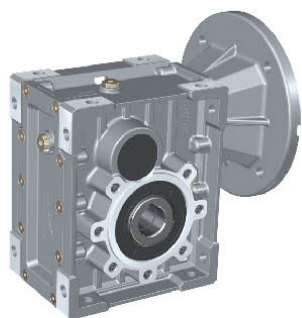


目 錄 CONTENTS

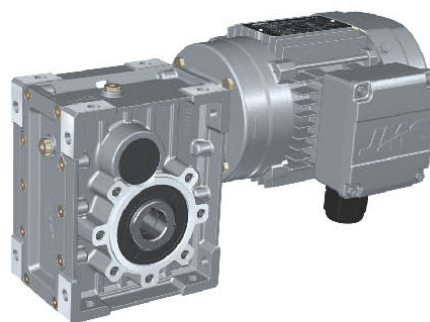
Page

2 - 3	▶ 產品結構圖	PRODUCT STRUCTURE PICTURE
4	▶ 概述	SUMMARIZE
5	▶ 型號說明	MODEL ILLUMINATE
6 - 10	▶ 選型相關參數	RELEVANT PARAMETER
11	▶ 選型舉例	SELECTION EXAMPLE
12 - 14	◀ 減速機選型表	GEAR UNIT SELECTION TABLES
	▶ 減速機組合表	Possible geometrical combinations
	◀ 外形尺寸圖表	OUTLINE DIMENSION SHEET
16 - 33	▶ TKM / TKB..(IEC)外形尺寸	TKBM / TKB..(IEC)Outline dimension
34	▶ TKM / TKB..(NEMA)外形尺寸	TKBM / TKB..(NEMA)Outline dimension
35	▶ TKM / TKB..HS.. 軸輸入外形尺寸	TKM / TKB..HS.. Outline dimension of shaft input
36 - 37	▶ 附件	ACCESSORIES
38	▶ 安裝方向	INSTALLATION POSITIONS
39	▶ 安裝	INSTALLATION
40	▶ 安裝方法	INSTALLATION METHODS
	◀ 潤滑油	LUBRICANTS
41	▶ 潤滑油型號	Types of lubricants
41-42	▶ 潤滑油添加量	Lubricant fill quantity
42	▶ 維護與保養	MAINTENANCE
43	▶ 存放	STORAGE
43	▶ 訂貨須知	NOTICE FOR ORDER
44	▶ 故障與排除	MULFUNCTIONS
45 - 46	▶ 減速機負載特性表	CHARGE CHARACTERISTIC CHART
	◀ 系列產品展示	SHOW THE SERIES PRODUCTS

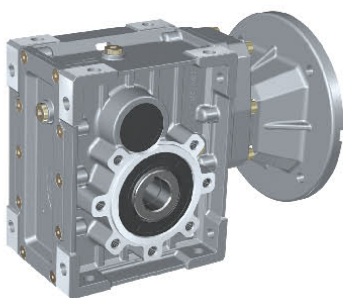
1. 產品圖片 / *PRODUCT PICTURE*



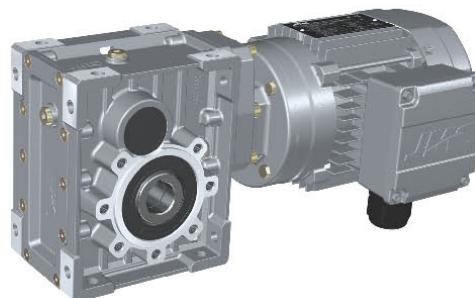
TKM28B~68B(IEC)



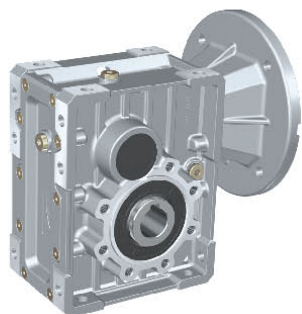
TKM28B~68B(MV)



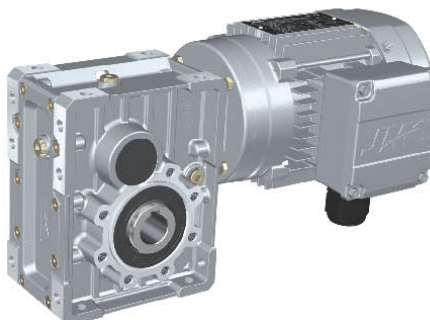
TKM28C~68C(IEC)



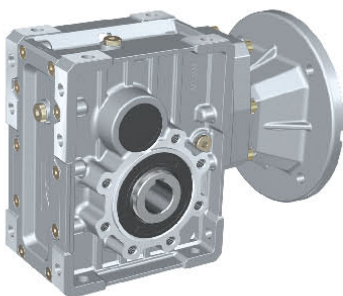
TKM28C~68C(MV)



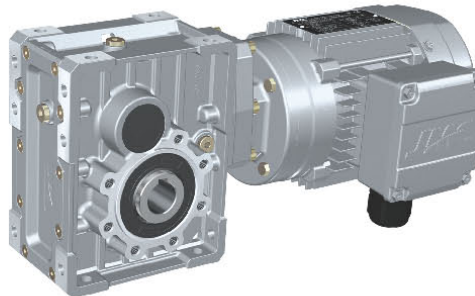
TKB38B~68B(IEC)



TKB38B~68B(MV)

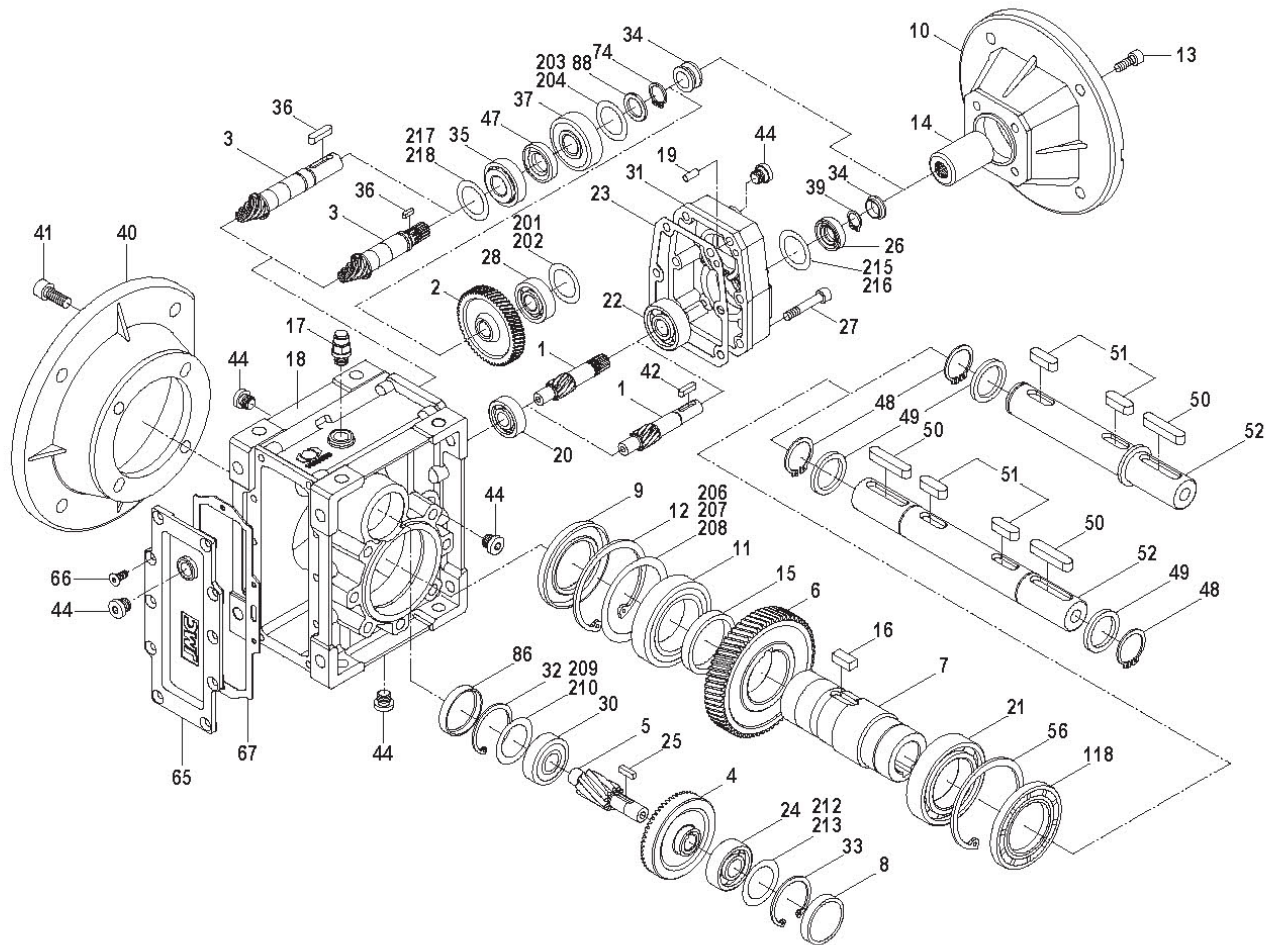


TKB38C~68C(IEC)



TKB38C~68C(MV)

1.1 產品構造原理 / Basic structure



1 主動齒輪 / Pinion	25 鍵 / Key	56 孔用擋圈 / Hole-circlip
2 從動齒輪 / Gear	26 油封 / Oil seal	65 齒輪箱蓋板 / Gearcase cover
3 主動齒輪軸 / Pinion shaft	27 內六角螺釘 / Inner hex screw	66 內六角沉頭螺釘 / Hexagon sunk screw
4 從動齒輪 / Gear	28 軸承 / Bearing	67 橡膠墊 / Rubber gasket
5 主動齒輪軸 / Pinion shaft	30 軸承 / Bearing	74 軸用擋圈 / Shaft-circlip
6 從動齒輪 / Gear	31 三級齒輪箱 / 3 stage gearcase	86 油封蓋 / Closing cap
7 輸出軸 / Hollow shaft	32 孔用擋圈 / Hole-circlip	88 墊圈 / Washer
8 油封蓋 / Closing cap	33 孔用擋圈 / Hole-circlip	118 油封 / Oil seal
9 油封 / Oil seal	34 橡膠套 / Rubber boot	201 調整墊片 / Shim ring
10 輸入法蘭 / Input flange	35 軸承 / Bearing	202 調整墊片 / Shim ring
11 軸承 / Bearing	36 鍵 / Key	203 調整墊片 / Shim ring
12 孔用擋圈 / Hole-circlip	37 軸承 / Bearing	204 調整墊片 / Shim ring
13 內六角螺釘 / Inner hex screw	39 軸用擋圈 / Shaft-circlip	206 調整墊片 / Shim ring
14 輸入軸 / Input shaft	40 輸出法蘭 / Output flange	207 調整墊片 / Shim ring
15 間隔套 / Spacer	41 內六角螺釘 / Inner hex screw	208 調整墊片 / Shim ring
16 鍵 / Key	42 鍵 / Key	209 調整墊片 / Shim ring
17 排氣閥 / Breather valve	44 油塞 / Oil plug	210 調整墊片 / Shim ring
18 齒輪箱體 / Gearcase	47 油封 / Oil seal	212 調整墊片 / Shim ring
19 圓柱銷 / Stifte	48 軸用擋圈 / Shaft-circlip	213 調整墊片 / Shim ring
20 軸承 / Bearing	49 墊片 / Gasket	215 調整墊片 / Shim ring
21 軸承 / Bearing	50 鍵 / Key	216 調整墊片 / Shim ring
22 軸承 / Bearing	51 鍵 / Key	217 調整墊片 / Shim ring
23 密封紙墊片 / Housing gasket	52 雙向輸出軸 / Double output shaft	218 調整墊片 / Shim ring
24 軸承 / Bearing	53 單向輸出軸 / Single output shaft	

2. 概述

2.1 產品特點

TKM、TKB系列斜齒-準雙曲面齒輪減速機是我公司自主研發的新一代實用性產品。融合了國內外先進技術，具有以下一些主要特點：

1. 採用準雙曲面齒輪傳動，減速比大；
2. 輸出扭矩大，傳動效率高，節能環保；
3. 優質鋁合金鑄造，重量輕，不生鏽；
4. 傳動平穩，噪音小，適合在惡劣環境中長期連續工作；
5. 美觀耐用，體積小；
6. 可適應全方位安裝，應用廣泛，使用方便；
7. **TKM**系列減速機安裝尺寸與**HMRV**系列蝸輪蝸桿減速機完全相容（**TKM28**與**HMRV050**部分尺寸不同）；
8. **TKB**系列減速機安裝尺寸與**W**系列蝸輪蝸桿減速機完全相容；
9. 模組化組合，可多種形式組合，滿足各種傳動條件的需求。

2.2 主要材料

1. 外殼：鋁合金(機座：28-58)；
2. 齒輪：20CrMnTiH1，滲碳淬火，齒面硬度56-62 HRC，精磨後保持滲碳層厚度0.3-0.5mm；

2.3 表面塗裝

鋁合金外殼：

1. 先噴砂處理，再經特種防腐處理，保持銀白金屬感，並耐汽油，二甲苯等有機溶劑的腐蝕；
2. 磷化處理後，再噴RAL9022 銀灰色塗料。

2. SUMMARIZE

2.1 Products characteristics

TKM、TKB series helical-hypoid gear units is a new-generation of product developed by our company . with a compromise of advanced technology both at home and abroad, its main features are as follows:

1. Driven by hypoid gear, has big ratios.
2. Large in output torque, high efficiency, energy saving and environmental protection.
3. Made of high-quality aluminum alloy, light in weight and nonrusting.
4. Smooth in running and low in noise, can work long time in dreadful conditions.
5. Good-looking in appearance, durable in service life and small in volume.
6. Suitable for all round installation, wide application and easy of use.
7. The mounting dimension of **TKM** series are compatible with **HMRV** series worm gear unit (A part of **HMRV050** dimensions are different from **TKM28**).
8. The mounting dimension of **TKB** series are compatible with **W** series worm gear unit.
9. Modular and multistructure can meet the demands of various conditions .

2.2 Main materials

1. Housing: die-cast aluminum alloy (frame size: 28 to 58); .
2. gear wheel: 20CrMnTiH1, carbonize & quencher heat treatment make the hardness of gear's surface up to 56~62 HRC, retain carburization layer's thickness between 0.3 and 0.5mm after precise grinding.

2.3 Surface painting

Aluminum alloy housing:

1. Shot blasting and special antiseptic treatment on the aluminum alloy surface.
2. After phosphating, spray the paint RAL9022 in silver white.

3. 型號說明 / MODEL ILLUMINATE

3.1 減速馬達 / Geared motor

TKM 38 B - 20.25 - FAD SSD - B3 - MV71D4 / BMG / 1
①
②
③
④
⑤
⑥
⑧
⑨
⑩
⑪

No	說 明	Comments
1	減速機系列代號: TKM 、 TKB	Code for gear units series: TKM 、 TKB
2	減速機規格代號: 28、38、48、58、68	Specification code of gear units 28、38、48、58、68
3	1). B : 表示2級傳動 2). C : 表示3級傳動	1). B : Means 2 stages 2). C : Means 3 stages
4	減速機速比 i	Speed ratio of reducer i
5	1). 無代號表示不帶輸出法蘭 2). FA,FB,FC,FD,FE(D/S) : 輸出法蘭代號和位置	1). No mark means without output flange 2). FA,FB,FC,FD,FE(D/S) : output Flange and position
6	1). 無代號表示孔輸出 2). AS(D/S) : 單向輸出軸和位置 3). AB : 雙向輸出軸	1). No mark means hole output 2). AS(D/S) : Single output shaft and position 3). AB : Double output shaft
8	安裝方向代號	Installation position code
9	馬達型號規格	motor type
10	1). 無代號表示無煞車器 2). BMG : 煞車器	1). no code means no brake 2). BMG : brake
11	馬達接線盒位置, 預設位置1可以不寫	Position diagram for motor terminal box default position 1 not to write out is ok

3.2 減速機或減速機+IEC馬達 / Gear unit or gear unit+IEC motor

減速機 / Gear unit
馬達 / Motor

TKM 38 B - 20.25 - FAD SSD - 71B5 B3 - 7124 或/or 0.37 - 4 / 1
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑪

No	說 明	Comments
1	減速機系列代號: TKM 、 TKB	Code for gear units series: TKM 、 TKB
2	減速機規格代號: 28、38、48、58、68	Specification code of gear units 28、38、48、58、68
3	1). B : 表示2級傳動 2). C : 表示3級傳動	1). B : Means 2 stages 2). C : Means 3 stages
4	減速機速比 i	Speed ratio of reducer i
5	1). 無代號表示不帶輸出法蘭 2). FA,FB,FC,FD,FE(D/S) : 輸出法蘭代號和位置	1). No mark means without output flange 2). FA,FB,FC,FD,FE(D/S) : output Flange and position
6	1). 無代號表示孔輸出 2). AS(D/S) : 單向輸出軸和位置 3). AB : 雙向輸出軸	1). No mark means hole output 2). AS(D/S) : Single output shaft and position 3). AB : Double output shaft
7	1). 輸入法蘭規格代號(63B5、71B5、71B14.....) 2). HS : 表示軸輸入	1). Input flange code(63B5、71B5、71B14.....) 2). HS : means shaft input
8	安裝方向代號	Installation position code
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)
11	馬達接線盒位置, 默認位置1可以不寫	Position diagram for motor terminal box default position 1 not to write out is ok

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.

