

# GTC

VERSION : MARCH 2014



工廠登記字號：66-000496

## 伺服電機專用減速器 Special Planetary Gear



Reducer for Servomotor

適用50W-15KW伺服電機  
For Combination with  
50W-15KW Servomotor

球體無背隙Backlash-free Ball Reducer  
轉向無限制Non-restricted Motion  
運用無範圍Flexible Applications



# GTC

## 目次

公司簡介	03
產品總覽	05
應用範例	06
訂制規格範例	07
90°轉向機	09
多枚行星減速機	15
中空旋轉平台減速機	19
球體減速機	21
諧波減速機	29
推引器	31
約定商品範例	33
如何選用減速機	34



# INDEX

---

Company Introduction	03
Products	05
Application	06
Product Specification	07
Right Angle Gear Reducer	09
Planetary Gear Reducer	15
Hollow and Rotary Platform Gear Reducer	19
Ball Reducer	21
Harmonic Drive	29
Power Base	31
OEM Product Example	33
How to Select a Gear Reducer	34





# GTC ABOUT US

## 關於鼎縊

鼎縊有限公司，自1990年起相繼投入機械產業，使得我們已於2001年著手產業資源匯整，成立漸伸線有限公司，並於2005年更名為鼎縊有限公司，專業從事各種精密減速機的研發、生產、設計、銷售，為國際貿易綜合發展的高科技企業。總部設在台灣台中，組織下有台南分公司及鼎縊(廈門)貿易有限公司。鼎縊(廈門)貿易有限公司已於2010年元月正式營運，具有獨立法人營業資格及合法進出口執照，提供廣大中國客戶更便捷的產品購買及技術支援。

## 專業 經驗

本公司專業從事減速機的研發、生產、設計，是精密機械動作元件的供應者，我們擁有豐富的經驗協助客戶將減速機導入機械產品中。並且已申請多項技術專利，以SBRU無間隙球體減速機、WS 90度轉角減速機、NT中空選轉平台減速機為核心產品，我們同時也擁有客制化的開發技術，能規格化生產少枚差行星減速機各系列商品，如關節機械臂專屬、分度盤規劃與傘型螺旋齒輪90度轉角規格等。不論訂單數量多寡，皆可依您的需求設計生產屬於您自己的專用規格，交貨期一般為45個工作日。

我們擁有先進的加工設備，裝配水線和檢測設備，可以根據客戶的要求進行計算、設計和製造，以滿足客戶需要。產品具有美觀、安全、高效、智慧控制等優勢，規範的設計、製造、檢測等工藝流程確保產品品質，令您的使用更放心、省心、安心。

本公司的產品被廣泛應用於多關節機械臂、碼垛機械人, 半導體自動化設備、面板自動化設備、PCB翻板設備、CNC車銑綜合機、雕刻機、工具機換刀系統、電離子、火弧切割機、高速移動等機器設備。



Gumptious Technology Co. (GTC) is an innovated company specialized in R&D and manufacture of various types of servo gearboxes. Since 2001, GTC has been well positioned to deliver reliable products and services to our customers and partners all over the world with breakthrough patented technologies.

Our company name, Gumptious Technology Co, derives from the word “gumption” -- meaning courage and initiative -- enterprise and willingness to move forward. Therefore, being gumptious enables us to design and manufacture the best technology products for our customers.

### What we provide

GTC provides patented products including the very popular backlash free Ball Reducer, backlash free Right Angle Gearbox(WS series), highly accurate Hollow Rotary Platform Gear Reducer (NT series) and precision Planetary Gearhead (GNP series).

### Why choose us

Through the advanced technology and diverse product portfolio, GTC offers the appropriate solutions to our clients, not only reducing costs but also creating the best value,. We are also able to offer customized products to meet diversified needs of our customers. Aesthetics, high quality, safety and efficiency, with the products GTC helps our customers, vendors, our sales channel and our employees become more successful.

有限公司  
ogy Co.



GNP多枚行星減速機系列 GNP Series Planetary Gearhead



**new** SW1RU 諧波減速機  
SW1RU Harmonic Drive



PIS 推引器  
PIS Power Base



NT中空旋轉平台系列 NT Series Hollow Rotating Platform



NT+WS雙軸極座標機械手臂  
NT+WS Biaxial and coordinates Robot

WS轉向機系列 WS Series Right Angle Gear Reducer



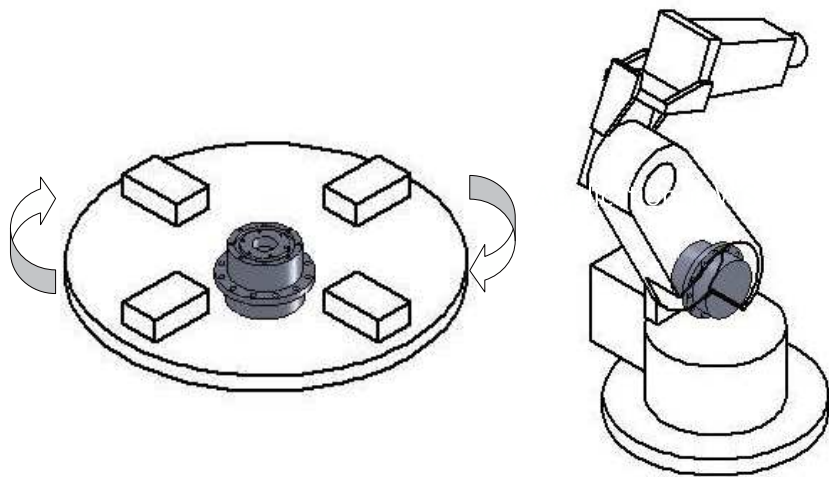
**new** 球體減速機系列 Ball Reducer Series



# 應用範例 Application Example

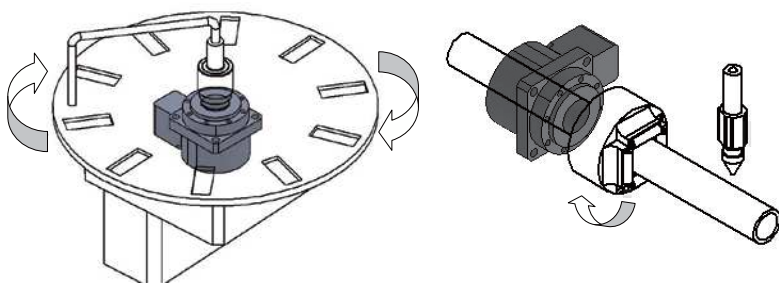
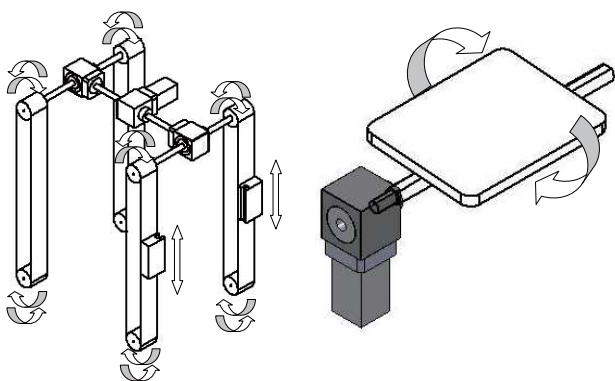
## 球體減速機應用 Application in Ball Reducer

## PIS推引器 PIS Power Base



## WS 應用 Application in WS

## NT 應用 Application in NT



## WS 應用 Application in WS



伺服電機：在訂貨時應告知工廠，伺服電機所需銜接法蘭及軸的尺寸。  
**Servomotor:** Please advise the all dimensions of the pilot and output shaft when you make an order.



WS系列 / 入力實心出力中空

WS / Solid input and hollow output



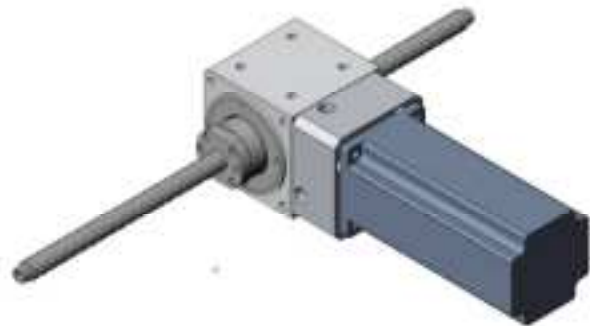
WS系列 / 一入二出

WS / One into the two



WS系列 / 入力實心出力實心

WS / Solid input and solid output



WS系列 / 螺桿應用

WS / Application in screw



WS系列 / 雙皮帶輪轉傳動

WS / Turn drive of two leather belts



WS系列 / 馬達與出力端平行

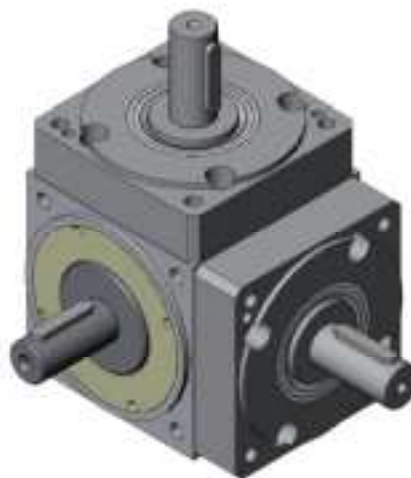
WS / Motor and output are parallel





WS系列 / 一入二出

WS / One into the two



WS系列 / 一入二出

WS / One into the two



WS系列 / 轉盤應用

WS / Application in turntable



WS系列 / 出力法蘭面

WS / The flange of output



WS系列 / SENSOR應用

WS / Application in SENSOR



WS系列 / 出力實心

WS / Solid output

## 90度轉向減速機

Right Angle Gear Reducer



**WS**

系列名稱  
Series name

**070**

外型尺寸  
Size

**F**

減速比  
Reduction ratio

**010**

**ØS**

**ØB**

**ØA**

參考下圖(馬達對照圖)  
Refer drawing (motor)

出力軸心規格 { SF: 實心軸  
F: 中空軸

Output shaft specification { SF: Hollow shaft  
F: Solid shaft

正面安裝尺寸 Size :

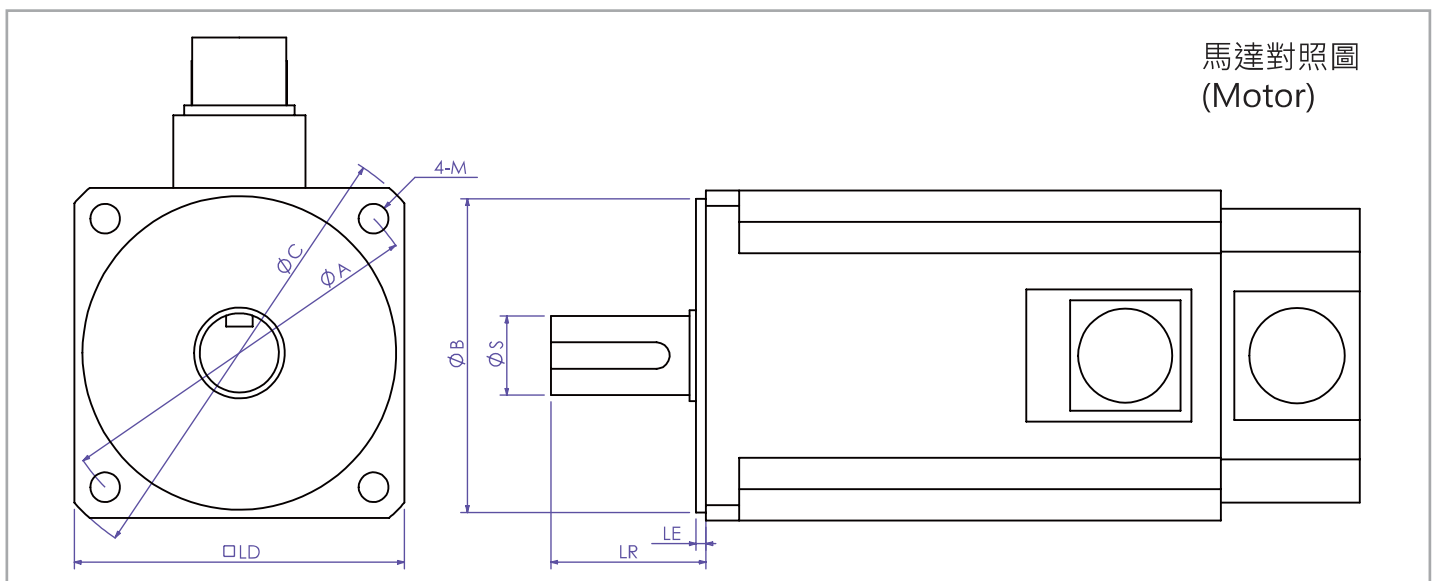
WS070 70X70mm

WS150 142X142mm

WS180 182X182mm

WS090 92X92mm

WS120 115X115mm



馬達對照圖  
(Motor)

伺服電機：在訂貨時應告知工廠，伺服電機所需銜接法蘭及軸的尺寸。

**Servomotor:** Please advise the all dimensions of the pilot and output shaft when you make an order.

# WS 系列 WS series

## 特長 Feature

- 1.可調整至零背隙。 Backlash free.
- 2.最大出力轉矩：Max Torque capacity: 1.25 – 42kgf\*m (12.2Nm – 411Nm) .
- 3.機械輸出軸為中空貫穿軸，機箱外殼有五面固定基座法蘭。  
Hollow output shaft design for various applications and 5 mounting surfaces for flexible installations.
- 4.背隙值可任意調整，可適用軸向低荷重間歇性運動。  
Adjustable backlash and suitable low load and intermitted motion.

## 安裝注意事項

- 90度中空轉向器安裝時軸心必須完全貫穿。  
It must be run through installing in right-angle Hollow Gearbox.
- WS系列未貫穿時，許用安裝誤差：  
The WS can install in deviation when running through yet :
  - (1) 偏擺不能大於0.5。  
The deflection can't be greater than 0.5.
  - (2) 偏心率不能大於0.01mm  
The Eccentricity can't be greater than 0.01mm.



