



TUNYO

M 系列 齒 輪 減 速 馬 達
M Series Hleical Gear Motor

M 系列 直 角 減 速 馬 達
M Series RT • RC Gear Motor

M 系列 蝸 輪 減 速 馬 達
M Series RV Gear Motor

M 系列 直 綫 減 速 馬 達
M Series Lingar Gear Motor

M 系列 力 矩 減 速 馬 達
M Series Torque Gear Motor

M 系列交流馬達使用手冊

M Series Motor Specification Hand Book

TUNYO ELECTRONICS INDUSTRY CO.,LTD

品質成就領先 技術服務社會

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*本公司產品因不斷改進，尺寸如有變動恕不另行通知，詳情請聯系本公司。

* Our company's products always develop in time, if there are some changes about size, we will not inform you again. So please contact us.

馬達特性概要 Motor characteristics

1. 高密封性:馬達出力部配置油封與O型環,防止齒輪箱潤滑脂回流,造成馬達絕緣老化損壞。
2. 高效率:採用新型沖壓矽鋼片模具設計,鐵心精度高,導磁性能佳,馬達外形採用新型散熱結構設計,散熱快,效率高,溫升低。
3. 特性佳:馬達特性優化設計,將S-T(轉速~轉矩)特性最佳化,適合各種運轉環境。
4. 客戶化:公司擁有自行研發設計,可接受客戶委託設計特殊性能、規格的馬達。

齒輪減速器概要 Gear head characteristics

本公司生產的齒輪減速器,採用高精度螺旋齒輪,並配以油封、O型圈,密封式齒輪箱體。採用潤滑浴潤方式,滾珠軸承傳動,具有噪聲低、使用壽命長、體積小、效率高等特點。

注意事項 Ters need attention

按正確的方法接線

Connect wire in right way

馬達不宜長時間空載運行或超負荷低速運行及堵轉(馬達轉速 $\geq 300r/min$),以免溫升過高。

Don't run no-load long time, run over load in low speed or locked motor to avoid excess temperature.

馬達測速機引出線不可用力拖拉,以免拉斷內部線圈。

Don't drag the expansion line of tachogenerator.

已裝配好的齒輪減速器不要隨便拆裝,以免灰塵進入或齒輪嚙合不好產生噪音。

Don't disassemble or assemble the assembled gear head to prevent the bad noise.

馬達和齒輪減速器的出軸與負載連接時不能重力敲打、擠壓,以免造成內部變形移位,產生嚴重噪聲或卡死現象。

Don't beat or squeeze when connect the gear head extend axle to load to avoid the phenomena of bad noise or locked dead that caused by deformation and diallocation

交流馬達通用技術條件 General specification for AC motors

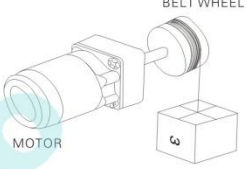
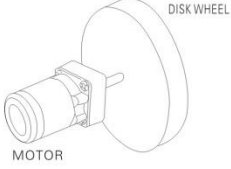
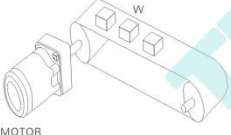
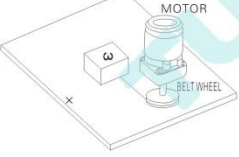
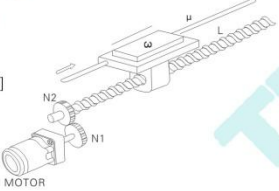
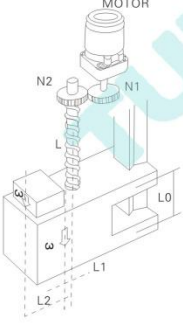
項目Items	內容contents
絕緣電阻 Insulation resistance	馬達導電部分對機殼的冷態絕緣電阻不低於100MΩ Colc insulation resistance of the motor conductive part to the housing is no less than 100MΩ
絕緣介電強度 Insulation dielectric strength	額定電壓 $\leq 60V$,馬達導電部分與機殼能承受500V歷時1min的耐壓試驗而不擊穿,額定電壓 $>60V$,能承受1500V歷時1min的耐壓試驗而不擊穿 Insulation Dielectric strength: the conductive part and the housing of the motor withstand 500v Lasting 1 min. for pressure proof experiment but can not be punctured, when the rated voltage $\leq 60V$; the conductive part and the housing of the motor withstand 1500V lasting 1 min for pressure proof experiment but can not be punctured, when the rated voltage $>60V$
溫度上升 Temperature rise	運轉馬達後,用電阻法來測量時,繞組繞組溫度的上升數值 $\leq 75K$ The temperature rise should be lower than $\leq 75K$ measured by resistance method when the motor is working
絕緣等級 Insulation class	B級(130°C) Class B(130°C)
使用溫度 Using temperature	-10°C~+40°C(無冰凍) -10°C~+40°C(No freeze)
使用濕度 Using humidity	85%以下(沒有結露的場所) $\leq 85\%$ (Place without dew)

減速機傳動效率 Transmision efficiency of the gear reducers

規格 Type	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							81%									73%									66%
3GN							81%									73%									66%
4GN							81%									73%									66%
5GN							81%									73%									66%
5GU							81%									73%									66%
6GU							81%									73%									66%

馬達容量計算方法 Capacity calculation method of the motor

- 1、求馬達所需的容量時，如下列標示，此處為一般的基本式。
- 2、實際使用時應考慮到加速時，巨大的瞬間負荷所需的動力，或者設計上的安全，電壓的變化所造成的影響之後，再選擇馬達。

(1) 卷起荷重物時 $Pg = \frac{\omega v}{6.12} \times \frac{100}{\eta} [w]$ ω: 荷重[kgf] V: 速度[m/min] η: 效率[%] 	(2) 驅動慣性體時 $Pg = 1.027nT [W]$ Gd^2 包括回轉體的圓輪效果 $T = \frac{Gd^2}{375} \times \frac{n}{T} (kg/m \times 10^2)$ n: 回轉數[rpm] T: 轉距[kg·m] Gd^2: 飛輪效率[kg·m²] t: 時間[sec] 
(3) 皮帶輸送時 $Pg = (p1 + p2 + p3) \times \frac{100}{\eta} [w]$ 無負荷動力 $p1 = 9.8 \mu \omega VL [w]$ $\text{水平動力 } p2 = \frac{\mu QL}{367} [w]$ $\text{垂直動力 } p3 = \pm \frac{QH}{367} [w]$ L: 運送帶的長度[m] ω: 環狀帶的比量[kgf/m] μ: 摩擦係數 V: 環狀帶的速度[m/sec]  Q: 運送量[kgf/h] η: 效率[%] Q: 傾斜運送機的兩端高低差[m]	(4) 把接觸面水平移動時 $Pg = \frac{\mu \omega v}{6.12} [w]$ ω: 荷重[kgf] V: 速度[m/min] μ: 摩擦係數 Pg: 所需動力[W] 
(5) 驅動導螺桿時 1) 水平移動時 $Pg = (P1 + P2) [W]$ 外部負荷 $P1 = 1.027N2k \frac{(F + \mu \omega)}{2\pi \eta} [w]$ 預壓負荷 $P2 = 1.027N2k \frac{Fao.L}{2\pi} [w]$ F: 切削力[kgf] ω: 工作質量 + 工作臺質量[kgf/m] μ: 滾動裝置的摩擦係數[0.01] L: 導螺桿的LEAD[m] η: 導螺桿效率[0.9] Fao: 預壓荷重[kgf] K: 預壓螺帽的內部摩擦係數[0.1-0.3] $N2$: 導螺桿的回旋速度[r/min] 	(6) 上下移動時 $Pg = (P1 + P2) [W]$ 在此，外部負荷 $P1 = 1.027N2 \frac{(F + \mu \omega)L}{2\pi \eta} [w]$ $W = \frac{\omega_1 L_1 + \omega_2 L_2}{L_0} [kgf]$ 預壓負荷 $P2 = 1.027N2k \frac{Fao.L}{2\pi} [w]$ ω_1: 工作質量 ω_2: 工作臺質量 $L1$: 導螺桿中心與工作重心的距離[m] $L2$: 導螺桿中心與工作重心的距離[m] $L0$: 工作臺腳之間的距離[m] μ: 滾動裝置的摩擦係數 L: 導螺桿的LEAD[m] Fao: 預壓荷重 K: 預壓螺帽的內部摩擦係數[0.1-0.3] $N2$: 導螺桿的回旋速度[r/min] η: 導螺桿效率[0.9] 

M 系列交流馬達特性與技術資料 M Series AC Motor Characteristics

減速機用詞概要 Terminology for the gear reducers

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 4W - 40W 使用→(輕負荷請選含油軸承; 重負荷請選滾珠軸承)。

GU 型→配合 60W - 250W 使用 (GU 型全部使用滾珠軸承)。

2. 減速機配合馬達之出力轉矩計算方式: 轉矩.....TG = TM × i × 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

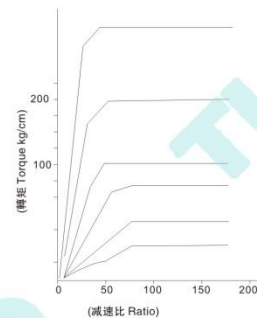
3. 最大容許轉矩(下圖)

減速機之出力轉矩因減速機比大而增大, 但因受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 × i × n = 1.9 × 100 × 0.66 = 125.4 kg-cm

如右圖所示 *A4GN100K 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 80kg-cm。

4. 容許懸吊荷重及容許推力荷重(下圖)減速機之出力軸使用在鏈條, 齒輪或皮帶等傳動機械上, 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。



減速機最大允許負載 Maximum allowable load of reducer

規格 TYPE	減速比 Ratio	最大容許轉矩 (kg-cm)	容許推力荷重(kg)		容許懸吊荷重 (kg)
			在軸前端10mm處	在軸前端20mm處	
2GN □ K	3~18	25	5	8	3
	20~180		12	18	
3GN □ K	3~18	50	8	12	4
	20~180		15	25	
4GN □ K	3~18	80	10	15	5
	20~180		20	30	
5GN □ K	3~18	100	25	35	10
	20~180		30	45	
5GU □ K	3~10	200	40	50	15
	12.5~18		45	60	
	20~180		50	70	
6GU □ K	3~10	450	60	80	20
	12.5~18		70	90	
	20~180		80	100	

常用的公式集 Frequently used formula

欲知的條件 Intended Conditions		已知的條件 Known Conditions		公式 Formula	
扭力 (Torque)	T1	動力 (F) 與半徑 (R)/ 馬力 (Hp) 與回轉數 (N)(r.p.m)		T=F × R	(Kgf-m)
扭力 (Torque)	T2	動力 (Kw) 與回轉數 (N)(r.p.m)/ 扭力 (T) 與回轉數 (N)(r.p.m)		T=(716 × Hp)/N	(Kgf-m)
扭力 (Torque)	T3	扭力 (T) 與回轉數 (N)(r.p.m)/ 重力 (F) 與速度 (V)(m/sec)		T=(974 × Kw)/N	(Kgf-m)
馬力 (Horse power)	Hp	重力 (F) 與速度 (V)(m/sec)/ 齒輪, 皮帶輪等的直徑 (D) 與回轉數 (N)(r.p.m)		Hp=(T × N)/716.2	(馬力)
動力 (Power)	Kw	入力回轉數 (N1) 與出力回轉數 (N2)		Kw=(T × N)/974	(千瓦)
馬力 (Horse power)	Hp	Power(F)&Radius(R)/aahorse piwer(Hp)&Revolution(N)(r.p.m)		Hp=(F × V)/75	(馬力)
動力 (Power)	Kw	Power(Kw)&Revolution(N)(r.p.m)/Torque(T)&Revdolution(N)(r.p.m)		Kw=(F × V)/102	(千瓦)
速度 (Velocity)	V	Torque(T)&Revolution(N)(r.p.m)/N(r.p.m)/Gravity(F)&Velocity(V)(m/sec)		V=(p × D × N)/60	(m/sec)
減速比 (Reducton Ratio)	i	Gravity(F)&Velocity(V)(m/sec)		I=N1/M2	
		Diameter(D)of gear and belt pulley & revolution			
		(N)(r.p.m)Input shaft revolution(N1)&Output/shaft revolution(N2)			

M 系列交流馬達型號解說

M Series AC Motor General Information

馬達型號解說 General information of motors



裝置尺寸
Dimension of device
M2: □60mm
M3: □70mm
M4: □80mm
M5: □90mm
M6: □104mm
M7: □120mm

RK:標準馬達
Helical Motor
TK:力矩馬達
Torque Motor

功率 Power: 4W
6W 140W
15W 160W
25W 180W
40W 200W
60W 250W
90W 300W
120W 400W

調速馬達
Speed Control Motor

A:單出圓形軸
Single shaft
B:雙出圓形軸
Double shaft
GN:斜齒輪軸
Bevel gear shaft
(6, 15, 25, 40, 60W)
GU:加強型斜齒輪軸
Fortified bevel gear shaft
(60-400W)

M:附電磁剎車
With Electronic brake
Z:附阻尼盤
With damper
F:附風葉
With Fan
K:附接線盒
With terminal box
H:安裝支架
With brackets
T:過熱保護裝置
Thermally protected
FS:防水電機
Waterproof Motor
GW:高溫電機
Temperature resis-
-tant Motor

A:單相 Single Phase 110V
C:單相 Single Phase 220V
S:三相 3- Phase 220V
S3:三相 3- Phase 380V
S4:三相 3- Phase 440V

減速機型號解說 General information of gearhead



5 GN - 100 - K

裝置尺寸
Dimension of device
2: □60mm
3: □70mm
4: □80mm
5: □90mm
6: □104mm
7: □120mm

GN:斜齒輪軸 Bevel gear shaft
(4-120W)
GU:加強型斜齒輪軸
Fortified bevel gear shaft
(60-400W)