示例 Example: **TKM58C - 200.66 - B3 - MV71D4**
TKB68B - 59.22 - FAD - 90B5

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}	馬達額定功率
f_s	使用係數
η	傳動效率

TKM、TKB系列減速機的效率是根據傳動級數確定，2級傳動效率為92%，3級傳動效率為90%。

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，為了最佳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}	選用輸出扭矩
P_1	輸入功率
η	傳動效率
f_s	使用係數

4.5 使用係數 f_s

使用減速機時，應考慮一定的使用係數 f_s ，它是根據每天的運轉時間和啟停頻率 Z 確定的。

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 power driving motor
f_s	Service factor
η	Transmission efficiency

The efficiency of TKM、TKB gear units varies with the number of gear stages, between 94 % (2-stage), 92 % (3-stage).

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

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

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

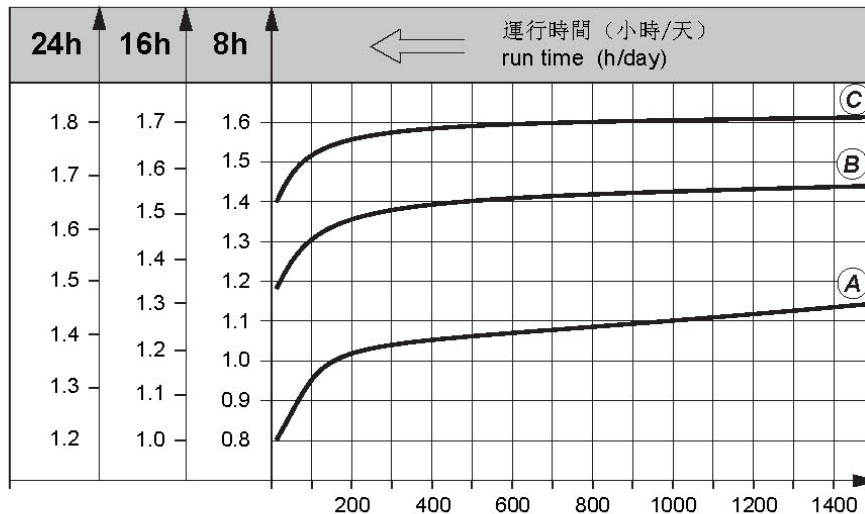
M_2	Output torque
M_{2n}	Selected output torque
P_1	Input power
η	Transmission efficiency
f_s	Service factor

4.5 Service factor f_s

The effect of the driven machine on the gear unit is taken into account to a sufficient level of accuracy using the service factor f_s . The service factor is determined according to the daily operating time and the starting frequency Z .

根據慣性加速係數確定三種負載類型，在下圖中可以讀取實際應用的使用係數，按下圖選取的使用係數必須小於或等於從效能參數表中提供的使用係數。

Three load classifications are considered depending on the mass acceleration factor. You can read off the service factor applicable to your application in following Figure. The service factor selected using this diagram must be less than or equal to the service factor as given in the performance parameter table.



圖：使用係數 (f_s)
Fig: Service factor (f_s)

啟動頻率 Z (次/小時) #
start up frequency Z (1/h) #

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 $f_a \leq 0.2$
- Ⓑ 中等衝擊負載，允許慣性加速係數 $f_a \leq 3$
- Ⓒ 重衝擊負載，允許慣性加速係數 $f_a \leq 10$

4.5.1 load classifications

- Ⓐ Uniform, permitted mass acceleration factor $f_a \leq 0.2$
- Ⓑ Moderate shock load, permitted mass acceleration factor $f_a \leq 3$
- Ⓒ Heavy shock load, permitted mass acceleration factor $f_a \leq 10$

負載類型

輕負載的螺旋輸送，風扇，裝備線，輸送帶，小型攪拌器，電梯，清洗機器，過濾器，控制驅動。

捲揚機，木工機器進料器，貨物起重機，平衡器，絞螺紋機器，中型攪拌器，重型輸送帶，絞盤，滑動閘門，刮料機，包裝機械，混凝土攪拌機，行車驅動裝置，銑床，齒輪泵。

大型攪拌器，剪床，壓機，離心機，旋轉支撐裝置，重型絞盤和起重機，磨床，石材打磨機，鏟斗升降機。

鑽床，沖床，凸軸壓機，摺床，機床轉盤，翻桶裝置，振盪裝置，破碎機。

load classifications:

Screw feeders for light materials, fans, assembly lines, conveyor belts for light materials, small mixers, lifts, cleaning machines, fillers, control machines.

Winding devices, woodworking machine feeders, goods lifts, balancers, threading machines, medium mixers, conveyor belts for heavy materials, winches, sliding doors, fertilizer scrapers, packing machines, concrete mixers, crane mechanisms, milling cutters, folding machines, gear pumps.

Mixers for heavy materials, shears, presses, centrifuges, rotating supports, winches and lifts for heavy materials, grinding lathes, stone mills, bucket elevators, drilling machines, hammer mills, cam presses, folding machines, turntables, tumbling barrels, vibrators, shredders.

4.5.2 慣性加速系數

慣性加速係數計算如下：

$$f_a = \frac{J_c}{J_m}$$

fa 慣性加速係數

Jc 所有外部傳動慣量 (kgm²)

Jm 驅動馬達的傳動慣量 (kgm²)

如果慣性加速係數 **fa** > 10, 請與我們技術部聯系。

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

舉例:

慣性加速係數2.5(負載類型(B)), 運行時間14小時/天, (按16小時/天查圖) 和每小時200次起停, 查圖得使用係數 **fs** = 1.48。根據效能參數表所選擇的使用係數 **fs** ≥ 1.48。

4.6 徑向載荷和軸向載荷

在確定影響徑向載荷時, 必須考慮安裝在軸端上的傳動件類型。不同類型的傳動件的傳動附加係數 **fz** 清單如下:

傳動件 Transmission element	傳動附加係數 Fz Transmission element factor Fz	註釋 Comments
齒輪 Gears	1.15	< 17齒 teeth
鏈輪 Chain sprockets	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

作用在馬達和齒輪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]

fz 傳動附加係數

4.5.2 Mass acceleration factor

The mass acceleration factor is calculated as follows:

$$f_a = \frac{J_c}{J_m}$$

fa Mass acceleration factor

Jc All external mass moments of inertia (kgm²)

Jm Mass moment of inertia on the motor end (kgm²)

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

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

Example:

Mass acceleration factor 2.5 (load classification (B)), 14 hours/day operating time (read off at 16 h/d) and 200 cycles/hour result in a service factor **fs** = 1.48.

choose the service factor **fs** = 1.48 according to the parameter sheet.

4.6 Overhung loads and axial forces

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 **fz**:

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]

fz Transmission element factor

許用徑向載荷是根據軸承額定使用壽命 **L10h** 來估算的 (根據 **ISO281**)。對於特殊的運行條件，許用徑向載荷是根據修正使用壽命 **Lna** 來確定。

當作用點偏離出軸中點時，許用徑向載荷須按以下公式來計算，取在 **x** 點的許可數值 **F_{xL}** (根據軸承的使用壽命)

根據軸承的使用壽命公式：

$$F_{xL} = F_{r(1,2)} \cdot \frac{a}{b+x} \text{ [N]}$$

F_{r1}, F_{r2} = 效能參數表中的許用徑向載荷 ($x = L/2$) [N]

x = 從軸肩到受力點的距離 [mm]

a, b, = 減速機徑向轉化常量 [mm]

The basis for determining the permitted radial loads is the computation of the rated service life **L10h** of the bearings (according to **ISO281**). For special operating conditions, the permitted radial loads can be determined with regard to the modified service life **Lna**.

The permitted radial loads given in the selection tables must be calculated using the following formula in the event of force application not in the center of the shaft end. The smaller of the two values **F_{xL}** (according to bearing service life)

F_{xL} according to bearing service life :

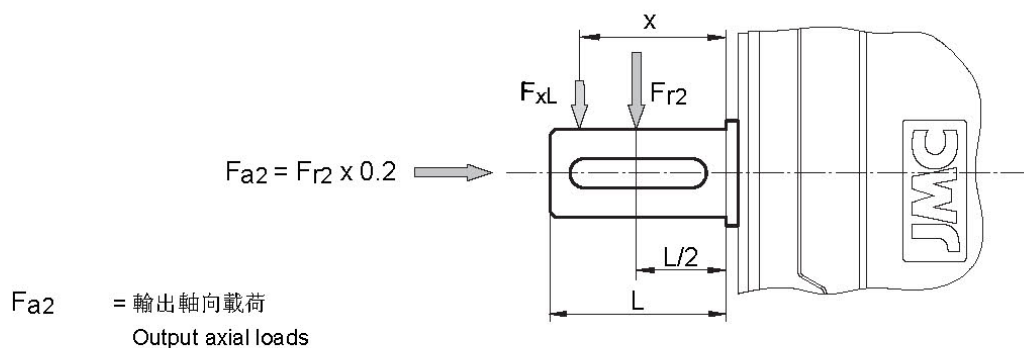
$$F_{xL} = F_{r(1,2)} \cdot \frac{a}{b+x} \text{ [N]}$$

F_{r1}, F_{r2} = Permitted overhung load ($x = L/2$) for foot-mounted gear units according to the selection tables in [N]

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

a, b = Gear unit constant for overhung load conversion [mm]

輸出軸徑向載荷 / Output shafts radial loads



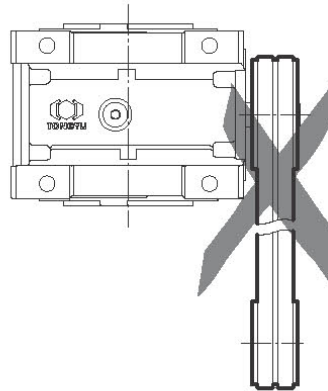
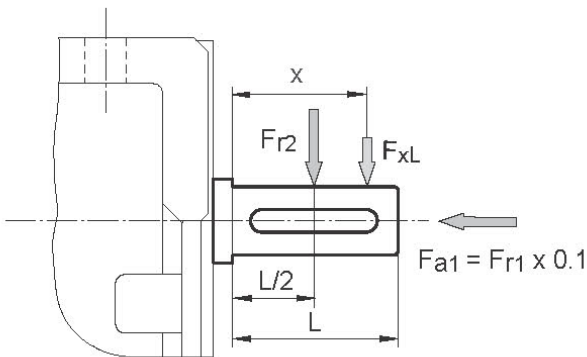
TKM 減速機徑向轉化常量 / Gear unit constants for overhung load conversion:

	TKM28B	TKM28C	TKM38B	TKM38C	TKM48B	TKM48C	TKM58B	TKM58C	TKM68B	TKM68C
a	104	104	118	118	131	131	159	159	174	174
b	78	78	93	93	101	101	119	119	134	134

TKB 減速機徑向轉化常量 / Gear unit constants for overhung load conversion:

			TKB38B	TKB38C	TKB48B	TKB48C	TKB58B	TKB58C	TKB68B	TKB68C
a			128	128	135	135	148.5	148.5	171	171
b			98	98	105	105	118.5	118.5	134	134

輸入軸徑向載荷 Input shafts radial loads



輸入結構
V帶輪 Narrow V-belt pulleys
平帶輪 Flat belt pulleys
齒帶輪 Toothed belt pulleys

F_{a1} = 輸入軸向載荷
Input axial loads

右示圖的輸入不被允許使用（包括三級輸入）。

It is forbidden to use the input on the right chart (including 3 stage input).

TKM / TKB 減速機徑向轉化常量 / Gear unit constants for overhung load conversion:

	TKM28B	TKM28C	TKM38B TKB38B	TKM38C TKB38C	TKM48B TKB48B	TKM48C TKB48C	TKM58B TKB58B	TKM58C TKB58C	TKM68B TKB68B	TKM68C TKB68C
a	51.5	56	58	56	73	70	81	70	101	87
b	40	44.5	43	44.5	53	55	61	55	76	67

4.7 選型表註釋

	表示馬達與減速機的組合是可行的
	表示馬達與減速機的組合是不可行的
*	表示速比可除盡
P_{1n}	馬達額定功率 [kW];
n_2	輸出轉速 [r/min];
M_{2n}	輸出扭矩 [Nm];
M_{2max}	最大允許輸出扭矩 [Nm];
F_{r2}	輸出軸徑向載荷 [N];
i	減速機公稱減速比;
i_a	減速機實際減速比;
f_s	使用係數;



減速馬達型號;



減速機型號;



馬達型號;

page 外形尺寸表頁碼.

4.7 Selection tables comments

	Combination with the motor in the header row is possible
	Combination with the motor in the header row is not possible
*	Finite gear unit reduction ratio;
P_{1n}	Rated power driving motor [kW];
n_2	Output speed [r/min];
M_{2n}	Output torque [Nm];
M_{2max}	Max. permissible output torque [Nm]

F_{r2} Permissible overhung load output side [N]

i Gear unit nominal ratio;

i_a Gear unit actual ratio;

f_s Service factor;



Geared motor type;



Gear unit type;



Motor type;

Page Dimension sheet page no.

5 選型舉例

5.1 減速馬達

例：被驅動設備所需功率0.25kW，工作8小時/天，中等衝擊，啟動頻率100次/小時，輸出轉速 $n_2=35\text{r/min}$ ，減速機要求**B3**安裝，則：

查P7使用係數圖表即可選使用係數 $f_s=1.3$

$$i = \frac{n_1}{n_2} = \frac{1400}{35} = 40$$

$$P_{1n} \geq P_1 \cdot f_s = \frac{P_2}{\eta} \cdot f_s = \frac{0.25}{0.94} \times 1.3 = 0.345 \text{ [kW]}$$

查TKM../TKB..系列效能參數表可確定減速馬達型號為：

TKM28B - 40.09 - MV71D4 - B3

5.2 減速機

例：被驅動設備所需扭矩為200Nm，工作8小時/天，均勻衝擊負載，啟動頻率400次/小時，減速機要求FA1法蘭安裝，減速機要求輸入轉速900r/min，輸出轉速 $n_2=6\text{r/min}$ ，查效能參數表可知，只能選三級傳動形式。

查P7使用係數圖表即可選使用係數 $f_s=1.05$

$$i = \frac{n_1}{n_2} = \frac{900}{6} = 150$$

$$M_{2n} \geq M_2 \cdot f_s = 200 \times 1.05 = 210 \text{ [Nm]}$$

$$P_{1n} \geq P_1 \cdot f_s = \frac{M_2 \cdot n_1}{9550 \cdot \eta \cdot i} \cdot f_s = \frac{210 \times 900}{9550 \times 0.92 \times 150} \times 1.05 = 0.151 \text{ [kW]}$$

查TKM / TKB系列效能參數表可確定減速型號為：

TKM48C-151.20-FA1

5 SELECTION EXAMPLE

5.1 Gear motor

Example: Required power 0.25kW on driven machine, work for 8 h/day, moderate shock load, start up frequency 100(1/h), $n_2=35\text{r/min}$, **B3** mounted, So:

Check the service factor table at page 7, choose $f_s=1.3$

Choose type:

TKM28B - 40.09 - MV71D4 - B3

5.2 Gear units

Example: Required torque 200Nm on driven machine, work 8 h/day, uniform load, start up frequency 400(1/h), **FA1** mounted, $n_1=900\text{ r/min}$, $n_2=2.5\text{ r/min}$, so the only selection is 3 stage after checked the table:

Check the service factor table at page 7, choose $f_s=1.05$

Choose type:

TKM48C-151.20-FA1

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

6.1 減速機選型表 / Possible geometrical combinations

TKM28.. $n_1=1400$ r/min**130Nm**

減速機型號 Gear units		i 公稱 Nominal	i 實際 Actual	n_2 [r/min]	M_2 max [Nm]	F_{r2} [N]	MV63	MV71	MV80	MV90
3 級 / Stage										
TKM28C		300	291.79	4.8	130	4100				
TKM28C		250	244.29	5.7	130	4100				
TKM28C		200	200.44	7.0	130	4100				
TKM28C		150	146.67	9.5	130	4000				
TKM28C		125	120.34	11.6	100	3770				
TKM28C		100	101.04	13.9	80	3560				
TKM28C		75	74.62	18.8	130	3220				
TKM28C		60	62.36	22	100	3030				
TKM28C		50	52.36	27	110	2860				
2 級 / Stage										
TKM28B		60	58.36	24	130	2960				
TKM28B		50	48.86	29	130	2790				
TKM28B		40	40.09	35	130	2610				
TKM28B		30	29.33	48	130	2350				
TKM28B		25	24.07	58	130	2200				
TKM28B		20	20.21	69	100	2080				
TKM28B		15	14.92	94	80	1880				
TKM28B		12.5	12.47	112	130	1770				
TKM28B		10	10.47	134	100	1670				
TKM28B		7.5	7.73	181	80	1510				

