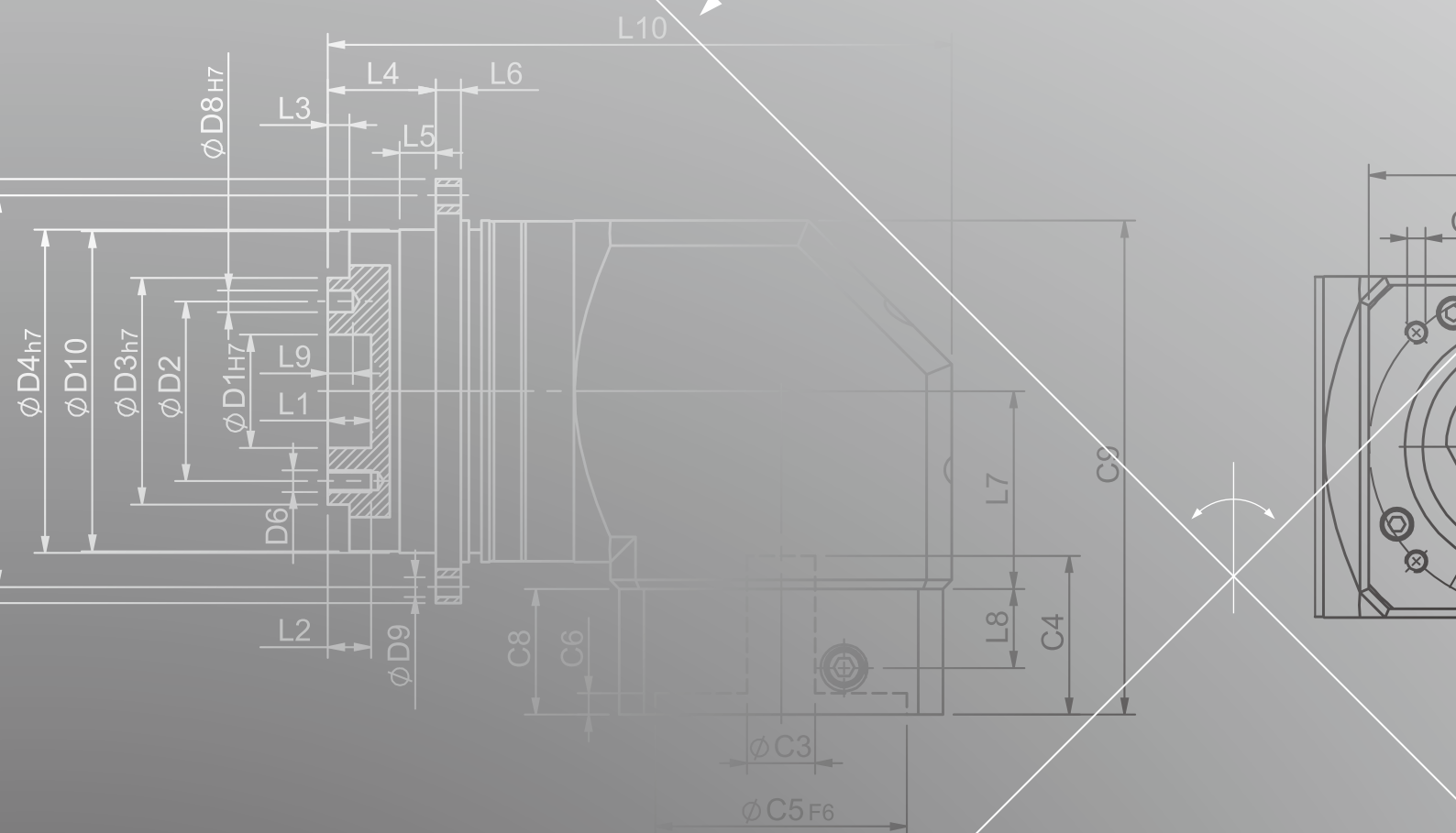
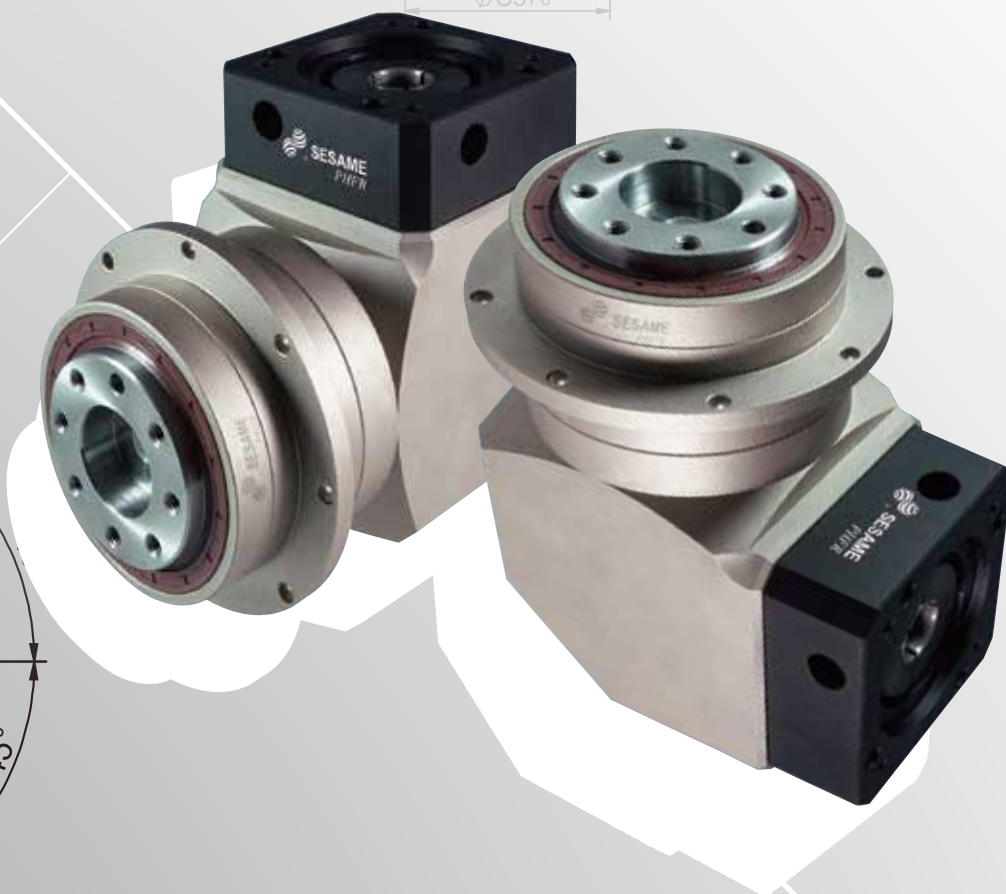
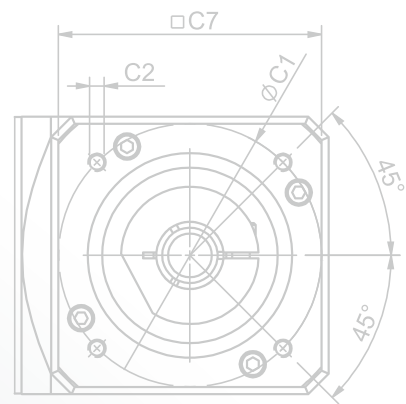
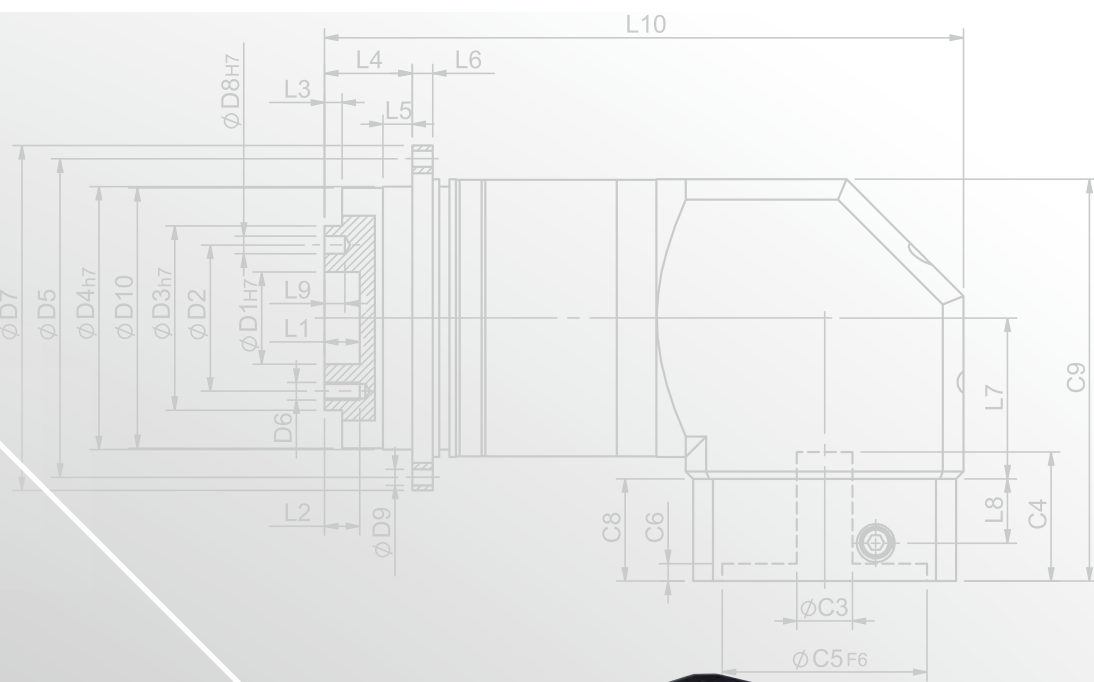
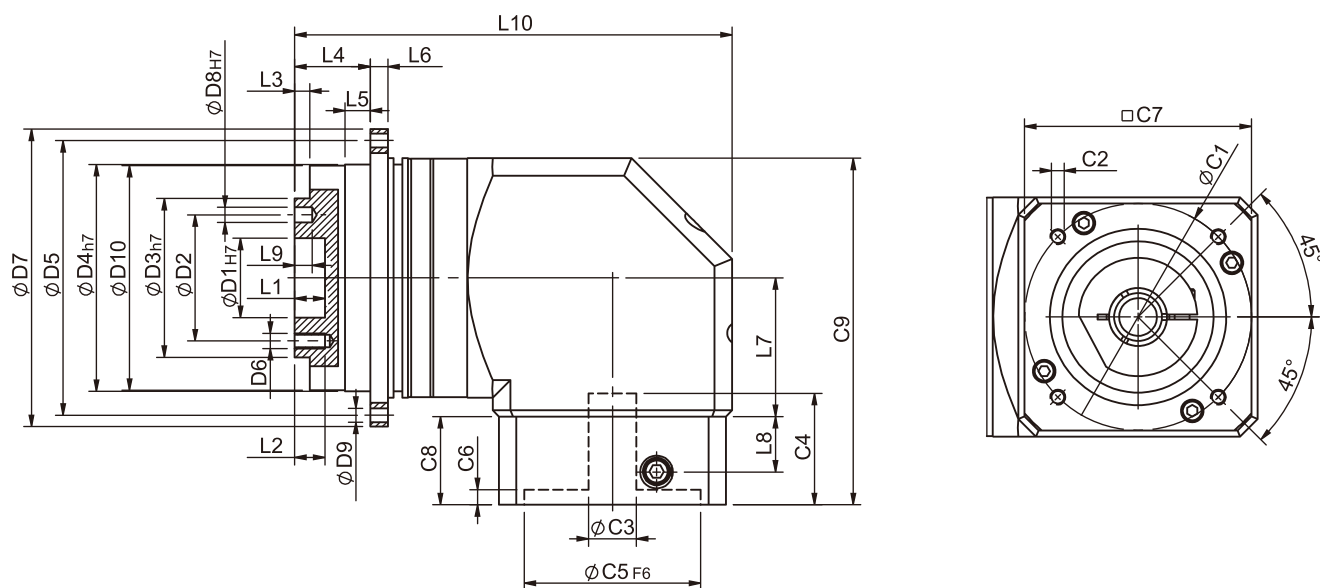


***PHFR** SERIES*





PHFR Single Stage Dimensions PHFR單段外型尺寸圖



Specifications 規格

Unit:mm

尺寸 Dimensions	PHFR42	PHFR60	PHFR90	PHFR115	PHFR142	PHFR200	PHFR255
D1 _{H7}	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 _{H7}	28	40	63	80	100	160	180
D4 _{H7}	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P	M16x2.0P
D7	72	86	118	145	179	247	300
D8 _{H7}	3	5	6	6	8	10	12
D9	3.4	4.5	5.5	5.5	6.6	9	13.5
D10	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6	7.2	12	13.5	16	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L7	32.2	44.8	55	69	71	92.5	92.5
L8	13.5	21.5	22	32	44.7	44	60
L9	4	6	7	7	7	10	10
L10	92.2	128.3	173.6	204.2	250.7	330.7	392.2
C1 ²	46	70	90	90	145	200	215
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M12x1.75P	M12x1.75P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35	≤50	≤55
C4 ²	29	34	44	53.5	76.8	78.8	98.7
C5 ² _{F6}	30	50	70	70	110	114.3	180
C6 ²	6	5	5	5.5	9	6	6
C7 ²	42.6	60	90	115	140	180	220
C8 ²	25	33	35	48	65	65	85
C9 ²	78.5	112.8	137.5	176.5	225.5	246.5	266.5

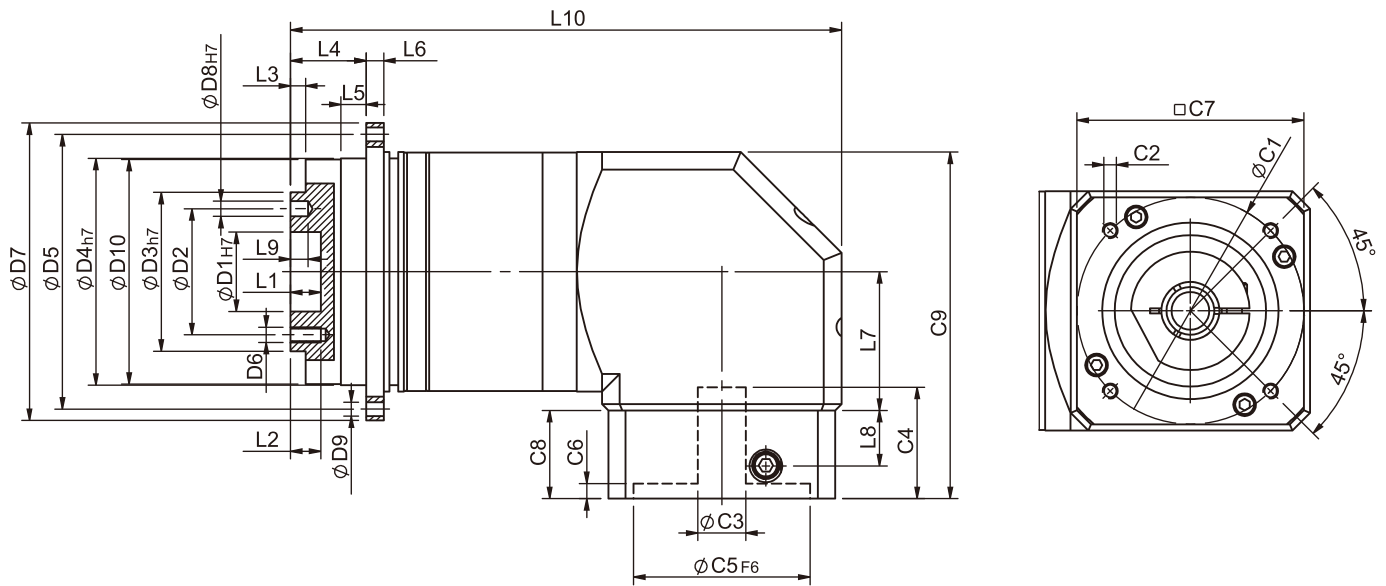
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to motor flange.

★ Specification subject to change without notice.

PHFR Double Stage Dimensions-1 PHFR雙段外型尺寸圖-1



Specifications 規格

Unit:mm

尺寸 Dimensions	PHFR42	PHFR60	PHFR90
D1 _{H7}	12	20	31.5
D2	20	31.5	50
D3 _{h7}	28	40	63
D4 _{h7}	47	64	90
D5	67	79	109
D6	M3x0.5P	M5x0.8P	M6x1.0P
D7	72	86	118
D8 _{H7}	3	5	6
D9	3.4	4.5	5.5
D10	46.2	63.2	89.2
L1	4	8	12
L2	6	7.2	12
L3	3	3	6
L4	19.5	19.5	30
L5	7	7	10
L6	4	4	7
L7	32.2	44.8	55
L8	13.5	21.5	22
L9	4	6	7
L10	119.9	163.3	218.6
C1 ²	46	70	90
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P
C3 ²	≤8	≤14	≤19/≤24
C4 ²	29	34	44
C5 ² F ₆	30	50	70
C6 ²	6	5	5
C7 ²	42.6	60	90
C8 ²	25	33	35
C9 ²	78.5	112.8	137.5

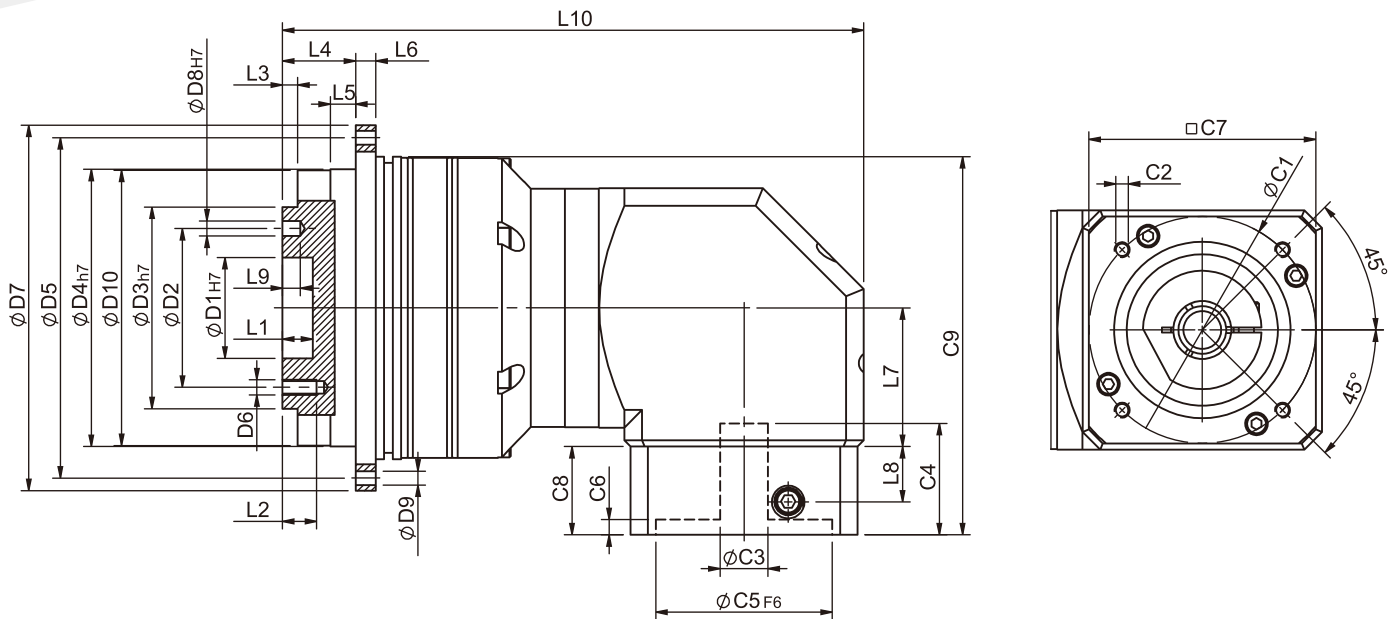
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格進行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to motor flange.

★ Specification subject to change without notice.

PHFR Double Stage Dimensions-2 PHFR雙段外型尺寸圖-2



Specifications 規格

Unit:mm

尺寸 Dimensions	PHFR60T	PHFR90T	PHFR115T	PHFR142T	PHFR200T	PHFR255T
D1 _{H7}	20	31.5	40	50	80	100
D2	31.5	50	63	80	125	140
D3 _{h7}	40	63	80	100	160	180
D4 _{h7}	64	90	110	140	200	255
D5	79	109	135	168	233	280
D6	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P	M16x2.0P
D7	86	118	145	179	247	300
D8 _{H7}	5	6	6	8	10	12
D9	4.5	5.5	5.5	6.6	9	13.5
D10	63.2	89.2	109.2	139.2	199.2	254.2
L1	8	12	12	12	16	20
L2	7.2	12	13.5	16	22.5	30.5
L3	3	6	6	6	8	12
L4	19.5	30	29	38	50	66
L5	7	10	10	14.6	15	20
L6	4	7	8	10	12	18
L7	32.2	44.8	55	69	71	92.5
L8	13.5	21.5	22	32	44.7	44
L9	6	7	7	7	10	10
L10	130.6	173.8	230.6	270.7	361.4	439.2
C1 ²	46	70	90	90	145	200
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M12x1.75P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35	≤50
C4 ²	29	34	44	53.5	76.8	78.8
C5 ² _{F6}	30	50	70	70	110	114.3
C6 ²	6	5	5	5.5	9	6
C7 ²	42.6	60	90	115	140	92.5
C8 ²	25	33	35	48	65	65
C9 ²	84.4	125.3	150	176.5	259.5	284

★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定.

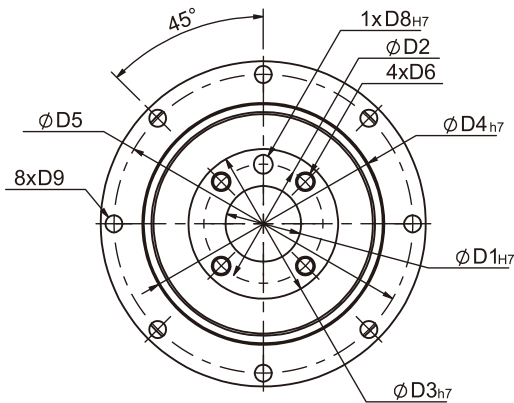
★ 本公司有權針對以上數據規格逕行設計變更不先行告知.

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to motor flange.

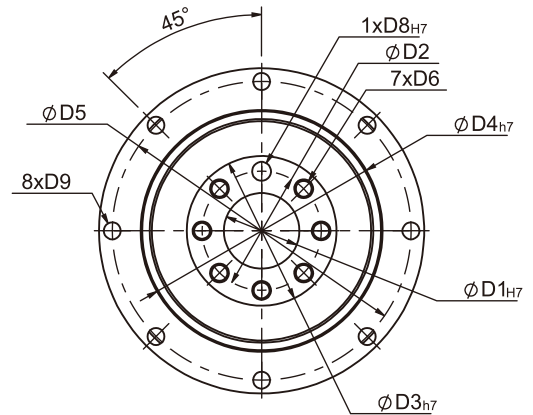
★ Specification subject to change without notice.