100:減速比
Ratio 1:100
減速比範圍: 1:3 ~ 5000

K:標準減速機
Helical gear head
X:中間減速機
Middel gear head
RC:直角中空減速機
RC gear head
RT:直角中實減速機
RT gear head

M 系列交流馬達調速器 M Series AC Motor Speed controller

型號解說 General information

US: 無段調速器
No-step variable speed
UX: 數顯調速器
No-step variable speed
SS: 分體式調速器
Split type speed
FS: 分體式調速器
Split type speed

US 40 - 002

功率Power: 4W
6W 140W
15W 160W
25W 180W
40W 200W
60W 250W
90W 300W
120W 400W

001:單相 Single Phase
100V-110V
002:單相 Single Phase
200V-220V



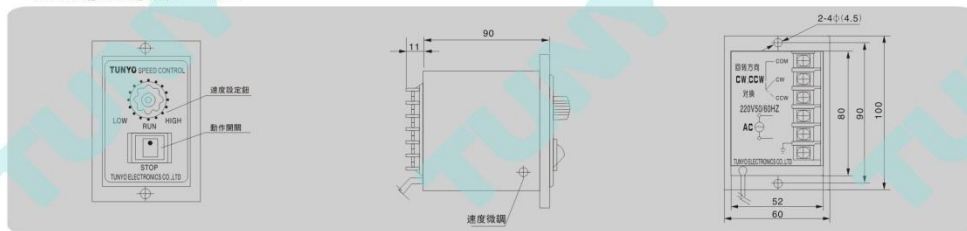
◆ 主要技術參數

- ◎ 輸出功率: $\leq 400W$
- ◎ 電源電壓: $110 \pm 10\%V, 60Hz$
 $220 \pm 10\%V, 50Hz$
- ◎ 電流: $< 6A$
- ◎ 工作環境: 溫度 $-10^{\circ}C \sim +50^{\circ}C$

單相電子調速器，採用PD比例調節器，電流負反饋技術，具有運轉平穩、起動迅速、調速範圍寬、控制精度高、壽命長、耗能低等特點，可實現恆力矩無極調速。調速器採用隔離電源，可與微機連接，實行遠程調速控制。

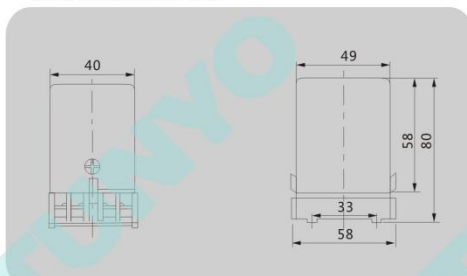
US.UX安裝尺寸 Installation size US.UX

US.UX適用馬達功率4~400W

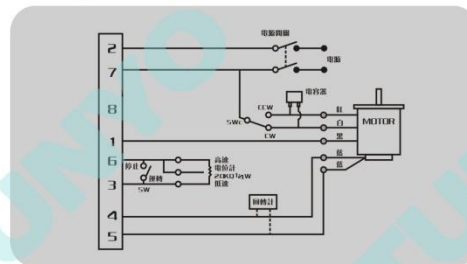


SS安裝尺寸 Installation size SS

SS型適用馬達功率4~40W

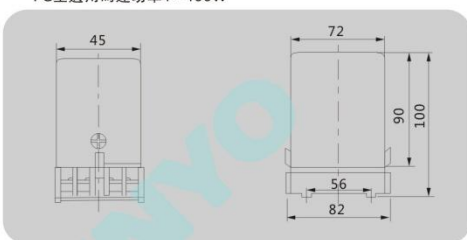


接線圖 Wiring diagram

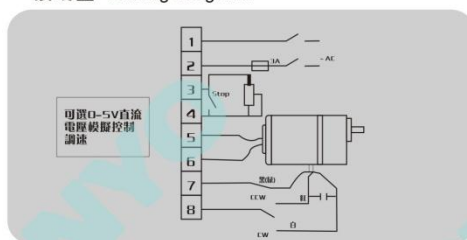


FS安裝尺寸 Installation size FS

FS型適用馬達功率4~400W



接線圖 Wiring diagram



M 系列齒輪減速馬達 M Series Precision Gear Motor

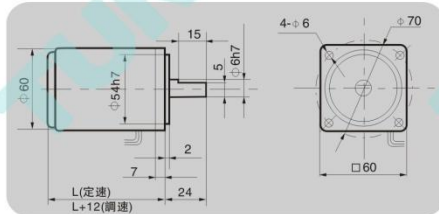


馬達參數 Specifications

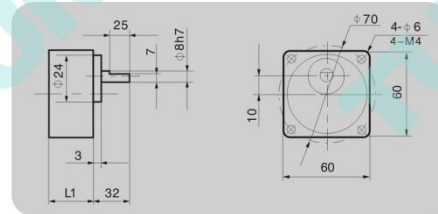
名稱 Name	極數 No. of p	型號 Type	功率 Power w	電壓 Voltage v	頻率 Frequency Hz	電流 Current A	啟動轉矩 Starting torque mN·m	額定轉矩 Rated torque mN·m	額定轉速 Rated speed r/min	電容 Capacitor μF/VAC
單相馬達 Single phase motors	4	M2RK4-C	4	220	50/60	0.10	40	30.6	1250/1550	0.8/450
		M2RK4-A	4	110	50/60	0.20	40	30.6	1250/1550	3/250
		M2RK6-C	6	220	50/60	0.12	70	46	1250/1550	0.8/450
		M2RK6-A	6	110	50/60	0.24	70	46	1250/1550	3/250
		M2RK10-C	10	220	50/60	0.15	90	76.4	1250/1550	1/450
		M2RK10-A	10	110	50/60	0.30	90	76.4	1250/1550	4/250

外型尺寸 External dimension

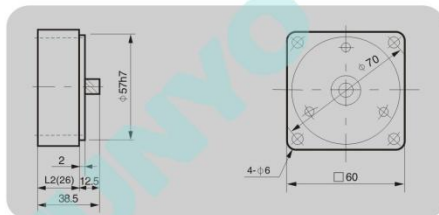
◆ 馬達 MOTOR



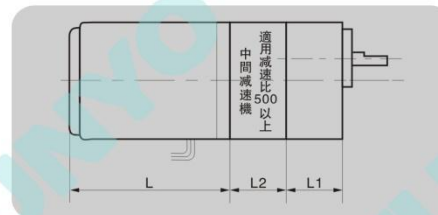
◆ 齒輪減速機 GEAR HEAD 2GN-□K



◆ 中間減速機 DECIMAL GEAR HEAD 2GN-10X



◆ 齒輪減速馬達 GEAR MOTOR



型號Type	L	減速比	L1
M2RK4	62	3-20	32
M2RK6	75		
M2RK10	75	20-500	40

帶減速器後允許負載 Load permissible with speed reducer

同步轉速: r/min	500	400	300	250	200	150	120	100	80	75	60	50	40	35	30	25	20	16	15	12	10	8	3
減速比: Gear reduction ratio	3	3.6	5	6	7.5	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	500
4W N·m	0.1	0.12	0.20	0.24	0.3	0.36	0.45	0.54	0.67	0.72	0.90	1.1	1.28	1.46	1.52	1.63	1.8	2.2	2.2	2.2	2.2	2.2	2.2
6W N·m	0.16	0.2	0.26	0.32	0.4	0.48	0.60	0.72	0.89	0.96	1.20	1.46	1.70	1.94	2.02	2.17	2.40	2.90	2.90	2.90	2.90	2.90	2.90
10W N·m	0.26	0.33	0.43	0.53	0.66	0.81	0.99	1.21	1.48	1.61	1.99	2.42	2.82	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90	2.90

表列數字是根據馬達同步運轉的轉速，在額定負載情況下實際輸出轉速為同步運轉轉速的80%-98%。淺灰色表示輸出軸運轉方向與馬達轉向相同，白色欄表示輸出方向與馬達轉向相反

Note: Speed figures are based on synchronous speed. The actual output speed, under rated torque conditions, is about 2~20% less than synchronous speed, a grey background indicates output shaft of geared motor rotates in the same direction as output shaft of motor. A white background indicates rotation in the opposite direction.

M 系列齒輪減速馬達 M Series Precision Gear Motor

M3

齒輪減速(調速)馬達

單相110V-220V

70MM

齒輪箱 3GN-□K

15W / 20W

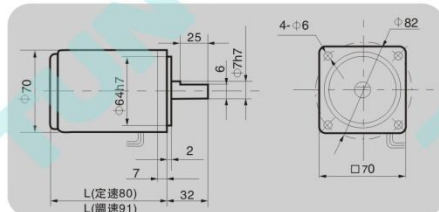


馬達參數 Specifications

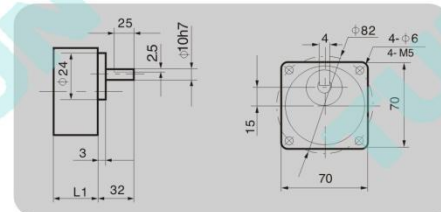
名稱 Name	極數 No. of p	型號 Type	功率 Power w	電壓 Voltage v	頻率 Frequency Hz	電流 Current A	啟動轉矩 Starting torque mN·m	額定轉矩 Rated torque mN·m	額定轉速 Rated speed r/min	電容 Capacitor uF/AC
單相馬達 Single phase motors	4	M3RK15-C	15	220	50/60	0.20	115	115	1250/1550	1.5/450
		M3RK15-A	15	110	50/60	0.40	115	115	1250/1550	6/250
		M3RK20-C	20	220	50/60	0.25	170	160	1250/1550	1.8/450
		M3RK20-A	20	110	50/60	0.50	170	160	1250/1550	7/250

外型尺寸 External dimension

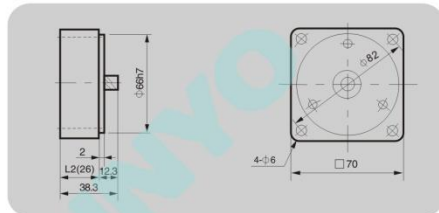
◆ 馬達 MOTOR



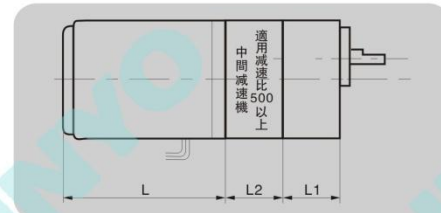
◆ 齒輪減速機 GEAR HEAD 3GN-□K



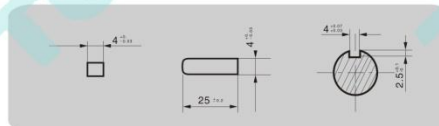
◆ 中間減速機 DECIMAL GEAR HEAD 3GN-10X



◆ 齒輪減速馬達 GEAR MOTOR



◆ 鍵 KEY



型號 Type	減速比 Reduction ratio	L1 mm
M3RK15	1:3 ~ 1:20	32
M3RK20	1:25 ~ 1:180	42

帶減速器後允許負載 Load permissible with speed reducer

同步轉速: r/min	500	400	300	250	200	150	120	100	80	75	60	50	40	35	30	25	20	16	15	12	10	8	3
減速比: Gear reduction ratio	3	3.6	5	6	7.5	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	500
允許負載 15W N·m	0.28	0.35	0.47	0.56	0.7	0.93	1.10	1.40	1.75	1.86	2.10	2.50	3.0	3.40	3.80	4.40	4.90	4.90	4.90	4.90	4.90	4.90	4.90
允許負載 20W N·m	0.37	0.47	0.63	0.74	0.93	1.37	1.46	1.86	2.33	2.47	2.79	3.33	3.99	4.52	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90	4.90

表列數字是根據馬達同步運轉的轉速，在額定負載情況下實際輸出轉速為同步運轉轉速的80%-98%。淺灰色表示輸出軸運轉方向與馬達轉向相同，白色欄表示輸出方向與馬達轉向相反

Note: Speed figures are based on synchronous speed. The actual output speed, under rated torque conditions, is about 2~20% less than synchronous speed. A grey background indicates output shaft of geared motor rotates in the same direction as output shaft of motor. A white background indicates rotation in the opposite direction.

