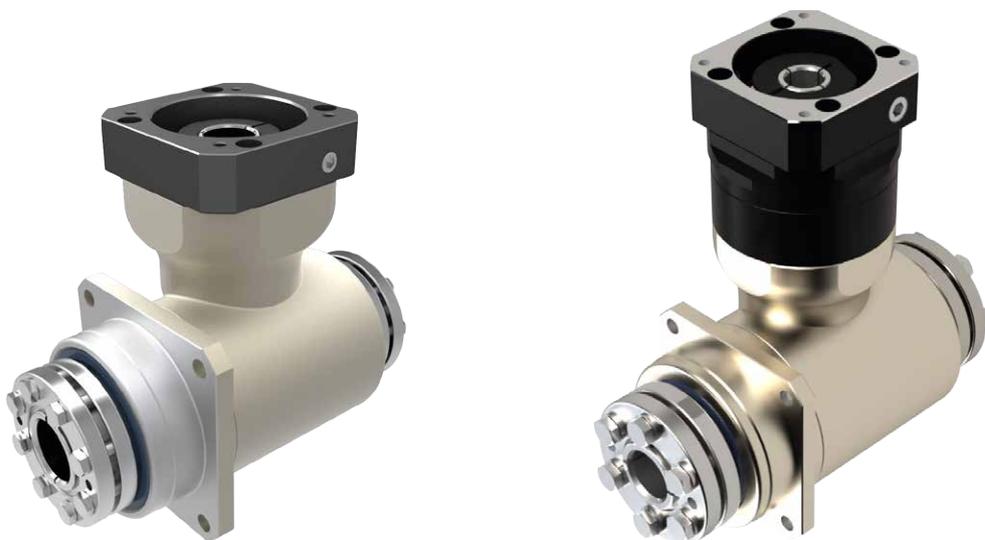


HF series

Indication of Model Numbers

機種型號表示

HF	60	F	O	B	3	P0
減速機機型 Type	型號 Model	入力表示 Input	出力表示 Output	軸承形式 Bearing	速比 Ratio	背隙等級 Backlash Class
HF	60 75 100 140 180	F: 入力法蘭 Input Flange R44: 減速機 Reducer 1-Stage: R44、R62...	O: 出力中空軸 Hollow Output Shaft N: 單邊免鍵軸套 (有鍵槽) Single Clamping (Keyway) N1: 單邊免鍵軸套 (無鍵槽) Single Clamping (No Keyway) M: 雙邊免鍵軸套 Double Clamping S: 單出力軸心 (有鍵槽) Single Output Shaft (Keyway) S1: 單出力軸心 (無鍵槽) Single Output Shaft (No Keyway)	B: 滾珠軸承 Ball Bearing T: 滾錐軸承 Taper Bearing	單段 1-Stage 5, 10, 15 ----- 搭配單段 行星減速機 With 1-Stage Planetary Reducer 25 ~ 150	P0 ≤ 3 P1 ≤ 6 P2 ≤ 9



Characteristic of HF Series

HF 系列產品特性

單段減速機 1-Stage

規格 Parameter	Code	Unit	Ratio	60	75	100	140	180
額定輸出扭矩 / Rated Output Torque (Nominal output torque)	T_{2N}	Nm	5	30	35	70	260	720
			10	25	30	60	220	615
			15	20	25	50	180	510
最大加速扭矩 / Max. Acceleration Torque	T_{2B}	Nm	5~15	1.5 倍額定輸出扭矩 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	5~15	2 倍額定輸出扭矩 2 Times of Rated Output Torque				
額定輸入轉速 / Rated Input Speed	n_{1N}	rpm	5	2,100	2,100	1,800	1,150	700
			10	3,200	3,200	2,700	1,800	1,200
			15	3,900	3,900	3,300	2,300	1,600
最大輸入轉速 / Max. Input Speed	n_{1B}	rpm	5~15	6,000	6,000	6,000	6,000	5,000
背隙 / Backlash	J_t	arcmin	P0	≤ 3	≤ 3	≤ 3	≤ 3	≤ 3
			P1	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6
			P2	≤ 9	≤ 9	≤ 9	≤ 9	≤ 9
容許徑向力 / Max. Radial Force 滾珠軸承 Ball Bearing	F_{2rB}	N	5~15	1,040	1,495	2,366	5,837	7,020
容許軸向力 / Max. Axial Force 滾珠軸承 Ball Bearing	F_{2aB}	N	5~15	520	748	1,183	2,919	3,510
容許徑向力 / Max. Radial Force 滾錐軸承 Taper Bearing	F_{2rB}	N	5~15	3,370	6,920	11,300	17,300	20,200
容許軸向力 / Max. Axial Force 滾錐軸承 Taper Bearing	F_{2aB}	N	5~15	1,685	2,460	5,650	8,650	10,100
使用壽命 / Service Life	L_H	hr	5~15	S5 周期運轉 Cycle Operation: >30,000				
效 率 / Efficiency	η	%	5~10	≥ 96%				
			15	≥ 93%				
使用溫度 / Operating Temperature		°C	5~15	-10°C ~ +90°C				
潤 滑 / Lubrication			5~15	全合成潤滑油 Synthetic Oil				
噪 音 值 / Noise Level		dB	5~15	≤ 66	≤ 66	≤ 66	≤ 68	≤ 70

轉動慣量 Mass Moments of Inertia (kgcm²)

