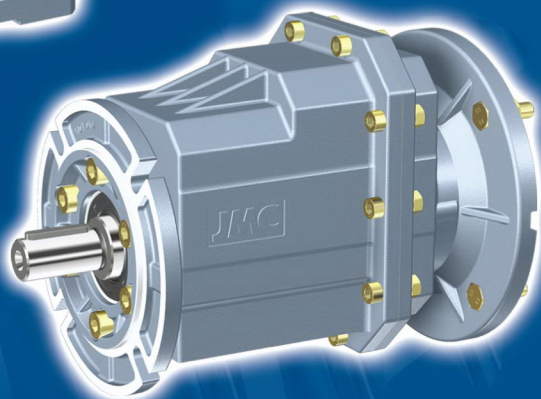
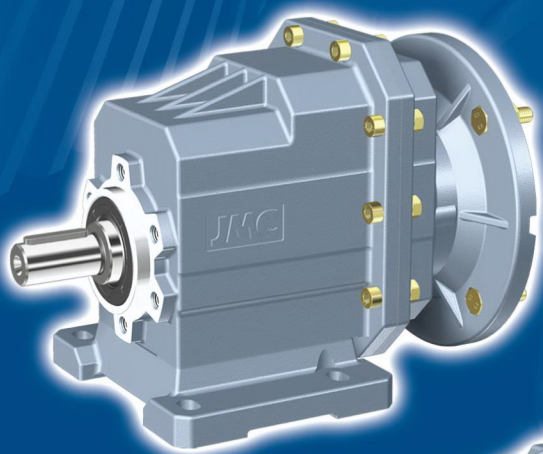


RDMAC

TRC 系列小型斜齒輪減速機

TRC SERIES MINI HELICAL GEAR UNITS



Page		
1	▶ 概述	SUMMARIZE
2	▶ 產品結構圖	PRODUCT STRUCTURE PICTURE
3	▶ 型號說明	MODEL ILLUMINATE
4 - 7	▶ 選型相關參數	RELEVANT PARAMETER
8	▶ 選型範例	SELECTION EXAMPLE
9	▶ 速比與IEC法蘭搭配	RATIO AND IEC MOTOR ADAPTERS
10 - 20	▶ 減速機選型表	SELECTION TABLES
21 - 28	▶ 外形尺寸圖	OUTLINE DIMENSION SHEET
29	▶ 安裝方向	INSTALLATION POSITIONS
29 - 30	▶ 潤滑油	LUBRICATION
30	▶ 安裝方法	INSTALLATION METHODS
31	▶ 故障排除	CORRECTTHE MALFUNCTIONS
32 - 33	▶ 附錄(減速機負載特性表)	ADDENDNM
34	▶ 系列產品展示	SHOW THE SERIES PRODUCTS



Page		
1	▶ 概述	SUMMARIZE
2	▶ 產品結構圖	PRODUCT STRUCTURE PICTURE
3	▶ 型號說明	MODEL ILLUMINATE
4 - 7	▶ 選型相關參數	RELEVANT PARAMETER
8	▶ 選型範例	SELECTION EXAMPLE
9	▶ 速比與IEC法蘭搭配	RATIO AND IEC MOTOR ADAPTERS
10 - 20	▶ 減速機選型表	SELECTION TABLES
21 - 28	▶ 外形尺寸圖	OUTLINE DIMENSION SHEET
29	▶ 安裝方向	INSTALLATION POSITIONS
29 - 30	▶ 潤滑油	LUBRICATION
30	▶ 安裝方法	INSTALLATION METHODS
31	▶ 故障排除	CORRECTTHE MALFUNCTIONS
32 - 33	▶ 附錄(減速機負載特性表)	ADDENDNM
34	▶ 系列產品展示	SHOW THE SERIES PRODUCTS



1. 概述

TRC系列小型斜齒輪減速機是我公司在模組體系的基礎上設計的新一代減速機產品，可分別與普通IEC、煞車、防爆、變頻、伺服等馬達組合，可在立體空間六個方位任意安裝。該產品廣泛適用於紡織、食品、啤酒飲料、化工、自動化倉儲設備、煙草、環保、物流等傳動領域。

1.1 產品特點

- 模組化；
- 斜齒輪傳動，效率高；
- 精磨齒面，噪音低；
- 結構緊湊，設計精巧；
- 安裝方式多樣；
- 鋁製箱體，重量輕；
- 滲碳硬齒面，經久耐用；
- 可組合多種結構形式，滿足各種傳動條件的需求。

TRC系列小型斜齒輪減速機共有4種機型，功率0.12~4KW，速比3.66~54，最大扭矩120~500Nm。可根據使用者要求進行任意組合(腳座、法蘭)和多種安裝位置的選擇。

1. SUMMARIZE

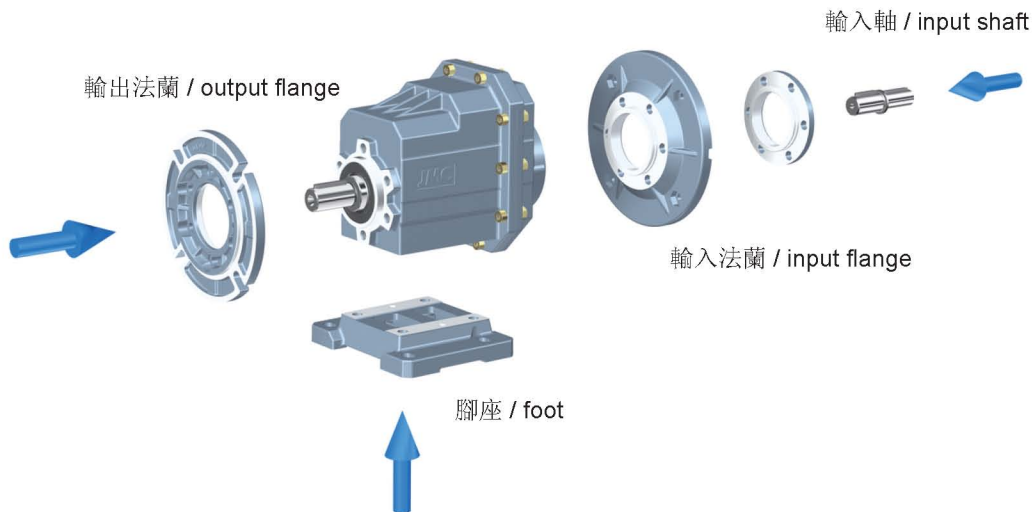
TRC Series helical gear units is a new generation mechanic-electrical integrated product, which designed basing on the modular system. It can be connected respectively with motors such as normal motor, brake motor, explosion-proof motor, frequency conversion motor, servo motor, IEC motor and so on. It can be mounted discretionary six orientation in solid space. This kind of product is widely used in drive fields such as textile, foodstuff, beverage, chemical industry, automatic arm ladder, automatic storage equipment, metallurgy, tobacco, environment-protection, logistics and so on.

1.1 Products characteristics

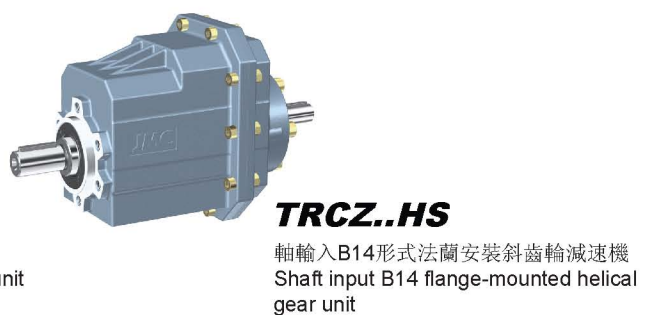
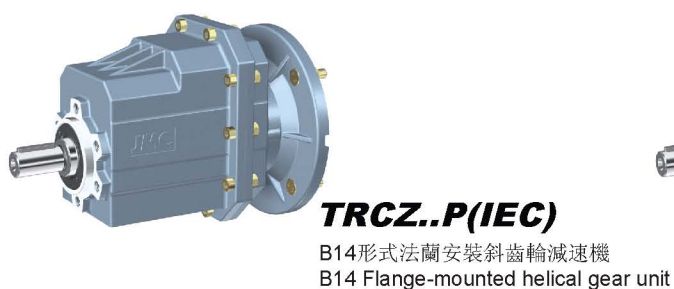
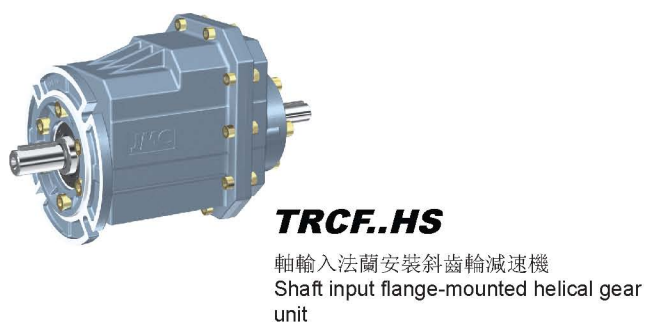
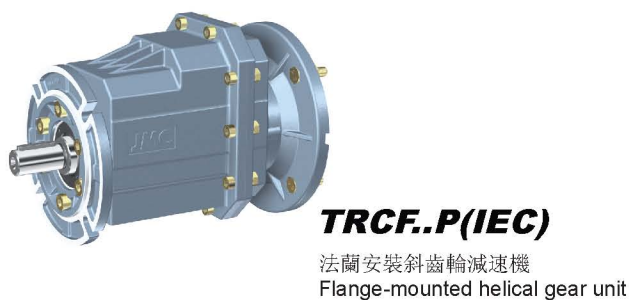
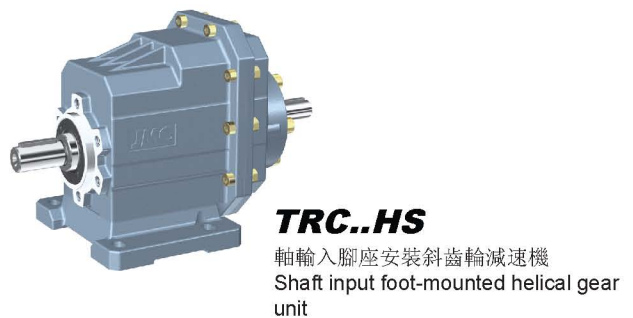
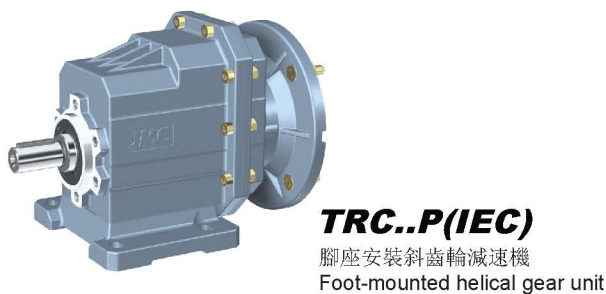
- Modularity;
- High efficiency;
- Low noise;
- Space effective, refined design;
- Universal mounting;
- Aluminium housing, light in weight;
- Gears in carbonize hard, durable;
- Multistructure, can be combined in many forms to meet needs of all kinds of transmission conditions.

TRC Series helical gear units has more than 4 types. Power 0.12-4KW; Ratio 3.66-54; Torque max 120-500Nm. It can be connected (foot, flange) discretionary and use multi-mounting positions according to customers' requirements.

1.2 結構特點 / Structure feature



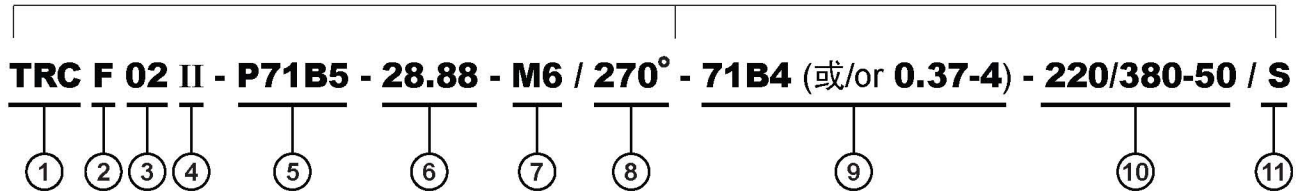
2. 產品結構 / PRODUCT STRUCTURE PICTURE



3. 型號說明 / MODEL ILLUMINATE

減速機 / Gear unit

馬達 / Motor



No	说 明	Comments
1	TRC: 減速機系列代號	TRC: code for gear units series
2	1). 無代號表示腳座安裝 2). F: B5形式法蘭安裝 3). Z: B14形式法蘭安裝	1). No code means foot-mounted 2). F: B5 flange mounted 3). Z: B14 flange mounted
3	減速機規格号 01、02、03、04	Specification code of gear units 01,02,03,04
4	1). B01 、 M01表示腳座代號, 無法蘭 2). I 、 II 、 III: B5形式輸出法蘭規格, 默認 I 可以不寫	1). B01 、 M01 means foot code,without flange 2). I 、 II 、 III: B5 Output flange specification, default I not to write out is ok
5	1). IEC 輸入連接法蘭 2). HS: 軸輸入	1). IEC Motor adapters 2). HS: Shaft input
6	減速機減速比 i	Transmission ratio of gear units i
7	M1: 安裝方向, 默認安裝方向 M1 可以不寫	M1: Mounting positio, default mounting position M1 not to write out is ok
8	馬達接線盒位置, 默認位置 0°(R) 可以不寫	Position diagram for motor terminal box, default position 0°(R) not to write out is ok
9	1). 無代號表示不帶馬達 2). 馬達型號或功率、極數	1). No mark means without motor 2). Model motos (poles of power)
10	電壓-頻率	Voltage - frequency
11	馬達進線位置, 默認位置 S 可以不寫	Coil in pssition for motor, default position S not to write out is ok

範例 **Example:** **TRC01B01-P71B5 - 28.50**

TRCZ03 - HS - 6.31

TRCF02III - P80B14- 8.78-71B4 -220/380-50 / 2

訂單時請說明是否帶馬達，一般按不帶馬達供應。

When ordering, you should show whether the reducers are equipped with motors, otherwise reducers aren't supplied with motors.

