ISO 9001

DNV

REGISTERED FIRM

CE

(EMC)認證通過

東力小型 伺服減速 齒輪減速 渦輪減速 馬達

T.L. GEAR REDUCTION MOTOR

公司簡介 The History of Tung Lee

ISO 9001：2008 認證通過

CCC 認證通過

CE (EMC)測試通過

公司概要

公司商號：東力電機股份有限公司
所在地址：台北縣五股工業區五權三路50號
電話：（02）2299-2655-9 （02）2299-2149-50
傳真：（02）2299-0146
資本額：玖仟萬圓整（授權資本一億八仟萬元整）
董事長：高勝雄
從業人員：120名
年營業額：肆億伍仟萬元　　出口比例：65%內銷
年生產量：貳拾伍萬台　　35%外銷
主要營業項目：齒輪減速馬達，小型AC.DC.馬達，AC.DC.馬達電子控速器，變頻器，線性馬達，渦輪減速馬達，伺服減速馬達，傳動軸用扭力限制器等專業生產。
主要銷售對象：停車機械設備，CNC 工具機械設備，電子機械設備，輸送機械設備，油壓機械設備，自動化機械設備。
內銷客戶：友嘉實業、台塑企業、中國鋼鐵、南亞塑膠、楊鐵機械、台灣松下、台灣麗偉、正隆紙業、振榮油機…等。
外銷地區：日本、泰國、新加坡、馬來西亞、澳洲、美國、德國、香港、中國大陸…等。

沿革

東力電機有限公司創業於民國65年（西元1976年），由早期的服務業逐步邁向生產製造與銷售到進出口貿易，（西元1990年）代理日本小型馬達與齒輪減速機販賣，（西元1992年）並引進國外技術開始生產小型齒輪馬達減速機，開拓了台灣最早期的小型齒輪減速馬達專業製造廠。

成長史

- （西元1976年）- 創立東力公司，資本額20萬元，廠地佔地30坪，專營買賣與修理服務。
- （西元1982年）- 建廠於三重市光復路一段12巷26號，廠房約300坪，員工30人，同年開始製造馬達。
- （西元1983年）- 因實際業務之需要公司改組為東力電機股份有限公司，並增加營業項目有齒輪減速機，小型AC.DC.馬達及馬達電子控速器、變頻器、傳動軸用扭力限制器等專業生產。
- （西元1984年）- 建立全省經銷網與成立貿易體制，使生產品順利外銷，其當時員工約40人。
- （西元1990年）- 因當時業績及實際生產量逐年突增，為應付其實際需求，再度於台北縣五股工業區五權三路50號，投資建設新廠房1200坪，員工有80餘人之多。
- （西元1995年）- 國際事業一致好評及擴大，遂於中國上海市成立分公司。
- （西元2000年）- 因考慮台灣廠商轉移大陸投資生產頗多，公司為求台商大陸交貨方便及降低成本，始於大陸廈門及蘇州設廠製造，以供大陸廠商之需。

THE HISTORY OF TUNG LEE

Established in 1976, the Company has evolved from its service oriented core business at the beginning through manufacturing and sales to export/import trade business.In 1990, it acquired distributorship of Japanese small motors and gear reducer. In 1992, it introduced foreign technology and know-how of small gear motor reducer manufacturing plant in Taiwan.

1976 Tung Lee Company was founded with capitalization of NT＄200,000 on a plant site with 100 m², specializing in resale and repairing.

1982 New plant constructed at No. 26, Lane 12, Guang-fu Road, Sec. 1, San-chung City.Capitalization increased to NT＄2 million with 30 employees. In the same year, motor manufacturing began.

1983 Under demand of business expansion, the Company was reorganized as Tung Lee Electronical Co., Ltd. and new products, such as gear reducers, small AC/DC motor speed controllers, inverters, torque limiter, were added to product lines.

1984 Established nationwide distribution networks and opened up overseas markets. 40employees.

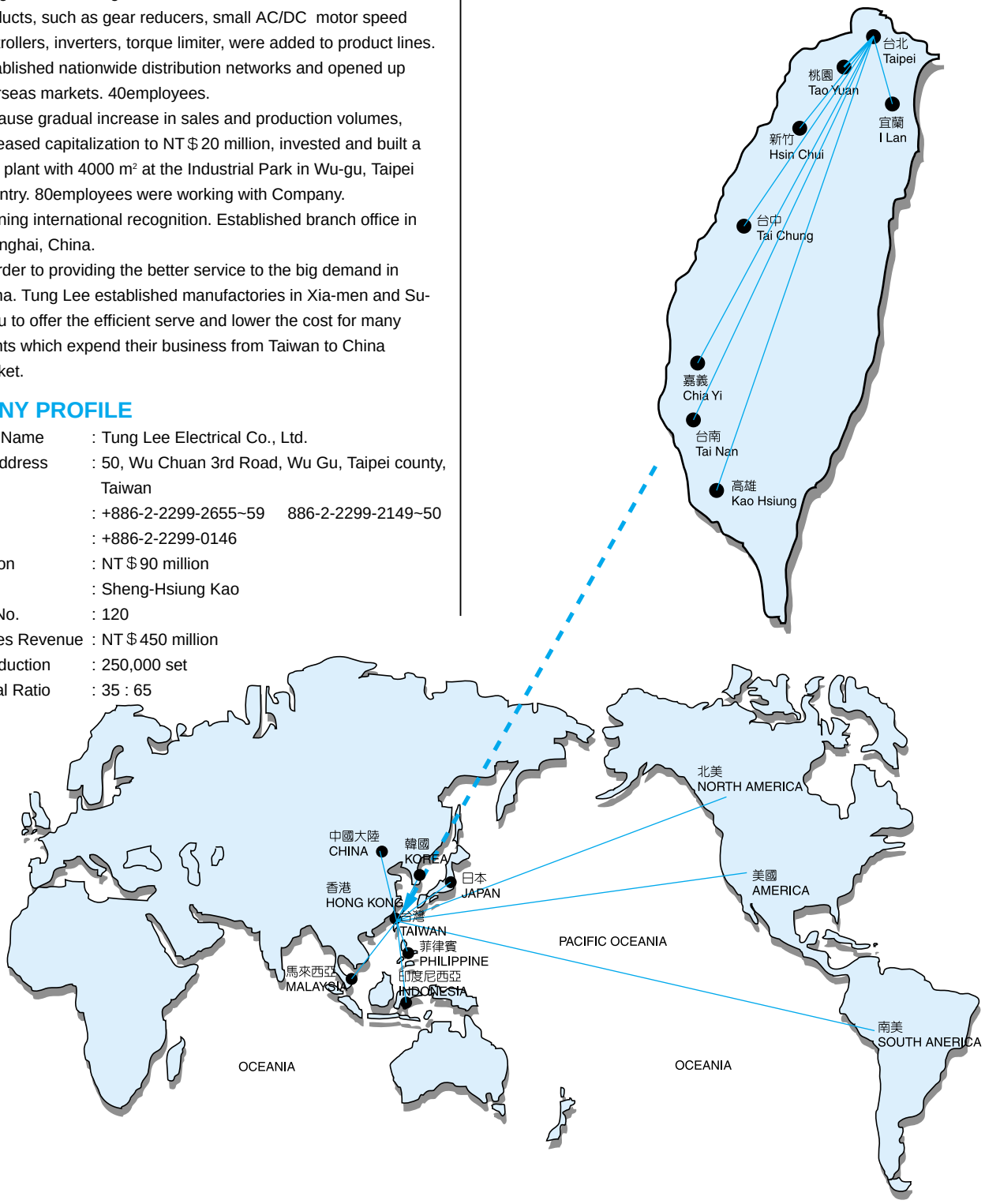
1990 Because gradual increase in sales and production volumes, increased capitalization to NT＄20 million, invested and built a new plant with 4000 m² at the Industrial Park in Wu-gu, Taipei Country. 80employees were working with Company.

1995 Winning international recognition. Established branch office in Shanghai, China.

2000 In order to providing the better service to the big demand in China. Tung Lee established manufactories in Xia-men and Su-Zhou to offer the efficient serve and lower the cost for many clients which expend their business from Taiwan to China market.

COMPANY PROFILE

Registered Name	: Tung Lee Electrical Co., Ltd.
Business Address	: 50, Wu Chuan 3rd Road, Wu Gu, Taipei county, Taiwan
Telephone	: +886-2-2299-2655~59　886-2-2299-2149~50
Facsimile	: +886-2-2299-0146
Capitalization	: NT＄90 million
CEO	: Sheng-Hsiung Kao
Employee No.	: 120
Annual Sales Revenue	: NT＄450 million
Annual Production	: 250,000 set
Export/Local Ratio	: 35 : 65
Major Products	: Gear Reducers, Small AC/DC Motors, AC/DC Motor Electronic Speed Controllers, Inverters, Linear Motors, Turbine Reducers, Transmission Axis Torque Limiter.
Major Clients	: CNC Equipment, Electronic Machinery Equipment, Conveying Belt Equipment, Oil Pressure Machinery Equipment, Automatic Machinery Equipment.
Domestic Clients	: Nan Ya Plastics Corp., China Steel, Matsushita Electric (TAiwan) Co., Ltd., Lead Well CNC Machines Mfg. Co., Chang Hua Chen Ying Oil Machinery Co., Ltd., Cheng Loong Co.
Overseas Markets	: Japan, Thailand, Singapore, Malaysia, Australia, The US, Germany, Hong Kong, Mainland China.



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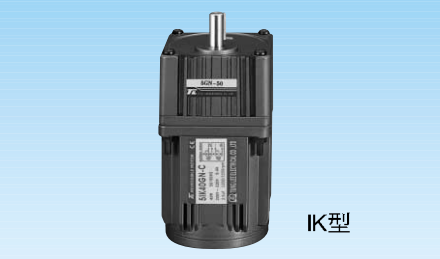

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單相感應式馬達
Single phase induction motor
馬力 HP：6W~150W
電壓 V：100V~110V
200V~220V
三相感應式馬達
3- phase induction motor
馬力 HP：25W~150W
電壓 V：200V・220V
380V・440V

- 額定運轉為連續運轉
- 採用 E 級絕緣
- 單相馬達使用電容器式感應馬達，故高功率、低噪音。
- 三相馬達使用三相電源200V....的感應馬達。

* Rated continuous operation
* E class insulation
* Capacitive induction motor shall be used for high power output and low noise single phase motor.
* Using the 220V, 3 phase AC Induction motor.

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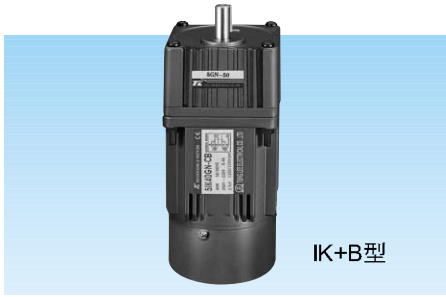
單相頻繁啟動(定格)馬達
Single phase reversible motor
馬力 HP：6W~150W
電壓 V：100V~110V
200V~220V
三相頻繁啟動(定格)馬達
3- phase reversible motor
馬力 HP：25W~150W
電壓 V：200V・220V
380V・440V

- 具有瞬時轉換正轉、逆轉功能。因採用平衡繞線方式，並內裝簡易制動機構能夠瞬時地轉換正轉、反轉，其正反旋轉特性同樣均勻且穩定。
- 運轉額定式30分鐘額定。 感應馬達和可逆式馬達的不同點：可逆式是能瞬時轉換正、反轉，但感應馬達將接線轉換到反轉，會發生旋轉磁場和逆方向的轉矩，故不能旋轉負載時轉換逆方向。

* Instantaneous alternate between normal and reversible for motors equipped with balanced windings and built-in simple brake mechanism.
* Thirty minutes of rated operation. Difference between the induction motor and reversible motor: the later one can instantaneously be reversible, however rotating magnetic field & reversible momentum for induction motor occurs in reversible direcion. In case no reversible shall be made in loading condition.



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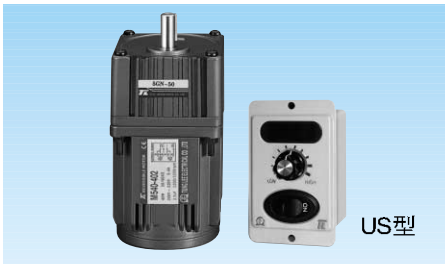
單相附電磁剎車馬達
Single phase motor with electromagnetic brake
馬力HP：6W~150W
電壓V：100V~110V
200V~220V
三相附電磁剎車馬達
3-phase motor with electromagnetic brake
馬力HP：25W~150W
電壓V：200V・220V
380V・440V

- 確實地保持負載：既為無激磁動作式電磁制動器，剛關掉電源時，立即產生制動力而確實地保持負載。
- 短時間內制動：電動機單機時，超程是2～4旋轉。
- 可能控制較複雜的瞬時正、反轉： 每分鐘可以停止 6次（停止時間必須保持3秒以上）。 如須1分鐘停止7～100次時，應採用C&B馬達。

* Always maintain the load properly: For a non-exciting type electrical magnetic brake, loading can be kept normally by the brake whenever the power source is "Off".
* Instantaneous brake: Over-travel in 2 - 4 cycles only for a single motor.
* More complex, controllable, instantaneous Normal / Reversible time: Allowable "Stop"for 6 times per minute. (3 second or more have to be kept for each "Stop"), C&B type of motor is applicable on 100 times of "stop" per minute if necessary.



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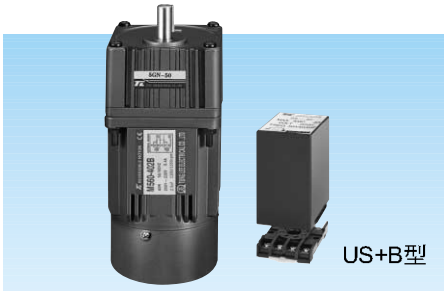
無段變速馬達
Stepless variable speed control motor
馬力 HP：6W~120W
電壓 V：單相 Single phase
100V~110V
200V~220V

- 因配用速度控制器，可以調整廣範圍的變速（50Hz.....90~1400轉/分；60Hz.....90~1700轉/分）。
- 可按需選擇變速、制動、轉換正・反轉、慢速起動、慢速減速等多種複雜的運轉程序。
- 內部備有轉速傳感器，實行回授控制，因此電源頻率有變化，其規定轉數絕無變化。

* Wide range of variable speed is adjustable by using the speed controller. (50Hz. .....90 - 1400 rpm; 60Hz. ....90 - 1700 rpm).
* More operational procedure shall be available, such as: variable speed selection, normal / reversible, slower starting, slower speed reduction, etc.
* Built - in rpm sensors, feed - back control, a constant rpm can be obtained even if there is any frequency variation.



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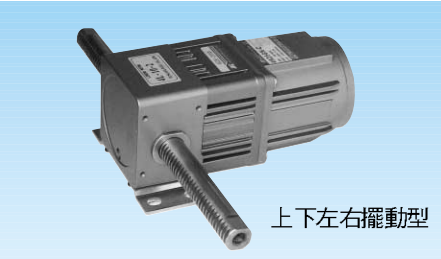
無段變速附電磁剎車馬達
Variable speed control motor with electromagnetic Brake
馬力 HP：6W~120W
電壓 V：單相 Single phase
100V~110V
200V~220V

- 因配用速度控制器，可以調整廣範圍的變速（50Hz.....90~1400轉/分；60Hz.....90~1700轉/分）。
- 可按需選擇變速、制動、轉換正・反轉、慢速起動、慢速減速等多種複雜的運轉程序。
- 內部備有轉速傳感器，實行回授控制，因此電源頻率有變化，其規定轉數絕無變化。

* Wide range of variable speed is adjustable by using the speed controller. (50Hz. .....90 - 1400 rpm; 60Hz. ....90 - 1700 rpm).
* More operational procedures are available, such as: variable speed selection, normal / reversible, slower starting, slower speed reduction etc.
* Built - in rpm sensors, feed - back type of control, a constant rpm can be obtained even if there is any frequency variation .



