

## 基本資訊

### GENERAL INFORMATION

# A

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## UMRV 系列蝸輪減速機

### UMRV SERIES CYLINDRICAL WORM GEAR UNITS

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## TKF/TXF 系列無段變速機

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## 1.0 參數符號對應表

符號 Symbols	單位 Units	註解
<b>P</b>	[kW]	功率
<b>P<sub>1</sub></b>	[kW]	輸入功率
<b>P<sub>2</sub></b>	[kW]	輸出功率
<b>P<sub>n1</sub></b>	[kW]	輸出扭矩
<b>M<sub>2</sub></b>	Nm	計算的輸出扭矩
<b>M<sub>c2</sub></b>	Nm	額定輸出扭矩
<b>M<sub>n2</sub></b>	Nm	需求的扭矩
<b>M<sub>r2</sub></b>	Nm	輸入轉速
<b>n<sub>1</sub></b>	min <sup>-1</sup>	輸出轉速
<b>n<sub>2</sub></b>	min <sup>-1</sup>	減速比
<b>i</b>	-	動態效率
<b>η<sub>d</sub></b>	-	靜態效率
<b>η<sub>s</sub></b>	-	蝸桿齒數
<b>Z<sub>1</sub></b>	-	軸向模數
<b>M<sub>x</sub></b>	-	工作系數
<b>f<sub>s</sub></b>	-	在電機軸上衰降的慣性矩
<b>J<sub>e</sub></b>	kgm <sup>2</sup>	電機慣性矩
<b>J<sub>m</sub></b>	kgm <sup>2</sup>	輸入軸徑向負荷
<b>F<sub>r1</sub></b>	N	輸出軸徑向負荷
<b>F<sub>r2</sub></b>	N	

## 1.0 SYMBOLS AND UNITS OF MEASURE

Description
Power
Transmitted power at input shaft
Transmitted power at output shaft
Rated input power
Transmitted torque at output shaft
Calculated torque at output shaft
Rated torque at output shaft
Required torque at output shaft
Angular input speed
Angular output speed
Ratio
Dynamic efficiency
Static efficiency
Number of worm thread
Axial modulus
Service factor
Moment of the external inertia reduced at the drive shaft
Moment of inertia of motor
Input shaft radial load
Output shaft radial load



重量標記



機型對應的尺寸圖頁碼



電機



Symbol referring to weight



Columns marked with this symbol indicate the reference page showing the dimensions of the selected unit.



IEC motor

## 基本信息

下列的標題包含選擇減速機的原理以及正確使用它們的方法。

具體的數值參照相應的章節

### 2.0 輸出扭矩

#### 2.1 額定扭矩 $M_{n2}$ [Nm]

扭矩作用於連續平穩運轉的減速機且在工作係數  $f_s = 1$  的情況下測出的數值。

#### 2.2 需求的扭矩 $M_{r2}$ [Nm]

基於實際所需，數值等於或小於減速機的額定扭矩  $M_{n2}$ 。

#### 2.3 計算扭矩 $M_{c2}$ [Nm]

在選擇減速機時有用。它要考慮實際需求的扭矩  $M_{r2}$  以及工作係數  $f_s$ ，由以下關係式計算出：

$$M_{c2} = M_{r2} \cdot f_s \leq M_{n2}$$

### 3.0 功率

#### 3.1 額定輸入功率 $P_{n1}$ [kW]

減速機安全運轉時的功率(kW)值，列於參數表中。它是在速度等於  $n_1$  且工作係數  $f_s = 1$  的情況下得出的。

#### 3.2 額定輸出功率 $P_{n2}$ [kW]

減速機的輸出功率值，可以用下面的公式計算。

$$P_{n2} = P_{n1} \cdot \eta_d$$

$$P_{n2} = \frac{M_{n2} \cdot n_2}{9550}$$

### 4.0 效率

效率是影響某些應用的主要因素，它的值基本由齒輪設計的參數決定。

在第21頁上的嚙合參數表上記錄了動態及靜態效率值( $n_1=1400$ )。

注意這些值只適用於磨合完成的在工作溫度下運轉的減速機

## GENERAL INFORMATION

The following headings contain information on essential elements for selection and correct use of gearbox.

For specific data on the gearbox range, see the relevant chapters.

### 2.0 OUTPUT TORQUE

#### 2.1 *Rated output torque* $M_{n2}$ [Nm]

The torque that can be transmitted continuously through the output shaft, with the gear unit operated under a service factor  $f_s = 1$ .

#### 2.2 *Required torque* $M_{r2}$ [Nm]

The torque demand based on application requirement. It is recommended to be equal to or less than torque  $M_{n2}$  the gearbox under study is rated for.

#### 2.3 *Calculated torque* $M_{c2}$ [Nm]

Computational torque value to be used when selecting the gearbox. It is calculated considering the required torque  $M_{r2}$  and service factor  $f_s$ , as per the relationship here after:

### 3.0 POWER

#### 3.1 *Rated input power* $P_{n1}$ [kW]

The parameter can be found in the gearbox rating charts and represents the KW that can be safely transmitted to the gearbox, based on input speed  $n_1$  and service factor  $f_s = 1$ .

#### 3.2 *Rated output power* $P_{n2}$ [kW]

This value is the power transmitted at gearbox output. it can be calculated with the following formulas:

### 4.0 EFFICIENCY

Efficiency is a parameter which has a major influence on the sizing of certain applications, and basically depends on gear pair design elements. The mesh data table on page 21 shows dynamic efficiency ( $n_1=1400$ ) and static efficiency values.

Remember that these values are only achieved after the unit has been run in and is at the working temperature.

4.1 動態效率  
[ $\eta_d$ ]

動態效率和輸出功率 P 以及輸入功率 P<sub>1</sub> 的關係：

$$\eta_d = \frac{P_2}{P_1}$$

4.2 靜態效率  
[ $\eta_s$ ]

在減速機剛啟動時的效率。雖然對連續傳動沒有實際的意義，但在選擇斷續傳動的減速機時卻十分重要。

5.0 工作系數  
[ $f_s$ ]

減速機的工作系數( $f_s$ )主要取決於減速機的運行條件，為了選擇最合適的工作環境系數進行正確的組合，必須考慮如下因素：

- 1 · 減速機的負載形式：**A - B - C**
- 2 · 工作時間：小時/天( $\Delta$ )
- 3 · 開機頻率：次/小時(\*)
- 負載類型：**A** - 均衡負荷,  $f_a \leq 0.3$
- B** - 中等衝擊,  $f_a \leq 3$
- C** - 嚴重衝擊,  $f_a \leq 10$

$f_a = J_e / J_m$   
 - $J_e$ (kgm<sup>2</sup>)：在驅動軸上衰降的慣性矩  
 - $J_m$ (kgm<sup>2</sup>)：電機慣性矩  
 -如果  $f_a > 10$ 時請與技術服務部聯繫

**A** -輕質材料螺旋輸送機，風扇，裝配線，輕質材料皮帶輸送機，小型攪拌機，提升機，清潔機，灌裝機，控制器。

**B** -捲繞裝置，木工機械，貨物提升機，平衡器，螺紋機，介質攪拌機，重型材料皮帶輸送機，絞盤，移動門，刮機，包裝機，混凝土攪拌機，起重機，磨割機，卷板機，齒輪泵。

**C** -重型材料攪拌機，剪切機，壓力機，離心機，旋轉支撐，重型材料絞盤和提升機，磨床，石材，升降機，鑽孔機，錘式粉碎機，凸輪壓力機，折疊機，運輸帶，翻斗車，振動器，撕碎機。

4.1 *Dynamic efficiency*  
[ $\eta_d$ ]

The dynamic efficiency is the relationship of power delivered at output shaft P<sub>2</sub> to power applied at input shaft P<sub>1</sub>:

4.2 *Static efficiency*  
[ $\eta_s$ ]

Efficiency obtained at start-up of the gearbox. Although this is generally not significant factor for helical gears, it may be instead critical when selecting worm gearmotors operating under intermittent duty.

5.0 **SERVICE FACTOR**  
[ $f_s$ ]

The service factor ( $f_s$ ) depends on the operating conditions the gearbox is subjected to the parameters that need to be taken into consideration to select the most adequate service factor correctly comprise:

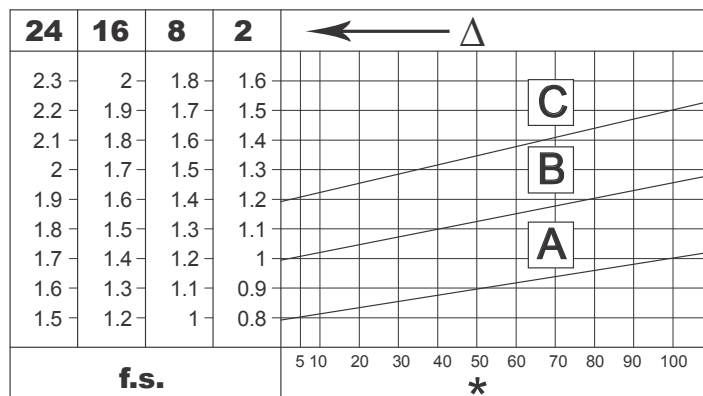
- 1. type of load of the operated machine : **A - B - C**
- 2. length of daily operating time: **hours/day**( $\Delta$ )
- 3. start-up frequency: **starts/hour** (\*)
- TYPE OF LOAD: **A** - uniform,  $f_a \leq 0.3$
- B** - moderate shocks,  $f_a \leq 3$
- C** - heavy shocks,  $f_a \leq 10$

$f_a = J_e / J_m$   
 -- $J_e$ (kgm<sup>2</sup>) moment of the external inertia reduced at the drive shaft  
 -- $J_m$ (kgm<sup>2</sup>) moment of inertia of motor  
 --If  $f_a > 10$  please contact our Technical Service

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

**B** -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.

**C** -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.



## 6.0 應用限制

技術資料的參數基本上是針對B3或相似的安裝方位設定出的，就是第一段沒有完全浸沒在油中。對於其他安裝方位和特定輸入轉速，請參閱以下每個減速機不同關鍵情形的表格。

以下應用情形應仔細評估，如有必要可致電我們的技術服務人員。

- 1.提高轉速時；
- 2.使用時如果減速機故障會帶來人員危險時；
- 3.有極高慣性的應用場合；
- 4.用作升降機絞盤；
- 5.在減速機外殼上有高動態應力的應用場合；
- 6.溫度低於-5°C或高於 40°C 時；
- 7.在有化工物質腐蝕的環境中使用；
- 8.在鹽性環境中使用；
- 9.未在技術資料中標示的安裝方位放置；
- 10.在放射性環境中使用；
- 11.在壓力不同於大氣壓的環境中使用。

避免減速機局部或整台浸入液體或其他物質中。

減速機可以承受的最大扭矩(\*)不得超過性能表中列出的額定扭矩(f.s.=1)的兩倍。

(\*) 指的是在超載啟動、制動、振動或其他原因造成的瞬間超載，特別是瞬間動態超載。

## 6.0 Critical applications

The performance given in the catalogue correspond to mounting position B3 or similar, ie. 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 unit.

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. Application that could be hazardous for people if the reduction unit fails
3. Applications with especially high inertia
4. Application as a lifting winch
5. Application with an high dynamic strain on the case of the gear unit
6. In places with temperatures under -5°C or over 40°C
7. Use in chemically aggressives enviroments
8. Use in salty enviroment
9. Mounting position is not envisaged in the catalogue
10. Use in radioactive enviroment
11. Use in enviroments pressure other than atmospheric pressure

Avoid applications where even partial immersion of the reduction unit is required.

The maximum torque (\*) that the gear reducer 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.

UMRV	025	030	040	050	063	075	090	110	130	150
<b>V5:</b> 1500<n1<3000	-	-	-	-	-	B	B	B	B	B
n1>3000	B	B	B	B	B	A	A	A	A	A
<b>V6</b>	B	B	B	B	B	B	B	B	B	B

**A** : 不建議使用的方式

**B** : 需檢查應用的合適性或者請聯繫我們的技術服務部

**A** : Application not recommended

**B** : Check the application and/or call our technical service

## 7.0 安裝

安裝減速機必須注意以下幾點：

1. 必須穩定地安裝在機器上，避免有任何鬆動。
2. 在把減速機固定於機器上之前，檢查減速機輸出軸的正確的旋轉方向。
3. 在長期的儲存情況下（4-6個月），一旦油封沒有浸沒在減速機的潤滑油中，橡膠可能會粘住主軸甚至失去彈性，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。
4. 安裝空心軸時，應採用專用力矩扳手。如果無該條件時，用戶可自行選用專用工具，但應確保軸向不受力，減速機可自由移動。
5. 盡可能避免減速機在陽光下直照或暴露惡劣氣候下。
6. 確保電機風扇邊的空氣有良好的通道，以求有足夠的冷卻。
7. 當使用時的絕對溫度  $< -5^{\circ}\text{C}$  或  $> 40^{\circ}\text{C}$  時，先與我們技術服務人員聯繫。
8. 各種零件（滑輪、齒輪、聯軸器、軸等）必須安裝在實心或空心軸上，該用專用的螺紋孔或其他工具以確保正確安裝而不會損壞軸承或減速器外端的所有零件，並以潤滑油來潤滑接觸表面避免卡死或氧化。
9. 橡膠零件以及透氣孔上不能沾有油漆。
10. 當遇見配有油塞的減速機時，把運輸專用的塞子拆掉，再裝上排氣塞。
11. 通過油視鏡檢查潤滑油油量是否足夠。
12. 使用新減速機時，應該逐步載入負荷，不要立即提升到最大的負載。
13. 如有任何在減速機旁的零件、物體或材料會因漏出的油而遭損壞時，應安裝特殊的保護或遮擋。

## 8.0 電機與PAM法蘭之連接

當僅購買減速機時，必須按照以下建議與已有的電機來組合，以確保正常的的使用。

1. 參照相關標準來檢查電機的軸和法蘭在安裝時是否有過大的誤差。
2. 仔細清潔軸、連軸器和法蘭表面，擦除污垢和灰塵。
3. 小心安裝軸，保證軸和軸孔的配合，避免力度過大而導致損壞。必要時使用專用工具來進行。
4. 去除毛刺，電機鍵槽的位置和偏差要在規定的範圍之內。
5. 用潤滑油來潤滑接觸表面避免卡死或氧化。

## 9.0 無段變速機的使用和保養

1. 機械無段變速機不宜用於可能超負載或堵轉使用場合。
2. 調整應在運轉中進行，嚴禁停車時轉動調整手輪。
3. 操作盒下的兩端調整限位螺釘已調整好，請勿再動。
4. 本機不宜工作在高於  $40^{\circ}\text{C}$  的環境中，溫升不得高於  $50^{\circ}\text{C}$ 。
5. 出廠前已加足潤滑油，首次使用1000小時後應更換潤滑油，以後每5000小時換一次油。
6. 變速機內潤滑油應保持在油標三分之二高度，用戶應經常檢查油位高度。嚴禁在潤滑不良的情況下使用。
7. 操作盒上的透氣螺母出廠時為防止搬運中漏油已旋緊，運轉時須鬆開，禁止未鬆開使用。

## 7.0 INSTALLATION

To install the reduction unit it is necessary to note the following recommendations:

1. The mounting on the machine must be stable to avoid any vibration.
2. Check the correct direction of rotation of the reduction unit output shaft before fitting the unit to the machine.
3. 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.
4. For a shaft mounting, for reduction units with a hollow output shaft, use the torque arms we can supply. If this is not possible, make sure that the constraint is axially free and with such play as to ensure free movement for the reduction unit.
5. Whenever possible, protect the reduction unit against solar radiation and bad weather.
6. Ensure the motor cools correctly by assuring good passage of air from the fan side.
7. In the case of ambient temperatures  $< -5^{\circ}\text{C}$  or  $> +40^{\circ}\text{C}$  call the Technical Service.
8. The various parts (pulleys, gear wheels, couplings, shafts, etc.) must be mounted on the solid or hollow shafts using special threaded holes or other systems that anyhow ensure correct operation without risking damage to the bearings or external parts of the units. Lubricate the surfaces in contact to avoid seizure or oxidation.
9. Painting must definitely not go over rubber parts and the holes on the breather plugs, if any.
10. For units equipped with oil plugs, replace the closed plug used for shipping with the special breather plug.
11. Check the correct level of the lubricant through the indicator, if there is one.
12. Starting must take place gradually, without immediately applying the maximum load.
13. When there are parts, objects or materials under the motor drive that can be damaged by even limited spillage of oil, special protection should be fitted.

## 8.0 MOTOR MOUNTING WITH PAM FLANGE

When the unit is supplied without motor, it is necessary to follow these recommendation to ensure the correct assembly of the electric motor.

1. Check that the tolerances for the motor shaft and flange correspond to the standard.
2. Carefully clean the shaft, couplings and surfaces of the flange removing traces of paint and dirt, and confirm the key is fitted correctly.
3. Fit the half coupling to the motor shaft taking care to ensure the motor shaft and bearings are not damaged by avoiding excessive force and where necessary using assembly equipment.
4. Complete the assembly using the fixing bolts. Key-ways with tightened tolerances.
5. Lubricate the surfaces in contact to avoid seizure or oxidation.

## 9.0 OPERATION & MAINTENANCE OF SPEED VARIATOR

1. The mechanical stepless speed variator is not used in such an occasion where overload or running-blockage happen to occur.
2. Speed-regulation should be effected in running. Do not turn the hand wheel of speed-regulation when the machine stops!
3. The limit screws of speed-regulation on two ends under the operating box are well adjusted, Please don't touch them!
4. This set is not suited to work in the environment over  $40^{\circ}\text{C}$ , especially no more than  $50^{\circ}\text{C}$  when the temperature rises.
5. The machine is filled with lubricating oil before leaving factory. When it starts to work up to 1000 hours for the first time, its lubricating oil should be replaced, changing the lubricating oil every 5000 hours later.
6. The lubricating oil level inside the speed variator should be kept at the height of two-third in the oil scale. Users should usually check the height of oil level. It is strictly prohibited to operate it when short of lubricating oil.
7. The air screw nut on the operating box is screwed up for preventing from oil leakage in moving before leaving factory. It should be loosed when it starts to run. It is strictly forbidden to use it before loosening!

## 10.0 潤滑油

### 10.1 潤滑油說明

如在圖表中不能查到對應的溫度，請與我們技術服務人員聯繫。  
如果溫度低於-30°C或高於60°C時，必須使用特殊油封。

如果在注油時的溫度低於0°C時，必須注意以下幾點：

- 1.電機選型必須符合周圍環境與工作條件。
- 2.電機的功率選擇必須考慮到在寒冷天氣時較大的起動扭矩。
- 3.鑄鐵外殼的減速機要避免忽然承受過重的衝擊負載，因為在-15°C或以下時鑄鐵的物理性能可能會變得較脆。
- 4.在剛開始使用時，可能會出現潤滑油的問題，因為新的潤滑油的粘度較高，因此推薦先讓減速機在空載情況下運行幾分鐘才開始載入。潤滑油在使用大約10,000時後必須更換，但也要視減速機的具體工作環境而定。對於沒有注油孔的減速機來說，是永遠不需要更換潤滑油的。

### 10.2 推薦的潤滑油

## 10.0 LUBRICATION

### 10.1 Specifications of lubricants

In cases of ambient temperatures not envisaged in the table, call our Technical Service. In the case of temperatures under -30°C or over 60°C it is necessary to use oil seals with special properties.

For operating ranges with temperatures under 0°C it is necessary to consider the following:

1. The motors need to be suitable for operation at the envisaged ambient temperature.
2. The power of the electric motor needs to be adequate for exceeding the higher starting torques required.
3. In the case of reduction units with a cast-iron case, pay attention to impact loads since cast iron may have problems of fragility at temperatures under -15°C.
4. During the early stages of service, problems of lubrication may arise due to the high level of viscosity taken on by the oil and so it is wise to have a few minutes of rotation under no load. The oil needs to be changed after approximately 10,000 hours. This period depends on the type of service and the environment where the reduction unit works. For units supplied without oil plugs, lubrication is permanent and so they need no servicing.

### 10.2 Specifications of lubricants recommended

	<b>UMRV 110-150</b>		<b>UMRV 025-090 PC 063-090</b>	<b>TK/TKF 002-100 TXF 005-010</b>
	Mineral oil 礦物油		Synthetic oil 合成油	Mineral oil 礦物油
<b>T°C</b>	(-5) - (+40)	(-15) - (+25)	(-25) - (+50)	(-25) - (+50)
<b>ISO</b>	ISO VG460	ISO VG220	ISO VG320	VG32
<b>AGIP</b>	BLASIA 460	BLASIA 220	TELIUM VSF320	A.T.F. DEXRON
<b>SHELL</b>	OMALA OIL460	OMALA OIL220	TIVELA OIL SC320	A.T.F. DEXRON
<b>ESSO</b>	SPARTAN EP460	SPARTAN EP220	S220	A.T.F. DEXRON
<b>MOBIL</b>	MOBILGEAR 634	MOBILGEAR 630	GLYGOYLE 30	A.T.F. 220
<b>CASTROL</b>	ALPHA MAX 460	ALPHA MAX 220	ALPHASYN PG320	TQ DEXRON II
<b>BP</b>	ENERGOL GR-XP460	ENERGOL GR-XP220	ENERGOL SG-XP320	AUTRAN DX

潤滑油的具體加注量請參考相關的頁面

For the quantity of oil, please refer to the pages relating

UMRV	025	030	040	050	063	075	090	110	130	150
<b>B3</b>	0.02	0.04	0.08	0.15	0.3	0.55	1	3	4.5	7
<b>B8</b>								2.2	3.3	5.1
<b>B6-B7</b>								2.5	3.5	5.4
<b>V5</b>								3	4.5	7
<b>V6</b>								2.2	3.3	5.1

PC	063	071	080	090
	0.05	0.07	0.15	0.16

TK/TKF/TFX	TK/TKF002	TK/TKF005	TK/TKF010	TK/TKF020	TK/TKF030/050	TK/TKF100	TFX005	TFX010
<b>B3</b>	0.13	0.15	0.33	1.2	2	3.5	0.13	0.4
<b>B8</b>								
<b>B6-B7</b>								
<b>V1</b>	0.2	0.25	0.45	1.5	2.5	4	0.33	0.75
<b>V3</b>								

- 減速機UMRV025-030-040-050-063-075-090 出廠時均已加注合成潤滑油，安裝方式可參照技術資料相關頁中所示方位。僅075,090採用V5/V6的安裝方式較特殊，如需要使用V5/V6的安裝方式時請與技術服務人員聯繫以確定實際情況。

- 減速機UMRV110-130和150均提供了礦物潤滑油。

- 當減速機型號為110-130和150時，必須預先在訂貨時說明安裝位置。否則出廠時只會按照B3位置去提供相應數量的潤滑油。

- 僅型號為110-130 和150 的減速機配備排氣裝置、油鏡和排油塞。在安裝完畢後，必須拿掉油塞及裝上排氣裝置。

- 中間段減速機 PC 已經預先注入了潤滑油 AGIP TELIUM VSF ，可以根據說明書的位置隨意安裝，它的潤滑油系統是獨立的。

- 無段變速機在出廠時均已加注了潤滑油。

### 11.0 PC的設計特點

PC 結構是一種標準元件(模組)的產品，因此它可與任何型號的齒輪電機組合，組合使用時，各種不同的法蘭/輸出軸可以參見第17頁。

前置減速裝置主要適合用於安裝方式為B5的所有馬達。

該裝置不能單獨使用，只能與減速機配套使用。

材料  
 壓鑄鋁合金外殼  
 回火鋼20CrMnTi表層硬化齒輪，精密漸開線齒形。

- The reduction units size 025-030-040-050-063-075-090 are supplied complete with lubricant for life, synthetic oil, and can therefore be mounted in any position envisaged in the catalogue. The only exceptions are 075,090 in pos. V5/V6 for which you should call our Technical Service to assess the conditions of use.

- The reduction units size 110-130 and 150 are supplied complete with lubricant, mineral oil.

- For sizes 110-130 and 150 it is necessary to specify the position, otherwise the reduction units are supplied with the quantity of oil relating to pos. B3.

- Only reduction units 110-130 and 150 are fitted with breather, level and oil drainage plugs. It is necessary, after installation, to replace the closed plug used for transportation with the breather plug supplied with the unit.

- The pre-stage helical modules are supplied complete with life-long lubricant, synthetic oil, AGIP TELIUM VSF, and can therefore be mounted in all the positions. Lubrication is separated from that of the worm reduction unit.

The speed variator are supplied complete with lubricant, mineral oil, GUANGYAN UB-3.

### 11.0 Design features (PC)

The PC construction is modular and therefore it can be supplied as separate unit to be mounted on any type of fitted geared motor (PAM). In this connection, the various possibilities of flange/output shafts can be found on page 17.

Fitting the pre-stage helical module on the main reduction unit is easily done as for any motor of type B14.

The pre-stage unit cannot be used by itself, but only coupled with another reduction unit.

#### Materials

Case in aluminium alloy.  
 Gears in case hardened, tempered steel 20CrMnTi accurately ground on the involute.



## 基本資訊

### GENERAL INFORMATION

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## UMRV 系列蝸輪減速機

### UMRV SERIES CYLINDRICAL WORM GEAR UNITS

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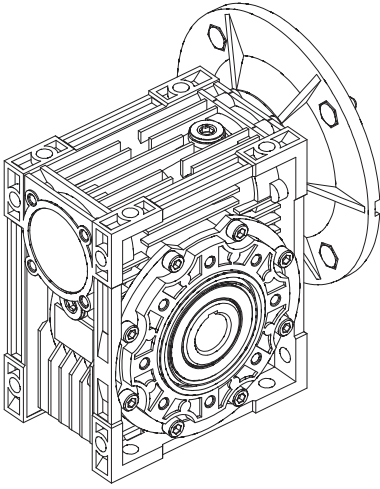
## TKF/TXF 系列無段變速機

### TKF/TXF SERIES PLANETARY CONE & DISK STEP-LESS SPEED VARIATOR

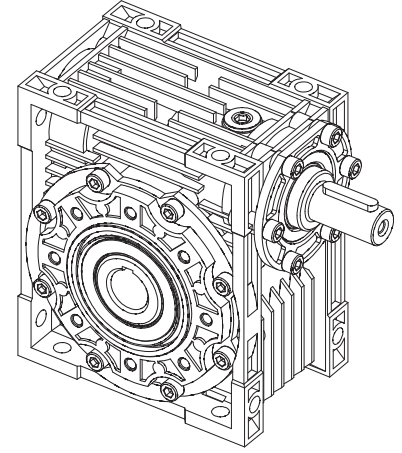
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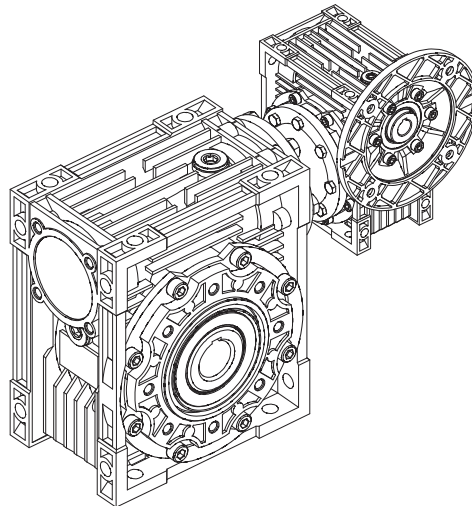
# UMRV 系列蝸輪減速機 UMRV SERIES WORM GEAR UNITS



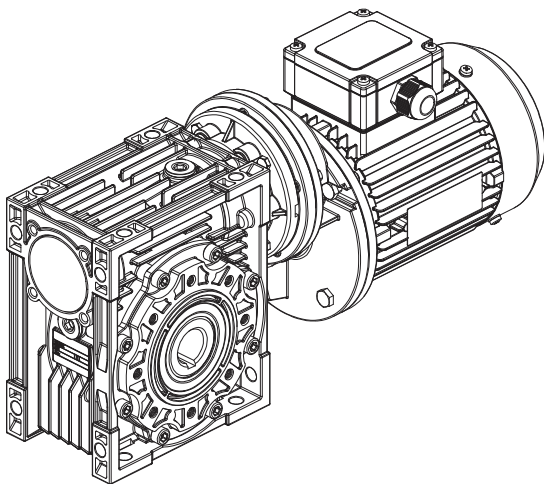
**UMRV**



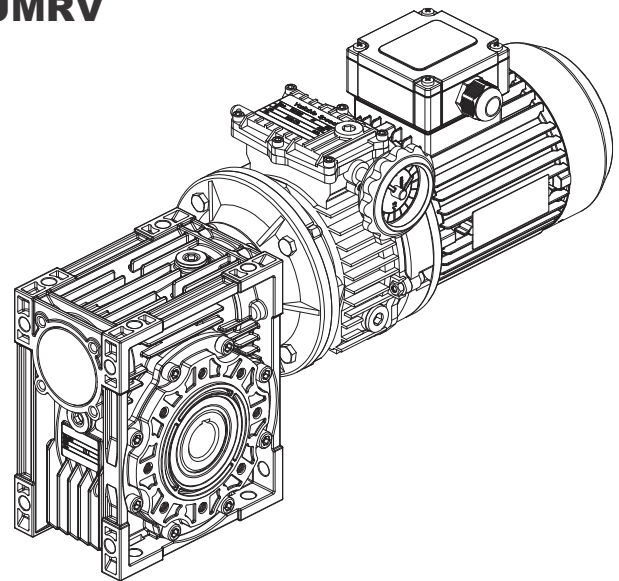
**URV**



**UMRV+UMRV**



**PC+UMRV**



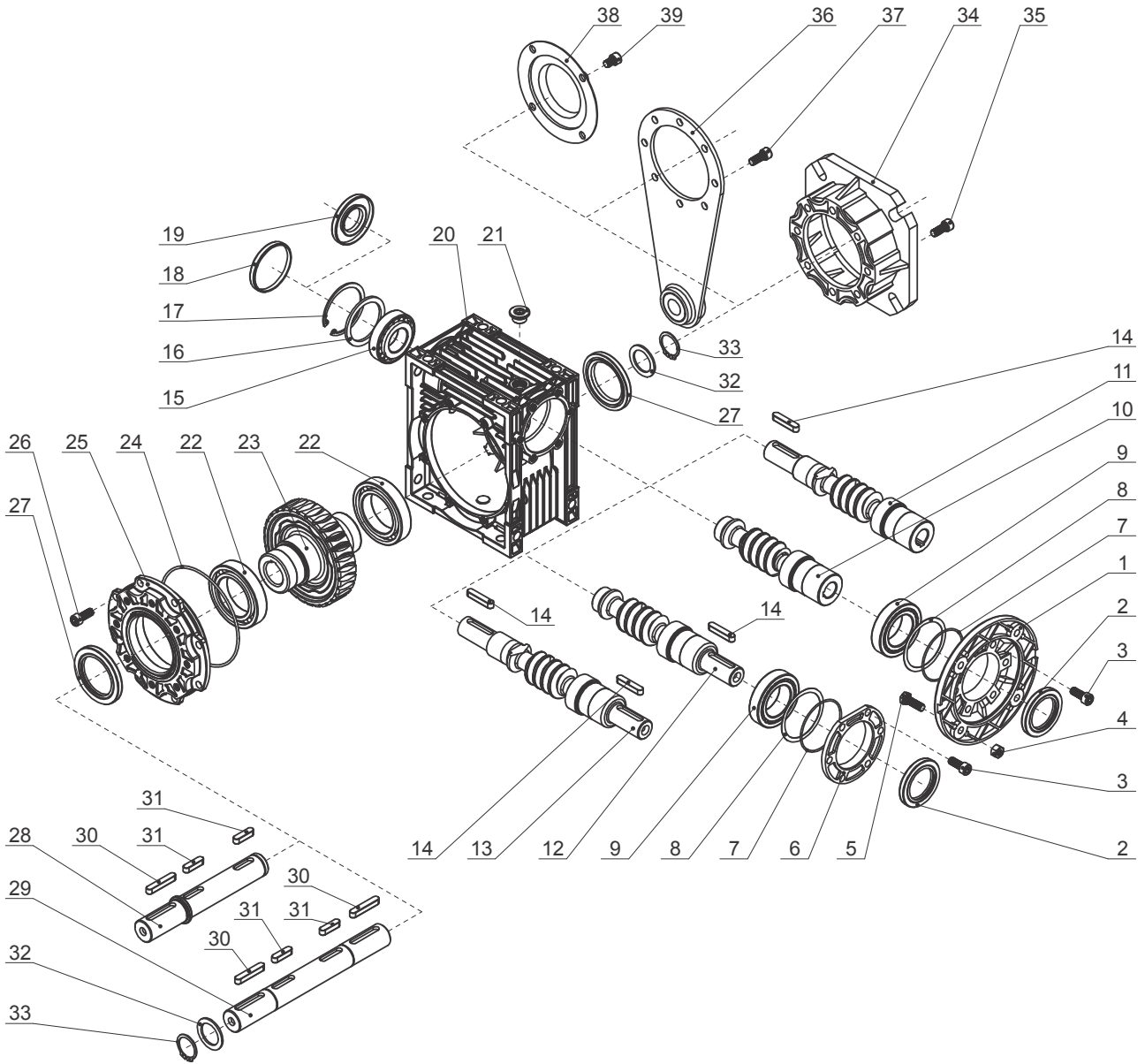
**TKF(TXF)+UMRV**

1.0 結構分解圖和機型版本

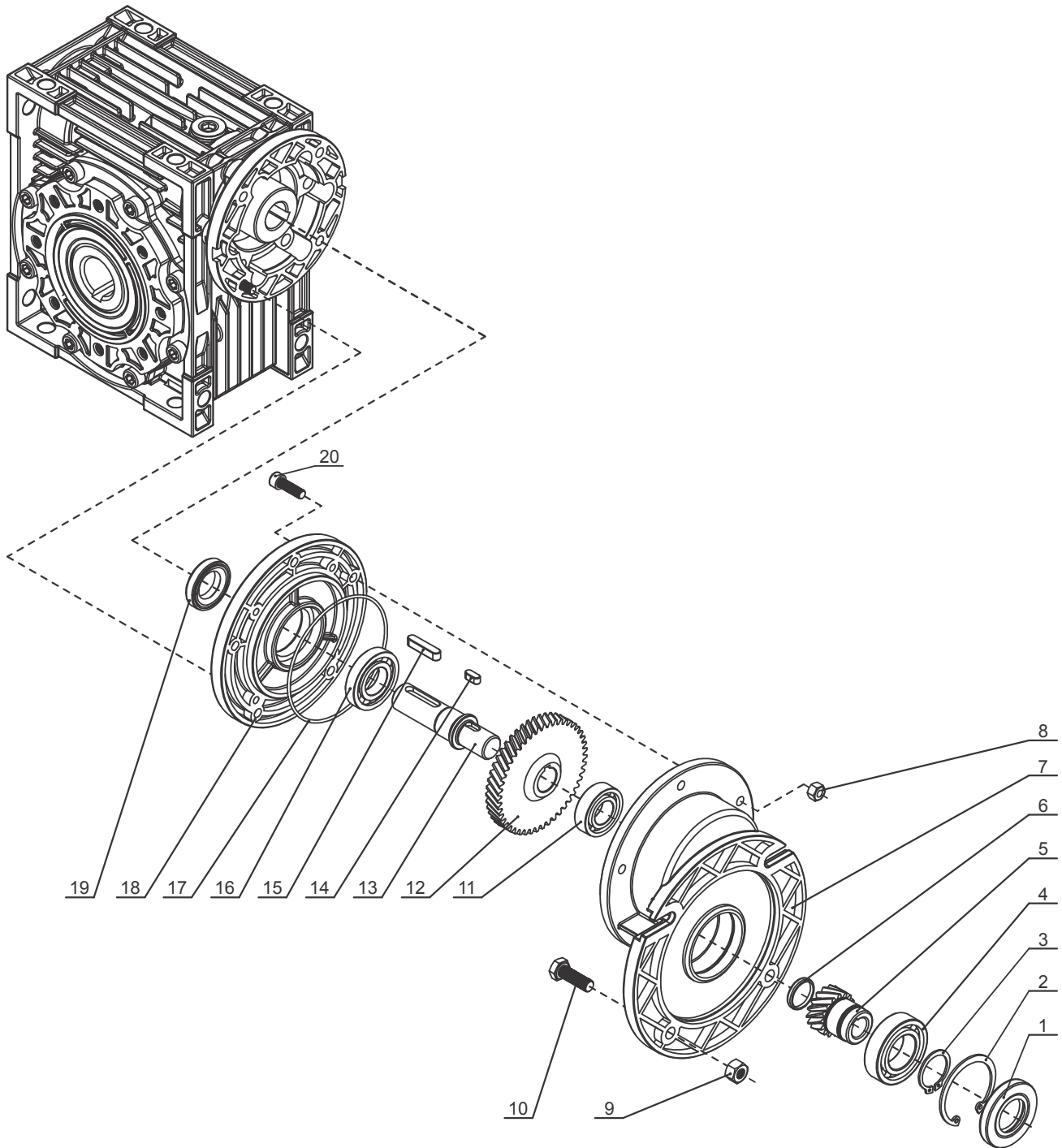
1.0 EXPLODED VIEW AND VERSIONS

1.1 UMRV 結構分解圖

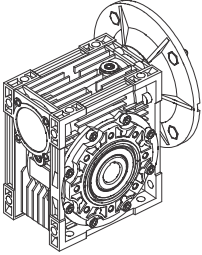
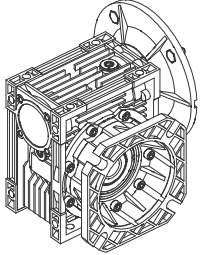
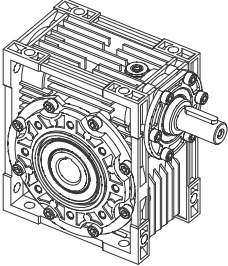
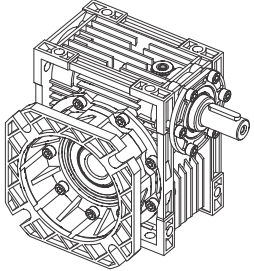
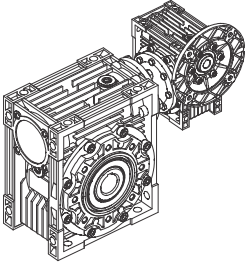
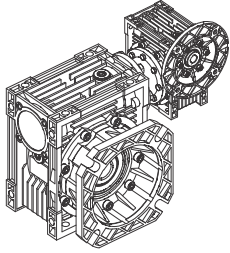
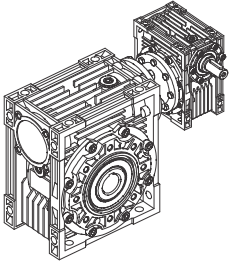
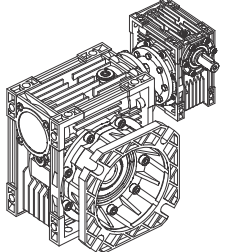
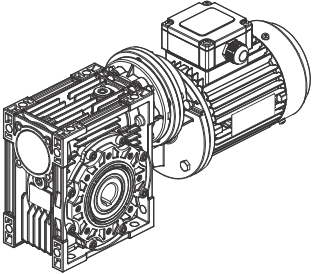
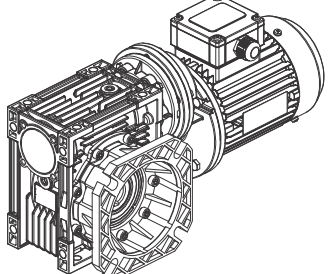
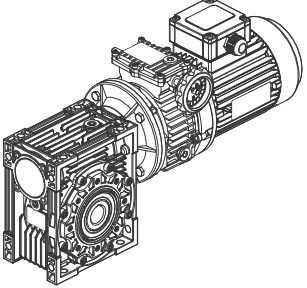
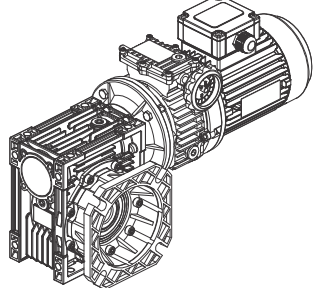
1.1 UMRV Exploded view



1	電機法蘭 Flange PAM	11	孔輸入軸輸入蝸桿 Double ext. PAM worm	21	油塞 Plug cock	31	平鍵 Parallel key
2	油封 Oli seal	12	軸輸入蝸桿 RV worm	22	軸承 Bearing	32	墊圈 Washer
3	內六角圓柱頭螺絲 Hexagon socket head cap screw	13	雙軸輸入蝸桿 Double ext. RV worm	23	蝸輪 Worm wheel	33	軸用C形扣環 Circlip for shaft
4	六角螺母 Hexagon nuts	14	平鍵 Parallel key	24	O形橡膠密封圈 O-ring	34	輸出法蘭 Output flange
5	六角頭螺栓 Hexagon bolt	15	軸承 Bearing	25	側蓋 Bearing support cover	35	內六角圓柱頭螺絲 Hexagon socket head cap screw
6	輸入端蓋 Gear unit cover	16	墊圈 Washer	26	內六角圓柱頭螺絲 Hexagon socket head cap screw	36	扭力臂 Torque arm
7	O形橡膠密封圈 O-ring	17	孔用C形扣環 Circlip for hole	27	油封 Oli seal	37	內六角圓柱頭螺絲 Hexagon socket head cap screw
8	調整墊片 Spacer shim	18	密式油封 Cap	28	單向輸出軸 Single output Shaft	38	保護蓋 Protection cap
9	軸承 Bearing	19	油封 Oli seal	29	雙向輸出軸 Double output Shaft	39	內六角圓柱頭螺絲 Hexagon socket head cap screw
10	孔輸入蝸桿 PAM worm	20	箱體 Case	30	平鍵 Parallel key		



1	油封 Oli seal	6	密式油封 Cap	11	軸承 Bearing	16	軸承 Bearing
2	孔用C形扣環 Circlip for hole	7	前置齒輪箱體 Pre-stage unit case	12	大齒輪 Gear	17	O形橡膠密封圈 O-ring
3	軸用C形扣環 Circlip for shaft	8	六角螺母 Hexagon nuts	13	輸出軸 Low speed shaft	18	輸出端蓋 Output cover
4	軸承 Bearing	9	六角螺母 Hexagon nuts	14	平鍵 Parallel key	19	油封 Oli seal
5	孔輸入小齒輪 Hollow pinion	10	六角頭螺栓 Hexagon bolt	15	平鍵 Parallel key	20	內六角圓柱頭螺絲 Hexagon socket head cap screw

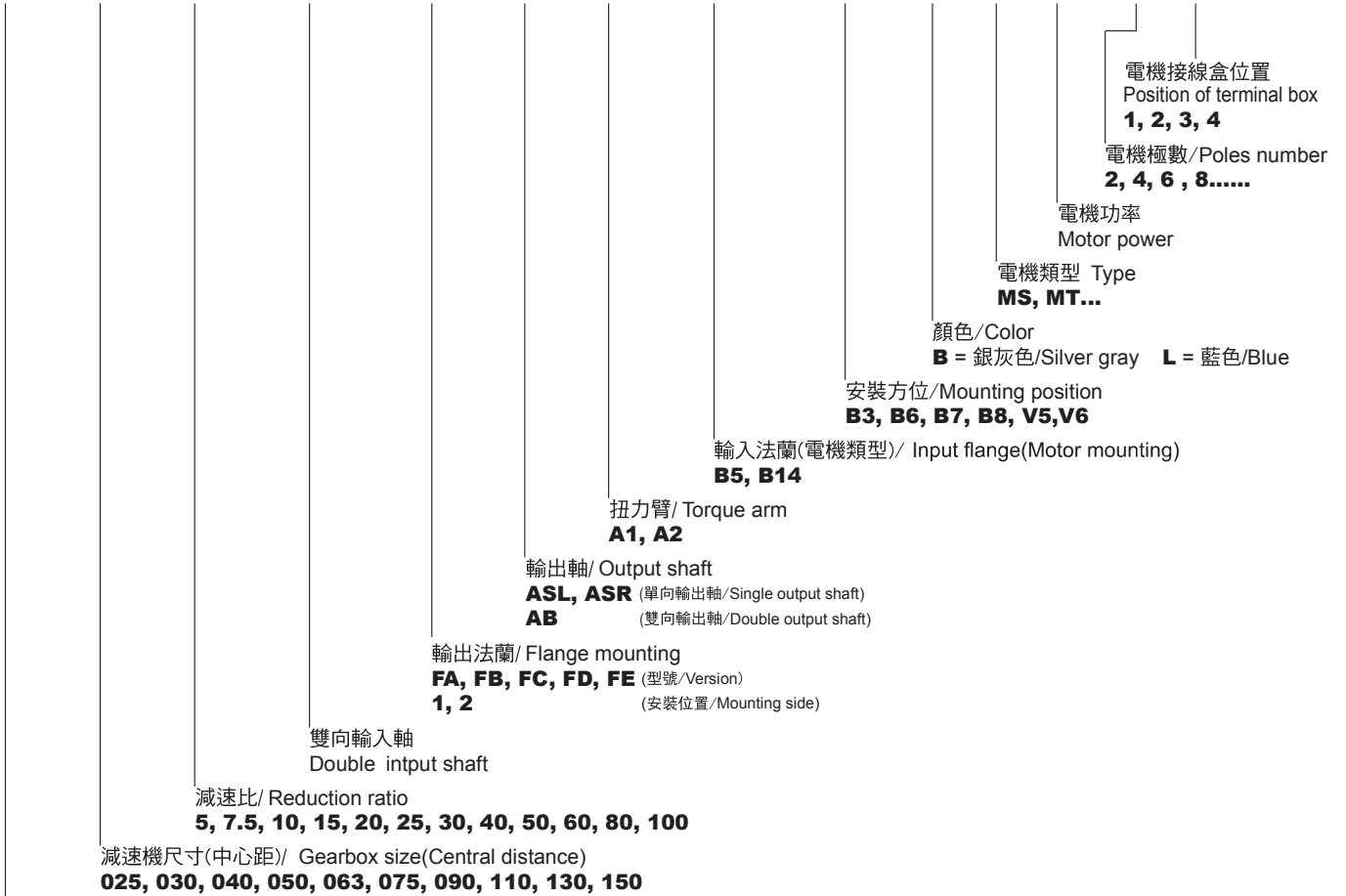
	<p><b>UMRV 025 - 150</b></p>	<p><b>UMRV 025 - 150 F</b></p>	
	<p><b>URV 025 - 150</b></p>	<p><b>URV 025 - 150 F</b></p>	
	<p><b>UMRV-UMRV 025/030 - 063/150</b></p>	<p><b>UMRV-UMRV 025/030 - 063/150 F</b></p>	
	<p><b>URV-UMRV 025/030 - 063/150</b></p>	<p><b>URV-UMRV 025/030 - 063/150 F</b></p>	
	<p><b>PC-UMRV 063/040 - 090/130</b></p>	<p><b>PC-UMRV 063/040 - 090/130 F</b></p>	
	<p><b>TKF(TXF)-UMRV 002/040 - 050/130</b></p>	<p><b>TKF(TXF)-UMRV 002/040 - 050/130 F</b></p>	

