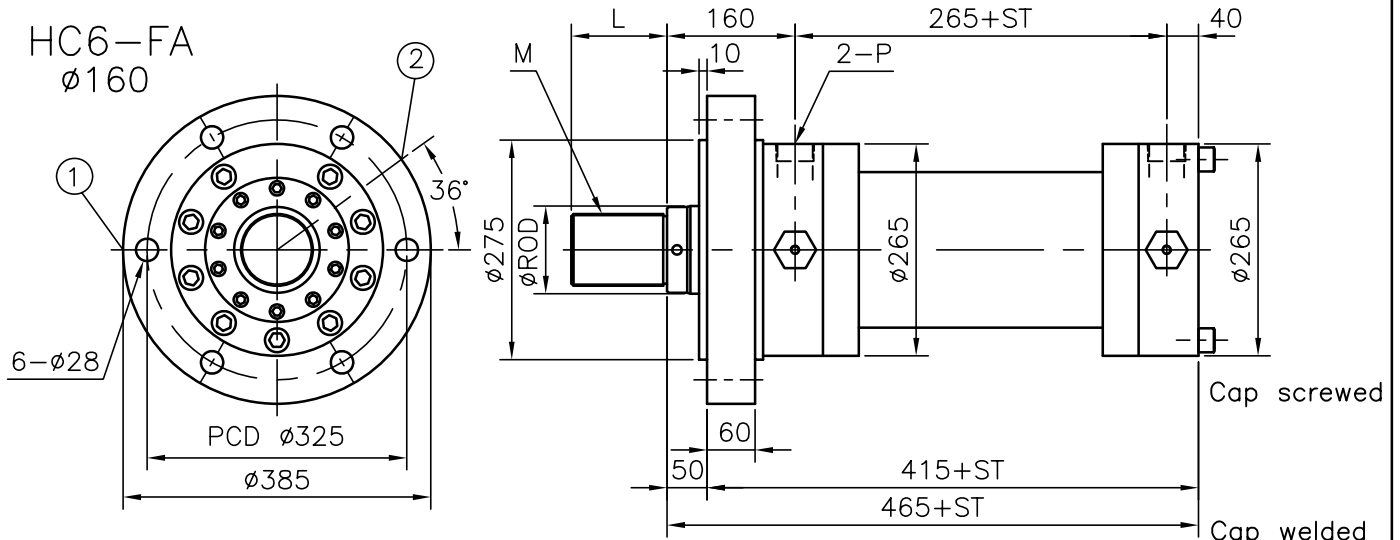
ROD	M		L	
	B	A	B	A
90	M65xP1.5	M80xP3.0	65	110
100				




$$\begin{aligned}\text{weight} &= W1 + (W2 * ST) \\ &= 117.4 + (11.8 * 2) \\ &= 141 \text{ kg}\end{aligned}$$

	FA	FB	TC	LA	CA
W1 (kg)	117.4	128.1	112.6	113.5	103.2
W2 (kg/100mm)	ø100=11.8		ø90=10.7		

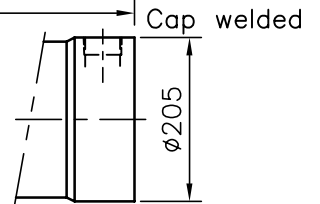
HC6-FA
ø160



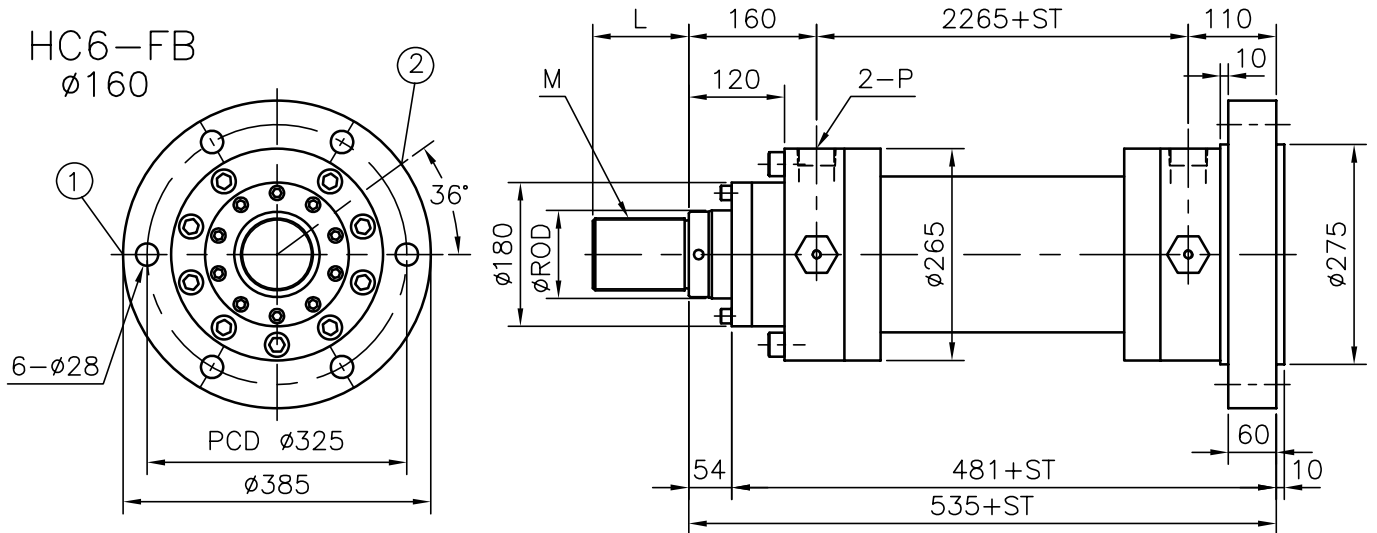
ROD	M		L	
	B	A	B	A
100	M80xP2.0	M90xP3.0	80	120
110				

P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve



HC6-FB
ø160

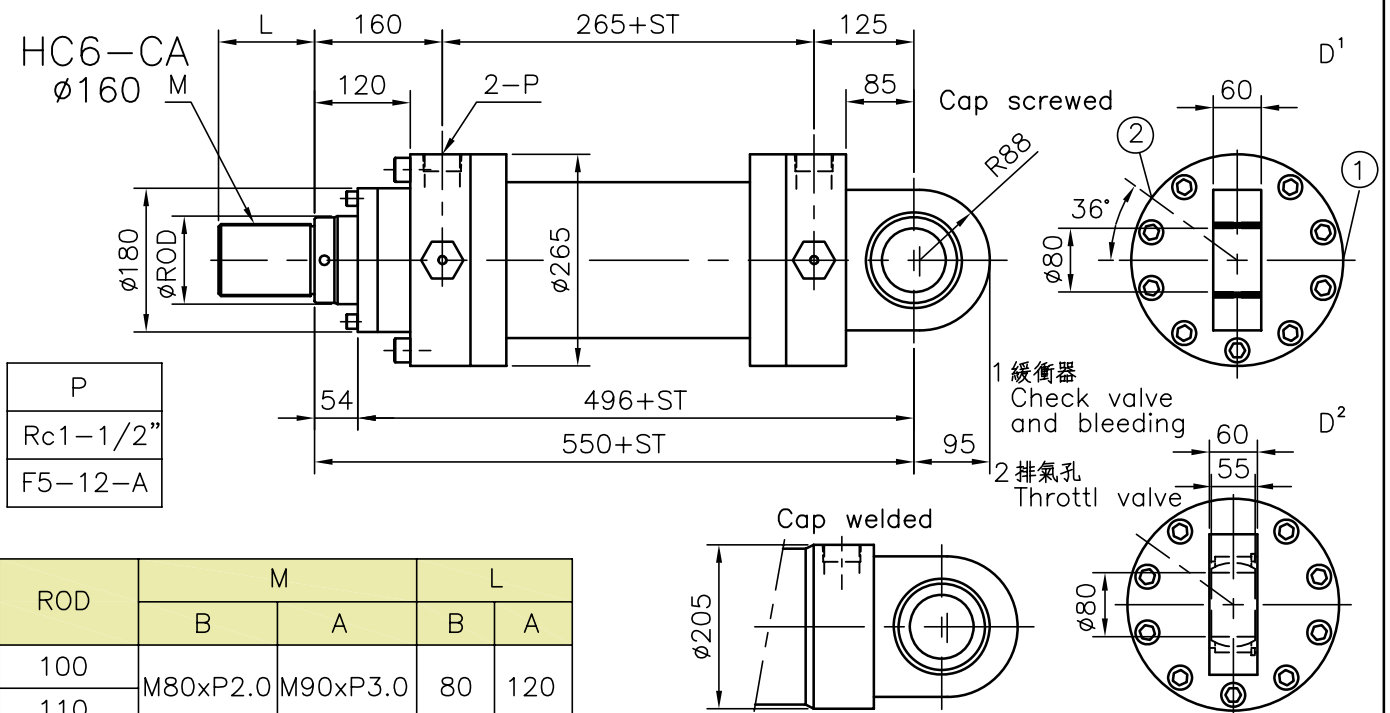


ROD	M		L	
	B	A	B	A
100	M80xP2.0	M90xP3.0	80	120
110				

P
Rc1-1/2"
F5-12-A

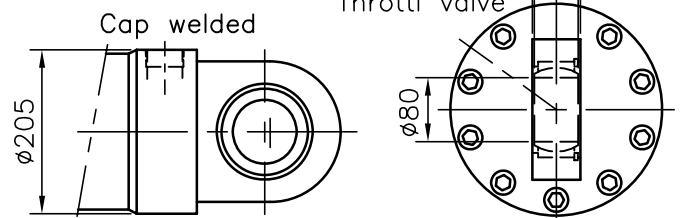
1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve

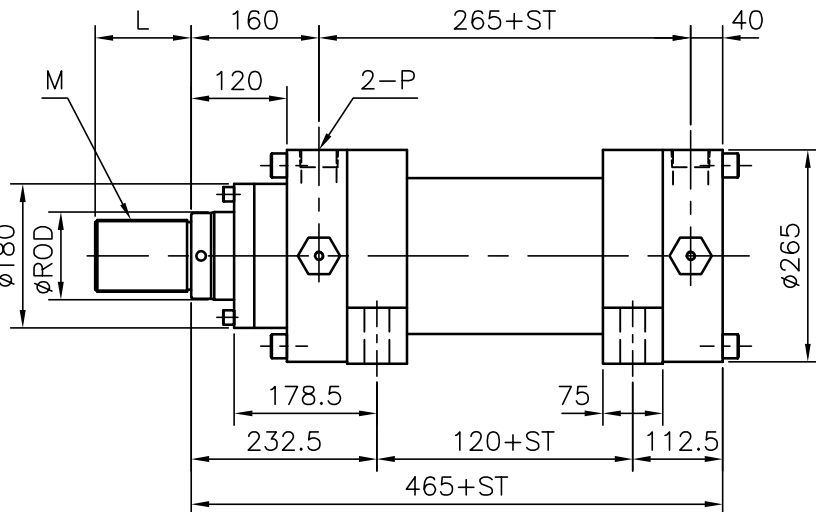
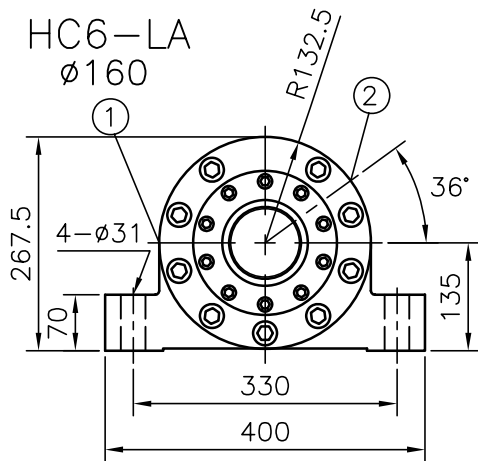
HC6-CA
ø160



P
Rc1-1/2"
F5-12-A

ROD	M		L	
	B	A	B	A
100	M80xP2.0	M90xP3.0	80	120
110				

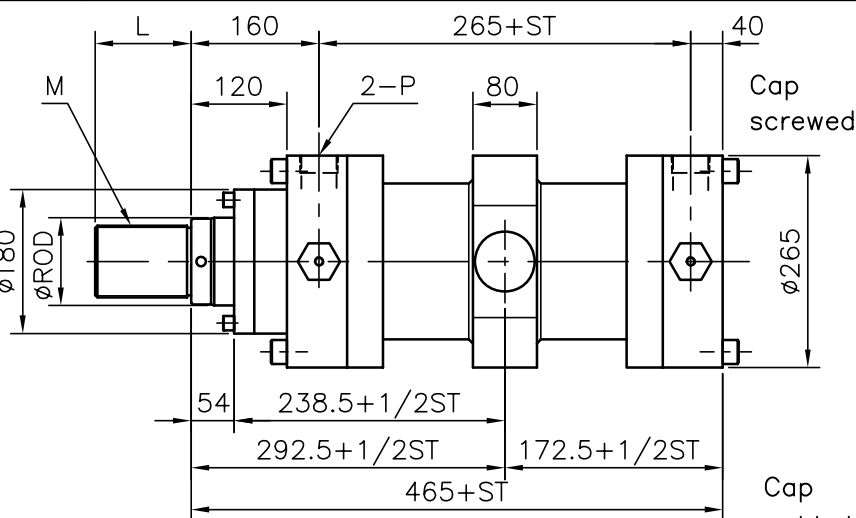
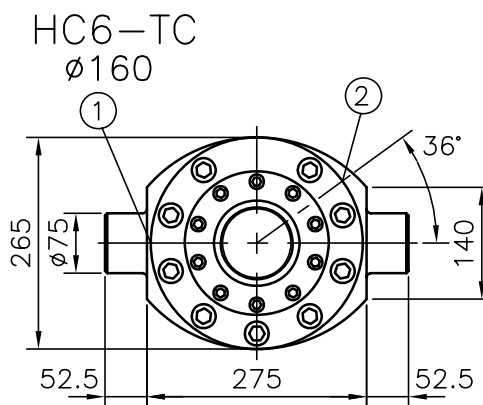




ROD	M		L	
	B	A	B	A
100	M80xP2.0	M90xP3.0	80	120
110				

P
Rc1-1/2"
F5-12-A

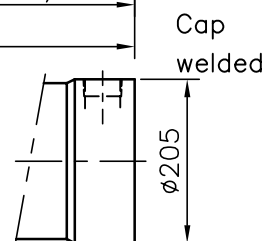
1 緩衝器
Check valve and bleeding
2 排氣孔
Throttl valve



ROD	M		L	
	B	A	B	A
100	M80xP2.0	M90xP3.0	80	120
110				

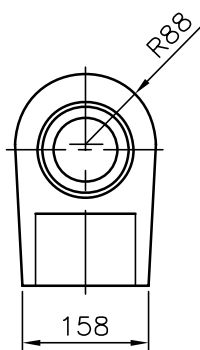
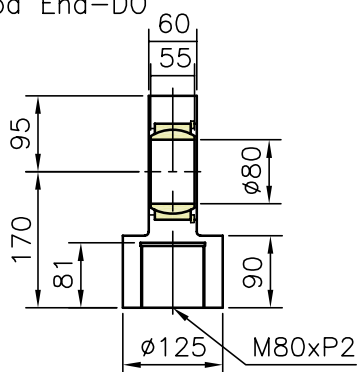
P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve and bleeding
2 排氣孔
Throttl valve

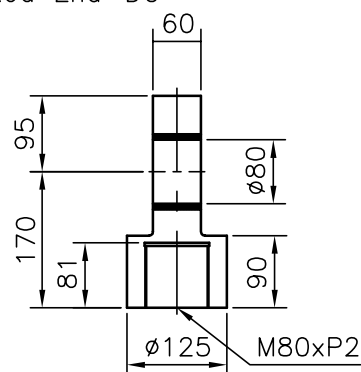


HC6-ø160 接頭 clevis head-D0

前端球面軸承接頭-D0
Spherical Rod End-D0



前端平行接頭-D0
Plain Rod End-D0



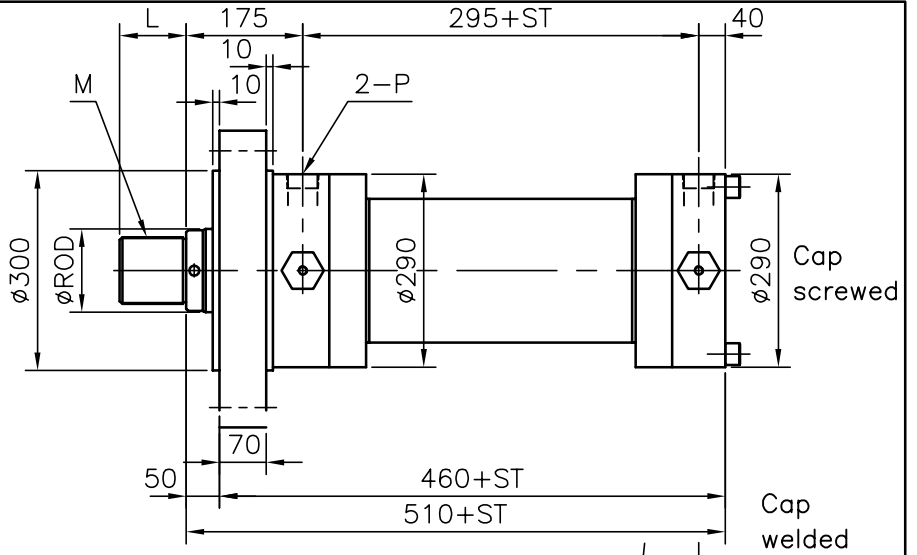
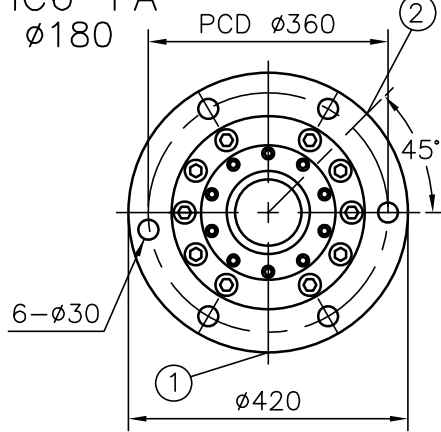
油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm

$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 189 + (15.1 * 2) \\ &= 219.2 \text{ kg} \end{aligned}$$

	FA	FB	TC	LA	CA
W1 (kg)	189	202.5	169.6	175.2	156.6
W2 (kg/100mm)	ø110=15.1		ø100=13.8		

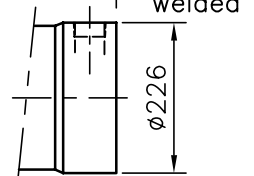
HC6-FA ø180



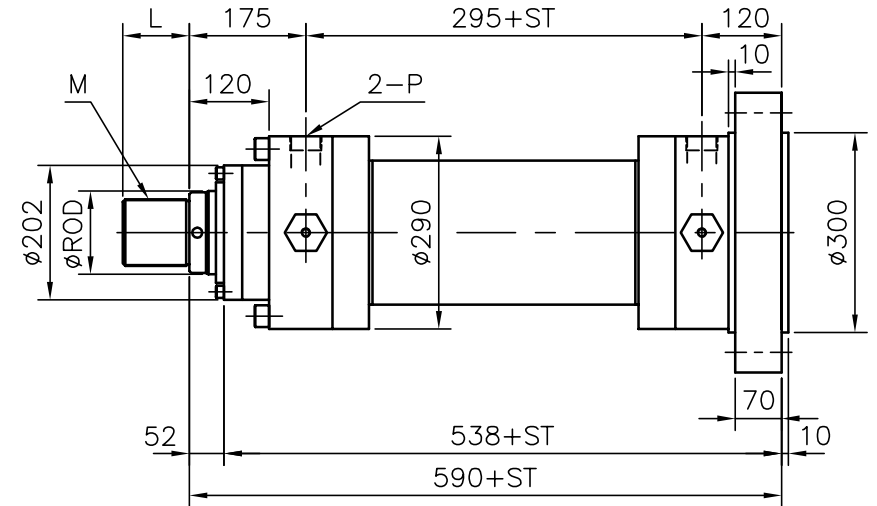
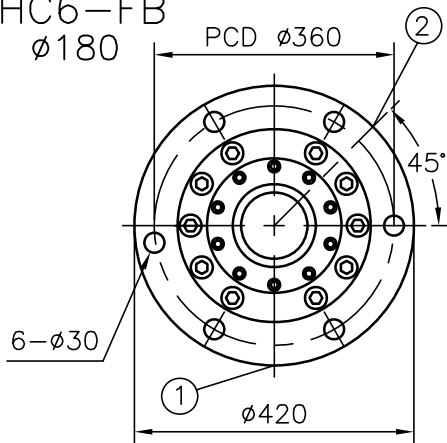
ROD	M		L	
	B	A	B	A
110	M100xP2.0	M100xP3.0	100	140
125				

P
Rc1-1/2"
F5-12-A

1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve



HC6-FB ø180

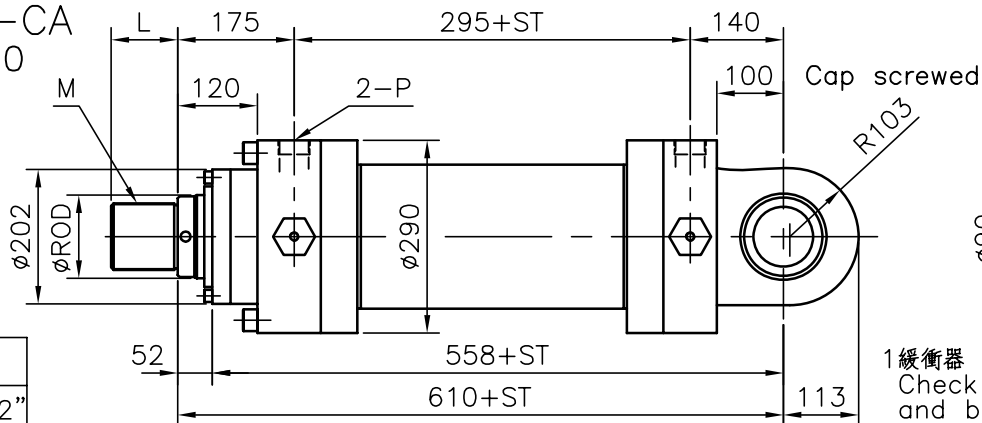


ROD	M		L	
	B	A	B	A
110	M100xP2.0	M100xP3.0	100	140
125				

P
Rc1-1/2"
F5-12-A

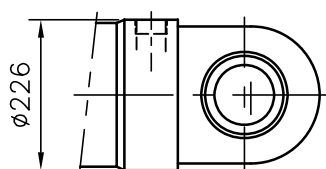
1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve

HC6-CA ø180

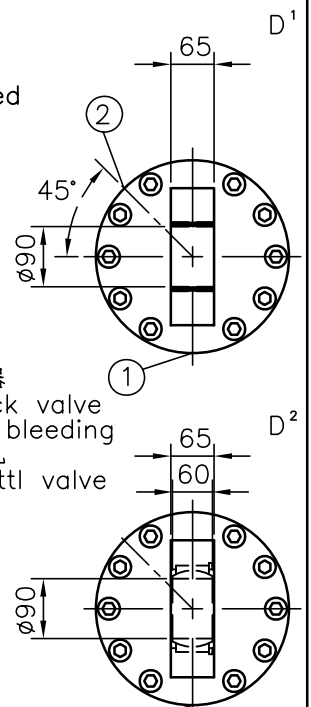


P
Rc1-1/2"
F5-12-A

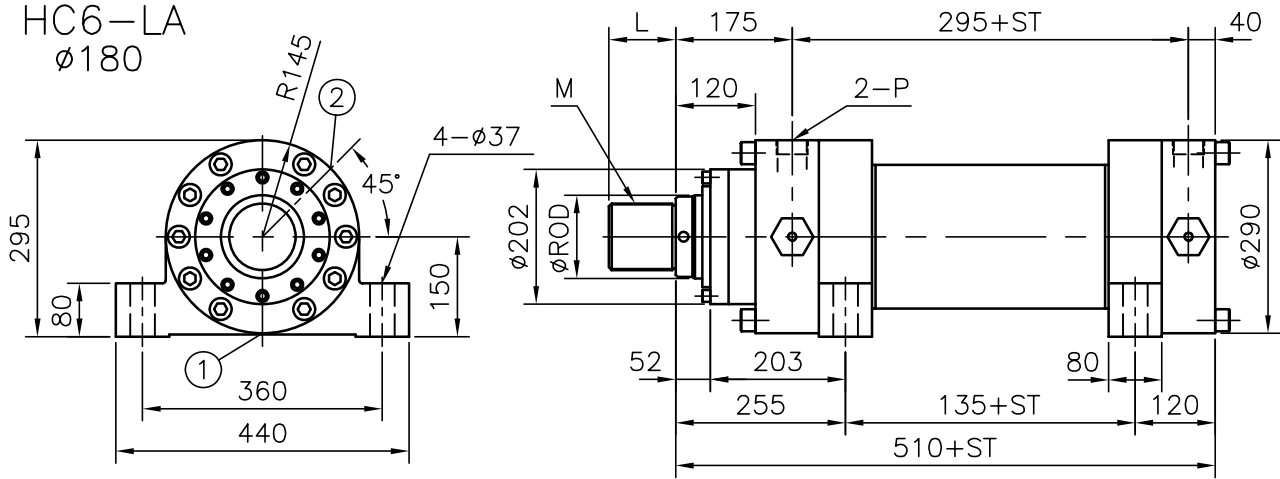
ROD	M		L	
	B	A	B	A
110	M100xP2.0	M100xP3.0	100	140
125				



1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve



HC6-LA ø180

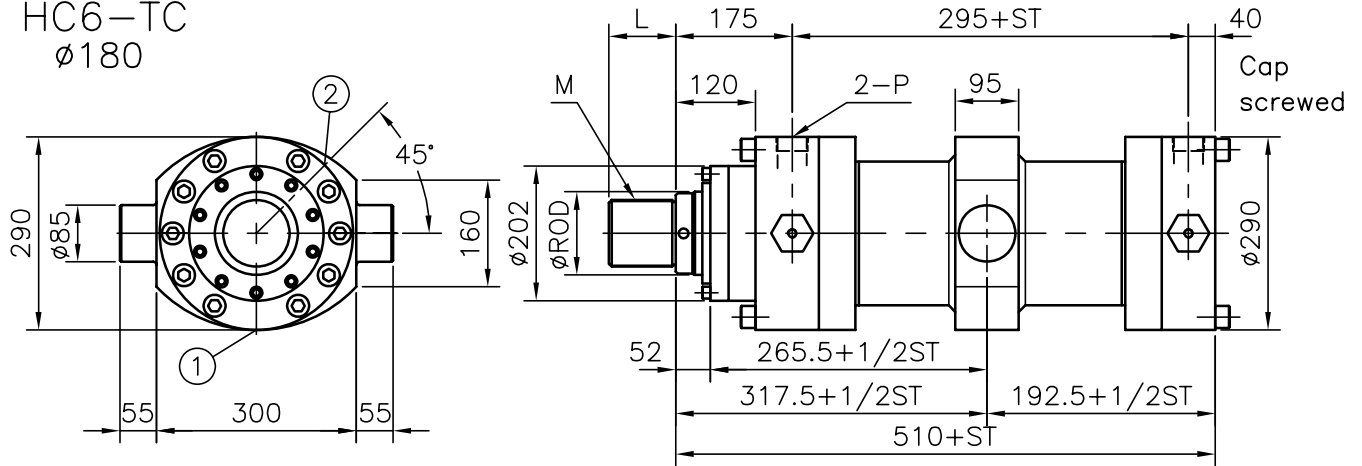


ROD	M		L	
	B	A	B	A
110	M100xP2.0	M100xP3.0	100	140
125				

P
Rc1-1/2"
F5-12-A

1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve

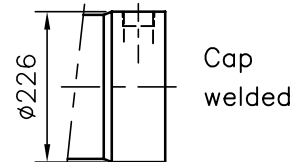
HC6-TC ø180



ROD	M		L	
	B	A	B	A
110	M100xP2.0	M100xP3.0	100	140
125				

P
Rc1-1/2"
F5-12-A

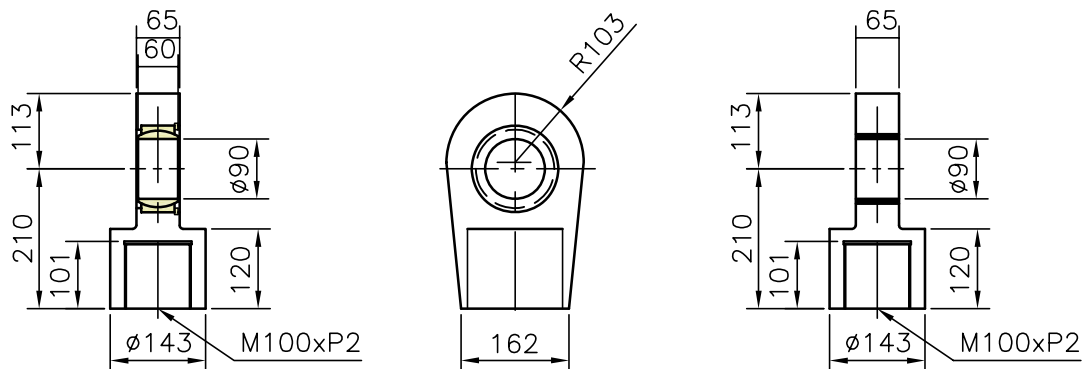
1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve



HC6-ø180 接頭 clevis head-DO

前端球面軸承接頭- DO
Spherical Rod End-DO

前端平行接頭- DO
Plain Rod End-DO

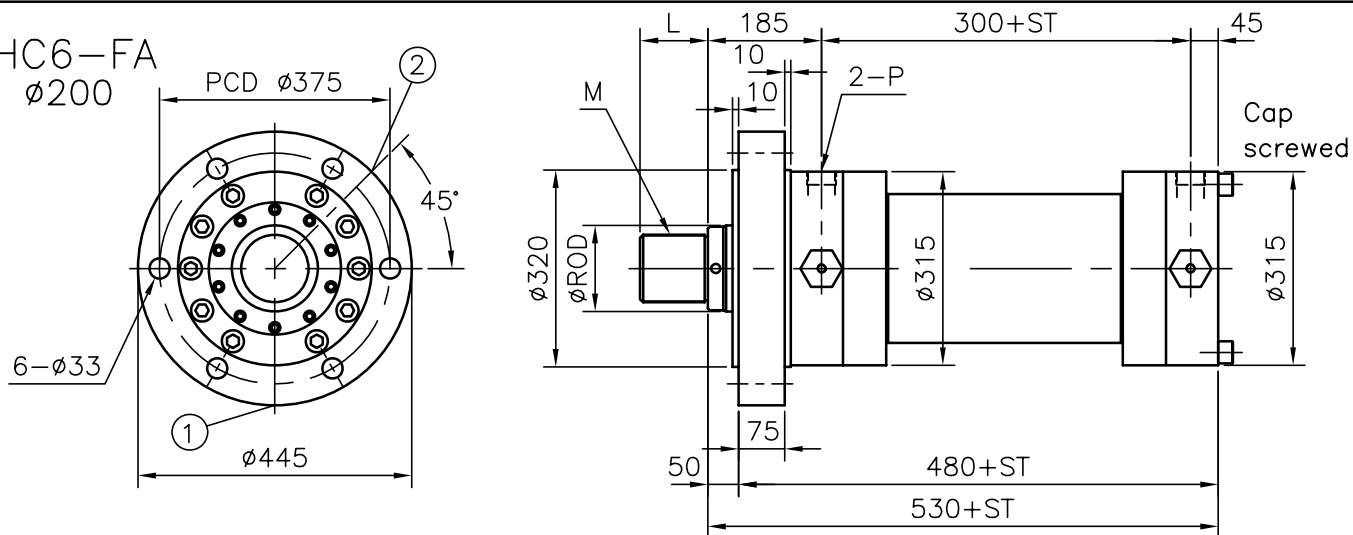


油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm
weight= W1 + (W2 * ST)
= 260 + (18.4 * 2)
= 296.8 kg

	FA	FB	TC	LA	CA
W1 (kg)	260	280.2	235.1	243.6	217.5
W2 (kg/100mm)	ø125=18.4		ø110=16.2		

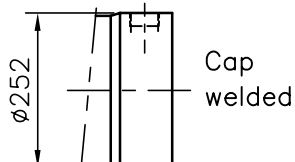
HC6-FA
ø200



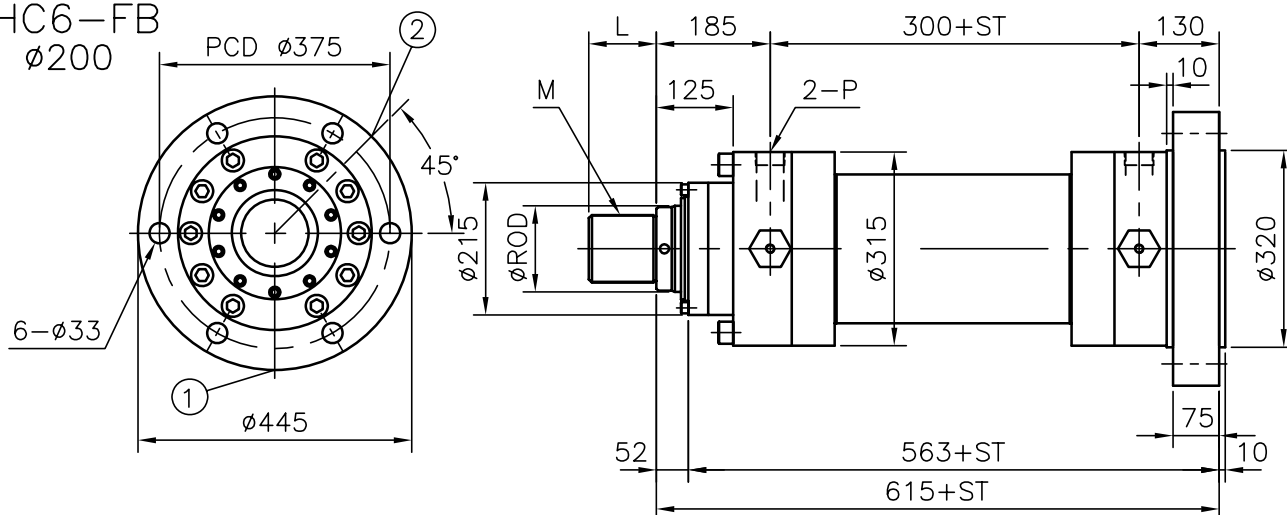
ROD	M		L	
	B	A	B	A
125	M110xP2.0	M110xP4.0	110	150
140				

P
Rc1-1/2"
F5-12-A

1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve



HC6-FB
ø200

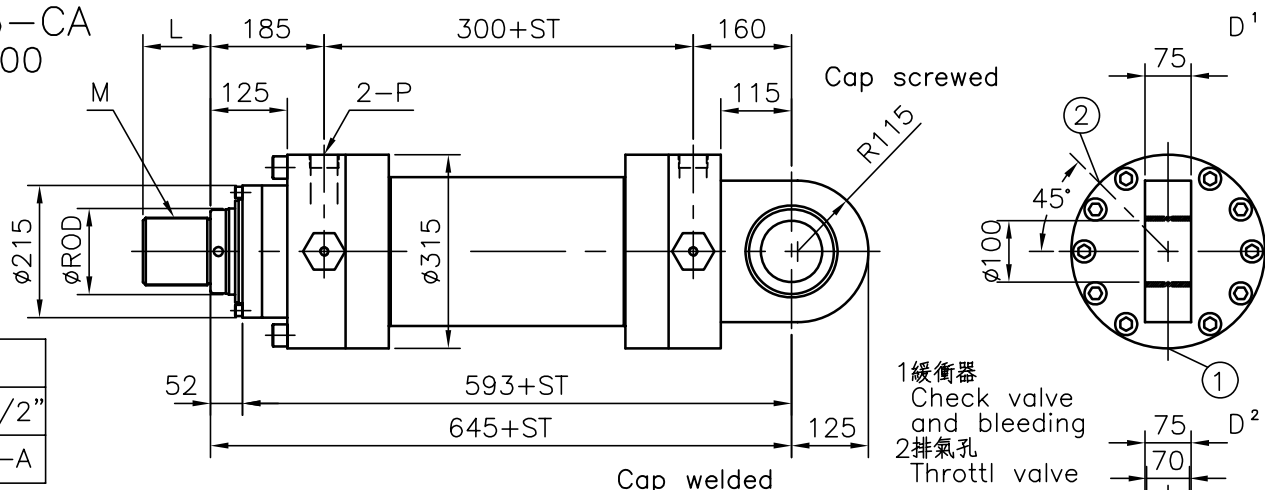


ROD	M		L	
	B	A	B	A
125	M110xP2.0	M110xP4.0	110	150
140				

P
Rc1-1/2"
F5-12-A

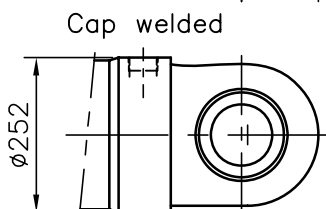
1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve

HC6-CA
ø200

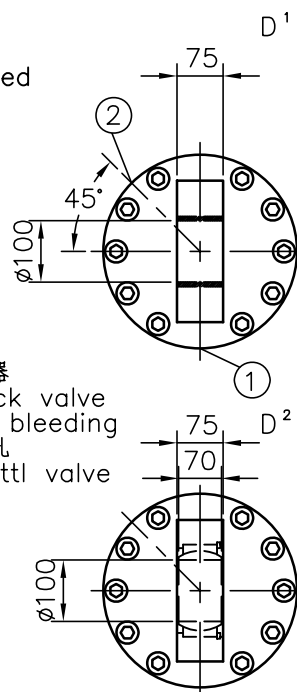


P
Rc1-1/2"
F5-12-A

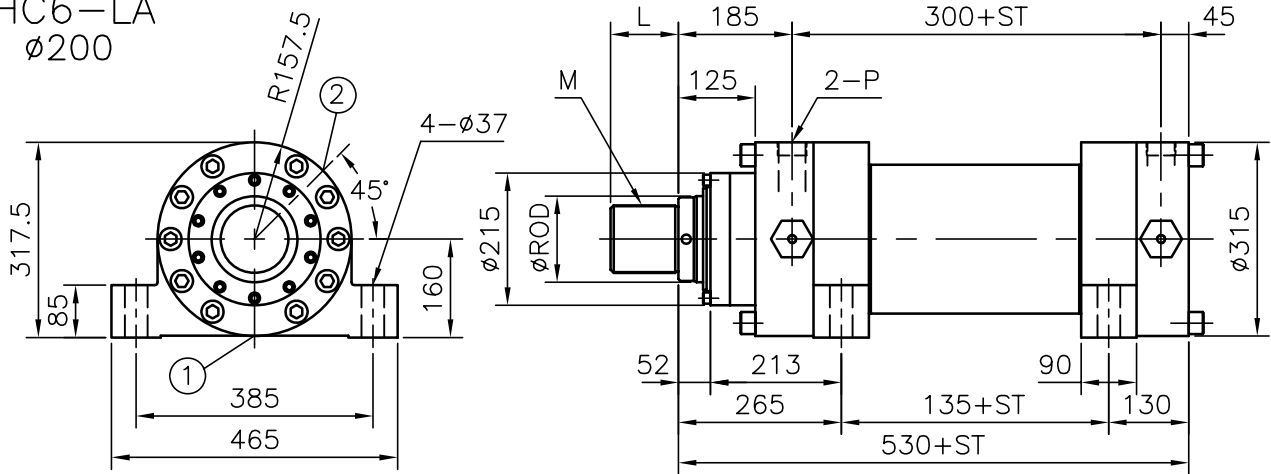
ROD	M		L	
	B	A	B	A
125	M110xP2.0	M110xP4.0	110	150
140				



1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve



HC6-LA ø200

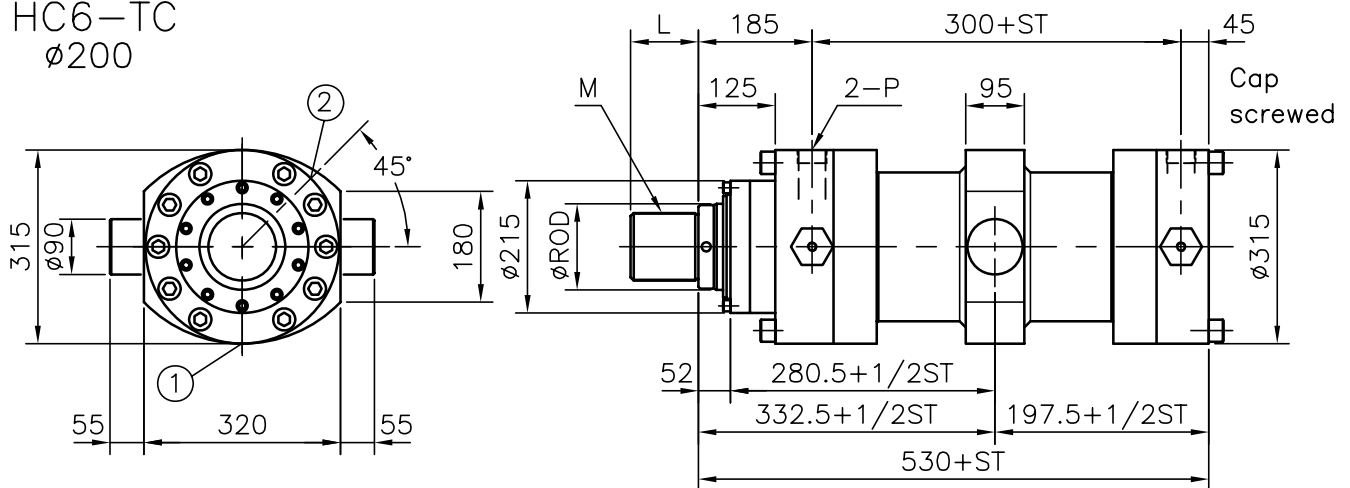


ROD	M		L	
	B	A	B	A
125	M110xP2.0	M110xP4.0	110	150
140				

P
Rc1-1/2"
F5-12-A

1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve

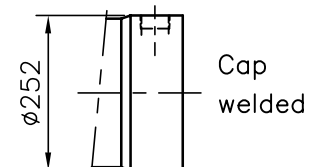
HC6-TC ø200



ROD	M		L	
	B	A	B	A
125	M110xP2.0	M110xP4.0	110	150
140				

P
Rc1-1/2"
F5-12-A

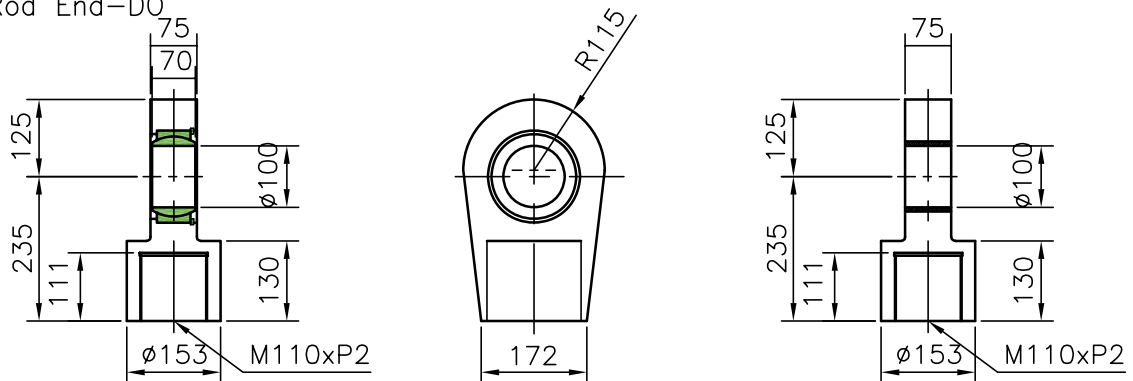
1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve



HC6-ø200 接頭 clevis head-D0

前端球面軸承接頭- D0
Spherical Rod End-D0

前端平行接頭- D0
Plain Rod End-D0

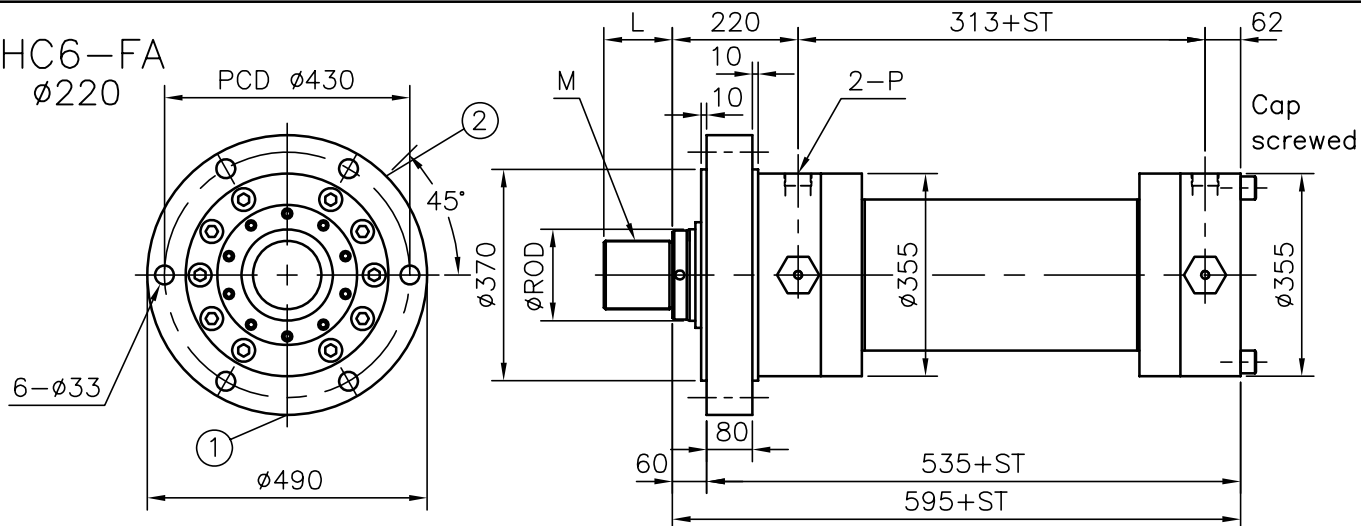


油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm
weight= W1 + (W2 * ST)
= 326.5 + (23.5 *2)
= 373.5 kg

	FA	FB	TC	LA	CA
W1 (kg)	326.5	350.6	292.2	303.3	280.4
W2 (kg/100mm)	ø140=23.5		ø125=21.1		

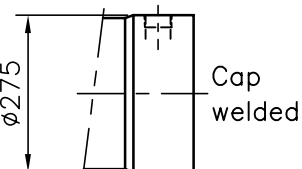
HC6-FA ø220



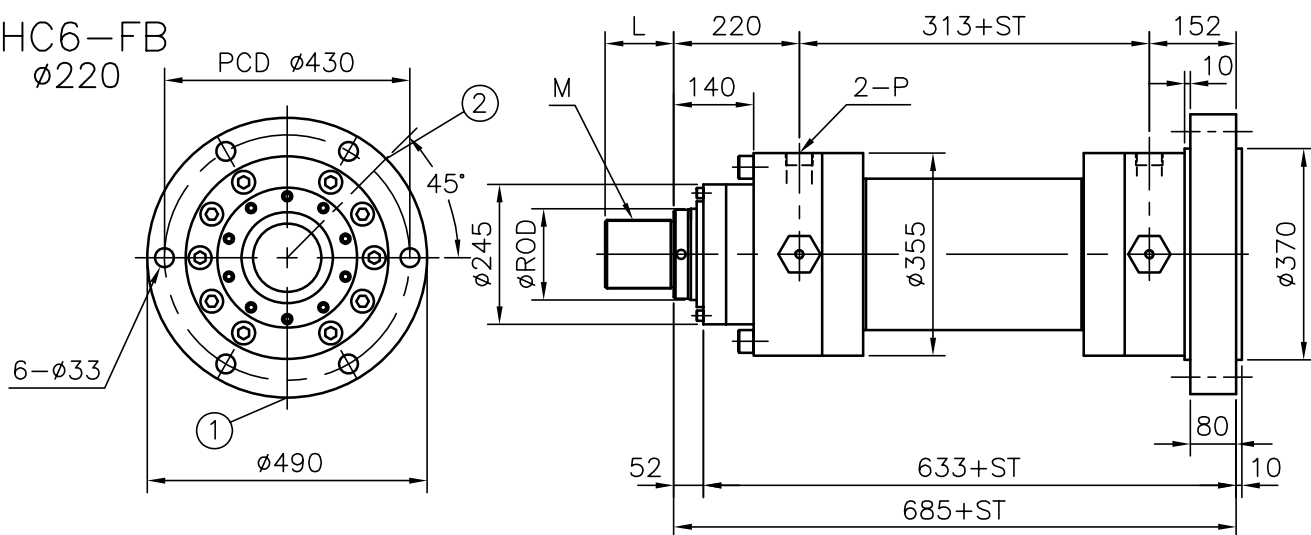
ROD	M		L	
	B	A	B	A
140	M120xP3.0	M120xP4.0	120	160
160				

P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve



HC6-FB ø220

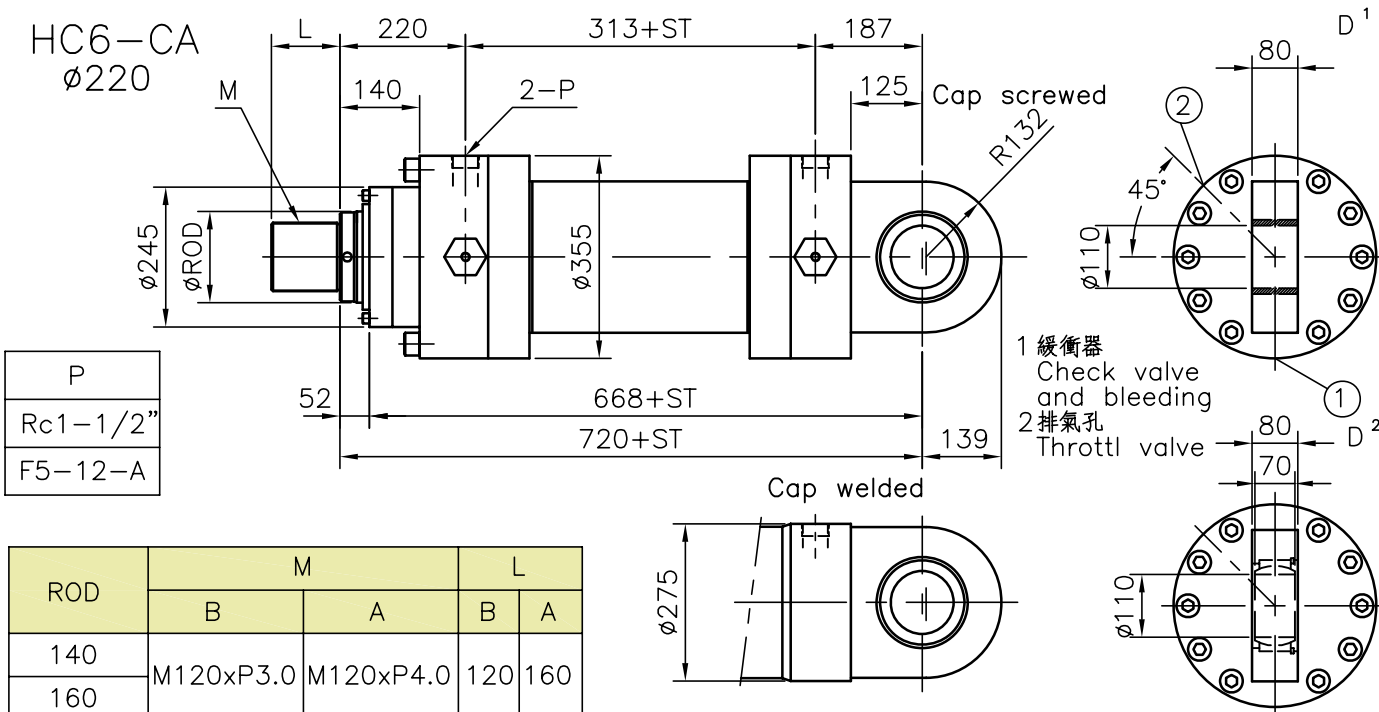


ROD	M		L	
	B	A	B	A
140	M120xP3.0	M120xP4.0	120	160
160				

P
Rc1-1/2"
F5-12-A

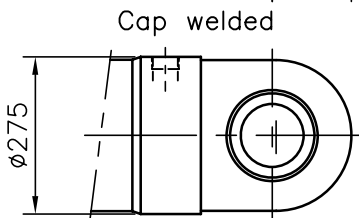
1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve

HC6-CA ø220

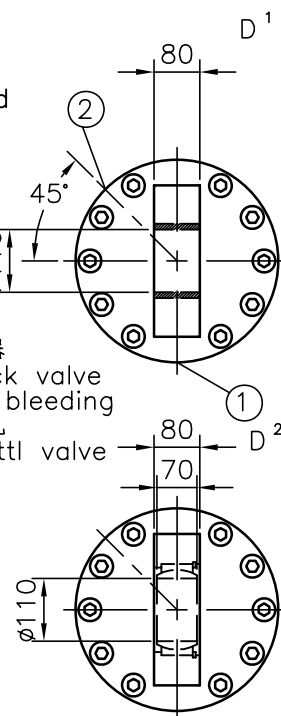


P
Rc1-1/2"
F5-12-A

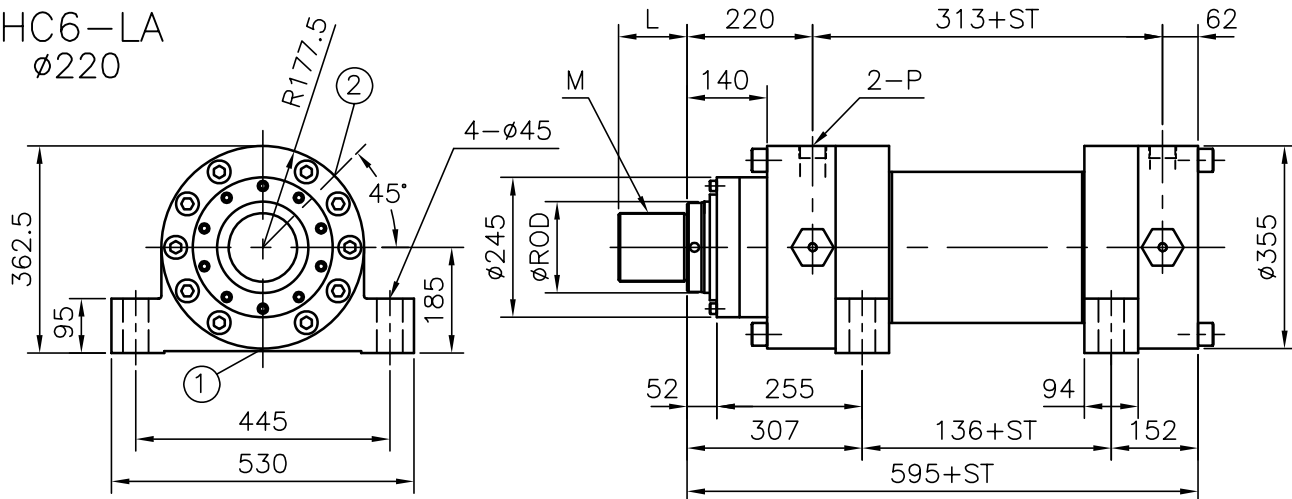
ROD	M		L	
	B	A	B	A
140	M120xP3.0	M120xP4.0	120	160
160				



1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve



HC6-LA
ø220

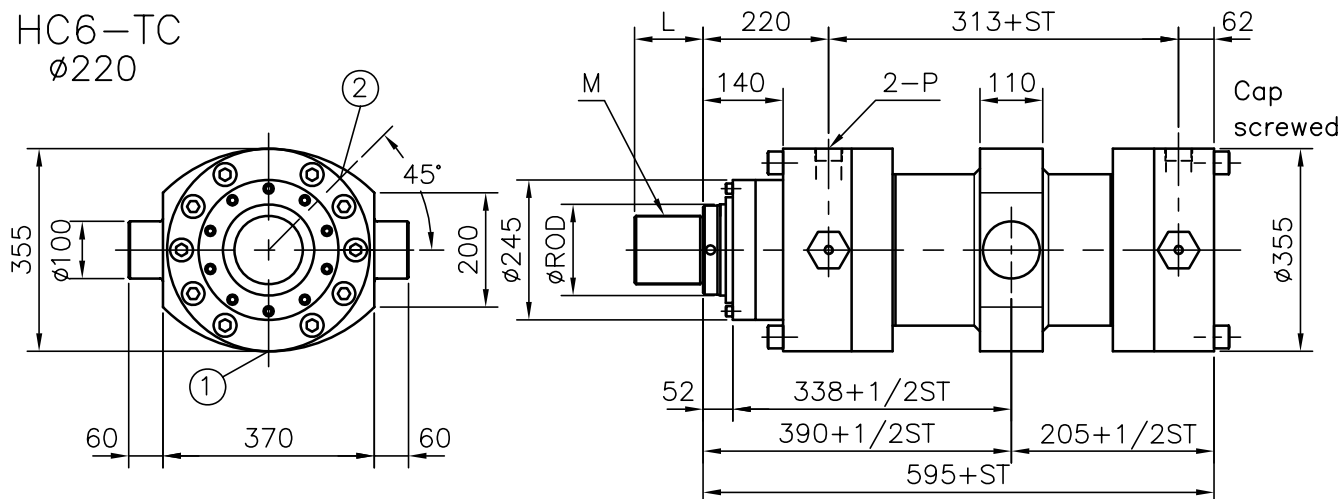


ROD	M		L	
	B	A	B	A
140	M120xP3.0	M120xP4.0	120	160
160				

P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve

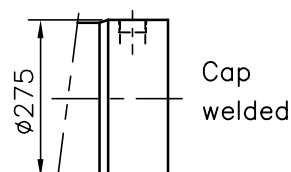
HC6-TC
ø220



ROD	M		L	
	B	A	B	A
140	M120xP3.0	M120xP4.0	120	160
160				

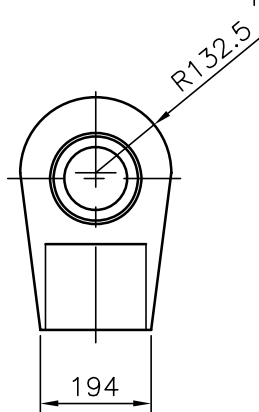
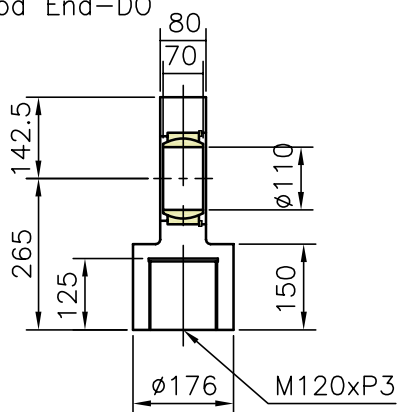
P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve

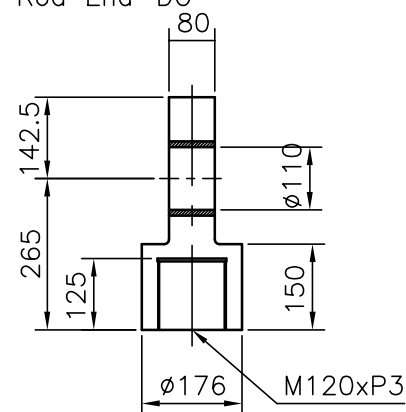


HC6-ø220 接頭 clevis head-D0

前端球面軸承接頭-D0
Spherical Rod End-D0



前端平行接頭-D0
Plain Rod End-D0



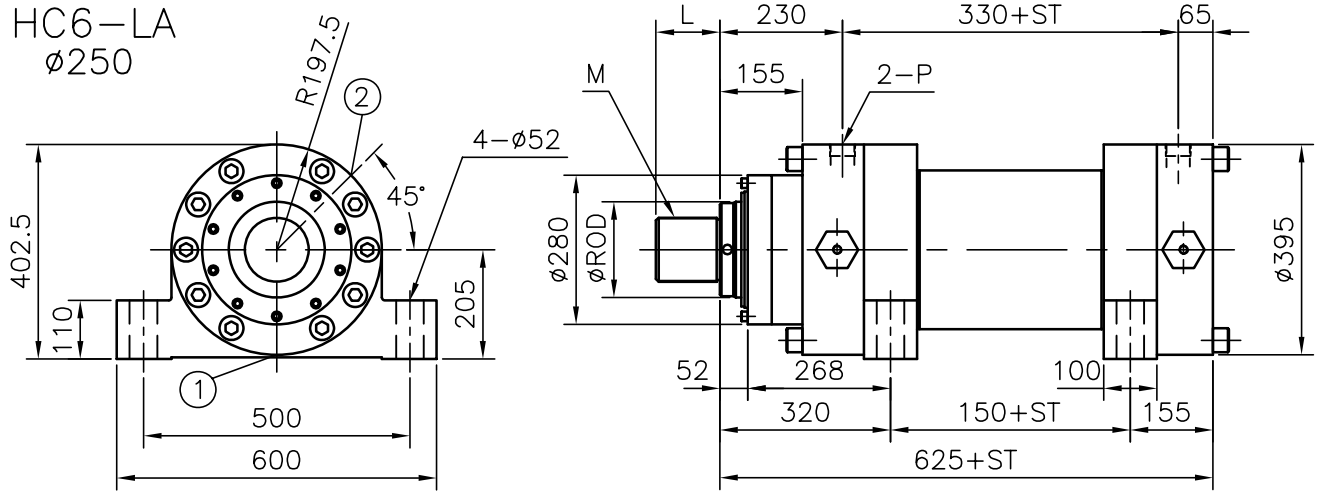
油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm

$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 459.9 + (29.2 * 2) \\ &= 518.3 \text{ kg} \end{aligned}$$

	FA	FB	TC	LA	CA
W1 (kg)	459.9	493.2	427.3	434.6	402.8
W2 (kg/100mm)	ø160=29.2		ø140=25.5		

HC6-LA ø250

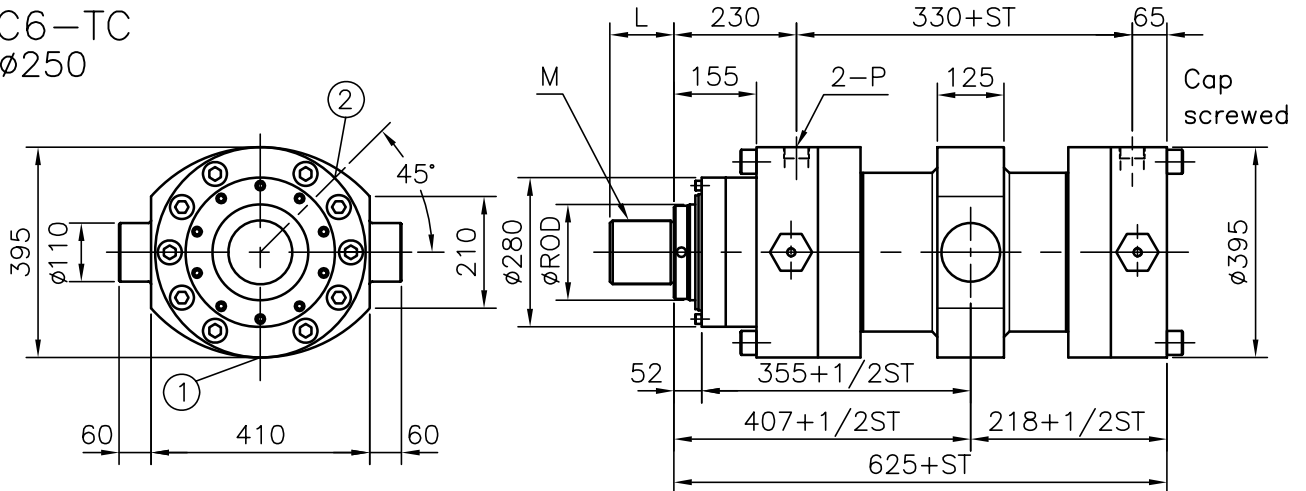


ROD	M		L	
	B	A	B	A
160	M120xP3.0	M120xP4.0	120	160
180				

P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve

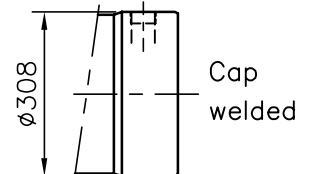
HC6-TC ø250



ROD	M		L	
	B	A	B	A
160	M120xP3.0	M120xP4.0	120	160
180				

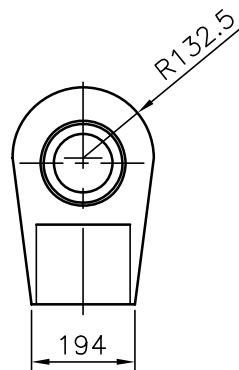
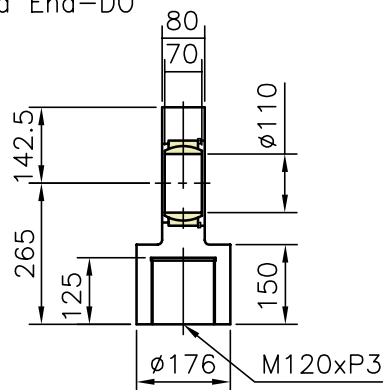
P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve

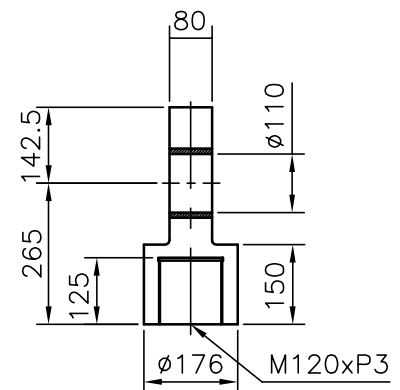


HC6-ø250 接頭 clevis head-D0

前端球面軸承接頭-D0
Spherical Rod End-D0



前端平行接頭-D0
Plain Rod End-D0



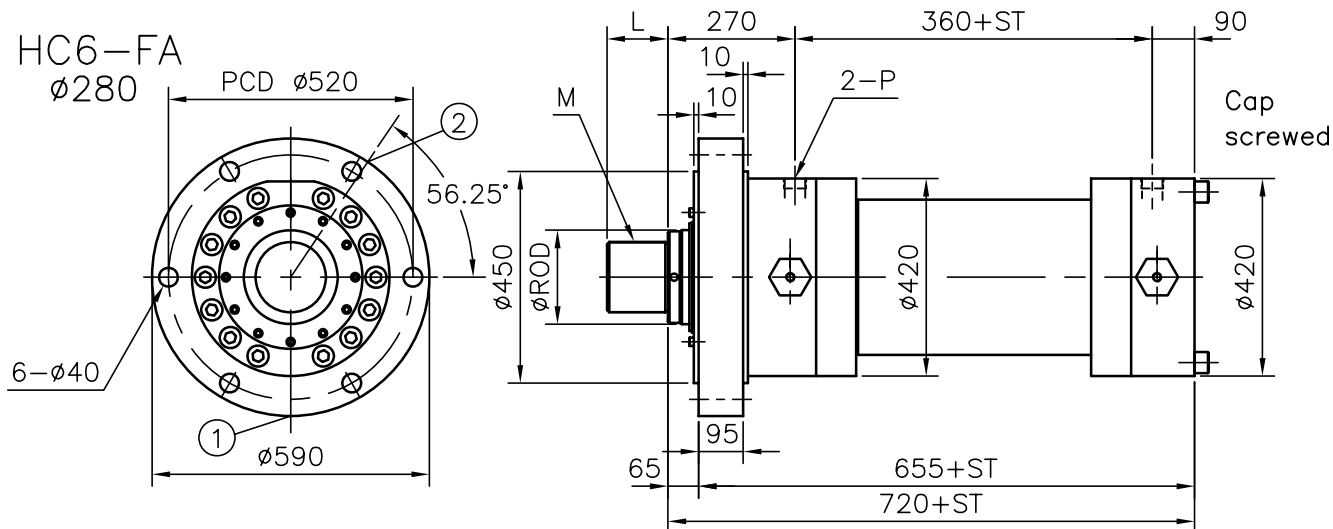
油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm

$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 602.7 + (36.2 * 2) \\ &= 675.1 \text{ kg} \end{aligned}$$

	FA	FB	TC	LA	CA
W1 (kg)	602.7	648.6	558.1	561.9	526.2
W2 (kg/100mm)	ø180=36.2		ø160=32		

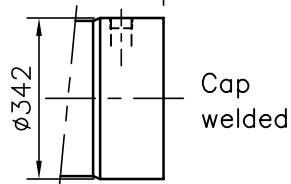
HC6-FA ø280



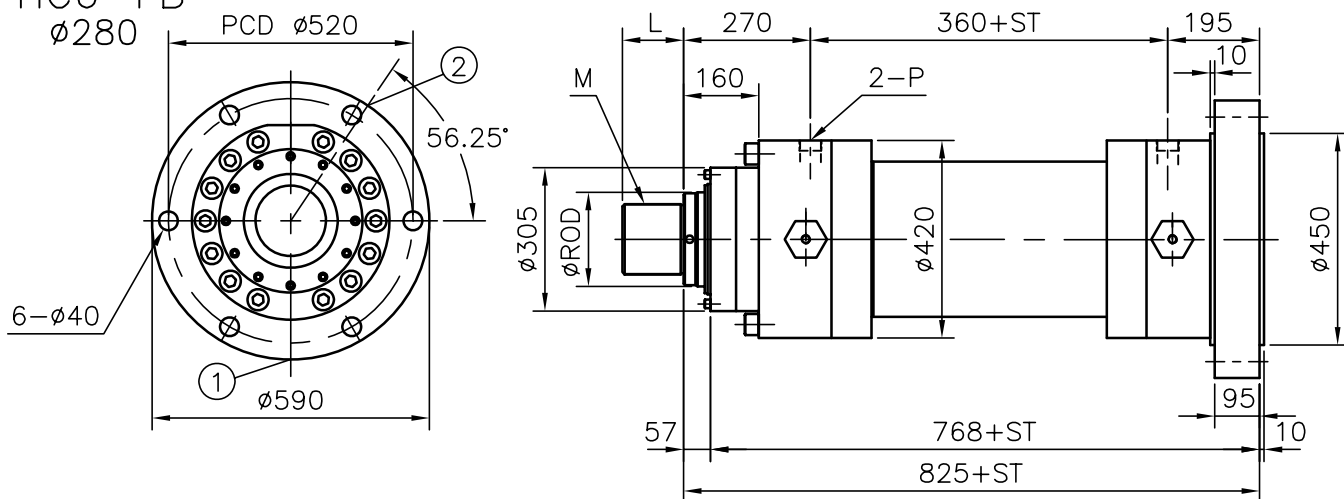
ROD	M		L	
	B	A	B	A
180	M130xP3.0	M150xP4.0	130	190
200				

P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve



HC6-FB ø280

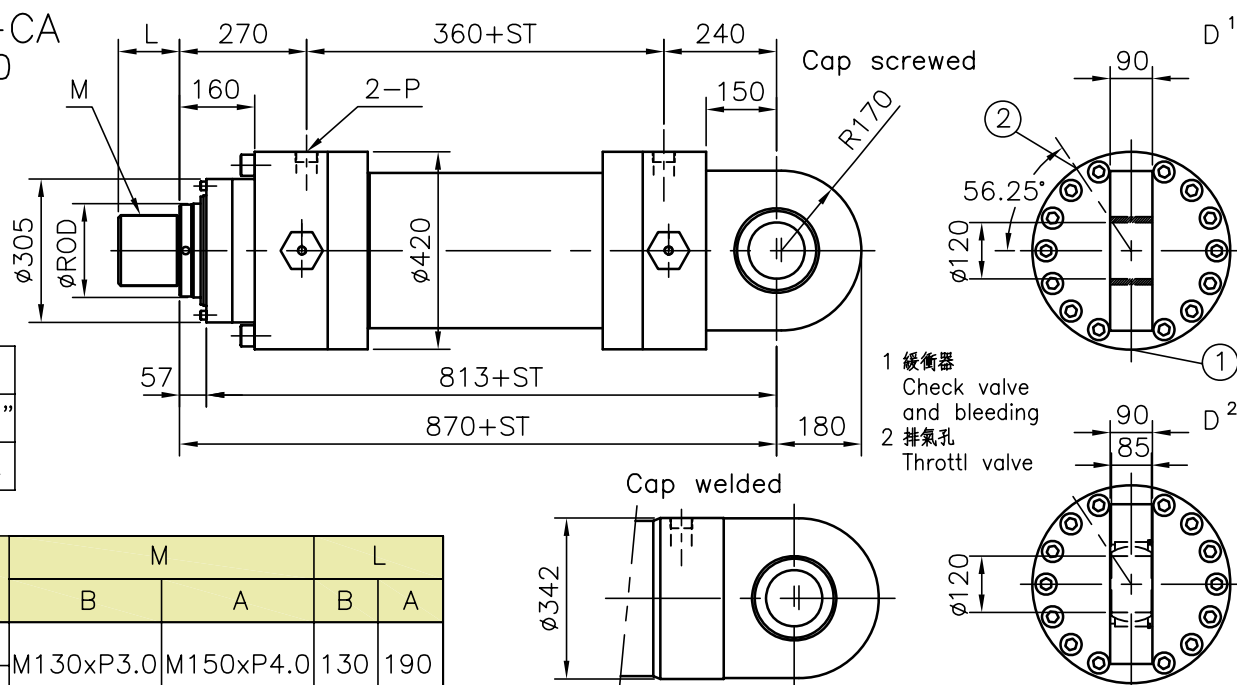


ROD	M		L	
	B	A	B	A
180	M130xP3.0	M150xP4.0	130	190
200				

P
Rc1-1/2"
F5-12-A

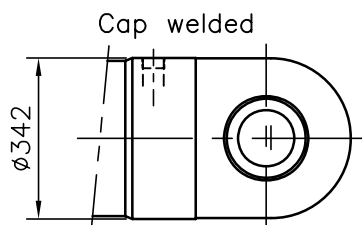
1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve

HC6-CA ø280

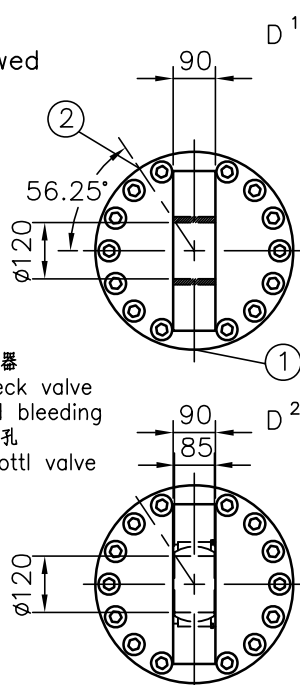


P
Rc1-1/2"
F5-12-A

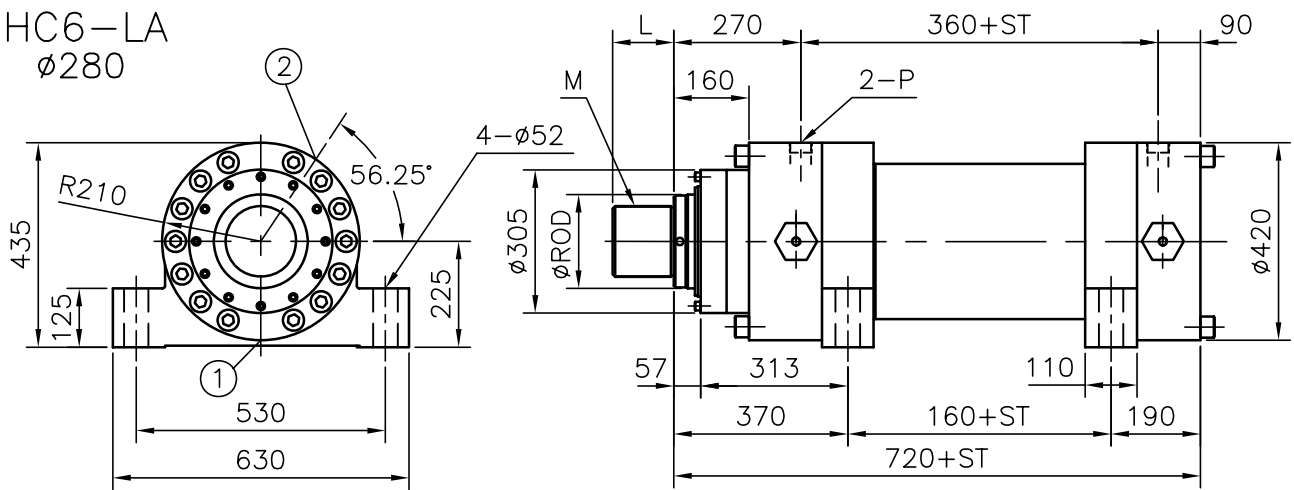
ROD	M		L	
	B	A	B	A
180	M130xP3.0	M150xP4.0	130	190
200				



1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve



HC6-LA ø280

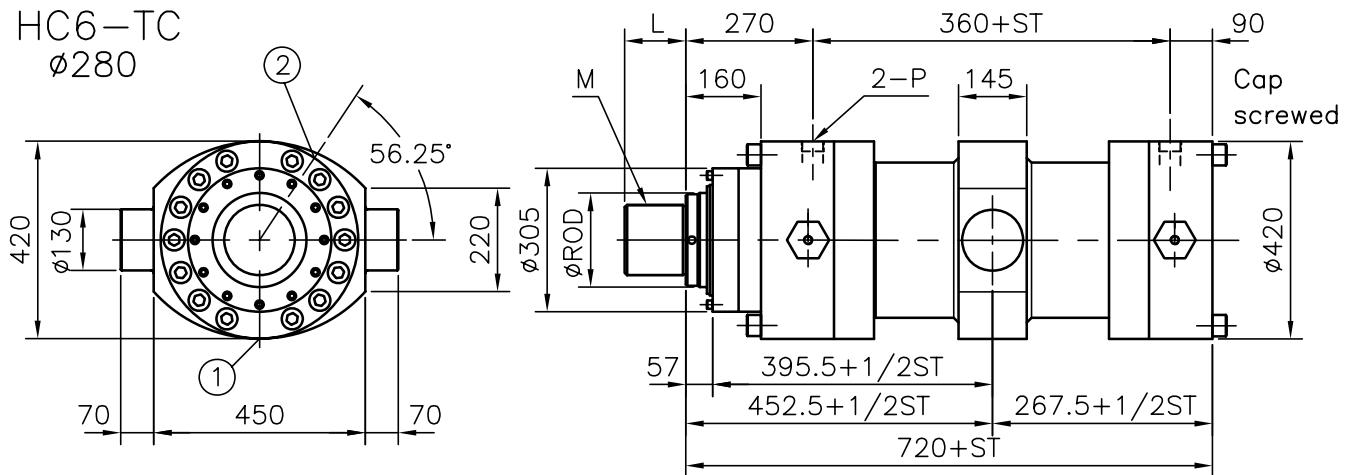


ROD	M		L	
	B	A	B	A
180	M130xP3.0	M150xP4.0	130	190
200				

P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve

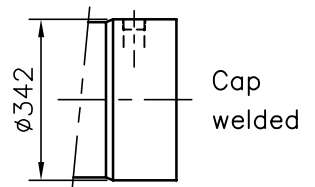
HC6-TC ø280



ROD	M		L	
	B	A	B	A
180	M130xP3.0	M150xP4.0	130	190
200				

P
Rc1-1/2"
F5-12-A

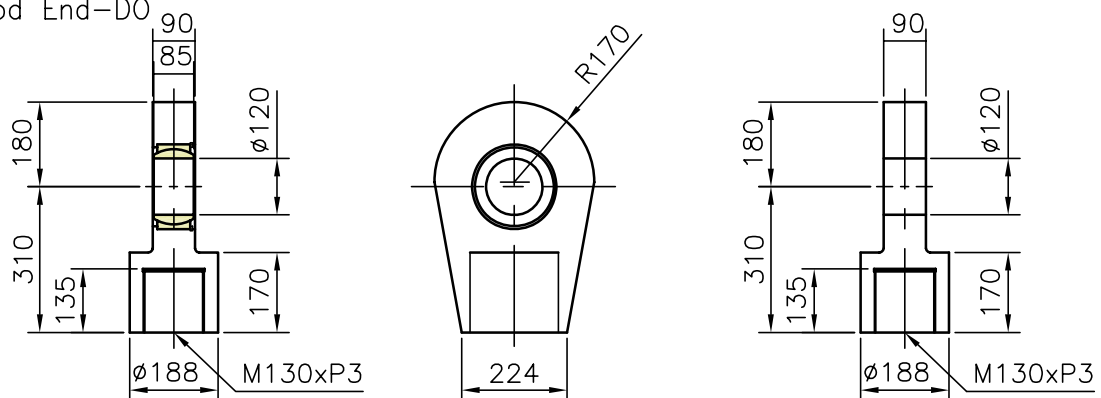
1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve



HC6-ø280 接頭 clevis head-D0

前端球面軸承接頭-D0
Spherical Rod End-D0

前端平行接頭-D0
Plain Rod End-D0



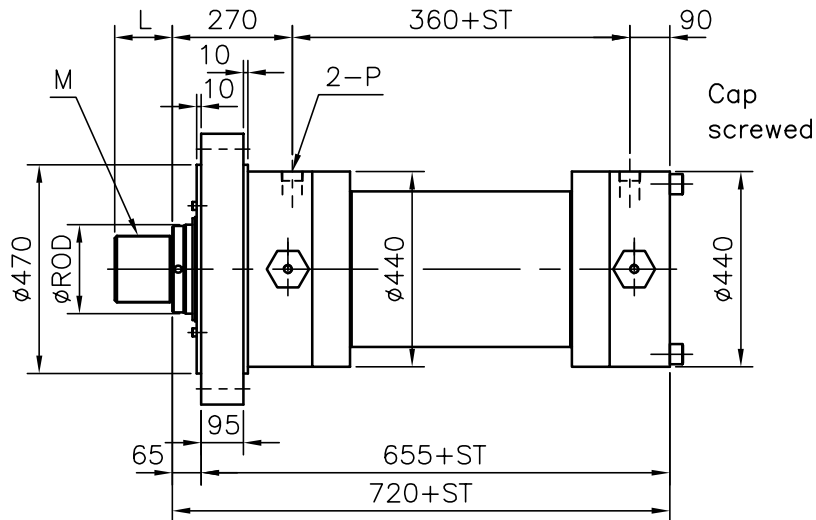
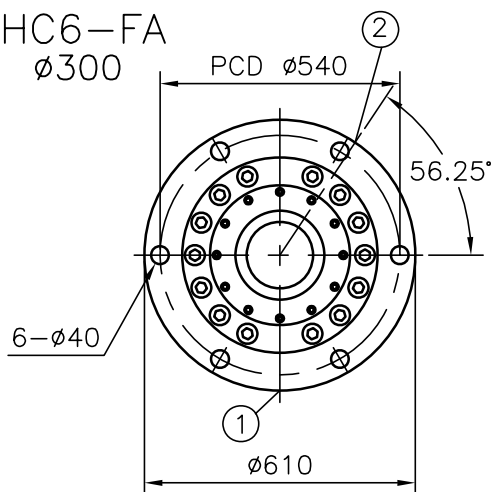
油壓缸大概重量計算 Estimated weight of hyd.

EX. : FA , ST=200mm
weight= W1 + (W2 * ST)
= 803.1 + (43.5 * 2)
= 890.1 kg

	FA	FB	TC	LA	CA
W1 (kg)	803.1	863.3	753.4	757.2	715.1
W2 (kg/100mm)	ø200=43.5		ø180=38.8		

HC6-FA

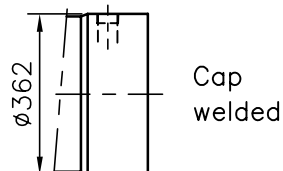
ø300



ROD	M		L	
	B	A	B	A
180	M130xP3.0	M150xP4.0	130	190
200				

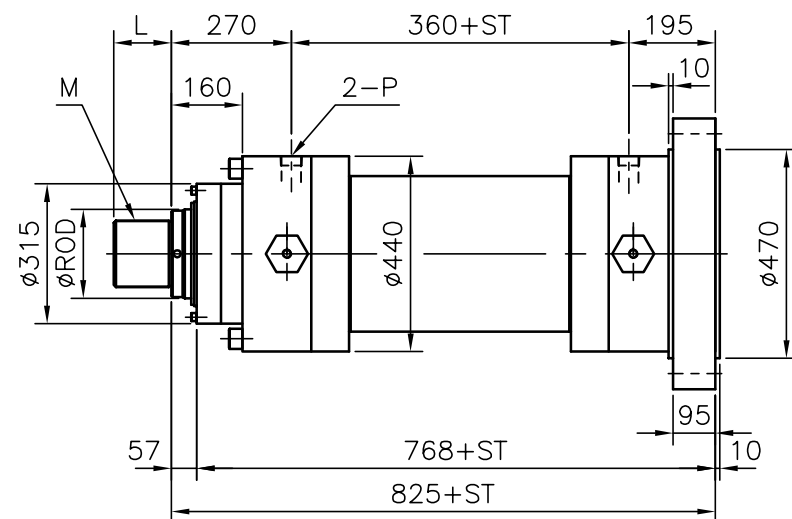
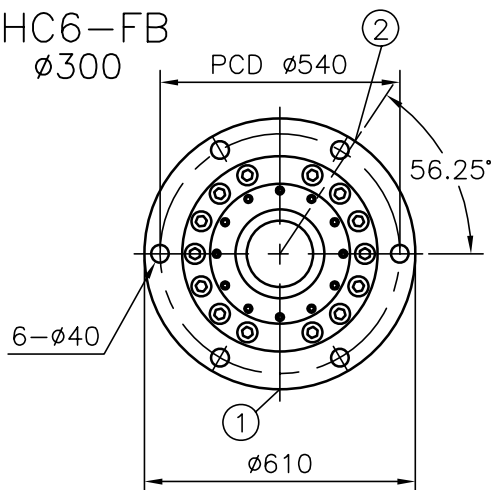
P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttling valve



HC6-FB

ø300



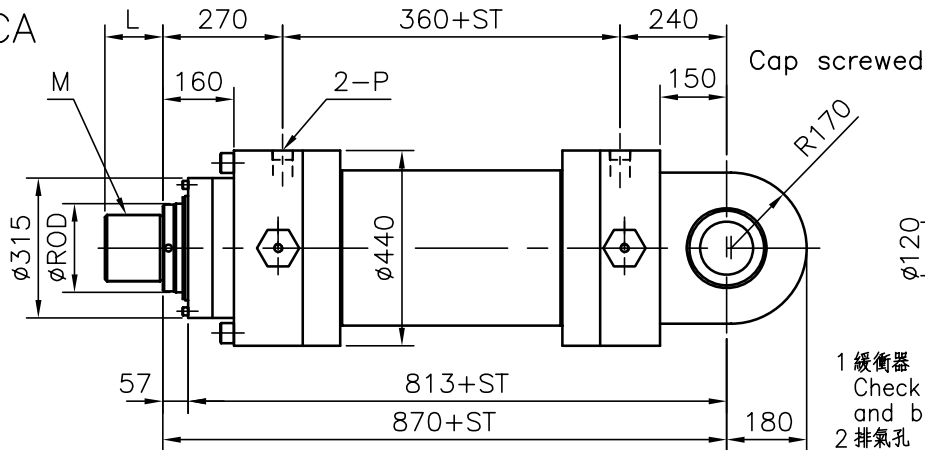
ROD	M		L	
	B	A	B	A
180	M130xP3.0	M150xP4.0	130	190
200				

P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttling valve

HC6-CA

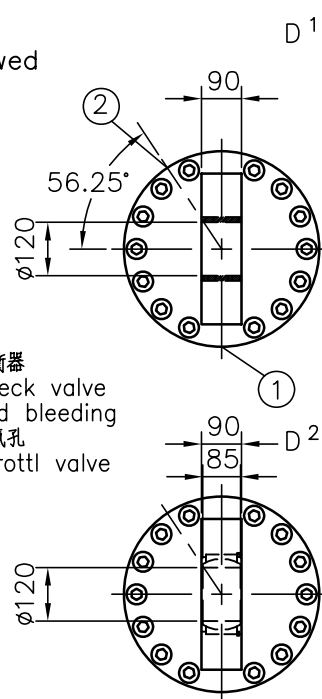
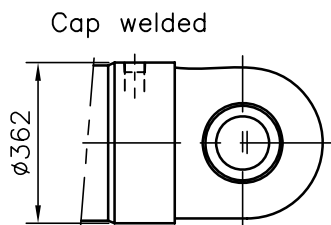
ø300



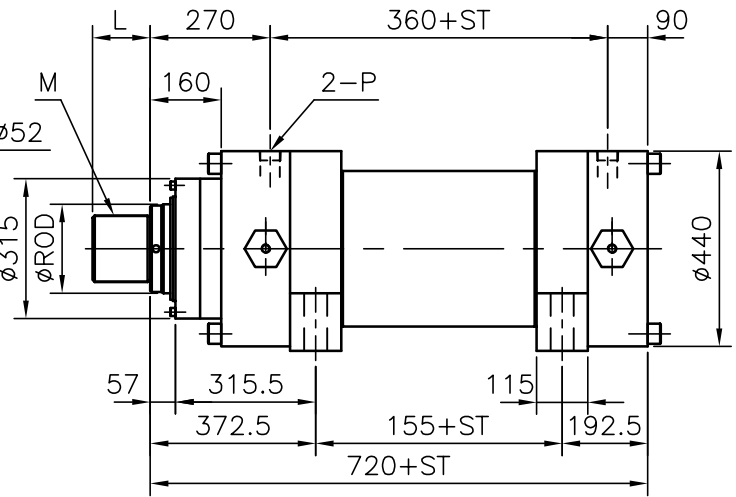
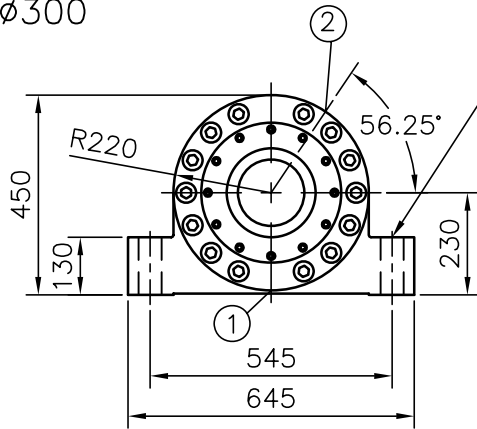
P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttling valve

ROD	M		L	
	B	A	B	A
180	M130xP3.0	M150xP4.0	130	190
200				



HC6-LA ø300

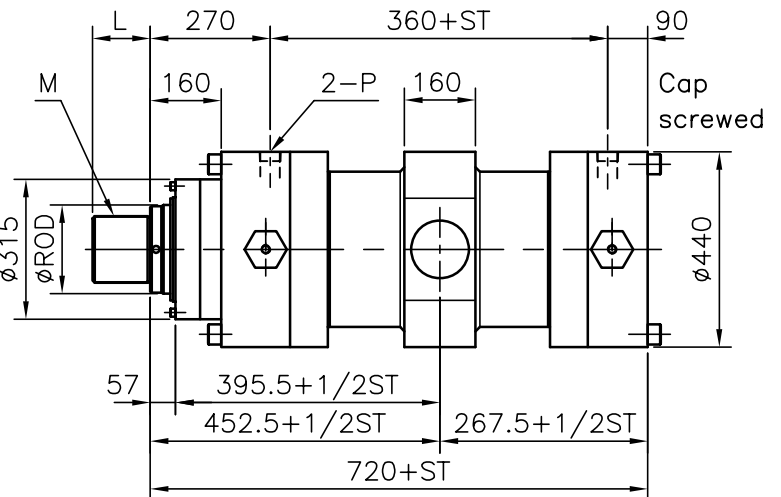
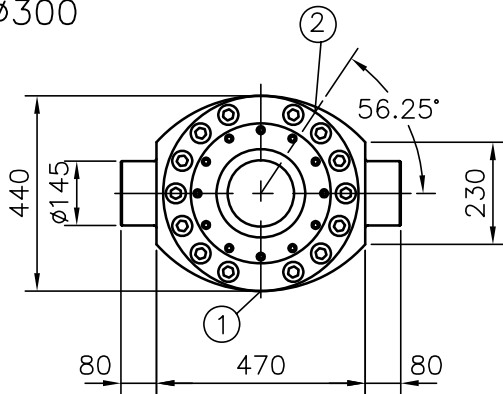


ROD	M		L	
	B	A	B	A
180	M130xP3.0	M150xP4.0	130	190
200				

P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve

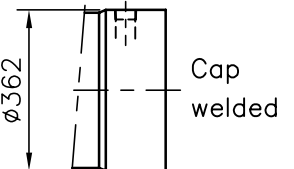
HC6-TC ø300



ROD	M		L	
	B	A	B	A
180	M130xP3.0	M150xP4.0	130	190
200				

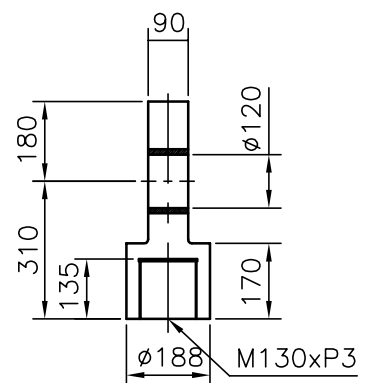
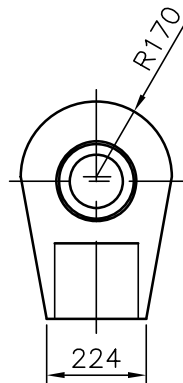
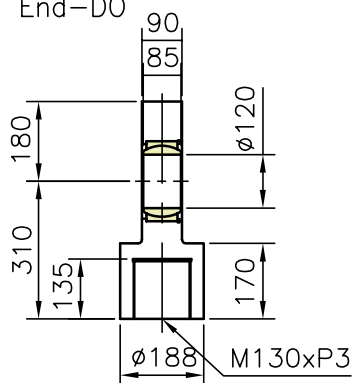
P
Rc1-1/2"
F5-12-A

1 緩衝器
Check valve
and bleeding
2 排氣孔
Throttl valve



HC6-ø300 接頭 clevis head-D0 前端球面軸承接頭-D0 Spherical Rod End-D0

前端平行接頭-D0 Plain Rod End-D0



油壓缸大概重量計算 Estimated weight of hyd.

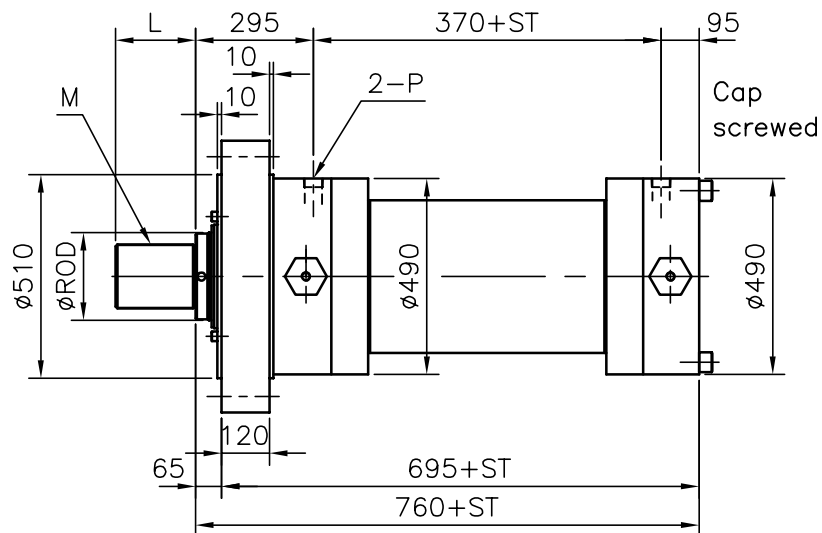
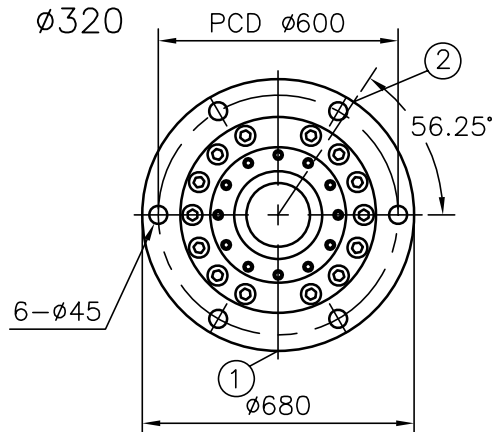
EX. : FA , ST=200mm

$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 875.2 + (44.7 * 2) \\ &= 964.6 \text{ kg} \end{aligned}$$

	FA	FB	TC	LA	CA
W1 (kg)	875.2	939.4	835	831.7	776
W2 (kg/100mm)	ø200=44.7		ø180=40		

HC6-FA

ø320



ROD	M		L	
	B	A	B	A
200	M160xP3.0	M160xP4.0	150	200
220				

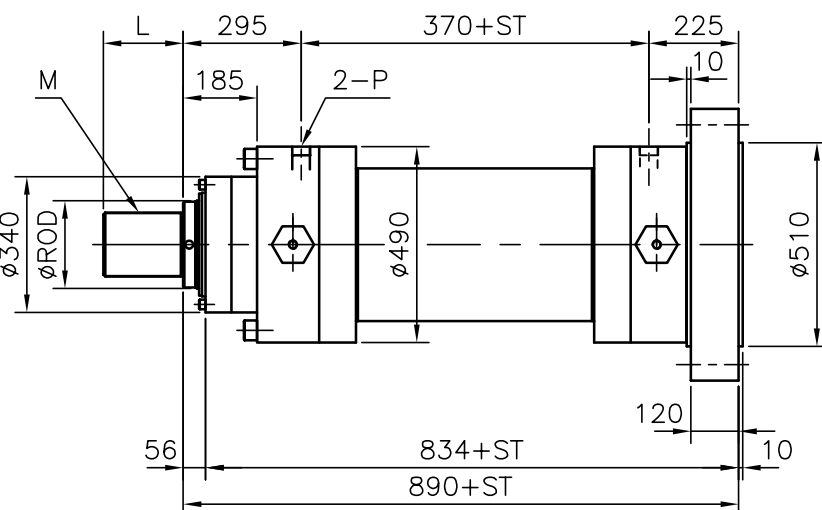
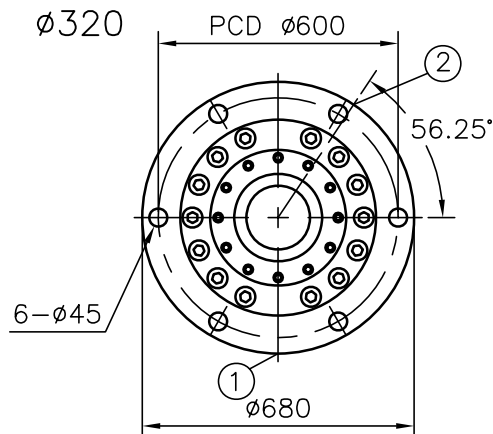
P
Rc1-1/2"
F5-12-A

1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve



HC6-FB

ø320



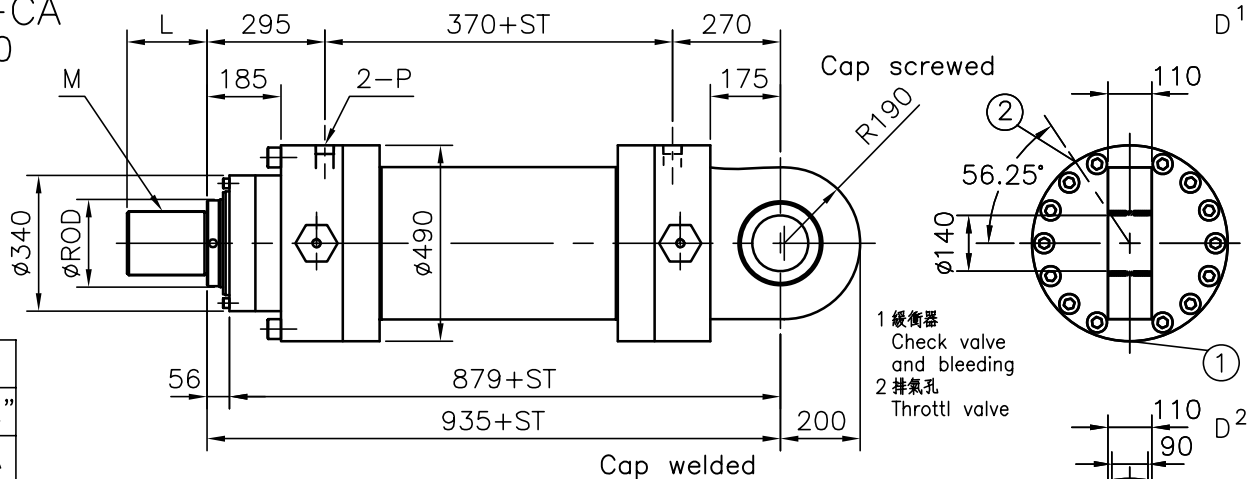
ROD	M		L	
	B	A	B	A
200	M160xP3.0	M160xP4.0	150	200
220				

P
Rc1-1/2"
F5-12-A

1緩衝器
Check valve
and bleeding
2排氣孔
Thrott valve

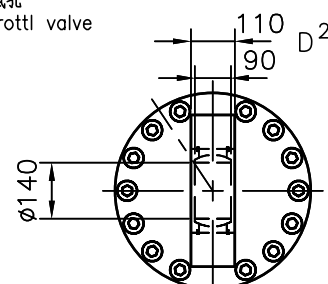
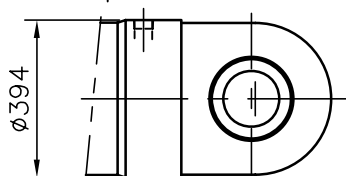
HC6-CA

ø320

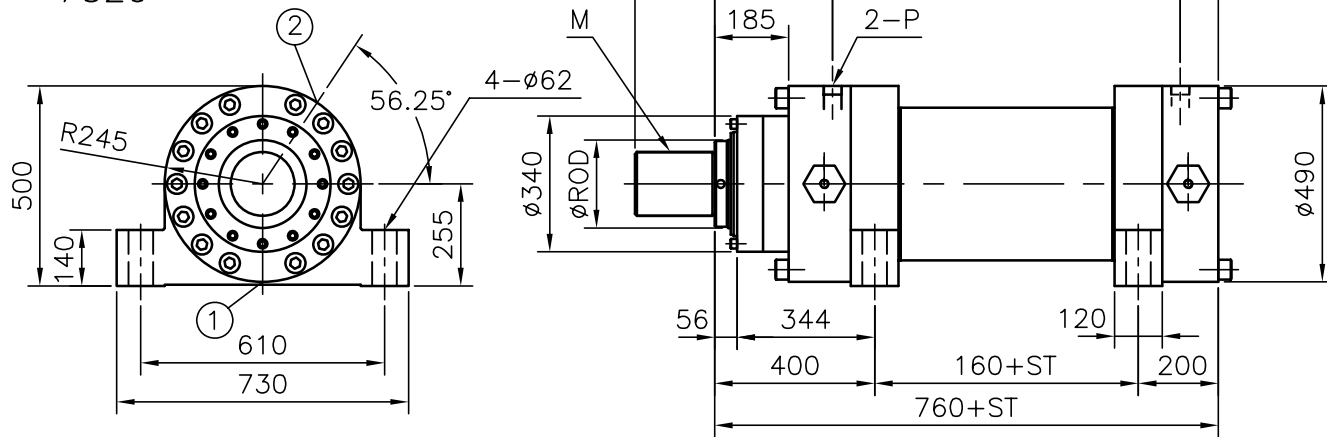


P
Rc1-1/2"
F5-12-A

ROD	M		L	
	B	A	B	A
200	M160xP3.0	M160xP4.0	150	200
220				



HC6-LA ø320

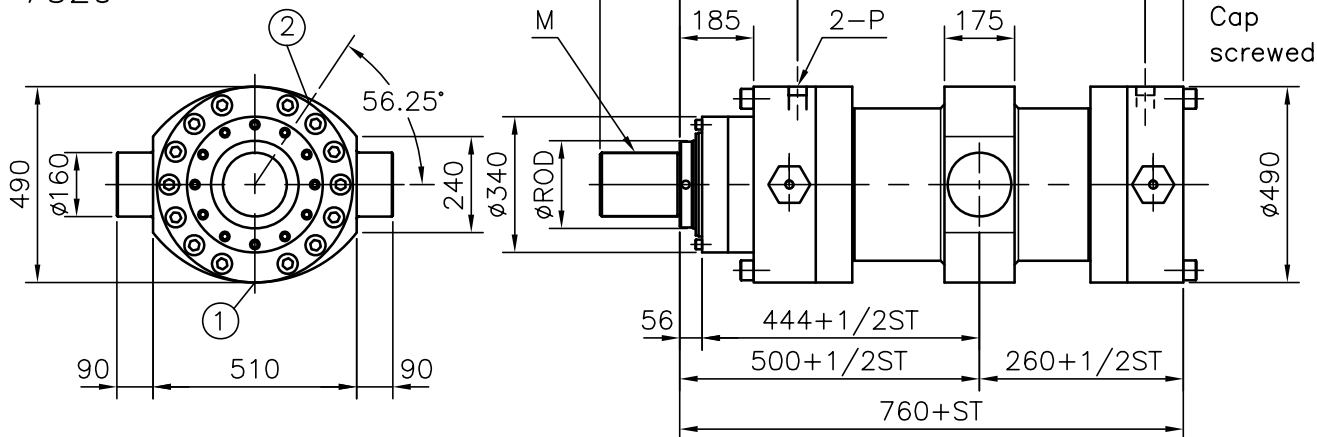


ROD	M		L	
	B	A	B	A
200	M160xP3.0	M160xP4.0	150	200
220				

P
Rc1-1/2"
F5-12-A

1緩衝器
Check valve
and bleeding
2排氣孔
Throttl valve

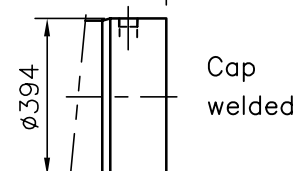
HC6-TC ø320



ROD	M		L	
	B	A	B	A
200	M160xP3.0	M160xP4.0	150	200
220				

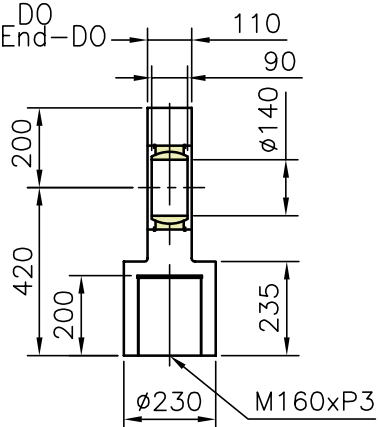
P
Rc1-1/2"
F5-12-A

1緩衝器
Check valve
and bleeding
2排氣孔
Throttl valve

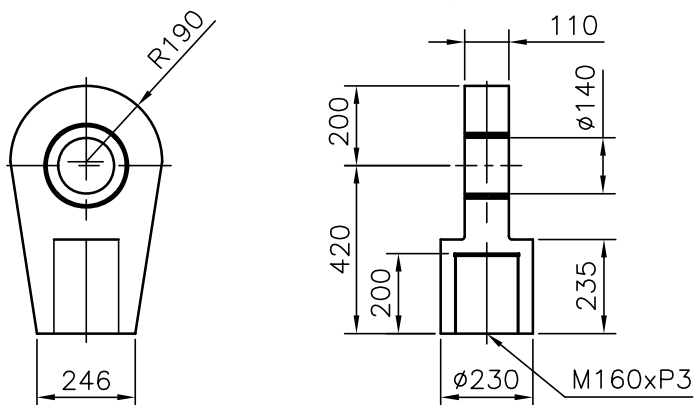


HC6-ø320 接頭 clevis head-D0

前端球面軸承接頭-D0
Spherical Rod End-D0



前端平行接頭-D0
Plain Rod End-D0



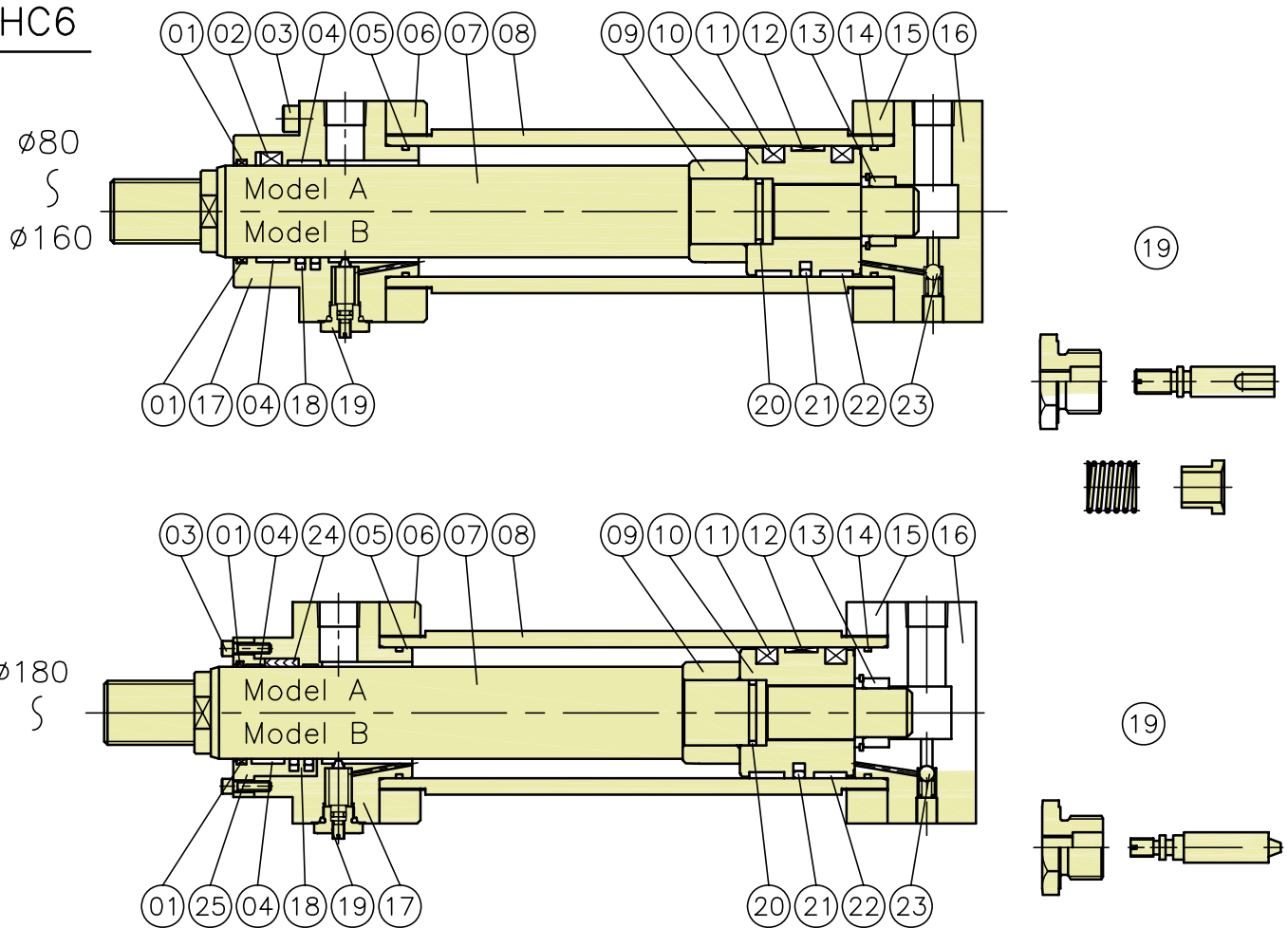
油壓缸大概重量計算

Estimated weight of hyd.

EX. : FA , ST=200mm
weight= W1 + (W2 * ST)
= 1183.8 + (56.6 * 2)
= 1297 kg

	FA	FB	TC	LA	CA
W1 (kg)	1183.8	1276.5	1088.6	1077.5	1023.7
W2 (kg/100mm)	ø220=56.6		ø200=51.5		

HC6



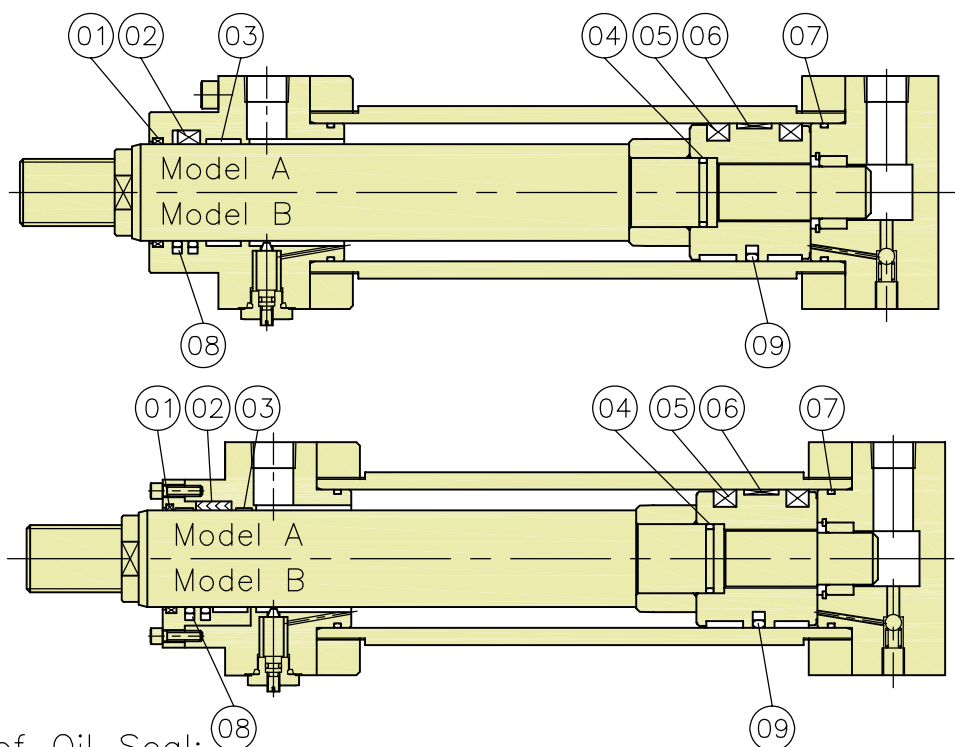
零件名稱 Parts Description

01	Wiper 防塵油封	10	Piston 活塞	19	Throttle valve 節流閥
02	Rod seal for model "U" 軸用U型油封	11	Piston seal for model "U" 活塞用U型油封	20	O-ring O型環
03	Socket head cap screw 六角承窩螺栓	12	Guide bush 導襯套	21	Piston seal for model "T" 活塞用T型油封
04	Guide bush 導襯套	13	Blank end cushioning bush 後緩衝環	22	Guide bush 導襯套
05	O ring O型環	14	O ring O型環	23	Non return valve and bleed 止逆閥
06	Flange 法蘭	15	Flange 法蘭	24	Rod seal for model "V" 軸用V型油封
07	Piston rod 活塞桿	16	Cylinder cap 後蓋	25	Cover 壓板
08	Cylinder tube 油壓缸管	17	Head 前蓋		
09	Rod end cushioning bush 前緩衝環	18	Rod seal for model "T" 軸用T型油封		

NOTE : Throttle and non return valves in cylinder head and cylinder cap
備註 : 節流閥和止逆閥置於油壓缸的前蓋及後蓋

HC6

ø80
S
ø160



油封規格表

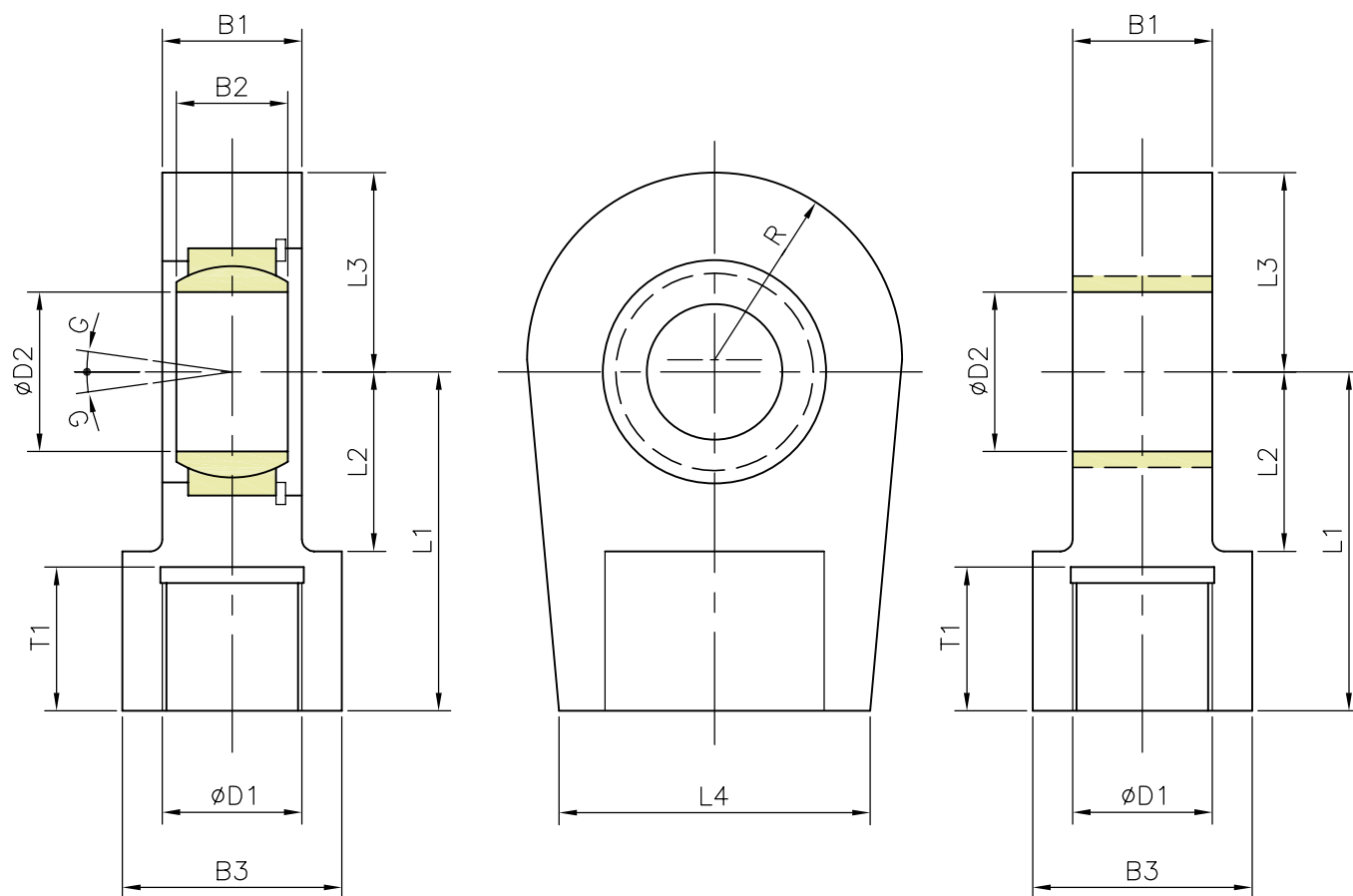
Specifications of Oil Seal:

NO	1	2	3	4	5	6	7	8	9
名 稱	防塵油封 Dust Seal	軸心油封 Rod Seal	耐磨片 Wear Ring	O型環 O Ring	活塞油封 Piston Seal	耐磨片 Wear Ring	O型環 O Ring	軸心油封T型 Rod Seal T	活塞油封T型 Piston Seal T
材質	PU	PU	PTFE	NBR	PU	PTFE	NBR	PTFE+NBR	PTFE+NBR
數 量 內徑	1 ø,ø.w mm	ø,ø.w 1 mm +Backup ring	2	1	ø,ø.w 2 mm +Backup ring	1	1	ø,ø.w 2 mm	ø,ø.w 1 mm
ø80	A	45-53-6.5	45-61-16	45-2.5	G-35	80-60-13	80-2.5	G-75	45-60.1-6.3
	B	56-64-6.5	56-72-16	56-2.5	G-45				56-71.1-6.3
ø100	A	56-64-6.5	56-72-16	56-2.5	G-45	100-80-19	100-2.5	G-95	56-71.1-6.3
	B	70-80-8	70-90-16	70-2.5	G-60				70-85.1-6.3
ø125	A	70-80-8	70-90-16	70-2.5	G-60	125-105-19	125-2.5	G-120	70-85.1-6.3
	B	90-100-8	90-110-16	90-2.5	G-75				90-105.1-6.3
ø140	A	90-100-8	90-110-16	90-2.5	G-75	140-120-19	140-2.5	G135	90-105.1-6.3
	B	100-110-8	100-120-16	100-2.5	G-85				100-115.1-6.3
ø160	A	100-110-8	100-120-19	100-2.5	G-75	160-135-24	160-2.5	G-150	100-115.1-6.3
	B	110-120-8	110-130-19	110-2.5	G-85				110-125.1-6.3
ø180	A	110-120-8	110-130-19	110-2.5	P-80	180-155-24	180-2.5	G-170	110-125.1-6.3
	B	125-138-9.5	125-155-39.5	125-2.5	P-95				125-140.1-6.3
ø200	A	125-138-9.5	125-155-39.5	125-2.5	P-95	200-175-24	200-2.5	G-190	125-140.1-6.3
	B	140-153-9.5	140-165-39.5	140-2.5	P-105				140-155.1-6.3
ø220	A	140-153-9.5	140-165-45.5	140-2.5	P-105	220-195-24	220-2.5	G-210	140-155.1-6.3
	B	160-174-9.5	160-185-45.5	160-2.5	P-115				160-175.1-6.3
ø250	A	160-174-9.5	160-185-45.5	160-2.5	P-115	250-225-24	250-2.5	G-240	160-175.1-6.3
	B	180-194-9.5	180-205-45.5	180-2.5	P-140				180-195.1-6.3
ø280	A	180-194-9.5	180-205-45.5	180-2.5	P-140	280-255-24	280-2.5	G-270	180-195.1-6.3
	B	200-214-9.5	200-225-45.5	200-2.5	P-160				200-220.5-8.1
ø300	A	180-194-9.5	180-205-45.5	180-2.5	P-140	300-275-24	300-2.5	G-290	180-195.1-6.3
	B	200-214-9.5	200-225-45.5	200-2.5	P-160				200-220.5-8.1
ø320	A	200-214-9.5	200-225-45.5	200-2.5	P-160	320-290-24	320-2.5	G-310	200-220.5-8.1
	B	220-233-9.5	220-250-50	220-2.5	P-180				220-240.5-8.1

接頭 Clevis Head— L0

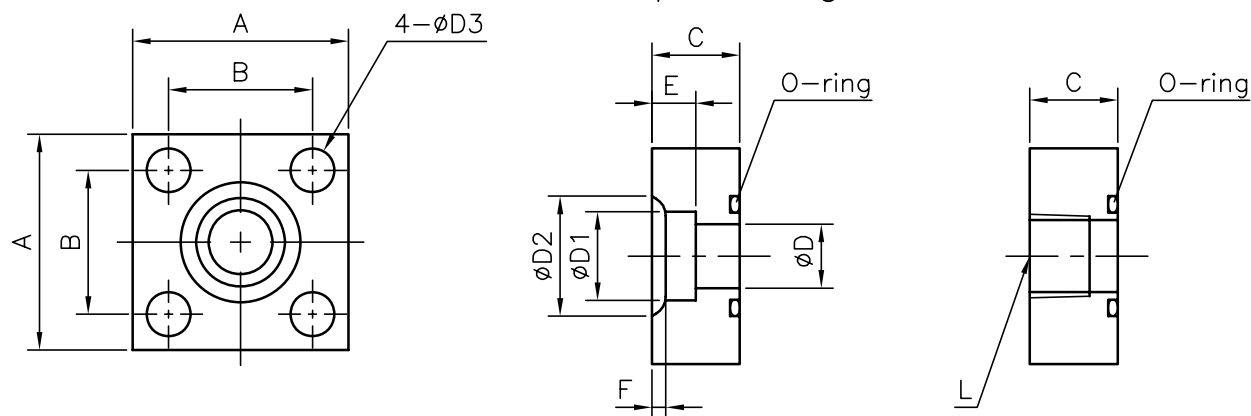
前端球面軸承接頭— L0
Spherical Rod End Type— L0

前端平行接頭— L0
Plain Rod End Type— L0



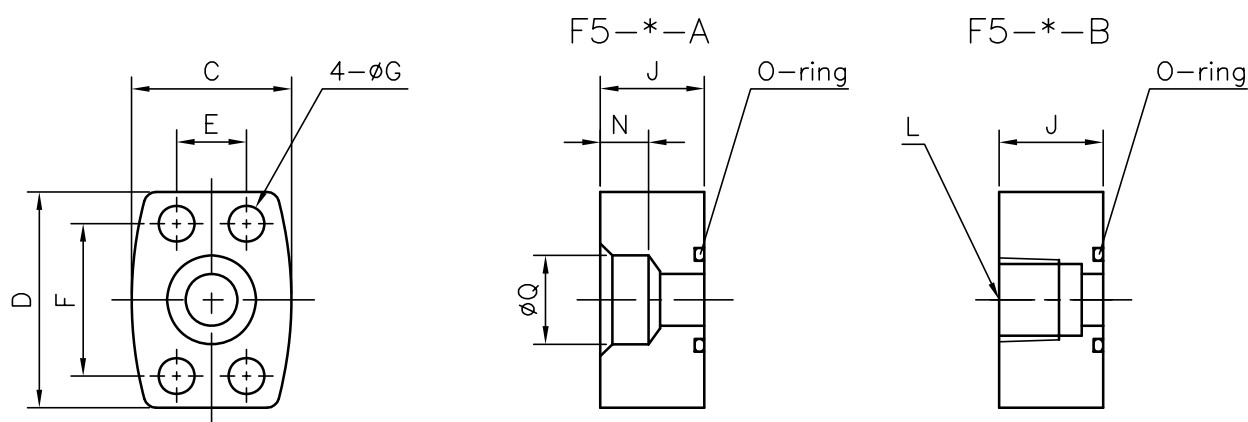
Piston Dia.	B1 ⁰ ₋₀₄	B2	B3	D1	øD2	L1	L2	L3	L4	R	T1	G	Weigh(kg)
80	35	28 ⁰ _{-0.12}	55	M 39x3	40 ⁰ _{-0.012}	105	45	50.0	78	47.0	55	7°	2.4
100	40	35 ⁰ _{-0.12}	70	M 50x3	50 ⁰ _{-0.012}	135	55	63.0	90	58.0	75	7°	4.1
125	50	44 ⁰ _{-0.15}	87	M 64x3	60 ⁰ _{-0.015}	170	65	70.0	118	65.0	95	7°	6.5
140	55	49 ⁰ _{-0.15}	105	M 80x3	70 ⁰ _{-0.015}	195	75	83.0	130	77.0	110	6°	9.5
160	60	55 ⁰ _{-0.15}	125	M 90x3	80 ⁰ _{-0.015}	210	80	95.0	152	88.0	120	6°	16.0
180	65	60 ⁰ _{-0.20}	150	M100x3	90 ⁰ _{-0.020}	250	90	113.0	162	103.0	140	5°	28.0
200	70	70 ⁰ _{-0.20}	170	M110x4	100 ⁰ _{-0.020}	275	105	125.0	192	115.0	150	7°	34.0
220	80	70 ⁰ _{-0.20}	180	M120x4	110 ⁰ _{-0.020}	300	115	142.5	194	132.5	160	6°	44.0
250	80	70 ⁰ _{-0.20}	180	M120x4	110 ⁰ _{-0.020}	300	115	142.5	194	132.5	160	6°	44.0
280	90	85 ⁰ _{-0.20}	210	M150x4	120 ⁰ _{-0.020}	360	140	180.0	224	170.0	190	6°	75.0
300	90	85 ⁰ _{-0.20}	210	M150x4	120 ⁰ _{-0.020}	360	140	180.0	224	170.0	190	6°	75.0
320	110	90 ⁰ _{-0.25}	230	M160x4	140 ⁰ _{-0.025}	420	185	200.0	246	190.0	200	7°	160.0

SSA 油壓凸緣 "SSA" Series Pipe Flange Kits



SIZE	A	B	C	D	D1	D2	D3	E	F	L	O-ring	Weigh(kg)
15	54	36	22	16	22.2	32	11	11	3.5	Rc 1/2	G25	
20	58	40	22	20	27.7	38	11	12	4.0	Rc 3/4	G30	
25	68	48	28	25	34.5	45	13	14	4.0	Rc 1	G35	
32	76	56	28	31.5	43.2	56	13	16	6.0	Rc 1-1/4	G40	
40	92	65	36	37.5	49.1	63	18	18	7.0	Rc 1-1/2	G50	
50	100	73	36	47.5	61.1	75	18	20	7.0	Rc 2	G60	
65	128	92	45	60	77.1	95	22	22	9.0	Rc 2-1/2	G75	
80	140	103	45	71	90.0	108	24	25	11.0	Rc 3	G85	

F5 油壓凸緣 "F5" Series Pipe Flange Kits



SIZE	C	D	E	F	G	J	N	Q	L	O-ring	Weigh(kg)
F5-04W-A(B)	40	54	17.5	38.1	8.8	26	9	17.8	Rc 3/8	P22	0.5
F5-04 -A(B)	40	54	17.5	38.1	8.8	26	11	22.2	Rc 1/2	P22	0.5
F5-06X-A(B)	48	65	22.2	47.6	11	28	12	27.7	Rc 3/4	G30	0.7
F5-06 -A(B)	48	65	22.2	47.6	11	28	12	27.7	Rc 3/4	G30	0.7
F5-08W-A(B)	55	70	26.2	52.4	11	28	12	27.7	Rc 3/4	G35	0.9
F5-08 -A(B)	55	70	26.2	52.4	11	28	14	34.5	Rc 1	G35	0.9
F5-10 -A(B)	64	80	30.2	58.7	11	29	16	43.2	Rc 1-1/4	G40	1.2
F5-12 -A(B)	72	94	35.7	69.9	13.5	30	18	49.1	Rc 1-1/2	G50	1.5
F5-16W-A(B)	85	102	42.9	77.8	13.5	30	18	49.1	Rc 1-1/2	G60	1.8
F5-16 -A(B)	85	102	42.9	77.8	13.5	30	20	61.1	Rc 2	G65	1.7
F5-20 -A(B)	102	114	50.8	88.9	13.5	38	22	77.1	Rc 2-1/2	G75	2.0
F5-24 -A(B)	116	135	61.9	106.4	17.5	38	25	90.0	Rc 3	G85	2.7

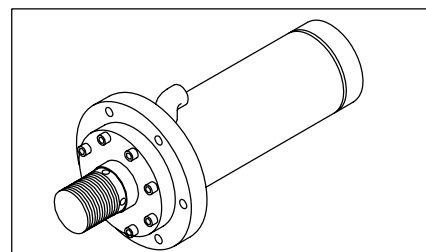
HC7系列油壓缸 HC7 Series Hydraulic Cylinders

橡膠加硫機與壓床機械等多種用途 Which employed in rubber vulcanizing M/C punching presses etc., machinery

- * HC7形油壓缸內徑從 $\phi 125 \sim \phi 350$,適用於橡膠加硫機或壓床,剪床機械等,多種用途的油壓缸
- * 振動,衝擊和瞬間極壓等均安全,因此形油壓缸為特殊機種用途,故其固定式只有一種,且此形油壓缸其最主要功能為推出,所以縮回時要注意壓力不可過高
- * 加工精度,表面處理,油封材料等各零件之設計均朝向特殊用途為基準之高性能油壓缸
- * The HC7 hyd cylinder with bore dia. $\phi 125 \sim \phi 350$ and employed in rubber vulcanizing M/C. press power shears etc., so that there are multi-purpose hyd cylinders.
- * Since, this is a special purpose for which just one mounting style furthermore, with vibration resistant impulse resistant & anti-instantaneous burst press. etc., features especially this series hyd cylinder is aim at extending force so that the retracting force will not larged during retracting.
- * The processing accuracy surface treatment & oil sealer's material etc selecting & manufacturing are emphasised on special applications.

規範 Specifications

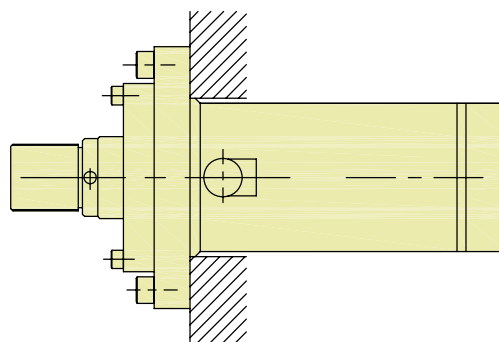
項目 Item	型式 Model	HC7系列 HC7 Series
缸管內徑 mm Cylinder Bore		$\phi 125, \phi 150, \phi 180, \phi 200$ $\phi 220, \phi 250, \phi 280, \phi 300$ $\phi 320, \phi 350$
固定座形式 Mounting		FA
使用壓力 Operating Pressure		160 kgf/cm ²
測試壓力 Testing Pressure		230 kgf/cm ²
最低作動壓力 Min. Operating Pres.		3 kgf/cm ²
適用作動油 Fluid		一般礦物性作動油 Mineral oil
最高使用速度 Max. Operating Speed		500 mm/sec
最低使用速度 Min. Operating Speed		20 mm/sec
使用溫度範圍 Range of Ambient Temperature		-10°C ~ +80°C (油溫及周圍)
推桿前端形式 Rod end type		A TYPE & B TYPE
最大行程 Max. Stroke		參考彎曲強度低值 (DRAW)
行程容許差 Tolerance of Stroke		JIS B 8354 A級



* 活塞桿前端形式 Rod End Type

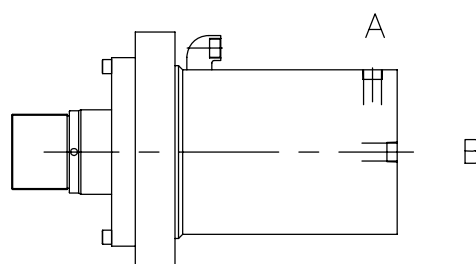
略圖 Configuration	
TYPE A	TYPE B

* 按裝要領 Installations



* 出入口形式 Port Position

- * 後蓋端出入口形式可分,管用斜牙螺紋,油壓用凸緣兩種 位置為A,B
- * 選購時須和目錄位置相同,如不同時長度會改變,請洽詢
- * The port position of cylinder cap can be divided into pipe threading & flange two models and the position as A,B
- * Beware, the port position which must same as fig shown if want another position which must consulted us.



HC7

訂購內容索引 Ordering Index :

180

HC7

FA

125

90

100

B

A

P

E

使用壓力 180 kgf/cm²
Max. Operating Pres.