4. 選型相關參數

4.1 功率 P

$$P_1 = \frac{P_2}{\eta} \text{ [kW]}$$

$$P_{1n} \geq P_1 \cdot f_s \text{ [kW]}$$

P_1	輸入功率
P_2	輸出功率
P_{1n}	輸入馬達額定功率
f_s	使用係數
η	傳動效率

TRC系列斜齒輪減速機的傳動是2級齒輪傳動，其效率為96%。

4.2 轉速 n

n_1	減速機輸入轉速
n_2	減速機輸出轉速

若是齒輪箱外部傳動裝置驅動，為了優化工作條件和提高使用壽命，建議使用1400r/min或更低轉速。允許輸入較高的輸入轉速，但在這種情況下，額定扭矩 M_2 會下降。

4.3 減速比 i

$$i = \frac{n_1}{n_2}$$

減速比通常為小數，在選型表中保留兩位小數。

4.4 扭矩 M

$$M_2 = \frac{9550 \cdot P_1 \cdot \eta}{n_2} \text{ [Nm]}$$

$$M_{2n} \geq M_2 \cdot f_s \text{ [Nm]}$$

M_2	輸出扭矩
M_{2n}	額定輸出扭矩
P_1	輸入功率
η	傳動效率
f_s	使用係數

4. RELEVANT PARAMETER

4.1 Power P

$$P_1 = \frac{P_2}{\eta} \text{ [kW]}$$

$$P_{1n} \geq P_1 \cdot f_s \text{ [kW]}$$

P_1	Input power
P_2	Output power
P_{1n}	Rated input motor power
f_s	Service factor
η	Transmission efficiency

TRC Series helical gear units has 2 stage and the efficiency is about 96%.

4.2 Rotation speed n

n_1	Gear units input speed
n_2	Gear units output speed

If driven by the external gearing, 1400r/min or lower rotation speed is suggested so as to optimize the working conditions and prolong the service life. Higher input rotation speed is permitted, but in this situation, the rated torque M_2 will be reduced.

4.3 Transmission ratio i

$$i = \frac{n_1}{n_2}$$

Usually transmission ratio is decimal fraction with 2 radix point tagged in selection tables.

4.4 Torque M

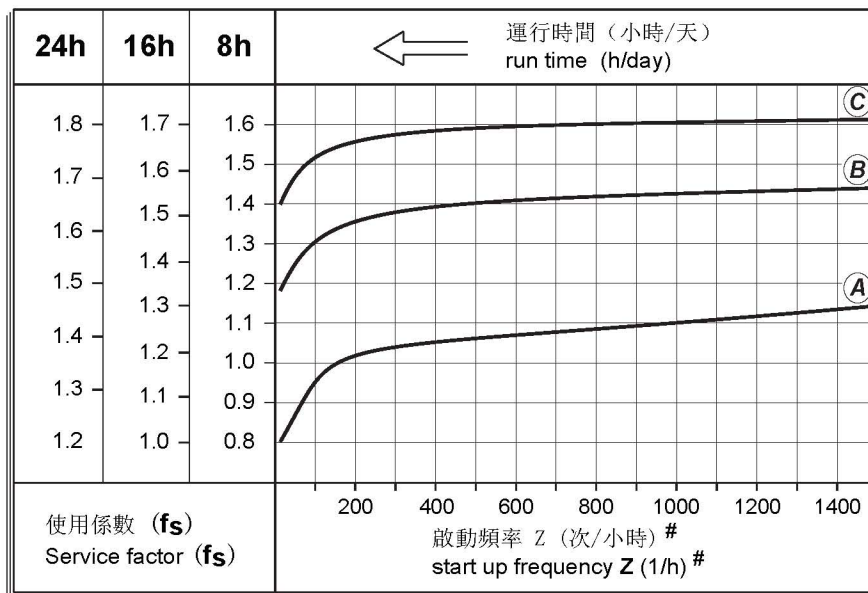
$$M_2 = \frac{9550 \cdot P_1 \cdot \eta}{n_2} \text{ [Nm]}$$

$$M_{2n} \geq M_2 \cdot f_s \text{ [Nm]}$$

M_2	Output torque
M_{2n}	Rated output torque
P_1	Input power
η	Transmission efficiency
f_s	Service factor

4.5 使用係數 f_s

減速機上的從動機構的受驅動效果是用使用係數 f_s 這個係數來衡量的。該使用係數根據每天的運轉時間和啟動頻率 Z 而定的。三種負載分類取決於慣性加速係數，在下圖中可以讀取實際應用的使用係數，按這圖表選取的使用係數必須小於或是等於效能參數表中提供的使用係數。



啟動頻率 Z : 週期包括所有啟動、煞車的程序以及從低速到高速的變化。

Starting frequency Z : The cycles include all starting and braking procedures as well as change overs from low to high speed.

4.5.1 負載類型

- Ⓐ 均勻衝擊負載，允許慣性加速係數 ≤ 0.2
 - Ⓑ 中等衝擊負載，允許慣性加速係數 ≤ 3
 - Ⓒ 重衝擊負載，允許慣性加速係數 ≤ 10
- 負載類型見附錄。

4.5.1 Load classifications

- Ⓐ Uniform shock load, permitted mass acceleration factor ≤ 0.2
- Ⓑ Moderate shock load, permitted mass acceleration factor ≤ 3
- Ⓒ Heavy shock load, permitted mass acceleration factor ≤ 10

Load classifications see the addendum.

4.5.2 慣性加速係數

慣性加速係數計算如下:

$$fa = \frac{Jc}{Jm}$$

4.5.2 Mass acceleration factor

The mass acceleration factor is calculated as follows:

$$fa = \frac{Jc}{Jm}$$

fa	慣性加速係數
Jc	所有外部傳動慣量 [kgm ²]
Jm	驅動馬達的傳動慣量 [kgm ²]

如果慣性加速係數 **fa** > 10，請與我們技術部聯絡。

為了保持減速機的使用壽命，從產品目錄中所選擇的使用係數 **fs** 應等於或略高於計算出的使用係數 **fs**。

4.6 徑向載荷 **Fr**

在決定影響徑向載荷時，安裝在軸端上的傳動件類型必須考慮在內，不同類型的傳動件對應不同傳動附加係數 **fz**，列表如下：

傳動件 Transmission element	傳動附加係數 Fz Transmission element factor Fz	註釋 Comments
齒輪 Gears	1.00	≥ 17齒 teeth
	1.15	< 17齒 teeth
鏈輪 Chain sprockets	1.00	≥ 20齒 teeth
	1.25	< 20齒 teeth
	1.40	< 13齒 teeth
V帶輪 Narrow V-belt pulleys	1.75	有預緊力作用 Influence of the tensile force
平帶輪 Flat belt pulleys	2.50	有預緊力作用 Influence of the tensile force
齒帶輪 Toothed belt pulleys	2.50	有預緊力作用 Influence of the tensile force

作用在軸上的徑向載荷按如下公式計算：

$$F_r = \frac{M \cdot 2000 \cdot f_z}{d_0} \text{ [N]}$$

Fr	作用在軸上的載荷 [N]
M	作用在軸上的扭矩 [Nm]
d₀	安裝在軸上傳動件的平均直徑 [mm]
f_z	傳動附加係數

當徑向負荷不作用在軸中點時，按以下公式計算有效負荷：

$$F_{xL} \leq \frac{Fr_2 \cdot a}{(b+x)} \text{ [N]}$$

Fr₂	依據下面表格給出中腳座安裝式齒輪減速機的許可徑向載荷(x = L / 2) [N]
a, b	齒輪減速機徑向換算常量 [mm]

fa	Mass acceleration factor
Jc	All external mass moments of inertia [kgm ²]
Jm	Mass moment of inertia on the motor end [kgm ²]

If mass acceleration factors **fa** > 10, please call our Technical Service.

To keep the service-life of gear units, the use factor **f_s** selected from the catalogue must be equal or slightly higher than the calculated use factor **f_s**.

4.6 Radial loads **Fr**

When determining the resulting radial loads, the type of transmission elements, mounted on the shaft end must be considered. Various transmission elements are corresponding with following transmission element factors **f_z**:

The overhung loads exerted on the motor or gear shaft is then calculated as follows:

$$F_r = \frac{M \cdot 2000 \cdot f_z}{d_0} \text{ [N]}$$

Fr	Resulting radial load [N]
M	Torque on the shaft [Nm]
d₀	Mean diameter of the mounted transmission element in [mm]
f_z	Transmission element factor

The allowed radial load force on the shaft is calculated with the following formula:

$$F_{xL} \leq \frac{Fr_2 \cdot a}{(b+x)} \text{ [N]}$$

Fr₂	Permitted overhung load (x = L/2) for foot-mounted gear units according to the selection tables in [N]
a, b	Gear unit constant for overhung load conversion [mm]

x 軸肩到實際作用點的距離 [mm]

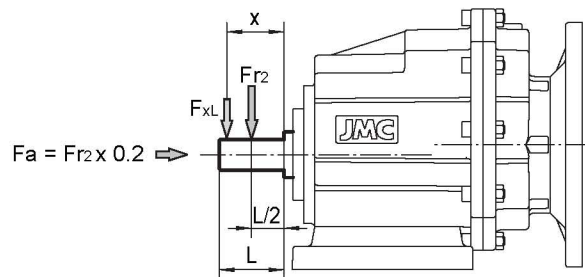
a, b, Fr₂ 的數值在下面表格給出:

x Distance from the shaft shoulder to the force application point in [mm]

The values of a, b, Fr₂ are given in the following tables:

	TRC01	TRC02	TRC03	TRC04
a	103	116.5	130	147
b	83	91.5	100	112

輸出軸徑向載荷和軸向載荷 Fr₂, Fa / Output shafts radial loads & axial loads Fr₂, Fa



n ₂ [min ⁻¹]	10	40	60	80	100	120	150	180	250	400	
Fr ₂ [N]	TRC01	2500	2500	2180	1980	1840	1630	1400	1320	1080	920
	TRC02	5000	5000	4370	3970	3680	3470	2710	2550	2150	1840
	TRC03	6500	6500	5550	5040	4510	3800	3530	3320	2800	2390
	TRC04	8000	8000	6590	5990	5230	4570	4240	3900	3350	2860

4.7 選型表註釋 / SELECTION TABLES COMMENTS

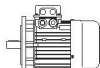
P _{1n} [kW]	n ₂ [r/min]	M _{2n} [Nm]	i	f _s			Page 
----------------------	------------------------	----------------------	---	----------------	--	---	--

 表示IEC與減速機的組合是可行的
 表示IEC與減速機的組合是不可行的

P_{1n} 輸入馬達額定功率 [kW];
n₂ 輸出轉速 [r/min];
M_{2n} 額定輸出扭矩 [Nm];
M_{2 max} 最大允許輸出扭矩 [Nm];
i 減速機減速比;
f_s 使用係數;




減速機型號;




馬達型號;

page 外型尺寸表頁碼;

* 表示速比可除盡。

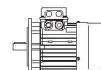
 — Combination with the IEC in the header row **is possible**

 — Combination with the IEC in the header row **is not possible**

P_{1n} Rated power driving motor [kW];
n₂ Output speed [r/min];
M_{2n} Rated output torque [Nm];
M_{2 max} Permissible output torque [Nm];
i Gear unit ratio;
f_s Service factor;



Gear unit type;



Motor type;

page Dimension sheet page no;

* Finite gear unit reduction ratio.

5. 選型舉例 / SELECTION EXAMPLE

5.1 減速機

例：被驅動設備所需扭矩為400Nm，工作6小時/天，均勻沖擊負載，啟動頻率400次/小時，輸出轉速 $n_2=30$ r/min，要求減速機 $\varnothing 200$ mm輸出法蘭安裝。

查表，選使用係數 $f_s=1.05$

$$M_{2n} \geq M_2 \cdot f_s = 400 \times 1.05 = 420[\text{Nm}]$$

$$i = \frac{n_1}{n_2} = \frac{1400}{30} = 46.67$$

查TRC系列選型表可選定減速機為：

TRCF04 II - P90B5 - 44.18

5.2 減速馬達

例：被驅動設備所需功率1kW，工作8小時/天，中等衝擊，連續啟動，輸出轉速 $n_2=95$ r/min，減速馬達要求M6腳座安裝。

查表，選使用係數 $f_s=1.35$

$$i = \frac{n_1}{n_2} = \frac{1400}{95} = 14.74$$

$$P_{1n} \geq P_1 \cdot f_s = \frac{P_2}{\eta} \cdot f_s = \frac{1}{0.96} \times 1.35 = 1.41[\text{kW}]$$

查TRC系列選型表可選定減速馬達型號為：

TRC02 - P90B5 - 14.81 - 1.5-4 - M6

5.1 Gear units

Example: The required torque on driven machine is 400Nm, works for 6 hours per day, Uniform shock load, start-up frequency is 400 times per hour, $\varnothing 200$ mm output flange-mounted, $n_2=30$ r/min.

see tables, $f_s=1.05$

$$M_{2n} \geq M_2 \cdot f_s = 400 \times 1.05 = 420[\text{Nm}]$$

$$i = \frac{n_1}{n_2} = \frac{1400}{30} = 46.67$$

Choose type:

TRCF04 II - P90B5 - 44.18

5.2 Gear motor

Example: The required power on driven machine 1kW, works for 8 hours per day, moderate shock load, start-up continuously, M6 foot-mounted, $n_2=95$ r/min.

see tables, $f_s=1.35$

$$i = \frac{n_1}{n_2} = \frac{1400}{95} = 14.74$$

$$P_{1n} \geq P_1 \cdot f_s = \frac{P_2}{\eta} \cdot f_s = \frac{1}{0.96} \times 1.35 = 1.41[\text{kW}]$$

Choose type:

TRC02 - P90B5 - 14.81 - 1.5-4 - M6

6. 速比與IEC馬達法蘭的配合 / RATIO AND IEC MOTOR ADAPTERS

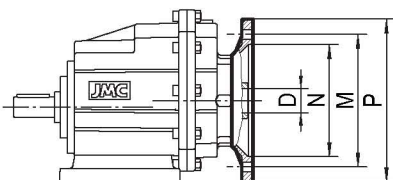
TRC..01..P(IEC)				
i	63B5	71B5	80B5	90B5
		71B14	80B14	90B14
53.33				
45.89				
40.10				
35.47				
28.50				
23.56				
19.83				
17.86				
14.62				
13.80*				
11.90				
9.81				
9.17				
7.72				
5.69				
4.63				
3.82				