Ratio	60	75	100	140	180
5~15	0.03	0.13	0.78	6.74	5.78

Characteristic of HF Series

HF 系列產品特性

雙段減速機 2-Stage

規格 Parameter	Code	Unit	Ratio	60	75	100	140	180
額定輸出扭矩 / Rated Output Torque (Nominal output torque)	T_{2N}	Nm	25·50	30	35	70	260	720
			100	25	30	60	220	615
			75·150	20	25	50	180	510
最大加速扭矩 / Max. Acceleration Torque	T_{2B}	Nm	25~150	1.5 倍額定輸出扭矩 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	25~150	2 倍額定輸出扭矩 2 Times of Rated Output Torque				
額定輸入轉速 / Rated Input Speed	n_{1N}	rpm	25~150	3,000	3,000	3,000	3,000	3,000
最大輸入轉速 / Max. Input Speed	n_{1B}	rpm	25~150	6,000	6,000	6,000	6,000	5,000
背隙 / Backlash	J_t	arcmin	P0	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4
			P1	≤ 7	≤ 7	≤ 7	≤ 7	≤ 7
			P2	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
容許徑向力 / Max. Radial Force 滾珠軸承 Ball Bearing	F_{2rB}	N	25~150	1,040	1,495	2,366	5,837	7,020
容許軸向力 / Max. Axial Force 滾珠軸承 Ball Bearing	F_{2aB}	N	25~150	520	748	1,183	2,919	3,510
容許徑向力 / Max. Radial Force 滾錐軸承 Taper Bearing	F_{2rB}	N	25~150	3,370	6,920	11,300	17,300	20,200
容許軸向力 / Max. Axial Force 滾錐軸承 Taper Bearing	F_{2aB}	N	25~150	1,685	2,460	5,650	8,650	10,100
使用壽命 / Service Life	L_{H1}	hr	25~150	S5 周期運轉 Cycle Operation: >30,000				
效 率 / Efficiency	η	%	25·50	≥ 92%				
			75·100·150	≥ 90%				
使用溫度 / Operating Temperature		°C	25~150	-10°C ~ +90°C				
潤 滑 / Lubrication			25~150	全合成潤滑油 Synthetic Oil				
噪 音 值 / Noise Level		dB	25~150	≤ 66	≤ 66	≤ 66	≤ 68	≤ 70

轉動慣量 Mass Moments of Inertia (kgcm²)

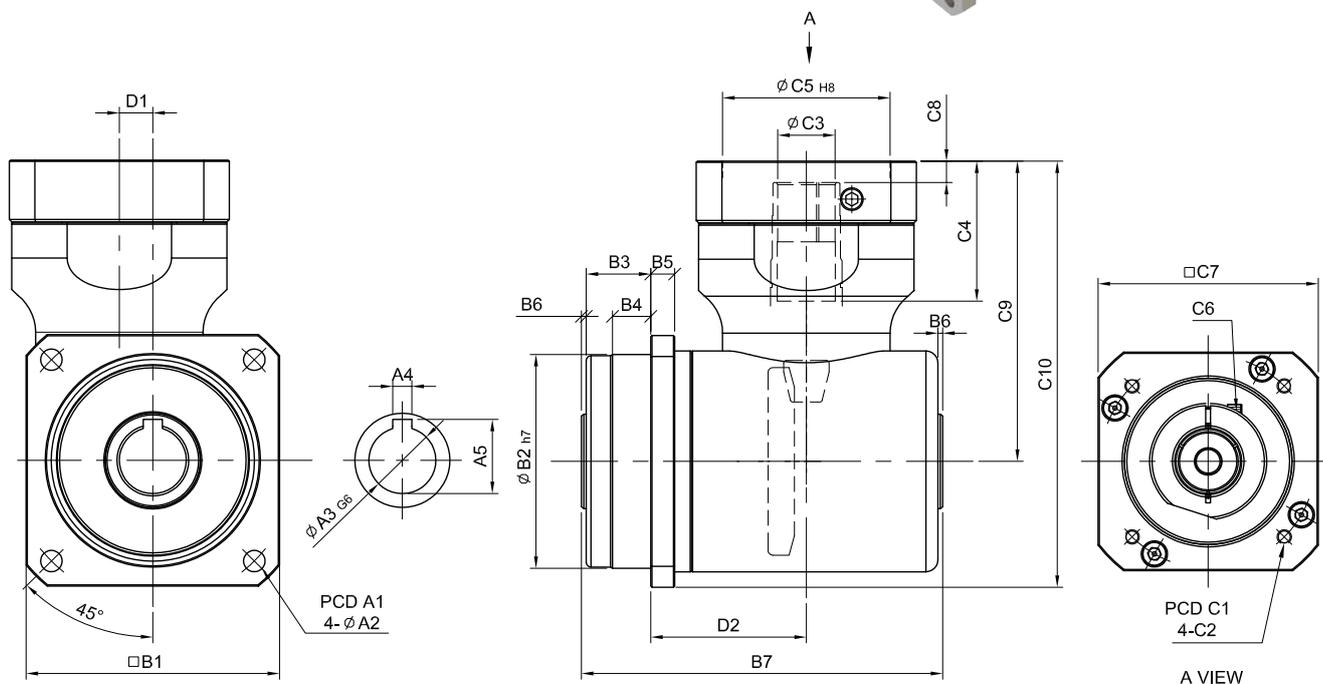
Ratio	60	75	100	140	180
25~150	0.04	0.13	0.13	0.47	2.71

HF-FO series

RATIO : 5.10.15 (單段 1-Stage)

