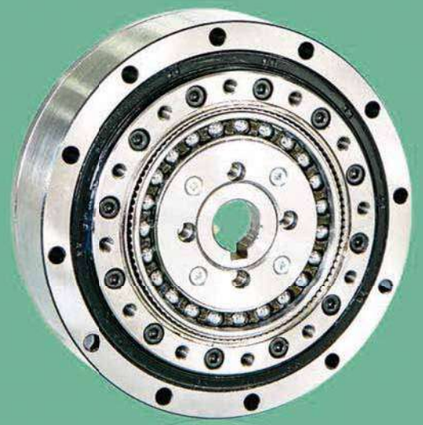


leaderdrive®

苏州绿的谐波传动科技有限公司

Leader Harmonious Drive Systems Co.,Ltd

Product Catalogue

leaderdrive®

ИННОДРАЙВ
ТЕХНОЛОГИИ ИМЕЮТ ЗНАЧЕНИЕ

ООО «ИнноДрайв» - официальный дистрибьютор Leaderdrive в РФ
8 (812) 317-77-93
sales@innodrive.ru
www.innodrive.ru

Five major technical breakthrough

01	02	03	04	05
High torque	Smaller size and lighter weight	High efficiency and near zero backlash	Long life	Unmatched stability at low speed

Company Information

Leaderdrive is a company mainly engaged in high precision reducer business since 2003, a high-tech enterprises specializes in the development, production and sale of harmonious speed reducer with world-class production and inspection line. The company spend more than 20million RMB on research and development annually, with powerful technical strength, the Company has established its own R&D center, and has a great partnership with universities and institutes domestic and overseas. At present, its R & D team consisting of more than 100 staffs, including 6 doctors and more than 20 masters, and has held more than 40 patents related to precision speed reducer, The Company is one of the main drafters of Chinese national standards "Harmonious Drive Gear Reducers for Robots", "Rolling Bearings - Flexible Bearings for Harmonious Drive Gear Reducers for Robots" and "Precision Gear Transmission for Robot—Test Method".

Leaderdrive is developing a mechatronic product which is characterized by compact structure, small vibration, low noise and easy installation.

Leaderdrive produced and sold over 100,000 harmonious reducers in 2017, penetrating into 90% of the domestic market of harmonious reducers for robot and occupying over 60% domestic robot market shares. Besides, we have sold products overseas including Europe and America, Japan and Korea, etc. In addition to standard products, Leaderdrive are able to provide customized services and product as required. To meet the sharp increase of demand for harmonious reducers, Leaderdrive initiated a 600,000 sets/year harmonious reducer workshop in 2017, with the aim to forge an intelligent and automatic harmonious reducer production line. The brand new workshop will be put into use in the forth quarter of 2018 . Leaderdrive is estimated to realize a production capacity of 800,000 sets/year in total in 2020. We will join hands with you to create a beautiful future of robot!

The principle of harmonious drive device was invented by American inventor C. Walt Musser in the middle of 1950s

Composition of Harmonious Drive device

Harmonious drive device mainly consists of three basic components, wave generator, flexible spline and rigid spline.

Wave generator

Small ball bearings are built into the outer circumference of its elliptical cam, and the bearings' inner faces are fixed to the cam. The outer faces are subjected to elastic deformation as the bearings move. It is attached to the input shaft.

Flex spline

The flex spline is a thin cup-shaped component made of flexible metal that has external teeth around the circumference of its mouth opening, When the wave generator is inserted into the flex spline's mouth opening, the flex spline becomes deformed into an elliptical shape. It is attached to the output shaft.

Circular spline

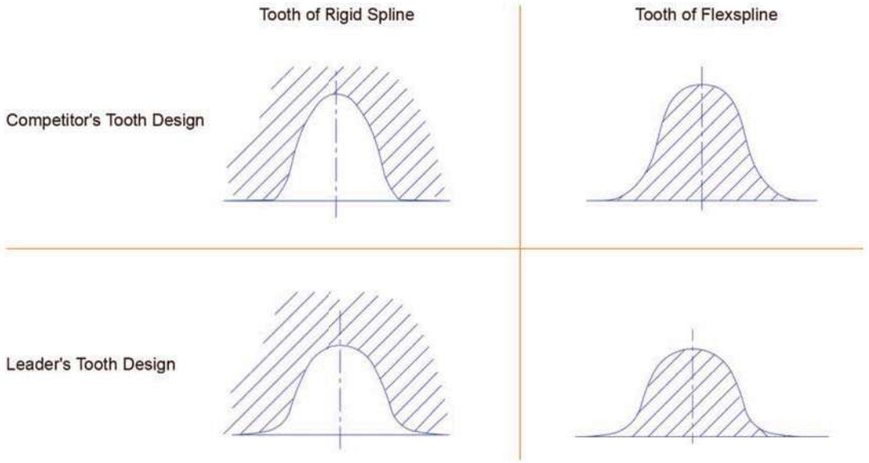
The circular spline is a rigid ring-shaped component with teeth along its inner circumference. The number of teeth is usually two more than the accompanying flex spline has. It is usually secured to the machine's casing.

Principle of harmonious speed reducer

As a reducer, harmonious waves are generally driven by wave generator with fixed rigid spline and output by flexible spline. When wave generator is installed inside the inner ring of flexible spline, flexible spline is forced to go through elastic transformation and becomes an elliptical shape; the flexible spline teeth of long shaft insert into the gear groove of rigid spline to realize complete engagement; the gear teeth of the two splines of the short shaft are not contacted at all but disengaged. Between engagement to disengagement, gear teeth are in engaging-out or engaging-in status. When the wave generator rotates continuously, the flexible spline is forced to deform constantly, and the gear teeth of the two gears change their working status repeatedly in the engaging-in, engagement, engaging-out and disengagement, generating the so-called staggered teeth motion and realizing the motion transmission between active wave generator and flexible spline.

Traditionally, the design of a rigid gear sold on the market is based on the the Conjugate Meshing Theory (Willis's Theorem). However, researchers at Leaderdrive have discovered that strain wave gearing meshing is more complex than that. Instead, strain wave gearing meshing can be more accurately described by the Geometric Mapping Theory of Curves. By incorporating this theory into the design, this patented technology has greatly improved the meshing of strain wave gearing, differentiating the product from competitors. The design can also be further extended to high ratio rigid reducers for better precision and control.

The P-type Tooth Profile



The unique P-type profile has distinctive advantages over a typical profile:

1. Lower profile reduces bending stress at the base to improve torque capacity.
2. Wide tooth base and streamlined profile transition reduces core stress concentration.
3. Lower profile reduces displacement and strain in the flexspine, leading to longer flexspline life.
4. 20 -30% of tooth surface is in meshing contact to reduce surface contact pressure.

Our harmonious reducers are all lubricated with lubrication grease

Harmonious reducers with a hallow shaft (Type III) and harmonious reducers with a solid shaft (Type IV) are sealed with lubrication grease inside , and therefore there is no need to inject otherwise. As for other models, lubrication grease has been sealed inside their internal hidden parts; however, lubrication grease still needs to be injected and applied when wave generator is assembled.

Categories of lubrication grease

LD super N0.096: Developed specially for harmonious reducers, it has longer endurance and better efficiency compared with the common lubrication grease sold in market.

LD super N0.098: Developed specially for small harmonic reducers, it can liquefy extreme-pressure additive, so as to obtain excellent lubrication effects when wave transformer rotates.

LD super N0.099: It has flow characteristics that can adapt to long service life and can be used within a larger temperature range.

Characteristics of lubrication grease :

Grease model	Leakage of lubrication grease	Low temperature	Micro vibration and wear resistance	Endurance
NO.096	○	◎	◎	◎
NO.098	△	◎	◎	◎
NO.099	◎	◎	○	○

※ Superior：◎ Apply：○ Attention should be paid to：△

Specifications of lubrication grease:

Lubrication grease	96	98	99
Base oil	Refined mineral oil	Synthetic hydrocarbon oil	Synthetic hydrocarbon oil
Thickening agent	Special lithium base	Lithium based thickening agent	Lithium based thickening agent
Addictive	Anti-wear addictive and extreme-pressure addictive	Anti-wear addictive and others	Anti-wear addictive and others
Viscosity（25°C）	265 ~295	295~315	260C~280
Temperature range of using conditions	-40°C~150°C	-40°C~120°C	-40°C~120°C
Dropping point	198°C	180°C	180°C
Appearance (color)	Yellow	Dark red	Red
Storage life	5 years in sealed state	5 years in sealed state	5 years in sealed state
Viscosity-temperature index	Base oil VI＞120	Base oil VI＞130	Base oil VI＞120

Model Number Rules

Abbreviation for company

Length Code of Flexspline

Code	Length
S	Standard
D	Dwarf

Reduction Ratio

Note
1.30 50 80 100 120 160 are general reduction ratio
2.Reduction ratio can be designed according to customer's demand

Structure Code

Code	Structure
C	Complete type
P	Component type
CL	Light weight of complete type

L C S G — 14 ——— 50 — C — II

Shape Code of Flexspline

Code	Shape
C	Cup
H	Hollow

Torque Code of Model

Code	Torque
G	High
null	Normal

P.D.D of Flexible Gear

Code	PDD (mm)
14	35.6
17	43.2
20	50.8
25	63.5
32	81.3
40	102
50	127
58	147

Connection Type

Between input end and cam of wave generator

Code	Type
I	Standard type
II	Cross slipper type coupling
III	Hollow shaft type
IV	Shaft input type

L C D series

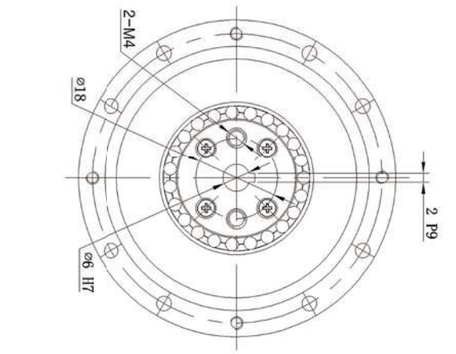
With a flexible gear in ultra-thin cup-shaped structure, **LCD** series are designed with an ultra-flat structure, with small volume and light weight, and are therefore can be used as the end joint of robot.

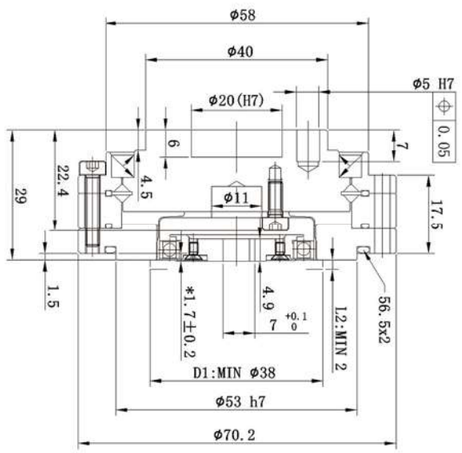
Parameter Table

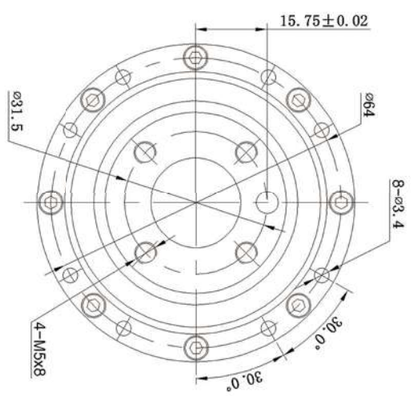
Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	Kg	Hour
14	50	3. 5	11. 4	4. 6	23	8000	3500	≤20	0. 56	9000
	80	5. 1	15	6. 2	29			≤20		10000
	100	5. 1	18	7. 3	33			≤20		10000
17	50	10. 4	22	17	46	7000	3500	≤20	0. 48	9000
	80	14	29	21	54			≤20		10000
	100	15	35	26	67			≤20		10000
20	50	16	37	23	66	6000	3500	≤20	0. 68	9000
	80	23	49	28	78			≤20		10000
	100	27	54	32	90			≤20		10000
25	50	26	66	36	121	5500	3500	≤20	1. 3	9000
	80	42	91	62	157			≤20		10000
	100	45	104	71	175			≤20		10000
	120	45	111	71	187			≤20		10000
32	50	50	143	71	255	4500	3500	≤20	2. 5	9000
	80	79	202	126	350			≤20		10000
	100	91	221	144	399			≤20		10000
	120	91	235	144	423			≤20		10000
40*	50	91	267	130	456	4000	3000	≤20	3. 8	9000
	100	176	378	247	665			≤20		10000
	160	196	430	300	727			≤20		10000

* Consult factory

LCD-14-XXX-C-I







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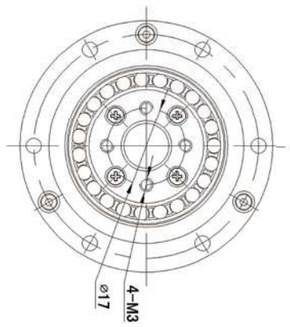

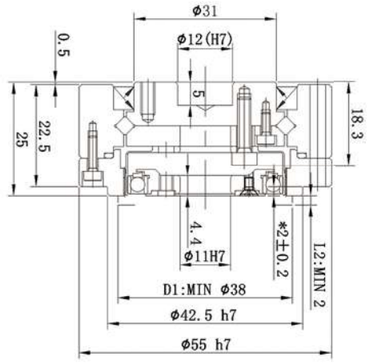

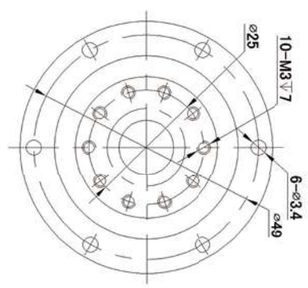

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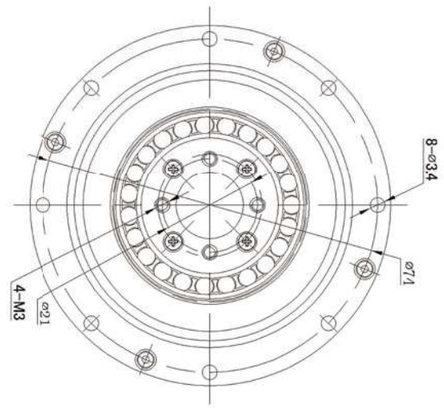

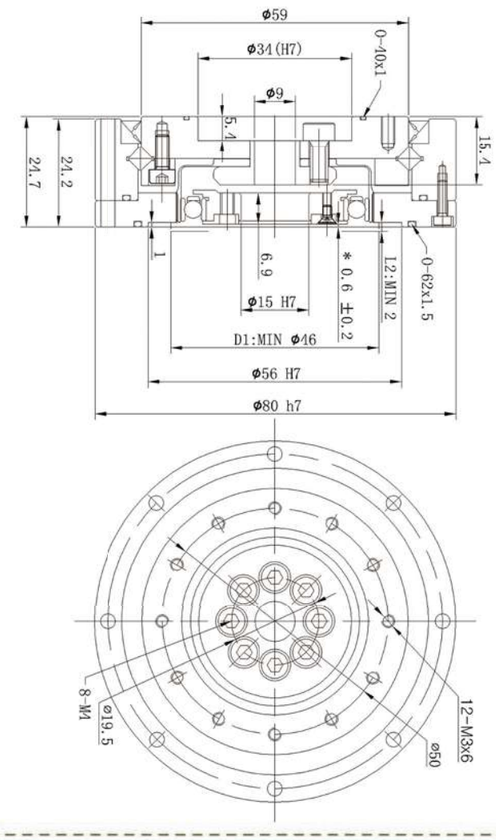

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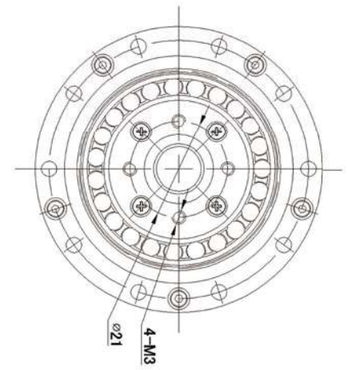

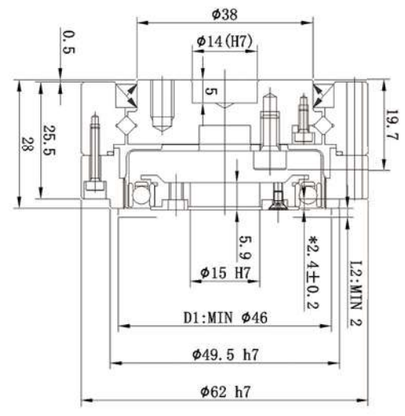

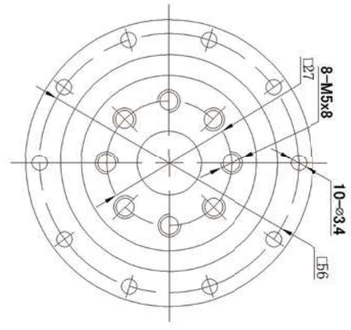

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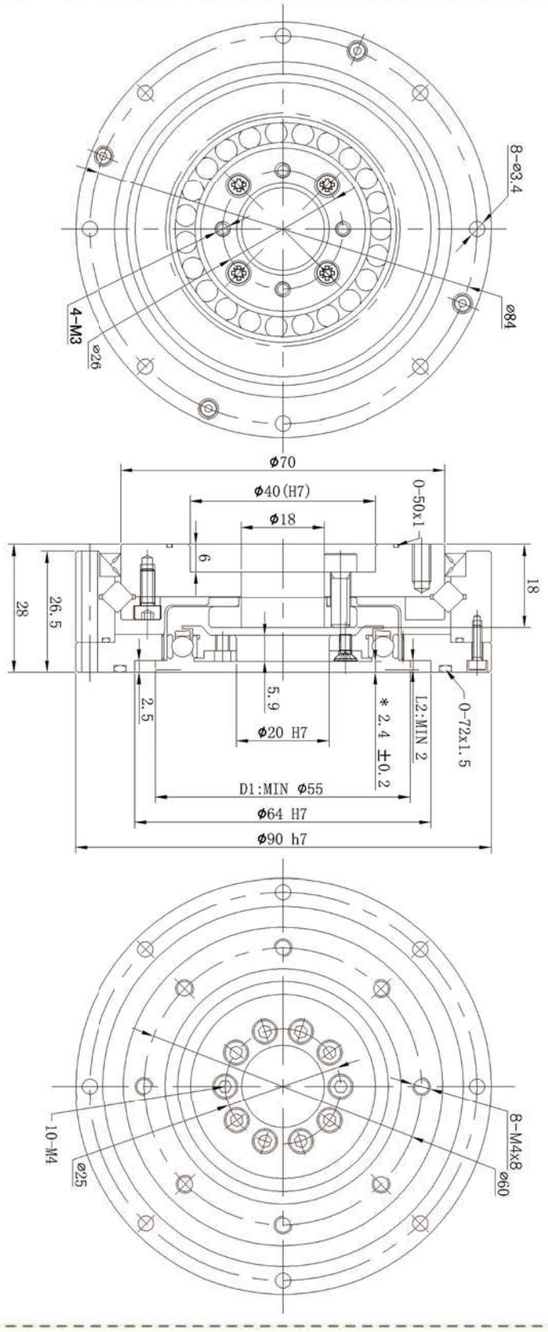

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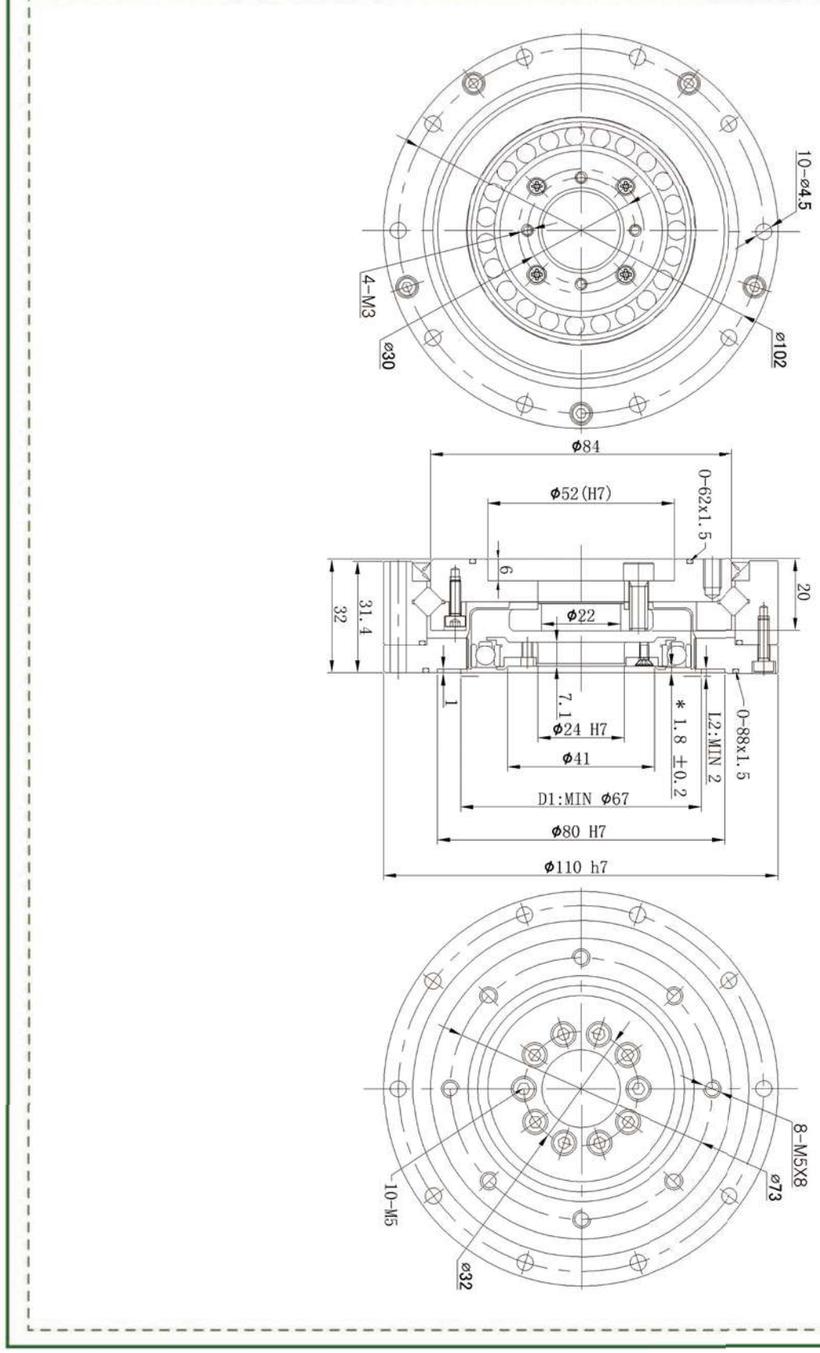
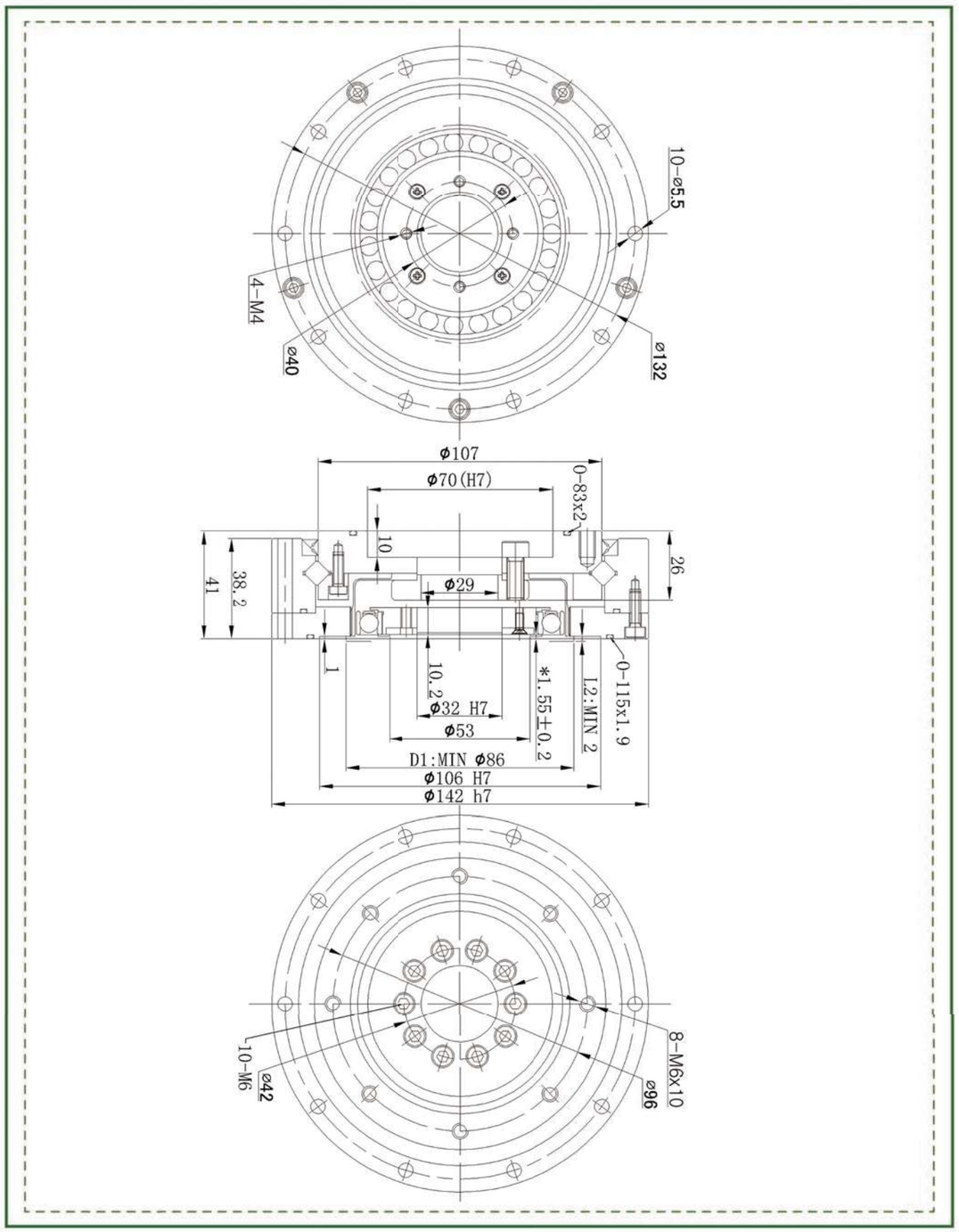




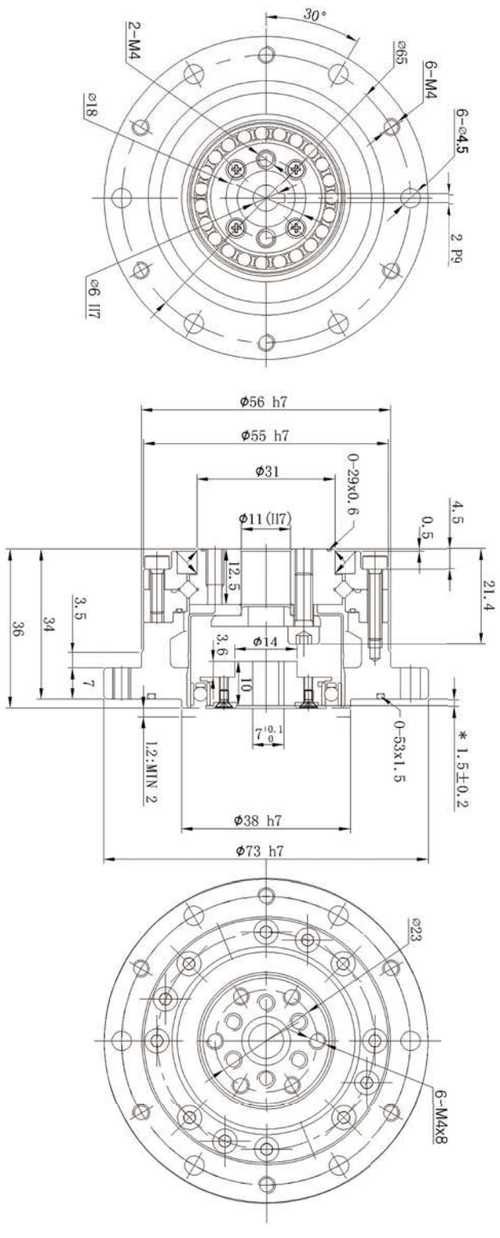
LCS-I series

For **LCS-I** series, the structure of flexible spline is standard cup-shaped. Their input shaft matches with the inner hole of wave transformer directly and are connected by flat key. In general, the series are used with the rigid gear end fixed and flexible gear outputting.

Parameter Table

Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	Kg	Hour
14	30	3. 8	8. 5	6. 5	16	8000	3500	≤20	0. 51	10000
	50	5. 1	17. 1	6. 6	33			≤20		10000
	80	7. 4	22	10. 5	44			≤10		15000
	100	7. 4	26	10. 5	51			≤10		15000
17	30	8. 4	15	11. 5	28	7000	3500	≤20	0. 68	10000
	50	15. 2	32	25	66			≤20		10000
	80	21	41	26	83			≤10		15000
	100	23	51	37	103			≤10		15000
	120	23	51	37	82			≤10		15000
20	30	14	26	19	48	6000	3500	≤20	0. 98	10000
	50	24	53	32	93			≤20		10000
	80	32	70	45	121			≤10		15000
	100	38	78	47	140			≤10		15000
	120	38	83	47	140			≤10		15000
	160	38	87	47	140			≤10		15000
25	30	26	48	36	90	5500	3500	≤20	1. 47	10000
	50	37	93	52	177			≤20		10000
	80	60	130	83	242			≤10		15000
	100	64	149	103	270			≤10		15000
	120	64	159	103	289			≤10		15000
	160	64	167	103	298			≤10		15000
32	30	51	95	71	190	4500	3500	≤20	3. 19	10000
	50	72	205	103	363			≤20		10000
	80	112	289	159	540			≤10		15000
	100	130	316	205	615			≤10		15000
	120	130	335	205	652			≤10		15000
	160	130	353	205	652			≤10		15000
40	50	130	382	186	652	4000	3000	≤20	5. 0	10000
	80	196	493	270	931			≤10		15000
	100	252	540	353	1026			≤10		15000
	120	279	586	429	1121			≤10		15000
	160	279	615	429	1121			≤10		15000
50*	50	233	679	333	1358	3000	2500	≤20	9. 6	10000
	80	353	894	493	1767			≤10		15000
	100	446	931	633	1957			≤10		15000
	120	503	1026	772	1957			≤10		15000
	160	503	1121	801	2327			≤10		15000
58*	80	522	1406	732	2328	3000	2200	≤10	14. 8	15000
	100	661	1511	1007	3021			≤10		15000
	120	708	1634	1131	3164			≤10		15000
	160	708	1748	1150	3259			≤10		15000

* Consult factory



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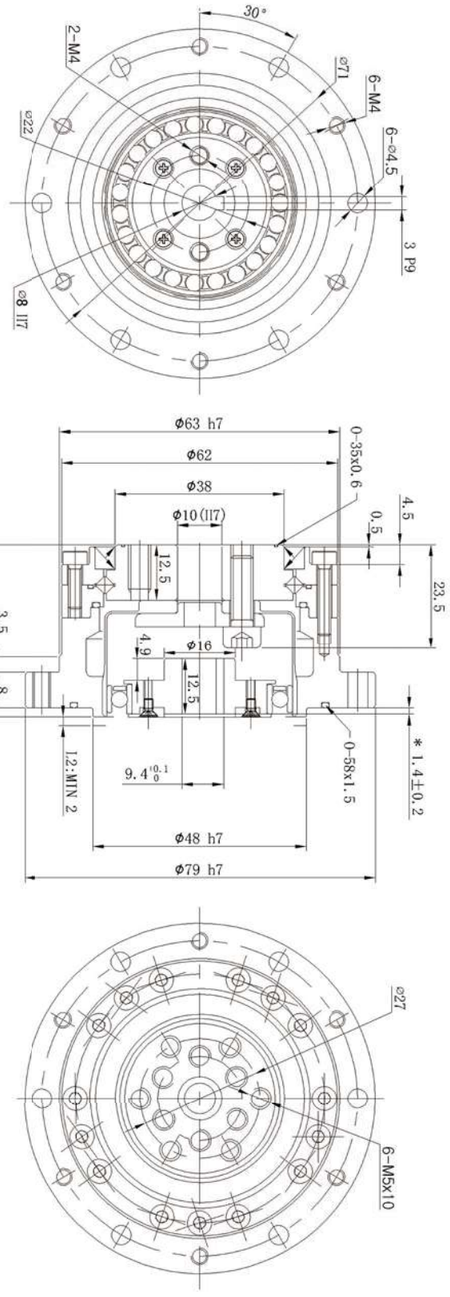

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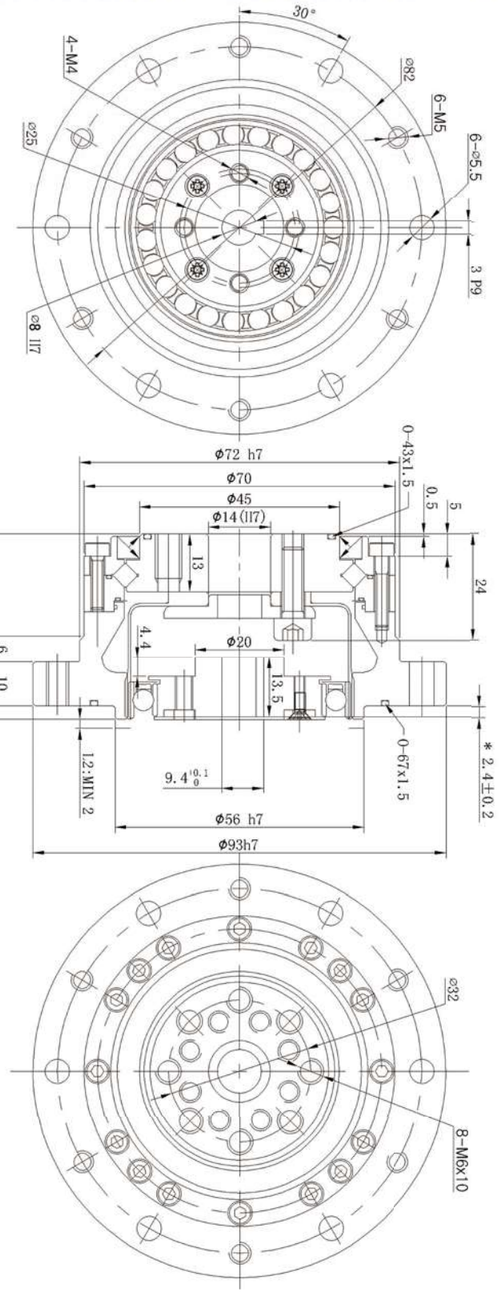

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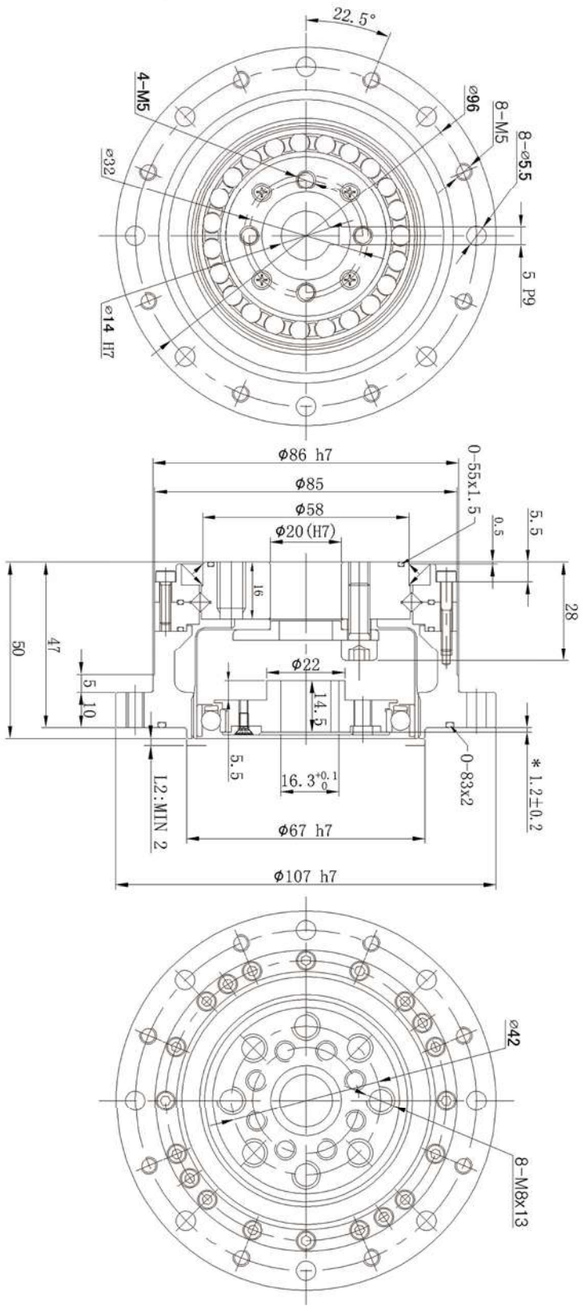