PHFR Flange Dimensions PHFR法蘭面尺寸圖

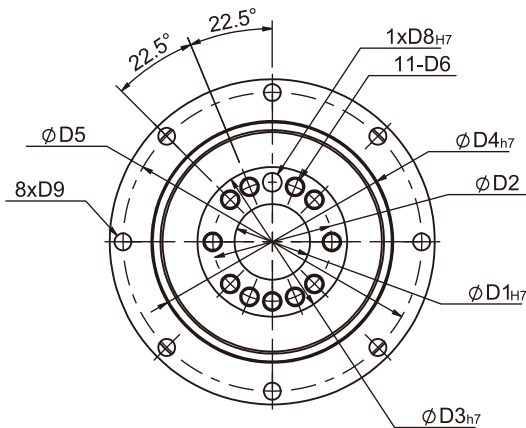
PHFR42



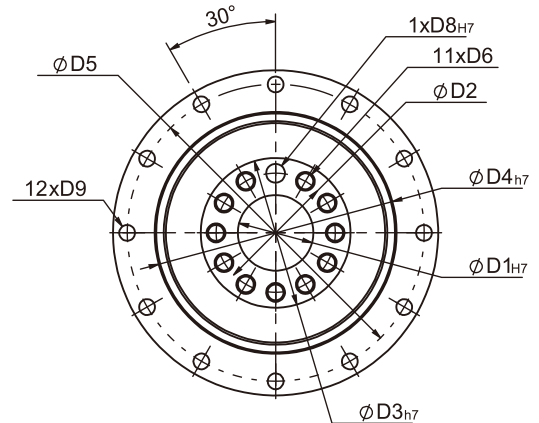
PHFR60 PHFR90



PHFR115



PHFR142 PHFR200



Specifications 規格

Unit:mm

尺寸 Dimensions	PHFR42	PHFR60	PHFR90	PHFR115	PHFR142	PHFR200
D1 H7	12	20	31.5	40	50	80
D2	20	31.5	50	63	80	125
D3 h7	28	40	63	80	100	160
D4 h7	47	64	90	110	140	200
D5	67	79	109	135	168	233
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P	M10x1.5P
D8 H7	3	5	6	6	8	10
D9	3.4	4.5	5.5	5.5	6.6	9

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

★ Specification subject to change without notice.

PHFR Specifications Table PHFR性能規格共表

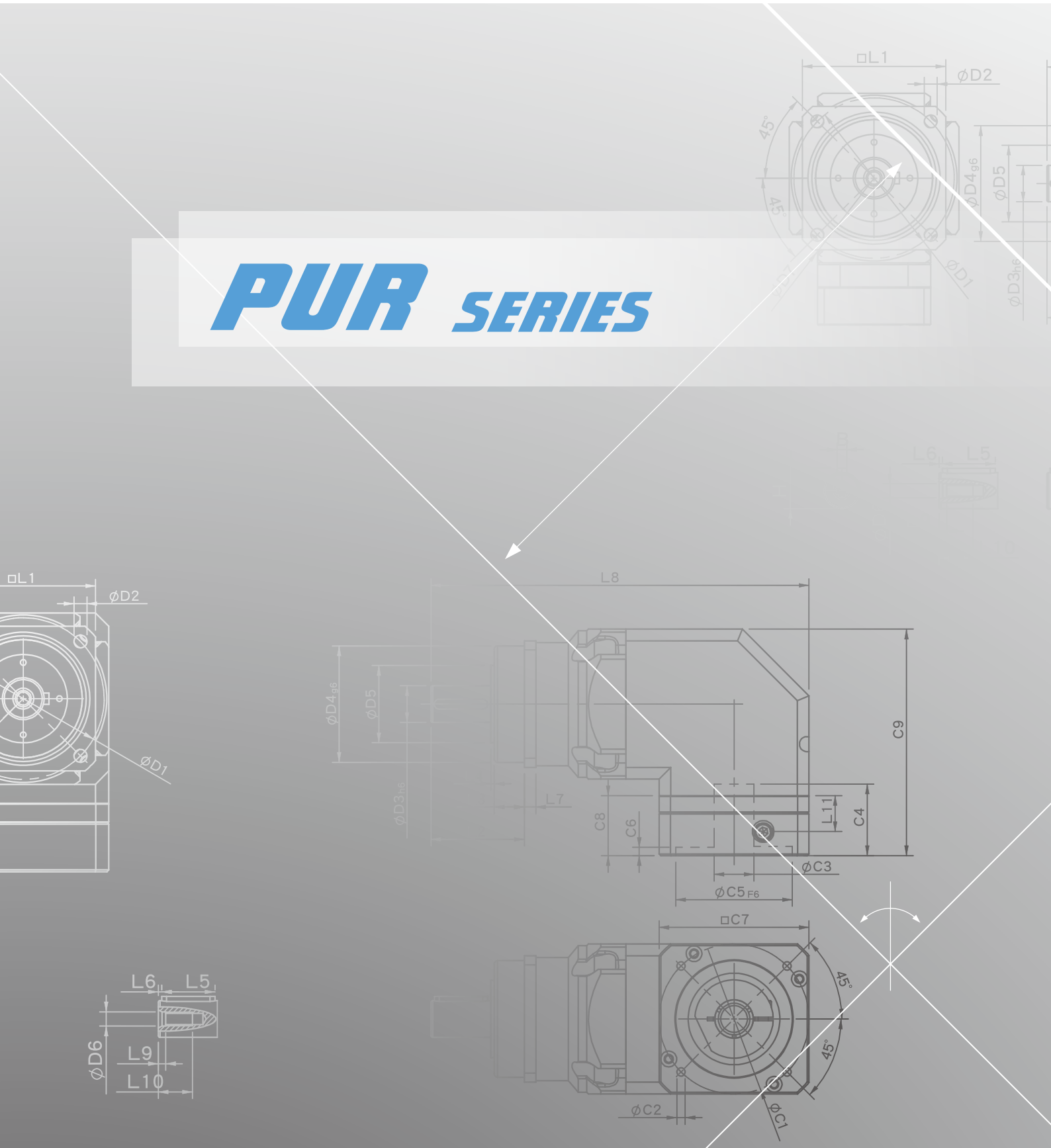
規格 Specifications		節數 Stage	減速比 Ratio	PHFR-42	PHFR-60	PHFR-90	PHFR-115	PHFR-142	PHFR-200	PHFR-255
額定輸出力矩 T _{2N} Nominal Output Torque	N • m	1	3	-	40	105	180	340	580	950
			4	16	43	110	240	500	1100	1500
			5	17	50	130	290	600	1200	1800
			7	14	44	125	270	530	1100	1750
			10	17	50	130	260	540	900	1500
			14	14	44	125	270	530	1100	1750
		20	11	37	95	220	430	900	1450	
		節數 Stage	減速比 Ratio	PHFR-42	PHFR-60 (T)	PHFR-90(T)	PHFR-115T	PHFR-142T	PHFR-200T	PHFR-255T
		2	15	-	40	105	180	600	1200	2000
			20	16	43	110	240	600	1200	2000
			25	17	50	130	290	600	1200	2000
			30	17	40	105	180	600	1200	2000
			35	17	50	130	290	600	1200	2000
			40	16	43	110	240	600	1200	2000
			50	17	50	130	290	600	1200	2000
			70	14	44	125	270	530	1100	1750
			100	11	37	95	220	430	900	1450
			140	14	44	125	270	530	1100	1750
		200	11	37	95	220	430	900	1450	
急停力矩 T _{2NOT} Emergency Stop Torque	N • m	3.0 倍額定輸出力矩 (3.0 times of Nominal Output Torque) (* 最大輸出力矩 Max. Output Torque T _{2B} =60% of Emergency Stop Torque)								
額定輸入轉速 n _{1N} Nominal Input Speed	rpm	1,2	3-200	5000	5000	4000	4000	3000	3000	2000
最大輸入轉速 n _{1max} Max. Input Speed	rpm	1,2	3-200	10000	10000	8000	8000	6000	6000	4000
超精密背隙 Micro Backlash P0	arcmin	1	3-20	-	-	≤ 3	≤ 2	≤ 2	≤ 2	≤ 2
		2	15-200	-	-	≤ 5	≤ 4	≤ 4	≤ 4	≤ 4
精密背隙 Precision Backlash P1	arcmin	1	3-20	≤ 5	≤ 5	≤ 5	≤ 4	≤ 4	≤ 4	≤ 4
		2	15-200	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7
標準背隙 Standard Backlash P2	arcmin	1	3-20	≤ 7	≤ 7	≤ 7	≤ 6	≤ 6	≤ 6	≤ 6
		2	15-200	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9
扭轉剛性Torsional Rigidity	N • m /arcmin	1,2	3-200	6	12	30	80	150	450	1000
容許彎曲力矩 M _{2kB} ¹ Max. Bending Moment	N • m	1,2	3-200	43	125	288	503	1470	2950	6500
容許軸向力 F _{2aB} ¹ Max. Axial Load	N	1,2	3-200	1015	1340	2868	3890	9850	12560	21850
使用溫度 Operating Temp.	°C		3-200	-10 °C ~ +90 °C						
使用壽命Service Life	hr		3-200	20,000 (10,000/ 連續運轉 Continuous operation)						
效率 Efficiency	%	1	3-20	≥ 95%						
		2	15-200	≥ 92%						
重量 Weight	kg	1	3-20	1.1	2.3	6.6	13.5	25.1	50	85
		2	15-200	1.6	3.2/2.2	8.6/5.3	14.8	26.7	55	88
安裝方向 Mounting Position	-	1,2	3-200	任意方向Any direction						
噪音值 Noise Level ²	dBA/1m	1,2	3-200	62	64	66	68	70	72	74
防護等級 Protection Class	-	1,2	3-200	IP65						
潤滑 Lubrication	-	1,2	3-200	全合成潤滑油脂 Synthetic Lubricant						
減速機轉動慣量 Inertia(J1)										
節數Stage	減速比Ratio	單位unit		PHFR-42	PHFR-60	PHFR-90	PHFR-115	PHFR-142	PHFR-200	PHFR-255
1	3/4/5/7/9	Kg • cm ²		0.06	0.40	2.28	6.87	24.2	69.8	138.2
	10/14/20			0.05	0.30	1.45	4.76	14.5	50.3	103.6
節數Stage	減速比Ratio			PHFR-42	PHFR-60(T)	PHFR-90(T)	PHFR-115T	PHFR-142T	PHFR-200T	PHFR-255T
2	15/20/25/35			0.06	0.40(0.08)	2.28(0.72)	3.02	7.83	27.7	80.3
	others			0.05	0.30(0.06)	1.45(0.38)	1.64	5.00	15.9	55.3
* 1. 輸出轉速 100rpm 時，作用於輸出軸中心位置。Applied to the output shaft center @100rpm. * 2. 3000rpm 空載量測。Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load. ※本公司有權對以上數據規格逕行設計變更不先行告知。The above figures/specifications are subject to change without prior notice.										

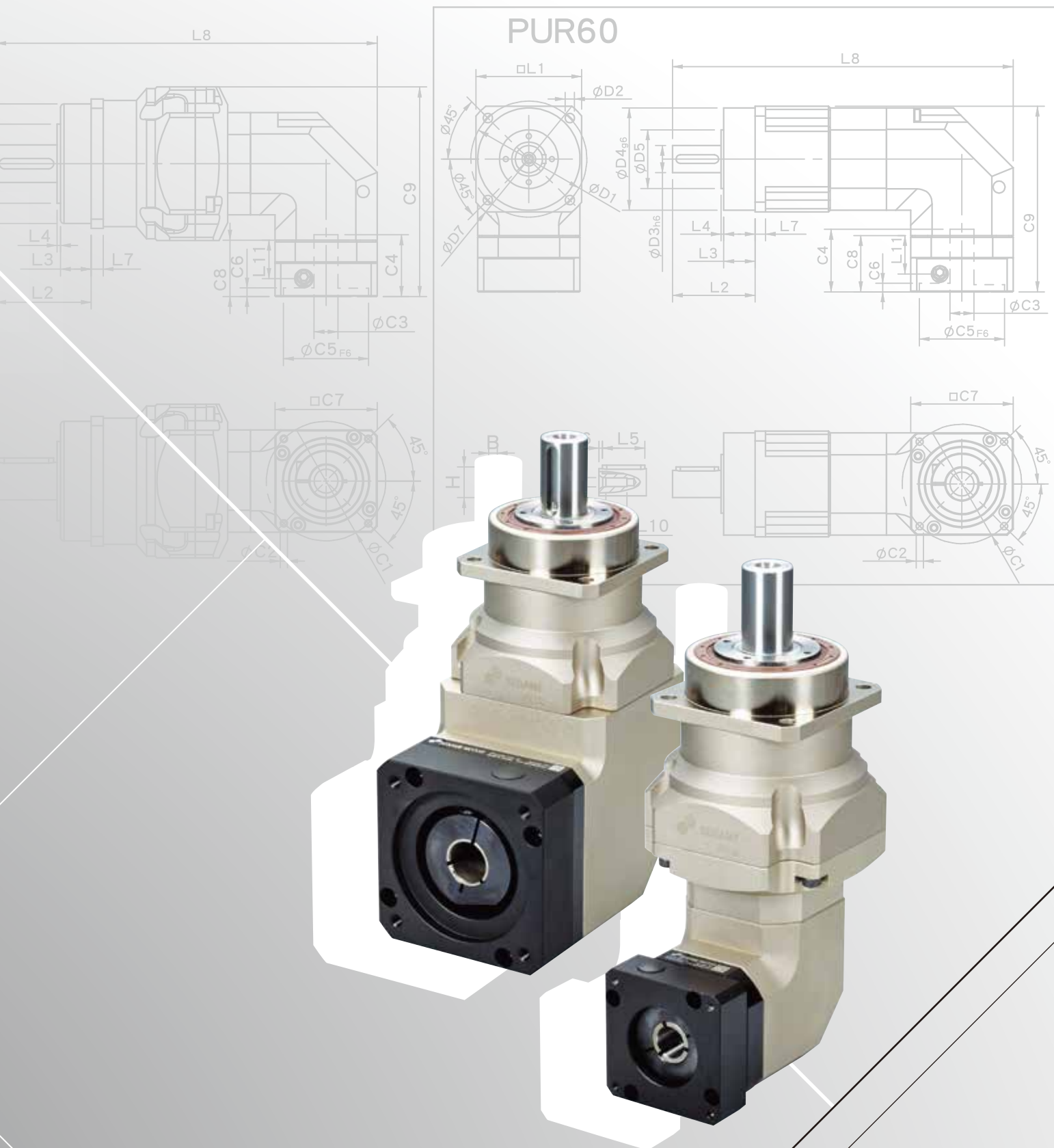
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.
 產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

PLANETARY GEARHEADS

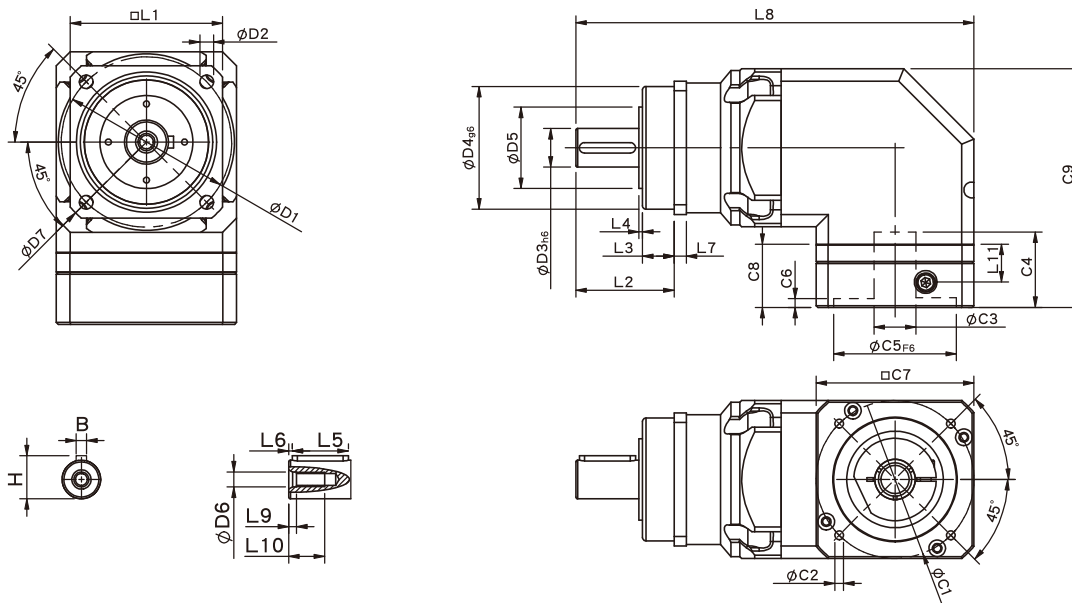


***PUR** SERIES*





PUR Single Stage Dimensions PUR單段外型尺寸圖



Specifications 規格

Unit:mm

尺寸	PUR60	PUR75	PUR100	PUR140	PUR180	PUR220
D1 ^{H7}	68	85	120	165	215	250
D2	5.5	6.8	9	11	13	17
D3 _{h6}	16	22	32	40	55	75
D4 _{g6}	60	70	90	130	160	180
D5	34.4	46.4	59.6	79.2	94.5	114.4
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P	M20x2.5P
D7	80	100	138	186	239	292
L1	62	76	105	142	180	220
L2	48.5	56	88	112	112	138
L3	18.5	18	28	27	27	30
L4	1.5	2	2	3	3	3
L5	25	32	40	60	70	90
L6	2	2	5	5	6	7
L7	6	7	10	12	15	20
L8	166.7	227	260.5	346.2	414.7	490.2
L9	4	4.5	6	6	8	15
L10	16.5	20.5	30	38	48	42
L11	22.5	21.5	31.8	44.7	44	60
C1 [*]	70	90	115	145	200	215
C2 [*]	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P	M12x1.75P
C3 [*]	≤14/≤19	≤19/≤24	≤24/≤32	≤35	≤50	≤55
C4 [*]	34	45	53.5	76.8	78.8	98.7
C5 ^{F6*}	50	70	95	110	114.3	180
C6 [*]	4	4	6	5.5	6	6
C7 [*]	60	90	115	140	180	220
C8 [*]	33	36	48	65	65	85
C9 [*]	108.8	136	174.5	207	247.5	287.5
B	5	6	10	12	16	20
H	18	24.5	35	43	59	79.5

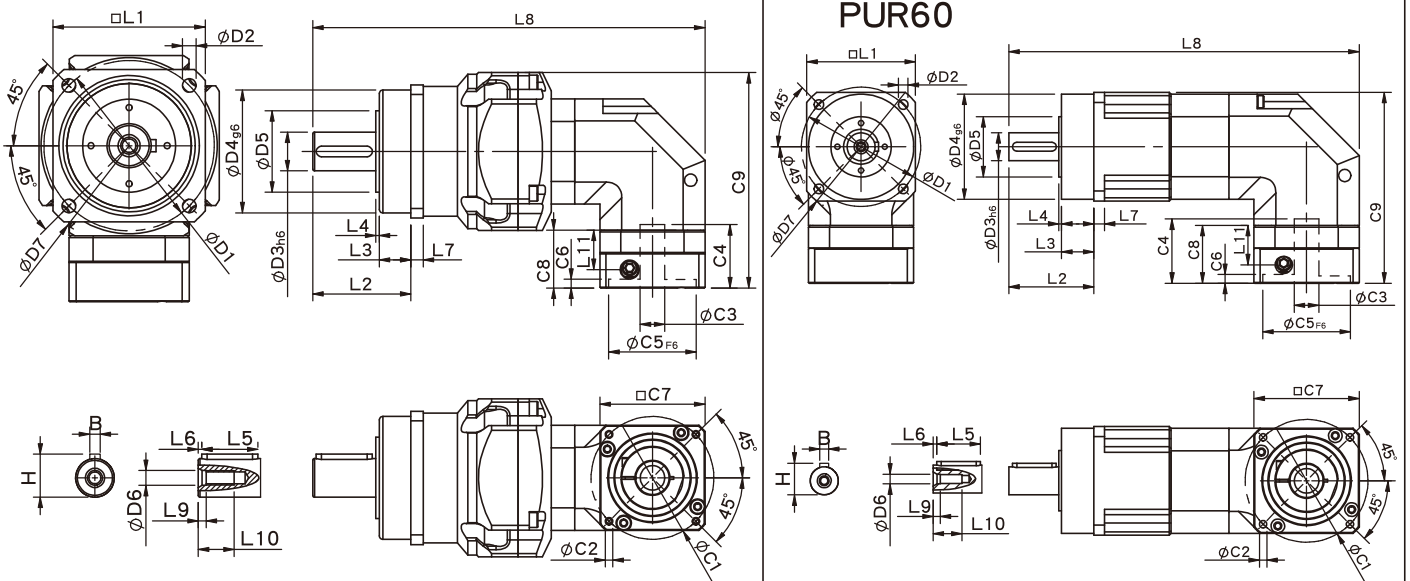
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to motor flange.

★ Specification subject to change without notice.

PUR Double Stage Dimensions PUR雙段外型尺寸圖



Specifications 規格

Unit:mm

尺寸 Dimensions	PUR60	PUR60T	PUR75T	PUR100T	PUR140T	PUR180T	PUR220T
D1	68	68	85	120	165	215	250
D2	5.5	5.5	6.8	9	11	13	17
D3 h6	16	16	22	32	40	55	75
D4 g6	60	60	70	90	130	160	180
D5	34.4	34.6	46.4	59.6	79.2	94.5	114.4
D6	M5x0.8P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P	M20x2.5P
D7	80	80	100	138	186	239	292
L1	62	62	76	105	142	180	220
L2	48.5	48.5	56	88	112	112	138
L3	18.5	18.5	18	28	27	27	30
L4	1.5	1.5	2	2	3	3	3
L5	25	25	32	40	60	70	90
L6	2	2	2	5	5	6	7
L7	6	6	7	10	12	15	20
L8	199.7	170.3	223.7	286.5	358.5	445.4	537.2
L9	4	4	4.5	6	6	8	15
L10	16.5	16.5	20.5	30	38	48	42
L11	22.5	15.5	22.5	21.5	31.8	44.7	44
C1 ²	70	46	70	90	115	145	200
C2 ²	M5x0.8P	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P
C3 ²	≤14/≤19	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35	≤50
C4 ²	34	29	34	45	53.5	76.8	78.8
C5 ² F6	50	30	50	70	95	110	114.3
C6 ²	4	4	4	6	6	5.5	6
C7 ²	60	42.6	60	90	115	140	180
C8 ²	33	25	33	36	48	65	65
C9 ²	108.8	80.5	122.8	148.5	188	223.5	267.5
B	6	5	6	10	12	16	20
H	18	18	24.5	35	43	59	79.5

★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格進行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to the motor flange chosen.

★ Specification subject to change without notice.

