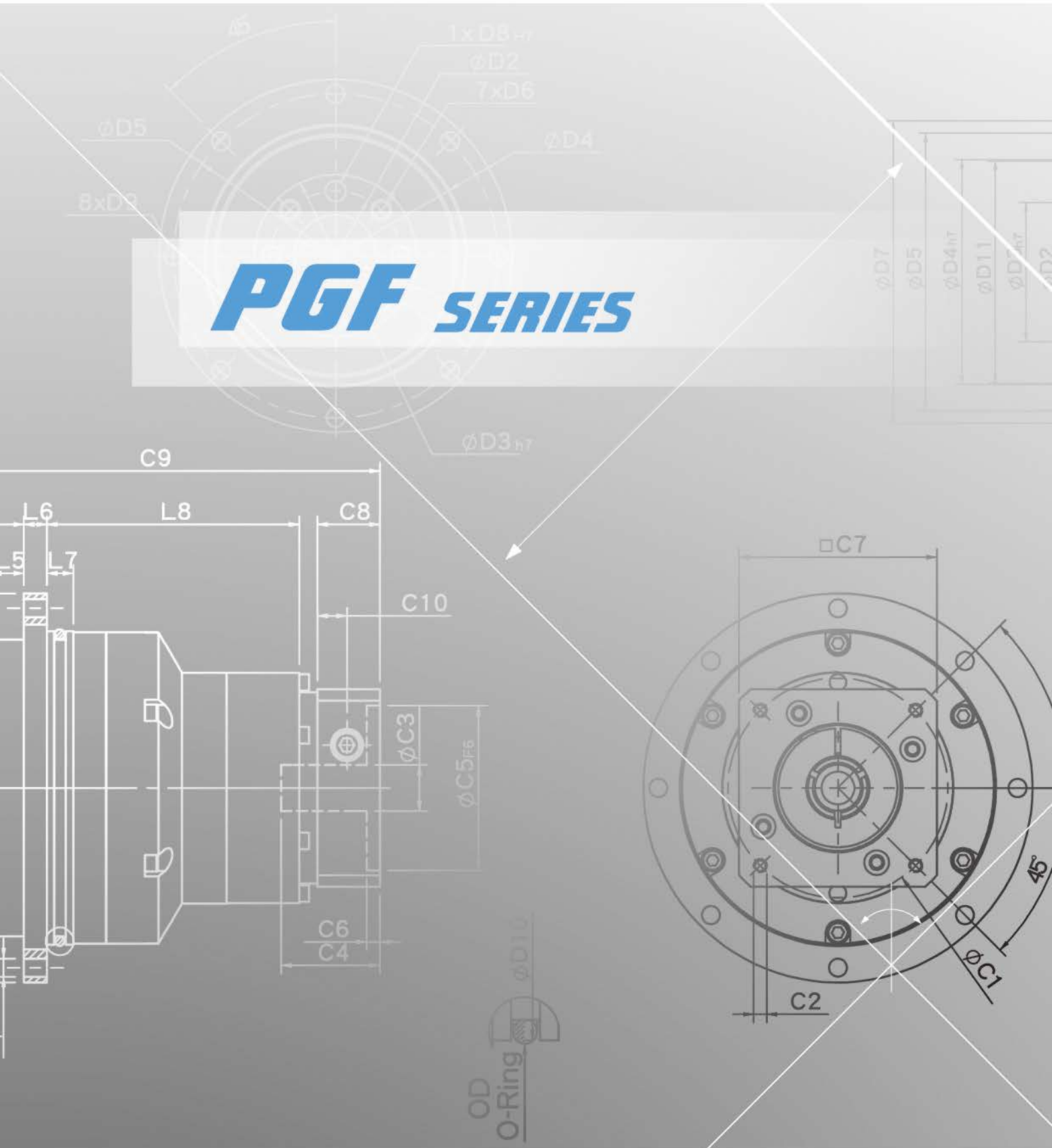
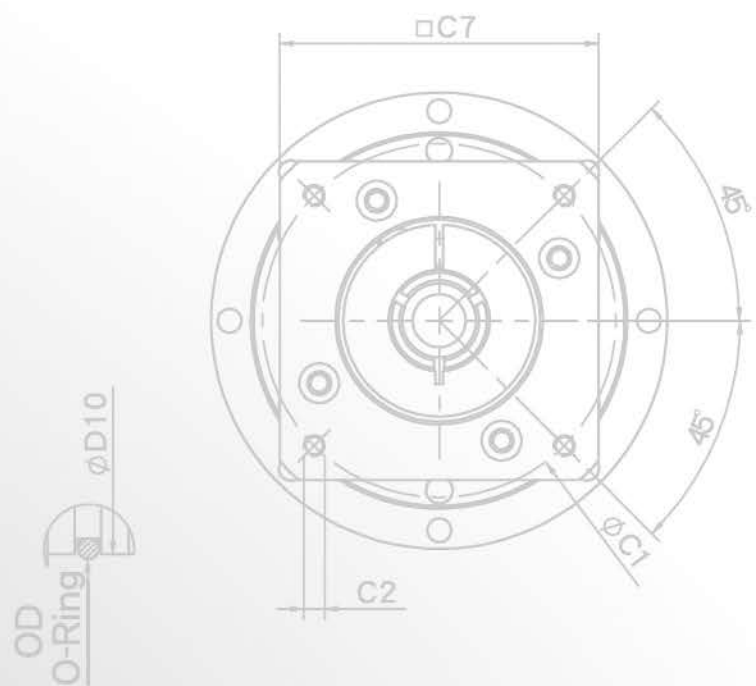