90° 轉向機  
Right Angle Gear Reducer

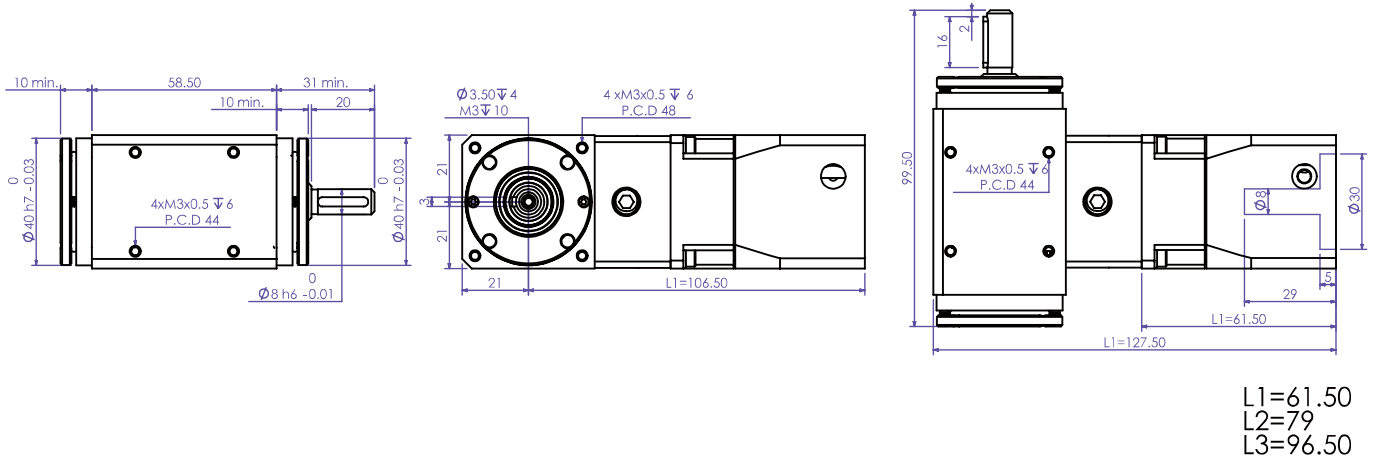
## 規格Specification

減速比 Ratio Table of Gear Reducer  
WS系列減速比1:2 (WS Series Ratio 1:2) \*特定規格1:1

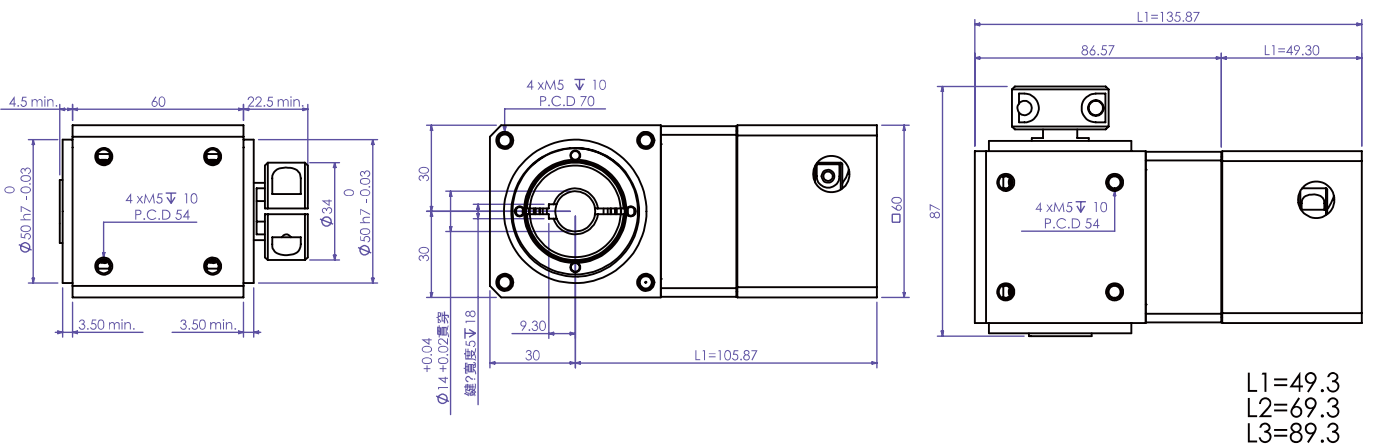
說明Description	WS42	WS60	WS70F	WS90F	WS120F	WS150F	WS180F
連續出力轉矩(kgf*m/Nm) Continuous Output Torque	0.42/4.1	0.67/6.5	1/9.8	2/19.6	4/39	9/88	14/137
最大出力轉矩(kgf*m/Nm) Max. Torque of Load	1.25/12.2	2/19.6	3/29.4	6/58.8	12/117	27/264	42/411
破壞轉矩值(kgf*m/Nm) Breaking Torque	2.5/24.5	4/39.2	6/58.8	12/117.6	24/235	54/529	84/823
許用輸入轉速(r/min) Permissible Input RPM	1500	1500	1200	1000	800	800	500
慣性矩(單一速比)(kg*cm <sup>2</sup> ) Gear Reducer Inertia	0.035	0.04	0.05	0.23	0.8	1.72	2.12
許用徑向最大荷重(kgf) Max Radial Load	25	50	86	140	250	350	550
重量(kg) Weight	0.6	1.1	1.2	3.4	7.4	13	41
重量L1(kg) Weight	0.9	1.7	2.1	5.7	12.5	17	52.1
重量L2(kg) Weight	1.0	2.0	2.4	6.8	14.3	17.8	52.8
重量L3(kg) Weight	1.2	2.3	2.7	7.9	15.4	18.9	53

減速機的安裝：減速機本體是一個非常精密的產品，所以在安裝上必須小心，嚴禁碰撞或是以鐵鎚敲打軸心或是任一部位。  
Installation of gear box: The gearbox is a high precision product; hence it must be careful in installation and forbid knocking at the shaft and any parts of the gearbox.

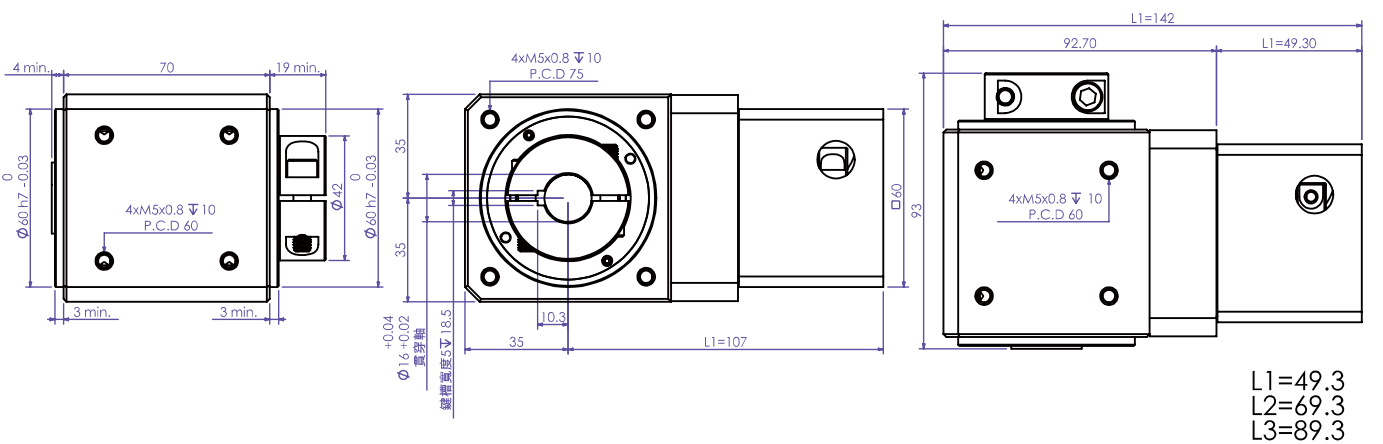
## WS42



## WS60



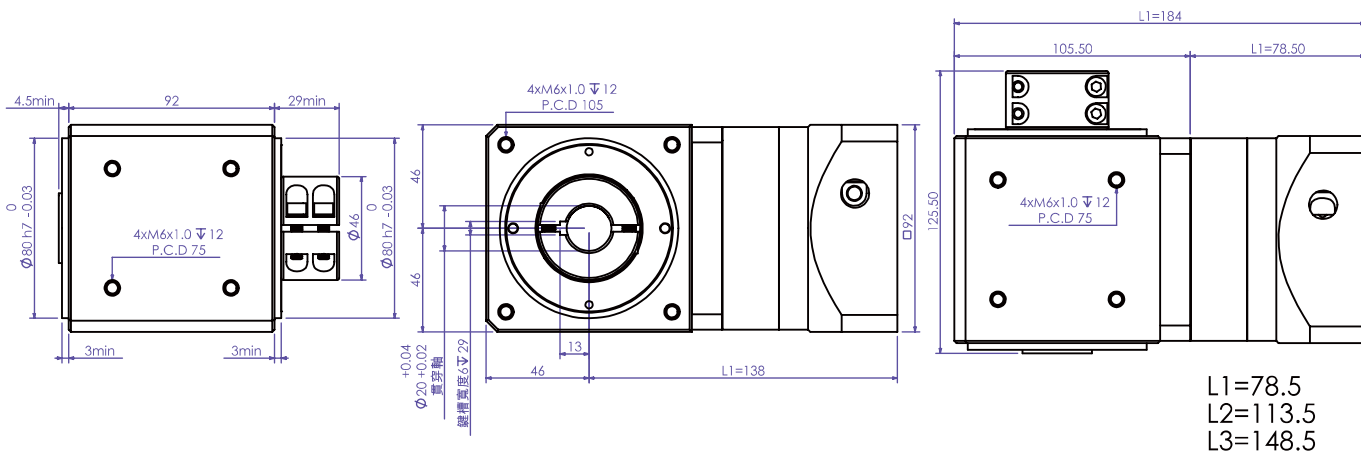
## WS70F



本公司保有尺寸變更權利，並不另行通知，訂貨前請再度確認。

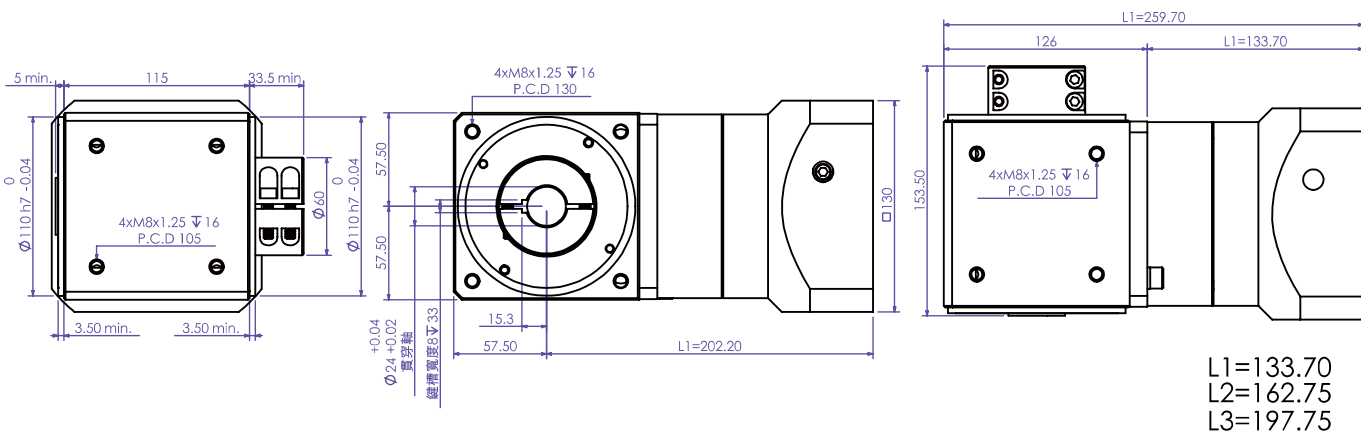
Dimension can be modified without notice for improvement of products so please Contact us before you order.