TKM38..,TKB38.. $n_1=1400$ r/min**200Nm**

減速機型號 Gear units		i 公稱 Nominal	i 實際 Actual	n_2 [r/min]	M_2 max [Nm]	F_{r2} [N]	MV63	MV71	MV80	MV90
3 級 / Stage										
TKM38C	TKB38C	300	302.50	4.6	200	4800				
TKM38C	TKB38C	250	243.57	5.7	200	4800				
TKM38C	TKB38C	200	196.43	7.1	180	4800				
TKM38C	TKB38C	150	151.56	9.2	200	4650				
TKM38C	TKB38C	125	122.22	11.5	180	4330				
TKM38C	TKB38C	100	101.27	13.8	150	4070				
TKM38C	TKB38C	75	73.33	19.1	110	3650				
TKM38C	TKB38C	60	63.33	22	180	3480				
TKM38C	TKB38C	50	52.48	27	150	3270				
2 級 / Stage										
TKM38B	TKB38B	60	60.50	23	200	3430				
TKM38B	TKB38B	50	48.71	29	200	3190				
TKM38B	TKB38B	40	39.29	36	180	2970				
TKM38B	TKB38B	30	30.31	46	200	2720				
TKM38B	TKB38B	25	24.44	57	180	2530				
TKM38B	TKB38B	20	20.25	69	150	2380				
TKM38B	TKB38B	15	14.67	95	110	2130				
TKM38B	TKB38B	12.5	12.67	110	180	2030				
TKM38B	TKB38B	10	10.50	133	150	1910				
TKM38B	TKB38B	7.5	7.60	184	110	1710				

TKM48..,TKB48.. $n_1=1400$ r/min**350Nm**

減速機型號 Gear units		i 公稱 Nominal	i 實際 Actual	n_2 [r/min]	M_2 max [Nm]	F_{r2} [N]	MV63	MV71	MV80	MV90	MV100	MV112
3 級 / Stage												
TKM48C	TKB48C	300	297.21	4.7	350	6500						
TKM48C	TKB48C	250	240.89	5.8	350	6500						
TKM48C	TKB48C	200	200.66	7.0	300	6500						
TKM48C	TKB48C	150	151.20	9.3	350	6500						
TKM48C	TKB48C	125	125.95	11.1	300	5980						
TKM48C	TKB48C	100	99.22	14.1	240	5520						
TKM48C	TKB48C	75	75.45	18.6	200	5040						
TKM48C	TKB48C	60	62.43	22	300	4730						
TKM48C	TKB48C	50	49.18	28	240	4370						
2 級 / Stage												
TKM48B	TKB48B	60	59.44	24	350	4660						
TKM48B	TKB48B	50	48.18	29	350	4340						
TKM48B	TKB48B	40	40.13	35	300	4080						
TKM48B	TKB48B	30	30.24	46	350	3720						
TKM48B	TKB48B	25	25.19	56	300	3500						
TKM48B	TKB48B	20	19.84	71	240	3230						
TKM48B	TKB48B	15	15.09	93	200	2950						
TKM48B	TKB48B	12.5	12.49	112	300	2770						
TKM48B	TKB48B	10	9.84	142	240	2550						
TKM48B	TKB48B	7.5	7.48	187	200	2330						

TKM58..,TKB58.. $n_1=1400$ r/min**500Nm**

減速機型號 Gear units		i 公稱 Nominal	i 實際 Actual	n_2 [r/min]	M_2 max [Nm]	F_{r2} [N]	MV63	MV71	MV80	MV90	MV100	MV112
3 級 / Stage												
TKM58C	TKB58C	300	295.18	4.7	500	8300						
TKM58C	TKB58C	250	240.89	5.8	500	8300						
TKM58C	TKB58C	200	200.66	7.0	480	8300						
TKM58C	TKB58C	150	151.20	9.3	500	8050						
TKM58C	TKB58C	125	125.95	11.1	480	7580						
TKM58C	TKB58C	100	99.22	14.1	380	7000						
TKM58C	TKB58C	75	75.45	18.6	300	6390						
TKM58C	TKB58C	60	62.43	22	480	6000						
TKM58C	TKB58C	50	49.18	28	380	5540						
2 級 / Stage												
TKM58B	TKB58B	60	59.04	24	500	5890						
TKM58B	TKB58B	50	48.18	29	500	5500						
TKM58B	TKB58B	40	40.13	35	480	5170						
TKM58B	TKB58B	30	30.24	46	500	4710						
TKM58B	TKB58B	25	25.19	56	480	4430						
TKM58B	TKB58B	20	19.84	71	380	4090						
TKM58B	TKB58B	15	15.09	93	300	3730						
TKM58B	TKB58B	12.5	12.49	112	480	3510						
TKM58B	TKB58B	10	9.84	142	380	3240						
TKM58B	TKB58B	7.5	7.48	187	300	2950						

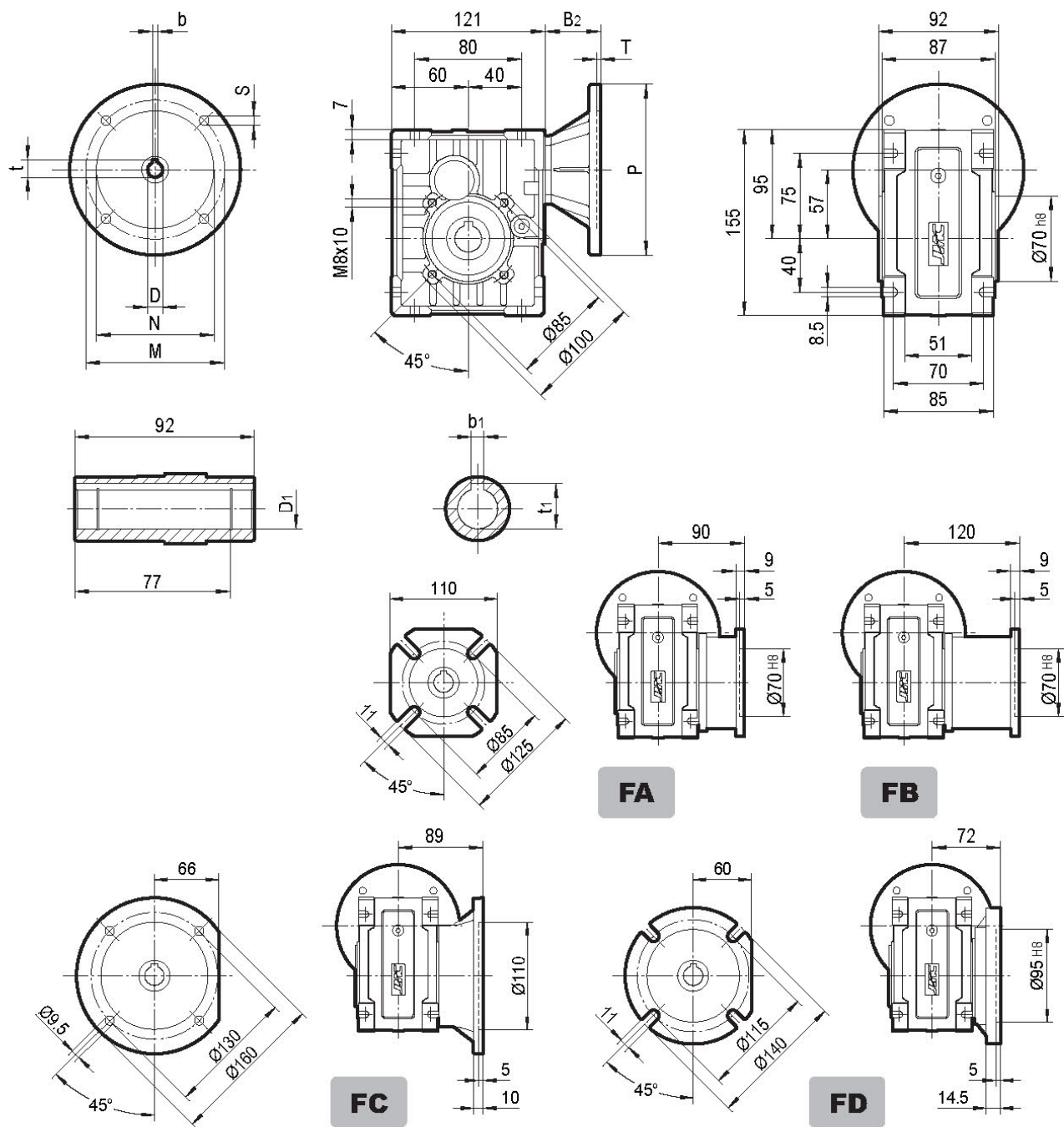
TKM68..,TKB68.. $n_1=1400$ r/min**750Nm**

減速機型號 Gear units		i 公稱 Nominal	I 實際 Actual	n_2 [r/min]	M_{2max} [Nm]	F_{r2} [N]	MV71	MV80	MV90	MV100	MV112	MV132
3 級 / Stage												
TKM68C	TKB68C	300	296.10	4.7	750	10000						
TKM68C	TKB68C	250	244.29	5.7	750	10000						
TKM68C	TKB68C	200	206.29	6.8	750	9920						
TKM68C	TKB68C	150	153.33	9.1	750	8980						
TKM68C	TKB68C	125	129.48	10.8	750	8490						
TKM68C	TKB68C	100	103.64	13.5	650	7880						
TKM68C	TKB68C	75	75.55	18.5	520	7090						
TKM68C	TKB68C	60	64.18	22	750	6720						
TKM68C	TKB68C	50	51.37	27	650	6240						
2 級 / Stage												
TKM68B	TKB68B	60	59.22	24	750	6540						
TKM68B	TKB68B	50	48.86	29	750	6130						
TKM68B	TKB68B	40	41.26	34	750	5800						
TKM68B	TKB68B	30	30.67	46	750	5250						
TKM68B	TKB68B	25	25.90	54	750	4960						
TKM68B	TKB68B	20	20.73	68	650	4610						
TKM68B	TKB68B	15	15.11	93	520	4150						
TKM68B	TKB68B	12.5	12.84	109	750	3930						
TKM68B	TKB68B	10	10.27	136	650	3650						
TKM68B	TKB68B	7.5	7.49	187	520	3280						

7. 外形尺寸圖表 / OUTLINE DIMENSION SHEET

7.1 TKM..(IEC) 外形尺寸 / Outline Dimension

TKM28B..(IEC)



IEC	DE8	b	t	P	M	N	S	T	B2	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	45	20*	6	22.8
71B5	14	5	16.3	160	130	110	9	4	52	24	8	27.3
71B14	14	5	16.3	105	85	70	7	4	52	* 非標產品, 訂單時請說明 * Only on request		
80B5	19	6	21.8	200	165	130	11	4	72			
80B14	19	6	21.8	120	100	80	7	4	72			
90B5	24	8	27.3	200	165	130	11	4	72			
90B14	24	8	27.3	140	115	95	9	4	72			

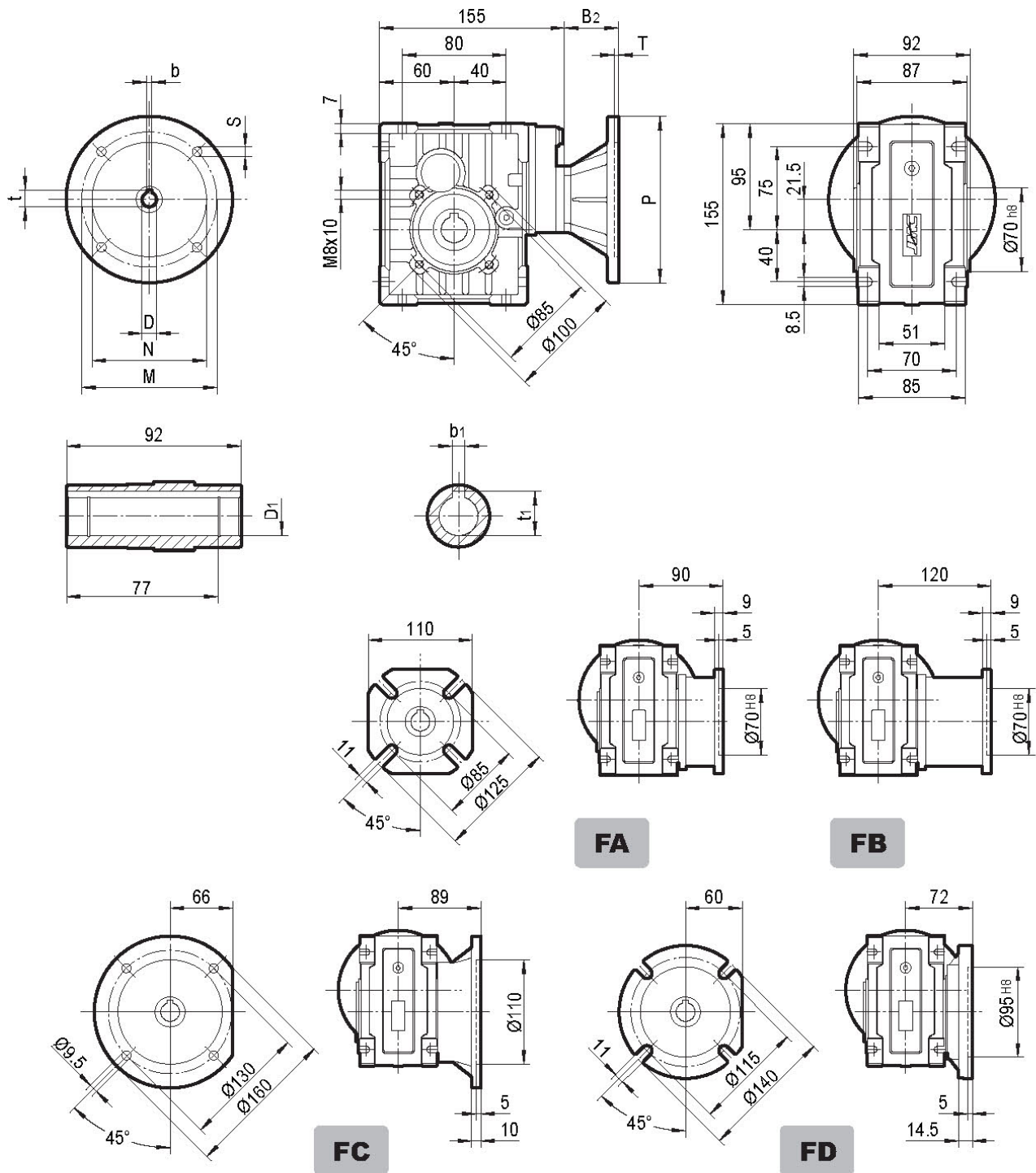
重量 (不包括馬達)

≈ 4.2kg

Weight without motor

≈ 4.2 kg

TKM28C..(IEC)



IEC	D _{E8}	b	t	P	M	N	S	T	B2	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	45	20*	6	22.8
71B5	14	5	16.3	160	130	110	9	4	52	24	8	27.3
71B14	14	5	16.3	105	85	70	7	4	52	* 非標產品, 訂單時請說明 * Only on request		

重量 (不包括馬達)

≈ 5 kg

Weight without motor

≈ 5 kg

[illegible]

IEC	D E8	b	t	P	M	N	S	T	B2	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	45	25	8	28.3
71B5	14	5	16.3	160	130	110	9	4	52	28*	8	31.3
71B14	14	5	16.3	105	85	70	7	4	52	* 非標產品, 訂單時請說明 * Only on request		
80B5	19	6	21.8	200	165	130	11	4	72			
80B14	19	6	21.8	120	100	80	7	4	72			
90B5	24	8	27.3	200	165	130	11	4	72			
90B14	24	8	27.3	140	115	95	9	4	72			

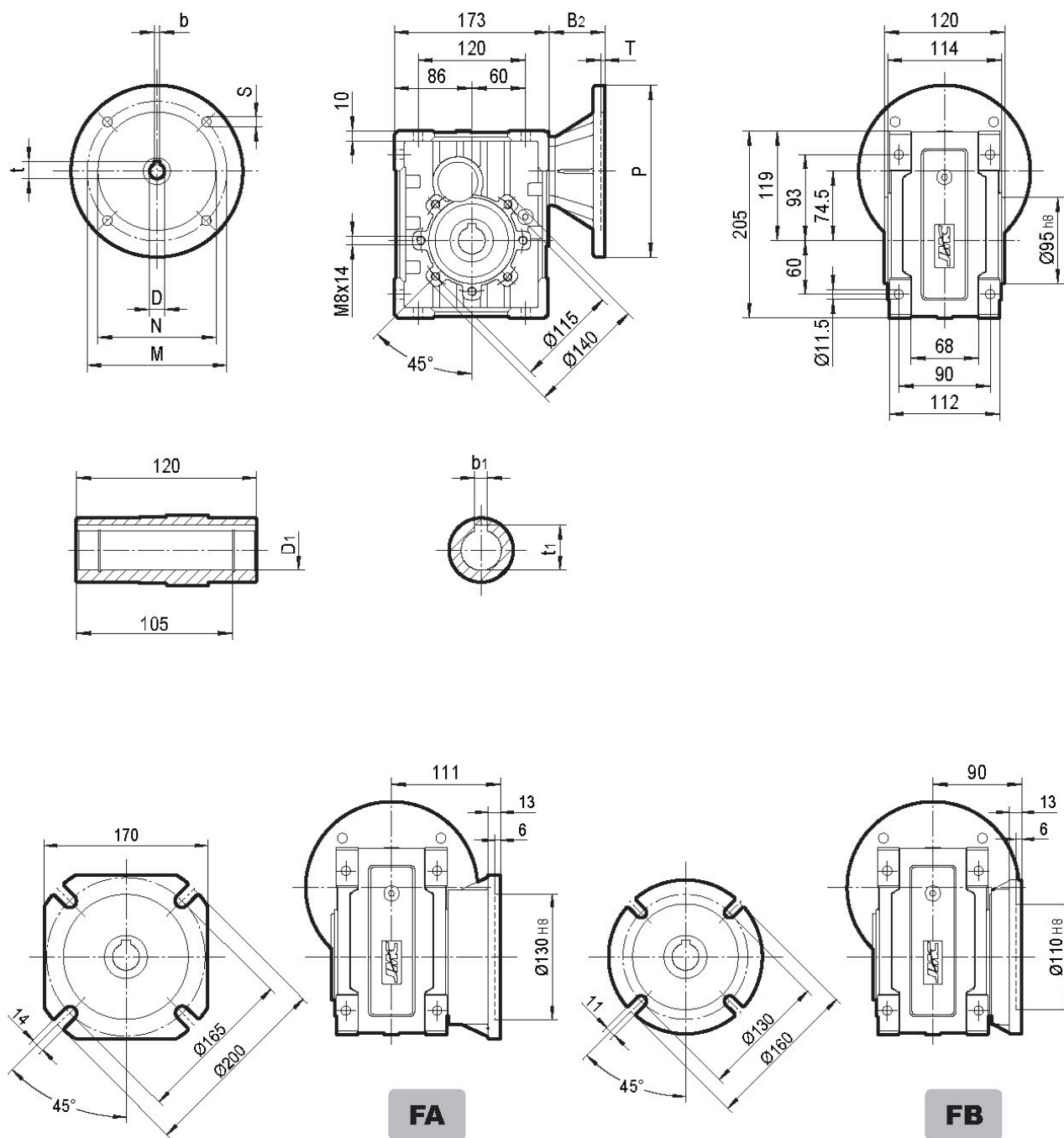
重量（不包括馬達）
≈ 6.0 kg
Weight without motor
≈ 6.0 kg