2.0 產品名稱

2.1 **UMRV-URV**  
蝸輪減速機

類型 Type	減速比 Ratio	雙向輸入軸 Double input shaft	輸出 Output	輸入法蘭 Input flange	安裝方位 Mounting position	顏色 Color	電機 Electric motor
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**UMRV063 - 30 - VS - FA1-ASR-A1 - 80B5 - B3 - B - MS0.75-4 / 1**



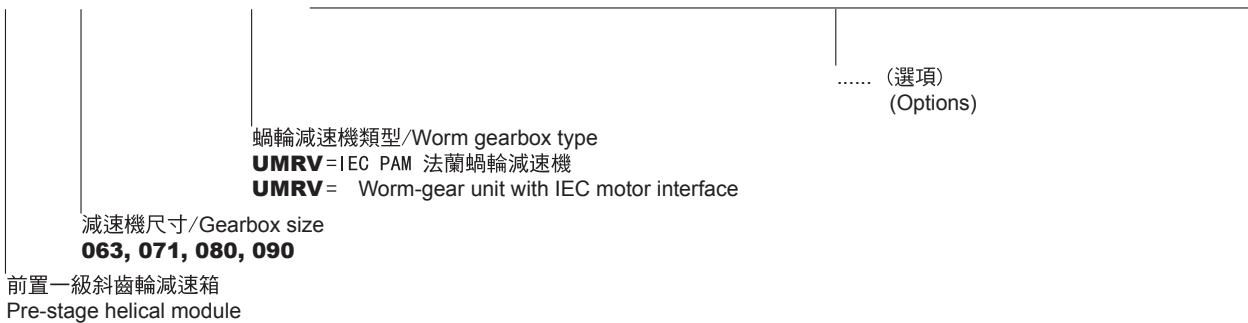
蝸輪減速機類型/ Worm gearbox type  
**UMRV** = IEC PAM 法蘭蝸輪減速機      **URV** = 軸輸入蝸輪減速機  
**UMRV** = Worm-gear unit with IEC motor interface      **URV** = Worm speed reducer with solid input shaft

2.2 **PC+UMRV**  
前置齒輪蝸輪減速機

2.2 **PC+UMRV**  
Worm geared motors with Pre-stage helical unit

前置斜齒輪模組 Pre-stage helical unit	類型 Type	減速比 Ratio	雙向輸入軸 Double input shaft	輸入法蘭 Output flange	輸出軸 Output shaft	安裝方位 Mounting position	電機 Electric motor
-----------------------------------	------------	--------------	-----------------------------	-----------------------	---------------------	---------------------------	----------------------

**PC 071 - UMRV063 - 30 - VS - FA1 - ASR - B3 - MS0.37-4 / 1**

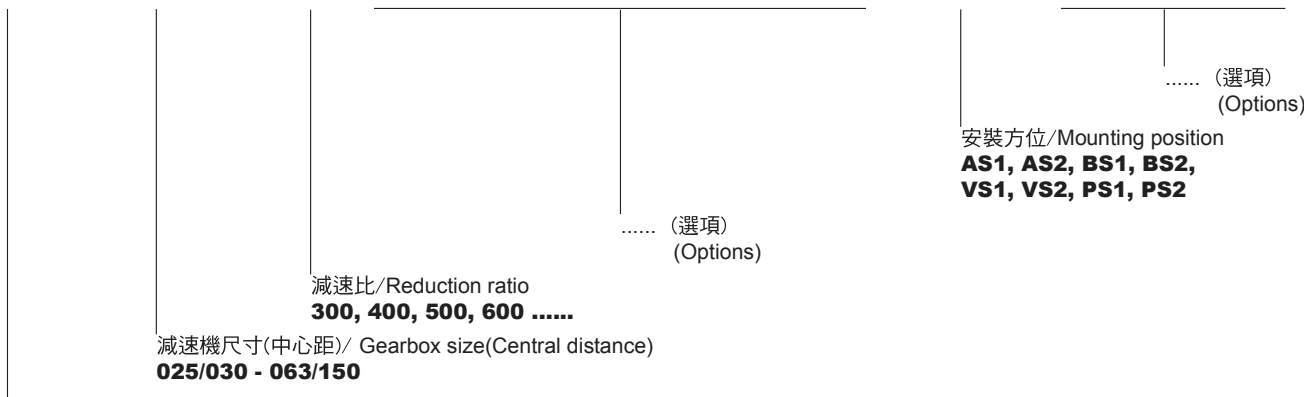


2.3 **UMRV+UMRV - URV+UMRV**  
雙蝸輪減速機

2.3 **UMRV+UMRV - URV+UMRV**  
Combination worm-gear unit

類型 Type	減速比 Ratio	雙向輸入軸 Double input shaft	輸出法蘭 Output flange	輸出軸 Output shaft	輸入法蘭 Input flange	安裝方位 Mounting position	電機 Electric motor
------------	--------------	-----------------------------	-----------------------	---------------------	----------------------	---------------------------	----------------------

**UMRV 040/090 - 500 - VS - FA1 - ASR - 71B5 - AS1 - MS0.37-4 / 1**



蝸輪減速機類型/Worm gearbox type

**UMRV=UMRV+UMRV** IEC PAM 法蘭蝸輪減速機

**UMRV=UMRV+UMRV** Worm-gear unit with IEC motor interface

**URV = URV+UMRV** 軸輸入蝸輪減速機

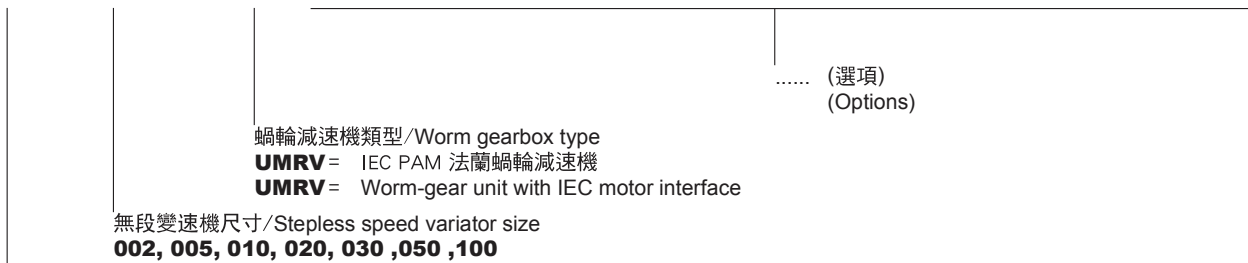
**URV = URV+UMRV** Worm speed reducer with solid input shaft

2.4 **TKF+UMRV**  
無段變速機和蝸輪減速機組合

2.4 **TKF+UMRV**  
Combination of Stepless speed variator and Worm-gear unit

無段變速機 Stepless speed variator	類型 Type	減速比 Ratio	雙向輸入軸 Double input shaft	輸出法蘭 Output flange	輸出軸 Output shaft	安裝方位 Mounting position	電機 Electric motor
----------------------------------	------------	--------------	-----------------------------	-----------------------	---------------------	---------------------------	----------------------

**TKF 010 - UMRV063 - 30 - VS - FA1 - ASR - B3 - MS0.75-4 / 1**



無段變速機類型/Stepless speed variator type

**TKF, TXF** 系列 (TXF=鋁合金殼體,

**TKF, TXF** Series (TXF=Aluminium alloy housing,

**TKF=鑄鐵殼體)**

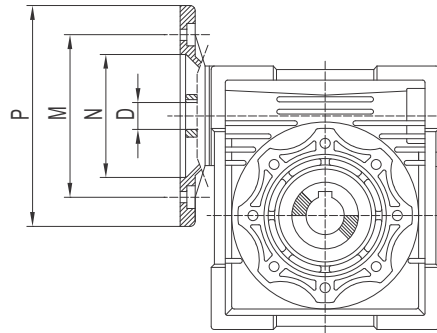
**TKF=Cast iron housing)**

### 3.0 配置和組合

### 3.0 DISPOSITION AND COMBINATIONS

#### 3.1 UMRV 基本配置

#### 3.1 UMRV Pre-disposition



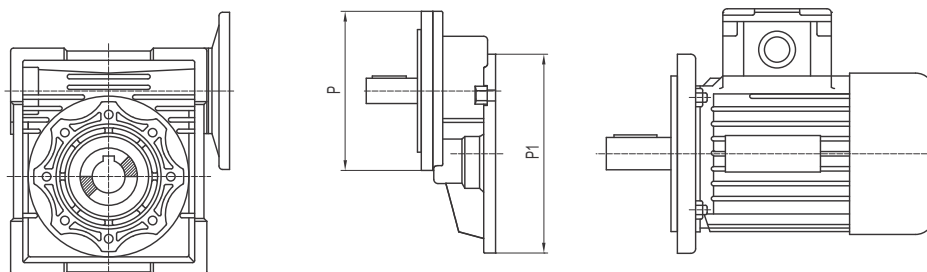
UMRV	PAM IEC	N	M	P	D											
					5	7.5	10	15	20	25	30	40	50	60	80	100
<b>025</b>	56B14	50	65	80	9	9	9	9	9	-	9	9	9	9	-	-
<b>030</b>	63B5	95	115	140	11	11	11	11	11	11	11	11	11	-	-	-
	63B14	60	75	90												
	56B5	80	100	120	9	9	9	9	9	9	9	9	9	9	9	-
	56B14	50	65	80												
<b>040</b>	71B5	110	130	160	14	14	14	14	14	14	14	14	-	-	-	-
	71B14	70	85	105												
	63B5	95	115	140	11	11	11	11	11	11	11	11	11	11	11	11
	63B14	60	75	90												
	56B5	80	100	120	-	-	-	-	-	-	-	-	9	9	9	9
<b>050</b>	80B5	130	165	200	19	19	19	19	19	19	19	-	-	-	-	-
	80B14	80	100	120												
	71B5	110	130	160	14	14	14	14	14	14	14	14	14	14	14	-
	71B14	70	85	105												
	63B5	95	115	140	-	-	-	-	-	-	-	11	11	11	11	11
<b>063</b>	90B5	130	165	200	-	24	24	24	24	24	24	-	-	-	-	-
	90B14	95	115	140												
	80B5	130	165	200	-	19	19	19	19	19	19	19	19	19	-	-
	80B14	80	100	120												
	71B5	110	130	160	-	-	-	-	-	-	-	14	14	14	14	14
	71B14	70	85	105												
<b>075</b>	100/112B5	180	215	250	-	28	28	28	-	-	-	-	-	-	-	-
	100/112B14	110	130	160												
	90B5	130	165	200	-	24	24	24	24	24	24	24	-	-	-	-
	90B14	95	115	140												
	80B5	130	165	200	-	-	-	-	19	19	19	19	19	19	19	19
	80B14	80	100	120												
	71B5	110	130	160	-	-	-	-	-	-	-	-	14	14	14	14
<b>090</b>	100/112B5	180	215	250	-	28	28	28	28	28	28	-	-	-	-	-
	100/112B14	110	130	160												
	90B5	130	165	200	-	24	24	24	24	24	24	24	24	24	-	-
	90B14	95	115	140												
	80B5	130	165	200	-	-	-	-	-	-	-	19	19	19	19	19
	80B14	80	100	120												
<b>110</b>	132B5	230	265	300	-	38	38	38	38	-	-	-	-	-	-	-
	100/112B5	180	215	250	-	28	28	28	28	28	28	28	28	28	-	-
	90B5	130	165	200	-	-	-	-	-	24	24	24	24	24	24	24
	80B5	130	165	200	-	-	-	-	-	-	-	-	-	-	19	19
	80B14	80	100	120												
<b>130</b>	132B5	230	265	300	-	38	38	38	38	38	38	38	-	-	-	-
	100/112B5	180	215	250	-	-	-	-	-	28	28	28	28	28	28	28
	90B5	130	165	200	-	-	-	-	-	-	-	-	-	-	24	24
<b>150</b>	160B5	250	300	350	-	42	42	42	42	42	-	-	-	-	-	-
	132B5	230	265	300	-	-	-	-	38	38	38	38	38	38	-	-
	100/112B5	180	215	250	-	-	-	-	-	-	-	-	28	28	28	28



3.2 **PC+UMRV** 組合方式

3.2 **PC+UMRV Possible combinations**

UMRV	IEC	PC063		PC071		PC080			PC090		
		105/11	105/14	120/14	120/19	160/19	160/24	160/28	160/19	160/24	160/28
	i	i=2.93	i=2.93	i=2.94	i=2.94	i=3	i=3	i=3	i=2.45	i=2.45	i=2.45
040	25										
	30										
	40										
	50										
	60										
	80										
	100										
050	25										
	30										
	40										
	50										
	60										
	80										
	100										
063	25										
	30										
	40										
	50										
	60										
	80										
	100										
075	25										
	30										
	40										
	50										
	60										
	80										
	100										
090	25										
	30										
	40										
	50										
	60										
	80										
	100										
110	25										
	30										
	40										
	50										
	60										
	80										
	100										
130	25										
	30										
	40										
	50										
	60										
	80										
	100										



	P1	P	(P)
<b>PC 063</b>	63B5-140/11	105/11	(105/14)
<b>PC 071</b>	71B5-160/14	120/14	(120/19)
<b>PC 080</b>	80B5-200/19	160/19	(160/24)
			(160/28)
			(160/19)
<b>PC 090</b>	90B5-200/24	160/24	(160/28)
			(160/19)

(..) 根據用戶要求訂製  
 (..) Only on request

3.3 UMRV+UMRV組合方式

3.3 UMRV+UMRV Possible combinations

	i	n <sub>2</sub>	IEC motor	i <sub>1</sub>	i <sub>2</sub>		
<b>UMRV 025/030</b>	100	14	56	10	10		
	150	9.3		10	15		
	200	7		10	20		
	250	5.6		10	25		
	300	4.7		10	30		
	400	3.5		20	20		
	500	2.8		20	25		
	600	2.3		20	30		
	750	1.9		30	25		
	900	1.6		30	30		
	1200	1.2		40	30		
	1500	0.93		50	30		
	1800	0.78		60	30		
	2400	0.58		60	40		
	3000	0.47		60	50		
<b>UMRV 025/040</b>	300	4.7	56	10	30		
	400	3.5		10	40		
	500	2.8		20	25		
	600	2.3		20	30		
	750	1.9		30	25		
	900	1.6		30	30		
	1200	1.2		40	30		
	1500	0.93		50	30		
	1800	0.78		60	30		
	2400	0.58		60	40		
	3000	0.47		60	50		
	4000	0.35		50	80		
	5000	0.28		50	100		
	<b>UMRV 030/040</b>	300		4.7	56	10	30
		400		3.5		10	40
500		2.8	20	25			
600		2.3	20	30			
750		1.9	25	30			
900		1.6	30	30			
1200		1.2	30	40			
1500		0.93	50	30			
1800		0.78	60	30			
2400		0.58	60	40			
3200		0.44	80	40			
4000		0.35	50	80			
5000		0.28	50	100			
<b>UMRV 030/050</b>		300	4.7	56 63		10	30
		400	3.5			10	40
	500	2.8	10		50		
	600	2.3	20		30		
	750	1.9	25		30		
	900	1.6	30		30		
	1200	1.2	30		40		
	1500	0.93	50		30		
	1800	0.78	60		30		
	2400	0.58	60		40		
	3000	0.47	60		50		
	4000	0.35	50		80		
	4800	0.29	60		80		
	<b>UMRV 030/063</b>	300	4.7		56 63	7.5	40
		400	3.5			10	40
500		2.8	10	50			
600		2.3	15	40			
750		1.9	15	50			
900		1.6	15	60			
1200		1.2	30	40			
1500		0.93	30	50			
1800		0.78	30	60			
2400		0.58	60	40			
3000		0.47	60	50			
4000		0.35	50	80			
5000		0.28	50	100			

	i	n <sub>2</sub>	IEC motor	i <sub>1</sub>	i <sub>2</sub>		
<b>UMRV 040/075</b>	300	4.7	56 63 71	10	30		
	400	3.5		10	40		
	500	2.8		10	50		
	600	2.3		20	30		
	750	1.9		25	30		
	900	1.6		30	30		
	1200	1.2		30	40		
	1500	0.93		50	30		
	1800	0.78		60	30		
	2400	0.58		60	40		
	3000	0.47		60	50		
	4000	0.35		50	80		
	5000	0.28		50	100		
	<b>UMRV 040/090</b>	300		4.7	56 63 71	7.5	40
		400		3.5		10	40
500		2.8	10	50			
600		2.3	15	40			
750		1.9	15	50			
900		1.6	15	60			
1200		1.2	30	40			
1500		0.93	30	50			
1800		0.78	30	60			
2400		0.58	60	40			
3000		0.47	60	50			
4000		0.35	50	80			
5000		0.28	50	100			
<b>UMRV 050/110</b>		300	4.7	63 71 80		10	30
		400	3.5			10	40
	500	2.8	10		50		
	600	2.3	15		40		
	750	1.9	25		30		
	900	1.6	30		30		
	1200	1.2	30		40		
	1500	0.93	50		30		
	1800	0.78	60		30		
	2400	0.58	60		40		
	3000	0.47	60		50		
	4000	0.35	50		80		
	5000	0.28	50		100		
	<b>UMRV 063/130</b>	300	4.7		71 80 90	10	30
		400	3.5			10	40
500		2.8	10	50			
600		2.3	15	40			
750		1.9	25	30			
900		1.6	30	30			
1200		1.2	30	40			
1500		0.93	50	30			
1800		0.78	60	30			
2400		0.58	60	40			
3000		0.47	60	50			
4000		0.35	50	80			
5000		0.28	50	100			
<b>UMRV 063/150</b>		150	9.3	71 80 90		10	15
		200	7.1			10	20
	250	5.6	10		25		
	300	4.7	10		30		
	400	3.5	10		40		
	500	2.8	10		50		
	600	2.3	15		40		
	750	1.9	25		30		
	900	1.6	30		30		
	1200	1.2	30		40		
	1800	0.78	60		30		
	2400	0.58	60		40		
	3000	0.47	60		50		
	4000	0.35	50		80		
	5000	0.28	50		100		

3.4 TKF+UMRV / TXF+UMRV  
組合方式

3.4 TKF+UMRV / TXF+UMRV  
Possible combinations

UMRV		TKF002 TXF002	TKF005 TXF005	TKF010 TXF010	TKF020	TKF030	TKF050
	IEC	63B5	71B5	80B5	90B5	100B5	112B5
	i	i=1.6-8.2	TKF : i=1.4-7 TXF : i=1.4-8.2	TKF : i=1.4-7 TXF : i=1.4-8.2	i=1.4-8.2	i=1.4-7	i=1.4-7
040	7.5						
	10						
	15						
	20						
	25						
	30						
	40						
050	50						
	7.5						
	10						
	15						
	20						
	25						
	30						
	40						
	50						
	60						
063	80						
	100						
	7.5						
	10						
	15						
	20						
	25						
	30						
	40						
	50						
075	60						
	80						
	100						
	7.5						
	10						
	15						
	20						
	25						
	30						
	40						
090	50						
	60						
	80						
	100						
	7.5						
	10						
	15						
	20						
	25						
	30						
110	40						
	50						
	60						
	80						
	100						
	7.5						
	10						
	15						
	20						
	25						
130	30						
	40						
	50						
	60						
	80						
	100						
	7.5						
	10						
	15						
	20						

#### 4.0 傳動不可逆轉性

##### 4.1 動態不可逆轉性

減速機在運轉過程中，當蝸桿脫開動力時，輸出軸能同步停止轉動。此時動態效率需要小於0.5(參照21頁表格)。

##### 4.2 靜態不可逆轉性

減速機在靜止狀態時，不能通過向輸出軸施加力矩帶動輸入蝸桿轉動。此時靜態效率需要小於0.5(參照21頁表格)。

#### 4.0 IRREVERSIBILITY

##### 4.1 *Dynamic irreversibility*

Dynamic irreversibility is achieved when the output shaft stops instantly when drive is no longer transmitted through the worm shaft .this condition requires a dynamic efficiency of  $\eta_d < 0.5$ (see table on page 21) .

##### 4.2 *Static irreversibility*

Static irreversibility is achieved when,with the gear reducer at a standstill,the application of a load to the output shaft does not set in motion the worm shaft .this condition requires a static efficiency of  $\eta_s < 0.5$ (see table on page 21) .

$\eta_d$	動態不可逆轉性	<b>DYNAMIC IRREVERSIBILITY</b>
<b>&gt; 0.6</b>	動態可逆	dynamic reversibility
<b>0.5 - 0.6</b>	低動態可逆	low dynamic reversibility
<b>0.4 - 0.5</b>	較好的動態不可逆	good dynamic irreversibility
<b>&lt; 0.4</b>	動態不可逆	dynamic irreversibility

$\eta_s$	靜態不可逆轉性	<b>STATIC IRREVERSIBILITY</b>
<b>&gt; 0.55</b>	靜態可逆	Static reversibility
<b>0.5 - 0.55</b>	低靜態可逆	low Static reversibility
<b>&lt; 0.5</b>	靜態不可逆	Static irreversibility

表中的分段只是近似值；

輕微的震動和衝擊也會影響自鎖性能；

雙蝸輪減速器的自鎖需考慮每個減速器的效率，總效率是兩個的乘積，也就是： $\eta_{總} = \eta_1 * \eta_2$ 。

The table shows approximate irreversibility classes.

Vibrations and shocks can affect a gear reducers's irreversibility.

For the irreversibility conditions of a combined geared unit one must consider that the efficiency of the group is given by the product of the efficiency of each single reducer,i.e.:  $\eta_{tot} = \eta_1 * \eta_2$ .

## 5.0 嚙合參數

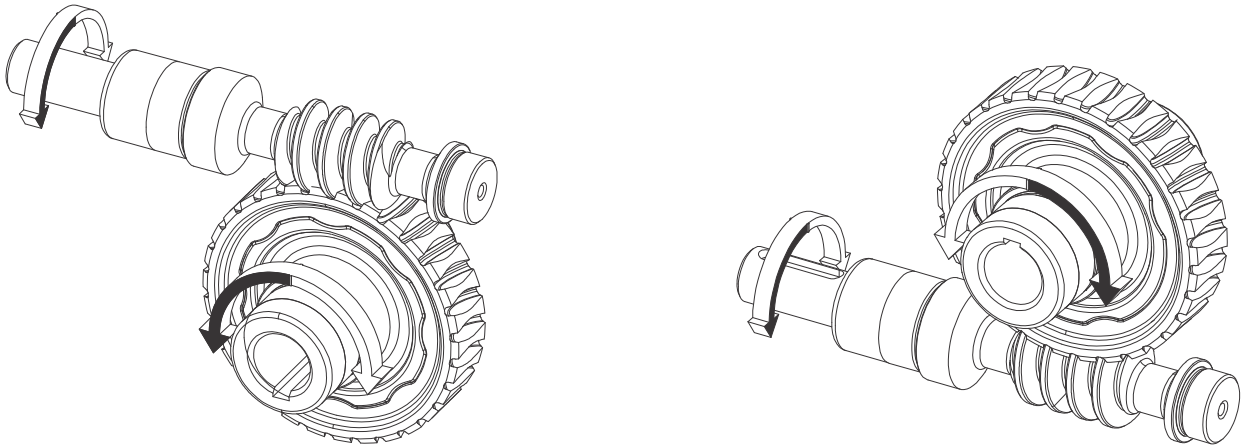
## 5.0 MESH DATA

### 5.1 蝸桿螺旋線、蝸輪齒牙和效率

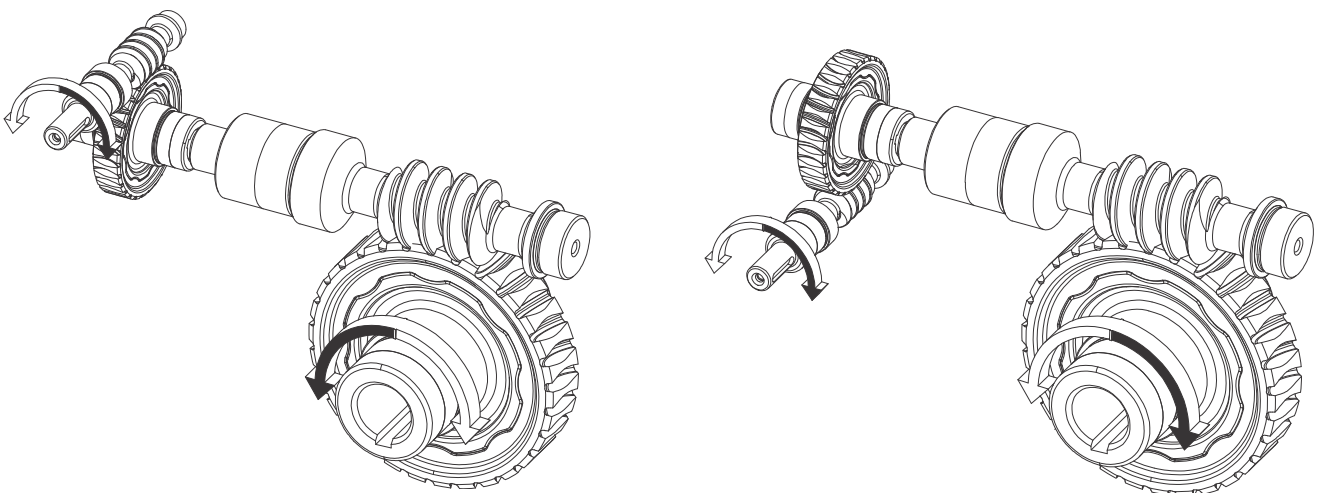
### 5.1 Worm thread, worm wheel tooth and efficiency data

UMRV	i	5	7.5	10	15	20	25	30	40	50	60	80	100
<b>025</b>	Z <sub>1</sub>	4	4	3	2	2		1	1	1	1		
	γ	30°57'	25°18'	19°31'	13°18'	10°53'		6°44'	5°29'	4°34'	3°56'		
	M <sub>x</sub>	1.8	1.3	1.3	1.3	1		1.3	1	0.8	0.67		
	η <sub>d</sub>	0.86	0.84	0.82	0.78	0.74		0.66	0.61	0.57	0.54		
	η <sub>s</sub>	0.71	0.70	0.67	0.60	0.55		0.46	0.41	0.36	0.34		
<b>030</b>	Z <sub>1</sub>	4	4	3	2	2	1	1	1	1	1	1	
	γ	21°48'	18°50'	14°21'	9°40'	7°44'	5°34'	4°52'	3°53'	3°11'	2°46'	2°07'	
	M <sub>x</sub>	2	1.44	1.44	1.44	1.1	1.7	1.44	1.1	0.88	0.75	0.56	
	η <sub>d</sub>	0.86	0.84	0.81	0.76	0.72	0.67	0.64	0.58	0.54	0.50	0.44	
	η <sub>s</sub>	0.71	0.66	0.62	0.54	0.50	0.43	0.39	0.35	0.31	0.27	0.23	
<b>040</b>	Z <sub>1</sub>	4	4	4	2	2	2	1	1	1	1	1	1
	γ	27°24'	21°48'	17°31'	11°18'	8°58'	7°41'	5°42'	4°30'	3°51'	3°17'	2°32'	2°05'
	M <sub>x</sub>	2.8	2	1.5	2	1.5	1.25	2	1.5	1.25	1.04	0.78	0.63
	η <sub>d</sub>	0.88	0.86	0.85	0.81	0.77	0.74	0.69	0.64	0.61	0.57	0.51	0.47
	η <sub>s</sub>	0.72	0.69	0.65	0.58	0.53	0.5	0.44	0.4	0.36	0.32	0.28	0.24
<b>050</b>	Z <sub>1</sub>	4	4	4	2	2	2	1	1	1	1	1	1
	γ	23°49'	21°48'	17°42'	11°18'	9°04'	7°36'	5°42'	4°33'	3°49'	3°17'	2°33'	2°04'
	M <sub>x</sub>	3.4	2.5	1.9	2.5	1.9	1.54	2.5	1.9	1.54	1.3	0.98	0.78
	η <sub>d</sub>	0.87	0.86	0.84	0.8	0.77	0.74	0.7	0.65	0.61	0.57	0.51	0.49
	η <sub>s</sub>	0.73	0.69	0.65	0.58	0.54	0.5	0.44	0.39	0.35	0.32	0.27	0.23
<b>063</b>	Z <sub>1</sub>		4	4	2	2	2	1	1	1	1	1	1
	γ		24°31'	20°19'	12°50'	10°29'	8°44'	6°30'	5°17'	4°23'	3°47'	2°59'	2°25'
	M <sub>x</sub>		3.25	2.5	3.25	2.5	2	3.25	2.5	2	1.68	1.28	1.02
	η <sub>d</sub>		0.87	0.86	0.82	0.8	0.77	0.73	0.69	0.65	0.61	0.56	0.5
	η <sub>s</sub>		0.7	0.65	0.59	0.54	0.5	0.45	0.4	0.36	0.33	0.28	0.24
<b>075</b>	Z <sub>1</sub>		4	4	2	2	2	1	1	1	1	1	1
	γ		26°33'	21°48'	14°02'	11°18'	9°37'	7°07'	5°42'	4°50'	4°05'	3°15'	2°40'
	M <sub>x</sub>		4	3	4	3	2.45	4	3	2.45	2	1.54	1.24
	η <sub>d</sub>		0.88	0.87	0.84	0.81	0.79	0.75	0.71	0.68	0.64	0.59	0.54
	η <sub>s</sub>		0.7	0.67	0.6	0.57	0.52	0.46	0.42	0.38	0.35	0.29	0.26
<b>090</b>	Z <sub>1</sub>		4	4	2	2	2	1	1	1	1	1	1
	γ		28°20'	23°26'	15°05'	12°14'	10°37'	7°40'	6°11'	5°21'	4°36'	3°36'	2°57'
	M <sub>x</sub>		4.8	3.6	4.8	3.6	3	4.8	3.6	3	2.5	1.88	1.5
	η <sub>d</sub>		0.89	0.88	0.85	0.83	0.81	0.77	0.74	0.71	0.68	0.62	0.58
	η <sub>s</sub>		0.72	0.69	0.63	0.59	0.55	0.49	0.45	0.41	0.38	0.32	0.28
<b>110</b>	Z <sub>1</sub>		4	4	2	2	2	1	1	1	1	1	1
	γ		28°17'	27°35'	15°03'	14°38'	12°37'	7°39'	7°26'	6°23'	5°31'	4°23'	3°38'
	M <sub>x</sub>		5.89	4.6	5.89	4.6	3.75	5.89	4.6	3.75	3.12	2.36	1.9
	η <sub>d</sub>		0.89	0.88	0.85	0.84	0.83	0.78	0.77	0.74	0.71	0.66	0.62
	η <sub>s</sub>		0.71	0.68	0.62	0.61	0.58	0.48	0.48	0.44	0.41	0.36	0.32
<b>130</b>	Z <sub>1</sub>		4	4	2	2	2	1	1	1	1	1	1
	γ		28°46'	26°15'	15°21'	13°51'	11°49'	7°48'	7°01'	5°58'	5°12'	4°05'	3°25'
	M <sub>x</sub>		7	5.4	7	5.4	4.37	7	5.4	4.37	3.68	2.75	2.24
	η <sub>d</sub>		0.9	0.88	0.86	0.85	0.83	0.79	0.77	0.74	0.71	0.67	0.63
	η <sub>s</sub>		0.71	0.68	0.62	0.6	0.57	0.49	0.46	0.43	0.39	0.34	0.3
<b>150</b>	Z <sub>1</sub>		6	4	3	2	2	2	1	1	1	1	1
	γ		32°09'	24°35'	17°27'	12°53'	11°19'	9°50'	6°32'	5°43'	4°57'	3°55'	3°14'
	M <sub>x</sub>		5.5	6.155	5.5	6.155	5	4.193	6.155	5	4.193	3.17	2.55
	η <sub>d</sub>		0.91	0.9	0.88	0.86	0.84	0.83	0.78	0.76	0.73	0.68	0.64
	η <sub>s</sub>		0.73	0.71	0.66	0.6	0.57	0.54	0.45	0.42	0.39	0.33	0.29

**UMRV - URV**



**UMRV+UMRV - URV+UMRV**



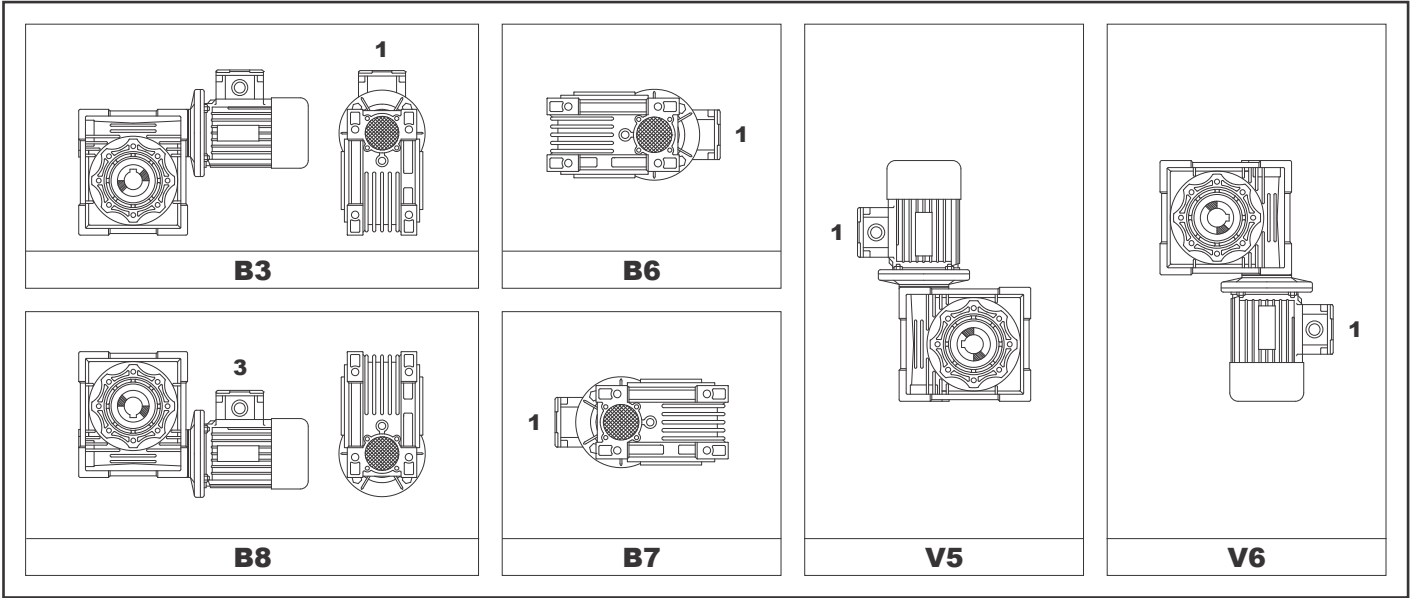
螺旋線為右旋  
The helix is right-handed

6.0 安裝方位

6.0 MOUNTING POSITIONS

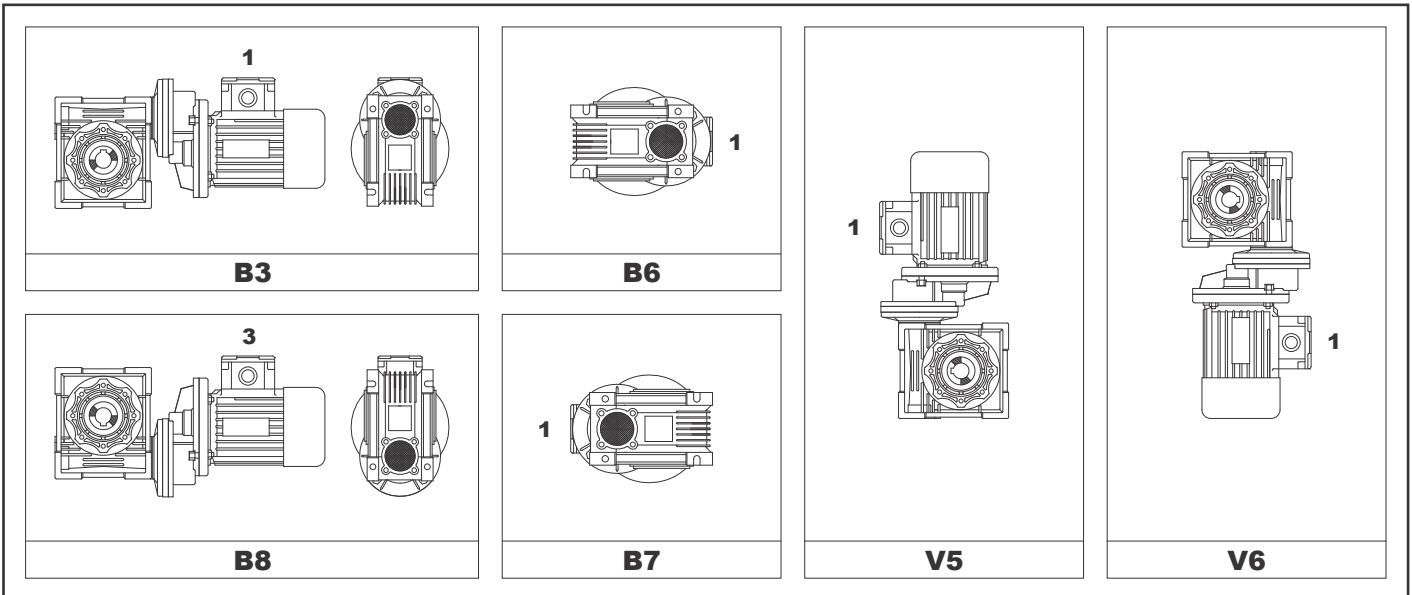
6.1 UMRV - URV 安裝方位

6.1 UMRV - URV Mounting positions



6.2 PC+UMRV 安裝方位

6.2 PC+UMRV Mounting positions

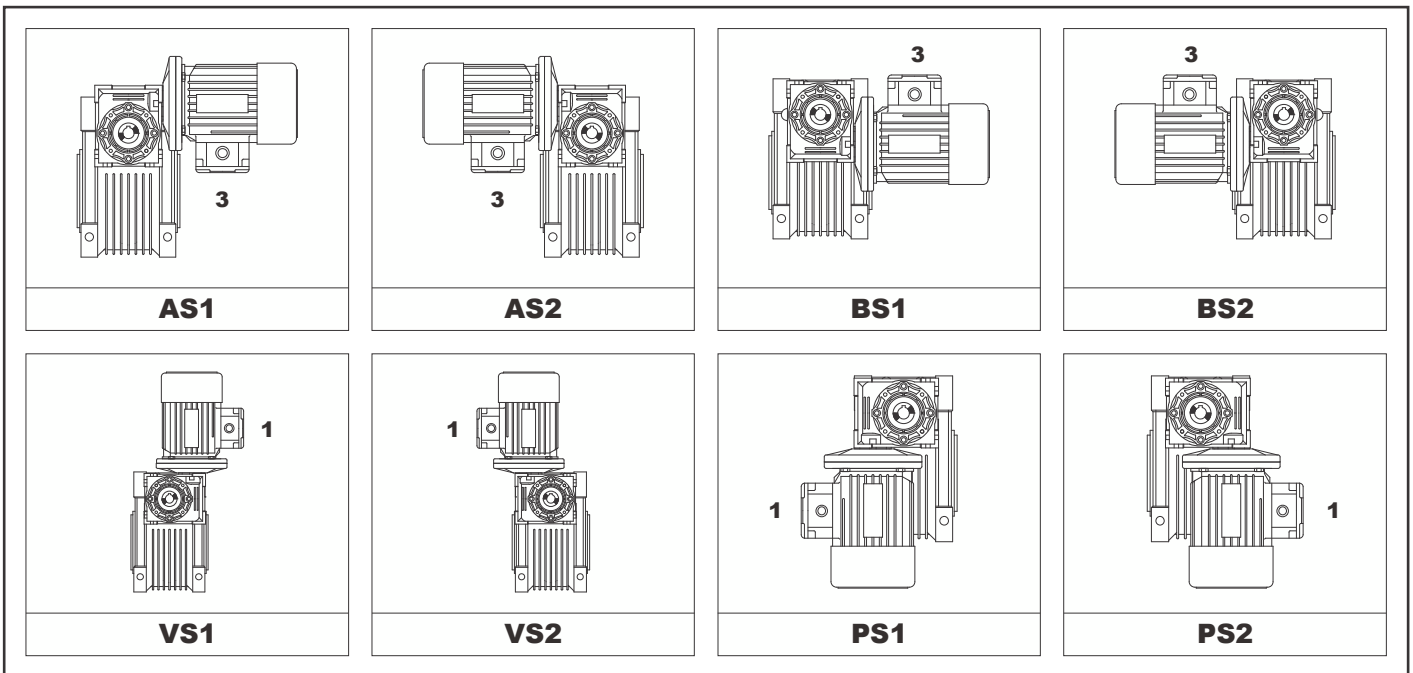


垂直安裝時，請查看5頁。  
如無特殊說明，以B3為標準安裝方式。無相應的安裝方式時，請與技術服務部聯繫。

For vertical positions, check with page 5.  
Unless specified otherwise, the standard positions are B3.  
For positions not envisaged, it is necessary to call our technical service.

6.3 **UMRV+UMRV - URV+UMRV**  
聯接方式

6.3 **UMRV+UMRV - URV+UMRV**  
Execution

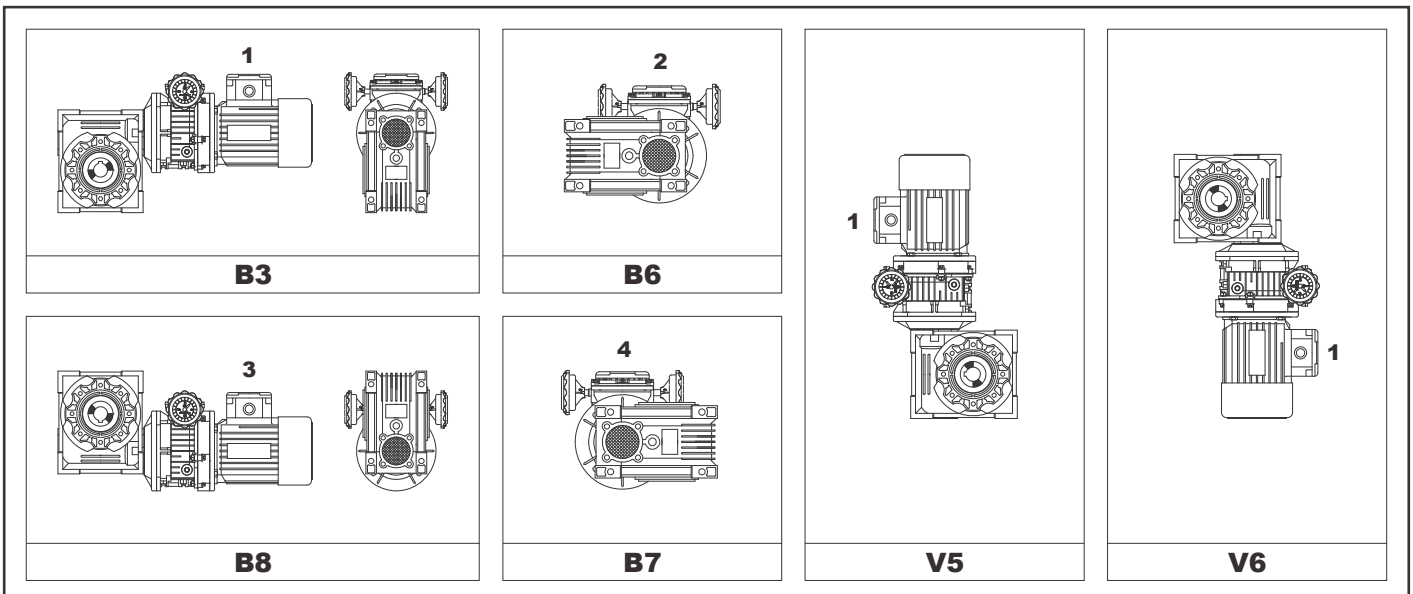


第一級和第二級減速機按上圖方式組合，如在訂貨時沒有特別說明，將按照BS2組合方式供貨。第二級減速機實際的安裝方式，參照23頁的方位圖。

The position of the 1st reducer with respect to the 2nd gear reducer on the version. Unless otherwise specified at the time of the order, combination groups are supplied in version BS2. The specified mounting position refers to the 2nd gear reducer. See page 23 for the possible mounting positions.