### WS90F



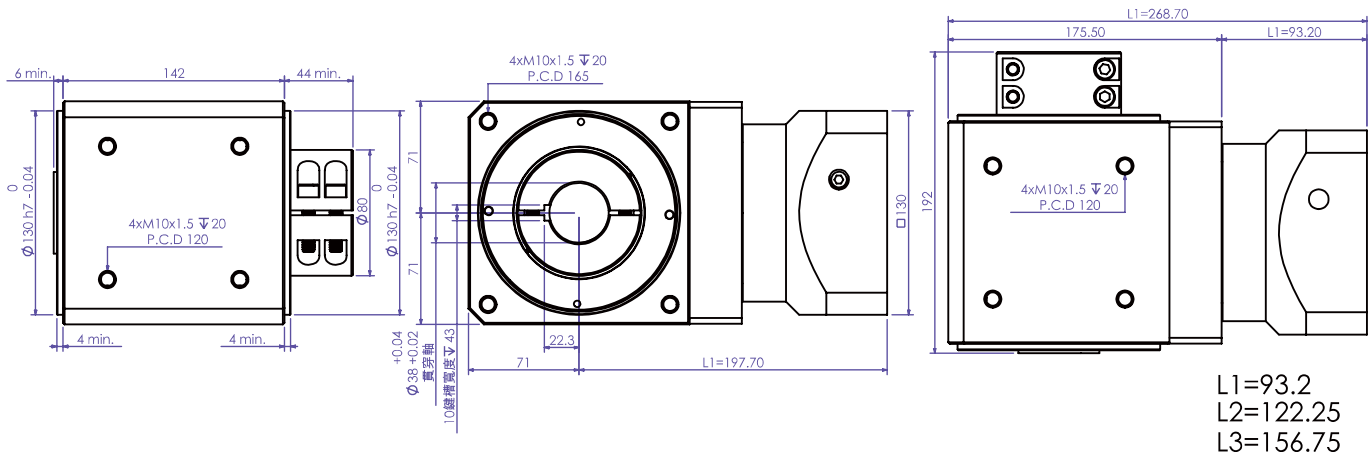
L1=78.5  
L2=113.5  
L3=148.5

### WS120F



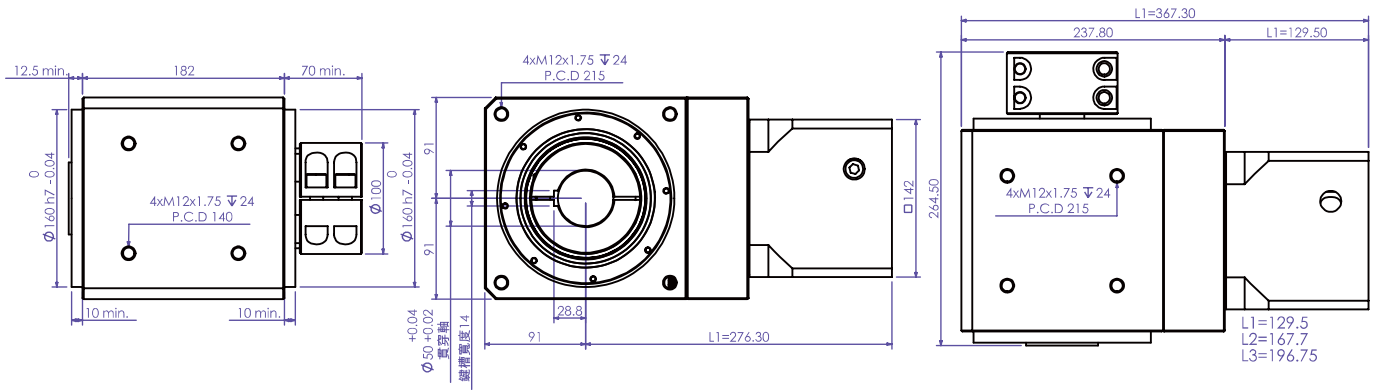
L1=133.70  
L2=162.75  
L3=197.75

### WS150F

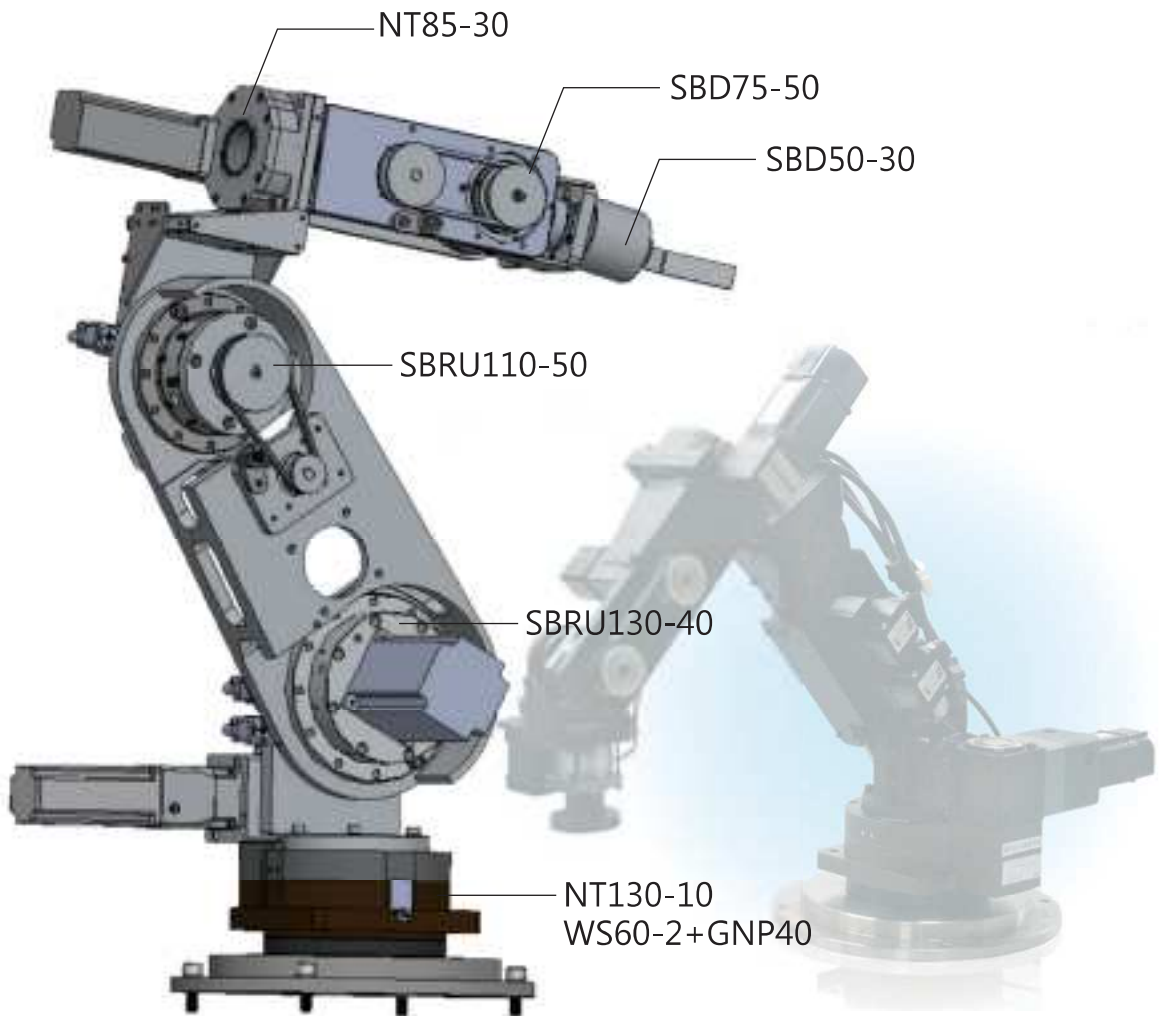


L1=93.2  
L2=122.25  
L3=156.75

## WS180F



## 機械手臂 (六軸) 6 Axis Robot



機械手臂 (四軸) 4 Axis Robot



## 多枚行星減速機

Planetary Gear Reducer



**GNP**

系列名稱  
Series name

**060**

外型尺寸  
Size

**L1**

減速比3~1000比  
Reduction ratio  
1/3~1/1000

段數：L1-單段  
Stage No. L2-雙段  
L3-三段

**005**

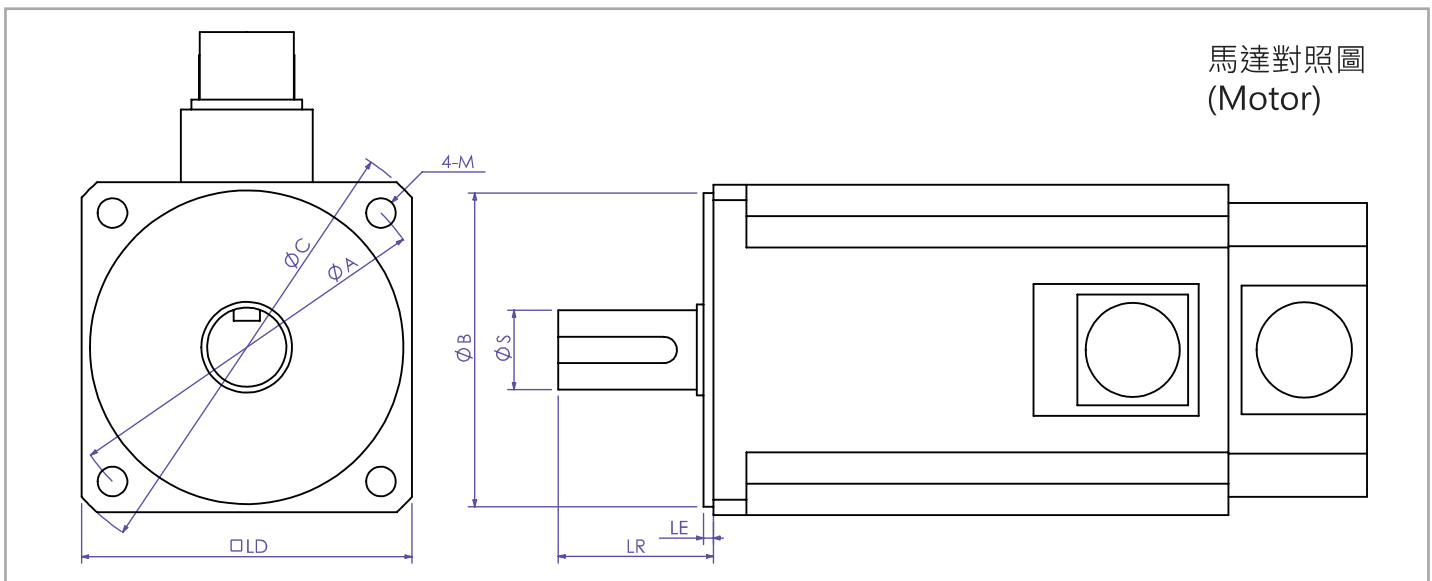
**ØS**

**ØB**

**ØA**

參考下圖(馬達對照圖)  
Refer drawing (motor)

正面安裝尺寸： Size	GNP 040	42X42mm	GNP 120	115X115mm
	GNP 060	60X60mm	GNP 150	142X142mm
	GNP 090	92X92mm	GNP 180	180X180mm



馬達對照圖  
(Motor)

減速機的安裝：減速機本體是一個非常精密的產品，所以在安裝上必須小心，嚴禁碰撞或是以鐵鎚敲打軸心或是任一部位。  
Installation of gear box: The gearbox is a high precision product; hence it must be careful in installation and forbid knocking at the shaft and any parts of the gearbox.



# GNP系列 GNP series

## 特長 Feature

- 1.精度出廠值為2~5弧分。(GNP40除外) EX Work precision 5 arcmin. (Except. GNP40)
- 2.正整數比。Integral Gear Ratio.
- 3.適合於各廠牌伺服電機。Suitable for combination with any kinds of servomotor.
- 4.密封式設計，不必換油，安裝方便。  
Totally enclosed design, lubricant refilling is not necessary. Easy installing and combination.
- 5.高轉矩，低慣性矩。High rating torque and low inertia.
- 6.另有長軸設計，適用齒排傳動，減化機構。  
Besides, the design of long shaft is suitable to driven by rack, and simplify the mechanism.

## 規格Specification

GNP40L1單一規格最輕的減速機 GNP40L1, the lightest model of all gearheads

說明Description / 型號Models	減速比 Ratio	GNP40	GNP60	GNP90	GNP120	GNP150	GVM-C
"連續出力轉矩 Continuous Output Torque(kgf*m / Nm)"	3	—	1.5/14.7	6.5/63.7	13/127.4	25/245	—
	4	1/9.8	2/19.6	7.5/73.5	15/147	43/421.4	—
	5	1.1/10.78	2.1/20.58	8/78.4	17.3/169.54	45/441	—
	7	1/9.8	1.9/18.62	7/68.6	13/127.4	38/372.4	—
	9	—	—	—	12/117.6	—	4.8/47.04
	10	0.9/8.82	1.7/16.66	6/58.8	8/78.4	28/274.4	—
"最大出力轉矩Max. Torque(kgf*m / Nm)"	3~10	3倍額定輸出轉矩 Three Times Rated Output Torque					
"慣性矩(單一速比)Gear Reducer Inertia(kg*cm <sup>2</sup> )"	-	0.049	0.127	1.247	2.274	1	0.26
"出力容許徑向力Permissible Radial Force(kgf)"	-	70	110	353	465	626	155
"入力孔徑Input Shaft Diameter(mm)"	-	5~8	6.35~14	11~24	19~35	20~38	8~16
"重量 L1Weight L1(kg)"	3~10	0.3	0.9	3.3	6.8	13.8	2
"重量 L2Weight L2(kg)"	9~100	0.4	1.2	4.5	7.7	14	
"重量 L3Weight L3(kg)"	100~1000	0.6	1.5	5.5	8.8	15	

## 減速比

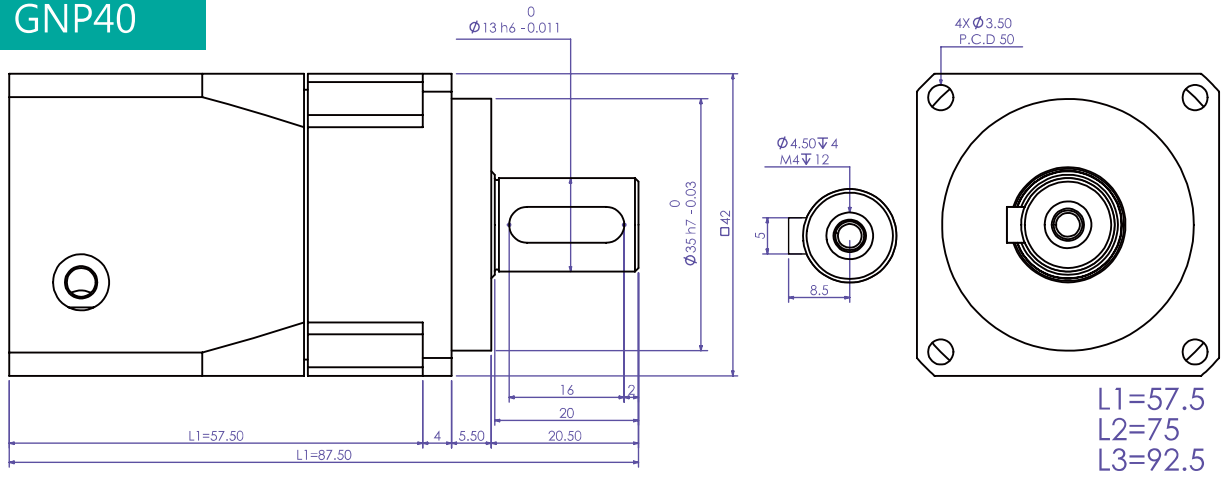
### Ratio Table of Gear Reducer

段數(Stage No.)	L 1	L 2
GNP40	4,5,7,10	12,15,16,20,21,25,28,30,35,40,49,50,70
GNP60	3,4,5,7,10	9,12,15,16,20,21,25,28,30,35,40,49,50,70,100
GNP90	3,4,5,7,10	9,12,16,15,20,21,25,28,30,35,40,49,50,70,100
GNP120	3,4,5,7,9,10	9,12,15,16,20,21,25,27,28,30,35,36,40,45,49,50,63,70,81,90,100
GNP150	3,4,5,7,10	9,12,15,16,20,21,25,27,28,30,35,36,40,45,49,50,63,70,90,100

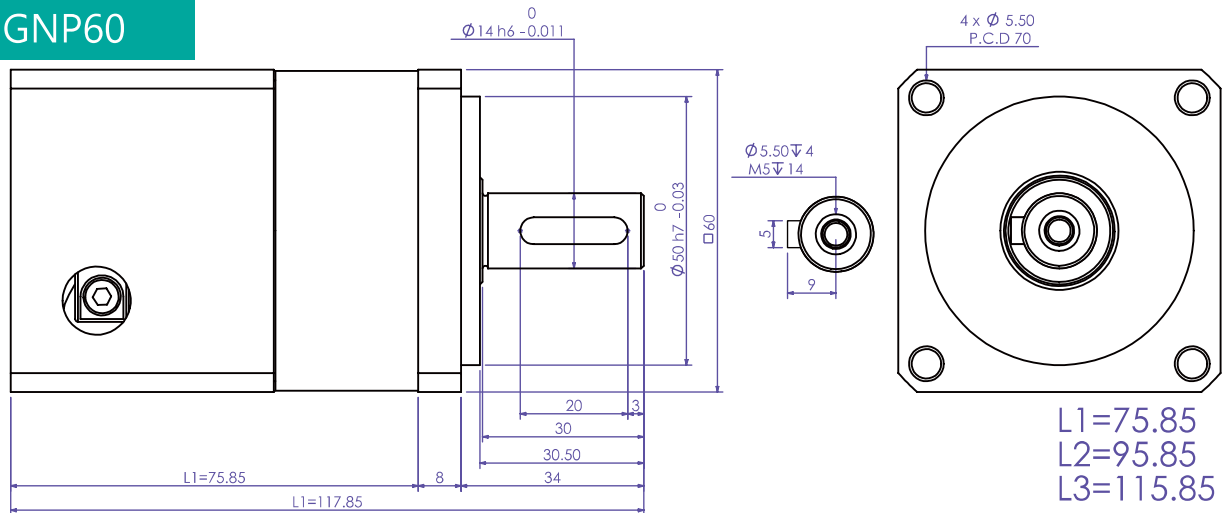
伺服電機：在訂貨時應告知工廠，伺服電機所需銜接法蘭及軸的尺寸。

Servomotor: Please advise the all dimensions of the pilot and output shaft when you make an order.