IEC	D _{E8}	b	t	P	M	N	S	T	B2	D1 _{H8}	b1	t1
63B5	11	4	12.8	140	115	95	9	4	45	25	8	28.3
71B5	14	5	16.3	160	130	110	9	4	52	28*	8	31.3
71B14	14	5	16.3	105	85	70	7	4	52	* 非標產品, 訂單時請說明 * Only on request		
80B5	19	6	21.8	200	165	130	11	4	72			
80B14	19	6	21.8	120	100	80	7	4	72			

重量（不包括馬達）
≈ 6.8 kg
Weight without motor
≈ 6.8 kg

TKM48B..(IEC)

TKM48B..(IEC)



IEC	D E8	b	t	P	M	N	S	T	B2	D1 H8	b1	t1
71B5	14	5	16.3	160	130	110	9	4	59	28	8	31.3
80B5	19	6	21.8	200	165	130	11	4	79	30*	8	33.3
80B14	19	6	21.8	120	100	80	7	4	79	35*	10	38.3
90B5	24	8	27.3	200	165	130	11	4	79	* 非標產品, 訂單時請說明 * Only on request		
90B14	24	8	27.3	140	115	95	9	4	79			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	89			
100/112B14	28	8	31.3	160	130	110	9	4.5	89			

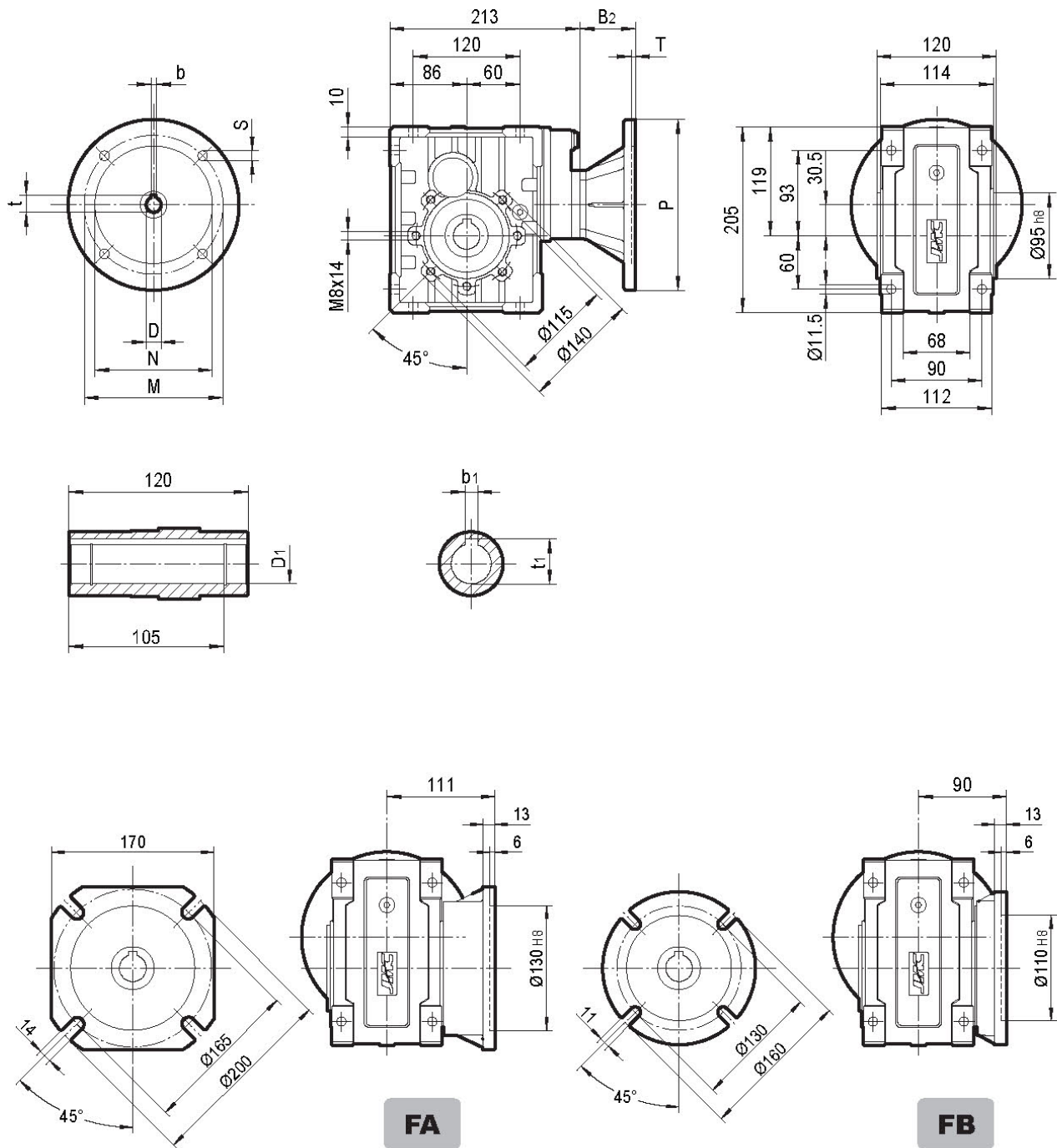
重量 (不包括馬達)

≈ 9.2 kg

Weight without motor

≈ 9.2 kg

TKM48C..(IEC)



IEC	D E8	b	t	P	M	N	S	T	B2	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	52	28	8	31.3
71B5	14	5	16.3	160	130	110	9	4	59	30*	8	33.3
80B5	19	6	21.8	200	165	130	11	4	79	35*	10	38.3
80B14	19	6	21.8	120	100	80	7	4	79	* 非標產品, 訂單時請說明 * Only on request		
90B5	24	8	27.3	200	165	130	11	4	79			
90B14	24	8	27.3	140	115	95	9	4	79			

重量 (不包括馬達)

≈ 10.8 kg

Weight without motor

≈ 10.8 kg

[illegible]

IEC	D _{E8}	b	t	P	M	N	S	T	B2	D1 _{H8}	b1	t1
71B5	14	5	16.3	160	130	110	9	4	59	35	10	38.3
80B5	19	6	21.8	200	165	130	11	4	79	38*	10	41.3
80B14	19	6	21.8	120	100	80	7	4	79	* 非標產品, 訂單時請說明 * Only on request		
90B5	24	8	27.3	200	165	130	11	4	79			
90B14	24	8	27.3	140	115	95	9	4	79			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	89			
100/112B14	28	8	31.3	160	130	110	9	4.5	89			

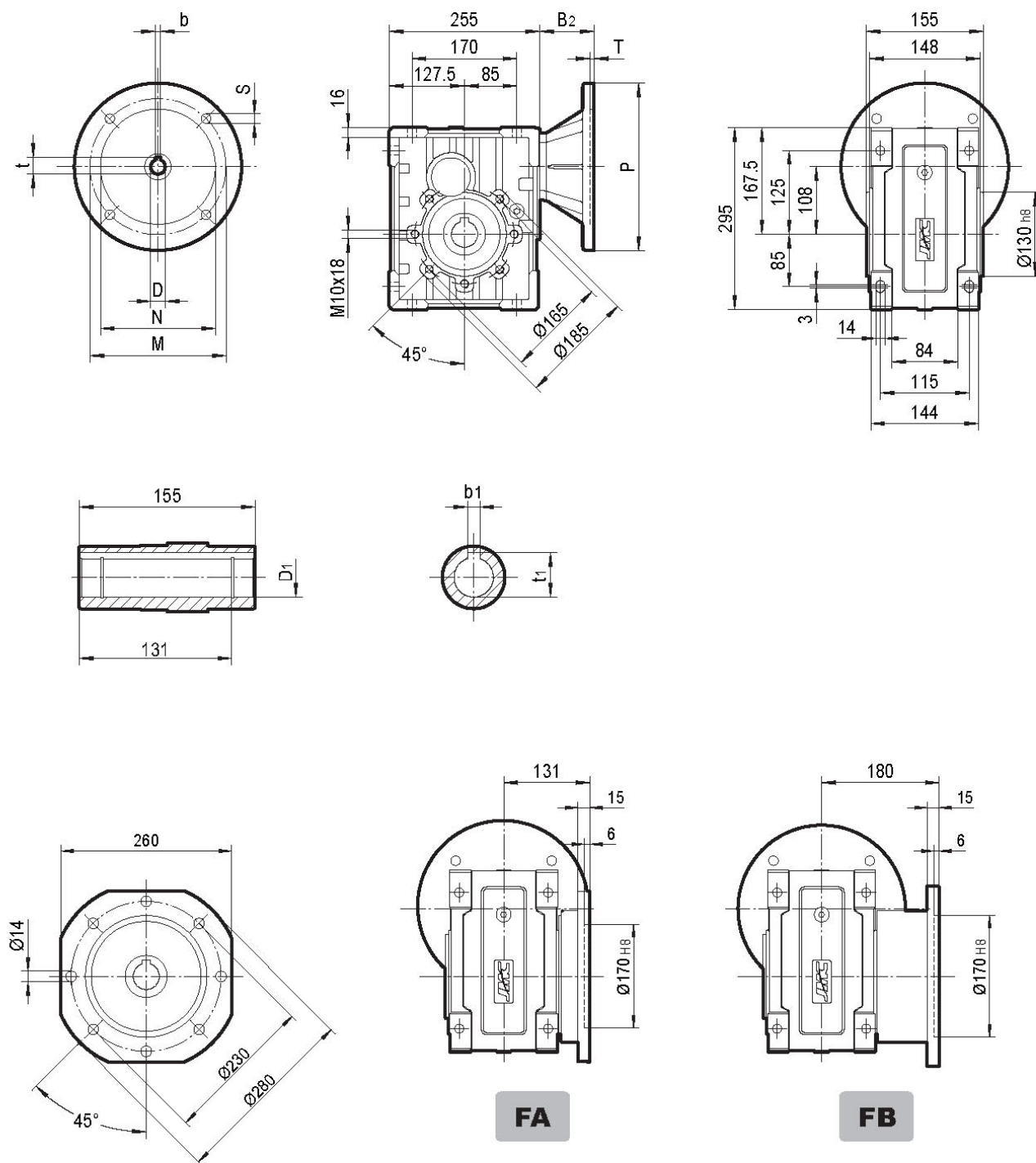
重量（不包括馬達）
≈ 13.3 kg
Weight without motor
≈ 13.3 kg

[illegible]

IEC	D _{E8}	b	t	P	M	N	S	T	B2	D1 _{H8}	b1	t1
63B5	11	4	12.8	140	115	95	9	4	52	35	10	38.3
71B5	14	5	16.3	160	130	110	9	4	59	38*	10	41.3
80B5	19	6	21.8	200	165	130	11	4	79	* 非標產品, 訂單時請說明 * Only on request		
80B14	19	6	21.8	120	100	80	7	4	79			
90B5	24	8	27.3	200	165	130	11	2	79			
90B14	24	8	27.3	140	115	95	9	4	79			

重量（不包括馬達）
≈ 14.8 kg
Weight without motor
≈ 14.8 kg

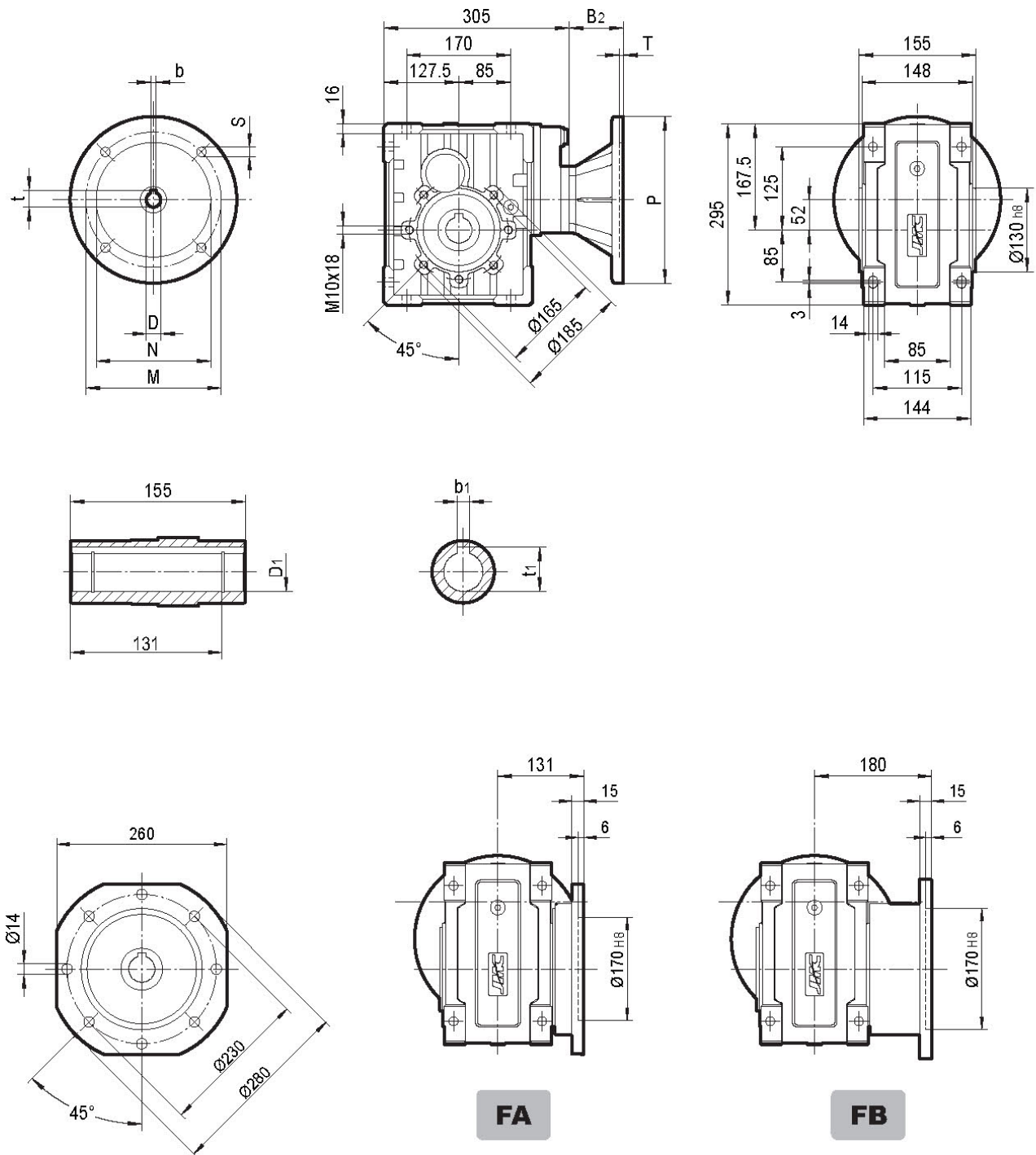
TKM68B..(IEC)



IEC	DE8	b	t	P	M	N	S	T	B2	D1 H8	b1	t1
71B5	14	5	16.3	160	130	110	9	4	64	40*	12	43.3
80B5	19	6	21.8	200	165	130	11	4	84	42	12	45.3
90B5	24	8	27.3	200	165	130	11	4	84	* 非標產品, 訂單時請說明 * Only on request		
100/112B5	28	8	31.3	250	215	180	13.5	4.5	94			
100/112B14	28	8	31.3	160	130	110	9	4.5	94			
132B5	38	10	41.3	300	265	230	14	4.5	114			

重量 (不包括馬達)
 ≈ 21.5 kg
 Weight without motor
 ≈ 21.5 kg

TKM68C..(IEC)



