

GEAR-WORM REDUCER SERIES

齒蝸輪減速機系列

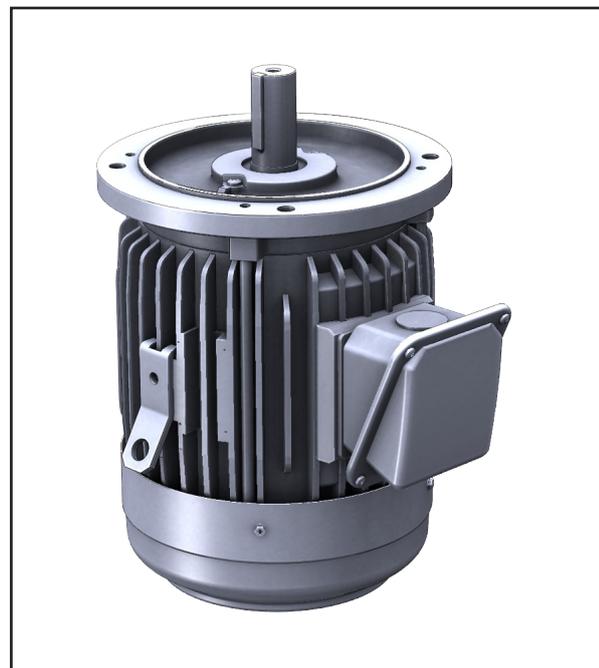
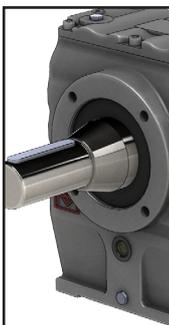
AS



Indication of Model Numbers

機種型號表示

產品樣式選擇							
AS	067	B	O	F	60	007	A
減速機型 Type	型號 Model	入力表示 Input	出力軸表示 Output	出力法蘭表示 Output Flange	減速比 Ratio	入力 kW Input kW	馬達極數 Motor Poles
AS	047 057 067 077 087 097	B 入力法蘭 Input Flange M 馬達連結 Motor D 入力軸 Input shaft	O 中空軸 Hollow shaft S 實心軸 Solid shaft	F 法蘭型 Flange A 側固型 Torque arm <input type="checkbox"/> 無 Nothing	20,30 40,45 60,80 90,100 120,150 160,180 200,240	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: 4 極 Poles B: 6 極 Poles C: 2 極 Poles D: 8 極 Poles



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
M 馬達直結 Motor + O 中空出力軸 Hollow shaft	 MO	 MOF	 MOA
M 馬達直結 Motor + S 實心出力軸 Solid shaft	 MS	 MSF	 MSA
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

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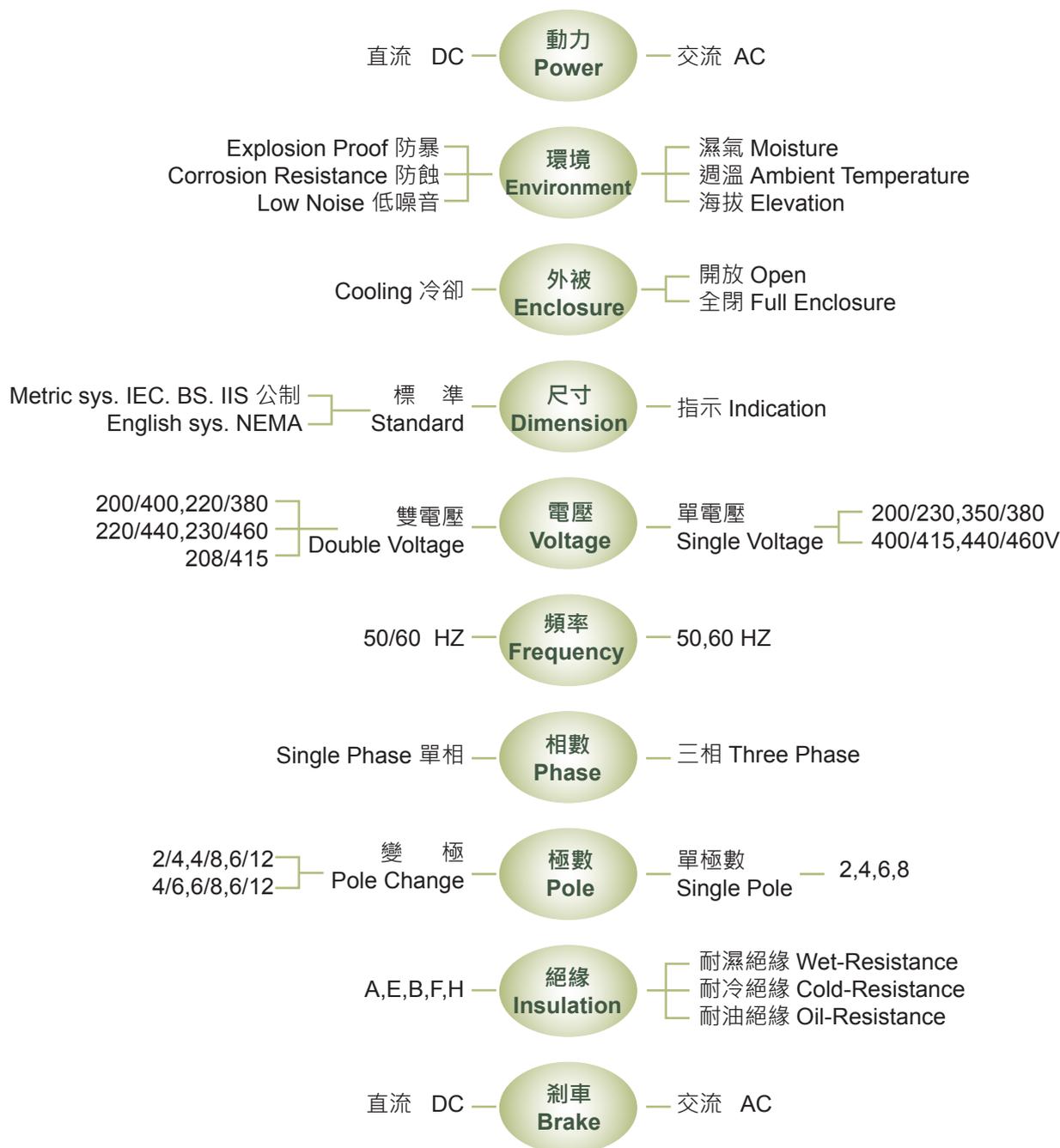
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一般注意事項

- ◆ 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. 起動停止頻繁。
 3. 需特別大之起動轉矩。
 4. 與往復運動機械連結時。