入力法蘭 - 出力中空軸

Input Flange - Hollow Output Shaft



unit: mm

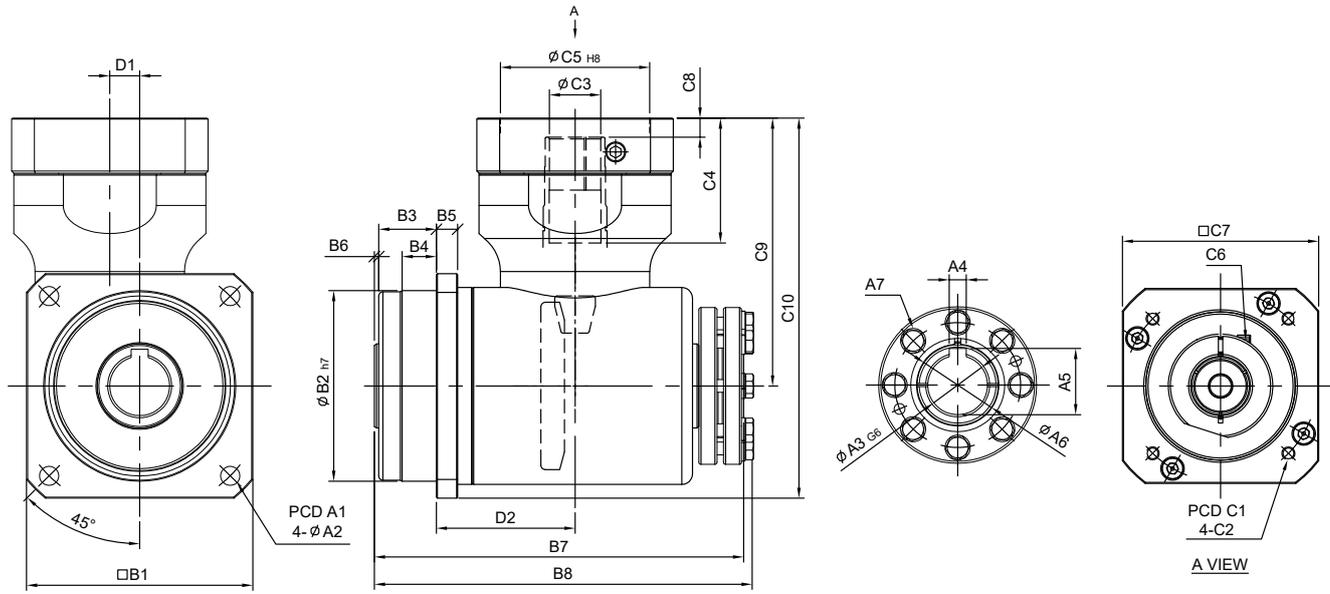
	Model	60	75	100	140	180
	Code					
A	A1	68	85	120	165	215
	A2	5.5	6.5	9	11	13
	A3	15	20	28	40	55
	A4	4	5	8	12	14
	A5	16.7	22.3	31.3	43.3	58.8
B	B1	62	76	106	142	190
	B2	60	70	90	130	160
	B3	18	18	27	27	26
	B4	11	12	16	15.5	15.5
	B5	6	7	10	12	15
	B6	2	2	2	3	3
	B7	103	113	151	193	247
C	C1	46 · 60 · 63	70 · 75 · 90	90 · 100 · 115 · 145	115 · 145 · 165	145 · 165 · 200
	C2	M3 · M4 · M5	M4 · M5 · M6	M5 · M6 · M8	M6 · M8 · M10	M8 · M10 · M12
	C3	11	14	24	35	42
	C4	26	33	59	82	84.5
	C5	30 · 40 · 50	50 · 60 · 70	70 · 80 · 95 · 110	95 · 110 · 130	110 · 130 · 180
	C6	M4 x P0.7	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5
	C7	46 · 55	64 · 70 · 80	92 · 110 · 130	122 · 130 · 150	146 · 150 · 190
	C8	5	6	9	10	10
	C9	69	95.5	126.5	179	228
	C10	100	133.5	179.5	250	323
D	D1	9	9	14	23	32
	D2	41.5	48	65	90	125
	Weight ±3% (kg)	1.5	2.6	6.42	15.6	35.3

HF-FN series

RATIO : 5.10.15 (單段 1-Stage)