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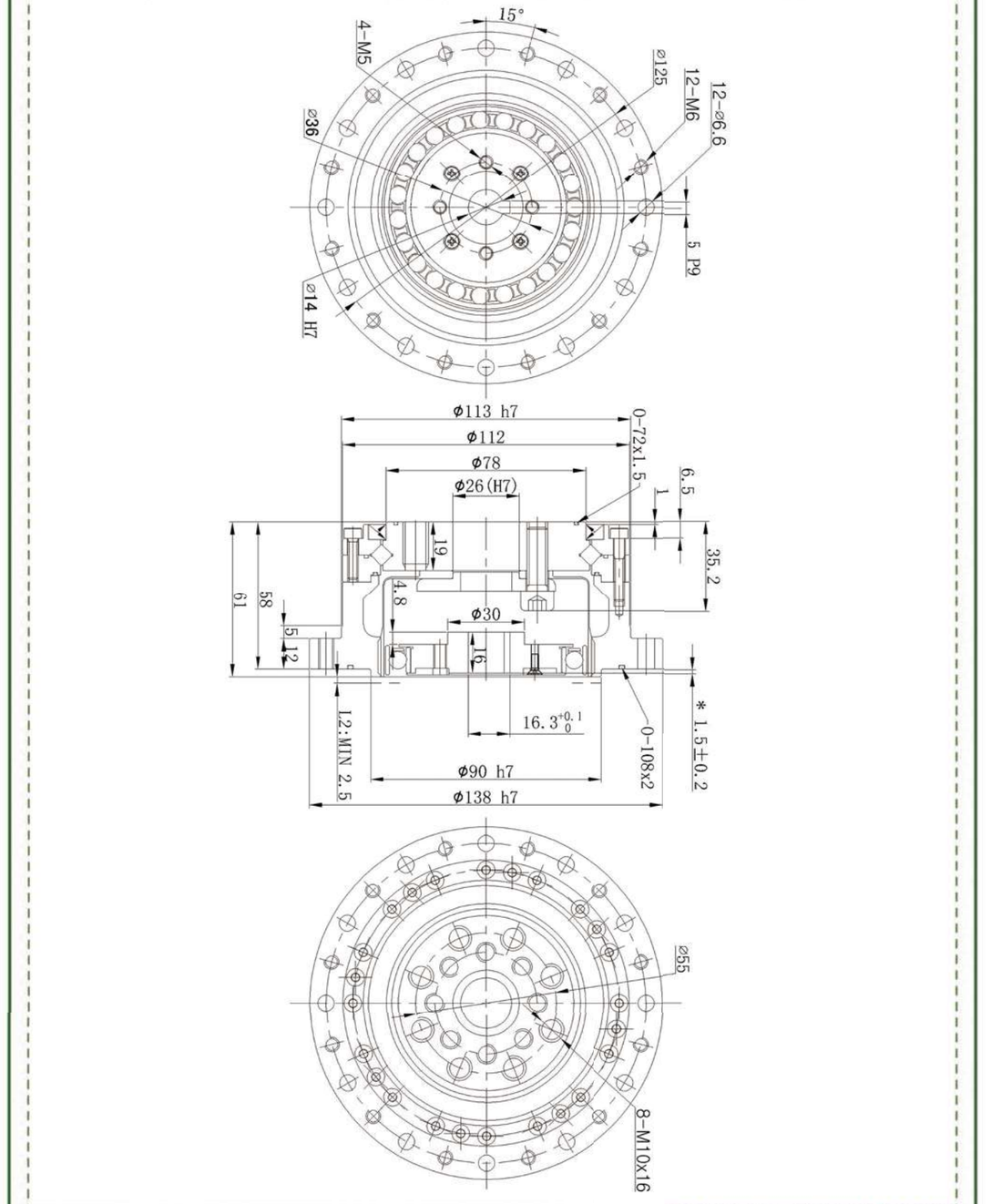
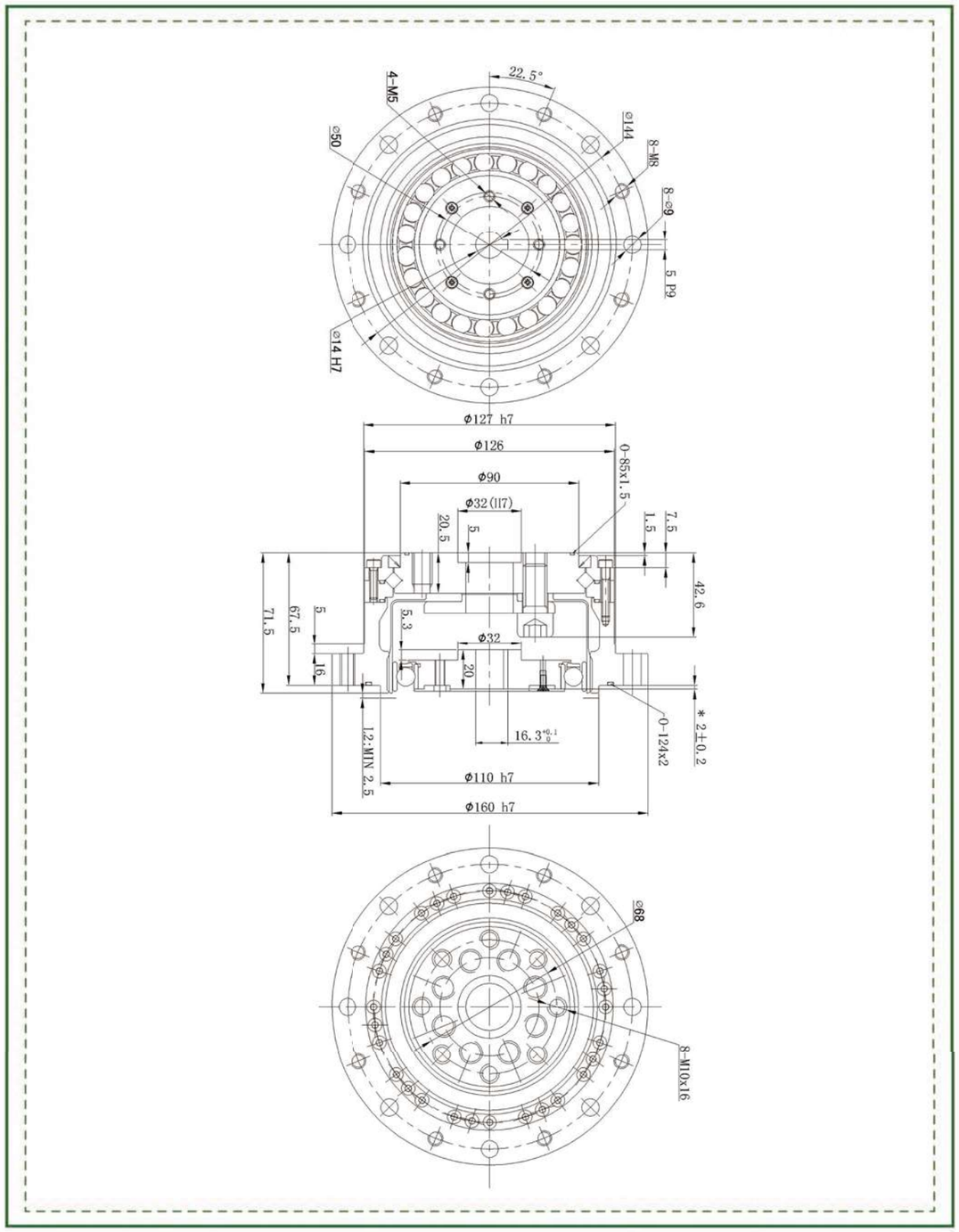




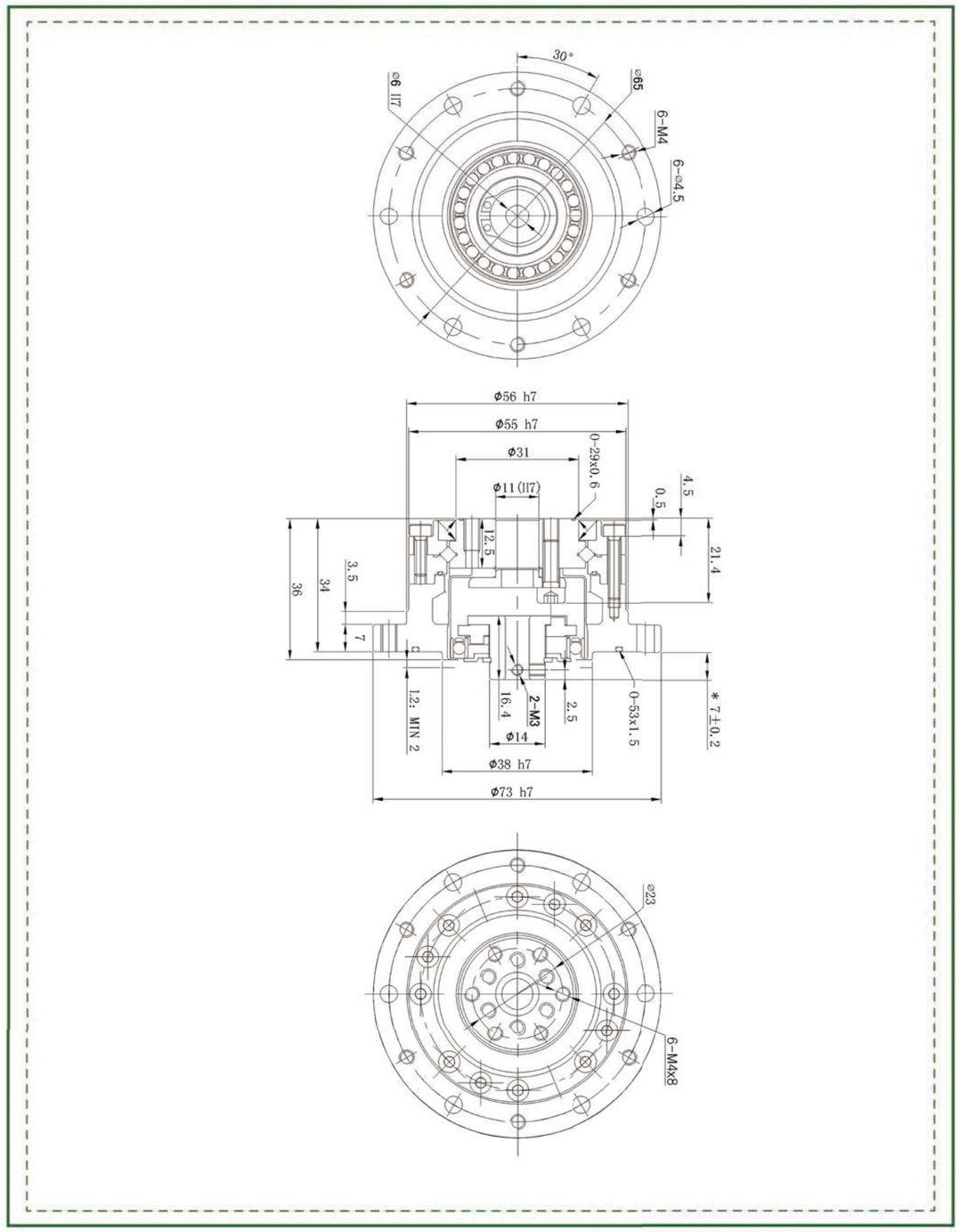
LCS-II series

For **LCS-II** series, their input shaft is connected with the inner hole of wave generator by double slider coupling.

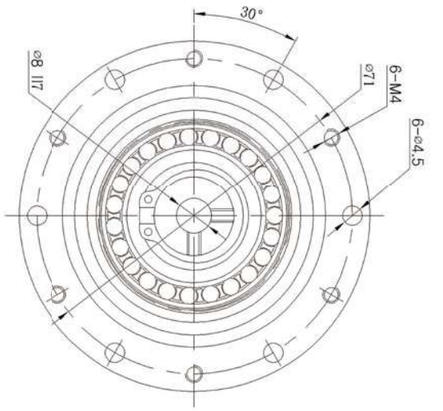
Parameter Table

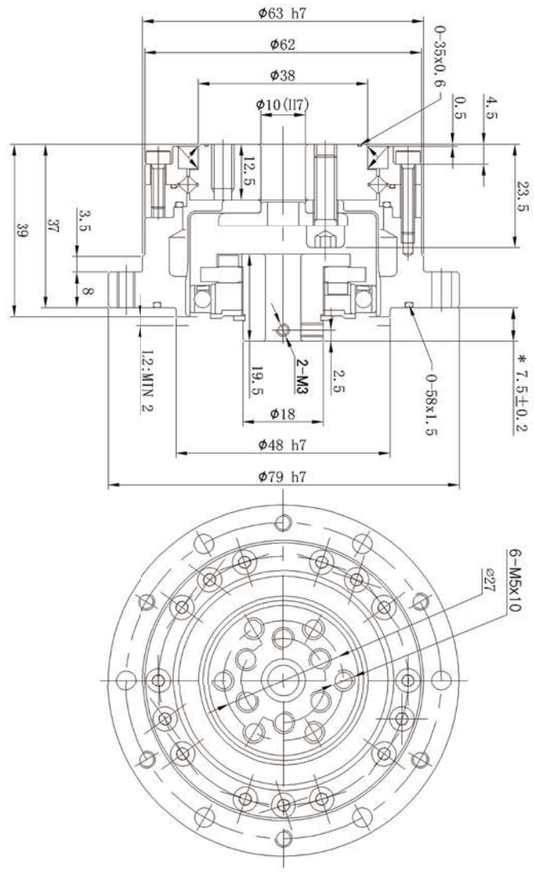
Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	Kg	Hour
14	30	3.8	8.5	6.5	16	8000	3500	≤20	0.52	10000
	50	5.1	17.1	6.6	33			≤20		10000
	80	7.4	22	10.5	44			≤20		15000
	100	7.4	26	10.5	51			≤20		15000
17	30	8.4	15	11.5	28	7000	3500	≤20	0.69	10000
	50	15.2	32	25	66			≤20		10000
	80	21	41	26	83			≤20		15000
	100	23	51	37	103			≤20		15000
	120	23	51	37	82			≤20		15000
20	30	14	26	19	48	6000	3500	≤20	0.99	10000
	50	24	53	32	93			≤20		10000
	80	32	70	45	121			≤20		15000
	100	38	78	47	140			≤20		15000
	120	38	83	47	140			≤20		15000
	160	38	87	47	140			≤20		15000
25	30	26	48	36	90	5500	3500	≤20	1.48	10000
	50	37	93	52	177			≤20		10000
	80	60	130	83	242			≤20		15000
	100	64	149	103	270			≤20		15000
	120	64	159	103	289			≤20		15000
	160	64	167	103	298			≤20		15000
32	30	51	93	71	196	4500	3500	≤20	3.2	10000
	50	72	205	103	363			≤20		10000
	80	112	289	159	540			≤20		15000
	100	130	316	205	615			≤20		15000
	120	130	335	205	652			≤20		15000
	160	130	353	205	652			≤20		15000
40	50	130	382	186	652	4000	3000	≤20	5.0	10000
	80	196	493	270	931			≤20		15000
	100	252	540	353	1026			≤20		15000
	120	279	586	429	1121			≤20		15000
	160	279	615	429	1121			≤20		15000
50*	50	233	679	333	1358	3000	2500	≤20	9.0	10000
	80	353	894	493	1767			≤20		15000
	100	446	931	633	1957			≤20		15000
	120	503	1026	772	1957			≤20		15000
	160	503	1121	801	2327			≤20		15000
58*	80	522	1406	732	2328	3000	2200	≤10	14.8	15000
	100	661	1511	1007	3021			≤10		15000
	120	708	1634	1131	3164			≤10		15000
	160	708	1748	1150	3259			≤10		15000

* Consult factory

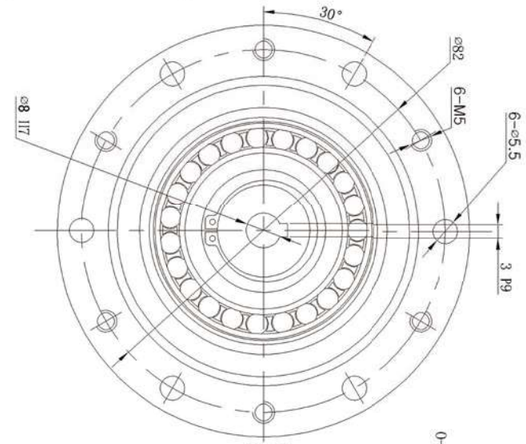


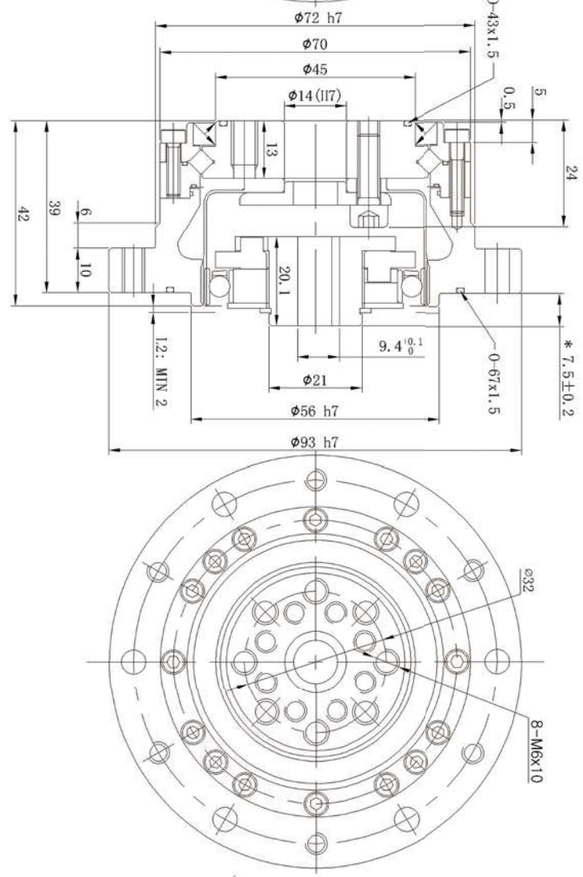
LCS-17-XXX-C-II



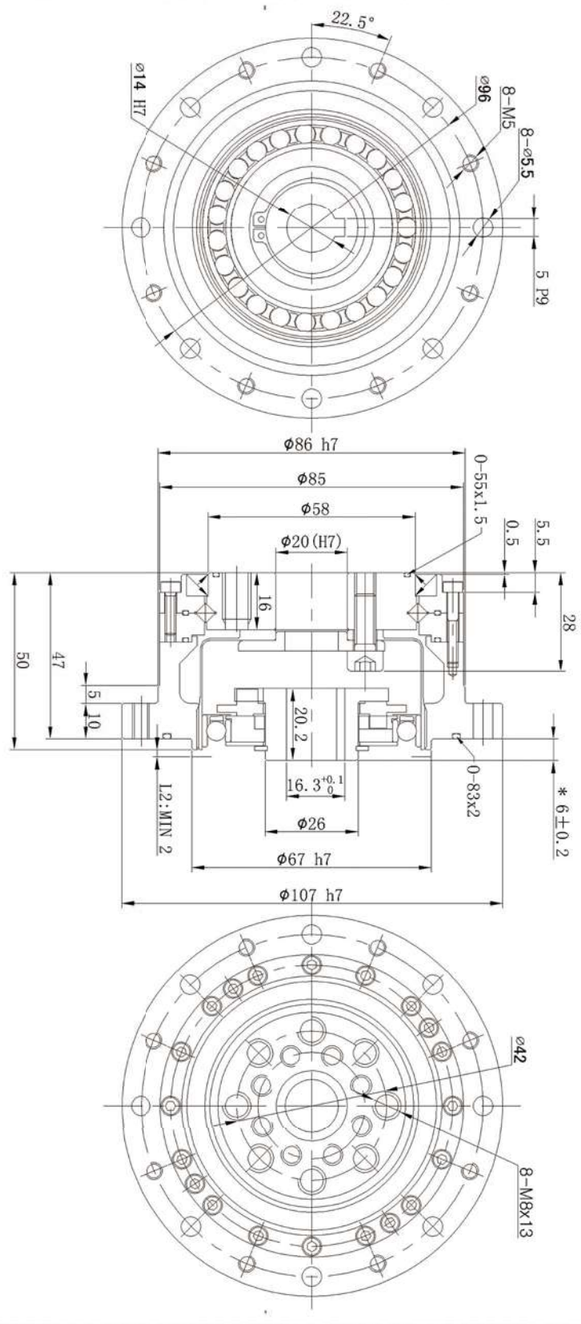


LCS-20-XXX-C-II

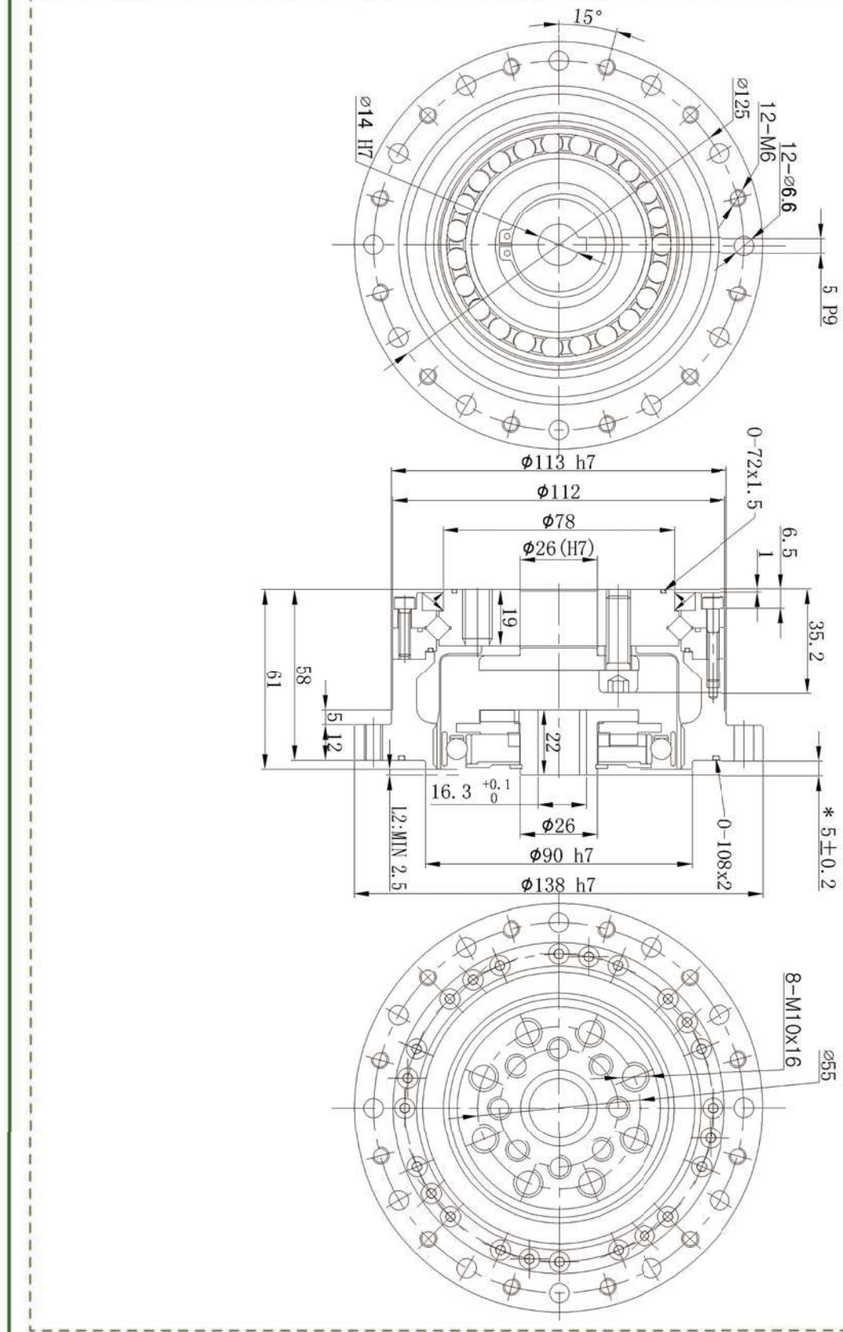


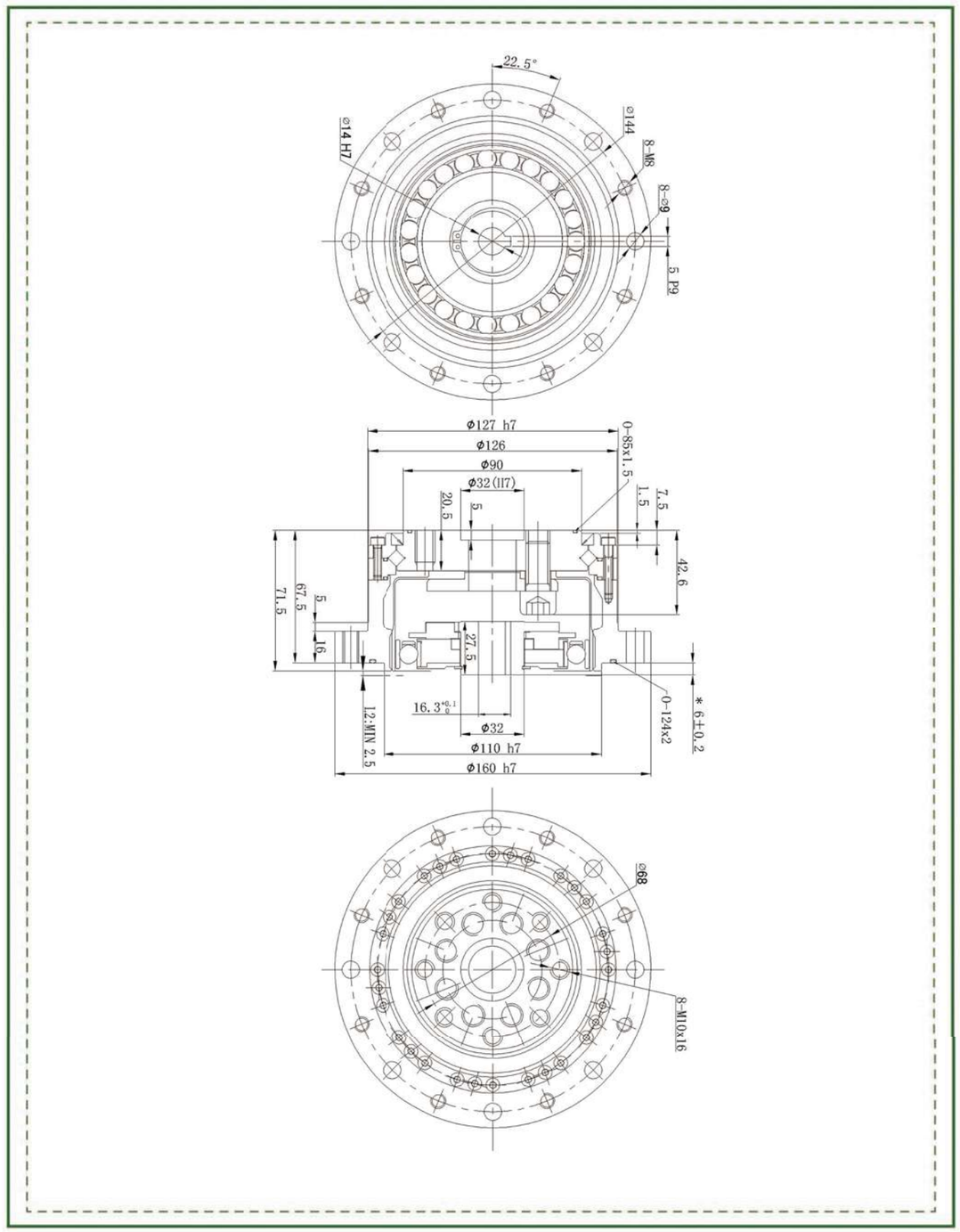


LCS-25-XXX-C-II



LCS-32-XXX-C-II





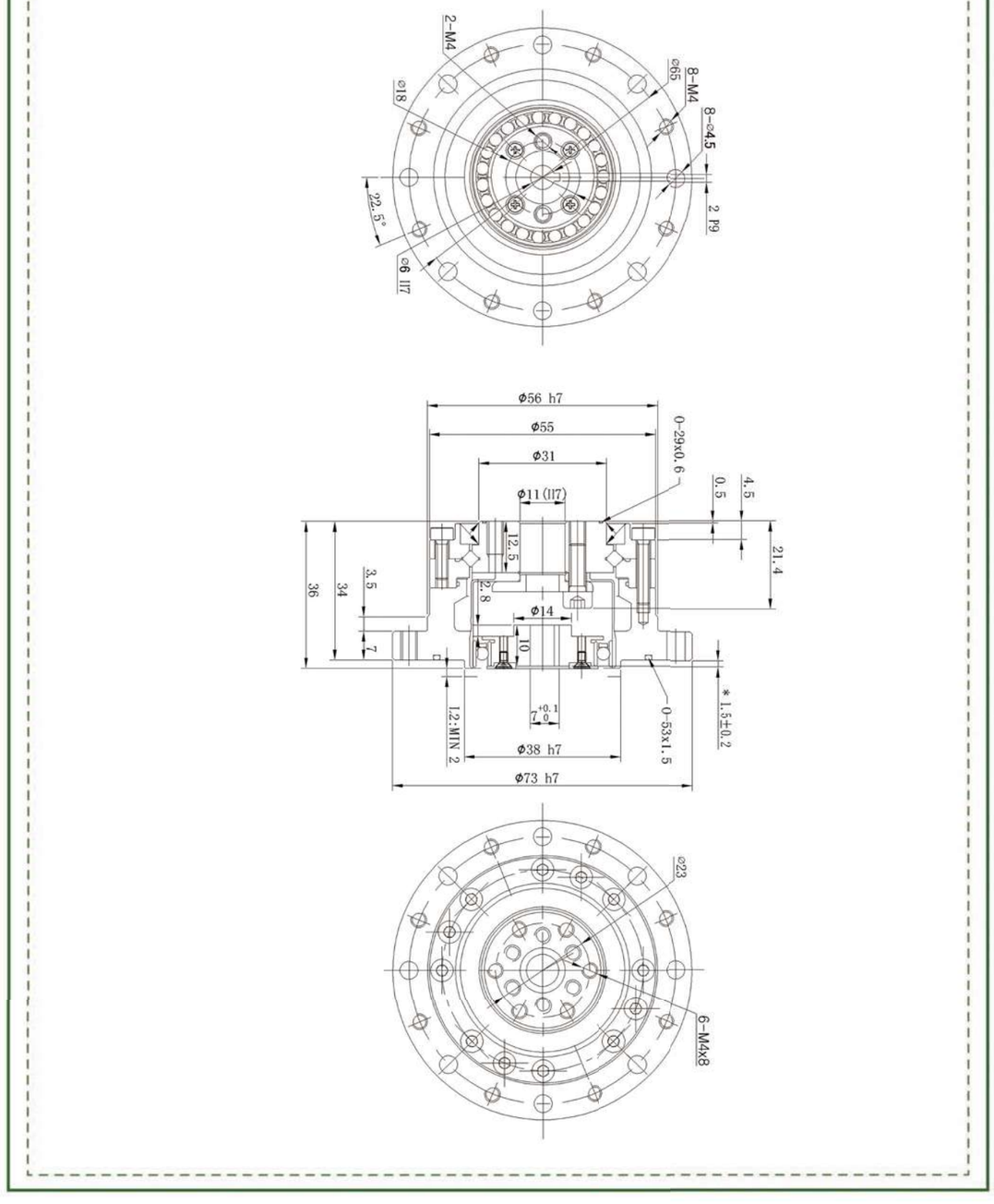
LCSG-I series

LCSG-I series are high-torque models which have the same structure, with **LCS-I** series. However, their torque bearing capacity is improved by **30%** compared with **LCS** series.

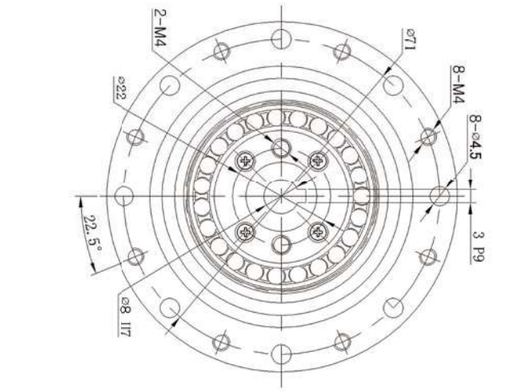
Parameter Table

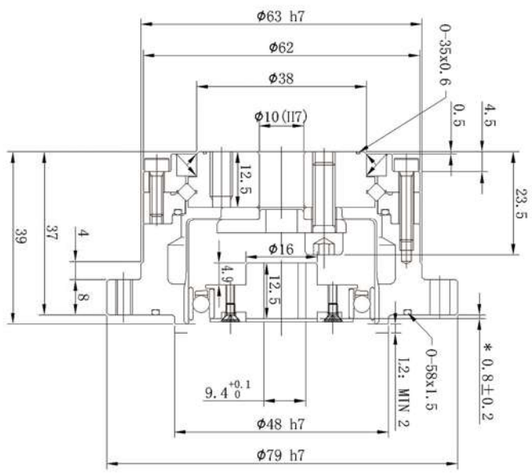
Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	Kg	Hour
14	50	6.6	23	8.6	43	8000	3500	≤10	0.51	10000
	80	9.6	29	13.5	57			≤10		15000
	100	9.6	34	13.5	66			≤10		15000
17	50	19.8	42	32.5	86	7000	3500	≤10	0.68	10000
	80	27.5	53	33.5	108			≤10		15000
	100	30	66	48.5	134			≤10		15000
	120	30	66	48.5	107			≤10		15000
20	50	32	69	42	121	6000	3500	≤10	0.98	10000
	80	42	91	58	158			≤10		15000
	100	50	102	61	182			≤10		15000
	120	50	108	61	182			≤10		15000
	160	50	113	61	182			≤10		15000
25	50	48	121	68.5	230	5500	3500	≤10	1.47	10000
	80	78	169	107.5	315			≤10		15000
	100	84	194	133	351			≤10		15000
	120	84	207	133	376			≤10		15000
	160	84	217	133	388			≤10		15000
32	50	94	267	133	472	4500	3500	≤10	3.19	10000
	80	146	376	206	702			≤10		15000
	100	169	411	267	800			≤10		15000
	120	169	436	267	848			≤10		15000
	160	169	459	267	848			≤10		15000
40	50	169	497	242	847	4000	3000	≤10	5.0	10000
	80	255	641	351	1210			≤10		15000
	100	328	702	460	1334			≤10		15000
	120	363	762	557	1458			≤10		15000
	160	363	800	557	1458			≤10		15000
50*	80	459	1163	642	2297	3000	2500	≤10	9.0	15000
	100	580	1211	823	2545			≤10		15000
	120	654	1334	1005	2545			≤10		15000
	160	654	1458	1042	3025			≤10		15000
58*	80	678	1828	951	3026	3000	2200	≤10	14.8	15000
	100	860	1964	1309	3927			≤10		15000
	120	921	2124	1470	4113			≤10		15000
	160	921	2272	1494	4236			≤10		15000