General Notices

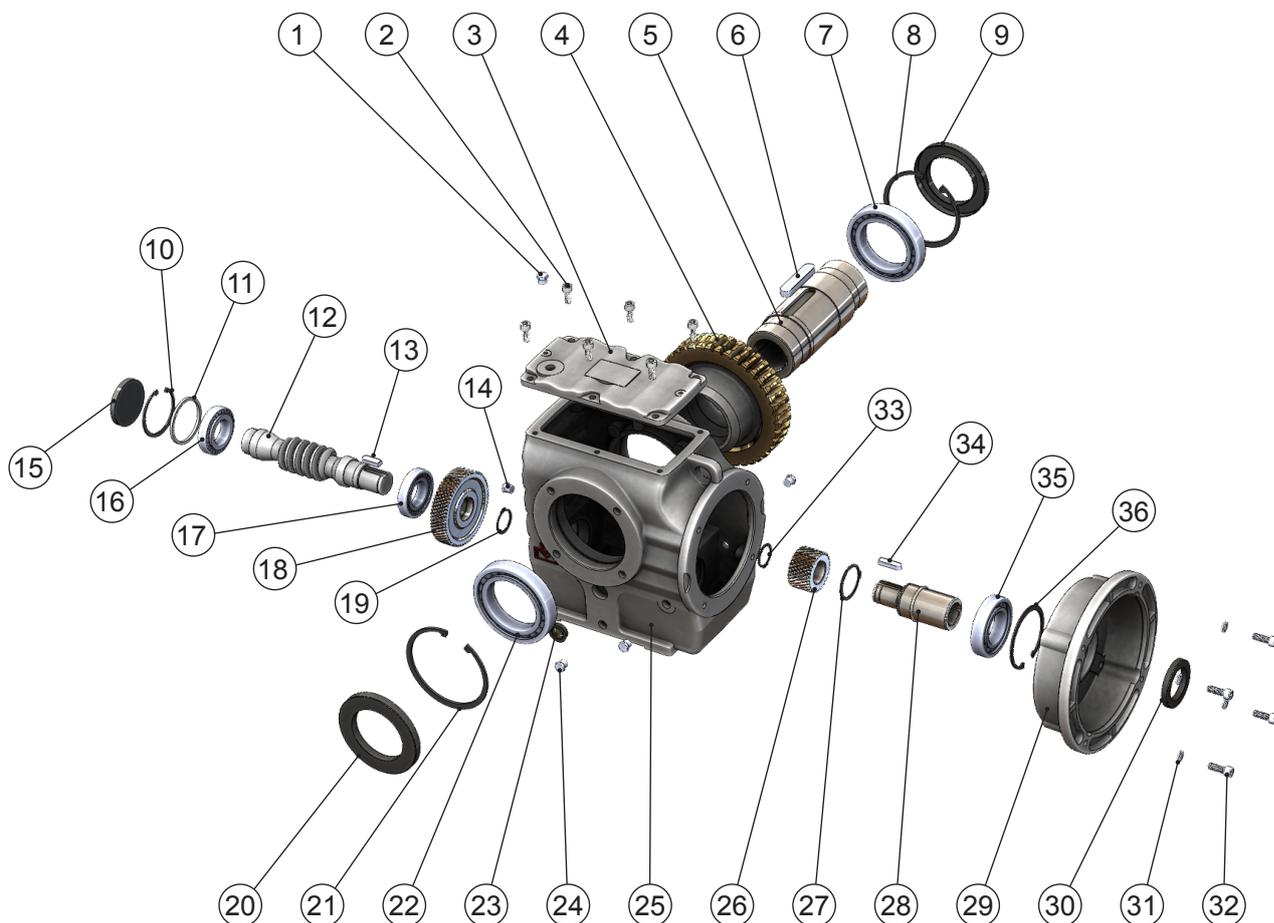
- ◆ Electricity: Single phase, 3 phase, voltage frequency, capacity of transformer, etc.
- ◆ Loading machine: Required horsepower, load torque characteristics.
- ◆ Special Conditions of Use:
 1. Rush reverse or stop.
 2. Frequent start-up or stop.
 3. Specially large Start-up torque required.
 4. Where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



- ◆ 利明牌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。
- ◆ LIMING standard gear reducers use low voltage, 3 phase induction motor, IEC dimension, full-enclosed outer fan cage rotor.

分解系統圖 System Drawing

MODEL : AS



編號 NO.	零件名稱 Name of Parts	編號 NO.	零件名稱 Name of Parts	編號 NO.	零件名稱 Name of Parts
1	油栓 Oil Plug	13	鍵 Key	25	齒輪箱 Outer Shell
2	內六角螺柱 Hex 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 Moter 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	內六角螺柱 Hex 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 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

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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。
- ◆ 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煞車馬達的煞車器產生鏽蝕失去煞車功能。
- ◆ 搭配變頻器使用時，如常使用於低頻，請使用變頻專用馬達。

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 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.

一般故障原因及改善方法

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

以上所列为一般故障原因，如有其它故障情形時，請與本公司連絡，我們將會提供最正確之服務。

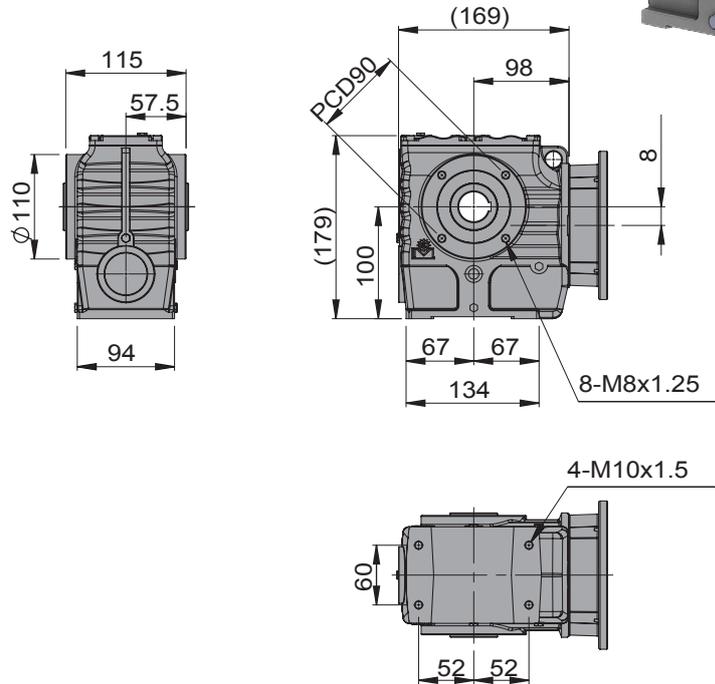
The above items are general fault descriptions. In case of other kinds of faults, please contact with us to obtain most correct services.

