

[2021]



The Art of Transmission

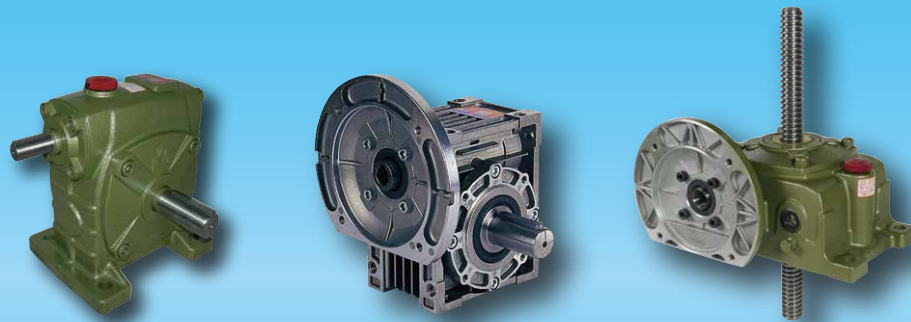
利明牌

齒輪減速機 & 蝸輪減速機



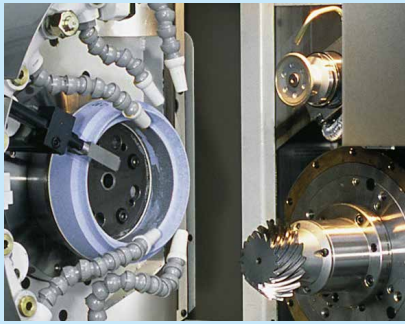
齒輪減速機 & 蝸輪減速機

Gear Reducers & Worm Gear Reducers



【 傳動裝置的解決方案 / 減速機的領導品牌 】

LIMING MACHINERY CO., LTD.





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# High Tech

H i g h P r e c i s i o n

傳動裝置的解決方案 / 減速機的領導品牌

## 品質第一、顧客滿意

利茗機械股份有限公司自1969年成立以來，專業從事高科技的各種減速馬達、螺旋齒輪減速機、蝸桿蝸輪減速機，以及行星式減速機的設計、研發、生產。近年來肩負著顧客們對產品質量與價格的追求，不斷地在提高減速機的高性能，實現效率的最大化和提供廣泛的技術資源等方面做著不懈的努力。公司奉行『品質第一、顧客滿意』及『勤、誠、信』的經營理念、不斷吸納專業人才，使得公司始終擁有一批掌握業界高階技術的科技人才。公司以積極務實的作風，借鑒各種先進的管理經驗，不斷實現自我完善，建立起良好企業文化。

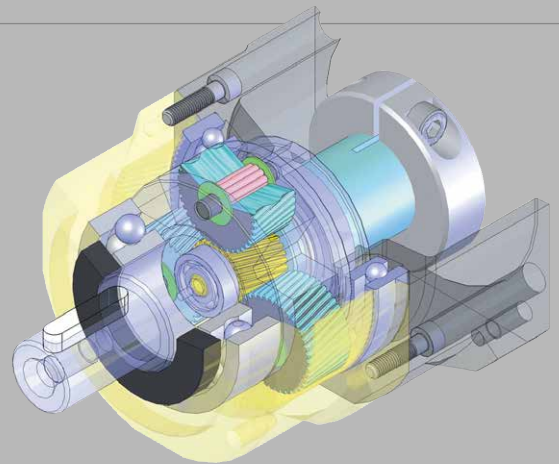


# Quality First & Customer's Satisfaction



Since 1969 LI MING Machinery CO., LTD. is specialist in design, R&D and manufacturing of a wide range of high-tech gear motor and helical gear reducers, worm gear reducers, planetary gear reducers. In recent years, to meet customers' requirements of quality and price, we have been dedicated to constantly upgrade the performance of gear reducer, maximize efficiency, and provide the most comprehensive technical supports. Under the company's policy of " Quality First; Customer Satisfaction and Intelligence; Sincerity; Honesty " , we have invited many highly experienced talents. At LI MING, we have a team with outstanding background in high-tech field. LI MING's outstanding enterprise culture results from its practicality, constantly learning the advanced management system and a commitment to excellence.

*The Art of Transmission*



## High Accuracy & Efficiency Profit

Among the wide range of speed reducers, the planetary gear reducer features compact construction, high-torque resistance, high transmission efficiency, wide range of speed reduction and high accuracy.

The planetary gear reducers are widely applied in servo, stepping and DC transmission system. With its outstanding feature of high precision transmission, the planetary gear reducer is excellent for reducing speed, increasing torque and reducing torsional inertia ratio. High torque, low backlash and low noise are three key features of LIMING's gear reducers, and these are the reasons why LIMING gear reducers are in the leading position in the industry.







## 自動化加工設備

秉持對減速機各部份零件的獨特加工特性的認知，我們自行開發設計一系列高效率自動化的加工設備，以配合系列高性能加工機械。本公司經驗豐富的技术員，掌握零件加工特性精度控制，嚴格品質管制以確保所有零組件的精度及性能。一系列自動化加工設備為零件加工精度穩定性提供最穩固的基礎。



# Integrated

Manufacturing with  
Full Range of  
Automatic Equipment

# Integration / Automation Machining Equipment



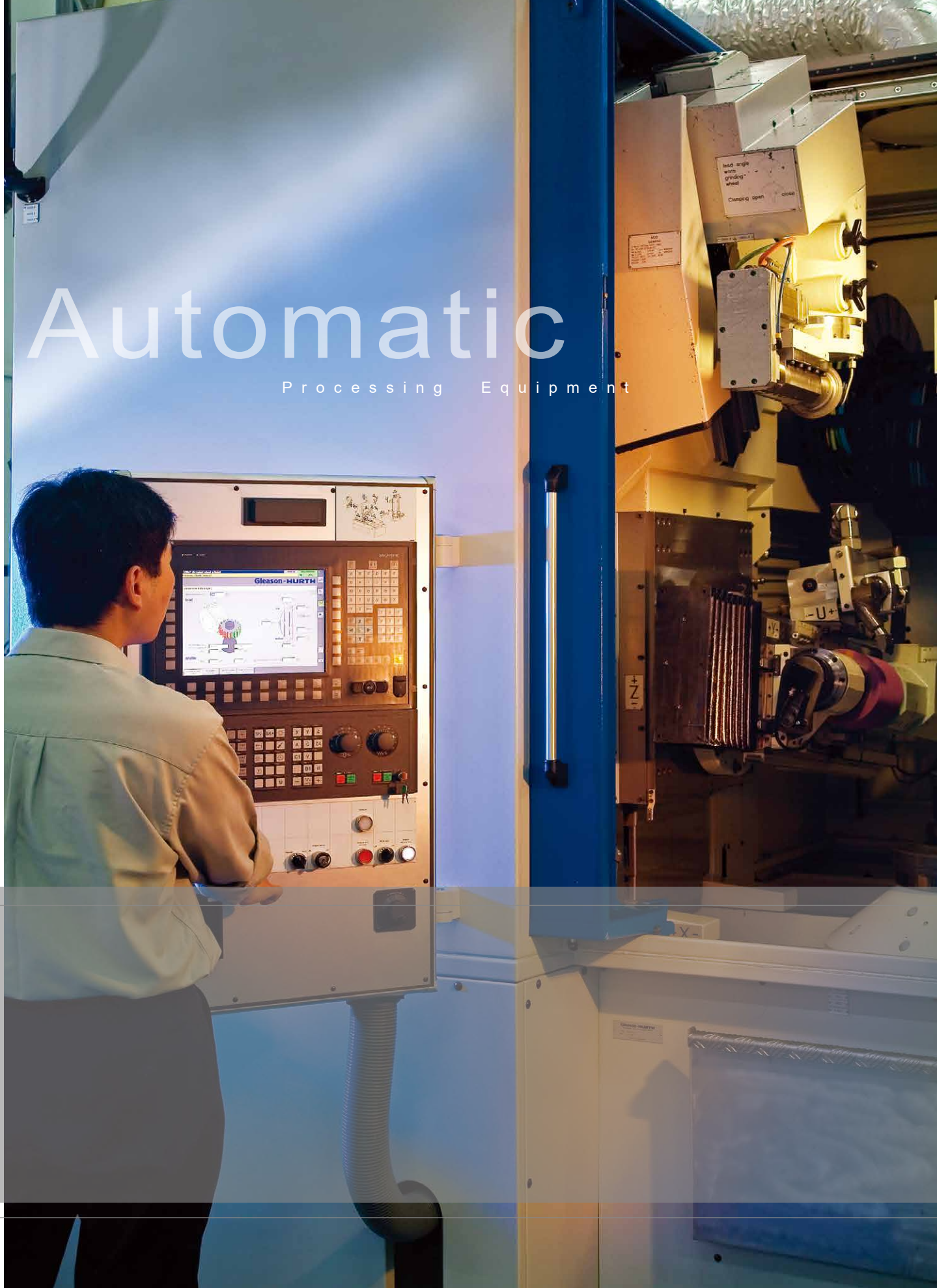
Based on our acknowledgement of the unique processing characteristics of speed reducers on all parts, we have developed and designed a series of high-efficiency automatic machining equipment to work with high-performance processing machines. Our well-experienced technicians take good control of precision in our parts, and stringent quality control to ensure the best precision and performance of all parts and components. A series of automatic processing equipment provides the most solid foundation for the consistency of precision in the machining of parts and components.





# Automatic

Processing Equipment



## 高精密的加工設備

利茗機械公司為增進技術精良，斥資購置整套最新CNC電腦加工機械設備，以精密零件加工，配合優秀工程人員，提升零件精度，確保穩定的品質。



# High Precision & Automatic Processing Equipment

To enhance technical improvement, LI MING Machinery Company has placed a huge investment in the purchase of a whole set of the latest generation of Computer Numerically-Controlled (CNC) machines and equipments, in combination with distinguished engineering personnel, to upgrade the precision of parts and ensure stable quality.







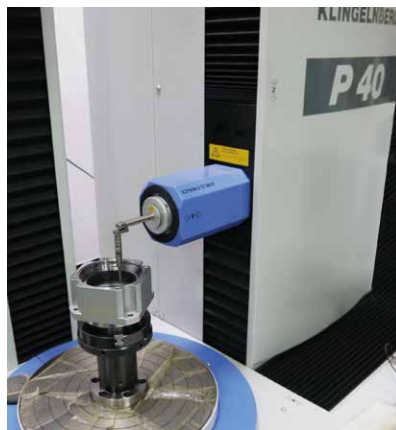
## 「全面品管」不只是口號

「全面品管」在利茗公司絕不是一句口號。我們對品質政策的執著，對每一個品質要求都訂有嚴格的品質標準書，迅速而確實的品質管制。每一個零件從最初的進料製程，裝配完成品的運轉等檢驗測試，鉅細靡遺，以完全符合您的要求及利茗的品質標準。品管部門有先進的檢驗設備，作精密的量測。「工欲善其事，必先利其器」，我們精密的檢驗儀器，是品質信賴的保證。

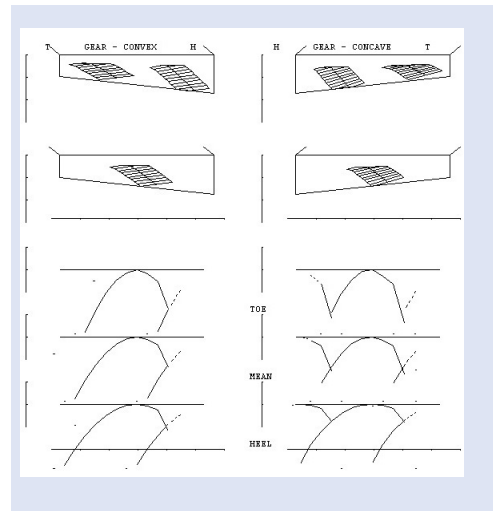
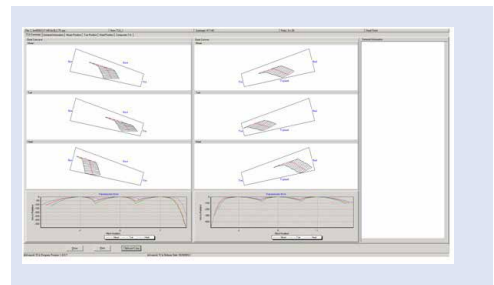
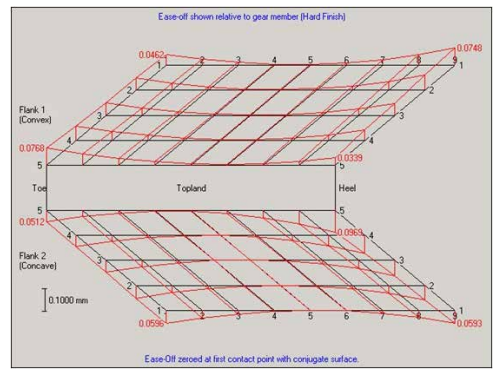


# Total Quality Management (TQM) isn't a Mere Slogan

Total Quality Management (TQM) is never a mere slogan of LI MING Company. We adhere to our quality policy. To each quality requirement, we have to set up rigorous quality standards for prompt and accurate quality control every single part is subjected to comprehensive inspection and tests, from initial receipt of material to assembly of finished products and regular operation, to completely satisfy your requirement. Our quality control department has the most advanced inspection equipment conducting precision measurement. A good tool is the master of all good works, our precision inspection equipments are the best assurance of our reliable quality.







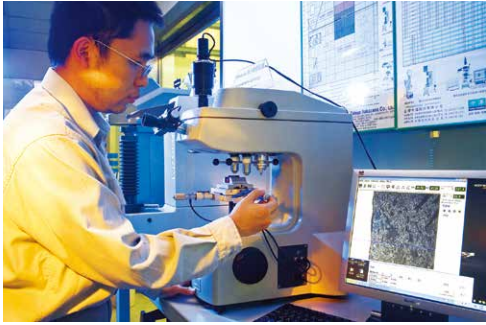
## 先進的製造技術

使用高端的設計軟件及世界級的高精密的加工設備，並配合全面品質管理確保設計輸入到輸出端的品質一致的閉循環 (Close Loop) 生產流程。  
 Using high-tech design software and world-class high-precision processing equipment, and with comprehensive quality control. Designed to ensure the quality of the input to the output of the same closed loop production process.



# Advanced

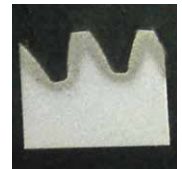
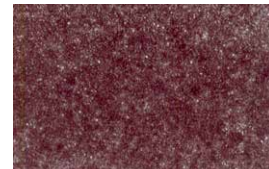
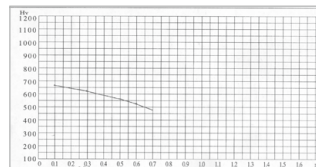
Manufacturing Technology



# Heat Treatment

## 熱處理

獨特真空滲碳齒輪兼具表面硬度與心部韌性，不但耐磨耗，且能在承受重負載的情況下，保持高嚙合精度。 Unique vacuum carburization treatment has the features of high surface hardness and interior toughness. It is hard-wearing and hard-tearing. It will keep good engagement under heavy loading.



\* 硬度分布圖 Hardenability curve \* 金相組織相片 Metallograph

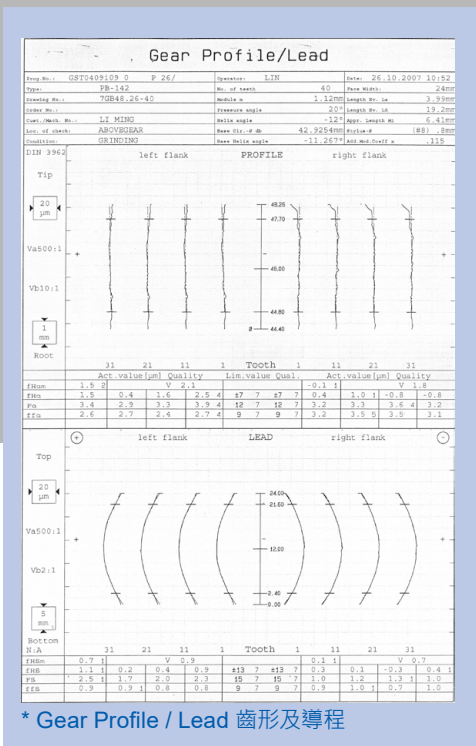
# High Precision

Gear Machining

## 高精度齒輪加工

行星齒輪及太陽齒輪材料採用高級之鎳鉻鉬合金鋼 (SNCM220)，切削加工後，經滲碳熱處理至硬度 57~60HRC，再進行齒面研磨，確保齒輪精度在 DIN6 級以內，比只有表面的氮化處理，獲得最佳的耐磨耗和耐衝擊韌性，壽命更長。

The planetary gear and sun gear are manufactured from high quality NI-Cr-Mo alloy steel (SNCM220), precision machined and carburized to hardness 57-60HRC. Precision teeth grinding assures gear accuracy reaches DIN6 class. It provides better wear resistance, impact resistance and longer service life than gears with only surface nitrided.







# GEAR REDUCERS

齒輪減速機



# Gear Reducer Series



## Indication of Model Numbers

### 機種型號表示

H	205	20	1	A	OH
機型 Type	型號 Model	減速比 Ratio	馬力 Horse Power	馬達極數 Motor Poles	安裝方向 Installation Direction
H	[ Note 1 ]	雙段 2-Stage 1/3~1/30	1/4HP ~ 75HP	A: 4 極 Poles B: 6 極 Poles C: 2 極 Poles D: 8 極 Poles	OH OD OU OL OR OS
HD		三段 3-Stage 1/31~1/200			
HB					
V					
VD					
VB					
LSH		連結 Multi-Stage		可搭配： 無段變速 Variator 皮帶變速 Belt-Variator	[ Note 2 ]
LSHD		1/200~1/6000			
LSHB					
LSV					
LSVD					
LSVB					

Note:

1. 請參閱「齒輪減速機馬力型號速比一覽表」。 See "Selection Table of HP, Model & Ratio".
2. 請參閱「安裝方向」。 See "Installation Direction".



## 齒輪減速機馬力型號速比一覽表

### Selection Table of HP, Model & Ratio

功率 Power HP (4P) (kW)	型號 Model	減速比 Ratio	功率 Power HP (4P) (kW)	型號 Model	減速比 Ratio
<b>1/4</b> (0.2)	201	5 10 15 20 25 30	<b>7 1/2</b> (5.5)	212	5 10
	203	35 40		213、213S	15 20 25 30
	304	50 60 70 90 100 120 ※150		314、314S	35 40 50
	306	150 180 200		315	60 70 80 90 100 120
202	5 10	317		150 160 180 190 200	
<b>1/2</b> (0.4)	203	10 15 20 25 30	<b>10</b> (7.5)	212	5 10
	205	35 40 45 50		214、214S	15 20 25 30
	※304	40 50		315	35 40 50
	306	60 70 80 90 100 120		316	60 70 80 90 100 120
	308	130 140 150 180 200	318	150 180 190 200	
<b>1</b> (0.75)	205	5 10 15 20 25 30	<b>15</b> (11)	213、213S	5 10
	207	35 40		215	15 20 25 30
	308	40 50 60 70 80 90 100 120		316	35 40 50
	310、310S	130 150 160 180 200		317	60 80 90 100 120
	312、312S	140 150 200	<b>20</b> (15)	215	5 10
<b>2</b> (1.5)	206	5 10		216	15 20 25 30
	207	15 20 25 30		317	40 50
	209	35 40		318	60 70 80 90 100 120
	※308	35 40		319	150 175 200
	310、310S	40 50 60 70 80 90 100 120	<b>25</b> (18)	216	5 10
	312	140 150 180 190 200		217	15 20 25 30
	312S	40 50 60 70 80 90 100 120		318	40 50
<b>3</b> (2.2)	208	5 10	319	100 110	
	209、209S	15 20 25 30	<b>30</b> (22)	217	5 10 15 20 25 30
	211	35 40		318	40 50
	※310	40 50 60		319	60 70 120
	312	50 60 70 80 90 100 120	<b>40</b> (29)	217	5 10
	314	130 140 150 160 170 180 190 200		218	10 15 20 25 30
<b>5</b> (3.7)	210、210S	5 10		319	40 50 60
	211、211S	15 20 25 30	<b>50</b> (37)	218	5 10
	312	40 50 ※60		219	15 20 25 30
	314、314S	60 70 80 90 100 120	<b>60</b> (44)	※218	5 10
	315	150 180 200		219	15 20 30
<b>75</b> (55)			219	5 10	
			220	15 20 30	

◆ 表中 ※ 表示輕負荷使用。

※ means used for light loading.

◆ 亦可訂製其他不定減速比。

Other ratios are available upon request.

◆ 以下減速比屬於標準品，其餘皆屬於特殊品。

The following gear ratio are standard, others are special specification.

5,10,15,20,25,30,40,50,60,70,80,90,100,120,150,200

# GEAR REDUCER SERIES

## 齒輪減速機系列

### 齒輪減速機實際減速比對照表 Actual Ratio Table

型號 Model	馬力 HP (4P)	減速比 Ratio	實際減速比 Actual Ratio	型號 Model	馬力 HP (4P)	減速比 Ratio	實際減速比 Actual Ratio	型號 Model	馬力 HP (4P)	減速比 Ratio	實際減速比 Actual Ratio	
201	1/4	5	5.00	209	3	15	15.07	215	15	15	15.20	
		10	10.09			20	20.00			20	19.95	
		15	14.89			25	24.00			25	25.24	
		20	20.57			30	29.97			30	30.07	
		25	24.92	2	35	35.37	20		5	5.09		
		30	30.39		40	38.50			10	9.69		
202	1/2	5	5.00	209S	3	15	15.13	216	20	15	15.20	
		10	10.09			20	19.51			20	19.95	
203	1/4	35	34.86			25	24.55			25	25	25.24
		40	39.35			30	29.25				30	30.07
	1/2	15	15.25	210	5	5	4.98		5		5	5.09
		20	20.08			10	10.00				10	9.69
25	24.62	210S	5	5	5.02	217	30	5	5.03			
30	30.02			10	9.87			10	10.07			
205	1	5	4.99	211	3			35	35.00	15	15	15.05
		10	9.95					40	39.67		20	19.77
		15	14.90		5		15	15.00	25	24.75		
		20	20.06				20	19.45	30	28.11		
		25	24.16	25		25.05	40	5	5.03			
		30	29.89	30		29.70		10	10.07			
	1/2	35	35.20	211S	5	15	15.00	218	40	15	15.06	
		40	39.70			20	19.80			20	20.00	
45		45.10	25			24.00	25			25.45		
50		50.87	30			30.30	30			29.91		
206	2	5	4.99	212	7 1/2	5	5.05		50	5	5.18	
		10	9.95			10	10.09			10	10.01	
207	1	35	35.85		10	5	5.05	219		50	10	10.04
		40	39.85			10	10.09				15	14.84
	2	15	15.00	213 213S	7 1/2	15	14.88		20		20.22	
		20	20.21			20	20.67		25		25.06	
		25	25.39			25	25.28		30	28.74		
		30	29.16			30	29.40		15	14.84		
208	3	5	5.02	15	5	5.00	60	20	20.22			
		10	10.09		10	10.05		30	28.74			
209	2	35	34.80	214 214S	10	15	14.89	75	5	5.03		
		40	40.48			20	20.67		10	10.04		
220	75	15	15.00			25	25.28	30	15	15.00		
		20	19.90			30	29.40		20	19.90		
											29.19	



## 齒輪減速機實際減速比對照表 Actual Ratio Table

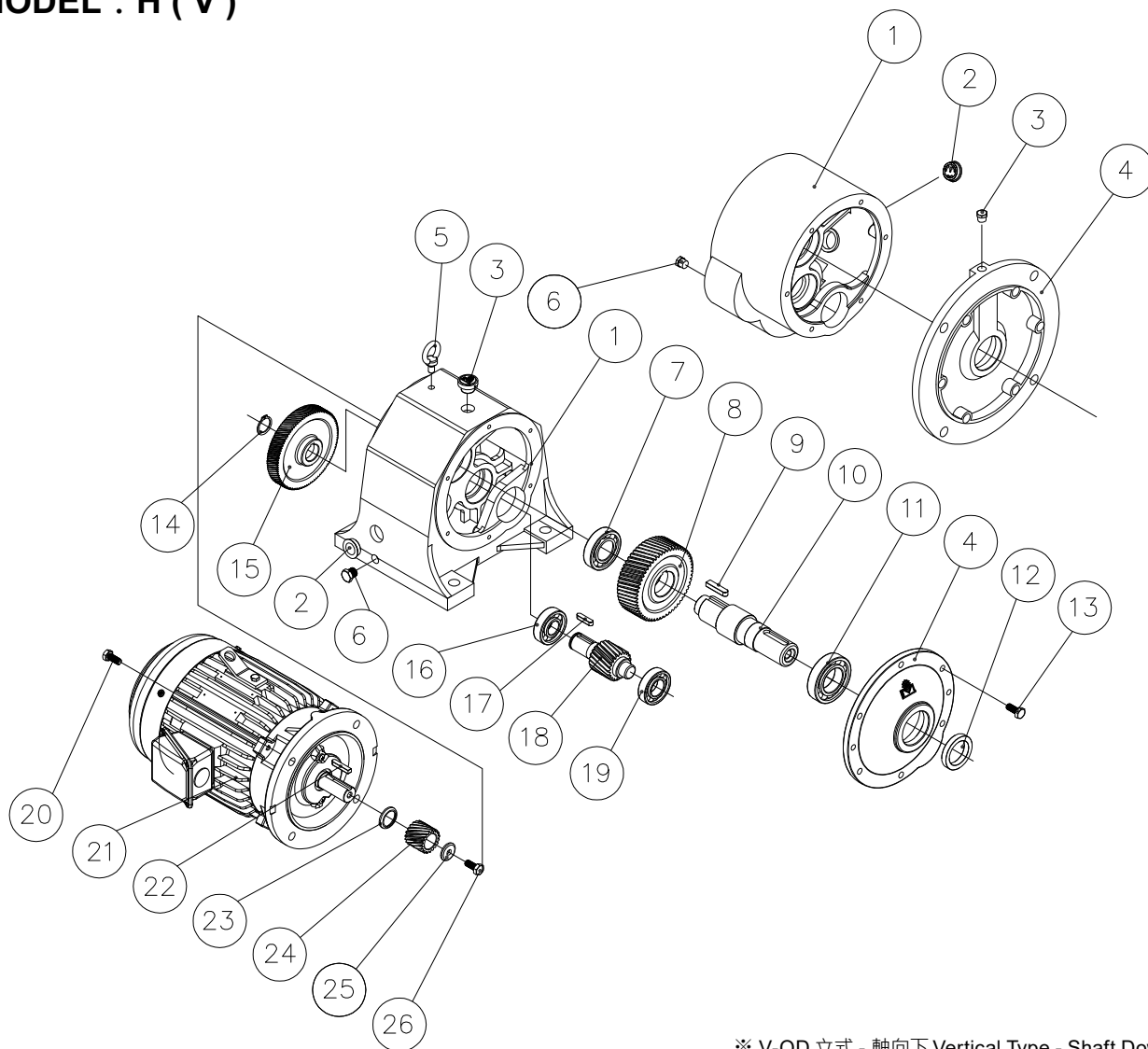
型號 Model	馬力 HP (4P)	減速比 Ratio	實際減速比 Actual Ratio	型號 Model	馬力 HP (4P)	減速比 Ratio	實際減速比 Actual Ratio	型號 Model	馬力 HP (4P)	減速比 Ratio	實際減速比 Actual Ratio	型號 Model	馬力 HP (4P)	減速比 Ratio	實際減速比 Actual Ratio						
304	1/4	50	49.47	310	2	40	41.18	312S	2	35	36.88	317	71/2	125	125.00						
		60	59.60			50	50.15			40	39.16			150	151.10						
		70	71.18			60	58.95			50	50.19			160	158.65						
		90	92.89			70	70.68			60	60.95			170	173.60						
		100	100.03			80	80.29			70	70.3			190	190.38						
		120	120.59			90	92.70			80	84.58			200	200.40						
		150	147.85			100	100.42			90	89.87			15	40	43.82					
	1/2	40	38.03			120	120.82			100	99.53		50		49.50						
		50	49.47			3	40			41.18	120		123.6		60	60.06					
		150	149.11				50			49.38	140		141.97	80	79.80						
306	1/4	180	181.69	310S	1	130	131.21	314 314S	3	150	149.86	20	40	43.82							
		200	197.85			150	147.67			170	167.62		50	49.50							
		1/2	40			42.84	180			183.25	180		184.42	60	62.45						
	50		50.59		2	40	41.81			200	204.29		70	72.55							
	60		59.28			50	50.25			5	60		62.45								
	70		69.47			60	60.4		70		72.55										
	80		79.43			70	69.12		80		81.99										
	90		90.05			80	81.96		90		90.43										
	100		100.10			90	90.25		100		100.53										
	120	119.94	100			98.32	120		122.96												
308	1/2	100	101.56	312	2	120	121.91	315	71/2	35	33.60	318	10	150	148.83						
		120	121.62			40	44.19			40	40.62										
		150	146.70			50	52.19			60	60.13										
		200	199.51			60	60.20			50	52.19			70	69.63						
	1	40	40.18			100	100.50		5	120	120.92		5	150	150.43	20	80	83.33			
		50	50.46			120	120.92			165	166.15			80	83.33						
		60	59.06			140	145.35			180	180.04			90	92.93						
		70	68.63			150	153.42			200	201.14			100	98.83						
		80	81.04			165	163.22			71/2	40			40.56	120		120.33				
		90	90.14			170	166.57				50			51.78	25、30		40	40.62			
100		100.75	180	179.54	60	60.89	50	48.62													
120		120.90	190	189.52	70	68.63	20	150			152.33										
2	35	36.55	200	200.22	80	79.13		175	175.64												
	40	40.18	60	58.86	90	88.40		200	201.19												
310	1	50	50.32	312	3	70		71.25	315	71/2	100	100.58	319	25、30	60	61.01					
		80	80.29			80	80.75	120			118.76	70			69.56						
		100	100.42			90	91.10	35			35.16	100			98.09						
		120	120.82			100	99.83	40			40.56	40			40.20						
		140	136.07			120	120.92	50			51.78	50			48.91						
		312S	1		150	148.82	312S	1		140	140.4	316		10	60	60.89	40	40	40.20		
					160	161.23				150	150.68				70	68.63		50	48.91		
					170	175.88				200	197.77				80	79.13		60	61.01		
					180	178.59				316	15				100	100.58		319	40	70	69.56
					200	194.82									120	118.76				100	98.09

# GEAR REDUCER SERIES

## 齒輪減速機系列

### 雙段式分解系統圖 2-Stage System Drawing

MODEL : H ( V )



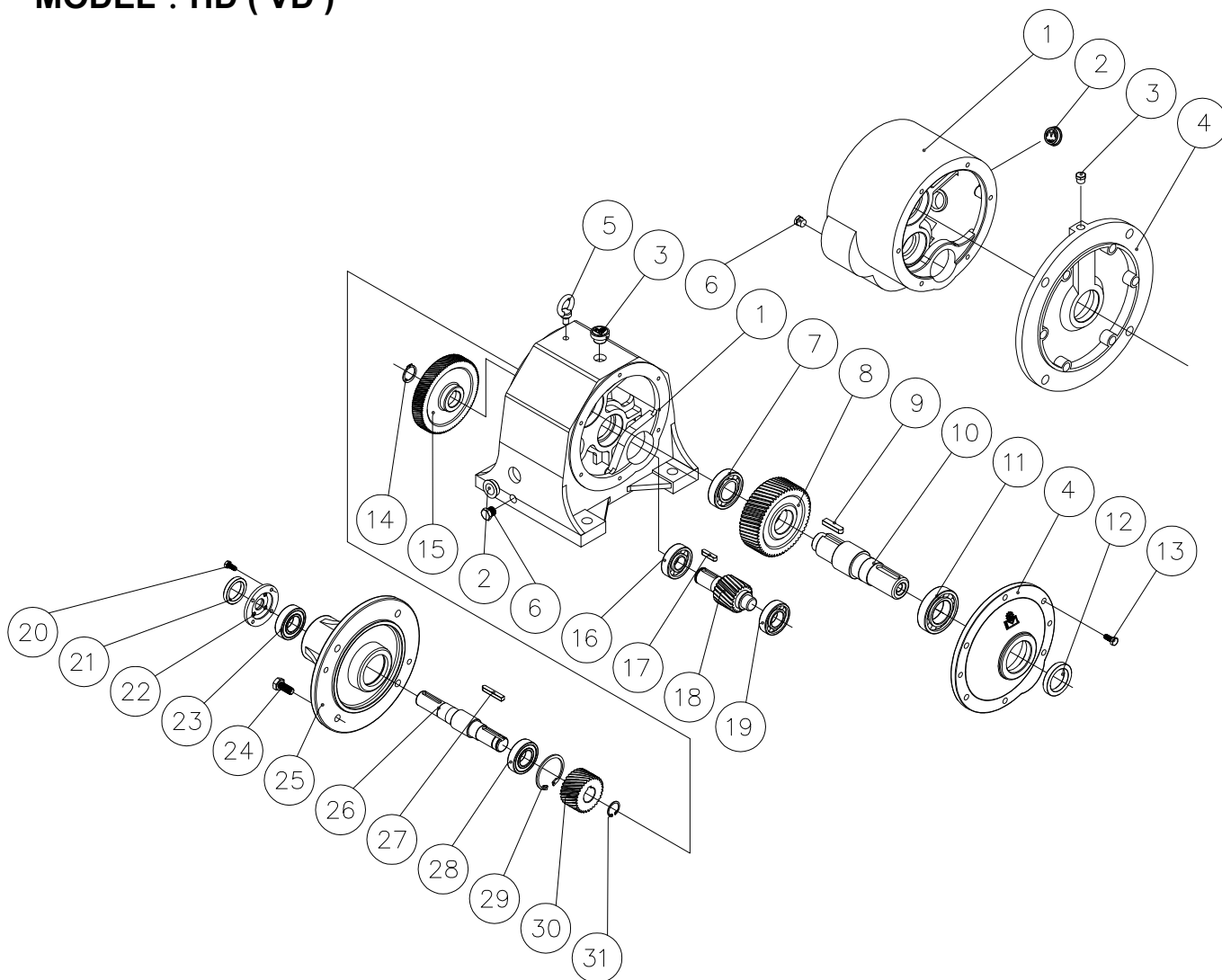
※ V-OD 立式 - 軸向下 Vertical Type - Shaft Downward  
 NO.3 排油栓 Drain Plug  
 NO.6 注油栓 Oil Plug

NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	本體	Outer Shell	14	扣環	Snap Ring
2	油鏡	Oil Gauge	15	B 齒輪	B Gear
※3	注油栓	Oil Plug	16	軸承	Bearing
4	前蓋	Front Cover	17	鍵	Key
5	吊環	Hoisting Ring	18	C 齒輪軸	C Gear Shaft
※6	排油栓	Drain Plug	19	軸承	Bearing
7	軸承	Bearing	20	六角螺絲	Hexagon Head Bolt
8	D 齒輪	D Gear	21	馬達	Motor
9	鍵	Key	22	鍵	Key
10	出力軸	Output Shaft	23	油封	Oil Seal
11	軸承	Bearing	24	A 齒輪	A Gear
12	油封	Oil Seal	25	華司 ( 或扣環 )	Washer ( or Snap Ring )
13	立式 : 內六角螺絲 臥式 : 外六角螺絲	Vertical: Hex Socket Cap Screw Horizontal: Hex Head Cap Screw	26	六角螺絲	Hexagon Head Bolt



## 雙段式分解系統圖 2-Stage System Drawing

MODEL : HD ( VD )



※ VD-OD 立式 - 軸向下 Vertical Type - Shaft Downward  
 NO.3 排油栓 Drain Plug  
 NO.6 注油栓 Oil Plug

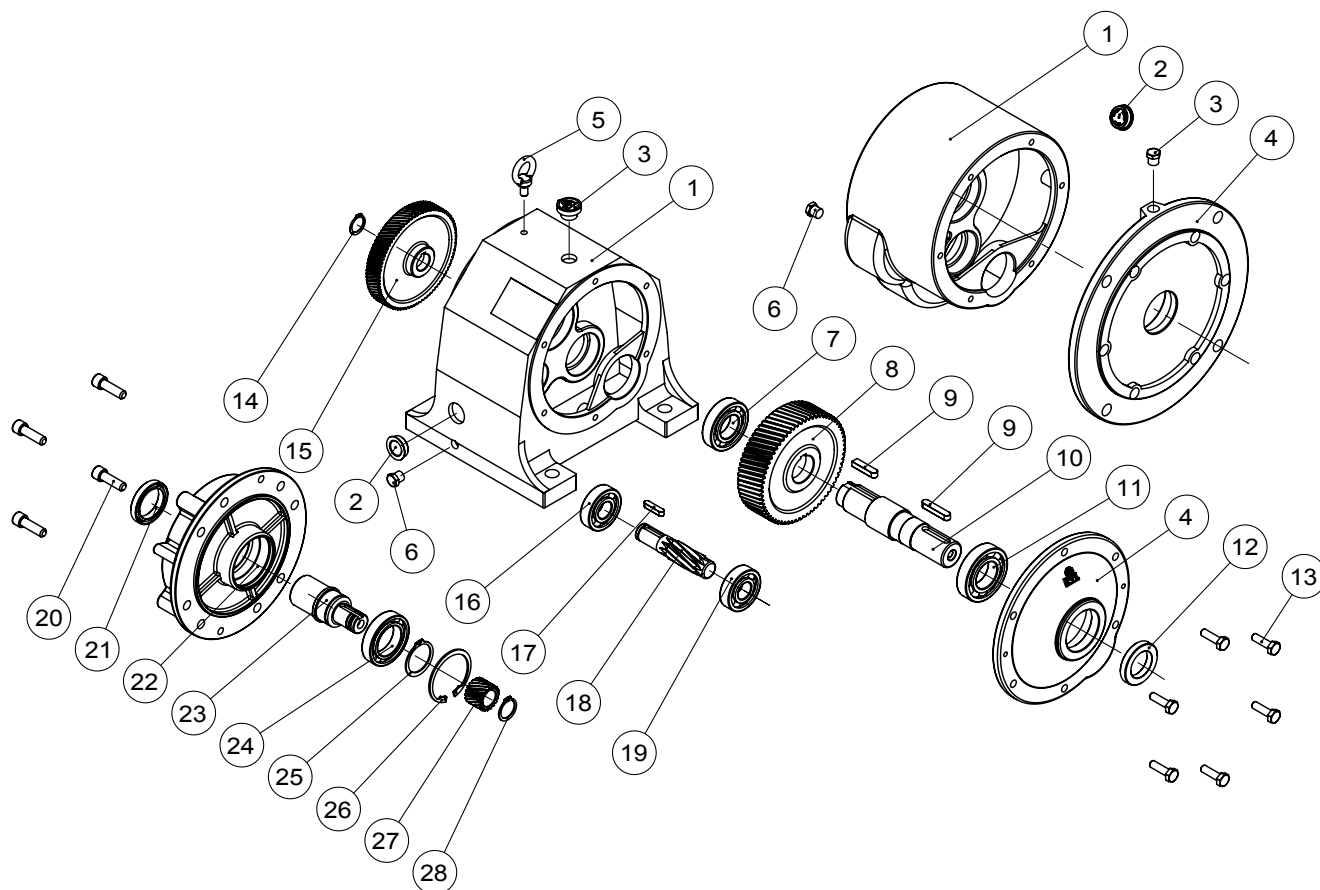
NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	本體	Outer Shell	17	鍵	Key
2	油鏡	Oil Gauge	18	C 齒輪軸	C Gear Shaft
※3	注油栓	Oil Plug	19	軸承	Bearing
4	前蓋	Front Cover	20	六角螺絲	Hexagon Head Bolt
5	吊環	Hoisting Ring	21	油封	Oil Seal
※6	排油栓	Drain Plug	22	小蓋 (71/2HP 以上使用)	Small Cover of 71/2 HP above
7	軸承	Bearing	23	軸承	Bearing
8	D 齒輪	D Gear	24	六角螺絲	Hexagon Head Bolt
9	鍵	Key	25	入力軸大蓋	Big Cover
10	出力軸	Output Shaft	26	入力軸	Input Shaft
11	軸承	Bearing	27	鍵	Key
12	油封	Oil Seal	28	軸承	Bearing
13	立式: 內六角螺絲 臥式: 外六角螺絲	Vertical: Hex Socket Cap Screw Horizontal: Hex Head Cap Screw	29	扣環	Snap Ring
14	扣環	Snap Ring	30	A 齒輪	A Gear
15	B 齒輪	B Gear	31	扣環	Snap Ring
16	軸承	Bearing			

# GEAR REDUCER SERIES

## 齒輪減速機系列

### 雙段式分解系統圖 2-Stage System Drawing

MODEL : HB ( VB )



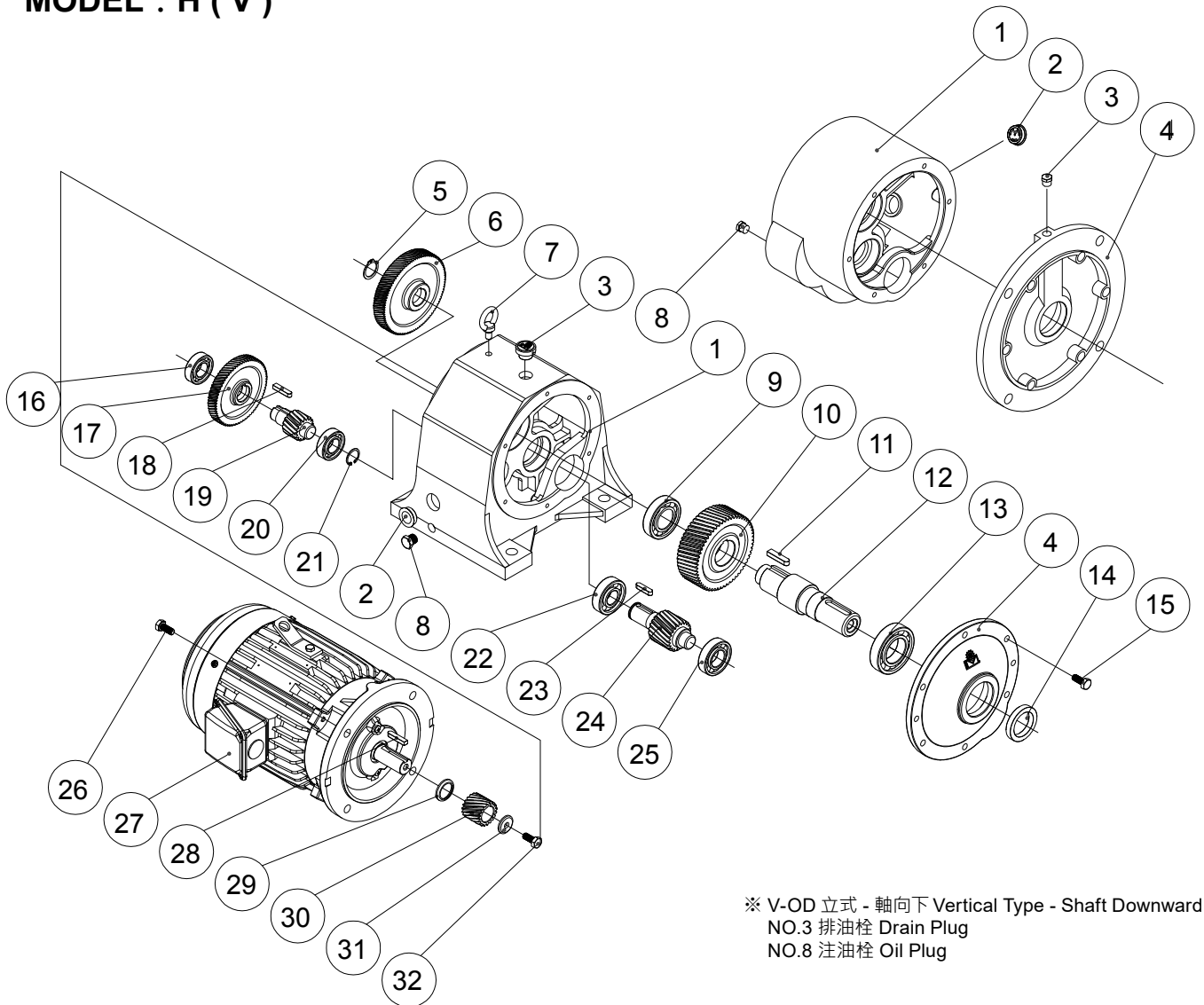
※ V-OD 立式 - 軸向下 Vertical Type - Shaft Downward  
 NO.3 排油栓 Drain Plug  
 NO.6 注油栓 Oil Plug

NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	本體	Outer Shell	14	扣環	Snap Ring
2	油鏡	Oil Gauge	15	B 齒輪	B Gear
※3	注油栓	Oil Plug	16	軸承	Bearing
4	前蓋	Front Cover	17	鍵	Key
5	吊環	Hoisting Ring	18	C 齒輪軸	C Gear Shaft
※6	排油栓	Drain Plug	19	軸承	Bearing
7	軸承	Bearing	20	六角螺絲	Hexagon Head Bolt
8	D 齒輪	D Gear	21	油封	Oil Seal
9	鍵	Key	22	馬達盤	Motor Flange
10	出力軸	Output Shaft	23	輔助軸心	Auxiliary shaft
11	軸承	Bearing	24	軸承	Bearing
12	油封	Oil Seal	25	扣環	Snap Ring
13	立式：內六角螺絲 臥式：外六角螺絲	Vertical: Hex Socket Cap Screw Horizontal: Hex Head Cap Screw	26	R 扣環	R Snap Ring
			27	A 齒輪	A Gear
			28	扣環	Snap Ring



## 三段式分解系統圖 3-Stage System Drawing

MODEL : H ( V )



※ V-OD 立式 - 軸向下 Vertical Type - Shaft Downward  
 NO.3 排油栓 Drain Plug  
 NO.8 注油栓 Oil Plug

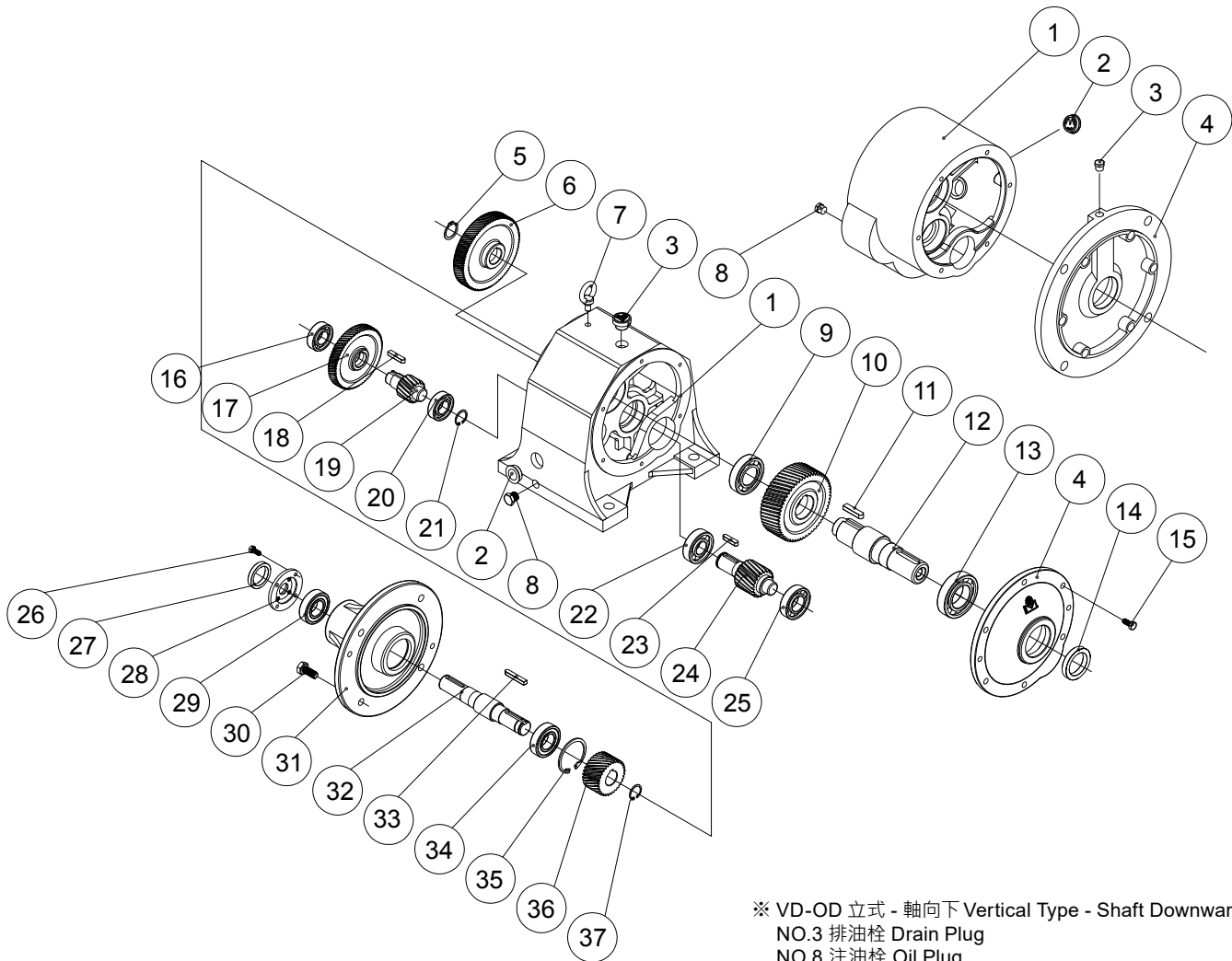
NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	本體	Outer Shell	17	B 齒輪	B Gear
2	油鏡	Oil Gauge	18	鍵	Key
※3	注油栓	Oil Plug	19	A'(E) 齒輪軸	A'(E) Gear Shaft
4	前蓋	Front Cover	20	軸承	Bearing
5	扣環	Snap Ring	21	R 扣環	R Snap Ring
6	B'(F) 齒輪	B'(F) Gear	22	軸承	Bearing
7	吊環	Hoisting Ring	23	鍵	Key
※8	排油栓	Drain Plug	24	C 齒輪軸	C Gear Shaft
9	軸承	Bearing	25	軸承	Bearing
10	D 齒輪	D Gear	26	六角螺絲	Hexagon Head Bolt
11	鍵	Key	27	馬達	Motor
12	出力軸	Output Shaft	28	鍵	Key
13	軸承	Bearing	29	油封	Oil seal
14	油封	Oil Seal	30	A 齒輪	A Gear
15	立式：內六角螺絲 臥式：外六角螺絲	Vertical: Hex Socket Cap Screw Horizontal: Hex Head Cap Screw	31	華司 ( 或扣環 )	Washer or Snap Ring
16	軸承	Bearing	32	六角螺絲	Hexagon Head Bolt

# GEAR REDUCER SERIES

## 齒輪減速機系列

### 三段式分解系統圖 3-Stage System Drawing

MODEL : HD ( VD )

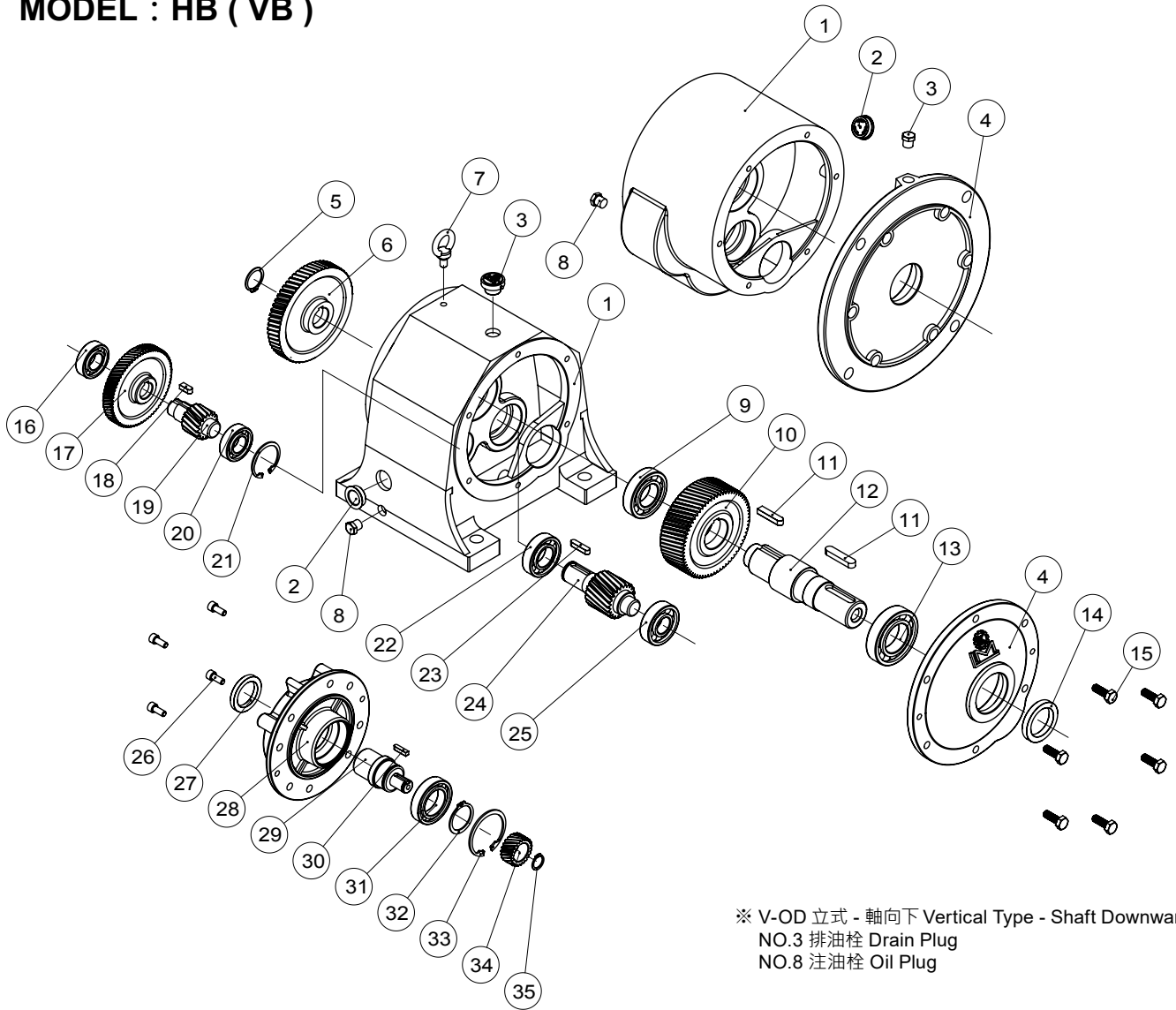


※ VD-OD 立式 - 軸向下 Vertical Type - Shaft Downward  
NO.3 排油栓 Drain Plug  
NO.8 注油栓 Oil Plug

NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	本體	Outer Shell	20	軸承	Bearing
2	油鏡	Oil Gauge	21	扣環	Snap Ring
※3	注油栓	Oil Plug	22	軸承	Bearing
4	前蓋	Front Cover	23	鍵	Key
5	扣環	Snap Ring	24	C 齒輪軸	C Gear Shaft
6	B'(F) 齒輪	B'(F) Gear	25	軸承	Bearing
7	吊環	Hoisting Ring	26	六角螺絲	Hexagon Head Bolt
※8	排油栓	Drain Plug	27	油封	Oil Seal
9	軸承	Bearing	28	小蓋 (71/2HP 以上使用)	Small Cover of 71/2 HP above
10	D 齒輪	D Gear	29	軸承	Bearing
11	鍵	Key	30	六角螺絲	Hexagon Head Bolt
12	出力軸	Output Shaft	31	入力軸大蓋	Big Cover
13	軸承	Bearing	32	入力軸	Input Shaft
14	油封	Oil Seal	33	鍵	Key
15	立式：內六角螺絲 臥式：外六角螺絲	Vertical: Hex Socket Cap Screw Horizontal: Hex Head Cap Screw	34	軸承	Bearing
16	軸承	Bearing	35	扣環	Snap Ring
17	B 齒輪	B Gear	36	A 齒輪	A Gear
18	鍵	Key	37	扣環	Snap Ring
19	A'(E) 齒輪軸	A'(E) Gear Shaft			

## 三段式分解系統圖 3-Stage System Drawing

MODEL : HB ( VB )



※ V-OD 立式 - 軸向下 Vertical Type - Shaft Downward  
 NO.3 排油栓 Drain Plug  
 NO.8 注油栓 Oil Plug

NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	本體	Outer Shell	18	鍵	Key
2	油鏡	Oil Gauge	19	A'(E) 齒輪軸	A'(E) Gear Shaft
※3	注油栓	Oil Plug	20	軸承	Bearing
4	前蓋	Front Cover	21	R 扣環	R Snap Ring
5	扣環	Snap Ring	22	軸承	Bearing
6	B'(F) 齒輪	B'(F) Gear	23	鍵	Key
7	吊環	Hoisting Ring	24	C 齒輪軸	C Gear Shaft
※8	排油栓	Drain Plug	25	軸承	Bearing
9	軸承	Bearing	26	六角螺絲	Hexagon Head Bolt
10	D 齒輪	D Gear	27	油封	Oil Seal
11	鍵	Key	28	馬達盤	Motor Flange
12	出力軸	Output Shaft	29	輔助軸心	Auxiliary shaft
13	軸承	Bearing	30	鍵	Key
14	油封	Oil Seal	31	軸承	Bearing
15	立式：內六角螺絲 臥式：外六角螺絲	Vertical: Hex Socket Cap Screw Horizontal: Hex Head Cap Screw	32	扣環	Snap Ring
16	軸承	Bearing	33	R 扣環	R Snap Ring
17	B 齒輪	B Gear	34	A 齒輪	A Gear
			35	扣環	Snap Ring



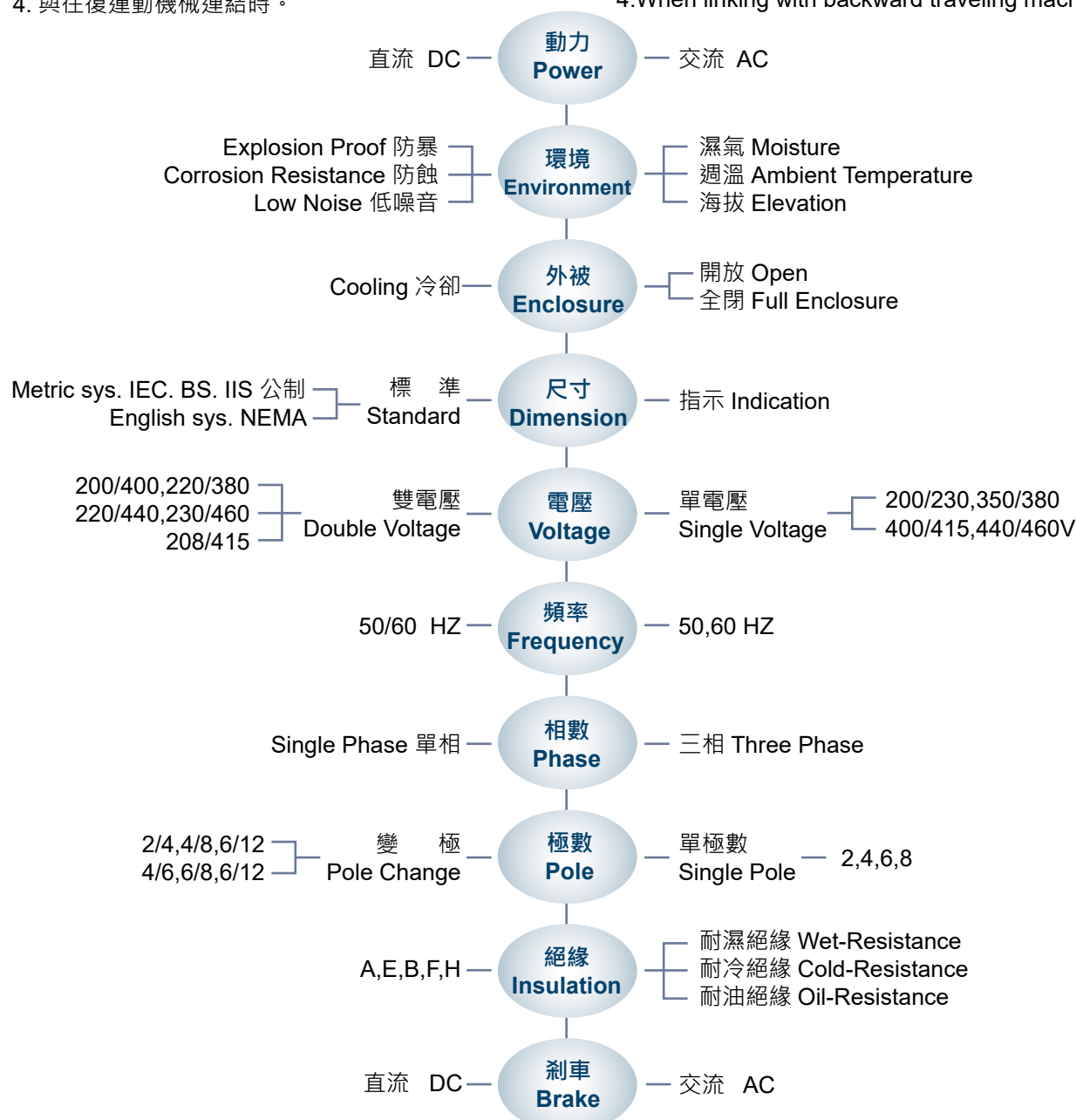
### 馬達選擇 Selection of Motor

#### 一般注意事項

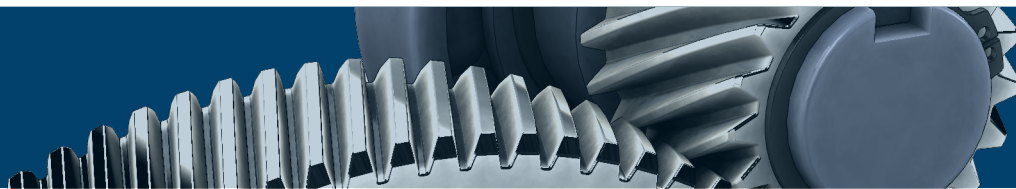
- ◆ 電源：單相、三相、電壓週率、變壓器容量等。
- ◆ 負載機械：所需馬力數、負載轉矩特性。
- ◆ 特殊使用條件：
  1. 急速逆轉或停止。
  2. 啟動停止頻繁。
  3. 需特別大之啟動轉矩。
  4. 與往復運動機械連結時。

#### General Notices

- ◆ Electricity: Single phase, 3 phase, voltage frequency, capacity of transformer, etc.
- ◆ Loading machine: Required horsepower, load torque characteristics.
- ◆ Special Conditions of Use:
  1. Rush reverse or stop.
  2. Frequent start-up or stop.
  3. Specially large Start-up torque required.
  4. When linking with backward traveling machinery.



- ◆ 齒輪減速機之標準品使用低壓、三相感應馬達、IEC 尺寸、全封閉外扇鼠籠型轉子。  
Standard gear reducers use low voltage, 3 phase induction motor, IEC dimension, full-enclosed outer fan cage rotor.
- ◆ 馬達尺寸請參考「IEC 標準馬達尺寸參考表」(第 W1 頁)。  
Reference page W1 for IEC flange motor dimension.



## 減速機安裝 Usage and Installation

### 使用前請檢查

- ◆ 檢查機種、型號、馬力、軸方向、減速比回轉方向及入力軸出力軸回轉數是否符合。
- ◆ 注意檢查注油情況，先確定是否有油，並保持油量在油面計一半以上。
- ◆ 使用前請拔掉加油蓋上的插梢。

### 場所

- ◆ 須裝置於平且堅固的底部。
- ◆ 安裝之環境須乾燥且通風良好，周圍溫度 0°C ~40°C 異常高溫或低溫時請註明。

### 連結方式

- ◆ 當聯接器用以聯入力或出力軸時，須確實固定並務使兩軸平行，底座須以適當螺栓，確保鎖固緊密。
- ◆ 所有配備均應輕裝於軸上，勿使用鐵鎚，並避免裝配過緊而引起軸承損壞。
- ◆ 滑輪、鏈輪或齒輪在裝配時應盡量靠近軸承以減少彎曲應力。使用適當大小（在出力軸徑的 6 倍以內）與出力軸連接之鍊輪、皮帶輪等請配合 H7 公差使用，可避免發出異聲與軸面受損。
- ◆ VB、HB 型入力孔可加添適當黃油，避免孔徑過度磨損及發出異聲。
- ◆ 軸面可塗上防鏽塗料避免生鏽。

### 馬達

- ◆ 電源電壓變動大於 10% 時，馬達會有燒燬之虞，並使出力軸扭力降低或異常。
- ◆ 馬達超負荷使用有燒燬之虞。
- ◆ 馬達結線錯誤會導致馬達燒燬。
- ◆ 濕氣過重的環境會使剎車馬達的剎車器產生鏽蝕失去剎車功能。
- ◆ 搭配變頻器使用時，如常使用於低頻，請使用變頻專用馬達。或變更比數改 HB(VB)，請電洽。

### Check Before Operating

- ◆ Check if the type, model No., horsepower, shaft direction, reduction ratio, revolution direction and input/output shaft revolutions are in accordance with the standard.
- ◆ Check carefully the oil level to make sure that the oil volume is sufficient and maintain above the middle of oil gauge.
- ◆ Please pull the pin out of the plug lid before use.

### Place

- ◆ A flat and solid base is one of the requirements for installation.
- ◆ The environment for installation shall be dry and well ventilated, with ambient temperature at 0°C to 40°C. Abnormal high or low temperature shall be dedicated.

### Connecting Method

- ◆ If coupler is used to connect input or output shaft, make sure they are firmly fixed and paralleled. The base seat shall be anchored with proper bolts.
- ◆ All of the components shall be properly assembled to the shaft. Avoid hammering and over-tight assembly which could damage the bearing.
- ◆ The pulley, chain pulley and gear shall be assembled as close to the bearing as possible to minimize the curving stress. The chain pulley and belt pulley used to connect the output shaft shall be properly chosen (within 6 times as large as the diameter of output shaft) and used in accordance with H7 tolerance so as to keep out of abnormal noise and harm to the shaft surface.
- ◆ Proper amount of grease can be applied to VB and HB input hole to ensure the hole against over-wearing and making abnormal noise.
- ◆ The application of anti-rust paint can keep the shaft from rusting.

### Motor

- ◆ The voltage variation over 10% could cause motor to burn out and reduce the torque of output shaft.
- ◆ Motor is subject to damage due to overload.
- ◆ Improper connection could cause motor to burn out.
- ◆ High-moisture environment could cause the brake of motor rusted and disabled.
- ◆ An appropriate motor shall be applied with the frequency converter while the low frequency is required in usual condition.

# GEAR REDUCER SERIES

## 齒輪減速機系列

### ■ 安裝方向 Installation Direction

● 油面計  
Oil Indicator

▼ 注油栓  
Oil Plug

△ 排油栓  
Oil Drain Plug

◆ 正常的使用方向可以使減速機保持較高的壽命。  
The life time of gear reducer can be prolonged in proper direction.

◆ 安裝時請注意油面計、注油栓及排油栓的位置以便日後維護。  
Please note the positions of oil gauge, oil filling plug and oil drain plug to facilitate the maintenance afterwards.

◆ 減速機使用方向特殊時，請與我們連繫。  
For special installation direction, please contact us.

Type	軸向下 Shaft Downward	軸向上 Shaft Upward	軸水平 Shaft Horizontal
臥式 Horizontal	<b>H-OD</b> 	<b>H-OU</b> 	<b>H-OH</b> 
立式 Vertical	<b>V-OD</b> 	<b>V-OU</b> 	<b>V-OH</b> 
Type	倒吊安裝 Inverse Installation	左側壁 On Left Side Wall	右側壁 On Right Side Wall
臥式 Horizontal	<b>H-OS</b> 	<b>H-OL</b> 	<b>H-OR</b> 

◆ 正常的使用方向可使減速機保持較高的壽命，非不得已的情況下盡量不要採用 H-OU 的方式，因入力軸端的油封在高速運轉下，較出力軸端的油封容易損壞，而導致潤滑油由油封滲出，如須採用請註明，以特別處理。

The life time of gear reducer can be prolong with proper operation. Unless otherwise specified, H-OU types of operation shall be avoid as much as possible, because the oil seal of input shaft could be damaged more easily than output shaft and thus result in leakage.

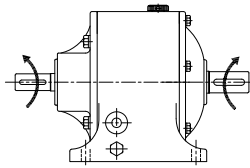
◆ 建議 H-OD、H-OU、H-OS 使用潤滑油脂，加潤滑油時因型號不同請另購加油彎管，否則產生油量過多會造成漏油之疑慮。

◆ 線盒標準是面向出力軸盒在左方，如有特殊時，請電洽。

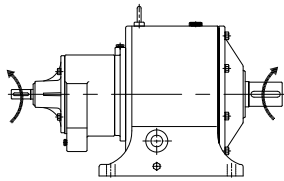


## 出力軸迴轉方向

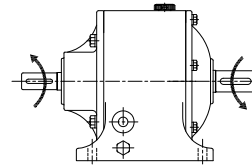
雙段式齒輪減速機的迴轉方向與入力的方向相同，  
三段式齒輪減速機的迴轉方向與入力的方向相反。  
多速比以配齒設計後，確認段數為準。



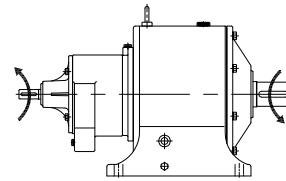
雙段式 (2-Stage) 1/3~1/30



四段式 (4-Stage)  
六段式 (6-Stage)



三段式 (3-Stage) 1/40~1/200



五段式 (5-Stage)

## Revolving Direction of Output Shaft

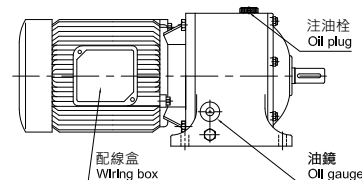
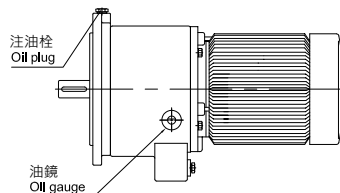
2-stage gear reducer revolves in the same direction as the input shaft, while 3-stage gear reducer does in the opposite direction.

## 馬達配線盒位置

安裝方向注意潤滑油加油便利，油量計可看見且配線容易，正常情況下，附馬達之減速機其配線盒位置、油鏡及注油栓位置如下圖，如有不同時，請註明。

### ◆ 標準配線盒、油鏡及加油口位置

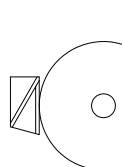
Standard positions of wiring box, oil gauge, and oil filling entrance.



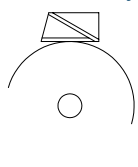
### ◆ 馬達配線盒之選擇 (以面向出力軸為準)

Selection of motor wiring box (based on output shaft)

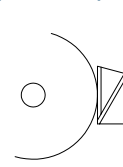
### ◆ 訂購時，請註明。For any order, please specify your need clearly.



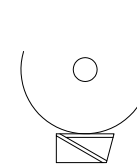
M1 左 (Left)  
標準 Standard



M2 上 (Up)  
側壁 Side



M3 右 (Right)



M4 下 (Down)

## Position of Motor Wiring Box

Be aware that the installation direction of wiring box shall facilitate the filling of lubricant, the visibility of oil level and wiring. In normal condition, the positions of motor wiring box, oil gauge and oil plug is as shown below, unless otherwise specified.

### 潤滑油之選定 Selection of Lubricant Oil

適當潤滑油的黏度，須使齒輪磨擦容易，遇高負荷及衝擊負荷時，減速機才能充分發揮其機能。下表即 "利明牌" 減速機潤滑油的選定：

Proper viscosity of lubricant is contributive to ease the friction of gears, so the speed reducer can fully apply its function in the case of high load or impact load. The table below shows the selection of lubricants for LIMING speed reducers:

荷重 (Load)	中國石油國光牌極壓機油 CPC E.P. LUBRICANT					SHELL OIL	MOBIL OIL	ISO VG
	Grade No.	黏度 (Cst) Viscosity		流動點 Pour Point	閃火點 Flash Point			
		40°C	100°C					
普通荷重 Common Load	HD-150	143.6	14.38	-18°C	264°C	OMALA OIL 150	MOBIL GEAR 629	ISO VG EP 150
	HD-320	310.5	23.7	-18°C	290°C	OMALA OIL 320	MOBIL GEAR 632	ISO VG EP 320
	HD-460	440.4	29.8	-18°C	310°C	OMALA OIL 460	MOBIL GEAR 634	ISO VG EP 460
超荷重 Heavy Load	HD-320	310.5	23.7	-18°C	290°C	OMALA OIL 320	MOBIL GEAR 632	ISO VG EP 320
	HD-460	440.4	29.8	-18°C	310°C	OMALA OIL 460	MOBIL GEAR 634	ISO VG EP 460
	HD-680	656.2	38.68	-12°C	316°C	OMALA OIL 680	MOBIL GEAR 636	ISO VG EP 680

#### 注意事項

- ◆本公司出廠減速機，使用中國石油國光牌極壓機油 HD-460 或相同等級的油品。
- ◆最初使用 100 小時後，洗淨內部、換上新油以後每 2500 小時換油。
- ◆在高速、高溫、低速、重荷重、強制潤滑等特殊情況下使用場合，請與本公司洽商。
- ◆潤滑油不足可能導致噪音和齒輪快速磨損。
- ◆潤滑油過多可能導致漏油。
- ◆請加入適當潤滑油至油量計一半以上 (請參考下一頁油量表)。
- ◆請檢視油鏡，如油品已經變黑混濁或異味，請更換油品。

#### Notice

- ◆ LI MING speed reducers use CPC E.P. lubricant HD-460 or equivalent.
- ◆ After initial 100 hours of use, clean the internal part and replace with new lubricant; then, do it every 2500 hours.
- ◆ If use in the special conditions of high speed, high temperature, low speed, heavy load, and forced lubrication, please contact the company.
- ◆ Could cause noise and fast abrasion of gears.
- ◆ Excessive lubricant could result in leakage.
- ◆ Please feed proper lubricant above half of the oil meter (see oil gauge).

## ■ 油量表 Oil Capacities ( unit: ℓ )

Type Dirction Model	V		VD		VB	
	OH	OD	OH	OD	OH	OD
201	0.3	0.5	0.3	0.5	0.3	0.5
202	0.3	0.5	0.3	0.5	0.3	0.5
203	0.5	1	0.5	1	0.5	1
205	1	2	1	2	1	2
206	1	2	1	2	1	2
207	1.5	3	1.5	3	1.5	3
208	1.5	3	1.5	3	1.5	3
209·209S	2	4	2	4	2	4
210·210S	2	4	2	4	2	4
211	3	8	3	8	3	8
211S	2	4	2	4	2	4
212	3	8	3	8	3	8
213·213S	5	12	5	12	5	12
214·214S	5	12	5	12	5	12
215	8	20	8	20	8	20
216	8	20	8	20	8	20
217	10	24	10	24	10	24
218	12	30	12	30	12	30
219	32	55	32	55	32	55
304	0.5	1	0.5	1	0.5	1
306	1	2	1	2	1	2
308	1.5	3	1.5	3	1.5	3
310·310S	2	4	2	4	2	4
312	3	8	3	8	3	8
312S	2	4	2	4	2	4
314·314S	5	12	5	12	5	12
315	8	20	8	20	8	20
316	8	20	8	20	8	20
317	10	24	10	24	10	24
318	12	30	12	30	12	30
319	32	55	32	55	32	55

Type Dirction Model	LSV				LSVD			
	OH		OD		OH		OD	
	LSV1	LSV2	LSV1	LSV2	LSV1	LSV2	LSV1	LSV2
406	0.8	0.3	2	0.5	1	0.3	2	0.5
408	1.5	0.5	3	1	1.5	0.5	3	1
410·410S	2	1	4	2	2	1	4	2
412	3	1	8	2	3	1	8	2
412S	2	1	4	2	2	1	4	2
414·414S	5	2	12	4	5	2	12	4
416	8	2	20	4	8	2	20	4
417	10	3	24	8	10	3	24	8
418	12	3	30	8	12	3	30	8
508	1.5	0.5	3	1	1.5	0.5	3	1
510·510S	2	1	4	2	2	1	4	2
512	3	1	8	2	3	1	8	2
512S	2	1	4	2	2	1	4	2
514·514S	5	1	12	3	5	1	12	3
516	8	2	20	4	8	2	20	4
517	10	3	24	8	10	3	24	8
518	12	3	30	8	12	3	30	8
610·610S	2	1	4	1	2	1	4	1
612	3	1	8	2	3	1	8	2
612S	2	1	4	1	2	1	4	2
614·614S	5	1	12	3	5	1	12	3
616	8	2	20	4	8	2	20	4
617	10	3	24	8	10	3	24	8
618	12	3	30	8	12	3	30	8

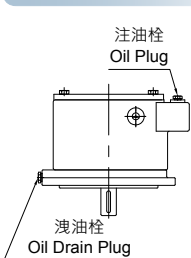
◆ 立式減速機依使用方向的不同而使用不同的油量，而油鏡及洩油孔位置亦不同，訂貨時請註明使用方向。

The capacity of lubricant oil and the positions of oil gauge and drain hole for the vertical speed reducers are based on use direction. Please indicate the intended use direction when ordering.

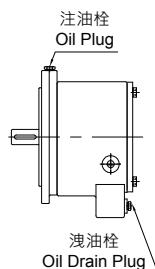
◆ 臥式減速機之油量請參閱尺寸表。

Please refer to the table below for the lubricant oil.

### 立式 Vertical

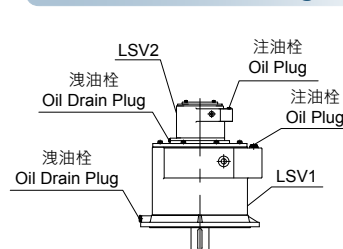


V-OD 立式 - 軸向下  
Vertical Type - Shaft Downward

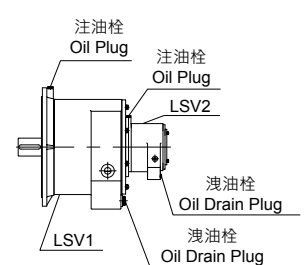


V-OH 立式 - 軸水平  
Vertical Type - Shaft Horizontal

### 立式連結式 Multi-Stage



V-OD 立式 - 軸向下  
Vertical Type - Shaft Downward



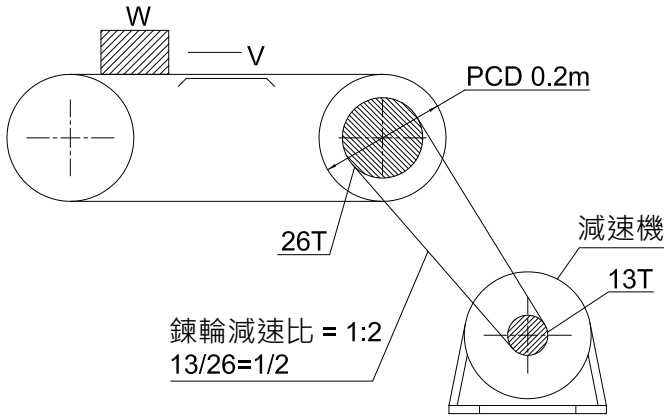
V-OH 立式 - 軸水平  
Vertical Type - Shaft Horizontal



# GEAR REDUCER SERIES

## 齒輪減速機系列

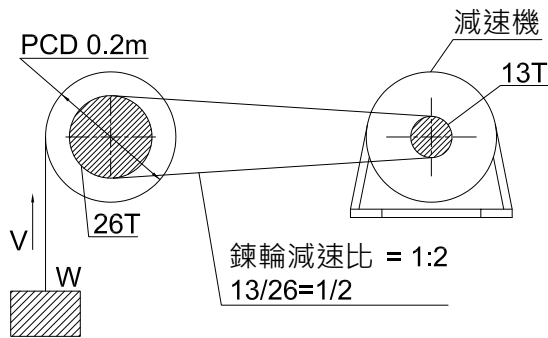
### 選型計算範例一 Example 1



- ◆ 搬運物總重量 Total Weight of Cargo:  
W=600kg
- ◆ 搬送速度 Carrying Speed:  
V=9.5m/min
- ◆ 與導軌之摩擦係數 Friction Coefficient to Guiding Rail:  
 $\mu=0.15$
- ◆ 鍊輪傳動效率 Chain Pulley Transmission Coefficient:  
 $\eta_1=0.95$
- ◆ 減速機傳動效率 Gear Reducer Transmission Coefficient:  
 $\eta_2=0.9$
- ◆ 運轉時間 Operation Time:  
8 小時 / 日 8 hours / day
- ◆ 啟動次數 Start Frequency:  
1 回 / 分, 中衝擊 1 time/min., medium shock
- ◆ 使用電源 Power:  
三相 220V, 60Hz 3 phase 220V, 60Hz

減速比 Ratio	選定之注意事項 Notices Calculation Example	計算範例 Load Condition Notices Calculation Example																										
	<p>藉由必要的入力軸回轉數及出力軸回轉數來選定減速比</p> <ol style="list-style-type: none"> <li>1. 先求出輸送帶滾輪回轉數 (N1) N1= 搬送速度 / ( 滾輪直徑 x <math>\pi</math> )</li> <li>2. 再求出減速機出力軸回轉數 (N2) N2 = N1 x ( 鍊輪齒數 / 減速機齒數 )</li> <li>3. 以 3 <math>\phi</math>, 60Hz 之馬達計算減速比 ( <math>\tau</math> ) <math>\tau</math> = 出力軸回轉數 / 入力軸回轉數 ( 馬達轉速 N )</li> </ol> <p>Reduction Ratio Notices Calculation Example The reduction ratio is based on input/output shaft revolutions.</p> <ol style="list-style-type: none"> <li>1. Find the revolution of conveyor pulley (N1) first N1=carrying speed / (pulley D x <math>\pi</math> )</li> <li>2. Find the output shaft revolution of gear reducer (N2) N2 = N1 x (chain pulley speed/gear number of reducer)</li> <li>3. Calculate reduction ratio ( <math>\tau</math> ) based on 3 <math>\phi</math>, 60Hz motor <math>\tau</math> = output shaft revolution/input shaft revolution (motor RPM N)</li> </ol>	<ol style="list-style-type: none"> <li>1. N1 = V / ( D x <math>\pi</math> ) = 9.5 / ( 0.2x3.14 ) = 15 r/min (RPM)</li> <li>2. N2 = N1 x ( 26 / 13 ) = 15 x 2/1 = 30 r/min (RPM)</li> <li>3. <math>\tau</math> = N2 / N = 30 / 1800 = 1/60 ( 馬達轉速 , motor RPM , input RPM )</li> </ol>																										
扭力 Torque	<p>決定減速比後, 由使用機械之條件換算其扭力</p> <ol style="list-style-type: none"> <li>1. 先算出輸送帶滾輪之扭力 (T1) T1 = ( <math>\mu</math> x 荷重 x 滾輪半徑 ) / <math>\eta_1</math></li> <li>2. 再換算成減速機出力軸所須扭力 (T2) T2 = ( T1 x 鍊輪減速比 ) / <math>\eta_2</math></li> </ol> <p>After reduction ratio is decided, calculate the torque by the pulley reducers radius condition of the machine used.</p> <ol style="list-style-type: none"> <li>1. Find the torque of conveyor pulley (T1) T1 = ( <math>\mu</math> x load x pulley radius ) / <math>\eta_1</math></li> <li>2. Find the torque needed from the output shaft of reducer (T2) T2 = ( T1 x reduction ratio of chain pulley ) / <math>\eta_2</math></li> </ol>	<ol style="list-style-type: none"> <li>1. T1 = <math>\mu</math> x W ( D / 2 ) / <math>\eta_1</math> = 0.15 x 600 x ( 0.2 / 2 ) / 0.95 = 9.5 kgf·m</li> <li>2. T2 = ( T1 x ( 1/2 ) ) / <math>\eta_2</math> = ( 9.5 x 1/2 ) / 0.9 = 5.28 kgf·m</li> </ol>																										
負荷條件 Load conditions	<p>選定之注意事項 Notices Calculation Example</p> <table border="1"> <thead> <tr> <th rowspan="2">原動機 Prime Mover</th> <th rowspan="2">傳動機負荷等級 Driven machine Load Classification</th> <th colspan="4">每日使用時間 Duration of Service Per Day</th> </tr> <tr> <th>0.50 hrs</th> <th>2 hrs</th> <th>8-10 hrs</th> <th>10-24 hrs</th> </tr> </thead> <tbody> <tr> <td rowspan="3">電動機 Electric Motor</td> <td>均一負荷 Uniform</td> <td>0.80</td> <td>0.90</td> <td>1.00</td> <td>1.25</td> </tr> <tr> <td>中衝擊 Medium Shock</td> <td>0.90</td> <td>1.00</td> <td>1.25</td> <td>1.50</td> </tr> <tr> <td>重衝擊 Heavy Shock</td> <td>1.00</td> <td>1.25</td> <td>1.50</td> <td>1.75</td> </tr> </tbody> </table> <p>補正扭力 = 減速機出力軸扭力 x 係數 Corrective torque = reducer shaft torque x coefficient</p>	原動機 Prime Mover	傳動機負荷等級 Driven machine Load Classification	每日使用時間 Duration of Service Per Day				0.50 hrs	2 hrs	8-10 hrs	10-24 hrs	電動機 Electric Motor	均一負荷 Uniform	0.80	0.90	1.00	1.25	中衝擊 Medium Shock	0.90	1.00	1.25	1.50	重衝擊 Heavy Shock	1.00	1.25	1.50	1.75	<p>計算範例 Load Condition Notices Calculation Example</p> <ol style="list-style-type: none"> <li>T3 = T2 x K = 5.28 x 1.25 = 6.6 kgf·m</li> </ol>
原動機 Prime Mover	傳動機負荷等級 Driven machine Load Classification			每日使用時間 Duration of Service Per Day																								
		0.50 hrs	2 hrs	8-10 hrs	10-24 hrs																							
電動機 Electric Motor	均一負荷 Uniform	0.80	0.90	1.00	1.25																							
	中衝擊 Medium Shock	0.90	1.00	1.25	1.50																							
	重衝擊 Heavy Shock	1.00	1.25	1.50	1.75																							
馬力 Horse Power	<p>選定之注意事項 Notices Calculation Example</p> <p>最後換算成馬力 (HP) HP = ( 補正扭力 x 出力軸轉數 ) / 716.2</p> <p>Find horse power (HP) HP = ( corrective torque x revolution of output shaft ) / 716.2</p>	<p>計算範例 Load Condition Notices Calculation Example</p> <ol style="list-style-type: none"> <li>HP = ( T3 x N2 ) / 716.2 = ( 6.6 x 30 ) / 716.2 = 0.27</li> </ol> <p>1/2HP 馬達適用 (For 1/2 HP motor)</p>																										
型號選定 Model Selected	<p>根據本目錄之型號速比對照表 1/2HP、減速比 1/60、型號 306 適用。 According to the model-reduction ratio reference table, model 306, 1/2 HP, reduction ratio 1/60 are selected.</p>																											

## 選型計算範例二 Example 2



- ◆ 搬運物總重量 Total Weight of Cargo: W=600kg
- ◆ 搬送速度 Carrying Speed: V=9.5m/min
- ◆ 鍊輪傳動效率 Chain Pulley Transmission Coefficient:  $\eta_1=0.95$
- ◆ 減速機傳動效率 Gear Reducer Transmission Coefficient:  $\eta_2=0.9$
- ◆ 運轉時間 Operation Time: 8 小時 / 日 8 hours / day
- ◆ 啟動次數 Start Frequency: 1 回 / 分, 中衝擊 1 time/min., medium shock
- ◆ 使用電源 Power: 三相 220V, 60Hz 3 phase 220V, 60Hz

減速比 Ratio	選定之注意事項 Notices Calculation Example	計算範例 Load Condition Notices Calculation Example
	藉由必要的人力軸回轉數及出力軸回轉數來選定減速比 1. 先求出輸送帶滾輪回轉數 (N1) $N1 = \text{搬送速度} / (\text{滾輪直徑} \times \pi)$ 2. 再求出減速機出力軸回轉數 (N2) $N2 = N1 \times \text{鍊輪齒數減速比}$ 3. 以 3 $\phi$ , 60Hz 之馬達計算減速比 ( $\tau$ ) $\tau = \text{出力軸回轉數} / \text{入力軸回轉數} (\text{馬達轉速 } N)$ Reduction Ratio Notices Calculation Example The reduction ratio is based on input/output shaft revolutions. 1. Find the revolution of conveyer pulley (N1) first $N1 = \text{carrying speed} / (\text{pulley } D \times \pi)$ 2. Find the output shaft revolution of gear reducer (N2) $N2 = N1 \times (\text{chain pulley speed/gear number of reducer})$ 3. Calculate reduction ratio ( $\tau$ ) based on 3 $\phi$ , 60Hz motor $\tau = \text{output shaft revolution} / \text{input shaft revolution} (\text{motor RPM } N)$	$1. N1 = V / (D \times \pi)$ $= 9.5 / (0.2 \times 3.14)$ $= 15 \text{r/min (RPM)}$ $2. N2 = N1 \times i$ $= 15 / (2/1)$ $= 30 \text{ r/min}$ $3. \tau = \text{出力軸回轉數} / \text{入力軸回轉數}$ $= 30 / 1800 = 1/60$ (馬達轉速, motor RPM, input RPM)
扭力 Torque	選定之注意事項 Notices Calculation Example	計算範例 Load Condition Notices Calculation Example
	決定減速比後, 由使用機械之條件換算其扭力 1. 先算出輸送帶滾輪之扭力 (T1) $T1 = (\mu \times \text{荷重} \times \text{滾輪半徑}) / \eta_1$ 2. 再換算成減速機出力軸所須扭力 (T2) $T2 = (T1 \times \text{鍊輪減速比}) / \eta_2$ Torque Notices Calculation Example After reduction ratio is decided, calculate the torque by the pulley reducers radius condition of the machine used. 1. Find the torque of conveyer pulley (T1) $T1 = (\mu \times \text{load} \times \text{pulley radius}) / \eta_1$ 2. Find the torque needed from the output shaft of reducer (T2) $T2 = (T1 \times \text{reduction ratio of chain pulley}) / \eta_2$	$1. T1 = \mu \times W (D / 2) / \eta_1$ $= 600 \times (0.2 / 2)$ $= 60 \text{ Kg-m}$ $2. T2 = T1 \times 1/2 \times 1 / \eta_2$ $= 60 \times 1/2 \times 1 / 0.9$ $= 33.3 \text{ Kg-m}$
負荷條件 Load conditions	選定之注意事項 Notices Calculation Example	計算範例 Load Condition Notices Calculation Example
	根據運轉條件算出補正扭力 (T3) $T3 = T2 \times \text{運轉條件} (\text{係數 } K)$ Find corrective torque (T3) according to operation condition $T3 = T2 \times \text{operation condition} (\text{coefficient } K)$	$T3 = T2 \times K$ $= 33.3 \times 1 = 33.3 \text{ kgf-m}$
馬力 Horse Power	選定之注意事項 Notices Calculation Example	計算範例 Load Condition Notices Calculation Example
	最後換算成馬力 (HP) $HP = (T \times N2) / 716.2$ Find horse power (HP) $HP = (T \times N2) / 716.2$	$HP = (T \times N2) / 716.2$ $= (33.3 \times 30) / 716.2 = 1.39 \dots (2HP)$
型號選定 Model Selected	根據本目錄之型號速比對照表 2HP、減速比 1/60、型號 310 適用。 According to the model-reduction ratio reference table, model 310, 2 HP, reduction ratio 1/60 are selected.	

## 常用的公式集 Frequently Used Formula

欲知的條件 Intended Conditions	已知的條件 Known Conditions	公式 Formula
扭力 (Torque) T	動力 (F) 與半徑 (R) / 馬力 (HP) 與回轉數 (N)(RPM)	$T = F \times R$ (kgf-m)
扭力 (Torque) T	動力 (Kw) 與回轉數 (N)(RPM) / 扭力 (T) 與回轉數 (N)(RPM)	$T = (716 \times \text{HP}) / N$ (kgf-m)
扭力 (Torque) T	扭力 (T) 與回轉數 (N)(RPM) / 重力 (F) 與速度 (V)(m/sec)	$T = (974 \times \text{kW}) / N$ (kgf-m)
馬力 (Horse Power) HP	重力 (F) 與速度 (V)(m/sec) / 齒輪、皮帶輪等的直徑 (D) 與回轉數 (N)(RPM)	$HP = (T \times N) / 716.2$ (馬力)
動力 (Power) kW	入力回轉數 (N1) 與出力回轉數 (N2)	$kW = (T \times N) / 974$ (千瓦)
馬力 (Horse Power) HP	Power (F) & Radius (R) Horse power (HP) & Revolution(N)(RPM)	$HP = (F \times V) / 75$ (馬力)
動力 (Power) kW	Power (Kw) & Revolution(N)(RPM) / Torque (T) & Revolution(N)(RPM)	$kW = (F \times V) / 102$ (千瓦)
速度 (Velocity) V	Torque (T) & Revolution(N)(RPM) / Gravity (F) & Velocity (V) (m/sec)	$V = (\pi \times D \times N) / 60$ (m/sec)
減速比 (Reduction Ratio) i	Gravity (F) & Velocity (V) (m/sec)	$i = N1 / N2$
	Diameter (D) of gear and belt pulley & revolution (N) (RPM) Input Shaft revolution (N1) & Output / shaft revolution (N2)	

# GEAR REDUCER SERIES

## 齒輪減速機系列

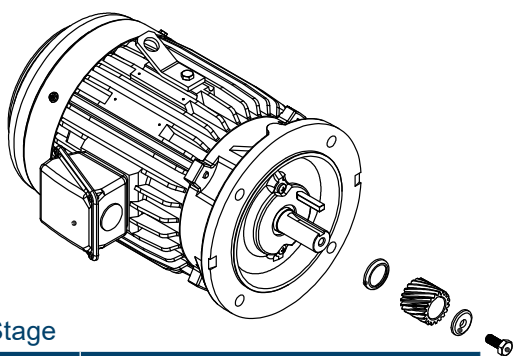
### 螺旋齒輪減速機 H、V 系列與電機搭配注意事項：

1. 搭配本公司電機可達最佳效率，實現機電一體化。
2. 在馬達軸心上安裝傳動齒輪，可彈性搭配各種 IEC 標準法蘭電機。
3. 馬達軸心處，必須有油封，防止潤滑油從齒箱洩漏至電機。
4. 下列規格需要修改馬達軸心尺寸或加裝 S 扣環：

### Cautions:

### Assemble Motor To Helical Gear Reducer H, V Series:

1. With our motor to achieve the best efficiency and achieve mechatronics.
2. Flexibly installation various IEC standard motor by Install the transmission gear on the motor shaft.
3. At the motor shaft, there must be an oil seal to prevent oil from leaking from the gear box to the motor.
4. The following specifications require modification of the motor dimension or machining for S ring:



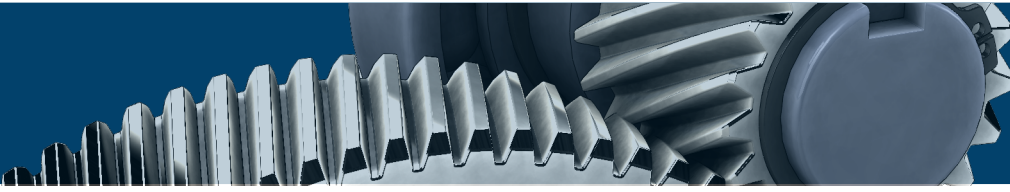
雙段 2-Stage

型號 Model	馬力 HP(4P)	速比 Ratio	
		修改馬達軸心 Modification of the Motor Dimension	加裝 S 扣環 Machining S Ring
206	2	-	3~10
208	3	-	3~10
209	2	35~40	-
	3	30	-
209S	3	20~30	-
211	3	35~40	-
212	7 1/2、10	-	3~10
213 213S	7 1/2	20~30	-
	15	3~15	3~10
	20	3~15	3~10
214 214S	10	20~30	-
215 215	15	25~30	-
216 216	20	25~30	-
	25	-	3~10
217	25、30	25~30	-
218	40	30	-
	50	3~10	-
219	50、60	20~30	-
220	75	30	-

三段 3-Stage

型號 Model	馬力 HP(4P)	速比 Ratio	
		修改馬達軸心 Modification of the Motor Dimension	加裝 S 扣環 Machining S Ring
308	1	-	40~120
310	2	170~200	-
310S	3	-	40~90
312	2	170~200	-
	3	90~120	40~120
	5	-	31~50
312S	2	120~200	-
314 314S	3	160~200	-
	5	-	51~120
	7 1/2	-	31~60
315	5	160~200	110~150
	7 1/2	120	60~120
316	10	120	60~120
	15	-	31~60
317	7 1/2	121~200	-
	15	120	40~120
	20	-	40~50
318	10	150~200	120~150
	15	-	60~100
	20	120	60~100
	25、30	-	40~50
319	20	175~200	121~200
	25、30	110~120	60~90
	40	-	40~60



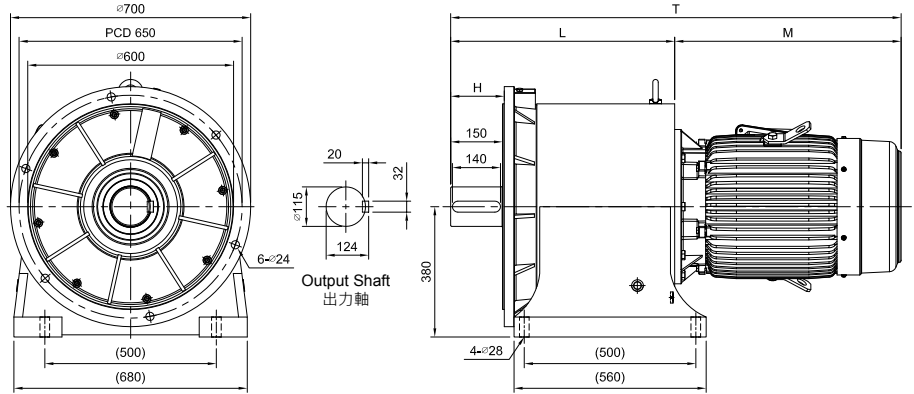


## 219 & 319 立式外觀圖 Dimension of Model 219, 319 :

### MODEL : V

unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	M	L	T	H
219	50	11~30	660		1,313	156
	60	11~30	660	653	1,313	
	75	5~10	676		1,329	
319	20	121~200	542		1,218	156
	25·30	70~90	562	676	1,238	
	40	40~60	600		1,276	



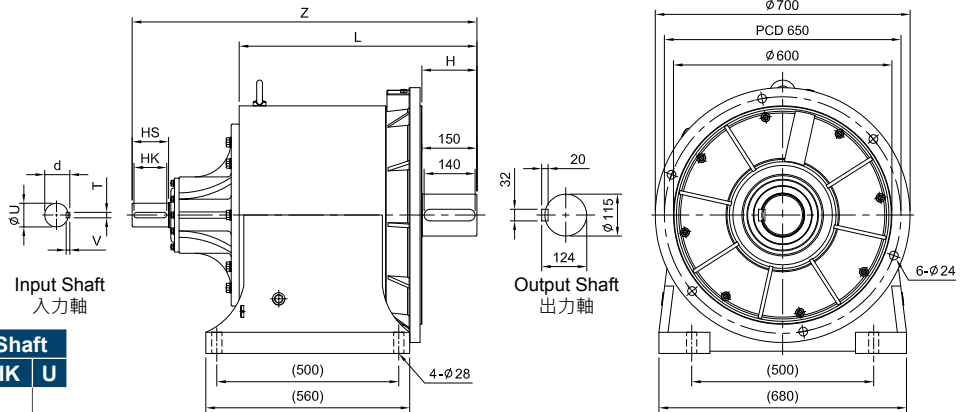
### MODEL : VD

unit: mm

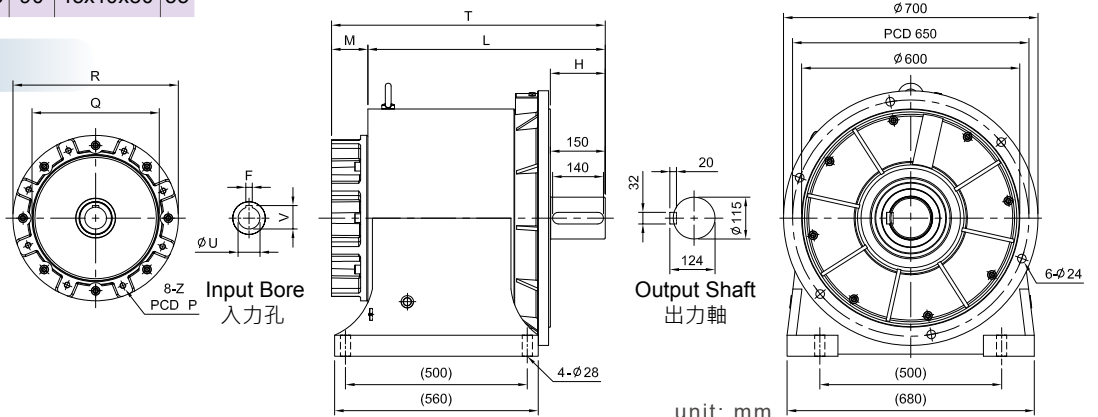
型號 Model	馬力 HP (4P)	減速比 Ratio	L	Z	H
219	50	10~30	653	953	156
	60				
319	20	121~200	676	964	156
	25·30	70~90			
	40	40~60			

型號 Model	馬力 HP (4P)	減速比 Ratio	入力軸 Input Shaft			
			d	HS	TxVxHK	U
219	50	10~30	69	100	15x10x90	65
	60					
319	20	121~200	51	80	12x8x70	48
	25·30	70~90				
	40	40~60				



### MODEL : VB



unit: mm

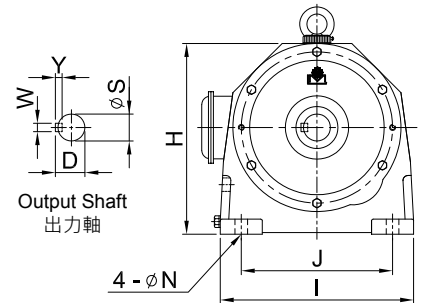
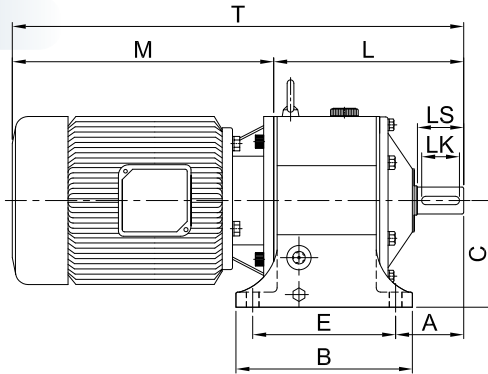
型號 Model	馬力 HP (4P)	減速比 Ratio	T	L	H	馬達盤 IEC Motor Flange					入力孔 Input Bore		
						M	P	Q	R	Z	U	F	V
219	50	10~30	754	653	156	100	400	350	450	M16	60	18	64.3
	60												
319	20	121~200	764	676	156	88	300	250	350	M16	42	12	45.3
	25·30	70~90	785	698									
	40	40~60	785	698									

# GEAR REDUCER SERIES

## 齒輪減速機系列

### MODEL : H

臥式減速機 Horizontal Type Reducer  
RATIO : 1/3~1/30 ( 雙段 2-Stage)



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	M	L	T	H	C	A	腳座 Foot Stock					出力軸 Output Shaft				重量 Weight (kg)	油量 Oil (ℓ)
									E	J	B	I	N	D	LS	S	WxYxLK		
201	1/4	3~30	225	165	390	170	90	54	125	140	155	180	10	21	38	19	5x5x30	8	0.5
202	1/2	3~10	248	171	419	170	90	60	125	140	155	180	10	27	45	24	7x7x35	8	0.5
203	1/4	31~50	225	178	405	190	110	62	135	145	170	190	13	27	45	24	7x7x35	10.5	0.7
	1/2	11~30	248		426														
205	1/2	31~50	248	231	479	227	127	77	170	180	210	230	15	31	50	28	7x7x40	18.5	1
	1	3~30	242	222	464														
206	2	3~10	322	226	548	227	127	81	170	180	210	230	15	35	55	32	10x8x45	18.5	1
207	1	31~40	242	254	496	253	145	80	205	195	240	260	15	35	55	32	10x8x45	25.5	1.4
	2	11~30	322		576														
208	3	3~10	315	259	574	265	145	87	205	195	240	260	15	41	60	38	10x8x50	28	1.4
209	2	31~40	322	290	612	289	164	88	215	215	265	295	19	41	60	38	10x8x50	34	2
	3	11~30	315		594														
209S	2	31~40	322	279	601	286	164	86	215	215	265	280	19	41	60	38	10x8x50	31	2
	3	15~30	315		583														
210	5	3~10	371	283	654	289	164	92	215	215	265	295	19	45	65	42	12x8x55	36	2
210S			273	644	286														
211	3	31~40	315	325	640	332	192	109	250	270	295	345	19	51	75	48	12x8x65	56	3
	5	11~30	371		696														
211S	5	11~30	298	669	289	164	105	215	215	265	295	19	51	75	48	12x8x65	46	2.5	
212	7 1/2	3~10	374	325	669	332	192	109	250	270	295	345	19	51	75	48	12x8x65	56	3
	10	3~10	412		737														
213	7 1/2	11~30	374	385	759	385	210	125	310	310	370	400	22	60	80	56	15x10x70	93	6.5
	15	3~10	498		883														
213S	7 1/2	11~30	374	382	756	377	210	125	310	310	370	390	22	60	80	56	15x10x70	86	6.5
	15	3~10	498		892														
214	10	11~30	412	390	802	385	210	130	310	310	370	400	22	66	85	62	15x10x75	97	6.5
214S			387	799	377														
215	15	11~30	498	471	970	445	245	157	360	360	430	450	25	76.5	100	72	20x12x90	149	10
	20	3~10	542		1,013														
216	20	11~30	542	471	1,013	445	245	157	360	360	430	450	25	80.5	100	76	20x12x90	151	10
	25	5~10	562		1,033														
217	25	11~30	562	508	1,070	505	280	172	380	420	460	530	25	84.5	110	80	20x12x100	205	15
	30	4~30	600		1,108														
218	40	11~30	600	608	1,208	565	310	196	480	480	570	600	28	106.5	130	100	24x16x120	335	24
	50	5~10	660		1,268														
219	50	11~30	660	676	1,336	670	380	214	540	500	635	670	28	124	150	115	32x20x140	485	32
	60	5~10	676		1,352														
220	75	11~30	676	792	1,468	782	425	272	600	680	700	830	38	139	180	130	35x22x170	760	45

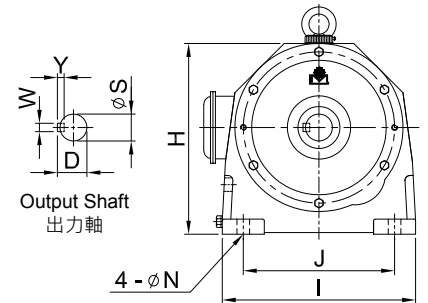
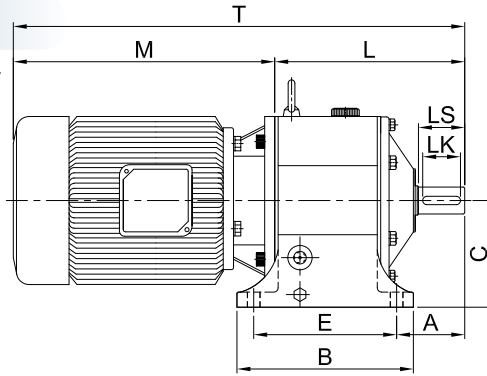
1. 表中 S 表示新尺寸。"S" means new dimension.

2. H213(含) 以上有雙油鏡雙排油孔。The model above H213 have dual oil gauges & drain plugs.

3. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.

**MODEL : H**

臥式減速機 Horizontal Type Reducer  
RATIO : 1/31~1/200 (三段 3-Stage)



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	M	L	T	H	C	A	腳座 Foot Stock					出力軸 Output Shaft				重量 Weight (kg)	油量 Oil (ℓ)
									E	J	B	I	N	D	LS	S	WxYxLK		
304	1/4	51~120	225	194	419	190	110	68	135	145	170	190	13	31	50	28	7x7x40	12	0.7
	1/4	121~200	225	236	461	227	127	81	170	180	210	230	15	35	55	32	10x8x45	20.5	1
306	1/2	51~120	248	268	516														
	308	1/2	121~200	248	268	516	253	145	85	205	195	240	260	15	41	60	38	10x8x50	28
1		40~120	242	259	501														
310	2	31~40	322	306	628	289	164	92	215	215	265	295	19	45	65	42	12x8x55	39	2
	1	121~200	242	297	538														
310S	2	60~120	322	297	618	286	164	92	215	215	265	280	19	45	65	42	12x8x55	37	2
	1	121~200	242	297	538														
312	2	121~200	322	348	670	332	192	109	250	270	295	345	19	51	75	48	12x8x65	61	3
	3	41~120	315	337	652														
312S	5	31~60	371	337	708	289	164	105	215	215	265	295	19	51	75	48	12x8x65	53	2.5
	1	121~200	242	323	565														
314	2	51~120	322	323	645	385	210	130	310	310	370	400	22	66	85	62	15x10x75	105	6.5
	3	121~200	315	413	728														
314S	5	60~120	371	410	784	377	210	130	310	310	370	390	22	66	85	62	15x10x75	103	6.5
	3	121~200	315	410	725														
315	7 1/2	31~50	374	402	776	445	245	157	360	360	430	450	25	76.5	100	72	20x12x90	169	10
	5	121~200	371	487	858														
316	10	60~120	412	492	904	445	245	157	360	360	430	450	25	80.5	100	76	20x12x90	169	10
	15	31~50	498	492	990														
317	7 1/2	121~200	374	539	913	505	280	172	380	420	460	530	25	84.5	110	80	20x12x100	220	15
	15	40~120	498	523	1,021														
318	20	40~50	542	523	1,065	565	310	196	480	480	570	600	28	106.5	130	100	24x16x120	366	24
	10	150~200	412	628	1,040														
319	15	121~200	498	628	1,126	670	380	214	540	500	635	670	28	124	150	115	32x20x140	529	32
	20	60~120	542	628	1,170														
319	25	60	562	628	1,190	670	380	214	540	500	635	670	28	124	150	115	32x20x140	529	32
	30	40~50	562	628	1,190														
319	20	121~200	542	696	1,238	670	380	214	540	500	635	670	28	124	150	115	32x20x140	529	32
	25	70~90	565	696	1,261														
319	40	40~60	603	696	1,299	670	380	214	540	500	635	670	28	124	150	115	32x20x140	529	32
	40	40~60	603	696	1,299														

- 表中 S 表示新尺寸。"S" means new dimension.
- H314(含) 以上有雙油鏡雙排油孔。The model above H314 have dual oil gauges & drain plugs.
- 重量不含馬達及潤滑油。The weight does not include motor and lubricant.



# GEAR REDUCER SERIES

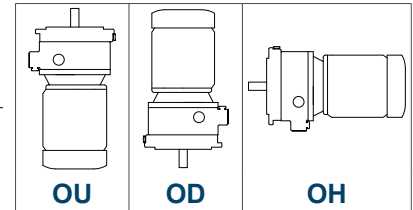
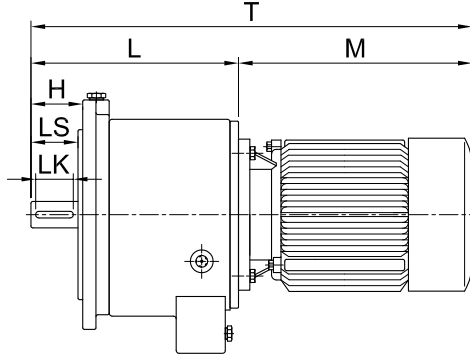
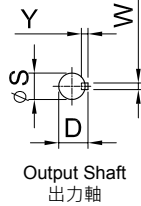
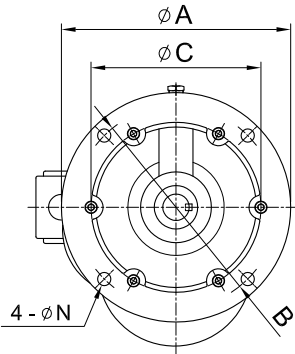
## 齒輪減速機系列



### MODEL : V

立式減速機 Vertical Type Reducer

RATIO: 1/3~1/30 (雙段 2-Stage)



使用方向 Installation Direction

unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	M	L	T	H	法蘭面 Flange				出力軸 Output Shaft				重量 Weight (kg)
							A	B	C	N	D	LS	S	WxYxLK	
201	1/4	3~30	225	146	371	43	186	155	130	10	21	38	19	5x5x30	8
202	1/2	3~10	248	153	401	50	186	155	130	10	27	45	24	7x7x35	8
203	1/4	31~50	225	187	412	50	200	175	150	13	27	45	24	7x7x35	12
	1/2	11~30	248		435										
205	1/2	31~50	248	220	468	55	243	215	180	14	31	50	28	7x7x40	17.5
	1	3~30	242	211	453										
206	2	3~10	322	216	538	60	243	215	180	14	35	55	32	10x8x45	17.5
207	1	31~40	242	233	475	60	280	245	210	14	35	55	32	10x8x45	25
	2	11~30	322		555										
208	3	3~10	315	239	554	65	280	245	210	14	41	60	38	10x8x50	25
209	2	31~40	322	271	593	65	330	300	250	18	41	60	38	10x8x50	36
	3	11~30	315	261	576										
209S	2	31~40	322	265	587	65	300	265	230	18	41	60	38	10x8x50	34
	3	11~30	315	254	569										
210	5	3~10	371	266	637	70	330	300	250	18	45	65	42	12x8x55	37
210S				259	630										300
211	3	31~40	315	305	620	80	380	335	290	18	51	75	48	12x8x65	56.5
	5	11~30		282	676										340
211S	5	11~30	371	282	653	80	380	335	290	18	51	75	48	12x8x65	48
				305	676										340
212	7 1/2	3~10	374	305	679	80	380	335	290	18	51	75	48	12x8x65	56.5
	10	3~10		412	717										
213	7 1/2	11~30	374	358	732	85	450	400	350	22	60	80	56	15x10x70	85.5
	15	3~10			498										856
213S	7 1/2	11~30	374	356	730	85	450	400	350	22	60	80	56	15x10x70	82
	15	3~10			498										866
214	10	11~30	412	363	775	90	450	400	350	22	66	85	62	15x10x75	86
214S	10	11~30		361	773										440
215	15	11~30	498	434	932	105	500	450	400	24	76.5	100	72	20x12x90	136
	20	3~10			542										976
216	20	11~30	542	434	976	105	500	450	400	24	80.5	100	76	20x12x90	137
	25	5~10			562										996
217	25	11~30	562	465	1,027	115	590	540	480	24	84.5	110	80	20x12x100	192
	30	4~30			1,065										
	40	4~10			600										1,171
218	40	11~30	600	571	1,171	135	660	610	560	6x24	106.5	130	100	24x16x120	285
	50	5~10			1,281										
	60	5~10			660										621
219 <sup>Note 2</sup>	50	11~30	600	653	1,313	156	700	650	600	6x24	124	150	115	32x20x140	520
	60	11~30			1,329										
	75	5~10			676										1,329

1. 表中 S 表示新尺寸。"S" means new dimension.

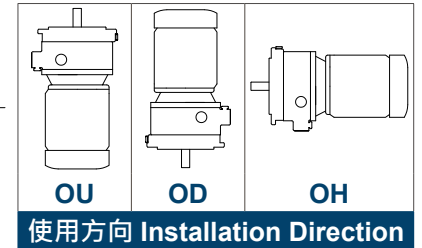
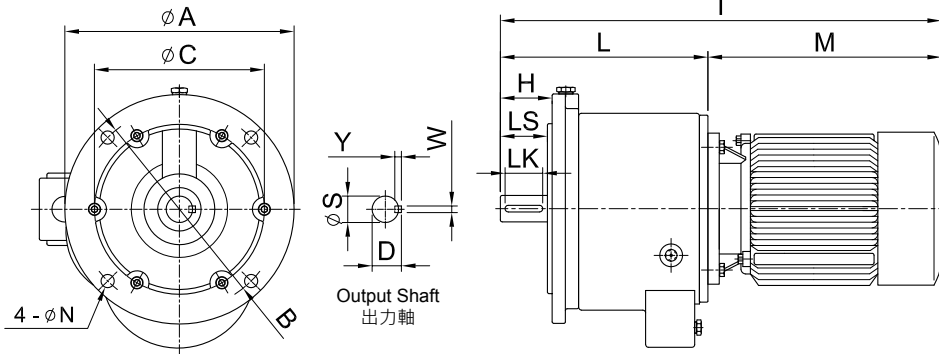
2. V219 外觀及尺寸請參考 B21 頁。Please refer to page B21 for the dimension of V219.

3. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.

**MODEL : V**

立式減速機 Vertical Type Reducer

RATIO: 1/31~1/200 (三段 3-Stage)



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	M	L	T	H	法蘭面 Flange				出力軸 Output Shaft				重量 Weight (kg)
							A	B	C	N	D	LS	S	WxYxLK	
304	1/4	51~120	225	192	417	55	200	175	150	13	31	50	28	7x7x40	12.5
306	1/4	121~200	225	226	451	60	243	215	180	14	35	55	32	10x8x45	19.5
	1/2	51~120	248		474										
308	1/2	121~200	248	247	495	65	280	245	210	14	41	60	38	10x8x50	26
	1	40~120	242	238	480										
310	2	31~40	322	290	560	70	330	300	250	18	45	65	42	12x8x55	41
	1	121~200	242		532										
	2	51~120	322		612										
310S	1	121~200	242	282	524	80	300	265	230	18	51	75	48	12x8x65	37
	2	60~120	322		604										
312	2	121~200	322	326	648	80	380	335	290	18	51	75	48	12x8x65	63.5
	3	41~120	315	315	630										
312S	5	31~50	371	307	686	90	340	300	250	22	66	85	62	15x10x75	57
	1	121~200	242		549										
314	2	35~120	322	389	628	90	450	400	350	22	66	85	62	15x10x75	98
	3	121~200	315		704										
314S	5	60~120	371	378	760	90	440	400	350	22	66	85	62	15x10x75	95
	3	121~200	315		699										
	5	60~120	371		755										
315	7 1/2	31~50	374	454	747	105	500	450	400	24	76.5	100	72	20x12x90	158
	5	121~200	371		822										
316	7 1/2	60~120	374	454	866	105	500	450	400	24	80.5	100	76	20x12x90	160
	10	31~50	412		866										
317	10	60~120	412	496	952	115	590	540	480	24	84.5	110	80	20x12x100	206
	15	31~50	498		870										
318	7 1/2	121~200	374	480	1,022	135	660	610	560	6x24	106.5	130	100	24x16x120	326
	10	150~200	412		1,001										
	15	121~200	498		1,087										
319 <sup>Note 2</sup>	20	60~120	542	589	1,131	155	700	650	600	6x24	124	150	115	32x20x140	552
	25	60	562		1,159										
319 <sup>Note 2</sup>	30	40~50	562	674	1,216	155	700	650	600	6x24	124	150	115	32x20x140	552
	20	121~200	542		1,236										
319 <sup>Note 2</sup>	25	70~90	562	674	1,274	155	700	650	600	6x24	124	150	115	32x20x140	552
	40	40~60	600		1,274										

1. 表中 S 表示新尺寸。"S" means new dimension.

2. V319 外觀及尺寸請參考 B21 頁。Please refer to page B21 for the dimension of V319.

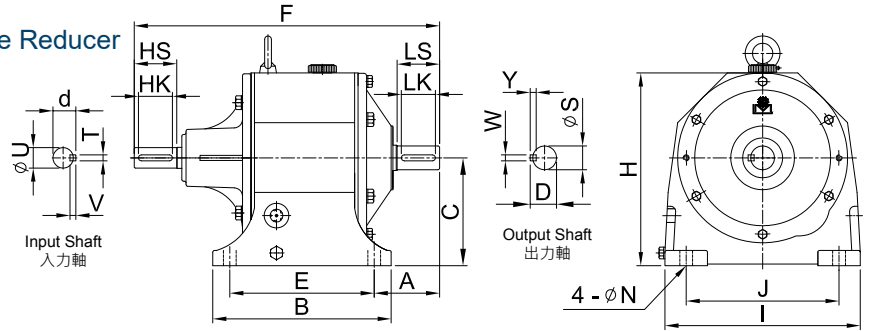
3. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.

# GEAR REDUCER SERIES

## 齒輪減速機系列

### MODEL : HD

臥式雙軸減速機 Horizontal Double Shaft Type Reducer  
RATIO : 1/3~1/30 ( 雙段 2-Stage)



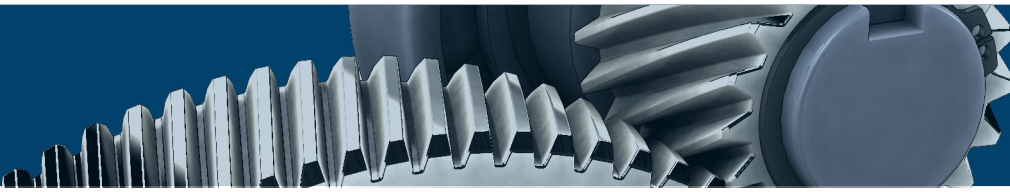
unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	F	A	C	H	入力軸 Input Shaft				腳座 Foot Stock					出力軸 Output Shaft				重量 Weight (kg)	油量 Oil (ℓ)																								
							d	HS	TxVxHK	U	E	J	B	I	N	D	LS	S	WxYxLK																										
201	1/4	3~30	251	54	90	170	18	35	5x5x25	16	125	140	155	180	10	21	38	19	5x5x30	10	0.5																								
202	1/2	3~10	264	60	90	170	21	40	5x5x30	19	125	140	155	180	10	27	45	24	7x7x35	10.5	0.5																								
203	1/4 1/2	31~50	264	62	110	190	18	35	5x5x25	16	135	145	170	190	13	27	45	24	7x7x35	12.5	0.7																								
		11~30	21				40	5x5x30	19																																				
205	1/2 1	31~50	357	77	127	227	21	40	5x5x30	19	170	180	210	230	15	31	50	28	7x7x40	22.5	1																								
		3~30					27	50	7x7x40	24																																			
206	2	3~10	361	81	127	227	27	50	7x7x40	24	170	180	210	230	15	35	55	32	10x8x45	22.5	1																								
207	1 2	31~40	389	80	145	253	27	50	7x7x40	24	205	195	240	260	15	35	55	32	10x8x45	29	1.4																								
		11~30																																											
208	3	3~10	394	85	145	265	27	50	7x7x40	24	205	195	240	260	15	41	60	38	10x8x50	31.5	1.4																								
209	2 3	31~40	419	88	164	289	31	55	7x7x45	28	215	215	265	295	19	41	60	38	10x8x50	42	2																								
		11~30																																											
209S	2 3	31~40	408	86	164	286	31	55	7x7x45	28	215	215	265	280	19	41	60	38	10x8x50	39	2																								
		11~30																																											
210	5	3~10	423	92	164	289	31	55	7x7x45	28	215	215	265	295	19	45	65	42	12x8x55	43	2																								
210S			413																			286	280																						
211	3 5	31~40	465	109	192	332	31	55	7x7x45	28	250	270	295	345	19	51	75	48	12x8x65	62	3																								
		11~30																				35	60	10x8x50	32																				
211S	5	11~30	457	105	164	289	35	60	10x8x50	32	215	215	265	280					46	2.5																									
212	7 1/2 10	3~10	484	109	192	332	35	60	10x8x50	32	250	270	295	345	19	51	75	48	12x8x65	62	3																								
213	7 1/2 15	11~30	564	125	210	385	41	65	10x8x55	38	310	310	370	400	22	60	80	56	15x10x70	107	6.5																								
		3~10																																											
213S	7 1/2 15	11~30	561	125	210	377	41	65	10x8x55	38	310	310	370	390	22	60	80	56	15x10x70	105	6.5																								
		3~10																																											
214	10	11~30	569	130	210	385	41	65	10x8x55	38	310	310	370	400	22	66	85	62	15x10x75	108	6.5																								
214S			566																			377	390																						
215	15 20	11~30	697	157	245	445	51	80	12x8x70	48	360	360	430	450	25	76.5	100	72	20x12x90	178	10																								
		3~10																																											
216	20 25	11~30	697	157	245	445	51	80	12x8x70	48	360	360	430	450	25	80.5	100	76	20x12x90	179	10																								
		5~10																																											
217	25 30 40	11~30	733	172	280	505	51	80	12x8x70	48	380	420	460	530	25	84.5	110	80	20x12x100	235	15																								
		4~30																																											
		4~10																																											
218	40 50 60	11~30	881	196	310	565	59	90	15x10x80	55	480	480	570	600	28	106.5	130	100	24x16x120	376	24																								
		5~10																																											
		5~10																																											
219	50 60 75	11~30	970	214	380	670	69	100	15x10x90	65	540	500	635	670	28	124	150	115	32x20x140	565	32																								
		11~30																																											
		5~10																																											
220	75	11~30	1,174	272	425	782	79.5	110	20x12x100	75	600	680	700	830	38	139	180	130	35x22x170	852	45																								

1. 表中 S 表示新尺寸。"S" means new dimension.

2. HD213(含) 以上有雙油鏡雙排油孔。The model above HD213 have dual oil gauges & drain plugs.

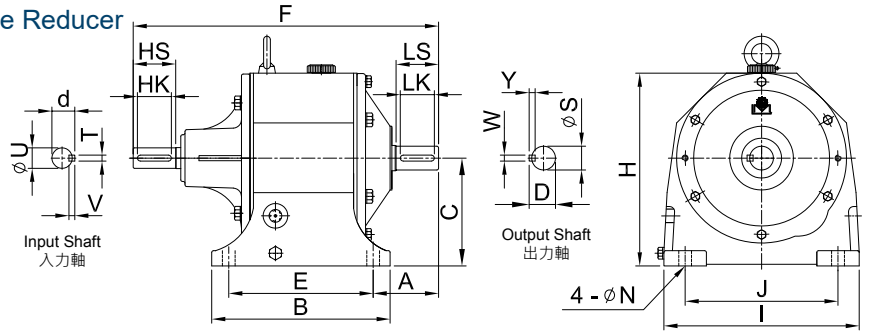
3. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.



**MODEL : HD**

臥式雙軸減速機 Horizontal Double Shaft Type Reducer

RATIO : 1/31~1/200 (三段 3-Stage)



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	F	A	C	H	入力軸 Input Shaft				腳座 Foot Stock					出力軸 Output Shaft				重量 Weight (kg)	油量 Oil (ℓ)
							d	HS	TxVxHK	U	E	J	B	I	N	D	LS	S	WxYxLK		
304	1/4	51~120	280	68	110	190	18	35	5x5x25	16	135	145	170	190	13	31	50	28	7x7x40	14	0.7
306	1/4	121~200	322	81	127	227	18	35	5x5x25	16	170	180	210	230	15	35	55	32	10x8x45	23	1
	1/2	51~120	329				21	40	5x5x30	19											
308	1/2	121~200	361	85	145	253	21	40	5x5x30	19	205	195	240	260	15	41	60	38	10x8x50	33	1.4
	2	31~40	392				27	50	7x7x40	24											
310	1	121~200	441	92	164	289	27	50	7x7x40	24	215	215	265	295	19	45	65	42	12x8x55	42.5	2
	2	51~120																			
310S	1	121~200	432	92	164	286	27	50	7x7x40	24	215	215	265	295	19	45	65	42	12x8x55	40	2
	2	60~120																			
312	2	121~200	478	109	192	332	31	55	7x7x45	28	250	270	295	345	19	51	75	48	12x8x65	67	3
	3	41~120																			
312S	3	31~50	458	105	164	289	31	55	7x7x45	28	250	270	295	345	19	51	75	48	12x8x65	67	3
	5	31~50																			
314	1	121~200	458	105	164	289	31	55	7x7x45	28	215	215	265	295	19	51	75	48	12x8x65	59	2.5
	2	51~120																			
314S	3	121~200	569	130	210	385	35	60	10x8x50	32	310	310	370	22	66	85	62	15x10x75	113	6.5	
	5	60~120																			
315	7 1/2	31~50	647	157	245	445	35	60	10x8x50	32	360	360	430	450	25	76.5	100	72	20x12x90	104	10
	10	60~120																			
316	10	121~200	671	157	245	445	41	65	10x8x55	38	360	360	430	450	25	80.5	100	76	20x12x90	115	10
	15	31~50																			
317	7 1/2	121~200	718	172	280	505	41	65	10x8x55	38	380	420	460	530	25	84.5	110	80	20x12x100	198	10
	15	40~120																			
318	20	40~50	747	172	280	505	51	80	12x8x70	48	380	420	460	530	25	84.5	110	80	20x12x100	250	15
	25	40~50																			
318S	10	150~200	807	196	310	565	41	65	10x8x55	38	480	480	570	600	28	106.5	130	100	24x16x120	410	24
	15	121~200																			
319	20	51~120	923	214	380	670	51	80	12x8x70	48	540	500	635	680	28	124	150	115	32x20x140	410	24
	25	60																			
319S	20	121~200	923	214	380	670	51	80	12x8x70	48	540	500	635	680	28	124	150	115	32x20x140	570	32
	30	31~50																			
319S	25	70~90	923	214	380	670	51	80	12x8x70	48	540	500	635	680	28	124	150	115	32x20x140	570	32
	40	40~60																			
319S	30	70~90	923	214	380	670	51	80	12x8x70	48	540	500	635	680	28	124	150	115	32x20x140	570	32
	40	40~60																			

- 表中 S 表示新尺寸。"S" means new dimension.
- HD314 (含) 以上有雙油鏡雙排油孔。The model above HD314 have dual oil gauges & drain plugs.
- 重量不含馬達及潤滑油。The weight does not include motor and lubricant.