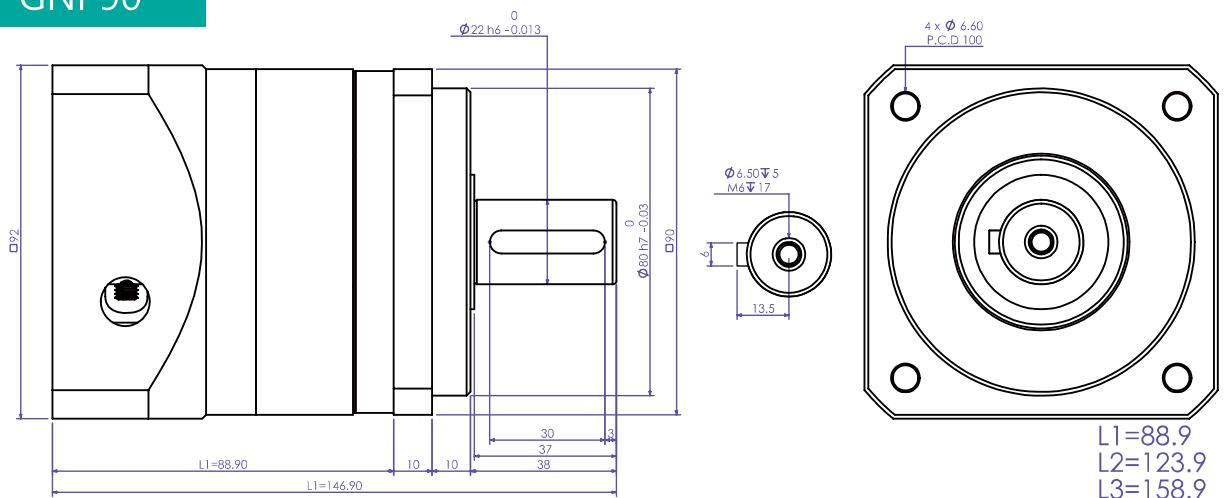
## GNP40



## GNP60

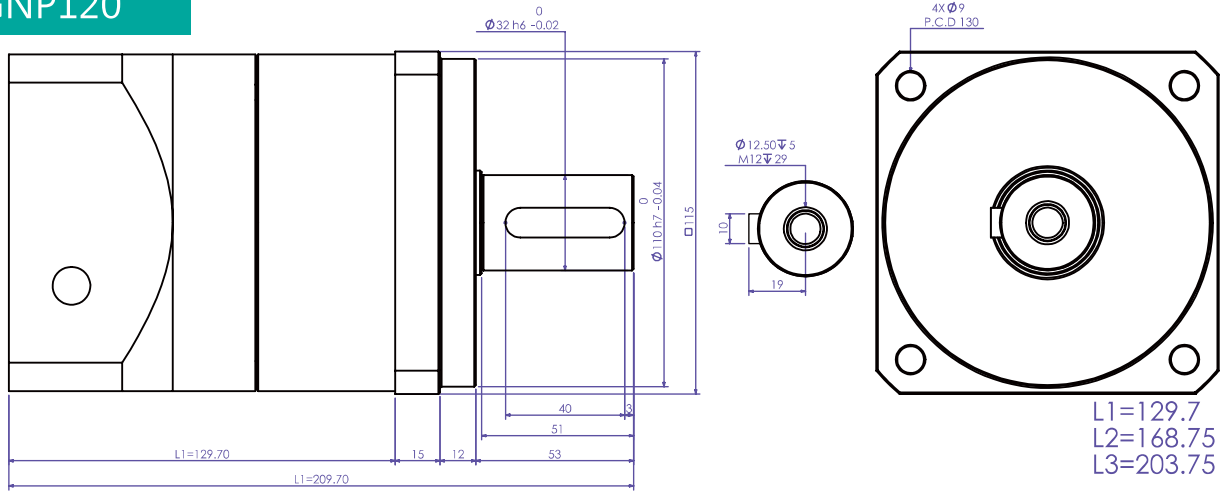


## GNP90

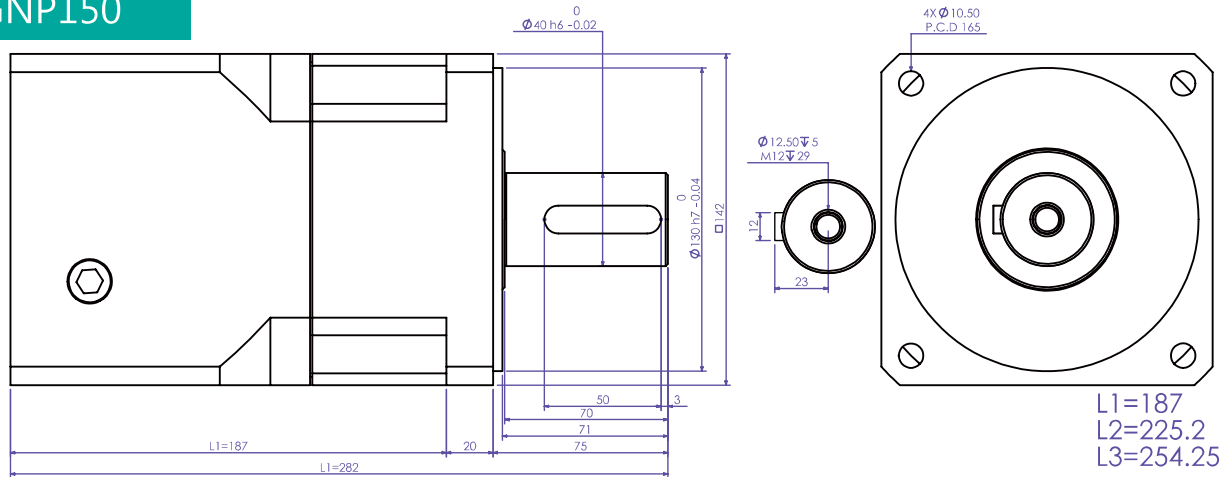


# 尺寸圖 Profile Dimensions

## GNP120



## GNP150



## 中空旋轉平台 減速器NT系列

Hollow and Rotary Platform for a Gear Reducer



### NT 系列 NT series

#### 特長 Feature

- 1.直接連結：簡易設計提升信賴性  
Direct attachment with simple and reliable design.
- 2.大口徑中空旋轉平台：簡潔的配線及配管  
Large hollow rotary table for concise wiring and piping.
- 3.定位精準高  
Accurate and fast positioning.
- 4.短時間定位：可在短時間內實現慣性負載的定位  
Repeat origin returns easily. Able to quickly position inertial load.
- 5.簡單原點回歸：省卻設計與零件採購的麻煩  
Zero Return Easily: Save you the troubled of designing and purchasing parts.
- 6.NT系列(85、130、230)採用交叉滾子軸承  
NT Series (85、130、230) use crossed roller bearing.

#### 規格 Specification

說明Description / 型號Models	NT60	NT85	NT130	NT230
連續出力轉矩 Continuous Torque (kgf*m/Nm)	0.07/0.72	0.11/1.078	1.4/13.72	3.7/36.2
最大出力軸矩 Max. Torque (kgf*m/Nm)	0.21/2.1	0.33/3.234	4.3/42.14	11.2/109.7
破壞轉矩值 Breaking point (kgf*m/Nm)	0.63/6.7	0.9/8.82	10.7/104.86	22.4/219.5
許用輸入轉速(r/min) Permissible Input Rotation (rpm)	3000	3000	3000	3000
背隙(min-arc) Backlash (min-arc)	5	±15sec	±15sec	±15sec
慣性矩(單一速比)(kg*cm <sup>2</sup> ) Gear Reducer Inertia	0.05	0.02	0.2	2.3
許用徑向最大荷量(kgf) Max Radial Load (kgf)	30	50	200	835
重量 Weight (kg)	0.6	0.95	3.6	13.2

NT60減速比1:10 (NT60 Series Reduction Ratio 1:10)  
NT85減速比1:30 (NT85 Series Reduction Ratio 1:30)

NT130減速比1:10 (NT130 Series Reduction Ratio 1:10)  
NT230減速比1:10 (NT230 Series Reduction Ratio 1:10)

**註** NT85出力軸螺絲長度請勿超過9.5mm  
The depth of screw within 9.5mm in NT85

伺服電機：在訂貨時應告知工廠，伺服電機所需銜接法蘭及軸的尺寸。

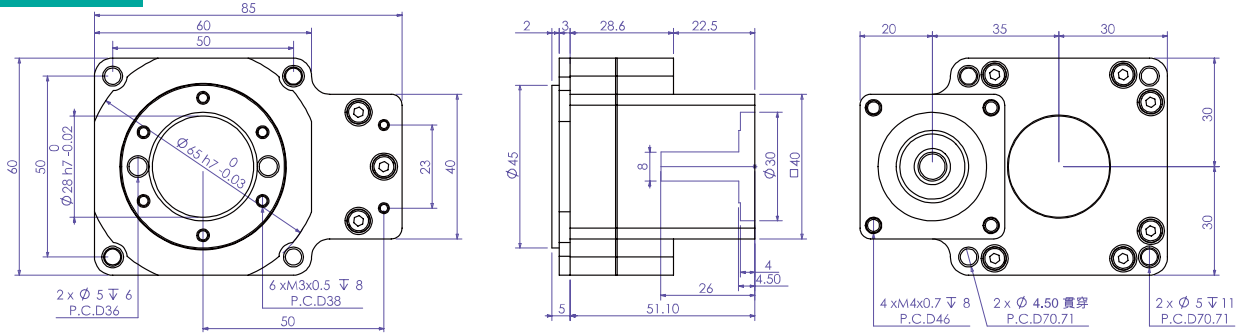
**Servomotor:** Please advise the all dimensions of the pilot and output shaft when you make an order.

減速機的安裝：減速機本體是一個非常精密的產品，所以在安裝上必須小心，嚴禁碰撞或是以鐵鎚敲打軸心或是任一部位。

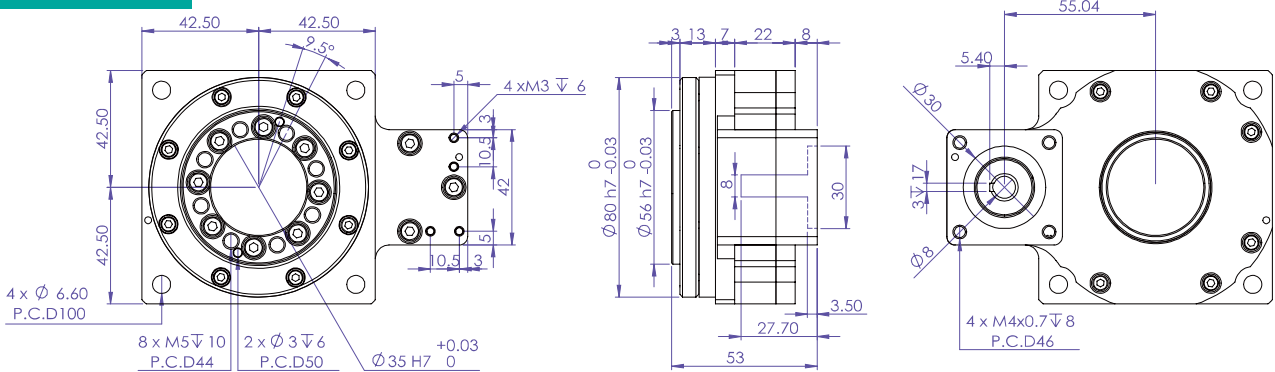
**Installation of gear box:** The gearbox is a high precision product; hence it must be careful in installation and forbid knocking at the shaft and any parts of the gearbox.