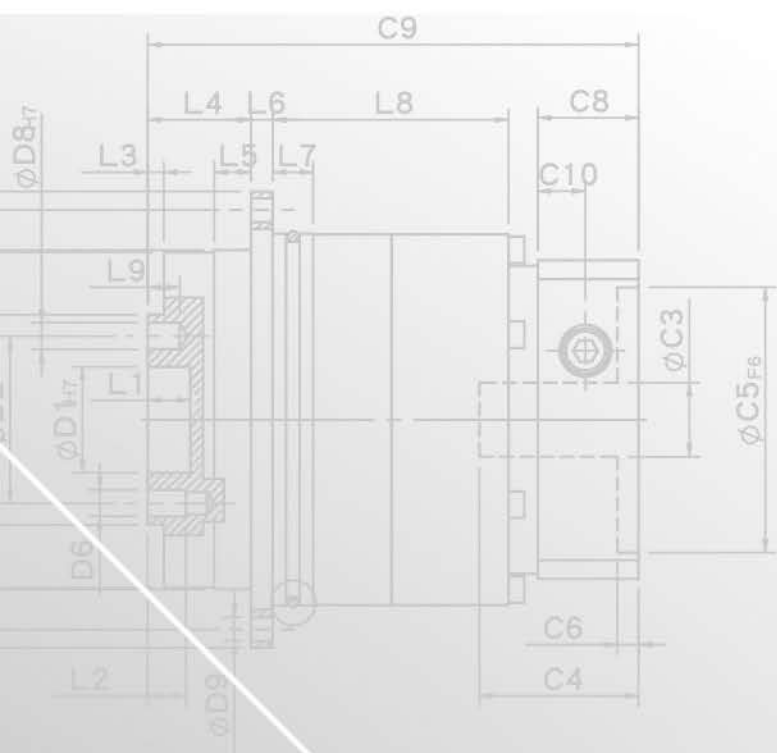