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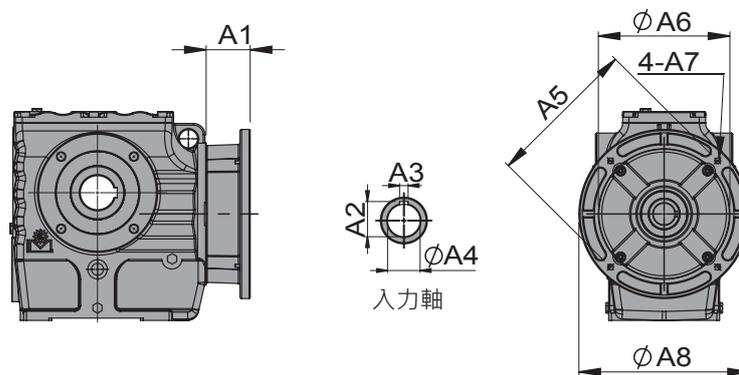


MODEL : AS047



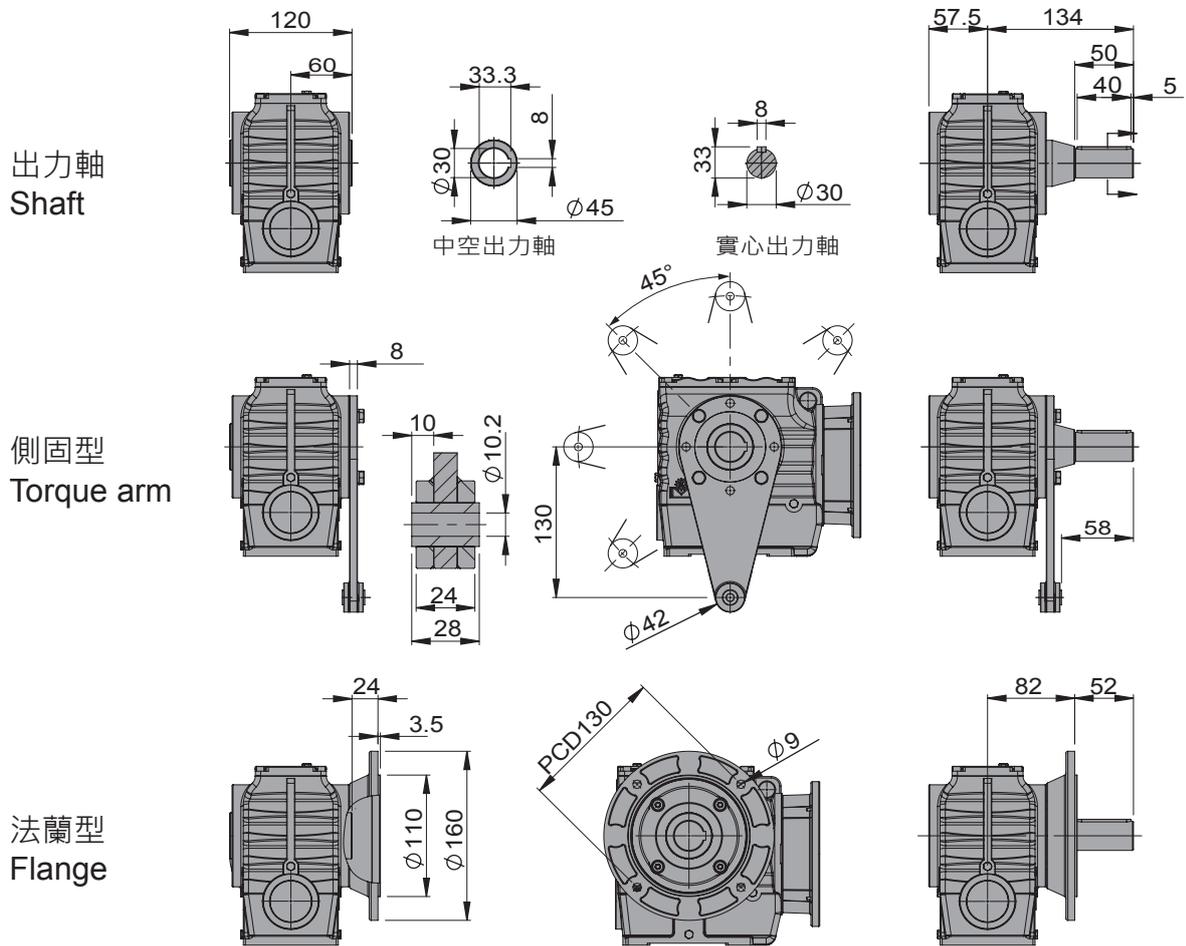
入力尺寸 Input

入力法蘭
Input Flange



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

出力尺寸 Output



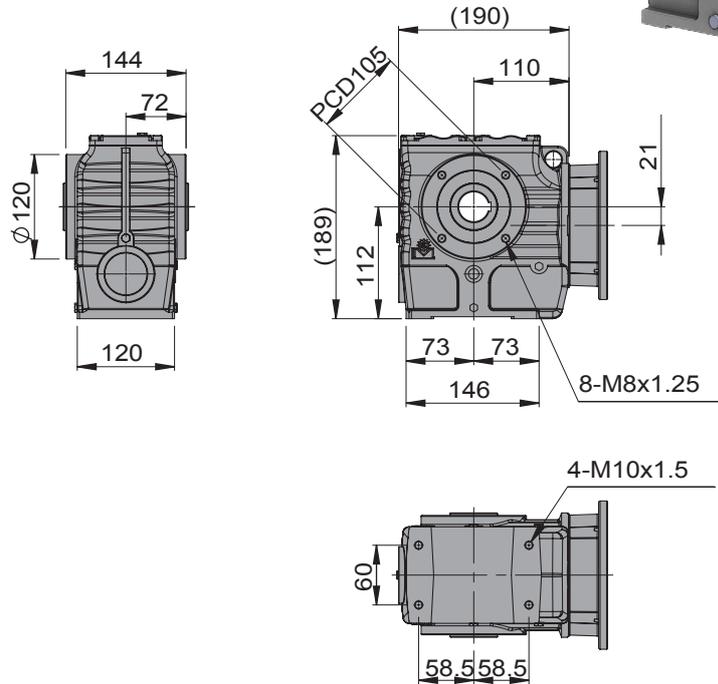
Power	0.2kW		0.4kW		0.75kW	
減速比	OT(Nm)	S.F.	OT(Nm)	S.F.	OT(Nm)	S.F.
20	16	6.87	34	3.23	70	1.57
30	25	5.05	52	2.43	105	1.20
40	33	4.14	69	1.98	140	0.97
45	35	3.35	73	1.60	149	0.78
60	47	2.71	98	1.30	198	0.64
80	62	2.13	127	1.04	258	0.51
90	60	2.00	123	0.97	250	0.48
100	62	1.50	129	0.72		
120	80	1.62	164	0.79		
150	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				