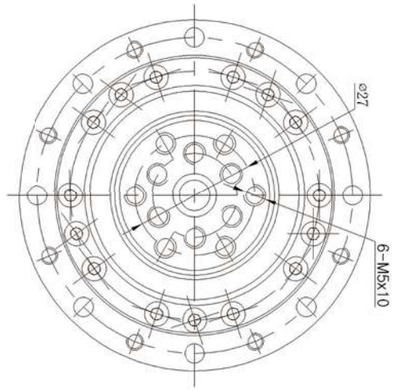
* Consult factory



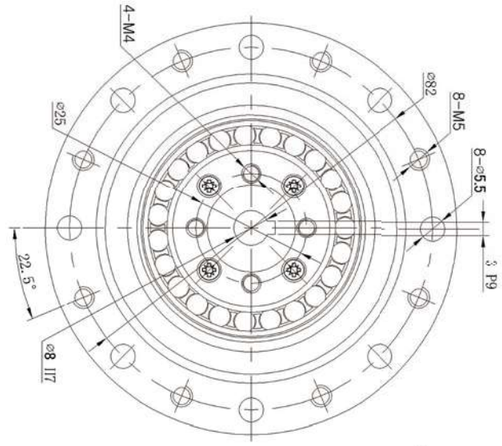
LCSG-17-XXX-C-I

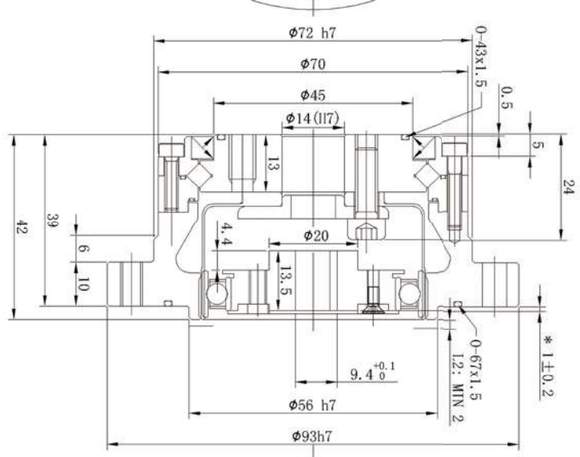


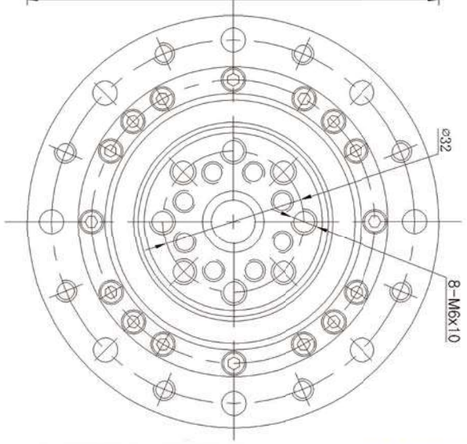




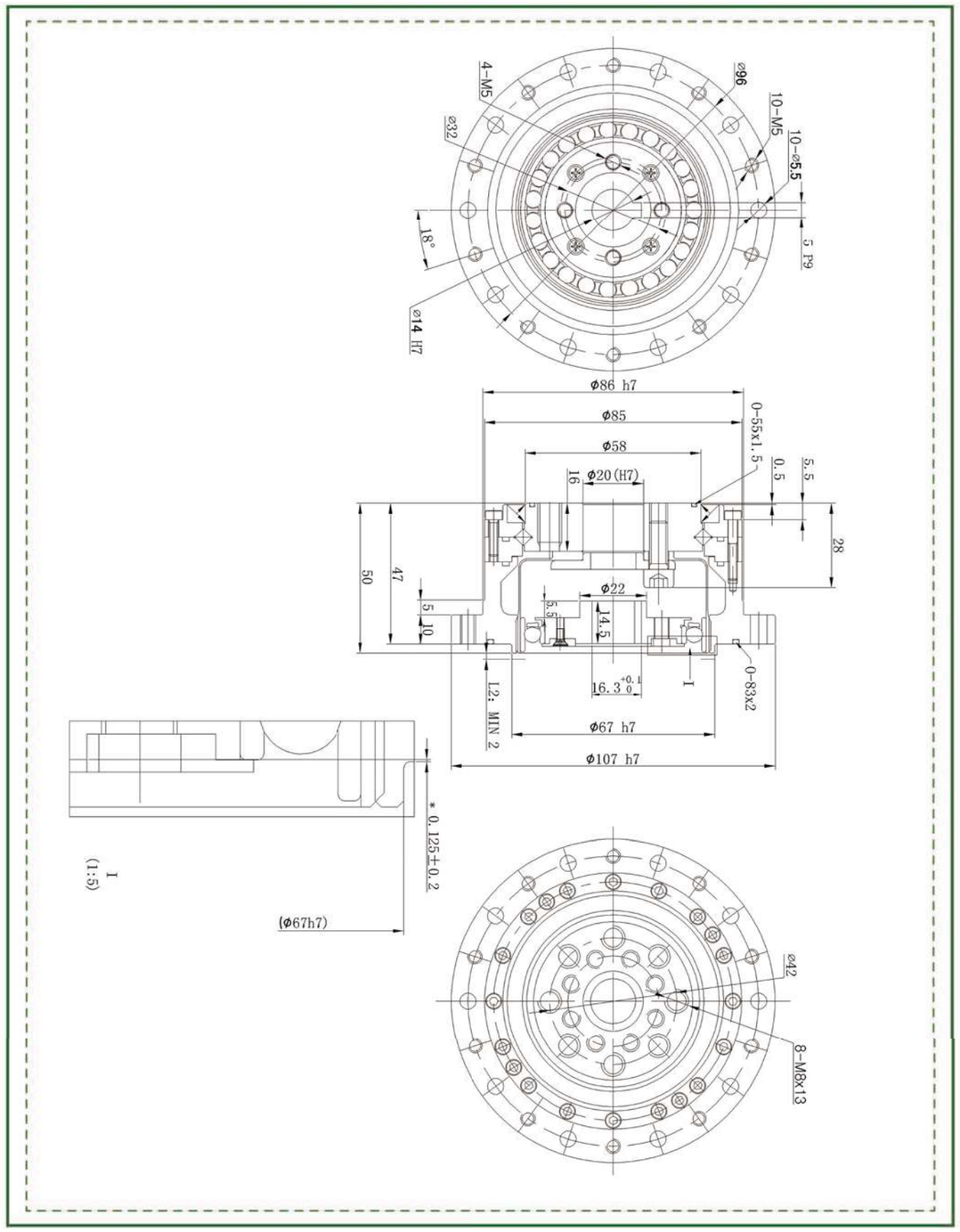
LCSG-20-XXX-C-I



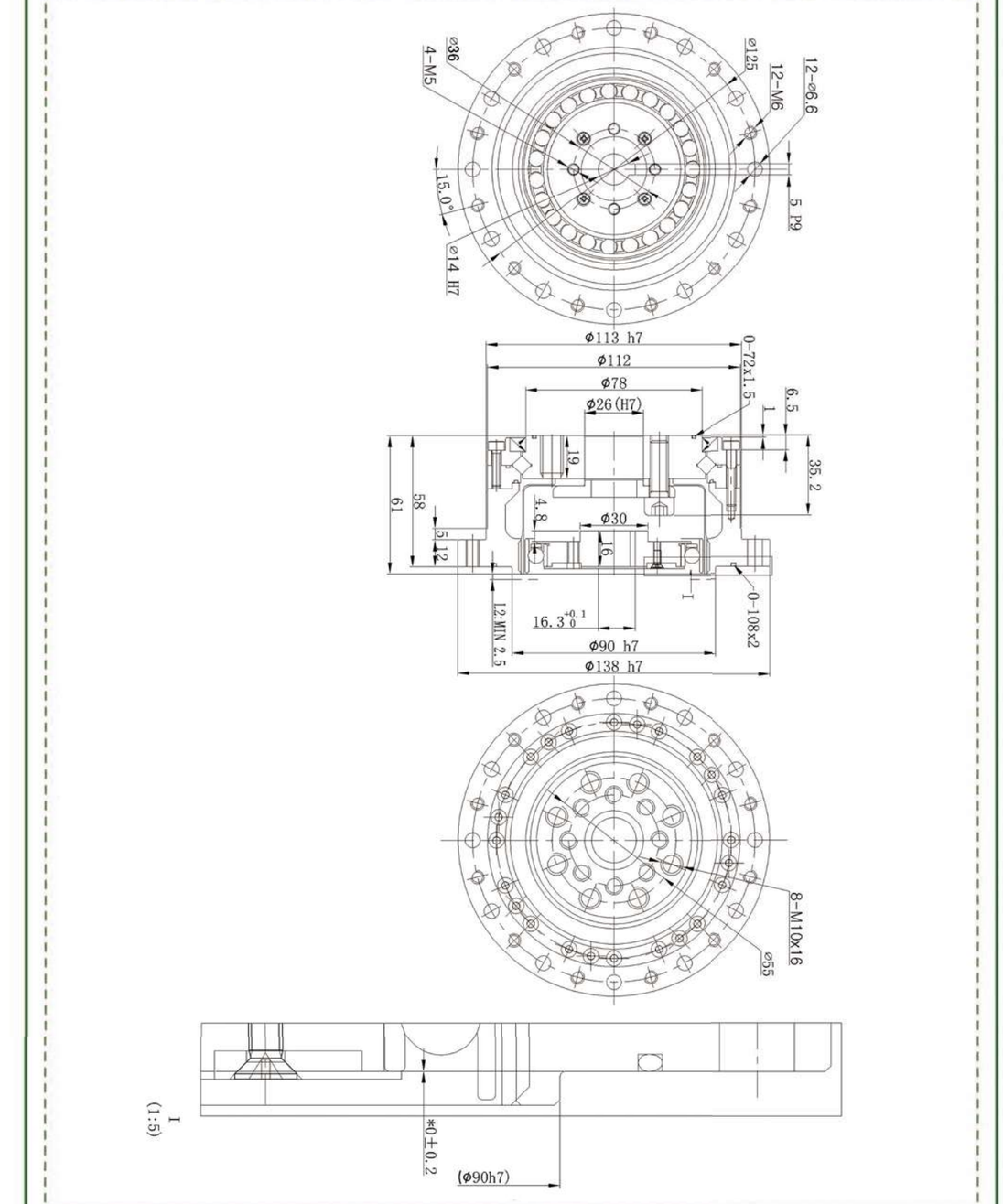




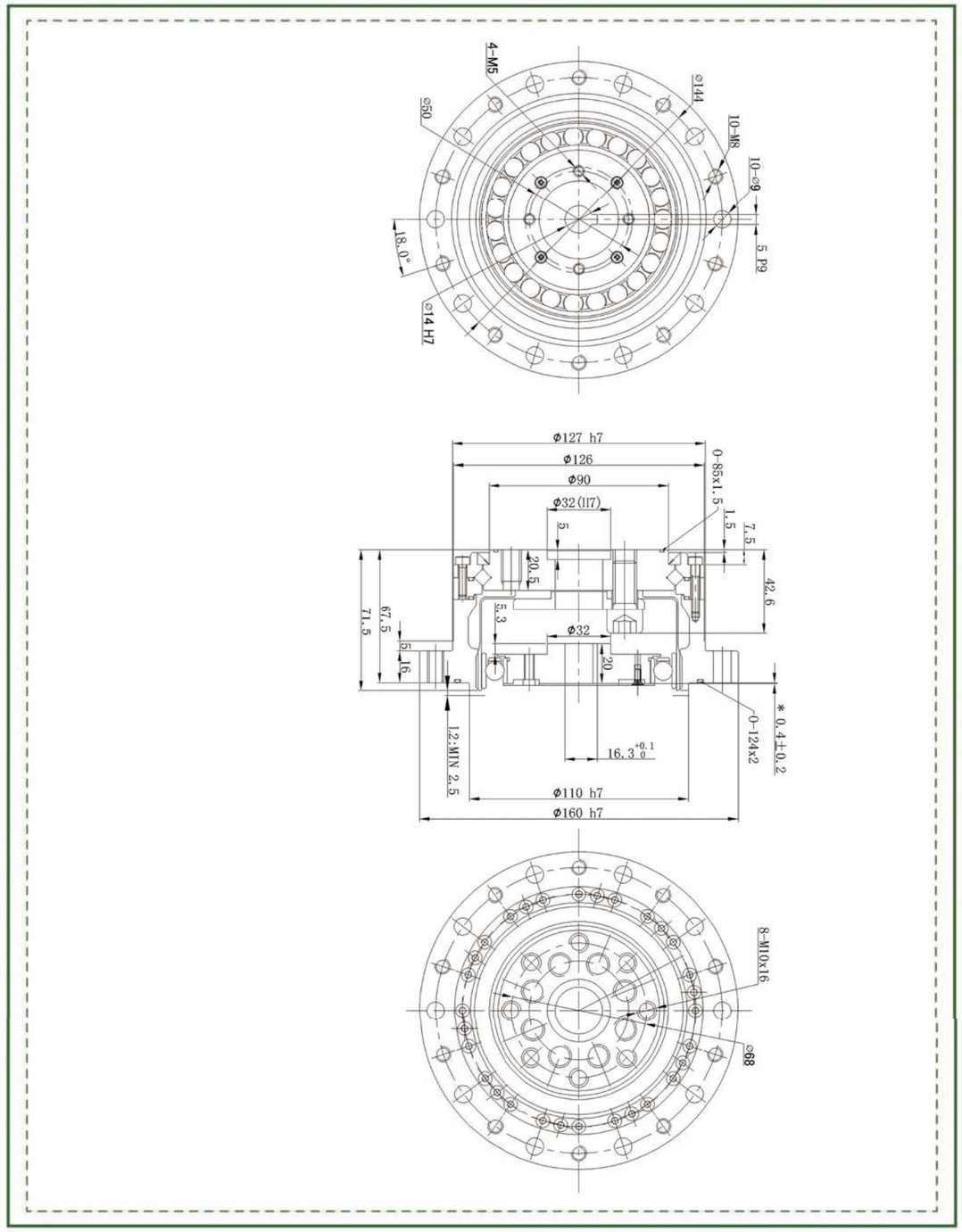
LCSG-25-XXX-C-I



LCSG-32-XXX-C-I



LCSG-40-XXX-C-I



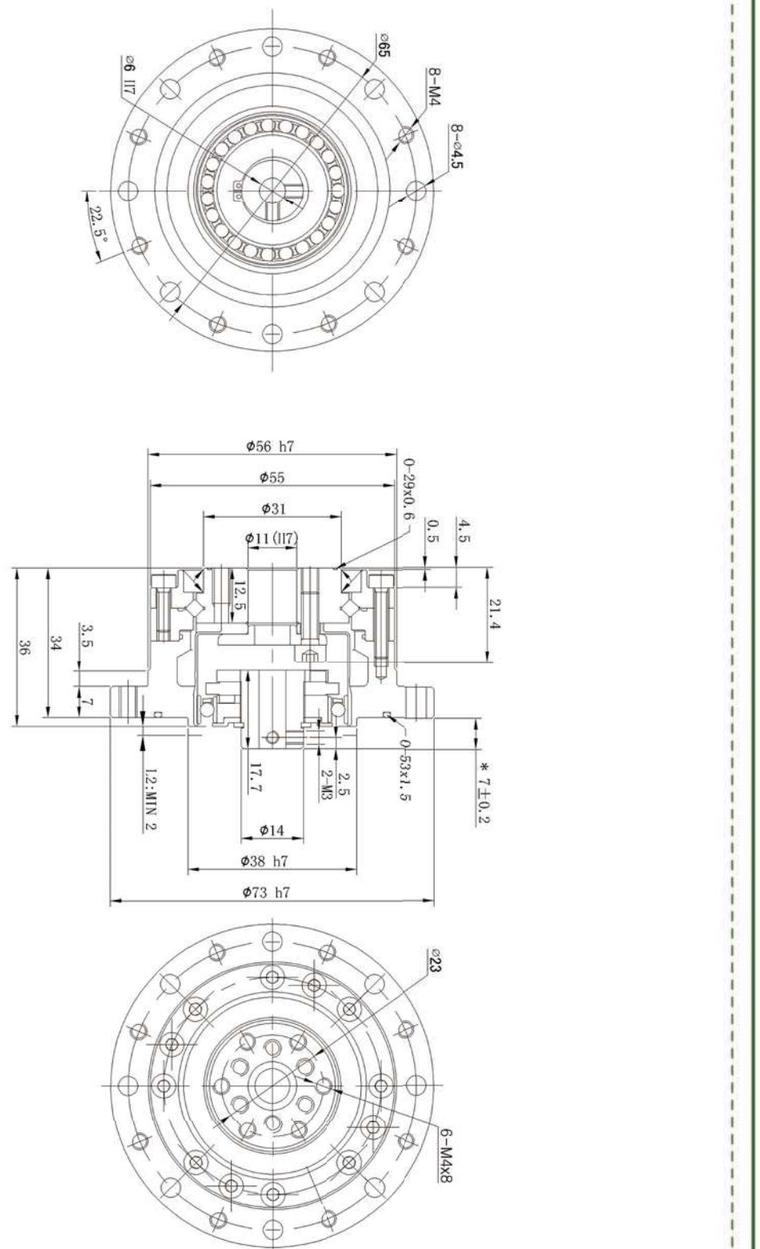
LCSG-II series

LCSG-II series are high-torque models which have the same structure, with **LCS-II** series. However, their torque bearing capacity is improved by **30%** compared with **LCS** series.

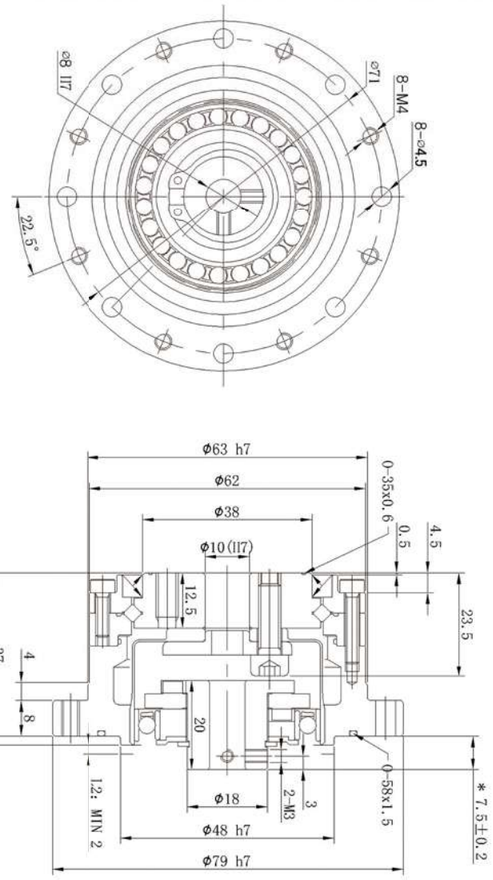
Parameter Table

Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	Kg	Hour
14	50	6. 6	23	8. 6	43	8000	3500	≤20	0. 52	10000
	80	9. 6	29	13. 5	57			≤20		15000
	100	9. 6	34	13. 5	66			≤20		15000
17	50	19. 8	42	32. 5	86	7000	3500	≤20	0. 69	10000
	80	27. 5	53	33. 5	108			≤20		15000
	100	30	66	48. 5	134			≤20		15000
	120	30	66	48. 5	107			≤20		15000
20	50	32	69	42	121	6000	3500	≤20	0. 99	10000
	80	42	91	58	158			≤20		15000
	100	50	102	61	182			≤20		15000
	120	50	108	61	182			≤20		15000
	160	50	113	61	182			≤20		15000
25	50	48	121	68. 5	230	5500	3500	≤20	1. 48	10000
	80	78	169	107. 5	315			≤20		15000
	100	84	194	133	351			≤20		15000
	120	84	207	133	376			≤20		15000
	160	84	217	133	388			≤20		15000
32	50	94	267	133	472	4500	3500	≤20	3. 2	10000
	80	146	376	206	702			≤20		15000
	100	169	411	267	800			≤20		15000
	120	169	436	267	848			≤20		15000
	160	169	459	267	848			≤20		15000
40	50	169	497	242	847	4000	3000	≤20	5. 0	10000
	80	255	641	351	1210			≤20		15000
	100	328	702	460	1334			≤20		15000
	120	363	762	557	1458			≤20		15000
	160	363	800	557	1458			≤20		15000
50*	80	459	1163	642	2297	3000	2500	≤20	9. 0	15000
	100	580	1211	823	2545			≤20		15000
	120	654	1334	1005	2545			≤20		15000
	160	654	1458	1042	3025			≤20		15000
58*	80	678	1828	951	3026	3000	2200	≤10	14. 8	15000
	100	860	1964	1309	3927			≤10		15000
	120	921	2124	1470	4113			≤10		15000
	160	921	2272	1494	4236			≤10		15000

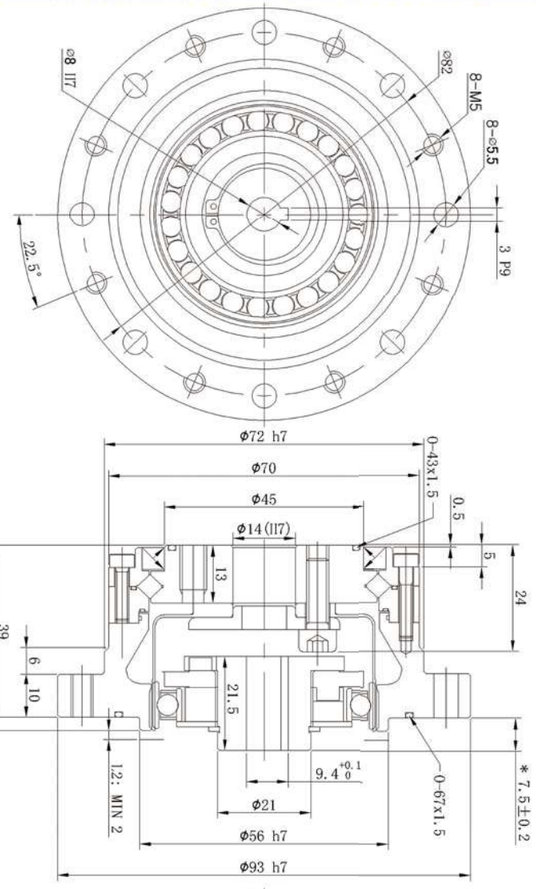
* Consult factory



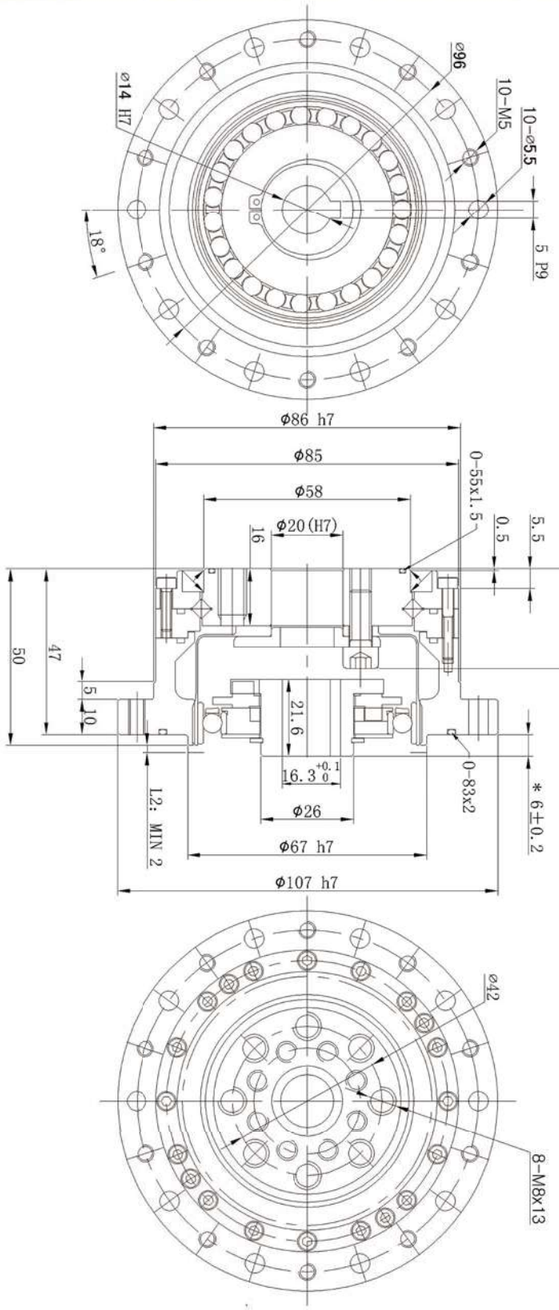
LCSG-17-XXX-C-II



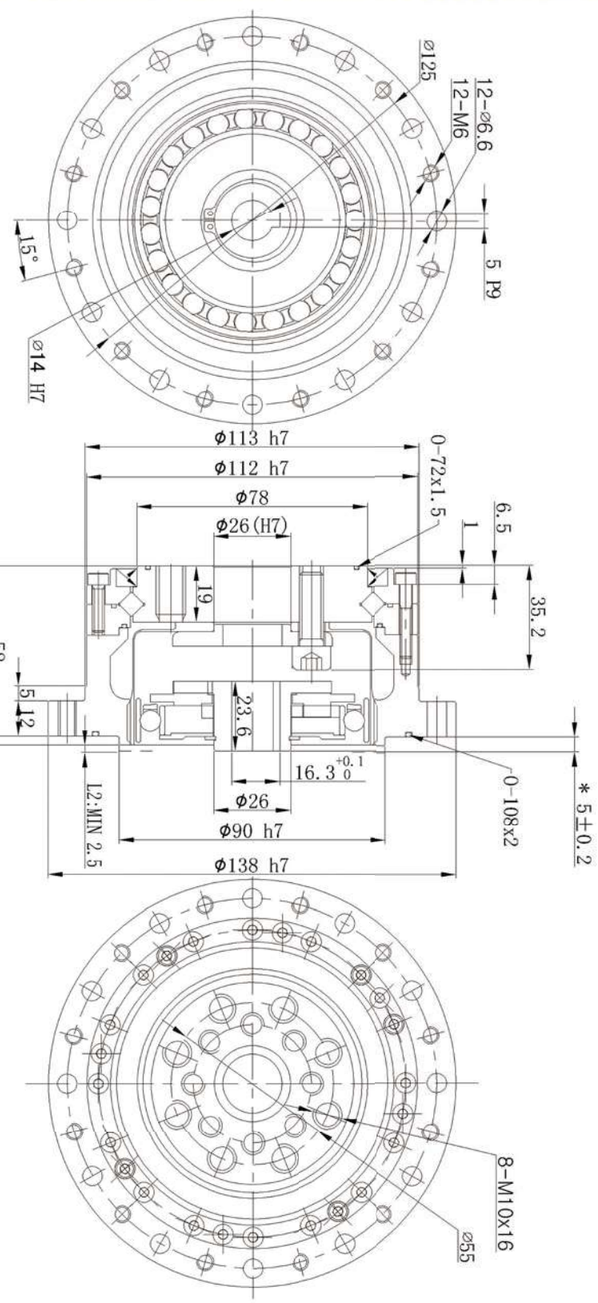
LCSG-20-XXX-C-II

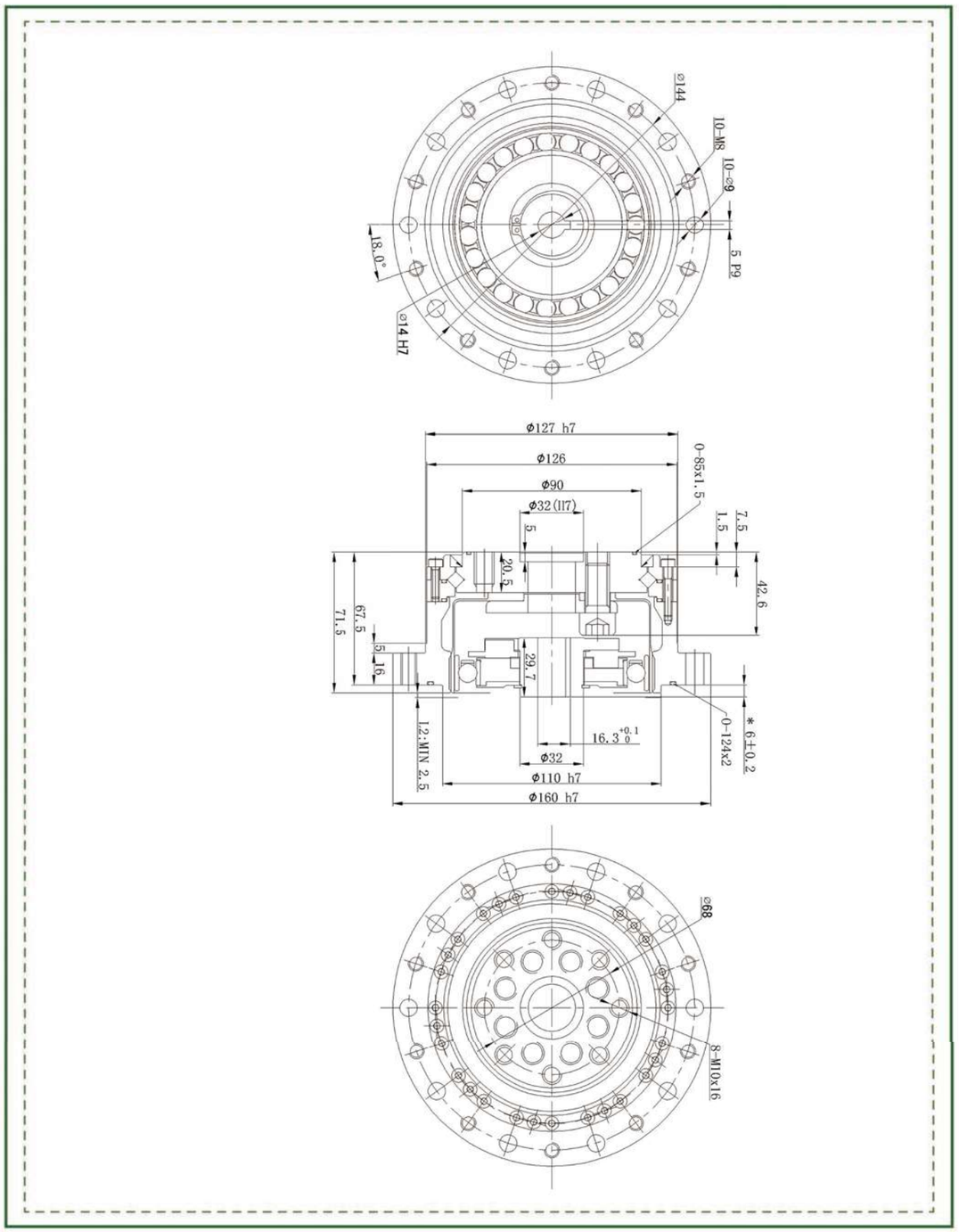


LCSG-25-XXX-C-II



LCSG-32-XXX-C-II





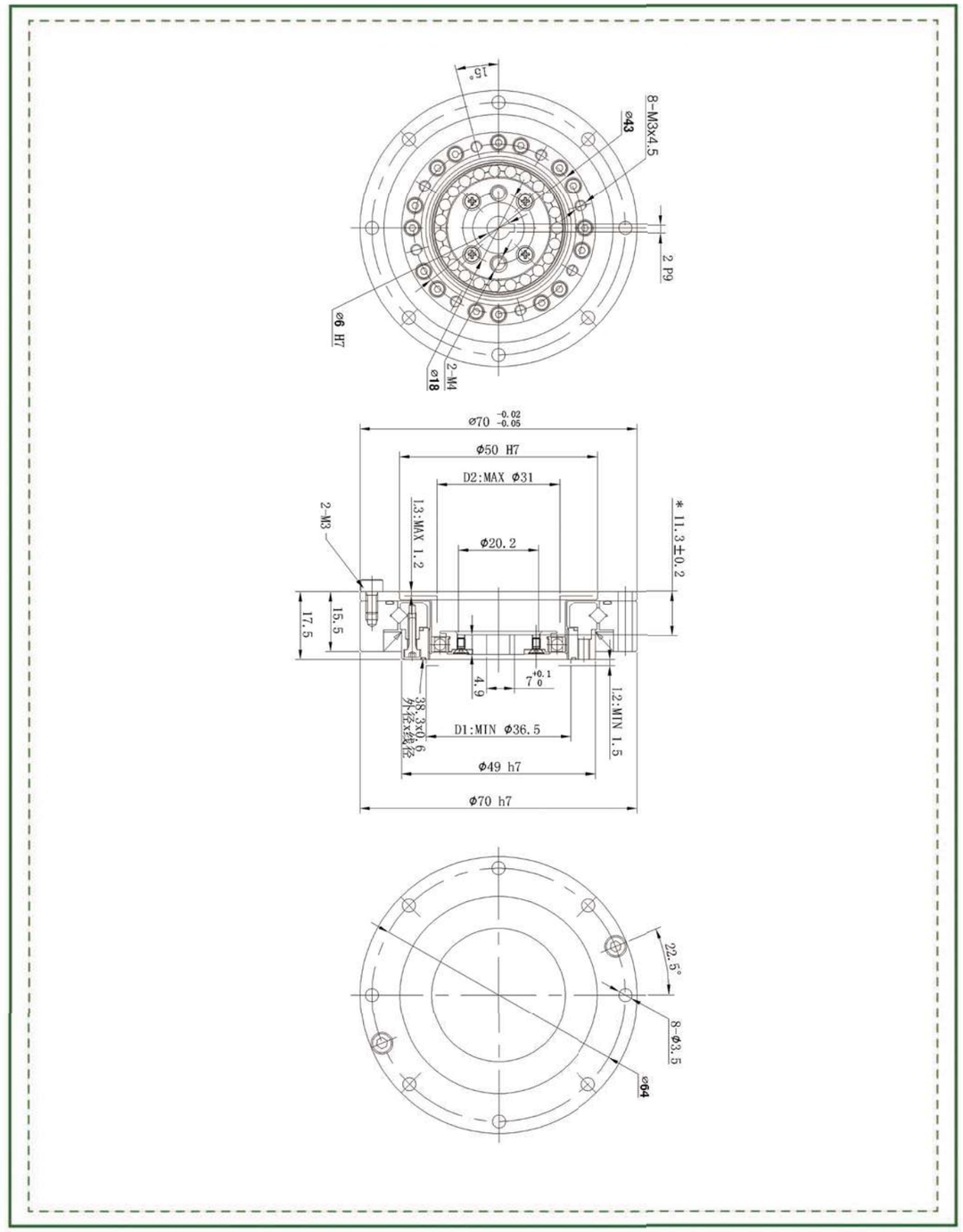
LHD series

With a flexible gear in ultra-thin hollow and flange structure, the LHD series are designed as flat as possible, and are therefore very suitable for the occasions where harsh thickness requirements for reducers are posed.

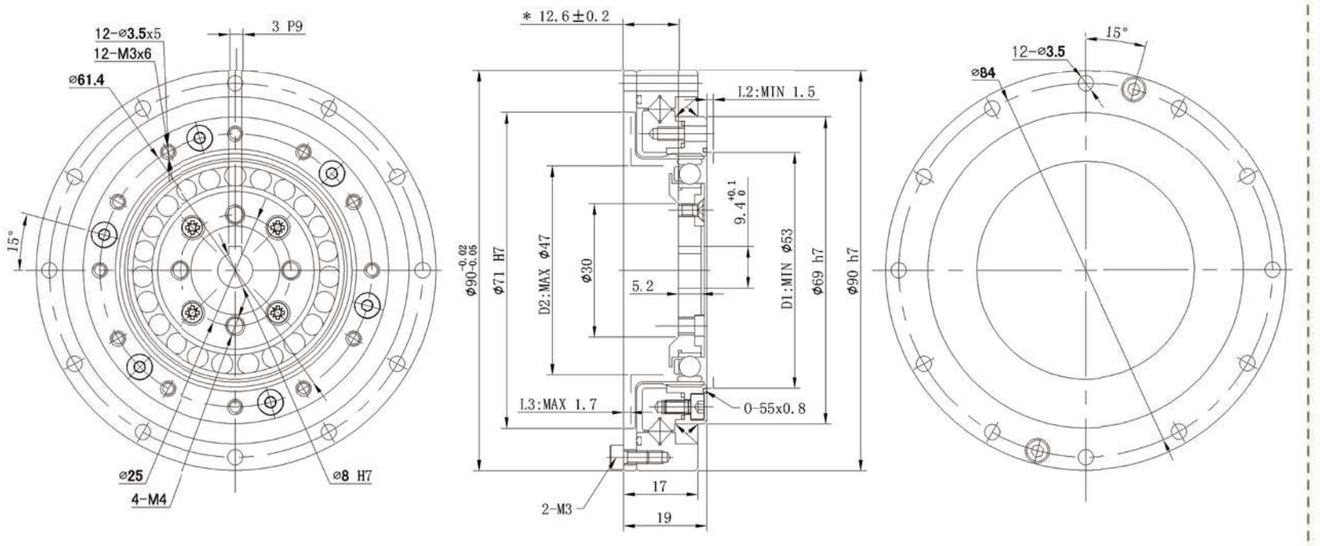
LHD-I series

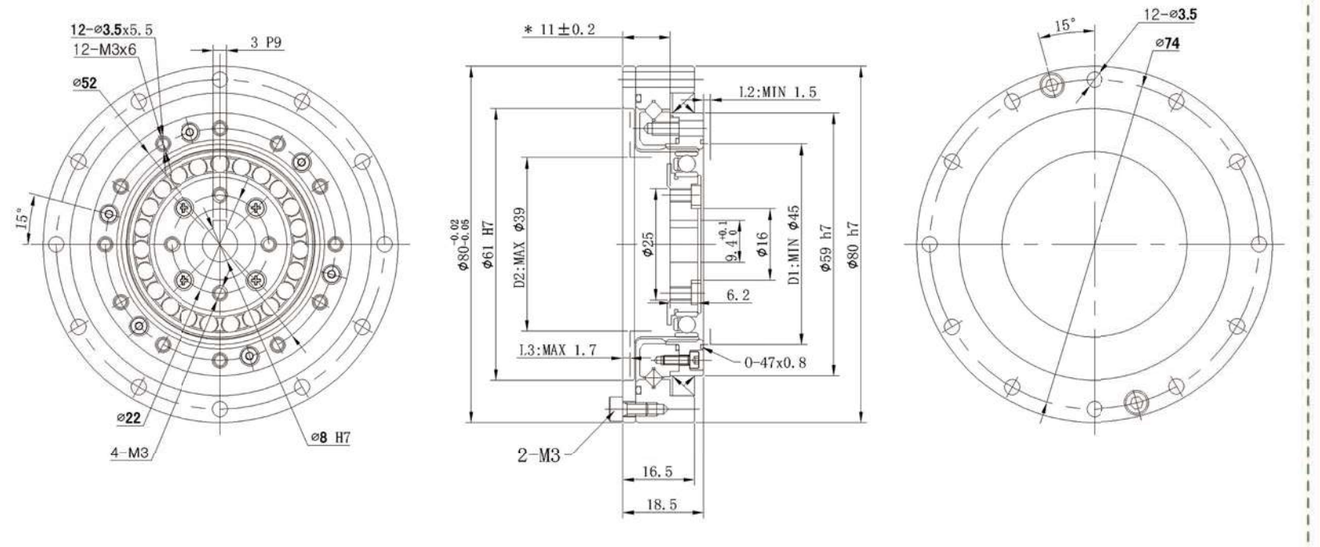
Parameter Table

Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	Kg	Hour
14	50	3. 5	11. 4	4. 6	23	8000	3500	≤20	0. 35	9000
	80	5. 1	15	6. 2	29			≤20		10000
	100	5. 1	18	7. 3	33			≤20		10000
17	50	10. 4	22	17	46	7000	3500	≤20	0. 45	9000
	80	14	29	21	54			≤20		10000
	100	15. 2	35	26	67			≤20		10000
20	50	16. 1	37	23	66	6000	3500	≤20	0. 55	9000
	80	23	49	28	78			≤20		10000
	100	27	54	32	90			≤20		10000
25	50	26	66	36	121	5500	3500	≤20	0. 95	9000
	80	42	91	62	157			≤20		10000
	100	45	105	71	175			≤20		10000
	120	45	111	71	187			≤20		10000
32	50	50	143	71	255	4500	3500	≤20	1. 92	9000
	80	79	202	126	350			≤20		10000
	100	91	221	144	399			≤20		10000
	120	91	235	144	423			≤20		10000
40	50	91	267	130	456	4000	3000	≤20	3. 15	9000
	100	176	378	247	665			≤20		10000
	160	196	430	300	727			≤20		10000