PGF SERIES

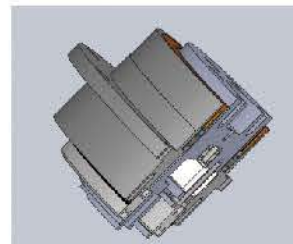
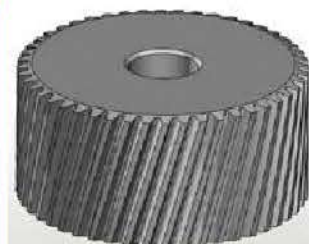




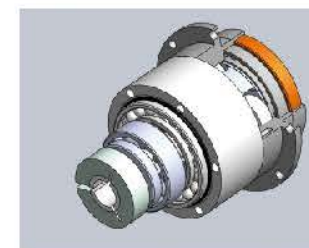
PGF SERIES FEATURES PGF系列 產品特點



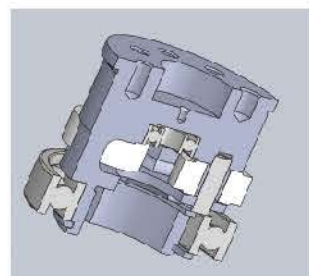
齒輪材質選用高級合金鋼，獨特熱處理至最佳硬度，兼具表面硬度及心部韌度，並經過齒型研磨加工，以獲得最佳的精度、高耐磨耗及高耐衝擊韌性。
Alloy steel gear with unique heat treatment. Additionally, with gear grinding processing to get the best accuracy, high wear resistance and high impact toughness.



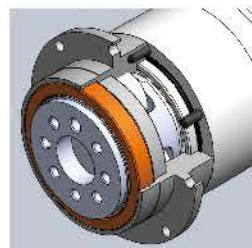
太陽齒前端軸承直接置入於行星固定架內，整體機械結構設計，以確保傳動元件的同心度。
The sun gear bearing is placed directly into the planetary arm bracket, the overall mechanical structure designed to ensure concentricity of the transmission components.



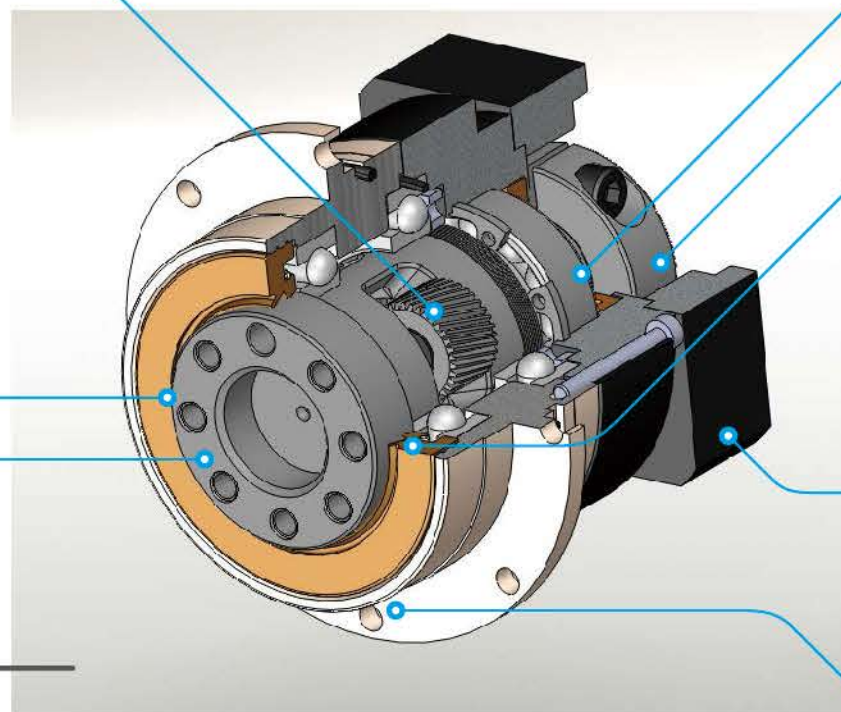
輸入端與馬達入力軸連結方法採用控緊式機構，鎖緊環經過動平衡分析，確保高轉速下，結合介面的同心度及零滑差動力傳遞。
Input-end and motor shaft are coupled through a dynamic balanced collar clamping mechanism to ensure connection interface concentricity and zero slip power transmission at high speed.



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.



