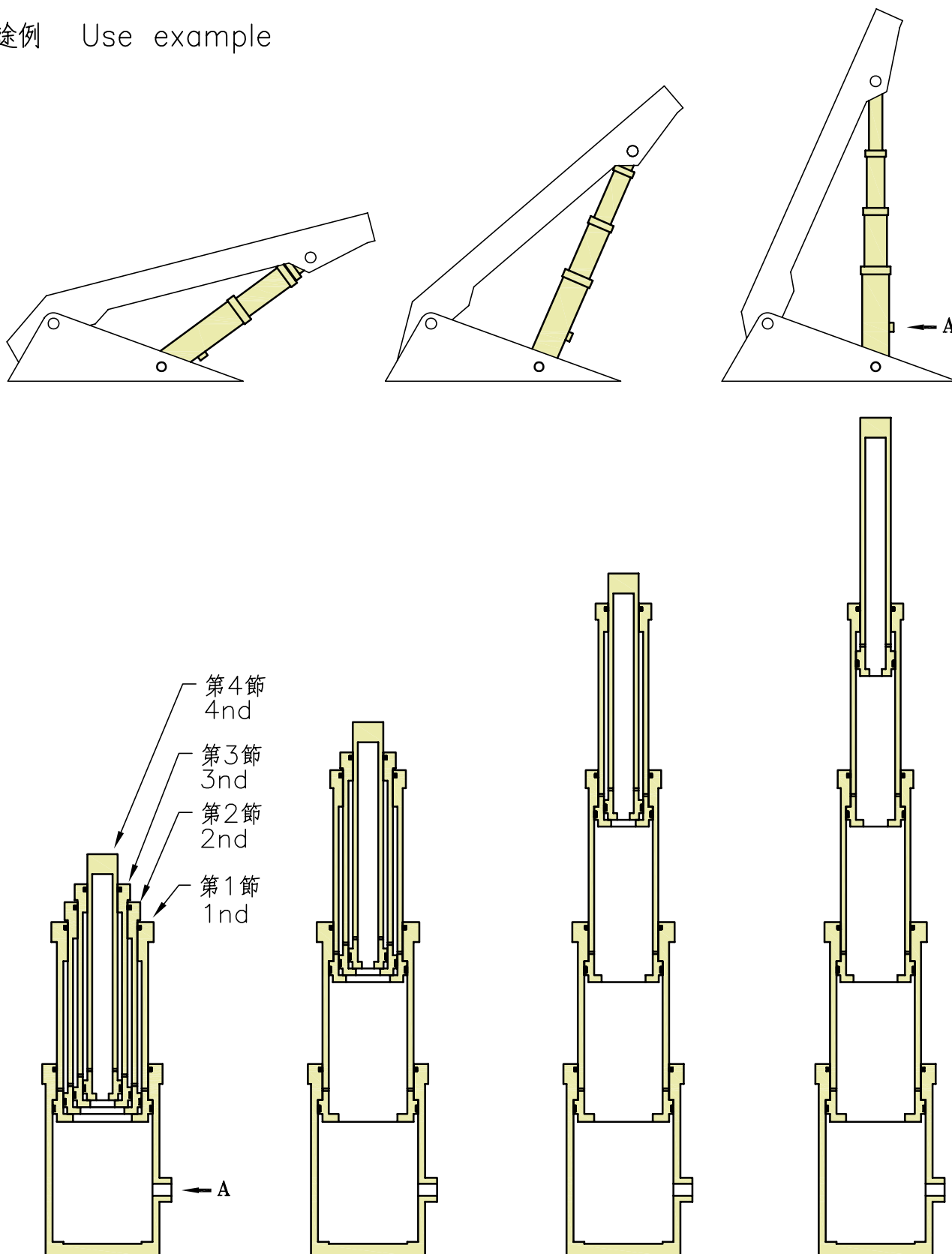


HC12系列油壓缸 / Series Hydraulic Cylinders

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

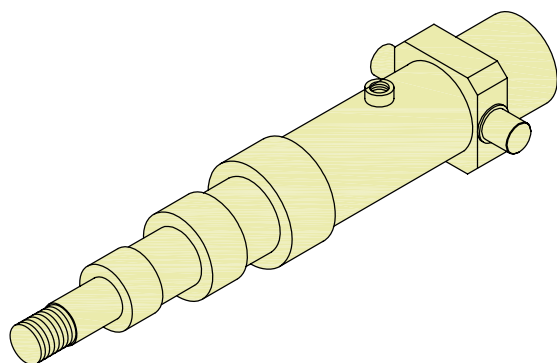
* 訂購內容索引 Ordering Index :