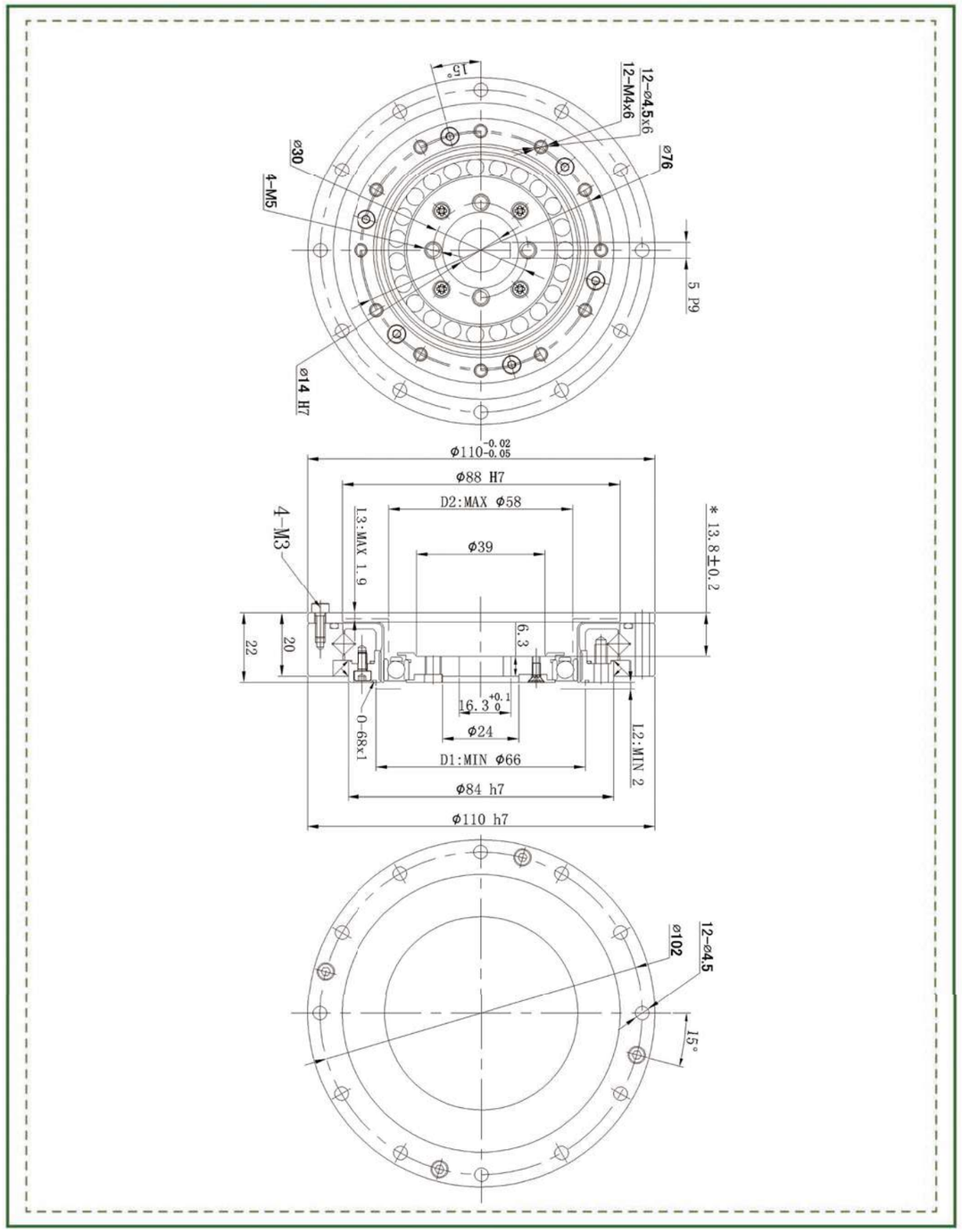


leaderdrive

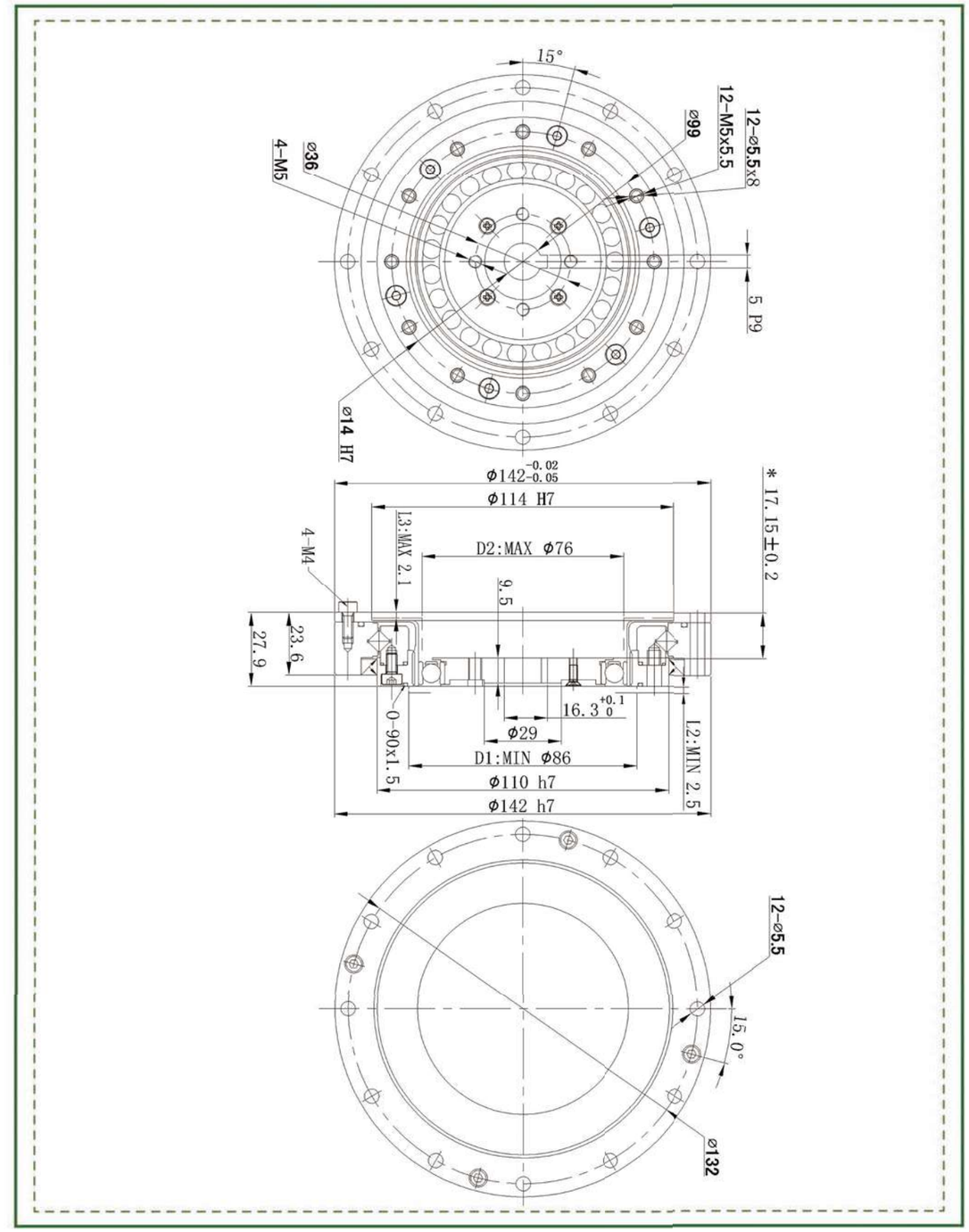




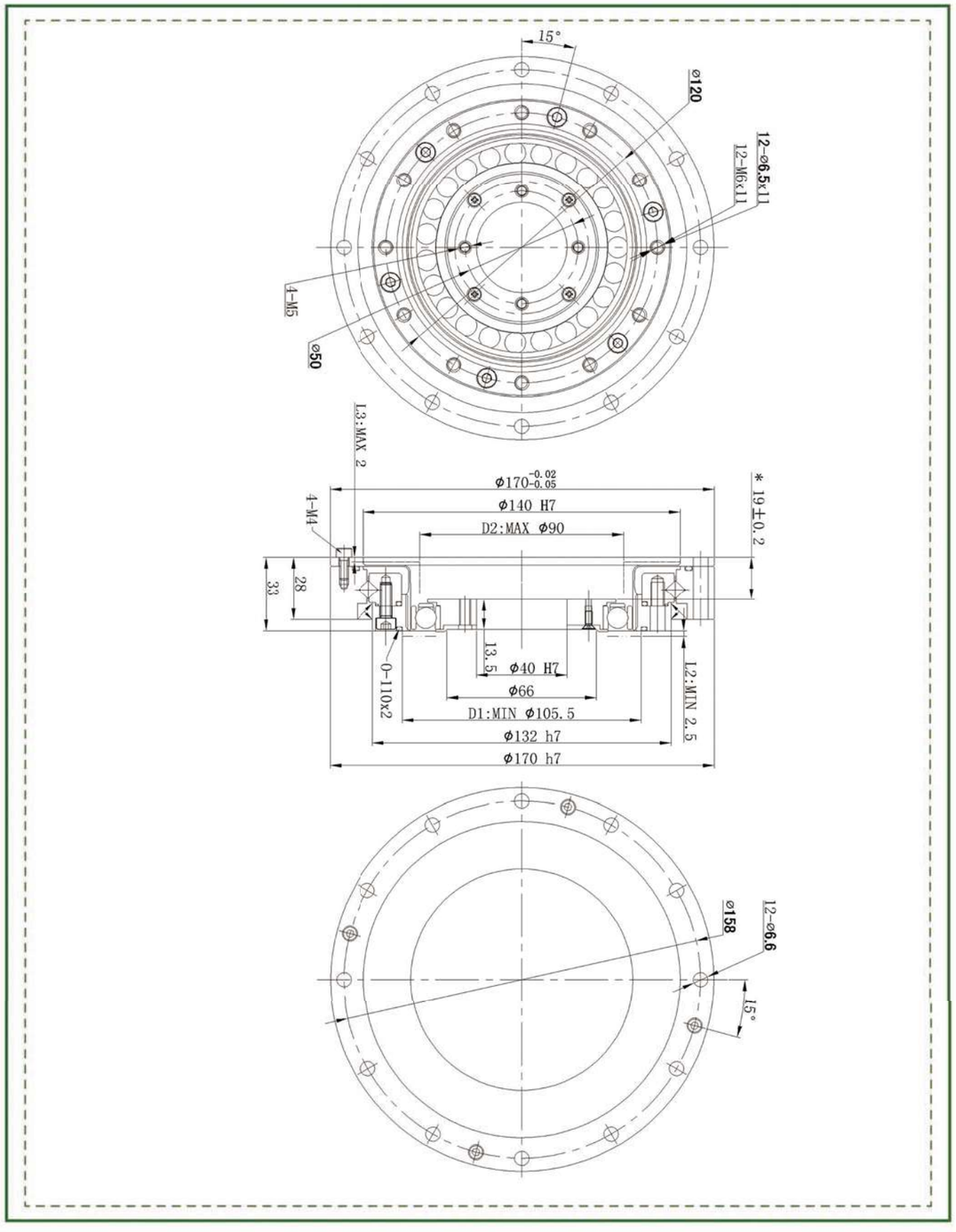
LHD-25-XXX-C-I



LHD-32-XXX-C-I



LHD-40-XXX-C-I



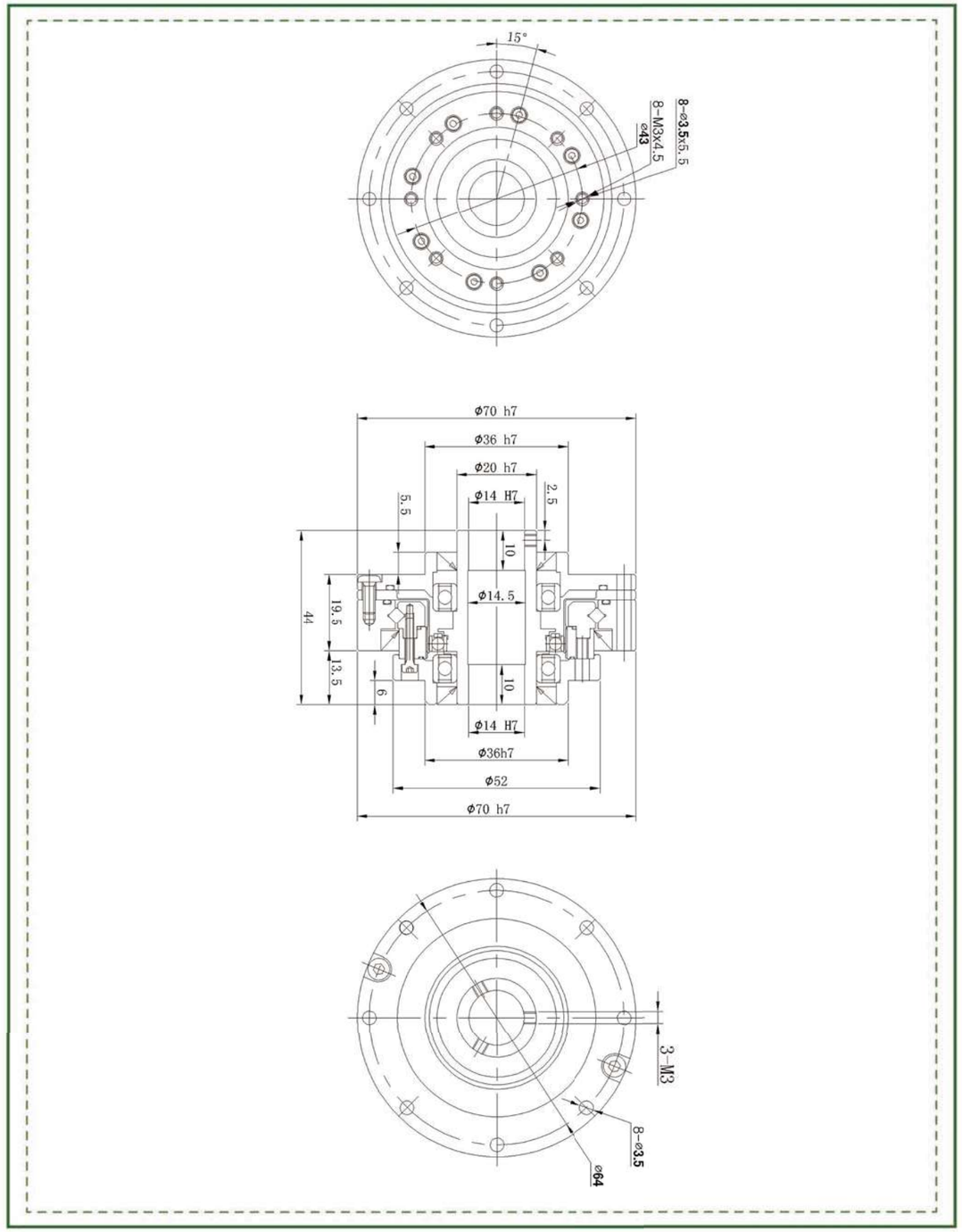
LHD-III series

For **LHD-III** series, there is a large-aperture hollow shaft hole in the middle of the cam of their wave generator with a flexible gear in ultra-thin hollow and flange structure, the LHD series are designed as flat as possible, and are therefore very suitable for the occasions where harsh thickness requirements for reducers are posed.

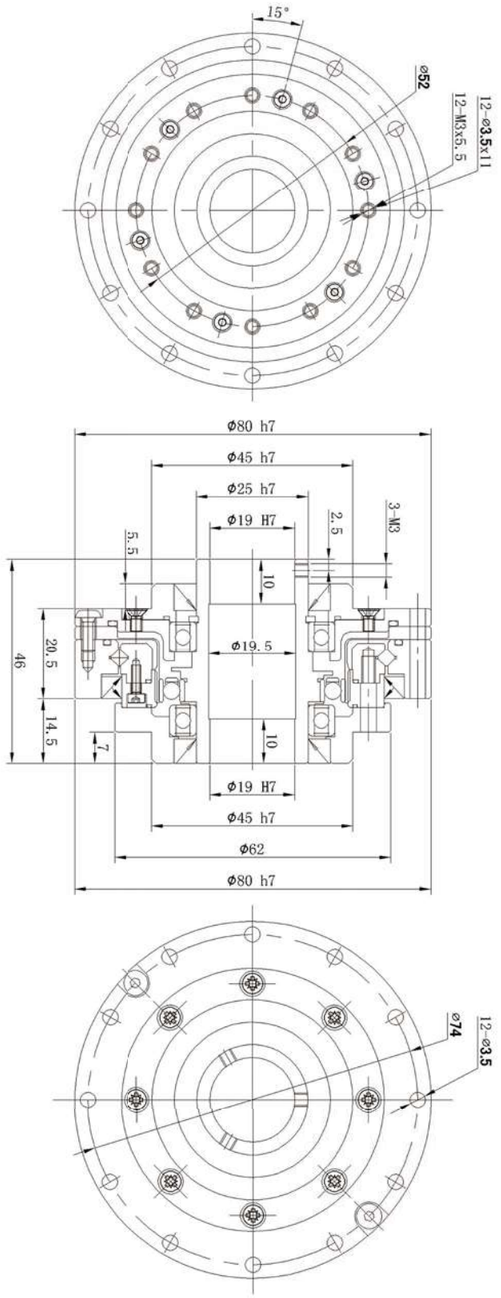
Parameter Table

Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	Kg	Hour
14	50	3. 5	11. 4	4. 6	23	8000	3500	≤20	0. 35	9000
	80	5. 1	15	6. 2	29			≤20		10000
	100	5. 1	18	7. 3	33			≤20		10000
17	50	10. 4	22	17	46	7000	3500	≤20	0. 45	9000
	80	14	29	21	54			≤20		10000
	100	15. 2	35	26	67			≤20		10000
20	50	16. 1	37	23	66	6000	3500	≤20	0. 55	9000
	80	23	49	28	78			≤20		10000
	100	27	54	32	90			≤20		10000
25	50	26	66	36	121	5500	3500	≤20	0. 95	9000
	80	42	91	62	157			≤20		10000
	100	45	105	71	175			≤20		10000
	120	45	111	71	187			≤20		10000
32	50	50	143	71	255	4500	3500	≤20	1. 92	9000
	80	79	202	126	350			≤20		10000
	100	91	221	144	399			≤20		10000
	120	91	235	144	423			≤20		10000
40*	50	91	267	130	456	4000	3000	≤20	3. 15	9000
	100	176	378	247	665			≤20		10000
	160	196	430	300	727			≤20		10000

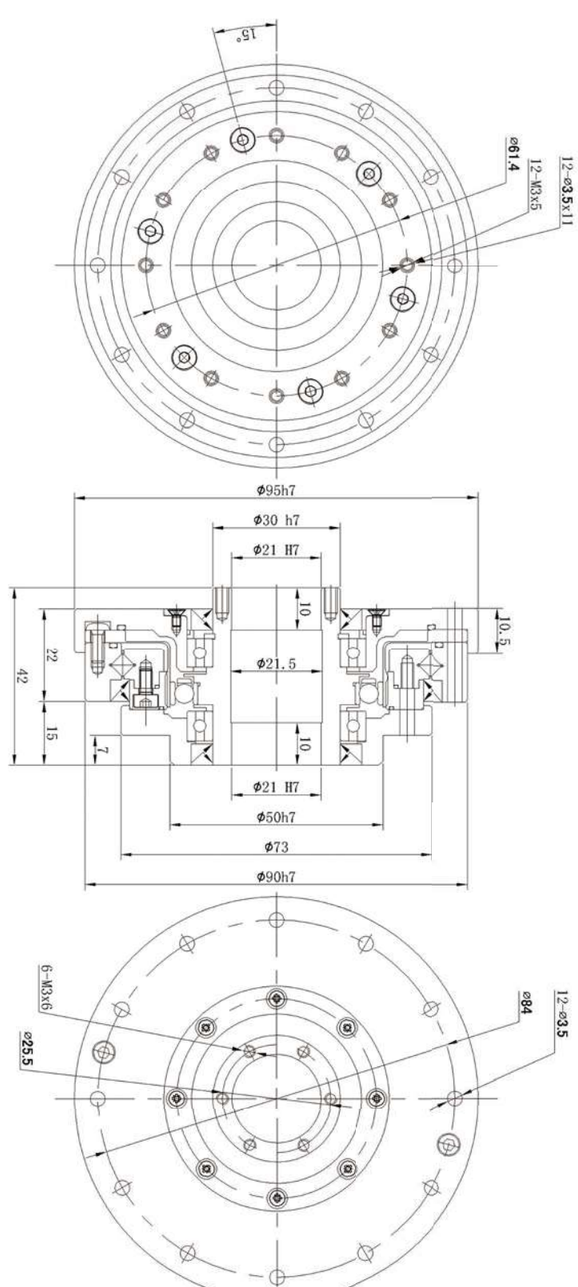
* Consult factory



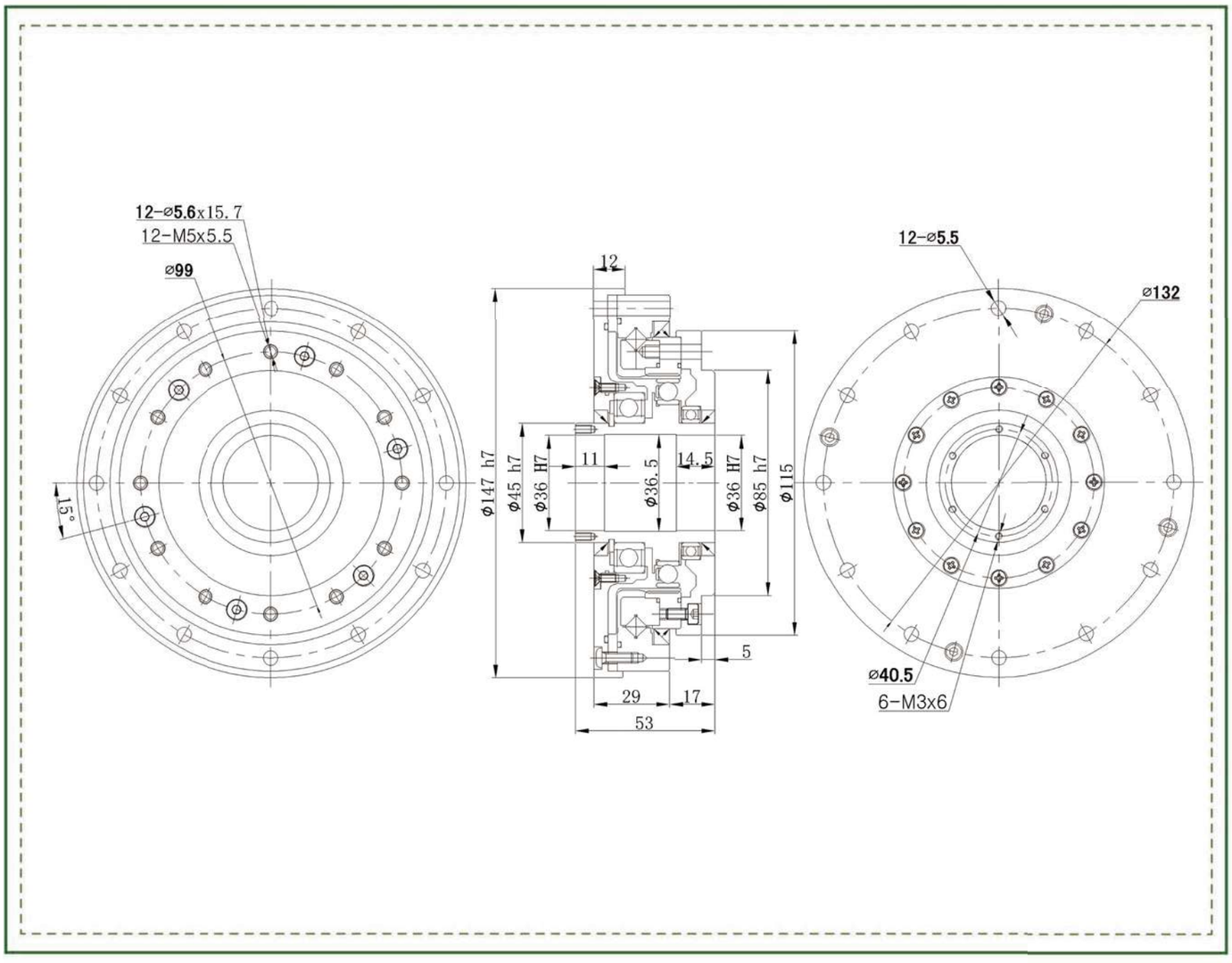
LHD-17-XXX-C-III

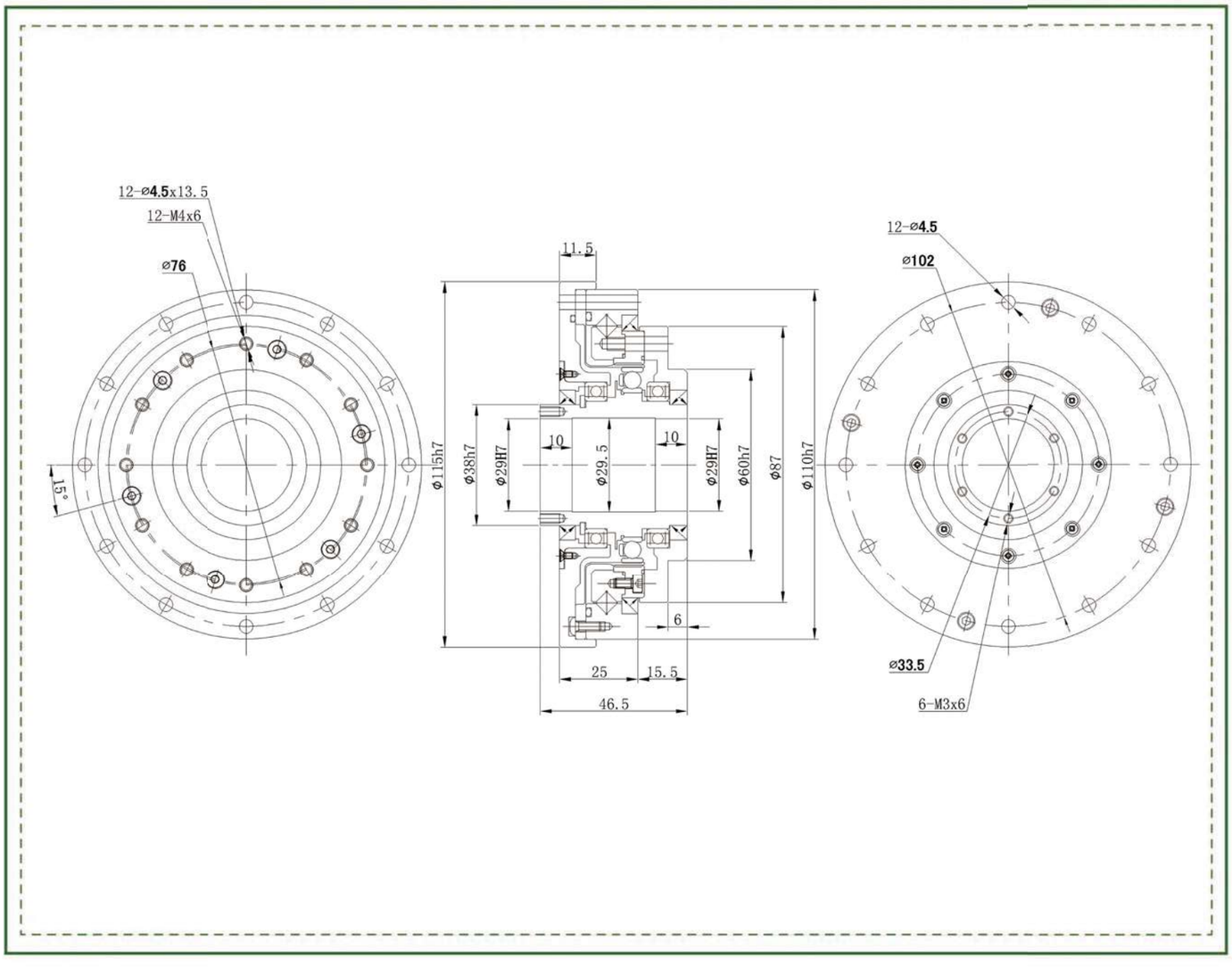


LHD-20-XXX-C-III



LHD-32-XXX-C-III





LHD-25-XXX-C-III

LHS-I series

LHS-I series, which have a standard hollow and flange-shaped tube structure, are tight in structure Their input shaft matches with the inner hole of wave transformer directly and are connected by flat key. Alternatively, they can be used with the rigid gear end fixed and the flexible gear end outputting, or with the flexible gear end fixed and the rigid gear end outputting.

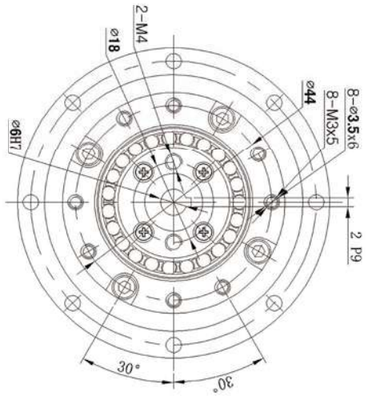
LHS-I series

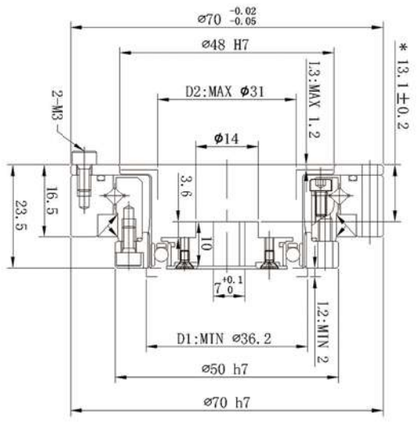
Parameter Table

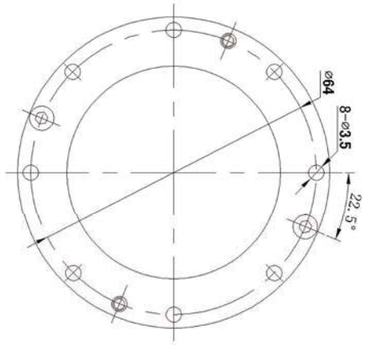
Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	Kg	Hour
14	30	3. 8	8. 6	7. 8	16	8000	3500	≤20	0. 38	10000
	50	5. 1	17	6. 6	33			≤20		10000
	80	7. 4	22	10. 5	45			≤10		15000
	100	7. 4	27	10. 5	51			≤10		15000
17	30	8. 4	15. 2	11. 5	29	7000	3500	≤20	0. 56	10000
	50	15. 2	32	25	66			≤20		10000
	80	21	41	26	83			≤10		15000
	100	23	51	37	104			≤10		15000
	120	23	51	37	82			≤10		15000
20	30	14	26	19	48	6000	3500	≤20	0. 76	10000
	50	24	53	32	93			≤20		10000
	80	32	70	45	121			≤10		15000
	100	38	78	47	140			≤10		15000
	120	38	83	47	140			≤10		15000
	160	38	87	47	140			≤10		15000
25	30	26	48	36	90	5500	3500	≤20	1. 24	10000
	50	37	93	52	177			≤20		10000
	80	60	130	83	242			≤10		15000
	100	64	149	103	270			≤10		15000
	120	64	159	103	289			≤10		15000
	160	64	167	103	298			≤10		15000
32	30	51	95	71	190	4500	3500	≤20	2. 6	10000
	50	72	205	103	363			≤20		10000
	80	112	289	159	540			≤10		15000
	100	130	316	205	615			≤10		15000
	120	130	335	205	652			≤10		15000
	160	130	353	205	652			≤10		15000
40	50	130	382	186	652	4000	3000	≤20	5. 0	10000
	80	196	493	270	931			≤10		15000
	100	252	540	353	1026			≤10		15000
	120	279	586	428	1121			≤10		15000
	160	279	615	428	1121			≤10		15000
50*	50	233	679	333	1358	3000	2500	≤20	9. 5	10000
	80	353	894	493	1767			≤10		15000
	100	446	931	633	1957			≤10		15000
	120	502	1026	772	1957			≤10		15000
	160	502	1121	801	2328			≤10		15000
58*	80	522	1406	732	2328	3000	2200	≤10	13. 6	15000
	100	661	1511	1007	3021			≤10		15000
	120	708	1634	1131	3164			≤10		15000
	160	708	1748	1150	3259			≤10		15000

* Consult factory

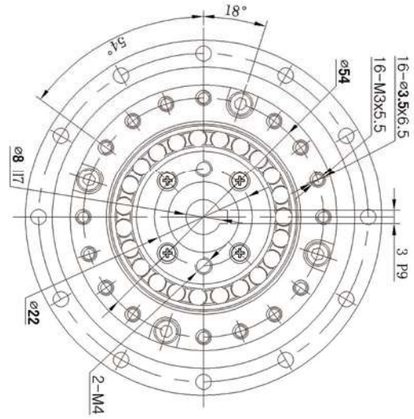
LHS-14-XXX-C-I

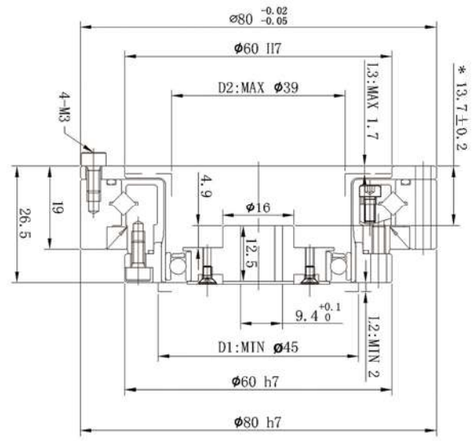


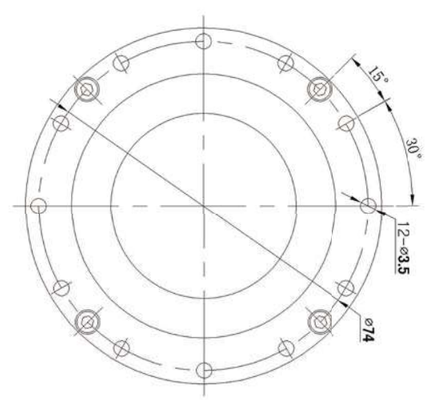




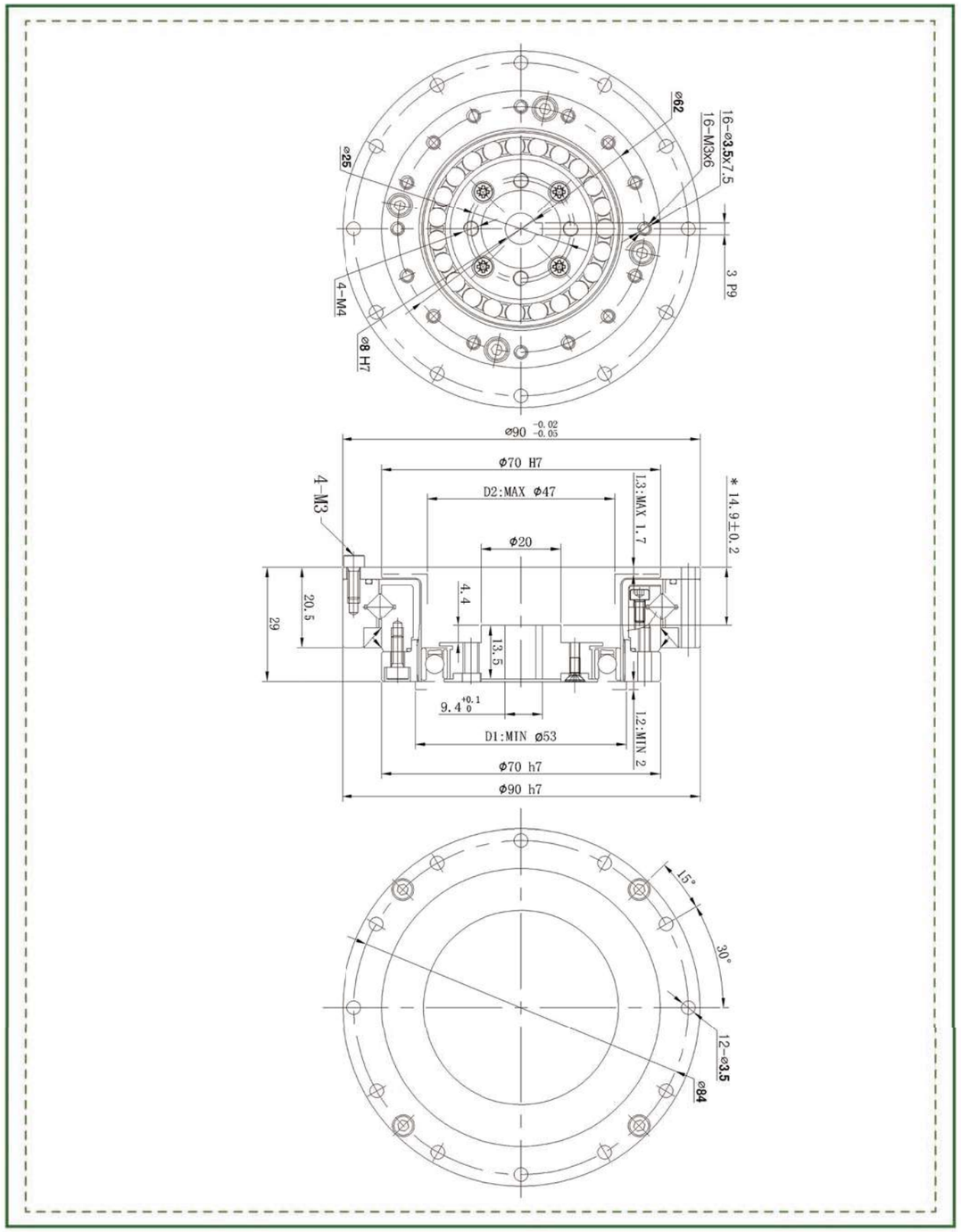
LHS-17-XXX-C-I



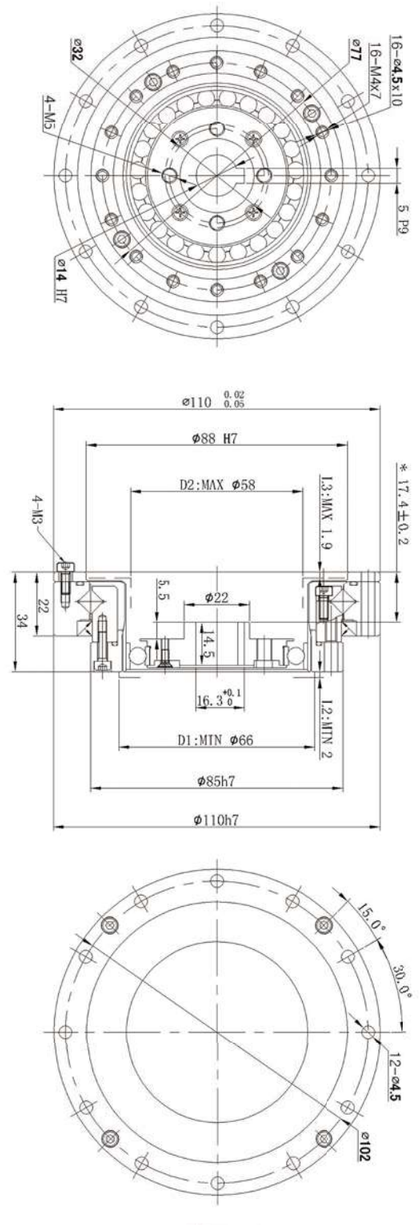




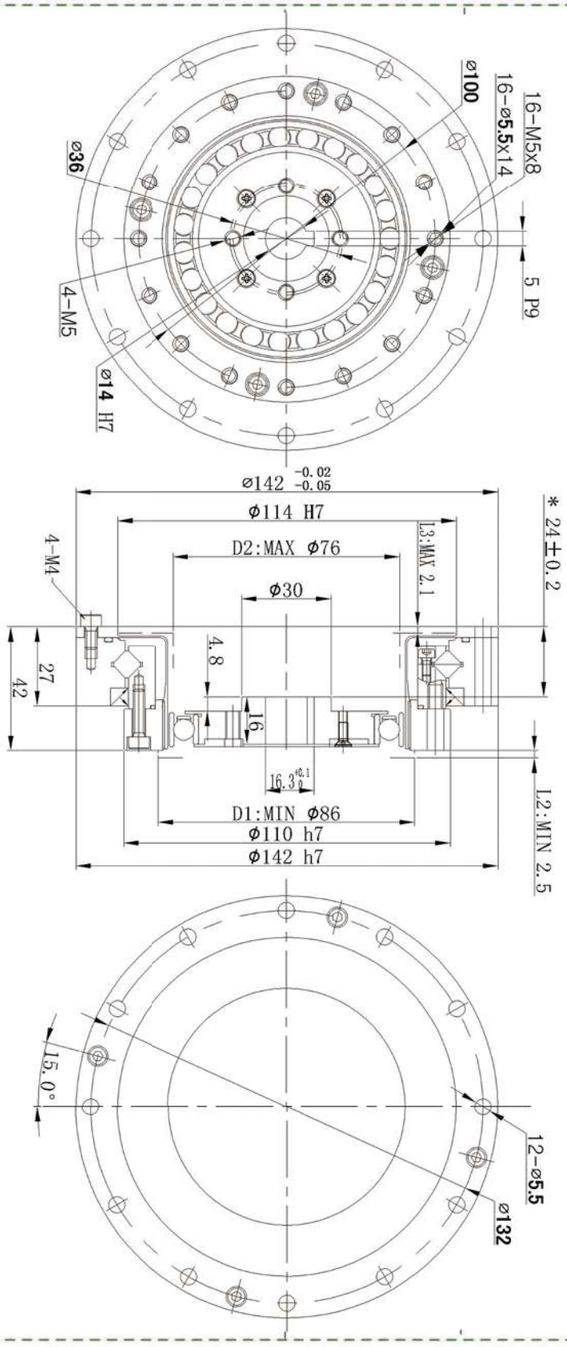
LHS-20-XXX-C-I



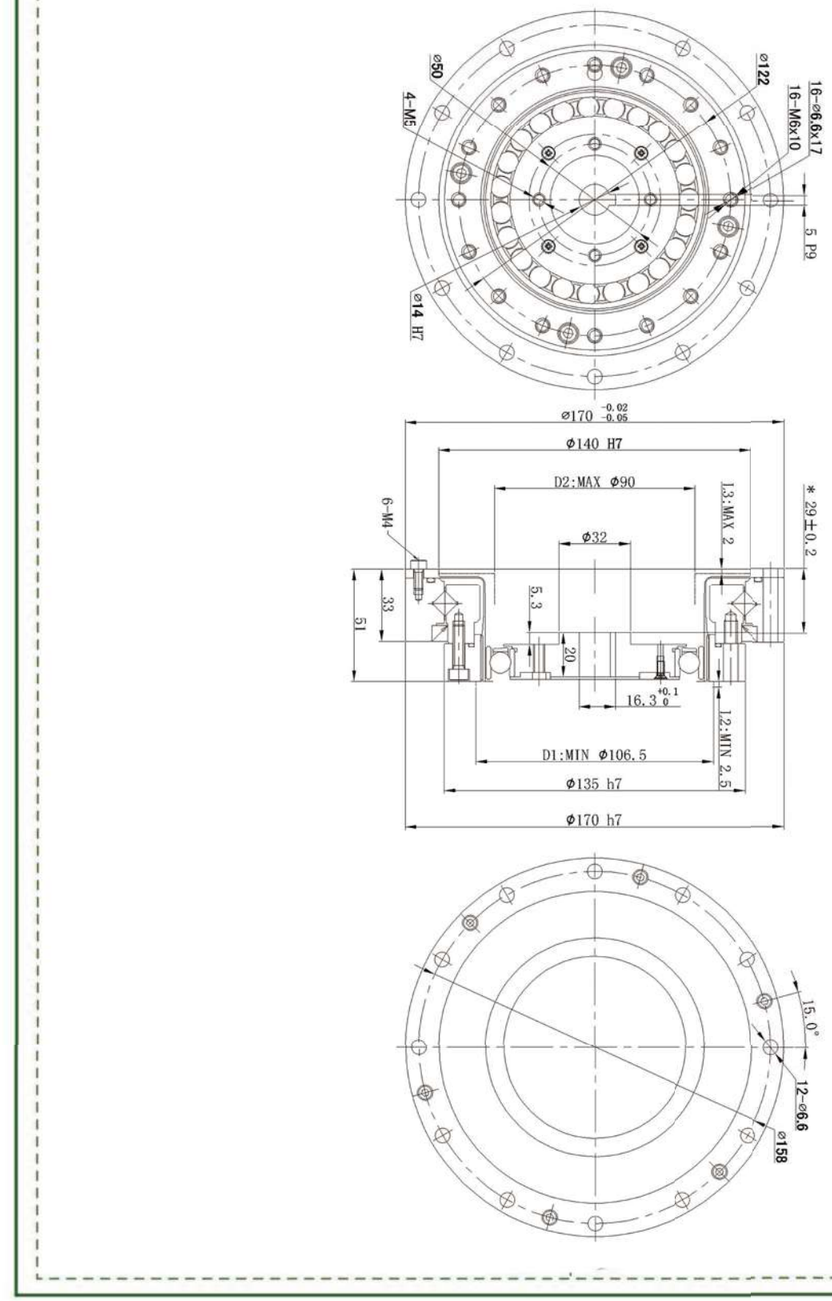
LHS-25-XXX-C-I



LHS-32-XXX-C-I



LHS-40-XXX-C-I



LHS-II series

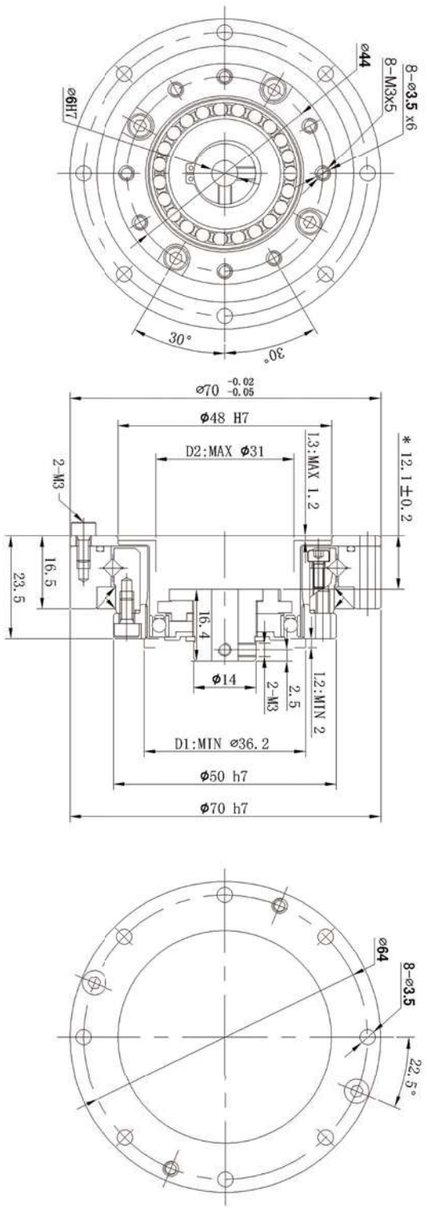
For **LHS-II** series, their input shaft is connected with the inner hole of wave transformer through a double slider coupling.