入力法蘭 - 單邊免鍵軸套
Input Flange - Single Clamping



unit: mm

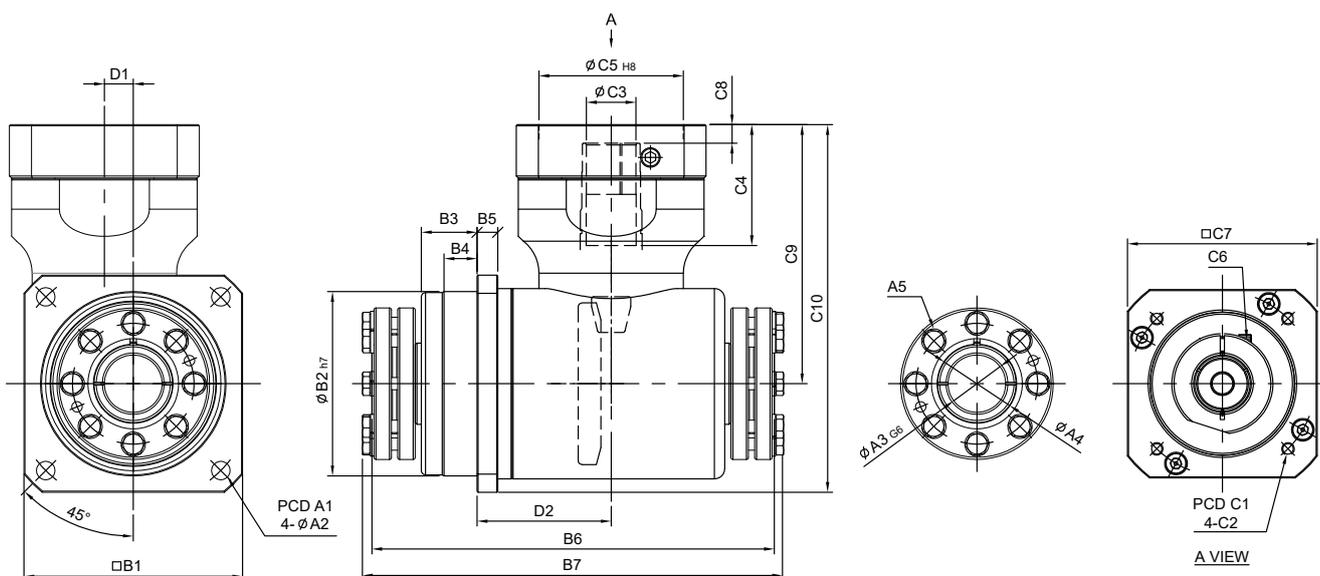
	Model Code	60	75	100	140	180
		A	A1	68	85	120
	A2	5.5	6.5	9	11	13
	A3	15	20	28	40	55
	A4	4	5	8	12	14
	A5	16.7	22.3	31.3	43.3	58.8
	A6	22	28	38	52	73
	A7	6-M6	6-M6	8-M6	8-M6	12-M8
B	B1	62	76	106	142	190
	B2	60	70	90	130	160
	B3	18	18	27	27	26
	B4	11	12	16	15.5	15.5
	B5	6	7	10	12	15
	B6	2	2	2	3	3
	B7	123.5	134	173	223	279
	B8	127	138	177	229	284
C	C1	46 · 60 · 63	70 · 75 · 90	90 · 100 · 115 · 145	115 · 145 · 165	145 · 165 · 200
	C2	M3 · M4 · M5	M4 · M5 · M6	M5 · M6 · M8	M6 · M8 · M10	M8 · M10 · M12
	C3	11	14	24	35	42
	C4	26	33	59	82	84.5
	C5	30 · 40 · 50	50 · 60 · 70	70 · 80 · 95 · 110	95 · 110 · 130	110 · 130 · 180
	C6	M4 x P0.7	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5
	C7	46 · 55	64 · 70 · 80	92 · 110 · 130	122 · 130 · 150	146 · 150 · 190
	C8	5	6	9	10	10
	C9	69	95.5	126.5	179	228
	C10	100	133.5	179.5	250	323
D	D1	9	9	14	23	32
	D2	41.5	48	65	90	125
Weight ±3% (kg)		1.53	2.64	6.5	15.8	35.3

HF-FM series

RATIO : 5.10.15 (單段 1-Stage)

入力法蘭 - 雙邊免鍵軸套

Input Flange - Double Clamping



unit: mm

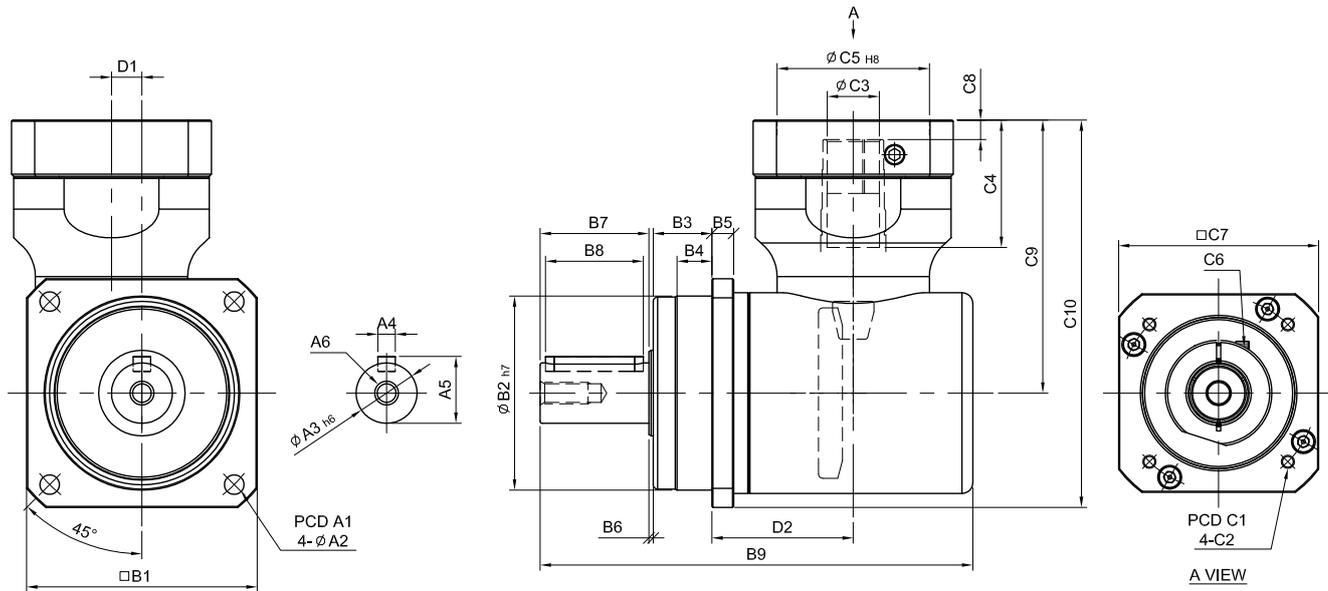
	Model	60	75	100	140	180
	Code					
A	A1	68	85	120	165	215
	A2	5.5	6.5	9	11	13
	A3	15	20	28	40	55
	A4	22	28	38	52	73
	A5	6-M6	6-M6	8-M6	8-M6	12-M8
B	B1	62	76	106	142	190
	B2	60	70	90	130	160
	B3	18	18	27	27	26
	B4	11	12	16	15.5	15.5
	B5	6	7	10	12	15
	B6	144	155	195	253	311
	B7	153	162	202	264	320
C	C1	46 · 60 · 63	70 · 75 · 90	90 · 100 · 115 · 145	115 · 145 · 165	145 · 165 · 200
	C2	M3 · M4 · M5	M4 · M5 · M6	M5 · M6 · M8	M6 · M8 · M10	M8 · M10 · M12
	C3	11	14	24	35	42
	C4	26	33	59	82	84.5
	C5	30 · 40 · 50	50 · 60 · 70	70 · 80 · 95 · 110	95 · 110 · 130	110 · 130 · 180
	C6	M4 x P0.7	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5
	C7	46 · 55	64 · 70 · 80	92 · 110 · 130	122 · 130 · 150	146 · 150 · 190
	C8	5	6	9	10	10
	C9	69	95.5	126.5	179	228
	C10	100	133.5	179.5	250	323
D	D1	9	9	14	23	32
	D2	41.5	48	65	90	125
Weight ±3% (kg)		1.6	2.71	6.63	16.1	35.8