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		

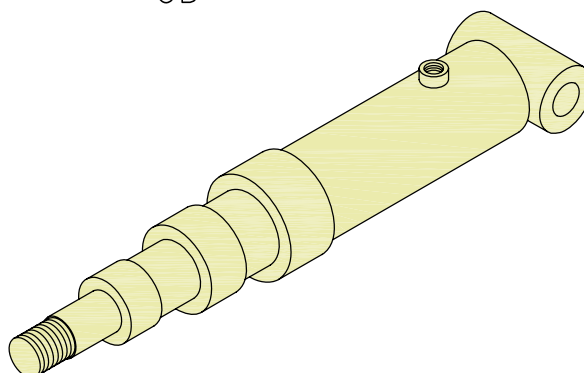
規範 Specifications

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		

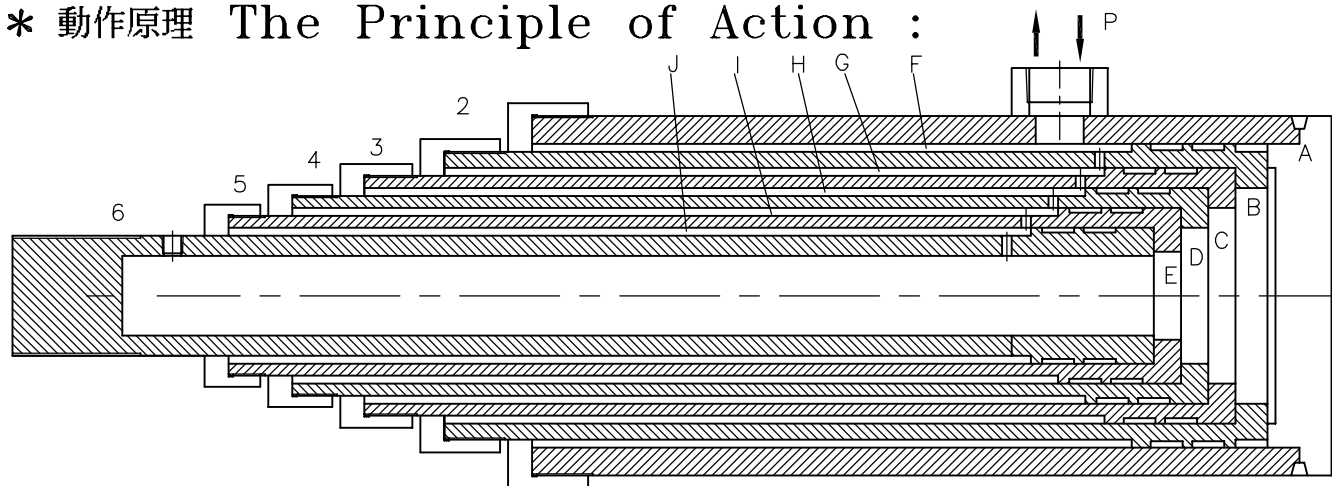
TC



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 be 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 :

$$\text{油壓缸出力公式 } F = A \times P \times \beta \quad (80\%)$$

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)

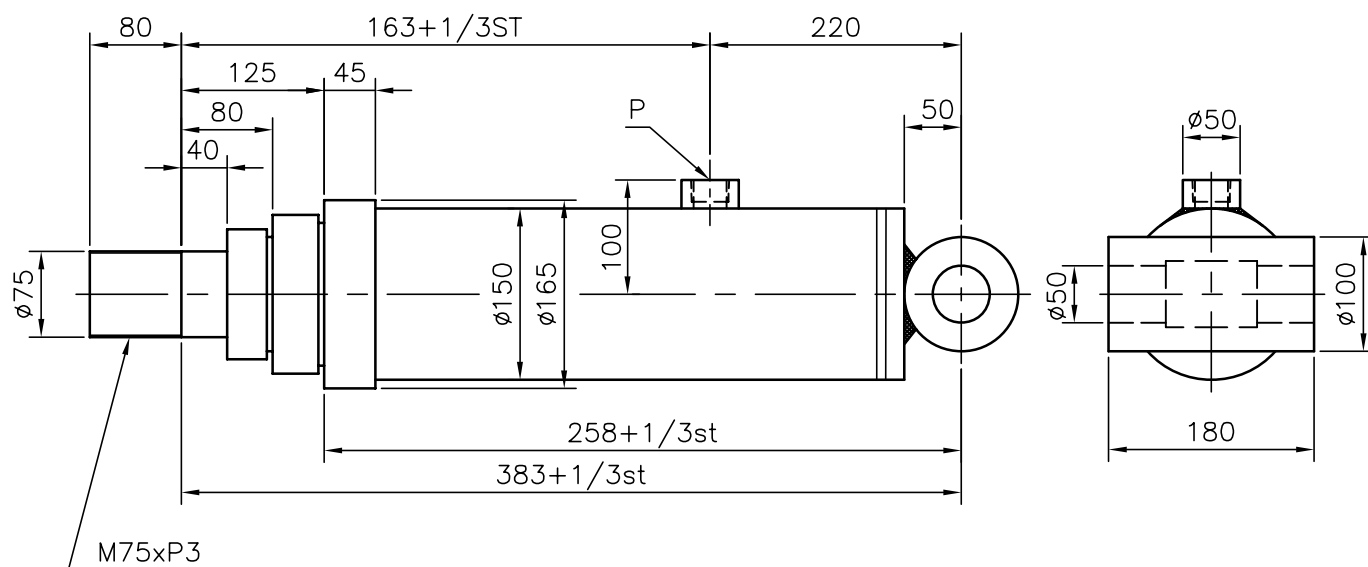
$$A = \frac{F}{P \times \beta} \quad \text{公式} \quad A = \frac{8000\text{kgf}}{140\text{kgf/cm}^2 \times 0.8} = 71.4\text{cm}^2$$