M 系列齒輪減速馬達 M Series Precision Gear Motor

M4

齒輪減速(調速)馬達

單相110V/220V三相220V/380V

80MM

齒輪箱 4GN-□K

25W / 30W

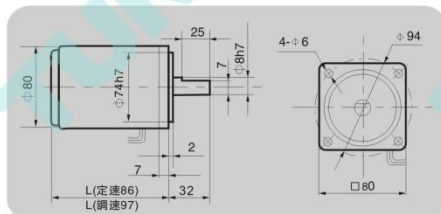


馬達參數 Specifications

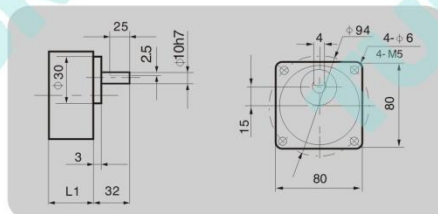
名稱 Name	極數 No. of p.	型號 Type	功率 Power w	電壓 Voltage v	頻率 Frequency Hz	電流 Current A	啟動轉矩 Starting torque mNm	額定轉矩 Rated torque mNm	額定轉速 Rated speed rpm	電容 Capacitor μF/AC
單相馬達 Single Phase Motor	4	M4RK25-C	25	220	50/60	0.30	195	191	1250/1550	2/450
		M4RK25-A	25	110	50/60	0.60	195	191/154	1250/1550	8/250
		M4RK30-C	30	220	50/60	0.35	240	235	1250/1550	2.5/450
		M4RK30-A	30	110	50/60	0.70	240	235	1250/1550	10/250
三相馬達 Three-phase Motor	4	M4RK25-S	25	220	50/60	0.25	195	191/154	1300/1550	/
		M4RK25-S ₂	25	380	50/60	0.15	195	191/154	1300/1550	/
		M4RK30-S	30	220	50/60	0.30	240	235	1300/1550	/
		M4RK30-S ₂	30	380	50/60	0.20	240	235	1300/1550	/

外型尺寸 External dimension

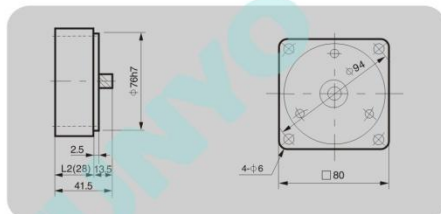
◆ 馬達 MOTOR



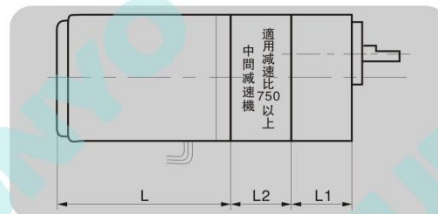
◆ 齒輪減速機 GEAR HEAD 4GN-□K



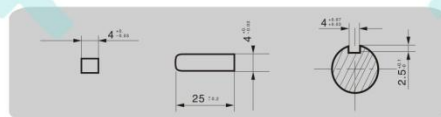
◆ 中間減速機 DECIMAL GEAR HEAD 4GN-10X



◆ 齒輪減速馬達 GEAR MOTOR



◆ 鍵 KEY



型號 Type	減速比 Reduction ratio	L1 mm
M4RK25	1:3 ~ 1:20	32
M4RK30	1:25 ~ 1:180	44

帶減速器後允許負載 Load permissible with speed reducer

同步轉速 r/min	500	400	300	250	200	150	120	100	80	75	60	50	40	35	30	25	20	16	15	12	10	8	2
減速比 Gear reduction ratio	3	3.6	5	6	7.5	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	750
允許負載 Permissible load	25W	N.m	0.45	0.55	0.78	0.90	1.15	1.55	1.86	2.25	2.60	2.78	3.43	4.15	4.90	5.57	6.50	7.8	7.8	7.8	7.8	7.8	7.8
允許負載 Permissible load	30W	N.m	0.54	0.66	0.94	1.08	1.38	1.86	2.23	2.7	3.1	3.34	4.08	4.98	5.88	6.68	7.8	8	8	8	8	8	8

表列數字是根據馬達同步運轉的轉速，在額定負載情況下實際輸出轉速為同步運轉轉速的80%~98%。淺灰色表示輸出軸運轉方向與馬達轉向相同，白色欄表示輸出方向與馬達轉向相反

Note: Speed figures are based on synchronous speed. The actual output speed, under rated torque conditions, is about 2~20% less than synchronous speed. A grey background indicates output shaft of geared motor rotates in the same direction as output shaft of motor. A white background indicates rotation in the opposite direction.

M 系列齒輪減速馬達 M Series Precision Gear Motor

M5

齒輪減速(調速)馬達

單相110V/220V三相220V/380V

90MM

齒輪箱 5GN-□K

40W

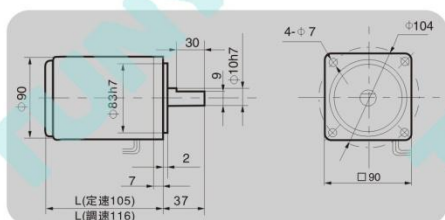


馬達參數 Specifications

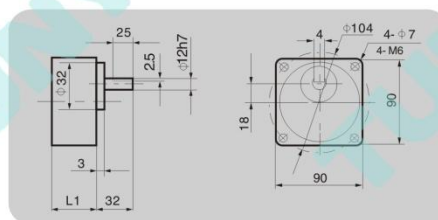
名稱 Name	極數 No. of p	型號 Type	功率 Power w	電壓 Voltage v	頻率 Frequency Hz	電流 Current A	啟動轉矩 Starting torque mN.m	額定轉矩 Rated torque mN.m	額定轉速 Rated speed r/min	電容 Capacitor μF/VAC
單相馬達 Single Phase Motor	4	M5RK40-C	40	220	50/60	0.50	294	294	1250/1550	3/450
		M5RK40-A	40	110	50/60	1.0	294/246	294/246	1250/1550	12/250
三相馬達 Three phase Motor	4	M5RK40-S	40	220	50/60	0.35	392	294/246	1300/1550	/
		M5RK40-S ₂	40	380	50/60	0.20	392	294/246	1300/1550	/

外型尺寸 External dimension

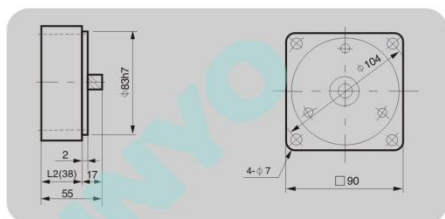
◆ 馬達 MOTOR



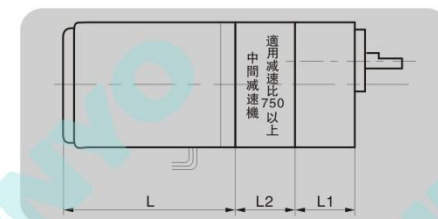
◆ 齒輪減速機 GEAR HEAD 5GN-□K



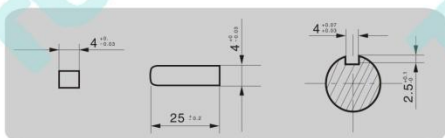
◆ 中間減速機 DECIMAL GEAR HEAD 5GN-10X



◆ 齒輪減速馬達 GEAR MOTOR



◆ 鍵 KEY



型號 Type	減速比 Reduction ratio	L1 mm
M5RK40	1:3 ~ 1:20	43
	1:25 ~ 1:180	61

帶減速器後允許負載 Load permissible with speed reducer

同步轉速: r/min	500	400	300	250	200	150	120	100	80	75	60	50	40	35	30	25	20	16	15	12	10	8	2
減速比: Gear reduction ratio	3	3.6	5	6	7.5	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	750
允許負載 Permissible load	40W	N.m	0.72	0.85	1.18	1.40	1.76	2.35	2.90	3.50	3.85	4.20	5.40	6.40	7.50	8.50	9.80	9.80	9.80	9.80	9.80	9.80	9.80

表列數字是根據馬達同步運轉的轉速，在額定負載情況下實際輸出轉速為同步運轉轉速的80%-98%。淺灰色表示輸出軸運轉方向與馬達轉向相同，白色欄表示輸出方向與馬達轉向相反

Note: Speed figures are based on synchronous speed. The actual output speed, under rated torque conditions, is about 2~20% less than synchronous speed. A grey background indicates output shaft of geared motor rotates in the same direction as output shaft of motor. A white background indicates rotation in the opposite direction.

M 系列齒輪減速馬達 M Series Precision Gear Motor

M5 齒輪減速(調速)馬達
 單相110V/220V三相220V/380V
 90MM 齒輪箱 5GN/5GU
 60W

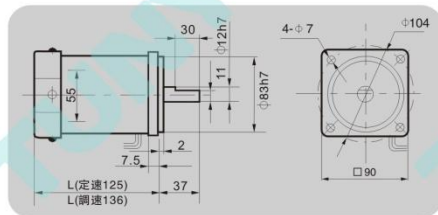


馬達參數 Specifications

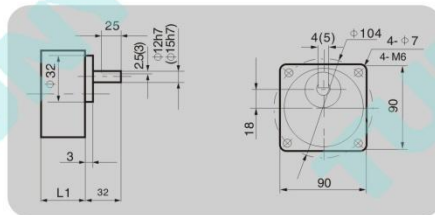
名稱 Name	極數 No. of p	型號 Type	功率 Power w	電壓 Voltage v	頻率 Frequency Hz	電流 Current A	啟動轉矩 Starting torque mN·m	額定轉矩 Rated torque mN·m	額定轉速 Rated speed r/min	電容 Capacitor μF/VAC
單相馬達 Single Phase Motor	4	M5RK60-C	60	220	50/60	0.65	441	441	1250/1550	4/450
		M5RK60-A	60	110	50/60	1.30	441/372	441/372	1250/1550	20/250
三相馬達 Three-phase Motor	4	M5RK60-S	60	220	50/60	0.50	637	441/372	1300/1550	/
		M5RK60-S ₂	60	380	50/60	0.30	637	441/372	1300/1550	/

外型尺寸 External dimension

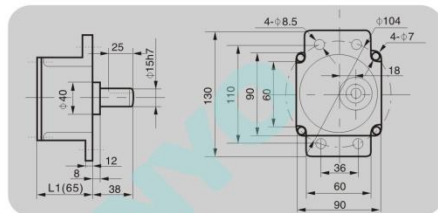
馬達 MOTOR



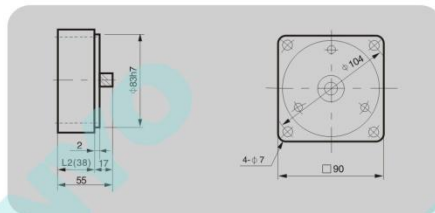
齒輪減速機 GEAR HEAD 5GN-□K



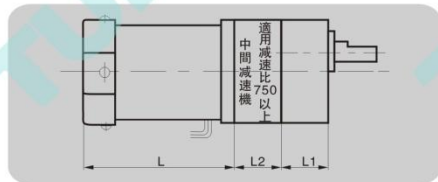
齒輪減速機 GEAR HEAD 5GU-□K



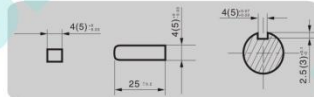
中間減速機 DECIMAL GEAR HEAD 5GN-10X



齒輪減速馬達 GEAR MOTOR



鍵 KEY



型號 Type	減速比 Reduction ratio	L1 mm
M5RK60	1:3 ~ 1:20	43
	1:25 ~ 1:180	61

帶減速器後允許負載 Load permissible with speed reducer

同步轉速: r/min	500	400	300	250	200	150	120	100	80	75	60	50	40	35	30	25	20	16	15	12	10	8	2
減速比: Gear reduction ratio	3	3.6	5	6	7.5	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	750
允許負載: 60W N·m	1.08	1.20	1.78	1.96	2.60	3.50	4.40	4.90	6.40	7.0	8.0	9.60	11.5	12.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7

表列數字是根據馬達同步運轉的轉速，在額定負載情況下實際輸出轉速為同步運轉轉速的80%-98%。淺灰色表示輸出軸運轉方向與馬達轉向相同，白色欄表示輸出方向與馬達軸轉向相反

Note: Speed figures are based on synchronous speed. The actual output speed, under rated torque conditions, is about 2~20% less than synchronous speed. A grey background indicates output shaft of geared motor rotates in the same direction as output shaft of motor. A white background indicates rotation in the opposite direction.

M Series Precision Gear Motor



90MM

单相110V/220V三相220V/380V

齿轮箱 5GN/5GU

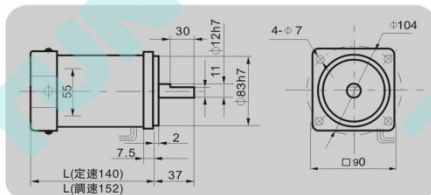
90 W – 120 W

馬達參數 Specifications

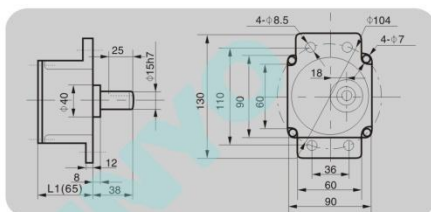
名稱 Name	極數 No. of p	型號 Type	功率 Power w	電壓 Voltage v	頻率 Frequency Hz	電流 Current A	啟動轉矩 Starting torque n·m	額定轉矩 Rated torque n·m	額定轉速 Rated speed rpm	電容 Capacitor μF/AC
單相馬達 Single Phase Motor	4	M5RK90-C	90	220	50/60	1.1	637	670	1250/1550	6/450
		M5RK90-A	90	110	50/60	2.2	637	670/554	1250/1550	25/250
		M5RK120-C	120	220	50/60	1.25	880	880	1250/1550	8/450
		M5RK120-A	120	110	50/60	2.5	880	880/739	1250/1550	35/250
三相馬達 Three-phase motor	4	M5RK90-S	90	220	50/60	0.75	950	670/554	1300/1550	/
		M5RK90-S _Δ	90	380	50/60	0.45	950	670/554	1300/1550	/
		M5RK120-S	120	220	50/60	1.0	1250	880/739	1300/1550	/
		M5RK120-S _Δ	120	380	50/60	0.6	1250	880/739	1300/1550	/

外型尺寸 External dimension

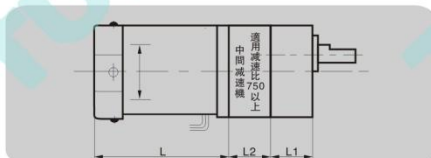
◆馬達 MOTOR



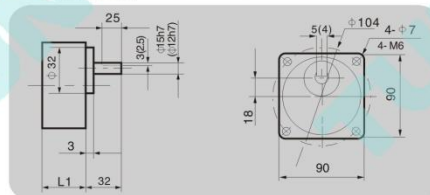
◆ 齒輪減速機 GEAR HEAD 5GU-□K



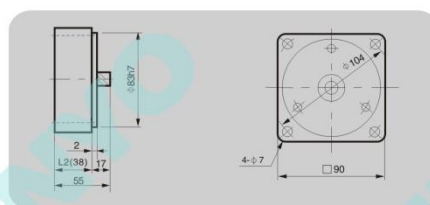
◆ 齒輪減速馬達 GEAR MOTOR



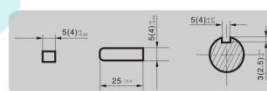
◆ 齒輪減速機 GEAR HEAD 5GN-□K



◆ 中間減速機 DECIMAL GEAR HEAD 5GN-10X



◆ 鍵 KEY



型號 Type	減速比 Reduction ratio	L1 mm
M5RK90	1:3 ~ 1:20	43
M5RK120	1:25 ~ 1:180	61

帶減速器後允許負載 Load permissible with speed reducer

[illegible]

表列數字是根據馬達同步運轉的轉速，在額定負載情況下實際輸出轉速為同步運轉轉速的80%-98%。淺灰色表示輸出軸運轉方向與馬達轉向相同，白色欄表示輸出方向與馬達轉向相反

Note: Speed figures are based on synchronous speed. The actual output speed, under rated torque conditions, is about 2 ~ 20% less than synchronous speed, a grey background indicates output shaft of geared motor rotates in the same direction as output shaft of motor. A white background indicates rotation in the opposite direction.