PUR Specifications Table PUR性能規格共表

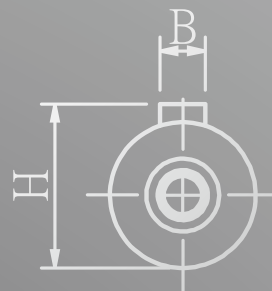
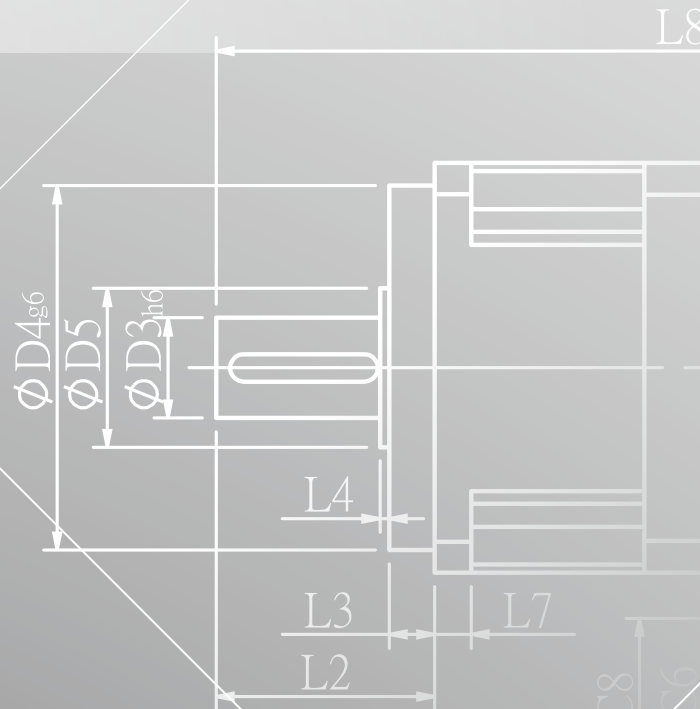
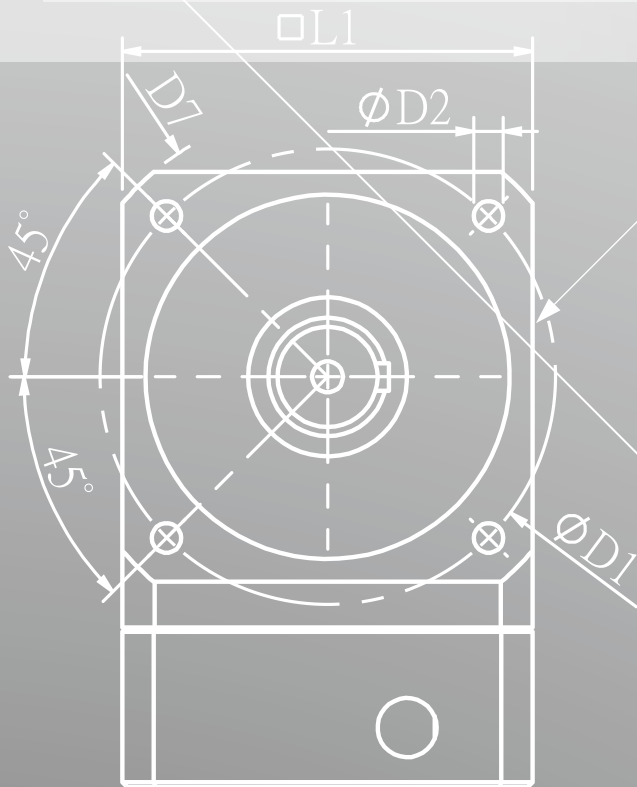
規格 Specifications		節數 Stage	減速比 Ratio	PUR-60	PUR-75	PUR-100	PUR-140	PUR-180	PUR-220
額定輸出力矩 T_{2N} Nominal Output Torque	N • m	1	3	53	145	180	340	580	950
			4	55	150	240	500	1100	1500
			5	54	140	290	600	1200	1800
			6	46	135	280	500	1100	1620
			7	44	125	270	530	1100	1750
			8	41	110	240	470	1000	1550
			9	37	95	220	430	900	1500
			10	50	130	260	540	900	1500
			14	44	125	270	530	1100	1750
		20	37	95	220	430	900	1450	
		2	減速比 Ratio	PUR-60 (T)	PUR-75T	PUR-100T	PUR-140T	PUR-180T	PUR-220T
			15	53	145	180	600	1200	2000
			20	55	150	240	600	1200	2000
			25	54	140	290	600	1200	2000
			30	53	145	180	600	1200	2000
			35	54	140	290	600	1200	2000
			40	55	150	240	600	1200	2000
			45	54	140	290	600	1200	2000
			50	54	140	290	600	1200	2000
			60	46	135	280	560	1100	1850
			70	44	125	270	530	1100	1750
			80	41	110	240	480	1000	1550
			90	37	95	220	430	900	1500
			100	37	95	220	430	900	1450
			120	46	135	280	560	1100	1850
			140	44	125	270	530	1100	1750
			160	41	110	240	480	1000	1550
			180	37	95	220	430	900	1500
		200	37	95	220	430	900	1450	
急停力矩 T_{2NOT} Emergency Stop Torque	N • m	3.0 倍額定輸出力矩 (3.0 times of Nominal Output Torque) (* 最大輸出力矩 Max. Output Torque T_{2B} =60% of Emergency Stop Torque)							
額定輸入轉速 n_{1N} Nominal Input Speed	rpm	1,2	3-200	5000	4000	4000	3000	3000	2000
最大輸入轉速 n_{1max} Max. Input Speed	rpm	1,2	3-200	10000	8000	8000	6000	6000	4000
超精密背隙 Micro Backlash P0	arcmin	1 2	3-20 15-200	- -	≤ 3 ≤ 5	≤ 2 ≤ 4	≤ 2 ≤ 4	≤ 2 ≤ 4	≤ 2 ≤ 4
精密背隙 Precision Backlash P1	arcmin	1 2	3-20 15-200	≤ 5 ≤ 7	≤ 5 ≤ 7	≤ 4 ≤ 7	≤ 4 ≤ 7	≤ 4 ≤ 7	≤ 4 ≤ 7
標準背隙 Standard Backlash P2	arcmin	1 2	3-20 15-200	≤ 7 ≤ 9	≤ 7 ≤ 9	≤ 6 ≤ 9	≤ 6 ≤ 9	≤ 6 ≤ 9	≤ 6 ≤ 9
扭轉剛性Torsional Rigidity	N • m /arcmin	1,2	3-200	7	14	25	50	150	220
容許徑向力 F_{2rB}^{-1} Max. Radial Load	N	1,2	3-200	4130	5220	10650	17600	22000	27800
容許軸向力 F_{2aB}^{-1} Max. Axial Load	N	1,2	3-200	2500	3300	5700	11300	14000	16200
使用溫度 Operating Temp.	°C		3-200	-10 °C ~ +90 °C					
使用壽命Service Life	hr		3-200	30,000 (15,000/ 連續運轉 Continuous operation)					
效率 Efficiency	%	1 2	3-20 15-200	≥ 95% ≥ 92%					
重量 Weight	kg	1 2	3-20 15-200	3.1 3.7(3.3)	5.5 4.9	12.5 13.6	25.5 27	46 50	75 88
安裝方向 Mounting Position	-	1,2	3-200	任意方向Any direction					
噪音值 Noise Level ²	dBA/1m	1,2	3-200	64	66	68	70	72	74
防護等級 Protection Class	-	1,2	3-200	IP65					
潤滑 Lubrication	-	1,2	3-200	全合成潤滑油脂 Synthetic Lubricant					
減速機轉動慣量 Inertia(J1)									
節數Stage	減速比Ratio	單位unit		PUR-60	PUR-75	PUR-100	PUR-140	PUR-180	PUR-220
1	3/4/5/7/9	Kg • cm ²		0.40	2.28	6.87	24.2	69.8	138.2
	6/8/10/14/20			0.30	1.45	4.76	14.5	50.3	103.6
節數Stage	減速比Ratio			PUR-60(T)	PUR-75T	PUR-100T	PUR-140T	PUR-180T	PUR-220T
2	15/20/25/35/45			0.40(0.08)	0.72	3.02	7.83	27.7	80.3
	others			0.30(0.06)	0.38	1.64	5.00	15.9	55.3
* 1. 輸出轉速 100rpm 時・作用於輸出軸中心位置。Applied to the output shaft center @100rpm. * 2. 3000rpm 空載量測。Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load. ※本公司有權對以上數據規格逕行設計變更不先行告知。The above figures/specifications are subject to change without prior notice.									

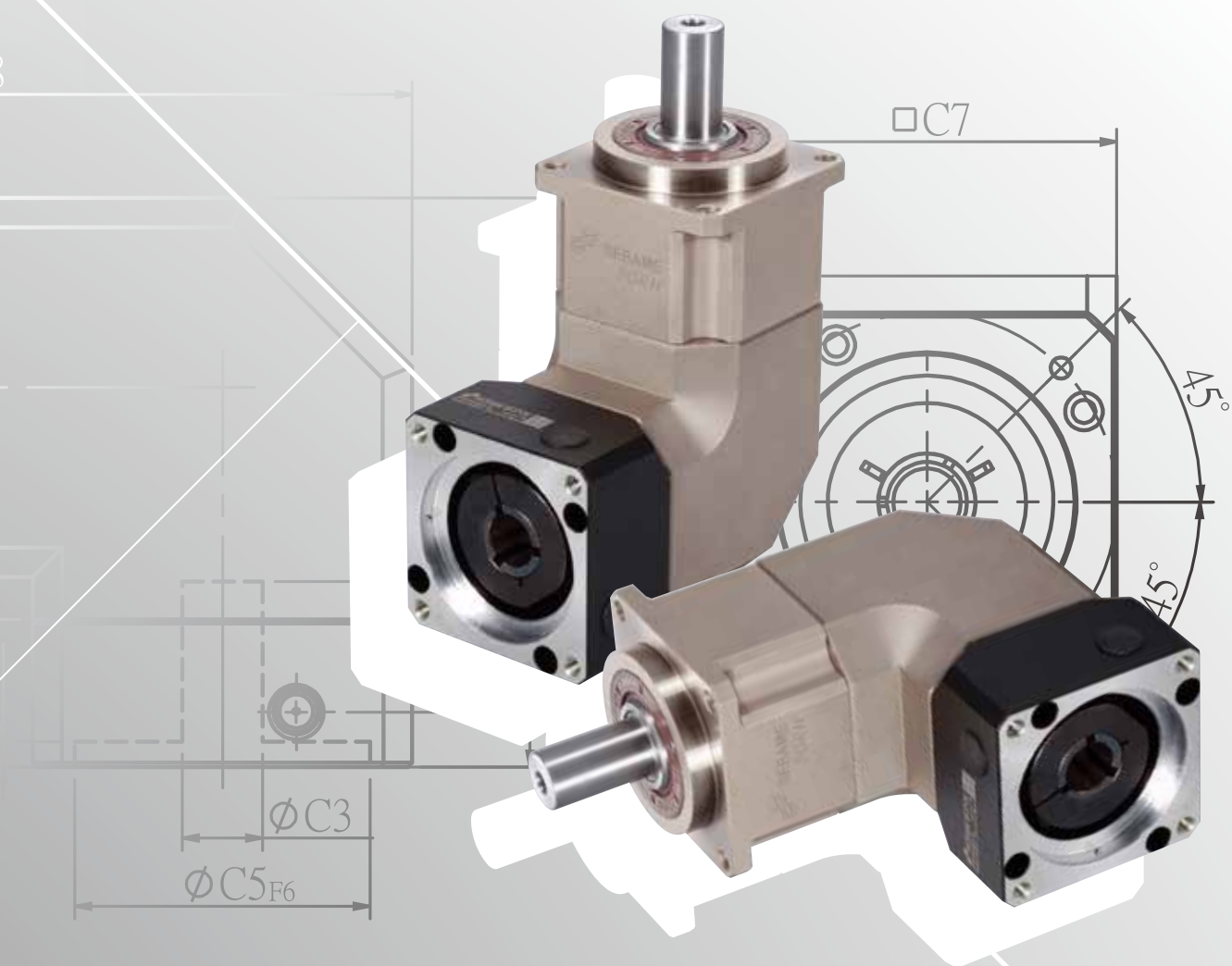
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.
產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

PLANETARY GEARHEADS

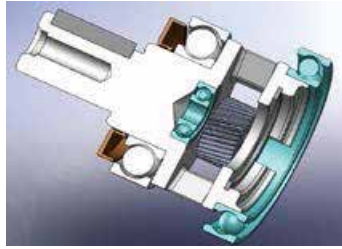


PGRH SERIES

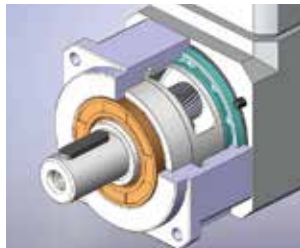




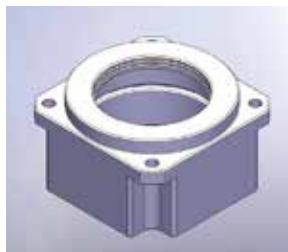
PGRH SERIES FEATURES PGRH系列 產品特點



行星固定架及出力軸設計一體成型，且前後培林設定位置為大跨距，可達到最大扭轉剛性及出力軸高徑向負載能力。
Planetary arm bracket and output shaft are one-piece constructed, setting bearing apart for larger span to reach the largest reverse rigid and contribute high axis radial load capacity.



出力軸表面與油封搭配確保最低磨擦係數和減少啟動負載，保持最佳密封性，延長使用壽命。
Grinding process to smooth surface of output shaft, and with oil-seal to minimum friction coefficient and reducing start up load; result in the best seal-ability and extended lifespan.



先進無電解鍍表面處理，耐刮，耐腐蝕，最適合高科技設備嚴苛要求。
本體齒箱與內環齒一體鍛造成形，再經德國頂級插齒機加工。具有高精度，高扭力，耐磨耗等特點。
Advanced electroless nickel plating surface treatment resists scratch and corrosion. Suitable for stringent require of high-tech equipment.
The gear box and internal gear ring are one-piece constructed, and then processed with advanced Germany gear shaper machinery for high-precision, high torque and abrade consumption.



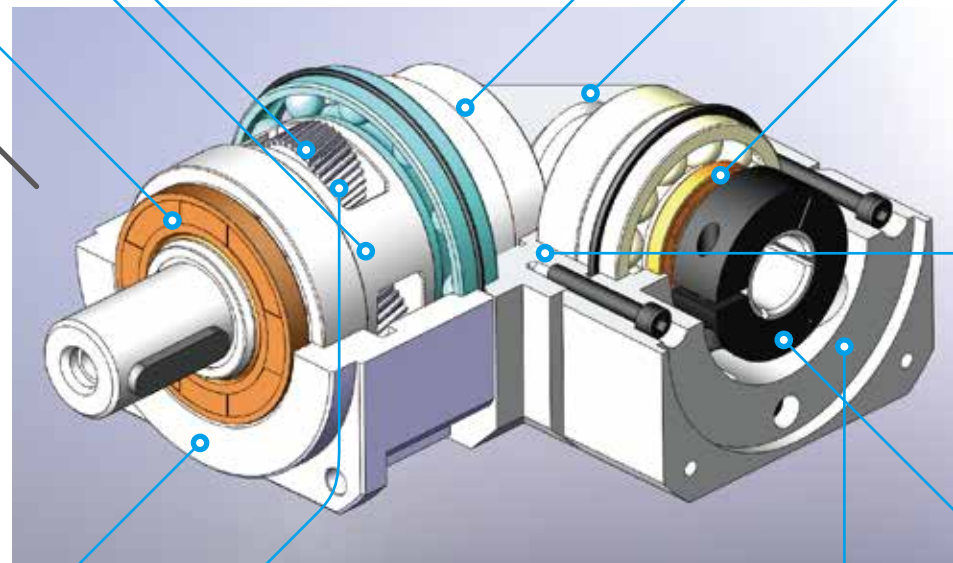
齒輪材質選用高級合金鋼，獨特熱處理至最佳硬度，兼具表面硬度及心部韌度，並經過齒型研磨加工，以獲得最佳的精度、高耐磨耗及高耐衝擊韌性。
Alloy steel gear with unique heat treatment. Additionally, with gear grinding processing to get the best accuracy, high wear resistance and high impact toughness.



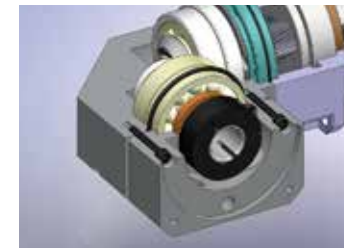
太陽齒前端軸承直接置入於行星固定架內，整體機械結構設計，以確保傳動元件的同心度。
The sun gear bearing is placed directly into the planetary arm bracket, the overall mechanical structure designed to ensure concentricity of the transmission components.



螺旋傘型齒輪採用高級合金鋼為材質，在滾齒加工及熱處理後，達到高精度咬合點及低背隙、低噪音。
Alloy steel spiral bevel gears selected after hobbing and heat treatment to ensure high accuracy of the engagement point, low backlash and low noise.



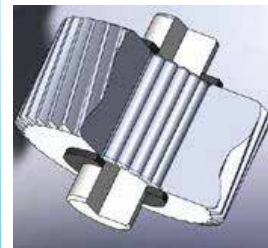
PGRH系列整體設計上可容許伺服馬達高轉速的輸入，達到最大扭力輸出。直角設計可節省空間。精密齒輪設計及專業齒輪加工，製造出低運轉背隙、高效率、低噪音及長壽命的行星減速機。
PGRH Series overall design suitable for combination operation with servo motor high-speed input and achieves maximum torque output. Right-angular designed drastically reducing the installation space. Precision gear design and gear processing create a planetary gearhead with low backlash operation, high efficiency, low noise and long lifespan.



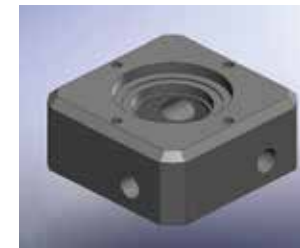
高科技油封設計上唇為防塵唇，下唇為防油唇。採IP65防護等級的密封設計，採用高級潤滑油脂，不洩漏、免保養。
High-tech oil seal design on the upper lip guard against dust intruder, lower lip to guard against oil leak. Advanced lubricants grease and IP65 protection safeguards fully avoid leaking and given it maintenance-free.



直角加工採用高精度CNC設備。超越業界技術門檻與齒輪獲得最高精密組合。螺旋傘齒箱表面無電解鍍處理，耐刮及耐腐蝕最適合高科技設備嚴苛需求。
Right angular gear box processed by precision CNC equipment to obtain the highest combination with spiral bevel gears. Advanced electroless nickel plating surface treatment resists scratch and corrosion. Suitable for stringent require of high-tech equipment.



行星齒輪傳動介面採用針狀軸承，滿針排列不含保持器，以達到最大接觸面積最小間隙公差，提高結構剛性及輸出扭力。
Planet gear transmission interface equipped with needle bearings, full needle roller bearings aligned without retainer achieve maximum exposure but smallest gap tolerances. Enhance over-all gear structure rigid and output torque.



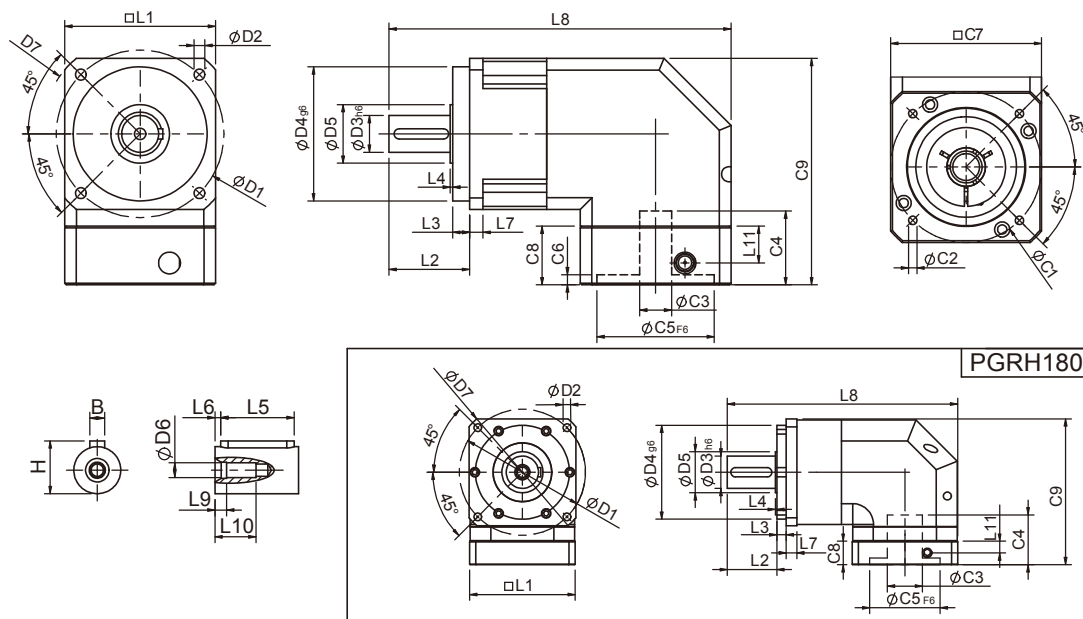
先進馬達連接板設計，配合入力軸襯套，安裝容易，可與各種廠牌之伺服、步進馬達完美搭配組合。
Advanced motor bracket design coupled with the input shaft bushing is easy to mount to any servo or stepper motor.