HC7:系列

HC7:Series Number

固定座形式Mounting

FA, FD

缸管內徑 Cylinder Bore mm

ø125, ø150, ø180, ø200, ø220
ø250, ø280, ø300, ø320, ø350

活塞桿徑 Rod Dia mm

ø80, ø90, ø110, ø125, ø140
ø150, ø170, ø180, ø190, ø200

衝程 Stroke mm

要考慮最大容許衝程
Max. Permissible stroke

特殊附件

E: 另類螺紋形K: 固定螺帽

L: 固定法蘭

Optional Attachment

E: Other threading L: Fixed flange

K: Fixed screw nut

後蓋出入口位置

Cap Port Position

A, B

出入口形式 Port Type

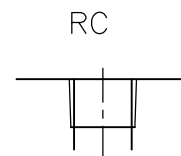
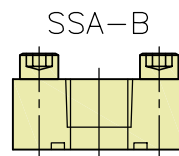
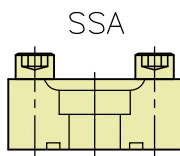
SSA, SSA-B, RC

活塞桿前端形式 Rod End Type

Type-A

Type-B

出入口油壓凸緣 Port Flange Kite

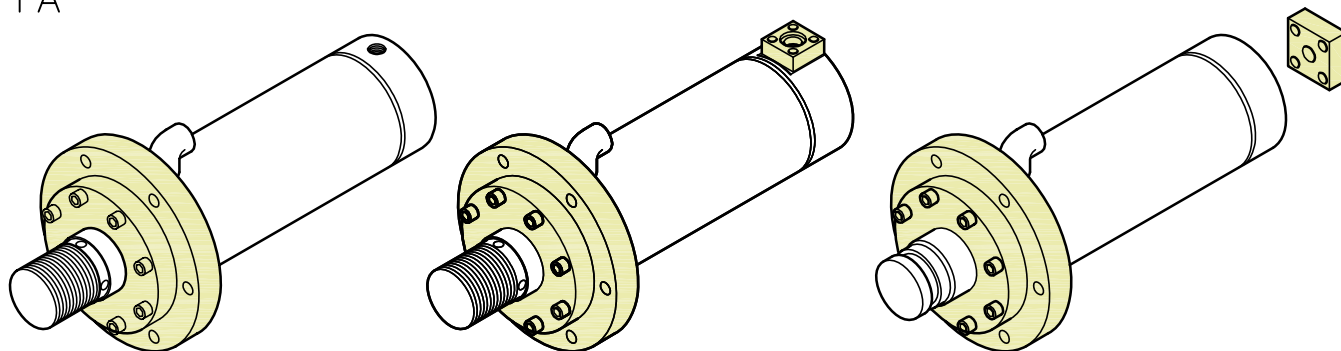


* 技術參數 Technical Data :

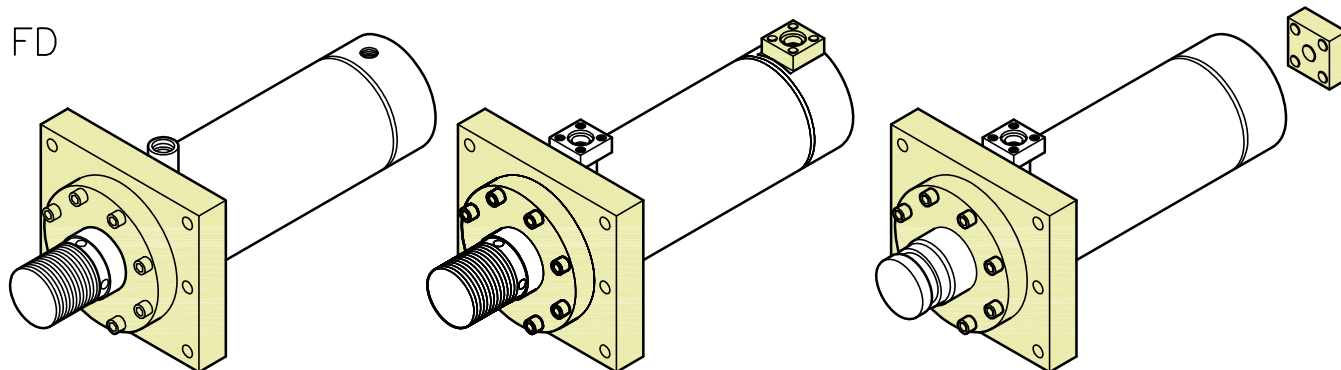
缸管內徑 Cylinder Bore mm	活塞桿徑 Rod Dia. mm	動 作 Action	有效面積 Effective Area cm ²	出 力 Output Power kgf				流量10L/分 之速度 Flow Rate at Speed 10L/min mm/sec	速度10mm/秒 之流量 Speed at Flow Rate 10mm/sec L/min
				30 kgf/cm ²	70 kgf/cm ²	140 kgf/cm ²	210 kgf/cm ²		
125	80	推力 Extend	122.7	3680	8586	17181	25771	14.0	7.4
		拉力 Retract	72.4	2172	5069	10143	15215	23.0	4.3
150	90	推力 Extend	176.6	5299	12364	24740	37110	9.0	10.6
		拉力 Retract	113.0	3391	7913	15834	23750	15.0	6.8
180	110	推力 Extend	254.3	7630	17804	35626	53438	7.0	15.3
		拉力 Retract	159.4	4781	11161	22321	33482	10.0	9.6
200	125	推力 Extend	314.2	9420	21980	43982	65973	5.3	18.8
		拉力 Retract	191.3	5740	13401	26802	40203	8.7	11.5
220	140	推力 Extend	380.0	11398	26596	53219	79828	4.4	22.8
		拉力 Retract	226.1	6782	15834	31667	47501	7.4	13.6
250	150	推力 Extend	490.6	14719	34344	68722	103084	3.4	29.4
		拉力 Retract	314.0	9420	21991	43982	65973	5.3	18.8
280	170	推力 Extend	615.4	18463	43081	86205	129308	2.7	36.9
		拉力 Retract	388.6	11657	27214	54428	81642	4.3	23.3
300	180	推力 Extend	706.5	21195	49455	98960	148440	2.4	42.4
		拉力 Retract	452.2	13565	31667	63335	95000	3.7	27.1
320	190	推力 Extend	804.2	24115	56269	112595	168892	2.1	48.2
		拉力 Retract	520.5	15614	36450	72900	109351	3.2	31.2
350	200	推力 Extend	961.6	28849	67314	134696	202044	1.7	57.7
		拉力 Retract	647.6	19429	45357	90713	136070	2.6	38.9

HC7

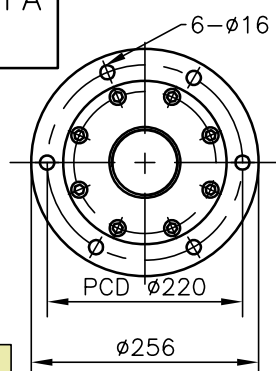
FA



FD

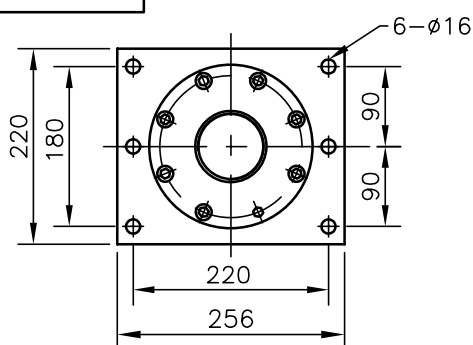


HC7- $\phi 125$ -FA
 $\phi 125/\phi 80$

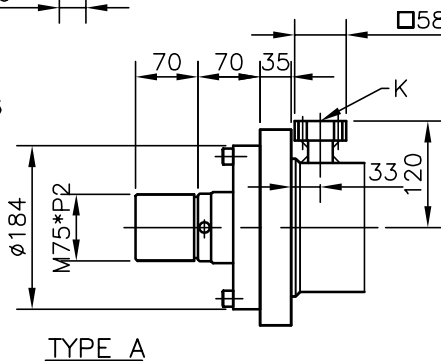
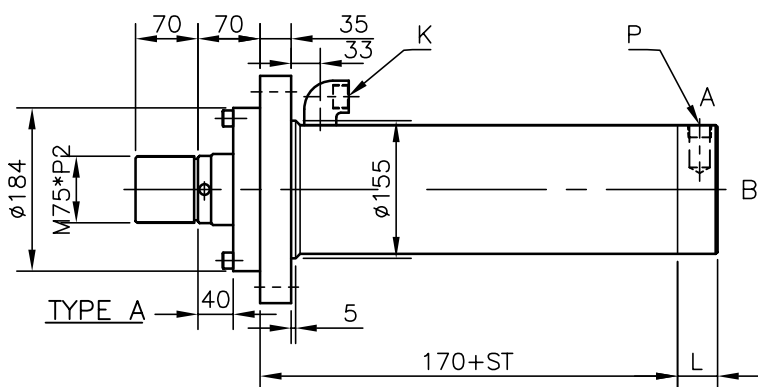
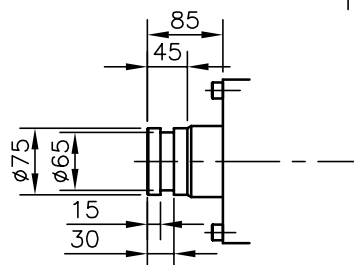


DIMENSION K
PT3/4"-90°
RC-3/4"
G-3/4"
SSA-20

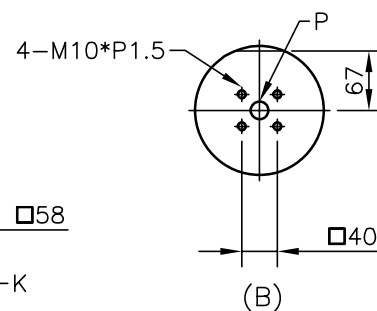
HC7- $\phi 125$ -FD
 $\phi 125/\phi 80$



TYPE B

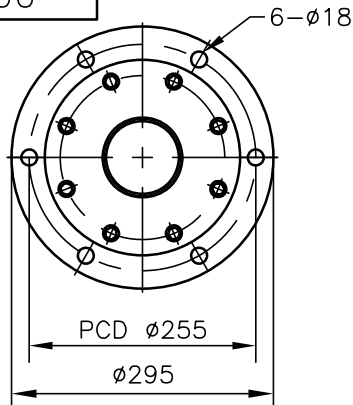


TYPE A



DIMENSION P	L
RC-3/4"	A,B 45
SSA-20	A 73
SSA-20	B 45

HC7- $\phi 150$ -FA
 $\phi 150/\phi 90$



DIMENSION

K

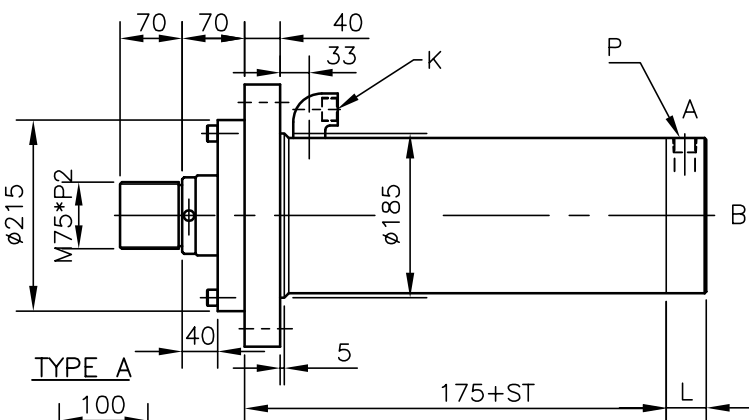
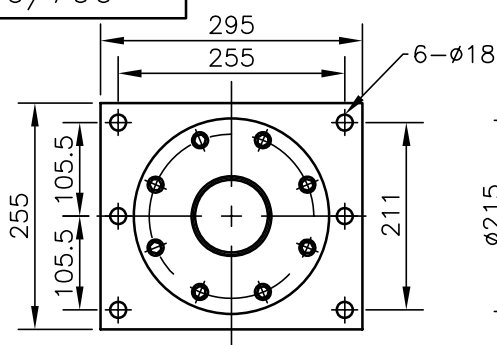
PT3/4"-90°

RC-3/4"

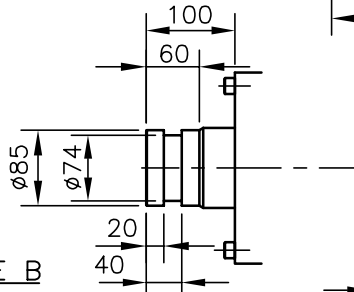
G-3/4"

SSA-20

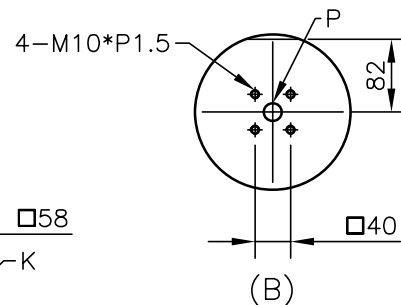
HC7- $\phi 150$ -FD
 $\phi 150/\phi 90$



TYPE A



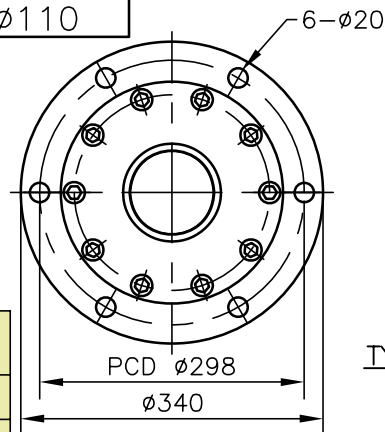
TYPE B



(B)

DIMENSION		
P	A, B	L
RC-3/4"	A, B	45
SSA-20	A	73
SSA-20	B	45

HC7- $\phi 180$ -FA
 $\phi 180/\phi 110$



DIMENSION

K

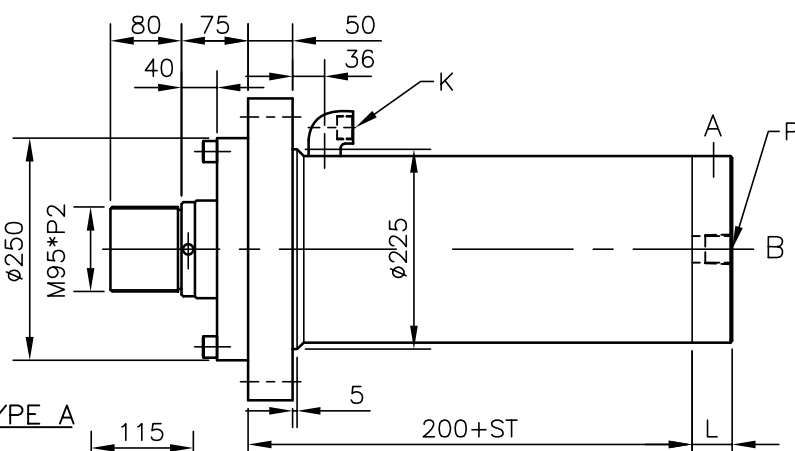
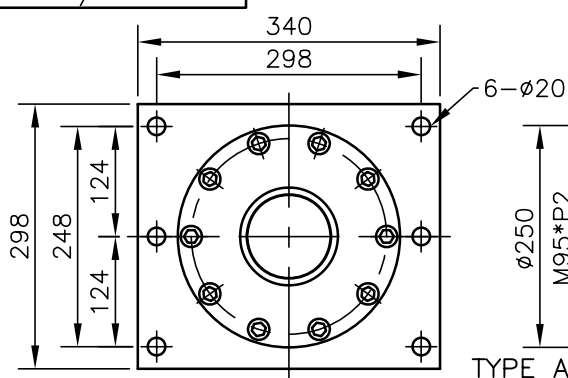
PT3/4"-90°

RC-3/4"

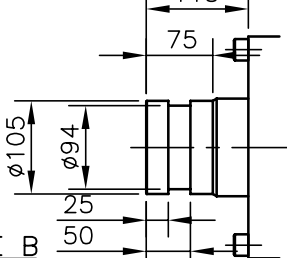
G-3/4"

SSA-20

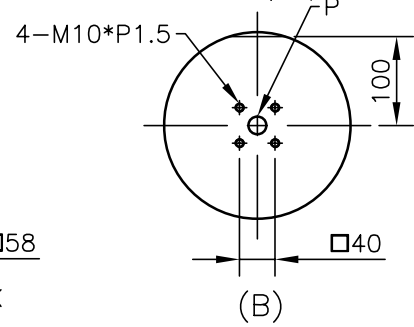
HC7- $\phi 180$ -FD
 $\phi 180/\phi 110$



TYPE A



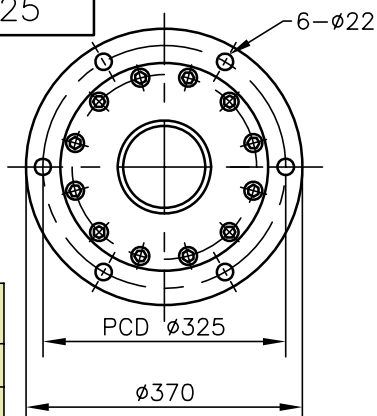
TYPE B



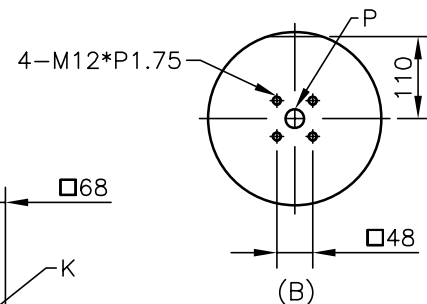
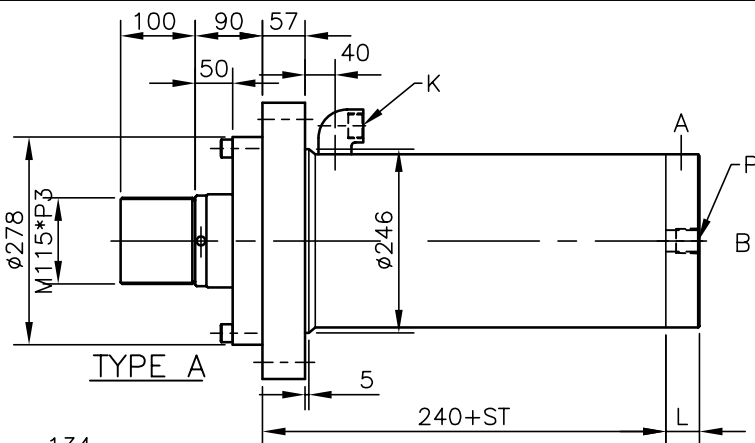
(B)

DIMENSION		
P	A, B	L
RC-3/4"	B	35
RC-3/4"	A	45
SSA-20	B	35
SSA-20	A	75

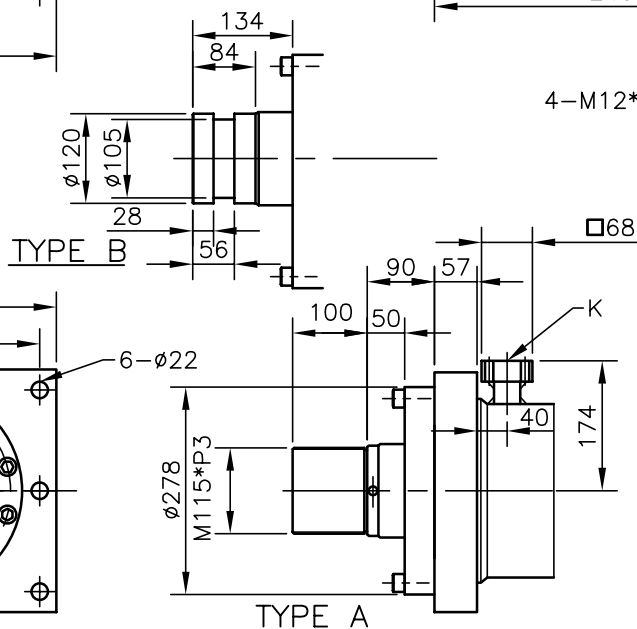
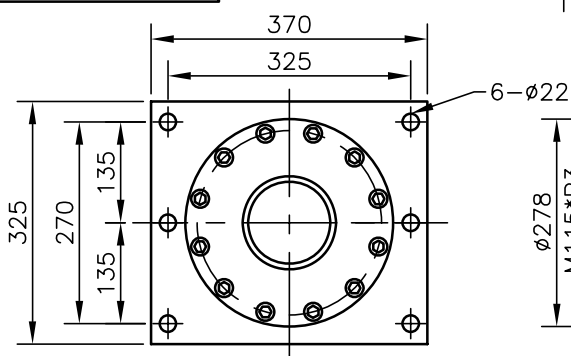
HC7- $\phi 200$ -FA
 $\phi 200/\phi 125$



DIMENSION K
RC 1"-90°
RC 1"
G- 1"
SSA-25

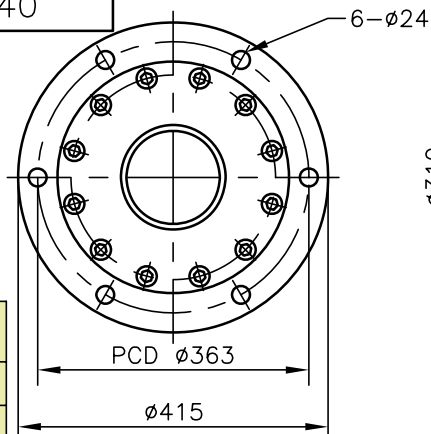


HC7- $\phi 200$ -FD
 $\phi 200/\phi 125$

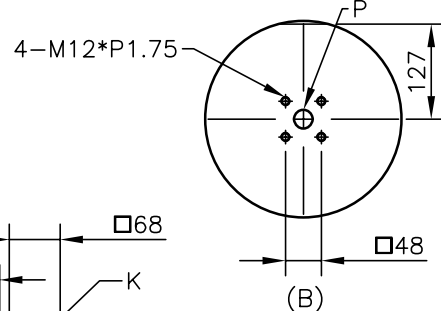
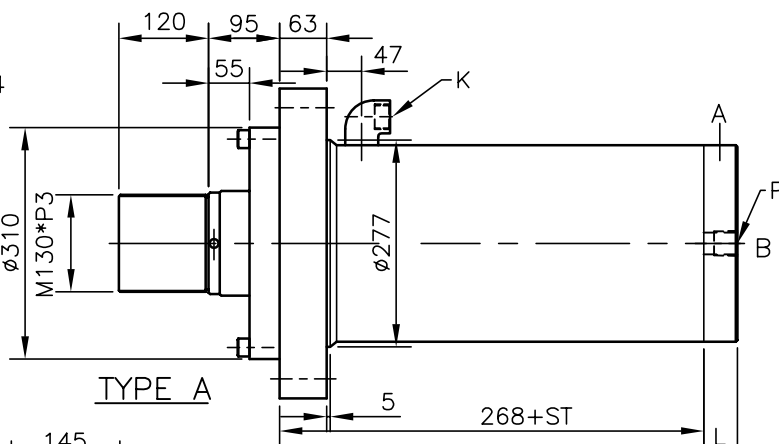


DIMENSION P		
		L
RC- 1"	B	45
RC- 1"	A	50
SSA-25	B	45
SSA-25	A	85

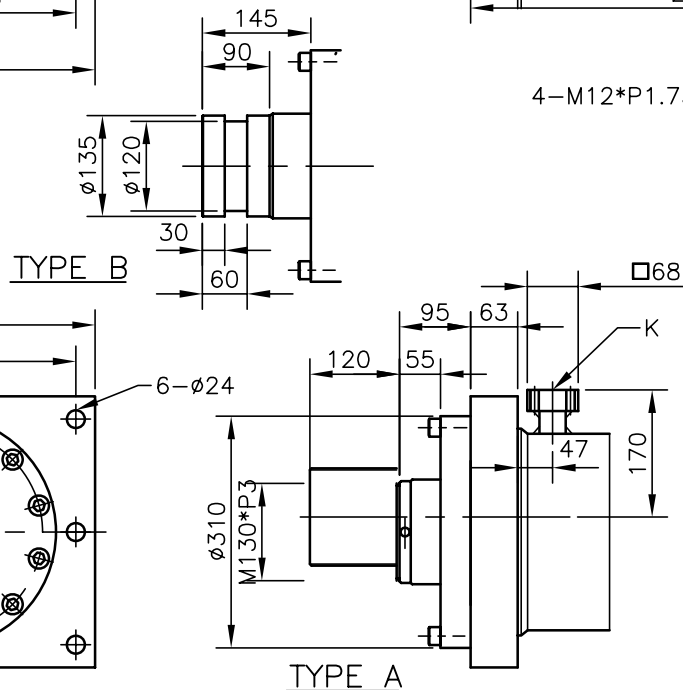
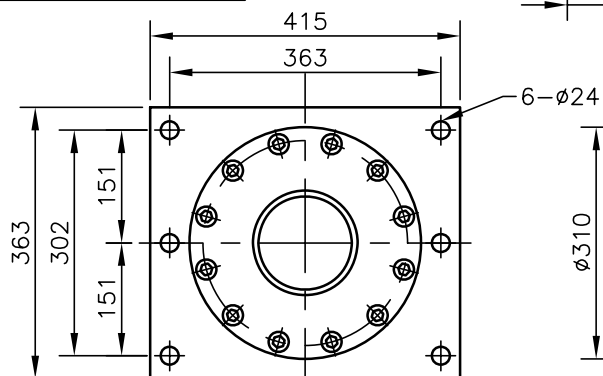
HC7- $\phi 220$ -FA
 $\phi 200/\phi 140$



DIMENSION K
RC 1"-90°
RC 1"
G- 1"
SSA-25



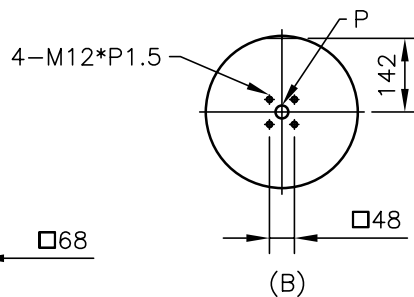
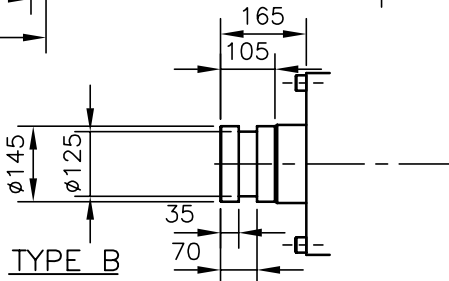
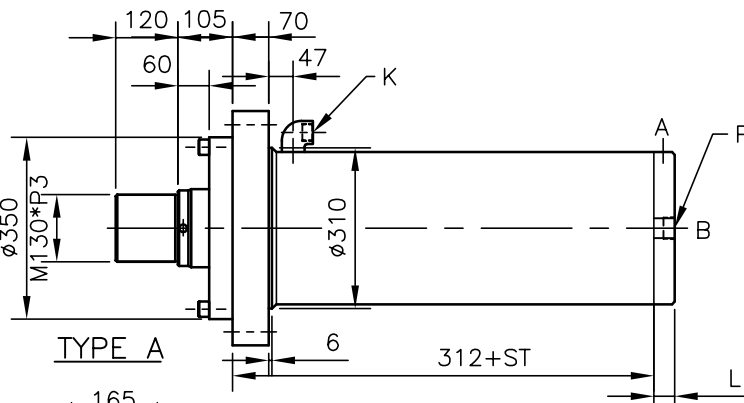
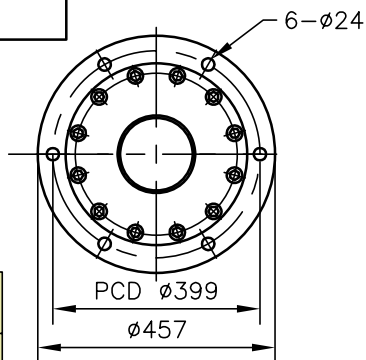
HC7- $\phi 220$ -FD
 $\phi 200/\phi 140$



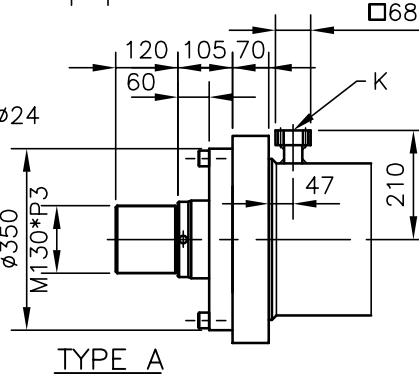
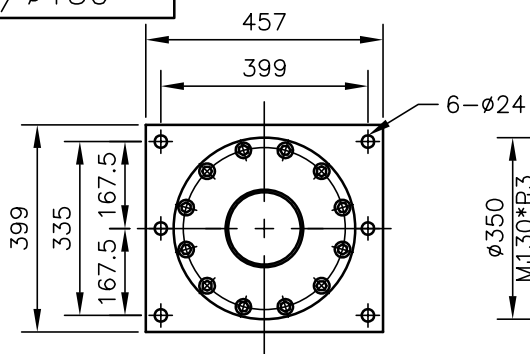
DIMENSION P		
		L
RC- 1"	B	45
RC- 1"	A	50
SSA-25	B	45
SSA-25	A	85

HC7- $\phi 250$ -FA
 $\phi 250/\phi 150$

DIMENSION K
RC-1"-90°
RC- 1"
G- 1"
SSA-25



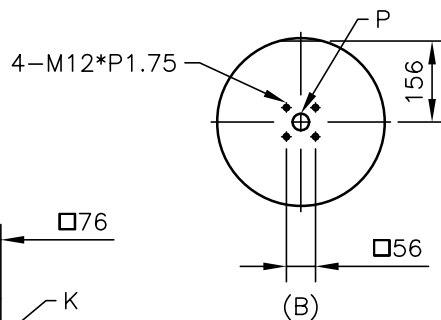
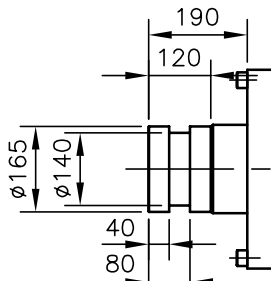
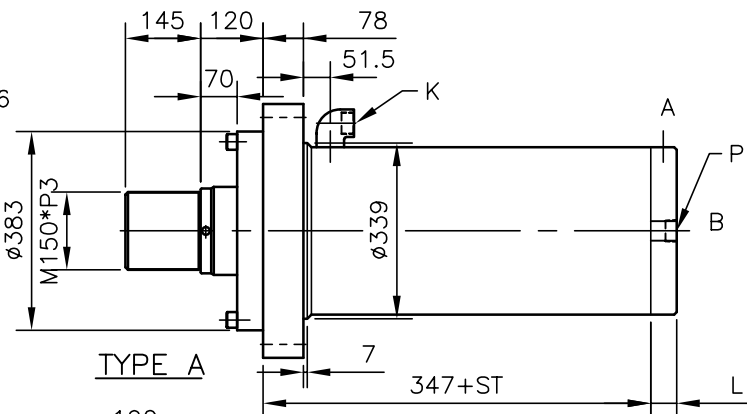
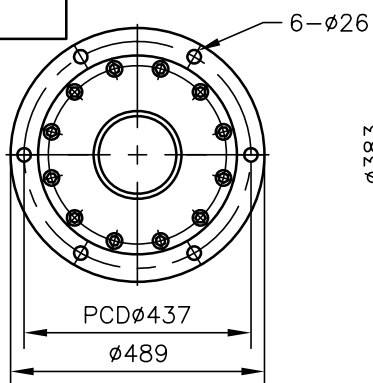
HC7- $\phi 250$ -FD
 $\phi 250/\phi 150$



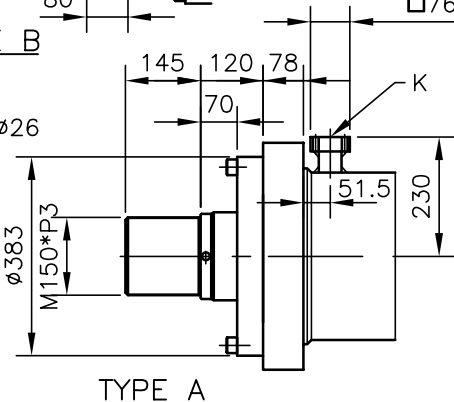
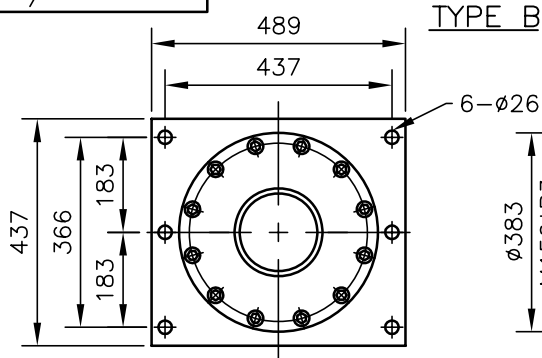
DIMENSION P		L
RC-1"	B	45
RC-1"	A	50
SSA-25	B	45
SSA-25	A	85

HC7- $\phi 280$ -FA
 $\phi 280/\phi 170$

DIMENSION K
RC1-1/4"-90°
RC1-1/4"
G1-1/4"
SSA-32

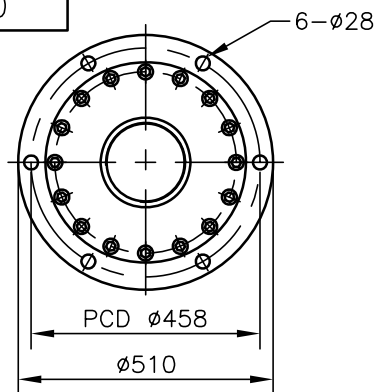


HC7- $\phi 280$ -FD
 $\phi 280/\phi 170$

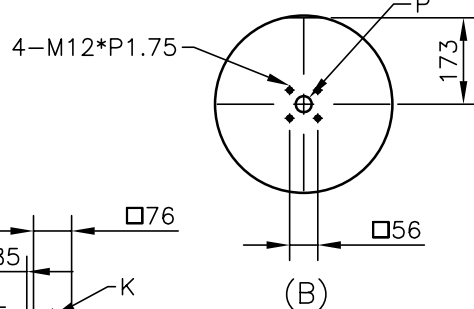
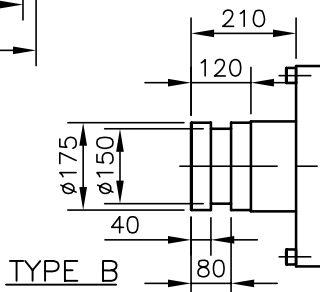
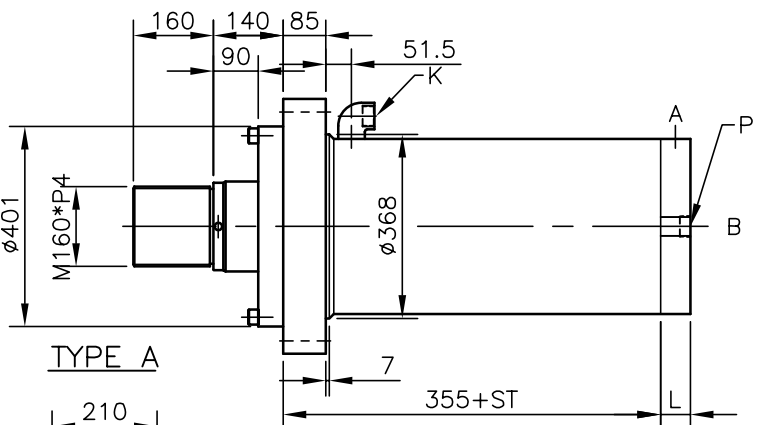


DIMENSION P		L
RC1-1/4"	B	50
RC1-1/4"	A	60
SSA-32	B	50
SSA-32	A	95

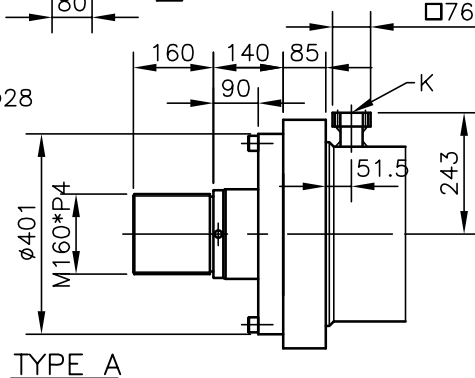
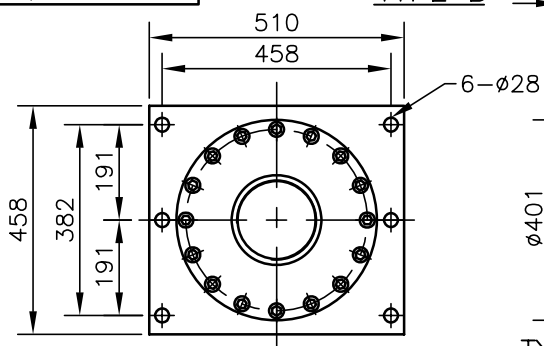
HC7- $\phi 300$ -FA
 $\phi 300/\phi 180$



DIMENSION K
RC1-1/4"-90°
RC1-1/4"
G1-1/4"
SSA-32

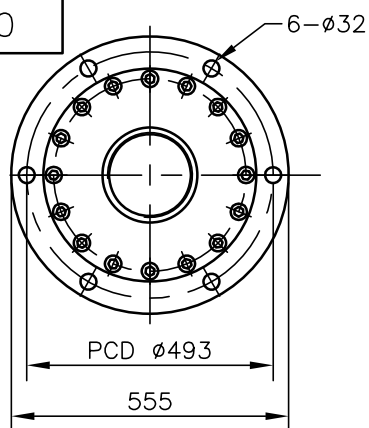


HC7- $\phi 300$ -FD
 $\phi 300/\phi 180$

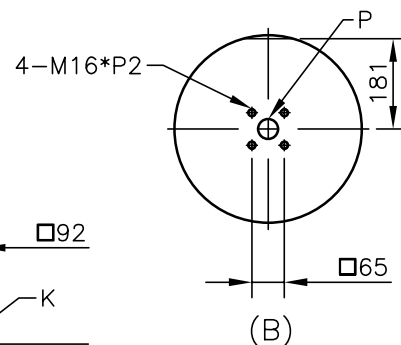
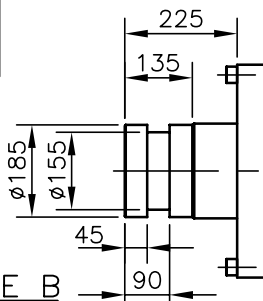
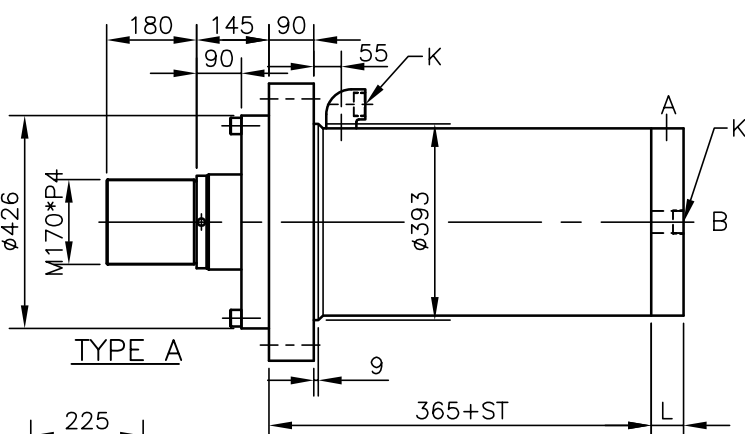


DIMENSION P		L
RC1-1/4"	B	60
RC1-1/4"	A	60
SSA-32	B	60
SSA-32	A	95

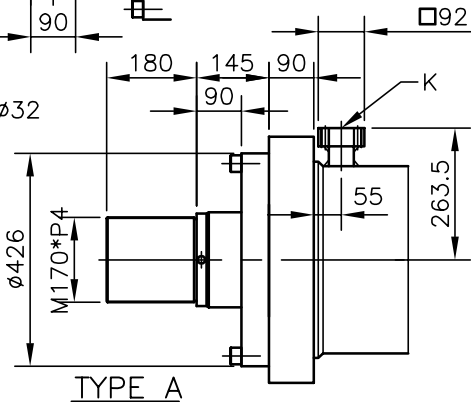
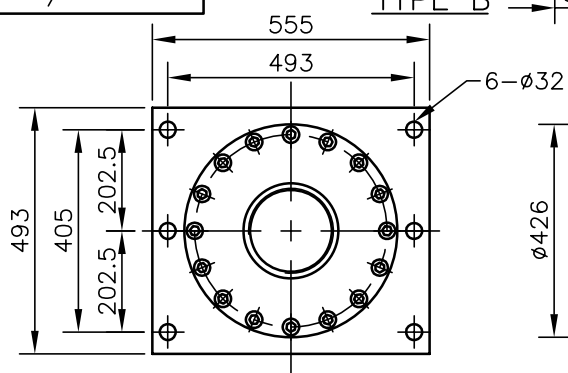
HC7- $\phi 320$ -FA
 $\phi 320/\phi 190$



DIMENSION K
RC1-1/2"-90°
RC1-1/2"
G1-1/2"
SSA-40

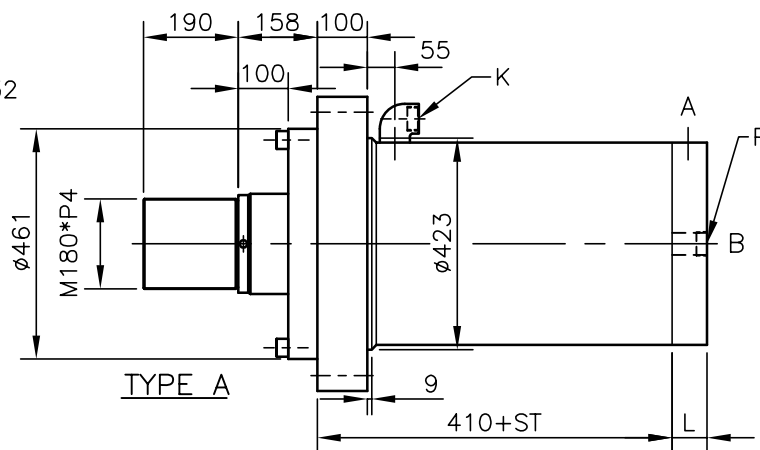
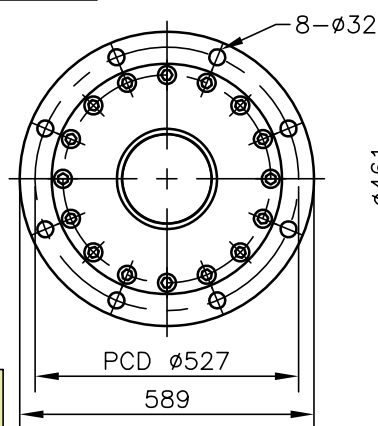


HC7- $\phi 320$ -FD
 $\phi 320/\phi 190$



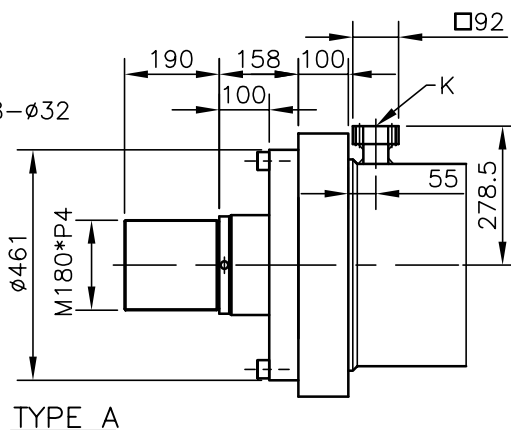
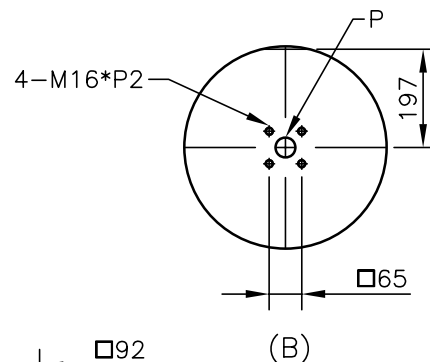
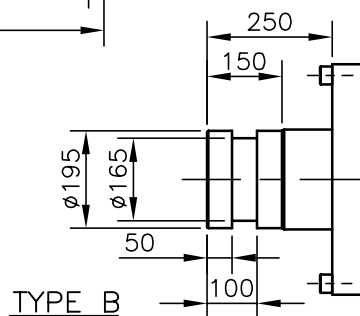
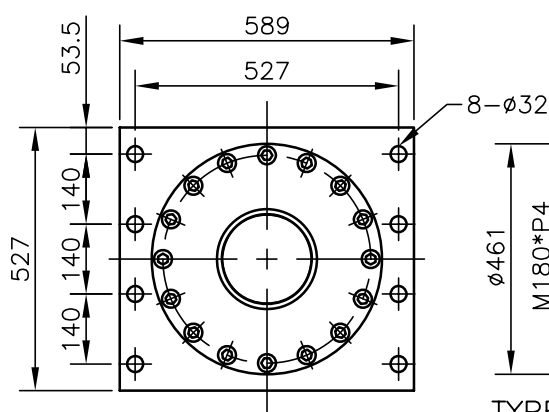
DIMENSION P		L
RC1-1/2"	B	65
RC1-1/2"	A	75
SSA-40	B	65
SSA-40	A	118

HC7- $\phi 350$ -FA
 $\phi 350/\phi 200$



DIMENSION K
RC1-1/2"-90°
RC1-1/2"
G1-1/2"
SSA-40

HC7- $\phi 350$ -FD
 $\phi 350/\phi 200$



DIMENSION P		L
RC1-1/2"	B	70
RC1-1/2"	A	75
SSA-40	B	70
SSA-40	A	118

HC7, HC8

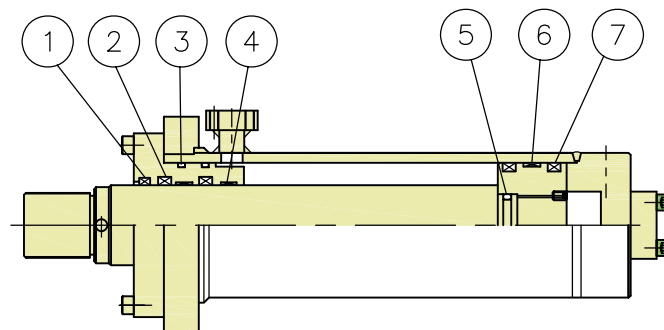
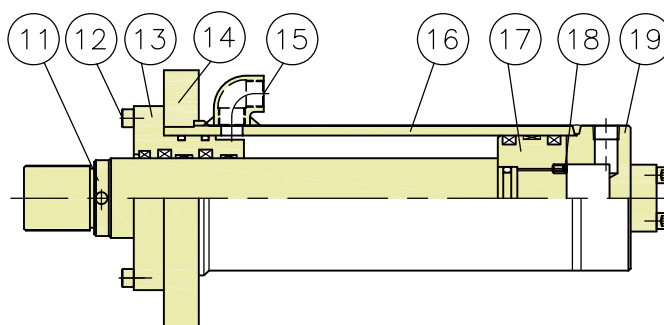
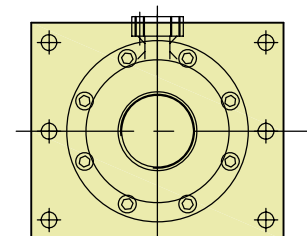
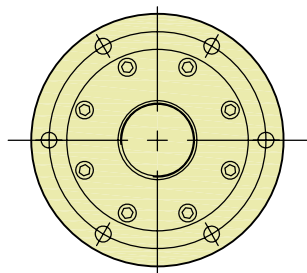
油壓缸大概重量計算

Estimated weight of hyd.

EX. : $\phi 125$, ST=200mm , HC7

$$\begin{aligned} \text{weight} &= W1 + (W2 * ST) \\ &= 43.5 + (7.2 * 2) \\ &= 69.3 \text{ kg} \end{aligned}$$

HC7 HC8	W1 (kg)			W2 (kg/100mm)
	HC7	HC8-FA	HC8-FC	
$\phi 125$	43.5	43.3	52.7	7.2
$\phi 150$	65.5	65	77.5	10
$\phi 180$	103.7	98.8	117.5	14.7
$\phi 200$	144.8	131.6	151	18.2
$\phi 220$	202.5	180	207.5	24.9
$\phi 250$	264.7	233.6	267.8	28.3
$\phi 280$	360	319	355.7	33.8
$\phi 300$	434.9	381	425.9	40
$\phi 320$	537.5	478	526.2	45.8
$\phi 350$	658	573	620.8	50.3



零件名稱及材質表 Parts Description & Material List:

NO	名 稱 Description.	材 質 Material.	Q'TY	NO	名 稱 Description.	材 質 Material.	Q'TY
11	活塞桿 Piston Rod	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1	16	缸管 Cylinder Tube	機械構造用碳鋼鋼管 Carbon Steel Pipe for Mechanical Structure	1
12	前蓋 Head	一般構造用軋鋼 Rolled Steel for General Structure	1	17	活塞 Piston	一般構造用軋鋼 Rolled Steel for General Structure	1
13	六角承窩螺絲 Scket Head Cap Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	8	18	防鬆螺絲 Set Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1
14	法蘭 Flange	一般構造用軋鋼 Rolled Steel for General Structure	1	19	後蓋 Cylinder Cap	一般構造用軋鋼 Rolled Steel for General Structure	1
15	活塞 Piston	一般構造用軋鋼 Rolled Steel for General Structure	1				

油封規格表 Specifications of Oil Seal:

NO	1	2	3	4	5	6	7
名 稱	防塵油封 Dust Seal	軸心油封 Rod Seal	O型環 O Ring	耐磨片 Wear Ring	O型環 O Ring	耐磨片 Wear Ring	活塞油封 Piston Seal
材質	PU	PU	NBR	PTFE	NBR	PTFE	PU
數 量	1	2	1	2	1	1	2
內徑	∅, ∅.w mm	∅, ∅.w mm					∅, ∅.w mm
∅125	80-90-8	80-90-6	G-120	80-2.5	G-55	125-2.5	125-112-13
∅150	90-100-8	90-105-9	G-145	90-2.5	G-65	150-2.5	150-136-13
∅180	110-120-8	110-125-9	G-170	110-2.5	G-95	180-2.5	180-165-13
∅200	125-138-9.5	125-140-9	G-190	125-2.5	G-105	200-2.5	200-180-16
∅220	140-153-9.5	140-155-9	G-210	140-2.5	P-115	220-2.5	220-200-16
∅250	150-163-9.5	150-165-9	G-240	150-2.5	P-125	250-2.5	250-230-16
∅280	170-185-14	170-185-9	G-270	170-2.5	P-145	280-2.5	280-255-20
∅300	180-194-9.5	180-200-12	G-290	180-2.5	G-155	300-2.5	300-270-23
∅320	190-203-9.5	190-210-12	P-300	190-2.5	G-165	320-2.5	320-290-24
∅350	200-214-9.5	200-220-12	P-335	200-2.5	G-175	350-2.5	350-320-24

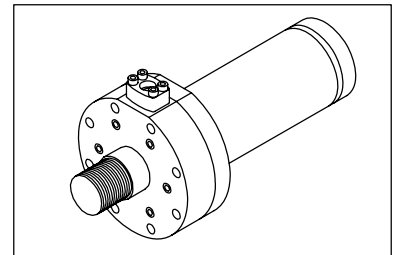
HC8系列油壓缸 HC8 Series Hydraulic Cylinders

橡膠加硫機與壓床機械等多種用途 Which employed in rubber vulcanizing M/C punching presses etc machinery

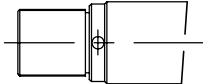
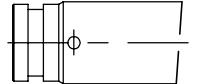
- *氣缸內徑從 $\phi 150 \sim \phi 350$ 止適用於橡膠加硫機或壓床機械等，特殊用途的油壓缸為HC7形改良形
- *振動，衝擊和瞬間極壓等均安全，因此形油壓缸適用於橡膠加硫機或壓床機械又為HC7形改良形，故其固定形式有兩種，FA形推出及縮回時均適用之形式
- *加工精度，表面處理，油封材料等各零件之設計均朝向特殊用途為基準之高性能油壓缸
- * The HC8 hyd. cylinder with bore dia $\phi 150 \sim \phi 350$ and employed in rubber vulcanizing M/C press, power shears etc., special field especially, those are also the reform type of HC7 series.
- * Since this series are specially employed in rubber vulcanizing M/C and press. and also the reform type of HC7 series furthermore with vibration resistant, impulse resistant & anti-instantaneous burst pressure also, there are two mounting style and extending & extracting are all suited for FA.
- * The processing accuracy surface treatment & oil sealer's material etc., selecting & manufacturing are all emphasised on special applications.

規範 Specifications

項目 Item	型式 Model	HC8系列 HC8 Series
缸管內徑 mm Cylinder Bore		$\phi 125, \phi 150, \phi 180, \phi 200$ $\phi 220, \phi 250, \phi 280, \phi 300$ $\phi 320, \phi 350$
固定座形式 Mounting		FA
使用壓力 Operating Pressure		160 kgf/cm ²
測試壓力 Testing Pressure		230 kgf/cm ²
最低作動壓力 Min. Operating Pres.		3 kgf/cm ²
適用作動油 Fluid		一般礦物性作動油 Mineral oil
最高使用速度 Max. Operating Speed		500 mm/sec
最低使用速度 Min. Operating Speed		20 mm/sec
使用溫度範圍 Range of Ambient Temperautre		$-10^{\circ}\text{C} \sim +80^{\circ}\text{C}$
推桿前端形式 Rod End Type		A TYPE & B TYPE
最大行程 Max. Stroke		參考彎曲強度低值 (DRAW)
行程容許差 Tolerance of Stroke		JIS B 8354 A級



* 活塞桿前端形式 : Rod End Type

略圖 Configuration	
TYPE A	TYPE B
	

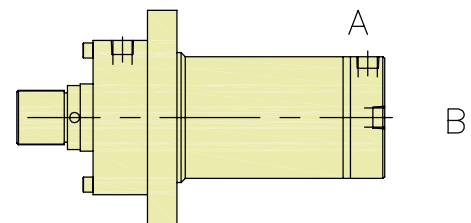
* 出入口形式 Port Position :

* 後蓋端出入口形式可分，管用斜牙螺紋，油壓用凸緣兩種 位置為A,B

* 選構時須和目錄位置相同，如不同時長度會改變，請洽詢

* The port position of cylinder cap can be divided into pipe threading & flange two models and the position as A,B

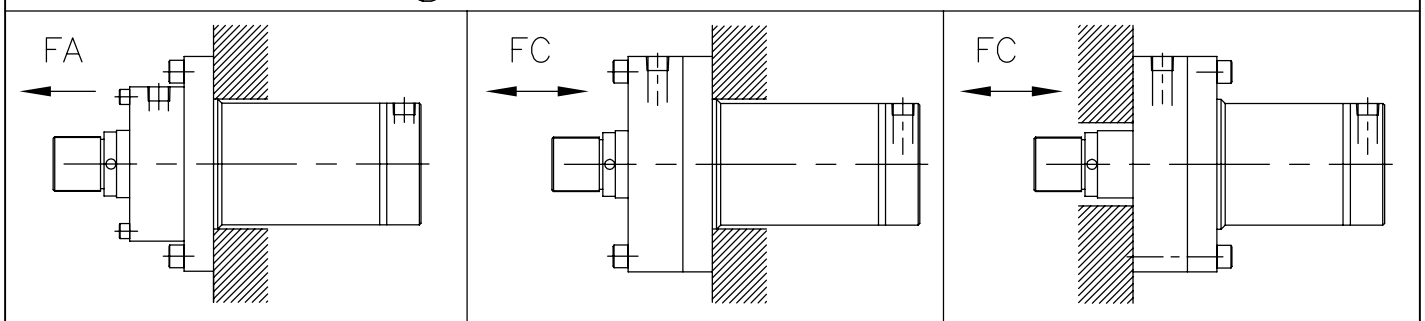
* Beware the port position which must same as fig shown if want another position which must consulted us.



* 作動油與油封材料之配合參照HC7表

The fluid & oil sealers material which must refered HC7 table

* 固定方式 Mounting :



HC8

訂購內容索引 Ordering Index :

180 HC7 FA 125 90 100 B A P E

使用壓力 180 kgf/cm²
Max. Operating Pres.

HC8:系列

HC8:Series Number

固定座形式Mounting

FA, FC

缸管內徑 Cylinder Bore mm

ø125, ø150, ø180, ø200, ø220
ø250, ø280, ø300, ø320, ø350

活塞桿徑 Rod Dia mm

ø80, ø90, ø110, ø125, ø140
ø150, ø170, ø180, ø190, ø200

衝程 Stroke mm

要考慮最大容許衝程
Max. Permissible stroke

特殊附件

E: 另類螺紋形K: 固定螺帽

L: 固定法蘭

Optional Attachment

E: Other threading L: Fixed flange

K: Fixed screw nut

後蓋出入口位置

Cap Port Position

A, B

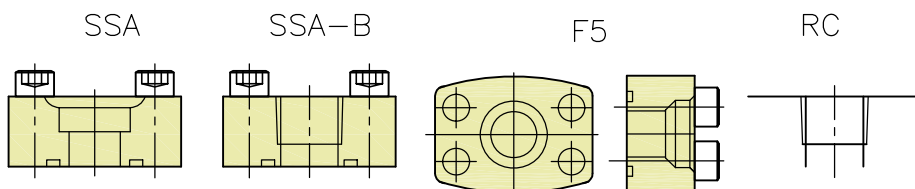
出入口形式 Port Type

SSA, SSA-B, RC F5

活塞桿前端形式 Rod End Type

Type-A Type-B

出入口油壓凸緣
Port Flange Kite

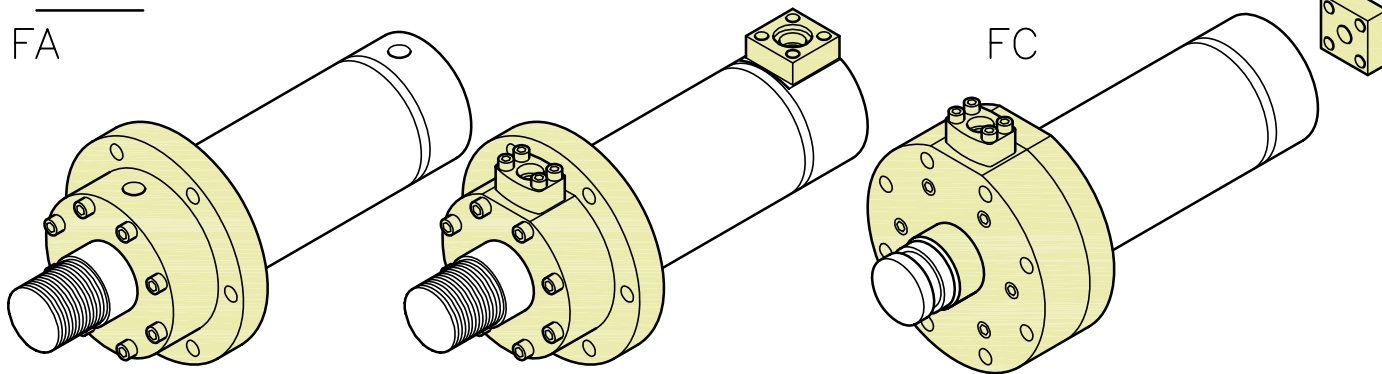


* 技術參數 Technical Data :

缸管內徑 Cylinder Bore mm	活塞桿徑 Rod Dia. mm	動 作 Action	有效面積 Effective Area cm ²	出 力 Output Power kgf				流量10L/分 之速度 Flow Rate at Speed 10L/min mm/sec	速度10mm/秒 之流量 Speed at Flow Rate 10mm/sec L/min
				30 kgf/cm ²	70 kgf/cm ²	140 kgf/cm ²	210 kgf/cm ²		
125	80	推力 Extend	122.7	3680	8586	17181	25771	14.0	7.4
		拉力 Retract	72.4	2172	5069	10143	15215	23.0	4.3
150	90	推力 Extend	176.6	5299	12364	24740	37110	9.0	10.6
		拉力 Retract	113.0	3391	7913	15834	23750	15.0	6.8
180	110	推力 Extend	254.3	7630	17804	35626	53438	7.0	15.3
		拉力 Retract	159.4	4781	11161	22321	33482	10.0	9.6
200	125	推力 Extend	314.2	9420	21980	43982	65973	5.3	18.8
		拉力 Retract	191.3	5740	13401	26802	40203	8.7	11.5
220	140	推力 Extend	380.0	11398	26596	53219	79828	4.4	22.8
		拉力 Retract	226.1	6782	15834	31667	47501	7.4	13.6
250	150	推力 Extend	490.6	14719	34344	68722	103084	3.4	29.4
		拉力 Retract	314.0	9420	21991	43982	65973	5.3	18.8
280	170	推力 Extend	615.4	18463	43081	86205	129308	2.7	36.9
		拉力 Retract	388.6	11657	27214	54428	81642	4.3	23.3
300	180	推力 Extend	706.5	21195	49455	98960	148440	2.4	42.4
		拉力 Retract	452.2	13565	31667	63335	95000	3.7	27.1
320	190	推力 Extend	804.2	24115	56269	112595	168892	2.1	48.2
		拉力 Retract	520.5	15614	36450	72900	109351	3.2	31.2
350	200	推力 Extend	961.6	28849	67314	134696	202044	1.7	57.7
		拉力 Retract	647.6	19429	45357	90713	136070	2.6	38.9

HC8

FA



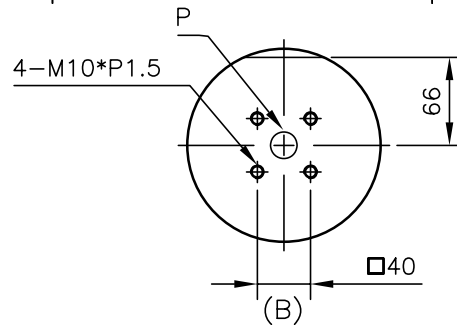
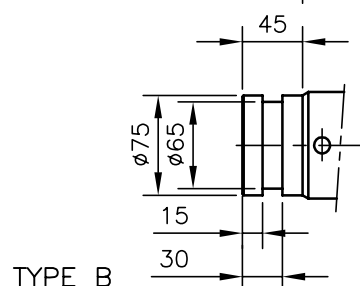
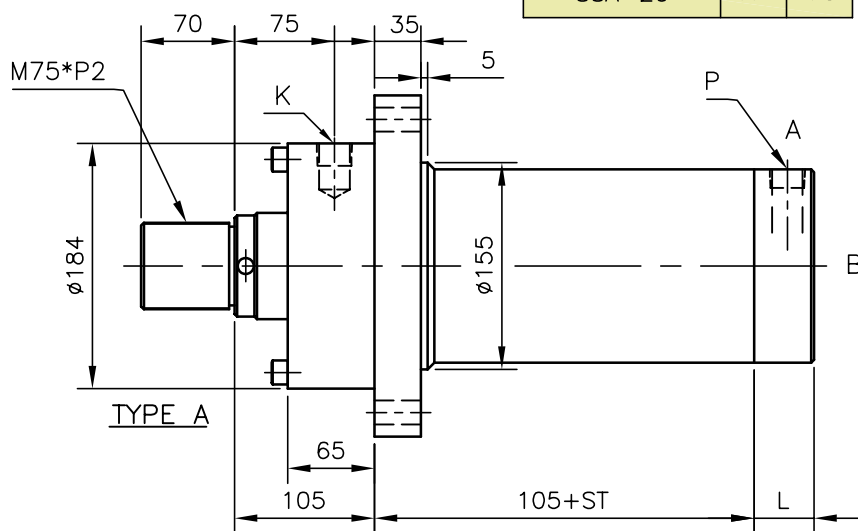
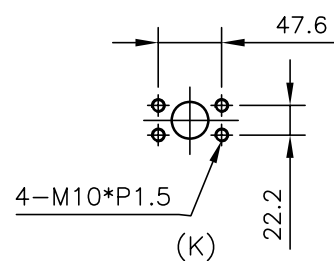
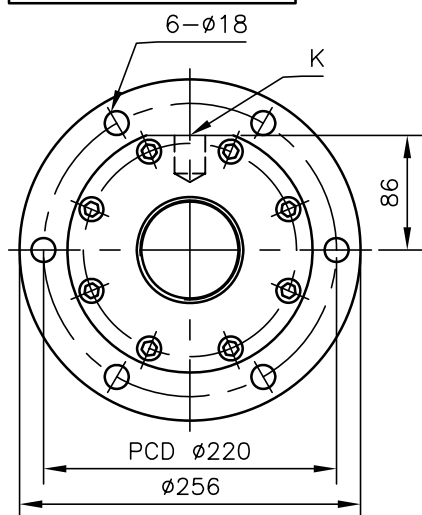
FC

CYLINDER INSIDE DIMENSION	PISTON-ROD OUTSIDE DIMENSION
$\phi 125$	$\phi 80$

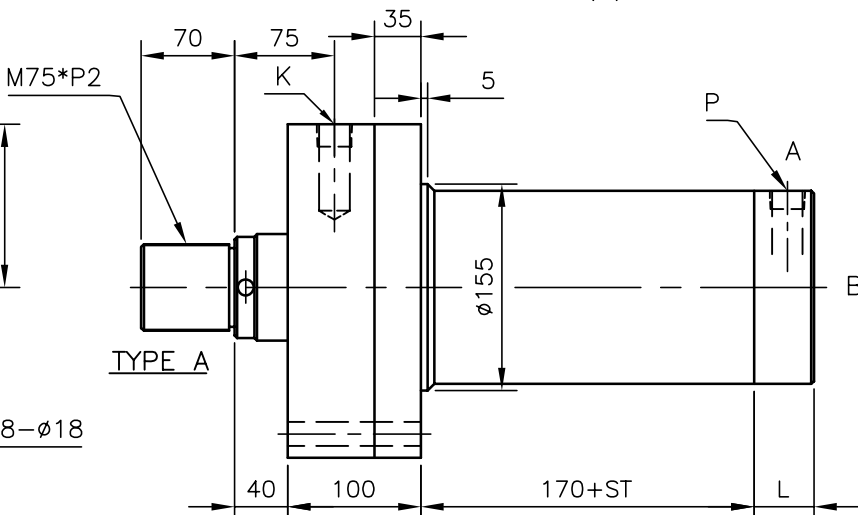
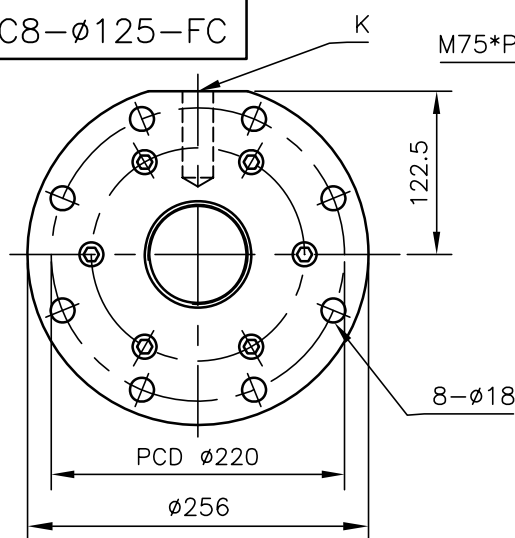
DIMENSION K
RC 3/4"
G 3/4"
F5-06-A