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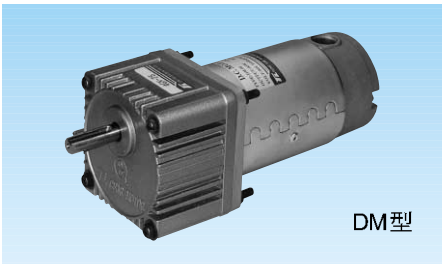
直線型減變速馬達
Linear type gear head and variable speed motor
馬力 HP：6W~150W
電壓 V：單相 Single phase
100V~110V
三相3-phase
200V~220V
380V~440V

- 自動化機械推動物料簡易法。
- 可任意選擇帶動馬達型號。(IK、RK、US、DM等.....）
- 動作齊全可左右擺動。
上下擺動。

* Simple method for the automatic mechanical materials lifting operation.
* Selectable in any type of driving motor. (IK, RK, US, DM.....etc.)
* Offering all kind of operation such as; Swing left and right
Swing up and down



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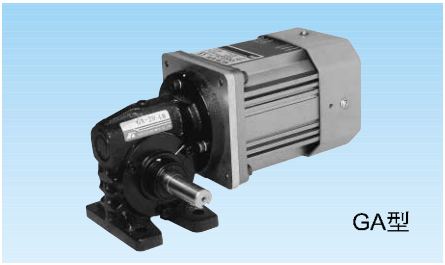
永磁性直流馬達
Permanent magnet DC motor
馬力HP：30W~120W
電壓V：12V・24V・90V
回轉數 rpm：1800RPM
3000RPM

- 在無交流電地點用電池即可使用。
- 簡易控制箱，調整電壓：可做變速用。
- 變速範圍大，扭力強。
- 回轉數如需要可定做。

* Battery can be used as a power source if AC power is not available.
* Simple control box, adjustable voltage, for speed alternating purpose
* Wider range for variable speed, larger torque operation.



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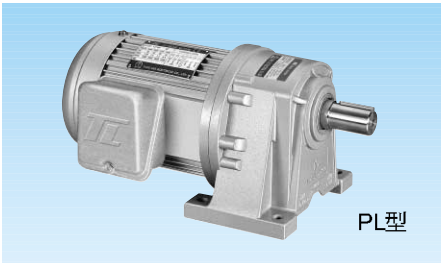
渦輪減速馬達
Worm gear reduction motor
馬力HP：40W~200W
電壓V：單相 Single Phase
100V~110V
200V~220V
三相3-Phase
200V~220V
380V~440V

- 90°出力軸方向可減省空間。
- 具有相當停止保持力。
- 可任選調配任何馬達。
- (IK・RK・US・DM)等.....。

* To reduce the space requirements for installation the 90 degree output power shaft can be used.
* Certain durability in stoppage.
* Any kind of motor can be used.
* (IK. RK. US. DM)etc.



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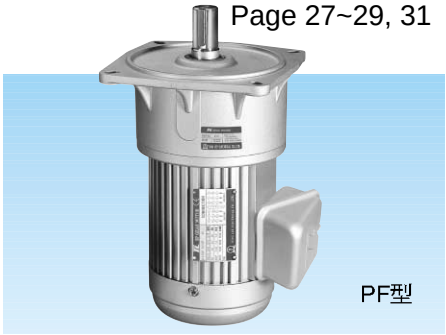
臥式減速馬達
Horizontal type gear reduction motor
馬力HP：100W~3700W
電壓V：單相 Single Phase
100V~110V・200V~220V
三相3-Phase
200V~220V・380V~440V
可附電磁剎車
Optional: electric magnetic brake
減速比齊全 Full range of reduction ratio



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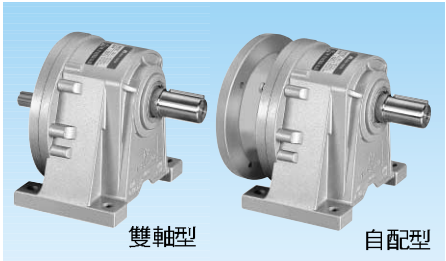
立式減速馬達
Vertical type gear reduction motor
馬力HP：100W~3700W
電壓V：單相 Single Phase
100V~110V・200~220V
三相3-Phase
200V~220V・380~440V
可附電磁剎車
Optional: electric magnetic brake
減速比齊全 Full range of reduction ratio



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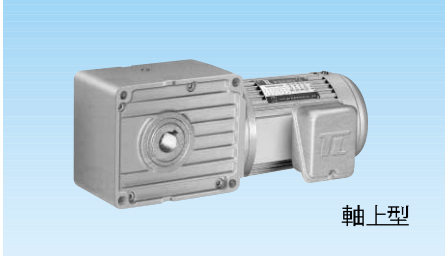
臥式/立式雙軸型減速機
Horizontal / Vertical dual - shaft type gear reducer
臥式/立式自配馬達減速機
Horizontal / Vertical, self contained motor gear reducer
帶動馬力Driving HP：100W~3700W
減速比齊全 Full range of reduction ratio



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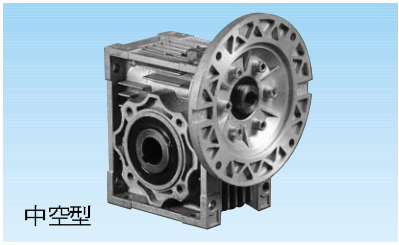
軸上型減速機
Shaft-Mounted Reducer
Model: TL-4060, 4070, 5080
減速比 (Ratio)：1/30~1/300
馬力：100~1500W

中空系列渦輪減速機
Hollow shaft worm gear reducer



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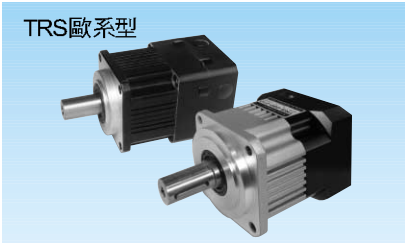
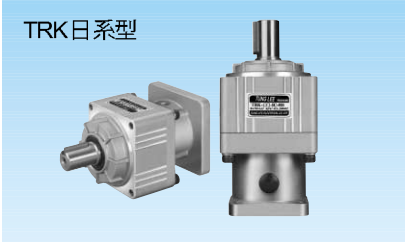
伺服專用減速機
Servo Reducer





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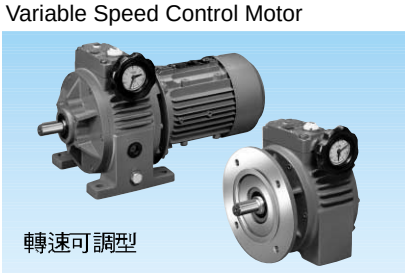
無段變速機
Variable Speed Control Motor



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馬達用詞概要

1. 定格
馬達在使用上從溫度上升分為連續定格及短時間定格兩種，通常被決定為定格有電壓，周波數，定格回轉數等；這些分別被稱為定格出力，定格電壓，定格周波數，定格回轉數等。

2. 連續定格、短時間定格
已定格出力在無異常情況下連續運轉稱為連續定格按規定時間內定格出力運轉稱為短時間定格。

3. 出力
馬達在單位時間內所能做的扭力之表示由馬達的回轉數及轉矩決定，在馬達已定格出力之表示，在日本瓦特（W）表示，而歐美以 HP表示出力

（W）= $1.027 \times 10^{-5} \times T \times N$

1.027×10^{-5} : 常數　T (gcm): 轉矩　N(rpm): 回轉數

4. 定格出力
指馬達在定格電壓周波數條件下能發揮其最佳特性出力為定格出力，回轉數轉矩，通常簡稱為定格出力。

5. 起動轉矩
馬達在起動瞬間所發出轉矩稱為起動轉矩，比這轉矩大的負荷一加在馬達上，馬達就無法回轉。

6.停動轉矩
馬達在一定電壓，一定周波數產生最大轉矩，在此轉矩標準內負荷再加上去，馬達便會停止。

7. 定格轉矩
馬達在定格電壓，定格周波數，定格出歷時所連續發出的轉矩稱為定格轉矩，定格回轉數的轉矩。

8. 定格回轉數
馬達在定格出力時之回轉為使用上最理想之回轉數。

9.同步回轉數
因馬達的極數及電源周波數之決定已被固定，所以可由以下公式來表示，通常以每分鐘回轉表示。

Ns=同步回轉數 (rpm) Ns=120f/p (rpm) f=周波數(Hz) P=極數　120=常數

例如: 4極的馬達電源周波數60Hz　Ns=120x60/4=1800(rpm)

10. 轉差率
回轉表現方法之一種，可由以下公式表示：

S=Ns-N/Ns 又 N=Ns(1-S)　Ns: 同步回轉數(rpm)

N: 任意負荷時之回轉數值(rpm)在此，4極60Hz的感應馬達轉差率S=0.1時之回轉

N=120-60/4　　(1-0.1)=1800(1-0.1)=1620(rpm)

Terminology for the motors

1. Ratings
There are two kinds of rating for motors: continuous duty rating and short time rating classified by the temperature rise of motors. Usually they are defined by power output, voltage, cycles in frequency, and rpm

etc. ; so-called rated power output, rated voltage, rated cycles in frequency, and rated rpm.

2. continuous duty rating and short time rating
continuous operation at the rated output power under normal condition is called a continuous duty rating,

while operation at the rated output power in a specific time is so called short time rating.

3. Output power
The twist force produced by motors in an unit time shall be expressed by rpm and the torque of motors. The rated output power of a motor is expressed by Watt in Japan and H.P. in Europe.

(W) = 1.027 x 0.00001 x T x N, where

1.027 x 0.00001: a constant　T (gcm): Torque　N (rpm) : number of revolutions per minute

4. Rated output power
Rated power output means to develop a best characteristic output power under the rated voltage and rated frequency of motors. The rpm torque is simply called rated output power.

5. starting torque
Torque produced at any instant of a starting motor is called starting torque. Motor is not rotating in case of a larger load than the torque.

6. Stop torque
The maximum torque is produced by any motor under a specific voltage and specific frequency. Any loading is applied on a Motor within this range of torque, motor is stopped.

7. Rated torque
The speed reduction gearing under rated voltage, rated frequency , rated power output is defined as continuous torque, as well as the rated torque, torque for rated rpm.

8. Rated rpm
The most favorable rpm of the motor shall be a rpm under a rated output power.

9. Rpm in synchronism
Suppose the number of poles of a motor and the frequency of power source are given, It can be shown in the following equation which is usually expressed by revolution per minute.

Ns = 120f / p(rpm)

Where　Ns = Number of rpm in synchronism

f = number of frequency in Hertz.　P = number of poles of the motor　120 = constant

For example:

A four-pole motor and frequency of the power source is 60Hz.

Ns = 120 x 60 /4 = 1800 (rpm)

10. Slide slip rate
Another kind of indication for rpm can be shown in the following formula:

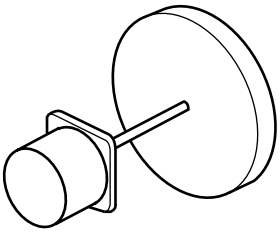
S = Ns - N/Ns or N = Ns(1-S) Ns:

Where Ns: rpm in synchronous (rpm)

Where N : rpm under any loading (rpm) , The slide slip rate for a 4 pole 60Hz induction motor is,

Revolution per S = 0.1　N = 120-60/4　(1-0.1) = 1800(1-0.1) = 1620 (rpm)

驅動慣性力矩時Driving Moment of Inertia



馬達

CD²（包括轉子的飛輪效率）

Pg=1.027 NT(W)

$T = \frac{GD^2}{375} \cdot \frac{N}{t}$ (kg•m)

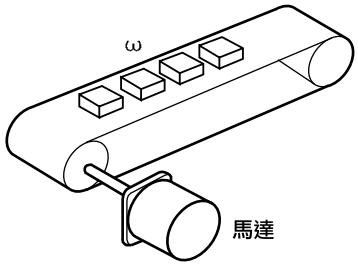
N: 轉數 (rpm)

T: 轉矩 (kg•m)

GD²: 飛輪效率 (kg•m²)

t: 時間

Pg: 所需動力 (W)



$Pg = (P_1+P_2+P_3)\frac{100}{\eta}$ (W)

空轉動力P1=9.8 μ ω ∪ *l*(W)

水平動力$P_2 = \frac{\mu Q\, l}{367}$ (W)

垂直動力$P_3 = \frac{QH}{367}$ (W)

l: 運輸機長 (m)

W: 皮帶單位長重量 (kg/m)

μ: 摩擦係數

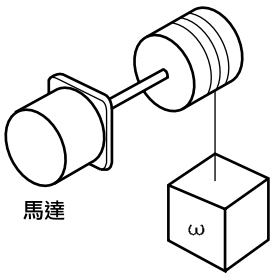
∪: 皮帶速度 (m/sec)

Q: 運輸量 (kg/h)

η: 效率 (%)

H: 傾斜運輸機兩端高低差 (m)

Pg: 所需動力 (W)



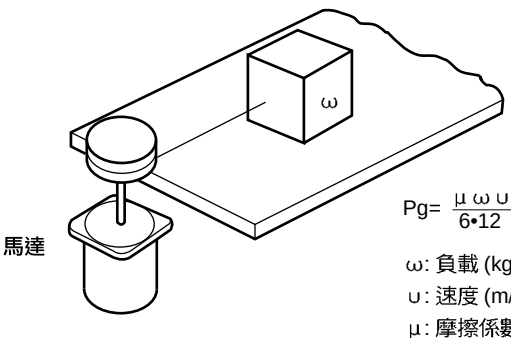
$Pg = \frac{\omega V}{6 \cdot 12} \cdot \frac{100}{\eta}$ (W)

ω: 負載 (kg)

V: 速度 (m/sec)

η: 效率 (%)

Pg: 所需動力 (W)



$Pg = \frac{\mu \omega \cup}{6 \cdot 12}$ (W)

ω: 負載 (kg)

∪: 速度 (m/min)

μ: 摩擦係數

Pg: 所需動力 (W)

減速機用詞概要

1.減速機選擇方法

減速機為配合馬達機型及瓦特數依負荷狀況做下列之分類：

GN型→配合6，15，25，40，60，90，120，150W使用→（輕負荷請選含油 軸承；重負荷請選滾珠軸承）。

GU型→配合60，90，120，150W使用（GU型全部使用滾珠軸承）。

1.Selections of the speed reduction gearing (mechanism)

To coordinate between the type of motor and wattage of power used, the following classification is made according to the loading conditions:

Model GN - for 6, 15, 25, 40, 60, 90, 120, 150W - (Oil bearing for applications in light loading,ball bearing shall be used for those heavier loading)

Model GU - for 60, 90, 120, 150W - (using ball bearing for all GU type motor).