# 尺寸圖 Profile Dimensions

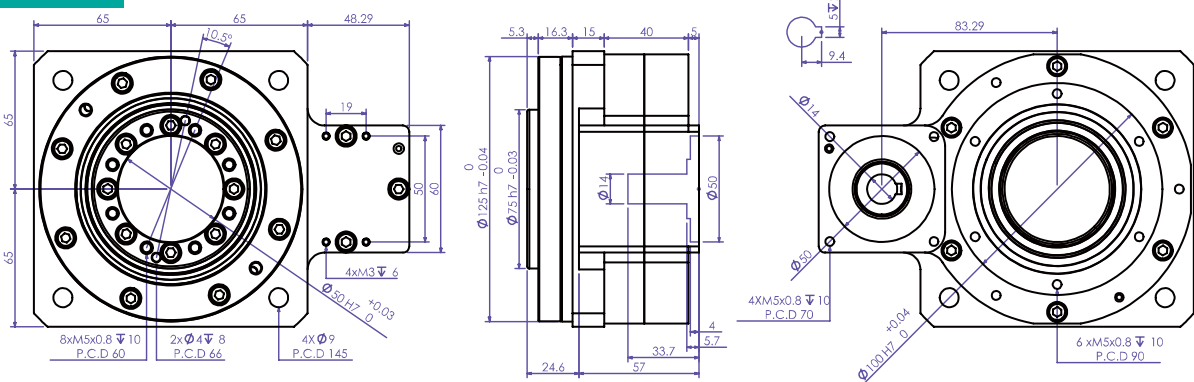
## NT60



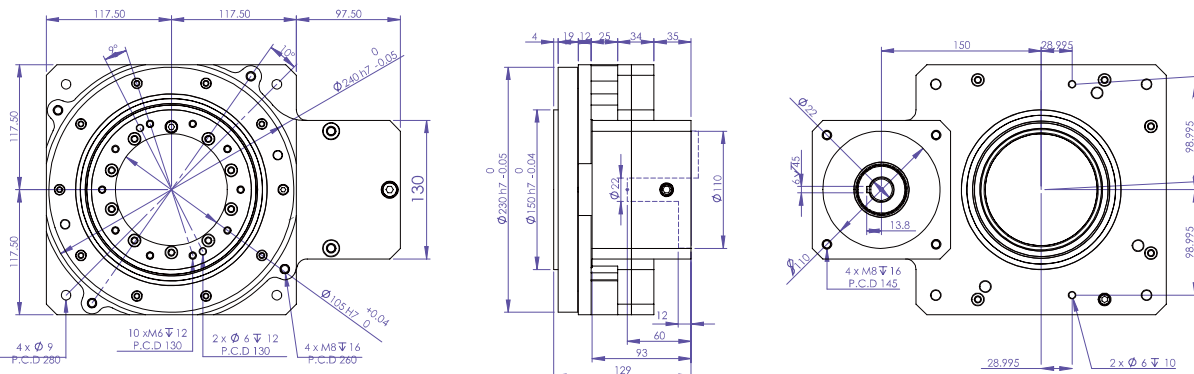
## NT85



## NT130



## NT230



## 球體減速機

Ball Reducer



### 特長 Feature

1. 無背隙、定位精度高：減速器中心部份採用滾珠取代齒輪而達到無背隙、極精準的反覆定位精度。  
Backlash free with highly precise positioning: By replacing gears with steel balls, we have achieved repeated accurate positioning with 0 backlash.
2. 優越的剛性表現：球體減速器是以結構上彼此銜接的軌道中運作，並非以滾珠摩擦傳導，因此不會發生打滑的現象。  
Excellent rigidity in performance: The Ball Reducer is structured to have steel balls rolling on their routes, but not with transmitted friction; therefore, it won't result in slipping incidence.
3. 超低軸向尺寸，節省空間：球體減速器使用軸向安裝，可減少體積空間，解決安裝空間不足的問題。  
Compact size designed to save space: Flexible and unrestricted installment. The solution for limited and confined space.
4. 低頻低噪音：滾珠接觸式傳動，運轉時只有滾珠轉動聲音，達到低噪音。  
Whisper quiet: Only the sound of the rolling balls can be heard, achieving a low noise operation.
5. 密封式設計，不需換油，安裝方便：採用特殊潤滑油，因此無須換油及補充。此外，球體減速器並無安裝方向的限制，安裝方便。  
Sealed shut design, self-lubricated and easy to install: Custom lubrication applied; maintenance free.
6. 經濟化的價格：在價格方便非常實惠合理，為您創造更多利潤空間。  
Economical of the price: The price is really reasonable, and creating more profits to you.
7. 適用於各廠牌伺服電機：只需提供您使用的伺服電機規格，我們即可為您量身打造適合您的減速器。  
Designed to work with any servomotors: You provide your requirements, the rest we'll take care of.
8. SBRU系列採用交叉滾子軸承  
SBRU Series use crossed roller bearing.

伺服電機：在訂貨時應告知工廠，伺服電機所需銜接法蘭及軸的尺寸。

**Servomotor:** Please advise the all dimensions of the pilot and output shaft when you make an order.

減速機的安裝：減速機本體是一個非常精密的產品，所以在安裝上必須小心，嚴禁碰撞或是以鐵鎚敲打軸心或是任一部位。

**Installation of gear box:** The gearbox is a high precision product; hence it must be careful in installation and forbid knocking at the shaft and any parts of the gearbox.

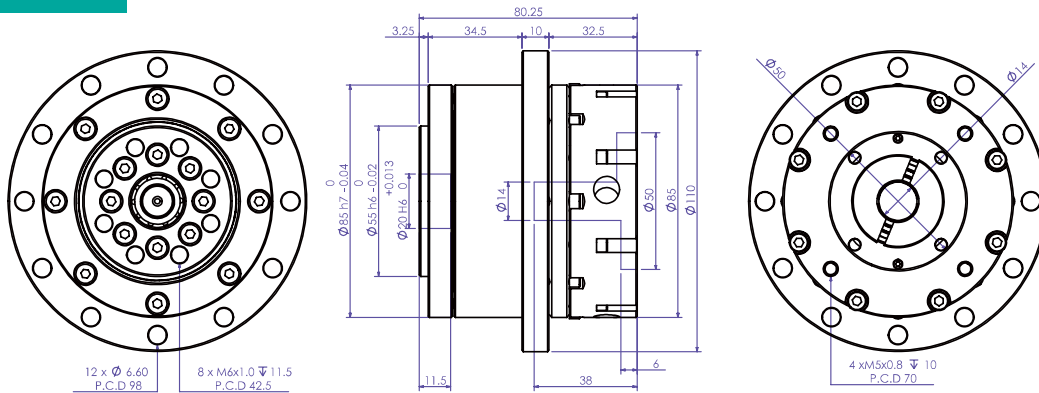
說明Description / 型號Models	減速比 Ratio	SBRU110	SBRU130	SBRU200
連續出力轉矩 (kgf*m / Nm) Continuous Output Torque	10	—	—	—
	15	—	—	—
	20	—	2.93/28.71	—
	30	—	2.13/20.87	9.33/91.43
	40	—	2.5/24.5	14.4/141.12
	50	1.96/19.21	2.13/20.87	10.64/104.27
最大出力轉矩 Max. Torque(kgf*m / Nm)	10~50	3倍額定輸出力轉矩 Three Times Rated Output Torque		
破壞轉矩值 Breaking point(kgf*m / Nm)	10~50	6倍額定輸出力轉矩 Six Times Rated Output Torque		
慣性矩(單一速比)(kg*cm <sup>2</sup> ) Gear Reducer Inertia	10~50	0.42	0.56	0.26
許用輸入轉速(r/min) Permissible Input Rotation (rpm)	10~50	3000		
容許徑向力 Permissible Radial Force(kgf)	10~50	50	170	200
入力孔徑 Input Shaft Diameter(mm)	10~50	14	14	19、22、24
入力軸徑 DSSolid Input Shaft Diameter(mm)	10~50	X	X	X
重量(kg)	10~50	2.5	4.3	12.65



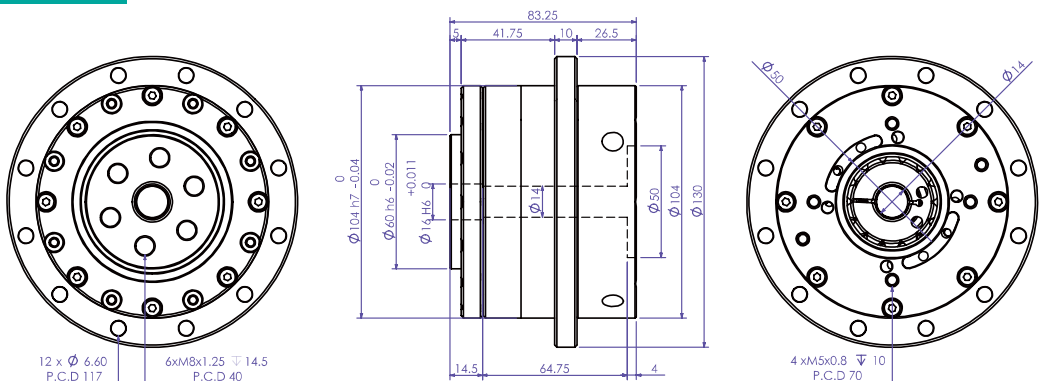
註：SBRU110出力軸螺絲長度請勿超過 10.5mm  
The depth of screw within 10.5mm in SBRU110.  
SBRU130出力軸螺絲長度請勿超過 13.5mm  
The depth of screw within 13.5mm in SBRU130.  
SBRU系列U為交叉式滾紙軸承 Use cross roller bearing.

球體減速機  
Ball Reducer

SBRU110

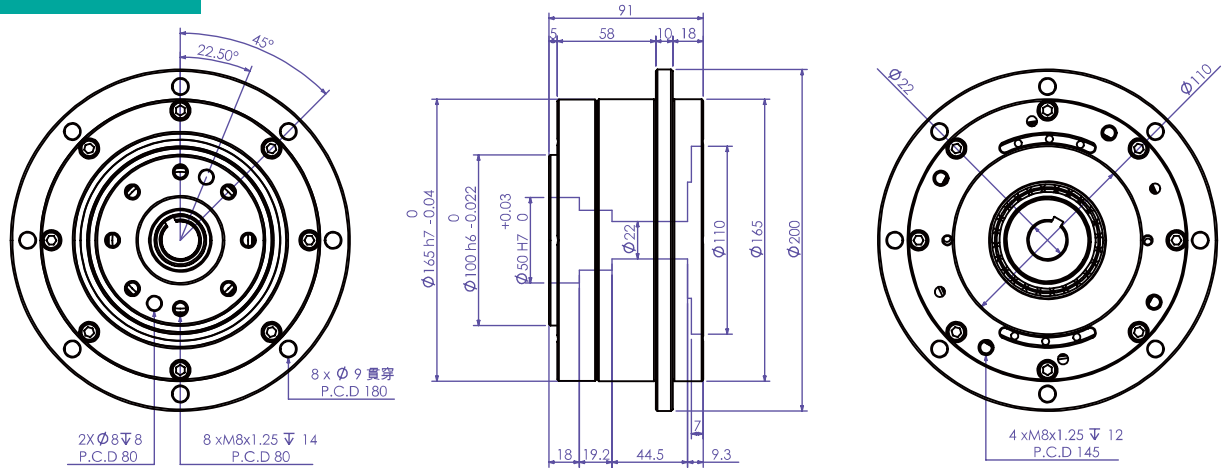


SBRU130



伺服電機：在訂貨時應告知工廠·伺服電機所需銜接法蘭及軸的尺寸。  
Servomotor: Please advise the all dimensions of the pilot and output shaft when you make an order.

## SBRU200



### 規格 Specification

### SBEE 系列 SBEE Series

減速比 Ratio	SBEE50	SBEE70	SBEE90	SBEE 120
10	1.43/14.01	3.22/31.55	4/39.2	6/58.84
15	—	2.11/20.68	2.78/27.24	5.67/55.57
20	—	1.57/15.39	3.93/38.51	4.22/41.31
30	1.16/11.37	2.19/21.46	1.8/17.64	4.89/47.95
40	—	1.64/16.07	2.88/28.22	4.11/40.3
50	—	—	3.47/34	3.61/35.41
連續出力轉矩 (kgf*m / Nm) Continuous Output Torque	3倍額定輸出轉矩 Three Times Rated Output Torque			
最大出力轉矩 Max. Torque(kgf*m / Nm)	6倍額定輸出轉矩 Six Times Rated Output Torque			
破壞轉矩值 Breaking point(kgf*m / Nm)	3000			
慣性矩(單一速比)(kg*cm <sup>2</sup> ) Gear Reducer Inertia	0.06	0.14	0.92	2.15
許用輸入轉速 (r/min) Permissible Input Rotation (rpm)	3000			
容許徑向力 Permissible Radial Force(kgf)	20	40	80	110
入力孔徑 Input Shaft Diameter(mm)	8	14	14~19	19~24
入力軸徑 DSSolid Input Shaft Diameter(mm)	X	X	X	X
重量 Weight(kg)	0.46	3.4	4.3	10

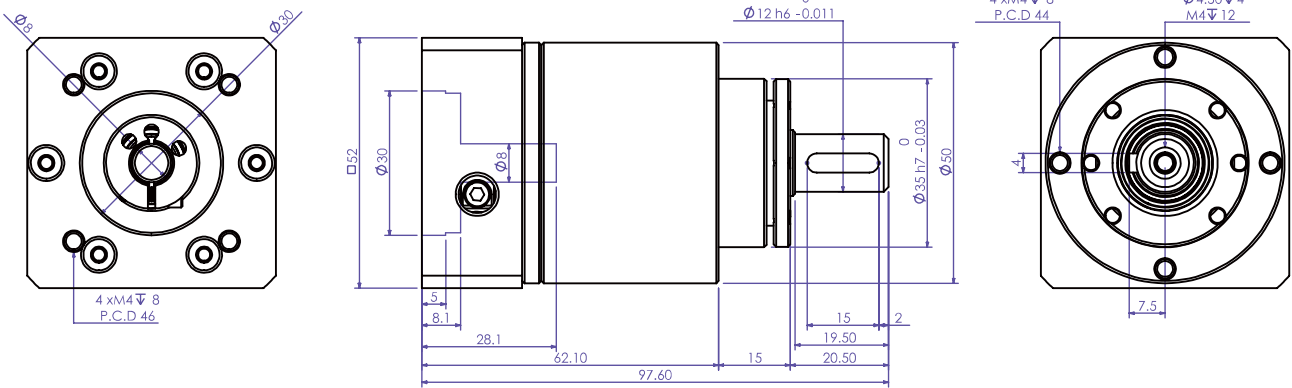


減速機的安裝：減速機本體是非常精密的產品，所以在安裝上必須小心，嚴禁碰撞或是以鐵鎚敲打軸心或是任一部位。  
 Natallation of gear box : The gearbox is a high precision product; hence it must be caareful in installation, and forbid knocking at the shaft and any part of the gearbox.