6.4 **TKF(TXF)+UMRV**  
安裝方位

6.4 **TKF(TXF)+UMRV**  
Mounting positions



垂直安裝時，請查看5頁。  
如無特殊說明，以B3為標準安裝方式。  
無相應的安裝方式時，請與技術服務部聯繫。

For vertical positions, check with page 5.  
Unless specified otherwise, the standard positions are B3.  
For positions not envisaged, it is necessary to call our technical service.

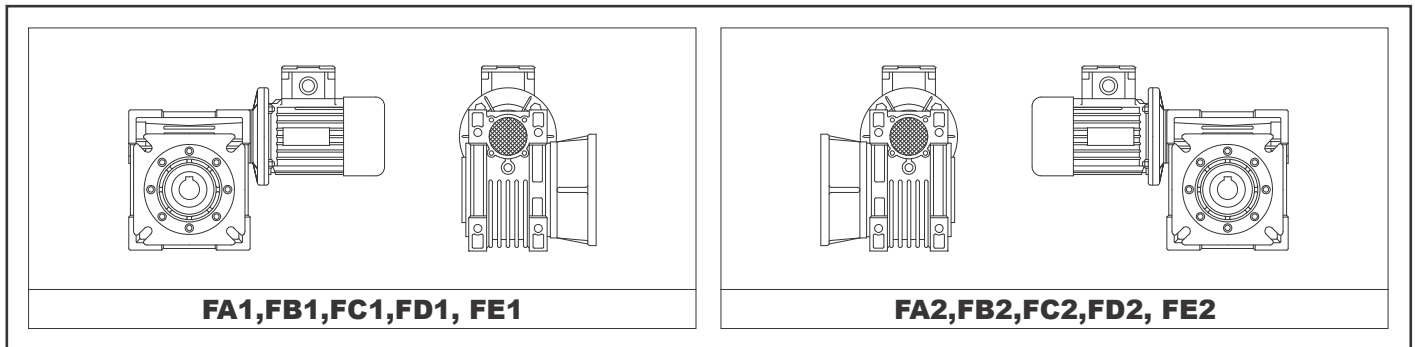


## 7.0 附件位置圖

## 7.0 ACCESSORIES POSITIONS DIAGRAM

### 7.1 輸出法蘭位置

### 7.1 Flange mounting side

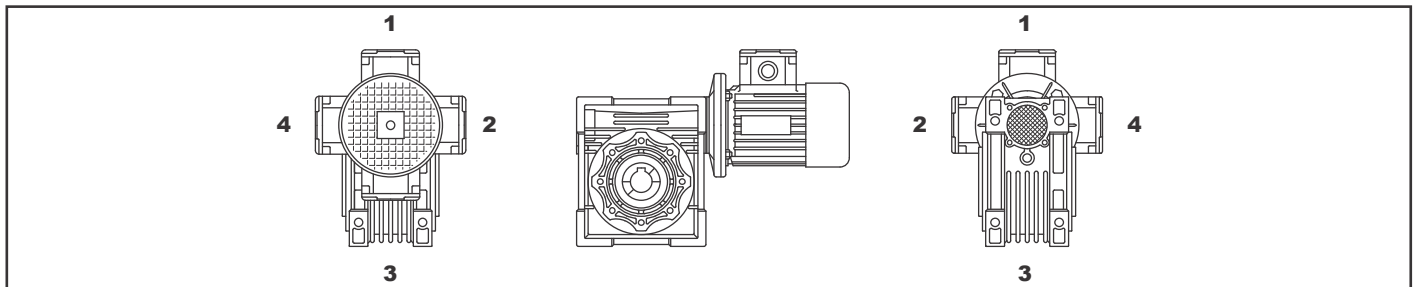


如沒有特別說明,將按照如圖F...1和B3安裝方位的組合樣式供貨。

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

### 7.2 電機接線盒方位

### 7.2 POS. of terminal box

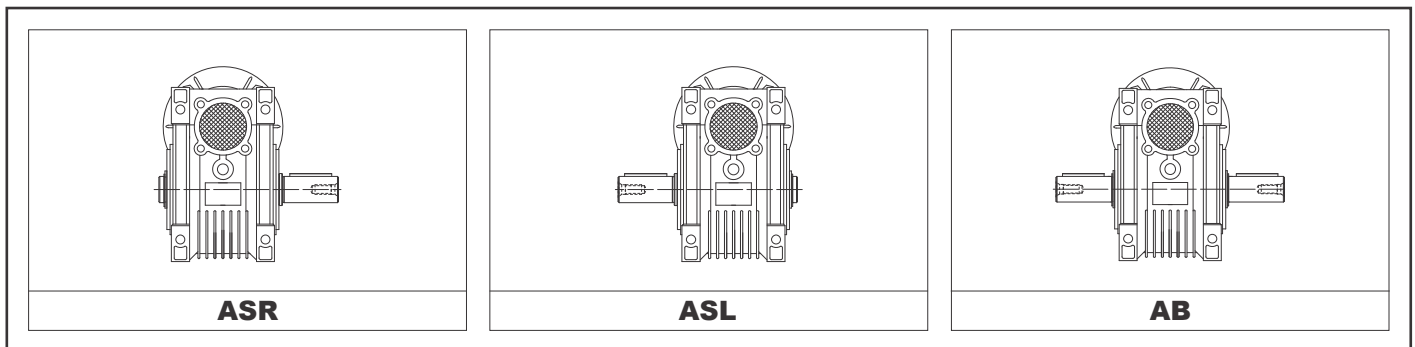


如對電機接線盒位置有特別要求,在下單時按圖示注明方位。

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

### 7.3 輸出軸配置

### 7.3 POS. of output shaft

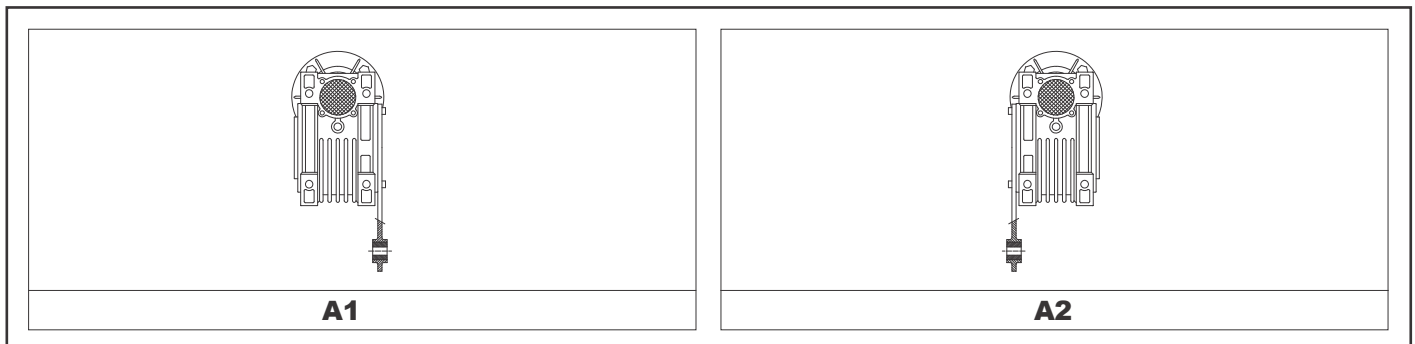


如沒有特別說明,將按照如圖ASR和B3安裝方位的組合樣式供貨。

Unless specified otherwise,the reduction unit is supplied with the flange in pos. ASR referred to position B3.

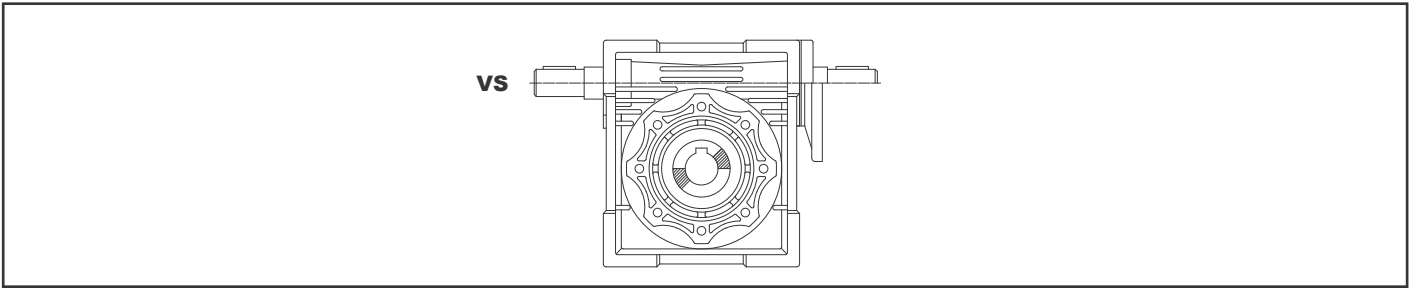
### 7.4 扭力臂配置

### 7.4 POS. of torque arm



如沒有特別說明,將按照如圖A1和B3安裝方位的組合樣式供貨。

Unless specified otherwise,the reduction unit is supplied with the flange in pos. A1 referred to position B3.



8.0 徑向負荷

8.0 RADIAL LOAD

8.1 徑向負荷

8.1 Radial load

通過下列公式可計算軸上的承受重量：

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

$$F_{re} = \frac{2000 \cdot M \cdot f_z}{D} \leq F_{r1} \text{ 或 } F_{r2}$$

$$F_{re} = \frac{2000 \cdot M \cdot f_z}{D} \leq F_{r1} \text{ o } F_{r2}$$

- F<sub>re</sub>** = 軸所承受的徑向負荷 (N)
- M** = 扭矩 (Nm)
- D** = 在軸上的傳動元件之直徑 (mm)
- F<sub>r</sub>** = 最大徑向承受力 (參考有關圖表) (N)

- F<sub>re</sub>** (N) Resulting radial load
- M** (Nm) Torque on the shaft
- D** (mm) Diameter of the transmission member mounted on the shaft
- F<sub>r</sub>** (N) Value of the maximum admitted radial load (see relative tables)

- f<sub>z</sub>** = 1.1 齒輪
- 1.4 鏈輪
- 1.7 V-帶輪
- 2.5 平直帶輪

- f<sub>z</sub>** = 1,1 gear pinion
- 1,4 chain wheel
- 1,7 v-pulley
- 2,5 flat pulley

當徑向負荷沒有作用在軸伸中點時，就需要用以下公式計算：

When the resulting radial load is not applied on the centre line of the shaft, it is necessary to calculate the effective load with the following formula:

$$F_{re} \leq \frac{F_r \cdot a}{(b+x)} \leq F_{r1} \text{ max 或 } F_{r2} \text{ max}$$

$$F_{re} \leq \frac{F_r \cdot a}{(b+x)} \leq F_{r1} \text{ max o } F_{r2} \text{ max}$$

a, b, x: 有關參數表見第27頁

a, b, x = values given in the tables on page 27

8.2 徑向負荷-技術說明

8.2 Radial load-Technical descriptions

軸所允許負載的負荷(N)可從相關的圖表中查找或從已推出的減速器相關資料中查找。它包括了當負荷與主軸在同一中心線的計算,也有不在同心線的情況下的好幾種可能角度和轉向。

The value of the admissible radial load (N) is given in the tables relating to the performance of the reduction unit at issue. It is related to the load applied on the centre line of the shaft and in the most unfavourable conditions of angle of application and direction of rotation.

當徑向與軸向負載同時存在時,最大的允許軸向負載值只是徑向負載值的五分之一。圖表中所表示的是輸出軸的最大承重量。

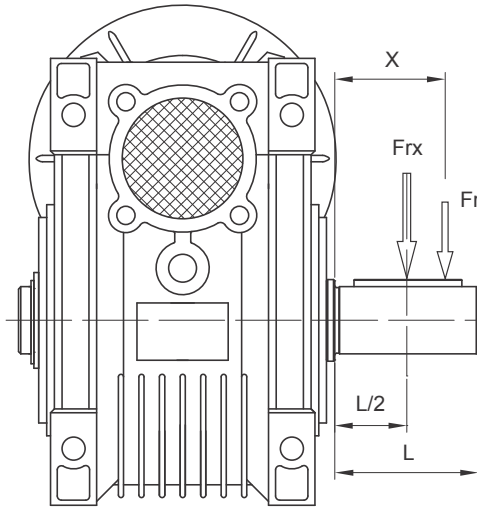
The maximum admissible axial loads are 1/5 of the value of the given radial load when they are applied in combination with the radial load. The tables relating to the output shafts give the maximum admissible value.

在日常操作中,絕對不可以超過圖表的數值,因為關係到外殼的承受極限。在特殊情況下,如軸的負載重量必須要超過這本樣本中的數值極限。請與技術人員聯繫並查閱使用說明書:負載指示,軸的旋轉方向,應用種類。

This value must never be exceeded since it relates to the strength of the case. Particular conditions of radial load higher than the limits of the catalogue may occur. In this case, call our Technical Service and provide details on the application: direction of the load, direction of rotation of the shaft, type.

8.3 輸出軸徑向負荷

8.3 Output shaft Radial load



UMRV	025	030	040	050	063	075	090	110	130	150
<b>a</b>	50	65	84	101	120	131	162	176	188	215
<b>b</b>	38	50	64	76	95	101	122	136	148	174
<b>F<sub>r2</sub> max</b>	1350	1830	3490	4840	6270	7380	8180	12000	13500	18000

(\*)上述所有軸上的最大負載值是根據單轉向並使用圓錐滾子軸承(非標)的前提下計算的。

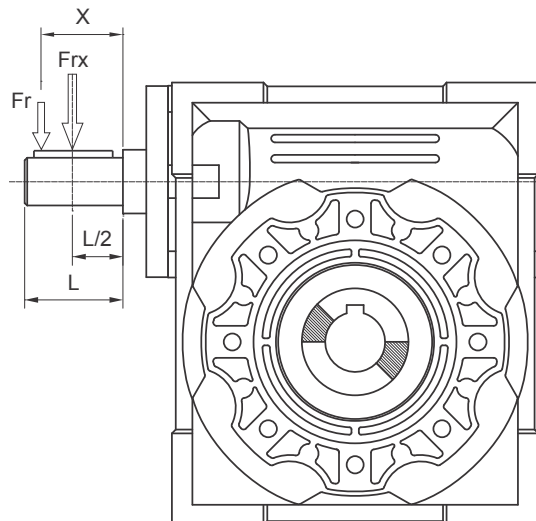
(\*) Maximum axial load values admissible in only one direction with the use of a thrust bearing (on request).

具體的徑向負載值可參見相關性能表 (F<sub>r2</sub>)

The values of the admissible radial loads are given on the pages relating to performance (F<sub>r2</sub>)

8.4 輸入軸徑向負荷

8.4 Input shaft radial load



URV	030	040	050	063	075	090	110	130	150
<b>a</b>	86	106	129	159	192	227	266	314	350
<b>b</b>	76	94.5	114	139	167	202	236	274	310
<b>F<sub>r1</sub> max</b>	210	350	490	700	980	1270	1700	2100	2800

具體的徑向負載值可參見相關性能表(F<sub>r1</sub>)



The values of the admissible radial loads are given on the pages relating to performance (F<sub>r1</sub>)



9.0 蝸輪減速機選型表



**WORM-GEAR UNIT SELECTION CHARTS**



9.1 UMRV, UMRV+UMRV, PC+UMRV 性能參數

9.1 UMRV, UMRV+UMRV, PC+UMRV Performance



$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)			
<b>0.06</b>	280	1.8	6.2	5	UMRV025	561-4	439	59		
	186.7	2.6	4.2	7.5			503			
	140	3.4	3.5	10			553			
	93.3	4.9	2.5	15			633			
	70	6.1	2	20			697			
	46.7	8.2	1.6	30			798			
	35	10	1.3	40			878			
	28	12	0.9	50			946			
	23.3	14	0.7	60			1006			
	180	2.7	4.8	5			UMRV025		562-6	509
120	4	3.2	7.5	583						
90	5.2	2.7	10	641						
60	7.4	1.9	15	734						
45	9.3	1.4	20	808						
30	12	1.2	30	925						
22.5	15	0.9	40	1018						
18	18	0.7	50	1096						
280	1.8	10.1	5	UMRV030	561-4	597		60		
186.7	2.6	6.9	7.5			683				
140	3.4	5.4	10			752				
93.3	4.7	3.8	15			861				
70	6	3	20			948				
56	7	3	25			1021				
46.7	8	2.5	30			1085				
35	9.7	1.9	40			1194				
28	11	1.5	50			1286				
23.3	13	1.3	60			1367				
17.5	14	0.9	80	1504						
15	18	0.9	60	UMRV030	562-6	1583	60			
14	25	1.3	100			UMRV025/030		561-4	1620	73
9.3	32	0.9	150						1830	
7	41	0.7	200						1830	
5.6	44	0.8	250						1830	
18	18	2.3	50			UMRV040		562-6	2868	61
15	21	1.9	60						3047	
11.3	24	1.4	80						3354	
9	27	1.2	100						3490	
4.7	59	1.2	300			UMRV025/040		561-4	3490	73
3.5	71	0.9	400	3490						
2.8	82	0.7	500	3490						
2.3	101	0.6	600	3490						
1.9	116	0.5	750	3490						
1.6	143	0.5	900	3490						
1.2	171	0.4	1200	3490						
0.9	197	0.3	1500	3490						
0.8	217	0.3	1800	3490						
0.6	268	0.2	2400	3490						
0.5	324	0.2	3000	3490						
0.4	294	0.1	4000	3490						
0.3	356	0.1	5000	3490						
4.7	57	1.3	300	UMRV030/040	561-4		3490		74	
3.5	70	0.9	400				3490			
2.8	96	0.6	500				3490			
2.3	104	0.7	600			3490				



$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)				
<b>0.06</b>	1.9	121	0.6	750	<i>UMRV030/040</i>	<i>561-4</i>	3490	74			
	1.6	139	0.5	900			3490				
	1.2	166	0.4	1200			3490				
	0.9	196	0.4	1500			3490				
	0.8	218	0.3	1800			3490				
	0.58	261	0.2	2400			3490				
	0.4	300	0.2	3200			3490				
	0.4	279	0.1	4000			3490				
	0.28	338	0.1	5000			3490				
	1.6	141	1	900			<i>UMRV030/050</i>		<i>561-4</i>	4840	74
1.2	169	0.7	1200	4840							
0.93	199	0.7	1500	4840							
0.78	222	0.7	1800	4840							
0.6	266	0.5	2400	4840							
0.5	307	0.4	3000	4840							
0.35	288	0.3	4000	4840							
0.29	311	0.3	4800	4840							
0.9	204	1.1	1500	<i>UMRV030/063</i>	<i>561-4</i>	6270		74			
0.78	225	0.9	1800			6270					
0.58	276	0.8	2400			6270					
0.47	319	0.7	3000			6270					
0.35	306	0.6	4000			6270					
0.28	360	0.4	5000			6270					
0.6	330	1.1	2400	<i>UMRV040/075</i>	<i>561-4</i>	7380	75				
0.47	377	0.8	3000			7380					
0.35	355	0.7	4000			7380					
0.28	419	0.5	5000			7380					
0.5	406	1.4	3000	<i>UMRV040/090</i>	<i>561-4</i>	8180	75				
0.35	365	1.3	4000			8180					
0.28	431	1	5000			8180					
<b>0.09</b>	280	2.7	4.1	5	<i>UMRV025</i>	<i>562-4</i>	439	59			
	186.7	3.9	2.8	7.5			503				
	140	5.1	2.4	10			553				
	93.3	7.3	1.6	15			633				
	70	9.2	1.3	20			697				
	46.7	12	1.1	30			798				
	35	15	0.9	40			878				
	280	2.7	6.7	5			<i>UMRV030</i>		<i>562-4</i>	597	60
	186.7	3.9	4.6	7.5						683	
	140	5	3.6	10						752	
93.3	7.1	2.5	15	861							
70	9	2	20	948							
56	10	2	25	1021							
46.7	12	1.7	30	1085							
35	14	1.2	40	1194							
28	17	1	50	1286							
23.3	19	0.9	60	1367							
180	4.1	4.9	5	<i>UMRV030</i>	<i>631-6</i>	692	60				
120	5.9	3.4	7.5			792					
90	7.6	2.6	10			871					
60	11	1.9	15			997					
45	13	1.5	20			1098					
36	15	1.5	25			1183					
30	17	1.2	30			1257					
22.5	21	1	40			1383					
18	24	0.7	50			1490					



<b>P<sub>1</sub></b> (kW)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	<b>M<sub>2</sub></b> (Nm)	<b>f.s.</b>	<b>i</b>	減速機型號 <b>Type</b>		<b>Fr<sub>2</sub></b> (N)	
<b>0.09</b>	14	38	0.8	100	<i>UMRV025/030</i>	<i>562-4</i>	1620	73
	9.3	49	0.6	150			1830	
	7	62	0.5	200			1830	
	5.6	66	0.5	250			1830	
	4.7	75	0.4	300			1830	
	3.5	107	0.3	400			1830	
	2.8	115	0.3	500			1830	
	2.3	135	0.2	600			1830	
	1.9	151	0.2	750			1830	
	1.6	178	0.2	900			1830	
	1.2	212	0.1	1200			1830	
	0.9	247	0.1	1500			1830	
	0.78	304	0.1	1800			1830	
	0.58	340	0.1	2400			1830	
	0.47	405	0.1	3000			1830	
		28	19	2			50	
	23.3	21	1.7	60	2630			
	17.5	26	1.3	80	2895			
	14	29	1	100	3118			
	30	19	2.6	30	<i>UMRV040</i>	<i>631-6</i>	2419	61
	22.5	24	1.9	40			2662	
	18	27	1.5	50			2868	
	15	31	1.3	60			3047	
	11.3	37	1	80			3354	
	9	41	0.8	100			3490	
	12.3	47	1.3	73.3	<i>PC063+UMRV040</i>	<i>631-6</i>	3283	69
	10.2	51	1.4	88			3488	
	7.7	62	1.1	117.3			3490	
	6.1	72	0.8	146.7			3490	
	5.1	79	0.7	176			3490	
	4.7	88	0.8	300	<i>UMRV030/040</i>	<i>562-4</i>	3490	74
	15	32	2.3	60	<i>UMRV050</i>	<i>631-6</i>	4183	62
	11.3	37	1.8	80			4604	
	9	42	1.3	100			4840	
	6.1	73	1.6	146.7	<i>PC063+UMRV050</i>	<i>631-6</i>	4840	69
	5.1	81	1.3	176			4840	
	3.8	94	0.9	234.6			4840	
	3	106	0.7	293.3			4840	
	3.5	107	1.2	400	<i>UMRV030/050</i>	<i>562-4</i>	4840	74
	2.8	123	1	500			4840	
	2.3	159	0.9	600			4840	
	1.9	185	0.8	750			4840	
	1.6	212	0.7	900			4840	
	3.8	99	1.7	234.6	<i>PC063+UMRV063</i>	<i>631-6</i>	6270	69
	3	109	1.4	293.3			6270	
	1.6	200	1	900	<i>UMRV030/063</i>	<i>562-4</i>	6270	74
	1.2	263	0.9	1200			6270	
	0.93	305	0.7	1500			6270	
	0.9	360	1.1	1500	<i>UMRV040/075</i>	<i>562-4</i>	7380	75
	0.78	404	1	1800			7380	
	0.58	496	0.7	2400			7380	
	0.5	609	0.9	3000	<i>UMRV040/090</i>	<i>562-4</i>	8180	75
	0.35	548	0.8	4000			8180	



$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)	
<b>0.12</b>	280	3.6	5.1	5	<i>UMRV030</i>	<i>631-4</i>	597	60
	186.7	5.2	3.4	7.5			683	
	140	6.7	2.7	10			752	
	93.3	9.5	1.9	15			861	
	70	12	1.5	20			948	
	56	14	1.5	25			1021	
	46.7	16	1.3	30			1085	
	35	19	0.9	40			1194	
	28	23	0.8	50			1286	
	180	5.4	3.7	5			<i>UMRV030</i>	
120	7.9	2.5	7.5	792				
90	10	2	10	871				
60	14	1.4	15	997				
45	18	1.1	20	1098				
36	20	1.1	25	1183				
30	23	0.9	30	1257				
46.7	17	2.6	30	<i>UMRV040</i>	<i>631-4</i>	2087	61	
35	21	1.9	40			2298		
28	25	1.5	50			2475		
23.3	28	1.3	60			2630		
17.5	34	1	80			2895		
14	38	0.8	100			3118		
30	25	1.9	30	<i>UMRV040</i>	<i>632-6</i>	2419	61	
22.5	32	1.4	40			2662		
18	36	1.2	50			2868		
15	41	0.9	60			3047		
19.1	42	1.2	73.3	<i>PC063+UMRV040</i>	<i>631-4</i>	2833	69	
15.9	46	1.2	88			3011		
11.9	57	0.9	117.3			3314		
9.5	66	0.7	146.7			3490		
7.9	74	0.6	176			3490		
12.3	62	1	73.3	<i>PC063+UMRV040</i>	<i>632-6</i>	3283	69	
10.2	68	1.1	88			3488		
7.7	83	0.8	117.3			3490		
23.3	29	2.3	60	<i>UMRV050</i>	<i>631-4</i>	3610	62	
17.5	35	1.9	80			3973		
14	40	1.4	100			4280		
22.5	32	2.6	40	<i>UMRV050</i>	<i>632-6</i>	3654	62	
18	38	2	50			3936		
15	42	1.7	60			4183		
11.3	50	1.4	80			4604		
9	56	1	100			4840		
9.5	68	1.3	146.7	<i>PC063+UMRV050</i>	<i>631-4</i>	4840	69	
8	75	1.1	176			4840		
5.8	88	0.8	234.6			4840		
4.8	98	0.7	293.3			4840		
12.3	63	1.7	73.3	<i>PC063+UMRV050</i>	<i>632-6</i>	4506	69	
10.2	70	2.1	88			4788		
7.7	84	1.5	117.3			4840		
6.1	97	1.2	146.7			4840		
5.1	108	1	176			4840		
3.8	125	0.7	234.6			4840		







$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)	
<b>0.12</b>	4.7	119	1.2	300	UMRV030/050	631-4	4840	74
	3.5	142	0.9	400				
	2.8	164	0.7	500				
	6	92	1.5	234.6	PC063+UMRV063	631-4	6270	69
	4.8	103	1.2	293.3			6270	
	6.1	101	2.1	146.7	PC063+UMRV063	632-6	6270	69
	5.1	112	1.8	176			6270	
	3.8	131	1.3	234.6			6270	
	3.1	145	1	293.3			6270	
	2.8	171	1.3	500	UMRV030/063	631-4	6270	74
	2.3	208	1.1	600			6270	
	1.9	241	0.9	750			6270	
	1.6	325	1.2	900	UMRV040/075	631-4	7380	75
	1.2	399	0.9	1200			7380	
	0.8	547	0.9	1800	UMRV040/090	631-4	8180	75
0.58	695	0.9	2400	8180				
0.5	884	1.2	3000	UMRV050/110	631-4	10320	75	
0.35	784	1	4000			10320		
0.28	928	0.8	5000			10320		
<b>0.18</b>	280	5.3	3.4	5	UMRV030	632-4	597	60
	186.7	7.8	2.3	7.5			683	
	140	10	1.8	10			752	
	93.3	14	1.3	15			861	
	70	18	1	20			948	
	56	21	1	25			1021	
	46.7	24	0.8	30			1085	
	70	19	2	20			UMRV040	
	56	23	1.7	25	1964			
	46.7	26	1.7	30	2087			
	35	32	1.3	40	2298			
	28	38	1	50	2475			
	23.3	43	0.8	60	2630			
	45	29	1.5	20	UMRV040	711-6		2113
	36	34	1.3	25			2276	
	30	38	1.3	30			2419	
	22.5	47	1	40			2662	
	19.1	64	0.8	73.3	PC063+UMRV040	632-4	2833	69
	15.9	70	0.8	88			3011	
	11.9	85	0.6	117.3			3314	
	35	33	2.3	40	UMRV050	632-4	3153	62
	28	39	1.9	50			3397	
	23.3	43	1.6	60			3610	
	17.5	52	1.2	80			3973	
	14	60	0.9	100			4280	
	18	56	1.4	50			UMRV050	
	15	63	1.1	60	4183			
	11.3	75	0.9	80	4604			



<b>P<sub>1</sub></b> (kW)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	<b>M<sub>2</sub></b> (Nm)	<b>f.s.</b>	<b>i</b>	減速機型號 <b>Type</b>		<b>Fr<sub>2</sub></b> (N)				
<b>0.18</b>	19.1	64	1.4	73.3	<i>PC063+UMRV050</i>	<i>632-4</i>	3889	69			
	15.9	71	1.5	88			4132				
	11.9	87	1.1	117.3			4548				
	9.5	101	0.9	146.7			4840				
	7.9	113	0.7	176			4840				
	5.8	133	0.6	234.6			4840				
	12.2	95	1.2	73.5	<i>PC071+UMRV050</i>	<i>711-6</i>	4506	70			
	10.2	105	1.4	88.2			4788				
	7.7	126	1	117.6			4840				
	15	66	2.1	60	<i>UMRV063</i>	<i>711-6</i>	5467	63			
	11.3	79	1.6	80			6018				
	9	90	1.4	100			6270				
	9.5	103	1.7	146.7	<i>PC063+UMRV063</i>	<i>632-4</i>	6270	69			
	8	117	1.4	176			6270				
	5.8	139	1	234.6			6270				
	4.8	155	0.8	293.3			6270				
	12.4	97	2.2	73.5	<i>PC071+UMRV063</i>	<i>711-6</i>	5889	70			
	10.2	107	2.4	88.2			6259				
	7.7	131	1.8	117.6			6270				
	6.1	152	1.4	147			6270				
	5.1	168	1.2	176.4			6270				
	3.8	197	0.9	235.2			6270				
	3.1	218	0.7	294			6270				
	3.5	222	1	400	<i>UMRV030/063</i>	<i>632-4</i>	6270	74			
	2.8	257	0.8	500			6270				
	5.1	179	1.7	176.4	<i>PC071+UMRV075</i>	<i>711-6</i>	7380	70			
	3.8	211	1.2	235.2			7380				
	3.1	235	1	294			7380				
	2.3	362	1.1	600	<i>UMRV040/075</i>	<i>632-4</i>	7380	75			
	1.9	435	0.9	750			7380				
	1.6	487	0.8	900			7380				
	1.2	629	1	1200	<i>UMRV040/090</i>	<i>632-4</i>	8180	75			
	0.93	735	0.8	1500			8180				
	0.8	861	1.5	1800	<i>UMRV050/110</i>	<i>632-4</i>	10320	75			
	0.58	1113	1.1	2400			10320				
<b>0.25</b>	280	8	4.5	5	<i>UMRV040</i>	<i>711-4</i>	1149	61			
	186.7	11	3.6	7.5			1315				
	140	14	2.8	10			1447				
	93.3	21	1.9	15			1657				
	70	27	1.5	20			1824				
	56	32	1.2	25			1964				
	46.7	36	1.3	30			2087				
	35	44	0.9	40			2298				
	180	12	3.5	5			<i>UMRV040</i>		<i>712-6</i>	1331	61
	120	17	2.6	7.5						1524	
	90	22	2	10						1677	
	60	31	1.4	15						1920	
	45	40	1.1	20						2113	
36	48	0.9	25	2276							
30	53	0.9	30	2419							



$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)	
<b>0.25</b>	70	27	2.7	20	<i>UMRV050</i>	<i>711-4</i>	2503	62
	56	32	2.2	25			2696	
	46.7	37	2.3	30			2865	
	35	46	1.7	40			3153	
	28	54	1.4	50			3397	
	23.3	60	1.1	60			3610	
	17.5	72	0.9	80			3973	
	45	40	1.9	20	<i>UMRV050</i>	<i>712-6</i>	2900	62
	36	48	1.5	25			3124	
	30	54	1.7	30			3320	
	22.5	67	1.2	40			3654	
	18	78	1	50			3936	
	15	88	0.8	60			4183	
	19	88	1	73.5	<i>PC071+UMRV050</i>	<i>711-4</i>	3889	70
	15.9	98	1.1	88.2			4132	
	11.9	121	0.8	117.6			4548	
	28	56	2.4	50	<i>UMRV063</i>	<i>711-4</i>	4440	63
	23.3	63	2	60			4719	
	17.5	78	1.6	80			5193	
	14	87	1.4	100			5595	
	18	81	1.8	50	<i>UMRV063</i>	<i>712-6</i>	5145	63
	15	92	1.5	60			5467	
	11.3	110	1.2	80			6018	
	9	125	1	100			6270	
	19	91	1.8	73.5	<i>PC071+UMRV063</i>	<i>711-4</i>	5083	70
	15.9	100	2	88.2			5401	
	11.9	125	1.5	117.6			5945	
	9.5	143	1.2	147			6270	
	7.9	163	1	176.4			6270	
	6	192	0.7	235.2			6270	
	4.8	215	0.6	294			6270	
	12.4	135	1.6	73.5			<i>PC071+UMRV063</i>	
	10.2	148	1.8	88.2	6259			
	7.7	181	1.3	117.6	6270			
	6.1	211	1	147	6270			
	17.5	82	2.3	80	<i>UMRV075</i>	<i>711-4</i>	6130	64
	14	94	1.9	100			6603	
	11.3	117	1.7	80	<i>UMRV075</i>	<i>712-6</i>	7103	64
	9	133	1.4	100			7380	
	9.5	151	1.7	147	<i>PC071+UMRV075</i>	<i>711-4</i>	7380	70
	7.9	172	1.4	176.4			7380	
	6	201	1.1	235.2			7380	
	4.8	230	0.9	294			7380	
	12.4	139	2.4	73.5	<i>PC071+UMRV075</i>	<i>712-6</i>	6952	70
	10.2	155	2.5	88.2			7380	
	7.7	191	1.9	117.6			7380	
	6.1	219	1.5	147			7380	
	5.1	248	1.2	176.4			7380	
	3.5	336	1.1	400				
	2.8	384	0.8	500	<i>UMRV040/075</i>	<i>711-4</i>	7380	

$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)	
<b>0.25</b>	5.1	263	1.9	176.4	<i>PC071+UMRV090</i>	<i>712-6</i>	8180	71
	3.8	318	1.4	235.2			8180	
	3.1	358	1.1	294			8180	
	2.3	512	1.2	600	<i>UMRV040/090</i>	<i>711-4</i>	8180	75
	1.9	598	0.9	750			8180	
	1.6	667	0.8	900			8180	
	1.2	943	1.3	1200	<i>UMRV050/110</i>	<i>711-4</i>	10320	75
	0.93	1064	1.2	1500			10320	
	0.78	1195	1.1	1800			10320	
	0.6	1624	1	2400	<i>UMRV063/130</i>	<i>711-4</i>	13500	76
	0.47	1935	0.8	3000			13500	
	0.35	2046	0.6	4000			13500	
	0.28	2430	0.5	5000			13500	
	0.8	1199	1.8	1800	<i>UMRV063/150</i>	<i>711-4</i>	18000	76
	0.6	1446	1.8	2400			18000	
0.5	1713	1.4	3000	18000				
0.4	2026	0.9	4000	18000				
0.3	2251	0.7	5000	18000				
<b>0.37</b>	280	11	3	5	<i>UMRV040</i>	<i>712-4</i>	1149	61
	186.7	16	2.4	7.5			1315	
	140	21	1.9	10			1447	
	93.3	31	1.3	15			1657	
	70	39	1	20			1824	
	56	47	0.8	25			1964	
	46.7	53	0.8	30			2087	
	140	22	3.3	10			<i>UMRV050</i>	
	93.3	31	2.4	15	2274			
	70	40	1.8	20	2503			
	56	48	1.5	25	2696			
	46.7	55	1.5	30	2865			
	35	68	1.1	40	3153			
	28	80	0.9	50	<i>UMRV050</i>	<i>712-4</i>	3397	62
	23.3	89	0.8	60			3610	
	180	17	4.3	5	<i>UMRV050</i>	<i>801-6</i>	1827	62
	120	25	3.3	7.5			2091	
	90	33	2.5	10			2302	
	60	47	1.8	15			2635	
	45	60	1.3	20			2900	
	36	72	1	25			3124	
	30	80	1.1	30			3320	
	35	71	2.1	40	<i>UMRV063</i>	<i>712-4</i>	4122	63
	28	83	1.6	50			4440	
	23.3	94	1.4	60			4719	
	17.5	115	1.1	80			5193	
	14	129	0.9	100			5595	
	45	60	2.4	20	<i>UMRV063</i>	<i>801-6</i>	3791	63
	36	74	1.9	25			4084	
	30	82	2.1	30			4339	
22.5	102	1.6	40	4776				
18	120	1.2	50	5145				
15	137	1	60	5467				



$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)	
<b>0.37</b>	19	134	1.2	73.5	<i>PC071+UMRV063</i>	<i>712-4</i>	5083	70
	15.9	148	1.4	88.2			5401	
	11.9	185	1	117.6			5945	
	9.5	212	0.8	147			6270	
	23.3	98	2	60	<i>UMRV075</i>	<i>712-4</i>	5569	64
	17.5	121	1.6	80			6130	
	14	139	1.3	100			6603	
	18	126	1.8	50	<i>UMRV075</i>	<i>801-6</i>	6073	64
	15	144	1.5	60			6453	
	11.3	173	1.2	80			7103	
	9	196	1	100			7380	
	19	138	1.8	73.5	<i>PC071+UMRV075</i>	<i>712-4</i>	6000	70
	15.9	154	1.9	88.2			6375	
	11.9	191	1.5	117.6			7017	
	9.5	223	1.1	147			7380	
	7.9	254	0.9	176.4			7380	
	12	206	1.6	75	<i>PC080+UMRV075</i>	<i>801-6</i>	6952	71
	10	230	1.7	90			7380	
	7.5	283	1.3	120			7380	
	6	324	1	150			7380	
	4.7	405	1	300	<i>UMRV040/075</i>	<i>712-4</i>	7380	75
	3.5	498	0.7	400			7380	
	11.3	185	1.7	80	<i>UMRV090</i>	<i>801-6</i>	7859	65
	9	212	1.3	100			8180	
	7.9	268	1.5	176.4	<i>PC071+UMRV090</i>	<i>712-4</i>	8180	71
	6	321	1.1	235.2			8180	
	4.8	371	0.9	294			8180	
	6	347	1.6	150	<i>PC080+UMRV090</i>	<i>801-6</i>	8180	71
	5	389	1.3	180			8180	
	3.8	471	1	240			8180	
	4.7	402	1.5	300	<i>UMRV040/090</i>	<i>712-4</i>	8180	75
	3.5	523	1.2	400			8180	
	2.8	611	0.9	500			8180	
	2.3	757	0.8	600			8180	
	3.8	509	1.6	240	<i>PC080+UMRV110</i>	<i>801-6</i>	10320	72
	3	577	1.3	300			10320	
	1.9	950	1.3	750	<i>UMRV050/110</i>	<i>712-4</i>	10320	75
	1.6	1079	1.2	900			10320	
	1.2	1396	0.8	1200			10320	
	0.9	1674	1.1	1500	<i>UMRV063/130</i>	<i>712-4</i>	13500	76
	0.78	1887	0.9	1800			13500	
	0.8	1775	1.2	1800	<i>UMRV063/150</i>	<i>712-4</i>	18000	76
	0.6	2141	1.2	2400			18000	
	0.5	2535	0.9	3000			18000	



$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)	
<b>0.55</b>	280	17	3.7	5	<i>UMRV050</i>	<i>801-4</i>	1577	62
	186.7	25	2.9	7.5			1805	
	140	32	2.2	10			1987	
	93.3	46	1.6	15			2274	
	70	59	1.2	20			2503	
	56	71	1	25			2696	
	46.7	81	1	30			2865	
<hr/>								
	120	38	2.2	7.5	<i>UMRV050</i>	<i>802-6</i>	2091	62
	90	49	1.7	10			2302	
	60	69	1.2	15			2635	
	45	89	0.9	20			2900	
<hr/>								
	70	61	2.2	20	<i>UMRV063</i>	<i>801-4</i>	3272	63
	56	73	1.8	25			3524	
	46.7	83	1.9	30			3745	
	35	105	1.4	40			4122	
	28	124	1.1	50			4440	
	23.3	140	0.9	60			4719	
<hr/>								
	60	71	2.2	15	<i>UMRV063</i>	<i>802-6</i>	3444	63
	45	90	1.6	20			3791	
	36	109	1.3	25			4084	
	30	123	1.4	30			4339	
	22.5	152	1.1	40			4776	
<hr/>								
	35	108	2	40	<i>UMRV075</i>	<i>801-4</i>	4865	64
	28	129	1.6	50			5241	
	23.3	146	1.4	60			5569	
	17.5	180	1.1	80			6130	
	14	206	0.9	100			6603	
<hr/>								
	30	128	2	30	<i>UMRV075</i>	<i>802-6</i>	5122	64
	22.5	159	1.5	40			5637	
	18	187	1.2	50			6073	
	15	214	1	60			6453	
<hr/>								
	18.7	205	1.2	75	<i>PC080+UMRV075</i>	<i>801-4</i>	6000	71
	15.6	230	1.3	90			6375	
	11.7	284	1	120			7017	
	9.3	332	0.8	150			7380	
<hr/>								
	12	306	1.1	75	<i>PC080+UMRV075</i>	<i>802-6</i>	6952	71
	10	341	1.1	90			7380	
<hr/>								
	17.5	189	1.5	80	<i>UMRV090</i>	<i>801-4</i>	6783	65
	14	221	1.2	100			7306	
<hr/>								
	18	198	2	50	<i>UMRV090</i>	<i>802-6</i>	6719	65
	15	224	1.6	60			7140	
	11.3	275	1.1	80			7859	
	9	315	0.9	100			8180	
<hr/>								
	15.6	240	2.3	90	<i>PC080+UMRV090</i>	<i>801-4</i>	7054	71
	11.7	297	1.6	120			7764	
	9.3	355	1.3	150			8180	
	7.8	398	1	180			8180	
<hr/>								
	10	357	2	90	<i>PC080+UMRV090</i>	<i>802-6</i>	8174	71
	7.5	441	1.4	120			8180	
	6	516	1.1	150			8180	
	5	578	0.9	180			8180	



$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)	
<b>0.55</b>	17.5	201	2.6	80	<i>UMRV110</i>	<i>801-4</i>	8571	66
	14	236	2	100			9232	
	11.3	294	1.9	80	<i>UMRV110</i>	<i>802-6</i>	9931	66
	9	338	1.5	100			10320	
	7.8	425	1.8	180	<i>PC080+UMRV110</i>	<i>801-4</i>	10320	72
	5.8	513	1.3	240			10320	
	4.7	597	1	300			10320	
	7.5	462	2.6	120	<i>PC080+UMRV110</i>	<i>802-6</i>	10320	72
	6	552	2	150			10320	
	5	620	1.6	180			10320	
	3.8	756	1.1	240			10320	
	4.7	639	2	300	<i>UMRV050/110</i>	<i>801-4</i>	10320	75
	3.5	826	1.4	400			10320	
	2.8	984	1.1	500			10320	
	2.3	1181	1	600			10320	
	1.9	1411	0.9	750			10320	
	3.8	756	1.6	240	<i>PC080+UMRV130</i>	<i>802-6</i>	13500	72
	3	858	1.3	300			13500	
	2.8	996	1.6	500	<i>UMRV063/130</i>	<i>801-4</i>	13500	76
	1.9	1471	1.2	750			13500	
1.2	2132	0.8	1200			13500		
0.8	2638	0.8	1800	<i>UMRV063/150</i>	<i>801-4</i>	18000	76	
0.6	3182	0.8	2400			18000		
<b>0.75</b>	280	23	2.7	5	<i>UMRV050</i>	<i>802-4</i>	1577	62
	186.7	34	2.1	7.5			1805	
	140	44	1.6	10			1987	
	93.3	63	1.2	15			2274	
	70	81	0.9	20			2503	
	93.3	64	2.2	15	<i>UMRV063</i>	<i>802-4</i>	2973	63
	70	83	1.6	20			3272	
	56	100	1.3	25			3524	
	46.7	114	1.4	30			3745	
	35	143	1	40			4122	
	120	52	2.9	7.5	<i>UMRV063</i>	<i>90S-6</i>	2734	63
	90	68	2.3	10			3009	
	60	97	1.6	15			3444	
	45	123	1.2	20			3791	
	36	149	0.9	25			4084	
	30	167	1	30			4339	
	56	102	2	25	<i>UMRV075</i>	<i>802-4</i>	4160	64
	46.7	117	2	30			4421	
	35	147	1.5	40			4865	
	28	177	1.2	50			5241	
23.3	200	1	60			5569		
60	98	2.4	15	<i>UMRV075</i>	<i>90S-6</i>	4065	64	
45	126	1.9	20			4474		
36	153	1.4	25			4820		
30	174	1.5	30			5122		
22.5	216	1.1	40			5637		