DIMENSION		
P	B	L
RC 3/4"	B	45
RC 3/4"	A	45
SSA-20	B	45
SSA-20	A	75

HC8- $\phi 125$ -FA



HC8- $\phi 125$ -FC



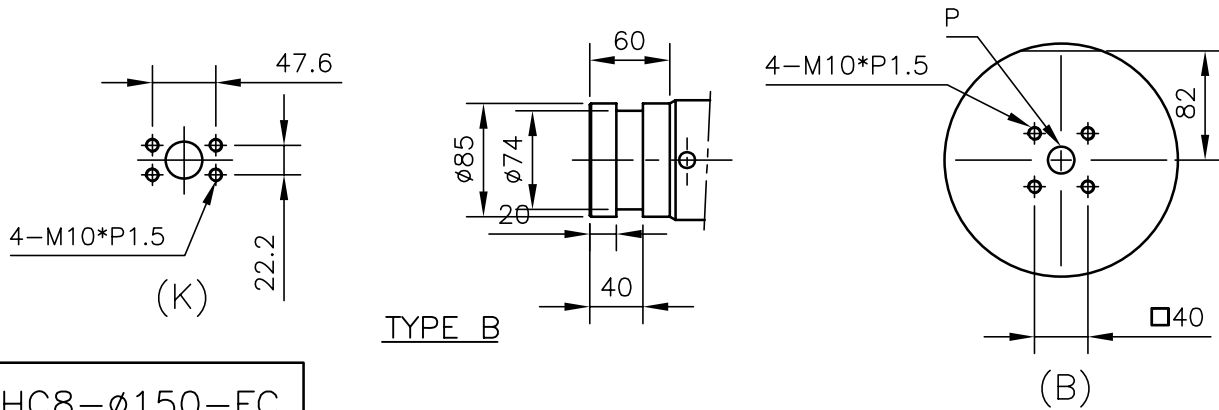
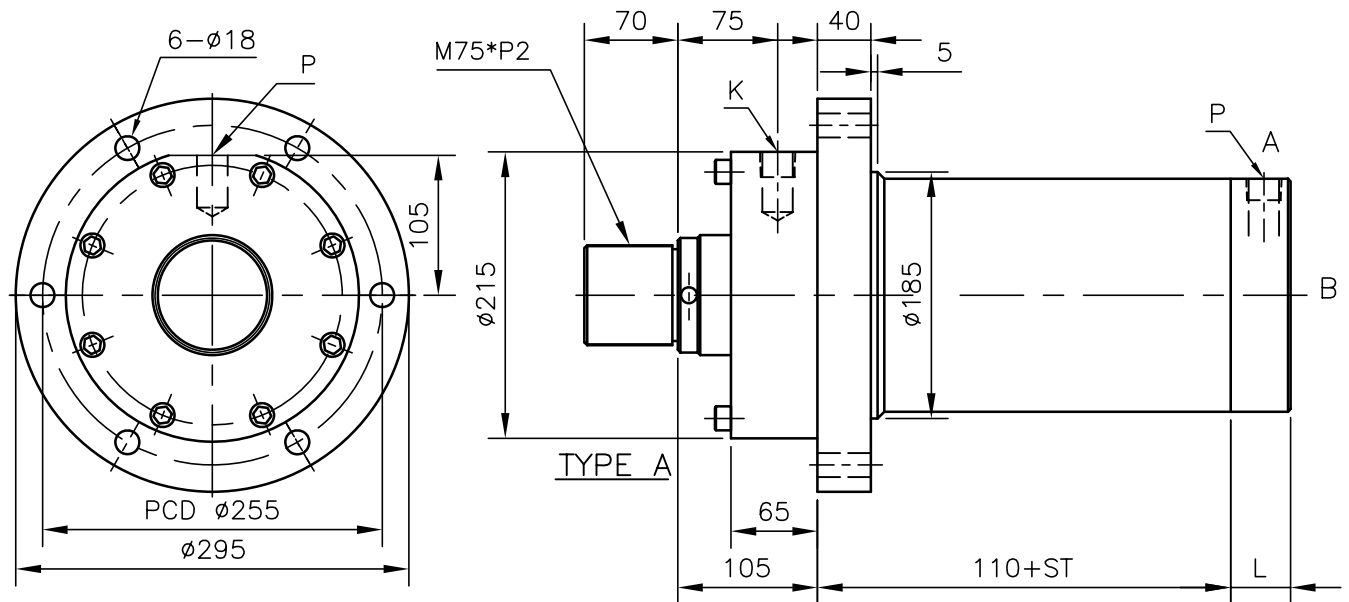
HC8

CYLINDER INSIDE DIMENSION	PISTON-ROD OUTSIDE DIMENSION
$\phi 150$	$\phi 90$

DIMENSION K
RC3/4"
G3/4"
F5-06-A

DIMENSION P		L
RC 3/4"	B	45
RC 3/4"	A	45
SSA-20	B	45
SSA-20	A	75

HC8- $\phi 150$ -FA



HC8- $\phi 150$ -FC

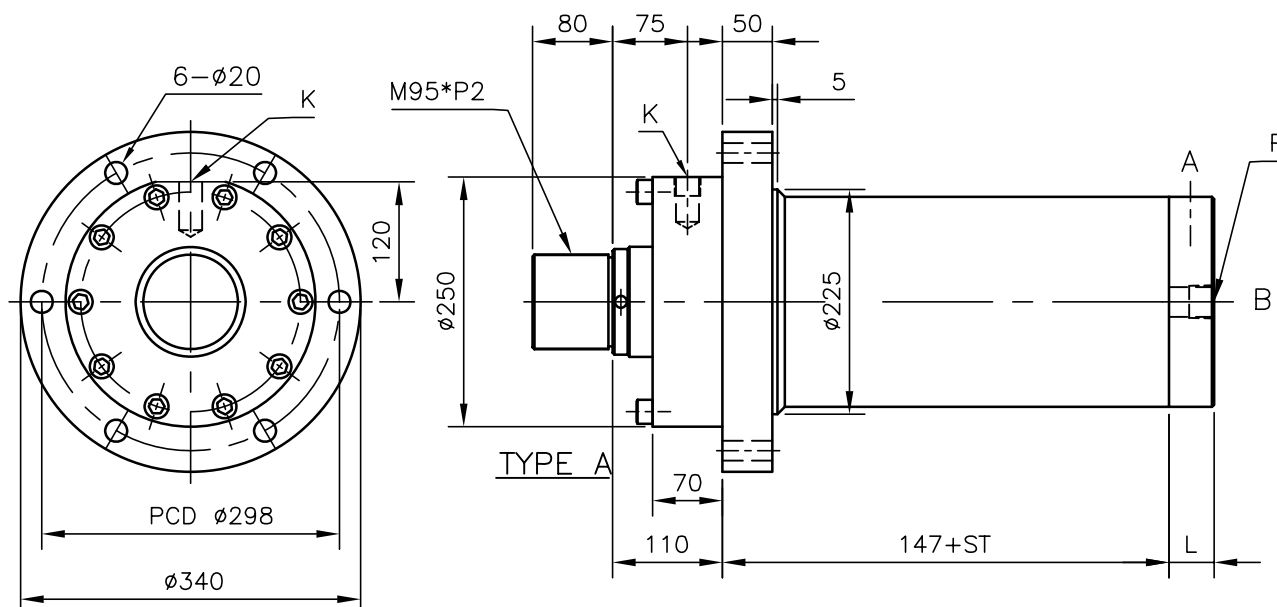
HC8

CYLINDER INSIDE DIMENSION	PISTON-ROD OUTSIDE DIMENSION
ø180	ø110

DIMENSION K
RC1"
G1"
F5-08-A

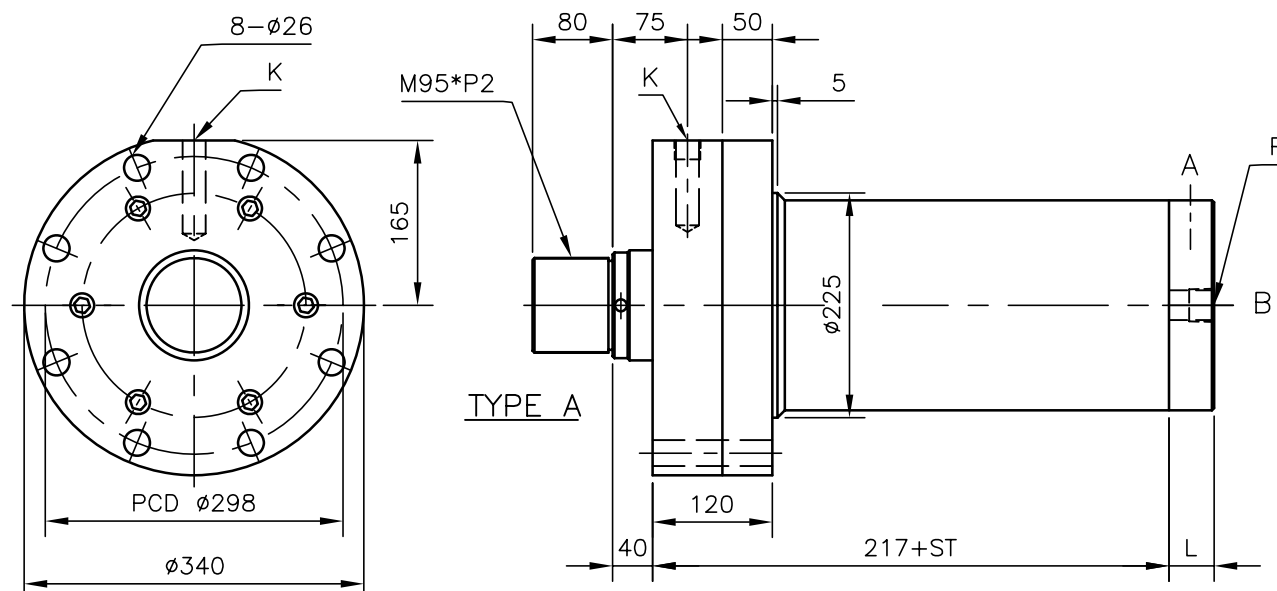
DIMENSION		
P		L
RC1"	B	45
RC1"	A	50
SSA-25	B	45
SSA-25	A	85

HC8-ø180-FA



TYPE B

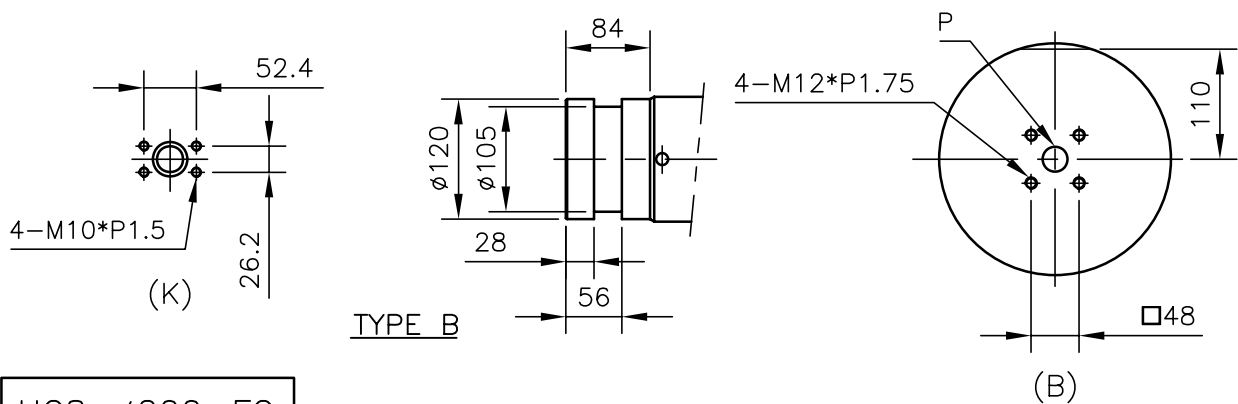
HC8-ø180-FC



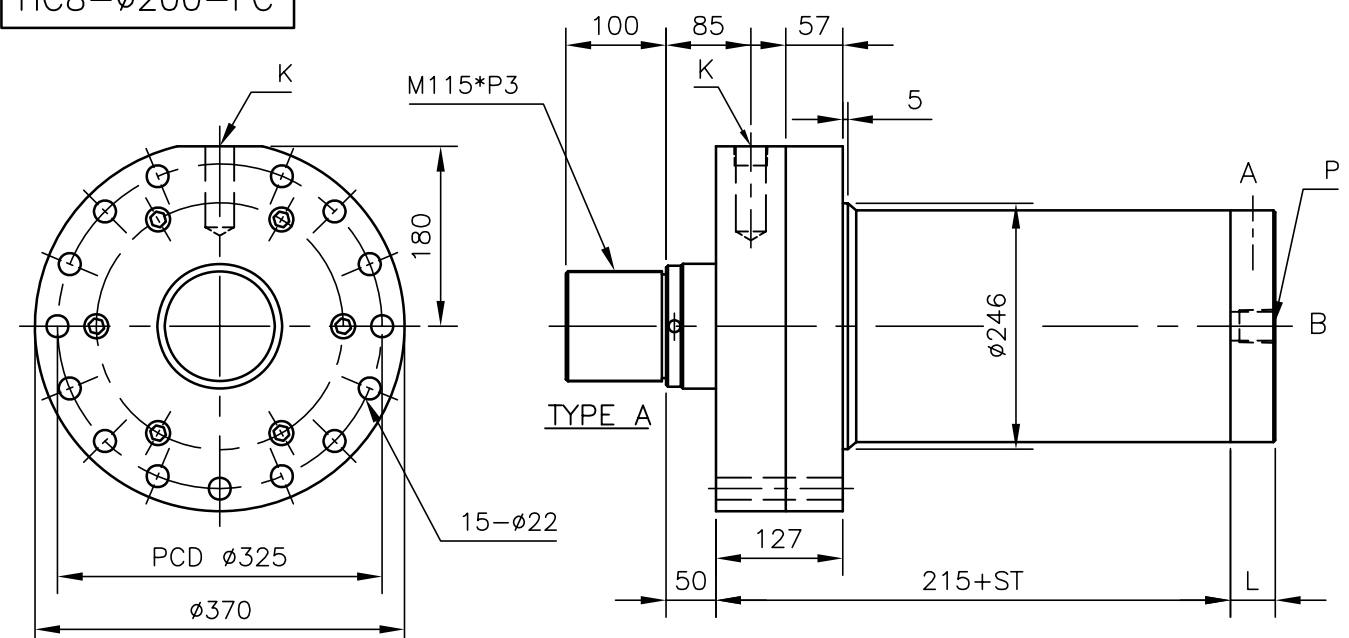
HC8- ϕ 200-FA

DIMENSION K
RC1"
G1"
F5-08-A

DIMENSION		
P		L
RC1"	B	45
RC1"	A	50
SSA-25	B	45
SSA-25	A	85



HC8- ϕ 200-FC



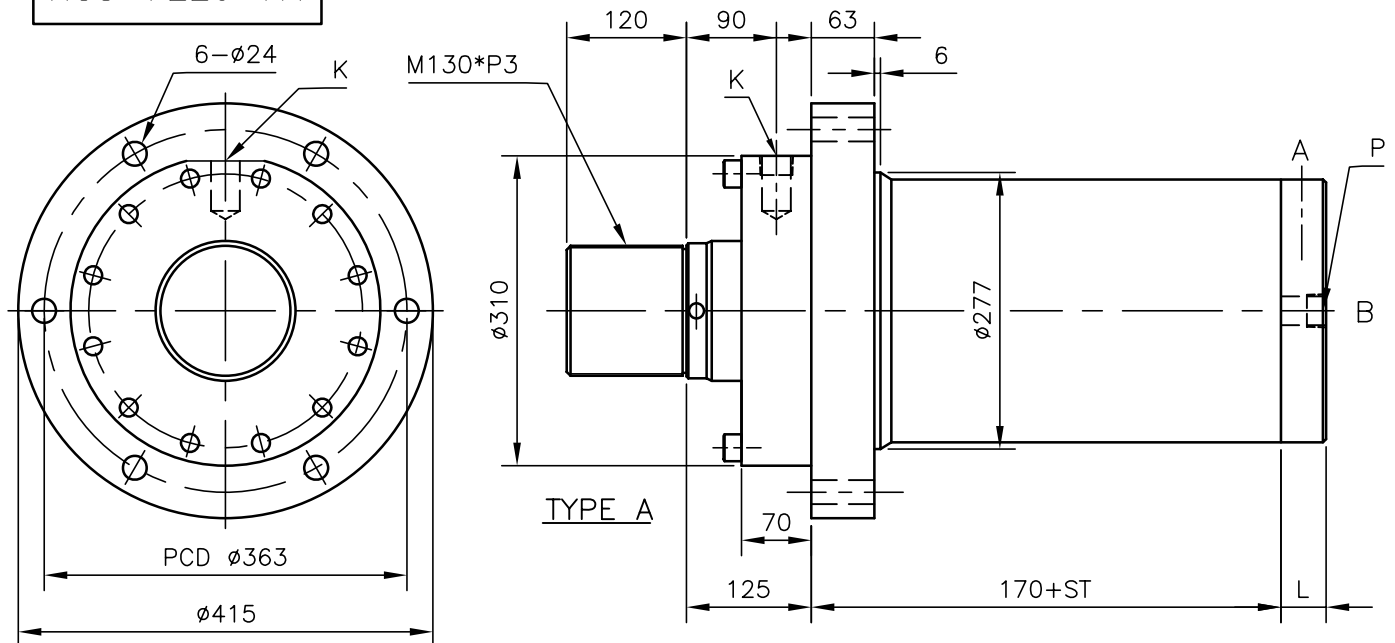
HC8

CYLINDER INSIDE DIMENSION	PISTON-ROD OUTSIDE DIMENSION
ø220	ø140

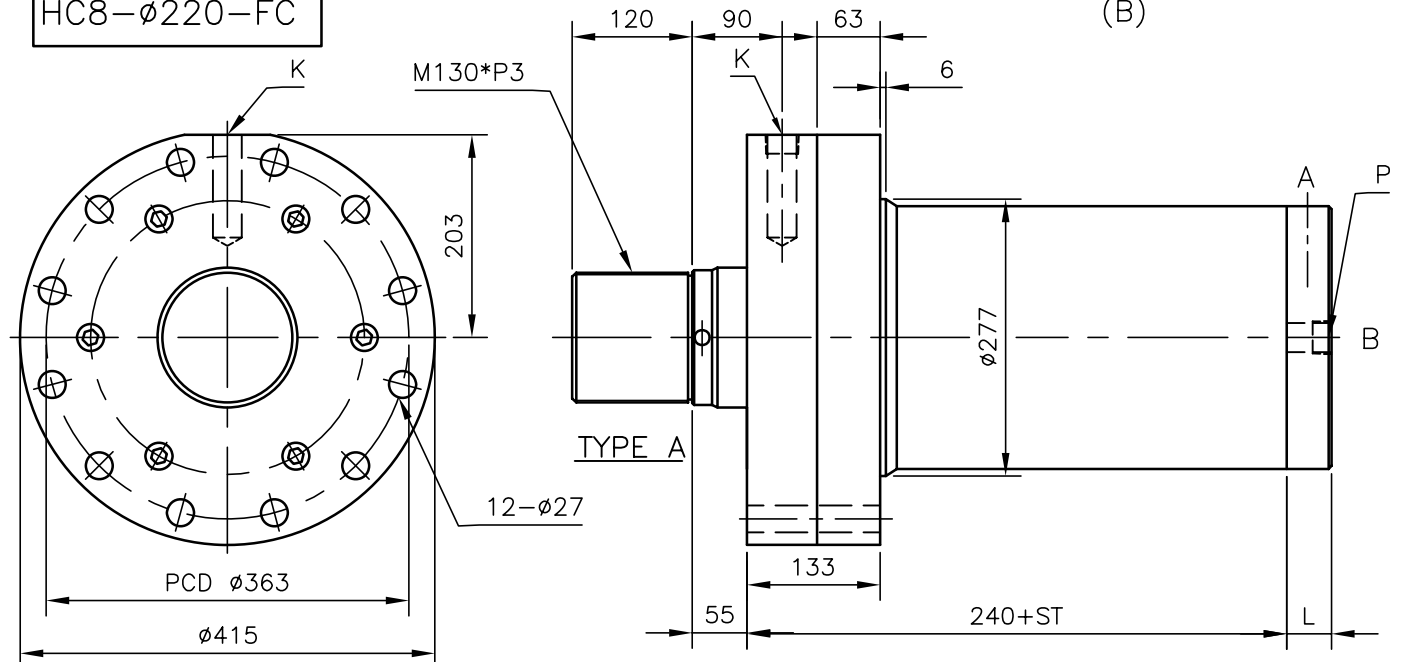
DIMENSION K
RC1"
G1"
F5-08-A

DIMENSION		L
P		
RC1"	B	45
RC1"	A	50
SSA-25	B	45
SSA-25	A	85

HC8-ø220-FA



HC8-ø220-FC



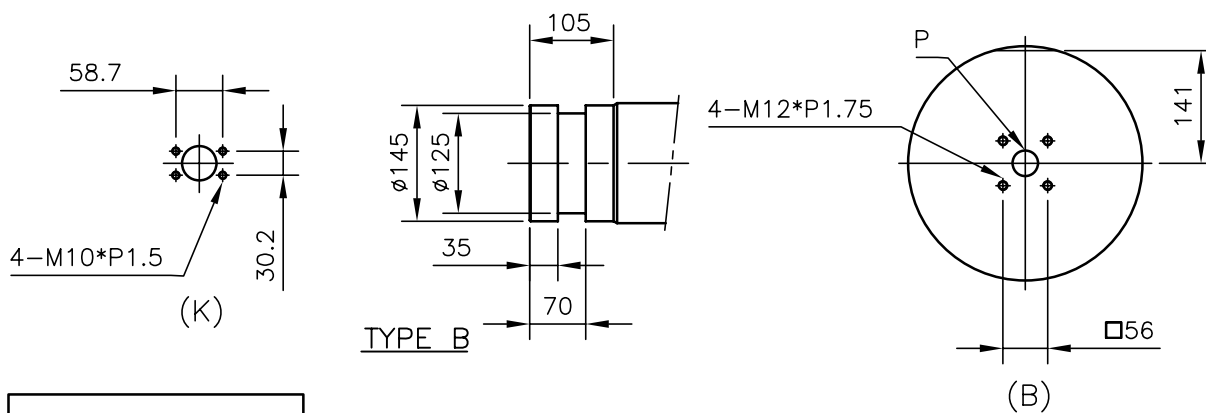
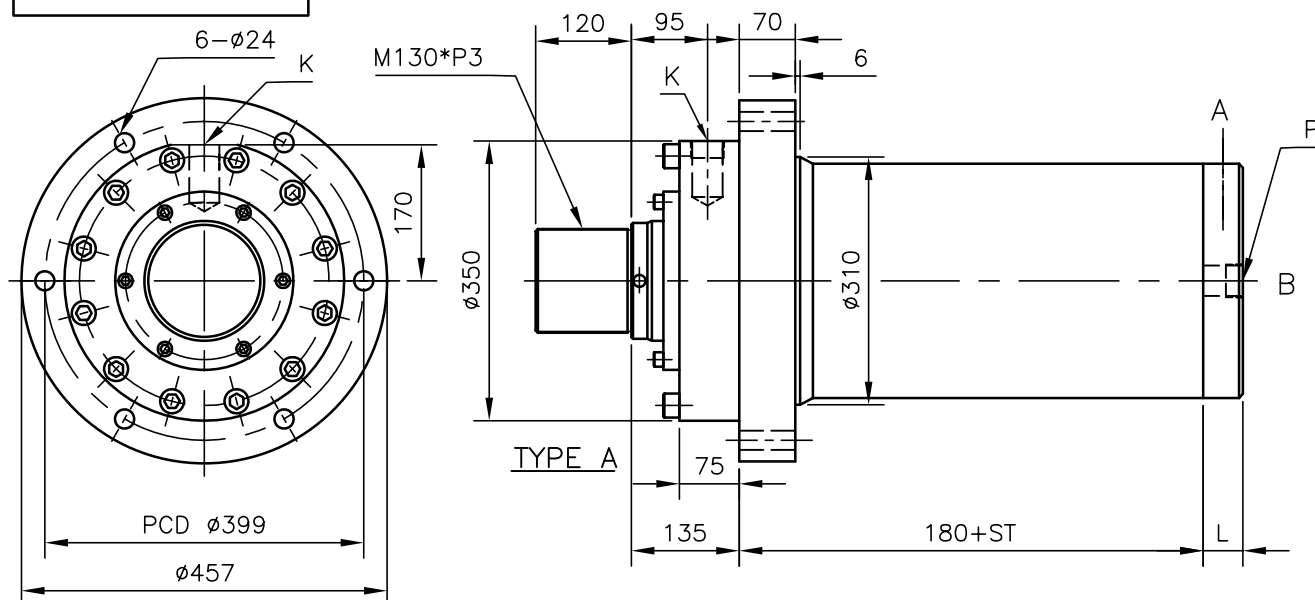
HC8

CYLINDER INSIDE DIMENSION	PISTON-ROD OUTSIDE DIMENSION
ø250	ø150

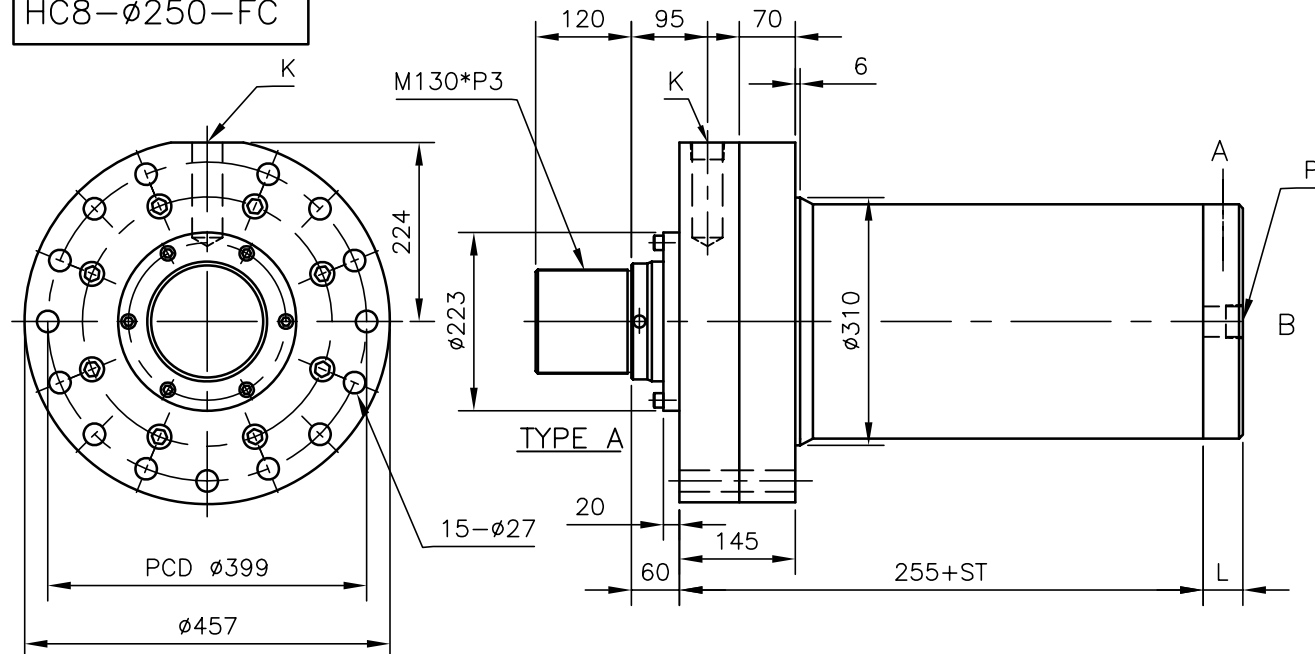
DIMENSION K
RC1-1/4"
G1-1/4"
F5-010-A

DIMENSION P		
	B	L
RC1-1/4"	B	50
RC1-1/4"	A	60
SSA-32	B	50
SSA-32	A	95

HC8-ø250-FA



HC8-ø250-FC



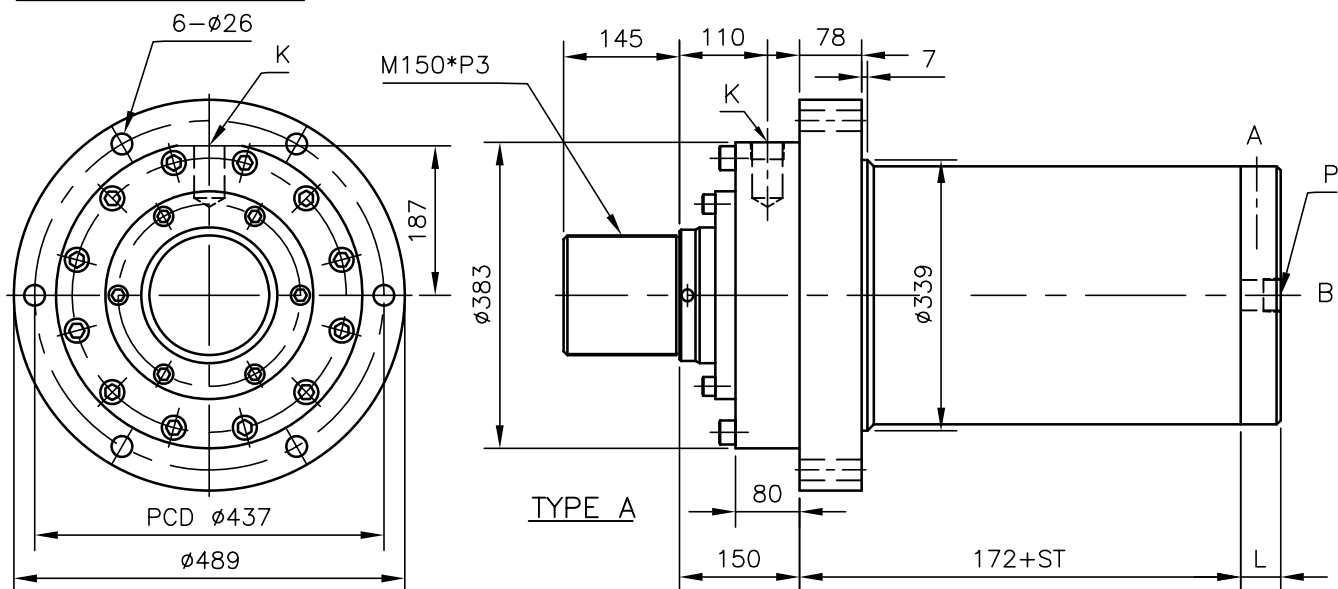
HC8

CYLINDER INSIDE DIMENSION	PISTON-ROD OUTSIDE DIMENSION
ø280	ø170

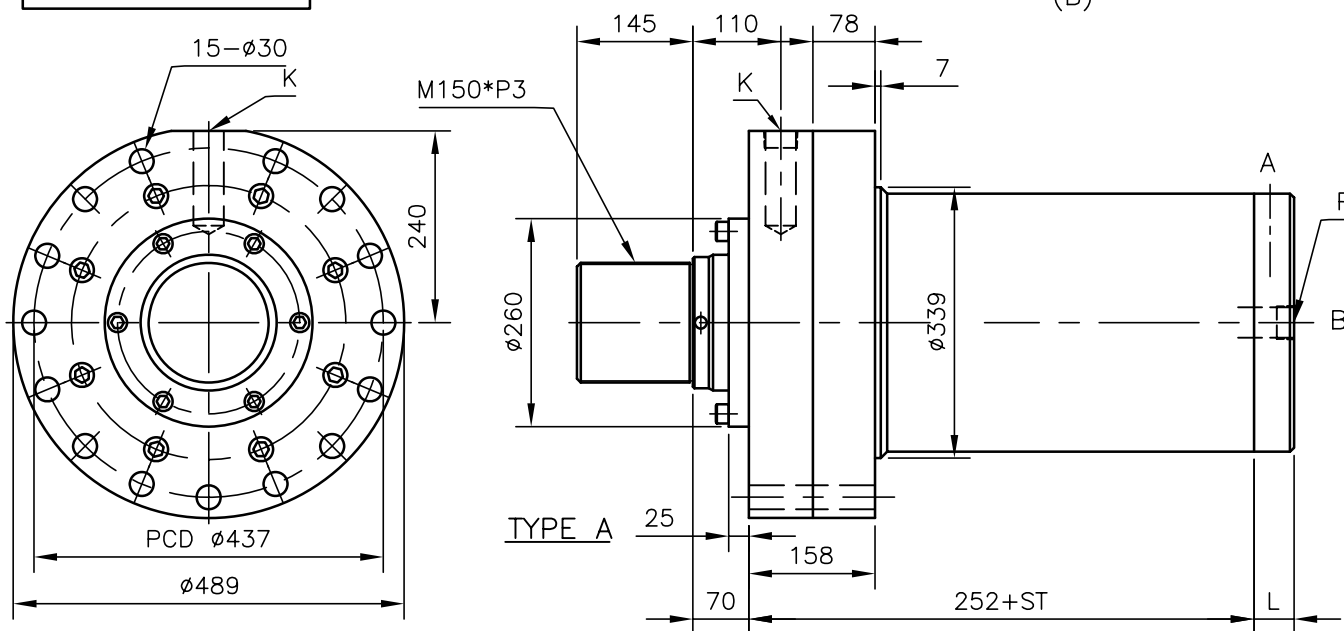
DIMENSION K
RC1-1/4"
G1-1/4"
F5-10-A

DIMENSION P		L
RC1-1/4"	B	50
RC1-1/4"	A	60
SSA-32	B	50
SSA-32	A	95

HC8-ø280-FA



HC8-ø280-FC



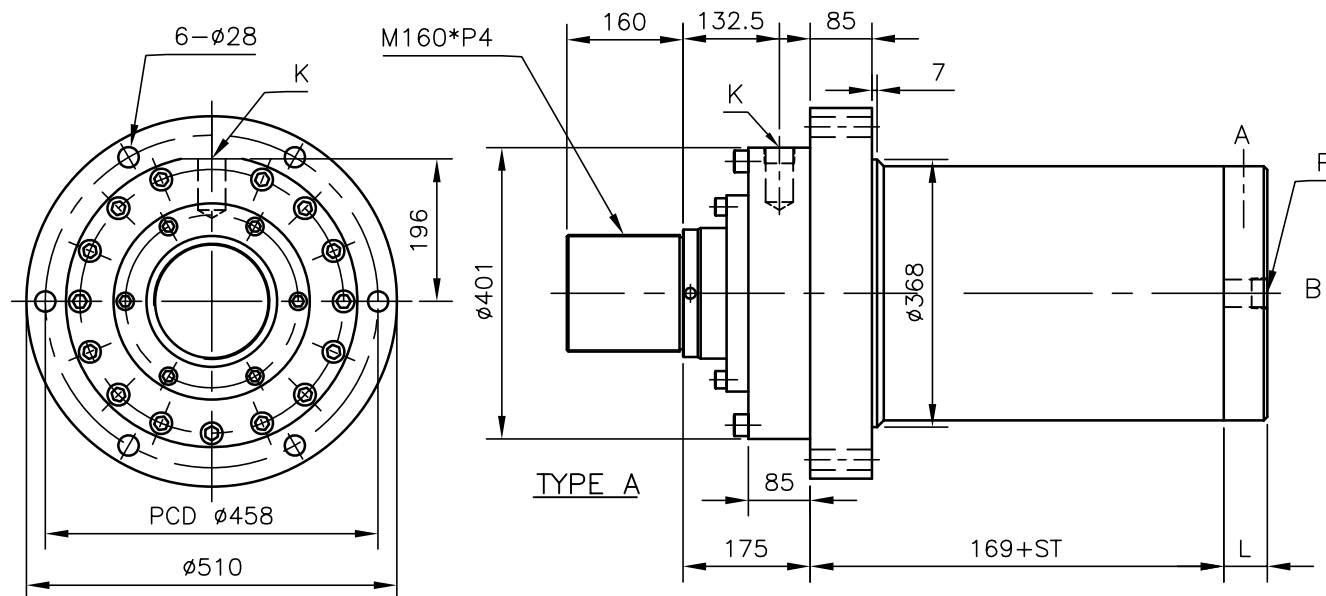
HC8

CYLINDER INSIDE DIMENSION	PISTON-ROD OUTSIDE DIMENSION
ø300	ø180

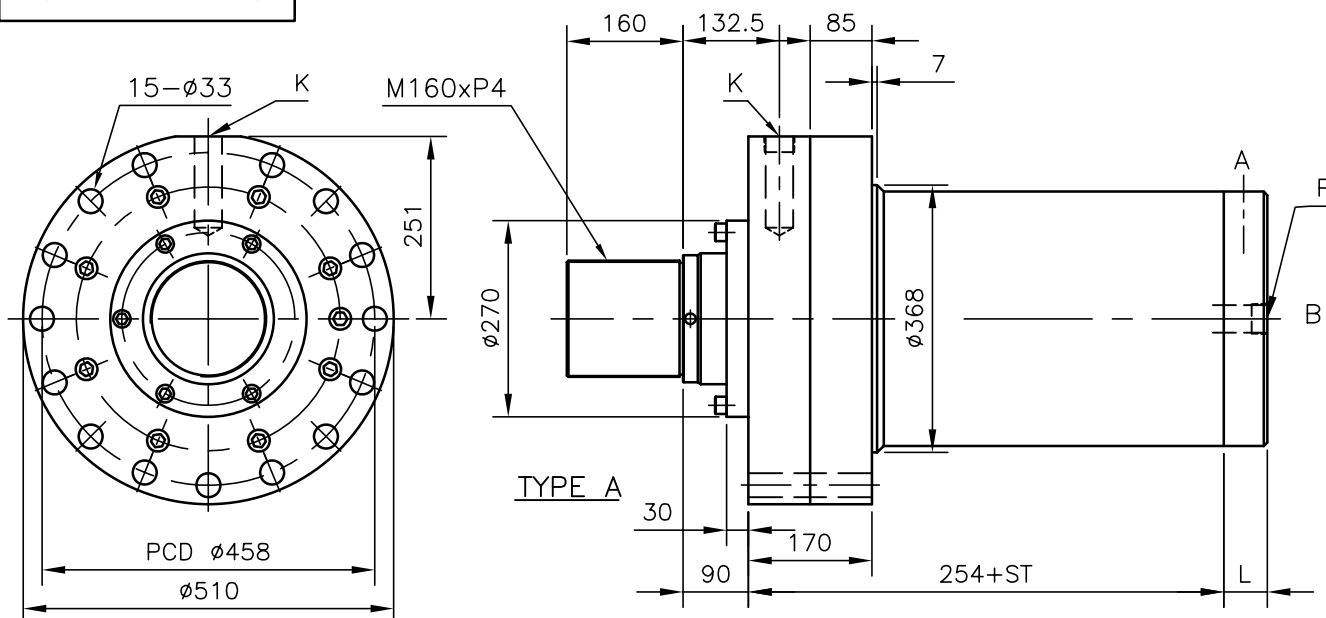
DIMENSION K
RC1-1/4"
G1-1/4"
F5-10-A

DIMENSION P		L
RC1-1/4"	B	60
RC1-1/4"	A	60
SSA-32	B	60
SSA-32	A	95

HC8-ø300-FA



HC8-ø300-FC



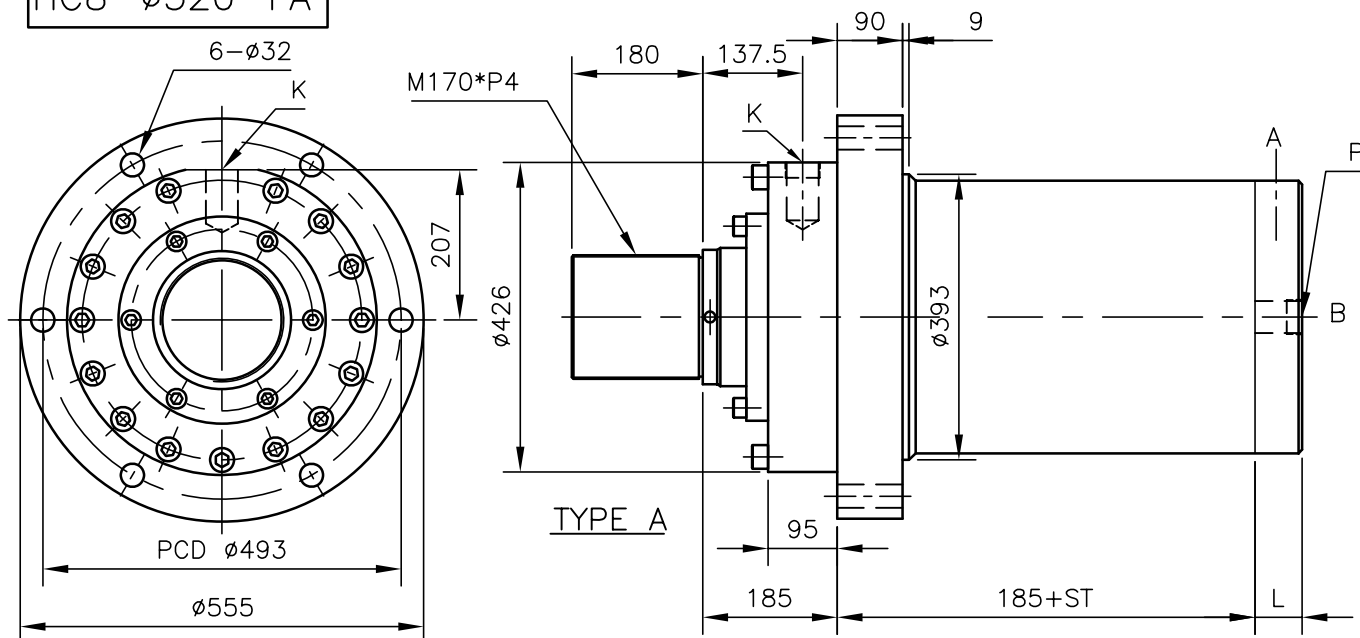
HC8

CYLINDER INSIDE DIMENSION	PISTON-ROD OUTSIDE DIMENSION
ø320	ø190

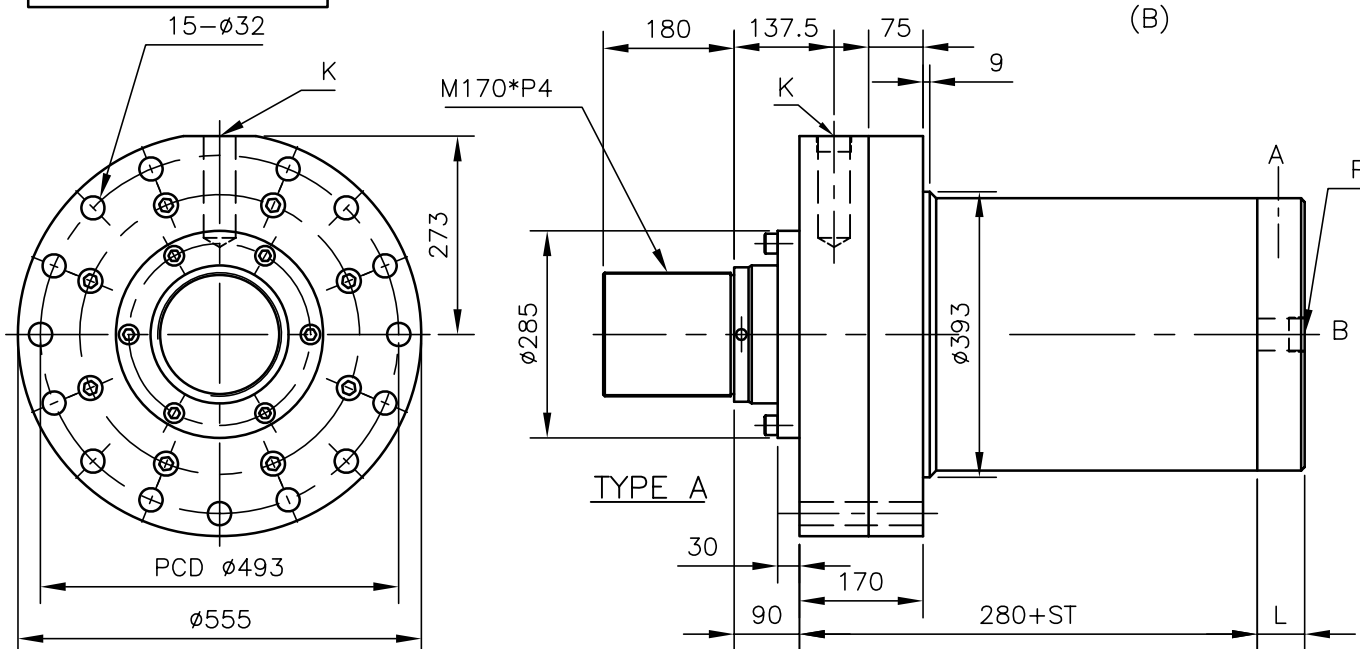
DIMENSION K
RC1-1/2"
G1-1/2"
F5-12-A

DIMENSION P	L
RC1-1/2"	B 65
RC1-1/2"	A 75
SSA-40	B 65
SSA-40	A 118

HC8-ø320-FA



HC8-ø320-FC



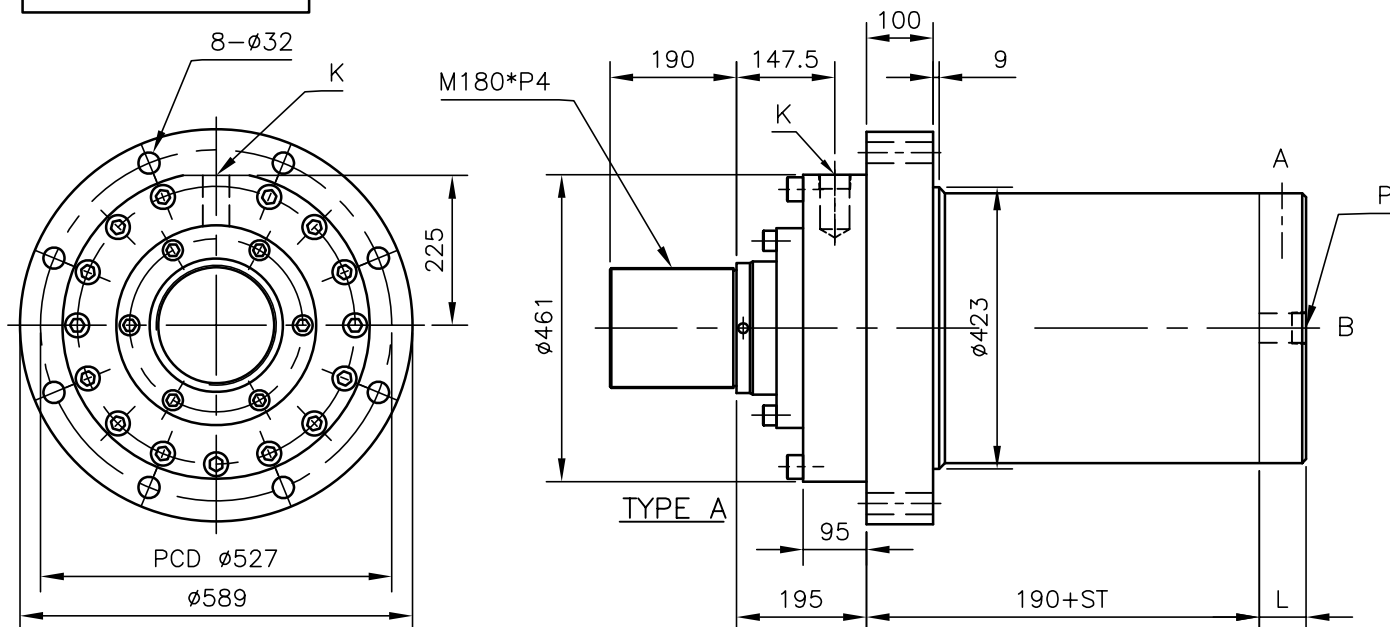
HC8

CYLINDER INSIDE DIMENSION	PISTON-ROD OUTSIDE DIMENSION
ø350	ø200

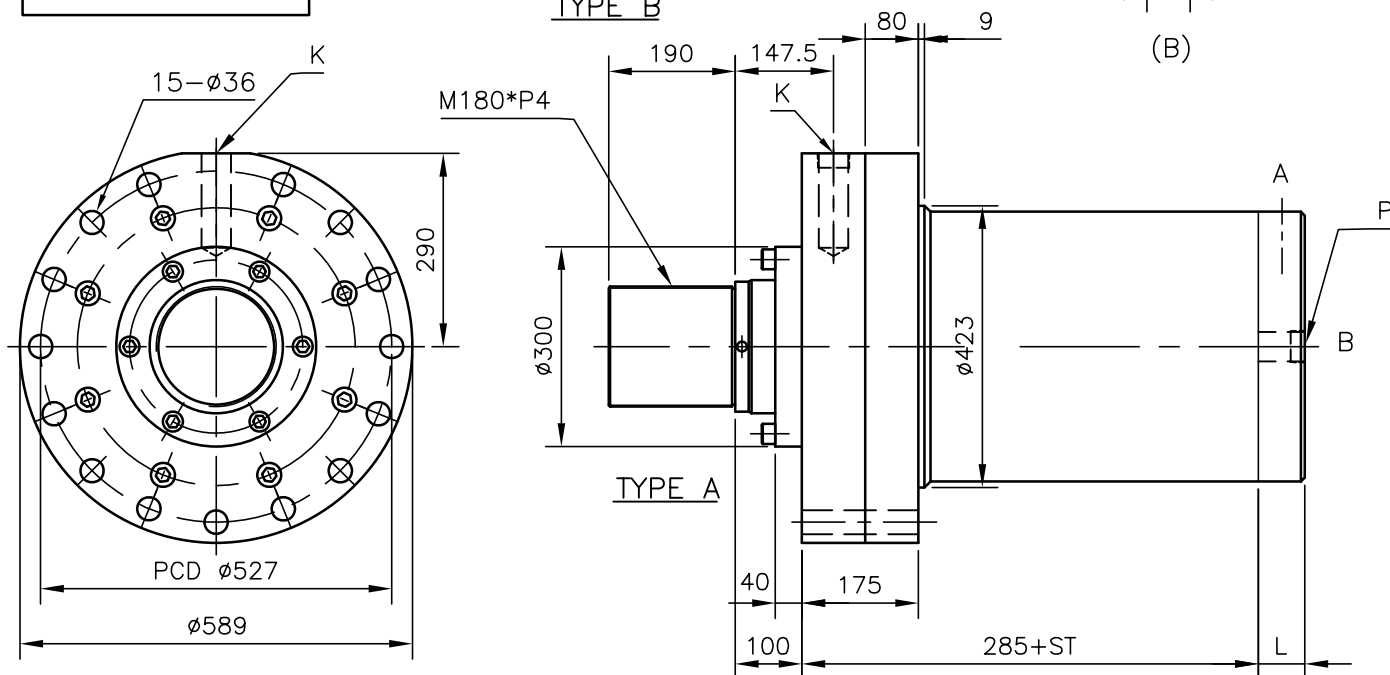
DIMENSION K
RC1-1/2"
G1-1/2"
F5-12-A

DIMENSION P		L
RC1-1/2"	B	70
RC1-1/2"	A	75
SSA-40	B	70
SSA-40	B	118

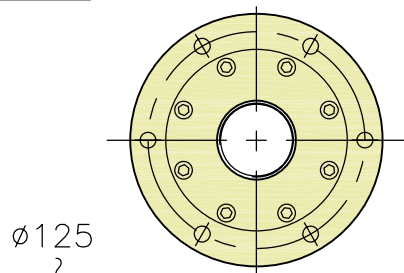
HC8-ø350-FA



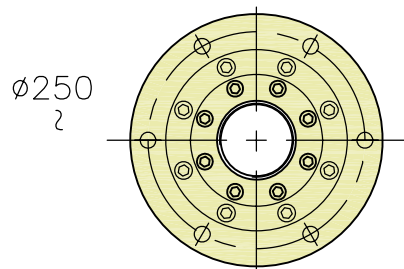
HC8-ø350-FC



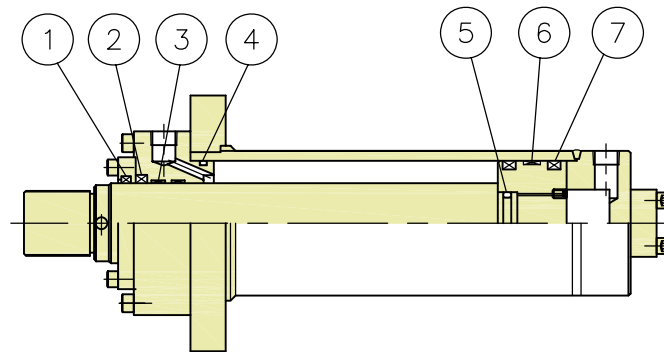
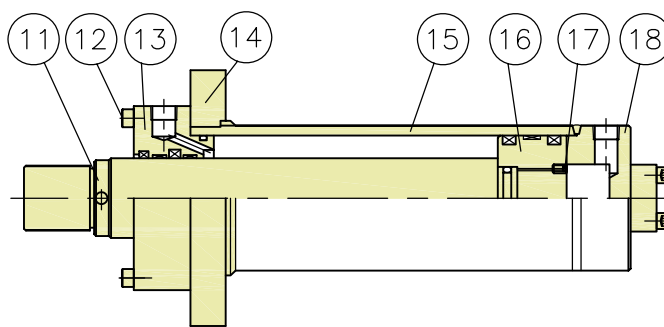
HC8



ø125
~
ø220



ø250
~
ø350



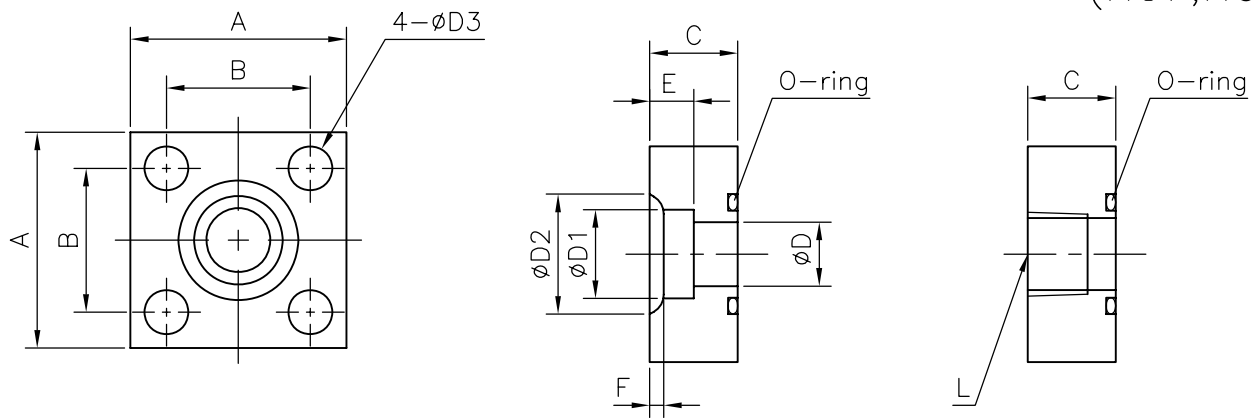
零件名稱及材質表 Parts Description & Material List:

NO	名 稱 Description.	材 質 Material.	Q'TY	NO	名 稱 Description.	材 質 Material.	Q'TY
11	活塞桿 Piston Rod	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1	15	缸管 Cylinder Tube	機械構造用碳鋼鋼管 Carbon Steel Pipe for Mechanical Structure.	1
12	前蓋 Head	一般構造用軋鋼 Rolled Steel for General Structure	1	16	活塞 Piston	一般構造用軋鋼 Rolled Steel for General Structure	1
13	六角承窩螺絲 Socket Head Cap Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	8	17	防鬆螺絲 Set Screw	機械構造用碳鋼 Carbon Steel for Mechanical Structure	1
14	法蘭 Flange	一般構造用軋鋼 Rolled Steel for General Structure	1	18	後蓋 Cylinder Cap	一般構造用軋鋼 Rolled Steel for General Structure	1

油封規格表 Specifications of Oil Seal:

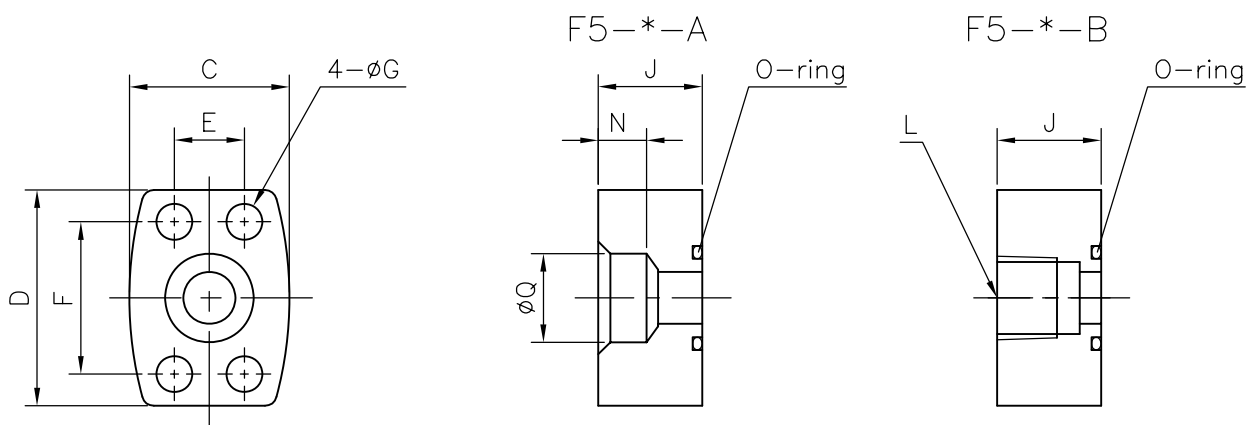
NO	1	2	3	4	5	6	7
名 稱	防塵油封 Dust Seal	軸心油封 Rod Seal	耐磨片 Wear Ring	O型環 O Ring	O型環 O Ring	耐磨片 Wear Ring	活塞油封 Piston Seal
材質	PU	PU	PTFE	NBR	NBR	PTFE	PU
數 量	1	2	2	1	1	1	2
內徑	ø,ø.w mm	ø,ø.w mm					ø,ø.w mm
ø125	80-90-8	80-90-6	80-2.5	G-120	G-55	125-2.5	125-112-13
ø150	90-100-8	90-105-9	90-2.5	G-145	G-65	150-2.5	150-136-13
ø180	110-120-8	110-125-9	110-2.5	G-170	G-95	180-2.5	180-165-13
ø200	125-138-9.5	125-140-9	125-2.5	G-190	G-105	200-2.5	200-180-16
ø220	140-153-9.5	140-155-9	140-2.5	G-210	P-115	220-2.5	220-200-16
ø250	150-163-9.5	150-165-9	150-2.5	G-240	P-125	250-2.5	250-230-16
ø280	170-185-14	170-185-9	170-2.5	G-270	P-145	280-2.5	280-255-20
ø300	180-194-9.5	180-200-12	180-2.5	G-290	G-155	300-2.5	300-270-23
ø320	190-203-9.5	190-210-12	190-2.5	P-300	G-165	320-2.5	320-290-24
ø350	200-214-9.5	200-220-12	200-2.5	P-335	G-175	350-2.5	350-320-24

SSA 油壓凸緣 "SSA" Series Pipe Flange Kits (HC7,HC8)



SIZE	A	B	C	D	D1	D2	D3	E	F	L	O-ring	Weigh(kg)
15	54	36	22	16	22.2	32	11	11	3.5	Rc 1/2	G25	0.4
20	58	40	22	20	27.7	38	11	12	4.0	Rc 3/4	G30	0.5
25	68	48	28	25	34.5	45	13	14	4.0	Rc 1	G35	0.8
32	76	56	28	31.5	43.2	56	13	16	6.0	Rc 1-1/4	G40	0.9
40	92	65	36	37.5	49.1	63	18	18	7.0	Rc 1-1/2	G50	1.7
50	100	73	36	47.5	61.1	75	18	20	7.0	Rc 2	G60	2.0
65	128	92	45	60	77.1	95	22	22	9.0	Rc 2-1/2	G75	4.2
80	140	103	45	71	90.0	108	24	25	11.0	Rc 3	G85	4.8

F5 油壓凸緣 "F5" Series Pipe Flange Kits



SIZE	C	D	E	F	G	J	N	Q	L	O-ring	Weigh(kg)
F5-04W-A(B)	40	54	17.5	38.1	8.8	26	9	17.8	Rc 3/8	P22	0.5
F5-04 -A(B)	40	54	17.5	38.1	8.8	26	11	22.2	Rc 1/2	P22	0.5
F5-06X-A(B)	48	65	22.2	47.6	11	28	12	27.7	Rc 3/4	G30	0.7
F5-06 -A(B)	48	65	22.2	47.6	11	28	12	27.7	Rc 3/4	G30	0.7
F5-08W-A(B)	55	70	26.2	52.4	11	28	12	27.7	Rc 3/4	G35	0.9
F5-08 -A(B)	55	70	26.2	52.4	11	28	14	34.5	Rc 1	G35	0.9
F5-10 -A(B)	64	80	30.2	58.7	11	29	16	43.2	Rc 1-1/4	G40	1.2
F5-12 -A(B)	72	94	35.7	69.9	13.5	30	18	49.1	Rc 1-1/2	G50	1.5
F5-16W-A(B)	85	102	42.9	77.8	13.5	30	18	49.1	Rc 1-1/2	G60	1.8
F5-16 -A(B)	85	102	42.9	77.8	13.5	30	20	61.1	Rc 2	G65	1.7
F5-20 -A(B)	102	114	50.8	88.9	13.5	38	22	77.1	Rc 2-1/2	G75	2.0
F5-24 -A(B)	116	135	61.9	106.4	17.5	38	25	90.0	Rc 3	G85	2.7

HC9 系列油壓缸 /Series Hydraulic Cylinders

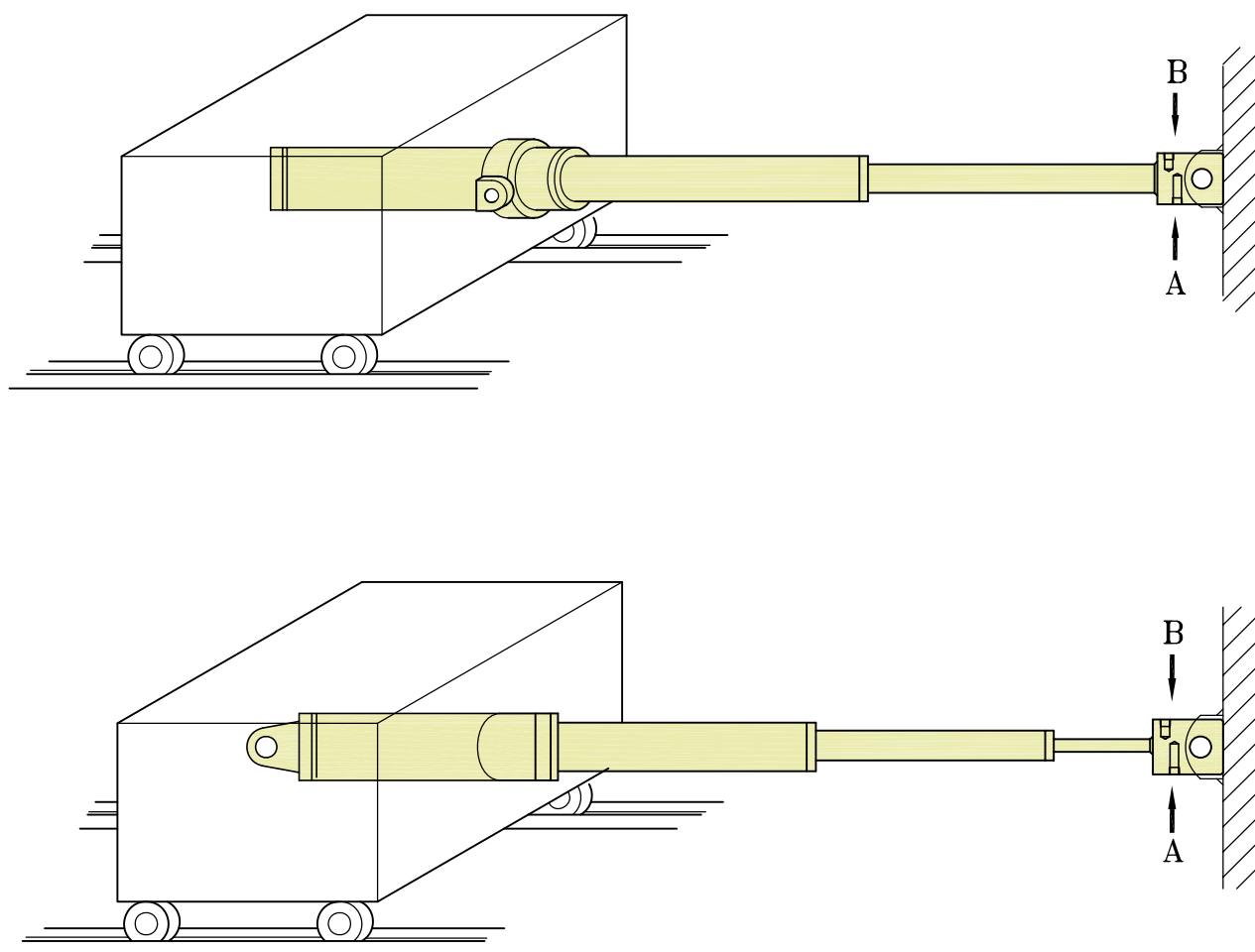
HC9—複動(軸端出入油口)多節油壓缸

HC9— (Port Position At Rod End)Multi-Stage Hyd. Cyl.

為節省空間經濟形設計:因為是多節式之行程，故縮短固定空間，並且集中於一節氣缸中，所設計之伸縮管式多節油壓缸

Economical saving space designs: Because those being with multi-stage stroke but can be reduced & concentrated in one cylinder. so that, for which no additive space occupied.

平面拉伸用途例 Plane stretch use example



規範 Specifications

最高使用壓力 Max.Operating Pressure	140 kgf/cm ²								
使用溫度範圍 Range of Ambient Temperature	-10°C ~ +50°C								
缸管內徑—節數 Cylinder Bore—Stage	95-2	90-3	125-2	125-3	150-3	150-4	160-3	200-3	200-4
常用速度 mm/sec Operating speed	150	150	128	128	118	118	118	110	110
標準行程限制 mm Permissible Stroke	2500	2500	3100	3100	3100	3100	3100	3500	3500

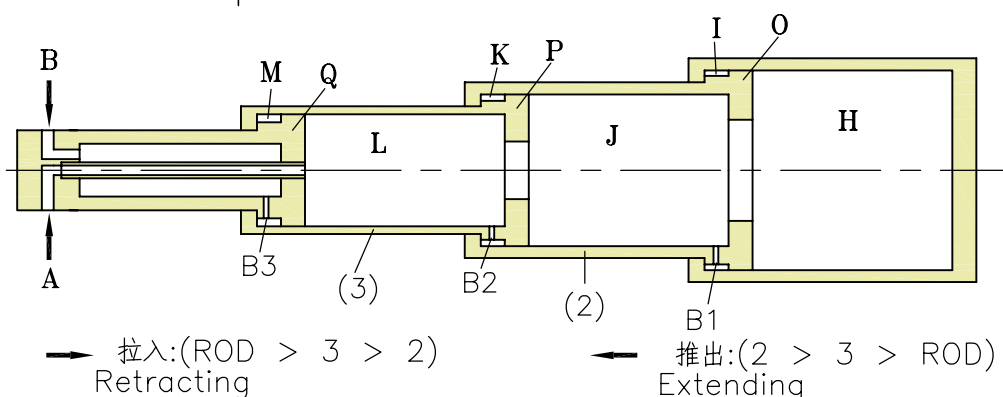
* 上表之數據是標準品，其最大之行程應考慮活塞桿裝置時其彎曲設定值，如果要求比上表之標準品更長時，請與敝公司商談 -

The above mentioned which means the standard model and the max. stroke also must considered the set bending value during installed. if want more longer size please consult us.