3. 最大容許轉矩（右圖）

減速機之出力轉矩因減速機比大而增大，但因受了齒輪之材質及其他條件之影響，限制實際所能承受之負荷轉矩，而減速機之最大容許轉矩之大小是視減速機種類與減速機之出力轉矩。

TG=TM x i x n =1.9x100x0.66 =125.4kg•cm

如右圖所示°4GN-100K最大容許轉矩80Kg•cm，但計算所得之減速機出力轉矩為125kg•cm，但是實際上減速機所能承受之負荷不可超過80kg•cm。

3.Maximum allowable torque (Figure to the right)

The torque for a motor output power can be increased in accordance with the bigger reduction ratio of the speed reduction gearing. however, the practical limitation of the loading torque shall be effected by the material of the gear and some other conditions. The Maximum allowable torque for a speed reduction gearing is also depending on the kind of speed reduction gearing and the output power torque of the speed reduction gearing.

TG = TM x i x n = 1.9 x 100 x 0.66 = 125.4 Kg•cm

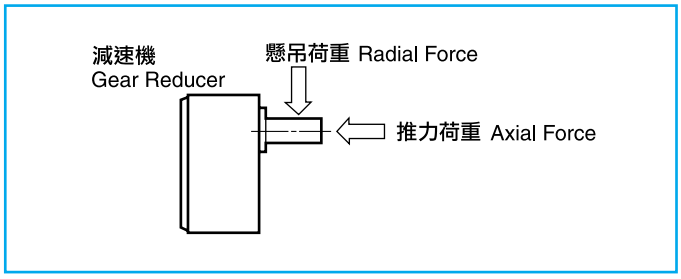
The maximum allowable torque 80 Kg•cm for the 4GN-100K is shown in the figure to the right, in comparing to the output power torque of the speed reduction gearing, 125 Kg-cm , by calculation, In practical, however, under no way the loading of a speed reduction gearing exceed 80 Kg•cm.

4. 容許懸吊荷重及容許推力荷重（右圖）

減速機之出力軸使用在鏈條，齒輪或皮帶等傳動機構上，在一定出力軸處，增加懸吊荷重（同軸呈直角重）軸承的壽命會受到懸吊荷重與出力軸間作用關係，產生直接影響。

4. Permissible Radial Force and Axial Force (see figure below):

Transmission mechanism such as chain, gears, or belt can be used as an output shaft for the speed reduction gearing. Suppose the radial force is increased (vertically to the shaft) at the output shaft which should be effected directly against the applicable life regarding to relations between Radial force and Axial force.



Terminology for the gear reducers

2.減速機配合馬達之出力轉矩計算方式：

轉矩.....TG=TM x i x n

TG: 減速機之轉矩(kg•cm)　　TM: 馬達之轉矩(kg•cm)

i: 減速機之減速比　　n: 減速機之傳動效率

2. Calculations of a speed reduction gear in relating to the torque of the motor output power.

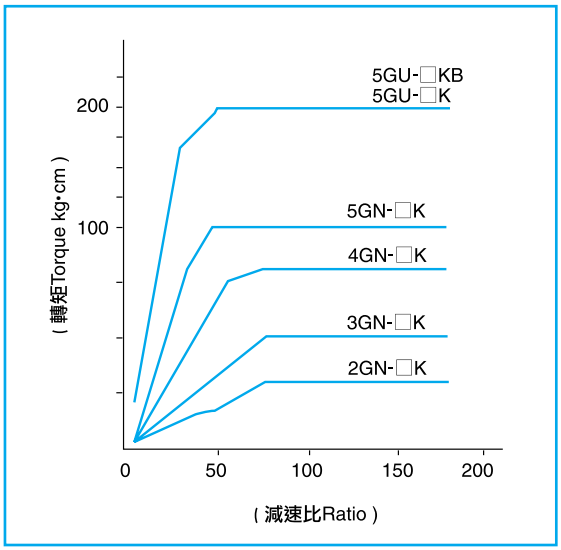
Torque:　TG = TM x I x n

TG = torque of the speed reduction gearing (Kg•cm)

TM: Torque of a motor (Kg•cm)

i = Reduction ratio of the speed reduction gearing

n = transmission efficiency of the speed reduction gearing

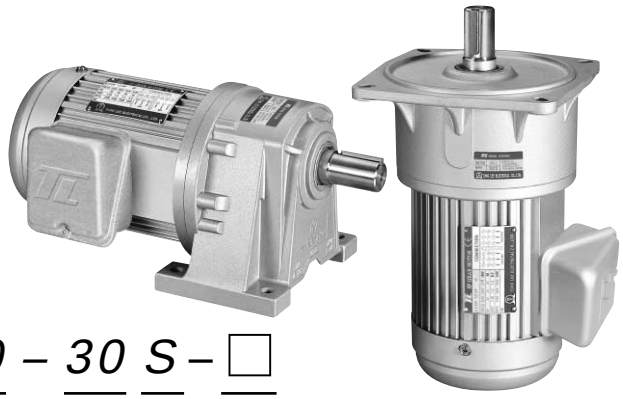


品 名 Gear Model No.	減速比 Ratio	最大容許轉矩 (kg•cm)	容許懸吊荷重(kg) 在軸前端10mm處	容許懸吊荷重(kg) 在軸前端20mm處	容許推力荷重 (kg)
2GN-□	3~18	25	5	8	3
2GN-□K	20~180		12	18	
3GN-□	3~18	50	8	12	4
3GN-□K	20~180		15	25	
4GN-□	3~18	80	10	15	5
4GN-□K	20~180		20	30	
5GN-□	3~18	100	25	35	10
5GN-□K	20~180		30	45	
5GU-□KB	3~10		40	50	
5GU-□K	12.5~18	200	45	60	15
	20~180		50	70	

5. 減速機傳動效率 Transmission efficiency of the gear reducers

品名 Gear Model No. \ 減數比 Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	45	50	60	75	90	100	120	150	180
2GN-□K 3GN-□K 4GN-□K 5GN-□K	81%										73%							66%						
5GU-□K	81%							73%			66%									59%				

馬達減速機型號解說（GL,GF,PL,PF規格）



PL–臥式馬達外殼鋁合金型
Horizontal Aluminum alloy motor shell
PF–立式馬達外殼鋁合金型
Vertical Aluminum alloy motor shell
GL–臥式馬達外殼鋼板型 (已停產)
Horizontal Steel motor shell
GF–立式馬達外殼鋼板型(已停產)
Vertical Steel motor shell
PLD–臥式雙軸型
Horizontal dual-shaft type
PFD–立式雙軸型
Vertical dual-shaft type
PLK–臥式入力自配型
Horizontal self-contained motor type
PFK–立式入力自配型
Vertical self-contained motor type

PL 22 – 0200 – 30 S – □

出力軸
Output Shaft :
ø18, ø22, ø28, ø32, ø40, ø50

馬力 HP:
100W, 200W, 400W, 750W, 1500W, 2200W, 3700W

減速比 Ratio: 1/30

B–附電磁剎車
W/Electromagnetic Brake

A: 單相 Single Phase 110V
C: 單相 Single Phase 220V
S_2: 三相 3-Phase 220V
S_3: 三相 3-Phase 220/380V
S_4: 三相 3-Phase 220/440V

馬達及安全剎車器特性表 *Specifications of PL, PF Type Motor & Brake*

相 (Phase)	馬力 (KW)	極數 (P)	電壓 (V)	頻率 (Hz)	定格RATING 轉速 (R.P.M)	電流 (A)	轉矩 (Kg•m)	絕緣 Class	扭矩 (Kg•m)	釋放時間 Release Time 交流一切斷 AC Switch	直流別切 DC Switch	調整間隙 Adjust Gap 規定值 Specified Value	限界值 Boundary Vaule	附安全剎車器 With Brake 剎車電壓 Brake Volt	整流電壓 Input Volt	使用次數 Operation Times
三相 3ø	0.1	4P	220/380	60/50	1680/1380	0.8/0.46	0.058/0.071	E/F	0.1	0.1	0.06	0.3	0.7	DC90V	AC200~240V	10 times/min
	0.2		220/380	60/50	1680/1380	1.2/0.7	0.116/0.142	E/F	0.2	0.07	0.03	0.3	0.7			
	0.4		220/380	60/50	1680/1400	2.1/1.2	0.232/0.278	E/F	0.4	0.10	0.03	0.3	0.7			
	0.75		220/380	60/50	1680/1400	3.6/2.1	0.43/0.52	E/F	0.8	0.12	0.05	0.4	1.0			
	1.5		220/380	60/50	1680/1420	6.1/3.5	0.87/1.03	E/F	1.6	0.14	0.05	0.4	1.0			
	2.2		220/380	60/50	1680/1420	9.5/5.5	1.27/1.51	E/F	2.5	0.15	0.03	0.4	1.0			
	3.7		220/380	60/50	1680/1420	15/8.7	2.14/2.54	E/F	5.0	0.17	0.05	0.5	1.2			
單相 1ø	0.1	4P	110/220	60/50	1680/1380	2/1	0.058/0.071	E	0.1	0.1	0.06	0.3	0.7	DC90V	AC-100~110V AC-200~240V	10 times/min
	0.2		110/220	60/50	1680/1380	4/2	0.116/0.142	E	0.2	0.07	0.03	0.3	0.7			
	0.4		110/220	60/50	1680/1400	8/4	0.232/0.278	E	0.4	0.10	0.03	0.3	0.7			
	0.75		110/220	60/50	1680/1400	12/6	0.43/0.52	E	0.8	0.12	0.15	0.4	1.0			

減速機輸出特性表 *Specifications of Gear Reducer*

(Kg•cm) x 9.8 ÷100 = N•m

減速比 Gear Ratio	出力轉速 Out. rpm		0.1KW 出力軸容許扭力荷重				0.2KW 出力軸容許扭力荷重				0.4KW 出力軸容許扭力荷重				0.75KW 出力軸容許扭力荷重				1.5KW 出力軸容許扭力荷重				2.2KW 出力軸容許扭力荷重			
	50Hz	60Hz	型號 Type	50Hz Kg•m	60Hz Kg•m	O.H.L. Kgf	型號 Type	50Hz Kg•m	60Hz Kg•m	O.H.L. Kgf	型號 Type	50Hz Kg•m	60Hz Kg•m	O.H.L. Kgf	型號 Type	50Hz Kg•m	60Hz Kg•m	O.H.L. Kgf	型號 Type	50Hz Kg•m	60Hz Kg•m	O.H.L. Kgf	型號 Type	50Hz Kg•m	60Hz Kg•m	O.H.L. Kgf
5	300	360		0.31	0.26	60		0.62	0.51	60		1.2	1	90		2.3	1.9	130		4.8	3.5	180		6.6	5.5	220
10	150	180		0.62	0.51	90	18	1.2	1	90	22	2.5	2.1	120		4.6	3.9	180		8.8	7.1	250	32	13.2	10.7	320
12.5	120	144		0.77	0.66	100		1.54	1.24	100		3.1	2.5	130		5.7	4.9	190		11	8.9	290		16.5	13.3	340
15	100	120		0.93	0.77	100		1.85	1.5	100		3.7	2.9	140	28	6.9	5.8	220		13.2	10.7	290		19.8	16	360
20	75	90	18	1.2	1	120		2.47	1.99	120		4.94	4	150		9.3	7.7	240	32	17.6	14.2	330		26.5	21.4	410
25	60	72		1.5	1.3	130		3	2.49	130		6.17	4.9	170		11.6	9.6	250		22.1	17.8	390	40	33.1	26.7	480
30	50	60		1.9	1.5	140		3.7	2.99	180		7.41	5.9	260		13.9	11.6	410		26.5	21.4	520		39.7	32.1	710
40	37.5	45		2.4	2	150	22	4.94	3.99	190	28	9.88	7.98	290		17.9	14.9	430		35.3	28.5	600		53	42.8	740
50	30	36		3	2.5	160		6.17	4.98	200		12.3	9.97	320		22.4	18.7	470		44.2	35.7	720		66.3	53.3	880
60	25	30		3.6	3	220		7.4	5.98	220		14.8	11.9	350	32	26.9	22.4	560	40	53	42.8	720		79.5	64.2	1000
75	20	24		4.6	3.7	220		9.2	7.5	220		18.5	14.9	350		35.1	28.3	560		66.3	53.5	720		99.4	80.3	1000
90	16.6	20		5.5	4.5	250		11.1	9	250		22.2	17.9	350		42.1	34	600		79.5	64.2	720	50	119.3	96.3	1000
100	15	18	22	6	5	250		12.3	9.9	250		24.7	19.9	350		46.8	37.8	600		88.4	71.4	720		132.6	107.1	1000
120	12.5	15		7.2	6	250		14.8	11.9	340		29.6	23.9	600		58.4	47.3	720		106	85.6	1000				
150	10	12		9.2	7.5	250	28	18.5	14.9	350	32	37	29.9	600	40	70.2	56.7	720	50	132.6	107.1	1000				
180	8.3	10		11	9	250		22.2	17.9	350		44.4	35.9	600		84.2	68	720		132.6	107.1	1000				
200	7.5	9		11.9	10	250		24.7	19.9	350		49.4	39.9	600		93.6	75.6	720		132.6	107.1	1000				
300	5	6		17.5	14.9	350		35.1	28.3	600		70.2	56.7	720		132.6	107.1	1000								
1200	1.25	1.5	28	58.5	47.6	350	32	70.2	56.7	600	40	70.2	56.7	720	50	132.6	107.1	1000								
1800	0.83	1		58.5	47.6	350		70.2	56.7	600		70.2	56.7	720		132.6	107.1	1000								

以上數值若有變動，恕不另行通知　We reserve the right to change without further notice.

