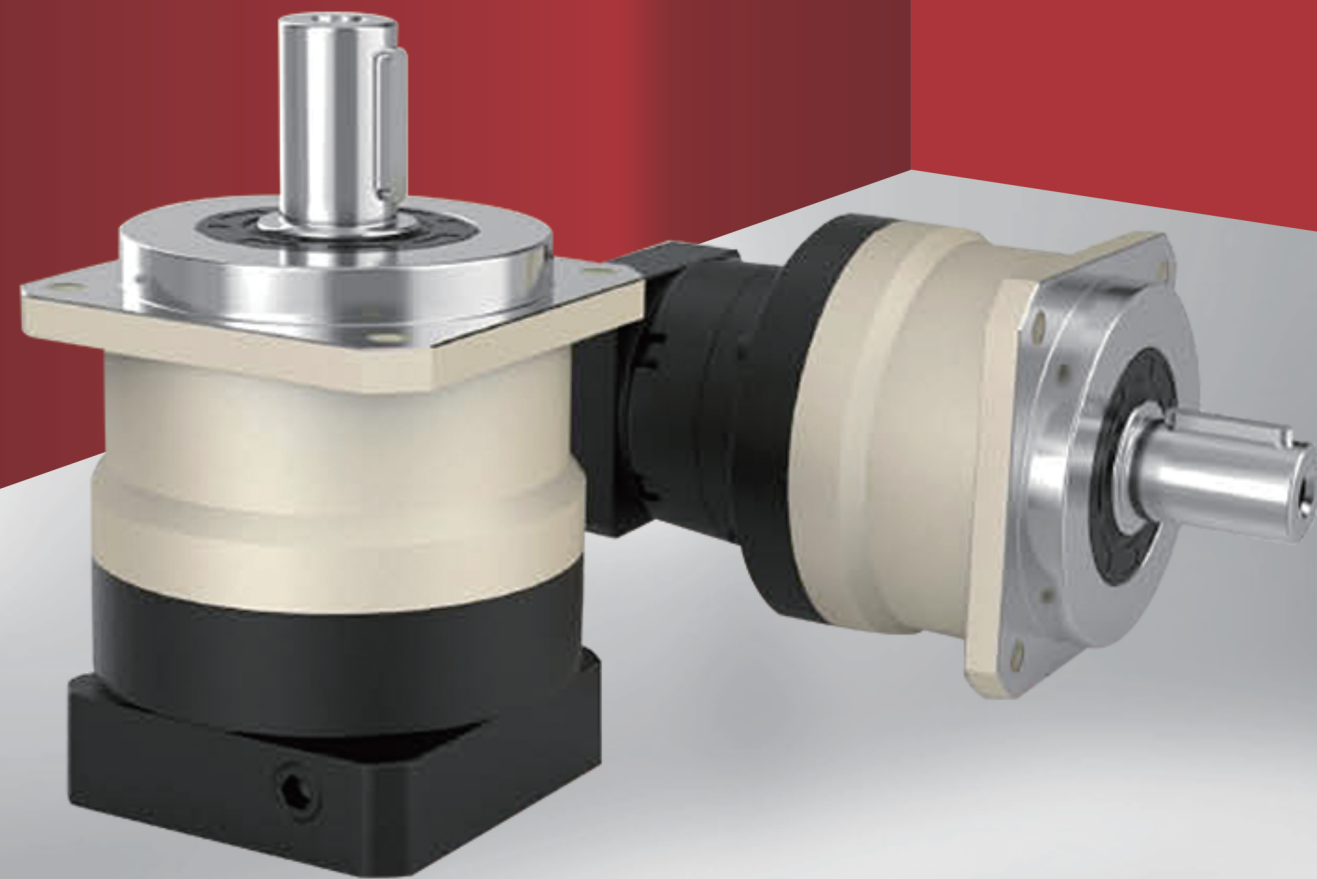


FB

High precision helical planetary reducer



GEAR BOX PERFORMANCE INFORMATION

Specification		Stages	Reduction Ratio	FB042	FB060	FB090	FB115	FB142	FB180	FB220
Rated output torque T2N	Nm	1	3	20	55	130	208	342	588	1,140
			4	19	50	140	290	542	1,050	1,700
			5	22	60	160	330	650	1,200	2,000
			7	19	35	140	300	550	1,100	1,800
			8	17	35	120	260	500	1,000	1,600
			10	14	23	48	140	370	520	1,220
		2	15	20	55	130	208	342	588	1,140
			20	19	50	140	290	542	1,050	1,700
			25	22	60	160	330	650	1,200	2,000
			30	22	60	160	330	650	1,200	2,000
			35	22	60	160	330	650	1,200	2,000
			40	22	60	160	330	650	1,200	2,000
			50	22	60	160	330	650	1,200	2,000
			70	19	35	140	300	550	1,100	1,800
			80	17	35	120	260	500	1,000	1,600
			100	14	23	48	140	370	520	1,220
Maximum output torque T2B	Nm	1,2	3~100	3 times rated output cabinet						
Rated input speed Π_1	rpm	1,2	3~100	5,000	5,000	4,000	4,000	4,000	3,000	2,000
Maximum input speed Π_{1B}	rpm	1,2	3~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Backlash	arcmin	1	3~10	≤8	≤8	≤8	≤8	≤8	≤8	≤8
		2	12~100	≤12	≤12	≤12	≤12	≤12	≤12	≤12
Torsional rigidity	Nm/arcmin	1,2	3~100	3	7	14	25	50	145	225
Permissible radial force F2rB2	N	1,2	3~100	780	1,530	3,250	6,700	9,400	14,500	50,000
Permissible radial force F2a1B2	N	1,2	3~100	350	630	1,300	3,000	4,000	6,200	35,000
Permissible radial force F2a2B2	N	1,2	3~100	390	765	1,625	3,350	4,700	7,250	25,000
Service life	hr	1,2	3~100	20,000*						