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.

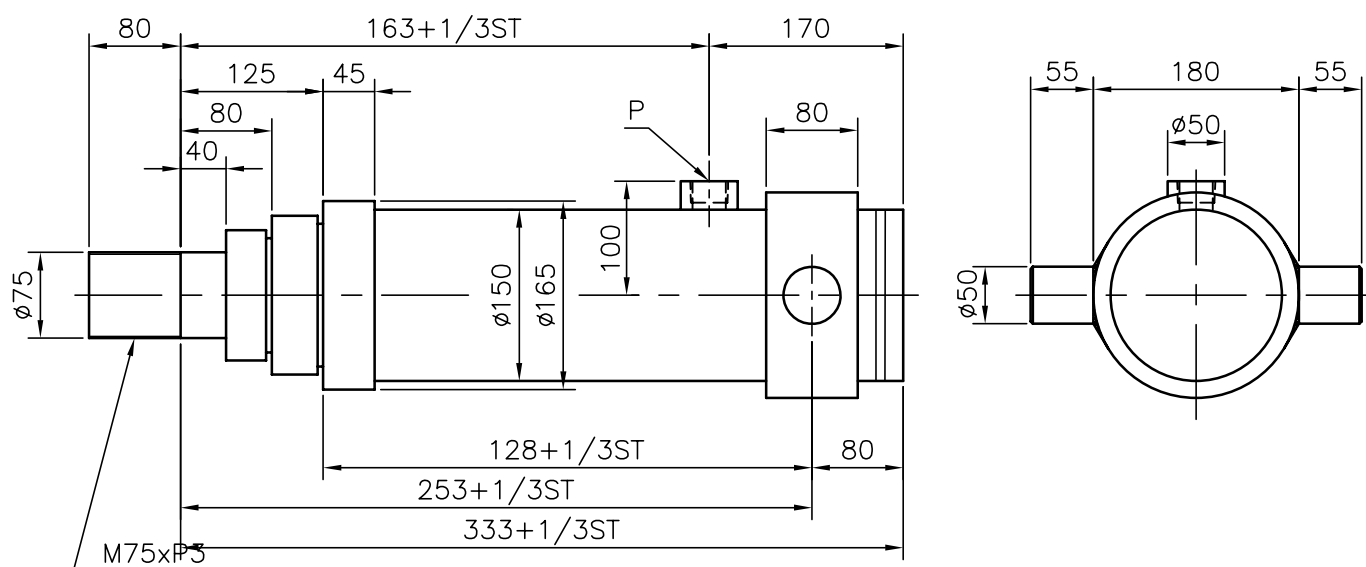
HC12-CD
 $\phi 135 \times 3$ 節

DIMENSION P
RC1"
G1"

