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Professional Supplier For Transmission Equipments And Solution

EXTREME AND WIN

Precision Planetary Rack / Pinion

DESBOER • 德世博尔

Comprehensive Catalogue - 2026 Edition

About DESBOER

Precision in Motion, Skilled in Engineering.



DESBOER (Jiangsu) Transmission Technology Co., Ltd. is a leading innovator and manufacturer of high precision planetary gearbox. We provide superior performance and reliable guarantee for demanding industrial applications worldwide. Driven by continuous innovation and strict quality control,

DESBOER provides integrated drive solutions that empower our global customers to achieve excellent productivity. We work with you to meet the most challenging needs based on the outstanding performance of precision engineering.

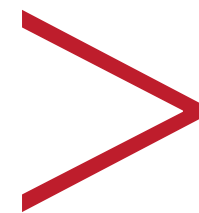
DESBOER • 德世博尔

To enhance customer service and reduce delivery times, our main manufacture plant - Changzhou Nanpeng Machinery Co., Ltd. was established in Changzhou, China in 2014, with large investment in top-tier processing equipment and cutting-edge technology from Japan. The workers were also well trained to ensure rapid production capacity. As a result, DESBOER (China) - Changzhou Nanpeng Machinery Co., Ltd. quickly developed a complete standard assembly line and a robust quality assurance system.

Now, a new-generation low-backlash planetary gearbox series has been developed by DESBOER, featuring high precision, high torsional rigidity, high reliability, low noise, long service life, and maintenance-free operation. These advanced gearboxes are widely used in robotic technologies, mechanical arms, machine tools, machining systems, food and packaging equipment, printing machinery, and automatic production lines, etc. In terms of R&D concept, system architecture and service philosophy regarding industrial automation solutions, DESBOER has won widespread recognition, which not only makes itself a leading domestic brand, but also gains the support and trust of customers from various industries around the world.

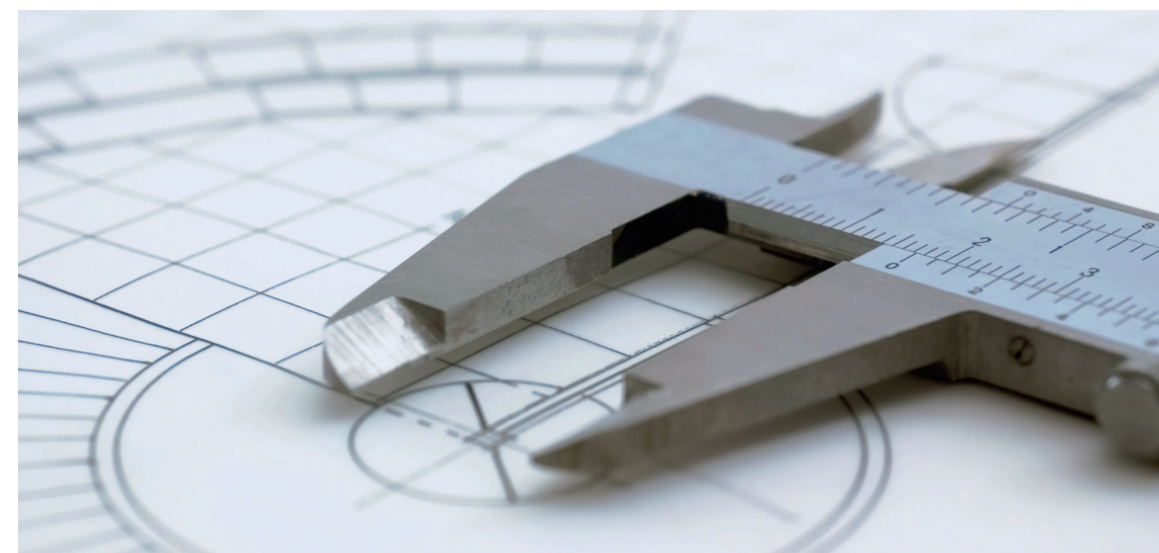


Quality Service Philosophy



Our commitment is unwavering:
Quality and Engineering Excellence.

- **Reliability & Durability:** Designed for rigorous working conditions to ensure long-lasting durability and maximize equipment uptime.
- **Precision Performance:** Maintain accuracy and smooth operation to optimize system efficiency.
- **Application Versatility:** Solutions designed to handle a wide range of applications with outstanding performance.
- **Exceptional Value:** High-quality components combined with efficient design to provide outstanding cost-effectiveness.



Quality Control



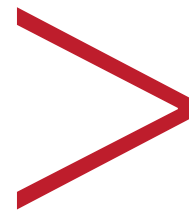
We implement 5S management mode on site.

The planetary gears and sun gears we provide are made of super-hard processing by Japanese precision hobbing machines and have the characteristics of high operating accuracy, good stability, high efficiency, high input speed, high output torque, low backlash and low noise.

High precision of our products effectively guarantees the stability even in long-time operation.