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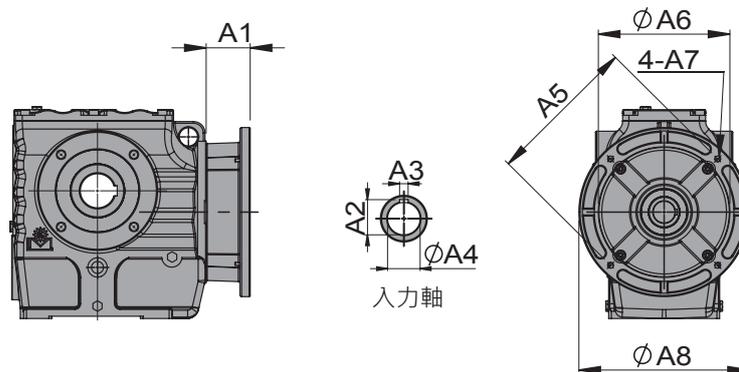


MODEL : AS057



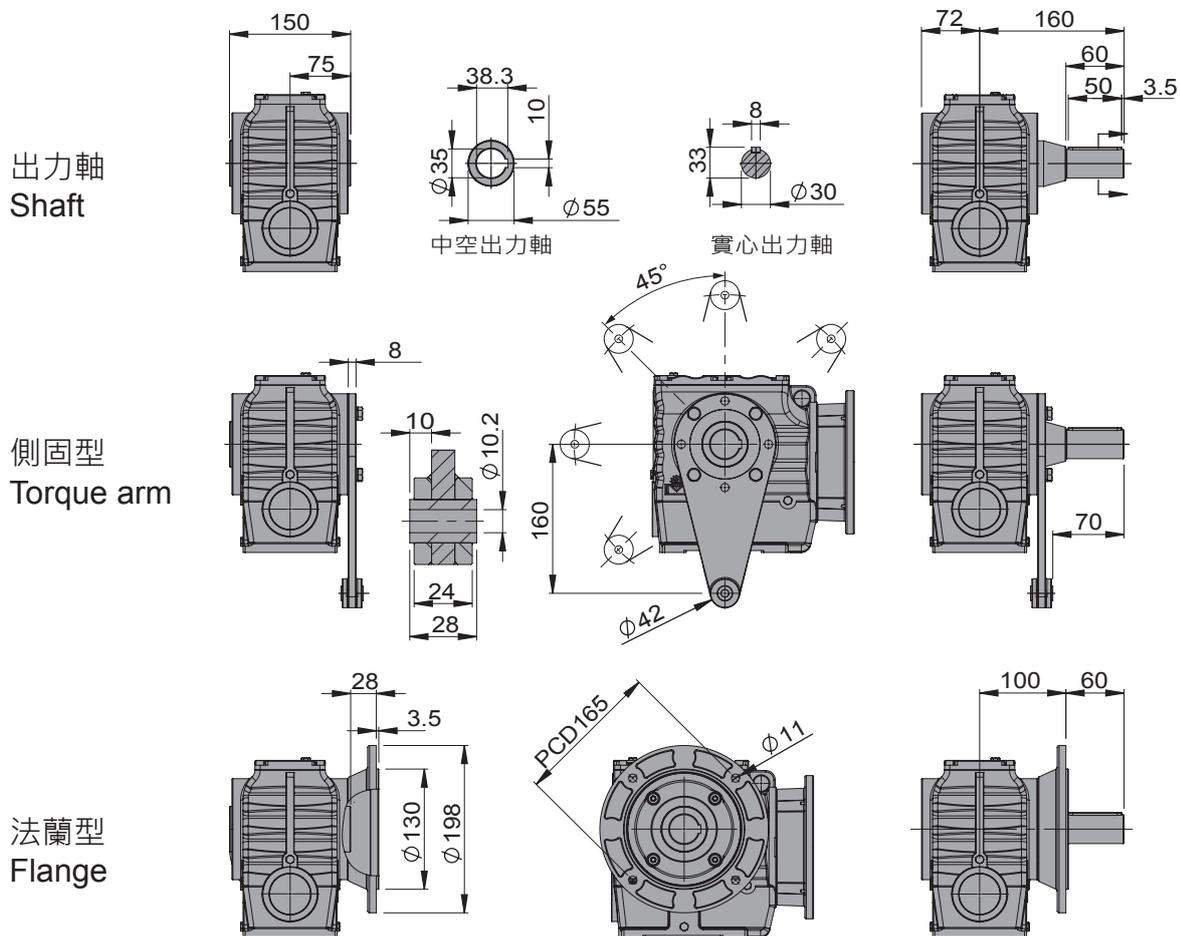
入力尺寸 Input

入力法蘭
Input Flange



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

出力尺寸 Output



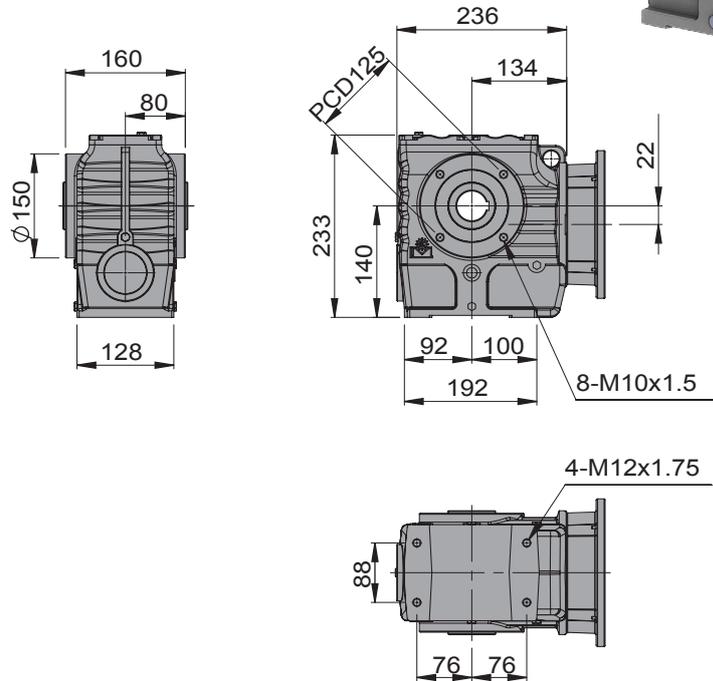
Power	0.4kW		0.75kW		1.5kW	
減速比	OT(Nm)	S.F.	OT(Nm)	S.F.	OT(Nm)	S.F.
20	35	5.61	72	2.72	144	1.36
30	53	4.28	108	2.10	216	1.05
40	71	3.42	144	1.68	288	0.84
45	76	2.90	154	1.43	309	0.71
60	101	2.38	206	1.17	412	0.58
80	132	1.80	268	0.88		
90	132	1.71	268	0.84		
100	135	1.33	274	0.65		
120	176	1.39	358	0.68		
150	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				