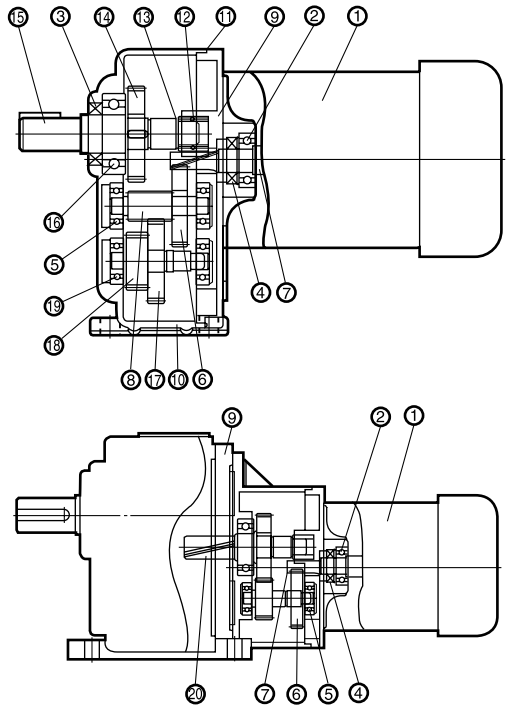
減速機外殼材質表 *Shell Material*

型號 Type	材質 Material
18	ADC 12 (鋁合金 Aluminum)
22	ADC 12 (鋁合金 Aluminum)
28	ADC 12 (鋁合金 Aluminum)
32	ADC 12 (鋁合金 Aluminum)
40	FC250 (25)- (鑄鐵 Cast Iron)
50	FC250 (25)- (鑄鐵 Cast Iron)

油量表 *Oil Capacities*

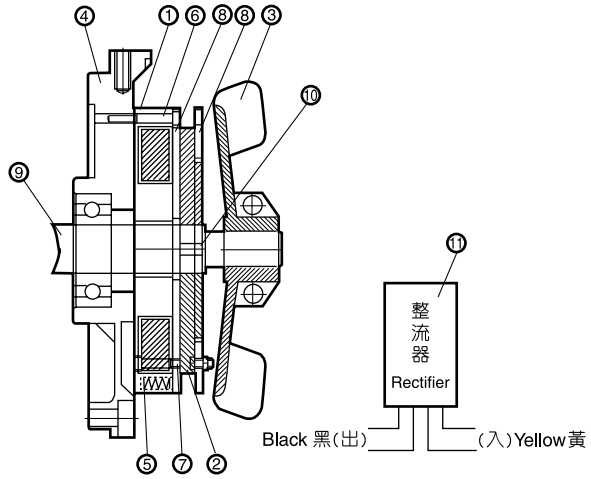
型號 Type	注油量 g	潤滑Lubrication	替代油品
18	180	BT-860高溫齒輪油	美孚 Mobil SHC系列 Mobiltemp 0
22	250		
28	500		
32	650		
40	900		
50	1200		

齒輪馬達減速機結構圖*Gear Reducer Structure*



編號 No.	零件名稱 Name of Parts	
1	馬達	Motor
2	馬達軸承	Motor Bearing
3	油軸封（出）	Oil Seal (Out)
4	油軸封（入）	Oil Seal (In)
5	二段側軸承	2nd Stage Bearing
6	一段側齒輪	1st Stage Gear
7	馬達小齒輪軸	Motor Pinion Shaft
8	二段側小齒輪軸	2nd Stage Pinion Shaft
9	本體蓋	Body Cover
10	本體	Body
11	油封膠圈	"O" Ring
12	出力軸尖軸承	Needle Bearing (Sleeve)
13	推力墊圈	Thrust Washer
14	出力齒輪	Output Gear
15	出力軸	Output Shaft
16	出力軸軸承	Output Shaft Bearing
17	二段側齒輪	2nd Stage Gear
18	三段側小齒輪軸	3rd Stage Pinion
19	三段側軸承	3rd Stage Bearing
20	中間段齒輪	Middle Stage Gear

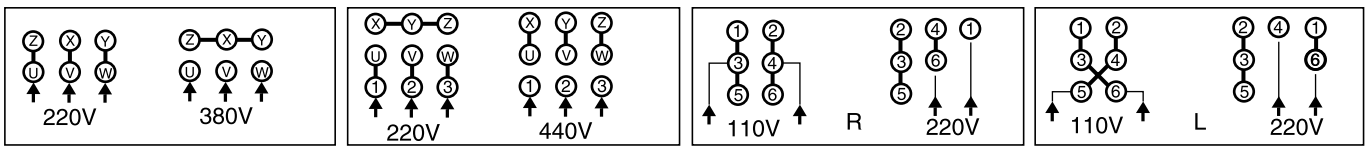
安全剎車器結構圖 *Brake Structure*



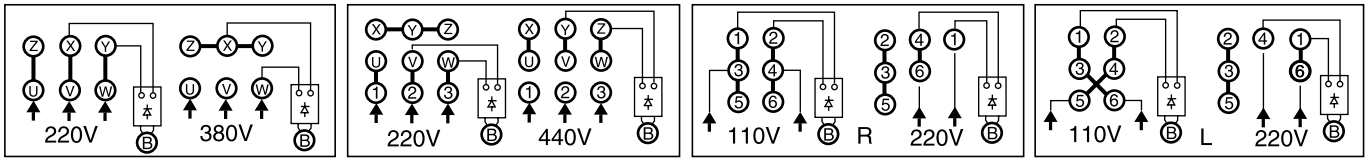
編號 No.	零件名稱 Name of Parts	
1	托架	Bracket(Brake Coil Included)
2	剎車來令	Brake Shoe
3	外扇風葉	Output Fan
4	軸承蓋	Bearing Cover
5	壓縮彈簧	Spring Compression
6	內六角螺絲	Hex Screw
7	內六角螺絲	Hex Screw
8	剎車基板	Brake Plate
9	馬達軸心	Motor Spindle
10	來令片固定環	Brake Shoe Fixing Ring
11	剎車電源裝置（整流器）	Power Device for Brake(Rectifier)

接線圖*Line Knotting Chart*

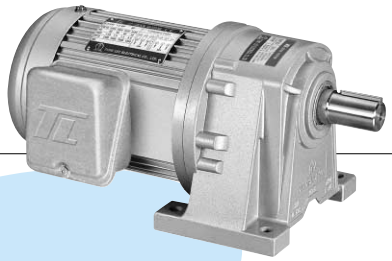
三相(Three Phase)　　單相(Single Phase)



下方圖係附剎車之接線圖 Line knotting chart of the brake are shown as below..

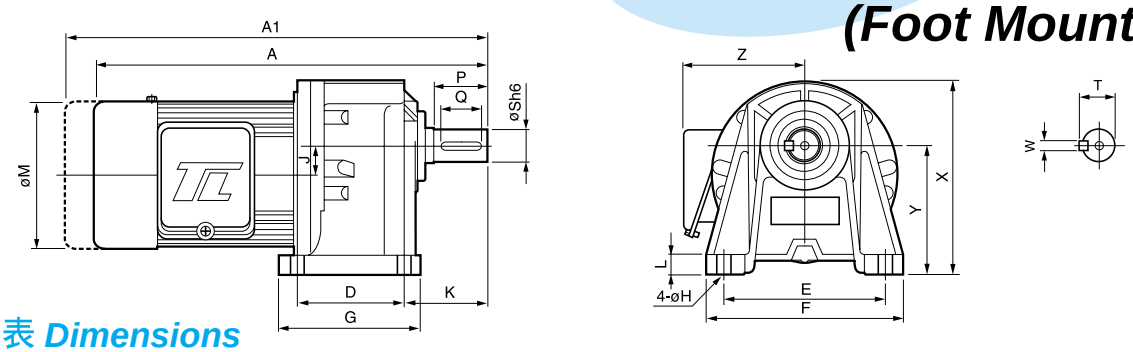


以上數值若有變動，恕不另行通知　We reserve the right to change without further notice.



PL型(臥式)三相齒輪減速馬達

PL Type 3-Phase Horizontal Gear Reduction Motor (Foot Mounted)



■ 馬達尺寸表 *Dimensions*

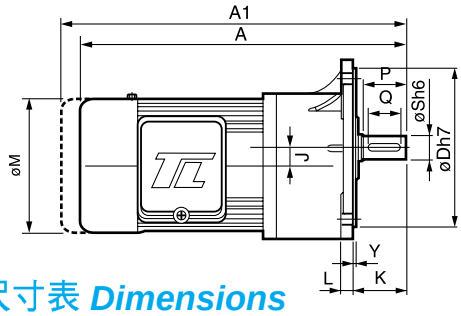
馬力 HP	減速比 Gear Ratio	框號 Type	A	A1	D	E	F	G	H	L	J	K	M	X	Y	Z	出力軸端 Output Shaft					重量 App.Wt. Kg
																	P	Q	S	T	W	
0.1KW | 1/8HPx4P	5~50	18	255	282	40	110	135	65	9	10	15.98	50	125	127	85	116	30	22	18	20	5	6.1
	60~200	22	287	314	65	130	155	90	11	12	17.66	60	125	145	90	116	40	30	22	25	7	7.0
	250~1800	22	356	383	65	130	155	90	11	12	17.66	60	125	145	90	116	40	30	22	25	7	8.9
	250~1800	28	393	420	90	140	170	120	11	15	23.11	70	125	170	110	116	45	35	28	31	7	11.6
0.2KW | 1/4HPx4P	5~10	18	273	301	40	110	135	65	9	10	15.98	50	125	127	85	116	30	22	18	20	5	7.04
	12.5~25	18	273	301	40	110	135	65	9	10	15.98	50	125	127	85	116	30	22	18	20	5	7.1
	12.5~100	22	305	330	65	130	155	90	11	12	17.66	60	125	145	90	116	40	30	22	25	7	8.8
	120~200	28	334	361	90	140	170	120	11	15	23.11	70	125	170	110	116	45	35	28	31	7	12
	250~1800	28	411	437	90	140	170	120	11	15	23.11	70	125	170	110	116	45	35	28	31	7	12.4
	250~1800	32	443	471	130	170	210	167	13	18	30.22	75	125	204	130	116	55	45	32	36.5	10	24.6
0.4KW | 1/2HPx4P	5~10	22	323	350	65	130	155	90	11	12	17.66	60	125	145	90	116	40	30	22	25	7	9.3
	12.5~25	22	323	350	65	130	155	90	11	12	17.66	60	125	145	90	116	40	30	22	25	7	10.6
	12.5~100	28	352	379	90	140	170	120	11	15	23.11	70	125	170	110	116	45	35	28	31	7	12.1
	120~200	32	382	409	130	170	210	167	13	18	30.22	75	125	204	130	116	55	45	32	36.5	10	25.2
	250~1800	32	464	491	130	170	210	167	13	18	30.22	75	125	204	130	116	55	45	32	36.5	10	27.6
	250~1800	40	542	569	150	210	260	200	18	23	37.96	96	125	252	160	116	65	55	40	44	10 (12)	45.2
0.75KW | 1HPx4P	5~25	28	379	405	90	140	170	120	11	15	23.11	70	158	170	110	131	45	35	28	31	7	15.1
	30~100	32	409	435	130	170	210	167	13	18	30.22	75	158	204	130	131	55	45	32	36.5	10	22
	120~200	40	465	491	150	210	260	200	18	23	37.96	96	158	252	160	131	65	55	40	44	10 (12)	45.2
	250~1800	40	569	595	150	210	260	200	18	23	37.96	96	158	252	160	131	65	55	40	44	10 (12)	47.7
	250~1800	50	580	606	160	230	285	210	18	25	39.2	104	158	293	176	–	75	65	50	53.5	14	60.5
1.5KW | 2HPx4P	5~30	32	442	477	130	170	210	167	13	18	30.22	75	190	204	130	138	55	45	32	36.5	10	25
	40~100	40	498	533	150	210	260	200	18	23	37.96	96	190	252	160	138	65	55	40	44	10 (12)	47.7
	120~200	50	509	543	160	230	285	210	18	25	39.2	104	190	293	176	–	75	65	50	53.5	14	55.0
2.2KW | 3HPx4P	5~10	32	467	502	130	170	210	167	13	18	30.22	75	190	204	130	138	55	45	32	36.5	10	35.2
	15~60	40	523	558	150	210	260	200	18	23	37.96	96	190	252	160	138	65	55	40	44	10 (12)	49.1
	75~120	50	534	569	160	230	285	210	18	25	39.2	104	190	293	176	–	75	65	50	53.5	14	58.0
3.7KW 5HPx4P	5~20	40	552	586	150	210	260	200	18	23	37.96	96	230	252	160	190	65	55	40	44	10 (12)	67
	25~100	50	562	597	160	230	285	210	18	25	39.2	104	230	293	176	190	75	65	50	53.5	14	72

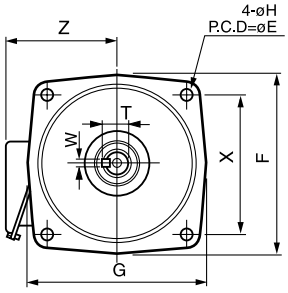
1. A1之長度為馬達附剎車之總長.
2. 淺藍色為輕扭力之機型.
3. 1/8~1 HP之附剎車重量，約無剎車重量加 2 KG.
4. 2~3 HP之附剎車重量,約無剎車重量加 3.5 KG.
5. 40~50 筒齒箱上附加O 型吊環 (高度約 50 mm).
6.軸徑40mm之鍵寬(w)標準為10mm，12mm為選用規格.

1. Length of A1 is the total length of motor and the brake.
2.Colour in Light blue indicates motor of smaller torque.
3. Weight of 1/8 ~ 1HP motor w / brake shall be weight of motor w / 0 brake + 2Kg.
4. Weight of a 2~3HP motor w / brake is equal to motor w/0 brake + 3.5kg.
5. " O " type rings shall be attached to the 40 ~ 50mm gear box. (add. Height: 50mm).
6. Keyway (w) for type 40 is 10mm, 12mm is optional.

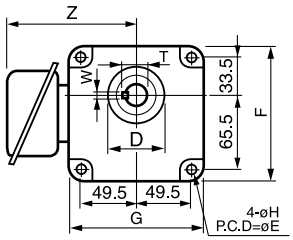
以上數值若有變動，恕不另行通知 We reserve the right to change without further notice.

PF型(立式)三相齒輪減速馬達
PF Type 3-Phase Vertical Gear Reduction Motor (with Flange)





A2法蘭 Flange



A1法蘭 Flange

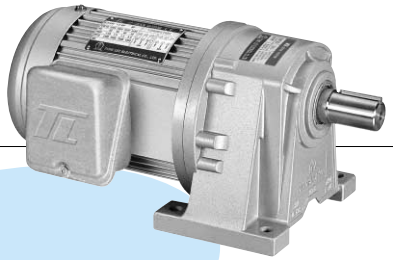
■ 馬達尺寸表 *Dimensions*

馬力 HP	減速比 Gear Ratio	框號 Type	A	A1	D	E	X	F	G	H	L	J	K	M	Y	Z	出力軸端 Output Shaft P	Q	S	T	W	重量 App.Wt. Kg	備註 Remark
0.1KW | 1/8HPx4P	5~50	18	255	282	50	140	99	122	120	9	12	15.98	40	125	5	116	30	22	18	20	5	6.08	A1法蘭
	60~200	22	287	314	148	185	131	176	165	11	12	17.66	50	125	3.5	116	40	30	22	25	7	7.3	A2法蘭
	250~1800	22	356	383	148	185	131	176	165	11	12	17.66	50	125	3.5	116	40	30	22	25	7	9.8	A2法蘭
	250~1800	28	393	420	170	220	156	205	195	Ø11 *14L	13	23.11	60	125	4	116	45	35	28	31	7	11.9	A2法蘭
0.2KW | 1/4HPx4P	5~10	18	273	302	50	140	99	122	120	9	12	15.98	40	125	5	116	30	22	18	20	5	7.1	A1法蘭
	12.5~25	18	273	302	50	140	99	122	120	9	12	15.98	40	125	5	116	30	22	18	20	5	7.13	A1法蘭
	12.5~100	22	305	330	148	185	131	176	165	11	12	17.66	50	125	3.5	116	40	30	22	25	7	8.81	A2法蘭
	120~200	28	334	361	170	220	156	205	195	Ø11 *14L	13	23.11	60	125	4	116	45	35	28	31	7	11.7	A2法蘭
	250~1800	28	411	437	170	220	156	205	195	Ø11 *14L	13	23.11	60	125	4	116	45	35	28	31	7	12.8	A2法蘭
	250~1800	32	443	471	185	255	180	241	225	15	15	30.22	70	125	4	116	55	40	32	36.5	10	25.2	A2法蘭
0.4KW | 1/2HPx4P	5~10	22	325	350	148	185	131	176	165	11	12	17.66	50	125	3.5	116	40	30	22	25	7	9.62	A2法蘭
	12.5~25	22	325	350	148	185	131	176	165	11	12	17.66	50	125	3.5	116	40	30	22	25	7	11	A2法蘭
	12.5~100	28	352	380	170	220	156	205	195	Ø11 *14L	13	23.11	60	125	4	–	45	35	28	31	7	13.4	A2法蘭
	120~200	32	385	410	185	255	180	241	225	15	15	30.22	70	125	4	116	55	45	32	36.5	10	24.4	A2法蘭
	250~1800	32	465	592	185	255	180	241	225	15	15	30.22	70	125	4	116	55	45	32	36.5	10	26.8	A2法蘭
	250~1800	40	545	570	230	310	219	297	268	15	20	37.96	76	125	5	–	65	55	40	44	10 (12)	45.6	A2法蘭
0.75KW | 1HPx4P	5~25	28	380	405	170	220	156	205	195	Ø11 *14L	13	23.11	60	158	4	131	45	35	28	31	7	15.1	A2法蘭
	30~100	32	410	435	185	255	180	241	225	15	15	30.22	70	158	4	131	55	45	32	36.5	10	26.9	A2法蘭
	120~200	40	465	492	230	310	219	297	268	15	20	37.96	76	158	5	–	65	55	40	44	10 (12)	45.6	A2法蘭
	250~1800	40	570	595	230	310	219	297	268	15	20	37.96	76	158	5	–	65	55	40	44	10 (12)	48.1	A2法蘭
	250~1800	50	580	606	250	352	249	320	290	18	22	39.2	86	158	5	–	75	65	50	53.5	14	57.3	A2法蘭
1.5KW | 2HPx4P	5~30	32	442	478	185	255	180	241	225	15	15	30.22	70	190	4	138	55	45	32	36.5	10	26.5	A2法蘭
	40~100	40	500	535	230	310	219	297	268	15	20	37.96	76	190	5	138	65	55	40	44	10 (12)	49.3	A2法蘭
	120~200	50	510	543	250	352	249	320	290	18	22	39.2	86	190	5	–	75	65	50	53.5	14	60.2	A2法蘭
2.2KW | 3HPx4P	5~10	32	467	502	185	255	180	241	225	15	15	30.22	70	190	4	138	55	45	32	36.5	10	34.2	A2法蘭
	15~60	40	525	560	230	310	219	297	268	15	20	37.96	76	190	5	138	65	55	40	44	10 (12)	50.8	A2法蘭
	75~120	50	535	570	250	352	249	320	290	18	22	39.2	86	190	5	–	75	65	50	53.5	14	55.6	A2法蘭
3.7KW | 5HPx4P	5~20	40	552	586	230	310	219	297	268	15	20	37.96	76	230	5	190	65	55	40	44	10 (12)	56.5	A2法蘭
	25~100	50	565	600	250	352	249	320	290	18	22	39.2	86	230	5	190	75	65	50	53.5	14	60.0	A2法蘭

1. A1之長度為馬達附剎車之總長.
2. 淺藍色為輕扭力之機型
3. 1/8~1 HP 之附剎車重量，約無剎車重量加2KG.
4. 2~3 HP 之附剎車重量,約無剎車重量加 3.5 KG.
5. 軸徑40mm之鍵寬(w)標準為10mm，12mm為選用規格.

