

HA series planetary reducer adopts crossed roller bearing, which has the characteristics of high precision, high rigidity and large bearing capacity

The bearing moment is several times that of deep groove ball bearings

At the same time, the use of this bearing realizes that a reducer can output both the shaft and the disk surface, which is more convenient for users to use and replace.

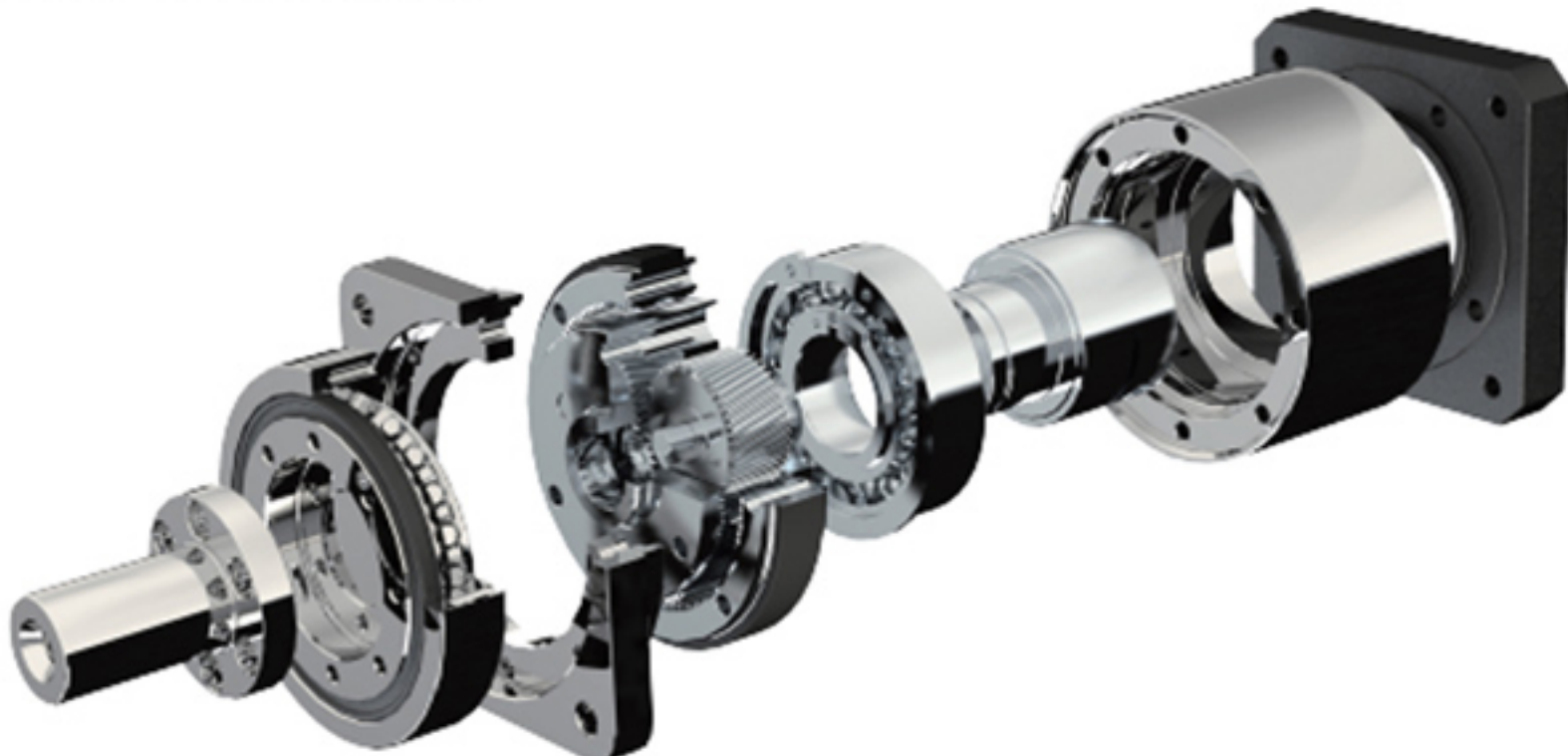
Specifications Table

Specifications		Stage	Ratio	HA042	HA060	HA090	HA115	HA142	HA180	HA220
Nominal Output Torque T _{2N}	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
			6	20	55	150	310	600	1,100	1,900
			7	19	50	140	300	550	1,100	1,800
			8	17	45	120	260	500	1,000	1,600
			9	14	40	100	230	450	900	1,500
			10	14	40	100	230	450	900	1,500
			15	20	55	130	208	342	588	1,140
			20	19	50	140	290	542	1,050	1,700
		2	25	22	60	160	330	650	1,200	2,000
			30	20	55	150	310	600	1,100	1,900
			35	19	50	140	300	550	1,100	1,800
			40	17	45	120	260	500	1,000	1,600
			45	14	40	100	230	450	900	1,500
			50	22	60	160	330	650	1,200	2,000
			60	20	55	150	310	600	1,100	1,900
			70	19	50	140	300	550	1,100	1,800
			80	17	45	120	260	500	1,000	1,600
			90	14	40	100	230	450	900	1,500
			100	14	40	100	230	450	900	1,500
Emergency Stop Torque T _{2NOT}	Nm	1,2	3~100 3times of Nominal Output Torque							
Nomial Input Speed n _{1N}	rpm	1,2	3~100	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max.Input Speed n _{1N}	rpm	1,2	3~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Micro Backlash P0	arcmin	1	3~10	—	—	≤1	≤1	≤1	≤1	≤1
Precision Backlash P1	arcmin	2	15~100	—	—	—	≤3	≤3	≤3	≤3