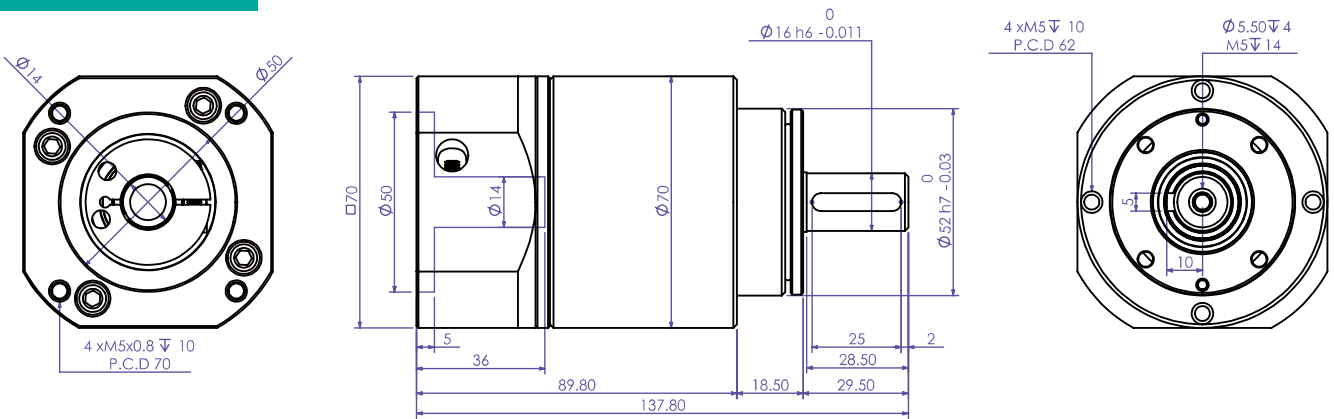


# 尺寸圖 Profile Dimensions

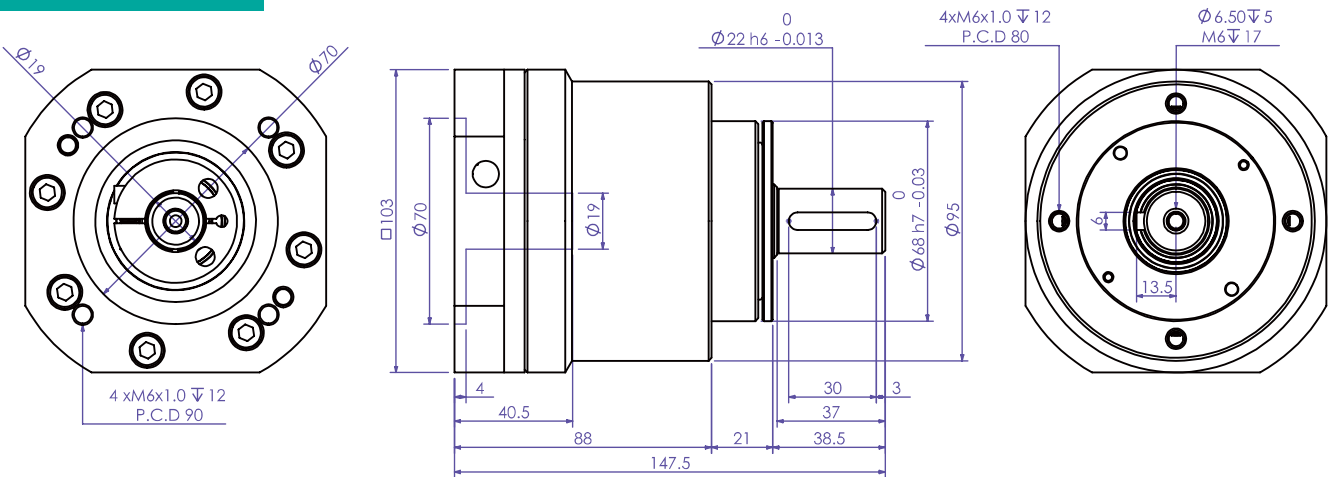
## SBEE50



## SBEE70



## SBEE90



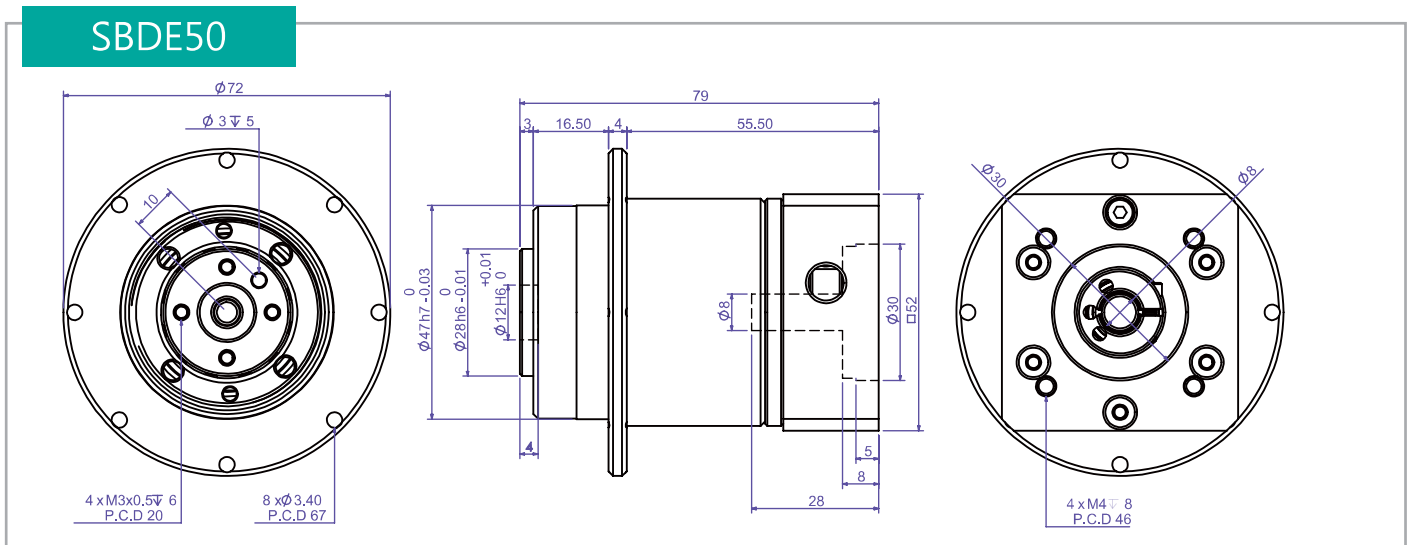
## 規格 Specification

## SBDE系列 SBDE Series

說明Description / 型號Models	減速比Ratio	SBDE 50	SBDE70	SBDE90
連續輸出轉矩 (kgf*m / Nm) Continuous Output Torque	10	1.43/14.01	3.22/31.55	4/39.2
	15	—	2.11/20.68	2.78/27.24
	20	—	1.57/15.39	3.93/38.51
	30	1.16/11.37	2.19/21.46	1.8/17.64
	40	—	1.64/16.07	2.88/28.22
	50	—	—	3.47/34
最大輸出轉矩 Max. Torque(kgf*m / Nm)	10~50	3倍額定輸出轉矩 Three Times Rated Output Torque		
破壞轉矩值 Breaking point(kgf*m / Nm)	10~50	6倍額定輸出轉矩 Six Times Rated Output Torque		
慣性矩(單一速比)(kg*cm <sup>2</sup> ) Gear Reducer Inertia	10~50	0.06	0.14	0.92
許用輸入轉速(r/min) Permissible Input Rotation (rpm)	10~50	3000		
容許徑向力 Permissible Radial Force(kgf)	10~50	25	40	108
入力孔徑 Input Shaft Diameter(mm)	10~50	X	14	14~19
入力軸徑 DSSolid Input Shaft Diameter(mm)	10~50	8	X	X
重量 Weight(kg)	10~50	0.46	3.4	4.3



## 尺寸圖 Profile Dimensions

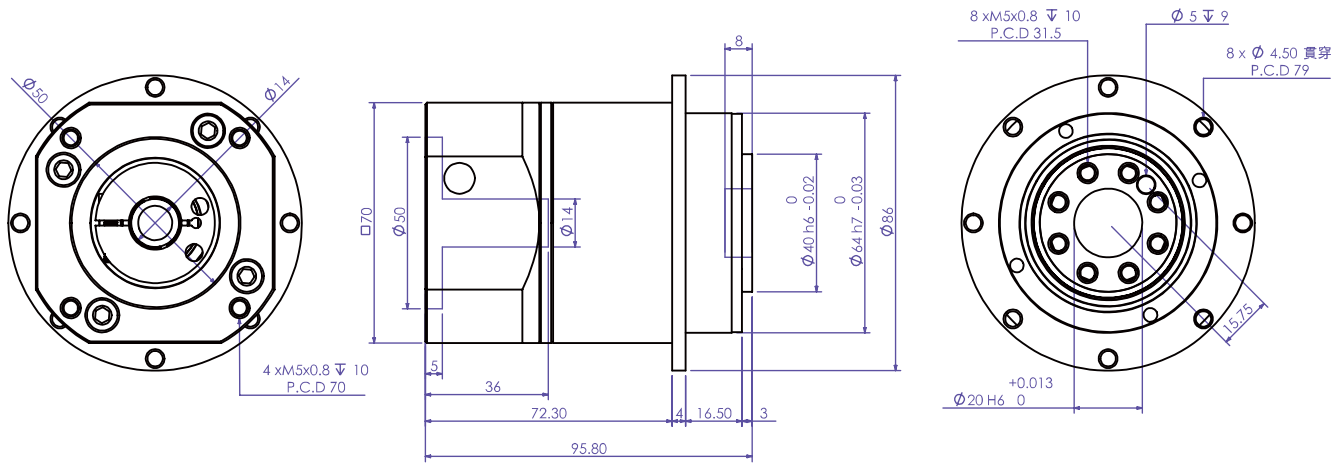


本公司保有尺寸變更權利，並不另行通知，訂貨前請再度確認。

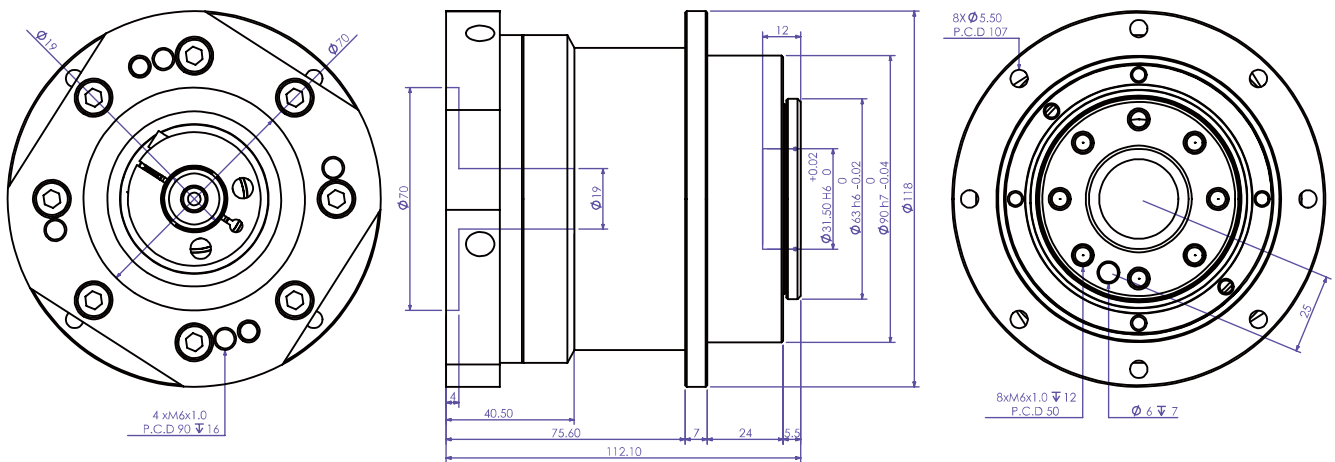
Dimension can be modified without notice for improvement of products so please Contact us before you order.

# 尺寸圖 Profile Dimensions

## SBDE70



## SBDE90



球體減速機 Ball Reducer



本公司保有尺寸變更權利，並不另行通知，訂貨前請再度確認。  
Dimension can be modified without notice for improvement of products so please Contact us before you order.

## 規格 Specification

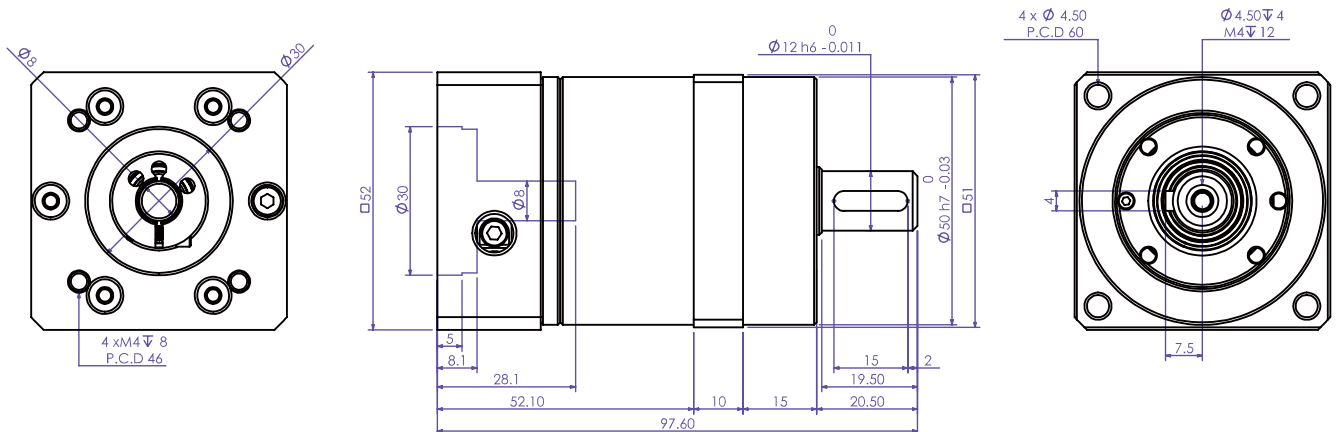
## SBPE系列 SBPE Series

減速比 Ratio	SBPE50	SBPE70	SBPE90	SBPE 120	
10	1.43/14.01	3.22/31.55	4/39.2	6/58.84	
15	—	2.11/20.68	2.78/27.24	5.67/55.57	
20	—	1.57/15.39	3.93/38.51	4.22/41.31	
30	1.16/11.37	2.19/21.46	1.8/17.64	4.89/47.95	
40	—	1.64/16.07	2.88/28.22	4.11/40.3	
50	—	—	3.47/34	3.61/35.41	
連續出力轉矩 (kgf*m / Nm) Continuous Output Torque	10~50	3倍額定輸出轉矩 Three Times Rated Output Torque			
破壞轉矩值 Breaking point(kgf*m / Nm)	10~50	6倍額定輸出轉矩 Six Times Rated Output Torque			
慣性矩(單一速比)(kg*cm <sup>2</sup> ) Gear Reducer Inertia	10~50	0.06	0.14	0.92	2.15
許用輸入轉速(r/min) Permissible Input Rotation (rpm)	10~50	3000			
容許徑向力 Permissible Radial Force(kgf)	10~50	20	40	80	110
入力孔徑 Input Shaft Diameter(mm)	10~50	8	14	14~19	19~24
入力軸徑 DSSolid Input Shaft Diameter(mm)	10~50	X	X	X	X
重量 Weight(kg)	10~50	0.46	3.4	4.3	10



減速機的安裝：減速機本體是非常精密的產品，所以在安裝上必須小心，嚴禁碰撞或是以鐵鎚敲打軸心或是任一部位。  
 Natallation of gear box : The gearbox is a high precision product; hence it must be caareful in installation, and forbid knocking at the shaft and any part of the gearbox.