M 系列齒輪減速馬達 M Series Precision Gear Motor

M6

齒輪減速(調速)馬達

單相110V/220V三相220V/380V

104MM

齒輪箱 6GU-□K

120W-140W-160W

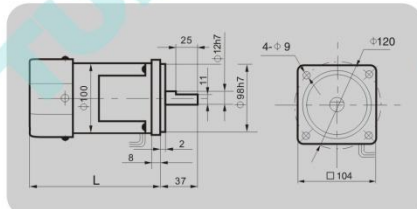


馬達參數 Specifications

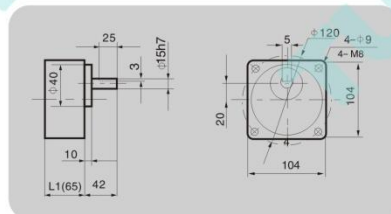
名稱 Name	極數 No. of p	型號 Type	功率 Power w	電壓 Voltage v	頻率 Frequency Hz	電流 Current A	啟動轉矩 Starting torque mN.m	額定轉矩 Rated torque mN.m	額定轉速 Rated speed rpm	電容 Capacitor μF/VAC
單相馬達 Single Phase Motor	4	M6RK120-C	120	220	50/60	1.2	881	881	1250/1550	8/450
		M6RK120-A	120	110	50/60	2.3	881	881/739	1250/1550	35/250
		M6RK140-C	140	220	50/60	1.4	1029	1029	1250/1550	10/450
		M6RK140-A	140	110	50/60	2.6	1029	1029/862	1250/1550	40/250
		M6RK160-C	160	220	50/60	1.5	830	1163	1250/1550	12/450
		M6RK160-A	160	110	50/60	2.9	830	1163	1250/1550	50/250
三相馬達 Three-phase motor	4	M6RK120-S	120	220	50/60	1.0	1250	880	1300/1550	/
		M6RK120-S ₂	120	380	50/60	0.6	1250	880	1300/1550	/
		M6RK140-S	140	220	50/60	0.83	1470	1029	1300/1550	/
		M6RK140-S ₂	140	380	50/60	0.48	1470	1029	1300/1550	/
		M6RK160-S	160	220	50/60	0.88	1660	1163/1000	1300/1550	/
		M6RK160-S ₂	160	380	50/60	0.50	1660	1163/1000	1300/1550	/

外型尺寸 External dimension

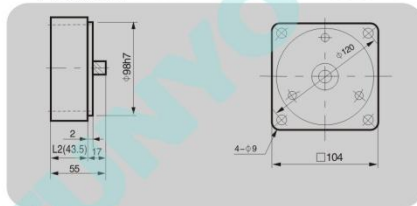
馬達 MOTOR



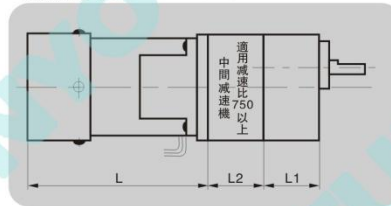
齒輪減速機 GEAR HEAD 6GU-□K



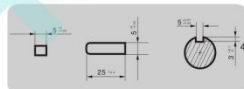
中間減速機 DECIMAL GEAR HEAD 6GU-10X



齒輪減速馬達 GEAR MOTOR



鍵 KEY



型號 Type	L (定速)	L (調速)
M6RK120	142	153
M6RK140	162	173
M6RK160	162	173

帶減速器後允許負載 Load permissible with speed reducer

同步轉速: r/min	500	400	300	250	200	150	120	100	80	75	60	50	40	35	30	25	20	16	15	12	10	8	2
減速比: Gear reduction ratio	3	3.6	5	6	7.5	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	750
允許負載 Permissible	120W N.m	2.16	2.56	3.52	4.28	5.35	7.0	8.80	10.4	11.5	13.0	16.0	19.0	22.8	25.0	31.0	35.0	42.0	44.0	44.0	44.0	44.0	44.0
	140W N.m	2.48	3.0	4.16	5.0	6.25	7.5	9.4	11.5	13.5	15.0	18.4	22.0	26.0	29.3	34.0	40.7	44.0	44.0	44.0	44.0	44.0	44.0
	160W N.m	2.68	3.3	4.6	5.6	7.0	9.6	12.1	14.2	15	17.5	22	26.5	32.5	36.5	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0

表列數字是根據馬達同步運轉的轉速，在額定負載情況下實際輸出轉速為同步運轉轉速的80%-98%。淺灰色表示輸出軸運轉方向與馬達轉向相同，白色欄表示輸出方向與馬達轉向相反

Note: Speed figures are based on synchronous speed. The actual output speed, under rated torque conditions, is about 2~20% less than synchronous speed. A grey background indicates output shaft of geared motor rotates in the same direction as output shaft of motor. A white background indicates rotation in the opposite direction.

M 系列齒輪減速馬達 M Series Precision Gear Motor

M6 齒輪減速(調速)馬達
單相110V/220V三相220V/380V
104MM 齒輪箱 6GU-□K
180W-200W-250W

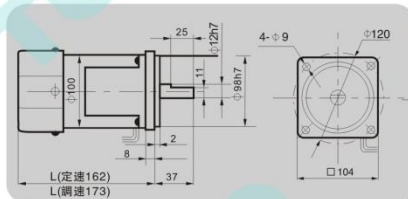


馬達參數 Specifications

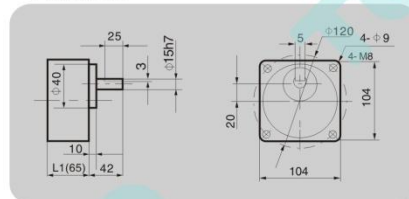
名稱 Name	極數 No. of p	型號 Type	功率 Power w	電壓 Voltage v	頻率 Frequency Hz	電流 Current A	啟動轉矩 Starting torque mN·m	額定轉矩 Rated torque mN·m	額定轉速 Rated speed r/min	電容 Capacitor uF/VAC
單相馬達 Single Phase Motor	4	M6RK180-C	180	220	50/60	1.7	998	1273	1250/1550	12/450
		M6RK180-A	180	110	50/60	3.5	998	1273/1074	1250/1550	50/250
		M6RK200-C	200	220	50/60	2.0	1085	1415	1250/1550	14/450
		M6RK200-A	200	110	50/60	4.0	1085	1415/1194	1250/1550	60/250
		M6RK250-C	250	220	50/60	2.2	1200	1600	1250/1550	16/450
		M6RK250-A	250	110	50/60	4.5	1200	1600	1250/1550	80/250
三相馬達 Three-phase motor	4	M6RK180-S	180	220	50/60	1.38	1820	1273/1074	1350/1550	/
		M6RK180-S ₂	180	380	50/60	0.98	1820	1273/1074	1350/1550	/
		M6RK200-S	200	220	50/60	1.45	2020	1415/1194	1350/1550	/
		M6RK200-S ₂	200	380	50/60	1.05	2020	1415/1194	1350/1550	/
		M6RK250-S	250	220	50/60	1.7	2500	1600	1350/1550	/
		M6RK250-S ₂	250	380	50/60	1.3	2500	1600	1350/1600	/

外型尺寸 External dimension

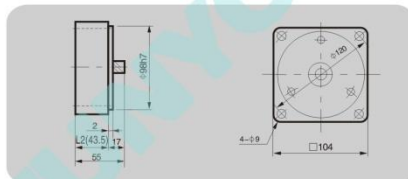
◆ 馬達 MOTOR



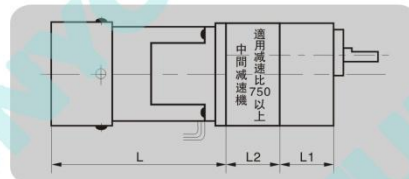
◆ 齒輪減速機 GEAR HEAD 6GU-□K



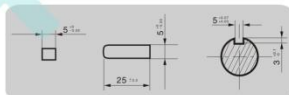
◆ 中間減速機 DECIMAL GEAR HEAD 6GU-10X



◆ 齒輪減速馬達 GEAR MOTOR



◆ 鍵 KEY



帶減速器後允許負載 Load permissible with speed reducer

同步轉速: r/min	500	400	300	250	200	150	120	100	80	75	60	50	40	35	30	25	20	16	15	12	10	8	2
減速比: Gear reduction ratio	3	3.6	5	6	7.5	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	750
180W N·m	3.0	3.60	5.0	6.0	7.73	10.3	12.8	15.4	16.7	18.7	23.0	27.8	33.4	37.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
200W N·m	3.43	4.10	5.73	6.85	8.60	11.46	14.3	17.1	18.6	20.6	25.8	30.8	36.8	41.3	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0
250W N·m	4.36	4.80	6.58	7.67	9.55	12.91	15.6	18.8	20.9	22.1	28.3	33.2	39.9	43.6	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0

表列數字是根據馬達同步運轉的轉速，在額定負載情況下實際輸出轉速為同步運轉轉速的80%-98%。淺灰色表示輸出軸運轉方向與馬達轉向相同，白色欄表示輸出方向與馬達轉向相反

Note: Speed figures are based on synchronous speed. The actual output speed under rated torque conditions is about 2~20% less than synchronous speed. A grey background indicates output shaft of geared motor rotates in the same direction as output shaft of motor. A white background indicates rotation in the opposite direction.

M 系列齒輪減速馬達 M Series Precision Gear Motor

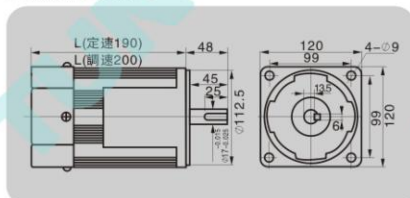


馬達參數 Specifications

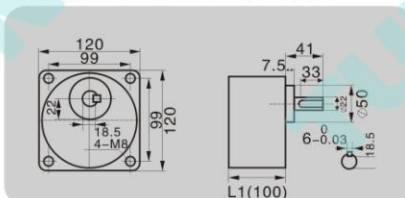
名稱 Name	極數 No. of p	型號 Type	功率 Power w	電壓 Voltage v	頻率 Frequency Hz	電流 Current A	啟動轉矩 Starting torque mN.m	額定轉矩 Rated torque mN.m	額定轉速 Rated speed r/min	電容 Capacitor μF/VAC
單相馬達 Single Phase Motor	4	M7RK400-C	400	220	50/60	2.7	2400	2700	1300	16/450
		M7RK400-A	400	110	50/60	5.7	2400	2700	1300	60/250
三相馬達 Three-phase motor	4	M7RK400-S	400	220	50/60	3.0	7200	2700	1300	/
		M7RK400-S3	400	380	50/60	1.5	7200	2700	1300	/

外型尺寸 External dimension

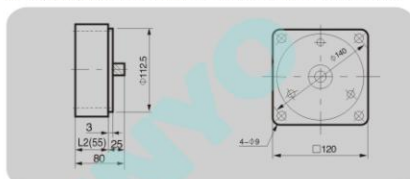
◆ 馬達 MOTOR



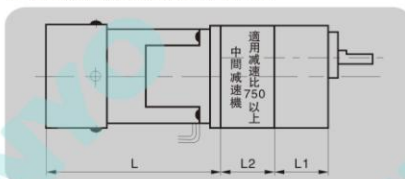
◆ 齒輪減速機 GEAR HEAD 7GU-□K



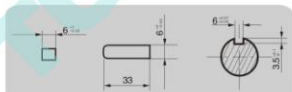
◆ 中間減速機 DECIMAL GEAR HEAD 7GU-10X



◆ 齒輪減速馬達 GEAR MOTOR



◆ 鍵 KEY



帶減速器後允許負載 Load permissible with speed reducer

同步轉速: r/min	500	400	300	250	200	150	120	100	80	75	60	50	40	35	30	25	20	16	15	12	10	8	2
減速比: Gear reduction ratio	3	3.6	5	6	7.5	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	750
允許負載 Permissible load 400W/ N.m	5.9	7.1	9.9	11.9	14.9	19.8	24.8	26.7	32.1	35.7	44.6	53.5	57.8	64.2	67.8	80.3	120	120	120	120	120	120	120

表列數字是根據馬達同步運轉的轉速，在額定負載情況下實際輸出轉速為同步運轉轉速的80%-98%。淺灰色表示輸出軸運轉方向與馬達轉向相同，白色欄表示輸出方向與馬達轉向相反

Note: Speed figures are based on synchronous speed. The actual output speed, under rated torque conditions, is about 2~20% less than synchronous speed, a grey background indicates output shaft of geared motor rotates in the same direction as output shaft of motor. A white background indicates rotation in the opposite direction.