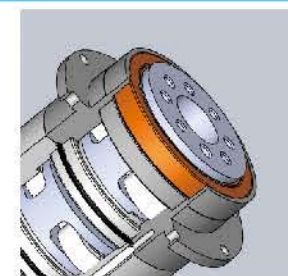
出力軸表面與油封搭配確保最低磨擦係數和減少啟動負載，保持最佳密封性，延長使用壽命且出力軸為中空穴設計，可搭配圓形法蘭面連結，大幅縮小安裝的空間。
Grinding process to smooth surface of output shaft, and with oil-seal to minimum friction coefficient and reducing start up load; result in the best seal-ability and extended lifespan. Hollow out-put shaft connects perfectly with circular flange drastically reducing the installation space.



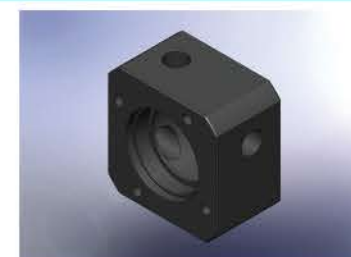
PGF系列整體設計上可容許伺服馬達高轉速的輸入，達到最大扭力輸出。出力軸為中空穴設計，可搭配圓形法蘭面連結，大幅縮小安裝的空間。精密齒輪設計及專業齒輪加工，製造出低運轉背隙、高效率、低噪音及長壽命的行星減速機。
PGF Series overall design suitable for combination operation with servo motor high-speed input and achieves maximum torque output. Hollow out-put shaft connects perfectly with circular flange drastically 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.



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加工成形，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.



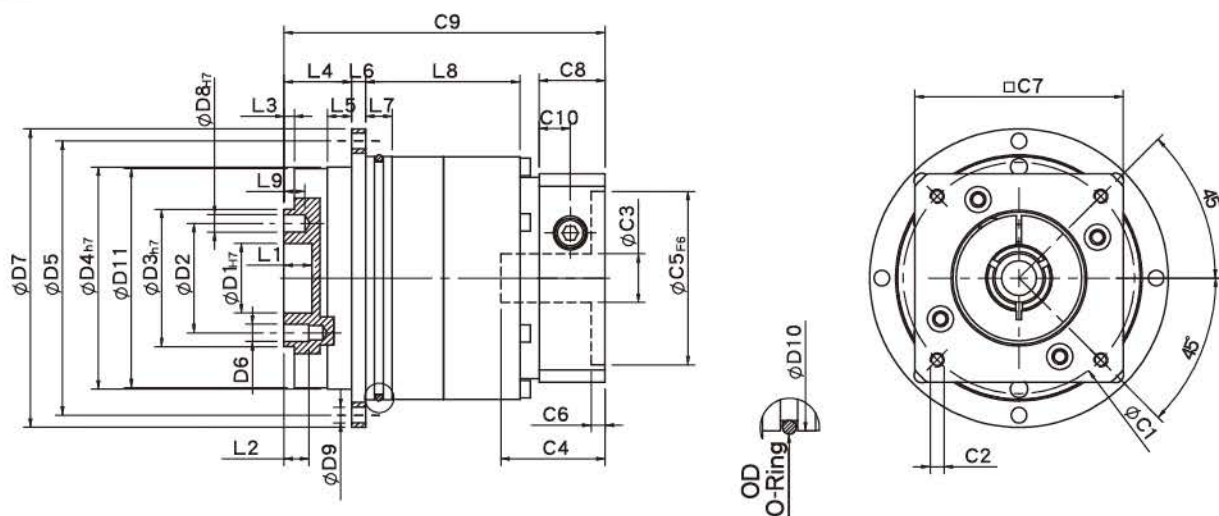
高科技油封設計上唇為防塵唇，下唇為防油唇。採IP65防護等級的密封設計，並採用高級潤滑油脂，不洩漏、免保養。
High-tech oil seal design on the upper lip guard against dust intruder, lower lip to guard against oil leak. Protection grade IP65 safeguards fully avoid leaking problem, and given it maintenance-free.



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.