輸入端與馬達入力軸連結方法採用拴緊式機構，鎖緊環經過動平衡分析，確保高轉速下，結合介面的同心度及零滑差動力傳遞。
Input-end and motor shaft are coupled through a dynamic balanced collar clamping mechanism to ensure connection interface concentricity and zero slip power transmission at high speed.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty. 產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

PGRH Single Stage Dimensions PGRH單段外型尺寸圖



Specifications 規格

Unit:mm

尺寸 Dimensions	PGRH42	PGRH60	PGRH90	PGRH115	PGRH142	PGRH180	PGRH220
D1	50	70	100	130	165	215	250
D2	3.4	5.5	6.5	8.5	10.5	13	17
D3 _{h6}	13	16	22	32	40	55	75
D4 _{g6}	35	50	80	110	130	160	180
D5	15	25	35	45	50	70	114.4
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P	M20x2.5P
D7	56	80	118	148	186	239	292
L1	42.6	60	90	115	142	180	220
L2	26	37	48	63	91.5	100.5	138
L3	5.5	7	10	10	10	16	30
L4	1	1.5	1.5	3.5	2.5	2.5	3
L5	15	25	32	40	60	70	90
L6	2	2	3	5	5	6	7
L7	4	6	8	11	16	18	20
L8	103.6	148.2	204	246.5	325	392.7	490.2
L9	4	4	4.5	6	6	8	15
L10	14	16.5	20.5	30	38	48	42
L11	13.5	21.5	22	32	44.7	20	60
C1 ²	46	70	90	115	145	200	215
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P	M12x1.75P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35	≤50	≤55
C4 ²	29	34	44	53	76.8	78.8	98.7
C5 ² _{F6}	30	50	70	95	110	114.3	180
C6 ²	6	5	5	6	9	6	6
C7 ²	42.6	60	90	115	140	182	220
C8 ²	25	33	35	48	65	40	85
C9 ²	70.8	107.8	135	174.5	207	248.5	287.5
B	5	5	6	10	12	16	20
H	15	18	24.5	35	43	59	79.5

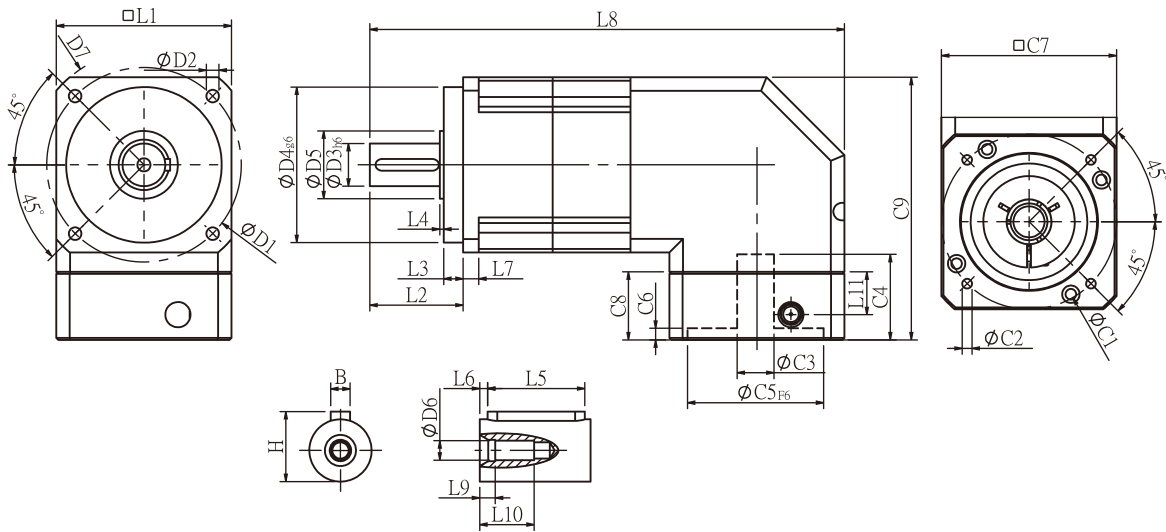
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to the motor flange chosen.

★ Specification subject to change without notice.

PGRH Double Stage Dimensions-1 PGRH雙段外型尺寸圖-1



Specifications 規格

Unit:mm

尺寸 Dimensions	PGRH42	PGRH60	PGRH90
D1	50	70	100
D2	3.4	5.5	6.5
D3 _{h6}	13	16	22
D4 _{g6}	35	50	80
D5	15	25	35
D6	M4x0.7P	M5x0.8P	M8x1.25P
D7	56	80	118
L1	42.6	60	90
L2	26	37	48
L3	5.5	7	10
L4	1	1.5	1.5
L5	15	25	32
L6	2	2	3
L7	4	6	8
L8	130.6	181.2	248
L9	4	4	4.5
L10	14	16.5	20.5
L11	13.5	21.5	22
C1 ²	46	70	90
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24
C4 ²	29	34	44
C5 ² _{F6}	30	50	70
C6 ²	6	5	5
C7 ²	42.6	60	90
C8 ²	25	33	35
C9 ²	70.8	107.8	135
B	5	5	6
H	15	18	24.5

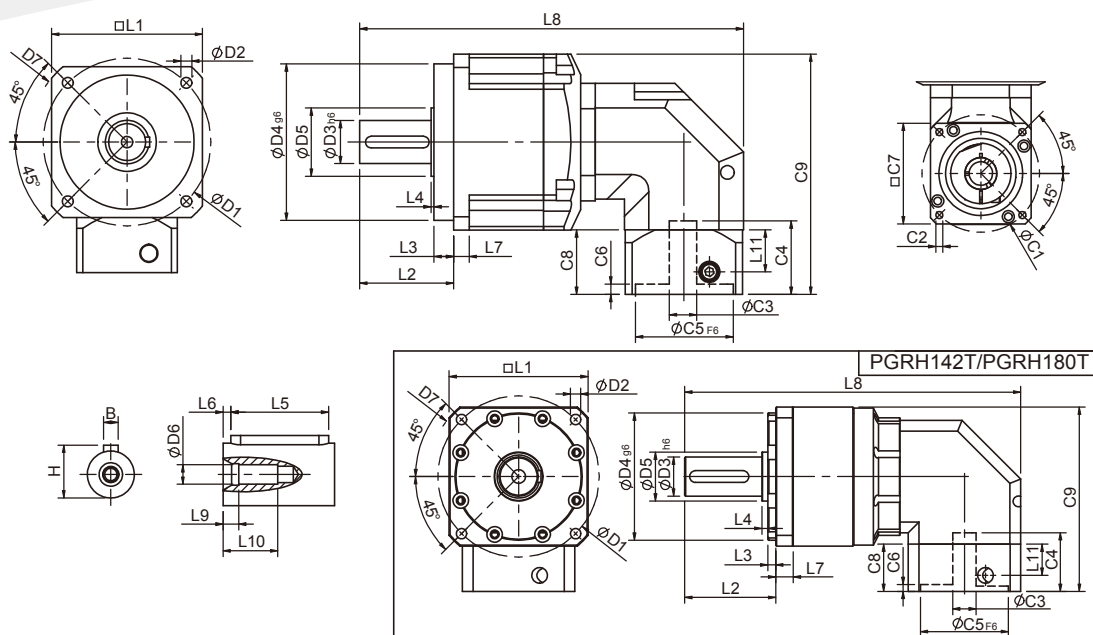
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格進行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to the motor flange chosen.

★ Specification subject to change without notice.

PGRH Double Stage Dimensions-2 PGRH雙段外型尺寸圖-2



Specifications 規格

Unit:mm

尺寸 Dimensions	PGRH60T	PGRH90T	PGRH115T	PGRH142T	PGRH180T	PGRH220T
D1	70	100	130	165	215	250
D2	5.5	6.5	8.5	10.5	13	17
D3 _{h6}	16	22	32	40	55	75
D4 _{g6}	50	80	110	130	160	180
D5	25	35	45	50	70	114.4
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P	M20x2.5P	M20x2.5P
D7	80	118	148	186	239	292
L1	60	90	115	142	182	220
L2	37	48	63	91.5	100.5	138
L3	7	10	10	10	16	30
L4	1.5	1.5	3.5	2.5	2.5	3
L5	25	32	40	60	70	90
L6	2	3	5	5	6	7
L7	6	8	11	16	18	20
L8	151.8	200.7	272.5	345.5	424.5	537.2
L9	4	4.5	6	6	8	15
L10	16.5	20.5	30	38	48	42
L11	13.5	21.5	22	32	44.7	44
C1 ²	46	70	90	115	145	200
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P	M12x1.75P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35	≤50
C4 ²	29	34	45.2	53.5	76.8	78.8
C5 ² _{F6}	30	50	70	95	110	114.3
C6 ²	6	5	5	6	9	6
C7 ²	42.6	60	90	115	140	180
C8 ²	25	33	35	48	65	65
C9 ²	79.5	122.8	147.5	188	207	267.5
B	5	6	10	12	16	20
H	18	24.5	35	43	59	79.5

★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格進行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to the motor flange chosen.

★ Specification subject to change without notice.

PGRH Specifications Table PGRH性能規格共表

規格 Specifications		節數 Stage	減速比 Ratio	PGRH-42	PGRH-60	PGRH-90	PGRH-115	PGRH-142	PGRH-180	PGRH-220
額定輸出力矩 T _{2N} Nominal Output Torque	N • m	1	3	19	53	145	220	380	750	950
			4	20	55	150	270	500	1000	1500
			5	17	54	140	290	600	1050	1800
			6	15	46	135	230	500	1000	1620
			7	14	44	125	270	530	960	1750
			8	12	41	110	240	470	900	1550
			9	11	37	95	220	430	800	1500
			10	17	50	130	260	530	900	1500
			14	14	44	125	270	530	960	1750
		20	11	37	95	220	430	800	1450	
		節數 Stage	減速比 Ratio	PGRH-42	PGRH-60 (T)	PGRH-90(T)	PGRH-115T	PGRH-142T	PGRH-180T	PGRH-220T
		2	15	19	53	145	290	520	950	2000
			20	20	55	150	300	500	1000	2000
			25	17	54	140	290	600	1050	2000
			30	17	54	140	290	600	1050	2000
			35	17	54	140	290	600	1050	2000
			40	17	54	140	290	600	1050	2000
			45	17	54	140	290	600	1050	2000
			50	17	54	140	290	600	1050	2000
			60	15	46	135	280	560	1000	2000
			70	14	44	125	270	530	960	1750
			80	12	41	110	240	480	900	1700
			90	11	37	95	220	430	800	1500
			100	11	37	95	220	430	800	1450
			120	15	46	135	280	560	1000	1850
			140	14	44	125	270	530	960	1750
			160	12	41	110	240	480	900	1550
			180	11	37	95	220	430	800	1500
			200	11	37	95	220	430	800	1450
急停力矩 T _{2NOT} Emergency Stop Torque	N • m		3.0 倍額定輸出力矩 (3.0 times of Nominal Output Torque) (* 最大輸出力矩 Max. Output Torque T _{2B} =60% of Emergency Stop Torque)							
額定輸入轉速 n _{1N} Nominal Input Speed	rpm	1,2	3-200	5000	5000	4000	4000	3000	3000	2000
最大輸入轉速 n _{1max} Max. Input Speed	rpm	1,2	3-200	10000	10000	8000	8000	6000	6000	4000
超精密背隙 Micro Backlash P0	arcmin	1	3-20	-	-	≤ 3	≤ 2	≤ 2	≤ 2	≤ 2
		2	15-200	-	-	≤ 5	≤ 4	≤ 4	≤ 4	≤ 4
精密背隙 Precision Backlash P1	arcmin	1	3-20	≤ 5	≤ 5	≤ 5	≤ 4	≤ 4	≤ 4	≤ 4
		2	15-200	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7
標準背隙 Standard Backlash P2	arcmin	1	3-20	≤ 7	≤ 7	≤ 7	≤ 6	≤ 6	≤ 6	≤ 6
		2	15-200	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9
扭轉剛性Torsional Rigidity	N • m /arcmin	1,2	3-200	2.5	6	12	23	50	145	220
容許徑向力 F _{2rB} ¹ Max. Radial Load	N	1,2	3-200	760	1570	2780	5340	9000	14000	31810
容許軸向力 F _{2aB} ¹ Max. Axial Load	N	1,2	3-200	410	750	1870	3310	4670	6460	18530
使用溫度 Operating Temp.	°C		3-200	-10 °C ~ +90 °C						
使用壽命Service Life	hr		3-200	20,000 (10,000/ 連續運轉 Continuous operation)						
效率 Efficiency	%	1	3-20	≥ 95%						
		2	15-200	≥ 92%						
重量 Weight	kg	1	3-20	1.0	2.6	6.8	13.5	25.1	42	75
		2	15-200	1.4	3.3/2.9	8.9/7.2	14.8	26.7	46	88
安裝方向 Mounting Position	-	1,2	3-200	任意方向Any direction						
噪音值 Noise Level ²	dBA/1m	1,2	3-200	62	64	66	68	70	72	74
防護等級 Protection Class	-	1,2	3-200	IP65						
潤滑 Lubrication	-	1,2	3-200	全合成潤滑油脂 Synthetic Lubricant						
減速機轉動慣量 Inertia(J1)										
節數Stage	減速比Ratio	單位unit		PGRH-42	PGRH-60	PGRH-90	PGRH-115	PGRH-142	PGRH-180	PGRH-220
1	3/4/5/7/9	Kg • cm ²		0.06	0.40	2.28	6.87	24.2	69.8	138.2
	6/8/10/14/20			0.05	0.30	1.45	4.76	14.5	50.3	103.6
節數Stage	減速比Ratio			PGRH-42	PGRH-60(T)	PGRH-90(T)	PGRH-115T	PGRH-142T	PGRH-180T	PGRH-220T
2	15/20/25/35/45			0.06	0.40(0.08)	2.28(0.72)	3.02	7.83	27.7	80.3
	others			0.05	0.30(0.06)	1.45(0.38)	1.64	5.00	15.9	55.3
* 1. 輸出轉速 100rpm 時・作用於輸出軸中心位置・Applied to the output shaft center @100rpm. * 2. 3000rpm 空載量測・Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load. ※本公司有權對以上數據規格逕行設計變更不先行告知・The above figures/specifications are subject to change without prior notice.										

* 1. 輸出轉速 100rpm 時，作用於輸出軸中心位置。Applied to the output shaft center @100rpm.

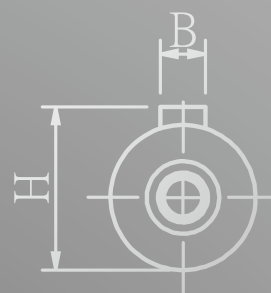
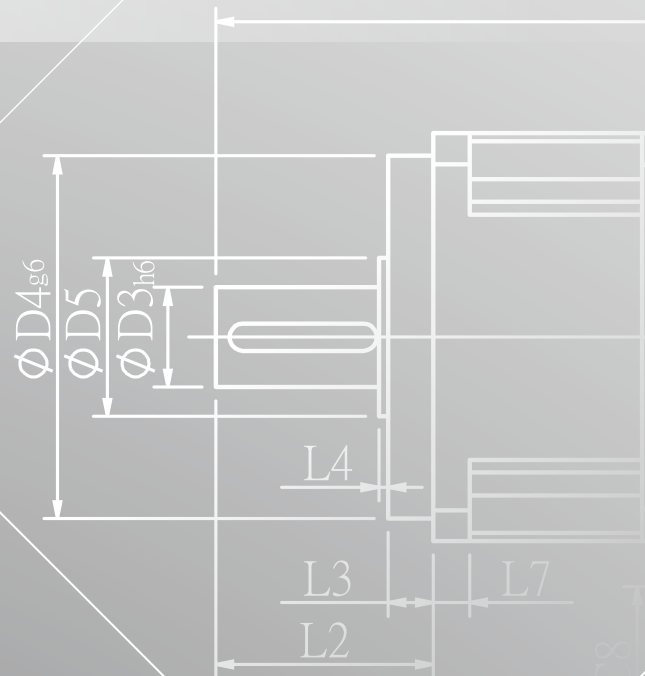
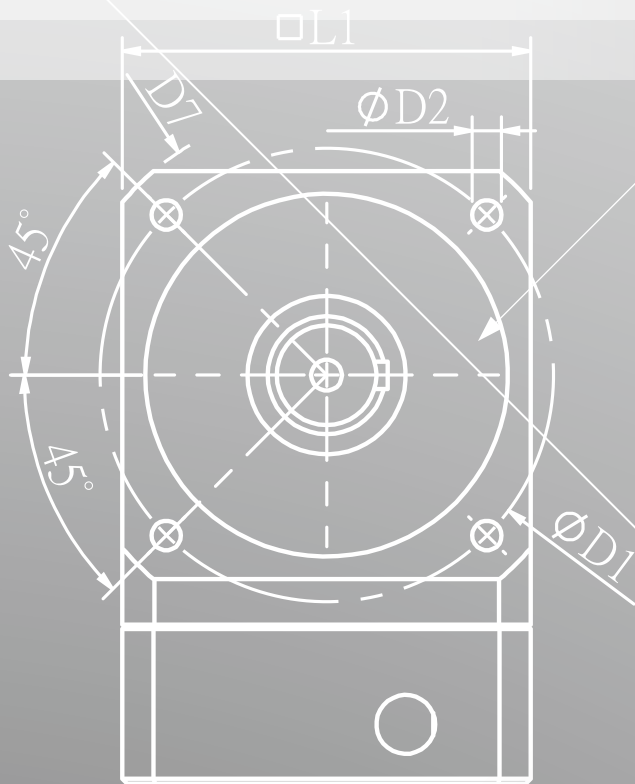
* 2. 3000rpm 空載量測。Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load.

※本公司有權對以上數據規格逕行設計變更不先行告知。The above figures/specifications are subject to change without prior notice.

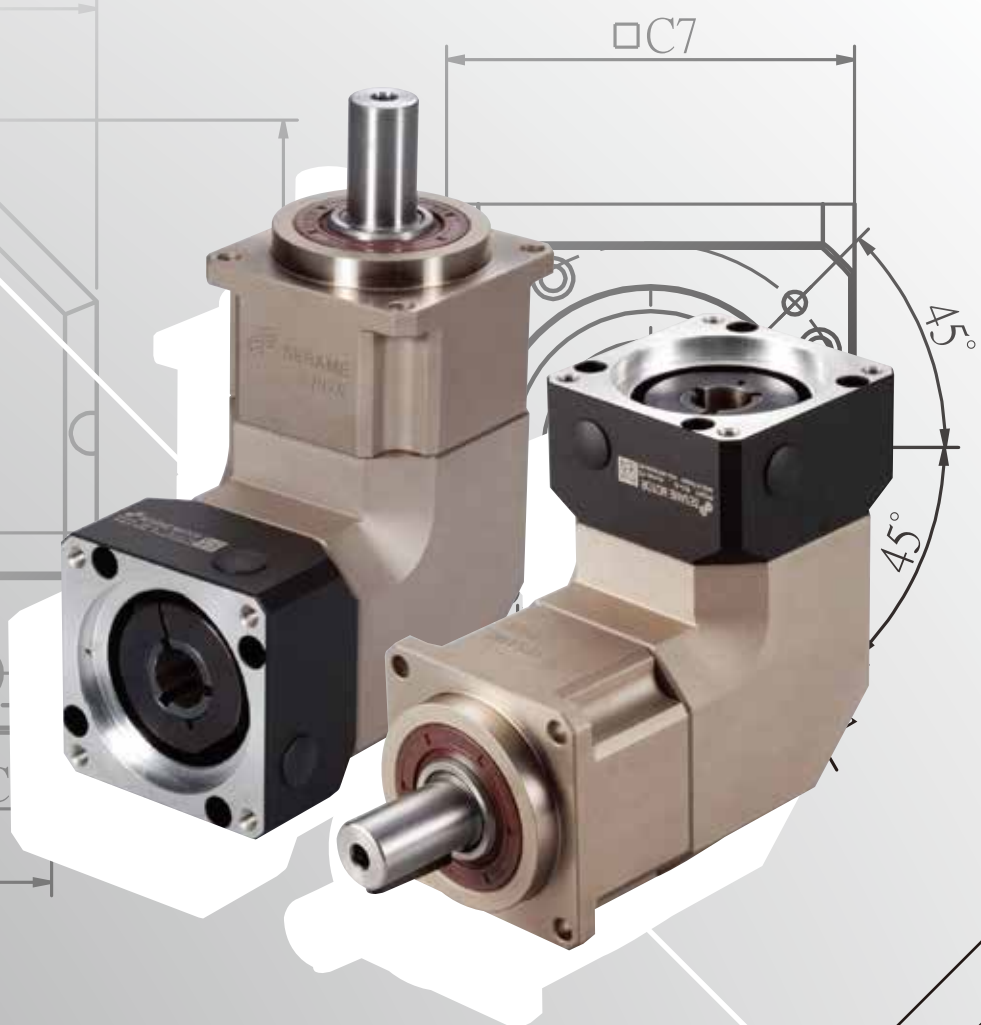
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

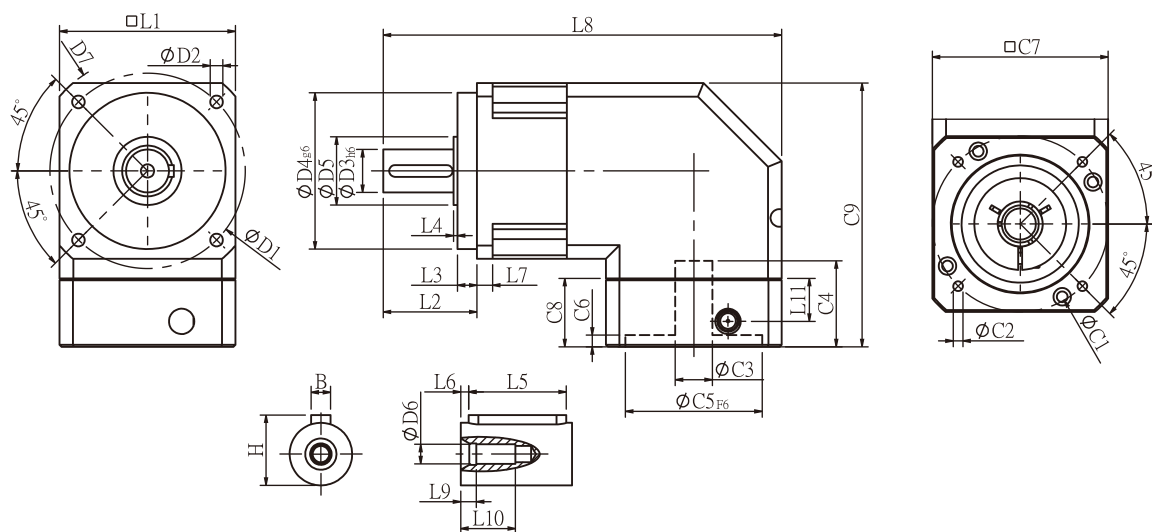
PGR SERIES



L8



PGR Single Stage Dimensions PGR單段外型尺寸圖



Specifications 規格

Unit:mm

尺寸 Dimensions	PGR42	PGR60	PGR90	PGR115	PGR142
D1	50	70	100	130	165
D2	3.4	5.5	6.5	8.5	10.5
D3 _{h6}	13	16	22	32	40
D4 _{g6}	35	50	80	110	130
D5	15	25	35	45	50
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P
D7	56	80	118	148	186
L1	42.6	60	90	115	142
L2	26	37	48	62	93
L3	5.5	7	10	8	8
L4	1.5	1.5	1.5	3	6
L5	15	25	32	40	60
L6	2	2	3	5	5
L7	4	6	8	12	18
L8	103.6	148.7	204	244.5	330
L9	4	4	4.5	6	6
L10	14	16.5	20.5	30	38
L11	13.5	21.5	22	32	44.7
C1 ²	46	70	90	115	145
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35
C4 ²	29	34	44	53	75
C5 ² _{F6}	30	50	70	95	110
C6 ²	6	5	5	6	9
C7 ²	42.6	60	90	115	140
C8 ²	25	33	35	48	65
C9 ²	70.8	107.8	135	174.5	207
B	5	5	6	10	12
H	15	18	24.5	35	43

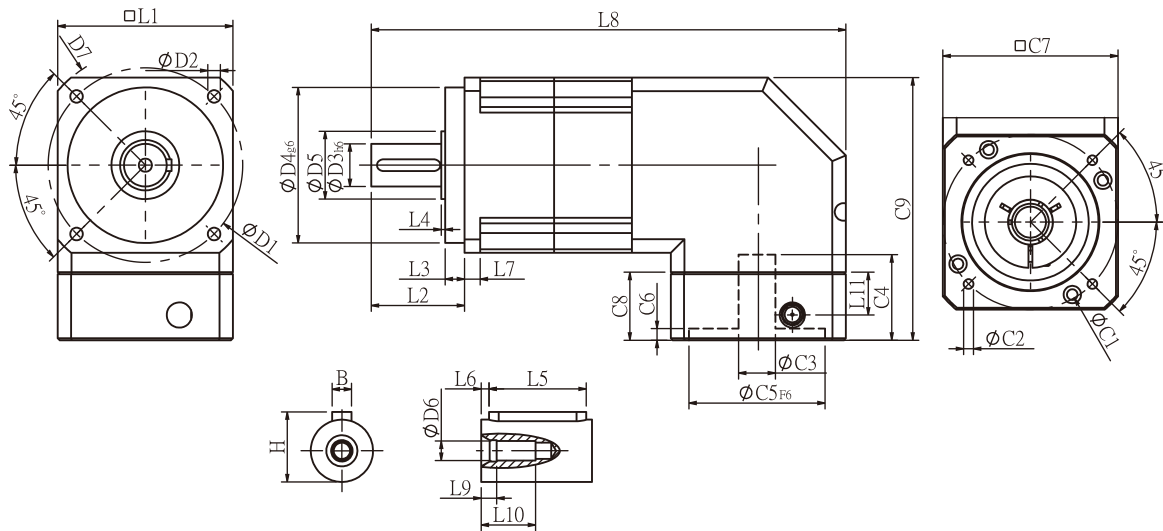
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to the motor flange chosen.