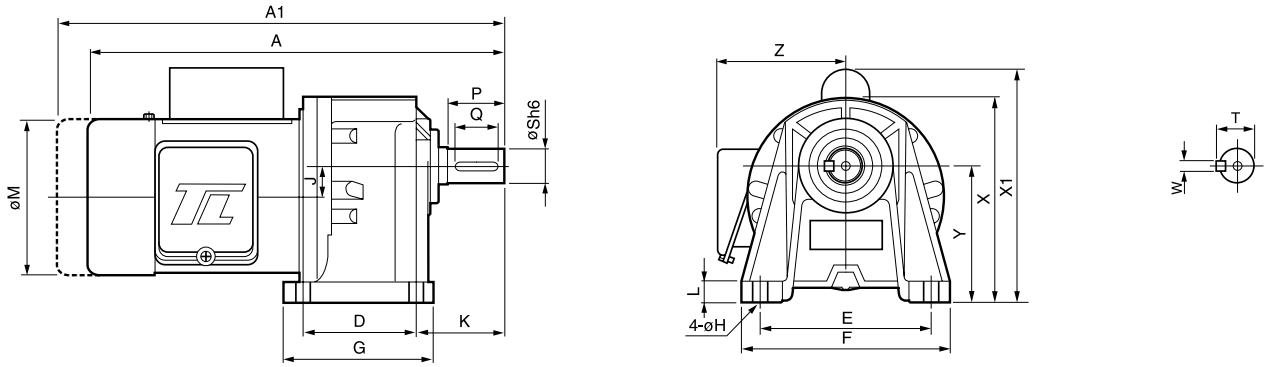
1. Length of A1 is the total length of motor and the brake.
2. Colour in Light blue indicates motor of smaller torque.
3. Weight of 1/8 ~ 1HP motor w / brake shall be weight of motor w / 0 brake + 2Kg.
4. Weight of a 2~3HP motor w / brake is equal to motor w/0 brake + 3.5kg.
5. Keyway (w) for type 40 is 10mm, 12mm is optional.

以上數值若有變動，恕不另行通知 We reserve the right to change without further notice.



PL 型(臥式)單相齒輪減速馬達

PL Type Single-Phase Horizontal Gear Reduction Motor (Foot Mounted)



■ 馬達尺寸表 *Dimensions*

馬力 HP	減速比 Gear Ratio	框號 Type	A	A1	D	E	F	G	H	L	J	K	M	X1	X	Y	Z	出力軸端 Output Shaft					重量 App.Wt. Kg
																		P	Q	S	T	W	
0.1KW | 1/8HPx4P	5~50	18	255	281	40	110	135	65	9	10	15.98	50	125	–	127	85	116	30	22	18	20	5	5.6
	60~200	22	286	313	65	130	155	90	11	12	17.66	60	125	–	145	90	116	40	30	22	25	7	7.0
	250~1800	22	356	382	65	130	155	90	11	12	17.66	60	125	–	145	90	116	40	30	22	25	7	8.9
	250~1800	28	393	419	90	140	170	120	11	15	23.11	70	125	–	170	110	116	45	35	28	31	7	11.6
0.2KW | 1/4HPx4P	5~10	18	290	315	40	110	135	65	9	10	15.98	50	125	–	127	85	116	30	22	18	20	5	6.4
	12.5~25	18	290	315	40	110	135	65	9	10	15.98	50	125	–	127	85	116	30	22	18	20	5	6.4
	12.5~100	22	322	347	65	130	155	90	11	12	17.66	60	125	–	145	90	116	40	30	22	25	7	7.9
	120~200	28	351	376	90	140	170	120	11	15	23.11	70	125	–	170	110	116	45	35	28	31	7	10.3
	250~1800	28	428	453	90	140	170	120	11	15	23.11	70	125	–	170	110	116	45	35	28	31	7	12.4
	250~1800	32	462	487	130	170	210	167	13	18	30.22	75	125	–	204	130	116	55	45	32	36.5	10	24.6
0.4KW | 1/2HPx4P	5~10	22	380	440	65	130	155	90	11	12	17.66	60	125	195	145	90	131	40	30	22	25	7	12.6
	12.5~25	22	380	440	65	130	155	90	11	12	17.66	60	125	195	145	90	131	40	30	22	25	7	12.6
	12.5~100	28	410	470	90	140	170	120	11	15	23.11	70	125	210	170	110	131	45	35	28	31	7	15.0
	120~200	32	450	510	130	170	210	167	13	18	30.22	75	125	222	204	130	131	55	45	32	36.5	10	27.2
	250~1800	32	530	590	130	170	210	167	13	18	30.22	75	125	–	204	130	131	55	45	32	36.5	10	29.6
	250~1800	40	600	660	150	210	260	200	18	23	37.96	96	125	–	252	160	131	65	55	40	44	10 (12)	47.2
0.75KW | 1HPx4P	5~25	28	420	480	90	140	170	120	11	15	23.11	70	158	214	170	110	138	45	35	28	31	7	16.7
	30~100	32	450	510	130	170	210	167	13	18	30.22	75	158	227	204	130	138	55	45	32	36.5	10	29.8
	120~200	40	510	570	150	210	260	200	18	23	37.96	96	158	–	252	160	138	65	55	40	44	10 (12)	47.2
	250~1800	40	610	670	150	210	260	200	18	23	37.96	96	158	–	252	160	138	65	55	40	44	10 (12)	49.7

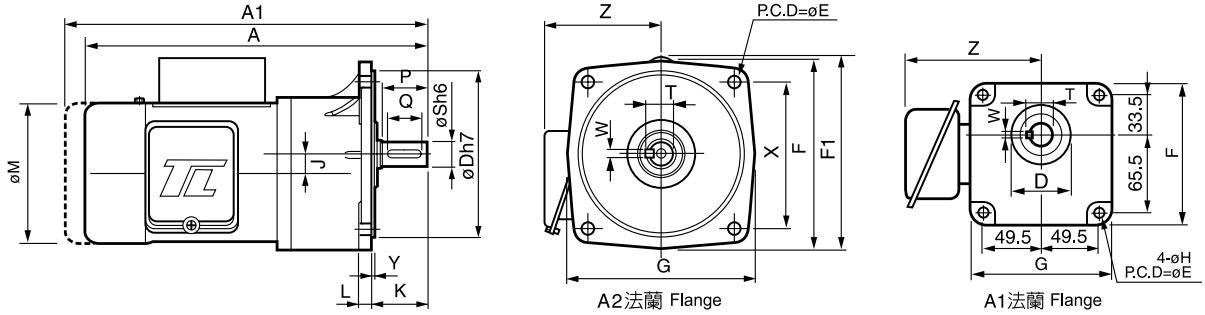
1. A1之長度為馬達附剎車之總長.
2. 淺藍色為輕扭力之機型.
3. 1/8~1 HP之附剎車重量，約無剎車重量加 2 KG.
4. 2~3 HP之附剎車重量,約無剎車重量加 3.5 KG.
5. 40~50 筒齒箱上附加O 型吊環 (高度約 50 mm).
6. 軸徑40mm之鍵寬(w)標準為10mm，12mm為選用規格.

1. Length of A1 is the total length of motor and the brake.
2. Colour in Light blue indicates motor of smaller torque.
3. Weight of 1/8 ~ 1HP motor w/brake shall be weight of motor w/o brake + 2Kg.
4. Weight of a 2~3HP motor w/brake is equal to motor w/0 brake + 3.5kg.
5. " O " type rings shall be attached to the 40 ~ 50mm gear box. (add. Height: 50mm)
6. Keyway (w) for type 40 is 10mm, 12mm is optional.

以上數值若有變動，恕不另行通知 We reserve the right to change without further notice.

PF型 (立式)單相齒輪減速馬達

PF Type Single-Phase Vertical Gear Reduction Motor (with Flange)



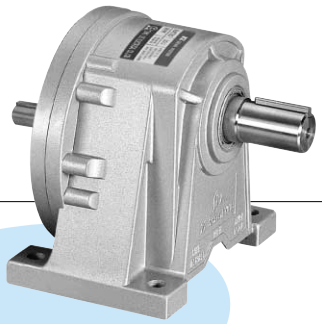
■ 馬達尺寸表 *Dimensions*

馬力 HP	減速比 Gear Ratio	框號 Type	A	A1	D	E	X	F	F1	G	H	L	J	K	M	Y	Z	出力軸端 Output Shaft P	Q	S	T	W	重量 App.Wt. Kg	備註 Remark
0.1KW | 1/8HPx4P	5~50	18	255	281	50	140	99	122	–	120	9	12	15.98	40	125	5	116	30	22	18	20	5	5.5	A1法蘭
	60~200	22	286	313	148	185	131	176	–	165	11	12	17.66	50	125	3.5	116	40	30	22	25	7	7.3	A2法蘭
	250~1800	22	356	385	148	185	131	176	–	165	11	12	17.66	50	125	3.5	116	40	30	22	25	7	9.2	A2法蘭
	250~1800	28	395	420	170	220	156	205	–	195	Ø11 *14L	13	23.11	60	125	4	116	45	35	28	31	7	11.9	A2法蘭
0.2KW | 1/4HPx4P	5~10	18	290	315	50	140	99	122	–	120	9	12	15.98	40	125	5	116	30	22	18	20	5	6.5	A1法蘭
	12.5~25	18	290	315	50	140	99	122	–	120	9	12	15.98	40	125	5	116	30	22	18	20	5	6.5	A1法蘭
	12.5~100	22	322	347	148	185	131	176	–	165	11	12	17.66	50	125	3.5	116	40	30	22	25	7	8.3	A2法蘭
	120~200	28	351	376	170	220	156	205	–	195	Ø11 *14L	13	23.11	60	125	4	116	45	35	28	31	7	11.7	A2法蘭
	250~1800	28	428	453	170	220	156	205	–	195	Ø11 *14L	13	23.11	60	125	4	116	45	35	28	31	7	12.8	A2法蘭
	250~1800	32	462	487	185	255	180	241	–	225	15	15	30.22	70	125	4	116	55	45	32	36.5	10	25.2	A2法蘭
0.4KW | 1/2HPx4P	5~10	22	380	440	148	185	131	176	195	165	11	12	17.66	50	125	3.5	131	40	30	22	25	7	11	A2法蘭
	12.5~25	22	380	440	148	185	131	176	195	165	11	12	17.66	50	125	3.5	131	40	30	22	25	7	11	A2法蘭
	12.5~100	28	410	470	170	220	156	205	–	195	Ø11 *14L	13	23.11	60	125	4	131	45	35	28	31	7	13.4	A2法蘭
	120~200	32	450	510	185	255	180	241	–	225	15	15	30.22	70	125	4	131	55	45	32	36.5	10	24.4	A2法蘭
	250~1800	32	530	590	185	255	180	241	–	225	15	15	30.22	70	125	4	131	55	45	32	36.5	10	26.8	A2法蘭
	250~1800	40	600	660	230	310	219	297	–	268	15	20	37.96	76	125	5	–	65	55	40	44	10 (12)	47.4	A2法蘭
0.75KW | 1HPx4P	5~25	28	420	480	170	220	156	205	209.5	195	Ø11 *14L	13	23.11	60	158	4	138	45	35	28	31	7	15.1	A2法蘭
	30~100	32	450	510	185	255	180	241	–	225	15	15	30.22	70	158	4	138	55	45	32	36.5	10	26.9	A2法蘭
	120~200	40	510	570	230	310	219	297	–	268	15	20	37.96	76	158	5	138	65	55	40	44	10 (12)	47.4	A2法蘭
	250~1800	40	610	670	230	310	219	297	–	268	15	20	37.96	76	158	5	138	65	55	40	44	10 (12)	49.7	A2法蘭

1. A1之長度為馬達附剎車之總長.
2. 淺藍色為輕扭力之機型.
3. 1/8~1 HP 之附剎車重量，約無剎車重量加2KG.
4. 2~3 HP 之附剎車重量,約無剎車重量加 3.5 KG.
5. 軸徑40mm之鍵寬(w)標準為10mm，12mm為選用規格.

1. Length of A1 is the total length of motor and the brake.
2. Colour in Light blue indicates motor of smaller torque.
3. Weight of 1/8 ~ 1HP motor w/brake shall be weight of motor w/o brake + 2Kg.
4. Weight of a 2~3HP motor w/brake is equal to motor w/0 brake + 3.5kg.
5. Keyway (w) for type 40 is 10mm, 12mm is optional.

以上數值若有變動，恕不另行通知 We reserve the right to change without further notice.