Solutions

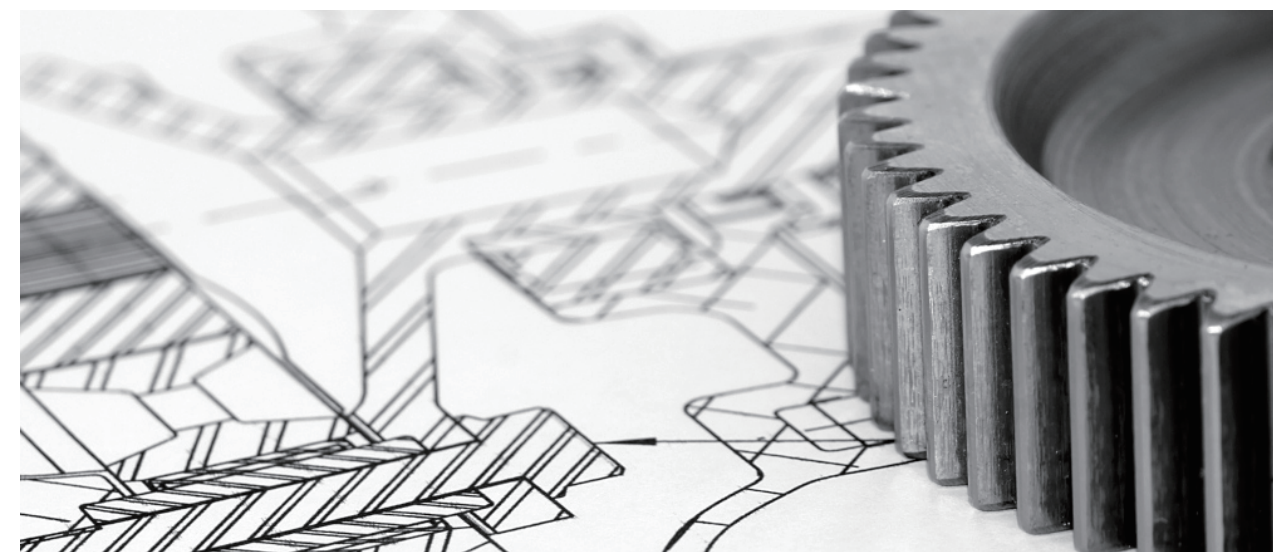


Understanding customers' needs, calculating costs, optimizing processes, and even providing personalized solutions for customers - for DESBOER, professional and precise engineering design is always carried out.

We use the exquisite gear manufacturing technology and experience of Japan and Germany and analyze the important parameters such as working conditions, running duration, speed and load, to design the professional solutions suitable for customers.

We can also develop and provide customers with personalized products at reasonable cost based on their special requirements to meet the individual need of each customer.

DESBOER's experienced experts provide customers with fast, efficient and professional services, because we know that Efficiency is Life.



Enterprise Mission

■ To win high praise and trust from all interested parties and to make contributions to the society based on honesty.

■ To provide first-class precision planetary gearbox and integrated supporting service.

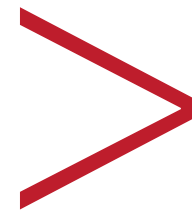
■ To put customer value first, continuously delve into core technologies and contribute to the development of the industry.

■ To create corporate culture of respecting each other and making progress by learning from each other.

■ To focus on sustainable development and create equal job opportunities for employees.

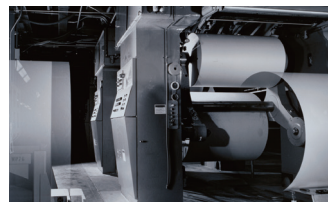


Related Fields



Currently, our products have been widely used in various industries, such as machine tools, robotic arms, printing equipment, textile machinery, packaging machinery, non-standard automation, medical equipment, inspection equipment, laser cutting, welding, automobile manufacturing, satellite communication, metal processing, pharmaceutical industry, etc.

Machine Tool



Robotic Arm



Printing Equipment



Textile Machinery



Packaging Machinery



Non-standard Automation



Medical Equipment



Inspection Equipment



Laser Cutting



Welding



Automobile Manufacturing



Satellite Communication



Metal Processing



Pharmaceutical Industry

01

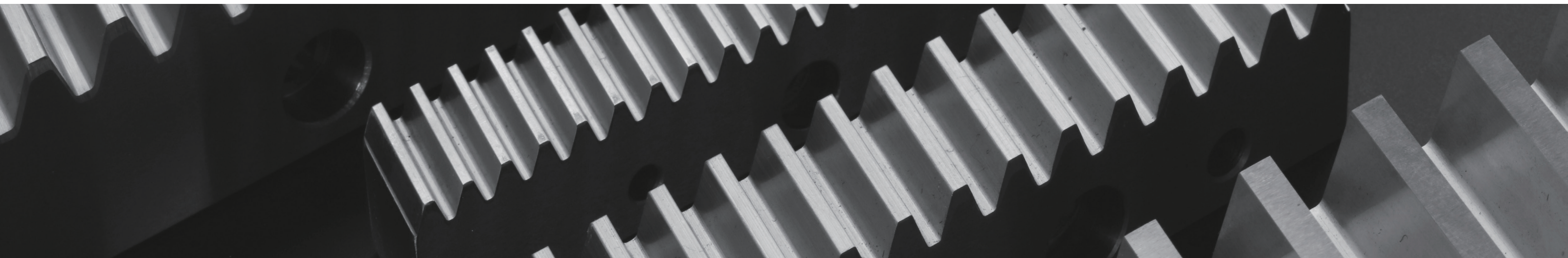
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Rack

