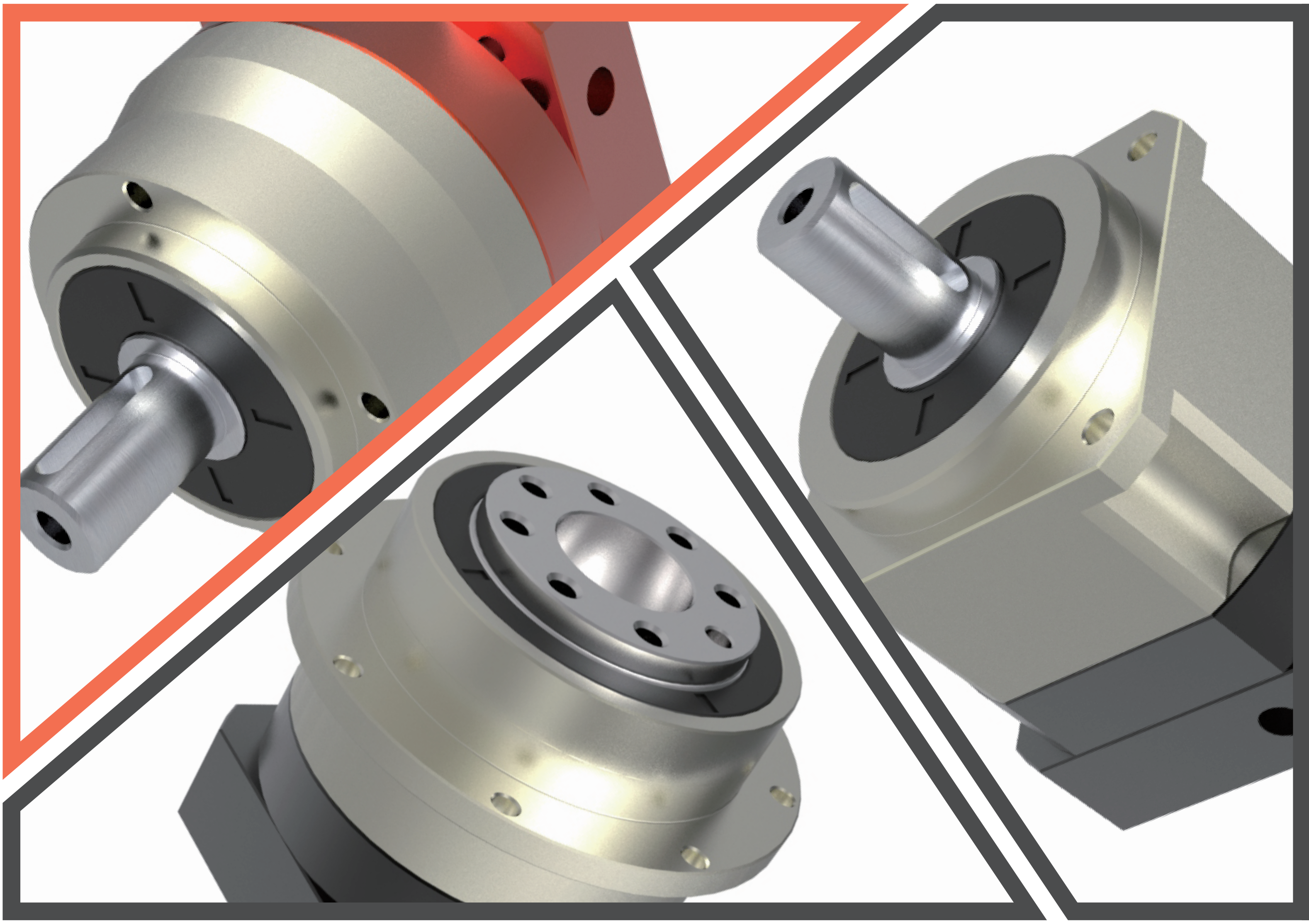
RAS

Dealing for Specials

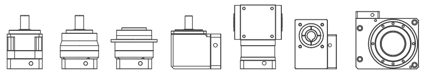


RAS REDUCER

About Us

公司簡介

Dealing for Specials



瑞星整合科技有限公司專門生產各式減速機，擁有專業的研發設計、精良的生產系統、完善的客製規劃；產品具有低背隙、低噪音、高效率之特點，提供高精度、高穩定、高節能之需求。

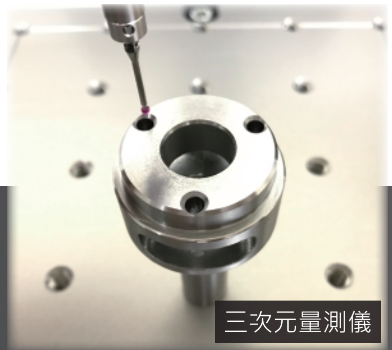
瑞星秉持高品質的產品理念，並以客戶為中心，提供最專業的服務，以明瞭、簡便、迅速的方式，生產具有優勢性的產品，滿足客戶的個別需求。

RAS REDUCER CO Ltd. specializes in producing several kinds of reducers and has professional R&D design, sophisticated production system and perfect customized planning. The products have low backlash, low noise and high efficiency, providing high precision, high stability and high energy saving needs.

With a high-quality product concept and a customer-focused approach, RAS provides the most professional customer service, produce superior products in a clear, simple and rapid manner to meet the individual needs of customers.

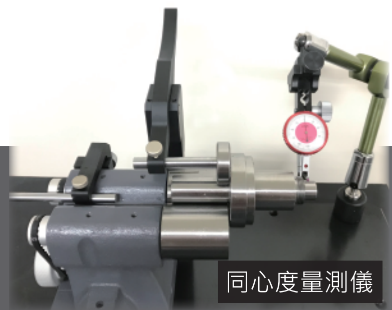
Instruments

儀器介紹



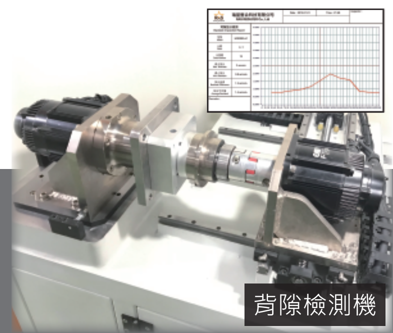
三次元量測儀

工件尺寸量測



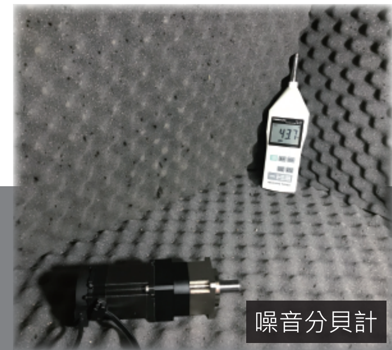
同心度量測儀

工件同心度量測



背隙檢測機

減速機背隙量測



噪音分貝計

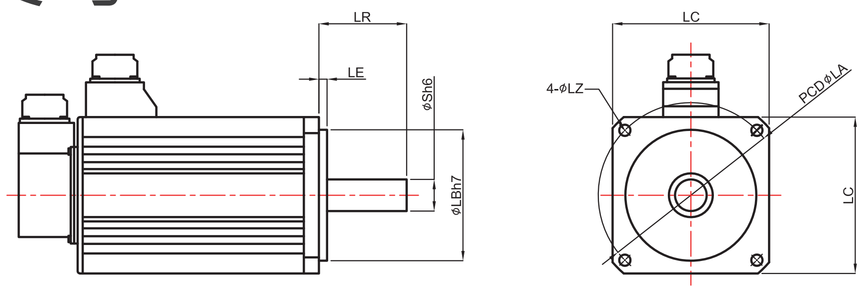
運轉分貝檢測

Best Quality

Product Code
型號編碼

型號 Model	框號 Type	-	減速比 Ratio	-	出力軸類型 Output Shaft Type	-	背隙等級 Backlash	-	法蘭類型 Flange Type
HER	042、060、090、115、142、180	-	003 ~ 100	-	S0：標準無鍵軸心 (Smooth Shaft)	-	PS	-	F1
HCR	042、060、090、115、142、180		003 ~ 100		S1：標準有鍵軸心 (Shaft With Key)		P0		.
HDR	047、064、090、110、140、200		004 ~ 100		S2：標準中空軸心 (Hollow Shaft)		P1		.
PR	042、060、090、120		001 ~ 002		D1：標準盤面 (Flange)		P2		.
TR	065、075、090、110、140、170、210		001 ~ 005						
ZR	042、060、090、120		010 ~ 050						
HT	060、085、100、130、200		010 ~ 050						

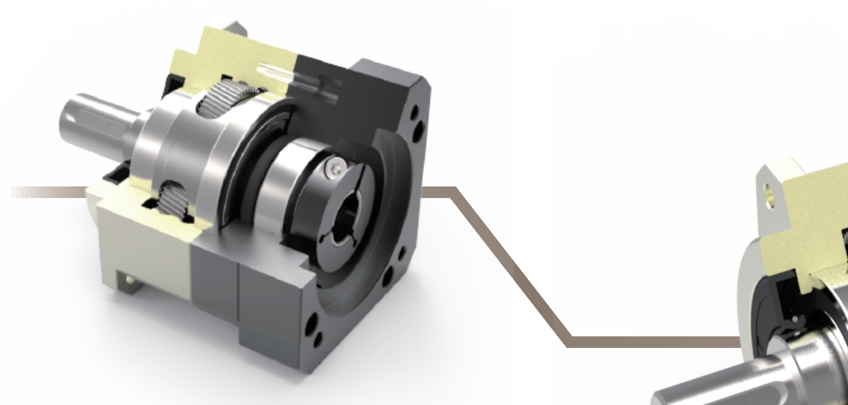
Flange Size
法蘭尺寸

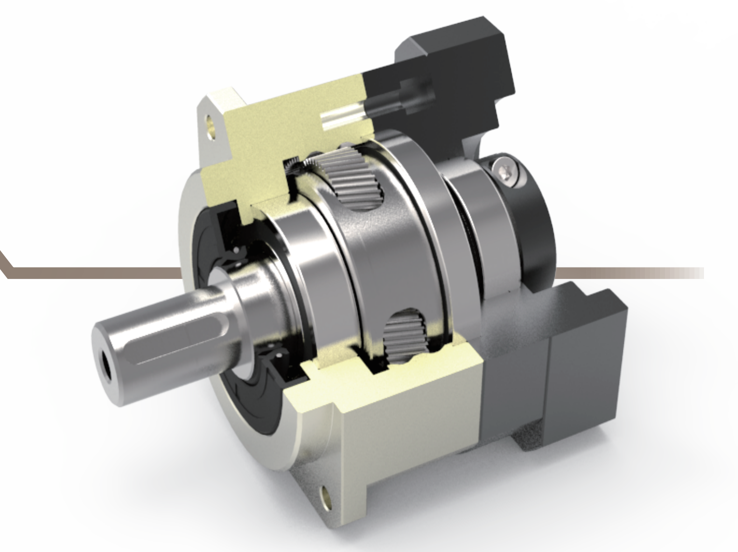


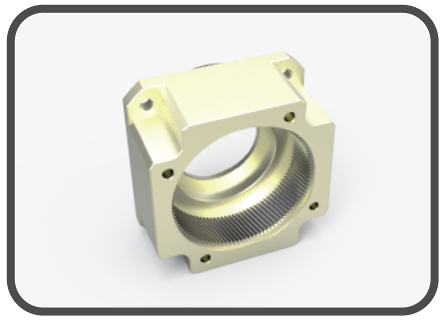
Motor

框號 Type	法蘭 Flange	S	LR	LB	LE	LA	LZ	LC	備註 Remarks
42	F1	8	25	30	2.5	46	4.5	40	
	F2	8	24	22	2	48	3.4	42	
	F3	8	25	30	3	45	3.4	38	
	F4	6	20	37.6	1.5	48	3.5	42	
	F5	5	22	25	3	36	M4	42	
	F6	5	20	22	2	43.8	M3	42	
60	F1	14	30	50	3	70	5.8	60	
	F2	14	30	50	3	70	4.5	60	
	F3	6	20	40	2	63	4.5	60	
	F4	8	24	54	2	70	4.5	60	
	F5	6.35	20	38.1	1.6	66.67	5	57	
	F6	8	20	38.1	1.6	66.67	5	57	
	F7	10	22	38.1	1.6	66.67	5	57	
	F8	8	20	36	1.5	70.7	4.5	60	
90	F1	19	40	70	3	90	6.6	80	
	F2	14	30	70	3	90	7	80	
	F3	16	35	80	3	100	6.6	86	
	F4	19	55	80	3	100	6.6	90	
	F5	19	55	95	3	115	9	100	
	F6	19	40	95	3	130	9	100	
	F7	12	37	83	2.5	104	8.5	90	
	F8	14	37	73	1.6	98.45	6.5	85	
	F9	14	37	73.03	2	98.45	6.5	85	
	F10	14	37	60	2	98.9	6.5	85	
120	F1	24	65	110	3	145	9	130	
	F2	22	58	110	6	145	9	130	
	F3	22	45	95	5	115	9	100	
	F4	19	37	94	2	120	8.5	104	
	F5	19	55	55.52	1.52	125.8	8.5	110	
	F6	19	55	95	3	115	9	100	
142	F1	24	65	110	3	145	9	130	
	F2	22	70	110	6	145	9	130	
	F3	28	63	110	6	145	9	130	
	F4	28	65	130	3.2	165	11	150	
180	F1	35	79	114.3	3	200	13.5	176	
	F2	42	113	114.3	3	200	13.5	176	
	F3	28	79	114.3	3	200	13.5	176	

Structure Introduction
結構介紹





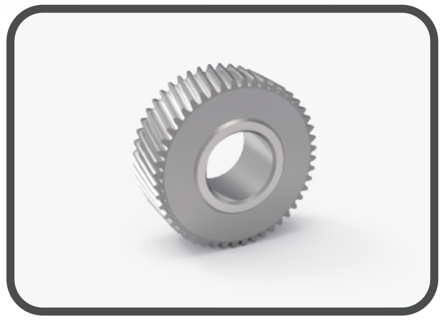


本體 GEARBOX HOUSING
本體和內環齒採一體式設計，結構穩固，精密度高，輸出扭矩大，低噪音。

Gearbox housing and internal ring gear are designed for one piece, make sure the structure stability, highly accuracy, large output torque, and low noise.

出力軸 OUTPUT SHAFT
行星架與輸出軸採一體式設計，有較高的同心度及較好的結構剛性。

Integrated design of planet carrier and output shaft, it provides highly concentricity and structure rigidity.

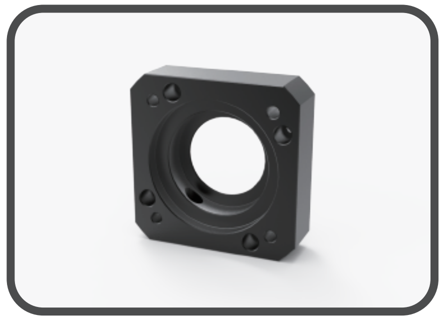


行星齒輪 PLANETARY GEAR
材質選用鉻鉬合金鋼，經過熱處理後，使用鎢鋼刀精滾，確保齒輪有最佳的韌性與精度。

Planetary gear are chosen as SCM440 with thermal refining, and hobbing by precision tungsten carbide hobbing cutter to ensure planetary gear have the best toughness and precision level.

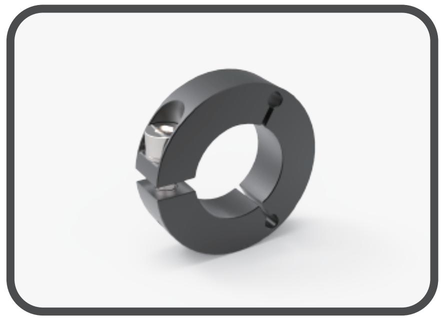
太陽齒 SUN GEAR
太陽齒和入力軸採一體式設計，有較高的同心度及較好的結構強度，並經二次熱處理，使其具有最佳的韌性及耐磨性。

Sun gear and input shaft are designed for one piece, which has high concentricity and good structural strength, and are subjected to thermal refining and nitrocarburizing to make it have the best toughness and wear resistance.



馬達板 MOTOR FLANGE
模組化的馬達連接板設計，可與各家廠牌及不同型式的馬達結合。

The modular design of the motor connecting flange; it can be fitted with various brands and different types of motors.



鎖緊環 CLAMPING SYSTEM
特殊的鎖緊結構設計，確保在高速及長時間使用下，不會產生滑脫的風險。

With special clamping structure design; Ensure that there is no risk of slippage at high speeds revolution and long periods of usage.