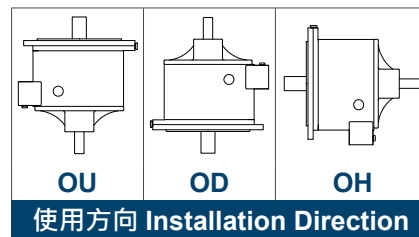
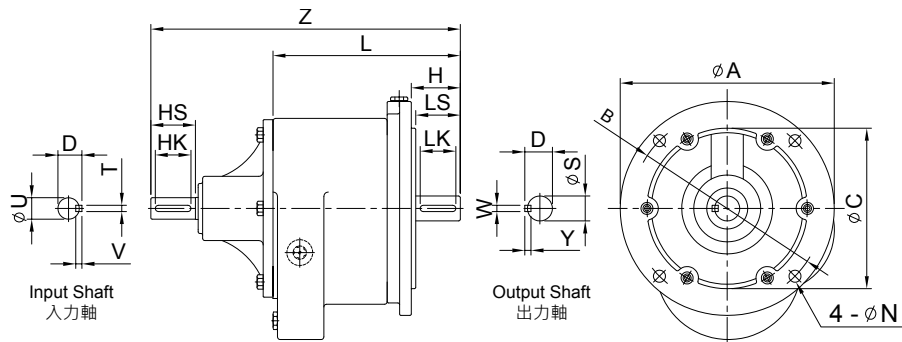
# GEAR REDUCER SERIES

## 齒輪減速機系列

### MODEL : VD

立式雙軸減速機 Vertical Double Shaft Type Reducer

RATIO : 1/3~1/40 (雙段 2-Stage)



型號 Model	馬力 HP (4P)	減速比 Ratio	L	Z	入力軸 Input Shaft				法蘭面 Flange				出力軸 Output Shaft				重量 Weight (kg)			
					d	HS	TxVxHK	U	A	B	C	N	D	LS	S	H		WxYxLK		
201	1/4	3~30	146	232	18	35	5x5x25	16	186	155	130	10	21	38	19	43	5x5x30	10.5		
202	1/2	3~10	153	245	21	40	5x5x30	19	186	155	130	10	27	45	24	50	7x7x35	10.5		
203	1/4	31~40	201	293	18	35	5x5x25	16	200	175	150	13	27	45	24	50	7x7x35	12.5		
	1/2	11~30			21	40	5x5x30	19												
205	1/2	31~40	211	346	21	40	5x5x30	19	243	215	180	14	31	50	28	55	7x7x40	21.7		
	1	3~30			27	50	7x7x40	24												
206	2	3~10	214	351	27	50	7x7x40	24	243	215	180	14	35	55	32	60	10x8x45	21.5		
207	1	31~40	233	370	27	50	7x7x40	24	280	245	210	14	35	55	32	60	10x8x45	29		
																			2	11~30
208	3	3~10	239	375	27	50	7x7x40	24	280	245	210	14	41	60	38	65	10x8x50	29.5		
																			3	11~30
209	2	31~40	261	401	31	55	7x7x45	28	330	300	250	18	41	60	38	65	10x8x50	43.5		
																			3	11~30
209S	2	31~40	254	394	31	55	7x7x45	28	300	265	230	18	41	60	38	65	10x8x50	42		
																			3	11~30
210	5	3~10	266	406	31	55	7x7x45	28	330	300	250	18	45	65	42	70	12x8x55	45		
210S			259	399														300	265	230
211	3	31~40	305	464	31	55	7x7x45	28	380	335	290	18	51	75	48	80	12x8x65	66.5		
																			5	11~30
211S	5	11~30	282	422	35	60	10x8x50	32	340	300	250	18	51	75	48	80	12x8x65	44		
212	7 1/2	3~10	305	464	35	60	10x8x50	32	380	335	290	18	51	75	48	80	12x8x65	66.5		
213	7 1/2	11~30	358	537	41	65	10x8x55	38	450	400	350	22	60	80	56	85	15x10x70	104		
																			15	3~10
213S	7 1/2	11~30	356	535	41	65	10x8x55	38	440	400	350	22	60	80	56	85	15x10x70	102		
			15	4~10															368	547
214	10	11~30	363	542	41	65	10x8x55	38	450	400	350	22	66	85	62	90	15x10x75	104		
214S			361	539															440	400
215	15	11~30	434	661	51	80	12x8x70	48	500	450	400	24	76.5	100	72	105	20x12x90	168		
216	20	11~30	434	661	51	80	12x8x70	48	500	450	400	24	80.5	100	76	105	20x12x90	170		
																			25	4~10
217	25	11~30	465	691	51	80	12x8x70	48	590	540	480	24	84.5	110	80	115	20x12x100	226		
																			30	4~30
																			40	4~10
218	40	11~30	571	856	59	90	15x10x80	55	660	610	560	6x24	106.5	130	100	135	24x16x120	332		
																			50	5~10
																			60	5~10
219 <sup>Note 2</sup>	50	11~30	653	953	69	100	15x10x90	65	700	650	600	6x24	124	150	115	156	32x20x140	560		

1. 表中 S 表示新尺寸。"S" means new dimension.

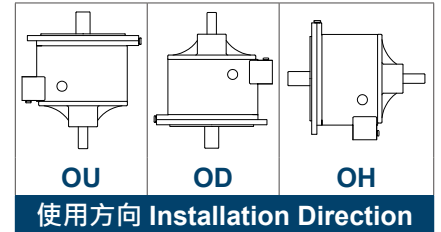
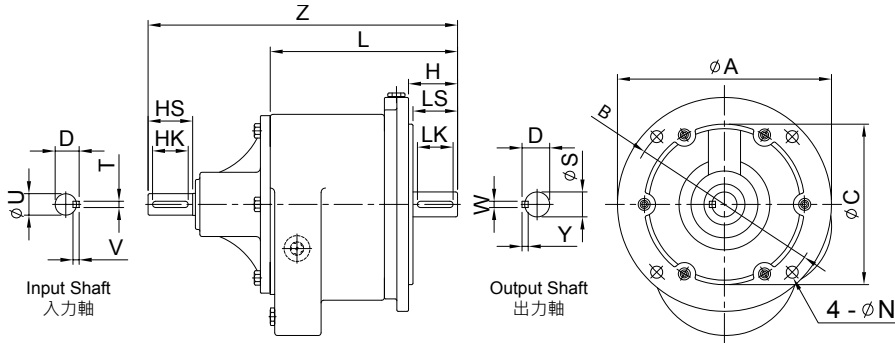
2. VD219 外觀及尺寸請參考 B21 頁。Please refer to page B21 for the dimension of VD219.

3. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.

**MODEL : VD**

立式雙軸減速機 Vertical Double Shaft Type Reducer

RATIO : 1/31~1/200 (三段 3-Stage)



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	L	Z	入力軸 Input Shaft				法蘭面 Flange				出力軸 Output Shaft					重量 Weight (kg)
					d	HS	TxVxHK	U	A	B	C	N	D	LS	S	H	WxYxLK	
304	1/4	51~120	192	278	18	35	5x5x25	16	200	175	150	12	31	50	28	55	7x7x40	14.5
306	1/4	121~200	311	309	18	35	5x5x25	16	242	215	180	14	35	55	32	60	10x8x45	22
	1/2	51~120	319	326	21	40	5x5x30	19										
308	1/2	121~200	247	333	21	40	5x5x30	19	280	245	210	14	41	60	38	65	10x8x50	30
	1	40~120	238	369	27	50	7x7x40	24										
310	2	121~200	279	416	27	50	7x7x40	24	330	300	250	18	45	65	42	70	12x8x55	45.5
	1	51~120																
310S	2	121~200	282	419	27	50	7x7x40	24	300	265	230	18	45	65	42	70	12x8x55	44
	1	51~120																
312	3	121~200	315	455	31	55	7x7x45	28	380	335	290	18	51	75	48	80	12x8x65	70
	5	41~120																
	3	31~50																
312S	1	121~200	296	433	31	55	7x7x45	28	340	300	250	18	51	75	48	80	12x8x65	65
	2	51~120																
314	7	121~200	389	523	35	60	10x8x50	32	450	400	350	22	66	85	62	90	15x10x75	111
	5	60~120																
	3	31~50																
314S	7	121~200	384	518	35	60	10x8x50	32	440	400	350	22	66	85	62	90	15x10x75	109
	5	60~120																
	3	31~50																
315	10	121~200	456	635	41	65	10x8x55	38	500	450	400	24	76.5	100	72	105	20x12x90	178
	7 1/2	60~120																
316	15	121~200	454	636	41	65	10x8x55	38	500	450	400	24	80.5	100	76	105	20x12x90	180
	10	60~120																
317	20	121~200	496	675	41	65	10x8x55	38	590	540	480	24	84.5	110	80	115	20x12x100	236
	15	40~120																
318	30	121~200	599	825	51	80	12x8x70	48	660	610	560	6x24	106.5	130	100	135	24x16x120	380
	20	51~120																
	25	60																
319 <sup>Note 2</sup>	40	121~200	674	962	51	80	12x8x70	48	700	650	600	6x24	124	150	115	155	32x20x140	591
	25	70~90																
	40	40~60																

1. 表中 S 表示新尺寸。"S" means new dimension.

2. VD319 外觀及尺寸請參考 B21 頁。Please refer to page B21 for the dimension of VD319.

3. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.

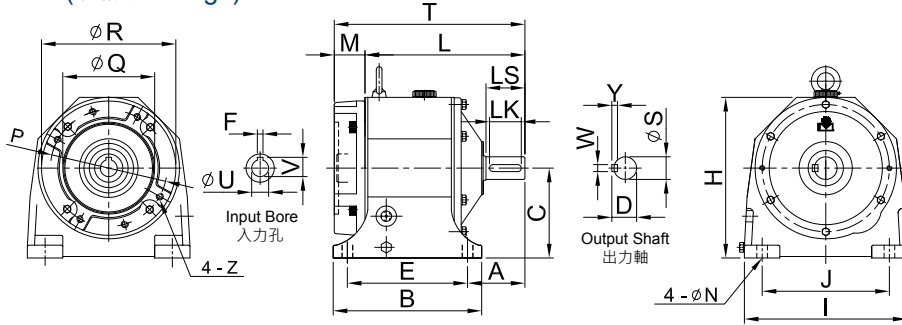
# GEAR REDUCER SERIES

## 齒輪減速機系列

### MODEL : HB

馬達插入式臥式減速機 Horizontal Type Reducer Motor Plug-In

RATIO : 1/3~1/30 (雙段 2-Stage)



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	T	H	L	C	A	腳座 Foot Stock					馬達盤 IEC Motor Flange					入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)	油量 Oil (ℓ)	
								E	J	B	I	N	M	P	Q	R	Z	U	F	V	D	LS	S	WxYxLK			
201	1/4	3~30	194	170	165	90	54	125	140	155	180	10	29	130	110	158	M8	11	4	12.7	21	38	19	5x5x30	9	0.5	
202	1/2	3~10	201	170	172	90	60	125	140	155	180	10	29	130	110	158	M8	14	5	16.3	27	45	24	7x7x35	9	0.5	
203	1/4 1/2	31~50 11~30	209	190	180	110	62	135	145	170	190	13	29	130	110	158	M8	11 14	4 5	12.7 16.3	27	45	24	7x7x35	11.5	0.7	
205	1/2 1	31~50 3~30	248 255	227	222	127	77	170	180	210	230	15	26 34	130 165	110 130	200	M8 M10	14 19	5 6	16.3 21.8	31	50	28	7x7x40	19.5	1	
206	2	3~10	271	227	226	127	81	170	180	210	230	15	45	165	130	200	M10	24	8	27.3	35	55	32	10x8x45	21	1	
207	1 2	31~40 11~30	299	253	254	145	80	205	195	240	260	15	34 45	165	130	200	M10	19 24	6 8	21.8 27.3	35	55	32	10x8x45	29 26.5	1.4	
208	3	3~10	319	265	262	145	87	205	195	240	260	15	57	215	180	250	M12	28	8	31.3	41	60	38	10x8x50	30.5	1.4	
209	2 3	31~40 11~30	328 336	299	279									49 57	165 215	130 180		M10 M12	24 28	27.3 31.3	41	60	38	10x8x50	42 37.5	2	
209S	2 3	31~40 15~30	317 325	286	268	164	88	215	215	265			19	49 57	165 215	130 180		M10 M12	24 28	27.3 31.3					40 35		
210			340	283																					39		
210S	5	3~10	345	299	273	164	92	215	215	265	295	19	57	215	180	250	M12	28	8	31.3	45	65	42	12x8x55	37	2	
211	3 5	31~40 11~30	382	332	325	192	109	250	270	295	345														59	3	
211S	5	11~30	355	289	298	164	105	215	215	265	295														50	2.5	
212	7 1/2 10	3~10 3~10	390	332	325	192	109	250	270	295	345	19	65	265	230	300	M12	38	10	41.3	51	75	48	12x8x65	67	3	
213	7 1/2 15	11~30 3~10	450 470	385	385									65 88	265 300	230 250	300 350	M12 M16	38 42	10 12	41.3 45.3					105 109	6.5
213S	7 1/2 15	11~30 3~10	447 482	377	382 394	210	125	310	310	370			22	65 88	265 300	230 250	300 350	M12 M16	38 42	10 12	41.3 45.3	60	80	56	15x10x70	98 102	
214			455	385																					105		
214S	10	11~30	455	377	390	210	130	310	310	370	400	22	65	265	230	300	M12	38	10	41.3	66	85	62	15x10x75	98	6.5	
215	15 20	11~30 3~10	559	445	471	245	157	360	360	430	450	25	88	300	250	350	M16	42	12	45.3	76.5	100	72	20x12x90	167	10	
216	20 25	11~30 5~10	559	445	471	245	157	360	360	430	450	25	88	300 350	250 300	350 400	M16	42 48	12 14	45.3 51.8	80.5	100	76	20x12x90	170	10	
217	25 30 40	11~30 4~30 4~10	595	505	508	280	172	380	420	460	530	25	88	350	300	400	M16	48	14	51.8	84.5	110	80	20x12x100	235	15	
218	40 50 60	11~30 5~10	695	565	608 626	310	196	480	480	570	600	28		88 100	350 400	300 450		M16	55 60	16 18	59.3 64.3	106.5	130	100	24x16x120	364 390	24
219	50 60	11~30	776	670	676	380	214	540	500	635	670	28	100	400	350	450	M16	60	18	64.3	124	150	115	32x20x140	541.5	32	

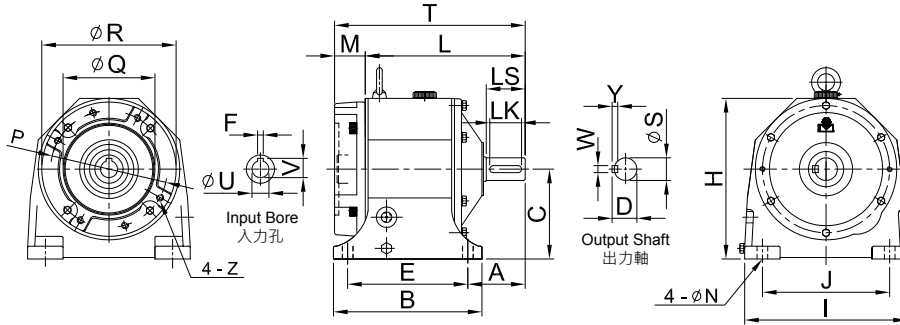
1. 表中 S 表示新尺寸。"S" means new dimension.

2. HB213(含) 以上有雙油鏡雙排油孔。The model above HB213 have dual oil gauges & drain plugs.

3. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.

**MODEL : HB**

馬達插入式臥式減速機 Horizontal Type Reducer Motor Plug-In  
 RATIO : 1/31~1/200 (三段 3-Stage)



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	T	H	L	C	A	腳座 Foot Stock					馬達盤 IEC Motor Flange					入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)	油量 Oil (ℓ)		
								E	J	B	I	N	M	P	Q	R	Z	U	F	V	D	LS	S	WxYxLK				
304	1/4	51~120	220	190	194	110	68	135	145	170	190	13	29	130	110	158	M8	11	4	12.7	31	50	28	7x7x40	12.5	0.7		
306	1/4	121~200	265	227	236	127	81	170	180	210	230	15	29	130	110	200	M8	11	4	12.7	35	55	32	10x8x45	21.5	1		
	1/2	51~120																14	5	16.3								
308	1/2	121~200	285		259									26	130	110		M8	14	5	16.3	41	60	38	10x8x50	29	1.4	
	1	40~120	293	253	259	145	85	205	195	240	260	15	34	165	130	200	M10	19	6	21.8								
310	2	31~40	313		268									45				M10	24	8	27.3	45	65	42	12x8x55	45	2	
	1	121~200	344											49	165	130		M10	19	6	21.8							
310S	2	51~120	289	295										57	215	180	250	M12	28	8	31.3	45	65	42	12x8x55	45	2	
	3	31~50	352			164	92	215	215	265		19	57	215	180	250	M12	28	8	31.3								
312	1	121~200	334	286	286									49	165	130		M10	19	6	21.8	51	75	48	12x8x65	65	3	
	2	60~120	386											45	165	130		M10	24		27.3							
312S	3	41~120	332	337										57	215	180	250	M12	28	8	31.3	51	75	48	12x8x65	65	3	
	5	31~50	394											57	215	180	250	M12	28		31.3							
314	1	121~200	361	289	312	164	105	215	215	265	295			49	165	130		M10	19	6	21.8	66	85	62	15x10x75	107	6.5	
	2	60~120	470		413									57	215	180	250		M12	28	8							31.3
314S	3	121~200	467		402									65	265	230	300		M12	38	10	41.3	66	85	62	15x10x75	105	6.5
	5	60~120	467		402	210	130	310	310	370		22	65	265	230	300		M12	38	10	41.3							
315	7 1/2	31~50	467		402									57	215	180	250		M12	28	8	31.3	76.5	100	72	20x12x90	176	10
	5	121~200	545		488									57	215	180	250		M12	28	8	31.3						
316	7 1/2	60~120	557	445	492	245	157	360	360	430	450	25		65	265	230	300		M12	38	10	41.3	80.5	100	76	20x12x90	184	10
	10	31~50	580											65	265	230	300		M12	38	10	41.3						
317	15	60~120	604		539									65	265	230	300		M12	38	10	41.3	84.5	110	80	20x12x100	239	15
	20	40~50	611	505	523	280	172	380	420	460	530	25	88	300	250	350		M16	42	12	45.3							
318	10	150~200	693											65	265	230	300		M12	38	10	41.3	106.5	130	100	24x16x120	377	24
	15	121~200	716		628									88	300	250	350		M16	42	12	45.3						
319	20	51~120	737	565		310	196	480	480	570	600	28		350	300	400		M16	48	14	51.8	124	150	115	32x20x140	394	24	
	25	60	737		650									350	300	400		M16	48	14	51.8							
319	30	31~50	787											300	250	350		M16	42	12	45.3	124	150	115	32x20x140	595	32	
	40	70~90	786	670	699	380	214	540	500	635	670	28	88	350	300	400		M16	48	14	51.8							
		40~60												55	16	59.3		M16	55	16	59.3							

1. 表中 S 表示新尺寸。"S" means new dimension.  
 2. HB314(含) 以上有雙油鏡雙排油孔。The model above HB314 have dual oil gauges & drain plugs.  
 3. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.

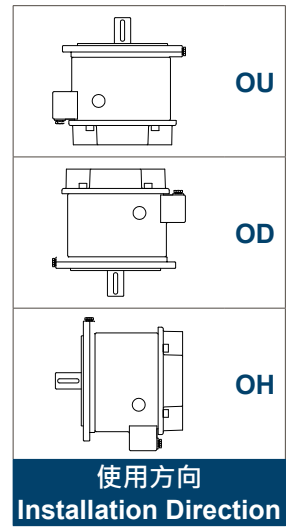
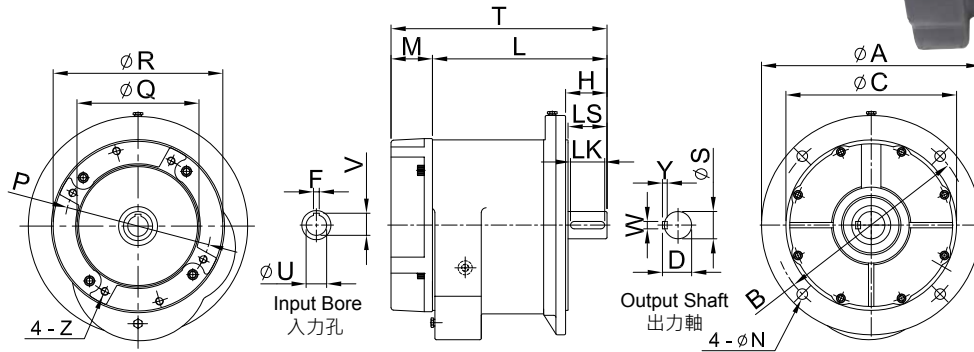


# GEAR REDUCER SERIES

## 齒輪減速機系列

### MODEL : VB

馬達插入式立式減速機 Vertical Type Reducer Motor Plug-In  
RATIO: 1/3~1/30 (雙段 2-Stage)



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	T	L	H	法蘭面 Flange				馬達盤 IEC Motor Flange					入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)
						A	B	C	N	M	P	Q	R	Z	U	F	V	D	LS	S	WxYxLK	
201	1/4	3~30	175	146	43	186	155	130	10	29	130	110	160	M8	11	4	12.7	21	38	19	5x5x30	9
202	1/2	3~10	182	153	50	186	155	130	10	29	130	110	160	M8	14	5	16.3	27	45	24	7x7x35	9
203	1/4 1/2	31~50 11~30	216	187	50	200	175	150	13	29	130	110	160	M8	11	4	12.7	27	45	24	7x7x35	12.5
															14	5	16.3					
205	1/2 1	31~50 3~30	237 245	211	55	243	215	180	14	26	130	110	200	M8	14	5	16.3	31	50	28	7x7x40	19
										34	165	130	M10	19	6	21.8						
206	2	3~10	261	216	60	243	215	180	14	45	165	130	200	M10	24	8	27.3	35	55	32	10x8x45	20.5
207	1 2	31~40 11~30	278	233	60	280	245	210	14	34	165	130	200	M10	19	6	21.8	35	55	32	10x8x45	27
										45	165	130	M10	24	8	27.3						
208	3	3~10	295	239	65	280	245	210	14	57	215	180	250	M12	28	8	31.3	41	60	38	10x8x50	27.5
209	2 3	31~40 11~30	310 318	261	65	330	300	250	18	49	165	130	250	M10	24	8	27.3	41	60	38	10x8x50	47.5 39
										57	215	180	M12	28	8	31.3						
209S	2 3	31~40 11~30	303 311	254	65	300	265	230	18	49	165	130	250	M10	24	8	27.3	41	60	38	10x8x50	44 36
										57	215	180	M12	28	8	31.3						
210	5	3~10	323	266	70	330	300	250	18	57	215	180	250	M12	28	8	31.3	45	65	42	12x8x55	41
210S			316	259		300	265	230														
211	3 5	31~40 11~30	362	305	80	380	335	290	18	57	215	180	250	M12	28	8	31.3	51	75	48	12x8x65	60.5
212	7 1/2 10	3~10	370	305	80	380	335	290	18	65	265	230	300	M12	38	10	41.3	51	75	48	12x8x65	69
213	7 1/2 15	11~30 3~10	423 446	358	85	450	400	350	22	65	265	230	300	M12	38	10	41.3	60	80	56	15x10x70	101
										88	300	250	350	M16	42	12	45.3					
213S	7 1/2 15	11~30 3~10	421 456	356 368	85	440	400	350	22	65	265	230	300	M12	38	10	41.3	60	80	56	15x10x70	98 99.5
										88	300	250	350	M16	42	12	45.3					
214	10	11~30	428	362	90	450	400	350	22	65	265	230	300	M12	38	10	41.3	66	85	62	15x10x75	99.5
214S			426			440																
215	15 20	11~30 3~10	552	434	105	500	450	400	24	88	300	250	350	M16	42	12	45.3	76.5	100	72	20x12x90	156
217	25 30	11~30 4~30	552	465	115	590	540	480	24	88	350	300	400	M16	48	14	51.8	84.5	110	80	20x12x100	220
															40	4~10	552					
218	40 50 60	11~30 5~10	658	571	135	660	610	560	6x24	88	350	300	400	M16	55	16	59.3	106.5	130	100	24x16x120	320
										100	400	350	450		M16	60	18					
219 <sup>Note 2</sup>	50 60	11~30	754	653	156	700	650	600	6x24	100	400	350	450	M16	60	18	64.3	124	150	115	32x20x140	575

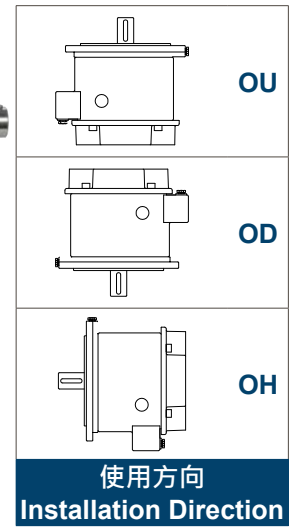
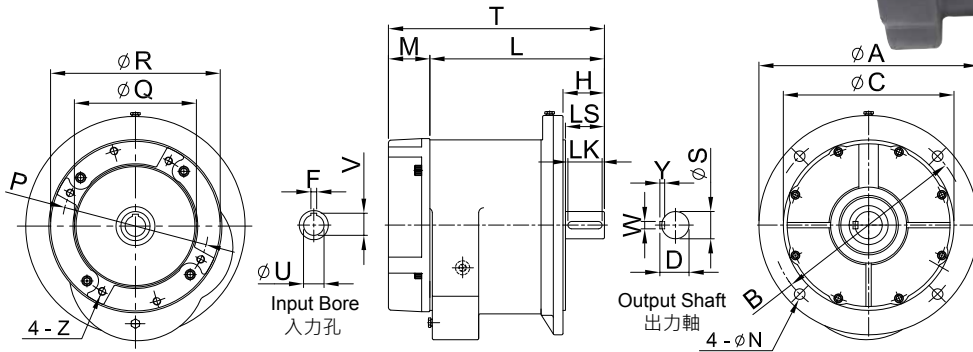
1. 表中 S 表示新尺寸。"S" means new dimension.

2. VB219 外觀及尺寸請參考 B21 頁。Please refer to page B21 for the dimension of VB219.

3. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.

## MODEL : VB

馬達插入式立式減速機 Vertical Type Reducer Motor Plug-In  
 RATIO : 1/31~1/200 (三段 3-Stage)



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	T	L	H	法蘭面 Flange				馬達盤 IEC Motor Flange					入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)
						A	B	C	N	M	P	Q	R	Z	U	F	V	D	LS	S	WxYxLK	
304	1/4	51~120	214	187	55	200	175	150	12	29	130	110	160	M8	11	4	12.7	31	50	28	7x7x40	13
306	1/4	121~200	250	226	60	243	215	180	14	29	130	110	160	M8	11	4	12.7	35	55	32	10x8x45	20.5
	1/2	51~120	262	247	65	280	245	210	14	29	130	110	160	M8	14	5	16.3					
308	1/2	121~200	274	247	65	280	245	210	14	29	130	110	200	M8	14	5	16.3	41	60	38	10x8x50	28
	1	40~120	271	238	70	330	300	250	18	34	165	130	250	M10	19	6	21.8					
310	2	31~40	282	279	70	330	300	250	18	45	165	130	250	M10	24	8	27.3	45	65	42	12x8x55	45
	1	121~200	313	279	70	330	300	250	18	49	165	130	250	M12	28	8	31.3					
310S	2	51~120	322	279	70	330	300	250	18	57	215	180	250	M10	19	6	21.8	45	65	42	12x8x55	41
	1	121~200	320	271	80	300	265	230	18	49	165	130	250	M10	19	6	21.8					
312	2	60~120	364	315	80	380	335	290	18	49	165	130	250	M10	24	8	27.3	51	75	48	12x8x65	65
	3	41~120	372	315	80	380	335	290	18	57	215	180	250	M12	28	8	31.3					
312S	5	31~50	372	315	80	380	335	290	18	57	215	180	250	M12	28	8	31.3	51	75	48	12x8x65	65
	1	121~200	344	296	80	340	300	250	18	49	165	130	250	M10	19	6	21.8					
314	2	60~120	364	315	80	380	335	290	18	49	165	130	250	M10	24	8	27.3	51	75	48	12x8x65	65
	3	121~200	445	389	90	450	400	350	22	57	215	180	250	M12	28	8	31.3					
314S	5	60~120	445	389	90	450	400	350	22	65	265	230	300	M12	38	10	41.3	66	85	62	15x10x75	105
	7 1/2	31~50	443	378	90	400	350	22	65	265	230	300	M12	38	10	41.3						
314S	3	121~200	430	373	90	440	400	350	22	57	215	180	250	M12	28	8	31.3	66	85	62	15x10x75	102
	5	60~120	430	373	90	440	400	350	22	65	265	230	300	M12	38	10	41.3					
315	7 1/2	121~200	510	451	105	500	450	400	24	57	215	180	250	M12	28	8	31.3	76.5	100	72	20x12x90	165
	10	60~120	521	454	105	500	450	400	24	65	265	230	300	M12	38	10	41.3					
316	7 1/2	60~120	521	454	105	500	450	400	24	65	265	230	300	M12	38	10	41.3	80.5	100	76	20x12x90	174
	15	31~50	544	496	115	590	540	480	24	88	300	250	350	M16	42	12	45.3					
317	7 1/2	121~200	544	496	115	590	540	480	24	65	265	230	300	M12	38	10	41.3	84.5	110	80	20x12x100	226.5
	15	40~120	567	480	115	590	540	480	24	88	300	250	350	M16	42	12	45.3					
318	20	40~50	567	480	115	590	540	480	24	88	300	250	350	M16	42	12	45.3	106.5	130	100	24x16x120	347
	10	150~200	662	589	135	660	610	560	6x24	65	265	230	300	M12	38	10	41.3					
318	15	121~200	685	589	135	660	610	560	6x24	88	300	250	350	M16	42	12	45.3	106.5	130	100	24x16x120	347
	20	51~120	684	589	135	660	610	560	6x24	88	350	300	400	M16	48	14	51.8					
319 <sup>Note 2</sup>	25	60	684	589	135	660	610	560	6x24	88	300	250	350	M16	42	12	45.3	124	150	115	32x20x140	597
	30	31~50	762	674	155	700	650	600	6x24	88	350	300	400	M16	48	14	51.8					
319 <sup>Note 2</sup>	40	121~200	761	674	155	700	650	600	6x24	88	350	300	400	M16	55	16	59.3	124	150	115	32x20x140	597
	25-30	70~90	761	674	155	700	650	600	6x24	88	350	300	400	M16	48	14	51.8					
319 <sup>Note 2</sup>	40	40~60	761	674	155	700	650	600	6x24	88	350	300	400	M16	55	16	59.3	124	150	115	32x20x140	597

1. 表中 S 表示新尺寸。"S" means new dimension.  
 2. VB319 外觀及尺寸請參考 B21 頁。Please refer to page B21 for the dimension of VB319.  
 3. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.

# VERTICAL REDUCER SERIES

## 多速比多段齒輪減速機系列

### 特點

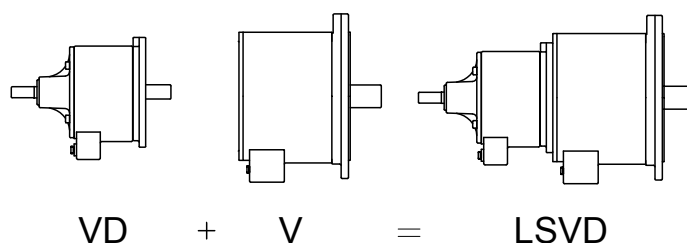
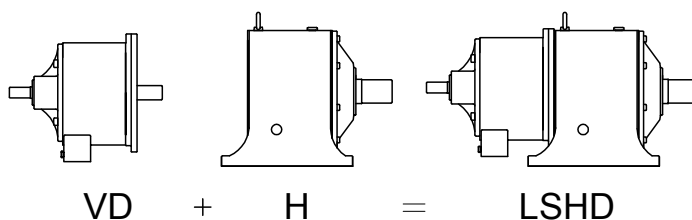
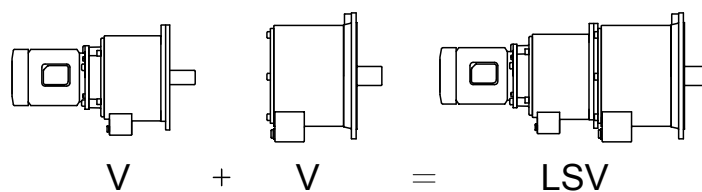
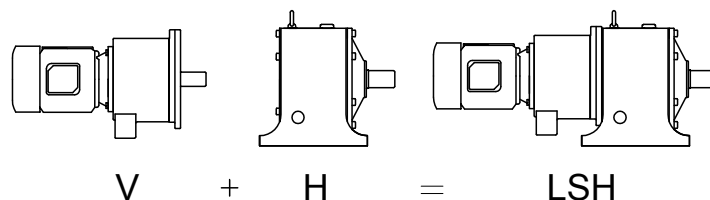
高減速比，從 1/210~1/6000。

### Specifications

High gear ratio from 1/210 to 1/6000.

多速比減速機—連結規格一覽表  
Multi-Stage Reducer - Link Specification Table

Model NO.	Type	LSH · LSHD	LSV · LSVL
406	201V+206H	201V+206V	
408	203V+208H	203V+208V	
508	201V+308H	201V+308V	
410	205V+210H	205V+210V	
410S	205V+210HS	205V+210VS	
510	306V+210H	306V+210V	
510S	306V+210HS	306V+210VS	
610	306V+310H	306V+310V	
610S	306V+310HS	306V+310VS	
412	205V+212H	205V+212V	
412S	205V+212HS	205V+212VS	
512	205V+312H	205V+312VS	
512S	205V+312HS	205V+312VS	
612	306V+312H	306V+312V	
612S	306V+312HS	306V+312VS	
414	209V+214H	209V+214V	
414S	209VS+214HS	209VS+214VS	
514	207V+314H	207V+314V	
514S	207V+314HS	207V+314VS	
614	308V+314H	308V+314V	
614S	308V+314HS	308V+314VS	
416	209V+216H	209V+216V	
516	209V+316H	209V+316V	
616	310V+316H	310V+316V	
417	211V+217H	211V+217V	
517	312V+217H	312V+217V	
617	310V+317H	310V+317V	
418	212V+218H	212V+218V	
518	212V+318H	212V+318V	
618	312V+318H	312V+318V	
419	213V+219H	213V+219V	



多速比減速機型號速比一覽表 (速比超過 1/6000 以上請另議)  
Model / Speed Ratio Table for Multi-Stage Reducer  
(Speed Ratio Above 1/6000 Excluded)

Horse Power		減速比 Ratio		
		1/210 ~ 1/600	1/610 ~ 1/1200	1/1210 ~ 1/6000
4P	6P	Model	Model	Model
1/4		406	508	610
1/2	1/4	408	510	612
1	1/2	410	512	614
2	1	412	514	616
3	2	414	516	617
5	3	416	517	618
7 1/2	5	417	518	
10	7.5	418		
15	10	419		

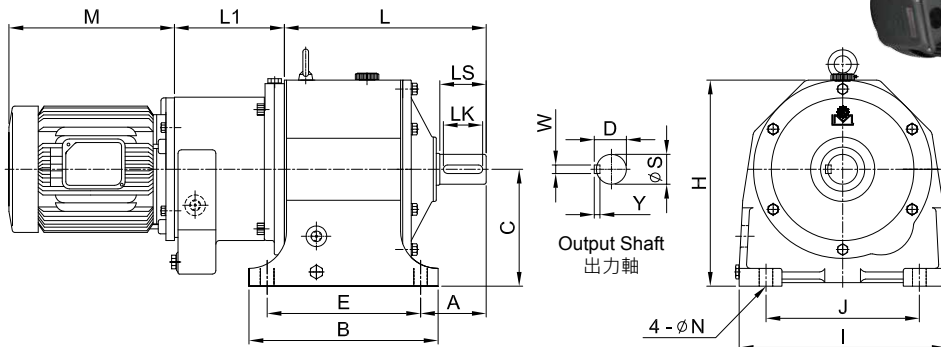
連結規格僅供參考用。

此表屬標準品，如馬力 (HP) 或安全係數 (SF) 標註不同則型號、配齒不同，如需安全係數 (SF)、扭力 (T)，請電洽。

## MODEL : LSH

臥式多速比減速機 Horizontal Multi-Stage Reducer

RATIO : 1/200~1/6000



unit: mm

型號 Model	L	L1	M	A	C	H	腳座 Foot Stock					出力軸 Output Shaft				重量 Weight (kg)	油量 Oil (ℓ)
							E	J	B	I	N	D	LS	S	WxYxLK		
406	226	103	225	81	127	227	170	180	210	230	15	35	55	32	10x8x45	27	1.3
408	259	137	248	87	145	253	205	195	240	260	15	41	60	38	10x8x50	40	2
508	259	103	225	87	145	253	205	195	240	260	15	41	60	38	10x8x50	40	2
410	284					289				295							
410S	273	155	242	92	164	286	215	215	265	280	19	45	65	42	12x8x55	54	3
510	294					289				295							
510S	273	166	248	92	164	286	215	215	265	280	19	45	65	42	12x8x55	56	3
610	306					289				295							
610S	296	132	225	92	164	286	215	215	265	280	19	45	65	42	12x8x55	59	3
412	325					332				345							
412S	298	155	322	109	192	289	250	270	295	345	19	51	75	48	12x8x65	74	4
512	337					332				345							
512S	323	155	242	109	192	289	250	270	295	345	19	51	75	48	12x8x65	65	3.5
612	337					332				345							
612S	323	166	248	109	192	289	250	270	295	345	19	51	75	48	12x8x65	79	4
414	390					385				400							
414S	387	189	315	130	210	377	310	310	370	390	22	66	85	62	15x10x75	70	3.5
514	402					385				400							
514S	389	173	322	130	210	377	310	310	370	390	22	66	85	62	15x10x75	139	10.5
614	402					385				400							
614S	399	173	242	130	210	377	310	310	370	390	22	66	85	62	15x10x75	130	8
416	471	196	371	157	245	445	360	360	430	450	25	80.5	100	76	20x12x90	145	14
516	492	196	315	157	245	445	360	360	430	450	25	80.5	100	76	20x12x90	132	8
616	492	212	322	157	245	445	360	360	430	450	25	80.5	100	76	20x12x90	149	14
417	508	225	374	172	280	505	380	420	460	530	25	84.5	110	80	20x12x100	134	8
517	508	231	371	172	280	505	380	420	460	530	25	84.5	110	80	20x12x100	188	12
617	523	209	315	172	280	505	380	420	460	530	25	84.5	110	80	20x12x100	206	12
418	607	221	412	196	310	565	480	480	570	600	28	106.5	130	100	24x16x120	211	12
518	628	221	374	196	310	565	480	480	570	600	28	106.5	130	100	24x16x120	262	18
618	628	231	371	196	310	565	480	480	570	600	28	106.5	130	100	24x16x120	269	18
419	685	273	498	214	380	670	540	500	635	670	28	124	150	115	32x20x140	270	18
519	685	282	412	214	380	670	540	500	635	670	28	124	150	115	32x20x140	277	18
420	808	293	412	272	430	782	600	680	700	830	38	139	180	130	35x22x170	392	27
520	808	308	412	272	425	782	600	680	700	830	38	139	180	130	35x22x170	392	27

1. 表中 S 表示新尺寸。"S" means new dimension.

2. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.



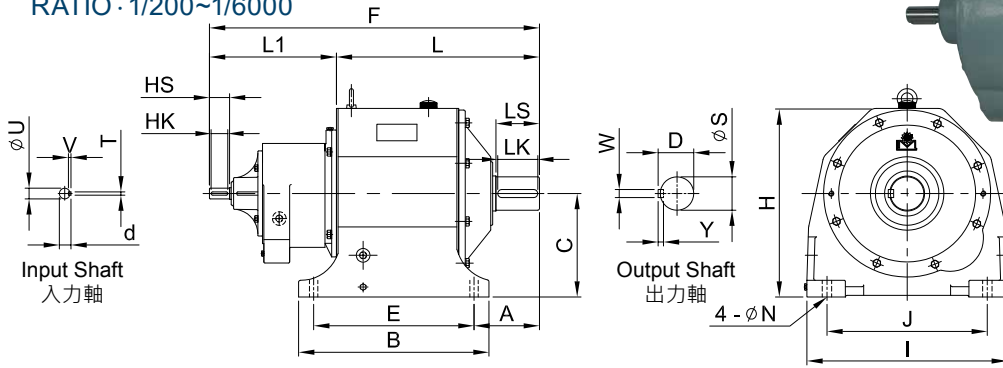
# VERTICAL REDUCER SERIES

## 多速比多段齒輪減速機系列

### MODEL : LSHD

臥式多速比雙軸減速機 Horizontal Multi-Stage & Double Shaft Reducer

RATIO : 1/200~1/6000



unit: mm

型號 Model	L	L1	F	A	C	H	入力軸 Input Shaft				腳座 Foot Stock					出力軸 Output Shaft				重量 Weight (kg)	油量 Oil (ℓ)
							U	HS	TxVxHK	d	E	J	B	I	N	S	LS	D	WxYxLK		
406	226	190	416	81	127	227	16	35	5x5x25	18	170	180	210	230	15	32	55	35	10x8x45	29	1.3
408	259	243	502	87	145	253	19	40	5x5x30	21	205	195	240	260	15	38	60	41	10x8x50	41	2
508	259	190	449	87	145	253	16	35	5x5x25	18	205	195	240	260	15	38	60	41	10x8x50	41	2
410	283		575	92	164	289															
410S	273	292	565			286	24	50	7x7x40	27	215	215	265	295	19	42	65	45	12x8x55	58	3
510	283	268	551	92	164	289															
510S	273	266	539			286	19	40	5x5x30	21	215	215	265	295	19	42	65	45	12x8x55	58	3
610	306		521	92	164	289															
610S	296	215	511			286	16	35	5x5x25	18	215	215	265	295	19	42	65	45	12x8x55	61	3
412	325			109	192																
412S	298	292	617	105	164	332	24	50	7x7x40	27	215	215	265	295	19	48	75	51	12x8x65	78	4
512	337			109	192																
512S	323	292	629	105	164	332	24	50	7x7x40	27	215	215	265	295	19	48	75	51	12x8x65	69	3.5
612	337			109	192																
612S	323	268	605	105	164	332	19	40	5x5x30	21	215	215	265	295	19	48	75	51	12x8x65	83	4
414	390			130	210																
414S	387	329	719			377	28	55	7x7x45	31	310	310	370	400	22	62	85	66	15x10x75	74	3.5
514	402			130	210																
514S	399	310	712			377	24	50	7x7x40	27	310	310	370	400	22	62	85	66	15x10x75	147	8
614	402			130	210																
614S	399	310	712			377	19	40	5x5x30	21	310	310	370	400	22	62	85	66	15x10x75	139	8
416	471	329	804	157	245	445	28	55	7x7x45	31	360	360	430	450	25	76	100	80.5	20x12x90	141	8
516	492	329	817	157	245	445	28	55	7x7x45	31	360	360	430	450	25	76	100	80.5	20x12x90	132	8
616	492	349	837	157	245	445	24	50	7x7x40	27	360	360	430	450	25	76	100	80.5	20x12x90	145	8
417	511	379	890	178	280	505	32	55	10x8x45	35	380	420	460	530	25	80	110	84.5	20x12x100	133	8
517	511	370	881	178	280	505	28	55	7x7x45	31	380	420	460	530	25	80	110	84.5	20x12x100	194	12
617	526	353	879	178	280	505	28	55	7x7x45	31	380	420	460	530	25	80	110	84.5	20x12x100	212	12
418	607	382	993	196	310	565	32	60	10x8x50	35	480	480	570	600	28	100	130	106.5	24x16x120	213	12
518	628	382	1014	196	310	565	28	55	7x7x45	31	480	480	570	600	28	100	130	106.5	24x16x120	272	18
618	628	370	998	196	310	565	28	55	7x7x45	31	480	480	570	600	28	100	130	106.5	24x16x120	275	18
419	676	451	949	214	380	670	38	65	10x8x55	41	540	500	635	680	28	115	150	124	32x20x140	266	18
519	676	431	1107	214	380	670	32	55	10x8x45	35	540	500	635	680	28	115	150	124	32x20x140	402	27
420	808	472	1280	272	430	782	48	80	12x8x70	51	600	680	700	830	38	130	180	139	35x22x170	433	27
520	808	487	1295	272	425	782	38	65	10x8x55	41	600	680	700	830	38	130	180	139	35x22x170	436	27

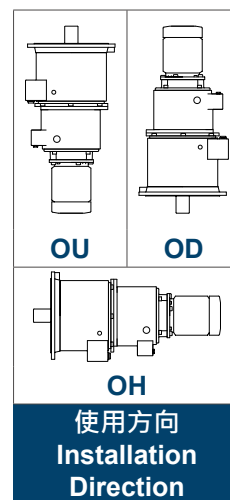
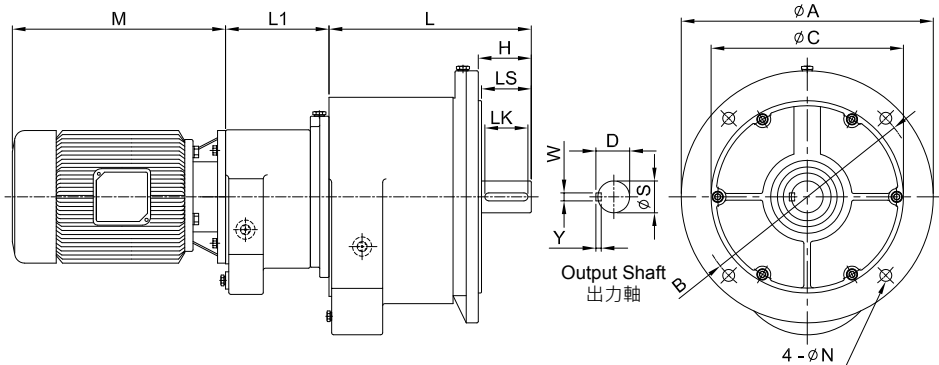
1. 表中 S 表示新尺寸。"S" means new dimension.

2. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.

**MODEL : LSV**

立式多速比減速機 Vertical Multi-Stage Reducer

RATIO : 1/200~1/6000



unit: mm

型號 Model	馬力 (4P) HP	L	L1	M	法蘭面 Flange				出力軸 Output Shaft					重量 Weight (kg)
					A	B	C	N	D	LS	S	WxYxLK	H	
406	1/4	216	103	225	243	215	180	14	35	55	32	10x8x45	60	26
408	1/2	239	137	248	280	245	210	14	41	60	38	10x8x50	66	37
508	1/4	238	103	225	280	245	210	14	41	60	38	10x8x50	65	38
410	1	266	155	242	330	300	250	18	45	65	42	12x8x55	70	55
410S	1	259	155	242	300	265	230	18	45	65	42	12x8x55	70	54
510	1/2	266	166	248	330	300	250	18	45	65	42	12x8x55	70	57
510S	1/2	259	166	248	300	265	230	18	45	65	42	12x8x55	70	56
610	1/4	289	132	225	330	300	250	18	45	65	42	12x8x55	70	61
610S	1/4	282	132	225	300	265	230	18	45	65	42	12x8x55	70	60
412	2	305	155	322	380	335	290	18	51	75	48	12x8x65	80	74
412S	2	282	155	322	340	300	250	18	51	75	48	12x8x65	80	67
512	1	315	155	242	380	335	290	18	51	75	48	12x8x65	80	81
512S	1	296	155	242	340	300	250	18	51	75	48	12x8x65	80	74
612	1/2	315	166	248	380	335	290	18	51	75	48	12x8x65	80	83
612S	1/2	296	166	248	340	300	250	18	51	75	48	12x8x65	80	76
414	3	363	196	315	450	400	350	22	66	85	62	15x10x75	90	122
414S	3	361	189	315	440	400	350	22	66	85	62	15x10x75	90	119
514	2	363	156	322	450	400	350	22	66	85	62	15x10x75	90	123
514S	2	378	173	322	440	400	350	22	66	85	62	15x10x75	90	120
614	1	372	166	242	450	400	350	22	66	85	62	15x10x75	90	124
614S	1	378	173	242	440	400	350	22	66	85	62	15x10x75	90	121
416	5	434	196	371	500	450	400	24	80.5	100	76	20x12x90	105	173
416S	5	434	189	371	500	450	400	24	80.5	100	76	20x12x90	105	172
516	3	454	196	315	500	450	400	24	80.5	100	76	20x12x90	105	196
516S	3	454	189	315	500	450	400	24	80.5	100	76	20x12x90	105	195
616	2	454	219	322	500	450	400	24	80.5	100	76	20x12x90	105	201
616S	2	454	212	322	500	450	400	24	80.5	100	76	20x12x90	105	200
417	7 1/2	465	225	374	590	540	480	24	84.5	110	80	20x12x100	115	249
517	5	479	235	371	590	540	480	24	84.5	110	80	20x12x100	115	256
617	3	484	209	315	590	540	480	24	84.5	110	80	20x12x100	115	247
418	10	565	221	412	660	610	560	6x24	106.5	130	100	24x16x120	135	342
518	7 1/2	599	221	374	660	610	560	6x24	106.5	130	100	24x16x120	135	383
618	5	599	235	371	660	610	560	6x24	106.5	130	100	24x16x120	135	390

1. 表中 S 表示新尺寸。"S" means new dimension.  
 2. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.

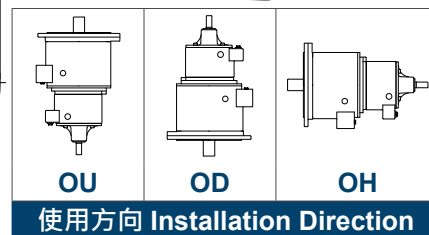
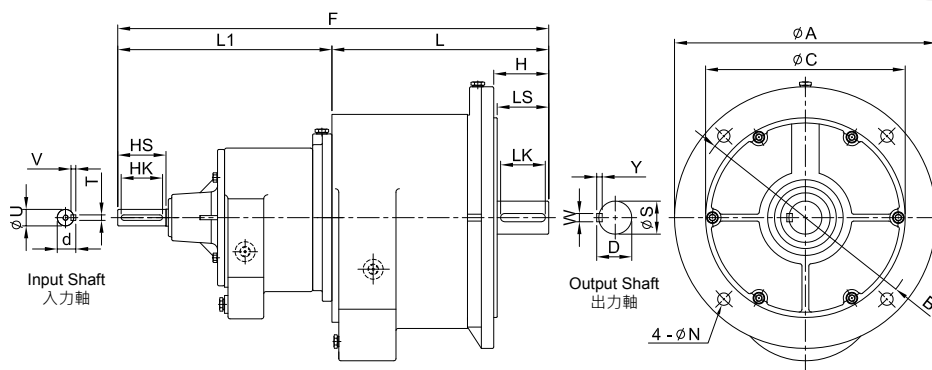
# VERTICAL REDUCER SERIES

## 多速比多段齒輪減速機系列

### MODEL : LSVD

立式多速比雙軸減速機 Vertical Multi-Stage & Double Shaft Reducer

RATIO : 1/200~1/6000



unit: mm

型號 Model	L	L1	F	法蘭面 Flange				入力軸 Input Shaft				出力軸 Output Shaft					重量 Weight (kg)
				A	B	C	N	d	HS	TxVxHK	U	D	LS	S	WxYxLK	H	
406	216	190	406	243	215	180	14	18	35	5x5x25	16	35	55	32	10x8x45	60	28
408	239	243	482	280	245	210	14	21	40	5x5x30	19	41	60	38	10x8x50	66	38
508	239	190	429	280	245	210	14	18	35	5x5x25	16	41	60	38	10x8x50	65	39
410	266		558	330	300	250											
410S	259	292	551	300	265	230	18	27	50	7x7x40	24	45	65	42	12x8x55	70	59
510	266	268	534	330	300	250	18	21	40	5x5x30	19	45	65	42	12x8x55	70	59
510S	259	266	525	300	265	230											
610	289		504	330	300	250	18	18	35	5x5x25	16	45	65	42	12x8x55	70	63
610S	282	215	497	300	265	230											
412	305		597	380	335	290	18	27	50	7x7x40	24	51	75	48	12x8x65	80	78
412S	282	292	574	340	300	250											
512	315		607	380	335	290	18	27	50	7x7x40	24	51	75	48	12x8x65	80	85
512S	296	292	588	340	300	250											
612	315		583	380	335	290	18	21	40	5x5x30	19	51	75	48	12x8x65	80	86
612S	296	268	564	340	300	250											
414	363	336	699	450													130
414S	361	329	690	440	400	350	22	31	55	7x7x45	28	66	85	62	15x10x75	90	128
514	378	293	656	450													127
514S	373	310	683	440	400	350	22	27	50	7x7x40	24	66	85	62	15x10x75	90	125
614	378	268	640	450													128
614S	373	310	683	440	400	350	22	21	40	5x5x30	19						
								27	50	7x7x40	24	66	85	62	15x10x75	90	128
								27	40	5x5x30	19						
								50	7x7x40	24							126
416																	181
416S	434	336	770	500	450	400	24	31	55	7x7x45	28	80.5	100	76	20x12x90	105	180
516																	204
516S	452	336	788	500	450	400	24	31	55	7x7x45	28	80.5	100	76	20x12x90	105	203
616																	206
616S	452	353	805	500	450	400	24	27	50	7x7x40	24	80.5	100	76	20x12x90	105	204
417	479	379	858	590	540	480	24	35	55	10x8x45	32	84.5	110	80	20x12x100	115	259
517	479	370	849	590	540	480	24	31	55	7x7x45	28	84.5	110	80	20x12x100	115	262
617	479	370	849	590	540	480	24	35	60	10x8x50	32	84.5	110	80	20x12x100	115	262
617	484	353	825	590	540	480	24	31	55	7x7x45	28	84.5	110	80	20x12x100	115	252
418	565	382	951	660	610	560	6x24	35	60	10x8x50	32	106.5	130	100	24x16x120	135	352
518	599	382	986	660	610	560	6x24	31	55	7x7x45	28	106.5	130	100	24x16x120	135	393
618	599	370	969	660	610	560	6x24	31	55	7x7x45	32	106.5	130	100	24x16x120	135	396

1. 表中 S 表示新尺寸。"S" means new dimension.

2. 重量不含馬達及潤滑油。The weight does not include motor and lubricant.





# GEAR-WORM REDUCER SERIES

## 齒蝸輪減速機系列

# AS



## Indication of Model Numbers












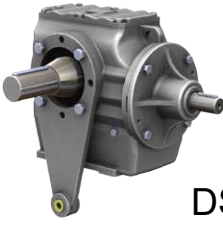
### 機種型號表示

#### 產品樣式選擇

AS	067	B	O	F	60	007	A	R
減速機型 Type	型號 Model	入力表示 Input	出力軸 Output	出力法蘭 Output Flange	減速比 Ratio	入力 kW Input kW	安裝方向 Installation Direction	軸向 Shaft Direction
AS	047 057 067 077 087 097	B 入力法蘭 Input Flange	O 中空軸 Hollow Shaft	F 法蘭型 Flange  A 側固型 Torque Arm  <input type="checkbox"/> 無 Nothing	20,30,40 45,60,80 90,100 120,160 180,200 240	0.2kW : 002 0.4kW : 004 0.75kW : 007 1.5kW : 015 2.2kW : 022 3.75kW : 037 5.5kW : 055 7.5kW : 075 11kW : 110 15kW : 150	A B C	R 右軸 Right Shaft  L 左軸 Left Shaft



產品樣式選擇 Selection of type

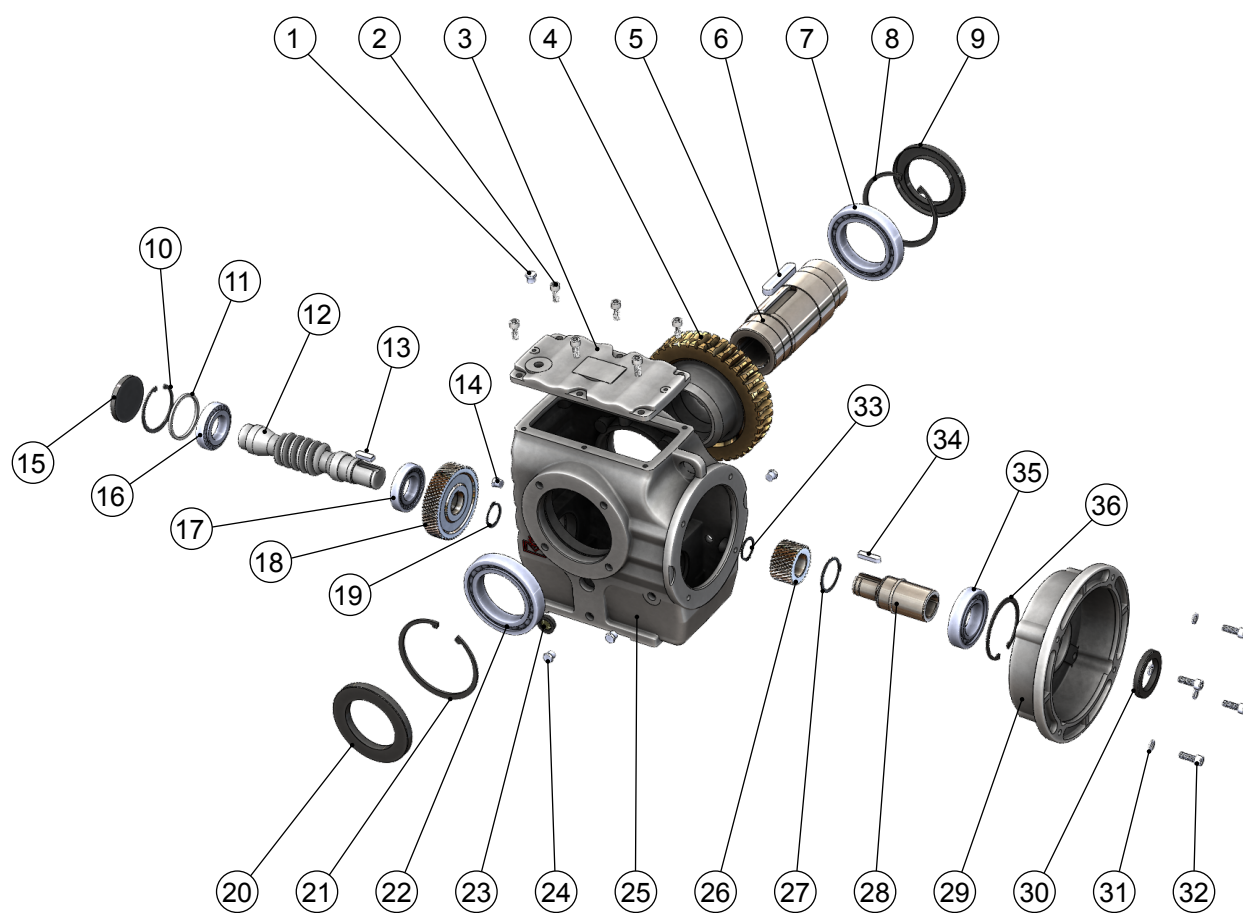
	標準型 Standard	F 法蘭型 Flange <small>出力附件 Accessories</small>	A 側固型 Torque arm <small>出力附件 Accessories</small>
B 入力法蘭 Input Flange + O 中空出力軸 Hollow shaft	 BO	 BOF	 BOA
B 入力法蘭 Input Flange + S 實心出力軸 Solid shaft	 BS	 BSF	 BSA
D 實心入力軸 Input shaft + O 中空出力軸 Hollow shaft	 DO	 DOF	 DOA
D 實心入力軸 Input shaft + S 實心出力軸 Solid shaft	 DS	 DSF	 DSA

# GEAR-WORM REDUCER SERIES

## 齒蝸輪減速機系列

### 分解系統圖 System Drawing

MODEL : AS



NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	油栓	Oil Plug	13	鍵	Key	25	齒輪箱	Outer Shell
2	內六角螺絲	Hex Socket Cap Screw	14	油栓	Oil Plug	26	A 齒輪	A Gear
3	上蓋	Cover	15	密式油封	Oil Seal	27	S 扣環	S Snap Ring
4	蝸輪	Worm Wheel	16	滾錐軸承	Taper Roller Bearing	28	入力軸	Input Shaft
5	出力軸	Output Shaft	17	滾錐軸承	Taper Roller Bearing	29	馬達盤	Motor Flange
6	鍵	Key	18	B 齒輪	B Gear	30	油封	Oil Seal
7	軸承	Ball Bearing	19	S 扣環	S Snap Ring	31	華司	Washer
8	R 扣環	R Snap Ring	20	油封	Oil Seal	32	內六角螺絲	Hex Socket Cap Screw
9	油封	Oil Seal	21	R 扣環	R Snap Ring	33	S 扣環	S Snap Ring
10	R 扣環	R Snap Ring	22	軸承	Bearing	34	鍵 K	Key
11	墊片	Packing	23	油鏡	Oil Gauge	35	軸承	Bearing
12	蝸桿	Worm Shaft	24	排油栓	Drain Plug	36	R 扣環	R Snap Ring

## 重量表及油量表 Weight & Oil Capacities

Model	AS047		AS057		AS067		AS077		AS087		AS097	
Type	重量 Weight (kg)	油量 Oil (ℓ)	重量 Weight (kg)	油量 Oil (ℓ)	重量 Weight (kg)	油量 Oil (ℓ)	重量 Weight (kg)	油量 Oil (ℓ)	重量 Weight (kg)	油量 Oil (ℓ)	重量 Weight (kg)	油量 Oil (ℓ)
BO DO	15	0.8	19	1	27	1.5	45	2	75	3	140	5
BOF·BOA DOF·DOA	16	0.8	20	1	29	1.5	47	2	78	3	145	5
BS DS	16	0.8	20	1	29	1.5	47	2	78	3	145	5
BSF·BSA DSF·DSA	18	0.8	22	1	33	1.5	50	2	80	3	150	5

重量不含馬達及潤滑油。The weight does not include motor and lubricant.

## 安裝方向 Installation Direction

油面計  
Oil Indicator

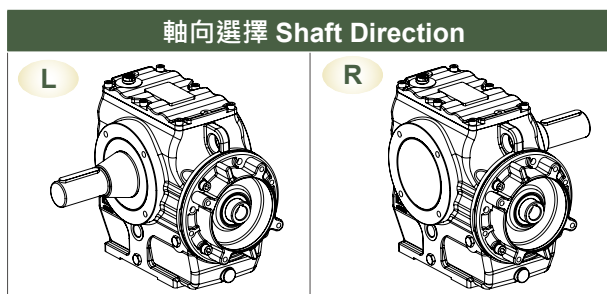
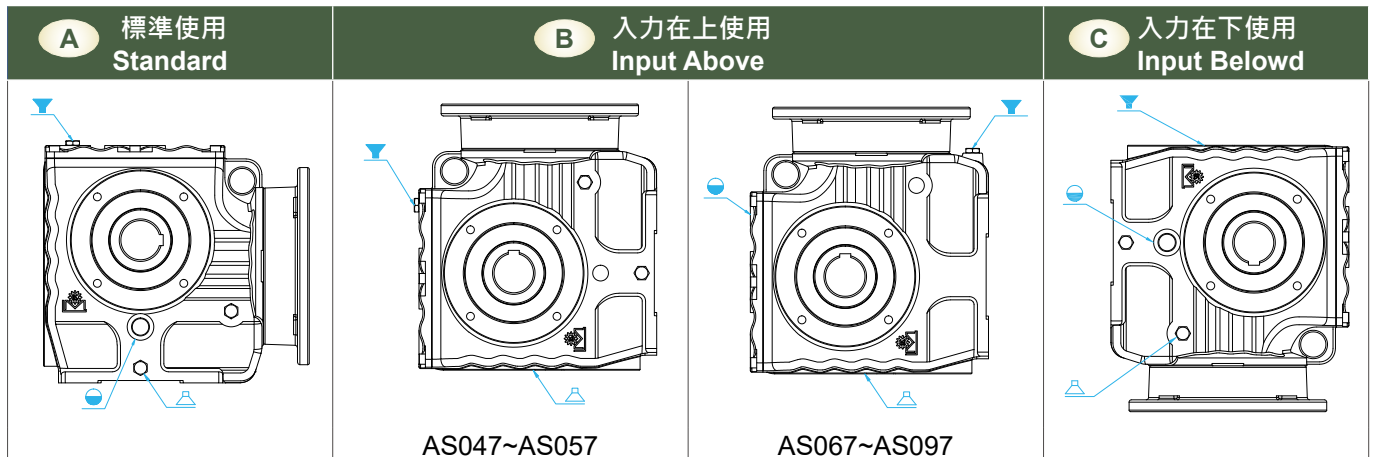
注油栓  
Oil Plug

排油栓  
Oil Drain Plug

◆ 正常的使用方向可以使減速機保持較高的壽命。  
The life time of gear reducer can be prolonged in proper direction.

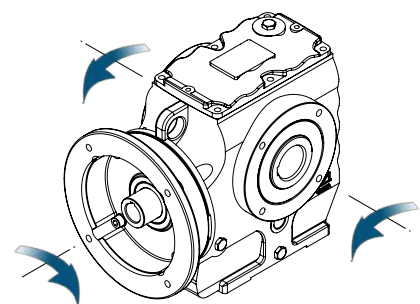
◆ 安裝時請注意油面計、注油栓及排油栓的位置以便日後維護。  
Please note the positions of oil gauge, oil filling plug and oil drain plug to facilitate the maintenance afterwards.

◆ 減速機使用方向特殊時，請與我們連繫。  
For special installation direction, please contact us.



◆ R：右軸（入力面對自己，出力軸在右方）  
Right Shaft (input to the face; output shaft to the right)

◆ L：左軸（入力面對自己，出力軸在左方）  
Left Shaft (input to the face; output shaft to the left)

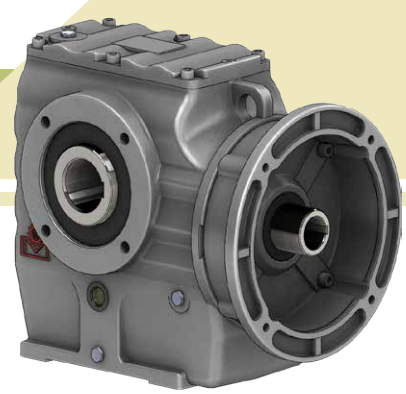


旋轉方向  
Rotation Directions

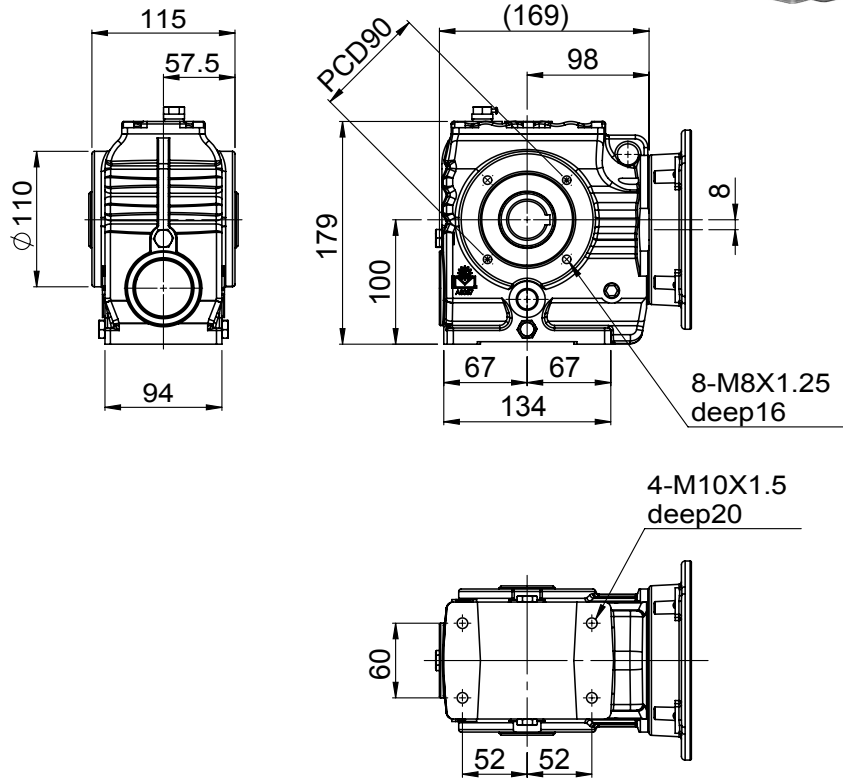


# GEAR-WORM REDUCER SERIES

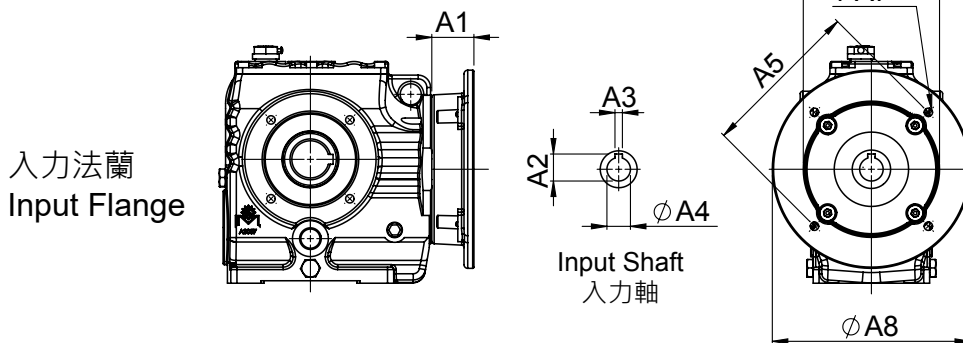
## 齒蝸輪減速機系列



MODEL : AS047



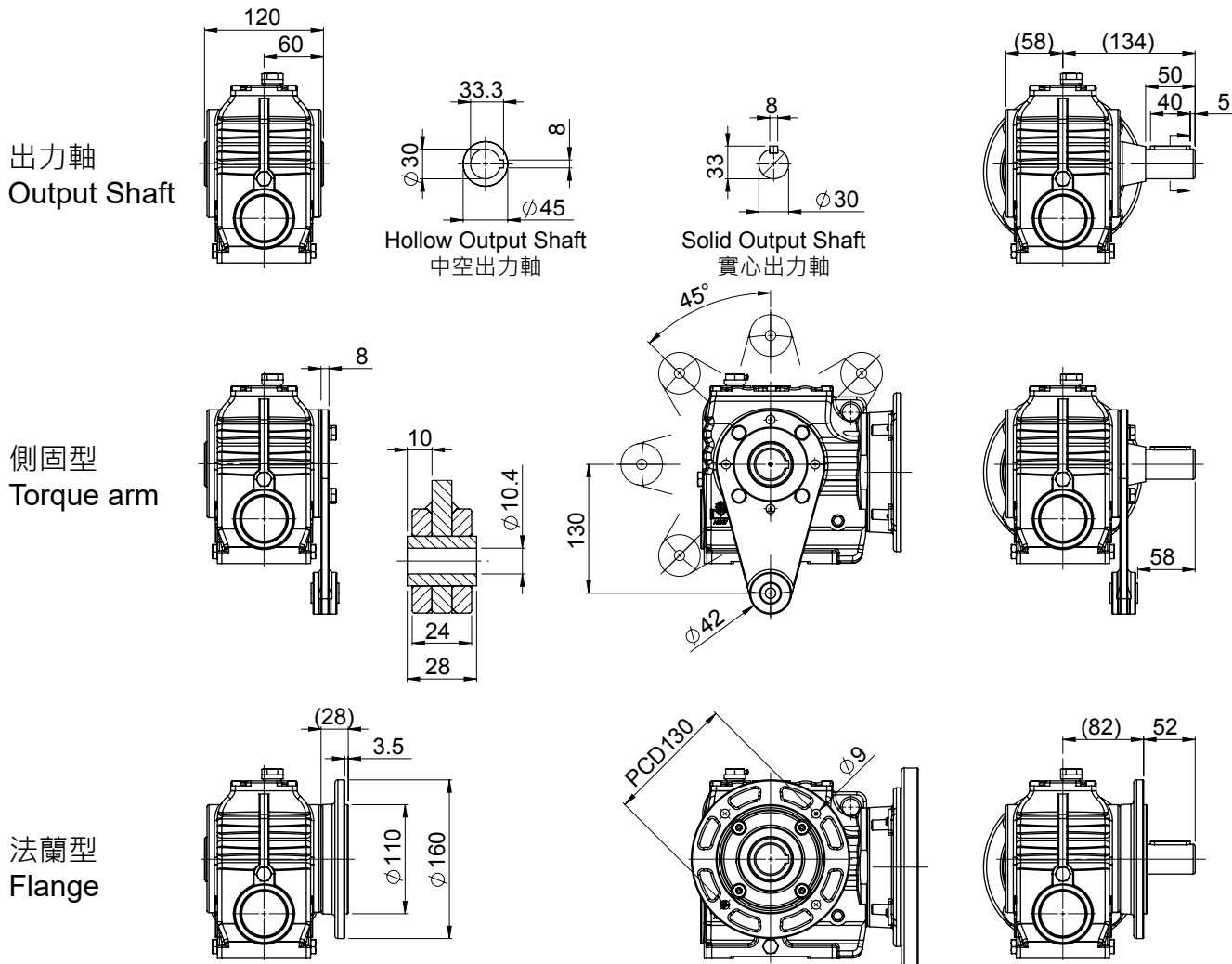
### 入力尺寸 Input



unit: mm

Power	A1	A2	A3	A4	A5	A6	A7	A8
0.2 kW	34	12.7	4	11	130	110	M8x1.25	160
0.4 kW	34	16.3	5	14	130	110	M8x1.25	160
0.75 kW	51	21.8	6	19	165	130	M10x1.5	200

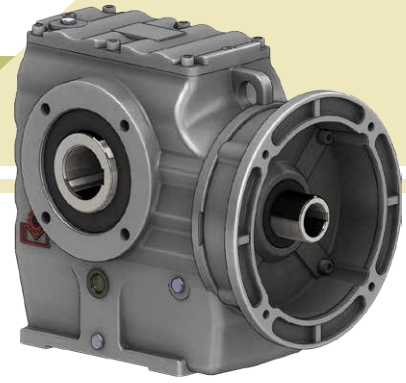
### 出力尺寸 Output



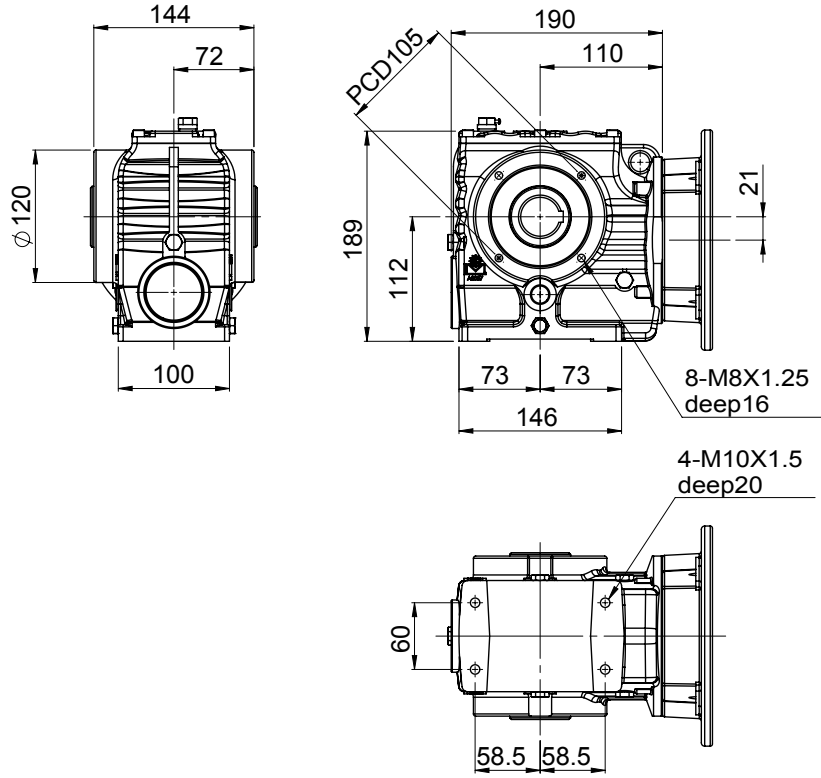
Power 實際減速比 Actual Ratio	0.2kW		0.4kW		0.75kW	
	OT(Nm)	SF	OT(Nm)	SF	OT(Nm)	SF
20	16	6.87	34	3.23	70	1.57
30	25	5.05	52	2.43	105	1.20
40	33	4.14	69	1.98	140	0.97
45	35	3.35	73	1.60	149	0.78
60	47	2.71	98	1.30	198	0.64
80	62	2.13	127	1.04	258	0.51
90	60	2.00	123	0.97	250	0.48
100	62	1.50	129	0.72		
120	80	1.62	164	0.79		
140 (143.5)	94	1.10	193	0.53		
160	103	1.20	213	0.58		
180	107	0.97				
200	125	0.88				
240	143	0.78				

# GEAR-WORM REDUCER SERIES

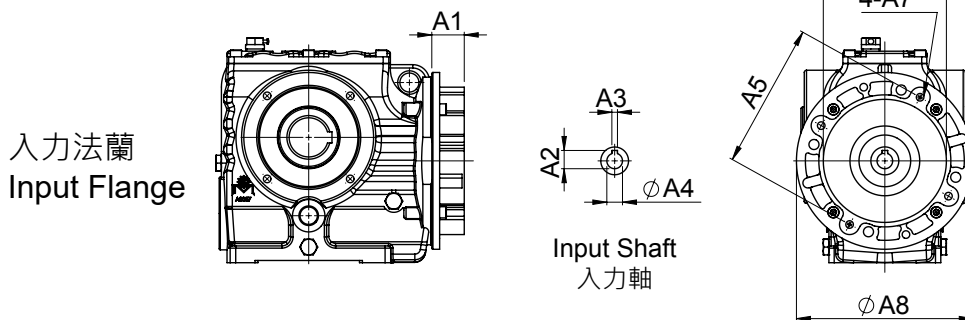
## 齒蝸輪減速機系列



MODEL : AS057



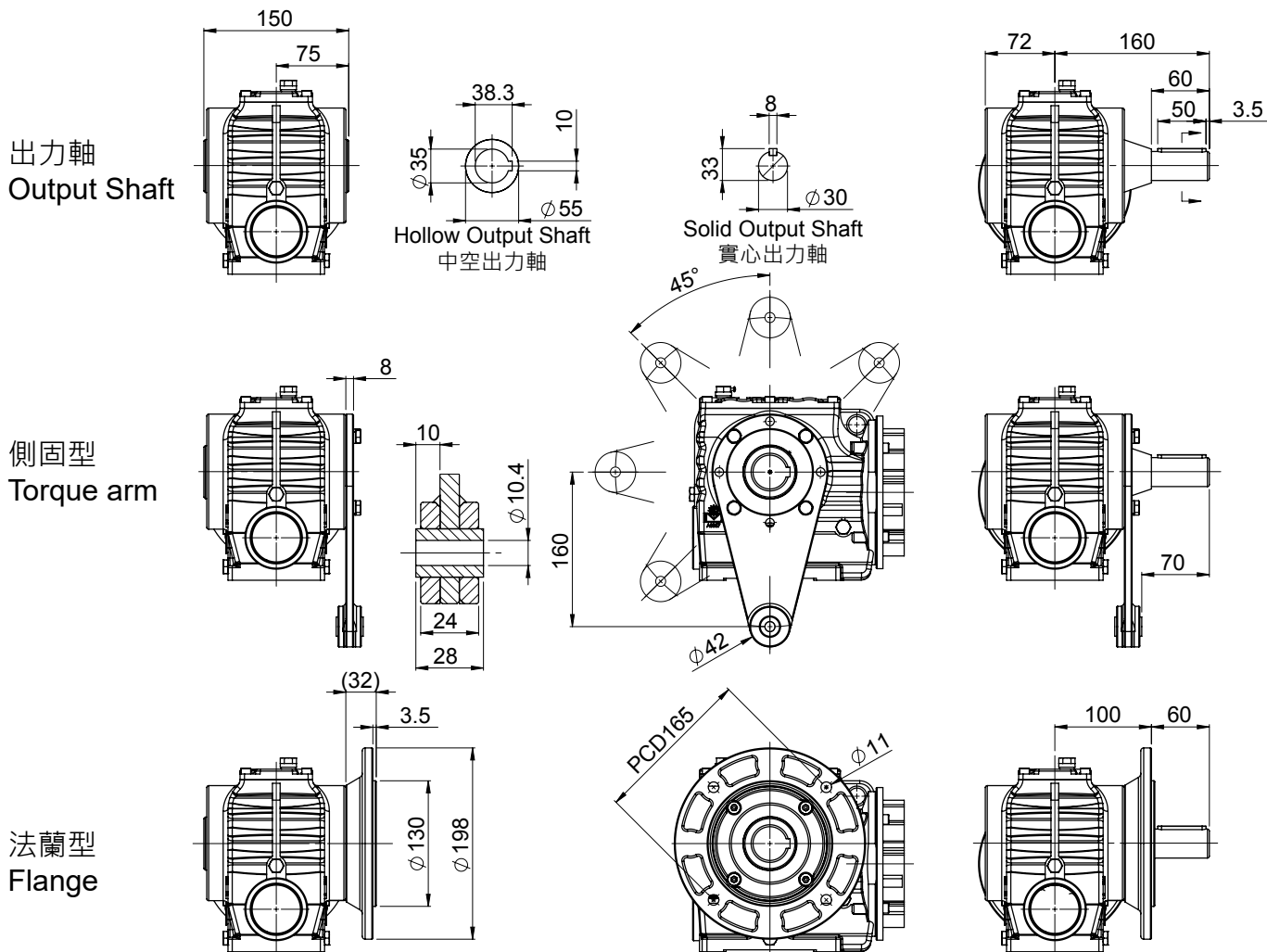
### 入力尺寸 Input



unit: mm

Power	A1	A2	A3	A4	A5	A6	A7	A8
0.4 kW	29	16.3	5	14	130	110	M8x1.25	160
0.75 kW	45	21.8	6	19	165	130	M10x1.5	200
1.5 kW	45	27.3	8	24	165	130	M10x1.5	200

### 出力尺寸 Output

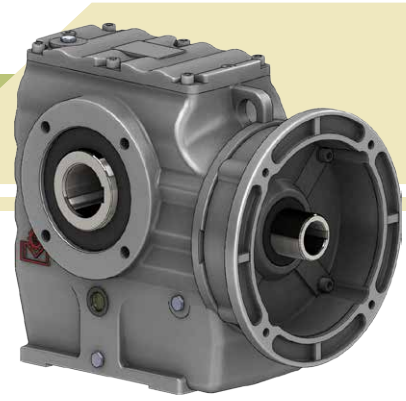


Power 實際減速比 Actual Ratio	0.4kW		0.75kW		1.5kW	
	OT(Nm)	SF	OT(Nm)	SF	OT(Nm)	SF
20	35	5.61	72	2.72	144	1.36
30	53	4.28	108	2.10	216	1.05
40	71	3.42	144	1.68	288	0.84
45	76	2.90	154	1.43	309	0.71
60	101	2.38	206	1.17	412	0.58
80	132	1.80	268	0.88		
90	132	1.71	268	0.84		
100	135	1.33	274	0.65		
120	176	1.39	358	0.68		
140 (143.5)	202	0.99	411	0.48		
160	226	1.04	458	0.51		
180	232	0.80				
200	270	0.79				
240	310	0.64				

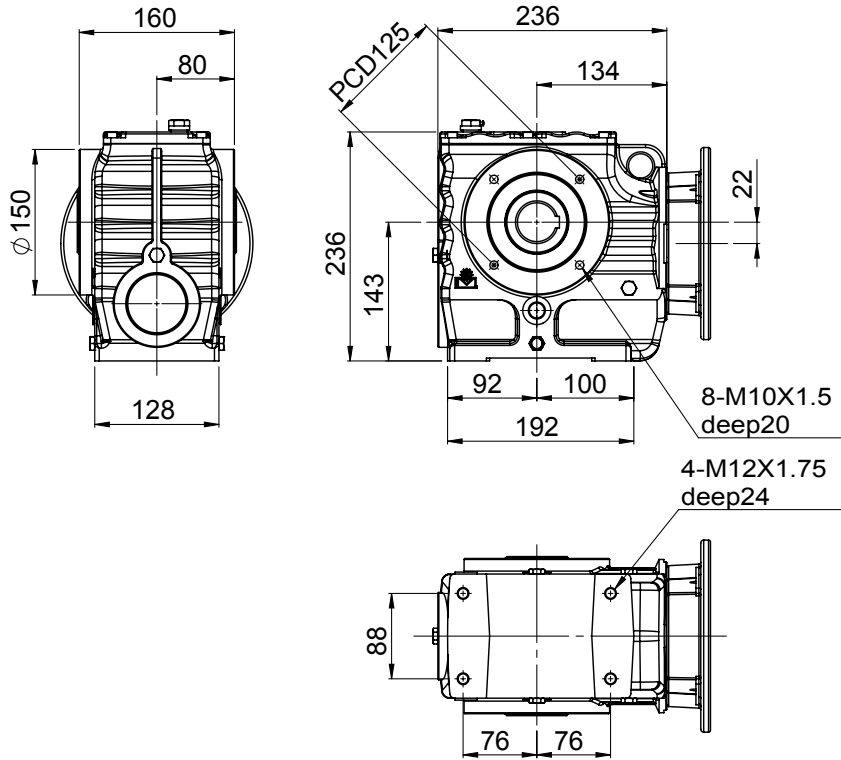


# GEAR-WORM REDUCER SERIES

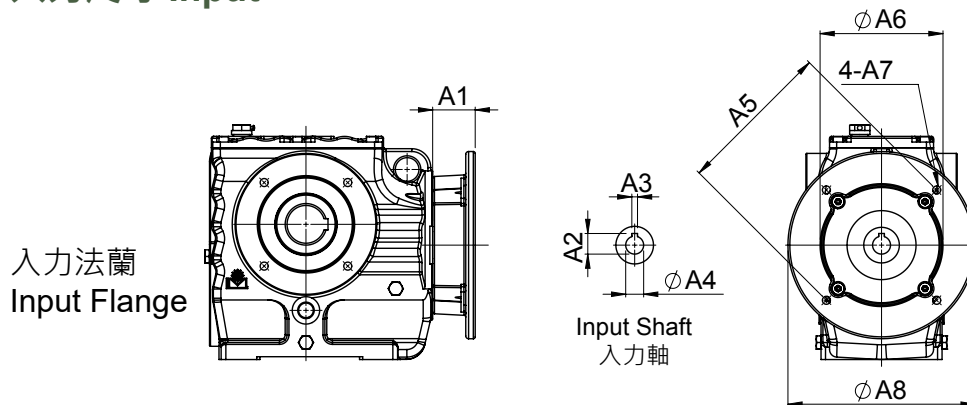
## 齒蝸輪減速機系列



MODEL : AS067



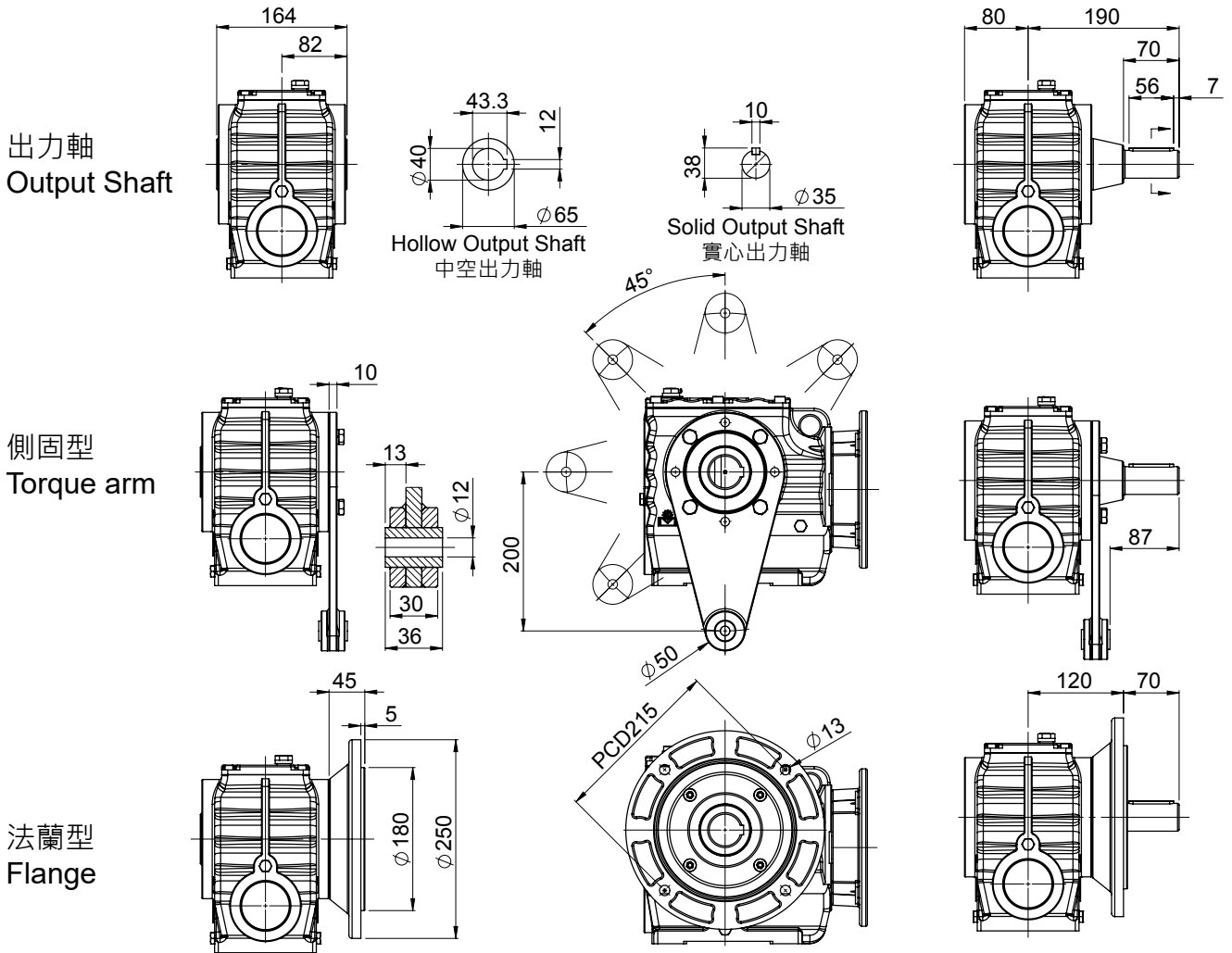
### 入力尺寸 Input



unit: mm

Power	A1	A2	A3	A4	A5	A6	A7	A8
0.75 kW	45	21.8	6	19	165	130	M10x1.5	200
1.5 kW	45	27.3	8	24	165	130	M10x1.5	200
2.2 kW 3.5 kW	59	31.3	8	28	215	180	M12x1.75	250

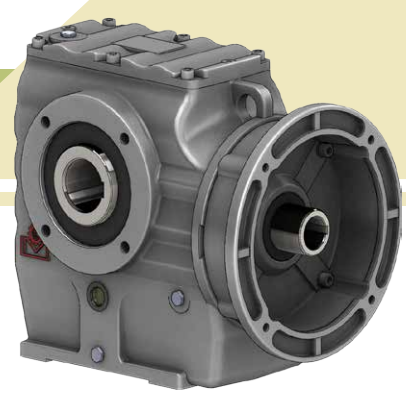
## 出力尺寸 Output



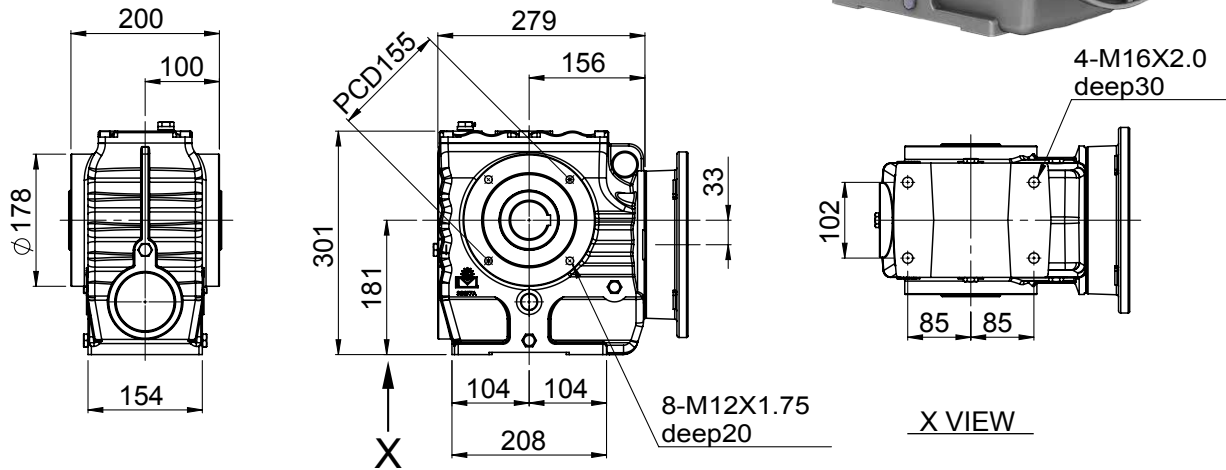
Power	0.75kW		1.5kW		2.2kW		3.7kW	
實際減速比 Actual Ratio	OT(Nm)	SF	OT(Nm)	SF	OT(Nm)	SF	OT(Nm)	SF
20	72	5.16	145	2.56	213	1.74	359	1.03
30	109	3.96	218	1.98	320	1.35	539	0.8
40	145	3.25	291	1.62	427	1.1	718	0.65
45	154	2.62	309	1.3	453	0.89	763	0.53
60	206	2.15	412	1.07	605	0.73		
80	258	1.46	517	0.72	758	0.49		
90	268	1.49	537	0.74	788	0.5		
100	224	1.42	449	0.71				
120	358	1.22	717	0.6				
140 (141)	336	1.07	673	0.53				
160	425	0.88						
180	434	0.66						
200	449	0.56						
240	579	0.53						

# GEAR-WORM REDUCER SERIES

## 齒蝸輪減速機系列

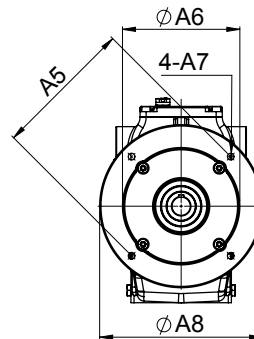
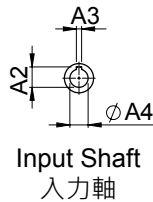
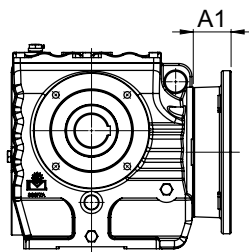


MODEL : AS077

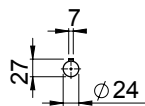
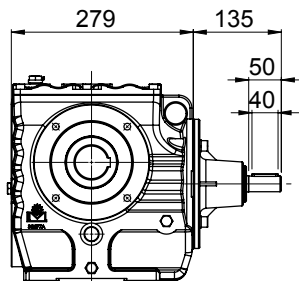


### 入力尺寸 Input

入力法蘭  
Input Flange



入力軸  
Input Shaft

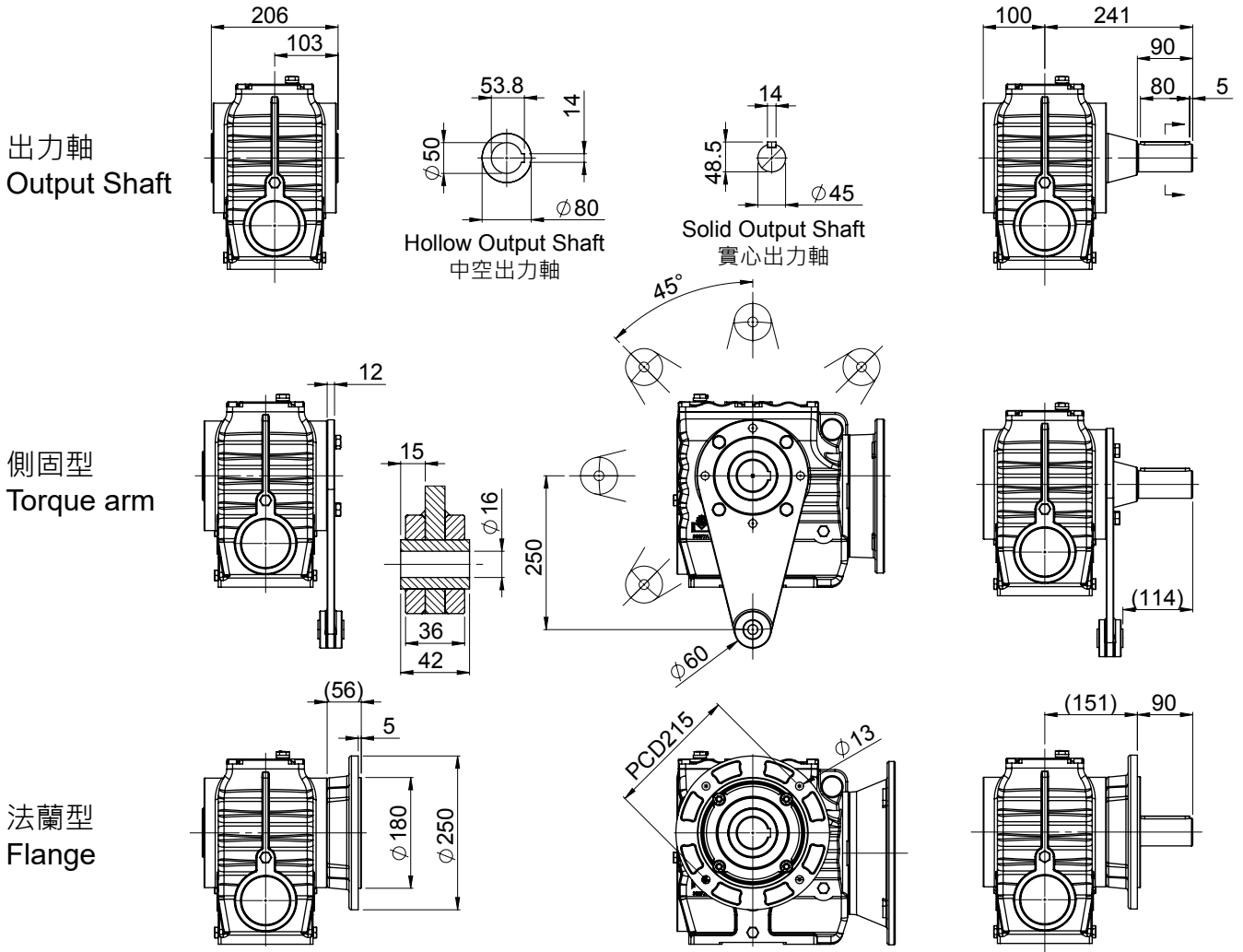


入力軸式僅生產 1.5kW、2.2kW、3.7kW。 The input shaft only produces 1.5kW, 2.2kW, 3.7kW.

unit: mm

Power	A1	A2	A3	A4	A5	A6	A7	A8
1.5 kW	45	27.3	8	24	165	130	M10x1.5	200
2.2 kW 3.7 kW	58	31.3	8	28	215	180	M12x1.75	250
5.5 kW	76	41.3	10	38	265	230	M12x1.75	300

### 出力尺寸 Output

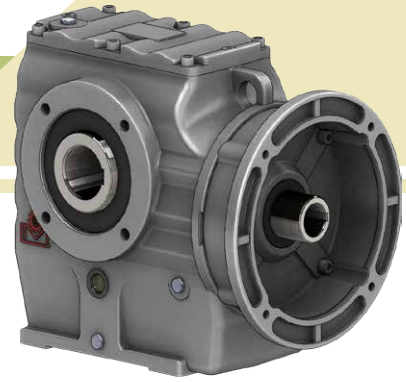


Power	1.5kW		2.2kW		3.7kW		5.5kW	
實際減速比 Actual Ratio	OT(Nm)	SF	OT(Nm)	SF	OT(Nm)	SF	OT(Nm)	SF
20	145	4.76	213	3.24	359	1.92	534	1.29
30	211	3.04	309	2.08	521	1.23	774	0.83
40	291	3.01	427	2.05	718	1.22	996	0.61
45	316	2.31	464	1.57	781	0.93	1161	0.62
60	422	1.91	619	1.3	1042	0.77	1350	0.51
80	543	1.42	797	0.97	1340	0.57		
90	552	1.42	810	0.97	1363	0.57		
100	548	1.14	804	0.78				
120	736	1.17	1080	0.8				
140 (141)	822	0.85	1206	0.58				
160	943	0.81	1383	0.55				
180	1002	0.64						
200	1097	0.69						
240	1336	0.51						

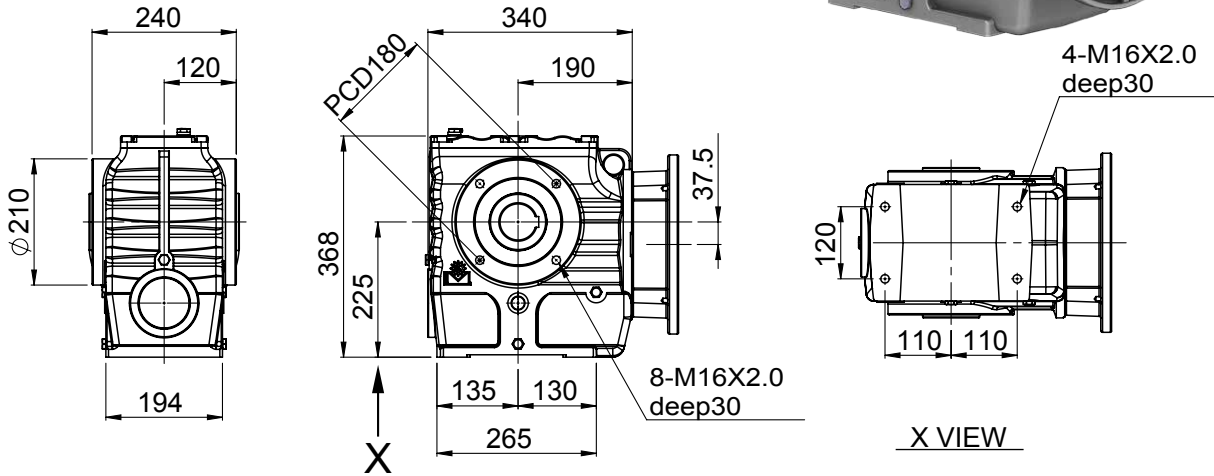


# GEAR-WORM REDUCER SERIES

## 齒蝸輪減速機系列

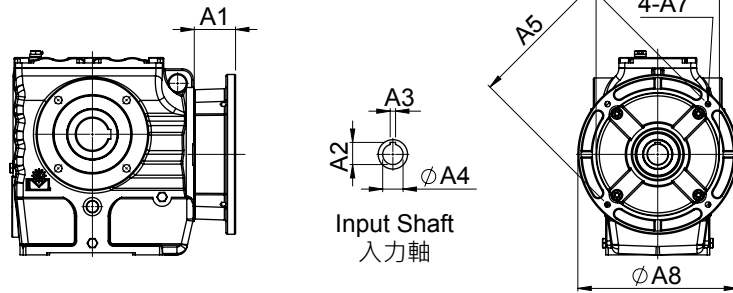


MODEL : AS087

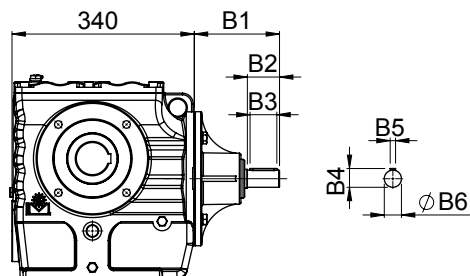


### 入力尺寸 Input

入力法蘭  
Input Flange



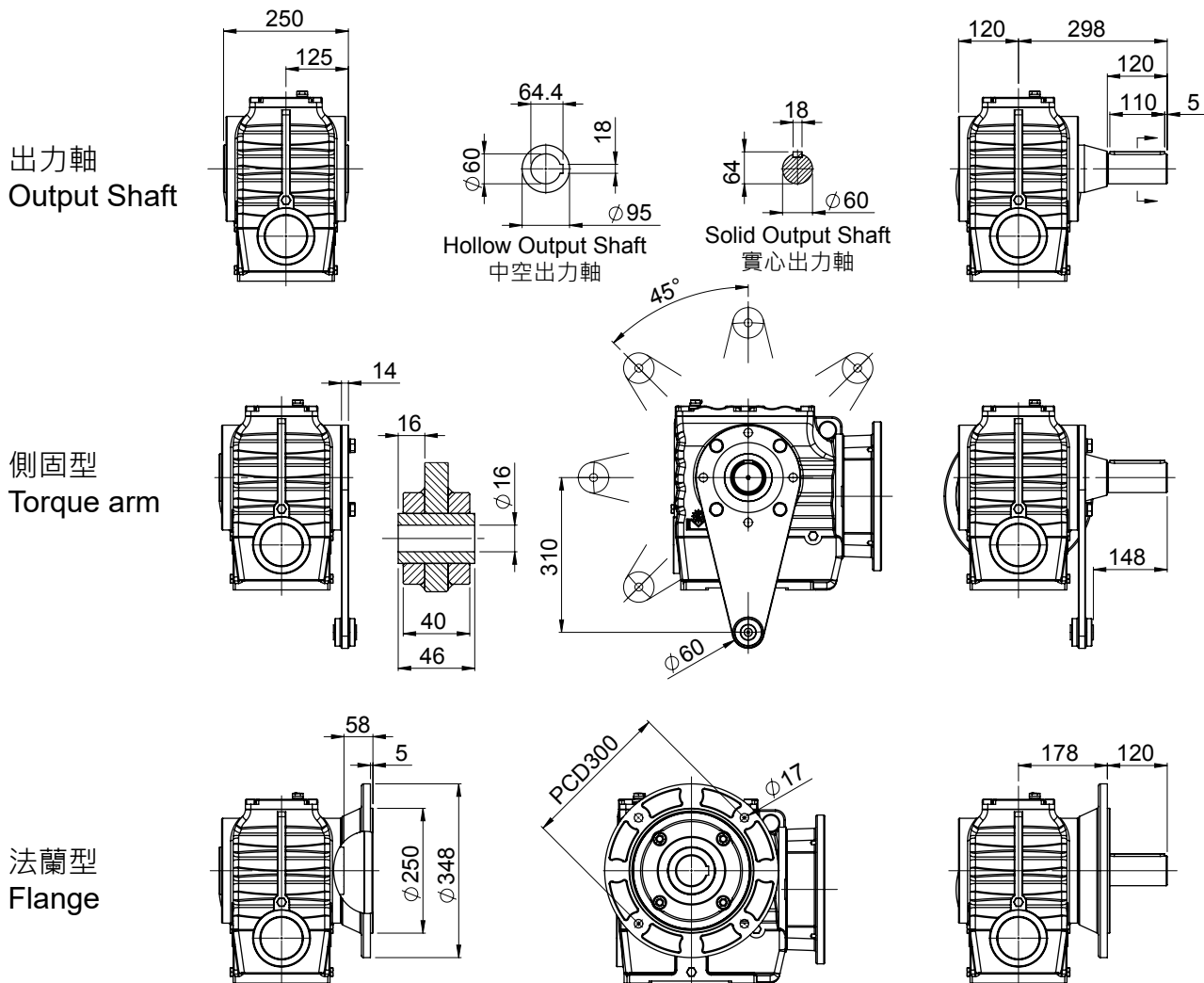
入力軸  
Input Shaft



unit: mm

Power	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6
2.2 kW 3.7 kW	57	31.3	8	28	215	180	M12x1.75	250	159	60	50	35	10	Ø32
5.5 kW 7.5 kW	77	41.3	10	38	265	230	M12x1.75	300	164	65	55	41	10	Ø38
11 kW	112	45.3	12	42	300	250	M16x2.0	350	164	65	55	41	10	Ø38

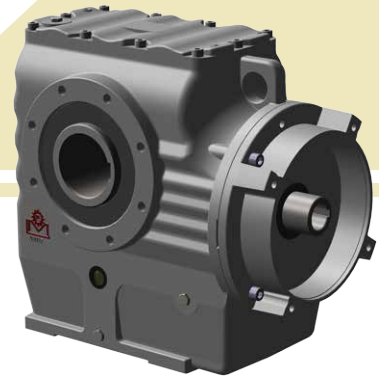
### 出力尺寸 Output



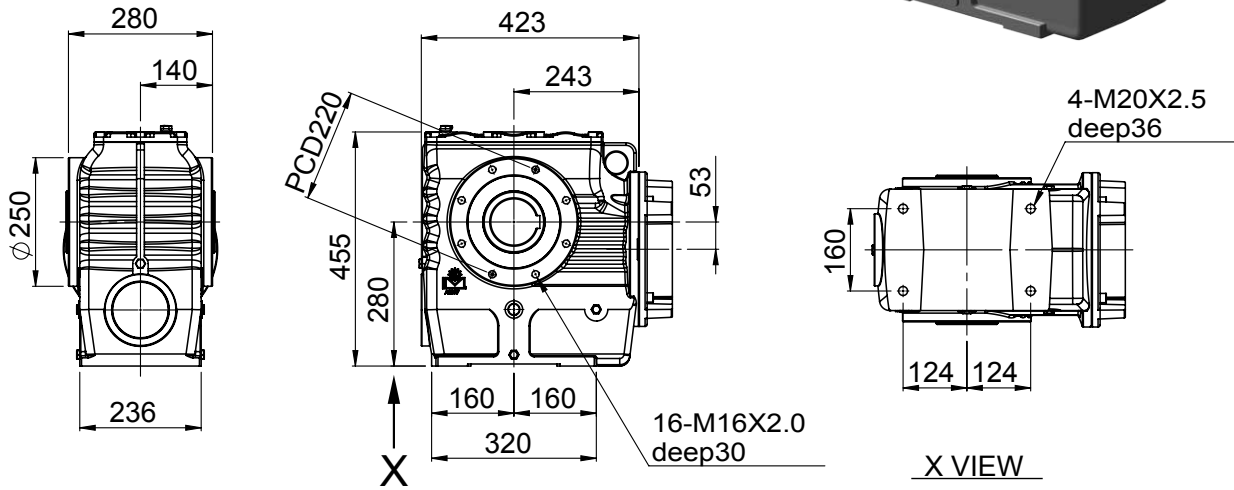
Power	2.2kW		3.7kW		5.5kW		7.5kW		11kW	
實際減速比 Actual Ratio	OT(Nm)	SF	OT(Nm)	SF	OT(Nm)	SF	OT(Nm)	SF	OT(Nm)	SF
20	208	5.34	351	3.17	522	2.13	712	1.56	1044	1.06
30	313	4.09	527	2.43	783	1.63	1068	1.2	1567	0.81
40	417	3.38	702	2	1044	1.35	1424	0.99	2089	0.67
45	480	2.73	808	1.62	1202	1.09	1639	0.79	2404	0.54
60	641	2.26	1078	1.34	1603	0.9	2186	0.66		
80	835	1.75	1405	1.04	2089	0.7	2849	0.51		
90	864	1.6	1454	0.95	2161	0.64				
100	840	1.21	1413	0.72	2101	0.48				
120	1152	1.32	1938	0.78	2881	0.52				
140 (141)	1260	0.91	2120	0.54						
160	1479	1.01	2488	0.6						
180	1534	0.74								
200	1681	0.74								
240	2046	0.6								

# GEAR-WORM REDUCER SERIES

## 齒蝸輪減速機系列

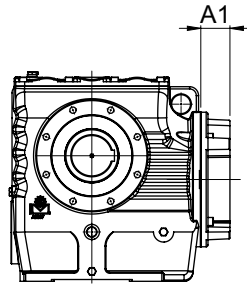


MODEL : AS097

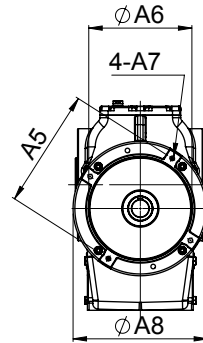


### 入力尺寸 Input

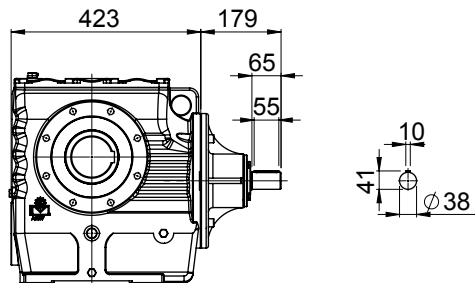
入力法蘭  
Input Flange



入力軸  
Input Shaft



入力軸  
Input Shaft

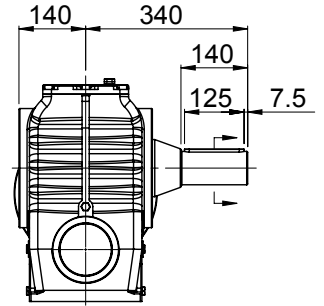
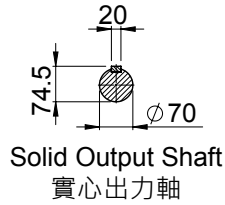
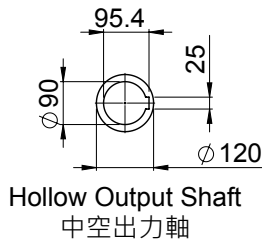
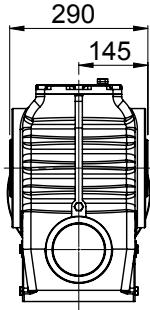


unit: mm

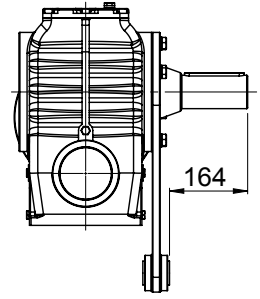
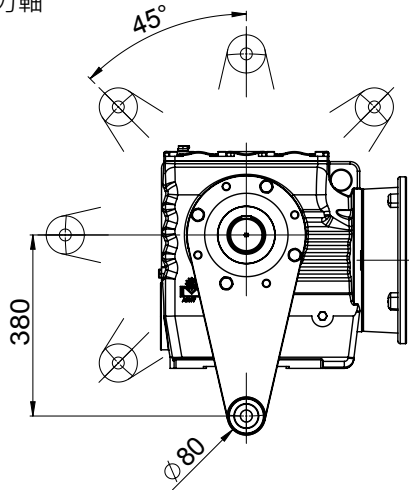
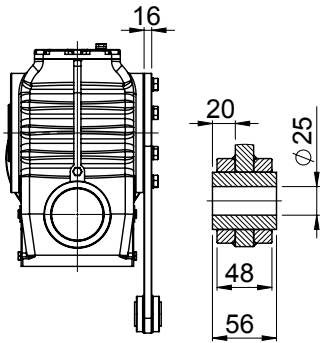
Power	A1	A2	A3	A4	A5	A6	A7	A8
5.5 kW 7.5 kW	65	41.3	10	38	265	230	M12x1.75	300
11 kW 15 kW	93	45.3	12	42	300	250	M16x2.0	350

### 出力尺寸 Output

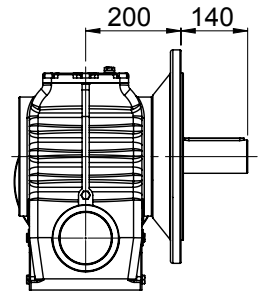
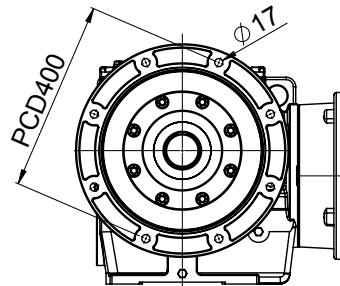
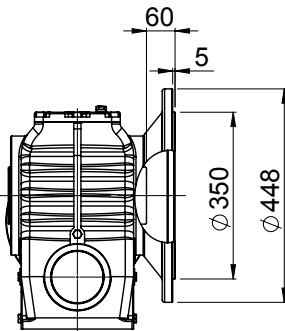
出力軸  
Output Shaft



側固型  
Torque arm



法蘭型  
Flange



Power	5.5kW		7.5kW		11kW		15kW	
實際減速比 Actual Ratio	OT(Nm)	SF	OT(Nm)	SF	OT(Nm)	SF	OT(Nm)	SF
20	552	3.41	753	2.50	1105	1.71	1506	1.25
30	829	2.66	1130	1.95	1657	1.33	2260	0.97
40	1105	2.18	1506	1.60	2210	1.09	3013	0.80
45	1202	1.88	1640	1.38	2405	0.94	3279	0.69
60	1603	1.56	2186	1.14	3206	0.78	4372	0.57
80	2089	1.32	2849	0.96	4179	0.66		
90	2161	1.11	2947	0.82	4323	0.56		
100	2192	0.88	2988	0.64				
120	2882	0.91	3930	0.67				
150 (148)	3287	0.66	4483	0.48				
160	3699	0.76	5043	0.56				
200	4383	0.53						



# AF

## Features of AF Series

### AF 系產品特性

- ◆ 安裝便利，無方向限制。  
Easy to install, Directions are not limited.
- ◆ 安裝、調整維護容易。  
Easy to install and maintain.
- ◆ 直裝以中空軸傳動，減少零配件。  
Speed reducers are mounted directly on the driven shaft, number of parts and fittings are reduced.

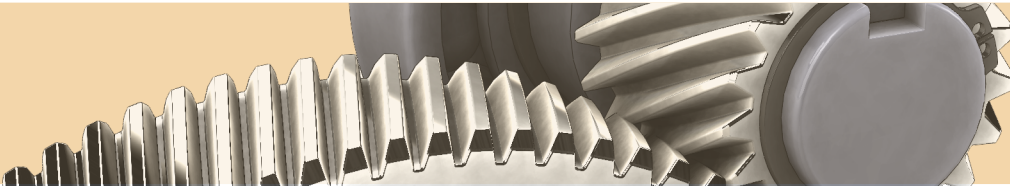


## Indication of Model Numbers

### 機種型號表示

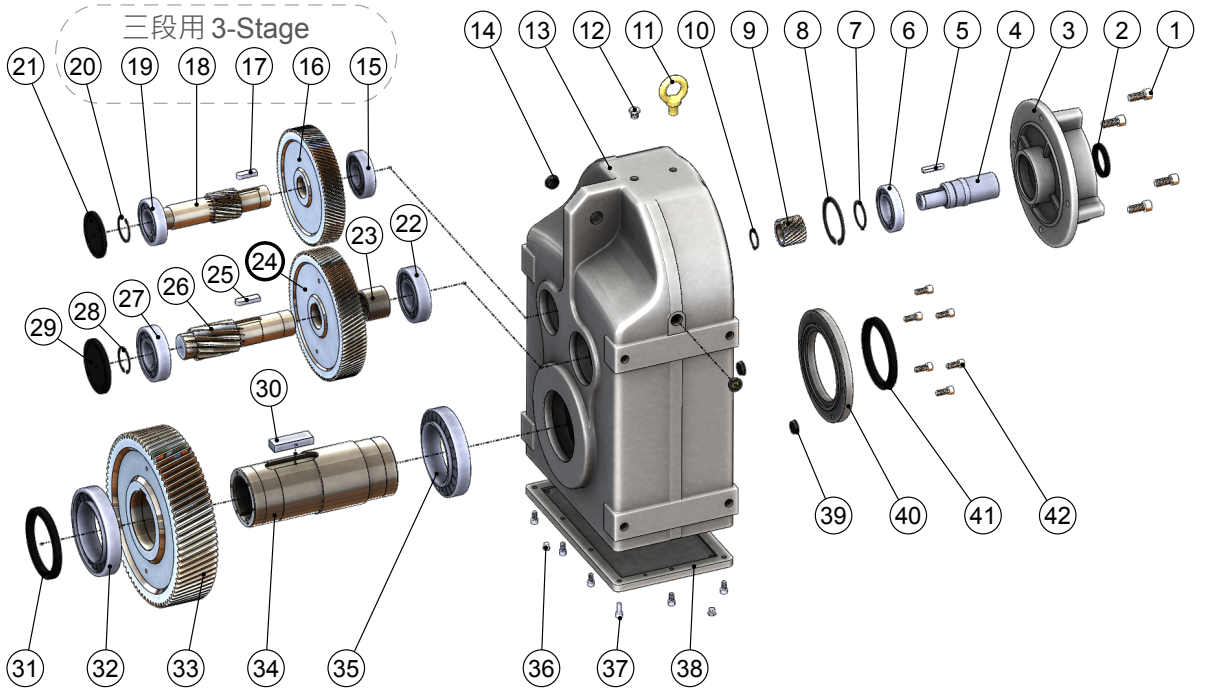
產品樣式選擇					
AF	097	B	O	60	037
減速機型 Type	型號 Model	入力表示 Input	出力軸表示 Output	減速比 Ratio	入力 kW Input kW
AF	087 097 107	B: 入力法蘭 Input Flange	O: 中空軸 Hollow shaft	15 20 30 60 80 100 120 170	2.2kW : 022 3.75kW : 037 5.5kW : 055 7.5kW : 075 11kW : 110 15kW : 150 18.7kW : 187 22.5kW : 225

- ◆ 如需其他減速比，請與我們連絡。 For special ratio, please contact us.



### 三段式分解系統圖 3-Stage System Drawing

MODEL : AF



NO.	零件名稱 Name of Parts	NO.	零件名稱 Name of Parts	NO.	零件名稱 Name of Parts	NO.	零件名稱 Name of Parts
1	內六角螺絲 Hex Socket Cap Screw	12	油栓 Oil Plug	23	套筒 Sleeve	33	D 齒輪 D Gear
2	油封 Oil Seal	13	齒輪箱 Outer Shell	24 <sup>3</sup>	F 齒輪 F Gear	34	出力軸 Output Shaft
3	馬達盤 Motor Flange	14	油鏡 Oil Gauge	24 <sup>2</sup>	B 齒輪 B Gear	35	滾錐軸承 Taper Roller Bearing
4	入力軸 Input Shaft	15 <sup>3</sup>	軸承 Ball Bearing	25	鍵 Key	36	排油栓 Drain Plug
5	鍵 Key	16 <sup>3</sup>	B 齒輪 B Gear	26	C 齒輪 C Gear	37	內六角螺絲 Hex Socket Cap Screw
6	軸承 Bearing	17 <sup>3</sup>	鍵 Key	27	軸承 Bearing	38	下蓋 Cover
7	S 扣環 S Snap Ring	18 <sup>3</sup>	E 齒輪 E Gear	28	S 扣環 S Snap Ring	39	油鏡 Oil Gauge
8	R 扣環 R Snap Ring	19 <sup>3</sup>	軸承 Bearing	29	密式油封 Oil Seal	40	出力軸蓋 Output Shaft Cover
9	A 齒輪 A Gear	20 <sup>3</sup>	R 扣環 R Snap Ring	30	鍵 Key	41	油封 Oil Seal
10	S 扣環 S Snap Ring	21	密式油封 Oil Seal	31	油封 Oil Seal	42	內六角螺絲 Hex Socket Cap Screw
11	吊環 Hoisting Ring	22	軸承 Bearing	32	滾錐軸承 Taper Roller Bearing		

### 實際減速比對照表 Actual Ratio Table

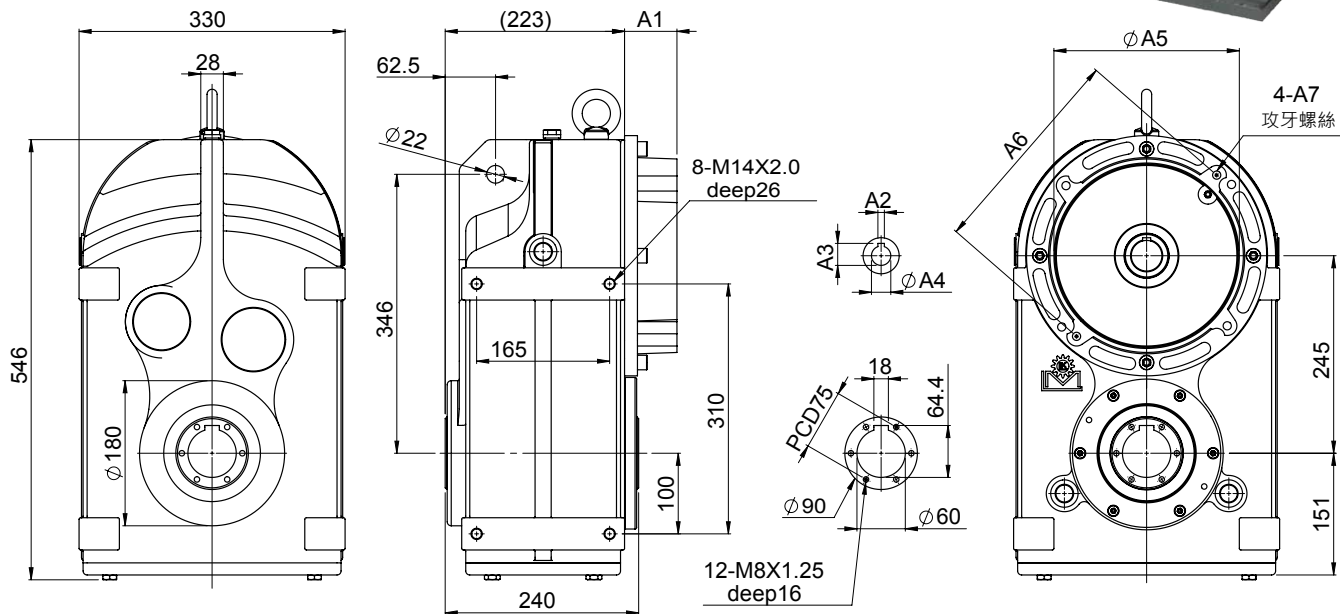
AF087		AF097		AF107	
減速比 Ratio	實際減速比 Actual Ratio	減速比 Ratio	實際減速比 Actual Ratio	減速比 Ratio	實際減速比 Actual Ratio
15	15.18	15	15.20	15	14.83
20	19.78	20	20.00	20	20.00
25	25.00	25	24.71	25	25.00
30	29.29	30	29.29	30	29.64
35	35.00	35	34.59	35	35.00
60	60.28	60	60.80	60	60.00
75	74.38	75	76.00	75	75.00
80	78.57	80	80.00	80	81.05
90	87.13	90	90.11	100	100.00
100	99.29	100	100.00	120	118.57
125	122.50	120	118.57	140	140.00
145	143.50	140	140.00	175	175.00
170	171.50	170	172.94		

# HOLLOW SHAFT GEAR REDUCER SERIES

## 斜齒輪減速機系列



MODEL : AF087



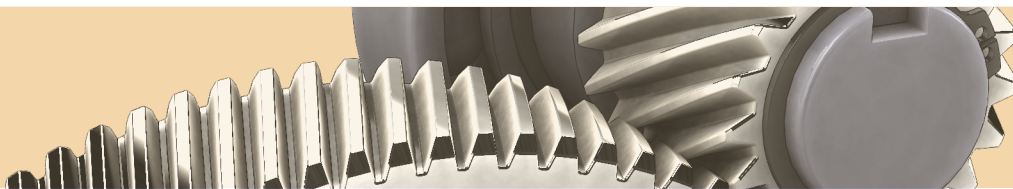
unit:mm

Power	A1	A2	A3	A4	A5	A6	A7	重量 Weight (kg)	油量 Oil (ℓ)
2.2kW · 3.7kW	47	8	31.3	28	180	215	M12x1.75	125	6
5.5kW · 7.5kW	65	10	41.3	38	230	265	M12x1.75	135	

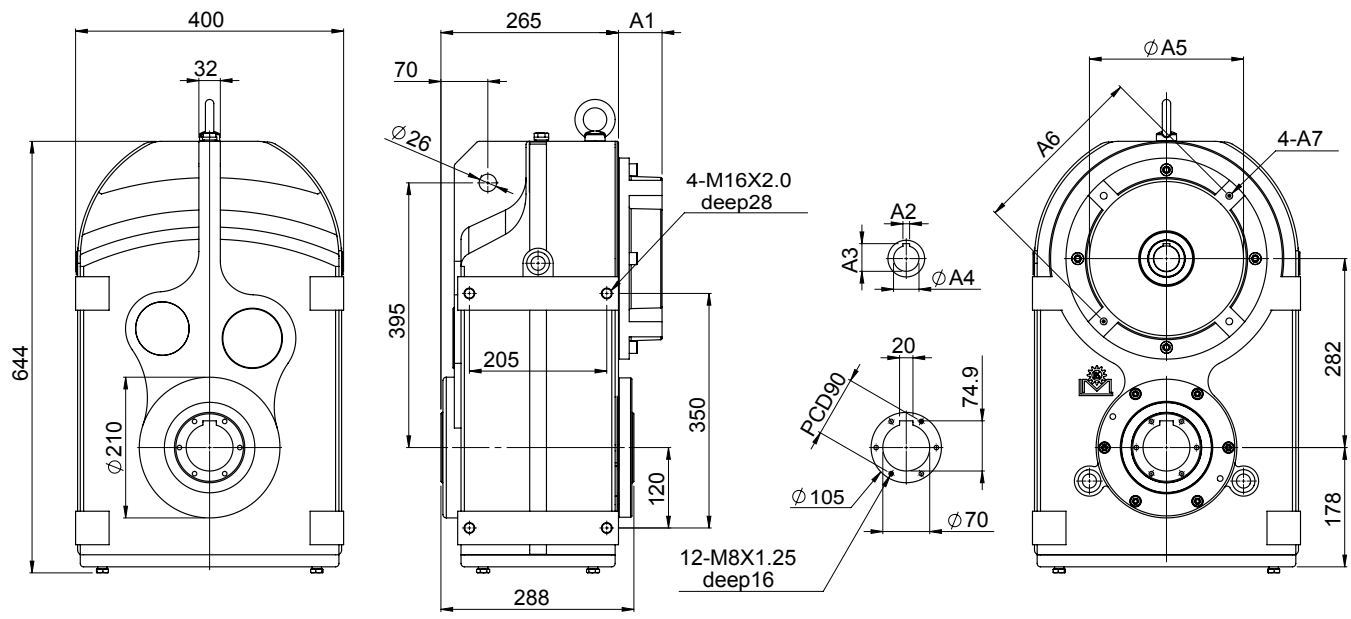
重量不含馬達及潤滑油。The weight does not include motor and lubricant.

OT= 輸出扭矩 Output Torque (Nm) SF= 安全係數 Safety Factor

	減速比 Ratio	2.2kW		3.7kW		5.5kW		7.5kW	
		OT	SF	OT	SF	OT	SF	OT	SF
雙段 2-Stage 出力軸與馬達 旋轉方向相同	15	175	15.49	295	9.21	439	6.2	598	4.54
	20	229	11.89	385	7.07	572	4.75	780	3.49
	25	289	11.29	486	6.71	723	4.51	985	3.31
	30	339	9.60	569	5.71	847	3.84	1154	2.82
	35	405	8.01	680	4.76	1012	3.21	1379	2.35
三段 3-Stage 出力軸與馬達 旋轉方向相反	60	697	4.66	1172	2.77	1742	1.87	2376	1.37
	75	860	3.79	1446	2.26	2150	1.52	2931	1.11
	80	908	3.58	1528	2.13	2271	1.43	3096	1.05
	90	1007	3.23	1694	1.92	2518	1.29	3434	0.95
	100	1148	2.83	1930	1.68	2870	1.13	3913	0.83
	120	1416	2.30	2382	1.37	3540	0.92	4828	0.68
	145	1659	1.96	2790	1.17	4147	0.78	5655	0.57
170	1983	1.64	3334	0.97	4956	0.65	6759	0.48	



**MODEL : AF097**



unit:mm

Power	A1	A2	A3	A4	A5	A6	A7	重量 Weight (kg)	油量 Oil (ℓ)
2.2kW·3.7kW	47	8	31.3	28	180	215	M12x1.75	165	8
5.5kW·7.5kW	65	10	41.3	38	230	265	M12x1.75	175	
11kW·15kW	88	12	45.3	42	250	300	M16x2	180	

重量不含馬達及潤滑油。 The weight does not include motor and lubricant.