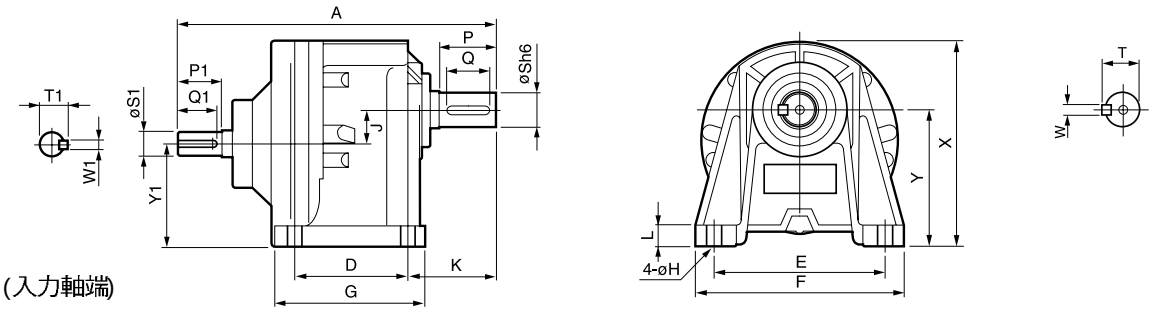


PLD (臥式)雙軸型齒輪減速機

PLD Dual-Shaft Type Gear Reducer

PLD 18 – 0200 – 10

- 減速比 Ratio: 1/10
- 馬力 HP: 200W
- 出力軸尺寸 Output Shaft Dimension: ø18
- PLD臥式雙軸型 Horizontal Type (Dual-Shaft)



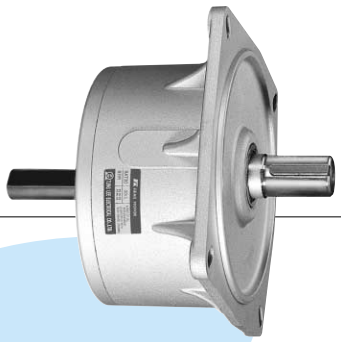
■ 馬達尺寸表 *Dimensions*

馬力 HP	減速比 Gear Ratio		A	D	E	F	G	H	J	K	L	X	Y	Y1	出力軸端 Output Shaft					入力軸端 Input Shaft					重量 App.Wt. Kg
															P	Q	S	T	W	P1	Q1	S1	T1	W1	
0.1KW	5~50	18	172	40	110	135	65	9	15.98	50	10	127	85	69	30	22	18	20	5	25	22	14	15.5	4	3
	60~200	22	204	65	130	155	90	11	17.66	60	12	145	90	72.3	40	30	22	25	7	25	22	14	15.5	4	4.2
0.2KW	5~10	18	172	40	110	135	65	9	15.98	50	10	127	85	69	30	22	18	20	5	25	22	14	15.5	4	3
	12.5~25	18	172	40	110	135	65	9	15.98	50	10	127	85	69	30	22	18	20	5	25	22	14	15.5	4	3
	12.5~100	22	204	65	130	155	90	11	17.66	60	12	145	90	72.3	40	30	22	25	7	25	22	14	15.5	4	4.2
	120~200	28	266	90	140	170	120	11	23.11	70	15	170	110	87	45	35	28	31	7	30	27	16	18	5	5.5
0.4KW	5~10	22	204	65	130	155	90	11	17.66	60	12	145	90	72.3	40	30	22	25	7	25	22	14	15.5	4	4.2
	12.5~25	22	204	65	130	155	90	11	17.66	60	12	145	90	72.3	40	30	22	25	7	25	22	14	15.5	4	4.2
	12.5~100	28	266	90	140	170	120	11	23.11	70	15	170	110	87	45	35	28	31	7	30	27	16	18	5	5.5
	120~200	32	296	130	170	210	167	13	30.22	75	18	204	130	99.8	55	45	32	36.5	10	30	27	19	21	5	16
0.75KW	5~25	28	266	90	140	170	120	11	23.11	70	15	170	110	87	45	35	28	31	7	30	27	16	18	5	6.5
	30~100	32	296	130	170	210	167	13	30.22	75	18	204	130	99.8	55	45	32	36.5	10	30	27	19	21	5	19.5
	120~200	40	357	150	210	260	200	18	37.96	96	23	252	160	122	65	55	40	44	10 (12)	35	32	24	27	7	38
1.5KW	5~30	32	296	130	170	210	167	13	30.22	75	18	204	130	99.8	55	45	32	36.5	10	30	27	19	21	5	19.5
	40~100	40	357	150	210	260	200	18	37.96	96	23	252	160	122	65	55	40	44	10 (12)	35	32	24	27	7	38
	120~200	50	367	160	230	285	210	18	39.2	104	25	305	176	137.8	75	65	50	53.5	14	45	42	28	31	8	51.2
2.2KW	5~10	32	296	130	170	210	167	13	30.22	75	18	204	130	99.8	55	45	32	36.5	10	30	27	19	21	5	20.5
	15~60	40	357	150	210	260	200	18	37.96	96	23	252	160	122	65	55	40	44	10 (12)	35	32	24	27	7	39
	75~120	50	367	160	230	285	210	18	39.2	104	25	305	176	137.8	75	65	50	53.5	14	45	42	28	31	8	53
3.7KW	5~20	40	357	150	210	260	200	18	37.96	96	23	252	160	122	65	55	40	44	10 (12)	35	32	24	27	7	39
	25~100	50	367	160	230	285	210	18	39.2	104	25	305	176	137.8	75	65	50	53.5	14	45	42	28	31	8	53

1. 淺藍色為輕扭力之機型.
2. 40~50 筒齒箱上附加O型吊環(高度約50mm).
3. 軸徑40mm之鍵寬(w)標準為10mm，12mm為選用規格.

1. Colour in Light blue indicates motor of smaller torque.
2. " O " type rings shall be attached to the 40 ~ 50mm gear box. (add. Height: 50mm).
3. Keyway (w) for type 40 is 10mm, 12mm is optional.

以上數值若有變動，恕不另行通知 We reserve the right to change without further notice.

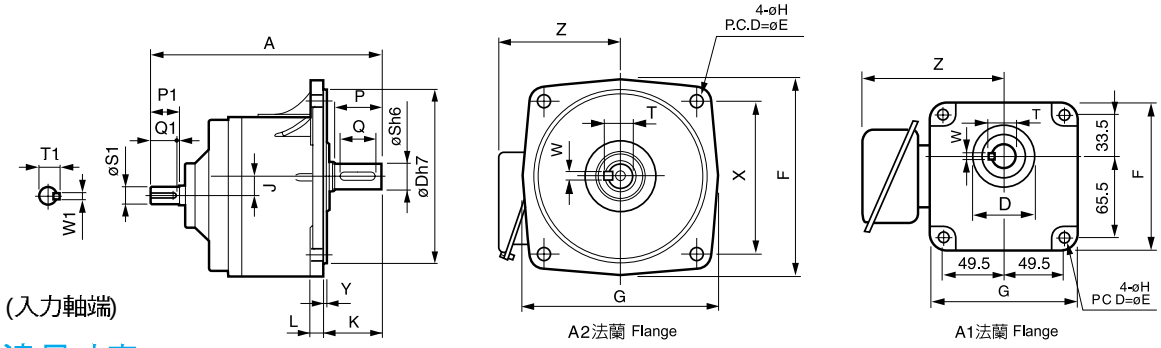


PFD (立式)雙軸型齒輪減速機

PFD Dual-Shaft Gear Reducer

PFD 18 – 0200 – 10

- 減速比 Ratio: 1/10
- 馬力 HP: 200W
- 出力軸尺寸 Output Shaft Dimension: ø18
- PFD立式雙軸型 Vertical Type (Dual-Shaft)



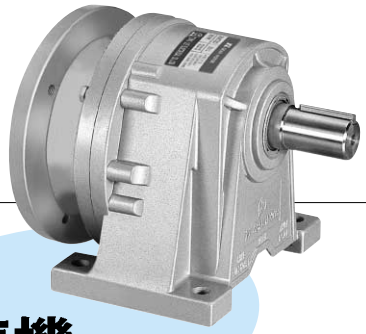
馬達尺寸表 *Dimensions*

馬力 HP	減速比 Gear Ratio	框號 Type	A	D	E	X	F	G	H	J	K	L	Y	出力軸端 Output Shaft					入力軸端 Output Shaft					重量 App.Wt. Kg	備註 Rrmark
														P	Q	S	T	W	P1	Q1	S1	T1	W1		
0.1KW	5~50	18	172	50	140	99	122	120	9	15.98	40	12	5	30	22	18	20	5	25	22	14	15.5	4	3	A1法蘭
	60~200	22	204	148	185	131	176	165	11	17.66	50	12	3.5	40	30	22	25	7	25	22	14	15.5	4	4.2	A2法蘭
0.2KW	5~10	18	172	50	140	99	122	120	9	15.98	40	12	5	30	22	18	20	5	25	22	14	15.5	4	3	A1法蘭
	12.5~25	18	172	50	140	99	122	120	9	15.98	40	12	5	30	22	18	20	5	25	22	14	15.5	4	3	A1法蘭
	12.5~100	22	204	148	185	131	176	165	11	17.66	50	12	3.5	40	30	22	25	7	25	22	14	15.5	4	4.2	A2法蘭
	120~200	28	266	170	220	156	205	195	Ø11 *14L	23.11	60	13	4	45	35	28	31	7	30	26	16	18	5	5.5	A2法蘭
0.4KW	5~10	22	204	148	185	131	176	165	11	17.66	50	12	3.5	40	30	22	25	7	25	22	14	15.5	4	4.2	A2法蘭
	12.5~25	22	204	148	185	131	176	165	11	17.66	50	12	3.5	40	30	22	25	7	25	22	14	15.5	4	4.2	A2法蘭
	12.5~100	28	266	170	220	156	205	195	Ø11 *14L	23.11	60	13	4	45	35	28	31	7	30	26	16	18	5	5.5	A2法蘭
	120~200	32	296	185	255	180	241	225	15	30.22	70	15	4	55	45	32	36.5	10	30	26	19	21	5	17	A2法蘭
0.75KW	5~25	28	266	170	220	156	205	195	Ø11 *14L	23.11	60	13	4	45	35	28	31	7	30	26	16	18	5	6.5	A2法蘭
	30~100	32	296	185	255	180	241	225	15	30.22	70	15	4	55	45	32	36.5	10	30	26	19	21	5	19.5	A2法蘭
	120~200	40	357	230	310	219	297	268	15	37.96	76	20	5	65	55	40	44	10 (12)	35	32	24	27	7	38	A2法蘭
1.5KW	5~30	32	296	185	255	180	241	225	15	30.22	70	15	4	55	45	32	36.5	10	30	26	19	21	5	19.5	A2法蘭
	40~100	40	357	230	310	219	297	268	15	37.96	76	20	5	65	55	40	44	10 (12)	35	32	24	27	7	38	A2法蘭
	120~200	50	367	250	352	249	320	290	18	39.2	86	22	5	75	65	50	53.5	14	45	42	28	31	8	51.2	A2法蘭
2.2KW	5~10	32	296	185	255	180	241	225	15	30.22	70	15	4	55	45	32	36.5	10	30	26	19	21	5	20.5	A2法蘭
	15~60	40	357	230	310	219	297	268	15	37.96	76	20	5	65	55	40	44	10 (12)	35	32	24	27	7	39	A2法蘭
	75~120	50	367	250	352	249	320	290	18	39.2	86	22	5	75	65	50	53.5	14	45	42	28	31	8	53	A2法蘭
3.7KW	5~20	40	357	230	310	219	297	268	15	37.96	76	20	5	65	55	40	44	10 (12)	35	32	24	27	7	39	A2法蘭
	25~100	50	367	250	352	249	320	290	18	39.2	86	22	5	75	65	50	53.5	14	45	42	28	31	8	53	A2法蘭

1. 淺藍色為輕扭力之機型.
3.軸徑40mm之鍵寬(w)標準為10mm，12mm為選用規格.

1. Colour in Light blue indicates motor of smaller torque.
2. Keyway (w) for type 40 is 10mm, 12mm is optional.

以上數值若有變動，恕不另行通知 We reserve the right to change without further notice.

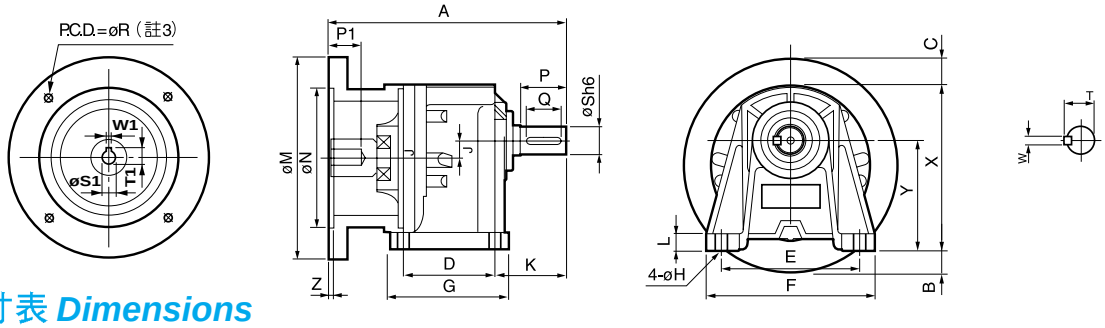


PLK (臥式)單軸型自配馬達減速機

PLK Self-Contained Motor Type Gear Reducer

PLK 18 – 0200 – 10

- 減速比 Ratio: 1/10
- 馬力 HP: 200W
- 出力軸尺寸 Output Shaft Dimension: ø18
- PLK臥式單軸型 Horizontal Type (Single-Shaft)



■ 馬達尺寸表 *Dimensions*

馬力 HP	減速比 Gear Ratio	框號 Type	A	B	C	D	E	F	G	H	J	K	L	M	N	R	X	Y	Z	入力軸端Input Shaft P1	S1	T1	W1	出力軸端 Output Shaft P	Q	S	T	W	重量 App.Wt. Kg
0.1KW	5~50	18	159	11	22	40	110	135	65	9	15.98	50	10	160	110	130	127	85	4	26	11	12.7	4	30	22	18	20	5	5
	60~200	22	191	8	8	65	130	155	90	11	17.66	60	12	160	110	130	145	90	4	26	11	12.7	4	40	30	22	25	7	6.2
0.2KW	5~10	18	159	11	22	40	110	135	65	9	15.98	50	10	160	110	130	127	85	4	26	11	12.7	4	30	22	18	20	5	5
	12.5~25	18	159	11	22	40	110	135	65	9	15.98	50	10	160	110	130	127	85	4	26	11	12.7	4	30	22	18	20	5	5
	12.5~100	22	191	8	8	65	130	155	90	11	17.66	60	12	160	110	130	145	90	4	26	11	12.7	4	40	30	22	25	7	6.2
	120~200	28	220	–	–	90	140	170	120	11	23.11	70	15	160	110	130	170	110	4	26	11	12.7	4	45	35	28	31	7	7.5
0.4KW	5~10	22	191	8	8	65	130	155	90	11	17.66	60	12	160	110	130	145	90	4	33	14	16.2	5	40	30	22	25	7	6.2
	12.5~25	22	191	8	8	65	130	155	90	11	17.66	60	12	160	110	130	145	90	4	33	14	16.2	5	40	30	22	25	7	6.2
	12.5~100	28	220	–	–	90	140	170	120	11	23.11	70	15	160	110	130	170	110	4	33	14	16.2	5	45	35	28	31	7	7.5
	120~200	32	250	–	–	130	170	210	167	13	30.22	75	18	160	110	130	204	130	4	33	14	16.2	5	55	45	32	36.5	10	19
0.75KW	5~25	28	254	135	–	90	140	170	120	11	23.11	70	15	200	130	165	170	110	4.5	43	19	21.7	6	45	35	28	31	7	7.5
	30~100	32	284	–	–	130	170	210	167	13	30.22	75	18	200	130	165	204	130	4.5	43	19	21.7	6	55	45	32	36.5	10	20.5
	120~200	40	340	–	–	150	210	260	200	18	37.96	96	23	200	130	165	252	160	4.5	43	19	21.7	6	65	55	40	44	10 (12)	39
1.5KW	5~30	32	303	–	–	130	170	210	167	13	30.22	75	18	200	130	165	204	130	4.5	53	24	27.2	8	55	45	32	36.5	10	20.5
	40~100	40	341	–	–	150	210	260	200	18	37.96	96	23	200	130	165	252	160	4.5	53	24	27.2	8	65	55	40	44	10 (12)	39
	120~200	50	351	–	–	160	230	285	210	18	39.2	104	30	200	130	165	305	176	4.5	53	24	27.2	8	75	65	50	53.5	14	52.2
2.2KW	5~10	32	317	–	–	130	170	210	167	13	30.22	75	18	250	180	215	204	130	4.5	63	28	31.2	8	55	45	32	36.5	10	21.5
	15~60	40	373	3	–	150	210	260	200	18	37.96	96	23	250	180	215	252	160	4.5	63	28	31.7	8	65	55	40	44	10 (12)	40
	75~120	50	383	–	–	160	230	285	210	18	39.2	104	30	250	180	215	305	176	4.5	63	28	31.2	8	75	65	50	53.5	14	54
3.7KW	5~20	40	373	3	–	150	210	260	200	18	37.96	96	23	250	180	215	252	160	4.5	63	28	31.2	8	65	55	40	44	10 (12)	40
	25~100	50	383	–	–	160	230	285	210	18	39.2	104	30	250	180	215	305	176	4.5	63	28	31.2	8	75	65	50	53.5	14	54

1. 淺藍色為輕扭力之機型.
2. 40~50 筒齒箱上附加O 型吊環（高度約 50 mm）.
3. 中間塹螺絲孔 1/8~1/4 HP為 M8*P1.25.
   1/2~2 HP為 M10*P1.5.　　3 HP為 M14*P2.
4. 軸徑40mm之鍵寬(w)標準為10mm，12mm為選用規格.