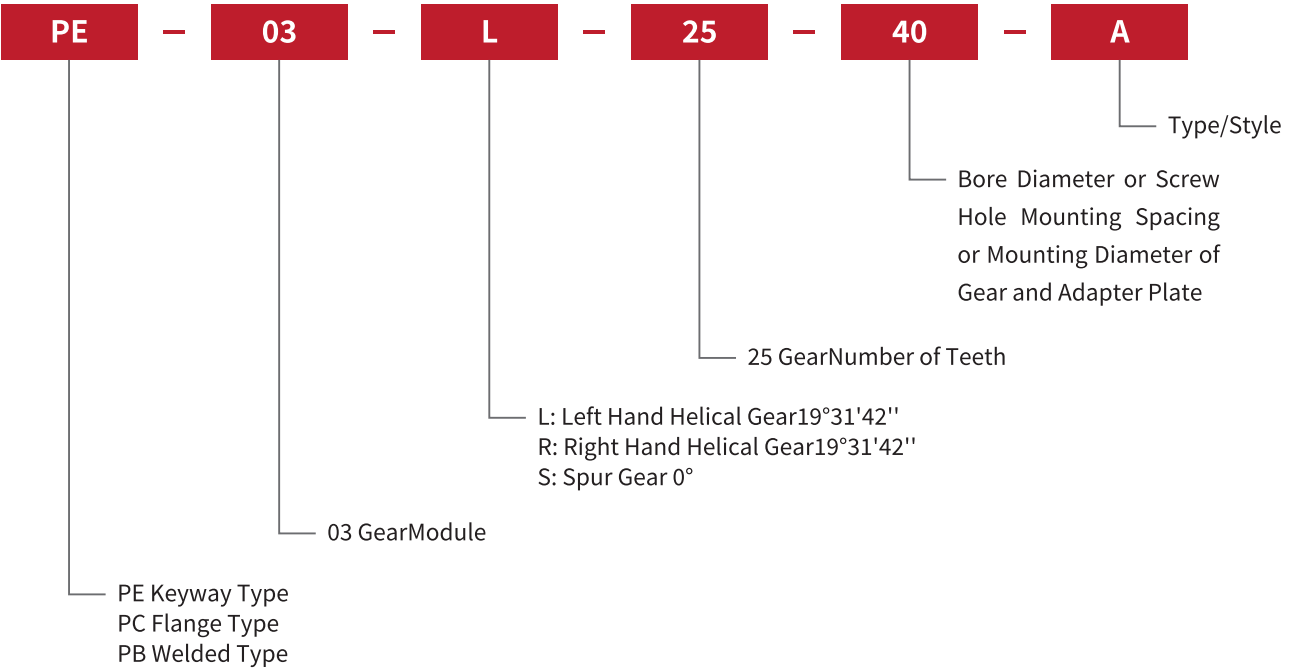
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GEAR

Code Meaning

We provide customers with high precision, high rigidity, high torque prdcision planetary gearbox.



Example: PE03L25-40A

Accuracy Class Comparison Table												
ISO	1	2	3	4	5	6	7	8	9	10	11	12
DIN		2	3	4	5	6	7	8	9	10	11	12
AGMA		15	14	13	12	11	10	9	8	7	6	5
JIS N				N4	N5	N6	N7	N8	N9	N10		
GB	1	2	3	4	5	6	7	8	9	10	11	12
ISO (International Organization for Standardization): International Standard DIN (German Institute for Standardization): German Standard AGMA (American Gear Manufacturers Association): American Gear Standard JIS (Japanese Industrial Standards): Japanese Industrial Standard GB (Chinese National Standards): Chinese National Standard												

Maximum Driving Force

Keyway Type Gear						
Accuracy Class	GearMaterial	Module	Z ⁽¹⁾	d ⁽⁴⁾	Maximum Driving Force N	Maximum Driving Force N•m
5	Alloy Steel	1.5	20	31.83	4712	75
			21	33.42	4907	82
		2	18	38.20	8377	160
			20	42.44	8954	190
			22	46.69	9852	230
			23	48.81	10858	265
			25	53.05	10745	285
			26	55.17	11057	305
			27	57.30	10994	315
			28	59.42	10602	315
			29	61.54	12025	370
			30	63.66	11310	360
			32	67.91	12075	410
			33	70.03	10852	380
			35	74.27	11309	420
		3	20	63.66	14767	470
			22	70.03	16850	590
			24	76.39	18327	700
			25	79.58	17592	700
		4	30	95.49	18222	870
			34	108.23	17925	970
			20	84.88	29453	1250
			22	93.37	31059	1450
		4	24	101.86	33380	1700
			25	106.10	32988	1750
			27	114.59	33162	1900
		5	25	132.63	52778	3500
		6	20	127.32	64405	4100
			23	146.42	71029	5200
		8	18	152.79	100792	7700
			20	169.77	111917	9500
		10	20	212.21	174358	18500

Integral Type Gear						
Accuracy Class	GearMaterial	Module	Z ⁽¹⁾	d ⁽⁴⁾	Maximum Driving Force N	Maximum Driving Force N•m
5	Alloy Steel	2	20	42.44	9661	205
			26	55.17	10875	300
			29	61.54	10725	330

(1) Number of teeth (4) Pitch circle diameter
*When selecting a gear and gearbox, the maximum driving torque of the gear must be greater than the tilting force and output torque of the gearbox.