★ Specification subject to change without notice.

PGR Double Stage Dimensions-1 PGR雙段外型尺寸圖-1



Specifications 規格

Unit:mm

尺寸 Dimensions	PGR42	PGR60	PGR90	PGR115	PGR142
D1	50	70	100	130	165
D2	3.4	5.5	6.5	8.5	10.5
D3 _{h6}	13	16	22	32	40
D4 _{g6}	35	50	80	110	130
D5	15	25	35	45	50
D6	M4x0.7P	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P
D7	56	80	118	148	186
L1	42.6	60	90	115	142
L2	26	37	48	62	93
L3	5.5	7	10	8	8
L4	1.5	1.5	1.5	3	6
L5	15	25	32	40	60
L6	2	2	3	5	5
L7	4	6	8	12	18
L8	129.6	176.7	244	292.5	391
L9	4	4	4.5	6	6
L10	14	16.5	20.5	30	38
L11	13.5	21.5	22	32	44.7
C1 ²	46	70	90	115	145
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P	M8x1.25P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35
C4 ²	29	34	44	53	75
C5 ² _{F6}	30	50	70	95	110
C6 ²	6	5	5	6	9
C7 ²	42.6	60	90	115	140
C8 ²	25	33	35	48	65
C9 ²	70.8	107.8	135	174.5	207
B	5	5	6	10	12
H	15	18	24.5	35	43

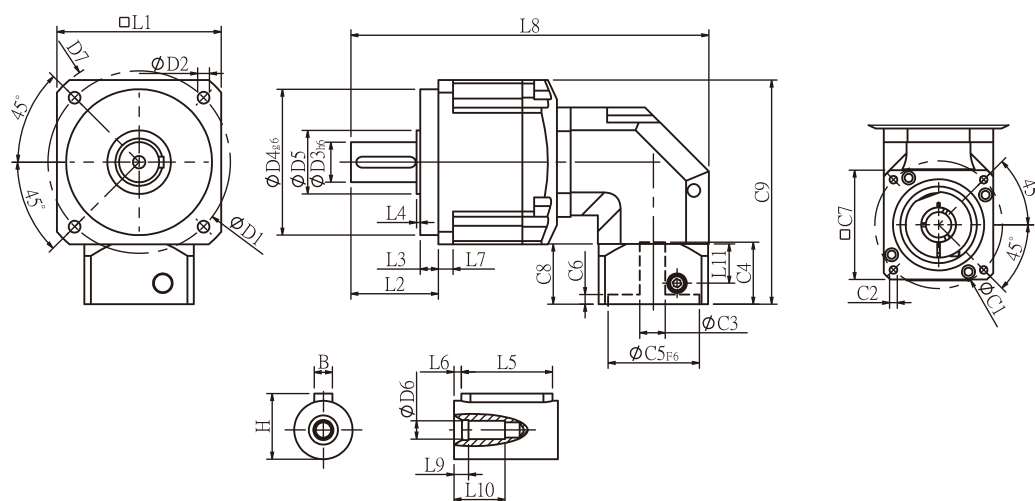
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格進行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to the motor flange chosen.

★ Specification subject to change without notice.

PGR Double Stage Dimensions-2 PGR雙段外型尺寸圖-2



Specifications 規格

Unit:mm

尺寸 Dimensions	PGR60T	PGR90T	PGR115T	PGR142T
D1	70	100	130	165
D2	5.5	6.5	8.5	10.5
D3 _{h6}	16	22	32	40
D4 _{g6}	50	80	110	130
D5	25	35	45	50
D6	M5x0.8P	M8x1.25P	M12x1.75P	M16x2.0P
D7	80	118	148	186
L1	60	90	115	142
L2	37	48	62	93
L3	7	10	8	8
L4	1.5	1.5	3	6
L5	25	32	40	60
L6	2	3	5	5
L7	6	8	12	18
L8	145.1	196.2	269.4	343.5
L9	4	4.5	6	6
L10	16.5	20.5	30	38
L11	13.5	21.5	22	32
C1 ²	46	70	90	115
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32
C4 ²	29	34	44	53
C5 ² _{F6}	30	50	70	95
C6 ²	6	5	5	6
C7 ²	42.6	60	90	115
C8 ²	25	33	35	48
C9 ²	79.5	122.8	147.5	188
B	5	6	10	12
H	18	24.5	35	43

★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to the motor flange chosen.

★ Specification subject to change without notice.

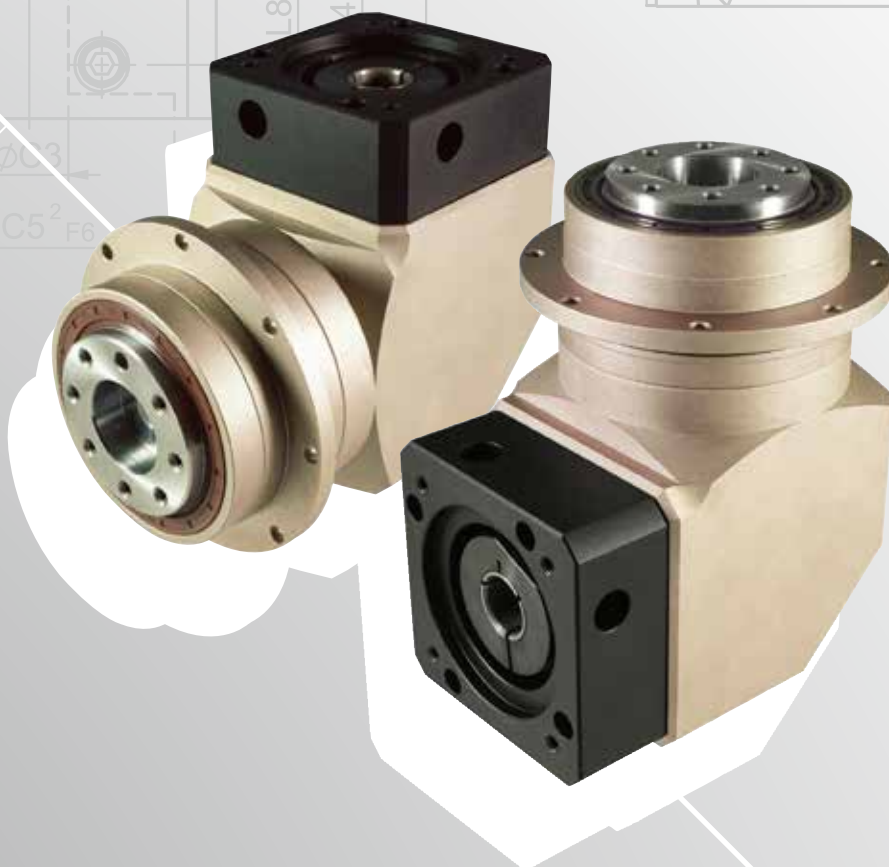
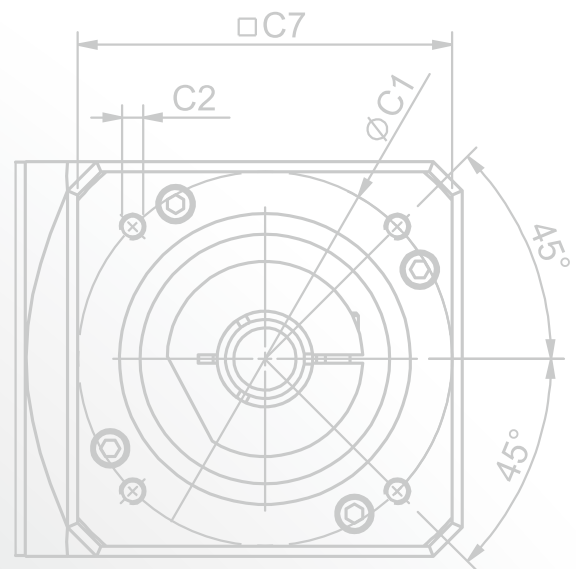
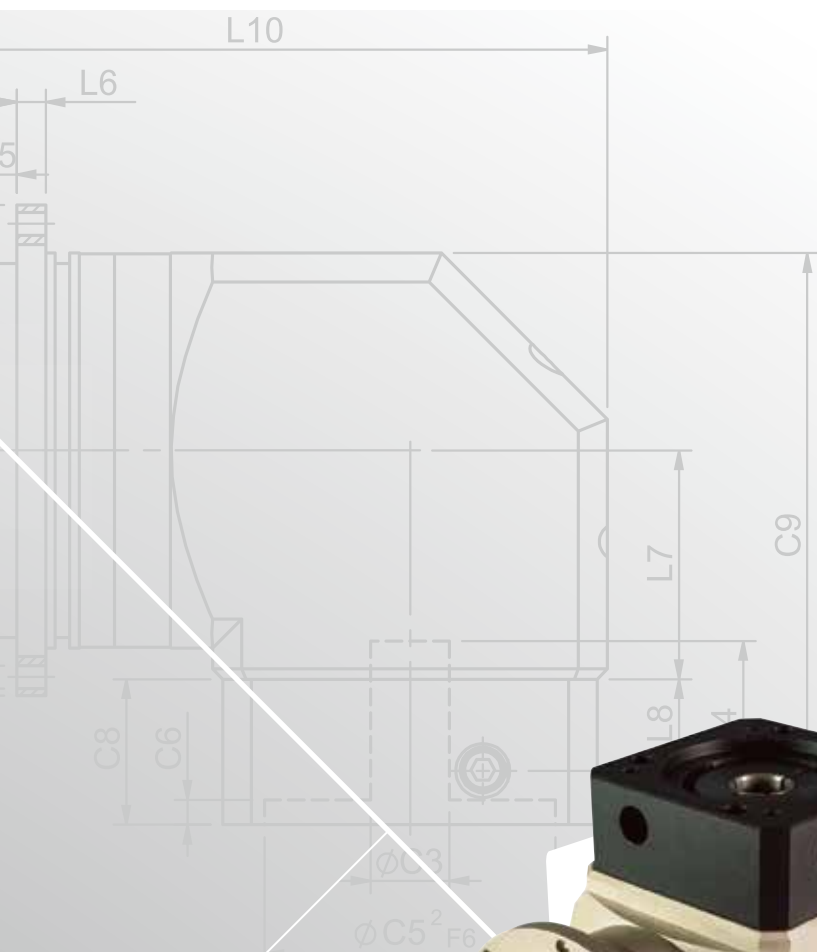
PGR Specifications Table PGR性能規格共表

規格 Specifications		節數 Stage	減速比 Ratio	PGR-42	PGR-60	PGR-90	PGR-115	PGR-142
額定輸出力矩 T _{2N} Nominal Output Torque	N · m	1	3	13.8	35.3	76.2	220	380
			4	11.9	35.9	74.6	249	450
			5	13.8	43.0	95.2	283	473
			6	12.5	39.4	90.9	220	420
			7	11.9	36.0	85.6	219	400
			8	10.9	32.4	85.0	216	363
			9	9.8	28.7	80.0	210	320
			10	13.8	43.0	95.2	260	473
		節數 Stage	減速比 Ratio	PGR-42	PGR-60 / 60T	PGR-90 / 90T	PGR-115 / 115T	PGR-142 / 142T
		2	15	13.8	44.2	95.2	283	482
			20	11.9	35.9	74.6	249	490
			25	13.8	43.0	95.2	283	473
			30	13.8	43.0	95.2	283	473
			35	13.8	43.0	95.2	283	473
			40	13.8	43.0	95.2	283	473
			45	13.8	43.0	95.2	283	473
			50	13.8	43.0	95.2	283	473
			60	12.5	39.4	90.9	266	436
70	11.9		36.0	85.6	219	400		
80	10.9	32.4	85.0	216	363			
90	9.8	28.7	80.0	210	320			
100	10.1	25.0	75.0	210	320			
急停力矩 T _{2NOT} Emergency Stop Torque	N · m		3.0 倍額定輸出力矩 (3.0 times of Nominal Output Torque) (* 最大輸出力矩 Max. Output Torque T _{2B} =60% of Emergency Stop Torque)					
額定輸入轉速 n _{1N} Nominal Input Speed	rpm	1,2	3-100	3000	3000	3000	2500	2000
最大輸入轉速 n _{1max} Max. Input Speed	rpm	1,2	3-100	6000	6000	6000	5000	4000
超精密背隙 Micro Backlash P0	arcmin	1 2	3-10 15-100	- -	- -	- -	≤ 4 ≤ 6	≤ 4 ≤ 6
精密背隙 Precision Backlash P1	arcmin	1 2	3-10 15-100	- -	- -	≤ 6 ≤ 9	≤ 6 ≤ 8	≤ 6 ≤ 8
標準背隙 Standard Backlash P2	arcmin	1 2	3-10 15-100	≤ 12 ≤ 15	≤ 9 ≤ 12	≤ 9 ≤ 12	≤ 9 ≤ 11	≤ 9 ≤ 11
扭轉剛性 Torsional Rigidity	N · m /arcmin	1,2	3-100	1.0	2.8	7.5	15.5	30
容許徑向力 F _{2rB} ¹ Max. Radial Load	N	1,2	3-100	350	960	1630	3380	6150
容許軸向力 F _{2aB} ¹ Max. Axial Load	N	1,2	3-100	320	900	1420	2930	5510
使用溫度 Operating Temp.	℃		3-100	-10℃ ~ +90℃				
使用壽命 Service Life	hr		3-100	20,000 (10,000/連續運轉 Continuous operation)				
效率 Efficiency	%	1 2	3-10 15-100	≥ 94% ≥ 90%				
重量 Weight	kg	1 2	3-10 15-100	1.0 1.3	2.5 3.2/2.8	6.5 8.6/6.9	13.2 17.7/14.5	24.6 29.7/26.2
安裝方向 Mounting Position	-	1,2	3-100	任意方向 Any direction				
噪音值 Noise Level ²	dBA/1m	1,2	3-100	65	67	70	70	75
防護等級 Protection Class	-	1,2	3-100	IP65				
潤滑 Lubrication	-	1,2	3-100	全合成潤滑油脂 Synthetic Lubricant				
減速機轉動慣量 Inertia(J1)								
節數 Stage	減速比 Ratio	單位 unit	PGR-42	PGR-60	PGR-90	PGR-115	PGR-142	
1	3/4/5/7/9	Kg · cm ²	0.06	0.40	2.28	6.87	24.2	
	6/8/10		0.05	0.30	1.45	4.76	14.5	
節數 Stage	減速比 Ratio		PGR-42	PGR-60(T)	PGR-90(T)	PGR-115(T)	PGR-142(T)	
2	15/20/25/35/45		0.06	0.40(0.08)	2.28(0.72)	6.87(3.02)	24.2(7.83)	
	others		0.05	0.30(0.06)	1.45(0.38)	4.76(1.64)	14.5(5.00)	
* 1. 輸出轉速 100rpm 時，作用於輸出軸中心位置。Applied to the output shaft center @100rpm. * 2. 3000rpm 空載量測。Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load. * 3.PGR115T-□□-P0不適用上表。PGR115T-□□-P0 is not applicable. ※本公司有權對以上數據規格逕行設計變更不先行告知。The above figures/specifications are subject to change without prior notice.								

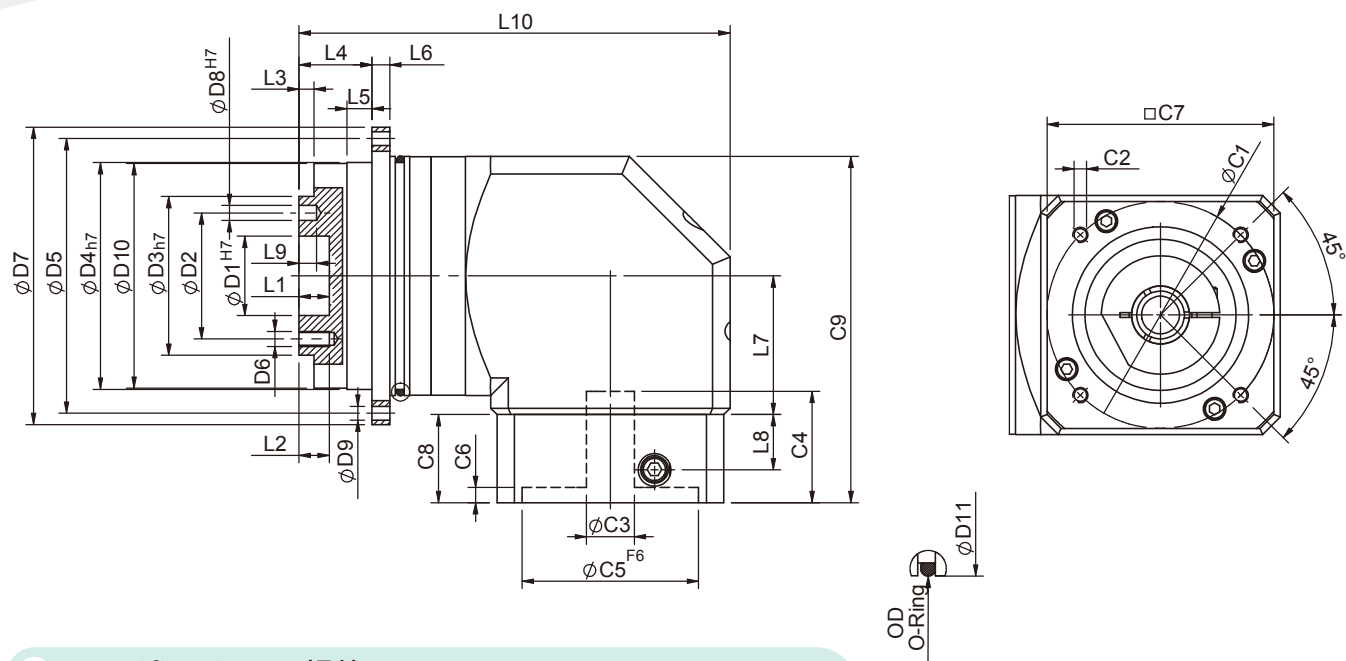
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.
 產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

PGFR SERIES





PGFR Single Stage Dimensions PGFR單段外型尺寸圖



Specifications 規格

Unit:mm

尺寸 Dimensions	PGFR42	PGFR60	PGFR90	PGFR115	PGFR142
D1 ^{H7}	12	20	31.5	40	50
D2	20	31.5	50	63	80
D3 _{h7}	28	40	63	80	100
D4 _{h7}	47	64	90	110	140
D5	67	79	109	135	168
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P
D7	72	86	118	145	179
D8 ^{H7}	3	5	6	6	8
D9	3.4	4.5	5.5	5.5	6.6
D10	46.2	63.2	89.2	109.2	139.2
D11	60	70	95	120	152
L1	4	8	12	12	12
L2	6	7.2	12	13.5	16
L3	3	3	6	6	6
L4	19.5	19.5	29	29	38
L5	7	7	10	10	14.6
L6	4	4	7	8	10
L7	32.2	44.8	55	69	71
L8	13.5	21.5	22	32	44.7
L9	4	6	7	7	7
L10	92.2	123.9	171.1	200.2	250.7
C1 *	46	70	90	90	145
C2 *	M4x0.7P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P
C3 *	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32	≤35
C4 *	29	34	44	53.5	76.8
C5 ^{F6} *	30	50	70	70	110
C6 *	6	5	5	5.5	9
C7 *	42.6	60	90	115	140
C8 *	25	33	35	48	65
C9 *	78.5	112.8	137.5	176.5	225.5
OD	56x2	66x2	90x3	110x3	145x3

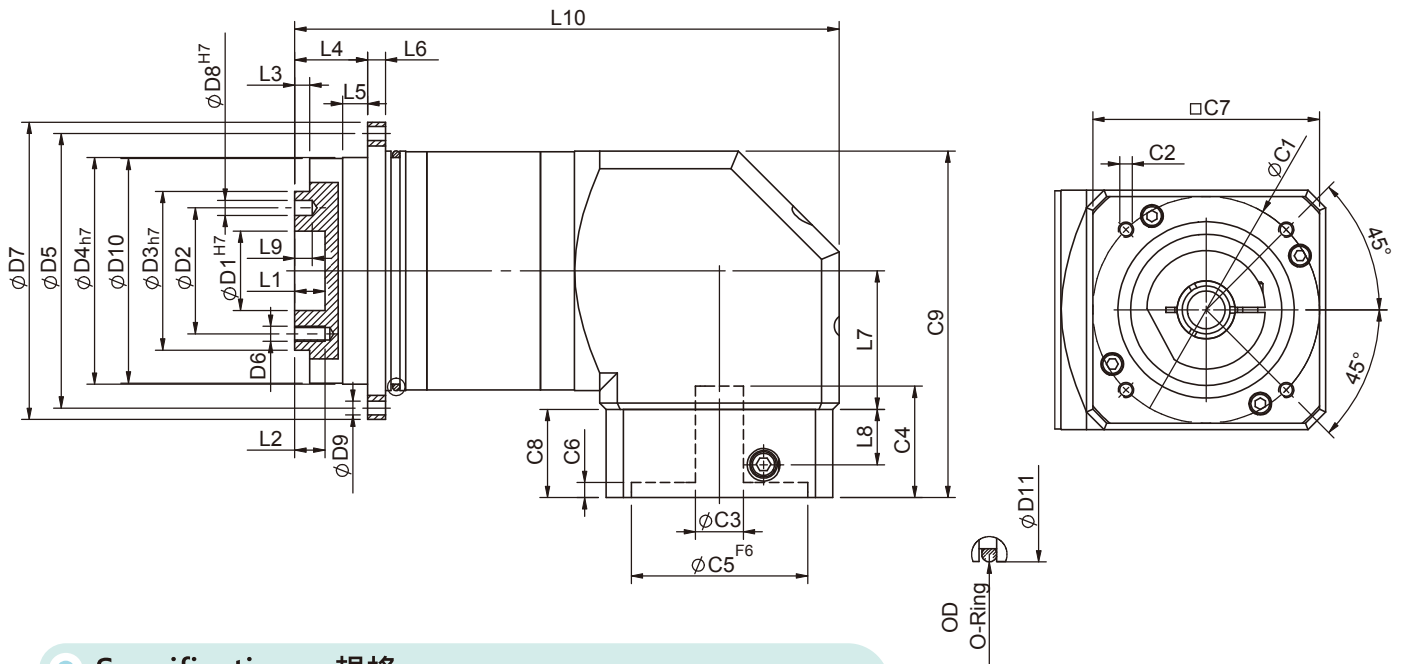
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格進行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to motor flange.