<b>P<sub>1</sub></b> (kW)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	<b>M<sub>2</sub></b> (Nm)	<b>f.s.</b>	<b>i</b>	<b>減速機型號</b> <b>Type</b>		<b>Fr<sub>2</sub></b> (N)	
<b>0.75</b>	18.7	280	0.9	75	<i>PC080+UMRV075</i>	<i>802-4</i>	6000	71
	15.6	313	1	90			6375	
	28	184	1.8	50	<i>UMRV090</i>	<i>802-4</i>	5799	65
	23.3	212	1.5	60			6163	
	17.5	258	1.1	80			6783	
	14	302	0.9	100			7306	
	30	179	2.6	30	<i>UMRV090</i>	<i>90S-6</i>	5667	65
	22.5	226	1.8	40			6238	
	18	271	1.4	50			6719	
	15	306	1.1	60			7140	
	15.6	327	1.7	90	<i>PC080+UMRV090</i>	<i>802-4</i>	7054	71
	11.7	405	1.2	120			7764	
	9.3	483	0.9	150			8180	
	7.8	543	0.7	180			8180	
	17.5	274	1.9	80	<i>UMRV110</i>	<i>802-4</i>	8571	66
	14	322	1.5	100			9232	
	15	325	2.1	60	<i>UMRV110</i>	<i>90S-6</i>	9023	66
	11.3	401	1.4	80			9931	
	9	462	1.1	100			10320	
	11.7	430	2.2	120	<i>PC080+UMRV110</i>	<i>802-4</i>	9811	72
	9.3	506	1.7	150			10320	
	7.8	580	1.3	180			10320	
	5.8	700	0.9	240			10320	
	12.2	393	3.2	73.5	<i>PC090+UMRV110</i>	<i>90S-6</i>	9614	72
	9.2	508	2.3	98			10320	
	7.3	607	1.8	122.5			10320	
	6.1	682	1.5	147			10320	
	4.6	832	1	196			10320	
	4.7	871	1.5	300	<i>UMRV050/110</i>	<i>802-4</i>	10320	75
	3.5	1126	1.1	400			10320	
	11.3	407	2.1	80	<i>UMRV130</i>	<i>90S-6</i>	12989	67
	9	470	1.7	100			13500	
	5.8	712	1.4	240	<i>PC080+UMRV130</i>	<i>802-4</i>	13500	72
	4.7	813	1.1	300			13500	
	12.2	399	4.4	73.5	<i>PC090+UMRV130</i>	<i>90S-6</i>	12575	72
	9.2	508	3.2	98			13500	
	7.3	607	2.6	122.5			13500	
	6.1	682	2.1	147			13500	
	4.6	832	1.5	196			13500	
	3.7	944	1.2	245			13500	
	2.8	1358	1.1	500	<i>UMRV063/130</i>	<i>802-4</i>	13500	76
	2.3	1631	1	600			13500	
	1.9	2005	0.9	750			13500	
	1.6	2283	0.8	900			13500	
	2.8	1291	1.8	500	<i>UMRV063/150</i>	<i>802-4</i>	18000	76
	2.3	1529	1.7	600			18000	
	1.9	1783	1.3	750			18000	
	1.6	2215	0.9	900			18000	
	1.2	2680	1	1200			18000	







$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)	
<b>1.10</b>	120	76	2	7.5	<i>UMRV063</i>	<i>90L-6</i>	2734	63
	90	99	1.5	10			3009	
	60	142	1.1	15			3444	
	45	180	0.8	20			3791	
	186.7	50	2.6	7.5	<i>UMRV063</i>	<i>90S-4</i>	2359	63
	140	65	2	10			2597	
	93.3	93	1.5	15			2973	
	70	122	1.1	20			3272	
	56	146	0.9	25			3524	
	46.7	167	1	30			3745	
	90	100	2.3	10	<i>UMRV075</i>	<i>90L-6</i>	3551	64
	60	144	1.6	15			4065	
	45	184	1.3	20			4474	
	36	225	1	25			4820	
	30	256	1	30			5122	
	93.3	96	2.1	15	<i>UMRV075</i>	<i>90S-4</i>	3509	64
	70	123	1.7	20			3862	
	56	150	1.3	25			4160	
	46.7	171	1.3	30			4421	
	35	216	1	40			4865	
	36	231	1.6	25	<i>UMRV090</i>	<i>90L-6</i>	5333	65
	30	263	1.8	30			5667	
	22.5	331	1.2	40			6238	
	18	397	1	50			6719	
	15	448	0.8	60			7140	
	35	225	1.6	40	<i>UMRV090</i>	<i>90S-4</i>	5383	65
	28	270	1.3	50			5799	
	23.3	311	1	60			6163	
	22.5	345	2.3	40	<i>UMRV110</i>	<i>90L-6</i>	7882	66
	18	414	1.8	50			8491	
	15	476	1.4	60			9023	
	11.3	588	1	80			9931	
	28	281	2.3	50	<i>UMRV110</i>	<i>90S-4</i>	7328	66
	23.3	324	1.9	60			7787	
	17.5	402	1.3	80			8571	
	14	473	1	100			9232	
	12.2	576	2.2	73.5	<i>PC090+UMRV110</i>	<i>90L-6</i>	9614	72
	9.2	746	1.6	98			10320	
	7.3	890	1.2	122.5			10320	
	6.1	1000	1	147			10320	
	19	392	2.5	73.5	<i>PC090+UMRV110</i>	<i>90S-4</i>	8298	72
	14.3	508	1.8	98			9133	
	11.4	599	1.5	122.5			9838	
	9.5	686	1.1	147			10320	
	7.1	828	0.8	196			10320	
	11.3	598	1.4	80	<i>UMRV130</i>	<i>90L-6</i>	12989	67
	9	689	1.1	100			13500	
	17.5	408	2.1	80	<i>UMRV130</i>	<i>90S-4</i>	11210	67
	14	480	1.5	100			12076	

<b>P<sub>1</sub></b> (kW)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	<b>M<sub>2</sub></b> (Nm)	<b>f.s.</b>	<b>i</b>	減速機型號 <b>Type</b>		<b>Fr<sub>2</sub></b> (N)	
<b>1.10</b>	12.2	585	3	73.5	<i>PC090+UMRV130</i>	<i>90L-6</i>	12575	72
	9.2	746	2.2	98			13500	
	7.3	890	1.7	122.5			13500	
	6.1	1000	1.4	147			13500	
	4.6	1220	1	196			13500	
	19	398	3.5	73.5	<i>PC090+UMRV130</i>	<i>90S-4</i>	10853	72
	14.3	508	2.6	98			11945	
	11.4	608	2	122.5			12868	
	9.5	686	1.6	147			13500	
	7.1	843	1.2	196			13500	
	5.7	962	0.9	245	13500			
	4.7	1312	1.3	300	<i>UMRV063/130</i>	<i>90S-4</i>	13500	76
	3.5	1671	1	400			13500	
	2.8	1991	0.8	500			13500	
	9.3	753	3.1	150	<i>UMRV063/150</i>	<i>90S-4</i>	18000	76
	7	966	2.4	200			18000	
	5.6	1175	1.7	250			18000	
	4.7	1364	1.7	300			18000	
	3.5	1619	1.6	400			18000	
	2.8	1893	1.2	500			18000	
2.3	2242	1.2	600	18000				
1.9	2616	0.9	750	18000				
<b>1.50</b>	186.7	68	1.9	7.5			<i>UMRV063</i>	
	140	89	1.5	10	2597			
	93.3	127	1.1	15	2973			
	70	166	0.8	20	3272			
	120	105	2	7.5	<i>UMRV075</i>	<i>100L-6</i>	3227	64
	90	137	1.7	10			3551	
	60	196	1.2	15			4065	
	140	90	2.2	10	<i>UMRV075</i>	<i>90L-4</i>	3065	64
	93.3	130	1.5	15			3509	
	70	168	1.3	20			3862	
	56	205	1	25			4160	
	46.7	233	1	30			4421	
	90	138	2.7	10	<i>UMRV090</i>	<i>100L-6</i>	3929	65
	60	201	2.1	15			4498	
	45	258	1.5	20			4951	
	36	314	1.2	25			5333	
	30	358	1.3	30			5667	
	70	172	2.1	20	<i>UMRV090</i>	<i>90L-4</i>	4273	65
	56	210	1.6	25			4603	
	46.7	239	1.7	30			4891	
	35	307	1.2	40			5383	
	28	368	0.9	50			5799	
	23.3	424	0.8	60			6163	
	45	264	2.7	20			<i>UMRV110</i>	
	36	322	2.4	25	6739			
	30	363	2.3	30	7161			
	22.5	471	1.7	40	7882			
	18	565	1.3	50	8491			
15	649	1.1	60	9023				


$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)	
<b>1.50</b>	35	319	2.2	40	<i>UMRV110</i>	<i>90L-4</i>	6803	66
	28	384	1.7	50			7328	
	23.3	442	1.4	60			7787	
	17.5	548	0.9	80			8571	
	19	535	1.9	73.5	<i>PC090+UMRV110</i>	<i>90L-4</i>	8298	72
	14.3	693	1.3	98			9133	
	11.4	817	1.1	122.5			9838	
	9.5	936	0.8	147			10320	
	22.5	478	2.3	40	<i>UMRV130</i>	<i>100L-6</i>	10309	67
	18	573	1.8	50			11105	
	15	659	1.4	60			11801	
	11.3	815	1.1	80			12989	
	17.5	557	1.5	80	<i>UMRV130</i>	<i>90L-4</i>	11210	67
	14	655	1.1	100			12076	
	19	542	2.6	73.5	<i>PC090+UMRV130</i>	<i>90L-4</i>	10853	72
	14.3	693	1.9	98			11945	
11.4	830	1.5	122.5	12868				
9.5	936	1.1	147	13500				
7.1	1149	0.8	196	13500				
4.7	1789	1	300	<i>UMRV063/130</i>	<i>90L-4</i>	13500	76	
3.5	2279	0.7	400			13500		
9.3	1026	2.3	150	<i>UMRV063/150</i>	<i>90L-4</i>	18000	76	
7	1317	1.8	200			18000		
5.6	1602	1.3	250			18000		
4.7	1860	1.3	300			18000		
3.5	2208	1.2	400			18000		
2.8	2582	0.9	500			18000		
2.3	3057	0.9	600			18000		
<b>2.20</b>	186.7	100	1.8			7.5		<i>UMRV075</i>
	140	132	1.5	10	3065			
	93.3	191	1	15	3509			
	186.7	101	2.9	7.5	<i>UMRV090</i>	<i>100L1-4</i>	3081	65
	140	134	2.3	10			3391	
	93.3	194	1.9	15			3882	
	70	252	1.4	20			4273	
	56	308	1.1	25			4603	
	46.7	351	1.2	30			4891	
	120	156	2.2	7.5	<i>UMRV090</i>	<i>112M-6</i>	3570	65
	90	203	1.8	10			3929	
	60	294	1.4	15			4498	
	45	378	1	20			4951	
	70	255	2.5	20	<i>UMRV110</i>	<i>100L1-4</i>	5399	66
	56	315	2.2	25			5816	
	46.7	356	2	30			6181	
35	468	1.5	40	6803				
28	563	1.2	50	7328				
23.3	648	1	60	7787				
90	205	3.5	10	<i>UMRV110</i>	<i>112M-6</i>	4965	66	
60	298	2.6	15			5684		
45	388	1.9	20			6256		
36	473	1.6	25			6739		
30	532	1.6	30			7161		

$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)	
<b>2.20</b>	35	468	2.2	40	<i>UMRV130</i>	<i>100L1-4</i>	8897	67
	28	563	1.7	50			9584	
	23.3	648	1.4	60			10185	
	17.5	816	1	80			11210	
	36	479	2.2	25	<i>UMRV130</i>	<i>112M-6</i>	8814	67
	30	546	2.1	30			9366	
	22.5	700	1.6	40			10309	
	18	840	1.2	50			11105	
	15	966	1	60			11801	
	28	570	2.5	50	<i>UMRV150</i>	<i>100L1-4</i>	13103	68
	23.3	657	1.9	60			13924	
	17.5	816	1.4	80			15325	
14	960	1	100	16508				
<b>3.00</b>	186.7	137	1.4	7.5	<i>UMRV075</i>	<i>100L2-4</i>	2785	64
	140	180	1.1	10			3065	
	93.3	261	0.8	15			3509	
	186.7	138	2.1	7.5	<i>UMRV090</i>	<i>100L2-4</i>	3081	65
	140	182	1.7	10			3391	
	93.3	264	1.4	15			3882	
	70	344	1	20			4273	
	56	420	0.8	25			4603	
	46.7	479	0.9	30			4891	
	93.3	264	2.5	15	<i>UMRV110</i>	<i>100L2-4</i>	4905	66
	70	348	1.9	20			5399	
	56	430	1.6	25			5816	
	46.7	485	1.5	30			6181	
	35	638	1.1	40			6803	
	28	767	0.9	50			7328	
	120	212	3.1	7.5			<i>UMRV110</i>	
	90	280	2.5	10	4965			
	60	406	1.9	15	5684			
	45	528	1.4	20	6256			
	56	430	2.2	25	<i>UMRV130</i>	<i>100L2-4</i>	7607	67
	46.7	491	2.1	30			8084	
	35	638	1.6	40			8897	
	28	767	1.3	50			9584	
	23.3	884	1	60			10185	
	17.5	1113	0.8	80			11210	
	90	280	3.4	10	<i>UMRV130</i>	<i>132S-6</i>	6494	67
	60	406	2.6	15			7434	
	45	535	1.9	20			8182	
	36	653	1.6	25	<i>UMRV130</i>	<i>132S-6</i>	8814	67
	30	745	1.6	30			9366	
	22.5	955	1.2	40			10309	
	28	778	1.8	50	<i>UMRV150</i>	<i>100L2-4</i>	13103	68
	23.3	896	1.4	60			13924	
	17.5	1113	1	80			15325	
	14	1310	0.8	100			16508	


$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	f.s.	i	減速機型號 Type		$Fr_2$ (N)	
<b>4.00</b>	186.7	184	1.6	7.5	<i>UMRV090</i>	<i>112M-4</i>	3081	65
	140	243	1.3	10			3391	
	93.3	352	1	15			3882	
	70	458	0.8	20			4273	
	140	243	2.5	10	<i>UMRV110</i>	<i>112M-4</i>	4285	66
	93.3	352	1.9	15			4905	
	70	464	1.4	20			5399	
	56	573	1.2	25			5816	
	46.7	647	1.1	30	6181			
	120	283	2.3	7.5	<i>UMRV110</i>	<i>132M1-6</i>	4511	66
	90	374	1.9	10			4965	
	60	541	1.4	15			5684	
	56	573	1.6	25	<i>UMRV130</i>	<i>112M-4</i>	7607	67
	46.7	655	1.6	30			8084	
	35	851	1.2	40			8897	
	28	1023	1	50			9584	
23.3	1179	0.8	60	10185				
120	287	3.1	7.5	<i>UMRV130</i>	<i>132M1-6</i>	5901	67	
90	374	2.6	10			6494		
60	541	2	15			7434		
45	713	1.5	20			8182		
36	870	1.2	25			8814		
28	1037	1.4	50	<i>UMRV150</i>	<i>112M-4</i>	13103	68	
23.3	1195	1.1	60			13924		
17.5	1484	0.8	80			15325		
<b>5.50</b>	186.7	253	2.2	7.5	<i>UMRV110</i>	<i>132S-4</i>	3893	66
	140	334	1.8	10			4285	
	93.3	484	1.4	15			4905	
	70	638	1	20			5399	
	140	334	2.5	10	<i>UMRV130</i>	<i>132S-4</i>	5605	67
	93.3	490	1.9	15			6416	
	70	645	1.4	20			7062	
	56	788	1.2	25			7607	
	46.7	900	1.2	30			8084	
	35	1171	0.9	40	8897			
	70	645	2	20	<i>UMRV150</i>	<i>132S-4</i>	9654	68
	56	788	1.5	25			10400	
	46.7	934	1.3	30			11051	
	35	1171	1.3	40			12163	
	28	1426	1	50			13103	
	23.3	1643	0.8	60			13924	
<b>7.50</b>	186.7	345	1.6	7.5	<i>UMRV110</i>	<i>132M-4</i>	3893	66
	140	455	1.3	10			4285	
	93.3	660	1	15			4905	
	186.7	349	2.1	7.5	<i>UMRV130</i>	<i>132M-4</i>	5092	67
	140	455	1.8	10			5605	
	93.3	668	1.4	15			6416	
70	880	1	20	7062				
56	1074	0.9	25	7607				
46.7	1228	0.8	30	8084				
35	1596	0.7	40	8897				

<b>P<sub>1</sub></b> (kW)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	<b>M<sub>2</sub></b> (Nm)	<b>f.s.</b>	<b>i</b>	減速機型號 <b>Type</b>		<b>Fr<sub>2</sub></b> (N)	
<b>7.50</b>	70	880	1.5	20	<b>UMRV150</b>	<b>132M-4</b>	9654	68
	56	1074	1.1	25			10400	
	46.7	1274	0.9	30			11051	
	35	1596	1	40			12163	
<b>11.00</b>	186.7	512	2.3	7.5	<b>UMRV150</b>	<b>160M-4</b>	6962	68
	140	675	1.8	10			7663	
	93.3	990	1.3	15			8771	
	70	1291	1	20			9654	
	56	1576	0.8	25			10400	
<b>15.00</b>	186.7	698	1.7	7.5	<b>UMRV150</b>	<b>160L-4</b>	6962	68
	140	921	1.3	10			7663	
	93.3	1351	0.9	15			8771	
	70	1760	0.7	20			9654	

**$n_1=1400$**


<b>M<sub>2</sub></b> (Nm)	<b>i</b>	<b>P<sub>1</sub></b> (kw)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	減速機型號 <b>Type</b>	<b>Fr<sub>2</sub></b> (N)	<b>Fr<sub>1</sub></b> (N)		
<b>18</b>	5	0.61	280.0	<b>URV030</b>	597	150	78	
<b>18</b>	7.5	0.41	186.7		683	150		
<b>18</b>	10	0.32	140.0		752	169		
<b>18</b>	15	0.23	93.3		861	169		
<b>18</b>	20	0.18	70.0		948	190		
<b>21</b>	25	0.18	56.0		1021	210		
<b>20</b>	30	0.15	46.7		1085	210		
<b>18</b>	40	0.11	35.0		1194	210		
<b>17</b>	50	0.09	28.0		1286	210		
<b>16</b>	60	0.08	23.3		1367	210		
<b>13</b>	80	0.05	17.5	1504	210			
<b>34</b>	5	1.1	280.0	<b>URV040</b>	1149	250	78	
<b>40</b>	7.5	0.90	186.7		1315	294		
<b>40</b>	10	0.69	140.0		1447	331		
<b>40</b>	15	0.48	93.3		1657	331		
<b>39</b>	20	0.37	70.0		1824	350		
<b>38</b>	25	0.30	56.0		1964	350		
<b>45</b>	30	0.31	46.7		2087	350		
<b>41</b>	40	0.23	35.0		2298	350		
<b>39</b>	50	0.18	28.0		2475	350		
<b>36</b>	60	0.15	23.3		2630	350		
<b>33</b>	80	0.12	17.5		2895	350		
<b>29</b>	100	0.09	14.0	3118	350			
<b>62</b>	5	2.0	280.0	<b>URV050</b>	1577	350	78	
<b>71</b>	7.5	1.6	186.7		1805	401		
<b>72</b>	10	1.2	140.0		1987	490		
<b>74</b>	15	0.88	93.3		2274	490		
<b>73</b>	20	0.68	70.0		2503	490		
<b>70</b>	25	0.54	56.0		2696	490		
<b>84</b>	30	0.57	46.7		2865	490		
<b>76</b>	40	0.42	35.0		3153	490		
<b>73</b>	50	0.34	28.0		3397	490		
<b>68</b>	60	0.28	23.3		3610	490		
<b>65</b>	80	0.22	17.5		3973	490		
<b>55</b>	100	0.16	14.0		4280	490		
<b>128</b>	7.5	2.8	186.7	<b>URV063</b>	2359	500	78	
<b>130</b>	10	2.2	140.0		2597	571		
<b>140</b>	15	1.6	93.3		2973	615		
<b>135</b>	20	1.2	70.0		3272	667		
<b>130</b>	25	1.0	56.0		3524	700		
<b>160</b>	30	1.1	46.7		3745	700		
<b>145</b>	40	0.76	35.0		4122	700		
<b>135</b>	50	0.60	28.0		4440	700		
<b>130</b>	60	0.51	23.3		4719	700		
<b>122</b>	80	0.39	17.5		5193	700		
<b>118</b>	100	0.34	14.0		5595	700		
<b>185</b>	7.5	4.1	186.7	<b>URV075</b>	2785	700	78	
<b>195</b>	10	3.2	140.0		3065	830		
<b>200</b>	15	2.3	93.3		3509	851		
<b>210</b>	20	1.9	70.0		3862	980		
<b>200</b>	25	1.5	56.0		4160	980		
<b>230</b>	30	1.5	46.7		4421	980		
<b>220</b>	40	1.1	35.0		4865	980		
<b>210</b>	50	0.89	28.0		5241	980		
<b>200</b>	60	0.75	23.3		5569	980		
<b>190</b>	80	0.58	17.5		6130	980		
<b>180</b>	100	0.48	14.0		6603	980		

**$n_1=1400$**


<b>M<sub>2</sub></b> (Nm)	<b>i</b>	<b>P<sub>1</sub></b> (kw)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	<b>減速機型號</b> <b>Type</b>	<b>Fr<sub>2</sub></b> (N)	<b>Fr<sub>1</sub></b> (N)	
<b>290</b>	7.5	6.3	186.7	<b>URV090</b>	3081	900	78
<b>310</b>	10	5.1	140.0		3391	1082	
<b>360</b>	15	4.1	93.3		3882	1257	
<b>355</b>	20	3.1	70.0		4273	1270	
<b>340</b>	25	2.4	56.0		4603	1270	
<b>410</b>	30	2.6	46.7		4891	1270	
<b>360</b>	40	1.8	35.0		5383	1270	
<b>340</b>	50	1.4	28.0		5799	1270	
<b>320</b>	60	1.1	23.3		6163	1270	
<b>285</b>	80	0.83	17.5		6783	1270	
<b>270</b>	100	0.67	14.0		7306	1270	
<b>552</b>	7.5	12.0	186.7	<b>URV110</b>	3893	1200	78
<b>598</b>	10	9.8	140.0		4285	1463	
<b>656</b>	15	7.5	93.3		4905	1604	
<b>644</b>	20	5.6	70.0		5399	1700	
<b>679</b>	25	4.7	56.0		5816	1700	
<b>725</b>	30	4.5	46.7		6181	1700	
<b>702</b>	40	3.3	35.0		6803	1700	
<b>660</b>	50	2.6	28.0		7328	1700	
<b>616</b>	60	2.1	23.3		7787	1700	
<b>515</b>	80	1.4	17.5		8571	1700	
<b>483</b>	100	1.1	14.0		9232	1700	
<b>750</b>	7.5	16.1	186.7	<b>URV130</b>	5092	1500	78
<b>820</b>	10	13.5	140.0		5605	1845	
<b>920</b>	15	10.3	93.3		6416	2070	
<b>910</b>	20	7.8	70.0		7062	2100	
<b>930</b>	25	6.5	56.0		7607	2100	
<b>1040</b>	30	6.4	46.7		8084	2100	
<b>1050</b>	40	4.9	35.0		8897	2100	
<b>980</b>	50	3.8	28.0		9584	2100	
<b>900</b>	60	3.1	23.3		10185	2100	
<b>840</b>	80	2.3	17.5		11210	2100	
<b>740</b>	100	1.7	14.0		12076	2100	
<b>1200</b>	7.5	25.8	186.7	<b>URV150</b>	6962	1950	78
<b>1240</b>	10	20.2	140.0		7663	2267	
<b>1250</b>	15	13.9	93.3		8771	2285	
<b>1300</b>	20	11.1	70.0		9654	2674	
<b>1200</b>	25	8.4	56.0		10400	2800	
<b>1200</b>	30	7.1	46.7		11051	2800	
<b>1550</b>	40	7.3	35.0		12163	2800	
<b>1400</b>	50	5.4	28.0		13103	2800	
<b>1260</b>	60	4.2	23.3		13924	2800	
<b>1150</b>	80	3.1	17.5		15325	2800	
<b>1000</b>	100	2.3	14.0		16508	2800	




**n<sub>1</sub>=900**

<b>M<sub>2</sub></b> (Nm)	<b>i</b>	<b>P<sub>1</sub></b> (kw)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	<b>減速機型號</b> <b>Type</b>	<b>Fr<sub>2</sub></b> (N)	<b>Fr<sub>1</sub></b> (N)		
<b>20</b>	5	0.44	180.0	<b>URV030</b>	692	175	78	
<b>20</b>	7.5	0.30	120.0		792	175		
<b>20</b>	10	0.24	90.0		871	197		
<b>20</b>	15	0.17	60.0		997	197		
<b>20</b>	20	0.13	45.0		1098	210		
<b>23</b>	25	0.14	36.0		1183	210		
<b>21</b>	30	0.11	30.0		1257	210		
<b>20</b>	40	0.09	22.5		1383	210		
<b>18</b>	50	0.07	18.0		1490	210		
<b>17</b>	60	0.06	15.0		1583	210		
<b>15</b>	80	0.04	11.3	1743	210			
<b>40</b>	5	0.87	180.0	<b>URV040</b>	1331	290	78	
<b>44</b>	7.5	0.65	120.0		1524	319		
<b>44</b>	10	0.50	90.0		1677	350		
<b>45</b>	15	0.36	60.0		1920	350		
<b>44</b>	20	0.28	45.0		2113	350		
<b>43</b>	25	0.23	36.0		2276	350		
<b>49</b>	30	0.23	30.0		2419	350		
<b>45</b>	40	0.17	22.5		2662	350		
<b>42</b>	50	0.14	18.0		2868	350		
<b>39</b>	60	0.11	15.0		3047	350		
<b>35</b>	80	0.09	11.3		3354	350		
<b>32</b>	100	0.07	9.0		3490	350		
<b>75</b>	5	1.6	180.0	<b>URV050</b>	1827	400	78	
<b>84</b>	7.5	1.2	120.0		2091	448		
<b>84</b>	10	0.94	90.0		2302	490		
<b>84</b>	15	0.67	60.0		2635	490		
<b>77</b>	20	0.48	45.0		2900	490		
<b>75</b>	25	0.39	36.0		3124	490		
<b>90</b>	30	0.42	30.0		3320	490		
<b>82</b>	40	0.31	22.5		3654	490		
<b>77</b>	50	0.25	18.0		3936	490		
<b>72</b>	60	0.21	15.0		4183	490		
<b>68</b>	80	0.16	11.3		4604	490		
<b>56</b>	100	0.12	9.0		4840	490		
<b>151</b>	7.5	2.2	120.0	<b>URV063</b>	2734	580	78	
<b>153</b>	10	1.7	90.0		3009	661		
<b>155</b>	15	1.2	60.0		3444	670		
<b>148</b>	20	0.91	45.0		3791	700		
<b>137</b>	25	0.69	36.0		4084	700		
<b>175</b>	30	0.79	30.0		4339	700		
<b>160</b>	40	0.58	22.5		4776	700		
<b>145</b>	50	0.45	18.0		5145	700		
<b>138</b>	60	0.37	15.0		5467	700		
<b>128</b>	80	0.29	11.3		6018	700		
<b>124</b>	100	0.25	9.0		6270	700		
<b>215</b>	7.5	3.1	120.0		<b>URV075</b>	3227		810
<b>230</b>	10	2.5	90.0	3551		975		
<b>235</b>	15	1.8	60.0	4065		980		
<b>235</b>	20	1.4	45.0	4474		980		
<b>215</b>	25	1.1	36.0	4820		980		
<b>260</b>	30	1.1	30.0	5122		980		
<b>240</b>	40	0.83	22.5	5637		980		
<b>220</b>	50	0.65	18.0	6073		980		
<b>210</b>	60	0.54	15.0	6453		980		
<b>200</b>	80	0.43	11.3	7103		980		
<b>190</b>	100	0.36	9.0	7380		980		


**n<sub>1</sub>=900**

<b>M<sub>2</sub></b> (Nm)	<b>i</b>	<b>P<sub>1</sub></b> (kw)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	<b>減速機型號</b> <b>Type</b>	<b>Fr<sub>2</sub></b> (N)	<b>Fr<sub>1</sub></b> (N)	
<b>340</b>	7.5	4.8	120.0	<b>URV090</b>	3570	1040	78
<b>370</b>	10	4.0	90.0		3929	1270	
<b>420</b>	15	3.1	60.0		4498	1270	
<b>390</b>	20	2.3	45.0		4951	1270	
<b>370</b>	25	1.8	36.0		5333	1270	
<b>460</b>	30	1.9	30.0		5667	1270	
<b>410</b>	40	1.4	22.5		6238	1270	
<b>390</b>	50	1.1	18.0		6719	1270	
<b>350</b>	60	0.86	15.0		7140	1270	
<b>315</b>	80	0.63	11.3		7859	1270	
<b>280</b>	100	0.49	9.0		8180	1270	
<b>650</b>	7.5	9.2	120.0		<b>URV110</b>	4511	
<b>713</b>	10	7.6	90.0	4965		1700	
<b>759</b>	15	5.6	60.0	5684		1700	
<b>725</b>	20	4.1	45.0	6256		1700	
<b>759</b>	25	3.5	36.0	6739		1700	
<b>840</b>	30	3.5	30.0	7161		1700	
<b>794</b>	40	2.5	22.5	7882		1700	
<b>748</b>	50	2.0	18.0	8491		1700	
<b>682</b>	60	1.6	15.0	9023		1700	
<b>567</b>	80	1.1	11.3	9931		1700	
<b>515</b>	100	0.84	9.0	10320		1700	
<b>880</b>	7.5	12.3	120.0	<b>URV130</b>		5901	1740
<b>960</b>	10	10.3	90.0		6494	2100	
<b>1060</b>	15	7.8	60.0		7434	2100	
<b>1040</b>	20	5.8	45.0		8182	2100	
<b>1050</b>	25	4.8	36.0		8814	2100	
<b>1170</b>	30	4.7	30.0		9366	2100	
<b>1100</b>	40	3.5	22.5		10309	2100	
<b>1050</b>	50	2.7	18.0		11105	2100	
<b>940</b>	60	2.1	15.0		11801	2100	
<b>860</b>	80	1.6	11.3		12989	2100	
<b>780</b>	100	1.2	9.0		13500	2100	
<b>1400</b>	7.5	19.5	120.0		<b>URV150</b>	8067	2270
<b>1480</b>	10	15.7	90.0	8878		2700	
<b>1450</b>	15	10.5	60.0	10163		2645	
<b>1500</b>	20	8.4	45.0	11186		2800	
<b>1380</b>	25	6.3	36.0	12050		2800	
<b>1400</b>	30	5.4	30.0	12805		2800	
<b>1800</b>	40	5.7	22.5	14094		2800	
<b>1600</b>	50	4.1	18.0	15182		2800	
<b>1440</b>	60	3.2	15.0	16133		2800	
<b>1300</b>	80	2.4	11.3	17757		2800	
<b>1150</b>	100	1.8	9.0	18000		2800	


**n<sub>1</sub>=500**

<b>M<sub>2</sub></b> (Nm)	<b>i</b>	<b>P<sub>1</sub></b> (kw)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	<b>減速機型號</b> <b>Type</b>	<b>Fr<sub>2</sub></b> (N)	<b>Fr<sub>1</sub></b> (N)			
<b>24</b>	5	0.30	100.0	<b>URV030</b>	841	210	78		
<b>24</b>	7.5	0.21	66.7						
<b>24</b>	10	0.16	50.0						
<b>24</b>	15	0.12	33.3						
<b>23</b>	20	0.09	25.0						
<b>29</b>	25	0.10	20.0						
<b>26</b>	30	0.08	16.7						
<b>23</b>	40	0.06	12.5						
<b>21</b>	50	0.05	10.0						
<b>19</b>	60	0.04	8.3						
<b>17</b>	80	0.03	6.3						
<b>49</b>	5	0.60	100.0	<b>URV040</b>	1619	350	78		
<b>54</b>	7.5	0.45	66.7						
<b>54</b>	10	0.35	50.0						
<b>55</b>	15	0.26	33.3						
<b>52</b>	20	0.19	25.0						
<b>49</b>	25	0.15	20.0						
<b>58</b>	30	0.16	16.7						
<b>53</b>	40	0.12	12.5						
<b>49</b>	50	0.10	10.0						
<b>46</b>	60	0.08	8.3						
<b>40</b>	80	0.06	6.3						
<b>36</b>	100	0.05	5.0						
<b>92</b>	5	1.1	100.0	<b>URV050</b>	2222	490	78		
<b>103</b>	7.5	0.86	66.7						
<b>103</b>	10	0.67	50.0						
<b>103</b>	15	0.47	33.3						
<b>93</b>	20	0.33	25.0						
<b>91</b>	25	0.28	20.0						
<b>108</b>	30	0.29	16.7						
<b>98</b>	40	0.22	12.5						
<b>91</b>	50	0.17	10.0						
<b>83</b>	60	0.14	8.3						
<b>75</b>	80	0.11	6.3						
<b>65</b>	100	0.09	5.0						
<b>184</b>	7.5	1.5	66.7		<b>URV063</b>	3325		700	78
<b>185</b>	10	1.2	50.0						
<b>187</b>	15	0.85	33.3						
<b>178</b>	20	0.63	25.0						
<b>164</b>	25	0.48	20.0						
<b>200</b>	30	0.54	16.7						
<b>185</b>	40	0.40	12.5						
<b>173</b>	50	0.32	10.0						
<b>160</b>	60	0.26	8.3						
<b>137</b>	80	0.19	6.3						
<b>128</b>	100	0.16	5.0						
<b>260</b>	7.5	2.1	66.7	<b>URV075</b>		3925	980	78	
<b>270</b>	10	1.7	50.0						
<b>280</b>	15	1.2	33.3						
<b>285</b>	20	0.98	25.0						
<b>255</b>	25	0.73	20.0						
<b>300</b>	30	0.77	16.7						
<b>280</b>	40	0.58	12.5						
<b>250</b>	50	0.44	10.0						
<b>240</b>	60	0.37	8.3						
<b>215</b>	80	0.29	6.3						
<b>210</b>	100	0.24	5.0						


**n<sub>1</sub>=500**

<b>M<sub>2</sub></b> (Nm)	<b>i</b>	<b>P<sub>1</sub></b> (kw)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	<b>減速機型號</b> <b>Type</b>	<b>Fr<sub>2</sub></b> (N)	<b>Fr<sub>1</sub></b> (N)	
<b>410</b>	7.5	3.3	66.7	<b>URV090</b>	4343	1270	78
<b>435</b>	10	2.7	50.0		4780	1270	
<b>490</b>	15	2.1	33.3		5472	1270	
<b>470</b>	20	1.6	25.0		6022	1270	
<b>440</b>	25	1.2	20.0		6487	1270	
<b>550</b>	30	1.4	16.7		6894	1270	
<b>480</b>	40	0.95	12.5		7588	1270	
<b>450</b>	50	0.75	10.0		8174	1270	
<b>400</b>	60	0.59	8.3		8180	1270	
<b>365</b>	80	0.45	6.3		8180	1270	
<b>330</b>	100	0.35	5.0		8180	1270	
<b>794</b>	7.5	6.4	66.7		<b>URV110</b>	5488	
<b>851</b>	10	5.2	50.0	6040		1700	
<b>909</b>	15	3.9	33.3	6914		1700	
<b>863</b>	20	2.8	25.0	7610		1700	
<b>909</b>	25	2.4	20.0	8198		1700	
<b>1000</b>	30	2.4	16.7	8711		1700	
<b>932</b>	40	1.7	12.5	9588		1700	
<b>880</b>	50	1.4	10.0	10320		1700	
<b>781</b>	60	1.1	8.3	10320		1700	
<b>662</b>	80	0.76	6.3	10320		1700	
<b>599</b>	100	0.59	5.0	10320		1700	
<b>1080</b>	7.5	8.6	66.7	<b>URV130</b>		7178	2100
<b>1160</b>	10	7.1	50.0		7900	2100	
<b>1300</b>	15	5.5	33.3		9043	2100	
<b>1230</b>	20	4.0	25.0		9953	2100	
<b>1200</b>	25	3.2	20.0		10722	2100	
<b>1400</b>	30	3.3	16.7		11394	2100	
<b>1300</b>	40	2.4	12.5		12540	2100	
<b>1220</b>	50	1.9	10.0		13500	2100	
<b>1070</b>	60	1.5	8.3		13500	2100	
<b>970</b>	80	1.1	6.3		13500	2100	
<b>860</b>	100	0.85	5.0		13500	2100	
<b>1700</b>	7.5	13.5	66.7		<b>URV150</b>	9812	2800
<b>1780</b>	10	10.7	50.0	10800		2800	
<b>1730</b>	15	7.2	33.3	12363		2800	
<b>1820</b>	20	5.9	25.0	13607		2800	
<b>1630</b>	25	4.3	20.0	14658		2800	
<b>1670</b>	30	3.8	16.7	15576		2800	
<b>2120</b>	40	3.9	12.5	17144		2800	
<b>1870</b>	50	2.9	10.0	18000		2800	
<b>1680</b>	60	2.3	8.3	18000		2800	
<b>1530</b>	80	1.7	6.3	18000		2800	
<b>1350</b>	100	1.3	5.0	18000		2800	

**n<sub>1</sub>=1400**



M <sub>2</sub> (Nm)	i	P <sub>1</sub> (kw)	n <sub>2</sub> (min <sup>-1</sup> )	減速機型號 Type	Fr <sub>2</sub> (N)	Fr <sub>1</sub> (N)	
<b>73</b>	300	0.08	4.7	<b>URV030/040</b>	3490	210	78
<b>65</b>	400	0.06	3.5		3490	210	
<b>61</b>	500	0.04	2.8		3490	210	
<b>73</b>	600	0.04	2.3		3490	210	
<b>73</b>	750	0.04	1.9		3490	210	
<b>73</b>	900	0.03	1.6		3490	210	
<b>65</b>	1200	0.02	1.2		3490	210	
<b>73</b>	1500	0.02	0.9		3490	210	
<b>73</b>	1800	0.02	0.8		3490	210	
<b>65</b>	2400	0.01	0.58		3490	210	
<b>65</b>	3200	0.01	0.4		3490	210	
<b>33</b>	4000	0.01	0.4		3490	210	
<b>29</b>	5000	0.01	0.28	3490	210		
<b>145</b>	300	0.15	4.7	<b>URV030/050</b>	4840	210	78
<b>124</b>	400	0.10	3.5		4840	210	
<b>120</b>	500	0.09	2.8		4840	210	
<b>145</b>	600	0.08	2.3		4840	210	
<b>145</b>	750	0.07	1.9		4840	210	
<b>145</b>	900	0.06	1.6		4840	210	
<b>124</b>	1200	0.04	1.2		4840	210	
<b>145</b>	1500	0.04	0.93		4840	210	
<b>145</b>	1800	0.04	0.78		4840	210	
<b>124</b>	2400	0.03	0.6		4840	210	
<b>120</b>	3000	0.02	0.5		4840	210	
<b>82</b>	4000	0.02	0.35		4840	210	
<b>82</b>	4800	0.02	0.29	4840	210		
<b>230</b>	300	0.24	4.7	<b>URV030/063</b>	6270	210	78
<b>230</b>	400	0.19	3.5		6270	210	
<b>216</b>	500	0.15	2.8		6270	210	
<b>230</b>	600	0.13	2.3		6270	210	
<b>216</b>	750	0.11	1.9		6270	210	
<b>198</b>	900	0.09	1.6		6270	210	
<b>230</b>	1200	0.08	1.2		6270	210	
<b>216</b>	1500	0.06	0.93		6270	210	
<b>198</b>	1800	0.05	0.78		6270	210	
<b>230</b>	2400	0.05	0.58		6270	210	
<b>216</b>	3000	0.04	0.47		6270	210	
<b>172</b>	4000	0.03	0.35		6270	210	
<b>150</b>	5000	0.02	0.28	6270	210		
<b>390</b>	300	0.36	4.7	<b>URV040/075</b>	7380	350	78
<b>360</b>	400	0.27	3.5		7380	350	
<b>320</b>	500	0.21	2.8		7380	350	
<b>390</b>	600	0.19	2.3		7380	350	
<b>390</b>	750	0.16	1.9		7380	350	
<b>390</b>	900	0.14	1.6		7380	350	
<b>360</b>	1200	0.11	1.2		7380	350	
<b>390</b>	1500	0.10	0.93		7380	350	
<b>390</b>	1800	0.09	0.78		7380	350	
<b>360</b>	2400	0.07	0.58		7380	350	
<b>320</b>	3000	0.05	0.47		7380	350	
<b>250</b>	4000	0.04	0.35		7380	350	
<b>230</b>	5000	0.03	0.28	7380	350		
<b>610</b>	300	0.56	4.7	<b>URV040/090</b>	8180	350	78
<b>610</b>	400	0.43	3.5		8180	350	
<b>560</b>	500	0.34	2.8		8180	350	
<b>610</b>	600	0.30	2.3		8180	350	
<b>560</b>	750	0.23	1.9		8180	350	
<b>505</b>	900	0.19	1.6		8180	350	
<b>610</b>	1200	0.17	1.2	8180	350		
<b>560</b>	1500	0.14	0.93	8180	350		



**n<sub>1</sub>=1400**

<b>M<sub>2</sub></b> (Nm)	<b>i</b>	<b>P<sub>1</sub></b> (kw)	<b>n<sub>2</sub></b> (min <sup>-1</sup> )	<b>減速機型號</b> <b>Type</b>	<b>Fr<sub>2</sub></b> (N)	<b>Fr<sub>1</sub></b> (N)	
<b>505</b>	1800	0.11	0.78	<b>URV040/090</b>	8180	350	78
<b>610</b>	2400	0.11	0.58		8180	350	
<b>560</b>	3000	0.08	0.47		8180	350	
<b>460</b>	4000	0.08	0.35		8180	350	
<b>410</b>	5000	0.06	0.28		8180	350	
<b>1265</b>	300	1.1	4.7	<b>URV050/110</b>	10320	490	78
<b>1185</b>	400	0.79	3.5		10320	490	
<b>1100</b>	500	0.61	2.8		10320	490	
<b>1185</b>	600	0.55	2.3		10320	490	
<b>1265</b>	750	0.49	1.9		10320	490	
<b>1265</b>	900	0.43	1.6		10320	490	
<b>1185</b>	1200	0.31	1.2		10320	490	
<b>1265</b>	1500	0.30	0.93		10320	490	
<b>1265</b>	1800	0.26	0.78		10320	490	
<b>1185</b>	2400	0.19	0.58		10320	490	
<b>1100</b>	3000	0.15	0.47		10320	490	
<b>819</b>	4000	0.13	0.35		10320	490	
<b>746</b>	5000	0.10	0.28		10320	490	
<b>1760</b>	300	1.5	4.7		<b>URV063/130</b>	13500	
<b>1650</b>	400	1.1	3.5	13500		700	
<b>1550</b>	500	0.86	2.8	13500		700	
<b>1650</b>	600	0.76	2.3	13500		700	
<b>1760</b>	750	0.66	1.9	13500		700	
<b>1760</b>	900	0.58	1.6	13500		700	
<b>1650</b>	1200	0.43	1.2	13500		700	
<b>1760</b>	1500	0.39	0.93	13500		700	
<b>1760</b>	1800	0.35	0.78	13500		700	
<b>1650</b>	2400	0.25	0.58	13500		700	
<b>1550</b>	3000	0.20	0.47	13500		700	
<b>1220</b>	4000	0.15	0.35	13500		700	
<b>1100</b>	5000	0.11	0.28	13500		700	
<b>2340</b>	150	3.4	9.3	<b>URV063/150</b>		18000	700
<b>2340</b>	200	2.7	7.0		18000	700	
<b>2050</b>	250	1.9	5.6		18000	700	
<b>2340</b>	300	1.9	4.7		18000	700	
<b>2670</b>	400	1.8	3.5		18000	700	
<b>2330</b>	500	1.4	2.8		18000	700	
<b>2670</b>	600	1.3	2.3		18000	700	
<b>2330</b>	750	0.98	1.9		18000	700	
<b>2100</b>	900	0.71	1.6		18000	700	
<b>2670</b>	1200	0.75	1.2		18000	700	
<b>2100</b>	1800	0.44	0.8		18000	700	
<b>2670</b>	2400	0.46	0.6		18000	700	
<b>2330</b>	3000	0.34	0.5		18000	700	
<b>1880</b>	4000	0.23	0.4		18000	700	
<b>1650</b>	5000	0.18	0.3		18000	700	



9.4 **TKF(TXF)+UMRV** 性能參數



 9.4 **TKF(TXF)+UMRV** Performance

$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	$i$	減速機型號 Type						
<b>0.18</b>	117~22.5	9~18	12~61.5	<b>TKF002-UMRV040</b> <b>TXF002-UMRV040</b>	632-4	77				
	88~17	12~23	16~82							
	58.7~11.3	17~32	24~123							
	44~8.5	22~40	32~164							
	35.2~6.8	27~47	40~205							
	29.3~5.7	30~51	48~246							
	22~4.3	37~62	64~328							
	17.6~3.4	43~60	80~410							
	22~4.3	38~63	64~328	<b>TKF002-UMRV050</b> <b>TXF002-UMRV050</b>	632-4	77				
	17.6~3.4	44~73	80~410							
	14.7~2.8	50~80	96~492							
	11~2.1	59~82	128~656							
	8.8~1.7	66~79	160~820							
	<b>0.25</b>	133~26.7	13~30	10.5~52.5	<b>TKF005-UMRV040</b> <b>TXF005-UMRV040</b>	711-4	77			
100~20		16~38	14~70							
66.7~13.3		24~53	21~105							
50~10		32~68	28~140							
40~8		38~80	35~175							
33.3~6.7		43~89	42~210							
25~5		48~96	56~280							
25~5		54~112	56~280	<b>TKF005-UMRV050</b> <b>TXF005-UMRV050</b>	711-4	77				
20~4		59~122	70~350							
16.7~3.3		66~135	84~420							
12.5~2.5		72~120	112~560							
<b>0.37</b>		133~26.7	19~36				10.5~52.5	<b>TKF005-UMRV050</b> <b>TXF005-UMRV050</b>	712-4	77
		100~20	25~47				14~70			
		66.7~13.3	36~65				21~105			
	50~10	46~82	28~140							
	40~8	55~97	35~175							
	33.3~6.7	61~107	42~210							
	25~5	76~124	56~280							
	20~4	89~120	70~350							
	25~5	79~134	56~280	<b>TKF005-UMRV063</b> <b>TXF005-UMRV063</b>	712-4	77				
	20~4	92~155	70~350							
	16.7~3.3	104~173	84~420							
	12.5~2.5	125~173	112~560							
	10~2	139~150	140~700							
	<b>0.55</b>	133~26.7	26~49				10.5~52.5	<b>TKF010-UMRV063</b> <b>TXF010-UMRV063</b>	801-4	77
100~20		34~63	14~70							
66.7~13.3		48~88	21~105							
50~10		62~112	28~140							
40~8		75~133	35~175							
33.3~6.7		81~146	42~210							
25~5		105~179	56~280							
20~4		123~207	70~350							
20~4		129~216	70~350	<b>TKF010-UMRV075</b> <b>TXF010-UMRV075</b>	801-4	77				
16.7~3.3		146~242	84~420							
12.5~2.5		176~250	112~560							
12.5~2.5		189~309	112~560	<b>TKF010-UMRV090</b> <b>TXF010-UMRV090</b>	801-4	77				
10~2		218~350	140~700							