TRC..02..P(IEC)				
i	63B5	71B5	80B5	90B5
		71B14	80B14	90B14
54.00*				
46.46*				
40.60*				
35.91*				
28.88*				
23.85*				
20.08*				
17.10				
14.81*				
13.21				
12.05				
9.93				
8.78				
7.39				
5.45				
4.43				
3.66				

TRC..03..P(IEC)					
i	71B5	80B5	90B5	100B5	112B5
		80B14	90B14	100B14	112B14
51.30*					
44.18*					
38.63					
34.20*					
30.57					
24.99					
21.15*					
19.24*					
18.21*					
15.30*					
13.30*					
12.60					
10.93*					
9.08					
7.93*					
6.31					
5.48					
4.50					
3.74					

TRC..04..P(IEC)				
i	80B5	90B5	100B5	112B5
	80B14	90B14	100B14	112B14
51.30*				
44.18*				
38.63				
34.20*				
30.57				
24.99				
21.15*				
19.24*				
15.30*				
13.30*				
12.60				
10.93*				
9.08				
7.93*				
6.31				
5.48				
4.50				
3.74				

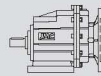
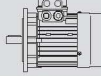

“*” 表示速比可除盡 / Finite gear unit reduction ratio


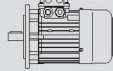


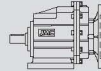
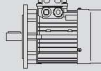
IEC	63B5	71B5	71B14	80B5	80B14	90B5	90B14	100B5	100B14	112B5	112B14
D _{E8}	11	14		19		24		28		28	
P	140	160	105	200	140	200	140	250	160	250	160
M	115	130	85	165	115	165	115	215	130	215	130
N	95	110	70	130	95	130	95	180	110	180	110


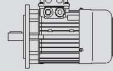
7.減速機選型表 / GEAR UNIT SELECTION TABLES



7.1 TRC..P(IEC).. 性能參數 / Performance parameter


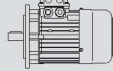
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	f_s				Page
0.12	26.3	42	53.33	2.9	TRC01	63B5	63A4	21
	30.5	36	45.89	3.3	TRCF01	63B5	63A4	21
	34.9	32	40.10	3.8	TRCZ01	63B5	63A4	21
	39.5	28	35.47	4.3				
	49.1	22	28.50	5.4				
	59.4	18.5	23.56	6.5				
	70.6	15.6	19.83	7.7				
	78.4	14.0	17.86	7.1				
	95.8	11.5	14.62	10.4				
	101	10.8	13.80*	9.2				
	118	9.4	11.90	12.8				
	143	7.7	9.81	13.0				
	153	7.2	9.17	11.1				
	181	6.1	7.72	13.2				
	246	4.5	5.69	13.4				
	302	3.6	4.63	16.5				
366	3.0	3.82	20.0					
0.18	16.9	98	53.33	1.2	TRC01	71B5	71A6	21
	19.6	84	45.89	1.4	TRCF01	71B5	71A6	21
	22.4	74	40.10	1.6	TRCZ01	71B5	71A6	21
	25.4	65	35.47	1.8				
	31.6	52	28.50	2.3				
	26.3	63	53.33	1.9	TRC01	63B5	63B4	21
	30.5	54	45.89	2.2	TRCF01	63B5	63B4	21
	34.9	47	40.10	2.5	TRCZ01	63B5	63B4	21
	39.5	42	35.47	2.9				
	49.1	34	28.50	3.6				
	59.4	28	23.56	4.3				
	70.6	23	19.83	5.1				
	78.4	21	17.86	4.8				
	95.8	17.2	14.62	7.0				
	101	16.3	13.80*	6.1				
	118	14.0	11.90	8.6				
	143	11.6	9.81	8.6				
	153	10.8	9.17	7.4				
	181	9.1	7.72	8.8				
	246	6.7	5.69	8.9				
302	5.5	4.63	11.0					
366	4.5	3.82	13.3					
16.7	99	54.00*	2.0	TRC02	71B5	71A6	23	
19.4	85	46.46*	2.3	TRCF02	71B5	71A6	23	
22.2	74	40.60*	2.7	TRCZ02	71B5	71A6	23	
25.1	66	35.91*	3.0					
31.2	53	28.88*	3.8					
25.9	64	54.00*	3.1	TRC02	63B5	63B4	23	
30.1	55	46.46*	3.7	TRCF02	63B5	63B4	23	
34.5	48	40.60*	4.2	TRCZ02	63B5	63B4	23	



P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	f_s			Page	
0.25	16.9	136	53.33	0.88	TRC01	71B5/B14	71B6	21
	19.6	117	45.89	1.0	TRCF01	71B5/B14	71B6	21
	22.4	102	40.10	1.2	TRCZ01	71B5/B14	71B6	21
	25.4	90	35.47	1.3				
	31.6	73	28.50	1.7				
	26.3	87	53.33	1.4	TRC01	71B5/B14	71A4	21
	30.5	75	45.89	1.6	TRCF01	71B5/B14	71A4	21
	34.9	66	40.10	1.8	TRCZ01	71B5/B14	71A4	21
	39.5	58	35.47	2.1				
	49.1	47	28.50	2.6				
	59.4	39	23.56	3.1				
	70.6	32	19.83	3.7				
	78.4	29	17.86	3.4				
	95.8	24	14.62	5.0				
	101	23	13.80*	4.4				
	118	19.5	11.90	6.2				
	143	16.1	9.81	6.2				
	153	15.0	9.17	5.3				
	181	12.6	7.72	6.3				
	246	9.3	5.69	6.4				
	302	7.6	4.63	7.9				
	366	6.3	3.82	9.6				
	16.7	138	54.00*	1.5	TRC02	71B5/B14	71B6	23
	19.4	118	46.46*	1.7	TRCF02	71B5/B14	71B6	23
	22.2	103	40.60*	1.9	TRCZ02	71B5/B14	71B6	23
	25.1	91	35.91*	2.2				
	31.2	74	28.88*	2.7				
	25.9	88	54.00*	2.3	TRC02	71B5/B14	71A4	23
	30.1	76	46.46*	2.6	TRCF02	71B5/B14	71A4	23
	34.5	66	40.60*	3.0	TRCZ02	71B5/B14	71A4	23
	39.0	59	35.91*	3.4				
	48.5	47	28.88*	4.2				
0.37	22.4	151	40.10	0.79	TRC01	80B5/B14	80A6	21
	25.4	134	35.47	0.90	TRCF01	80B5/B14	80A6	21
	31.6	107	28.50	1.1	TRCZ01	80B5/B14	80A6	21
	38.2	89	23.56	1.4				
	26.3	129	53.33	0.93	TRC01	71B5/B14	71B4	21
	30.5	111	45.89	1.1	TRCF01	71B5/B14	71B4	21
	34.9	97	40.10	1.2	TRCZ01	71B5/B14	71B4	21
	39.5	86	35.47	1.4				
	49.1	69	28.50	1.7				
	59.4	57	23.56	2.1				
	70.6	48	19.83	2.5				
	78.4	43	17.86	2.3				
	95.8	35	14.62	3.4				
	101	33	13.80*	3.0				
	118	29	11.90	4.2				
	143	24	9.81	4.2				
	153	22	9.17	3.6				
	181	19	7.72	4.3				
	246	14	5.69	4.4				
	302	11	4.63	5.3				
366	9	3.82	6.5					


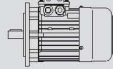
P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	f_s			Page	
0.37	16.7	204	54.00*	1.0	TRC02	80B5/B14	80A6	23
	19.4	175	46.46*	1.1	TRCF02	80B5/B14	80A6	23
	22.2	153	40.60*	1.3	TRCZ02	80B5/B14	80A6	23
	25.1	135	35.91*	1.5				
	31.2	109	28.88*	1.8				
	25.9	131	54.00*	1.5	TRC02	71B5/B14	71B4	23
	30.1	113	46.46*	1.8	TRCF02	71B5/B14	71B4	23
	34.5	98	40.60*	2.0	TRCZ02	71B5/B14	71B4	23
	39.0	87	35.91*	2.3				
	48.5	70	28.88*	2.9				
	58.7	58	23.85*	3.5				
	81.9	41	17.10	3.9				
	17.5	193	51.30*	1.6	TRC03	80B5/B14	80A6	25
	20.4	167	44.18*	1.8	TRCF03	80B5/B14	80A6	25
	23.3	146	38.63	2.1	TRCZ03	80B5/B14	80A6	25
	26.3	129	34.20*	2.3				
	29.4	115	30.57	2.6				
	27.3	124	51.30*	2.4	TRC03	71B5	71B4	25
	31.7	107	44.18*	2.8	TRCF03	71B5	71B4	25
	36.2	94	38.63	3.2	TRCZ03	71B5	71B4	25
40.9	83	34.20*	3.6					
0.55	31.6	160	28.50	0.75	TRC01	80B5/B14	80B6	21
	38.2	132	23.56	0.91	TRCF01	80B5/B14	80B6	21
	45.4	111	19.83	1.1	TRCZ01	80B5/B14	80B6	21
	34.9	144	40.10	0.8	TRC01	80B5/B14	80A4	21
	39.5	128	35.47	0.9	TRCF01	80B5/B14	80A4	21
	49.1	103	28.50	1.2	TRCZ01	80B5/B14	80A4	21
	59.4	85	23.56	1.4				
	70.6	71	19.83	1.7				
	78.4	64	17.86	1.6				
	95.8	53	14.62	2.3				
	101	50	13.80*	2.0				
	118	43	11.90	2.8				
	143	35	9.81	2.8				
	153	33	9.17	2.4				
	181	28	7.72	2.9				
	246	20	5.69	2.9				
	302	17	4.63	3.6				
	366	14	3.82	4.4				
	19.4	260	46.46*	0.77	TRC02	80B5/B14	80B6	23
	22.2	227	40.60*	0.88	TRCF02	80B5/B14	80B6	23
	25.1	201	35.91*	1.0	TRCZ02	80B5/B14	80B6	23
	31.2	162	28.88*	1.2				
	37.7	134	23.85*	1.5				
	25.9	194	54.00*	1.0	TRC02	80B5/B14	80A4	23
	30.1	167	46.46*	1.2	TRCF02	80B5/B14	80A4	23
	34.5	146	40.60*	1.4	TRCZ02	80B5/B14	80A4	23
39.0	129	35.91*	1.5					
48.5	104	28.88*	1.9					
58.7	86	23.85*	2.3					



P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	f_s			Page	
0.55	69.7	72	20.08*	2.8	TRC02	80B5/B14	80A4	23
	81.9	62	17.10	2.6	TRCF02	80B5/B14	80A4	23
	94.5	53	14.81*	3.7	TRCZ02	80B5/B14	80A4	23
	17.5	287	51.30*	1.0	TRC03	80B5/B14	80B6	25
	20.4	248	44.18*	1.2	TRCF03	80B5/B14	80B6	25
	23.3	216	38.63	1.4	TRCZ03	80B5/B14	80B6	25
	26.3	192	34.20*	1.6				
	29.4	171	30.57	1.8				
	27.3	185	51.30*	1.6	TRC03	80B5/B14	80A4	25
	31.7	159	44.18*	1.9	TRCF03	80B5/B14	80A4	25
	36.2	139	38.63	2.2	TRCZ03	80B5/B14	80A4	25
	40.9	123	34.20*	2.4				
	45.8	110	30.57	2.7				
	56.0	90	24.99	3.3				
	0.75	49.1	140	28.50	0.86	TRC01	80B5/B14	80B4
59.4		116	23.56	1.0	TRCF01	80B5/B14	80B4	21
70.6		97	19.83	1.2	TRCZ01	80B5/B14	80B4	21
78.4		88	17.86	1.1				
95.8		72	14.62	1.7				
101		68	13.80*	1.5				
118		58	11.90	2.1				
143		48	9.81	2.1				
153		45	9.17	1.8				
181		38	7.72	2.1				
246		28	5.69	2.1				
302		23	4.63	2.6				
366		19	3.82	3.2				
31.2		221	28.88*	0.91	TRC02	90B5/B14	90S6	23
37.7		182	23.85*	1.1	TRCF02	90B5/B14	90S6	23
44.8		153	20.08*	1.3	TRCZ02	90B5/B14	90S6	23
30.1		228	46.46*	0.88	TRC02	80B5/B14	80B4	23
34.5		199	40.60*	1.0	TRCF02	80B5/B14	80B4	23
39.0		176	35.91*	1.1	TRCZ02	80B5/B14	80B4	23
48.5		142	28.88*	1.4				
58.7		117	23.85*	1.7				
69.7		99	20.08*	2.0				
81.9		84	17.10	1.9				
94.5		73	14.81*	2.7				
106		65	13.21	2.5				
116.2		59	12.05	3.4				
141		49	9.93	3.3				
159		43	8.78	2.8				
189		36	7.39	3.3				
257		27	5.45	3.7				
97.0		71	28.88*	2.8	TRC02	80B5/B14	80A2	23
117.4		59	23.85*	3.4	TRCF02	80B5/B14	80A2	23
139.4		49	20.08*	4.1	TRCZ02	80B5/B14	80A2	23
163.7	42	17.10	3.8					

