

PRECISION PLANETARY REDUCERS

精密行星減速機

PADR



1.省空間

直交型減速機使用螺旋式傘齒輪，馬達的安裝可實現90度彎曲，節省了安裝空間。

2.高剛性、高扭矩

使用鑲齒式滾針軸承，大大提高了剛性和扭矩。

3.連接器、接裝方式

可以安裝到世界上任何一臺馬達上。

4.無潤滑脂滲漏

使用高粘度、不易分離的潤滑脂，有效防止潤滑脂滲漏。

5.維護方便

在产品壽命期內無需更換潤滑脂，安裝更便捷。

1.Space – saving

Right angle reducer using spiral bevel gear Customer can locate the motor at 90 degree away from the reducer if required to save space.

2.High rigidity & torque

High rigidity & high torque was achieved by uncaged needle roller bearings.

3.Adapter–bushing connection

Can be attached to any motor all over the world.

4.No grease leakage

Perfect solution by high viscosity anti-separation grease.

5.Maintenance-free

No need to replace the grease for the life time. Can be attached in any position.

減速機的選型/Indication of Model Numbers

PADR 系列/PADR Series

PADR 090 – 10 – S1 – P1 / 馬達

減速機型式/Type

PADR047, PADR064, PADR090,
PADR110, PADR140, PADR200,
PADR255

出力軸鍵槽

Output Shaft Keyway

S1: 實心軸，無鍵槽
(Solid Output Shaft No Keyway)
S2: 標準品，有鍵槽
(Standard Keyway)

馬達型號/Motor Type

馬達製造商及型號

減速比/Ratio

單節: 3, 4, 5, 6, 7, 8, 9, 10
雙節: 12, 15, 16, 20, 25, 28, 30, 35, 40, 50,
70, 80, 100

背隙等級Backlash Class

P0: 高精密背隙/Micro Backlash P0
P1: 精密背隙/Precision Backlash P1
P2: 標準背隙/Standard Backlash P2

選型範例: PADR090–100–S2–P1/Panasonic MSMJ 082S1A

PADR 減速機性能資料 Specification Table

規格 Model No	單位 Unit	節數 Stage	減速比 Ratio	PADR047	PADR064	PADR090	PADR110	PADR140	PADR200	PADR255
额定輸出力矩T _{2N} Rated Output Torque	Nm	1	4	19	50	133	278	555	1050	1700
			5	22	60	160	330	650	1200	2000
			7	19	50	140	300	550	1100	1800
			10	14	40	100	230	450	900	1500
		2	20	19	50	133	278	555	1050	1700
			25	22	60	160	330	650	1200	2000
			35	19	50	140	300	550	1100	1800
			40	19	45	120	260	500	1000	1600
			50	22	60	160	330	650	1200	2000
			70	19	50	140	300	550	1100	1800
			100	14	40	100	230	450	900	1500
3倍额定輸出力矩/3Times of Nominal Output Torque										
最大輸出扭矩T _{2Nmax} Max Output Torque	Nm	1,2	4-100							
额定輸入轉速T _{1N} Rated Input Speed	rpm	1,2	4-100	5000	5000	4000	4000	3000	3000	2000
最大輸入轉速T _{1Nmax} Input Speed	rpm	1,2	4-100	10000	10000	8000	8000	6000	6000	4000
超精密背隙P0/Micro Backlash P0	arcmin	1	4-10	≤1	≤1	≤1	≤1	≤1	≤1	≤1
	2	12-100	≤3	≤3	≤3	≤3	≤3	≤3	≤3	≤3
精密背隙P1/Precision Backlash P1	arcmin	1	4-10	≤3	≤3	≤3	≤3	≤3	≤3	≤3
	2	20-100	≤5	≤5	≤5	≤5	≤5	≤5	≤5	≤5
標準背隙P2/Standard Backlash P2	arcmin	1	4-10	≤6	≤6	≤6	≤6	≤6	≤6	≤6
	2	20-100	≤8	≤8	≤8	≤8	≤8	≤8	≤8	≤8
扭轉剛性/Torsional Rigidity	Nm/arcmin	1,2	4-100	8	13	30	80	150	450	1010
最大常力矩Nm _{max}	N	1,2	4-100	43	125	235	430	1300	3064	5900
容許軸向力F _{axial} Max Axial Force	N	1,2	4-100	990	1050	2850	2990	10590	16660	29430
使用壽命/Service Life	hr	1,2	4-100	22000h						
效率 η Efficiency		1	4-10	≥97%						
		2	20-100	≥94%						
重量/Weight	kg	1	4-10	0.7	1.3	3.2	5.8	12.3	33	57.9
		2	20-100	1	1.5	4.1	7.6	16.8	38	72.6
使用溫度/Operating Temperature	℃	1,2	4-100	(-15℃ ~ +90℃)						
潤滑/Lubrication		1,2	4-100	全合成潤滑油類(Synthetic Grease)						
防護等級/Protection Class		1,2	4-100	IP65						
安裝方向/Mounting Position		1,2	4-100	任意方向/Any Direction						
噪音值p1=3000rpm, 無負載/Noise Level	dB(A)	1,2	4-100	≤58	≤59	≤62	≤65	≤68	≤69	≤70