### SBPE50

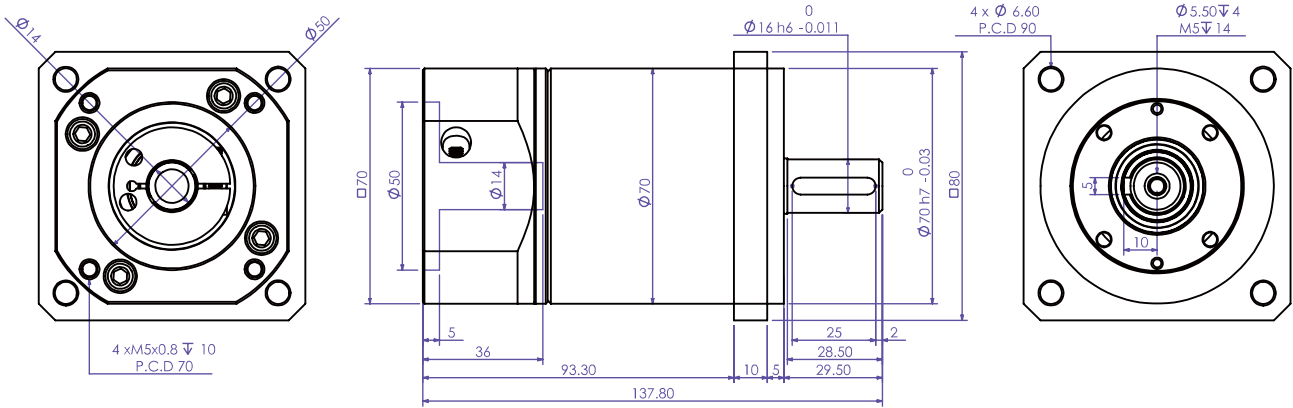


伺服電機：在訂貨時應告知工廠，伺服電機所需銜接法蘭及軸的尺寸。

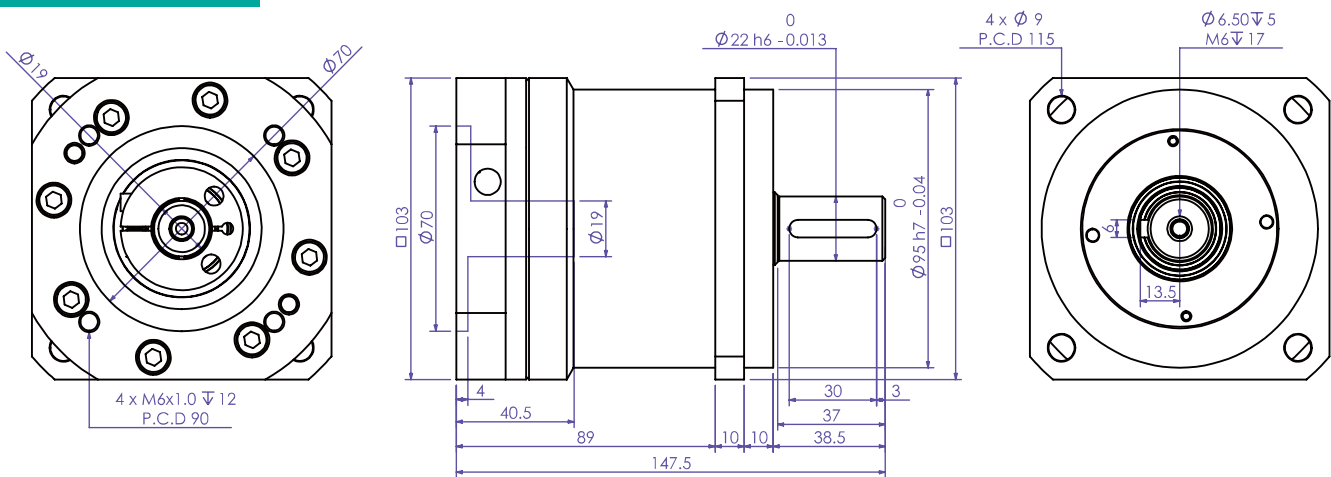
Servomotor: Please advise the all dimensions of the pilot and output shaft when you make an order.

# 尺寸圖 Profile Dimensions

## SBPE70



## SBPE90



## 諧波減速機 Harmonic Drive

### SW1RU系列 SW1RU series



#### 特長 Feature

1. 承載能力較高、傳動比大  
Better loading capacity and bigger transmission ratio.
2. 傳動效率高、使用壽命長  
High efficiency and longer life.
3. 體積小、重量輕  
Compact and light weight.
4. 耐衝擊、傳動平穩、精度高、噪音低  
Impact resistant, Smooth transmission, High precision and Low noise.
5. 出廠背隙值±15秒  
Backlash ±15 arcsec.

#### 規格Specification

說明Description / 型號Models	減速比 Ratio	SW1RU 107	SW1RU 138	SW1RU 226
	80	4.08/40	10.2/100	36.73/360
	100	5.1/50	12.24/120	45.9/450
	120	5.1/50	-	45.9/450
連續出力轉矩 Continuous Output Torque (kgf*m/Nm)	135	-	12.24/120	-
	150	5.1/50	-	45.9/450
	160	5.1/50	12.24/120	45.9/450
	200	5.1/50	12.24/120	45.9/450
最大出力轉矩 Max. Torque (kgf*m/Nm)	-	3倍定額輸出轉矩		
破壞轉矩值 Breaking Point (kgf*m/Nm)	-	6倍定額輸出轉矩		
許用輸入轉速 Permissible Input Rotation (r/min)	-	3000		
許用徑向力 Permissible Radial Force (kgf)	80~200	50	200	347
入力孔徑 Input Shaft Diameter (mm)	80~200	14	19	22、24
重量 Weight(kg)	80~200	2.7	5.6	27.9

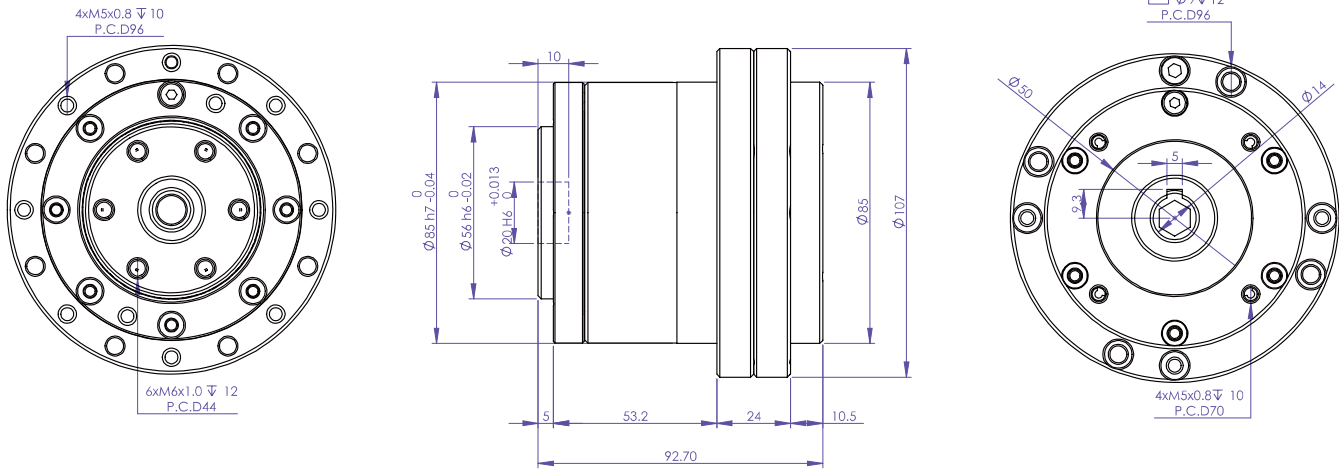
減速機的安裝：減速機本體是非常精密的產品，所以在安裝上必須小心，嚴禁碰撞或是以鐵鎚敲打軸心或是任一部位。  
Nattallation of gear box : The gearbox is a high precision product; hence it must be caareful in installation, and forbid knocking at the shaft and any part of the gearbox.

伺服電機：在訂貨時應告知工廠，伺服電機所需銜接法蘭及軸的尺寸。

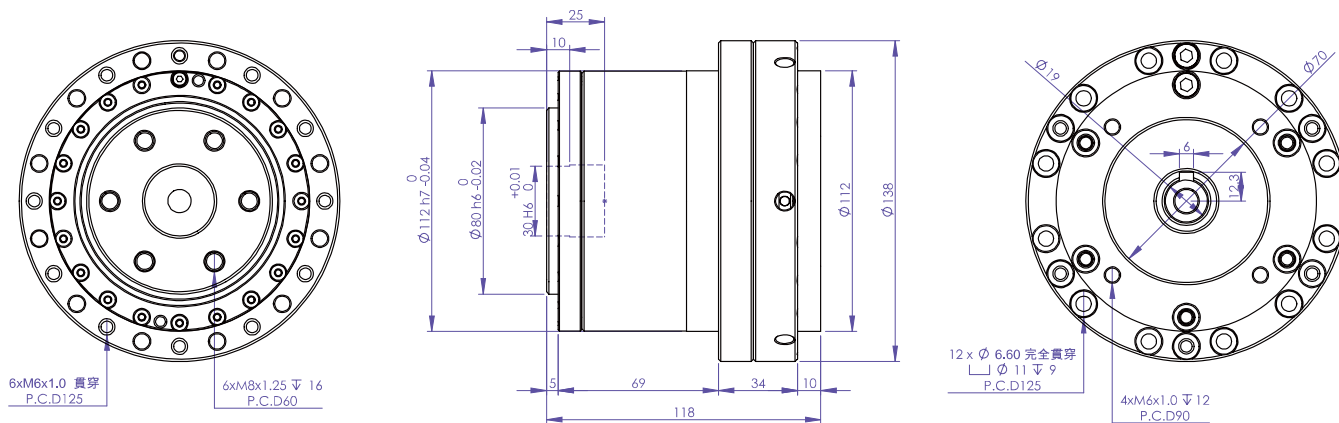
**Servomotor:** Please advise the all dimensions of the pilot and output shaft when you make an order.

# 尺寸圖 Profile Dimensions

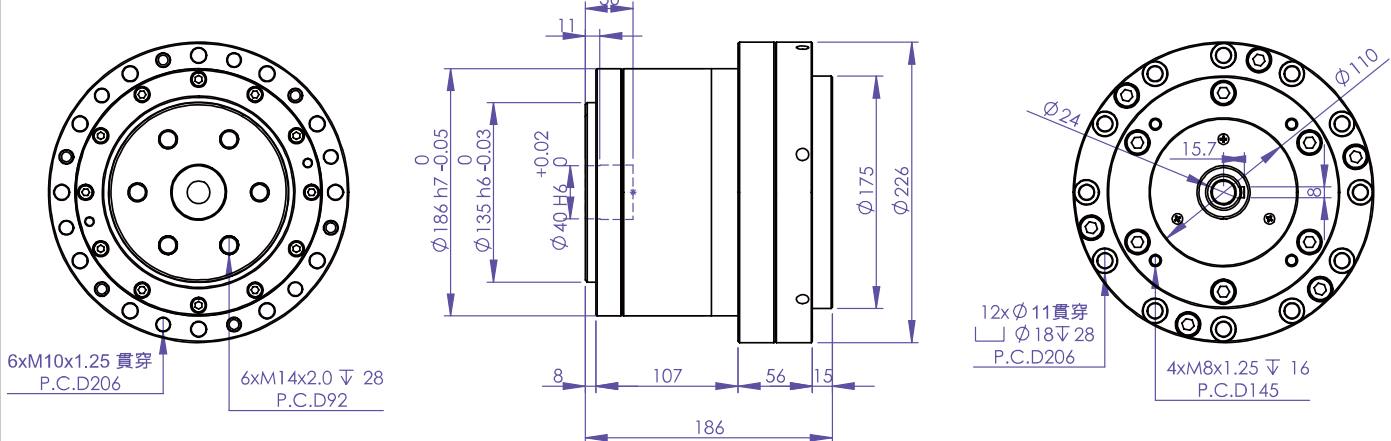
## SW1RU 107



## SW1RU 138



## SW1RU 226





## 推引器 PIS Power Base

# PIS - 500FCJ - 40ST / CAP

系列名稱  
Series name

規格  
Specification

有效長度  
Effective Length

有套管  
Contain the Cases

### 特長 Feature

1. 速度快：高速移動快，每秒可移動 4 000 mm/s  
Fast movement: high speed mobility, 4000 mm/s
2. 反應快：應達靈敏，組裝容易，可二機組或四機組同動  
Fast response to commands: easy to install. Can be operated in combinations of 2 or 4 units.
3. 效率高：採直線運動，軸不會自轉  
High efficiency: Linear motion while shaft remains steady.