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	f_s			Page	
0.75	17.5	392	51.30*	0.77	TRC03	90B5/B14	90S6	25
	20.4	338	44.18*	0.89	TRCF03	90B5/B14	90S6	25
	23.3	295	38.63	1.0	TRCZ03	90B5/B14	90S6	25
	26.3	261	34.20*	1.1				
	29.4	234	30.57	1.3				
	36.0	191	24.99	1.6				
	27.3	252	51.30*	1.2	TRC03	80B5/B14	80B4	25
	31.7	217	44.18*	1.4	TRCF03	80B5/B14	80B4	25
	36.2	190	38.63	1.6	TRCZ03	80B5/B14	80B4	25
	40.9	168	34.20*	1.8				
	45.8	150	30.57	2.0				
	56.0	123	24.99	2.4				
	66.2	104	21.15*	2.7				
	72.8	94	19.24*	3.0				
	76.9	89	18.21*	3.1				
	91.5	75	15.30*	3.7				
	105	65	13.30*	3.8				
	111	62	12.60	4.0				
	17.5	392	51.30*	1.3	TRC04	90B5/B14	90S6	27
	20.4	338	44.18*	1.5	TRCF04	90B5/B14	90S6	27
	23.3	295	38.63	1.7	TRCZ04	90B5/B14	90S6	27
	26.3	261	34.20*	1.8				
	29.4	234	30.57	2.1				
	27.3	252	51.30*	2.0	TRC04	80B5/B14	80B4	27
	31.7	217	44.18*	2.3	TRCF04	80B5/B14	80B4	27
	36.2	190	38.63	2.6	TRCZ04	80B5/B14	80B4	27
	40.9	168	34.20*	2.9				
45.8	150	30.57	3.2					
56.0	123	24.99	3.9					
66.2	104	21.15*	4.0					
1.1	70.6	143	19.83	0.84	TRC01	90B5/B14	90S4	21
	78.4	129	17.86	0.78	TRCF01	90B5/B14	90S4	21
	95.8	105	14.62	1.1	TRCZ01	90B5/B14	90S4	21
	101	99	13.80*	1.0				
	118	86	11.90	1.4				
	143	71	9.81	1.4				
	153	66	9.17	1.2				
	181	56	7.72	1.4				
	246	41	5.69	1.5				
	302	33	4.63	1.8				
	366	28	3.82	2.2				
	285	35	9.81	2.8	TRC01	80B5/B14	80B2	21
	305	33	9.17	2.4	TRCF01	80B5/B14	80B2	21
	363	28	7.72	2.9	TRCZ01	80B5/B14	80B2	21
	492	20	5.69	2.9				
	605	17	4.63	3.6				
	733	14	3.82	4.4				
	39.0	259	35.91*	0.77	TRC02	90B5/B14	90S4	23
	48.5	208	28.88*	1.0	TRCF02	90B5/B14	90S4	23
	58.7	172	23.85*	1.2	TRCZ02	90B5/B14	90S4	23
	69.7	145	20.08*	1.4				
	81.9	123	17.10	1.3				

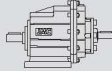
P _{1n} [kW]	n ₂ [r/min]	M _{2n} [Nm]	i	fs			Page	
1.1	94.5	107	14.81*	1.9	TRC02	90B5/B14	90S4	23
	106	95	13.21	1.7	TRCF02	90B5/B14	90S4	23
	116	87	12.05	2.3	TRCZ02	90B5/B14	90S4	23
	141	72	9.93	2.2				
	159	63	8.78	1.9				
	189	53	7.39	2.3				
	257	39	5.45	2.5				
	316	32	4.43	3.1				
	383	26	3.66	3.8				
	27.3	370	51.30*	0.81	TRC03	90B5/B14	90S4	25
	31.7	318	44.18*	0.94	TRCF03	90B5/B14	90S4	25
	36.2	278	38.63	1.1	TRCZ03	90B5/B14	90S4	25
	40.9	246	34.20*	1.2				
	45.8	220	30.57	1.4				
	56.0	180	24.99	1.7				
	66.2	152	21.15*	1.8				
	72.8	139	19.24*	2.0				
	76.9	131	18.21*	2.1				
	91.5	110	15.30*	2.5				
	72.5	139	38.63	2.2	TRC03	80B5/B14	80B2	25
	81.9	123	34.20*	2.4	TRCF03	80B5/B14	80B2	25
	91.6	110	30.57	2.7	TRCZ03	80B5/B14	80B2	25
	112.0	90	24.99	3.3				
	132.4	76	21.15*	3.7				
	145.5	69	19.24*	4.0				
	153.8	66	18.21*	4.3				
	27.3	370	51.30*	1.4	TRC04	90B5/B14	90S4	27
	31.7	318	44.18*	1.6	TRCF04	90B5/B14	90S4	27
36.2	278	38.63	1.8	TRCZ04	90B5/B14	90S4	27	
40.9	246	34.20*	1.9					
45.8	220	30.57	2.2					
56.0	180	24.99	2.7					
66.2	152	21.15*	2.8					
72.8	139	19.24*	3.0					
76.9	131	18.21*	3.2					
91.5	110	15.30*	3.8					
105	96	13.30*	3.7					
1.5	118	117	11.90	1.0	TRC01	90B5/B14	90L4	21
	143	96	9.81	1.0	TRCF01	90B5/B14	90L4	21
	153	90	9.17	0.9	TRCZ01	90B5/B14	90L4	21
	181	76	7.72	1.1				
	246	56	5.69	1.1				
	302	45	4.63	1.3				
	366	38	3.82	1.6				
	305	45	9.17	1.8	TRC01	90B5/B14	90S2	21
	363	38	7.72	2.1	TRCF01	90B5/B14	90S2	21
	492	28	5.69	2.1	TRCZ01	90B5/B14	90S2	21
	605	23	4.63	2.6				
	733	19	3.82	3.2				

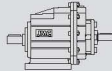

P _{1n} [kW]	n ₂ [r/min]	M _{2n} [Nm]	i	fs			Page	
1.5	58.7	234	23.85*	0.85	TRC02	90B5/B14	90L4	23
	69.7	197	20.08*	1.0	TRCF02	90B5/B14	90L4	23
	81.9	168	17.10	1.0	TRCZ02	90B5/B14	90L4	23
	94.5	145	14.81*	1.4				
	106	130	13.21	1.2				
	116	118	12.05	1.7				
	141	98	9.93	1.6				
	159	86	8.78	1.4				
	189	73	7.39	1.7				
	257	54	5.45	1.9				
316	44	4.43	2.3					
383	36	3.66	2.8					
	212	65	13.21	2.5	TRC02	90B5/B14	90S2	23
	232	59	12.05	3.4	TRCF02	90B5/B14	90S2	23
	282	49	9.93	3.3	TRCZ02	90B5/B14	90S2	23
	319	43	8.78	2.8				
	379	36	7.39	3.3				
	514	27	5.45	3.7				
	40.9	336	34.20*	0.89	TRC03	90B5/B14	90L4	25
	45.8	300	30.57	1.0	TRCF03	90B5/B14	90L4	25
	56.0	245	24.99	1.2	TRCZ03	90B5/B14	90L4	25
	66.2	208	21.15*	1.3				
	72.8	189	19.24*	1.5				
	76.9	179	18.21*	1.6				
	91.5	150	15.30*	1.9				
	105	131	13.30*	1.9				
	111	124	12.60	2.0				
	128	107	10.93*	1.7				
	154	89	9.08	2.0				
	177	78	7.93*	2.3				
	222	62	6.31	2.9				
	255	54	5.48	2.8				
	311	44	4.50	3.4				
	374	37	3.74	4.1				
	256	54	10.93*	3.4	TRC03	90B5/B14	90S2	25
	308	45	9.08	4.0	TRCF03	90B5/B14	90S2	25
	353	39	7.93*	4.6	TRCZ03	90B5/B14	90S2	25
	26.3	523	34.20*	0.92	TRC04	100B5/B14	100L6	27
	29.4	467	30.57	1.0	TRCF04	100B5/B14	100L6	27
	36.0	382	24.99	1.3	TRCZ04	100B5/B14	100L6	27
	27.3	504	51.30*	1.0	TRC04	90B5/B14	90L4	27
	31.7	434	44.18*	1.2	TRCF04	90B5/B14	90L4	27
	36.2	379	38.63	1.3	TRCZ04	90B5/B14	90L4	27
	40.9	336	34.20*	1.4				
	45.8	300	30.57	1.6				
	56.0	245	24.99	2.0				
	66.2	208	21.15*	2.0				
	72.8	189	19.24*	2.2				
	76.9	179	18.21*	2.3				
	91.5	150	15.30*	2.8				
	105	131	13.30*	2.7				
	111	124	12.60	2.8				
	128	107	10.93*	2.6				
	154	89	9.08	3.1				
	177	78	7.93*	3.3				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	f_s			Page	
2.2	72.8	277	19.24*	1.0	TRC03	100B5/B14	100LA4	25
	91.5	220	15.30*	1.1	TRCF03	100B5/B14	100LA4	25
	105	192	13.30*	1.3	TRCZ03	100B5/B14	100LA4	25
	111	182	12.60	1.4				
	128	157	10.93*	1.1				
	154	131	9.08	1.4				
	177	114	7.93*	1.6				
	222	91	6.31	2.0				
	255	79	5.48	1.9				
	311	65	4.50	2.3				
374	54	3.74	2.8					
	308	65	9.08	2.8	TRC03	90B5/B14	90L2	25
	353	57	7.93*	3.2	TRCF03	90B5/B14	90L2	25
	444	45	6.31	4.0	TRCZ03	90B5/B14	90L2	25
	511	39	5.48	3.8				
	36.0	560	24.99	0.86	TRC04	112B5/B14	112M6	27
	46.8	431	19.24*	1.0	TRCF04	112B5/B14	112M6	27
					TRCZ04	112B5/B14	112M6	27
	40.9	493	34.20*	1.0	TRC04	100B5/B14	100LA4	27
	45.8	440	30.57	1.1	TRCF04	100B5/B14	100LA4	27
	56.0	360	24.99	1.3	TRCZ04	100B5/B14	100LA4	27
	72.8	277	19.24*	1.5				
	91.5	220	15.30*	1.9				
	105	192	13.30*	1.8				
	111	182	12.60	1.9				
	128	157	10.93*	1.8				
	154	131	9.08	2.1				
	177	114	7.93*	2.3				
	222	91	6.31	2.9				
	255	79	5.48	2.9				
	311	65	4.50	3.5				
	374	54	3.74	4.3				
3	91.5	301	15.30*	0.93	TRC03	100B5/B14	100LB4	25
	105	261	13.30*	1.0	TRCF03	100B5/B14	100LB4	25
	111	248	12.60	1.0	TRCZ03	100B5/B14	100LB4	25
	128	215	10.93*	0.8				
	154	178	9.08	1.0				
	177	156	7.93*	1.2				
	222	124	6.31	1.5				
	255	108	5.48	1.4				
	311	88	4.50	1.7				
	374	73	3.74	2.0				
	45.8	601	30.57	0.80	TRC04	100B5/B14	100LB4	27
	56.0	491	24.99	1.0	TRCF04	100B5/B14	100LB4	27
	72.8	378	19.24*	1.1	TRCZ04	100B5/B14	100LB4	27
	91.5	301	15.30*	1.4				
	105	261	13.30*	1.3				
	111	248	12.60	1.4				
	128	215	10.93*	1.3				
	154	178	9.08	1.6				

P_{1n} [kW]	n_2 [r/min]	M_{2n} [Nm]	i	fs			Page	
3	177	156	7.93*	1.7	TRC04	100B5/B14	100LB4	27
	222	124	6.31	2.1	TRCF04	100B5/B14	100LB4	27
	255	108	5.48	2.1	TRCZ04	100B5/B14	100LB4	27
	311	88	4.50	2.6				
	374	73	3.74	3.1				
	308	89	9.08	3.1	TRC04	100B5/B14	100L2	27
	353	78	7.93*	3.3	TRCF04	100B5/B14	100L2	27
	444	62	6.31	4.2	TRCZ04	100B5/B14	100L2	27
	511	54	5.48	4.3				
4	177	208	7.93*	0.87	TRC03	112B5/B14	112M4	25
	222	165	6.31	1.1	TRCF03	112B5/B14	112M4	25
	255	144	5.48	1.0	TRCZ03	112B5/B14	112M4	25
	311	118	4.50	1.3				
	374	98	3.74	1.5				
	105	348	13.30*	1.0	TRC04	112B5/B14	112M4	27
	111	330	12.60	1.1	TRCF04	112B5/B14	112M4	27
	128	286	10.93*	1.0	TRCZ04	112B5/B14	112M4	27
	154	238	9.08	1.2				
	177	208	7.93*	1.3				
	222	165	6.31	1.6				
	255	144	5.48	1.6				
	311	118	4.50	2.0				
	374	98	3.74	2.3				
	308	119	9.08	2.4	TRC04	112B5/B14	112M2	27
	353	104	7.93*	2.5	TRCF04	112B5/B14	112M2	27
	444	83	6.31	3.1	TRCZ04	112B5/B14	112M2	27
	511	72	5.48	3.2				
	622	59	4.50	3.9				

7.2 TRC..HS.. 性能參數 / Performance parameter

M_{2max} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]		Page
120	1400	53.33	0.34	26.3	TRC01-HS	22
120	1400	45.89	0.40	30.5	TRCF01-HS	22
120	1400	40.10	0.46	34.9	TRCZ01-HS	22
120	1400	35.47	0.52	39.5		
120	1400	28.50	0.64	49.1		
120	1400	23.56	0.78	59.4		
120	1400	19.83	0.92	70.6		
100	1400	17.86	0.86	78.4		
120	1400	14.62	1.25	95.7		
100	1400	13.80 *	1.10	101		
120	1400	11.90	1.54	118		
100	1400	9.81	1.56	143		
80	1400	9.17	1.34	153		
80	1400	7.72	1.58	181		
60	1400	5.69	1.61	246		
60	1400	4.63	1.98	302		
60	1400	3.82	2.40	367		
200	1400	54.00 *	0.57	25.9	TRC02-HS	24
200	1400	46.46 *	0.66	30.1	TRCF02-HS	24
200	1400	40.60 *	0.75	34.5	TRCZ02-HS	24
200	1400	35.91 *	0.85	39.0		
200	1400	28.88 *	1.06	48.5		
200	1400	23.85 *	1.28	58.7		
200	1400	20.08 *	1.52	69.7		
160	1400	17.10	1.43	81.9		
200	1400	14.81 *	2.06	94.6		
160	1400	13.21	1.85	106		
200	1400	12.05	2.53	116		
160	1400	9.93	2.46	141		
120	1400	8.78	2.08	159		
120	1400	7.39	2.49	190		
100	1400	5.45	2.80	257		
100	1400	4.43	3.45	316		
100	1400	3.66	4.18	383		