Efficiency η	%	1	3~10	≥97%						
		2	12~100	≥94%						
weight	kg	1	3~10	0.5	1.3	3.7	7.8	14.5	29	48
		2	12~100	0.8	1.9	4.1	9	17.5	33	60
Use temperature	°C	1,2	3~100	-10°C~+90°C						
lubricating		1,2	3~100	Synthetic grease						
Protection level		1,2	3~100	IP64						
Installation direction		1,2	3~100	Any direction						
Noise level (n _r =3000rpm)	dB	1,2	3~100	≤56	≤58	≤60	≤63	≤65	≤67	≤70

Reducer moment of inertia

Specification		Stages	Reduction Ratio	FB042	FB060	FB090	FB115	FB142	FB180	FB220
Moment of inertia J,	kg·cm ²	1	3	0.03	0.16	0.61	3.25	9.21	28.98	69.61
			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
			8	0.03	0.13	0.44	2.58	7.07	22.59	50.84
			10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
		2	15	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			20	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			25	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			30	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			35	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			40	0.03	0.03	0.13	0.47	2.71	7.42	23.29
			50	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			70	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			80	0.03	0.03	0.13	0.44	2.57	7.03	22.51
			100	0.03	0.03	0.13	0.44	2.57	7.03	22.51

1. Reduction ratio ($i=N_{in}/N_{out}$)

*Continuous operation reduces service life by half.

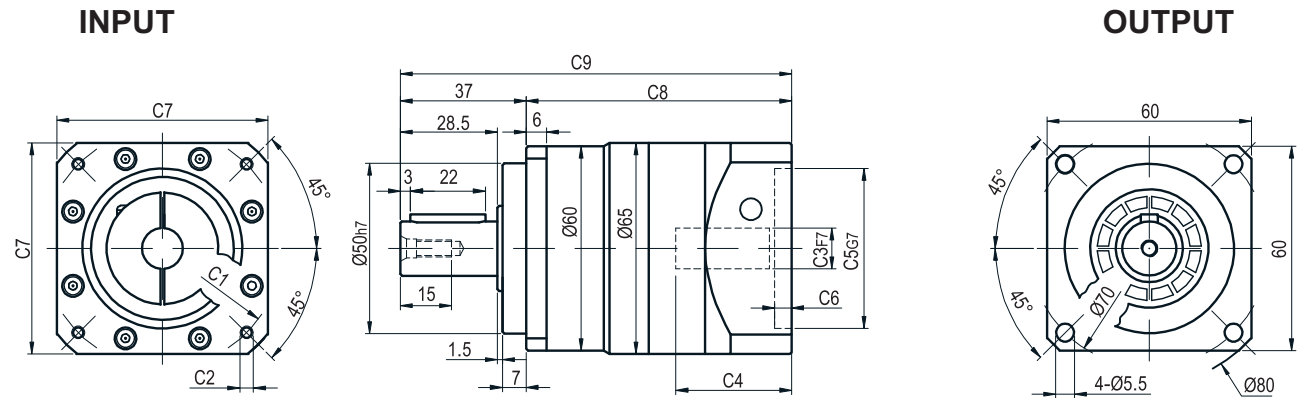
2. When the output speed is **100 rpm**,

it acts on the center position of the output shaft.