		1	3~10	≤3	≤3	≤3	≤3	≤3	≤3	≤3
Standard Backlash P2	arcmin	2	15~100	≤5	≤5	≤5	≤5	≤5	≤5	≤5
		1	3~10	≤5	≤5	≤5	≤5	≤5	≤5	≤5
Torsional Rigidity	Nm/arcmin	1,2	3~100	6	14	28	50	100	290	450
Max Radial Load F _{2R1} C	N	1,2	3~100	1,120	3,060	6,500	13,400	18,800	29,000	60,000
Max Axoa2 Load F _{2R1} C	N	1,2	3~100	560	1,025	2,300	3,750	5,900	12,500	30,000
Service Life	hr	1,2	3~100	25,000						
Efficiency	%	1	3~10	≥97%						
		2	15~100	≥94%						
Weight	kg	1	3~10	0.4	0.9	2.6	5.5	10.15	21	33.6
		2	15~100	0.56	1.1	2.9	6.3	12.3	22.9	42
Operating Temp	°C	1,2	3~100	-10°C~90°C						
Lubrication				Synthetic Lubricant						
Protection Class		1,2	3~100	IP65						
Mounting Position		1,2	3~100	Any direction						
Noise Level ¹ (n ₁ =3000rpm, i=10,) ²	dB(A)	1,2	3~100	≤56	≤58	≤60	≤63	≤65	≤67	≤70

Inertia

Specifications		Stage	Ratio	HA042	HA060	HA090	HA115	HA142	HA180	HA220
Inertia J _i	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
			6	0.03	0.13	0.45	2.65	7.25	22.75	51.72
			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
			9	0.03	0.13	0.44	2.57	7.04	22.53	50.63
			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
			45	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
			60	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
			90	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})
2. Maximum acceleration torque T_{2B} = 60% of T_{2NOT}
3. When the output speed is 100rpm, it acts on the center of the output shaft
4. Connecting and running, the service life is 10,000hrs
- 5.The noise value will vary with the ratio of the reducer