### 規格 Specification

說明Description / 型號Models	PIS - 500						PIS - 900				
齒模/齒數 Module / Gear teeth	1.5 / 18 齒						2.0 / 20 齒				
單一齒數使用最大接觸次數 Surface contact of a single	5*10 <sup>7</sup>						5*10 <sup>7</sup>				
工作節圓直徑(mm) Operating pitch diameter	27						40				
圓周有效長度(mm) Permissible circumference	84.82						125.66				
升降行程(mm) Effective length	40	60	170	270	370	470	60	170	270	370	470
單組/四組 最大推力(mm) Max. thrust in group of One/ Four.	300 /500	300 /500	252 /420	240 /400	180 /300	108 /180	400 /800	350 /700	300 /600	250 /500	200 /400

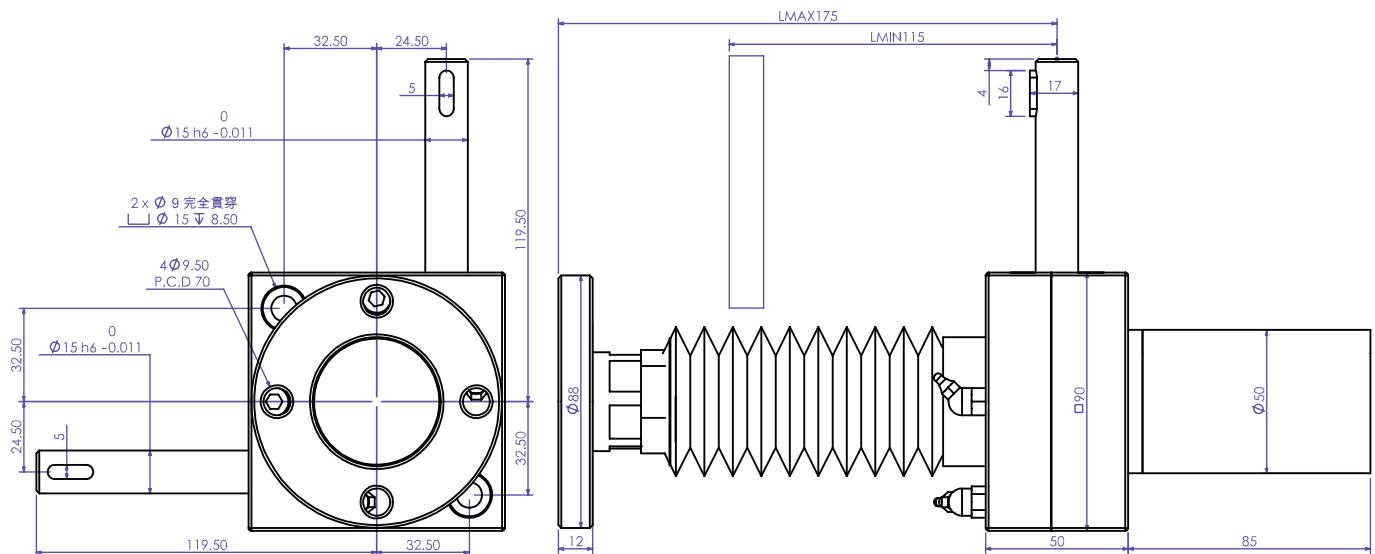
伺服電機：在訂貨時應告知工廠，伺服電機所需銜接法蘭及軸的尺寸。

**Servomotor:** Please advise the all dimensions of the pilot and output shaft when you make an order.

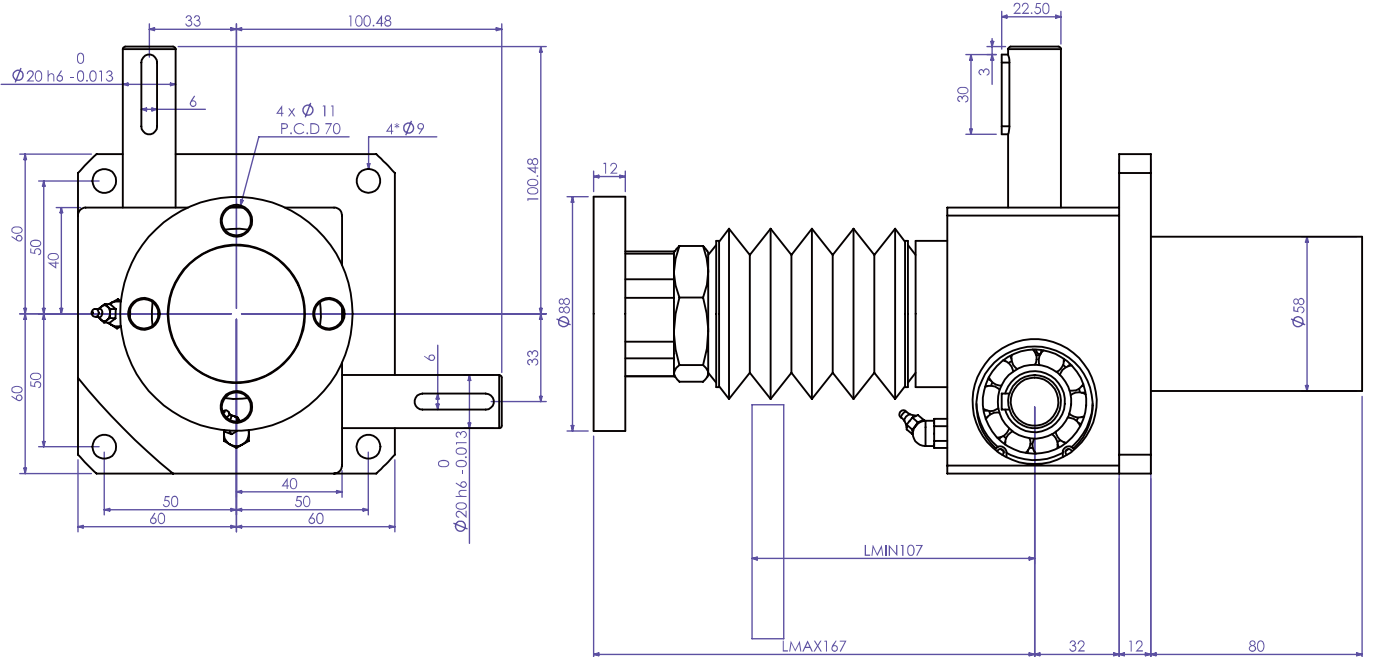


# 尺寸圖 Profile Dimensions

## 推引器500-60 Power Base 500-60

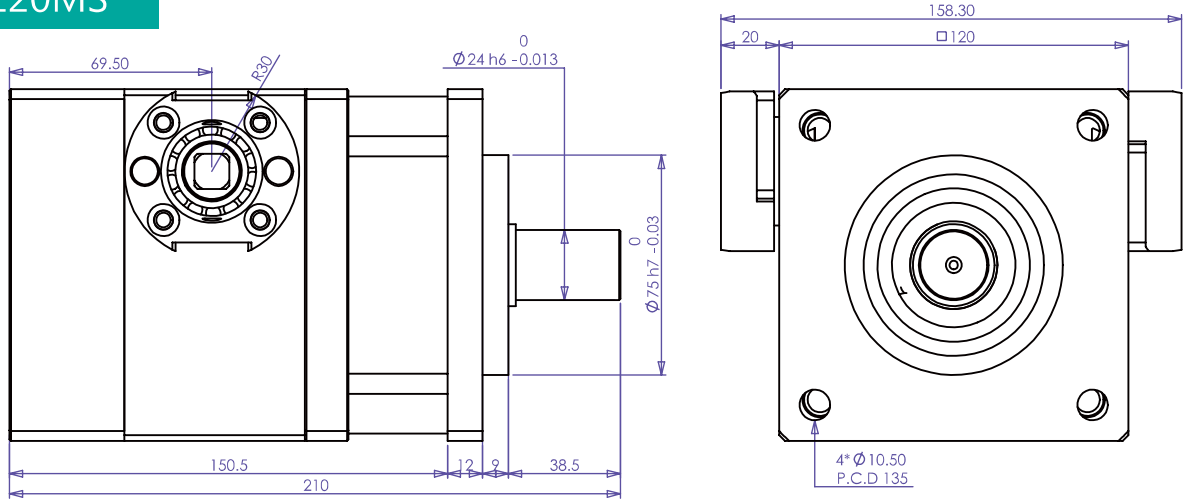


## 推引器900-60 Power Base 900-60

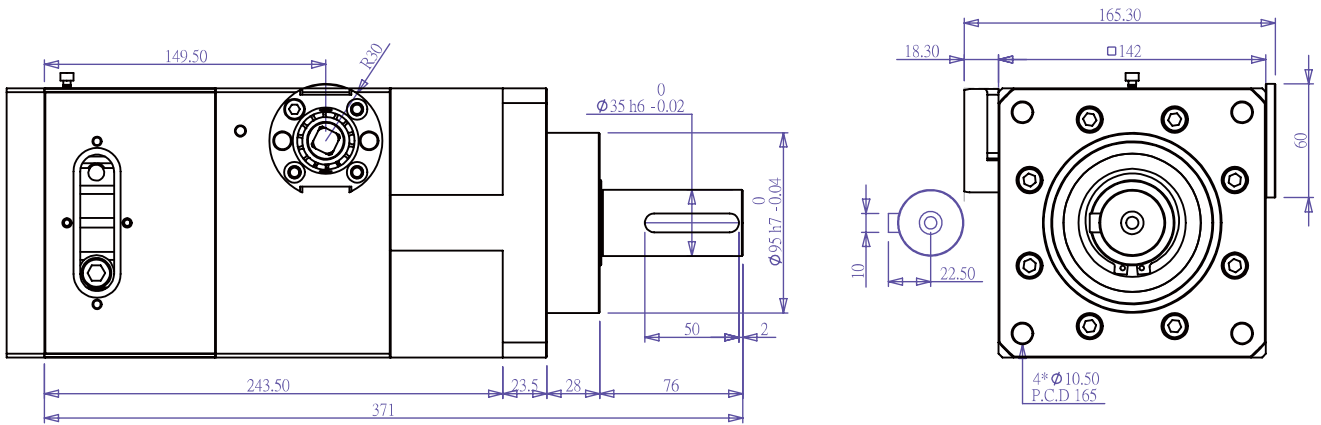


推引器 PIS Power Base

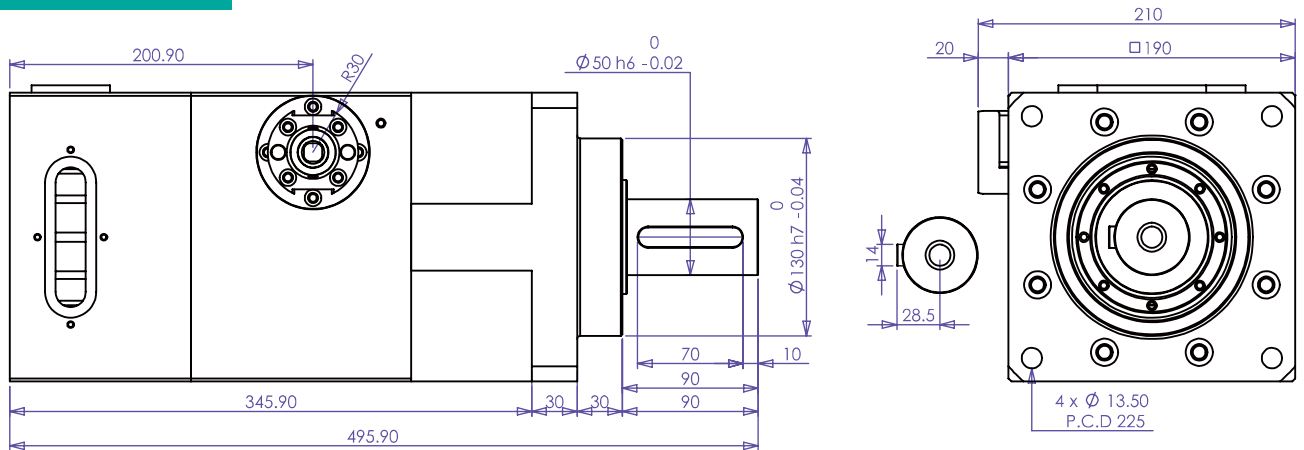
## MF120MS



## MF150MS



## SPB C190-25



# 減速機選用盡量選用接近理想減速比：

Choose an applicable reduction ratio :

$$\text{減速比} = \frac{\text{伺服電機轉速}}{\text{減速機出力軸轉速}}$$

Reduction ratio =  $\frac{\text{RPM servomotor}}{\text{RPM gear reducer output}}$

扭力計算<sup>√</sup>：對減速機的壽命而言，承受扭力計算非常重要，並且要注意加減速的最大轉矩值(TP)，是否超過減速機之最大負載扭力。

### CALCULATION OF REQUIRED TORQUE:

The lifetime of gear reducer depends on calculation of required torque. Also please notice peak torque happened in accelerating or decelerating should be less than the maximum load of gear reducer.

### 參考用計算公式 calculating formula for reference

$$TP = ((GD^2_L + GD^2_a + GD^2_M) * N / (375 * t) \pm TL) / R$$

TP 所需啟動轉矩，亦是減速機必須承受之瞬間轉矩。

Min. torque required at moment of starting, that gear reducer should bear against peak torque at moment.

$GD^2_M$  為電機本身轉子飛輪效應矩。  
Rotary inertia of motor rotor.

$GD^2_L$  為負載之飛輪效應矩，經減速機等化到電機轉子。  
The rotary inertia of load reflected motor rotor.

$GD^2_a$  為減速機之飛輪效應矩等化到電機轉子  
Rotary inertia of motor rotor.

R 為電機至減速機出力側總減速比。  
Total reduction ratio.

$$R = \frac{\text{RPM (motor)}}{\text{RPM (load)}}$$

$T_L$  為負載之靜態轉矩等化到電機轉子。  
The static torque of load reflected to motor rotor.

$$TL = \frac{T \text{ load}}{(R * EFF) \text{ EFF} = \text{efficiency}}$$

T 設定所需之加速或減速時間。  
The time required in accelerate/decelerate.

N 為電機工作轉速。  
Motor rotor speed RPM.

+ 為加速。  
The time required in accelerate/decelerate.

- 為減速。  
The time required in accelerate/decelerate.

# GTC

VERSION : MARCH 2014



[www.gumptious.org](http://www.gumptious.org)  
[www.gtc-gearbox.com](http://www.gtc-gearbox.com)

# GTC

鼎縊有限公司

瑞縊科技股份有限公司

Gumptious Technology Co.

41280台中市大里區工業九路8號  
No.8, Gongye 9th Rd., Dali Dist., Taichung City 41280,  
Taiwan, R.O.C  
TEL : +886-4-24919100 FAX : +886-4-24919155  
E-mail : sales@gumptious.org

## ■ 鼎縊 (廈門) 貿易有限公司

361000廈門市思明區會展南里220號1402室  
Room 1402, No.220, Huizhan NANLI, Siming District,  
Xiamen 361000, China, P.R.C  
TEL : +86-592-5931017 / +86-592-5931959  
Mobile : +86-13459020930 / +86-13616057046  
E-mail : gumptious@gumptious.org

VERSION : MARCH 2014