Maximum Driving Force

Flange Type Gear						
Accuracy Class	GearMaterial	Module	Z ⁽¹⁾	d ⁽⁴⁾	Maximum Driving Force N	Maximum Driving Force N•m
5	Alloy Steel	2	25	53.05	10933	290
			26	55.17	10875	300
			27	57.30	11169	320
			29	61.54	10725	330
			30	63.66	10996	350
			33	70.03	10852	380
			35	74.27	11309	420
			37	78.52	11207	440
			40	84.88	11074	470
		3	20	63.66	17281	550
			27	81	19012	770
			35	111.41	19747	1100

Split Welded Gear						
Accuracy Class	GearMaterial	Module	Z ⁽¹⁾	d ⁽⁴⁾	Maximum Driving Force N	Maximum Driving Force N•m
5	Alloy Steel	2	20	42.44	10839	230
			23	48.81	10244	250
			25	53.05	10933	290
			27	57.30	11169	320
			29	61.54	10725	330
		3	14	44.56	13690	305
			16	50.93	14530	370
			17	54.11	14785	400
			20	63.66	17908	570
			12	50.93	23954	610
		4	20	84.88	31574	1340
			24	101.86	36324	1850
			19	100.8	45635	2300

Integral Welded Gear						
Accuracy Class	GearMaterial	Module	Z ⁽¹⁾	d ⁽⁴⁾	Maximum Driving Force N	Maximum Driving Force N•m
5	Alloy Steel	2	20	42.44	9661	205
			23	48.81	10244	250
		3	20	63.66	17281	550
		4	20	84.88	29453	1250

(1) Number of teeth (4) Pitch circle diameter
*When selecting a gear and gearbox, the maximum driving torque of the gear must be greater than the tilting force and output torque of the gearbox.

Helical Gear (Keyway Type Gear)

Accuracy Class 5 GB (Chinese National Standards)/ T10095 / Alloy Steel

Left Hand (LH)19°31'42"Gear

Carburizing, quenching, and gear tooth grinding

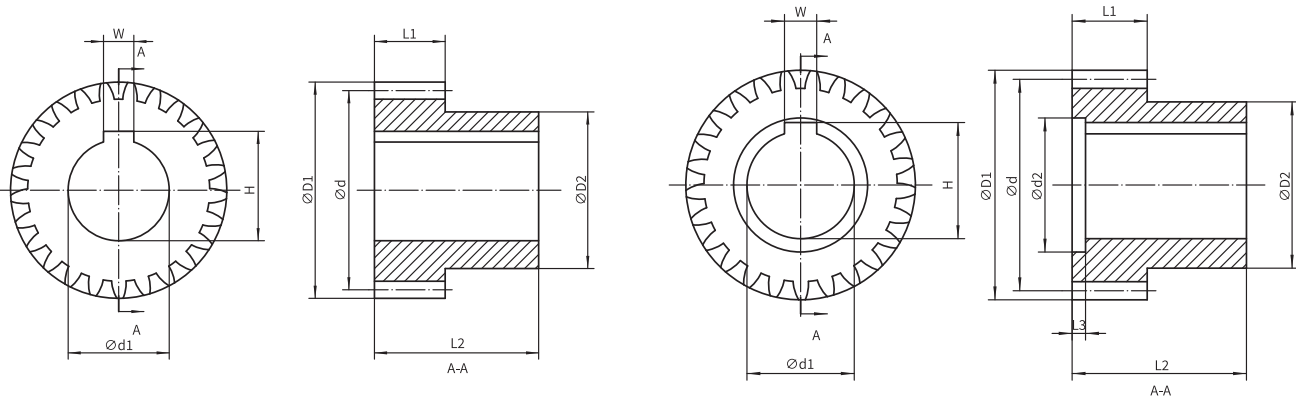


Figure A

Figure B

Module 1.5													Helical Gear	
Z ⁽¹⁾	X ⁽²⁾	D1 ⁽³⁾	d ⁽⁴⁾	d _w ⁽⁵⁾	d1	D2	L1	L2	d2	L3	W	H	Figure A / B	Gear Model
20	0	34.83	31.83	31.83	16	26	18	35	22.5	3	5	18.3	B	PE1.5L20-16A
21	0	36.42	33.42	33.42	16	26	18	35	22.5	3	5	18.3	B	PE1.5L21-16A

Module 2													Helical Gear	
Z ⁽¹⁾	X ⁽²⁾	D1 ⁽³⁾	d ⁽⁴⁾	d _w ⁽⁵⁾	d1	D2	L1	L2	d2	L3	W	H	Figure A / B	Gear Model
18	0	42.20	38.20	38.20	16	30	26	29	N/A	N/A	5	18.3	A	PE02L18-16A
18	0.45	43.99	38.20	39.80	22	34	26	33.5	30	3.5	6	24.8	B	PE02L18-22A
20	0	46.44	42.44	42.44	22	36	26	37.5	N/A	N/A	6	24.8	A	PE02L20-22B
22	0.2	51.48	46.69	47.45	22	40	26	37.5	N/A	N/A	6	24.8	A	PE02L22-22
23	0	52.80	48.81	48.81	22	36	28	37.5	N/A	N/A	6	24.8	A	PE02L23-22A
25	0	57.05	53.05	53.05	22	46	30	46	35	5	6	24.8	B	PE02L25-22A
25	0	57.05	53.05	53.05	22	46	30	37.5	N/A	N/A	6	24.8	A	PE02L25-22B
25	0	57.05	53.05	53.05	32	46	26	33.5	N/A	N/A	10	35.3	A	PE02L25-32A
26	0	59.17	55.17	55.17	22	46	26	37.5	35	5	6	24.8	B	PE02L26-22A
26	0	59.17	55.17	55.17	32	46	26	51	41	5	10	35.3	B	PE02L26-32C
27	0.3	62.49	57.30	58.43	32	52	26	33.5	N/A	N/A	10	35.3	A	PE02L27-32A
28	0	63.42	59.42	59.42	22	50	28	37.5	N/A	N/A	6	24.8	A	PE02L28-22A
28	0	63.42	59.42	59.42	32	54	25	58.5	41	7.8	10	35.3	B	PE02L28-32A
29	0	65.50	61.54	61.54	22	50	28	37.5	N/A	N/A	6	24.8	A	PE02L29-22A
30	0	67.70	63.66	63.66	22	50	28	37.5	N/A	N/A	6	24.8	A	PE02L30-22A
30	0	67.70	63.66	63.66	32	55	28	60	N/A	N/A	10	35.3	A	PE02L30-32B
30	0	67.70	63.66	63.66	32	55	26	33.5	N/A	N/A	10	35.3	A	PE02L30-32C
30	0	67.70	63.66	63.66	32	55	28	47.3	N/A	N/A	10	35.3	A	PE02L30-32D
32	0	71.91	67.91	67.91	32	55	28	60	N/A	N/A	10	35.3	A	PE02L32-32B
33	0.393	75.60	70.03	71.50	32	60	26	33.5	48	4.2	10	35.3	B	PE02L33-32A
33	0.393	75.60	70.03	71.50	40	60	26	65	N/A	N/A	12	43.3	A	PE02L33-40A
33	0.393	75.60	70.03	71.50	40	60	26	63	N/A	N/A	12	43.3	A	PE02L33-40B
33	0.393	75.60	70.03	71.50	40	60	26	37	N/A	N/A	12	43.3	A	PE02L33-40C
35	0	78.27	74.27	74.27	40	60	26	65	N/A	N/A	12	43.3	A	PE02L35-40A