HF-FS series

RATIO : 5.10.15 (單段 1-Stage)

入力法蘭 - 單出力軸心

Input Flange - Single Output Shaft



unit: mm

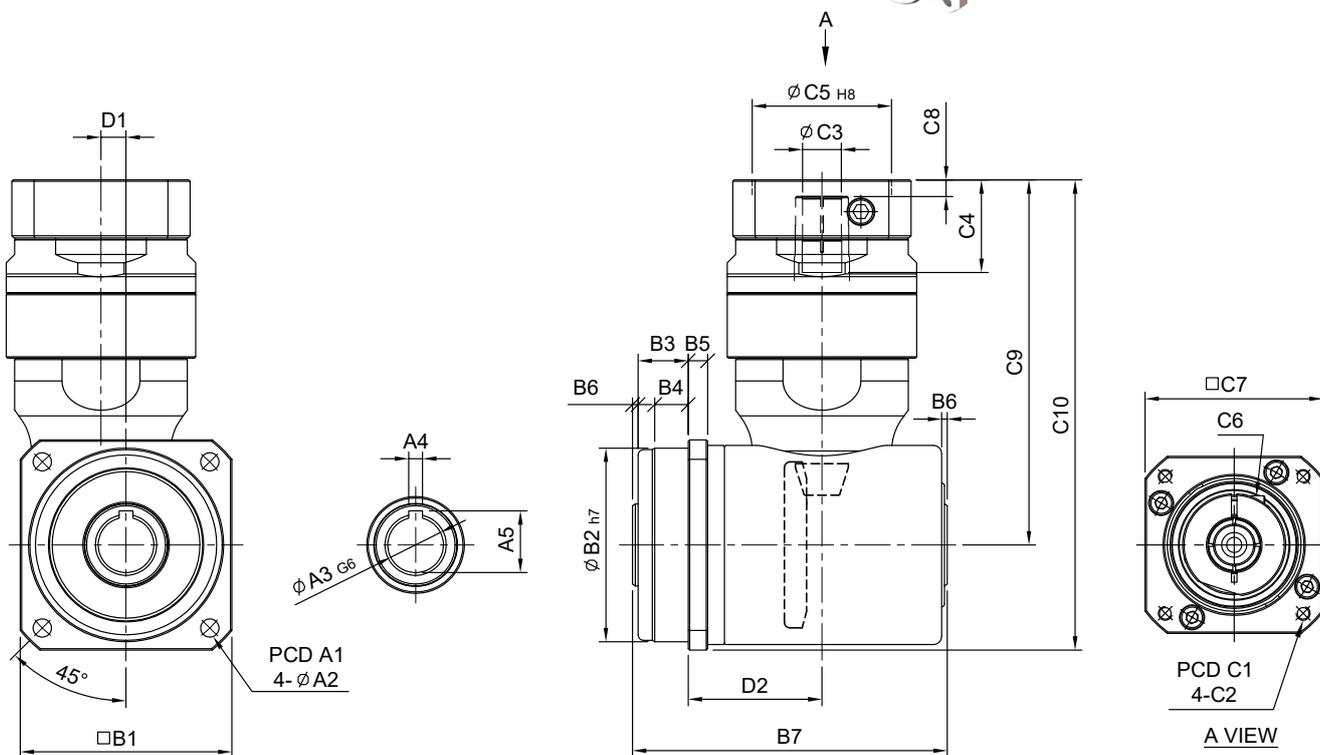
Model Code	60	75	100	140	180	
A	A1	68	85	120	165	215
	A2	5.5	6.5	9	11	13
	A3	16	22	28	40	55
	A4	5	6	8	12	16
	A5	18	24.5	31	43	59
	A6	M5 x P0.8	M8 x P.125	M10 x 1.5	M12 x P1.75	M16 x P20
B	B1	62	76	106	142	190
	B2	60	70	90	130	160
	B3	18	18	27	27	26
	B4	11	12	16	15.5	15.5
	B5	6	7	10	12	15
	B6	2	2	2	3	3
	B7	28	36	50	70	82
	B8	25	32	45	60	70
	B9	129	147	199	260	326
C	C1	46 · 60 · 63	70 · 75 · 90	90 · 100 · 115 · 145	115 · 145 · 165	145 · 165 · 200
	C2	M3 · M4 · M5	M4 · M5 · M6	M5 · M6 · M8	M6 · M8 · M10	M8 · M10 · M12
	C3	11	14	24	35	42
	C4	26	33	59	82	84.5
	C5	30 · 40 · 50	50 · 60 · 70	70 · 80 · 95 · 110	95 · 110 · 130	110 · 130 · 180
	C6	M4 x P0.7	M5 x P0.8	M6 x P1.0	M8 x P1.25	M10 x P1.5
	C7	46 · 55	64 · 70 · 80	92 · 110 · 130	122 · 130 · 150	146 · 150 · 190
	C8	5	6	9	10	10
	C9	69	95.5	126.5	179	228
	C10	100	133.5	179.5	250	323
D	D1	9	9	14	23	32
	D2	41.5	48	65	90	125
Weight ±3% (kg)	1.64	2.9	7.3	17.9	40.2	