Product Index

產品目錄

HER Series
P. 7 ~ P. 10

Helical Gear

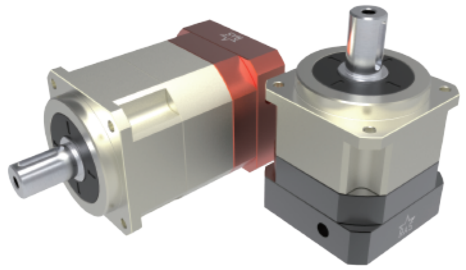
Type 42/60/90/115/142/180

1 Stage Ratio 3~10

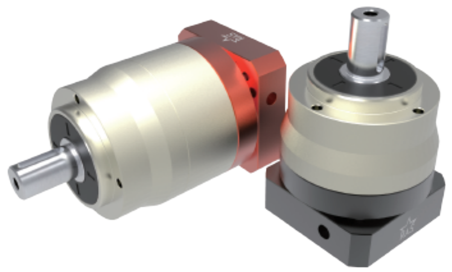
Backlash 1~7 arcmin

2 Stage Ratio 15~100

Backlash 3~9 arcmin



HCR Series
P. 11 ~ P. 14



Helical Gear

Type 42/60/90/115/142/180

1 Stage Ratio 3~10

Backlash 1~7 arcmin

2 Stage Ratio 15~100

Backlash 3~9 arcmin

HDR Series
P. 15 ~ P. 18

Helical Gear

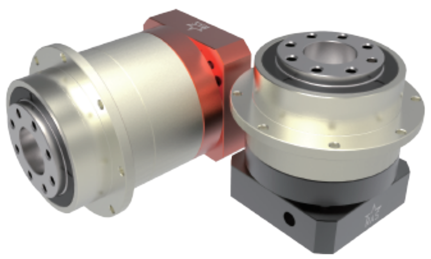
Type 47/64/90/110/140/200

1 Stage Ratio 4~10

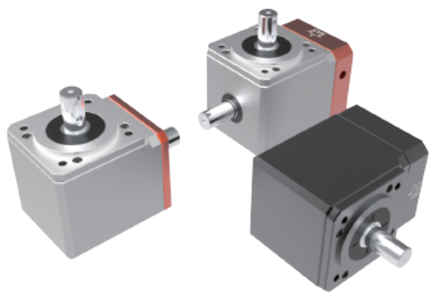
Backlash 1~7 arcmin

2 Stage Ratio 20~100

Backlash 3~9 arcmin



PR Series
P. 19 ~ P. 24

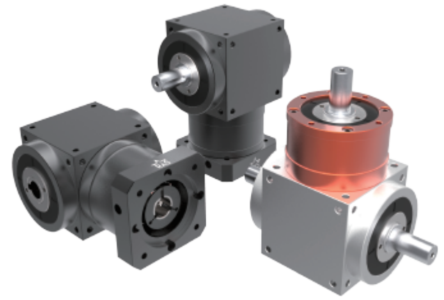


Bevel Gear

Type 42/60/90/120

1 Stage Ratio 1~2

Backlash 2~8 arcmin



TR Series
P. 25 ~ P. 30

Bevel Gear

Type 65/75/90/110/140/170

1 Stage Ratio 1~5

Backlash 2~8 arcmin

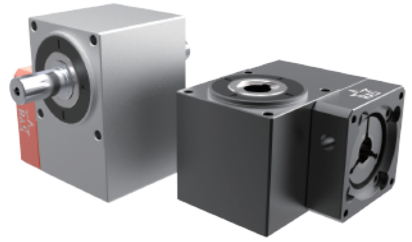
ZR Series
P. 31 ~ P. 34

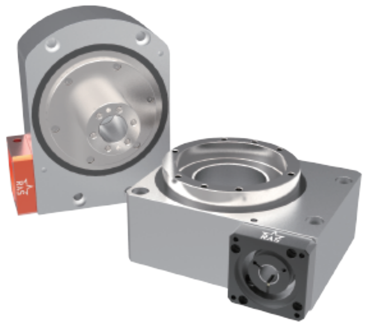
Worm Gear

Type 42/60/90/120

1 Stage Ratio 10~50

Backlash 20 arcmin





HT Series
P. 35 ~ P. 36

Worm Gear

Type 60/85/100/130/200

1 Stage Ratio 10~50

Accuracy Of Repetition ± 1 arcmin

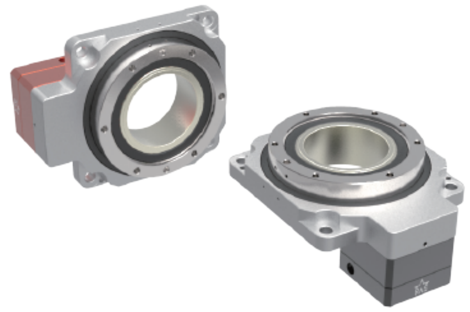
HV Series
P. 37 ~ P. 38

Helical Gear

Type 60/85/130/200

1 Stage Ratio 5~18

Accuracy Of Repetition ± 15 arcsec



CPA & CRA Series
P. 39 ~ P. 40

Roller Pinion & Cam Rack

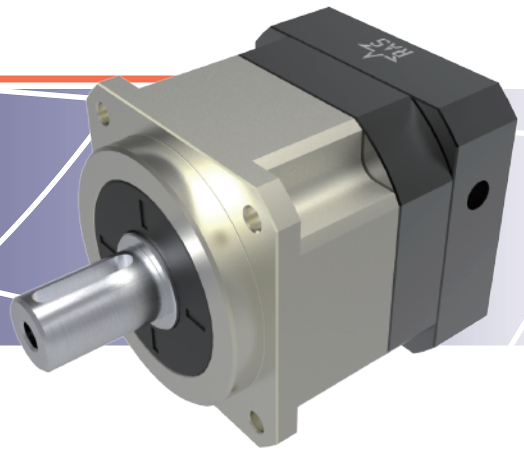
Type 1610/2010/2510/3212/4012

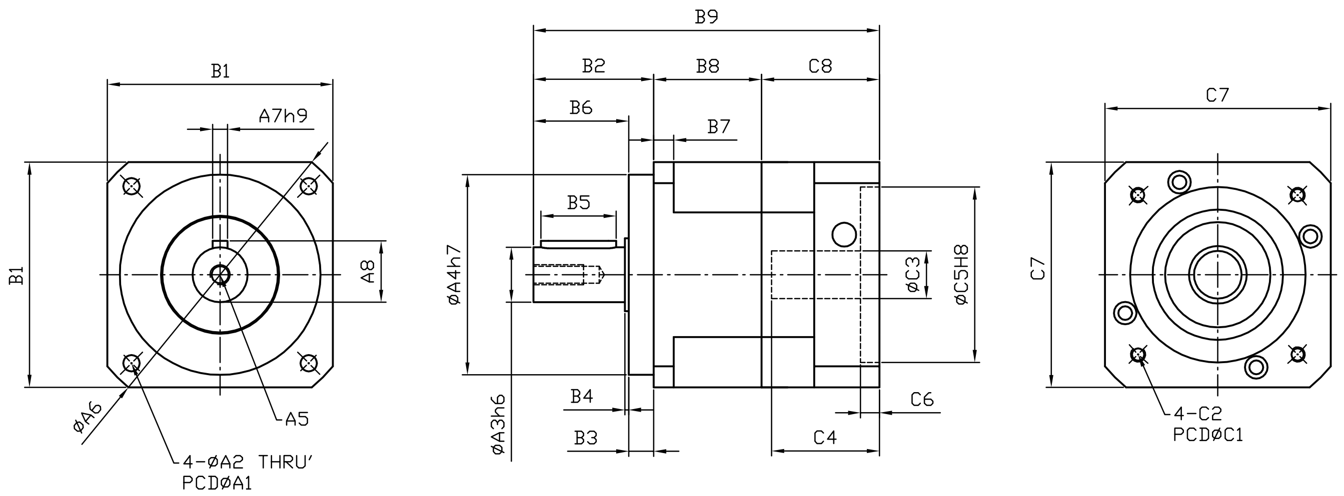
1 Stage Module 4.75~12

Predetermined Length 992~1000 mm

HER

L1 : 1 Stage
RATIO : 3、4、5、6、7、8、9、10





Unit：mm

	Type / Code	42	60	90	115	142	180
A	A1	50	70	100	130	165	215
	A2	4.5	5.5	6.5	8.5	10.5	13.5
	A3	13	16	22	32	40	55
	A4	35	50	80	110	130	160
	A5	M4xP0.7	M5xP0.8	M8xP1.25	M12xP1.75	M16xP2.0	M20xP2.5
	A6	56	80	116	148	185	240
	A7	5	5	6	10	12	16
	A8	15	18	24.5	35	43	60
B	B1	42.6	60	90	115	142	180
	B2	25.8	37	48	65	97	104.5
	B3	5.5	7	10	12	15	20
	B4	1.6	1.5	1.5	2	3	2.5
	B5	15	25	30	40	65	70
	B6	20.3	30	38	53	82	84.5
	B7	4	6	8	10	12	16
	B8	28.3	33	43	54	72	87.5
	B9	88.4	114	138	190	251	292
C	C1	46	70	90	145	145	200
	C2	M4x12DP	M5x15DP	M6x18DP	M8x24DP	M8x24DP	M12x36DP
	C3	8	14 (19)	19 (24)	24 (28)	24 (28)	35 (42)
	C4	26	34	43	67.5	68	81.5
	C5	30	50	70	110	110	114.3
	C6	6	5	7.5	8.5	7	12
	C7	42.6	60	90	120	142	180
	C8	34.3	44	47	71	82	100

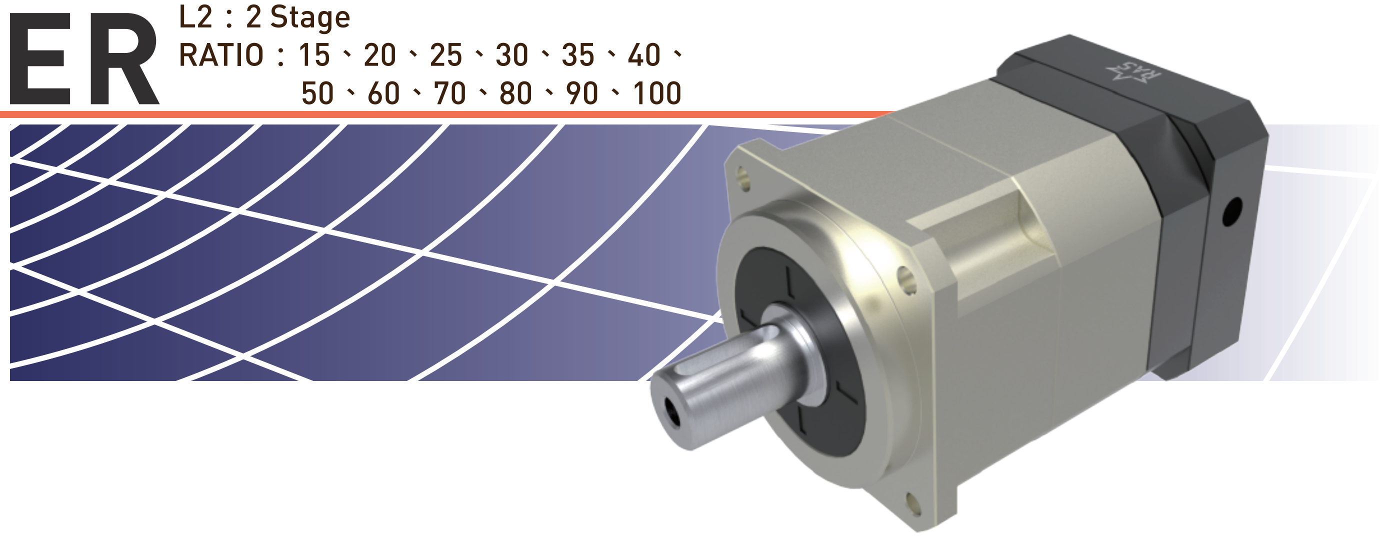
Performance Information

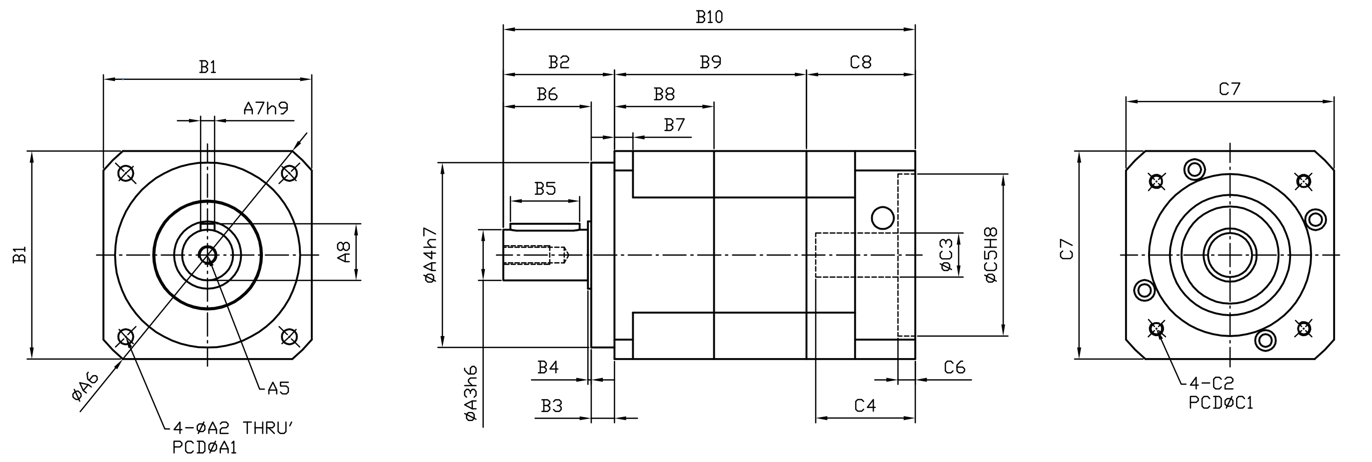
性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	42	60	90	115	142	180
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	3	19	59	165	335	625	1,206
			4	16	51	146	300	555	1,069
			5	16	48	160	333	618	1,189
			6	15	45	151	311	583	1,118
			7	15	45	149	309	573	1,108
			8	14	43	143	298	553	1,070
			9	13	44	145	278	516	993
			10	14	43	141	294	549	1,059
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	3 ~ 10	1.8 倍額定輸出力矩 1.8 Times of Rated Output Torque					
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	3 ~ 10	3 倍額定輸出力矩 3 Times of Rated Output Torque					
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	3 ~ 10	3,000	3,000	3,000	3,000	3,000	3,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	3 ~ 10	6,000	6,000	6,000	5,000	5,000	4,000
背隙 Ps Backlash Ps	-	arcmin	3 ~ 10	≦1					
背隙 P0 Backlash P0	-	arcmin	3 ~ 10	≦3					
背隙 P1 Backlash P1	-	arcmin	3 ~ 10	≦5					
背隙 P2 Backlash P2	-	arcmin	3 ~ 10	≦7					
扭轉剛性 Torsional Rigidity	-	Nm/arcmin	3 ~ 10	3	6	14	27	60	140
容許徑向力 Max. Radial Force	F_{2rB}	N	3 ~ 10	380	1,180	3,200	6,800	9,300	15,600
容許軸向力 Max. Axial Force	F_{2aB}	N	3 ~ 10	190	590	1,600	3,400	4,650	7,800
使用壽命 Service Life	L_H	hr	3 ~ 10	S5 週期運轉： > 30,000 (S1 連續運轉： > 15,000hrs) S5 Cycle Operation： > 30,000 (S1 Continuous Operation： > 15,000hrs)					
效率 Efficiency	η	%	3 ~ 10	≧97					
使用溫度 Operating Temperature	-	˚C	3 ~ 10	-25˚C ~ +90˚C					
潤滑 Lubrication	-		3 ~ 10	全合成潤滑油脂 Fully Synthetic Grease					
防護等級 Protection Class	-		3 ~ 10	IP65					
安裝方向 Mounting Position	-		3 ~ 10	任意方向 Any					
噪音值 Noise Level	-	dB	3 ~ 10	≦56	≦58	≦60	≦63	≦65	≦67
重量 Weight	-	Kg	3 ~ 10	0.5	1.2	3.5	7.5	15.5	38

HER

L2 : 2 Stage
RATIO : 15、20、25、30、35、40、50、60、70、80、90、100





Unit：mm

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	A7	5	5	6	10	12	16
	A8	15	18	24.5	35	43	60
B	B1	42.6	60	90	115	142	180
	B2	25.8	37	48	65	97	104.5
	B3	5.5	7	10	12	15	20
	B4	1.6	1.5	1.5	2	3	2.5
	B5	15	25	30	40	65	70
	B6	20.3	30	38	53	82	84.5
	B7	4	6	8	10	12	16
	B8	28.3	33	43	54	72	87.5
	B9	54.3	61	83	102	123	177.5
	B10	114.4	142	178	238	302	382
C	C1	46	70	90	145	145	200
	C2	M4x12DP	M5x15DP	M6x18DP	M8x24DP	M8x24DP	M12x36DP
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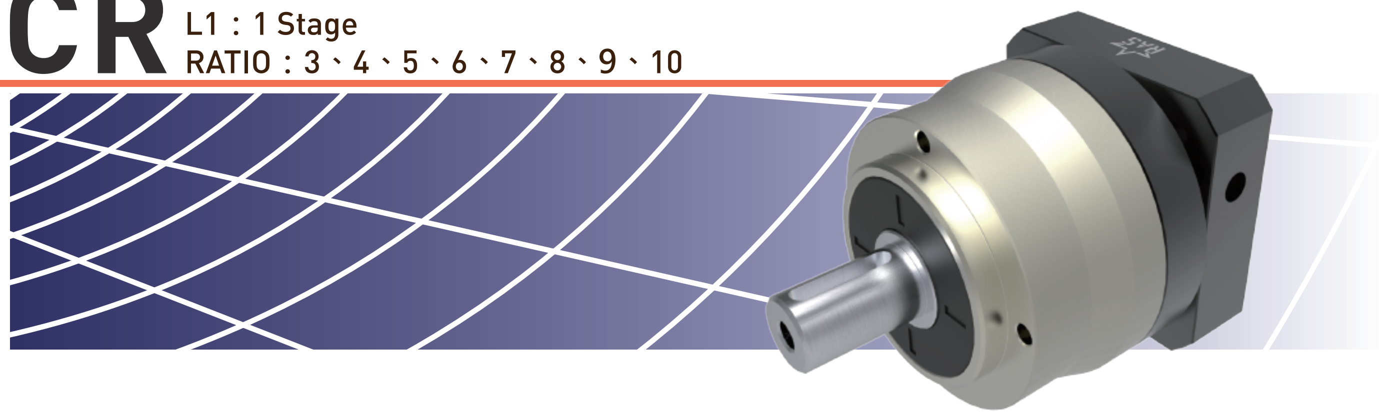
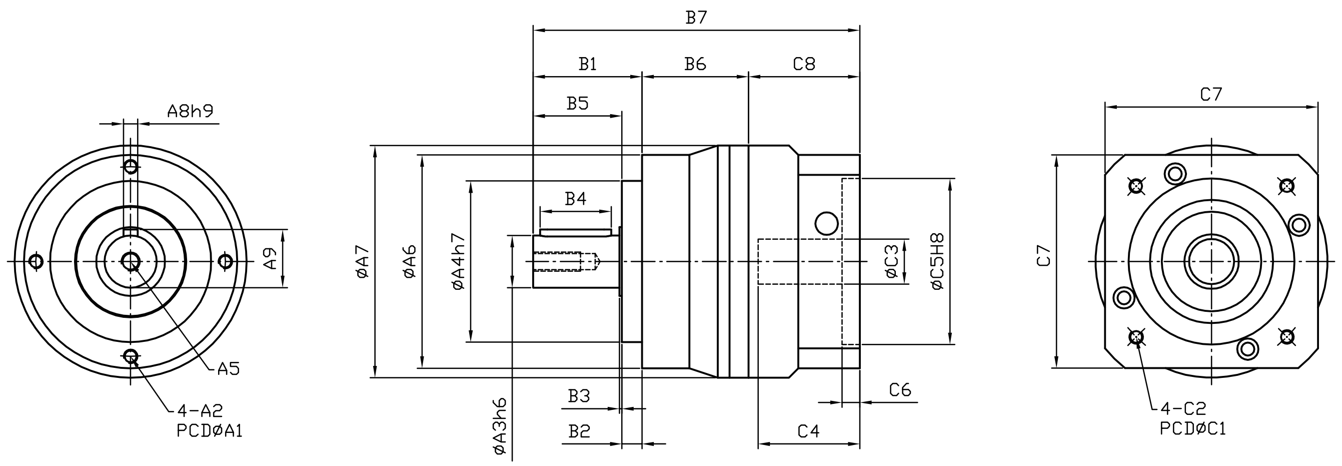
			35	15	45	149	309	573	1,108
			40	14	43	143	298	553	1,070
			50	16	48	160	333	618	1,189
			60	15	45	151	311	583	1,118
			70	15	45	149	309	573	1,108
			80	14	43	143	398	553	1,070
			90	13	44	145	278	516	993
			100	14	43	141	294	549	1,059
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	15 ~ 100	1.8 倍額定輸出力矩 1.8 Times of Rated Output Torque					
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	15 ~ 100	3 倍額定輸出力矩 3 Times of Rated Output Torque					
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	15 ~ 100	3,000	3,000	3,000	3,000	3,000	3,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	15 ~ 100	6,000	6,000	6,000	5,000	5,000	4,000
背隙 Ps Backlash Ps	-	arcmin	15 ~ 100	≦3					
背隙 P0 Backlash P0	-	arcmin	15 ~ 100	≦5					
背隙 P1 Backlash P1	-	arcmin	15 ~ 100	≦7					
背隙 P2 Backlash P2	-	arcmin	15 ~ 100	≦9					
扭轉剛性 Torsional Rigidity	-	Nm/arcmin	15 ~ 100	3	6	14	27	60	140
容許徑向力 Max. Radial Force	F_{2rB}	N	15 ~ 100	380	1,180	3,200	6,800	9,300	15,600
容許軸向力 Max. Axial Force	F_{2aB}	N	15 ~ 100	190	590	1,600	3,400	4,650	7,800
使用壽命 Service Life	L_H	hr	15 ~ 100	S5 週期運轉： > 30,000 (S1 連續運轉： > 15,000hrs) S5 Cycle Operation： > 30,000 (S1 Continuous Operation： > 15,000hrs)					
效率 Efficiency	η	%	15 ~ 100	≧94					
使用溫度 Operating Temperature	-	˚C	15 ~ 100	-25˚C ~ +90˚C					
潤滑 Lubrication	-		15 ~ 100	全合成潤滑油脂 Fully Synthetic Grease					
防護等級 Protection Class	-		15 ~ 100	IP65					
安裝方向 Mounting Position	-		15 ~ 100	任意方向 Any					
噪音值 Noise Level	-	dB	15 ~ 100	≦56	≦58	≦60	≦63	≦65	≦67
重量 Weight	-	Kg	15 ~ 100	0.8	1.8	5.2	11.2	22.5	48