M 系列交流馬達型號解說 M Series AC Motor General Information

馬達型號解說 General information of motors



裝置尺寸
Dimension of device
M2: □60mm
M3: □70mm
M4: □80mm
M5: □90mm
M6: □104mm
M7: □120mm

RK:標準馬達
Helical Motor
TK:力矩馬達
Torque Motor

功率 Power: 4W
6W 140W
15W 160W
25W 180W
40W 200W
60W 250W
90W 300W
120W 400W

調速馬達
Speed Control Motor

A:單出圓形軸
Single shaft
B:雙出圓形軸
Double shaft
GN:斜齒輪軸
Bevel gear shaft
(6, 15, 25, 40, 60W)
GU:加強型斜齒輪軸
Fortified bevel gear shaft
(60-400W)

M:附電磁剎車
With Electronic brake
Z:附阻尼盤
With damper
F:附風葉
With Fan
K:附接線盒
With terminal box
H:安裝支架
With brackets
T:過熱保護裝置
Thermally protected
FS:防水電機
Waterproof Motor
GW:高溫電機
Temperature resis-
-tant Motor

A:單相 Single Phase 110V
C:單相 Single Phase 220V
S:三相 3- Phase 220V
S3:三相 3- Phase 380V
S4:三相 3- Phase 440V

減速機型號解說 General information of gearhead



裝置尺寸
Dimension of device
2: □60mm
3: □70mm
4: □80mm
5: □90mm
6: □104mm
7: □120mm

GN:斜齒輪軸 Bevel gear shaft
(4-120W)
GU:加強型斜齒輪軸
Fortified bevel gear shaft
(60-400W)

100:減速比
Ratio 1:100
減速比範圍:1:3 ~ 5000

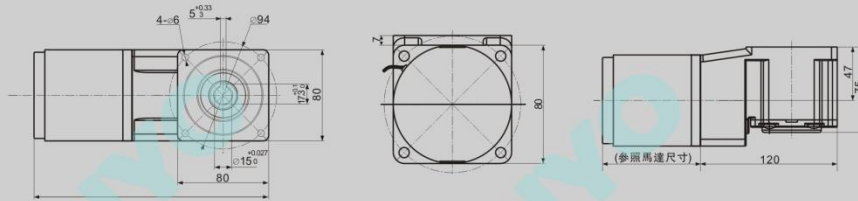
K:標準減速機
Helical gear head
X:中間減速機
Middel gear head
RC:直角中空減速機
RC gear head
RT:直角中實減速機
RT gear head

M系列直角減速馬達 M Series Gear Motor

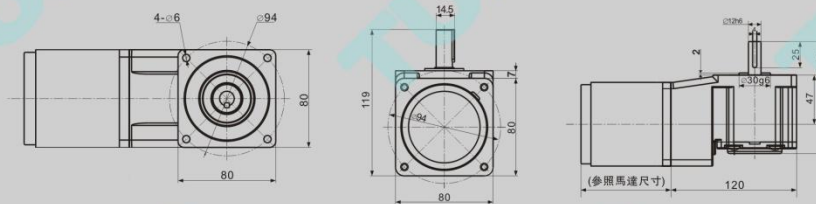
M4 直角減速(調速)馬達
 單相110V/220V 三相220V/380V
 齒輪箱 4GN-□RC·RT
 25W-30W



直角中空減速馬達 RC geared motor



直角中實減速馬達 RT geared motor



中間減速機 Decimal gear head



扭矩表 Gear head-torque table(kg-cm)

$\text{kg.cm} \times 9.8 \div 100 = \text{N.m}$

同步轉速:r/min		500	300	200	150	120	100	75	60	50	30	20	15	10	7.5	6	5	3
減速比 Gear reduction ratio	50Hz	3	5	7.5	10	12.5	15	20	25	30	50	75	100	150	200	250	300	500
	60Hz	3.6	6	9	12.5	15	18	25	30	36	60	90	120	180	250	300	360	600
允許負載 permissible load	25W kg-cm	4	6.7	10	13.3	16	20	26.7	32	39	65	80	80	80	80	80	80	80
	30W kg-cm	4.8	8	12	16	20	24	32	38	46	76	80	80	80	80	80	80	80

M系列直角減速馬達 M Series Gear Motor

M5

直角減速(調速)馬達

單相110V/220V 三相220V/380V

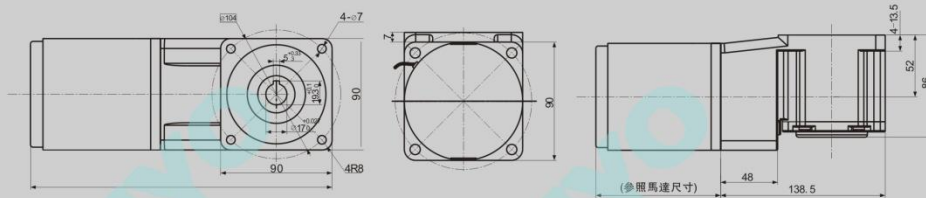
90MM

齒輪箱 5GN-RC·RT

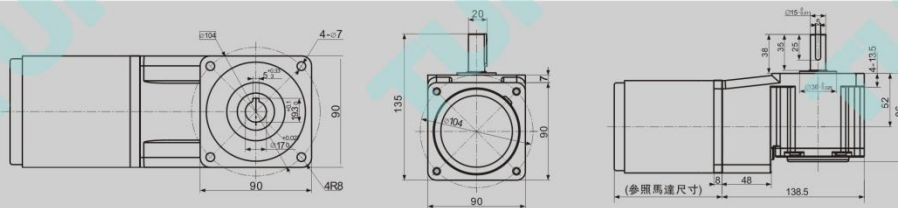
40W-60W-90W-120W



直角中空減速馬達 RC geared motor



直角中實減速馬達 RT geared motor



中間減速機 Decimal gear head



扭矩表 Gear head-torque table(kg-cm)

kg.cm $\times 9.8 \div 100 = \text{N.m}$

同步轉速:r/min		500	300	200	150	120	100	75	60	50	30	20	15	10	7.5	6	5	3
減速比 Gear redcuton ratio	50Hz	3	5	7.5	10	12.5	15	20	25	30	50	75	100	150	200	250	300	500
	60Hz	3.6	6	9	12.5	15	18	25	30	36	60	90	120	180	250	300	360	600
允許負載 permissible load	40W	kg·cm	6.7	11	16	21.3	28	33	42	54	65	108	150	150	150	150	150	150
	60W	kg·cm	10	16	24	32	40	48	64	77	93	150	150	150	150	150	150	150
	90W	kg·cm	14	23	35	46	58	69	92	110	133	200	200	200	200	200	200	200
	120W	kg·cm	18.7	30.7	46	61	77	92	123	147	177	200	200	200	200	200	200	200

M系列直角減速馬達 M Series Gear Motor

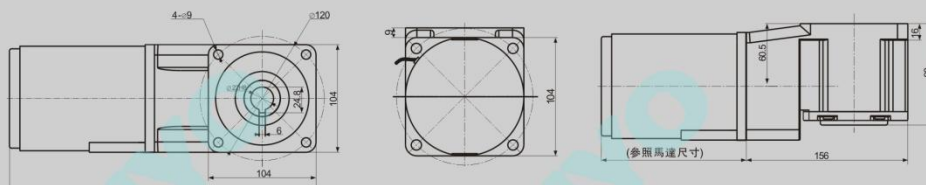
直角減速(調速)馬達

单相110V/220V三相220V/380V

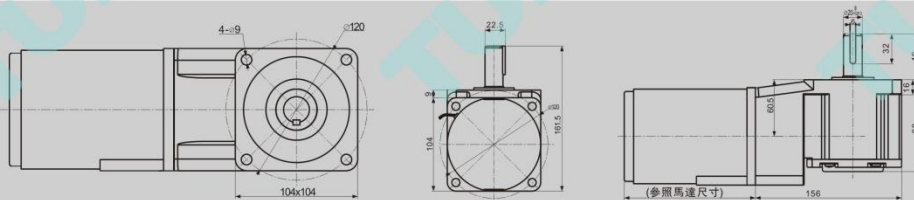
齿轮箱 6GU-□RC·RT
120W-140W-160W



直角中空減速馬達 RC geared motor



直角中實減速馬達 RT geared motor



中間減速機Decimal gear head



扭矩表 Gear head-torque table(kg-cm)

$$\text{kg.cm} \times 9.8 \div 100 = \text{N.m}$$
[illegible]

M系列直角減速馬達 M Series Gear Motor

☐ 104MM

单相110V/220V三相220V/380V

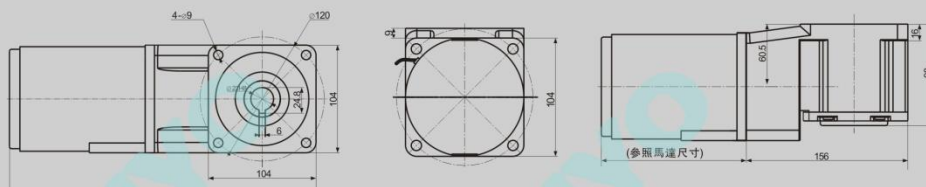
单相110V/220V三相220V/380V

齿轮箱 6GU-□RC·RT

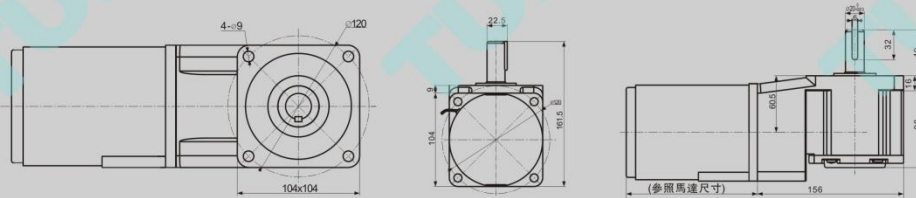
180W-200W-250W



直角中空減速馬達 RC geared motor



直角中實減速馬達 RT geared motor



中間減速機Decimal gear head



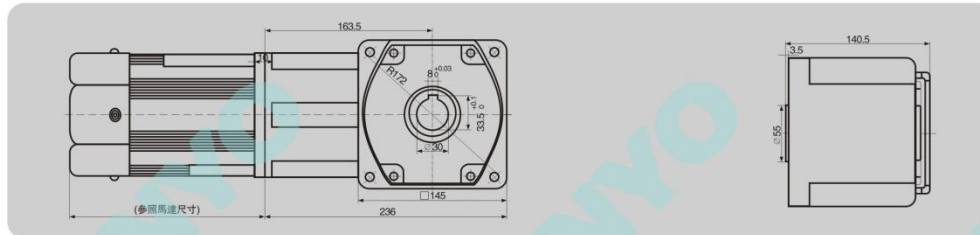
扭矩表 Gear head-torque table(kg-cm)

$$\text{kg.cm} \times 9.8 \div 100 = \text{N.m}$$
[illegible]

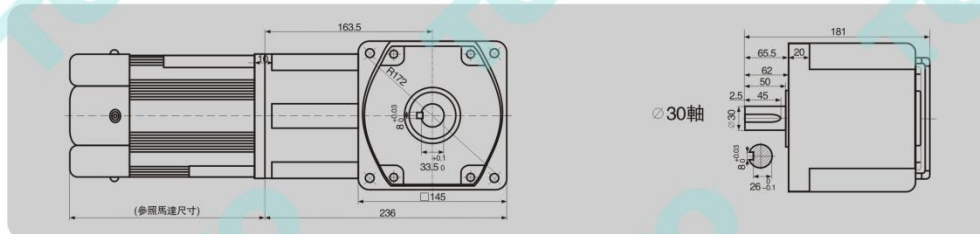
M系列直角減速馬達 M Series Gear Motor



直角中空減速馬達 RC geared motor



直角中實減速馬達 RT geared motor



中間減速機Decimal gear head



扭矩表 Gear head-torque table(kg-cm)

kg.cm $\times$ 9.8 $\div$ 100=N.m

同步轉速:r/min		500	300	200	150	120	100	75	60	50	30	20	15	10	7.5	6	5	3
減速比 Gear redcutio ratio	50Hz	3	5	7.5	10	12.5	15	20	25	30	50	75	100	150	200	250	300	500
	60Hz	3.6	6	9	12.5	15	18	25	30	36	60	90	120	180	250	300	360	600
允許負載 permissible load	400W	kg-cm	59	71	149	198	248	267	357	446	535	678	1230	1230	1230	1230	1230	1230

M系列直角減速馬達 M Series Gear Motor

M8

直角減速(調速)馬達

單相110V/220V三相220V/380V

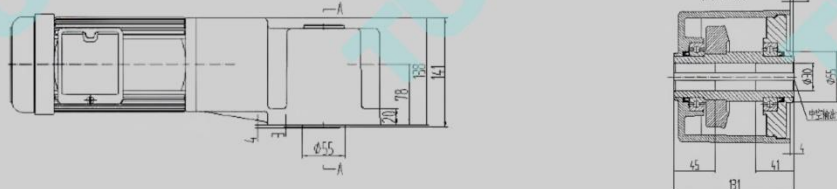
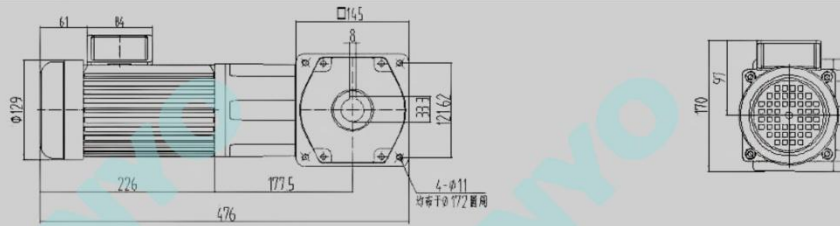
145MM