* 訂購內容索引 Ordering Index :

140	HC9	TC	125	2	1000
使用壓力140 kgf/cm ² Max. Operating Pres.					衝程 Stroke mm 要考慮最大容許衝程 Max. Permissible stroke
HC9:系列 HC9:Series Number					節數記號 Stage Symbol 2, 3, 4
固定座形式 Mounting TC, CA, CD					缸管內徑 Cylinder Bore mm ø95,ø125,ø150,ø160,ø200

* 動作原理 The Principle of Action:



* 推出原理 The Principle of Extending:

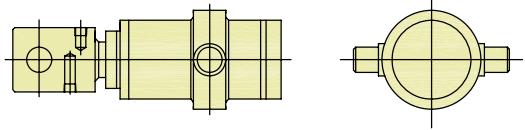
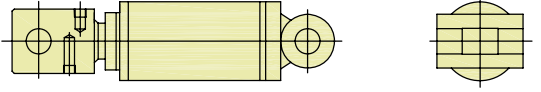
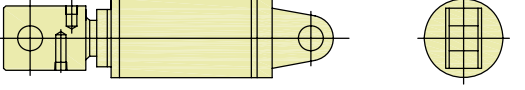
- * 從A油口流入的壓油，經由活塞桿內的導管進入H室，推動活塞O，第2節油缸動作同時在I室內的油，經由B1油孔回到K室，再經B2油孔回流到M室，然後由B3油孔從B油口排出 -
- * 當活塞O到達前蓋端時，壓油再推動活塞P，第3節油缸動作，同時在K室的油經由B2油孔，回到M室，再經由B3油孔，從B油口排出 -
- * 當活塞P到達前蓋端時，壓油再推動活塞Q，第4節油缸動作，同時在M室的油經由B3油孔，從B油口排出 -
- * The hyd. action oil flow from port A and pass through the piston rod guide tube into portion H and thrusts piston O, Meanwhile, the hyd. action oil in the portion I (2nd stage) which will flow through port B1 into portion K and flow through port B2 into portion M thus the oil flow through port B3 and discharged from port B.
- * During the piston O is approached to cyl. head and the hyd. action oil will thrusts the piston P, Meanwhile, the third cyl. actioned also, the oil in port K flow through port B2 into portion M thus, the oil flow through port B3 and discharged from port B.
- * During the piston P is approached to cyl. head and the hyd. action oil will thrusts the piston Q, Meanwhile, the fourth piston rod actioned thus the oil in portion M flow through port B3 and discharged from port B.

* 縮收原理 The Principle of Extracting :

- * 從B油口流入的壓油，經由B3油孔，進入M室，推動活塞Q，第4節油缸開始縮收，同時在L室的油，經由導管，從A油口排出 -
- * 當活塞Q到達活塞P內時，壓油經由B2油孔，進入K室，推動活塞P，第3節油缸縮收，同時在J室的油，經由導管，從A油口排出 -
- * 當活塞P到達活塞O內時，壓油經由B1油孔，進入I室，推動活塞O，第2節油缸縮收，同時在H室的油，經由導管，從A油口排出 -
- * The hyd. action oil flow from port B and pass through port B3 into portion M and thrusts piston Q, Meanwhile, the fourth piston rod will retract the hyd. action oil in portion L which will flow through piston rod guide tube and discharged from port A.
- * During the piston Q is approached to piston P and the hyd. action oil will flow through port B2 into portion K and thrusts piston P, Meanwhile, the third piston rod will retract the hyd. action oil in portion J which will flow through piston rod guide tube and discharged from port A.
- * During the piston P is approached to piston O and the hyd. action oil will flow through port B1 into portion I and thrusts piston O, Meanwhile, the second piston rod will retract also the hyd. action oil in portion H which will flow through piston rod guide tube and discharged from port A.

HC9

* 固定座形式 Mounting :

記號 Symbol	略 圖 Configuration	記號 Symbol	略 圖 Configuration
TC		CD	
CA			

* 油壓缸出力的算法 The Calculating of Hyd. Cyl. Output :

缸管內徑－節數 Cylinder Bore－Stage		95-2	90-3	125-2	125-3	150-3	150-4	160-3	200-3	200-4
各節缸管內徑 Stage Bore Dia	2nd	70	70	95	95	125	125	120	160	160
各節缸管內徑 Stage Bore Dia	3nd	—	50	—	70	95	95	80	120	120
各節缸管內徑 Stage Bore Dia	4nd	—	—	—	—	—	70	—	—	80
各節活塞桿徑 Stage Rod Dia	1nd	80	80	110	110	140	140	140	180	180
各節活塞桿徑 Stage Rod Dia	2nd	50	50	80	80	110	110	95	140	140
各節活塞桿徑 Stage Rod Dia	3nd	—	35	—	50	80	80	60	90	95.
各節活塞桿徑 Stage Rod Dia	4nd	—	—	—	—	—	50	—	—	60

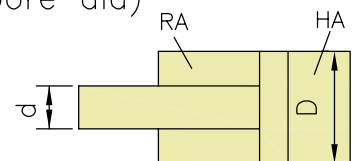
HC9—油壓缸，當推出時前蓋端面與後蓋端面同時受力，所以在推出時實際受力面積為油壓缸管外徑之面積 -

During the extending of HC9— hyd. cyl. and there are same stressed at cyl. head & cap. so that, the practical stressed area is the exterior area of hyd. cyl.

D=缸管內徑 / Cylinder bore

d=活塞桿徑(次節缸管外徑) / Piston rod dia(The second bore dia)

$$HA = \frac{\pi D^2}{4} \quad RA = \frac{\pi (D^2 - d^2)}{4}$$



當HA與RA同時受同樣壓力時，推出時之受力面積為：

There are same stressed at HA & RA and the stressed area during extending for then.

$$\frac{\pi D^2}{4} - \frac{\pi (D^2 - d^2)}{4} = \frac{\pi (D^2 - D^2 + d^2)}{4} = \text{活塞桿面積} / \text{Piston rod area}$$

推出力的算法為(HA-RA)xP，縮收力的算法為RAXP

The calculating of extending force is(HA-RA)xP and the extracting force which is RAXP.

$$F = A \times P \times \beta \quad F = \text{出力(kgf)} \quad A = \text{面積(cm)} \quad P = \text{壓力(kgf/cm)} \quad \beta = \text{負荷率(\%)} \\ \text{Output} \quad \text{Area} \quad \text{Pressure} \quad \text{Load rating}$$

決定油壓缸的實際出力是必須考慮油壓缸之滑動部的抵抗，配管上及機器之壓力損失等因素 -

負荷率是油壓缸實際負載之出力與從回路設定壓力計算的理論出力(油壓缸理論出力)之比率，謂之負荷率 - 本目錄之計算例題是以負荷率80%而計算的 -

As for the practical output of hyd. cyl. which must considered the sliding resistance of cyl. and pressure loss of piping & machinery etc., factor.

Also the load rating is the comparison ratio for the practical output and the theoretical setting of hyd. cyl. and which are calculated at 80% in this literatures.

HC9

活塞有效斷面積 **Effective Section Area of Piston:** (cm²)

機種 Model	有效面積 Effective Area	推出 Extending				拉入 Retracting			
		1 節 1st	2 節 2nd	3 節 3rd	4 節 4th	1 節 1st	2 節 2nd	3 節 3rd	4 節 4th
95-2		50.2	38.5	—	—	20.6	18.8	—	—
95-3		50.2	28.3	19.6	—	20.6	10.2	10	—
125-2		95	63.6	—	—	27.7	20.6	—	—
125-3		95	50.2	38.5	—	27.7	20.6	18.8	—
150-3		153.9	95	63.6	—	22.8	27.7	20.6	—
150-4		153.9	95	50.2	38.5	22.8	27.7	20.6	18.8
160-3		165	86.6	63.6	—	35.9	36.1	35.3	—
200-3		268.7	165	122.7	—	45.3	35.9	36.1	—
200-4		268.7	165	86.6	63.6	45.3	35.9	36.1	35.3

*** 例題 For Example:**

HC9— **125-2形複動式多節油壓缸，設使用壓力為100kgf/cm²時，求推出及縮收之各節出力為多少?(kgf) $F=A \times P \times \beta$ 公式 Formula

HC9— **125-2 double acting multi-stage hyd. cyl. and the operating pressure : 100kgf/cm² for which derived the extending & extracting of stage? (kgf)

推出之各節壓力 / Extending pressure of stage :

(1)第1節 /1st stage : $A=95\text{cm}^2$, $F=95 \times 100 \times 0.8=7600\text{kgf}$

(2)第2節 /2nd stage : $A=63.6\text{cm}^2$, $F=63.6 \times 100 \times 0.8=5090\text{kgf}$

縮收之各節壓力 / Extracting pressure of stage :

(1)第1節 /1st stage : $A=27.7\text{cm}^2$, $F=27.7 \times 100 \times 0.8=2220\text{kgf}$

(2)第2節 /2nd stage : $A=20.6\text{cm}^2$, $F=20.6 \times 100 \times 0.8=1650\text{kgf}$

*** 如何選擇機種 How To Select The Suited Model:**

又今預使用複動式多節油壓缸且設使用壓力為100kgf/cm²時，縮收之荷重，為在最後一節 - (第3節或第4節)時需要2800kgf，求使用3節的複動式油壓缸，與使用4節的複動式油壓缸，其機種為何?

Now if want employed the double acting multi-stage hyd. cyl. and the operating pressure : 100kgf/cm² also the extracting load at the last stage.(3rd or 4th stage)and with load 2800kgf for which derived 3rd or 4th hyd. cyl.

$$A = \frac{F}{P \times \beta} \quad \text{公式 Formula} \quad A = \frac{2800\text{kgf}}{100\text{kgf/cm}^2 \times 0.8} = 35\text{cm}^2$$

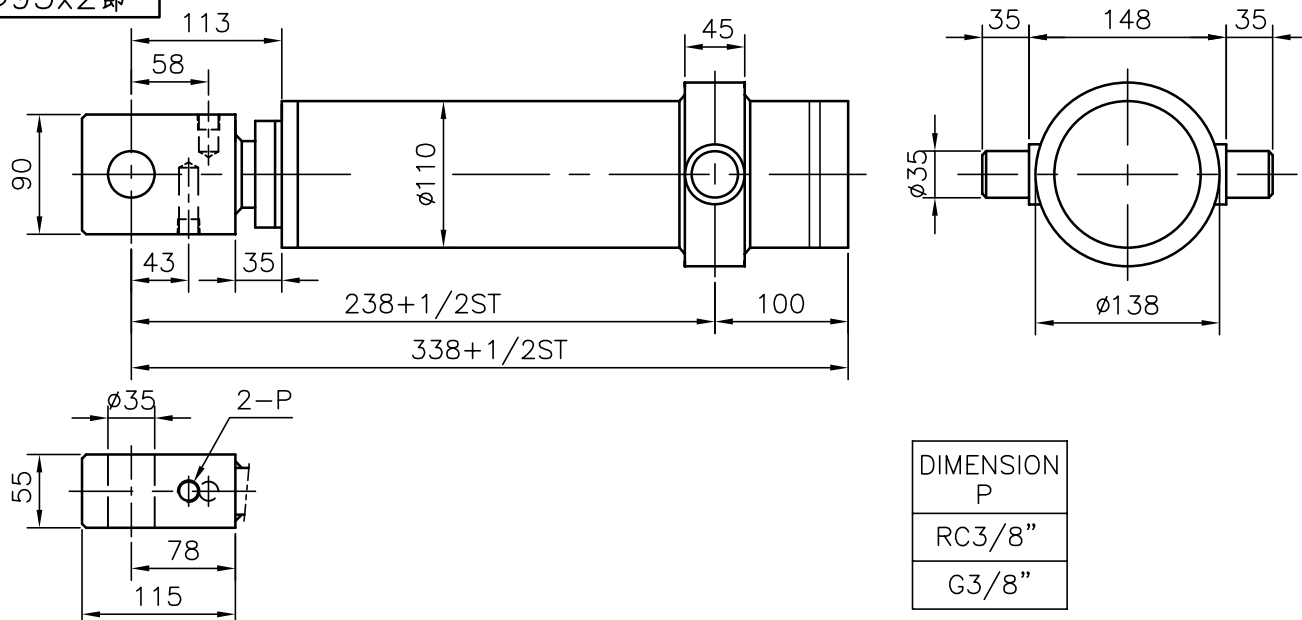
(1)如果要3節形時，則選用HC9— **200-3或HC9— **160-3

If selecting 3rd stage those are selected HC9— **200-3 or HC9— **160-3

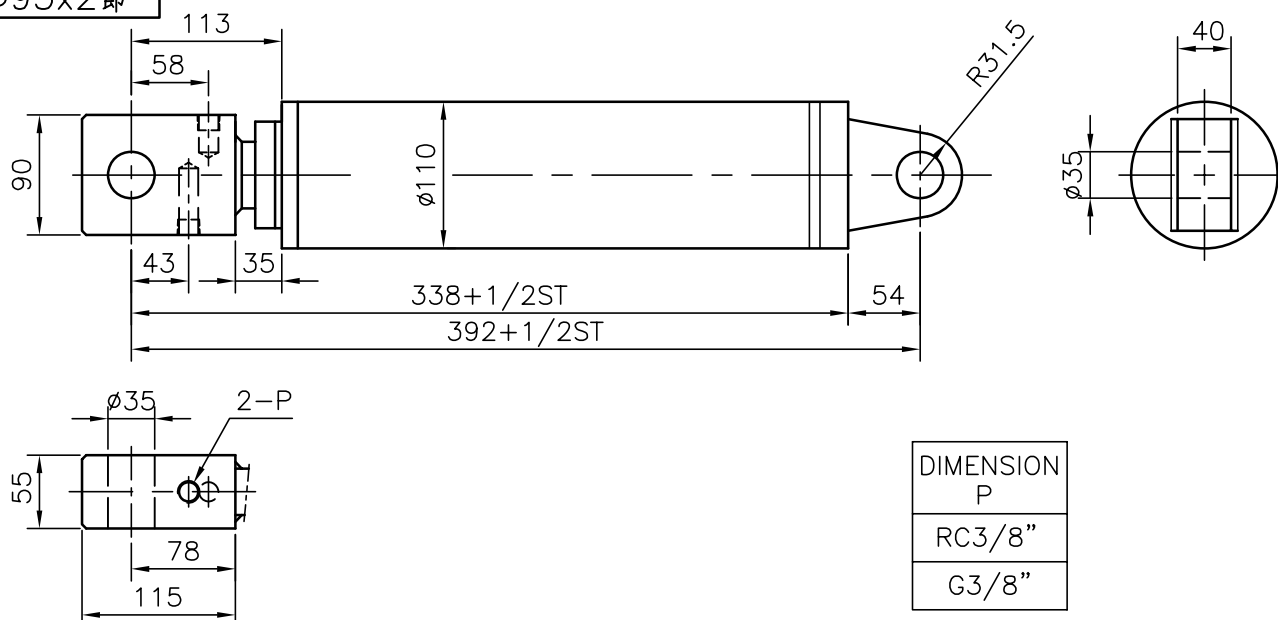
(2)如果要4節形時，則選用HC9— **200-4

If selecting 4th stage those are selected HC9—160-**-200-4

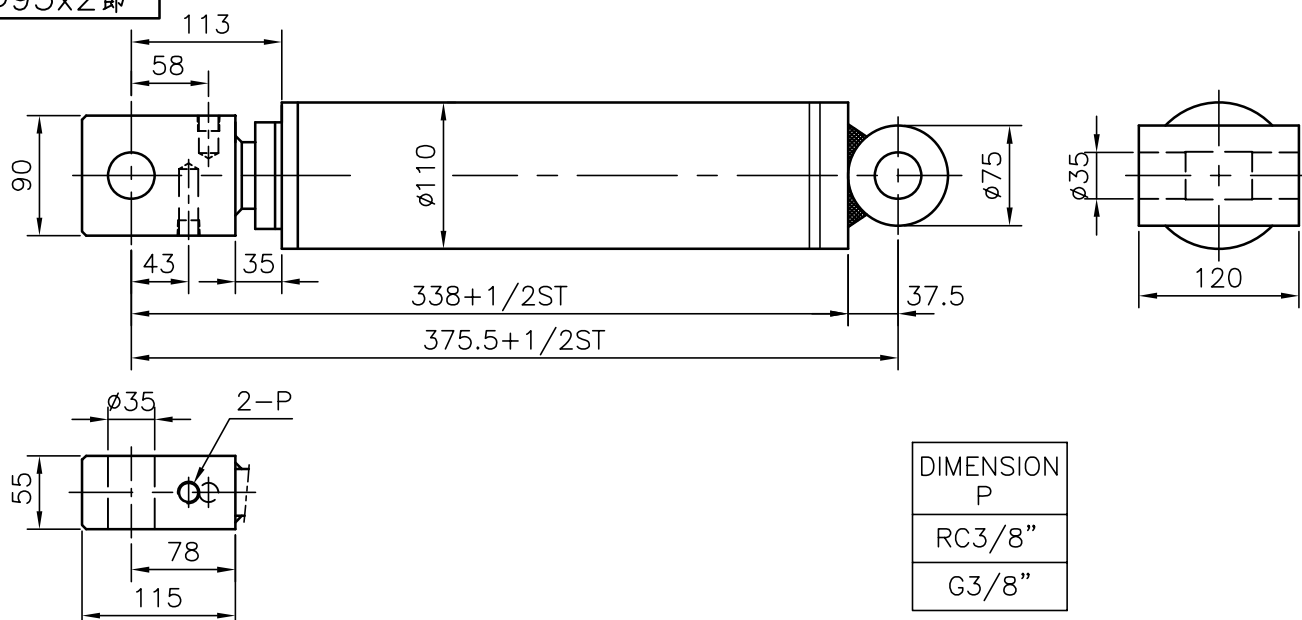
HC9-TC , 140kg/cm²
 ø95x2節



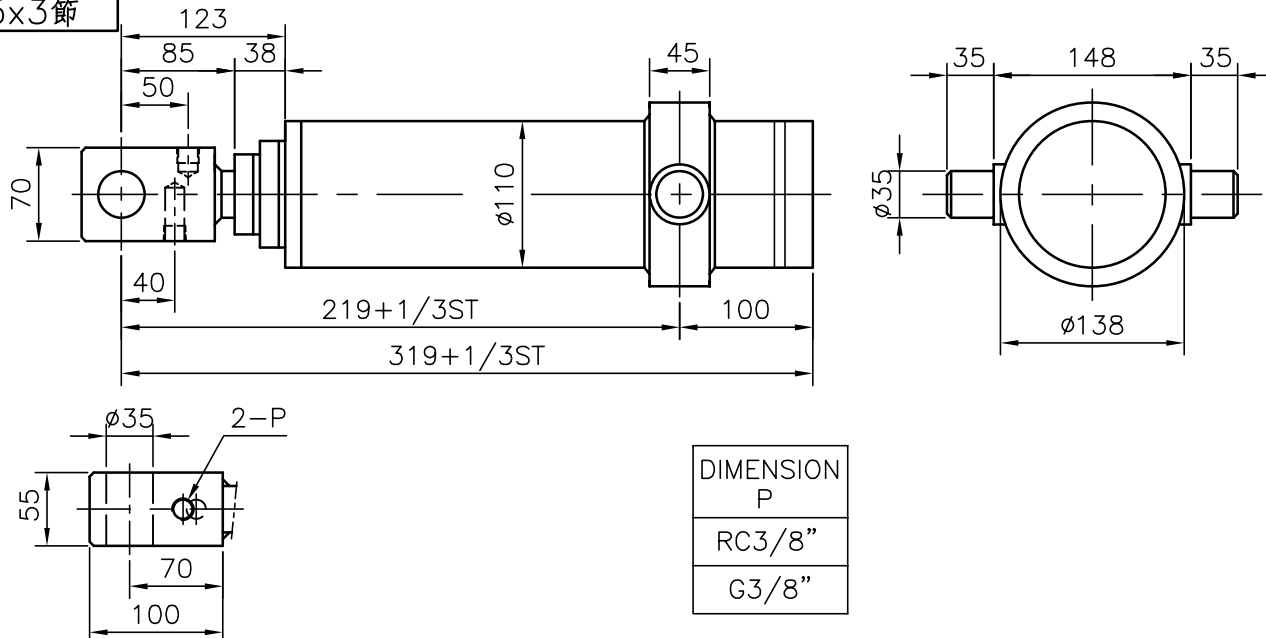
HC9-CA , 140kg/cm²
 ø95x2節



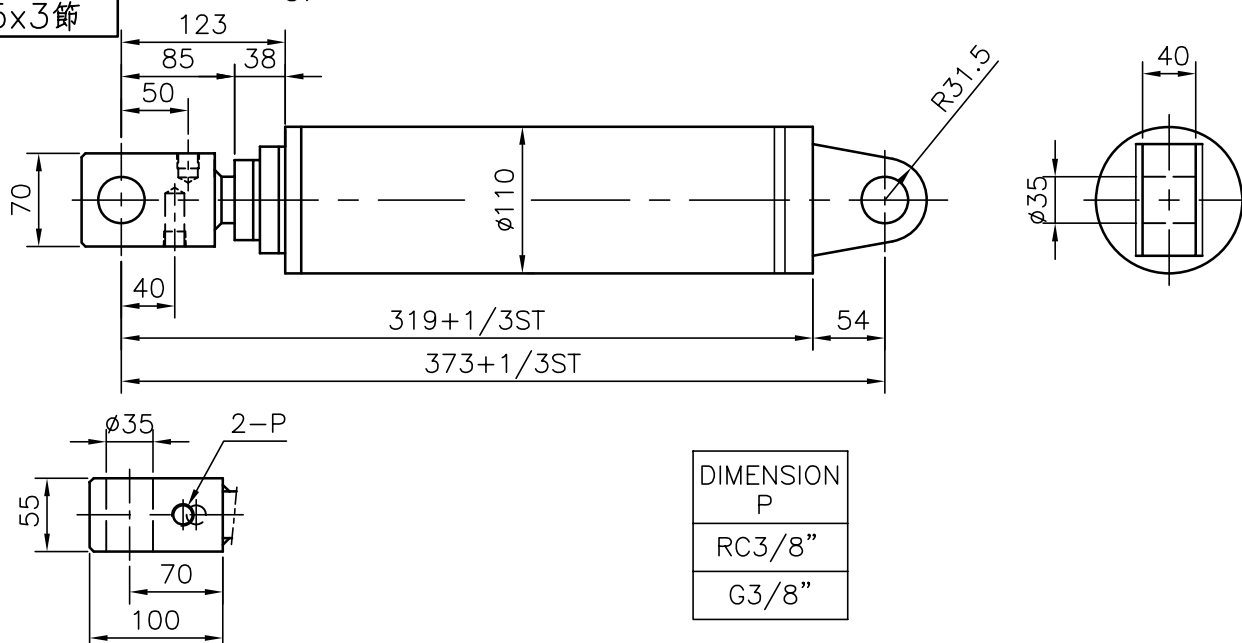
HC9-CD , 140kg/cm²
 ø95x2節



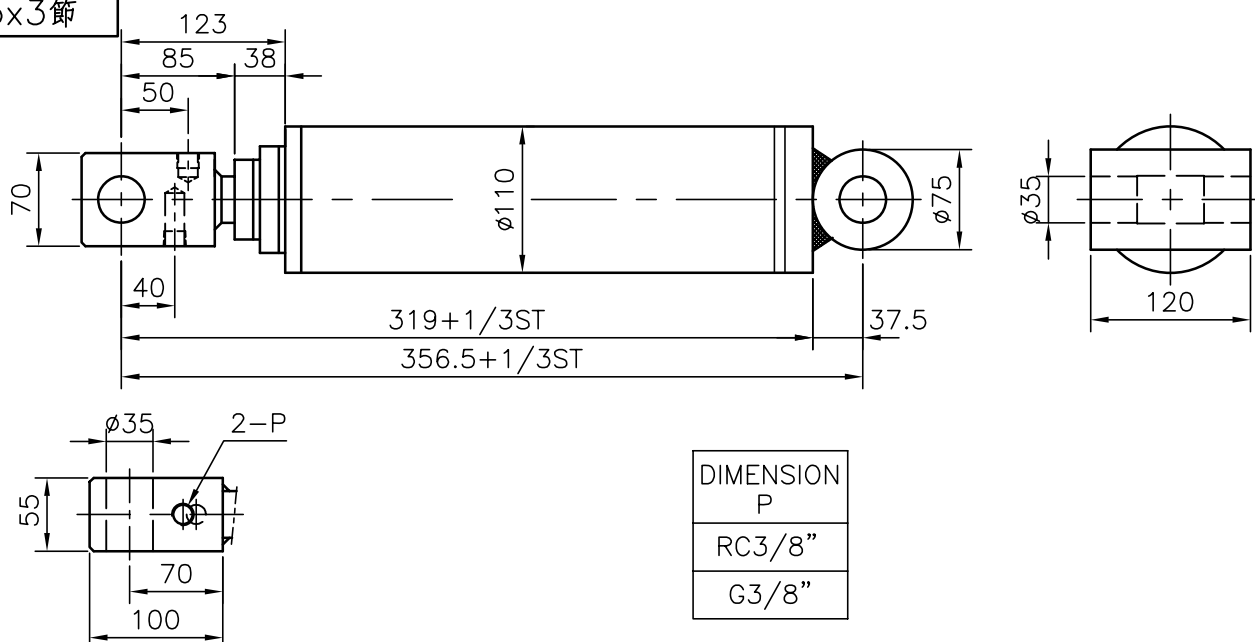
HC9-TC , 140kg/cm²
 ø95x3節



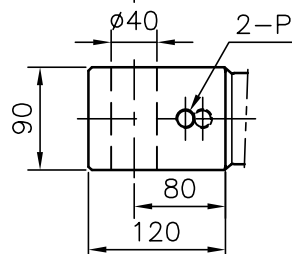
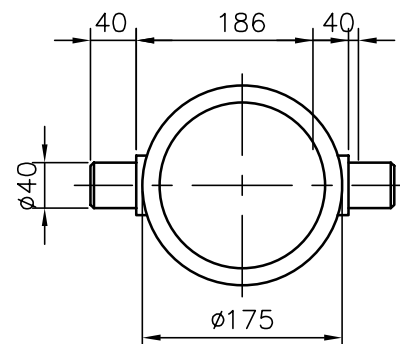
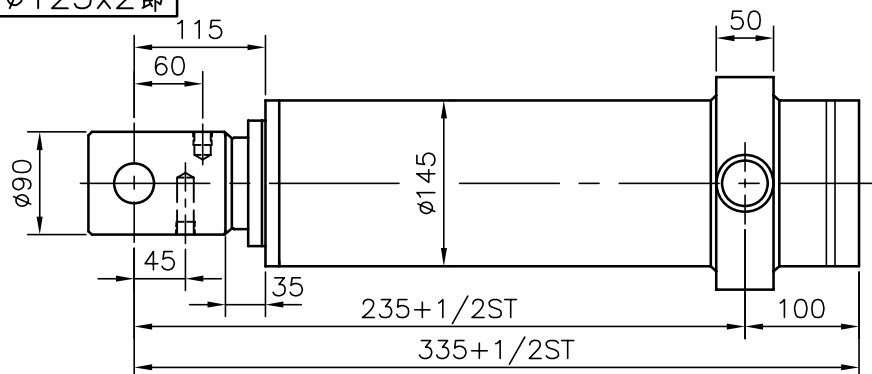
HC9-CA , 140kg/cm²
 ø95x3節



HC9-CD , 140kg/cm²
 ø95x3節

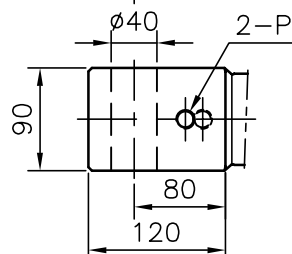
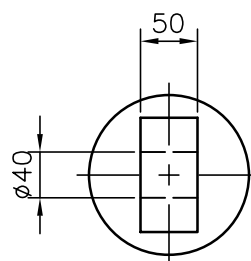
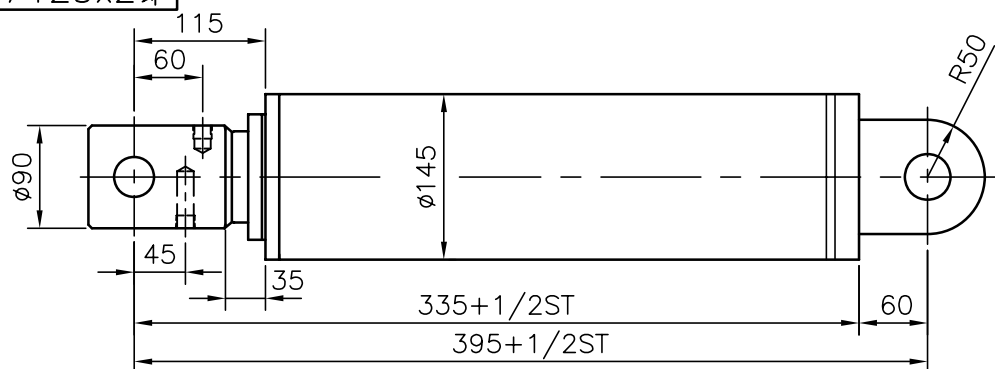


HC9-TC
ø125x2節



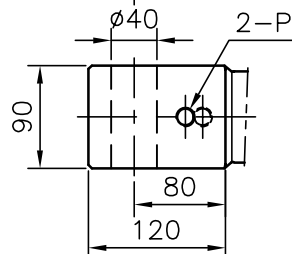
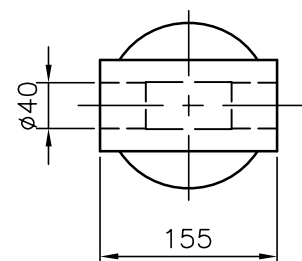
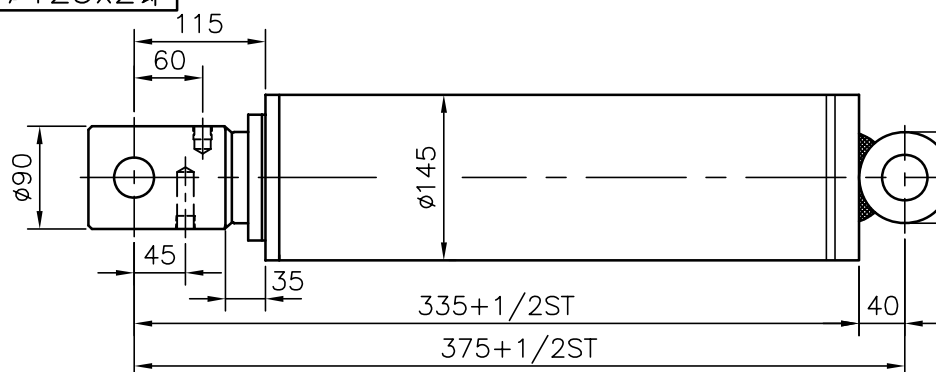
DIMENSION
P
RC3/8"
G3/8"

HC9-CA , 140kg/cm²
 ø125x2節



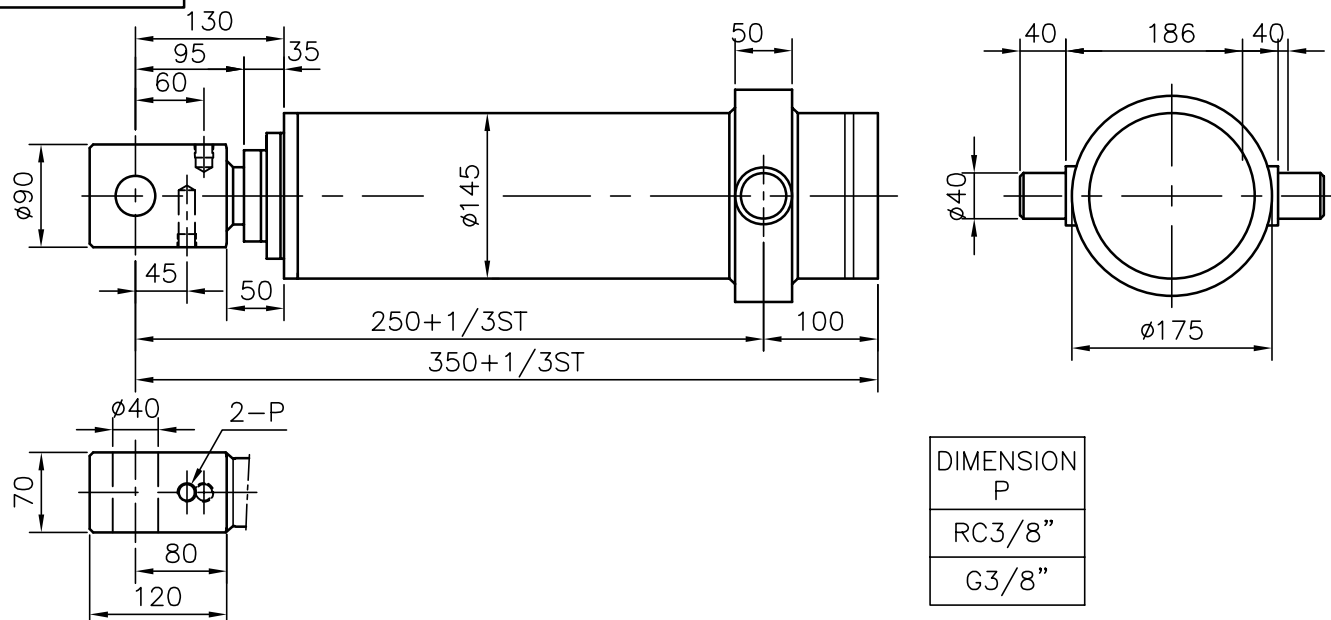
DIMENSION
P
RC3/8"
G3/8"

HC9-CD
ø125x2節

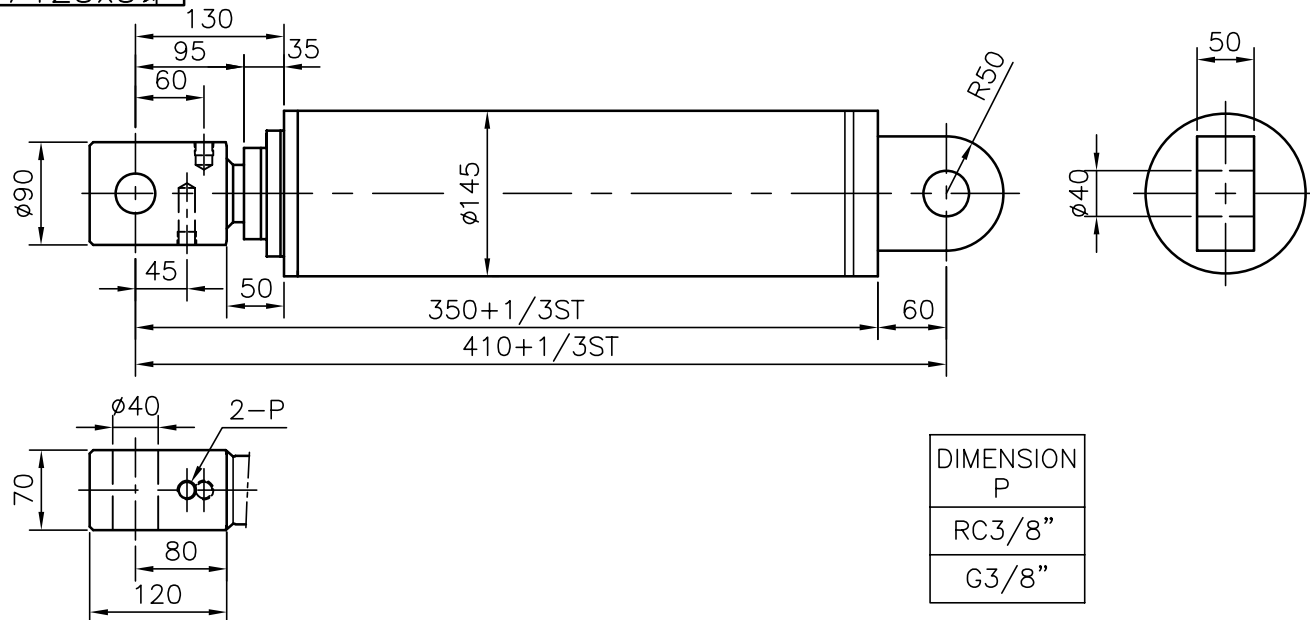


DIMENSION
P
RC3/8"
G3/8"