HCR

L1 : 1 Stage

RATIO : 3、4、5、6、7、8、9、10





Unit：mm

	Type / Code	42	60	90	115	142	180
A	A1	44	62	80	108	140	184
	A2	M4xP0.7	M5xP0.8	M6xP1.0	M6xP1.0	M10xP1.5	M12xP1.75
	A3	13	16	22	32	40	55
	A4	35	52	68	90	120	160
	A5	M4xP0.7	M5xP0.8	M8xP1.25	M12xP1.75	M16xP2.0	M20xP2.5
	A6	50	70	90	120	156	212
	A7	59	70	98	125	156	212
	A8	5	5	6	10	12	16
	A9	15	18	24.5	35	43	60
B	B1	25.8	36.5	46	70	97	99.5
	B2	5.5	6.5	8.5	17	15	15
	B3	1.6	1.5	1	2	3	2.5
	B4	15	25	30	40	65	70
	B5	20.3	30	37.5	53	82	84.5
	B6	28.3	33.5	45	49	72	87.5
	B7	88.4	114	138	190	251	287
C	C1	46	70	90	145	145	200
	C2	M4x12DP	M5x15DP	M6x18DP	M8x24DP	M8x24DP	M12x36DP
	C3	8	14 (19)	19 (24)	24 (28)	24 (28)	35 (42)
	C4	26	34	43	67.5	68	81.5
	C5	30	50	70	110	110	114.3
	C6	6	5	7.5	8.5	7	12
	C7	42.6	60	90	120	142	180
	C8	34.3	44	47	71	82	100

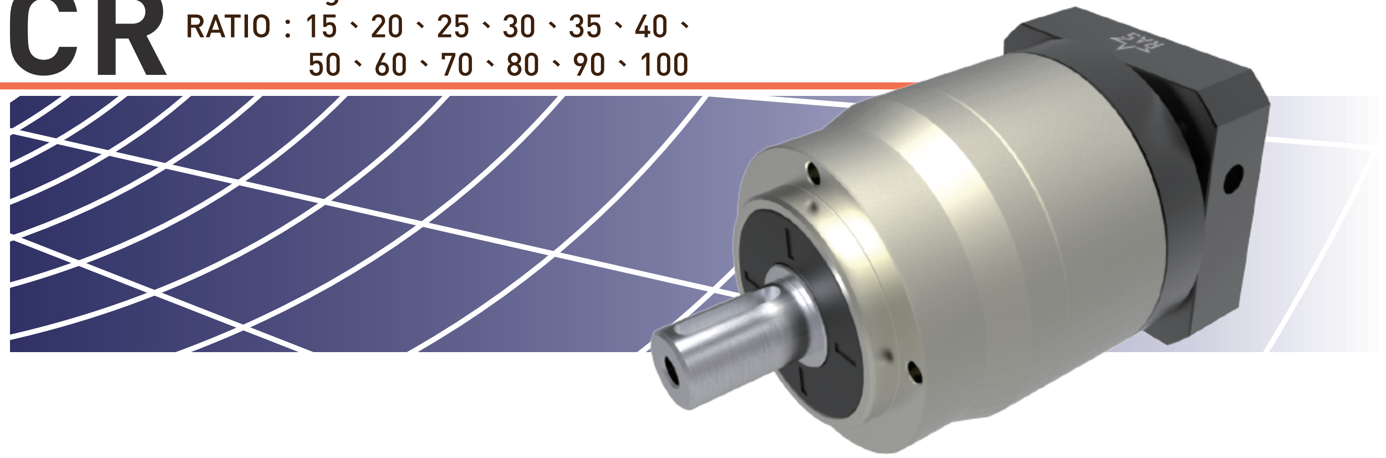
Performance Information

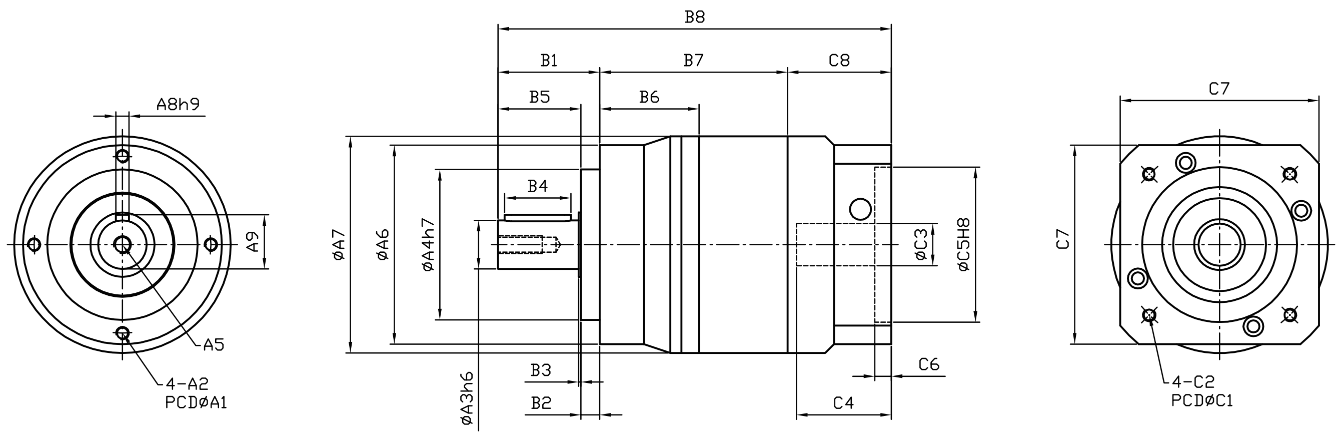
性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	42	60	90	115	142	180
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	3	19	59	165	335	625	1,206
			4	16	51	146	300	555	1,069
			5	16	48	160	333	618	1,189
			6	15	45	151	311	583	1,118
			7	15	45	149	309	573	1,108
			8	14	43	143	298	553	1,070
			9	13	44	145	278	516	993
			10	14	43	141	294	549	1,059
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	3 ~ 10	1.8 倍額定輸出力矩 1.8 Times of Rated Output Torque					
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	3 ~ 10	3 倍額定輸出力矩 3 Times of Rated Output Torque					
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	3 ~ 10	3,000	3,000	3,000	3,000	3,000	3,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	3 ~ 10	6,000	6,000	6,000	5,000	5,000	4,000
背隙 Ps Backlash Ps	-	arcmin	3 ~ 10	≦1					
背隙 P0 Backlash P0	-	arcmin	3 ~ 10	≦3					
背隙 P1 Backlash P1	-	arcmin	3 ~ 10	≦5					
背隙 P2 Backlash P2	-	arcmin	3 ~ 10	≦7					
扭轉剛性 Torsional Rigidity	-	Nm/arcmin	3 ~ 10	3	6	14	27	60	140
容許徑向力 Max. Radial Force	F_{2rB}	N	3 ~ 10	380	1,180	3,200	6,800	9,300	15,600
容許軸向力 Max. Axial Force	F_{2aB}	N	3 ~ 10	190	590	1,600	3,400	4,650	7,800
使用壽命 Service Life	L_H	hr	3 ~ 10	S5 週期運轉： ＞30,000 (S1 連續運轉： ＞15,000hrs) S5 Cycle Operation： ＞30,000 (S1 Continuous Operation： ＞15,000hrs)					
效率 Efficiency	η	%	3 ~ 10	≧97					
使用溫度 Operating Temperature	-	˚C	3 ~ 10	-25˚C ~ +90˚C					
潤滑 Lubrication	-		3 ~ 10	全合成潤滑油脂 Fully Synthetic Grease					
防護等級 Protection Class	-		3 ~ 10	IP65					
安裝方向 Mounting Position	-		3 ~ 10	任意方向 Any					
噪音值 Noise Level	-	dB	3 ~ 10	≦56	≦58	≦60	≦63	≦65	≦67
重量 Weight	-	Kg	3 ~ 10	0.6	1.4	3.3	6.9	13	31

HCR

L2：2 Stage
RATIO：15、20、25、30、35、40、50、60、70、80、90、100





Unit：mm

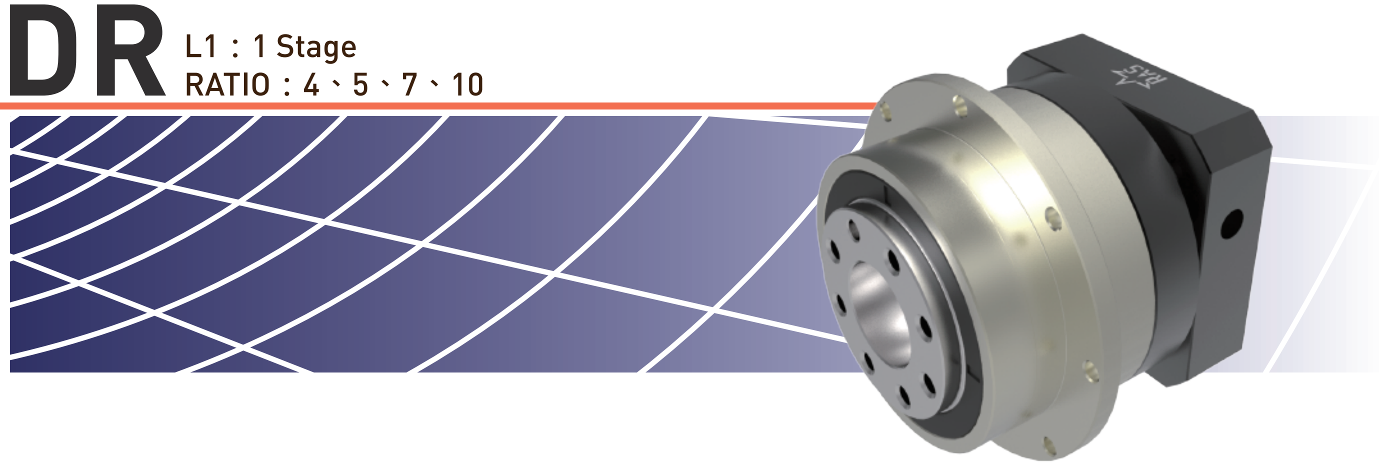
	Type / Code	42	60	90	115	142	180
A	A1	44	62	80	108	140	184
	A2	M4xP0.7	M5xP0.8	M6xP1.0	M6xP1.0	M10xP1.5	M12xP1.75
	A3	13	16	22	32	40	55
	A4	35	52	68	90	120	160
	A5	M4xP0.7	M5xP0.8	M8xP1.25	M12xP1.75	M16xP2.0	M20xP2.5
	A6	50	70	90	120	156	212
	A7	59	70	98	125	156	212
	A8	5	5	6	10	12	16
	A9	15	18	24.5	35	43	60
B	B1	25.8	36.5	46	70	97	99.5
	B2	5.5	6.5	8.5	17	15	15
	B3	1.6	1.5	1	2	3	2.5
	B4	15	25	30	40	65	70
	B5	20.3	30	37.5	53	82	84.5
	B6	28.3	33.5	45	49	72	87.5
	B7	54.3	61.5	85	97	123	177.5
	B8	114.4	142	178	238	302	377
C	C1	46	70	90	145	145	200
	C2	M4x12DP	M5x15DP	M6x18DP	M8x24DP	M8x24DP	M12x36DP
	C3	8	14 (19)	19 (24)	24 (28)	24 (28)	35 (42)
	C4	26	34	43	67.5	68	81.5
	C5	30	50	70	110	110	114.3
	C6	6	5	7.5	8.5	7	12
	C7	42.6	60	90	120	142	180
	C8	34.3	44	47	71	82	100

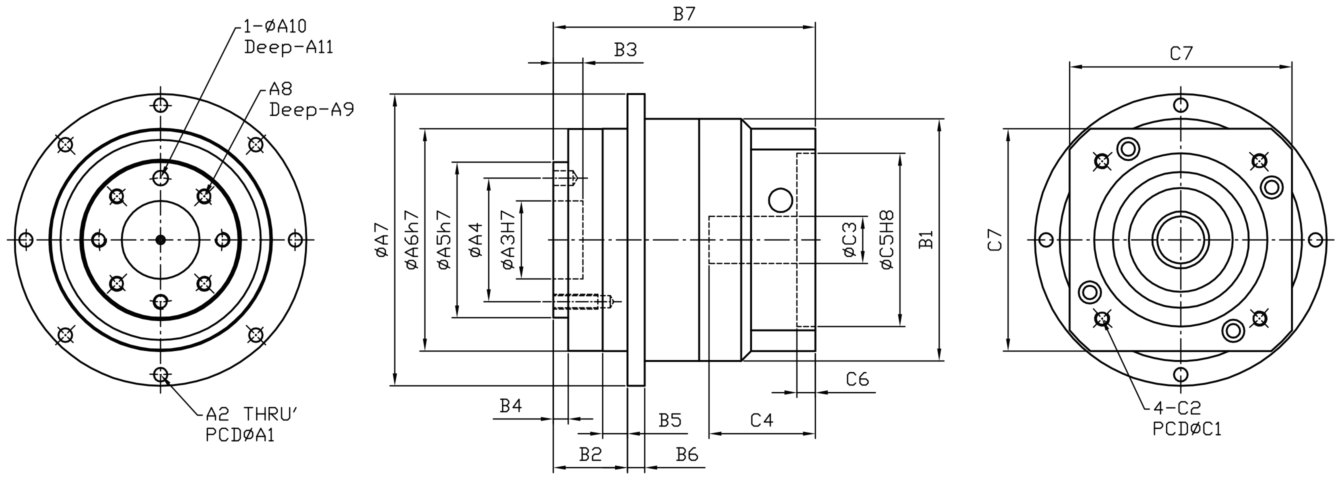
Performance Information
性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	42	60	90	115	142	180
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	15	19	59	165	335	625	1,206
			20	16	51	146	300	555	1,069
			25	16	48	160	333	618	1,189
			30	15	45	151	311	583	1,118
			35	15	45	149	309	573	1,108
			40	14	43	143	298	553	1,070
			50	16	48	160	333	618	1,189
			60	15	45	151	311	583	1,118
			70	15	45	149	309	573	1,108
			80	14	43	143	398	553	1,070
			90	13	44	145	278	516	993
			100	14	43	141	294	549	1,059
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	15 ~ 100	1.8 倍額定輸出力矩 1.8 Times of Rated Output Torque					
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	15 ~ 100	3 倍額定輸出力矩 3 Times of Rated Output Torque					
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	15 ~ 100	3,000	3,000	3,000	3,000	3,000	3,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	15 ~ 100	6,000	6,000	6,000	5,000	5,000	4,000
背隙 Ps Backlash Ps	-	arcmin	15 ~ 100	≦3					
背隙 P0 Backlash P0	-	arcmin	15 ~ 100	≦5					
背隙 P1 Backlash P1	-	arcmin	15 ~ 100	≦7					
背隙 P2 Backlash P2	-	arcmin	15 ~ 100	≦9					
扭轉剛性 Torsional Rigidity	-	Nm/arcmin	15 ~ 100	3	6	14	27	60	140
容許徑向力 Max. Radial Force	F_{2rB}	N	15 ~ 100	380	1,180	3,200	6,800	9,300	15,600
容許軸向力 Max. Axial Force	F_{2aB}	N	15 ~ 100	190	590	1,600	3,400	4,650	7,800
使用壽命 Service Life	L_H	hr	15 ~ 100	S5 週期運轉：＞30,000 (S1 連續運轉：＞15,000hrs) S5 Cycle Operation：＞30,000 (S1 Continuous Operation：＞15,000hrs)					
效率 Efficiency	η	%	15 ~ 100	≧94					
使用溫度 Operating Temperature	-	˚C	15 ~ 100	-25˚C ~ +90˚C					
潤滑 Lubrication	-		15 ~ 100	全合成潤滑油脂 Fully Synthetic Grease					
防護等級 Protection Class	-		15 ~ 100	IP65					
安裝方向 Mounting Position	-		15 ~ 100	任意方向 Any					
噪音值 Noise Level	-	dB	15 ~ 100	≦56	≦58	≦60	≦63	≦65	≦67
重量 Weight	-	Kg	15 ~ 100	0.9	2	6	10.2	22.5	42