HF-RO series

RATIO : 25.50.75.100.150 (雙段 2-Stage)

搭配行星減速機 - 出力中空軸

Fitted with Planetary Reducer - Hollow Output Shaft



unit: mm

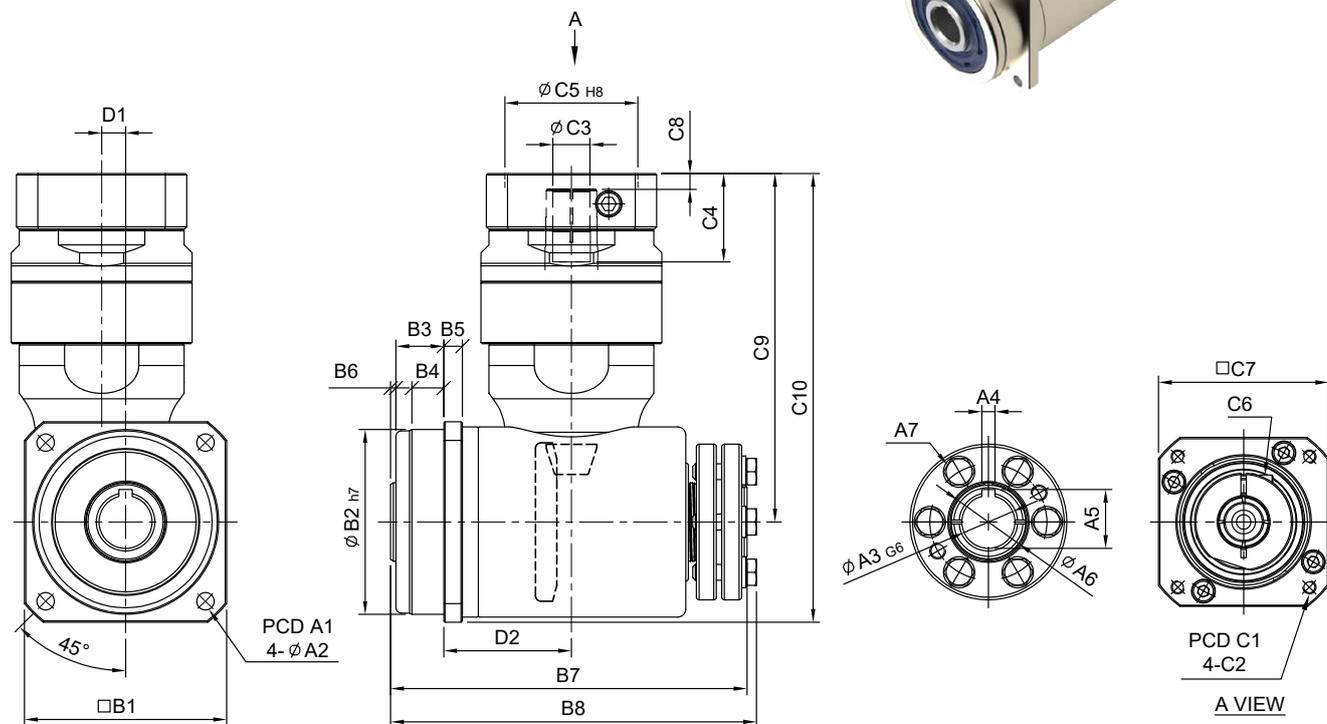
	Model	60	75	100	140	180
	Code					
A	A1	68	85	120	165	215
	A2	5.5	6.5	9	11	13
	A3	15	20	28	40	55
	A4	4	5	8	12	14
	A5	16.7	22.3	31.3	43.3	58.8
B	B1	62	76	106	142	190
	B2	60	70	90	130	160
	B3	18	18	27	27	26
	B4	11	12	16	15.5	15.5
	B5	6	7	10	12	15
	B6	2	2	2	3	3
	B7	103	113	151	193	247
C	C1	46·60·63	70·75·90	70·75·90·115	90·100·115·145	115·145·165
	C2	M3·M4·M5	M4·M5·M6	M4·M5·M6·M8	M5·M6·M8	M6·M8·M10
	C3	8·9·11	11·14	11·14 16·19	16·19·22·24	22·24·28·32
	C4	26	33.5	33.5 41.5	59.2	67.5
	C5	30·40·50	50·60·70	50·60·70·95	70·80·95·110	95·110·130
	C6	M4 x P0.7	M5 x P0.8	M5 x P0.8	M6 x P1.0	M8 x P1.25
	C7	46·55	64·70·80	64·70·80·100	92·110·130	122·130·150
	C8	5	6	6	9.2	10.5
	C9	98	132	155 163	220	278.5
	C10	129	170	208 216	294.5	382.5
D	D1	9	9	14	23	32
	D2	41.5	48	65	90	125
Weight ±3% (kg)		2.3	3.5	8.81	18.1	43.4

HF-RN series

RATIO : 25.50.75.100.150 (雙段 2-Stage)