1. Colour in Light blue indicates motor of smaller torque.
2. " O " type rings shall be attached to the 40 ~ 50mm gear box. (add. Height: 50mm).
3. Central screw hole for 1/8 ~ 1/4 HP motor shall be M8*P1.25
   Central screw hole for the 1/2 ~ 2HP motor shall be M10*P1.5.
   Central screw hole for the 3HP motor shall be M14*P2.
4. Keyway (w) for type 40 is 10mm, 12mm is optional.

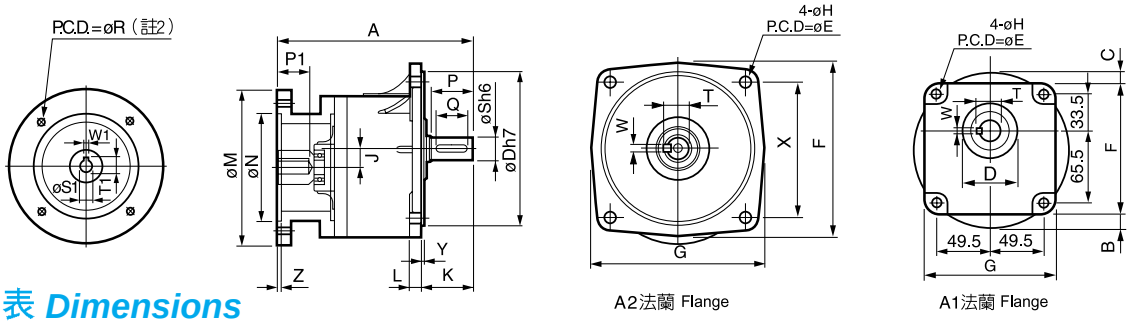
以上數值若有變動，恕不另行通知　We reserve the right to change without further notice.

PFK (立式)單軸型自配馬達減速機

PFK Self-Contained Motor Type Gear Reducer

PFK 18 – 0200 – 10

- 減速比 Ratio: 1/10
- 馬力 HP: 200W
- 出力軸尺寸 Output Shaft Dimension: ø18
- PFK立式單軸型 Vertical Type (Single-Shaft)



■ 馬達尺寸表 *Dimensions*

馬力 HP	減速比 Gear Ratio	框號 Type	A	B	C	D	E	X	F	G	H	J	K	L	M	N	R	Y	Z	入力軸端 Input Shaft P1	S1	T1	W1	出力軸端 Output haft P	Q	S	T	W	重量 App.Wt. Kg	備註
0.1KW	5~50	18	159	20	20	50	140	99	122	120	9	15.98	40	12	160	110	130	5	4	26	11	12.7	4	30	22	18	20	5	5	A1法蘭
	60~200	22	191	7	–	148	185	131	176	165	11	17.66	50	12	160	110	130	3.5	4	26	11	12.7	4	40	30	22	25	7	6.2	A2法蘭
0.2KW	5~10	18	159	20	20	50	140	99	122	120	9	15.98	40	12	160	110	130	5	4	26	11	12.7	4	30	22	18	20	5	5	A1法蘭
	12.5~25	18	159	20	20	50	140	99	122	120	9	15.98	40	12	160	110	130	5	4	26	11	12.7	4	30	22	18	20	5	5	A1法蘭
	12.5~100	22	191	7	–	148	185	131	176	165	11	17.66	50	22	160	110	130	3.5	4	26	11	12.7	4	40	30	22	25	7	6.2	A2法蘭
	120~200	28	220	–	–	170	220	156	205	195	ø11 *14L	23.11	60	13	160	110	130	4	4	26	11	12.7	4	45	35	28	31	7	7.5	A2法蘭
0.4KW	5~10	22	191	7	–	148	185	131	176	165	11	17.66	50	12	160	110	130	3.5	4	33	14	16.2	5	40	30	22	25	7	6.2	A2法蘭
	12.5~25	22	191	7	–	148	185	131	176	165	11	17.66	50	12	160	110	130	3.5	4	33	14	16.2	5	40	30	22	25	7	6.2	A2法蘭
	12.5~100	28	220	–	–	170	220	156	205	195	ø11 *14L	23.11	60	13	160	110	130	4	4	33	14	16.2	5	45	35	28	31	7	7.5	A2法蘭
	120~200	32	250	–	–	185	255	180	241	225	15	30.22	70	15	160	110	130	4	4	33	14	16.2	5	55	45	32	36.5	10	19	A2法蘭
0.75KW	5~25	28	254	17.5	–	170	220	156	205	195	ø11 *14L	23.11	60	13	200	130	165	4	4.5	43	19	21.7	6	45	35	28	31	7	7.5	A2法蘭
	30~100	32	284	2	–	185	255	180	241	225	15	30.22	70	15	200	130	165	4	4.5	43	19	21.7	6	55	45	32	36.5	10	20.5	A2法蘭
	120~200	40	340	–	–	230	310	219	297	268	15	37.96	76	20	200	130	165	5	4.5	43	19	21.7	6	65	55	40	44	10 (12)	39	A2法蘭
1.5KW	5~30	32	303	2	–	185	255	180	241	225	15	30.22	70	15	200	130	165	4	4.5	53	24	27.2	8	55	45	32	36.5	10	20.5	A2法蘭
	40~100	40	341	–	–	230	310	219	297	268	15	37.96	76	20	200	130	165	5	4.5	53	24	27.2	8	65	55	40	44	10 (12)	39	A2法蘭
	120~200	50	351	13.5	–	250	352	249	320	290	18	39.2	86	22	200	130	165	5	4.5	53	24	27.2	8	75	65	50	53.5	14	52.2	A2法蘭
2.2KW	5~10	32	317	27	–	185	255	180	241	225	15	30.22	70	15	250	180	215	4	4.5	63	28	31.2	8	55	45	32	36.5	10	21.5	A2法蘭
	15~60	40	373	2.5	–	230	310	219	297	268	15	37.96	76	20	250	180	215	5	4.5	63	28	31.2	8	65	55	40	44	10 (12)	40	A2法蘭
	75~120	50	383	13.5	–	250	352	249	320	290	18	39.2	86	22	250	180	215	5	4.5	63	28	31.2	8	75	65	50	53.5	14	54	A2法蘭
3.7KW	5~20	40	373	2.5	–	230	310	219	297	268	15	37.96	76	20	250	180	215	5	4.5	63	28	31.2	8	65	55	40	44	10 (12)	40	A2法蘭
	25~100	50	383	13.5	–	250	352	249	320	290	18	39.2	86	22	250	180	215	5	4.5	63	28	31.2	8	75	65	50	53.5	14	54	A2法蘭

1. 淺藍色為輕扭力之機型
2. 中間塹螺絲孔 1/8~1/4 HP 為 M8*P1.25.
   1/2~2 HP 為 M10*P1.5.
   3 HP 為 M14*P2.
3. 軸徑40mm之鍵寬(w)標準為10mm，12mm為選用規格.

以上數值若有變動，恕不另行通知　We reserve the right to change without further notice.

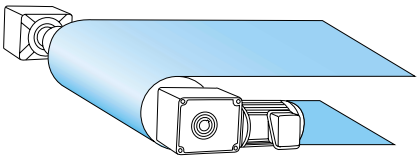
1. Colour in Light blue indicates motor of smaller torque.
2. Central screw hole for 1/8 ~ 1/4 HP motor shall be M8*P1.25.
   Central screw hole for the 1/2 ~ 2HP motor shall be M10*P1.5.
   Central screw hole for the 3HP motor shall be M14*P2.
3. Keyway (w) for type 40 is 10mm, 12mm is optional.

TL系列–軸上型蝸輪減速機

TL 4070 – 0400 – 30 S3 B

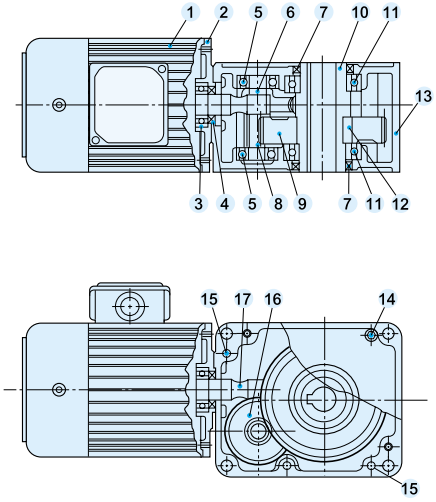
- B: 附剎車
- S3: 電壓: A: 110V C: 220V S3: 三相220/380V S4: 三相220/440V
- 30: 減速比: 30, 40, 50, 60, 75, 100, 120, 132, 150, 180, 200, 250, 300
- 0400: 馬力: 100W, 200W, 400W, 750W, 1500W
- 4070: 框號代號: 4060, 4070, 5080
- TL: 軸上型代號

■ 應用範例 Examples



輸送機 CONVEYER

■ 零件組合圖 SYSTEM DRAWNG



No.	零件名稱	Name of Parts
1	馬達	Motor
2	馬達盤	Motor Cover
3	滾珠軸承	Ball Bearing
4	油封	Oil Seal
5	滾珠軸承	Ball Bearing
6	雙圓鍵	Key
7	油封	Oil Seal
8	A齒輪軸	A Gear Shaft
9	B齒輪	B Gear
10	出力套軸	Output Shaft Bushing
11	滾珠軸承	Ball Bearing
12	雙圓鍵	Key
13	齒輪箱	Gear Shell
14	內六角螺絲	Hex. Screw
15	定位梢	Location Pin
16	蝸輪	Worm Wheel
17	蝸桿	Worm Shaft

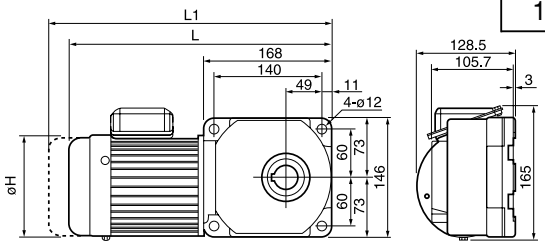
■ 轉矩表 *Torque Table (Kg•m)*

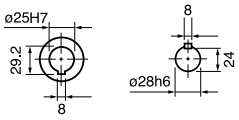
減速比	4060						4070						5080					
	1/8HP		1/4HP		1/2HP		1/8HP		1/4HP		1/2HP		1/2HP		1HP		2HP	
	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz
30	1.65	1.35	3.28	2.68	6.43	5.37	1.76	1.44	3.51	2.87	6.88	5.74	6.88	5.74	12.87	10.64	25.49	21.53
40	2.19	1.79	4.39	3.58	8.57	7.16	2.34	1.91	4.69	3.83	9.17	7.66	9.17	7.66	17.16	14.19	33.99	28.71
45	2.64	2.01	4.93	4.03	9.65	8.05	2.64	2.15	5.27	4.31	10.32	8.61	10.32	8.61	19.31	15.96	38.24	32.30
50	2.47	2.23	5.48	4.48	10.72	8.95	2.93	2.39	5.86	4.79	11.47	9.57	11.47	9.57	21.45	17.74	42.49	35.89
60	3.28	2.68	6.57	5.37	12.87	10.73	3.41	2.78	6.82	5.57	13.34	11.14	13.34	11.14	24.96	20.64	49.44	41.76
75(80)	4.39	3.58	8.76	7.16	17.16	14.31	4.39	3.59	8.79	7.18	17.20	14.36	17.20	14.36	32.18	26.61	63.73	53.83
100	5.31	4.34	10.62	8.68	20.79	17.35	5.68	4.64	11.36	9.28	22.24	18.56	22.24	18.56	41.60	34.40	82.40	69.60
120	6.38	5.21	12.74	10.42	24.96	20.92	6.82	5.57	13.63	11.14	26.69	22.27	26.69	22.27	49.92	41.28	98.88	83.52
132	7.01	5.72	14.03	11.45	27.45	22.91	7.50	6.12	15.00	12.25	29.36	24.50	29.36	24.50	54.91	45.41	108.77	91.87
150	7.97	6.51	15.93	13.02	31.19	26.03	8.52	6.96	17.04	13.92	33.36	27.84	33.36	27.84	62.40	51.60	123.60	104.40
180	9.56	7.81	19.12	15.61	37.43	31.24	10.22	8.35	20.45	16.70	40.03	33.41	40.03	33.41	74.88	61.92	148.32	125.28
200	10.29	8.41	20.58	16.81	40.29	33.62	11.01	8.99	22.01	17.98	43.09	35.96	43.09	35.96	80.60	66.65	159.65	134.85
250	10.29	8.41	20.58	16.81	40.29	33.62	11.01	8.99	22.01	17.98	43.09	35.96	43.09	35.96	80.60	66.65	159.65	134.85
300	10.29	8.41	20.58	16.81	40.29	33.62	11.01	8.99	22.01	17.98	43.09	35.96	43.09	35.96	80.60	66.65	159.65	134.85

以上數值若有變動，恕不另行通知 We reserve the right to change without further notice.