OT= 輸出扭矩 Output Torque (Nm) SF= 安全係數 Safety Factor

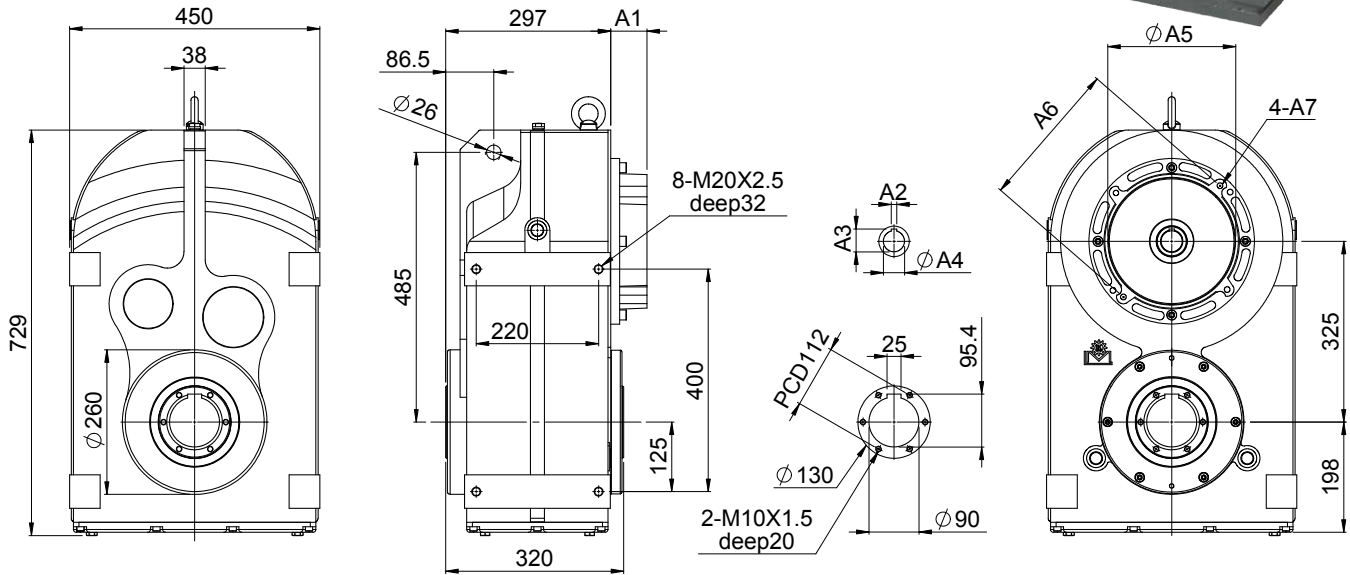
	減速比 Ratio	2.2kW		3.7kW		5.5kW		7.5kW		11kW		15kW	
		OT	SF	OT	SF	OT	SF	OT	SF	OT	SF	OT	SF
雙段 2-Stage 出力軸與馬達 旋轉方向相同	15	176	25.36	296	15.08	439	10.14	599	7.44	879	5.07	1198	3.72
	20	231	19.27	389	11.46	578	7.71	788	5.65	1156	3.85	1576	2.83
	25	286	15.60	480	9.27	714	6.24	974	4.58	1428	3.12	1948	2.29
	30	339	15.70	569	9.33	847	6.28	1154	4.60	1693	3.14	2309	2.30
	35	400	12.62	673	7.50	1000	5.05	1363	3.70	1999	2.52	2726	1.85
三段 3-Stage 出力軸與馬達 旋轉方向相反	60	703	7.41	1182	4.41	1757	2.96	2396	2.17	3514	1.48	4792	1.09
	75	879	6.09	1478	3.62	2196	2.43	2995	1.79	4393	1.22	5990	0.89
	80	925	5.63	1555	3.35	2312	2.25	3153	1.65	4624	1.13	6306	0.83
	90	1042	5.10	1752	3.03	2604	2.04	3551	1.50	5209	1.02	7103	0.75
	100	1156	4.63	1944	2.75	2890	1.85	3941	1.36	5780	0.93	7882	0.68
	120	1371	3.88	2305	2.31	3427	1.55	4673	1.14	6854	0.78	9346	0.57
	140	1618	3.12	2722	1.85	4046	1.25	5517	0.91	8092	0.62	11035	0.46
170	1999	2.52	3362	1.50	4998	1.01	6816	0.74	9996	0.50	13631	0.37	

# HOLLOW SHAFT GEAR REDUCER SERIES

## 斜齒輪減速機系列



MODEL : AF107



unit:mm

Power	A1	A2	A3	A4	A5	A6	A7	重量 Weight (kg)	油量 Oil (ℓ)
5.5kW·7.5kW	65	10	41.3	38	230	265	M12 x 1.75	195	10
11kW·15kW	88	12	45.3	42	250	300	M16 x 2	200	
18.7kW·22kW	87	14	51.5	48	300	350	M16 x 2	210	

重量不含馬達及潤滑油。 The weight does not include motor and lubricant.

OT= 輸出扭矩 Output Torque (Nm) SF= 安全係數 Safety Factor

	減速比 Ratio	5.5kW		7.5kW		11kW		15kW		18.5kW		22kW	
		OT	SF	OT	SF	OT	SF	OT	SF	OT	SF	OT	SF
雙段 2-Stage 出力軸與馬達 旋轉方向相同	15	429	14.70	584	10.78	857	7.35	1,169	5.39	1,442	4.37	1,714	3.68
	20	578	10.90	788	8.00	1,156	5.45	1,576	4.00	1,944	3.24	2,312	2.73
	25	723	8.72	985	6.40	1,445	4.36	1,971	3.20	2,430	2.59	2,890	2.18
	30	867	7.17	1,182	5.26	1,734	3.58	2,365	2.63	2,916	2.13	3,468	1.79
	35	1,012	7.39	1,379	5.42	2,023	3.69	2,759	2.71	3,402	2.20	4,046	1.85
三段 3-Stage 出力軸與馬達 旋轉方向相反	60	1,734	3.65	2,365	2.68	3,468	1.83	4,729	1.34	5,833	1.09	6,936	0.95
	75	2,168	3.51	2,956	2.57	4,335	1.75	5,912	1.29	7,291	1.04	8,670	0.88
	80	2,342	3.22	3,194	2.36	4,685	1.61	6,388	1.18	7,879	0.96	9,370	0.81
	100	2,890	2.62	3,941	1.92	5,780	1.31	7,882	0.96	9,721	0.78	11,560	0.65
	120	3,427	2.18	4,673	1.60	6,854	1.09	9,346	0.80	11,526	0.65	12,377	0.54
	140	4,046	1.57	5,517	1.15	8,092	0.78	11,035	0.57	13,610	0.47	16,184	0.39
	175	5,058	1.23	6,897	0.90	10,115	0.62	13,794	0.45	17,012	0.37	20,231	0.31





# SOG

## Features of SOG Series


### SOG 系產品特性

- ◆ 安裝便利，無方向限制。  
Easy to install, Directions are not limited.
- ◆ 安裝、調整維護容易。  
Easy to install and maintain.
- ◆ 直裝以中空軸傳動，減少零配件。  
Speed reducers are mounted directly on the driven shaft, number of parts and fittings are reduced.

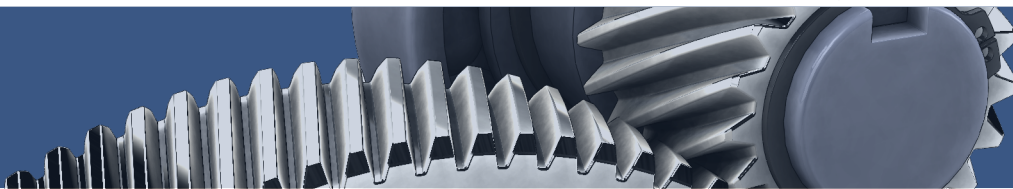


## Indication of Model Numbers

### 機種型號表示

SOG		30		30	1	A
減速機型 Type	型號 Model	單向軸承 One-way bearing		減速比 Ratio	馬力 Horse Power	安裝方向 Installation Direction
SOG	30	□ : 無 none		10	1HP ~ 75HP (4P)	A: 標準使用 Standard Direction
SOGM	35	C: 單向順時針 One-way clockwise		15		B: 倒吊安裝 Reverse Installation
	40	R: 單向逆時針 One-way counterclockwise		20		C: 水平 - 入力在下 Horizontal type - Input shaft below
	45			25		D: 水平 - 入力在上 Horizontal type - Input shaft above
	50			30		
	55					
	60					
	65					
	75					
	85					
	95					
	105					

◆ 如需其他減速比，請與我們連絡。 For special ratio, please contact us.



## ■ 安裝方向 Installation Direction

● 油面計 Oil Indicator

▼ 注油栓 Oil Plug

⚡ 排油栓 Oil Drain Plug

◆ 正常的使用方向可以使減速機保持較高的壽命。

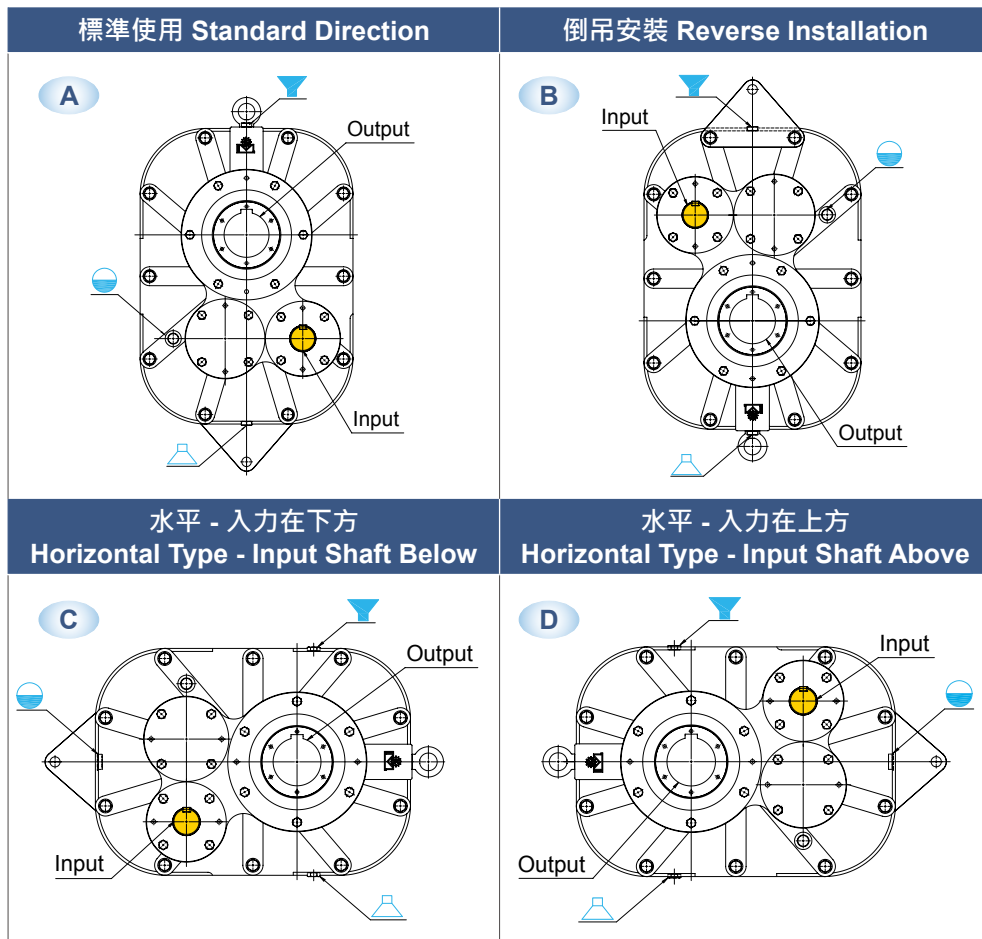
The life time of gear reducer can be prolonged in proper direction.

◆ 安裝時請注意油面計、注油栓及排油栓的位置以便日後維護。

Please note the positions of oil gauge, oil filling plug and oil drain plug to facilitate the maintenance afterwards.

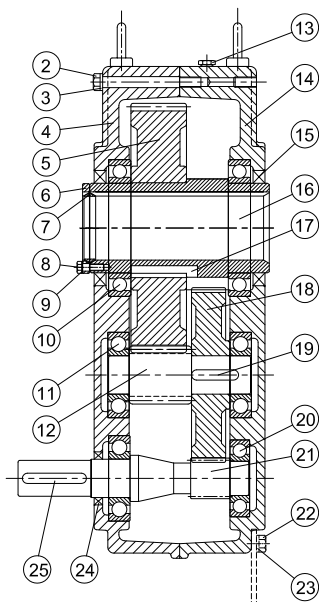
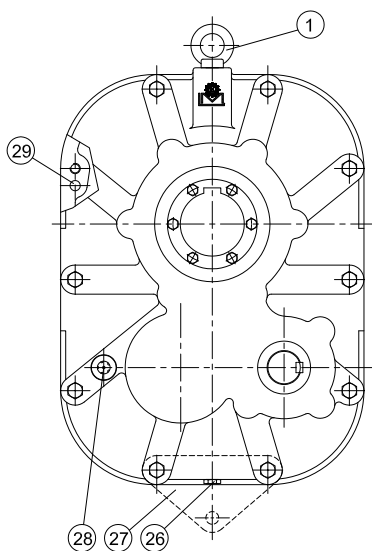
◆ 減速機使用方向特殊時，請與我們連繫。

For special installation direction, please contact us.



## 零件組合圖 System Drawing

MODEL : SOG



NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	吊環	Hoisting Ring	5	D 齒輪	D Gear
2	六角頭螺絲	Hex Head Screw	※6	迫緊片	Packing Sheet
3	彈簧華司	Spring Washer	※7	迫緊環	Packing Ring
4	齒輪箱 (左)	Housing Shell (Left)	8	六角頭螺絲	Hex Head Screw
			9	彈簧華司	Spring Washer
			10	滾珠軸承	Ball Bearing
			11	滾珠軸承	Ball Bearing
			12	C 齒輪軸	C Gear Shaft
			13	注油栓	Oil Plug
			14	齒輪箱 (右)	Housing Shell (Right)
			15	油封	Oil Seal
			16	出力軸	Output Shaft
			17	單圓鍵	Key
			18	B 齒輪	B Gear
			19	單圓鍵	Key
			20	滾珠軸承	Ball Bearing
			21	A 齒輪軸	A Gear Shaft
			22	六角頭螺絲	Hex Head Screw
			23	彈簧華司	Spring Washer
			24	油封	Oil Seal
			25	雙圓鍵	Key
			26	洩油栓	Drain Plug
			27	固定片	Setting Plate
			28	油鏡	Oil Gauge
			29	固定梢	Locating Pin

※ 選配品 Optional Accessories

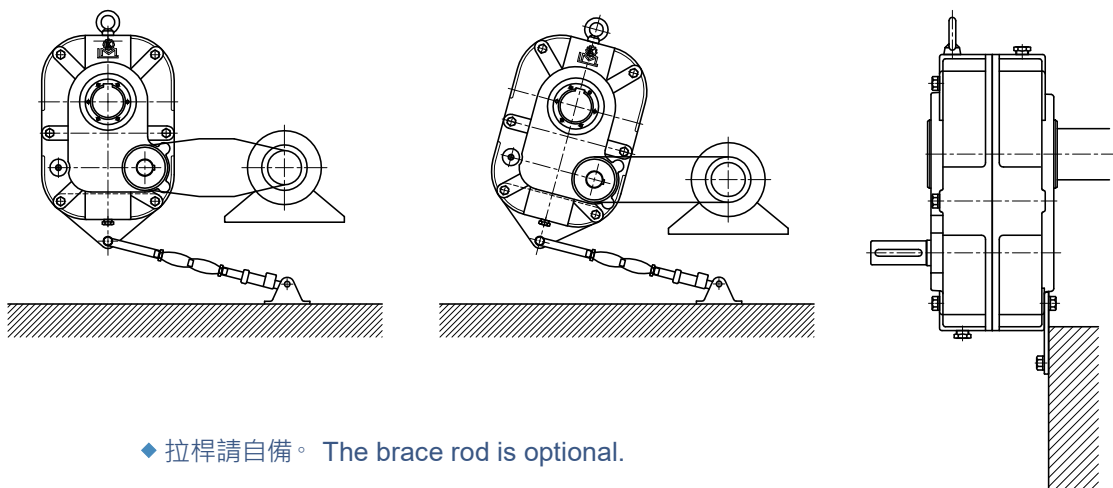
# SHAFT-MOUNTED GEAR REDUCER SERIES

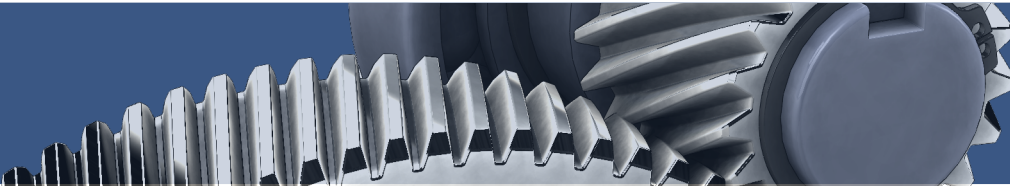
## 軸上型齒輪減速機系列

### 實際減速比對照表 Actual Ratio Table ( SOG & SOGM )

SOG & SOGM				SOG & SOGM				SOG & SOGM				SOG						
型號 Model	馬力 HP (4P)	減速比 Ratio	實際減速比 Actual Ratio	型號 Model	馬力 HP (4P)	減速比 Ratio	實際減速比 Actual Ratio	型號 Model	馬力 HP (4P)	減速比 Ratio	實際減速比 Actual Ratio	型號 Model	馬力 HP (4P)	減速比 Ratio	實際減速比 Actual Ratio			
30	1	10	10.15	50	5	10	9.99	65	7 1/2	10	10.16	85	25	10	10.52			
		15	15.22			15	14.78			15	14.60			15	14.51			
		25	25.00			20	20.02			20	20.00			20	19.59			
		30	29.60			25	25.00			25	25.00			25	25.04			
35	2	10	10.00			30	29.60			30	29.60			30	29.72	30	10	10.52
		15	15.00			55	5			10	9.99			10	10.16		15	14.51
		20	20.18	15	14.78				15	14.60	20		19.59					
		25	25.00	20	20.02				20	20.00	25		25.04					
30	30.00	25	25.00	25	25.00				25	25.04								
40	2	10	10.09	30	29.60				75	10	10		10.16	95	40		20	19.82
		15	15.00	60	7 1/2						15		14.60			25	24.44	
		20	20.18			20	20.00				30		29.84					
		25	25.00			25	25.00	20			19.82							
30	30.00	30	29.60			30	29.84											
45	3	10	10.15			10	10.16	105			15	10	10.00			60	15	14.97
		15	15.22			15	14.60		15	15.00		20	19.87					
		20	19.74	20	20.00	20	20.00		25	24.86								
		25	25.00	25	25.00	25	25.00		30	29.86								
		30	29.61	30	29.60	30	29.60		30	29.60		75	15	14.97				
													20	19.87				
											25	24.86						
											30	29.86						
											15	14.97						
											20	19.87						
											25	24.86						
											30	29.86						

### 拉桿式固定片使用方式 Example for Brace Rod Used

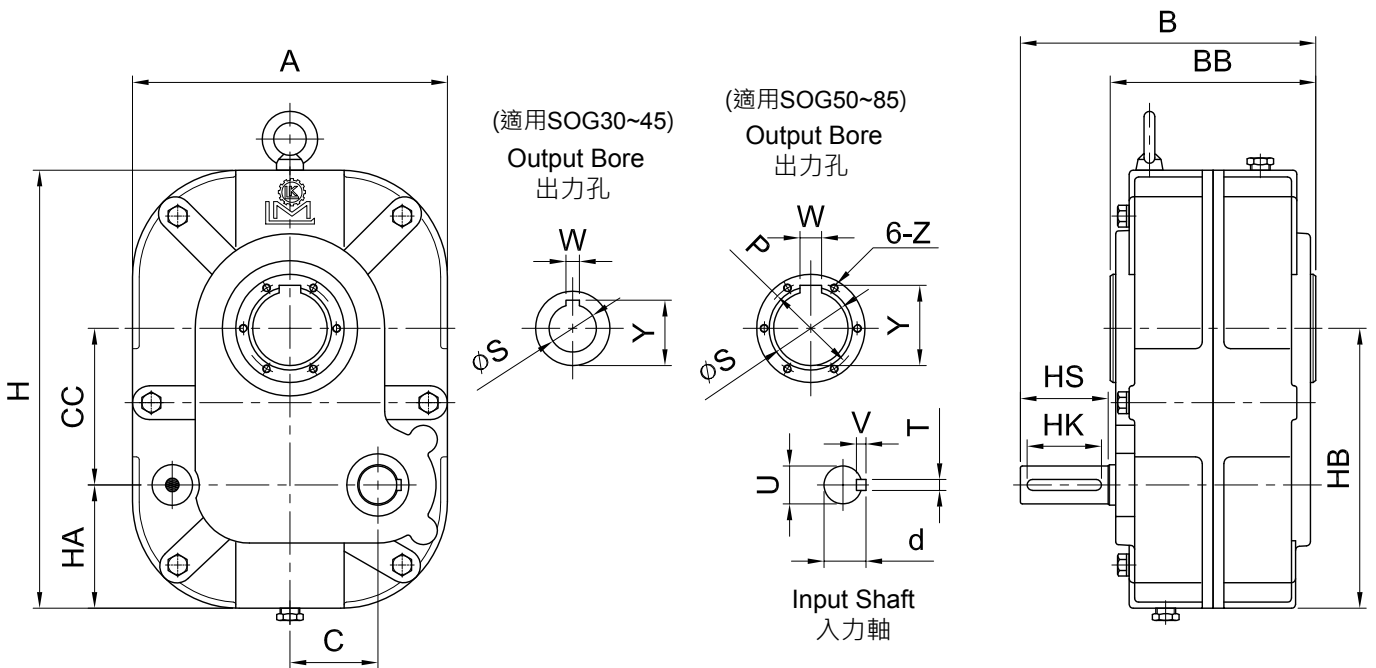




**MODEL : SOG**

RATIO : 10, 15, 20, 25, 30

馬力 (HP) : 1HP ~ 75HP



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	A	B	BB	C	CC	H	HA	HB	入力軸 Input Shaft				出力孔 Output Bore				重量 Weight (kg)	油量 Oil (ℓ)	
											HS	U	d	TxVxHK	S	W	Y	P			Z
30	1	10~30	166	154	110	49.5	81	233	69	150	45	19	21.5	6x6x35	30	8	33.3	-	-	15	0.4
35	2	10~30	176	165.5	117	52.5	87	247	71	158	50	24	27	8x7x40	35	10	38.3	-	-	17	0.8
40	2	10~30	176	165.5	117	52.5	87	247	71	158	50	24	27	8x7x40	40	10	43.3	-	-	19	0.8
45	2.3	10~30	210	198	132	58	104	288	77	181	65	28	31	8x7x55	45	12	48.3	-	-	28	1
50	5	10~30	233	218.5	152	65	116	324	91	207	65	28	31	8x7x55	50	14	53.8	66	M6	37	1.3
55	5	10~30	233	218.5	152	65	116	324	91	207	65	28	31	8x7x55	55	16	59.3	69	M6	36	1.4
60	7 1/2 10	10~30 10~30	276	241.5	165	78.5	140	380	101	241	75	32	35	10x8x65	60	16	64.3	80	M8	58	3
65	7 1/2 10	10~30 10~30	276	241.5	165	78.5	140	380	101	241	75	32	35	10x8x65	65	16	69.3	82	M8	57	3
75	15-20	10~30	355	295	210	84	168	480	137	305	85	42	45	12x8x75	75	20	79.9	92	M8	121	3.9
85	25-30	10~30	380	329	244	108	184	530	156	340	85	42	45	12x8x75	85	24	91.5	104	M8	173	7
95	40-50	20~30	450	398	286	119	219	625	181	400	100	50	53.5	14x9x90	95	24	101.5	120	M8	257	7.5
105	60-75	15~30	550	462	318	133	253	740	212	465	120	60	64	16x10x110	105	28	111.4	130	M10	420	14

重量不含馬達及潤滑油。 The weight does not include motor and lubricant.



# SHAFT-MOUNTED GEAR REDUCER SERIES

## 軸上型齒輪減速機系列

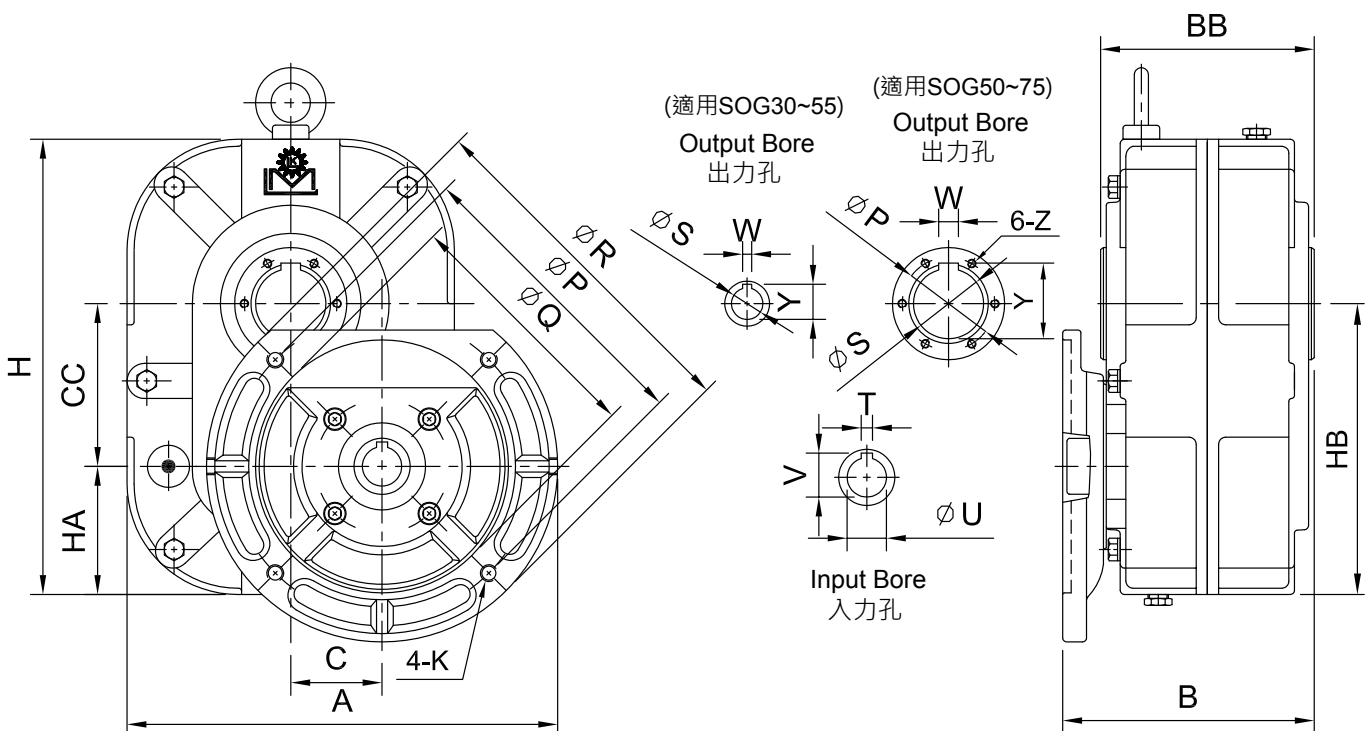
### MODEL : SOGM

RATIO : 10, 15, 20, 25, 30

馬力 (HP) : 1HP ~ 20HP



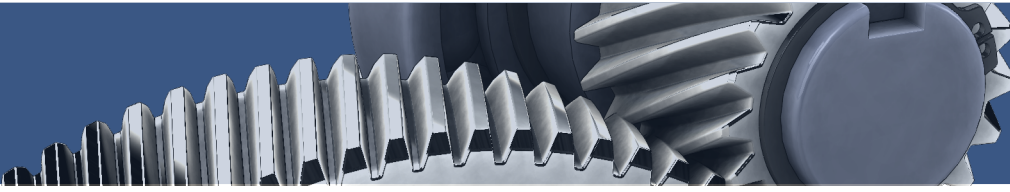
◆ SOGM 沒有單向設計，若需要單向請選擇 SOG60#~105# 的型號。



unit: mm

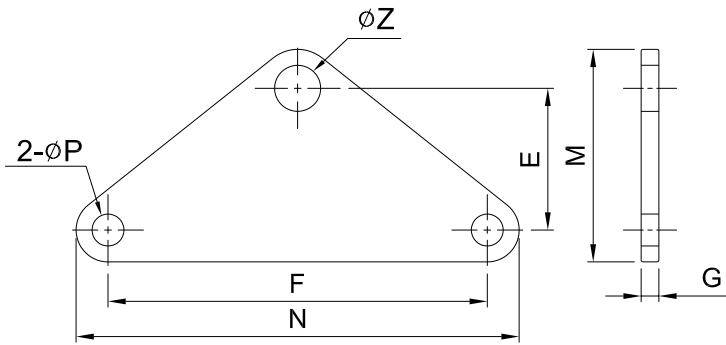
型號 Model	馬力 HP (4P)	減速比 Ratio	A	B	BB	C	CC	HA	HB	H	馬達盤 IEC 及入力孔 Motor Flange & Input Bore								出力孔 Output Bore					重量 Weight (kg)	油量 Oil (ℓ)
											P	Q	R	K	V	T	U	S	W	Y	P	Z			
30	1	10~30	233	135	110	49.5	81	69	150	233	165	130	200	M10	21.8	6	19	30	8	33.3	-	-	15	0.4	
35	2	15~30	241	142	117	52.5	87	71	158	247	165	130	200	M10	27.3	8	24	35	10	38.3	-	-	17	0.8	
40	2	10~30	241	142	117	52.5	87	71	158	247	165	130	200	M10	27.3	8	24	40	10	43.3	-	-	19	0.8	
45	2 3	10~30	263 288	157 160	132	58	104	77	181	288	165 215	130 180	200 250	M10 M12	27.3 31.3	8 8	24 28	45	12	48.3	-	-	30	1	
50	5	15~30	307	180	152	65	116	91	207	324	215	180	250	M12	31.3	8	28	50	14	53.8	66	M6	39	1.3	
55	5	15~30	307	180	152	65	116	91	207	324	215	180	250	M12	31.3	8	28	55	16	59.3	69	M6	38	1.4	
60	7 1/2 10	15~30 15~30	367	201	165	78.5	140	101	241	380	265	230	300	M12	41.3	10	38	60	16	64.3	80	M8	65	3	
65	7 1/2 10	15~30 15~30	367	201	165	78.5	140	101	241	380	265	230	300	M12	41.3	10	38	65	16	69.3	82	M8	64	3	
75	15~20	10~30	436	243	210	84	168	137	305	480	300	250	348	M16	45.3	12	42	75	20	79.9	92	M8	131	3.9	

重量不含馬達及潤滑油。 The weight does not include motor and lubricant.



## ■ 選配品 Optional Accessories ( 適用 SOG 系列 )

### 固定片 Setting Plate

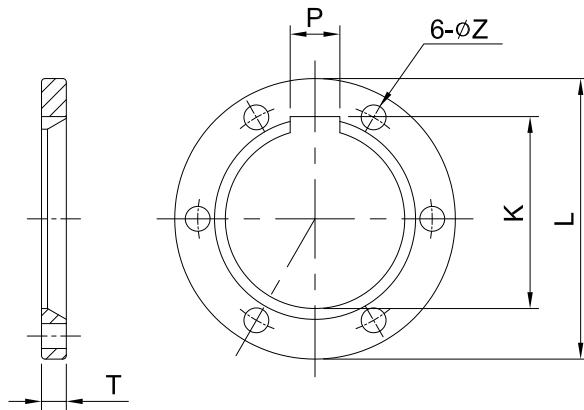


- ◆ 每台減速機出貨時，附一片固定片。  
We will provide a setting plate with every gear reducer.

unit: mm

型號 Model	F	N	E	M	G	Z	P
SOG-30	107	125	40	60	5	13	9
SOG-35	116	136	45	67	5	13	9
SOG-40	116	136	45	67	5	13	9
SOG-45	146	170	56	80	5	13	11
SOG-50	166	192	70	96	5	13	11
SOG-55	166	192	70	96	5	13	11
SOG-60	204	236	70	100	6	15	13
SOG-65	204	236	70	100	6	15	13
SOG-75	130	165	56	90	6	15	13
SOG-85	140	174	65	99	8	16	16
SOG-95	175	215	100	140	8	20	15
SOG-105	205	275	100	170	8	21	21

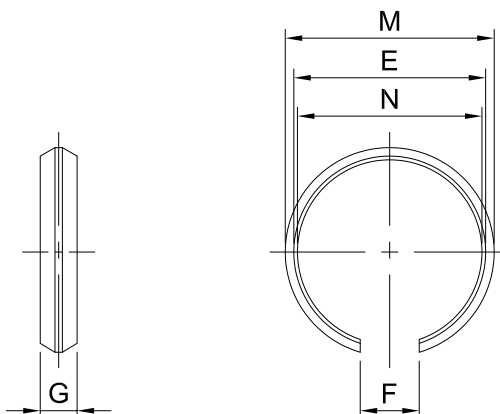
### 迫緊片 Packing Sheet



unit: mm

型號 Model	T	K	L	P	Z
SOG-50	7	54.1	79	14	7
SOG-55	7	59.5	80	16	7
SOG-60	8	64.6	94	16	9
SOG-65	8	69.5	96	16	9
SOG-75	8	80.1	106	20	9
SOG-85	8	93.5	119	24	9
SOG-95	10	103.5	139	24	9
SOG-105	10	111.9	149	28	11

### 迫緊環 Packing Ring



unit: mm

型號 Model	G	N	E	M	F
SOG-50	10	50	52	56.6	16
SOG-55	10	55	57	61.6	18
SOG-60	12	60	62	67.8	18
SOG-65	12	65	67	72.8	18
SOG-75	12	75	77	82.8	22
SOG-85	14	85	87	93.9	26
SOG-95	15	95	97	104.5	26
SOG-105	15	105	107	114.5	30

# BGT



■ 實際減速比對照表 Actual Ratio Table

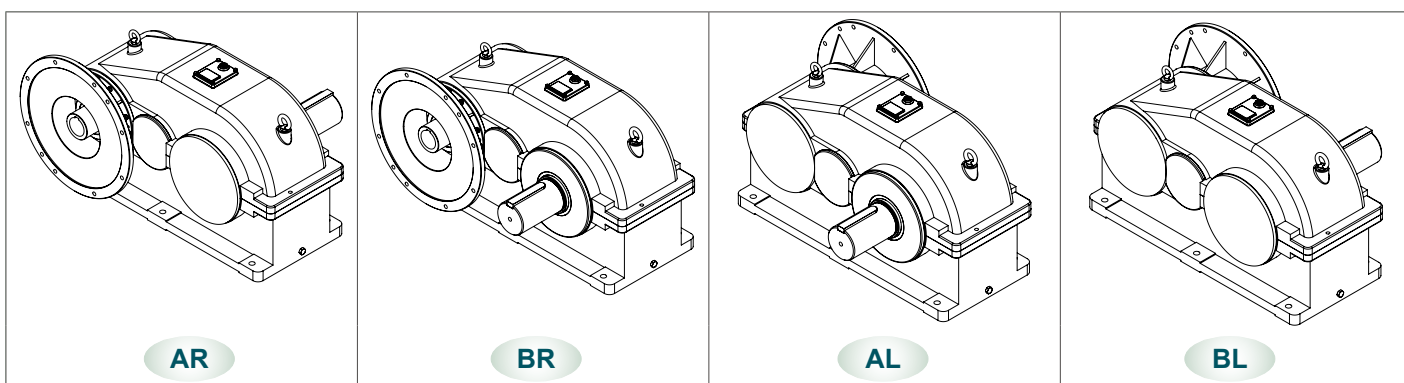
型號 Model	功率 Power HP (4P)	減速比 Ratio	實際減速比 Actual Ratio
150	75 / 100	15	14.36
		20	20.8
		30	29.36
	125	10	10.147
		20	20.8
		30	29.36
150	10	10.147	
	20	20.45	
	30	29.36	

## Indication of Model Numbers

### 機種型號表示

BGT	150	20	125	M	A	R
減速機型 Type	型號 Model	減速比 Ratio	馬力 Horse Power	入力表示 Input	安裝方向 Installation Direction	軸向 Shaft Direction
BGT	150	10 15 20 30	75HP 100HP 125HP 150HP  (4P)	M: 附馬達 Motor D: 入力軸式 Input Shaft B: 入力法蘭 Input Flange	A B	R: 右軸 Right Shaft L: 左軸 Left Shaft

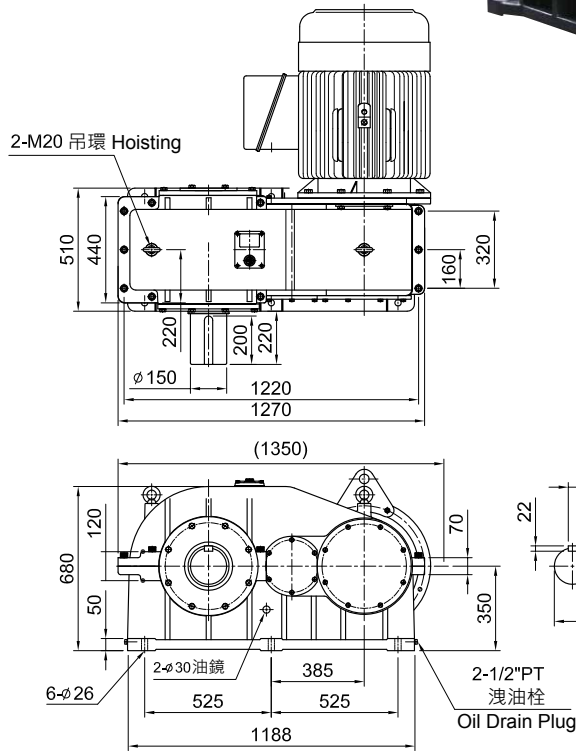
## ■ 安裝方向 Installation Direction



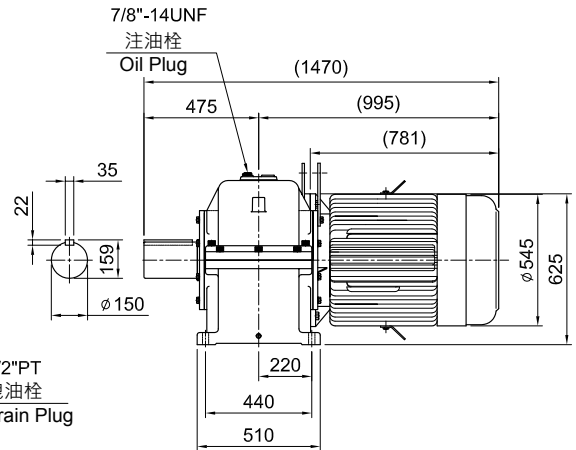
**MODEL : BGT150 □ M**

RATIO : 10, 15, 20, 30

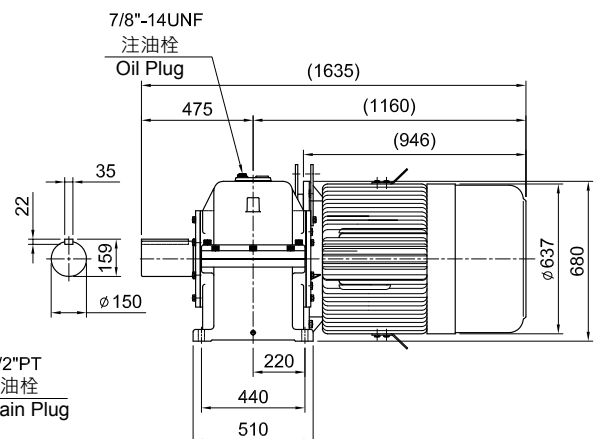
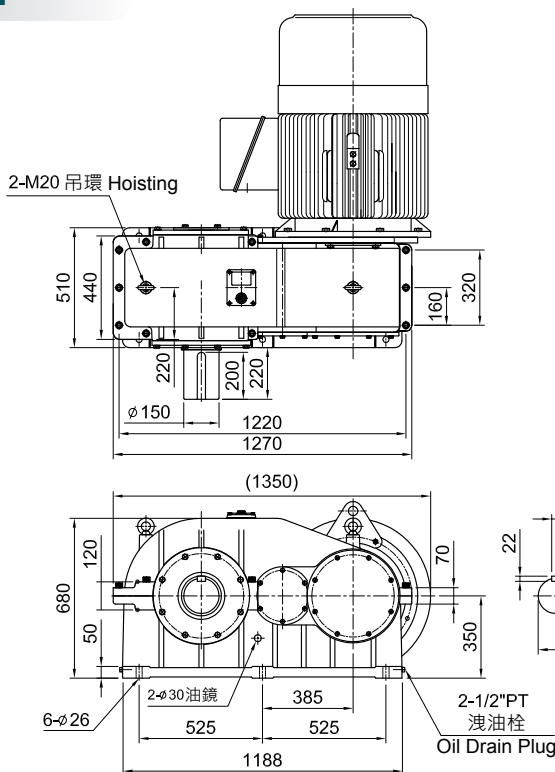
**125HP x 4P**



◆ 大型馬達 (75HP、100HP、125HP、150HP) 軸心處若有排油孔，會產生漏油現象，建議使用 BGT150 □ B 自裝式或 BGT150 □ D 雙軸式。



**150HP x 4P**



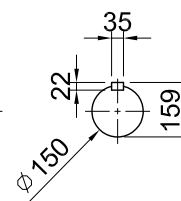
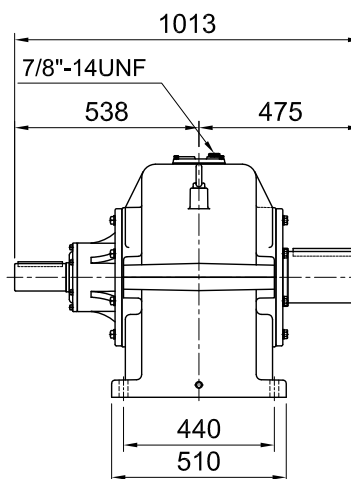
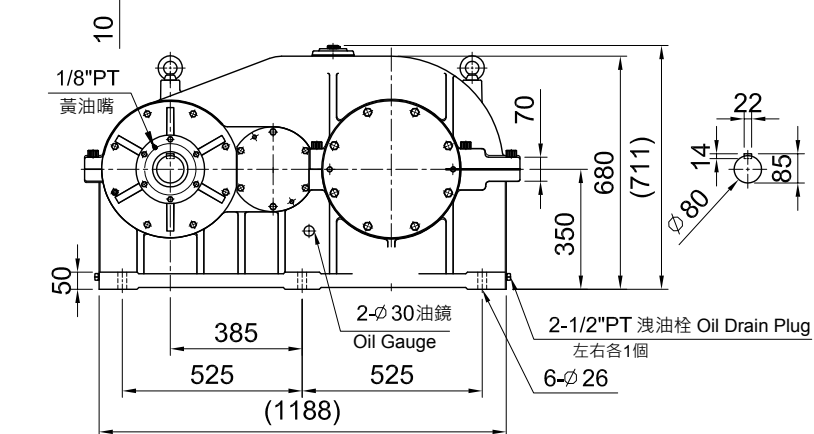
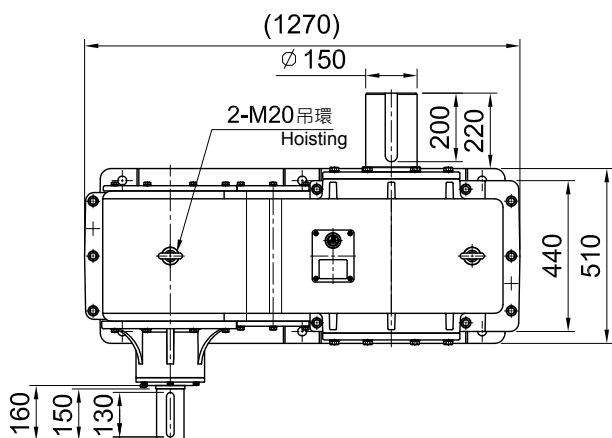
# GEARBOX SERIES

## 大型齒箱系列

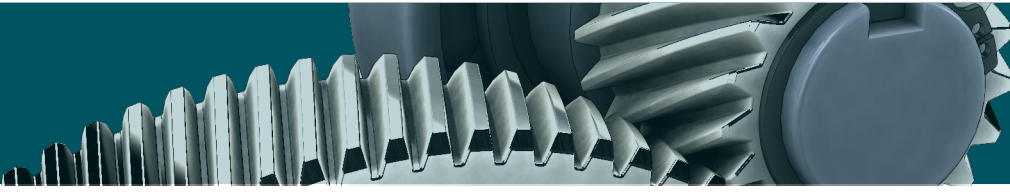
MODEL : BGT150 □ D

RATIO : 10, 15, 20, 30

馬力 (HP) : 75, 100, 125, 150



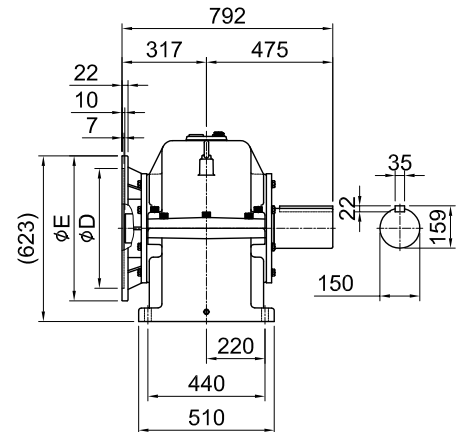
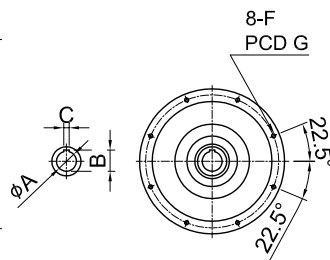
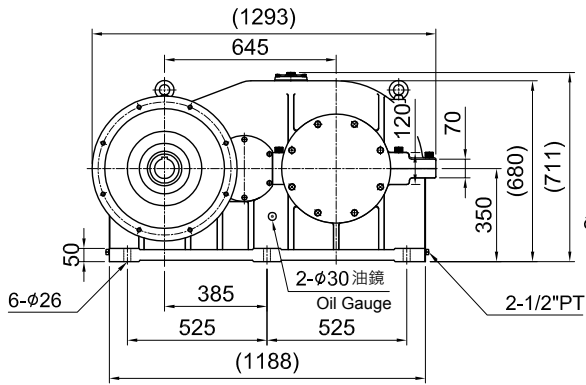
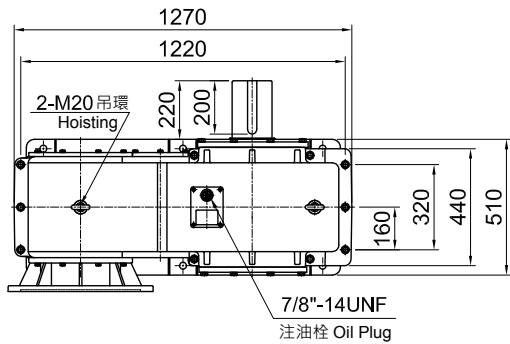




**MODEL : BGT150**  B

RATIO : 10, 15, 20, 30

馬力 (HP) : 75, 100, 125, 150



unit: mm

馬力 HP	A	B	C	D	E	F	G	重量 Weight (kg)
75	65	69.3	18	450	545	M16	500	
100	75	79.9	20	450	545	M16	500	
125	75	79.9	20	450	545	M16	500	
150	85	90.4	22	550	645	M20	600	

# GEAR REDUCER SERIES

## 齒輪減速機一般故障原因及改善方法

### Solutions and Reasons for Gear Reducer General Faults

故障情形 Fault Description	故障原因 Reasons	解決方法 Solutions
減速機過熱 Over-heating	<ul style="list-style-type: none"> <li>◆超負荷運轉</li> <li>◆油封過度磨擦</li> <li>◆出力軸與傳動裝置連接不當</li> <li>◆衝擊荷重大</li> <li>◆ Overload.</li> <li>◆ Over friction of oil seal.</li> <li>◆ Improper connection between driving shaft and the transmission device.</li> <li>◆ Large impact loading.</li> </ul>	<ul style="list-style-type: none"> <li>◆調整至適當負荷</li> <li>◆在油封處滴潤滑油</li> <li>◆調整至適當位置</li> <li>◆更換較大型號減速機</li> <li>◆ Adjust to proper loading.</li> <li>◆ Drop lubricat at oil seal.</li> <li>◆ Adjust to proper position.</li> <li>◆ Use larger reduction gears.</li> </ul>
減速機雜音 Noise	<ul style="list-style-type: none"> <li>◆超負荷運轉</li> <li>◆軸承損傷或間隙過大</li> <li>◆潤滑油不足或劣化</li> <li>◆出力軸與傳動裝置連接不當</li> <li>◆螺栓鬆脫</li> <li>◆傳動裝置固定不良</li> <li>◆ Overload.</li> <li>◆ Bearing damaged or too large clearance.</li> <li>◆ Lubricant oil shortage or deterioration.</li> <li>◆ Shaft and the transmission device improper connection between driving.</li> <li>◆ Bolt loose.</li> <li>◆ Improper installation of transmission device.</li> </ul>	<ul style="list-style-type: none"> <li>◆調整至適當負荷</li> <li>◆更換軸承</li> <li>◆依指示加入適量潤滑油</li> <li>◆調整至適當位置</li> <li>◆旋緊螺栓</li> <li>◆傳動裝置固定</li> <li>◆ Adjust to proper loading.</li> <li>◆ Replace bearing.</li> <li>◆ Fill in adequate lubricant oil as indication.</li> <li>◆ Adjust to proper position.</li> <li>◆ Tighten bolt.</li> <li>◆ Fix transmission device properly.</li> </ul>
漏油 Oil leakage	<ul style="list-style-type: none"> <li>◆油封損傷</li> <li>◆油量過多</li> <li>◆螺絲鬆脫</li> <li>◆外殼破裂</li> <li>◆ Oil seal damaged.</li> <li>◆ Too much oil.</li> <li>◆ Screw loose.</li> <li>◆ Outer shell fractured.</li> </ul>	<ul style="list-style-type: none"> <li>◆更換油封</li> <li>◆依指示加入適量潤滑油</li> <li>◆旋緊螺栓</li> <li>◆更換外殼</li> <li>◆ Replace oil seal.</li> <li>◆ Fill in adequate lubricant oil as dication.</li> <li>◆ Tighten screw.</li> <li>◆ Replace outer shell.</li> </ul>
出力軸不轉 Output shaft cannot rotate	<ul style="list-style-type: none"> <li>◆超負荷運轉</li> <li>◆軸承損傷</li> <li>◆異物嵌入</li> <li>◆齒輪磨損</li> <li>◆馬達損壞</li> <li>◆配線錯誤</li> <li>◆衝擊荷重過大</li> <li>◆ Overload.</li> <li>◆ Bearing damaged.</li> <li>◆ Invasion by foreign objects.</li> <li>◆ Gear worn-out.</li> <li>◆ Motor out of order.</li> <li>◆ Incorrect wiring.</li> <li>◆ Large impact loading.</li> </ul>	<ul style="list-style-type: none"> <li>◆調整至適當負荷</li> <li>◆更換軸承</li> <li>◆取出異物</li> <li>◆更換齒輪</li> <li>◆修復馬達</li> <li>◆依指示配線</li> <li>◆更換較大型號減速機</li> <li>◆ Adjust to proper loading.</li> <li>◆ Replace bearing</li> <li>◆ Take out foreign objects.</li> <li>◆ Replace gear.</li> <li>◆ Repair motor</li> <li>◆ Wiring as indication.</li> <li>◆ Use larger sized gear reducer.</li> </ul>

以上所列為一般故障原因，如有其它故障情形時，請與本公司聯絡。

The above items are general fault descriptions. In case of other kinds of faults, please contact with us.

# WORM GEAR REDUCERS

蝸輪減速機



# Worm Reducer Series

## Features of Worm Reducer Series

### 蝸輪減速機系列產品特性

#### 出力軸

中碳鋼 S45C，以 CNC 車床精密加工及研磨。

#### 蝸輪

鋁青銅 ALBC3 & FC20，使用成形專用刀具切削及電腦輔助設計，摩擦係數小，使用壽命長。

#### 出力軸蓋

鑄鐵 FC20 或 鑄鋁 AL，以 CNC 車床精密加工。

#### 蝸輪箱

鑄鐵 FC20，本體一體鑄造，強度強，外型美觀散熱效果佳。

#### 蝸桿

中碳鋼 S45C 或 SCM21 精密滾齒機切削，熱處理後經齒形研磨，故齒形正確，齒面平滑，運轉時效率高，無雜音。

#### 右入力軸蓋

鑄鐵 FC20 或 鑄鋁 AL。

#### 左入力軸蓋

鑄鐵 FC20 或 鑄鋁 AL。

#### Output Shaft

Medium carbon steel S45C, precision process and grinding with CNC lathe.

#### Worm Wheel

Aluminum brass ALBC3 & FC20, shaping cutter and computer auxiliary design low friction coefficient, durability in use.

#### Output Shaft Cover

Cast iron FC20 or cast aluminum AL, precision process with CNC.

#### Outer Shell

Cast iron FC20, one-line body, high intensity, elegant appearance, remarkable radiating effect.

#### Worm Shaft

Medium carbon steel S45C or SCM21, Cut by precision tooth-rolling machine; after being heated, grind the tooth so that the tooth is correct and smooth; high efficiency in operation; without noise.

#### Input Shaft Cover

Cast iron FC20 or cast aluminum AL.

#### Input Shaft Cover

Cast iron FC20 or cast aluminum AL.



## Indication of Model Numbers

### 機種型號表示

<b>HW</b>	<b>100</b>	<b>60</b>	<b>1</b>	<b>R</b>
機型 Type	型號 Model	減速比 Ratio	馬力 Horse Power	軸向 Shaft Direction

## 機型

依外型傳動方式不同而區分：

一般而言，機型代號內

有 M 者為馬達直結式機種

有 O 者為出力軸中空機種

有 H 者為二段式蝸輪減速機 ( 蝸輪 + 蝸輪 )

有 G 者為二段式蝸輪減速機 ( 齒輪 + 蝸輪 )

## 型號

由入力軸中心至出力軸中心距離定

出，型號愈大體積愈大。

## 減速比

### 單段蝸輪減速機

一般速比：1/10 1/15 1/20 1/30 1/40 1/50 1/60

特殊速比：1/5 1/25 1/80

### 雙段蝸輪減速機

蝸輪 + 蝸輪：1/100.....1/3600

齒輪 + 蝸輪：1/80.....1/300

蝸輪減速機一般速比大部分為正減速比，但有部份機型非正減速比右表僅供參考，如需正確減速比請與我們連絡。

Most of the general ratio for worm gear reducer is same as actual ratio, but some models are different. The table on the right is for reference. Please contact us if you need actual ratio.

## 馬力

1/8HP~50HP 根據本目錄之馬力、型號選擇表。

## 軸向

R：右軸 ( 腳座貼地面，輸入端面向自己，此時輸出端位於右側 )

L：左軸 ( 腳座貼地面，輸入端面向自己，此時輸出端位於左側 )

V：單入力軸雙出力軸

W：雙入力軸單出力軸

WV：雙入力軸和雙出力軸

S：特殊軸 ( 訂貨時請註明或附圖面 )

旋向：設計上蝸桿使用右旋牙，如需特殊旋向時請註明。

※TW、TMW 系列除外。

## Type

Category by method of transmission

For the general reference：

M: type of motor upright joint

O: type of hollow output shaft

H: type of two-stage worm gear reducer (worm+worm)

G: type of two-stage worm gear reducer (gear+worm)

## Model

The larger the model number (which is identified by the distance from the enter of input shaft to that of output shaft) is, the bigger the machine size is.

## Ratio

### 1-Stage Reduction Worm Reducer

General Ratio：1/10 1/15 1/20 1/30 1/40 1/50 1/60

Special Ratio：1/5 1/25 1/80

### 2-Stage Reduction Worm Reducer

Worm-Worm：1/100.....1/3600

Gear-Worm：1/80.....1/300

型號 Model	速比 Ratio	實際減速比 Actual Ratio	型號 Model	速比 Ratio	實際減速比 Actual Ratio
30	15	1/14.5	250	40	1/41
	30	1/29		50	1/52
70	80	1/78		60	1/61
	100	1/94	300	10	1/10.25
175	50	1/51		15	1/14.33
	200	10		1/10.33	30
30		1/31	40	1/41	
225	15	1/14.5	60	1/63	
			350	10	1/11
				20	1/22
40	1/44				
			50	1/49	

以上型號包含所有機種。

## Horse Power

1/8HP ~ 50HP

## Shaft Direction

R: Right Shaft (when facing input shaft and foot on the ground, output shaft is on the right)

L: Left Shaft (when facing input shaft and foot on the ground, output shaft is on the left)

V: Single Input Shaft & Double Output Shaft

W: Double Input Shaft & Single Output Shaft

WV: Double Input Shaft & Single Output Shaft

S: Special shaft (Please specify your need clearly or attach drawing)

Rotary Direction: The worm shaft is right-hand thread. Please specify if you have special request.

※ Excluding TW and TMW series.



### ■ 減速機之選定 Selection of Worm Reducer

#### 入力軸回轉數 & 出力軸回轉數

最高入力轉速盡量不要超過 2000RPM，一般使用約 600~1800RPM，轉速太高時容易使軸承及蝸輪、蝸桿因高度的磨擦而縮短壽命；轉速過低時可能導致潤滑不足或效率降低，如須使用特別高或低轉速時請註明。

出力軸回轉數 = 入力軸回轉數 ÷ 減速比  
如特別低速回轉時，效率及扭力均會降低，並且使軸承給油較為困難。若須使用時須注意選擇機型及潤滑油。

$$\text{減速比} = \frac{\text{出力軸回轉數}}{\text{入力軸回轉數}} = \frac{60}{1800} = \frac{1}{30}$$

#### 回轉方向 & 軸方向

蝸輪減速機之出力軸回轉方向取決於蝸桿旋牙方向，除特別情形外均使用右旋牙。當入力軸為順時針方向時出力軸為反時針方向，但二段式蝸輪減速機其入力軸與出力軸之回轉方向為同一方向。蝸輪減速機的軸向變化多，使用時請參考本目錄之"軸向選擇"。未註明時以右軸 (R) 為標準。

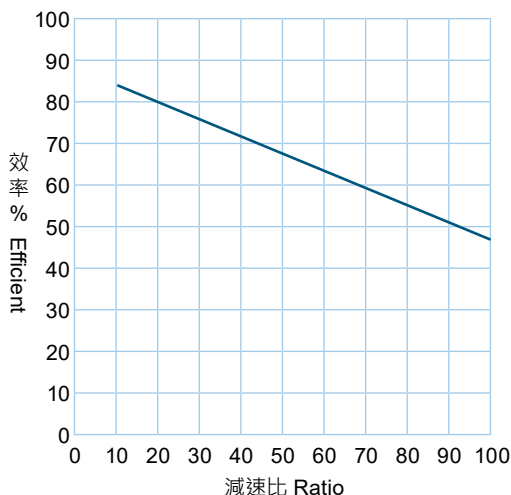
#### 效率

由於減速機內部磨擦的損失，部份能量將轉為熱能消失。

依本目錄之附表所示

$$\text{效率} = \text{出力軸馬力} \div \text{入力軸馬力} \times 100\%$$

蝸輪減速機之效率取決於蝸輪之前進角、週速度、潤滑油、軸承的磨擦及材質的磨擦系數等。右表為效率之大約值，請參考。



#### Revolutions of input shaft and output shaft

With belt-pulley or coupled shaft transmission, the highest input speed should not exceed 2000RPM; the general range is 600-1800RPM. If the revolving speed is too high, the earing will have less life due to over-friction; too low, the lubrication or efficiency will be reducer. Please specify either high or low speed.

output shaft revolution = input shaft revolution x reduction ratio  
In case of any revolution of specially low speed, both the efficiency and torque will be lessened; further, it may be harder to provide oil on the bearing. Be careful to select the model number and lubricant oil.

$$\text{reduction ratio} = \frac{\text{output shaft revolution}}{\text{input shaft revolution}} = \frac{60}{1800} = \frac{1}{30}$$

#### Revolving direction and shaft direction

The revolving direction of output shaft relies on worm thread's direction; right-directed thread is for common use except for special conditions. When input shaft is in clockwise, output shaft is in counterclockwise; pay attention to two-stage worm reducer, the revolving direction of input and output shaft is the same. As a worm reducer has various shaft directions, be sure to see the user's manual titled "choice of shaft directions". For any not specified, refer the right shaft as the standard.

#### Efficiency

Due to the internal fabrication wear, partial energy will be transformed to be heat energy and fade away.

As the appendix shown in this catalog

$$\text{efficiency} = \text{output shaft HP} \div \text{input shaft HP} \times 100\%$$

The efficiency of the worm reducer depends on worm's advancing angle, periodical speed, lubricant oil, bearing friction and materials friction factor. For the approximated value of efficiency, please see the right table.

速比 Ratio	效率 % Efficient
1/10	82 ~ 85%
1/20	78 ~ 82%
1/30	73 ~ 76%
1/40	69 ~ 74%
1/50	67 ~ 72%
1/60	65 ~ 70%

## 馬力

馬力是一種動力的單位，由三個要素所組成。

1. 距離 (公尺 M 或公分 Cm) .....S
2. 重力 (公斤 Kg 或公克) ..... P
3. 時間 (秒 Sec)  $HP=(PxS)/75$

所謂 1 馬力就是在 1 秒的時間將 75Kg 的重物移動一公尺的距離，所以 1 馬力 =75Kg-M/Sec。

1 馬力之減速機可拖多大的力量？要知 1 馬力之馬達其所拖多大之力量時，必定要知道被拖動之機器的速度。1 馬力之馬達在每秒 1M 的速度下可拖動 75Kg 的力量，因馬達須經過減速機及其他傳動機構故實際傳到機器之馬力已不足 1HP，所以 1HP 之馬達在 1M 之速度下，所能拖動之力量，當在 75Kg 以下，其視機械效率而定。如為 1HP 之馬達在拖動每秒 2M 之速度的機器時，則可拖動  $75/2=37.5Kg$  之力量，在每秒 1/2M 之速度時，則可拖動  $75 \div (1/2) = 150kg$  之力量 (機械效率未計算在內) 其他各種場合可依此推算出。

每一型號之減速機皆有適合之馬力，請參考下表

## 使用系數

一般減速機之傳達容量及強度計算係依照每日八小時連續運轉與均一負荷的理想下設計因實際使用的情況不同在瞭解現場使用情況如：是否有反覆啟動、停止或正轉、逆轉、使用的時間、衝擊荷重等必須將使用係數計算在內，依適當的荷重係數來選擇適當的減速機型號，以免誤用過大或過小的減速機。

類別 Type	單段蝸輪減速機 1-Stage Reduction		雙段蝸輪減速機 2-Stage Reduction			
	10 ~ 30	40 ~ 60	蝸輪 - 蝸輪 Worm-Worm		齒輪 - 蝸輪 Gear-Worm	
Ratio Model			100 ~ 900	1000 ~ 3600	80 ~ 160	80 ~ 300
40	1/8	-	-	-	-	-
50	1/4	1/8	-	-	-	-
60	1/2	1/4	1/16	-	-	-
70	1	1/2	1/8	1/16	-	-
80	2	1	1/4	1/8	1	1/2
100	3	2	1/2	1/4	2	1
120	5	3	1	1/2	2	1
135	7 1/2	5	2	1	3	2
155	10	7 1/2	3	2	5	3
175	15	10	5	3	-	-
200	20	15	-	-	-	-
225	25	20	-	-	-	-
250	30	25	-	-	-	-
300	40	30	-	-	-	-
350	50	40	-	-	-	-

## Horse Power

Horse power is the measuring unit of power, consisting of three elements:

- 1.distance (m or cm) S
- 2.gravity ( kg or g ) P
- 3.time (sec)  $HP = ( P \times S )/75$

1HP represents the distance where the load of 75kg in a second is moved,

so 1HP = 75Kg-M/Sec. How much power can a 1HP-reducer pull; which depends on the speed of the machine to be pulled. 1HP-motor is able to pull 75kg in a second 1M. As the motor should pass through the reducer and other transmission mechanism, 1HP is not enough. So the power 1HP motor can pull should be under 75Kg per the speed of 1M, depending on the mechanical efficiency. When 1HP motor pulls the machine with the speed of 2M per second, the pulling power is  $75/2=37.5Kg$ ; with the speed of 1/2M per second, the pulling power is  $75 \div (1/2) = 150Kg$  (the mechanical efficiency is not taken into account). For other events, this formula is applicable. Each reducer should adopt suitable HP, please see the table below.

## Coefficient

For general reducers, the transmitted capacity and intensity are calculated per a continual operation of 8 hour a day and per the ideal conditions of a unified load design. However, for on-site use, it should take such factors into account as: repetitive start-up, stop or obverse, reverse rotation, use time, impact load and the like. Select an appropriate reducer model according to the load coefficient lest improper event should occur.

原動機 Prime Mover	傳動機負荷等級 Driven Machine Load lassification	每日使用時間 Duration Of Service Per Day			
		0.50 hrs	2 hrs	8 -10 hrs	10-24 hrs
電動機 Electric Motor	均一負荷 Uniform	0.80	0.90	1.00	1.25
	中衝擊 Medium Shock	0.90	1.00	1.25	1.50
	重衝擊 Heavy Shock	1.00	1.25	1.50	1.75

★正轉、逆轉或啟動、停止，一小時內達 10 次以上者，請將左表的值乘以 1.2。

For any obverse rotation / reverse rotation or start-up / stop to happen more than 10 times in one hour, multiply the values ( listed in the left table ) by 1.2.

### 減速機之選定 Selection of Worm Reducer

#### 懸掛荷重

懸掛荷重為減速機出力軸，軸端所承受的力量。容許懸掛荷重並非表示減速機不可拖動多大的力量，而只是減速機之使用情況之選擇的依據。

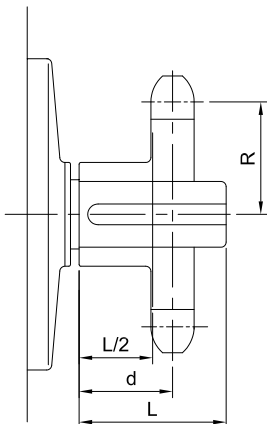
各型減速機在各種使用場合下，皆有一定之容許轉矩， $T=F \times R$  即轉矩 = 力量 x 力量施力線到旋轉中心之垂直距離。

式中之  $F$  與容許懸掛荷重有直接之關係，出力軸裝置鏈輪時， $F$  之最大容許值，即為容許懸掛荷重，如在出力軸裝置齒輪，則  $F$  之最大容許值為容許懸掛荷重的 0.8 倍，或容許懸掛荷重除以 1.25 倍（此 1.25 之數值即為懸掛荷重係數）當一減速機出力軸所裝之鏈輪或齒輪所受的拉力已計算出（鏈輪之容許拉力值，即為容許懸掛荷重，而齒輪之最大容許拉力值，即為容許懸掛荷重的 80%）依  $T=F \times R \quad R \leq T/F$  .....  $R$  為鏈輪或齒輪之節圓半徑， $T$  為容許出力轉矩  $F$  為容許懸掛荷重。總之，當一減速機在使用時其出力之承受轉矩與懸掛荷重，一定在容許值以下，為其中之一大於容許值時，則須重新設計傳動機構或將減速機之型號改大。當承受轉矩超過容許轉矩時，減速機會發生過熱或蝸輪齒面過度磨損或軸扭斷之現象。當承受荷重超過懸掛荷重時，出力軸在使用過一段時間後會折斷。

#### 懸掛荷重 (O.H.L.) 系數

#### Over-Hanging Load (O.H.L.) Coefficient

出力軸 Output Shaft	系數 F Coefficient
鍊輪傳動 Chain Pulley Transmission	1.00
齒輪傳動 Gear Transmission	1.25
V 皮帶輪傳動 V-Belt Transmission	1.50
平皮帶輪傳動 Flat Belt Transmission	2.50



#### Over-Hanging Load (O.H.L)

O.H.L. stands for the force accepted from the output shaft end of the speed reducer. The allowed O.H.L. is not the dragging limit which the speed reducer can manage; it is only the optional reference which may be based for reducer use. Every type of reducers has a rotating allowed torque under different circumstances.  $T=F \times R$  (i.e. torque = force x the perpendicular distance from force application line to rotating center). In this formula,  $F$  is directly related to the allowed O.H.L.; if the output shaft connects with the chain pulley, the maximum allowed  $F$ -value is the allowed O.H.L.; if the output shaft connects with gear, the maximum allowed  $F$ -value = O.H.L. x 0.8 (or O.H.L. ÷ 1.25; the coefficient of O.H.L. is 1.25). The pulling force accepted from the chain pulley or gear which is attached to the output shaft of the reducer is calculated (the allowed pulling force equals to 80% of the allowed O.H.L.) by  $T = F \times R \quad R < T/F$  ( $R$  stands for pitch radius of the chain pulley or gear;  $T$  stands for the allowed output torque;  $F$  stands for the allowed O.H.L.). To sum up, when the reducer is in operation, its output load torque and O.H.L. have to be limited below the allowed value; when either output load torque or O.H.L. is above the allowed value, it needs to re-design the transmission mechanism or to change larger model number of the reducer. When the load torque exceeds the allowed value, either the reducer will be over-heated or the worm gear be over worn out or the shaft be broken.

$$OHL = \frac{T' \times f \times l}{R}$$

$T'$  = 補正後之扭力 (Corrective torque)

$f$  = OHL 系數 (O.H.L. Coefficient)

$l$  = 位置系數 (Position factor)

$R$  = 皮帶輪或鍊輪半徑

(Radius of belt-pulley or chain pulley)

(1).  $d \leq L/2$

當負載在軸的中點或中點以內

(When Load is at middle or inner side)

位置系數 (Position factor)  $S=1$

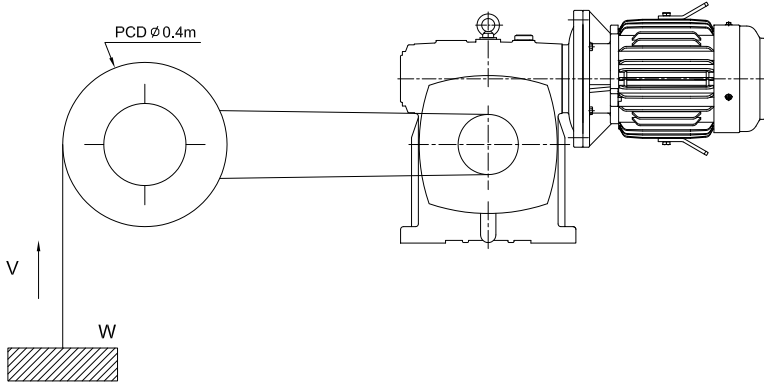
(2).  $d > L/2$

當負載在軸的中點以外

(When Load is at outer side)

位置系數 (Position factor)  $S=2$

## 減速機之選定計算範例 Criteria for Reducer Selection



- ◆ 搬運物總重量 Total Weight of Cargo:  
W=800kg
- ◆ 搬送速度 Carrying Speed:  
V=15m/min
- ◆ 鍊輪傳動效率 Chain Pulley Transmission Coefficient:  
 $\eta_1=0.97$
- ◆ 減速機傳動效率 Reducer Transmission Coefficient:  
 $\eta_2=0.75$
- ◆ 運轉時間 Operation Time:  
8 小時 / 日 8 hours / day
- ◆ 啟動次數 Start Frequency:  
1 回 / 分，中衝擊 1 time/min., medium shock
- ◆ 使用電源 Power:  
三相 220V，60Hz 3 phase 220V, 60Hz

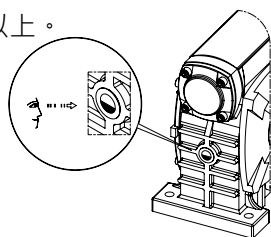
減速比 Ratio	選定之注意事項 Notices Calculation Example	計算範例 Load Condition Notices Calculation Example
	<p>藉由必要的入力軸回轉數及出力軸回轉數來選定減速比</p> <ol style="list-style-type: none"> <li>1. 先求出輸送帶滾輪回轉數 (N1) N1= 搬送速度 / (滾輪直徑 x <math>\pi</math>)</li> <li>2. 總減速比 = 滾筒回轉數 / 入力軸 (馬達) 回轉數 (R1)</li> <li>3. 總減速比 = 減速機減速比 x 鍊輪減速比 (R2) 選定鍊輪減速比 R2=1/5</li> <li>4. 減速機之減速比 R1=1/30</li> </ol> <p>Reduction Ratio Notices Calculation Example The reduction ratio is based on input / output shaft revolutions.</p> <ol style="list-style-type: none"> <li>1. Find the revolution of conveyer pulley (N1) first N1=carrying speed / (pulley D<sup>*</sup> - <math>\pi</math>)</li> <li>2. Total reduction ratio = pulley revolutions / input shaft (motor) revolutions revolutions (R1)</li> <li>3. Total reduction ratio = reduction ratio of reducer<sup>*</sup> x reduction ratio of chain pulley Reduction ratio of selected chain pulley: R2 = 1/5</li> <li>4. Reduction ratio of reducer: R1=1/30</li> </ol>	<ol style="list-style-type: none"> <li>1. <math>N1 = V / (D \times \pi)</math> <math>= 15 / (0.4 \times 3.14) = 12 \text{ r/min (PRM)}</math></li> <li>2. <math>R = 12 / 1800 \text{ (馬達轉數 Motor RPM)}</math> <math>= 1 / 150</math></li> <li>3. <math>R = R_1 \times R_2</math> <math>1/20 \times 1/7.5</math> <math>1/30 \times 1/5</math> <math>1/40 \times 1/3.75</math> <math>1/50 \times 1/3</math> <math>1/60 \times 1/2.5</math></li> <li>4. <math>N2 = 1800 \times 1/30 = 60</math></li> </ol>
扭力 Torque	<p>減速機所要的出力扭力 (搬運物重量 x 滾輪半徑 x 鍊輪減速比) / (鍊輪效率 x 減速機效率)</p> <p>The output torque needed by reducer (load x pulley x radius x reduction ratio of chain pulley) / (chain pulley efficiency x reducer efficiency)</p>	$T1 = W \times (D/2) \times R2 / (\eta_1 \times \eta_2)$ $= [800 \times (0.4 / 2) \times (1/5)] / (0.97 \times 0.75)$ $= 43.98$
負荷條件 Load conditions	<p>根據運轉條件算出補正扭力 8 小時運轉、中衝擊、係數 1.25(K)。</p> <p>Load Condition Notices Calculation Example Find corrective Torque according to operation condition 8 hrs operation, medium Impact, coefficient 1.25 (K).</p>	$T2 = (\text{補正扭力 Corrective Torque}) T1 \times \text{運轉條件 (係數 K)}$ $\text{Operation Condition (coefficient K)}$ $= 43.98 \times 1.25 = 54.98 \text{ kgf}\cdot\text{m}$
馬力 Horse Power	<p>最後換算成馬力 (HP) <math>HP = (\text{補正扭力} \times \text{出力軸轉數}) / 716.2</math></p> <p>Find Horsepower (HP) <math>HP = (\text{Corrective Torque} \times \text{Output RPM}) / 716.2</math></p>	$HP = (T2 \times N2) / 716.2$ $= (54.98 \times 60) / 716.2 = 4.6 \text{ HP}$ 5HP 馬達適用 (For 5HP motor)
型號選定 Model Selected	<p>根據本目錄之馬力型號選擇表 5HP、減速比 1/30、型號 120 適用。 According to the selection table of HP &amp; model, model 120, 5HP, reduction ratio 1/30 are selected.</p>	



### 減速機安裝 Usage and Installation

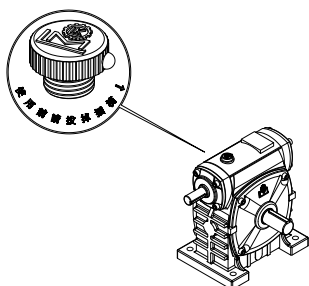
#### 使用前請檢查

- ◆ 檢查機種、型號、馬力、軸方向、減速比回轉方向及入力軸出力軸回轉數是否符合。
- ◆ 注意檢查注油情況，先確定是否有油，並保持油量在油面計一半以上。



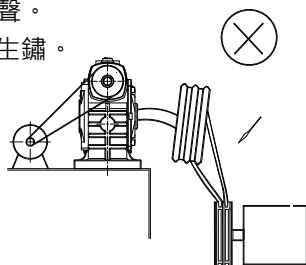
#### 場所

- ◆ 須裝置於平且堅固的底部。
- ◆ 安裝之環境須乾燥且通風良好，周圍溫度 0°C ~40°C 異常高溫或低溫時請註明。
- ◆ 使用前請拔掉加油蓋上的插梢。



#### 連結方式

- ◆ 當聯接器用以聯接入力或出力軸時，須確實固定並務使兩軸平行，底座須以適當螺栓，確保固鎖緊密。
- ◆ 所有配備均應輕裝於軸上，勿使用鐵鎚，並避免裝配過緊而引起軸承損壞。
- ◆ 滑輪、鏈輪或齒輪在裝配時應盡量靠近軸承以減少彎曲應力。使用適當大小（在出力軸徑的 6 倍以內）與出力軸連接之鍊輪、皮帶輪等請配合 H7 公差使用，可避免發出異聲與軸面受損。
- ◆ 各型加馬達盤之入力孔可加添適當黃油，避免孔徑過度磨損及發出異聲。
- ◆ 軸面可塗上防鏽塗料避免生鏽。



#### Check Before Operating

- ◆ Check if the type, model No., horsepower, shaft direction, reduction ratio, revolution direction and input/output shaft revolutions are in accordance with the standard.
- ◆ Check carefully the oil level to make sure that the oil volume is sufficient and maintain above the middle of oil gauge.

#### Place

- ◆ A flat and solid base is one of the requirements for installation.
- ◆ The environment for installation shall be dry and well ventilated, with ambient temperature at 0°C to 40°C. Abnormal high or low temperature shall be dedicated.
- ◆ Please pull the pin out of the plug lid before use.

#### Connecting Method

- ◆ If coupler is used to connect input or output shaft, make sure they are firmly fixed and paralleled. The base seat shall be anchored with proper bolts.
- ◆ All of the components shall be properly assembled to the shaft. Avoid hammering and over-tight assembly which could damage the bearing.
- ◆ The pulley, chain pulley and gear shall be assembled as close to the bearing as possible to minimize the curving stress. The chain pulley and belt pulley used to connect the output shaft shall be properly chosen (within 6 times as large as the diameter of output shaft) and used in accordance with H7 tolerance so as to keep out of abnormal noise and harm to the shaft surface.
- ◆ Proper amount of grease can be applied to the input hole of the additional motor board to ensure the hole against over-wearing and making abnormal noise.
- ◆ The application of anti-rust paint can keep the shaft from rusting.



## ■ 潤滑油之選定 Selection of Lubricant Oil

適當潤滑油的黏度，須使蝸輪與蝸桿磨擦容易，遇高負荷及衝擊負荷時，減速機才能充分發揮其機能。下表即“利明牌”減速機潤滑油的選定：

Proper viscosity of lubricant is contributive to ease the friction of worm gears, so the speed reducer can fully apply its function in the case of high load or impact load. The table below shows the selection of lubricants for LIMING speed reducers:

荷重 (Load)	中國石油國光牌極壓機油 CPC E.P. LUBRICANT					SHELL OIL	MOBIL OIL	ISO VG
	Grade No.	黏度 (Cst) Viscosity		流動點 Pour Point	閃火點 Flash Point			
		40°C	100°C					
普通荷重 Common Load	HD-150	143.6	14.38	- 18°C	264°C	OMALA OIL 150	MOBIL GEAR 629	ISO VG EP 150
	HD-220	212.2	18.59	- 18°C	278°C	OMALA OIL 220	MOBIL GEAR 630	ISO VG EP 220
	HD-320	310.5	23.7	- 18°C	290°C	OMALA OIL 320	MOBIL GEAR 632	ISO VG EP 320
超荷重 Heavy Load	HD-220	212.2	18.59	- 18°C	278°C	OMALA OIL 220	MOBIL GEAR 630	ISO VG EP 220
	HD-320	310.5	23.7	- 18°C	290°C	OMALA OIL 320	MOBIL GEAR 632	ISO VG EP 320
	HD-460	440.4	29.8	- 18°C	310°C	OMALA OIL 460	MOBIL GEAR 634	ISO VG EP 460

### 注意事項

- ◆本公司出廠減速機，使用中國石油國光牌極壓機油 HD-150 或相同等級的油品。
- ◆最初使用 100 小時後，洗淨內部、換上新油以後每 2500 小時換油。
- ◆在高速、高溫、低速、重荷重、強制潤滑等特殊情況下使用場合，請與本公司洽商。
- ◆潤滑油不足可能導致蝸輪快速磨損和效率降低。
- ◆潤滑油過多可能導致漏油。
- ◆請加入適當潤滑油至油量計一半以上（請參考油量表）。

### Notice

- ◆LI MING speed reducers use CPC E.P. lubricant HD-150 or equivalent.
- ◆After initial 100 hours of use, clean the internal part and replace with new lubricant; then, do it every 2500 hours.
- ◆If use in the special conditions of high speed, high temperature, low speed, heavy load, and forced lubrication, please contact the company.
- ◆Insufficient lubricant oil may lead to the rapid wears of worm gear and low efficiency.
- ◆Excessive lubricant could result in leakage.
- ◆Please feed proper lubricant above half of the oil meter (see oil gauge).

### ■ 安裝方向 Installation Direction

● 油面計  
Oil Indicator

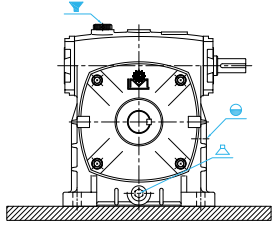
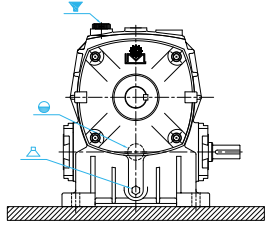
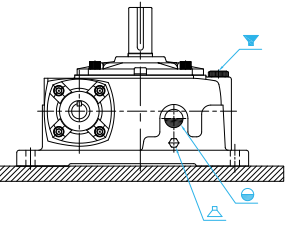
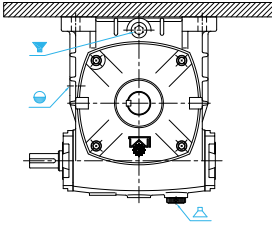
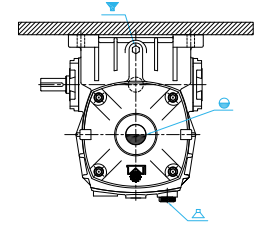
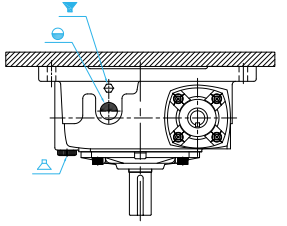
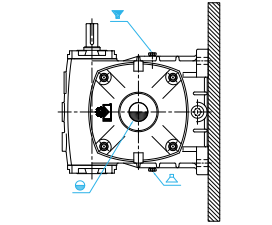
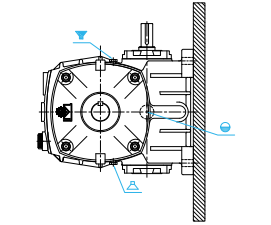
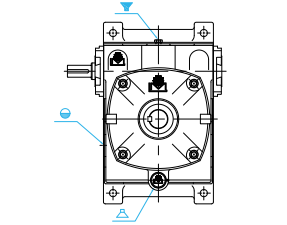
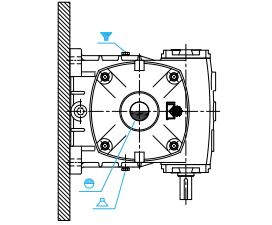
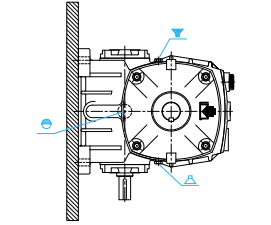
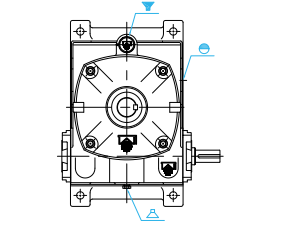
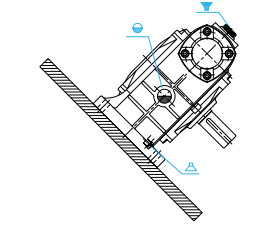
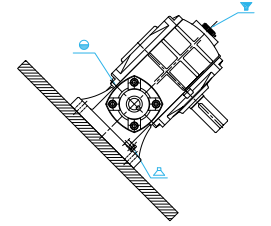
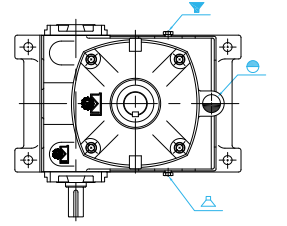
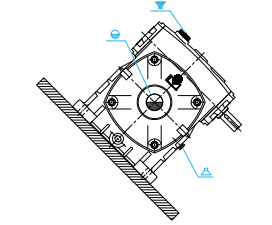
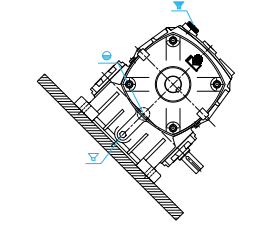
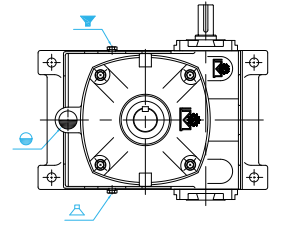
▼ 注油栓  
Oil Plug

△ 排油栓  
Oil Drain Plug

◆ 正常的使用方向可以使減速機保持較高的壽命。  
The life time of gear reducer can be prolonged in proper direction.

◆ 安裝時請注意油面計、注油栓及排油栓的位置以便日後維護。  
Please note the positions of oil gauge, oil filling plug and oil drain plug to facilitate the maintenance afterwards.

◆ 減速機使用方向特殊時，請與我們連繫。  
For special installation direction, please contact us.

<p><b>H1</b> 標準方向 Standard Direction</p> 	<p><b>L1</b> 標準方向 Standard Direction</p> 	<p><b>V1</b> 標準方向 Standard Direction</p> 
<p><b>H2</b> 倒吊安裝 Inverse Installation</p> 	<p><b>L2</b> 倒吊安裝 Inverse Installation</p> 	<p><b>V2</b> 倒吊安裝 Inverse Installation</p> 
<p><b>H3</b> 側面安裝 Side Installation</p> 	<p><b>L3</b> 側面安裝 Side Installation</p> 	<p><b>V3</b> 側面安裝 Side Installation</p> 
<p><b>H4</b> 側面安裝 Side Installation</p> 	<p><b>L4</b> 側面安裝 Side Installation</p> 	<p><b>V4</b> 側面安裝 Side Installation</p> 
<p><b>H5</b> 傾斜安裝 Inclined Installation</p> 	<p><b>L5</b> 傾斜安裝 Inclined Installation</p> 	<p><b>V5</b> 貼壁安裝 Side-word Installation</p> 
<p><b>H6</b> 傾斜安裝 Inclined Installation</p> 	<p><b>L6</b> 傾斜安裝 Inclined Installation</p> 	<p><b>V6</b> 貼壁安裝 Side-word Installation</p> 

## W 系列 Series

### HW :

入力軸在出力軸上方，可方便且容易地安裝鍊輪、皮帶輪等，但型號較大時，潤滑油供給較困難，型號從 40# 至 175#。

The input shaft which is above the output shaft can provide convenient and easy installation of chain pulley and belt pulley, etc. For the larger model No., it is not easy to feed lubricant. Model No.: 40# to 175#.

### HMW(MW) :

同 HW，附加馬達盤及入力孔，可直接連接 IEC 尺寸之馬達，安裝快速、容易，型號從 50# 至 175#。

Same as HW above. With additional motor flange and input bore, this model can be directly connected to IEC motor. The installation is fast and easy. Model NO.: 50# to 175#.

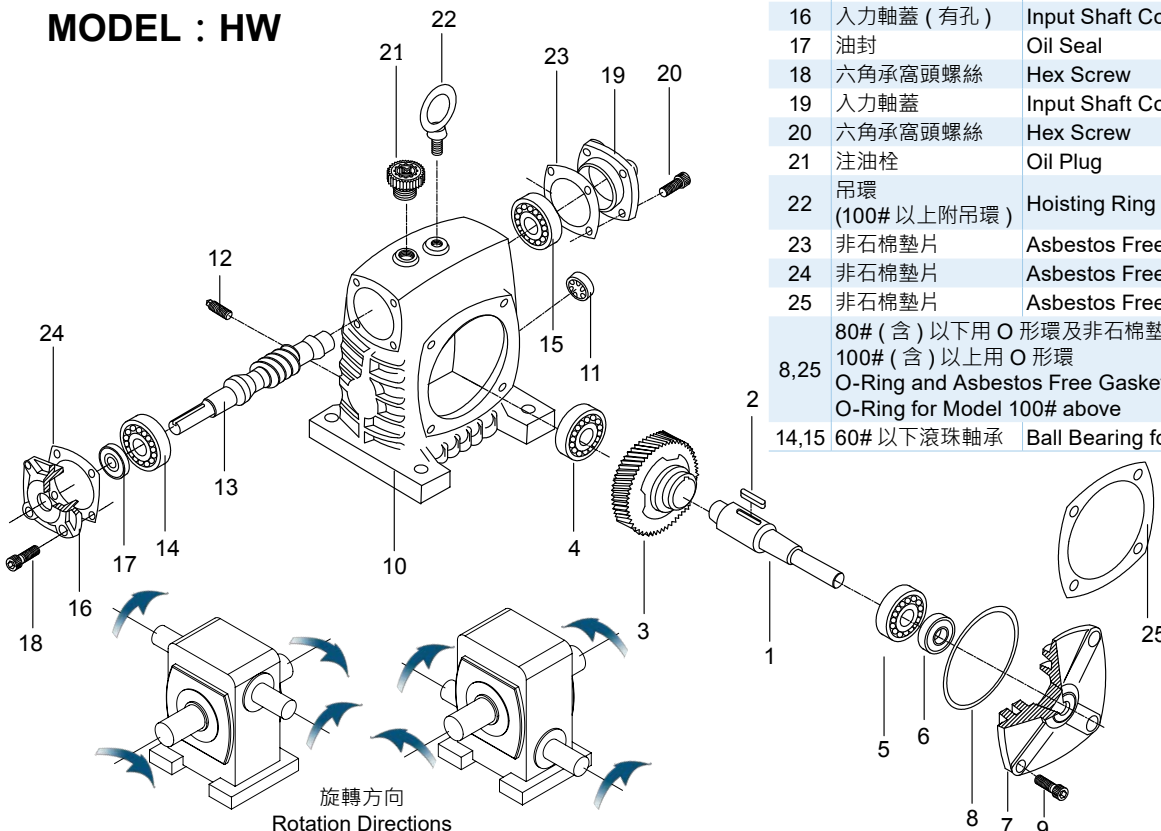
### LW :

入力軸在出力軸下方，使入力軸浸在油中，潤滑效果最好，適合較高扭矩傳動，型號從 50# 至 350#。

The input shaft which is below the output shaft is submerged in the oil so as to provide good lubrication effect. Suitable for higher torque transmission. Model NO.: 50# to 350#.

## 分解系統圖 System Drawing

### MODEL : HW



油量表 Oil Capacities (unit: ℓ)

Type Model	HW	LW	MW	HOM	HOW	LOW	WRC
40	0.2	-	-	-	-	-	-
50	0.4	0.2	0.4	0.4	0.4	0.2	0.4
60	0.5	0.3	0.5	0.5	0.5	0.3	0.5
70	0.8	0.5	0.8	0.8	0.8	0.5	0.8
80	1.2	0.6	1.2	1.2	1.2	0.6	1.2
100	2.6	1.2	2.6	2.6	2.6	1.2	2.6
120	4.5	2.1	4.5	4.5	4.5	2.1	4.5
135	7	3.4	7	7	7	3.4	-
155	11	4.5	11	10	10	4	-
175	12.5	6.4	12.5	11.5	11.5	6	-
200	-	7	-	-	-	-	-
225	-	6	-	-	-	-	-
250	-	7.6	-	-	-	-	-
300	-	9.2	-	-	-	-	-
350	-	12.6	-	-	-	-	-

NO.	零件名稱	Name of Parts
1	出力軸	Output Shaft
2	雙圓鍵	Key
3	蝸輪	Worm Wheel
4	滾珠軸承	Ball Bearing
5	滾珠軸承	Ball Bearing
6	油封	Oil Seal
7	出力軸蓋	Output Shaft Cover
8	O 形環	O-Ring
9	六角承窩頭螺絲	Hex Screw
10	蝸輪箱	Outer Shell
11	油鏡	Oil Gauge
12	排油栓	Oil Drain Plug
13	蝸桿	Worm Shaft
14	滾錐軸承	Taper Roller Bearing
15	滾錐軸承	Taper Roller Bearing
16	入力軸蓋 (有孔)	Input Shaft Cover (with bore)
17	油封	Oil Seal
18	六角承窩頭螺絲	Hex Screw
19	入力軸蓋	Input Shaft Cover
20	六角承窩頭螺絲	Hex Screw
21	注油栓	Oil Plug
22	吊環 (100# 以上附吊環)	Hoisting Ring for 100# above
23	非石棉墊片	Asbestos Free Gasket
24	非石棉墊片	Asbestos Free Gasket
25	非石棉墊片	Asbestos Free Gasket
80# (含) 以下用 O 形環及非石棉墊片		
100# (含) 以上用 O 形環		
8,25 O-Ring and Asbestos Free Gasket for Model 100# below		
O-Ring for Model 100# above		
14,15 60# 以下滾珠軸承 Ball Bearing for Model 60# below		

# 1-STAGE WORM REDUCER W SERIES

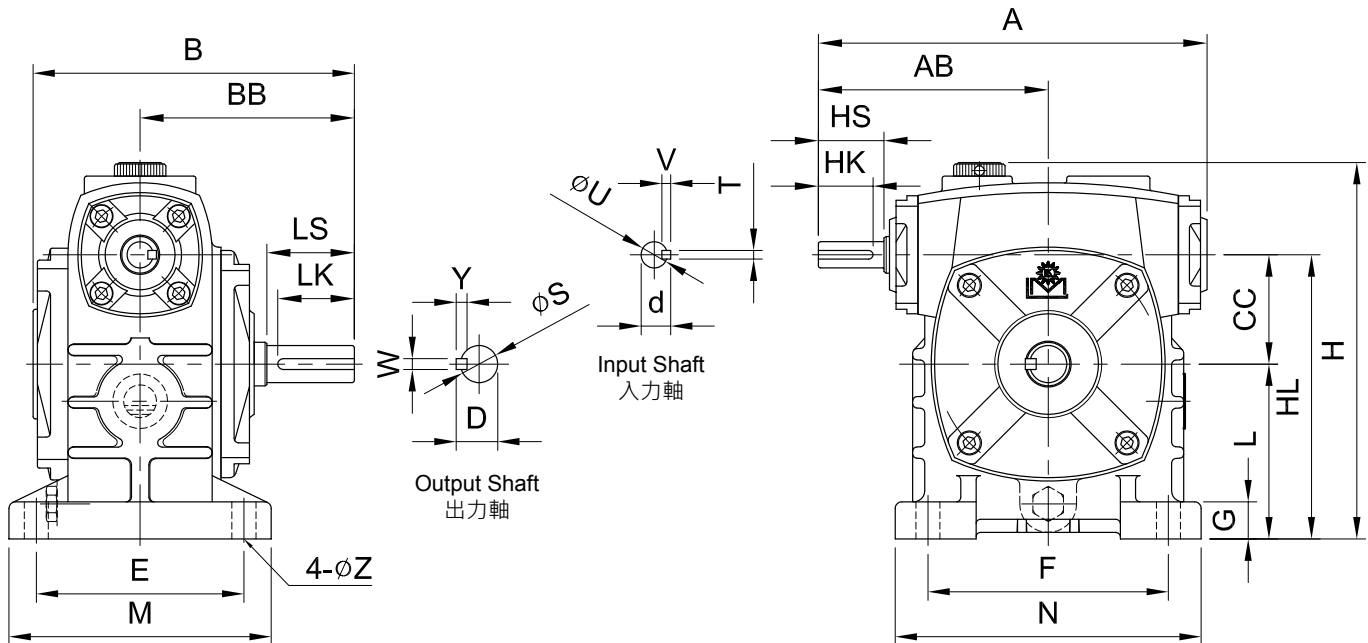
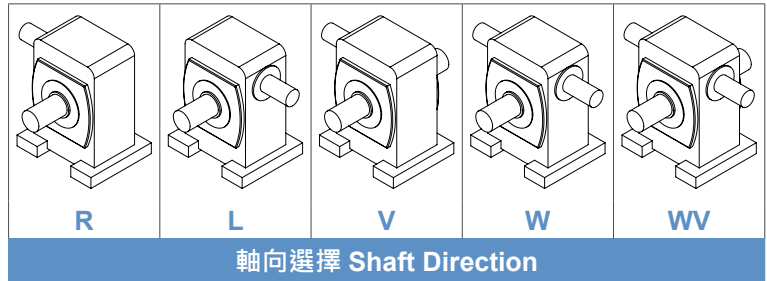
## 單段蝸輪減速機 W 系列

MODEL : HW



▲ 40#~135#

▲ 155#~175#



unit: mm

型號 Model	Ratio \ HP		腳座 Foot Stock										入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)				
	1/10 ~ 1/30	1/40 ~ 1/60	A	AB	B	BB	CC	L	H	HL	E	F	M	N	G	Z	HS	U	d	TxVxHK		LS	S	D	WxYxLK
40	1/8	-	139.5	86	122	80	40	60	139.5	100	89	89	110	112	14	9	25	12	13.5	4x4x20	30	15	17	5x5x25	4
50	1/4	1/8	178	105	146	98	50	80	174.5	130	95	110	120	140	16	11	30	12	13.5	4x4x25	40	17	19	5x5x35	6.6
60	1/2	1/4	198	120	164	110	60	90	200	150	105	120	130	150	20	11	40	15	17	5x5x35	50	22	25	7x7x45	8.2
70	1	1/2	235	140	193	130	70	105	235	175	115	150	150	190	18	15	40	18	20	5x5x35	60	28	31	7x7x55	13.8
80	2	1	268	161	210	140	80	120	260	200	135	180	170	217	20	15	50	22	25	7x7x45	65	32	35	10x8x60	19
100	3	2	323	190	257	170	100	150	324	250	155	220	195	270	25	15	50	25	28	7x7x45	75	38	41	10x8x70	37
120	5	3	391	231	288	190	120	180	383	300	180	260	230	310	30	18	65	30	33	7x7x60	85	45	48	12x8x80	65.2
135	7 1/2	5	438	258	322	214	135	215	445	350	200	290	250	340	32	18	75	35	38	10x8x70	95	55	59	15x10x90	82.2
155	10	7 1/2	491	292	392	253	155	235	482	390	220	320	285	385	38	20	85	40	43	10x8x80	110	60	64	15x10x105	116.8
175	15	10	554	324	411	262	175	260	537	435	250	350	310	410	40	22	85	45	48	12x8x80	110	65	69	18x10x105	143.2

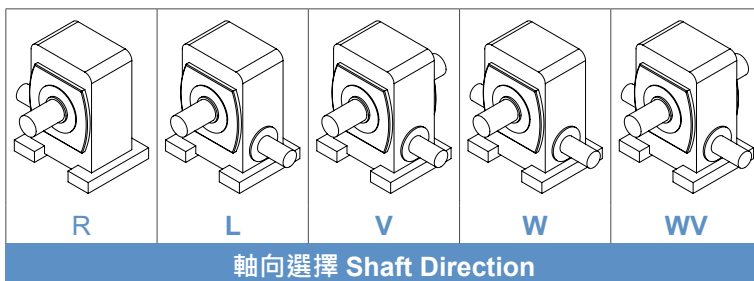
MODEL : LW



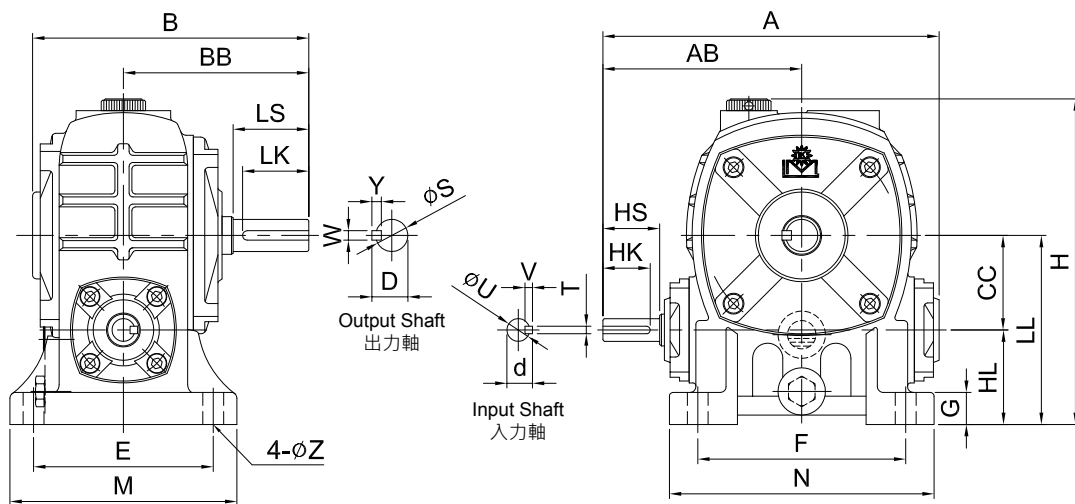
▲ 50#~135#



▲ 155#~250#



▲ 300#~350#



unit: mm

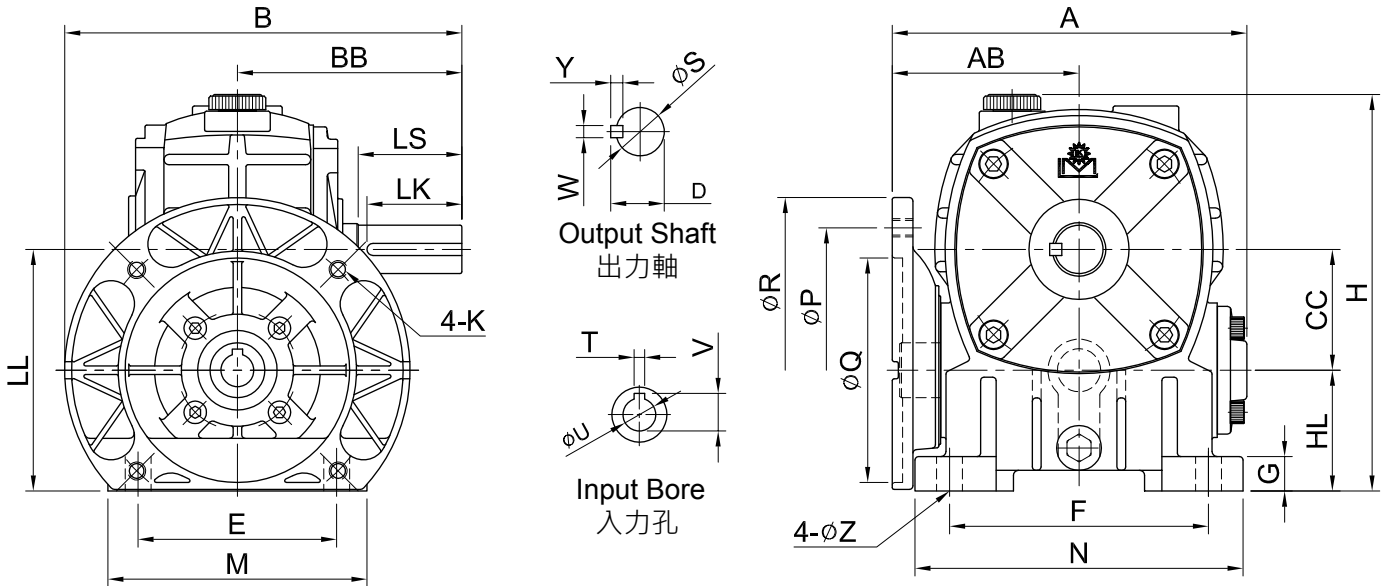
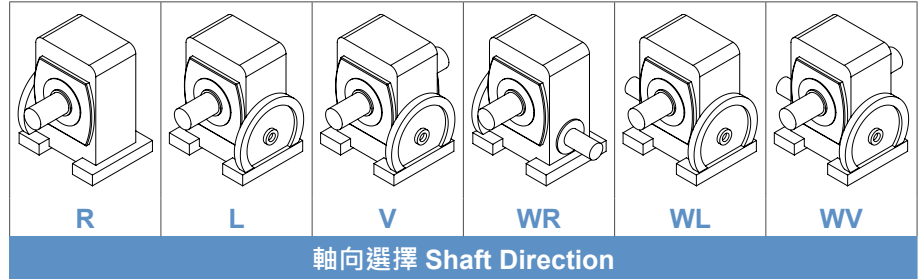
型號 Model	Ratio \ HP		A	AB	B	BB	CC	H	HL	LL	腳座 Foot Stock					入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)	
	1/10 ~ 1/30	1/40 ~ 1/60									E	F	M	N	G	Z	HS	U	d	TxVxHK	LS	S	D		WxYxLK
50	1/4	-	178	105	149	98	50	173	50	100	95	110	120	140	16	11	30	12	13.5	4x4x25	40	17	19	5x5x35	6.6
60	1/2	1/4	198	120	164	110	60	201	60	120	105	120	130	150	20	11	40	15	17	5x5x35	50	22	25	7x7x45	9
70	1	1/2	235	140	193	130	70	230	70	140	115	150	150	186	18	15	40	18	20	5x5x35	60	28	31	7x7x55	13.4
80	2	1	268	161	210	140	80	260	80	160	135	180	170	214	20	15	50	22	25	7x7x45	65	32	35	10x8x60	19
100	3	2	323	190	259	170	100	335	100	200	155	220	195	270	25	15	50	25	28	7x7x45	75	38	41	10x8x70	36
120	5	3	391	231	288	190	120	398	120	240	180	260	230	310	30	18	65	30	33	7x7x60	85	45	48	12x8x80	59
135	7 1/2	5	438	258	322	214	135	440	135	270	200	290	250	340	32	18	75	35	38	10x8x70	95	55	59	15x10x90	80.6
155	10	7 1/2	491	292	392	253	155	490	135	290	220	320	285	380	38	20	85	40	43	10x8x80	110	60	64	15x10x105	110.4
175	15	10	554	324	411	262	175	560	160	335	250	350	315	415	40	22	85	45	48	12x8x80	110	65	69	18x10x105	151.2
200	20	15	604	352	483	311	200	620	175	375	290	350	360	420	42	22	95	50	53	12x8x90	125	70	74.5	20x12x120	203
225	25	20	650	375	525	335	225	693	190	415	330	390	410	470	45	27	95	55	59	15x10x90	140	80	85	20x12x135	277.2
250	30	25	724	422	555	359	250	784	200	450	380	440	460	520	50	27	110	60	64	15x10x105	155	90	96.5	24x16x150	325
300	40	30	863	498	596	387	300	843	190	490	368	520	450	620	55	36	125	70	73	18x10x120	170	95	101	24x16x160	480
350	50	40	968	570	740	480	350	958	215	565	432	597	520	700	55	43	145	80	85	20x12x135	190	115	124	32x20x185	800



# 1-STAGE WORM REDUCER W SERIES

## 單段蝸輪減速機 W 系列

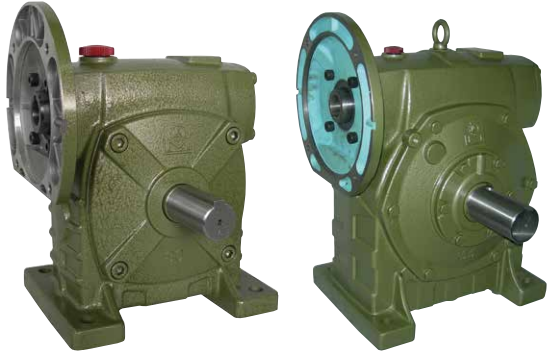
MODEL : LMW



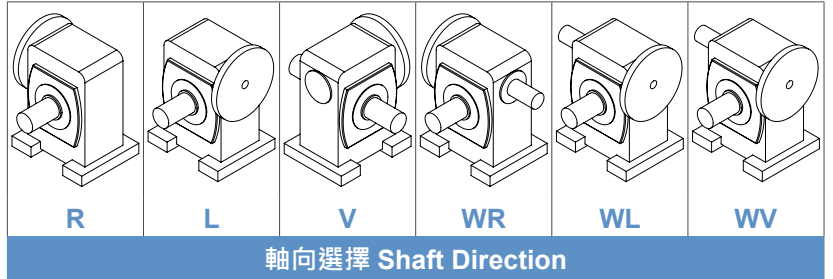
unit: mm

型號 Model	Ratio \ HP		馬達盤 IEC Motor Flange									腳座 Foot Stock					入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)				
	1/10 ~ 1/30	1/40 ~ 1/60	A	AB	B	BB	CC	HL	LL	H	P	Q	R	K	E	F	M	N	G	Z	V	T	U		LS	S	D	WxYxLK
60	1/2	1/4	165	87	190	110	60	60	120	201	130	110	160	M8	105	120	130	150	20	11	12.7 16.3	4 5	11 14	50	22	25	7x7x45	8.8
70	1	1/2	200	105	210	130	70	70	140	230	130	110	160	M8	115	150	150	186	18	15	16.3	5	14	60	28	31	7x7x55	14.8
			206	111	230						165	130	200	M10							21.8	6	19					
80	2	1	229	121	240	140	80	80	160	260	165	130	200	M10	135	180	170	214	20	15	21.8	6	19	65	32	35	10x8x60	20.2
			283	150	295						215	180	248	M12							27.3	8	24					
100	3	2	279	146	270	170	100	100	200	335	165	130	200	M10	155	220	195	270	25	15	27.3	8	24	75	38	41	10x8x70	37
			283	150	295						215	180	248	M12							31.3	8	28					
120	5	3	334	173	315	190	120	120	240	398	215	180	248	M12	180	260	230	310	30	18	31.3	8	28	85	45	48	12x8x80	62.4
			339	194	364						265	180	248	M12							31.3	8	28					
135	7 1/2	5	375	194	339	214	135	135	270	440	215	180	248	M12	200	290	250	340	30	18	31.3	8	28	95	55	59	15x10x90	81
			364	265	230						300	41.3	10	38														
155	10	7 1/2	413	213	403	253	155	135	290	490	265	230	300	M12	220	320	285	380	38	20	41.3	10	38	110	60	64	15x10x105	111.6

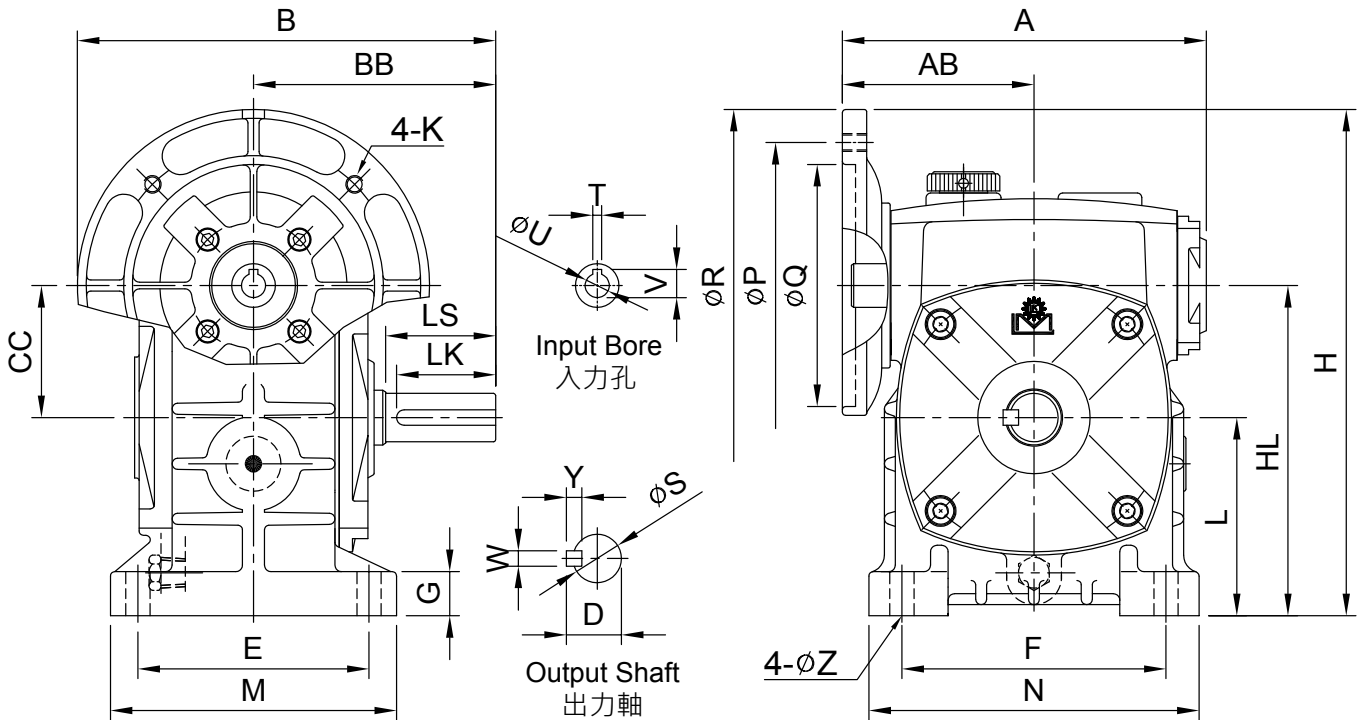
MODEL : HMW



▲ 50#~135#    ▲ 155#~175#



軸向選擇 Shaft Direction



unit: mm

型號 Model	Ratio \ HP		A	AB	B	BB	CC	HL	L	H	馬達盤 IEC Motor Flange				腳座 Foot Stock					入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)	
	1/10 ~ 1/30	1/40 ~ 1/60									P	Q	R	K	E	F	M	N	G	Z	V	T	U	LS	S	D		WxYxLK
50	1/4	-	154	81	178	98	50	130	80	210	130	110	160	M8	95	110	120	140	16	11	12.7	4	11	40	17	19	5x5x35	7.6
60	1/2	1/4	165	87	190	110	60	150	90	230	130	110	160	M8	105	120	130	150	20	11	12.7 16.3	4 5	11 14	50	22	25	7x7x45	9.4
70	1	1/2	200 206	105 111	210 230	130	70	175	105	255 275	130 165	110 130	160 200	M8 M10	115	150	150	190	18	15	16.3 21.8	5 6	14 19	60	28	31	7X7X55	15.2
80	2	1	229	121	240	140	80	200	120	300	165	130	200	M10	135	180	170	217	20	15	21.8 27.3	6 8	19 24	65	32	35	10x8x60	21.2
100	3	2	279 283	146 150	270 295	170	100	250	150	350 375	165 215	130 180	200 248	M10 M12	155	220	195	270	25	15	27.3 31.3	8	24 28	75	38	41	10x8x70	40
120	5	3	333	173	315	190	120	300	180	425	215	180	248	M12	180	260	230	310	30	18	31.3	8	28	85	45	48	12x8x80	66.2
135	7 1/2	5	375	194	339 364	214	135	350	215	475 500	215 265	180 230	248 300	M12	200	290	250	340	32	18	31.3 41.3	8 10	28 38	95	55	59	15x10x90	82.6
155	10	7 1/2	413	213	403	253	155	390	235	540	265	230	300	M12	220	320	285	385	38	20	41.3	10	38	110	60	64	15x10x105	118
175	15	10	466	237	412 437	262	175	435	260	585 610	265 300	230 250	300 350	M12 M16	250	350	310	410	40	22	41.3 45.3	10 12	38 42	110	65	69	18x10x105	152.2

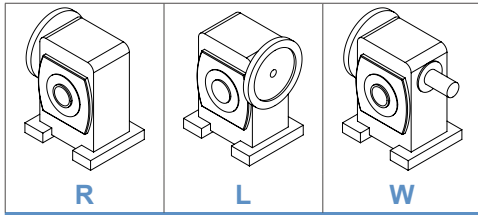
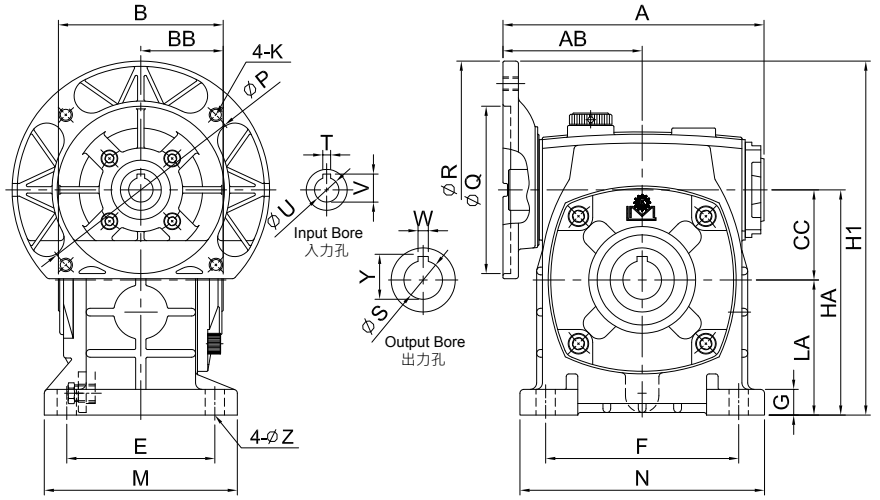
# 1-STAGE WORM REDUCER W SERIES

## 單段蝸輪減速機 W 系列

### MODEL : HOM



Model	N
50	140
60	150
70	190
80	217
100	270
120	310
135	340
155	380
175	415

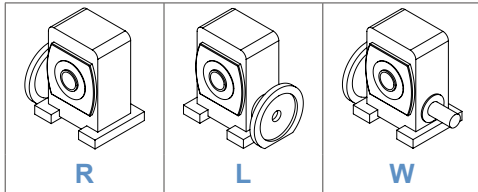
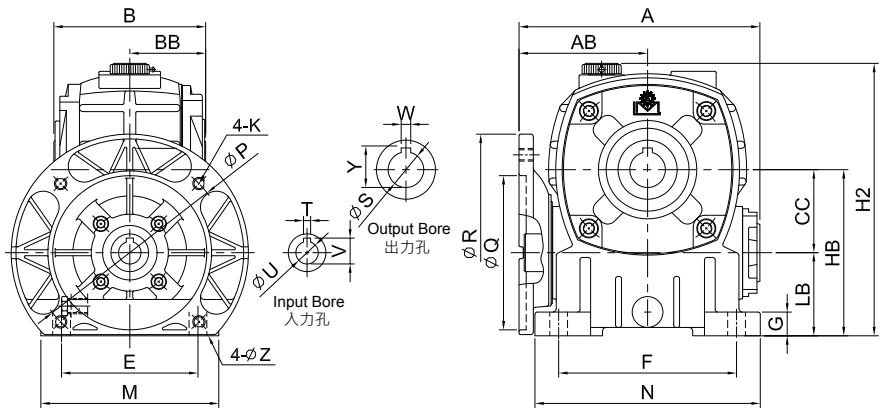


軸向選擇 Shaft Direction

### MODEL : LOM



Model	N
50	140
60	150
70	190
80	214
100	270
120	310
135	340
155	380
175	415



軸向選擇 Shaft Direction

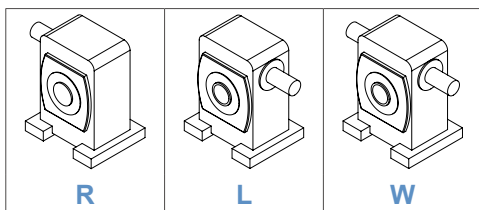
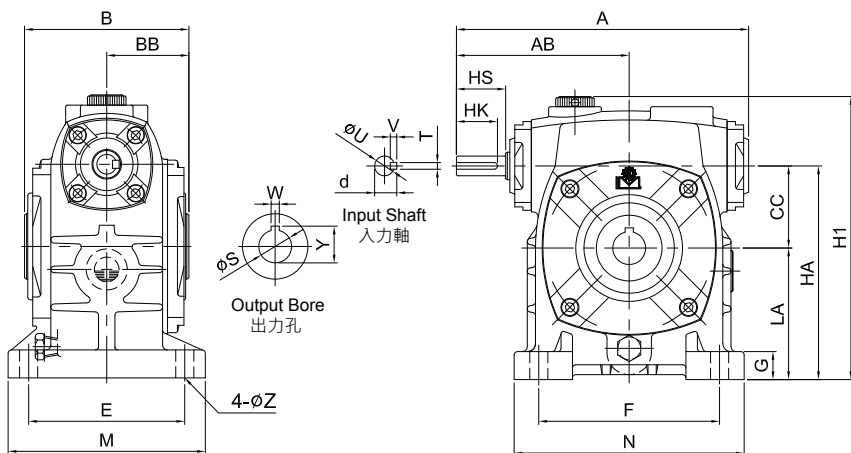
unit: mm

型號 Model	Ratio \ HP		A	AB	B	BB	CC	H1	H2	HA	HB	LA	LB	馬達盤 IEC Motor Flange				腳座 Foot Stock				入力孔 Input Bore			出力孔 Output Bore			重量 Weight (kg)	
	1/10 ~ 1/30	1/40 ~ 1/60												P	Q	R	K	E	F	M	G	Z	V	T	U	W	Y		S
50	1/4	-	154	81	98	49	50	210	172	130	100	80	50	130	110	160	M8	95	110	120	16	11	12.7	4	11	6	22.8	20	8
60	1/2	1/4	165	87	108	54	60	230	200	150	120	90	60	130	110	160	M8	105	120	130	20	11	12.7	4	11	8	28.3	25	10.6
70	1	1/2	200	105	128	64	70	255	235	175	140	105	70	130	110	160	M8	115	150	150	18	15	16.3	5	14	8	33.3	30	18
			206	111				275						130	130	200							M10	21.8	6				
80	2	1	229	121	138	69	80	300	260	200	160	120	80	165	130	200	M10	135	180	170	20	15	21.8	6	19	10	38.3	35	23.2
100	3	2	279	146	178	89	100	350	337	250	200	150	100	165	130	200	M10	155	220	195	25	15	27.3	8	24	10	43.3	40	40.8
			283	150				375						165	180	248							M12	31.3	8				
120	5	3	333	173	198	99	120	425	398	300	240	180	120	215	180	248	M12	180	260	230	30	18	31.3	8	28	12	48.3	45	68.2
			475	440				350						270	215	135							215	180	248				
155	10	7 1/2	412	212	247	123.5	155	540	482	390	290	235	135	265	230	300	M12	220	320	285	35	20	41.3	10	38	15	69.3	65	113.4
			585	482				390						290	235	135							265	230	300				
175	15	10	467	236	262	131	175	610	565	435	335	260	160	265	230	300	M16	250	350	315	40	22	41.3	10	38	18	94.3	90	158.6

### MODEL : HOW



Model	N
50	140
60	150
70	190
80	217
100	270
120	310
135	340
155	380
175	415

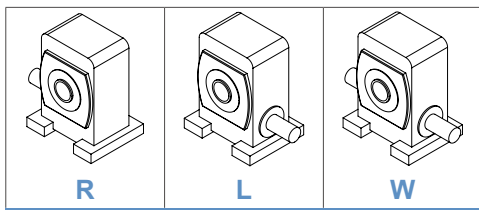
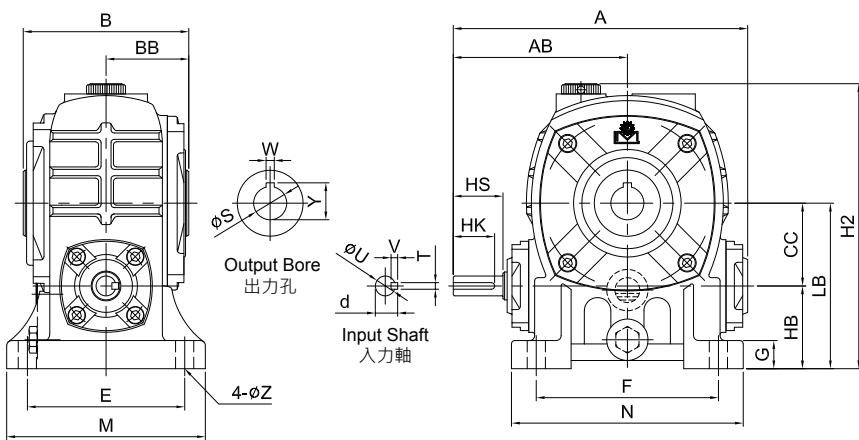


軸向選擇 Shaft Direction

### MODEL : LOW



Model	N
50	140
60	150
70	190
80	214
100	270
120	310
135	340
155	380
175	415



軸向選擇 Shaft Direction

unit: mm

型號 Model	Ratio \ HP		腳座 Foot Stock												輸入軸 Input Shaft					出力孔 Output Bore			重量 Weight (kg)				
	1/10 ~ 1/30	1/40 ~ 1/60	A	AB	B	BB	CC	H1	H2	HA	HB	LA	LB	E	F	M	G	Z	HS	U	d	TxVxHK	W	Y	S	HOW	LOW
	50	1/4	-	179	105	98	49	50	171	172	130	50	80	100	95	110	120	16	11	30	12	13.5	4x4x25	6	22.8	20	7.6
60	1/2	1/4	198	120	108	54	60	200	200	150	60	90	120	105	120	130	20	11	40	15	17	5x5x35	8	28.3	25	10.4	11.4
70	1	1/2	235	140	128	64	70	235	235	175	70	105	140	115	150	150	18	15	40	18	20	5x5x35	8	33.3	30	16.6	16.2
80	2	1	268	161	138	69	80	260	200	200	80	120	160	135	180	170	20	15	50	22	25	7x7x45	10	38.3	35	22	22.2
100	3	2	323	190	178	89	100	324	337	250	100	150	200	155	220	195	25	15	50	25	28	7x7x45	10	43.3	40	37.8	36.8
120	5	3	391	231	198	99	120	380	398	300	120	180	240	180	260	230	30	18	65	30	33	7x7x60	12	48.3	45	65.2	59
135	7 1/2	5	438	258	218	109	135	445	440	350	135	215	270	200	290	250	32	18	75	35	38	10x8x70	15	59.3	55	78	76.4
155	10	7 1/2	491	292	247	123.5	155	482	482	390	135	235	290	220	320	285	35	20	85	40	43	10x8x80	15	69.3	65	112.2	105.8
175	15	10	554	324	262	131	175	536	565	435	160	260	335	250	350	315	40	22	85	45	48	12x8x80	18	94.3	90	159.6	166.6

# 1-STAGE WORM REDUCER VW SERIES

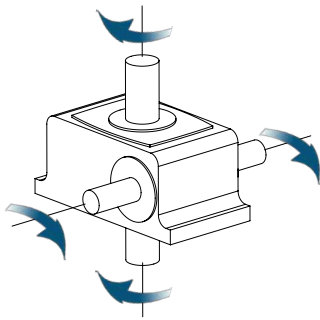
## 單段蝸輪減速機 VW 系列

### ■ VW 系列 Series

#### VW & UW :

安裝所佔空間小，潤滑效果佳，適合較高扭矩傳動，  
型號從 40# ~ 350#。

Small space needed for installation; good lubrication effect; suitable for higher torque transmission. Model NO.: 40# to 350#.