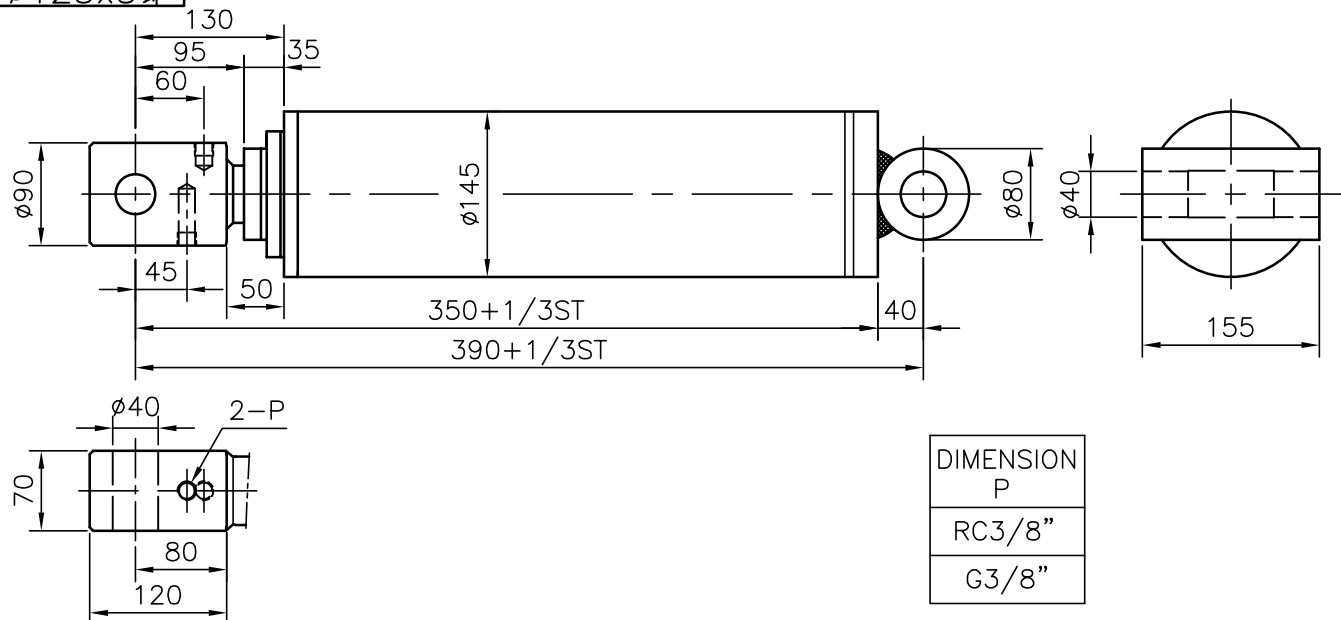
HC9-TC , 140kg/cm²
 ø125x3節



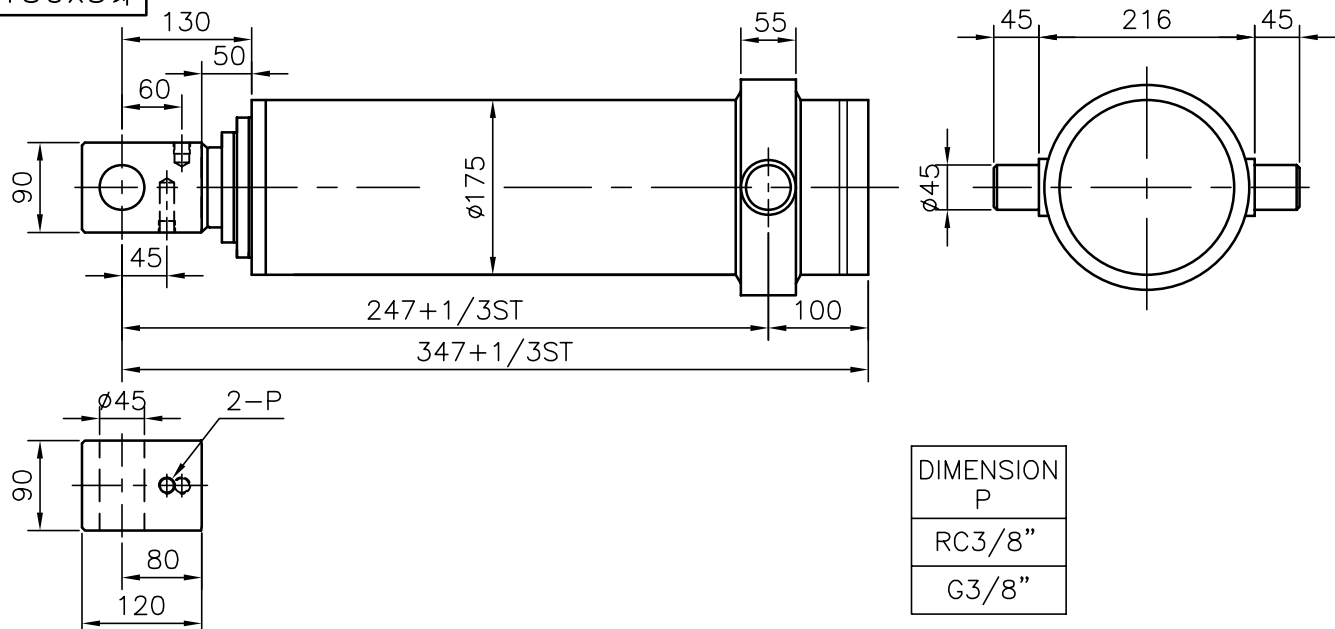
HC9-CA , 140kg/cm²
 ø125x3節



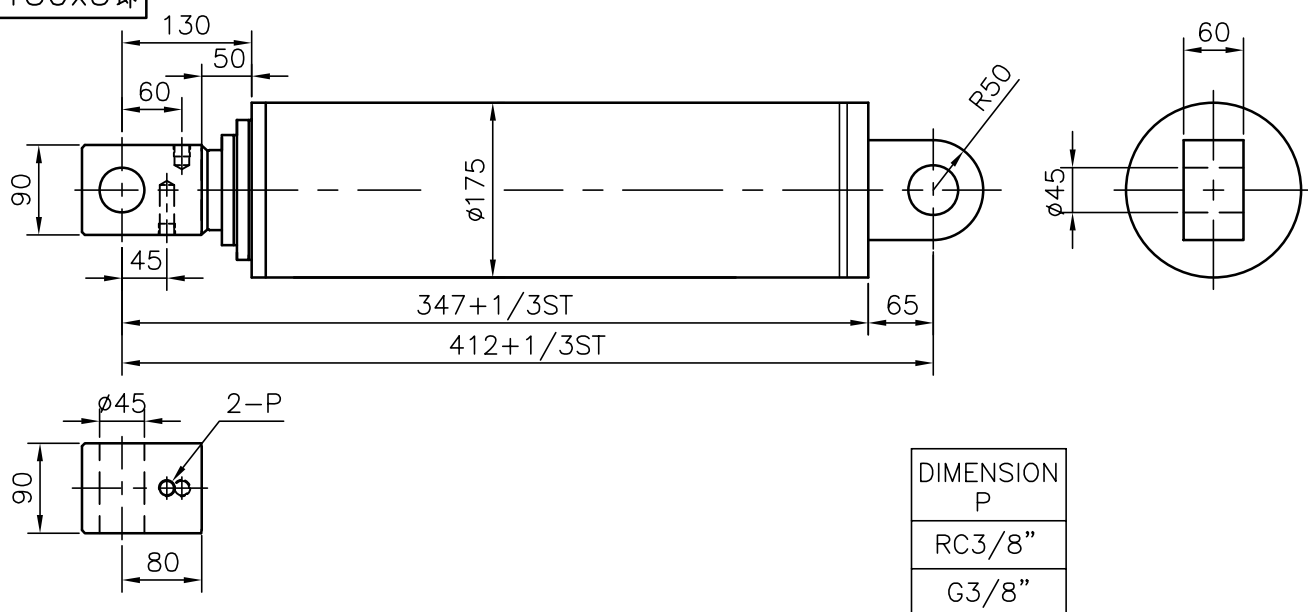
HC9-CD , 140kg/cm²
 ø125x3節



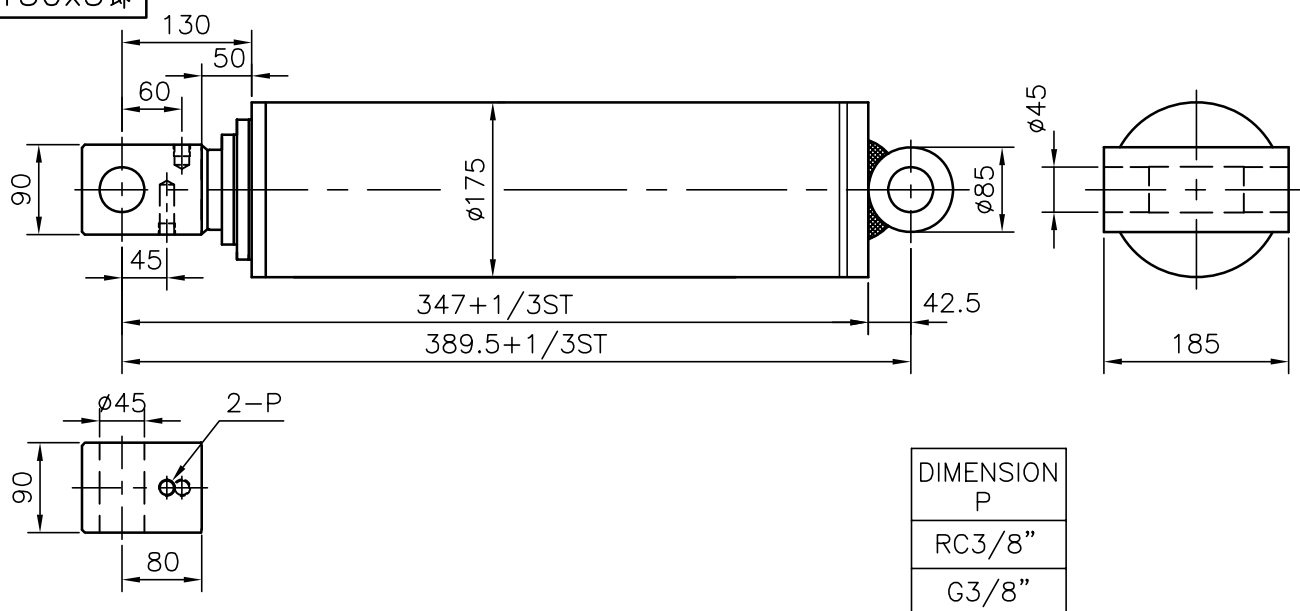
HC9-TC , 140kg/cm²
 ø150x3節



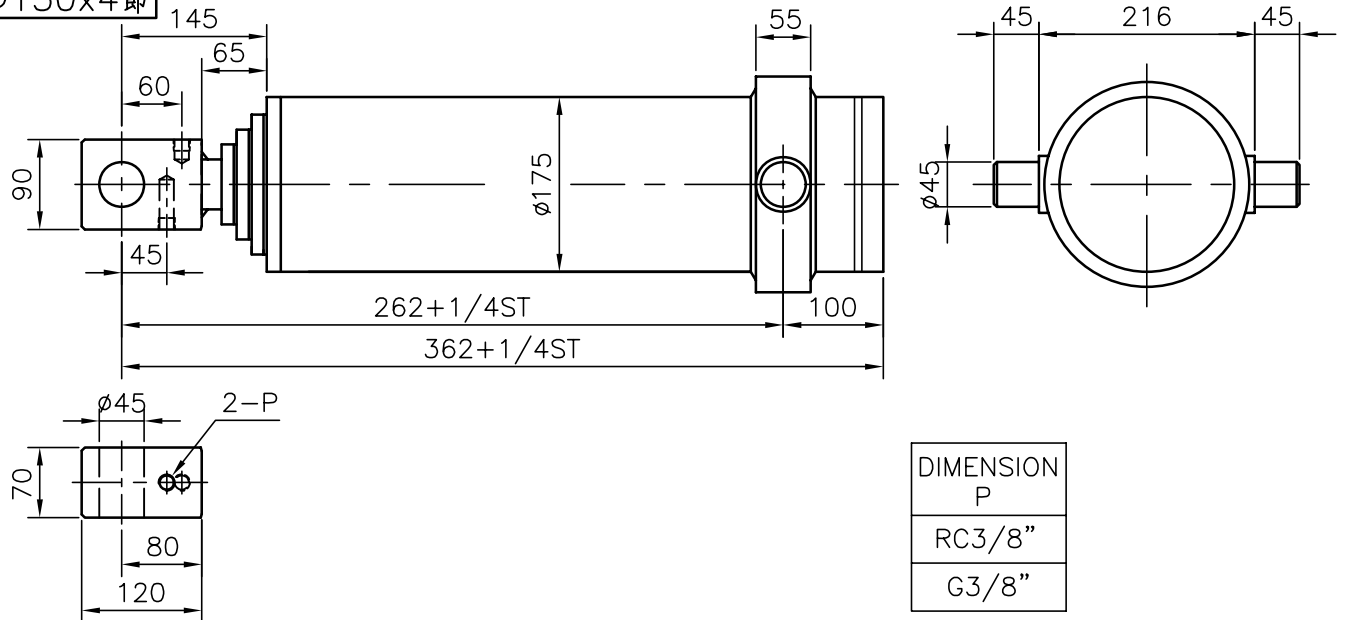
HC9-CA , 140kg/cm²
 ø150x3節



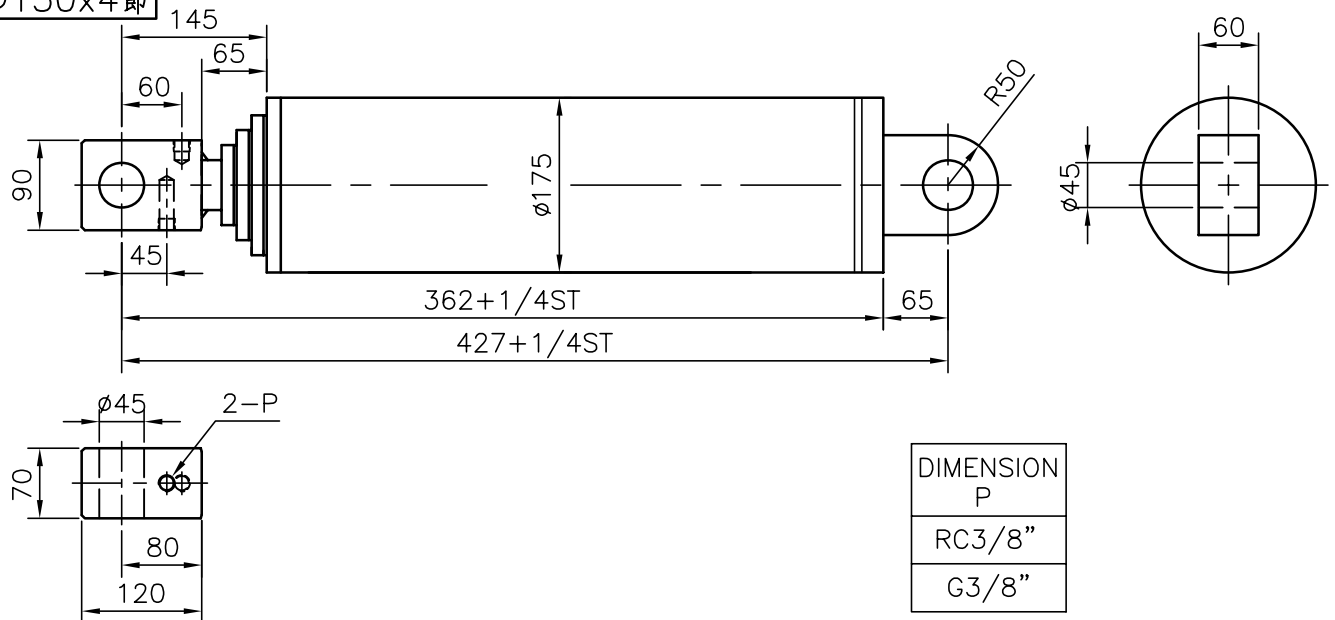
HC9-CD , 140kg/cm²
 ø150x3節



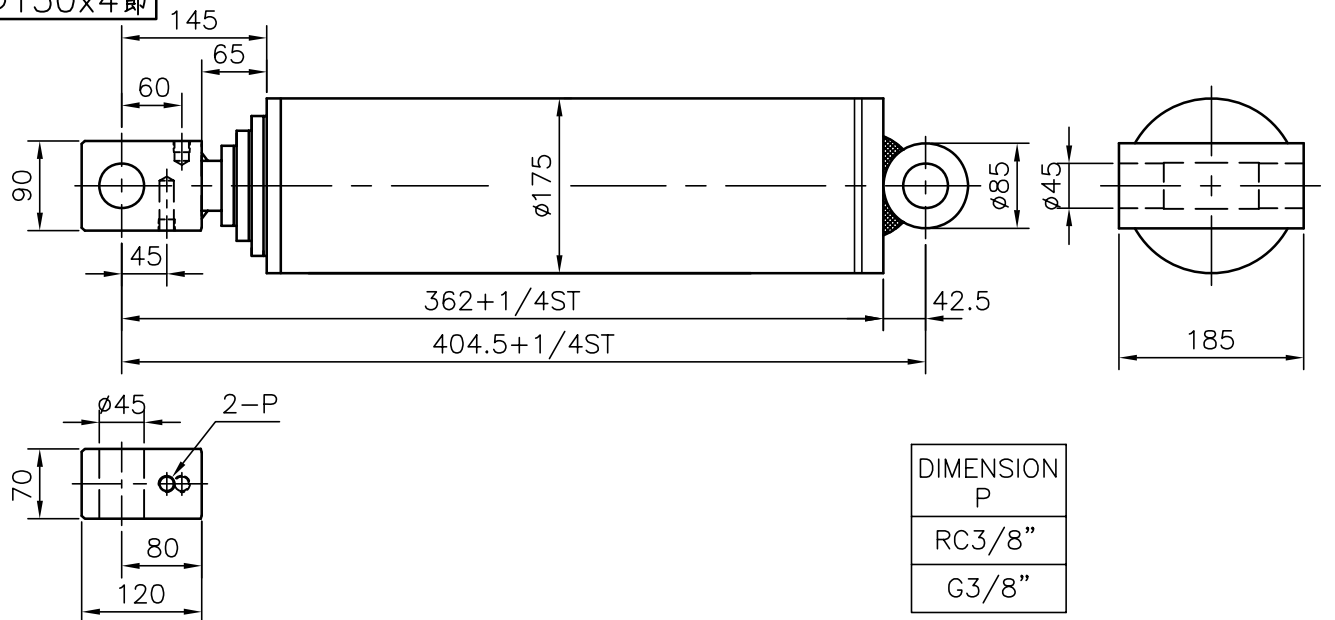
HC9-TC , 140kg/cm²
 ø150x4節



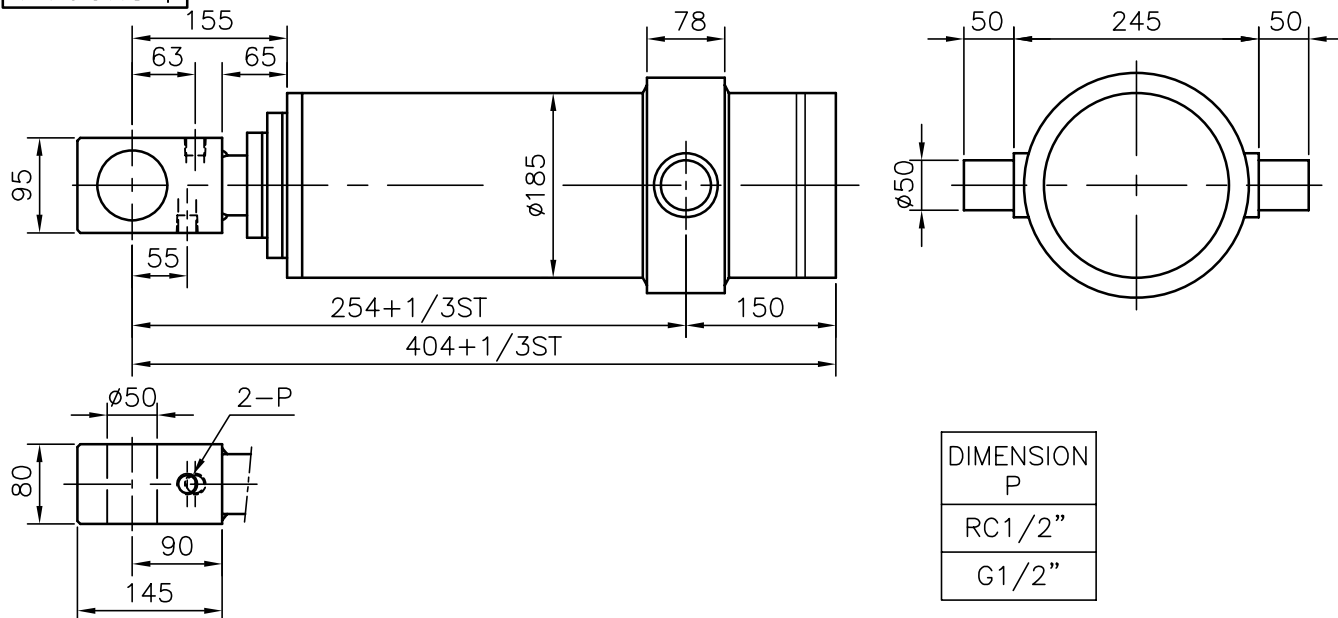
HC9-CA , 140kg/cm²
 ø150x4節



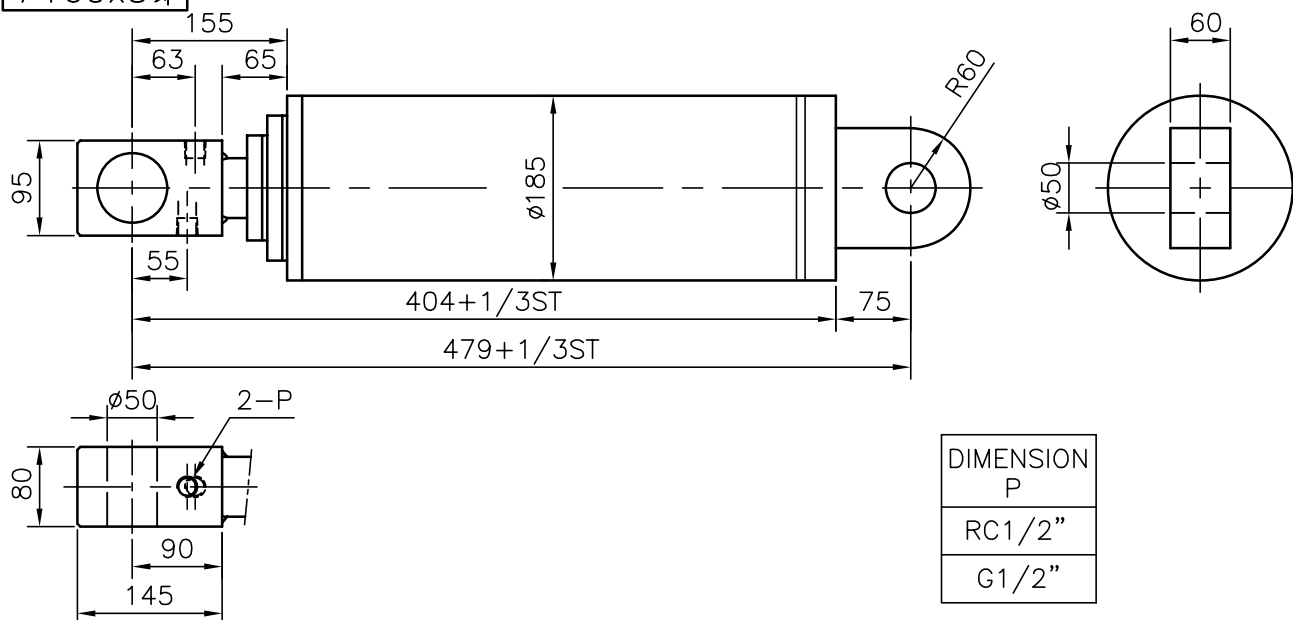
HC9-CD , 140kg/cm²
 ø150x4節



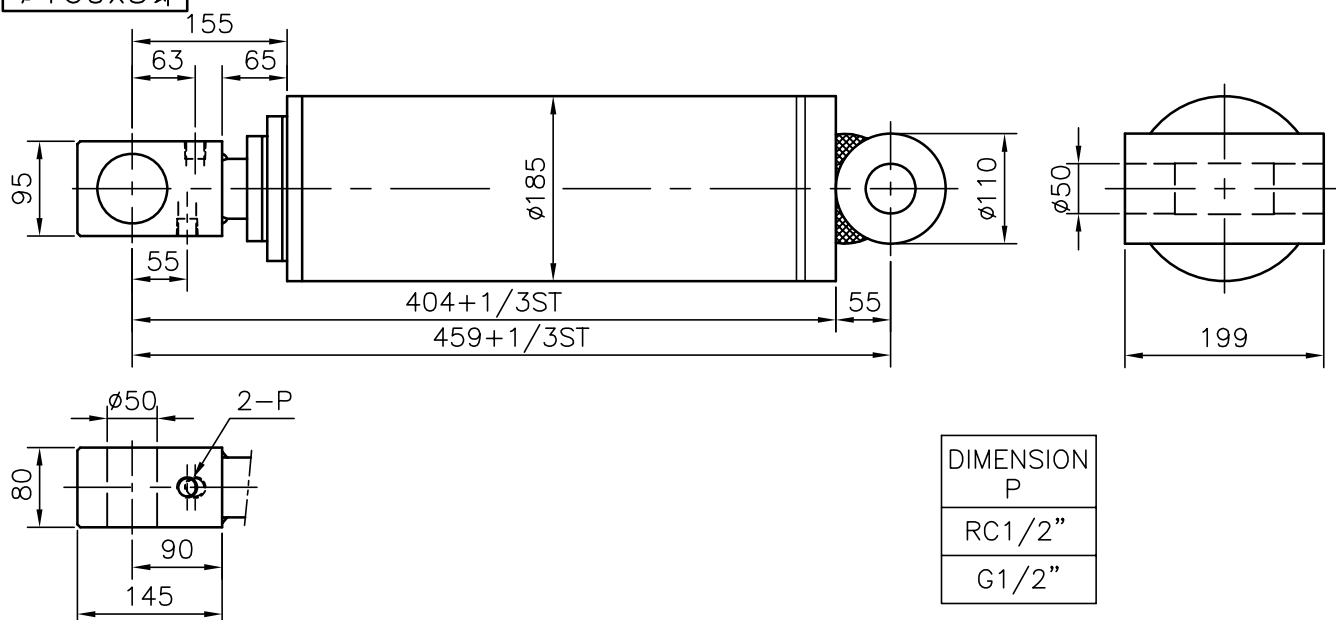
HC9-TC , 140kg/cm²
 ø160x3節



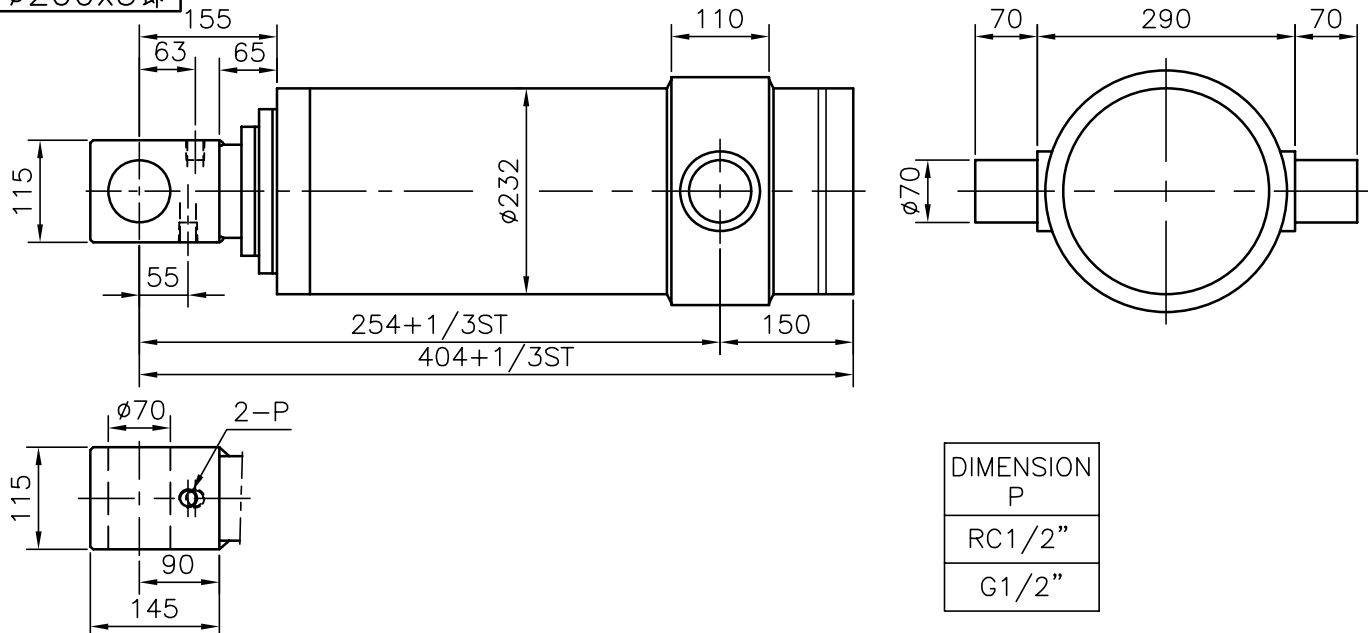
HC9-CA , 140kg/cm²
 ø160x3節



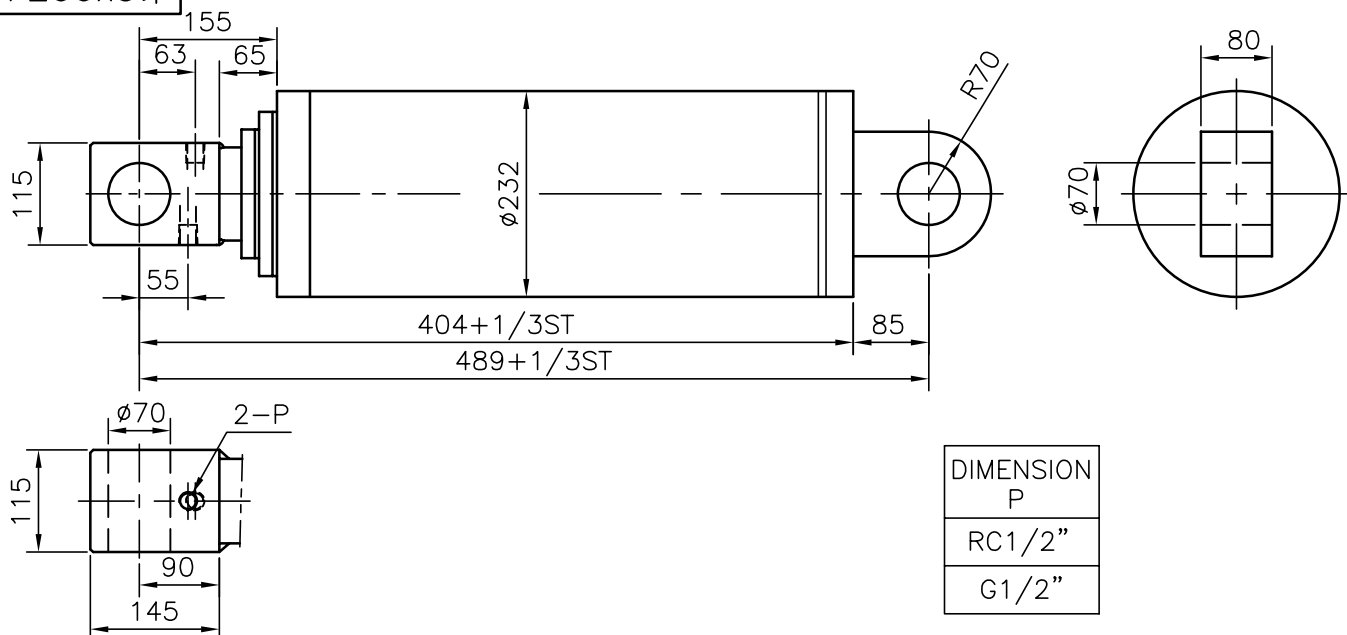
HC9-CD , 140kg/cm²
 ø160x3節



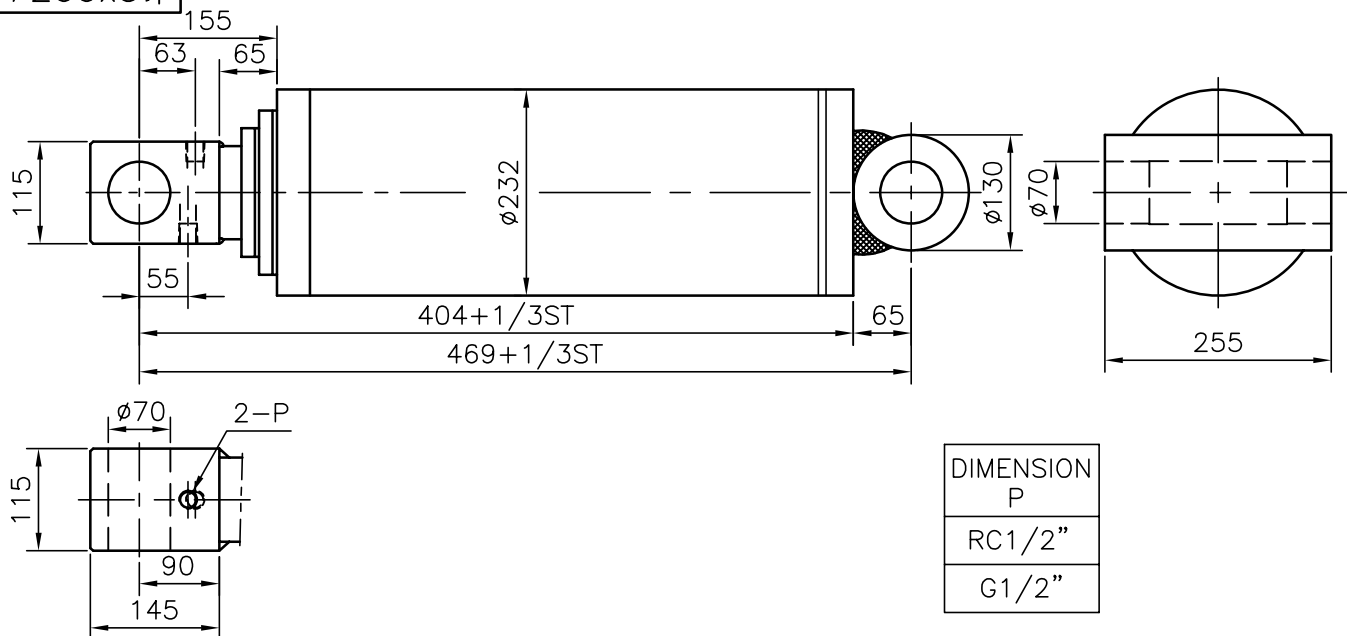
HC9-TC , 140kg/cm²
 ø200x3節



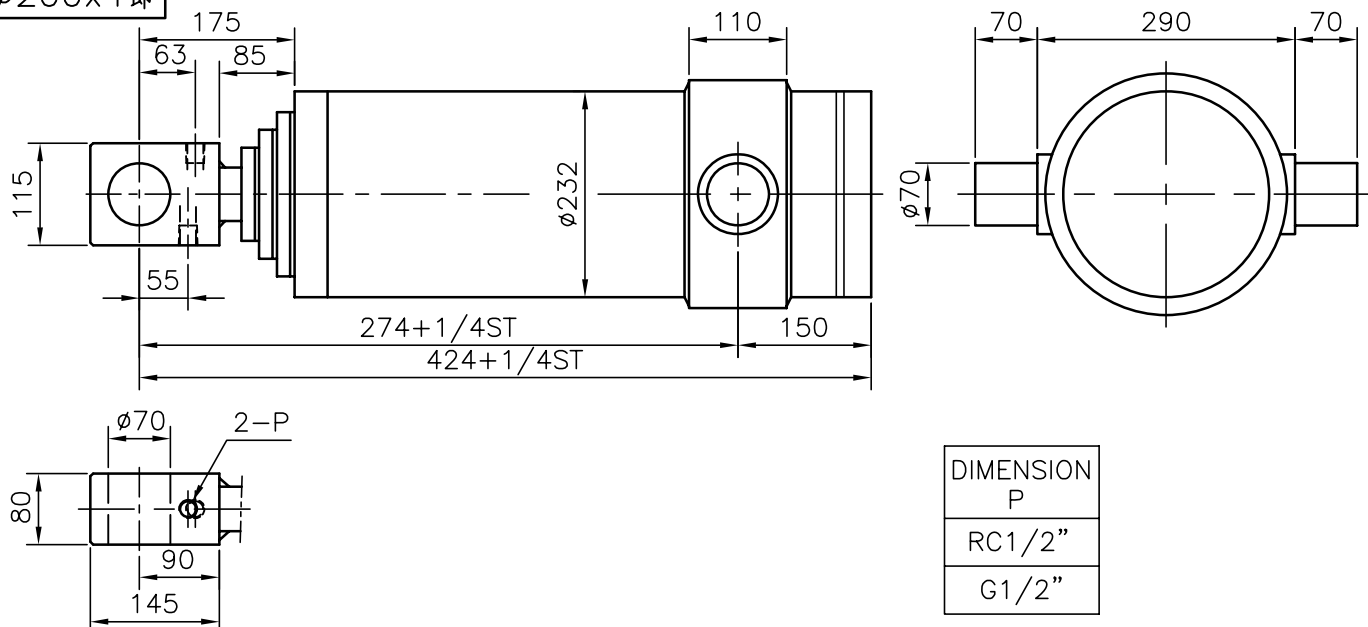
HC9-CA , 140kg/cm²
 ø200x3節



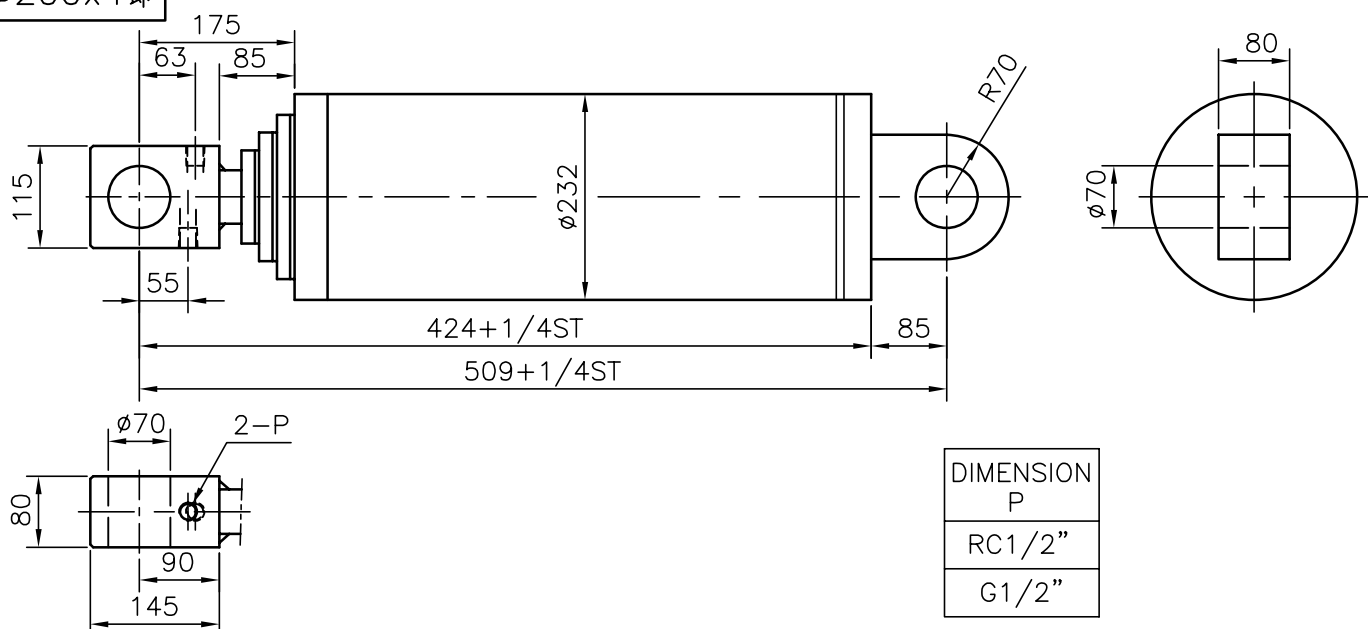
HC9-CD , 140kg/cm²
 ø200x3節



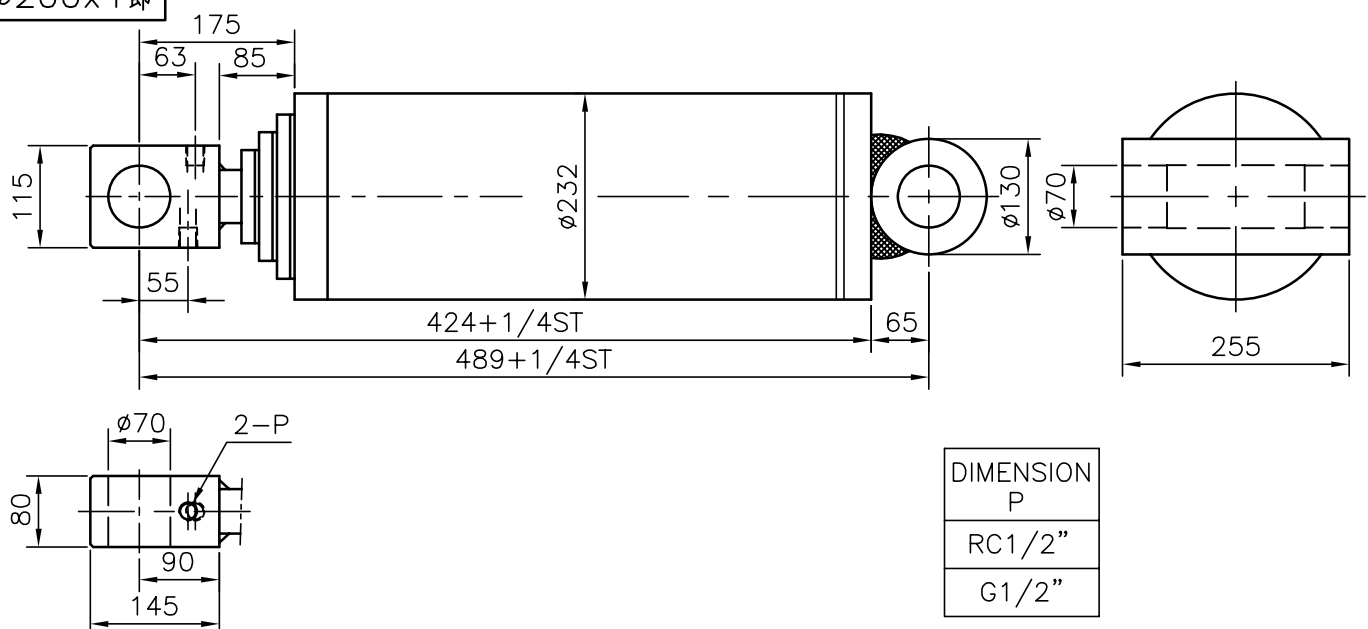
HC9-TC , 140kg/cm²
 ø200x4節



HC9-CA , 140kg/cm²
 ø200x4節



HC9-CD , 140kg/cm²
 ø200x4節

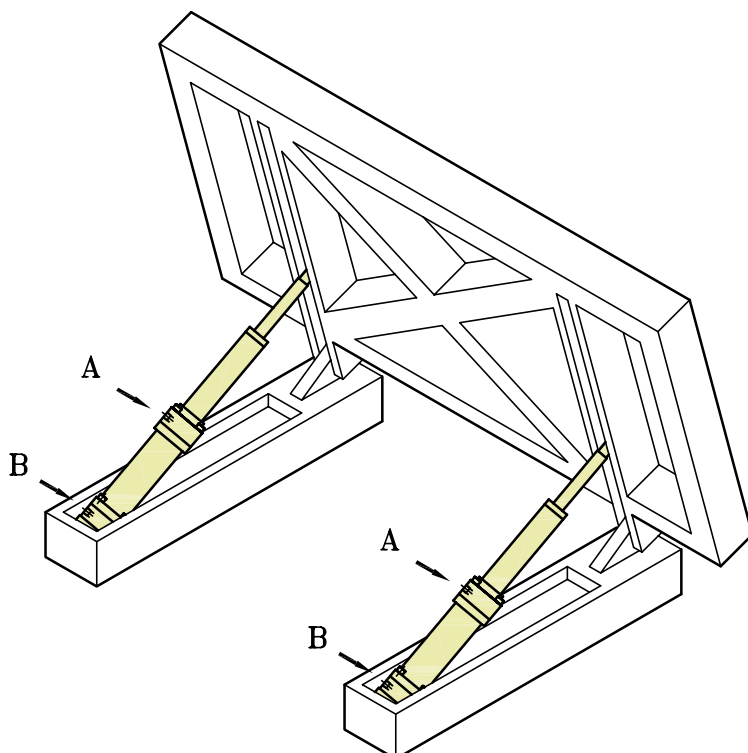
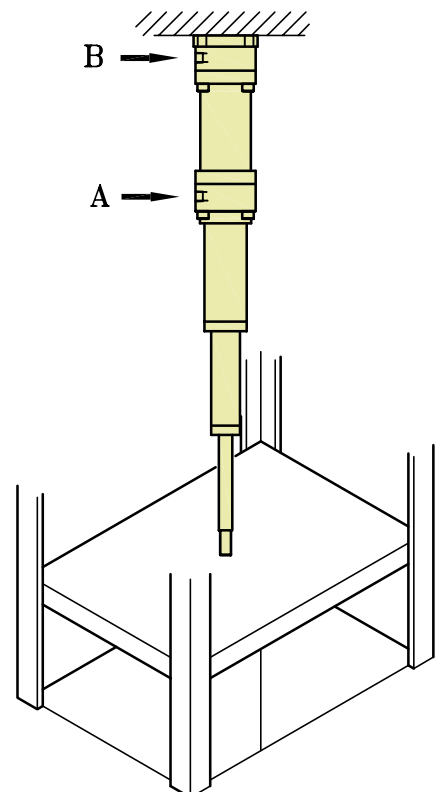
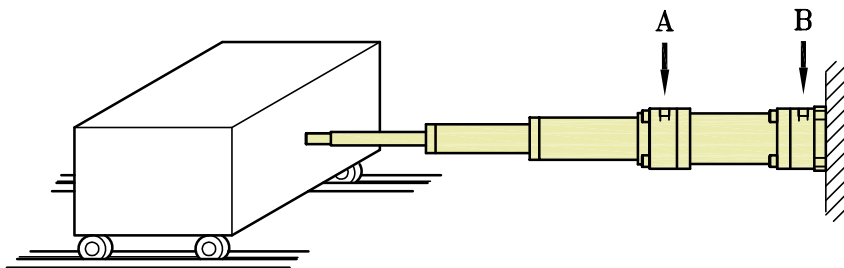
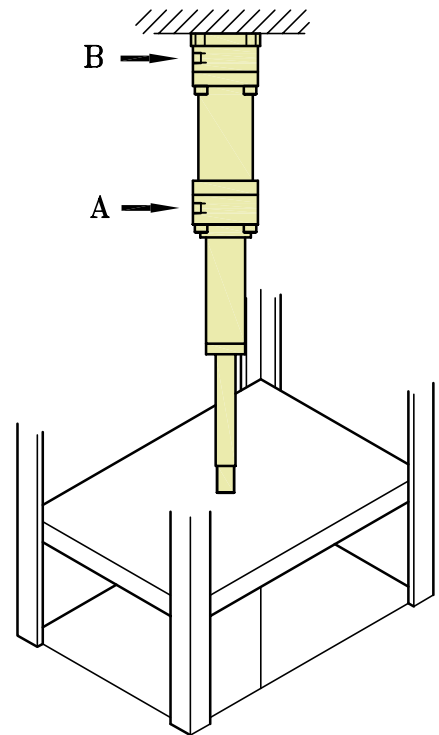
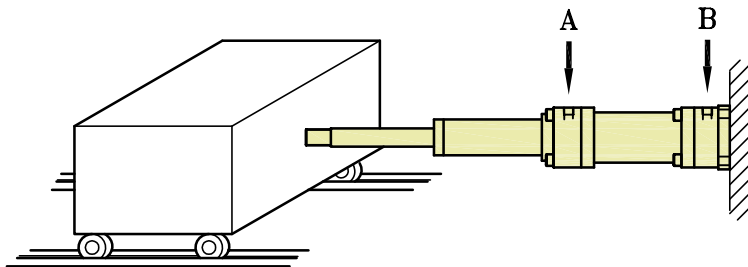


HC10系列油壓缸 / Series Hydraulic Cylinders

HC10— 複動(前後蓋出入油口)多節油壓缸

HC10— (Port Position At Head & Cap) Multi-Stage Hyd. Cyl.

用途例 Use example



HC10

* 訂購內容索引 Ordering Index :

140	HC10	TC	125	2	1000	E
使用壓力 140 kgf/cm ² Max. Operating Pres.	HC10: 系列 HC10: Series Number	固定座形式 Mounting FA, FB, CA, TC	缸管內徑 Cylinder Bore mm ø63, ø90, ø110, ø125, ø140, ø160	衝程 Stroke mm 要考慮最大容許衝程 Max. Permissible stroke	節數記號 Stage Symbol 2, 3,	特殊附件 E: 異形螺紋 K: 附固定螺帽 L: 附I接頭 M: 附Y接頭 Optional Attachment E: Rod end with other threading K: With locking nut L: With I adapter M: With Y adapter

規範 Specifications

最高使用壓力 Max. Operating Pressure	140 kgf/cm ²								
使用溫度範圍 Range of Ambient Temperature	-10°C ~ +50°C								
適用作動油 Fluid	一般礦物性作動油 Mineral oil								
缸管內徑—節數 Cylinder Bore—Stage	63-2	90-2	90-3	110-2	110-3	125-2	125-3	140-2	160-2
常用速度 Operating speed mm/sec	166	150	150	140	140	128	128	118	115
標準行程限制 Permissible Stroke mm	1700	2500	2500	3100	3100	3100	3100	3100	3100

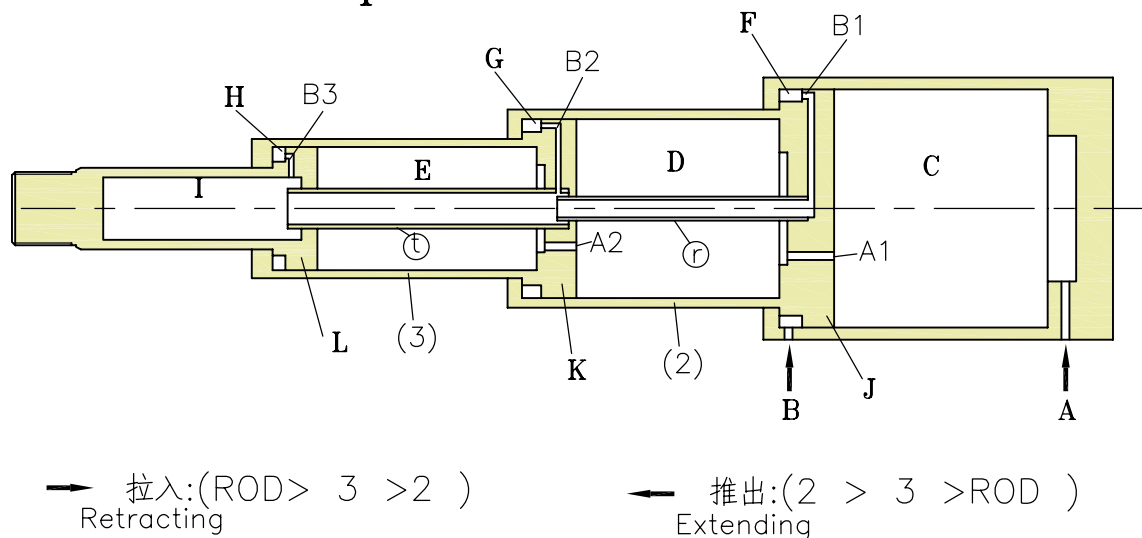
* 上表之數據是標準品，其最大之行程應考慮活塞桿裝置時其彎曲設定值，如果要求比上表之標準品更長時，請與敝公司商談 -

The above mentioned which means the standard model and the max. stroke also must considered the set bending value during installed. if want more longer size please consult us.

* 固定座形式 Mounting :

記號 Symbol	略圖 Configuration	記號 Symbol	略圖 Configuration
FA		FB	
FB		CA	
CA		TC	
TC			

* 動作原理 The Principle of Action:



* 推出原理 The Principle of Extending :

- * 從A油口流入的壓油，進入C室，推動活塞J，第2節油缸動作，同時在F室內的油，從B油口排出 -
- * 當活塞J到達前蓋端時，壓油再經由A1油孔進入D室，推動活塞K，第3節油缸動作，同時在G室的油，經由B2油孔，導管r及B1油孔，流入F室，再從B油口排出 -
- * 當活塞K到達前蓋端時，壓油再經由A2油孔進入E室，推動活塞L，活塞桿推出，同時在H室的油，經由B3油孔流入I室，再經由導管t，導管r及B1油孔，流入F室，再從B油口排出 -

* The hyd. action oil flow from port A and into portion C and thrust piston J, Meanwhile, the second cyl. actioned furthermore the oil in port F will be discharged from port B.

* During the piston J is approached to the cyl. head and the hyd. action oil flow from port A1 into portion D also for which will thrust piston K, Meanwhile, the third cyl. actioned the oil in portion G flow through port B2 piston rod guide tube r & port B1 into portion F for which will be discharged from port B.

* During the piston K is approached to the cyl. head and the hyd. action oil flow port A2 into portion E also for which will thrust piston L, Meanwhile the piston rod extended the oil in portion H flow through port B3 into portion I thus the oil will flow through piston rod guide tube t & r and port B1 into portion F and for which will be discharged from port B.

* 縮收原理 The Principle of Extracting :

- * 從B油口流入的壓油，進入F室，推動活塞J，第2節油缸開始縮收，同時在C室的油，從A油口排出 -
- * 當活塞J到達後蓋端時，壓油經由B1油孔，導管r及B2油孔，進入G室，推動活塞K，第3節油缸縮收，同時在D室的油經由A1油孔，從A油口排出 -
- * 當活塞K到達後蓋端時，壓油進入I室，經由B3油孔進入H室，推動活塞L，活塞桿縮收，同時在E室的油，經由A2油孔及A1油孔，從A油口排出 -
- * 作動壓力相同，受力面積大者先動作，所以動作順序，依受力面積的大小為順序 -

The hyd. action oil flow from port B and into portion F for which will thrust the piston J, Meanwhile the second cyl. will retract also the hyd. action oil in portion C will be discharged from port A.

During the piston J is approached to the cap end and the hyd. action oil will flow through port B1 piston rod guide tube r and port B2 into portion G and thrust piston K, Meanwhile the third cyl. will retract also the hyd. action oil in portion D will be discharged from port A.

During the piston K is approached to the cap end and the hyd. action oil flow into portion I also flow through port B3 into portion H and thrust piston L, Meanwhile the piston rod will retract also the hyd. action oil in portion E will flow through port A2 & A1 and discharged from port A.

There are same actioned stress and being with more bigger stressed area which actioned ahead. so that the actioned sequence for which will according to the stressed area.

HC10

活塞有效斷面積 / Effective Section Area of Piston: (cm²)

機種 Model 方向	推 出 Extending			縮 收 Extracting		
	1 節 1st	2 節 2nd	3 節 3rd	1 節 1st	2 節 2nd	3 節 3rd
63-2	31.2	11.4	—	9.1	6.4	—
90-2	63.6	31.4	—	19.4	21.8	—
90-3	63.6	36.7	14.7	13.3	10.2	10
110-2	95	48.5	—	31.4	34.3	—
110-3	95	55	23.4	24.1	18.3	15.7
125-2	122.7	61	—	36.1	39.8	—
125-3	122.7	76.7	39.3	24.2	21.8	20.4
140-2	153.9	71.4	—	44.6	50.2	—
160-2	201	110.5	—	64.2	56.3	—

* 例題 For Example:

HC10- **125-2形複動式多節油壓缸，設使用壓力為100kgf/cm²時，求推出及縮收之各節出力為多少?(kgf) $F=A \times P \times \beta$ 公式 Formula

HC10- **125-2 double acting multi-stage hyd. cyl. and the operating press. : 100kgf/cm² for which derived the extending & extracting of stage? (kgf)

推出之各節壓力 / Extending pressure of stage :

(1)第1節 /1st stage : $A=122.7\text{cm}^2$, $F=122.7 \times 100 \times 0.8=9820\text{kgf}$

(2)第2節 /2nd stage : $A=76.7\text{cm}^2$, $F=76.7 \times 100 \times 0.8=6140\text{kgf}$

(3)第3節 /3rd stage : $A=39.3\text{cm}^2$, $F=39.3 \times 100 \times 0.8=3150\text{kgf}$

縮收之各節壓力 / Extracting pressure of stage :

(1)第1節 /1st stage : $A=24.2\text{cm}^2$, $F=24.2 \times 100 \times 0.8=1940\text{kgf}$

(2)第2節 /2nd stage : $A=21.8\text{cm}^2$, $F=21.8 \times 100 \times 0.8=1750\text{kgf}$

(3)第3節 /3rd stage : $A=20.4\text{cm}^2$, $F=20.4 \times 100 \times 0.8=1640\text{kgf}$

* 如何選擇機種 How To Select The Suited Model:

又今預使用複動式多節油壓缸且設使用壓力為140kgf/cm²時，縮收之荷重，在第3節時需要1800kgf，求該形(第3節)之油壓缸，其機種為何?

Now if want employed the double acting multi-stage hyd. cyl. and the operating pressure : 140 kgf/cm² also the extracting load at 3rd stage and with load 1800kgf for which derived 3rd hyd. cyl.

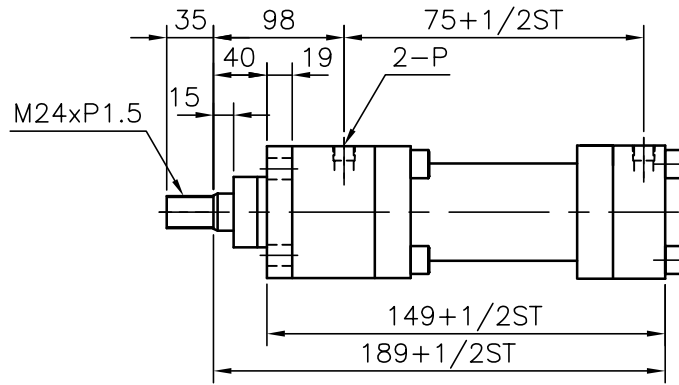
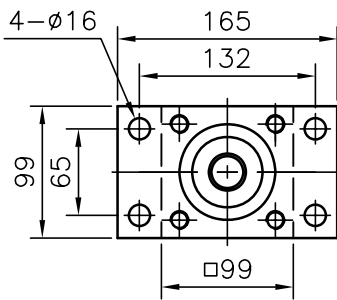
$$A = \frac{F}{P \times \beta} \quad \text{公式} \quad A = \frac{1800\text{kgf}}{140\text{kgf/cm}^2 \times 0.8} = 16\text{cm}^2$$

Formula

由上表(HC10- 活塞有效斷面積)縮收時，得知為15.7cm²與20.4cm²則適用之機種條件為:(1)HC10- **110-3或(2)HC10- **125-3之機種

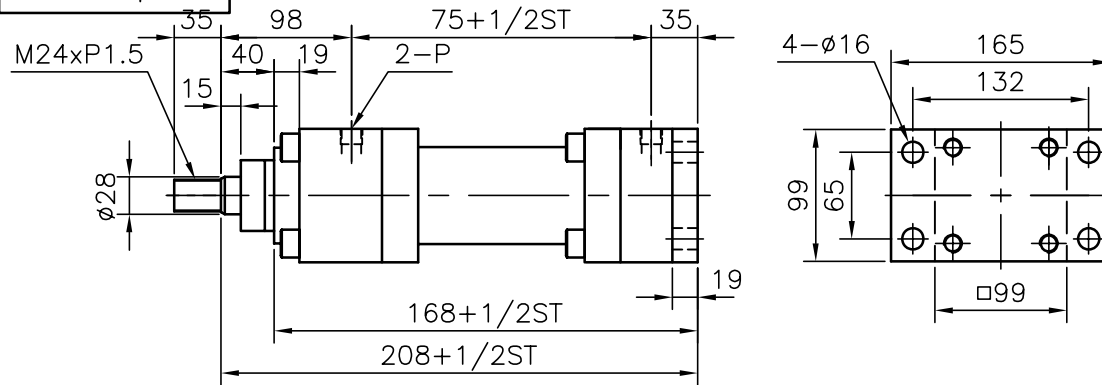
From above table the HC10- at extracting and achieved 15.7cm² and 20.4cm² which suited the model (1)HC10- **110-3 or (2)HC10- **125-3

HC10-FA
ø63x2節



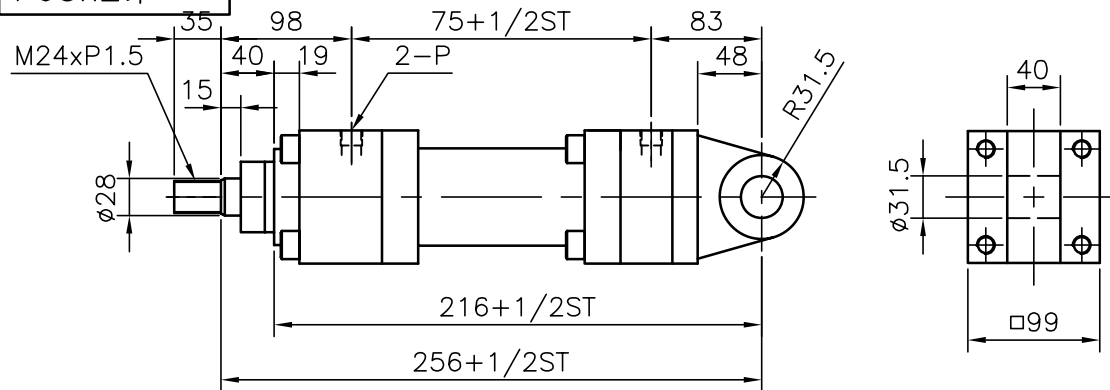
DIMENSION P
RC3/8"
G3/8"

HC10-FB
ø63x2節



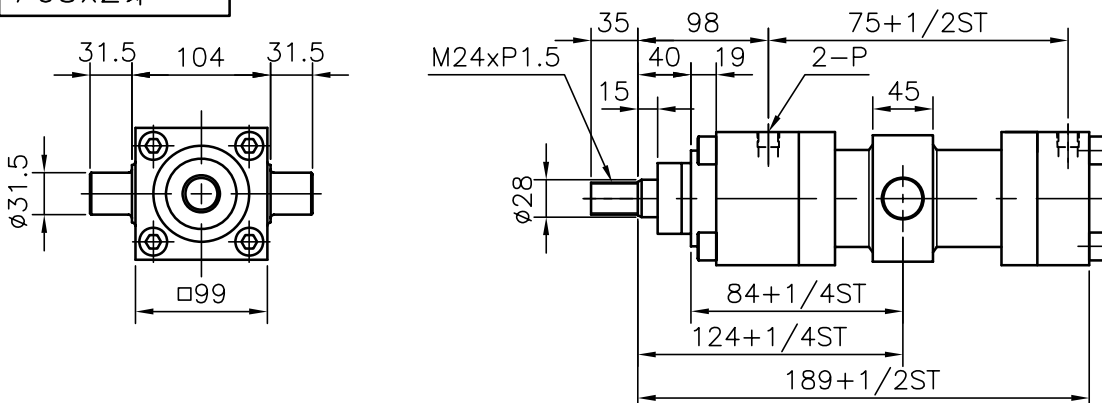
DIMENSION P
RC3/8"
G3/8"

HC10-CA
ø63x2節



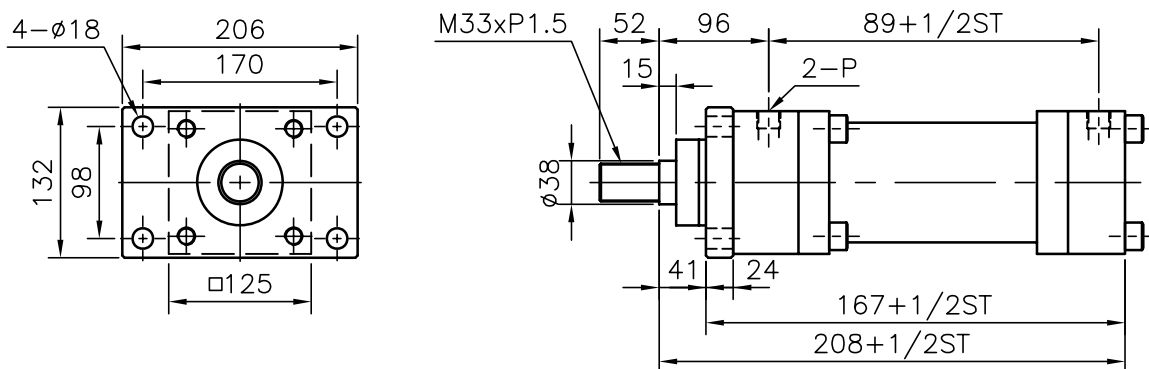
DIMENSION P
RC3/8"
G3/8"

HC10-TC
ø63x2節



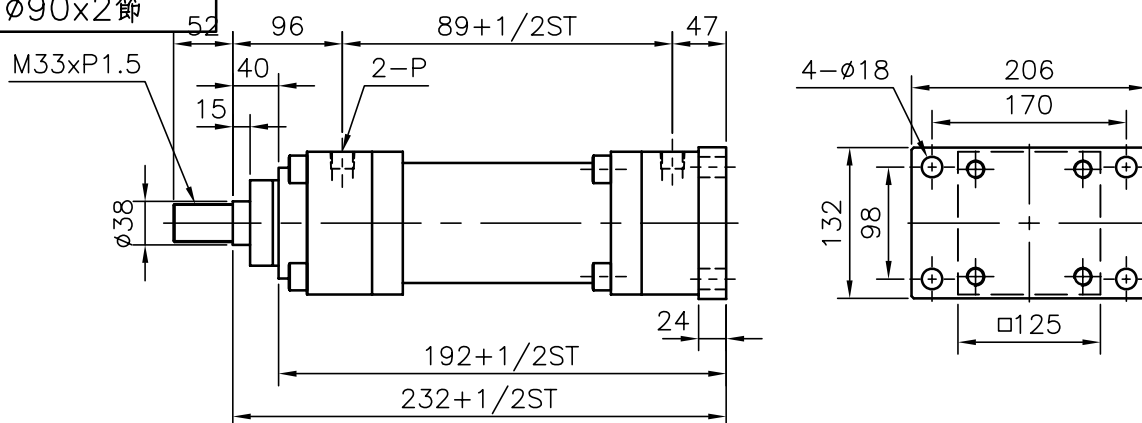
DIMENSION P
RC3/8"
G3/8"

HC10-FA
ø90x2節



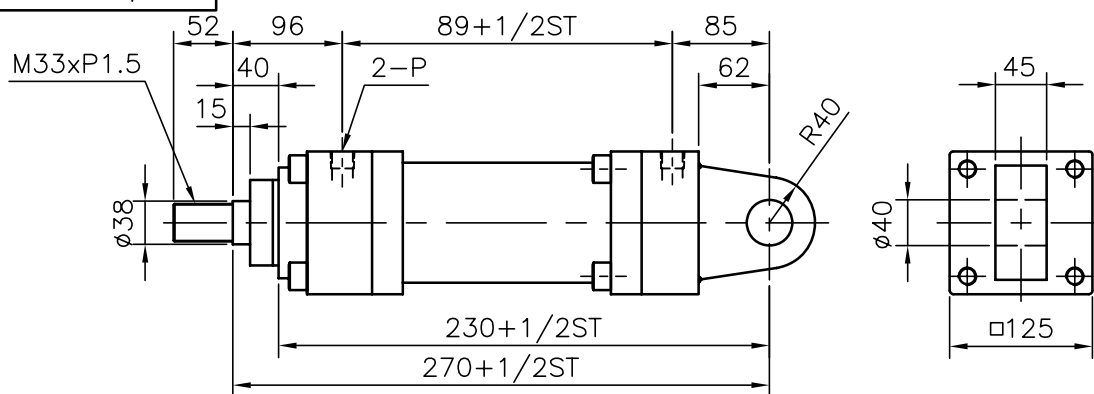
DIMENSION P
RC1/2"
G1/2"

HC10-FB
ø90x2節



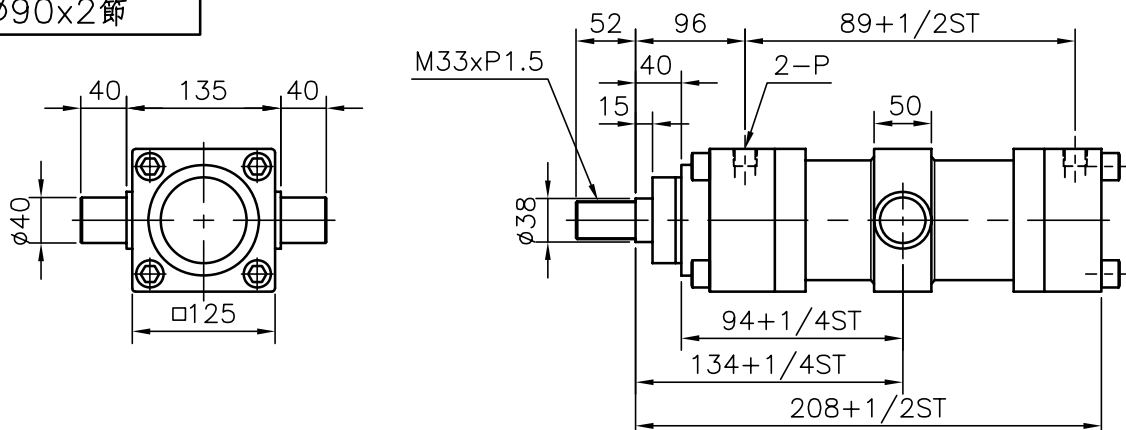
DIMENSION P
RC1/2"
G1/2"

HC10-CA
ø90x2節



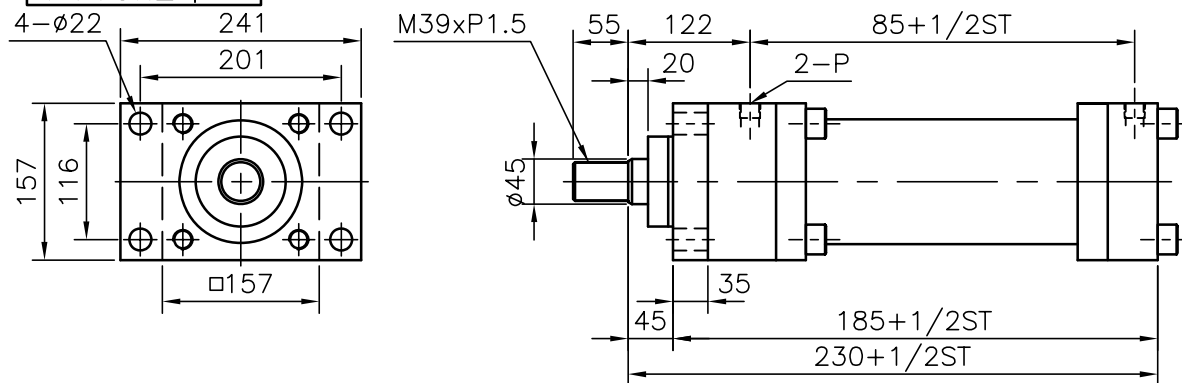
DIMENSION P
RC1/2"
G1/2"

HC10-TC
ø90x2節



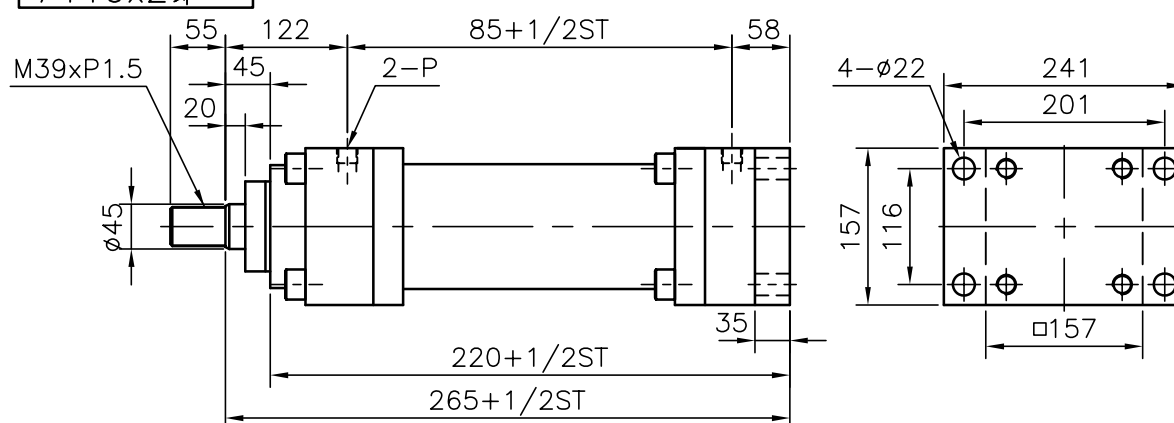
DIMENSION P
RC1/2"
G1/2"

HC10-FA
ø110x2節



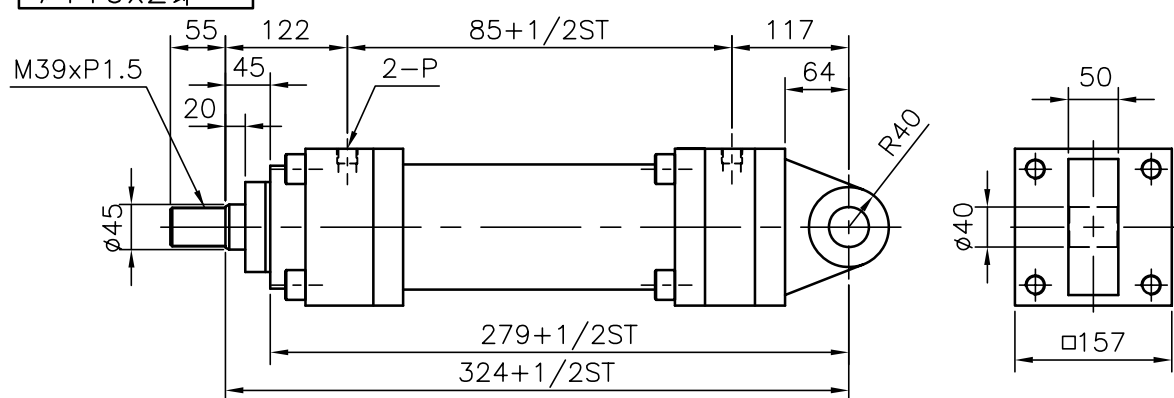
DIMENSION P
RC1/2"
G1/2"

HC10-FB
ø110x2節



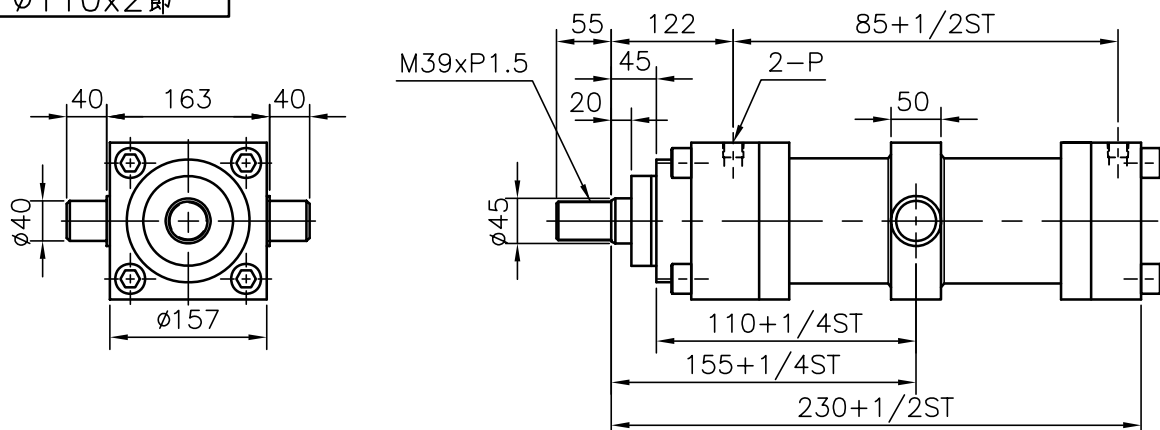
DIMENSION P
RC1/2"
G1/2"

HC10-CA
ø110x2節



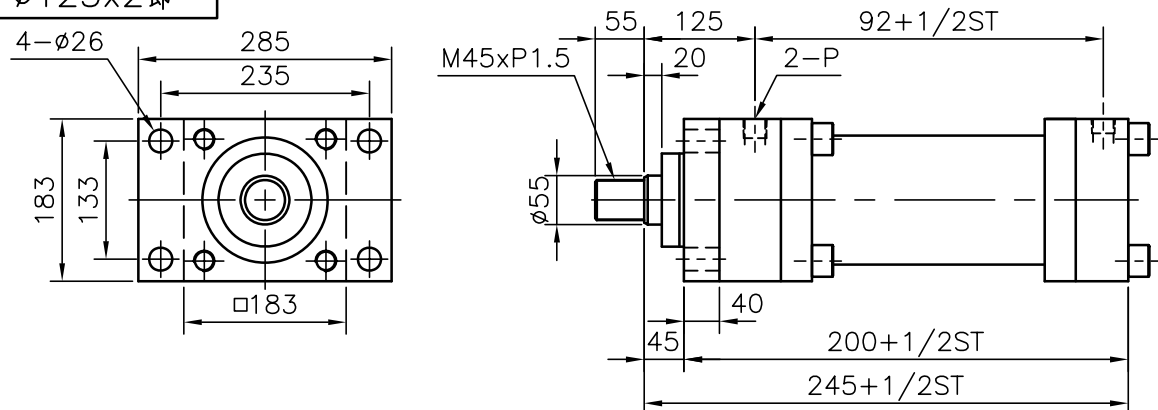
DIMENSION P
RC1/2"
G1/2"

HC10-TC
ø110x2節



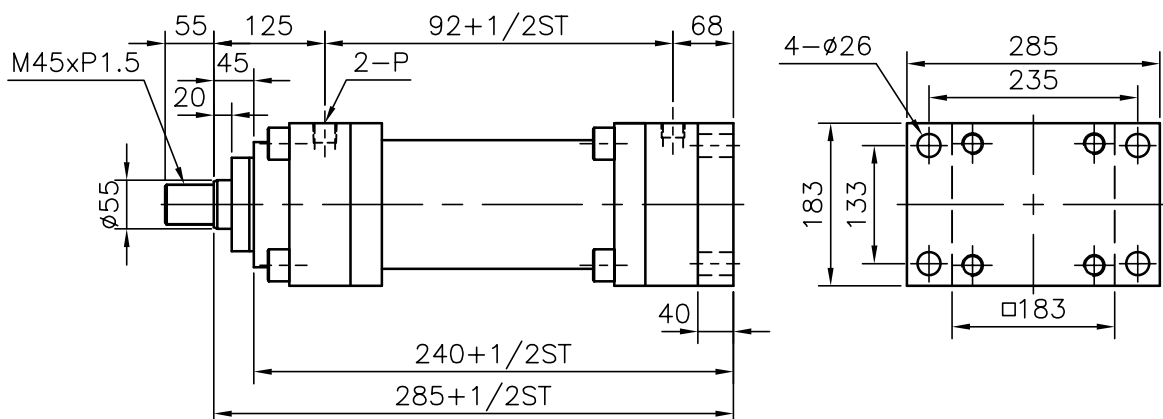
DIMENSION P
RC1/2"
G1/2"

HC10-FA
 $\phi 125 \times 2$ 節



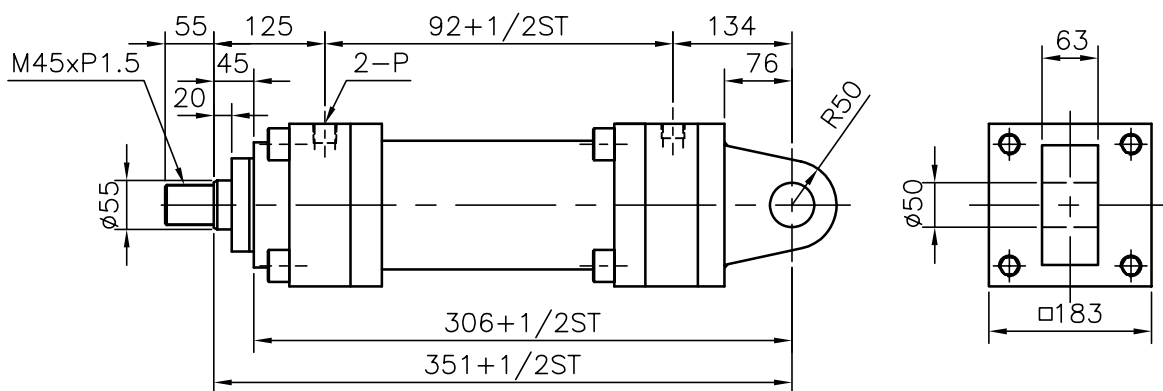
DIMENSION P
RC3/4"
G3/4"

HC10-FB
 $\phi 125 \times 2$ 節



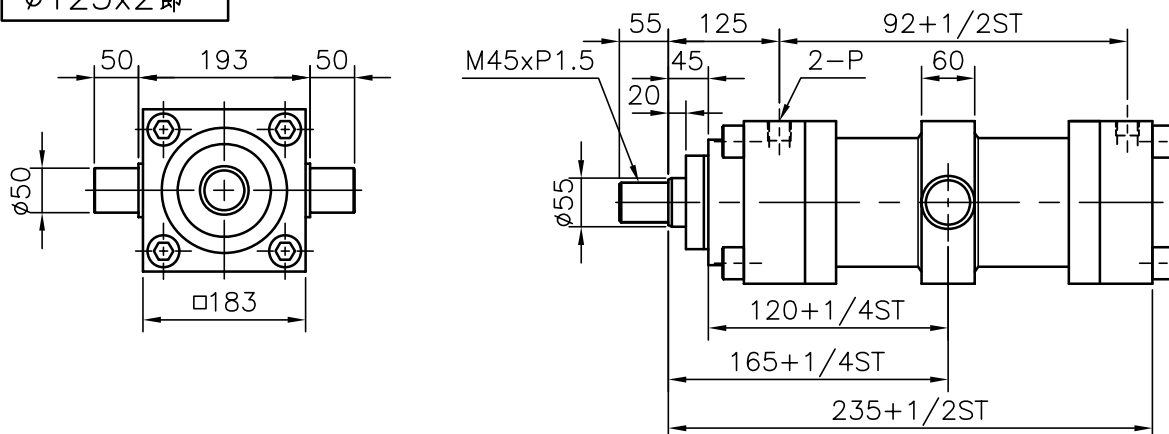
DIMENSION P
RC3/4"
G3/4"

HC10-CA
 $\phi 125 \times 2$ 節



DIMENSION P
RC3/4"
G3/4"

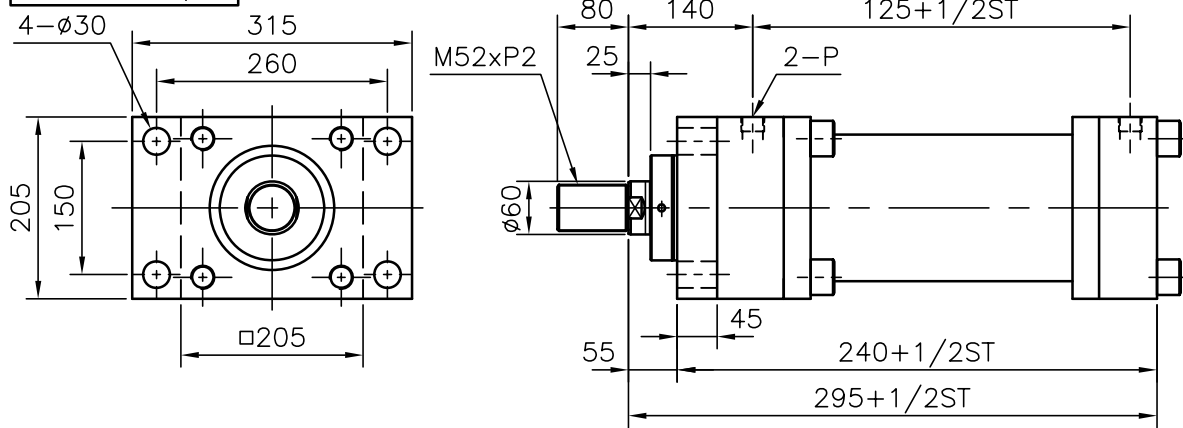
HC10-TC
 $\phi 125 \times 2$ 節



DIMENSION P
RC3/4"
G3/4"

HC10-FA

ø140x2節



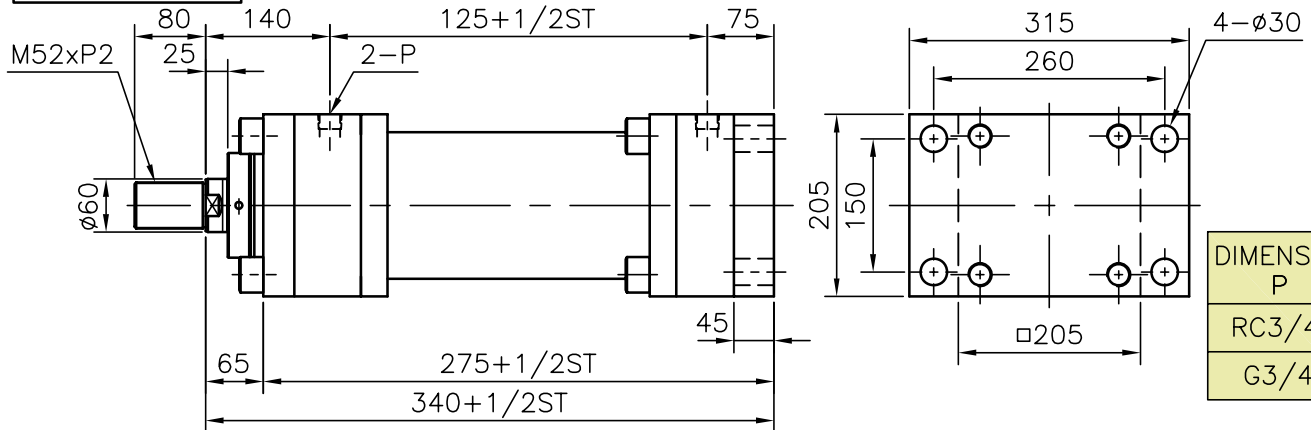
DIMENSION
P

RC3/4"

G3/4"

HC10-FB

ø140x2節



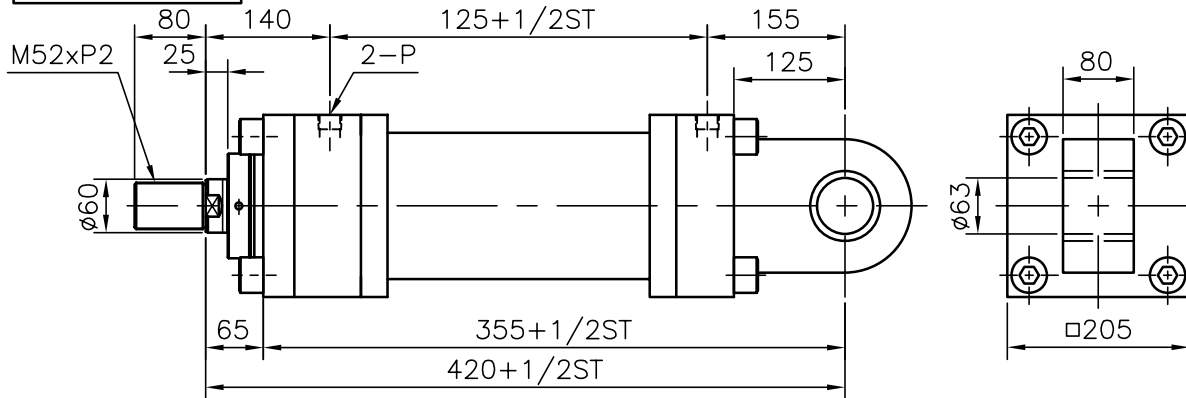
DIMENSION
P

RC3/4"

G3/4"

HC10-CA

ø140x2節



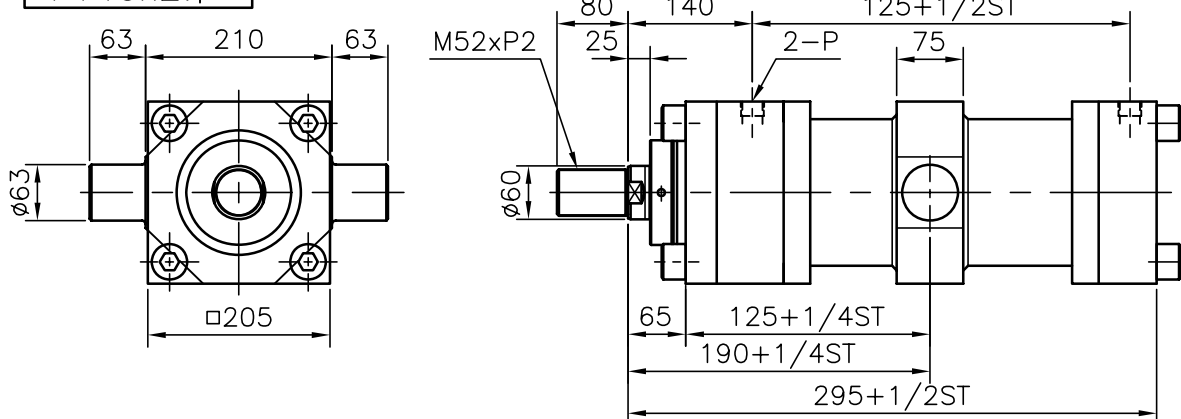
DIMENSION
P

RC3/4"

G3/4"

HC10-TC

ø140x2節

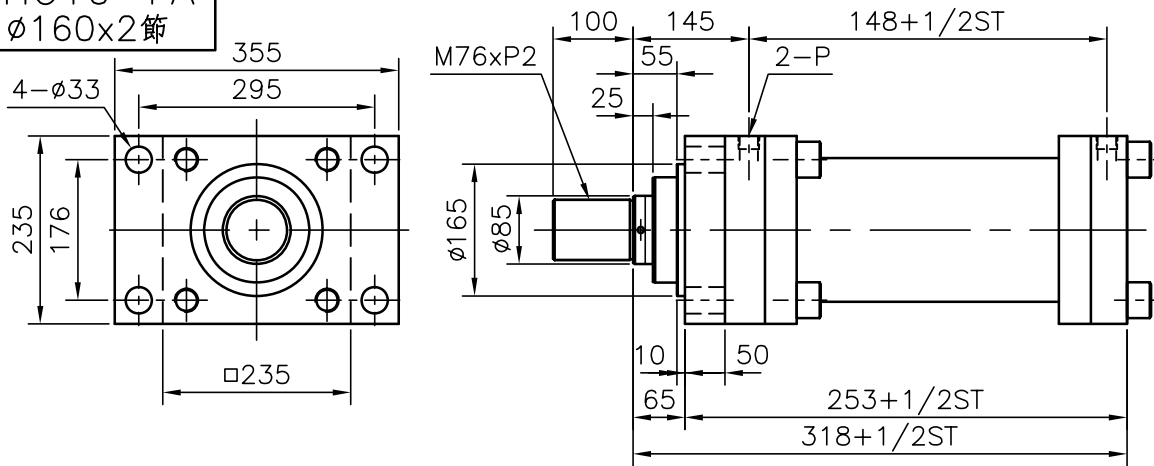


DIMENSION
P

RC3/4"

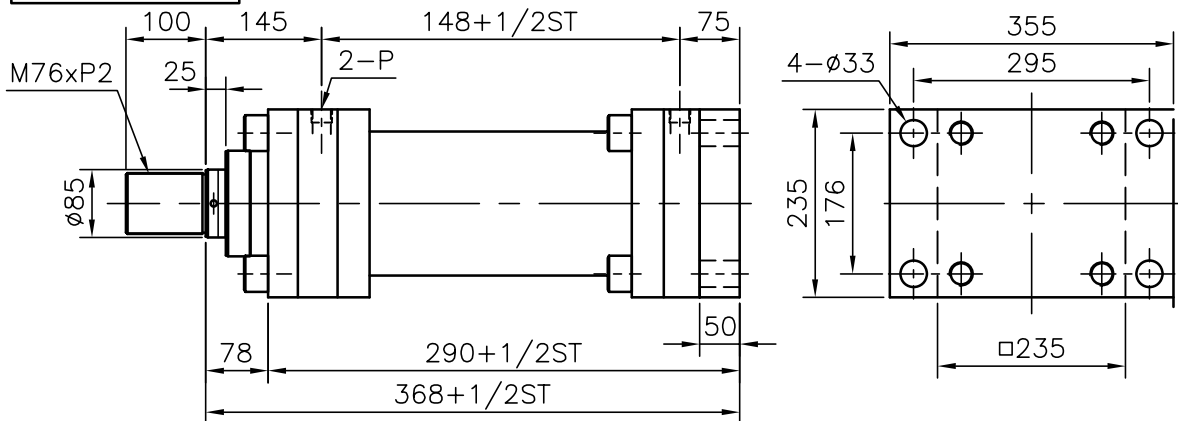
G3/4"

HC10-FA
ø160x2節



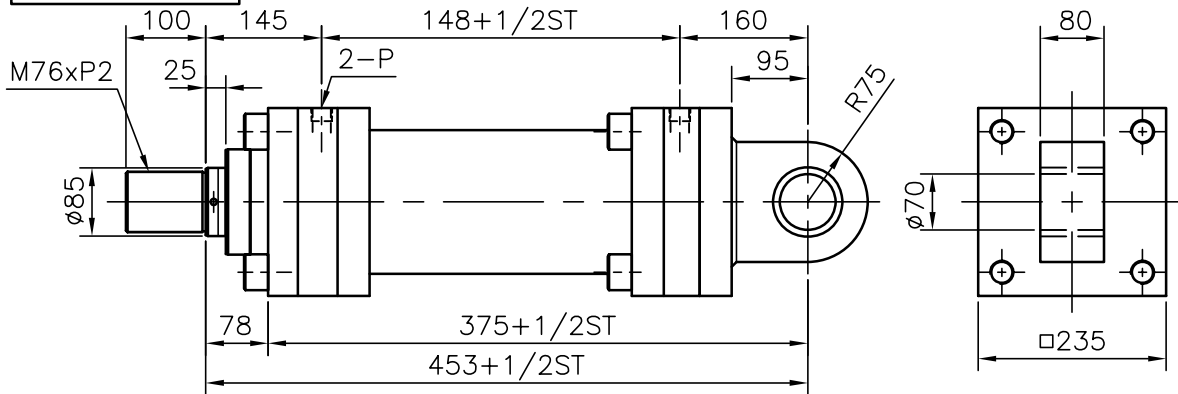
DIMENSION P
RC3/4"
G3/4"

HC10-FB
ø160x2節



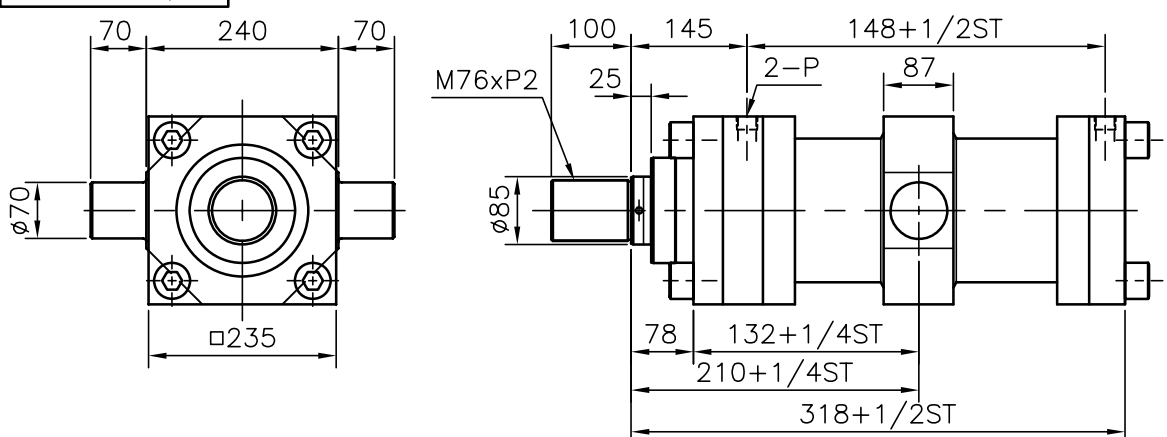
DIMENSION P
RC3/4"
G3/4"

HC10-CA
ø160x2節



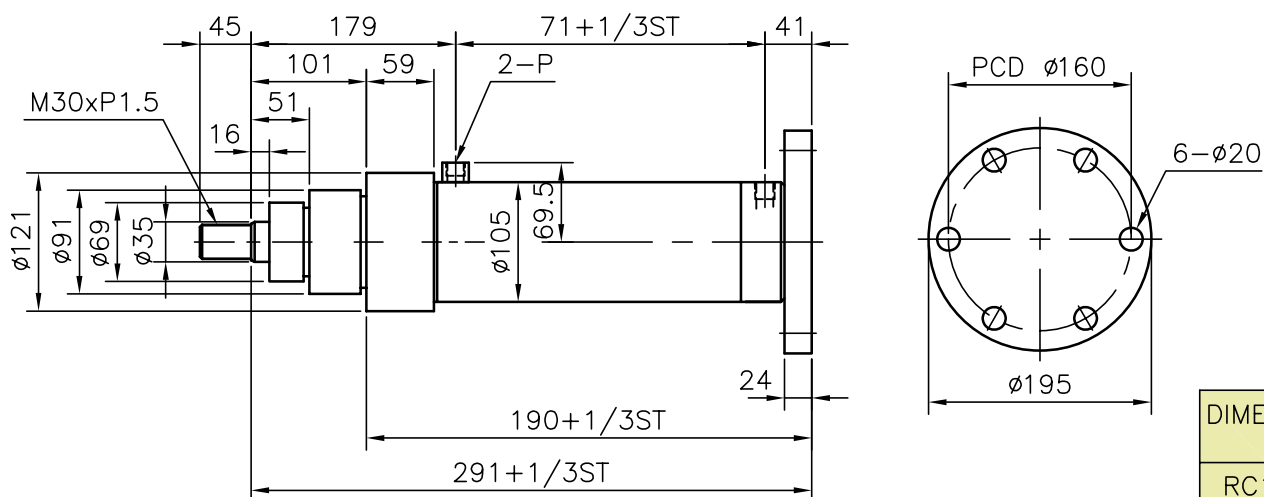
DIMENSION P
RC3/4"
G3/4"