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。

PGF Single Stage Dimensions PGF單段外型尺寸圖



Specifications 規格

Unit:mm

尺寸 Dimensions	PGF42	PGF60	PGF90	PGF115
D1 _{H7}	12	20	31.5	40
D2	20	31.5	50	63
D3 _{H7}	28	40	63	80
D4 _{H7}	47	64	90	110
D5	67	79	109	135
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P
D7	72	86	118	145
D8 _{H7}	3	5	6	6
D9	3.4	4.5	5.5	5.5
D10	60	70	95	120
D11	46.2	63.2	89.2	109.2
L1	4	8	12	12
L2	6	7.2	12	13.5
L3	3	3	6	6
L4	19.5	19.5	29	29
L5	7	7	10	10
L6	4	4	7	8
L7	5	7.7	8	10
L8	25	29.5	35	50.5
L9	4	6	7	7
C1 ²	46	70	90	115
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P	M8x1.25P
C3 ²	≤8/≤11	≤14	≤19/≤24	≤24/≤32
C4 ²	28.1	36.5	41.2	51.1
C5 ² _{F6}	30	50	70	95
C6 ²	4	4	6.7	6
C7 ²	42	60	90	115
C8 ²	16.5	19	25.5	30
C9 ²	74.8	84.5	104.5	127.5
C10 ²	7.4	9	11.3	13.9
OD	56x2	66x2	90x3	110x3

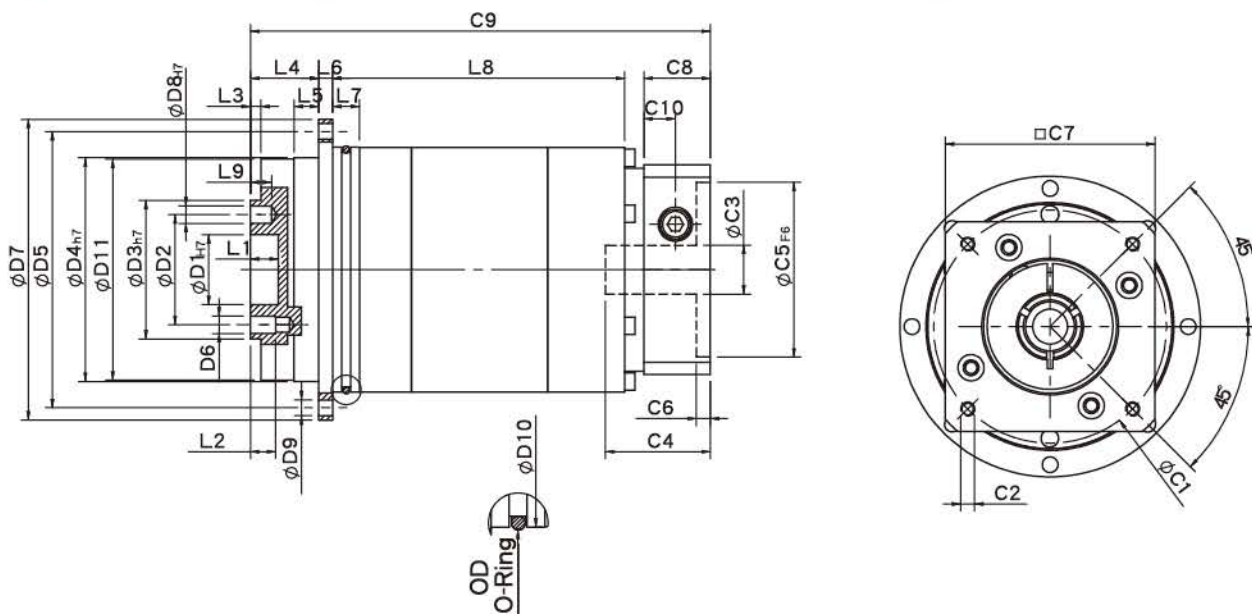
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 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.