Parameter Table

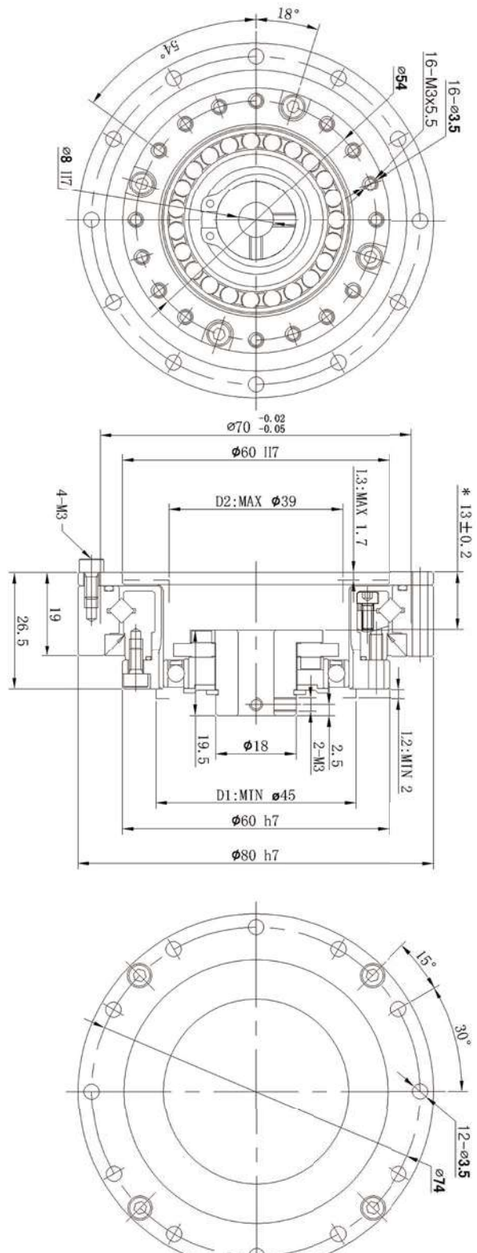
Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	Kg	Hour
14	30	3. 8	8. 6	7. 8	16	8000	3500	⩽20	0. 38	10000
	50	5. 1	17	6. 6	33			⩽20		10000
	80	7. 4	22	10. 5	45			⩽20		15000
	100	7. 4	27	10. 5	51			⩽20		15000
17	30	8. 4	15. 2	11. 5	29	7000	3500	⩽20	0. 56	10000
	50	15. 2	32	25	66			⩽20		10000
	80	21	41	26	83			⩽20		15000
	100	23	51	37	104			⩽20		15000
	120	23	51	37	82			⩽20		15000
20	30	14	26	19	48	6000	3500	⩽20	0. 76	10000
	50	24	53	32	93			⩽20		10000
	80	32	70	45	121			⩽20		15000
	100	38	78	47	140			⩽20		15000
	120	38	83	47	140			⩽20		15000
	160	38	87	47	140			⩽20		15000
25	30	26	48	36	90	5500	3500	⩽20	1. 24	10000
	50	37	93	52	177			⩽20		10000
	80	60	130	83	242			⩽20		15000
	100	64	149	103	270			⩽20		15000
	120	64	159	103	289			⩽20		15000
	160	64	167	103	298			⩽20		15000
32	30	51	95	71	190	4500	3500	⩽20	2. 6	10000
	50	72	205	103	363			⩽20		10000
	80	112	289	159	540			⩽20		15000
	100	130	316	205	615			⩽20		15000
	120	130	335	205	652			⩽20		15000
	160	130	353	205	652			⩽20		15000
40	50	130	382	186	652	4000	3000	⩽20	5. 0	10000
	80	196	493	270	931			⩽20		15000
	100	252	540	353	1026			⩽20		15000
	120	279	586	428	1121			⩽20		15000
	160	279	615	428	1121			⩽20		15000
50*	50	233	679	333	1358	3000	2500	⩽20	9. 5	10000
	80	353	894	493	1767			⩽20		15000
	100	446	931	633	1957			⩽20		15000
	120	502	1026	772	1957			⩽20		15000
	160	502	1121	801	2328			⩽20		15000
58*	80	522	1406	732	2328	3000	2200	⩽10	13. 6	15000
	100	661	1511	1007	3021			⩽10		15000
	120	708	1634	1131	3164			⩽10		15000
	160	708	1748	1150	3259			⩽10		15000

* Consult factory

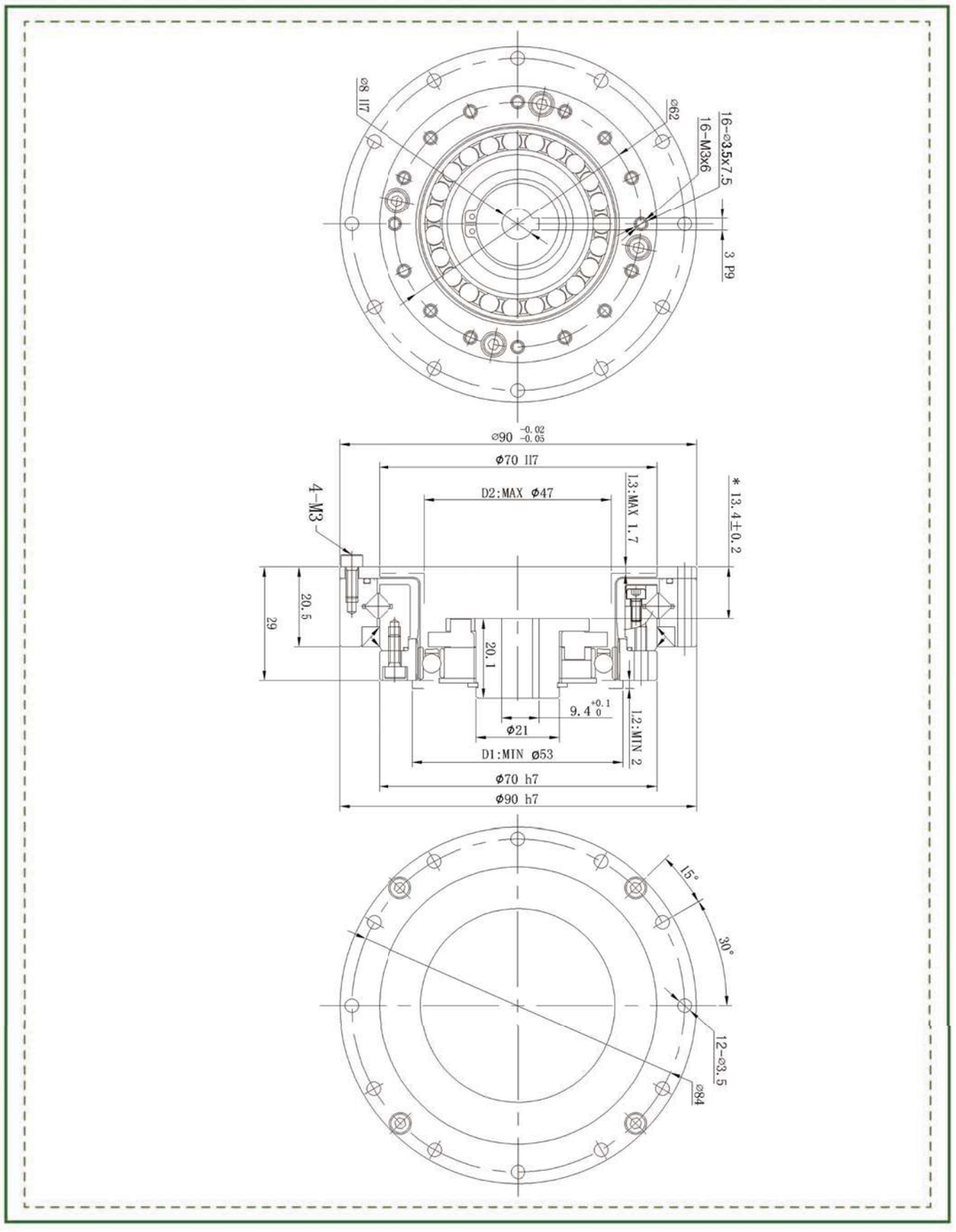
LHS-14-XXX-C-II



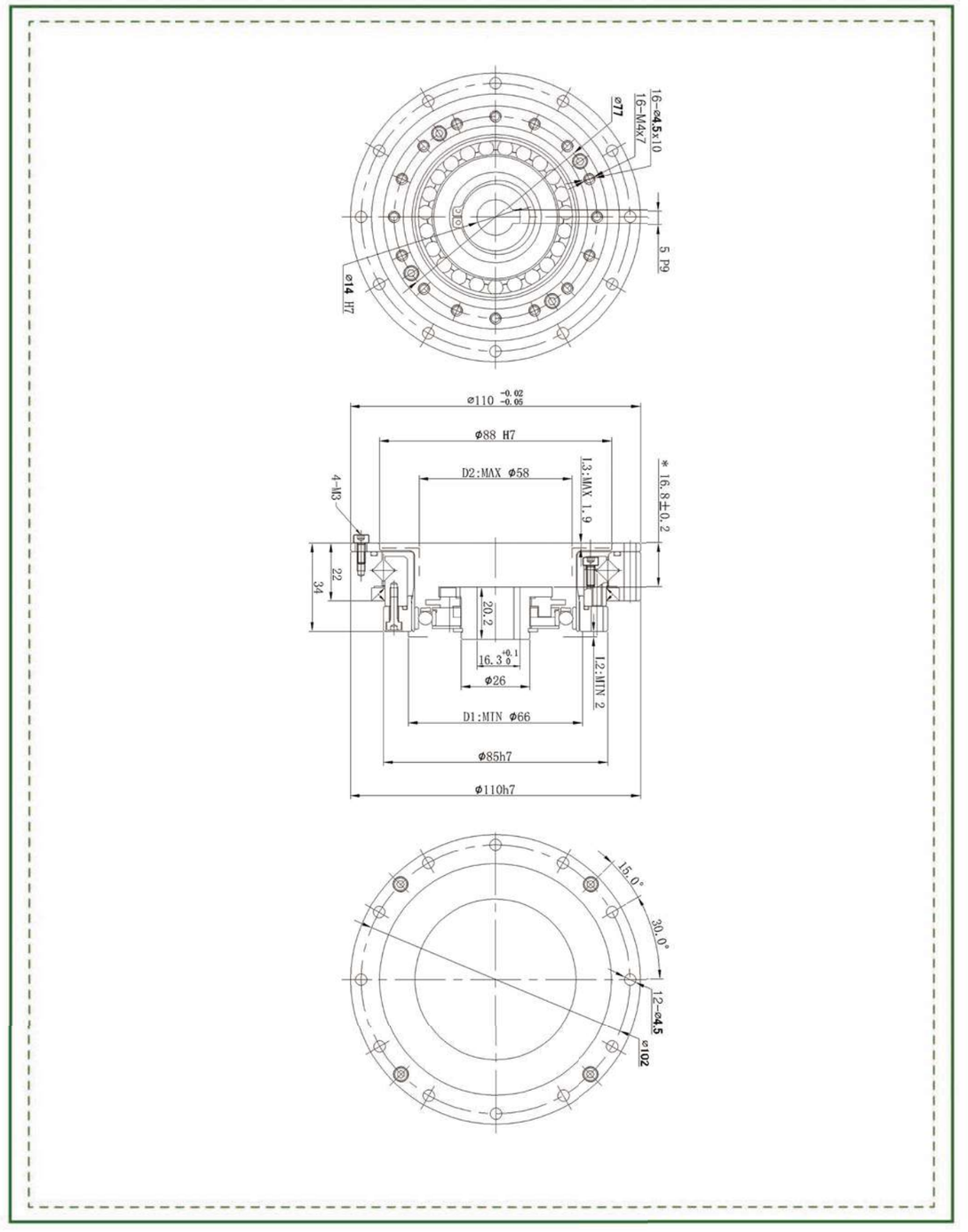
LHS-17-XXX-C-II



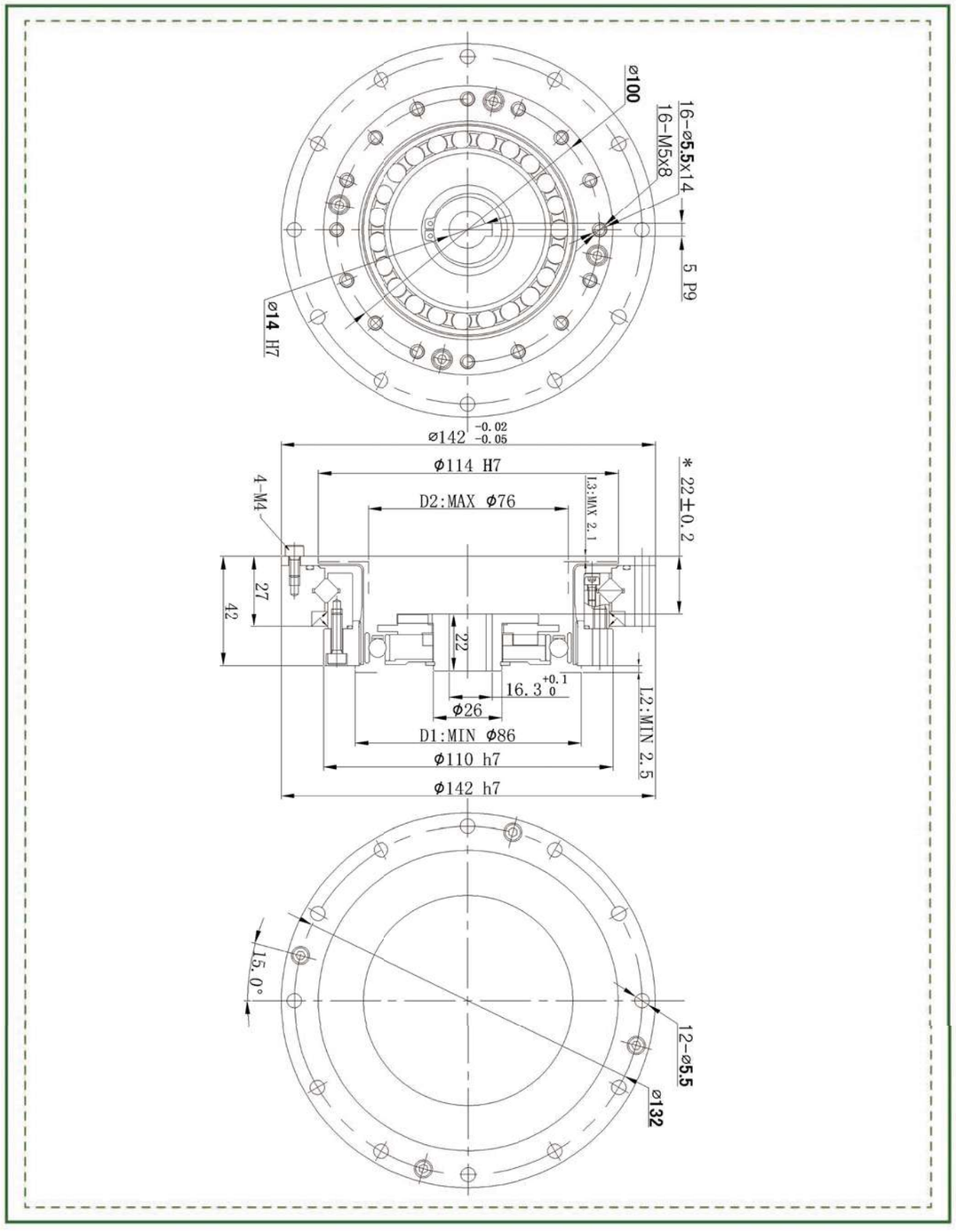
LHS-20-XXX-C-II



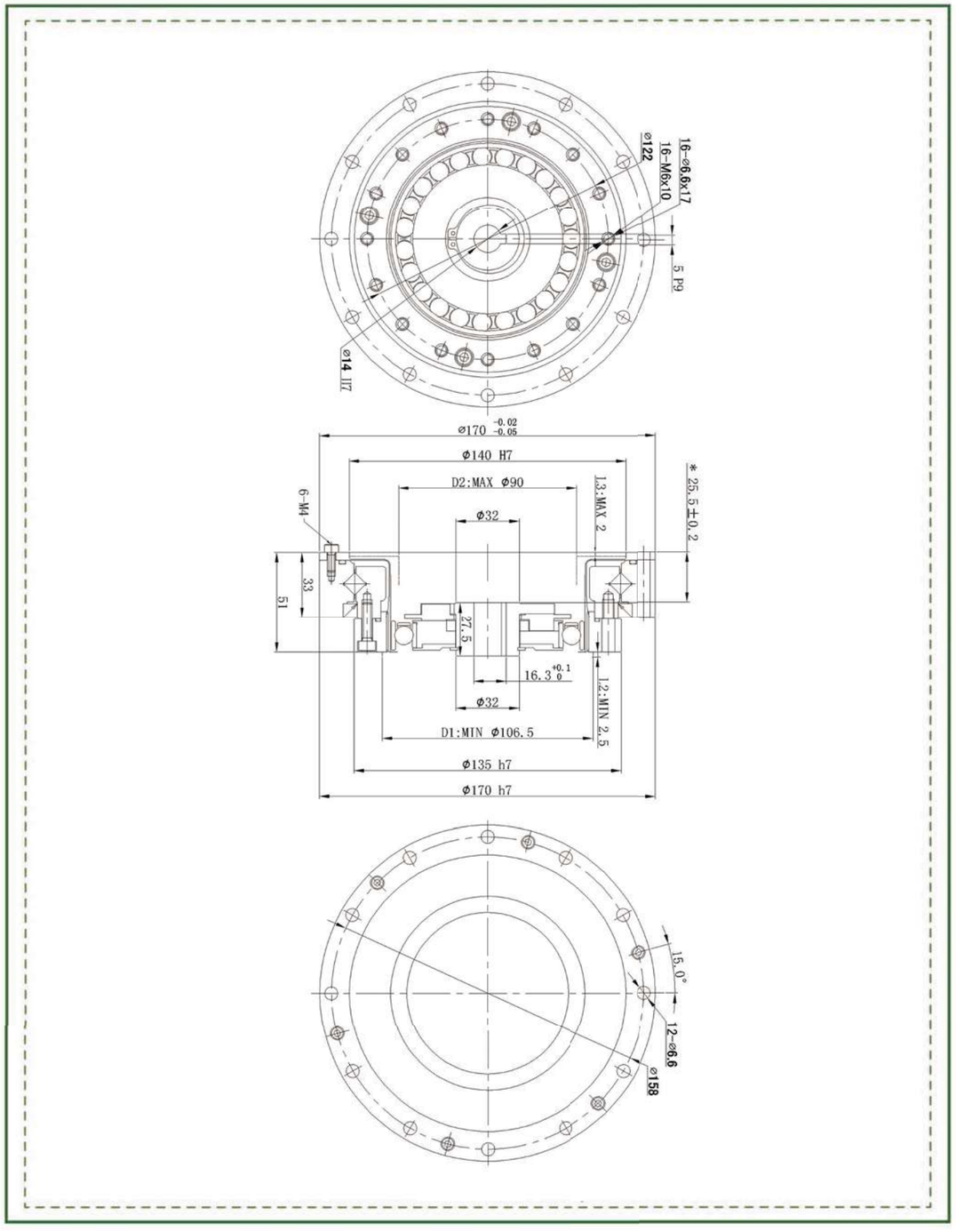
LHS-25-XXX-C-II



LHS-32-XXX-C-II



LHS-40-XXX-C-II



LHS-III series

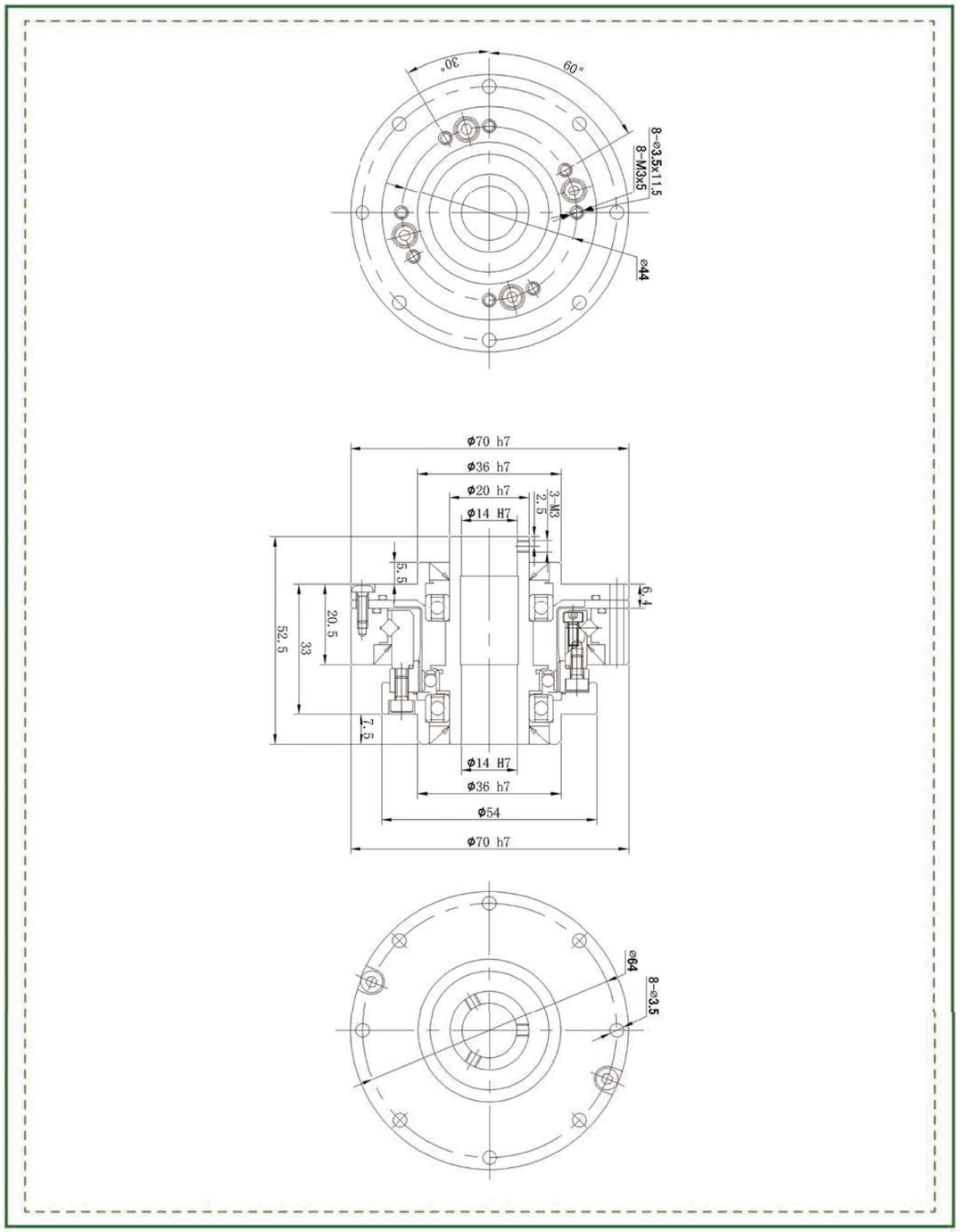
For **LHS-III** series, there is a large-aperture hollow shaft hole in the middle of the cam of their wave generator, and a supporting bearing designed inside reducer. Characterized by full-sealing structure and easy installation, the series are very suitable for the occasions where threading needs running through the center of reducer.

Parameter Table

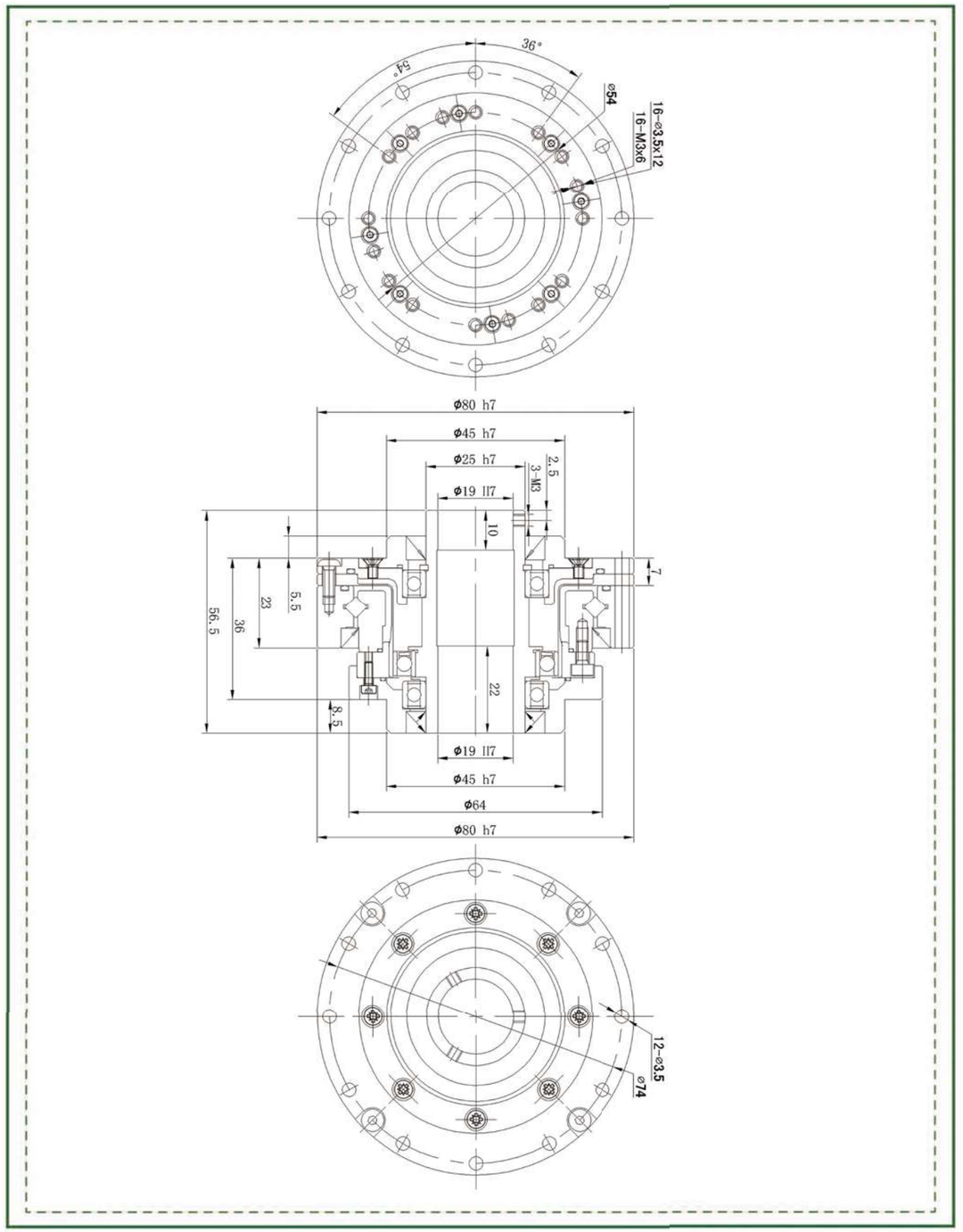
Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	With Maximum Tension	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	N	Kg	Hour
14	30	3. 8	8. 6	7. 8	16	8000	3500	≤20	≤77	0. 72	10000
	50	5. 1	17	6. 6	33			≤20			10000
	80	7. 4	22	10. 5	45			≤10			15000
	100	7. 4	27	10. 5	51			≤10			15000
17	30	8. 4	15. 2	11. 5	29	7000	3500	≤20	≤92	1. 0	10000
	50	15. 2	32	25	66			≤20			10000
	80	21	41	26	83			≤10			15000
	100	23	51	37	104			≤10			15000
	120	23	51	37	82			≤10			15000
20	30	14	26	19	48	6000	3500	≤20	≤136	1. 38	10000
	50	24	53	32	93			≤20			10000
	80	32	70	45	121			≤10			15000
	100	38	78	47	140			≤10			15000
	120	38	83	47	140			≤10			15000
	160	38	87	47	140			≤10			15000
25	30	26	48	36	90	5500	3500	≤20	≤147	2. 15	10000
	50	37	93	52	177			≤20			10000
	80	60	130	83	242			≤10			15000
	100	64	149	103	270			≤10			15000
	120	64	159	103	289			≤10			15000
	160	64	167	103	298			≤10			15000
32	30	51	95	71	190	4500	3500	≤20	≤154	4. 3	10000
	50	72	205	103	363			≤20			10000
	80	112	289	159	540			≤10			15000
	100	130	316	205	615			≤10			15000
	120	130	335	205	652			≤10			15000
	160	130	353	205	652			≤10			15000
40	50	130	382	186	652	4000	3000	≤20	≤294	7. 8	10000
	80	196	493	270	931			≤10			15000
	100	252	540	353	1026			≤10			15000
	120	279	586	428	1121			≤10			15000
	160	279	615	428	1121			≤10			15000
50*	50	233	679	333	1358	3000	2500	≤20	≤373	14. 5	10000
	80	353	894	493	1767			≤10			15000
	100	446	931	633	1957			≤10			15000
	120	502	1026	772	1957			≤10			15000
	160	502	1121	801	2328			≤10			15000
58*	80	678	1828	951	3026	3000	2200	≤10	≤1300	20. 0	15000
	100	860	1964	1309	3927			≤10			15000
	120	921	2124	1470	4113			≤10			15000
	160	921	2272	1494	4236			≤10			15000

* Consult factory

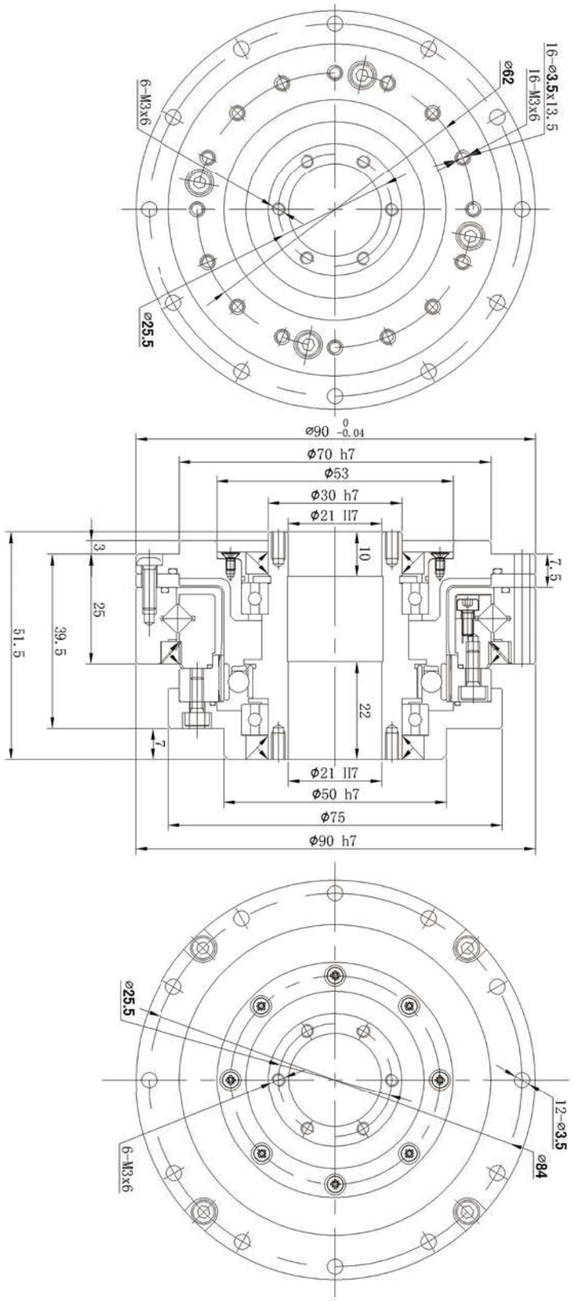
LHS-14-XXX-C-III



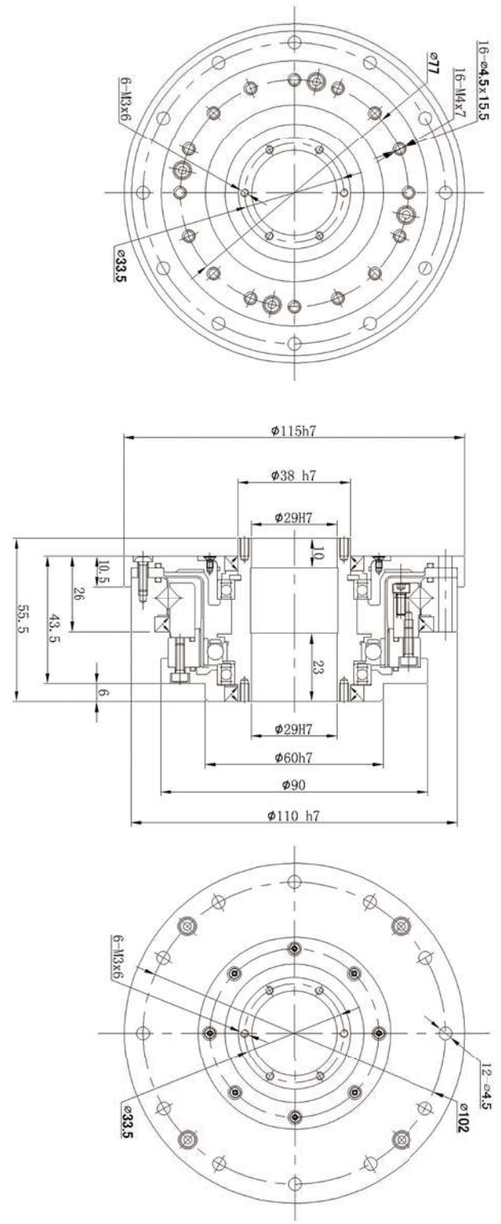
LHS-17-XXX-C-III



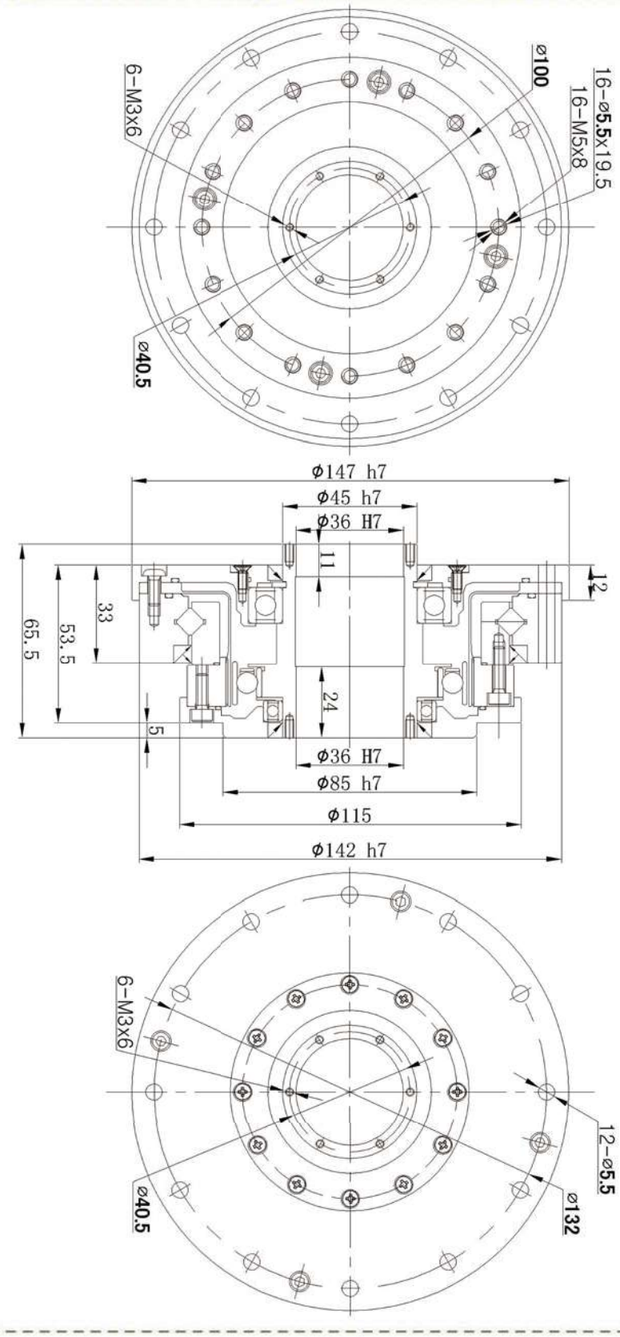
LHS-20-XXX-C-III



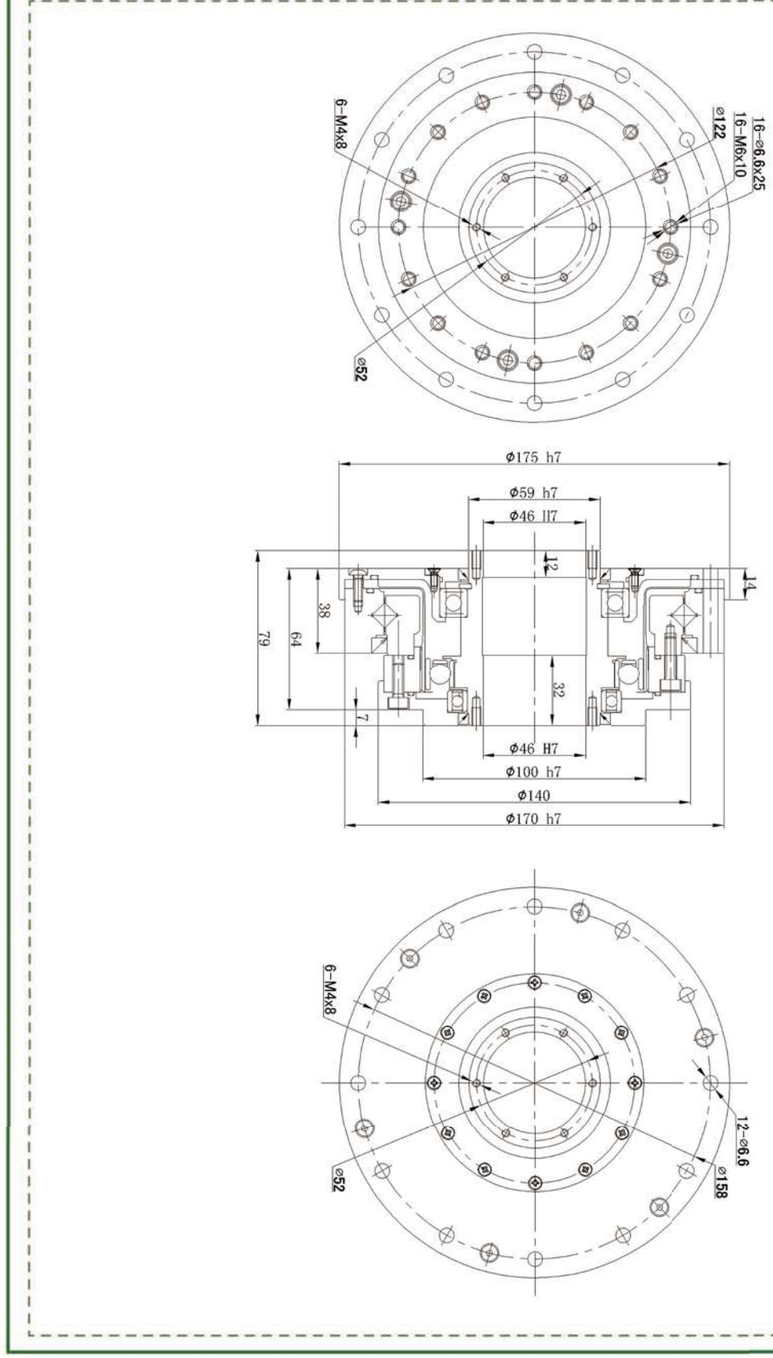
LHS-25-XXX-C-III



LHS-32-XXX-C-III



LHS-40-XXX-C-III



LHS-CL-III series

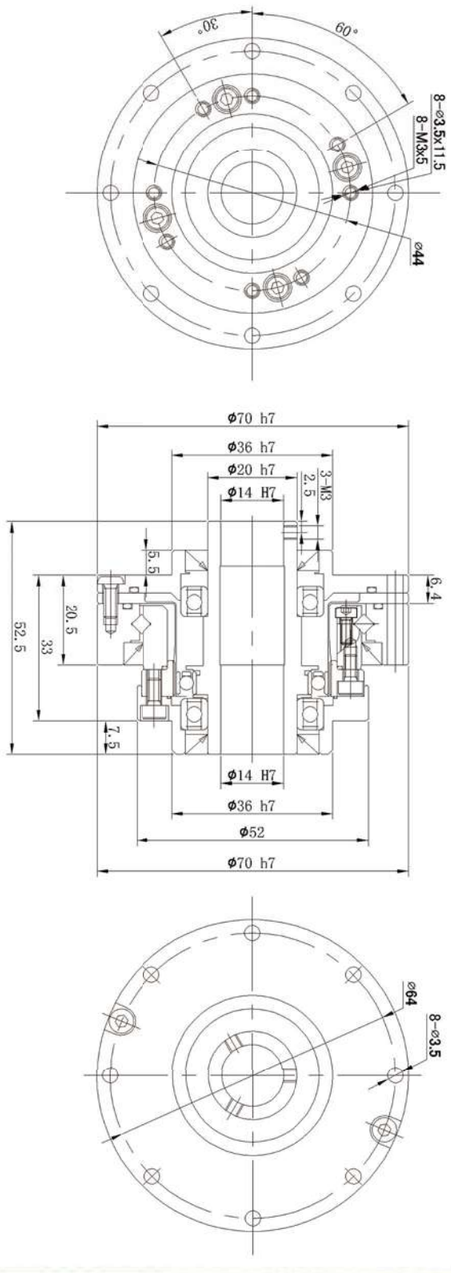
For **LHS-CL-III** series, there is a large-aperture hollow shaft hole in the middle of the cam of their wave generator, and a supporting bearing designed inside reducer. Characterized by full-sealing structure and easy installation, the series are very suitable for the occasions where threading needs running through the center of reducer.