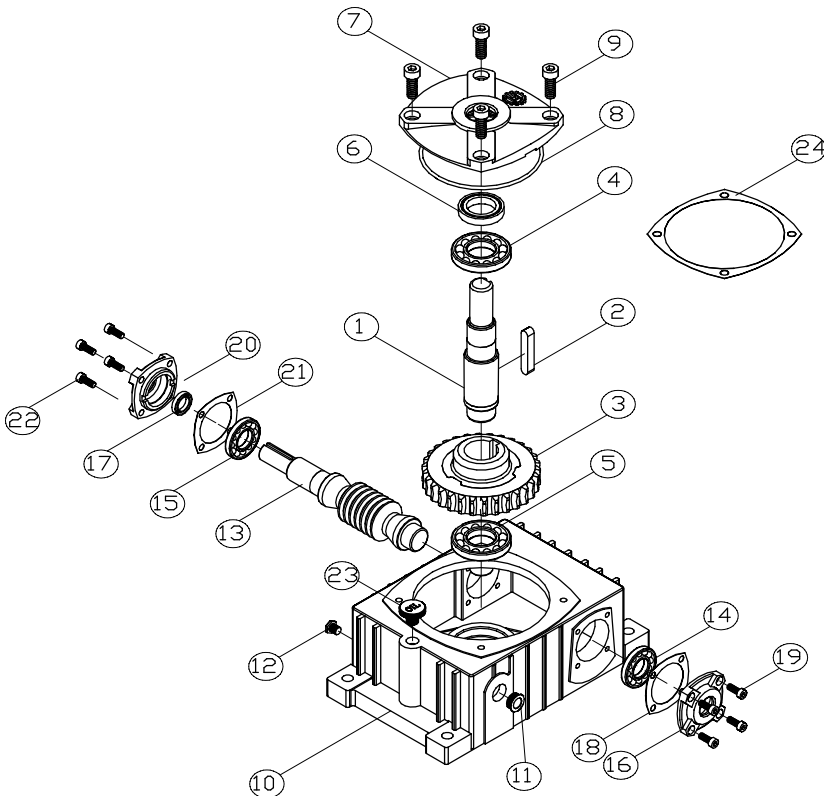
旋轉方向  
Rotation Directions

#### 油量表 Oil Capacities (unit: ℓ)

Type Model	VW	UW	VOM	VOW	VWM	UWM	VOWY
40	0.2	0.2		0.2			0.2
50	0.3	0.3	0.3	0.3	0.3	0.3	0.3
60	0.5	0.5	0.5	0.5	0.5	0.5	0.5
70	0.8	0.8	0.8	0.8	0.8	0.8	0.8
80	1.3	1.3	1.3	1.3	1.3	1.3	1.3
100	2.5	2.5	2.5	2.5	2.5	2.5	2.5
120	3.7	3.7	3.7	3.7	3.7	3.7	3.7
135	5.2	5.2	5.2	5.2	5.2	5.2	5.2
155	6.8	6.8	6.7	6.7	6.8	6.8	
175	8.1	8.1	8.0	8.0	8.1	8.1	
200	10.8	10.8					
225	12.2	12.2					
250	15.2	15.2					
300	18.2	18.2					
350	21.3	21.3					

### 分解系統圖 System Drawing

#### MODEL : VW



NO.	零件名稱	Name of Parts
1	出力軸	Output Shaft
2	雙圓鍵	Key
3	蝸輪	Worm Wheel
4	滾珠軸承	Ball Bearing
5	滾珠軸承	Ball Bearing
6	油封	Oil Seal
7	出力軸蓋	Output Shaft Cover
8	O 形環	O-Ring
9	六角承窩頭螺絲	Hex Screw
10	蝸輪箱	Outer Shell
11	油鏡	Oil Gauge
12	排油栓	Oil Drain Plug
13	蝸桿	Worm Shaft
14	滾錐軸承	Taper Roller Bearing
15	滾錐軸承	Taper Roller Bearing
16	入力軸蓋	Input Shaft Cover
17	油封	Oil Seal
18	非石棉墊片	Asbestos Free Gasket
19	六角承窩頭螺絲	Hex Screw
20	入力軸蓋 (有孔)	Input Shaft Cover (with bore)
21	非石棉墊片	Asbestos Free Gasket
22	六角承窩頭螺絲	Hex Screw
23	注油栓	Oil Plug
24	非石棉墊片	Asbestos Free Gasket
14,15	60# 以下滾珠軸承	Ball Bearing for Model 60# below



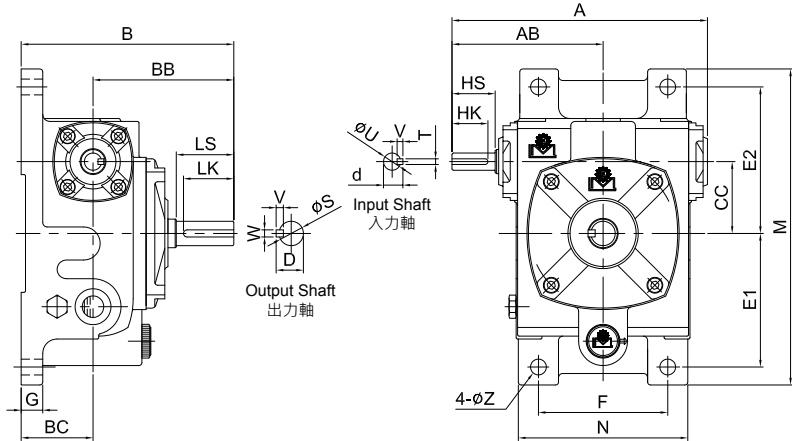
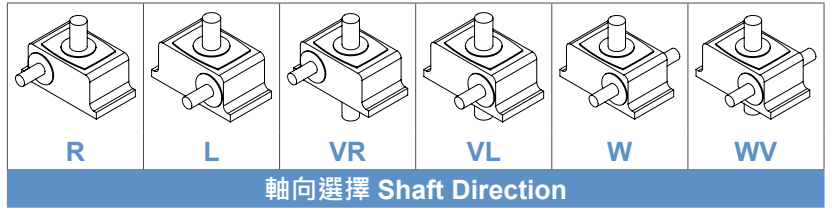
MODEL : VW



▲ 40#~135#



▲ 155#~175#

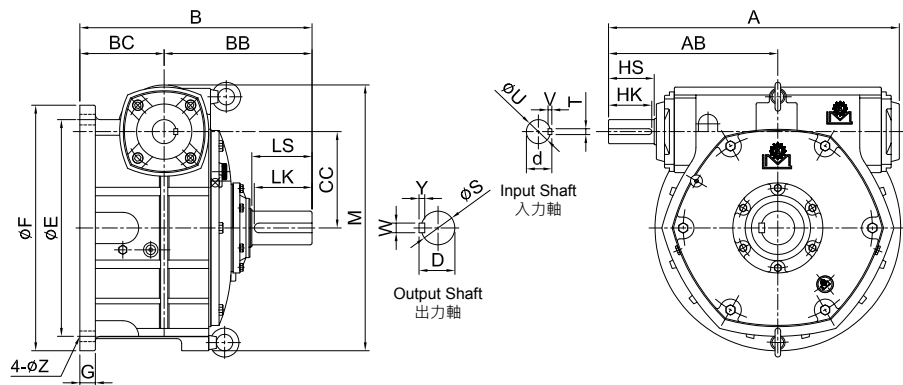


unit: mm

型號 Model	Ratio \ HP		A	AB	B	BB	BC	CC	腳座 Foot Stock						入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)	
	1/10 ~ 1/30	1/40 ~ 1/60							E1	E2	F	M	N	G	Z	HS	U	d	TxVxHK	LS	S	D		WxYxLK
40	1/8	-	139.5	86	125	80	45	40	75	85	70	182	94	14	9	25	12	13.5	4x4x20	30	15	17	5x5x25	4.5
50	1/4	1/8	178	105	148	98	50	50	93	102	90	220	118	16	11	30	12	13.5	4x4x25	40	17	19	5x5x35	6.8
60	1/2	1/4	198	120	165	110	55	60	105	120	100	252	128	18	11	40	15	17	5x5x35	50	22	25	7x7x45	9.2
70	1	1/2	235	140	195	130	65	70	120	135	120	288	160	20	15	40	18	20	5x5x35	60	28	31	7x7x55	14.4
80	2	1	268	161	210	140	70	80	130	150	140	310	183	20	15	50	22	25	7x7x45	65	32	35	10x8x60	19.4
100	3	2	322	190	260	170	90	100	155	180	190	380	230	26	15	50	25	28	7x7x45	75	38	41	10x8x70	38.6
120	5	3	390	231	290	190	100	120	185	215	220	450	266	30	18	65	30	33	7x7x60	85	45	48	12x8x80	62
135	7 1/2	5	438	258	324	214	110	135	210	235	260	495	305	35	18	75	35	38	10x8x70	95	55	59	15x10x90	83
155	10	7 1/2	491	292	393	253	140	155	145	265	290	460	340	45	20	85	40	43	10x8x80	110	60	64	15x10x105	106.8
175	15	10	555	325	412	262	150	175	167	293	320	516	385	45	22	85	45	48	12x8x80	110	65	69	18x10x105	141



▲ 200#~350#



unit: mm

型號 Model	Ratio \ HP		A	AB	B	BB	BC	CC	腳座 Foot Stock					入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)
	1/10 ~ 1/30	1/40 ~ 1/60							E	F	M	G	Z	HS	U	d	TxVxHK	LS	S	D	WxYxLK	
200	20	15	604	352	486	311	175	200	450	510	558	32	22	95	50	53	12x8x90	125	70	74.5	20x12x120	185.2
225	25	20	650	375	525	335	190	225	510	580	622	35	27	95	55	59	15x10x90	140	80	84.5	20x12x135	255.2
250	30	25	728	422	559	359	200	250	570	640	675	35	27	110	60	64	15x10x105	155	90	96.5	24x16x150	298
300	40	30	864	498	622	387	235	300	660	750	800	38	8-36	125	70	73	18x10x120	170	95	101	24x16x160	465
350	50	40	945	570	770	480	290	350	780	880	945	38	8-38	145	80	85	20x12x135	190	115	124	32x20x185	785

# 1-STAGE WORM REDUCER VW SERIES

## 單段蝸輪減速機 VW 系列

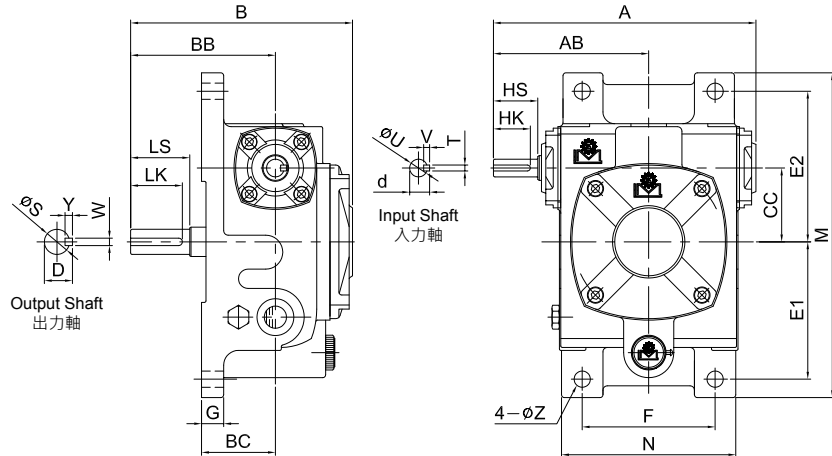
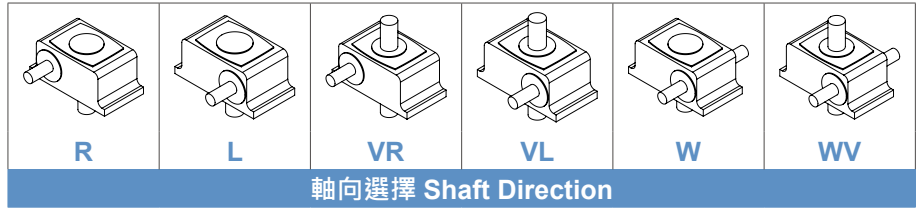
### MODEL : UW



▲ 40#~135#



▲ 155#~175#

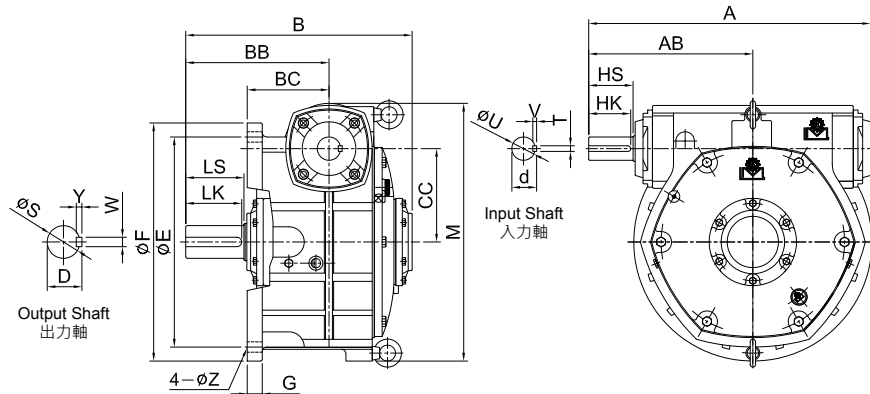


unit: mm

型號 Model	Ratio \ HP		A	AB	B	BB	BC	CC	腳座 Foot Stock						入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)	
	1/10 ~ 1/30	1/40 ~ 1/60							E1	E2	F	M	N	G	Z	HS	U	d	TxVxHK	LS	S	D		WxYxLK
40	1/8	-	139.5	86	124	80	45	40	75	85	70	182	94	14	9	25	12	13.5	4x4x20	30	15	17	5x5x25	4.5
50	1/4	1/8	178	105	148	98	50	50	93	102	90	220	118	16	11	30	12	13.5	4x4x25	40	17	19	5x5x35	6.8
60	1/2	1/4	198	120	165	110	55	60	105	120	100	252	128	18	11	40	15	17	5x5x35	50	22	25	7x7x45	9.2
70	1	1/2	235	140	195	130	65	70	120	135	120	288	160	20	15	40	18	20	5x5x35	60	28	31	7x7x55	14.4
80	2	1	268	161	210	140	70	80	130	150	140	315	183	20	15	50	22	25	7x7x45	65	32	35	10x8x60	19.4
100	3	2	322	190	260	170	90	100	155	180	190	380	230	26	15	50	25	28	7x7x45	75	38	41	10x8x70	38.6
120	5	3	390	231	290	190	100	120	185	215	220	450	266	30	18	65	30	33	7x7x60	85	45	48	12x8x80	62
135	7 1/2	5	438	258	324	214	110	135	210	235	260	495	305	35	18	75	35	38	10x8x70	95	55	59	15x10x90	83
155	10	7 1/2	491	292	393	253	140	155	145	265	290	460	340	45	20	85	40	43	10x8x80	110	60	64	15x10x105	106.8
175	15	10	555	325	412	262	150	175	167	293	320	516	385	45	22	85	45	48	12x8x80	110	65	69	18x12x105	141



▲ 200#~350#



unit: mm

型號 Model	Ratio \ HP		A	AB	B	BB	BC	CC	腳座 Foot Stock					入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)
	1/10 ~ 1/30	1/40 ~ 1/60							E	F	M	G	Z	HS	U	d	TxVxHK	LS	S	D	WxYxLK	
200	20	15	604	352	486	311	175	200	450	510	558	32	22	95	50	53	12x8x90	125	70	74.5	20x12x120	185.2
225	25	20	650	375	525	335	190	225	510	580	622	35	27	95	55	59	15x10x90	140	80	85	20x12x135	255.2
250	30	25	728	422	559	359	200	250	570	640	675	35	27	110	60	64	15x10x105	155	90	96.5	24x16x150	298
300	40	30	864	498	622	387	235	300	660	750	880	38	36	125	70	73	18x10x120	170	95	101	24x16x160	465
350	50	40	945	570	770	480	290	350	780	880	945	38	43	145	80	85	20x12x135	190	115	124	32x20x185	785

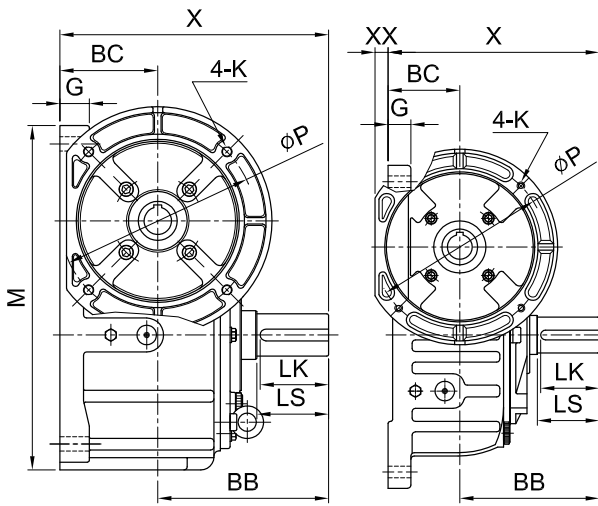
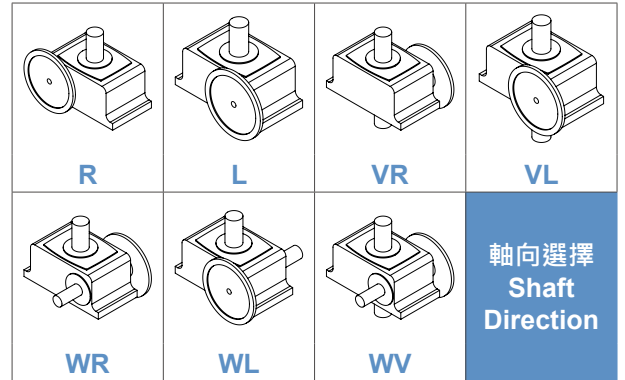
MODEL : VMW



▲ 50#~135#

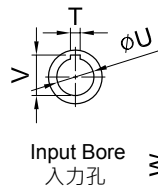


▲ 155#~175#

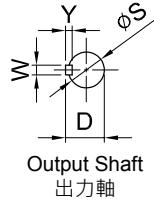


VMW 155~175

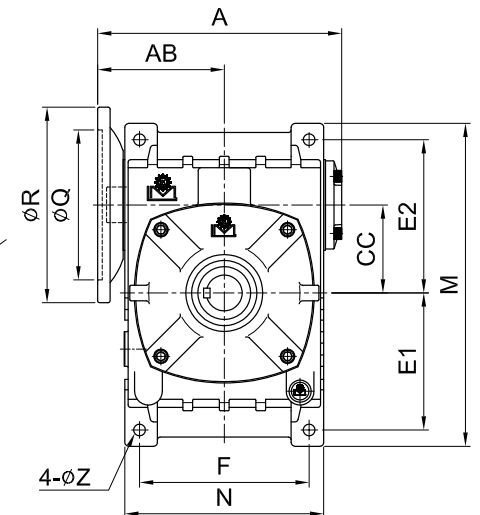
VMW 50~135



Input Bore 入力孔



Output Shaft 出力軸



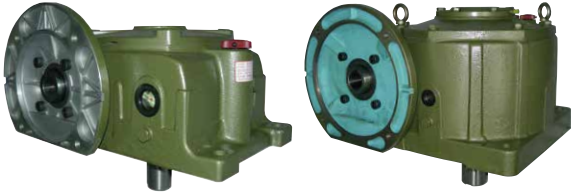
unit: mm

型號 Model	Ratio \ HP		A	AB	X	XX	BB	BC	CC	馬達盤 IEC Motor Flange				腳座 Foot Stock						入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)	
	1/10 ~ 1/30	1/40 ~ 1/60								P	Q	R	K	E1	E2	F	M	N	G	Z	V	T	U	LS	S	D		WxYxLK
50	1/4	-	154	81	148	9	98	50	50	130	110	160	M8	93	102	90	220	118	16	11	12.7	4	11	40	17	19	5x5x35	7.2
60	1/2	1/4	167	86	165	4	110	55	60	130	110	160	M8	105	120	100	252	128	18	11	12.7	4	11	50	22	25	7x7x45	10.2
70	1	1/2	200	105	195	35	130	65	70	130	110	160	M8	120	135	120	288	160	20	15	16.3	5	14	60	28	31	7x7x55	14.4
			206	111						165	130	200	M10								21.8	6	19					
80	2	1	226	118	210	30	140	70	80	165	130	200	M10	130	150	140	315	183	20	15	21.8	6	19	65	32	35	10x8x60	21.2
100	3	2	279	146	260	-	170	90	100	165	130	200	M10	155	180	190	380	230	26	15	27.3	8	24	75	38	41	10x8x70	43
			283	150						215	180	248	M12								31.3	8	28					
120	5	3	335	173	290	-	190	100	120	215	180	248	M12	185	215	220	450	266	30	18	31.3	8	28	85	45	48	12x8x80	65
135	7 1/2	5	369	187	324	-	214	110	135	215	180	248	M12	210	235	260	495	305	35	18	31.3	8	28	95	55	59	15x10x90	85.2
					265					230	300	M16	41.3								10	38						
155	10	7 1/2	412	212	393	-	253	140	155	265	230	300	M12	145	265	290	460	340	45	20	41.3	10	38	110	60	64	15x10x105	108
175	15	10	467	236	412	-	262	150	175	265	230	300	M16	167	293	320	516	385	45	22	41.3	10	38	110	65	69	18x10x105	150

# 1-STAGE WORM REDUCER VW SERIES

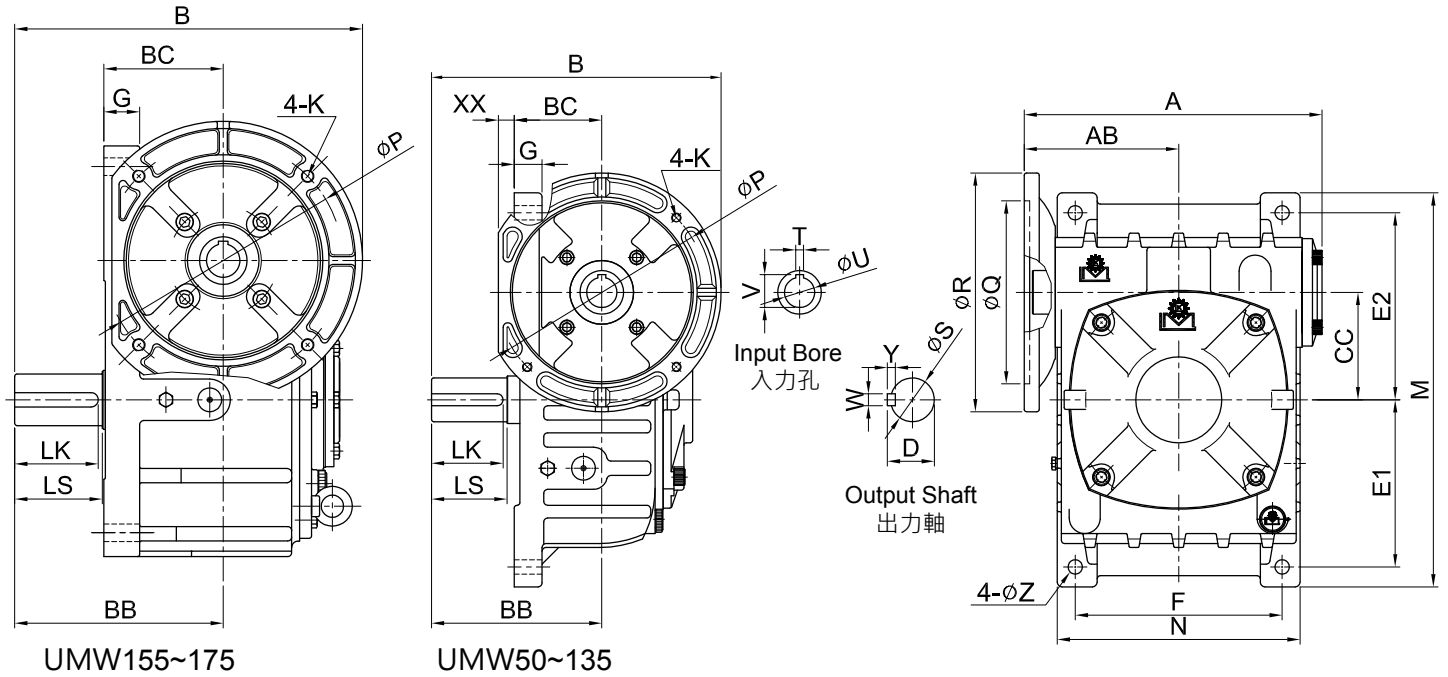
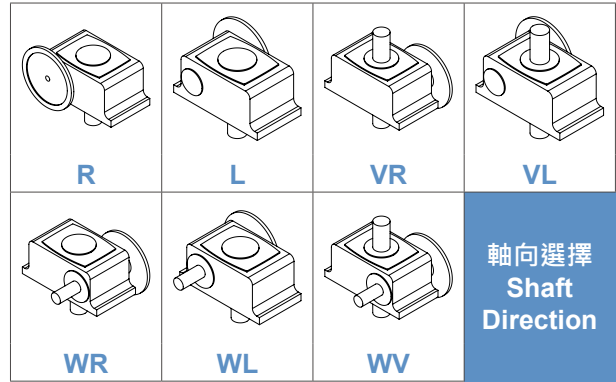
## 單段蝸輪減速機 VW 系列

MODEL : UMW



▲ 50#~135#

▲ 155#~175#



unit: mm

型號 Model	Ratio \ HP		馬達盤 IEC Motor Flange								腳座 Foot Stock								入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)		
	1/10 ~ 1/30	1/40 ~ 1/60	A	AB	B	XX	BB	BC	CC	P	Q	R	K	E1	E2	F	M	N	G	Z	V	T	U	LS	S		D	WxYxLK
50	1/4	-	154	81	178	9	98	50	50	130	110	160	M8	93	102	90	220	118	16	11	12.7	4	11	40	17	19	5x5x35	7.2
60	1/2	1/4	167	87	190	4	110	55	60	130	110	160	M8	105	120	100	252	128	18	11	12.7 16.3	4 5	11 14	50	22	25	7x7x45	10.2
70	1	1/2	200 206	105 111	210 230	35	130	65	70	130 165	110 130	160 200	M8 M10	120	135	120	288	160	20	15	16.3 21.8	5 6	14 19	60	28	31	7x7x55	14.4
80	2	1	226	118	240	30	140	70	80	165	130	200	M10	130	150	140	315	183	20	15	21.8 27.3	6 8	19 24	65	32	35	10x8x60	20.6
100	3	2	279 283	146 150	270 295	- 8	170	90	100	165 215	130 180	200 248	M10 M12	155	180	190	380	230	26	15	27.3 31.3	8 8	24 28	75	38	41	10x8x70	43
120	5	3	335	173	315	-	190	100	120	215	180	248	M12	185	215	220	450	266	30	18	31.3	8	28	85	45	48	12x8x80	65
135	7 1/2	5	369	187	339 364	- 20	214	110	135	215 265	180 230	248 300	M12	210	235	260	495	305	35	18	31.3 41.3	8 10	28 38	95	55	59	15x10x90	85.2
155	10	7 1/2	412	212	403	-	253	140	155	265	230	300	M12	145	265	290	460	340	45	20	41.3	10	38	110	60	64	15x10x105	108
175	15	10	467	236	412 437	-	262	150	175	265 300	230 250	300 350	M16	167	293	320	516	385	45	22	41.3 45.3	10 12	38 42	110	65	69	18x10x105	150

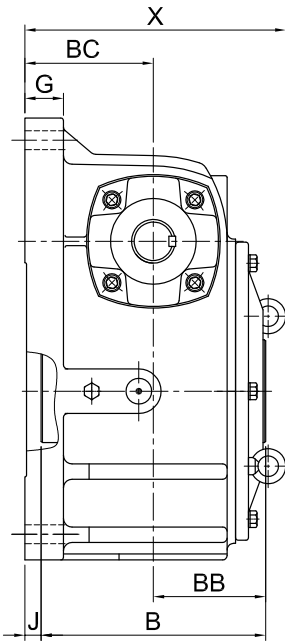
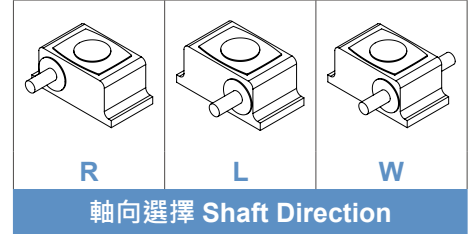
MODEL : VOW



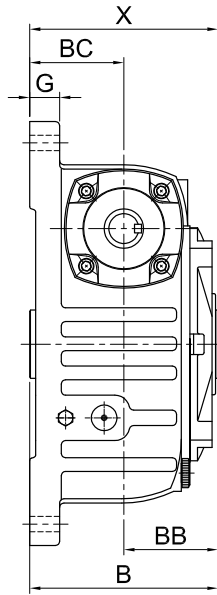
▲ 40#~135#



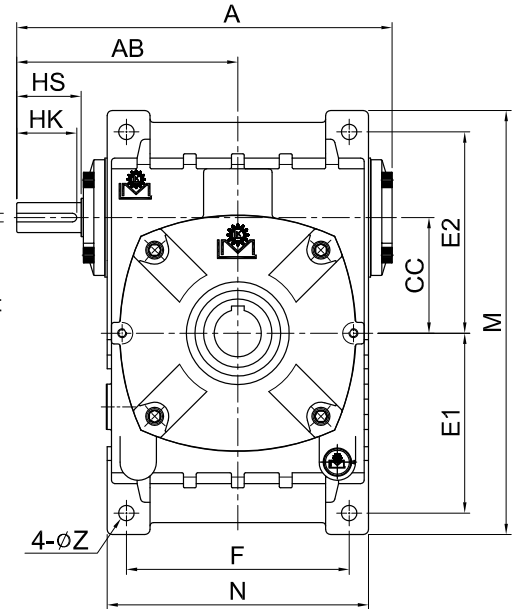
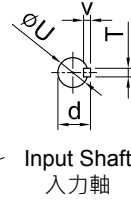
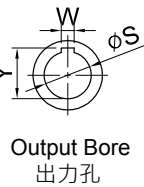
▲ 155#~175#



VOW155~175



VOW40~135



unit: mm

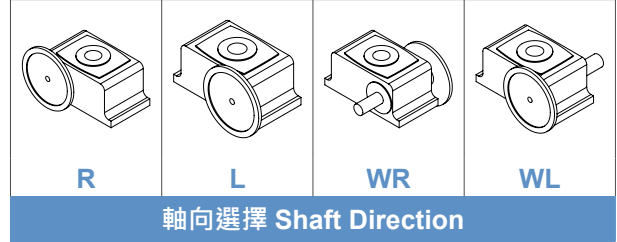
型號 Model	Ratio \ HP		腳座 Foot Stock										入力軸 Input Shaft				出力孔 Output Bore			重量 Weight (kg)					
	1/10 ~ 1/30	1/40 ~ 1/60	A	AB	J	B	X	BB	BC	CC	E1	E2	F	M	N	G	Z	HS	U		d	TxVxHK	W	Y	S
	40	1/8	-	139.5	86	-	88	89	44	45	40	75	85	70	183	94	11	9	25		12	13.5	4x4x20	6	22.8
50	1/4	-	178	105	-	98	99	49	50	50	93	102	90	220	118	16	11	30	12	13.5	4x4x25	6	22.8	20	7.8
60	1/2	1/4	198	120	-	108	109	54	55	60	105	120	100	252	128	18	11	40	15	17	5x5x35	8	28.3	25	12
70	1	1/2	235	140	-	128	129	64	65	70	120	135	120	288	160	20	15	40	18	20	5x5x35	8	33.3	30	15.4
80	2	1	268	161	-	138	139	69	70	80	130	150	140	315	183	20	15	50	22	25	7x7x45	10	38.3	35	21.2
100	3	2	322	190	-	178	179	89	90	100	155	180	190	380	230	26	15	50	25	28	7x7x45	10	43.3	40	39.4
120	5	3	390	231	-	198	199	99	100	120	185	215	220	450	266	30	18	65	30	33	7x7x60	12	48.3	45	62
135	7 1/2	5	438	258	-	218	219	109	110	135	210	235	260	495	305	35	18	75	35	38	10x8x70	15	59.3	55	78.8
155	10	7 1/2	491	292	16.5	247	288	123.5	140	155	145	265	290	460	340	45	20	85	40	43	10x8x80	15	69.3	65	104
175	15	10	555	325	19	262	305	131	150	175	167	293	320	520	390	45	22	85	45	48	12x8x80	18	94.3	90	149



# 1-STAGE WORM REDUCER VW SERIES

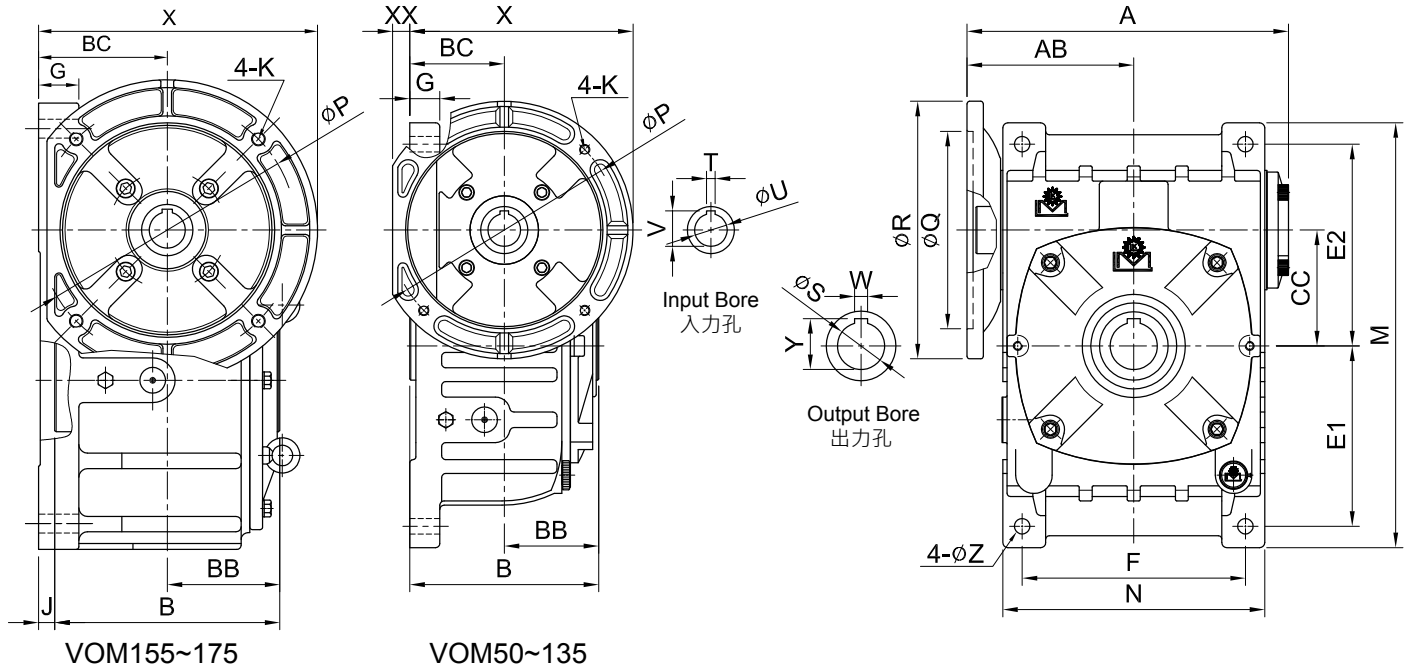
## 單段蝸輪減速機 VW 系列

MODEL : VOM



▲ 50#~135#

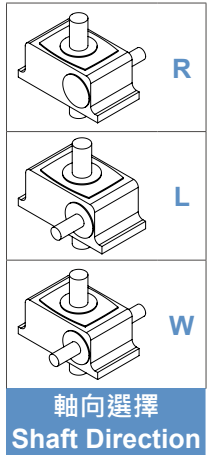
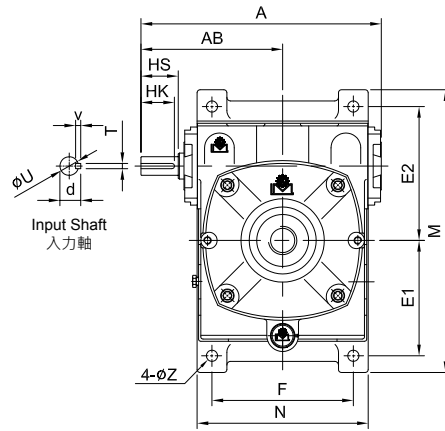
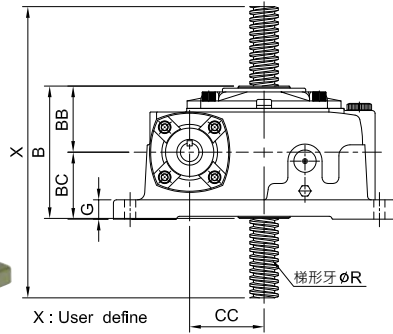
▲ 155#~175#



unit: mm

型號 Model	Ratio \ HP		A	AB	J	B	X	XX	BB	BC	CC	馬達盤 IEC Motor Flange				腳座 Foot Stock					入力孔 Input Bore			出力孔 Output Bore			重量 Weight (kg)		
	1/10 ~ 1/30	1/40 ~ 1/60										P	Q	R	K	E1	E2	F	M	N	G	Z	V	T	U	W		Y	S
50	1/4	—	154	81	-	98	130	9	49	50	50	130	110	160	M8	93	102	90	220	118	16	11	12.7	4	11	6	22.8	20	8.2
60	1/2	1/4	167	87	-	111	135	4	54	55	60	130	110	160	M8	105	120	100	252	128	18	11	12.7	4	11	8	28.3	25	11
70	1	1/2	200	105	-	128	165	35	64	65	70	130	110	160	M8	120	135	120	288	160	20	15	16.3	5	14	8	33.3	30	15.4
			206	111								130	200	21.8									6	19					
80	2	1	226	118	-	138	170	30	69	70	80	165	130	200	M10	130	150	140	315	183	20	15	21.8	6	19	10	38.3	35	22.6
100	3	2	279	146	-	178	215	35	89	90	100	165	130	200	M10	155	180	190	380	230	26	15	27.3	8	24	10	43.3	40	40.4
			283	150								165	248	31.3									8	28					
120	5	3	333	173	-	198	225	25	99	100	120	215	180	248	M12	185	215	220	450	266	30	18	31.3	8	28	12	48.3	45	65
135	7 1/2	5	369	187	-	218	234	40	109	110	135	215	180	248	M12	210	235	260	495	305	35	18	31.3	8	28	15	59.3	55	81
							260					230	300	41.3									10	38					
155	10	7 1/2	412	212	16.5	247	290	-	123.5	140	155	265	230	300	M12	145	265	290	460	340	45	20	41.3	10	38	15	69.3	65	105.2
175	15	10	467	236	19	262	300	-	131	150	175	265	230	300	M12	167	293	320	520	390	45	22	41.3	10	38	18	94.3	90	158
							325					250	350	45.3									12	42					

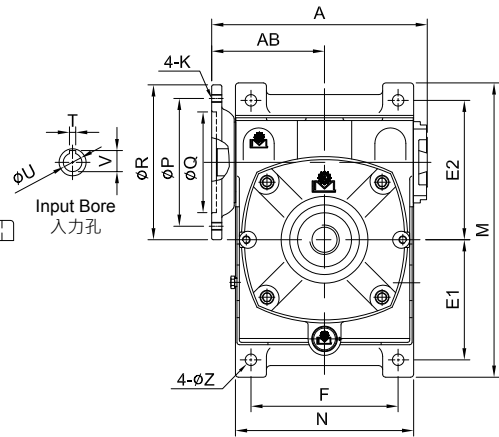
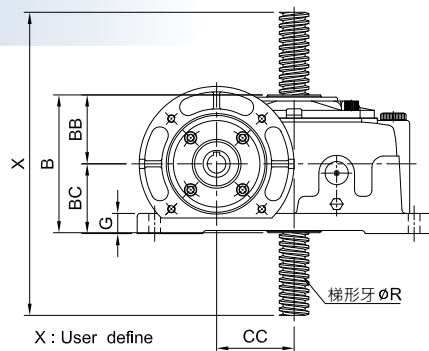
MODEL : VOWY



unit: mm

型號 Model	Ratio \ HP		A	AB	B	BB	BC	CC	腳座 Foot Stock						入力軸 Input Shaft				角牙 R"	螺距 inch/ Pitch	重量 Weight (kg)	
	1/10~ 1/30	1/40~ 1/60							E1	E2	F	M	N	G	Z	HS	U	d				TxVxHK
40	1/8	-	139.5	86	88	45	45	40	75	85	70	183	94	11	9	25	12	13.5	4x4x20	1"	4T	4.6
50	1/4	-	178	105	98	50	50	50	93	102	90	220	118	16	11	30	12	13.5	4x4x25	1"	4T	7.2
60	1/2	1/4	198	120	108	55	55	60	105	120	100	252	128	18	11	40	15	17	5x5x35	1"	4T	11.8
70	1	1/2	235	140	128	65	65	70	120	135	120	288	160	20	15	40	18	20	5x5x35	1 1/8"	4T	15.8
80	2	1	268	161	138	70	70	80	130	150	140	315	183	20	15	50	22	25	7x7x45	1 1/4"	4T	21.8
100	3	2	322	190	178	90	90	100	155	180	190	380	230	30	15	50	25	28	7x7x45	1 1/2"	4T	40.4
120	5	3	390	231	198	100	100	120	185	215	220	450	266	30	18	65	30	33	7x7x60	2"	4T	62
135	7 1/2	5	438	258	218	110	110	135	210	235	260	495	305	35	18	75	35	38	10x8x70	2"	4T	78.8

MODEL : VOMY



unit: mm

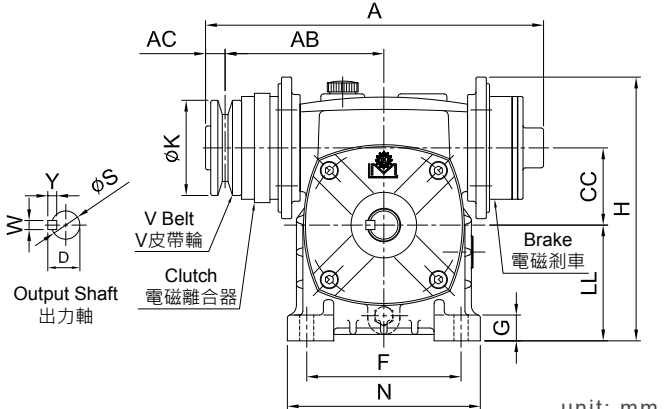
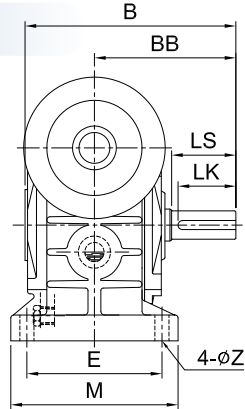
型號 Model	Ratio \ HP		A	AB	B	BB	BC	CC	馬達盤 IEC Motor Flange				腳座 Foot Stock						入力孔 Input Bore			角牙 R"	螺距 inch/ Pitch	重量 Weight (kg)	
	1/10~ 1/30	1/40~ 1/60							P	Q	R	K	E1	E2	F	M	N	G	Z	V	T				U
50	1/4	-	154	81	98	50	50	50	130	110	160	M8	93	102	90	220	118	16	11	12.7	4	11	1"	4T	7.6
60	1/2	1/4	167	87	111	55	55	60	130	110	160	M8	105	120	100	252	128	18	11	12.7	4	11	1"	4T	11.4
70	1	1/2	200	105	128	65	65	70	130	110	160	M8	120	135	120	288	160	20	15	16.3	5	14	1 1/8"	4T	17.6
80	2	1	226	118	138	70	70	80	165	130	200	M10	130	150	140	315	183	20	15	21.8	6	19	1 1/4"	4T	23.2
100	3	2	279	146	178	90	90	100	165	130	200	M10	155	180	190	380	230	26	15	27.3	8	24	1 1/2"	4T	41.4
120	5	3	333	173	198	100	100	120	215	180	248	M12	185	215	220	450	266	30	18	31.3	8	28	2"	4T	65
135	7 1/2	5	369	187	218	110	110	135	215	180	248	M12	210	235	260	495	305	35	18	31.3	8	28	2"	4T	81

1. VOWY·VOMY 減速機只適合輕負荷使用。VOWY & VOMY only used for light loading.
2. VOWY·VOMY 減速機之配合螺桿只生產全牙型。The screw for VOWY & VOMY is "No End Tybe" only.
3. 本公司另有生產螺旋升降器減速機 (J1~J9) 供客戶參考。Please refer to Page J1~J9 for Screw Jack Reducers.

# 1-STAGE WORM REDUCER WRC SERIES

## 單段蝸輪減速機 WRC 系列

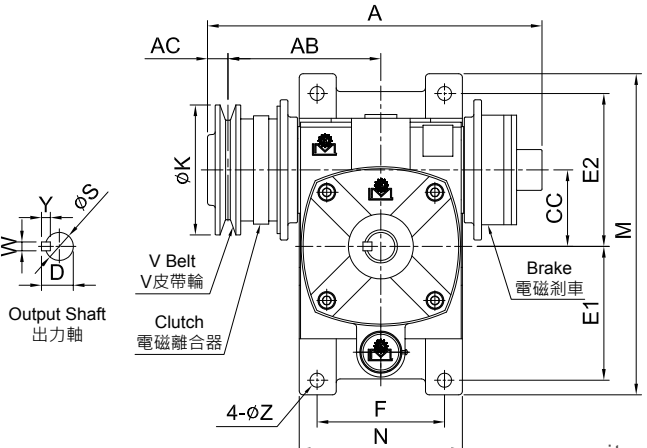
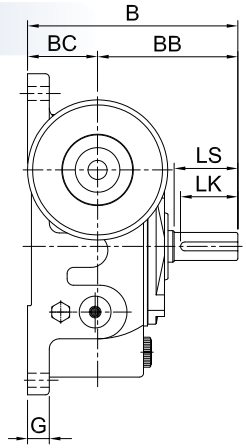
### MODEL : HWRC(WRC)



unit: mm

型號 Model	容量 kg	馬力 HP	減速比 Ratio	A	AB	AC	B	BB	CC	K	LL	H	腳座 Foot Stock						出力軸 Output Shaft				重量 Weight (kg)
													E	F	M	N	G	Z	LS	S	D	WxYxLK	
50	0.6	1/4	10~30	246	108	20	149	98	50	76	80	180	95	110	120	140	15	11	40	17	19	5x5x35	7.8
60	0.6	1/4	40~60	250	116	20	164	110	60	76	90	190	105	120	130	150	20	11	50	22	25	7x7x45	9.8
60	1.1	1/2	10~30	254	119	20	164	110	60	102	90	205	105	120	130	150	20	11	50	22	25	7x7x45	9.8
70	1.1	1/2	40~60	287	132	20	193	130	70	102	105	230	115	150	150	190	20	15	60	28	31	7x7x55	15.4
70	2.2	1	10~30	322	145	23	193	130	70	127	105	238	115	150	150	190	20	15	60	28	31	7x7x55	15.4
80	2.2	1	40~60	338	152	23	210	140	80	127	120	270	135	180	170	217	20	15	65	32	35	10x8x60	21.2
80	2.2	2	10~30	338	152	23	210	140	80	127	120	270	135	180	170	217	20	15	65	32	35	10x8x60	21.2
100	4.4	2	40~60	419	214	23	260	170	100	127	150	332	155	220	195	270	25	15	75	38	41	10x8x70	41.2
100	4.4	3	10~30	419	214	23	260	170	100	127	150	332	155	220	195	270	25	15	75	38	41	10x8x70	41.2
120	8	3 5	40~60 10~30	504	227	32	288	190	120	210	180	405	180	260	230	310	30	18	85	45	48	12x8x80	70

### MODEL : VWRC



unit: mm

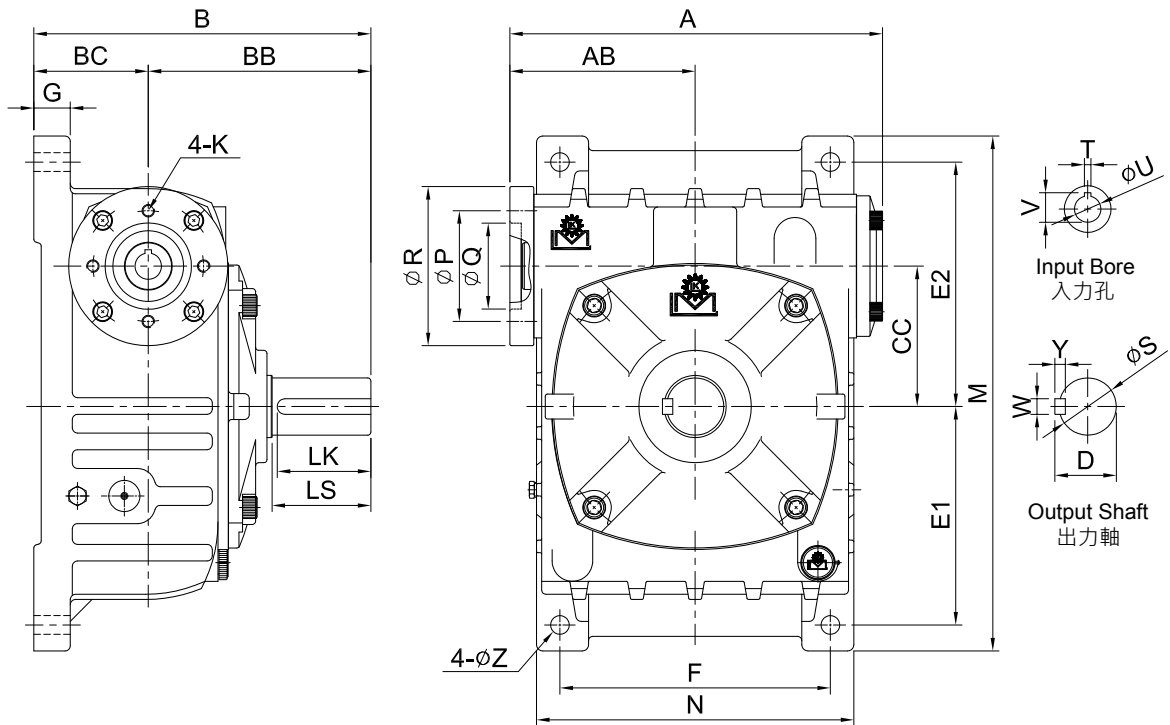
型號 Model	容量 kg	馬力 HP	減速比 Ratio	A	AB	AC	B	BB	CC	K	BC	腳座 Foot Stock						出力軸 Output Shaft				重量 Weight (kg)	
												E2	E1	F	M	N	G	Z	LS	S	D		WxYxLK
50	0.6	1/4	10~30	326	108	20	148	98	50	76	50	102	93	90	220	118	15	11	40	17	19	5x5x35	8
60	0.6	1/4	40~60	250	116	20	165	110	60	76	55	120	105	100	252	128	18	11	50	22	25	7x7x45	10.8
60	1.1	1/2	10~30	254	119	20	165	110	60	102	55	120	105	100	252	128	18	11	50	22	25	7x7x45	10.8
70	1.1	1/2	40~60	287	132	20	195	130	70	102	65	135	120	120	288	160	20	15	60	28	31	7x7x55	16
70	2.2	1	10~30	322	145	23	195	130	70	127	65	135	120	120	288	160	20	15	60	28	31	7x7x55	16
80	2.2	1	40~60	338	152	23	210	140	80	127	70	150	130	140	315	180	20	15	65	32	35	10x8x60	21.6
80	2.2	2	10~30	338	152	23	210	140	80	127	70	150	130	140	315	180	20	15	65	32	35	10x8x60	21.6
100	4.4	2	40~60	419	214	23	260	170	100	127	90	180	155	190	380	230	30	15	75	38	41	10x8x70	42.8
100	4.4	3	10~30	419	214	23	260	170	100	127	90	180	155	190	380	230	30	15	75	38	41	10x8x70	42.8
120	8	3 5	40~60 10~30	504	227	32	290	190	120	210	100	215	185	220	450	266	30	18	85	45	48	12x8x80	66.8

HWRC(WRC) - VWRC 電磁剎車 / 離合器定格電壓 DC 24V(需另外訂購)。

HWRC (WRC), VWRC electromagnetic brake / clutch rated voltage DC 24V (must be ordered separately).

## MODEL : VMP

裝配油壓馬達用 For Hydraulic Motor



unit: mm

型號 Model	A	AB	B	BB	BC	CC	油壓盤 Motor Flange				腳座 Foot Stock				入力孔 Input Bore				出力軸 Output Shaft				重量 Weight (kg)		
							P	Q	R	K	E1	E2	F	M	N	G	Z	V	T	U	LS	S		D	WxYxLK
100	278	143.5	260	170	90	100	106.5	82.55	133	M12	155	180	190	380	230	26	15	28.2	6.35	25.4	75	38	41	10x8x70	41
120	314	155	290	190	100	120	106.5	82.55	145	M12	185	215	220	452	266	30	18	28.2	6.35	25.4	85	45	48	12x8x80	63.6
135	358	178	324	214	110	135	106.5	82.55	153	M12	210	235	260	497	306	35	18	28.2	6.35	25.4	95	55	59	15x10x90	84
155	396	197	393	253	140	155	106.5	82.55	153	M12	145	265	290	464	345	45	20	28.2	6.35	25.4	110	60	64	15x10x105	116.8
175	457	227.5	412	262	150	175	106.5	82.55	174	M12	167	293	320	520	385	45	20	28.2	6.35	25.4	110	65	69	18x10x105	148.4

# WORM REDUCER E SERIES

## 蝸輪減速機 E 系列

### E 系列 Series

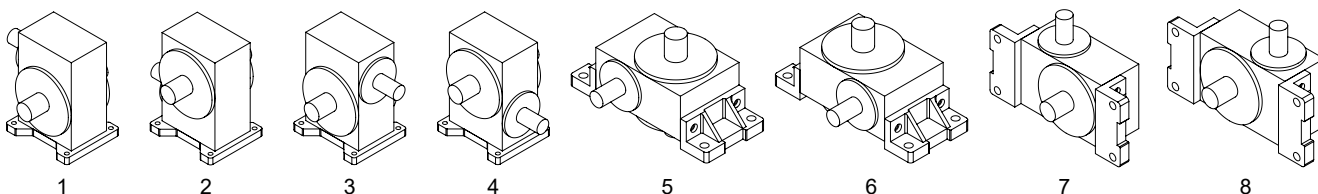
#### 特點 Features

體積小、重量輕，任意安裝方向，可附加腳座，安裝方式多變化，型號從 40# ~ 135#。

Small size, light weight, free installation direction, with base kits, various installation methods, Model No.: 40# to 135#.

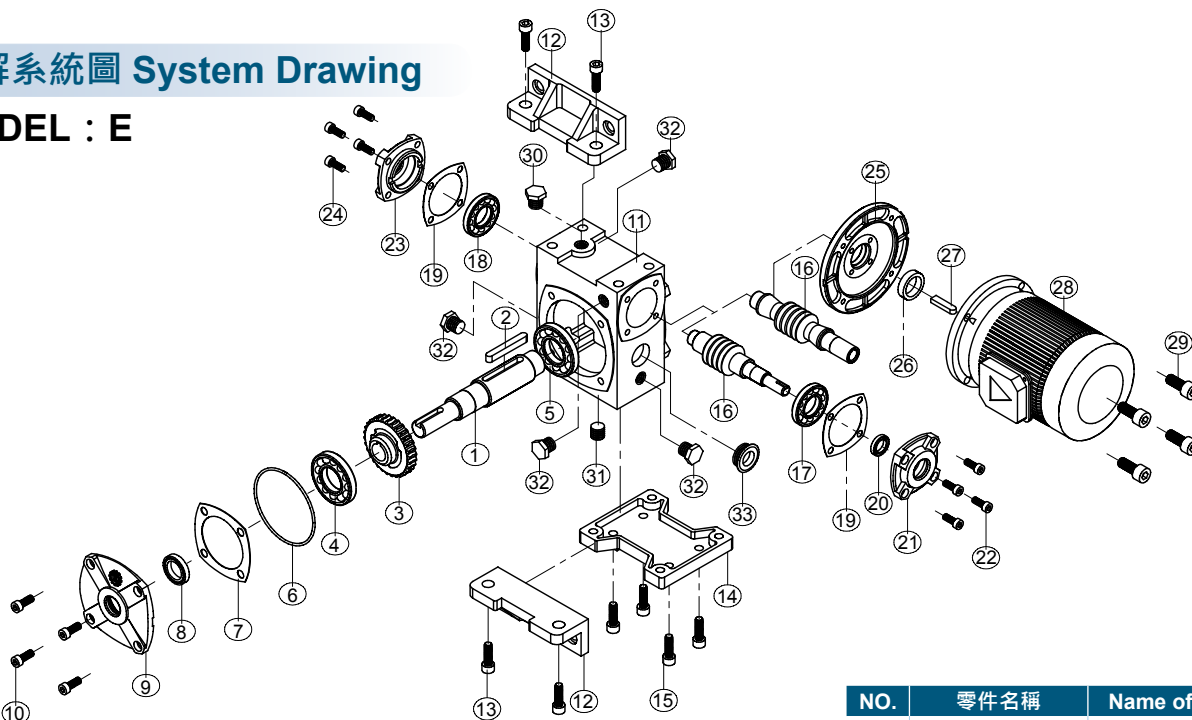
#### 油量表 Oil Capacities (unit: ℓ)

Type Model	E EM	EO EOM	EOV	EOVM	LD	LDM	TW	TM	VOF VOFM
40	0.2	0.2	-	-	-	-	-	-	-
50	0.3	0.3	0.4	0.4	-	-	0.3	0.3	-
60	0.5	0.5	0.5	0.5	-	-	0.4	0.4	-
70	0.8	0.8	0.8	0.8	1.5	1.5	0.9	0.9	0.6
80	1.2	1.2	1.2	1.2	2.5	2.5	1.2	1.2	1.0
100	2.6	2.6	2.6	2.6	4.7	4.7	2.6	2.6	1.6
120	4.5	4.5	4.5	4.5	-	-	3.9	3.9	2.4
135	7.2	7.2	7.2	7.2	6.4	6.4	4.8	4.8	3.5



#### 分解系統圖 System Drawing

MODEL : E

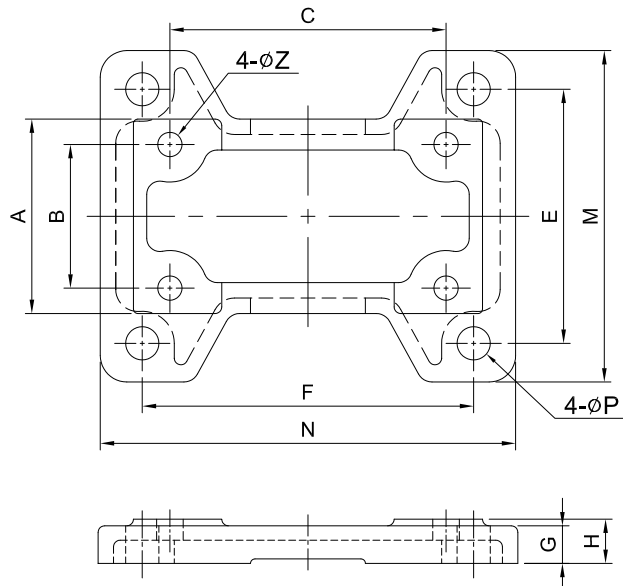
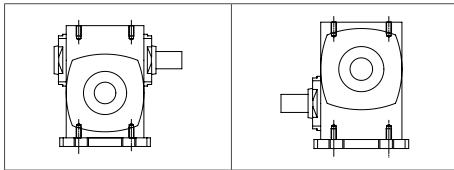


NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	出力軸	Output Shaft	12	L 型腳座	Base Kits (L)
2	雙圓鍵	Key	13	六角承窩頭螺絲	Hex Screw
3	蝸輪	Worm Wheel	14	H 型腳座	Base Kits (H)
4	滾珠軸承	Ball Bearing	15	六角承窩頭螺絲	Hex Screw
5	滾珠軸承	Ball Bearing	16	蝸桿	Worm Shaft (Input Shaft)
6	O 形環	O-Ring	17	滾錐軸承	Taper Roller Bearing
7	非石棉墊片	Asbestos Free Gasket	18	滾錐軸承	Taper Roller Bearing
8	油封	Oil Seal	19	非石棉墊片	Asbestos Free Gasket
9	出力軸蓋	Output Shaft Cover	20	油封	Oil Seal
10	六角承窩頭螺絲	Hex Screw	21	入力軸蓋 (有孔)	Input Shaft Cover (with bore)
11	蝸輪箱	Worm Wheel	22	六角承窩頭螺絲	Hex Screw

NO.	零件名稱	Name of Parts
23	入力軸蓋	Input Shaft Cover
24	六角承窩頭螺絲	Hex Screw
25	馬達盤	Motor Flange
26	油封	Oil Seal
27	單圓鍵	Key
28	馬達	Motor
29	六角承窩頭螺絲	Hex Screw
30	注油栓	Oil Plug
31	沉頭油栓	Plug
32	洩油栓	Drain Plug
33	油鏡	Oil Gauge
17,18	60# 以下滾珠軸承	Ball Bearing for Model 60# below



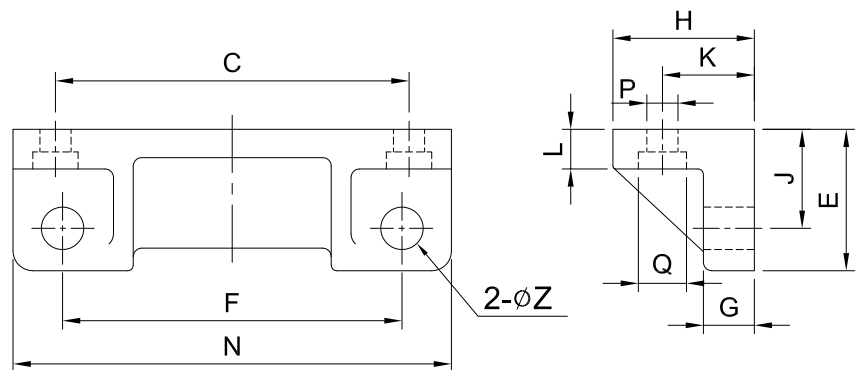
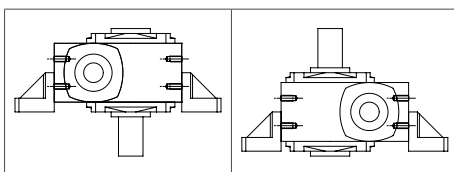
### H 型腳座 H Type Base Kits



型號 Model	A	B	C	E	F	G	H	M	N	P	Z	重量 Weight (kg)
40	55	35	76	71	80	12	12	97	104	14x9	7	0.2
50	70	50	90	95	110	13	15	120	140	11	9	0.5
60	80	55	100	105	120	15	18	130	150	11	11	1
70	88	65	125	115	150	17	20	150	188	15	12	1
80	100	75	145	135	180	17	20	168	218	15	12	1.5
100	118	85	185	155	220	21	25	188	268	15	12	2.5
120	132	100	220	180	260	21	25	230	320	18	15	4.6
135	145	110	260	200	290	25	30	250	350	18	17	5.8

unit: mm

### L 型腳座 L Type Base Kits



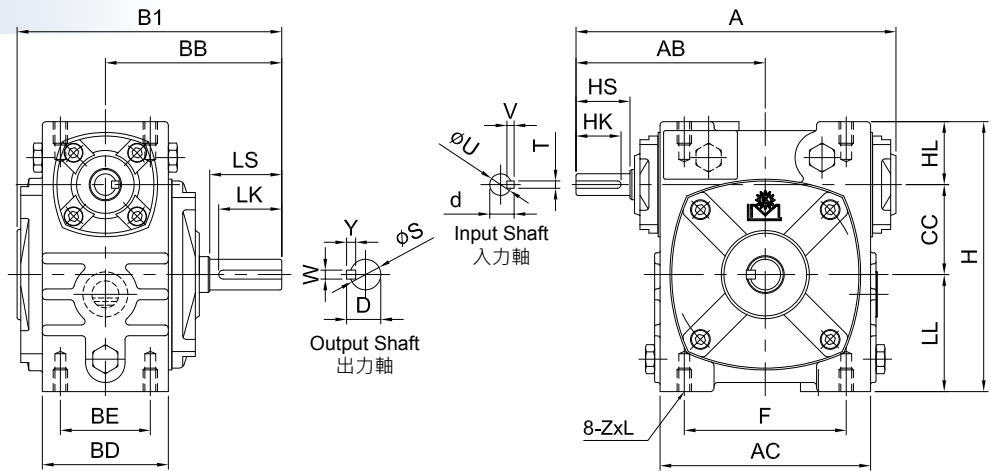
型號 Model	C	E	F	G	H	J	K	L	N	P	Q	Z	重量 Weight (kg)
50	90	40	90	14	40	25	25	9	115	9	14	11	1
60	100	45	100	15	45	30	27.5	12	126	11	17	11	2
70	125	50	120	18	50	35	32.5	14	155	11	17	15	2.5
80	145	60	140	20	52	40	32.5	18	174	11	17	15	4
100	185	60	190	20	70	40	47.5	18	224	13	19	15	4
120	220	62.5	220	24	80	40	50	18	264	15	21	18	6
135	260	67.5	260	28	77	45	55	24	304	17	26	18	5.1

unit: mm

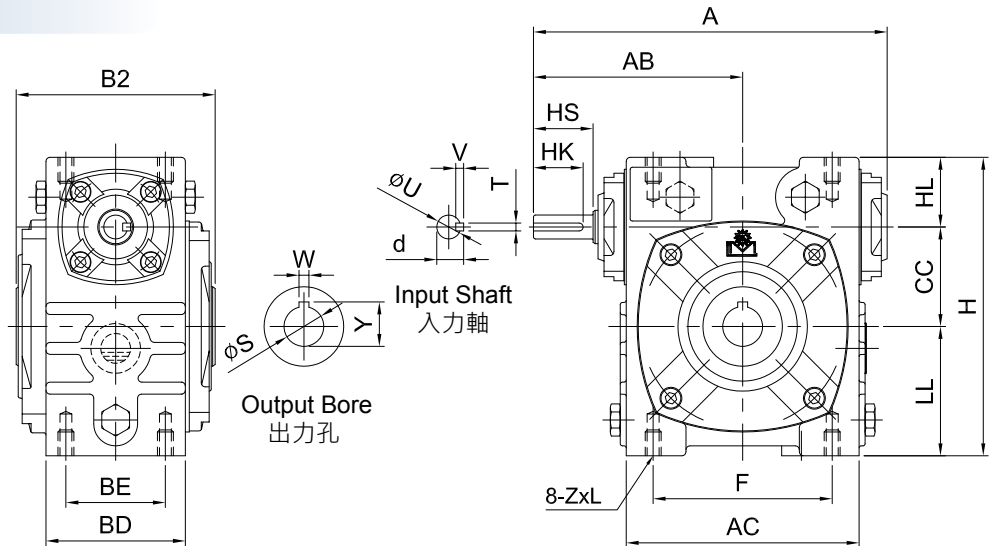
# WORM REDUCER E SERIES

## 蝸輪減速機 E 系列

### MODEL : E

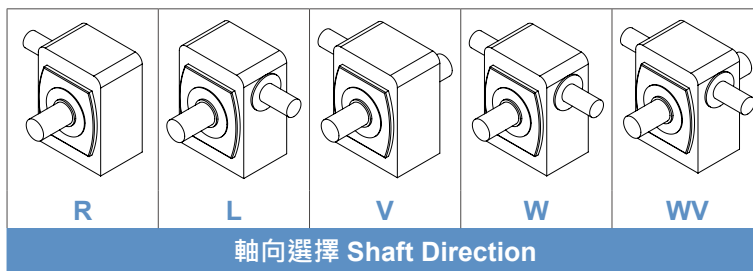


### MODEL : EO



unit: mm

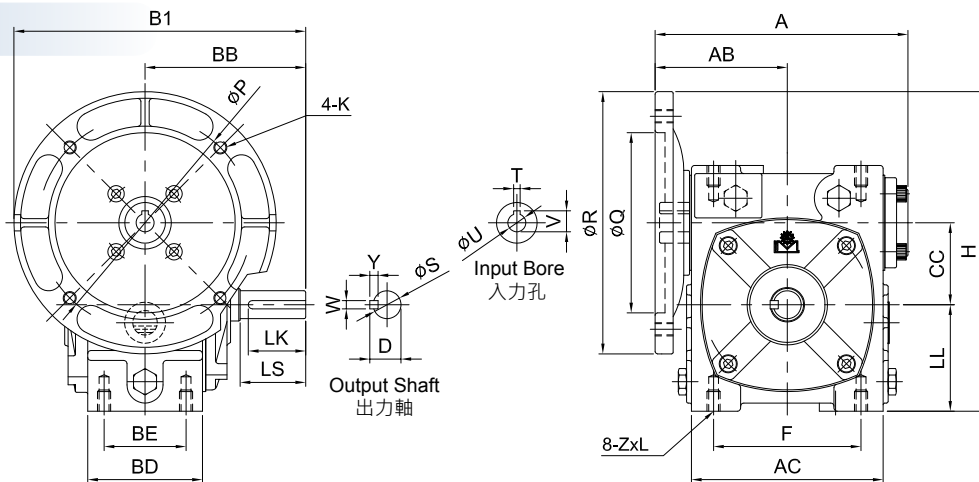
型號 Model	出力孔 Output Bore		
	W	S	Y
40	6	20	22.8
50	6	20	22.8
60	8	25	28.3
70	8	30	33.3
80	10	35	38.3
100	10	40	43.3
120	12	45	48.3
135	15	55	59.3



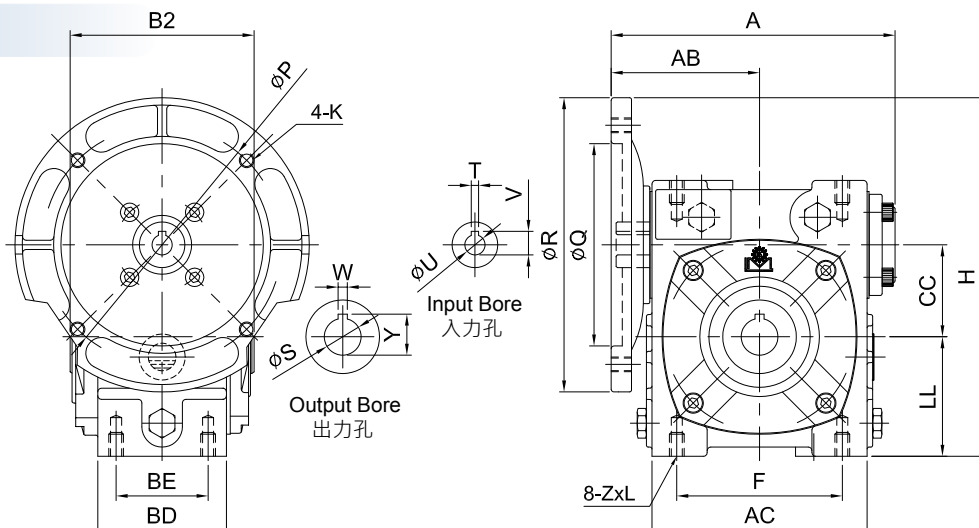
unit: mm

型號 Model	Ratio \ HP		A	AB	B1	B2	BB	CC	HL	LL	H	腳座 Foot Stock					輸入軸 Input Shaft				輸出軸 Output Shaft				重量 Weight (kg)	
	1/10~1/30	1/40~1/60										AC	F	BD	BE	ZxL	HS	U	d	TxVxHK	LS	S	D	WxYxLK	E	EO
40	1/8	-	139.5	86	122	88	80	40	28	48	116	92	76	55	35	M6x12	25	12	13.5	4x4x20	30	15	17	5x5x25	3	4
50	1/4	-	178	105	147	98	98	50	35	65	150	115	90	70	50	M8x16	30	12	13.5	4x4x25	40	17	19	5x5x35	6.2	7.2
60	1/2	1/4	198	120	165	108	110	60	42	75	177	124	100	77	55	M10x18	40	15	17	5x5x35	50	22	25	7x7x45	9.2	10.4
70	1	1/2	235	140	193	128	130	70	50	85	205	154	125	85	65	M10x18	40	18	20	5x5x35	60	28	31	7x7x55	14	14.2
80	2	1	268	161	208	138	140	80	60	92	232	174	145	96	75	M10x18	50	22	25	7x7x45	65	32	35	10x8x60	18.4	20.4
100	3	2	323	190	258	178	170	100	75	115	290	225	185	116	85	M12x20	50	25	28	7x7x45	75	38	41	10x8x70	34.6	35.4
120	5	3	391	231	288	198	190	120	95	155	370	264	220	132	100	M14x28	65	30	33	7x7x60	85	45	48	12x8x80	56.8	58.2
135	7 1/2	5	438	258	319	218	214	135	105	185	425	306	260	150	110	M16x30	75	35	38	10x8x70	95	55	59	15x10x90	81.2	78.8

MODEL : EM

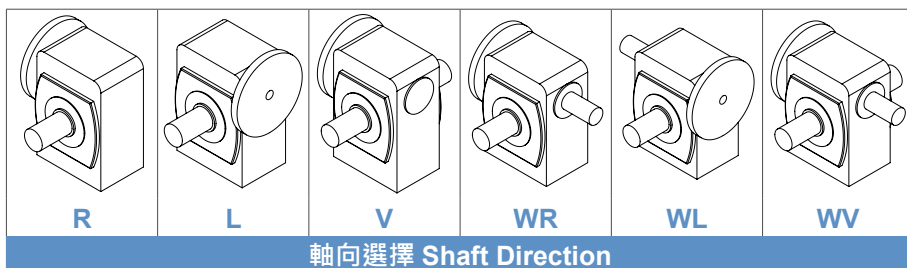


MODEL : EOM



unit: mm

型號 Model	出力孔 Output Bore		
	S	W	Y
50	20	6	22.8
60	25	8	28.3
70	30	8	33.3
80	35	10	38.3
100	40	10	43.3
120	45	12	48.3
135	55	15	59.3



軸向選擇 Shaft Direction

unit: mm

型號 Model	Ratio \ HP		A	AB	B1	B2	BB	CC	LL	H	腳座 Foot Stock					馬達盤 IEC 及入力孔 Motor Flange & Input Bore							出力軸 Output Shaft						重量 Weight (kg)	
	1/10~ 1/30	1/40~ 1/60									AC	F	BD	BE	ZxL	P	Q	R	K	V	T	U	LS	S	D	WxYxLK	EM	EOM		
	50	1/4									-	154	81	178	98	98	50	65	195	115	90	70	50	M8x16	130	110	160	M8	12.7	4
60	1/2	1/4	165	87	190	108	110	60	75	215	124	100	77	55	M10x18	130	110	160	M8	12.7	4	11	50	22	25	7x7x45	9.4	10.6		
70	1	1/2	200	105	210	128	130	70	85	235	154	125	85	65	M10x18	130	110	160	M8	16.3	5	14	60	28	31	7x7x55	15.6	15.4		
			206	111	230					165						130	200	M10	21.8	6	19									
80	2	1	229	121	240	138	140	80	92	272	174	145	96	75	M10x18	165	130	200	M10	21.7	6	19	65	32	35	10x8x60	20	22		
			284	150	295					272						174	145	96	75	M10x18	21.7	6							19	
100	3	2	280	146	270	178	170	100	115	315	225	185	116	85	M12x20	165	130	200	M10	27.1	8	24	75	38	41	10x8x70	37.8	38.4		
			284	150	295					315						225	185	116	85	M12x20	31.3	8							28	
120	5	3	333	173	315	198	190	120	155	400	264	220	132	100	M14x28	215	180	248	M12	31.3	8	28	85	45	48	12x8x80	60.2	61.6		
			339	173	315					400						264	220	132	100	M14x28	41.3	10							38	
135	7 1/2	5	374	193	339	218	214	135	185	445	306	260	150	110	M16x30	215	180	248	M12	31.3	8	28	95	55	59	15x10x90	81.6	84		
			364	193	364					445						306	260	150	110	M16x30	41.3	10							38	

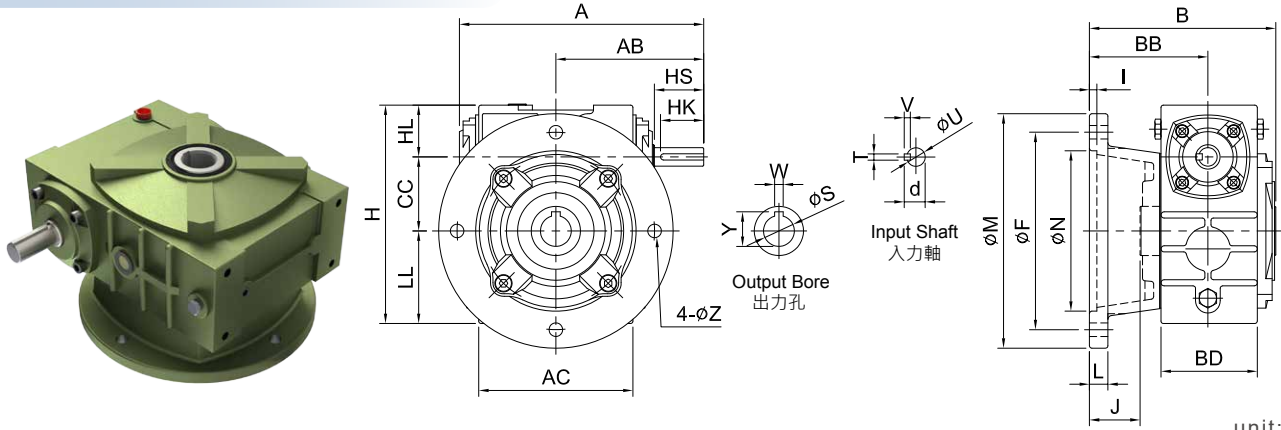
# WORM REDUCER E SERIES

## 蝸輪減速機 E 系列

◆ 安裝方式，依 VOF 系列安裝方向為主 ( 第 G38 頁 )。

Please refer to Page. G38 to confirm the installation.

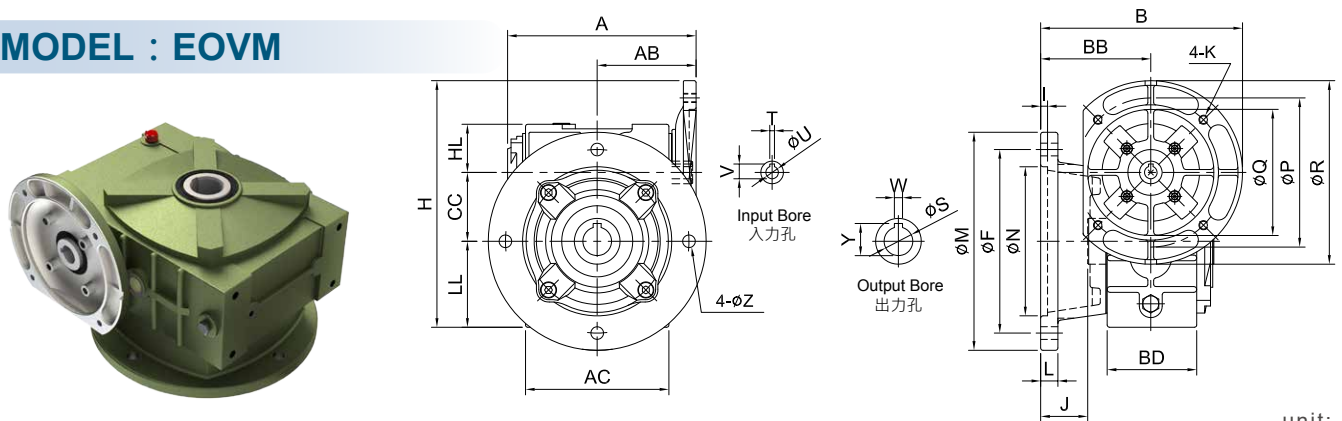
### MODEL : EOV



unit: mm

型號 Model	Ratio \ HP		A	AB	AC	B	BB	BD	CC	HL	LL	H	M	F	L	I	J	N	Z	入力軸 Input Shaft				出力孔 Output Bore			重量 Weight (kg)
	1/10 ~ 1/30	1/40 ~ 1/60																		HS	U	d	TxVxHK	W	Y	S	
50	1/4	-	178	105	115	145	96	70	50	35	65	150	180	150	15	6	47	120	11	30	12	13.5	4x4x25	6	22.8	20	9.2
60	1/2	1/4	198	120	124	151	96	77	60	42	75	177	190	160	15	6	42	130	11	40	15	17	5x5x35	8	28.3	25	12.2
70	1	1/2	235	140	154	179	115	85	70	50	85	205	250	215	16	6	51	180	15	40	18	20	5x5x35	8	33.3	30	18.4
80	2	1	268	161	174	184	115	96	80	60	92	232	250	215	16	6	46	180	15	50	22	25	7x7x45	10	38.3	35	24.4
100	3	2	323	190	225	234	145	116	100	75	115	290	300	265	16	5	56	230	15	50	25	28	7x7x45	10	43.3	40	41.6
120	5	3	391	231	264	244	145	132	120	95	155	370	350	300	20	7	46	260	17	65	30	33	7x7x60	12	48.3	45	63
135	7 1/2	5	438	258	306	284	175	150	135	105	185	425	400	350	24	7	66	320	18	75	35	38	10x8x70	15	59.3	55	83

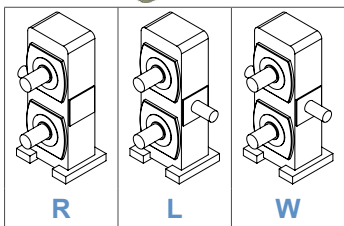
### MODEL : EOVM



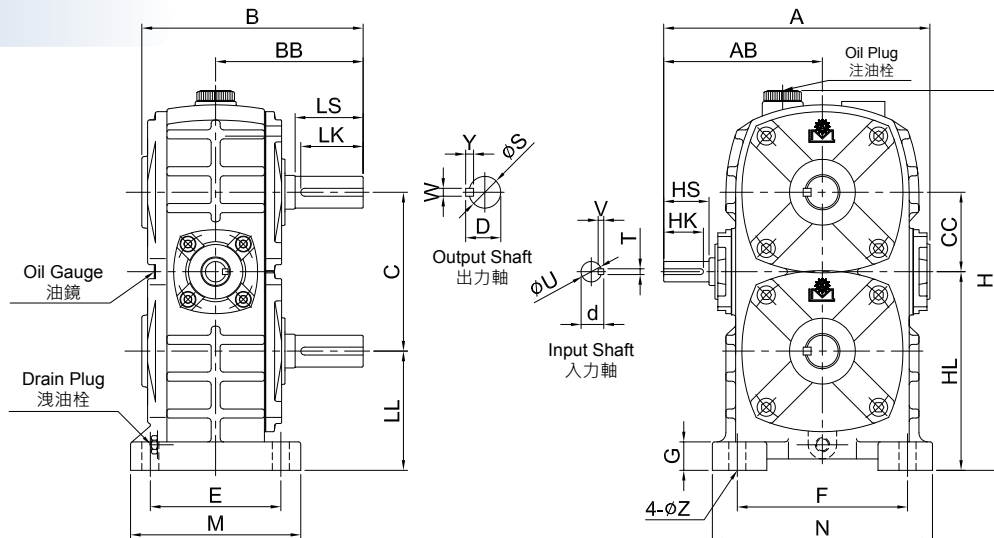
unit: mm

型號 Model	Ratio \ HP		A	AB	AC	B	BB	BD	CC	HL	LL	H	M	F	L	I	J	N	Z	馬達盤 Motor Flange				入力孔 Input Bore			出力孔 Output Bore			重量 Weight (kg)
	1/10 ~ 1/30	1/40 ~ 1/60																		P	Q	R	K	V	T	U	W	Y	S	
50	1/4	-	154	81	115	176	96	70	50	35	65	195	180	150	15	6	47	120	11	130	110	160	M8	12.7	4	11	6	22.8	20	9.6
60	1/2	1/4	165	87	124	176	96	77	60	42	75	215	190	160	15	6	42	130	11	130	110	160	M8	12.7 16.3	4 5	11 14	8	28.3	25	12.4
70	1	1/2	206	105 111	154	195 215	115	85	70	50	85	235 255	250	215	16	6	51	180	15	130 165	110 130	160 200	M8 M10	16.3 21.8	5 6	14 19	8	33.3	30	20
80	2	1	229	121	174	215	115	96	80	60	92	272	250	215	16	6	46	180	15	165	130	200	M10	21.7 27.2	6 8	19 24	10	38.3	35	26
100	3	2	280	146	225	245 270	145	116	100	75	115	315 340	300	265	16	5	56	230	15	165 215	130 180	200 250	M10 M12	27.1 31.3	8	24 28	10	43.3	40	44.6
120	5	3	333	173	264	270	145	132	120	95	155	400	350	300	20	7	46	260	17	215	180	250	M12	31.3	8	28	12	48.3	45	66.6
135	7 1/2	5	374	193	306	300 325	175	150	135	105	185	445 470	400	350	24	7	66	320	18	215 265	180 230	250 300	M12	31.3 41.3	8 10	28 38	15	59.3	55	89

**MODEL : LD**



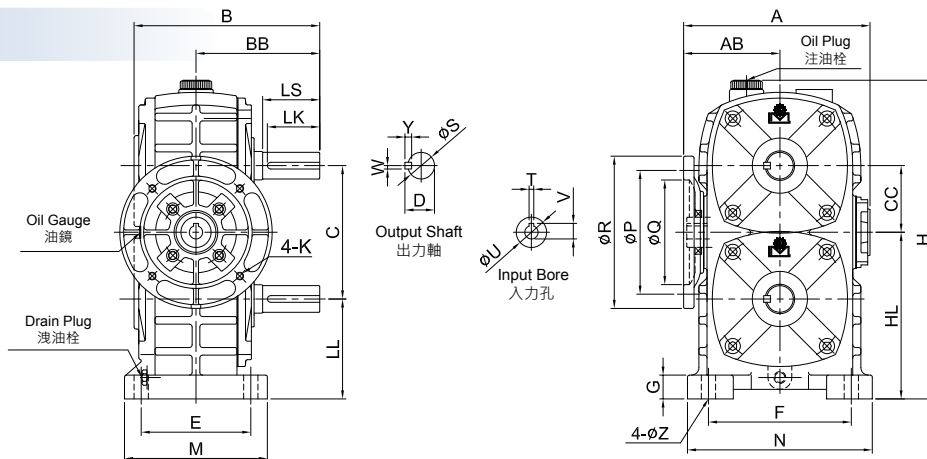
軸向選擇 Shaft Direction



unit: mm

型號 Model	Ratio \ HP		腳座 Foot Stock										入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)					
	1/10 ~ 1/30	1/40 ~ 1/60	A	AB	B	BB	C	CC	H	HL	LL	E	F	M	N	G	Z	HS	U	d		TxVxHK	LS	S	D	WxYxLK
70	1	1/2	235	140	194	130	140	70	348	175	105	115	150	150	194	25	15	40	18	20	5x5x35	60	28	31	7x7x55	23
80	2	1	268	161	208	140	160	80	378	192	112	135	180	170	220	25	15	50	22	25	7x7x45	65	32	35	10x8x60	30.6
100	3	2	322	190	258	170	200	100	472	250	150	155	220	197	270	27	15	50	25	28	7x7x45	75	38	41	10x8x70	59.4
135	7 1/2	5	435	258	327	214	270	135	636	350	215	200	290	250	350	35	18	75	35	38	10x8x70	95	55	59	15x10x90	135

**MODEL : LDM**



unit: mm

型號 Model	Ratio \ HP		腳座 Foot Stock										入力孔 Input Bore			馬達盤 IEC Motor Flange				出力軸 Output Shaft				重量 Weight (kg)					
	1/10 ~ 1/30	1/40 ~ 1/60	A	AB	B	BB	C	CC	H	HL	LL	E	F	M	N	G	Z	V	T	U	P	Q	R		K	LS	S	D	WxYxLK
70	1	1/2	200	102	108	130	140	70	348	175	105	115	150	150	194	25	15	16.3	5	14	130	110	160	M8	60	28	31	7x7x55	24.6
80	2	1	223	118	208	140	160	80	378	192	112	135	180	170	220	25	15	21.8	6	19	165	130	200	M10	65	32	35	10x8x60	32
																		27.3	8	24	165	130	200	M10					
100	3	2	278	146	258	170	200	100	472	250	150	155	220	197	270	27	15	27.3	8	24	165	130	200	M10	75	38	41	10x8x70	62.4
																		31.3	8	28	215	180	250	M12					
135	7 1/2	5	370	193	327	214	270	135	636	350	215	200	290	250	350	35	18	31.3	8	28	215	180	250	M12	95	55	59	15x10x90	142
			371	194														41.3	10	38	265	230	300	M12					



# WORM REDUCER T SERIES

## 蝸輪減速機 T 系列

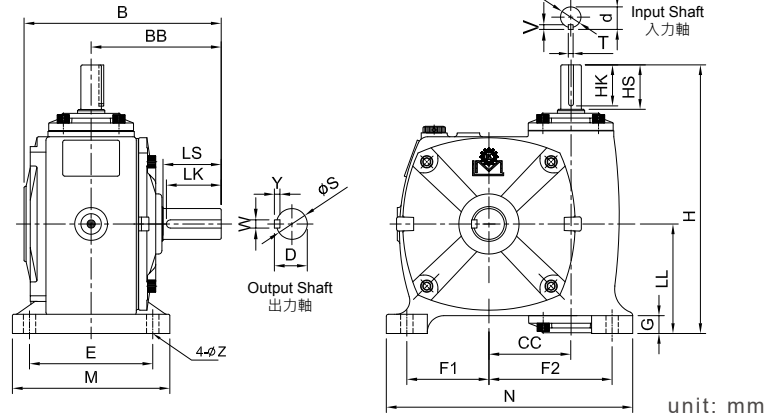
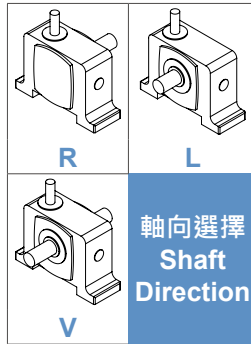
### MODEL : TW

R : 右軸 (腳座貼地面, 油鏡端面向自己, 此時輸出端位於右側)

Right Shaft (when facing oil gauge and foot on the ground, output shaft is on the right)

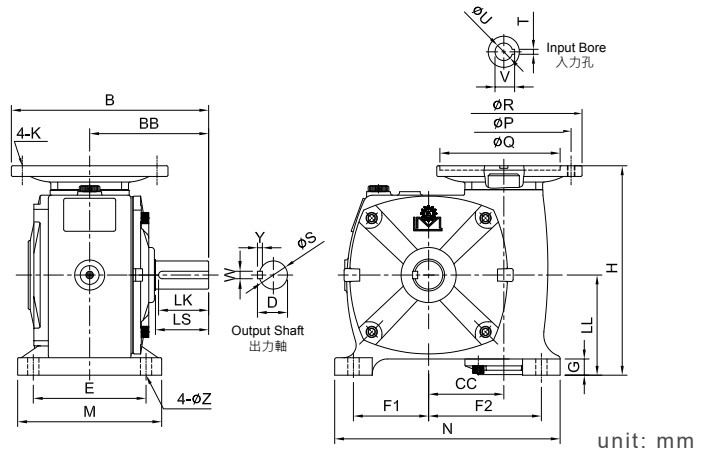
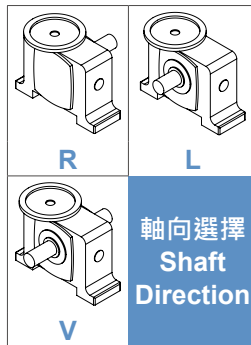
L : 左軸 (腳座貼地面, 油鏡端面向自己, 此時輸出端位於左側)

Left Shaft (when facing oil gauge and foot on the ground, output shaft is on the left)



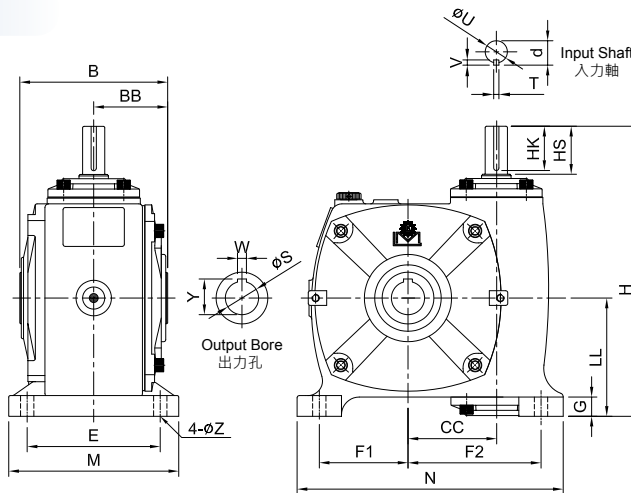
型號 Model	Ratio \ HP		H	LL	CC	B	BB	腳座 Foot Stock						入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)	
	1/10 ~ 1/30	1/40 ~ 1/60						F1	F2	E	M	N	G	Z	HS	U	d	TxVxHK	LS	S	D		WxYxLK
50	1/4	-	181	76	50	149	98	53	77	100	124	163	16	11	30	12	13.5	4x4x25	40	17	19	5x5x35	7
60	1/2	1/4	210	90	60	165	110	67	98	105	130	200	17	11	40	15	17	5x5x35	50	22	25	7x7x45	9.8
70	1	1/2	236	95	70	189	130	75	115	120	150	230	20	15	40	18	20	5x5x35	60	28	31	7x7x55	13.4
80	2	1	269	105	80	206	140	90	125	125	160	260	20	15	50	22	25	7x7x45	65	32	35	10x8x60	18.4
100	3	2	326	135	100	256	170	100	150	155	195	310	25	15	50	25	28	7x7x45	75	38	41	10x8x70	40.4
120	5	3	392	160	120	286	190	120	180	180	230	360	30	18	65	30	33	7x7x60	85	45	48	12x8x80	57.8
135	7 1/2	5	426	170	135	323	214	130	200	200	250	390	30	18	75	35	38	10x8x70	95	55	59	15x10x90	80

### MODEL : TMW



型號 Model	Ratio \ HP		H	LL	CC	B	BB	馬達盤 IEC Motor Flange				腳座 Foot Stock						入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)	
	1/10 ~ 1/30	1/40 ~ 1/60						P	Q	R	K	F1	F2	E	M	N	G	Z	V	T	U	LS	S	D		WxYxLK
50	1/4	-	163	76	50	178	98	130	110	160	M8	53	77	100	124	163	16	11	12.7	4	11	40	17	19	5x5x35	7.8
60	1/2	1/4	177	90	60	190	110	130	110	160	M8	67	98	105	130	200	17	11	12.7	4	11	50	22	25	7x7x45	10.2
70	1	1/2	201 207	95	70	210 230	130	130	110 165	160 200	M8 M10	75	115	120	150	230	20	15	16.3	5	14	60	28	31	7x7x55	15
																			21.7	6	19					
80	2	1	229 270	105	80	240 294	140	165	130 215	200 248	M10 M12	90	125	125	160	260	20	15	21.7	6	19	65	32	35	10x8x60	20
																			27.2	8	24					
100	3	2	282 286	135	100	270 294	170	165	130 180	200 248	M10 M12	100	150	155	195	310	25	15	27.1	8	24	75	38	41	10x8x70	43.4
																			31.3	8	28					
120	5	3	324 360	160	120	315 361	190	215	180 230	248 300	M12	120	180	180	230	360	30	18	31.3	8	28	85	45	48	12x8x80	60
																			31.3	8	28					
135	7 1/2	5	360 361	170	135	339 364	214	215	180 230	248 300	M12	130	200	200	250	390	30	18	31.3	8	28	95	55	59	15x10x90	80.4
																			41.3	10	38					

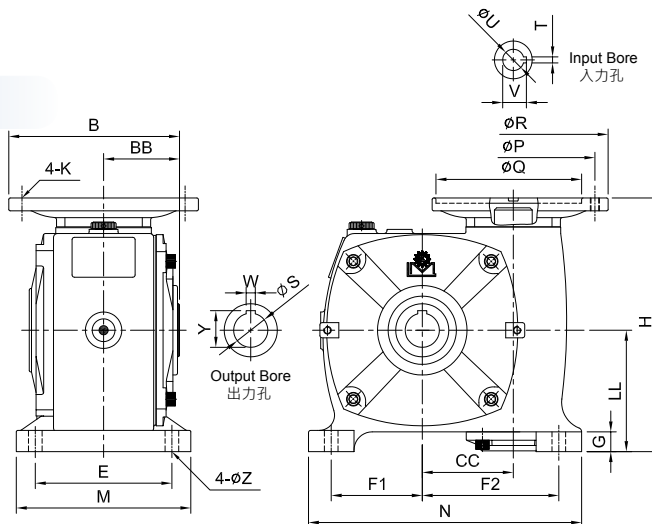
MODEL : TOW



unit: mm

型號 Model	Ratio \ HP		H	LL	CC	BB	B	腳座 Foot Stock							入力軸 Input Shaft				出力孔 Output Bore			重量 Weight (kg)
	1/10 ~ 1/30	1/40 ~ 1/60						F1	F2	E	M	N	G	Z	HS	U	d	TxVxHK	W	Y	S	
60	1/2	1/4	210	90	60	57	108	67	98	105	130	200	17	11	40	15	17	5x5x35	8	28.3	25	
70	1	1/2	236	95	70	64	128	75	115	120	150	230	20	15	40	18	20	5x5x35	8	33.3	30	13.6
80	2	1	269	105	80	69	138	90	125	125	160	260	20	15	50	22	25	7x7x45	10	38.3	35	20
100	3	2	326	135	100	89	178	100	150	155	195	310	25	15	50	25	28	7x7x45	10	43.3	40	41.2
120	5	3	392	160	120	99	198	120	180	180	230	360	30	18	65	30	33	7x7x60	12	48.3	45	57.8
135	7 1/2	5	426	170	135	109	218	130	200	200	250	390	30	18	75	35	38	10x8x70	15	59.3	55	77.8

MODEL : TOM



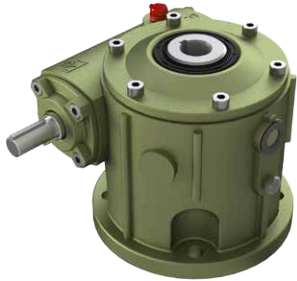
unit: mm

型號 Model	Ratio \ HP		H	LL	CC	BB	B	馬達盤 IEC Motor Flange				腳座 Foot Stock						入力孔 Input Bore			出力孔 Output Bore			重量 Weight (kg)	
	1/10 ~ 1/30	1/40 ~ 1/60						P	Q	R	K	F1	F2	E	M	N	G	Z	V	T	U	W	Y		S
60	1/2	1/4	177	90	60	57	108	130	110	160	M8	67	98	105	130	200	17	11	12.7 16.3	4 5	11 14	8	28.3	25	10.8
70	1	1/2	201 207	95	70	64	128	130 165	110 130	160 200	M8 M10	75	115	120	150	230	20	15	16.3 21.7	5 6	14 19	8	33.3	30	15.2
80	2	1	229	105	80	69	138	165	130	200	M10	90	125	125	160	260	20	15	21.7 27.2	6 8	19 24	10	38.3	35	22.4
100	3	2	282 286	135	100	89	178	165 215	130 180	200 248	M10 M12	100	150	155	195	310	25	15	27.1 31.3	8 8	24 28	10	43.3	40	43.2
120	5	3	326	160	120	100	198	215	180	248	M12	120	180	180	230	360	30	18	31.3	8	28	12	48.3	45	60
135	7 1/2	5	360 361	170	135	109	218	215 265	180 230	248 300	M12	130	200	200	250	390	30	18	31.3 41.3	8 10	28 38	15	59.3	55	78.4

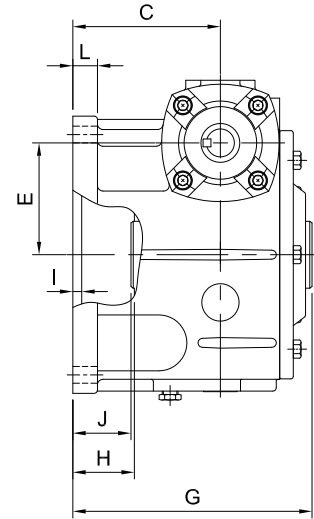
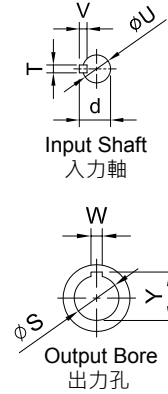
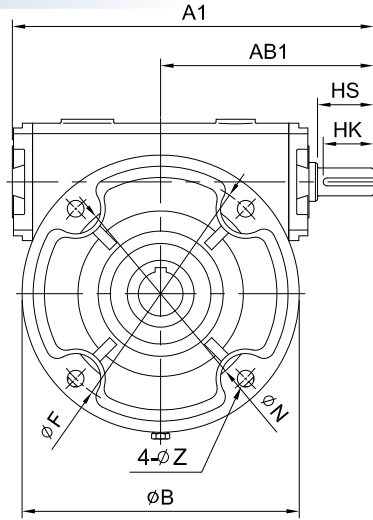
# WORM REDUCER VOF SERIES

## 蝸輪減速機 VOF 系列

### MODEL : VOF



▲ 70#~100#



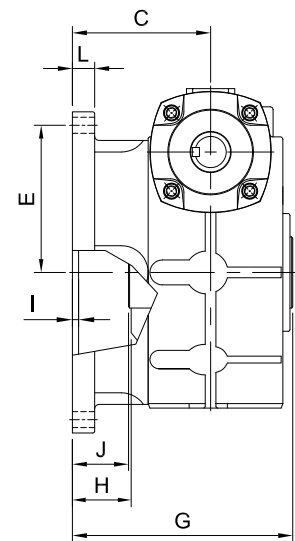
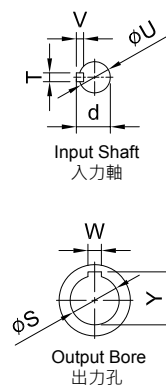
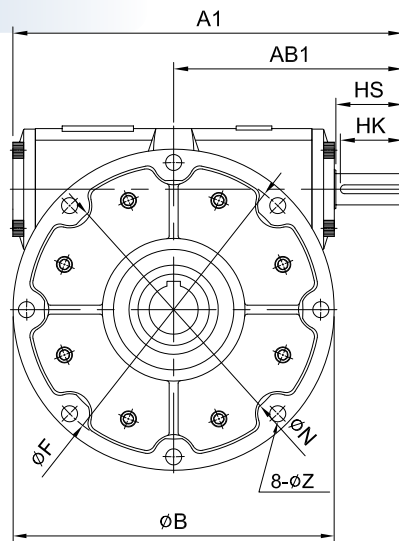
unit: mm

型號 Model	Ratio \ HP		A1	AB1	B	C	N	E	F	G	H	I	J	L	Z	入力軸 Input Shaft				出力孔 Output Bore			重量 Weight (kg)
	1/10 ~ 1/30	1/40 ~ 1/60														HS	U	d	TxVxHK	W	Y	S	
	70	1														1/2	235	140	182	106	115	70	
80	2	1	268	161	200	107	130	80	170	180	34	12	30	20	15	50	22	25	7x7x45	10	38.3	35	19.4
100	3	2	323	190	248	132	180	100	215	214	55	14	52	22	15	50	25	28	7x7x45	10	43.3	40	35

### MODEL : VOF



▲ 120#~135#



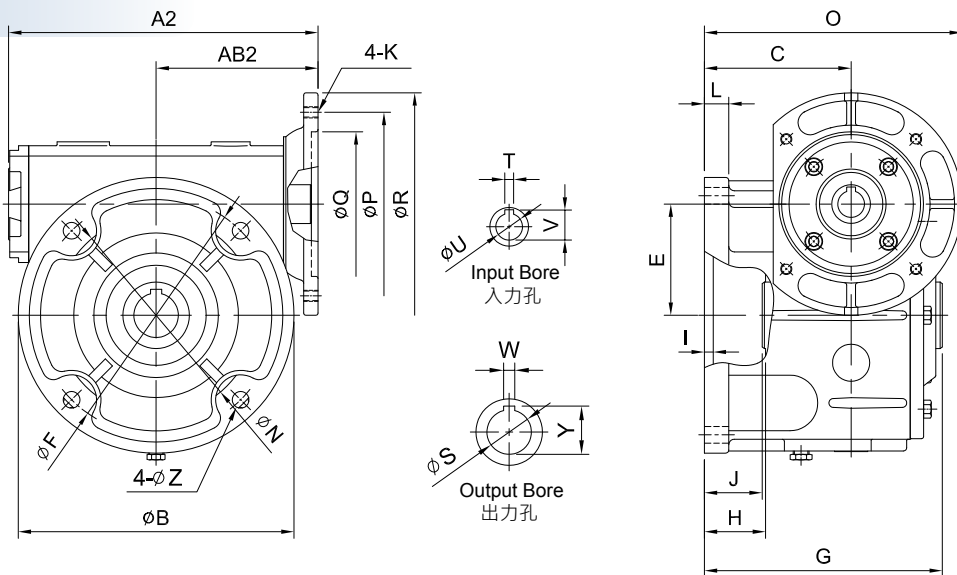
unit: mm

型號 Model	Ratio \ HP		A1	AB1	B	C	N	E	F	G	H	I	J	L	Z	入力軸 Input Shaft				出力孔 Output Bore			重量 Weight (kg)
	1/10 ~ 1/30	1/40 ~ 1/60														HS	U	d	TxVxHK	W	Y	S	
	120	5														3	391	231	330	145	260	120	
135	7 1/2	5	438	258	360	155	290	135	330	247	66	7	63	25	18	75	35	38	10x8x70	15	59.3	55	84.6

MODEL : VOFM



▲ 70#~100#



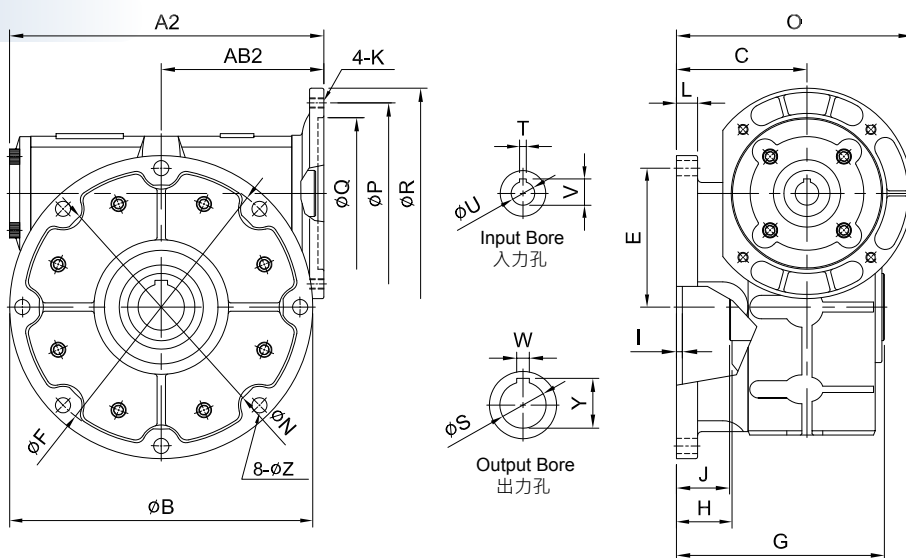
unit: mm

型號 Model	Ratio \ HP		A2	AB2	B	C	N	E	F	G	H	I	J	L	O	Z	馬達盤				入力孔 Input Bore			出力孔 Output Bore			重量 Weight (kg)
	1/10 ~ 1/30	1/40 ~ 1/60															P	Q	R	K	V	T	U	W	Y	S	
70	1	1/2	200 206	105 111	182	106	115	70	150	170	45	9	42	17	186 206	15	130 165	110 130	160 200	M8 M10	16.3 21.8 27.3	5 6	14 19	7	28.3	25	15.4
80	2	1	229	121	200	107	130	80	170	180	34	12	30	20	207	15	165	130	200	M10	21.8 27.3	6	19 24	10	38.3	35	21
100	3	2	279 284	146 150	248	132	180	100	215	214	55	14	52	22	232 257	15	165 215	130 180	200 248	M10 M12	27.3 31.3	8	24 28	10	43.3	40	38

MODEL : VOFM



▲ 120#~135#



unit: mm

型號 Model	Ratio \ HP		A2	AB2	B	C	N	E	F	G	H	I	J	L	O	Z	馬達盤				入力孔 Input Bore			出力孔 Output Bore			重量 Weight (kg)
	1/10 ~ 1/30	1/40 ~ 1/60															P	Q	R	K	V	T	U	W	Y	S	
120	5	3	334	173	330	145	260	120	300	234	61	6	56	24	270	18	215	180	248	M12	31.3	8	28	12	53.3	50	56.4
135	7 1/2	5	374 375	193 194	360	155	290	135	330	247	66	7	63	25	280 305	18	215 265	180 230	248 300	M12	31.3 41.3	8 10	28 38	15	59.3	55	85

### ■ 安裝方向 Installation Direction ( EOV、EOVM、VOF、VOFM )

● 油面計  
Oil Indicator

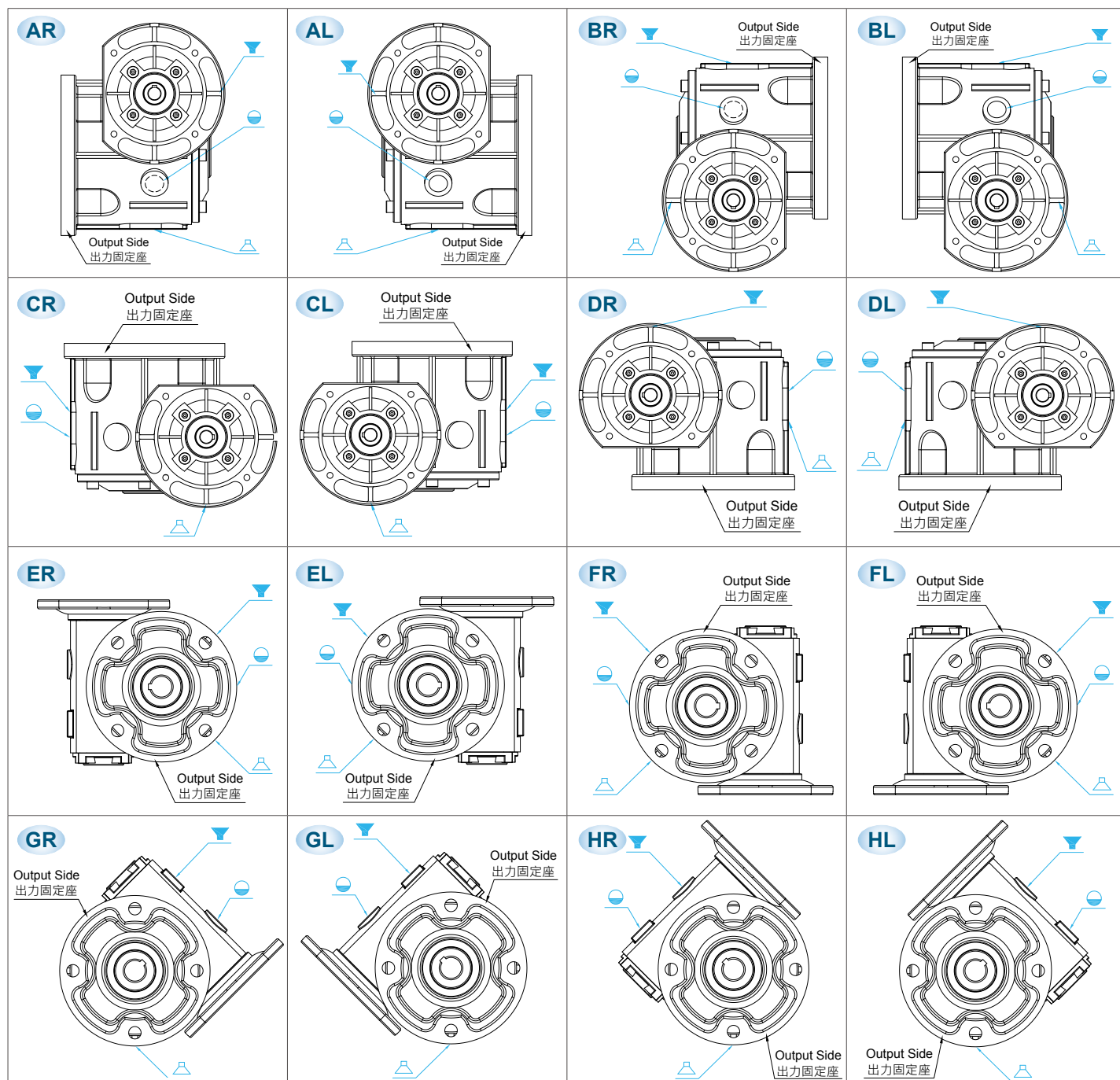
▼ 注油栓  
Oil Plug

△ 排油栓  
Oil Drain Plug

◆ 正常的使用方向可以使減速機保持較高的壽命。  
The life time of gear reducer can be prolonged in proper direction.

◆ 安裝時請注意油面計、注油栓及排油栓的位置以便日後維護。  
Please note the positions of oil gauge, oil filling plug and oil drain plug to facilitate the maintenance afterwards.

◆ 減速機使用方向特殊時，請與我們連繫。  
For special installation direction, please contact us.







# MEMO

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# 2-STAGE WORM REDUCER (WORM+WORM) SERIES

## 雙段蝸輪減速機 ( 蝸輪 + 蝸輪 ) 系列

### ■ 蝸輪 + 蝸輪系列 Worm + Worm Series

◆ 特點 Features :

1. 減速比多變化  
Various reduction ratios.
2. 適合低速高扭力矩之轉動  
Suitable for low-speed and high-torque transmission.
3. 可選擇組合角度  
Various assembling angles for choice.

◆ 型號 Model :

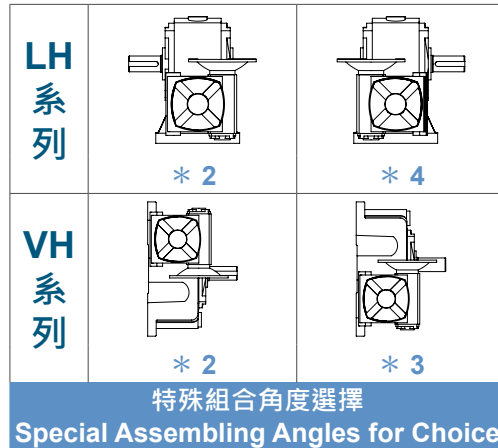
60#~175#

◆ 馬力 HP :

1/16HP~5HP

◆ 減速比 Ratio :

1/100, 1/150, 1/200, 1/300, 1/400, 1/500, 1/600, 1/800,  
1/900, 1/1000, 1/1200, 1/1500, 1/1600, 1/1800, 1/2000,  
1/2400, 1/2500, 1/3000, 1/3600

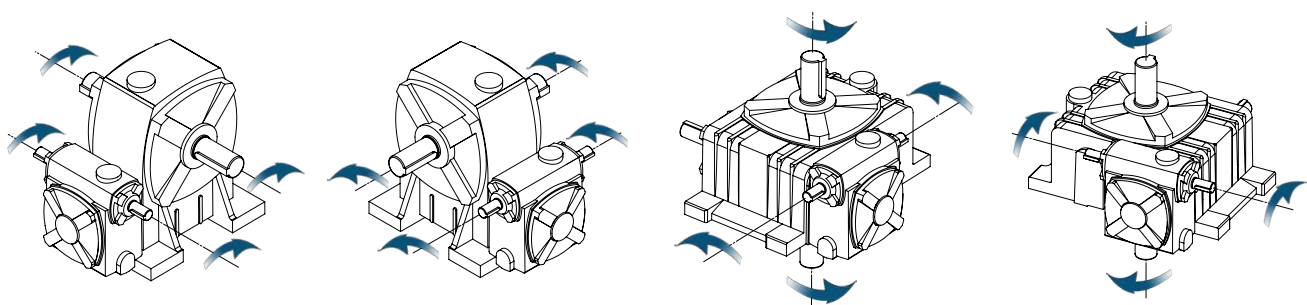


\*記號者為特殊品 \* means special product

### 油量表 Oil Capacities (unit: ℓ)

Type Model	LH	LHM	LOH	LOHM	VH UH	VHM UHM	VOH	VOHM	EH	EHM	EOH	EOHM
60	0.5	-	0.5	-	0.6	-	0.6	-	0.5	-	0.5	-
70	0.8	-	0.8	-	1	-	1	-	0.8	-	0.8	-
80	1.0	1.0	1.0	1.0	1.6	1.6	1.6	1.6	1	1	1	1
100	1.8	1.8	1.8	1.8	2.9	2.9	2.9	2.9	1.8	1.8	1.8	1.8
120	2.8	2.8	2.8	2.8	4.6	4.6	4.6	4.6	2.8	2.8	2.8	2.8
135	4.6	4.6	4.6	4.6	7.1	7.1	7.1	7.1	4.6	4.6	4.6	4.6
155	7	7	7	7	8.6	8.6	8.6	8.6	-	-	-	-
175	9	9	9	9	12	12	12	12	-	-	-	-

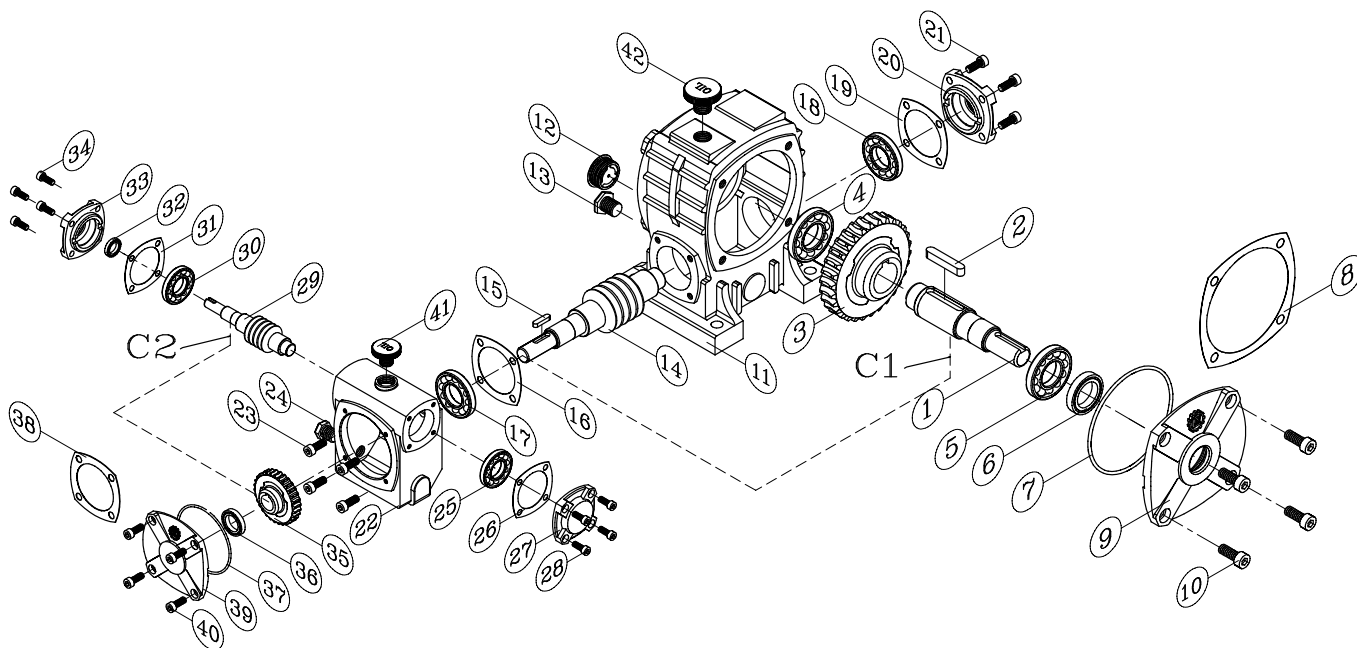
出力段減速機中心距離 (mm) Central distance of output of reducer.	<b>C1</b>	60	70	80	100	120	135	155	175
入力段減速機中心距離 (mm) Central distance of input of reducer.	<b>C2</b>	32	40	50	60	70	80	100	120



旋轉方向  
Rotation Directions

## 分解系統圖 System Drawing

MODEL : LH



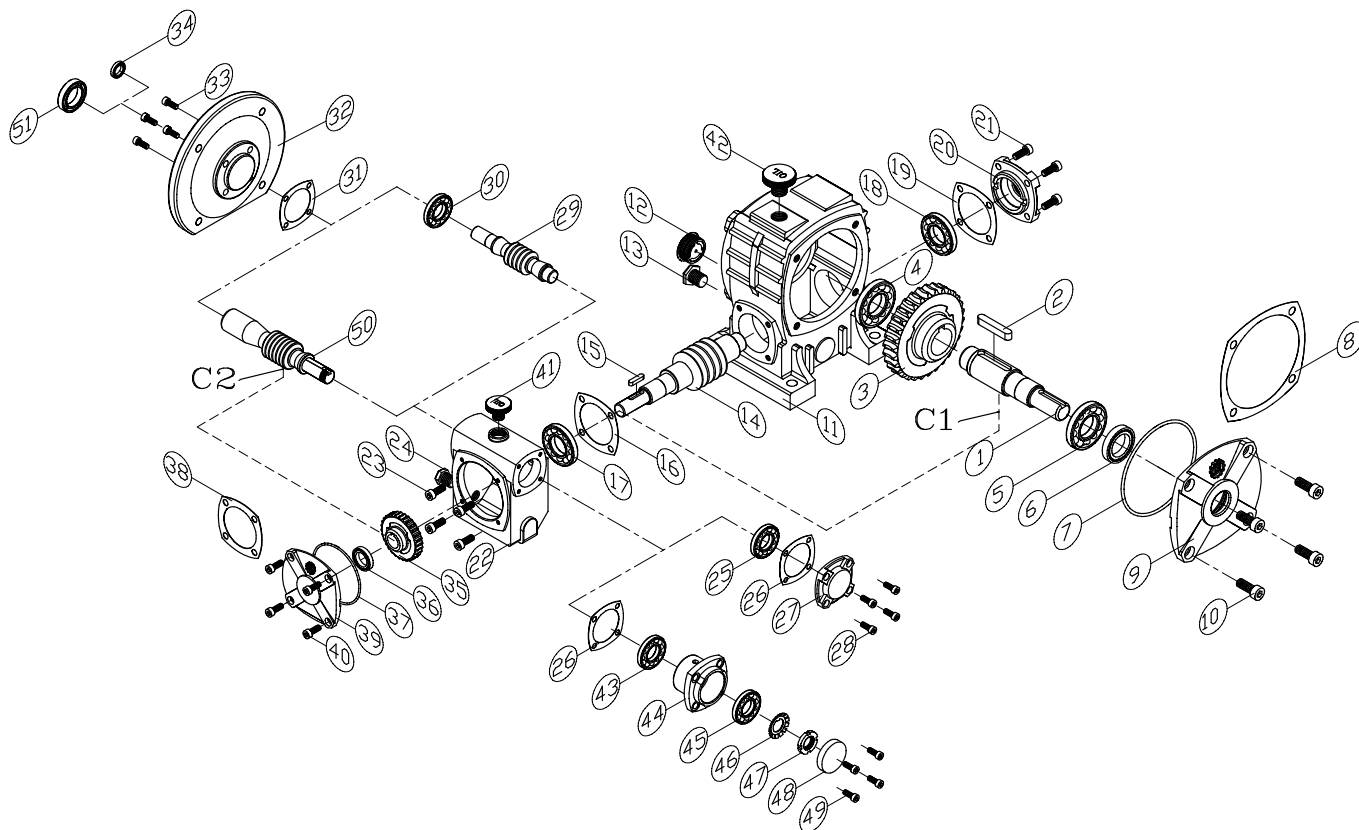
NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	出力軸	Output Shaft	24	排油栓	Drain Plug
2	雙圓鍵	Key	25	滾錐軸承 120# 以上	Taper Roller Bearing for Model 120# above
3	蝸輪	Worm Wheel	26	非石棉墊片	Asbestos Free Gasket
4	滾珠軸承	Ball Bearing	27	入力軸蓋	Input Shaft Cover
5	滾珠軸承	Ball Bearing	28	六角承窩頭螺絲	Hex Screw
6	油封	Oil Seal	29	蝸桿 ( 入力軸 )	Worm Shaft (Input Shaft)
7	O 型環	O Ring	30	滾錐軸承 120# 以上	Taper Roller Bearing for Model 120# above
8	非石棉墊片	Asbestos Free Gasket	31	非石棉墊片	Asbestos Free Gasket
9	出力軸蓋 ( 有孔 )	Output Shaft Cover (with bore)	32	油封	Oil Seal
10	六角承窩頭螺絲	Hex Screw	33	入力軸蓋 ( 有孔 )	Input Shaft Cover (with bore)
11	蝸輪箱	Outer Shell	34	六角承窩頭螺絲	Hex Screw
12	油鏡	Oil Gauge	35	蝸輪	Worm Wheel
13	排油栓	Drain Plug	36	滾珠軸承	Ball Bearing
14	蝸桿 ( 入力軸 )	Worm Shaft (Input Shaft)	37	O 型環	O Ring
15	雙圓鍵	Key	38	非石棉墊片	Asbestos Free Gasket
16	非石棉墊片	Asbestos Free Gasket	39	出力軸蓋	Output Shaft Cover
17	滾錐軸承	Taper Roller Bearing	40	六角承窩頭螺絲	Hex Screw
18	滾錐軸承	Taper Roller Bearing	41	油栓	Oil Plug
19	非石棉墊片	Asbestos Free Gasket	42	注油栓	Oil Plug
20	入力軸蓋	Input Shaft Cover	17, 18	60# 以下滾珠軸承	Ball Bearing for 60# below
21	六角承窩頭螺絲	Hex Screw	8, 38	100# ( 含 ) 以上不使用 非石棉墊片	Model 100# and above are without Asbestos Free Gasket
22	蝸輪箱	Outer Shell	36	80# 以下不用滾珠軸承	Model 80# below are without Ball Bearing
23	六角承窩頭螺絲	Hex Screw			

# 2-STAGE WORM REDUCER (WORM+WORM) SERIES

## 雙段蝸輪減速機 ( 蝸輪 + 蝸輪 ) 系列

### 分解系統圖 System Drawing

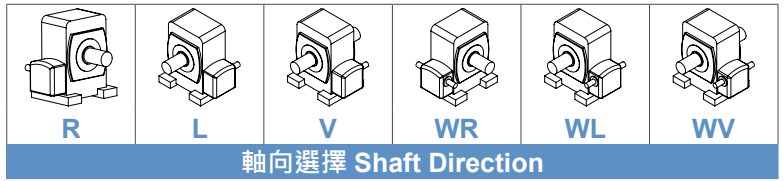
MODEL : LHM



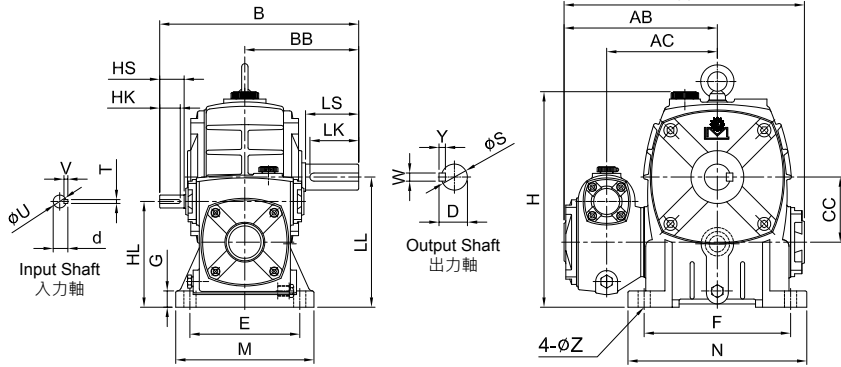
NO.	零件名稱	Name of Parts
1	出力軸	Output Shaft
2	雙圓鍵	Key
3	蝸輪	Worm Wheel
4	滾珠軸承	Ball Bearing
5	滾珠軸承	Ball Bearing
6	油封	Oil Seal
7	O 型環	O Ring
8	非石棉墊片	Asbestos Free Gasket
9	出力軸蓋 (有孔)	Output Shaft Cover (with bore)
10	六角承窩頭螺絲	Hex Screw
11	蝸輪箱	Outer Shell
12	油鏡	Oil Gauge
13	排油栓	Drain Plug
14	蝸桿 (入力軸)	Worm Shaft (Input Shaft)
15	雙圓鍵	Key
16	非石棉墊片	Asbestos Free Gasket
17	滾錐軸承	Taper Roller Bearing
18	滾錐軸承	Taper Roller Bearing
19	非石棉墊片	Asbestos Free Gasket
20	入力軸蓋	Input Shaft Cover
21	六角承窩頭螺絲	Hex Screw
22	蝸輪箱	Outer Shell
23	六角承窩頭螺絲	Hex Screw
24	排油栓	Drain Plug
25	滾錐軸承或滾珠軸承	Taper Roller Bearing or Ball Bearing
26	非石棉墊片	Asbestos Free Gasket
27	入力軸蓋	Input Shaft Cover

NO.	零件名稱	Name of Parts
28	六角承窩頭螺絲	Hex Screw
29	蝸桿 (入力軸)	Worm Shaft (Input Shaft)
30	滾錐軸承或滾珠軸承	Taper Roller Bearing or Ball Bearing
31	非石棉墊片	Asbestos Free Gasket
32	馬達盤	Motor Cover
33	六角承窩頭螺絲	Hex Screw
34	油封	Oil Seal
35	蝸輪	Worm Wheel
36	滾珠軸承	Ball Bearing
37	O 型環	O Ring
38	非石棉墊片	Asbestos Free Gasket
39	出力軸蓋	Output Shaft Cover
40	六角承窩頭螺絲	Hex Screw
41	油栓	Oil Plug
42	注油栓	Oil Plug
43	滾錐軸承	Taper Roller Bearing
44	入力後蓋	Input Shaft Cover
45	滾錐軸承	Taper Roller Bearing
46	太陽片	Lock Washers AW
47	軸承螺帽	Lock Nuts AN
48	密油封	Oil Seal
49	六角承窩頭螺絲	Hex Screw
50	蝸桿	Worm Shaft
51	油封	Oil Seal
17, 18	60# 以下滾珠軸承	Ball Bearing for Model 60# below
8, 38	100#(含) 以上不使用非石棉墊片	Model 100# and above are without Asbestos Free Gasket
36	80# 以下不用滾珠軸承	Model 80# below are without Ball Bearing

**MODEL : LH**



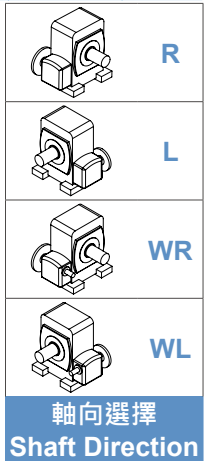
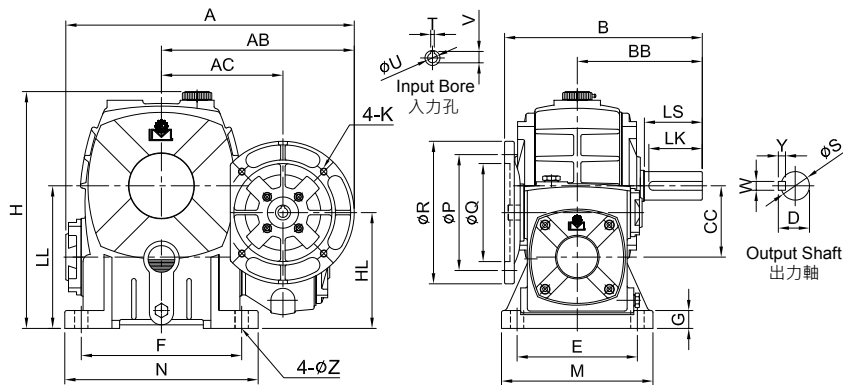
軸向選擇 Shaft Direction



unit: mm

型號 Model	Ratio \ HP		A	AB	AC	B	BB	CC	H	HL	LL	腳座 Foot Stock				入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)		
	1/100 ~ 1/900	1/1000 ~ 1/3600										E	F	M	N	G	Z	HS	U	d	TxVxHK	LS	S		D	WxYxLK
60	1/16	-	222	144	100	198	110	60	200	92	120	105	120	130	150	20	11	25	12	13.5	4x4x25	50	22	25	7x7x45	11.8
70	1/8	-	260	165	121	216	130	70	240	110	140	115	150	150	190	20	15	25	12	13.5	4x4x20	60	28	31	7x7x55	16.4
80	1/4	-	295	188	136	245	140	80	266	130	160	135	180	170	214	20	15	30	12	13.5	4x4x25	65	32	35	10x8x60	24
100	1/2	1/4	346	214	158	290	170	100	331	160	200	155	220	195	270	25	15	40	15	17	5x5x35	75	38	41	10x8x70	42.6
120	1	1/2	407	248	185	330	190	120	398	190	240	180	260	230	310	30	18	40	18	20	5x5x35	85	45	48	12x8x80	70.6
135	2	1	471	290	219	375	214	135	440	215	270	200	290	250	340	32	18	50	22	25	7x7x45	95	55	59	15x10x90	96.6
155	3	2	547	348	258	443	253	155	490	235	290	220	320	285	380	38	20	50	25	28	7x7x45	110	60	64	15x10x105	118
175	5	3	623	393	284	493	262	175	565	280	335	250	350	315	415	40	22	65	30	33	7x7x60	110	65	69	18x10x105	196.2

**MODEL : LHM**



軸向選擇 Shaft Direction

unit: mm

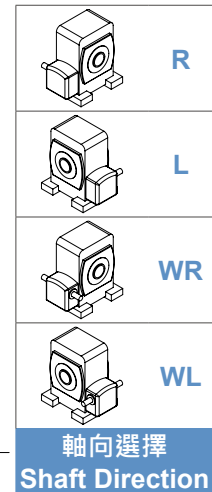
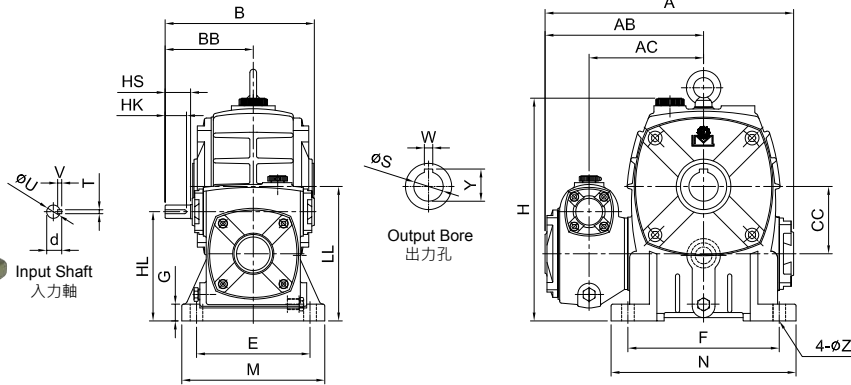
型號 Model	Ratio \ HP		A	AB	AC	B	BB	CC	H	HL	LL	馬達盤 IEC Motor Flange				腳座 Foot Stock				入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)		
	1/100 ~ 1/900	1/1000 ~ 1/3600										P	Q	R	K	E	F	M	N	G	Z	V	T	U	LS	S		D	WxYxLK
80	1/4	-	324	216	136	221	140	80	260	130	160	130	110	160	M8	135	180	170	214	20	15	12.7	4	11	65	32	35	10x8x60	25.6
100	1/2	1/4	371	238	158	256	170	100	337	160	200	130	110	160	M8	155	220	195	270	25	15	12.7	4	11	75	38	41	10x8x70	45.6
120	1	1/2	424	265	185	291	190	120	398	190	240	130	110	160	M8	180	260	230	310	30	18	16.3	5	14	85	45	48	12x8x80	72
135	2	1	500	319	219	330	214	135	440	215	270	165	130	200	M10	200	290	250	340	32	18	16.3	5	14	95	55	59	15x10x90	97.8
155	3	2	557	358	258	397	253	155	490	235	290	165	130	200	M10	220	320	285	380	38	20	21.8	6	19	110	60	64	15x10x105	122
175	5	3	645	415	284	435	262	175	565	280	335	215	180	248	M12	250	350	315	415	40	22	27.3	8	24	110	65	69	18x10x105	199.6



# 2-STAGE WORM REDUCER (WORM+WORM) SERIES

## 雙段蝸輪減速機 ( 蝸輪 + 蝸輪 ) 系列

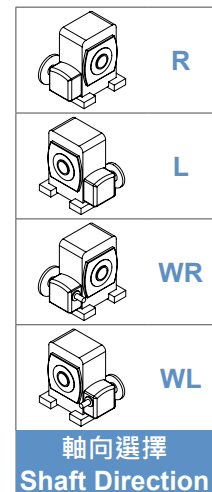
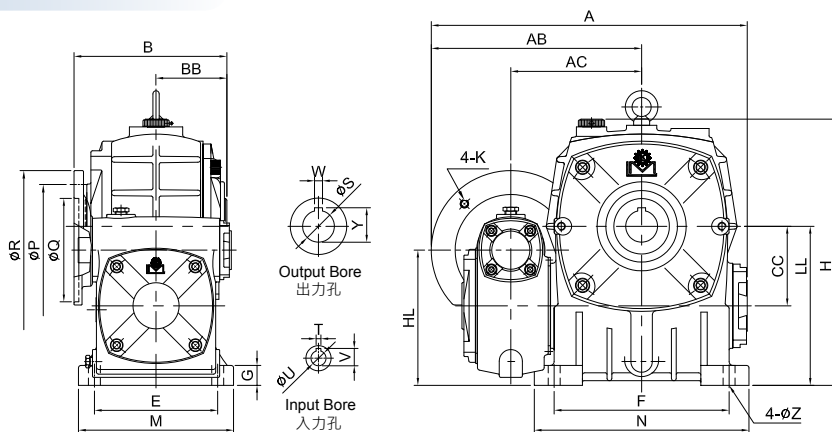
### MODEL : LOH



unit: mm

型號 Model	Ratio \ HP		A	AB	AC	B	BB	CC	H	HL	LL	腳座 Foot Stock					入力軸 Input Shaft				出力孔 Output Bore			重量 Weight (kg)	
	1/100 ~ 1/900	1/1000 ~ 1/3600										E	F	M	N	G	Z	HS	U	d	TxVxHK	W	Y		S
60	1/16	-	222	144	100	144	88	60	200	92	120	105	120	130	150	20	11	25	12	13.5	4x4x25	8	28.3	25	13
70	1/8	-	260	165	121	151	86	70	240	110	140	115	150	150	190	20	15	25	12	13.5	4x4x20	8	33.3	30	19.2
80	1/4	-	295	188	136	175	105	80	266	130	160	135	180	170	214	20	15	30	12	13.5	4x4x25	10	38.3	35	26
100	1/2	1/4	346	214	158	210	120	100	337	160	200	155	220	195	270	25	15	40	15	17	5x5x35	10	43.3	40	43.4
120	1	1/2	407	248	185	240	140	120	398	190	240	180	260	230	310	30	18	40	18	20	5x5x35	12	48.3	45	72.6
135	2	1	471	290	219	271	161	135	440	215	270	200	290	250	340	32	18	50	22	25	7x7x45	15	59.3	55	90.6
155	3	2	547	348	258	313.5	190	155	490	235	290	220	320	285	380	38	20	50	25	28	7x7x45	15	69.3	65	113.2
175	5	3	623	393	284	362	231	175	556	280	335	250	350	315	415	40	22	65	30	33	7x7x60	18	94.3	90	200