★ Specification subject to change without notice.

PGFR Double Stage Dimensions-1 PGFR雙段外型尺寸圖-1



Specifications 規格

Unit:mm

尺寸 Dimensions	PGFR42	PGFR60	PGFR90
D1 ^{H7}	12	20	31.5
D2	20	31.5	50
D3 ^{h7}	28	40	63
D4 ^{h7}	47	64	90
D5	67	79	109
D6	M3x0.5P	M5x0.8P	M6x1.0P
D7	72	86	118
D8 ^{H7}	3	5	6
D9	3.4	4.5	5.5
D10	46.2	63.2	89.2
D11	60	70	95
L1	4	8	12
L2	6	7.2	12
L3	3	3	6
L4	19.5	19.5	29
L5	7	7	10
L6	4	4	7
L7	32.2	44.8	55
L8	13.5	21.5	22
L9	4	6	7
L10	119.9	159.3	216.1
C1 *	46	70	90
C2 *	M4x0.7P	M5x0.8P	M6x1.0P
C3 *	≤8/≤11	≤14/≤19	≤19/≤24
C4 *	29	34	44
C5 ^{F6} *	30	50	70
C6 *	6	5	5
C7 *	42.6	60	90
C8 *	25	33	35
C9 *	78.5	112.8	137.5
OD	56x2	66x2	90x3

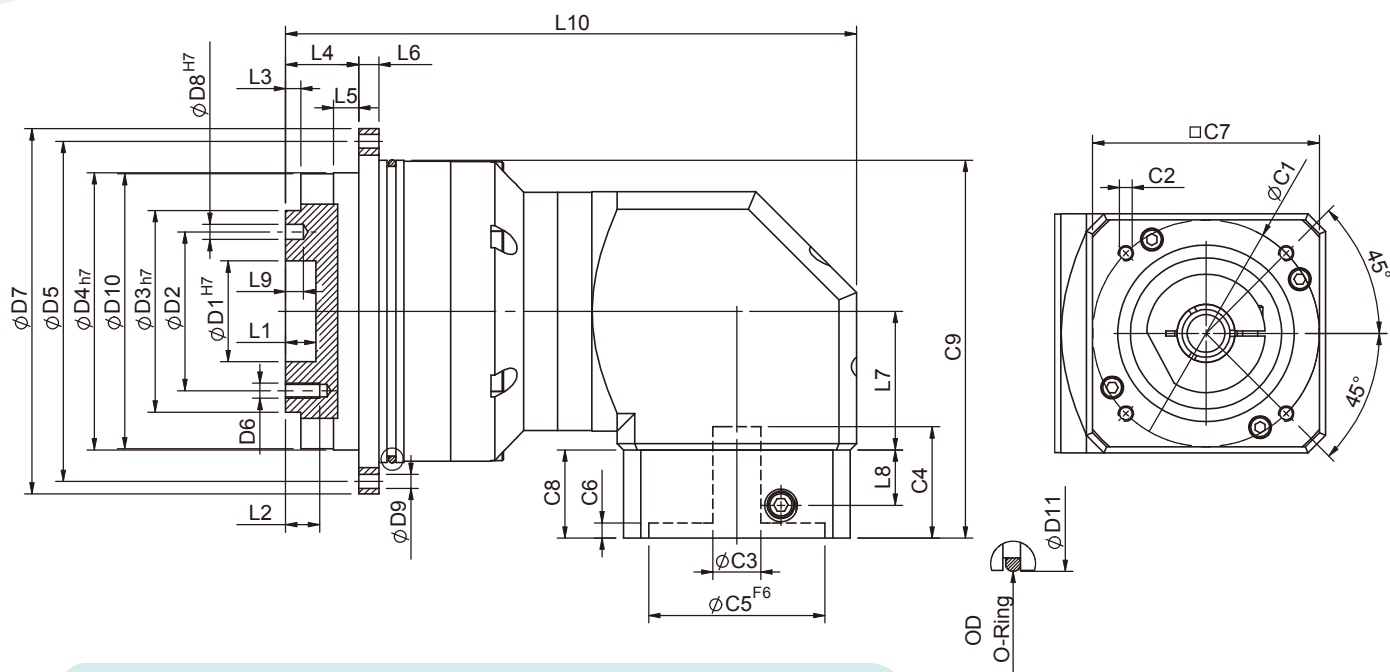
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 本公司有權針對以上數據規格進行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to motor flange.

★ Specification subject to change without notice.

PGFR Double Stage Dimensions-2 PGFR雙段外型尺寸圖-2



Specifications 規格

Unit:mm

尺寸 Dimensions	PGFR60T	PGFR90T	PGFR115T	PGFR142T
D1 ^{H7}	20	31.5	40	50
D2	31.5	50	63	80
D3 _{h7}	40	63	80	100
D4 _{h7}	64	90	110	140
D5	79	109	135	168
D6	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P
D7	86	118	145	179
D8 ^{H7}	5	6	6	8
D9	4.5	5.5	5.5	6.6
D10	63.2	89.2	109.2	139.2
D11	70	95	120	152
L1	8	12	12	12
L2	7.2	12	13.5	16
L3	3	6	6	6
L4	19.5	29	29	38
L5	7	10	10	14.6
L6	4	7	8	10
L7	32.2	44.8	55	69
L8	13.5	21.5	22	32
L9	6	7	7	7
L10	126.6	171.3	226.6	270.7
C1 *	46	70	90	90
C2 *	M4x0.7P	M5x0.8P	M6x1.0P	M6x1.0P
C3 *	≤8/≤11	≤14/≤19	≤19/≤24	≤24/≤32
C4 *	29	34	44	53.5
C5 ^{F6} *	30	50	70	70
C6 *	6	5	5	5.5
C7 *	42.6	60	90	115
C8 *	25	33	35	48
C9 *	84.4	125.3	150	176.5
OD	66x2	90x3	110x3	145x3

★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

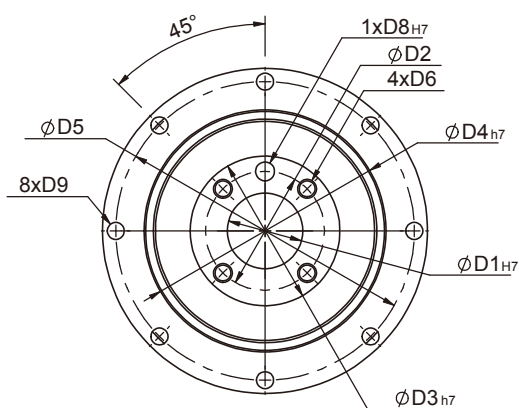
★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

★ C1~C9 are motor specific dimensions(metric std shown), Size may vary according to motor flange.

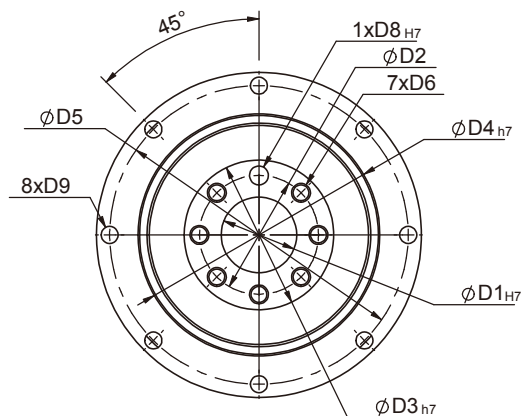
★ Specification subject to change without notice.

PGFR Flange Dimensions PGFR法蘭面尺寸圖

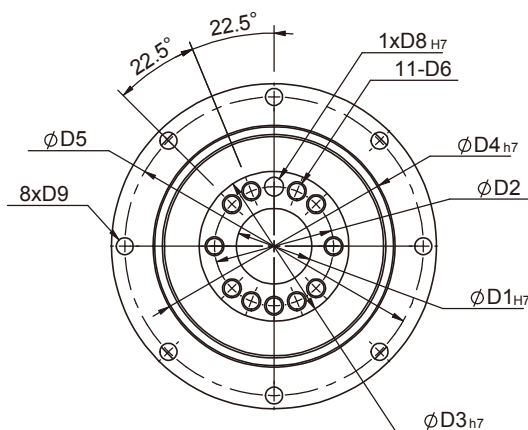
PGFR42



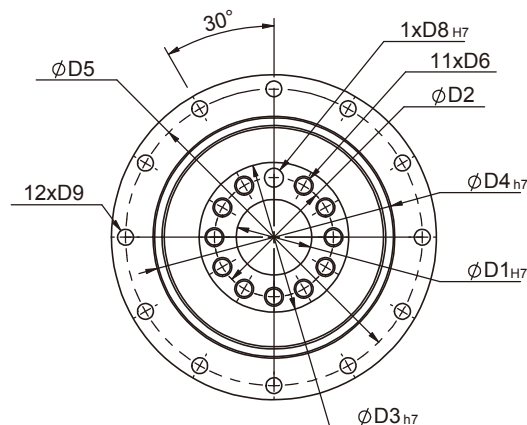
PGFR60
PGFR90



PGFR115



PGFR142



Specifications 規格

Unit:mm

尺寸 Dimensions	PGFR42	PGFR60	PGFR90	PGFR115	PGFR142
D1 H7	12	20	31.5	40	50
D2	20	31.5	50	63	80
D3 h7	28	40	63	80	100
D4 h7	47	64	90	110	140
D5	67	79	109	135	168
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P	M8x1.25P
D8 H7	3	5	6	6	8
D9	3.4	4.5	5.5	5.5	6.6

★ 本公司有權針對以上數據規格運行設計變更不先行告知。

★ Specification subject to change without notice.

PGFR Specifications Table PGFR性能規格共表

規格 Specifications		節數 Stage	減速比 Ratio	PGFR-42	PGFR-60	PGFR-90	PGFR-115	PGFR-142
額定輸出力矩 T _{2N} Nominal Output Torque	N • m	1	3	-	40	105	180	340
			4	16	43	110	240	500
			5	17	50	130	290	600
			7	14	44	125	270	530
			10	17	50	130	260	540
			14	14	44	125	270	530
			20	11	37	95	220	430
		節數 Stage	減速比 Ratio	PGFR-42	PGFR-60/ PGFR-60T	PGFR-90/ PGFR-90T	PGFR-115T	PGFR-142T
		2	15	-	40	105	180	600
			20	16	43	110	240	600
			25	17	50	130	290	600
			30	17	40	105	180	600
			35	17	50	130	290	600
			40	16	43	110	240	600
			50	17	50	130	290	600
			70	14	44	125	270	530
			100	11	37	95	220	430
			140	14	44	125	270	530
			200	11	37	95	220	430
急停力矩 T _{2NOT} Emergency Stop Torque	N • m	3.0 倍額定輸出力矩 (3.0 times of Nominal Output Torque) (* 最大輸出力矩 Max. Output Torque T _{2B} =60% of Emergency Stop Torque)						
額定輸入轉速 n _{1N} Nominal Input Speed	rpm	1,2	3-200	5000	5000	4000	4000	3000
最大輸入轉速 n _{1max} Max. Input Speed	rpm	1,2	3-200	10000	10000	8000	8000	5000
超精密背隙 Micro Backlash P0	arcmin	1 2	3-20 15-200	- -	- -	≤ 4 ≤ 6	≤ 2 ≤ 4	≤ 2 ≤ 4
精密背隙 Precision Backlash P1	arcmin	1 2	3-20 15-200	≤ 6 ≤ 8	≤ 6 ≤ 8	≤ 6 ≤ 8	≤ 4 ≤ 7	≤ 4 ≤ 7
標準背隙 Standard Backlash P2	arcmin	1 2	3-20 15-200	≤ 8 ≤ 10	≤ 8 ≤ 10	≤ 8 ≤ 10	≤ 6 ≤ 9	≤ 6 ≤ 9
扭轉剛性Torsional Rigidity	N • m /arcmin	1,2	3-200	6	12	28	75	145
容許彎曲力矩 M _{2kB} ¹ Max. Bending Moment	N • m	1,2	3-200	22.5	36	76	140	950
容許軸向力 F _{2aB} ¹ Max. Axial Load	N	1,2	3-200	465	635	1060	1580	6400
使用溫度 Operating Temp.	°C		3-200	-10 °C ~ +90 °C				
使用壽命Service Life	hr		3-200	20,000 (10,000/ 連續運轉 Continuous operation)				
效率 Efficiency	%	1 2	3-20 15-200	≥ 95% ≥ 92%				
重量 Weight	kg	1 2	3-20 15-200	1.1 1.6	2.2 2.9/2.1	6.3 8.3/5.0	13.5 14.8	25.1 26.7
安裝方向 Mounting Position	-	1,2	3-200	任意方向 Any direction				
噪音值 Noise Level ²	dBA/1m	1,2	3-200	62	64	66	68	70
防護等級 Protection Class	-	1,2	3-200	IP65				
潤滑 Lubrication	-	1,2	3-200	全合成潤滑油脂 Synthetic Lubricant				
減速機轉動慣量 Inertia(J1)								
節數Stage	減速比Ratio	單位unit		PGFR-42	PGFR-60	PGFR-90	PGFR-115	PGFR-142
1	3/4/5/7	Kg • cm ²		0.06	0.40	2.28	6.87	24.2
	10/14/20			0.05	0.30	1.45	4.76	14.5
節數Stage	減速比Ratio			PGFR-42	PGFR-60(T)	PGFR-90(T)	PGFR-115T	PGFR-142T
2	15/20/25/35			0.06	0.40(0.08)	2.28(0.72)	3.02	7.83
	others			0.05	0.30(0.06)	1.45(0.38)	1.64	5.00

* 1. 輸出轉速 100rpm 時，作用於輸出軸中心位置。Applied to the output shaft center @100rpm.

* 2. 3000rpm 空載量測。Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load.

※本公司有權對以上數據規格逕行設計變更不先行告知。The above figures/specifications are subject to change without prior notice.

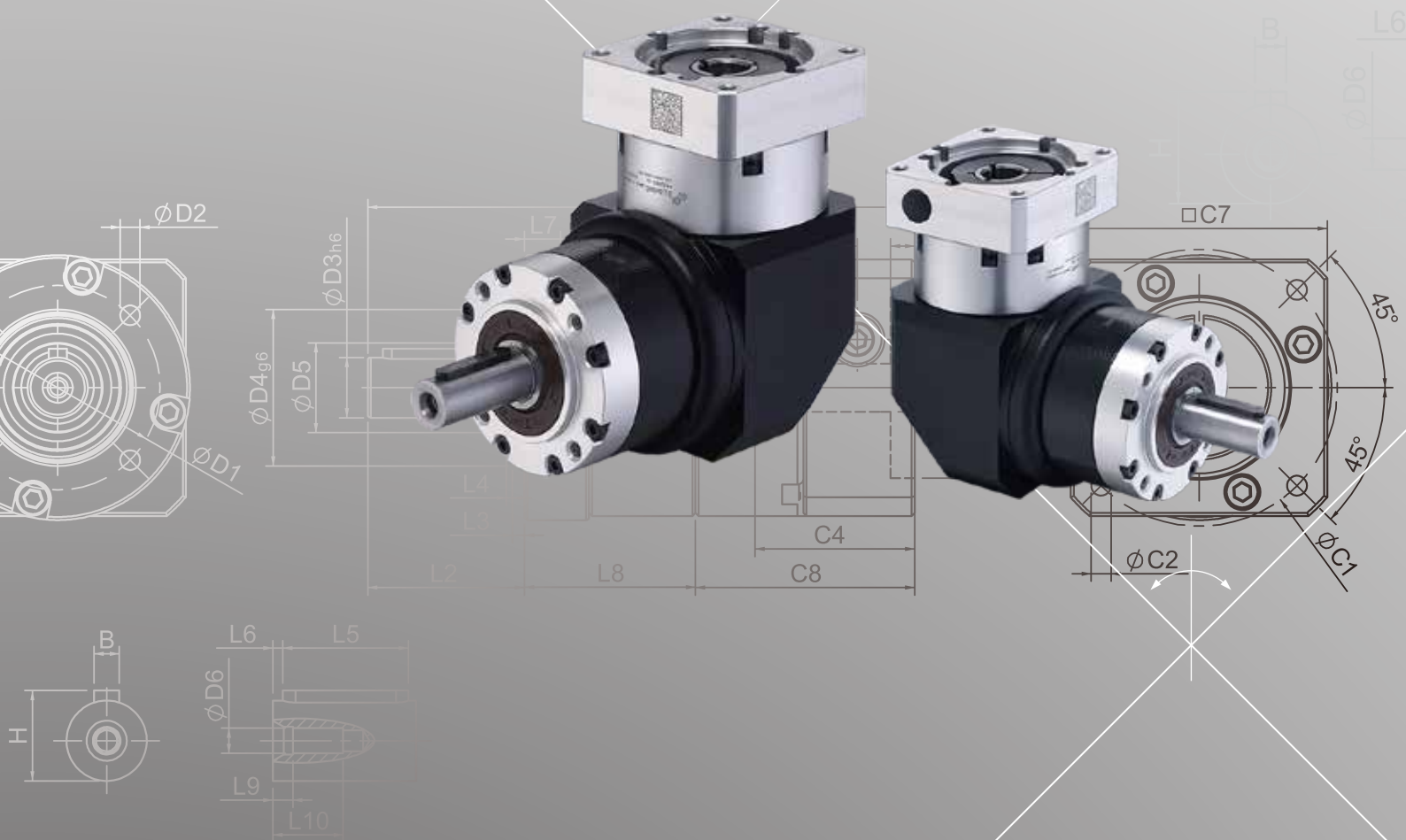
Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.

產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

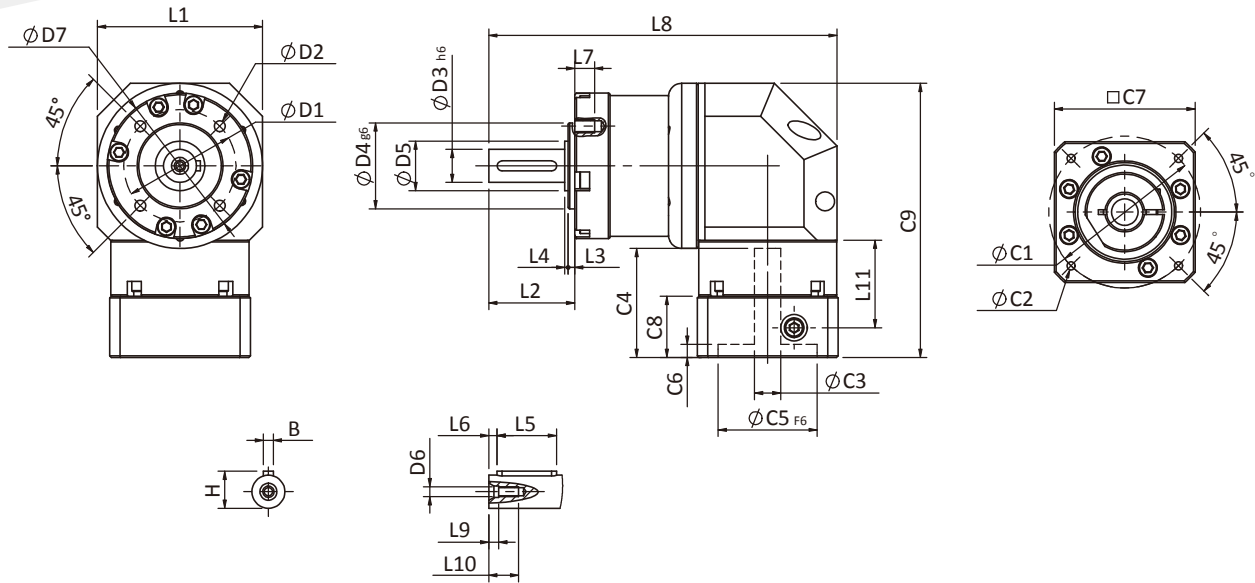
PLANETARY GEARHEADS



PNSR SERIES



PNSR Single Stage Dimensions PNSR單段外型尺寸圖



Specifications 規格

Unit:mm

尺寸 Dimensions	PNSR40	PNSR60	PNSR80	PNSR120
D1	34	52	70	-
D2	M4x0.7P	M5x0.8P	M6x1.0P	-
D3 _{h6}	10	14	20	-
D4 _{g6}	26	40	60	-
D5	15	20	35	-
D6	M3x0.5P	M5x0.8P	M6x1.0P	-
D7	44	60	90	-
L1	50	70	-	-
L2	26	35	40	-
L3	2	3	3	-
L4	1	1	1	-
L5	18	25	28	-
L6	2.5	2.5	4	-
L7	6	8	10	-
L8	105.4	139.7	189.2	-
L9	3	4	4.5	-
L10	9	16.5	16.5	-
L11	26.5	36	40.7	-
C1 ²	46	70	90	-
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	-
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	-
C4 ²	33	44	57	-
C5 ² _{F6}	30	50	70	-
C6 ²	4	4	6	-
C7 ²	42.6	60	90	-
C8 ²	18.5	20	26	-
C9 ²	83	111.4	150.2	-
B	3	5	6	-
H	11.2	16	22.5	-

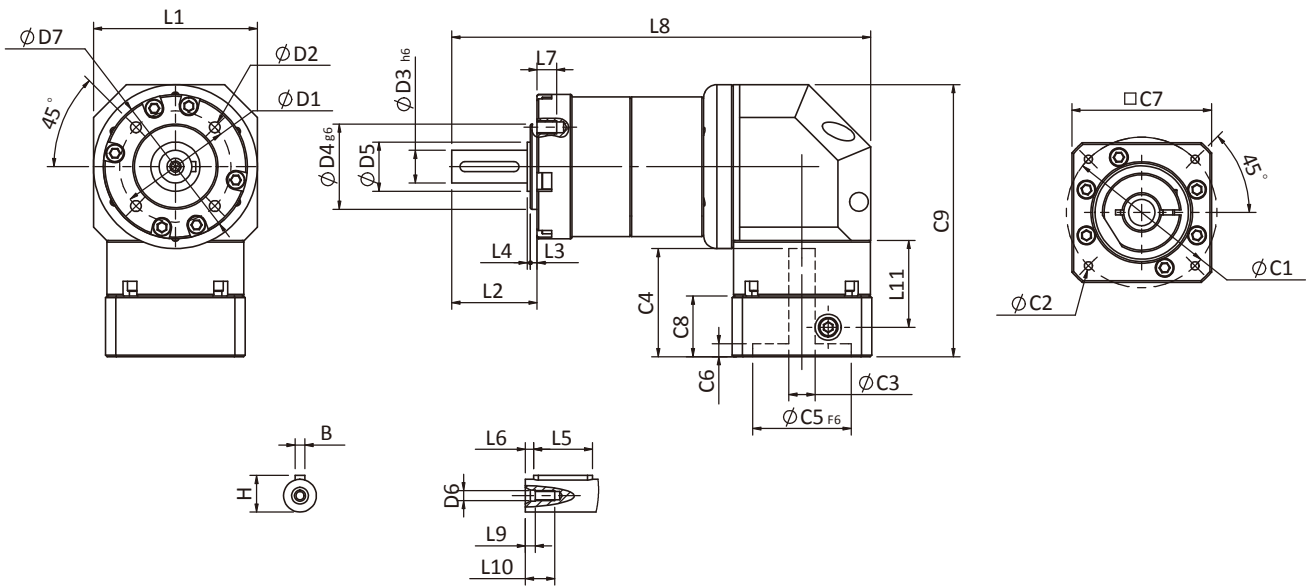
* C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定.