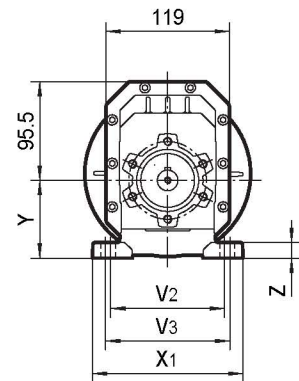
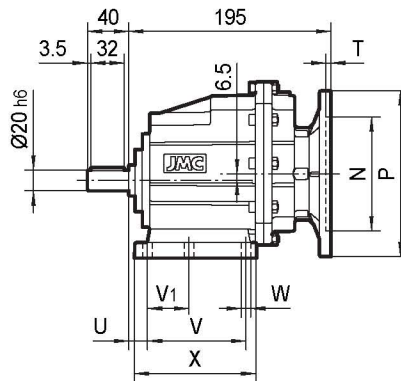
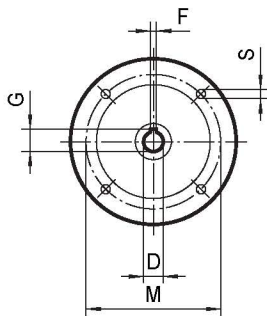
M_{2max} [Nm]	n_1 [r/min]	i	P_{1n} [kW]	n_2 [r/min]		Page 
300	1400	51.30 *	0.89	27.3	TRC03-HS	26
300	1400	44.18 *	1.04	31.7	TRCF03-HS	26
300	1400	38.63	1.19	36.2	TRCZ03-HS	26
300	1400	34.20 *	1.34	40.9		
300	1400	30.57	1.50	45.8		
300	1400	24.99	1.83	56.0		
280	1400	21.15 *	2.02	66.2		
280	1400	19.24 *	2.22	72.8		
250	1400	18.21 *	2.10	76.9		
280	1400	15.30 *	2.79	91.5		
250	1400	13.30 *	2.86	105		
250	1400	12.60	3.03	111		
180	1400	10.93	2.51	128		
180	1400	9.08	3.02	154		
180	1400	7.93 *	3.46	176		
180	1400	6.31	4.36	222		
150	1400	5.48	4.17	255		
150	1400	4.50	5.09	311		
150	1400	3.74	6.12	374		
500	1400	51.30 *	1.49	27.3	TRC04-HS	28
500	1400	44.18 *	1.73	31.7	TRCF04-HS	28
500	1400	38.63	1.98	36.2	TRCZ04-HS	28
480	1400	34.20 *	2.14	40.9		
480	1400	30.57	2.40	45.8		
480	1400	24.99	2.93	56.0		
280	1400	21.15 *	2.02	66.2		
420	1400	19.24 *	3.34	72.8		
420	1400	15.30 *	4.19	91.5		
350	1400	13.30 *	4.01	105		
350	1400	12.60	4.24	111		
280	1400	10.93	3.91	128		
280	1400	9.08	4.70	154		
260	1400	7.93 *	4.99	176		
260	1400	6.31	6.30	222		
230	1400	5.48	6.40	255		
230	1400	4.50	7.80	311		
230	1400	3.74	9.38	374		

TRC..01..(IEC)

8. 外形尺寸圖表 / OUTLINE DIMENSION SHEET

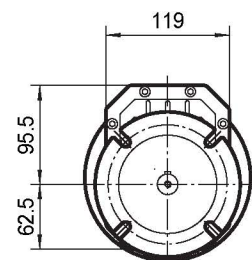
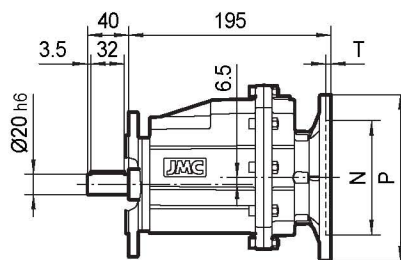
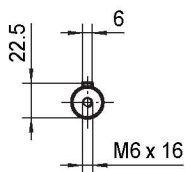
TRC01..P(IEC)

輸入 / INPUT

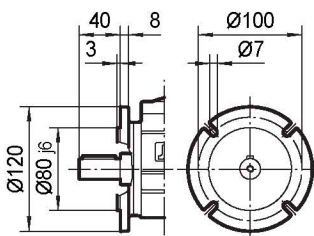


TRCF01..P(IEC)

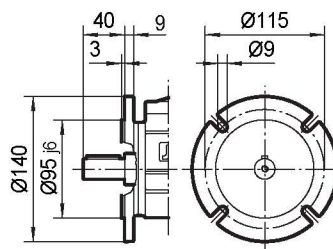
輸出 / OUTPUT



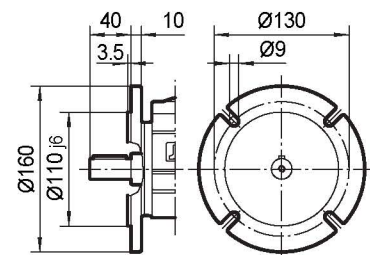
I
Ø120



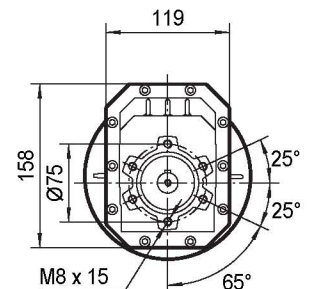
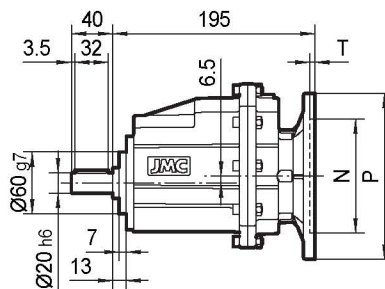
II
Ø140



III
Ø160



TRCZ01..P(IEC)

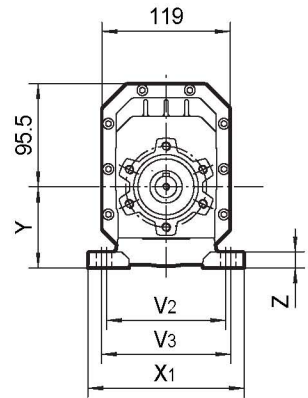
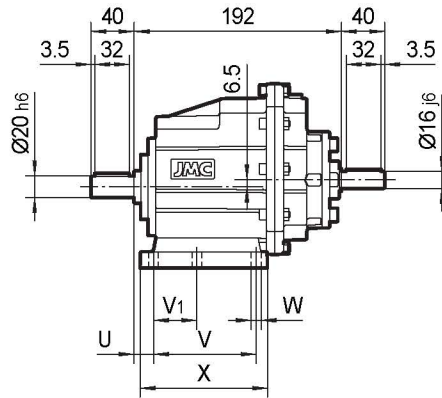
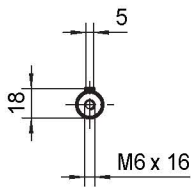


IEC	D	F	G	P	M	N	S	T
63B5	11	4	12.8	140	115	95	9	5
71B5	14	5	16.3	160	130	110	9	5
71B14	14	5	16.3	105	85	70	7	5
80B5	19	6	21.8	200	165	130	11	5
80B14	19	6	21.8	120	100	80	7	5
90B5	24	8	27.3	200	165	130	11	5
90B14	24	8	27.3	140	115	95	9	5

腳座代號 Foot Code	U	V	V1	V2	V3	W	X	X1	Y	Z
B01	18	87	50	110	—	9	118	130	85	15
M01	18	80	—	110	120	9	118	145	75	15
M02	25	85	—	110	120	9	112	145	75	15
B02	18	107.5	60	—	130	11	136	155	95	17

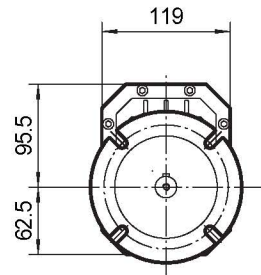
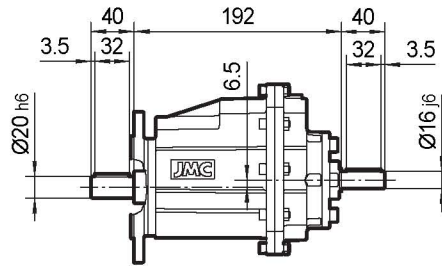
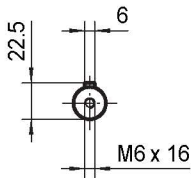
TRC01..HS

輸入 / INPUT

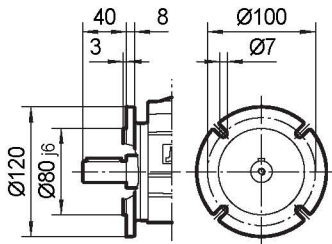


TRCF01..HS

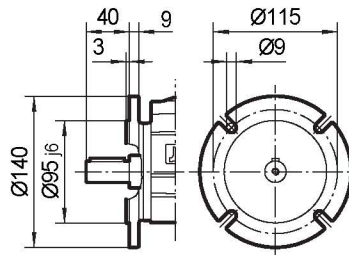
輸出 / OUTPUT



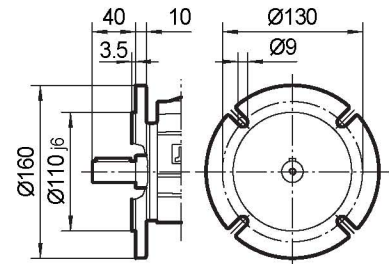
I
Ø120



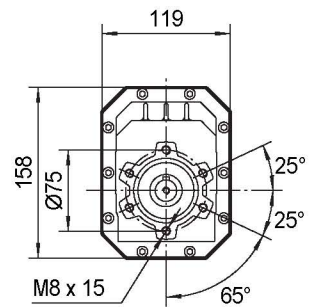
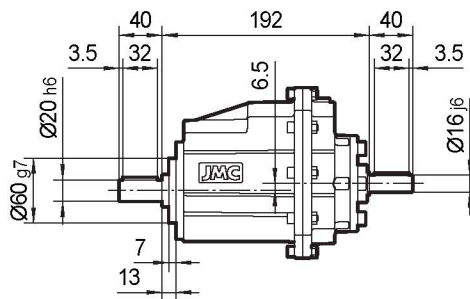
II
Ø140



III
Ø160



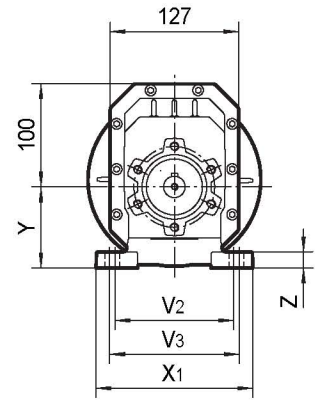
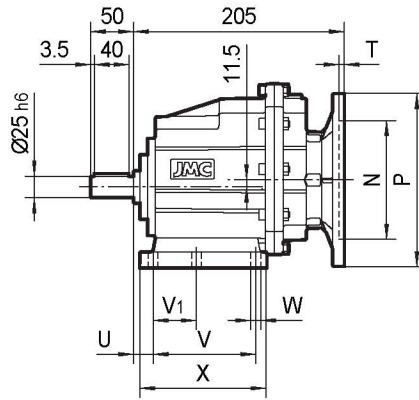
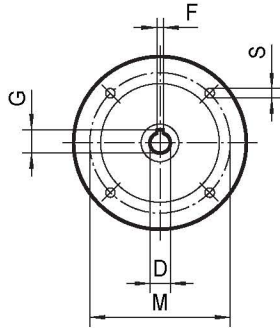
TRCZ01..HS



腳座代號 Foot Code	U	V	V1	V2	V3	W	X	X1	Y	Z
B01	18	87	50	110	—	9	118	130	85	15
M01	18	80	—	110	120	9	118	145	75	15
M02	25	85	—	110	120	9	112	145	75	15
B02	18	107.5	60	—	130	11	136	155	95	17

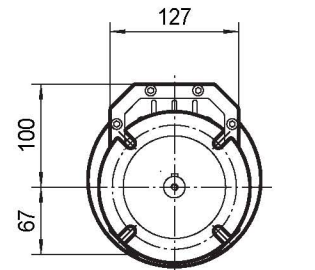
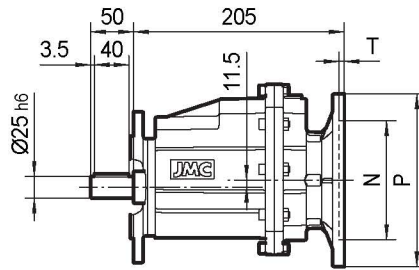
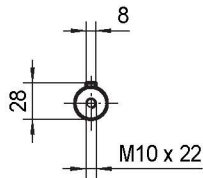
TRC02..P(IEC)

輸入 / INPUT

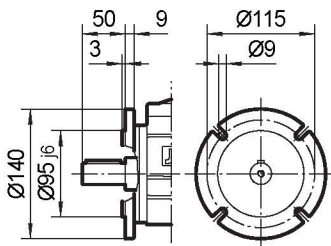


TRCF02..P(IEC)

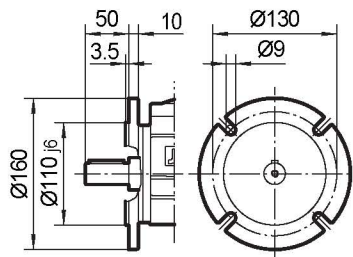
輸出 / OUTPUT



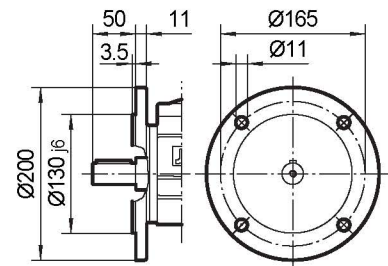
I
Ø140



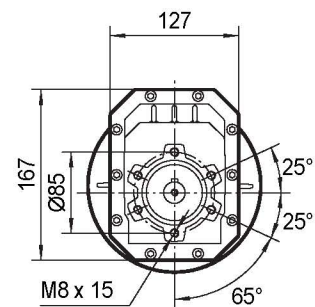
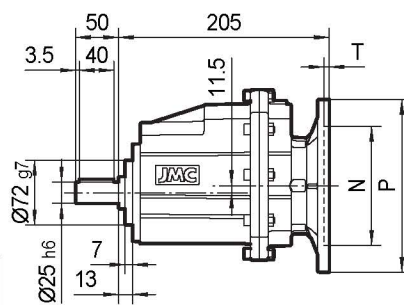
II
Ø160



III
Ø200



TRCZ02..P(IEC)