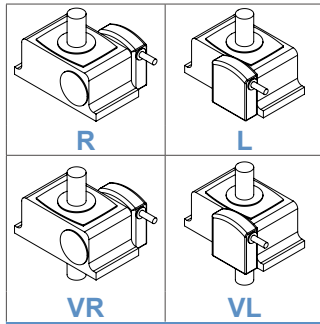
### MODEL : LOHM



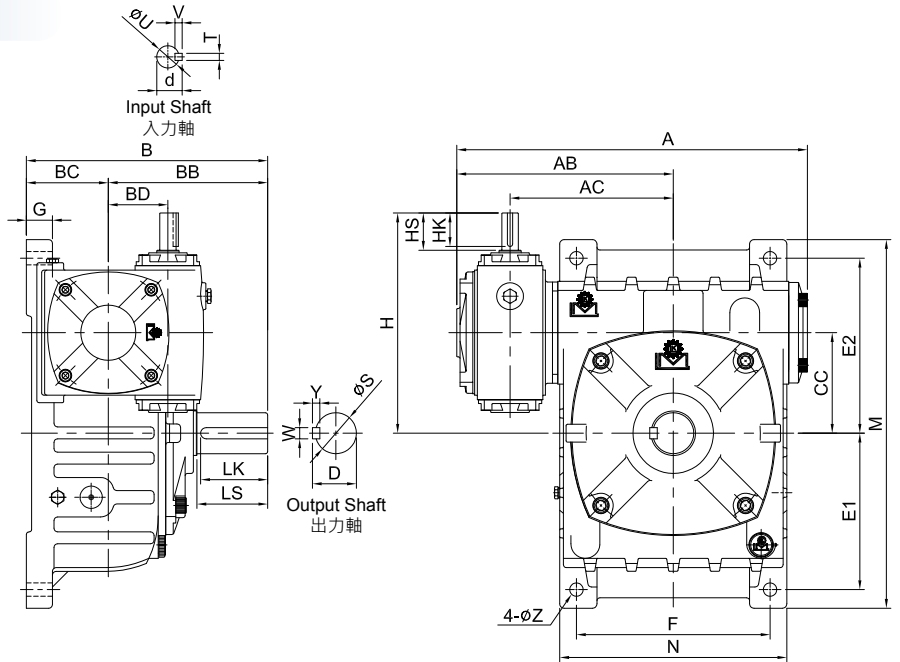
unit: mm

型號 Model	Ratio \ HP		A	AB	AC	B	BB	CC	H	HL	LL	馬達盤 IEC Motor Flange				腳座 Foot Stock					入力孔 Input Bore			出力孔 Output Bore			重量 Weight (kg)	
	1/100 ~ 1/900	1/1000 ~ 1/3600										P	Q	R	K	E	F	M	N	G	Z	V	T	U	W	Y		S
80	1/4	-	324	216	136	151	70	80	266	130	160	130	110	160	M8	135	180	170	214	20	15	12.7	4	11	10	38.3	35	27.4
100	1/2	1/4	371	238	158	176	90	100	337	160	200	130	110	160	M8	155	220	195	270	25	15	12.7	4	11	10	43.3	40	46.4
120	1	1/2	424	265	185	202	100	120	398	190	240	130	110	160	M8	180	260	230	310	30	18	16.3	5	14	12	48.3	45	73
135	2	1	500	319	219	226	110	135	440	215	270	165	130	200	M10	200	290	250	340	32	18	16.3	5	14	15	59.3	55	91.8
155	3	2	557	358	258	267.5	123.5	155	490	235	290	165	130	200	M10	220	320	285	380	38	20	16.3	5	14	15	69.3	65	117.2
175	5	3	645	415	284	295	131	175	556	280	335	215	180	248	M12	250	350	315	415	40	22	21.8	6	19	18	94.3	90	203.4

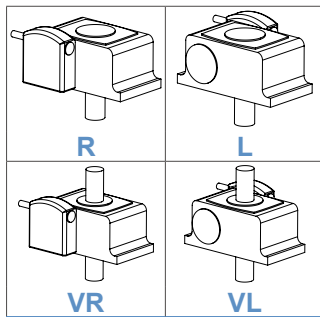
**MODEL : VH**



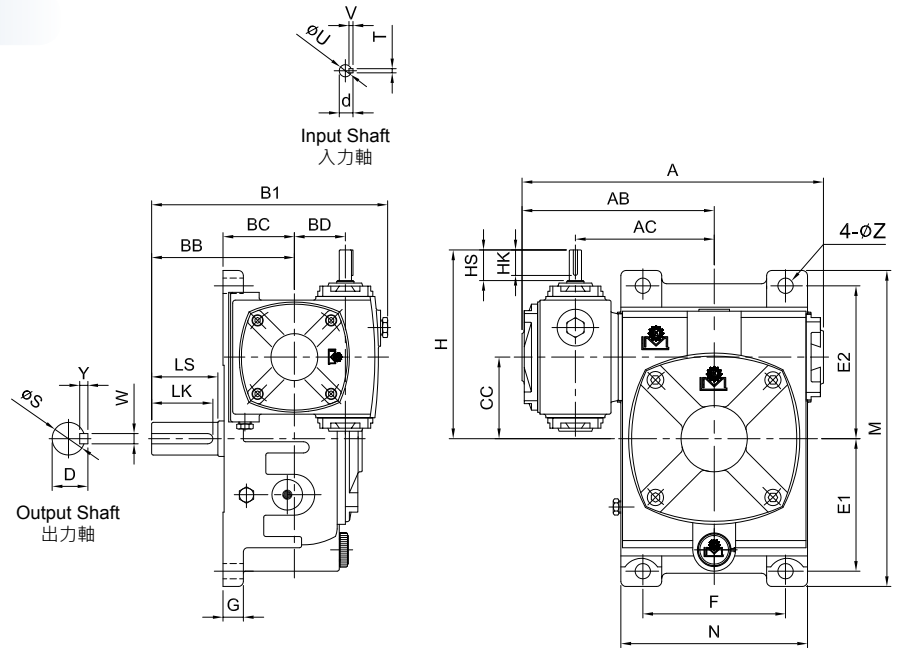
軸向選擇 Shaft Direction



**MODEL : UH**



軸向選擇 Shaft Direction



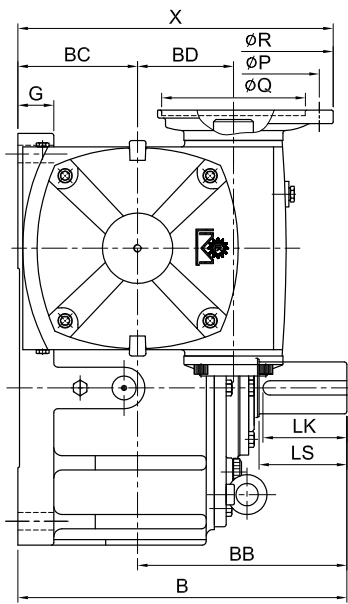
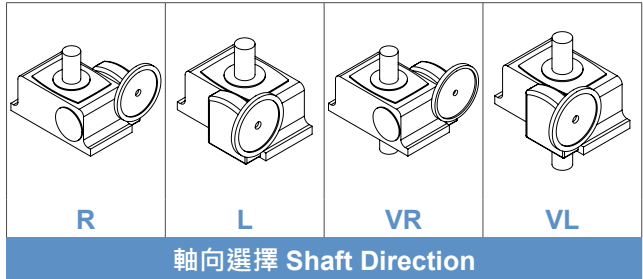
unit: mm

型號 Model	Ratio \ HP		腳座 Foot Stock											入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)						
	1/100 ~ 1/900	1/1000 ~ 1/3600	A	AB	AC	B	B1	BB	BC	BD	CC	H	E1	E2	F	M	N	G	Z	HS	U		d	TxVxHK	LS	S	D	WxYxLK
60	1/16	-	218	140	100	165	175	110	55	32	60	148	105	120	100	252	128	18	11	25	12	13.5	4x4x25	50	22	25	7x7x45	12
70	1/8	-	260	165	121	195	207	130	65	40	70	156	120	135	120	288	160	20	15	25	12	13.5	4x4x20	60	28	31	7x7x55	17.4
80	1/4	-	295	188	136	210	231	140	70	50	80	185	130	150	140	315	183	20	15	30	12	13.5	4x4x25	65	32	35	10x8x60	24.4
100	1/2	1/4	346	214	158	260	280	170	90	60	100	220	155	180	190	380	230	30	15	40	15	17	5x5x35	75	38	41	10x8x70	38.2
120	1	1/2	407	248	185	290	315	190	100	70	120	260	185	215	220	450	266	30	18	40	18	20	5x5x35	85	45	48	12x8x80	73.6
135	2	1	472	292	219	324	352	214	110	80	135	296	210	235	260	495	305	35	18	50	22	25	7x7x45	95	55	59	15x10x90	97.4
155	3	2	547	348	258	393	419	253	140	100	155	345	145	265	290	460	340	45	20	50	25	28	7x7x45	110	60	64	15x10x105	120.4
175	5	3	623	393	284	412	451	262	150	120	175	406	167	293	320	516	385	45	22	65	30	33	7x7x60	110	65	69	18x10x105	187

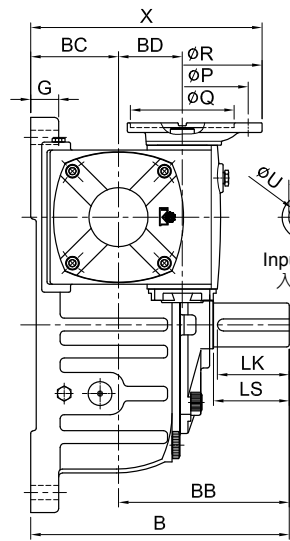
# 2-STAGE WORM REDUCER (WORM+WORM) SERIES

## 雙段蝸輪減速機 ( 蝸輪 + 蝸輪 ) 系列

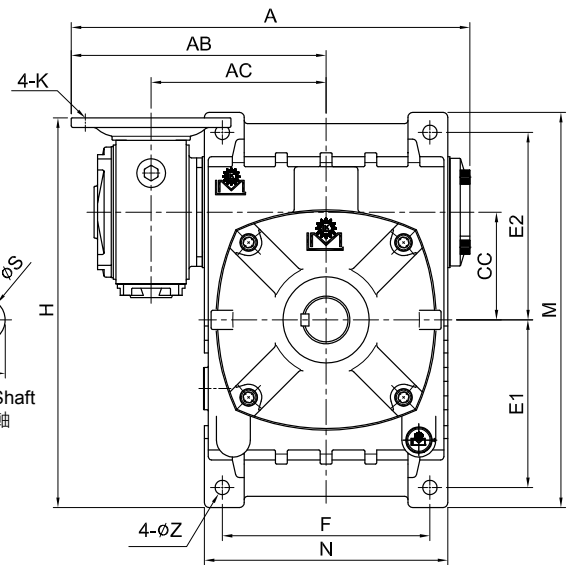
MODEL : VHM



VHM155~175



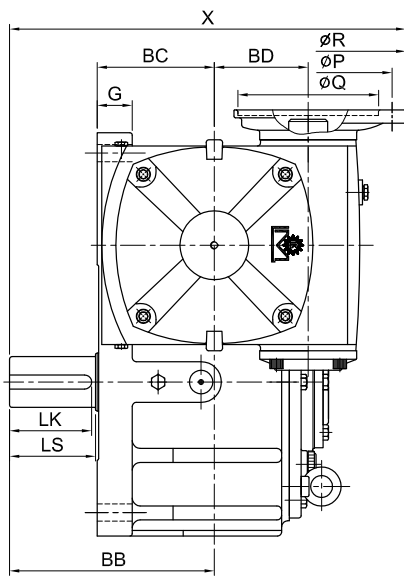
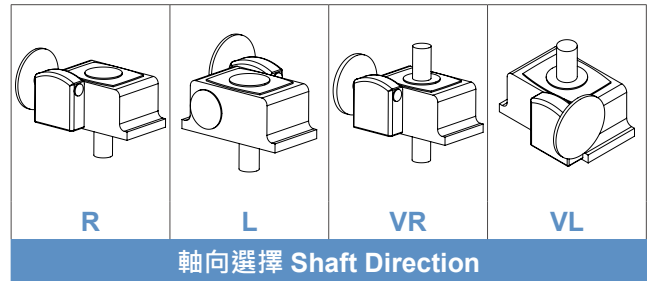
VHM80~135



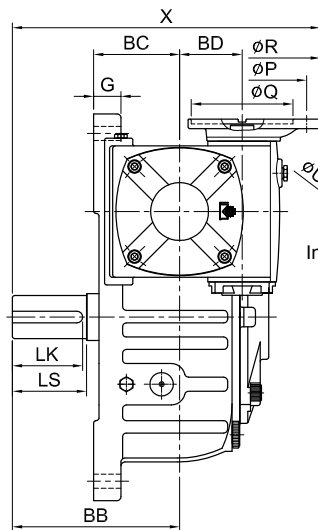
unit: mm

型號 Model	Ratio \ HP		馬達盤 IEC Motor Flange										腳座 Foot Stock					入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)						
	1/100 ~ 1/900	1/1000 ~ 1/3600	A	AB	AC	B	X	BB	BC	BD	CC	H	P	Q	R	K	E1	E2	F	M	N	G	Z	V		T	U	LS	S	D	WxYxLK
80	1/4	-	323	216	136	210	200	140	70	50	80	310	130	110	160	M8	130	150	140	315	183	20	15	12.7	4	11	65	32	35	10x8x60	25.4
100	1/2	1/4	370	238	158	260	230	170	90	60	100	365	130	110	160	M8	155	180	190	380	230	30	15	12.7	4	11	75	38	41	10x8x70	41.2
120	1	1/2	424	265	185	290	250	190	100	70	120	432	130	110	160	M8	185	215	220	450	266	30	18	16.3	5	14	85	45	48	12x8x80	74.8
135	2	1	499	319	219	324	290	214	110	80	135	490	165	130	200	M10	210	235	260	495	305	35	18	21.8	6	19	95	55	59	15x10x90	98.6
155	3	2	557	358	258	393	340	253	140	100	155	471	165	130	200	M10	145	265	290	460	340	45	20	27.3	8	24	110	60	64	15x10x105	124.4
175	5	3	645	415	284	412	395	262	150	120	175	530	215	180	248	M12	167	293	320	516	385	45	20	31.3	8	28	110	65	69	18x10x105	190.4

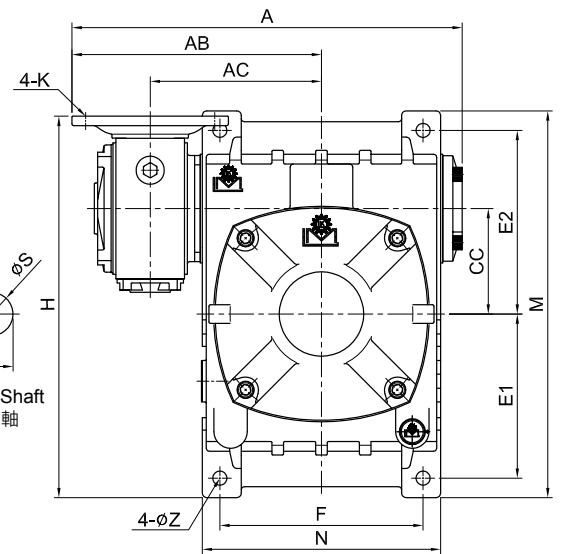
MODEL : UHM



UHM155~175



UHM80~135



unit: mm

型號 Model	Ratio \ HP		A	AB	AC	X	BB	BC	BD	CC	H	馬達盤 IEC Motor Flange				腳座 Foot Stock						入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)	
	1/100 ~ 1/900	1/1000 ~ 1/3600										P	Q	R	K	E1	E2	F	M	N	G	Z	V	T	U	LS	S	D		WxYxLK
80	1/4	-	323	216	136	270	140	70	50	80	310	130	110	160	M8	130	150	140	315	183	20	15	12.7	4	11	65	32	35	10x8x60	25.4
100	1/2	1/4	370	238	158	310	170	90	60	100	365	130	110	160	M8	155	180	190	380	230	30	15	12.7	4	11	75	38	41	10x8x70	41.2
120	1	1/2	424	265	185	340	190	100	70	120	432	130	110	160	M8	185	215	220	450	266	30	18	16.3	5	14	85	45	48	12x8x80	74.8
			444	285		360					432	165	130	200									M10	21.8	6					
135	2	1	499	319	219	394	214	110	80	135	490	165	130	200	M10	210	235	260	495	305	35	18	21.8	6	19	95	55	59	15x10x90	98.6
155	3	2	557	358	258	453	253	140	100	155	471	165	130	200	M10	145	265	290	460	340	45	20	27.3	8	24	110	60	64	15x10x105	124.4
			582	383		478					475	215	180	248									M12	31.3	8					
175	5	3	645	415	284	507	262	150	120	175	530	215	180	248	M12	167	293	320	516	385	45	20	31.3	8	28	110	65	69	18x10x105	190.4

# 2-STAGE WORM REDUCER (WORM+WORM) SERIES

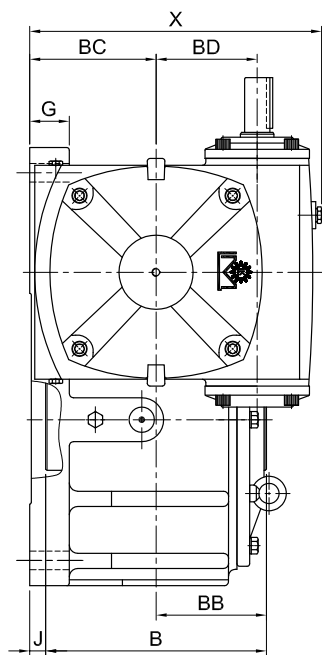
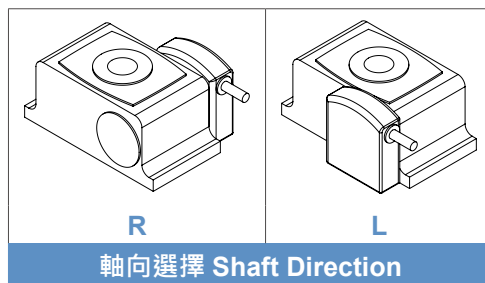
## 雙段蝸輪減速機 ( 蝸輪 + 蝸輪 ) 系列

MODEL : VOH

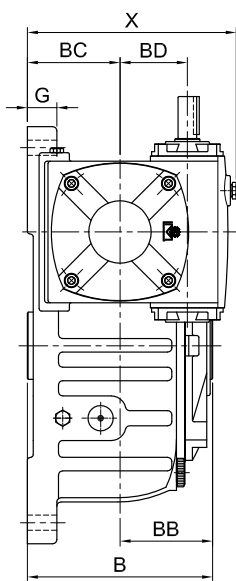


▲ 60#~135#

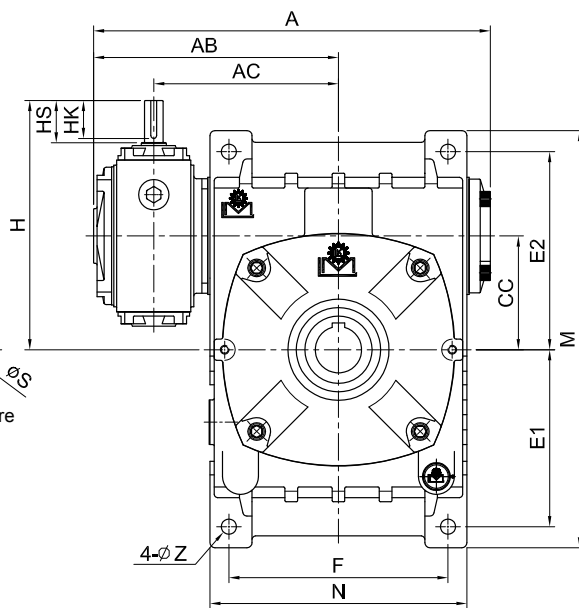
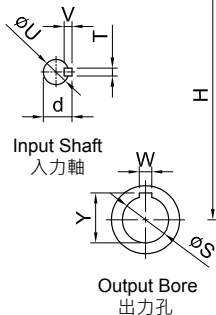
▲ 155#~175#



VOH155~175



VOH60~135



unit: mm

型號 Model	Ratio \ HP		A	AB	AC	J	B	X	BB	BC	BD	CC	H	腳座 Foot Stock					入力軸 Input Shaft				出力孔 Output Bore			重量 Weight (kg)		
	1/100 ~ 1/900	1/1000 ~ 1/3600												E1	E2	F	M	N	G	Z	HS	U	d	TxVxHK	W		Y	S
60	1/16	-	218	140	100	-	108	120	54	55	32	60	148	105	120	100	252	128	18	11	25	12	13.5	4x4x25	8	28.3	25	14.8
70	1/8	-	260	165	121	-	128	142	64	65	40	70	156	120	135	120	288	160	20	15	25	12	13.5	4x4x20	8	33.3	30	18.4
80	1/4	-	295	188	136	-	138	161	69	70	50	80	185	130	150	140	315	183	20	15	30	12	13.5	4x4x25	10	38.3	35	27.2
100	1/2	1/4	346	214	158	-	178	200	89	90	60	100	220	155	180	190	380	230	30	15	40	15	17	5x5x35	10	43.3	40	39
120	1	1/2	407	248	185	-	198	225	99	100	70	120	260	185	215	220	450	266	30	18	40	18	20	5x5x35	12	48.3	45	69.8
135	2	1	472	292	219	-	218	248	109	110	80	135	296	210	235	260	495	305	35	18	50	22	25	7x7x45	15	59.3	55	92.6
155	3	2	547	348	258	16.5	247	310	123.5	140	100	155	345	145	265	290	460	340	45	20	50	25	28	7x7x45	15	69.3	65	117.4
175	5	3	623	393	284	19	262	343	131	150	120	175	406	167	293	320	516	385	45	22	65	30	33	7x7x60	18	94.3	90	190.8



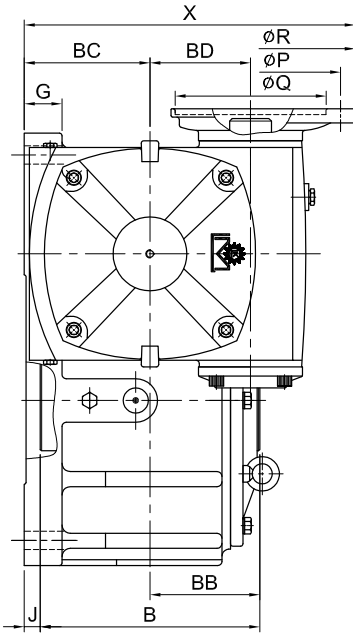
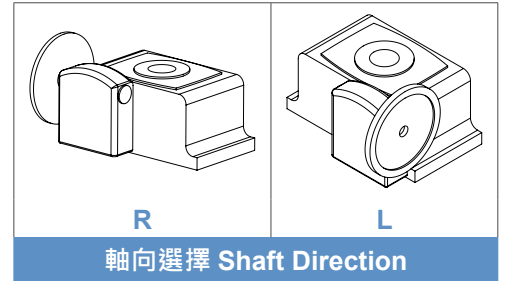
MODEL : VOHM



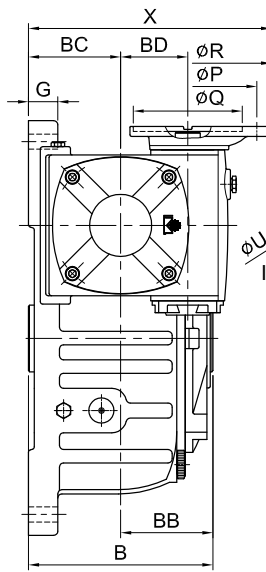
▲ 80#~135#



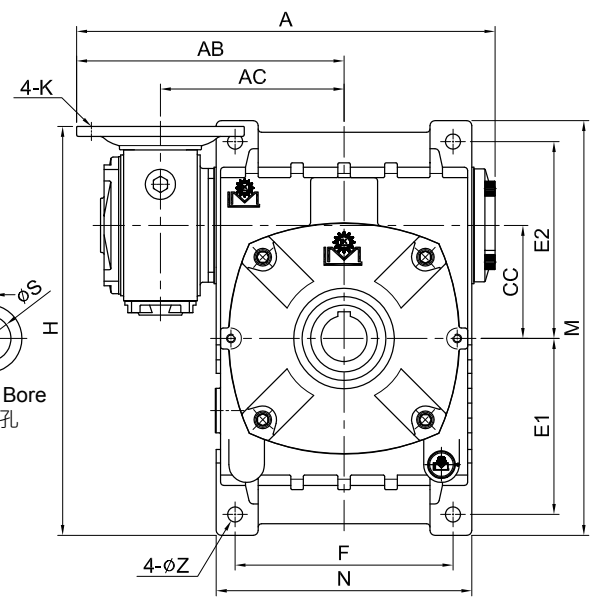
▲ 155#~175#



VOHM155~175



VOHM80~135



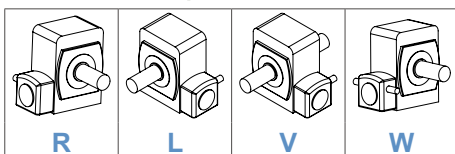
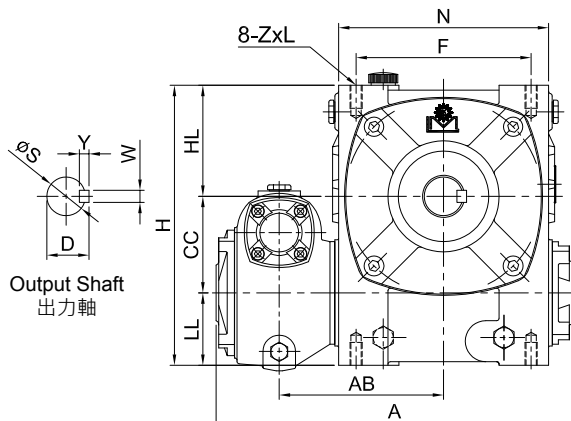
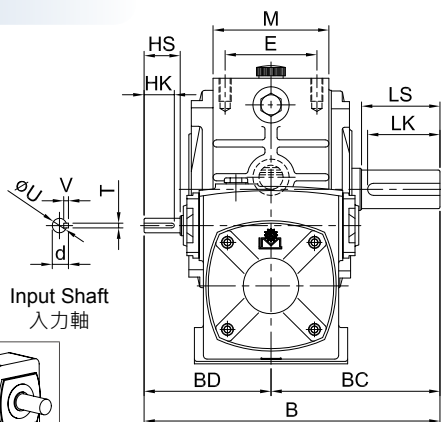
unit: mm

型號 Model	Ratio \ HP		A	AB	AC	J	B	X	BB	BC	BD	CC	H	馬達盤 IEC Motor Flange				腳座 Foot Stock						入力孔 Input Bore			出力孔 Output Bore			重量 Weight (kg)	
	1/100	1/1000												P	Q	R	K	E1	E2	F	M	N	G	Z	V	T	U	W	Y		S
	~ 1/900	~ 1/3600																													
80	1/4	-	323	216	136	-	138	200	69	70	50	80	310	130	110	160	M8	130	150	140	315	183	20	15	12.7	4	11	10	38.3	35	28.2
100	1/2	1/4	370	238	158	-	178	230	89	90	60	100	365	130	110	160	M8	155	180	190	380	230	30	15	12.7	4	11	10	43.3	40	42
120	1	1/2	424	265	185	-	198	250	99	100	70	120	432	130	110	160	M8	185	215	220	450	266	30	18	16.3	5	14	12	48.3	45	71
			444	285				270					165	130	200	M10									21.8	6	19				
135	2	1	499	319	219	-	218	290	109	110	80	135	490	165	130	200	M10	210	235	260	495	305	35	18	21.8	6	19	15	59.3	55	93.8
155	3	2	557	358	258	16.5	247	340	123.5	140	100	155	471	165	130	200	M10	145	265	290	460	340	45	20	27.3	8	24	15	69.3	65	121.4
			582	383				365					475	215	180	248									M12	31.3	8				
175	5	3	645	415	284	19	262	395	131	150	120	175	530	215	180	248	M12	167	293	320	516	385	45	20	31.3	8	28	18	94.3	90	194.2

# 2-STAGE WORM REDUCER (WORM+WORM) SERIES

## 雙段蝸輪減速機 ( 蝸輪 + 蝸輪 ) 系列

### MODEL : EH

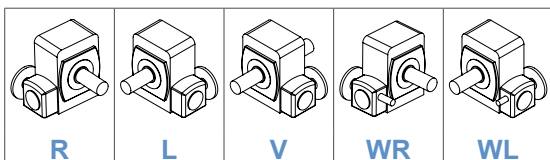
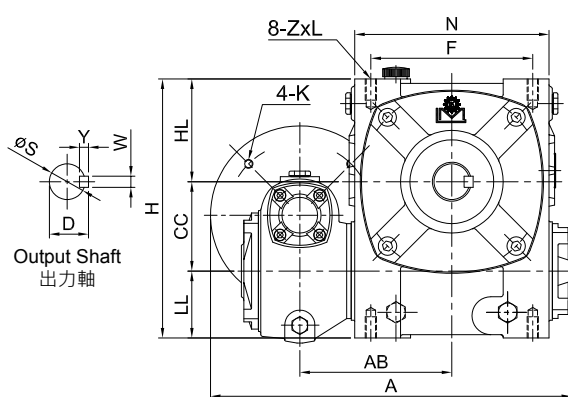
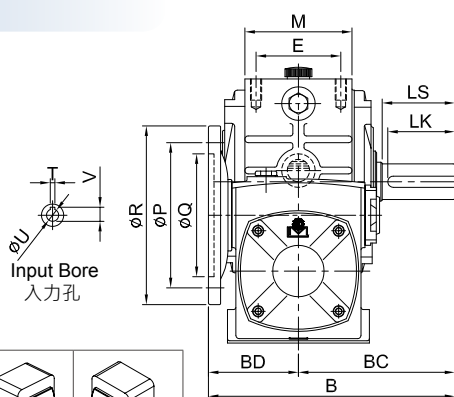


軸向選擇 Shaft Direction

unit: mm

型號 Model	Ratio \ HP		A	AB	B	BC	BD	CC	LL	HL	H	腳座 Foot Stock					入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)
	1/100 ~ 1/900	1/1000 ~ 1/3600										E	F	M	N	ZxL	HS	U	d	TxVxHK	LS	S	D	WxYxLK	
60	1/16	-	207	100	198	110	86	60	42	75	177	55	100	77	124	M10x20	25	12	13.5	4x4x25	50	22	25	7x7x45	12
70	1/8	-	260	121	216	130	86	70	50	85	205	65	125	85	154	M10x20	25	12	13.5	4x4x20	60	28	31	7x7x55	17
80	1/4	-	295	136	245	140	105	80	60	92	232	75	145	96	174	M10x20	30	12	13.5	4x4x25	65	32	35	10x8x60	23.4
100	1/2	1/4	346	158	290	170	120	100	75	115	290	85	185	117	226	M12x24	40	15	17	5x5x35	75	38	41	10x8x70	41.8
120	1	1/2	407	185	330	190	140	120	95	155	370	100	220	132	264	M14x28	40	18	20	5x5x35	85	45	48	12x8x80	66.6
135	2	1	471	219	375	214	161	135	105	185	425	110	260	150	306	M16x35	50	22	25	7x7x45	95	55	59	15x10x90	97.2

### MODEL : EHM

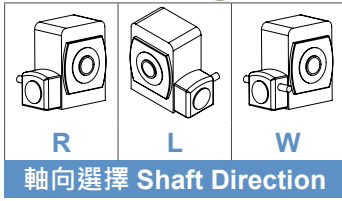
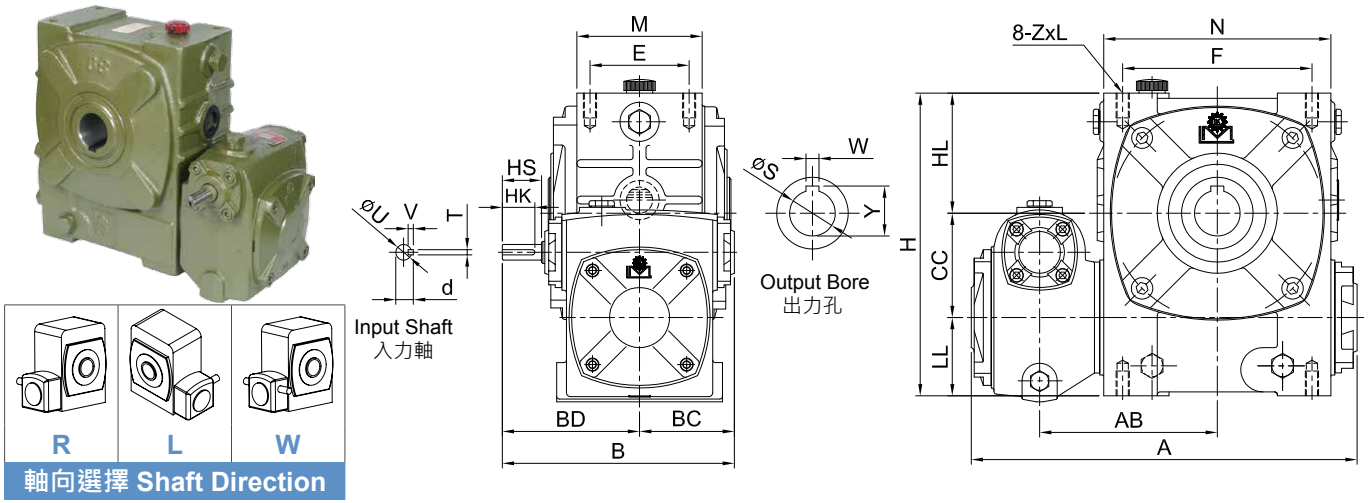


軸向選擇 Shaft Direction

unit: mm

型號 Model	Ratio \ HP		A	AB	B	BC	BD	CC	LL	HL	H	馬達盤 IEC Motor Flange				腳座 Foot Stock					入力孔 Input Bore			出力軸 Output Shaft				重量 Weight (kg)
	1/100 ~ 1/900	1/1000 ~ 1/3600										P	Q	R	K	E	F	M	N	ZxL	V	T	U	LS	S	D	WxYxLK	
80	1/4	-	323	136	221	140	81	80	60	92	232	130	110	160	M8	75	145	96	174	M10x20	12.7	4	11	65	32	35	10x8x60	24
100	1/2	1/4	370	158	256	170	86	100	75	115	290	130	110	160	M8	85	185	117	226	M12x24	12.7	4	11	75	38	41	10x8x70	44.8
120	1	1/2	424 444	185	291	190	101	120	95	155	370	130	110	160	M8 M10	100	220	132	264	M14x28	16.3	5	14	85	45	48	12x8x80	68
135	2	1	499	219	330	214	116	135	105	185	425	165	130	200	M10	110	260	150	306	M16x35	21.8	6	19	95	55	59	15x10x90	98.4
																					27.3	8	24					

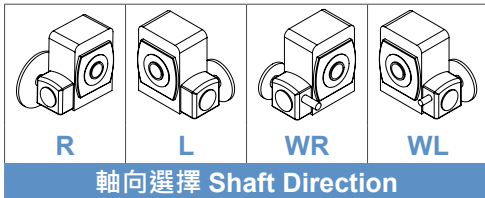
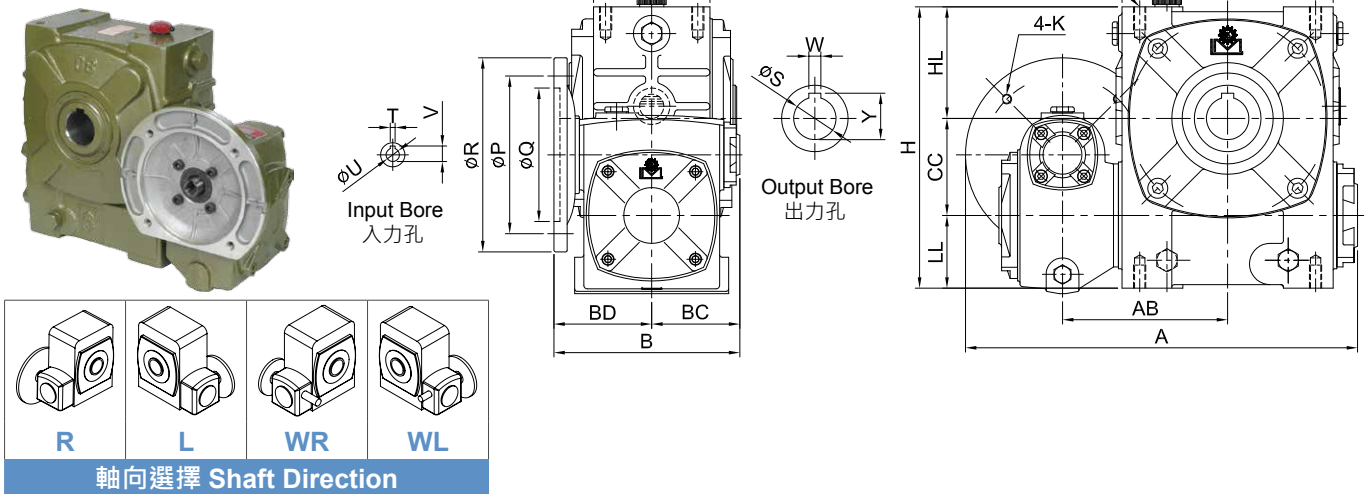
**MODEL : EOH**



unit: mm

型號 Model	Ratio \ HP		A	AB	B	BC	BD	CC	LL	HL	H	腳座 Foot Stock				入力軸 Input Shaft				出力孔 Output Bore			重量 Weight (kg)	
	1/100 ~ 1/900	1/1000 ~ 1/3600										E	F	M	N	ZxL	HS	U	d	TxVxHK	W	Y		S
60	1/16	-	218	100	144	55	86	60	42	75	177	55	100	77	125	M10x20	25	12	13.5	4x4x25	8	28.3	25	13.2
70	1/8	-	260	121	151	65	86	70	50	85	205	65	125	87	158	M10x20	25	12	13.5	4x4x20	8	33.3	30	17.2
80	1/4	-	295	136	175	70	105	80	60	92	232	75	145	98	175	M10x20	30	12	13.5	4x4x25	10	38.3	35	25.4
100	1/2	1/4	346	158	210	90	120	100	75	115	290	85	185	117	226	M12x24	40	15	17	5x5x35	10	43.3	40	42.6
120	1	1/2	407	185	240	100	140	120	95	155	370	100	220	132	264	M14x28	40	18	20	5x5x35	12	48.3	45	68
135	2	1	471	219	271	110	161	135	105	185	425	110	260	150	306	M16x35	50	22	25	7x7x45	15	59.3	55	91.2

**MODEL : EOHM**



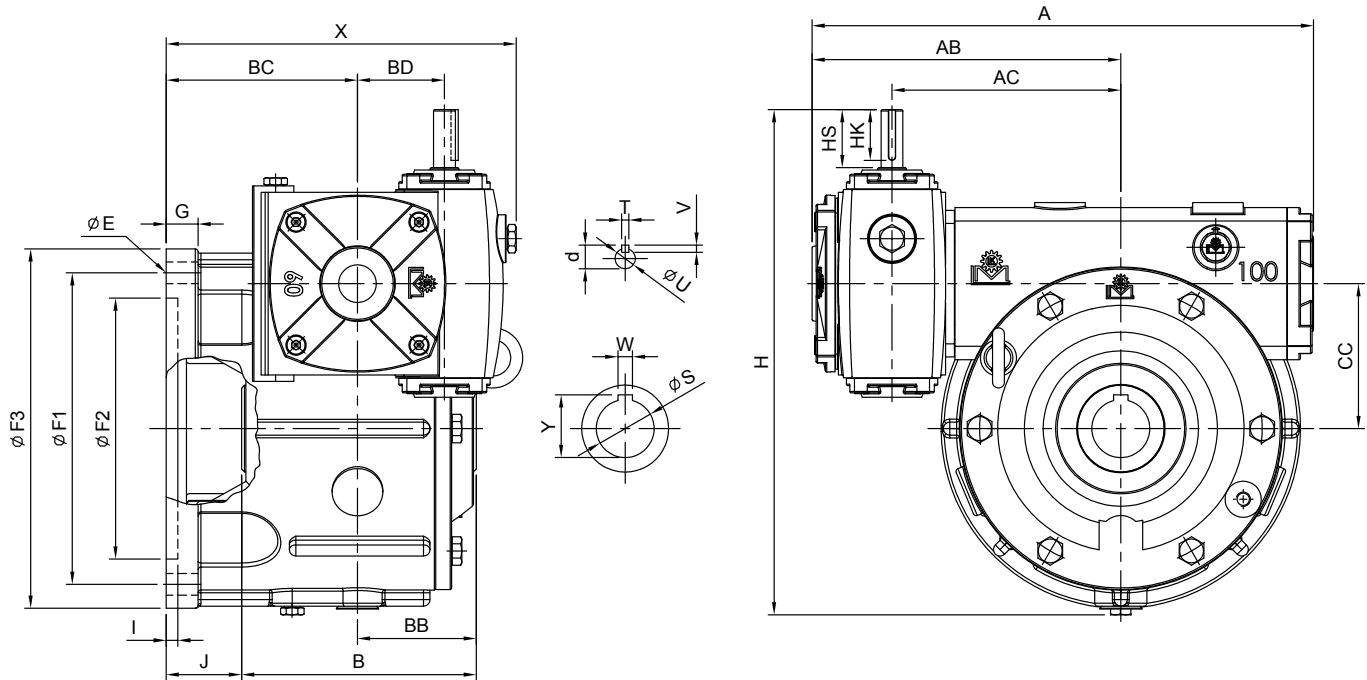
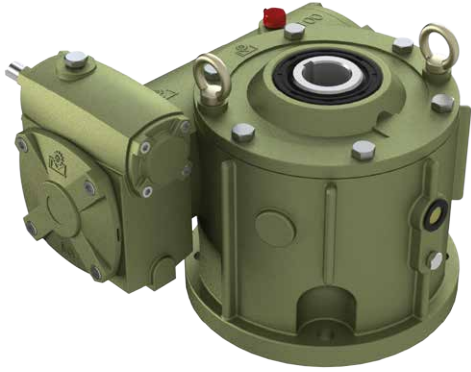
unit: mm

型號 Model	Ratio \ HP		A	AB	B	BD	BC	CC	LL	HL	H	馬達盤 IEC Motor Flange				腳座 Foot Stock					入力孔 Input Bore			出力孔 Output Bore			重量 Weight (kg)
	1/100 ~ 1/900	1/1000 ~ 1/3600										P	Q	R	K	E	F	M	N	ZxL	V	T	U	W	Y	S	
80	1/4	-	323	136	151	81	70	80	60	92	232	130	110	160	M8	75	145	98	175	M10x20	12.7	4	11	10	38.3	35	26
100	1/2	1/4	370	158	176	86	90	100	75	115	290	130	110	160	M8	85	185	117	226	M12x24	12.7 16.3	4 5	11 14	10	43.3	40	45.6
120	1	1/2	424 444	185	202	102	100	120	95	155	370	130 165	110 130	160 200	M8 M10	100	220	132	264	M14x28	16.3 21.8	5 6	14 19	12	48.3	45	69.4
135	2	1	499	219	226	116	110	135	105	185	425	165	130	200	M10	110	260	150	306	M16x35	21.8 27.3	6 8	19 24	15	59.3	55	92.4

# 2-STAGE WORM REDUCER (WORM+WORM) SERIES

## 雙段蝸輪減速機 ( 蝸輪 + 蝸輪 ) 系列

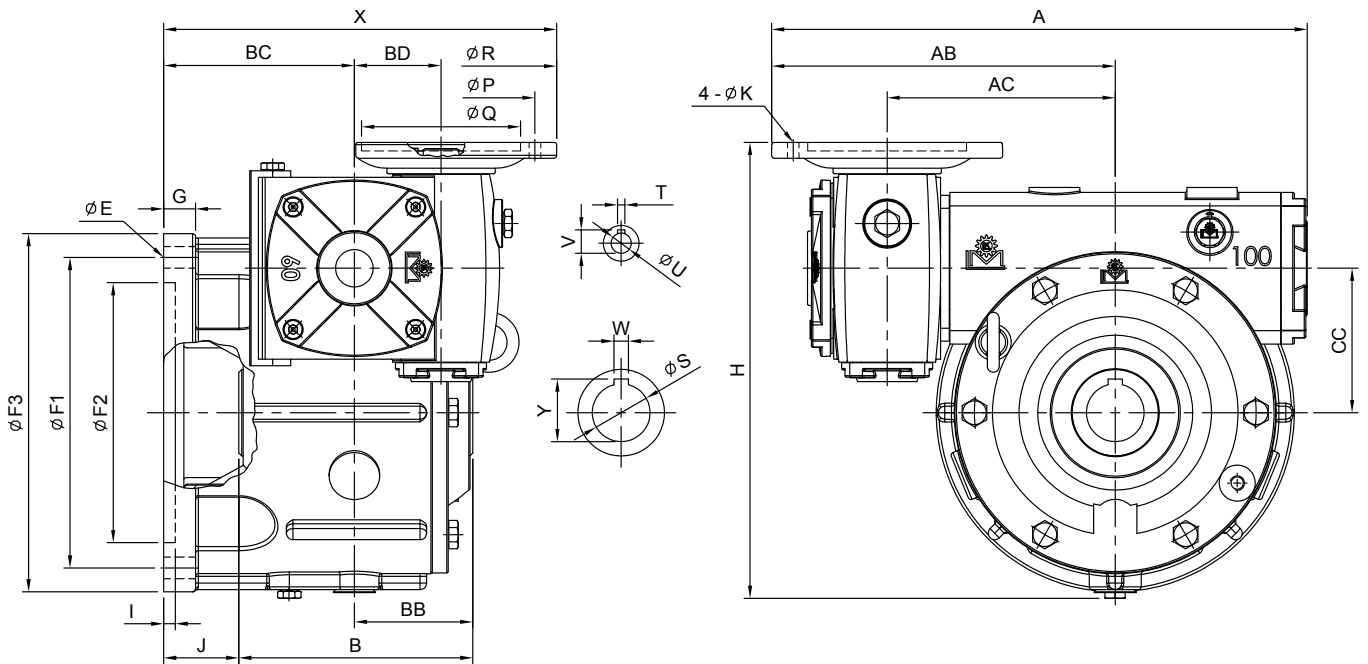
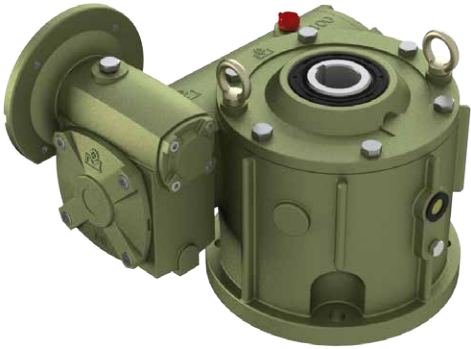
MODEL : VOFH



unit: mm

型號 Model	Ratio \ HP		腳座 Foot Stock										輸入軸 Input Shaft					出力孔 Output Bore			重量 Weight (kg)						
	1/100 ~ 1/900	1/1000 ~ 1/3600	A	AB	AC	J	B	X	BB	BC	BD	CC	H	E	F1	F2	F3	G	I	HS		U	d	TxVxHK	W	Y	S
	70	1/8	-	241	151	120	42	128	183	64	106	40	70	247	4-15	150	115	182	17	9		25	12	13.5	4x4x20	7	28.3
80	1/4	-	296	189	136	30	150	197	73	107	50	80	285	4-15	170	130	200	20	8	30	12	13.5	4x4x25	10	38.3	35	24.5
100	1/2	1/4	346	213	158	52	162	242	82	132	60	100	349	4-15	215	180	248	22	8	40	15	17	5x5x35	10	43.3	40	45.5
120	1	1/2	407	223	185	56	178	266	89	145	70	120	425	8-18	300	260	330	24	6	40	18	20	5x5x35	12	48.3	45	67.5
135	2	1	470	290	219	63	184	291	92	155	80	135	476	8-18	330	290	360	25	7	50	22	25	7x7x45	15	49.3	55	89.3

MODEL : VOFHM



unit: mm

型號 Model	Ratio \ HP		A	AB	AC	J	B	X	BB	BC	BD	CC	H	馬達盤 IEC Motor Flange				腳座 Foot Stock					入力孔 Input Bore			出力孔 Output Bore			重量 Weight (kg)	
	1/100 ~ 1/900	1/1000 ~ 1/3600												P	Q	R	K	E	F1	F2	F3	G	I	V	T	U	W	Y		S
80	1/4	-	323	216	136	30	150	237	73	107	50	80	262	130	110	160	M8	4-15	170	130	200	20	8	12.7	4	11	10	38.3	35	24.5
100	1/2	1/4	371	238	158	52	162	272	82	132	60	100	316	130	110	160	M8	4-15	215	180	248	22	8	12.7	4	11	10	43.3	40	45.4
														16.3	5	14														
120	1	1/2	425	265	185	56	178	295	89	145	70	120	386	130	110	160	M8	8-18	300	260	330	24	6	16.3	5	14	12	48.3	45	67.5
														165	130	200	M10													
135	2	1	498	319	219	63	184	335	92	155	80	135	432	165	130	200	M10	8-18	332	290	360	25	7	21.8	6	19	15	59.3	55	89.3
														27.3	8	24														



# 2-STAGE WORM REDUCER (WORM+WORM) SERIES

## 雙段蝸輪減速機 ( 蝸輪 + 蝸輪 ) 系列

### ■ 安裝方向 Installation Direction ( VOFH & VOFHM )

● 油面計  
Oil Indicator

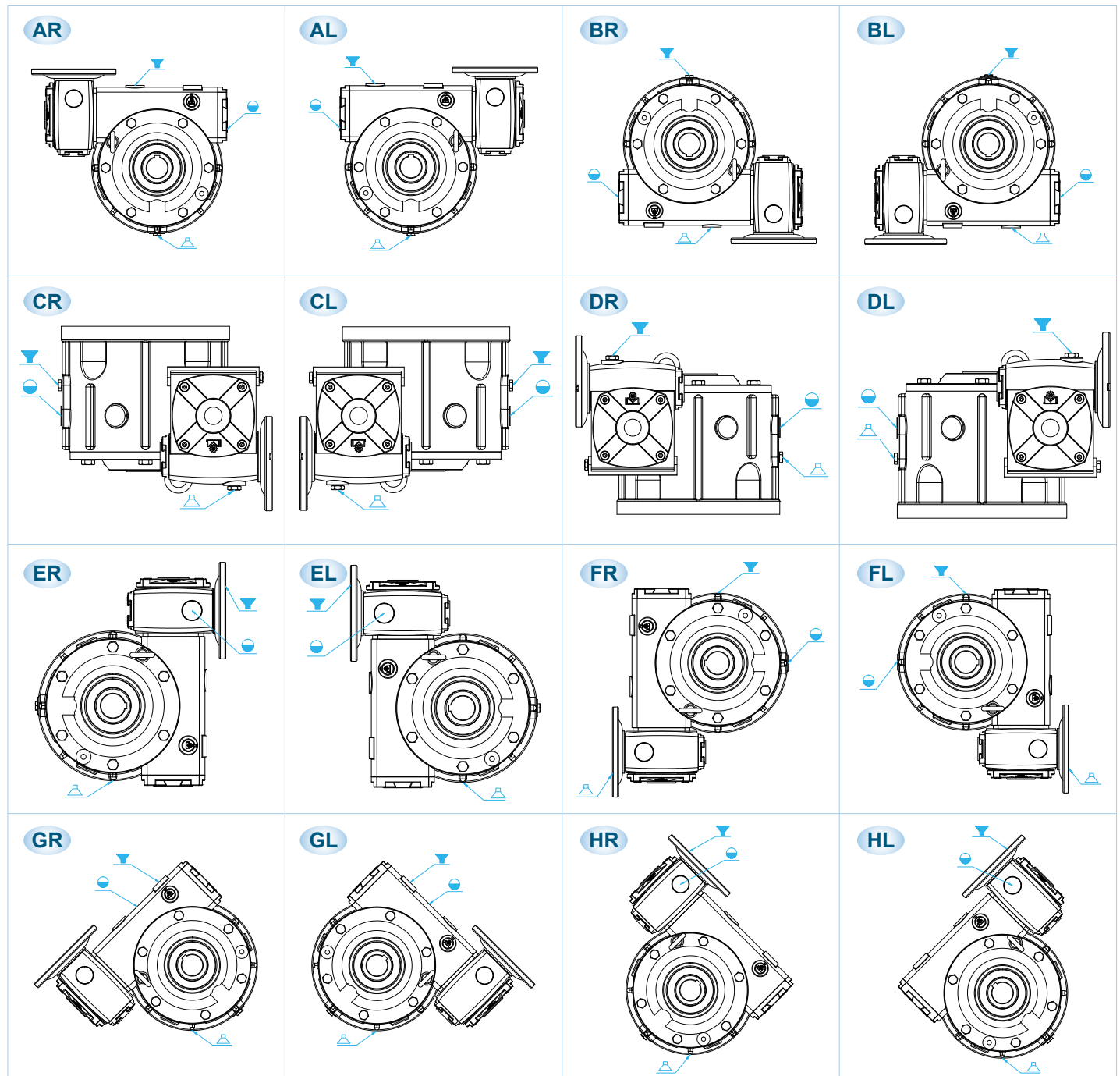
▼ 注油栓  
Oil Plug

△ 排油栓  
Oil Drain Plug

◆ 正常的使用方向可以使減速機保持較高的壽命。  
The life time of gear reducer can be prolonged in proper direction.

◆ 安裝時請注意油面計、注油栓及排油栓的位置以便日後維護。  
Please note the positions of oil gauge, oil filling plug and oil drain plug to facilitate the maintenance afterwards.

◆ 減速機使用方向特殊時，請與我們連繫。  
For special installation direction, please contact us.





# MEMO

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# 2-STAGE WORM REDUCER (GEAR+WORM) SERIES

## 雙段蝸輪減速機 (齒輪 + 蝸輪) 系列

### 齒輪 + 蝸輪系列 Gear + Worm Series

◆ 特點 Features :

1. 入力段螺旋齒輪減速 (減速比 1/3~1/5)  
Input-stage spiral gear reduction (reduction ratio 1/3 ~ 1/5)
2. 出力段蝸輪減速 (減速比 1/10~1/60)  
Output-stage worm reduction (reduction ratio 1/10 ~ 1/60)
3. 效率高·螺旋齒輪經研磨  
High efficiency, grinding spiral gear.
4. 速比變化多 (1/80~1/300)  
Various reduction ratios (1/8 ~ 1/300)
5. 適合低速高扭力之轉動  
Suitable for low-speed and high-torque transmission.
6. 可選擇組合角度  
Various assembling angles for choice.

◆ 型號 Model :

80#~155#

◆ 馬力 HP :

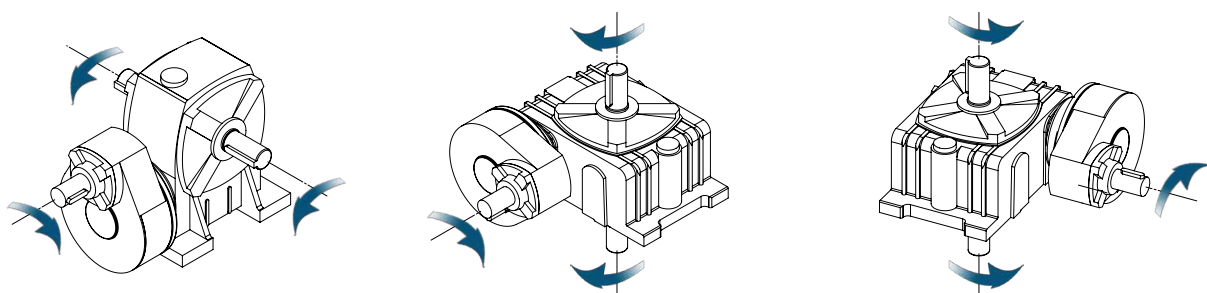
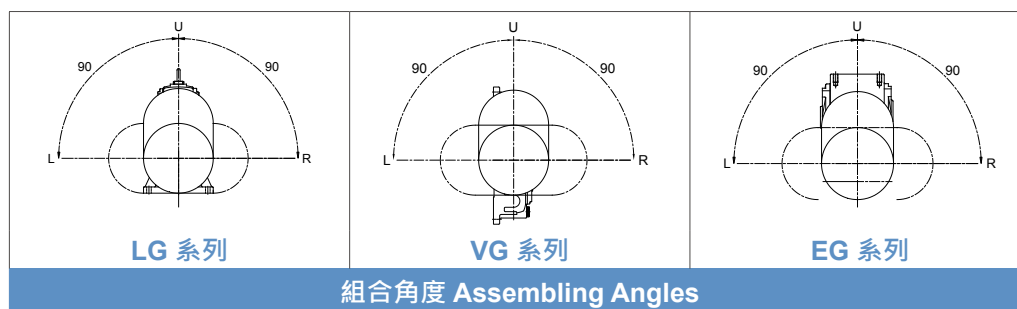
1/2HP~5HP

◆ 減速比 Ratio :

馬力 HP	型號 Model	可組立之減速比 Ratio
1/2	80	80, 90, 100, 120, 150, 160, 180, 200, 240, 250, 300
	100	80, 90, 100, 120, 150, 160, 180, 200, 240, 250, 300
1	80	80, 90, 100, 120, 150, 160,
	100	80, 90, 100, 120, 150, 160, 180, 200, 240, 250, 300
	120	80, 90, 100, 120, 150, 160, 180, 200, 240, 250, 300
2	100	80, 90, 100, 120, 150, 160
	120	80, 90, 100, 120, 150, 160, 180, 200
	135	80, 90, 100, 120, 150, 160, 180, 200, 240, 250, 300
3	135	80, 90, 100, 120, 150, 160, 180, 200
	155	80, 90, 100, 120, 150, 160, 180, 200, 240, 250, 300
5	155	80, 90, 100, 120, 150, 160

### 油量表 Oil Capacities ( unit: ℓ )

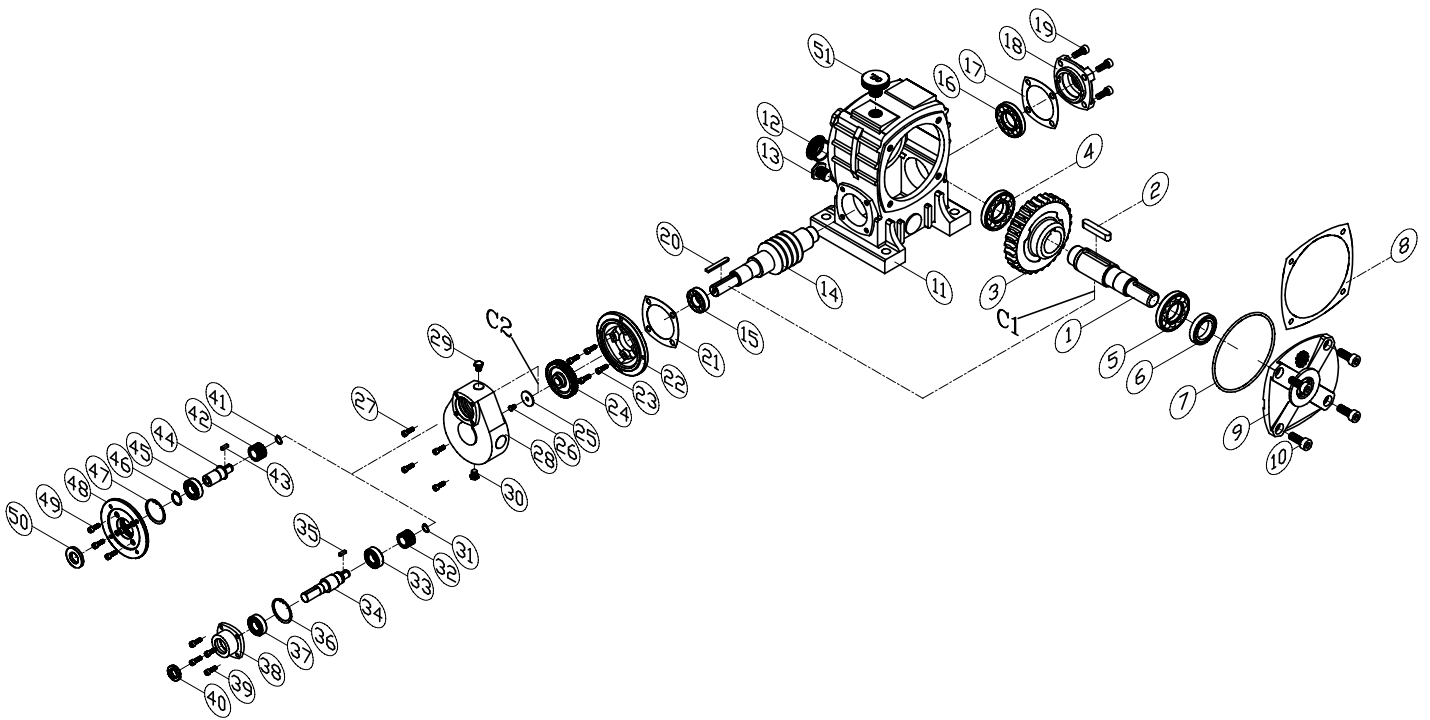
Type Model	LG LGM	LOG LOGM	VG VGM	VOG VOGM	EG EGM	EOG EOGM	VOFG VOFGM
80	1	1	1.6	1.6	1	1	1.4
100	1.8	1.8	2.9	2.9	1.8	1.8	2
120	2.8	2.8	4.6	4.6	2.8	2.8	2.8
135	4.6	4.6	7.1	7.1	4.6	4.6	4.2
155	7	7	-	-	-	-	-



旋轉方向  
Rotation Directions

## 分解系統圖 System Drawing

MODEL : LG



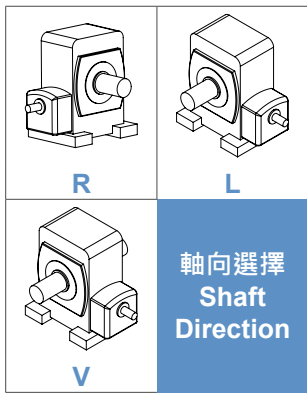
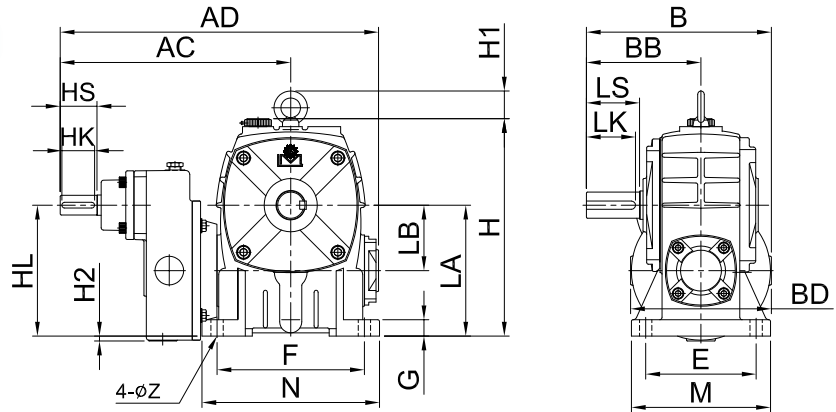
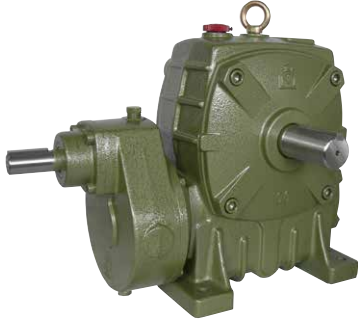
NO.	零件名稱	Name of Parts
1	出力軸	Output Shaft
2	雙圓鍵	Key
3	蝸輪	Worm Wheel
4	滾珠軸承	Ball Bearing
5	滾珠軸承	Ball Bearing
6	油封	Oil Seal
7	O 型環	O Ring
8	非石棉墊片	Asbestos Free Gasket
9	出力軸蓋	Output Shaft Cover
10	六角承窩頭螺絲	Hex Screw
11	蝸輪箱	Outer Shell
12	油鏡	Oil Gauge
13	排油栓	Drain Plug
14	蝸桿 (入力軸)	Worm Shaft (Input Shaft)
15	滾錐軸承	Taper Roller Bearing
16	滾錐軸承	Taper Roller Bearing
17	非石棉墊片	Asbestos Free Gasket
18	入力軸蓋	Input Shaft Cover
19	六角承窩頭螺絲	Hex Screw
20	雙圓鍵	Key
21	非石棉墊片	Asbestos Free Gasket
22	連接盤	Adapter
23	六角承窩頭螺絲	Hex Screw
24	B 齒輪	B Gear
25	鐵制華司	Shim Washer
26	六角螺絲	Hexagon Head Bolt
27	六角承窩頭螺絲	Hex Screw

NO.	零件名稱	Name of Parts
28	偏心齒輪箱	Gear Box
29	油栓	Oil Plug
30	排油栓	Drain Plug
31	扣環 (S)	Snap Ring (S)
32	A 齒輪	A Gear
33	滾珠軸承	Ball Bearing
34	A 齒輪軸	A Gear Shaft
35	雙圓鍵	Key
36	扣環 (R)	Snap Ring (R)
37	滾珠軸承	Ball Bearing
38	入力軸蓋	Input Shaft Cover
39	六角承窩頭螺絲	Hex Screw
40	油封	Oil Gauge
41	扣環 (S)	Snap Ring (S)
42	A 齒輪	A Gear
43	單圓鍵	Key
44	A 齒輪軸	A Gear Shaft
45	滾珠軸承	Ball Bearing
46	扣環 (S)	Snap Ring (S)
47	扣環 (R)	Snap Ring (R)
48	馬達盤	Motor Cover
49	六角承窩頭螺絲	Hex Screw
49	六角承窩頭螺絲	Hex Screw
50	油封	Oil Seal
51	注油栓	Oil Plug
8	100#(含) 以上不使用 非石棉墊片	Model 100# and above are without Asbestos Free Gasket

# 2-STAGE WORM REDUCER (GEAR+WORM) SERIES

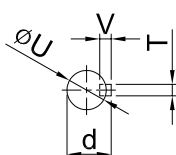
## 雙段蝸輪減速機 (齒輪 + 蝸輪) 系列

### MODEL : LG

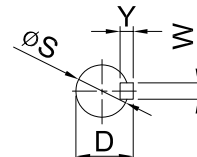


軸向選擇  
Shaft  
Direction

型號 Model	出力軸 Output Shaft				重量 (kg) Weight
	LS	S	D	WxYxLK	
80	65	32	35	10x8x60	32.2
100	75	38	41	10x8x70	48.8
120	85	45	48	12x8x80	73
135	95	55	59	15x10x90	103.4
155	110	60	64	15x10x105	133.6

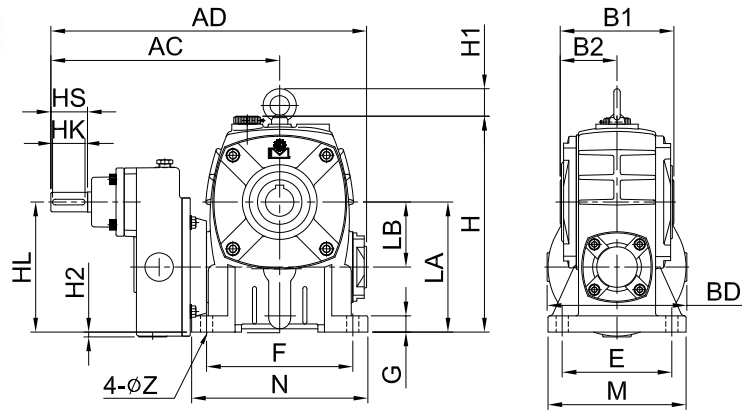


Input Shaft  
入力軸

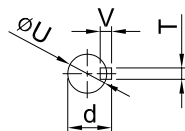


Output Shaft  
出力軸

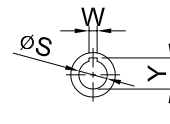
### MODEL : LOG



型號 Model	出力孔 Output Bore			重量 (kg) Weight
	W	Y	S	
80	10	38.3	35	30.6
100	10	43.3	40	49.6
120	12	48.3	45	74.8
135	15	59.3	55	106.8
155	15	69.3	65	128.8



Input Shaft  
入力軸



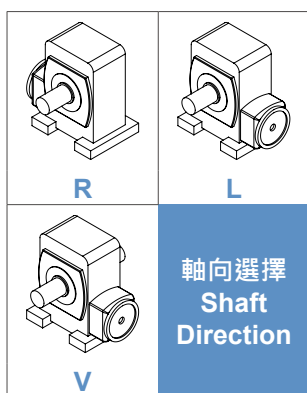
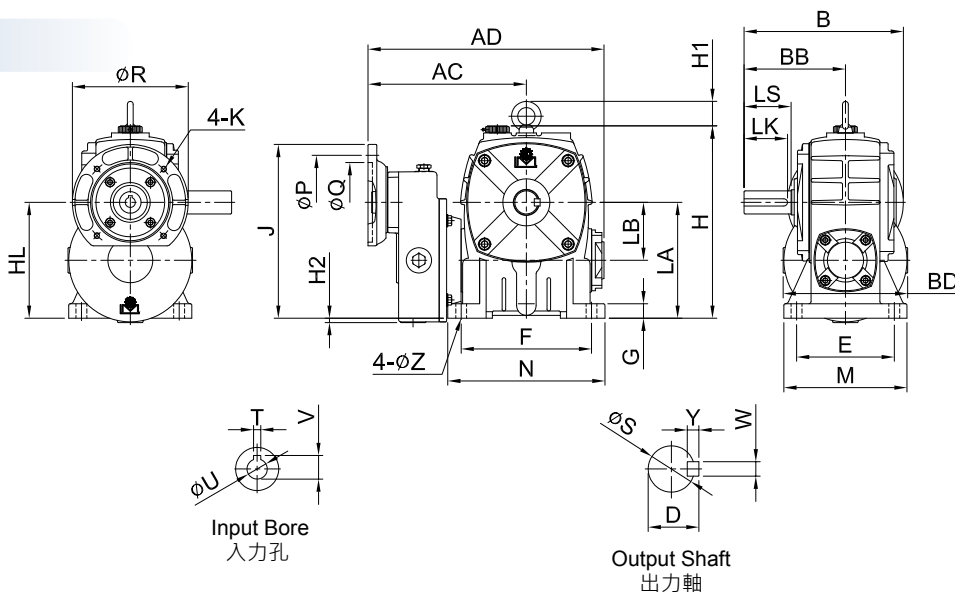
Output Bore  
出力孔

unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	AC	AD	B	BB	B1	B2	BD	H1	H2	LB	H	HL	LA	腳座 Foot Stock					入力軸 Input Shaft				
																E	F	M	N	G	Z	HS	U	d	TxVxHK
80	1/2	80~300	282	389	235	140	138	70	172	-	6	80	266	160	160	135	180	170	217	20	15	45	24	27	7x7x40
	1	80~160														155	220	195	270	25	15	45	24	27	7x7x40
100	1	80~300	306	439	267.5	170	178	90	172	36	-	100	335	180	200	155	220	195	270	25	15	45	24	27	7x7x40
	2	80~160														180	260	230	320	30	18	45	24	27	7x7x40
120	1	80~300	344	504	305	190	198	100	172	34	-	120	398	200	240	180	260	230	320	30	18	45	24	27	7x7x40
	2	80~200														180	260	230	320	30	18	45	24	27	7x7x40
135	2	80~300	401	582	322	214	218	110	240	41	-	135	440	227	270	200	290	250	350	32	18	55	28	31	7x7x50
	3	80~200														200	290	250	350	32	18	55	28	31	7x7x50
155	3	80~300	420	620	392	253	247	123.5	240	37	-	155	486	227	290	220	320	285	380	38	20	55	28	31	7x7x50
	5	80~160														220	320	285	380	38	20	55	28	31	7x7x50

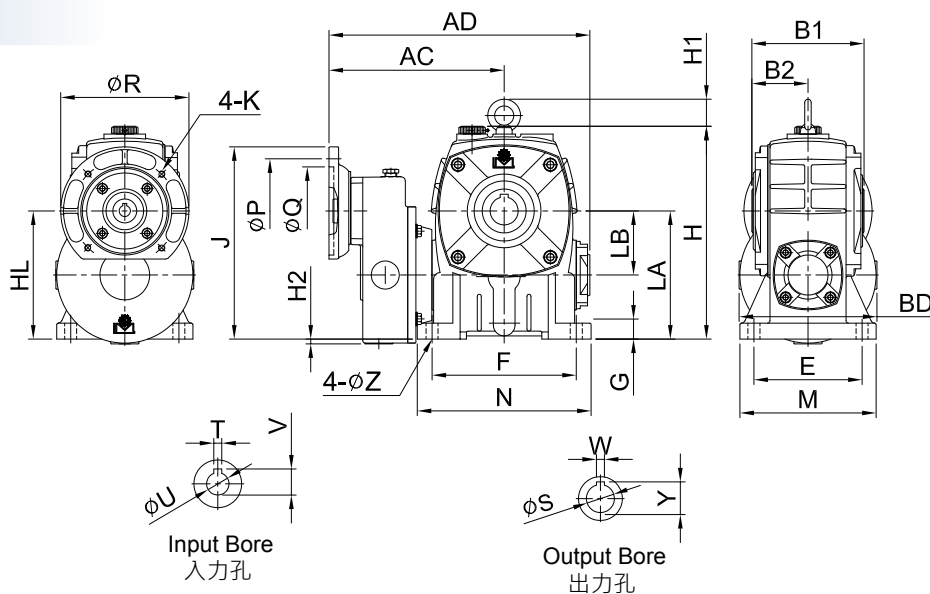


**MODEL : LGM**



型號 Model	出力軸 Output Shaft				重量 (kg) Weight
	LS	S	D	WxYxLK	LGM
80	65	32	35	10x8x60	31.6
100	75	38	41	10x8x70	48
120	85	45	48	12x8x80	72.2
135	95	55	59	15x10x90	101.2
155	110	60	64	15x10x105	131.6

**MODEL : LOGM**



型號 Model	出力孔 Output Bore			重量 (kg) Weight
	W	Y	S	LOGM
80	10	38.3	35	30
100	10	43.3	40	48.6
120	12	48.3	45	74
135	15	59.3	55	104.6
155	15	69.3	65	126.8

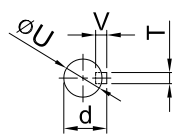
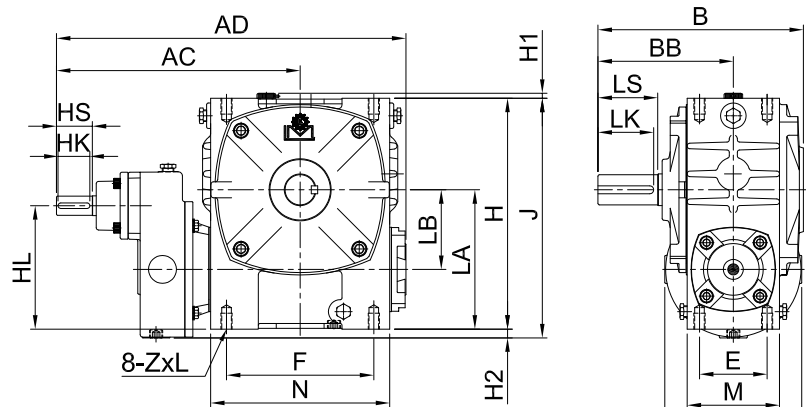
型號 Model	馬力 HP (4P)	減速比 Ratio	AC	AD	B	BB	B1	B2	BD	H1	H2	LB	H	HL	LA	J	馬達盤 IEC Motor Flange				腳座 FOOT STOCK					入力孔 Input Bore			
																	P	Q	R	K	E	F	M	N	G	Z	V	T	U
																	80	100	120	135	155	80	100	120	135	155	80	100	120
80	1/2	80~300	219	326	235	140	138	70	172	-	6	80	266	160	160	246	130	110	160	M8	135	180	170	214	20	15	16.3	5	14
		80~160	220	327	240												165	130	200	M10							21.7	6	19
100	1	80~300	244	377	270	170	178	90	172	36	-	100	335	180	200	280	165	130	200	M10	155	220	195	270	25	15	21.7	6	19
		80~160																									27.3	8	24
120	1	80~300	282	442	305	190	198	100	172	34	-	120	398	200	240	300	165	130	200	M10	180	260	230	310	30	18	21.7	6	19
		80~200																									27.3	8	24
135	2	80~300	306	487	322	214	218	110	240	41	-	135	440	227	270	353	165	130	200	M10	200	290	250	340	32	18	27.3	8	24
		80~200																									31.3	8	28
155	3	80~300	325	525	392	253	247	123.5	240	37	-	155	486	227	290	353	215	180	252	M12	220	320	285	380	38	20	31.3	8	28
		80~160																											

unit: mm

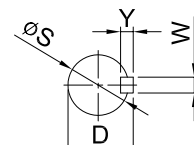
# 2-STAGE WORM REDUCER (GEAR+WORM) SERIES

## 雙段蝸輪減速機 (齒輪 + 蝸輪) 系列

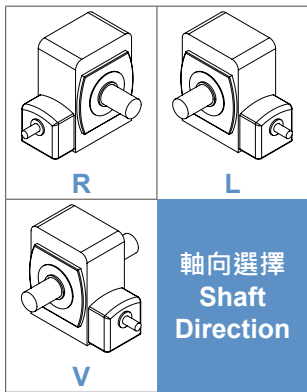
### MODEL : EG



Input Shaft  
入力軸

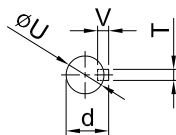
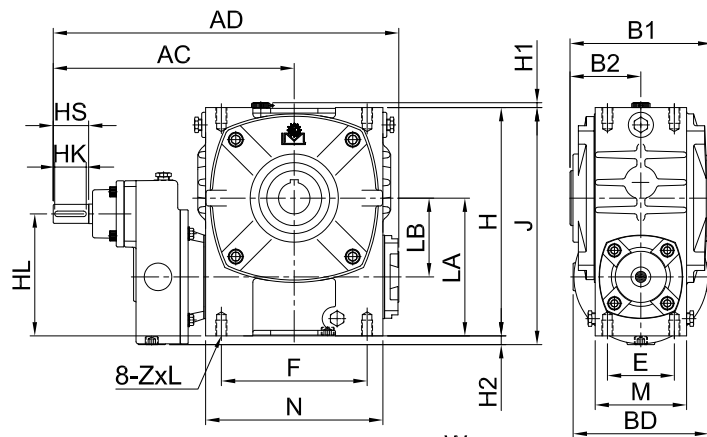


Output Shaft  
出力軸

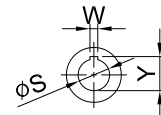


型號 Model	出力軸 Output Shaft				重量 (kg) Weight
	LS	S	D	WxYxLK	EG
80	65	32	35	10x8x60	30.4
100	75	38	41	10x8x70	46.4
120	85	45	48	12x8x80	68.8
135	95	55	59	15x10x90	103

### MODEL : EOG



Input Shaft  
入力軸



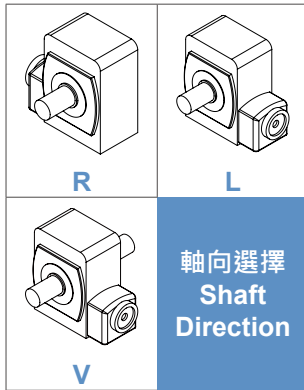
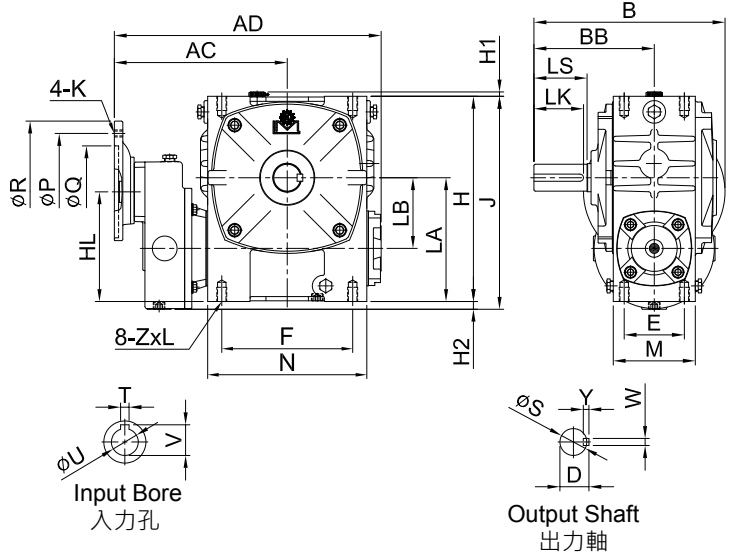
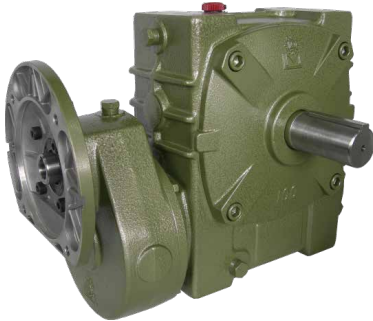
Output Bore  
出力孔

型號 Model	出力孔 Output Bore			重量 (kg) Weight
	W	Y	S	EOG
80	10	38.3	35	32
100	10	43.3	40	47.8
120	12	48.3	45	70.2
135	15	59.3	55	97

unit: mm

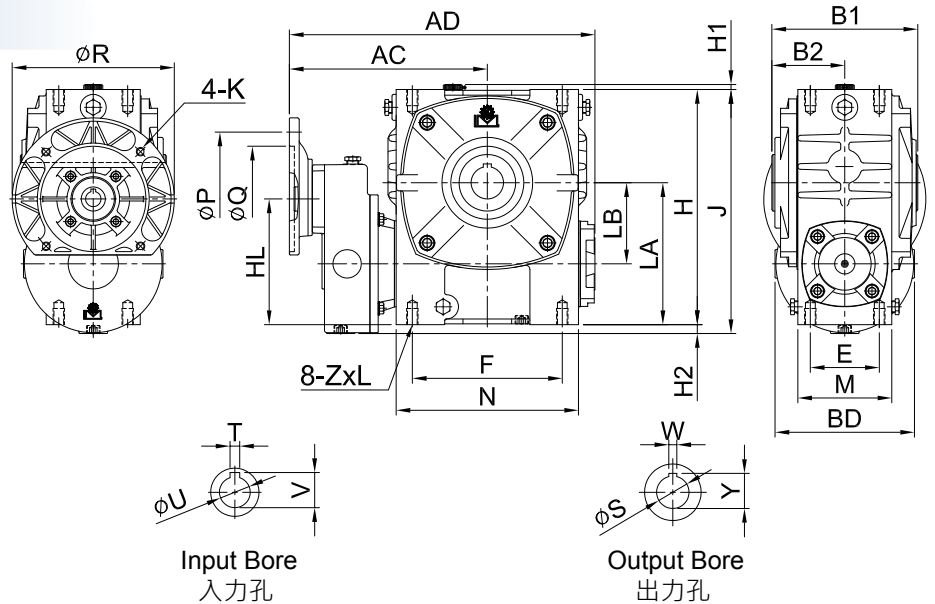
型號 Model	馬力 HP (4P)	減速比 Ratio	AC	AD	B	BB	B1	B2	BD	H1	H2	H	HL	LA	LB	J	腳座 Foot Stock					入力軸 Input Shaft			
																	E	F	M	N	ZxL	HS	U	d	TxVxHK
80	1/2	80~300	282	289	235	140	138	70	172	-	26	232	92	92	80	267	75	145	96	174	M10x18	45	24	27	7x7x40
	1	80~160																							
100	1	80~300	306	439	256	170	178	90	172	6	11	301	135	115	100	301	85	185	116	225	M12x20	45	24	27	7x7x40
	2	80~160																							
120	1	80~300	335	495	288	198	198	100	172	6	-	370	195	155	120	370	100	220	132	264	M14x28	45	24	27	7x7x40
	2	80~200																							
135	2	80~300	402	583	319	214	218	110	240	6	-	425	228	240	135	425	110	260	150	306	M16x30	55	28	31	7x7x50
	3	80~200																							

MODEL : EGM



型號 Model	出力軸 Output Shaft				重量 (kg) Weight
	LS	S	D	WxYxLK	EGM
80	65	32	35	10x8x60	30.6
100	75	38	41	10x8x70	45.6
120	85	45	48	12x8x80	68
135	95	55	59	15x10x90	103

MODEL : EOGM



型號 Model	出力孔 Output Bore			重量 (kg) Weight
	W	Y	S	EOGM
80	10	38.3	35	31.8
100	10	43.3	40	47.4
120	12	48.3	45	69.4
135	15	59.3	55	97

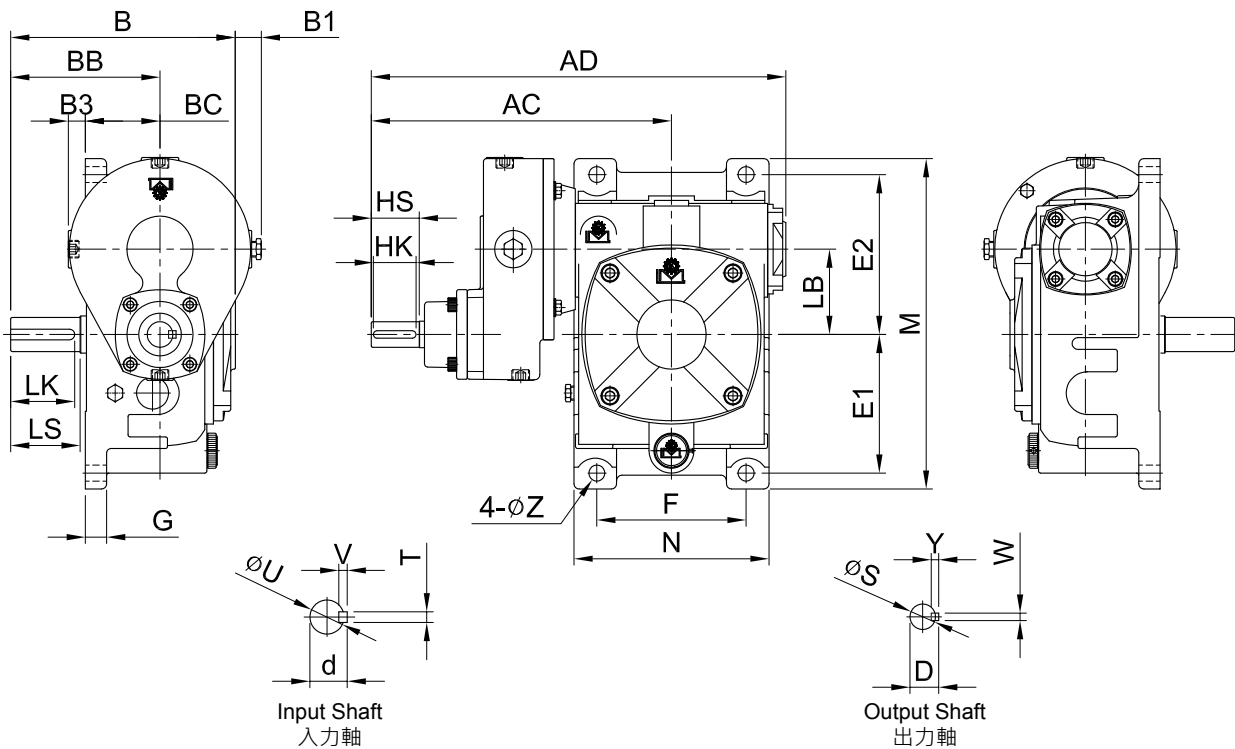
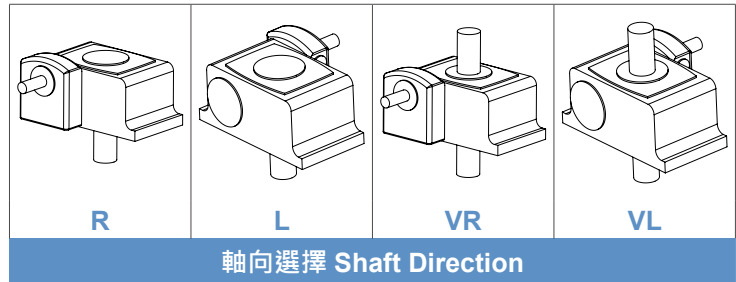
型號 Model	馬力 HP (4P)	減速比 Ratio	AC	AD	B	BB	B1	B2	BD	H1	H2	H	HL	LA	LB	J	馬達盤 IEC Motor Flange				腳座 Foot Stock				入力孔 Input Bore			
																	P	Q	R	K	E	F	M	N	ZxL	V	T	U
																	8	10	12	16	20	25	32	40	50	63	80	100
80	1/2	80~300	219	326	226	140	138	70	172	6	26	232	140	140	80	267	130	110	160	M8	75	145	96	174	M10x18	16.3	5	14
																	165	130	200	M10	85	185	116	225	M12x20	21.8	6	19
100	1	80~300	245	377	270	170	178	90	172	6	11	290	155	175	100	301	165	130	200	M10	85	185	116	225	M12x20	21.8	6	19
																	273	240	320	M10	100	220	132	264	M14x28	27.3	8	24
120	1	80~300	273	433	290	190	198	100	172	6	-	370	175	215	120	370	165	130	200	M10	100	220	132	264	M14x28	21.8	6	19
																	215	180	250	M12	110	260	150	306	M16x30	27.3	8	24
135	2	80~300	306	487	319	214	218	110	240	6	-	425	228	240	135	425	165	130	200	M10	110	260	150	306	M16x30	27.3	8	24
																	215	180	250	M12	110	260	150	306	M16x30	31.3	8	28

unit: mm

# 2-STAGE WORM REDUCER (GEAR+WORM) SERIES

## 雙段蝸輪減速機 (齒輪 + 蝸輪) 系列

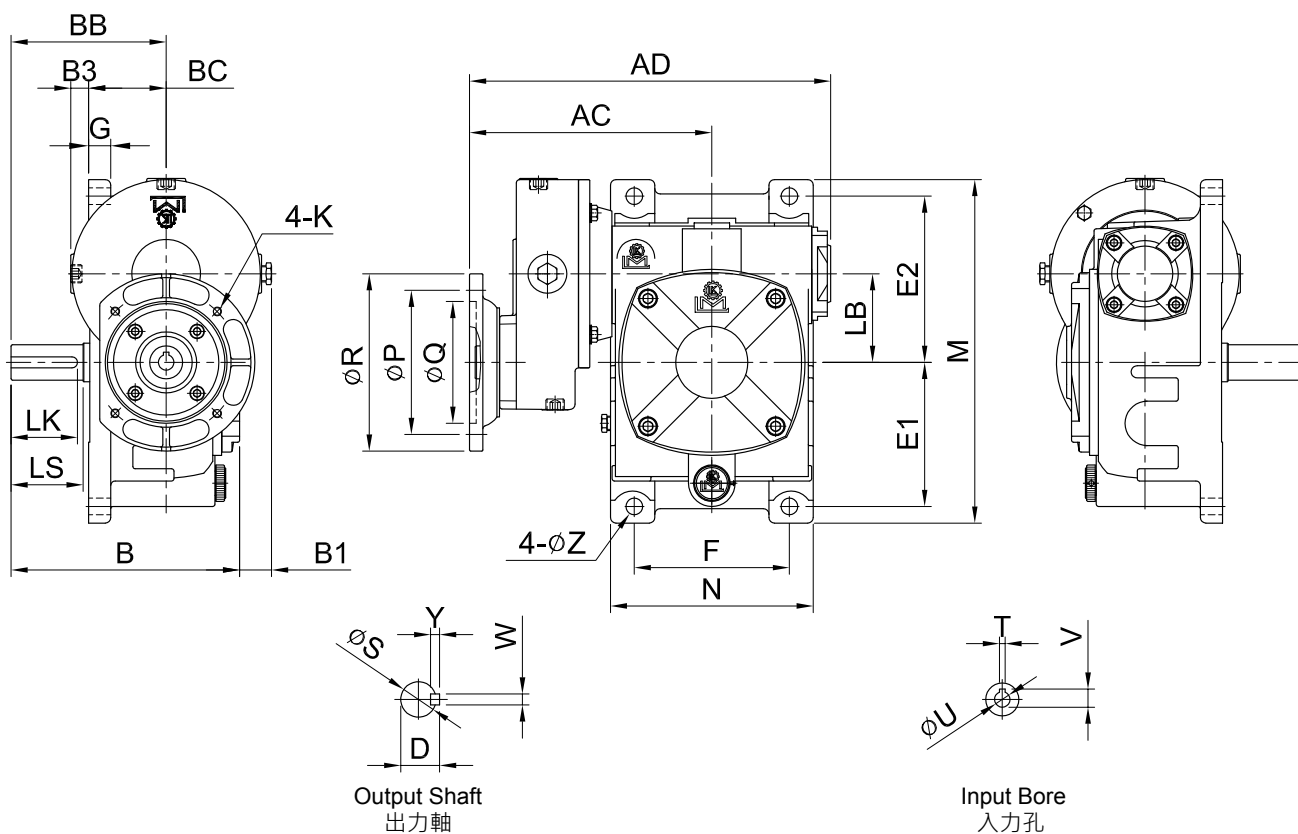
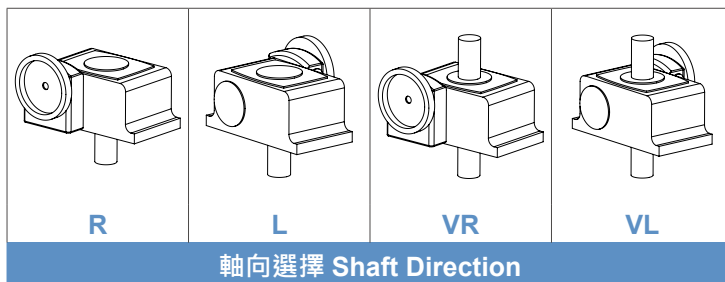
MODEL : UG



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	AC	AD	B	BB	BC	B1	B3	LB	腳座 Foot Stock						入力軸 Input Shaft				出力軸 Output Shaft				重量 Weight (kg)	
											E1	E2	M	F	N	G	Z	HS	U	d	TxVxHK	LS	S	D		WxYxLK
80	1/2	80~300	282	389	211	140	70	24.5	16	80	130	80	315	140	183	20	15	45	24	27	7x7x40	65	32	35	10x8x60	31.4
	1	80~160																								
100	1	80~300	306	439	260	170	90	6	0	100	155	100	380	190	230	26	15	45	24	27	7x7x40	75	38	41	10x8x70	50.8
	2	80~160																								
120	1	80~300	344	504	292	190	100	-	-	120	185	120	450	220	266	30	18	45	24	27	7x7x40	85	45	48	12x8x80	72.6
	2	80~200																								
135	2	80~300	401	582	324	214	110	16	-	135	210	235	495	260	305	35	18	55	28	31	7x7x50	95	55	59	15x10x90	102.8
	3	80~200																								
155	3	80~300	420	620	393	253	140	-	-	155	145	265	460	290	340	45	20	55	28	31	7x7x50	110	60	64	15x10x105	136
	5	80~160																								

MODEL : UGM



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	馬達盤 IEC Motor Flange											腳座 Foot Stock					入力孔 Input Bore			出力軸 Output Shaft					重量 Weight (kg)				
			AC	AD	B	BB	BC	B1	B3	LB	P	Q	R	K	E1	E2	M	F	N	G	Z	V	T	U	LS	S		D	WxYxLK		
			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2		1	2	1	2
80	1/2	80~300	219	326	235	140	70	29	16	80	130	110	160	M8	130	150	315	140	183	20	15	16.3	5	14	65	32	35	10x8x60	31.6		
	1	80~160	220	327	240						165	130	200	M10								21.7	6	19							
100	1	80~300	244	377	270	170	90	11	0	100	165	130	200	M10	155	180	380	190	230	26	15	21.7	6	19	75	38	41	10x8x70	50		
	2	80~160																				27.3	8	24							
120	1	80~300	282	442	292	190	100	-	-	120	165	130	200	M10	185	215	450	220	266	30	18	21.7	6	19	85	45	48	12x8x80	71.8		
	2	80~200																				27.3	8	24							
135	2	80~300	306	487	487	214	110	15	-	135	165	130	200	M10	210	235	495	260	305	35	18	27.3	8	24	95	55	59	15x10x90	100.6		
	3	80~200						16	-		215	180	250	M12								31.3	8	28							
155	3	80~300	325	525	525	253	140	-	-	155	215	180	250	M12	145	265	460	290	340	45	20	31.3	8	28	110	60	64	15X10X105	134		
	5	80~160																													



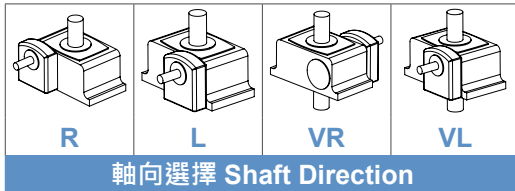
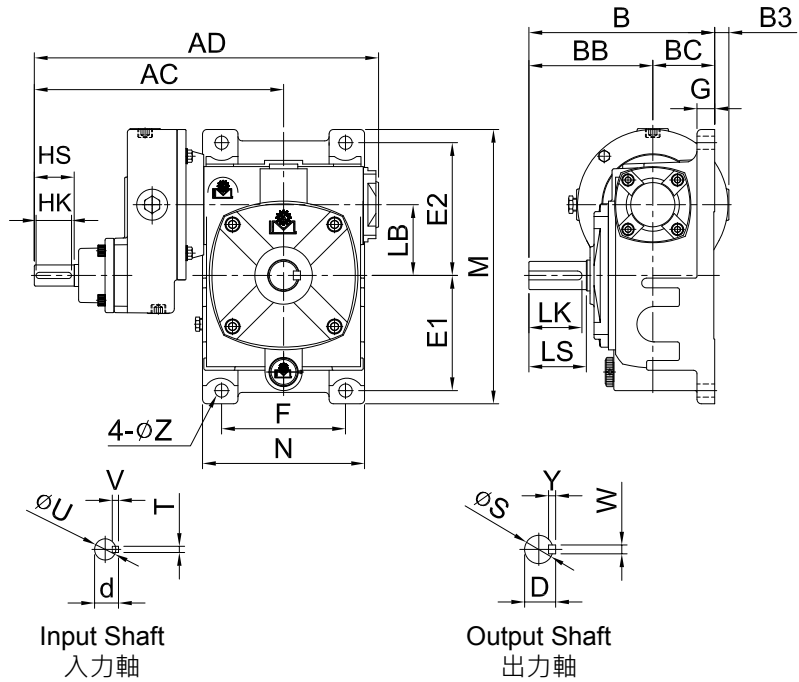
# 2-STAGE WORM REDUCER (GEAR+WORM) SERIES

## 雙段蝸輪減速機 (齒輪 + 蝸輪) 系列

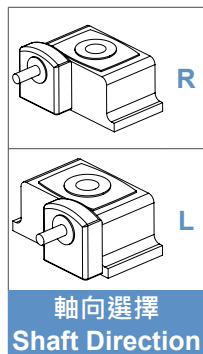
### MODEL : VG



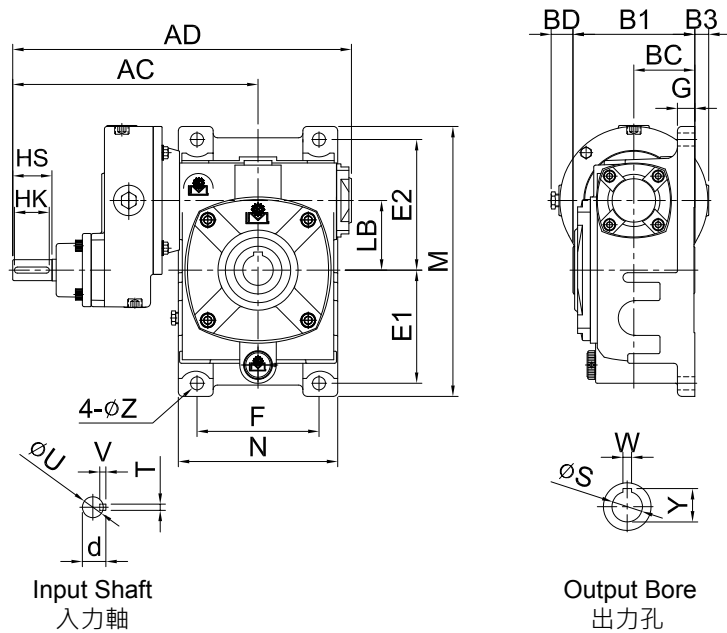
型號 Model	出力軸 Output Shaft				重量 (kg) Weight
	LS	S	D	WxYxLK	VG
80	65	32	35	10x8x60	31.4
100	75	38	41	10x8x70	50.8
120	85	45	48	12x8x80	72.8
135	95	55	59	15x10x90	102.8
155	110	60	64	15X10X105	136



### MODEL : VOG



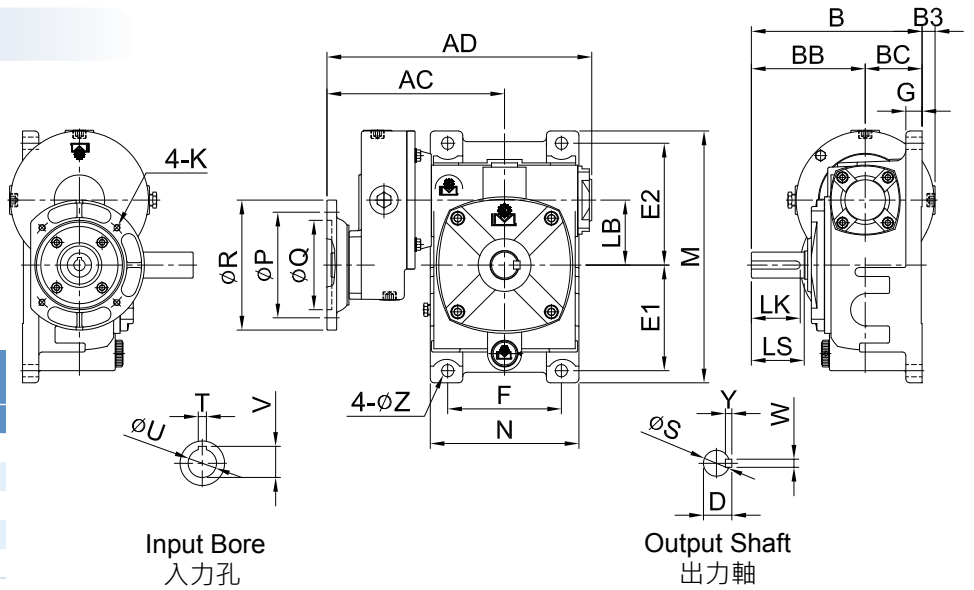
型號 Model	出力孔 Output Bore			重量 (kg) Weight
	W	Y	S	VOG
80	10	38.3	35	32.8
100	10	43.3	40	50.8
120	12	48.3	45	72.8
135	15	59.3	55	102.2
155	15	69.3	65	133



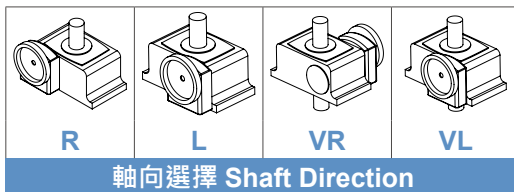
unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	AC	AD	B	BB	BC	BD	B1	B3	LB	腳座 Foot Stock						入力軸 Input Shaft				
												E1	E2	M	F	N	G	Z	HS	U	d	TxVxHK
80	1/2	80~300	282	389	210	140	70	25	139	16	80	130	150	315	140	183	20	15	45	24	27	7x7x40
	1	80~160																				
100	1	80~300	306	439	260	170	90	5	179	0	100	155	180	380	190	230	26	15	45	24	27	7x7x40
	2	80~160																				
120	1	80~300	344	504	290	190	100	0	199	0	120	185	215	450	220	266	30	18	45	24	27	7x7x40
	2	80~200																				
135	2	80~300	401	582	324	214	110	16	219	16	135	210	235	495	260	305	35	18	55	28	31	7x7x50
	3	80~200																				
155	3	80~300	420	620	393	253	140	2.5	263.5	0	155	145	265	460	290	340	45	20	55	28	31	7x7x50
	5	80~160																				

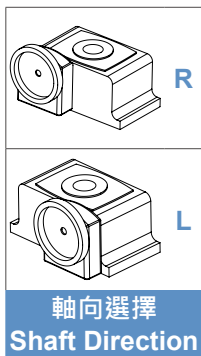
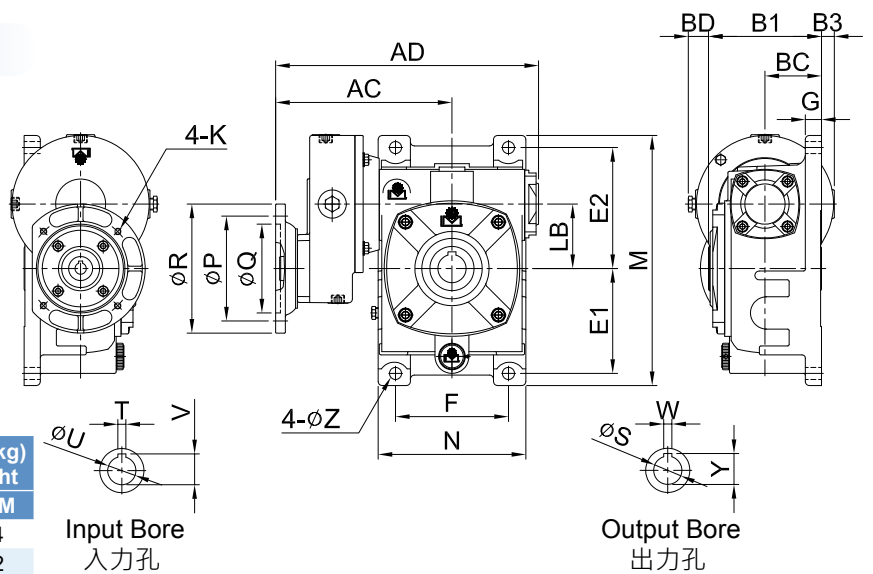
### MODEL : VGM



型號 Model	出力軸 Output Shaft				重量 (kg) Weight VGM
	LS	S	D	WxYxLK	
80	65	32	35	10x8x60	31.6
100	75	38	41	10x8x70	51
120	85	45	48	12x8x80	72
135	95	55	59	15x10x90	100.8
155	110	60	64	15X10X105	134



### MODEL : VOGM



型號 Model	出力孔 Output Bore			重量 (kg) Weight VOGM
	W	Y	S	
80	10	38.3	35	32.4
100	10	43.3	40	49.2
120	12	48.3	45	72
135	15	59.3	55	100.2
155	15	69.3	65	131

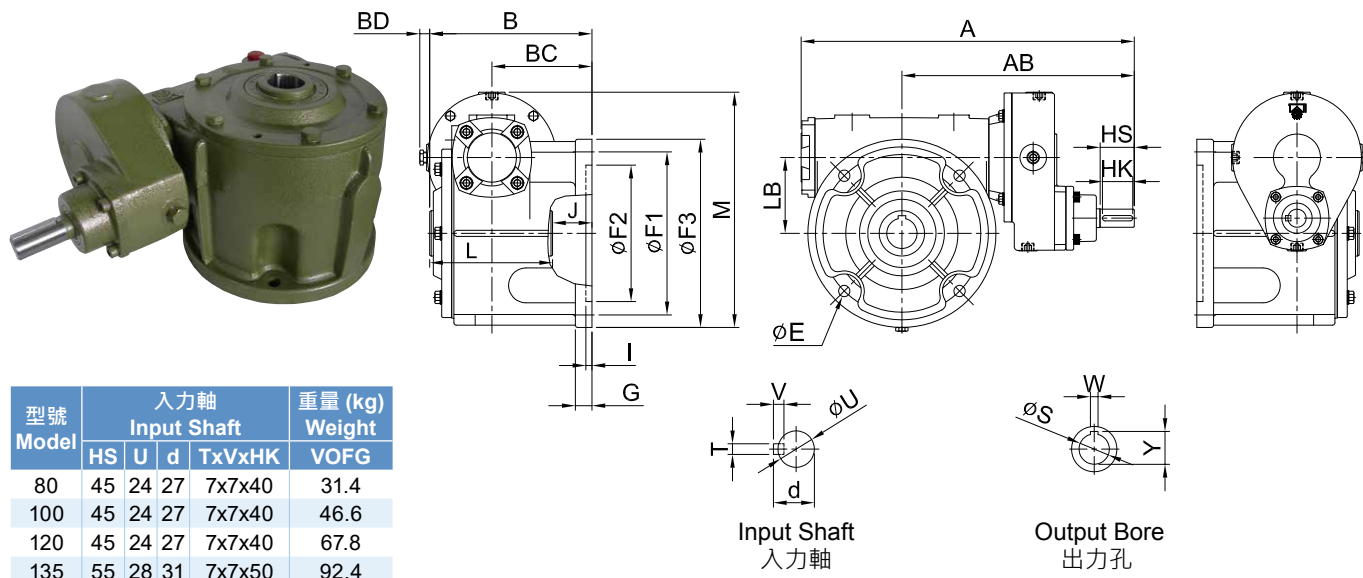
unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	AC	AD	B	BB	BC	BD	B1	B3	LB	馬達盤 IEC Motor Flange				腳座 Foot Stock						入力孔 Input Bore			
												P	Q	R	K	E1	E2	M	F	N	G	Z	V	T	U
80	1/2	80~300	219	326	210	140	70	25	139	16	80	130	110	160	M8	130	150	315	140	183	20	15	16.3	5	14
	1	80~160	220	327								165	130	200	M10									21.7	6
100	1	80~300																					21.7	6	19
	2	80~160	244	377	260	170	90	5	179	-	100	165	130	200	M10	155	180	380	190	230	26	15	27.3	8	24
120	1	80~300																					21.7	6	19
	2	80~200	282	442	290	190	100	-	199	-	120	165	130	200	M10	185	215	450	220	266	30	18	27.3	8	24
135	2	80~300																					27.3	8	24
	3	80~200	306	487	324	214	110	16	219	16	135	165	130	200	M10	210	235	495	260	305	35	18	31.3	8	28
155	3	80~300																							
	5	80~160	325	525	392	253	140	2.5	263.5	-	155	215	180	250	M12	145	265	460	290	340	45	20	31.3	8	28

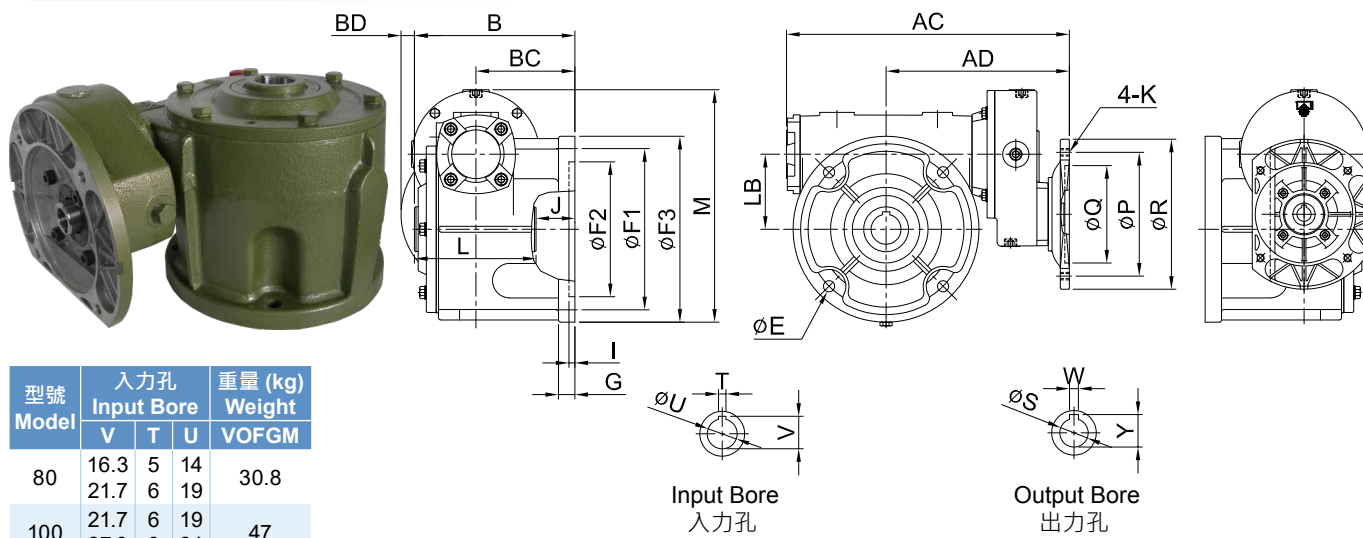
# 2-STAGE WORM REDUCER (GEAR+WORM) SERIES

## 雙段蝸輪減速機 (齒輪 + 蝸輪) 系列

### MODEL : VOFG



### MODEL : VOFGM



unit: mm

型號 Model	馬力 HP (4P)	減速比 Ratio	A	AB	AC	AD	B	BC	BD	LB	M	馬達盤 IEC Motor Flange				法蘭面 Flange						出力孔 Output Bore				
												P	Q	R	K	E	F1	F2	F3	J	G	I	W	Y	S	L
												80	1/2 1	80~300 80~160	389	282	326 327	219 220	180	107	22	80	266	130 165	110 130	160 200
100	1 2	80~300 80~160	439	306	377	244	214	132	18	100	310	165	130	200	M10	4-15	215	180	248	52	22	8	10	43.3	40	162
120	1 2	80~300 80~200	509	344	447	282	234	145	11	120	371	165	130	200	M10	8-18	300	260	330	56	24	6	12	48.3	50	178
135	2 3	80~300 80~200	582	401	487	306	247	155	33 34	135	415	165 215	130 180	200 250	M10 M12	8-18	330	290	360	63	25	7	15	59.3	55	184

## ■ 安裝方向 Installation Direction (VOFGM)

● 油面計  
Oil Indicator

▼ 注油栓  
Oil Plug

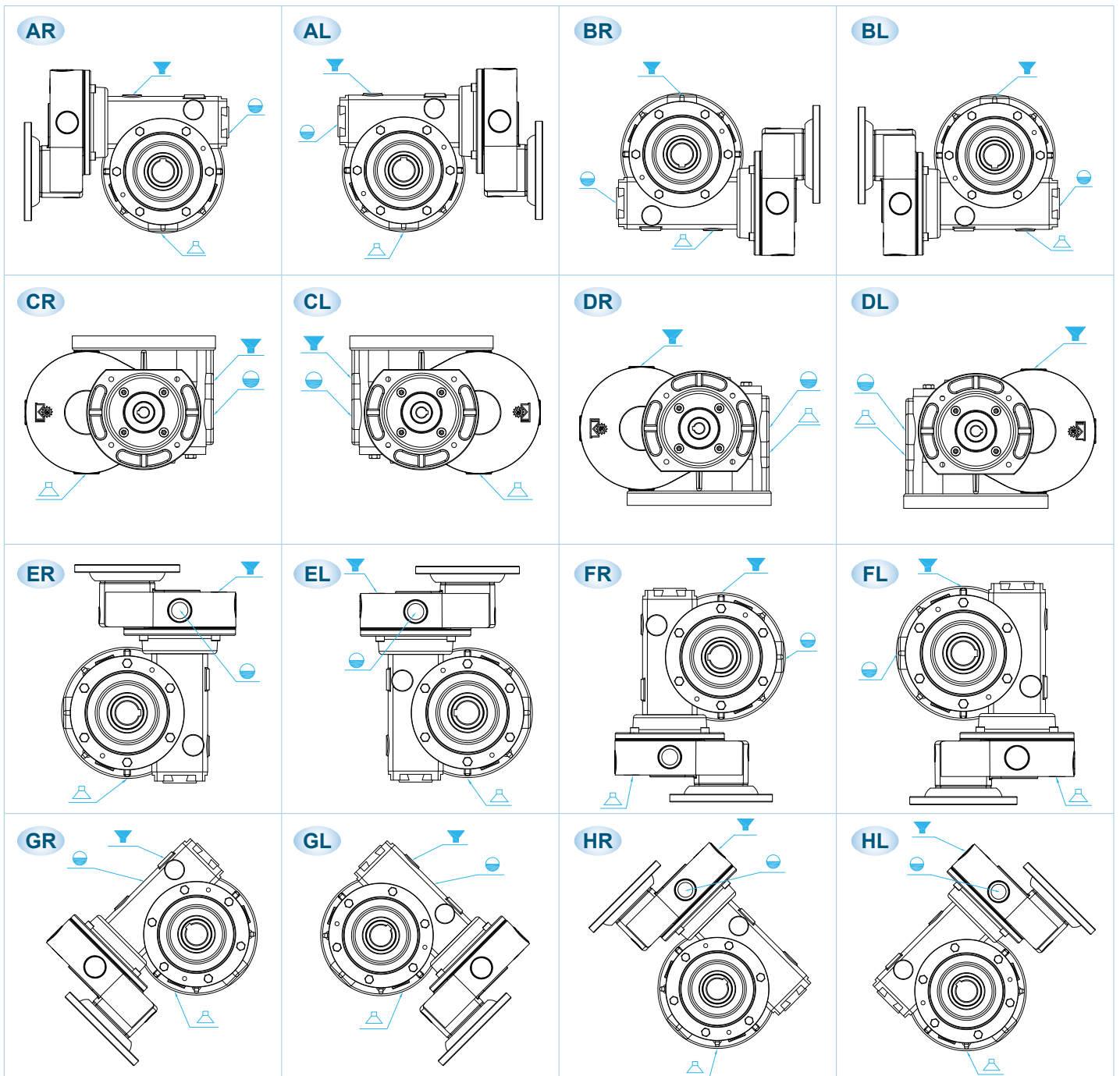
△ 排油栓  
Oil Drain Plug

◆ 入力軸段可提供反向安裝。

◆ 正常的使用方向可以使減速機保持較高的壽命。  
The life time of gear reducer can be prolonged in proper direction.

◆ 安裝時請注意油面計、注油栓及排油栓的位置以便日後維護。  
Please note the positions of oil gauge, oil filling plug and oil drain plug to facilitate the maintenance afterwards.

◆ 減速機使用方向特殊時，請與我們連繫。  
For special installation direction, please contact us.



# WORM REDUCER SERIES

## 蝸輪減速機系列

### ■ 蝸輪減速機零件對照表 Comparison Table of Parts

#### 油封規格 Oil Seal

型號 Model	出力軸蓋 Output Shaft Cover	入力軸蓋 Input Shaft Cover	出力軸蓋 (VOW) Output Shaft Cover	出力軸蓋 (VOF) Output Shaft Cover	剎車盤 Brake Disc	無段盤	油壓盤 Oil Pressure Cover
	TC	SC	TC	TC	SC	SC	SC
40#	17X30X7	15X25X6	30X50X7				
50#	20X35X7	17X30X7	40X55X7		17X30X7	17X30X7	
60#	25X40X7	20X35X7	40X62X10		20X35X7	20X35X7	
70#	30X46X7	25X40X7	50X70X10	50X70X10	25X40X7	25X40X7	
80#	35X50X7	30X46X8	55X75X10	50X62X7	30X46X8	30X46X8	30X46X8
100#	40X62X10	35X50X7	70X90X12	60X90X10	35X50X7	35X50X7	45X62X8
120#	50X70X10	40X62X10	70X90X12	75X100X13	40X62X10	40X62X10	50X70X10
135#	60X80X12	45X62X8	80X100X12	80X100X12			45X62X6
155#	70X90X12	45X62X8	90X125X12				45X62X6
175#	75X100X13	50X70X10	120X150X14				50X70X10
200#	80X100X12	55X75X10	120X150X14				55X75X10
225#	85X110X13	60X80X10					60X80X10
250#	95X120X13	70X90X10					70X90X10
300#	100X130X13	80X100X13					
350#	120X150X14	90X110X13					

型號 Model	入力軸 Input Shaft						
	1/4 HP	1/2HP	1HP	2HP	3HP、5HP	7 1/2、10HP	15HP
50#	17x35x5	25x35x7					
60#	25x40x7	25x40x7					
70#		25x46x7	28x46x7				
80#		30x55x7	30x55x7	35x55x8			
100#			35x62x10	35x62x10	40x62x10		
120#				50x70x10	50x70x10		
135#					55x80x10	55x80x10	55x80x10
155#					55x80x10	55x80x10	55x80x10
175#						60x90x10	60x90x10

以上數值僅供參考，如有變更恕不另行通知。The above information is for reference only. No notices will be made for any changes.



## ■ 蝸輪減速機零件對照表 Comparison Table of Parts

### 軸承規格 Ball Bearing

型號 Model	入力軸 Input Shaft		出力軸 Output Shaft		
	標準 Standard	標準 Standard	VOW	VOF	VOW 角牙
40#	6202 x 2	6203 x 2	6007 x 2		30206 x 2
50#	6203 x 2	6204 x 2	6008 x 2		32008 x 2
60#	6204 x 2	6205 x 2	6008x 2		30208 x 2
70#	30205 x 2	6206 x 2	6010 x 2	6210 x 2	30210 x 2
80#	30206 x 2	6207 x 2	6011 x 2	6010 x 2	30211 x 2
100#	30207 x 2	6208 x 2	6214 x 2	6212 x 2	30214 x 2
120#	30308 x 2	6210 x 2	6214 x 2	6215 x 2	30214 x 2
135#	30309 x 2	6212 x 2	6216 x 2	6216 x 2	30216 x 2
155#	30309 x 2	6214 x 3	6218 x 2		
175#	30310 x 2	6215 x 3	6224 x 2		
200#	30311 x 2	6216 x 4	6224 x 2		
225#	30312 x 2	6217 x 4			
250#	30314 x 2	NJ219 x 2			
300#	30316 x 2	NJ220 x 2			
350#	30318 x 2	NJ224 x 2			

型號 Model	入力軸 Input Shaft						
	1/4 HP	1/2HP	1HP	2HP	3HP、5HP	7 1/2、10HP	15HP
50#	6203 x 2	6202 x2					
60#	6005 x1 6204 x1	6005 x1 6204 x1					
70#		30205 x2	320/28 x1 30205 x1				
80#		30206 x2	30206 x2	6206 x1 6007 x1			
100#			30207 x2	30207 x2	6008 x1 30206 x2		
120#				30210 x2	30210 x2		
135#					30211 x1 30309 x1	30211 x1 30309 x1	
155#					30211 x1 30309 x1	30211 x1 30309 x1	30211 x1 30309 x1
175#						30212 x1 30310 x1	30212 x1 30310 x1

以上數值僅供參考，如有變更恕不另行通知。The above information is for reference only. No notices will be made for any changes.