Model: TL4060

減速比 (Ratio) :
1/80~1/300





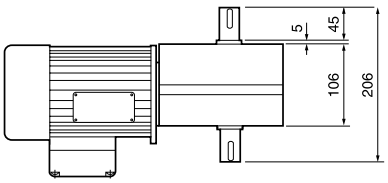
(中孔式) (軸心式)

■ 尺寸表 Dimension 單位：mm

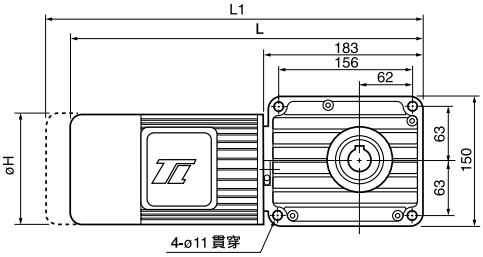
馬力 (4P)	L 標準	L1 含剎車	øH	重量 (Kg)
1/8	328	351	125	12.0
1/4	345	370	125	13.0
1/2	363	388	125	15.0

Model: TL4070

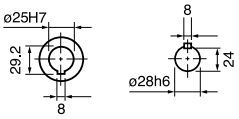
減速比 (Ratio) :
1/30~1/300



(雙出或單出力軸)



(中空型)



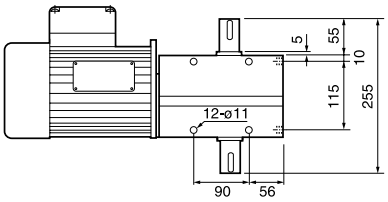
(中孔式) (軸心式)

■ 尺寸表 Dimension 單位：mm

馬力 (4P)	L 標準	L1 含剎車	øH	重量 (Kg)
1/8	345	370	125	12.5
1/4	363	380	125	13.5
1/2	382	407	125	15.5

Model: TL5080

減速比 (Ratio) :
1/30~1/300



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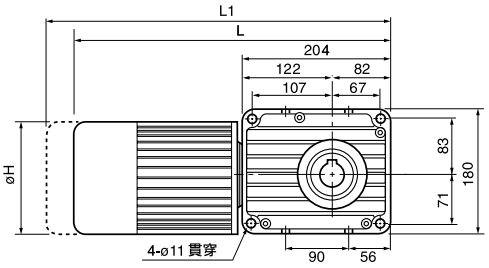
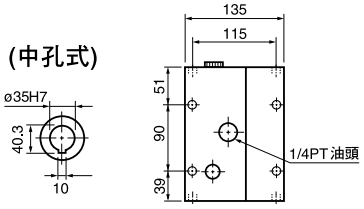


(中空型)

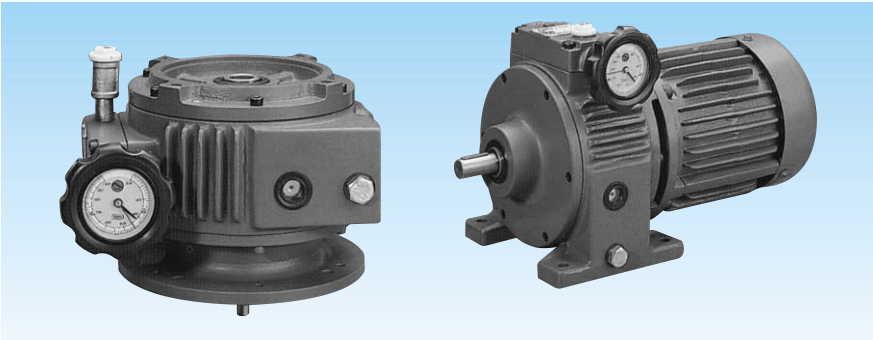


■ 尺寸表 Dimension 單位：mm

馬力 (4P)	L 標準	L1 含剎車	øH	重量 (Kg)
1/2	406	431	125	20
1	433	483	158	25.2
2	465	500	190	30.5

* L1之長度為馬達附剎車之總長。(L1 is the total length of motor with brake.)
*出線盒可指定向上，向下，左邊，右邊。(Terminal Box position can be changed.)
以上數值若有變動，恕不另行通知 We reserve the right to change without further notice.

DISCO 無段變速機 (Variable Speed Control Motor)



A系列標準型附加法蘭
A series standard model with flange

■ 馬力(KW)：0.2~3.7KW

■ 變速範圍 **Range of speed variation:**

50Hz 165~1000rpm

60Hz 200~1200rpm

■ 附R型減速比 **With R type reduction ratio:**

AR2.5	50Hz	66~400rpm
	60Hz	80~480rpm
AR5	50Hz	33~200rpm
	60Hz	40~240rpm

特點：

1. 低速時扭力變大效率高
DISCO 無段變速機，輸入容量自0.18W~22KW，其扭力的傳導是由多組斜面游星片面的傳導，所以能夠承受過負載 、衝擊負荷和反動作負荷的特殊環境，在低速時因游星片軌道擴大而力臂增大，故扭力變大效力特高。

2. 全封閉機械式變速
DISCO 無段變速機，經由機械方式變速，且全封閉在框架內，故在特殊場所，如爆炸性、易燃性 、粉塵性、酸鹼性、潮濕性場所，只要馬達選用得當，均能適應，沒有危險且壽命特長。

3. 穩定：速度變動率在0.01%以內
機械式變速的另一特色，就是速度穩定變動率低，游星片的組合均附調壓裝置，故速度非常穩，不會因環境溫升改變或使用過久而失去準確性。

4. 體積小、重量輕、介面特性佳
DISCO 本體 1HP 僅 125mm 長，體積小重量輕，且立式、臥式，雙軸型均可配合在整體的聯動系統中，可適用單一馬達驅動，降低成本、減少故障，提高系統聯動的特性，因此雙軸型的應用不可或缺。

5. 變速操作容易
由於採用操作輪，變速容易，運轉中不管是否在負載狀態下，均可快速而卻實地變速，並且可以裝用各種遙控裝置，與 P.L.D. 自動控制。

6. 應用範圍廣泛
任何速度均可指定，任何角度均可安裝，不受入力軸變速的限制，且能配合各種馬達及減速機使用。

Features:

1. High torque at low speed enhance the efficiency
Disco stage less reducer, with input capacity from 0.18W~22KW, the transmission of torque is done by multiple tapered planetary plate which capable to withstand special conditions of overload, impact load and reverse acting load. The torque arm is enlarged due to expansion of planetary plate while low speed, so the torque is enlarged with higher efficiency.

2. Fully enclosed mechanical speed variation
Disco stage less reducer, speed change via mechanical method and enclosed in fully concealed frame, so is adaptable to special places such as explosive, flammable, dusty, acid and alkaline, damp place is right selection of motor, hazard free and long life.

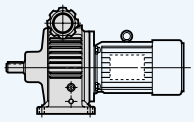
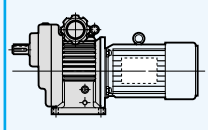
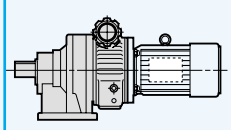
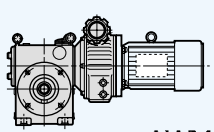
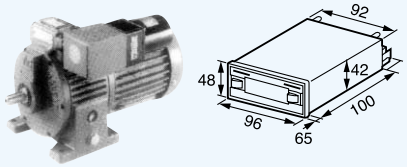
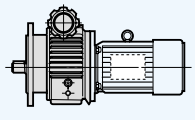
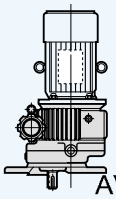
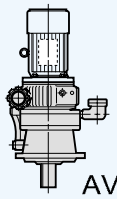
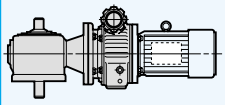
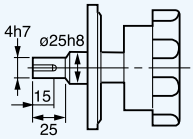
3. Stable: speed variation rate within 0.01%
Another feature of mechanical speed change is stable speed with low variation, the combination of planetary plate is complete with pressure regulation device, so the speed is very stable, no concern of accuracy loss due to temperature change or extended usage.

4. Compact, light weight, good interface characteristic.
The body of 1HP Disco is merely 125mm long, compact and light weight, match the interlinked system by using vertical, flat or dual shafts type, suitable for single motor drive, reduce cost, less trouble, elevate the characteristic of system interlocked, thus the application of dual shafts is indispensable.

5. Easy operation for speed change
Easy speed change due to adoption of operation wheel, speed change exactly and fast during operating regardless loaded or not, and allow remote control device, and PLD automatic control.

6. Wide application scope
Any speed can be specified and mount to any angle, no restriction from the speed change of input shaft, and match with various motor and reducer.

各系列機種例 *Full kinds of series model:*

A—基本型 A- Basic	R—附偏心減速機 R- with eccentric reducer	G—附齒輪減速機 G- with gear reducer	W—附渦輪減速機 W- with worm gear reducer	S—電氣式遙控數字顯示器 S- electrical remote number display
 AM	 ARM	 AGM	 AWM	
 AVM	 AVRM	 AVGM	 AVWM	S—並附把手 S-with handle 
200-1200RPM	輸出轉速任意指定方式 Free designating of output revolution.			

註：出力軸按裝方向均可指定，並可作雙軸使用。

NOTE: The installation direction of the output shaft can be designated and may be served as dual shafts.

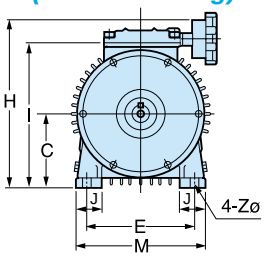
以上數值若有變動，恕不另行通知 We reserve the right to change without further notice.

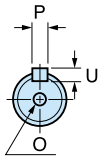
常用出力軸回轉數選擇表 *Selection list for revolution of common output shaft*

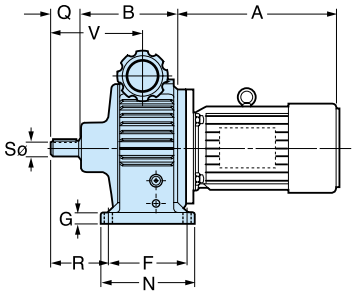
出力軸回轉數選擇表（RPM）		減速比 Ratio	變速範圍 Range of speed variation	減速機型式 Model of reducer	代號 Code
4P 60Hz	4P 50Hz				
1200~200	1000~165		1/1.4~1/8.4	A 系列 Series	AM AVM
480~80	400~66	2.5	1/3.5~1/21	R型：附偏心齒輪減速機 R type: with eccentric reducer	ARM AVRM
240~40	200~33	5	1/7~1/42		
120~20	100~16.5	10	1/14~1/84	C型：附擺線形減速機 G型：附齒輪減速機 W型：附渦輪減速機 C type: with swing linear reducer G type: with gear reducer W type: with worm gear reducer	AGM AVGM AWM AVWM
80~13.3	66.6~11	15	1/21~1/126		
60~10	50~8.3	20	1/28~1/168		
40~6.7	33.3~5.5	30	1/42~1/251		
20~3.3	16.7~2.8	60	1/84~1/509		

臥式基本型（腳座安裝型）
Horizontal type (Foot mounting)

A (M) 型



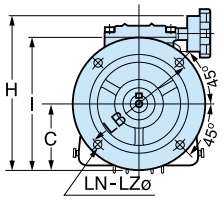


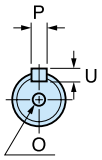


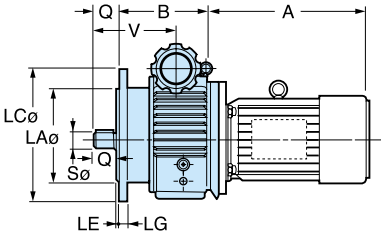
型式 Model	B	C	E	F	G	H	I	J	M	N	R	V	Z	出力軸尺寸 Output shaft size					A (Kg)
														S (h6)	Q	P	U	O	
02A(M)	110	71	110	105	12	203	158	25	140	125	48	99	9	14	30	5	5	M5	8
05A(M)	138	90	120	105	15	223	177	32	160	135	60	110	10	14	30	5	5	M5	14
1A(M)	152	106	160	125	15	254	208	40	190	150	75	129	12	19	40	6	6	M6	20
2A(M)	190	125	180	140	18	300	246	50	230	165	100	157	12	24	50	8	7	M8	34
$\frac{3}{5}$A(M)	220	150	245	230	20	360	298	55	300	270	85	187	14	28	60	8	7	M8	63 67

立式基本型（法蘭直結型）
Vertical type (Flange direct coupling)

AV (M) 型



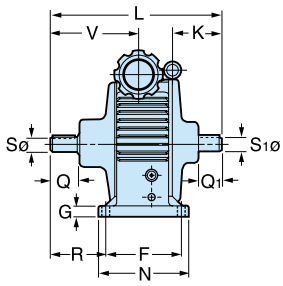


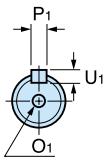


型式 Model	B	C	H	I	V	LA	LB	LC	LE	LG	LN	LZ	出力軸尺寸 Output shaft size					AV (Kg)
													S (h6)	Q	P	U	O	
02AV(M)	110	66	198	153	99	110	130	160	3.5	10	4	10	11	23	5	5	M5	8.5
05AV(M)	138	87	220	174	110	110	130	160	3.5	12	4	12	14	30	5	5	M5	15
1AV(M)	152	103	251	205	129	130	165	200	3.5	12	4	12	19	40	6	6	M6	22
2AV(M)	190	120	295	241	157	130	165	200	4	16	4	15	24	50	8	7	M8	37
$\frac{3}{5}$AV(M)	220	147	357	295	187	180	215	250	4	16	4	15	28	60	8	7	M8	68 72

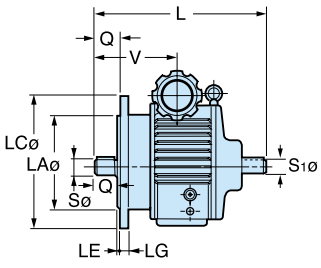
雙軸型 *Dual shafts Type*

AK 型





AVK 型



型式 Model	L	K	出力軸尺寸 Output shaft size				
			S_1 (h6)	Q_1	P_1	U_1	O_1
02 $^{A}_{AV}$K	205 200	77	14 11	30 25	5	5	M5
05 $^{A}_{AV}$K	210	69	14	30	5	5	M5
1 $^{A}_{AV}$K	261	89	19	40	6	6	M6
2 $^{A}_{AV}$K	331	112	24	50	8	7	M8
$\frac{3}{5}$ $^{A}_{AV}$K	391	134	28	60	8	7	M8

以上數值若有變動，恕不另行通知 We reserve the right to change without further notice.

東力小型 齒輪、渦輪減速變速馬達

先進尖端的品質，精確控制機器自動化的命脈

DNV ISO-9001 國際品質保證 CE (EMC)認證通過

臥式、立式齒輪減速馬達
Horizontal/Vertical type gear motor

CE/EMC approved
馬力(Horsepower):
0.1kw-3.7kw
減速比(Ratio):
1/3-1/1800

無段變速齒輪馬達
Speed control gear motor

齒輪減速馬達
Gear motor

馬力(Horsepower):
6w-150w
減速比(Ratio):
1/3-1/1800

直線型馬達
Linear gear motor

推力(Thrust): 1kg-140kg
基本速度(Strock Speed): 1-50 mm/sec
長度(Length): 100~600mm

電磁制動馬達
Electromagnetic brake motor

馬力(Horsepower): 6-150w
減速比(Ratio): 1/3-1/1800

中空渦輪減速機
Hollow-worm gear motor

馬力(Horsepower): 40w-2200w
減速比(Ratio): 1/5-1/180

軸上型減速機 (直交軸型)
Shaft-Mounted Reducer

Model: TL-4060, 4070, 5080
減速比(Ratio): 1/30~1/300
馬力(Horsepower): 100w-1500w

TRS低間隙伺服馬達專用減速機 (歐系規格)
Low backlash planetary gear reducer for servo motor

機種(Mode)l :
042, 060, 090, 115, 142, 180
馬力(Horsepower): 50w-5000w
減速比(Ratio): 3-100

TRK低間隙伺服馬達專用減速機 (日系規格)
Low backlash planetary gear reducer for servo motor

機種(Type): TRK-B.C.D.E.F
馬力(Horsepower): 50w-5000w
減速比(Ratio): 3-25

無段變速機
Variable Speed control motor

馬力(Horsepower):
0.2kw-3.7kw
變速範圍(Speed range):
200rpm-1200rpm

遊星式減速機
Planetary Reducer

馬力(Horsepower): 1/2HP-150HP
減速比齊全

東 力

東 力 電 機 股 份 有 限 公 司

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2012/05