搭配行星減速機 - 單邊免鍵軸套

Fitted with Planetary Reducer - Single Clamping



unit: mm

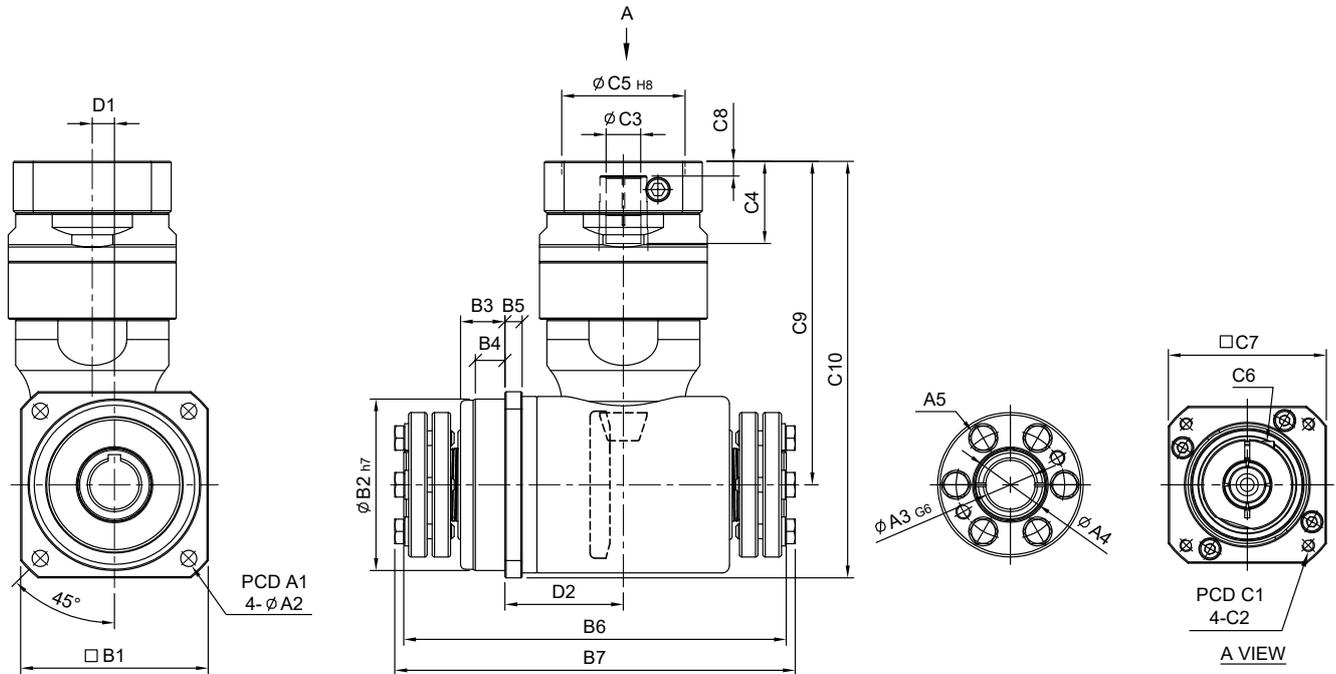
Model Code	60	75	100	140	180	
A	A1	68	85	120	165	215
	A2	5.5	6.5	9	11	13
	A3	15	20	28	40	55
	A4	4	5	8	12	14
	A5	16.7	22.3	31.3	43.3	58.8
	A6	22	28	38	52	73
	A7	6-M6	6-M6	8-M6	8-M6	12-M8
B	B1	62	76	106	142	190
	B2	60	70	90	130	160
	B3	18	18	27	27	26
	B4	11	12	16	15.5	15.5
	B5	6	7	10	12	15
	B6	2	2	2	3	3
	B7	123.5	134	173	223	279
B8	127	138	177	229	284	
C	C1	46 · 60 · 63	70 · 75 · 90	70 · 75 · 90 · 115	90 · 100 · 115 · 145	115 · 145 · 165
	C2	M3 · M4 · M5	M4 · M5 · M6	M4 · M5 · M6 · M8	M5 · M6 · M8	M6 · M8 · M10
	C3	8 · 9 · 11	11 · 14	11 · 14 16 · 19	16 · 19 · 22 · 24	22 · 24 · 28 · 32
	C4	26	33.5	33.5 41.5	59.2	67.5
	C5	30 · 40 · 50	50 · 60 · 70	50 · 60 · 70 · 95	70 · 80 · 95 · 110	95 · 110 · 130
	C6	M4 x P0.7	M5 x P0.8	M5 x P0.8	M6 x P1.0	M8 x P1.25
	C7	46 · 55	64 · 70 · 80	64 · 70 · 80 · 100	92 · 110 · 130	122 · 130 · 150
	C8	5	6	6	9.2	10.5
	C9	98	132	155 163	220	278.5
	C10	129	170	208 216	294.5	382.5
D	D1	9	9	14	23	32
	D2	41.5	48	65	90	125
Weight ±3% (kg)	2.3	3.5	8.9	18.3	43.4	

HF-RM series

RATIO : 25.50.75.100.150 (雙段 2-Stage)