減速機轉動慣量/Moment of Inertia/

規格 Model No	單位 Unit	節數 Stage	減速 Ratio	PADR047	PADR064	PADR090	PADR110	PADR140	PADR200	PADR255
轉動慣量J1 Moment of Inertia	kg·cm ²	1	4	0.03	0.14	0.48	2.74	7.54	23.67	54.37
			5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
			7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
		2	10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
			20-40	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			50-100	0.03	0.03	0.13	0.44	2.57	7.03	22.51

1.減速比(i=Nin/Nout)。

2.最大輸出力矩T_{2B}=60% of T_{2NOT}。

3.輸出轉數100rpm時，作用於輸出法蘭位置，「連續運轉使用壽命為15000hrs。」

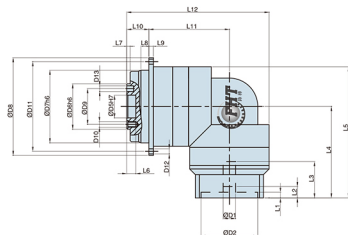
MODEL: PADR

單段 1-Stage

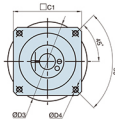
速比: 3, 4, 5, 7, 10



外形尺寸圖 Dimensions:



輸入端 Input



Unit:mm

尺寸 Size	PADR047-L1	PADR064-L1	PADR090-L1	PADR110-L1	PADR140-L1	PADR200-L1	PADR255-L1
D1	≤11/≤12	11(11-14)	19(19-24)	24(22-32)	32(24-35)	≤48	≤55
D2	30	50	70(70-110)	110(110-130)	110(110-114.3)	85	116
D3	46	70	90(90-145)	145(145-165)	145(145-200)	215	235
D4	M4	M4	M8	M8-M10	M8-M12	M12	M12
D5	12	20	31.5	40	50	80	100
D6	28	40	63	80	100	160	180
D7	47	64	90	110	140	200	255
D8	72	86	118	145	179	247	300
D9	20	31.5	50	63	80	125	140
D10	4-M3	7-M5x深度8	8-M6x深度12	11-M6x深度12	11-M8x深度17	11-M10x深度20	12-M16x深度25
D11	67	79	109	135	168	233	280
D12	8-Ø3.4	8-Ø4.5	8-Ø5.5	8-Ø5.5	12-Ø6.6	12-Ø9	16-Ø13.5
D13	Ø3	Ø5x深度8	Ø6x深度7	Ø6x深度7	Ø8x深度7	Ø10x深度10	Ø12x深度10
L1	3.5	5	12	10	8	6	6
L2	8	10	13	19	17	20	24
L3	30	32	42-47	57-60	67-77	85	116
L4	74	80.5	107-112	134-147.5	166.5-167	213.5	268.5
L5	104	115.5	152-157	195-208.5	217.5-241.5	316	398.5
L6	6.5	8	12	13	12	22.5	30.5
L7	3	3	6	6	8	8	12
L8	7	7	10	11	15	15	20
L9	4	4	7	8	10	12	18
L10	19.5	19.5	25	29	38	50	66
L11	60	71	102	130	142.5	189	216
L12	107.5	125.5	172	220	255.5	334.5	392
C1	48	60	90(90-130)	130-160	130(130-220)	190	220

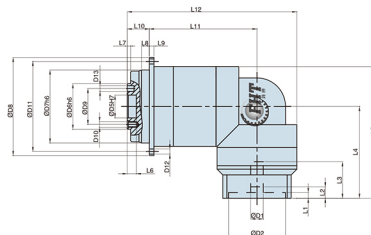
MODEL: PADR

雙段 2-Stage

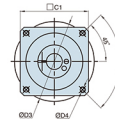
速比: 15, 20, 25, 30, 35, 40, 50, 70, 100



外形尺寸圖 Dimensions:



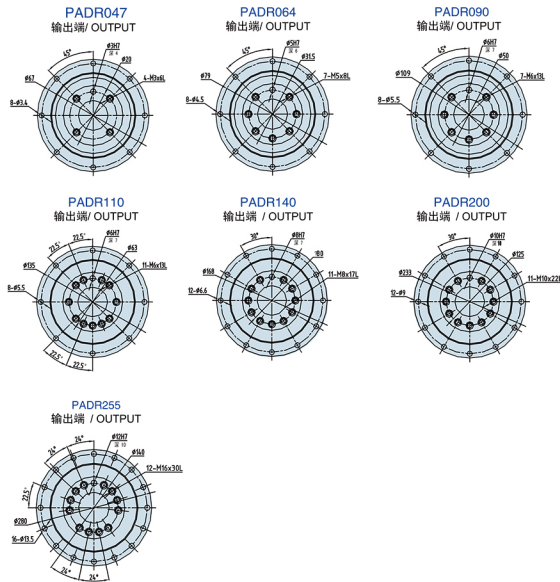
輸入端 Input



Unit:mm

尺寸 Size	PADR047-L2	PADR064-L2	PADR090-L2	PADR110-L2	PADR140-L2	PADR200-L2	PADR255-L2
D1	≤11/≤12	11(11-14)	19(19-24)	24(22-32)	32(24-35)	≤48	≤55
D2	30	50	70(70-110)	110(110-130)	110(110-114.3)	85	116
D3	46	70	90(90-145)	145(145-165)	145(145-200)	215	235
D4	M4	M4	M8	M8-M10	M8-M12	M12	M12
D5	12	20	31.5	40	50	80	100
D6	28	40	63	80	100	160	180
D7	47	64	90	110	140	200	255
D8	72	86	118	145	179	247	300
D9	20	31.5	50	63	80	125	140
D10	4-M3	7-M5x深度8	8-M6x深度12	11-M6x深度12	11-M8x深度17	11-M10x深度20	12-M16x深度25
D11	67	79	109	135	168	233	280
D12	8-Ø3.4	8-Ø4.5	8-Ø5.5	8-Ø5.5	12-Ø6.6	12-Ø9	16-Ø13.5
D13	Ø3	Ø5x深度8	Ø6x深度7	Ø6x深度7	Ø8x深度7	Ø10x深度10	Ø12x深度10
L1	3.5	5	12	10	8	6	6
L2	8	10	13	19	17	20	24
L3	30	32	42-47	57-60	67-77	85	116
L4	74	80.5	107-112	134-147.5	166.5-167	213.5	268.5
L5	104	115.5	152-157	195-208.5	217.5-241.5	289.5	340
L6	6.5	8	12	13	12	22.5	30.5
L7	3	3	6	6	8	8	12
L8	7	7	10	11	15	15	20
L9	4	4	7	8	10	12	18
L10	19.5	19.5	30	29	38	50	66
L11	79	94.5	117	163.5	187	243	270
L12	122	149	187	253.5	300	382	403
C1	48	60	90(90-130)	130-160	130(130-220)	190	220

輸出端尺寸圖 Dimensions:



PRECISION PLANETARY REDUCERS

精密行星減速機

PAF



- 行星架與輸出軸一體式結構確保最大耐扭剛性力及穩定性。
Integrated design of planet carrier and output shaft ensures the maximum torque stiffness and stability.
- 齒輪箱表面利用無電鍍處理，連接板藍灰色陽極處理，提高環境的耐腐蝕和抗疲勞能力。
Electroless Nickel deposition treatment and black and anodized treatment are employed to gear box surface and motor adapter module respectively, the tolerance to the environment and resistant to corrosion are enhanced.
- 最低的回程間隙 low backlash
- 高效率(95%high efficiency (95%)
- 終生潤滑 long life lubrication

減速機の選型/Indication of Model Numbers

PAF 系列/PAF Series

PAF 090 - 10 - S1 - P1 / 馬達

減速機型式/Type

PAF042, PAF060, PAF090, PAF120
PAF150, PAF180, PAF220

出力軸鍵槽
Output Shaft Keyway

S1: 實心軸, 無鍵槽
(Solid Output Shaft No Keyway)
S2: 標準品, 有鍵槽
Standard (Keyway)
S3: 輸出為孔
Output for holes

馬達型號/Motor Type

馬達製造商及型號
Motor manufacturer and model

減速比/Ratio

單節: 3, 4, 5, 6, 7, 8, 9, 10
雙節: 12, 15, 16, 20, 25, 28, 30, 35, 40, 50,
70, 80, 100

背隙等級/Backlash Class

P0: 高精密背隙/Micro Backlash P0
P1: 精密背隙/Precision Backlash P1
P2: 標準背隙/Standard Backlash P2

選型範例：PAF090-100-S2-P1/Panasonic MSMJ 082S1A