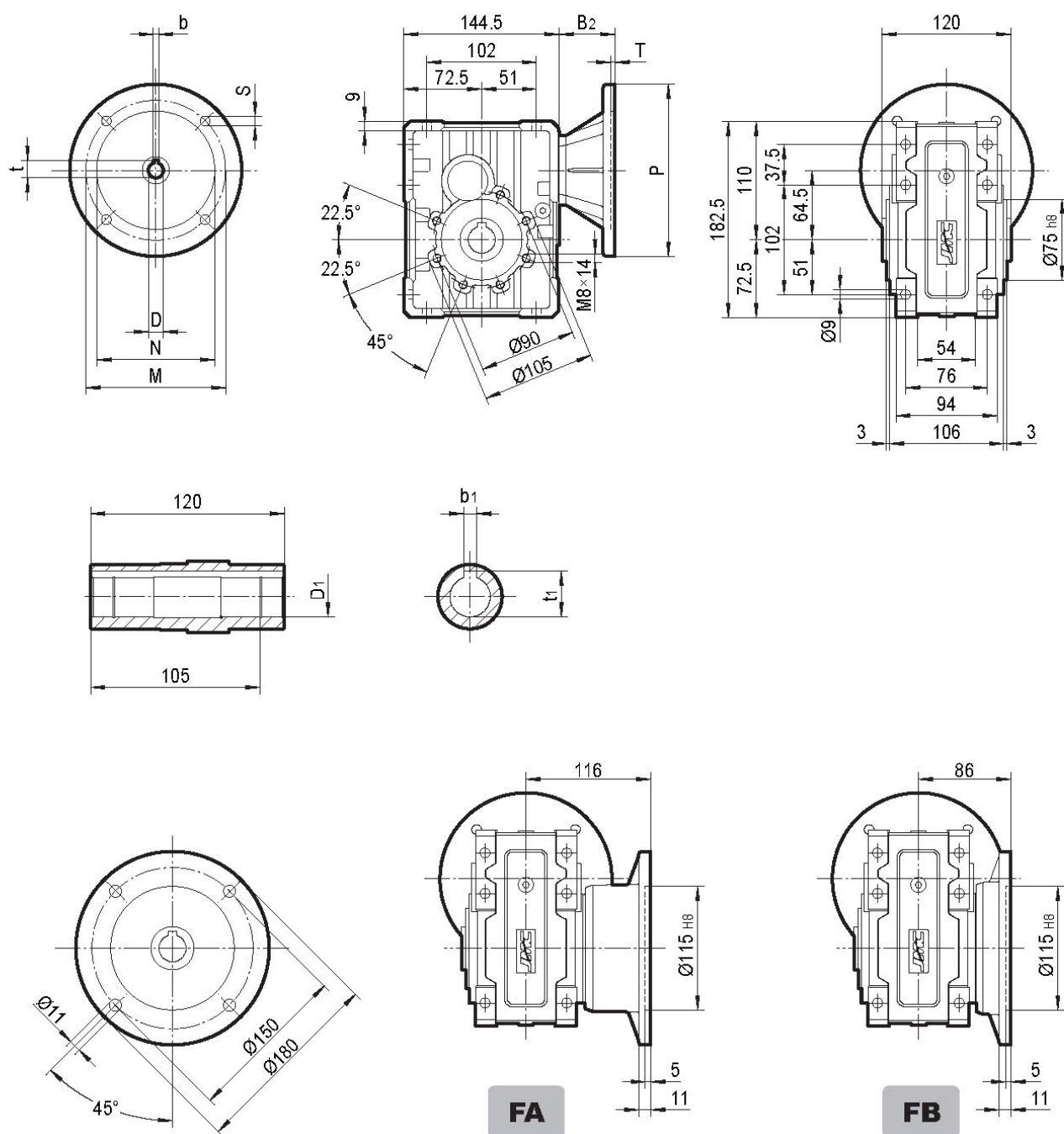
IEC	D E8	b	t	P	M	N	S	T	B2	D1 H8	b1	t1
71B5	14	5	16.3	160	130	110	9	4	64	40*	12	43.3
80B5	19	6	21.8	200	165	130	11	4	84	42	12	45.3
90B5	24	8	27.3	200	165	130	11	4	84	* 非標產品, 訂單時請說明 * Only on request		
100B5	28	8	31.3	250	215	180	13.5	4.5	94			
10014	28	8	31.3	160	130	110	9	4.5	94			

重量 (不包括馬達)
≈ 23.5 kg
Weight without motor
≈ 23.5 kg

TKB38B..(IEC)

7.2 TKB.. (IEC)外形尺寸 / Outline Dimension

TKB38B..(IEC)



IEC	D _{E8}	b	t	P	M	N	S	T	B2	D1 _{H8}	b1	t1
63B5	11	4	12.8	140	115	95	9	4	45	25	8	28.3
71B5	14	5	16.3	160	130	110	9	4	52	28*	8	31.3
71B14	14	5	16.3	105	85	70	7	4	52	* 非標產品, 訂單時請說明 * Only on request		
80B5	19	6	21.8	200	165	130	11	4	72			
80B14	19	6	21.8	120	100	80	7	4	72			
90B5	24	8	27.3	200	165	130	11	4	72			
90B14	24	8	27.3	140	115	95	9	4	72			

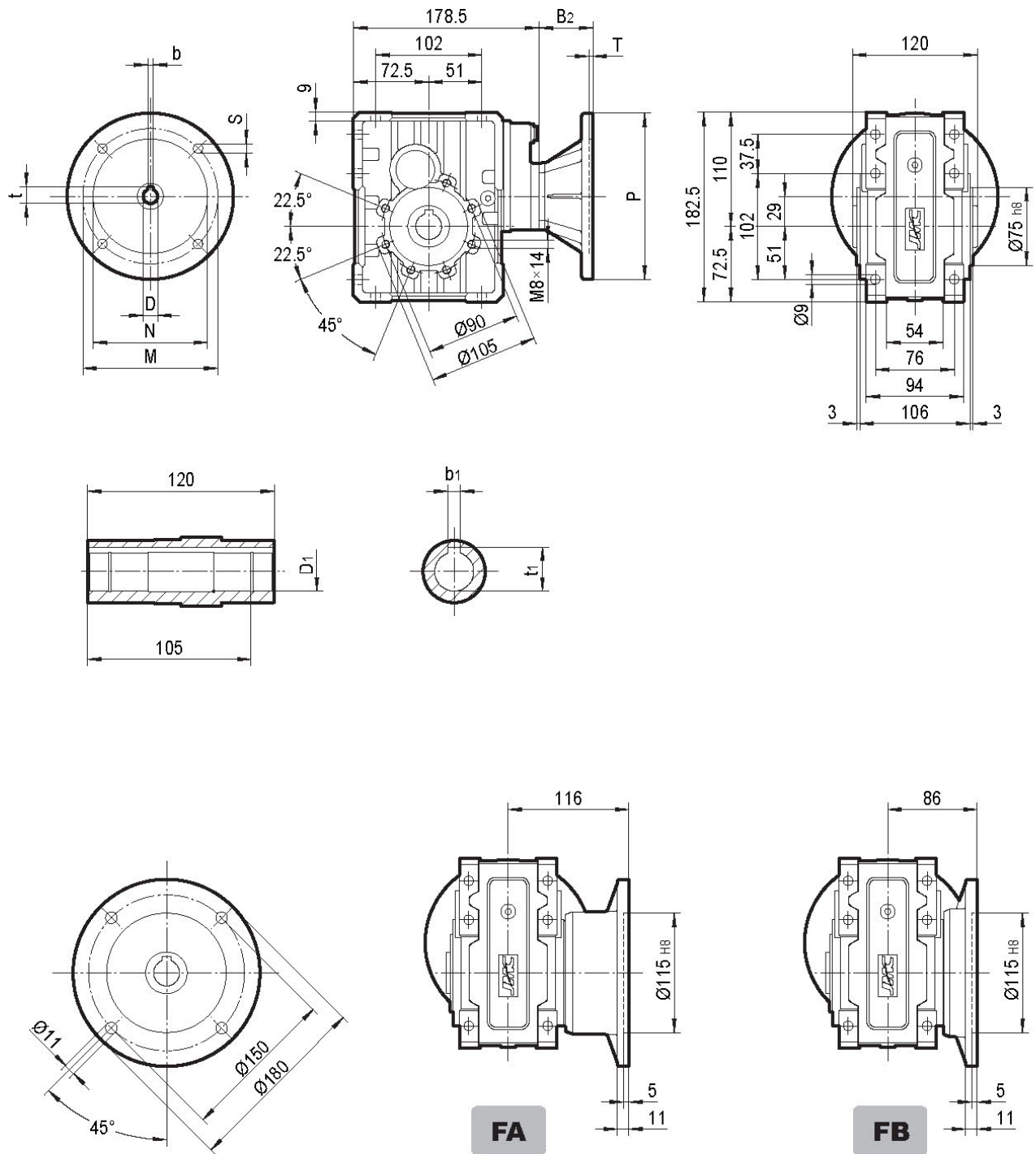
重量 (不包括馬達)

≈ 6.0 kg

Weight without motor

≈ 6.0 kg

TKB38C..(IEC)



IEC	D _{E8}	b	t	P	M	N	S	T	B2	D1 H8	b1	t1
63B5	11	4	12.8	140	115	95	9	4	45	25	8	28.3
71B5	14	5	16.3	160	130	110	9	4	52	28*	8	31.3
71B14	14	5	16.3	105	85	70	7	4	52	* 非標產品, 訂單時請說明 * Only on request		
80B5	19	6	21.8	200	165	130	11	4	72			
80B14	19	6	21.8	120	100	80	7	4	72			

重量 (不包括馬達)

≈ 6.8 kg

Weight without motor

≈ 6.8 kg

[illegible]

IEC	D _{E8}	b	t	P	M	N	S	T	B2	D1 _{H8}	b1	t1
71B5	14	5	16.3	160	130	110	9	4	59	28*	8	31.3
80B5	19	6	21.8	200	165	130	11	4	79	30	8	33.3
80B14	19	6	21.8	120	100	80	7	4	79	35*	10	38.3
90B5	24	8	27.3	200	165	130	11	4	79	* 非標準產品, 訂單時請說明 * Only on request		
90B14	24	8	27.3	140	115	95	9	4	79			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	89			
100/112B14	28	8	31.3	160	130	110	9	4.5	89			

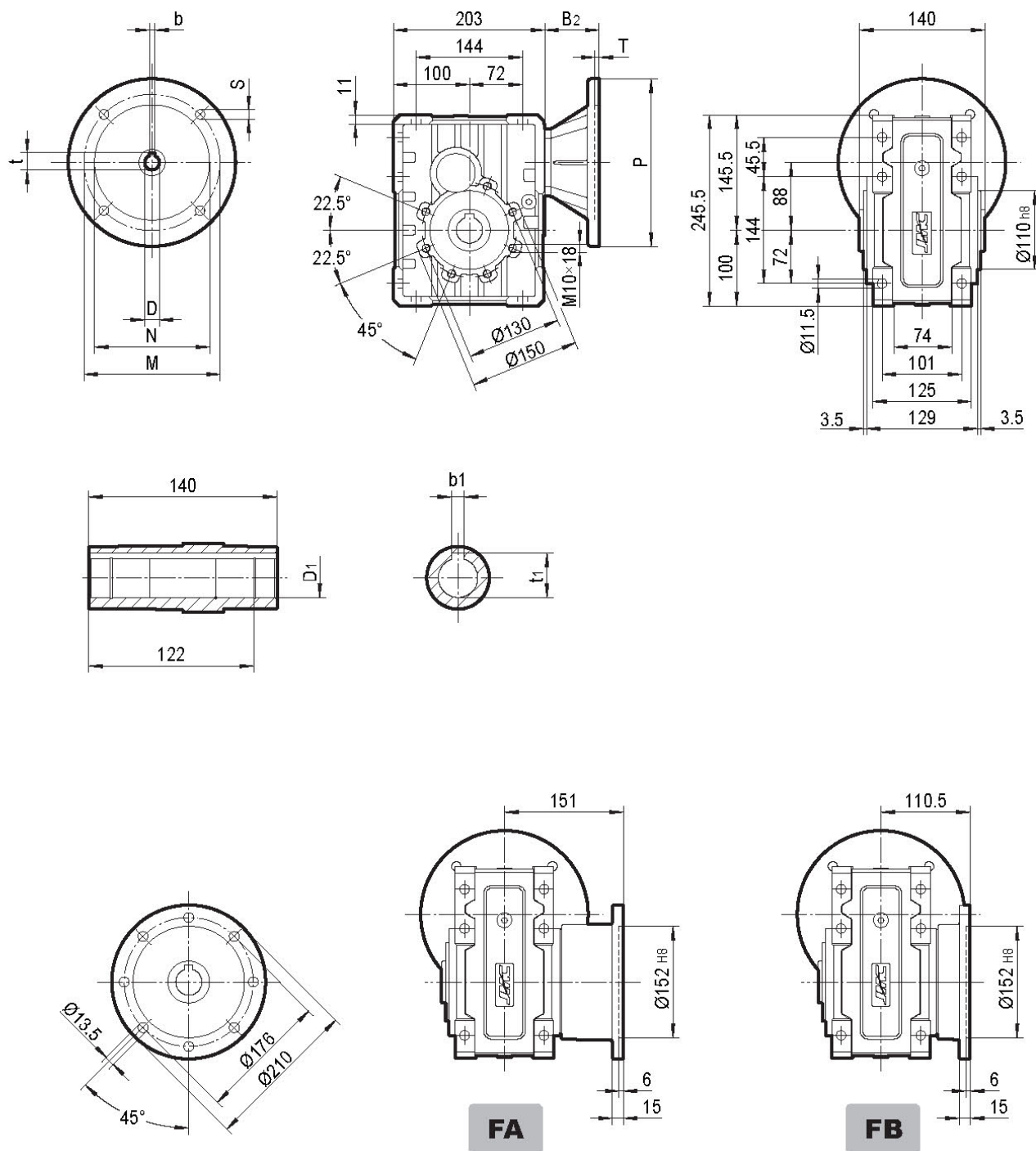
重量（不包括馬達）
≈ 9.5 kg
Weight without motor
≈ 9.5 kg

[illegible]

IEC	D _{E8}	b	t	P	M	N	S	T	L	D1 _{H8}	b1	t1
63B5	11	4	12.8	140	115	95	9	4	52	28*	8	31.3
71B5	14	5	16.3	160	130	110	9	4	59	30*	8	33.3
80B5	19	6	21.8	200	165	130	11	4	79	35*	10	38.3
80B14	19	6	21.8	120	100	80	7	4	79	* 非標產品, 訂單時請說明 * Only on request		
90B5	24	8	27.3	200	165	130	11	4	79			
90B14	24	8	27.3	140	115	95	9	4	79			

TKM / TKB 2014

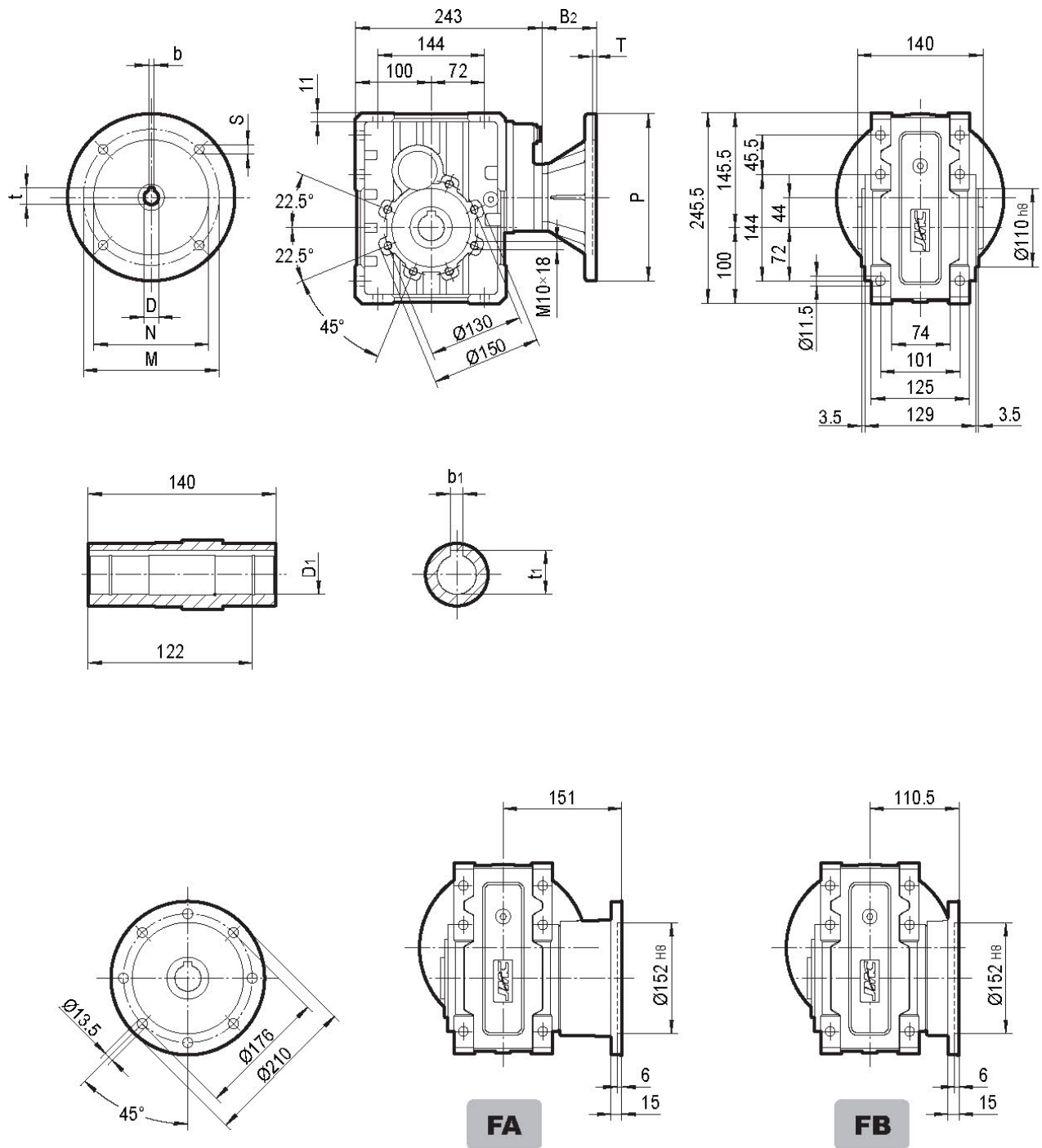
TKB58B..(IEC)