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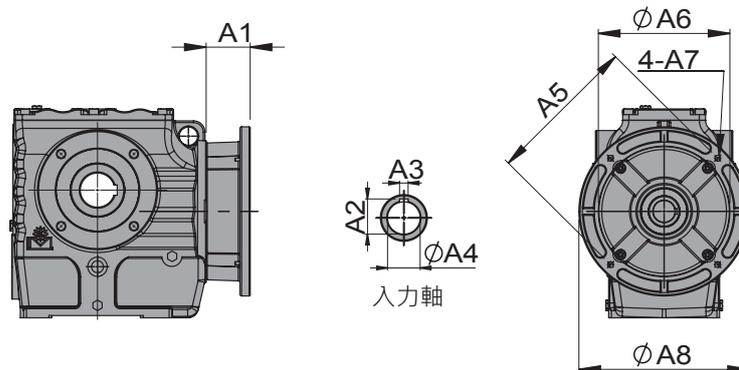


MODEL : AS067



入力尺寸 Input

入力法蘭
Input Flange



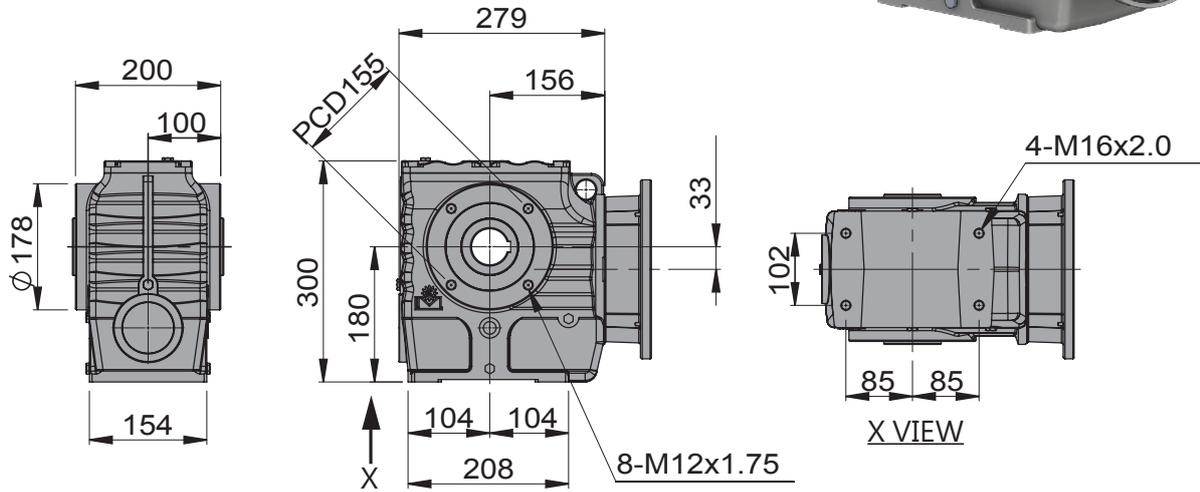
Power	A1	A2	A3	A4	A5	A6	A7	A8
0.75kW	45	21.8	6	19	165	130	M10x1.5	200
1.5kW	45	27.3	8	24	165	130	M10x1.5	200
2.2kW,3.5kW	59	31.3	8	28	215	180	M12x1.75	250

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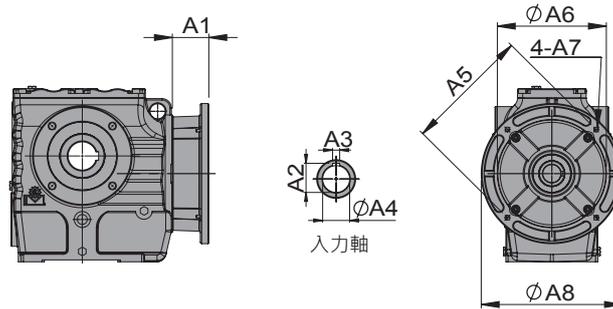