$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	$i$	減速器型號 Type		
<b>0.75</b>	133~26.7	39~73	10.5~52.5	<b>TKF010-UMRV063</b> <b>TXF010-UMRV063</b>	802-4	77
	100~20	51~94	14~70			
	66.7~13.3	72~132	21~105			
	50~10	92~168	28~140			
	40~8	112~199	35~175			
	33.3~6.7	126~219	42~210			
	25~5	156~232	56~280			
	20~4	185~310	70~350			
	20~4	192~320	70~350	<b>TKF010-UMRV075</b> <b>TXF010-UMRV075</b>		
	16.7~3.3	219~300	84~420			
	16.7~3.3	230~389	84~420	<b>TKF010-UMRV090</b> <b>TXF010-UMRV090</b>		
	12.5~2.5	265~428	112~560			
	10~2	303~410	140~700			
	12.5~2.5	302~503	112~560	<b>TKF010-UMRV110</b> <b>TXF010-UMRV110</b>		
10~2	348~575	140~700				
<b>1.1</b>	133~26.7	59~111	10.5~52.5	<b>TXF020-UMRV075</b>	90S-4	77
	100~20	77~144	14~70			
	66.7~13.3	110~203	21~105			
	50~10	142~258	28~140			
	40~8	172~308	35~175			
	33.3~6.7	195~340	42~210			
	25~5	245~360	56~280			
	100~20	78~146	14~70	<b>TXF020-UMRV090</b>		
	66.7~13.3	113~208	21~105			
	50~10	146~266	28~140			
	40~8	177~320	35~175			
	33.3~6.7	202~356	42~210			
	25~5	256~442	56~280			
	20~4	304~517	70~350			
	20~4	320~550	70~350	<b>TXF020-UMRV110</b>		
	16.7~3.3	368~625	84~420			
	12.5~2.5	455~754	112~560			
	10~2	522~710	140~700			
	16.7~3.3	373~623	84~420	<b>TXF020-UMRV130</b>		
	12.5~2.5	460~749	112~560			
	10~2	531~868	140~700			



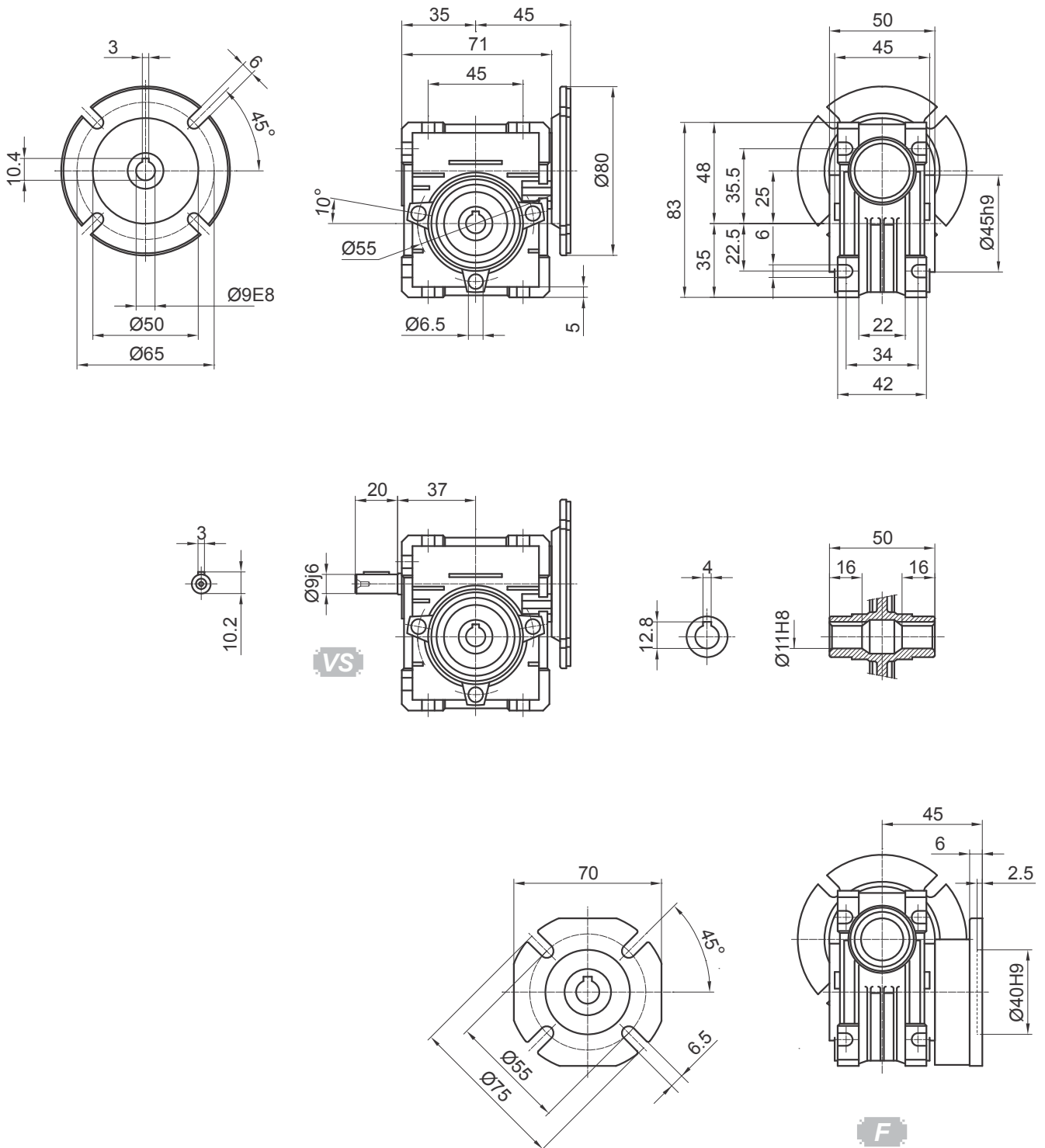
$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	$i$	減速機型號 Type						
<b>1.5</b>	133~26.7	78~148	10.5~52.5	<b>TKF020-UMRV075</b>	90L-4	77				
	100~20	102~192	14~70							
	66.7~13.3	147~270	21~105							
	50~10	190~344	28~140							
	40~8	229~330	35~175							
	33.3~6.7	260~390	42~210							
	25~5	327~360	56~280							
	133~26.7	77~150	10.5~52.5	<b>TKF020-UMRV090</b>	90L-4	77				
	100~20	104~195	14~70							
	66.7~13.3	150~277	21~105							
	50~10	194~355	28~140							
	40~8	236~427	35~175							
	33.3~6.7	270~474	42~210							
	25~5	341~589	56~280							
	20~4	406~560	70~350							
	20~4	426~733	70~350	<b>TKF020-UMRV110</b>	90L-4	77				
	16.7~3.3	490~833	84~420							
	16.7~3.3	498~831	84~420	<b>TKF020-UMRV130</b>	90L-4	77				
	12.5~2.5	614~999	112~560							
	10~2	696~1100	140~700							
	<b>2.2</b>	133~26.7	120~226	10.5~52.5	<b>TKF030-UMRV110</b>	100L1-4	77			
100~20		157~294	14~70							
66.7~13.3		228~418	21~105							
50~10		298~549	28~140							
40~8		364~664	35~175							
33.3~6.7		413~717	42~210							
25~5		533~931	56~280							
25~5		542~932	56~280	<b>TKF030-UMRV130</b>	100L1-4	77				
20~4		648~1097	70~350							
16.7~3.3		746~1246	84~420							
12.5~2.5		921~1499	112~560							
10~2		1040~1690	140~700							
<b>3.0</b>		133~26.7	160~302				10.5~52.5	<b>TKF030-UMRV110</b>	100L2-4	77
		100~20	210~392				14~70			
	66.7~13.3	304~558	21~105							
	50~10	398~732	28~140							
	40~8	485~885	35~175							
	33.3~6.7	547~956	42~210							
	25~5	711~1030	56~280							
	133~26.7	160~301	10.5~52.5	<b>TKF030-UMRV130</b>	100L2-4	77				
	100~20	211~395	14~70							
	66.7~13.3	307~563	21~105							
	50~10	402~733	28~140							
	40~8	490~885	35~175							
	33.3~6.7	562~973	42~210							
25~5	720~1242	56~280								
20~4	864~1463	70~350								

$P_1$ (kW)	$n_2$ (min <sup>-1</sup> )	$M_2$ (Nm)	$i$	減速機型號 Type		
<b>4.0</b>	133~26.7	213~402	10.5~52.5	<b>TKF050-UMRV110</b>	112M4	77
	100~20	279~523	14~70			
	66.7~13.3	405~744	21~105			
	50~10	530~975	28~140			
	40~8	647~1020	35~175			
	133~26.7	214~401	10.5~52.5	<b>TKF050-UMRV130</b>	112M4	77
	100~20	281~527	14~70			
	66.7~13.3	410~751	21~105			
	50~10	536~978	28~140			
	40~8	653~1180	35~175			
33.3~6.7	749~1298	42~210				
25~5	960~1650	56~280				

#### 10.0 減速機尺寸圖

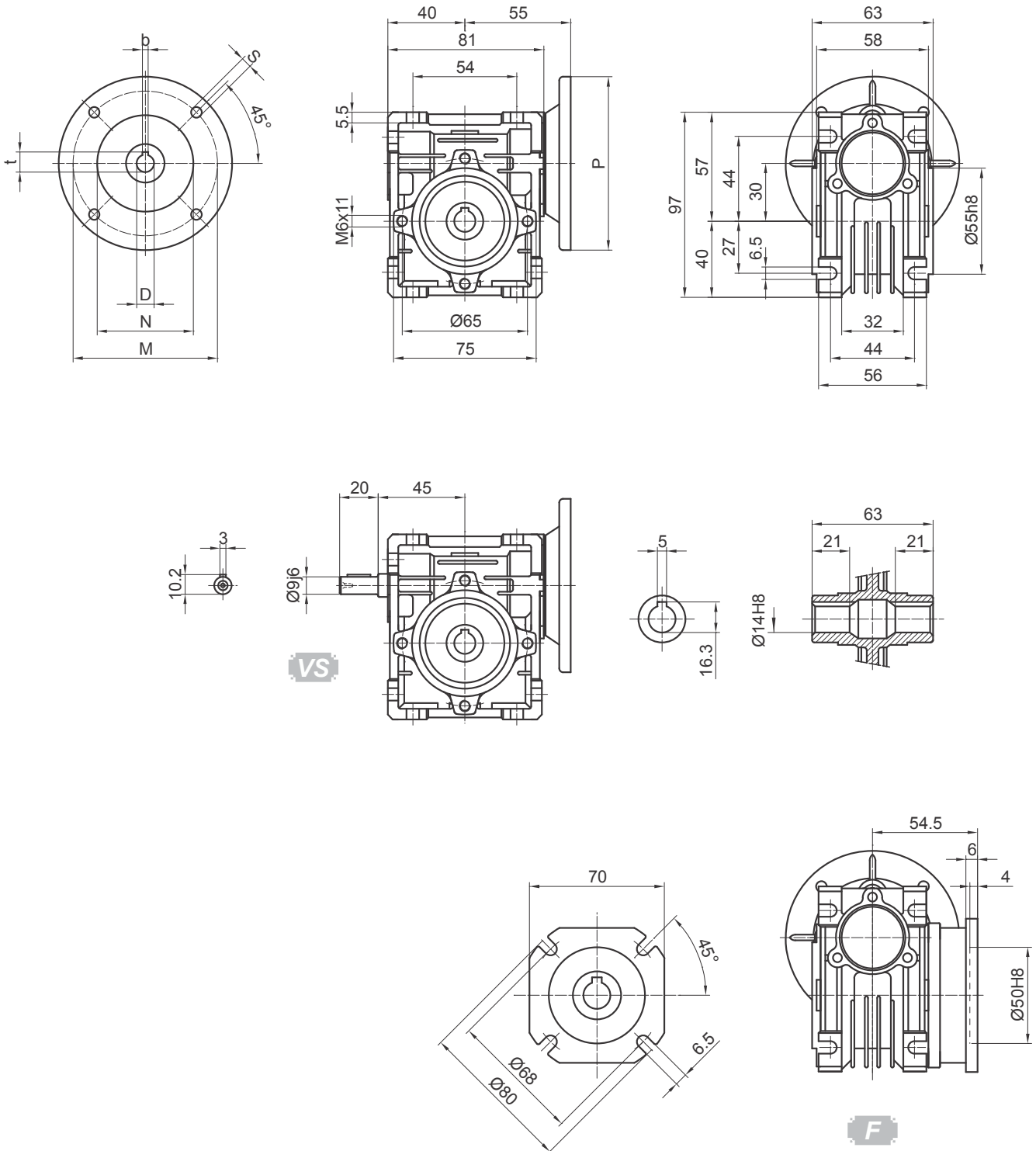
#### SPEED REDUCER UNIT DIMENSIONS CHARTS

**UMRV025**



\*不含電機重量  $\approx 0.7\text{kg}$   
\*Weight without motor  $\approx 0.7\text{kg}$

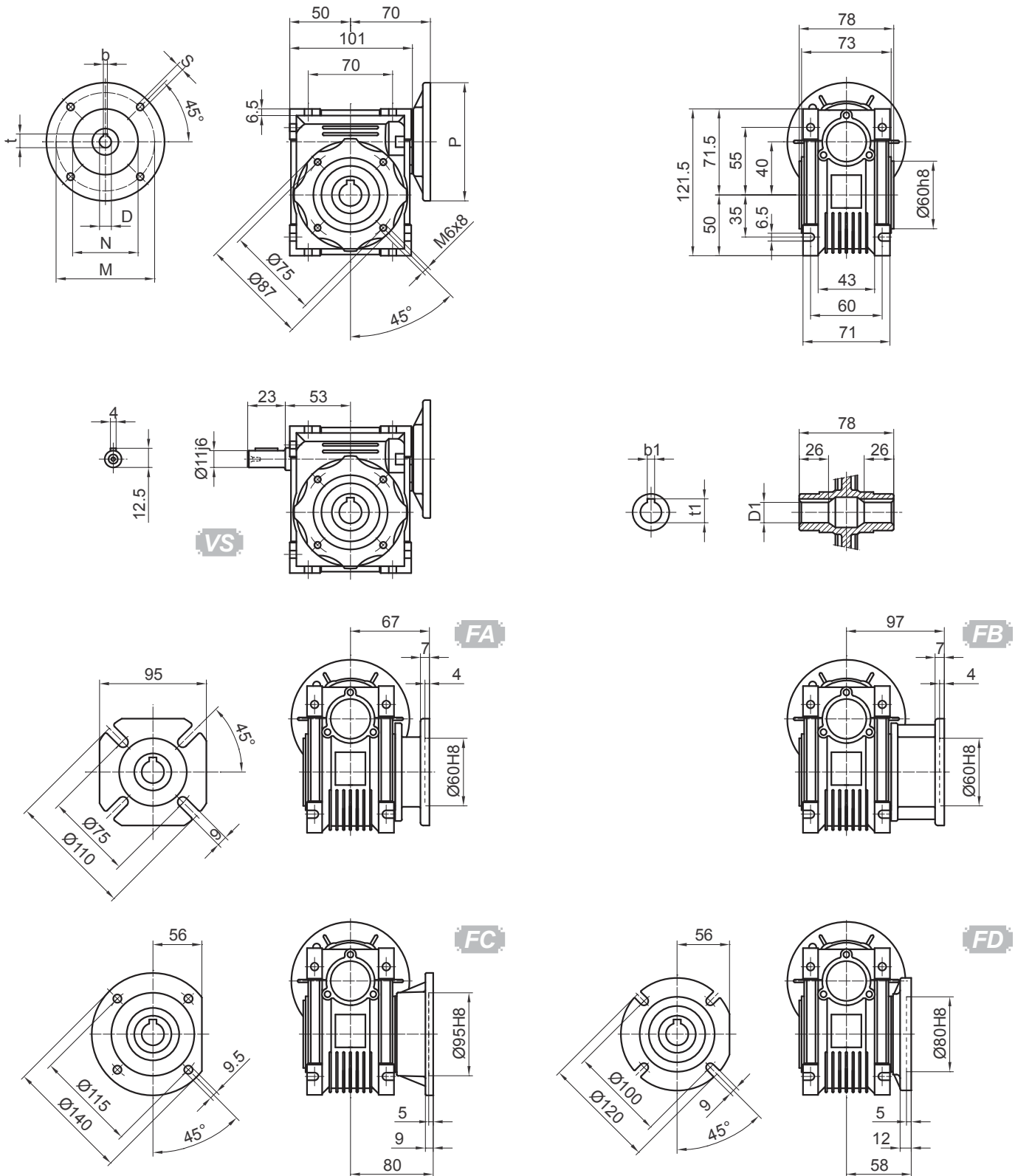
**UMRV030**



PAM IEC	$D_{E8}$	$b$	$t$	$P$	$M$	$N$	$S$
63B5	11	4	12.8	140	115	95	9
63B14	11	4	12.8	90	75	60	5.5
56B5	9	3	10.4	120	100	80	6.5
56B14	9	3	10.4	80	65	50	5.5

\*不含電機重量  $\approx 1.2\text{kg}$   
\*Weight without motor  $\approx 1.2\text{kg}$

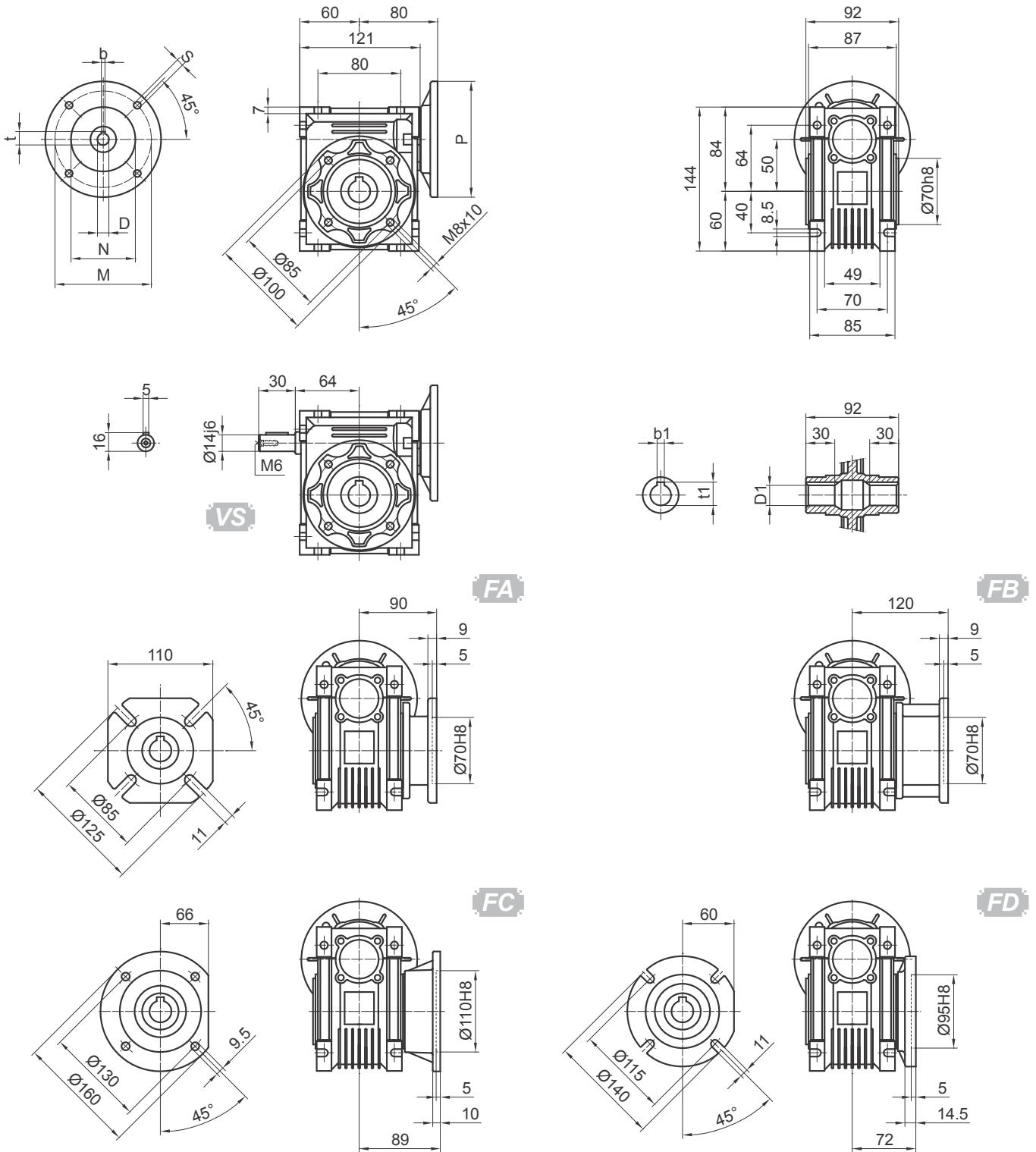
# UMRV040



PAM IEC	$D_{E8}$	$b$	$t$	$P$	$M$	$N$	$S$	輸出 Output	$D1_{H8}$	$b1$	$t1$
71B5	14	5	16.3	160	130	110	8.5			18	6
71B14	14	5	16.3	105	85	70	6.5		(19)	(6)	(21.8)
63B5	11	4	12.8	140	115	95	9		(..) 根據用戶要求訂製 (..) Only on request		
63B14	11	4	12.8	90	75	60	6				
56B5	9	3	10.4	120	100	80	6.5				

\*不含電機重量  $\approx 2.3\text{kg}$   
 \*Weight without motor  $\approx 2.3\text{kg}$

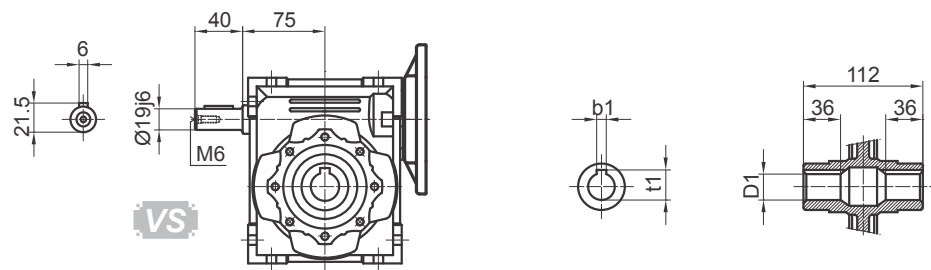
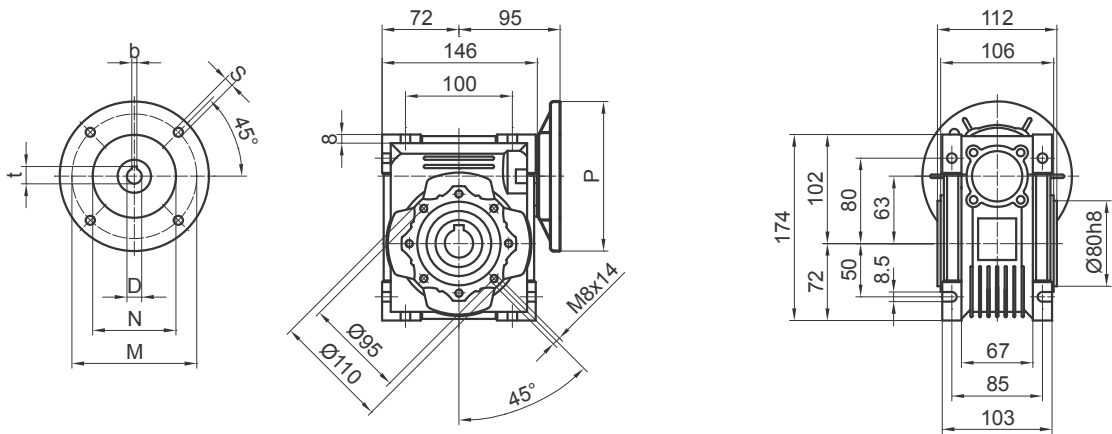
**UMRV050**



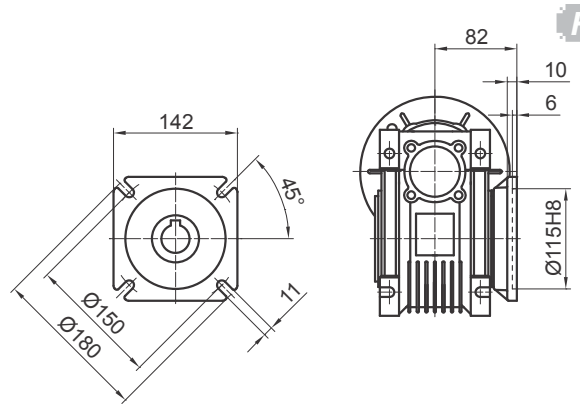
PAM IEC	D <sub>E8</sub>	b	t	P	M	N	S	輸出 Output	D <sub>1H8</sub>	b <sub>1</sub>	t <sub>1</sub>
80B5	19	6	21.8	200	165	130	11		25	8	28.3
80B14	19	6	21.8	120	100	80	6.5	(24)	(8)	(27.3)	
71B5	14	5	16.3	160	130	110	8.5	(..) 根據用戶要求訂製 (..) Only on request			
71B14	14	5	16.3	105	85	70	7				
63B5	11	4	12.8	140	115	95	8.5				

\*不含電機重量 ≈3.5kg  
\*Weight without motor ≈3.5kg

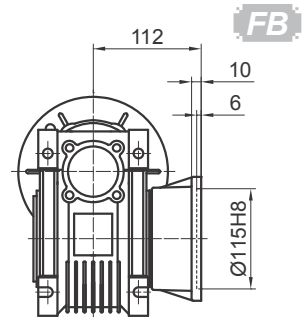
**UMRV063**



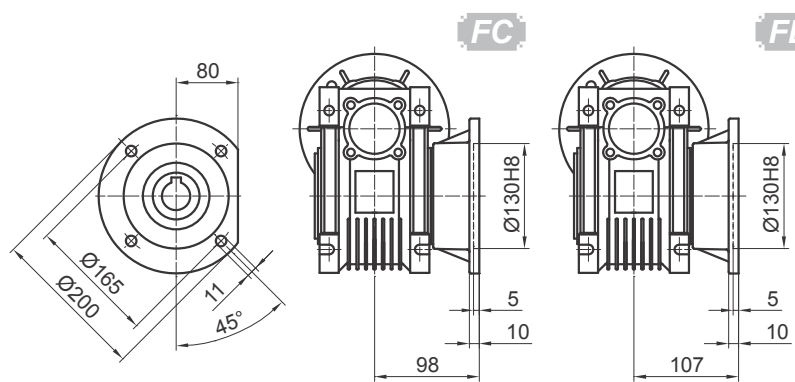
**VS**



**FA**

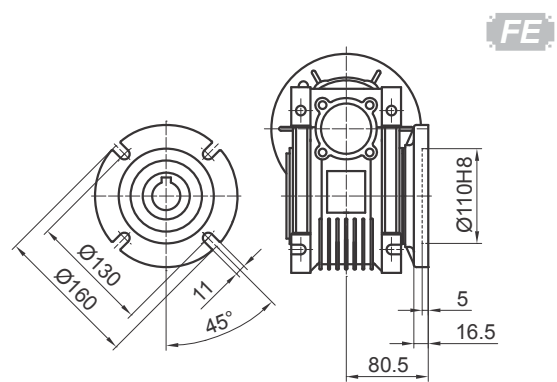


**FB**



**FC**

**FD**

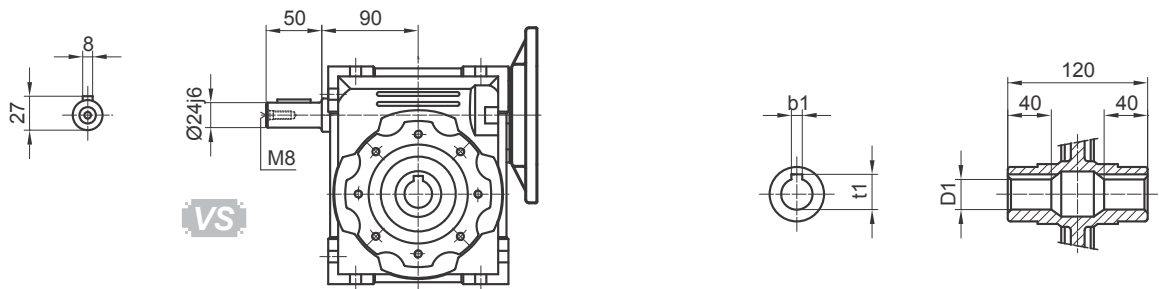
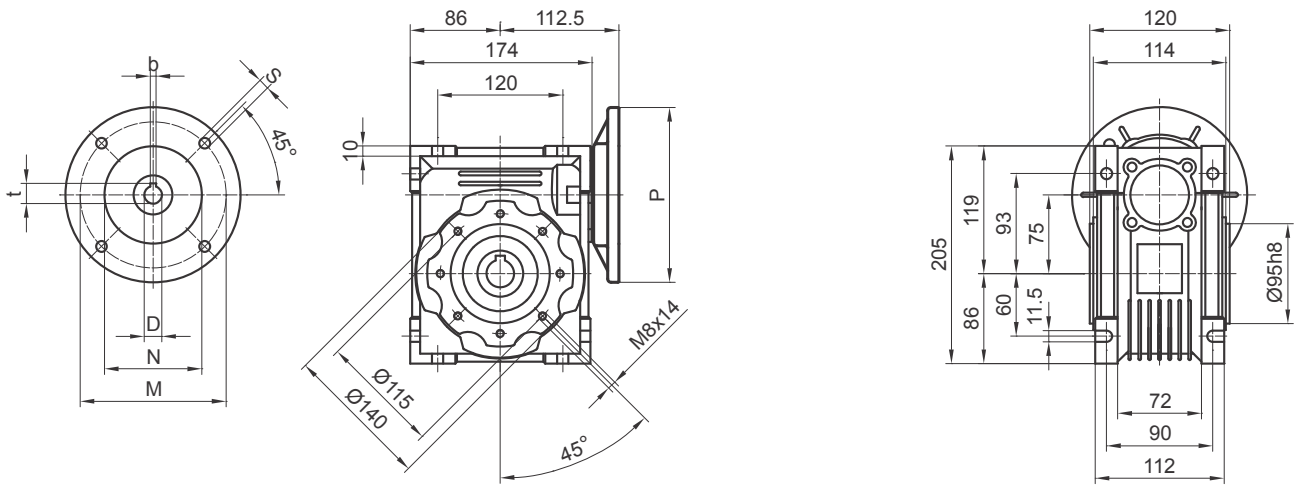


**FE**

PAM IEC	D <sub>EB</sub>	b	t	P	M	N	S	Output		
								D <sub>1H8</sub>	b <sub>1</sub>	t <sub>1</sub>
90B5	24	8	27.3	200	165	130	11	25	8	28.3
90B14	24	8	27.3	140	115	95	9	(28)	(8)	(31.3)
80B5	19	6	21.8	200	165	130	11	(..) 根據用戶要求訂製		
80B14	19	6	21.8	120	100	80	7	(..) Only on request		
71B5	14	5	16.3	160	130	110	8.5			
71B14	14	5	16.3	105	85	70	7			

\*不含電機重量 ≈6.2kg  
\*Weight without motor ≈6.2kg

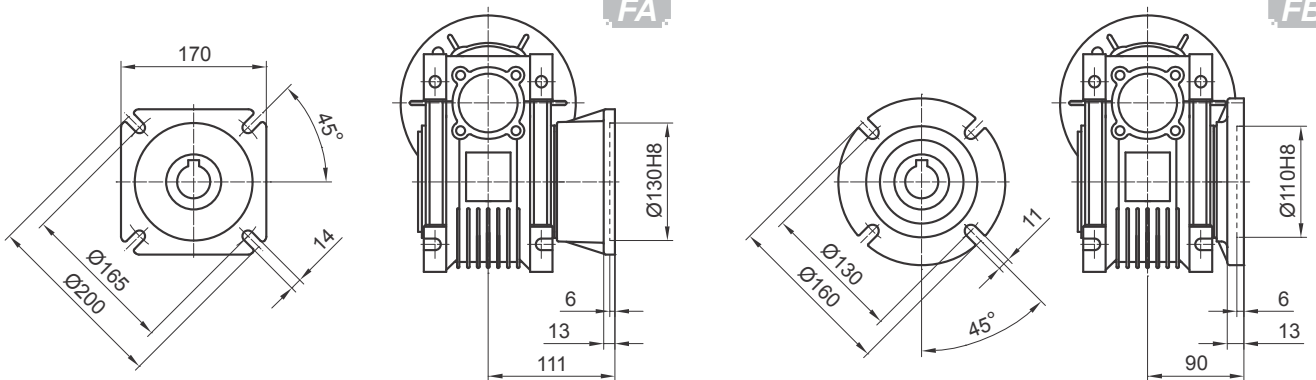
**UMRV075**



VS

FA

FB



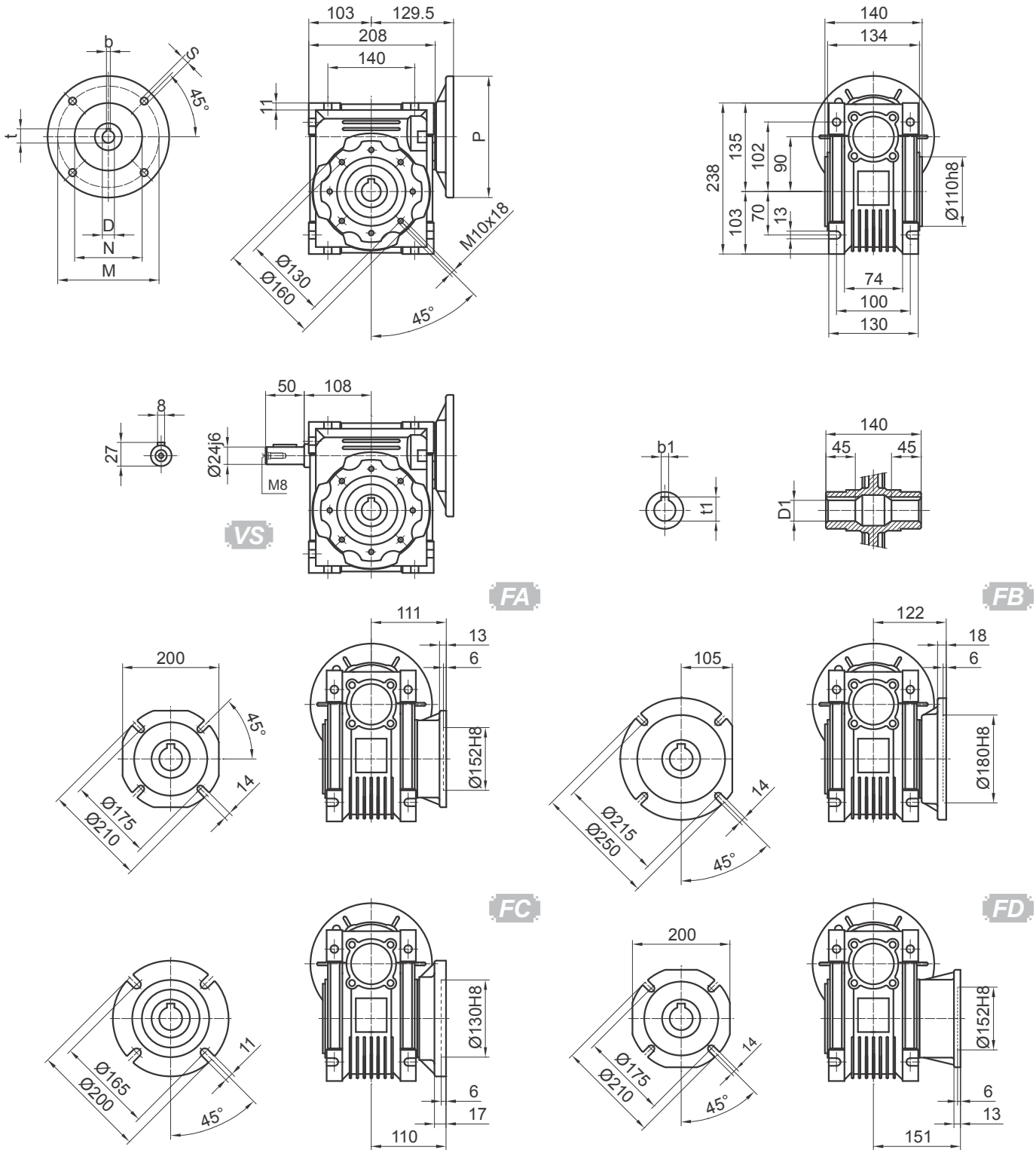
PAM IEC	D <sub>E8</sub>	b	t	P	M	N	S	Output	D <sub>1H8</sub>	b <sub>1</sub>	t <sub>1</sub>
									100/112B5	28	8
100/112B14	28	8	31.3	160	130	110	9	(35)	(10)	(38.3)	
90B5	24	8	27.3	200	165	130	11				
90B14	24	8	27.3	140	115	95	9				
80B5	19	6	21.8	200	165	130	11				
80B14	19	6	21.8	120	100	80	6.5				
71B5	14	5	16.3	160	130	110	9				

(..) 根據用戶要求訂製  
(..) Only on request

\*不含電機重量 ≈9.0kg  
\*Weight without motor ≈9.0kg



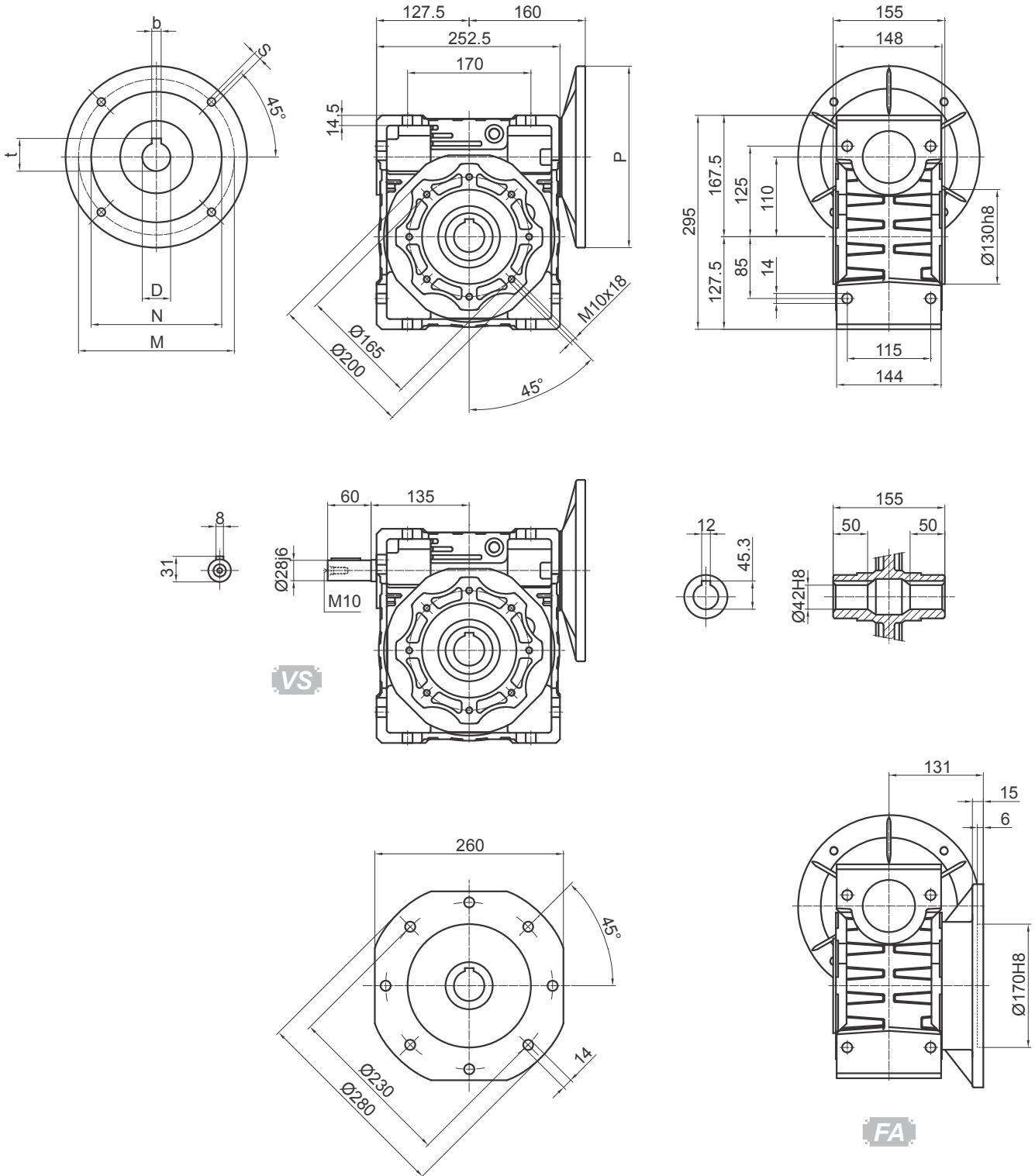
**UMRV090**



PAM IEC	D <sub>E8</sub>	b	t	P	M	N	S	Output	D <sub>1H8</sub>	b <sub>1</sub>	t <sub>1</sub>
									100/112B5	28	8
100/112B14	28	8	31.3	160	130	110	9	(38)	(10)	(41.3)	
90B5	24	8	27.3	200	165	130	11	(..) 根據用戶要求訂製			
90B14	24	8	27.3	140	115	95	9	(..) Only on request			
80B5	19	6	21.8	200	165	130	11				
80B14	19	6	21.8	120	100	80	6.5				

\*不含電機重量 ≈13kg  
\*Weight without motor ≈13kg

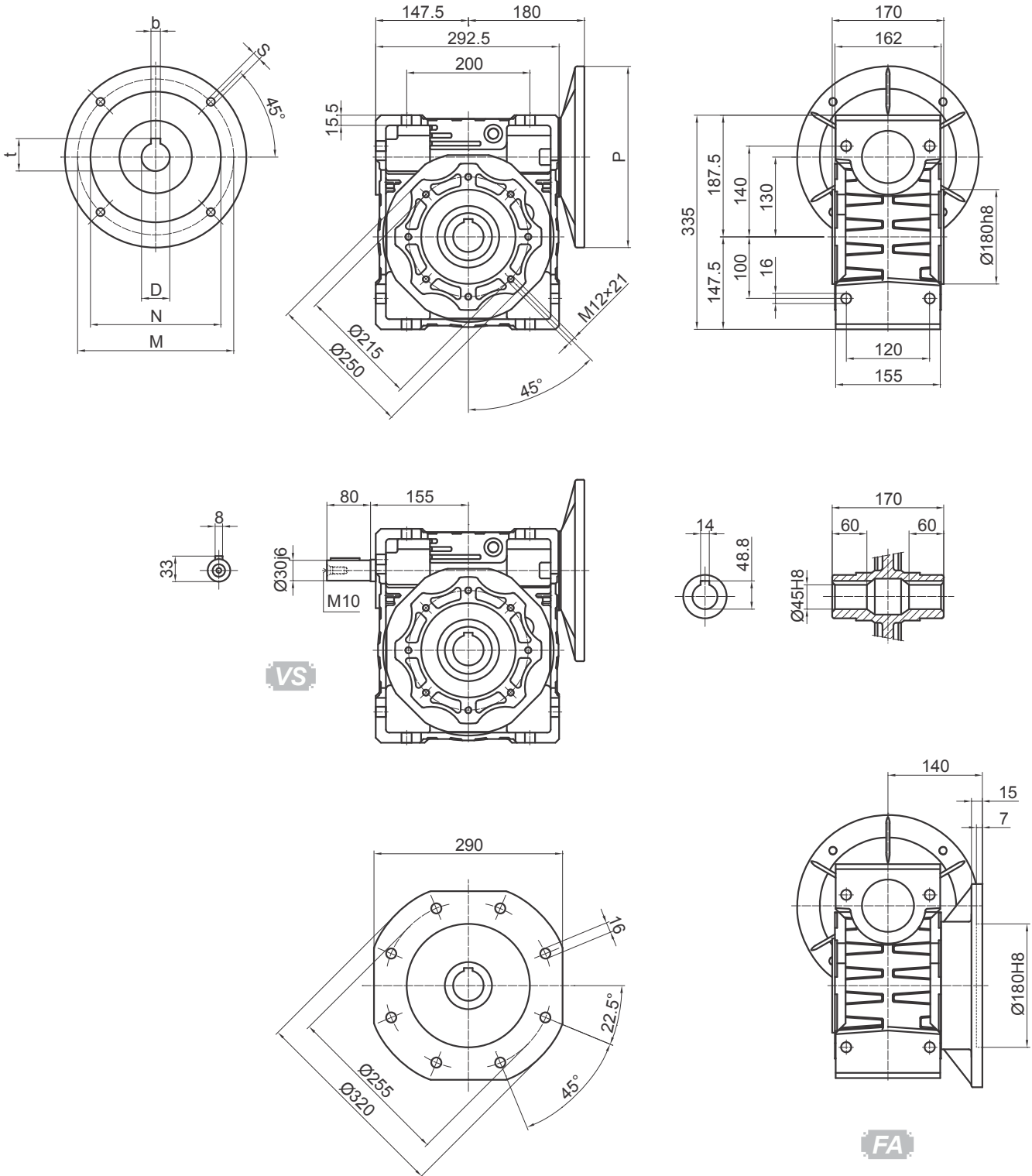
**UMRV110**



PAM IEC	D <sub>E8</sub>	b	t	P	M	N	S
132B5	38	10	41.3	300	265	230	M12
100/112B5	28	8	31.3	250	215	180	13
90B5	24	8	27.3	200	165	130	11
80B5	19	6	21.8	200	165	130	11