# WORM REDUCER SERIES

## 蝸輪減速機系列

### 馬力、扭矩對照表 (單段) Horsepower and Torque Collate (1-Stage)

輸入轉速 Input R.P.M.		1800 RPM				1500 RPM				1200 RPM				900 RPM				600 RPM				300 RPM			
Model	Ratio	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>
40	1/10	0.83	0.65	2.6	70	0.77	0.6	2.8	70	0.67	0.51	3.1	70	0.56	0.43	3.4	70	0.43	0.32	3.8	70	0.23	0.16	3.8	70
	1/15	0.41	0.28	2.3	70	0.37	0.25	2.5	70	0.33	0.20	2.8	70	0.27	0.17	3.2	70	0.2	0.11	3.5	70	0.11	0.04	3.8	70
	1/20	0.39	0.27	2.1	70	0.35	0.24	2.3	70	0.31	0.21	2.5	70	0.27	0.17	2.8	70	0.2	0.12	3.1	70	0.12	0.08	3.7	70
	1/30	0.43	0.28	3.3	70	0.4	0.25	3.5	70	0.34	0.21	3.8	70	0.27	0.16	3.8	70	0.2	0.11	3.8	70	0.09	0.04	3.8	70
	1/40	0.27	0.15	2.5	70	0.24	0.15	2.6	70	0.21	0.12	2.8	70	0.19	0.11	3.1	70	0.15	0.07	3.4	70	0.08	0.04	3.8	70
	1/50	0.25	0.15	2.8	70	0.23	0.12	3.0	70	0.2	0.11	3.2	70	0.17	0.11	3.5	70	0.12	0.05	3.8	70	0.07	0.03	3.8	70
	1/60	0.20	0.11	2.4	70	0.19	0.09	2.6	70	0.16	0.08	2.7	70	0.15	0.07	3.0	70	0.11	0.04	3.2	70	0.07	0.03	3.8	70
50	1/10	1.44	1.15	4.59	100	1.31	1.03	4.94	107	1.16	0.90	5.40	115	0.89	0.68	5.43	120	0.60	0.45	5.43	140	0.31	0.23	5.43	200
	1/15	1.07	0.81	4.89	115	0.97	0.73	5.22	120	0.82	0.60	5.43	130	0.63	0.45	5.43	140	0.43	0.30	5.43	160	0.22	0.15	5.43	200
	1/20	0.65	0.48	3.85	130	0.58	0.43	4.13	140	0.51	0.37	4.48	155	0.43	0.31	4.94	170	0.32	0.22	5.43	200	0.17	0.12	5.43	200
	1/30	0.68	0.45	5.43	150	0.58	0.37	5.43	170	0.48	0.30	5.43	180	0.37	0.22	5.43	200	0.25	0.15	5.43	200	0.14	0.07	5.43	200
	1/40	0.44	0.28	4.50	170	0.40	0.25	4.80	180	0.35	0.21	5.16	200	0.28	0.17	5.43	200	0.20	0.11	5.43	200	0.10	0.05	5.43	200
	1/50	0.39	0.23	4.55	200	0.35	0.20	4.94	200	0.31	0.17	5.29	200	0.24	0.13	5.43	200	0.17	0.09	5.43	200	0.09	0.04	5.43	200
	1/60	0.31	0.18	4.35	200	0.28	0.16	4.60	200	0.24	0.13	4.87	200	0.21	0.11	5.43	200	0.15	0.07	5.43	200	0.08	0.03	5.43	200
60	1/10	2.32	1.87	7.44	98	2.08	1.66	7.95	104	1.88	1.47	8.80	110	1.57	1.21	9.68	121	1.23	0.93	11.1	140	0.66	0.48	11.6	200
	1/15	1.72	1.32	7.91	116	1.55	1.18	8.46	123	1.36	1.01	9.07	133	1.17	0.85	10.2	145	0.90	0.64	11.5	167	0.48	0.32	11.6	200
	1/20	1.21	0.89	7.15	138	1.10	0.80	7.66	146	0.98	0.69	8.31	157	0.83	0.57	9.16	172	0.65	0.43	10.4	200	0.38	0.24	11.6	200
	1/30	1.14	0.78	9.31	151	1.05	0.70	10.0	159	0.92	0.59	10.6	172	0.78	0.48	11.6	189	0.54	0.32	11.6	200	0.29	0.16	11.6	200
	1/40	0.82	0.52	8.27	178	0.75	0.46	8.83	189	0.67	0.39	9.49	200	0.58	0.32	10.4	200	0.45	0.24	11.6	200	0.25	0.12	11.6	200
	1/50	0.77	0.49	9.70	200	0.70	0.43	10.2	200	0.62	0.37	11.0	200	0.40	0.23	9.22	200	0.31	0.17	10.3	200	0.19	0.09	11.6	200
	1/60	0.64	0.38	9.20	200	0.58	0.35	9.7	200	0.51	0.29	10.4	200	0.43	0.24	11.3	200	0.25	0.13	9.52	200	0.14	0.07	11.2	200
70	1/10	3.48	2.82	11.2	128	3.11	2.50	11.9	136	2.77	2.20	13.1	145	2.33	1.81	14.4	159	1.85	1.41	16.9	180	1.20	0.88	21.1	228
	1/15	2.53	1.96	11.7	153	2.29	1.76	12.6	161	2.02	1.52	13.6	174	1.73	1.28	15.2	190	1.34	0.96	17.3	218	0.87	0.59	21.4	277
	1/20	1.93	1.47	11.7	178	1.75	1.31	12.5	188	1.55	1.14	13.6	202	1.31	0.94	15.0	222	1.02	0.71	17.1	255	0.65	0.43	20.6	300
	1/30	1.69	1.16	13.8	198	1.55	1.05	15.0	208	1.36	0.89	16.1	225	1.18	0.74	17.7	247	0.92	0.56	20.1	284	0.59	0.33	23.8	300
	1/40	1.24	0.82	13.1	233	1.13	0.73	14.0	247	1.01	0.63	15.0	266	0.86	0.51	16.5	293	0.67	0.39	18.6	300	0.43	0.23	21.9	300
	1/50	1.12	0.72	14.3	266	1.03	0.64	15.2	282	0.91	0.55	16.3	300	0.77	0.45	17.8	300	0.60	0.33	19.7	300	0.39	0.19	23.2	300
	1/60	0.94	0.58	13.9	289	0.86	0.51	14.6	300	0.76	0.43	15.6	300	0.65	0.36	17.0	300	0.50	0.26	18.6	300	0.32	0.15	22.0	300
80	1/10	4.93	4.01	15.9	180	4.43	3.48	17.0	191	2.89	3.12	18.6	204	3.30	2.59	20.6	224	2.63	2.02	24.1	254	1.70	1.26	30.1	321
	1/15	3.57	2.79	16.7	215	3.21	2.49	17.8	228	2.83	2.17	19.4	244	2.44	1.81	21.7	267	1.90	1.38	24.7	306	1.24	0.85	30.7	288
	1/20	2.53	1.90	15.1	253	2.30	1.71	16.3	267	2.04	1.49	17.8	287	1.73	1.22	19.5	316	1.37	0.93	22.4	362	0.89	0.57	27.2	400
	1/30	2.38	1.66	19.8	277	2.15	1.47	21.1	294	1.90	1.28	22.9	316	1.65	1.06	25.3	345	1.31	0.80	28.7	398	0.84	0.47	34.0	400
	1/40	1.70	1.10	17.5	326	1.54	0.98	18.7	347	1.38	0.55	20.4	372	1.19	0.69	22.2	400	0.94	0.52	25.0	400	0.62	0.31	29.8	400
	1/50	1.57	1.01	20.1	364	1.43	0.90	21.6	385	1.28	0.77	23.1	400	1.09	0.63	25.1	400	0.85	0.47	28.0	400	0.55	0.28	33.0	400
	1/60	1.29	0.79	18.9	400	1.18	0.71	20.4	400	1.05	0.60	21.6	400	0.91	0.50	23.7	400	0.70	0.36	26.0	400	0.46	0.21	30.8	400
100	1/10	8.73	7.18	28.5	167	7.83	6.46	30.8	177	6.83	5.6	33.4	190	5.87	4.69	37.3	207	4.68	3.65	43.3	235	2.79	2.09	50	297
	1/15	6.33	5.02	29.9	204	5.66	4.43	31.7	217	5.09	3.94	35.3	230	4.33	3.29	39.3	251	3.38	2.48	44.5	289	1.99	1.39	50	365
	1/20	5.02	3.93	31.2	239	4.57	3.54	33.8	252	4.03	3.09	36.9	269	3.40	2.53	40.3	297	2.67	1.93	46.2	240	1.52	1.04	50	435
	1/30	4.20	3.00	35.8	265	3.81	2.66	38.2	281	3.35	2.30	41.1	302	2.89	1.92	46.0	330	2.23	1.39	50.0	382	1.20	0.69	50	500
	1/40	3.17	2.20	35.1	316	2.86	1.96	37.4	336	2.54	1.71	40.9	359	2.03	1.28	46.0	397	1.71	1.04	50.0	458	0.92	0.52	50	500
	1/50	2.39	1.59	31.8	364	2.17	1.42	24.0	386	1.93	1.24	37.0	415	1.66	1.01	40.2	458	1.29	0.75	44.7	500	0.79	0.41	50	500
	1/60	1.96	1.27	30.4	400	1.79	1.14	32.7	424	1.49	0.97	34.9	458	1.37	0.79	38.1	500	1.05	0.58	42.0	500	0.68	0.34	49.8	500
120	1/10	13.8	11.4	45.7	177	12.6	10.4	49.6	184	11.0	9.02	53.8	198	9.38	7.55	60.1	214	7.46	5.86	69.9	241	4.64	3.51	84.0	305
	1/15	10.0	8.05	48.0	218	9.02	7.15	51.2	231	8.08	6.32	56.5	244	6.83	5.26	62.8	267	5.39	4.01	71.9	305	3.30	2.34	84.0	386
	1/20	7.16	5.54	44.0	270	6.49	4.97	47.4	285	5.72	4.30	51.2	306	4.85	3.58	57.0	335	3.87	2.74	65.4	383	2.53	1.69	80.7	488
	1/30	6.66	4.82	57.5	285	6.00	4.28	61.3	302	5.31	3.70	77.3	325	4.55	3.09	73.0	354	3.65	2.34	83.9	408	1.97	1.17	84.0	531
	1/40	4.68	3.19	50.7	357	4.19	2.81	53.6	380	3.77	2.45	58.5	407	3.24	2.03	64.8	446	2.62	1.53	73.3	514	1.64	0.88	84.0	665
	1/50	3.93	2.74	54.5	404	3.54	2.43	58.0	429	3.15	2.12	63.4	459	2.69	1.72	68.7	508	2.09	1.28	76.5	588	1.24	0.70	84.0	700
	1/60	3.14	2.04	48.9	453	2.84	1.81	51.9	481	2.52	1.56	56.2	518	2.17	1.28	61.3	571	1.70	0.94	67.5	662	1.12	0.56	81.1	700
135	1/10	19.8	16.5	66.0	304	18.0	15.0	71.7	319	15.8	13.0	77.7	342	13.3	10.9	86.8	372	10.6	8.46	101	421	6.87	5.30	126	533
	1/15	14.7	11.9	71.4	362	13.1	10.6	76.1	384	11.8	9.38	84.0	407	9.95	7.82	93.3	445	7.83	5.96	106	510	5.11	3.73	133	644
	1/20	11.3	9.11	72.5	426	10.3	8.19	78.2	449	8.97	7.03	83.9	484	7.69	5.92	94.3	528	6.05	4.51	107	605	3.88	2.76	131	777
	1/30	9.68	7.21	86.0	468	8.71	6.40	91.7	496	7.70	5.53	99.1	533	6.58	4.62	110	583								

## 馬力、扭矩對照表 (單段) Horsepower and Torque Collate (1-Stage)

輸入轉速 Input R.P.M.		1800 RPM				1500 RPM				1200 RPM				900 RPM				600 RPM				300 RPM			
Model	Ratio	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>
155	1/10	32.9	27.3	105	1500	29.8	24.7	114	1500	26.4	21.7	125	1500	22.3	18.1	139	1500	17.8	14.3	165	1500	11.7	8.99	207	1500
	1/15	22.9	18.5	106	1500	20.5	16.5	114	1500	18.1	14.4	124	1500	15.4	12.0	139	1500	12.1	9.31	161	1500	8.96	5.84	202	1500
	1/20	14.9	11.8	94.5	1500	13.5	10.6	102	1500	11.9	9.29	110	1500	10.0	7.70	122	1500	8.01	5.94	141	1500	5.18	3.65	174	1500
	1/30	13.3	9.78	112	1500	12.1	8.82	122	1500	10.4	7.55	130	1500	9.08	6.32	146	1500	7.24	4.87	168	1500	4.77	2.92	202	1500
	1/40	9.32	6.67	106	1500	8.26	5.86	112	1500	7.40	5.11	122	1500	6.23	4.22	134	1500	5.02	3.19	152	1500	3.25	1.91	182	1500
	1/50	7.13	4.97	98.9	1500	6.42	4.40	105	1500	5.76	3.84	114	1500	4.89	3.17	126	1500	3.90	2.37	141	1500	2.53	1.41	168	1500
	1/60	5.85	3.99	95.3	1500	5.37	3.57	102	1500	4.72	3.05	109	1500	3.94	2.48	118	1500	3.20	1.87	133	1500	2.10	1.12	160	1500
175	1/10	46.8	39.1	150	1770	42.5	35.4	163	1800	37.7	31.3	180	1800	31.7	26.0	200	1800	25.2	20.4	235	1800	16.6	12.9	297	1800
	1/15	33.0	26.7	154	1800	29.6	23.9	165	1800	25.9	20.8	180	1800	22.1	17.5	202	1800	17.3	13.4	233	1800	11.4	8.44	292	1800
	1/20	22.8	18.2	141	1800	20.4	16.2	151	1800	18.0	14.2	165	1800	15.2	11.7	182	1800	12.1	9.15	212	1800	7.87	5.62	261	1800
	1/30	19.0	14.1	163	1800	17.2	12.7	176	1800	15.0	11.0	190	1800	12.9	9.20	212	1800	10.2	7.04	243	1800	8.73	4.23	293	1800
	1/40	13.2	9.60	149	1800	11.9	8.58	159	1800	10.4	7.36	171	1800	8.96	6.12	190	1800	7.10	4.65	216	1800	4.69	2.80	261	1800
	1/50	9.78	6.81	135	1800	8.74	6.03	144	1800	7.98	5.37	160	1800	6.64	4.32	171	1800	5.28	3.25	194	1800	3.46	1.94	231	1800
	1/60	8.23	5.74	132	1800	7.74	5.31	147	1800	6.62	4.41	152	1800	5.56	3.60	166	1800	4.45	2.70	187	1800	2.90	1.62	224	1800
200	1/10	52.6	44.0	181	1750	47.7	39.9	196	1840	41.8	34.8	215	1950	35.6	29.3	241	1800	28.0	22.8	281	2200	18.5	14.4	366	2200
	1/15	39.5	32.1	198	1990	35.4	28.7	212	2090	30.9	25.0	231	2200	26.3	21.0	259	2120	20.6	16.1	298	2200	13.6	10.0	373	2200
	1/20	30.2	24.3	193	2200	27.0	21.6	206	2200	23.8	18.9	226	2200	20.1	15.7	250	2200	15.9	12.2	291	2200	10.3	7.48	357	2200
	1/30	25.1	18.8	232	2200	22.6	16.8	249	2200	19.8	14.6	270	2200	16.9	12.1	300	2200	13.3	9.32	345	2200	8.78	5.60	414	2200
	1/40	18.2	13.3	213	2200	16.5	12.0	230	2200	14.3	10.3	247	2200	12.3	8.62	274	2200	9.56	6.43	307	2200	6.44	3.94	376	2200
	1/50	13.8	9.84	195	2200	12.3	8.68	207	2200	11.2	7.76	231	2200	9.29	6.21	247	2200	7.33	4.69	280	2200	4.82	2.80	334	2200
	1/60	11.5	8.01	188	2200	10.3	7.11	200	2200	9.64	6.49	228	2200	7.76	5.05	237	2200	6.12	3.77	265	2200	4.03	2.26	318	2200
225	1/10	71.2	60.2	239	2150	64.6	54.5	260	2260	56.7	47.7	284	2400	48.1	40.1	319	2500	37.9	31.2	372	2500	24.9	19.8	473	2500
	1/15	56.8	46.9	280	2410	50.9	41.9	300	2500	44.4	36.4	326	2500	37.8	30.6	365	2500	29.5	23.5	422	2500	19.3	14.7	527	2500
	1/20	43.4	35.2	280	2500	38.7	31.2	298	2500	34.1	27.4	326	2500	28.8	22.8	363	2500	22.7	17.6	421	2500	14.7	10.8	518	2500
	1/30	37.3	28.7	342	2500	33.5	25.6	367	2500	29.3	22.3	399	2500	24.9	18.5	442	2500	19.6	14.2	508	2500	12.7	8.54	611	2500
	1/40	25.9	19.3	307	2500	23.6	17.4	333	2500	20.4	14.9	357	2500	17.6	12.5	399	2500	13.6	9.36	447	2500	9.09	5.72	546	2500
	1/50	19.4	14.2	282	2500	17.2	12.5	299	2500	15.6	11.1	334	2500	12.9	8.96	356	2500	10.1	6.77	404	2500	6.65	4.04	482	2500
	1/60	16.0	11.3	262	2500	14.2	10.0	278	2500	13.2	9.19	318	2500	10.6	7.15	330	2500	8.37	5.35	370	2500	5.51	3.20	443	2500
250	1/10	96.6	81.3	323	2700	88.3	74.2	354	2700	78.4	65.7	392	2700	65.5	54.7	435	2700	51.8	42.6	508	2700	34.2	27.1	648	2700
	1/15	72.3	59.3	354	2700	66.4	54.3	389	2700	57.9	47.2	423	2700	49.0	39.7	474	2700	38.3	30.3	544	2700	25.3	19.1	689	2700
	1/20	55.3	45.0	367	2700	49.2	39.9	391	2700	43.3	35.0	428	2700	36.4	29.0	473	2700	28.7	22.4	549	2700	18.6	13.8	678	2700
	1/30	47.2	35.8	427	2700	42.2	31.9	457	2700	37.1	27.9	499	2700	31.0	23.0	551	2700	24.7	17.6	633	2700	16.3	10.8	774	2700
	1/40	32.9	24.6	401	2700	29.8	22.2	435	2700	25.9	19.1	468	2700	22.8	16.4	537	2700	17.2	11.9	587	2700	11.4	7.30	715	2700
	1/50	23.7	17.3	359	2700	21.2	15.4	383	2700	18.7	13.5	418	2700	15.8	11.0	458	2700	12.2	8.23	511	2700	8.12	4.97	617	2700
	1/60	20.2	14.6	350	2700	18.0	12.9	371	2700	16.8	11.9	426	2700	13.4	9.21	439	2700	10.5	6.88	493	2700	6.91	4.13	591	2700
300	1/10	146	123	516	2590	133	111	563	2710	120	100	631	2860	101	84	704	3090	78	65	814	3460	52	42	1056	3800
	1/15	115	96	564	2910	105	87.2	616	3040	92	76	679	3210	78	64	757	3480	61	49	874	3800	40	31	1106	3800
	1/20	86	70	573	3150	79	65	631	3280	68	56	680	3500	58	47	759	3790	45	36	876	3800	30	22	1100	3800
	1/30	69	54	658	3560	62	48	706	3800	54	42	765	3800	45	35	848	3800	36	27	976	3800	23	16	1196	3800
	1/40	53	40	665	3800	47	35	710	3800	34	25	849	3800	28	19	979	3800	28	19	979	3800	18	12	1186	3800
	1/50	40	30	612	3800	36	27	659	3800	32	23	713	3800	28	20	828	3800	21	14	888	3800	14	9	1074	3800
	1/60	32	23	571	3800	28	21	608	3800	25	18	660	3800	21	15	729	3800	16	11	811	3800	11	6	980	3800
350	1/10					185	156	788	3260	165	139	876	3430	141	118	993	3680	110	92	1161	4080	73	59	1493	4890
	1/15					153	127	926	3680	138	114	1044	3850	115	94	1152	4170	90	73	1332	4650	59	46	1706	5100
	1/20	140	115	933	3900	129	106	1030	4000	111	91	1111	4320	95	77	1257	4640	74	59	1441	5100	48	37	1798	5100
	1/30					89	69	1043	4870	78	60	1133	5100	66	50	1263	5100	52	38	1461	5100	34	24	1792	5100
	1/40	79	59	991	5100	70	53	1061	5100	62	47	1171	5100	52	39	1297	5100	41	29	1475	5100	27	18	1782	5100
	1/50	62	46	926	5100	56	42	999	5100	49	36	1081	5100	41	30	1197	5100	44	31	1357	5100	29	19	1647	5100
	1/60	48	36	872	5100	43	32	933	5100	38	28	1011	5100	32	23	1115	5100	25	17	1249	5100	16	10	1512	5100

P<sub>1</sub> = 輸入軸馬力 (HP) Horsepower of Input Shaft  
P<sub>0</sub> = 輸出軸馬力 (HP) Horsepower of Output Shaft

T<sub>0</sub> = 輸出軸扭矩 (kgf-m) Torque of Output Shaft  
F<sub>0</sub> = 懸垂荷重 (kgf) Loading

以上數值僅供參考 The above information is for reference only.

# WORM REDUCER SERIES

## 蝸輪減速機系列

### 馬力、扭矩對照表 ( 蝸輪 + 蝸輪 ) Horsepower and Torque Collate (Worm+Worm)

輸入轉速 Input R.P.M.		1800 RPM				1500 RPM				1200 RPM				900 RPM			
Model	Ratio	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>	P <sub>1</sub>	P <sub>0</sub>	T <sub>0</sub>	F <sub>0</sub>
32 / 60	1/200	0.29	0.14	11.6	200	0.25	0.12	11.6	200	0.19	0.09	11.6	200	0.16	0.07	11.6	200
	1/300	0.20	0.09	11.6	200	0.18	0.08	11.6	200	0.14	0.06	11.6	200	0.12	0.05	11.6	200
	1/400	0.16	0.07	11.6	200	0.14	0.06	11.6	200	0.12	0.05	11.6	200	0.10	0.04	11.6	200
	1/500	0.16	0.06	11.6	200	0.14	0.05	11.6	200	0.11	0.04	11.6	200	0.09	0.03	11.6	200
	1/600	0.13	0.05	11.6	200	0.11	0.04	11.6	200	0.09	0.03	11.6	200	0.06	0.02	11.6	200
	1/800	0.11	0.04	11.6	200	0.09	0.03	11.6	200	0.06	0.02	11.6	200	0.03	0.01	11.6	200
	1/900	0.10	0.03	11.6	200	0.09	0.03	11.6	200	0.06	0.02	11.6	200	0.03	0.01	11.6	200
40 / 70	1/200	0.57	0.30	23.8	300	0.49	0.25	24.7	300	0.40	0.20	25.0	300	0.32	0.16	25.0	300
	1/300	0.42	0.21	25.0	300	0.35	0.17	25.0	300	0.29	0.14	25.0	300	0.22	0.10	25.0	300
	1/400	0.34	0.16	25.0	300	0.29	0.13	25.0	300	0.23	0.10	25.0	300	0.19	0.08	25.0	300
	1/500	0.28	0.12	25.0	300	0.25	0.10	25.0	300	0.20	0.08	25.0	300	0.16	0.06	25.0	300
	1/600	0.24	0.10	25.0	300	0.22	0.09	25.0	300	0.18	0.07	25.0	300	0.14	0.05	25.0	300
	1/800	0.21	0.08	25.0	300	0.16	0.06	25.0	300	0.14	0.05	25.0	300	0.12	0.04	25.0	300
	1/900	0.21	0.07	25.0	300	0.19	0.06	25.0	300	0.16	0.05	25.0	300	0.10	0.03	25.0	300
50 / 80	1/200	0.68	0.35	28.2	400	0.66	0.33	31.7	400	0.57	0.28	33.7	400	0.46	0.22	35.0	400
	1/300	0.59	0.28	33.7	400	0.52	0.24	35.0	400	0.42	0.19	35.0	400	0.32	0.14	35.0	400
	1/400	0.52	0.22	35.0	400	0.43	0.18	35.0	400	0.35	0.14	35.0	400	0.29	0.11	35.0	400
	1/500	0.43	0.17	35.0	400	0.37	0.14	35.0	400	0.33	0.12	35.0	400	0.25	0.09	35.0	400
	1/600	0.35	0.14	35.0	400	0.30	0.12	35.0	400	0.27	0.10	35.0	400	0.20	0.07	35.0	400
	1/800	0.32	0.11	35.0	400	0.28	0.09	35.0	400	0.21	0.07	35.0	400	0.16	0.05	35.0	400
	1/900	0.29	0.10	35.0	400	0.24	0.08	35.0	400	0.18	0.06	35.0	400	0.16	0.05	35.0	400
60 / 100	1/200	1.13	0.63	50.0	450	0.96	0.52	50.0	450	0.79	0.42	50.0	450	0.59	0.31	50.0	450
	1/300	0.75	0.42	50.0	450	0.65	0.35	50.0	450	0.56	0.28	50.0	450	0.43	0.21	50.0	450
	1/400	0.62	0.31	50.0	450	0.53	0.26	50.0	450	0.44	0.21	50.0	450	0.35	0.16	50.0	450
	1/500	0.53	0.25	50.0	450	0.45	0.21	50.0	450	0.38	0.17	50.0	450	0.28	0.12	50.0	450
	1/600	0.46	0.21	50.0	450	0.39	0.17	50.0	450	0.34	0.14	50.0	450	0.25	0.10	50.0	450
	1/800	0.39	0.16	50.0	450	0.32	0.13	50.0	450	0.26	0.10	50.0	450	0.22	0.08	50.0	450
	1/900	0.38	0.14	50.0	450	0.34	0.12	50.0	450	0.28	0.09	50.0	450	0.21	0.07	50.0	450
70 / 120	1/200	1.94	1.05	84.0	520	1.66	0.88	84.0	520	1.37	0.70	84.0	520	1.06	0.53	84.0	520
	1/300	1.40	0.70	84.0	520	1.20	0.58	84.0	520	1.00	0.47	84.0	520	0.76	0.35	84.0	520
	1/400	1.10	0.53	84.0	520	0.93	0.44	84.0	520	0.76	0.35	84.0	520	0.59	0.26	84.0	520
	1/500	0.97	0.42	84.0	520	0.83	0.35	84.0	520	0.70	0.28	84.0	520	0.53	0.21	84.0	520
	1/600	0.81	0.35	84.0	520	0.69	0.29	84.0	520	0.57	0.23	84.0	520	0.44	0.17	84.0	520
	1/800	0.63	0.26	84.0	520	0.56	0.22	84.0	520	0.44	0.17	84.0	520	0.36	0.13	84.0	520
	1/900	0.62	0.23	84.0	520	0.52	0.19	84.0	520	0.44	0.15	84.0	520	0.37	0.12	84.0	520
80 / 135	1/200	2.98	1.73	140	810	2.52	1.44	140	810	2.05	1.15	140	810	1.58	0.87	140	810
	1/300	2.09	1.15	140	810	1.77	0.96	140	810	1.48	0.77	140	810	1.16	0.58	140	810
	1/400	1.64	0.87	140	810	1.41	0.72	140	810	1.16	0.58	140	810	0.89	0.43	140	810
	1/500	1.40	0.69	140	810	1.20	0.58	140	810	0.97	0.46	140	810	0.79	0.35	140	810
	1/600	1.20	0.58	140	810	1.06	0.48	140	810	0.84	0.38	140	810	0.67	0.29	140	810
	1/800	0.95	0.43	140	810	0.83	0.36	140	810	0.70	0.29	140	810	0.55	0.22	140	810
	1/900	1.10	0.38	140	810	0.96	0.32	140	810	0.81	0.26	140	810	0.66	0.20	140	810
100 / 155	1/200	4.25	2.41	192	1700	3.72	2.07	198	1700	3.25	1.76	210	1700	2.67	1.42	226	1700
	1/300	3.32	1.76	210	1700	2.95	1.25	218	1700	2.58	1.29	231	1700	2.10	1.01	242	1700
	1/400	2.71	1.41	225	1700	2.44	1.22	234	1700	2.06	1.01	242	1700	1.58	0.76	242	1700
	1/500	2.36	1.18	236	1700	2.06	1.01	242	1700	1.68	0.81	242	1700	1.32	0.61	242	1700
	1/600	2.19	1.01	242	1700	1.86	0.84	242	1700	1.55	0.67	242	1700	1.19	0.50	242	1700
	1/800	1.68	0.76	242	1700	1.46	0.43	242	1700	1.21	0.51	242	1700	0.95	0.38	242	1700
	1/900	2.23	0.67	242	1700	1.86	0.56	242	1700	1.50	0.45	242	1700	1.13	0.34	242	1700
120 / 175	1/200	5.66	3.40	271	2000	5.12	2.97	284	2000	4.35	2.48	296	2000	3.56	1.99	317	2000
	1/300	4.44	2.48	296	2000	3.94	2.16	309	2000	3.43	1.83	327	2000	2.76	1.44	345	2000
	1/400	3.73	2.00	318	2000	3.30	1.73	331	2000	2.80	1.44	345	2000	2.18	1.08	345	2000
	1/500	3.14	1.68	334	2000	2.73	1.44	345	2000	2.26	1.16	345	2000	1.75	0.87	345	2000
	1/600	2.91	1.44	345	2000	2.50	1.20	345	2000	2.05	0.96	345	2000	1.60	0.72	345	2000
	1/800	2.35	1.08	345	2000	2.01	0.90	345	2000	1.67	0.72	345	2000	1.31	0.45	345	2000
	1/900	3.20	0.96	345	2000	2.66	0.80	345	2000	2.13	0.64	345	2000	1.60	0.48	345	2000

P<sub>1</sub> = 輸入軸馬力 (HP) Horsepower of Input Shaft      T<sub>0</sub> = 輸出軸扭矩 (kgf·m) Torque of Output Shaft      以上數值僅供參考 The above information is for reference only.  
P<sub>0</sub> = 輸出軸馬力 (HP) Horsepower of Output Shaft      F<sub>0</sub> = 懸垂荷重 (kgf) Loading

## 蝸輪減速機一般故障原因及改善方法

# Solutions and Reasons for Worm Reducer General Faults

故障情形 Fault Description	故障原因 Reasons	解決方法 Solutions
減速機過熱 Over-Heating	<ul style="list-style-type: none"> <li>◆超負荷運轉</li> <li>◆潤滑油過少或過多</li> <li>◆潤滑油不良或不適當</li> <li>◆油封過度磨擦</li> <li>◆出力軸與傳動裝置連接不當</li> <li>◆Insufficient or excess lubricant oil.</li> <li>◆Inferior or improper lubricant oil.</li> <li>◆Oil seal is over-rubbed.</li> <li>◆Improper connection between driving shaft and the transmitting device.</li> </ul>	<ul style="list-style-type: none"> <li>◆調整至適當負荷</li> <li>◆依指示加入適量潤滑油</li> <li>◆油排出後加入適當潤滑油</li> <li>◆在油封處滴數滴潤滑油</li> <li>◆調整至適當位置</li> <li>◆Adjust to proper loading.</li> <li>◆Fill in adequate lubricant oil as indication.</li> <li>◆Fill in proper lubricant oil after draining out oil.</li> <li>◆Drop lubricant at oil seal.</li> <li>◆Adjust to proper position.</li> </ul>
減速機雜音 Noise	<ul style="list-style-type: none"> <li>◆蝸輪、蝸桿嚙合不良</li> <li>◆軸承損傷或間隙過大</li> <li>◆潤滑油不足</li> <li>◆異物侵入</li> <li>◆Poor fit between worm heel and worm shaft.</li> <li>◆Bearing damaged or clearance too large.</li> <li>◆Insufficient lubricant oil.</li> <li>◆Invaded by foreign objects.</li> </ul>	<ul style="list-style-type: none"> <li>◆修整齒接觸面 (請與本公司聯絡)</li> <li>◆更換軸承</li> <li>◆依指示加入適量潤滑油</li> <li>◆去除異物並更換潤滑油</li> <li>◆Finish contact surfaces of gears (please contact with us).</li> <li>◆Replace bearing.</li> <li>◆Fill in adequate lubricant oil as indication.</li> <li>◆Remove foreign objects and replace lubricant oil.</li> </ul>
不正常振動 Abnormal Vibration	<ul style="list-style-type: none"> <li>◆傳動裝置固定不良</li> <li>◆蝸輪磨耗或損傷</li> <li>◆軸承磨耗或損傷</li> <li>◆螺栓鬆脫</li> <li>◆異物侵入</li> <li>◆Transmitting device is not fixed.</li> <li>◆Worm wheel worn or damaged.</li> <li>◆Bearing worn or damaged.</li> <li>◆Bolt loosed.</li> <li>◆Invaded by foreign objects.</li> </ul>	<ul style="list-style-type: none"> <li>◆將傳動裝置固定</li> <li>◆更換蝸輪 (請與本公司聯絡)</li> <li>◆更換軸承</li> <li>◆鎖緊螺栓</li> <li>◆去除異物並更換潤滑油</li> <li>◆Fix transmitting device.</li> <li>◆Replace worm wheel (please contact with us).</li> <li>◆Replace bearing.</li> <li>◆Tighten bolt.</li> <li>◆Remove foreign objects and replace lubricant oil.</li> </ul>
漏油 Oil Leakage	<ul style="list-style-type: none"> <li>◆油封損傷</li> <li>◆迫緊閉破損</li> <li>◆油量過多</li> <li>◆洩油栓鬆脫</li> <li>◆油鏡破損</li> <li>◆Oil seal damaged.</li> <li>◆Gasket damaged.</li> <li>◆Excess oil.</li> <li>◆Oil drain plug loosed.</li> <li>◆Oil gauge damaged.</li> </ul>	<ul style="list-style-type: none"> <li>◆更換油封</li> <li>◆更換迫緊</li> <li>◆依指示加入適量潤滑油</li> <li>◆鎖緊洩油栓</li> <li>◆更換油鏡</li> <li>◆Replace oil seal.</li> <li>◆Replace gasket.</li> <li>◆Fill in adequate lubricant oil as indication.</li> <li>◆Tighten oil drain plug.</li> <li>◆Replace oil gauge.</li> </ul>
入力或出力軸不轉 Input or Output Shaft Doesn't Work	<ul style="list-style-type: none"> <li>◆蝸輪蝸桿過熱膨脹</li> <li>◆軸承損傷</li> <li>◆異物侵入</li> <li>◆蝸輪、蝸桿過度磨損</li> <li>◆Worm wheel and worm shaft expanded by overheating.</li> <li>◆Bearing damaged.</li> <li>◆Invaded by foreign objects.</li> <li>◆Excess wear of worm wheel and worm shaft.</li> </ul>	<ul style="list-style-type: none"> <li>◆更換蝸輪或蝸桿 (請與本公司聯絡)</li> <li>◆更換軸承</li> <li>◆去除異物並更換潤滑油</li> <li>◆更換蝸輪或蝸桿 (請與本公司聯絡)</li> <li>◆Replace worm wheel or worm shaft (please contact with us).</li> <li>◆Replace bearing</li> <li>◆Remove foreign objects and replace lubricant oil.</li> <li>◆Replace worm wheel or worm shaft (please contact with us).</li> </ul>
蝸輪過度磨耗 Worm Wheel Over-Worn	<ul style="list-style-type: none"> <li>◆超負荷</li> <li>◆潤滑油不良或不適當</li> <li>◆潤滑油不足</li> <li>◆軸承磨損</li> <li>◆運轉溫度過高</li> <li>◆Overloading.</li> <li>◆Inferior or improper lubricant oil.</li> <li>◆Insufficient lubricant oil.</li> <li>◆Bearing damaged.</li> <li>◆Operating temperature too high.</li> </ul>	<ul style="list-style-type: none"> <li>◆調整至適當負荷</li> <li>◆更換適當潤滑油</li> <li>◆依指示加入適量潤滑油</li> <li>◆更換軸承</li> <li>◆改善通風環境</li> <li>◆Adjust to proper loading.</li> <li>◆Replace proper lubricant oil.</li> <li>◆Full in adequate lubricant oil as indication.</li> <li>◆Replace bearing.</li> <li>◆Improve ventilation conditions.</li> </ul>

以上所列為一般故障原因，如有其它故障情形時，請與本公司連絡。

The above items are general fault descriptions. In case of other kinds of faults, please contact with us.



# Flange-Mounted Worm Reducer



## Indication of Model Numbers

### 機種型號表示

AMW	50	5	1/4	A	R
減速機型 Type	型號 Model	減速比 Ratio	馬力 Horse Power	安裝方向 Installation Direction	軸向 Shaft Direction
AMW	50	5	1/4HP~1HP	A: 標準 Standard	R: 右軸 Right Shaft
ADW	60	10	(4P)	B: 標準・入力在下 Input Below	L: 左軸 Left Shaft
BMW		15		C: 出力向上 Output Upward	
BDW		20		D: 出力向下 Output Downward	
AG		30		E: 入力向上 Input Upward	
BG		40		F: 入力向下 Input Downward	
ADG		50			
BDG		60			

◆ 80# 轉換鋁合金蝸輪減速機系列 80# Conversion Aluminum Alloy Worm Reducer Series

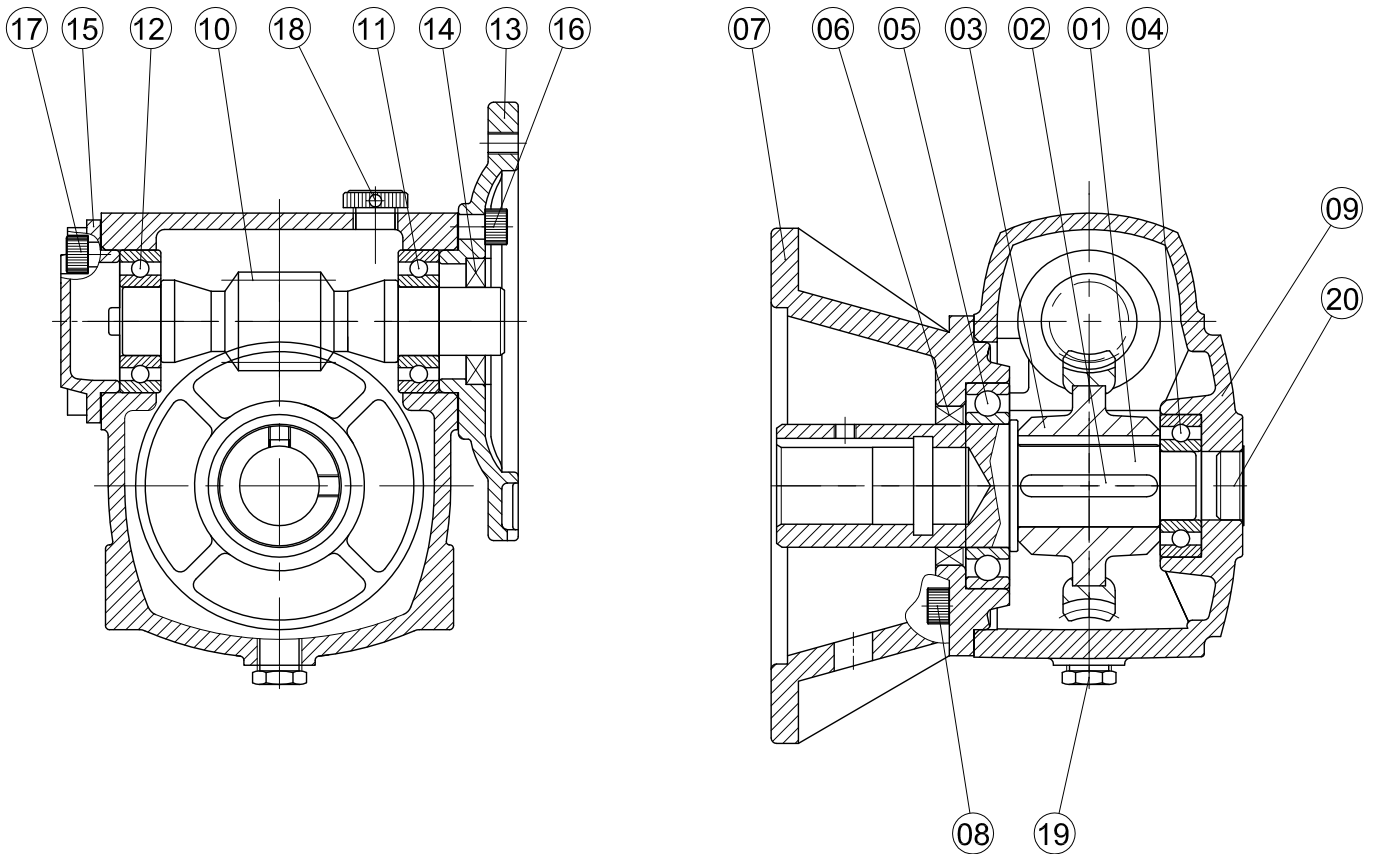
Model : CAMW75#、CADW75#。

Ratio : 7.5、10、15、20、30、40、50、60。

請參閱 I24~I26 Please refer to page I24~I26

## 分解系統圖 System Drawing

MODEL : AMW



NO.	零件名稱	Name of Parts
1	出力軸	Output Shaft
2	半圓鍵	Key
3	蝸輪	Worm Wheel
4	軸承	Bearing
5	軸承	Bearing
6	油封	Oil Seal
7	出力軸蓋	Output Shaft Cover
8	六角承窩頭螺絲	Hex Screw
9	蝸輪箱	Outer Shell
10	蝸桿 ( 入力軸 )	Worm Shaft (Input Shaft)

NO.	零件名稱	Name of Parts
11	軸承	Bearing
12	軸承	Bearing
13	馬達盤	Motor Cover
14	油封	Oil Seal
15	入力軸蓋	Input Shaft Cover
16	六角承窩頭螺絲	Hex Screw
17	六角承窩頭螺絲	Hex Screw
18	注油栓	Oil Plug
19	排油栓	Drain Plug
20	油鏡	Oil Gauge

# FLANGE-MOUNTED WORM REDUCER SERIES

## 法蘭式蝸輪減速機系列

### ■ 安裝方向 Installation Direction

- ◆ 正常的使用方向可以使減速機保持較高的壽命。

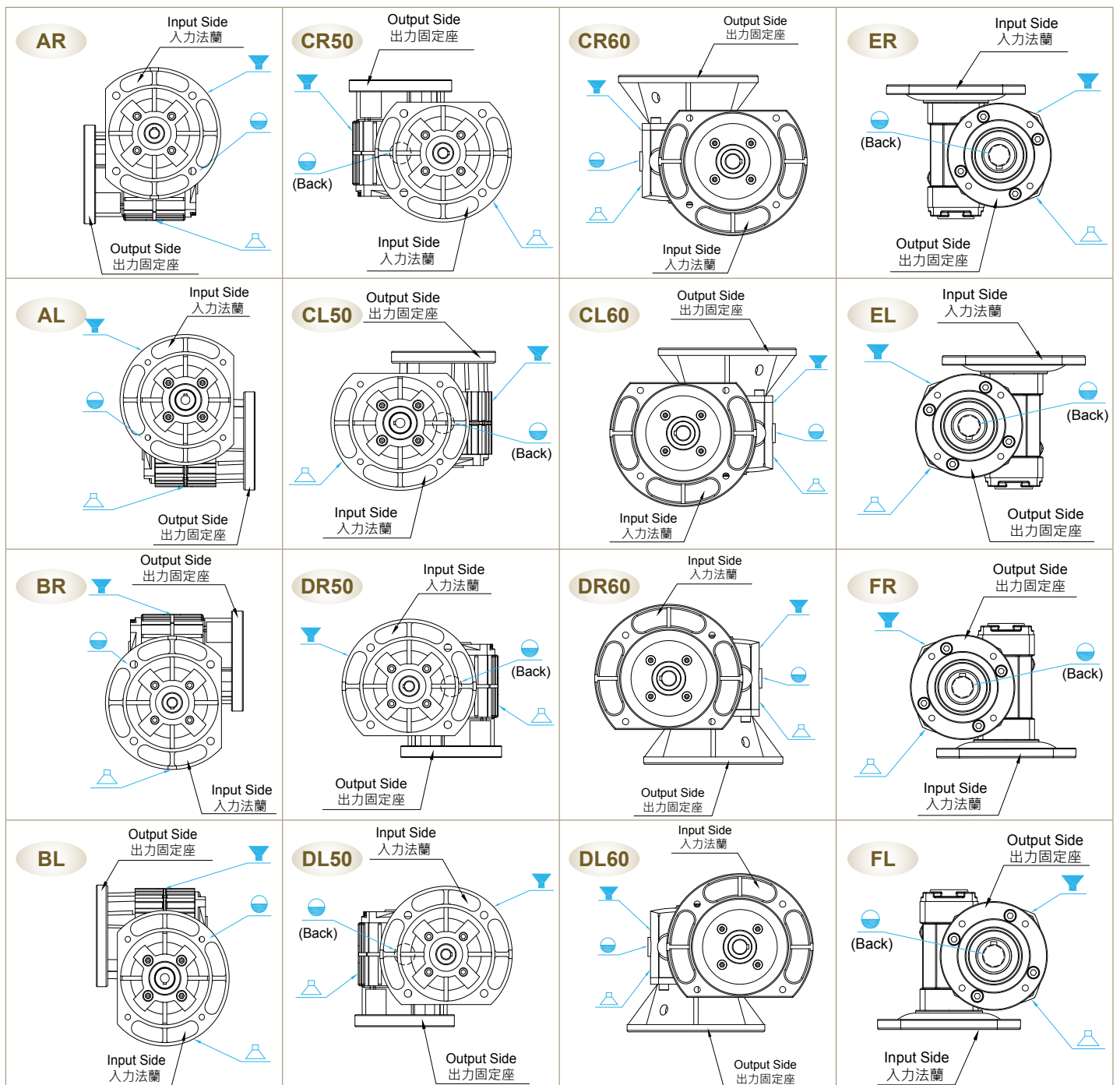
The life time of gear reducer can be prolonged in proper direction.

- ◆ 安裝時請注意油面計、注油栓及排油栓的位置以便日後維護。

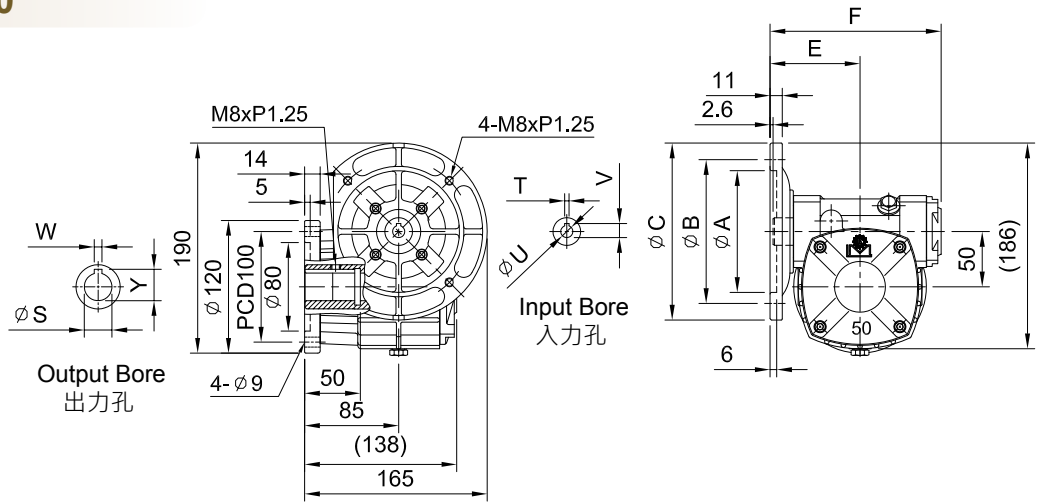
Please note the positions of oil gauge, oil filling plug and oil drain plug to facilitate the maintenance afterwards.

- ◆ 減速機使用方向特殊時，請與我們連繫。

For special installation direction, please contact us.



**MODEL : AMW50**

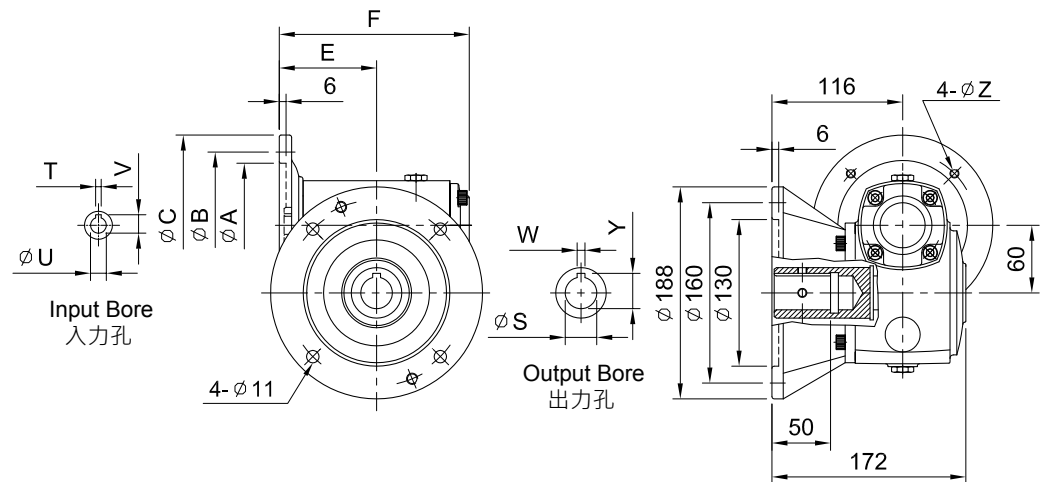


unit: mm

型號 Model	馬力 HP (4P)	出力孔 Output Bore			入力孔 Input Bore			入力馬達盤 Motor Flange				E	F	重量 Weight (kg)	油量 Oil (ℓ)
		S	W	Y	U	T	V	A	B	C	Z				
50	1/4 1/2	25	7	28.3	11 14	4 5	12.7 16.3	110	130	160	M8	81	155	8.7	0.35

重量不含馬達及潤滑油。 The weight does not include motor and lubricant.

**MODEL : AMW60**



unit: mm

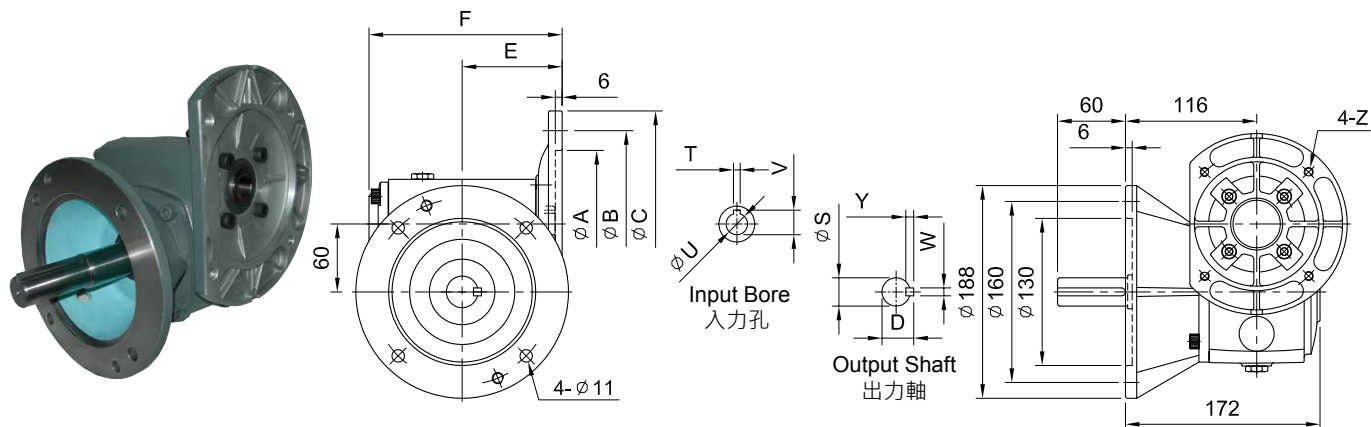
型號 Model	馬力 HP (4P)	出力孔 Output Bore			入力孔 Input Bore			入力馬達盤 Motor Flange				E	F	重量 Weight (kg)	油量 Oil (ℓ)
		S	W	Y	U	T	V	A	B	C	Z				
60	1/2	25	7	28.3	14	5	16.3	110	130	160	M8	86	168	11.9	0.45
		28	7	31.3	(16)		(18.3)								
		30	8	33.3											
	1	25	7	28.3	19	6	21.8	130	165	200	M10	88	170		
		28	7	31.3	(16)	(5)	(18.3)								
		30	8	33.3											

重量不含馬達及潤滑油。 The weight does not include motor and lubricant.

# FLANGE-MOUNTED WORM REDUCER SERIES

## 法蘭式蝸輪減速機系列

### MODEL : ADW60



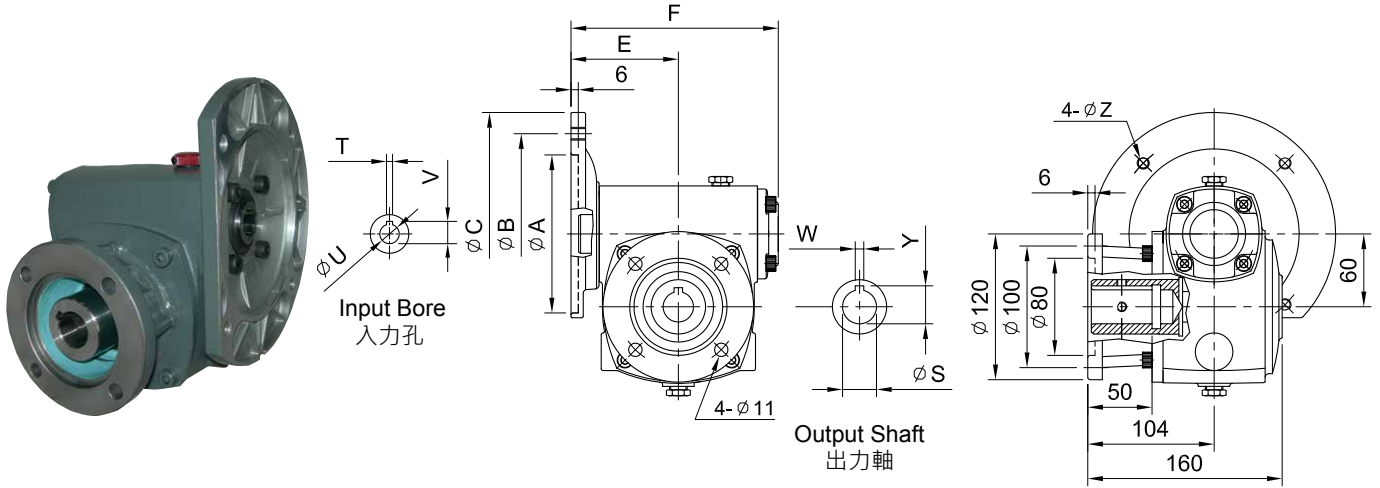
unit: mm

型號 Model	馬力 HP (4P)	出力軸 Output Shaft			入力孔 Input Bore			入力馬達盤 Motor Flange				E	F	重量 Weight (kg)	油量 Oil (ℓ)
		S	WxY	D	U	T	V	A	B	C	Z				
60	1/2	25 28	7x7	28 31	16 14	5	18.3 16.3	110	130	160	M8	87	168	11.9	0.45
	1	25 28	7x7	28 31	19 16	6 5	21.8 18.3	130	165	200	M10	88	170	12.4	0.45

重量不含馬達及潤滑油。 The weight does not include motor and lubricant.



**MODEL : BMW60**

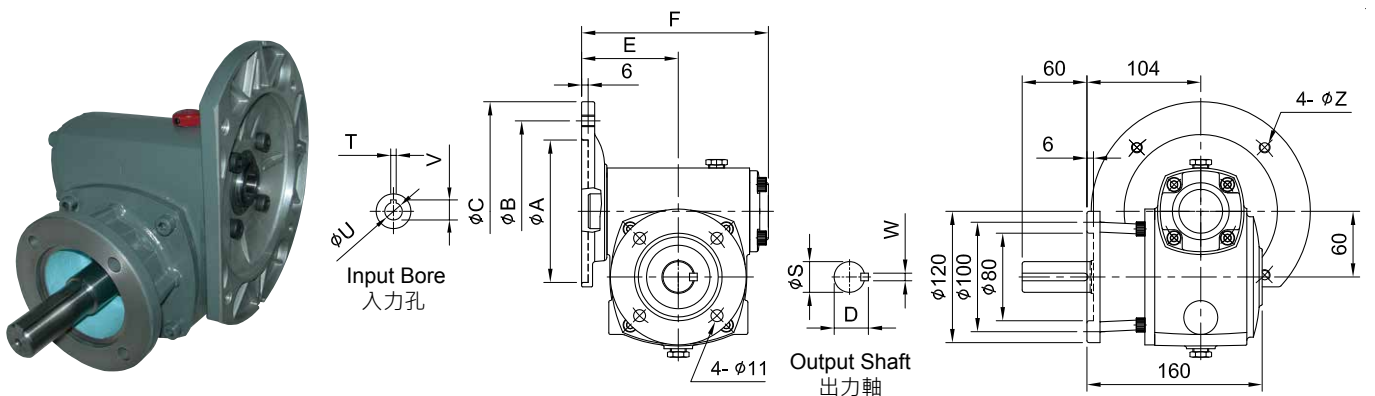


unit: mm

型號 Model	馬力 HP (4P)	出力軸 Output Shaft			入力孔 Input Bore			入力馬達盤 Motor Flange				E	F	重量 Weight (kg)	油量 Oil (ℓ)
		S	W	Y	U	T	V	A	B	C	Z				
60	1/2	25 28	7	28.3 31.3	16 14	5	18.3 16.3	110	130	160	M8	87	168	9.6	0.45
	1	25 28	7	28.3 31.3	19 16	6 5	21.8 18.3	130	165	200	M10	88	170	11.1	0.45

重量不含馬達及潤滑油。 The weight does not include motor and lubricant.

**MODEL : BDW60**



unit: mm

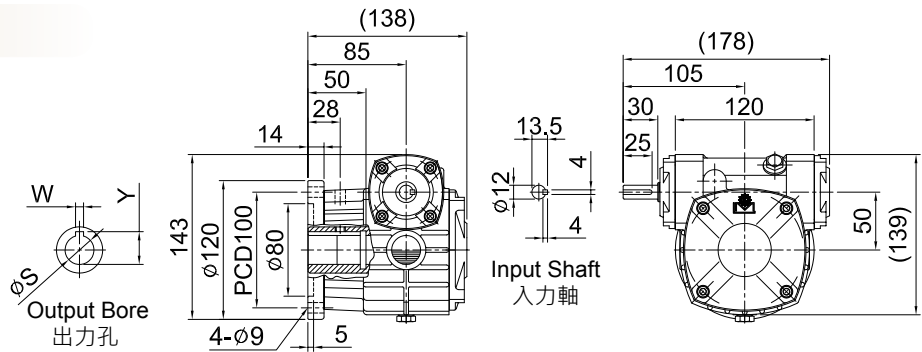
型號 Model	馬力 HP (4P)	出力軸 Output Shaft			入力孔 Input Bore			入力馬達盤 Motor Flange				E	F	重量 Weight (kg)	油量 Oil (ℓ)
		S	WxY	D	U	T	V	A	B	C	Z				
60	1/2	25 28	7x7	28 31	16 14	5	18.3 16.3	110	130	160	M8	87	168	11.1	0.45
	1	25 28	7x7	28 31	19 16	6 5	21.8 18.3	130	165	200	M10	88	170		

重量不含馬達及潤滑油。 The weight does not include motor and lubricant.

# FLANGE-MOUNTED WORM REDUCER SERIES

## 法蘭式蝸輪減速機系列

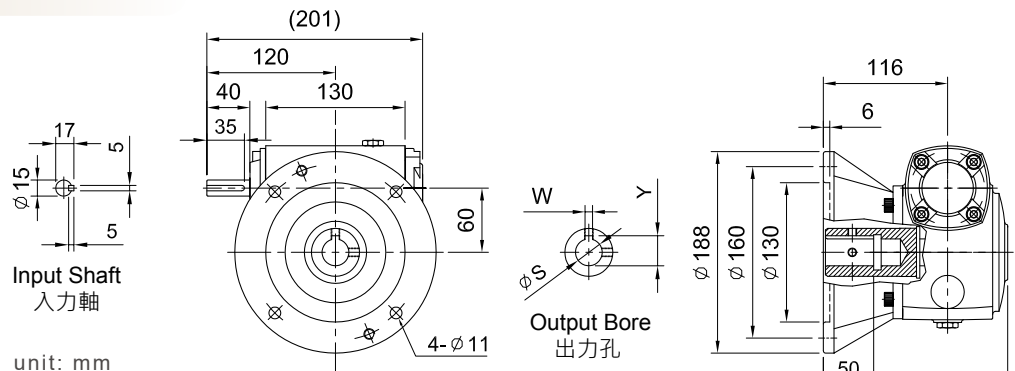
### MODEL : AG50



unit: mm

型號 Model	馬力 HP (4P)	出力孔 Output Bore			重量 Weight (kg)	油量 Oil (ℓ)
		S	W	Y		
50	1/4	25	7	28.3	6.2	0.35

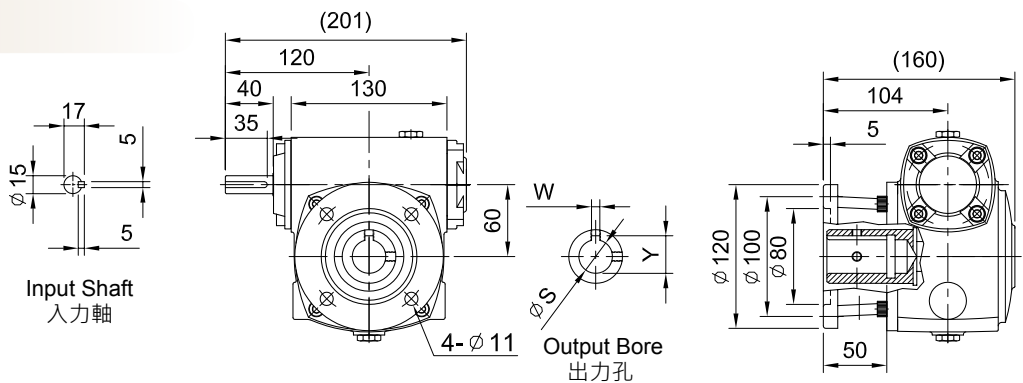
### MODEL : AG60



unit: mm

型號 Model	馬力 HP (4P)	出力孔 Output Bore			重量 Weight (kg)	油量 Oil (ℓ)
		S	W	Y		
60	1/2	25	7	28.3	10.4	0.45
		28	7	31.3		
		30	8	33.3		

### MODEL : BG60



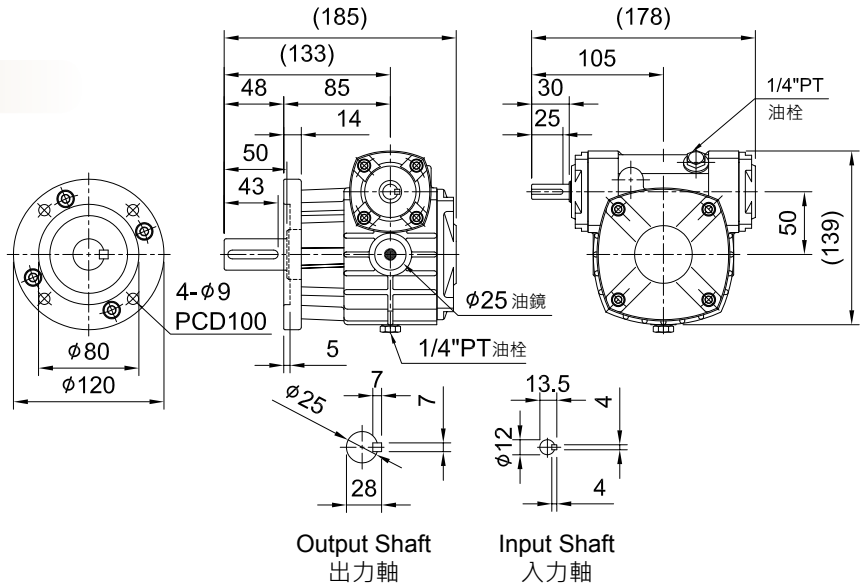
unit: mm

型號 Model	馬力 HP (4P)	出力孔 Output Bore			重量 Weight (kg)	油量 Oil (ℓ)
		S	W	Y		
60	1/2	25	7	28.3	9.65	0.45
		28	7	31.3		

◆ 重量不含馬達及潤滑油。

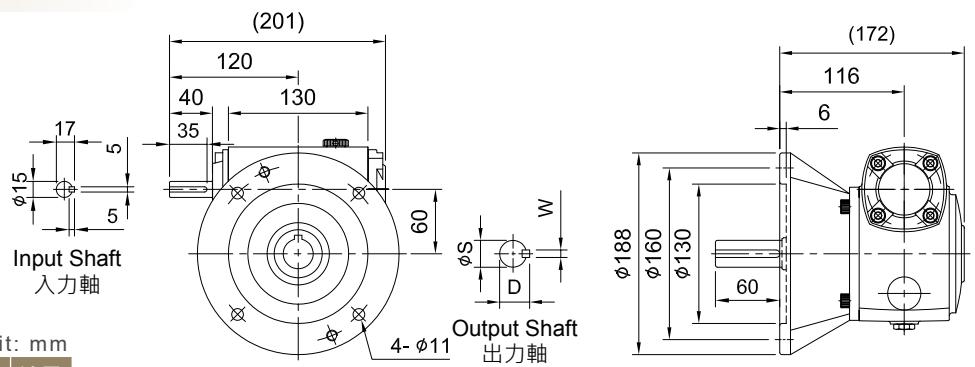
The weight does not include motor and lubricant.

**MODEL : ADG50**



型號 Model	馬力 HP (4P)	重量 Weight (kg)	油量 Oil (ℓ)
50	1/2	8.7	0.35

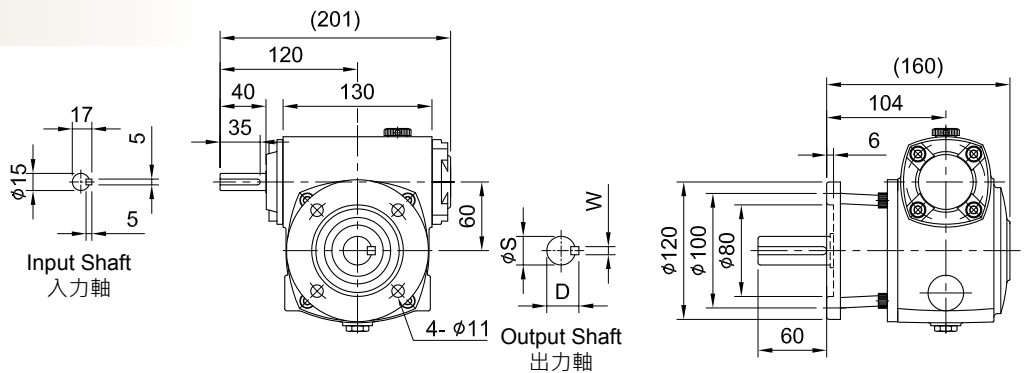
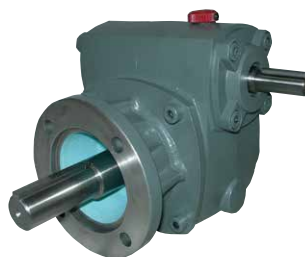
**MODEL : ADG60**



unit: mm

型號 Model	馬力 HP (4P)	出力軸 Output Shaft			重量 Weight (kg)	油量 Oil (ℓ)
		S	W	D		
60	1/2	25	7	28.3	10.4	0.45
		28	7	31.3		
		30	8	33.3		

**MODEL : BDG60**



unit: mm

型號 Model	馬力 HP (4P)	出力軸 Output Shaft			重量 Weight (kg)	油量 Oil (ℓ)
		S	W	D		
60	1/2	25	7	28.3	9.4	0.45
		28	7	31.3		

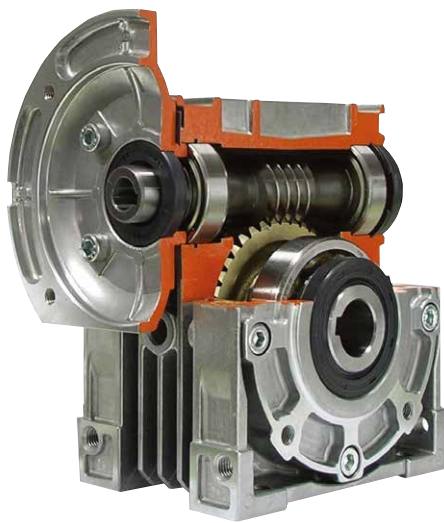
◆ 重量不含馬達及潤滑油。

The weight does not include motor and lubricant.

# Aluminum Alloy Worm Reducer

## Features of NE Series

### NE 系列產品特性



NE 系列鋁合金蝸輪減速機，是本公司原有 E 系列的基礎上開發而成的新一代產品，機體用優質的鋁合金壓鑄成形，體積小、散熱快、表面經皮膜處理不生鏽，美觀耐用。蝸桿使用鉻鉬合金鋼 (SCM415)，經滲碳熱處理及研磨，傳動平穩，噪音小、輸出扭矩大，可適應全方位安裝。

The NE series aluminum alloy worm reducers are a new generation of products launched on the basis of the E Series products available in LI MING. The compact aluminum alloy extruded body features good dissipation. The surface undergoing electrotype is aesthetic and stainless. The worm shaft is made of Chromium-Molybdenum alloy steel (SCM415). After acieration and polishing, the worm shaft delivers smooth transmission in minimum noise and maximum torque. Making it apt for all-purpose installations.

## Indication of Model Numbers

### 機種型號表示

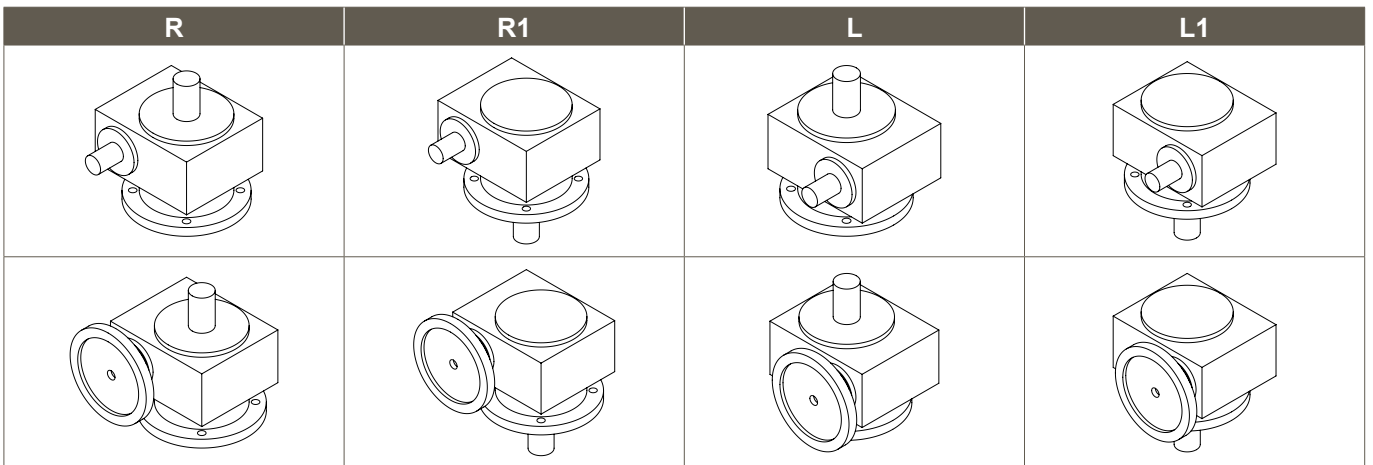
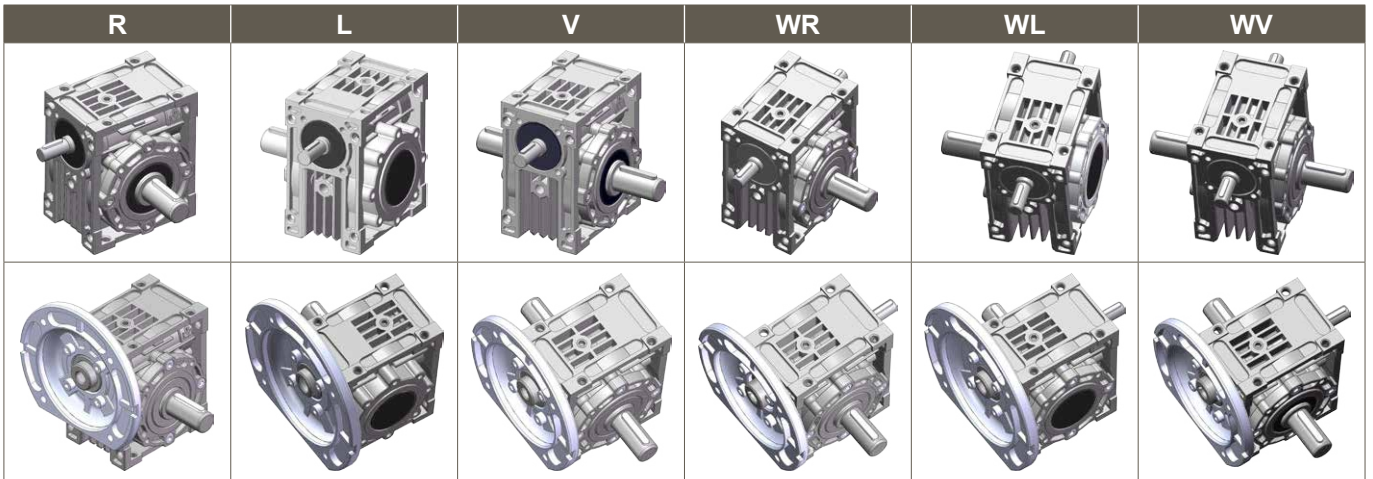
NE	50	10	1	R
減速機型 Type	型號 Model	減速比 Ratio	馬力 Horse Power	軸向 Shaft Direction
NE	30	1/5	40W	R
NEO	40	1/10	60W	L
NEM	50	1/15	90W	V
NEOM	60	1/20	1/4HP	WR
NEF	70	1/30	1/2HP	WL
NEOF		1/40	1HP	WV
NEFM		1/50	2HP	
NEOFM		1/60		
NEH		※1/25		
NEHM		※1/45		
NEOH		※1/80		
NEOHM		※1/100		

Note:

- ※ 特殊品。 ※ means special specification.
- 有些型號之減速比非正整數。 Some ratios are not positive integer.



### 軸向 Shaft Direction



- R : 右軸 (腳座貼地面·輸入端面向自己·此時輸出端位於右側)
- L : 左軸 (腳座貼地面·輸入端面向自己·此時輸出端位於左側)
- V : 單入力軸雙出力軸
- W : 雙入力軸單出力軸
- WV : 雙入力軸和雙出力軸
- S : 特殊軸 (訂貨時請註明或附圖面)

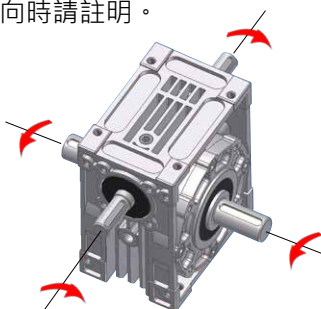
- R : Right Shaft (when facing input shaft and foot on the ground, output shaft is on the right)
- L : Left Shaft (when facing input shaft and foot on the ground, output shaft is on the left)
- V : Single Input Shaft & Double Output Shaft
- W : Double Input Shaft & Single Output Shaft
- WV : Double Input Shaft & Double Output Shaft
- S : Special shaft (Please specify your need clearly or attach drawing)

### 旋向 Rotary Direction

設計上蝸桿使用右旋牙·如入力軸以順時針方向旋轉時·出力軸方向旋轉·請參考圖 1 圖 2·如需特殊旋向時請註明·

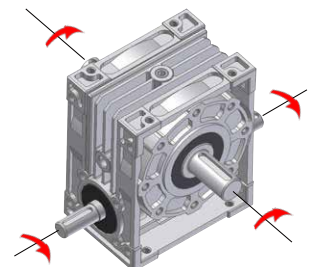
upper worm for right-directed thread, so the input shaft is rotating clockwise and the output shaft see image 1 and image 2 ; for any rotating direction required, be sure to specify it.

<圖 1>  
<Image 1>



旋轉方向  
Rotation Direction

<圖 2>  
<Image 2>



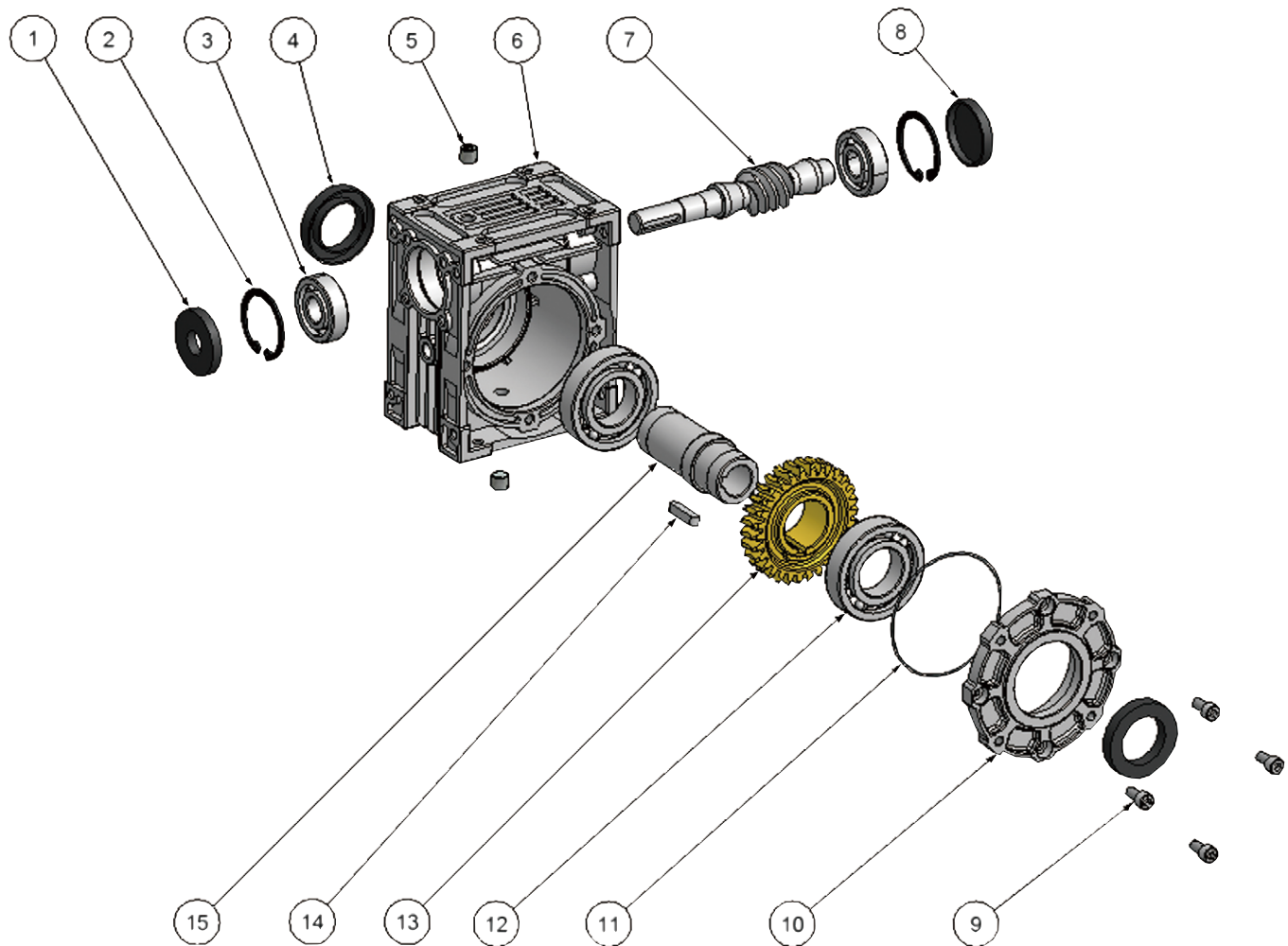


# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

### 分解系統圖 System Drawing

MODEL : NEO



NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	油封 SC	Oil Seal SC	9	六角承窩頭螺絲	Hex Screw
2	R 扣環	Snap Ring	10	出力軸蓋	Output Shaft Cover
3	滾珠軸承 ZZ	Ball Bearing ZZ	11	O 形環	O-Ring
4	油封 TC	Oil Seal TC	12	滾珠軸承	Ball Bearing
5	油栓 PT	Plug PT	13	蝸輪	Worm Wheel
6	蝸輪箱	Outer Shell	14	雙圓鍵	Key
7	蝸桿	Worm Shaft	15	出力軸	Output Shaft
8	密式油封	Seal			

#### 材質說明:

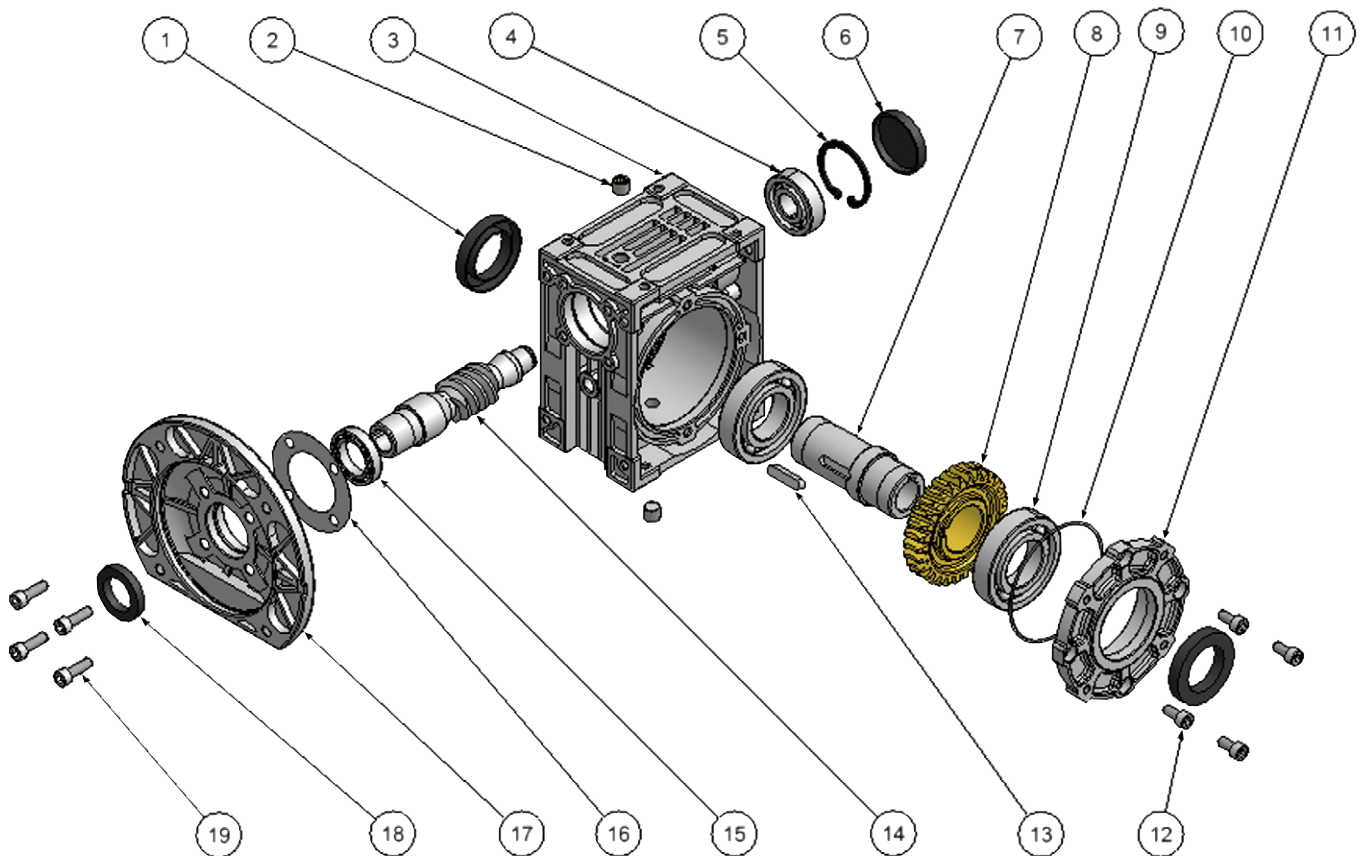
- 蝸輪箱、出力軸蓋：壓鑄鋁 ALADC-12，本體一體壓鑄，強度強、重量輕、外型美觀、散熱好。
- 出力軸：S45C 中碳鋼，CNC 車床精密加工研磨。
- 蝸輪：鋁青銅 ALBC3，CNC 車床精密加工，成形專用刀具切削磨擦係數小、壽命長。
- 蝸桿：SCM415 綠十字，CNC 車床精密加工，精密滾齒機切削，滲碳後經齒形研磨，齒形正確齒面平滑，無雜音、壽命長。

#### Material :

- Outer shell & output shaft cover : Cast aluminum ALADC-12, alone-piece cast, rigid, lightweight, aesthetic and sound dissipation.
- Output shaft : S45C medium carbon steel, CNC lathe machining.
- Worm wheel : ALBC3, CNC precision lathe machining, shaping cutting blade of minimum cutting coefficient and extended service life.
- Worm shaft : SCM415 green cross, CNC precision lathe machining, gear grinding after cutting and carburizing with precision gear grinding, for sound gear shape of smooth surface, free of noise and extended service life.

## 分解系統圖 System Drawing

MODEL : NEOM



NO.	零件名稱	Name of Parts	NO.	零件名稱	Name of Parts
1	油封 TC	Oil Seal TC	11	出力軸蓋	Output Shaft Cover
2	油栓 PT	Plug PT	12	六角承窩頭螺絲	Hex Screw
3	蝸輪箱	Outer Shell	13	雙圓鍵	Key
4	滾珠軸承 ZZ	Ball Bearing ZZ	14	蝸桿	Worm Shaft
5	R 扣環	Snap Ring	15	滾珠軸承 ZZ	Ball Bearing ZZ
6	密式油封	Seal	16	非石棉墊片	Asbestos Free Gasket
7	出力軸	Output Shaft	17	馬達連結盤	Motor Flange
8	蝸輪	Worm Wheel	18	油封 SC	Oil Seal SC
9	滾珠軸承	Ball Bearing	19	六角承窩頭螺絲	Hex Screw
10	O 形環	O-Ring			

### 材質說明：

- 蝸輪箱、出力軸蓋：壓鑄鋁 ALADC-12，本體一體壓鑄，強度強、重量輕、外型美觀、散熱好。
- 出力軸：S45C 中碳鋼，CNC 車床精密加工研磨。
- 蝸輪：鋁青銅 ALBC3，CNC 車床精密加工，成形專用刀具切削磨擦係數小、壽命長。
- 蝸桿：SCM415 綠十字，CNC 車床精密加工，精密滾齒機切削，滲碳後經齒形研磨，齒形正確齒面平滑，無雜音、壽命長。

### Material :

- Outer shell & output shaft cover : Cast aluminum ALADC-12, alone-piece cast, rigid, lightweight, aeathtic and sound dissipation.
- Output shfat : S45C medium carbon steel, CNC lathe machining.
- Worm wheel : ALBC3, CNC precision lathe machining, shaping cutting blade of minimum cutting coefficient and extended service life.
- Worm shaft : SCM415 green cross, CNC precision lathe machining, gear grinding after cutting and carburizing with precision gear grinding, for sound gear shape of smooth surface, free of noise and extended service life.

# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

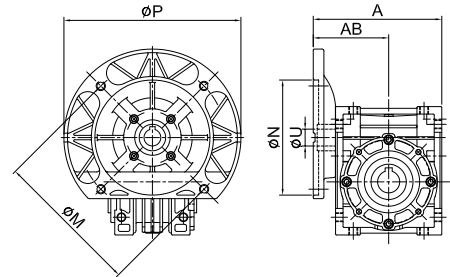
### 減速機參數 Reducers Parameter

馬達 Motor : 4P/60Hz 輸入轉速 Input R.P.M. = 1700 RPM

(安全係數 1.0 以下為輕負荷。The reducer is used for light loading when SF below 1.0.)

OR= 輸出轉速 Output R.P.M. (RPM) . IH= 輸入馬力 Input HP (kW) . OT= 輸出扭力 Output Torque (Kg-m) . SF= 安全係數 Safety Factor

型號 Model	減速比 Ratio	5		10		15		20		30		40		50		60			
		OR		340		170		113		85		56		42		34		28	
		IH	OT	SF	OT	SF	OT	SF	OT	SF	OT	SF	OT	SF	OT	SF	OT	SF	
30	0.04	0.09	8.8	0.16	5.4	0.24	4.8	0.28	3.4	1.42	3.2	0.45	2.2	0.6	1.6	0.76	1.3		
	0.06	0.13	6.0	0.25	3.6	0.40	3.2	0.43	2.3	0.63	2.1	0.68	1.4	1.02	1.1	1.12	0.9		
	0.09	0.22	4.0	0.43	2.4	0.61	2.1	0.74	1.5	1.05	1.4	1.16	1.0	-	-	-	-		
40	0.18	0.47	4.4	0.90	2.7	1.32	2.3	1.60	1.6	2.31	1.4	2.81	1.1	3.46	0.9	3.65	0.7		
	0.37	0.94	2.2	1.80	1.4	2.64	1.2	3.20	1.0	4.62	0.7	-	-	-	-	-	-		
50	0.18	0.48	6.8	0.94	5.2	1.35	3.6	1.74	2.8	2.39	2.2	2.98	1.7	3.41	1.3	3.84	1.1		
	0.37	0.96	3.3	1.88	2.5	2.70	1.8	3.48	1.3	4.78	1.1	5.96	0.9	6.82	0.6	-	-		
	0.75	1.92	1.6	3.76	1.3	5.41	1.0	6.97	0.7	9.57	0.5	-	-	-	-	-	-		
60	0.37	0.96	4.8	1.89	4.0	2.74	2.8	3.48	2.1	4.85	1.6	6.04	1.3	7.56	1.1	7.93	0.9		
	0.75	1.93	2.3	3.78	2.0	5.41	1.4	6.97	1.1	9.70	0.8	12.0	0.6	15.1	0.5	-	-		
	1.5	3.86	1.2	7.56	1.0	10.9	0.7	-	-	-	-	-	-	-	-	-	-		
70	0.37	0.95	7.0	1.84	5.1	2.67	3.4	3.52	3.0	4.77	1.8	6.23	1.6	7.48	1.2	8.73	1.0		
	0.75	1.90	3.4	3.69	2.5	5.35	1.7	7.05	1.5	9.54	0.9	12.4	0.7	14.9	0.6	17.4	0.5		
	1.5	3.81	1.7	7.38	1.3	10.7	0.9	14.1	0.7	19.0	0.4	24.9	0.3	-	-	-	-		

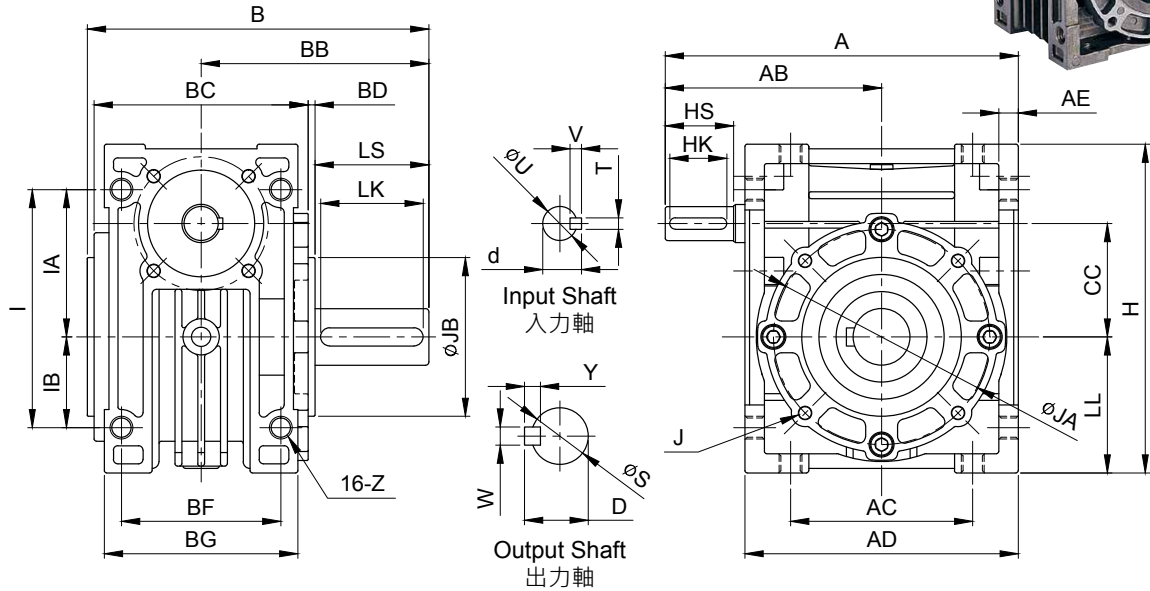
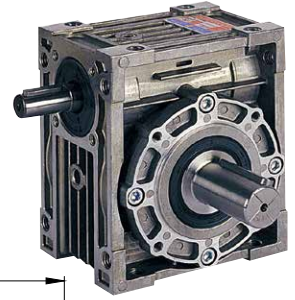


### 馬達規格選配 Selection of Motor Size

unit: mm

型號 Model	安裝規格 Size							減速比 Ratio									
	法蘭型號 Flange Model	馬力 HP	N	M	P	A	AB	5	10	15	20	30	40	50	60	80	100
								馬達軸心尺寸 Motor Shaft Dimension ØU									
30	40W·60W		83	104	□ 90	98	58	11	11	11	11	11	11	11	11		
	90W	1/8	83	104	□ 90	98	58	11	11	11	11	11	11				
	63B14	1/4	60	75	90	98	58	11	11	11	11	11					
	63B	1/4	95	115	140	98	58	11	11	11	11	11					
40	63B14	1/4	60	75	90	124	73	11	11	11	11	11	11	11	11	11	11
	63B	1/4	95	115	140	124	73	11	11	11	11	11	11	11	11	11	11
	63	1/4	110	130	160	124	73	11	11	11	11	11	11	11	11	11	11
	71B14	1/2	70	85	105	124	73	14	14	14	14	14					
	71	1/2	110	130	160	124	73	14	14	14	14	14					
50	56C	1/2	114.3	149.3	166	137	86	15.875	15.875	15.875	15.875	15.875					
	63B	1/4	95	115	140	141	81	11	11	11	11	11	11	11	11	11	11
	63	1/4	110	130	160	141	81	11	11	11	11	11	11	11	11	11	11
	71B14	1/2	70	85	105	141	81	14	14	14	14	14	14	14			
	71	1/2	110	130	160	141	81	14	14	14	14	14	14	14			
	80B14	1	80	100	120	148	88	19	19	19	19	19					
	80	1	130	165	200	148	88	19	19	19	19	19					
60	71	1/2	110	130	160	167	94	14	14	14	14	14	14	14	14	14	14
	80B14	1	80	100	120	174	101	19	19	19	19	19	19	19			
	80	1	130	165	200	174	101	19	19	19	19	19	19	19			
	90L	2	130	165	200	174	101	24	24	24							
	56C	3/4	114.3	149.3	166	183	109	15.875	15.875	15.875	15.875	15.875	15.875	15.875	15.875	15.875	
70	71	1/2	110	130	160	196	111	14	14	14	14	14	14	14	14	14	14
	80	1	130	165	200	198	113	19	19	19	19	19	19	19	19		
	90B14	2	95	115	140	198	113	24	24	24	24	24	24				
	90L	2	130	165	200	198	113	24	24	24	24	24	24				
	56C	1	114.3	149.3	166	205	120	15.875	15.875	15.875	15.875	15.875	15.875	15.875	15.875	15.875	

MODEL : NE



unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BB	BC	BD	BF	BG	CC	LL	H	I	IA	IB	Z
30	5~60	40W·60W																		
	5~40	90W	105	65	55	80	6	99.5	67.5	60	2	45	58	30	40	98	72	45	27	M6
	5~30	1/4																		
40	5~60	1/4	131	80	70	102	7.5	127	85	80	2	60	72	40	50	122	90	55	35	M8
	5~30	1/2																		
50	5~60	1/4	155	95	80	120	8.5	150	100	94	3	70	85	50	60	145	105	65	40	M10
	5~50	1/2																		
60	5~60	1/2	193	120	100	146	10	159	105	102	3	85	102	60	75	180	136	83	53	M10
	5~50	1																		
	5~15	2																		
70	5~60	1/2	225	140	120	170	12	187	125	118	3	90	110	70	85	200	150	90	60	M10
	5~60	1																		
	5~40	2																		

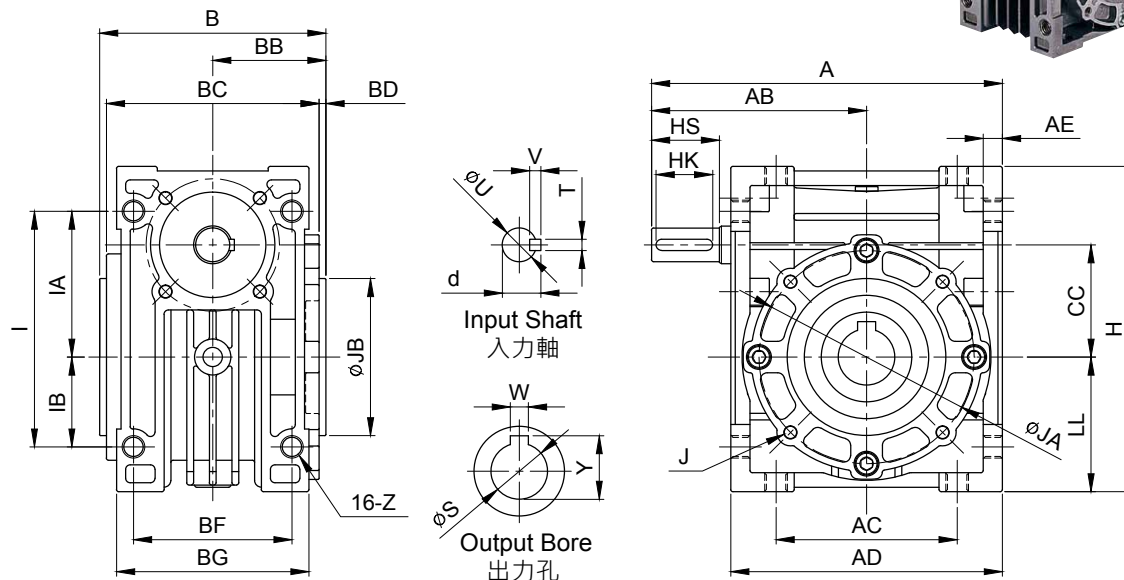
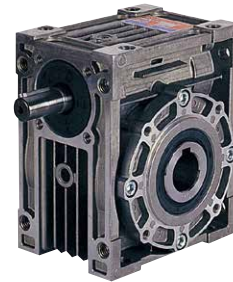
型號 Model	減速比 Ratio	馬力 HP	入力軸 Input Shaft				出力軸 Output Shaft							重量 Weight (kg)						
			HS	U	d	TxVxHK	LS	S	D	WxYxLK	JA	JB	Jx 牙深 Deep							
30	5~60	40W·60W																		
	5~40	90W	20	11	12.5	4x4x16	35	16	18	5x5x30	65	55	8-M6-9	1.28						
	5~30	1/4																		
40	5~60	1/4	25	12	13.5	4x4x20	40	20	22.5	6x6x35	77	60	12-M6-9	2.46						
	5~30	1/2																		
50	5~60	1/4	30	15	17	5x5x25	50	25	28	8x7x45	95	70	12-M6-9	4.13						
	5~50	1/2																		
60	5~60	1/2	40	18	20.5	6x6x35	50	25	28	8x7x45	120	80	12-M8-12	6.35						
	5~50	1																		
70	5~60	1/2	45	22	25	7x7x40	60	30	33	8x7x55	140	90	12-M10-15	9.9						
	5~60	1																		
	5~40	2																		

選配馬力時，請參考「減速機參數」(第15頁)。 Please refer to page 15 "Reducers Parameter".

# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

MODEL : NEO



unit: mm

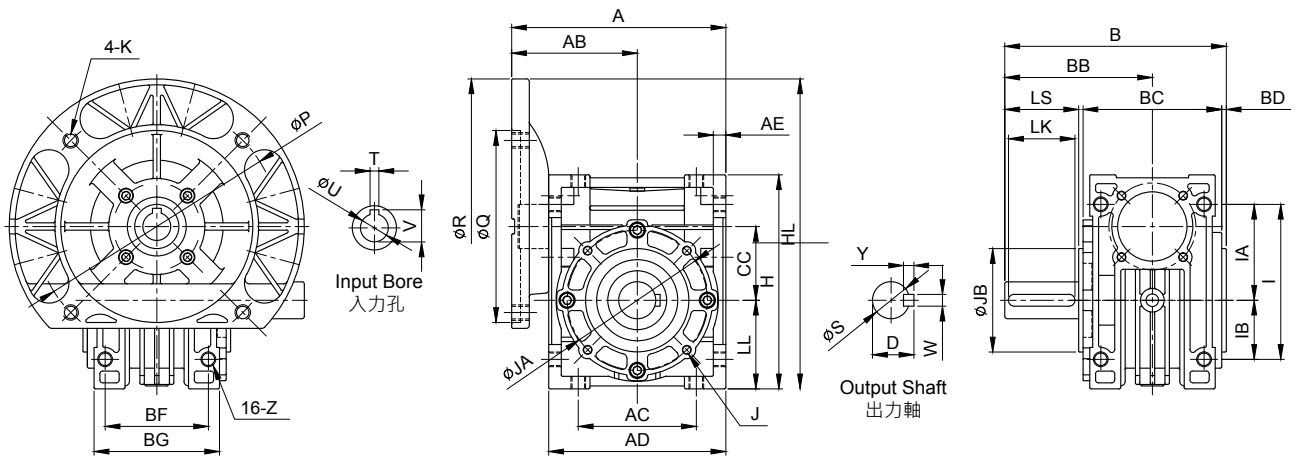
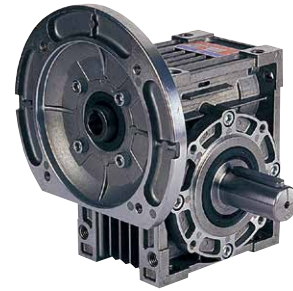
型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BB	BC	BD	BF	BG	CC	LL	H	I	IA	IB	Z
30	5~60	40W·60W	105	65	55	80	6	65	32.5	60	2	45	58	30	40	98	72	45	27	M6
	5~40	90W																		
	5~30	1/4																		
40	5~60	1/4	131	80	70	102	7.5	88	44	80	2	60	72	40	50	122	90	55	35	M8
	5~30	1/2																		
50	5~60	1/4	155	95	80	120	8.5	98	49	94	3	70	85	50	60	145	105	65	40	M10
	5~50	1/2																		
	5~30	1																		
60	5~60	1/2	193	120	100	146	10	108	54	102	3	85	102	60	75	180	136	83	53	M10
	5~50	1																		
	5~15	2																		
70	5~60	1/2	225	140	120	170	12	128	64	118	3	90	110	70	85	200	150	90	60	M10
	5~60	1																		
	5~40	2																		

型號 Model	減速比 Ratio	馬力 HP	入力軸 Input Shaft				出力孔 Output Bore						重量 Weight (kg)
			HS	U	d	TxVxHK	W	S	Y	JA	JB	J×牙深 Deep	
30	5~60	40W·60W	20	11	12.5	4x4x16	5	14	16.3	65	55	8-M6-9	1.16
	5~40	90W											
	5~30	1/4											
40	5~60	1/4	25	12	13.5	4x4x20	6	20	22.8	77	60	12-M6-9	2.2
	5~30	1/2											
50	5~60	1/4	30	15	17	5x5x25	8	25	28.3	95	70	12-M6-9	3.59
	5~50	1/2											
	5~30	1											
60	5~60	1/2	40	18	20.5	6x6x35	8	25	28.3	120	80	12-M8-12	5.8
	5~50	1											
	5~15	2											
70	5~60	1/2	45	22	25	7x7x40	8	30	33.3	140	90	12-M10-15	9.04
	5~60	1											
	5~40	2											

選配馬力時，請參考「減速機參數」(第15頁)。Please refer to page I5 "Reducers Parameter".



**MODEL : NEM**



unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BB	BC	BD	BF	BG	CC	LL	H	HL	I	IA	IB	Z
30	5~60	40W·60W														115					
	5~40	90W	98	58	55	80	6	99.5	67.5	60	2	45	58	30	40	98	115	72	45	27	M6
	5~30	63B														140					
40	5~60	63B	124	73	70	102	7.5	127	85	80	2	60	72	40	50	122	170	90	55	35	M8
	5~30	1/2														190					
50	5~60	1/4	141	81												190					
	5~50	1/2	141	81	80	120	8.5	150	100	94	3	70	85	50	60	145	190	105	65	40	M10
	5~30	1	148	88												210					
60	5~60	1/2	167	94												215					
	5~50	1	174	101	100	146	10	159	105	102	3	85	102	60	75	180	235	136	83	53	M10
	5~15	2	174	101												235					
70	5~60	1/2	196	111												235					
	5~60	1	198	113	120	170	12	187	125	118	3	90	110	70	85	200	255	150	90	60	M10
	5~40	2	198	113												255					

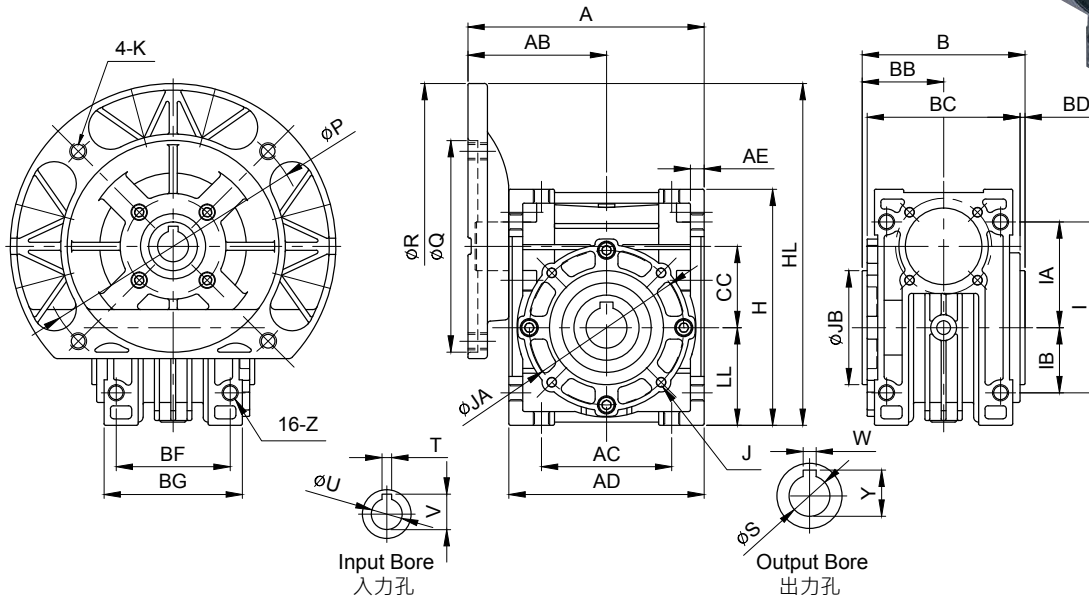
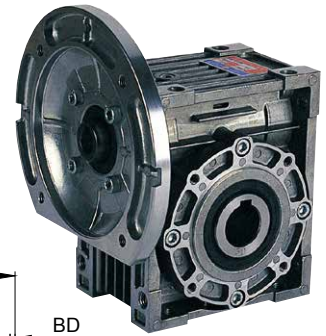
型號 Model	減速比 Ratio	馬力 HP	馬達盤及入力孔 Motor Flange & Input Bore							出力軸 Output Shaft							重量 Weight (kg)					
			P	Q	R	K	V	T	U	LS	S	D	WxYxLK	JA	JB	Jx 牙深 Deep						
30	5~60	40W·60W	104	83	□ 90	M6																
	5~40	90W	104	83	□ 90	M6	12.7	4	11	35	16	18	5x5x30	65	55	8-M6-9	1.57					
	5~30	63B	115	95	140	M8																
40	5~60	63B	115	95	140	M8	12.7	4	11													
	5~30	1/2	130	110	160	M8	16.3	5	14	40	20	22.5	6x6x35	77	60	12-M6-9	2.8					
50	5~60	1/4	130	110	160	M8	12.7	4	11													
	5~50	1/2	130	110	160	M8	16.3	5	14	50	25	28	8x7x45	95	70	12-M6-9	4.4					
	5~30	1	165	130	200	M10	21.8	6	19													
60	5~60	1/2	130	110	160	M8	16.3	5	14													
	5~50	1	165	130	200	M10	21.8	6	19	50	25	28	8x7x45	120	80	12-M8-12	6.6					
	5~15	2	165	130	200	M10	27.3	8	24													
70	5~60	1/2	130	110	160	M8	16.3	5	14													
	5~60	1	165	130	200	M10	21.8	6	19	60	30	33	8x7x55	140	90	12-M10-15	10.37					
	5~40	2	165	130	200	M10	27.3	8	24													

選配馬力時，請參考「減速機參數」(第 15 頁)。 Please refer to page 15 "Reducers Parameter".

# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

MODEL : NEOM



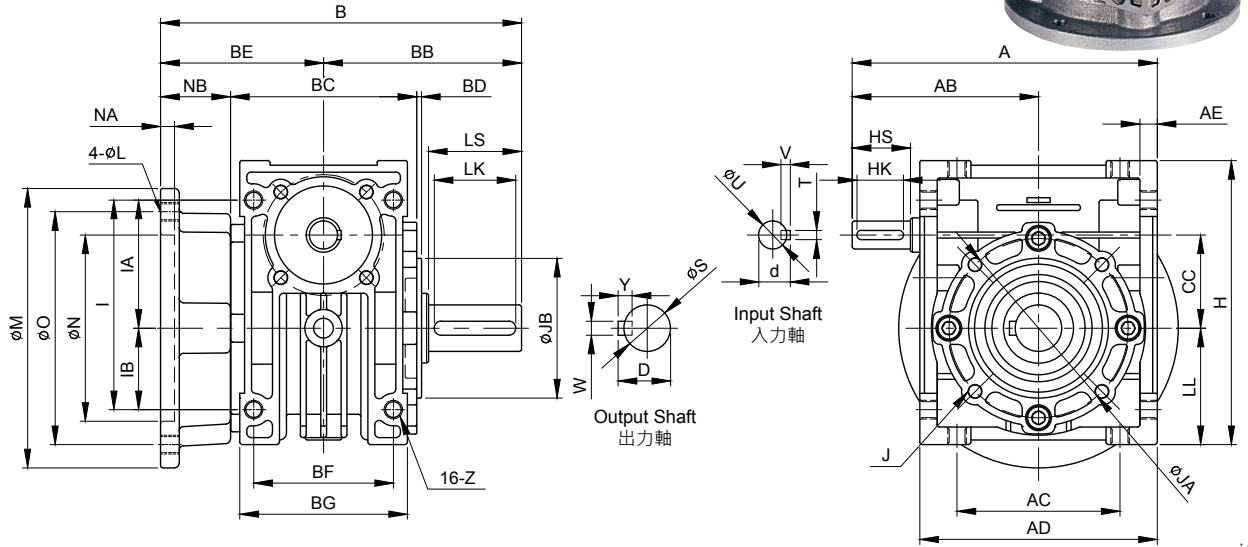
unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BB	BC	BD	BF	BG	CC	LL	H	HL	I	IA	IB	Z
30	5~60	40W·60W														115					
	5~40	90W	98	58	55	80	6	65	32.5	60	2	45	58	30	40	98	115	72	45	27	M6
	5~30	63B														140					
40	5~60	63B	124	73	70	102	7.5	88	44	80	2	60	72	40	50	122	170	90	55	35	M8
	5~30	1/2														190					
50	5~60	1/4	141	81												190					
	5~50	1/2	141	81	80	120	8.5	98	49	94	3	70	85	50	60	145	190	105	65	40	M10
	5~30	1	148	88												210					
60	5~60	1/2	167	94												215					
	5~50	1	174	101	100	146	10	108	54	102	3	85	102	60	75	180	235	136	83	53	M10
	5~15	2	174	101												235					
70	5~60	1/2	196	111												235					
	5~60	1	198	113	120	170	12	128	64	118	3	90	110	70	85	200	255	150	90	60	M10
	5~40	2	198	113												255					

型號 Model	減速比 Ratio	馬力 HP	馬達盤及入力孔 Motor Flange & Input Bore							出力孔 Output Bore						重量 Weight (kg)						
			P	Q	R	K	V	T	U	W	S	Y	JA	JB	J×牙深 Deep							
30	5~60	40W·60W	104	83	□ 90	M6																
	5~40	90W	104	83	□ 90	M6	12.7	4	11	5	14	16.3	65	55	8-M6-9						1.28	
	5~30	63B	115	95	140	M8																
40	5~60	63B	115	95	140	M8	12.7	4	11													
	5~30	1/2	130	110	160	M8	16.3	5	14	6	20	22.8	77	60	12-M6-9						2.56	
50	5~60	1/4	130	110	160	M8	12.7	4	11													
	5~50	1/2	130	110	160	M8	16.3	5	14	8	25	28.3	95	70	12-M6-9						4.27	
	5~30	1	165	130	200	M10	21.8	6	19													
60	5~60	1/2	130	110	160	M8	16.3	5	14													
	5~50	1	165	130	200	M10	21.8	6	19	8	25	28.3	120	80	12-M8-12						6.41	
	5~15	2	165	130	200	M10	27.3	8	24													
70	5~60	1/2	130	110	160	M8	16.3	5	14													
	5~60	1	165	130	200	M10	21.8	6	19	8	30	33.3	140	90	12-M10-15						9.54	
	5~40	2	165	130	200	M10	27.3	8	24													

選配馬力時，請參考「減速機參數」(第15頁)。 Please refer to page I5 "Reducers Parameter".

MODEL : NEF



unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BE	NB	BB	BC	BD	BF	BG	CC	LL	H	I	IA	IB	Z
30	5~60	40W·60W	105	65	55	80	6	127.5	60	30	67.5	60	2	45	58	30	40	98	72	45	27	M6
	5~40	90W																				
	5~30	1/4																				
40	5~60	1/4	131	80	70	102	7.5	155	70	30	85	80	2	60	72	40	50	122	90	55	35	M8
	5~30	1/2																				
	5~60	1/4																				
50	5~50	1/2	155	95	80	120	8.5	180	80	33	100	94	3	70	85	50	60	145	105	65	40	M10
	5~30	1																				
	5~60	1/2																				
60	5~60	1/2	193	120	100	146	10	205	100	49	105	102	3	85	102	60	75	180	136	83	53	M10
	5~50	1																				
	5~15	2																				
70	5~60	1/2	225	140	120	170	12	225	100	41	125	118	3	90	110	70	85	200	150	90	60	M10
	5~60	1																				
	5~40	2																				

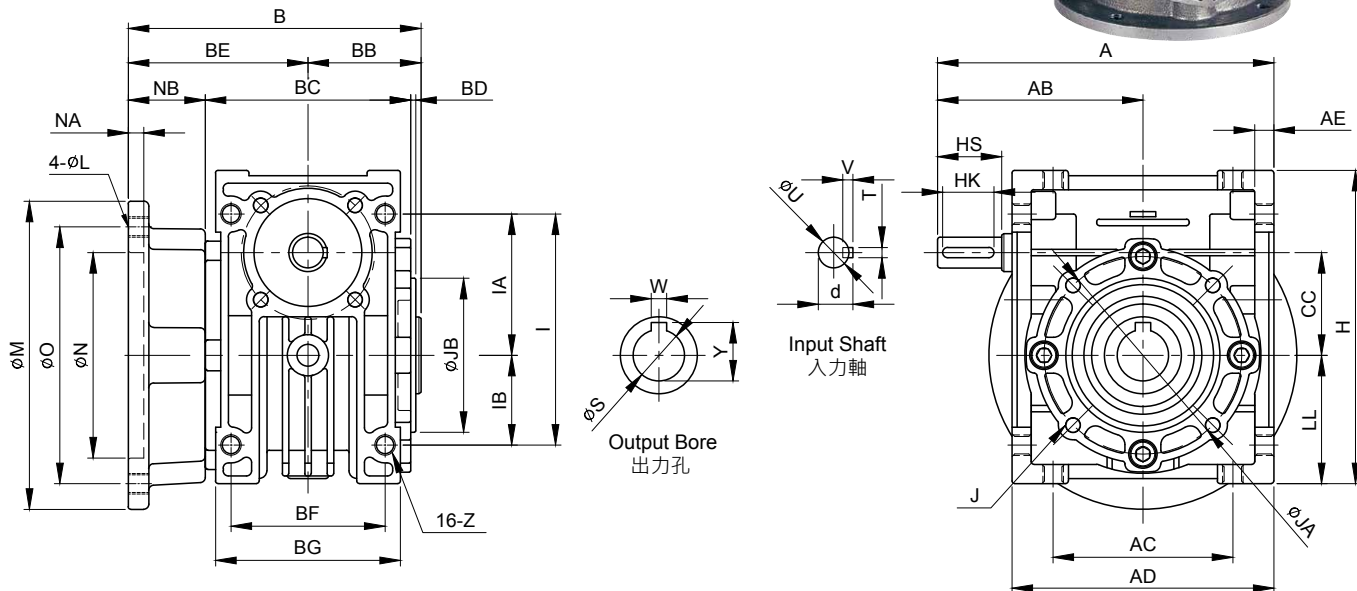
型號 Model	減速比 Ratio	馬力 HP	輸入軸 Input Shaft					出力法蘭及出力軸 Output Flange & Output Shaft											重量 Weight (kg)			
			HS	U	d	TxVxHK	N	NA	O	M	L	LS	S	D	WxYxLK	JA	JB	Jx 牙深 Deep				
30	5~60	40W·60W	20	11	12.5	4x4x16	70	5	85	100	M6	35	16	18	5x5x30	65	55	4-M6-9				1.46
	5~40	90W																				
	5~30	1/4																				
40	5~60	1/4	25	12	13.5	4x4x20	80	6	100	120	M8	40	20	22.5	6x6x35	77	60	4-M6-9				2.7
	5~30	1/2																				
	5~60	1/4																				
50	5~50	1/2	30	15	17	5x5x25	95	6	120	140	M10	50	25	28	8x7x45	95	70	4-M6-9				4.37
	5~30	1																				
	5~60	1/2																				
60	5~50	1	40	18	20.5	6x6x35	130	7	160	180	M10	50	25	28	8x7x45	120	80	4-M8-12				6.5
	5~50	1																				
	5~15	2																				
70	5~60	1/2	45	22	25	7x7x40	150	7	185	210	M12	60	30	33	8x7x55	140	90	4-M10-15				11.1
	5~60	1																				
	5~40	2																				

選配馬力時，請參考「減速機參數」(第15頁)。 Please refer to page I5 "Reducers Parameter".

# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

MODEL : NEOF



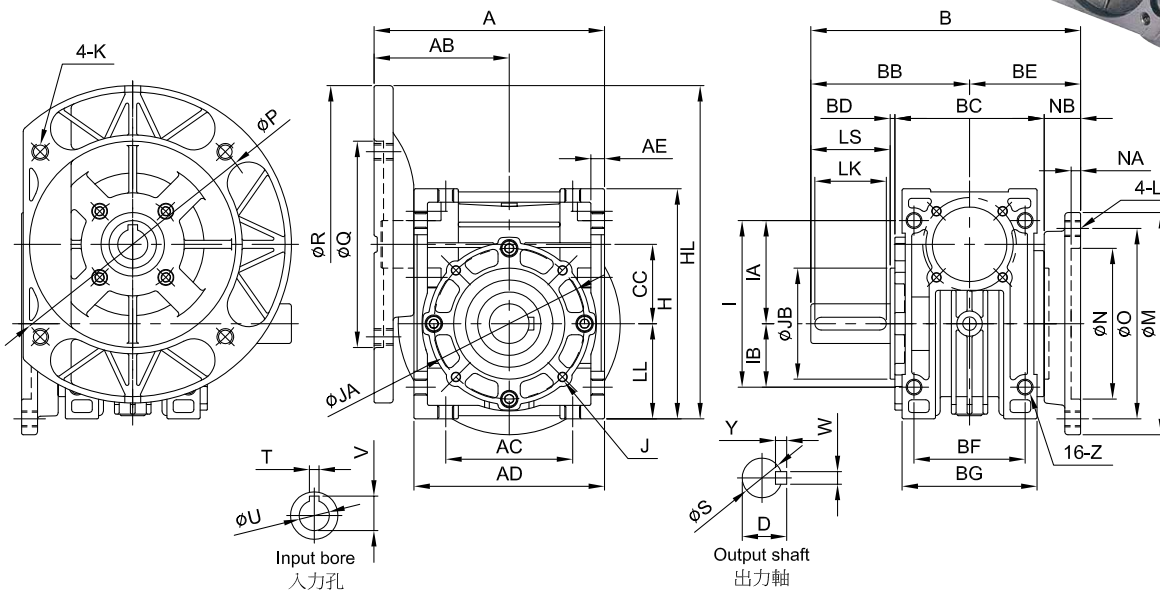
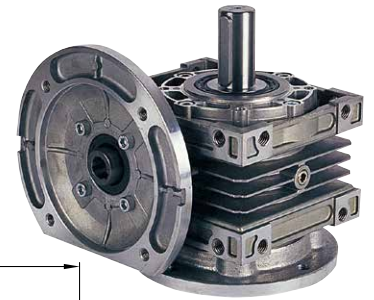
unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BE	NB	BB	BC	BD	BF	BG	CC	LL	H	I	IA	IB	Z
30	5~60	40W・60W	105	65	55	80	6	92.5	60	30	32.5	60	2	45	58	30	40	98	72	45	27	M6
	5~40	90W																				
	5~30	1/4																				
40	5~60	1/4	131	80	70	102	7.5	114	70	30	44	80	2	60	72	40	50	122	90	55	35	M8
	5~30	1/2																				
	5~60	1/4																				
50	5~50	1/2	155	95	80	120	8.5	129	80	33	49	94	3	70	85	50	60	145	105	65	40	M10
	5~30	1																				
	5~60	1/2																				
60	5~50	1	193	120	100	146	10	154	100	49	54	102	3	85	102	60	75	180	136	83	53	M10
	5~15	2																				
	5~60	1/2																				
70	5~60	1	225	140	120	170	12	164	100	41	64	118	3	90	110	70	85	200	150	90	60	M10
	5~40	2																				

型號 Model	減速比 Ratio	馬力 HP	入力軸 Input Shaft				出力法蘭及出力孔 Output Flange & Output Shaft											重量 Weight (kg)
			HS	U	d	TxVxHK	N	NA	O	M	L	W	S	Y	JA	JB	Jx 牙深 Deep	
30	5~60	40W・60W	20	11	12.5	4x4x16	70	5	85	100	M6	5	14	16.3	65	55	4-M6-9	1.33
	5~40	90W																
	5~30	1/4																
40	5~60	1/4	25	12	13.5	4x4x20	80	6	100	120	M8	6	20	22.8	77	60	4-M6-9	2.45
	5~30	1/2																
	5~60	1/4																
50	5~50	1/2	30	15	17	5x5x25	95	6	120	140	M10	8	25	28.3	95	70	4-M6-9	4.02
	5~30	1																
	5~60	1/2																
60	5~50	1	40	18	20.5	6x6x35	130	7	160	180	M10	8	25	28.3	120	80	4-M8-12	6.54
	5~15	2																
	5~60	1/2																
70	5~60	1	45	22	25	7x7x40	150	7	185	210	M12	8	30	33.3	140	90	4-M10-15	9.5
	5~40	2																

選配馬力時，請參考「減速機參數」(第15頁)。Please refer to page I5 "Reducers Parameter".

**MODEL : NEFM**



unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BE	NB	BB	BC	BD	BF	BG	CC	LL	H	HL	I	IA	IB	Z
30	5~60	40W·60W																115	72	45	27	M6	
	5~40	90W	98	58	55	80	6	127.5	60	30	67.5	60	2	45	58	30	40	98	115	45	27	M6	
	5~30	63B																140					
40	5~60	63B	124	73	70	102	7.5	155	70	30	85	80	2	60	72	40	50	122	170	90	55	35	M8
	5~30	1/2																					
50	5~60	1/4	141	81														190					
	5~50	1/2	141	81	80	120	8.5	180	80	33	100	94	3	70	85	50	60	145	190	105	65	40	M10
	5~30	1	148	88														210					
60	5~60	1/2	167	94														215					
	5~50	1	174	101	100	146	10	205	100	49	105	102	3	85	102	60	75	180	235	136	83	53	M10
	5~15	2	174	101														235					
70	5~60	1/2	196	111														235					
	5~60	1	198	113	120	170	12	225	100	41	125	118	3	90	110	70	85	200	255	150	90	60	M10
	5~40	2	198	113														255					

型號 Model	減速比 Ratio	馬力 HP	馬達盤 Motor Flange				入力孔 Input Bore			出力法蘭及出力軸 Output Flange & Output Shaft											重量 Weight (kg)		
			P	Q	R	K	V	T	U	N	NA	O	M	L	LS	S	D	WxYxLK	JA	JB		Jx 牙深 Deep	
30	5~60	40W·60W	104	83	□ 90	M6				70	5	85	100	M6	35	16	18	5x5x30	65	55	4-M6-9	1.56	
	5~40	90W	104	83	□ 90	M6	12.7	4	11														
	5~30	63B	115	95	140	M8																	
40	5~60	63B	115	95	140	M8	12.7	4	11	80	6	100	120	M8	40	20	22.5	6x6x35	77	60	4-M6-9	3.1	
	5~30	1/2	130	110	160	M8	16.3	5	14														
50	5~60	1/4	130	110	160	M8	12.7	4	11														
	5~50	1/2	130	110	160	M8	16.3	5	14	95	6	120	140	M10	50	25	28	8x7x45	95	70	4-M6-9	4.83	
	5~30	1	165	130	200	M10	21.8	6	19														
60	5~60	1/2	130	110	160	M8	16.3	5	14														
	5~50	1	165	130	200	M10	21.8	6	19	130	7	160	180	M10	50	25	28	8x7x45	120	80	4-M8-12	7.94	
	5~15	2	165	130	200	M10	27.3	8	24														
70	5~60	1/2	130	110	160	M8	16.3	5	14														
	5~60	1	165	130	200	M10	21.8	6	19	150	7	185	210	M12	60	30	33	8x7x55	140	90	4-M10-15	11.4	
	5~40	2	165	130	200	M10	27.3	8	24														

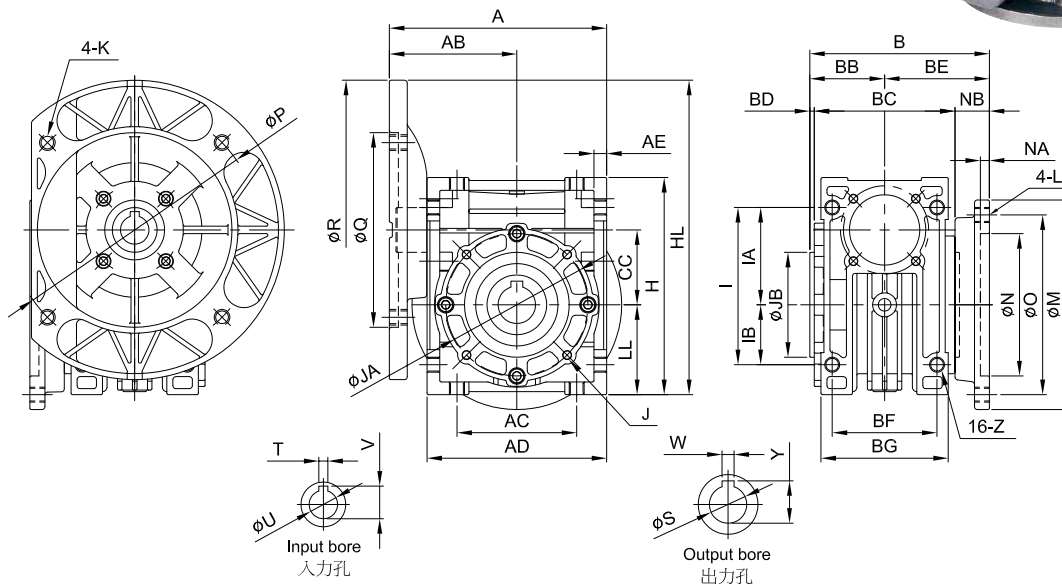
選配馬力時，請參考「減速機參數」及「馬達規格選配」(第 I5 頁)。Please refer to page I5 "Reducers Parameter" and "Selection of Motor Size".



# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

MODEL : NEOFM



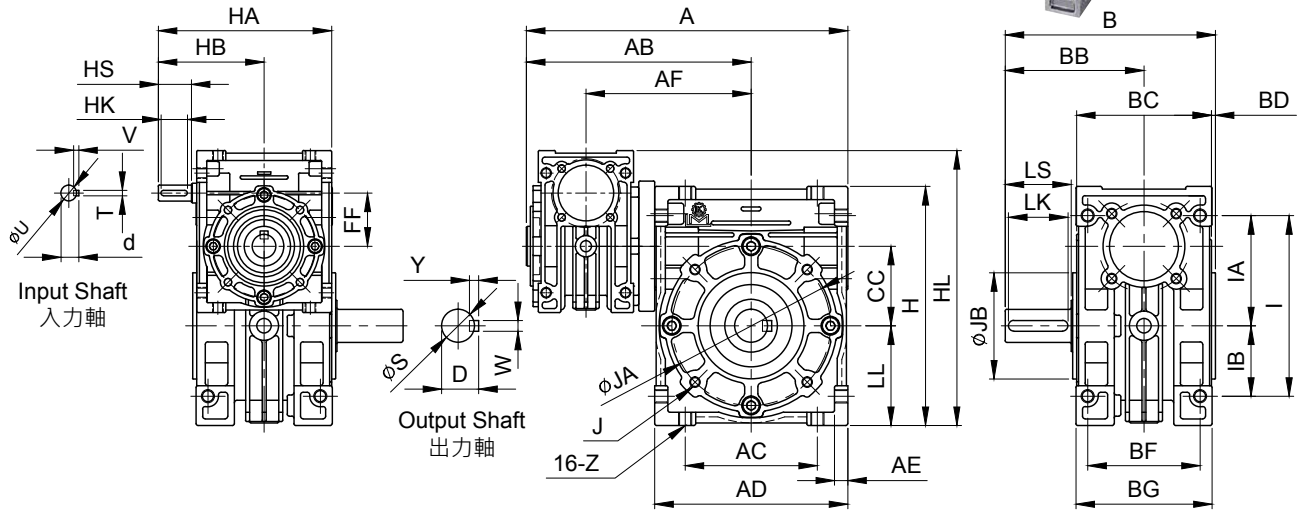
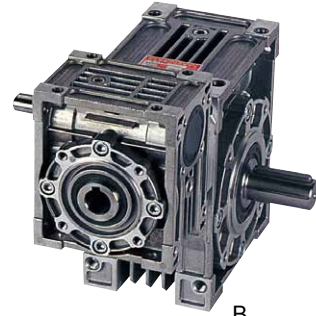
unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BE	NB	BB	BC	BD	BF	BG	CC	LL	H	HL	I	IA	IB	Z
30	5~60	40W·60W																	115				
	5~40	90W	98	58	55	80	6	92.5	60	30	32.5	60	2	45	58	30	40	98	115	72	45	27	M6
	5~30	63B																	140				
40	5~60	63B	124	73	70	102	7.5	114	70	30	44	80	2	60	72	40	50	122	170	90	55	35	M8
	5~30	1/2																					
50	5~60	1/4	141	81															190				
	5~50	1/2	141	81	80	120	8.5	130	80	33	50	94	3	70	85	50	60	145	190	105	65	40	M10
	5~30	1	148	88															210				
60	5~60	1/2	167	94															215				
	5~50	1	174	101	100	146	10	154	100	49	54	102	3	85	102	60	75	180	235	136	83	53	M10
	5~15	2	174	101															235				
70	5~60	1/2	196	111															235				
	5~60	1	198	113	120	170	12	164	100	41	64	118	3	90	110	70	85	200	255	150	90	60	M10
	5~40	2	198	113															255				

型號 Model	減速比 Ratio	馬力 HP	馬達盤 Motor Flange				入力孔 Input Bore			出力法蘭及出力孔 Output Flange & Output Shaft											重量 Weight (kg)			
			P	Q	R	K	V	T	U	N	NA	O	M	L	W	S	Y	JA	JB	Jx 牙深 Deep				
30	5~60	40W·60W	104	83	□ 90	M6																		
	5~40	90W	104	83	□ 90	M6	12.7	4	11	70	5	85	100	M6	5	14	16.3	65	55			4-M6-9	1.58	
	5~30	63B	115	95	140	M8																		
40	5~60	63B	115	95	140	M8	12.7	4	11															
	5~30	1/2	130	110	160	M8	16.3	5	14	80	6	100	120	M8	6	20	22.8	77	60			4-M6-9	2.89	
50	5~60	1/4	130	110	160	M8	12.7	4	11															
	5~50	1/2	130	110	160	M8	16.3	5	14	95	6	120	140	M10	8	25	28.3	95	70			4-M6-9	4.5	
	5~30	1	165	130	200	M10	21.8	6	19															
60	5~60	1/2	130	110	160	M8	16.3	5	14															
	5~50	1	165	130	200	M10	21.8	6	19	130	7	160	180	M10	8	25	28.3	120	80			4-M8-12	7.23	
70	5~15	2	165	130	200	M10	27.3	8	24															
	5~60	1/2	130	110	160	M8	16.3	5	14															
70	5~60	1	165	130	200	M10	21.8	6	19	150	7	185	210	M12	8	30	33.3	140	90			4-M10-15	10.6	
	5~40	2	165	130	200	M10	27.3	8	24															

選配馬力時，請參考「減速機參數」及「馬達規格選配」(第 15 頁)。 Please refer to page I5 "Reducers Parameter" and "Selection of Motor Size".

MODEL : NEH



出力段減速機中心距離 (mm) Central distance of output of reducer.	40	50	60	70
入力段減速機中心距離 (mm) Central distance of input of reducer.	30	30	40	50

unit: mm

型號 Model	減速比 Ratio	馬力 HP	CC	FF	A	AB	AC	AD	AE	AF	B	BB	BC	BD	BF	BG	H	HA	HB	HL
40	100~3600	1/8(90W) 63B	40	30	176.5	125.5	70	102	7.5	93	127	85	80	2	60	72	122	105	65	148
50	100~3600	1/8(90W) 63B	50	30	194.5	134.5	80	120	8.5	102	150	100	94	3	70	85	145	105	65	168
60	100~3600	(1/4) 1/2	60	40	243	170	100	146	10	125	159	105	102	3	85	102	180	131	80	207
70	100~3600	(1/4) 1/2 1	70	50	280	195	120	170	12	145	187	125	118	3	90	110	200	155	95	240

型號 Model	減速比 Ratio	馬力 HP	I	IA	IB	LL	Z	入力軸 Input Shaft				出力軸 Output Shaft						重量 Weight (kg)	
								HS	U	d	TxVxHK	LS	S	D	WxYxLK	JA	JB		Jx 牙深 Deep
40	100~3600	1/8(90W) 63B	90	55	35	50	M8	20	11	12.5	4x4x16	40	20	22.5	6x6x35	77	60	12-M6-9	3.86
50	100~3600	1/8(90W) 63B	105	65	40	60	M10	20	11	12.5	4x4x16	50	25	28	8x7x45	95	70	12-M6-9	5.41
60	100~3600	(1/4) 1/2	136	83	53	75	M10	25	12	13.5	4x4x20	50	25	28	8x7x45	120	80	12-M8-12	8.3
70	100~3600	(1/4) 1/2 1	150	90	60	85	M10	30	15	17	5x5x25	60	30	33	8x7x55	140	90	12-M10-15	13.95

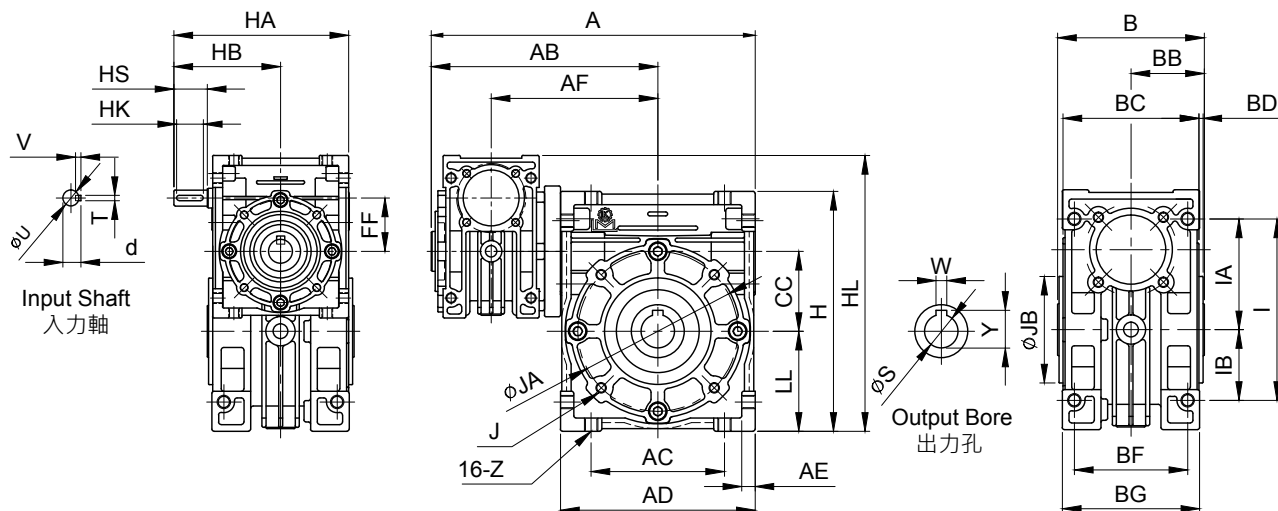
雙段減速機以定轉速為設計，最大扭力請參考「減速機參數」(第 15 頁)，( ) 為較安全選配馬力。

This 2-stage worm reducer is designed to rotate at fixed speed. We recommend to choose the HP inside ( ) for safer choice. Please refer to page I5 "Reducers Parameter."

# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

MODEL : NEOH



出力段減速機中心距離 (mm) Central distance of output of reducer.	40	50	60	70
入力段減速機中心距離 (mm) Central distance of input of reducer.	30	30	40	50

unit: mm

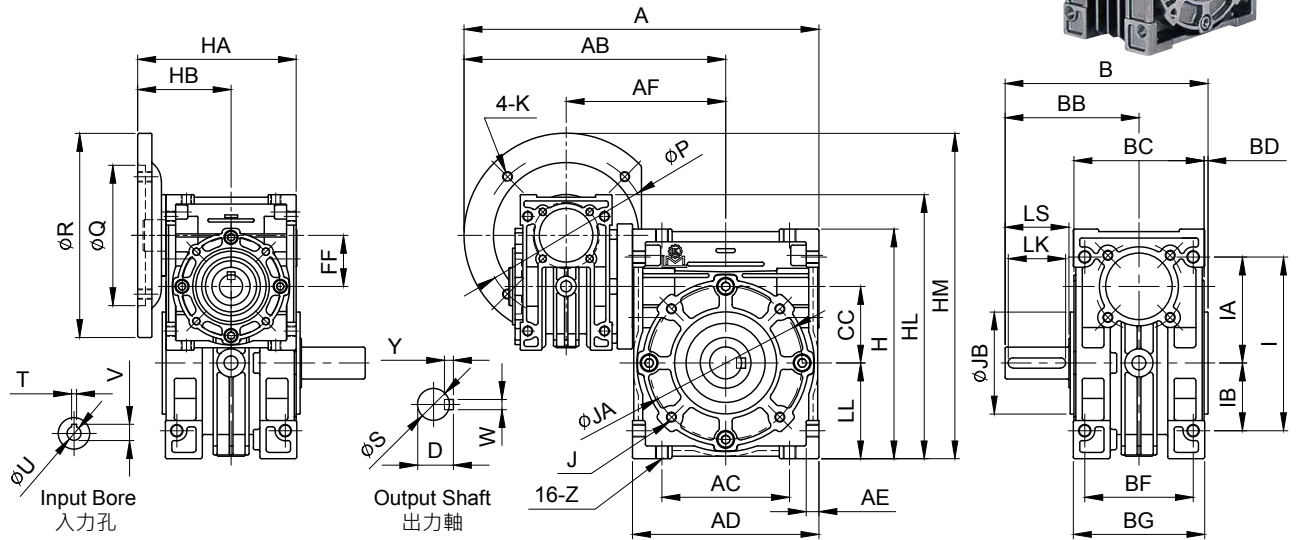
型號 Model	減速比 Ratio	馬力 HP	CC	FF	A	AB	AC	AD	AE	AF	B	BB	BC	BD	BF	BG	H	HA	HB	HL
40	100~3600	1/8(90W) 63B	40	30	176.5	125.5	70	102	7.5	93	88	44	80	2	60	72	122	105	65	148
50	100~3600	1/8(90W) 63B	50	30	194.5	134.5	80	120	8.5	102	98	49	94	3	70	85	145	105	65	168
60	100~3600	(1/4) 1/2	60	40	243	170	100	146	10	125	108	54	102	3	85	102	180	131	80	207
70	100~3600	(1/4) 1/2 1	70	50	280	195	120	170	12	145	128	64	118	3	90	110	200	155	95	240

型號 Model	減速比 Ratio	馬力 HP	I	IA	IB	LL	Z	入力軸 Input Shaft				出力孔 Output Shaft					重量 Weight (kg)	
								HS	U	d	TxVxHK	W	S	Y	JA	JB		Jx 牙深 Deep
40	100~3600	1/8(90W) 63B	90	55	35	50	M8	20	11	12.5	4x4x16	6	20	22.8	77	60	12-M6-9	3.56
50	100~3600	1/8(90W) 63B	105	65	40	60	M10	20	11	12.5	4x4x16	8	25	28.3	95	70	12-M6-9	4.96
60	100~3600	(1/4) 1/2	136	83	53	75	M10	25	12	13.5	4x4x20	8	25	28.3	120	80	12-M8-12	8.23
70	100~3600	(1/4) 1/2 1	150	90	60	85	M10	30	15	17	5x5x25	8	30	33.3	140	90	12-M10-15	14.1

雙段減速機以定轉速設計，最大扭力請參考「減速機參數」(第 15 頁)，( ) 為較安全選配馬力。

This 2-stage worm reducer is designed to rotate at fixed speed. We recommend to choose the HP inside ( ) for safer choice. Please refer to page I5 "Reducers Parameter."

**MODEL : NEHM**



出力段減速機中心距離 (mm) Central distance of output of reducer.	40	50	60	70
入力段減速機中心距離 (mm) Central distance of input of reducer.	30	30	40	50

unit: mm

型號 Model	減速比 Ratio	馬力 HP	CC	FF	A	AB	AC	AD	AE	AF	B	BB	BC	BD	BF	BG	H	HA	HB	HL	HM	I
40	100~3600	1/8(90W) 63B	40	30	189 214	138 163	70	102	7.5	93	127	85	80	2	60	72	122	98	58	148	165 190	90
50	100~3600	1/8(90W) 63B	50	30	207 232	147 172	80	120	8.5	102	150	100	94	3	70	85	145	98	58	168	185 210	105
60	100~3600	(1/4) 1/2	60	40	278	205	100	146	10	125	159	105	102	3	85	102	180	124	73	207	255	136
70	100~3600	(1/4) 1/2 1	70	50	310 310 330	225 225 245	120	170	12	145	187	125	118	3	90	110	200	141 141 148	81 81 88	240	285 285 305	150

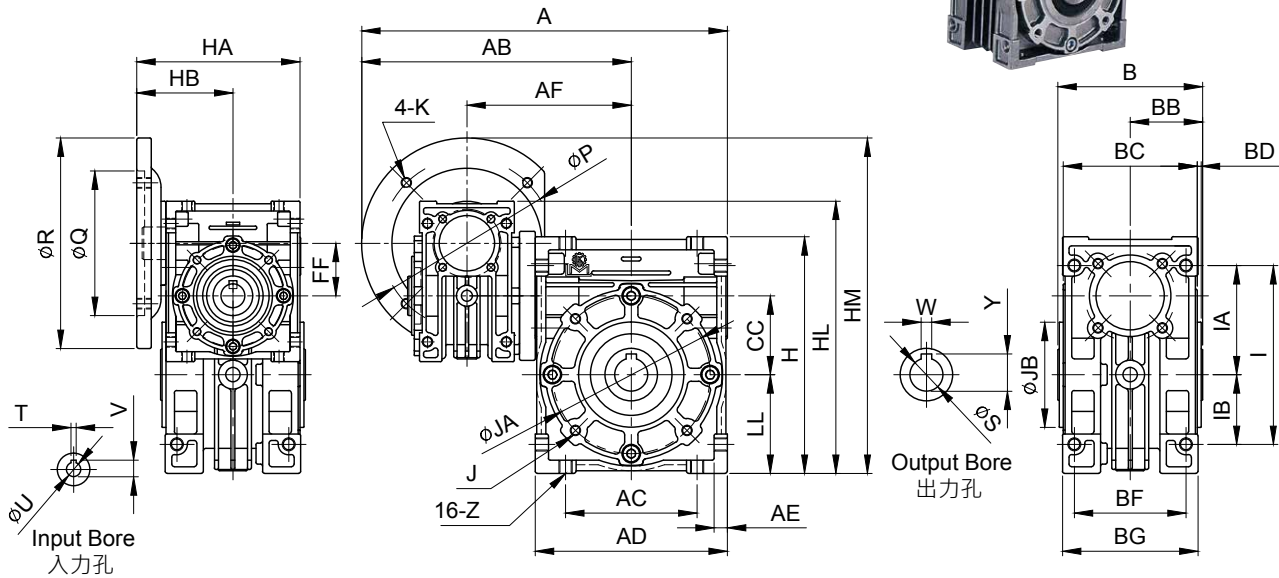
型號 Model	減速比 Ratio	馬力 HP	馬達盤及入力孔 Motor Flange & Input Bore											出力軸 Output Shaft							重量 Weight (kg)
			IA	IB	LL	Z															
							P	Q	R	K	V	T	U	LS	S	D	WxYxLK	JA	JB	Jx 牙深 Deep	
40	100~3600	1/8(90W) 63B	55	35	50	M8	104	83	□ 90	M6	12.7	4	11	40	20	22.5	6x6x35	77	60	12-M6-9	3.89
50	100~3600	1/8(90W) 63B	65	40	60	M10	104	83	□ 90	M6	12.7	4	11	50	25	28	8x7x45	95	70	12-M6-9	5.51
60	100~3600	(1/4) 1/2	83	53	75	M10	130	110	160	M8	12.7 16.3	4 5	11 14	50	25	28	8x7x45	120	80	12-M8-12	9.14
70	100~3600	(1/4) 1/2 1	90	60	85	M10	130 130 165	110 110 130	160 160 200	M8 M8 M10	12.7 16.3 21.8	4 5 6	11 14 19	60	30	33	8x7x55	140	90	12-M10-15	14.6

雙段減速機以定轉速設計，最大扭力請參考「減速機參數」(第15頁)，( ) 為較安全選配馬力。  
This 2-stage worm reducer is designed to rotate at fixed speed. We recommend to choose the HP inside ( ) for safer choice. Please refer to page I5 "Reducers Parameter."

# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

MODEL : NEOHM



出力段減速機中心距離 (mm) Central distance of output of reducer.	40	50	60	70
入力段減速機中心距離 (mm) Central distance of input of reducer.	30	30	40	50

unit: mm

型號 Model	減速比 Ratio	馬力 HP	CC	FF	A	AB	AC	AD	AE	AF	B	BB	BC	BD	BF	BG	H	HA	HB	HL	HM
40	100~3600	1/8(90W)	40	30	189	138	70	102	7.5	93	88	44	80	2	60	72	122	98	58	148	165
		63B			214	163															190
50	100~3600	1/8(90W)	50	30	207	147	80	120	8.5	102	98	49	94	3	70	85	145	98	58	168	185
		63B			232	172															210
60	100~3600	(1/4)	60	40	278	205	100	146	10	125	108	54	102	3	85	102	180	124	73	207	255
		1/2			310	225															285
70	100~3600	(1/4)	70	50	310	225	120	170	12	145	128	64	118	3	90	110	200	141	81	240	285
		1/2			310	225												285			
		1			330	245												305			

型號 Model	減速比 Ratio	馬力 HP	馬達盤及入力孔 Motor Flange & Input Bore							出力孔 Output Bore							重量 Weight (kg)				
			I	IA	IB	LL	Z	P	Q	R	K	V	T	U	W	S		Y	JA	JB	J×牙深 Deep
40	100~3600	1/8(90W) 63B	90	55	35	50	M8	104	83	90	M6	12.7	4	11	6	20	22.8	77	60	12-M6-9	3.82
50	100~3600	1/8(90W) 63B	105	65	40	60	M10	104	83	90	M6	12.7	4	11	8	25	28.3	95	70	12-M6-9	5.08
60	100~3600	(1/4)	136	83	53	75	M10	130	110	160	M8	12.7	4	11	8	25	28.3	120	80	12-M8-12	8.7
		1/2										16.3	5	14							
70	100~3600	(1/4)	150	90	60	85	M10	130	110	160	M8	12.7	4	11	8	30	33.3	140	90	12-M10-15	14.4
		1/2										16.3	5	14							
		1										21.8	6	19							

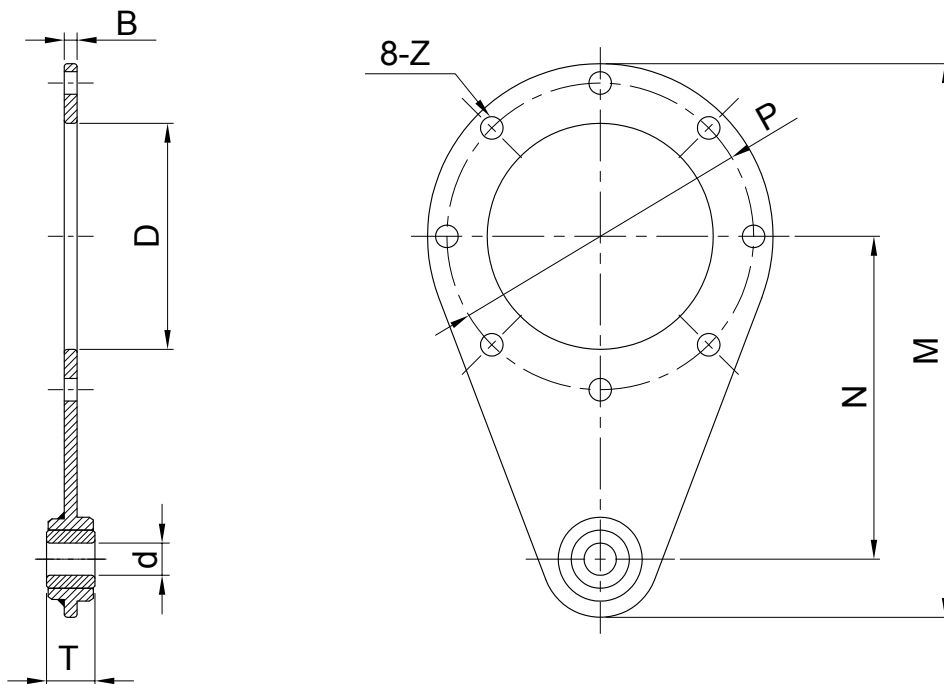
雙段減速機以定轉速設計，最大扭力請參考「減速機參數」(第15頁)，( )為較安全選配馬力。

This 2-stage worm reducer is designed to rotate at fixed speed. We recommend to choose the HP inside ( ) for safer choice. Please refer to page 15 "Reducers Parameter."



## ■ 選配件 Optional Accessories ( 適用 NE 系列 )

### 扭力臂 Torque Arm



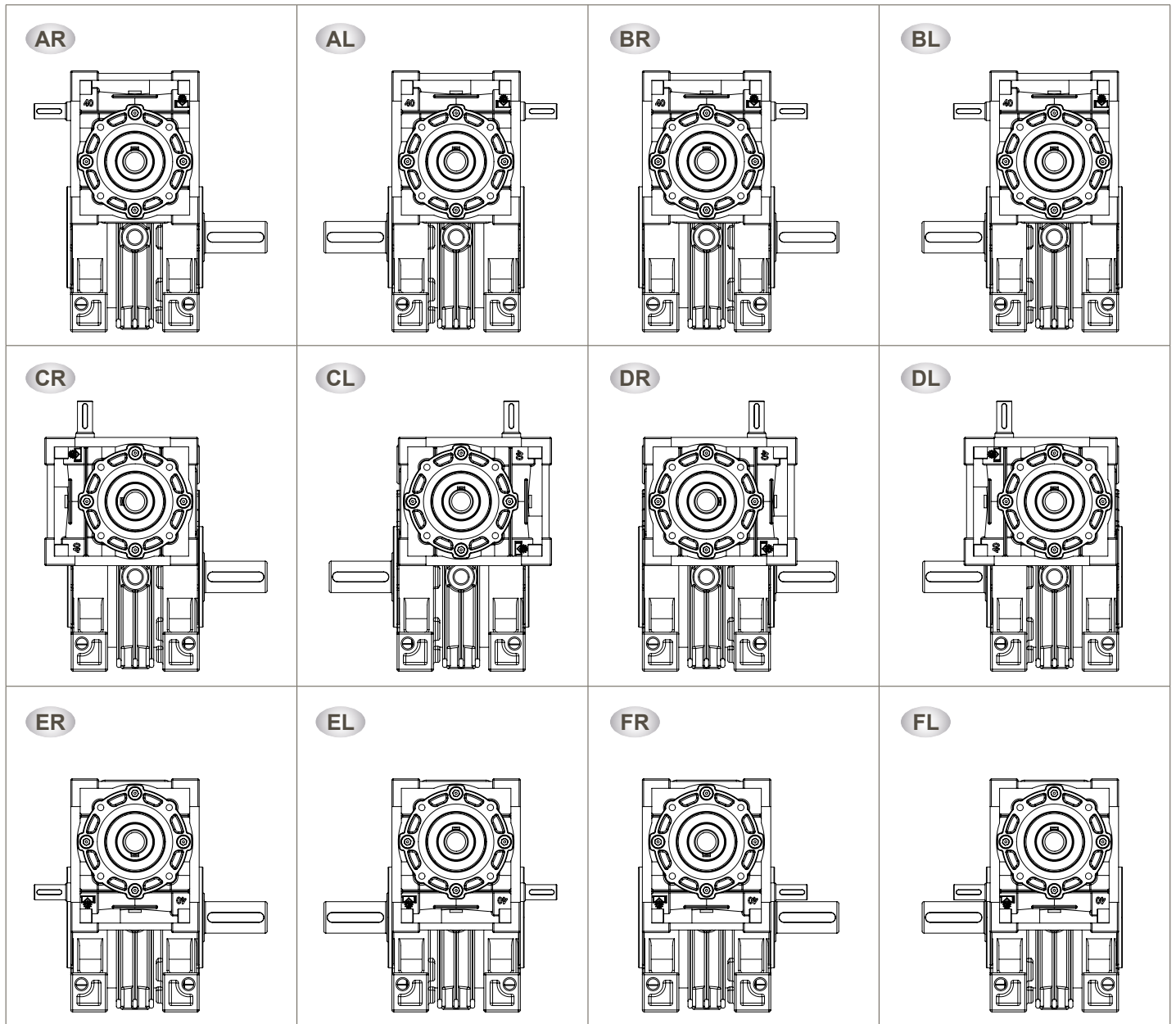
unit: mm

型號 Model	B	D	d	T	P	Z	N	M
30	3.5	55	8	12.5	65	7	85	140
40	4	60	10	14	77	7	100	162.5
50	4	70	10	14	95	7	100	171.5
60	4	80	10	14	120	9	150	237
70	6	90	12	16	140	11	180	285

# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

### ■ 安裝方向 Installation Direction ( NE 雙段式 2-Stage Series )



# Aluminum Alloy Worm Reducer



## Indication of Model Numbers

### 機種型號表示

<b>CEM</b>	<b>63</b>	<b>7.5</b>	<b>1/2</b>	<b>R</b>
減速機型 Type	型號 Model	減速比 Ratio	馬力 Horse Power	軸向 Shaft Direction
CEM	63	7.5~60	1/2HP	R
CEOM	75		1HP	L
CEOFM	90		2HP 3HP	

## 減速機參數 Reducers Parameter

馬達 Motor : 4P/60Hz 輸入轉速 Input R.P.M. = 1700 RPM

(安全係數 1.0 以下為輕負荷。 The reducer is used for light loading when SF below 1.0.)

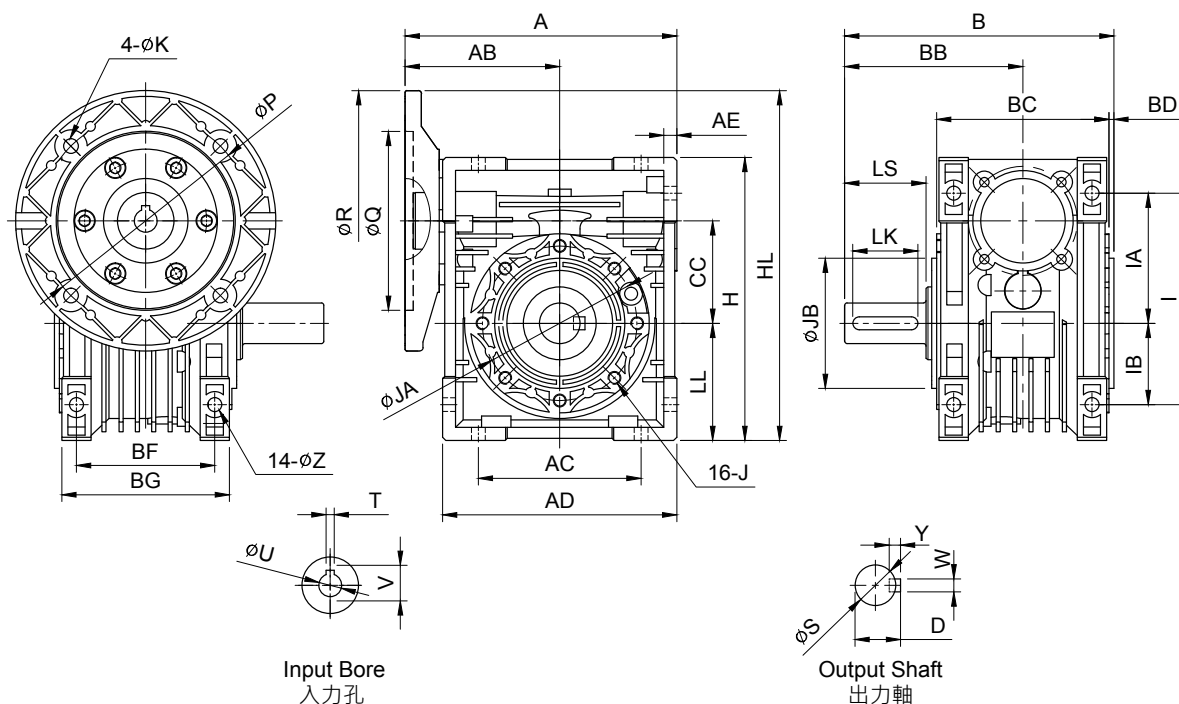
OR= 輸出轉速 Output R.P.M. (RPM) , IH= 輸入馬力 Input HP (kW) , OT= 輸出扭力 Output Torque (Kg-m) , SF= 安全係數 Safety Factor

型號 Mode	減速比 Ratio	7.5		10		15		20		25		30		40		50		60	
	OR	227		170		113		85		68		56		42		34		28	
	IH	OT	SF	OT	SF	OT	SF	OT	SF	OT	SF	OT	SF	OT	SF	OT	SF	OT	SF
63	0.37	1.58	5.9	1.94	5.2	2.81	4	3.56	3.7	4.2	3.2	4.87	3.7	6.87	2.9	7.58	2.5	8.8	1.9
	0.75	3	2.9	3.7	2.6	5.45	2	6.9	1.8	8.2	1.6	9.5	1.8	13.5	1.5	14.9	1.2	17.4	0.9
	1.5	5.73	1.5	7.3	1.3	10.8	1	13.5	0.9	16.3	0.8	18.7	0.9	-	-	-	-	-	-
75	0.75	3.36	6.8	3.98	4.6	5.56	3.6	7.09	3	8.39	2.6	9.78	3	12.6	2.4	15.3	2	17.8	1.8
	1.5	5.9	3.4	7.8	2.3	10.9	1.8	14	1.5	16.6	1.3	19.4	1.5	25	1.2	30.4	1	35.2	0.9
	2.2	10.1	1.7	13.3	1.1	19.1	0.9	-	-	-	-	-	-	-	-	-	-	-	-
90	1.5	5.9	3.6	7.8	3.4	10.9	3	14	2.1	16.6	1.6	19.4	1.7	25.1	1.2	30.5	0.9	35.5	0.8
	2.2	10.2	2.9	13.4	2.3	19.3	1.9	25.1	1.4	30.6	1.1	35.3	1.3	-	-	-	-	-	-

# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

MODEL : CEM



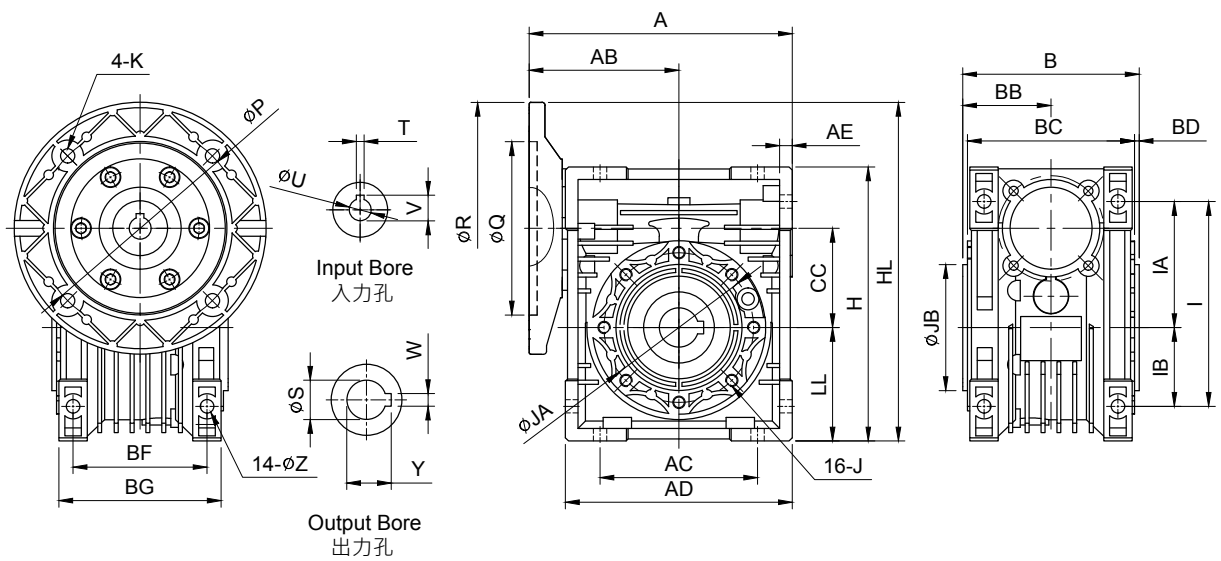
unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BB	BC	BD	BF	BG	CC	LL	H	HL	I	IA	IB	Z
63	7.5~60	1/2	167	95	100	144	8	166	110	106	3	85	103	63	72	174	215	130	80	50	8.5
		1	167	95	100	144	8	166	110	106	3	85	103	63	72	174	235	130	80	50	8.5
		2	167	95	100	144	8	166	110	106	3	85	103	63	72	174	235	130	80	50	8.5
75	7.5~60	1	199	113	120	172	10	184	124	114	3	90	112	75	86	205	261	153	93	60	11.5
		2	199	113	120	172	10	184	124	114	3	90	112	75	86	205	261	153	93	60	11.5
		3	200	114	120	172	10	184	124	114	3	90	112	75	86	205	286	153	93	60	11.5
90	7.5~60	2	233	130	140	206	11	225	155	134	3	100	130	90	103	238	293	172	102	70	13
		2	233	130	140	206	11	225	155	134	3	100	130	90	103	238	293	172	102	70	13
		3	234	131	140	206	11	225	155	134	3	100	130	90	103	238	318	172	102	70	13

型號 Model	減速比 Ratio	馬力 HP	馬達盤及入力孔 Motor Flange & Input Bore							出力軸 Output Shaft							重量 Weight (kg)
			P	Q	R	K	V	T	U	LS	S	D	WxYxLK	JA	JB	Jx牙深 Deep	
63	7.5~60	1/2	130	110	160	9	16.3	5	14	50	25	28	8x7x40	95	80	M8-12	6.7
		1	165	130	200	11	21.8	6	19	50	25	28	8x7x40	95	80	M8-12	
		2	165	130	200	11	27.3	8	24	50	25	28	8x7x40	95	80	M8-12	
75	7.5~60	1	165	130	200	11	21.8	6	19	60	28	31	8x7x50	115	95	M8-12	9.6
		2	165	130	200	11	27.3	8	24	60	28	31	8x7x50	115	95	M8-12	
		3	215	180	250	13	31.3	8	28	60	28	31	8x7x50	115	95	M8-12	
90	7.5~60	2	165	130	200	11	27.3	8	24	80	35	38	10x8x65	130	110	M10-15	15.5
		2	165	130	200	11	27.3	8	24	80	35	38	10x8x65	130	110	M10-15	
		3	215	180	250	13	31.3	8	28	80	35	38	10x8x65	130	110	M10-15	

選配馬力時，請參考「減速機參數」(第 I20 頁)。 Please refer to page I20 "Reducers Parameter".

MODEL : CEOM



unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BB	BC	BD	BF	BG	CC	LL	H	HL	I	IA	IB	Z	
63	7.5~60	1/2	167	95													215					
		1	167	95	100	144	8	112	56	106	3	85	103	63	72	174	235	130	80	50	8.5	
		2	167	95														235				
75	7.5~60	1	199	113													261					
		2	199	113	120	172	10	120	60	114	3	90	112	75	86	205	261	153	93	60	11.5	
		3	200	114														286				
90	7.5~60	2	233	130	140	206	11	140	70	134	3	100	130	90	103	238	293	172	102	70	13	
		3	234	131														318				

型號 Model	減速比 Ratio	馬力 HP	馬達盤及入力孔 Motor Flange & Input Bore							出力孔 Output Shaft							重量 Weight (kg)					
			P	Q	R	K	V	T	U	W	S	Y	JA	JB	Jx 牙深 Deep							
63	7.5~60	1/2	130	110	160	9	16.3	5	14													
		1	165	130	200	11	21.8	6	19	8	25	28.3	95	80	M8-12	6.2						
		2	165	130	200	11	27.3	8	24													
75	7.5~60	1	165	130	200	11	21.8	6	19													
		2	165	130	200	11	27.3	8	24	8	28	31.3	115	95	M8-12	8.7						
		3	215	180	250	13	31.3	8	28													
90	7.5~60	2	165	130	200	11	27.3	8	24	10	35	38.3	130	110	M10-15	13.9						
		3	215	180	250	13	31.3	8	28													

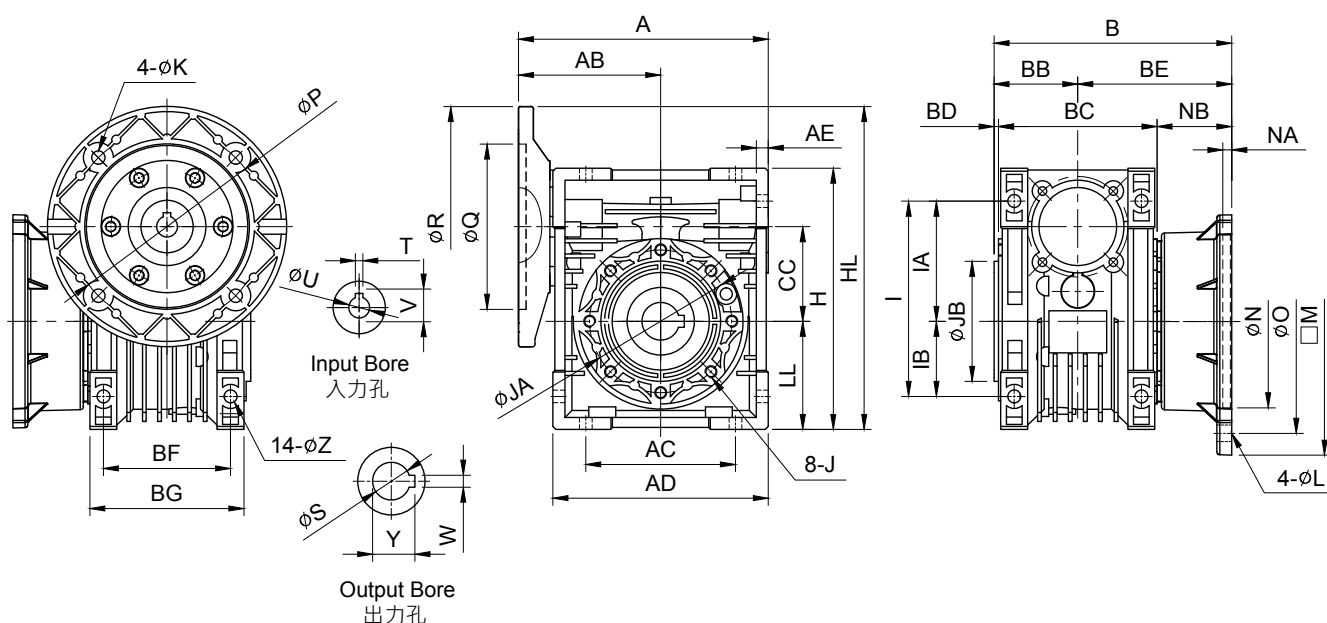
選配馬力時，請參考「減速機參數」(第 I20 頁)。 Please refer to page I20 "Reducers Parameter".



# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

MODEL : CEOFM



unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BE	NB	BB	BC	BD	BF	BG	CC	LL	H	HL	I	IA	IB	Z
63	7.5~60	1/2	167	95														215					
		1	167	95	100	144	8	159	103	50	56	106	3	85	103	63	72	174	235	130	80	50	8.5
		2	167	95															235				
75	7.5~60	1	199	113														261					
		2	199	113	120	172	10	171	111	54	60	114	3	90	112	75	86	205	261	153	93	60	11.5
		3	200	114															286				
90	7.5~60	2	233	130														293					
		3	234	131	140	206	11	181	111	44	70	134	3	100	130	90	103	238	293	172	102	70	13
																			318				

型號 Model	減速比 Ratio	馬力 HP	馬達盤及入力孔 Motor Flange & Input Bore							出力法蘭及出力孔 Output Flange & Output Shaft											重量 Weight (kg)				
			P	Q	R	K	V	T	U	N	NA	O	M	L	W	S	Y	JA	JB	Jx 牙深 Deep					
63	7.5~60	1/2	130	110	160	9	16.3	5	14																
		1	165	130	200	11	21.8	6	19	115	6	150	□ 142	11	8	25	28.3	95	80	M8-12		6.6			
		2	165	130	200	11	27.3	8	24																
75	7.5~60	1	165	130	200	11	21.8	6	19																
		2	165	130	200	11	27.3	8	24	130	6	165	□ 169	14	8	28	31.3	115	95	M8-12		9.4			
		3	215	180	250	13	31.3	8	28																
90	7.5~60	2	165	130	200	11	27.3	8	24																
		3	215	180	250	13	31.3	8	28	152	6	175	□ 200	14	10	35	38.3	130	110	M10-15		14.6			

選配馬力時，請參考「減速機參數」(第 I21 頁)。 Please refer to page I21 "Reducers Parameter".

# Aluminum Alloy Worm Reducer



## Indication of Model Numbers

### 機種型號表示

<b>CAMW</b>	<b>75</b>		<b>7.5</b>	<b>1</b>	<b>R</b>
減速機型 Type  CAMW CADW	型號 Model  75	出力法蘭 Output Flange  □：標準品 Standard  A：圓形出力法蘭 Round Output Flange	減速比 Ratio  7.5~60	馬力 Horse Power  1HP 2HP 3HP	軸向 Shaft Direction  R L

## 減速機參數 Reducers Parameter

馬達 Motor : 4P/60Hz 輸入轉速 Input R.P.M. = 1700 RPM

(安全係數 1.0 以下為輕負荷。 The reducer is used for light loading when SF below 1.0.)

OR= 輸出轉速 Output R.P.M. (RPM) , IH= 輸入馬力 Input HP (kW) , OT= 輸出扭力 Output Torque (Kg-m) , SF= 安全係數 Safety Factor

型號 Mode	減速比 Ratio	7.5		10		15		20		25		30		40		50		60	
	OR	227	170	113	85	68	56	42	34	28	IH	OT	SF	OT	SF	OT	SF	OT	SF
75	0.75	3.36	6.8	3.98	4.6	5.56	3.6	7.09	3	8.39	2.6	9.78	3	12.6	2.4	15.3	2	17.8	1.8
	1.5	5.9	3.4	7.8	2.3	10.9	1.8	14	1.5	16.6	1.3	19.4	1.5	25	1.2	30.4	1	35.2	0.9
	2.2	10.1	1.7	13.3	1.1	19.1	0.9	-	-	-	-	-	-	-	-	-	-	-	-

# ALUMINUM ALLOY WORM REDUCER SERIES

## 鋁合金蝸輪減速機系列

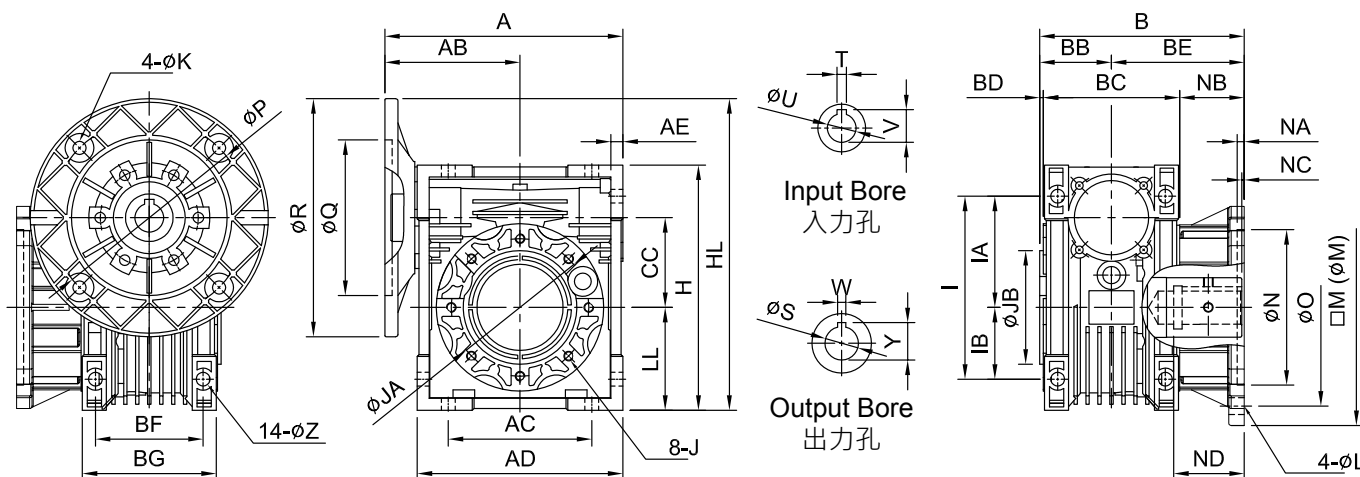
MODEL : CAMW



▲ 75#



▲ 75A#



unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BE	NB	NC	BB	BC	BD	BF	BG	CC	LL	H	HL	I	IA	IB	Z
75 75A	7.5~60	1	199	113	120	172	10	171 185	111 125	54 68	2	60	114	3	90	112	75	86	205	261	153	93	60	11.5
75 75A	7.5~60	2	199	113	120	172	10	171 185	111 125	54 68	2	60	114	3	90	112	75	86	205	261	153	93	60	11.5
75 75A	7.5~15	3	200	114	120	172	10	171 185	111 125	54 68	2	60	114	3	90	112	75	86	205	286	153	93	60	11.5

型號 Model	減速比 Ratio	馬力 HP	馬達盤及入力孔 Motor Flange & Input Bore							出力法蘭及出力孔 Output Flange & Output Shaft											重量 Weight (kg)	
			P	Q	R	K	V	T	U	N	NA	ND	O	M	L	W	S	Y	JA	JB		Jx 牙深 Deep
75 75A	7.5~60	1	165	130	200	11	21.8	6	19	130	6	59	165 160	□ 169 185	14 11	7 8	25 28 30	28.3 31.3 33.3	115	95	M8-12	9.8
75 75A	7.5~60	2	165	130	200	11	27.3	8	24	130	6	59	165 160	□ 169 185	14 11	7 8	25 28 30	28.3 31.3 33.3	115	95	M8-12	9.8
75 75A	7.5~15	3	215	180	250	13	31.3	8	28	130	6	59	165 160	□ 169 185	14 11	7 8	25 28 30	28.3 31.3 33.3	115	95	M8-12	10

選配馬力時，請參考「減速機參數」(第 I24 頁)。 Please refer to page I24 "Reducers Parameter".

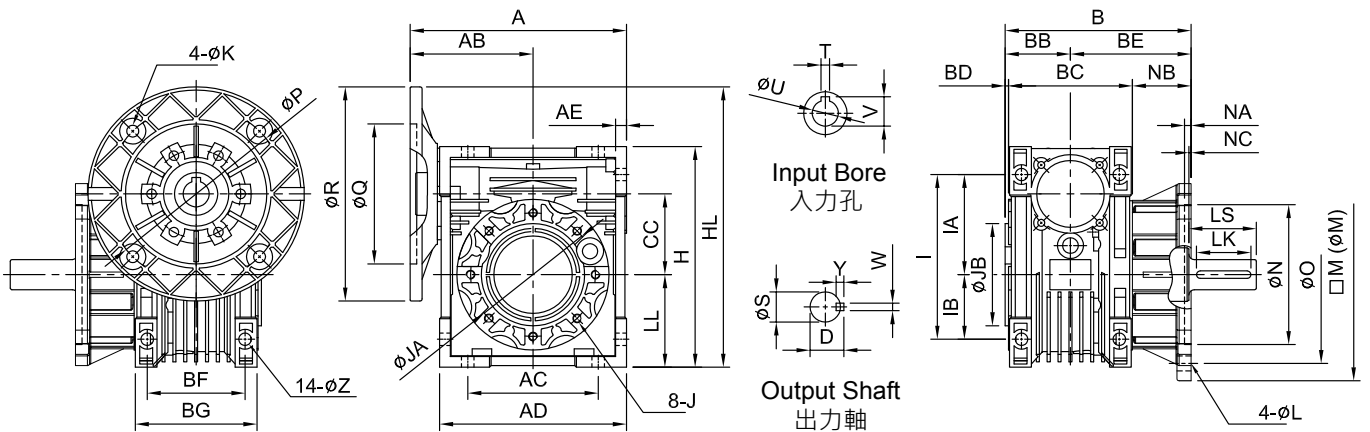
**MODEL : CADW**



▲ 75#



▲ 75A#



unit: mm

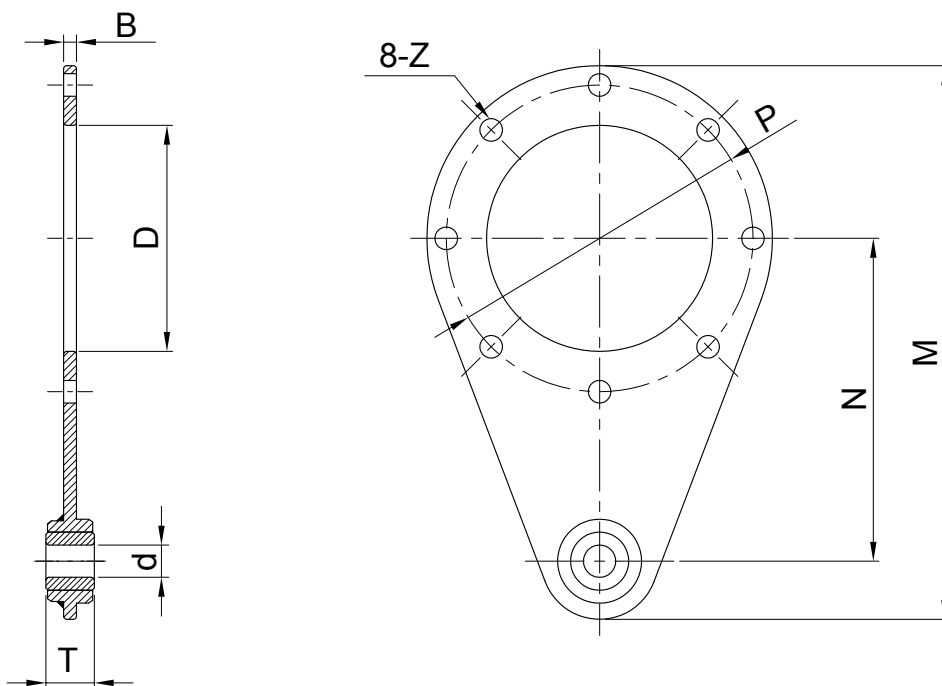
型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	AD	AE	B	BE	NB	NC	BB	BC	BD	BF	BG	CC	LL	H	HL	I	IA	IB	Z
75 75A	7.5~60	1	199	113	120	172	10	171 185	111 125	54 68	2	60	114	3	90	112	75	86	205	261	153	93	60	11.5
75 75A	7.5~60	2	199	113	120	172	10	171 185	111 125	54 68	2	60	114	3	90	112	75	86	205	261	153	93	60	11.5
75 75A	7.5~15	3	200	114	120	172	10	171 185	111 125	54 68	2	60	114	3	90	112	75	86	205	286	153	93	60	11.5

型號 Model	減速比 Ratio	馬力 HP	馬達盤及入力孔 Motor Flange & Input Bore									出力法蘭及出力軸 Output Flange & Output Shaft										重量 Weight (kg)
			P	Q	R	K	V	T	U	N	NA	O	M	L	LS	S	D	WxYxLK	JA	JB	Jx 牙深 Deep	
75 75A	7.5~60	1	165	130	200	11	21.8	6	19	130	6	165 160	169 185	14 11	62	25	28	7x7x50	115	95	M8-12	9.8
75 75A	7.5~60	2	165	130	200	11	27.3	8	24	130	6	165 160	169 185	14 11	62	28	31	7x7x50	115	95	M8-12	9.8
75 75A	7.5~15	3	215	180	250	13	31.3	8	28	130	6	165 160	169 185	14 11	62	28	31	7x7x50	115	95	M8-12	10

選配馬力時，請參考「減速機參數」(第 I24 頁)。 Please refer to page I24 "Reducers Parameter".

### ■ 選配品 Optional Accessories ( 適用 CE & CA 系列 )

#### 扭力臂 Torque Arm



unit: mm

型號 Model	B	D	d	T	P	Z	N	M
63	6	80	10	14	95	9	150	223
75	6	95	20	25	115	9	200	299
90	6	110	20	25	130	11	200	310





## ■ 潤滑油選定 Selection of Lubricant Oil

適當潤滑油的黏度，能使蝸輪與蝸桿磨擦容易，遇高負荷及衝擊負荷時，減速機才能充分發揮其機能。右表即"利明牌"減速機潤滑油的選定：

Proper viscosity of lubricant is contributive to ease the friction of worm gears, so the speed reducer can fully apply its function in the case of high load or impact load. The table right shows the selection of lubricants for LIMING gear reducers:

油量表 Oil Capacities (unit: cc)

Type Model	NE	Type Model	CE / CA
30#	30	63#	300
40#	70	75#	420
50#	140	90#	1000
60#	260		
70#	360		

### 注意事項 Notices

- ◆ 本公司出廠減速機使用合成齒輪油。(不能使  
用礦物油，或礦物油與合成齒輪油混合使用)
- ◆ 最初使用 100 小時後，洗淨內部、換上新油  
以後每 2000 小時換油。
- ◆ 在高速、高溫、低速、重荷重、強制潤滑等  
特殊情況下使用場合，請與本公司洽商。
- ◆ 潤滑油不足可能導致蝸輪快速磨損和效率降  
低。
- ◆ 潤滑油過多可能導致漏油。
- ◆ 請加入適當潤滑。
- ◆ LI MING gear reducers use synthetic gear oil. (Do not use  
mineral oil, or mix mineral oil with synthetic gear oil.)
- ◆ After Initial 100 hours of usage, the interior of the reducing  
gear should be cleaned up and refill new oil. And then, after  
every 2000 hours of usage replace new oil again.
- ◆ Please contact with our company if the gear reducer will  
be used in special conditions, such as high speed, high  
temperature, low speed, heavy load, and forced lubrication  
and so on.
- ◆ Insufficient lubricant oil may lead to the rapid wears of worm  
gear and low efficiency.
- ◆ Excessive lubricant could result in leakage.
- ◆ Please fill in adequate lubricant oil.

## ■ 零件對照表 Table of Parts

型號 Model	零件 Parts	出力軸蓋 output shaft cover	入力軸蓋 input shaft cover	馬達盤 Motor Flange				
				NE	CE/CA	40W、60W、90W	1/4HP、1/2HP	1HP
30#	Oil Seal	6005 x 2	6202ZZ x 2	6202ZZ x 1	6003ZZ x 1	-	-	-
	Bearing	TC25x47x7	SC15x35x7	SC17x30x7	-	-	-	-
40#	Oil Seal	6006 x 2	6202ZZ x 2	-	6302ZZ x 1	6905ZZ x 1	-	-
	Bearing	TC30x47x7	SC15x42x7	-	SC25x35x7	-	-	-
50#	Oil Seal	6008 x 2	6303ZZ x 2	-	6303ZZ x 1	6005ZZ x 1	6906ZZ x 1	6303ZZ x 1
	Bearing	TC40x55x7	SC17x47x7	-	SC25x40x7	SC30x40x8	-	-
60#	Oil Seal	6208 x 2	6304ZZ x 2	-	6304ZZ x 1	6205ZZ x 1	6304ZZ x 1	320/28 x 1
	Bearing	TC40x62x10	SC20x52x8	-	SC25x46x7	SC28x46x7	SC35x46x7	SC35x46x7
70#	Oil Seal	6210 x 2	6305ZZ x 2	-	6206ZZ x 1	6305ZZ x 1	6007ZZ x 1	6305ZZ x 1
	Bearing	TC50x70x10	SC25x62x8	-	SC30x55x7	SC35x55x8	SC35x55x8	SC35x55x8
-	63#	Oil Seal	6009 x 2	-	-	-	6007ZZ x 1	6007ZZ x 1
		Bearing	TC45x65x10	-	-	SC35x52x7	SC35x52x7	6205ZZ x 1
-	75#	Oil Seal	6010 x 2	-	-	-	6008ZZ x 1	6008ZZ x 1
		Bearing	TC50x72x10	-	-	-	TC40x60x10	6206ZZ x 1
-	90#	Oil Seal	6012 x 2	-	-	-	-	6008ZZ x 1
		Bearing	TC60x85x10	-	-	-	-	6206ZZ x 1

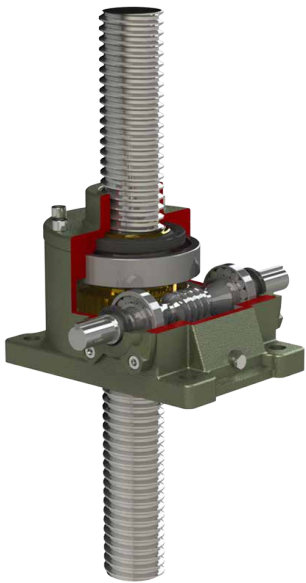
1. Oil Seal = 油封規格 Oil Seal
2. Bearing = 軸承規格 Ball Bearing
3. 以上數值僅供參考，如有變動恕不另行通知。

The above information is for reference only. No notices will be made for any changes.

# VJ

## Features of VJ Series

### VJ 系列產品特性



螺旋升降器結構主要為由機身、含內螺紋之銅件、螺桿及其它附件組成。在設計規範上從 35# ~ 80#，有多種規格。螺桿端在應用上又可分為全牙式、平頭式、螺牙式、栓孔式、頂板式。螺旋升降器具有體積小、功能多、重量輕、無噪音、結構緊湊、安裝方便、靈活、動力源廣、傳動效率高、使用壽命長等特點。可以頂升、降落、提升、下壓、推進、翻轉等多種安裝使用方式。螺旋升降器可單台或多台組合使用。能按一定的程式準確地控制調整頂升或降落的高度，可以用電機或其他動力直接帶動，也可以手動方式帶動。

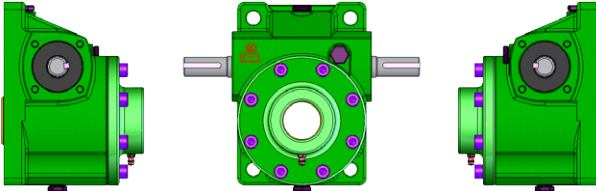
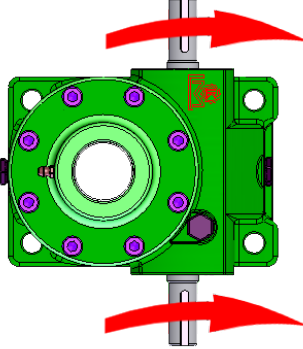
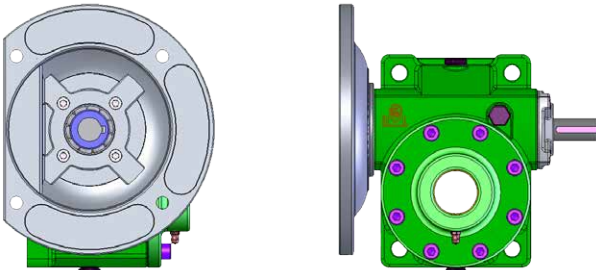
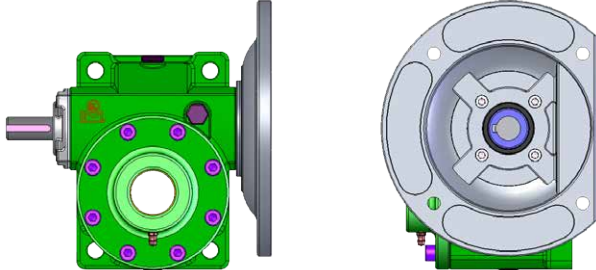
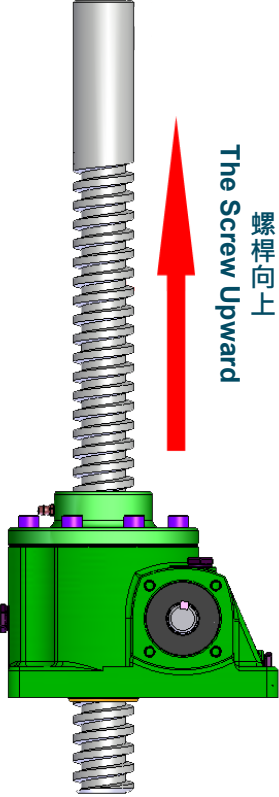
The screw jack is composed of a main body, copper articles with interior thread, screw and other accessories. It comes in various specifications from model 35 to 80. In actual application, the screw ends can be divided into various types such as : no end, rod end, threaded end, clevis end, and top plate. The screw jack has a variety of features, such as compact size, multiple functions, light weight, no noise, intensified structure, convenient installation, high maneuverability, wide variety of power sources, high transmission efficiency, and long service life. It is capable of various installation, such as moving upward, moving downward, pushing forward, overturning, etc. The screw jacks can be used independently or in combination of several sets. It can accurately control lifting or lowering height according to programmed setting. It can be driven directly by electrical or other power sources, or by manually.

## Indication of Model Numbers

### 機種型號表示

VJ	50	-	10	-	1	R
減速機型 Type	型號 Model		減速比 Ratio		馬力 Horse Power	軸向 Direction
VJ	35				1/4HP	
VJM	40				1/2HP	
	50				1HP	
	60				2HP	
	70				3HP	
	80					

## ■ 入力傳動型式 Variety of Input Transmission

雙入力 (VJ 標準型) Double Input Shaft (VJ Standard Type)	入力轉向與螺桿上下運動關係 Rotation Direction & Movement
	 <p>旋轉方向 Rotation Direction</p>
<p>直結雙入 (VJM 標準型) With Motor Flange (VJM Standard Type)</p> <p>軸向 Shaft Direction: R</p>  <p>軸向 Shaft Direction: L</p> 	 <p>The Screw Upward 螺桿向上</p>

## ■ 潤滑油使用 Lubricant

適當的潤滑油使用，可以發揮升降器的效率，並提高其運轉的壽命。本產品出廠採用中國石油極壓機油 HD-150。  
 To use appropriate lubricant will enhance the efficiency of the jack, and increase its service life. LI MING screw jacks use CPC E.P. lubricant HD-150.

# SCREW JACK REDUCER SERIES

## 螺旋升降器減速機系列

### 容許彎曲負荷值 Permissible Bending Load

關於各種型號及軸端各種負荷方式，有關牙桿長度及容許彎曲負荷可參考以下表格或計算式。

Concerning the variety of models and loading methods at screw end, as well as screw length and permissible bending load, please refer to the following charts or formula.

計算方法：Formula

$$Per = n \cdot \pi^2 \cdot E \cdot (k/\ell)^2 \cdot A \cdot \alpha$$

n: 軸端支撐因數

Shaft End Support Factor

E: 縱向彈性模速

Longitudinal Elasticity Modulus

$$2.1 \times 10 \text{ kgf/mm}^2$$

K: 最小輔助半徑

Minimum Auxiliary Modulus

$$K = \frac{d_1}{4}$$

d<sub>1</sub>: 最小輔助半徑

Minor Diam

ℓ: 軸支撐長度

Shaft Support Length

$$A = \frac{\pi \cdot (d_1)^2}{4}$$

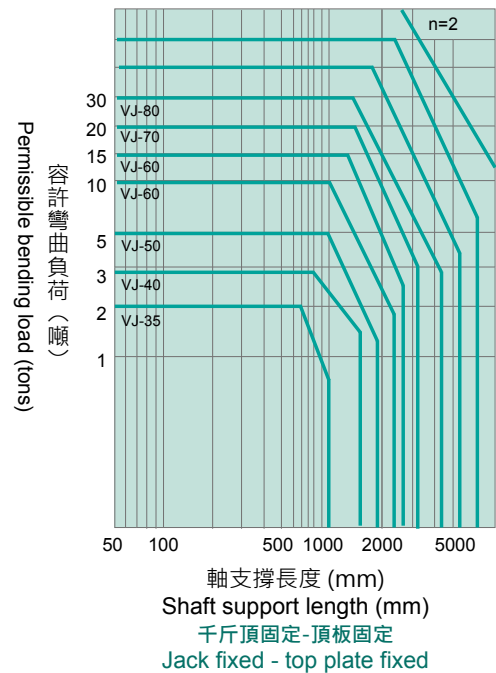
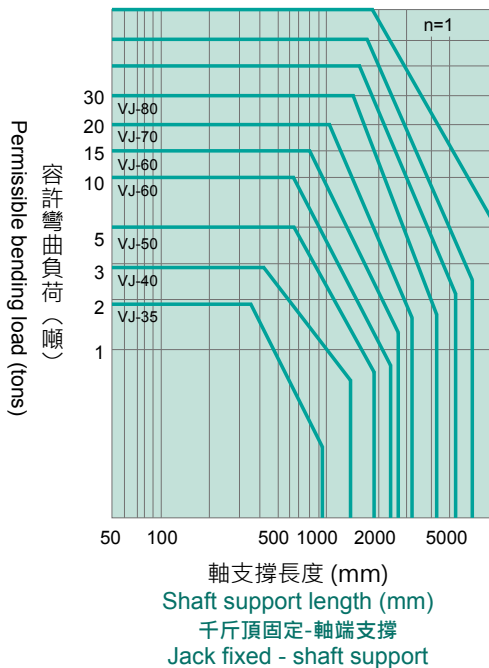
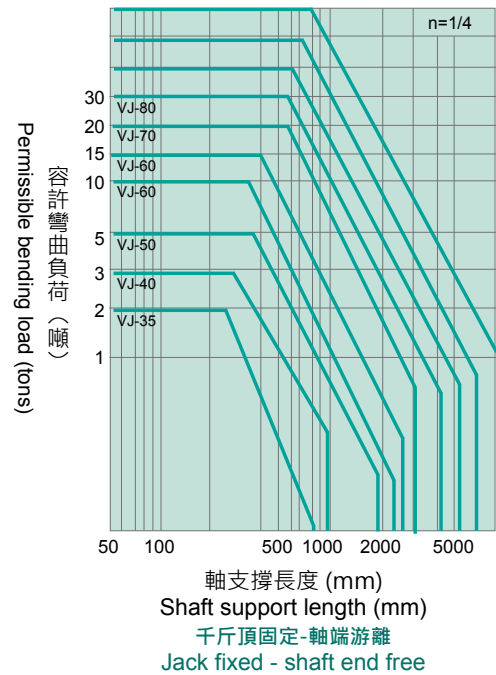
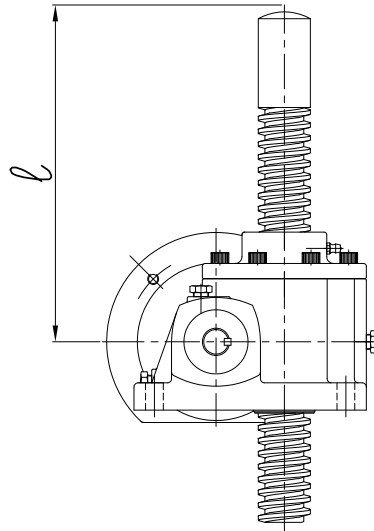
A: 舉升螺桿之螺紋底直徑的斷面積

Thread of lift screw section area of minor diam.

α: 安全係數

$$\alpha = 0.25$$

Safety Factor



## 減速機參數 Reducers Parameter

型號 Model	螺桿 Screw Ø	螺距 Pitch mm	減速比 Ratio	1800 RPM 入力轉速 Input Speed				1500 RPM 入力轉速 Input Speed				1200 RPM 入力轉速 Input Speed			
				最大 輸入馬力 MAX. Input HP	輸出轉速 Output Speed R.P.M.	荷重 Load (kg)	每分鐘升 (降) mm/min	最大 輸入馬力 MAX. Input HP	輸出轉速 Output Speed R.P.M.	荷重 Load (kg)	每分鐘升 (降) mm/min	最大 輸入馬力 MAX. Input HP	輸出轉速 Output Speed R.P.M.	荷重 LOAD (kg)	每分鐘升 (降) mm/min
35	1"	P=5	5	0.93	360	500	1800	0.86	300	550	1500	0.87	240	700	1200
			10	0.50	180	500	900	0.50	150	550	750	0.50	120	700	600
			20	0.50	90	600	450	0.50	75	700	375	0.50	60	900	300
40	1 1/4"	P=6	6	1.31	300	700	1800	1.25	250	800	1500	1.18	200	950	1200
			12	0.89	150	950	900	0.86	125	1100	750	0.81	100	1300	600
			24	0.50	75	950	450	0.50	63	1100	375	0.50	50	1300	300
50	1 1/2"	P=6	6	1.86	300	900	1800	1.72	250	1000	1500	1.66	200	1200	1200
			12	1.47	150	1350	900	1.36	125	1500	750	1.31	100	1800	600
			24	1.04	75	1800	450	0.96	63	2000	375	0.92	50	2400	300
60	2"	P=8	8	2.84	225	1300	1800	2.64	188	1450	1500	2.48	150	1700	1200
			16	1.50	113	1300	900	1.40	94	1450	750	1.31	75	1700	600
			32	1.07	56	1750	450	1.00	47	1950	375	0.92	37	2250	300
70	2 1/2"	P=10	10	3.57	180	1400	1800	3.24	150	1850	1500	3.01	120	1950	1200
			20	1.90	90	1600	900	1.97	75	1850	750	1.84	60	2250	600
			40	1.53	45	2400	450	1.57	38	2800	375	1.46	30	3350	300
80	75mm	P=12	12	4.86	150	1850	1800	4.71	125	2150	1500	4.55	100	2600	1200
			18	3.56	100	1900	1200	3.59	83	2300	1000	3.44	66	2750	800
			36	2.22	50	2200	600	2.19	42	2600	500	2.15	33	3200	400

型號 Model	螺桿 Screw Ø	螺距 Pitch mm	減速比 Ratio	900 RPM 入力轉速 Input Speed				600 RPM 入力轉速 Input Speed				300 RPM 入力轉速 Input Speed			
				最大 輸入馬力 MAX. Input HP	輸出轉速 Output Speed R.P.M.	荷重 Load (kg)	每分鐘升 (降) mm/min	最大 輸入馬力 MAX. Input HP	輸出轉速 Output Speed R.P.M.	荷重 Load (kg)	每分鐘升 (降) mm/min	最大 輸入馬力 MAX. Input HP	輸出轉速 Output Speed R.P.M.	荷重 LOAD (kg)	每分鐘升 (降) mm/min
35	1"	P=5	5	0.84	180	900	900	0.62	120	1000	600	0.50	60	1000	300
			10	0.50	90	750	450	0.50	60	1000	300	0.25	30	1350	150
			20	0.50	45	1200	225	0.25	30	1350	150	0.25	15	1350	75
40	1 1/4"	P=6	6	1.22	150	1300	900	1.12	100	1800	600	0.56	20	1800	300
			12	0.77	75	1650	450	0.62	50	2000	300	0.50	25	2000	150
			24	0.50	38	1650	225	0.50	25	2000	150	0.25	13	2000	75
50	1 1/2"	P=6	6	1.55	150	1500	900	1.17	100	1700	600	0.72	50	2100	300
			12	1.17	75	2150	450	0.78	50	2150	300	0.50	25	2500	150
			24	0.73	38	2550	225	0.56	25	2850	150	0.50	13	2900	75
60	2"	P=8	8	2.30	113	2100	900	2.22	75	3050	600	1.75	38	4800	300
			16	1.27	56	2200	450	1.17	38	3050	300	0.92	19	4800	150
			32	0.86	28	2800	225	0.84	19	4100	150	0.65	9	6400	75
70	2 1/2"	P=10	10	2.84	90	2450	900	2.59	60	3350	600	1.89	30	4900	300
			20	1.72	45	2800	450	1.58	30	3850	300	1.15	15	5600	150
			40	1.44	23	4400	225	1.25	15	5750	150	0.92	8	8400	75
80	75mm	P=12	12	4.27	75	3250	900	3.94	30	4500	600	2.80	25	6400	300
			18	3.28	50	3500	600	2.94	33	4700	400	2.09	17	6700	200
			36	1.97	25	3900	300	1.82	17	5400	200	1.61	8	9600	100

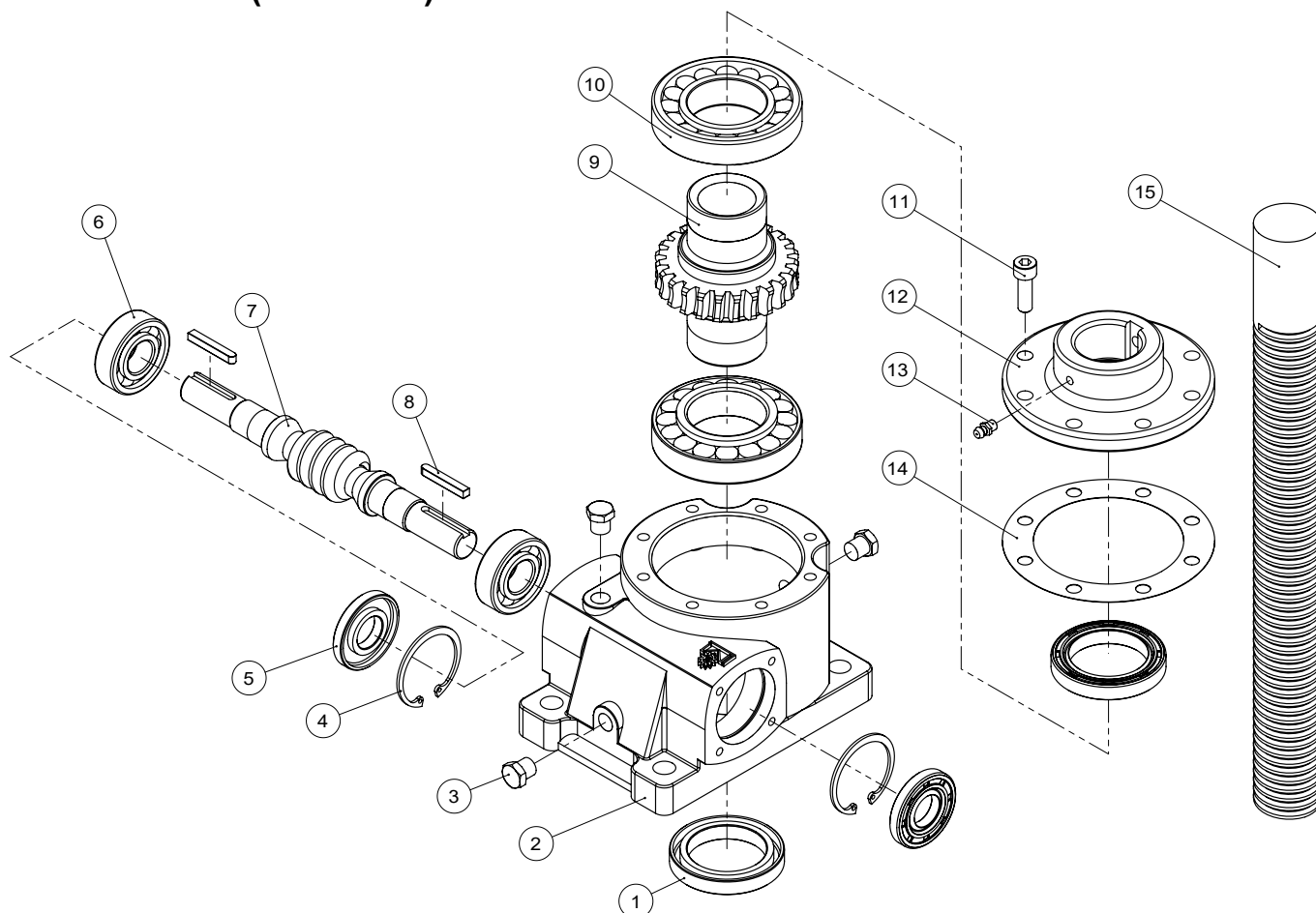


# SCREW JACK REDUCER SERIES

## 螺旋升降器減速機系列

### 分解系統圖 System Drawing

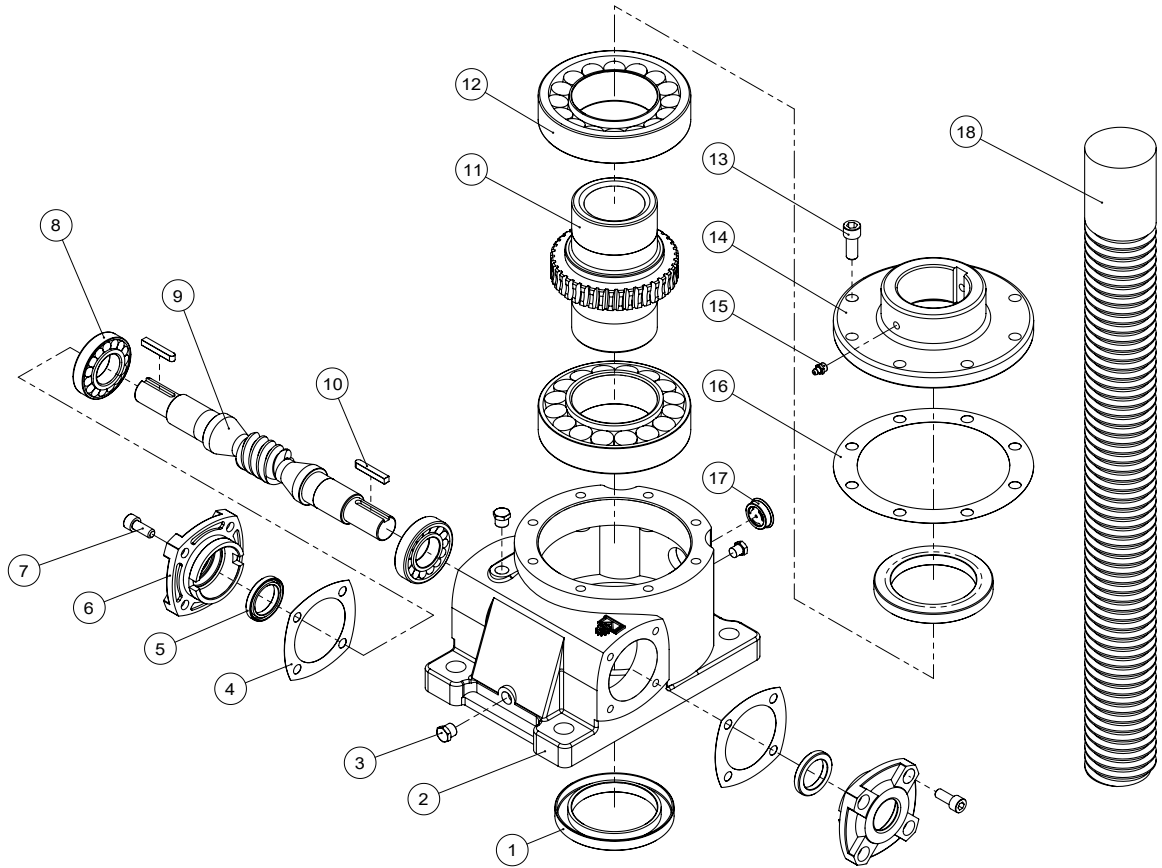
MODEL : VJ(35# ~ 50#)



NO.	零件名稱	Name of Parts
1	油封 TC	Oil Seal TC
2	蝸輪箱	Outer Shell
3	油栓	Oil Plug
4	R 扣環	R Snap Ring
5	油封 SC	Oil Seal SC
6	單圓鍵	Key
7	蝸桿	Worm Shaft
8	滾珠軸承	Ball Bearing
9	蝸輪	Worm Wheel
10	滾錐軸承	Taper Roller Bearing
11	六角承窩頭螺絲	Hex Screw
12	出力軸蓋	Output Shaft Cover
13	牛油嘴	Fittings
14	非石棉墊片	Asbestos Free Gasket
15	螺桿	Screw

## 分解系統圖 System Drawing

MODEL : VJ(60# ~ 80#)



NO.	零件名稱	Name of Parts
1	油封 TC	Ball Bearing
2	蝸輪箱	Worm Shaft
3	油柱	Key
4	非石棉墊片	Asbestos Free Gasket
5	油封 SC	Oil Seal TC
6	入力軸蓋	Outer Shell
7	六角承窩頭螺絲	Oil Plug
8	滾珠軸承 (60# · 70#)	Ball Bearing (60# · 70#)
	滾錐軸承 (80#)	Taper Roller Bearing (80#)
9	蝸桿	R Snap Ring
10	單圓鍵	Oil Seal SC
11	蝸輪	Worm Wheel
12	滾錐軸承	Taper Roller Bearing
13	六角承窩頭螺絲	Hex Screw
14	出力軸蓋	Output Shaft Cover
15	牛油嘴	Fittings
16	非石棉墊片	Asbestos Free Gasket
17	油鏡	Oil Gauge
18	螺桿	Screw

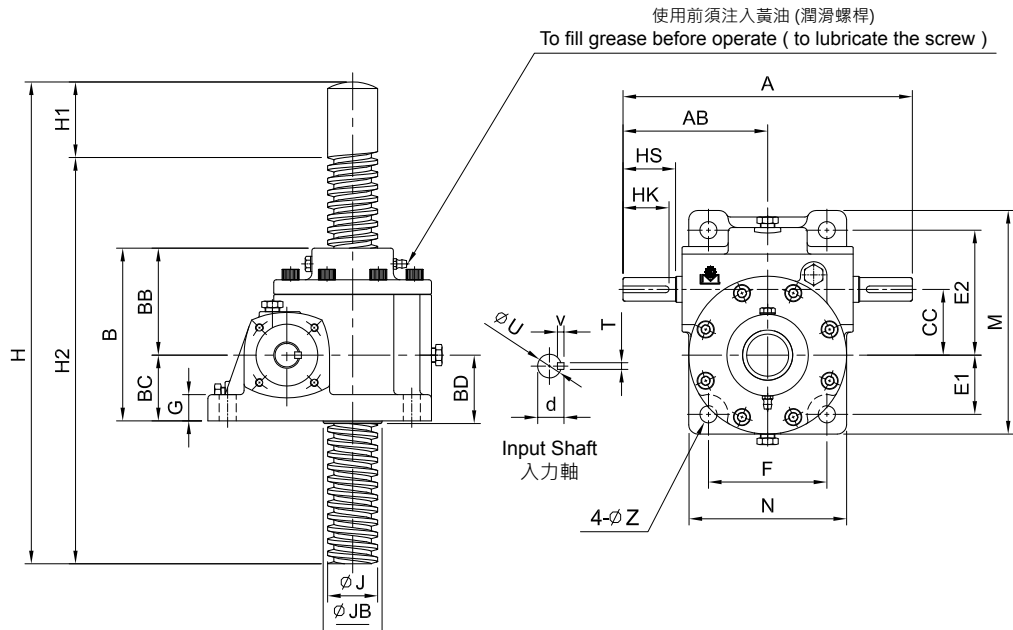
# SCREW JACK REDUCER SERIES

## 螺旋升降器減速機系列

### MODEL : VJ

Note:

- 請參考螺桿桿端尺寸表。  
Please refer to dimension of screw end.
- 行程 Route = H-H1-B



unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	B	BB	BC	BD	CC	腳座 Foot Stock						入力軸 Input Shaft				ØJ 螺桿 Screw	JB	螺距 Pitch	H1 Note 1	重量 Weight (kg)	油量 Oil (C.C.)	
										E1	E2	F	M	N	G	Z	HS	U	d							TxVxHK
35	5	1/4	170	85	110	70	40	42	35	38	73	66	135	90	16	11	30	15	17	5x5x25	1"	30	P=5	50	4.1	205
	10																									
	20																									
40	6	1/4	220	110	130	80	50	52	40	42	83	80	155	110	18	11	40	18	20	5x5x35	1 1/4"	40	P=6	60	7.5	350
	12																									
	24																									
50	6	1/2	220	110	130	80	50	52	50	45	95	90	170	120	20	13	40	18	20	5x5x35	1 1/2"	45	P=6	70	9	580
	12																									
	24																									
60	8	1	278	139	160	100	60	62	60	70	120	110	230	148	22	17	45	25	28	7x7x40	2"	60	P=8	70	16	640
	16																									
	32																									
70	10	1	318	159	180	110	70	72	70	75	135	140	250	178	25	17	50	28	31	7x7x45	2 1/2"	75	P=10	80	26	980
	20																									
	40																									
80	12	2	360	180	210	130	80	82.5	80	90	155	160	295	210	28	21	50	28	31	7x7x45	75mm	90	P=12	80	45	1,200
	18																									
	36																									

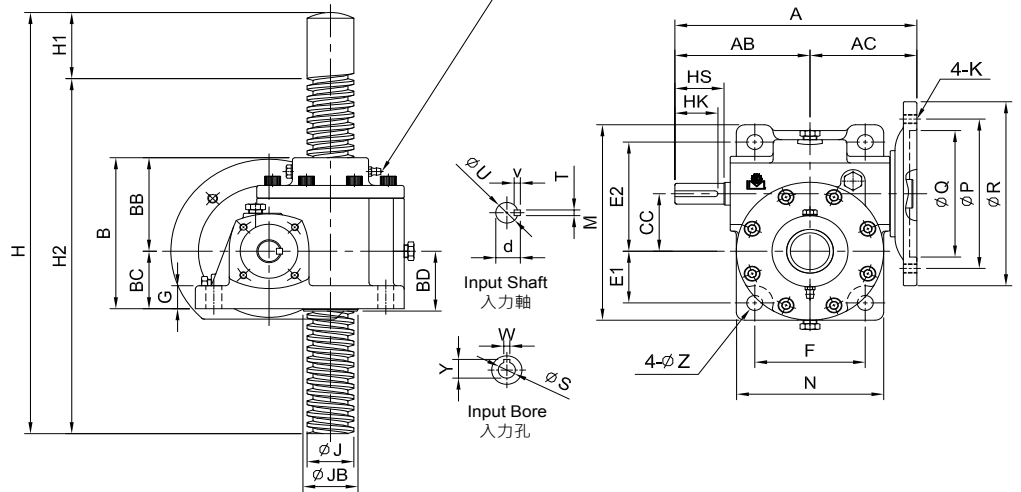
MODEL : VJM



Note:

- 請參考螺桿端尺寸表。  
Please refer to dimension of screw end.
- 行程 Route =H-H1-B

使用前須注入黃油 (潤滑螺桿)  
To fill grease before operate ( to lubricate the screw )



unit: mm

型號 Model	減速比 Ratio	馬力 HP	A	AB	AC	B	BB	BC	BD	CC	馬達盤 Motor Flang				腳座 Foot Stock						
											P	Q	R	K	E1	E2	F	M	N	G	Z
35	5	1/4 1/2	167	95.3	72	110	70	40	42	35	130	110	160	M8	38	73	66	135	90	16	11
	10										130	110	160	M8	42	83	80	155	110	18	11
	20										130	110	160	M8	42	83	80	155	110	18	11
40	6	1/4 1/2	196	110	86	130	80	50	52	40	130	110	160	M8	42	83	80	155	110	18	11
	12										130	110	160	M8	42	83	80	155	110	18	11
	24										130	110	160	M8	42	83	80	155	110	18	11
50	6	1/2 1	197 203	110 110	87 93	130	80	50	52	50	130 165	110 130	160 200	M8 M10	45	95	90	170	120	20	13
	12										130	110	160	M8	45	95	90	170	120	20	13
	24										130	110	160	M8	45	95	90	170	120	20	13
60	8	1 2	242	139	103	160	100	60	62	60	165	130	200	M10	70	120	110	230	148	22	17
	16										165	130	200	M10	70	120	110	230	148	22	17
	32										165	130	200	M10	70	120	110	230	148	22	17
70	10	1 2	277	159	118	180	110	70	72	70	165	130	200	M10	75	135	140	250	178	25	17
	20										165	130	200	M10	75	135	140	250	178	25	17
	40										165	130	200	M10	75	135	140	250	178	25	17
80	12	2 3	319	180	139	210	130	80	82.5	80	165 215	130 180	200 250	M10 M12	90	155	160	295	210	28	21
	18										165	130	200	M10	90	155	160	295	210	28	21
	36										165	130	200	M10	90	155	160	295	210	28	21

型號 Model	減速比 Ratio	馬力 HP	入力軸 Input Shaft				入力孔 Input Bore			ØJ 螺桿 Screw	JB	螺距 Pitch	H1 Note 1	重量 Weight (kg)	油量 Oil (C.C.)
			HS	U	d	TxVxHK	W	Y	S						
35	5	1/4 1/2	30	15	17	5x5x25	4	12.7	11	1"	30	P=5	50	4.1	205
	10						5	16.3	14						
	20						5	16.3	14						
40	6	1/4 1/2	40	18	20	5x5x35	4	12.7	11	1 1/4"	40	P=6	60	7.5	350
	12						4	12.7	11						
	24						4	12.7	11						
50	6	1/2 1	40	18	20	5x5x35	5	16.3	14	1 1/2"	45	P=6	70	9	580
	12						5	16.3	14						
	24						5	16.3	14						
60	8	1 2	45	25	28	7x7x40	6	21.8	19	2"	60	P=8	70	16	640
	16						6	21.8	19						
	32						6	21.8	19						
70	10	1 2	50	28	31	7x7x45	6	21.8	19	2 1/2"	75	P=10	80	26	980
	20						6	21.8	19						
	40						6	21.8	19						
80	12	2 3	50	28	31	7x7x45	8	27.3	24	75mm	90	P=12	80	45	1,200
	18						8	27.3	24						
	36						8	27.3	24						

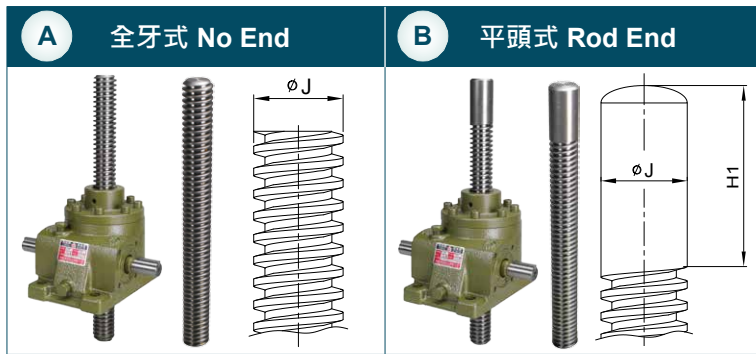
# SCREW JACK REDUCER SERIES

## 螺旋升降器減速機系列

### 選配品 Optional Accessories (適用 VJ 系列)

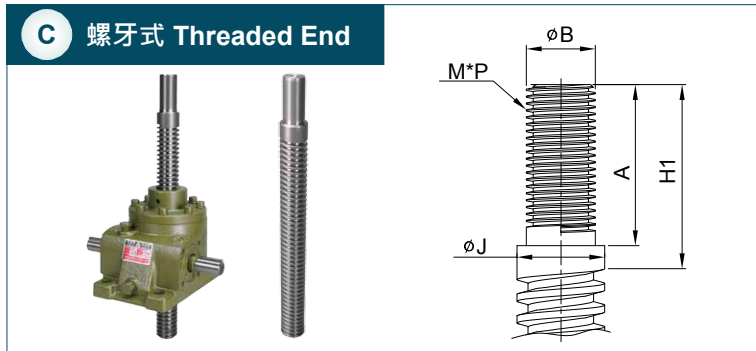
#### 螺桿 Screw End

螺桿桿端形式 Type of Screw End

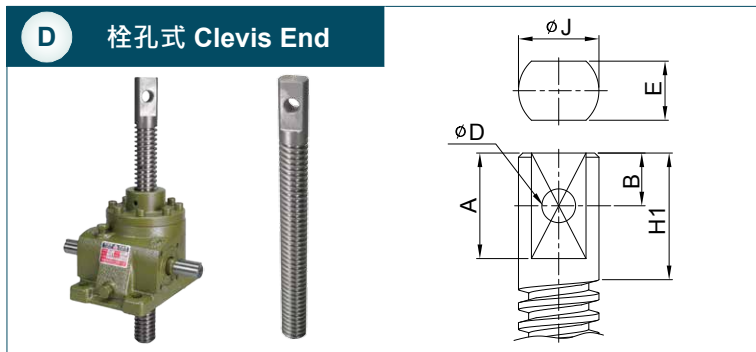


螺桿桿端尺寸 Dimension of Screw End

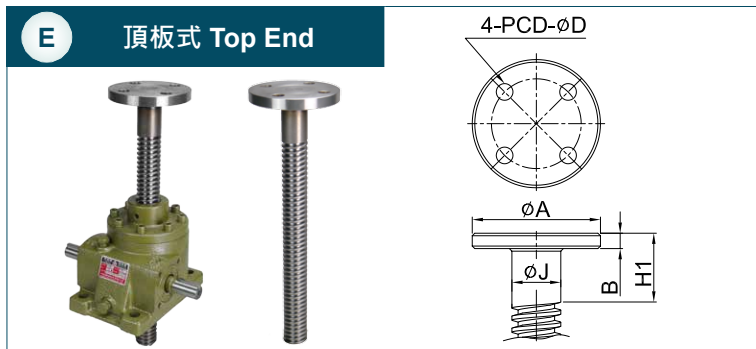
型號 Model	$\phi J$	H1
35	1"	50
40	1 1/4"	60
50	1 1/2"	70
60	2"	70
70	2 1/2"	80
80	75mm	80



型號 Model	$\phi J$	A	$\phi B$	H1	M*P
35	1"	40	20	50	M20*P1.0
40	1 1/4"	50	25	60	M25*P1.5
50	1 1/2"	50	30	70	M30*P1.5
60	2"	60	40	70	M40*P1.5
70	2 1/2"	70	50	80	M50*P1.5
80	75mm	75	60	80	M60*P2.0



型號 Model	$\phi J$	A	B	H1	E	$\phi D$
35	1"	40	20	50	18	12
40	1 1/4"	50	25	60	24	14
50	1 1/2"	50	25	70	28	16
60	2"	60	30	70	38	20
70	2 1/2"	70	35	80	50	25
80	75mm	76	38	80	60	30



型號 Model	$\phi J$	A	B	H1	$\phi D$	PCD
35	1"	84	10	50	11	60
40	1 1/4"	84	10	60	11	60
50	1 1/2"	99	13	70	13	75
60	2"	118	15	70	15	90
70	2 1/2"	138	21	80	17	105
80	75mm	158	25	80	21	120





## 螺桿長度 Length of The Screw

螺桿直徑 Screw Dia. ØJ	螺桿牙距 Pitch P(mm)	螺桿長度 Length of the Screw mm H (標準螺桿長度 · 亦可訂製其他尺寸 Standard length of the screw, other dimensions also available)							
									此尺寸須另訂購
1"	5	400	-	600	800	1000	1200	1500	2000
1 1/4"	6	400	-	600	800	1000	1200	1500	2000
1 1/2"	6	400	-	600	800	1000	1200	1500	2000
2"	8	-	500	600	800	1000	1200	1500	2000
2 1/2"	10	-	-	600	800	1000	1200	1500	2000
75m/m	12	-	-	600	800	1000	1200	1500	2000

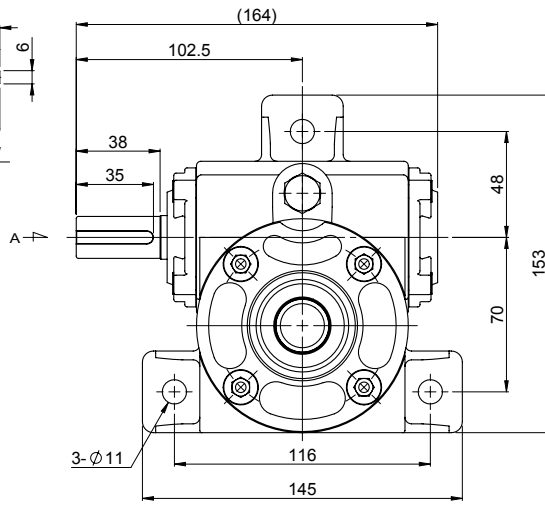
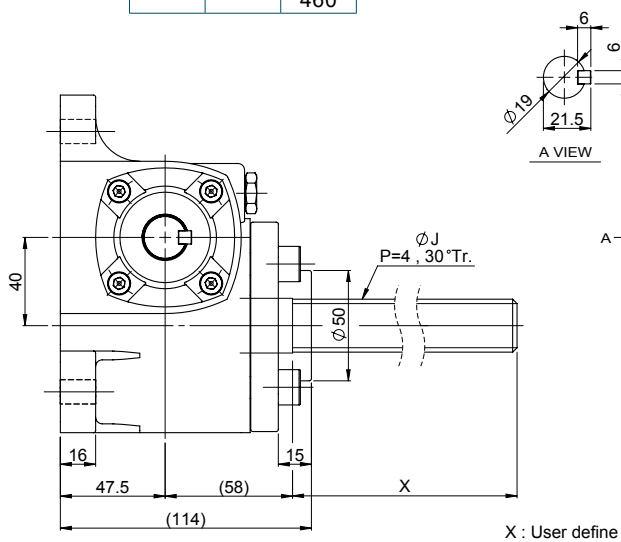
# SCREW JACK REDUCER SERIES

## 螺旋升降器減速機系列

### MODEL : VTW40

RATIO : 5, 10, 15, 20, 30, 40

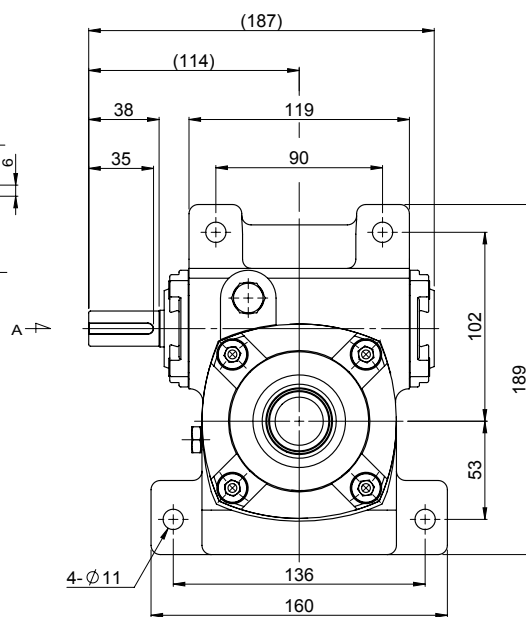
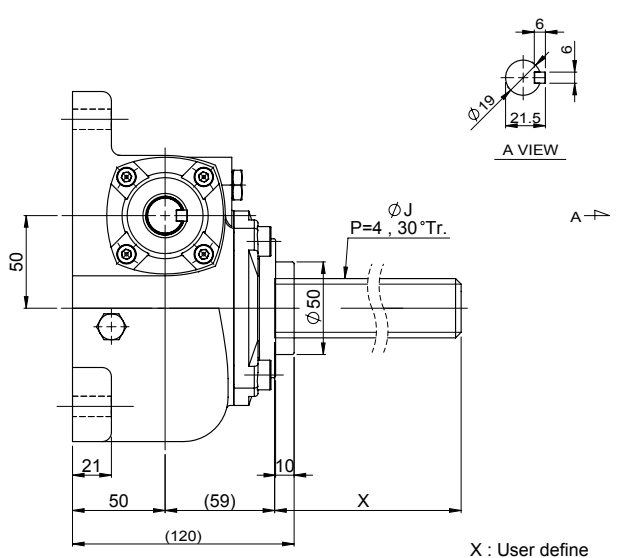
型號 Model	ØJ	X
40	24	310
		365
	32	360
		460



### MODEL : VTW50

RATIO : 5, 30

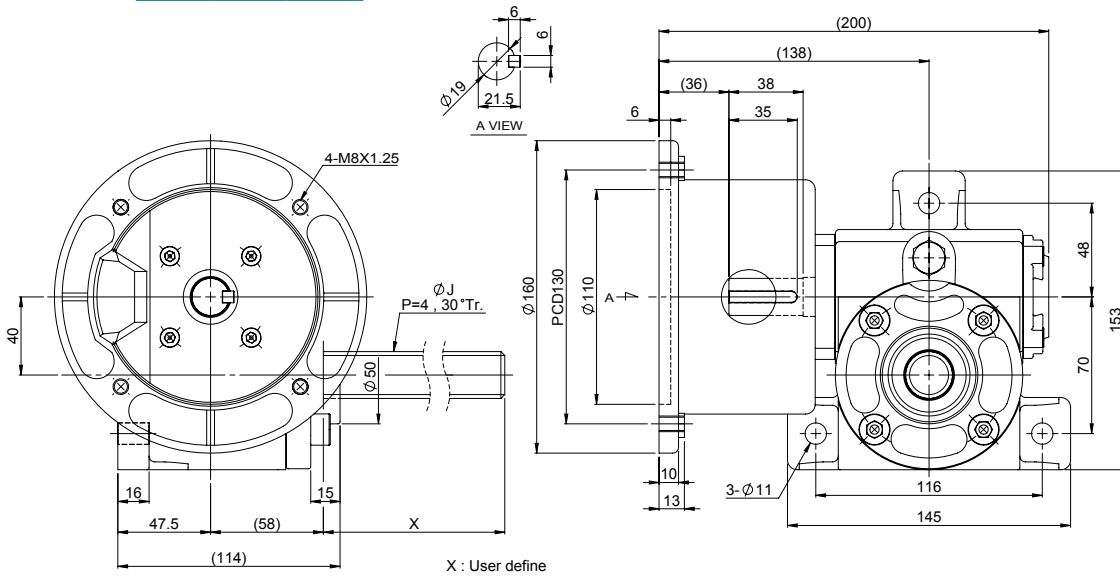
型號 Model	ØJ	X
50	32	360
		460



### MODEL : VTM40

RATIO : 5, 10, 15, 20, 30, 40

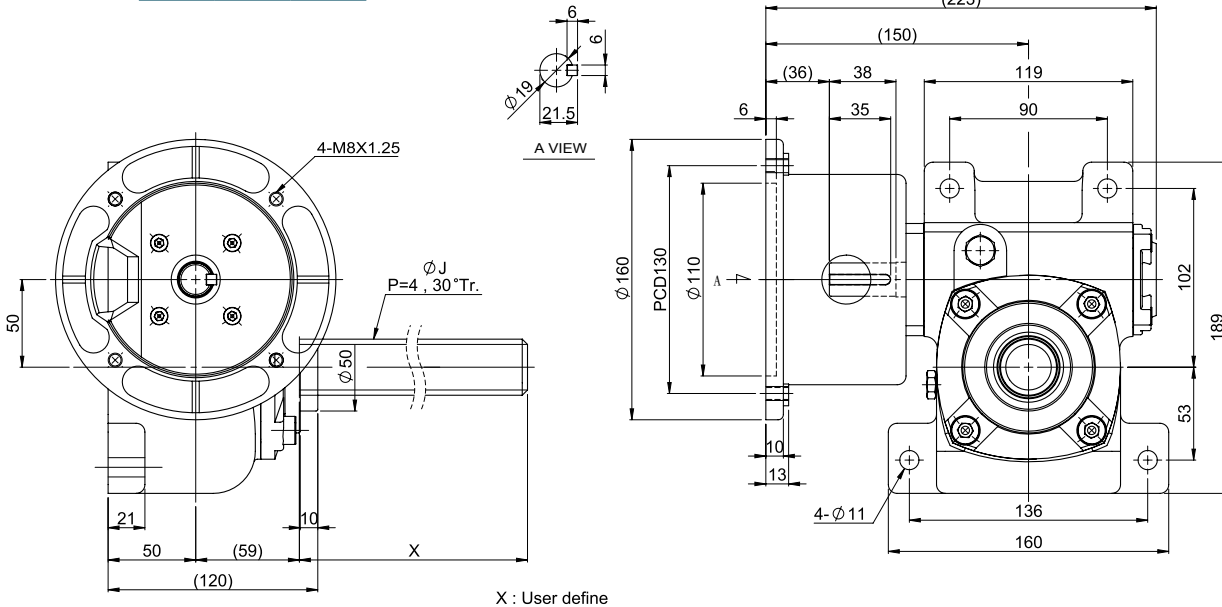
型號 Model	ØJ	X
40	24	310
		365
	32	360
		460



### MODEL : VTM50

RATIO : 5, 30

型號 Model	ØJ	X
50	32	360
		460

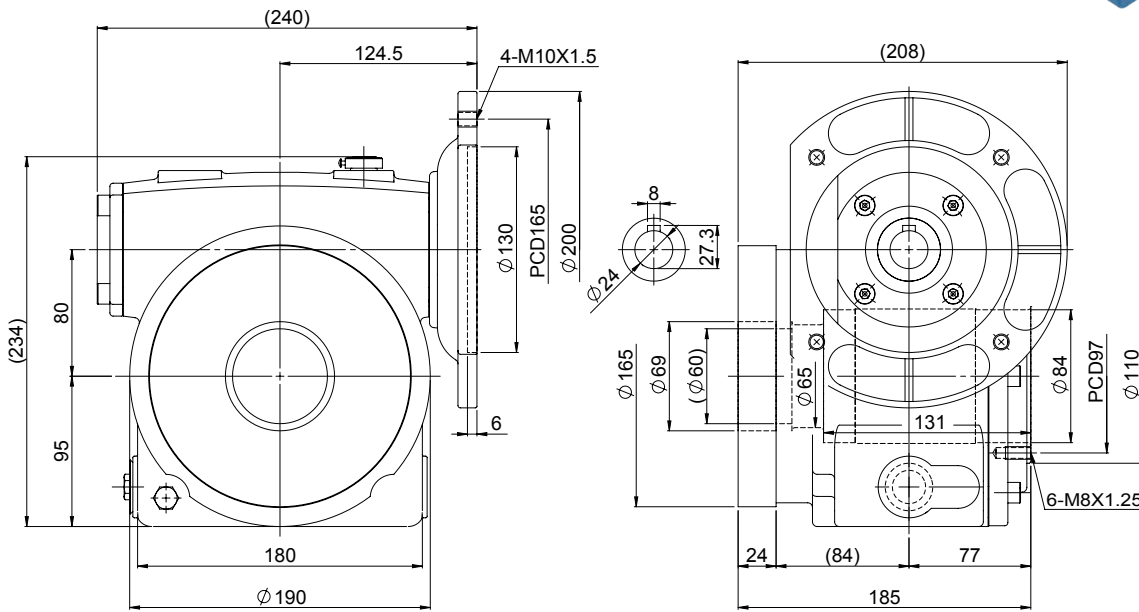
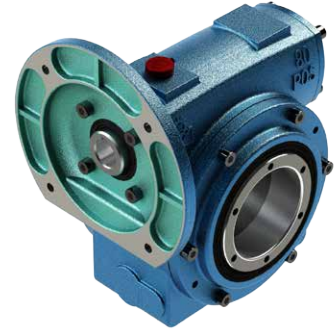


# SCREW JACK REDUCER SERIES

## 螺旋升降器減速機系列

**MODEL : POS80**

RATIO : 10, 15



## Indication of Model Numbers

### 機種型號表示

**POS 80 — 10**

減速機型 Type	型號 Model	減速比 Ratio
POS	80	10
		15





# TH

## Features of TH Series

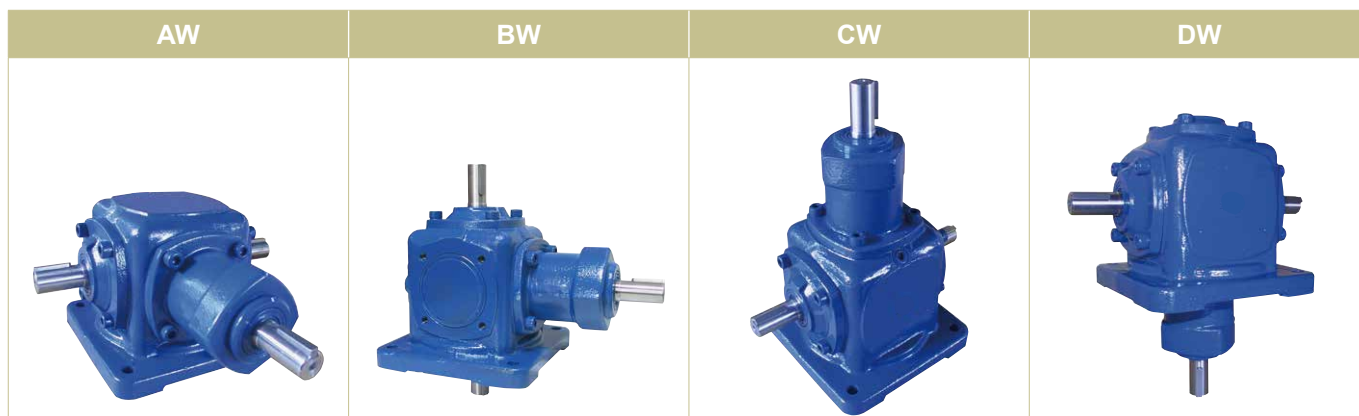
### TH 系列產品特性

- ◆ 採用全系列模組化組合設計製造，低噪音、高轉矩、高效率。  
All series are made of modulated design and production, low noise, high torque, and high efficiency.
- ◆ 螺旋傘齒輪可簡單裝置於任何機械場所，方向可由客戶自行選擇上、下、左、右 24 種變化。  
Bevel gear reducer can be installed at all machinery, 24 various directions are basis of up, down, left and right.
- ◆ 齒輪傳動效率可達 95%，速比分為 1：1、1：2 兩種。  
Gear transmission efficiency is available to 95%, ratio 1:1 or 1:2 can be chosen.
- ◆ 使用優質潤滑油脂。  
Using high quality lubricant.

## Indication of Model Numbers

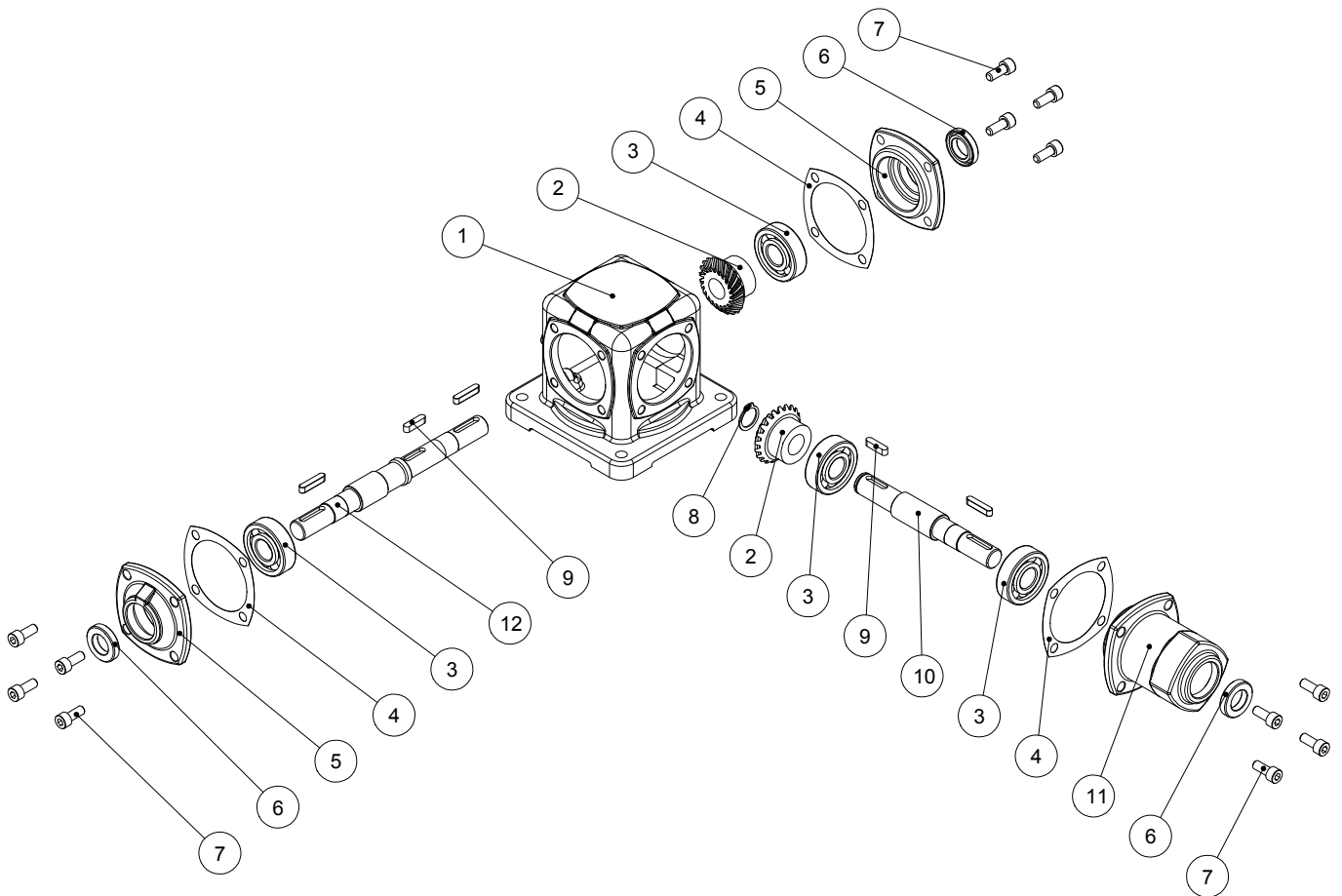
### 機種型號表示

TH	15	I	AW
機型 Type	型號 Model	速比 Ratio	軸向 Shaft Direction
TH	15 19 25 40	1/1 1/2	AW BW CW DW



分解系統圖 System Drawing

MODEL : TH



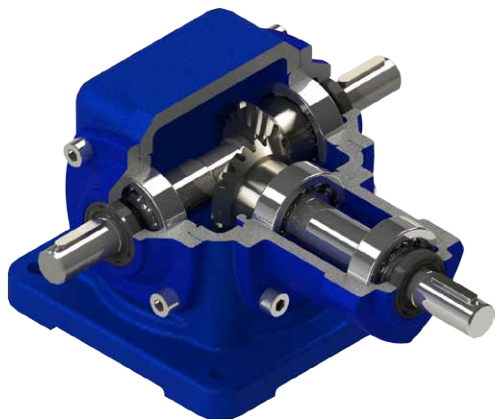
NO.	零件名稱	Name of Parts
1	齒輪箱	Gear Shell
2	傘齒輪	Bevel Gear
3	滾珠軸承	Ball Bearing
4	非石棉墊片	Asbestos Free Gasket
5	出力軸蓋	Output Shaft Cover
6	油封 TC	Oil Seal TC

NO.	零件名稱	Name of Parts
7	六角承窩頭螺絲	Hex Screw
8	扣環	Snap Ring
9	雙圓鍵	Key
10	入力軸	Input Shaft
11	入力軸蓋	Input Shaft Cover
12	出力軸	Output Shaft

# BEVEL GEAR REDUCER SERIES

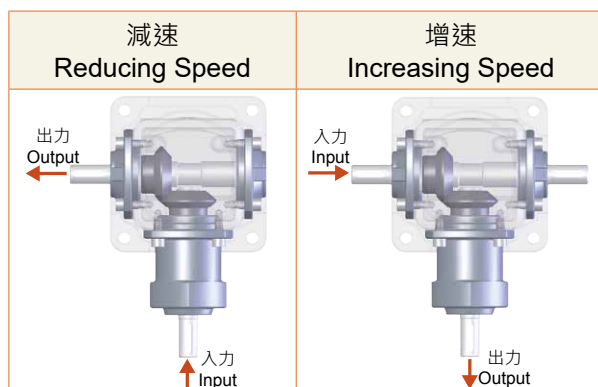
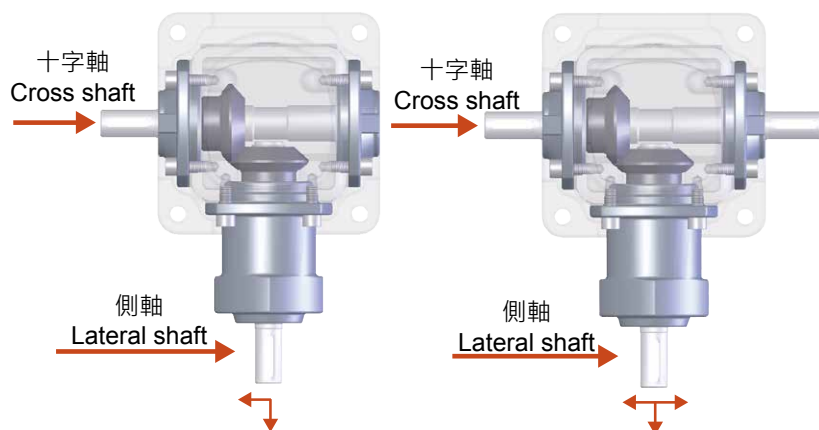
## 螺旋傘齒輪轉向器系列

### ■ 結構、特性與應用 Structure, Features and Application

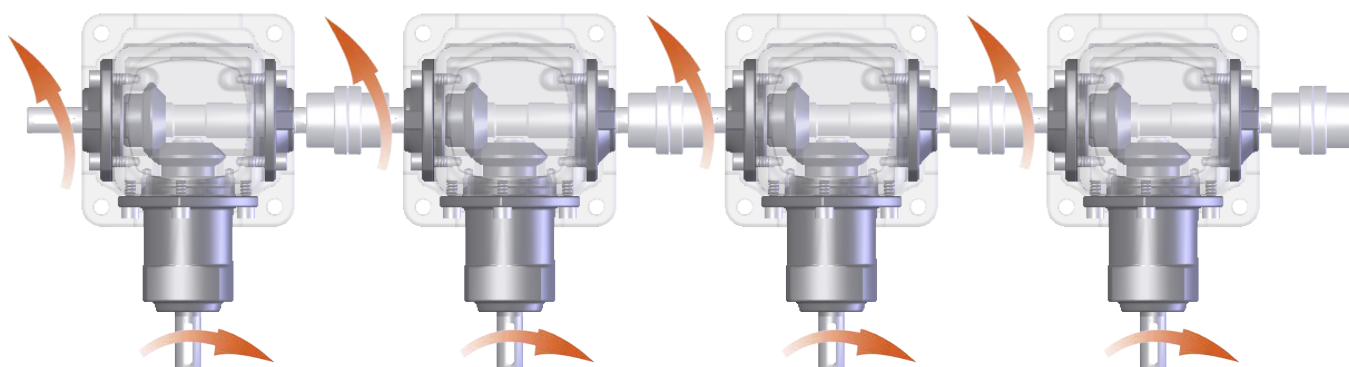


- ◆ 機殼：高剛性 FC 鑄鐵鑄造。  
Casing: High rigid FC cast iron.
- ◆ 齒輪：齒輪採用優質高純淨度合金鋼 SCM415 滲碳硬化處理。  
Gear: Made of superior purity alloy steel SCM415 with carbonized heat treatment to increase hardness.
- ◆ 主軸：軸類採用中碳鋼 S45C，能承載高負荷。  
Shaft: Made of steel S45C to bear high loading.
- ◆ 軸承：配置帶重負荷能力的滾珠軸承。  
Bearing: Equipped with ball bearing.
- ◆ 油封：雙封唇片的油封，兼具防塵及防漏油。  
Oil Seal: With double lips to prevent dust and oil leakage.

### 轉向器基本轉動方式 Basic Rotation Direction



### 轉向器應用例 Example



## ■ 軸向及旋向選擇表 Shaft & Rotating Direction

AW	AR	AL	AW-C	AR-C	AL-C
BW	BR	BL	BW-C	BR-C	BL-C
CW	CR	CL	CW-C	CR-C	CL-C
DW	DR	DL	DW-C	DR-C	DL-C

注意事項 Note:

1. 請正確選擇轉向代號及減速比。  
To choose correct rotating direction and ratio.
2. 如需特殊潤滑油，請與本公司連絡。  
Please contact us if any special request for oil.

# BEVEL GEAR REDUCER SERIES

## 螺旋傘齒輪轉向器系列

### 螺旋傘齒輪轉向器系列 扭力參考數據表

速比 Ratio 1 : 1

Model	RPM	1750	1450	1150	870	600	400	300	200
TH-15	kW	1.5	1.25	1.0	0.77	0.5	0.35	0.27	0.18
	kgf·m	0.8	0.82	0.83	0.85	0.86	0.87	0.88	0.89
TH-19	kW	3.9	3.4	2.9	2.4	1.7	1.2	0.9	0.6
	kgf·m	2.13	2.27	2.42	2.65	2.8	2.86	2.89	2.94
TH-25	kW	11	10	8.2	6.9	5	3.8	2.75	1.87
	kgf·m	6.0	6.5	7.0	7.5	8.2	8.7	8.75	8.9
TH-40	kW	33.5	28.5	23.5	18.2	12.6	8.8	6.9	4.6
	kgf·m	18.5	19	19.4	19.9	20.5	21.1	22	22.4

速比 Ratio 1 : 2

Model	RPM	1750	1450	1150	870	600	400	300	200
TH-15	kW	0.99	0.79	0.6	0.43	0.27	0.18	0.14	0.1
	kgf·m	0.59	0.56	0.54	0.52	0.51	0.5	0.49	0.48
TH-19	kW	2.77	2.3	1.86	1.4	0.96	0.68	0.5	0.35
	kgf·m	1.65	1.67	1.69	1.72	1.75	1.75	1.82	1.85
TH-25	kW	6.6	5.5	4.45	3.4	2.3	1.6	1.2	0.8
	kgf·m	3.8	3.9	4.0	4.1	4.15	4.2	4.25	4.3
TH-40	kW	11.8	9.8	7.9	6.1	4.1	3	2.2	1.5
	kgf·m	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4

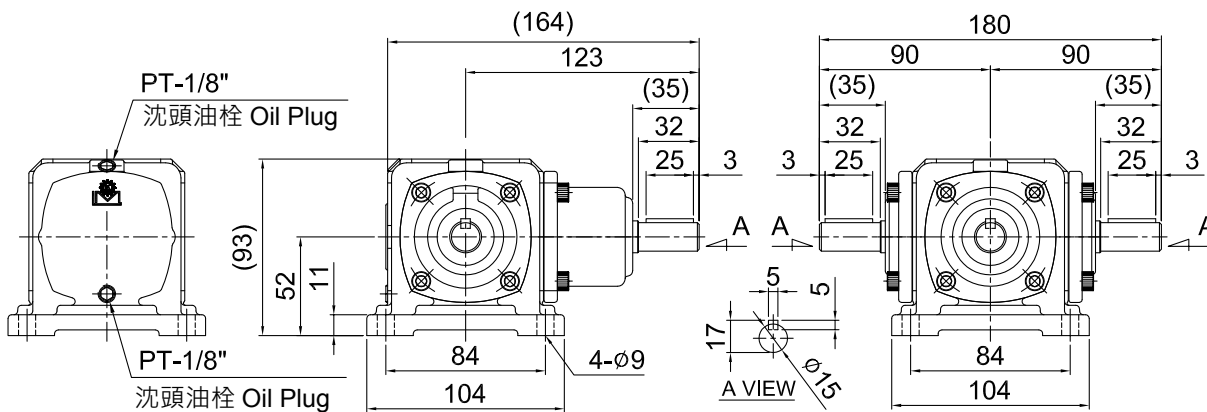
### 重量表及油量表 Weight & Oil Capacities

Model	TH-15		TH-19		TH-25		TH-40	
Type	重量 Weight (kg)	油量 Oil (kg)	重量 Weight (kg)	油量 Oil (kg)	重量 Weight (kg)	油量 Oil (kg)	重量 Weight (kg)	油量 Oil (kg)
AW·AW-C	3.92	0.15	9.08	0.37	19.50	1	38.10	1.98
AR·AR-C	3.90	0.15	9.03	0.37	19.12	1	37.50	1.98
AL·AL-C	3.80	0.15	8.91	0.37	19.10	1	36.94	1.98
BW·BW-C	3.87	0.15	8.70	0.37	18.90	1	36.00	1.98
BR·BR-C	3.62	0.15	8.56	0.37	18.90	1	36.00	1.98
BL·BL-C	3.60	0.15	8.56	0.37	18.85	1	36.00	1.98
CW·CW-C	3.70	0.15	9.20	0.37	18.40	1	37.00	1.98
CR·CR-C	3.69	0.15	8.51	0.37	18.20	1	37.00	1.98
CL·CL-C	3.11	0.15	8.64	0.37	18.02	1	37.00	1.98
DW·DW-C	3.70	0.15	8.5	0.37	18.38	1	36.00	1.98
DR·DR-C	3.91	0.15	8.5	0.37	18.23	1	36.00	1.98
DL·DL-C	3.91	0.15	8.5	0.37	18.15	1	36.00	1.98

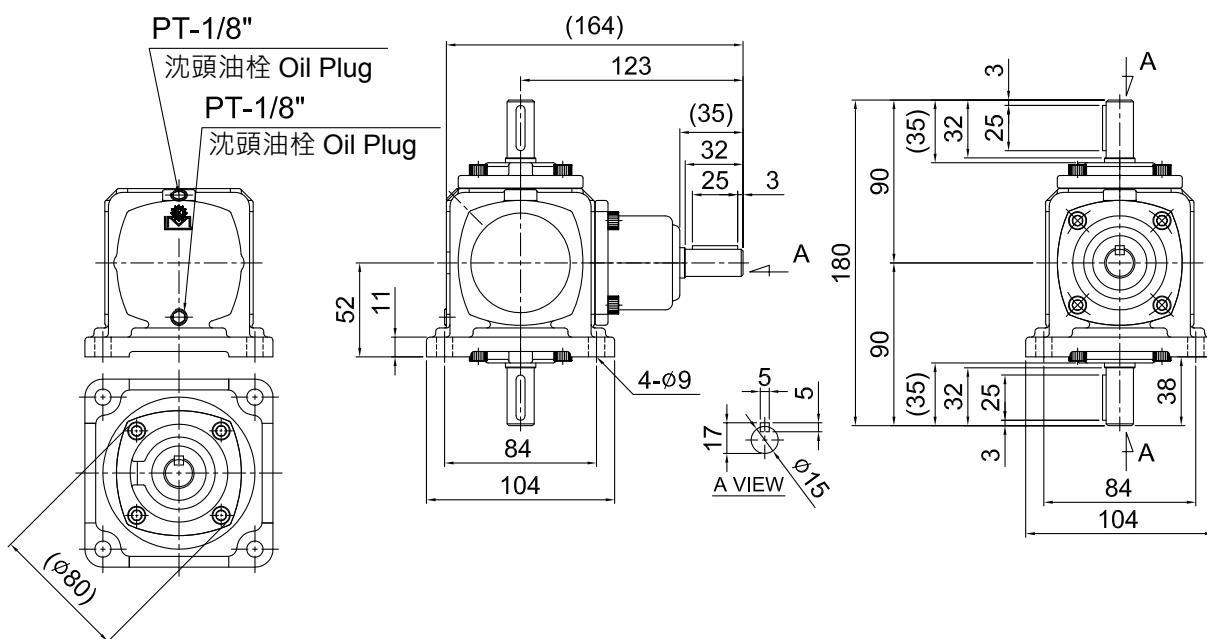
重量不含馬達及潤滑油。 The weight does not include motor and lubricant.