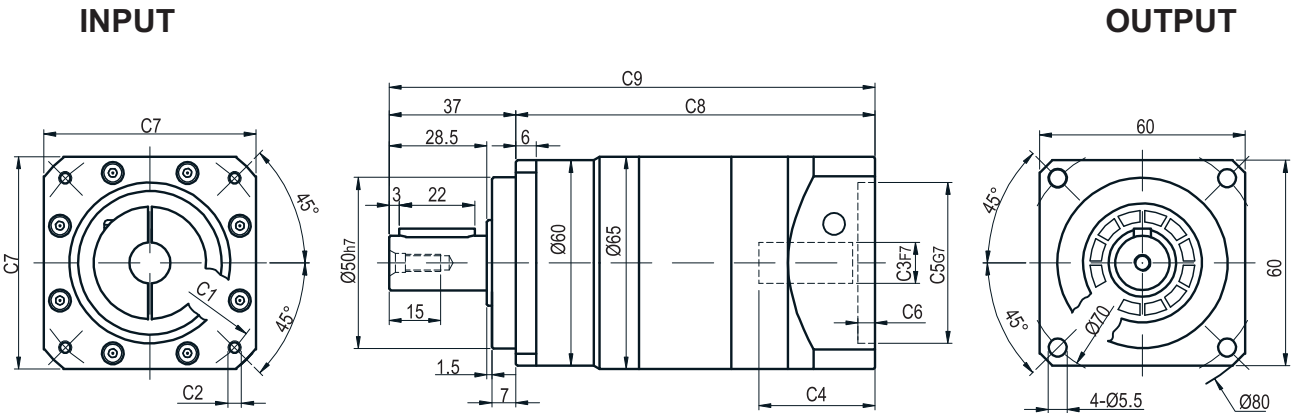
High-precision Helical Planetary Gear Reducer

OUTLINE DIMENSION SHEET

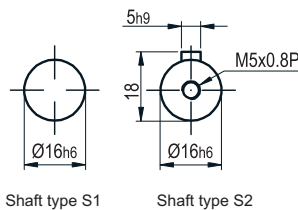
FB-060-L1



FB-060-L2



OUTPUT DIAMETER

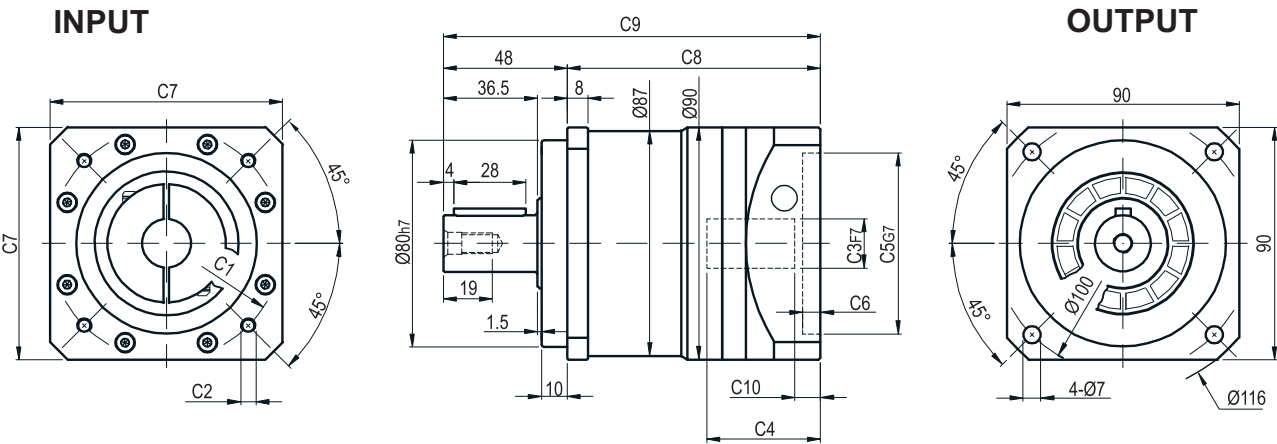


Size	C1	C2	C3	C4	C5	C6	C7	C8	C9
FB-060-L1	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	65	78	115
	Ø90	4-M5x12,4-M6x14	Ø19	44	Ø70	5	80	88	125
FB-060-L1	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	65	105	142