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



Specifications 規格

Unit:mm

尺寸 Dimensions	PGF42	PGF60	PGF90
D1H7	12	20	31.5
D2	20	31.5	50
D3h7	28	40	63
D4h7	47	64	90
D5	67	79	109
D6	M3x0.5P	M5x0.8P	M6x1.0P
D7	72	86	118
D8H7	3	5	6
D9	3.4	4.5	5.5
D10	60	70	95
D11	46.2	63.2	89.2
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	5	7.7	8
L8	54.5	68.5	80
L9	4	6	7
C1 ²	46	70	90
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P
C3 ²	≤8	≤14	≤19/≤24
C4 ²	28.1	36.5	41.2
C5 ² F6	30	50	70
C6 ²	4	4	6.7
C7 ²	42	60	90
C8 ²	16.5	19	25.5
C9 ²	102.5	123.5	148.6
C10 ²	7.4	9	11.3
OD	56x2	66x2	90x3

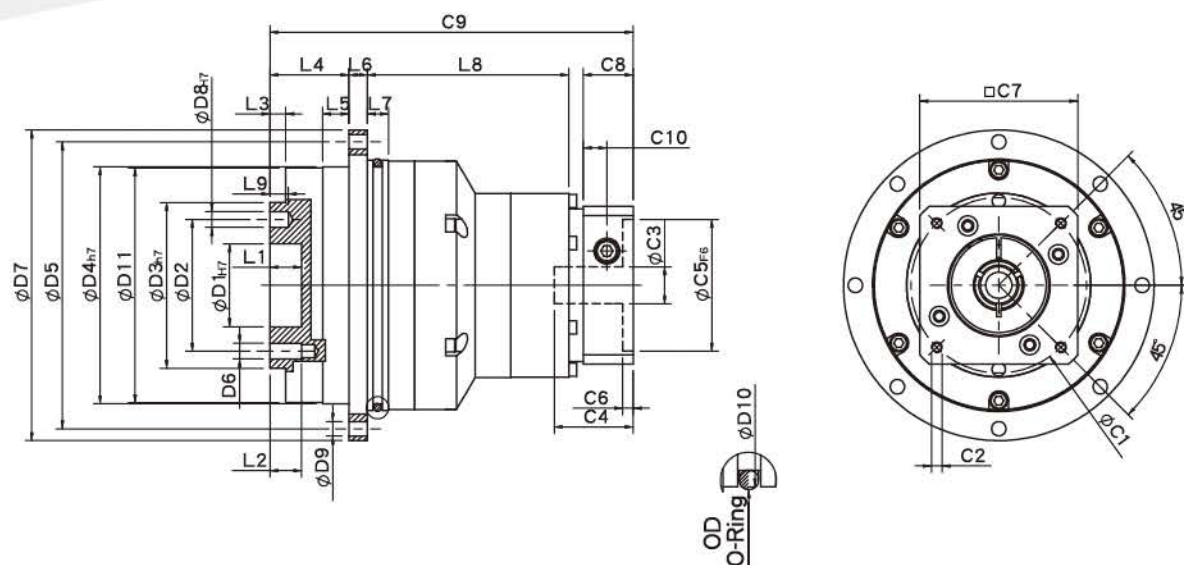
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 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 the motor flange chosen.

★ Specification subject to change without notice.

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



Specifications 規格

Unit:mm

尺寸 Dimensions	PGF60T	PGF90T	PGF115T
D1 _{H7}	20	31.5	40
D2	31.5	50	63
D3 _{H7}	40	63	80
D4 _{H7}	64	90	110
D5	79	109	135
D6	M5x0.8P	M6x1.0P	M6x1.0P
D7	86	118	145
D8 _{H7}	5	6	6
D9	4.5	5.5	5.5
D10	70	95	120
D11	63.2	89.2	109.2
L1	8	12	12
L2	7.2	12	13.5
L3	3	6	6
L4	19.5	29	29
L5	7	10	10
L6	4	7	8
L7	7.7	8	10
L8	61.2	68	89.5
L9	6	7	7
C1 ²	46	70	90
C2 ²	M4x0.7P	M5x0.8P	M6x1.0P
C3 ²	≤8/≤11	≤14	≤19/≤24
C4 ²	28.1	36.5	41.7
C5 ² _{F6}	30	50	70
C6 ²	4	4	6.7
C7 ²	42	60	90
C8 ²	16.5	19	25.5
C9 ²	109.2	135.5	159.1
C10 ²	7.4	9	11.3
OD	66x2	90x3	110x3