齒輪箱 8GU-RC·RT

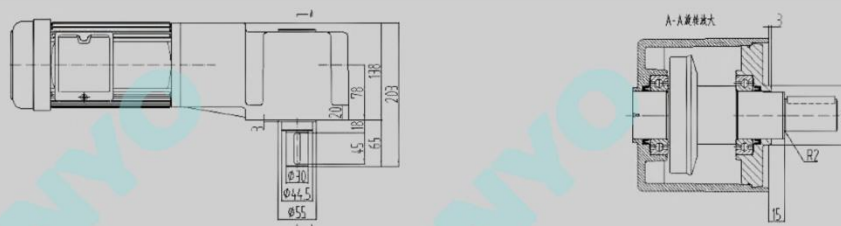
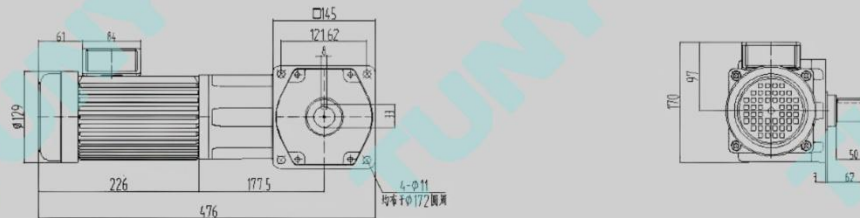
750W



直角中空減速馬達 RC geared motor



直角中實減速馬達 RT geared motor



M 系列力矩馬達型號解說 M Series AC Motor General Information

型號說明 Type description

TX

名稱代號
TX (數顯式)
TS (內置式)

40

功率: 3W
6W 60W
10W 90W
20W 120W
40W 150W

002

電機代號
001-單相110V
002-單相220V



減速機型號解說 General information of gearhead



5

裝置尺寸
Dimension of device
2: □60mm
3: □70mm
4: □80mm
5: □90mm
6: □104mm

GN - 100 - K

GN: 斜齒輪軸 Bevel gear shaft
(4~120W)
GU: 加強型斜齒輪軸
Fortified bevel gear shaft
(60~400W)

100: 減速比
Ratio 1:100
減速比範圍: 1:3 ~ 5000

K: 標準減速機
Helical gear head
X: 中間減速機
Middle gear head
RC: 直角中空減速機
RC gear head
RT: 直角中實減速機
RT gear head

馬達型號解說 General information of motors



M5 TK 40 GN - C - M

裝置尺寸
Dimension of device
M2: □60mm
M3: □70mm
M4: □80mm
M5: □90mm
M6: □104mm

TK: 力矩馬達
Torque Motor

功率:
Power 3W
6W 60W
10W 90W
20W 120W
40W 150W

A: 單出圓形軸
Single shaft
B: 雙出圓形軸
Double shaft
GN: 斜齒輪軸
Bevel gear shaft
(6, 15, 25, 40, 60W)
GU: 加強型斜齒輪軸
Fortified bevel gear shaft
(60~400W)

M: 附電磁剎車
With Electronic brake
Z: 附阻尼盤
With damper
F: 附風葉
With Fan
K: 附接線盒
With terminal box
H: 安裝支架
With brackets
T: 過熱保護裝置
Thermally protected
FS: 防水電機
Waterproof Motor
GW: 高溫電機
Temperature resis-
-tant Motor

A: 單相 Single Phase 110V
C: 單相 Single Phase 220V

M 系列力矩減速馬達 M Series Torque Gear Motor

馬達特性表110V List of motor characteristics 110V

馬達型號 Model of Motor 光軸馬達 Motor 減速馬達 gear Motor	額定時間 DUTY	電壓 Voltage	頻率 Frequency	起動轉矩 Starting Torque		最大出力時電流 Current at Ultimate Output	最大出力 Ultimate Output	最大出力時轉速 Speed at Ultimate Output	最大出力時轉矩 Torque at Ultimate Output		電容器 Capacitor
		V	Hz	Kgf·cm	N·m	A	W	rpm	Kgf·cm	N·m	
M2TK-3W	S MIN	110	50	0.70	0.069	0.42	3.2	750	0.42	0.041	7.0/250
	連續 CONT	60		0.26	0.025	0.16	1.2		0.16	0.016	
M3TK-6W	S MIN	110	60	0.70	0.069	0.47	3.2	900	0.38	0.037	6.0/250
	連續 CONT	60		0.26	0.025	0.30	1.2		0.11	0.011	
M4TK-10W	S MIN	110	50	1.37	0.134	0.45	6.0	750	0.82	0.080	8.0/250
	連續 CONT	60		0.69	0.068	0.37	2.5		0.37	0.036	
M5TK-20W	S MIN	110	60	1.37	0.134	0.45	6.5	900	0.76	0.074	7.0/252
	連續 CONT	60		0.69	0.068	0.35	2.8		0.31	0.030	
M5TK-40W	S MIN	110	50	2.40	0.235	0.70	10	750	1.30	0.127	10.0/250
	連續 CONT	60		0.75	0.074	0.45	3.0		0.47	0.046	
M6TK-60W	S MIN	110	60	2.30	0.225	0.67	10	900	1.30	0.127	8.0/250
	連續 CONT	60		0.70	0.069	0.43	3.0		0.39	0.038	
M6TK-90W	S MIN	110	50	3.70	0.363	0.92	20	750	2.90	0.224	15.0/250
	連續 CONT	60		1.40	0.137	0.58	6.0		0.78	0.076	
M6TK-120W	S MIN	110	60	3.00	0.294	0.85	26	900	2.20	0.216	12.0/250
	連續 CONT	60		1.10	0.108	0.52	6.0		0.65	0.064	
M6TK-150W	S MIN	110	50	6.40	0.627	1.98	40	750	5.20	0.510	30/250
	連續 CONT	60		2.50	0.274	0.98	15		1.95	0.191	
M6TK-200W	S MIN	110	60	7.70	0.755	1.98	40	900	5.06	0.490	30/250
	連續 CONT	60		3.50	0.343	1.12	15		1.84	0.180	
M6TK-250W	S MIN	110	50	8.60	0.84	2.6	60	750	7.80	0.76	35/250
	連續 CONT	60		4.20	0.41	1.56	22		3.10	0.3	
M6TK-300W	S MIN	110	60	9.60	0.94	2.44	60	900	7.50	0.735	35/250
	連續 CONT	60		5.10	0.5	1.46	22		2.80	0.274	
M6TK-350W	S MIN	110	50	12.0	1.18	4	90	750	10.0	0.98	40/250
	連續 CONT	60		6.30	0.62	2.4	33		4.10	0.4	
M6TK-400W	S MIN	110	60	13.0	1.27	3.8	90	900	11.0	1.08	40/250
	連續 CONT	60		7.0	0.69	2.3	33		4.50	0.44	
M6TK-450W	S MIN	110	50	16.0	1.55	5	120	750	15.0	1.47	50/250
	連續 CONT	60		8.50	0.83	3	45		5.20	0.509	
M6TK-500W	S MIN	110	60	17.0	1.67	4.8	120	900	14.5	1.42	50/250
	連續 CONT	60		9.0	0.88	2.9	45		6.50	0.637	
M6TK-550W	S MIN	110	50	20.0	1.96	6	150	750	17.4	1.7	60/250
	連續 CONT	60		9.50	0.93	4	60		9.0	0.88	
M6TK-600W	S MIN	110	60	21.0	2.0	5.8	150	900	16.0	1.57	60/250
	連續 CONT	60		11.0	1.0	3.5	60		8.0	0.78	

馬達特性表220V List of motor characteristics 220V

馬達型號 Model of Motor 光軸馬達 Motor 減速馬達 gear Motor	額定時間 DUTY	電壓 Voltage	頻率 Frequency	起動轉矩 Starting Torque		最大出力時電流 Current at Ultimate Output	最大出力 Ultimate Output	最大出力時轉速 Speed at Ultimate Output	最大出力時轉矩 Torque at Ultimate Output		電容器 Capacitor
		V	Hz	Kgf·cm	N·m	A	W	rpm	Kgf·cm	N·m	
M2TK-3W	S MIN	220	50	0.70	0.069	0.20	3.2	750	0.42	0.041	1.5/450
	連續 CONT	140		0.26	0.025	0.14	1.2		0.16	0.016	
M3TK-6W	S MIN	220	60	0.70	0.069	0.20	3.2	900	0.38	0.037	1.2/450
	連續 CONT	140		0.26	0.025	0.14	1.2		0.11	0.011	
M4TK-10W	S MIN	220	50	1.37	0.134	0.23	6.0	750	0.82	0.080	2.0/450
	連續 CONT	140		0.69	0.068	0.17	2.5		0.37	0.036	
M5TK-20W	S MIN	220	60	1.37	0.134	0.23	6.5	900	0.76	0.074	1.5/450
	連續 CONT	140		0.69	0.068	0.17	2.8		0.31	0.030	
M5TK-40W	S MIN	220	50	2.70	0.265	0.41	10	750	1.30	0.127	2.5/450
	連續 CONT	140		1.00	0.098	0.26	3.0		0.47	0.046	
M6TK-60W	S MIN	220	60	2.30	0.225	0.38	10	900	1.30	0.127	2.0/450
	連續 CONT	140		0.92	0.090	0.25	3.0		0.39	0.038	
M6TK-90W	S MIN	220	50	3.70	0.363	0.44	20	750	2.90	0.224	3.5/450
	連續 CONT	140		1.40	0.137	0.29	6.0		0.78	0.076	
M6TK-120W	S MIN	220	60	3.00	0.294	0.45	26	900	2.20	0.216	3.0/450
	連續 CONT	140		1.10	0.108	0.34	6.0		0.65	0.064	
M6TK-150W	S MIN	220	50	6.40	0.627	0.95	40	750	5.20	0.510	6.0/450
	連續 CONT	140		2.80	0.274	0.49	15		1.95	0.191	
M6TK-200W	S MIN	220	60	7.70	0.755	0.99	40	900	5.06	0.490	6.0/450
	連續 CONT	140		3.50	0.343	0.56	15		1.84	0.180	
M6TK-250W	S MIN	220	50	8.60	0.84	2.6	60	750	7.80	0.76	10/450
	連續 CONT	140		4.20	0.41	1.56	22		3.10	0.3	
M6TK-300W	S MIN	220	60	9.60	0.94	2.44	60	900	7.50	0.735	10/450
	連續 CONT	140		5.10	0.5	1.46	22		2.80	0.274	
M6TK-350W	S MIN	220	50	12.0	1.18	4	90	750	10.0	0.98	12/450
	連續 CONT	140		6.30	0.62	2.4	33		4.10	0.4	
M6TK-400W	S MIN	220	60	13.0	1.27	3.8	90	900	11.0	1.08	12/450
	連續 CONT	140		7.0	0.69	2.3	33		5.0	0.44	
M6TK-450W	S MIN	220	50	16.0	1.55	5	120	750	15.0	1.47	14/450
	連續 CONT	140		8.50	0.83	3	45		5.20	0.509	
M6TK-500W	S MIN	220	60	17.0	1.67	4.8	120	900	14.5	1.42	14/450
	連續 CONT	140		9.0	0.88	2.9	45		5.0	0.637	
M6TK-550W	S MIN	220	50	20.0	1.96	6	150	750	17.4	1.7	16/250
	連續 CONT	140		9.50	0.93	4	60		9.0	0.88	
M6TK-600W	S MIN	220	60	21.0	2.0	5.8	150	900	16.0	1.57	16/250
	連續 CONT	140		11.0	1.0	3.5	60		8.0	0.78	

M 系列力矩減速馬達 M Series Torque Gear Motor

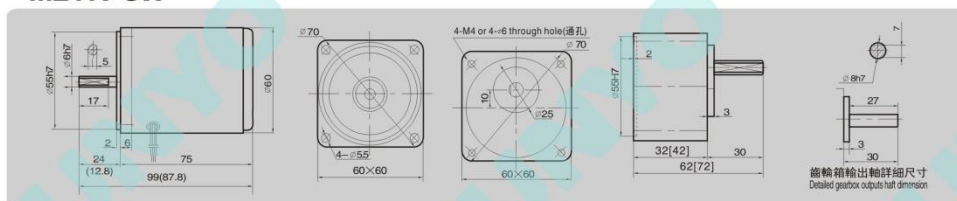
力矩马达特征 Torque motor character

1. 力矩馬達能輸出較大的起動力矩，尤其是在低速運轉或堵轉時，均可保持穩定的運轉；
2. 調速範圍寬廣：馬達力矩同電壓成正比，只要改變輸入電壓即可調速；
3. 適用於卷繞作業：以固定力矩運轉卷取定速度的物體時，若卷軸直徑增大至2倍，則馬達的輸出力矩也增大至2倍，而馬達轉速則減半；作業時須保持速度一比例關係；
4. 可用於堵轉作業：力矩馬達的設計不同於感應，可逆馬達，具有在堵轉狀態或近堵轉的低速運轉時也可保持穩定轉矩的設計特點，一般適用於頂住工作物需要靜止力矩的作業。此外，（也適合通常為堵轉運轉而工程最終階段使馬達呈堵轉狀態的用途，運轉使用時的電壓為60V（110V標準）、140V（220V適合）。使用60V或140V以上的電壓時為短時間額定，110V、220V時則為5分鐘額定；（注：堵轉運轉時，輸出力矩將變的很大，請勿使力矩值超過過速機之容許力矩值。此外，請勿切斷電路，否則會因摩擦作用力過大而損壞過速機。）
5. 可作為制動使用：馬達在輸出力矩時的制動效果，可作為制動使用。此外，也可透過直流電磁鐵行固定力矩控制。