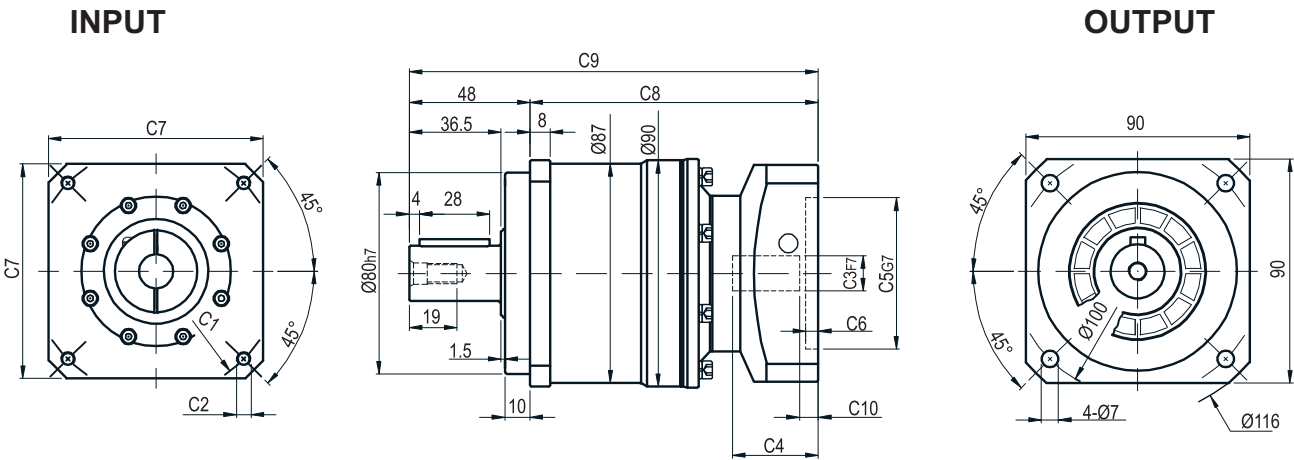
*C1~C7 are the dimensions of the metric standard motor connection plate, which can be customized according to customer requirements.

OUTLINE DIMENSION SHEET

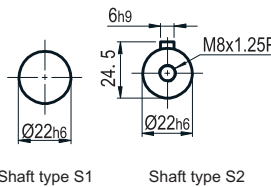
FB-090-L1



FB-090-L2



OUTPUT DIAMETER



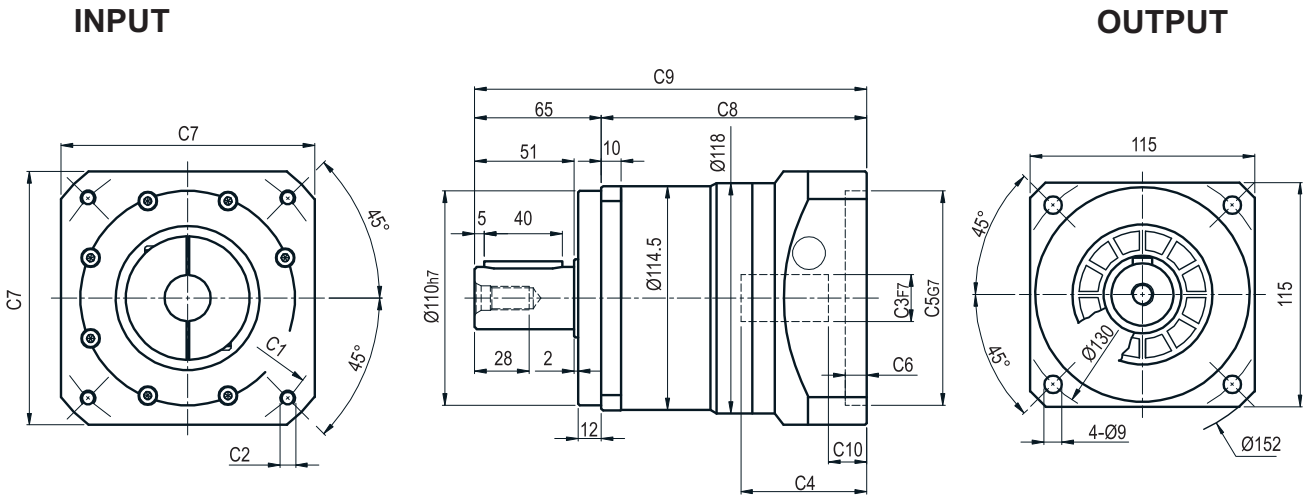
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FB-090-L1	Ø90	4-M5x12,4-M6x14	Ø19	44	Ø70	7	90	98	146	8
	Ø100	4-M6x14	Ø16	44	Ø80	6.5	90	98	146	7
	Ø115	4-M8x20	Ø19,Ø22	50	Ø95	7	100	104	152	13
	Ø115	4-M8x25	Ø19,Ø22	60	Ø95	8	100	114	162	23
	Ø145	4-M8x25	Ø19,Ø22,Ø24	60	Ø110	8	130	114	162	23
FB-090-L2	Ø70	4-M4x10,4-M5x12	Ø11,Ø14	34	Ø50	5	65	114.5	162.5	5.5
	Ø90	4-M5x12,4-M6x14	Ø19	44	Ø70	5	80	124.5	172.5	16.5
	Ø100	4-M6x14	Ø16	38.5	Ø80	5	86	119	167	10

*C1~C7 are the dimensions of the metric standard motor connection plate, which can be customized according to customer requirements.