Parameter Table

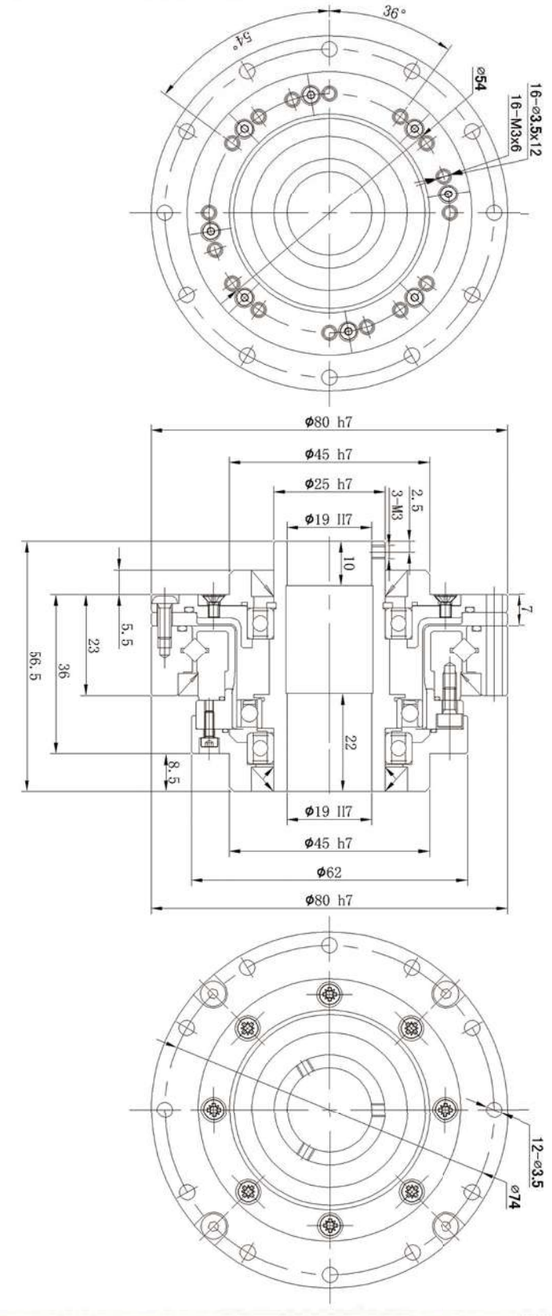
Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	With Maximum Tension	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	N	Kg	Hour
14	30	3.8	8.6	7.8	16	8000	3500	≤20	≤77	0.56	10000
	50	5.1	17	6.6	33			≤20			10000
	80	7.4	22	10.5	45			≤10			15000
	100	7.4	27	10.5	51			≤10			15000
17	30	8.4	15.2	11.5	29	7000	3500	≤20	≤92	0.80	10000
	50	15.2	32	25	66			≤20			10000
	80	21	41	26	83			≤10			15000
	100	23	51	37	104			≤10			15000
	120	23	51	37	82			≤10			15000
20	30	14	26	19	48	6000	3500	≤20	≤136	1.09	10000
	50	24	53	32	93			≤20			10000
	80	32	70	45	121			≤10			15000
	100	38	78	47	140			≤10			15000
	120	38	83	47	140			≤10			15000
	160	38	87	47	140			≤10			15000
25	30	26	48	36	90	5500	3500	≤20	≤147	1.70	10000
	50	37	93	52	177			≤20			10000
	80	60	130	83	242			≤10			15000
	100	64	149	103	270			≤10			15000
	120	64	159	103	289			≤10			15000
	160	64	167	103	298			≤10			15000
32	30	51	95	71	190	4500	3500	≤20	≤154	3.50	10000
	50	72	205	103	363			≤20			10000
	80	112	289	159	540			≤10			15000
	100	130	316	205	615			≤10			15000
	120	130	335	205	652			≤10			15000
	160	130	353	205	652			≤10			15000
40	50	130	382	186	652	4000	3000	≤20	≤294	6.35	10000
	80	196	493	270	931			≤10			15000
	100	252	540	353	1026			≤10			15000
	120	279	586	428	1121			≤10			15000
	160	279	615	428	1121			≤10			15000
50*	50	233	679	333	1358	3000	2500	≤20	≤373	12.0	10000
	80	353	894	493	1767			≤10			15000
	100	446	931	633	1957			≤10			15000
	120	502	1026	772	1957			≤10			15000
	160	502	1121	801	2328			≤10			15000
58*	80	678	1828	951	3026	3000	2200	≤10	≤1300	16.5	15000
	100	860	1964	1309	3927			≤10			15000
	120	921	2124	1470	4113			≤10			15000
	160	921	2272	1494	4236			≤10			15000

* Consult factory

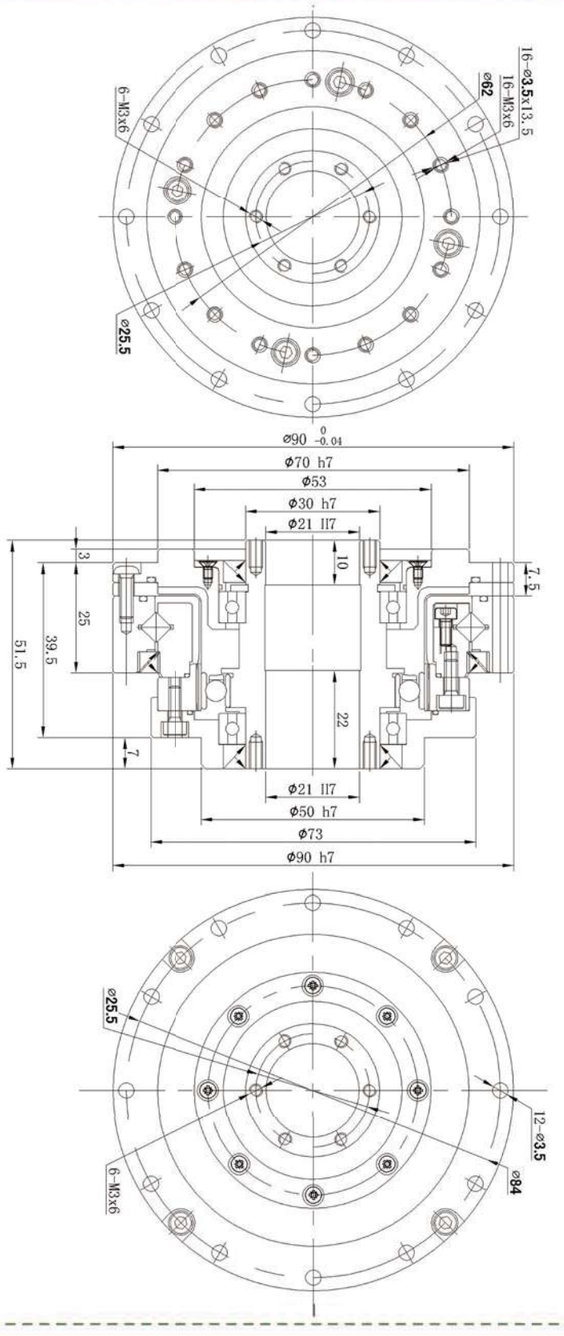
LHS-14-XXX-CL-III



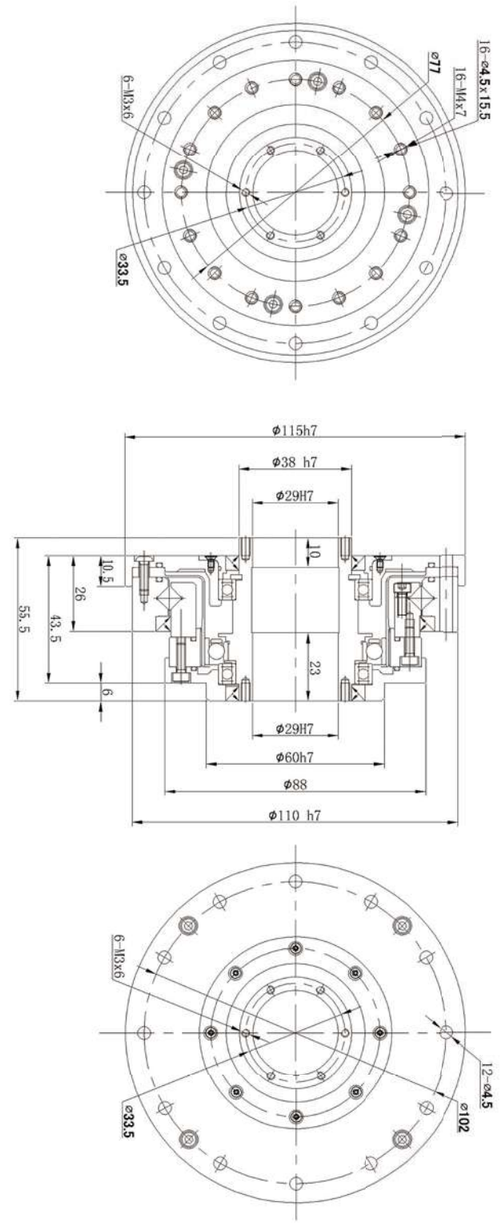
LHS-17-XXX-CL-III



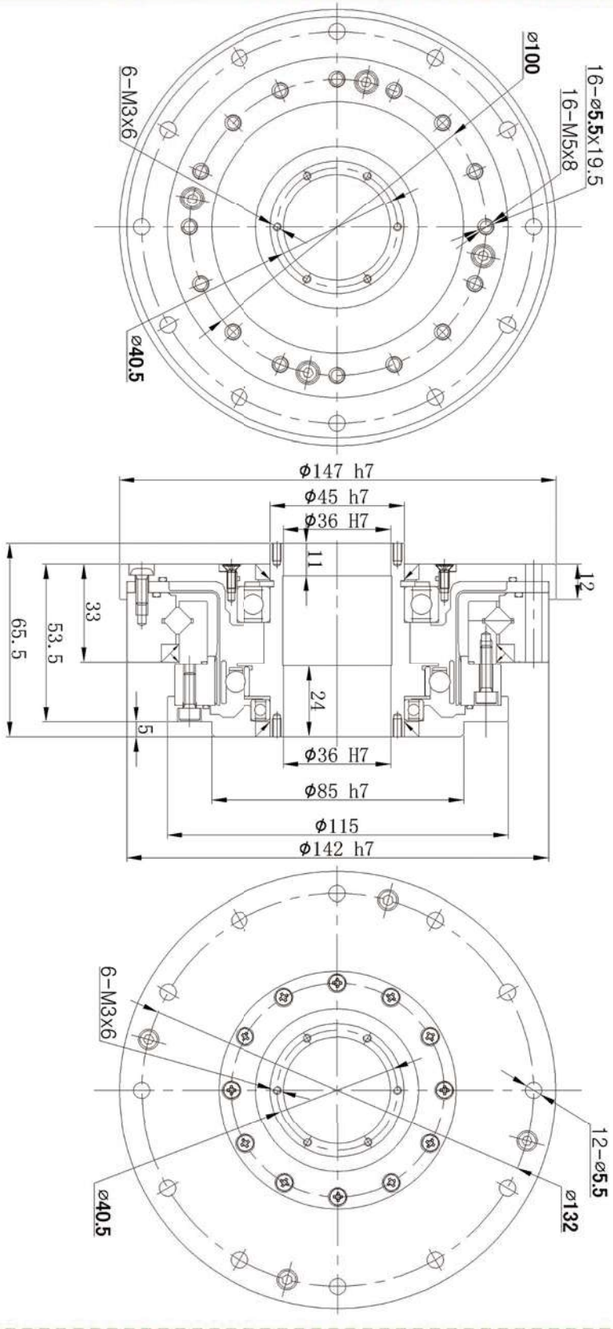
LHS-20-XXX-CL-III



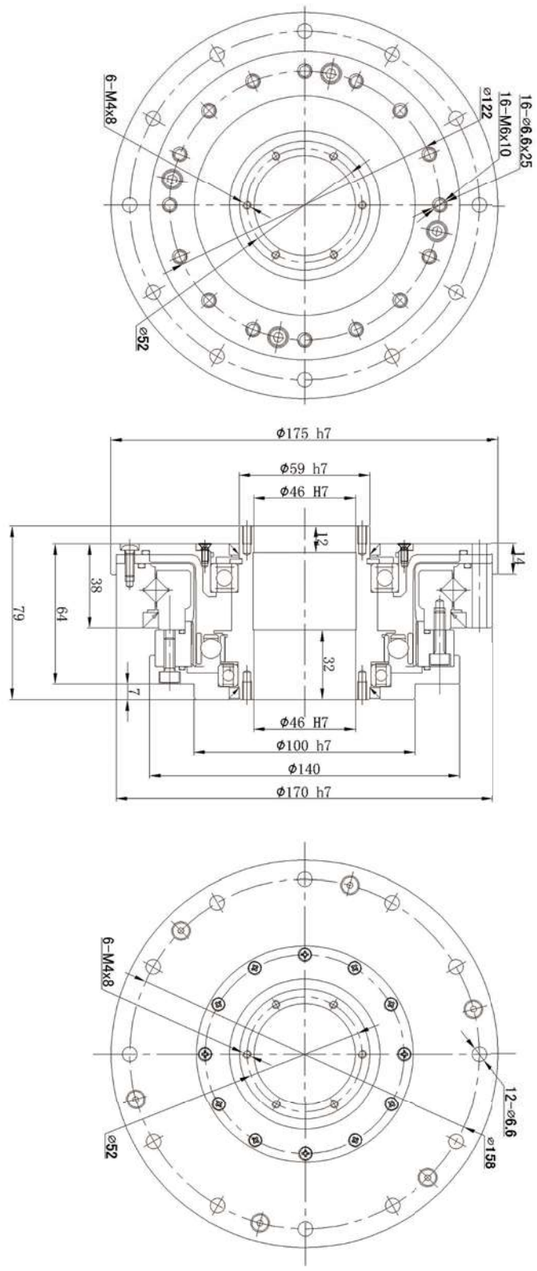
LHS-25-XXX-CL-III



LHS-32-XXX-CL-III



LHS-40-XXX-CL-III



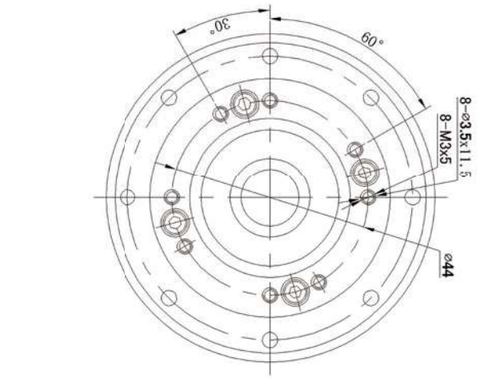
LHS-IV series

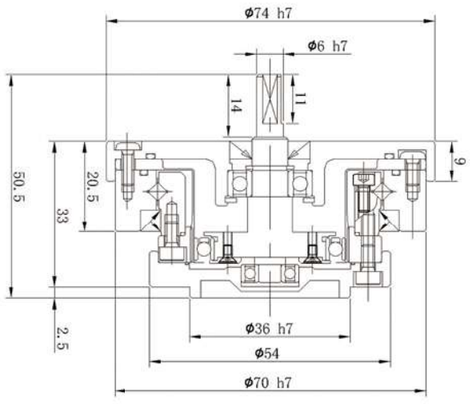
For **LHS-IV** series, the cam of their wave generator is provided with an input shaft; therefore, the series are very suitable for occasions where bevel gear or synchronous belt drive is needed at the input end.

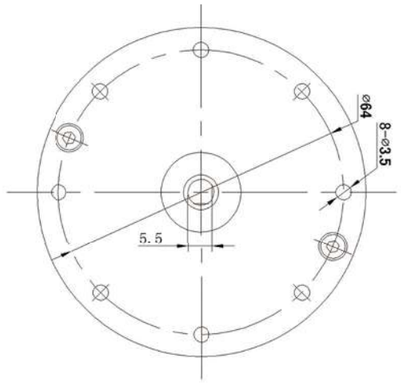
Parameter Table

Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	With Maximum Tension	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	N	Kg	Hour
14	30	3. 8	8. 6	7. 8	16	8000	3500	≤20	≤26	0. 65	10000
	50	5. 1	17	6. 6	33			≤20			10000
	80	7. 4	22	10. 5	45			≤10			15000
	100	7. 4	27	10. 5	51			≤10			15000
17	30	8. 4	15. 2	11. 5	29	7000	3500	≤20	≤32	0. 92	10000
	50	15. 2	32	25	66			≤20			10000
	80	21	41	26	83			≤10			15000
	100	23	51	37	104			≤10			15000
	120	23	51	37	82			≤10			15000
20	30	14	26	19	48	6000	3500	≤20	≤58	1. 36	10000
	50	24	53	32	93			≤20			10000
	80	32	70	45	121			≤10			15000
	100	38	78	47	140			≤10			15000
	120	38	83	47	140			≤10			15000
	160	38	87	47	140			≤10			15000
25	30	26	48	36	90	5500	3500	≤20	≤71	2. 05	10000
	50	37	93	52	177			≤20			10000
	80	60	130	83	242			≤10			15000
	100	64	149	103	270			≤10			15000
	120	64	159	103	289			≤10			15000
	160	64	167	103	298			≤10			15000
32	30	51	95	71	190	4500	3500	≤20	≤114	4. 35	10000
	50	72	205	103	363			≤20			10000
	80	112	289	159	540			≤10			15000
	100	130	316	205	615			≤10			15000
	120	130	335	205	652			≤10			15000
	160	130	353	205	652			≤10			15000
40	50	130	382	186	652	4000	3000	≤20	≤294	6. 45	10000
	80	196	493	270	931			≤10			15000
	100	252	540	353	1026			≤10			15000
	120	279	586	428	1121			≤10			15000
	160	279	615	428	1121			≤10			15000

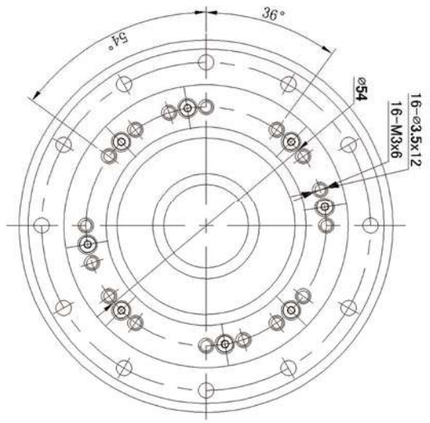
LHS-14-XXX-C-IV

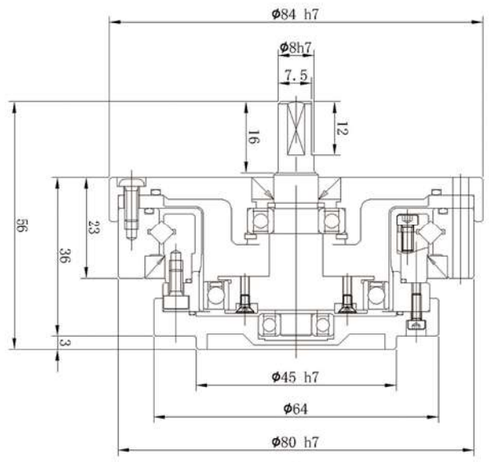


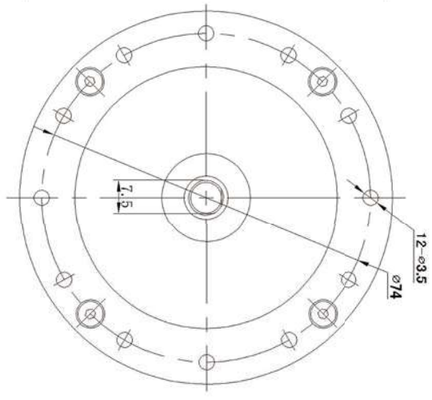




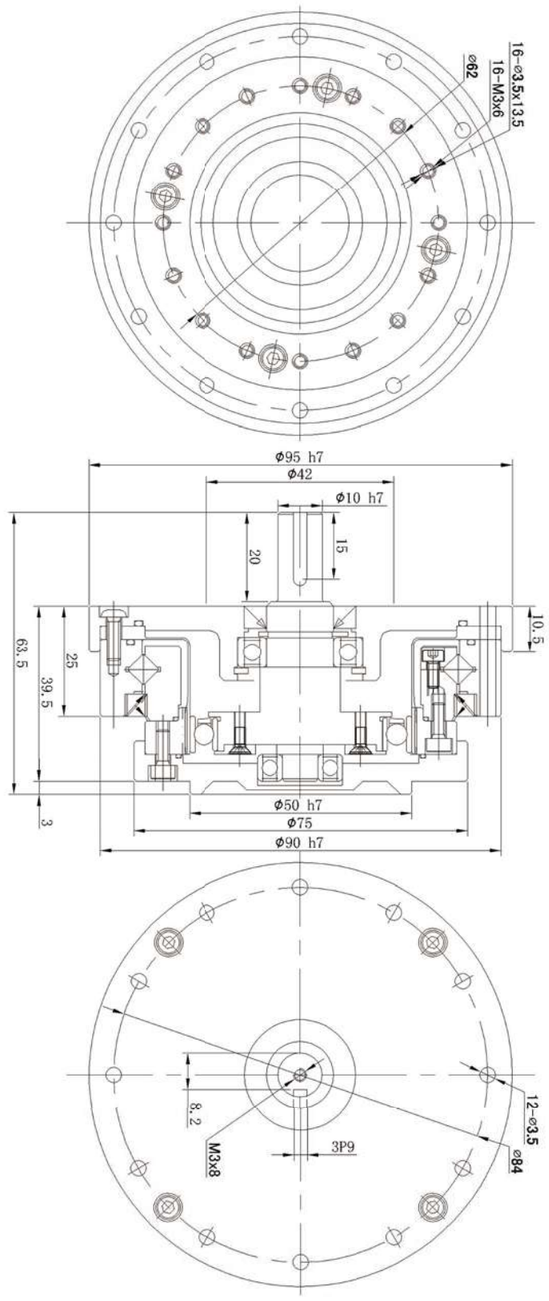
LHS-17-XXX-C-IV



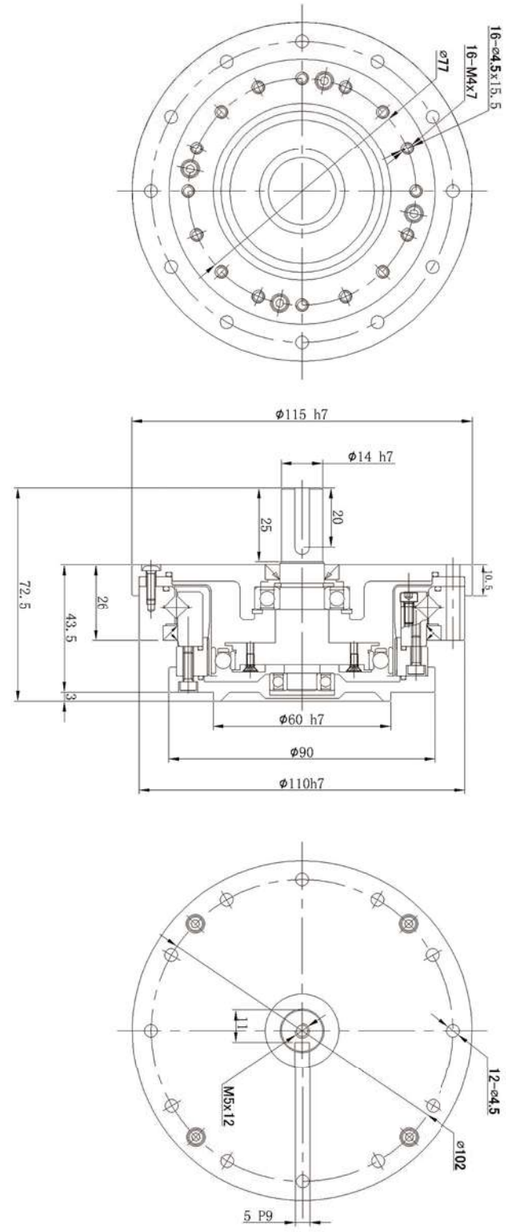




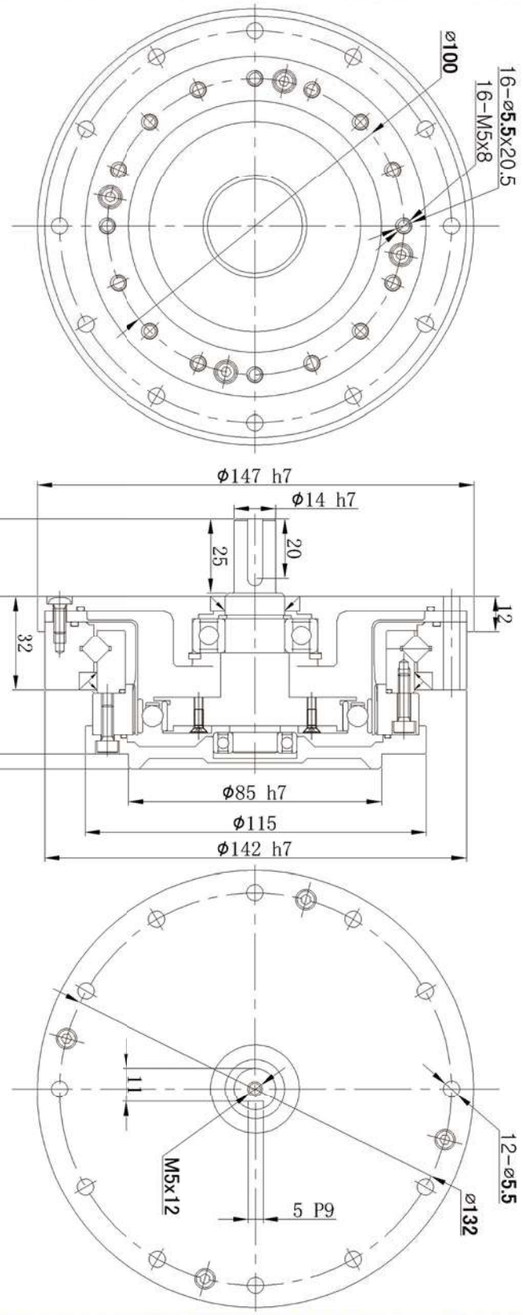
LHS-20-XXX-C-IV



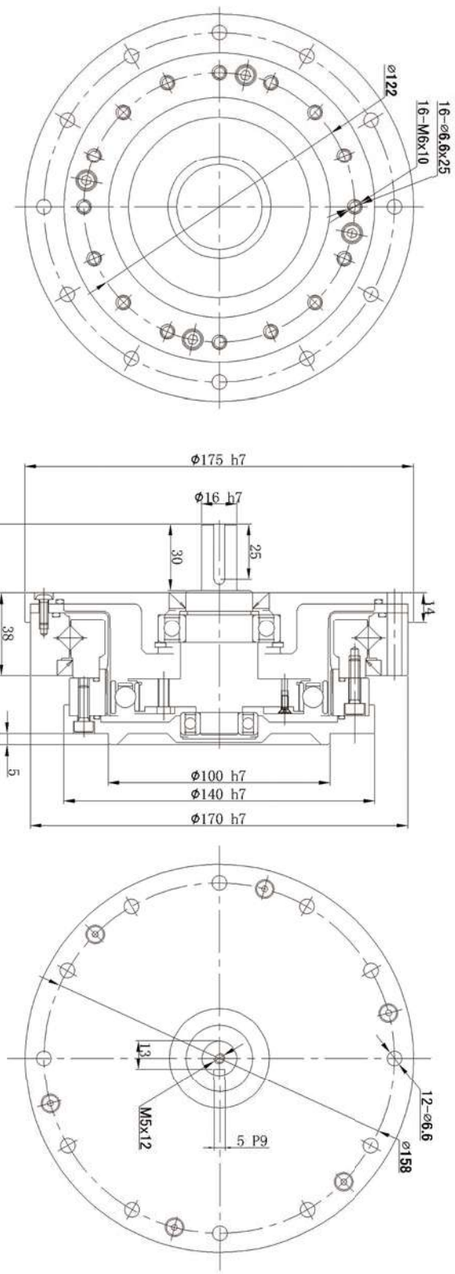
LHS-25-XXX-C-IV



LHS-32-XXX-C-IV



LHS-40-XXX-C-IV



LHSG-I series

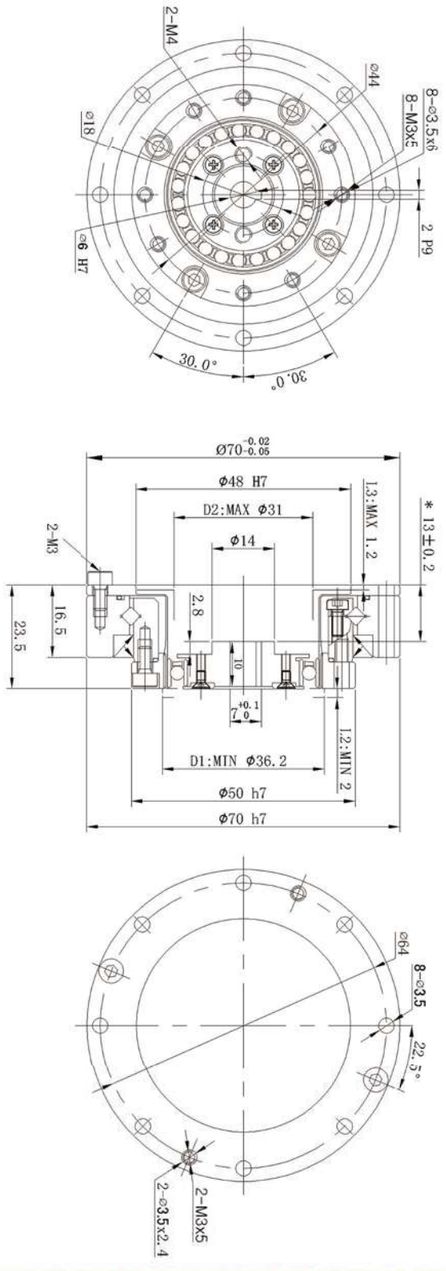
LHSG-I series are high-torque models which have the same structure, with **LHS-I** series. However, their torque bearing capacity is improved by **30%** compared with **LHS** series.