**MODEL : TH-15AW**



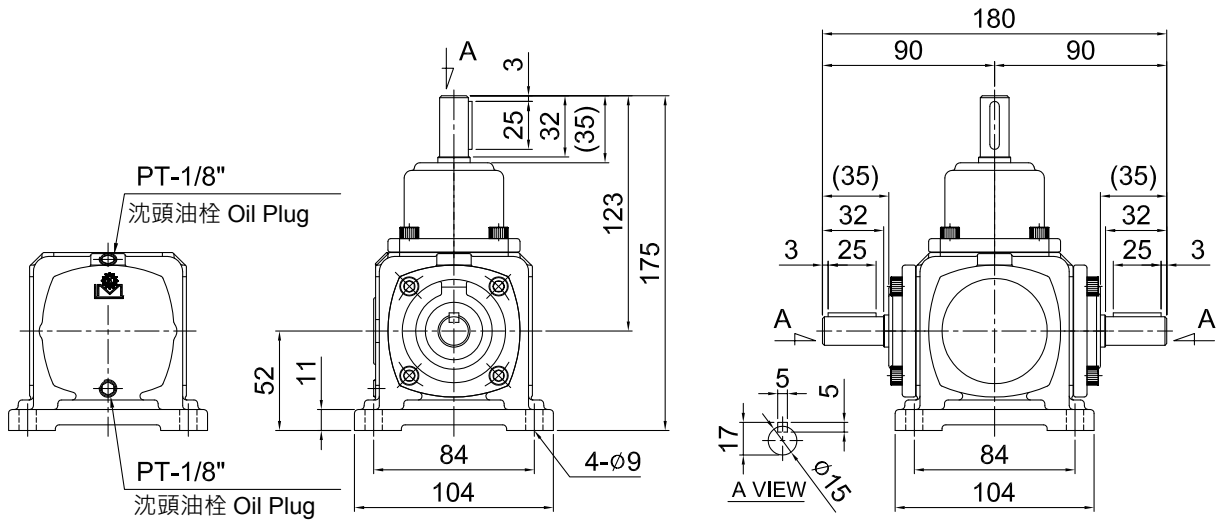
**MODEL : TH-15BW**



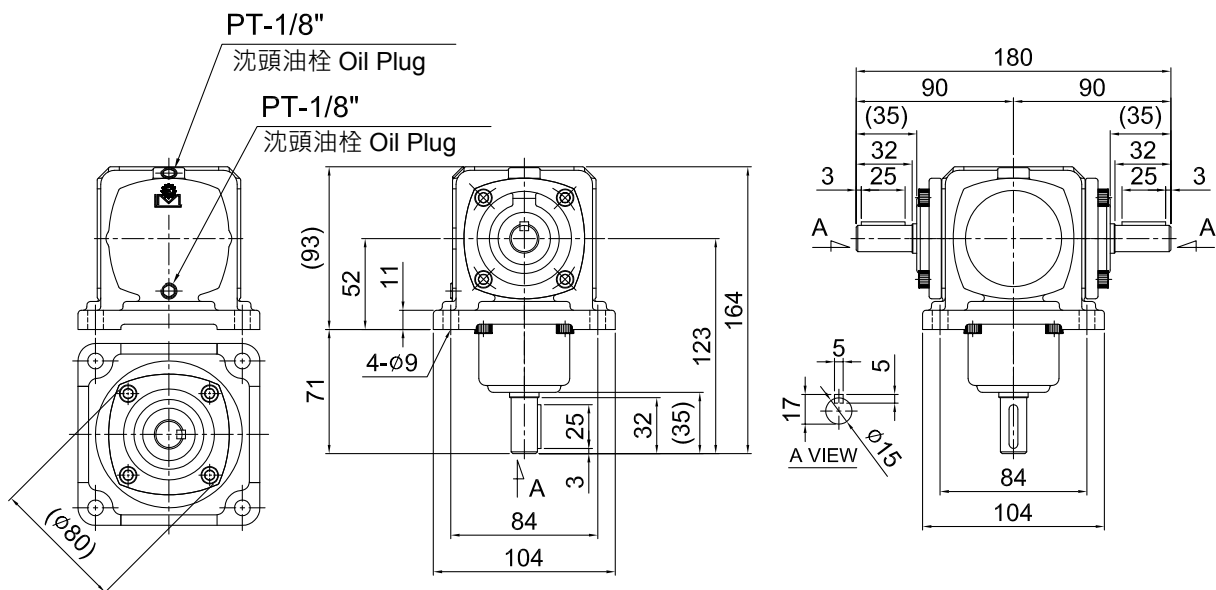
# BEVEL GEAR REDUCER SERIES

## 螺旋傘齒輪轉向器系列

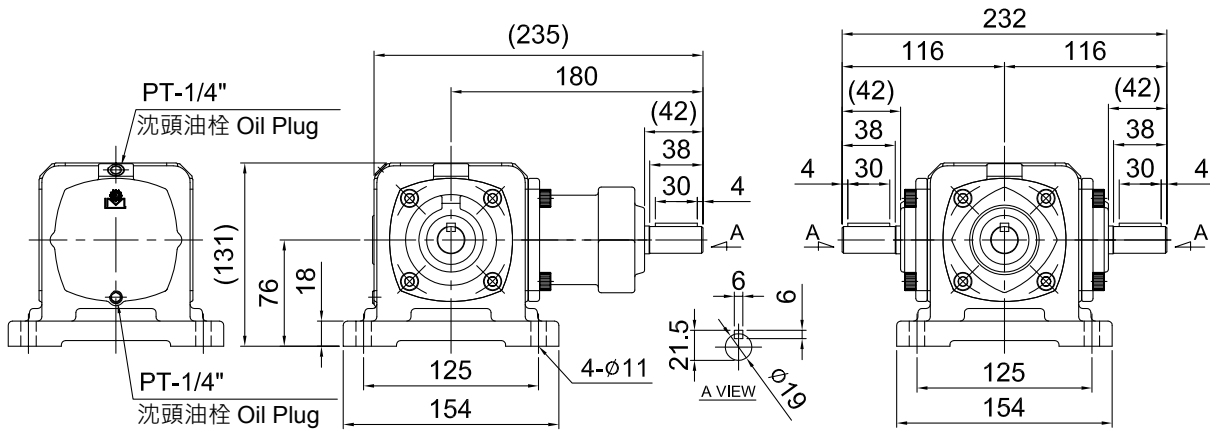
### MODEL : TH-15CW



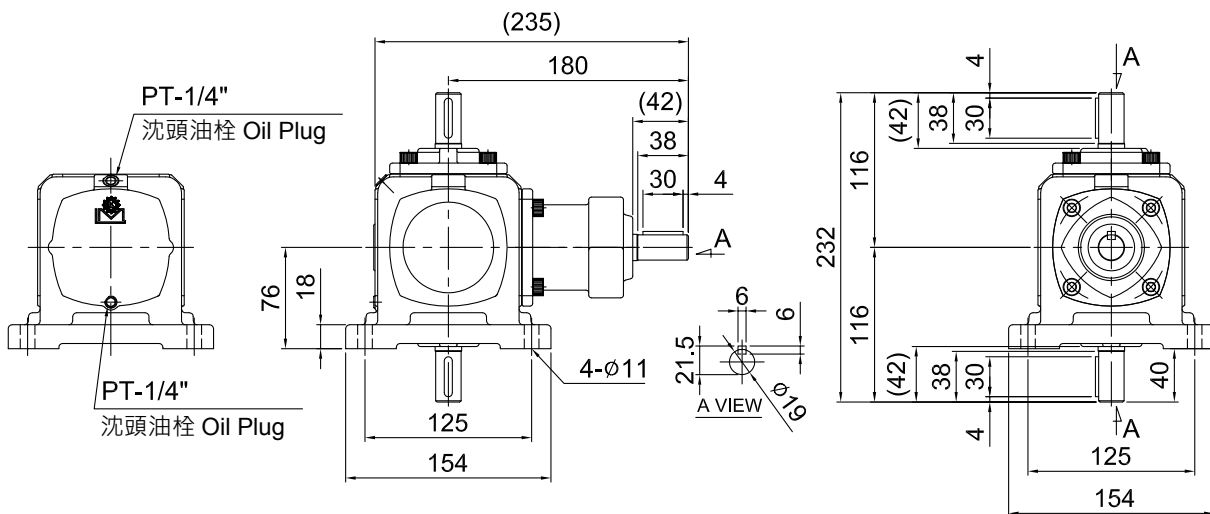
### MODEL : TH-15DW



MODEL : TH-19AW



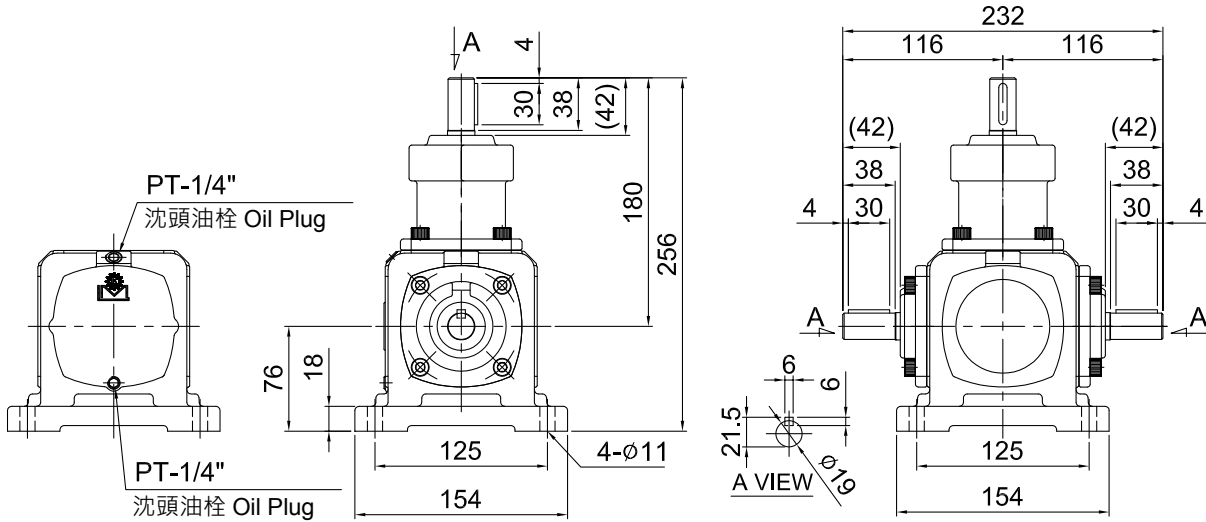
MODEL : TH-19BW



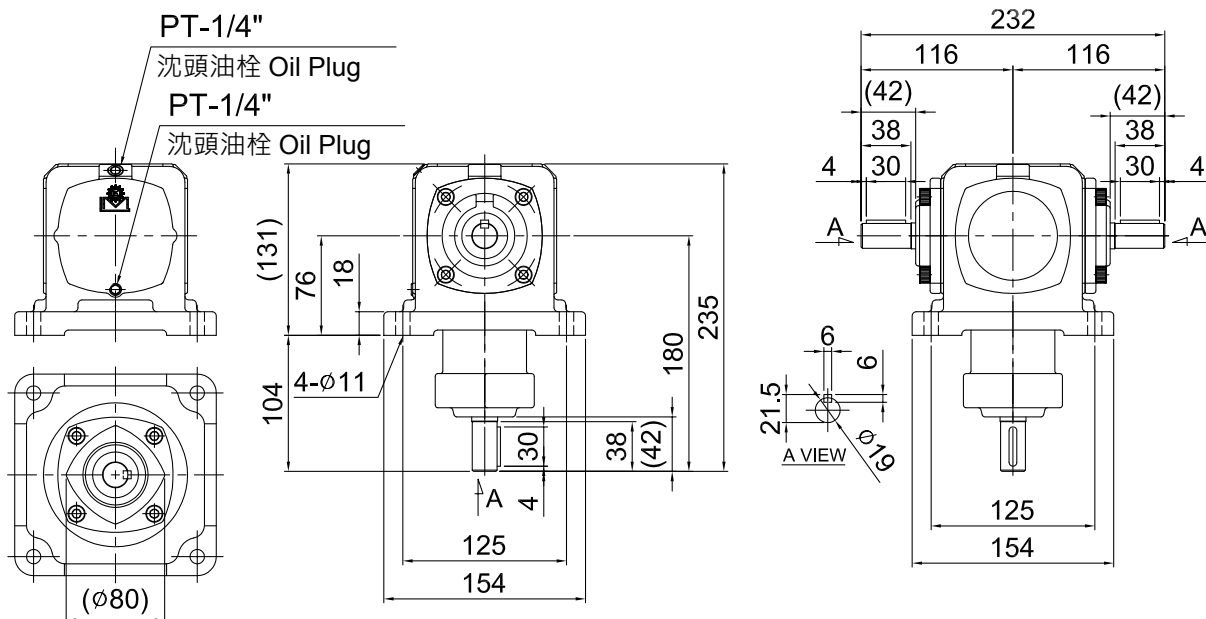
# BEVEL GEAR REDUCER SERIES

## 螺旋傘齒輪轉向器系列

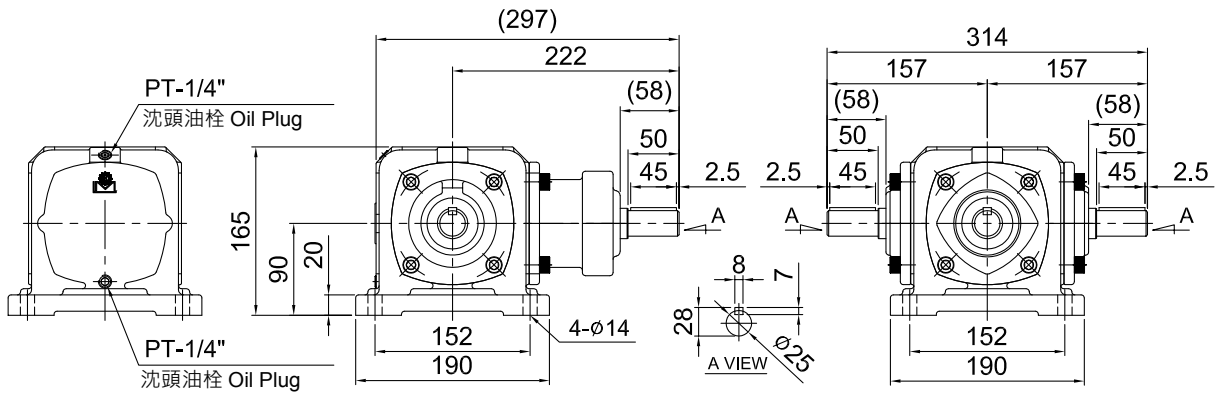
### MODEL : TH-19CW



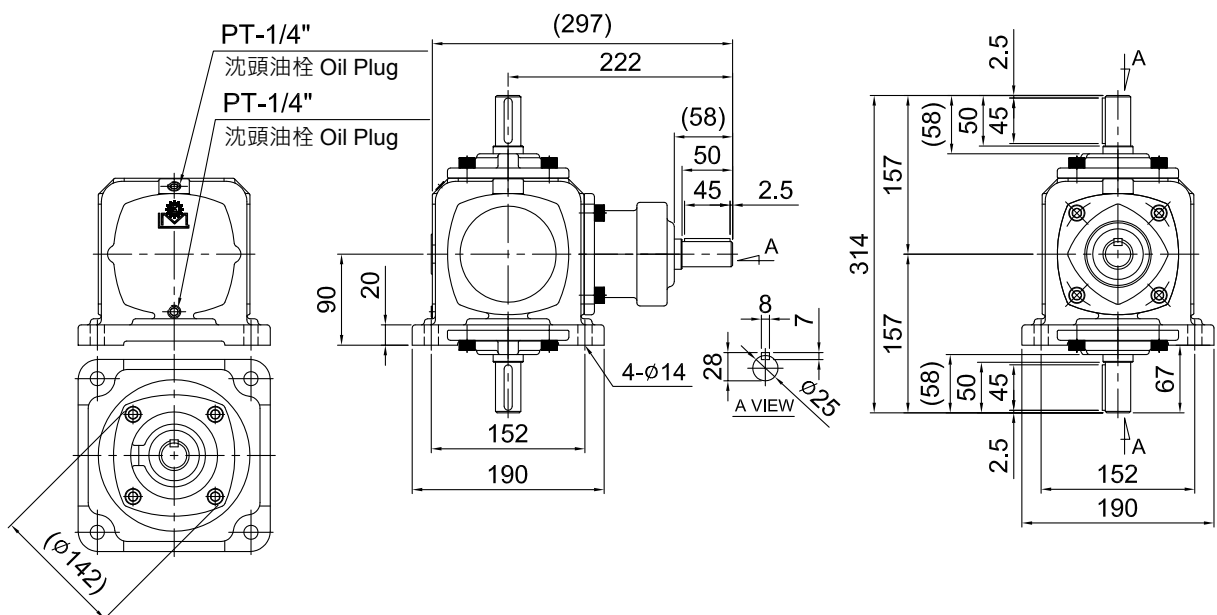
### MODEL : TH-19DW



MODEL : TH-25AW



MODEL : TH-25BW

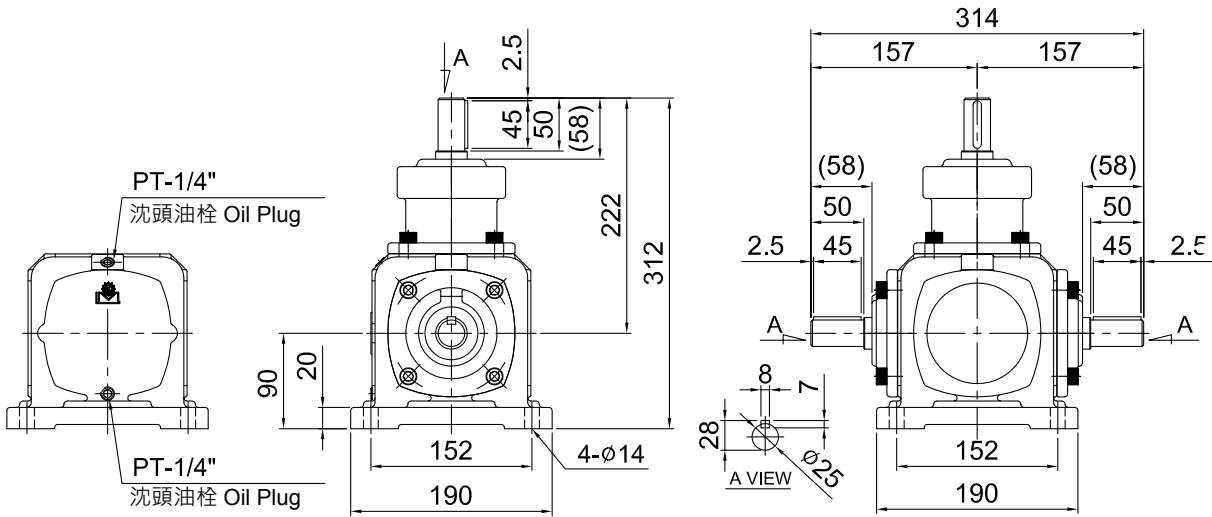




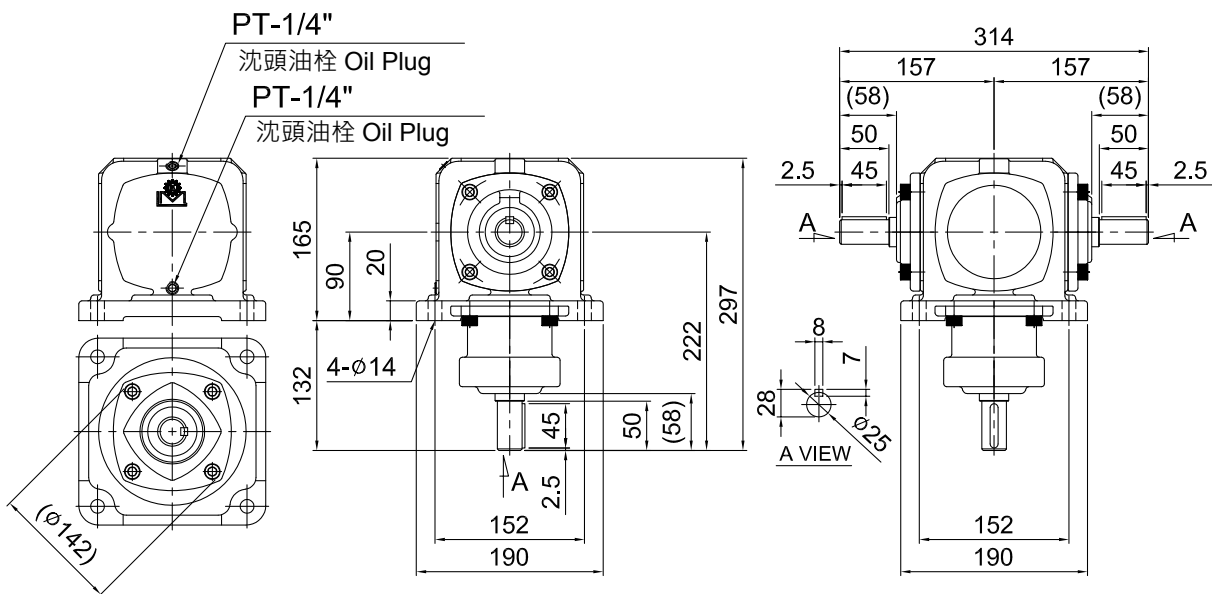
# BEVEL GEAR REDUCER SERIES

## 螺旋傘齒輪轉向器系列

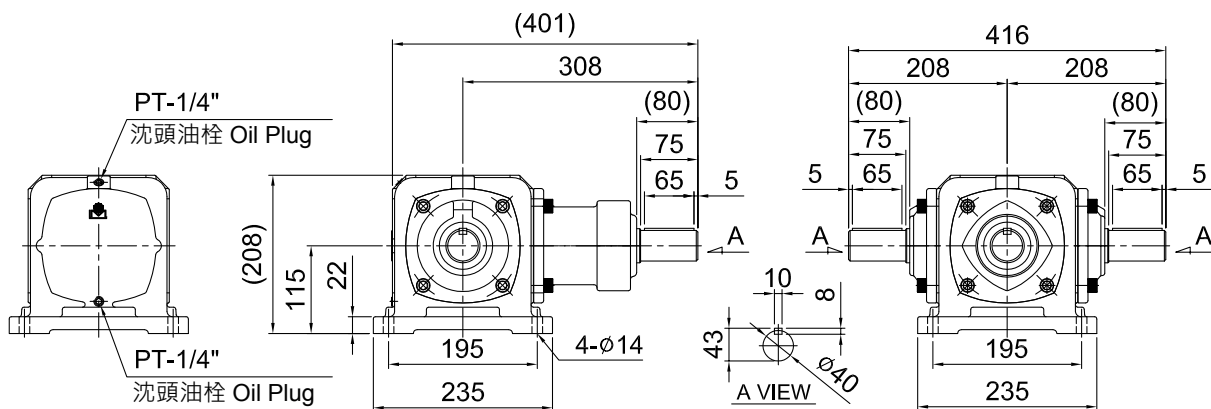
### MODEL : TH-25CW



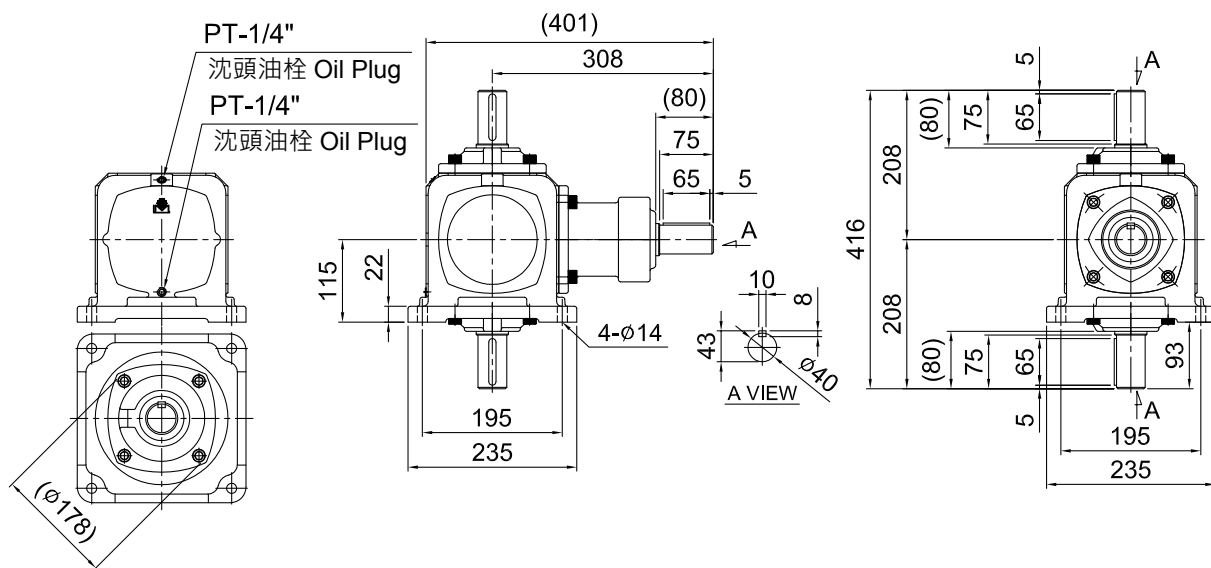
### MODEL : TH-25DW



**MODEL : TH-40AW**



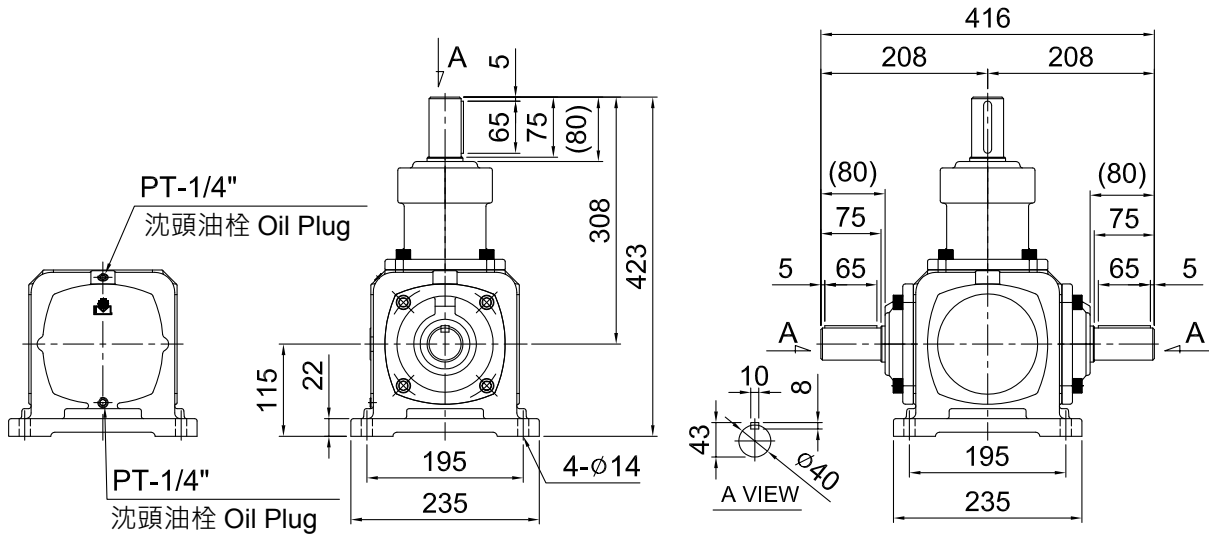
**MODEL : TH-40BW**



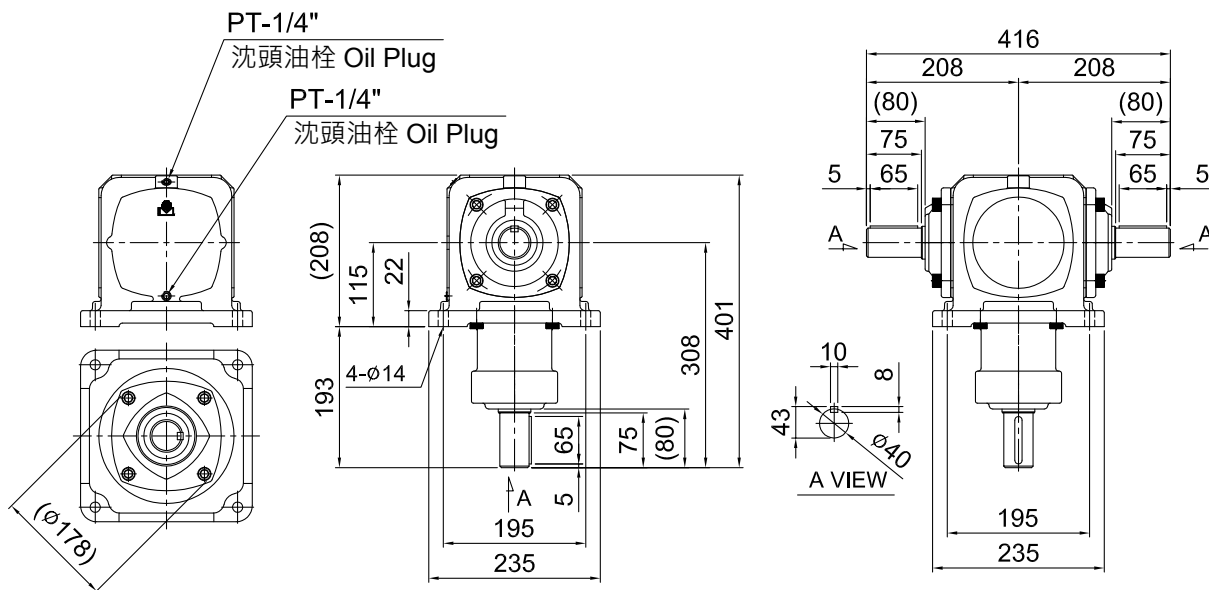
# BEVEL GEAR REDUCER SERIES

## 螺旋傘齒輪轉向器系列

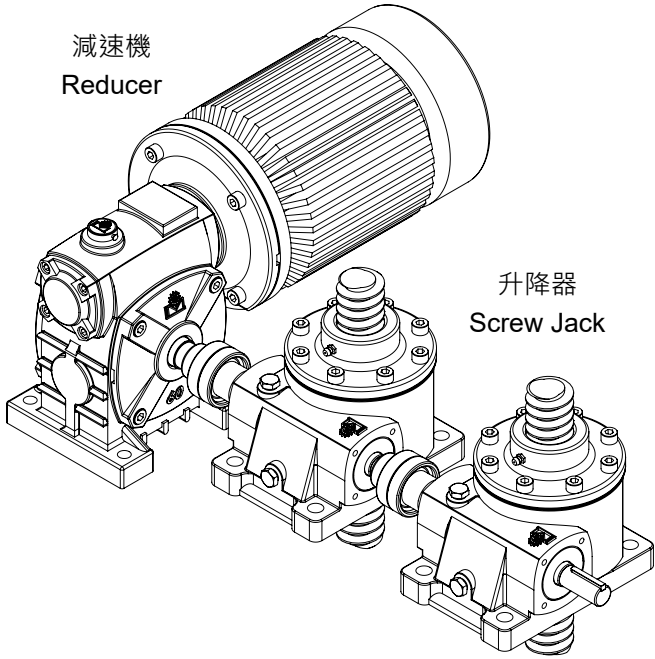
### MODEL : TH-40CW



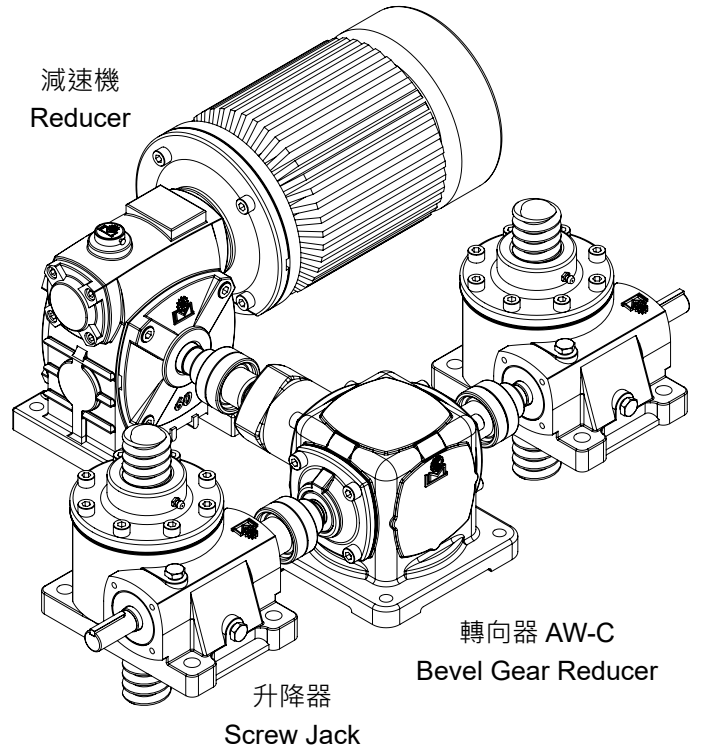
### MODEL : TH-40DW



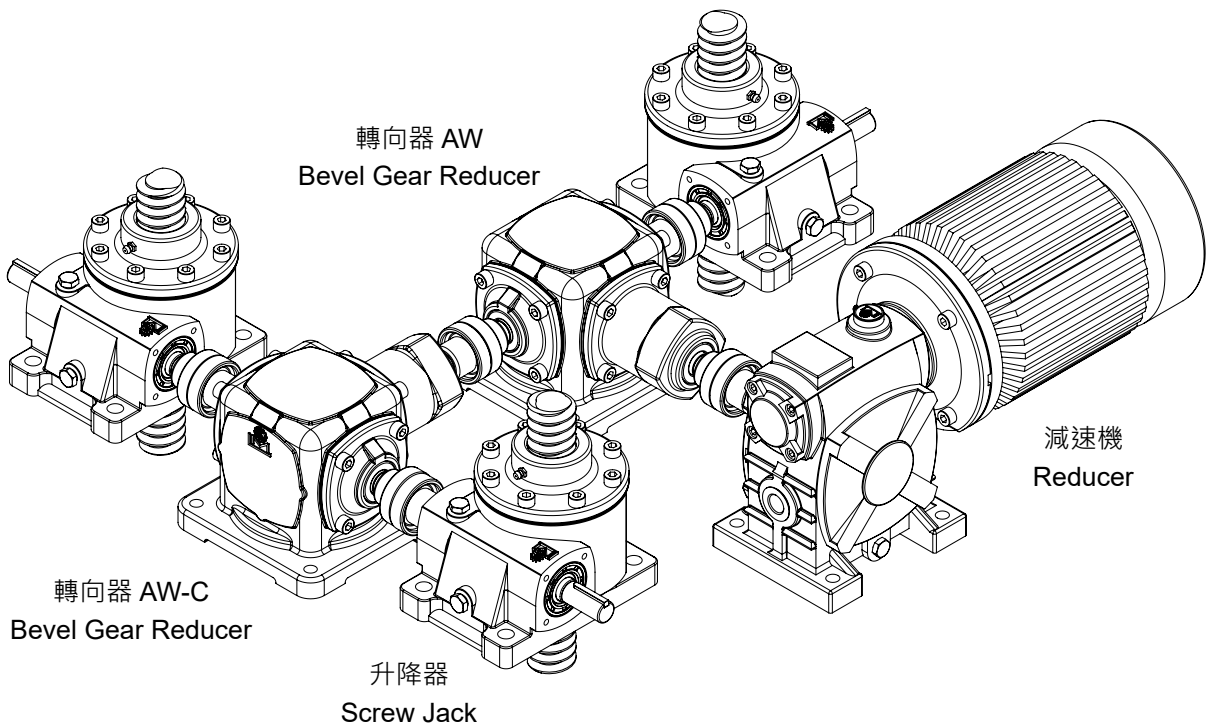
I-TYPE



T-TYPE



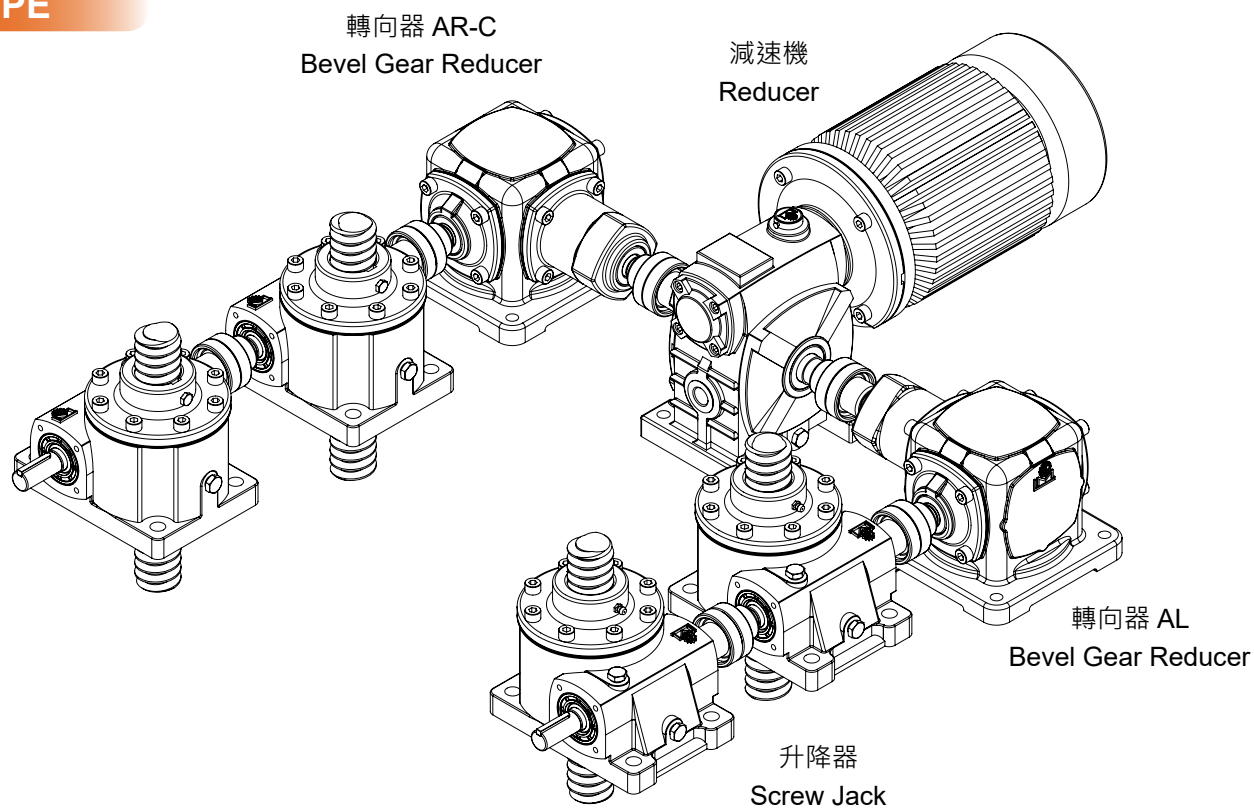
Modified T-TPE



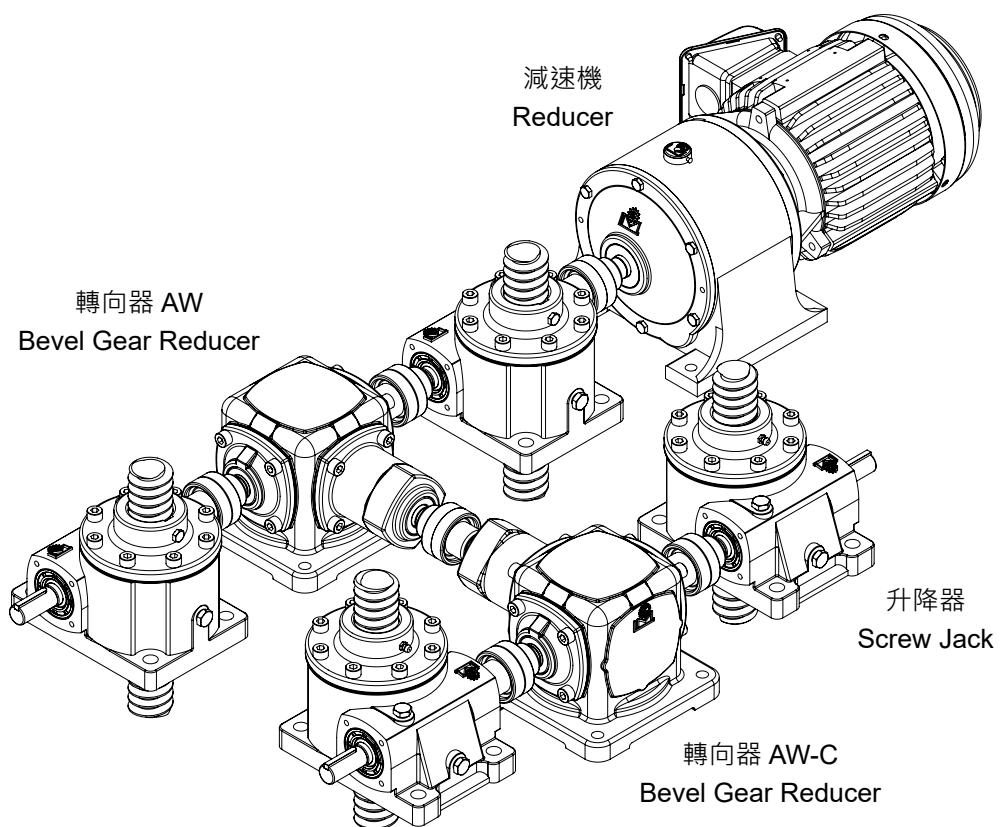
# BEVEL GEAR REDUCER SERIES

## 螺旋傘齒輪轉向器系列

### U-TYPE



### H-TYPE







# COHM

## Features of COHM Series

### COHM 系列產品特性

- ◆ 扭力限制設計，防止因扭力過大使馬達燒毀，或扭力過大而損壞其機件。  
Torque limitation design: to prevent motor from burning or other parts from damaging by over-large torque.
- ◆ 已調整扭力限制，至適當扭力限制大小。  
The torque limitation already adjusted to proper value.
- ◆ 安裝方便，可任意方向安裝。  
Fixing holes are attached. The reducer can be installed in any direction.
- ◆ 體積小，效率高，扭力大，壽命長，減速比高。  
Small volume, high efficiency, large torsion, long lifetime, high reduction ratio.

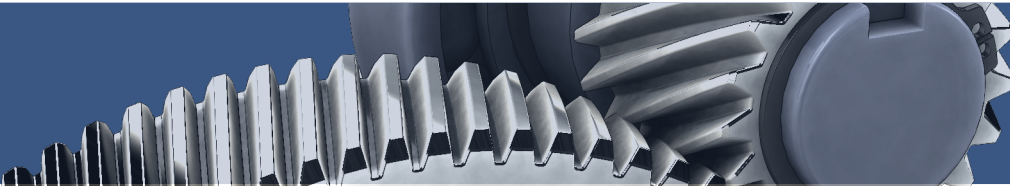


## Indication of Model Numbers

### 機種型號表示

COHM	50	100	1/4	TB
減速機型 Type	型號 Model	減速比 Ratio	馬力 Horse Power	馬達種類 Motor Type
COHM	50 60	100 ~ 400 200 ~ 300	1/4HP 1/2HP  (4P)	T: 三相馬達 3 Phase TB: 三相剎車 3 Phase Brake

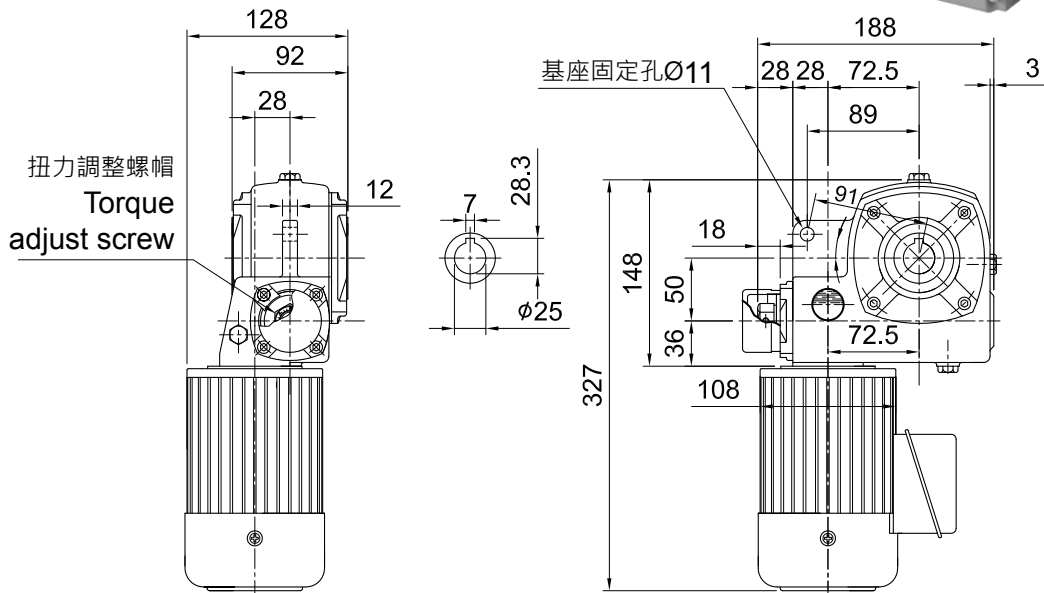
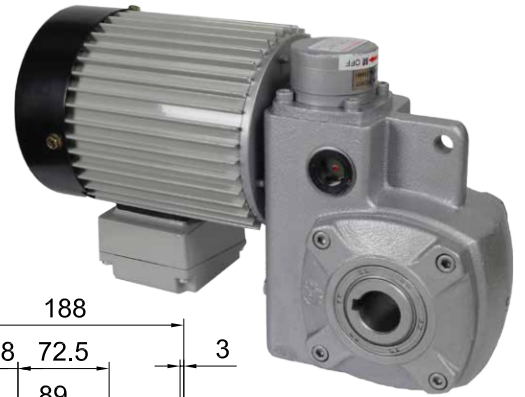
- ◆ COHM 限用 4P 三相馬達。  
Please use 4 Pole Motor.
- ◆ 如需其他減速比，請與我們連絡。  
For special ratio, please contact us.
- ◆ 本目錄所記載之減速比為公稱減速比，實際減速比非正整數，如需實際減速比請與我們連絡。  
The reduction ratio recorded in this catalogue is the nominal reduction ratio, and the actual reduction ratio is not a positive integer. If you need the actual reduction ratio, please contact us.



### MODEL : COHM50

RATIO : 100, 200, 300, 400

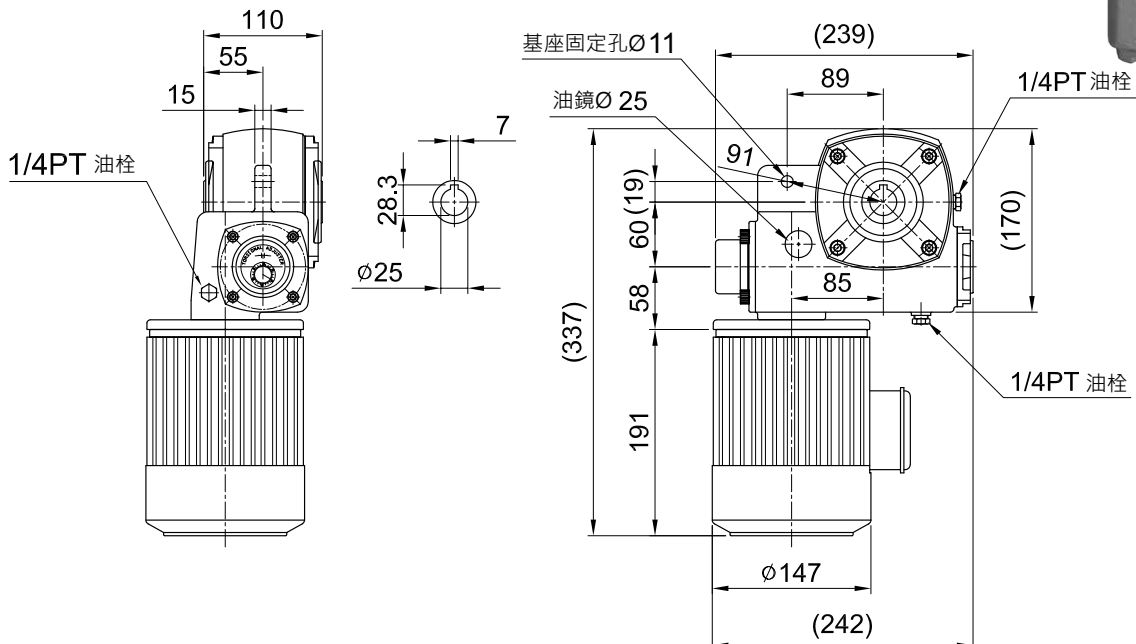
型號 Model	馬力 HP (4P)	重量 Weight (kg)	油量 Oil (ℓ)
50	1/4	13	0.5



### MODEL : COHM60

RATIO : 200, 300, 400

型號 Model	馬力 HP (4P)	重量 Weight (kg)	油量 Oil (ℓ)
60	1/2	18	0.8

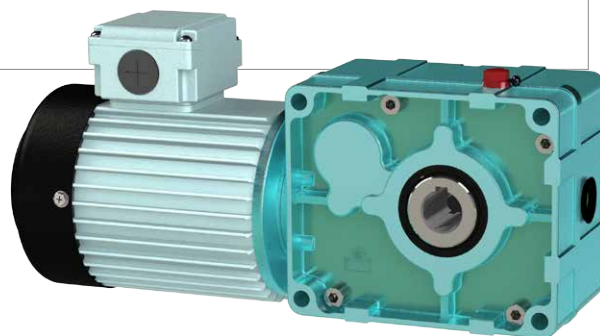


# HE

## Features of HE Series

### HE 系產品特性

- ◆ 簡化安裝元件  
Simplify Assembly Component
- ◆ 高效率  
High Efficiency
- ◆ 低噪音  
Low Noise
- ◆ 維護簡單  
Easy to Maintain
- ◆ 任意方向安裝  
Free Direction
- ◆ 安裝快速  
Easy to Install
- ◆ 小型輕量  
Small and Light-Weight
- ◆ 安全  
Safety



## Indication of Model Numbers

### 機種型號表示

HE	4070	- 30 -	1/8	A	1	- TB
機型 Type	型號 Model	減速比 Ratio	馬力 Horse Power	安裝方向 Installation Direction	馬達配線盒 Motor Wiring Box	馬達種類 Motor Type
HE	4070	30	1/8HP	A	1: 上 (標準) Up (Standard)	T: 三相馬達 3 Phase
HEB	5080	~ 192	1/4HP 1/2HP 1HP (4P)	B C D E F	2: 右 Right 3: 下 Down 4: 左 Left	TB: 三相剎車 3 Phase Brake

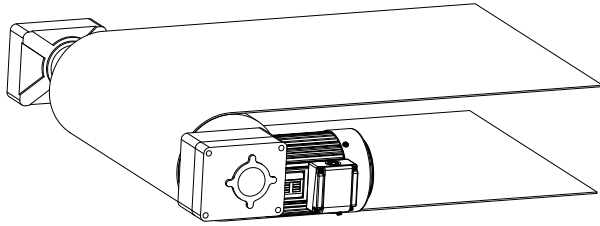
- ◆ 如需其他減速比，請與我們連絡。

For special ratio, please contact us.

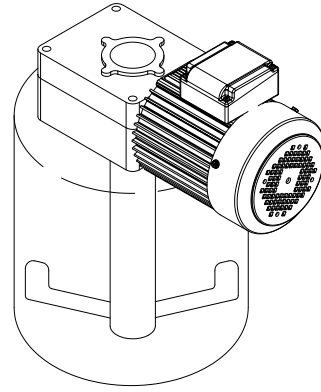
- ◆ 本目錄所記載之減速比為公稱減速比，實際減速比非正整數，如需實際減速比請與我們連絡。

The reduction ratio recorded in this catalogue is the nominal reduction ratio, and the actual reduction ratio is not a positive integer. If you need the actual reduction ratio, please contact us.

## 應用範例 Examples



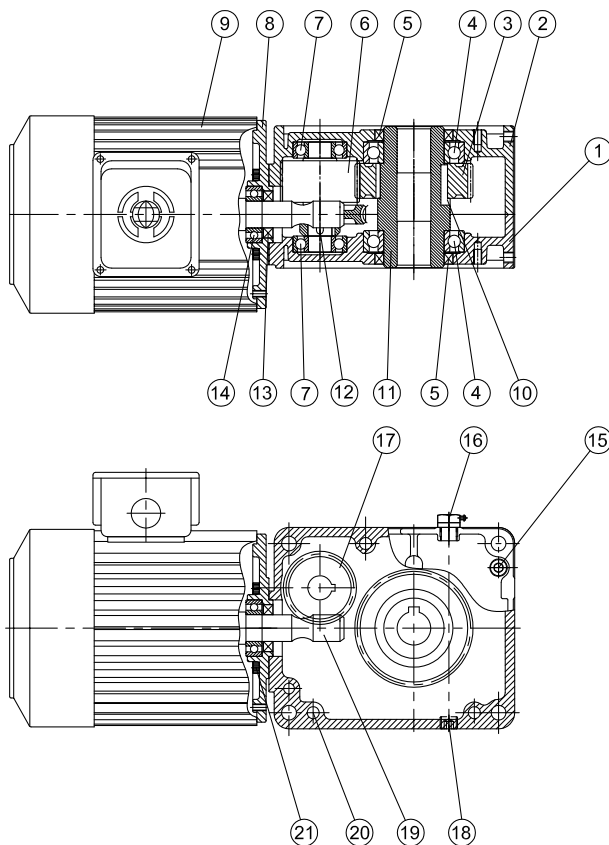
輸送機 CONVEYER



攪拌機 STIRRING MACHINE

## 分解系統圖 System Drawing

MODEL : HE



NO.	零件名稱	Name of Parts
1	齒輪箱蓋	Gear Shell Cover
2	齒輪箱	Gear Shell
3	D 齒輪	D Gear
4	滾珠軸承	Ball Bearing
5	油封	Oil Seal
6	C 齒輪軸	C Gear Shaft
7	滾珠軸承	Ball Bearing
8	馬達盤	Motor Cover
9	馬達	Motor
10	雙圓鍵	Key
11	出力軸	Output Shaft
12	雙圓鍵	Key
13	油封	Oil Seal
14	滾珠軸承	Ball Bearing
15	六角承窩頭螺絲	Hex Screw
16	注油栓	Oil Plug
17	蝸輪	Worm Wheel
18	排油栓	Drain Plug
19	蝸桿	Worm Shaft
20	定位梢	Locating Pin
21	六角承窩頭螺絲	Hex Screw



### ■ 減速機安裝 Usage and Installation

#### 使用前請檢查

- ◆ 檢查機種、型號、馬力、使用方式、旋向、軸方向、減速比、入力軸、出力軸回轉數是否符合。
- ◆ 檢查注油情況，先確定是否有油，並保持油量在油面計一半以上，潤滑油選定請參考潤滑油之說明。

#### 場所

- ◆ 須裝置於平且堅固的底部。
- ◆ 安裝之環境須乾燥且通風良好，周圍溫度 0°C ~40°C 異常高溫或低溫時請註明。
- ◆ 使用前請拔掉加油蓋上的插梢。

#### 潤滑油

- ◆ 本公司出廠減速機使用多效齒輪油黏度指數 400~480，亦可選用合成潤滑油或相同等級潤滑油。
- ◆ 最初使用 100 小時後，洗淨內部，換上新油，以後每 2,500 小時換油。
- ◆ 在高速、高溫、低速、重荷重、強制潤滑等，特殊情況下使用場合，請與本公司洽商。
- ◆ 潤滑油不足或潤滑油不適合，可能導致蝸輪、齒輪磨損和效率降低。
- ◆ 潤滑油過多，會導致漏油。

#### 注意事項

- ◆ 如須 24 小時，連續使用，建議可使用合成油，請於訂購時須註明，油價另商議。

#### 馬達

- ◆ 電源電壓變動大於 10% 時，馬達會有燒毀之虞，並使出力軸扭力降低或異常。
- ◆ 馬達超負荷使用有燒燬之虞。
- ◆ 馬達結線錯誤會導致馬達燒燬。
- ◆ 濕氣過重的環境會使剎車馬達的剎車器產生鏽蝕失去剎車功能。

#### Check Before Operating

- ◆ Check if the type, model number, horsepower, installation direction, running direction, gear ratio, input R.P.M. and output R.P.M. are in accordance with the requirement.
- ◆ Check oil level to make sure that oil volume is sufficient and keeps above the middle position of oil gauge. Selection of lubricant is suggested as below.

#### Place

- ◆ A flat, firm and solid mounting place is required necessarily for installation.
- ◆ The ambient environment shall be dry and well ventilated and ambient temperature is at 0~40°C. Please point out if extreme high or low temperature will occur.
- ◆ Please pull the black pin out of red oil plug before operating.

#### Lubricant Oil

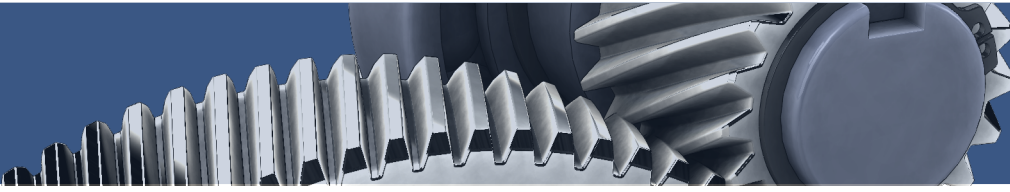
- ◆ Our Standard products use extreme pressure lubricant, the viscosity is 400~480. You can also use synthetic lubricant or the same level of lubrication.
- ◆ After initial operating 100 hours, please clean the interior of gearbox and replace new lubricant. Please have this measure every 2,500 hours operation.
- ◆ If the reducer is applied to special conditions such as high speed, high temperature, low speed, heavy loading or forced lubrication, please state in advance.
- ◆ That lubricant is insufficient or improper will cause worm wheel and gear worn-out to make efficiency lower.
- ◆ Excessive lubricant will cause leakage.

#### Precautions

- ◆ If it is used continuously for 24 hours working, it is recommended to use synthetic oil. Please advice when ordering.

#### Motor

- ◆ The voltage variation over 10% will cause motor to burn out.
- ◆ Overloading operation will make motor to burn out.
- ◆ Wrong wiring connection will make motor to burn out.
- ◆ High moisture environment will cause the brake set rusted and lost brake function.

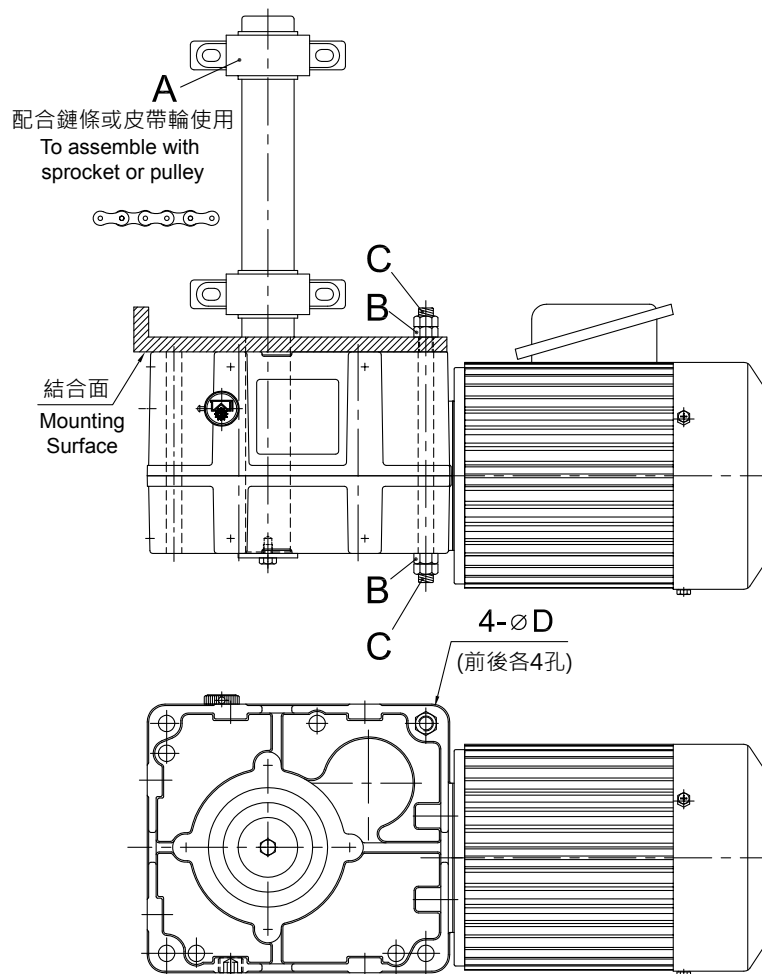


## 安裝方式

安裝時，減速機結合面應成 90° 垂直，如安裝錯誤會導致減速機損毀或漏油。  
安裝方式如下圖：

## Installation Method

Please keep the mounting surface as vertical when you install the shaft, or the reducer will be damaged or leakage.  
Installation as below:



型號 Model	軸承座 A Bearing Housing	螺帽 B Nut	牙條螺絲 C Long-threaded Screw	基座固定孔 D Fixing Hole
HE4070	2 sets	M10 x 4pcs	M10x170L	4-∅11
HE5080	2 sets	M10 x 4pcs	M10x200L	4-∅11

建議使用此種設計安裝 - 軸承座 2 組：

安裝時使用 1 支牙條螺絲，置入基座固定孔內，並使用雙向雙螺帽固定於機台上。

We suggest this installation - 2 sets of bearing housing:

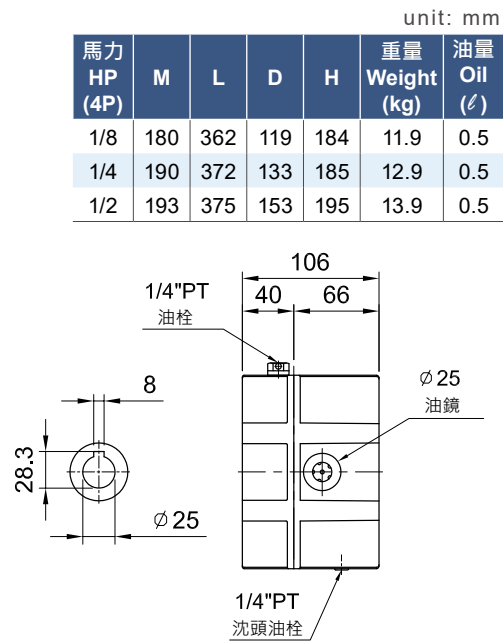
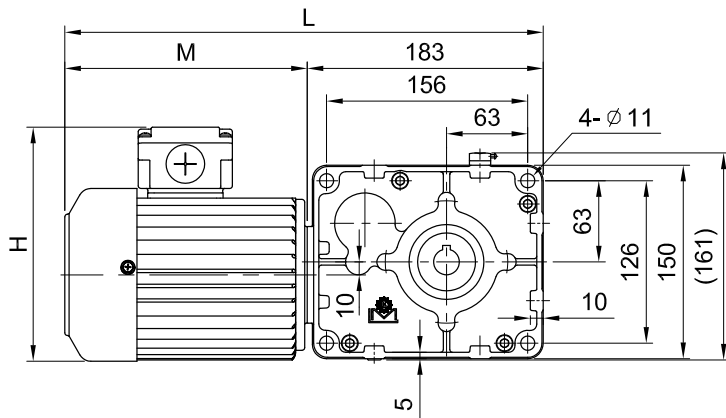
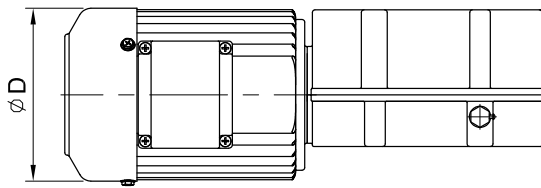
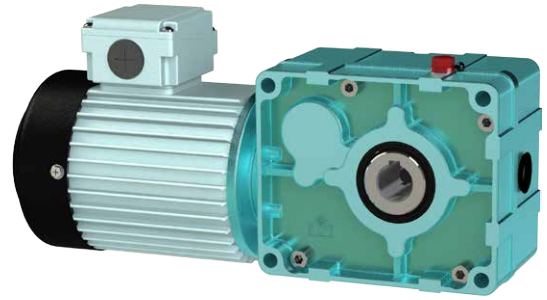
To use a long-threaded screw to put into the fixing hole, with two-way double nuts.

# SHAFT-MOUNTED WORM REDUCER HE SERIES

## 軸上型蝸輪減速機 HE 系列

### MODEL : HE4070

RATIO: 30, 40, 50, 60, 96, 132, 150, 192

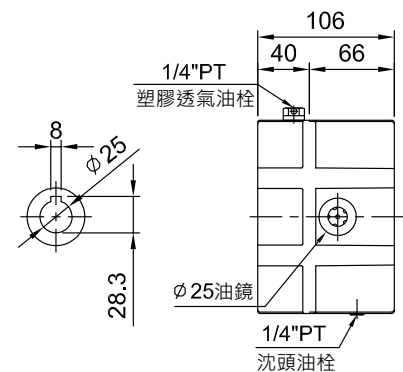
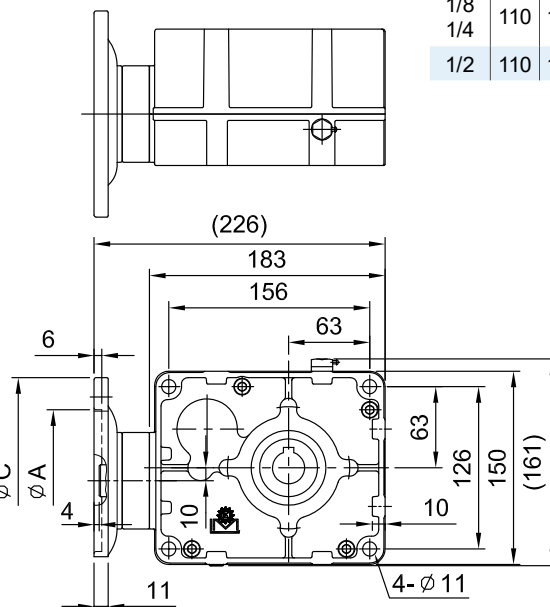
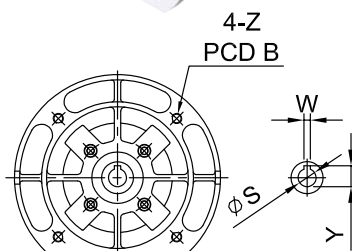
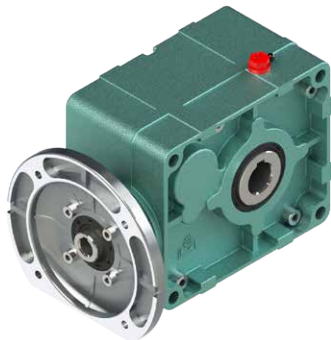


unit: mm

馬力 HP (4P)	M	L	D	H	重量 Weight (kg)	油量 Oil (ℓ)
1/8	180	362	119	184	11.9	0.5
1/4	190	372	133	185	12.9	0.5
1/2	193	375	153	195	13.9	0.5

### MODEL : HEB4070

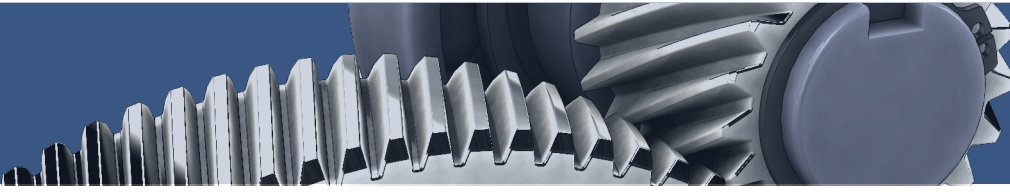
RATIO: 30, 40, 50, 60, 96, 132, 150, 192



unit: mm

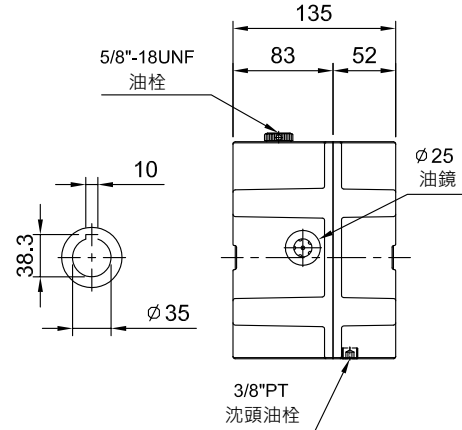
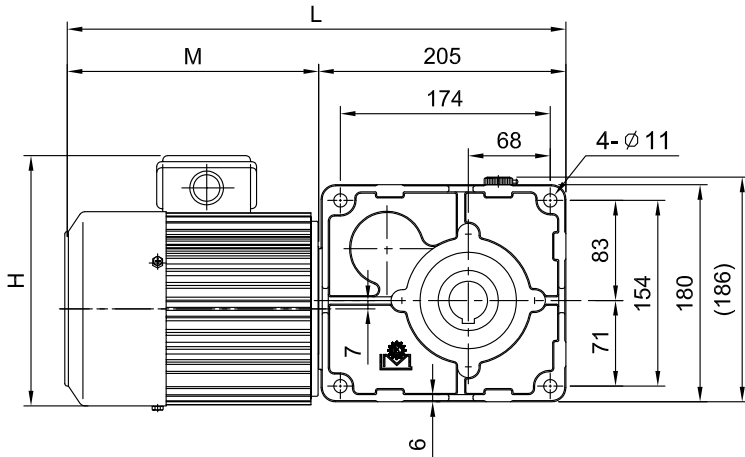
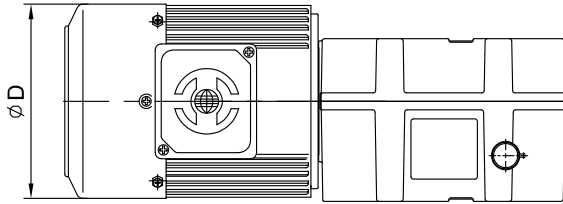
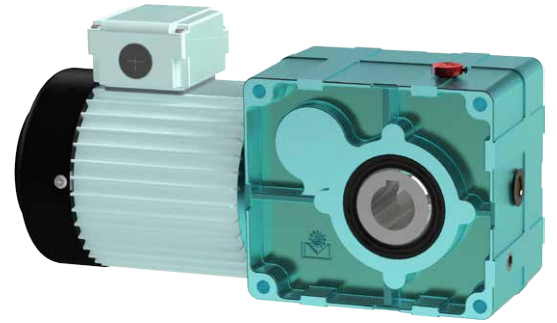
馬力 HP (4P)	A	B	C	Z	S	W	Y	重量 Weight (kg)	油量 Oil (ℓ)
1/8	110	130	160	M8	11	4	12.7	9.4	0.5
1/4	110	130	160	M8	14	5	16.3	9.4	0.5

◆ 重量不含馬達及潤滑油。 The weight does not include motor and lubricant.



### MODEL : HE5080

RATIO : 30, 40, 50, 60, 75, 90, 120, 150, 180

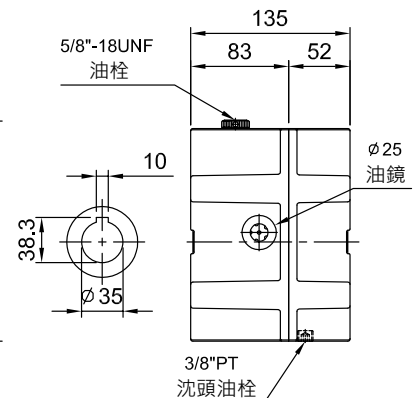
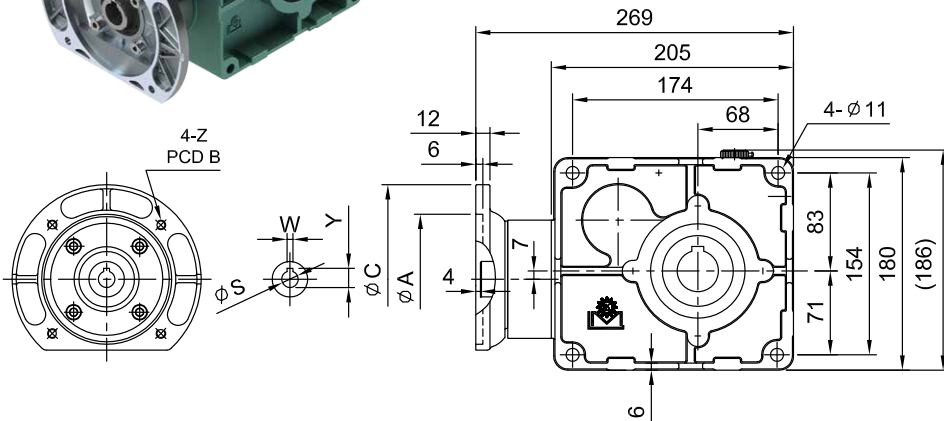
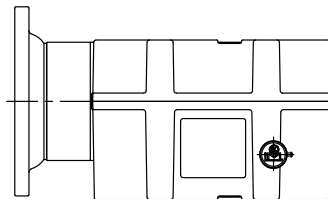
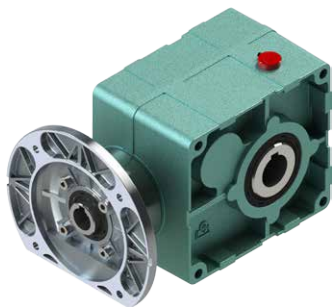


unit: mm

馬力 HP (4P)	M	L	D	H	重量 Weight (kg)	油量 Oil (ℓ)
1/2	193	403	147	195	19.2	0.75
1	212	417	161	210	21.2	0.75

### MODEL : HEB5080

RATIO : 30, 40, 50, 60, 75, 90, 120, 150, 180



unit: mm

馬力 HP (4P)	A	B	C	Z	S	W	Y	重量 Weight (kg)	油量 Oil (ℓ)
1/2	110	130	160	M8	14	5	16.3	12.8	0.75
1	130	165	200	M10	19	6	21.8	13.25	0.75

◆ 重量不含馬達及潤滑油。 The weight does not include motor and lubricant.

# SHAFT-MOUNTED WORM REDUCER HE SERIES

## 軸上型蝸輪減速機 HE 系列

### 安裝方向 Installation Direction

● 油面計  
Oil Indicator

▼ 注油栓  
Oil Plug

△ 排油栓  
Oil Drain Plug

◆ 正常的使用方向可以使減速機保持較高的壽命。  
The life time of gear reducer can be prolonged in proper direction.

◆ 安裝時請注意油面計、注油栓及排油栓的位置以便日後維護。  
Please note the positions of oil gauge, oil filling plug and oil drain plug to facilitate the maintenance afterwards.

◆ 減速機使用方向特殊時，請與我們連繫。  
For special installation direction, please contact us.

◆ 以下安裝方向示意圖的馬達配線盒位置，皆為圖示 ① 上 (Up) 標準 Standard。

◆ 馬達配線盒之選擇 (以面向馬達風罩為準)。

◆ 訂購時，請註明。

The positions of the motor wiring box in the following installation direction diagrams are all standard (Up) ① .

Selection of motor wiring box (when we face the motor fan).

For any order, please specify your need clearly.

A 標準使用 Standard		B 標準使用 Standard		C 馬達在上使用 Motor Above	
HE4070	HE5080	HE4070	HE5080	HE4070	HE5080
D 馬達在下使用 Motor Below		E 出力面在下使用 Output Bore Downward		F 出力面在上使用 Output Bore Upward	
HE4070	HE5080	HE 4070	HE 5080		
① 上 (Up) 標準 Standard	② 右 (Right)	③ 下 (Down)	④ 左 (Left)		
				HE4070	HE5080





# FABMOTOR

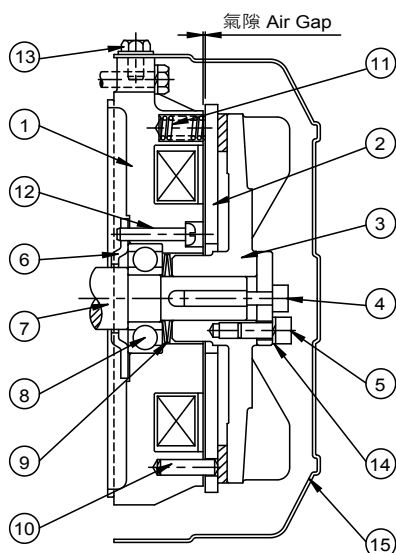
## Features of FABMOTOR Series

### FABMOTOR 系列產品特性

- ◆ 結構精巧：剎車構造一體化的設計，適用於空間受限制場所。  
Compact structure: integrated brake structure is applied to restricted space.
- ◆ 高頻度、壽命長：制動板與散熱風扇一體化的設計，散熱效率高，在高頻度的制動工作量下，可保持長壽命，省去保養維護的麻煩。  
High frequency, long service life: integrated design of braking plate and cooling fan can get advantages of long service life and maintenance-free during high frequency brake operation.
- ◆ 先進的規格：採用日本進口高效非石棉材質，可耐較高頻度使用，磨耗率低且無公害。  
Advanced specification: high efficient non-asbestos materials imported for Japan is durable to high frequency operation, low wearing rate and pollution-free.



### 剎車構造剖面圖 Cross Section of Magnetic Brake System :



NO.	零件名稱	Name of Parts
1	托架 (附剎車線圈)	Bracket (Brake coil included)
2	剎車來令片	Brake Lining
3	外扇	Fan
4	調整螺絲	Adjusting Screw
5	內六角螺絲	Hex Socket Cap Screw
6	軸承壓蓋	Bearing Cover
7	軸心	Shaft
8	軸承	Bearing
9	皿形彈簧	Tray-Type Spring
10	彈簧梢	Spring Pin
11	壓縮彈簧	Compression Spring
12	圓頭十字螺絲	Philips Pan Head Screw
13	外六角螺絲	Hex Head Cap Screw
14	彈簧華司	Spring Washer
15	風罩	Fan Guard

## 標準規範表 Standard Specification Table

### 規格 Specification

項目 Item	標準規範 Standard Specification			
種類 Type	三相鼠籠式感應電動機 Three-Phase Squirrel Cage Induction Motor			
輸出馬力 Output Power	AEVF/AEEF	2P: 1/4~25HP	ETVF/ETEF	-
		4P: 1/4~20HP		4P: 1/4~5HP
		6P: 1/4HP~15HP		6P: 1/4HP~3HP
電壓 Voltage	額定電壓 Rated Voltage 220V、380V			
頻率 Frequency	額定頻率 Rated Frequency 50Hz、60Hz			
保護方式 Protection Type	IP54: 全密式外扇型 Totally Enclosed Fan Type			
冷卻方式 Cooling Type	IC411: 全密式自帶外扇冷卻 Total Enclosed Fan Cooling			
安裝方式 Mounting Type	AEVF/ETVF: 凸緣型安裝 Flange Mounted			
	AEEF/ETEF: 水平腳座安裝 Horizontal Feet Mounted			
絕緣等級 Insulation Class	B 級 B Grade			
塗裝 Painting	防鏽處理、酚樹脂底漆、磁漆 Antirust treatment, primerpainting of phenol and surface enamel painting.			
軸承 Bearing	為預注油脂式雙遮蓋密閉式滾珠軸承 Dual cover enclosed ball bearings with grease injected beforehand.			

### 適用 Applicable

項目 Item	標準規範 Standard Specification
場所 Location	屋內，需裝置於平坦及堅固的底部 Indoor; the product should be installed on flat and solid foundation.
標高 Altitude	海拔 1000 公尺以下 Under 1000m height above sea level.
濕度 Humidity	相對溼度 80% 以下 Relative Humidity MAX. 80%
周溫 Ambient Temperature	-15°C ~ 40°C
電源 Power Source	電壓變動率: ±10% 以內 Voltage Deviation: MAX. ±10%
	頻率變動率: ±5% 以內 Voltage Deviation: MAX. ±5%
轉向 Rotation Wise	雙轉向 Dual Rotation Wise
啟動方式 Start Form	全壓直接啟動或 Y - Δ 啟動 Full voltage direct start or Y - Δ start.

## 剎車特性表 Brake Character List

輸出 Output (HP)	4 極 4-Pole	1/4	1/2	1	2	3	5
	6 極 6-Pole	-	1/4	1/2	1	2	3
框號 Frame No.		63	71	80	90L	100L	112M
額定轉矩 Rated torque (Nm)		2	4	8	15	30	40
吸引時間 Suction time (ms)		30	30	60	90	90	80
釋放時間 Release time (ms)		80	100	120	140	150	100
氣隙 Air Gap (mm)	規定值 Specified value	0.3	0.3	0.3	0.4	0.4	0.5
	限定值 Limited value	0.7	0.7	1.0	1.0	1.0	1.2

# FABMOTOR INDUCTION MOTOR SERIES

## 低壓感應電動機

### ■ 特性表 Character List

220V, 3Ø 60Hz

輸出 Output				框號 Frame No.	滿載特性 Full Load Character				啟動特性 Starting Character		最大轉矩 (%) MAX. Torque	轉子慣量 (kg-m <sup>2</sup> ) Inertia
HP	kW	Pole	RPM		轉矩 (kg-m) Torque	效率 (%) Efficiency	功率因素 (%) Power Factor	電流 (AMP.) Current	轉矩 (%) Torque	電流 (AMP.) Current		
0.25	0.18	2	3260	63	0.054	61	77	0.82	400	6	370	0.002
		4	1610	63	0.110	65	76	0.95	250	6	240	0.002
		6	1110	71	0.162	64	60	1.3	260	6	290	0.007
0.5	0.37	2	3335	71	0.105	75	86	1.5	340	12	310	0.002
		4	1645	71	0.213	73	74	2.0	200	12	250	0.005
		6	1115	80	0.320	68	67	2.2	200	12	240	0.009
1	0.75	2	3330	80	0.213	77	87	2.9	220	19	280	0.005
		4	1710	80	0.427	75	74	3.4	250	19	280	0.009
		6	1120	90L	0.635	76	71	3.6	200	19	240	0.017
2	1.5	2	3355	90L	0.422	80	89	5.5	250	40	280	0.010
		4	1685	90L	0.845	79	81	6.1	220	40	280	0.017
		6	1120	100L	1.273	78	74	6.8	180	40	220	0.033
3	2.2	2	3385	90L	0.630	82	89	8.1	230	68	280	0.015
		4	1700	100L	1.235	81	81	8.5	210	68	260	0.033
		6	1135	112M	1.877	82	77	11.8	180	68	270	0.059
5	3.7	2	3415	112M	1.041	84.5	90	12.9	240	110	340	0.038
		4	1750	112M	2.050	85	75	15.0	220	110	300	0.059
		6	1135	132S	3.128	84	77	17.0	180	110	230	0.151
7.5	5.5	2	3435	132S	1.550	90	90	19.2	220	160	260	0.063
		4	1715	132S	3.111	83	84	20.1	230	160	280	0.104
		6	1135	132M	4.689	76	77.5	22.3	200	160	230	0.217
10	7.5	2	3440	132S	2.068	90	90	25.1	200	200	270	0.076
		4	1715	132M	4.145	88	88	25.1	220	200	250	0.143
		6	1150	160M	6.178	79	80	28.1	280	200	300	0.400
15	11	2	3470	160M	3.076	90	90	37.1	220	290	300	0.147
		4	1725	160M	6.183	88	89	36.7	220	290	250	0.297
		6	1145	160L	9.306	84	84	39.1	240	290	260	0.588
20	15	2	3450	160M	4.120	90	91	48.1	210	360	260	0.183
		4	1725	160L	8.248	86	86	50.3	230	360	260	0.381
25	18.5	2	3520	160L	5.120	89	87	62.0	230	480	250	0.225

1. 上列標稱代表值為實測值。  
2. 以上數值若有變更，恕不另行通知。

1. The above the nominal representative value of the measured value.  
2. The above mentioned value subject to change without notice.

## ■ 特性表 Character List

### 380V, 3Ø 50Hz

輸出 Output				框號 Frame No.	滿載特性 Full Load Character				啟動特性 Starting Character		最大轉矩 (%) MAX. Torque	轉子慣量 (kg-m <sup>2</sup> ) Inertia
HP	kW	Pole	RPM		轉矩 (kg-m) Torque	效率 (%) Efficiency	功率因素 (%) Power Factor	電流 (AMP.) Current	轉矩 (%) Torque	電流 (AMP.) Current		
0.25	0.18	2	2670	63	0.062	71	76.5	0.53	400	3.5	330	0.002
		4	1320	63	0.125	62	68.5	0.65	220	3.5	240	0.002
		6	900	71	0.198	52	60	0.79	260	3.5	270	0.007
0.5	0.37	2	2760	71	0.127	78	85	0.89	320	6	280	0.002
		4	1345	71	0.245	72	73	1.24	200	6	230	0.005
		6	910	80	0.389	57	67	1.34	200	6	230	0.009
1	0.75	2	2745	80	0.259	77.5	78	1.90	220	11	280	0.005
		4	1370	80	0.518	75	73	2.13	250	11	280	0.009
		6	930	90L	0.764	61	70	2.28	190	11	230	0.017
2	1.5	2	2785	90L	0.511	82	82	3.4	250	23	280	0.010
		4	1375	90L	1.036	85	66	4.0	220	23	280	0.017
		6	910	100L	1.561	74	45	6.7	180	23	220	0.033
3	2.2	2	2790	90L	0.765	83	85	4.6	250	38	280	0.015
		4	1405	100L	1.515	81	73	5.6	210	38	260	0.033
		6	935	112M	2.280	84	50	7.8	180	38	230	0.059
5	3.7	2	2820	112M	1.258	84	83	7.7	240	63	320	0.038
		4	1415	112M	2.512	80	64	11.0	220	63	290	0.059
		6	940	132S	3.780	65.5	75.5	9.15	180	63	230	0.151
7.5	5.5	2	2845	132S	1.872	86.5	88.5	11.1	210	92	260	0.062
		4	1415	132S	3.765	86	82.5	12.0	220	92	280	0.104
		6	940	132M	5.671	84.5	77.5	13.0	200	92	230	0.216
10	7.5	2	2850	132S	2.494	88.5	88.5	14.5	200	115	250	0.076
		4	1420	132M	5.006	87.5	85.5	15.2	220	115	250	0.142
		6	955	160M	7.445	86	80	16.5	270	115	300	0.4
15	11	2	2880	160M	3.701	88.5	90	21.3	210	168	290	0.146
		4	1430	160M	7.455	89.5	88	21.6	220	168	250	0.297
		6	950	160L	11.225	88.5	84	22.9	220	168	260	0.588
20	15	2	2860	160M	4.970	90	91	27.7	210	207	260	0.183
		4	1435	160L	9.907	90.5	88.5	28.3	230	207	260	0.380
25	18.5	2	2920	160L	6.120	89	87	34.2	230	268	250	0.225

1. 上列標稱代表值為實測值。

2. 以上數值若有變更，恕不另行通知。

1. The above the nominal representative value of the measured value.

2. The above mentioned value subject to change without notice.

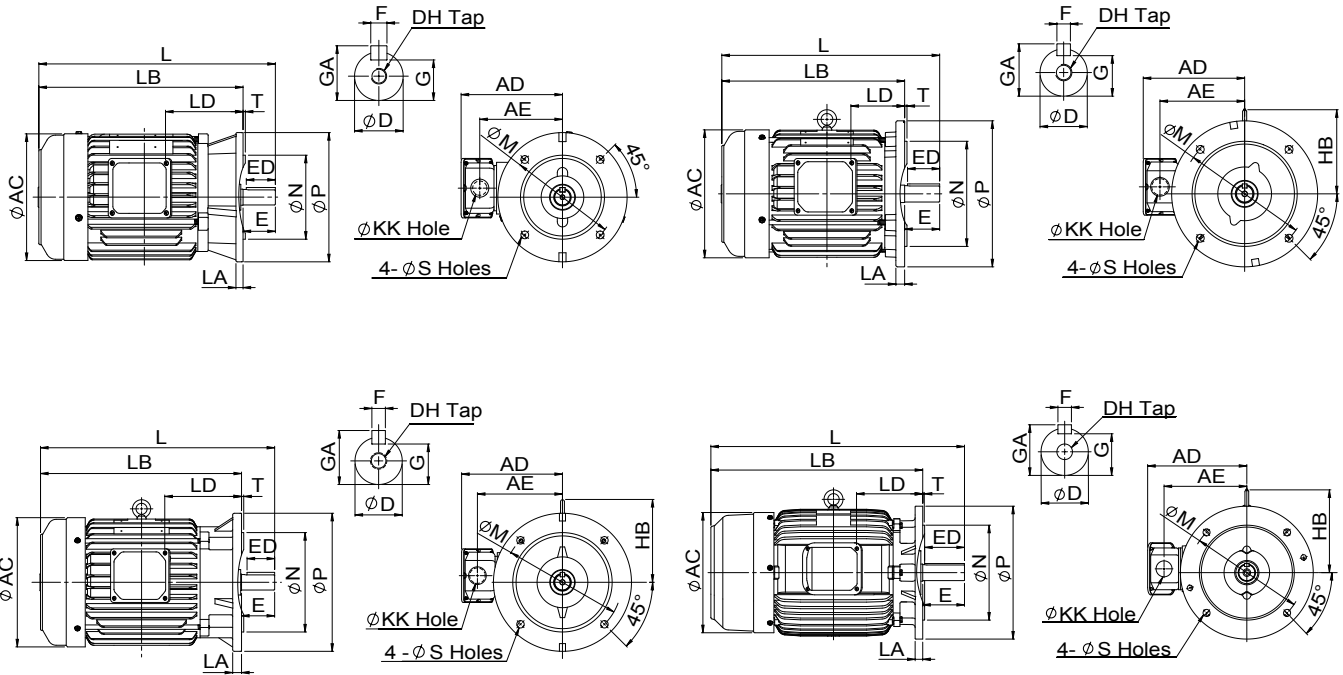


# FABMOTOR INDUCTION MOTOR SERIES

## 低壓感應電動機

### MODEL : AEVF

立式標準馬達 Vertical Standard Motor



unit: mm

輸出 Output (HP)			框號 Frame NO.	圖號 Figure NO.	AC	AD	AE	HB	KK	L	LA	LB	LD	安裝尺寸 Mounted Size				
2P	4P	6P												M	N	P	S	T
1/4	1/4	-	63	1	142	131.5	103	-	22	245.5	11	222.5	78	130	110	160	10	3.5
1/2	1/2	1/4	71	1	156	131.5	105	-	22	271	10	241.5	85	130	110	160	10	3.5
1	1	1/2	80	2	175	146.5	118	-	22	274	12	234	64	165	130	200	12	3.5
2、3	2	1	90L	3	196	156.5	128	-	22	367	11	317	120	165	130	200	12	3.5
-	3	2	100L	2	219	173	145	144	28	373	15	313	92	215	180	250	13.5	4
5	5	3	112M	3	234	182	154	150	28	425	16	365	154	215	180	250	13.5	4
7.5、10	7.5	5	132S	2	274	226	180	169	35	450	20	372	102	265	230	300	14.5	4
-	10	7.5	132M	2	274	226	180	169	35	489	20	408	118	265	230	300	18.5	4
15、20	15	10	160M	4	334	262	218	216	35	602	20	496	153	300	250	350	18.5	5
25	20	15	160L	4	334	262	218	216	35	648	20	541	175	300	250	350	18.5	5

軸端 End of Shaft							軸承 Bearings		重量 Weight (kg)
D	E	ED	F	G	GA	DH	負載端 L. S.	反負載端 O. S.	
11	23	20	4	8.5	12.5	M4x8	6201ZZ	6201ZZ	10
14	30	25	5	11	16	M5x10	6203ZZ	6202ZZ	12
19	40	35	6	15.5	21.5	M6x12	6204ZZ	6203ZZ	15
24	50	45	8	20	27	M8x16	6205ZZ	6204ZZ	24
28	60	55	8	24	31	M10x20	6206ZZ	6205ZZ	31
28	60	55	8	24	31	M10x20	6306ZZ	6305ZZ	41
38	80	75	10	33	41	M12x24	6308ZZ	6306ZZ	64
38	80	75	10	33	41	M12x24	6308ZZ	6306ZZ	76
42	110	105	12	37	45	M16x32	6309ZZ	6307ZZ	118
42	110	105	12	37	45	M16x32	6309ZZ	6307ZZ	136

1. 心軸直徑 "D" 公差: ∅11~∅28: j6, ∅38~∅48: k6。

2. 引導直徑 "N" 公差: h7。

3. 重量誤差 3%。

4. 以上數值如有變更, 恕不另行通知。

1. Shaft dia "D" clearance: ∅11~∅28: j6, ∅38~∅48: k6.

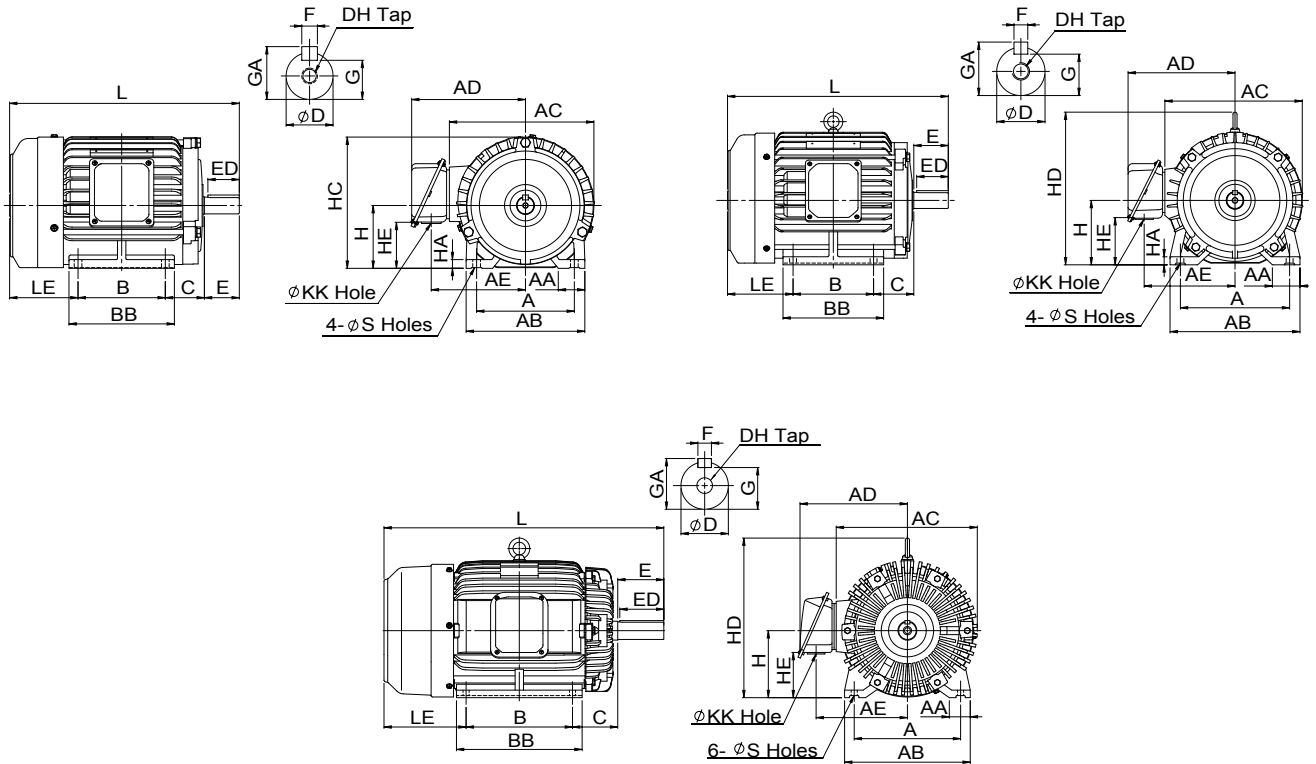
2. Guidance dia "N" clearance: h7.

3. Weight error of 3%.

4. The above mentioned value subject to change without notice.

**MODEL : AEEF**

臥式標準馬達 Horizontal Standard Motor



unit: mm

輸出 Output (HP)			框號 Frame NO.	圖號 Figure NO.	AA	AB	AC	AD	AE	BB	HA	HC	HD	HE	KK	安裝尺寸 Mounted Size				
2P	4P	6P														A	B	C	H	S
1/4	1/4	-	63	1	30	120	145	123	98	101	8.5	136	-	28	22	100	80	40	63	7
1/2	1/2	1/4	71	1	38	140	156	130	105	115	10	148	-	63	22	112	90	45	71	7
1	1	1/2	80	2	43.5	155	176.5	143	115	130	10	167.5	-	57	22	125	100	50	80	10
2、3	2	1	90L	3	35	170	207	163	135	150	12.5	188	-	66	22	140	125	56	90	10
-	3	2	100L	2	46	195	221.5	176	148	175	14	-	244	68	28	160	140	63	100	12
5	5	3	112M	3	48	226	239	186	158	175	14.1	-	266	82	28	190	140	70	112	12
7.5、10	7.5	5	132S	2	48	250	272	224	182	175	16	-	312	82	35	216	140	89	132	12
-	10	7.5	132M	2	48	250	272	224	182	212	16	-	312	82	35	216	178	89	132	12
15、20	15	10	160M	4	52	300	334	262	220	250	18	-	378	106	35	254	210	108	160	14.5
25	20	15	160L	4	52	300	334	262	220	300	18	-	378	106	34	254	254	108	160	14.5

L	LE	軸端 End of Shaft							軸承 Bearings		重量 Weight (kg)
		D	E	ED	F	G	GA	DH	負載端 L. S.	反負載端 O. S.	
206	63	11	23	18	4	8.5	12.5	M4x8	6201ZZ	6201ZZ	9
242.5	77.5	14	30	24	5	11	16	M5x10	6203ZZ	6202ZZ	11
271.5	91	19	40	25	6	15.5	21.5	M6x12	6204ZZ	6203ZZ	15
329	98	24	50	45	8	20	27	M8x16	6205ZZ	6204ZZ	23
373.5	110.5	28	60	55	8	24	31	M10x20	6206ZZ	6205ZZ	30
384	114	28	60	55	8	24	31	M10x20	6306ZZ	6305ZZ	33
448	145	38	80	75	10	33	41	M12x24	6308ZZ	6306ZZ	62
486	145	38	80	75	10	33	41	M12x24	6308ZZ	6306ZZ	74
598	180	42	110	105	12	37	45	M16x32	6309ZZ	6307ZZ	118
646	180	42	110	105	12	37	45	M16x32	6309ZZ	6307ZZ	140

1. 心軸直徑 "D" 公差:  $\varnothing 11 \sim \varnothing 28$ : j6,  $\varnothing 38 \sim \varnothing 48$ : k6。
2. 心軸高度 "H" 公差:  $H_{-0.05}^{+0}$ 。
3. 重量誤差 3%。
4. 以上數值如有變更, 恕不另行通知。

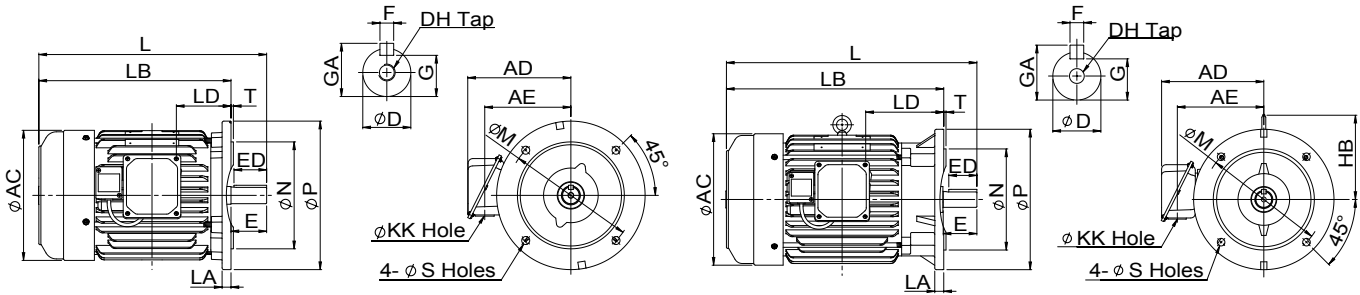
1. Shaft dia "D" clearance:  $\varnothing 11 \sim \varnothing 28$ : j6,  $\varnothing 38 \sim \varnothing 48$ : k6.
2. Shaft height "H" clearance:  $H_{-0.05}^{+0}$ .
3. Weight error of 3%.
4. The above mentioned value subject to change without notice.

# FABMOTOR INDUCTION MOTOR SERIES

## 低壓感應電動機

### MODEL : ETVF

立式剎車馬達 Vertical Brake Motors



unit: mm

輸出 Output (HP)		框號	圖號	AC	AD	AE	HB	KK	L	LA	LB	LD	安裝尺寸 Mounted Size				
4P	6P	Frame NO.	Figure NO.										M	N	P	S	T
1/4	-	63	1	142	131.5	103	-	22	257.5	11	234.5	78	130	110	160	10	3.5
1/2	1/4	71	1	156	131.5	105	-	22	277	10	247.5	85	130	110	160	10	3.5
1	1/2	80	2	175	146.5	118	-	22	274	12	252	64	165	130	200	12	3.5
2	1	90L	2	196	156.5	128	-	22	401	11	333	120	165	130	200	12	3.5
3	2	100L	2	219	173	145	144	28	386.5	15	326.5	92	215	180	250	13.5	4
5	3	112M	2	234	182	154	150	28	446	16	386	154	215	180	250	13.5	4

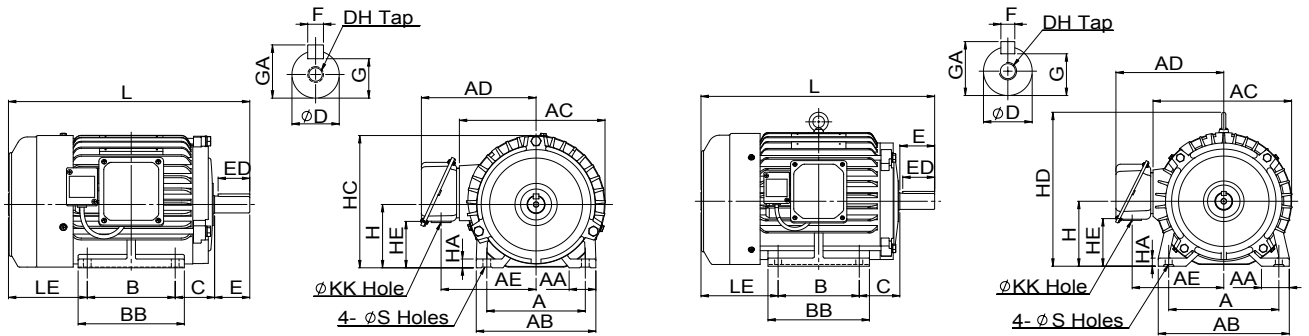
軸端 End of Shaft							軸承 Bearing		重量 Weight (kg)
D	E	ED	F	G	GA	DH	負載端 L. S.	反負載端 O. S.	
11	23	20	4	8.5	12.5	M4x8	6201ZZ	6201ZZ	12
14	30	25	5	11	16	M5x10	6203ZZ	6202ZZ	14
19	40	35	6	15.5	21.5	M6x12	6204ZZ	6203ZZ	19
24	50	45	8	20	27	M8x16	6205ZZ	6204ZZ	29
28	60	55	8	24	31	M10x20	6206ZZ	6205ZZ	36.5
28	60	55	8	24	31	M10x20	6306ZZ	6305ZZ	52

1. 心軸直徑 "D" 公差 :  $\varnothing 11 \sim \varnothing 28$ : j6 ,  $\varnothing 38 \sim \varnothing 48$ : k6 。
2. 引導直徑 "N" 公差 : h7 。
3. 重量誤差 3% 。
4. 以上數值如有變更, 恕不另行通知。

1. Shaft dia "D" clearance:  $\varnothing 11 \sim \varnothing 28$ : j6 ,  $\varnothing 38 \sim \varnothing 48$ : k6.
2. Guidance dia "N" clearance : h7.
3. Weight error of 3 %.
4. The above mentioned value subject to change without notice.

## MODEL : ETEF

臥式剎車馬達 Horizontal Brake Motors



unit: mm

輸出 Output (HP)		框號 Frame NO.	圖號 Figure NO.	AA	AB	AC	AD	AE	BB	HA	HC	HD	HE	KK	安裝尺寸 Mounted Size				
4P	6P														A	B	C	H	S
1/4	-	63	1	30	120	145	123	98	101	8.5	136	-	28	22	100	80	40	63	7
1/2	1/4	71	1	38	140	156	130	105	115	10	148	-	63	22	112	90	45	71	7
1	1/2	80	1	43.5	155	176.5	143	115	130	10	167.5	-	57	22	125	100	50	80	10
2	1	90L	1	35	170	207	163	135	150	12.5	188	-	66	22	140	125	56	90	10
3	2	100L	2	46	195	221.5	176	148	175	14	-	244	68	28	160	140	63	100	12
5	3	112M	2	48	226	239	186	158	175	14	-	266	82	28	190	140	70	112	12

L	LE	軸端 End of Shaft							軸承 Bearing		重量 Weight (kg)
		D	E	ED	F	G	GA	DH	負載端 L. S.	反負載端 O. S.	
218	75	11	23	18	4	8.5	12.5	M4x8	6201ZZ	6201ZZ	11
248.5	83.5	14	30	24	5	11	16	M5x10	6203ZZ	6202ZZ	13
289.5	100	19	40	25	6	15.5	21.5	M6x12	6204ZZ	6203ZZ	19
345	114	24	50	45	8	20	27	M8x16	6205ZZ	6204ZZ	27
3387	124	28	60	55	8	24	31	M10x20	6206ZZ	6205ZZ	35.5
405	135	28	60	55	8	24	31	M10x20	6306ZZ	6305ZZ	44

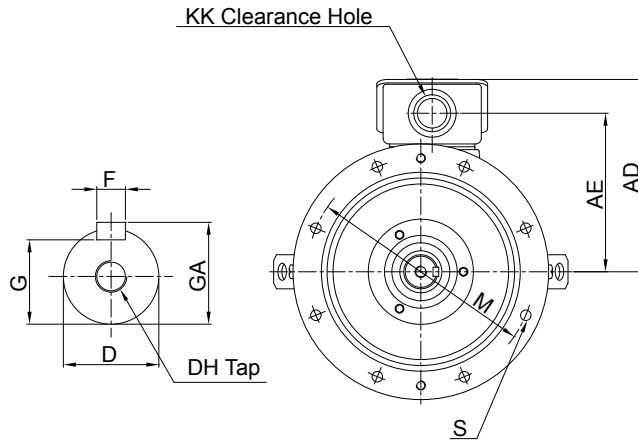
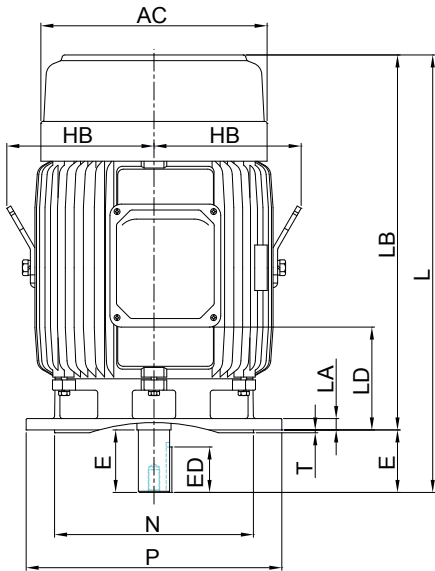
1. 心軸直徑 "D" 公差:  $\varnothing 11 \sim \varnothing 28$ : j6,  $\varnothing 38 \sim \varnothing 48$ : k6。
2. 心軸高度 "H" 公差:  $H_{-0.05}^0$ 。
3. 重量誤差 3%。
4. 以上數值如有變更, 恕不另行通知。

1. Shaft dia "D" clearance:  $\varnothing 11 \sim \varnothing 28$ : j6,  $\varnothing 38 \sim \varnothing 48$ : k6.
2. Shaft height "H" clearance:  $H_{-0.05}^0$ .
3. Weight error of 3%.
4. The above mentioned value subject to change without notice.

# ENGINEERING INFORMATION

## MODEL : IEC

標準馬達 Standard Motor



材質 Material : 鑄鐵 Cast Iron

極數 Pole	馬力 HP	重量 (kg) Weight
4P	1/4	10
	1/2	12
	1	19
	2	26
	3	35
	5	47
	7 1/2	71
	10	81
	15	116
	20	133
6P	25	163
	30	190
	40	275
	50	300
	1/8	-
	1/4	12
	1/2	19
	1/8	26
	2	35
	3	47
5	71	
7 1/2	81	
10	116	
15	133	
20	163	
25	190	
30	275	
40	300	

unit: mm

輸出 (HP) Output				框號 IEC Frame	AC	AD	AE	HB	KK	L	LA	LB	LD	M	N	P	S	T	軸端 End of Shaft							
2P	4P	6P	8P																D	E	ED	F	G	GA	DH	
1/4	1/4	---	---	63	144	123	93	---	22	248	12	225	74	130	110	160	4-Ø10	3.5	11	23	10	4	8.5	12.5	M4X8	
1/2	1/2	1/4	---	71	162	133	103	---	22	277.5	12	247.5	82	130	110	160	4-Ø10	3.5	14	30	14	5	11	16	M5X10	
1	1	1/2	1/4	80	177	144	112	---	22	282	12	242	60	165	130	200	4-Ø12	3.5	19	40	25	6	15.5	21.5	M6X12	
2、3	2	1	1/2	90L	200	157	125	---	22	371.5	12	321.5	113	165	130	200	4-Ø12	3.5	24	50	32	8	20	27	M8X16	
---	3	2	1	100L	219	180	145	140	28	374.5	16	314.5	88	215	180	250	4-Ø14.5	4.0	28	60	40	8	24	31	M10X20	
5	5	3	2	112M	235	189	154	150	28	431	16	371	135	215	180	250	4-Ø14.5	4.0	28	60	40	8	24	31	M10X20	
7.5、10	7.5	5	3	132S	273	224	180	169	35	454	20	374	97	265	230	300	4-Ø14.5	4.0	38	80	64	10	33	41	M12X24	
---	10	7.5	5	132M	273	224	180	169	35	492	20	412	116	265	230	300	4-Ø14.5	4.0	38	80	64	10	33	41	M12X24	
15、20	15	10	7.5	160M	334	263	218	217	35	608	20	498	139	300	250	350	4-Ø18.5	5.0	42	110	80	12	37	45	M16X32	
25	20	15	10	160L	334	263	218	217	35	652	20	542	161	300	250	350	4-Ø18.5	5.0	42	110	80	12	37	45	M16X32	
30	---	---	---	180MA	382	305	250	241	52	672	20	562	158	350	300	400	4-Ø18.5	5.0	48	110	80	14	42.5	51.5	M16X32	
---	25	20	15	180MC	382	305	250	241	52	672	20	562	158	350	300	400	4-Ø18.5	5.0	48	110	80	14	42.5	51.5	M16X32	
---	30	20	15	180MC	382	305	250	241	52	672	20	562	158	350	300	400	4-Ø18.5	5.0	48	110	80	14	42.5	51.5	M16X32	
40	---	---	---	180LA	382	305	250	241	52	710	20	600	177	350	300	400	4-Ø18.5	5.0	55	110	80	16	49	59	M20X40	
---	40	25	20	180LC	382	305	250	241	52	710	20	600	177	350	300	400	4-Ø18.5	5.0	55	110	80	16	49	59	M20X40	
---	40	30	20	180LC	382	305	250	241	52	710	20	600	177	350	300	400	4-Ø18.5	5.0	55	110	80	16	49	59	M20X40	
50、60	---	---	---	200LA	420	341	274	260	65	770	20	660	178	400	350	450	8-Ø18.5	5.0	55	110	80	16	49	59	M20X40	
---	50	40	25	200LC	420	341	274	260	65	800	20	660	178	400	350	450	8-Ø18.5	5.0	60	140	110	18	53	64	M20X40	
---	60	50	30	200LC	420	341	274	260	65	800	20	660	178	400	350	450	8-Ø18.5	5.0	60	140	110	18	53	64	M20X40	
75	---	---	---	225SA	458	386	312	286	90	786	22	676	175	500	450	550	8-Ø18.5	5.0	55	110	80	16	49	59	M20X40	
---	75	60	40	225SC	458	386	312	286	92	816	22	676	175	500	450	550	8-Ø18.5	5.0	65	140	110	18	58	69	M20X40	
100	---	---	---	A250SA	510	479	364	312	92	890.5	22	780.5	201.5	500	450	550	8-Ø18.5	5.0	55	110	80	16	49.5	59	M20X40	
---	100	75	50	A250SC	510	479	364	312	92	920.5	22	780.5	201.5	500	450	550	8-Ø18.5	5.0	75	140	110	20	67.5	79.5	M20X40	
125	---	---	---	A250MA	510	479	364	312	92	947.5	22	837.5	230	500	450	550	8-Ø18.5	5.0	55	110	80	16	49	59	M20X40	
---	125	100	60	A250MC	510	479	364	312	92	977.5	22	837.5	230	500	450	550	8-Ø18.5	5.0	75	140	110	20	67.5	79.5	M20X40	
100	---	---	---	A250SA	510	479	364	312	92	890.5	22	780.5	201.5	500	450	550	8-Ø18.5	5.0	55	110	80	16	49.5	59	M20X40	
---	100	75	50	A250SC	510	479	364	312	92	920.5	22	780.5	201.5	500	450	550	8-Ø18.5	5.0	75	140	110	20	67.5	79.5	M20X40	
125	---	---	---	A250MA	510	479	364	312	92	947.5	22	837.5	230	500	450	550	8-Ø18.5	5.0	55	110	80	16	49	59	M20X40	
---	125	100	60	A250MC	510	479	364	312	92	977.5	22	837.5	230	500	450	550	8-Ø18.5	5.0	75	140	110	20	67.5	79.5	M20X40	

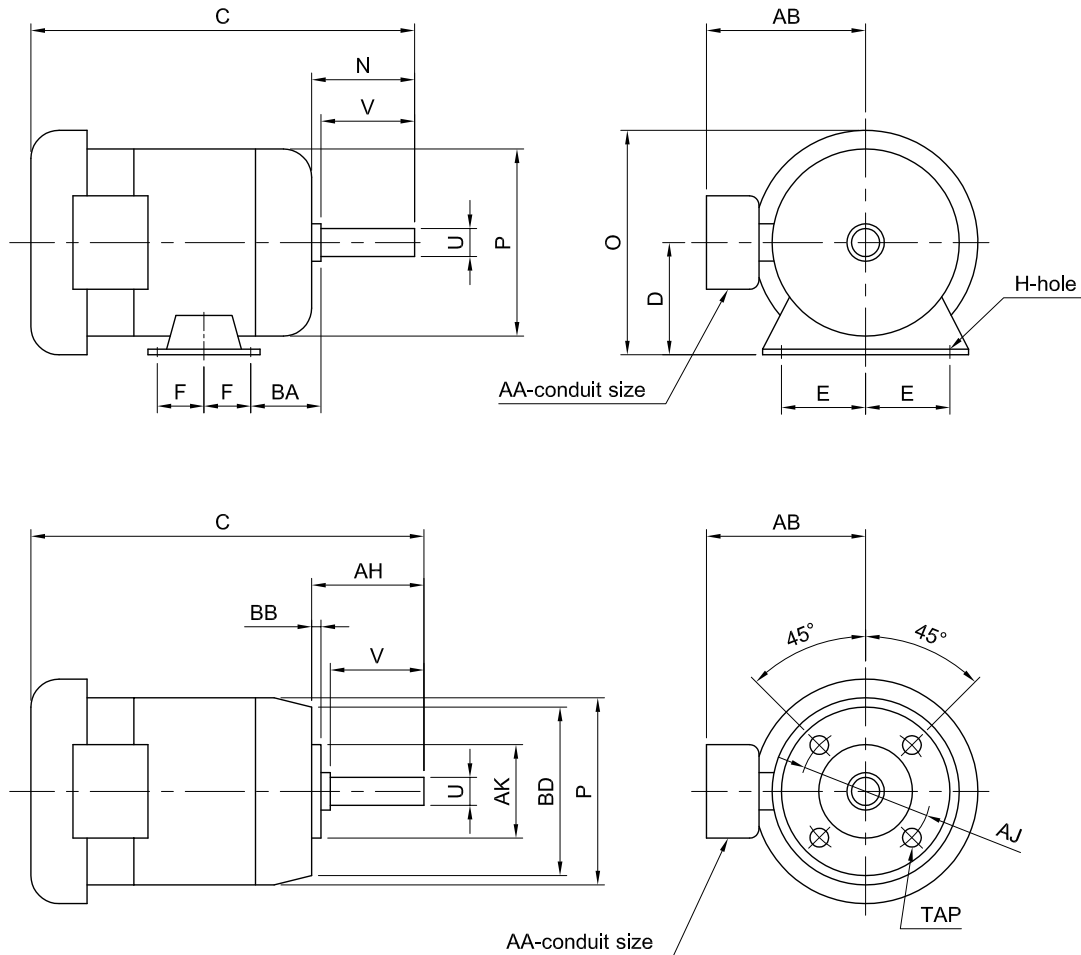
1. 以上數值僅供參考。  
2. 實際尺寸依製造商規格為準。

1.The above information is for reference only.  
2.Certified dimension drawings from the motor manufacturer.



MODEL : NEMA

標準馬達 Standard Motor



unit: mm

Nema Frame	D	E	F	H	MIN. N	D	P	U	MIN. V	AA	AB	AH	AJ	AK	BA	BB	BD	TAP
48	3	2-1/8	1-3/8	11/32 SLOT	1-7/8	5-7/8	5-11/16	1/2	1-1/2	1/2	4-3/8	1-11/16	3-3/4	3	2-1/2	5/32	5-5/8	1/2-20
56	3-1/2	2-7/16	1-1/2	11/32 SLOT	2-1/4	6-7/8	6-5/8	5/8	1-7/8	1/2	5	2-1/16	5-7/8	4-1/2	2-3/4	5/32	6-1/2	3/8-16
143T 145T	3-1/2	2-3/4	2 2-1/2	11/32	2	6-7/8	6-5/8	7/8	2	3/4	5-1/4	2-1/8	5-7/8	4-1/2	2-1/4	5/32	6-1/2	3/8-16
182 184 182T 184T	4-1/4	3-3/4	2-1/4 2-3/4 2-1/4 23/4	13/32	2 2-3/4	8-11/16	7-7/8	7/8 1-1/8	2 2-3/4	3/4	5-7/8	2-1/8 2-7/8	5-7/8 7-1/4	4-1/2 8-1/2	2-3/4	5/32 1/4	6-1/2 9	3/8-16 1/2-13
213 215 213T 215T	5-1/4	4-1/4	2-3/4 3-1/2 2-3/4 3-1/2	13/32	3-3/8	10-1/4	9-9/16	1-1/8 1-3/8	3-3/4 3-3/8	3/4	7-3/8	3 3-3/8	5-7/8 7-1/4	8-1/2	3-1/2	1/4	9	1/2-13
254U 256U 254T 256T	6-1/4	5	4-1/8 5 4-1/8 5	17/32	4-1/4	13	13-1/2	1-3/8 1-5/8	3-1/2 4	1	9-5/8	3-3/4 4	7-1/4	8-1/2	4-1/4	1/4	10	1/2-13

1. 以上數值僅供參考。  
2. 實際尺寸依製造商規格為準。

1.The above information is for reference only.  
2.Certified dimension drawings from the motor manufacturer.

# ENGINEERING INFORMATION

減速比 Ratio	入力轉速 Input R.P.M.	出力軸轉速表 Output R.P.M.				
	1800	1500	1200	900	600	
5	360	300	240	180	120	
10	180	150	120	90	60	
20	90	75	60	45	30	
30	60	50	40	30	20	
40	45	37.5	30	22.5	15	
50	36	30	24	18	12	
60	30	25	20	15	10	
80	22.5	18.75	15	11.25	7.5	
100	18	15	12	9	6	
120	15	12.5	10	7.5	5	
150	12	10	8	6	4	
180	10	8.33	6.67	5	3.33	
200	9	7.5	6	4.5	3	
300	6	5	4	3	2	
500	3.6	3	2.4	1.8	1.2	
1000	1.8	1.5	1.2	0.9	0.6	
2000	0.9	0.75	0.6	0.45	0.3	

## 馬達 kW 選定表扭力曲線圖 Motor kW Selection Table Torque Curve Drawing

1. 本選定表係針對標準馬達 (低壓三相全密式感應電動機, E 級絕緣) 使用而言, 對於啟動頻繁、變動負載或衝擊負載等特殊負載條件者, 不在此限。

2. 馬達所需 kW 以  $\frac{\text{必要負載轉矩}}{\text{減速部效率}}$  計算所得決定之

●減速機效率 2 段減速時為 95%, 3 段減速時為 92%。

●必要負載轉矩, 如為變動負載以其等值轉矩表示之, 如負載變動循環不明時, 以最大轉矩使用。

●一般對啟動轉矩不予考慮。

$$\frac{\text{負載轉矩}}{\text{效率}} = \frac{35.1}{0.95} = 36.9\text{Kg-m}$$

負載轉矩 36.9kg.m 之橫線與 58RPM 之垂直線之交點可得知馬達使用 2.2kW 計算值

2.19kW, 可選用 3HP 馬達

$$\text{減速比} = \frac{\text{出力轉速}}{\text{馬達轉速}} = \frac{58}{1750} = \frac{1}{30}$$

1.This selection table is for standard motor (low voltage 3-phase fully-enclosed induction motor, E class insulation). But it is exclusive for the conditions of frequent starting, variable loading or impact loading etc.

2.kW required by the motor shall be decided from the calculation of Necessary loading torque.

Reducing efficiency  
The reducing efficiency of 2-stage reducer is 95%, and the reducing efficiency of 3-stage reduce is 92%.

Necessary loading torque, if the change loading is indicated by its equivalent value or if loading change cycle is unclear, please use the maximum torque  
In general, start torque won't be considered.

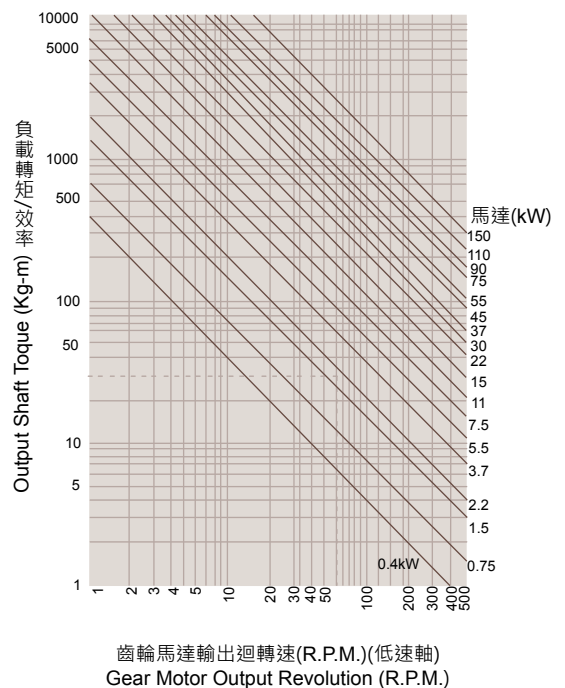
$$\frac{\text{Loading Torque}}{\text{Efficiency}} = \frac{35.1}{0.95} = 36.9\text{Kg-m}$$

From the cross point of the cross line of loading torque 6.3Kg-m and the vertical line of 60RPM. we know the motor applied is 0.4kW.

Calculation value :  
0.39kW can select to use of 1/2HP motor.

$$\text{Reducing ratio} = \frac{\text{Output Revolving speed}}{\text{Motor RPM}}$$

$$= \frac{58}{1750} = \frac{1}{30}$$



單位換算 Conversion Factors					
1kW	1HP	1kgf·m	1 Nm	1 Lb-in	1 Lb-ft
1.34 HP	0.746 kW	9.807 Nm	0.10197 Kgf·m	0.1129 Nm	1.356 Nm
1.36 PS	1.01 PS	7.233 Lb-ft	0.73756 Lb-ft	0.0115 Kgf·m	0.1383 Kgf·m
102.0 Kgf/m/s	76.07 kgf·m/s	86.796 Lb-in	8.85070 Lb-in	0.083 Lb-ft	12 Lb-in

電動機公式 Electrical Power Formula			
	直流 Direct Current	交流 Alternating Current	
		單相 Single Phase	三相 Three Phase
AMP=	$(HP \times 746) / (VOLT \times EFF)$ $(kW \times 1000) / VOLTS$	$(HP \times 746) / (VOLT \times EFF)$ $(kW \times 1000) / (VOL \times PF)$	$(HP \times 746) / (VOLT \times EFF \times PF \times 1.73)$ $(kW \times 1000) / (VOLT \times PF \times 1.73)$
kW=	$(AMP \times VOLT) / 1000$	$(AMP \times VOLT \times PF) / 1000$	$(AMP \times VOLT \times PF \times 1.73) / 1000$
HP=	$(AMP \times VOLT \times EFF) / 746$	$(AMP \times VOLT \times EFF \times PF) / 746$	$(AMP \times VOLT \times EFF \times PF \times 1.73) / 746$

PF= 功率因數約 80%  
EFF= 效率, 約 80~90%  
詳細資料請與馬達製造商聯絡

Power Factor (Usually Estimated at 80% )  
Efficiency (Usually 80~90%)  
Contact Motor Manufacturer for Complete Information.

## 公式集 Formula

欲知的條件 Item	代號 Symbol	公式 Formula	單位 Unit
扭力 Troque	T	$T=F \times R$	(kgf·m)
扭力 Troque	T	$T=(716 \times HP) / N$	(kgf·m)
扭力 Troque	T	$T=(974 \times kW) / N$	(kgf·m)
馬力 HP	HP	$HP=(T \times N) / 716$	(HP)
動力 kW	kW	$kW=(T \times N) / 974$	(kW)
馬力 HP	HP	$HP=(F \times V) / 75$	(HP)
動力 kW	kW	$kW=(F \times V) / 102$	(kW)
速度 Speed	V	$V=(\pi \times D \times N) / 60$	(m/sec)
減速比 Ratio	I	$i=N1 / N2$	
飛輪效應 Dynamic moment	GD <sup>2</sup>	$GD^2 = 364 \times (F \times V^2 / N^2)$	Kgm <sup>2</sup>

F: 重量 Mass (kg)  
N: 迴轉數 Return per minutes (R.P.M.)

D: 直徑 Diameter (M)  
R: 半徑 Radius (M)

# LIMING REDUCERS

## ■ 臥式齒輪減速機 Horizontal



H



LSH



HD



LSHD



HB

## ■ 立式齒輪減速機 Vertical



V



LSV



VD



LSVD



VB

## ■ 減速機附無段變速 Reducer With Variator



H □ RV (RCGH)



V □ RV (RCGV)



HW □ RC (RCHW)

## ■ 皮帶式無段變速 Gear Reducer With Belt-Variator



H □ GRV (GRV-H)



V □ GRV (GRV-V)



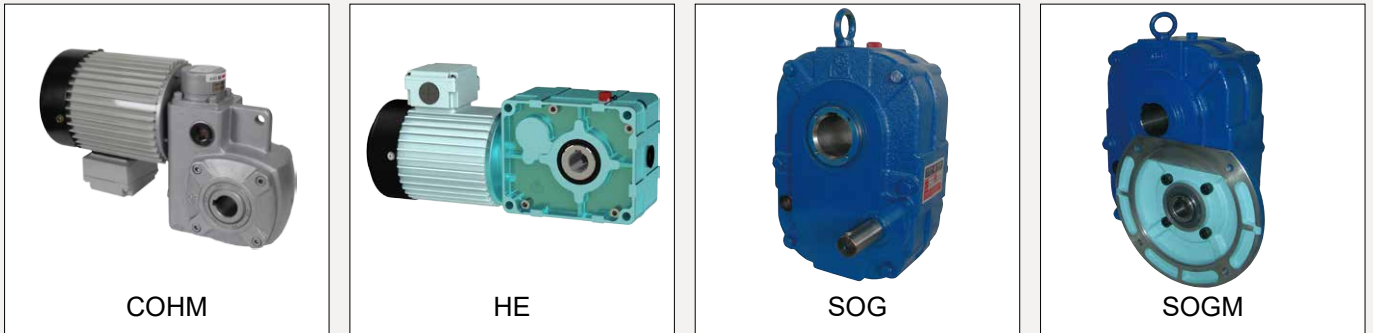
HW □ WRV (WRV-H)



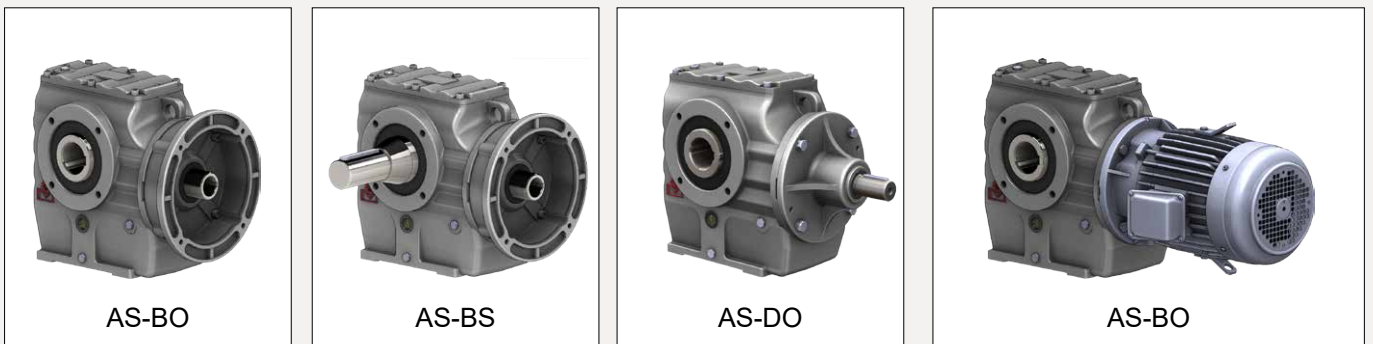
VW □ WRV (WRV-V)

# 利明牌減速機系列產品

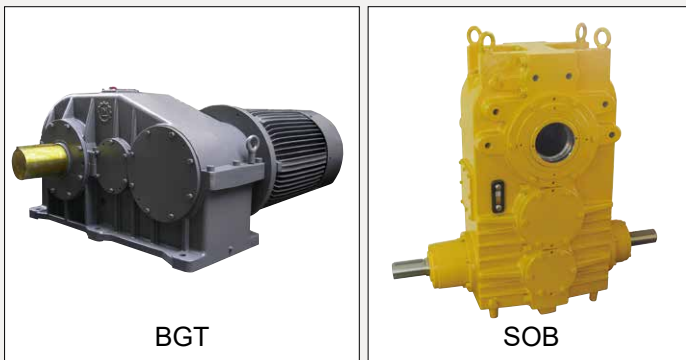
## ■ 軸上型蝸輪減速機 Shaft-Mounted Worm Reducer



## ■ 齒蝸輪減速機 Gear-Worm Reducer



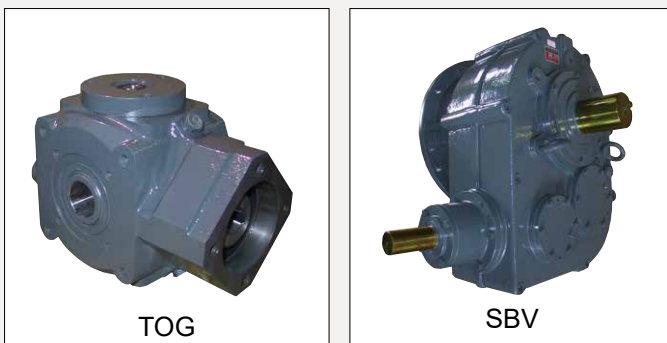
## ■ 大型齒輪箱 Gearbox



## ■ 斜齒輪減速機 Hollow Shaft Gear



## ■ 專用型減速機 Special Gear Reducers





# LIMING REDUCERS

## 單段蝸輪減速機 Single Reduction Worm Gear Reducers

RATIO:1/10~1/60

W 系列 W Series

標準型 Standard	附馬達盤 Motor Flange	出力軸中空 Output Bore	附馬達且出力軸中空 Output Bore & Motor Flange
 HW 40#~175#	 HMW 50#~175#	 HOW 50#~175#	 HOM 50#~175#
 LW 50#~350#	 LMW 60#~155#	 LOW 50#~175#	 LOM 60#~155#
 VW 40#~350#	 VMW 50#~175#	 VOW 40#~175#	 VOM 50#~175#
 UW 40#~350#	 UMW 50#~175#	 VOWY 40#~135#	 VOMY 50#~135#

# 利明牌減速機系列產品

## 裝配油壓馬達用 For Hydraulic Motor



## WRC 系列 WRC Series



## E 系列 E Series



## T 系列 T Series



## VOF 系列 VOF Series



## LD 系列 LD Series




# LIMING REDUCERS

■ 雙段蝸輪減速機 ( WORM-WORM )

■ Double Reduction Worm Gear Reducers

RATIO: 1/100~1/3600

標準型 Standard	附馬達盤 Motor Flange	出力軸中空 Output Bore	附馬達且出力軸中空 Output Bore & Motor Flange
 LH 60#~175#	 LHM 80#~175#	 LOH 60#~175#	 LOHM 80#~175#
 VH 60#~175#	 VHM80#~175#	 VOH 60#~175#	 VOHM 80#~175#
 UH 60#~175#	 UHM80#~175#		
 EH 60#~135#	 EHM 80#~135#	 EOH 60#~135#	 EOHM 80#~135#
 VOFH 70#~135#	 VOFHM 80#~135#		

# 利明牌減速機系列產品

- 雙段蝸輪減速機 ( GEAR-WORM )
- Double Reduction Worm Gear Reducers

RATIO:1/30~1/300

標準型 Standard	附馬達 Motor	出力軸中空 Output Bore	附馬達且出力軸中空 Output Bore & Motor Flange
 LG 80#~155#	 LGM 80#~155#	 LOG 80#~155#	 LOGM 80#~155#
 VG 80#~155#	 VGM 80#~155#	 VOG 80#~155#	 VOGM 80#~155#
 EG 80#~135#	 EGM 80#~135#	 EOG 80#~135#	 EOGM 80#~135#
 UG 80#~155#	 UGM 80#~155#		
 VOFG 80#~135#	 VOFGM 80#~135#		



# LIMING REDUCERS

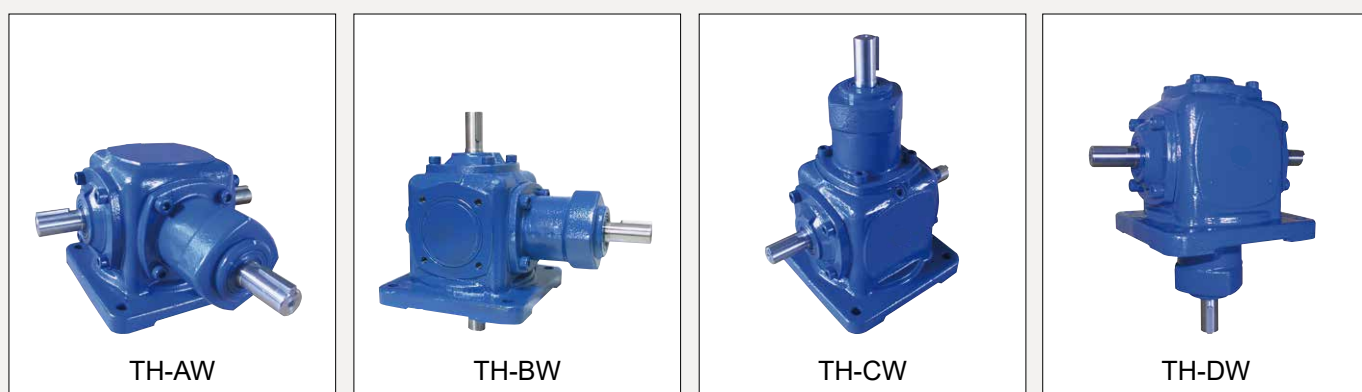
## ■ 法蘭式蝸輪減速機系列 Flange-Mounted Worm Reducer Series



## ■ 螺旋升降器減速機系列 Screw Jack Reducer Series



## ■ 螺旋傘齒輪轉向器系列 Bevel Gear Reducer Series





# 利明牌減速機系列產品

## ■ 鋁合金蝸輪減速機系列 Aluminum Alloy Worm Reducer Series



# LIMING REDUCERS

## ■ 小型齒輪減速機系列 Small Gear Reducer Series



## ■ 小型戟齒輪減速機系列 Small Hypoid Reducer Series



## ■ 小型同心軸戟齒輪減速機系列 Small Hypoid Gear Reducer Series (Concentric Shaft)



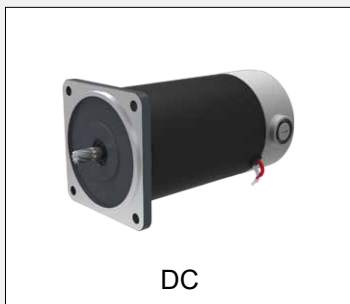
註：另有實心軸系列 (SK-D)。 Note: There are also solid shaft series (SK-D).

## ■ 小型蝸輪減速機系列 Small Worm Reducer Series



# 利明牌減速機系列產品

## ■ 微型齒輪減速機 Compact AC Gearmotor Series





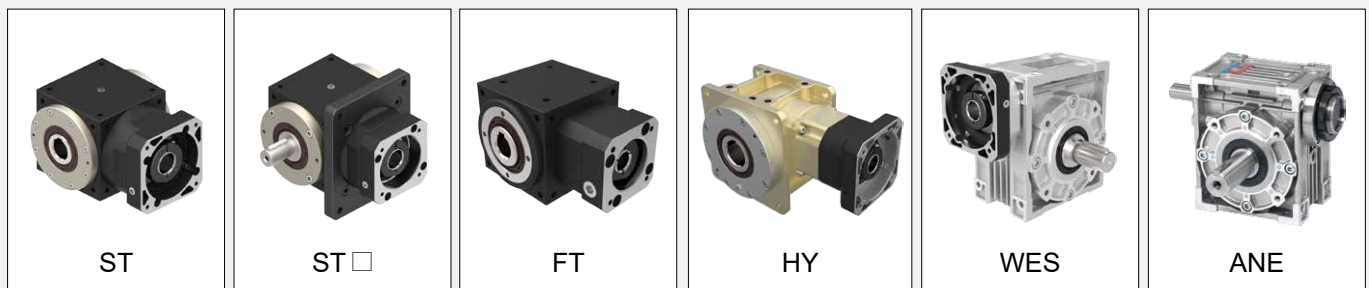
# LIMING REDUCERS

## ■ 伺服用減速機 Reducers for Servo Motor

## ■ 高精密行星減速機 High Precision Planetary Reducers



## ■ 直交軸伺服用減速機 High Precision Right Angle Reducers



## ■ 伺服用中空旋轉平台減速機 Hollow Rotary Actuator Reducers



# 利明牌減速機系列產品

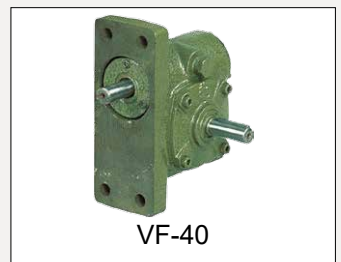
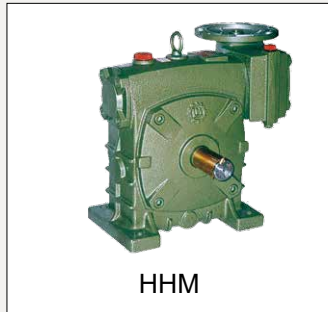
## 傳動用減速機 Transaxle Reducers

 4W30	 AT29	 CFG-A	 L1	 M1T
 M1T-VIBE	 M3T	 M4T	 M6	 M6T
 M8	 M9L	 M9M	 M9S	 M620
 MD3850	 ME116	 MO3446	 MW30	 MW32
 MW37	 MW40	 MW58	 MW63	 PC90A
 PC90B	 PM1922	 SU3344	 TS3058	



# LIMING REDUCERS

## ■ 特殊用減速機 Special Purpose Speed Reducer



## ■ 電梯主機 Traction Machine

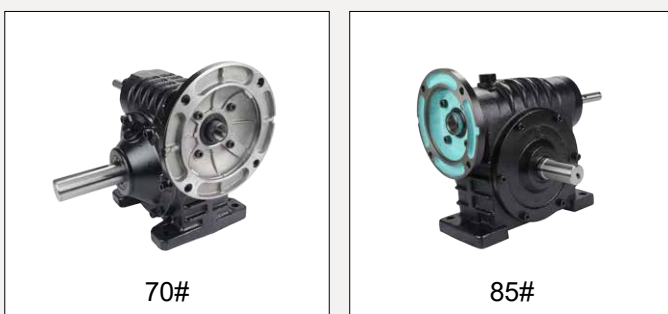
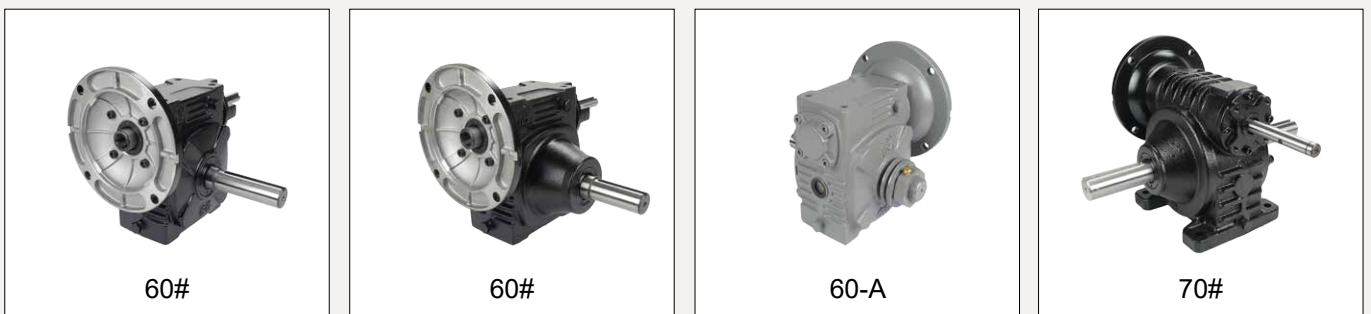
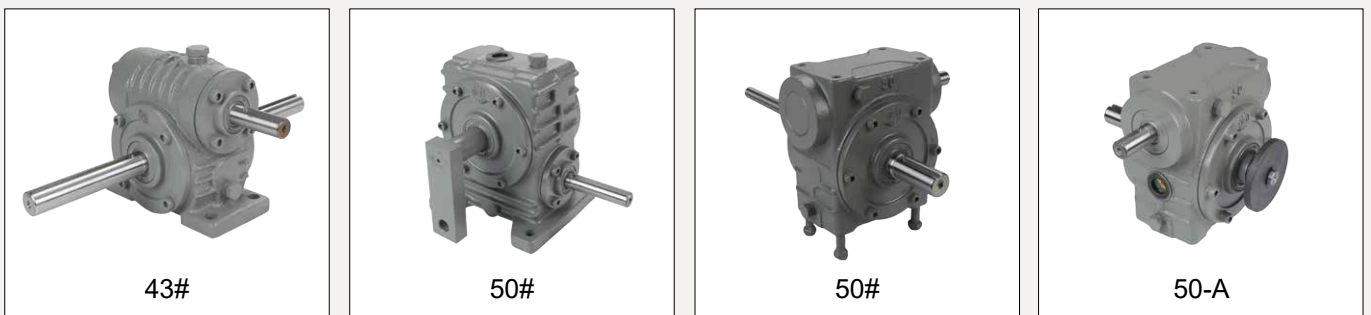


精密傳動元件  
Precision Transmission parts

# 利明牌減速機系列產品

■ 專用型蝸輪減速機 (Inch Size)

■ Special Worm Gear Reducers

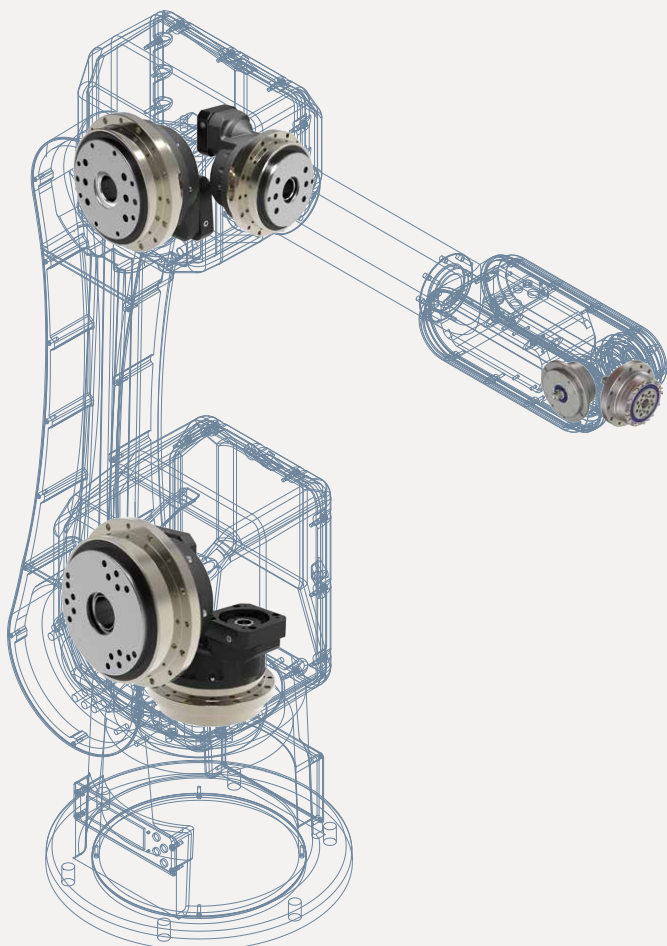


# LIMING REDUCERS

## ■ 諧波減速機系列 ROBOICDRIVE Series



## ■ 高精密擺線減速機系列 CYKODRIVE Series





2021年3月版

- 由於產品改良，未經通告變更印刷製品規格，請諒察。
- 由於印刷特性與拍攝技術的關係，印刷顏色與實物稍有差異，請諒察。
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- 本目錄於製作時已力求完美，但因機種繁多，校稿疏失在所難免，請於訂貨時與業務人員進行確認。

March, 2021

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