Basic matching size of reducer

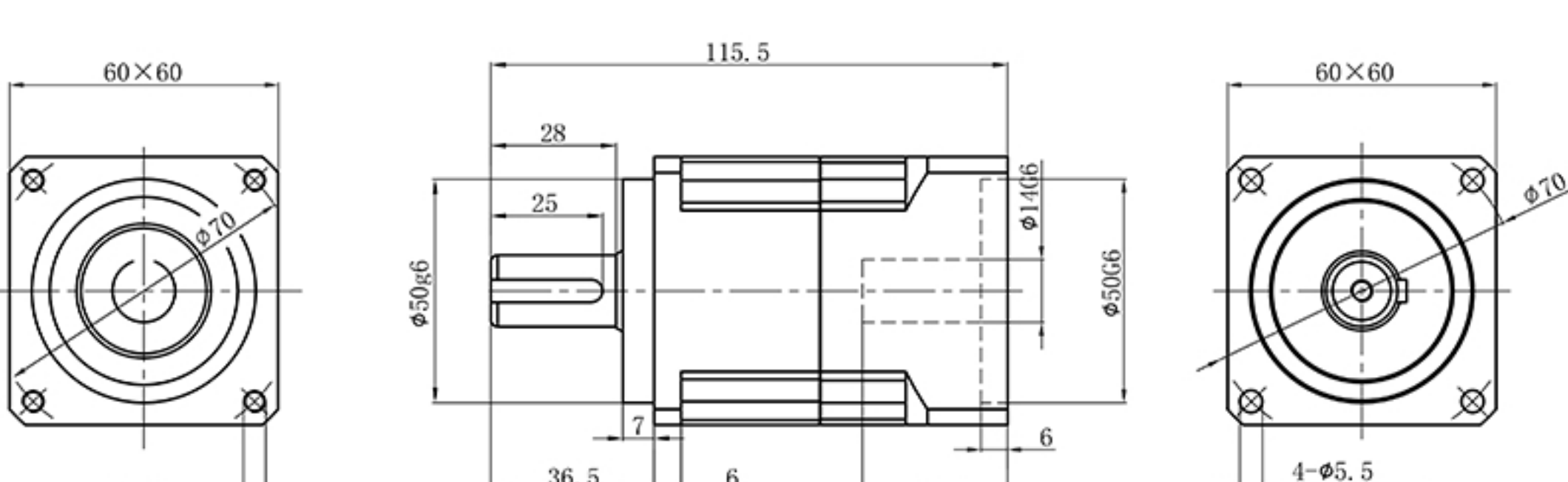
(mm)

Size	HA042	HA060	HA090	HA115	HA142	HA180	HA220
D1	50	70	100	130	165	215	250
D2	3.4	5.5	6.6	9	11	13	17
D3 j6	13	16	22	32	40	55	75
D4 g6	35	50	80	110	130	160	180
D5	22	45	65	95	75	95	115
D6	M4 x 0.7P	M5 x 0.8P	M8 x 1.25P	M12 x 1.75P	M16 x 2P	M20 x 2.5P	M20 x 2.5P
D7	56	80	110	165	185	240	292
L1	42	60	90	115	142	180	220
L2	26	37	48	83.5	97	105	138
L3	5.5	7	10	12	15	20	30
L4	1	1	1	0.5	3	3	3
L5	16	25	32	40	63	70	90
L6	2	2	3	5	5	6	7
L7	4	14	18	26	12	15	20
L8	31	57.3	48	97	119.5	154	163.5
L9	4.5	4.5	27.75	13	12	15	15
L10	10	12.5	23.2	23	36	42	42
C1 ¹	46	24.5	130	65	165	215	235
C2 ¹	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M12 x 1.75P
C3 ¹	≤11 / ≤12 ²	≤14 / ≤16 ²	≤19 / ≤24	≤32	≤38	≤48	≤55
C4 ¹	25	34	60.4	65	60	85	116
C5 ¹	30	4.2~4.5	59.3	110	130	180	200
C6 ¹	3.5	8	4	33	6	6	6
C7 ¹	42	47	165	73	142	190	220
C8 ¹	29.5	19	160.9	32	22.5	29	63
C9 ¹	86.5	118.8	145	213	239	288	364.5
C10 ¹	8.75	13.5	15.5	145	15	20.75	53
B1 h9	5	5	6	10	12	16	20
H1	15	18	24.5	35	43	59	79.5