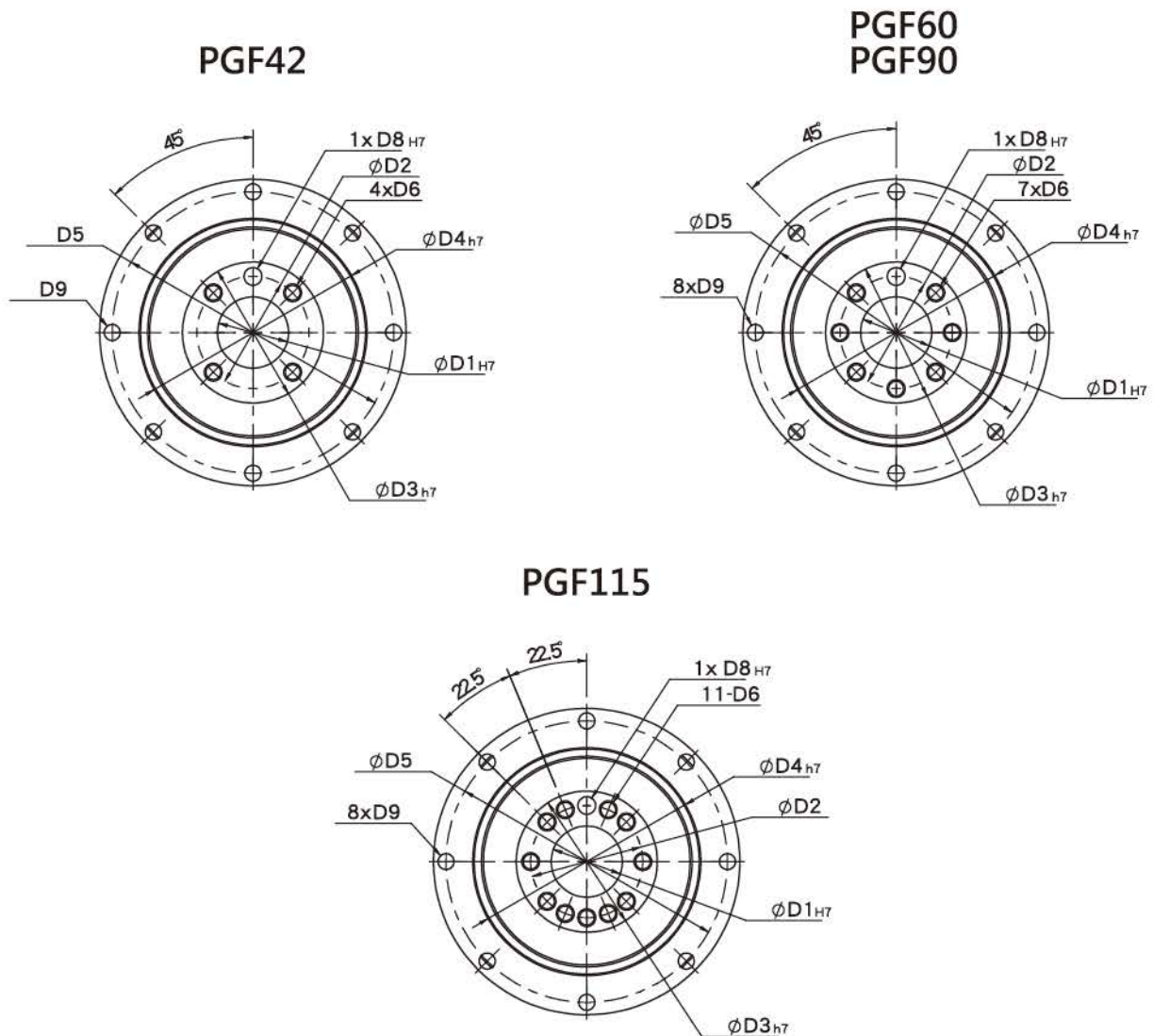
★ C1~C9是公製標準馬達連接板尺寸,請依所選用的馬達決定。

★ 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.