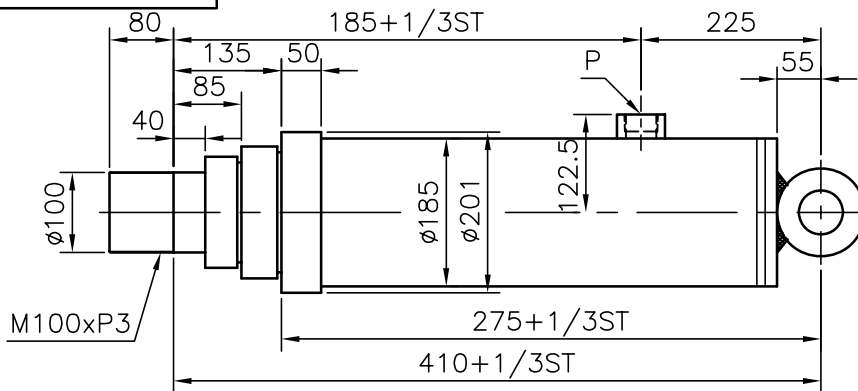


HC12-TC
 $\phi 135 \times 3$ 節

DIMENSION P
RC1"
G1"

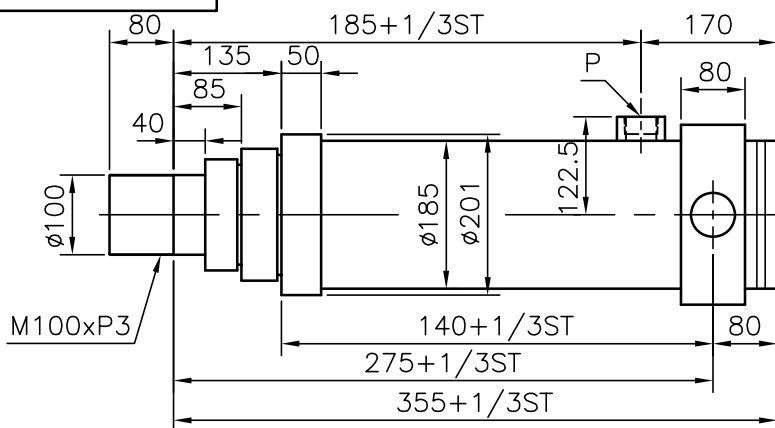


HC12-CD
ø160x3節



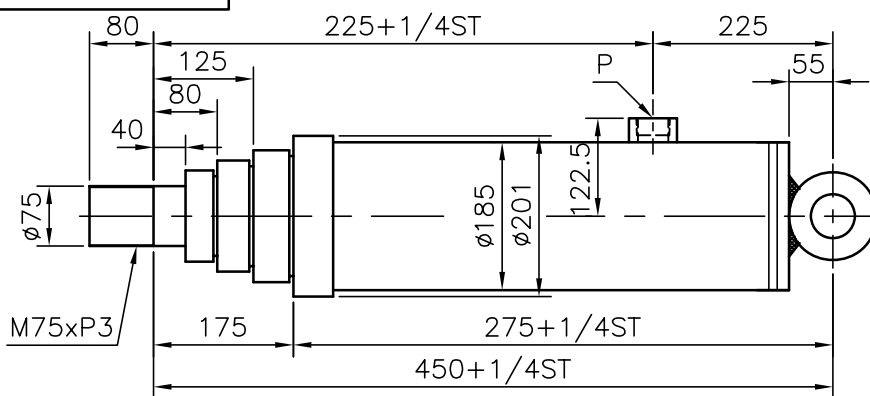
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-TC
ø160x3節



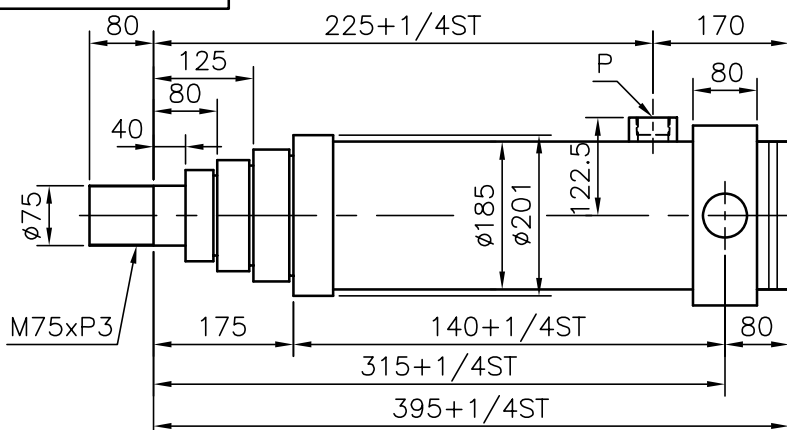
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-CD
ø160x4節