MODEL : AS077

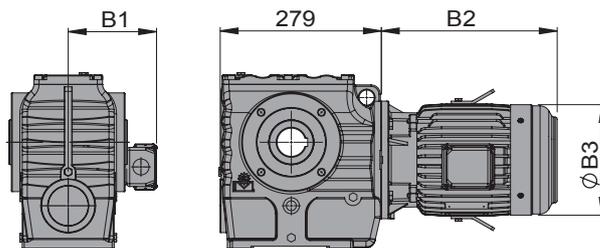


入力尺寸 Input

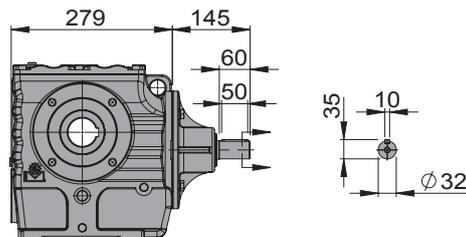
入力法蘭
Input Flange



馬達直結
Motor

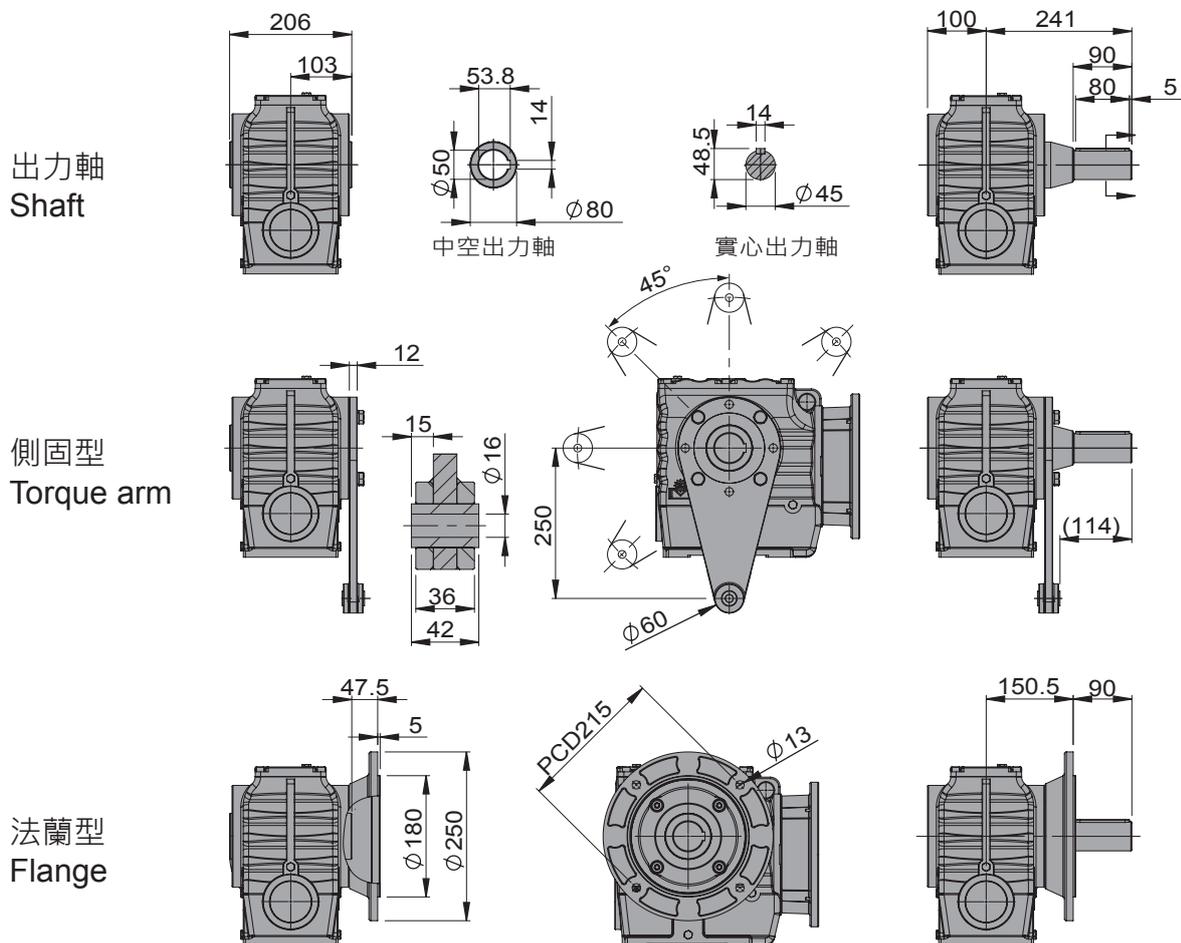


入力軸式
Input Shaft



Power	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3
1.5kW	45	27.3	8	24	165	130	M10x1.5	200	157	322	200
2.2kW	58	31.3	8	28	215	180	M12x1.75	250	180	315	219
3.7kW									189	371	235
5.5kW	76	41.3	10	38	265	230	M12x1.75	300	224	374	273

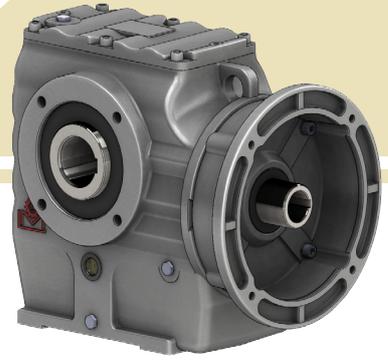
出力尺寸 Output



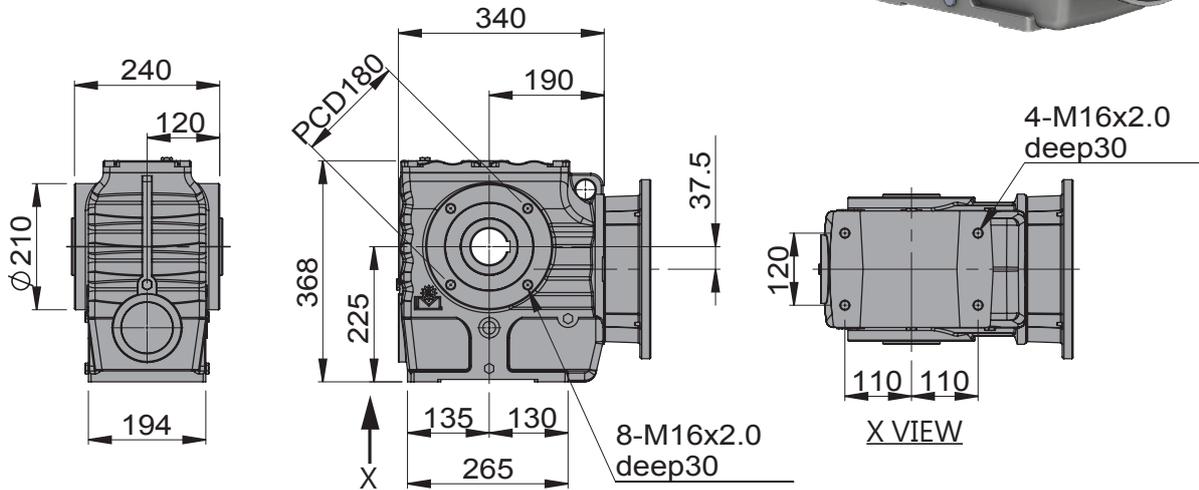
Power	1.5kW		2.2kW		3.7kW		5.5kW	
減速比	OT(Nm)	S.F.	OT(Nm)	S.F.	OT(Nm)	S.F.	OT(Nm)	S.F.
20	145	4.76	213	3.24	359	1.92	534	1.29
30	211	3.04	309	2.08	521	1.23	774	0.83
40	291	3.01	427	2.05	718	1.22	996	0.61
45	316	2.31	464	1.57	781	0.93	1161	0.62
60	422	1.91	619	1.3	1042	0.77	1350	0.51
80	543	1.42	797	0.97	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				
150	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						

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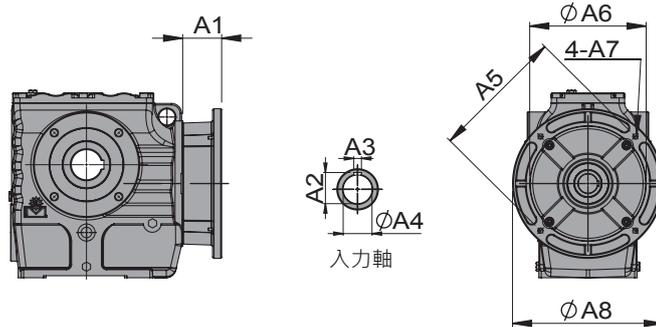