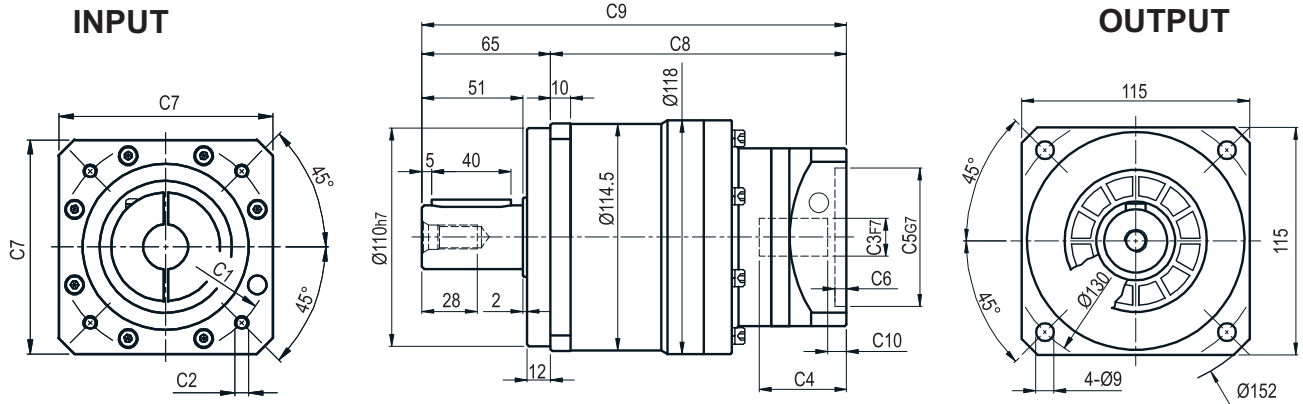
High-precision Helical Planetary Gear Reducer