IEC	D _{E8}	b	t	P	M	N	S	T	B ₂	D ₁ H ₈	b ₁	t ₁
71B5	14	5	16.3	160	130	110	9	4	59	35	10	38.3
80B5	19	6	21.8	200	165	130	11	4	79	38*	10	41.3
80B14	19	6	21.8	120	100	80	7	4	79	* 非標產品, 訂單時請說明 * Only on request		
90B5	24	8	27.3	200	165	130	11	4	79			
90B14	24	8	27.3	140	115	95	9	4	79			
100/112B5	28	8	31.3	250	215	180	13.5	4.5	89			
100/112B14	28	8	31.3	160	130	110	9	4.5	89			

重量 (不包括馬達)
 ≈ 13.5 kg
 Weight without motor
 ≈ 13.5 kg

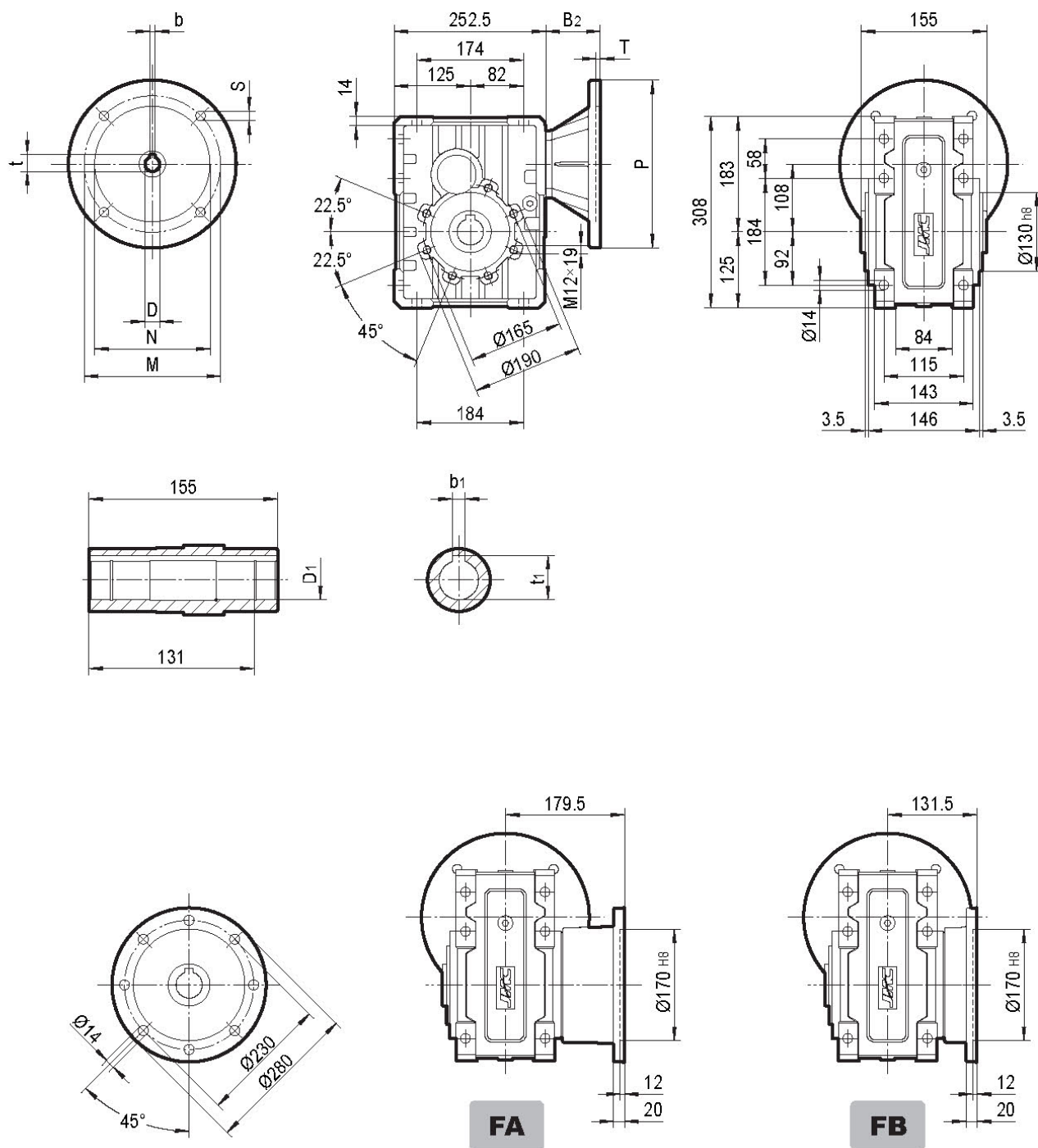
TKB58C..(IEC)



IEC	D _{E8}	b	t	P	M	N	S	T	B ₂	D ₁ H ₈	b ₁	t ₁
63B5	11	4	12.8	140	115	95	9	4	52	35	10	38.3
71B5	14	5	16.3	160	130	110	9	4	59	38*	10	41.3
80B5	19	6	21.8	200	165	130	11	4	79	* 非標產品, 訂單時請說明 * Only on request		
80B14	19	6	21.8	120	100	80	7	4	79			
90B5	24	8	27.3	200	165	130	11	4	79			
90B14	24	8	27.3	140	115	95	9	4	79			

重量 (不包括馬達)
≈ 14.8 kg
Weight without motor
≈ 14.8 kg

TKB68B..(IEC)



IEC	D E8	b	t	P	M	N	S	T	B2	D1 H8	b1	t1
80B5	19	6	21.8	200	165	130	11	4	84	40*	12	43.3
90B5	24	8	27.3	200	165	130	11	4	84	42	12	45.3
100/112B5	28	8	31.3	250	215	180	13.5	4.5	94	*非標產品, 訂單時請說明 * Only on request		
100/112B14	28	8	31.3	160	130	110	9	4.5	94			
132B5	38	10	41.3	300	265	230	14	4.5	114			

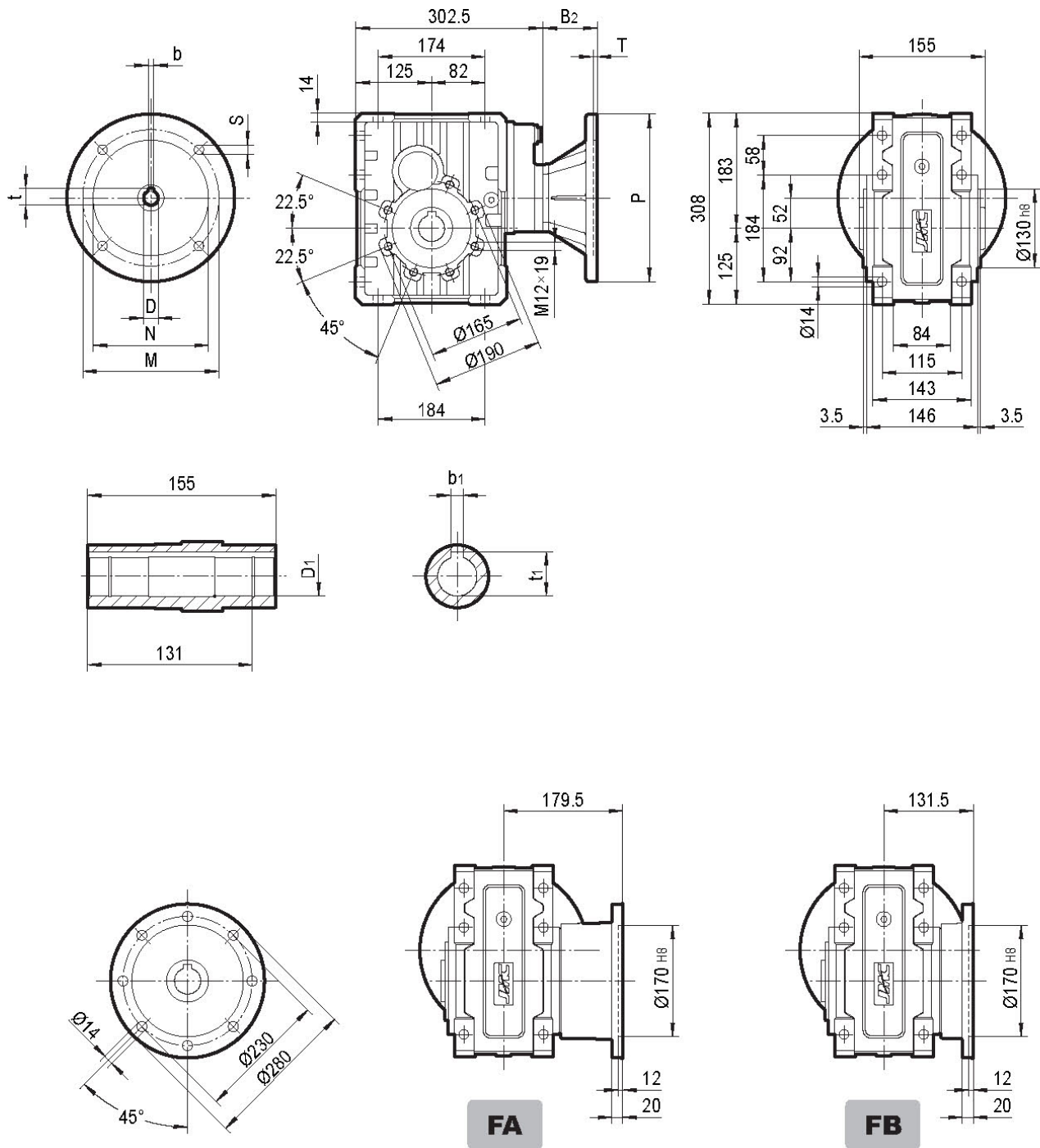
重量 (不包括馬達)

≈ 21.5 kg

Weight without motor

≈ 21.5 kg

TKB68C..(IEC)

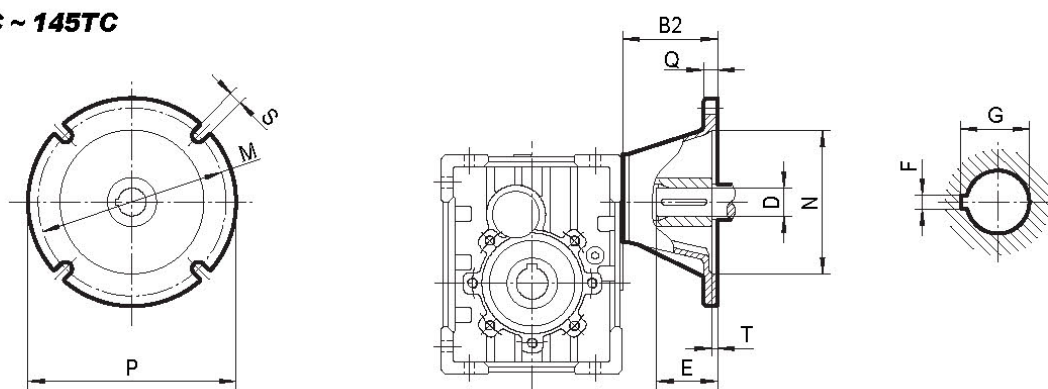


IEC	D _{E8}	b	t	P	M	N	S	T	B2	D1 H8	b1	t1
71B5	14	5	16.3	160	130	110	9	4	64	40*	12	43.3
80B5	19	6	21.8	200	165	130	11	4	84	42	12	45.3
90B5	24	8	27.3	200	165	130	11	4	84	*非標產品, 訂單時請說明 * Only on request		
100/112B5	28	8	31.3	250	215	180	13.5	4.5	94			
100/112B14	28	8	31.3	160	130	110	9	4.5	94			

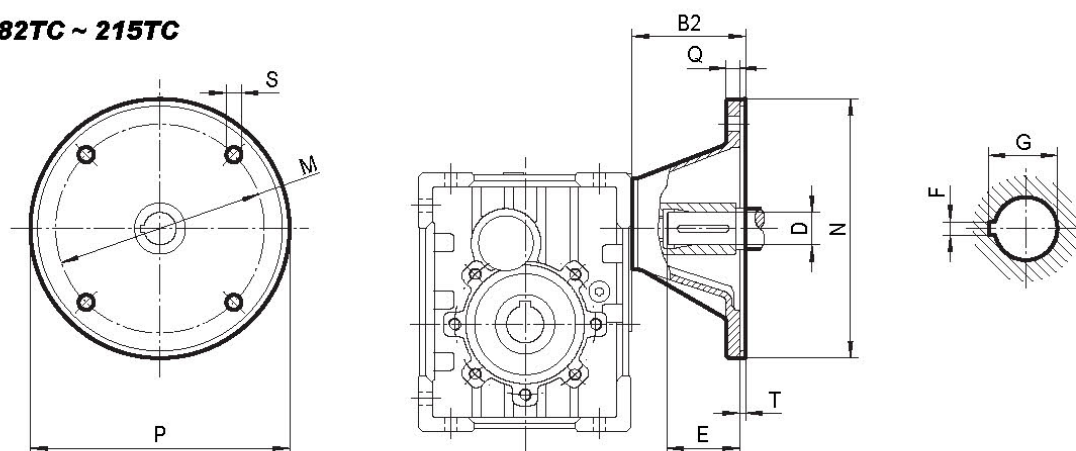
重量 (不包括馬達)
≈ 23.5 kg
Weight without motor
≈ 23.5 kg

7.3 TKM / TKB..NEMA 外形尺寸 / Outline Dimension

56C ~ 145TC



182TC ~ 215TC

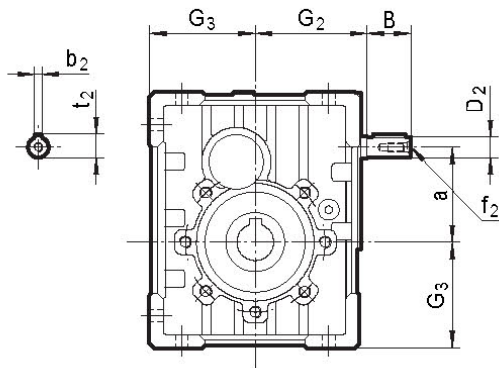


表內數值單位為in. / Table data unit is inch.