Parameter Table

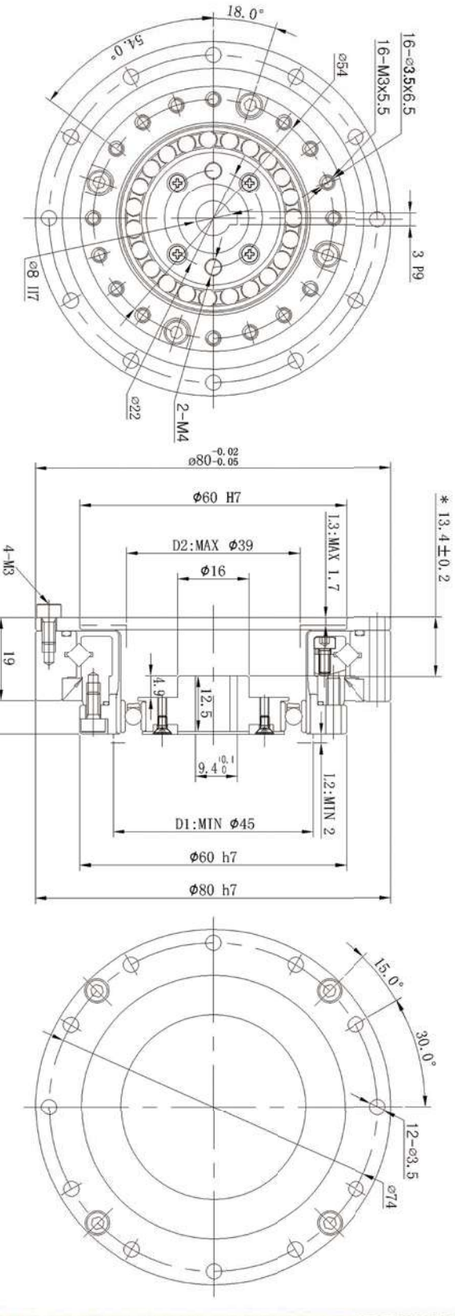
Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	Kg	Hour
14	50	6. 6	23	8. 6	43	8000	3500	≤10	0. 38	10000
	80	9. 6	29	13. 5	57			≤10		15000
	100	9. 6	34	13. 5	66			≤10		15000
17	50	19. 8	42	32	86	7000	3500	≤10	0. 56	10000
	80	27. 5	53	33	108			≤10		15000
	100	30	66	49	134			≤10		15000
	120	30	66	49	107			≤10		15000
20	50	32	69	42	121	6000	3500	≤10	0. 76	10000
	80	42	91	58	158			≤10		15000
	100	50	102	61	182			≤10		15000
	120	50	108	61	182			≤10		15000
	160	50	113	61	182			≤10		15000
25	50	48	121	68. 5	230	5500	3500	≤10	1. 24	10000
	80	78	169	107	315			≤10		15000
	100	84	194	133	351			≤10		15000
	120	84	207	133	376			≤10		15000
	160	84	217	133	388			≤10		15000
32	50	94	267	133	472	4500	3500	≤10	2. 6	10000
	80	146	376	206	702			≤10		15000
	100	169	411	267	800			≤10		15000
	120	169	436	267	848			≤10		15000
	160	169	459	267	848			≤10		15000
40	50	169	497	242	847	4000	3000	≤10	5. 0	10000
	80	255	641	351	1210			≤10		15000
	100	328	702	460	1334			≤10		15000
	120	363	762	557	1458			≤10		15000
	160	363	800	557	1458			≤10		15000
50*	80	459	1163	642	2297	3000	2500	≤10	9. 5	15000
	100	580	1211	823	2545			≤10		15000
	120	654	1334	1005	2545			≤10		15000
	160	654	1458	1042	3025			≤10		15000
58*	80	678	1828	951	3026	3000	2200	≤10	13. 6	15000
	100	860	1964	1309	3927			≤10		15000
	120	921	2124	1470	4113			≤10		15000
	160	921	2722	1494	4236			≤10		15000

* Consult factory

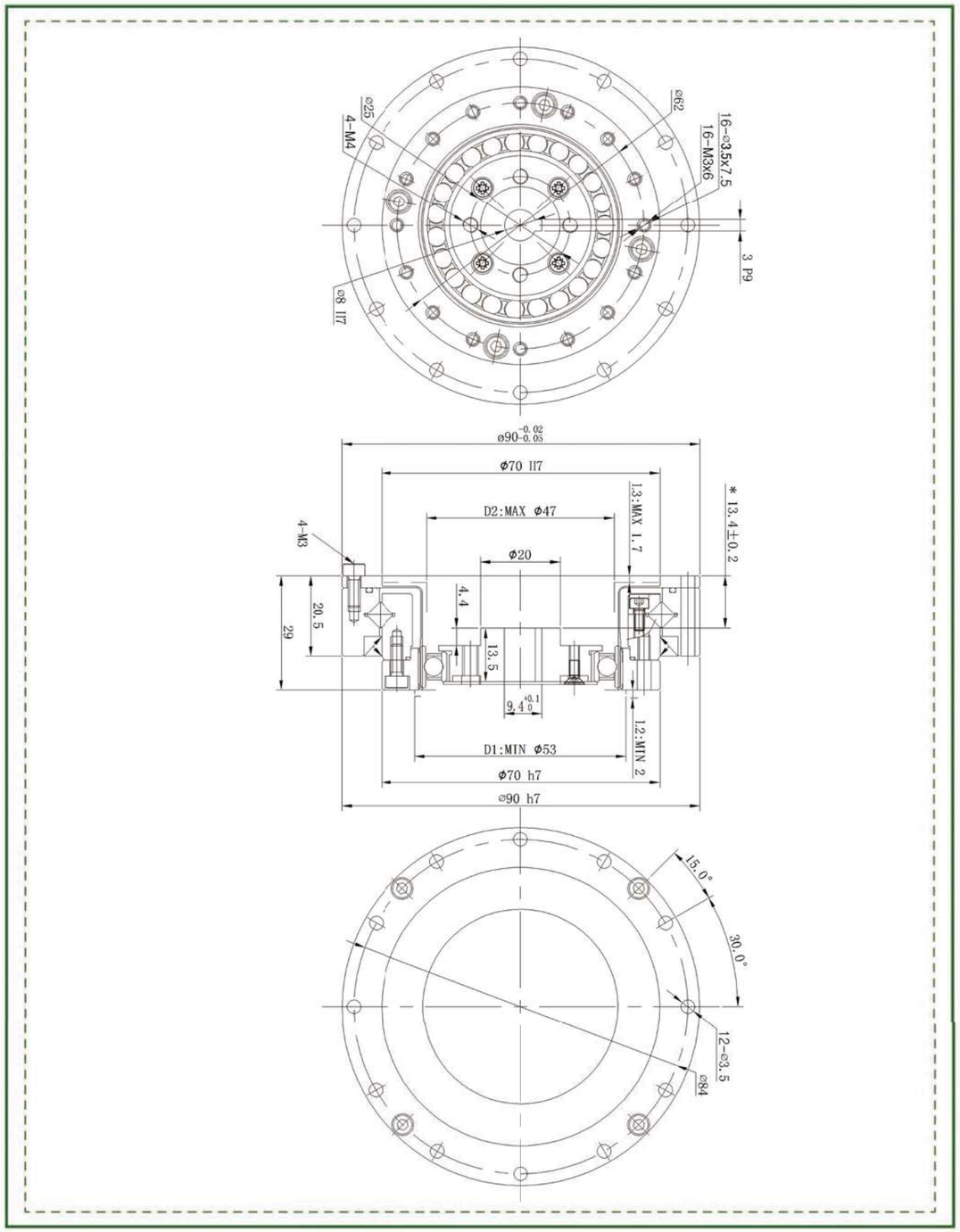
LHSG-14-XXX-C-I



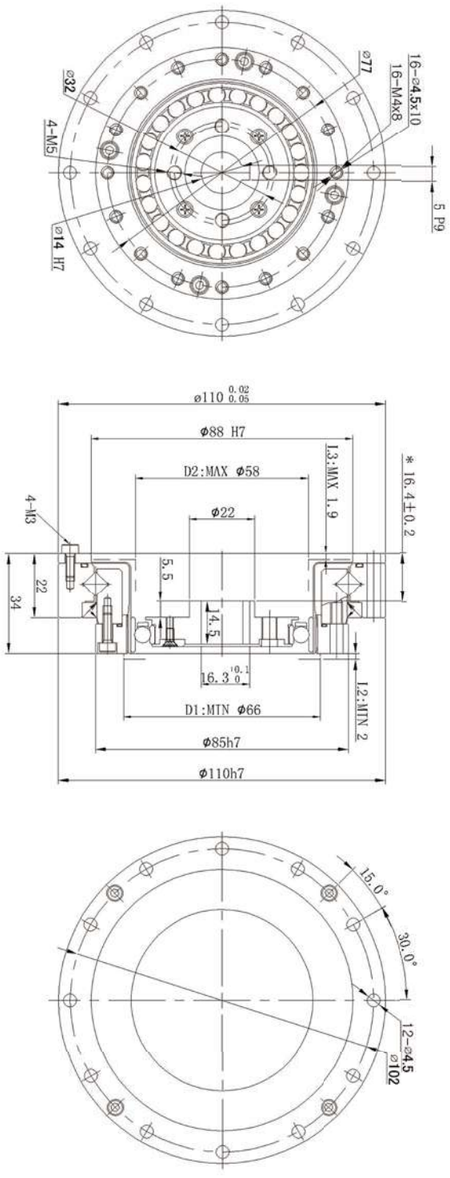
LHSG-17-XXX-C-I



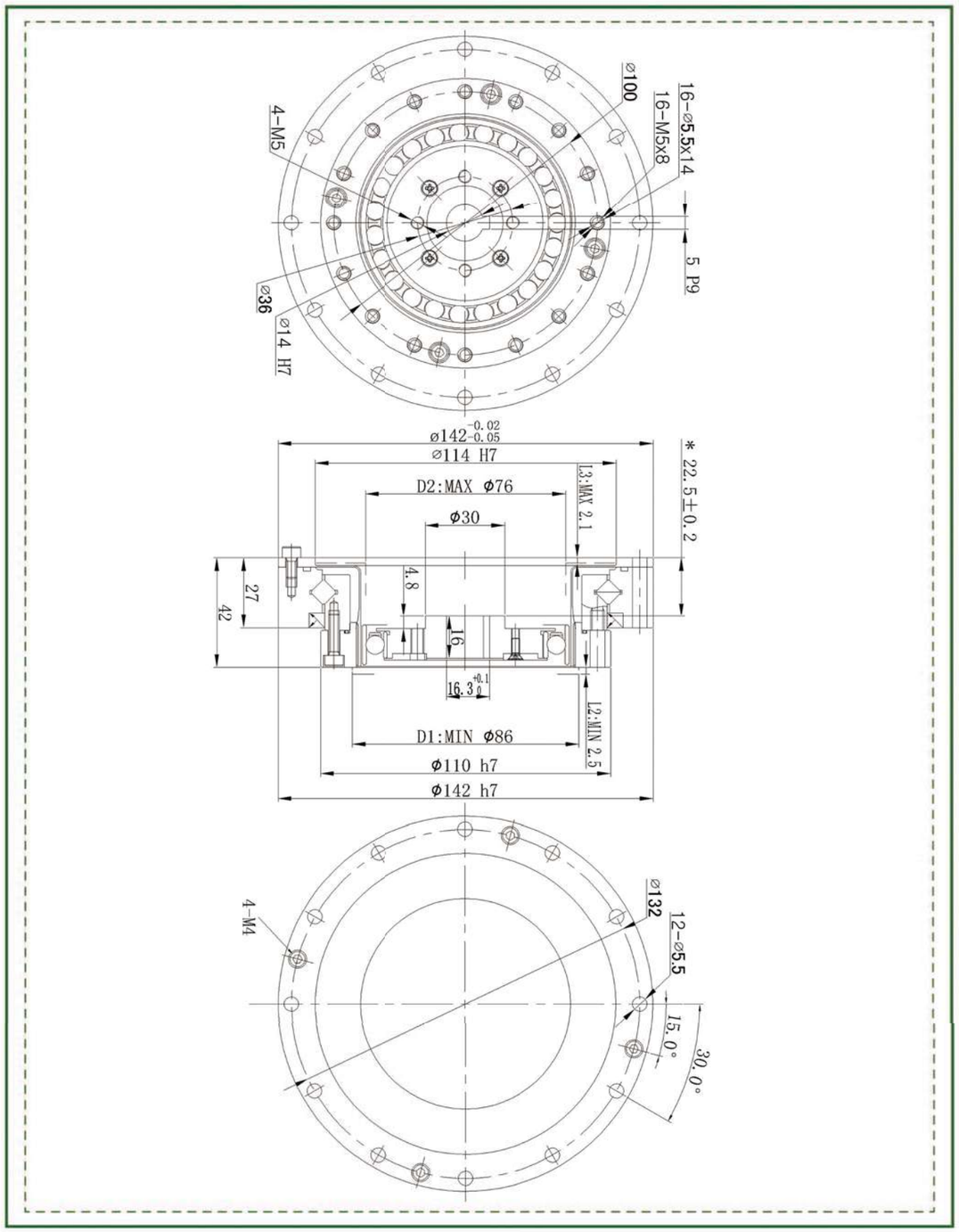
LHSG-20-XXX-C-I



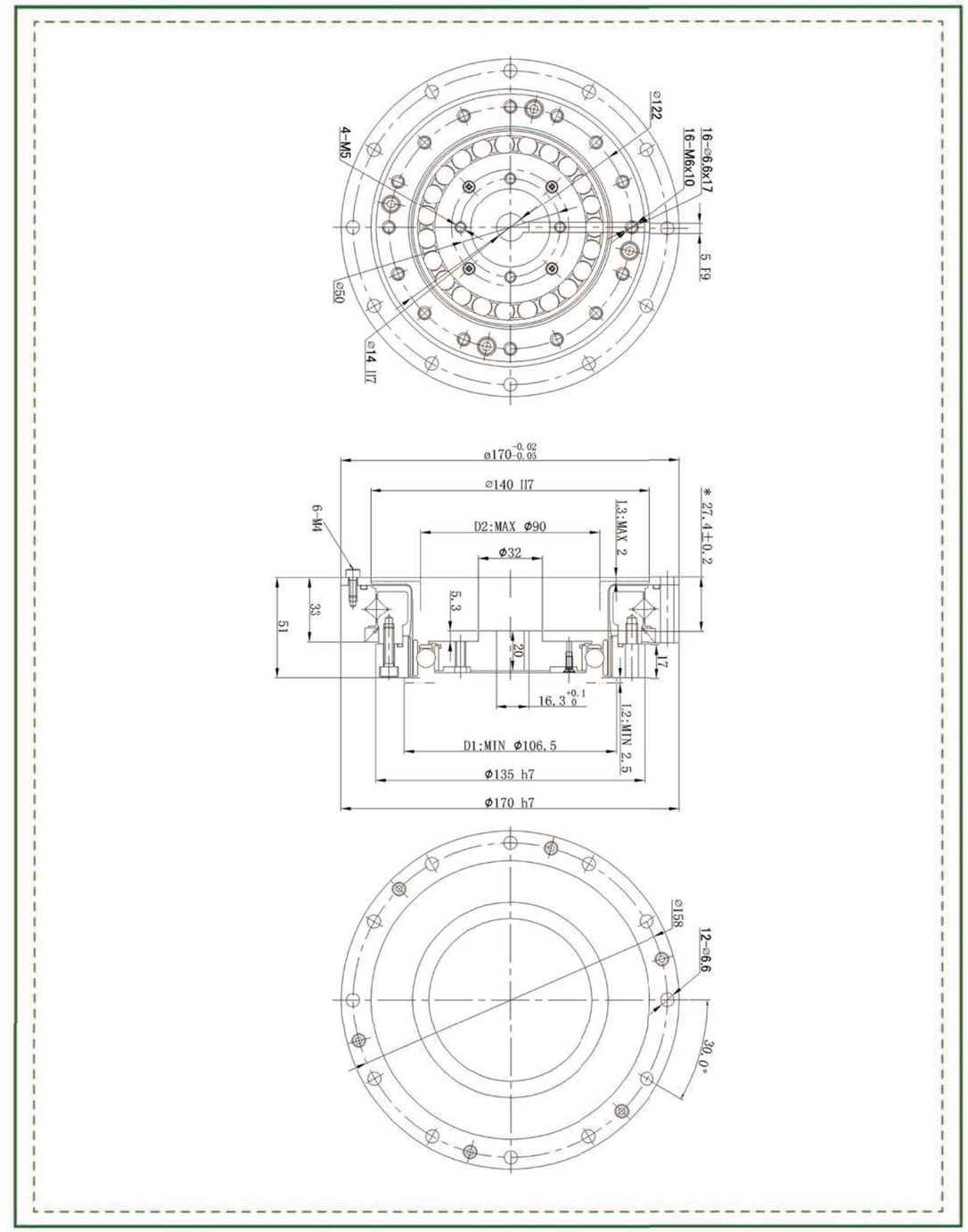
LHSG-25-XXX-C-I



LHSG-32-XXX-C-I



LHSG-40-XXX-C-I



LHSG-II series

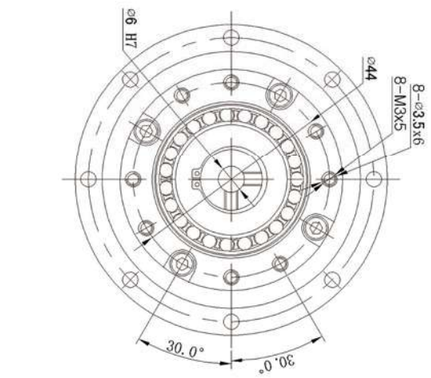
LHSG-II series are high-torque models which have the same structure, with **LHS-II** series. However, their torque bearing capacity is improved by **30%** compared with **LHS** series.

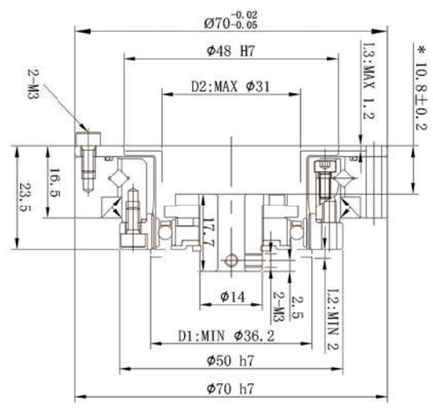
Parameter Table

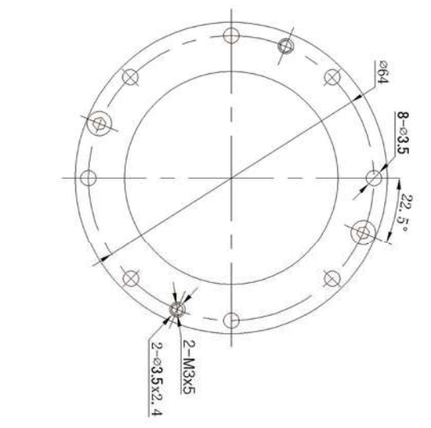
Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	Kg	Hour
14	50	6.6	23	8.6	43	8000	3500	≤20	0.38	10000
	80	9.6	29	13.5	57			≤20		15000
	100	9.6	34	13.5	66			≤20		15000
17	50	19.8	42	32	86	7000	3500	≤20	0.56	10000
	80	27.5	53	33	108			≤20		15000
	100	30	66	49	134			≤20		15000
	120	30	66	49	107			≤20		15000
20	50	32	69	42	121	6000	3500	≤20	0.76	10000
	80	42	91	58	158			≤20		15000
	100	50	102	61	182			≤20		15000
	120	50	108	61	182			≤20		15000
	160	50	113	61	182			≤20		15000
25	50	48	121	68.5	230	5500	3500	≤20	1.24	10000
	80	78	169	107	315			≤20		15000
	100	84	194	133	351			≤20		15000
	120	84	207	133	376			≤20		15000
	160	84	217	133	388			≤20		15000
32	50	94	267	133	472	4500	3500	≤20	2.6	10000
	80	146	376	206	702			≤20		15000
	100	169	411	267	800			≤20		15000
	120	169	436	267	848			≤20		15000
	160	169	459	267	848			≤20		15000
40	50	169	497	242	847	4000	3000	≤20	5.0	10000
	80	255	641	351	1210			≤20		15000
	100	328	702	460	1334			≤20		15000
	120	363	762	557	1458			≤20		15000
	160	363	800	557	1458			≤20		15000
50*	80	459	1163	642	2297	3000	2500	≤10	9.5	15000
	100	580	1211	823	2545			≤10		15000
	120	654	1334	1005	2545			≤10		15000
	160	654	1458	1042	3025			≤10		15000
58*	80	678	1828	951	3026	3000	2200	≤10	13.6	15000
	100	860	1964	1309	3927			≤10		15000
	120	921	2124	1470	4113			≤10		15000
	160	921	2722	1494	4236			≤10		15000

* Consult factory

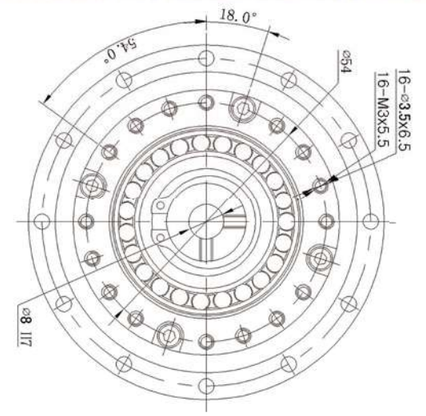
LHSG-14-XXX-C-II

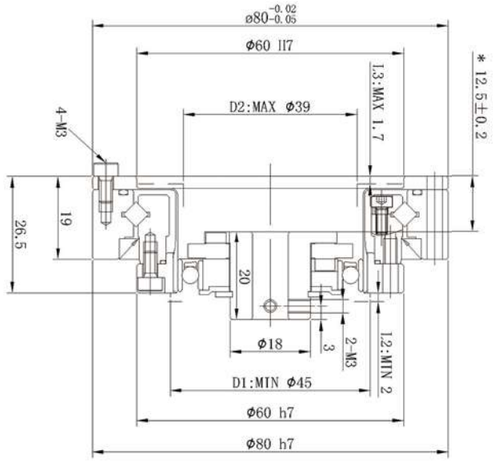


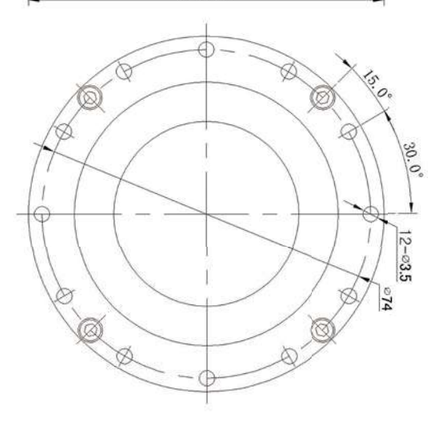




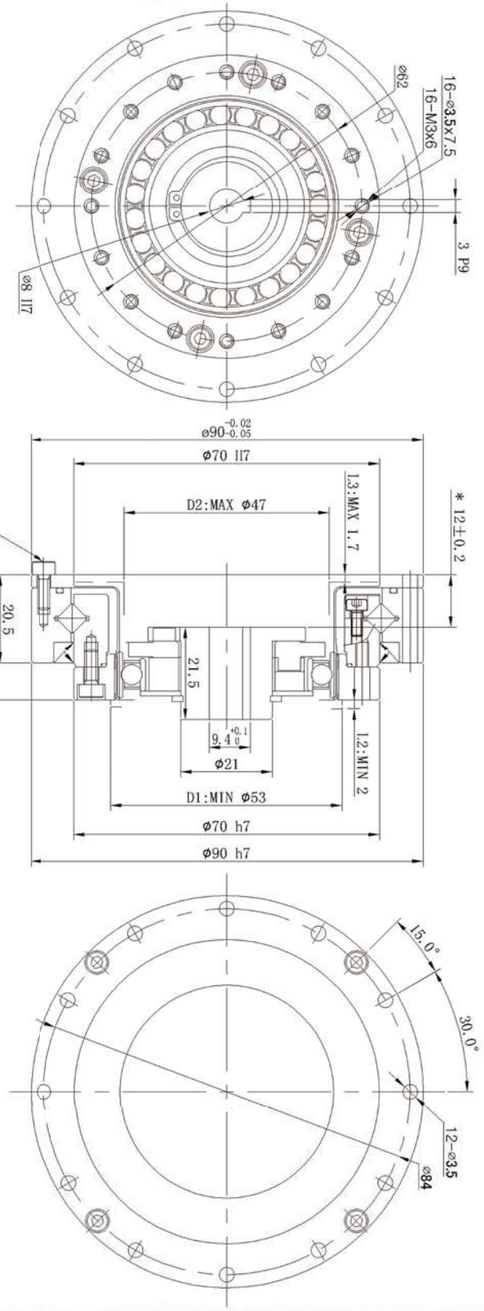
LHSG-17-XXX-C-II



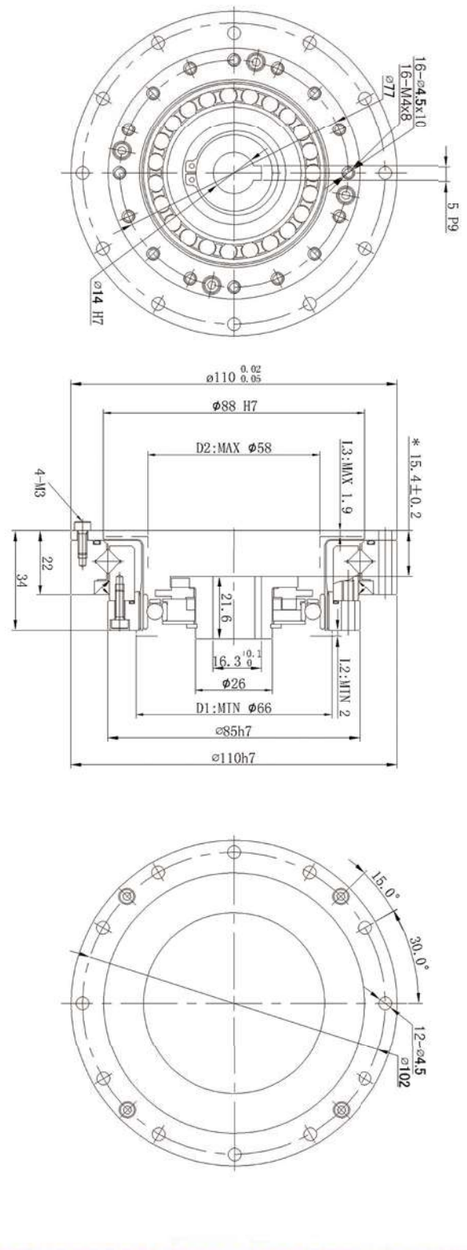




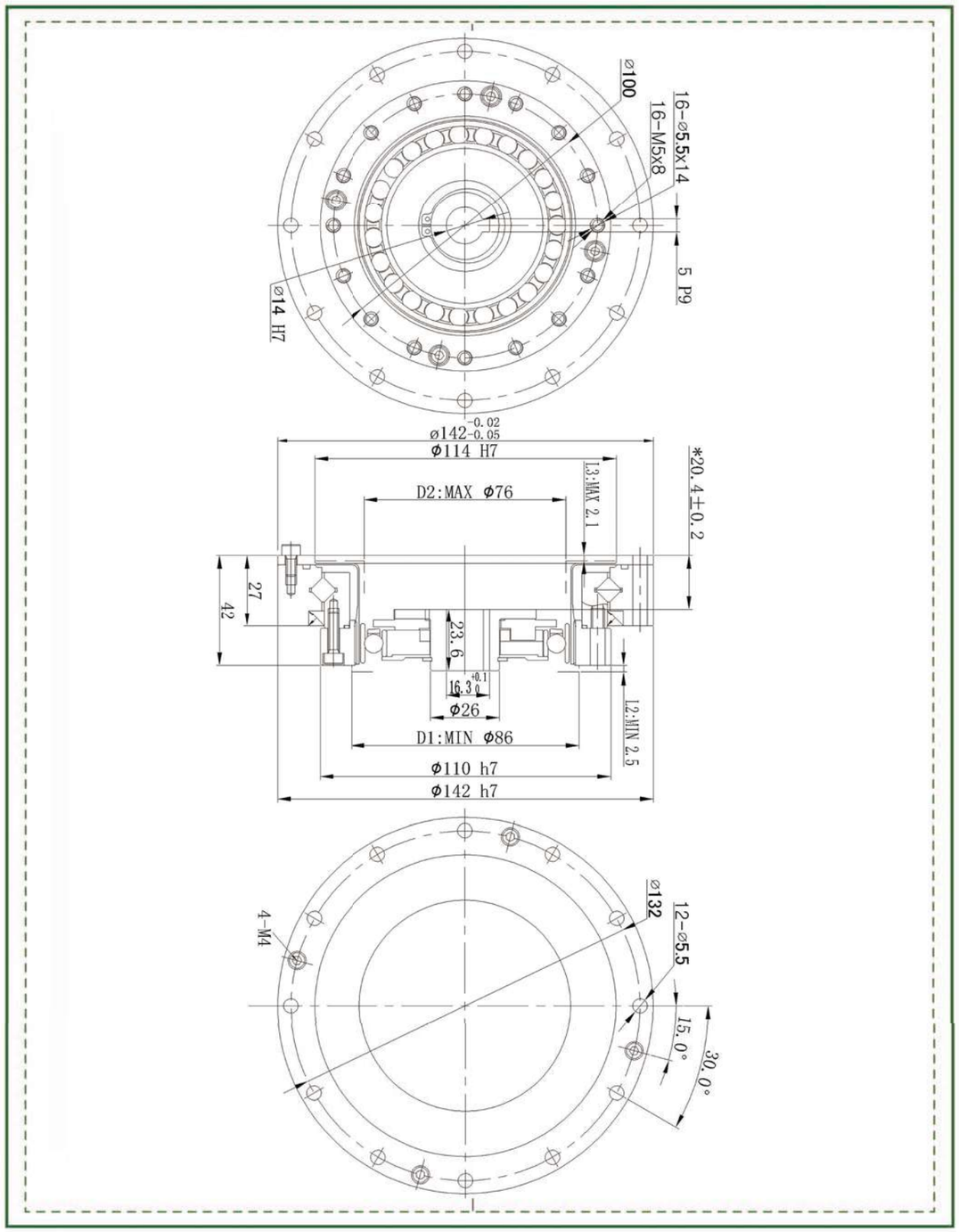
LHSG-20-XXX-C-II



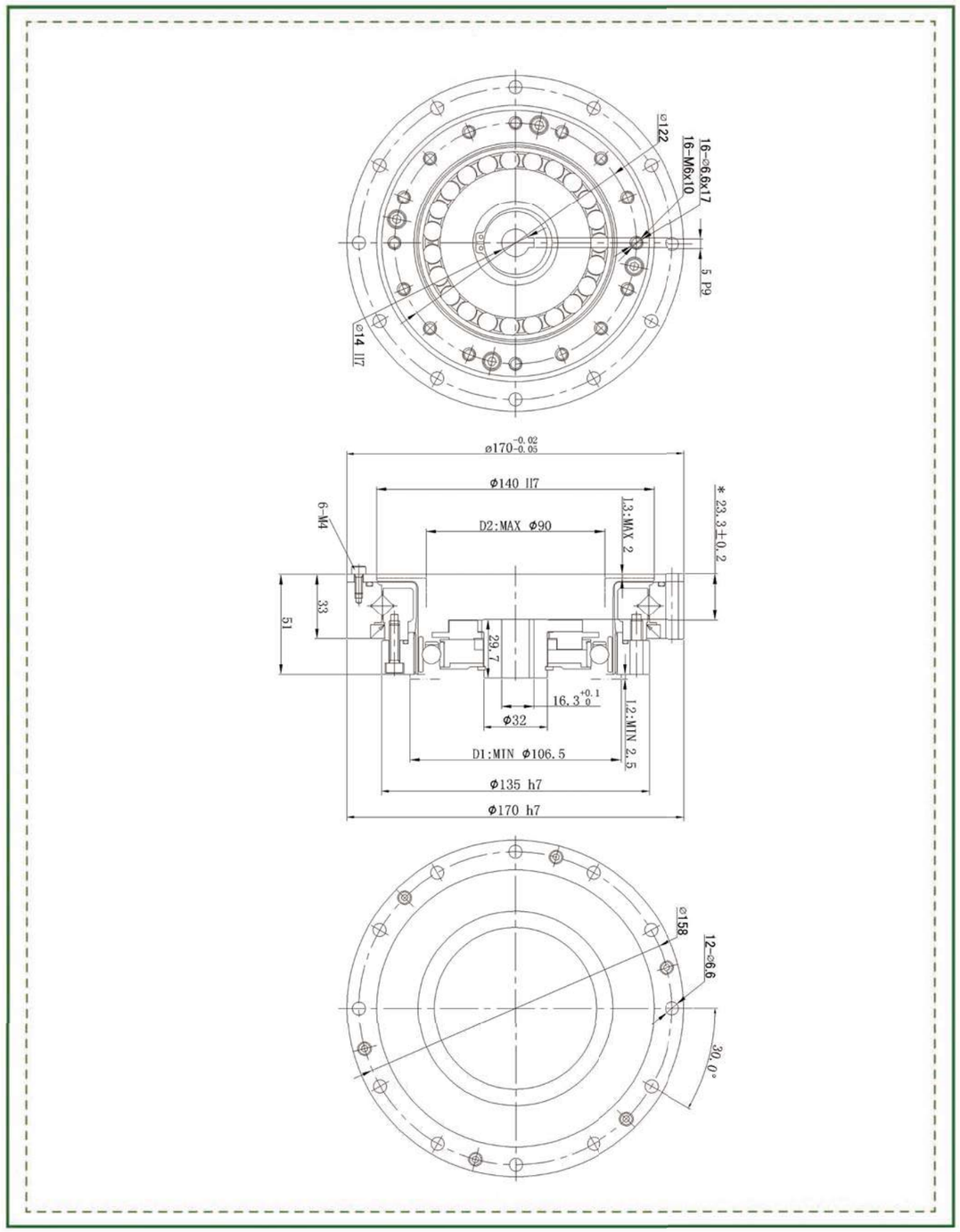
LHSG-25-XXX-C-II



LHSG-32-XXX-C-II



LHSG-40-XXX-C-II



LHSG-III series

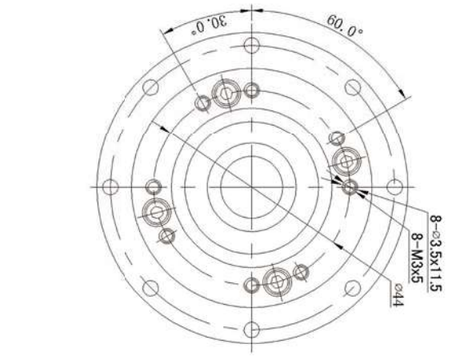
LHSG-III series are high-torque models which have the same structure, with **LHS-III** series. However, their torque bearing capacity is improved by **30%** compared with **LHS** series.

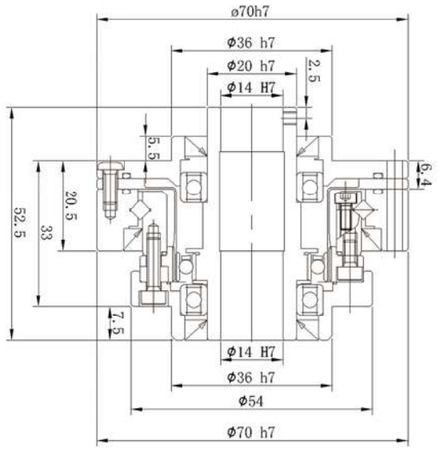
Parameter Table

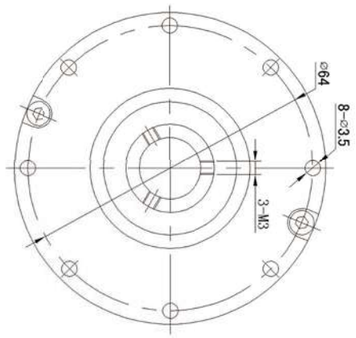
Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	With Maximum Tension	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	N	Kg	Hour
14	50	6.6	23	8.6	43	8000	3500	≤20	≤77	0.72	10000
	80	9.6	29	13.5	57			≤10			15000
	100	9.6	34	13.5	66			≤10			15000
17	50	19.8	42	32	86	7000	3500	≤20	≤92	1.0	10000
	80	27.5	53	33	108			≤10			15000
	100	30	66	49	134			≤10			15000
	120	30	66	49	107			≤10			15000
20	50	32	69	42	121	6000	3500	≤20	≤136	1.38	10000
	80	42	91	58	158			≤10			15000
	100	50	102	61	182			≤10			15000
	120	50	108	61	182			≤10			15000
	160	50	113	61	182			≤10			15000
25	50	48	121	68.5	230	5500	3500	≤20	≤147	2.15	10000
	80	78	169	107	315			≤10			15000
	100	84	194	133	351			≤10			15000
	120	84	207	133	376			≤10			15000
	160	84	217	133	388			≤10			15000
32	50	94	267	133	472	4500	3500	≤20	≤154	4.3	10000
	80	146	376	206	702			≤10			15000
	100	169	411	267	800			≤10			15000
	120	169	436	267	848			≤10			15000
	160	169	459	267	848			≤10			15000
40	50	169	497	242	847	4000	3000	≤10	≤294	7.8	10000
	80	255	641	351	1210			≤10			15000
	100	328	702	460	1334			≤10			15000
	120	363	762	557	1458			≤10			15000
	160	363	800	557	1458			≤10			15000
50*	80	459	1163	641	2297	3000	2500	≤10	≤373	14.5	15000
	100	580	1211	823	2545			≤10			15000
	120	654	1334	1004	2545			≤10			15000
	160	654	1458	1041	3025			≤10			15000
58*	80	678	1828	951	3026	3000	2200	≤10	≤1300	20.0	15000
	100	860	1964	1309	3927			≤10			15000
	120	921	2124	1470	4113			≤10			15000
	160	921	2272	1494	4236			≤10			15000

*** Consult factory**

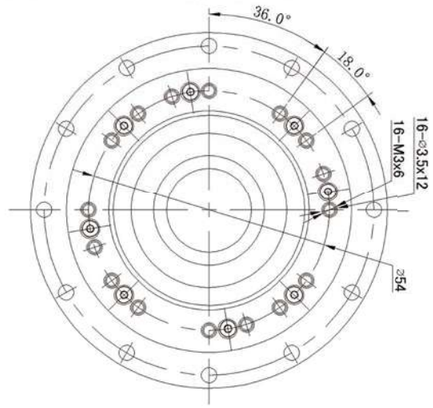
LHSG-14-XXX-C-III

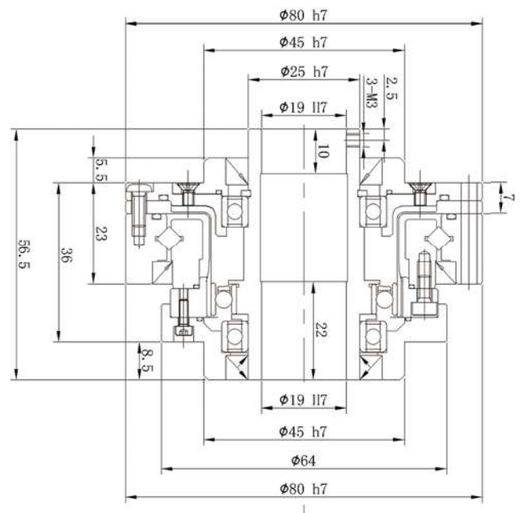


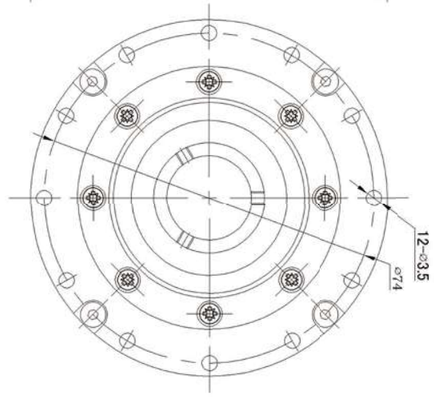




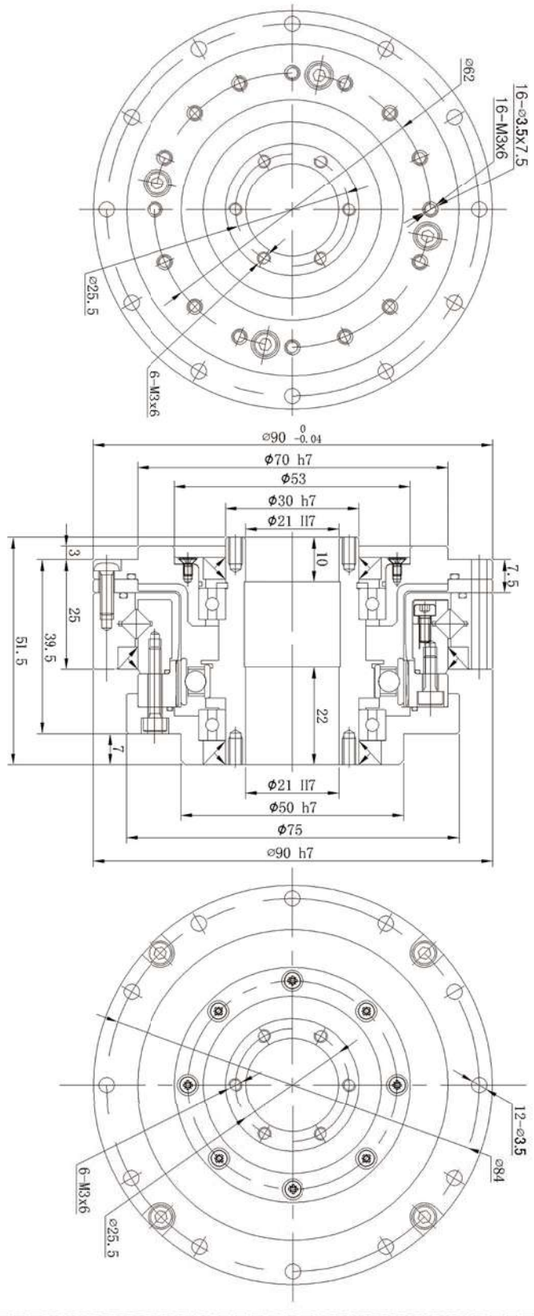
LHSG-17-XXX-C-III







LHSG-20-XXX-C-III



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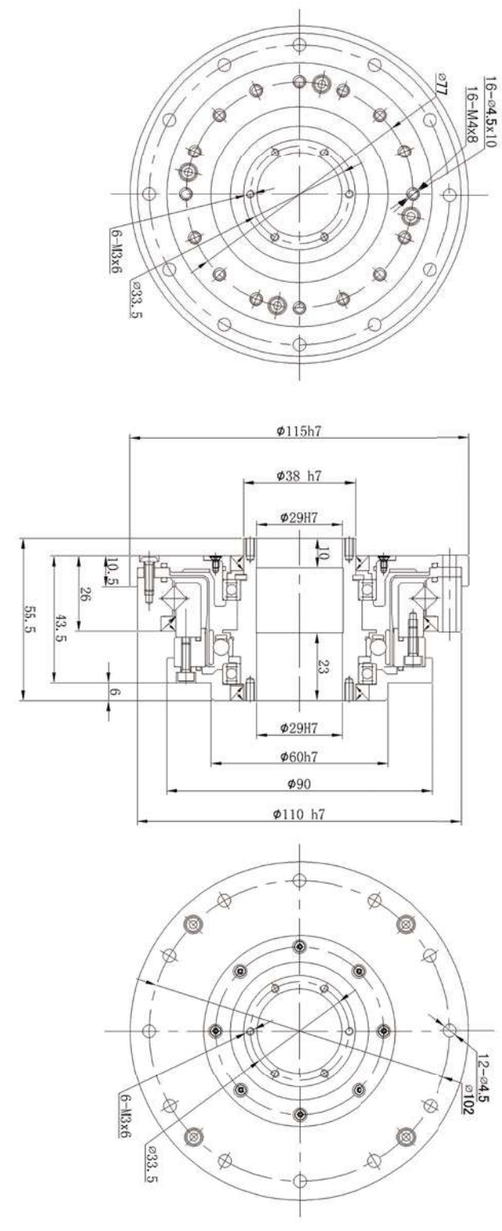