OUTLINE DIMENSION SHEET

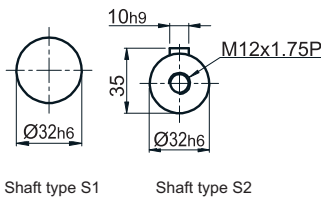
FB-115-L1



FB-115-L2



OUTPUT DIAMETER

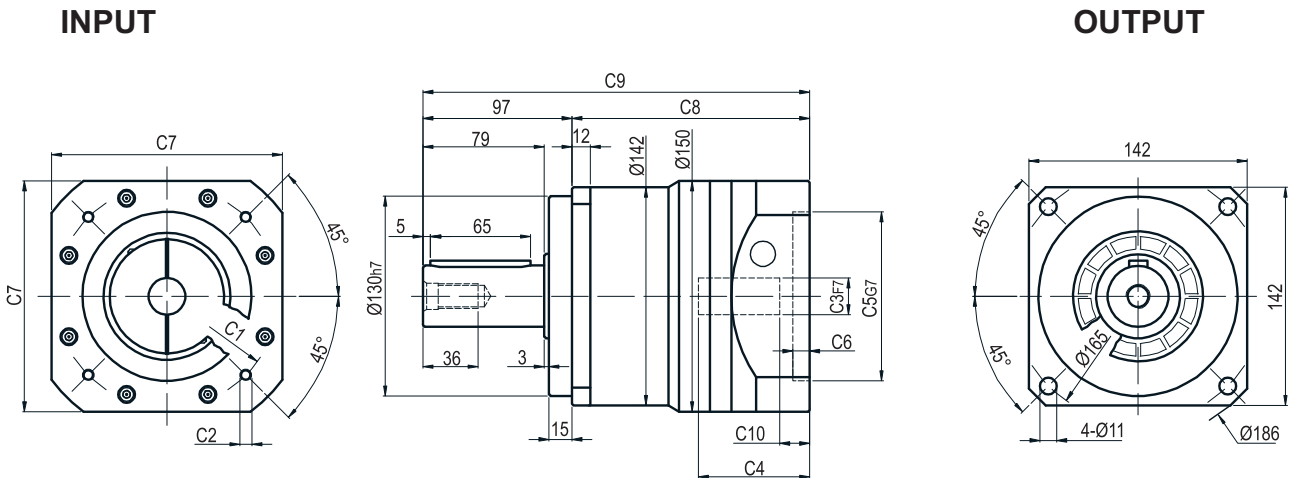


Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FB-115-L1	Ø145	4-M8x25	Ø19,Ø22,Ø24	64.5	Ø110	11	130	135	201	19.5
	Ø200	4-M12x30	Ø35	81.5	Ø114.3	6	180	153	218	37.5
	Ø90	4-M5x12, 4-M6x14	Ø19	44	Ø70	7	90	149.5	214.5	8
FB-115-L2	Ø100	4-M6x12	Ø16	44	Ø80	7	90	149.5	214.5	7
	Ø115	4-M8x20	Ø19,Ø22	50	Ø95	7	100	155.5	220.5	13
	Ø115	4-M8x25	Ø19,Ø22	60	Ø95	8	100	165.5	230.5	23
	Ø145	4-M8x25	Ø19,Ø22,Ø24	60	Ø110	8	130	165.5	230.5	23

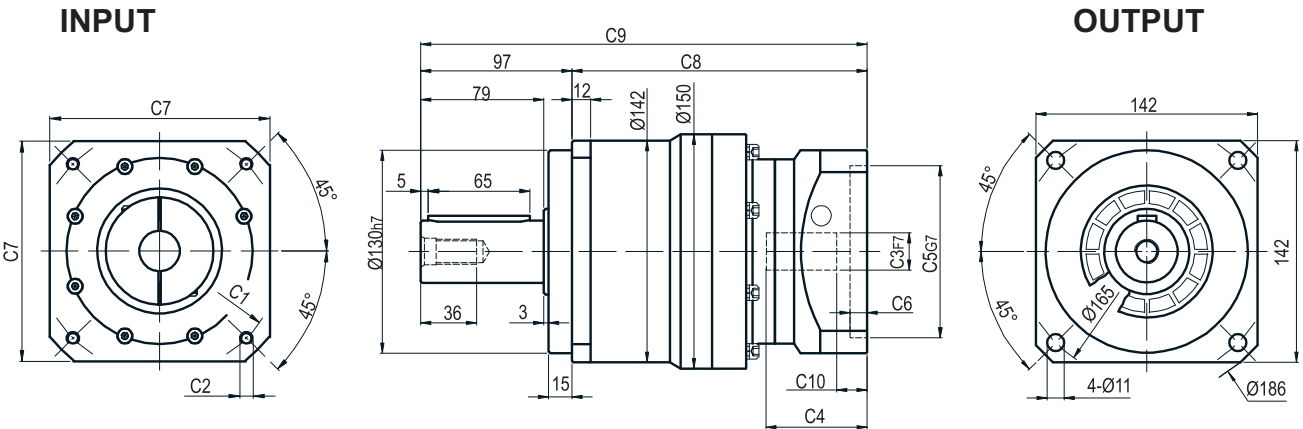
*C1~C7 are the dimensions of the metric standard motor connection plate, which can be customized according to customer requirements.

OUTLINE DIMENSION SHEET

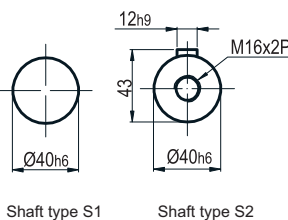
FB-142-L1



FB-142-L2



OUTPUT DIAMETER



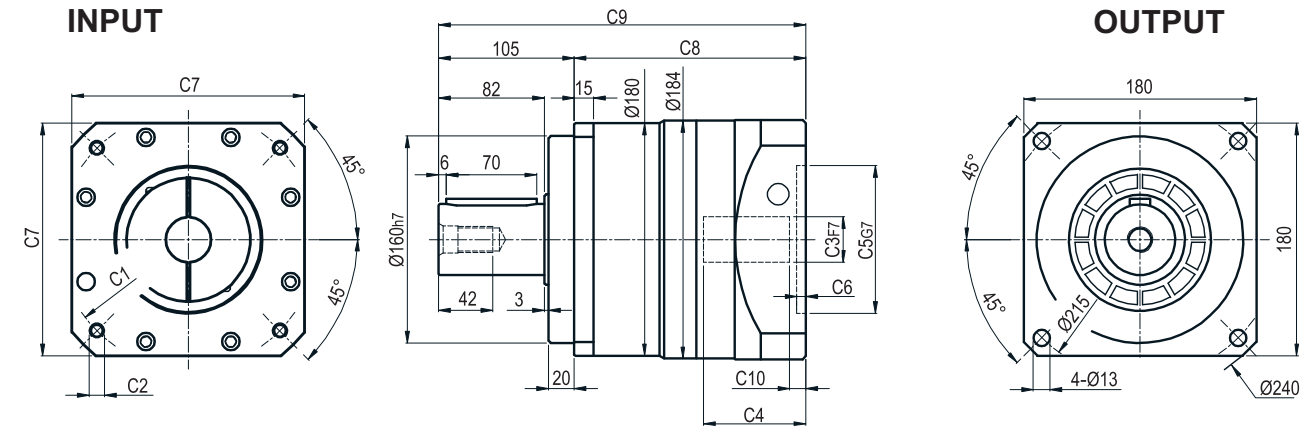
Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FB-142-L1	Ø145	4-M8x25	Ø22,Ø24	72.5	Ø110	11	150	154.5	251.5	19.5
	Ø200	4-M12x30	Ø35	82	Ø114.3	8	180	164	261	29
FB-142-L2	Ø145	4-M8x25	Ø19,Ø22,Ø24	64.5	Ø110	11	130	189	286	19.5
	Ø200	4-M12x30	Ø35	81.5	Ø114.3	6	180	206	303	37.5