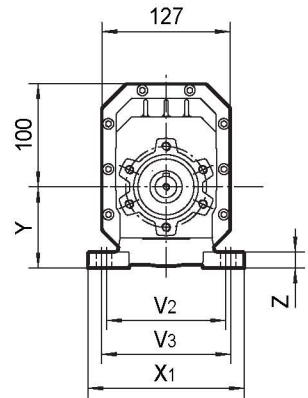
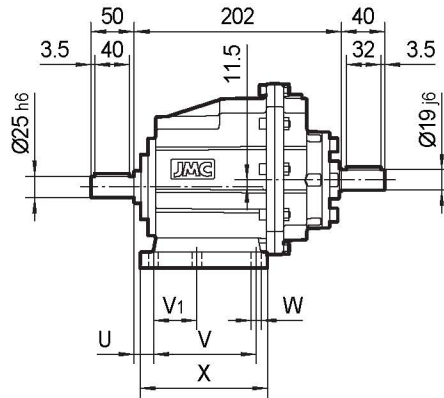
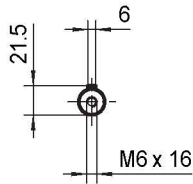


IEC	D	F	G	P	M	N	S	T
63B5	11	4	12.8	140	115	95	9	5
71B5	14	5	16.3	160	130	110	9	5
71B14	14	5	16.3	105	85	70	7	5
80B5	19	6	21.8	200	165	130	11	5
80B14	19	6	21.8	120	100	80	7	5
90B5	24	8	27.3	200	165	130	11	5
90B14	24	8	27.3	140	115	95	9	5

腳座代號 Foot Code	U	V	V1	V2	V3	W	X	X1	Y	Z
B02	18	107.5	60	—	130	11	136	155	100	17
M02	25	85	—	110	120	9	112	145	80	15
M01	18	80	—	110	120	9	118	145	80	15
B01	18	87	50	110	—	9	118	130	90	15

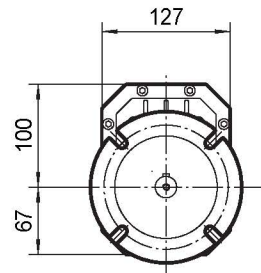
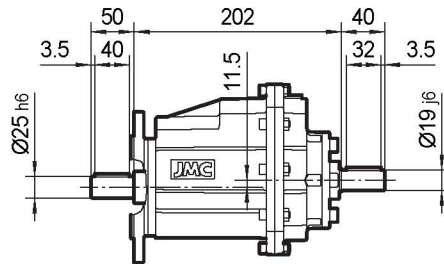
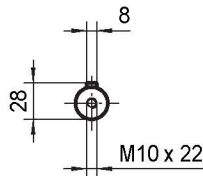
TRC02..HS

輸入 / INPUT

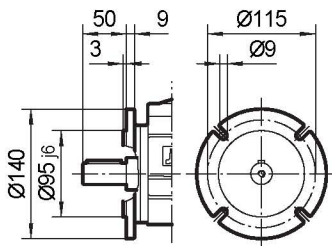


TRCF02..HS

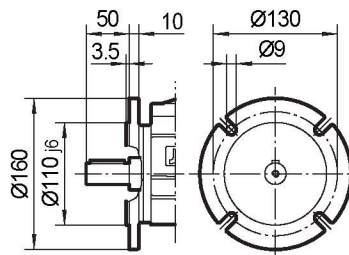
輸出 / OUTPUT



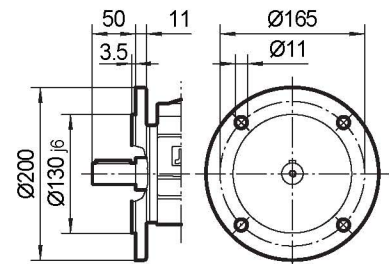
I
Ø140



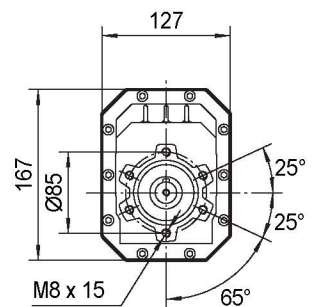
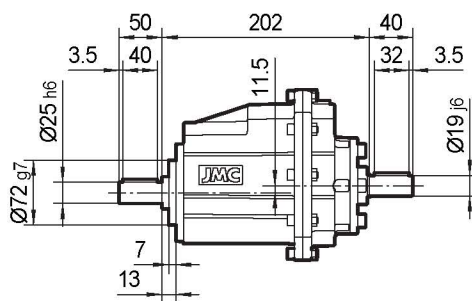
II
Ø160



III
Ø200



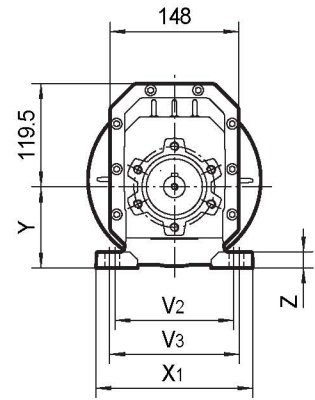
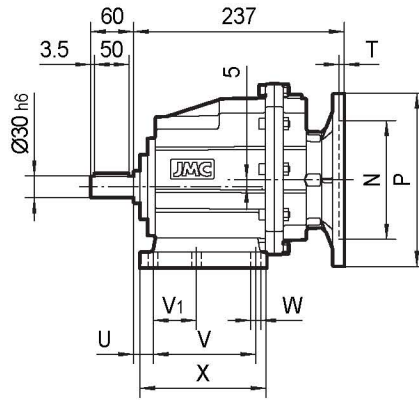
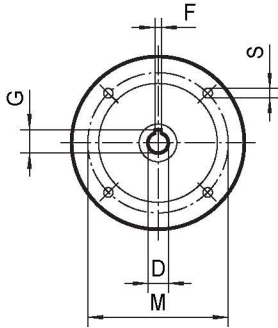
TRCZ02..HS



腳座代號 Foot Code	U	V	V1	V2	V3	W	X	X1	Y	Z
B02	18	107.5	60	—	130	11	136	155	100	17
M02	25	85	—	110	120	9	112	145	80	15
M01	18	80	—	110	120	9	118	145	80	15
B01	18	87	50	110	—	9	118	130	90	15

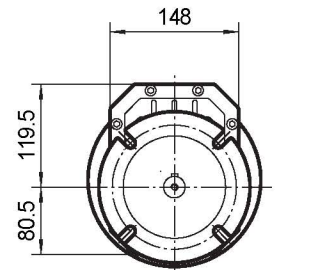
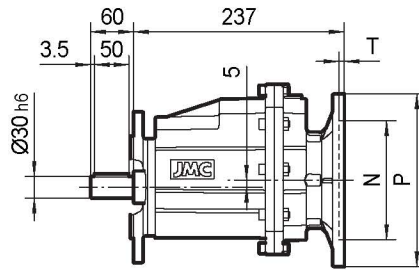
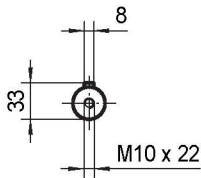
TRC03..P(IEC)

輸入 / INPUT

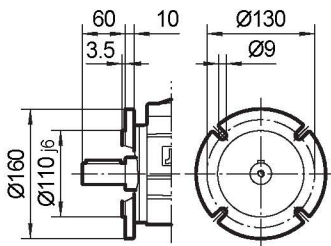


TRCF03..P(IEC)

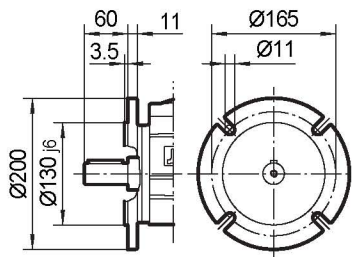
輸出 / OUTPUT



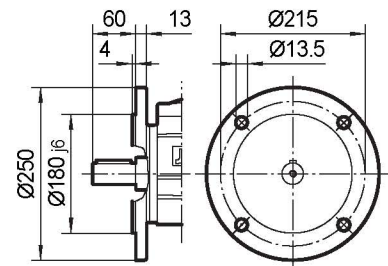
I
Ø160



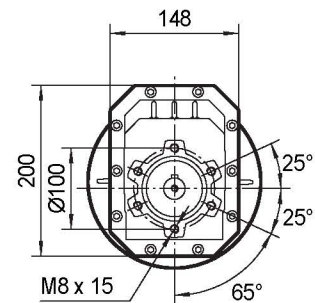
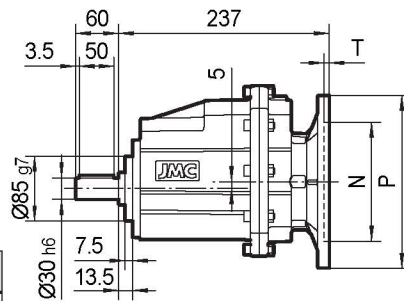
II
Ø200



III
Ø250



TRCZ03..P(IEC)

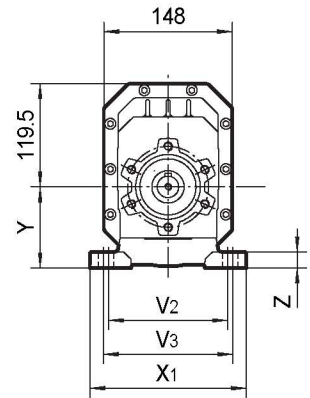
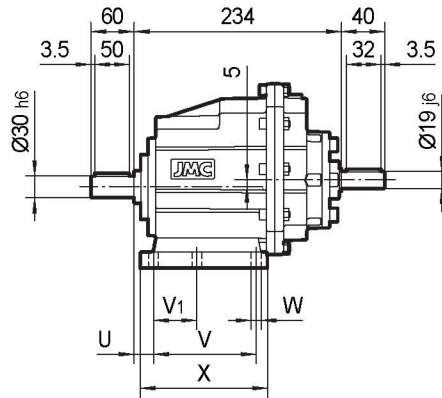
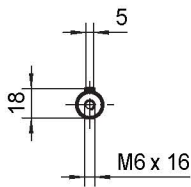


IEC	D	F	G	P	M	N	S	T
71B5	14	5	16.3	160	130	110	9	5
80B5	19	6	21.8	200	165	130	11	5
80B14	19	6	21.8	120	100	80	7	5
90B5	24	8	27.3	200	165	130	11	5
90B14	24	8	27.3	140	115	95	9	5
100/112B5	28	8	31.3	250	215	180	13.5	5
100/112B14	28	8	31.3	160	130	110	9	5

腳座代號 Foot Code	U	V	V1	V2	V3	W	X	X1	Y	Z
B03	18	130	70	—	160	11	156	190	110	20
M03	30	100	—	135	150	11	150	190	110	18
M04	32	110	—	170	185	14	150	230	110	20
B04	20.5	130	—	170	—	14	168	205	105	20

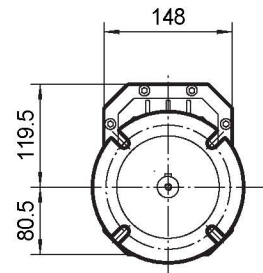
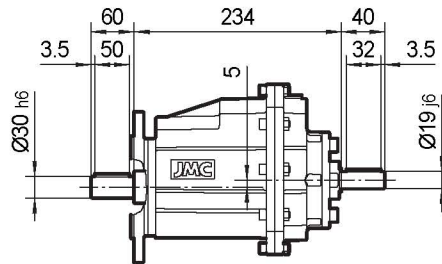
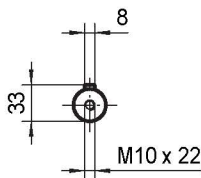
TRC03..HS

輸入 / INPUT

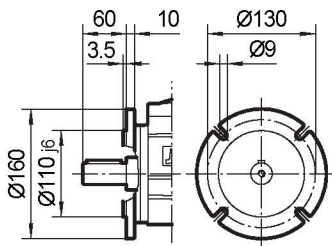


TRCF03..HS

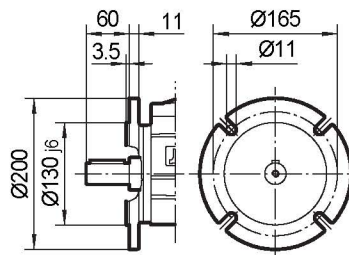
輸出 / OUTPUT



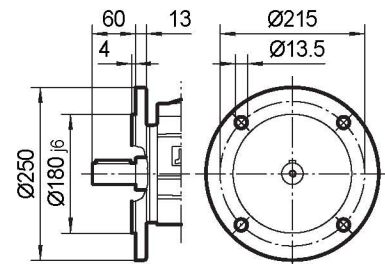
I
Ø160



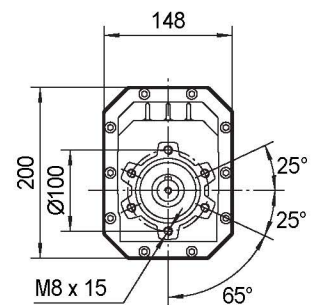
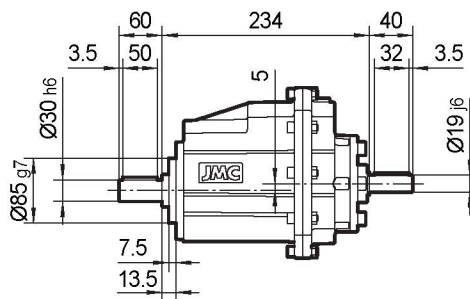
II
Ø200



III
Ø250



TRCZ03..HS

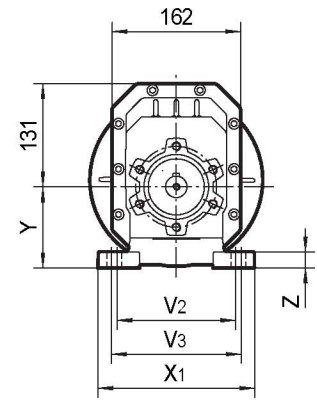
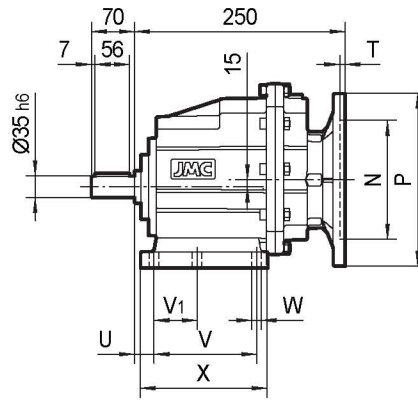
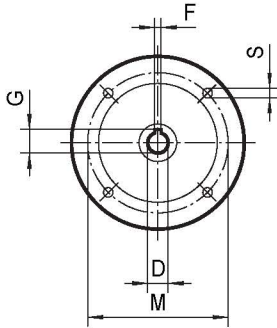