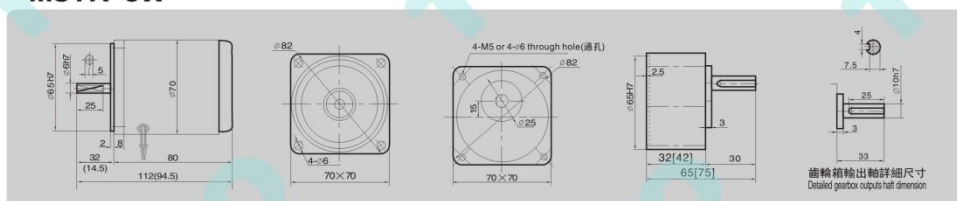


馬達尺寸Motor dimension (可匹配標準、直角、蝸輪、直線減速機)

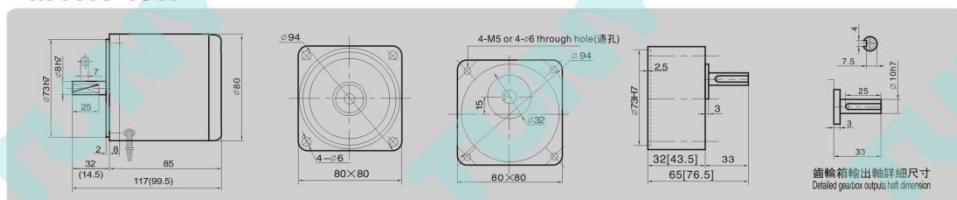
◆ M2TK-3W



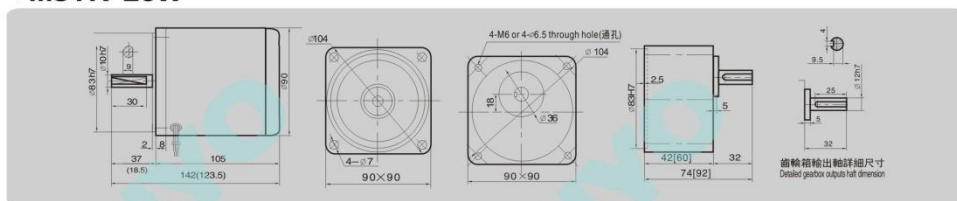
◆ M3TK-6W



◆ M4TK-10W



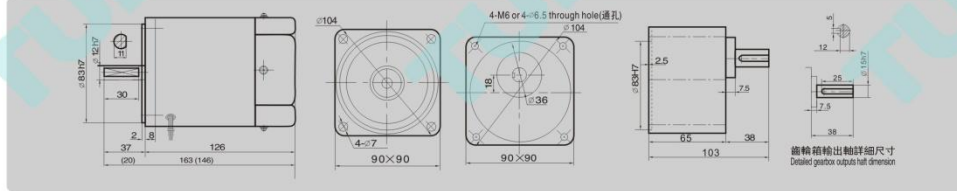
◆ M5TK-20W



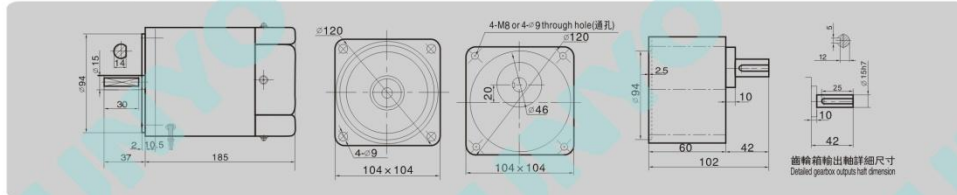
M 系列力矩減速馬達 M Series Torque Gear Motor

馬達尺寸 Motor dimension (可匹配標準、直角、蝸輪、直線減速機)

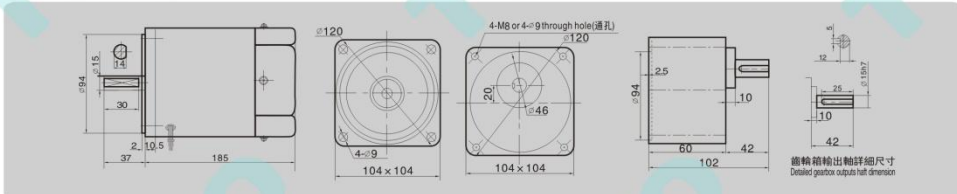
◆ M5TK-40W



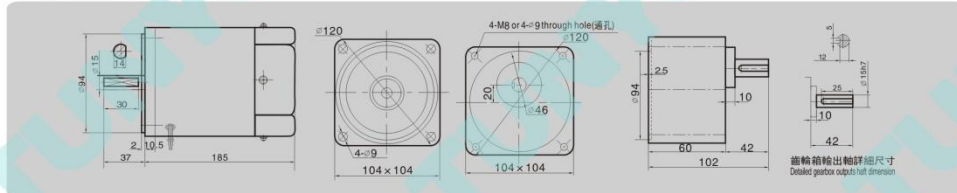
◆ M6TK-60W



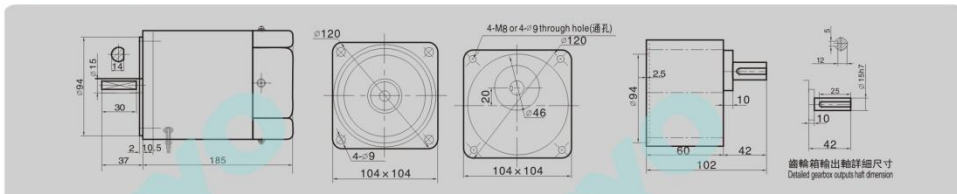
◆ M6TK-90W



◆ M6TK-120W



◆ M6TK-150W



- 其中 () 數字系小齒輪軸馬達的數值;
- 其中 [] 數字系減速比 $\geq 20K$ 的數值;
- RC · RT · RV · GT 減速機參照對應尺寸。

- The figure in () is the value of small gear shaft motor.
- The figure in [] is the value of ratio $\geq 20k$.
- RC · RT · RV · GT Gear box reference of corresponding size.

M Series Linear Gear Motor

型號解說 General information

推杆長度
Push rod length
100:100mm
200:200mm
300:300mm
400:400mm
500:500mm

直綫減速機 Linear Gear Box

GT 4 L 45 - 300

推杆斷面
Ram Section
2:60mm SQ
4:80mm SQ
5:90mm SQ
6:104mmSQ
7:120mmSQ

衝程速度 Strbke Speed45mm/sec

L:水平推力 Horizontal Thrust
F:垂直推力 Vertical Thrust

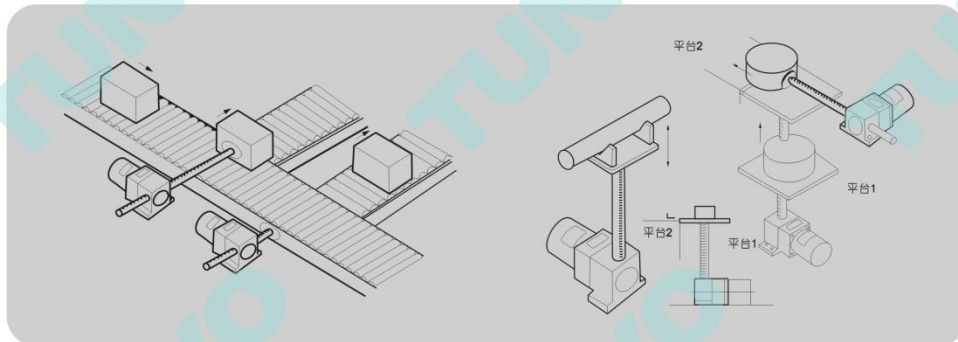


規格性能表 Specifications & performance chart

型式 Type	配合馬達機種 Arrange Model of Motor	最大推力 Max Thrust (Kg)	基本速度 Speed (mm/sec)	最大衝程 Max Stroke (mm)	直吊荷重 Permissible O.H.L. (Kg)
GT2 ^L _F -□-□	 M2 (4-10W)	20	1-100	200-500	3
GT4 ^L _F -□-□	 M4 (25-30W)	70	1-100	200-700	5
GT5 ^L _F -□-□	 M5 (40-180W)	140	1-100	200-1000	8
GT6 ^L _F -□-□	 M6 (120-300W)	200	1-100	200-2000	12
GT7 ^L _F -□-□	 M7 (400W)	250	1-100	200-2000	15

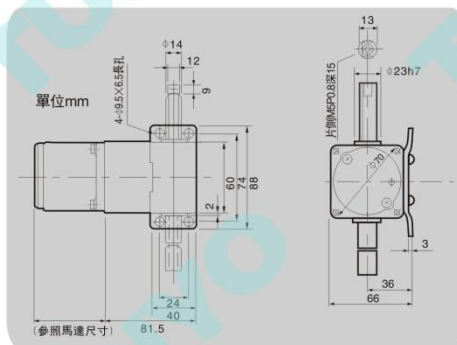
M 系列直綫減速馬達 M Series Linear Gear Motor

用途示例 Application

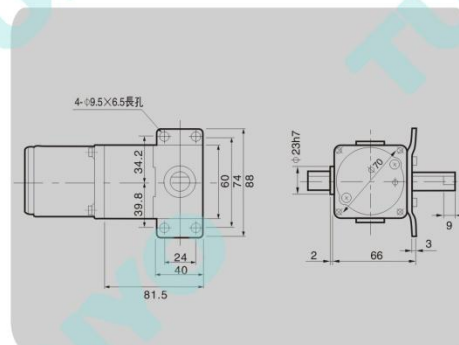


尺寸圖 Dimension chart

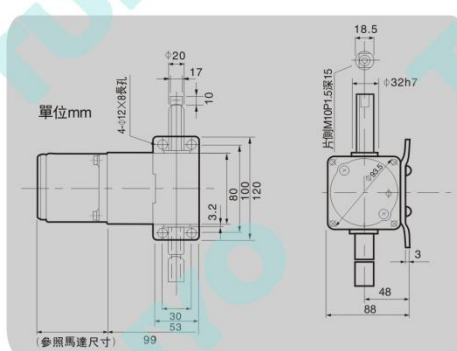
◆GT2-L



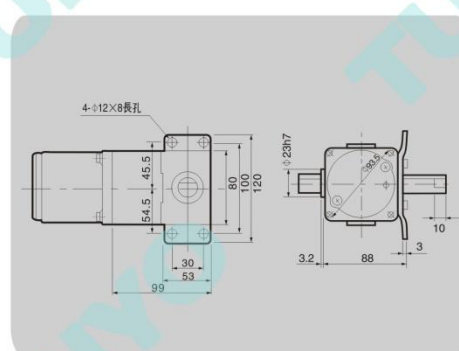
◆GT2-F



◆GT4-L



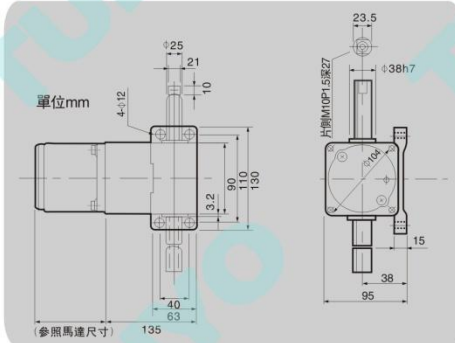
◆GT4-F



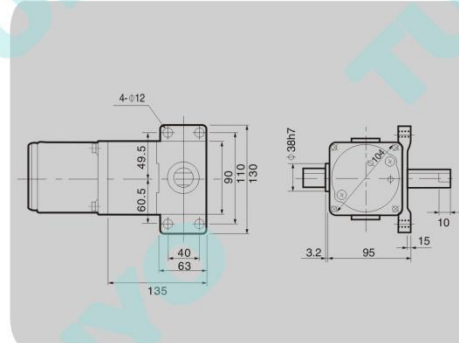
M 系列直線減速馬達 M Series Linear Gear Motor

尺寸圖 Dimension chart

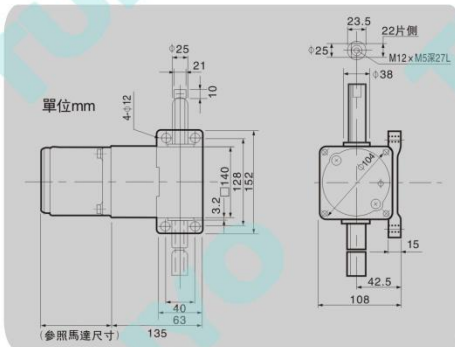
◆GT5-L



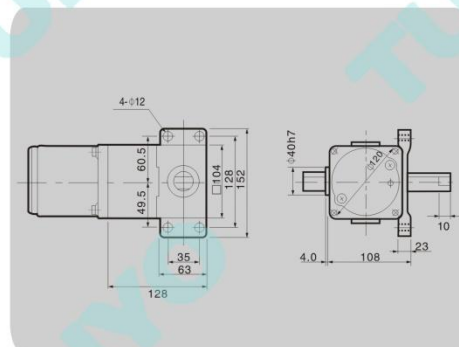
◆GT5-F



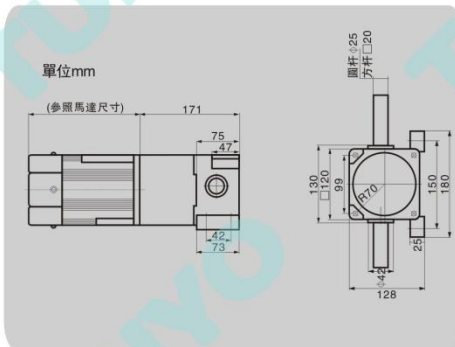
◆GT6-L



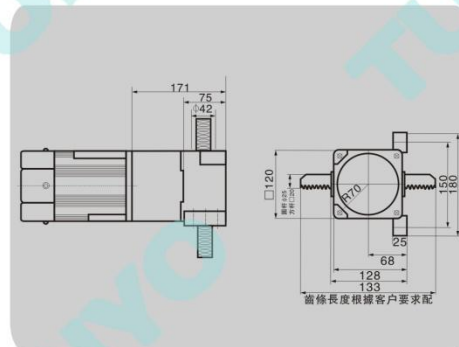
◆GT6-F



◆GT7-L



◆GT7-F



M 系列蝸輪減速馬達 M Series RV Gear motor

型號解說 General information



機座號 Type

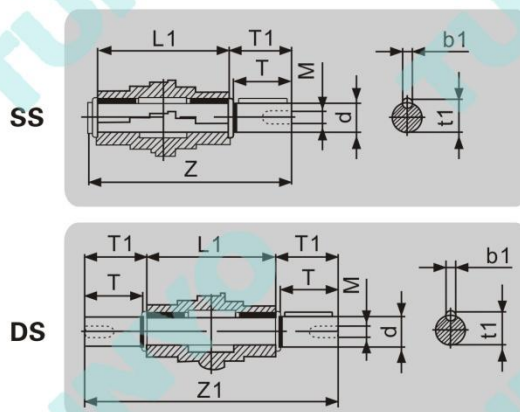
025、030
040、050
063、075
090、110
130、150

輸出軸:

無 (孔輸出)、
SS (單向輸出軸)、
DS (雙向輸出軸)、



蝸輪輸出軸 (SS,DS) 尺寸 SS、DS dimension



TYPE	d(h6)	T	T1	L1	Z	Z1	M	b1	t1
025	11	23	25.5	50	81	101	—	4	12.5
030	14	30	32.5	63	102	128	M6	5	16
040	18	40	48	78	128	164	M6	6	20.5
050	25	50	53.5	92	153	199	M10	8	28
063	25	50	53.5	112	173	219	M10	8	28
075	28	60	63.5	120	192	247	M10	8	31
090	35	80	84.5	140	234	309	M12	10	38
110	42	80	84.5	155	249	324	M16	12	45
180	45	80	35	170	265	340	M16	14	48.5

產品簡介 Introduction

產品在符合國家標準GB10085—88圓柱蝸杆蝸輪參數基礎之上，採用ZK齒錐面包絡蝸輪蝸杆，採用國內外最先進科技設計製造的“方箱型”薄壁花紋散熱片，採用靜力學結構設計的器體以優質鋁合金壓鑄而成。

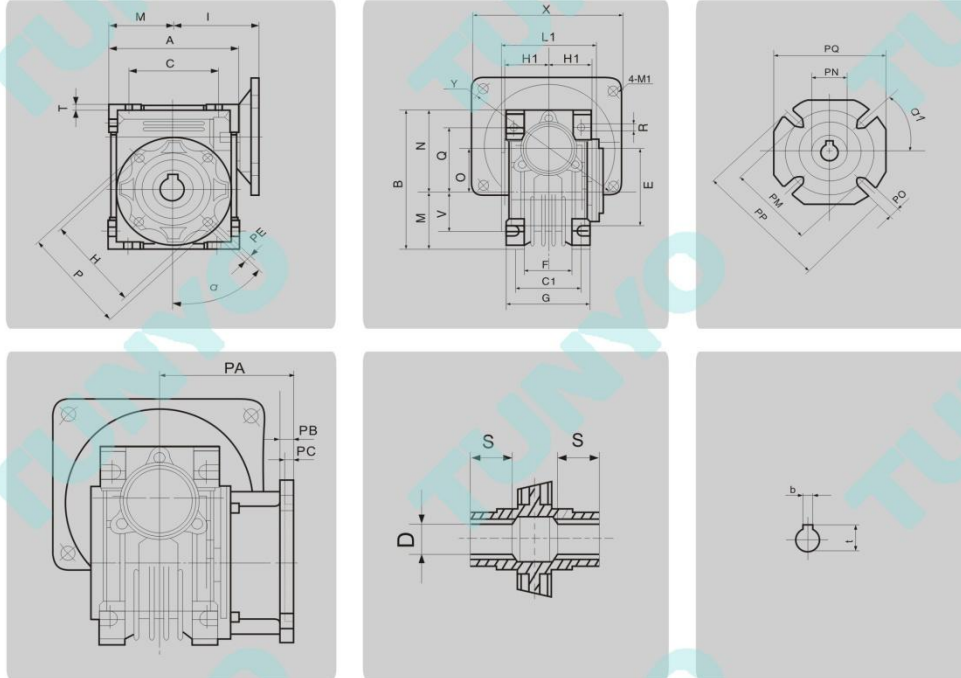
These series are in compliant with the national standard Gb10085-88 cylinder worm turbo parametef and comined with the most advanced technology inside and outside China to design and make Square Chest Watll.This machine with thin wall pattern radiator and design via static structure is cast by compression with high -quality aluminum alloy.which has the advances and

優勢特征 Features as follows

1. 機械結構緊湊，體積輕巧，小型高效；
 2. 熱交換性能好，散熱快；
 3. 安裝簡易，聯接型式靈活，性能優越，易于維護檢修；
 4. 傳動速比大(5-20000: 1)，扭矩大，承受過載能力高；
 5. 運行平穩，噪音小，經久耐用；
 6. 適用性強，安全可靠性能大。
1. Compact structure, light size,small and high efficiency.
 2. Good function of heat exchange,rapid heat rejection.
 3. Easy installation and flexible connecting style.Easy for maintaining and checking.
 4. Large in both transmission ratio(5-20000:1) and twisting distance (N.m) resulting to high capacity of bearing and loading.
 5. Stable operation.little noise, long lasting.
 6. Widely applicable and liable

M 系列蝸輪減速馬達 M Series RV Gear motor

RV減速機尺寸 RV dimensions



NMRV	A	B	C	C1	D(h7)	E(h8)	F	G	H	H1	I	L1	M	M1	N	O	P	Q	R	S
025	71	83	45	34	11	40	22	42	45	25	45	50	35.5	5	48	25	66	35.5	6	16
030	80	97	54	44	14	55	32	56	65	29	55	63	40	5	57	30	75	44	6.5	21
040	100	121.5	70	60	18(19)	60	43	71	75	36.5	70	78	50	6	71.5	40	87	55	6.5	26
050	120	144	80	70	25(24)	70	49	85	85	43.5	80	92	60	8	84	50	100	64	8.5	30
063	144	174	100	85	25(28)	80	67	103	95	53	95	112	72	-	102	63	110	80	8.5	36
075	172	205	120	90	28(35)	95	72	112	115	57	112.5	120	86	-	119	75	140	93	11	40
090	206	238	140	100	35(38)	110	74	130	130	67	129.5	140	103	-	135	90	160	102	13	45
110	252.5	295	170	115	42	130	-	144	165	74	160	155	127.5	-	167.5	110	200	125	14	50
130	292.5	335	200	120	45	180	-	155	215	81	180	170	147.5	-	187.5	130	250	140	16	60

NMRV	T	V	X	Y	PA	PB	PC	PE	PM	PN(h8)	PO	PP	PQ	b	t	α	α1	Kg	適用馬達
025	5	22.5	-	-	45	6	2.5	M6×11(n=4)	55	40	6.5(n=4)	75	70	5	12.8	10°	45°	0.7	M2-M7
030	5.5	27	-	-	54.5	6	4	M6×11(n=4)	68	50	6.5(n=4)	80	70	5	16.3	0°	45°	1.2	
040	6.5	35	-	-	67	7	4	M6×8(n=4)	75	60	9(n=4)	110	95	6	20.8(21.8)	45°	45°	2.3	
050	7	40	-	-	90	9	5	M8×10(n=4)	85	70	11(n=4)	125	110	8	28.3(27.3)	45°	45°	3.5	
063	8	50	-	-	82	10	6	M8×14(n=4)	150	115	11(n=4)	180	145	8	28.3(31.3)	45°	45°	6.2	
075	10	60	-	-	111	13	6	M8×14(n=4)	165	130	14(n=4)	200	170	8	31.3(38.3)	45°	45°	9	
090	11	70	-	-	111	13	6	M10×18(n=4)	175	152	14(n=4)	210	200	10	38.3(41.3)	45°	45°	13	
110	14	85	-	-	131	15	6	M10×18(n=4)	230	170	14(n=8)	280	260	12	45.3	45°	45°	35	
130	15	100	-	-	140	15	6	M12×21(n=4)	255	180	16(n=6)	320	290	14	18.8	45°	22.5°	48	

M 系列剎車馬達 M Series Brake Motor

機械阻尼剎車馬達 Mechanical damper brake motor

◆ 特點 Features

- 1、結構簡單 Simple structure
- 2、馬達斷電后0.5秒內制動
Cpomp to a stop within 0.5s after being deenergize

◆ 適用馬達 Suitable motors 4–400W



電磁剎車馬達 Eelectromagntic brake motor

◆ 特點 Features

- 1、能實現快速制動 Simple structure
- 2、有足夠的制動轉矩 Having enough braking torque

◆ 適用馬達 Suitable motors 4–400W

功率 P	M3型 15–20W	M4型 25–30W	M5型 40–120W	M6型 120–300W	M7型 400W
制動轉矩 Braking Torque N.m	0.5	0.5	1	2	3

電子瞬時制動器 Electronic brake

◆ 瞬時制動器原理 Instantaneous brake principle

在馬達 運轉結束時瞬間，給馬達、主副繞阻通過直流電機產生磁場，使馬達轉子瞬間消除慣性，達到轉動的目的。

The motor stops running moments,to motor,main winding vice winding graffed in dc power magnetic fields generated and make motor rotor inertial,achieve instant elminate braking purpose

◆ 特點 Features

- 1、能實現快速制動 Braking quickly
- 2、與馬達結構無關 The performance has nothing to do with the motor

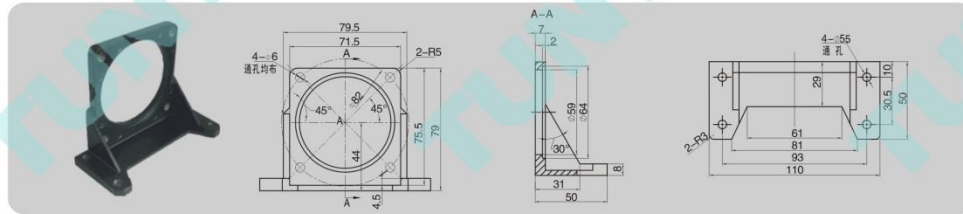
◆ 適用馬達 Suitable motors 4–400W

- ◆ 注意：無制動保持轉矩，制動時間過長，可能引起馬達溫升過高，使馬達線包受損。
Note:Having no continuous braking torque.

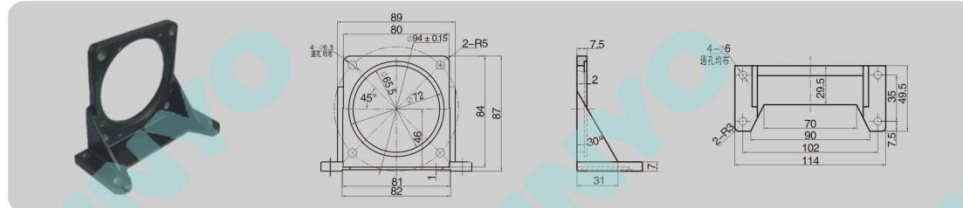


M 系列特殊定制與配件 M Series Special Custom and Accessorise

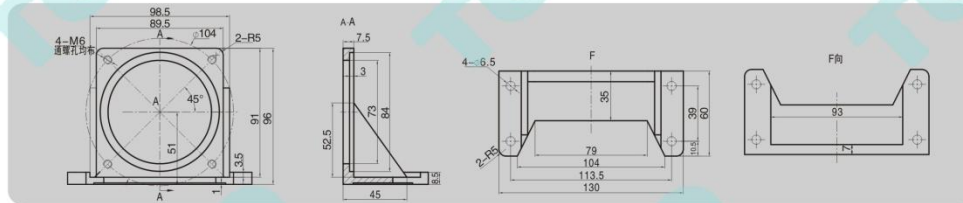
M3安裝支架 External dimension



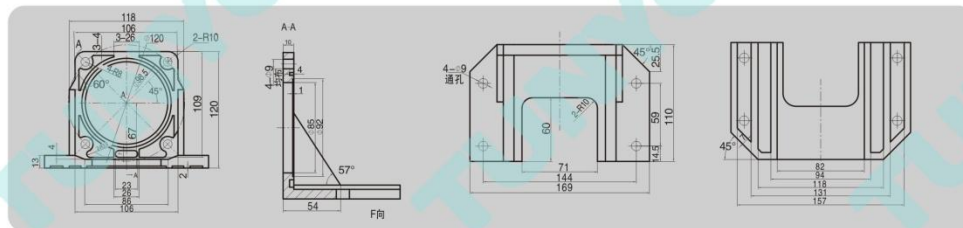
M4安裝支架 External dimension



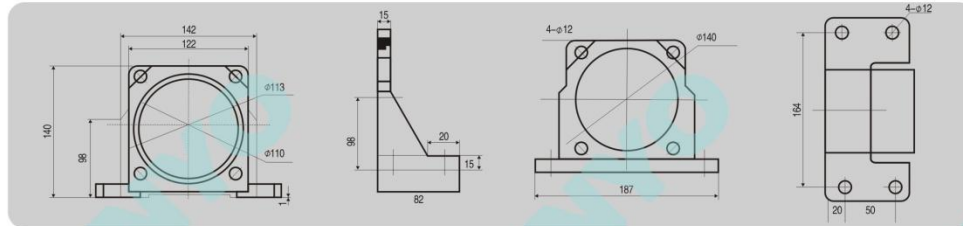
M5安裝支架 External dimension



M6安裝支架 External dimension



M7安裝支架 External dimension



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