* 本公司有權針對以上數據規格進行設計變更不先行告知.

* C1~C9 are motor specific dimensions(metric std shown).
Size may vary according to motor flange.

* Specification subject to change without notice.

PNSR Double Stage Dimensions-1 PNSR雙段外型尺寸圖-1



Specifications 規格

Unit:mm

尺寸 Dimensions	PNSR40	PNSR60	PNSR80	PNSR120
D1	34	52	70	-
D2	M4x0.7P	M5x0.8P	M6x1.0P	-
D3 _{h6}	10	14	20	-
D4 _{g6}	26	40	60	-
D5	15	20	35	-
D6	M3x0.5P	M5x0.8P	M6x1.0P	-
D7	44 (45)	60	90	-
L1	50	70	-	-
L2	26	35	40	-
L3	2	3	3	-
L4	1	1	1	-
L5	18	25	28	-
L6	2.5	2.5	4	-
L7	6	8	10	-
L8	127.9	166.7	223	-
L9	3	4	4.5	-
L10	9	16.5	16.5	-
L11	26.5	36	40.7	-
C1 ²	46	70	90	-
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	-
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	-
C4 ²	33	44	57	-
C5 ² _{F6}	30	50	70	-
C6 ²	4	4	6	-
C7 ²	42.6	60	90	-
C8 ²	18.5	20	26	-
C9 ²	83	111.4	150.2	-
B	3	5	6	-
H	11.2	16	22.5	-

*1. 減速比100、200、300時，D7=45

*2. C1~C9是公製標準馬達連接板尺寸，請依所選用的馬達決定。

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

*1. D7=45 when gear ratios are 100, 200, and 300.

*2. C1~C9 are motor specific dimensions (metric std shown).
Sizes may vary according to the motor flange chosen.

★ Specification subject to change without notice.



Unit:mm

尺寸 Dimensions	PNSR60T	PNSR80T	PNSR120T
D1	52	70	100
D2	M5x0.8P	M6x1.0P	M10x1.5P
D3 _{h6}	14	20	25
D4 _{g6}	40	60	80
D5	20	35	40
D6	M5x0.8P	M6x1.0P	M10x1.5P
D7	60	90	116
L1	-	-	-
L2	35	40	55
L3	3	3	4
L4	1	1	1
L5	25	28	40
L6	2.5	4	5
L7	8	10	15
L8	140.7	181.8	268.9
L9	4	4.5	6
L10	16.5	16.5	26
L11	26.5	36	40.7
C1 ²	46	70	90
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24
C4 ²	33	44	57
C5 ² _{F6}	30	50	70
C6 ²	4	4	6
C7 ²	42.6	60	90
C8 ²	18.5	20	26
C9 ²	83	111.4	150.2
B	5	6	8
H	16	22.5	28

★ 本公司有權針對以上數據規格逕行設計變更不先行告知.

★ Specification subject to change without notice.

PNSR Specifications Table PNSR性能規格共表

規格 Specifications		節數 Stage	減速比 Ratio	PNSR-40	PNSR-60	PNSR-80	PNSR-120
額定輸出力矩 T_{2N} Nominal Output Torque	N • m	1	3	9	28	85	200
			4	10	32	80	215
			5	11	35	95	215
			7	10	28	85	200
			8	10	32	80	215
			9	9	28	85	200
			10	11	35	95	215
			12	10	32	80	215
			14	10	28	85	200
		15	11	35	95	215	
		16	8	23	75	195	
		節數 Stage	減速比 Ratio	PNSR-40	PNSR-60/ PNSR-60T	PNSR-80/ PNSR-80T	PNSR-120T
		2	20	11	35/31	95/95	215
			25	11	35/30	95/95	215
			30	11	35/30	95/95	215
			35	11	35/28	95/95	215
			40	11	35/31	95/95	215
			50	11	35/30	95/95	215
	60		11	35/30	95/95	215	
	70		10	35/28	95/95	215	
	80		11	35/27	95/92	215	
	98		10	-	-	-	
	100		-	35/27	95/82	205	
	120		11	35/27	95/92	215	
	160	-	23/23	75/75	195		
	200	8	21/21	65/65	180		
	243	8	23/23	75/75	195		
	300	8	21/21	65/65	180		
急停力矩 T_{2NOT} Emergency Stop Torque	N • m	2.5 倍額定輸出力矩 (2.5 times of Nominal Output Torque) * 最大輸出力矩 Max. Output Torque T_{2B} =60% of Emergency Stop Torque)					
額定輸入轉速 n_{1N} Nominal Input Speed	rpm	1,2	3-300	4500	4000	3000	2500
最大輸入轉速 n_{1max} Max. Input Speed	rpm	1,2	3-300	7500	7000	6000	5000
標準背隙 Standard Backlash P2	arcmin	1 2	3-16 20-300	≤ 18 ≤ 20	≤ 15 ≤ 17	≤ 13 ≤ 15	≤ 11 ≤ 13
扭轉剛性 Torsional Rigidity	N • m /arcmin	1,2	3-300	1.2	3.5	8.5	17
容許徑向力 F_{2rB}^1 Max. Radial Load	N	1,2	3-300	580	890	2050	4370
容許軸向力 F_{2aB}^1 Max. Axial Load	N	1,2	3-300	410	430	1100	2630
使用溫度 Operating Temp.	°C	1,2	3-300	-10°C ~ +90°C			
使用壽命 Service Life	hr	1,2	3-300	20,000 (10,000 連續運轉 Continuous operation)			
效率 Efficiency	%	1 2	3-16 20-300	$\geq 95\%$ $\geq 90\%$			
重量 Weight	kg	1 2	3-16 20-300	1.0 1.2	2.4 2.9/2.7	6.1 8.1/6.5	12.2 13.8
安裝方向 Mounting Position	-	1,2	3-300	任意方向 Any direction			
噪音值 Noise Level ²	dBA/1m	1,2	3-300	66	68	70	73
防護等級 Protection Class	-	1,2	3-300	IP 65			
潤滑 Lubrication	-	1,2	3-300	全合成潤滑油脂 Synthetic Lubricant			
減速機轉動慣量 Inertia (J1)							
節數 Stage	減速比 Ratio	單位 unit	PNSR-40 (ϕ 8)	PNSR-60 (ϕ 14)	PNSR-80 (ϕ 19)	PNSR-120 (ϕ 24)	
1	3, 4, 5, 7	Kg • cm ²	0.07	0.40	2.30	6.80	
	其它比數 Other ratios		0.05	0.30	1.50	4.70	
節數 Stage	減速比 Ratio		PNSR-40 (ϕ 8)	PNSR-60 (ϕ 14) PNSR-60T (ϕ 8)	PNSR-80 (ϕ 19) PNSR-80T (ϕ 14)	PNSR-120T (ϕ 19)	
2	20, 25, 35		0.07	0.40/0.07	2.30/0.40	2.30	
	其它比數 Other ratios		0.05	0.30/0.05	1.50/0.30	1.50	

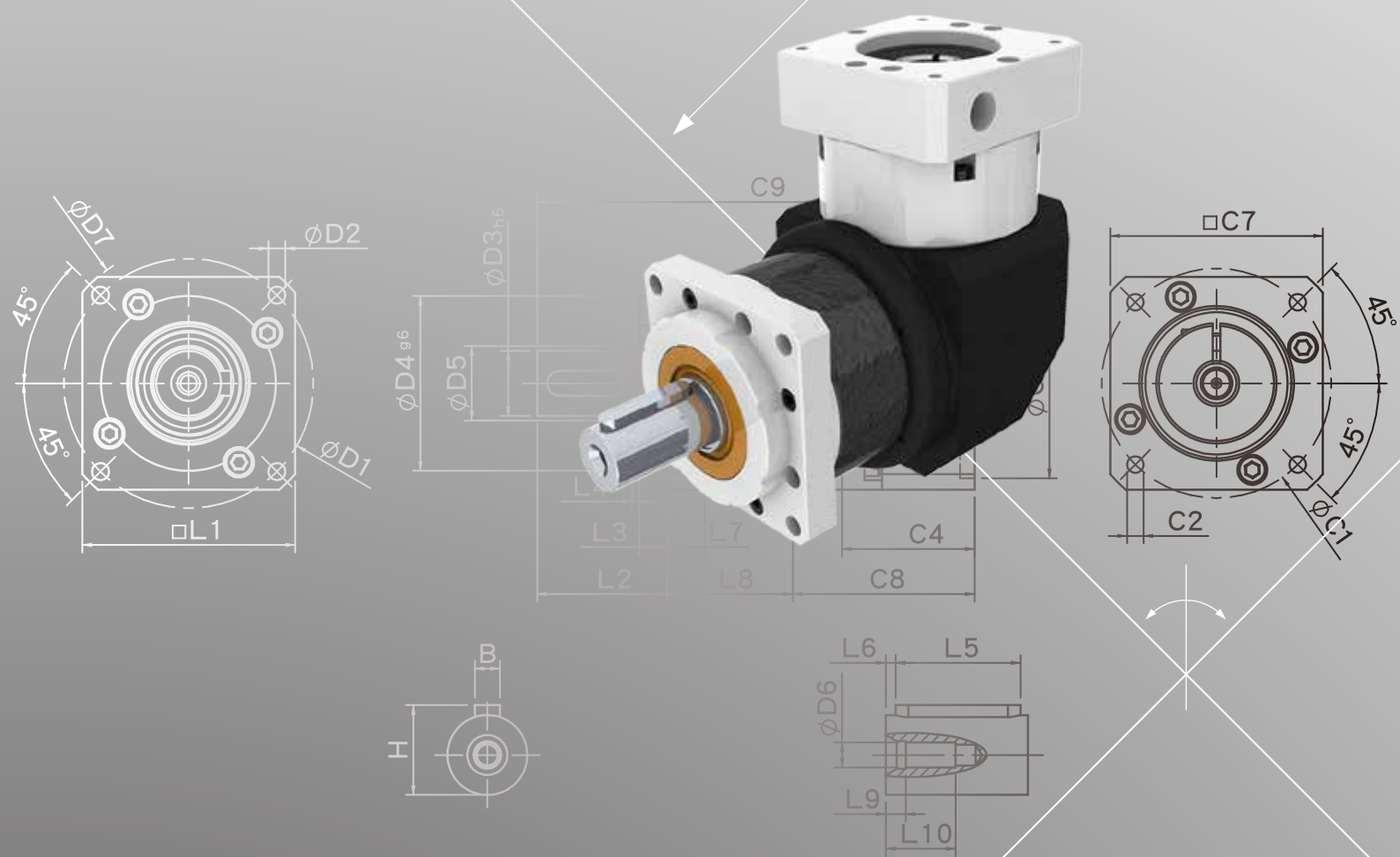
* 1. 輸出轉速 100rpm 時，作用於輸出軸中心位置。Applied to the output shaft center @100rpm.

* 2. 3000rpm 空載量測。Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load.

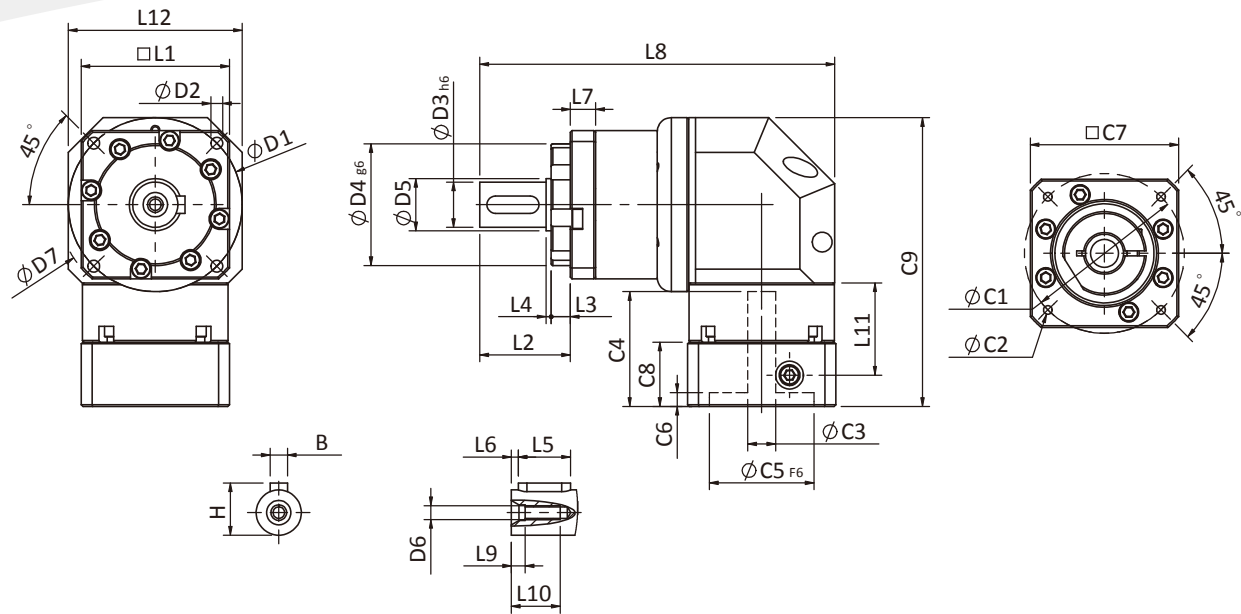
※本公司有權對以上數據規格逕行設計變更不先行告知。The above figures/specifications are subject to change without prior notice.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.
產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

PAER SERIES



PAER Single Stage Dimensions PAER單段外型尺寸圖



Specifications 規格

Unit:mm

尺寸 Dimensions	PAER42	PAER60	PAER90	PAER115
D1	50	70	100	-
D2	3.4	5.5	6.5	-
D3 _{h6}	13	16	22	-
D4 _{g6}	35	50	80	-
D5	15	20	35	-
D6	M4x0.7P	M5x0.8P	M8x1.25P	-
D7	56	80	118	-
L1	42.6	60	90	-
L2	26	37	48	-
L3	5.5	7	10	-
L4	1.5	1.5	1.5	-
L5	15	25	32	-
L6	2	2	3	-
L7	7.3	10	12	-
L8	102	143.6	194.5	-
L9	4	4	4.5	-
L10	14	16.5	20.5	-
L11	26.5	36	40.7	-
L12	50	70	98	-
C1 ²	46	70	90	-
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	-
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	-
C4 ²	33	44	57	-
C5 ² _{F6}	30	50	70	-
C6 ²	4	4	6	-
C7 ²	42.6	60	90	-
C8 ²	18.5	20	26	-
C9 ²	83	111.4	149.2	-
B	5	5	6	-
H	15	18	24.5	-

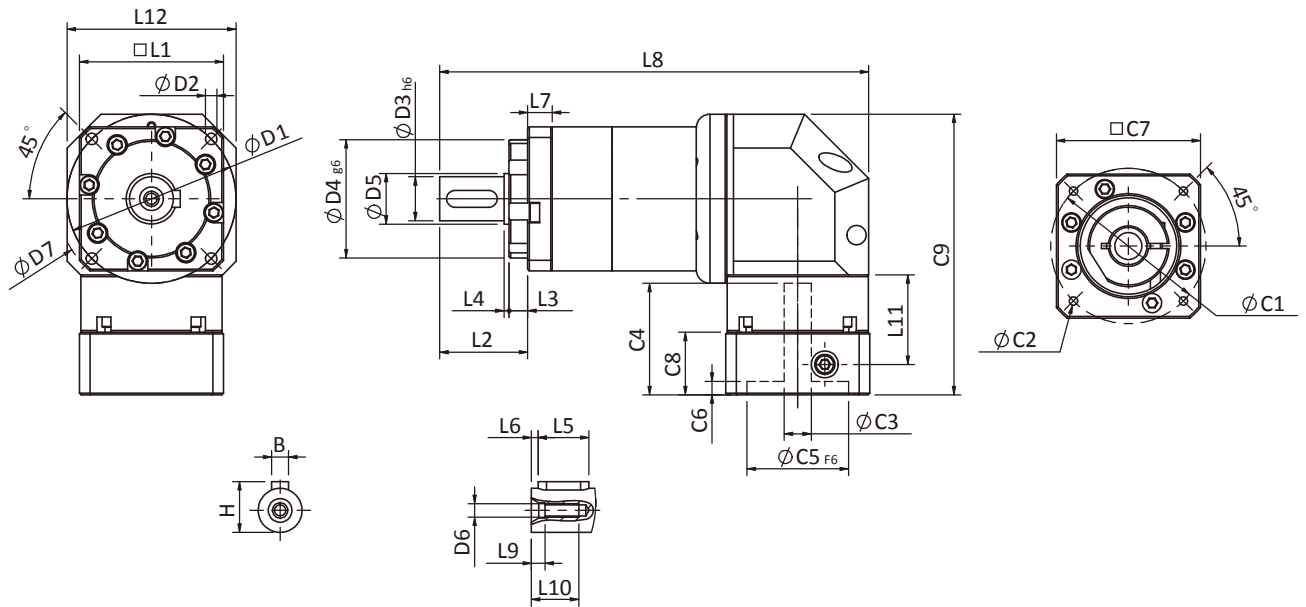
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定.

★ 本公司有權針對以上數據規格逕行設計變更不先行告知.

★ C1~C9 are motor specific dimensions(metric std shown).
Size may vary according to motor flange.

★ Specification subject to change without notice.

PAER Double Stage Dimensions-1 PAER雙段外型尺寸圖-1



Specifications 規格

Unit:mm

尺寸 Dimensions	PAER42	PAER60	PAER90	PAER115
D1	50	70	100	-
D2	3.4	5.5	6.5	-
D3 _{h6}	13	16	22	-
D4 _{g6}	35	50	80	-
D5	15	20	35	-
D6	M4x0.7P	M5x0.8P	M8x1.25P	-
D7	56	80	118	-
L1 ¹	42.6 (44)	60	90	-
L2	26	37	48	-
L3	5.5	7	10	-
L4	1.5	1.5	1.5	-
L5	15	25	32	-
L6	2	2	3	-
L7	7.3	10	12	-
L8	126.9	174.3	235.5	-
L9	4	4	4.5	-
L10	14	16.5	20.5	-
L11	26.5	36	40.7	-
L12	50	70	98	-
C1 ²	46	70	90	-
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	-
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24	-
C4 ²	33	44	57	-
C5 ² _{F6}	30	50	70	-
C6 ²	4	4	6	-
C7 ²	42.6	60	90	-
C8 ²	18.5	20	26	-
C9 ²	83	111.4	149.2	-
B	5	5	6	-
H	15	18	24.5	-

*1. 減速比100、200、300時，L1=44

*2. C1~C9是公製標準馬達連接板尺寸，請依所選用的馬達決定。

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

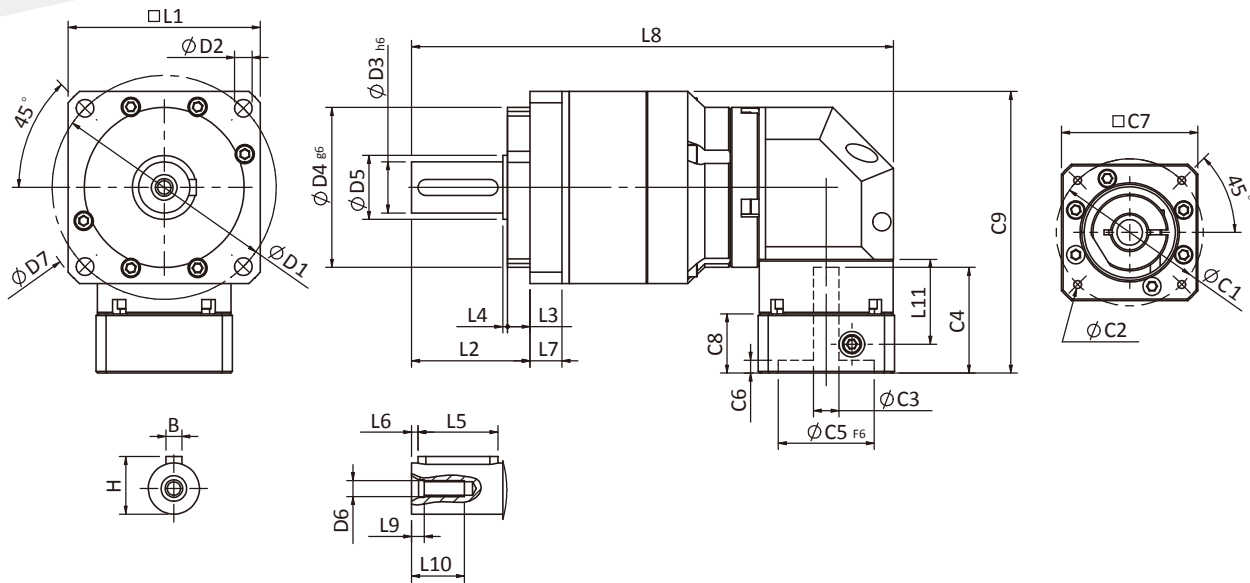
*1. L1=44 when gear ratios are 100, 200, and 300.

*2. C1~C9 are motor specific dimensions (metric std shown).

Sizes may vary according to the motor flange chosen.

★ Specification subject to change without notice.

PAER Double Stage Dimensions-2 PAER雙段外型尺寸圖-2



Specifications 規格

Unit:mm

尺寸 Dimensions	PAER60T	PAER90T	PAER115T
D1	70	100	130
D2	5.5	6.5	9
D3 _{h6}	16	22	32
D4 _{g6}	50	80	110
D5	20	35	44
D6	M5x0.8P	M8x1.25P	M12x1.75P
D7	80	118	148
L1	60	90	115
L2	37	48	65
L3	7	10	12
L4	1.5	1.5	2
L5	25	32	40
L6	2	3	5
L7	10	12	16
L8	150.6	190.6	268.1
L9	4	4.5	6
L10	16.5	20.5	30
L11	26.5	36	40.7
C1 ²	46	70	90
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24
C4 ²	33	44	57
C5 ² _{F6}	30	50	70
C6 ²	4	4	6
C7 ²	42.6	60	90
C8 ²	18.5	20	26
C9 ²	88	121.4	157.7
B	5	6	10
H	18	24.5	35

*2. C1~C9是公製標準馬達連接板尺寸，請依所選用的馬達決定。

*2. C1~C9 are motor specific dimensions (metric std shown).
Sizes may vary according to the motor flange chosen.

★ 本公司有權針對以上數據規格進行設計變更不先行告知。

★ Specification subject to change without notice.