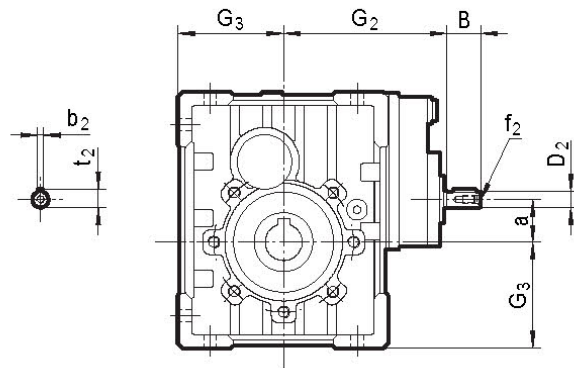
TYPE	NEMA Flange	B ₂	D	E	F	G	M	N	P	Q	S	T
TKM28	56C	2.953	0.625	2.06	0.188	0.713	5.875	4.50	6.50	0.433	0.413	0.177
TKM38 TKB38	56C	2.953	0.625	2.06	0.188	0.713	5.875	4.50	6.50	0.433	0.413	0.177
	143TC 145TC	2.953	0.875	2.12	0.188	0.963	5.875	4.50	6.50	0.433	0.413	0.177
TKM48 TKM58 TKB48 TKB58	56C	3.228	0.625	2.06	0.188	0.713	5.875	4.50	6.50	0.433	0.413	0.177
	143TC 145TC	3.228	0.875	2.12	0.188	0.963	5.875	4.50	6.50	0.433	0.413	0.177
	182TC 184TC	3.937	1.125	2.62	0.250	1.240	7.250	8.50	9.00	0.472	0.551	0.197
TKM68 TKB68	143TC 145TC	3.425	0.875	2.12	0.188	0.963	5.875	4.50	6.50	0.433	0.413	0.177
	182TC 184TC	4.134	1.125	2.62	0.250	1.240	7.250	8.50	9.00	0.472	0.551	0.197
	213TC 215TC	4.646	1.375	3.12	0.312	1.517	7.250	8.50	9.00	0.472	0.551	0.197

7.4 **TKM..HS** 外形尺寸 / Outline Dimension

TKM..B..HS



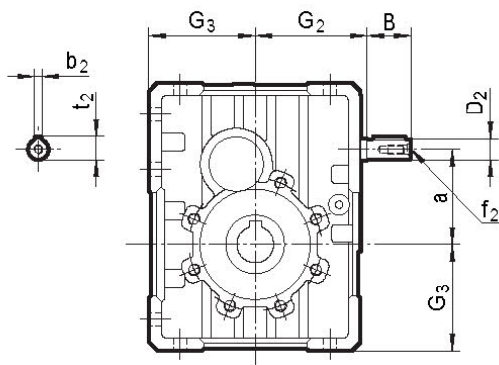
TKM..C..HS



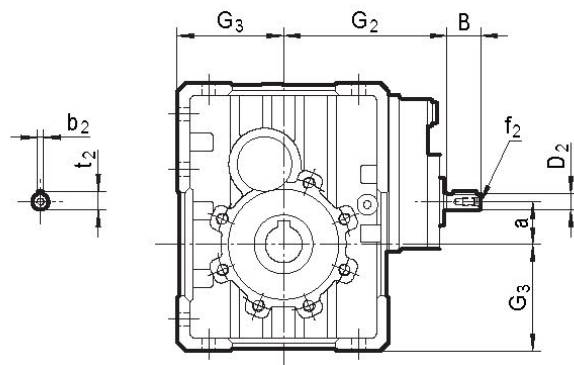
	B	D _{2j6}	G ₂	G ₃	a	b ₂	f ₂	t ₂
TKM28B	23	11	65	60	57	4	-	12.5
TKM28C	23	11	100	60	21.5	4	-	12.5
TKM38B	30	14	76	72	64.5	5	M6	16
TKM38C	23	11	111	72	29	4	-	12.5
TKM48B	40	16	91	86	74.5	5	M6	18
TKM48C	30	14	132	86	30.5	5	M6	16
TKM58B	40	19	107	103	88	6	M6	21.5
TKM58C	30	14	148	103	44	5	M6	16
TKM68B	50	24	132	127.5	108	8	M8	27
TKM68C	40	19	181	127.5	52	6	M6	21.5

7.5 **TKB..HS** 外形尺寸 / Outline Dimension

TKB..B..HS



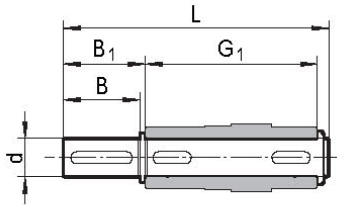
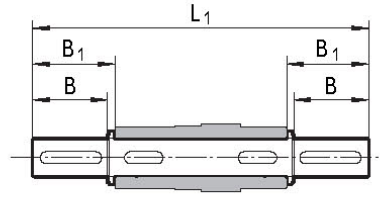
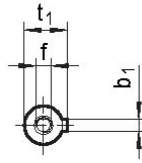
TKB..C..HS



	B	D _{2j6}	G ₂	G ₃	a	b ₂	f ₂	t ₂
TKB38B	30	14	76	72.5	64.5	5	M6	16
TKB38C	23	11	111	72.5	29	4	-	12.5
TKB48B	40	16	91	87	74.5	5	M6	18
TKB48C	30	14	132	87	30.5	5	M6	16
TKB58B	40	19	107	100	88	6	M6	21.5
TKB58C	30	14	148	100	44	5	M6	16
TKB68B	50	24	132	125	108	8	M8	27
TKB68C	40	19	181	125	52	6	M6	21.5

8. 附件尺寸圖表 / ACCESSORIES OUTLINE DIMENSION SHEET

8.1 輸出軸 / Output Shafts

**AS****AB**

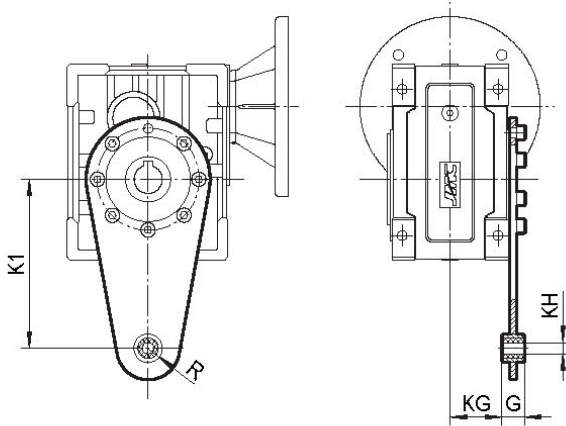
	d h6	B	B ₁	G ₁	L	L ₁	f	b ₁	t ₁
TKM28	25	50	53.5	92	153	199	M10x22	8	28
TKM38	25	50	53.5	112	173	219	M10x22	8	28
TKM48	28	60	63.5	120	192	247	M10x22	8	31
TKM58	35	80	84.5	140	234	309	M12x28	10	38
TKM68	42	80	84.5	155	249	324	M16x36	12	45
TKB38	25	60	65	120	192	246.4	M8x19	8	28
TKB48_d 28	28	60	65	127	199	255	M8x20	8	31
TKB48_d 30	30	60	65	127	199	255	M10x22	8	33
TKB58	35	60	65	140	214	268	M12x22	10	38
TKB68	42	75	80	155	244	313.5	M12x28	12	45

* 非標產品，訂單時請說明

* Only on request

8.2 扭力臂 / Torque Arm

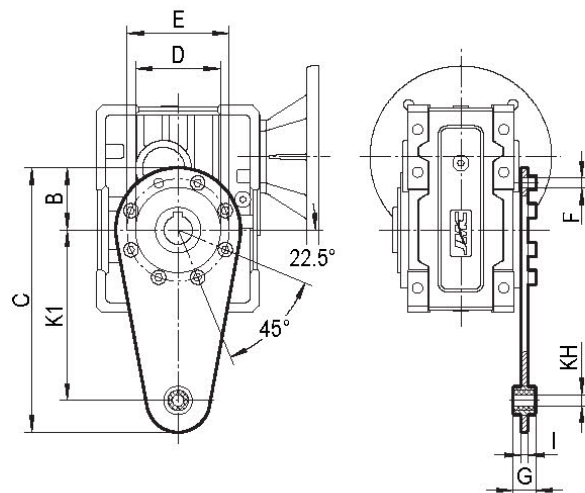
8.2.1 TKM..扭力臂 / Torque Arm



	K1	G	KG	KH	R
TKM28	100	14	38.5	10	18
TKM38	150	14	49	10	18
TKM48	200	25	47.5	20	30
TKM58	200	25	57.5	20	30
TKM68	250	30	62	25	35

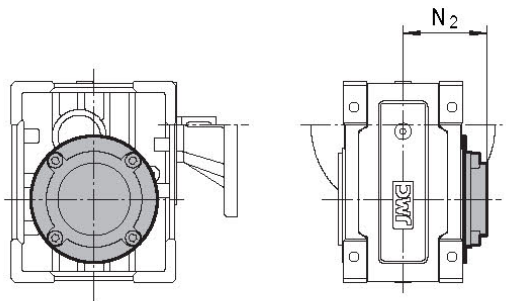
8.2.2 TKB..扭力臂 / Torque Arm

	K1	B	C	D	E	F	G	kH	I
TKB38	150	55	233	75	90	9	20	10	6
TKB48	200	60	300	90	110	9	25	20	6
TKB58	200	80	318	110	130	11	25	20	6
TKB68	250	100	388	130	165	13	25	20	6



8.3 防塵蓋 / Cover

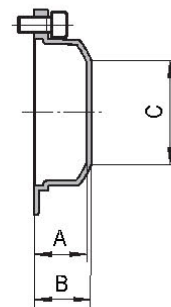
8.3.1 TKM..防塵蓋 / Cover



	N ₂
TKM28	63
TKM38	73
TKM48	79
TKM58	94
TKM68	102

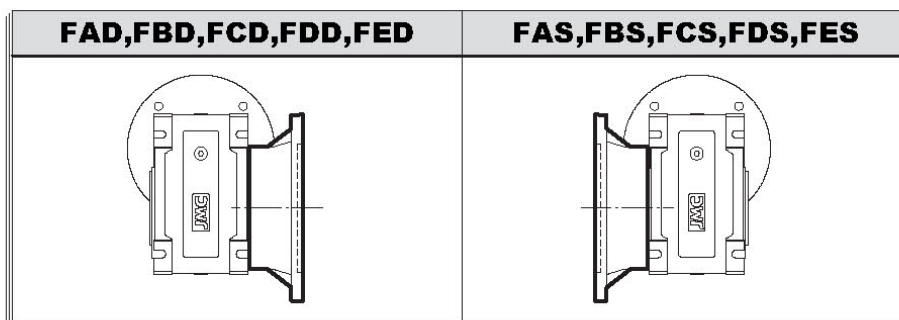
8.3.2 TKB..防塵蓋 / Cover

	A	B	C
TKB38	26.5	29	Φ35
TKB48	24.5	27	Φ54
TKB58	26.5	29	Φ71
TKB68	27.5	30	Φ89



9. 安裝方向圖 / INSTALLATION POSITIONS DIAGRAM

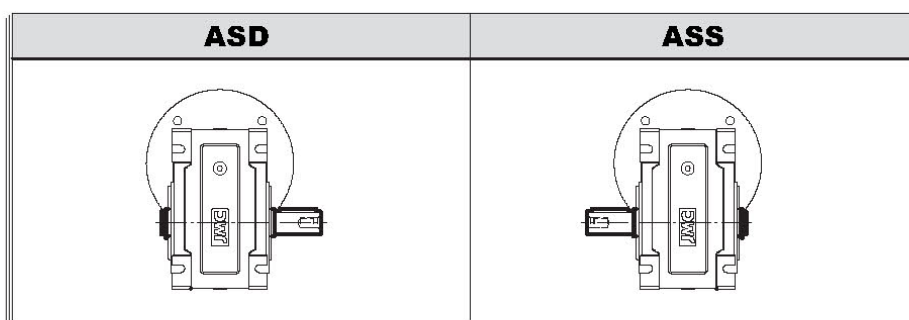
9.1 輸出法蘭位置 / Position diagram for output flange



如沒有特殊要求，一般按出廠的標準位置如圖F..1方式和B3位置提供。

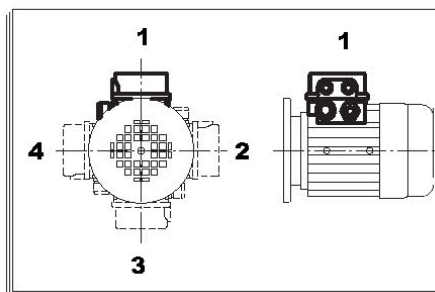
Unless specified otherwise, the gear units is supplied with the flange in pos. F..1 referred to position B3.

9.2 單向輸出軸位置 / Position diagram for single output shaft



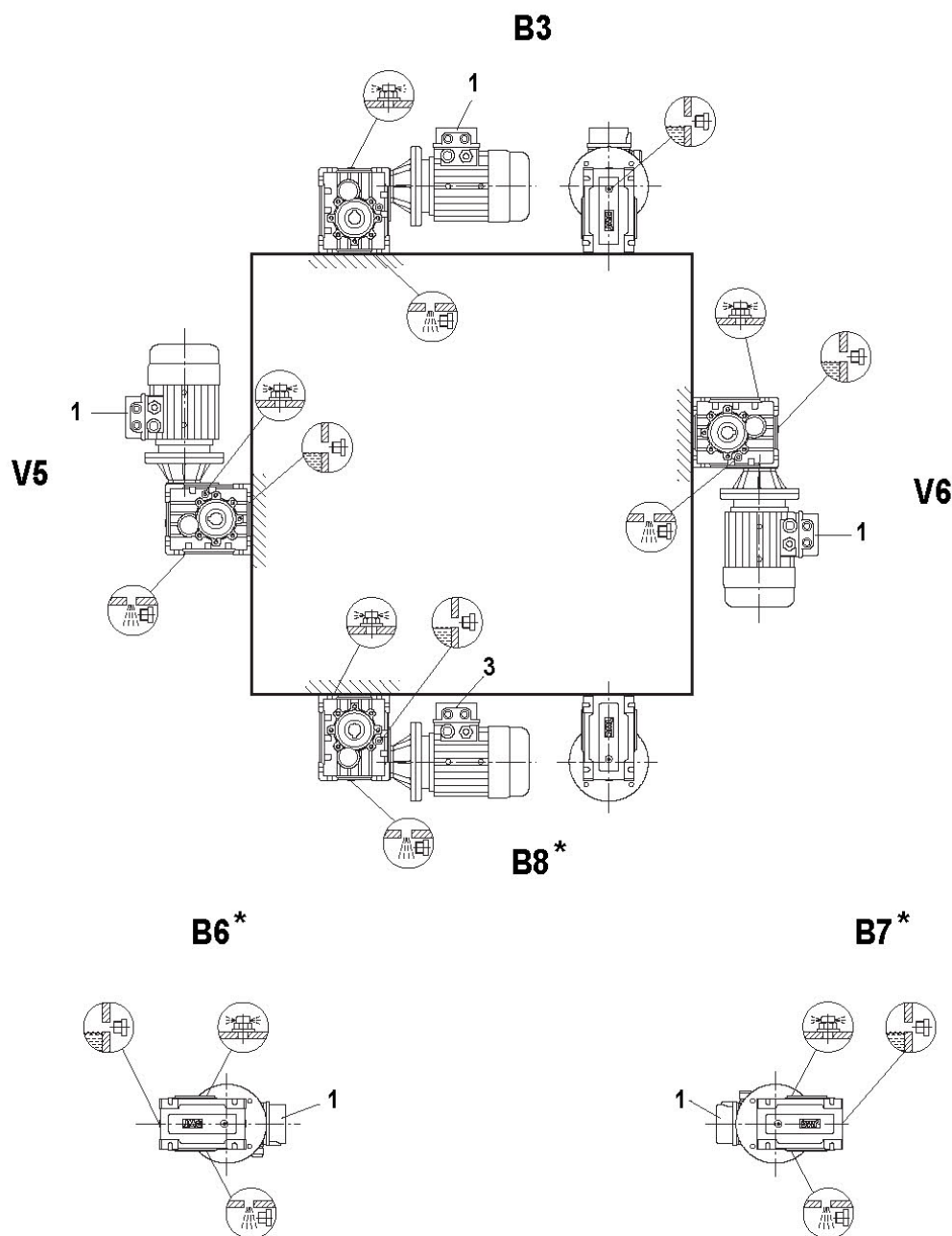
9.3 TKB.. 或 / OR TKM.. 安裝方向 / Mounting Positions

符號 Symbol	含義 Meaning
	排氣閥 Breather valve
	油位塞 Oil level plug
	放油塞 Oil drain plug



如對接線盒位置有特殊要求，請在下單時如圖所示來指定接線盒安裝方向。

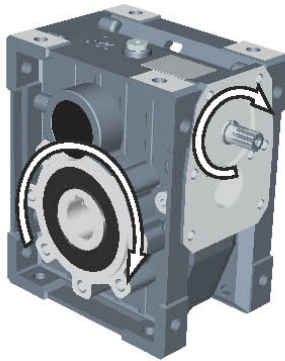
In the case of specific requirements, when ordering, specify the position of the terminal box as shown in the diagram.



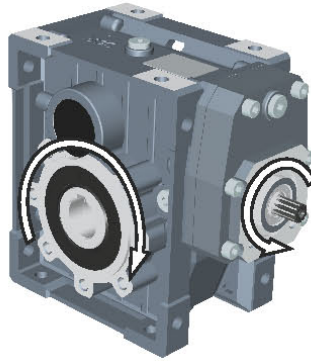
*: 表示在此安裝方式，不能僅憑油位塞添加潤滑油，油位需高出油位塞，添加量按表內所示。

*: It means the lubricant can't be added according to the oil level line plug, but also higher the plug the fill quantity as shown in the table

9.4 旋轉方向 / Direction of rotation



TKM..B / TKB..B



TKM..C / TKB..C

減速機在使用時，馬達可正反轉輸入使用；推薦使用左圖所示輸入軸旋轉方向為準雙曲面齒輪最佳嚙合方向。

The motor can be run either CW or CCW while using with gearbox, the left chart is recommended

10. 安裝 / INSTALLATION

10.1 注意事項

安裝減速機時要注意以下一些事項：

1. 減速機與機械設備裝配之前，要檢查減速機輸出軸的旋轉方向是否正確；
2. 減速機與原動機、設備裝配之前，應檢查各軸徑、孔徑、鍵和鍵槽的偏差尺寸，避免裝配過緊、過鬆影響減速機效能；
3. 減速機必須牢固地安裝在機械設備上，避免有鬆動或振動；
4. 盡可能地避免減速機暴露在烈日陽光下和惡劣環境中；
5. 如果減速機存放時間長達4-6個月，應檢查油封是否浸潤在潤滑油中，可能油封唇口會黏在軸上，甚至失去了彈性，由於適當的彈性是油封必須的工作條件，所以推薦更換油封；
6. 所有橡膠件和透氣孔不能沾有油漆；
7. 與減速機的空心軸或實心軸配合連接時，應在軸上配合部分塗上潤滑油，以免卡死或氧化；

10.1 Note recommendations

To install the gear units it is necessary to note the following recommendations:

1. Check the correct direction of rotation of the gear units output shaft before fitting the unit to the machine.
2. Before mount with the prime mover and device, please check the reducer's every axial diameter, aperture, key and key slot, to be sure their dimensions are not deviation, and avoid assembling too tight or too loose, unless it will influence the reducer's performance.
3. The mounting on the machine must be stable to avoid any vibration.
4. Whenever possible, protect the gear units against solar radiation and bad weather.
5. In the case of particularly lengthy periods of storage (4-6 months), if the oil seal is not immersed in the lubricant inside the unit, it is recommended to change it since the rubber could stick to the shaft or may even have lost the elasticity it needs to function properly.
6. Painting must definitely not go over rubber parts and the holes on the breather plugs, if any.
7. When connect with hollow or solid shaft, please grease the joint to avoid lock or oxidation.