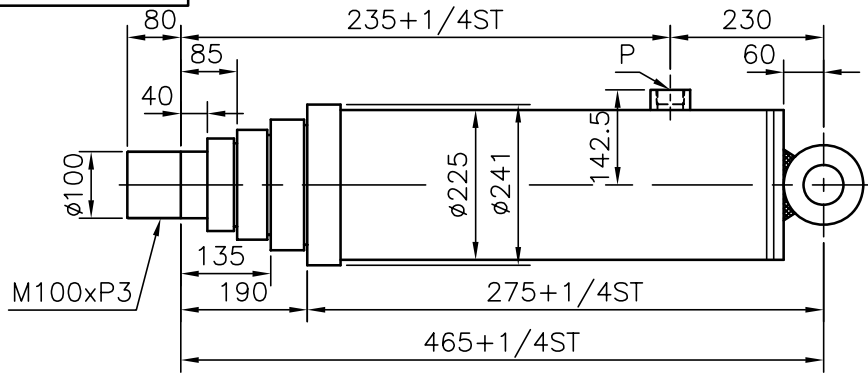
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-TC
ø160x4節



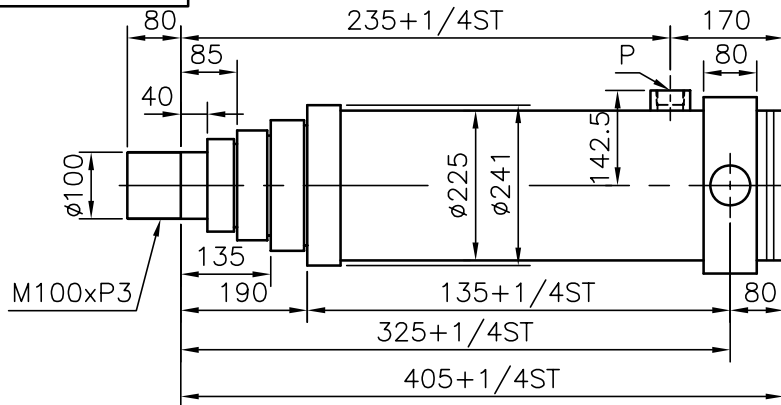
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-CD
 Ø190x4節



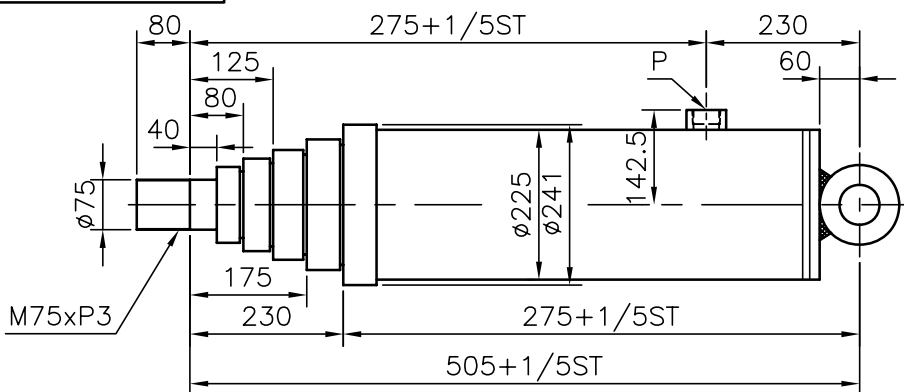
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-TC
 Ø190x4節



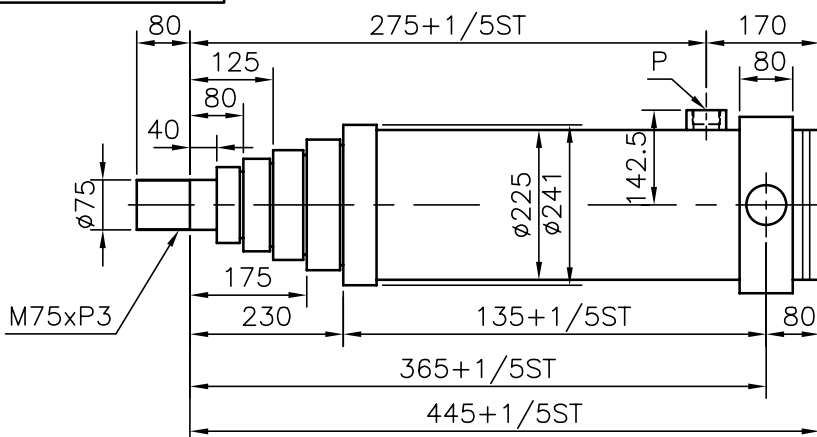
DIMENSION P
RC1-1/4"
G1-1/4"

HC12-CD
 Ø190x5節



DIMENSION P
RC1-1/4"
G1-1/4"

HC12-TC
 Ø190x5節



DIMENSION P
RC1-1/4"
G1-1/4"