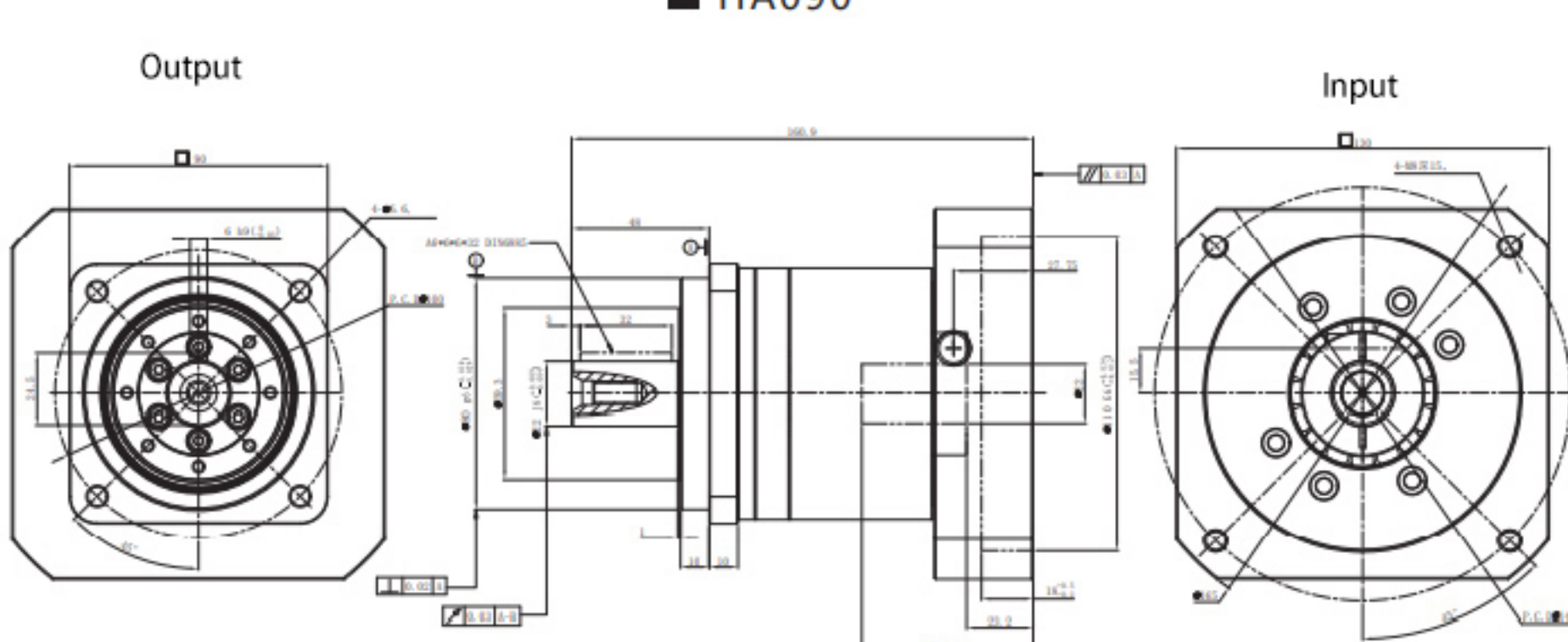
- 1.C1~C10 is the metric standard motor connection board size
2. HA042 5,10 reduction ratio provides C3≤12 optional, HA060 5,10 reduction ratio provides C3≤16 optional

Dimensions

HA060



HA090



HA115