HDR

L1 : 1 Stage
RATIO : 4、5、7、10





Unit : mm

	Type / Code	47	64	90	110	140	200
A	A1	67	79	109	135	168	233
	A2	8-Ø3.4	8-Ø4.5	8-Ø5.5	8-Ø5.5	12-Ø6.6	12-Ø9.0
	A3	12	20	31.5	40	50	80
	A4	20	31.5	50	63	80	125
	A5	28	40	63	80	100	160
	A6	47	64	90	110	140	200
	A7	72	86	118	146	179	248
	A8	4-M3xP0.5	7-M5xP0.8	7-M6xP1.0	11-M6xP1.0	11-M8xP1.25	11-M10xP1.5
	A9	6.5	13	18	18	17	24
	A10	3	5	6	6	8	10
	A11	4	7	8	8	8	10
B	B1	59	70	98	125	156	212
	B2	19.5	19.5	30	29	38	50
	B3	5	7	12	12	12	16
	B4	3	4	6	6	6	8
	B5	5	6	10	10	15	15
	B6	4	5	7	8	10	12
	B7	74.7	88	106	149	175	228.5
C	C1	46	70	90	145	145	200
	C2	M4x12DP	M5x15DP	M6x18DP	M8x24DP	M8x24DP	M12x36DP
	C3	8	14 (19)	19 (24)	24 (28)	24 (28)	35 (42)
	C4	26	34	43	67.5	68	81.5
	C5	30	50	70	110	110	114.3
	C6	6	5	7.5	8.5	7	12
	C7	42.6	60	90	120	142	180

Performance Information

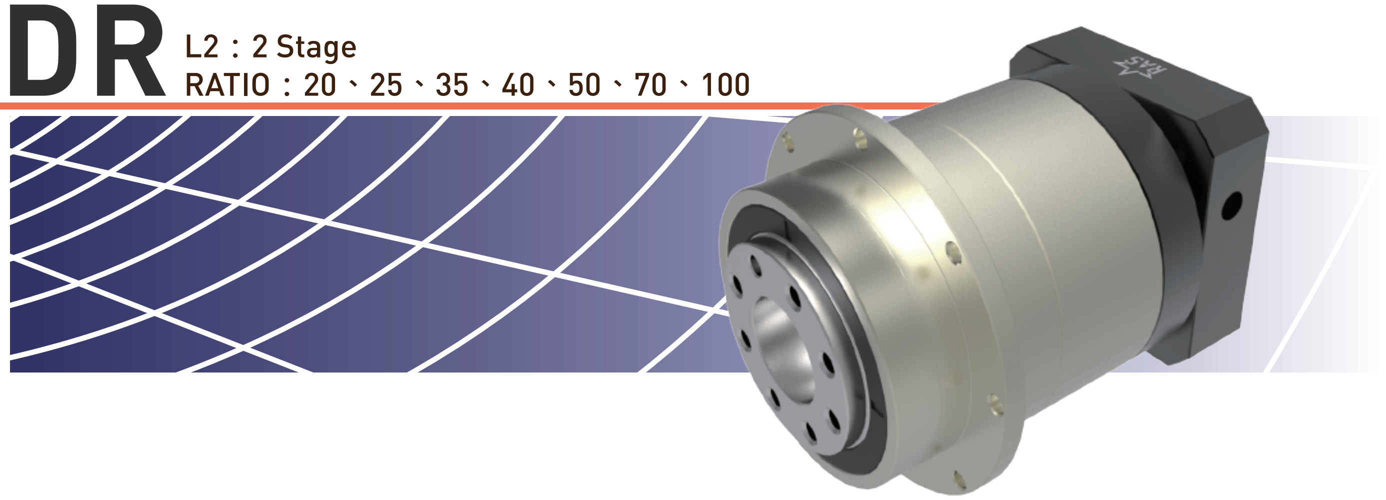
性能表

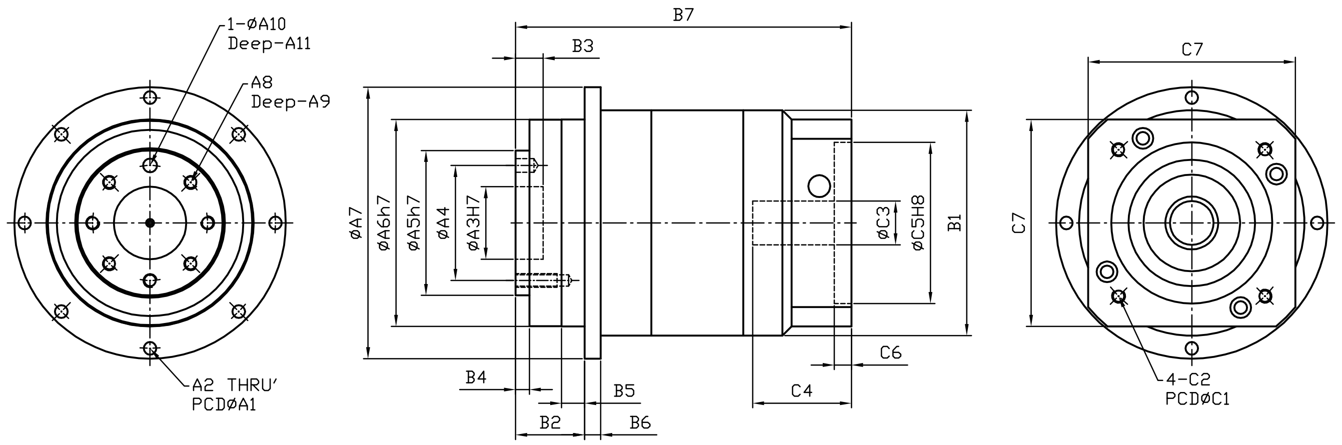
規格 Model No.	代號 Code	單位 Unit	速比 Ratio	47	64	90	110	140	200
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	4	22	60	160	335	650	1,200
			5	20	50	155	333	618	1,189
			7	19	47	142	309	573	1,108
			10	16	43	136	294	549	1,059
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	4 ~ 10	1.8 倍額定輸出力矩 1.8 Times of Rated Output Torque					
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	4 ~ 10	3 倍額定輸出力矩 3 Times of Rated Output Torque					
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	4 ~ 10	3,000	3,000	3,000	3,000	3,000	3,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	4 ~ 10	6,000	6,000	6,000	6,000	5,000	4,000
背隙 Ps Backlash Ps	-	arcmin	4 ~ 10	≦1					
背隙 P0 Backlash P0	-	arcmin	4 ~ 10	≦3					
背隙 P1 Backlash P1	-	arcmin	4 ~ 10	≦5					
背隙 P2 Backlash P2	-	arcmin	4 ~ 10	≦7					
扭轉剛性 Torsional Rigidity	-	Nm/arcmin	4 ~ 10	6	14	30	86	155	450
容許徑向力 Max. Radial Force	F_{2rB}	N	4 ~ 10	1,020	1,260	4,230	6,360	7,035	17,600
容許軸向力 Max. Axial Force	F_{2aB}	N	4 ~ 10	-	-	7,330	11,500	18,600	36,800
使用壽命 Service Life	L_H	hr	4 ~ 10	S5 週期運轉： > 30,000 (S1 連續運轉： > 15,000hrs) S5 Cycle Operation： > 30,000 (S1 Continuous Operation： > 15,000hrs)					
效率 Efficiency	η	%	4 ~ 10	≧97					
使用溫度 Operating Temperature	-	˚C	4 ~ 10	-25˚C ~ +90˚C					
潤滑 Lubrication	-		4 ~ 10	全合成潤滑油脂 Fully Synthetic Grease					
防護等級 Protection Class	-		4 ~ 10	IP65					
安裝方向 Mounting Position	-		4 ~ 10	任意方向 Any					
噪音值 Noise Level	-	dB	4 ~ 10	≦56	≦58	≦60	≦63	≦65	≦67
重量 Weight	-	Kg	4 ~ 10	0.7	1.4	4.2	7.4	13.9	32.4

HDR

L2：2 Stage

RATIO：20、25、35、40、50、70、100





Unit：mm

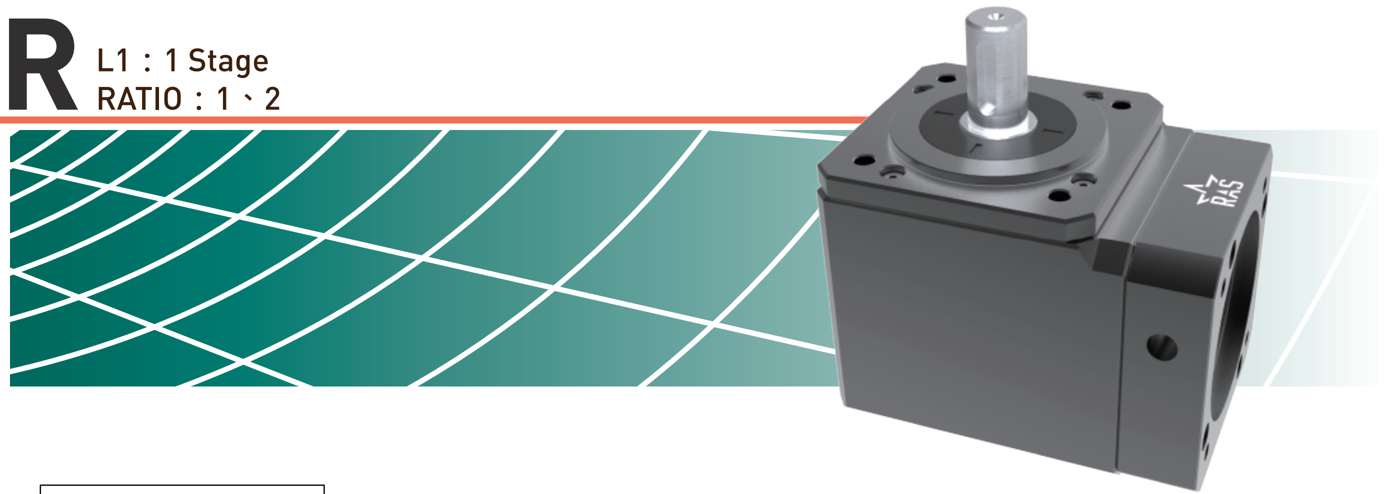
	Type / Code	47	64	90	110	140	200
A	A1	67	79	109	135	168	233
	A2	8-Ø3.4	8-Ø4.5	8-Ø5.5	8-Ø5.5	12-Ø6.6	12-Ø9.0
	A3	12	20	31.5	40	50	80
	A4	20	31.5	50	63	80	125
	A5	28	40	63	80	100	160
	A6	47	64	90	110	140	200
	A7	72	86	118	146	179	248
	A8	4-M3xP0.5	7-M5xP0.8	7-M6xP1.0	11-M6xP1.0	11-M8xP1.25	11-M10xP1.5
	A9	6.5	13	18	18	17	24
	A10	3	5	6	6	8	10
	A11	4	7	8	8	8	10
B	B1	59	70	98	125	156	212
	B2	19.5	19.5	30	29	38	50
	B3	5	7	12	12	12	16
	B4	3	4	6	6	6	8
	B5	5	6	10	10	15	15
	B6	4	5	7	8	10	12
	B7	100.7	116	146	197	226	318.5
C	C1	46	70	90	145	145	200
	C2	M4x12DP	M5x15DP	M6x18DP	M8x24DP	M8x24DP	M12x36DP
	C3	8	14 (19)	19 (24)	24 (28)	24 (28)	35 (42)
	C4	26	34	43	67.5	68	81.5
	C5	30	50	70	110	110	114.3
	C6	6	5	7.5	8.5	7	12
	C7	42.6	60	90	120	142	180

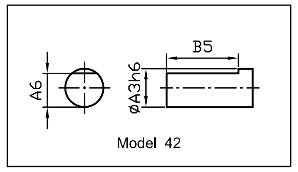
Performance Information

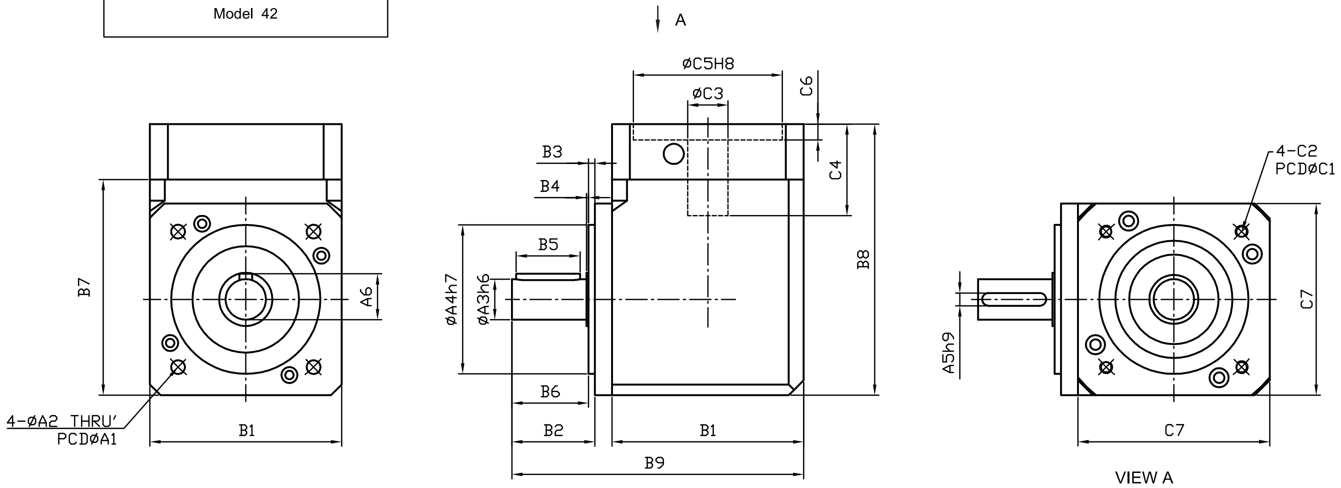
性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	47	64	90	110	140	200
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	20	22	60	160	335	650	1,200
			25	20	50	155	333	618	1,189
			35	19	47	142	309	573	1,108
			40	22	60	160	335	650	1,200
			50	20	50	155	333	618	1,189
			70	19	47	142	309	573	1,108
			100	16	43	136	294	549	1,059
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	20 ~ 100	1.8 倍額定輸出力矩 1.8 Times of Rated Output Torque					
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	20 ~ 100	3 倍額定輸出力矩 3 Times of Rated Output Torque					
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	20 ~ 100	3,000	3,000	3,000	3,000	3,000	3,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	20 ~ 100	6,000	6,000	6,000	6,000	5,000	4,000
背隙 Ps Backlash Ps	-	arcmin	20 ~ 100	≦3					
背隙 P0 Backlash P0	-	arcmin	20 ~ 100	≦5					
背隙 P1 Backlash P1	-	arcmin	20 ~ 100	≦7					
背隙 P2 Backlash P2	-	arcmin	20 ~ 100	≦9					
扭轉剛性 Torsional Rigidity	-	Nm/arcmin	20 ~ 100	6	14	30	86	155	450
容許徑向力 Max. Radial Force	F_{2rB}	N	20 ~ 100	1,020	1,260	4,230	6,360	7,035	17,600
容許軸向力 Max. Axial Force	F_{2aB}	N	20 ~ 100	-	-	7,330	11,500	18,600	36,800
使用壽命 Service Life	L_H	hr	20 ~ 100	S5 週期運轉： > 30,000 (S1 連續運轉： > 15,000hrs) S5 Cycle Operation： > 30,000 (S1 Continuous Operation： > 15,000hrs)					
效率 Efficiency	η	%	20 ~ 100	≧94					
使用溫度 Operating Temperature	-	˚C	20 ~ 100	-25˚C ~ +90˚C					
潤滑 Lubrication	-		20 ~ 100	全合成潤滑油脂 Fully Synthetic Grease					
防護等級 Protection Class	-		20 ~ 100	IP65					
安裝方向 Mounting Position	-		20 ~ 100	任意方向 Any					
噪音值 Noise Level	-	dB	20 ~ 100	≦56	≦58	≦60	≦63	≦65	≦67
重量 Weight	-	Kg	20 ~ 100	1	1.9	4.8	9.4	16.7	40.12