MODEL : AS087

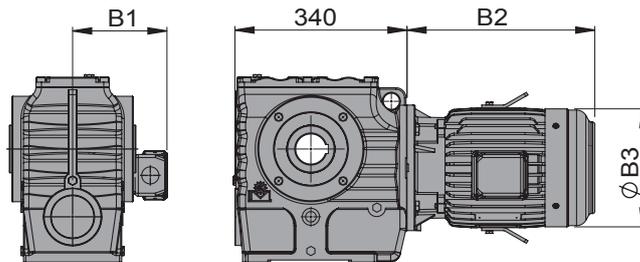


入力尺寸 Input

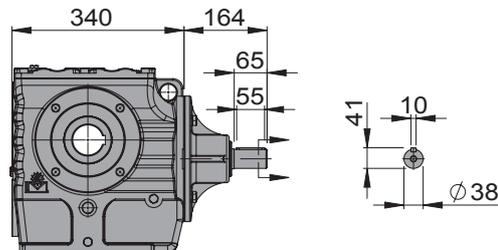
入力法蘭
Input Flange



馬達直結
Motor

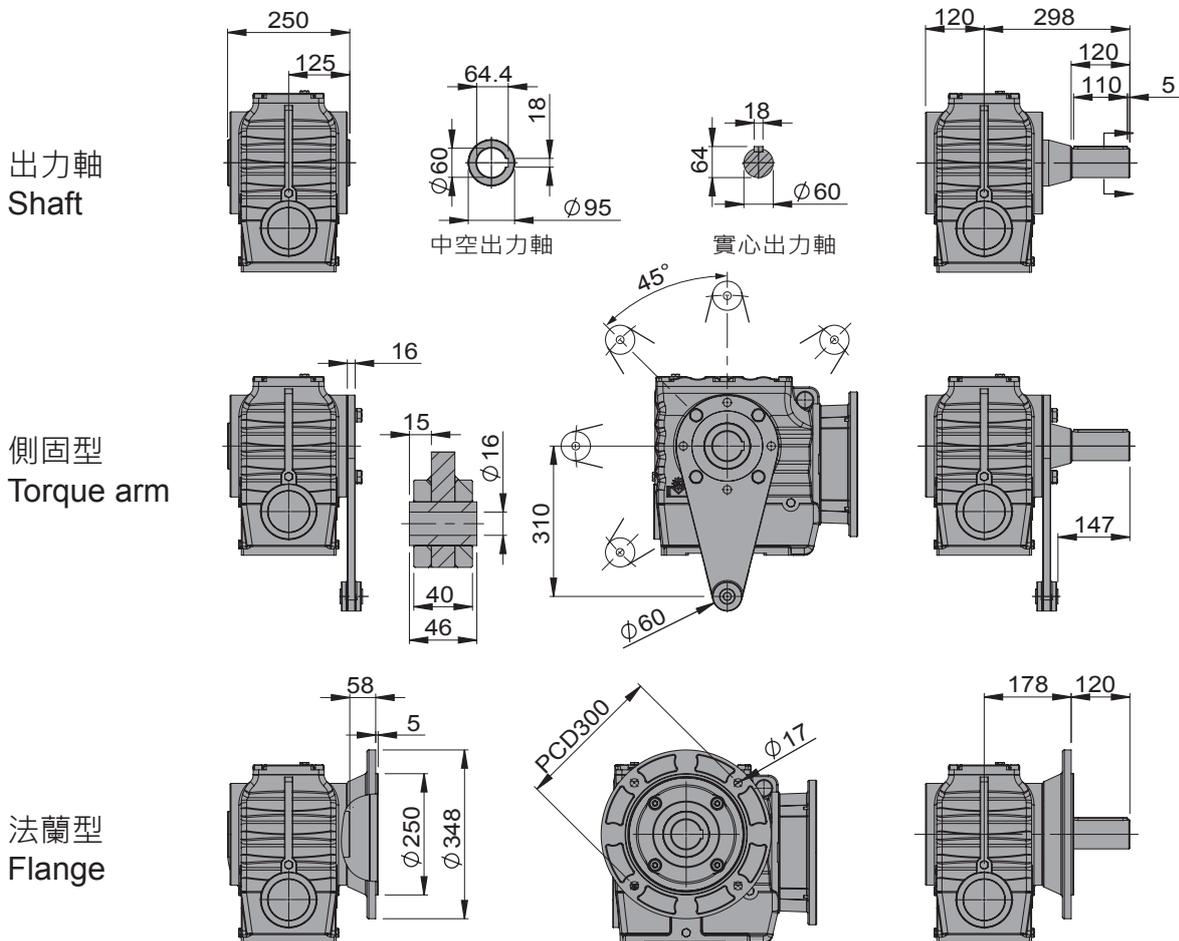


入力軸式
Input Shaft



Power	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3
2.2kW	57	31.3	8	28	215	180	M12x1.75	250	180	315	219
3.7kW									189	371	235
5.5kW	77	41.3	10	38	265	230	M12x1.75	300	224	374	273
7.5kW									412		
11kW	112	45.3	12	42	300	250	M16x2.0	350	263	498	334

出力尺寸 Output



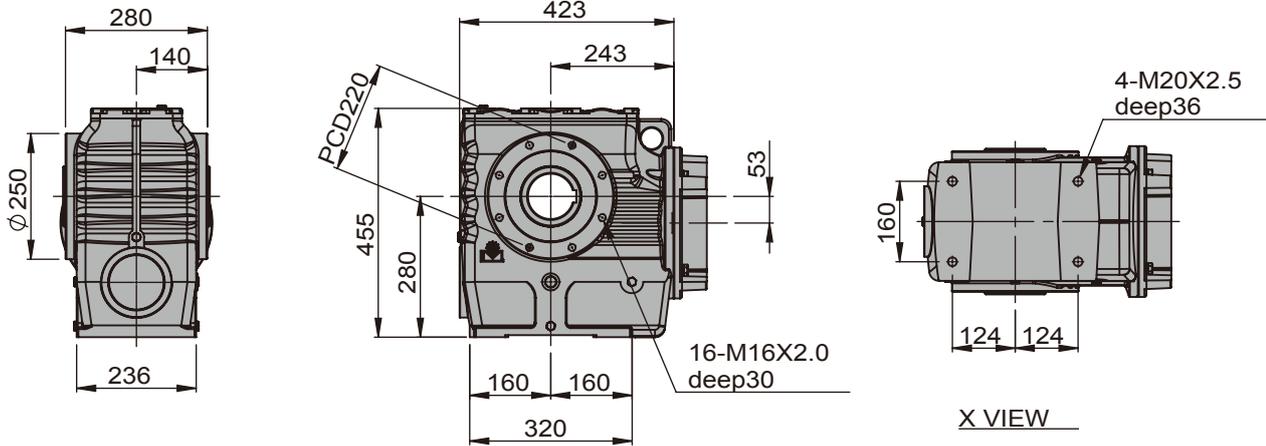
Power	2.2kW		3.7kW		5.5kW		7.5kW		11kW	
減速比	OT(Nm)	S.F.								
20	208	5.34	351	3.17	522	2.13	712	1.56	1044	1.06
30	313	4.09	527	2.43	783	1.63	1068	1.2	1567	0.81
40	417	3.38	702	2	1044	1.35	1424	0.99	2089	0.67
45	480	2.73	808	1.62	1202	1.09	1639	0.79	2404	0.54
60	641	2.26	1078	1.34	1603	0.9	2186	0.66		
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				
150	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