\*不含電機重量 ≈35kg  
\*Weight without motor ≈35kg

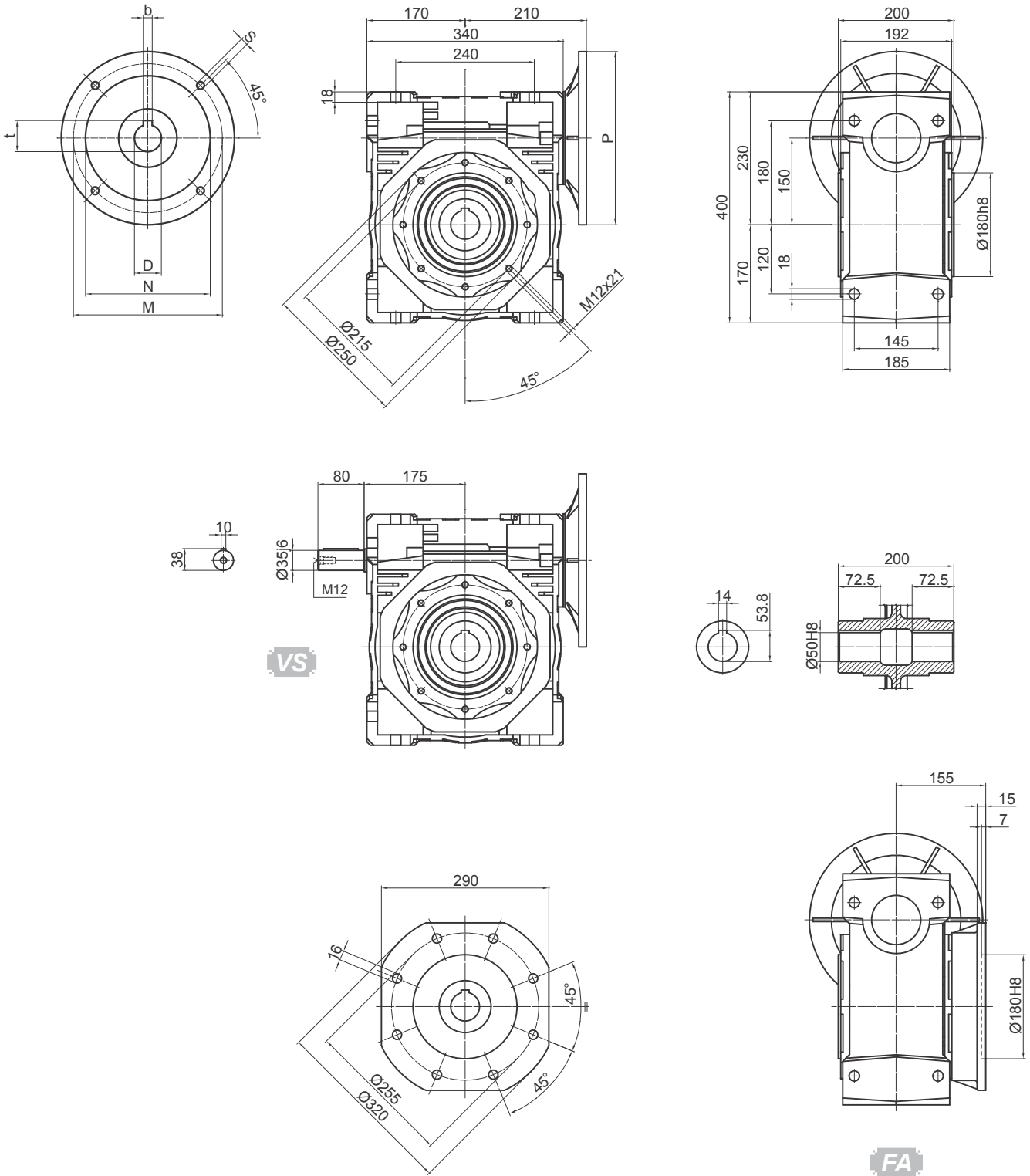
**UMRV130**



PAM IEC	$D_{E8}$	$b$	$t$	$P$	$M$	$N$	$S$
132B5	38	10	41.3	300	265	230	M12
100/112B5	28	8	31.3	250	215	180	13
90B5	24	8	27.3	200	165	130	11

\*不含電機重量 ≈48kg  
\*Weight without motor ≈48kg

**UMRV150**



PAM IEC	$D_{E8}$	$b$	$t$	$P$	$M$	$N$	$S$
160B5	42	12	45.3	350	300	250	19
132B5	38	10	41.3	300	265	230	M12
100/112B5	28	8	31.3	250	215	180	M12

\*不含電機重量  $\approx 84\text{kg}$   
\*Weight without motor  $\approx 84\text{kg}$

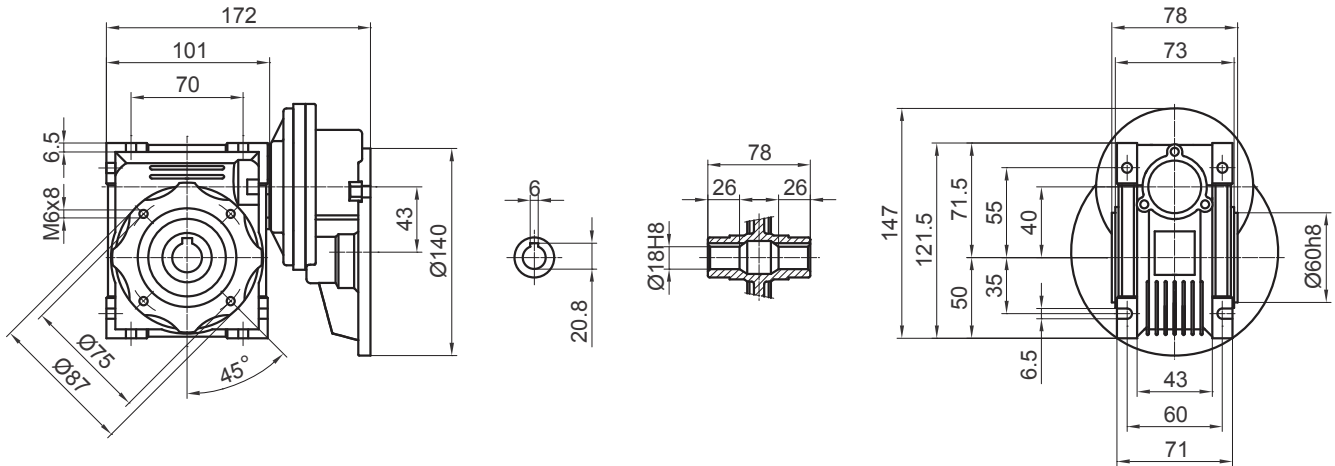
10.2 **PC+UMRV** 尺寸圖

- 關於輸出法蘭的尺寸，請參考UMRV有關圖紙。
- 關於空心輸出軸的尺寸，請參考UMRV的相關圖紙。
- 關於雙軸蝸桿的尺寸，請參考UMRV的相關圖紙。

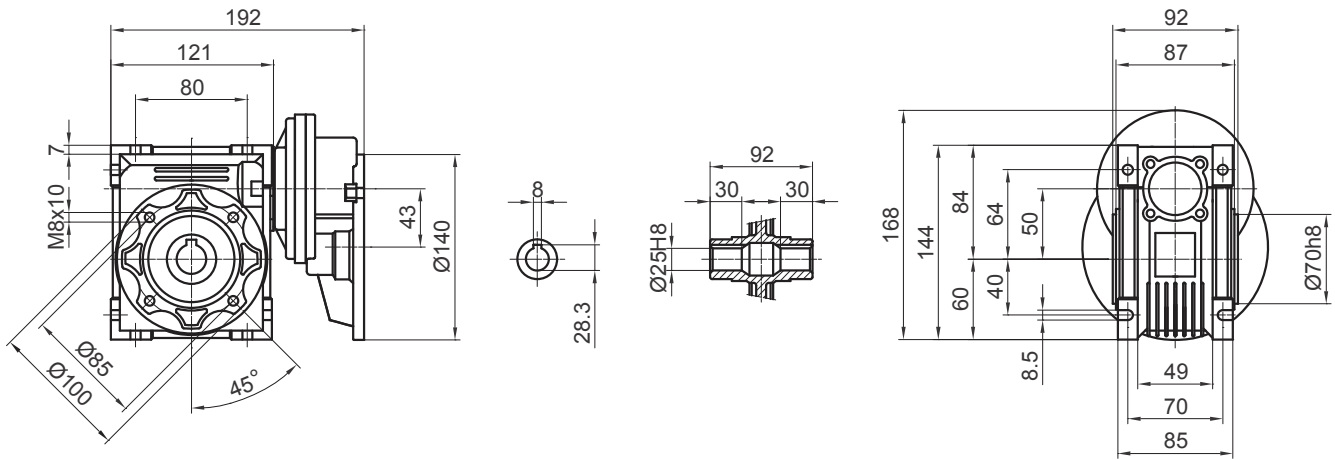
10.2 **PC+UMRV** Dimensions charts

- For the dimensions of the output flanges, please consider the drawing of relevant UMRV size.
- For the dimensions of the hollow shafts in option, please consider the drawing of relevant UMRV size.
- For the dimensions of the double extension worm shafts, please consider the drawing of relevant UMRV size

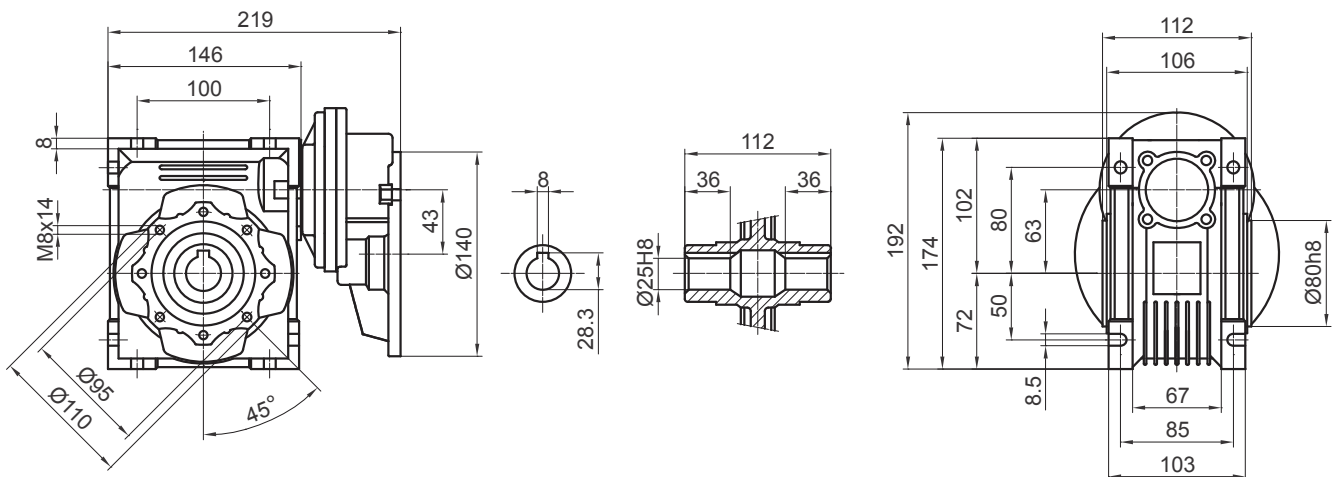
**PC063 - UMRV040**



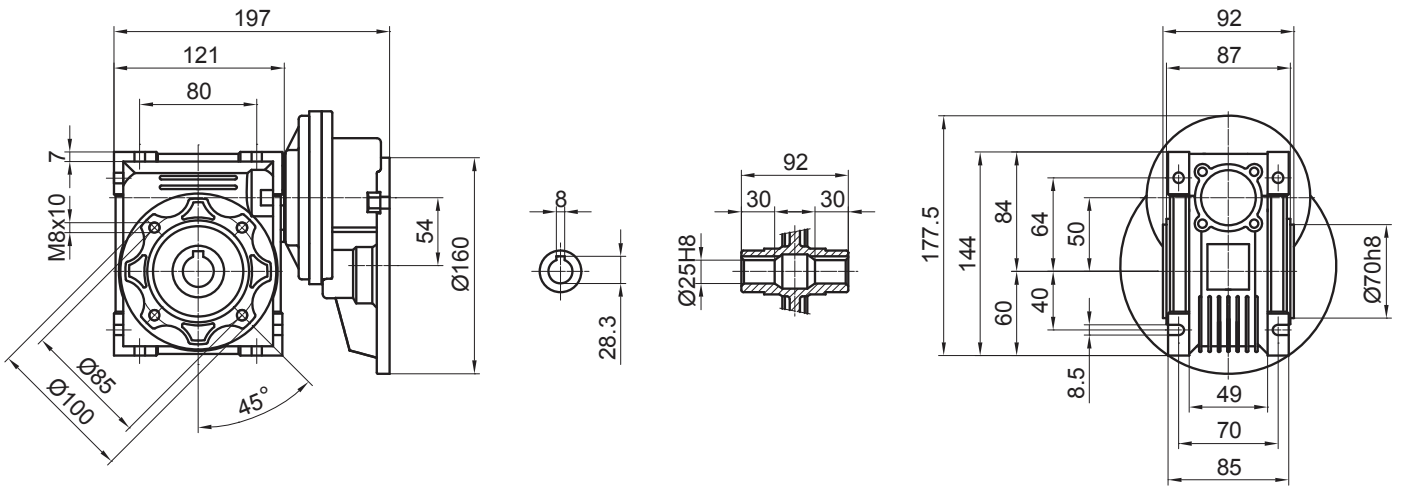
**PC063 - UMRV050**



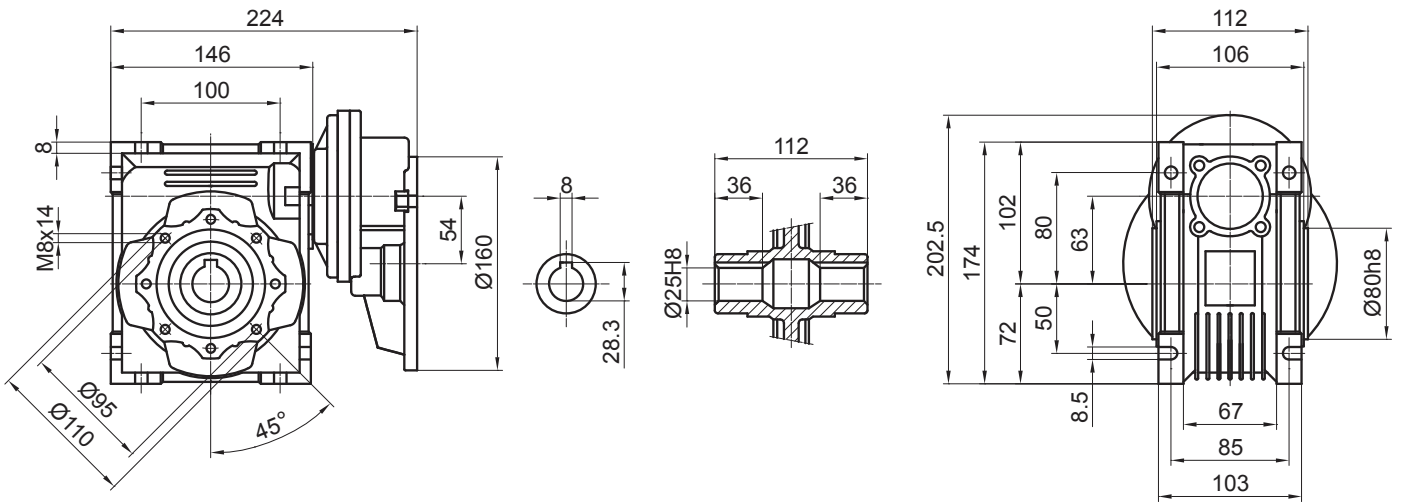
**PC063 - UMRV063**



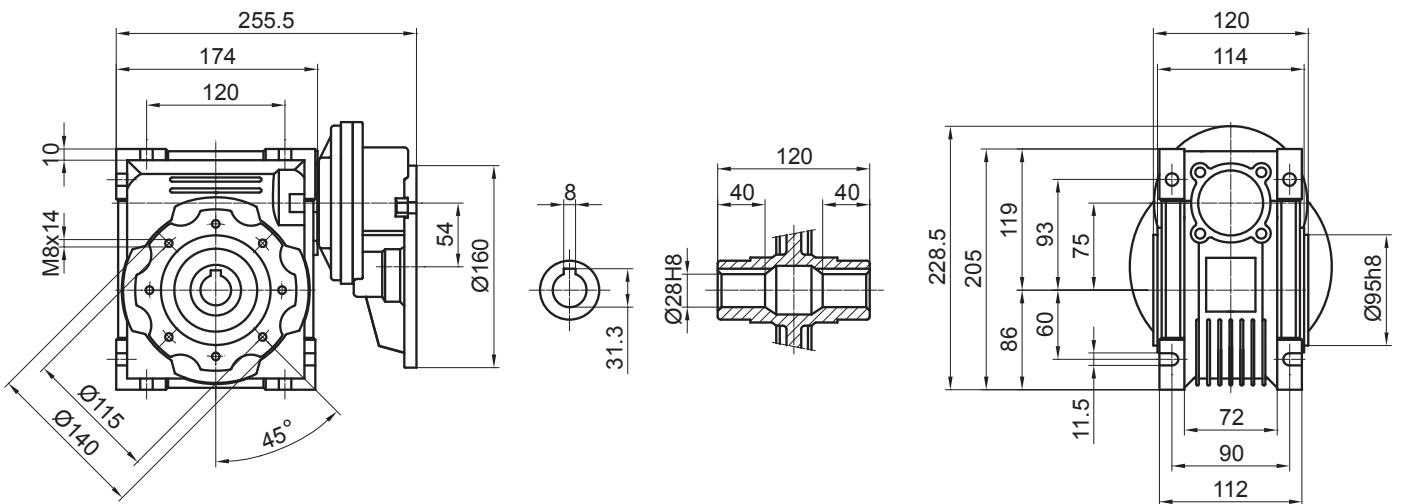
**PC071 - UMRV050**



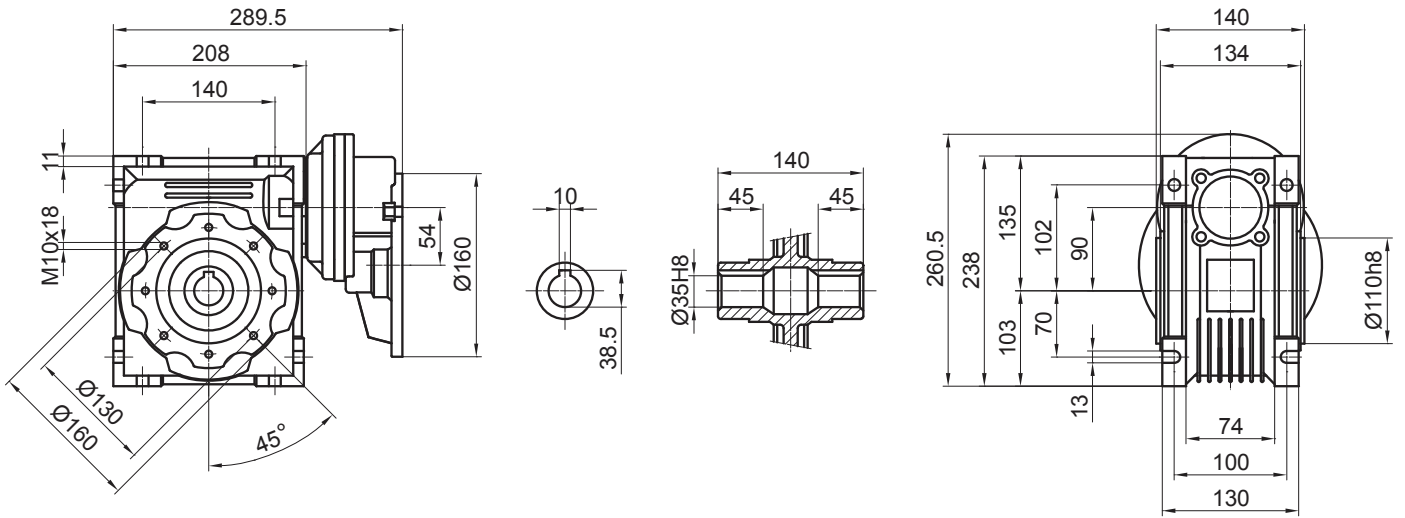
**PC071 - UMRV063**



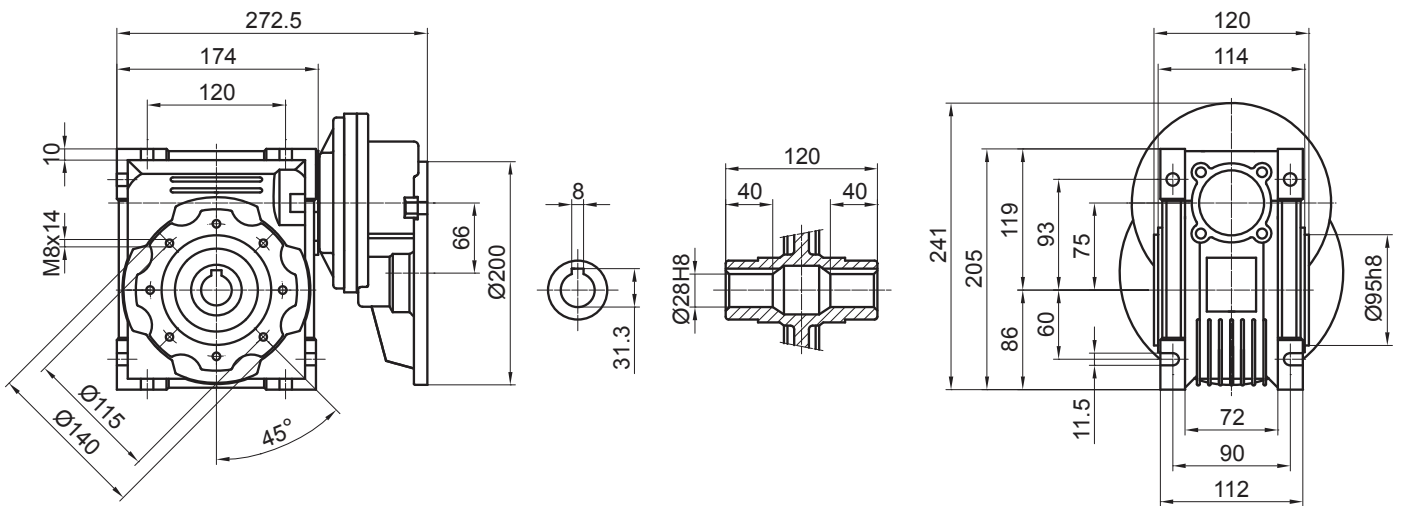
**PC071 - UMRV075**



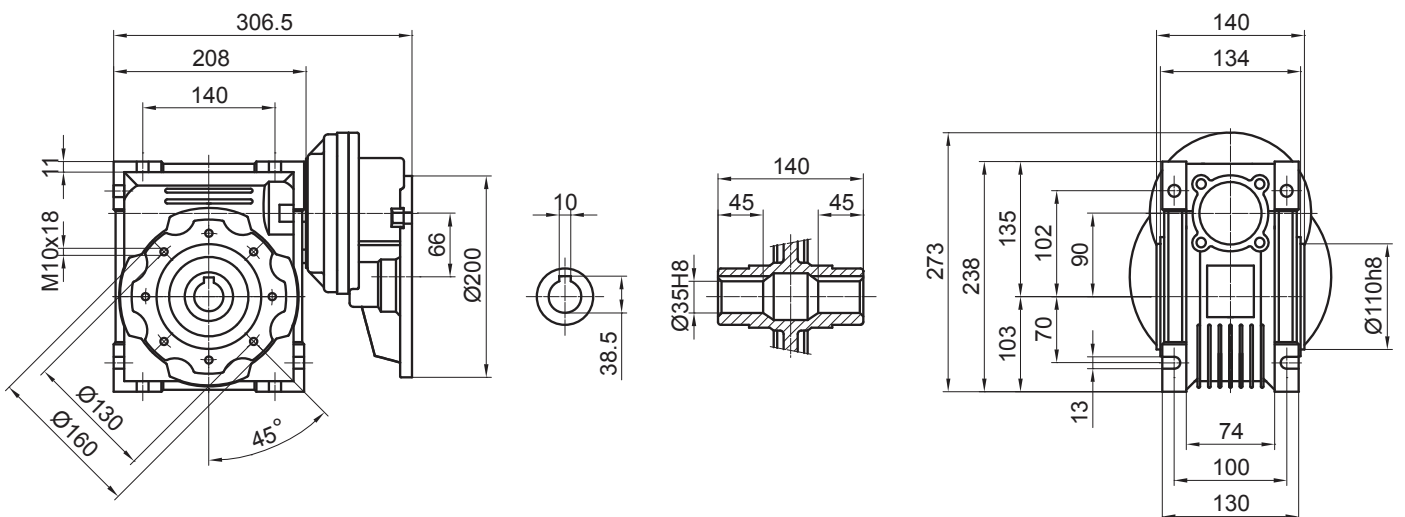
**PC071 - UMRV090**



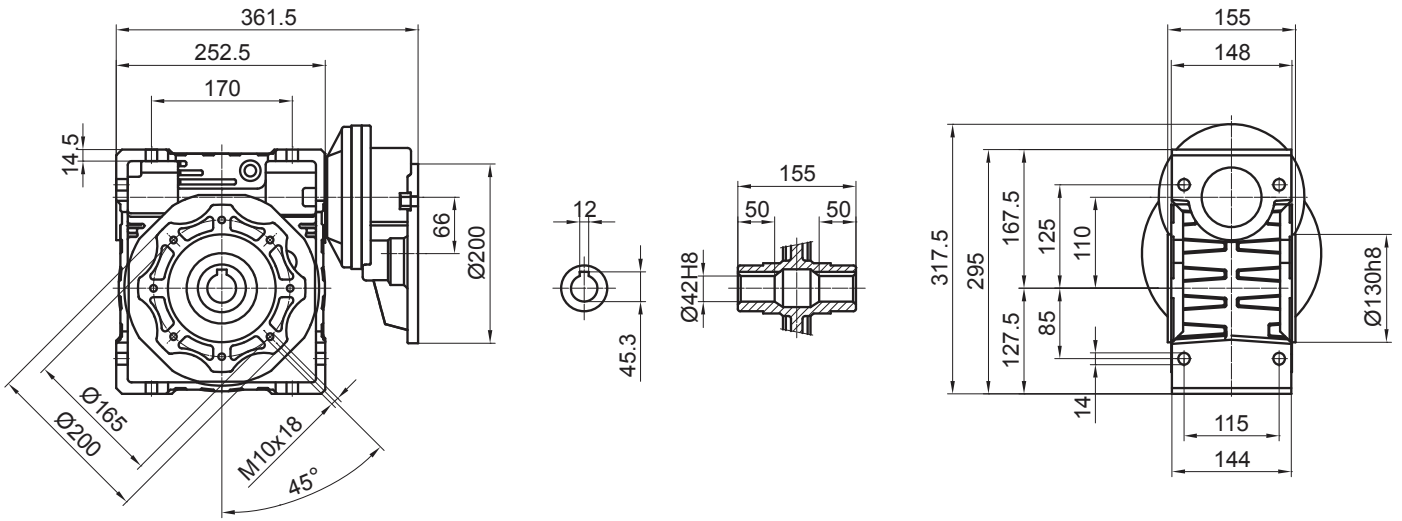
**PC080 - UMRV075**



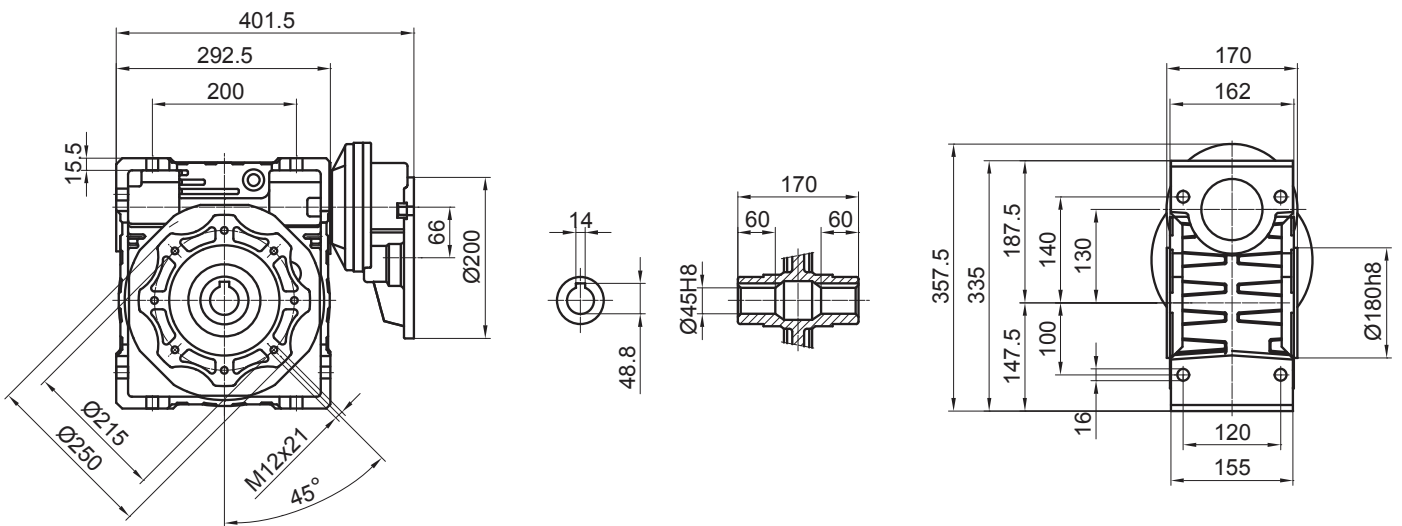
**PC080 - UMRV090**



**PC080(090) - UMRV110**



**PC080(090) - UMRV130**





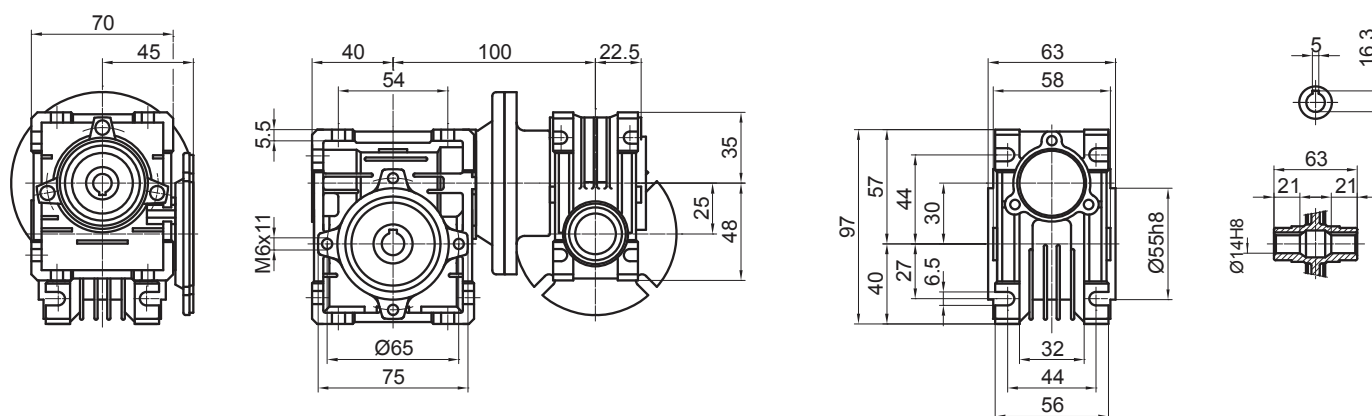
### 10.3 UMRV+UMRV 尺寸圖

- 關於輸出法蘭的尺寸，請參考UMRV有關圖紙。
- 關於空心輸出軸的尺寸，請參考UMRV的相關圖紙。
- 關於雙軸蝸桿的尺寸，請參考UMRV的相關圖紙。

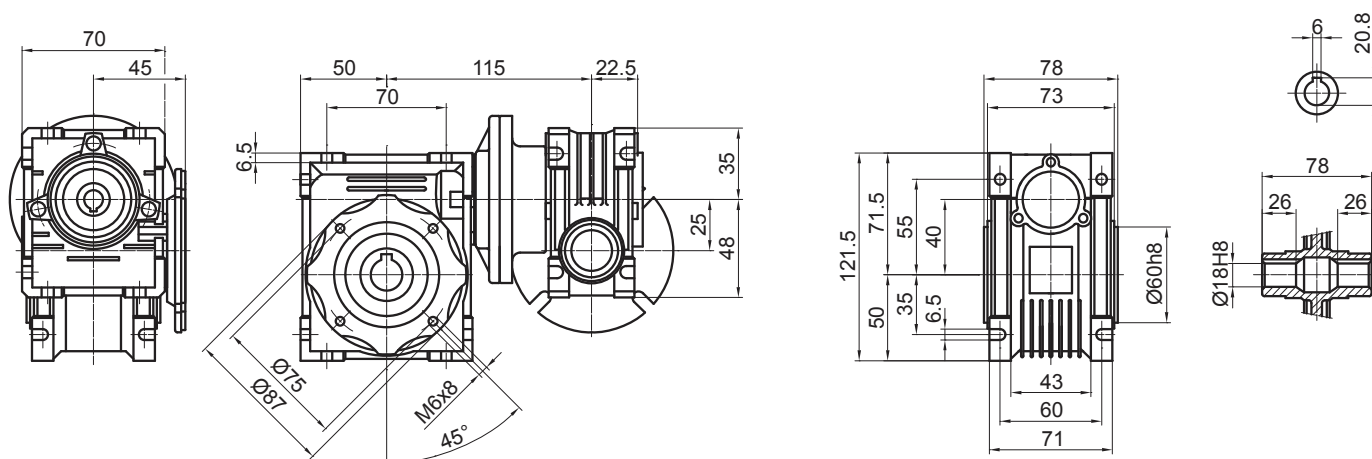
### 10.3 UMRV+UMRV Dimensions charts

- For the dimensions of the output flanges, please consider the drawing of relevant UMRV size.
- For the dimensions of the hollow shafts in option, please consider the drawing of relevant UMRV size.
- For the dimensions of the double extension worm shafts, please consider the drawing o. f relevant UMRV size