搭配行星減速機 - 雙邊免鍵軸套

Fitted with Planetary Reducer - Double Clamping



unit: mm

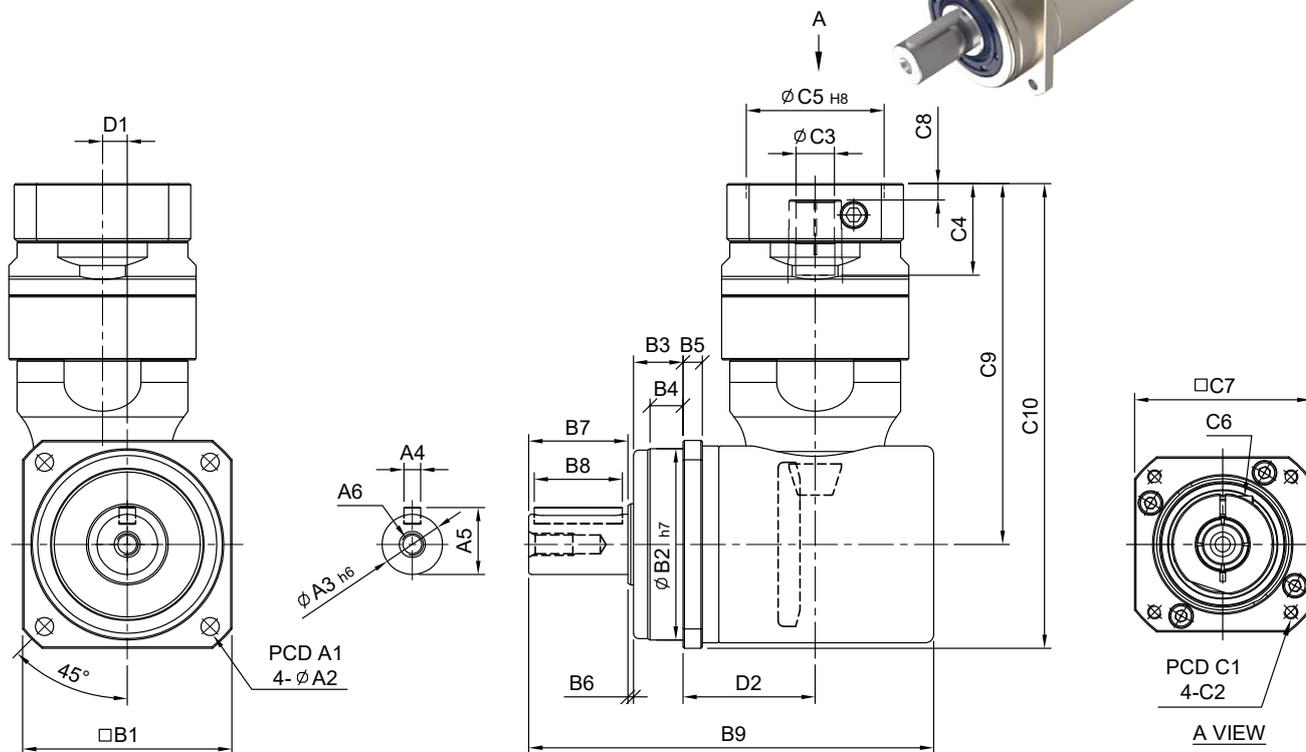
	Model Code	60	75	100	140	180
		A	A1	68	85	120
	A2	5.5	6.5	9	11	13
	A3	15	20	28	40	55
	A4	22	28	38	52	73
	A5	6-M6	6-M6	8-M6	8-M6	12-M8
B	B1	62	76	106	142	190
	B2	60	70	90	130	160
	B3	18	18	27	27	26
	B4	11	12	16	15.5	15.5
	B5	6	7	10	12	15
	B6	144	155	195	253	311
	B7	153	162	202	264	320
C	C1	46 · 60 · 63	70 · 75 · 90	70 · 75 · 90 · 115	90 · 100 · 115 · 145	115 · 145 · 165
	C2	M3 · M4 · M5	M4 · M5 · M6	M4 · M5 · M6 · M8	M5 · M6 · M8	M6 · M8 · M10
	C3	8 · 9 · 11	11 · 14	11 · 14 16 · 19	16 · 19 · 22 · 24	22 · 24 · 28 · 32
	C4	26	33.5	33.5 41.5	59.2	67.5
	C5	30 · 40 · 50	50 · 60 · 70	50 · 60 · 70 · 95	70 · 80 · 95 · 110	95 · 110 · 130
	C6	M4 x P0.7	M5 x P0.8	M5 x P0.8	M6 x P1.0	M8 x P1.25
	C7	46 · 55	64 · 70 · 80	64 · 70 · 80 · 100	92 · 110 · 130	122 · 130 · 150
	C8	5	6	6	9.2	10.5
	C9	98	132	155 163	220	278.5
	C10	129	170	208 216	294.5	382.5
D	D1	9	9	14	23	32
	D2	41.5	48	65	90	125
	Weight ±3% (kg)	3.6	3.61	9	18.6	44

HF-RS series

RATIO : 25.50.75.100.150 (雙段 2-Stage)

搭配行星減速機 - 單出力軸心

Fitted with Planetary Reducer - Single Output Shaft



unit: mm

	Model Code	60	75	100	140	180
	A	A1	68	85	120	165
A2		5.5	6.5	9	11	13
A3		16	22	28	40	55
A4		5	6	8	12	16
A5		18	24.5	31	43	59
A6		M5 x P0.8	M8 x P.125	M10 x 1.5	M12 x P1.75	M16 x P20
B	B1	62	76	106	142	190
	B2	60	70	90	130	160
	B3	18	18	27	27	26
	B4	11	12	16	15.5	15.5
	B5	6	7	10	12	15
	B6	2	2	2	3	3
	B7	28	36	50	70	82
	B8	25	32	45	60	70
	B9	129	147	199	260	326
C	C1	46 · 60 · 63	70 · 75 · 90	70 · 75 · 90 · 115	90 · 100 · 115 · 145	115 · 145 · 165
	C2	M3 · M4 · M5	M4 · M5 · M6	M4 · M5 · M6 · M8	M5 · M6 · M8	M6 · M8 · M10
	C3	8 · 9 · 11	11 · 14	11 · 14 16 · 19	16 · 19 · 22 · 24	22 · 24 · 28 · 32
	C4	26	33.5	33.5 41.5	59.2	67.5
	C5	30 · 40 · 50	50 · 60 · 70	50 · 60 · 70 · 95	70 · 80 · 95 · 110	95 · 110 · 130
	C6	M4 x P0.7	M5 x P0.8	M5 x P0.8	M6 x P1.0	M8 x P1.25
	C7	46 · 55	64 · 70 · 80	64 · 70 · 80 · 100	92 · 110 · 130	122 · 130 · 150
	C8	5	6	6	9.2	10.5
	C9	98	132	155 163	220	278.5
	C10	129	170	208 216	294.5	382.5
D	D1	9	9	14	23	32
	D2	41.5	48	65	90	125
Weight ±3% (kg)		3.64	3.8	9.64	20.4	48.3