腳座代號 Foot Code	U	V	V1	V2	V3	W	X	X1	Y	Z
B03	18	130	70	—	160	11	156	190	110	20
M03	30	100	—	135	150	11	150	190	110	18
M04	32	110	—	170	185	14	150	230	110	20
B04	20.5	130	—	170	—	14	168	205	105	20

TRC..03..P(IEC)

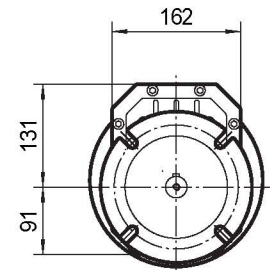
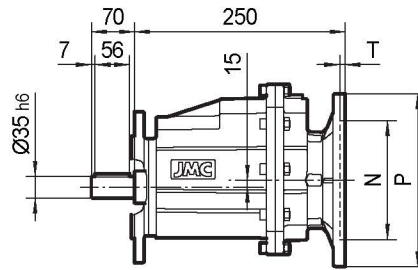
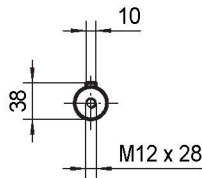
TRC04..P(IEC)

輸入 / INPUT

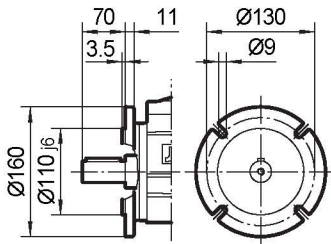


TRCF04..P(IEC)

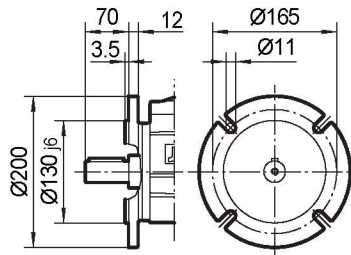
輸出 / OUTPUT



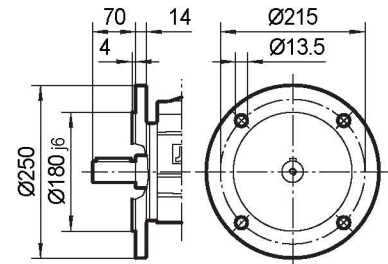
I
Ø160



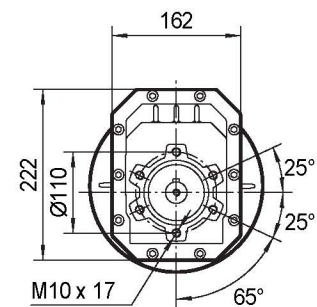
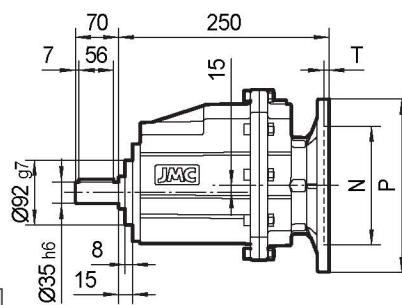
II
Ø200



III
Ø250



TRCZ04..P(IEC)

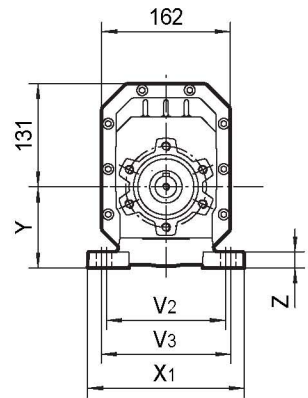
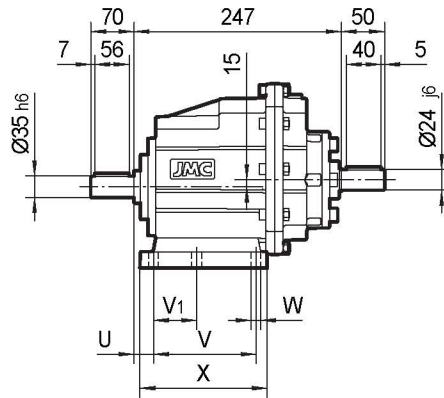
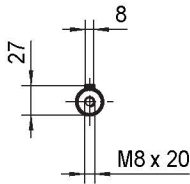


IEC	D	F	G	P	M	N	S	T
80B5	19	6	21.8	200	165	130	11	5
80B14	19	6	21.8	120	100	80	7	5
90B5	24	8	27.3	200	165	130	11	5
90B14	24	8	27.3	140	115	95	9	5
100/112B5	28	8	31.3	250	215	180	13.5	5
100/112B14	28	8	31.3	160	130	110	9	5

腳座代號 Foot Code	U	V	V1	V2	V3	W	X	X1	Y	Z
B04	23.5	130	—	170	—	14	168	205	115	20
B05	19.5	149.5	—	180	—	14	185	215	130	20
M04	35	110	—	170	185	14	150	230	120	20
M03	33	100	—	135	150	11	150	190	120	18
B03	21	130	70	—	160	11	156	190	120	20

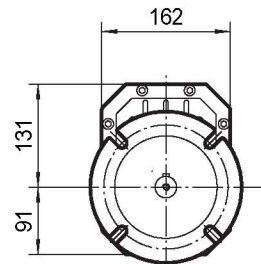
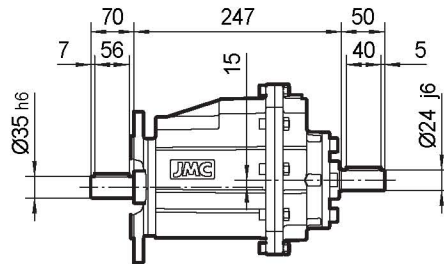
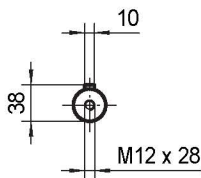
TRC04..HS

輸入 / INPUT

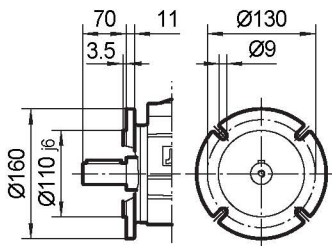


TRCF04..HS

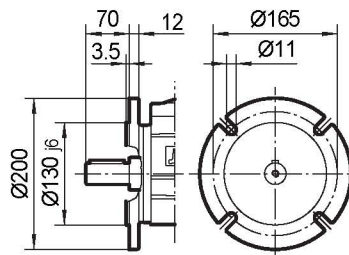
輸出 / OUTPUT



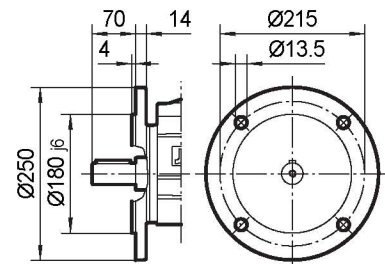
I
Ø160



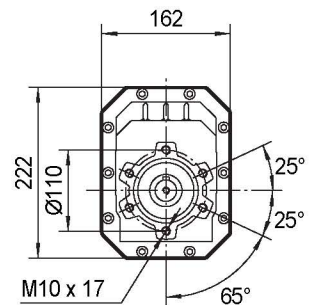
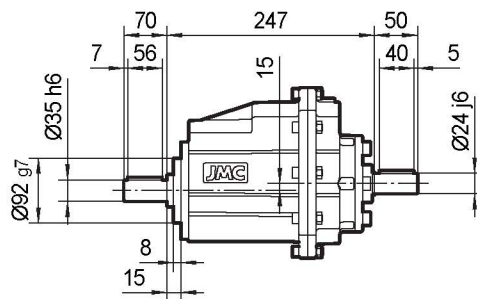
II
Ø200



III
Ø250

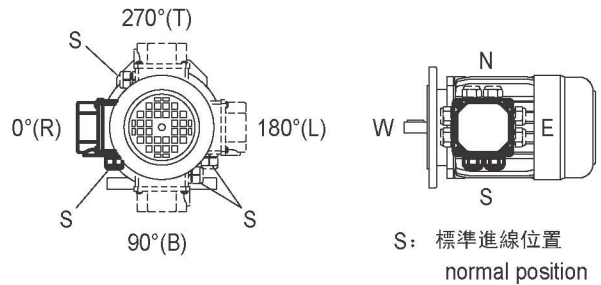
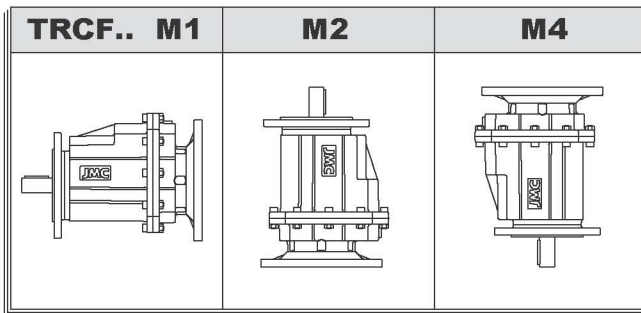
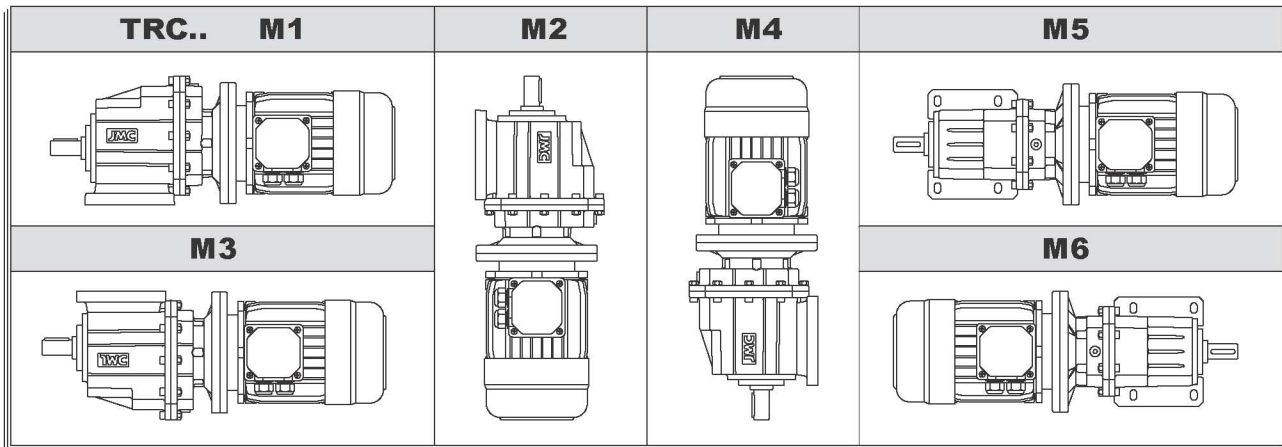


TRCZ04..HS








腳座代號 Foot Code	U	V	V1	V2	V3	W	X	X1	Y	Z
B04	23.5	130	—	170	—	14	168	205	115	20
B05	19.5	149.5	—	180	—	14	185	215	130	20
M04	35	110	—	170	185	14	150	230	120	20
M03	33	100	—	135	150	11	150	190	120	18
B03	21	130	70	—	160	11	156	190	120	20

9. 安裝方向和接線盒位置 / MOUNTING POSITION AND TERMINAL BOX ORIENTATION



10. 潤滑油 / LUBRICATION

10.1 潤滑油型號 / Types of lubrication

	 °C -50 0 +50 +100	 ISO	 SHELL	 MOBIL	 BP	潤滑油型號 lubrication type
TRC..	標準 Standard -10 +40	VG 220	Shell Omala 220	Mobilgear 630	BP Energol GR-XP 220	礦物油 Mineral oil
	-20 +25	VG 150 VG 100	Shell Omala 100	Mobilgear 627	BP Energol GR-XP 100	
	-30 +10	VG 68-46 VG 32	Shell Tellus T 32	Mobil D.T.E. 13M		
	-40 -20	VG 22 VG 15	Shell Tellus T 15	Mobil D.T.E. 11M	BP Energol HLP-HM 15	
	-40 +80	VG 220	Shell Omala HD 220	Mobil SHC 630		合成油 Synthetic oil
	-40 +40	VG 150		Mobil SHC 629		
	-40 +10	VG 32		Mobil SHC 624		

10.2 潤滑油添加量 / Lubricant fill quantity

減速機型號 Gear units	添加量 Fill quantity in liters					單位 unit: 升(L)
	M1	M2	M3	M4	M5	M6
TRC..01..	0.4	0.6	0.4	0.3	0.3	0.3
TRC..02..	0.5	0.7	0.5	0.4	0.4	0.4
TRC..03..	0.8	1.1	0.8	0.6	0.6	0.6
TRC..04..	1.2	1.6	1.0	1.0	0.9	0.9

表格規定的添加量為參考值，準確值的變化與傳動比有關。TRC系列減速機在出廠前已添加了長壽命的潤滑油，可長期使用，一般不需要換油。

The fill quantity in the table is referenced, the exact value relating to the ratio. All TRC Series helical gear units are filled with life lubrication before delivery, do not need to change it in general.

11. 安裝方法 / INSTALLATION METHODS

11.1 安裝前準備工作

- 1). 檢查減速馬達銘牌上的規定與電源是否一致。
- 2). 對於標準減速機，環境溫度必須與潤滑劑表中相應的潤滑劑表相一致。
- 3). 動力安裝不允許在油、爆炸氣體、水蒸汽、酸性腐蝕和放射線環境下進行。
- 4). 輸出軸和法蘭表面必須徹底清除掉防鏽劑、污染物或是類似髒物。必須使用常用的溶劑。不得讓溶劑進入到軸密封環的密封唇上，否則會損壞密封材料！
- 5). 支承結構必須滿足平穩、防震、剛性好，不發生扭曲特性。

11.2 減速機的安裝

- 1). 減速機安裝時將腳座或法蘭交錯鎖緊，注意其允許承受的橫向力和軸向力！
- 2). 輸出軸上安裝傳動件時，傳動件如皮帶輪，聯軸器，小齒輪等絕對不能使用錘子敲擊的方法套裝到輸出軸上，否則有可能損傷軸承，外殼以及軸。
- 3). 啟動機器之前，檢查放油塞是否利於操作，油鏡是否利於觀察油位，油位與減速機的安裝位置是否一致，透氣塞方位是否恰當。

11.1 Preparation before the installation

- 1). Check if the data on the nameplates of the gearmotor matches the voltage supply system.
- 2). For standard gear unit, the ambient temperature must be in accordance with the corresponding lubricant table.
- 3). The drive must not be assembled in conditions such as oil, gas, vapors, acids, radiation and so on.
- 4). Output shaft and flange surfaces must thoroughly cleaned to ensure they are free of anti-corrosion agents, contamination or similar. Use a commercially available solvent. Do not let the solvent come into contact with the sealing lip of the oil seals, or will damage the material!
- 5). The supporting structure must have the following characteristics: level, vibration damping and torsionally rigid.