Helical Gear (Keyway Type Gear)

Module 3													Helical Gear	
Z ⁽¹⁾	X ⁽²⁾	D1 ⁽³⁾	d ⁽⁴⁾	d _w ⁽⁵⁾	d1	D2	L1	L2	d2	L3	W	H	Figure A / B	Gear Model
20	0	69.66	63.66	63.66	22	50	28	41	35	4	6	24.8	B	PE03L20-22A
20	0.3897	72.00	63.66	65.79	32	55	28	65	47	6	10	35.3	B	PE03L20-32A
22	0.3897	78.35	70.03	72.17	32	62	28	65	55	10	10	35.3	B	PE03L22-32A
22	0.4	78.43	70.03	72.22	40	62	31	65	50	10	12	43.3	B	PE03L22-40B
24	0	82.39	76.39	76.39	40	62	30	65	50	10	12	43.3	B	PE03L24-40A
25	0	85.57	79.58	79.58	40	62	28	65	50	5	12	43.3	B	PE03L25-40A
30	0	101.49	95.49	95.49	40	62	28	65	50	7.5	12	43.3	B	PE03L30-40A
34	0	114.23	108.23	108.23	75	99	28	75	N/A	N/A	20	79.8	A	PE03L34-75A

Module 4													Helical Gear	
Z ⁽¹⁾	X ⁽²⁾	D1 ⁽³⁾	d ⁽⁴⁾	d _w ⁽⁵⁾	d1	D2	L1	L2	d2	L3	W	H	Figure A / B	Gear Model
20	0.2	94.48	84.88	86.40	40	0	41	48	50	4	12	43.3	B	PE04L20-40A
22	0	101.37	93.37	94.89	40	60	41	50	N/A	N/A	12	43.3	A	PE04L22-40A
24	0	109.86	101.86	101.86	55	80	41	80	N/A	N/A	16	59.3	A	PE04L24-55A
25	0	114.10	106.10	106.10	40	80	40	80	N/A	N/A	12	43.3	A	PE04L25-40A
25	0	114.10	106.10	106.10	55	80	41	80	N/A	N/A	16	59.3	A	PE04L25-55A
27	0	122.59	114.59	114.59	40	90	41	80	51	5	12	43.3	B	PE04L27-40A
27	0	122.59	114.59	114.59	55	90	41	80	N/A	N/A	16	59.3	A	PE04L27-55A

Module 5													Helical Gear	
Z ⁽¹⁾	X ⁽²⁾	D1 ⁽³⁾	d ⁽⁴⁾	d _w ⁽⁵⁾	d1	D2	L1	L2	d2	L3	W	H	Figure A / B	Gear Model
25	0	142.63	132.63	132.63	75	110	50	110	N/A	N/A	20	79.9	A	PE05L25-75A

Module 6													Helical Gear	
Z ⁽¹⁾	X ⁽²⁾	D1 ⁽³⁾	d ⁽⁴⁾	d _w ⁽⁵⁾	d1	D2	L1	L2	d2	L3	W	H	Figure A / B	Gear Model
20	0	139.32	127.32	127.33	75	95	62	114	95	8	20	80.2	B	PE06L20-75A
23	0	158.40	146.42	146.42	85	120	61	82.5	108	8.5	22	90.4	B	PE06L23-85A

Module 8													Helical Gear	
Z ⁽¹⁾	X ⁽²⁾	D1 ⁽³⁾	d ⁽⁴⁾	d _w ⁽⁵⁾	d1	D2	L1	L2	d2	L3	W	H	Figure A / B	Gear Model
18	0	168.79	152.79	152.79	75	110	80	140	N/A	N/A	20	79.9	A	PE08L18-75A
20	0	185.77	169.77	169.77	85	125	80	145	N/A	N/A	22	90.4	A	PE08L20-85A

Module 10													Helical Gear	
Z ⁽¹⁾	X ⁽²⁾	D1 ⁽³⁾	d ⁽⁴⁾	d _w ⁽⁵⁾	d1	D2	L1	L2	d2	L3	W	H	Figure A / B	Gear Model
20	0	232.21	212.21	212.21	85	125	100	165	N/A	N/A	22	90.4	A	PE10L20-85A

(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

Spur Gear (Keyway Type Gear)

Accuracy Class 5 GB (Chinese National Standards)/T10095 / Alloy Steel

Spur Gear

Carburizing, quenching, and gear tooth surface grinding.