*C1~C7 are the dimensions of the metric standard motor connection plate, which can be customized according to customer requirements.

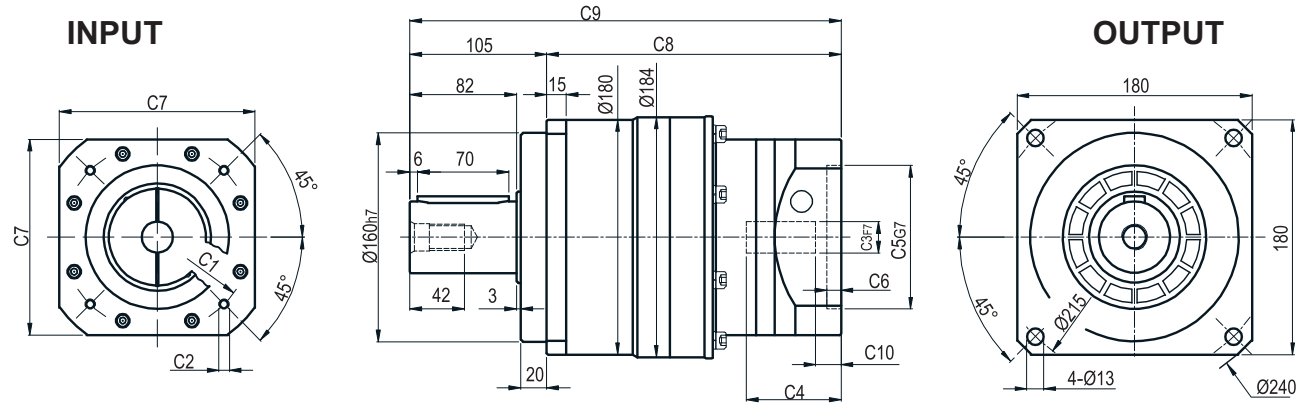
High-precision Helical Planetary Gear Reducer