PGF Flange Dimensions PGF法蘭面尺寸圖



Specifications 規格

Unit:mm

尺寸 Dimensions	PGF42	PGF60	PGF90	PGF115
D1 _{H7}	12	20	31.5	40
D2	20	31.5	50	63
D3 _{H7}	28	40	63	80
D4 _{H7}	47	64	90	110
D5	67	79	109	135
D6	M3x0.5P	M5x0.8P	M6x1.0P	M6x1.0P
D8 _{H7}	3	5	6	6
D9	3.4	4.5	5.5	5.5

★ 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.

PGF Specifications Table PGF性能規格共表

規格 Specifications		節數 Stage	減速比 Ratio	PGF-42	PGF-60	PGF-90	PGF-115
額定輸出力矩 T _{2N} Nominal Output Torque	N • m	1	3	-	40	105	180
			4	16	43	110	240
			5	17	50	130	290
			7	14	44	125	270
			10	11	37	95	220
		節數 Stage	減速比 Ratio	PGF-42	PGF-60(T)	PGF-90(T)	PGF-115T
		2	15	-	40	105	180
			20	16	43	110	240
			25	17	50	130	290
			30	17	50	130	290
			35	17	50	130	290
			40	17	50	130	290
			50	17	50	130	290
			70	14	44	125	270
			100	11	37	95	220
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	5000	5000	4000	4000
最大輸入轉速 n _{1max} Max. Input Speed	rpm	1,2	3-100	10000	10000	8000	8000
超精密背隙 Micro Backlash P0	arcmin	1 2	3-10 12-100	≤ 3 ≤ 5	≤ 3 ≤ 5	≤ 3 ≤ 5	≤ 1 ≤ 3
精密背隙 Precision Backlash P1	arcmin	1 2	3-10 12-100	≤ 5 ≤ 7	≤ 5 ≤ 7	≤ 5 ≤ 7	≤ 3 ≤ 5
標準背隙 Standard Backlash P2	arcmin	1 2	3-10 12-100	≤ 7 ≤ 9	≤ 7 ≤ 9	≤ 7 ≤ 9	≤ 5 ≤ 7
扭轉剛性Torsional Rigidity	N • m /arcmin	1,2	3-100	6	12	28	75
容許彎曲力矩 M _{2kB} ¹ Max. Bending Moment	N • m	1,2	3-100	22.5	36	76	140
容許軸向力 F _{2aB} ¹ Max. Axial Load	N	1,2	3-100	465	635	1060	1580
使用溫度 Operating Temp.	°C		3-100	-10 °C ~ +90 °C			
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 12-100	≥ 97% ≥ 94%			
重量 Weight	kg	1 2	3-10 12-100	0.7 1.1	1.4 2.2/1.7	3.2 5.9/4.0	6.0 7.9
安裝方向 Mounting Position	-	1,2	3-100	任意方向Any direction			
噪音值 Noise Level ²	dB(A)/1m	1,2	3-100	56	58	60	63
防護等級 Protection Class	-	1,2	3-100	IP65			
潤滑 Lubrication	-	1,2	3-100	全合成潤滑油 Synthetic Lubricant			
減速機轉動慣量 Inertia(J1)							
節數Stage	減速比Ratio	單位unit	PGF-42	PGF-60	PGF-90	PGF-115	
1	3	Kg • cm ²	-	0.19	0.72	2.35	
	4		0.02	0.18	0.67	1.66	
	5		0.02	0.17	0.65	1.50	
	7		0.02	0.14	0.60	1.45	
	10		0.02	0.14	0.58	1.41	
節數Stage	減速比Ratio		PGF-42	PGF-60(T)	PGF-90(T)	PGF-115T	
2	15/20/25		0.02	0.17(0.02)	0.65(0.17)	0.65	
	30/35/40		0.02	0.14(0.02)	0.60(0.14)	0.60	
	50/70/100		0.02	0.14(0.02)	0.58(0.14)	0.58	

* 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 空載重測 Measured at 3000rpm 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。

SERVO MOTOR GEARHEADS



PHL PHFR PHF PGH PUR PIL PGLH PGL PGC PGE PGRH PGR PGFR PGF PBC PBE PAE PAC PAN PGS PNS