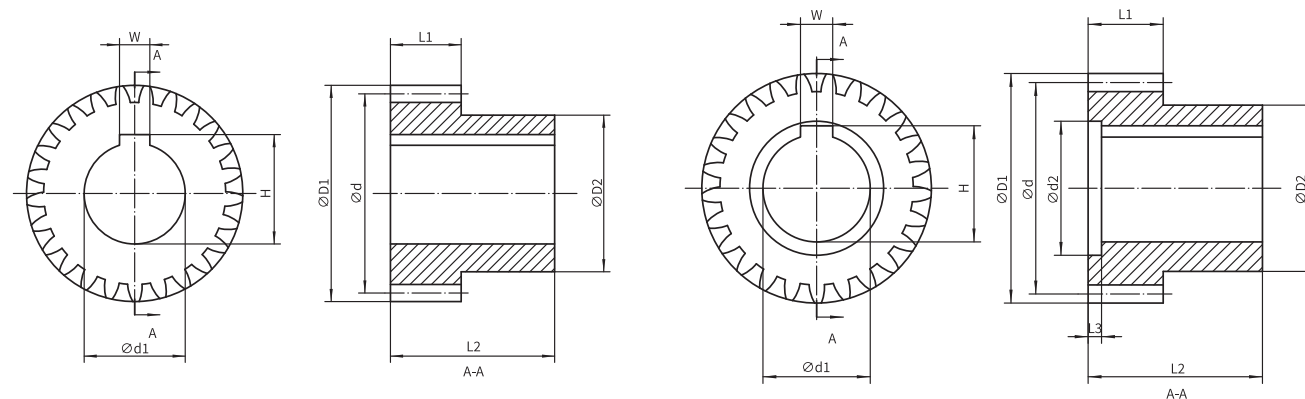


Figure A

Figure B

Module 2														Spur Gear
$Z^{(1)}$	$X^{(2)}$	$D1^{(3)}$	$d^{(4)}$	$d_w^{(5)}$	$d1$	$D2$	$L1$	$L2$	$d2$	$L3$	W	H	Figure A / B	Gear Model
23	0	50	46	46.34	22	40	24	24	N/A	N/A	6	24.8	A	PE02S23-22A

Module 3														Spur Gear
$Z^{(1)}$	$X^{(2)}$	$D1^{(3)}$	$d^{(4)}$	$d_w^{(5)}$	$d1$	$D2$	$L1$	$L2$	$d2$	$L3$	W	H	Figure A / B	Gear Model
19	0.4	65.4	57	57.42	32	45	31	59.8	N/A	N/A	10	35.3	A	PE03S19-32A

Module 5														Spur Gear
$Z^{(1)}$	$X^{(2)}$	$D1^{(3)}$	$d^{(4)}$	$d_w^{(5)}$	$d1$	$D2$	$L1$	$L2$	$d2$	$L3$	W	H	Figure A / B	Gear Model
20	0.05	110.5	100	101.20	55	75	50	85	N/A	N/A	16	59.3	A	PE05S20-55A
25	0	135	125	125.92	75	109	66	86	N/A	N/A	20	79.8	A	PE05S25-75B

Module 8														Spur Gear
$Z^{(1)}$	$X^{(2)}$	$D1^{(3)}$	$d^{(4)}$	$d_w^{(5)}$	$d1$	$D2$	$L1$	$L2$	$d2$	$L3$	W	H	Figure A / B	Gear Model
20	0	176	160	161.17	75	109	75	97	N/A	N/A	20	79.8	A	PE08S20-75A

(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

Helical Gear (Direct-locking gears)

Accuracy Class 5 GB (Chinese National Standards)/T10095 / Alloy Steel

Left Hand (LH) Gear

Carburizing, quenching, and gear tooth surface grinding.