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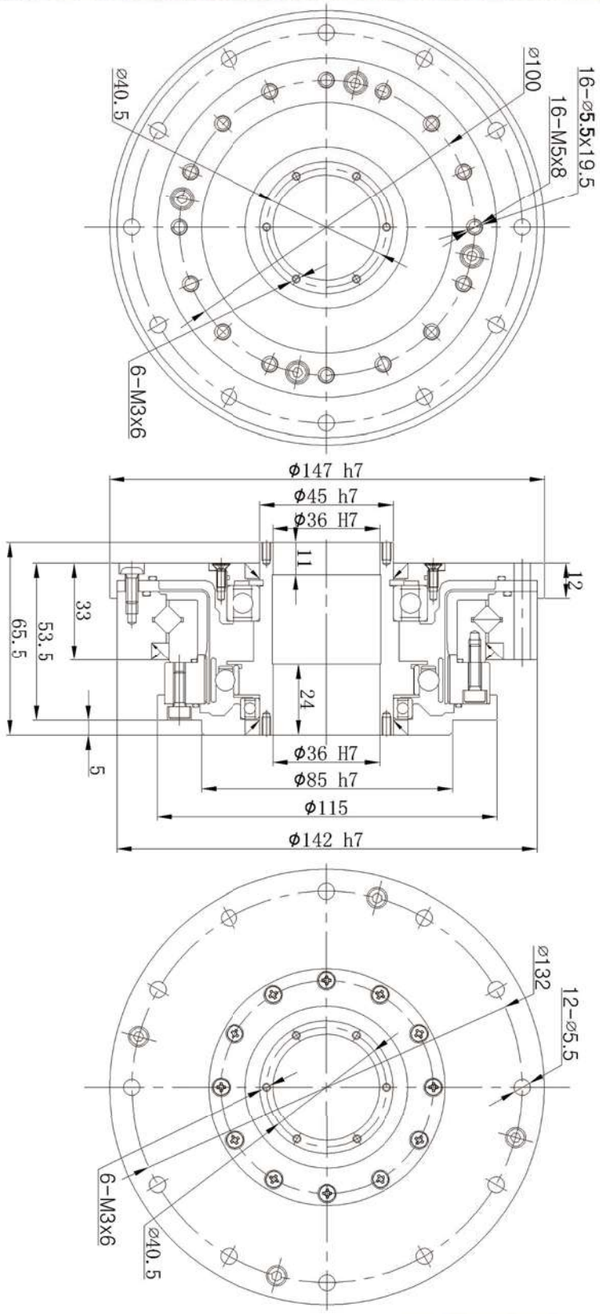

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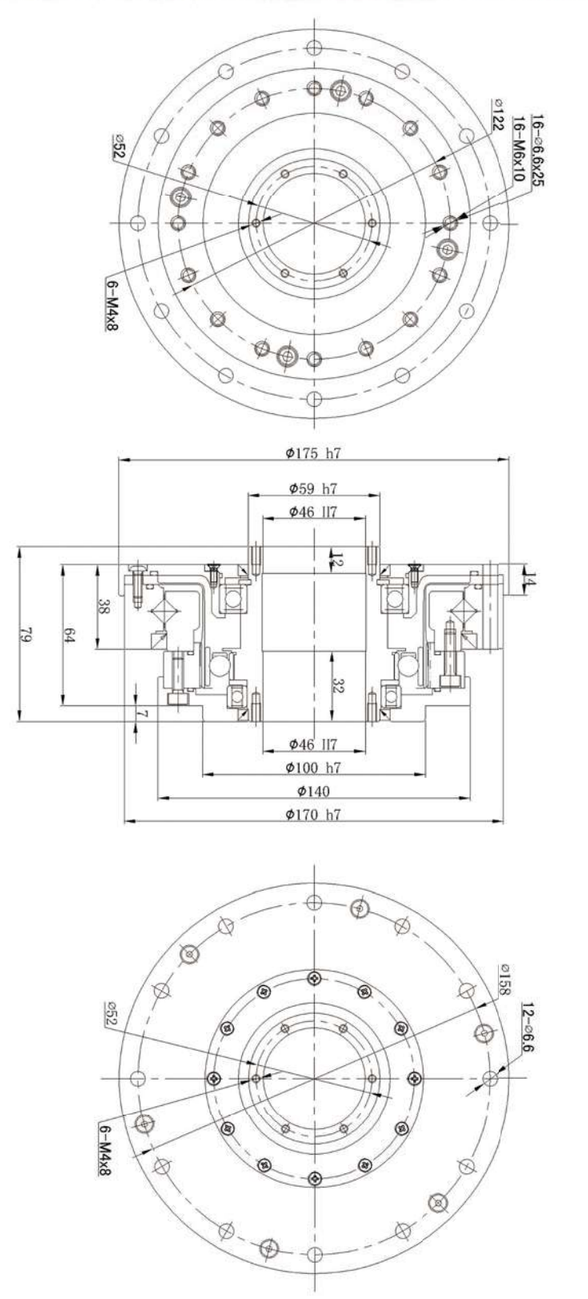


LHSG-CL-III series

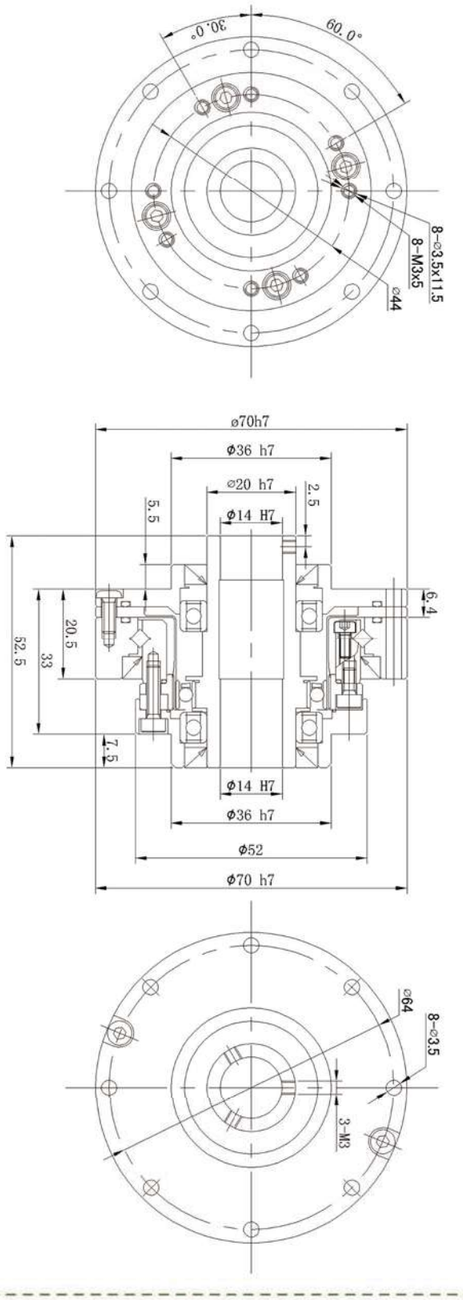
LHSG-CL-III series are high-torque models which have the same structure, with **LHS-CL-III** series. However, their torque bearing capacity is improved by **30%** compared with **LHS** series.

Parameter Table

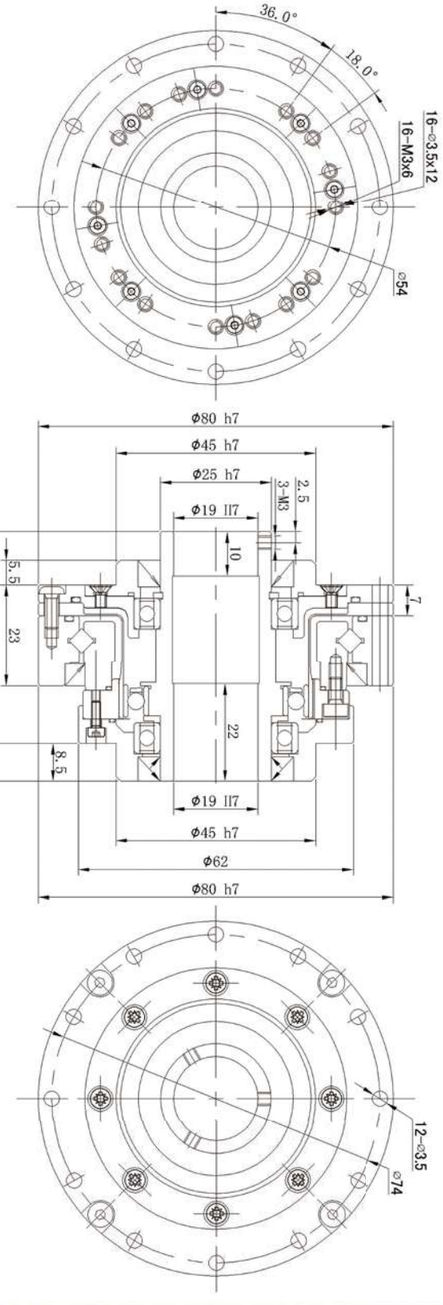
Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	With Maximum Tension	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	N	Kg	Hour
14	50	6. 6	23	8. 6	43	8000	3500	≤10	≤77	0. 56	10000
	80	9. 6	29	13. 5	57			≤10			15000
	100	9. 6	34	13. 5	66			≤10			15000
17	50	19. 8	42	32	86	7000	3500	≤10	≤92	0. 80	10000
	80	27. 5	53	33	108			≤10			15000
	100	30	66	49	134			≤10			15000
	120	30	66	49	107			≤10			15000
20	50	32	69	42	121	6000	3500	≤10	≤136	1. 09	10000
	80	42	91	58	158			≤10			15000
	100	50	102	61	182			≤10			15000
	120	50	108	61	182			≤10			15000
	160	50	113	61	182			≤10			15000
25	50	48	121	68. 5	230	5500	3500	≤10	≤147	1. 70	10000
	80	78	169	107	315			≤10			15000
	100	84	194	133	351			≤10			15000
	120	84	207	133	376			≤10			15000
	160	84	217	133	388			≤10			15000
32	50	94	267	133	472	4500	3500	≤10	≤154	3. 50	10000
	80	146	376	206	702			≤10			15000
	100	169	411	267	800			≤10			15000
	120	169	436	267	848			≤10			15000
	160	169	459	267	848			≤10			15000
40	50	169	497	242	847	4000	3000	≤10	≤294	6. 35	10000
	80	255	641	351	1210			≤10			15000
	100	328	702	460	1334			≤10			15000
	120	363	762	557	1458			≤10			15000
	160	363	800	557	1458			≤10			15000
50*	80	459	1163	641	2297	3000	2500	≤10	≤373	12. 0	15000
	100	580	1211	823	2545			≤10			15000
	120	654	1334	1004	2545			≤10			15000
	160	654	1458	1041	3025			≤10			15000
58*	80	678	1828	951	3026	3000	2200	≤10	≤1300	16. 5	15000
	100	860	1964	1309	3927			≤10			15000
	120	921	2124	1470	4113			≤10			15000
	160	921	2272	1494	4236			≤10			15000

*** Consult factory**

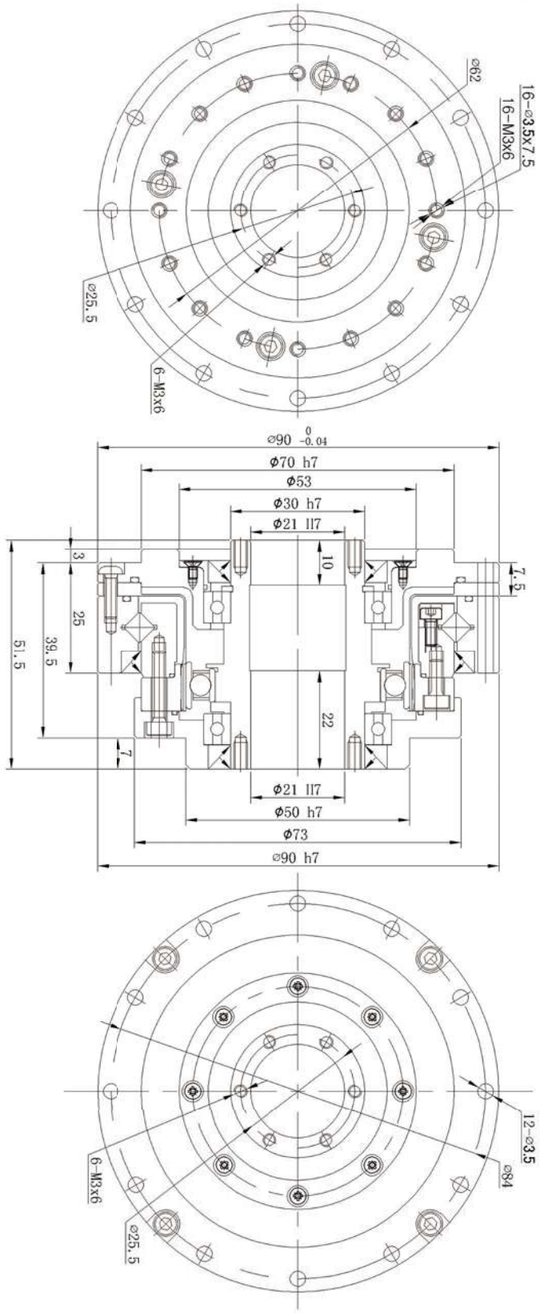
LHSG-14-XXX-CL-III



LHSG-17-XXX-CL-III



LHSG-20-XXX-CL-III



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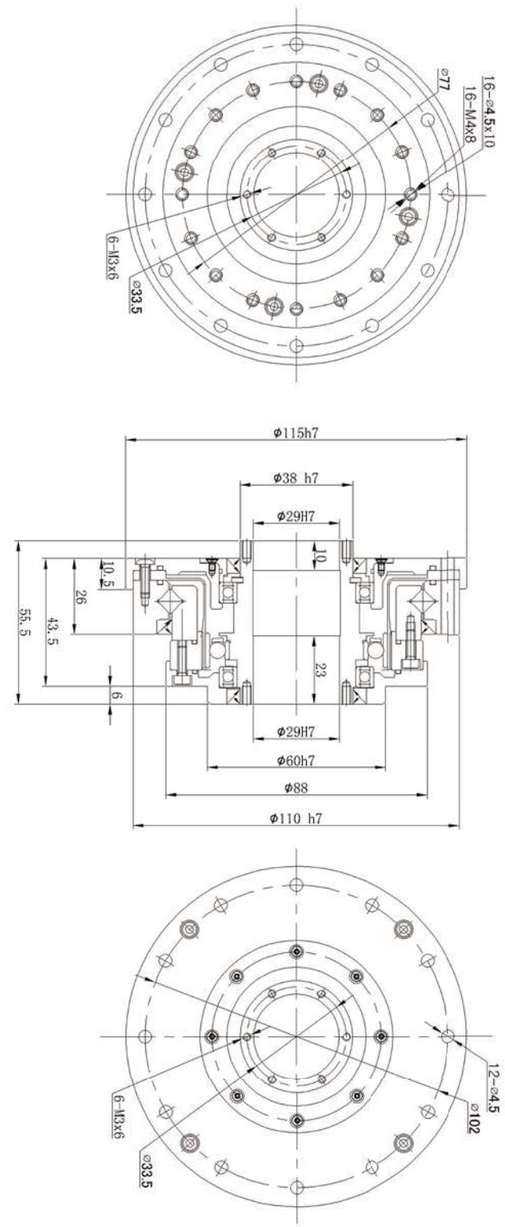

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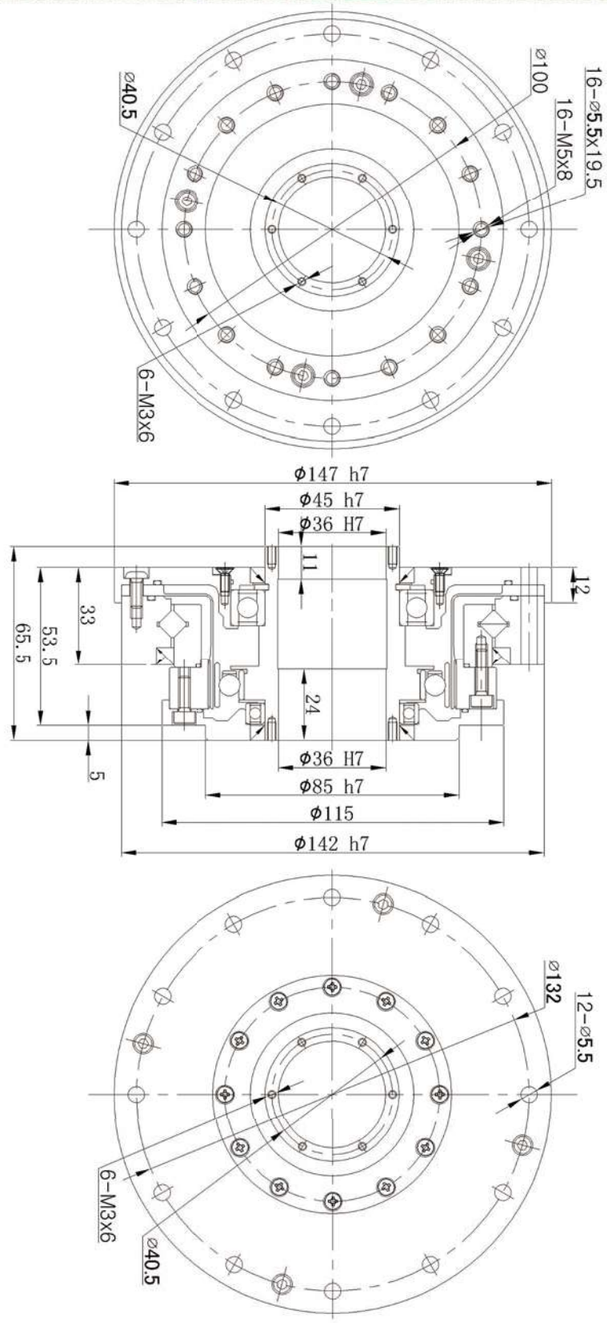

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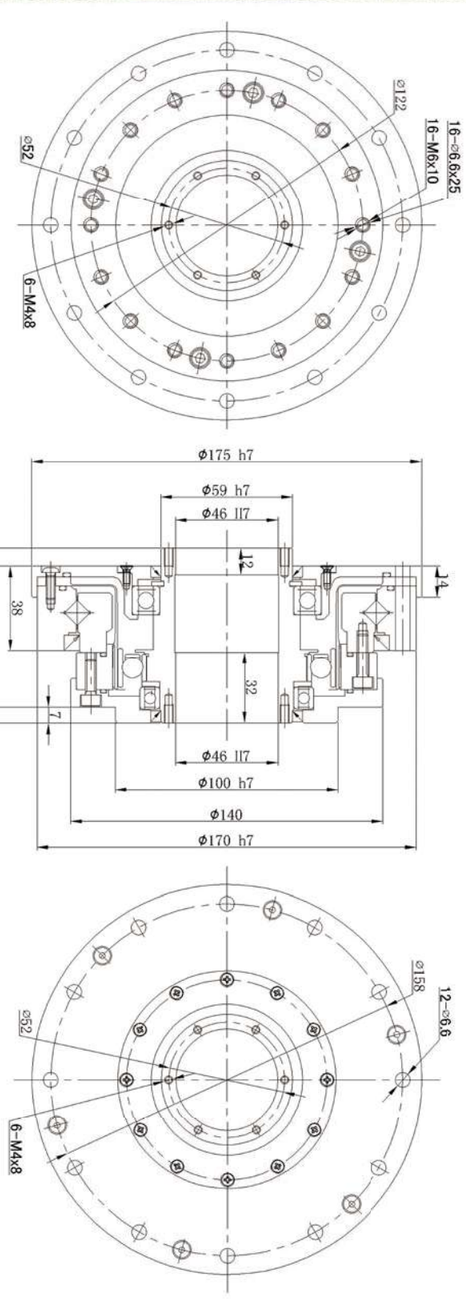


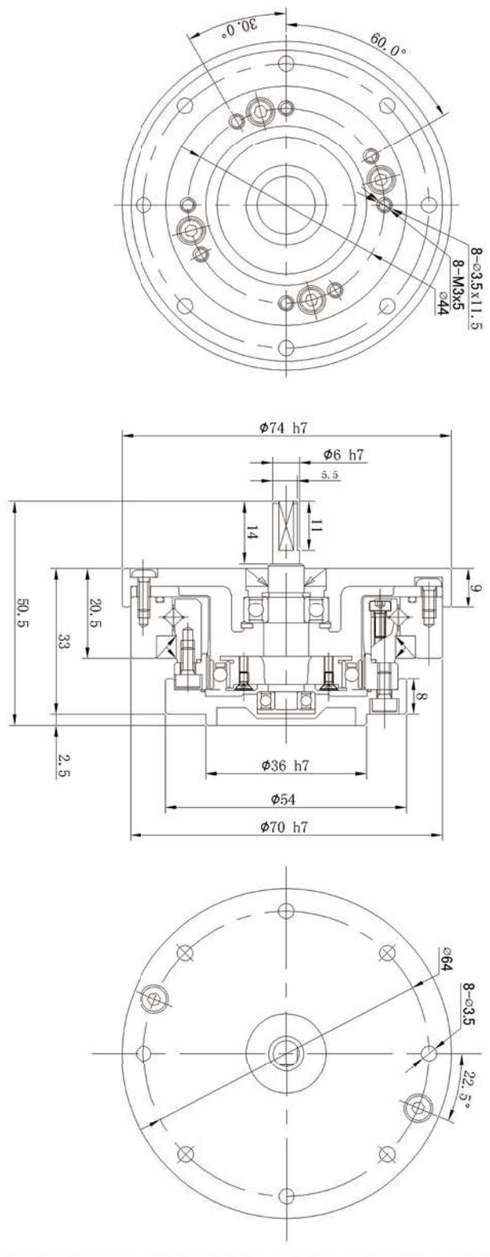
LHSG-IV series

LHSG-IV series are high-torque models which have the same structure, with **LHS-IV** series. However, their torque bearing capacity is improved by **30%** compared with **LHS** series.

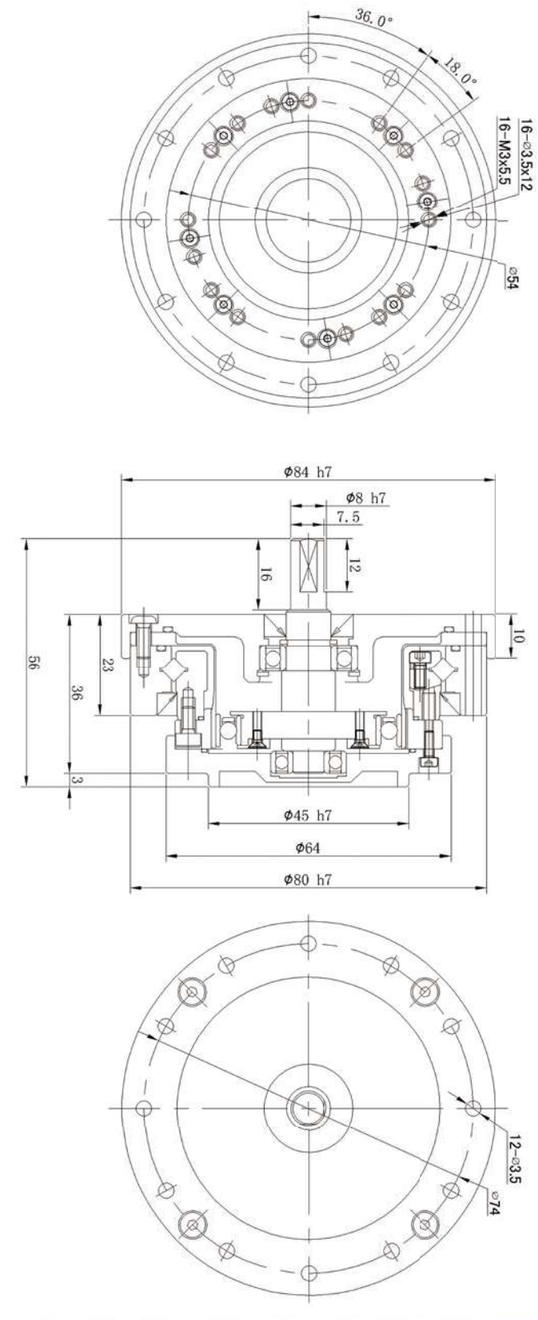
Parameter Table

Item / Model No	Reduction Ratio	Rated Torque at 2000r/min	Allowable Peak Torque at Start and Stop	Allowable Average Torque	Allowable Maximum Momentary Torque	Maximum Input Speed	Allowable Average Input Speed	Back lash	With Maximum Tension	Weight	Design Life
		Nm	Nm	Nm	Nm	r/min	r/min	Arc sec	N	Kg	Hour
14	50	6. 6	23	8. 6	43	8000	3500	≤10	≤26	0. 65	10000
	80	9. 6	29	13. 5	57			≤10			15000
	100	9. 6	34	13. 5	66			≤10			15000
17	50	19. 8	42	32	86	7000	3500	≤10	≤32	0. 92	10000
	80	27. 5	53	33	108			≤10			15000
	100	30	66	49	134			≤10			15000
	120	30	66	49	107			≤10			15000
20	50	32	69	42	121	6000	3500	≤10	≤58	1. 36	10000
	80	42	91	58	158			≤10			15000
	100	50	102	61	182			≤10			15000
	120	50	108	61	182			≤10			15000
	160	50	113	61	182			≤10			15000
25	50	48	121	68. 5	230	5500	3500	≤10	≤71	2. 05	10000
	80	78	169	107	315			≤10			15000
	100	84	194	133	351			≤10			15000
	120	84	207	133	376			≤10			15000
	160	84	217	133	388			≤10			15000
32	50	94	267	133	472	4500	3500	≤10	≤114	4. 35	10000
	80	146	376	206	702			≤10			15000
	100	169	411	267	800			≤10			15000
	120	169	436	267	848			≤10			15000
	160	169	459	267	848			≤10			15000
40	50	169	497	242	847	4000	3000	≤10	≤294	7. 9	10000
	80	255	641	351	1210			≤10			15000
	100	328	702	460	1334			≤10			15000
	120	363	762	557	1458			≤10			15000
	160	363	800	557	1458			≤10			15000

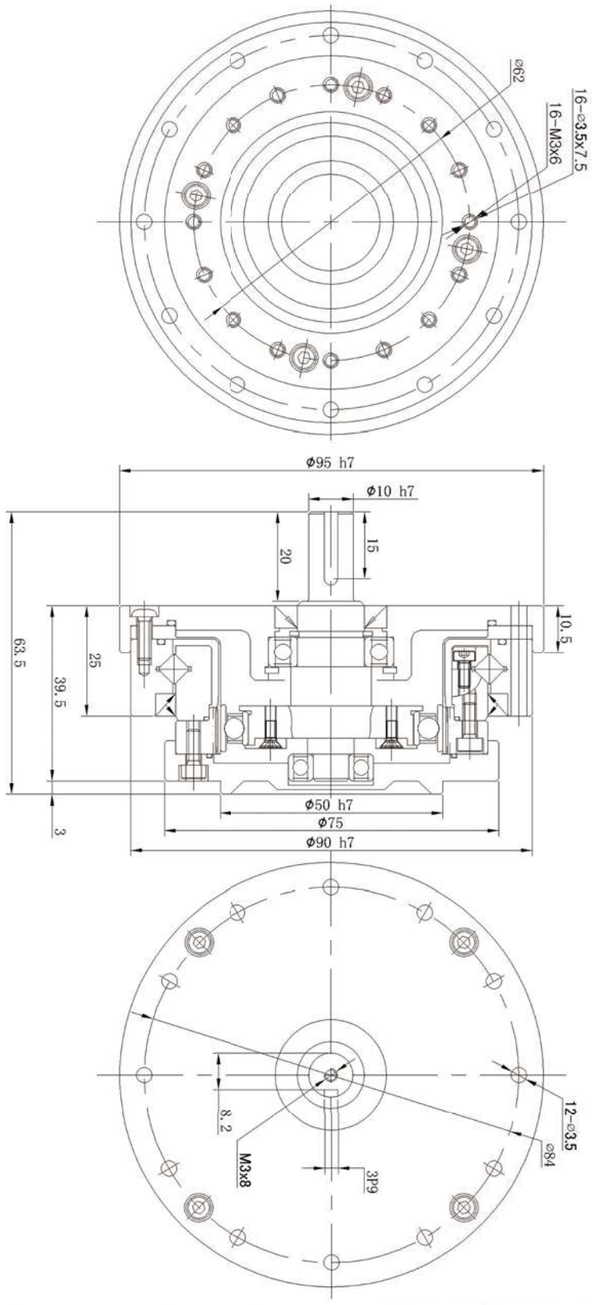
LHSG-14-XXX-C-IV



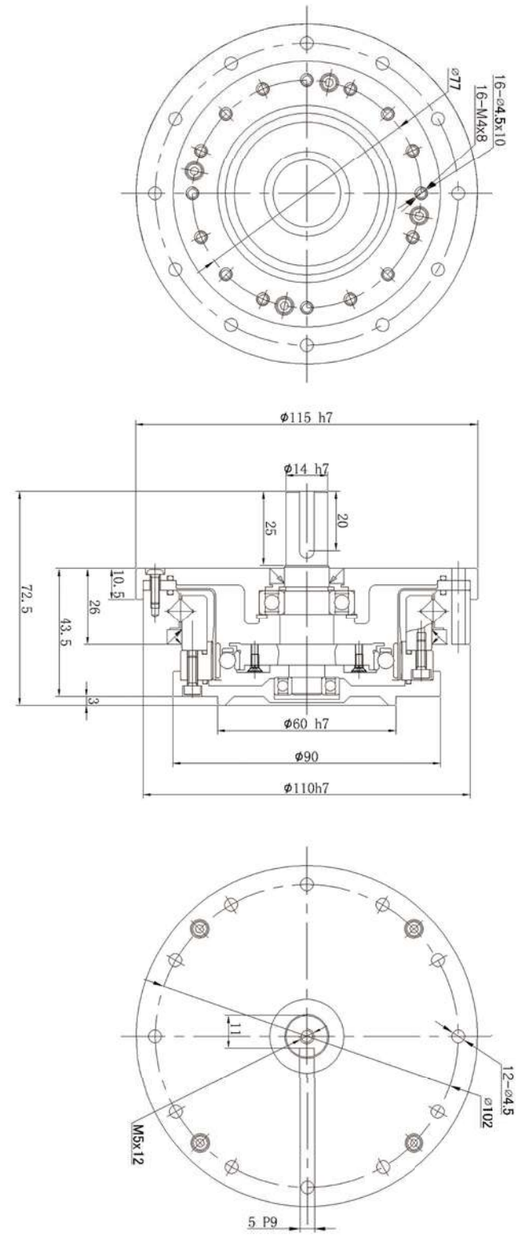
LHSG-17-XXX-C-IV



LHSG-20-XXX-C-IV



LHSG-25-XXX-C-IV



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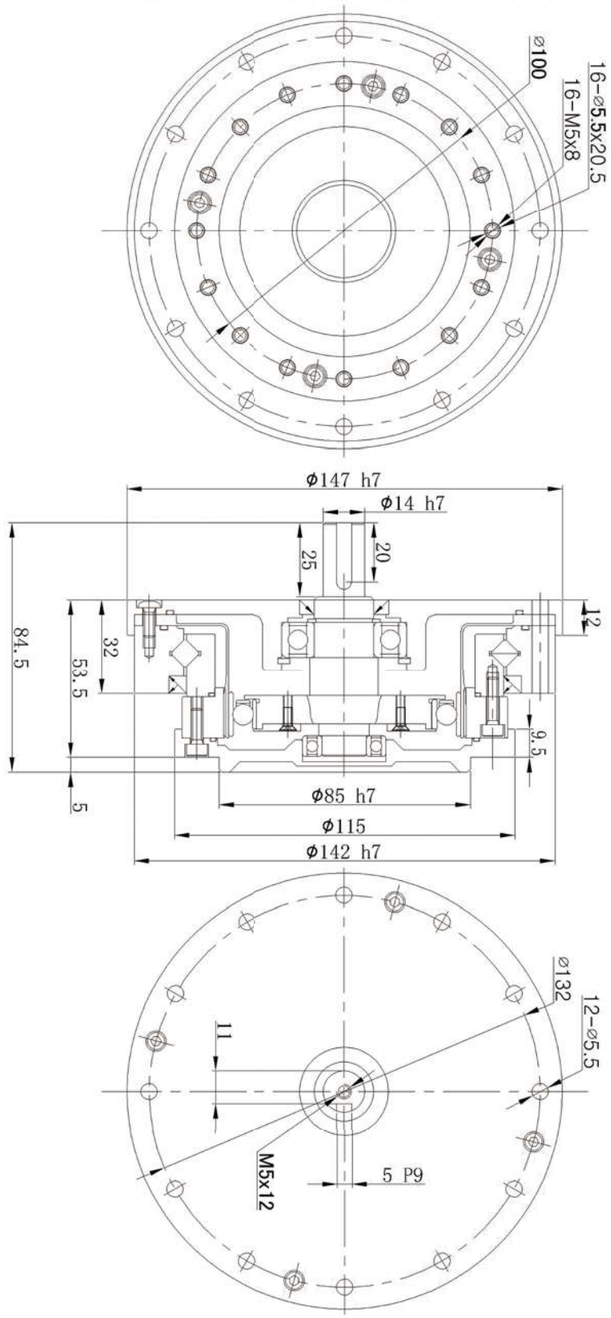
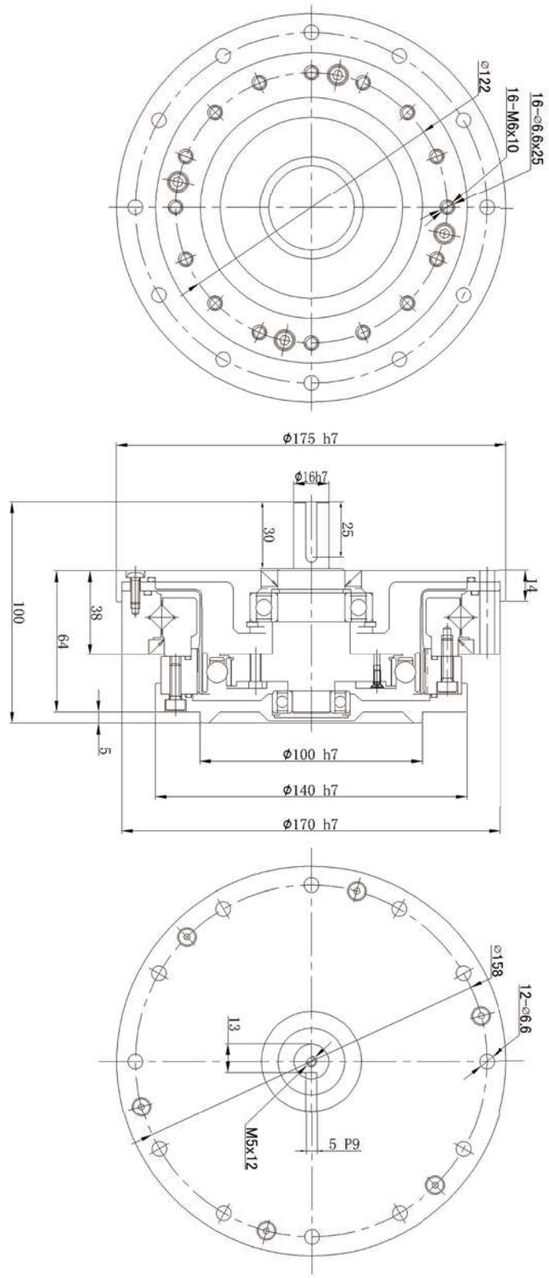


LHSG-40-XXX-C-IV



Authentication Certificate

The company for making national standards

认证证书

兹证明

苏州绿的谐波传动科技有限公司

统一社会信用代码：91320506567813635P

中国江苏省苏州市太湖镇木渎路 19 号 215101

经 NSF-ISR 评估，已建立的质量管理体系符合国际质量体系标准：

ISO 9001:2015

认证范围：

精密谐波减速机的研发和生产

证书编号：CNQMS030760
证书颁发日期：2018/01/08
注册日期：2018/01/08
证书到期日期*：2021/01/07

Carl Blank,
Director- Technical Operations &
Business Units, NSF-ISR, Ltd.

NSF International Strategic Registrations

789 North Dixboro Road, Ann Arbor, Michigan 48105 | (888) NSF-9000 | www.nsf-isr.org

认证证书

兹证明

苏州绿的谐波传动科技有限公司

中国江苏省苏州市太湖镇木渎路 19 号 215101

经 NSF-ISR 评估，已建立的环境管理体系符合环境体系标准：

ISO 14001:2015

认证范围：

精密谐波减速机的研发和生产

证书编号：CNEMS030742
证书颁发日期：2018/01/08
注册日期：2018/01/08
证书到期日期*：2021/01/07

Carl Blank,
Director- Technical Operations &
Business Units, NSF-ISR, Ltd.

NSF International Strategic Registrations

789 North Dixboro Road, Ann Arbor, Michigan 48105 | (888) NSF-9000 | www.nsf-isr.org

GB

中华人民共和国国家标准

GB/T 30819—2014

机器人用谐波齿轮减速器

Harmonic drive gear reducers for robots

2014-06-24 发布　　2014-12-31 实施

中华人民共和国国家质量监督检验检疫总局
中国国家标准化管理委员会　发布

GB

中华人民共和国国家标准

GB/T 34884—2017

滚动轴承　工业机器人
谐波齿轮减速器用柔性轴承

Rolling bearings—Flexible bearings
for harmonic drive gear reducers of industrial robots

2017-11-01 发布　　2018-05-01 实施

中华人民共和国国家质量监督检验检疫总局
中国国家标准化管理委员会　发布

GB

中华人民共和国国家标准

GB/T 35089—2018

机器人用精密齿轮传动装置　试验方法

Precision gear transmission for robot—Test method

2018-05-14 发布　　2018-12-01 实施

国家市场监督管理总局
中国国家标准化管理委员会　发布

application area

Robot

Numerical control machine

Nonstandard automation

Aeronautics and Astronautics

Medical apparatus and instruments

new energy