HC10-TC
ø160x2節



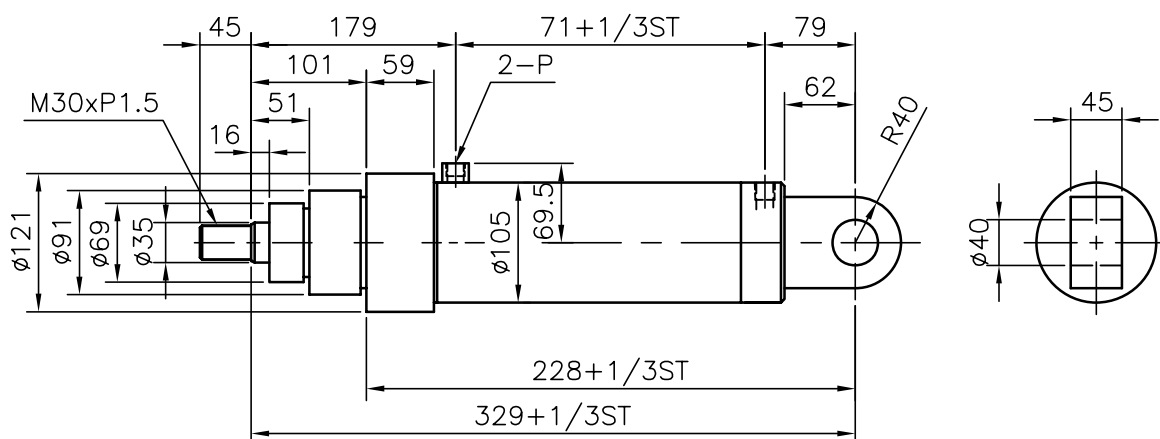
DIMENSION P
RC3/4"
G3/4"

HC10-FB
ø90x3節



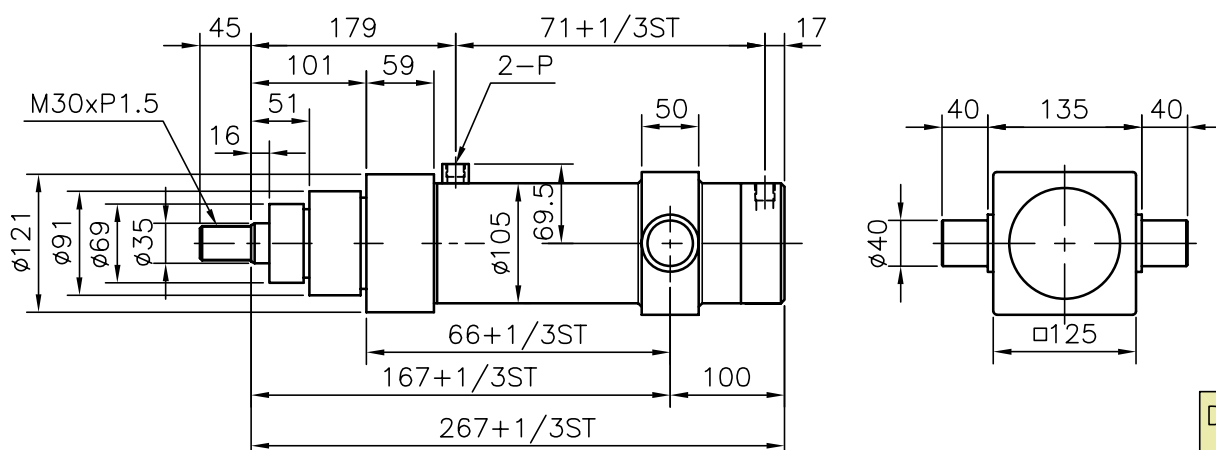
DIMENSION P
RC1/2"
G1/2"

HC10-CA
ø90x3節



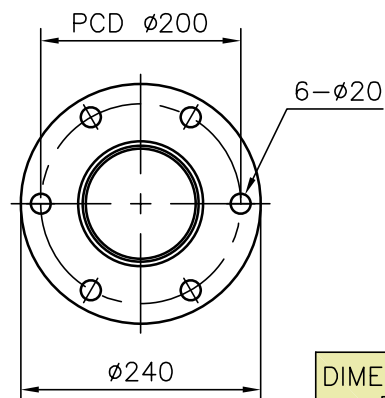
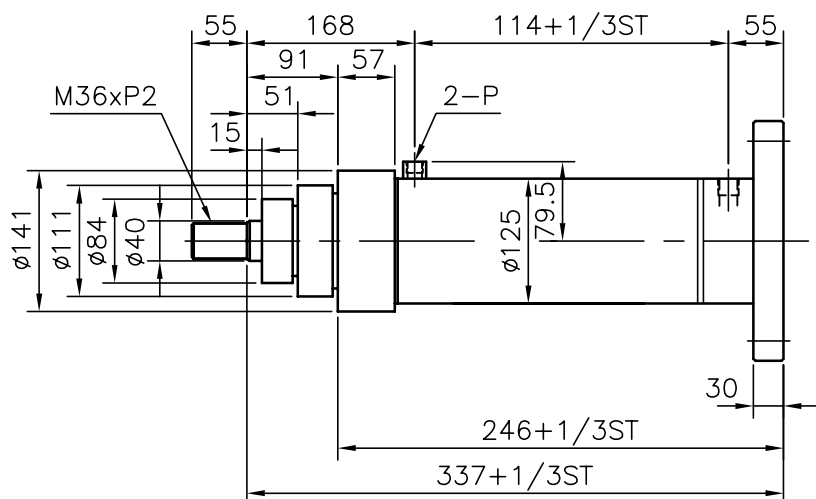
DIMENSION P
RC1/2"
G1/2"

HC10-TC
ø90x3節



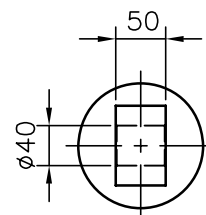
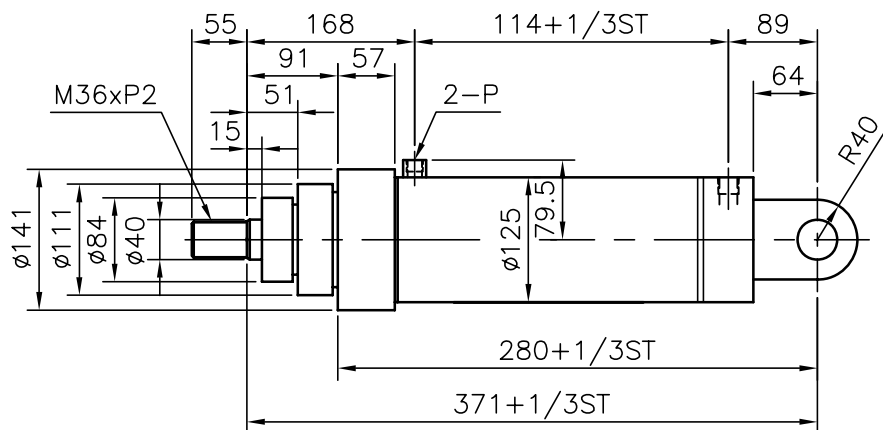
DIMENSION P
RC1/2"
G1/2"

HC10-FB
ø110x3節



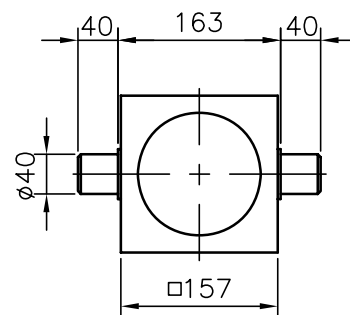
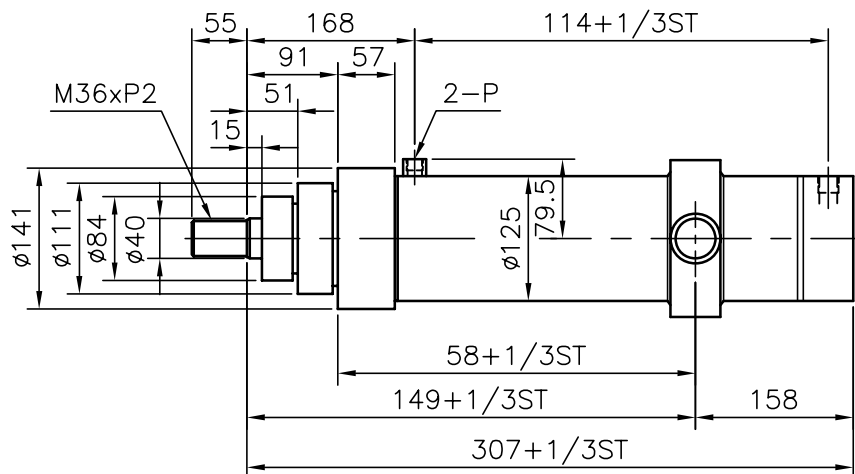
DIMENSION P
RC1/2"
G1/2"

HC10-CA
ø110x3節



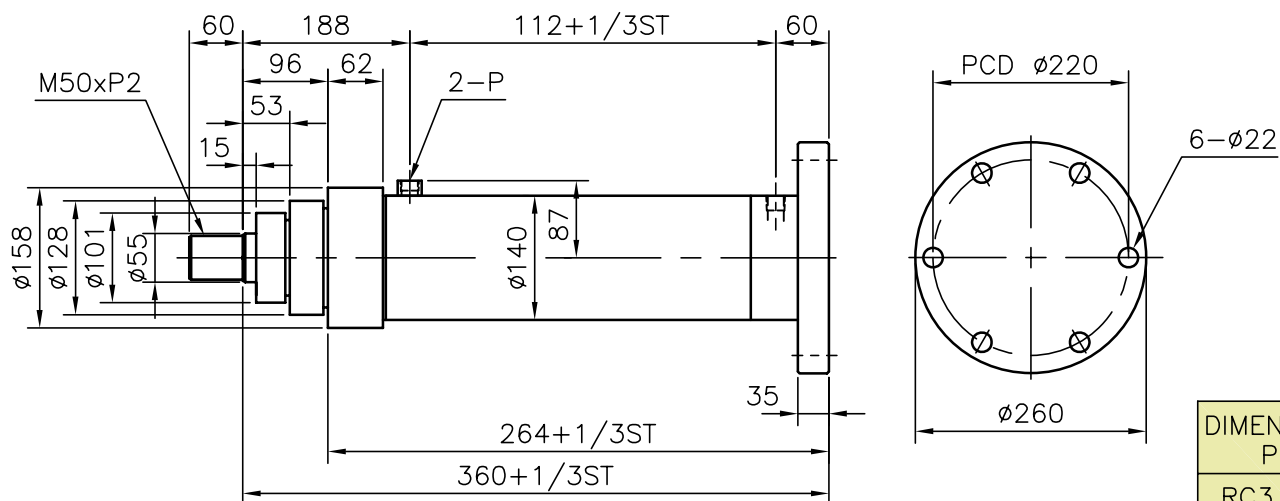
DIMENSION P
RC1/2"
G1/2"

HC10-TC
ø110x3節

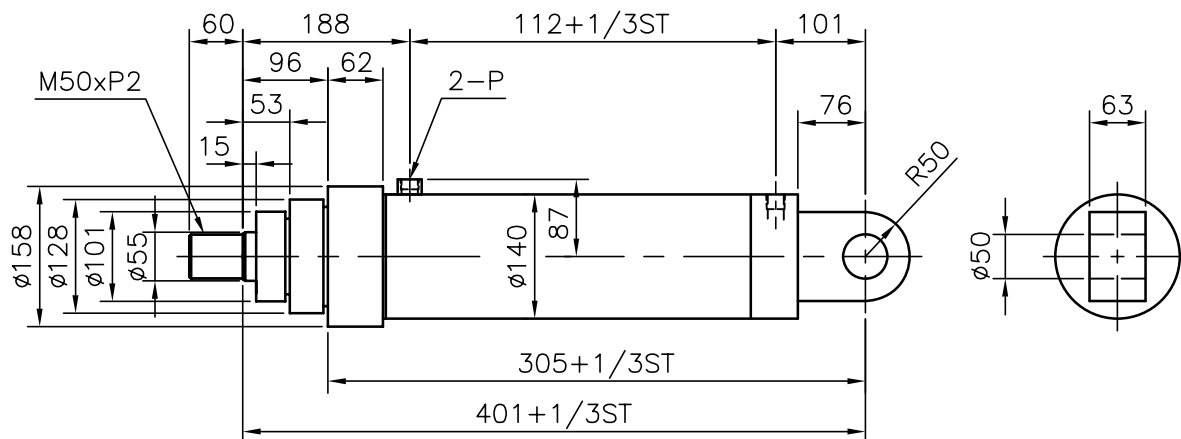


DIMENSION P
RC1/2"
G1/2"

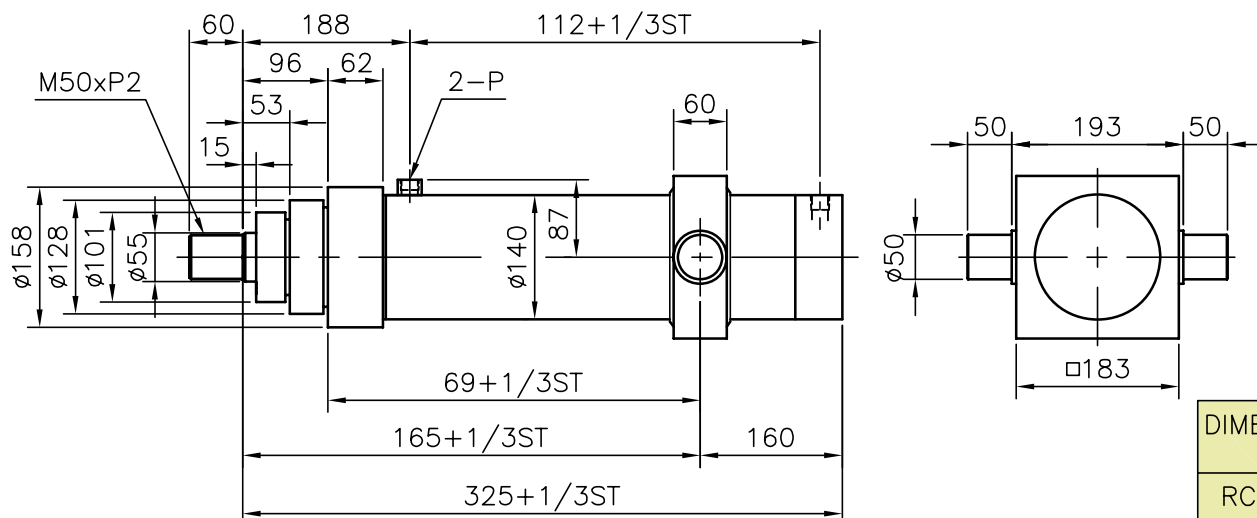
HC10-FB
 $\phi 125 \times 3$ 節



HC10-CA
 $\phi 125 \times 3$ 節



HC10-TC
 $\phi 125 \times 3$ 節



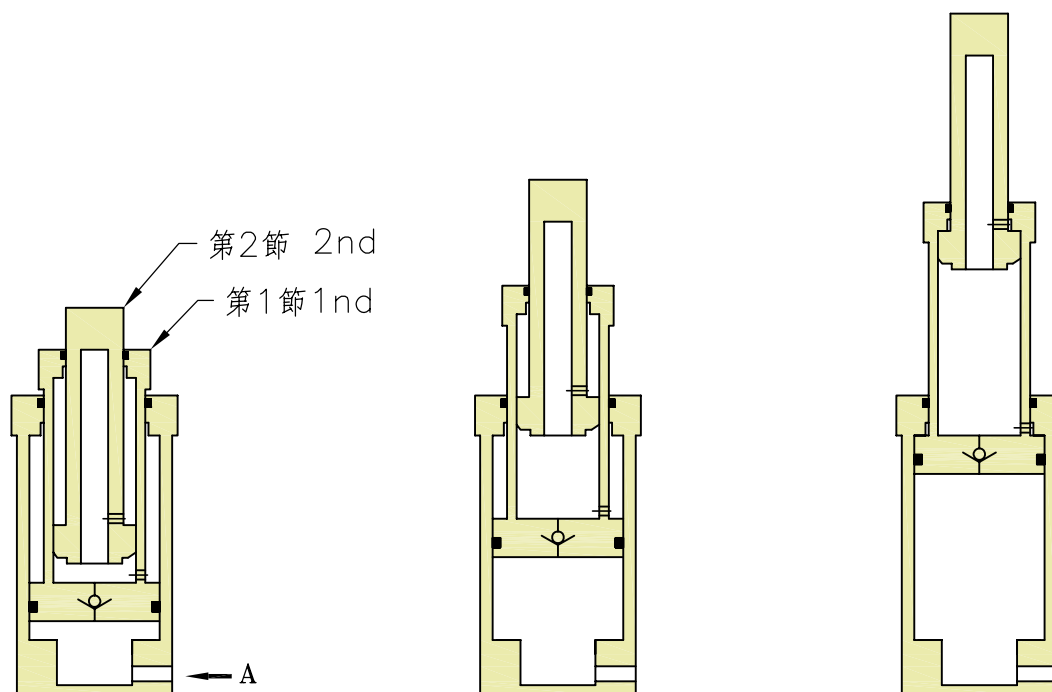
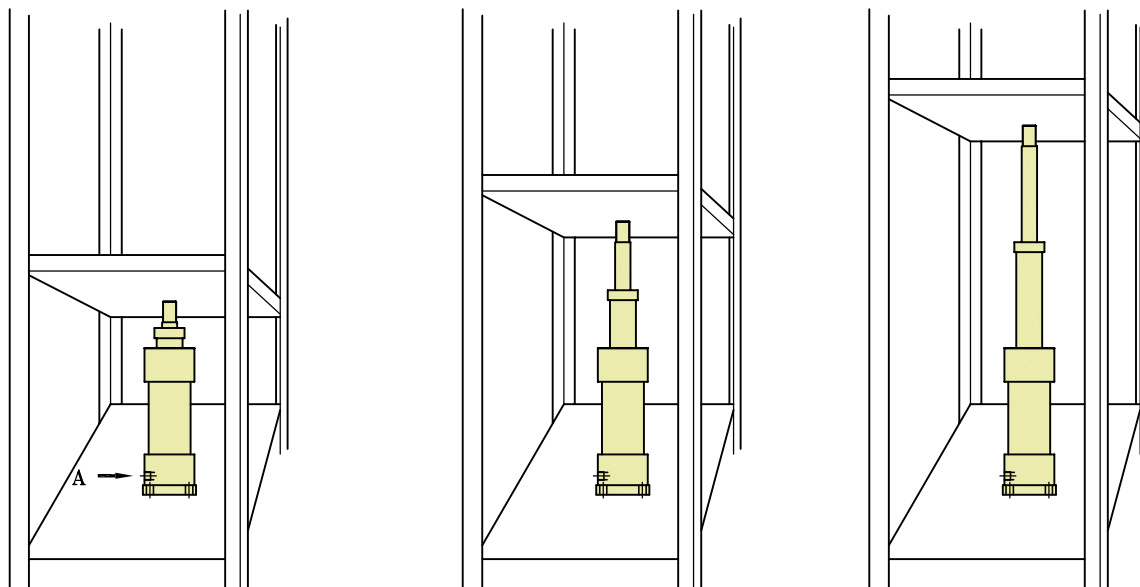
HC11 系列油壓缸 / Series Hydraulic Cylinders

HC11 形同步雙節油壓缸 / Two Stage Synchronous Hyd. Cyl. &

- * 快速且穩定性高之作動: HC11形同步雙節式其速度快而且穩定性高，各節同時作動，因為第2節的活塞桿端之速度為第1節活塞桿端速度的2倍，所以快速而且速度一定，故稱為同步形
- * Rapid & hi-stability of action: The HC11 two stage synchronous hyd. cyl. which being with rapid & hi-stability of action etc., character. Because the speed of 2nd stage cyl. rod is two multiple of 1st stage cyl. rod. so that, those are same speed during action.

直立伸縮用途例

Stands erect the expansion and contraction use example



在伸出和縮回時第1節和第2節，皆等速距離動作

而縮入時需於前端的重量使其壓回

When stretches out and retracts first and second
All uniform motion

When retracts must cause it to the front end weight to press

HC11

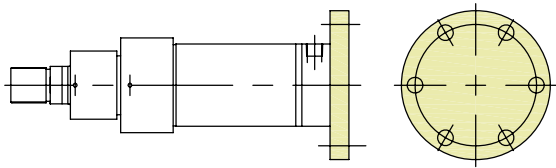
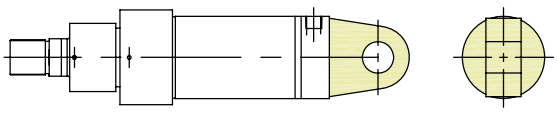
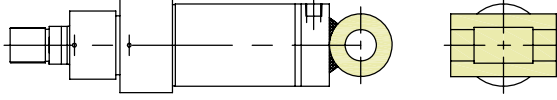
* 訂購內容索引 Ordering Index :

140	HC11	FB	125	1000	E
使用壓力140 kgf/cm ² Max. Operating Pres.	HC11:系列 HC11:Series Number	固定座形式 Mounting FB, CA, CD	缸管內徑 Cylinder Bore mm ø90,ø100,ø125,ø150,ø180,ø200	衝程 Stroke mm 要考慮最大容許衝程 Max. Permissible stroke	特殊附件 E:異形螺紋 K:附固定螺帽 L:附I接頭 M:附Y接頭 Optional Attachment E:Rod end with other threading K:With locking nut L:With I adapter M:With Y adapter

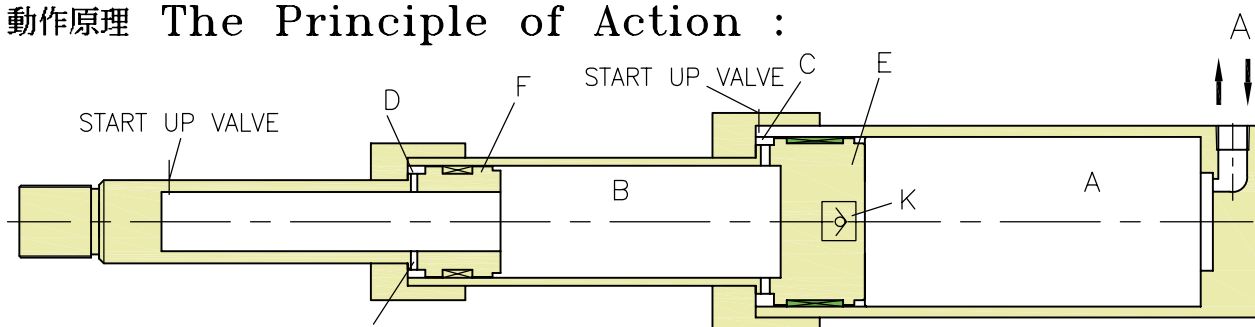
規範 Specifications

最高使用壓力 Max.Operating Pressuer		160 kgf/cm ² -10°C ~ +50°C						
使用溫度範圍 Range of Ambient Temperature		周圍溫度 Ambient temp				油溫 Oil temp		
適用作動油 Fluid		一般礦物性作動油 Mineral oil						
最低使用速度 mm/sec Min. Operating Speed		2 mm/sec						
缸管內徑 mm Cylinder Bore	主缸 Main Cyl.	90	100	125	150	180	200	
	第2節 2nd	65	70	90	100	125	140	
最小活塞桿徑 mm Min. Piston Rod Dia.		50	60	75	90	100	120	
常用速度 mm/sec General Operating Speed		300	280	250	230	220	220	
標準行程限制 mm Permissible Stroke		4400	4800	5100	5500	6800	7700	

* 固定座形式 Mounting :

記號 Symbol	略 圖 Configuration	記號 Symbol	略 圖 Configuration
FB		CA	
		CD	

* 動作原理 The Principle of Action :



* 推出原理 The Principle of Extending:

- * 壓油從油口流入到A室，推動活塞E，第2節油缸動作同時在C室內的壓油，經由G油孔流入B室，推動活塞F，活塞桿作動，同時在D室內的壓油，會經H油孔流入B室成為差動回路 - 因此稱之為同步雙節油壓缸 - (如B室內油量不足時，K平衡閥自動補足)

The hyd. action oil flow into portion A from port and thrusts piston E, Meanwhile, the 2nd stage hyd. cyl. will actioned and the hyd. action oil in portion C will flow pass through port G into portion B and thrusts piston F, also, the piston rod actioned. Thus the hyd. action oil in portion D will flow pass through port H into portion B and formed hyd. differential circuiting. so that, those are named the twin stage synchronous hyd. cyl. (If the oil volume of portion B is shortage for then, the counter-balance valve K will be supplied automatically)

* 縮收原理 The Principle of Extracting:

- * 由於活塞桿前端的荷重，壓下活塞桿，活塞桿作動，同時在B室內的壓油，經由H油孔與G油孔流入D室與C室，而將活塞E押下，第2節作動，而且於A室內的油會從油孔排出，達到縮收 - (如B室內有多餘的壓油，在活塞E到達後蓋時，K平衡閥自動排出)

Owing to, the load at the end of piston rod and pressed the piston rod also the piston rod actioned. Meanwhile, the hyd. action oil in portion B will flow pass through port H & G into portion D & C and pressed the piston E, and the 2nd stage actioned. Thus the hyd. action oil in portion A will be discharged from port for which the hyd. cyl. will be extracted (If there are surplus hyd. action oil in portion B and when the piston E is approached to cap for then the surplus oil will be discharged from counter-balance valve K automatically)

- * 註:初安裝同步雙節油缸，在初次試車時，因為在B室內有可能沒有油或不足，而且都是空氣，開始試車時要先鬆開各排氣閥，讓空氣排出，然後鎖緊排氣閥 - (此動作要來回數次)

Remarks: During installing the twin stage synchronous hyd. cyl. in primary and making test running perhaps there are no hyd. action oil or shortage and is full of air for which must released the air from various discharge valve many times, thus, lock the discharge valves

* 油壓缸出力的算法 The Calculating of Hyd. Cyl. Output :

油壓缸出力公式/The Formula $F = A \times P \times \beta$ (80%)

HC11 - 形同步雙節油壓缸，其A(活塞有效斷面積)是活塞桿有效斷面積 -

HC11 - twin stage synchronous hyd. cyl. and A (effective section area of piston)

活塞有效斷面積 / Effective Section Area of Piston: (cm²)

機 種 Model	90	100	125	150	180	200
有效斷面積 Eff Section Area	19.6	28.3	44.2	63.6	78.5	113.1

* 如何選擇機種 How To Select The Suited Model:

如想使用HC11 - 雙節同步油壓缸且設使用壓力為140kgf/cm²時，其出力需4500 kgf之昇降台，應如何選擇適當形式之油壓缸 -

The HC11 - twin stage synchronous hyd. cyl. and the operating pressure : 140kgf/cm² Now, the elevating platform for which the output will be 4500 kgf since how to achieved the suited hyd. cyl.

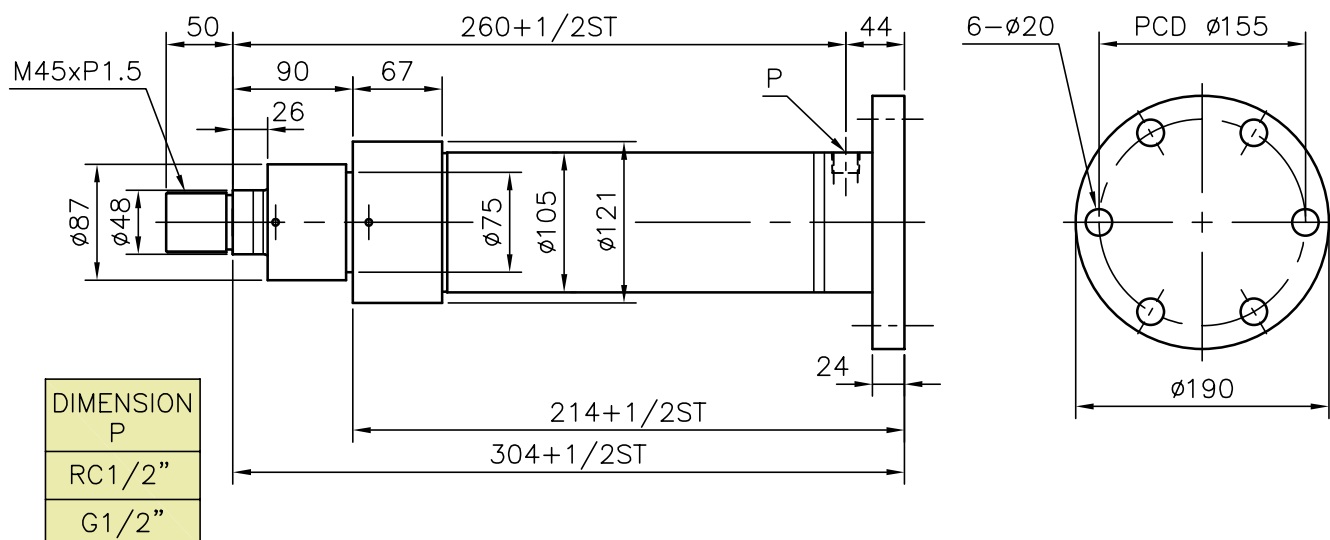
(解答)公式/ According to formula

$$A = \frac{F}{P \times \beta} \quad A = \frac{4500 \text{ kgf}}{140 \text{ kgf/cm}^2 \times 0.8} = 40.2 \text{ cm}^2$$

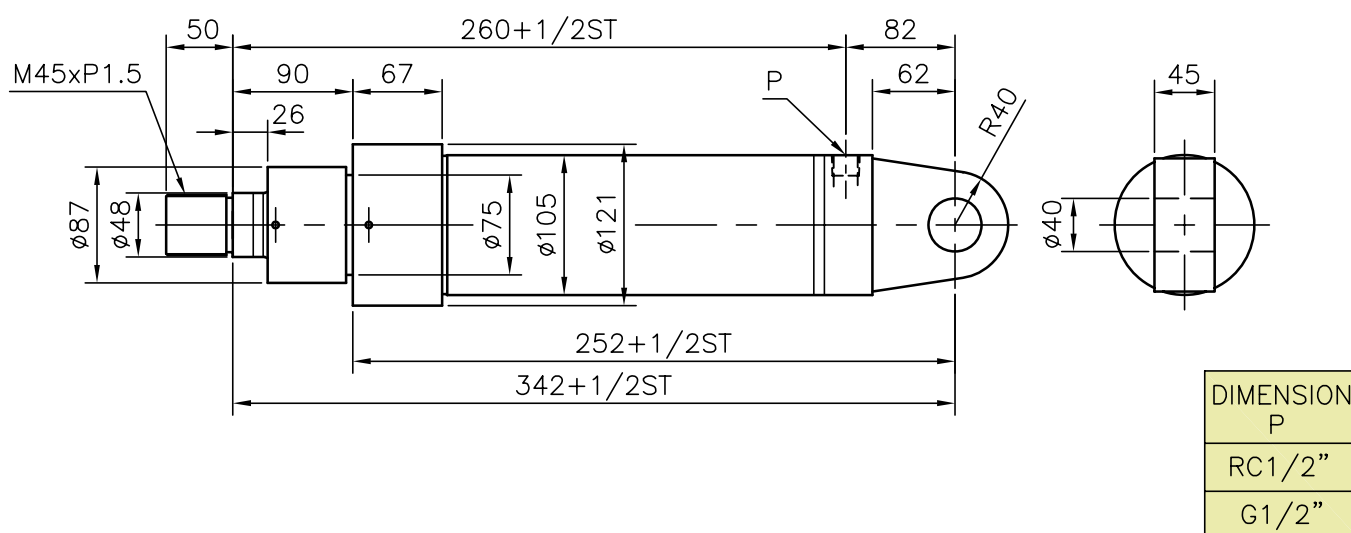
再從上表各機種之有效段面積，查知為HC11 - **125較適當 -

From above table mentioned. We can viewed the HC11 - **125 will be suited.

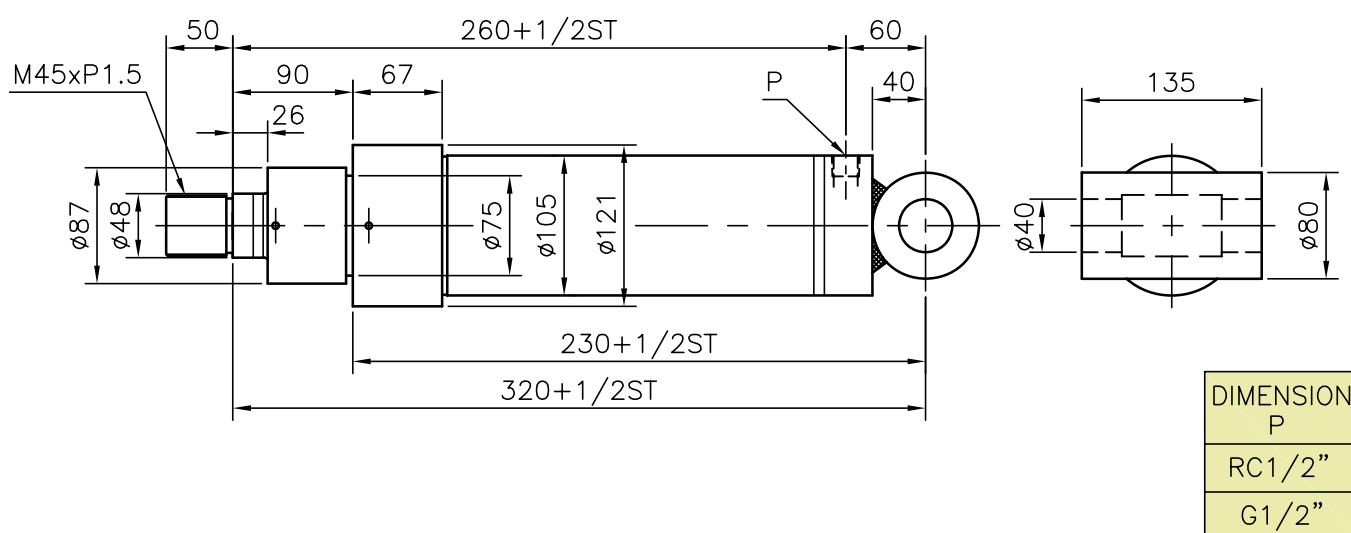
HC11-FB
ø90x2節



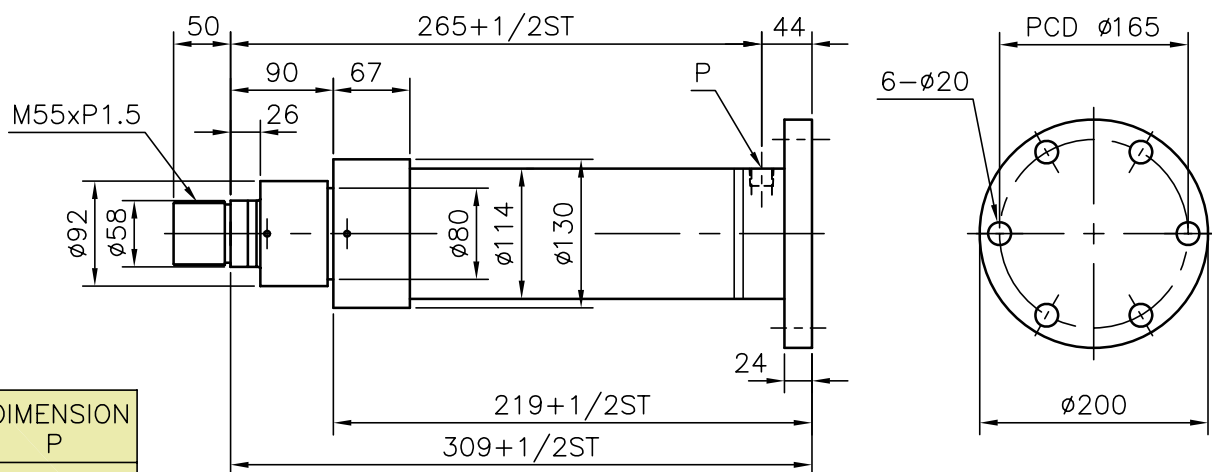
HC11-CA
ø90x2節



HC11-CD
ø90x2節

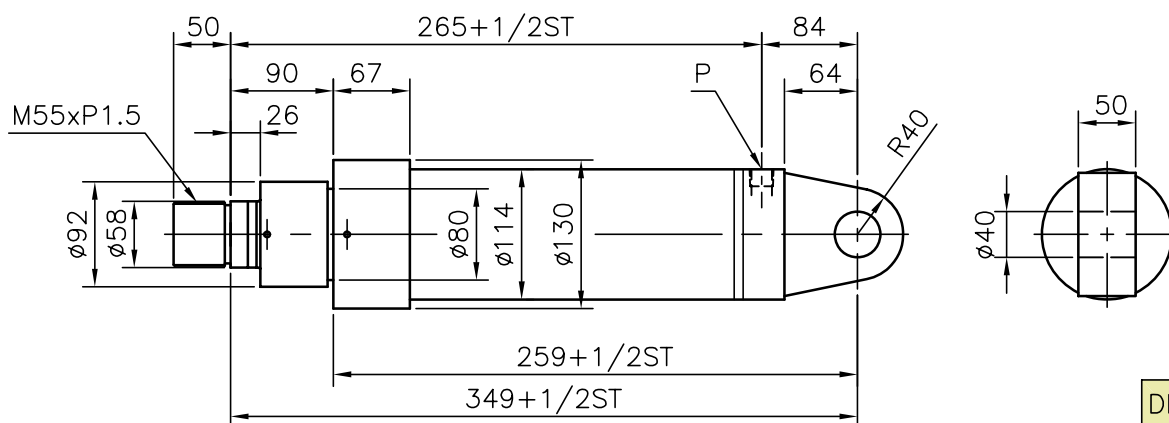


HC11-FB
ø100x2節



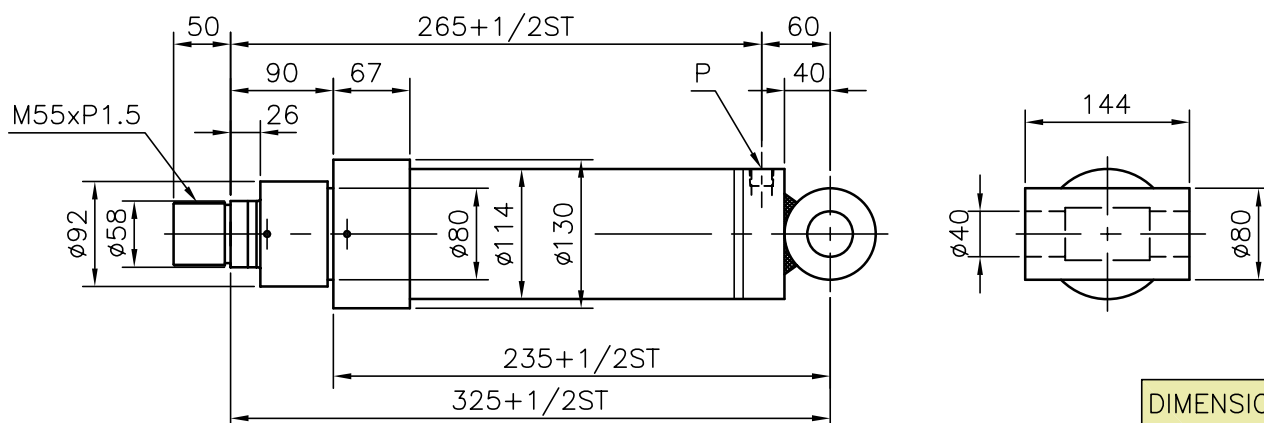
DIMENSION P
RC1/2"
G1/2"

HC11-CA
ø100x2節



DIMENSION P
RC1/2"
G1/2"

HC11-CD
ø100x2節



DIMENSION P
RC1/2"
G1/2"

Technical drawing of a 24-inch diameter, 270-inch long pipe section. The drawing includes a side view and an end view.

Side View Dimensions:

- Overall length: 270 + 1/2 ST
- Flange thickness: 35
- Flange outer diameter: ø260
- Flange inner diameter: ø220
- Flange bolt holes: 6-ø22
- Flange to pipe distance: 55
- Pipe length: 270
- Pipe outer diameter: ø260
- Pipe inner diameter: ø240
- Pipe to flange distance: 103
- Flange to pipe distance: 80
- Flange to pipe distance: 28
- Flange to pipe distance: 318 + 1/2 ST

End View Dimensions:

- Overall diameter: ø260
- Pitch Circle Diameter (PCD): ø220
- Bolt holes: 6-ø22

Table of Dimensions:

DIMENSION	P
RC 3/4"	
G 3/4"	

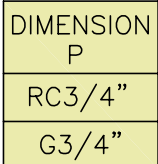
DIMENSION P
RC3/4"
G3/4"

[illegible]

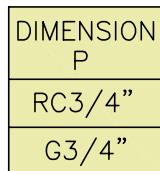
DIMENSION P
RC3/4"
G3/4"

[illegible]

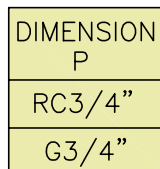
DIMENSION P
RC3/4"
G3/4"



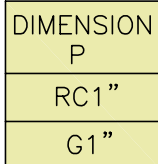
Ø150x2節



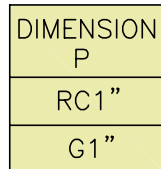
Ø150x2節



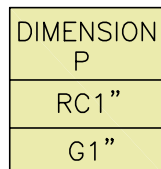
HC11-FB
ø180x2節



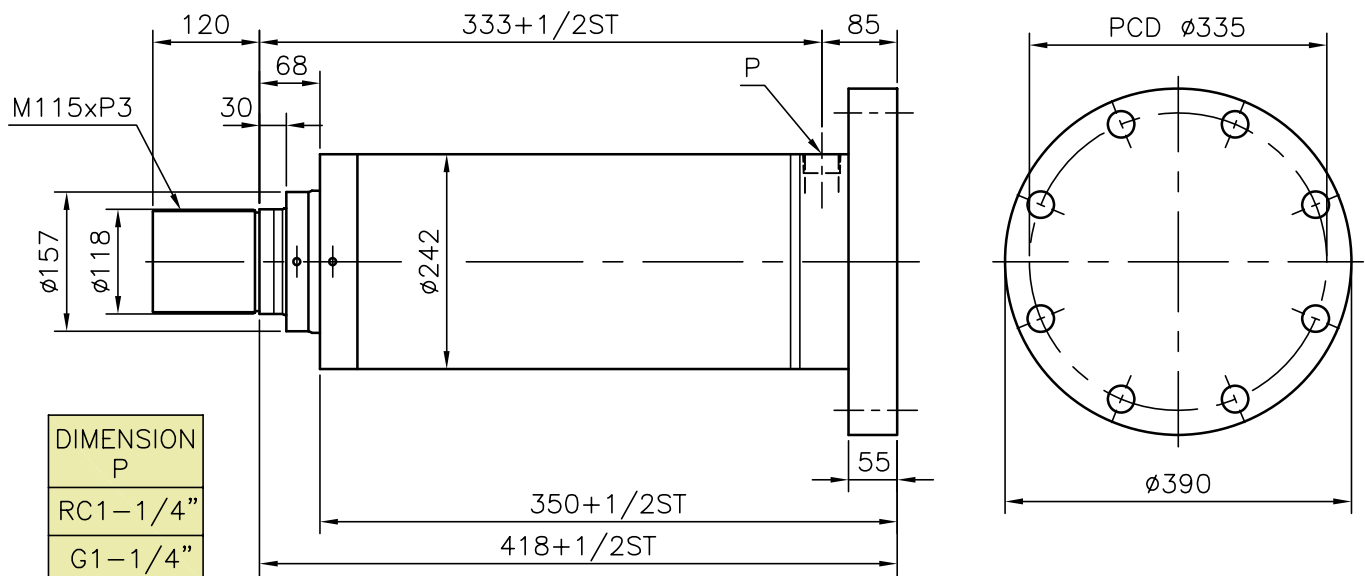
HC11-CA
ø180x2節



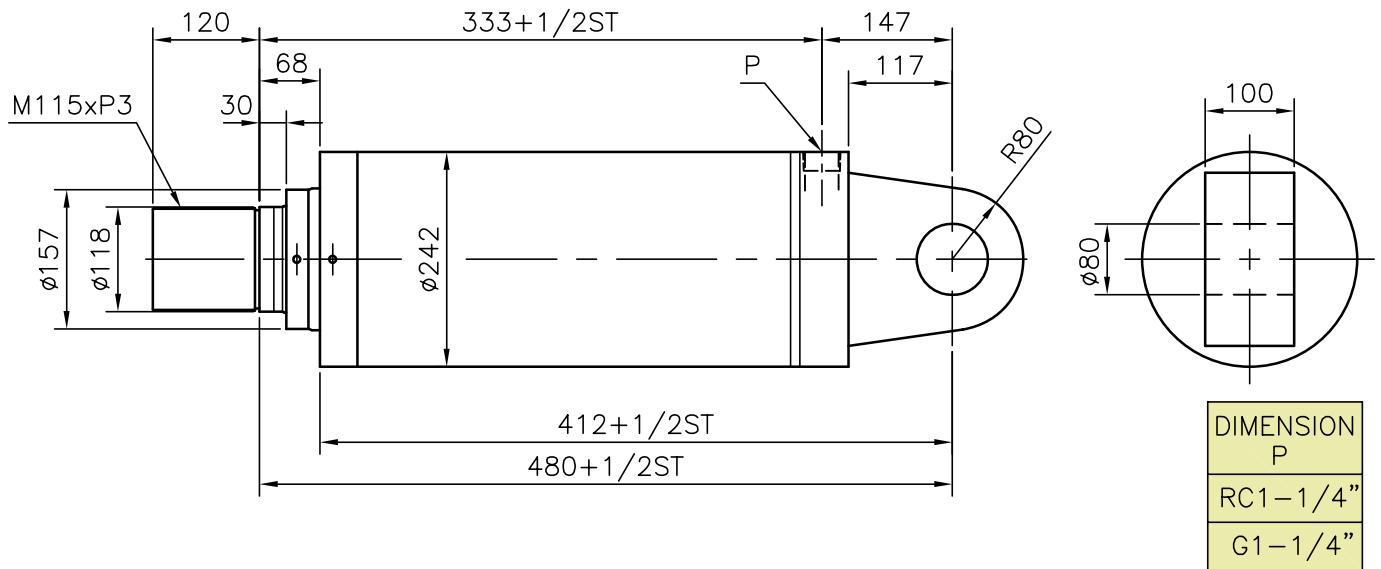
HC11-CD
ø180x2節



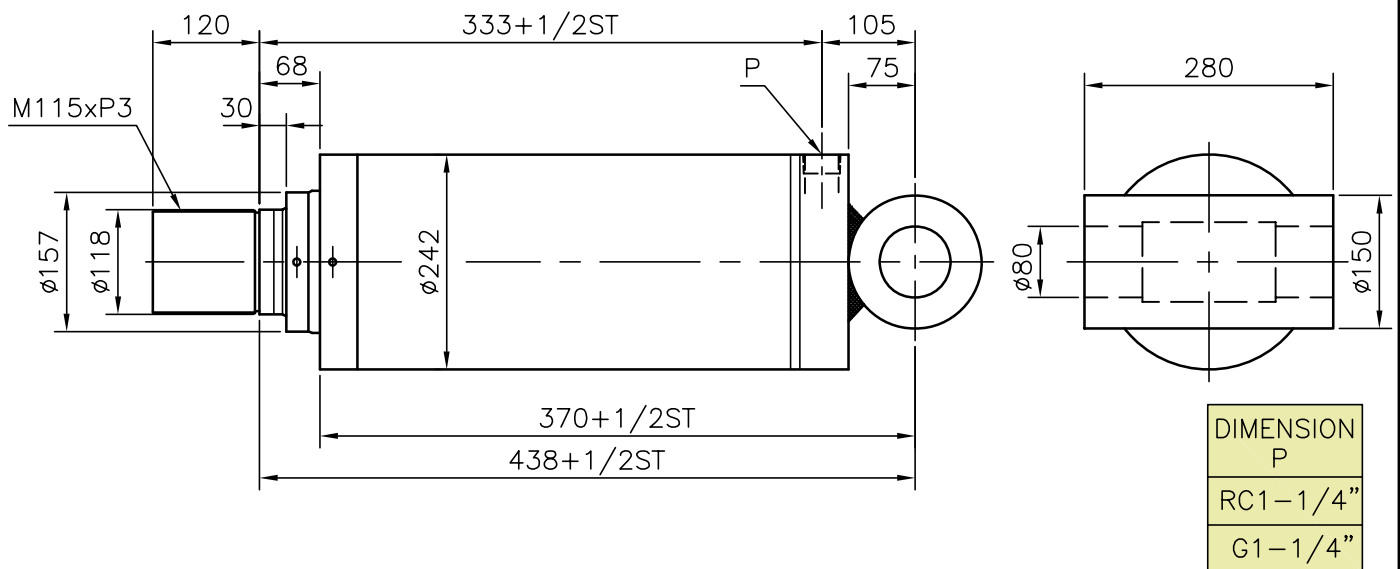
HC11-FB
 $\phi 200 \times 2$ 節



HC11-CA
 $\phi 200 \times 2$ 節



HC11-CD
 $\phi 200 \times 2$ 節

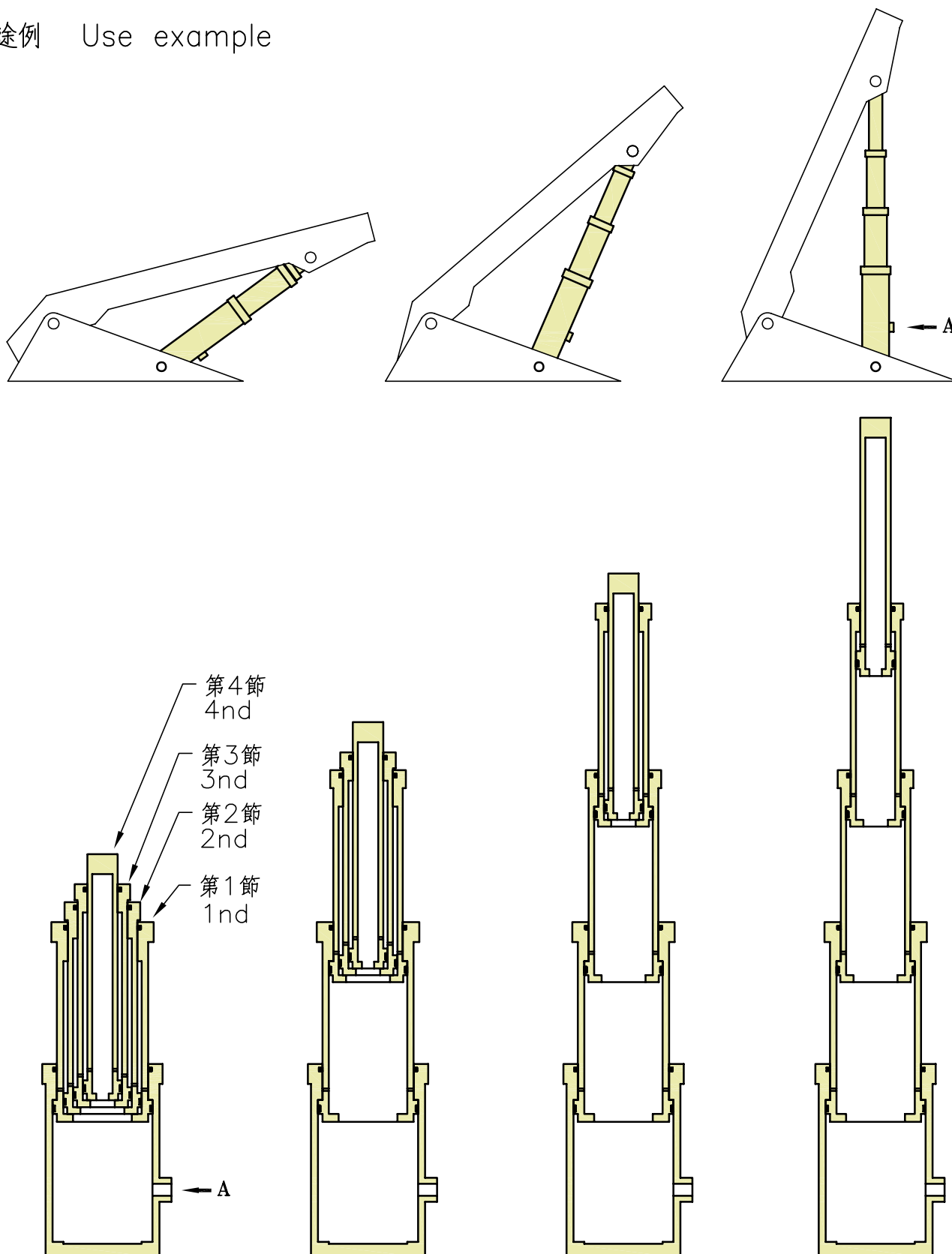


HC12系列油壓缸 / Series Hydraulic Cylinders

HC12 形多節油壓缸 / Multi-Stage Hyd. Cylinders

- * 出入油口可設置於前蓋與後蓋間: HC12形多節單動式油壓缸, 將通用形單動多節式缸之出入油口, 設置於前蓋與後蓋之間(通用形之出入油口如設於後蓋端)亦不失原來之功能的油壓缸 -
- * The Port position can be positioned between in the cyl. head & cap: The HC12 single acting multistage hyd. cyl. which generally the port between in the cyl. head & cap. But the port which generally at the cap and also those are the original performance hyd. cyl.

用途例 Use example



HC12

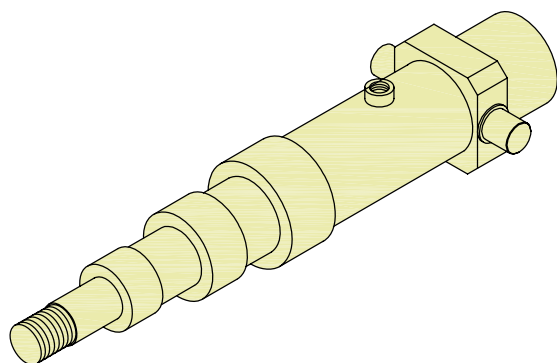
* 訂購內容索引 Ordering Index :

140	HC12	TC	160	3	2000	E
使用壓力160 kgf/cm ² Max. Operating Pres.	HC12:系列 HC12:Series Number	固定座形式 Mounting CD, TC	缸管內徑 Cylinder Bore mm ø135,ø160,ø190,	特殊附件 E:異形螺紋 K:附固定螺帽 Optional Attachment E:Rod end with other threading K:With locking nut		
				衝程 Stroke mm 要考慮最大容許衝程 Max. Permissible stroke		
				節數記號 Stage Symbol 2, 3, 4, 5, 6		

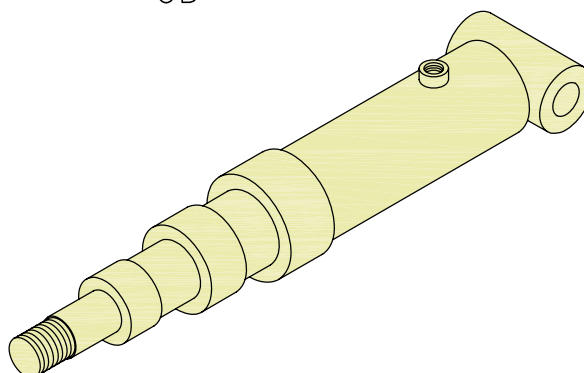
規範 Specifications

最高使用壓力 Max.Operating Pressuer		160 kgf/cm ² -10°C ~ +50°C						
使用溫度範圍 Range of Ambient Temperature		周圍溫度 Ambient temp			油溫 Oil temp		-10°C ~ +50°C	-5°C ~ +80°C
適用作動油 Fluid		一般礦物性作動油					Mineral oil	
最低使用速度 mm/sec Min. Operating Speed		2 mm/sec						
缸管內徑 Cylinder Bore mm	主缸 Main Cyl.	135	160	160	190	190		
	第2節 2nd	110	135	135	160	160		
	第3節 3nd	85	110	110	135	135		
	第4節 4nd	——	——	85	110	110		
	第5節 5nd	——	——	——	——	85		
最小活塞桿徑 Min. Piston Rod Dia.		75	100	75	100	75		
常用速度 mm/sec General Operating Speed		250	220	220	220	220		
標準行程限制 mm Permissible Stroke		8100	10200	10800	13600	13500		

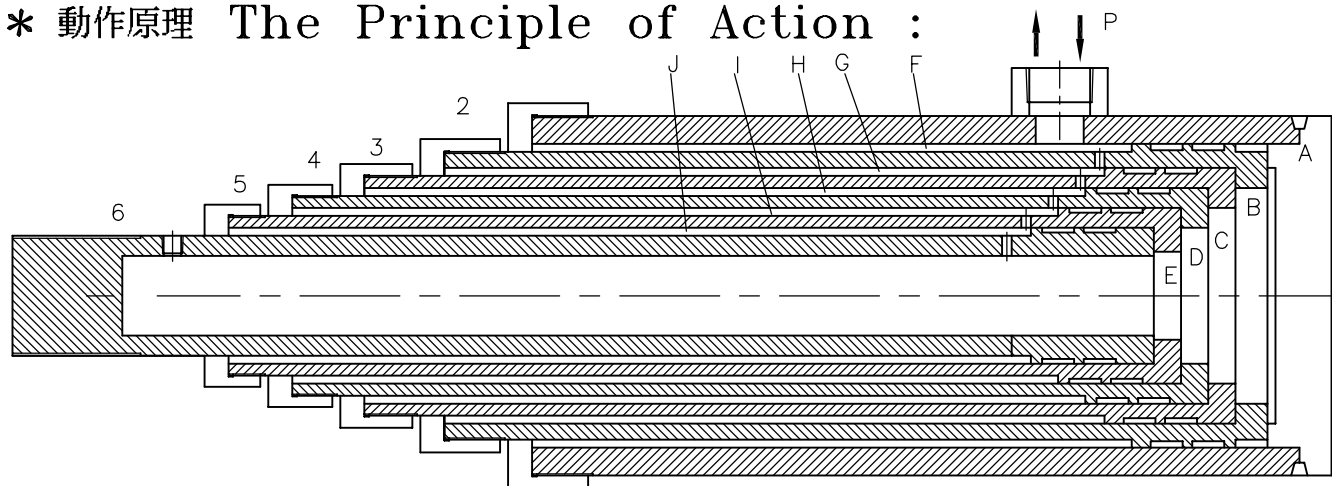
TC



CD



* 動作原理 The Principle of Action :



* 推出原理 The Principle of Extending :

- * 壓油從P油口流入F，經G,H,I,J室，最後流到A室，而推動，第2節作動 - 當活塞到達前蓋時，壓油繼續推動第3,4,5,6節作動，所以說HC12-160推出時是依第2.3——活塞桿之順序推出 -
The hyd. action oil flow into portion F from port P and pass through portion G,H,I,J etc., thus flow into portion A and thrust piston. Meanwhile, the 2nd stage hyd. cyl. will actioned also during the piston is approached to cyl. head and the hyd. action oil will thrust the 3,4,5,6 etc., stage and actioned. so that, the HC12-160 hyd. cyl. for which actioned according to the 2,3 stage and actioned so on

* 縮收原理 The Principle of Extracting :

- * 由於活塞桿前端的荷重，壓下活塞桿，活塞桿作動，活塞桿縮收，當活塞6到達活塞E時，第5節作動，而縮收 - 同理當活塞5到達活塞D時，第4節作動，而縮收 - 一直使活塞A到後蓋端為止，當然所有油會分佈於各室內，多餘的油從A油孔排出 -

Owing to, the load at end of piston rod and pressed the piston rod also the piston rod actioned, Meanwhile, the piston rod will be retracted also during the piston 6 is approached to piston E also the 5th stage actioned and retracted. In same reason, during the piston 5 is approached to piston D the 4th stage actioned and retracted and so on till the piston A is approached to the cap of course the hyd. action oil will be distributed evenly and the surplus oil will be discharged from port A.

* 油壓缸出力的算法 The Calculating of Hyd. Cyl. Output :

$$\text{油壓缸出力公式} \quad F = A \times P \times \beta \quad (80\%)$$

From Formula

HC12- 形單動多節節油壓缸，其A(活塞有效斷面積)是活塞桿有效斷面積 -

HC12- multi-stage single actioned hyd. cyl. and A (effective section area of piston)

活塞有效斷面積 Effective Section Area of Piston: (cm²)

機 種	Model	135-3	160-3	160-4	190-4	190-5
有效段面積	Eff. Section Area	44.2	78.5	44.2	78.5	44.2

* 如何選擇機種 How To Select The Suited Model:

又今行程需要13500mm，且出力需8000kgf，設使用壓力為140kgf/cm²，之昇降台，應如何選擇適當形式之油壓缸 -

Now, the desired stroke will be 13500mm and output 8000kgf for elevating platform and operating pressure : 140 kgf/cm² since, how to achieved the suited hyd. cyl. according to formula.

(解答)

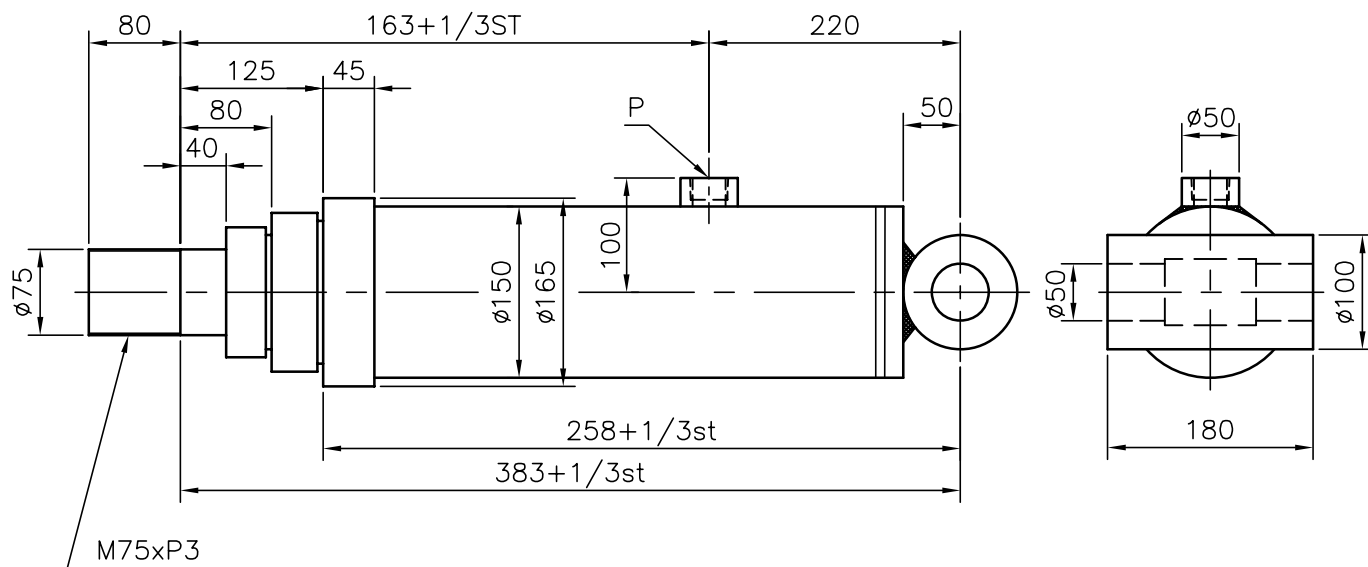
$$A = \frac{F}{P \times \beta} \quad \text{公式} \quad A = \frac{8000\text{kgf}}{140\text{kgf/cm}^2 \times 0.8} = 71.4\text{cm}^2$$

由上表得知，可選擇160-3及190-4兩種形式之油壓缸，但要求行程需要13500mm，由規範表得知160-3形其行程限制為10200mm，而190-4形其行程限制為13600mm，所以適當之油壓缸為HC12- **190-4形 -

From above table mentioned we can selected 160-3 & 190-4 two model but the desired stroke 13500mm and from table the model 160-3 with permissible stroke 10200mm and the model 190-4 with permissible stroke 13600mm so that we will selected the HC12- **190-4 hyd. cyl.