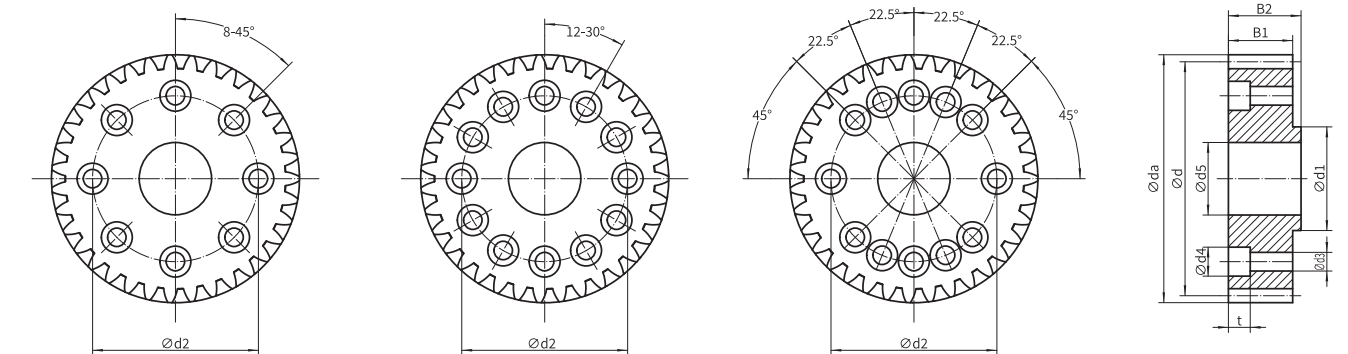


Figure A

Figure B

Figure C

Gear Code	Module	$Z^{(1)}$	$X^{(2)}$	$d_a^{(3)}$	$d^{(4)}$	$d_w^{(5)}$	$d1$	$d2$	$B1$	$B2$	$d3$	$d4$	t	$d5$	Figure A / B / C
PC02L27-040A	2	27	0	61.29	57.30	57.30	25	40	26	29	6.6	11	13	20.11	A
PC02L29-040A	2	29	0.415	67.20	61.54	63.08	25	40	26	29	6.6	11	14	20.11	A
PC02L30-040B	2	30	0	67.66	63.66	63.66	25	40	26	29	6.6	11	13	20.11	A
PC02L33-050A	2	33	0.393	75.60	70.03	71.50	31.5	50	26	29	6.6	11	14	20.11	A
PC02L35-050A	2	35	-0.068	78.00	74.27	74	31.5	50	26	29	6.6	11	14	20.11	A
PC02L37-050A	2	37	0.2	83.31	78.52	79.29	31.5	50	26	29	6.6	11	14	20.11	A
PC02L40-050A	2	40	0	88.88	84.88	84.88	31.5	50	26	29	6.6	11	14	20.11	A
PC02L40-050B	2	40	0	88.88	84.88	84.88	31.5	50	26	35	6.6	11	14	20.11	A
PC02L40-063A	2	40	0.379	90.40	84.88	86.32	40	63	26	29	6.6	11	11.5	32	C
PC03L35-080A	3	35	0.365	119.60	111.41	113.48	50	80	31	35	9	14	10.5	32	B

Please note: Bolt connections limit the maximum transmissible torque.

Please refer to the table below for the maximum allowable torque.

$\phi d1$	$\phi d2$	Screw Specifications	Maximum transmissible torque (N • m)
25	40	M6	140
31.5	50	M6	175
40	63	M6	335
50	80	M8	810

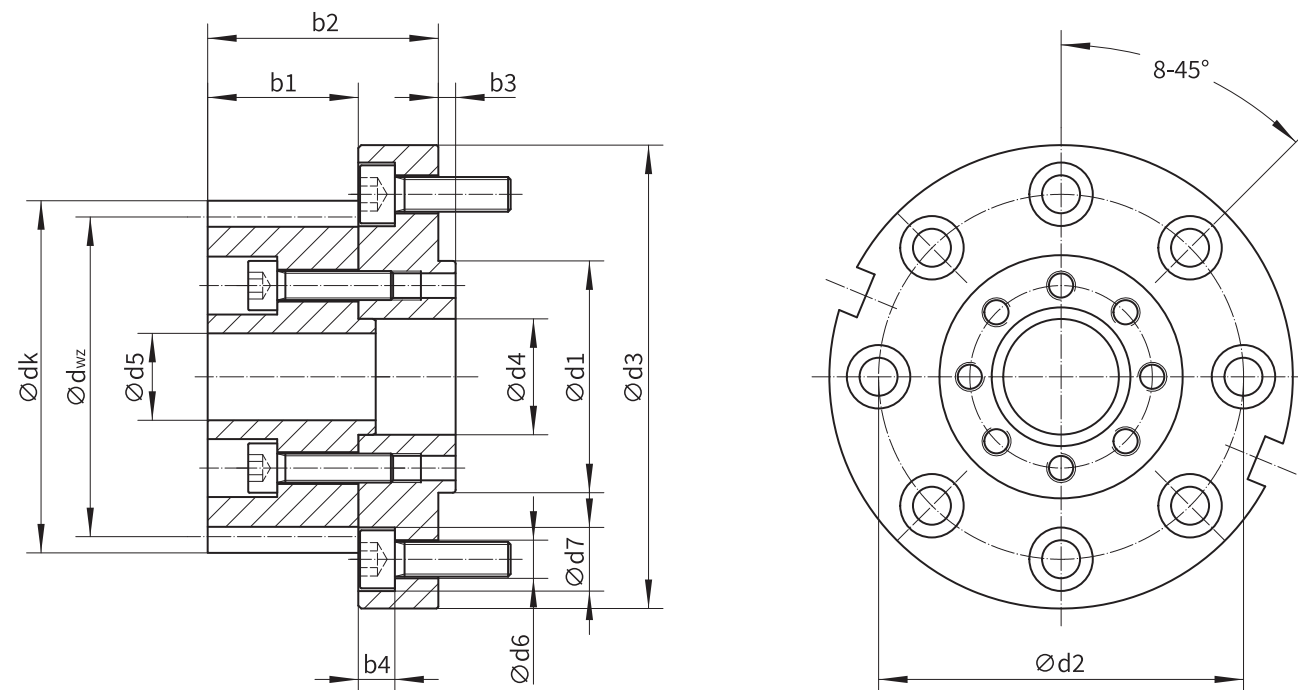
(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

Helical Gear (Direct-locking gears)

Accuracy Class 5 GB (Chinese National Standards)/T10095 / Alloy Steel

Left Hand (LH) Gear

Carburizing, quenching, and gear tooth surface grinding.