PR L1 : 1 Stage RATIO : 1、2







Unit：mm

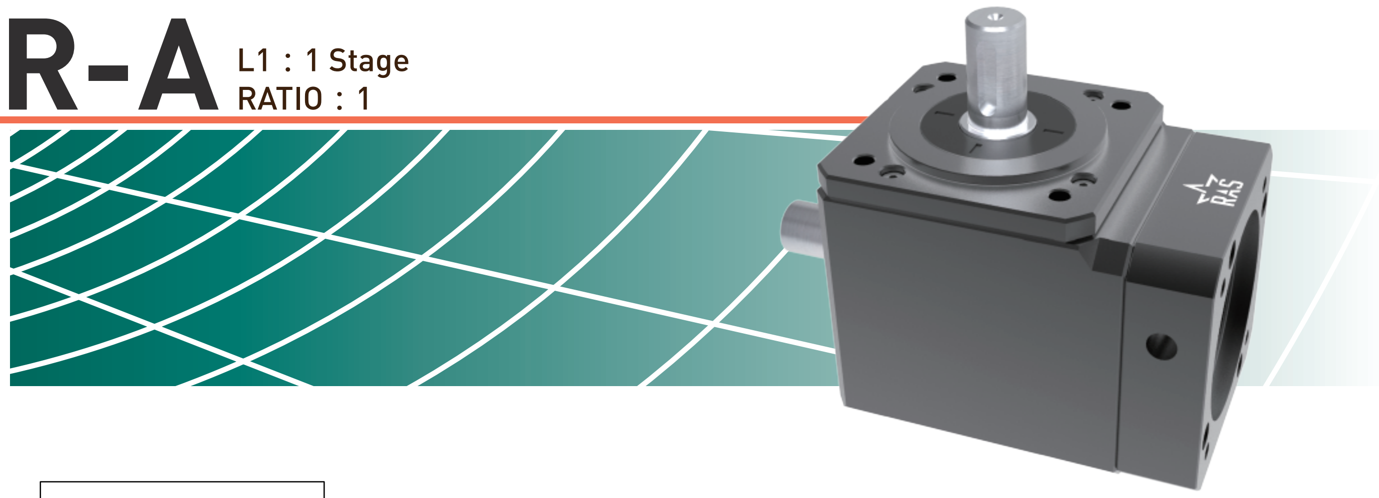
Code \ Type		42	60	90	120
A	A1	46	70	90	145
	A2	4.2	5.5	6.5	9
	A3	8	14	19	24
	A4	30	50	70	110
	A5	-	5	6	8
	A6	7	16	21.5	27
B	B1	43	60	90	120
	B2	21.3	28.5	39	55
	B3	2.5	2.5	3	3
	B4	0.8	1	1	2
	B5	15	20	25	40
	B6	18.8	26	36	52
	B7	46	66.5	101	134
	B8	66	90.5	127	176
	B9	68.3	92.5	137	185
C	C1	46	70	90	145
	C2	M4x12DP	M5x15DP	M6x18DP	M8x24DP
	C3	8	14 (19)	19 (24)	24 (28)
	C4	28.5	30.5	40.5	66
	C5	30	50	70	110
	C6	6	5	7.5	8.5
	C7	42.6	60	90	120

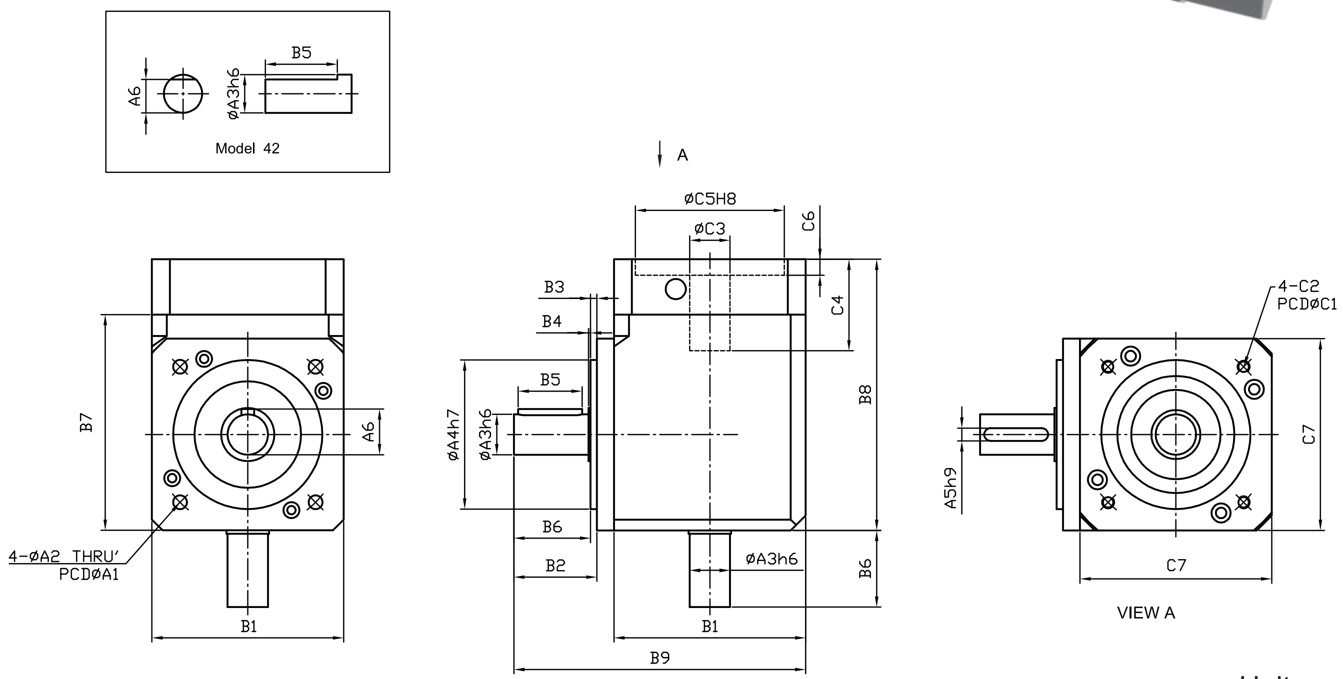
Performance Information
性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	42	60	90	120
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	1	15	25	68	235
			2	18	42	115	330
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	1 ~ 2	1.5 倍額定輸出力矩 1.5 Times of Rated Output Torque			
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	1 ~ 2	3 倍額定輸出力矩 3 Times of Rated Output Torque			
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	1 ~ 2	3,000	3,000	3,000	1,500
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	1 ~ 2	6,000	6,000	6,000	3,000
背隙 Ps Backlash Ps	-	arcmin	1 ~ 2	≦2			
背隙 P0 Backlash P0	-	arcmin	1 ~ 2	≦4			
背隙 P1 Backlash P1	-	arcmin	1 ~ 2	≦6			
背隙 P2 Backlash P2	-	arcmin	1 ~ 2	≦8			
容許徑向力 Max. Radial Force	F_{2rB}	N	1 ~ 2	200	880	2,000	4,600
容許軸向力 Max. Axial Force	F_{2aB}	N	1 ~ 2	100	440	1,000	2,300
使用壽命 Service Life	L_H	hr	1 ~ 2	S5 週期運轉： > 30,000 (S1 連續運轉： > 15,000hrs) S5 Cycle Operation： > 30,000 (S1 Continuous Operation： > 15,000hrs)			
效率 Efficiency	η	%	1 ~ 2	≧94			
使用溫度 Operating Temperature	-	˚C	1 ~ 2	-25˚C ~ +90˚C			
潤滑 Lubrication	-		1 ~ 2	全合成潤滑油脂 Fully Synthetic Grease			
防護等級 Protection Class	-		1 ~ 2	IP65			
安裝方向 Mounting Position	-		1 ~ 2	任意方向 Any			
噪音值 Noise Level	-	dB	1 ~ 2	≦62	≦65	≦70	≦75
重量 Weight	-	Kg	1 ~ 2	0.3	1	3.3	8.2

PR-A

L1：1 Stage
RATIO：1





Unit：mm

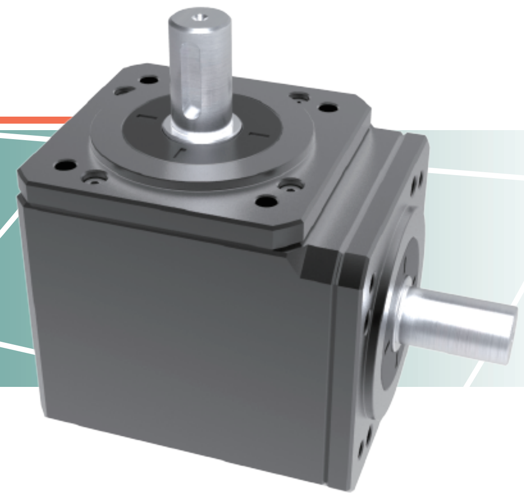
Code \ Type		42	60	90	120
A	A1	46	70	90	145
	A2	4.2	5.5	6.5	9
	A3	8	14	19	24
	A4	30	50	70	110
	A5	-	5	6	8
	A6	7	16	21.5	27
B	B1	43	60	90	120
	B2	21.3	28.5	39	55
	B3	2.5	2.5	3	3
	B4	0.8	1	1	2
	B5	15	20	25	40
	B6	18.8	26	36	52
	B7	46	66.5	101	134
	B8	66	90.5	127	176
	B9	68.3	92.5	137	185
C	C1	46	70	90	145
	C2	M4x12DP	M5x15DP	M6x18DP	M8x24DP
	C3	8	14 (19)	19 (24)	24 (28)
	C4	28.5	30.5	40.5	66
	C5	30	50	70	110
	C6	6	5	7.5	8.5
	C7	42.6	60	90	120

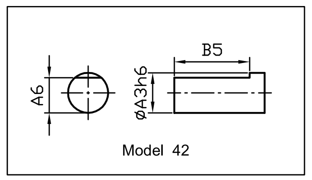
Performance Information
性能表

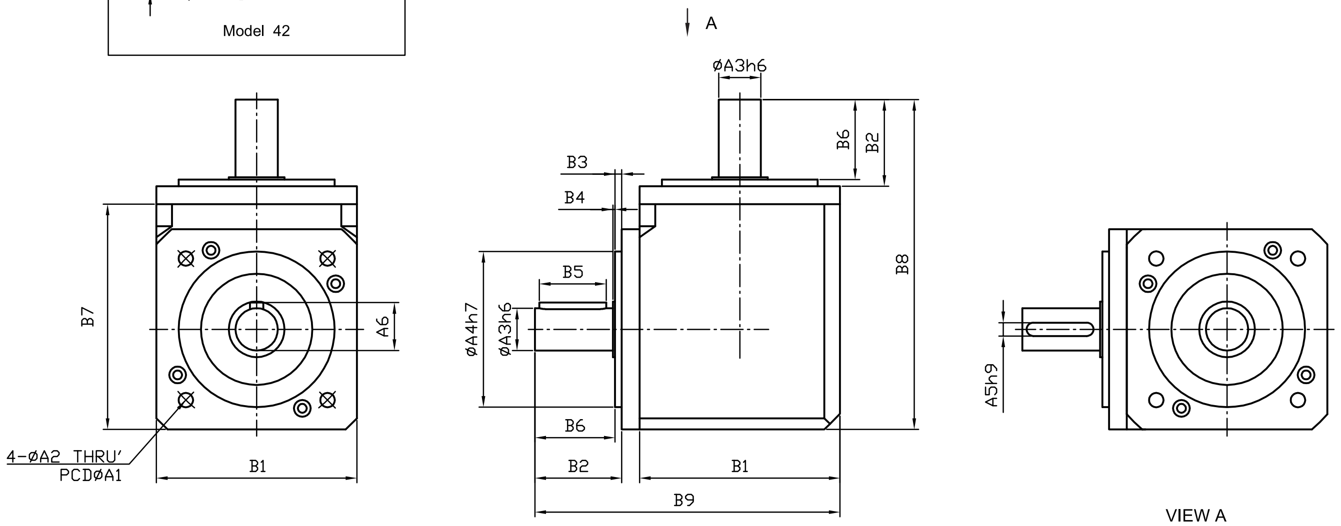
規格 Model No.	代號 Code	單位 Unit	速比 Ratio	42	60	90	120
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	1	15	25	68	235
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	1 ~ 2	1.5 倍額定輸出力矩 1.5 Times of Rated Output Torque			
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	1 ~ 2	3 倍額定輸出力矩 3 Times of Rated Output Torque			
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	1 ~ 2	3,000	3,000	3,000	1,500
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	1 ~ 2	6,000	6,000	6,000	3,000
背隙 Ps Backlash Ps	-	arcmin	1 ~ 2	≦2			
背隙 P0 Backlash P0	-	arcmin	1 ~ 2	≦4			
背隙 P1 Backlash P1	-	arcmin	1 ~ 2	≦6			
背隙 P2 Backlash P2	-	arcmin	1 ~ 2	≦8			
容許徑向力 Max. Radial Force	F_{2rB}	N	1 ~ 2	200	880	2,000	4,600
容許軸向力 Max. Axial Force	F_{2aB}	N	1 ~ 2	100	440	1,000	2,300
使用壽命 Service Life	L_H	hr	1 ~ 2	S5 週期運轉：＞30,000 (S1 連續運轉：＞15,000hrs) S5 Cycle Operation：＞30,000 (S1 Continuous Operation：＞15,000hrs)			
效率 Efficiency	η	%	1 ~ 2	≧94			
使用溫度 Operating Temperature	-	°C	1 ~ 2	-25°C ~ +90°C			
潤滑 Lubrication	-		1 ~ 2	全合成潤滑油脂 Fully Synthetic Grease			
防護等級 Protection Class	-		1 ~ 2	IP65			
安裝方向 Mounting Position	-		1 ~ 2	任意方向 Any			
噪音值 Noise Level	-	dB	1 ~ 2	≦62	≦65	≦70	≦75
重量 Weight	-	Kg	1 ~ 2	0.3	1.1	3.5	8.9

PR-B

L1：1 Stage
RATIO：1







Unit：mm

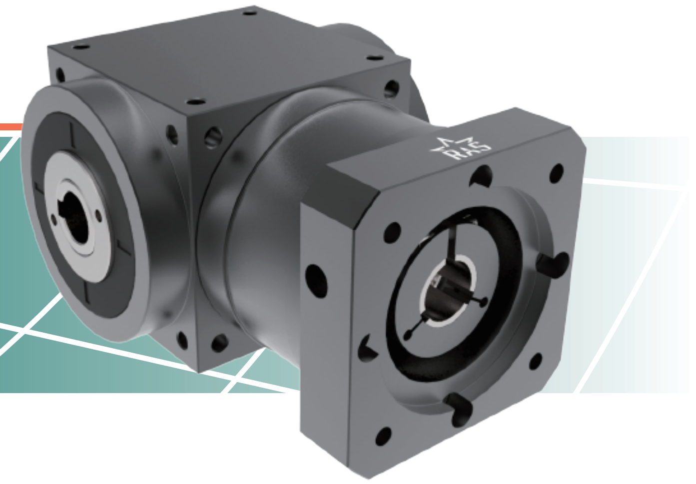
	Type / Code	42	60	90	120
A	A1	46	70	90	145
	A2	4.2	5.5	6.5	9
	A3	8	14	19	24
	A4	30	50	70	110
	A5	-	5	6	8
	A6	7	16	21.5	27
B	B1	43	60	90	120
	B2	21.3	28.5	39	55
	B3	2.5	2.5	3	3
	B4	0.8	1	1	2
	B5	15	20	25	40
	B6	18.8	26	36	52
	B7	46	66.5	101	134
	B8	71.3	99	148	199
	B9	68.3	92.5	137	185

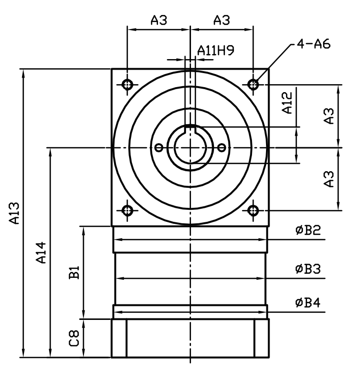
Performance Information
性能表

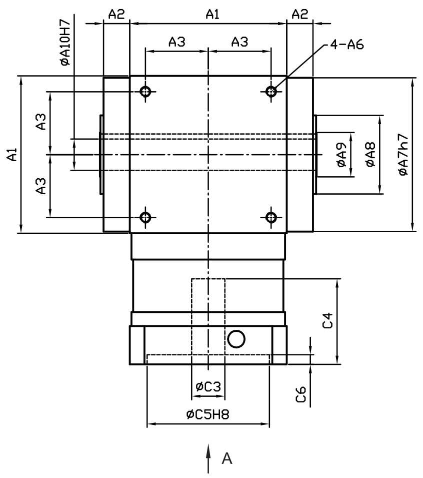
規格 Model No.	代號 Code	單位 Unit	速比 Ratio	42	60	90	120
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	1	15	25	68	235
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	1 ~ 2	1.5 倍額定輸出力矩 1.5 Times of Rated Output Torque			
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	1 ~ 2	3 倍額定輸出力矩 3 Times of Rated Output Torque			
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	1 ~ 2	3,000	3,000	3,000	1,500
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	1 ~ 2	6,000	6,000	6,000	3,000
背隙 Ps Backlash Ps	-	arcmin	1 ~ 2	≦2			
背隙 P0 Backlash P0	-	arcmin	1 ~ 2	≦4			
背隙 P1 Backlash P1	-	arcmin	1 ~ 2	≦6			
背隙 P2 Backlash P2	-	arcmin	1 ~ 2	≦8			
容許徑向力 Max. Radial Force	F_{2rB}	N	1 ~ 2	200	880	2,000	4,600
容許軸向力 Max. Axial Force	F_{2aB}	N	1 ~ 2	100	440	1,000	2,300
使用壽命 Service Life	L_H	hr	1 ~ 2	S5 週期運轉：＞30,000 (S1 連續運轉：＞15,000hrs) S5 Cycle Operation：＞30,000 (S1 Continuous Operation：＞15,000hrs)			
效率 Efficiency	η	%	1 ~ 2	≧94			
使用溫度 Operating Temperature	-	˚C	1 ~ 2	-25˚C ~ +90˚C			
潤滑 Lubrication	-		1 ~ 2	全合成潤滑油脂 Fully Synthetic Grease			
防護等級 Protection Class	-		1 ~ 2	IP65			
安裝方向 Mounting Position	-		1 ~ 2	任意方向 Any			
噪音值 Noise Level	-	dB	1 ~ 2	≦62	≦65	≦70	≦75
重量 Weight	-	Kg	1 ~ 2	0.3	0.9	3.1	7.7