10.1 注意事項

8. 使用時必須檢查油位（如油位鏡孔或開啟油塞，小型號是沒有的）；
9. 使用新減速機時，不能滿負載起動，應該逐步增大負載；
10. 使用各類馬達直聯型減速機時，若馬達重量偏大，應設支撐裝置；
11. 確保馬達風扇附近有良好的通風環境，以免影響散熱效果；
12. 減速機的標準工作環境溫度是-5°C至40°C，如果不在這範圍時，請與我們技術服務人員聯絡

10.2 使用限制

這本目錄給出的參數基本上是按B3安裝方向來編的，即第一級沒有完全浸入在油中。對於其他安裝方向和輸入轉速，請參考下面表格中的相應參數。當遇到下列應用情況時，如有必要請與我們技術服務人員聯絡：

1. 在原有上提高轉速時；
 2. 應用在慣性特別大的設備上時；
 3. 當減速機出現故障有可能會對操作者造成危害時；
 4. 應用在減速機過度疲勞狀態時；
 5. 工作環境溫度低於-5°C或高於40°C時；
 6. 在化學腐蝕環境中使用時；
 7. 在鹽性環境中使用時；
 8. 在輻射性高的環境中使用時；
 9. 在環境氣壓不在正常大氣壓力下使用時；
 10. 安裝方向在這目錄中沒有提到時。
- 避免把減速機部分或整台浸入水裡或其它液體中。

減速機承受的最大負載扭矩不能超過兩倍於效能參數表中規定的正常扭矩（當使用係數 $f_s=1$ 時）；這裡最大負載扭矩是指能承受瞬間短暫的過載，它出現在過載啟動、剎車、振動或其他動態操作環境中。

10.1 Note recommendations

8. Check the correct level of the lubricant through the indicator, if there is one.
9. Starting must take place gradually, without immediately applying the maximum load.
10. Supporting unit is required when using various of reducer matched with motor directly and the weight of motor is a little bigger than common.
11. Ensure the motor cools correctly by assuring good passage of air from the fan side.
12. In the case of ambient temperatures $< -5^{\circ}\text{C}$ or $> +40^{\circ}\text{C}$ call the Technical Service.

10.2 Critical applications

The performance given in the catalogue correspond to mounting position B3 or similar, when the first stage is not entirely immersed in oil. For other mounting positions and/or particular input speeds, refer to the tables that highlight different critical situations for each size of gear units. It is also necessary to take due consideration of and carefully assess the following applications by calling our Technical Service:

1. As a speed increasing.

2. Applications with especially high inertia.
3. Use in services that could be hazardous for people if the gear units fails.
4. Applications with high dynamic strain on the case of the gear units.
5. In places with T° under -5°C or over 40°C .
6. Use in chemically aggressive environments.
7. Use in a salty environment.
8. Use in radioactive environments.
9. Use in environments pressures other than atmospheric pressure.
10. Mounting positions not envisaged in the catalogue.

Avoid applications where even partial immersion of the gear units is required.

The maximum torque that the gear units can support must not exceed two times the nominal torque ($f_s = 1$) stated in the performance tables. Intended for momentary overloads due to starting at full load, braking, shocks or other causes, particularly those that are dynamic.

11. 潤滑油 / LUBRICATION

11.1 潤滑油型號 / Types of lubrication

						潤滑油類型 lubrication type
TKM.. TKB..	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		

11.2 潤滑油添加量

規定的添加量為參考值。精確值的變化與級數和減速比有關。請您在添加潤滑油時一定要注意油位螺栓所指示的精確油量。後期調整安裝方式時，您必須根據改變後的安裝方式相應調整添加潤滑劑。下表中列出了不同安裝方式（B3、B6、B7.....）的減速機相應的標準參考潤滑油添加量值。

11.2 Lubricant fill quantity

The specified fill quantities are recommended values. The precise values vary depending on the number of stages and gear ratio. When filling, it is essential to check the oil level plug since it indicates the precise oil capacity. The following tables show guide values for lubricant fill quantities in relation to the mounting position (B3、B6、B7.....)

TKM..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:升(L)
	B3	B6	B7	B8	V5	V6	
TKM28B	0.22	0.20*	0.13*	0.15	0.25	0.14	
TKM28C #	0.07	0.04	0.04	0.05	0.08	0.09	
TKM38B	0.42	0.35*	0.24*	0.22	0.46	0.25	
TKM38C #	0.07	0.04	0.04	0.05	0.08	0.09	
TKM48B	0.70	0.58*	0.42*	0.42	0.75	0.45	
TKM48C #	0.13	0.09	0.09	0.09	0.15	0.17	
TKM58B	1.21	0.95*	0.72*	0.67	1.30	0.74	
TKM58C #	0.13	0.09	0.09	0.09	0.15	0.17	
TKM68B	2.15	1.70*	1.10*	1.25	2.20	1.20	
TKM68C #	0.25	0.17	0.17	0.20	0.32	0.36	

TKB..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:升(L)
	B3	B6	B7	B8	V5	V6
TKB38B	0.38	0.35*	0.25*	0.26*	0.44	0.25
TKB38C #	0.07	0.04	0.04	0.05	0.08	0.09
TKB48B	0.66	0.60*	0.45*	0.48	0.78	0.48
TKB48C #	0.13	0.09	0.09	0.09	0.15	0.17
TKB58B	1.15	0.95*	0.70*	0.75*	1.25	0.75
TKB58C #	0.13	0.09	0.09	0.09	0.15	0.17
TKB68B	2.00	1.70*	1.10*	1.40*	2.20	1.20
TKB68C #	0.25	0.17	0.17	0.20	0.32	0.36

#: 採用3級傳動減速機時，各自添加3級箱體和2級箱體的潤滑油，潤滑油互不相通。表中的添加量為3級箱體潤滑油添加量。

#: Means the oil quantity in the 3rd stage housing, as this one is separated from the 2nd housing, please fill them separately while in 3 stages.

*: 表示在此安裝方式，不能僅憑油位塞添加潤滑油，油位需高出油位塞，添加量按表中所示。

*: It means the lubricant can't be added according to the oil level line plug, but also higher the plug the fill quantity as shown in the table

12. 維護

1). 對於齒輪箱，首次換油必須在工作大約300小時（齒輪磨合期）後進行，在換油時應使用合適的清洗劑小心地衝洗齒輪箱，不得將礦物油和合成油混合。

2). 每 3000 工作小時，最低程度半年，應檢測油以及油位，油封密封不嚴引起滴漏的常規檢測，若是IEC輸入的減速機，則檢測檢查彈性體，必要時進行更換。

3). 根據不同的工作條件（見下圖）而定，最長每三年檢測一次，更換礦物油，更換軸承潤滑油脂。

4). 根據不同的工作條件而定，更換輸出軸上的油封。

5). 產品出現故障時，不要拆卸部件，與本公司銷售服務部門聯絡（需提供減速機規格、出廠日期、編號、已使用時間、主機名稱、主機生產單位和故障類型）後，再採取合理的措施。

12. MAINTENANCE

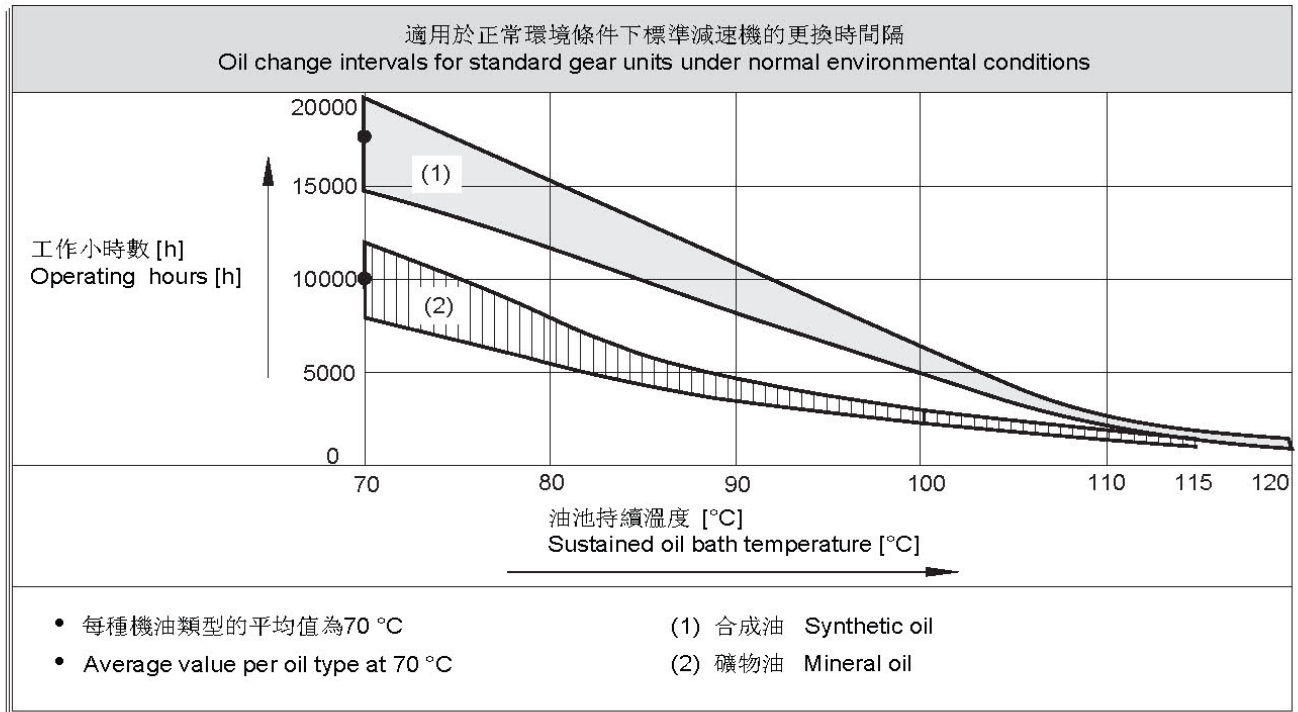
1). For gear units, first oil change should be after about 300 hours (run-in period). The right lotion is required to clean the gear units with care. Never mix the synthetic oil and mineral oil together.

2). Every 3000 working time, at least every 6 months, you have to check the oil and oil level, the seals visually for leakage. For IEC input gear units, the elastomer should be tested or replaced if necessary.

3). Depending on the operating conditions (see chart below), every 3 years at the latest for inspection is needed. Then change the mineral oil and replace the bearing grease.

4). Depending on the operating conditions, change the oil seals on output shaft.

5). Once the malfunctions appear, stop disassembling the parts, and firstly please contact the customer service (the information about specification, delivery date, series number, time used, name of machine, machine manufacturer, malfunction problems is required), then take the reasonable measures.



13. 存放

- 1). 有頂棚，防雨雪，無振動。
- 2). 在設備和地面之間墊放木塊或其他材料。
- 3). 開箱後暫不使用的齒輪減速機在其加工表面塗上防鏽油，並應及時放回包裝箱內。
- 4). 在定期檢查的情況下，兩年以及更長時間。在進行檢查時，應檢查清潔度和機械損傷，檢查防鏽層是否完好。

14. 訂貨須知

減速機訂單請向我們提供以下資訊：

- 1). 減速機型號標記（減速機類型、速比、功率和安裝方式）。
- 2). 減速機表面噴塗顏色，有藍色和銀灰色兩種供選擇，一般按銀灰色提供。
- 3). 訂購數量。
- 4). 其他特殊要求。
- 5). 單位名稱、聯絡人、聯絡電話

13. STORAGE

- 1). Under roof, protected against rain and snow, no shock loads.
- 2). Underlay the block and other material between the ground and equipment.
- 3). The opened but not used gear units should be added with the anti-corrosive oil on its surface, and then return to the packing containers timely.
- 4). Two years or more given regular inspections. Check for cleanliness and mechanical damage as part of the inspection, Check corrosion protection.

14. NOTICE FOR ORDER

Please offer the following information when place the orders:

- 1). the model mark of the gear units(type, ratio, power and mounting position).
- 2). generally the gear units paint in silver.
- 3). quantity ordered.
- 4). other special requirements.
- 5). company, contact and telephone.

15. 故障與排除 / MALFUNCTIONS

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 leaking ¹⁾ • 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).

16. 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	
渦輪式風機 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

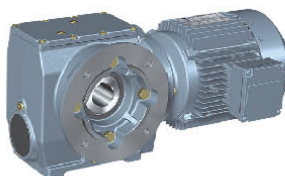
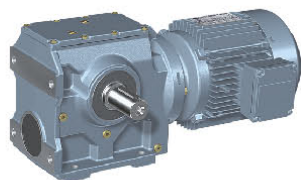
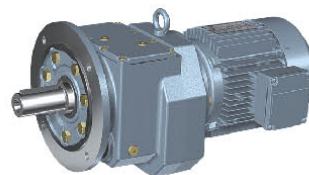
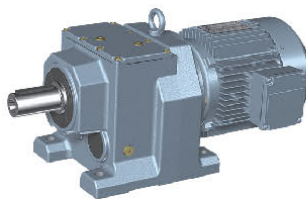
棒坯轉運機類 BAR TRANSMISSION EQUIPMENTS	B	泵類 PUMPS	
棒坯推料機 Bar pusher	B	離心泵(稀液體) Centrifugal pump (thin liquid)	A
推床 Push bed	B	離心泵(半液體) Centrifugal pump (half liquid)	B
剪板機** Shears	C	活塞泵 Displacement pump	C
板材擺升降台** Lumber elevator platform	B	柱塞泵 Plunger pump	C
軋輥調整裝置 ROLL ADJUSTING EQUIPMENTS	B	壓力泵 Force 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	球磨機 Ball crusher	B
機床及主要傳動裝置 Machine tool and main driving equipment	B	擠壓料碎機** Ejecting press and breaker	C
金屬刨床 Metal facing machine	C	破碎機 Breaker	C
板材矯直機床 Plate-leveling machine tool	C	壓磚機 Brick press	C
沖床 Backing-out punch	C	錘料碎機** Beating crusher	C
沖壓機床 Press machine tool	C	轉爐** Converter	C
剪床 Cutting machine	B	筒型磨機** Cylinder mill	C
薄板彎曲機床 Sheet bending machine tool	B	紡織機械類 TEXTILE MACHINERY	
石油工業機械類 PETROLEUM PROCESSING MACHINERY		送料機 Feeding machine	B
輸油管油泵** Pump of oil pipe line	B	織布機 Loom machine	B
轉子鑽井設備 Rotary drilling equipment	C	印染機 Dyeing machine	B
製紙機類 PAPERING MACHINE		精製筒 Purified drum	B
壓光機** Glazing press	C	威羅機 Welon machine	B
多層紙板機** Multilayer paper board machine	C	水處理設備類 WASTER TREATMENT EQUIPMENTS	
乾燥滾筒** Drying cylinder	C	鼓風機** Air blast	B
上光滾筒** Glazing cylinder	C	螺桿泵 Screw pump	B
攪漿機** Masher	C	木料加工機床 WOOD PROCESSING MACHINE TOOL	
攪漿擦碎機** Mashing and breaking machine	C	剝皮機 Barker	C
吸水滾** Suction roll	C	刨床 Facing machine	B
潮紙滾壓機** Wet paper roller machine	C	鋸床 Saw bench	C
吸水滾壓機木** Water absorbing roller machine	C	木材加工機床 Wood processing machine tool	A
威羅機 Welon machine	C		

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.

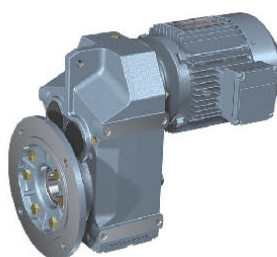
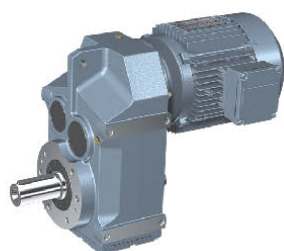
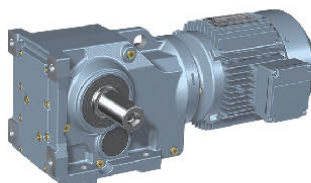
系列產品展示
SHOW THE SERIES PRODUCTS

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



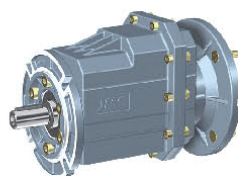
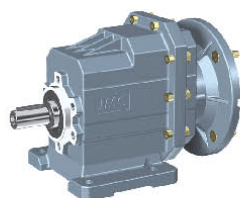
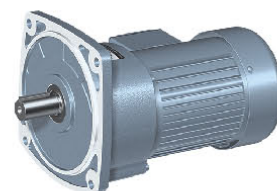
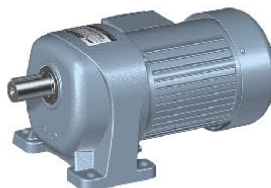
TS系列斜齒輪-蝸輪蝸桿減速馬達
TS Series helical-worm geared motors

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