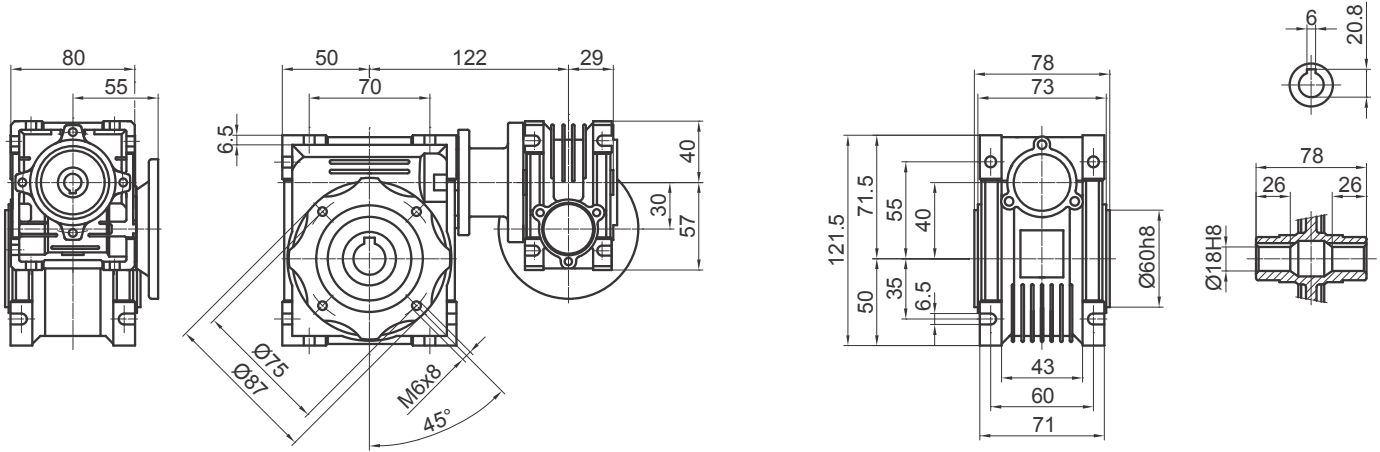
#### UMRV 025 - 030



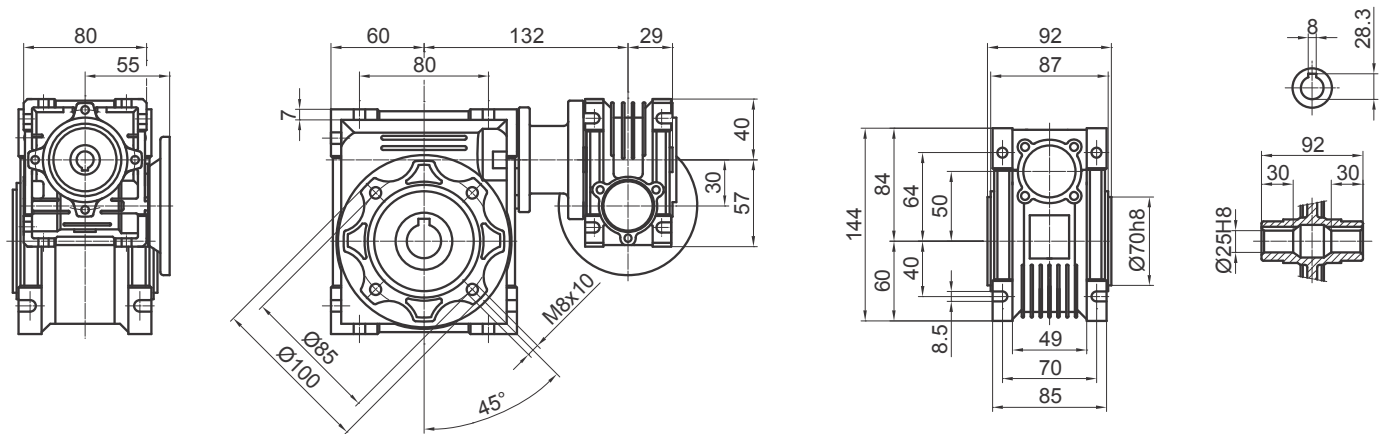
#### UMRV 025 - 040



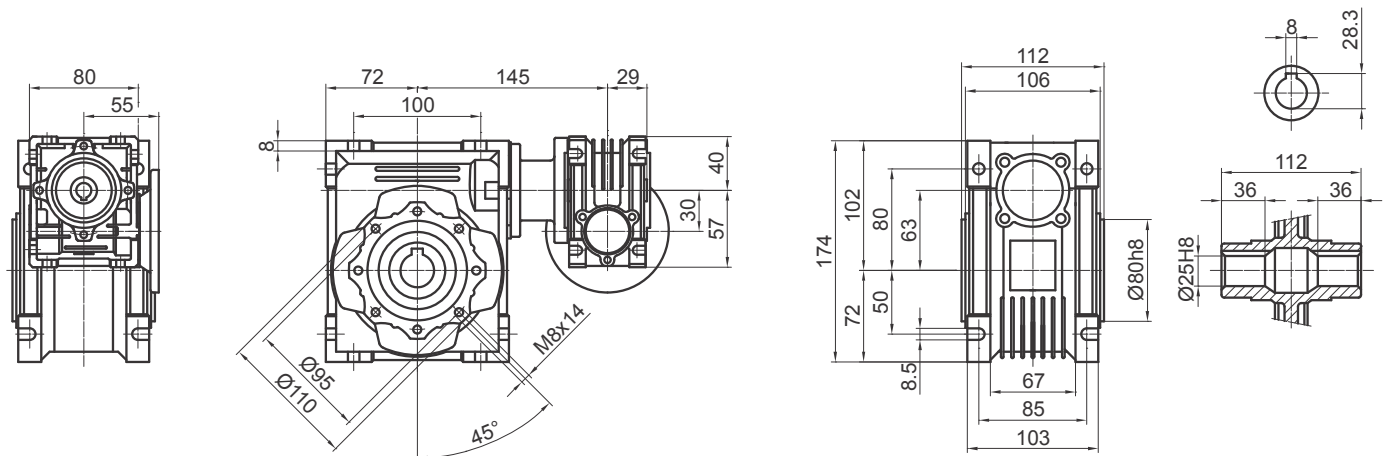
**UMRV 030 - 040**



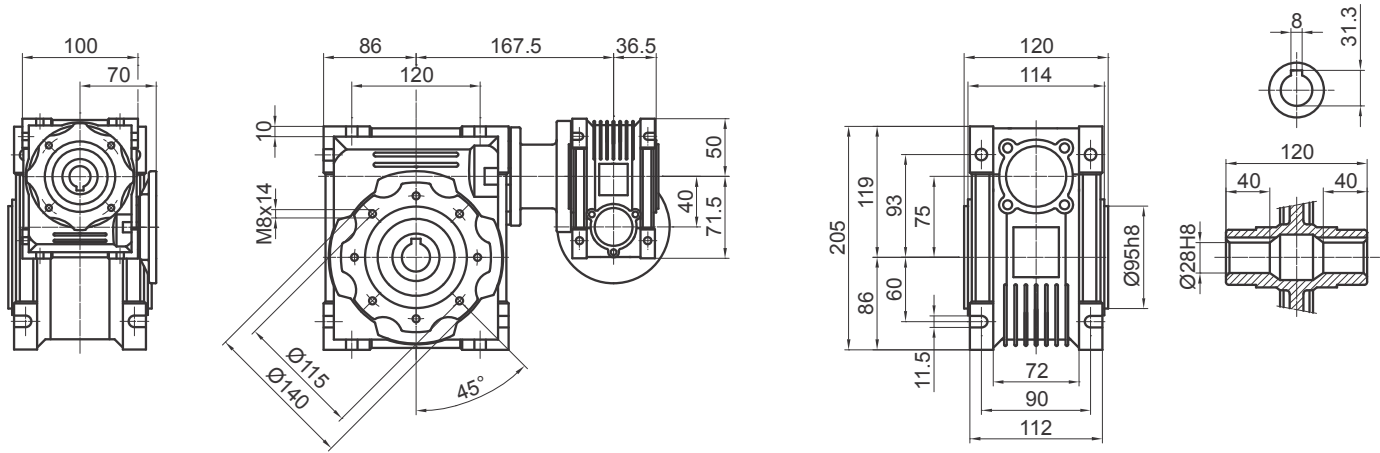
**UMRV 030 - 050**



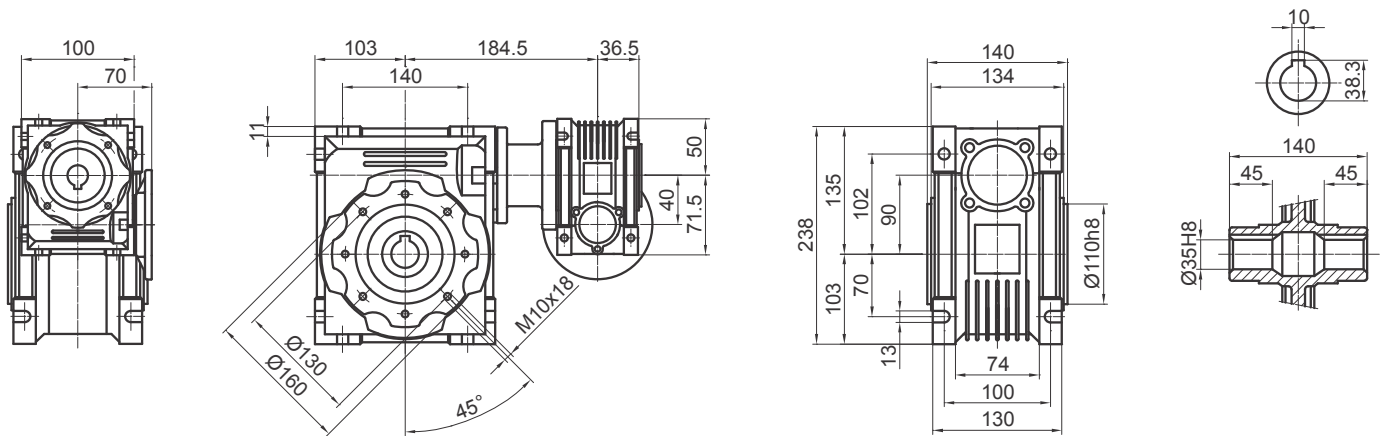
**UMRV 030 - 063**



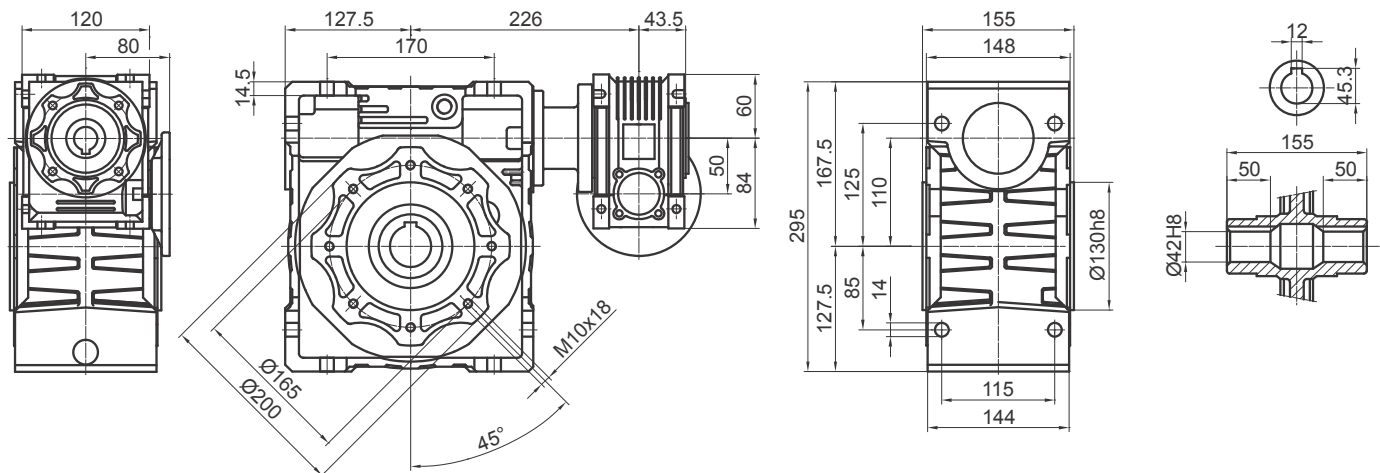
**UMRV 040 - 075**



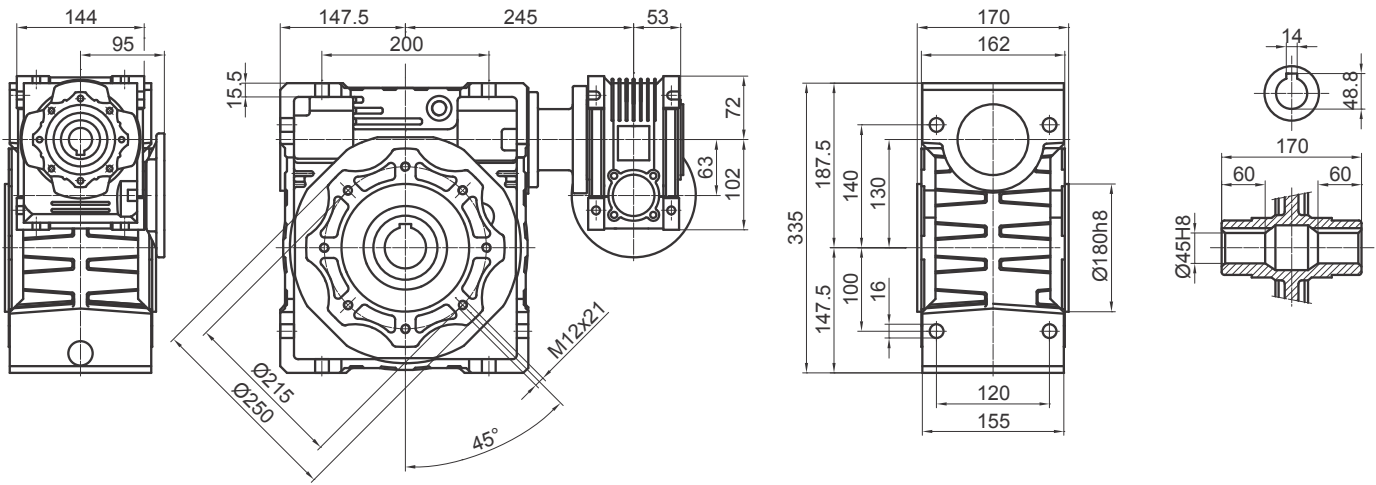
**UMRV 040 - 090**



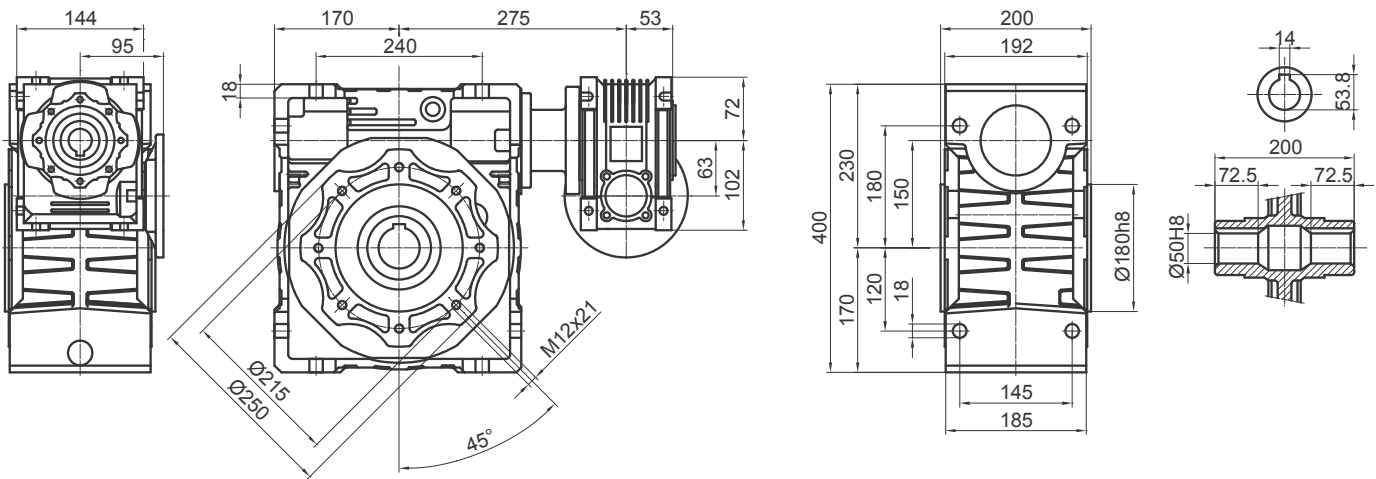
**UMRV 050 - 110**



**UMRV 063 - 130**

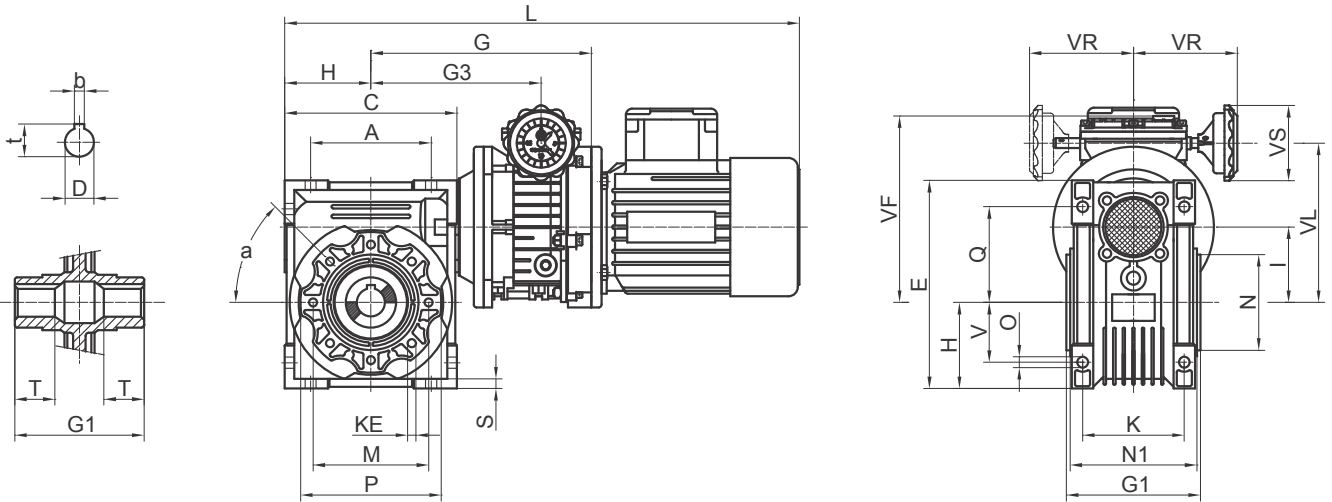


**UMRV 063 - 150**



10.4 TKF(TXF)+UMRV尺寸圖

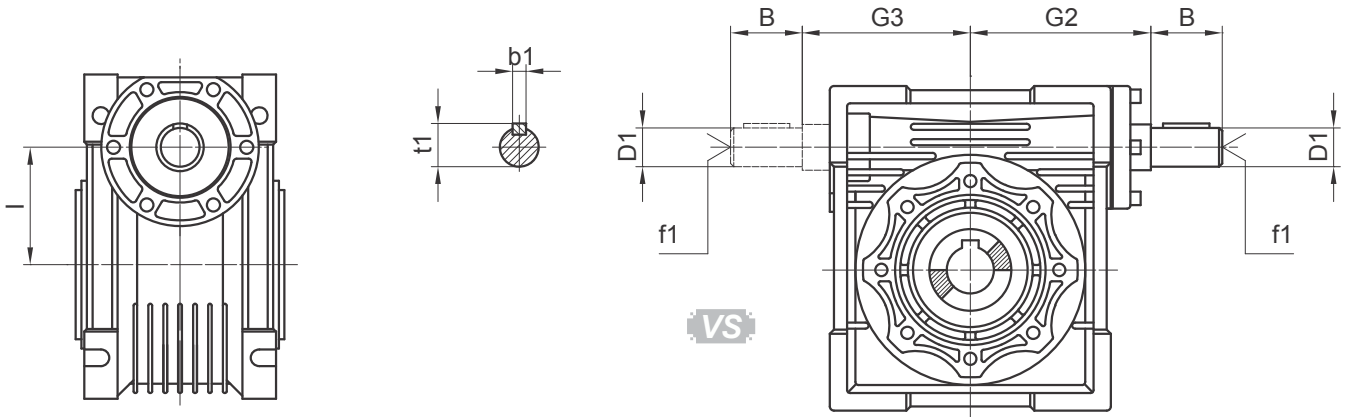
10.4 TKF(TXF)+UMRV Dimensions charts



	A	C	D <sub>H8</sub>	b	t	E	G	G1	G3	H	I	L	M	N <sub>H8</sub>	N1	O	P	Q	S	T	V	VF	VR	VS	VL	K	KE	a
TKF002-UMRV040							181.5	134				438.5										153	113	70	118			
TKF005-UMRV040	70	100	18	6	20.8	121.5	178	78	141.5	50	40	453	75	60	73	6.5	87	55	6.5	26	35	165	113	70	131	60	M6x8 (n=4)	45°
TXF005-UMRV040							177		127			452										152	115	70	123.5			
TKF002-UMRV050							191.5		144			458.5										163	113	70	128			
TKF005-UMRV050	80	120	25	8	28.3	144	188	92	151.5	60	50	473	85	70	87	8.5	100	64	7	30	40	175	113	70	141	70	M8x10 (n=4)	45°
TXF005-UMRV050							187		137			472										162	115	70	133.5			
TKF005-UMRV063							204		167.5			501										188	113	70	154			
TXF005-UMRV063							203		153			500										175	115	70	146.5	85	M8x14 (n=8)	45°
TKF010-UMRV063	100	144	25	8	28.3	174	239.5	112	183.5	72	63	566.5	95	80	106	8.5	110	80	8	36	50	205	120	85	170			
TXF010-UMRV063							227		164.5			554										197	126	85	166			
TKF010-UMRV075							256.5		200.5			597.5										217	120	85	182			
TKF010-UMRV075	120	172	28	8	31.3	205	244	120	181.5	86	75	585	115	95	114	11	140	93	10	40	60	209	126	85	178	90	M8x14 (n=8)	45°
TXF010-UMRV075							287		217			631										223	140	85	202			
TKF010-UMRV090							273		217			631										232	120	85	197			
TKF010-UMRV090	140	206	35	10	38.3	238	260.5	140	198	103	90	618.5	130	110	134	13	160	102	11	45	70	224	126	85	193	110	M10x18 (n=8)	45°
TXF010-UMRV090							304		236.5			702										238	140	85	217			
TKF010-UMRV110							303.5		247.5			686										252	120	85	217			
TXF010-UMRV110							291		228.5			673.5										244	120	85	213			
TKF020-UMRV110	170	252.5	42	12	45.3	295	334	155	266.5	127.5	110	756.5	165	130	148	14	200	125	14	50	85	258	140	85	237	115	M10x18 (n=8)	45°
TKF030-UMRV110												834.5										291	150	120	268			
TKF050-UMRV110							382		291			849.5																
TKF020-UMRV130							354		286.5			796.5										278	140	85	257			
TKF030-UMRV130	200	292.5	45	14	48.8	335	402	170	311	147.5	130	874.5	215	180	162	16	250	140	15	60	100	311	150	120	288	120	M12x21 (n=8)	45°
TKF050-UMRV130							402		311			889.5										311	150	120	288			

10.5 URV 尺寸圖

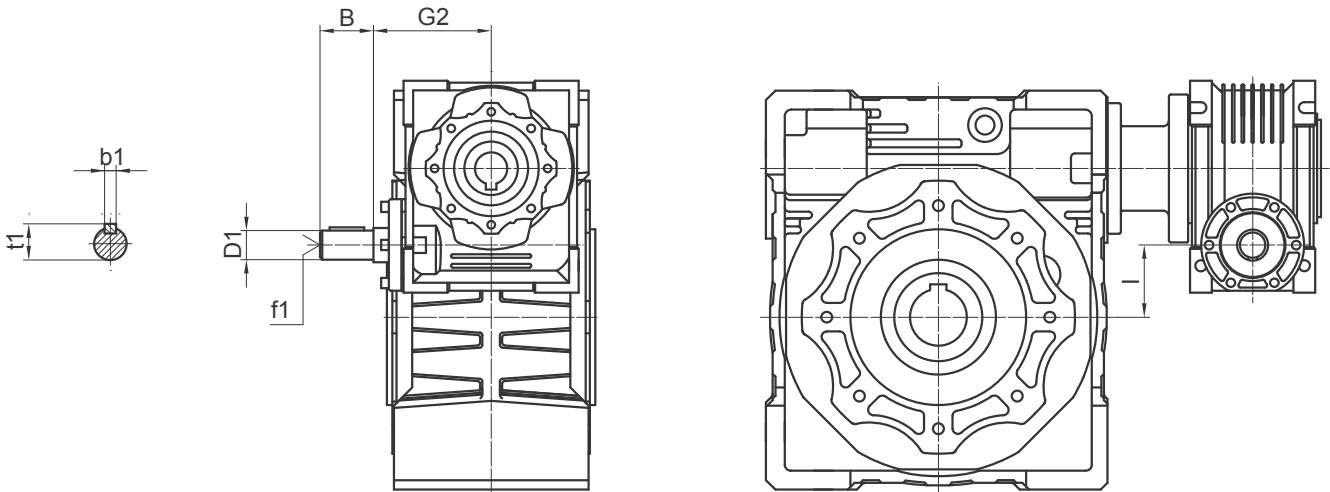
10.5 URV Dimensions charts



URV	025	030	040	050	063	075	090	110	130	150
<b>B</b>	20	20	23	30	40	50	50	60	80	80
<b>D1</b>	9 j6	9 j6	11 j6	14 j6	19 j6	24 j6	24 j6	28 j6	30 j6	35 j6
<b>G2</b>	38	51	60	74	90	105	125	142	162	195
<b>G3</b>	37	45	53	64	75	90	108	135	155	175
<b>I</b>	25	30	40	50	63	75	90	110	130	150
<b>b1</b>	3	3	4	5	6	8	8	8	8	10
<b>f1</b>	-	-	-	M6	M6	M8	M8	M10	M10	M12
<b>t1</b>	10.2	10.2	12.5	16	21.5	27	27	31	33	38

10.6 URV+UMRV 尺寸圖

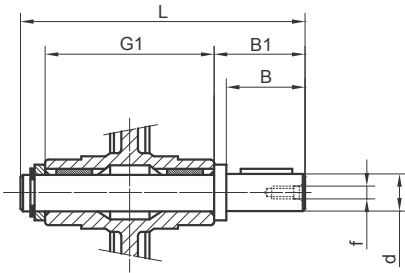
10.6 URV+UMRV Dimensions charts



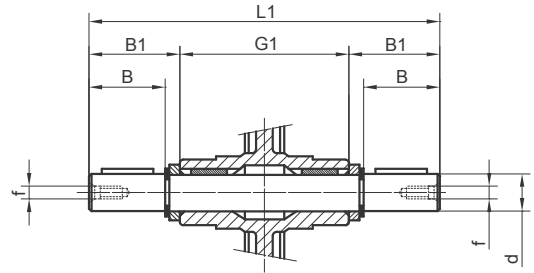
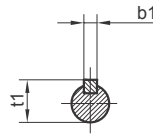
URV-UMRV	030-040	030-050	030-063	040-075	040-090	050-110	063-130	063-150
<b>B</b>	20	20	20	23	23	30	40	40
<b>D1</b>	9 j6	9 j6	9 j6	11 j6	11 j6	14 j6	19 j6	19j6
<b>G2</b>	51	51	51	60	60	74	90	90
<b>I</b>	10	20	33	35	50	50	67	87
<b>b1</b>	3	3	3	4	4	5	6	6
<b>f1</b>	-	-	-	-	-	M6	M6	M6
<b>t1</b>	10.2	10.2	10.2	12.5	12.5	16	21.5	21.5

10.7 輸出軸

10.7 Output shaft



AS



AB

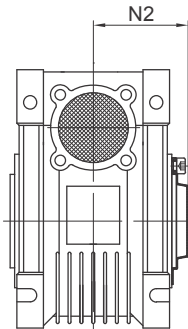
	<b>d</b>	<b>B</b>	<b>B1</b>	<b>G1</b>	<b>L</b>	<b>L1</b>	<b>f</b>	<b>b1</b>	<b>t1</b>
<b>025</b>	11 g6 (9)	23 (25)	25.5 (30)	50	81 (85.5)	101	-	4 (3)	12.5 (10.2)
<b>030</b>	14 g6	30	32.5	63	102	128	M6	5	16
<b>040</b>	18 h6	40	43	78	128	164	M6	6	20.5
<b>050</b>	25 h6	50	53.5	92	153	199	M10	8	28
<b>063</b>	25 h6	50	53.5	112	173	219	M10	8	28
<b>075</b>	28 h6	60	63.5	120	192	247	M10	8	31
<b>090</b>	35 h6	80	84.5	140	234	309	M12	10	38
<b>110</b>	42 h6	80	84.5	155	249	324	M16	12	45
<b>130</b>	45 h6	80	85	170	265	340	M16	14	48.5
<b>150</b>	50 h6	82	87	200	297	374	M16	14	53.5

(..) 根據用戶要求訂製

(..) Only on request

10.8 防塵蓋

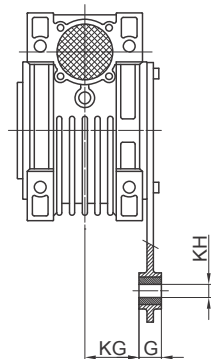
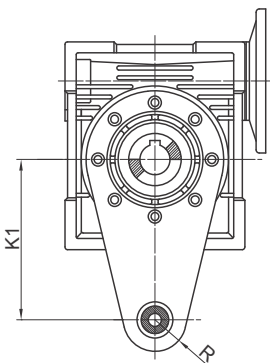
10.8 Protective Cover



	<b>N2</b>
<b>030</b>	42
<b>040</b>	50
<b>050</b>	58
<b>063</b>	69
<b>075</b>	74
<b>090</b>	86
<b>110</b>	94
<b>130</b>	102
<b>150</b>	113

10.9 扭力臂

10.9 Torque arm

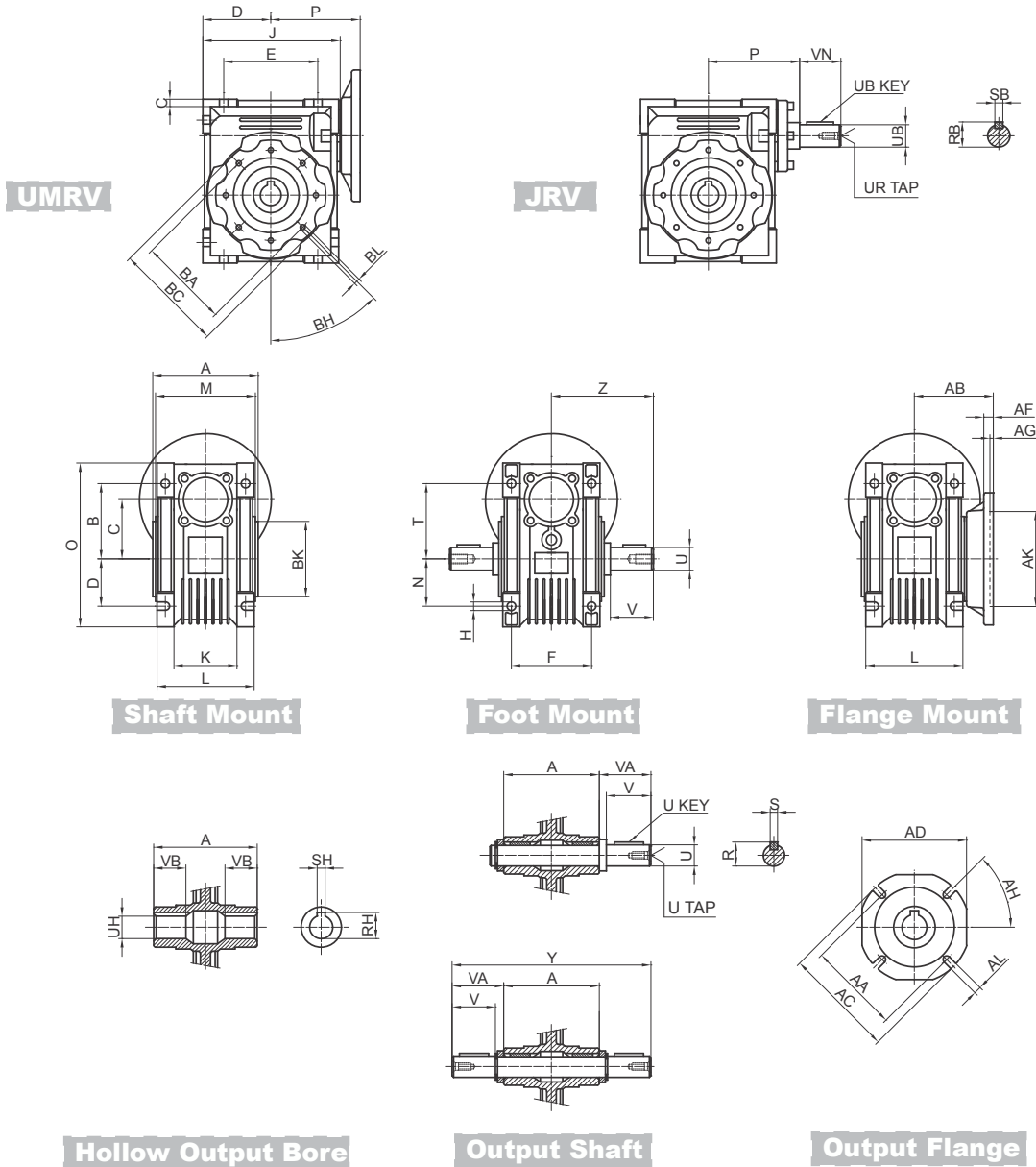


	<b>K1</b>	<b>G</b>	<b>KG</b>	<b>KH</b>	<b>R</b>
<b>025</b>	70	14	17.5	8	15
<b>030</b>	85	14	24	8	15
<b>040</b>	100	14	31.5	10	18
<b>050</b>	100	14	38.5	10	18
<b>063</b>	150	14	49	10	18
<b>075</b>	200	25	47.5	20	30
<b>090</b>	200	25	57.5	20	30
<b>110</b>	250	30	62	25	35
<b>130</b>	250	30	69	25	35
<b>150</b>	250	30	84	25	35

11.0 UMRV-英制系列  
**UMRV-INCH SERIES**

11.1 尺寸

11.1 Dimensions chart



Hollow Output Bore	030	040	050	063	075	090	110	130	150
<b>RH</b>	0.71	0.84	1.12	1.24	1.37	1.52	1.8	1.93	2.22
<b>SH</b>	0.1875	0.1875	0.25	0.25	0.25	0.3125	0.375	0.375	0.500
<b>UH</b>	0.625 <sup>+0.001</sup> <sub>0</sub>	0.75 <sup>+0.001</sup> <sub>0</sub>	1.0 <sup>+0.001</sup> <sub>0</sub>	1.125 <sup>+0.001</sup> <sub>0</sub>	1.25 <sup>+0.001</sup> <sub>0</sub>	1.375 <sup>+0.001</sup> <sub>0</sub>	1.625 <sup>+0.001</sup> <sub>0</sub>	1.75 <sup>+0.001</sup> <sub>0</sub>	2.0 <sup>+0.001</sup> <sub>0</sub>
<b>VB</b>	0.83	1.14	1.28	1.42	1.56	1.77	1.97	2.24	2.85

Output Shaft	030	040	050	063	075	090	110	130	150
<b>R</b>	0.7	0.83	1.11	1.23	1.36	1.51	1.79	1.92	2.22
<b>S</b>	0.1875	0.1875	0.25	0.25	0.25	0.3125	0.375	0.375	0.500
<b>U</b>	0.625 <sup>0</sup> <sub>-0.0005</sub>	0.75 <sup>0</sup> <sub>-0.0005</sub>	1.0 <sup>0</sup> <sub>-0.0005</sub>	1.125 <sup>0</sup> <sub>-0.0005</sub>	1.25 <sup>0</sup> <sub>-0.0005</sub>	1.375 <sup>0</sup> <sub>-0.0005</sub>	1.625 <sup>0</sup> <sub>-0.0005</sub>	1.75 <sup>0</sup> <sub>-0.0005</sub>	2.0 <sup>0</sup> <sub>-0.0005</sub>
<b>U KEY</b>	0.1875x1.125	0.1875x1.5	0.25x1.5	0.25x1.875	0.25x2.25	0.3125x2.5	0.375x2.75	0.375x2.75	0.50x3.50
<b>U TAP</b>	1/4-20	1/4-20	3/8-16	3/8-16	1/2-13	1/2-13	5/8-11	5/8-11	3/4-10
<b>V</b>	1.57	1.97	1.97	2.36	2.76	3.15	3.54	3.54	3.94
<b>VA</b>	1.67	2.09	2.11	2.5	2.89	3.33	3.72	3.74	4.13
<b>Y</b>	5.82	7.25	7.84	9.41	10.5	12.17	13.54	14.17	16.13



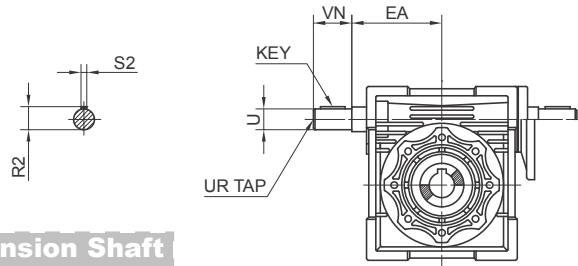
	<b>030</b>	<b>040</b>	<b>050</b>	<b>063</b>	<b>075</b>	<b>090</b>	<b>110</b>	<b>130</b>	<b>150</b>
<b>A</b>	2.48	3.07	3.62	4.41	4.72	5.51	6.1	6.69	7.87
<b>B</b>	2.24	2.81	3.31	4.02	4.69	5.31	6.59	7.38	9.06
<b>BA</b>	2.56	2.95	3.35	3.74	4.53	5.12	6.5	8.46	8.46
<b>BC</b>	2.95	3.43	3.94	4.33	5.51	6.3	7.87	9.84	9.84
<b>BH</b>	90°	45°	45°	45°	45°	45°	45°	45°	45°
<b>BK</b>	2.165 <sup>0</sup> <sub>-0.0018</sub>	2.362 <sup>0</sup> <sub>-0.0018</sub>	2.756 <sup>0</sup> <sub>-0.0018</sub>	3.15 <sup>0</sup> <sub>-0.0021</sub>	3.74 <sup>0</sup> <sub>-0.0021</sub>	4.331 <sup>0</sup> <sub>-0.0021</sub>	5.118 <sup>0</sup> <sub>-0.0025</sub>	7.087 <sup>0</sup> <sub>-0.0025</sub>	7.087 <sup>0</sup> <sub>-0.0025</sub>
<b>BL</b>	M6x11	M6x10	M8x10	M8x14	M8x14	M10x18	M10x18	M12x21	M12x21
<b>C</b>	1.18	1.57	1.97	2.48	2.95	3.54	4.33	5.12	5.91
<b>D</b>	1.57	1.97	2.36	2.83	3.39	4.06	5.02	5.81	6.69
<b>E</b>	2.13	2.76	3.15	3.94	4.72	5.51	6.69	7.87	9.45
<b>F</b>	1.73	2.36	2.76	3.35	3.54	3.94	4.53	4.72	5.71
<b>G</b>	0.22	0.26	0.28	0.31	0.39	0.43	0.57	0.61	0.71
<b>H</b>	0.26	0.26	0.33	0.33	0.45	0.51	0.55	0.63	0.71
<b>J</b>	3.15	3.98	4.76	5.75	6.85	8.19	9.94	11.52	13.39
<b>K</b>	1.26	1.69	1.93	2.64	2.83	2.91	-	-	-
<b>L</b>	2.2	2.8	3.35	4.06	4.41	5.12	5.67	6.1	7.28
<b>M</b>	2.28	2.87	3.43	4.17	4.49	5.28	5.83	6.38	7.56
<b>N</b>	1.06	1.38	1.57	1.97	2.36	2.76	3.35	3.94	4.72
<b>O</b>	3.82	4.78	5.67	6.85	8.07	9.37	11.61	13.19	15.75
<b>P</b>	2.64	3.15	3.54	4.13	4.96	5.63	6.81	7.6	8.46
<b>Q</b>	0.83	2.36	2.91	3.54	4.13	4.92	5.59	6.38	7.68
<b>T</b>	1.73	2.17	2.52	3.15	3.66	4.02	4.92	5.51	7.09
<b>Z</b>	2.91	3.63	3.92	4.71	5.25	6.09	6.77	7.09	8.07

Output Flange		<b>AA</b>	<b>AB</b>	<b>AC</b>	<b>AD</b>	<b>AF</b>	<b>AG</b>	<b>AH</b>	<b>AK</b>	<b>AL</b>
<b>030</b>	<b>FA</b>	2.68	2.15	3.15	2.76	0.24	0.16	45°	1.969 <sup>+0.0015</sup> <sub>0</sub>	0.26
	<b>FB</b>	2.95	2.64	4.33	3.74	0.28	0.16	45°	2.362 <sup>+0.0018</sup> <sub>0</sub>	0.35
<b>040</b>	<b>FB</b>	2.95	3.82	4.33	3.74	0.28	0.16	45°	2.362 <sup>+0.0018</sup> <sub>0</sub>	0.35
	<b>FC</b>	4.53	3.15	5.51	-	0.35	0.2	45°	3.740 <sup>+0.0021</sup> <sub>0</sub>	0.37
	<b>FD</b>	3.94	2.28	4.72	-	0.47	0.2	45°	3.150 <sup>+0.0018</sup> <sub>0</sub>	0.35
	<b>FA</b>	3.35	3.54	4.92	4.33	0.35	0.2	45°	2.756 <sup>+0.0018</sup> <sub>0</sub>	0.43
<b>050</b>	<b>FB</b>	3.35	4.72	4.92	4.33	0.35	0.2	45°	2.756 <sup>+0.0018</sup> <sub>0</sub>	0.43
	<b>FC</b>	5.12	3.5	6.3	-	0.39	0.2	45°	4.331 <sup>+0.0021</sup> <sub>0</sub>	0.37
	<b>FD</b>	4.53	2.83	5.51	-	0.57	0.2	45°	3.543 <sup>+0.0021</sup> <sub>0</sub>	0.43
	<b>FA</b>	4.13	3.23	7.09	5.59	0.39	0.24	45°	4.528 <sup>+0.0021</sup> <sub>0</sub>	0.43
<b>063</b>	<b>FB</b>	5.91	4.41	7.09	5.59	0.39	0.24	45°	4.528 <sup>+0.0021</sup> <sub>0</sub>	0.43
	<b>FC</b>	6.5	3.86	7.87	-	0.39	0.2	45°	5.118 <sup>+0.0025</sup> <sub>0</sub>	0.43
	<b>FD</b>	6.5	4.21	7.87	-	0.39	0.2	45°	5.118 <sup>+0.0025</sup> <sub>0</sub>	0.43
	<b>FE</b>	5.12	3.17	6.3	-	0.65	0.2	45°	4.331 <sup>+0.0021</sup> <sub>0</sub>	0.43
	<b>FA</b>	6.5	4.37	7.87	6.69	0.51	0.24	45°	5.118 <sup>+0.0025</sup> <sub>0</sub>	0.55
<b>075</b>	<b>FB</b>	5.12	3.54	6.3	-	0.51	0.24	45°	4.331 <sup>+0.0021</sup> <sub>0</sub>	0.55
	<b>FA</b>	6.89	4.37	8.27	8.27	0.51	0.24	45°	5.984 <sup>+0.0025</sup> <sub>0</sub>	0.55
<b>090</b>	<b>FB</b>	8.46	4.8	9.84	-	0.71	0.24	45°	7.087 <sup>+0.0025</sup> <sub>0</sub>	0.55
	<b>FC</b>	6.5	4.33	7.87	-	0.67	0.24	45°	5.118 <sup>+0.0025</sup> <sub>0</sub>	0.43
	<b>FD</b>	6.89	5.94	8.27	-	0.51	0.24	45°	5.984 <sup>+0.0025</sup> <sub>0</sub>	0.55
	<b>FA</b>	9.06	5.16	11.02	10.24	0.59	0.24	45°	6.693 <sup>+0.0025</sup> <sub>0</sub>	0.55
<b>110</b>	<b>FB</b>	9.06	7.09	11.02	10.24	0.59	0.24	45°	6.693 <sup>+0.0025</sup> <sub>0</sub>	0.55
	<b>FA</b>	10.04	5.51	12.6	11.42	0.59	0.24	22.5°	7.087 <sup>+0.0025</sup> <sub>0</sub>	0.63
<b>130</b>	<b>FA</b>	10.04	6.10	12.6	11.42	0.59	0.24	22.5°	7.087 <sup>+0.0025</sup> <sub>0</sub>	0.63
<b>150</b>	<b>FA</b>	10.04	6.10	12.6	11.42	0.59	0.24	22.5°	7.087 <sup>+0.0025</sup> <sub>0</sub>	0.63

Input Shaft		<b>030</b>	<b>040</b>	<b>050</b>	<b>063</b>	<b>075</b>	<b>090</b>	<b>110</b>	<b>130</b>	<b>150</b>
<b>SB</b>		0.094	0.125	0.1875	0.1875	0.1875	0.1875	0.25	0.25	0.3175
<b>RB</b>		0.42	0.55	0.7	0.83	0.96	0.96	1.24	1.36	1.51
<b>UB</b>		0.375 <sup>0</sup> <sub>-0.0005</sub>	0.5 <sup>0</sup> <sub>-0.0005</sub>	0.625 <sup>0</sup> <sub>-0.0005</sub>	0.75 <sup>0</sup> <sub>-0.0005</sub>	0.875 <sup>0</sup> <sub>-0.0005</sub>	0.875 <sup>0</sup> <sub>-0.0005</sub>	1.125 <sup>0</sup> <sub>-0.0005</sub>	1.25 <sup>0</sup> <sub>-0.0005</sub>	1.375 <sup>0</sup> <sub>0.0005</sub>
<b>UB KEY</b>		0.094x0.875	0.125x0.875	0.1875x1.125	0.1875x1.5	0.1875x1.875	0.1875x1.875	0.25x2.25	0.25x2.5	0.3175x2.875
<b>UR TAP</b>		-	1/4-20	1/4-20	1/4-20	1/4-20	1/4-20	3/8-16	1/2-13	1/2-13
<b>VN</b>		1.18	1.18	1.58	1.97	2.36	2.36	2.76	3.15	3.15

11.2 VS 尺寸圖

11.2 VS Dimensions charts

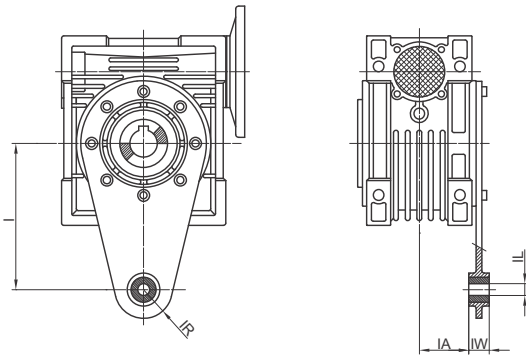


**High Speed Extension Shaft**

	EA	U	VN	UR	S2	R2	KEY	
							Length	Square
<b>030</b>	1.772	0.375 <sup>0</sup> <sub>-0.0005</sub>	1.18	-	0.093	0.42	0.875	0.094
<b>040</b>	2.087	0.5 <sup>0</sup> <sub>-0.0005</sub>	1.18	1/4-20	0.13	0.55	0.875	0.125
<b>050</b>	2.52	0.625 <sup>0</sup> <sub>-0.0005</sub>	1.58	1/4-20	0.19	0.7	1.125	0.188
<b>063</b>	2.953	0.75 <sup>0</sup> <sub>-0.0005</sub>	1.97	1/4-20	0.19	0.83	1.5	0.188
<b>075</b>	3.543	0.875 <sup>0</sup> <sub>-0.0005</sub>	2.36	1/4-20	0.19	0.96	1.875	0.188
<b>090</b>	4.252	0.875 <sup>0</sup> <sub>-0.0005</sub>	2.36	1/4-20	0.19	0.96	1.875	0.188
<b>110</b>	5.315	1.125 <sup>0</sup> <sub>-0.0005</sub>	2.76	3/8-16	0.25	1.24	2.25	0.25
<b>130</b>	6.102	1.25 <sup>0</sup> <sub>-0.0005</sub>	3.15	1/2-13	0.25	1.36	2.5	0.25
<b>150</b>	8.27	1.375 <sup>0</sup> <sub>-0.0005</sub>	3.15	1/2-13	0.32	1.51	2.875	0.315

11.3 扭力臂

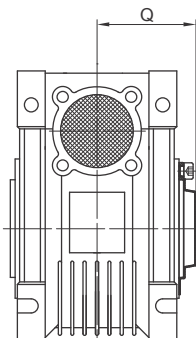
11.3 Torque Arm



	I	IA	IL	IR	IW
<b>025</b>	2.76	0.69	0.31	0.59	0.55
<b>030</b>	3.35	0.94	0.31	0.59	0.55
<b>040</b>	3.94	1.24	0.39	0.71	0.55
<b>050</b>	3.94	1.52	0.39	0.71	0.55
<b>063</b>	5.91	1.93	0.39	0.71	0.55
<b>075</b>	7.87	1.87	0.79	1.18	0.98
<b>090</b>	7.87	2.26	0.79	1.18	0.98
<b>110</b>	9.84	2.44	0.98	1.38	1.18
<b>130</b>	9.84	2.72	0.98	1.38	1.18
<b>150</b>	9.84	3.31	0.98	1.38	1.18

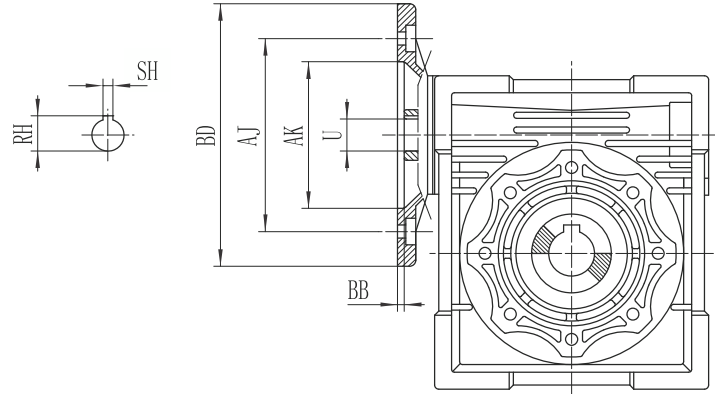
11.4 防塵蓋

11.4 Protective Cover



	Q
<b>030</b>	1.65
<b>040</b>	1.97
<b>050</b>	2.28
<b>063</b>	2.72
<b>075</b>	2.91
<b>090</b>	3.39
<b>110</b>	3.7
<b>130</b>	4.02
<b>150</b>	4.45

	NEMA Flange	Input Bore Diameter	Available Ratios											
			5	7.5	10	15	20	25	30	40	50	60	80	100
030	48C	0.5	•	•	•	•	•	•	•	•	•	•	•	
040	56C	0.625	•	•	•	•	•	•	•	•	•	•	•	•
050	56C	0.625	•	•	•	•	•	•	•	•	•	•	•	•
063	56C	0.625					•	•	•	•	•	•	•	•
	140TC	0.875		•	•	•	•	•	•	•				
075	56C	0.625									•	•	•	•
	140TC	0.875				•	•	•	•	•	•			
	180TC	1.125		•	•	•								
090	56C	0.625											•	•
	140TC	0.875						•	•	•	•	•		
	180TC	1.125		•	•	•	•	•	•	•				
110	140TC	0.875									•	•	•	•
	180TC	1.125					•	•	•	•	•	•		
	210TC	1.375		•	•	•	•							
130	140TC	0.875											•	•
	180TC	1.125							•	•	•	•	•	
	210TC	1.375		•	•	•	•	•	•	•				
150	180TC	1.125							•	•	•	•	•	•
	210TC	1.375				•	•	•	•	•				
	250TC	1.625		•	•	•	•							



	NEMA Flange	DIMENSIONS						
		AK	AJ	BD	BB	RH	SH	U
<b>030</b>	<b>48C</b>	3.00	3.75	5.63	0.20	0.56	0.125	0.500
<b>040</b>	<b>56C</b>	4.50	5.88	6.50	0.20	0.71	0.188	0.625
<b>050</b>	<b>56C</b>	4.50	5.88	6.50	0.20	0.71	0.188	0.625
<b>063</b>	<b>56C</b>	4.50	5.88	6.50	0.20	0.71	0.188	0.625
	<b>140TC</b>	4.50	5.88	6.50	0.20	0.97	0.188	0.875
<b>075</b>	<b>56C</b>	4.50	5.88	6.50	0.20	0.71	0.188	0.625
	<b>140TC</b>	4.50	5.88	6.50	0.20	0.97	0.188	0.875
	<b>180TC</b>	8.50	7.25	9.00	0.22	1.24	0.250	1.125
<b>090</b>	<b>56C</b>	4.50	5.88	6.50	0.20	0.71	0.188	0.625
	<b>140TC</b>	4.50	5.88	6.50	0.20	0.97	0.188	0.875
	<b>180TC</b>	8.50	7.25	9.00	0.22	1.24	0.250	1.125
<b>105 110</b>	<b>140TC</b>	4.50	5.88	6.50	0.20	0.97	0.188	0.875
	<b>180TC</b>	8.50	7.25	9.00	0.22	1.24	0.250	1.125
	<b>210TC</b>	8.50	7.25	9.00	0.22	1.52	0.313	1.375
<b>130</b>	<b>140TC</b>	4.50	5.88	6.50	0.20	0.97	0.188	0.875
	<b>180TC</b>	8.50	7.25	9.00	0.22	1.24	0.250	1.125
	<b>210TC</b>	8.50	7.25	9.00	0.22	1.52	0.313	1.375
<b>150</b>	<b>180TC</b>	8.50	7.25	9.00	0.22	1.24	0.250	1.125
	<b>210TC</b>	8.50	7.25	9.00	0.22	1.52	0.313	1.375
	<b>250TC</b>	8.50	7.25	9.00	0.22	1.59	0.375	1.625

## 基本信息 GENERAL INFORMATION

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## UMRV 系列蝸輪減速機 UMRV SERIES CYLINDRICAL WORM GEAR UNITS

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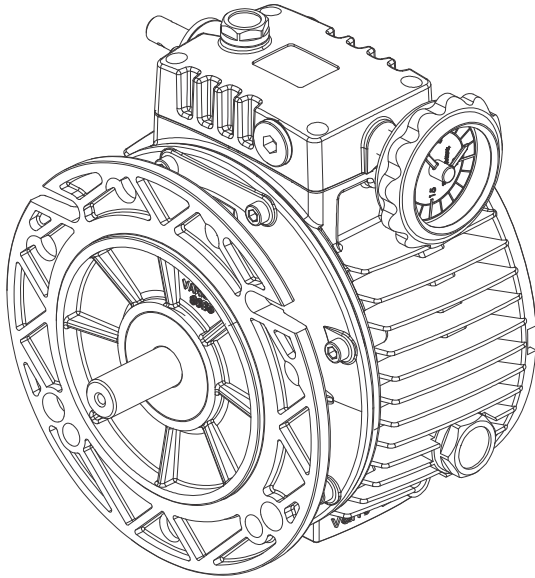
## TK/TKF/TXF 系列無段變速機 TK/TKF/TXF SERIES PLANETARY CONE & DISK STEP-LESS SPEED VARIATOR