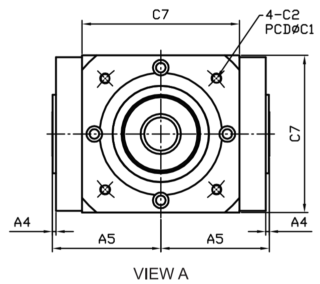
TR

L1 : 1 Stage
RATIO : 1、2、3、4、5









Unit：mm

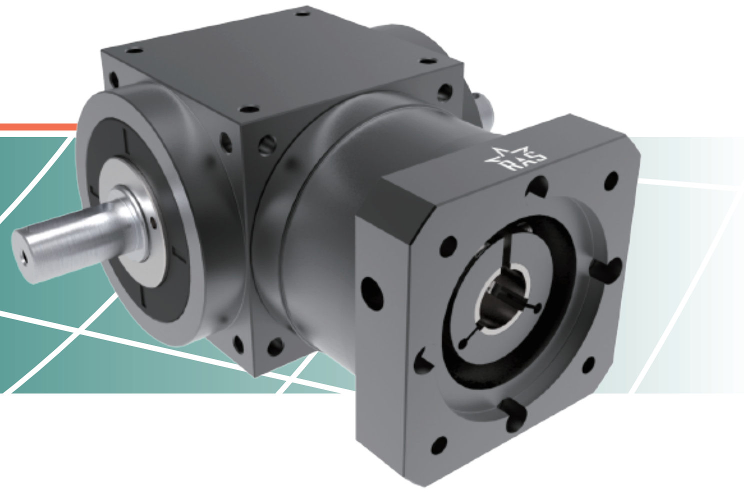
	Type / Code	65	75	90	110	140	170
A	A1	65	75	90	110	140	170
	A2	13	14.5	15	15	15	15
	A3	27	30	36	44	55	67
	A4	2	2	2	2	2	2
	A5	47.5	54	62	72	87	102
	A6	M4xP0.7	M6xP1.0	M6xP1.0	M8xP1.25	M10xP1.5	M12xP1.75
	A7	63	73	88	108	135	165
	A8	31	35	45	53	68	83
	A9	21	22	26	33	47	55
	A10	13	14	18	22	32	40
	A11	5	5	6	6	10	12
	A12	15.3	16.3	20.8	24.8	35.3	43.3
	A13	133.5	154.5	165	196.5	245	287.5
	A14	101	117	120	141.5	175	202.5
B	B1	49	60.5	53	69.5	85.5	95
	B2	63	73	88	108	135	165
	B3	62	72	86	106	133	163
	B4	63	73	88	108	135	165
C	C1	46	70	90	145	145	200
	C2	M4x8DP	M5x10DP	M6x12DP	M8x16DP	M8x16DP	M12x24DP
	C3	8	14 (19)	19 (24)	24 (28)	24 (28)	35 (42)
	C4	30	35	40	40	50	60
	C5	30	50	70	110	110	114.3
	C6	3.5	5	5.5	7	5	6
	C7	42	60	90	120	130	142
	C8	19.5	20	22	22	24	24

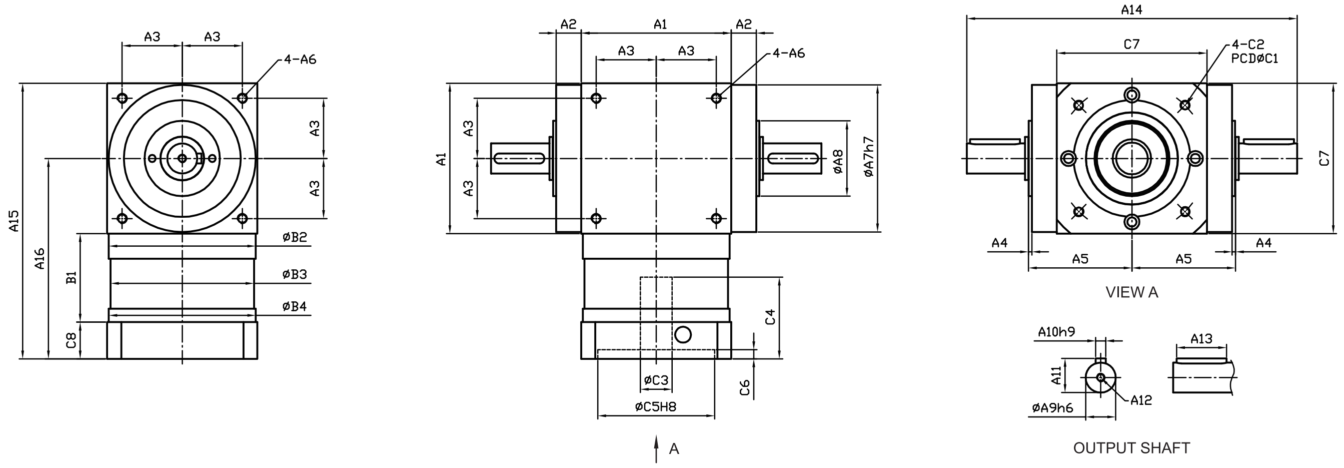
Performance Information
性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	65	75	90	110	140	170
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	1	25	45	78	150	360	585
			2	24	42	68	150	330	544
			3	18	33	54	120	270	450
			4	13	28	52	100	224	376
			5	12	25	40	85	196	320
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	1 ~ 5	1.5 倍額定輸出力矩 1.5 Times of Rated Output Torque					
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	1 ~ 5	3 倍額定輸出力矩 3 Times of Rated Output Torque					
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	1 ~ 5	3,000	3,000	3,000	2,500	2,500	2,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	1 ~ 5	7,500	6,500	5,500	4,500	3,500	3,000
背隙 PS Backlash PS	-	arcmin	1 ~ 5	≦2					
背隙 P0 Backlash P0	-	arcmin	1 ~ 5	≦4					
背隙 P1 Backlash P1	-	arcmin	1 ~ 5	≦6					
背隙 P2 Backlash P2	-	arcmin	1 ~ 5	≦8					
容許徑向力 Max. Radial Force	F_{1rB}	N	1 ~ 5	900	1,100	1,700	2,700	4,800	6,600
容許軸向力 Max. Axial Force	F_{2aB}	N	1 ~ 5	450	600	800	1,400	2,400	3,300
使用壽命 Service Life	L_H	hr	1 ~ 5	S5 週期運轉： > 30,000 (S1 連續運轉： > 15,000hrs) S5 Cycle Operation： > 30,000 (S1 Continuous Operation： > 15,000hrs)					
效率 Efficiency	η	%	1 ~ 5	≧98					
使用溫度 Operating Temperature	-	˚C	1 ~ 5	-30˚C ~ +100˚C					
潤滑 Lubrication	-		1 ~ 5	全合成潤滑油脂 Fully Synthetic Grease					
噪音值 Noise Level	-	dB	1 ~ 5	≦68	≦70	≦74	≦76	≦77	≦78

TR-A

L1 : 1 Stage
RATIO : 1、2、3、4、5





Unit：mm

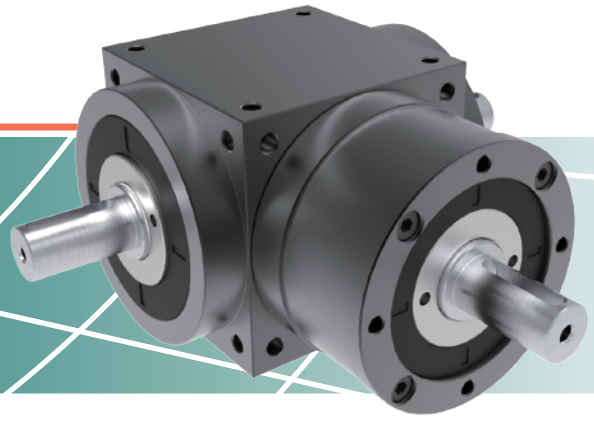
	Type / Code	65	75	90	110	140	170
A	A1	65	75	90	110	140	170
	A2	13	14.5	15	15	15	15
	A3	27	30	36	44	55	67
	A4	2	2	2	2	2	2
	A5	47.5	54	62	72	87	102
	A6	M4xP0.7	M6xP1.0	M6xP1.0	M8xP1.25	M10xP1.5	M12xP1.75
	A7	63	73	88	108	135	165
	A8	31	35	45	53	68	83
	A9	13	14	18	22	32	40
	A10	5	5	6	6	10	12
	A11	15	18	20.5	24.5	35	43
	A12	M4	M5	M5	M8	M12	M16
	A13	16	25	30	32	45	50
	A14	134	168	198	224	274	324
	A15	133.5	154.5	165	196.5	245	287.5
	A16	101	117	120	141.5	175	202.5
B	B1	49	60.5	53	69.5	85.5	95
	B2	63	73	88	108	135	165
	B3	62	72	86	106	133	163
	B4	63	73	88	108	135	165
C	C1	46	70	90	145	145	200
	C2	M4x8DP	M5x10DP	M6x12DP	M8x16DP	M8x16DP	M12x24DP
	C3	8	14 (19)	19 (24)	24 (28)	24 (28)	35 (42)
	C4	30	35	40	40	50	60
	C5	30	50	70	110	110	114.3
	C6	3.5	5	5.5	7	5	6
	C7	42	60	90	120	130	142
	C8	19.5	20	22	22	24	24

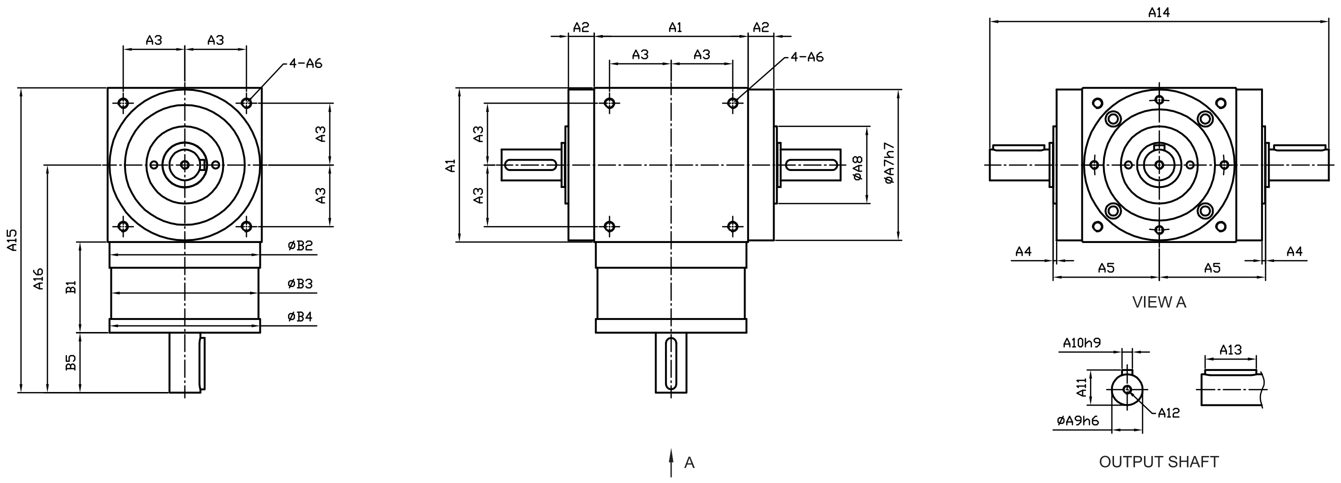
Performance Information
性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	65	75	90	110	140	170
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	1	25	45	78	150	360	585
			2	24	42	68	150	330	544
			3	18	33	54	120	270	450
			4	13	28	52	100	224	376
			5	12	25	40	85	196	320
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	1 ~ 5	1.5 倍額定輸出力矩 1.5 Times of Rated Output Torque					
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	1 ~ 5	3 倍額定輸出力矩 3 Times of Rated Output Torque					
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	1 ~ 5	3,000	3,000	3,000	2,500	2,500	2,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	1 ~ 5	7,500	6,500	5,500	4,500	3,500	3,000
背隙 PS Backlash PS	-	arcmin	1 ~ 5	≦2					
背隙 P0 Backlash P0	-	arcmin	1 ~ 5	≦4					
背隙 P1 Backlash P1	-	arcmin	1 ~ 5	≦6					
背隙 P2 Backlash P2	-	arcmin	1 ~ 5	≦8					
容許徑向力 Max. Radial Force	F_{1rB}	N	1 ~ 5	900	1,100	1,700	2,700	4,800	6,600
容許軸向力 Max. Axial Force	F_{2aB}	N	1 ~ 5	450	600	800	1,400	2,400	3,300
使用壽命 Service Life	L_H	hr	1 ~ 5	S5 週期運轉：＞30,000 (S1 連續運轉：＞15,000hrs) S5 Cycle Operation：＞30,000 (S1 Continuous Operation：＞15,000hrs)					
效率 Efficiency	η	%	1 ~ 5	≧98					
使用溫度 Operating Temperature	-	˚C	1 ~ 5	-30˚C ~ +100˚C					
潤滑 Lubrication	-		1 ~ 5	全合成潤滑油脂 Fully Synthetic Grease					
噪音值 Noise Level	-	dB	1 ~ 5	≦68	≦70	≦74	≦76	≦77	≦78

TR-B

L1 : 1 Stage
RATIO : 1、2、3、4、5





Unit：mm

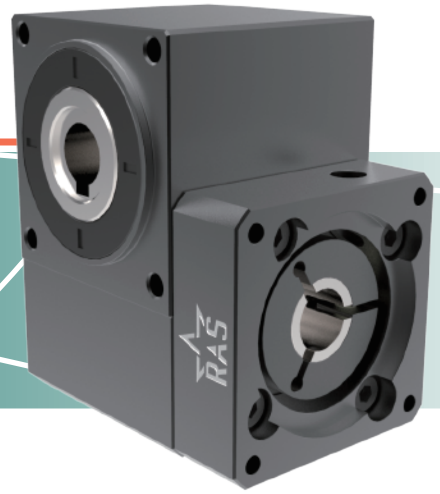
	Type / Code	65	75	90	110	140	170
A	A1	65	75	90	110	140	170
	A2	13	14.5	15	15	15	15
	A3	27	30	36	44	55	67
	A4	2	2	2	2	2	2
	A5	47.5	54	62	72	87	102
	A6	M4xP0.7	M6xP1.0	M6xP1.0	M8xP1.25	M10xP1.5	M12xP1.75
	A7	63	73	88	108	135	165
	A8	31	35	45	53	68	83
	A9	13	14	18	22	32	40
	A10	5	5	6	6	10	12
	A11	15	18	20.5	24.5	35	43
	A12	M4	M5	M5	M8	M12	M16
	A13	16	25	30	32	45	50
	A14	134	168	198	224	274	324
	A15	133.5	165.5	178	219.5	275.5	325
	A16	101	128	133	164.5	205.5	240
B	B1	49	60.5	53	69.5	85.5	95
	B2	63	73	88	108	135	165
	B3	62	72	86	106	133	163
	B4	63	73	88	108	135	165
	B5	19.5	30	35	40	50	60

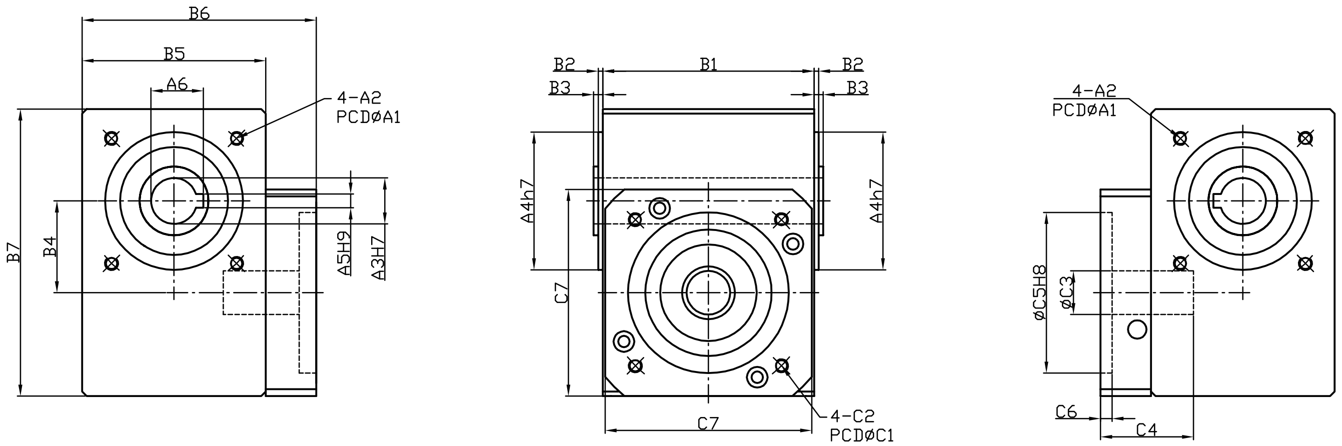
Performance Information
性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	65	75	90	110	140	170
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	1	25	45	78	150	360	585
			2	24	42	68	150	330	544
			3	18	33	54	120	270	450
			4	13	28	52	100	224	376
			5	12	25	40	85	196	320
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	1 ~ 5	1.5 倍額定輸出力矩 1.5 Times of Rated Output Torque					
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	1 ~ 5	3 倍額定輸出力矩 3 Times of Rated Output Torque					
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	1 ~ 5	3,000	3,000	3,000	2,500	2,500	2,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	1 ~ 5	7,500	6,500	5,500	4,500	3,500	3,000
背隙 PS Backlash PS	-	arcmin	1 ~ 5	≦2					
背隙 P0 Backlash P0	-	arcmin	1 ~ 5	≦4					
背隙 P1 Backlash P1	-	arcmin	1 ~ 5	≦6					
背隙 P2 Backlash P2	-	arcmin	1 ~ 5	≦8					
容許徑向力 Max. Radial Force	F_{2aB}	N	1 ~ 5	450	600	800	1,400	2,400	3,300
容許軸向力 Max. Axial Force	F_{2aB}	N	1 ~ 5	450	600	800	1,400	2,400	3,300
使用壽命 Service Life	L_H	hr	1 ~ 5	S5 週期運轉： ＞30,000 (S1 連續運轉： ＞15,000hrs) S5 Cycle Operation： ＞30,000 (S1 Continuous Operation： ＞15,000hrs)					
效率 Efficiency	η	%	1 ~ 5	≧98					
使用溫度 Operating Temperature	-	˚C	1 ~ 5	-30˚C ~ +100˚C					
潤滑 Lubrication	-		1 ~ 5	全合成潤滑油脂 Fully Synthetic Grease					
噪音值 Noise Level	-	dB	1 ~ 5	≦68	≦70	≦74	≦76	≦77	≦78

ZR L1 : 1 Stage

RATIO : 10、20、50





Unit：mm

Code \ Type		42	60	90	120
A	A1	50	70	77	120
	A2	M4x7DP	M5x14DP	M6x10DP	M8x15DP
	A3	8	14	20	25
	A4	30	50	60	80
	A5	3	5	6	8
	A6	9.4	16.3	22.8	27
B	B1	43	61	86	122
	B2	2	2	2	2
	B3	2.5	2.5	4	4
	B4	18	33.9	40	60
	B5	42	60	80	120
	B6	62	84	102	162
	B7	60	93	122.5	192
C	C1	46	70	90	145
	C2	M4x12DP	M5x15DP	M6x18DP	M8x24DP
	C3	8	14 (19)	19 (24)	24 (28)
	C4	26	34	44	66
	C5	30	50	70	110
	C6	6	5	7.5	8.5
	C7	42.6	60	85	120