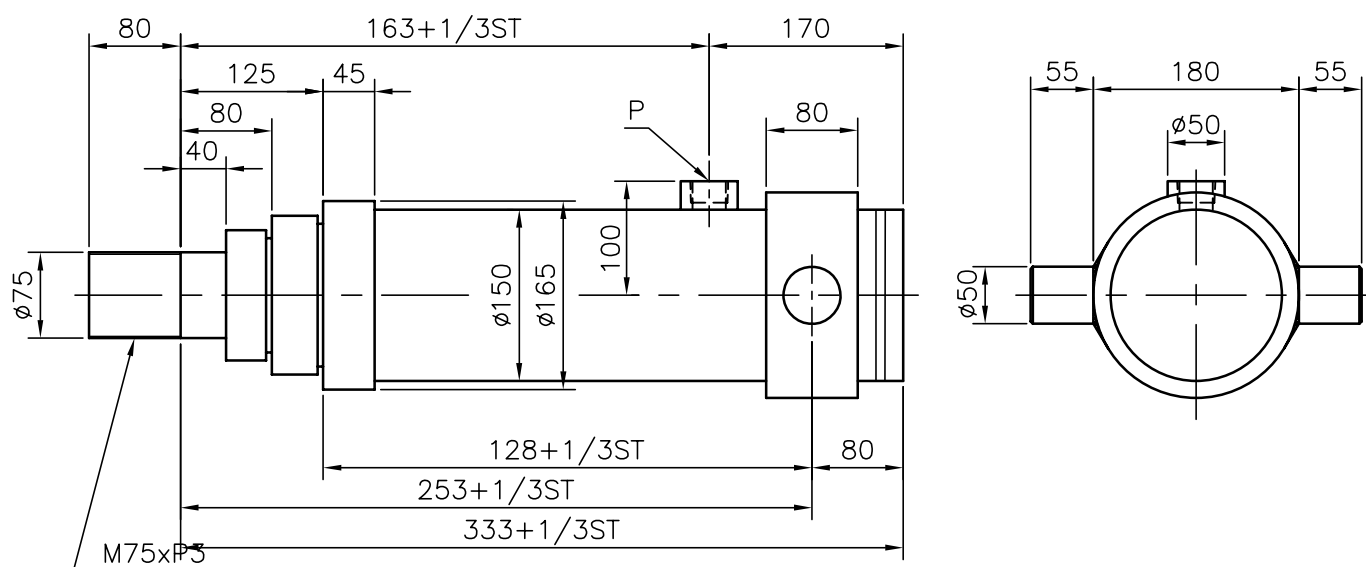
HC12-CD
 ø135x3節

DIMENSION P
RC1"
G1"

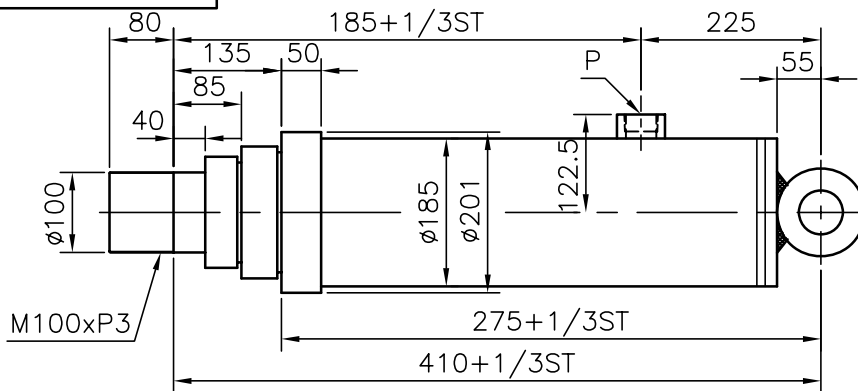


HC12-TC
 ø135x3節

DIMENSION P
RC1"
G1"

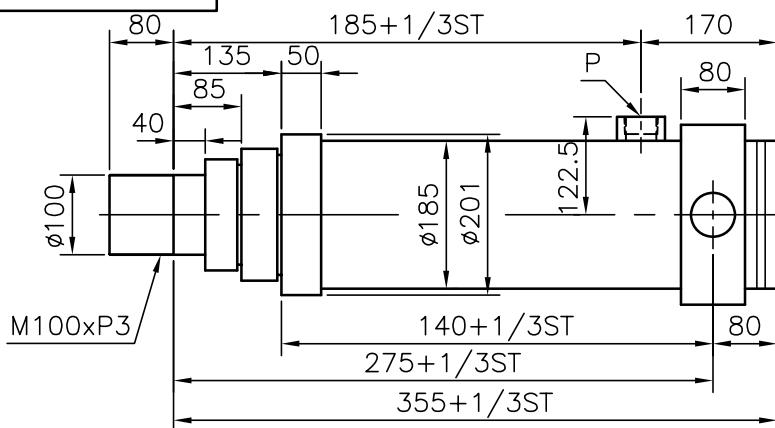


HC12-CD
ø160x3節



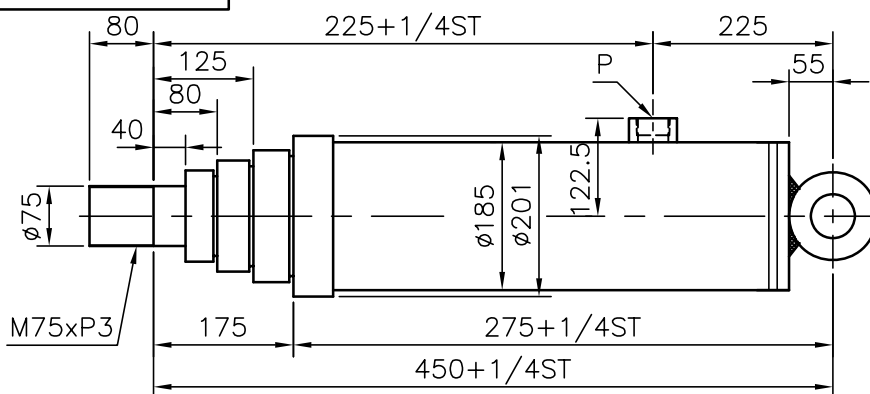
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-TC
ø160x3節



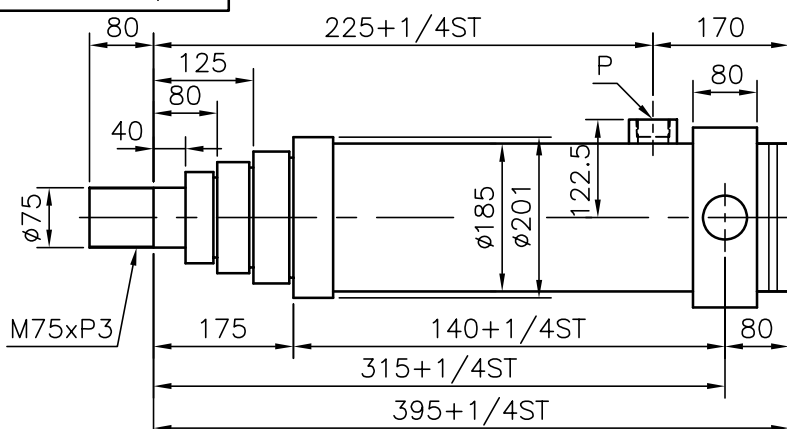
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-CD
ø160x4節



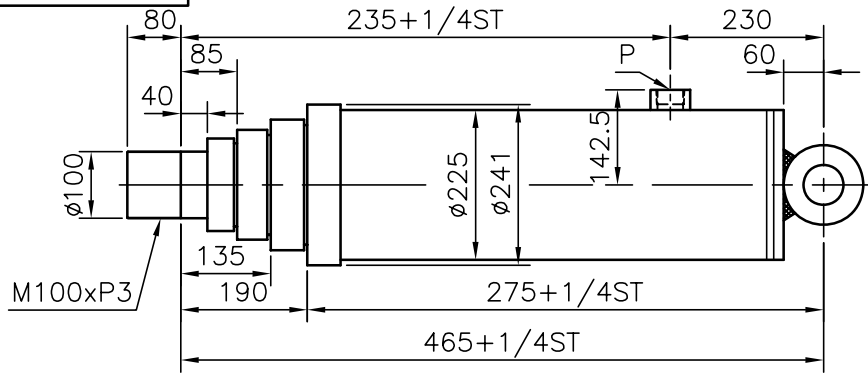
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-TC
ø160x4節



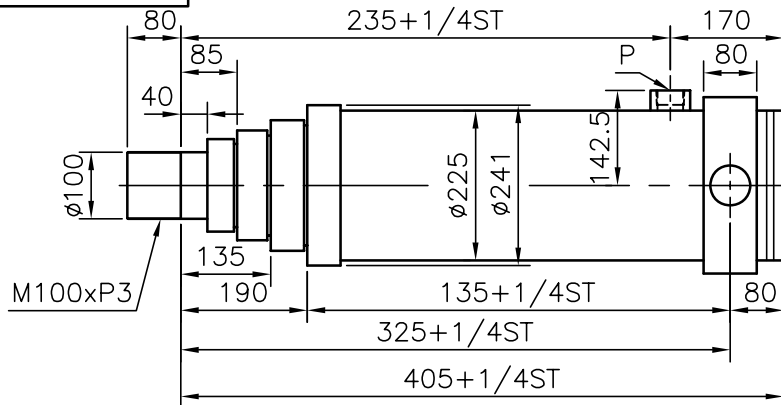
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-CD
 Ø190x4節



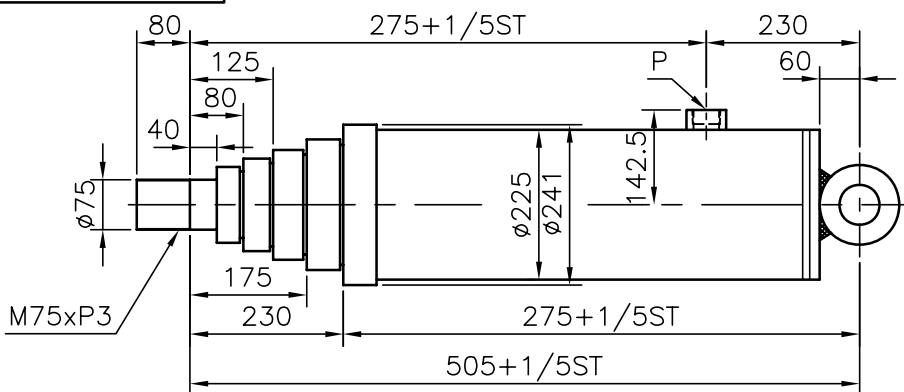
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-TC
 Ø190x4節



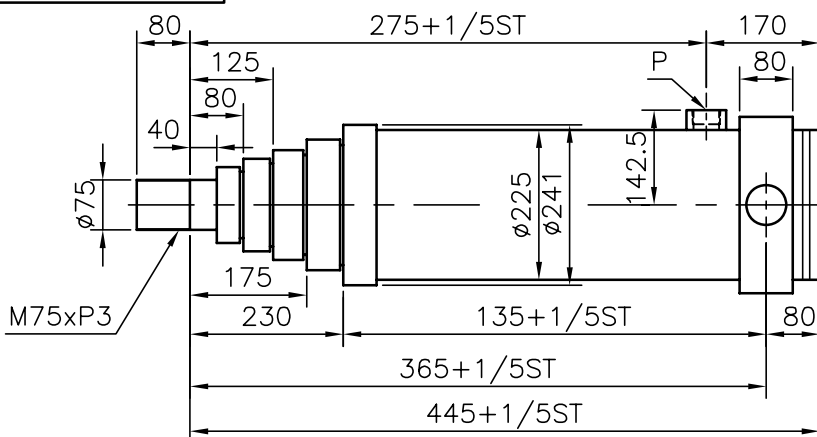
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-CD
 Ø190x5節



DIMENSION P
RC1-1/4"
G1-1/4"

HC12-TC
 Ø190x5節



DIMENSION P
RC1-1/4"
G1-1/4"

HC13系列油壓缸 HC13 Series Hydraulic Cylinders

70/140/210 kgf/cm²輕便形,薄型油壓缸

Thin shape flowing tubing head pressure cylinder

* HC13薄型油壓缸本體是一體成形,其長度為一般油壓缸之1/3長

* 應用在空間不足的環境下,在前後上下皆可安裝,依用途而決定

* 各零件皆從本體取出,很簡單更換油封

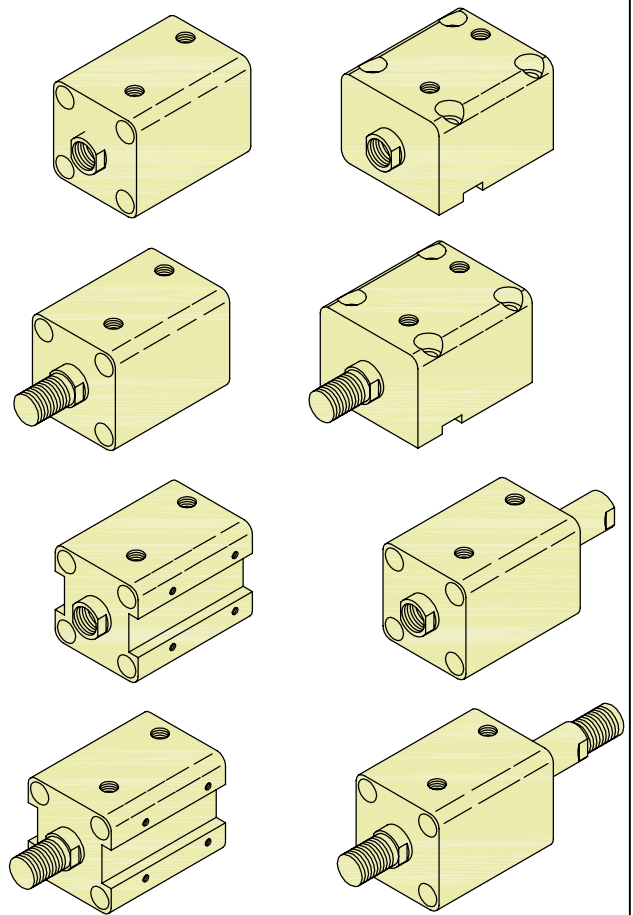
* The HC13 thin flowing tubing head pressure cylinder main body is a body forming, its length is 1/3rd general flowing tubing head pressure cylinder is long

* The application is insufficient in the space under environment, In around about all may install, Decided according to the use

* Various components all take out from the main body
Very simple replacement packings

規範 Specifications

項 目 Item	型 式 Model	HC13系列 HC13 Series
缸管內徑 Cylinder Bore	mm	ø20, ø25, ø32, ø40, ø50 ø63, ø80
固定座形式 Mounting		SD, LA
使用壓力 Operating Pressure		140 kgf/cm ²
測試壓力 Testing Pressure		210 kgf/cm ²
最低作動壓力 Min. Operating Press.		2 kgf/cm ²
適用作動油 Fluid		一般礦物性作動油 Mineral oil
最高使用速度 Max Operating Speed		100 mm/sec
周圍溫度範圍 Range of Ambient Temperature		-10 ⁰ C ~ +80 ⁰ C



商品系列 Commodity series

機種	固定形式 Mounting	ø25	ø32	ø40	ø50	ø63	ø80	ø100
標準 140kgf/cm ² Standard	基本形 Basic type	SD	●	●	●	●	●	●
標準 140kgf/cm ² Standard	腳架形 Foot type	LA	●	●	●	●		
雙軸心 140kgf/cm ² Double rod	基本形 Basic type	SDD	●	●	●	●	●	●
雙軸心 140kgf/cm ² Double rod	腳架形 Foot type	LAD	●	●	●	●		
感應開關 140kgf/cm ² Sensor	基本形 Basic type	SDR	●	●	●	●	●	
標準 210kgf/cm ² Standard	基本形 Basic type	SD21			●	●	●	

HC13

訂購內容索引 Ordering Index :

140

HC13

D

CA

50

50

N

使用壓力 140 kgf/cm²
Max. Operating Pres.

活塞桿前端形式 Rod End Type
Type-N Type-W

HC13: 系列
HC13: Series Number

衝程 Stroke mm

D-雙軸心 Double rod
R-感應開關 Sensor

缸管內徑 Cylinder Bore mm
ø25, ø32, ø40, ø50, ø63, ø80

固定座形式 Mounting
SD, LA, SDD, LAD, SDR

衝程範圍

○ 標準 Standard

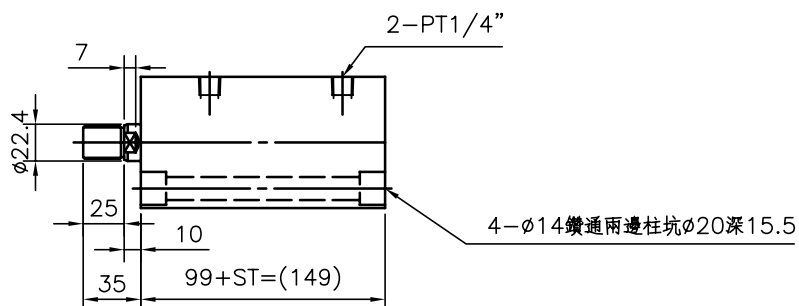
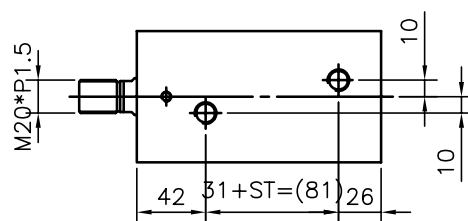
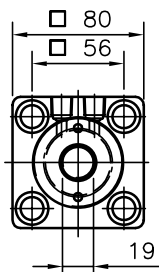
機種	固定形式 Mounting	內徑 Bore	衝程 Stroke mm															
			5	10	15	20	25	30	35	40	45	50	60	70	80	90	100	
標準 Standard 140kgf/cm2	基本形 Basic type (SD)	ø25	○	○	○	○	○	○	○	○	○	—	—	—	—	—	—	—
		ø32	○	○	○	○	○	○	○	○	○	○	○	—	—	—	—	
		ø40	○	○	○	○	○	○	○	○	○	○	○	○	○	—	—	
		ø50	○	○	○	○	○	○	○	○	○	○	○	○	○	○	—	
		ø63	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		ø80	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
		ø100	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
	腳架形 Foot type (LA)	ø32	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	
		ø40	○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	
		ø50	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	
ø63		○	○	○	○	○	○	○	○	○	○	—	—	—	—	—		
雙軸心 Double rod 140kgf/cm2	(SDD)	ø25	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	
		ø32	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	
		ø40	○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	
		ø50	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	
		ø63	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	
		ø80	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	
		ø100	○	○	○	○	○	○	○	○	○	○	○	○	—	—	—	
	腳架形 Foot type (LAD)	ø32	○	○	○	○	○	○	—	—	—	—	—	—	—	—	—	
		ø40	○	○	○	○	○	○	○	○	—	—	—	—	—	—	—	
		ø50	○	○	○	○	○	○	○	○	○	○	—	—	—	—	—	
ø63		○	○	○	○	○	○	○	○	○	○	—	—	—	—	—		
感應開關 Sensor 140kgf/cm2	基本形 Basic type (SDR)	ø32	—	—	○	○	○	○	○	○	○	○	○	—	—	—	—	
		ø40	—	—	○	○	○	○	○	○	○	○	○	○	—	—	—	
		ø50	—	—	○	○	○	○	○	○	○	○	○	○	○	○	—	
		ø63	—	—	○	○	○	○	○	○	○	○	○	○	○	○	○	
		ø80	—	—	○	○	○	○	○	○	○	○	○	○	○	○	○	
標準 Standard 210kgf/cm2	SD21	ø40	—	○	—	○	—	○	—	○	—	○	○	—	—	—	—	
		ø50	—	○	—	○	—	○	—	○	—	○	○	—	—	—	—	
		ø63	—	○	—	○	—	○	—	○	—	○	○	—	—	—	—	

HC13-SD-21Mpa

21MPa用

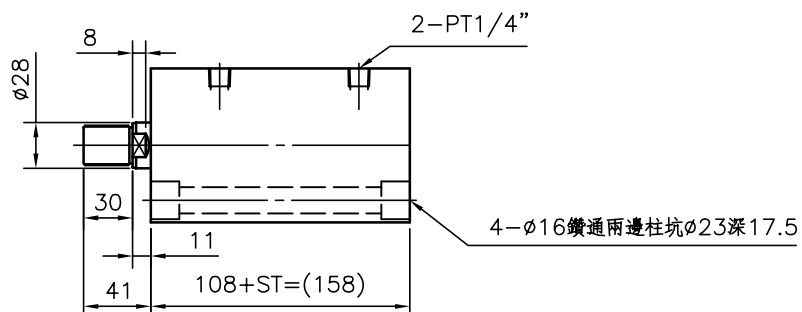
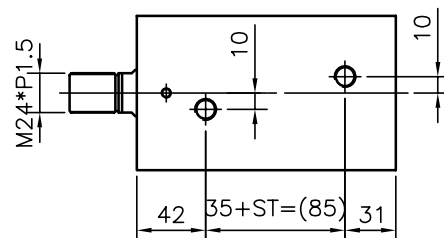
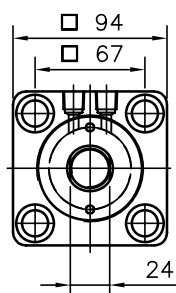
HC13-SD

ø40



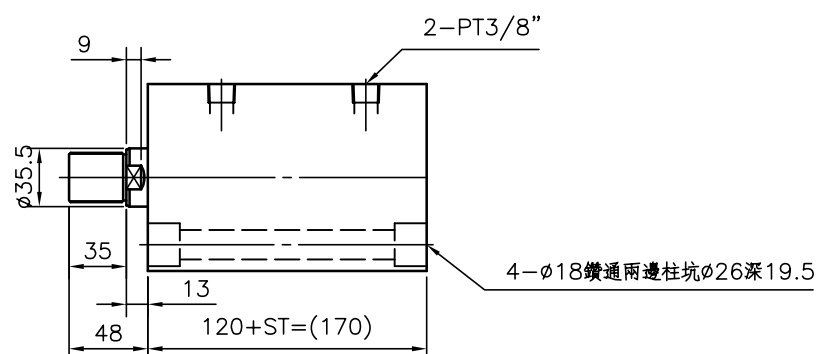
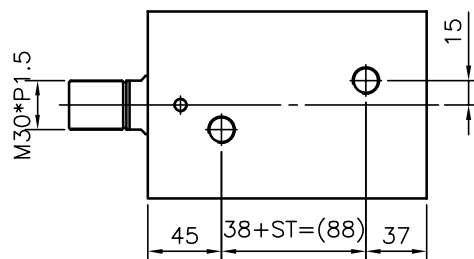
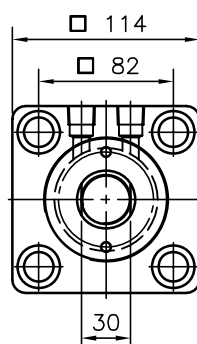
HC13-SD

ø50



HC13-SD

ø63

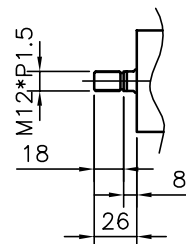
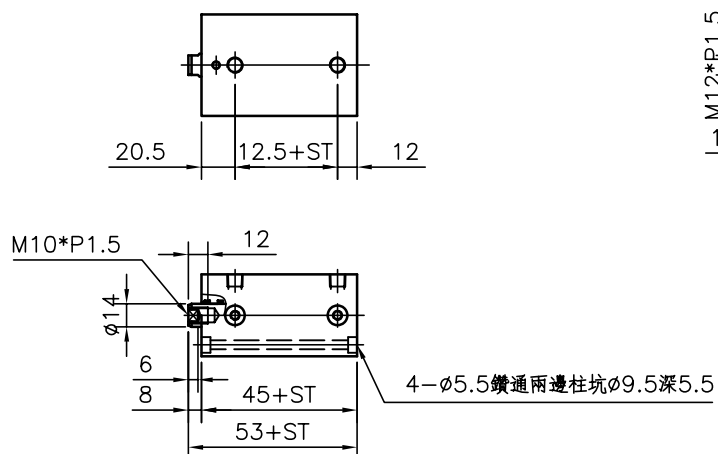
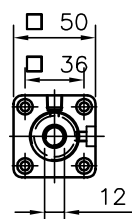


HC13-SD (標準形) Basic type

7/14MPa用

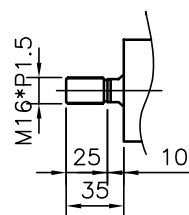
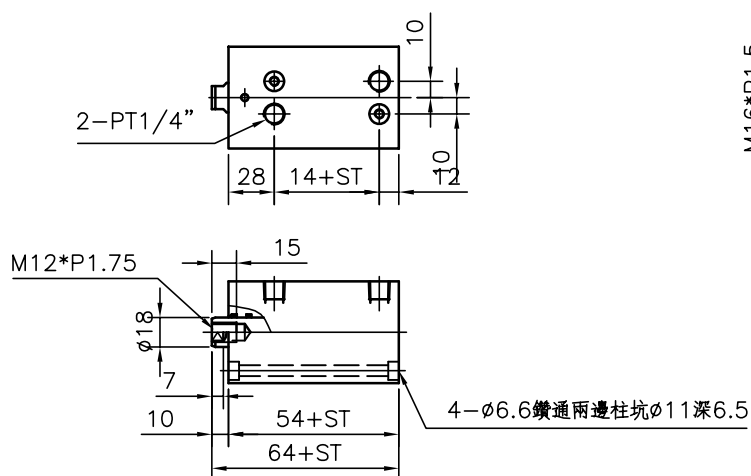
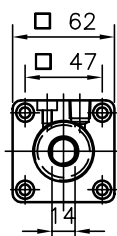
HC13-SD

ø25



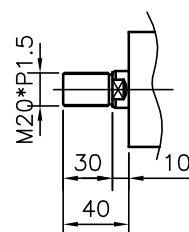
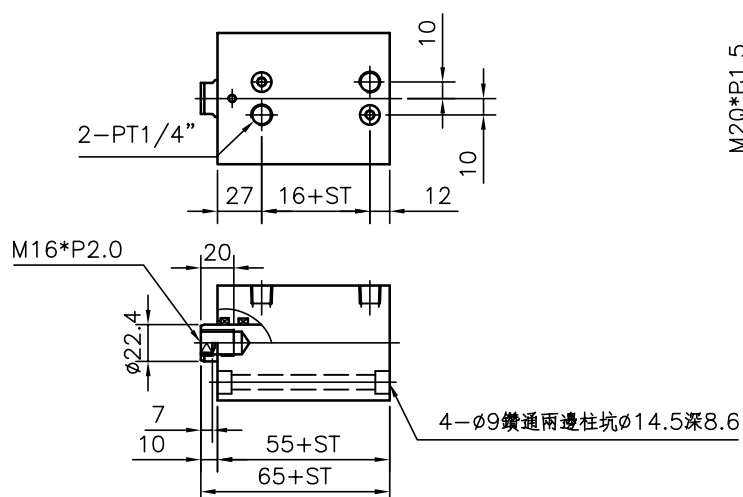
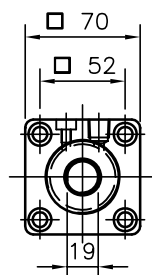
HC13-SD

ø32



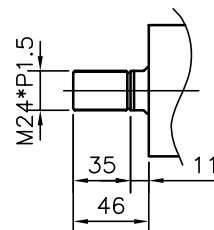
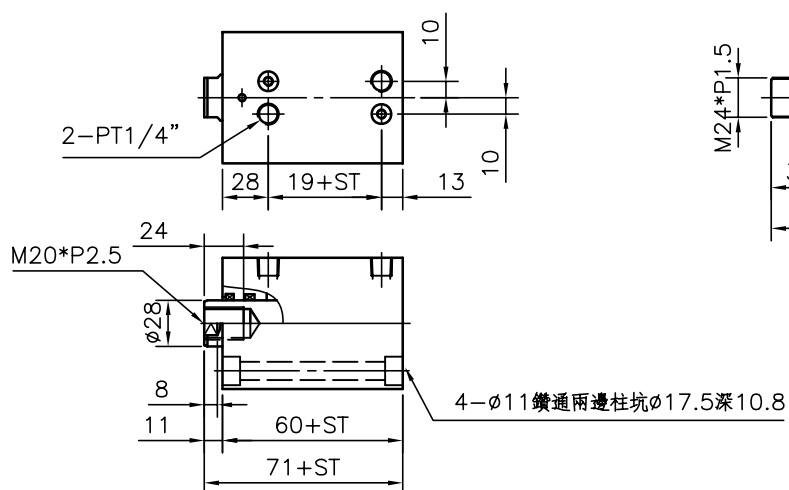
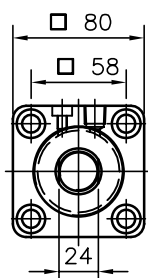
HC13-SD

ø40

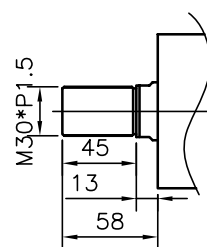
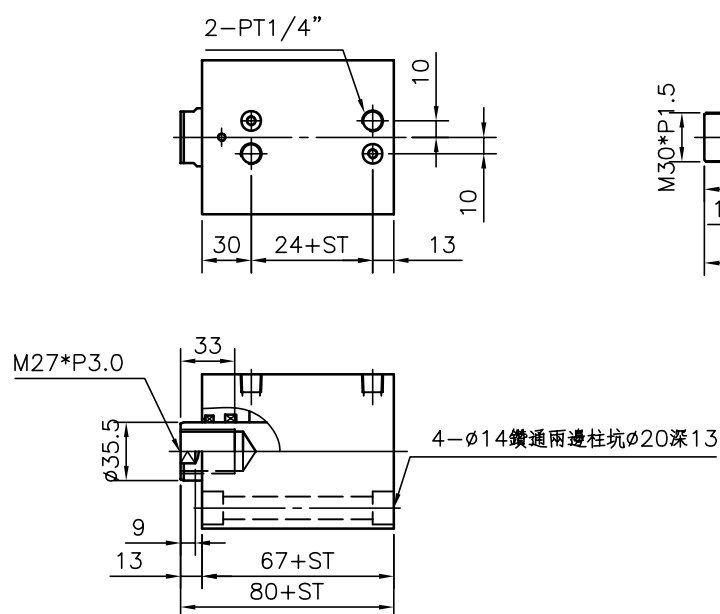
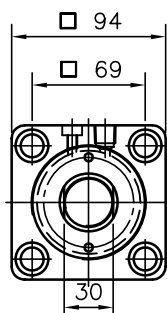


HC13-SD

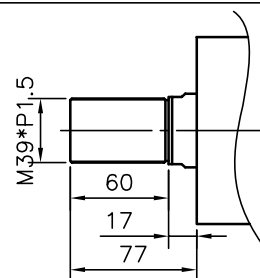
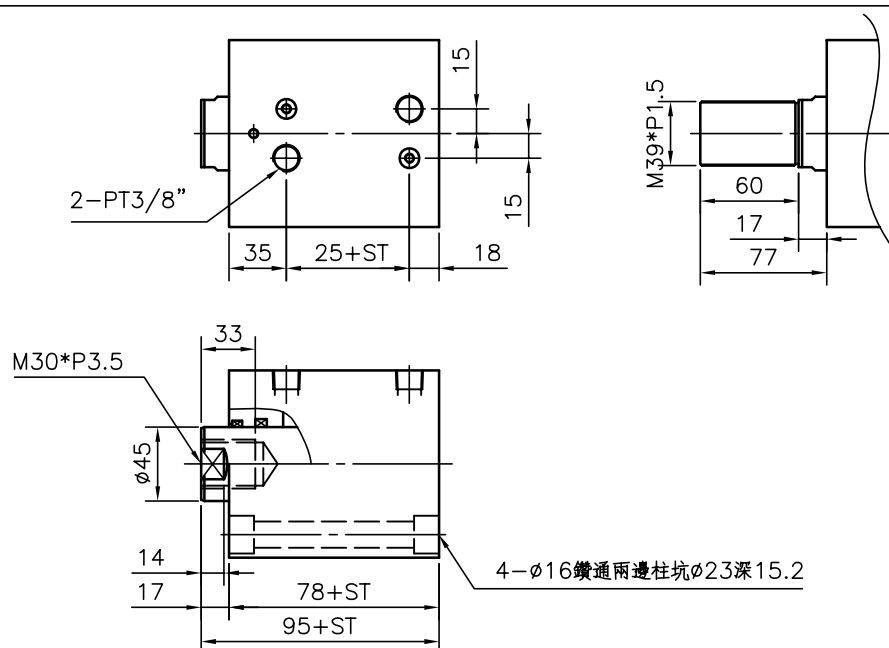
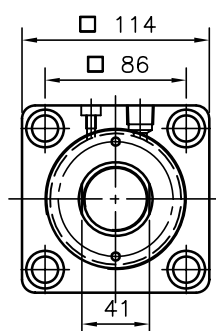
ø50



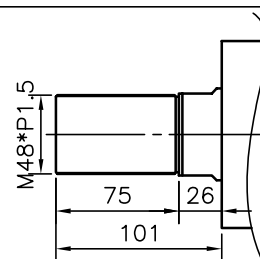
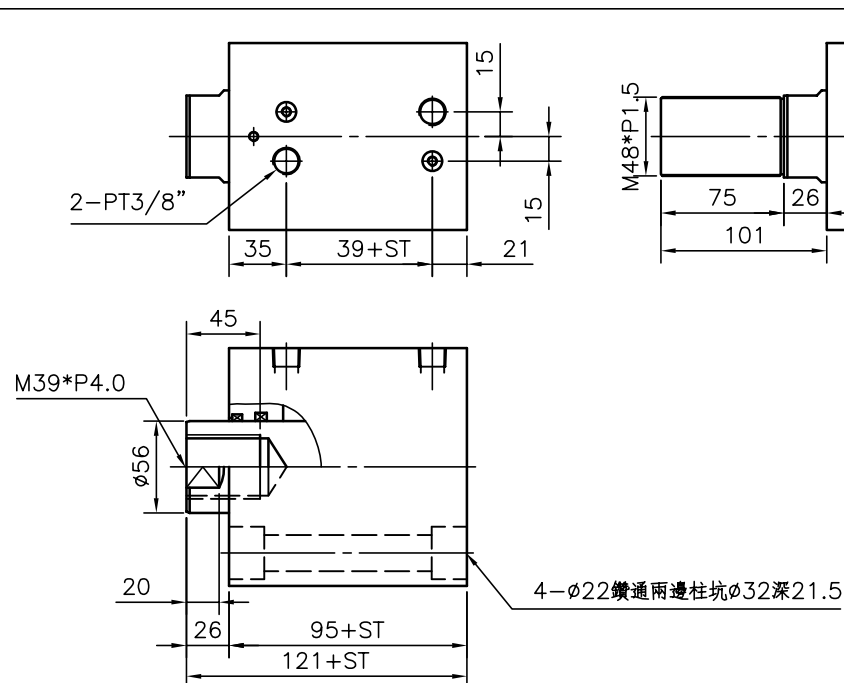
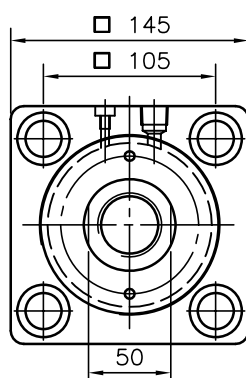
HC13-SD
ø63



HC13-SD
ø80



HC13-SD
ø100

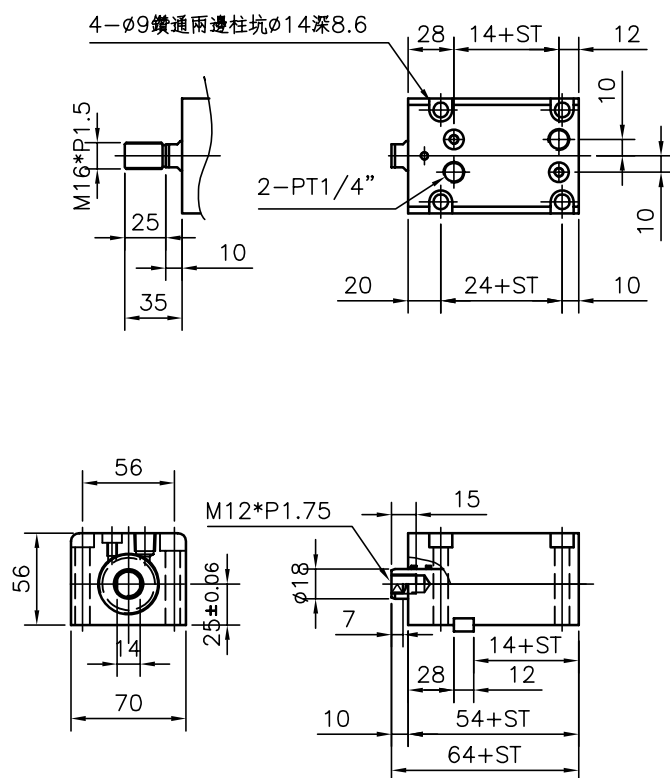


HC13-LA (脚架形) Feet type

7/14MPa用

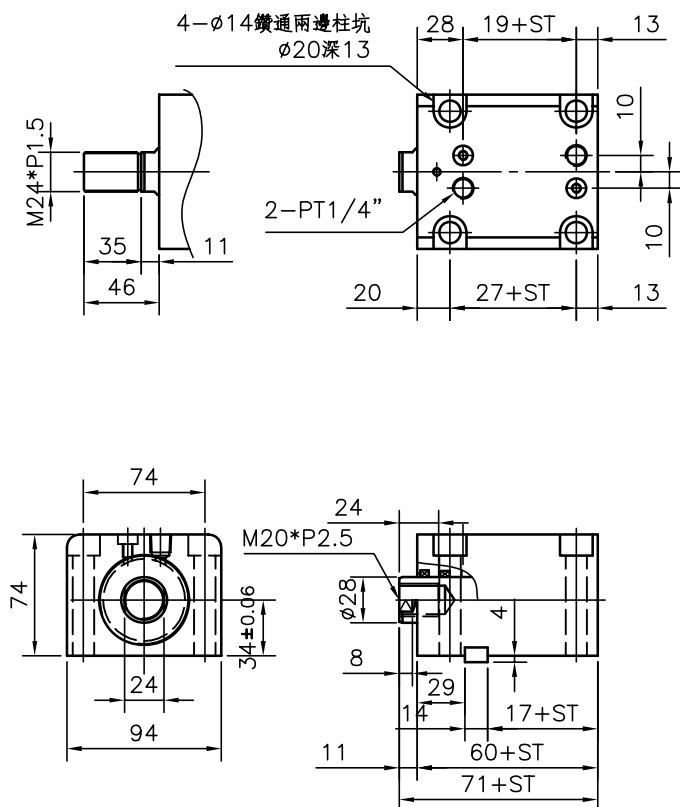
HC13-LA

φ32



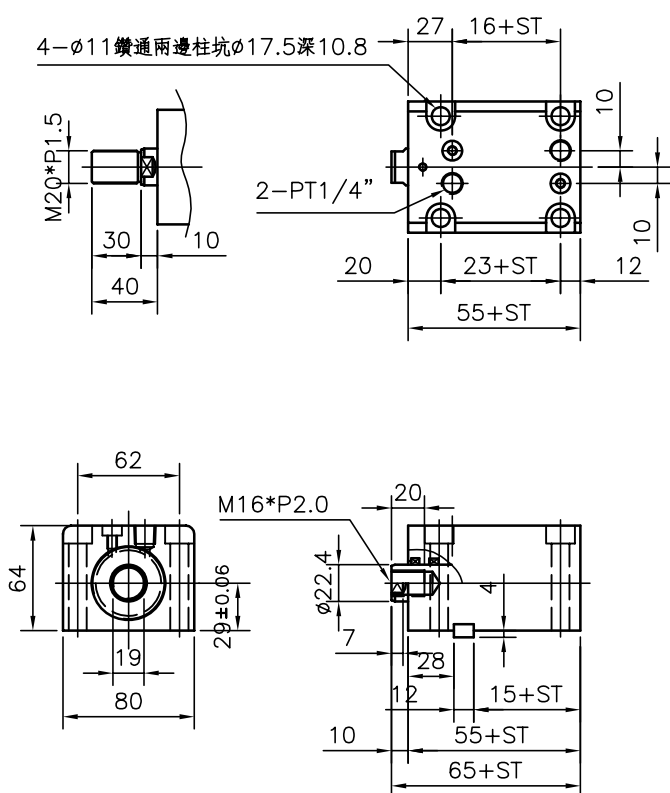
HC13-LA

φ50



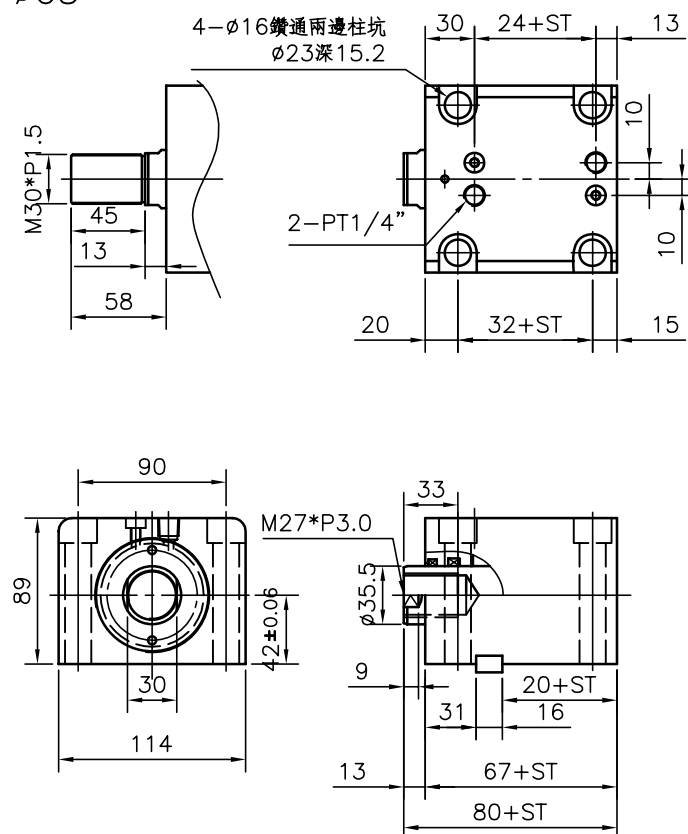
HC13-LA

φ40



HC13-LA

φ63



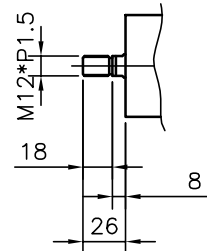
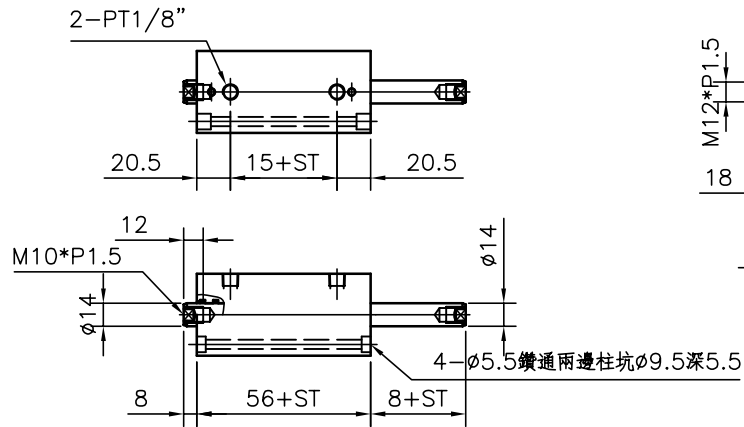
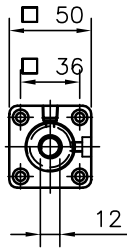
HC13-SDD

(雙軸心)Double rod

7/14MPa用

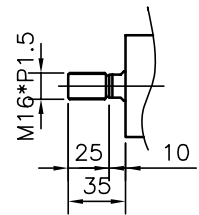
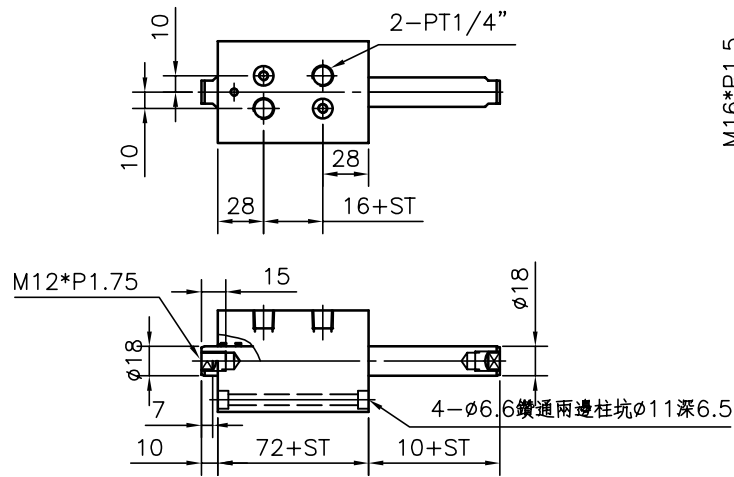
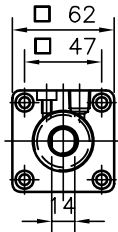
HC13-SDD

ø25



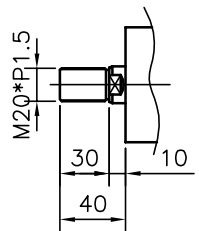
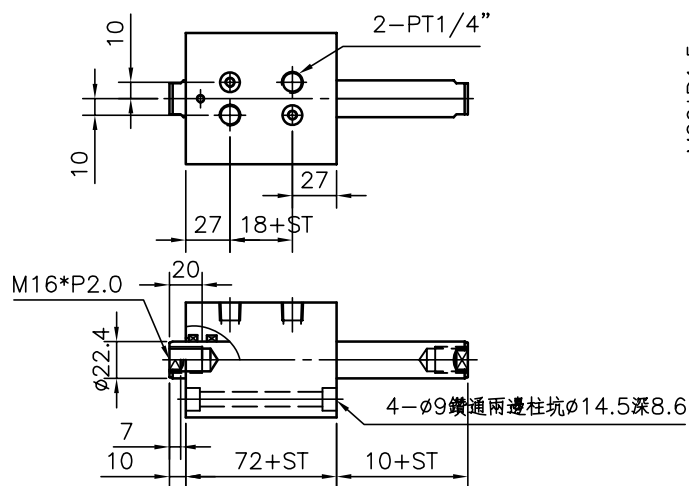
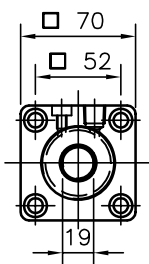
HC13-SDD

ø32



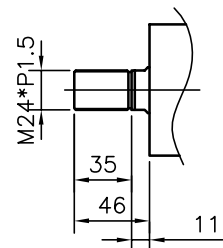
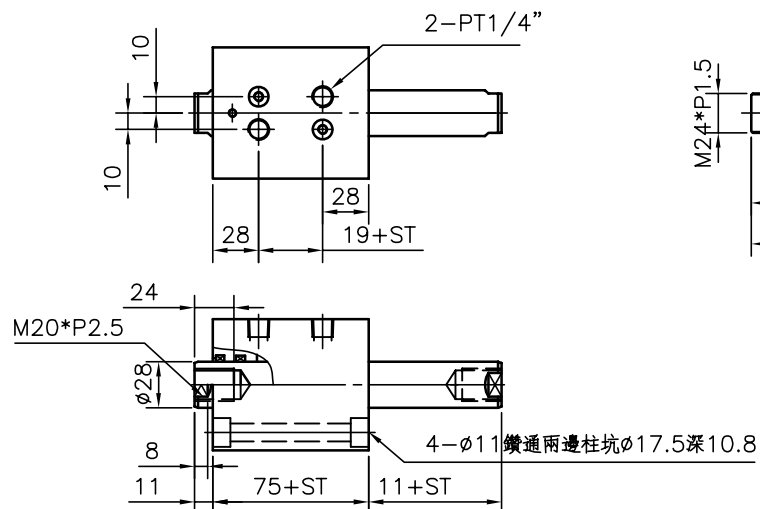
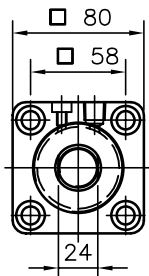
HC13-SDD

ø40



HC13-SDD

ø50



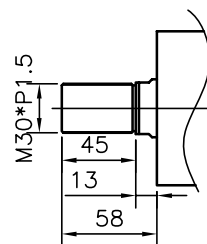
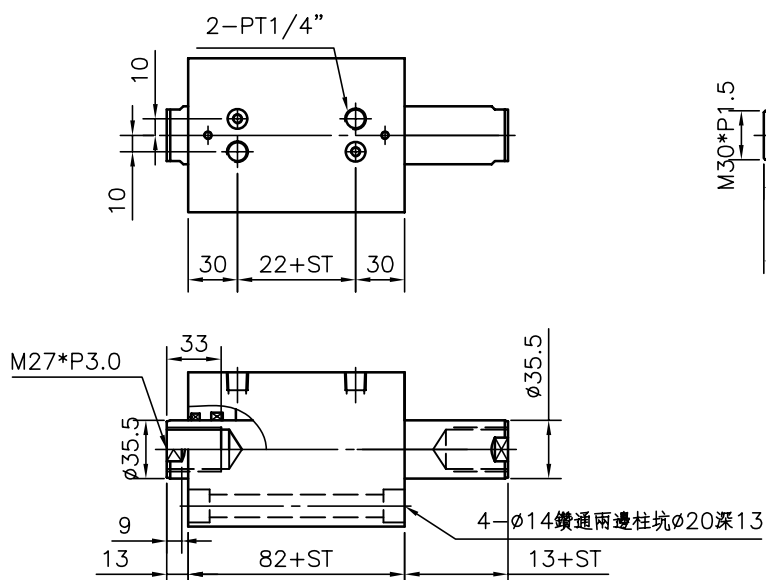
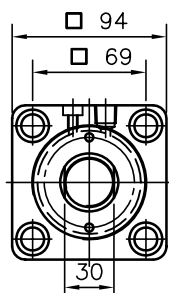
HC13-SDD

(雙軸心)Double rod

7/14MPa用

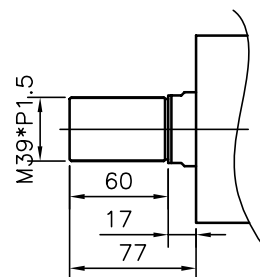
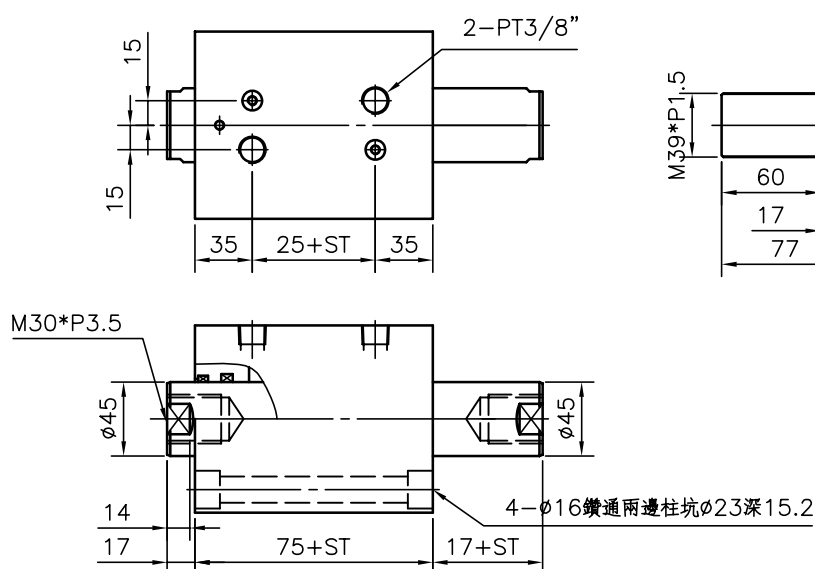
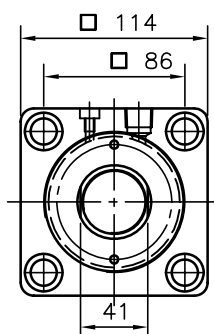
HC13-SDD

ø63



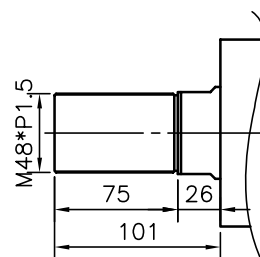
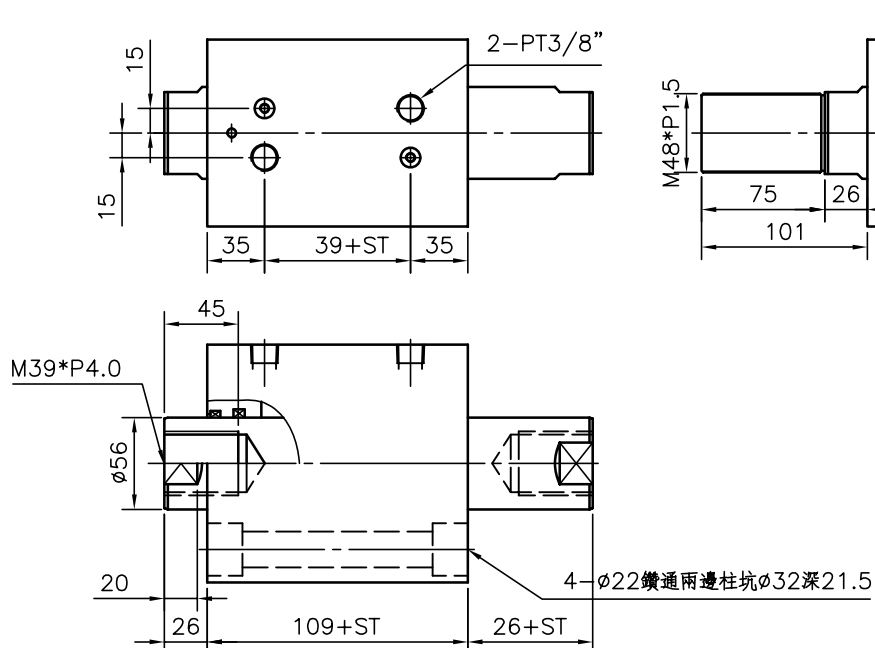
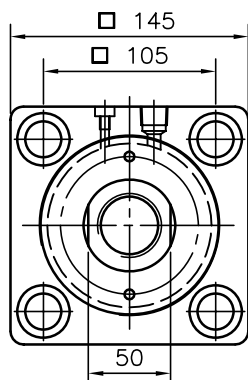
HC13-SDD

ø80



HC13-SDD

ø100



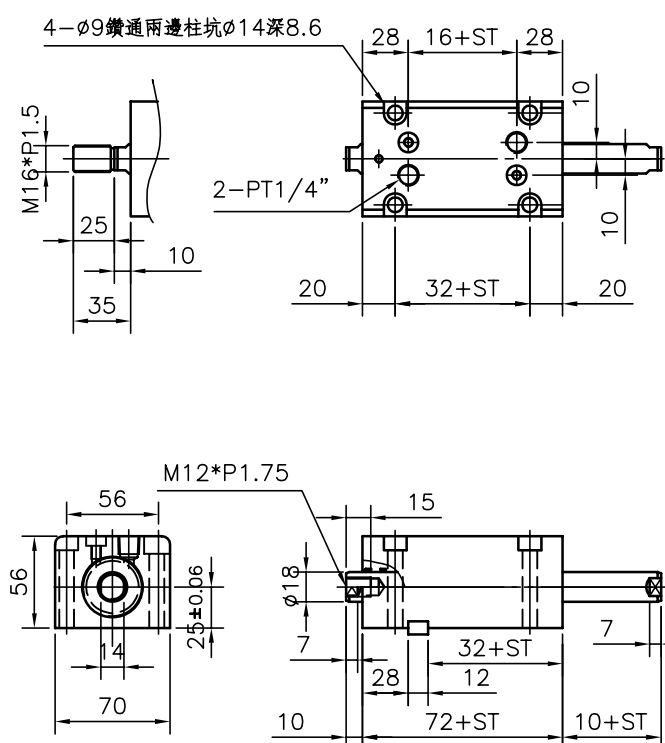
HC13-LAD

(雙軸心)Double rod

7/14MPa用

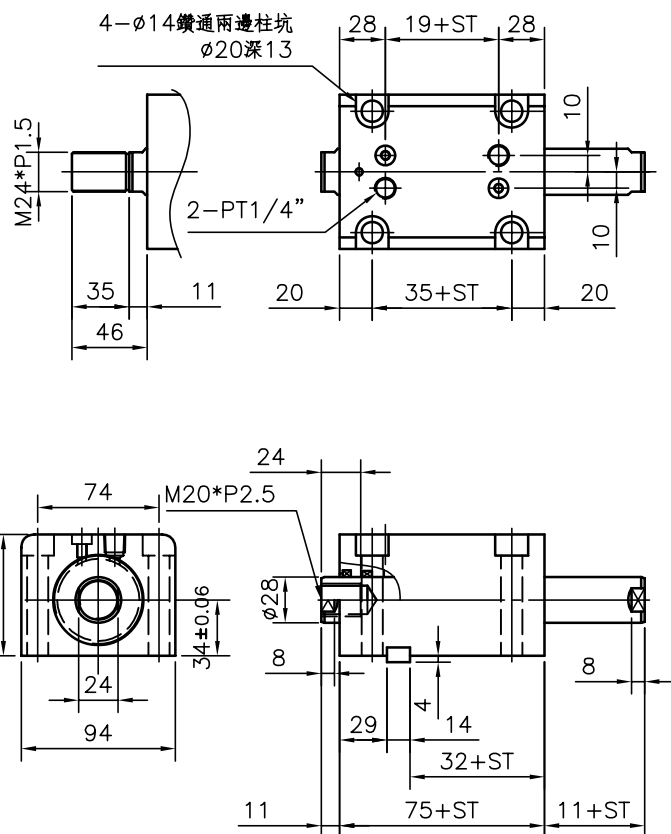
HC13-LAD

ø32



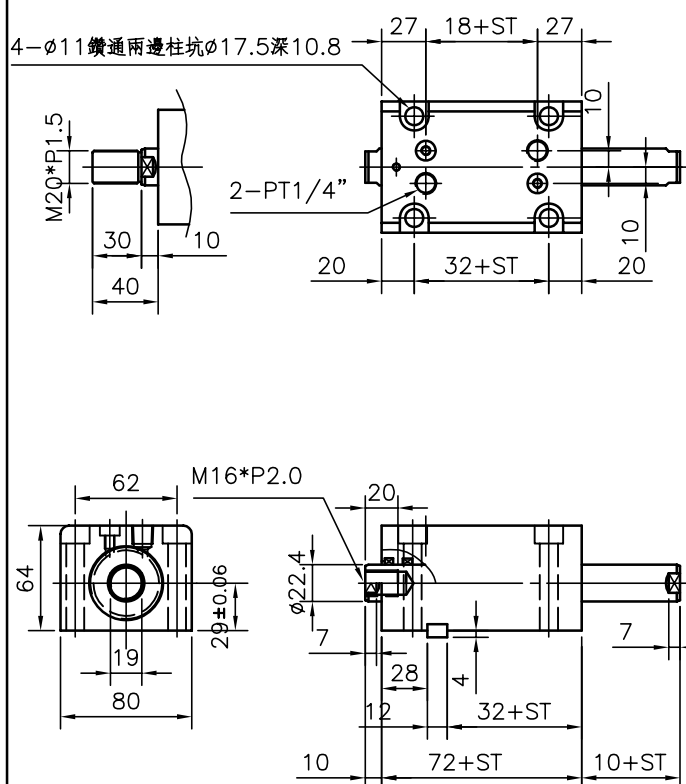
HC13-LAD

ø50



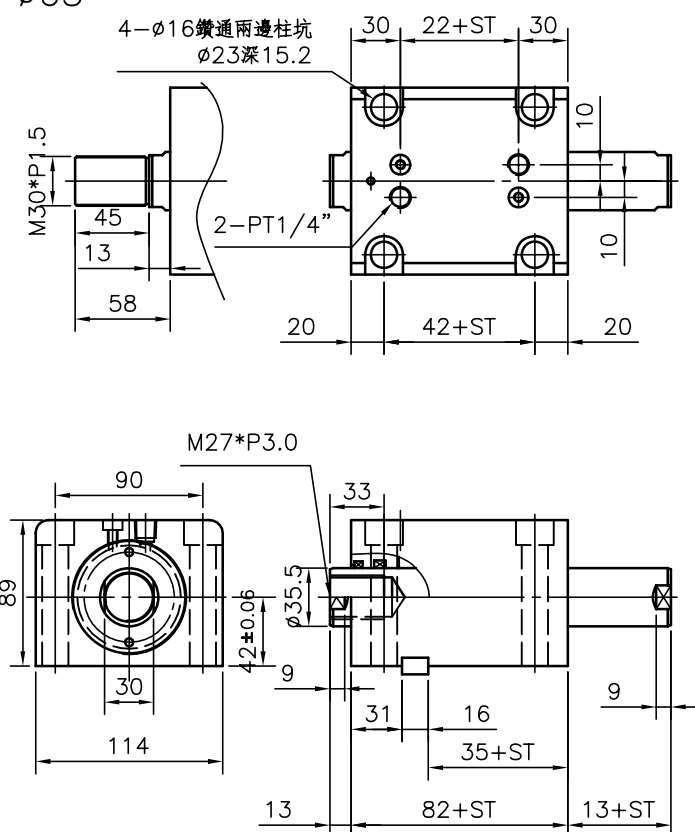
HC13-LAD

ø40



HC13-LAD

ø63

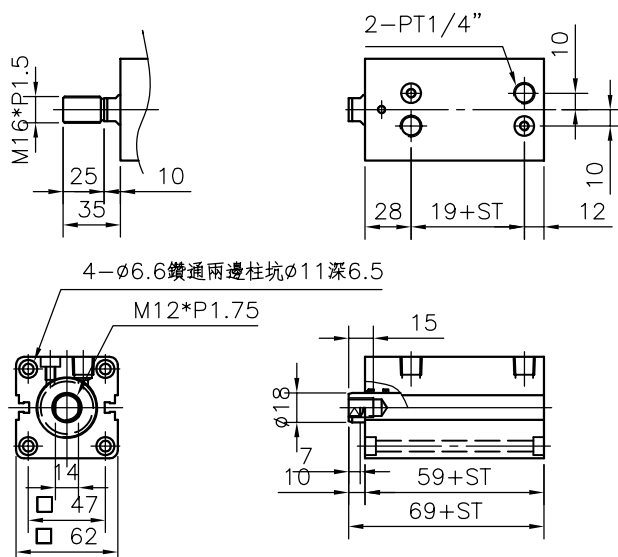


HC13-SDR (感應開關) Sensor

7/14MPa用

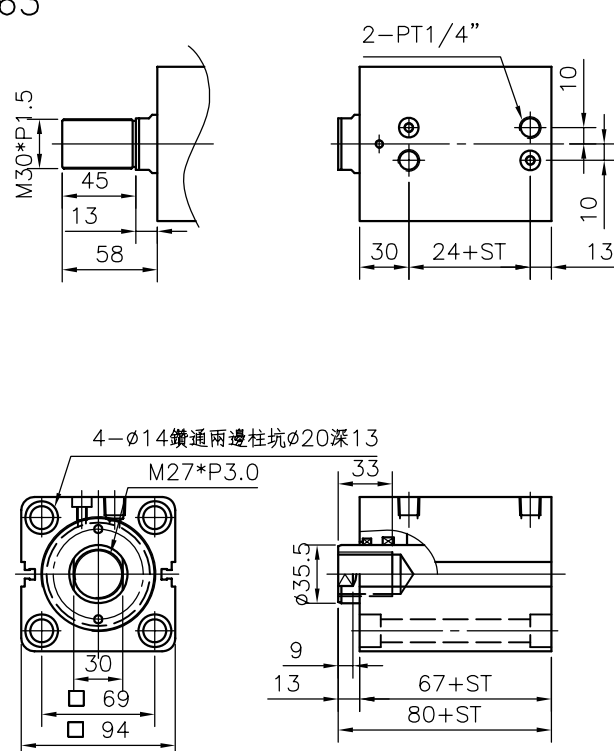
HC13-SDR

ø32



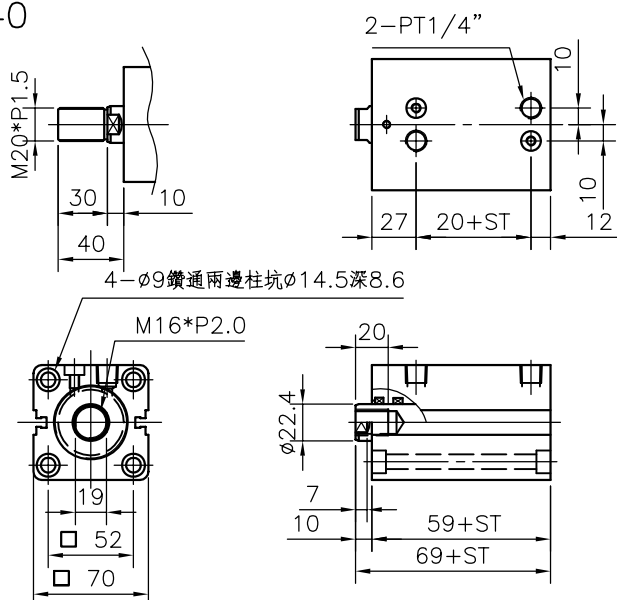
HC13-SDR

ø63



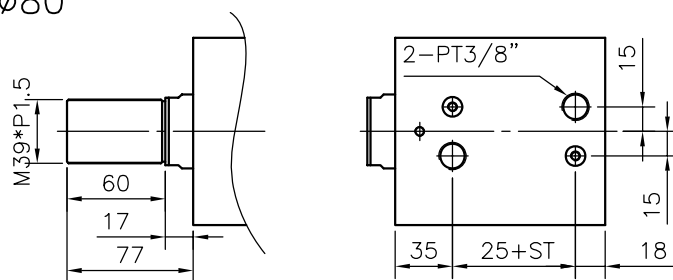
HC13-SDR

ø40



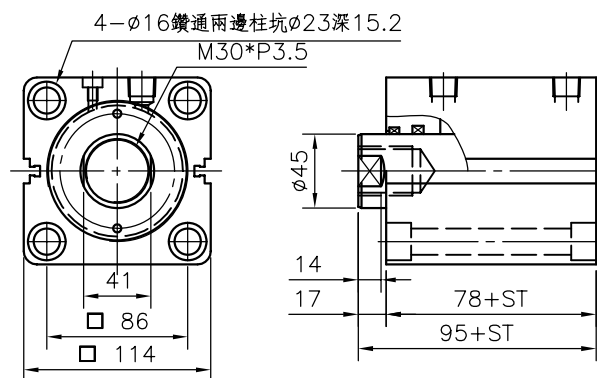
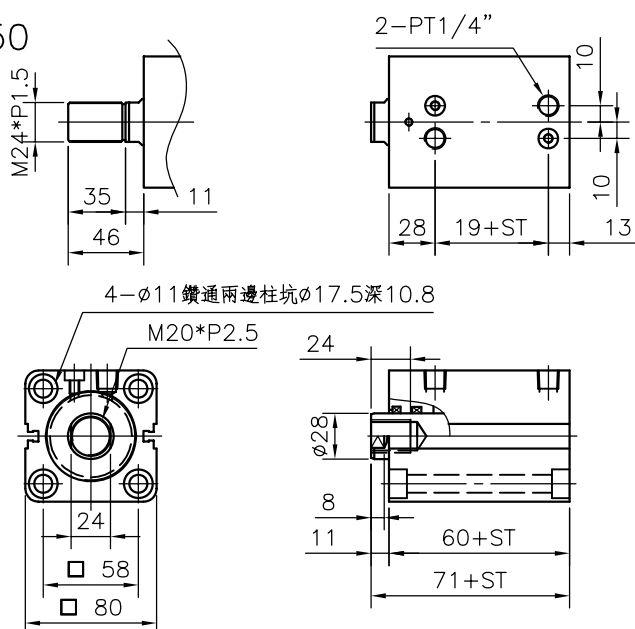
HC13-SDR

ø80

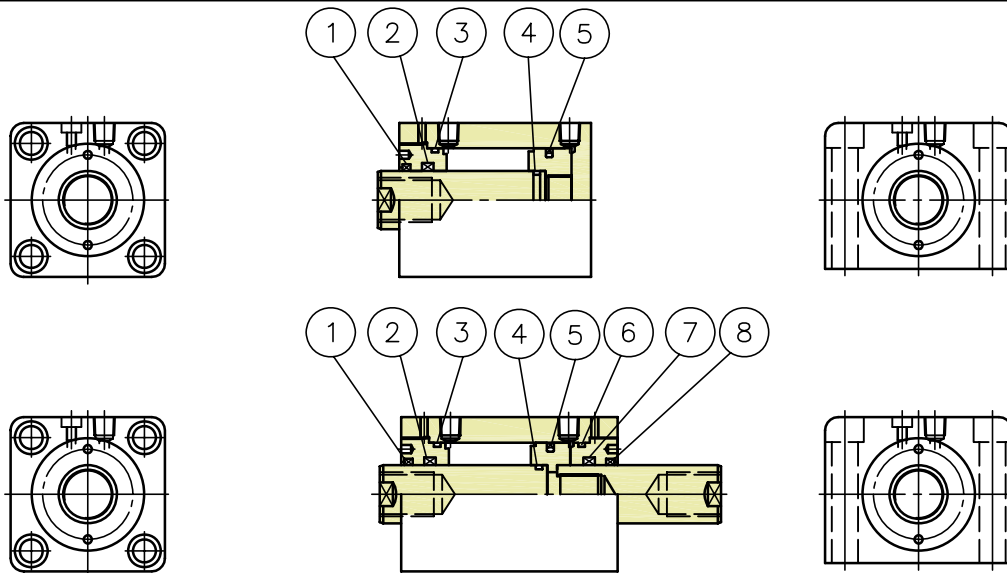


HC13-SDR

ø50



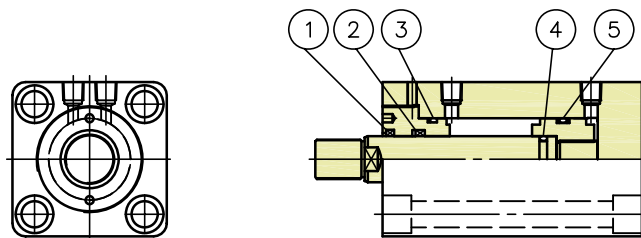
14Mpa



油封規格表 Specifications of Oil Seal:

NO	1	2	3	4	5	6	7	8
名 稱	防塵油封 Dust Seal	軸心油封 Rod Seal	O型環 O Ring	O型環 O Ring	活塞油封 Piston Seal	O型環 O Ring	軸心油封 Rod Seal	防塵油封 Dust Seal
材質	NBR	NBR	NBR	NBR	PU+NBR	NBR	NBR	NBR
數量 內徑	1	1	1	1	1	1	1	1
∅25	SER-14	NMY-14	AS-19	P-10	P-21	AS-19	NMY-14	SER-14
∅32	SER-18	NMY-18	G-25	P14	PW4100320	G-25	NMY-18	SER-18
∅40	SDR-22.4	SKY-22.4	G-35	P18	PW4200400	G-35	SKY-22.4	SDR-22.4
∅50	SDR-28	SKY-28	G-45	P-21	PW4200500	G-45	SKY-28	SDR-28
∅63	SDR-35.5	SKY-35.5	G-58	G-30	PW4200630	G-58	SKY-35.5	SDR-35.5
∅80	SDR-45	SKY-45	G-75	G-40	PW4300800	G-75	SKY-45	SDR-45
∅100	SDR-56	SKY-56	G-95	G-50	PW4301000	G-50	SKY-56	SDR-56

21Mpa



NO	1	2	3	4	5
名 稱	防塵油封 Dust Seal	軸心油封 Rod Seal	O型環 O Ring	O型環 O Ring	活塞油封 Piston Seal
材質	NBR	NBR+PTFE		NBR	NBR+PTFE
數量 內徑	1	1+1	1+1	1	1+2
∅40	SER-22.4	SKY-22.4	G-35	P-18	P-34
∅50	SER-28	SKY-28	G-45	P-22A	P-44
∅63	SDR-35.5	SKY-35.5	G-58	G-30	P-53