# C

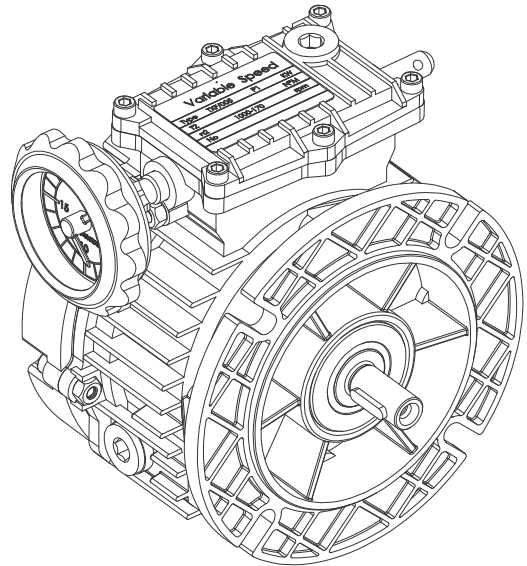
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# TK/TKF/TFX系列無段變速機

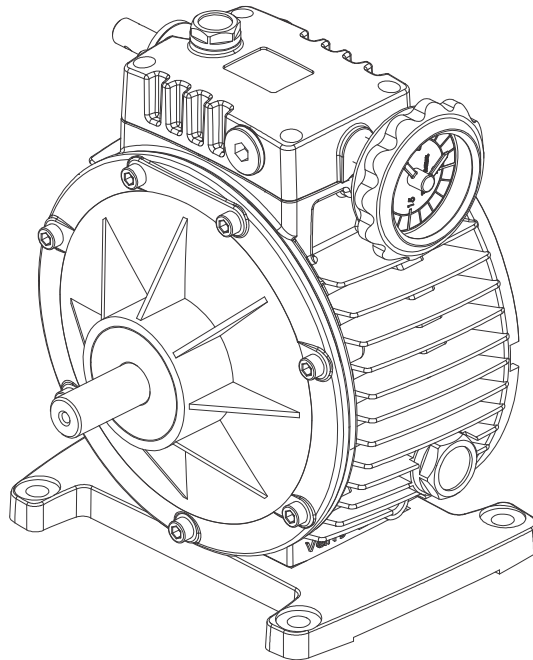
## TK/TKF/TFX SERIES PLANETARY CONE & DISK STEP-LESS SPEED VARIATOR



**TKF**



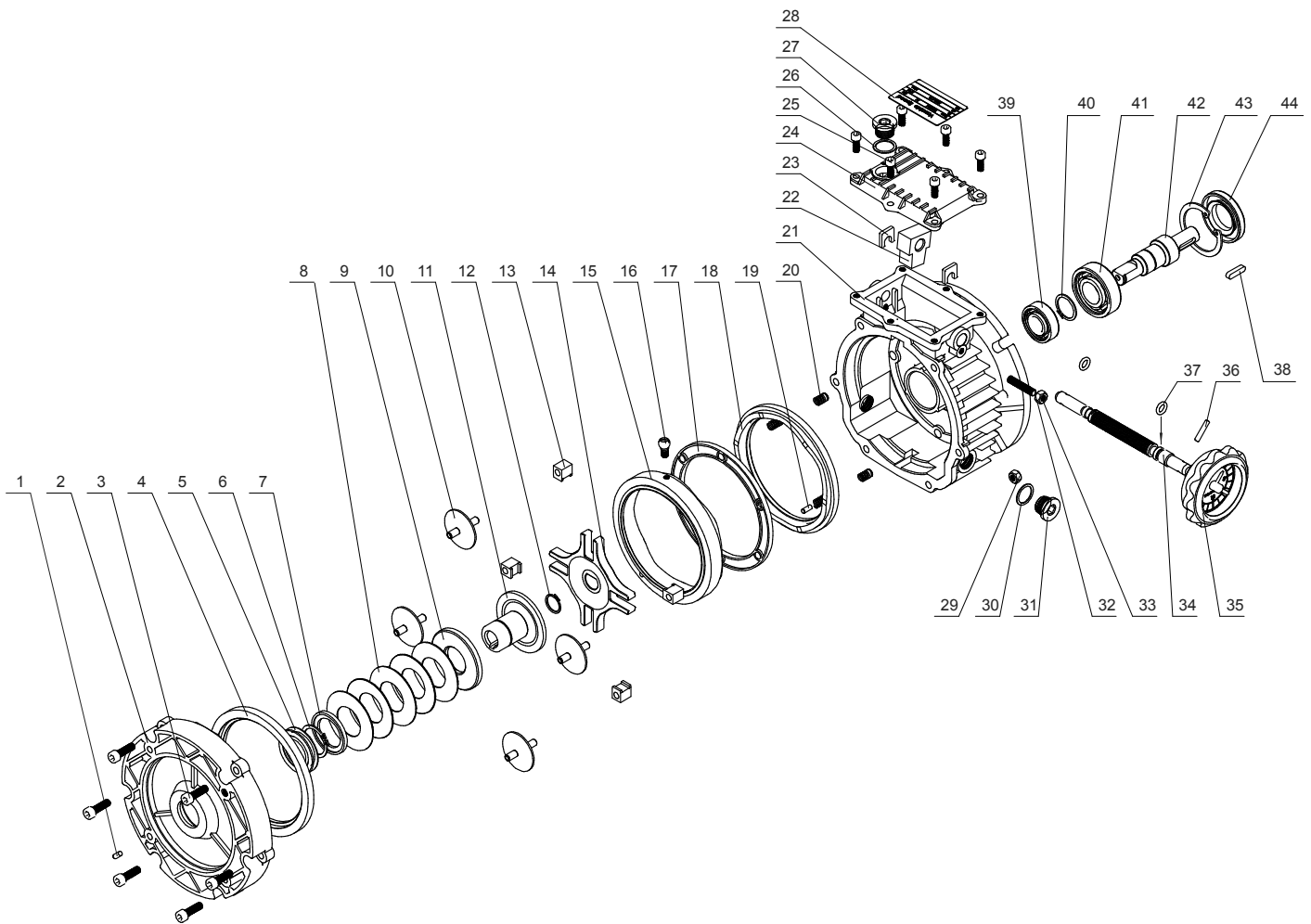
**TFX**



**TK**

1.0 分解圖

1.0 EXPLODED VIEW



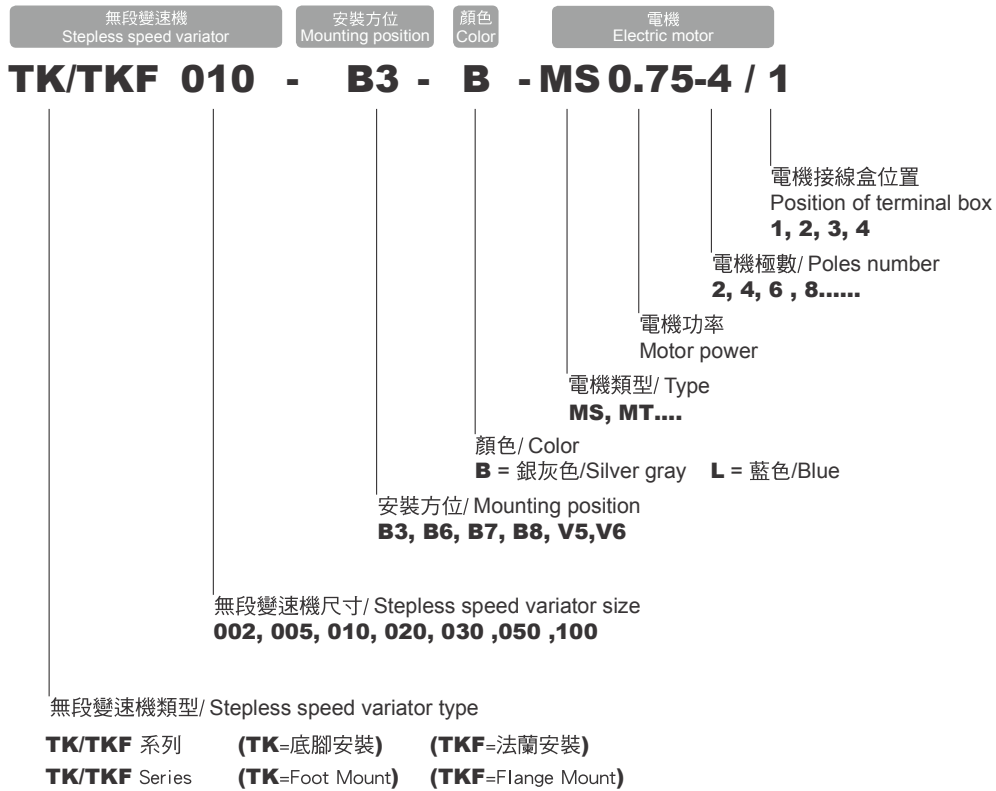
1	圓柱銷 Straight pin	12	軸用C型扣環 Circlip for shaft	23	卡板 Locating piece	34	調節螺桿 Regulating screw rod
2	輸入法蘭 Input flange	13	行星盤摩擦軸承 Planet disc friction bearing	24	頂蓋 Cap	35	手輪 Handwheel
3	內六角圓柱頭螺絲 Hexagon socket head cap screw	14	行星輪架 Planet carrier	25	內六角圓柱頭螺絲 Hexagon socket head cap screw	36	圓柱銷 Straight pin
4	固定外軌 Fixed annulus race	15	調整軌 Adjustable annulus race	26	橡膠墊片 Rubber gasket	37	O形橡膠密封圈 O-ring
5	油封 Oli seal	16	球接頭 Ball joint	27	油塞 Oil plug	38	平鍵 Parallel key
6	軸用C型扣環 Circlip for shaft	17	滾珠環 Ball ring	28	銘牌 Nameplate	39	軸承 Bearing
7	墊圈 Washer	18	凸輪圈 Cam ring	29	六角螺母 Hexagon nuts	40	孔用C型扣環 Circlip for hole
8	碟形彈簧 Belleville spring	19	圓柱銷 Straight pin	30	橡膠墊片 Rubber insert	41	軸承 Bearing
9	活動太陽輪 Adjustable sun race	20	彈簧 Spring	31	油鏡 Oil level indicator	42	輸出軸 Low speed shaft
10	行星盤 Planet disc	21	箱體 Case	32	螺栓 Bolt	43	孔用C型扣環 Circlip for hole
11	固定太陽輪 Fixed sun race	22	操作塊 Regulating block	33	六角螺母 Hexagon nuts	44	油封 Oli seal

2.0 產品名稱

2.0 DESIGNATION

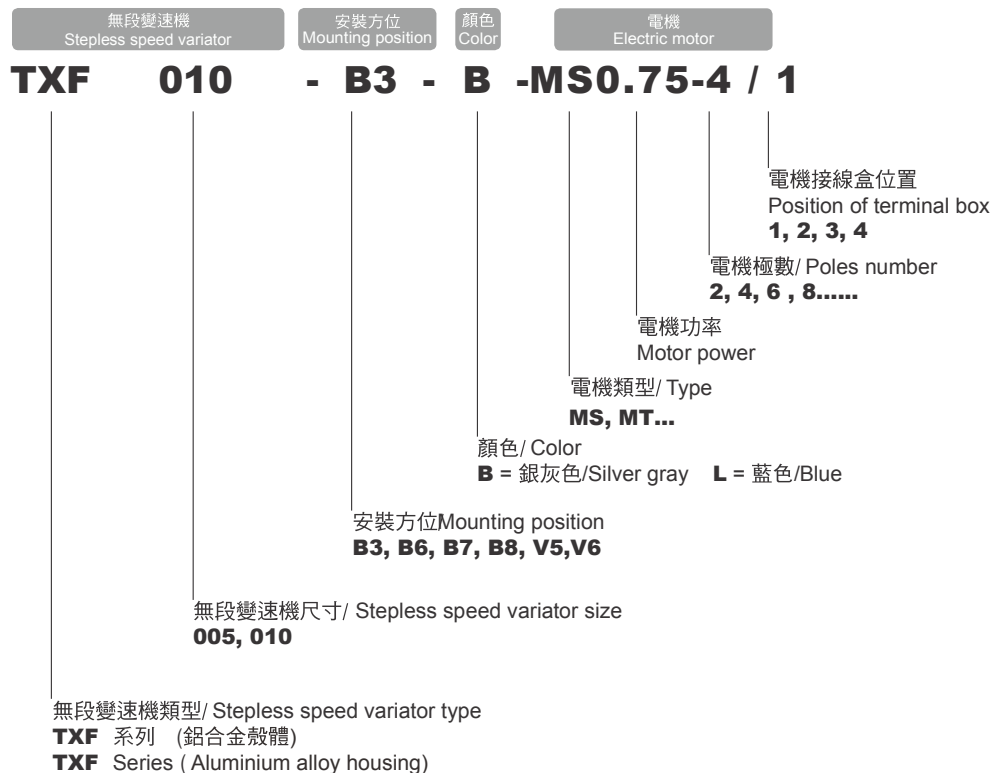
2.1 TK 系列無段變速機

2.1 TK Series stepless speed variator



2.2 TXF 系列無段變速機

2.2 TXF Series stepless speed variator






### 3.0 無段變速器選型表

### 3.0 STEPLESS SPEED VARIATOR SELECTION CHARTS

#### 3.1 TK/TKF 性能參數

#### 3.1 TK/TKF Performance


**$n_1=1400$**

$P_1$ (kW)	$i$	型式 TYPE	$n_2$ min <sup>-1</sup> max	$n_2$ min <sup>-1</sup> min	$M_2$ Nm min	$M_2$ Nm max	
0.18	1.6-8.2	TK/TKF002	880	170	1.5	3	632-4
0.25	1.4-7	TK/TKF005	1000	200	2	6	711-4
0.37	1.4-7	TK/TKF005	1000	200	3	6	712-4
0.55	1.4-7	TK/TKF010	1000	200	4.4	12	801-4
0.75	1.4-7	TK/TKF010	1000	200	6	12	802-4
1.1	1.4-8.2	TK/TKF020	1000	170	9	18	90S-4
1.5	1.4-8.2	TK/TKF020	1000	170	12	24	90L-4
2.2	1.4-7	TK/TKF030	1000	200	18	36	100L1-4
3.0	1.4-7	TK/TKF030/050	1000	200	24	48	100L2-4
4.0	1.4-7	TK/TKF050	1000	200	32	64	112M-4
5.5	1.4-7	TK/TKF100	1000	200	45	90	132S-4
7.5	1.4-7	TK/TKF100	1000	200	59	118	132M-4

#### 3.2 TXF 性能參數

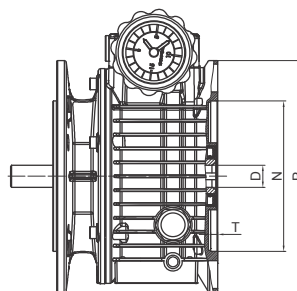
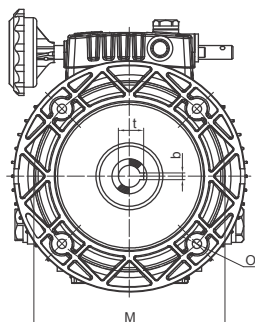
#### 3.2 TXF Performance

**$n_1=1400$**

$P_1$ (kW)	$i$	型式 TYPE	$n_2$ min <sup>-1</sup> max	$n_2$ min <sup>-1</sup> min	$M_2$ Nm min	$M_2$ Nm max	
0.25	1.4-8.2	TXF005	1000	170	2	6	711-4
0.37	1.4-8.2	TXF005	1000	170	3	6	712-4
0.55	1.4-8.2	TXF010	1000	170	4.4	12	801-4
0.75	1.4-8.2	TXF010	1000	170	6	12	802-4

### 4.0 電機法蘭尺寸

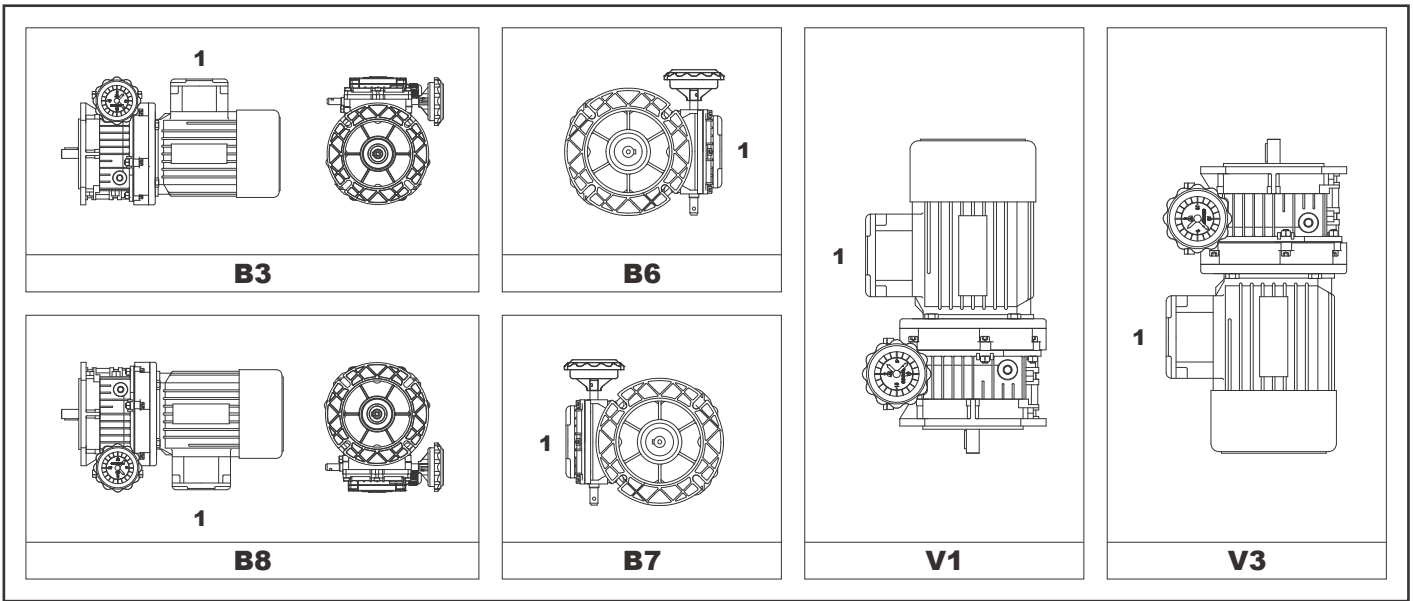
### 4.0 IEC Motor interface



	PAM IEC	P	$N_{H7}$	M	O	$D_{E7}$	b	t	T
TKF002/TXF002	63B5	140	95	115	M8	11	4	12.8	4
TKF005/TXF005	71B5	160	110	130	M8	14	5	16.3	5
TKF010/TXF010	80B5	200	130	165	M10	19	6	21.8	6
TKF020	90B5	200	130	165	M10	24	8	27.3	6
TKF030/050	100B5/112B5	250	180	215	M12	28	8	31.3	6
TKF100	132B5	300	230	265	M12	38	10	41.3	6

5.0 安裝方式

5.0 MOUNTING POSITIONS

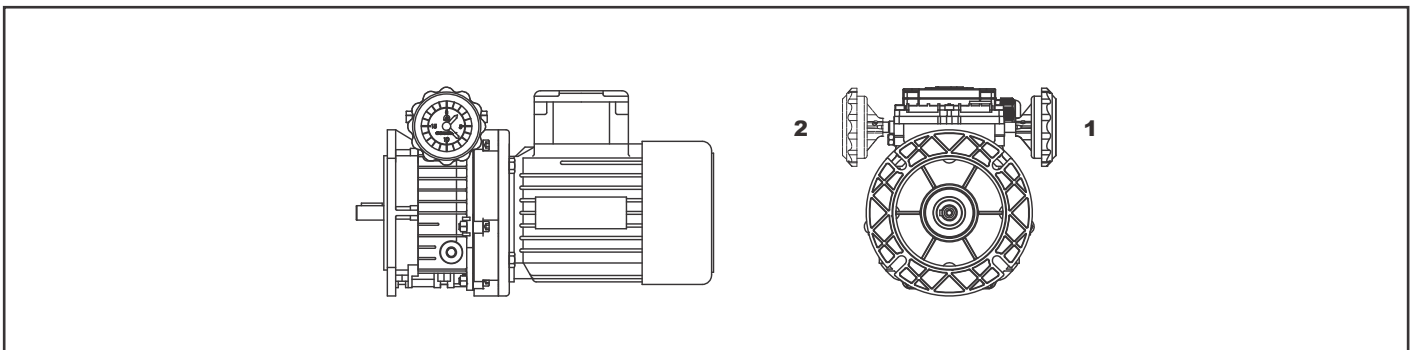


6.0 位置圖

6.0 POSITIONS DIAGRAM

6.1 手輪位置

6.1 Hand-wheel position

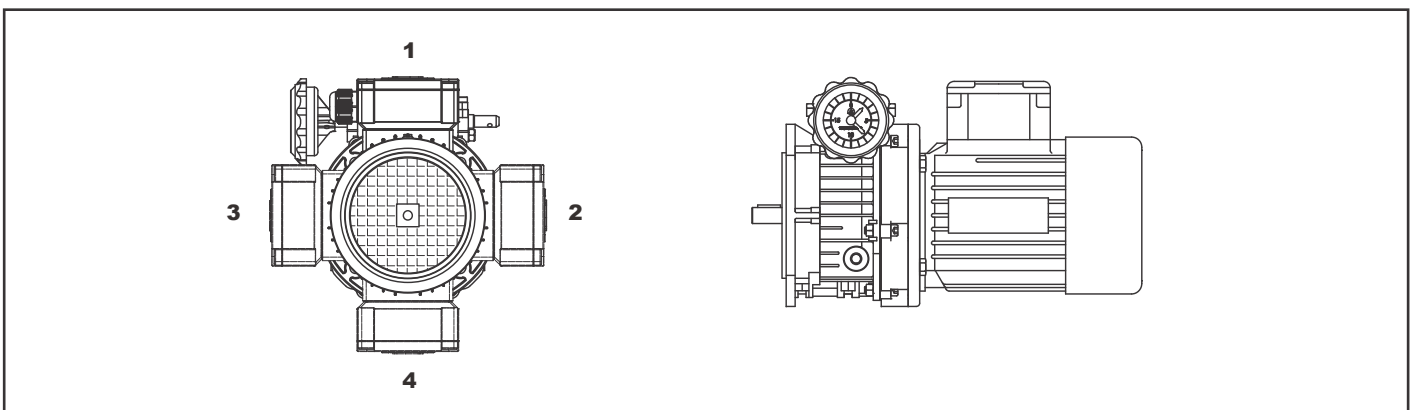


如沒有特別說明，手輪將按照如圖1位和B3安裝方位的組合樣式供貨。

Unless specified otherwise, the variator is supplied with the hand-wheel in pos. 1 referred to position B3.

6.2 電機接線盒方位

6.2 POS. of terminal box



如對電機接線盒位置有特別要求，在下單時按圖示注明方位。

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

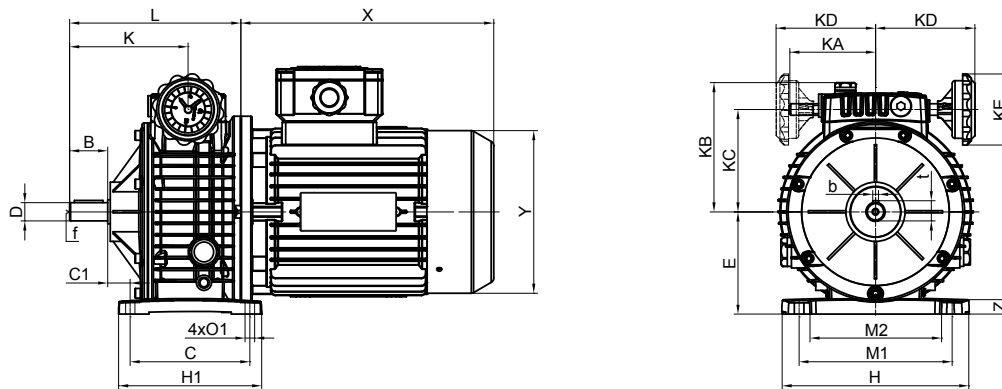
7.0 無段變速機尺寸圖

7.0 Speed Variator Dimensions Charts

7.1 TK系列尺寸圖

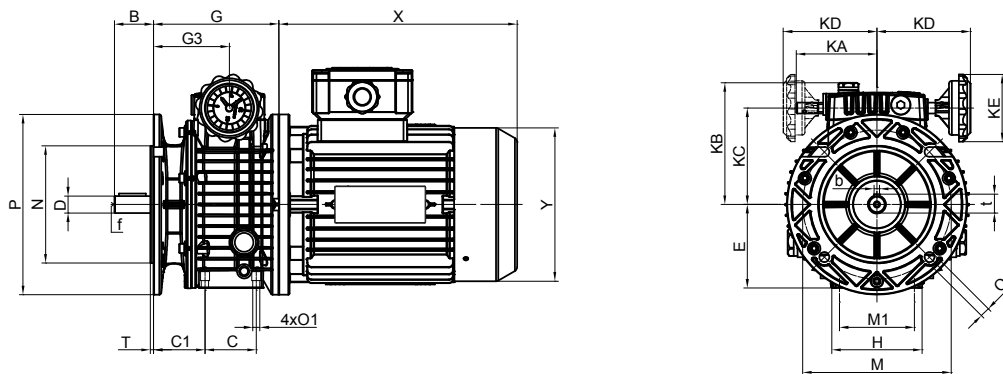
7.1 TK Series dimensions charts

TK



TYPE	B	Dj6	C	C1	E	H	H1	K	L	M1	M2	O1	KA	KB	KC	KD	KD1	KE	b	t	f	X	Y	Z
TK002-0.18	23	11	105	17.5	80	145	120	87	134.5	110	71	9	71	113	78	113	113	70	4	12.5	M5	207	130	10
TK005-0.25	30	14	104	19.5	93	149	125	102	138.5	120	96	9	71	125	91	113	113	70	5	16	M5	225	145	10
TK005-0.37																								
TK010-0.55	40	19	125	35	113	190	150	127.5	183.5	160	135	11	79	142	107	120	120	85	6	21.5	M6	255	175	15
TK010-0.75																								
TK020-1.1	50	24	140	49	125	230	170	154	221.5	180	130	13	-	148	127	140	-	85	8	27	M8	270	195	18
TK020-1.5																						295	195	
TK030-2.2	60	28	230	25	150	300	270	191	282	245	190	14	-	181	158	150	-	120	8	31	M8	325	215	25
TK030/050-3.0																						340	240	
TK050-4.0																						390	275	
TK100-5.5	80	38	250	32	200	365	290	200	333	315	225	18	-	218	193	182	-	120	10	41	M10	390	275	30
TK100-7.5																						430	275	

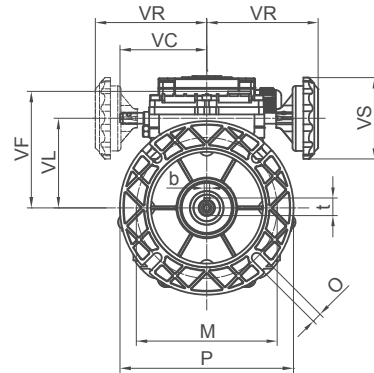
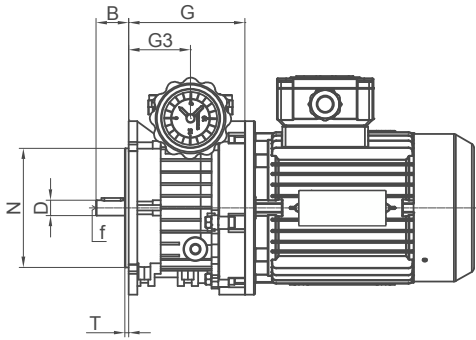
TKF



TYPE	B	Dj6	C	G	G3	E	H	M	M1	N	O	O1	P	T	C1	KA	KB	KC	KD	KD1	KE	b	t	f	X	Y
TKF002-0.18	23	11	50	111.5	64	70	72	115	60	95	9	M6	140	3.5	46	75	113	78	113	113	70	4	12.5	M5	207	130
TKF005-0.25	30	14	40	108	71.5	80	90	130	77	110	9	M8	160	3.5	51.5	75	125	91	113	113	70	5	16	M5	225	145
TKF005-0.37																										
TKF010-0.55	40	19	58	143.5	87.5	100	98	165	84	130	11	M8	200	3.5	62	82.5	142	107	120	120	85	6	21.5	M6	255	175
TKF010-0.75																										
TKF020-1.1	50	24	-	174	106.5	111	230	165	-	130	11	-	200	3.5	-	108.5	148	127	140	-	85	8	27	M8	270	195
TKF020-1.5																									295	195
TKF030-2.2	60	28	-	222	131	136	265	215	-	180	15	-	250	4	-	131	181	158	150	-	120	8	31	M8	325	215
TKF030/050-3.0																									340	240
TKF050-4.0																									390	275
TKF100-5.5	80	38	-	263	130	185	-	265	-	230	19	-	300	4	-	163	218	193	182	-	120	10	41	M10	390	275
TKF100-7.5																									430	275

7.2 **TXF** 系列尺寸圖

7.2 **TXF** Series dimensions charts



TYPE	B	Dk6	G	G3	M	Nh8	O	P	T	VC	VF	VL	VR	VS	b	f	t
<b>TXF005</b>	30(40)	14(19)	107	57	130	110	9	160	3.5	79.5	104.5	82	116.5	71	5(6)	M6	16(21.5)
<b>TXF010</b>	40(50)	19(24)	131	68.5	165	130	11	200	3.5	89.5	127	103	126.5	85	6(8)	M6(M8)	21.5(27)

(..) 根據用戶要求訂製

(..) Only on request

## 三相感應電動機 Electric Motors

Motor-type	P <sub>N</sub>		n <sub>N</sub> min <sup>-1</sup>	I <sub>N</sub> 400 V A	M <sub>N</sub> Nm	M <sub>S</sub> M <sub>N</sub>	M <sub>max</sub> M <sub>N</sub>	I <sub>S</sub> I <sub>N</sub>	COS φ	η %	Weight Kg(B3)
	kW	HP									

### 2極 2 Poles (3000 min<sup>-1</sup>)

230 V/400 V/50 HZ

56 B	2	0,12	0,16	2750	0,45	0,40	1,8	2,0	4	0,70	55	3,4
63 B	2	0,25	0,33	2790	0,72	0,87	2,2	2,2	5,5	0,76	66	4,4
63 C	2	0,30	0,50	2720	0,75	0,87	2,2	2,2	5,5	0,76	66	4,6
71 A	2	0,37	0,5	2760	0,95	1,29	2,2	2,2	6	0,80	73,5	6,2
71 B	2	0,55	0,75	2800	1,33	1,92	2,2	2,3	6	0,82	75,5	6,5
71 C	2	0,75	1	2820	1,74	2,54	2,3	2,4	6	0,83	76	6,5
80 A	2	0,75	1	2820	1,74	2,54	2,3	2,4	6	0,85	76,5	8,6
80 B	2	1,1	1,5	2830	2,50	3,70	2,3	2,4	6	0,85	77	10
80 C	2	1,5	2	2840	3,10	5,02	2,4	2,6	6	0,85	78,5	12,5
90 S	2	1,5	2	2840	3,10	5,02	2,4	2,6	6	0,85	78,5	13
90 L	2	2,2	3	2840	4,70	7,37	2,4	2,6	6	0,86	81	15
90 LL	2	3,0	4	2870	6,10	10,0	2,2	2,4	6,5	0,88	82,7	16
100 L	2	3,0	4	2870	6,10	10,0	2,2	2,4	7	0,88	82,6	20,5
100 LB	2	4,0	5,5	2880	7,80	13,4	2,3	2,4	7	0,88	85,5	26
112 M	2	4,0	5,5	2880	7,80	13,4	2,3	2,4	7	0,88	85,5	28
112 MC	2	5,5	7,5	2880	10,50	13,5	2,3	2,4	6,7	0,88	85,5	34
132 S	2	5,5	7,5	2900	10,50	18	2,2	2,3	7,5	0,88	86	40
132 SB	2	7,5	10	2900	14,10	25	2,2	2,3	7,5	0,88	87,3	44
132 SC	2	9	12	2900	16,40	30,5	2,2	2,3	7,5	0,88	87,5	63
132 L	2	11	15	2900	20,20	36	2,2	2,3	7,5	0,89	88	65

### 4極 4 Poles (1500 min<sup>-1</sup>)

230 V/400 V/50 HZ

56 B	4	0,09	0,12	1380	0,35	0,61	1,8	2,0	4	0,73	50	3,4
63 B	4	0,18	0,25	1320	0,62	1,25	1,8	2,0	4	0,73	58	4,5
63 C	4	0,22	0,30	1290	0,65	1,60	1,8	2,0	4	0,73	58	4,8
71 A	4	0,25	0,34	1350	0,8	1,80	2,2	2,3	6	0,71	67	6,1
71 B	4	0,37	0,50	1380	1,1	2,67	2,2	2,3	6	0,72	69,5	6,7
71 C	4	0,55	0,75	1370	1,7	3,90	2,7	2,7	5,5	0,66	71,3	7,1
80 A	4	0,55	0,75	1400	1,5	3,89	2,2	2,4	6	0,73	73,5	8,9
80 B	4	0,75	1	1380	1,95	5,30	2,3	2,5	6	0,75	75,5	9,6
80 D	4	1,1	1,5	1380	2,8	7,70	2,2	2,3	5,5	0,77	78	11,9
90 S	4	1,1	1,5	1395	2,8	7,53	2,2	2,4	6	0,78	78	12,5
90 L	4	1,5	2	1395	3,6	10,27	2,2	2,5	6	0,79	79	15
90 LL	4	1,85	2,5	1400	4,7	13	2,7	2,8	5,4	0,76	79	17,1
100 LA	4	2,2	3	1420	4,8	15,06	2,2	2,4	7	0,82	81	19,5
100 LB	4	3	4	1425	6,4	20,32	2,2	2,4	7	0,81	82,6	23
112 M	4	4	5,5	1430	8,3	27,10	2,2	2,4	7	0,82	84,5	29
112 MC	4	5,5	7,5	1430	11	33,2	2,2	2,2	6,8	0,82	85	35
132 S	4	5,5	7,5	1440	11,2	36	2,3	2,3	7	0,83	85,7	43,5
132 M	4	7,5	10	1440	14,8	49	2,3	2,3	7	0,84	87	53,5
132 MB	4	9	12	1450	18,1	60	2,3	2,6	7	0,84	86	55
132 L	4	11	15	1450	21,4	70	2,2	2,6	7	0,84	86,7	75,6

### 6極 6 Poles (1000 min<sup>-1</sup>)

230 V/400 V/50 HZ

63 B	6	0,12	0,15	900	0,5	1,27	1,8	1,8	4	0,6	55	5
71 A	6	0,18	0,25	870	0,75	1,94	1,4	2	4	0,66	56	6,4
71 B	6	0,25	0,34	870	0,90	2,69	1,4	2	4	0,68	59	6,5
80 A	6	0,37	0,50	900	1,15	3,86	2	2,2	4	0,70	62	8,5
80 B	6	0,55	0,75	905	1,60	5,74	2	2,2	4	0,72	65	9,2
90 S	6	0,75	1	910	2,20	7,78	2	2,2	5,5	0,70	72,5	12
90 L	6	1,1	1,5	915	3,10	11,42	2	2,2	5,5	0,72	73,5	14
100 L	6	1,5	2	930	3,70	15,49	2,1	2,2	6	0,74	77,5	22
112 M	6	2,2	3	940	5,20	22,24	2,2	2,2	6	0,74	80,5	29
132 S	6	3	4	960	7	30	2,1	2,1	6,6	0,76	81,5	38
132 M	6	4	5,5	960	9,1	40	2,1	2,1	6,6	0,76	82	45
132 MB	6	5,5	7,5	960	12,1	55	2,1	2,1	6,6	0,77	84	54

P<sub>N</sub> nominal power [KW]

$\frac{M_S}{M_N}$  starting torque / nominal torque ratio

n<sub>N</sub> nominal speed [min<sup>-1</sup>]

$\frac{M_{max}}{M_N}$  maximum torque / nominal torque ratio

I<sub>N</sub> nominal current [A]

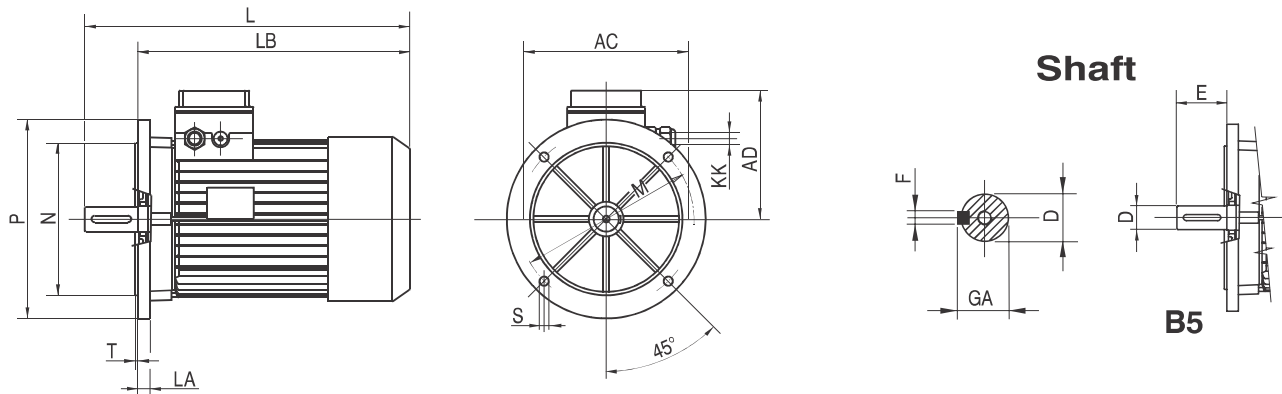
$\frac{I_S}{I_N}$  starting current / nominal current ratio

M<sub>N</sub> nominal torque [Nm]

η nominal efficiency in %

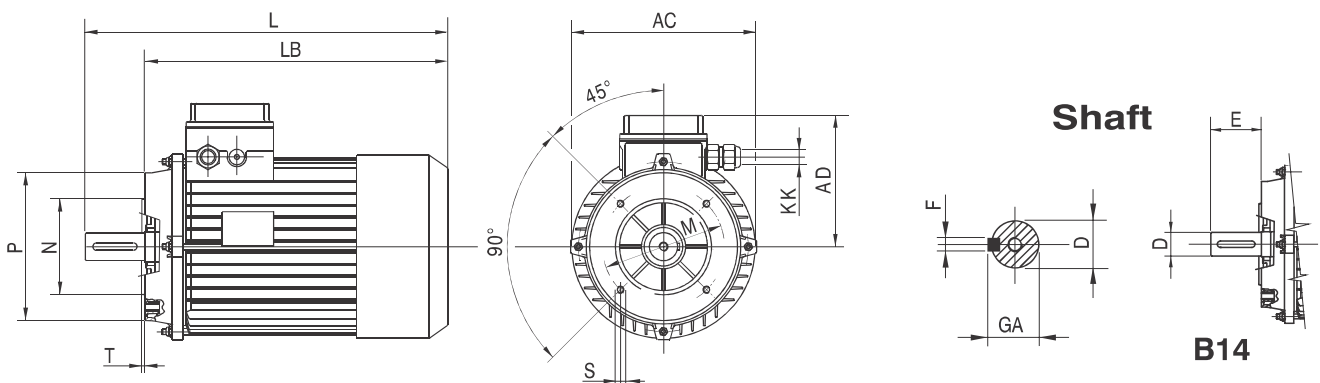
COS φ nominal power factor

## B5馬達尺寸圖 Electric Motors Dimensions



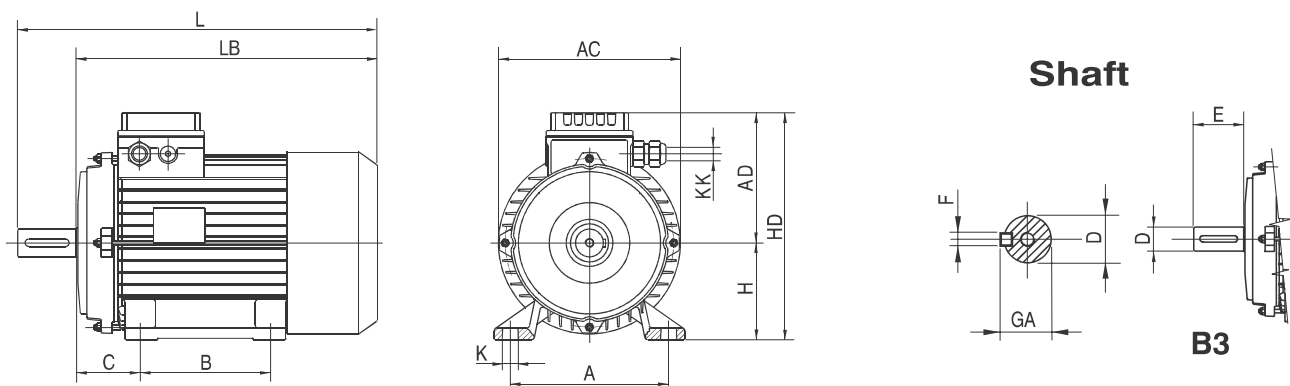
Motor	Overall dim.					Flange B5						Shaft			
	AC	AD	L	LB	KK	M	Nj6	P	LA	S( $\phi$ )	T	D( $\phi$ )	E	F	GA
56	110	96	200	180	M16x1,5	100	80	120	10	7	3	9 M4	20	3	10,2
63	122	99	213	190	M16x1,5	115	95	140	10	9	3	11 M4	23	4	12,5
71	140	125	260	230	M16x1,5	130	110	160	10	10	3,5	14 M5	30	5	16
80	152	135	290	250	M20x1,5	165	130	200	13	12	3,5	19 M6	40	6	21,5
90 S	175	145	330	280	M20x1,5	165	130	200	13	12	3,5	24 M8	50	8	27
90 L	175	145	365	315	M20x1,5	165	130	200	13	12	3,5	24 M8	50	8	27
100	200	170	380	320	M25x1,5	215	180	250	15	15	4	28 M10	60	8	31
112	220	180	400	340	M25x1,5	215	180	250	15	15	4	28 M10	60	8	31
132 S	260	210	470	390	M25x1,5	265	230	300	15	15	4	38 M12	80	10	41
132 M	260	210	510	430	M25x1,5	265	230	300	15	15	4	38 M12	80	10	41

## B14馬達尺寸圖 Electric Motors Dimensions



Motor	Overall dim.					Flange B14						Shaft			
	AC	AD	L	LB	KK	M	Nj6	P	S( $\phi$ )	T	D( $\phi$ )	E	F	GA	
56	110	96	200	180	M16x1,5	65	50	80	M5	3	9 M4	20	3	10,2	
63	122	99	213	190	M16x1,5	75	60	90	M5	3	11 M4	23	4	12,5	
71	140	125	260	230	M16x1,5	85	70	105	M6	3	14 M5	30	5	16	
80	152	135	290	250	M20x1,5	100	80	120	M6	3	19 M6	40	6	21,5	
90 S	175	145	330	280	M20x1,5	115	95	140	M8	3	24 M8	50	8	27	
90 L	175	145	365	315	M20x1,5	115	95	140	M8	3	24 M8	50	8	27	
100	200	170	380	320	M25x1,5	130	110	160	M8	4	28 M10	60	8	31	
112	220	180	400	340	M25x1,5	130	110	160	M8	4	28 M10	60	8	31	
132 S	260	210	470	390	M25x1,5	165	130	200	M10	5	38 M12	80	10	41	
132 M	260	210	510	430	M25x1,5	165	130	200	M10	5	38 M12	80	10	41	

## B3馬達尺寸圖 Electric Motors Dimensions



Motor	Overall dim.					Feet B3						Shaft			
	AC	AD	L	LB	KK	A	B	C	K	H	HD	D(ø)	E	F	GA
<b>56</b>	110	96	200	180	M16x1,5	90	71	36	7	56	152	9 M4	20	3	10,2
<b>63</b>	122	99	213	190	M16x1,5	100	80	40	7	63	162	11 M4	23	4	12,5
<b>71</b>	140	125	260	230	M16x1,5	112	90	45	7	71	185	14 M5	30	5	16
<b>80</b>	152	135	290	250	M20x1,5	125	100	50	10	80	215	19 M6	40	6	21,5
<b>90 S</b>	175	145	330	280	M20x1,5	140	100	56	10	90	235	24 M8	50	8	27
<b>90 L</b>	175	145	365	315	M20x1,5	140	125	56	10	90	235	24 M8	50	8	27
<b>100</b>	200	170	380	320	M25x1,5	160	140	63	12	100	255	28 M10	60	8	31
<b>112</b>	220	180	400	340	M25x1,5	190	140	70	12	112	285	28 M10	60	8	31
<b>132 S</b>	260	210	470	390	M25x1,5	216	140	89	12	132	345	38 M12	80	10	41
<b>132 M</b>	260	210	510	430	M25x1,5	216	178	89	12	132	345	38 M12	80	10	41