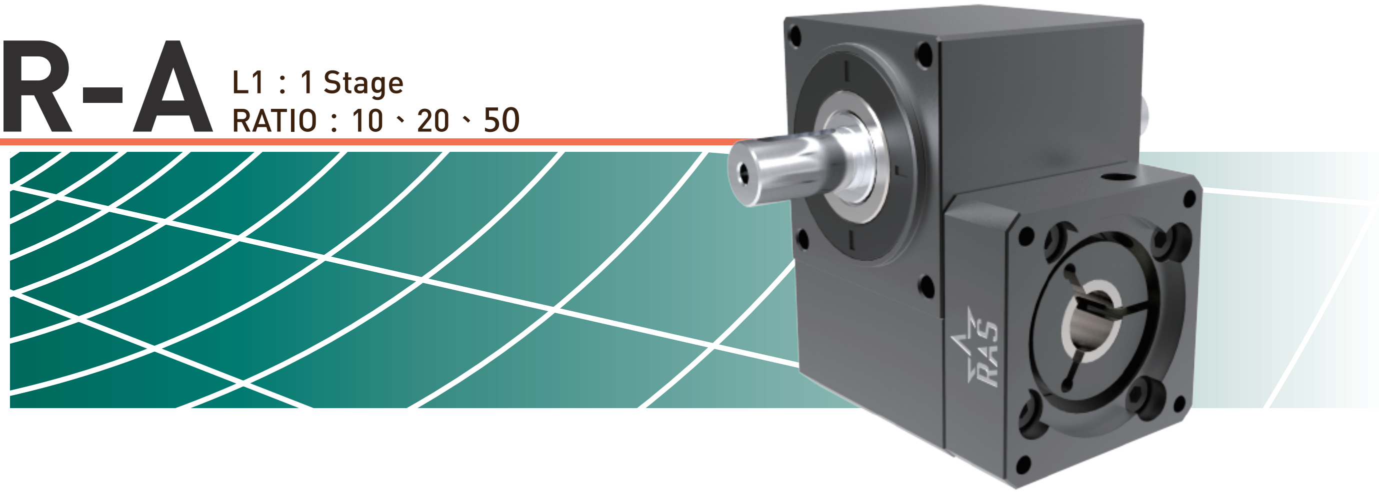
Performance Information

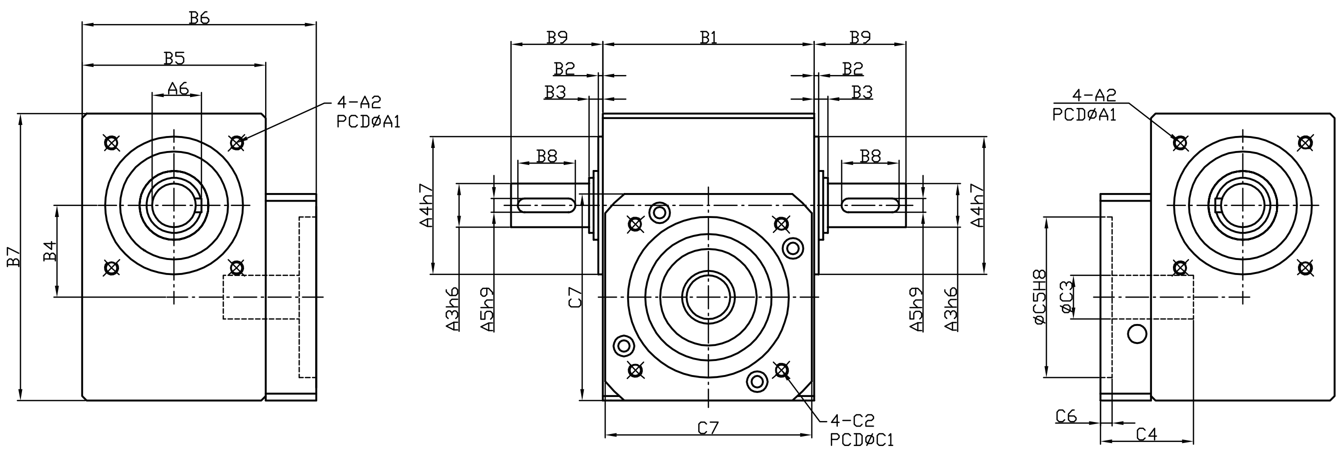
性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	42	60	90	120
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	10	11	79	95	420
			20	13.8	94	116	480
			50	-	35	59	170
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	10 ~ 50	1.5 倍額定輸出力矩 1.5 Times of Rated Output Torque			
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	10 ~ 50	3 倍額定輸出力矩 3 Times of Rated Output Torque			
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	10 ~ 50	2,000	2,000	2,000	2,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	10 ~ 50	3,000	3,000	3,000	3,000
背隙 P2 Backlash P2	-	arcmin	10 ~ 50	≦20			
使用壽命 Service Life	L_H	hr	10 ~ 50	S5 週期運轉： > 30,000 (S1 連續運轉： > 15,000hrs) S5 Cycle Operation： > 30,000 (S1 Continuous Operation： > 15,000hrs)			
效率 Efficiency	η	%	10 ~ 50	≧85			
使用溫度 Operating Temperature	-	˚C	10 ~ 50	-30˚C ~ +70˚C			
潤滑 Lubrication	-		10 ~ 50	全合成潤滑油脂 Fully Synthetic Grease			
噪音值 Noise Level	-	dB	10 ~ 50	≦60		≦65	

ZR-A

L1：1 Stage
RATIO：10、20、50





Unit：mm

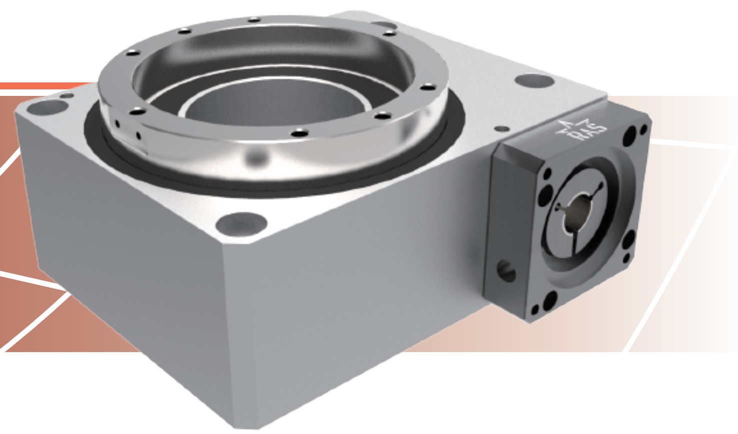
Code \ Type		42	60	90	120
A	A1	50	70	77	120
	A2	M4x7DP	M5x14DP	M6x10DP	M8x15DP
	A3	8	14	19	24
	A4	30	50	60	80
	A5	3	5	6	8
	A6	9.2	16	22.5	27
B	B1	43	61	86	122
	B2	2	2	2	2
	B3	3.5	4	6	6
	B4	18	33.9	40	60
	B5	42	60	80	120
	B6	62	84	102	162
	B7	60	93	122.5	192
	B8	12	20	25	40
	B9	23.5	29	40	56
C	C1	46	70	90	145
	C2	M4x12DP	M5x15DP	M6x18DP	M8x24DP
	C3	8	14 (19)	19 (24)	24 (28)
	C4	26	34	44	66
	C5	30	50	70	110
	C6	6	5	7.5	8.5
	C7	42.6	60	85	120

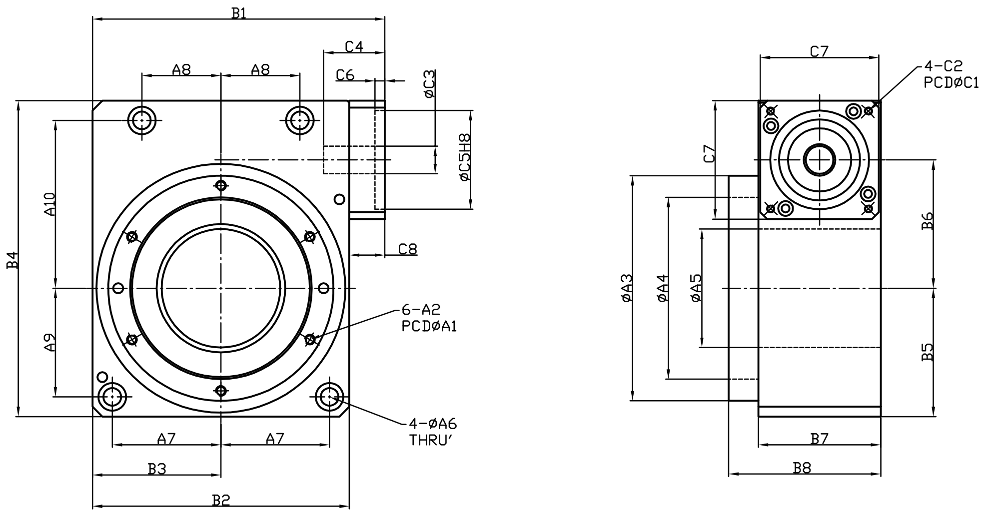
Performance Information
性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	42	60	90	120
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	10	11	79	95	420
			20	13.8	94	116	480
			50	-	35	59	170
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	10 ~ 50	1.5 倍額定輸出力矩 1.5 Times of Rated Output Torque			
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	10 ~ 50	3 倍額定輸出力矩 3 Times of Rated Output Torque			
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	10 ~ 50	2,000	2,000	2,000	2,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	10 ~ 50	3,000	3,000	3,000	3,000
背隙 P2 Backlash P2	-	arcmin	10 ~ 50	≦20			
使用壽命 Service Life	L_H	hr	10 ~ 50	S5 週期運轉：＞30,000 (S1 連續運轉：＞15,000hrs) S5 Cycle Operation：＞30,000 (S1 Continuous Operation：＞15,000hrs)			
效率 Efficiency	η	%	10 ~ 50	≧85			
使用溫度 Operating Temperature	-	˚C	10 ~ 50	-30˚C ~ +70˚C			
潤滑 Lubrication	-		10 ~ 50	全合成潤滑油脂 Fully Synthetic Grease			
噪音值 Noise Level	-	dB	10 ~ 50	≦60		≦65	

HT

L1 : 1 Stage
RATIO : 10、18、50





Unit：mm

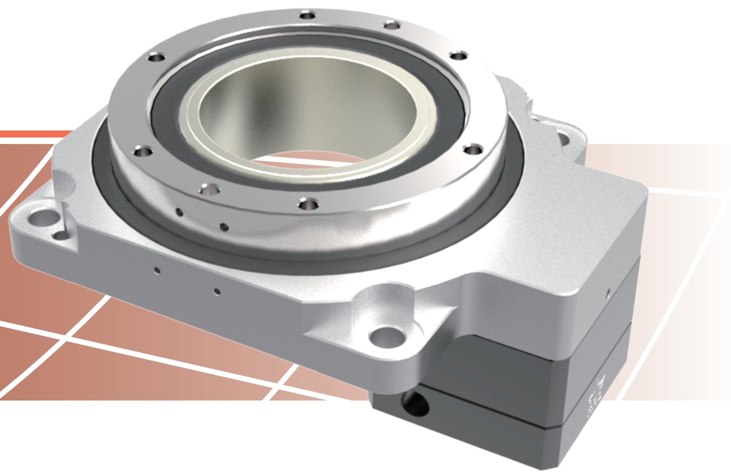
	Type / Code	60	85	130	200
A	A1	38	62.5	104	155
	A2	M3x8DP	M4x5DP	M5x8DP	M6x10DP
	A3	45	70	114	170
	A4	28	52	92	140
	A5	25	40	60	100
	A6	5	5	9	11
	A7	25	35	55	85
	A8	20	25	40	60
	A9	25	35	55	85
	A10	49	55	85	130
B	B1	72	105	148	226
	B2	60	85	130	200
	B3	30	42.5	65	100
	B4	84	106	160	245
	B5	30	42.5	65	100
	B6	26	40	65	100
	B7	45	45	62	92
	B8	51	50	77	114
C	C1	46	46	70	90
	C2	M4x12DP	M4x12DP	M4x18DP	M6x18DP
	C3	8	8	14	19
	C4	26	26	31	42
	C5	30	30	50	70
	C6	3	6	5	6
	C7	42	42	60	90
	C8	12	20	18	26

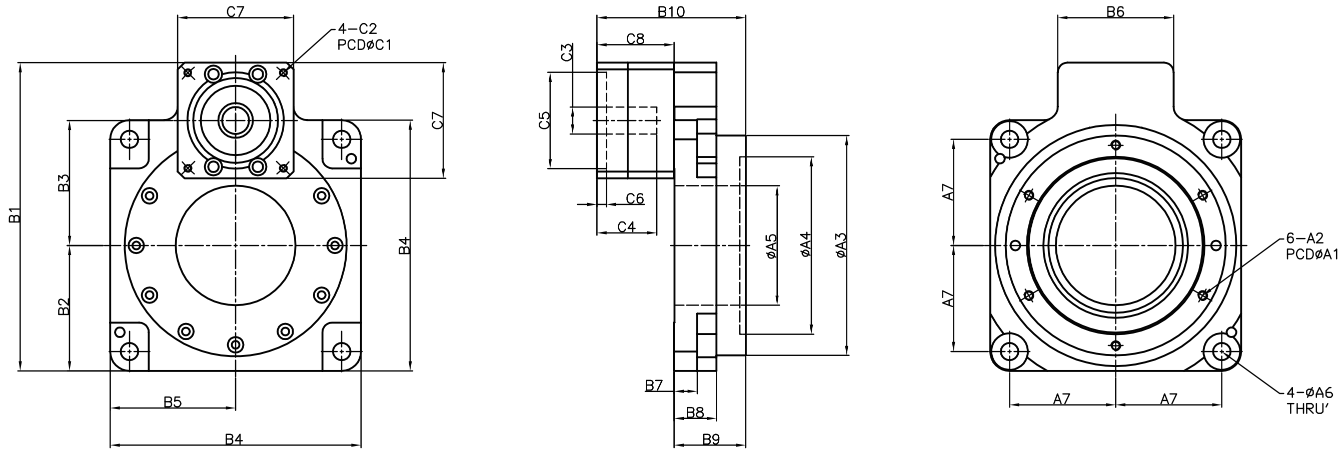
Performance Information
性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	60	85	130	130-X	200	200-X
輸出平台支撐軸承 Output Table Supporting Bearing	-		10 ~ 50	深溝滾珠軸承 / Deep Groove Ball Bearing	深溝滾珠軸承 / Deep Groove Ball Bearing	深溝滾珠軸承 / Deep Groove Ball Bearing	交叉滾子軸承 / Crossed Roller Bearing	深溝滾珠軸承 / Deep Groove Ball Bearing	交叉滾子軸承 / Crossed Roller Bearing
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	10	-	110	228	228	790	790
			18	63	-	-	-	-	-
			50	-	-	240	240	800	800
最大加速扭矩 MAX. Acceleration Torque	T_{2B}	Nm	10 ~ 50	1.5 倍額定輸出力矩 1.5 Times of Rated Output Torque					
最大輸出扭矩 MAX. Output Torque 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	10 ~ 50	3 倍額定輸出力矩 3 Times of Rated Output Torque					
額定輸入轉速 Rated Input Speed	n_{1N}	rpm	10 ~ 50	2,000	2,000	2,000	2,000	1,000	1,000
最大輸入轉速 Max. Input Speed	n_{1B}	rpm	10 ~ 50	3,000	3,000	3,000	3,000	2,000	2,000
重複定位精度 Accuracy Of Repetition	-	arcmin	10 ~ 50	±1	±1	±1	±1	±1	±1
盤面直徑偏轉度 Circular rounout of Table	-	mm	10 ~ 50	≦0.01	≦0.01	≦0.02	≦0.01	≦0.03	≦0.02
盤面平行度 Parallelism of Table	-	mm	10 ~ 50	≦0.01	≦0.01	≦0.02	≦0.01	≦0.03	≦0.02
容許徑向力 Max. Radial Force	F_{2rB}	N	10 ~ 50	500	600	1,500	5,000	2,500	8,000
容許軸向力 Max. Axial Force	F_{2aB}	N	10 ~ 50	250	300	750	5,000	1,250	8,000
啟動扭矩 Starting Torque	Ts	Nm	10 ~ 50	0.05	0.08	0.25	0.25	0.47	0.47
使用壽命 Service Life	L_H	hr	10 ~ 50	S5 週期運轉： > 30,000 (S1 連續運轉： > 15,000hrs) S5 Cycle Operation： > 30,000 (S1 Continuous Operation： > 15,000hrs)					
效率 Efficiency	η	%	10 ~ 50	Ratio < 20 , η ≧ 85 / Ratio = 50 , η ≧ 60					
使用溫度 Operating Temperature	-	˚C	10 ~ 50	-30˚C ~ +70˚C					
潤滑 Lubrication	-		10 ~ 50	全合成潤滑油脂 Fully Synthetic Grease					
噪音值 Noise Level	-	dB	10 ~ 50	≦60		≦65			
重量 Weight	-	Kg	10 ~ 50	0.9	1.4	5.2	5.2	17	17