PAER Specifications Table PAER性能規格共表

規格 Specifications		節數 Stage	減速比 Ratio	PAER-42	PAER-60	PAER-90	PAER-115
額定輸出力矩 T_{2N} Nominal Output Torque	N • m	1	3	9	28	85	135
			4	10	32	80	180
			5	11	35	95	215
			7	10	28	85	220
			8	10	32	80	210
			9	9	25	75	210
			10	11	35	95	210
			12	10	32	80	-
			14	10	28	85	220
		15	11	35	95	-	
		節數 Stage	減速比 Ratio	PAER-42	PAER-60/ PAER-60T	PAER-90/ PAER-90T	PAER-115T
		2	20	10	32	80	240
			25	11	35	95	240
			30	11	34	90	230
			35	11	35	95	240
			40	10	32	80	240
			50	11	35	95	240
			60	11	35	95	240
			70	11	35	95	240
			80	11	35	95	240
			100	8	35	95	240
			120	11	35	95	240
			140	-	28	85	220
			200	8	21	65	190
			300	8	21	65	190
急停力矩 T_{2NOT} Emergency Stop Torque	N • m	2.5 倍額定輸出力矩 (2.5 times of Nominal Output Torque) * 最大輸出力矩 Max. Output Torque T_{2B} =60% of Emergency Stop Torque)					
額定輸入轉速 n_{1N} Nominal Input Speed	rpm	1,2	3-300	4500	4000	3000	2500
最大輸入轉速 n_{1max} Max. Input Speed	rpm	1,2	3-300	7500	7000	6000	5000
標準背隙 Standard Backlash P2	arcmin	1 2	3-16 20-300	≤ 18 ≤ 20	≤ 15 ≤ 17	≤ 13 ≤ 15	≤ 11 ≤ 13
扭轉剛性 Torsional Rigidity	N • m /arcmin	1,2	3-300	1.5	4.0	8.5	17
容許徑向力 F_{2rB}^1 Max. Radial Load	N	1,2	3-300	760	1250	2030	4200
容許軸向力 F_{2aB}^1 Max. Axial Load	N	1,2	3-300	410	700	1200	2600
使用溫度 Operating Temp.	°C	1,2	3-300	-10°C ~ +90°C			
使用壽命 Service Life	hr	1,2	3-300	20,000 (10,000 連續運轉 Continuous operation)			
效率 Efficiency	%	1 2	3-16 20-300	$\geq 95\%$ $\geq 90\%$			
重量 Weight	kg	1 2	3-16 20-300	1.1 1.3	2.6 3.2/3.0	6.5 8.7/7.1	13.4 15.1
安裝方向 Mounting Position	-	1,2	3-300	任意方向 Any direction			
噪音值 Noise Level ²	dBA/1m	1,2	3-300	66	68	70	73
防護等級 Protection Class	-	1,2	3-300	IP 65			
潤滑 Lubrication	-	1,2	3-300	全合成潤滑油脂 Synthetic Lubricant			
減速機轉動慣量 Inertia (J1)							
節數 Stage	減速比 Ratio	單位 unit		PAER-42 (ϕ 8)	PAER-60 (ϕ 14)	PAER-90 (ϕ 19)	PAER-115 (ϕ 24)
1	3, 4, 5, 7	Kg • cm ²		0.07	0.40	2.0	2.7
	其它比數 Other ratios			0.05	0.30	1.5	2.2
節數 Stage	減速比 Ratio			PAER-42 (ϕ 8)	PAER-60 (ϕ 14) PAER-60T (ϕ 8)	PAER-90 (ϕ 19) PAER-90T (ϕ 14)	PAER-115T (ϕ 19)
2	20, 25, 35			0.07	0.40/0.07	2.30/0.40	2.2
	其它比數 Other ratios			0.05	0.30/0.05	1.50/0.30	1.5

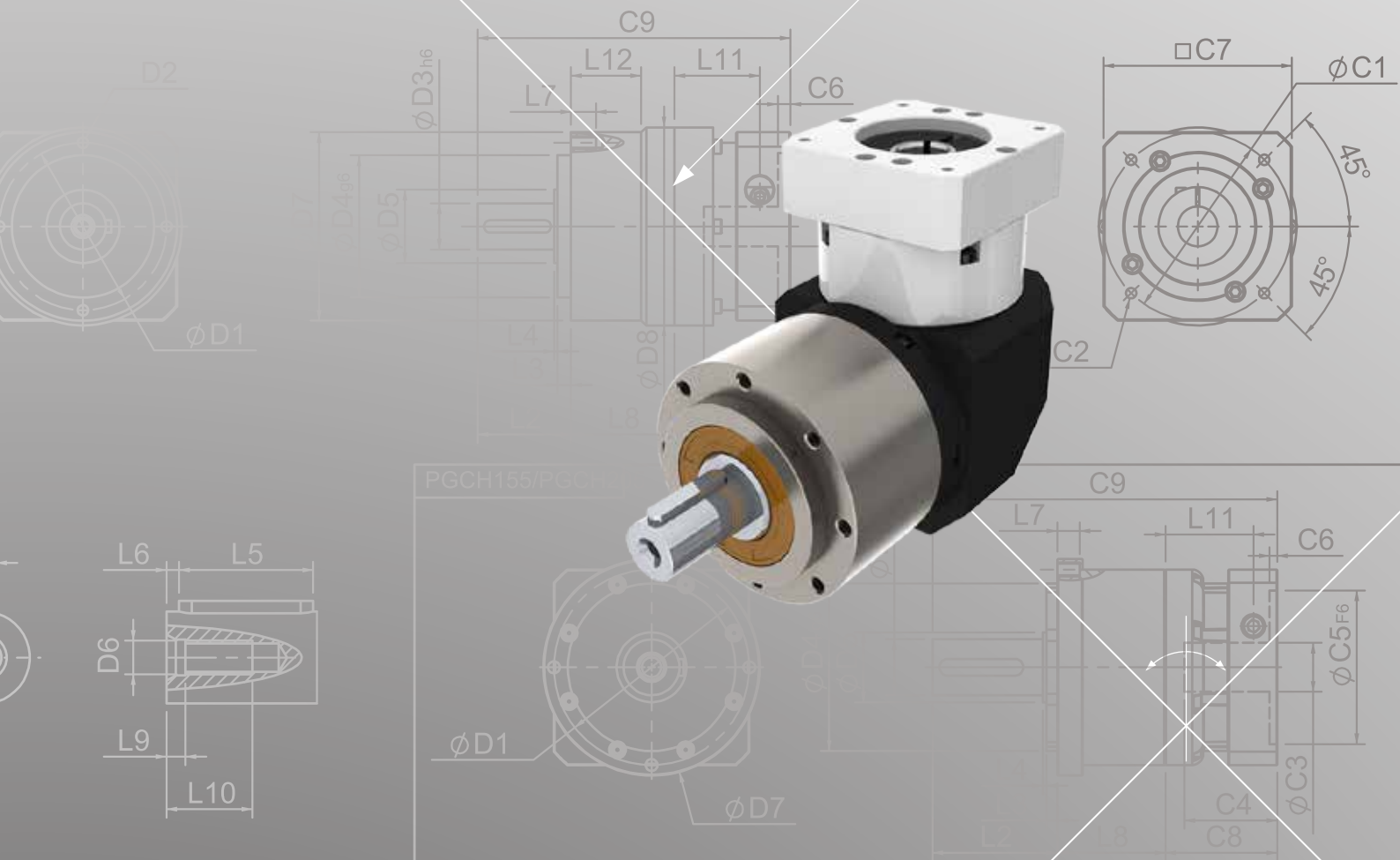
* 1. 輸出轉速 100rpm 時，作用於輸出軸中心位置。Applied to the output shaft center @100rpm.

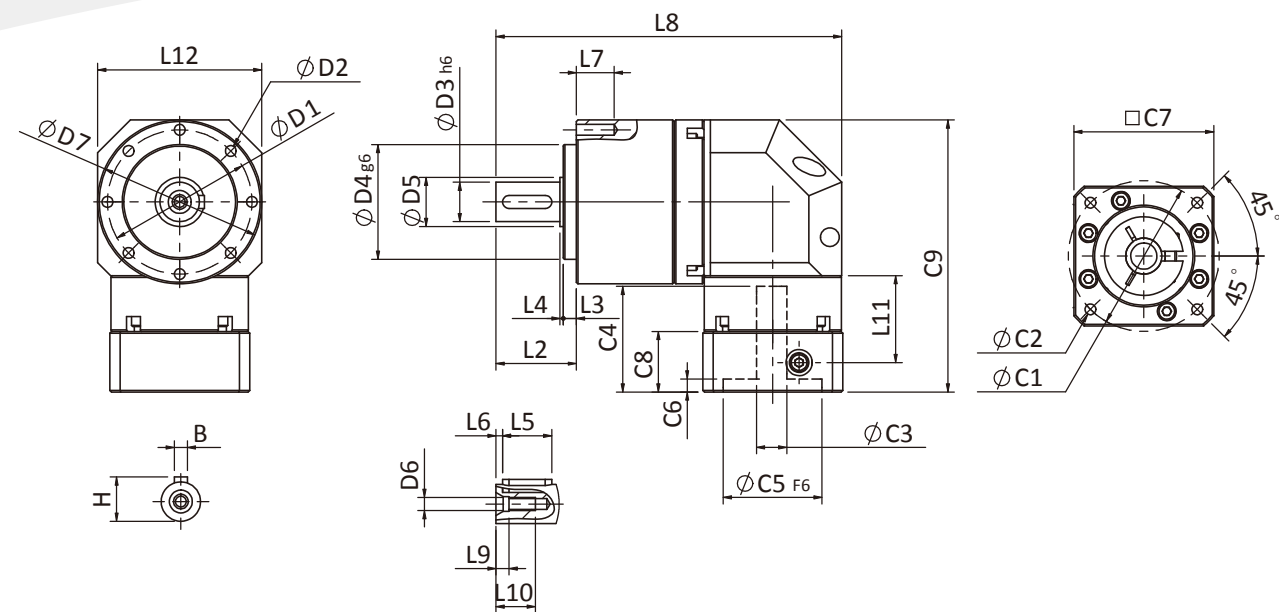
* 2. 3000rpm 空載量測。Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load.

※本公司有權對以上數據規格逕行設計變更不先行告知。The above figures/specifications are subject to change without prior notice.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.
產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。

PGCHR SERIES





Unit:mm

尺寸 Dimensions	PGCHR50	PGCHR70	PGCHR90
D1	44	62	80
D2	M4x0.7P	M5x0.8P	M6x1.0P
D3 _{h6}	12	16	22
D4 _{g6}	35	52	68
D5	15	25	35
D6	M4x0.7P	M5x0.8P	M8x1.25P
D7	50	70	90
-	-	-	-
L2	24.5	36	44.5
L3	4	6	6.5
L4	1	1.5	1.5
L5	15	25	32
L6	2	2	3
L7	8	10	12
L8	105.3	144.3	201
L9	4	4	4.5
L10	12	16.5	20.5
L11	26.5	36	41.2
L12	50	70	98
C1 ²	46	70	90
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24
C4 ²	33	44	57
C5 ² _{F6}	30	50	70
C6 ²	4	4	6
C7 ²	42.6	60	90
C8 ²	18.5	20	26
C9 ²	83	111.4	149.2
B	4	5	6
H	13.5	18	24.5

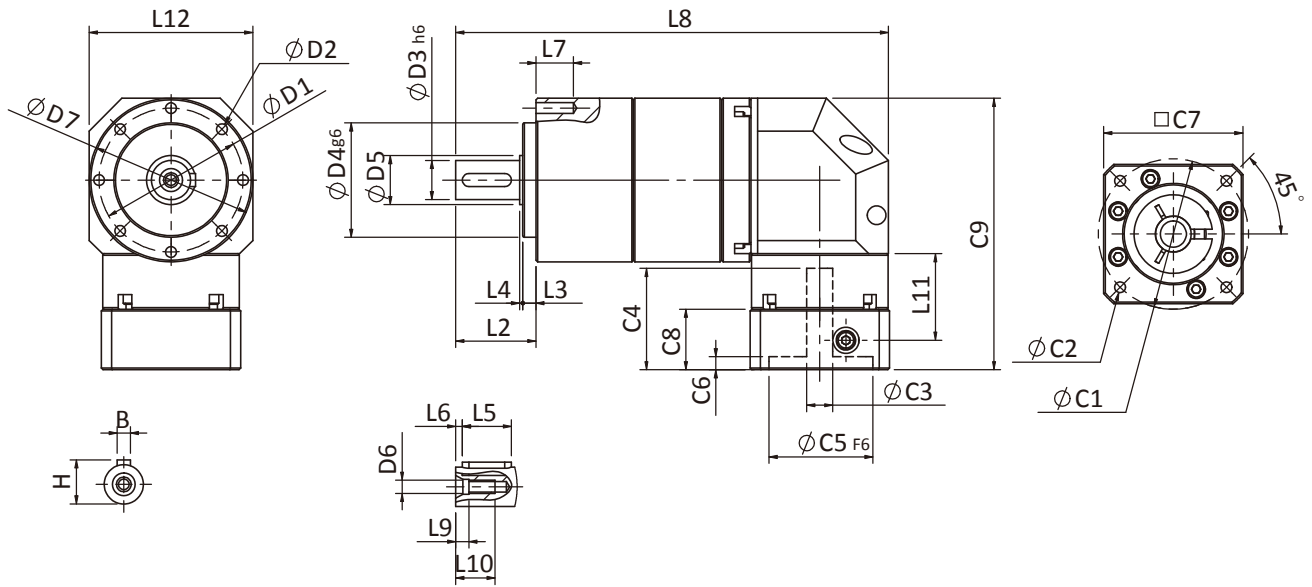
*2. C1~C9是公製標準馬達連接板尺寸，請依所選用的馬達決定。

*2. C1~C9 are motor specific dimensions (metric std shown).
 Sizes may vary according to the motor flange chosen.

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

★ Specification subject to change without notice.

PGCHR Double Stage Dims.-1 PGCHR雙段外型尺寸圖-1



Specifications 規格

Unit:mm

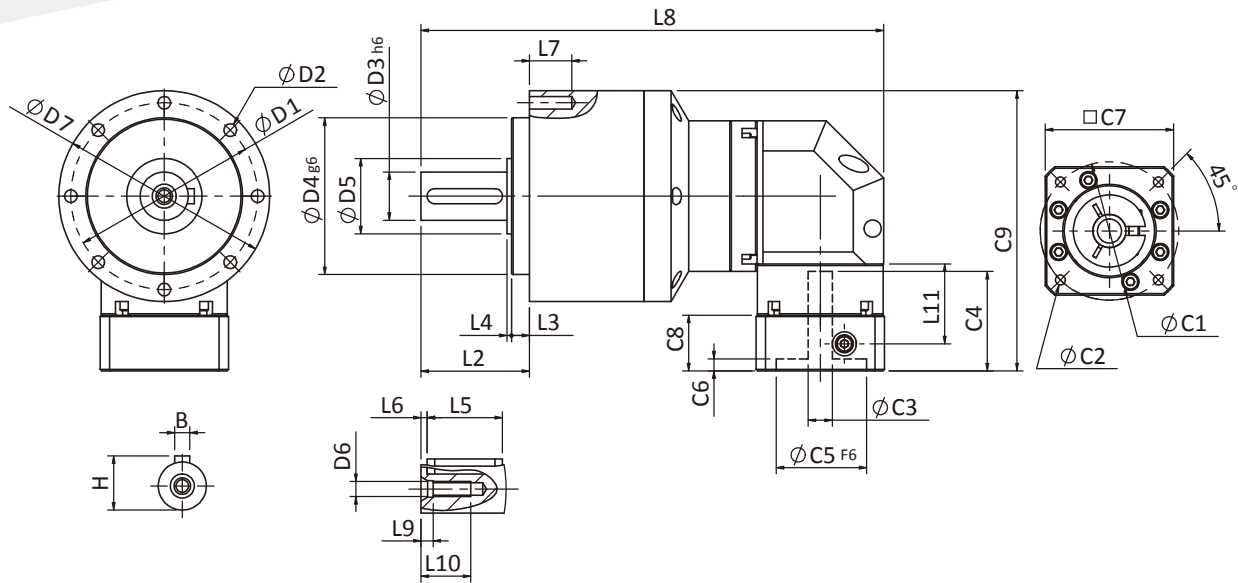
尺寸 Dimensions	PGCHR50	PGCHR70	PGCHR90
D1	44	62	80
D2	M4x0.7P	M5x0.8P	M6x1.0P
D3 h ₆	12	16	22
D4 g ₆	35	52	68
D5	15	25	35
D6	M4x0.7P	M5x0.8P	M8x1.25P
D7	50	70	90
-	-	-	-
L2	24.5	36	44.5
L3	4	6	6.5
L4	1	1.5	1.5
L5	15	25	32
L6	2	2	3
L7	8	10	12
L8	132.3	177.3	245
L9	4	4	4.5
L10	12	16.5	20.5
L11	26.5	36	41.2
L12	50	70	98
C1 ²	46	70	90
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24
C4 ²	33	44	57
C5 ² F ₆	30	50	70
C6 ²	4	4	6
C7 ²	42.6	60	90
C8 ²	18.5	20	26
C9 ²	83	111.4	149.2
B	4	5	6
H	13.5	18	24.5

*2. C1~C9是公製標準馬達連接板尺寸，請依所選用的馬達決定。 *2. C1~C9 are motor specific dimensions (metric std shown).
 Sizes may vary according to the motor flange chosen.

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

★ Specification subject to change without notice.

PGCHR Double Stage Dims.-2 PGCHR雙段外型尺寸圖-2



Specifications 規格

Unit:mm

尺寸 Dimensions	PGCHR70T	PGCHR90T	PGCHR120T
D1	62	80	108
D2	M5x0.8P	M6x1.0P	M8x1.25P
D3 _{h6}	16	22	32
D4 _{g6}	52	68	90
D5	25	35	45
D6	M5x0.8P	M8x1.25P	M12x1.75P
D7	70	90	120
-	-	-	-
L2	36	44.5	60
L3	6	6.5	7
L4	1.5	1.5	3.5
L5	25	32	40
L6	2	3	5
L7	10	12	16
L8	153.5	196.8	269.5
L9	4	4.5	6
L10	16.5	20.5	30
L11	26.5	36	41.2
C1 ²	46	70	90
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P
C3 ²	≤8/≤11	≤14/≤19	≤19/≤24
C4 ²	33	44	57
C5 _{F6} ²	30	50	70
C6 ²	4	4	6
C7 ²	42.6	60	90
C8 ²	18.5	20	26
C9 ²	93	123.65	160.2
B	5	6	10
H	18	24.5	35

*2. C1~C9是公製標準馬達連接板尺寸，請依所選用的馬達決定。

*2. C1~C9 are motor specific dimensions (metric std shown).
Sizes may vary according to the motor flange chosen.

★ 本公司有權針對以上數據規格逕行設計變更不先行告知。

★ Specification subject to change without notice.

PGCHR Specs. Table PGCHR性能規格共表

規格 Specifications		節數 Stage	減速比 Ratio	PGCHR-50	PGCHR-70	PGCHR-90	PGCHR-120
額定輸出力矩 T_{2N} Nominal Output Torque	N • m	1	3	16	36	105	135
			4	18	48	140	180
			5	17	54	140	225
			7	14	44	125	270
			8	18	48	140	240
			9	16	35	95	220
			10	17	50	140	210
			12	18	40	120	-
			14	14	44	125	270
		15	17	45	135	-	
		20	11	37	95	220	
		節數 Stage	減速比 Ratio	PGCHR-50	PGCHR-70/ PGCHR-70T	PGCHR-90/ PGCHR-90T	PGCHR-120T
		2	20	20	55	150	300
			25	17	54	140	290
			30	19	53	145	290
			35	17	54	140	290
			40	20	55	150	290
			50	17	54	140	290
			60	17	54	140	290
	70		17	54	140	290	
	80		17	54	140	290	
	100		17	54	140	290	
	120		17	54	140	290	
	140	14	44	125	270		
	200	11	37	95	220		
300	11	37	95	220			
急停力矩 T_{2NOT} Emergency Stop Torque	N • m	2.5 倍額定輸出力矩 (2.5 times of Nominal Output Torque) * 最大輸出力矩 Max. Output Torque T_{2B} =60% of Emergency Stop Torque)					
額定輸入轉速 n_{1N} Nominal Input Speed	rpm	1,2	3-300	4500	4000	3600	3600
最大輸入轉速 n_{1max} Max. Input Speed	rpm	1,2	3-300	7500	8000	6000	6000
標準背隙 Standard Backlash P2	arcmin	1 2	3-16 20-300	≤ 10 ≤ 12	≤ 10 ≤ 12	≤ 9 ≤ 11	≤ 8 ≤ 10
扭轉剛性 Torsional Rigidity	N • m /arcmin	1,2	3-300	2.5	6	12	23
容許徑向力 F_{2rB}^1 Max. Radial Load	N	1,2	3-300	640	1260	2030	4200
容許軸向力 F_{2aB}^1 Max. Axial Load	N	1,2	3-300	410	600	1200	2600
使用溫度 Operating Temp.	°C	1,2	3-300	-10°C ~ +90°C			
使用壽命 Service Life	hr	1,2	3-300	20,000 (10,000 連續運轉 Continuous operation)			
效率 Efficiency	%	1 2	3-16 20-300	$\geq 95\%$ $\geq 92\%$			
重量 Weight	kg	1 2	3-16 20-300	1.1 1.4	2.6 3.3/3.0	6.8 9.5/7.3	14.9 16.7
安裝方向 Mounting Position	-	1,2	3-300	任意方向 Any direction			
噪音值 Noise Level ²	dBA/1m	1,2	3-300	62	64	66	68
防護等級 Protection Class	-	1,2	3-300	IP 65			
潤滑 Lubrication	-	1,2	3-300	全合成潤滑油脂 Synthetic Lubricant			
減速機轉動慣量 Inertia (J1)							
節數 Stage	減速比 Ratio	單位 unit	PGCHR-50 (ϕ 8)	PGCHR-70 (ϕ 14)	PGCHR-90 (ϕ 19)	PGCHR-120 (ϕ 24)	
1	3, 4, 5, 7	Kg • cm ²	0.07	0.40	2.0	2.7	
	其它比數 Other ratios		0.05	0.30	1.5	2.2	
節數 Stage	減速比 Ratio		PGCHR-50 (ϕ 8)	PGCHR-70 (ϕ 14) PGCHR-70T (ϕ 8)	PGCHR-90 (ϕ 19) PGCHR-90T (ϕ 14)	PGCHR-120T (ϕ 19)	
2	20, 25, 35		0.07	0.40/0.07	2.30/0.40	2.0	
	其它比數 Other ratios		0.05	0.30/0.05	1.50/0.30	1.5	
* 1. 輸出轉速 100rpm 時，作用於輸出軸中心位置。Applied to the output shaft center @100rpm. * 2. 3000rpm 空載量測。Measured at 3000 rpm with no load. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at nominal input speed or 3000 rpm (if nominal input speed is higher than 3000 rpm) with no load. ※本公司有權對以上數據規格逕行設計變更不先行告知。The above figures/specifications are subject to change without prior notice.							

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.
產品因人為原因或天災等因素導致不良或損壞，不在保固範圍內。