11.2 The installation of the gear units

- 1). Do not tighten the housing legs and mounting flanges against one another and ensure that you comply with the permitted radial load and axial load.
- 2). Never drive belt pulleys, couplings, pinions, etc. onto the shaft end by hitting them with a hammer. This will damage the bearing, housing and the shaft.
- 3). Prior to startup, check that if the oil level is as specified for the mounting position. if the oil checking and drain screw and the breather valves are free accessible.

12. 故障排除 / CORRECT THE MALFUNCTION

故障	可能的原因	解決辦法
異常、均勻的運轉噪聲。	A. 滾動/ 碾壓噪聲： 軸承損壞。 B. 衝擊型噪聲： 齒輪嚙合不均勻	A. 檢測潤滑油， 更換軸承。 B. 請向客戶服務部諮詢。
異常、不均勻的運轉噪聲。	機油中有異物。	• 檢測潤滑。 • 停止運轉傳動裝置，向客戶服務部諮詢。
機油洩漏 1)。 • 在減速機蓋上。 • 在馬達凸緣上。 • 在馬達軸密封圈上。 • 在減速機凸緣上。 • 在輸出端軸密封圈上。	A. 減速機底座上的橡膠密封發生滲漏。 B. 密封圈損壞。 C. 減速機沒有排氣。	A. 擰緊各個外蓋上的螺釘並且觀察減速機。如果機油繼續洩露，請向客戶服務部諮詢。 B. 請向客戶服務部諮詢。 C. 給減速機排氣（參見“安裝方式”）。
機油從排氣閥旁滲出。	A. 機油太多。 B. 傳動裝置安裝方式錯誤。 C. 頻繁冷起動（機油起泡沫）和 / 或者較高的油位。	A. 修正油量（參見“潤滑油”）。 B. 正確安裝排氣閥並且矯正油位（參見“安裝方式”）。
儘管馬達在運轉或是傳動軸已經被驅動，但是傳動軸不轉動	減速機中的軸輪轂聯接斷裂。	將減速機或減速馬達送修。

1) 在磨合試運轉階段（24 小時的運轉時間內），軸密封圈有可能出現短期內的漏油/油脂的現象。

Problem	Possible cause	Remedy
Unusual, regular running noise	A. Meshing/grinding noise: Bearing damage. B. Knocking noise: Irregularity in the gearing	A. Check the oil, change bearings B. Contact customer service
Unusual, irregular running noise	Foreign bodies in the oil	• Check the oil • Stop the drive, contact customer service
Oil leaking1) • From the gear cover plate • From the motor flange • From the motor oil seal • From the gear unit flange • From the output end oil seal	A. Rubber seal on the gear cover plate leaking B. Seal defective C. Gear unit not vented	A. Tighten the bolts on the gear cover plate and observe the gear unit. Oil still leaking: Contact customer service B. Contact customer service C. Vent the gear unit (see "Mounting Positions")
Oil leaking from breaking valve	A. Too much oil B. Drive operated in incorrect mounting position C. Frequent cold starts(oil foams) and/or high oil level	A. Correct the oil level (see Sec. "Inspection and Maintenance") B. Mount the breather valve correctly (see Sec."Mounting Positions")and correct the oil level(see"Lubricants")
Output shaft does not turn although the motor is running or the input shaft is rotated	Connection between shaft and hub in gear unit interrupted	Send in the gear unit/gearmotor for repair

1) Short-term oil/grease leakage at the oil seal is possible in the run-in phase (24 hours running time).

13. 減速機負載特性表(參考件) Charge Characteristic Chart (for reference)

風機類 AIR BLOWERS		捲揚機齒輪傳動裝置 Hoist gear assembly	A
風機(軸向和徑向) Air blower(axial or radial)	A	吊桿起落齒輪傳動裝置 Derrick gear assembly	B
冷卻塔風扇 Fan of cooling tower	B	轉向齒輪傳動裝置 Steering gear assembly	B
引風機 Induced draught fan	B	行走齒輪傳動裝置 Moving gear assembly	C
螺旋活塞式風機 Rotary piston type fan	B	挖泥機類 LAND DREDGER	
蝸輪式風機 Turbo-fan	A	筒式傳送機 Drum-type conveyer	C
建築機械類 CONSTRUCTION MACHINERY		筒式轉動機 Drum-type rotation wheel	C
混凝土攪拌機 Concrete mixer	B	挖泥頭 Dredger head	C
捲揚機 Hoist	B	機動絞車 Powered crab	B
路面建築機械 Road building machinery	B	泵 Pump	B
鑽孔機 Boring mill	B	泵轉向齒輪傳動裝置 Pump turning gear assembly	B
化工機械類 CHEMICAL MACHINERY		行走齒輪傳動裝置(履帶)Moving gear assembly (apron wheel)	C
攪拌機(液體) Mixer (liquid)	A	行走齒輪傳動裝置(鐵軌) Moving gear assembly (track)	B
攪拌機(半液體) Mixer (half liquid)	B	食品工業機械類 FOODSTUFF PROCESSING MACHINERY	
離心機(重型) Centrifuge (heavy)	B	灌注及裝箱機器 Placer or box filler	A
離心機(輕型) Centrifuge(light)	A	甘蔗壓榨機 Cane crusher	A
冷卻滾筒** Cooling rolling drum	B	甘蔗切斷機** Cane cutter	B
乾燥滾筒** Dry rolling drum	B	甘蔗粉碎機** Cane crusher	C
攪拌機 Mixer	B	攪拌機 Mixer	B
壓縮機類 COMPRESSOR		醬狀物吊筒 Paste bucket	B
活塞式壓縮機 Piston type compressor	C	裝包機 Packager	A
渦輪式壓縮機 Turbo-compressor	B	糖甜菜切斷機 Beet slicer	B
傳送運輸機類 TRANSMISSION FREIGHTER		糖和甜菜清洗機 Beet washing machine	B
平板傳送機 Pan conveyer	B	發動機及轉換器類 MOTOR AND CONVERSION EQUIPMENTS	
平衡塊升降機 Balance lifter	B	頻率轉換器 Frequency converter	C
槽式傳送機 Trough conveyer	B	發動機 Motor	C
帶式傳送機(大件) Ribbon conveyer (large piece)	C	焊接發動機 Welding motor	C
帶式傳送機(碎料) Ribbon conveyer (small piece)	B	洗衣機類 WASHING MACHINE	
筒式麵粉傳送機 Drum-type flour conveyer	A	滾筒 Rolling drum	B
鏈式傳送機 Chain conveyer	B	洗衣機 Washing machine	B
環式傳送機 Ring type conveyer	B	金屬滾軋機類 METAL ROLLER MACHINE	
貨物升降機 Lifter	B	鋼坯剪斷機** Steel cutter	C
捲揚機 Hoist	B	鏈式輸送機** Chain conveyer	B
連桿式傳送機 Crank-connecting conveyer	B	冷軋機** Cold mill	C
載入升降機 Lifter	B	連續成套設備 Continuous casting equipments	B
螺旋式傳送機 Worm conveyer	B	冷床** Cold bed	B
鋼帶式傳送機 Steel-band conveyer	B	剪料機頭** Cropper	C
鏈式槽型傳送機 Chain reed-type conveyer	B	交叉轉彎輸送機** Cross steering transmitter	B
絞車運輸機 Crab freighter	B	除鏽機** Deruster	C
起重機類 HOIST		重型和中型板軋機** Heavy and medium steel mill	C
轉臂式起重傳動齒輪裝置 Bracket swing gear assembly	B	棒坯切軋機** Bar mill	C

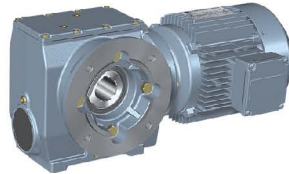
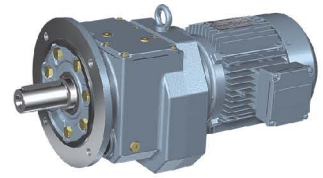
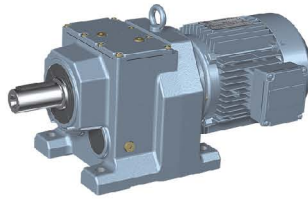
捧坯轉運機類 BAR TRANSMISSION EQUIPMENTS	B	泵類 PUMPS	
捧坯推料機 Bar pusher	B	離心泵(稀液體) Centrifugal pump (thin liquid)	A
推床 Push bed	B	離心泵(半液體) Centrifugal pump (half liquid)	B
剪板機 ** Shears	C	活塞泵 Displacement pump	C
板材擺升降台 ** Lumber elevator platform	B	柱塞泵 Plunger pump	C
軋輥調整裝置 ROLL ADJUSTING EQUIPMENTS	B	壓力泵 Force pump	C
輥式矯直機 Roller leveling machine	B	塑料機械類 PLASTIC EQUIPMENTS	
軋鋼機軋道(重型)** Mill rolling way (heavy)	C	壓光機 ** Glazing press	B
軋鋼機軋道(輕型)** Mill rolling way (light)	B	擠壓機 ** Ejecting press	B
薄板軋機 ** Sheet rolling mill	C	螺旋壓出機 ** Spiral extruding machine	B
修整剪切機 ** Trimming shears	B	混合機 ** Mixing machine	B
焊管機 Pipe welder	C	橡膠機械類 RUBBER EQUIPMENT	
焊管機(帶材和線材)Soldering machine(belt material and wire rod)	B	壓光機 ** Glazing press	B
線材拉拔機 Wire drawbench	B	擠壓機 ** Ejecting press	C
金屬加工機床類 METAL PROCESSING MACHINE TOOLS		混合攪拌機 ** Mixing stir machine	B
動力軸 Power shaft	A	捏合機 Kneading machine	B
鍛造機 ** Forging machine	C	滾壓機 ** Roller machine	C
鍛錘 Drop hammer	C	石料、瓷土料加工機械類 STONE PORCELAIN CLAY PROCESSING EQUIPMENTS	
機床及附助裝置 Machine tool and necessary	A		
機床及主要傳動裝置 Machine tool and main driving equipment	B	球磨機 Ball crusher	B
金屬刨床 Metal facing machine	C	擠壓料碎機 ** Ejecting press and breaker	C
板材矯直機床 Plate-leveling machine tool	C	破碎機 Breaker	C
沖床 Backing-out punch	C	壓磚機 Brick press	C
沖壓機床 Press machine tool	C	錘料碎機 ** Beating crusher	C
剪床 Cutting machine	B	轉爐 ** Converter	C
薄板彎曲機床 Sheet bending machine tool	B	筒型磨機 ** Cylinder mill	C
石油工業機械類 PETROLEUM PROCESSING MACHINERY		紡織機械類 TEXTILE MACHINERY	
輸油管油泵 ** Pump of oil pipe line	B	送料機 Feeding machine	B
轉子鑽井設備 Rotary drilling equipment	C	織布機 Loom machine	B
製紙機類 PAPERING MACHINE		印染機 Dyeing machine	B
壓光機 ** Glazing press	C	精製筒 Purified drum	B
多層紙板機 ** Multilayer paper board machine	C	威羅機 Welon machine	B
乾燥滾筒 ** Drying cylinder	C	水處理設備類 WASTER TREATMENT EQUIPMENTS	
上光滾筒 ** Glazing cylinder	C	鼓風機 ** Air blast	B
攪漿機 ** Masher	C	螺桿泵 Screw pump	B
攪漿擦碎機 ** Mashing and breaking machine	C	木料加工機床 WOOD PROCESSING MACHINE TOOL	
吸水滾 ** Suction roll	C	剝皮機 Barker	C
潮紙滾壓機 ** Wet paper roller machine	C	刨床 Facing machine	B
吸水滾壓機木 ** Water absorbing roller machine	C	鋸床 Saw bench	C
威羅機 Welon machine	C	木材加工機床 Wood processing machine tool	A

註：A—均勻沖擊負載；B—中等沖擊負載；C—重沖擊負載；**—用於24小時工作制。

Note: A - Uniform load; B - Moderate shock load; C - Heavy shock load; ** - for 24hour system.

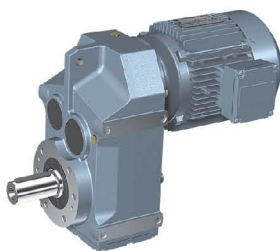
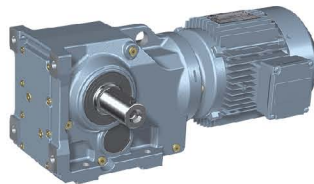
系列產品展示
SHOW THE SERIES PRODUCTS

TR系列斜齒輪減速馬達
TR Series helical geared motors



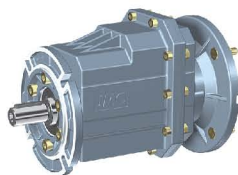
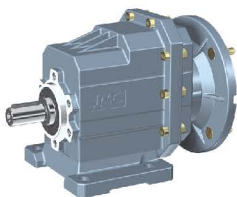
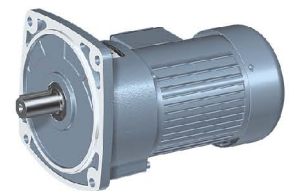
TS系列斜齒輪-蝸輪蝸桿減速馬達
TS Series helical-worm geared motors

TK系列斜齒輪-傘齒輪減速馬達
TK Series helical-bevel geared motors



TF系列平行軸-斜齒輪減速馬達
TF Series parallel shaft helical geared motors

G3系列小型斜齒輪減速馬達
G3 Series mini helical geared motors



TRC 系列小型斜齒輪減速機
TRC Series mini helical gear units



HMRV 系列蝸輪蝸桿減速機
HMRV Series worm gear units

UDL 系列無段變速機
UDL Series stepless speed variator