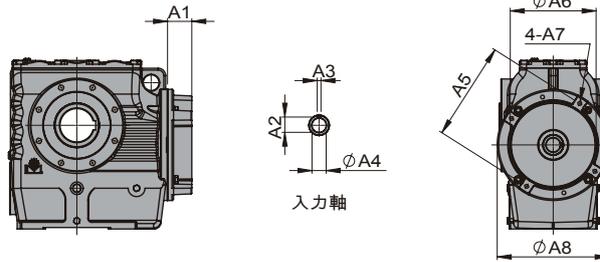


MODEL : AS097

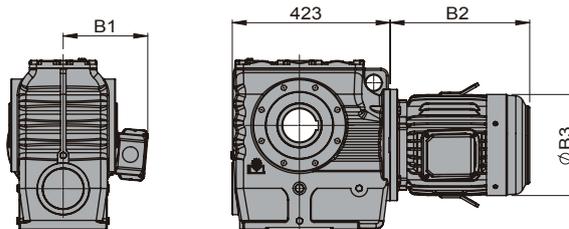


入力尺寸 Input

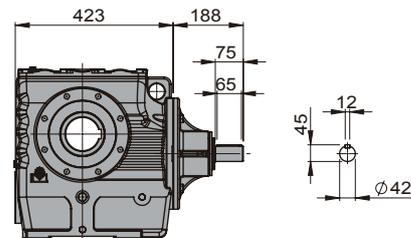
入力法蘭
Input Flange



馬達直結
Motor

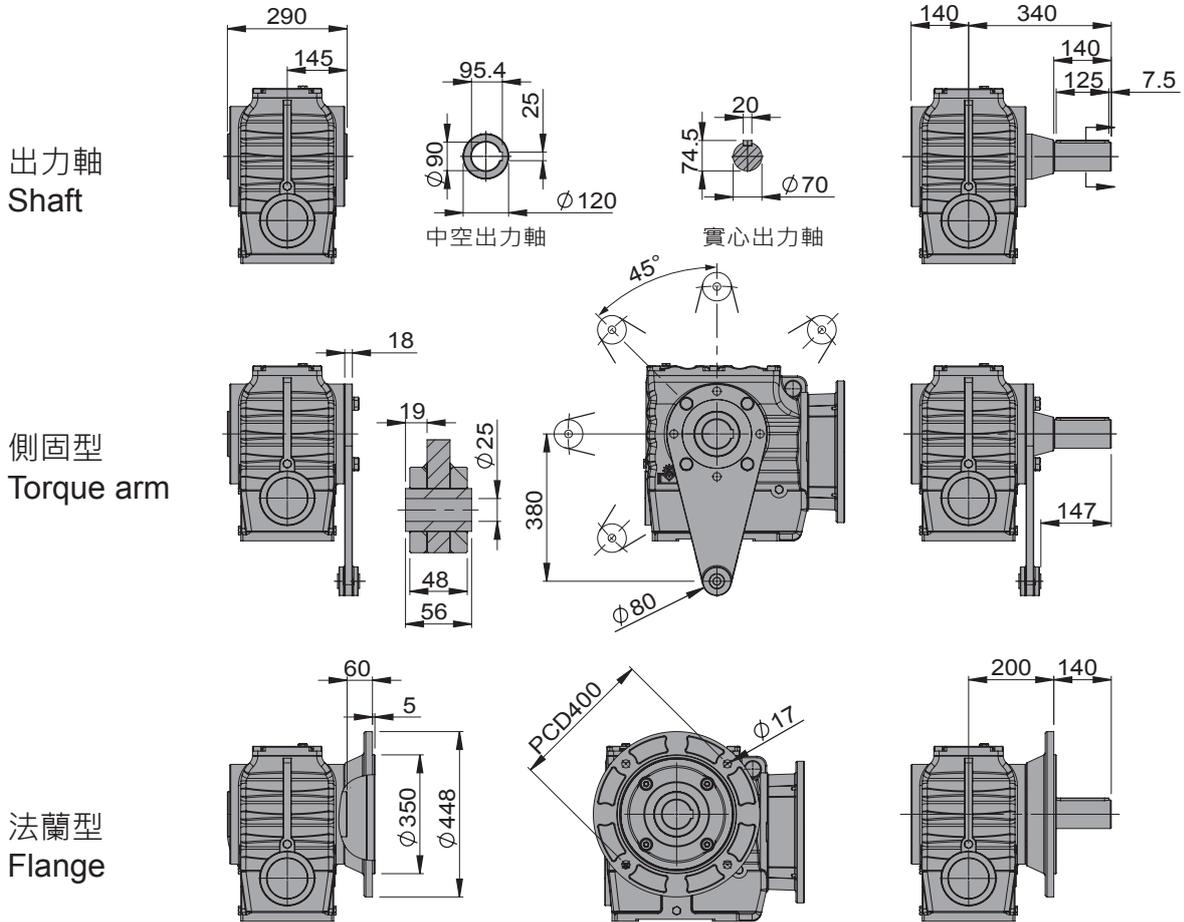


入力軸式
Input Shaft



Power	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3
5.5kW	65	41.3	10	38	265	230	M12x1.75	300	224	374	273
7.5kW										412	
11kW	93	45.3	12	42	300	250	M16x2.0	350	263	498	334
15kW										542	

出力尺寸 Output



Power	5.5kW		7.5kW		11kW		15kW	
減速比	OT(Nm)	S.F.	OT(Nm)	S.F.	OT(Nm)	S.F.	OT(Nm)	S.F.
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	3287	0.66	4483	0.48				
160	3699	0.76	5043	0.56				
200	4383	0.53						