OUTLINE DIMENSION SHEET

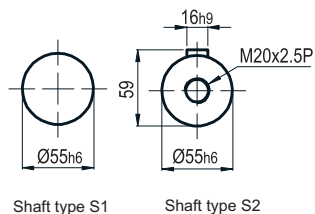
FB-180-L1



FB-180-L2



OUTPUT DIAMETER

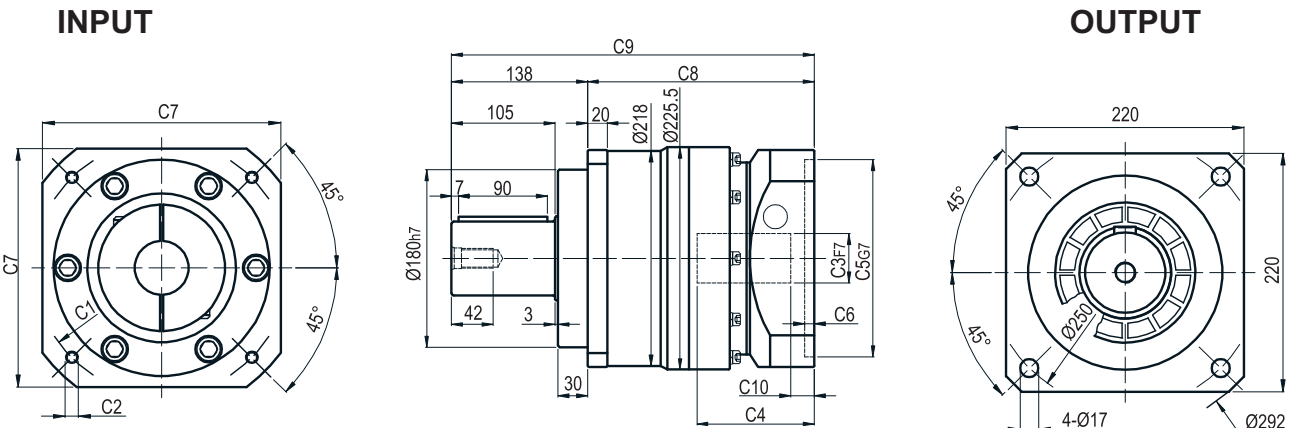


Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FB-180-L1	Ø200	4-M12x28	Ø35	85	Ø114.3	7	180	179	284	7.5
	Ø200	4-M12x30	Ø42	116	Ø114.3	7	180	210	315	40
	Ø215	4-M12x30	Ø42	90	Ø180	8	200	184	289	14
	Ø235	4-M12x30	Ø42	120	Ø200	10	220	214	319	44
FB-180-L2	Ø145	4-M8x25	Ø22, Ø24	72.5	Ø110	11	150	225.5	330.5	19.5
	Ø200	4-M12x30	Ø35	82	Ø114.3	8	180	235	340	29

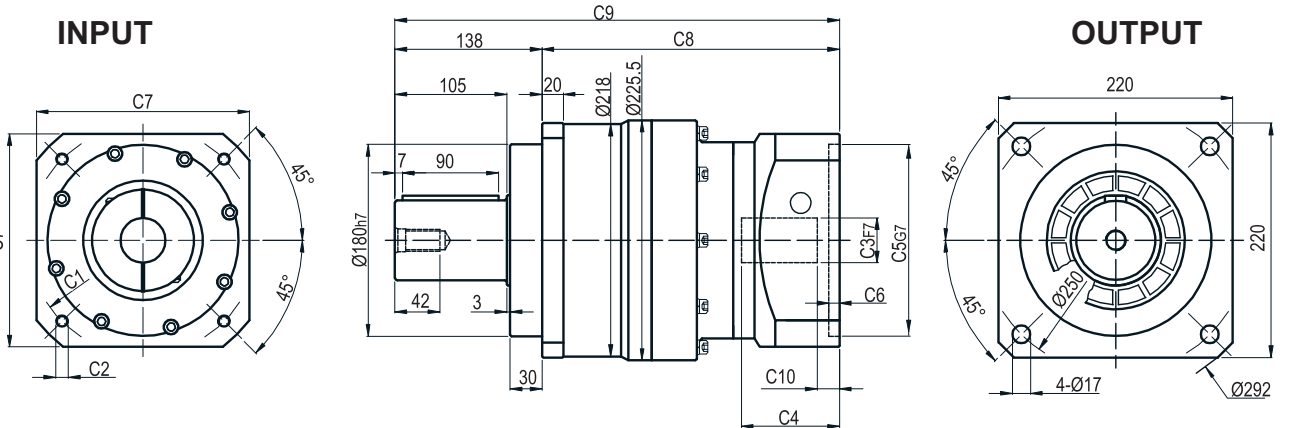
*C1~C7 are the dimensions of the metric standard motor connection plate, which can be customized according to customer requirements.

OUTLINE DIMENSION SHEET

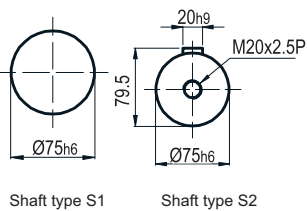
FB-220-L1



FB-220-L2



OUTPUT DIAMETER



Size	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
FB-220-L1	Ø200	4-M12x30	Ø35, Ø42	116	Ø114.3	15	200	227	365	19.5
	Ø215	4-M12x30	Ø42	109	Ø180	8	200	220	358	12.5
	Ø235	4-M12x30	Ø42, Ø55	119	Ø200	10	220	230	368	22.5
	Ø200	4-M12x30	Ø35	85	Ø114.3	7	180	264	402	7.5
FB-220-L2	Ø200	4-M12x30	Ø42	116	Ø114.3	7	180	295	433	40
	Ø215	4-M12x30	Ø42	90	Ø180	8	200	269	407	14
	Ø235	4-M12x30	Ø42	120	Ø200	10	220	299	437	44
	Ø200	4-M12x30	Ø35	85	Ø114.3	7	180	264	402	7.5

*C1~C7 are the dimensions of the metric standard motor connection plate, which can be customized according to customer requirements.