HV

L1 : 1 Stage
RATIO : 5、8、10、18





Unit：mm

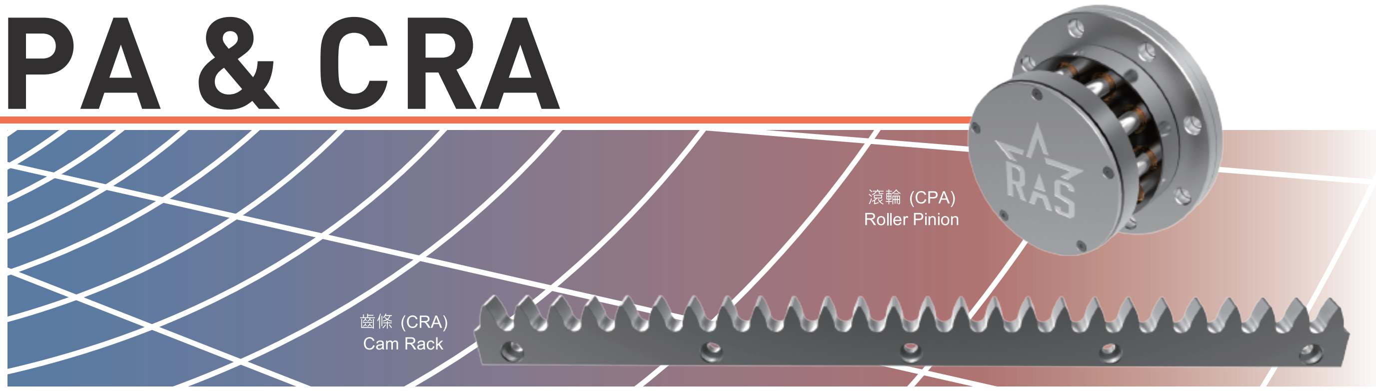
	Type / Code	60	85	130	200
A	A1	38	62.5	104	155
	A2	M3x8DP	M4x8DP	M5x8DP	M6x10DP
	A3	45	70	114	170
	A4	28	52	92	140
	A5	28	33	62	100
	A6	4.5	6.5	9	11
	A7	25	35	55	85
B	B1	84.7	120	159.8	245
	B2	31	42.5	65	100
	B3	32.7	47.5	64.8	100.2
	B4	62	85	130	200
	B5	31	42.5	65	100
	B6	42	60	60	90
	B7	10	10.5	12	15.2
	B8	29	22.5	22	38.2
	B9	31	35.3	37.2	60.2
	B10	63	75.1	77.2	118
C	C1	46	70	70	105
	C2	M4x8DP	M5x10DP	M5x10DP	M6x12DP
	C3	8	14	14	19
	C4	26	31	31	42
	C5	30	50	50	70
	C6	3	5	5	6
	C7	42	60	60	90
	C8	32	39.8	40	57.8

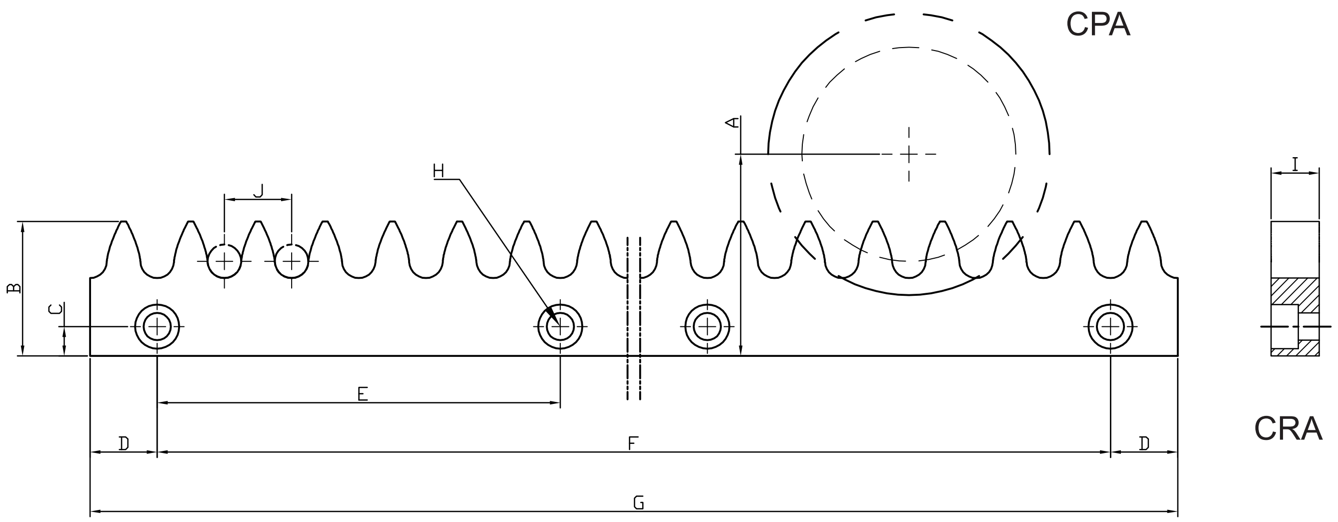
Performance Information

性能表

規格 Model No.	代號 Code	單位 Unit	速比 Ratio	60	85	85-X	130	130-X	200	200-X
輸出平台支撐軸承 Output Table Supporting Bearing	-		5 ~ 18	深溝滾珠軸承 / Deep Groove Ball Bearing	角接觸軸承 / Deep Groove Ball Bearing	交叉滾子軸承 / Crossed Roller Bearing	角接觸軸承 / Deep Groove Ball Bearing	交叉滾子軸承 / Crossed Roller Bearing	角接觸軸承 / Deep Groove Ball Bearing	交叉滾子軸承 / Crossed Roller Bearing
額定輸出扭矩 Rate Output Torque (Nominal output torque)	T_{2N}	Nm	5	5	15	15	-	-	-	-
			8	-	15	15	-	-	-	-
			10	-	-	-	45	45	85	85
			18	-	-	-	45	45	-	-
最大輸出扭矩 MAX. Output Torque / 急停扭矩 Emergency Stop Torque	T_{2NOT}	Nm	5 ~ 18	2 倍額定輸出力矩 2 Times of Rated Output Torque						
出力盤容許轉速 Output Permissible Speed	n_{1N}	rpm	5 ~ 18	200	200	200	200	200	150	150
重複定位精度 Accuracy Of Repetition	-	arcmin	5 ~ 18	±1	±1	±1	±1	±1	±1	±1
盤面直徑偏轉度 Circular rounout of Table	-	mm	5 ~ 18	≦0.01	≦0.01	≦0.01	≦0.02	≦0.01	≦0.03	≦0.02
盤面平行度 Parallelism of Table	-	mm	5 ~ 18	≦0.01	≦0.01	≦0.01	≦0.02	≦0.01	≦0.03	≦0.02
容許徑向力 Max. Radial Force	F_{2rB}	N	5 ~ 18	500	600	1,200	1,500	5,000	2,500	8,000
容許軸向力 Max. Axial Force	F_{2aB}	N	5 ~ 18	250	300	1,200	750	5,000	1,250	8,000
使用壽命 Service Life	L_H	hr	5 ~ 18	S5 週期運轉： > 30,000 (S1 連續運轉： > 15,000hrs) S5 Cycle Operation： > 30,000 (S1 Continuous Operation： > 15,000hrs)						
使用溫度 Operating Temperature	-	˚C	5 ~ 18	-30˚C ~ +70˚C						
潤滑 Lubrication	-		5 ~ 18	全合成潤滑油脂 Fully Synthetic Grease						
噪音值 Noise Level	-	dB	5 ~ 18	≦60			≦65			
重量 Weight	-	Kg	5 ~ 18	0.7	1.4	1.4	2.4	2.4	8.5	8.5

CPA & CRA





NUMBER OF TOOTH：K

中華民國專利證書編號 **M597347**

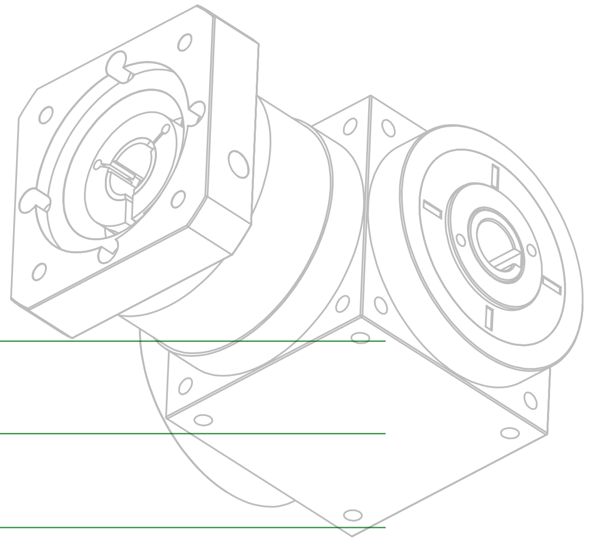
Unit：mm

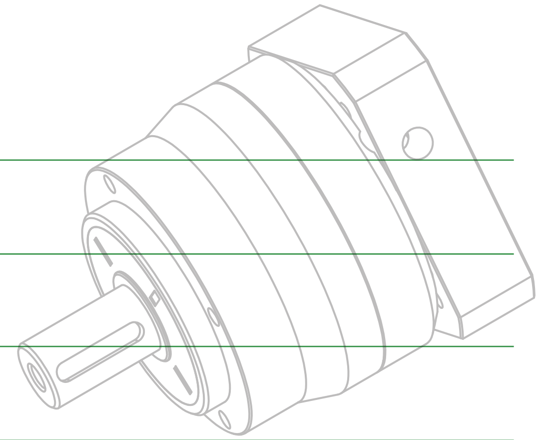
Model / Code	1610	2010	2510	3212	4012
A	48	64	75	102	129
B	30.5	42	48	57	72.6
C	7	10	12	14	16
D	16	50	50	16	80
E	96	100	100	96	120
F	10x96	9x100	9x100	10x96	7x120
G	992	1000	1000	992	1000
H	11-Ø7	10-Ø9	10-Ø11	11-Ø14	8-Ø18
I	12	16	19	25	32
J	16	20	25	32	40
K	62	50	40	31	25

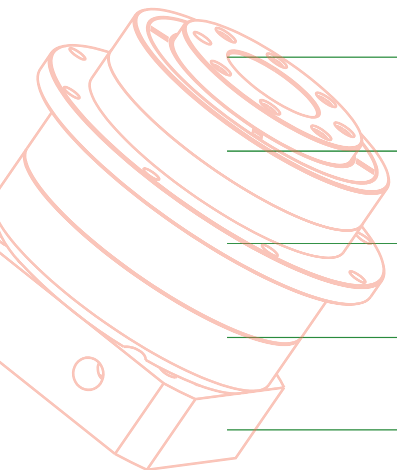
Performance Information
性能表

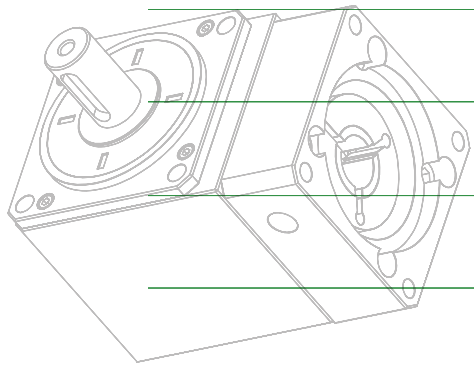
項目 Items	規格 Model No.	單位 Unit	滾輪 / 齒條 系列 CPA / CRA Series				
			1610	2010	2510	3212	4012
滾輪 (CPA) Roller Pinion	容許動額定荷重 Allowable Dynamic Rated Load	N	1000	1500	2200	3600	6000
	容許靜額定荷重 Allowable Static Rated Load	N	1500	2250	3300	5400	9000
	容許動額定轉矩 Allowable Dynamic Rated Torque	Nm	25.5	47.7	87.5	220	458.4
	容許靜額定轉矩 Allowable Static Rated Torque	Nm	38.2	71.7	131.3	329.9	687.6
	滾輪轉一圈移動距離 Displacement Distance Of Pinion Per Rotation	mm / 圈 mm / revolution	160	200	250	384	480
	等效模數 Module	mm	4.75	6	7.5	9.5	12
	齒數 Number Of Tooth	齒 teeth	10	10	10	12	12
	外徑 Outer Diameter	mm	67	84	101	148	190
	齒距圓直徑 Diameter Of Pitch Circle	mm	50.9	63.7	79.6	122.2	152.8
	慣性矩 Inertia Moment	kgm^2	$3.93x10^{-4}$	$10.5x10^{-4}$	$25.5x10^{-4}$	$169x10^{-4}$	$594x10^{-4}$
齒條 (CRA) Cam Rack	容許動額定荷重 Allowable Dynamic Rated Load	N	1000	1500	2200	3600	6000
	容許靜額定荷重 Allowable Static Rated Load	N	1500	2250	3300	5400	9000
	容許動額定轉矩 Allowable Dynamic Rated Torque	Nm	25.5	47.7	87.5	220	458.4
	容許靜額定轉矩 Allowable Static Rated Torque	Nm	38.2	71.7	131.3	329.9	687.6
	滾輪轉一圈移動距離 Displacement Distance Of Pinion Per Rotation	mm / 圈 mm / revolution	160	200	250	384	480
	等效模數 Module	mm	4.75	6	7.5	9.5	12
	齒距 Pitch	mm	16	20	25	32	40
	長度 Predetermined Length	mm	992	1000	1000	992	1000
	齒數 Number Of Tooth	齒 teeth	62	50	40	31	25

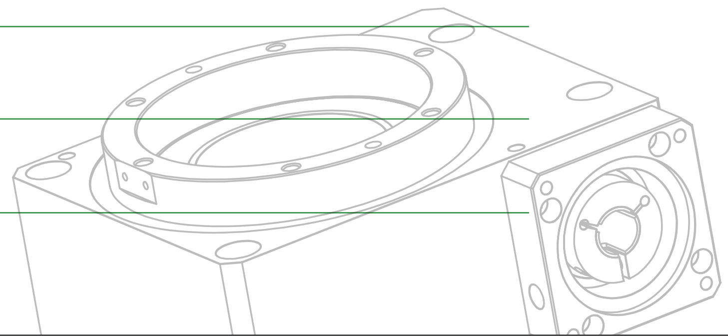
Memo

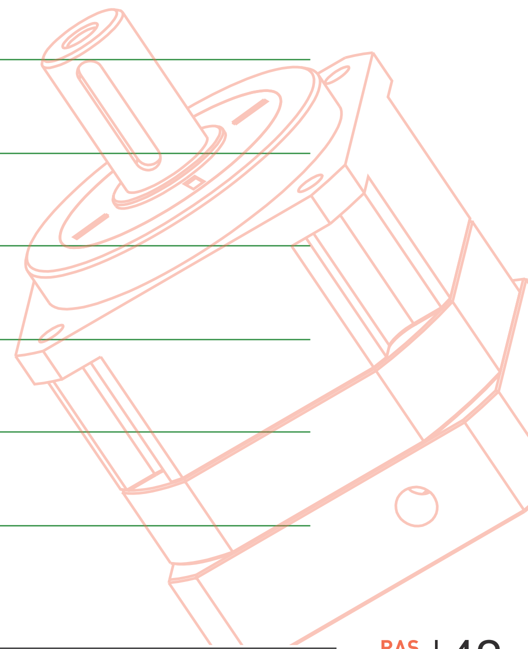


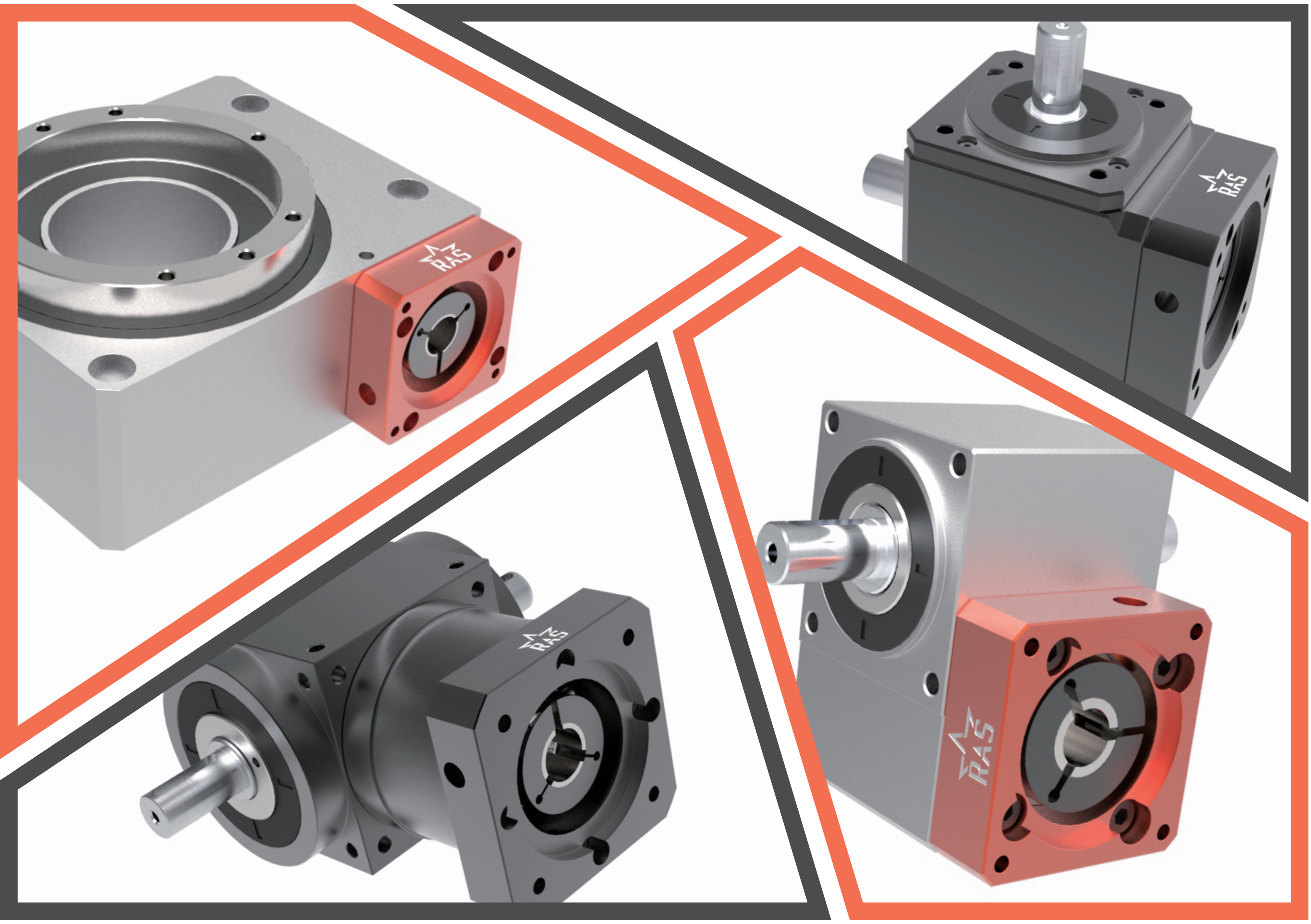












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