Bolt circle diameter $\phi 50$

Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	d5	b2	b1	b3	d3	d1	d4	d7	d6	b4	d2
PC02L25-031A	PFC050A-10	2	25	0	57.05	53.05	53.05	15	36	26	3	63	31.5	20	11	6.6	6.5	50
PC02L29-040A	PFC050E-10	2	29	0.415	67.20	61.54	63.08	20.11	36	26	3.5	63	31.5	25	11	6.6	6	50
PC02L29-040A	PFC050E-12	2	29	0.415	67.20	61.54	63.08	20.11	38	26	3.5	63	31.5	25	11	6.6	8	50
PC02L29-040A	PFC050E-14	2	29	0.415	67.20	61.54	63.08	20.11	40	26	3.5	63	31.5	25	11	6.6	10	50
PC02L33-050A	PFC050D-12	2	33	0.393	75.60	70.03	71.50	20.11	38	26	3	63	31.5	20	11	6.6	7	50
PC02L33-050A	PFC050D-18	2	33	0.393	75.60	70.03	71.50	20.11	44	26	3	63	31.5	20	11	6.6	13	50
PC02L35-050A	PFC050D-23	2	35	-0.0681	78.00	74.27	74	20.11	49	26	3	63	31.5	20	11	6.6	17	50

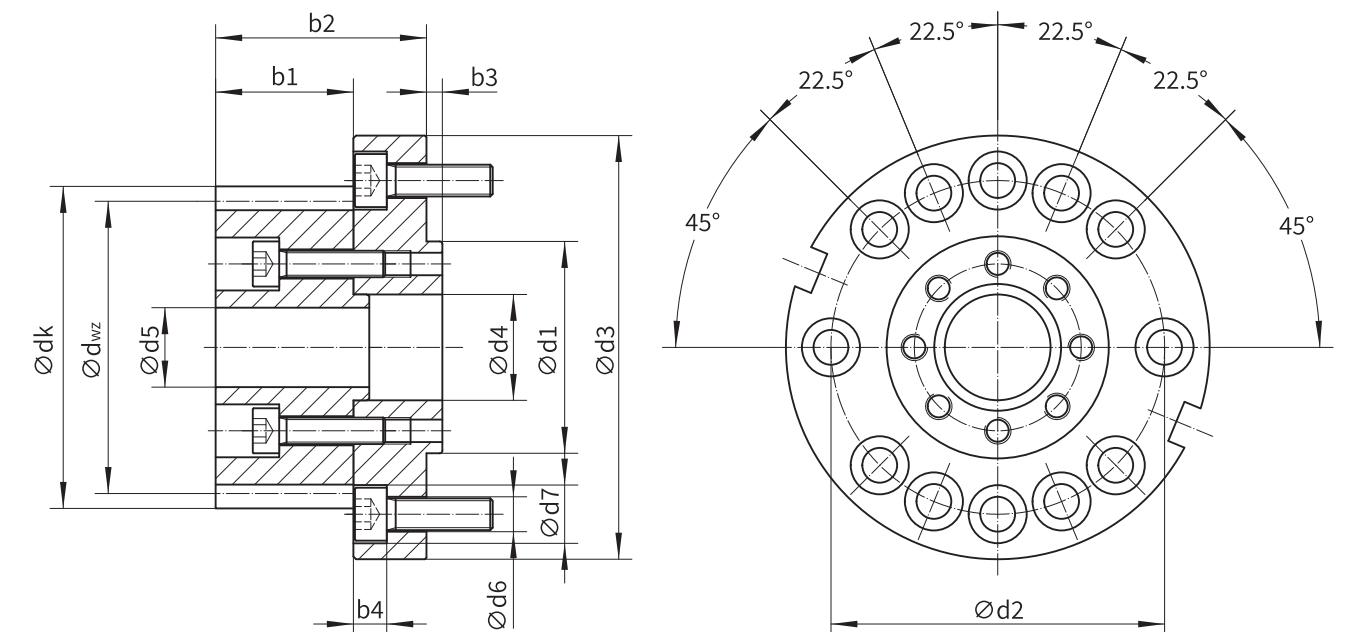
(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

Helical Gear (Direct-locking gears)

Accuracy Class 5 GB (Chinese National Standards)/T10095 / Alloy Steel

Left Hand (LH) Gear

Carburizing, quenching, and gear tooth surface grinding.



Bolt circle diameter $\phi 63$

Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	d5	b2	b1	b3	d3	d1	d4	d7	d6	b4	d2
PC02L26-031A	PFC063A-10	2	26	0.407	60.80	55.17	56.68	15	36	26	3	80	40	20	11	6.6	9.8	63
PC02L26-031A	PFC063A-14	2	26	0.407	60.80	55.17	56.68	15	40	26	3	80	40	20	11	6.6	13.8	63
PC02L29-040A	PFC063G-10	2	29	0.415	67.20	61.54	63.08	20.11	36	26	3	80	40	25	11	6.6	6	63
PC02L29-040A	PFC063G-14.5	2	29	0.415	67.20	61.54	63.08	20.11	40.5	26	3	80	40	25	11	6.6	7.5	63
PC02L29-040A	PFC063G-20	2	29	0.415	67.20	61.54	63.08	20.11	46	26	3	80	40	25	11	6.6	10.8	63
PC02L29-040A	PFC063G-29	2	29	0.415	67.20	61.54	63.08	20.11	55	26	3	80	40	25	11	6.6	12	63
PC02L30-040B	PFC063G-14.5	2	30	0	67.66	63.66	63.66	20.11	40.5	26	3	80	40	25	11	6.6	7.5	63
PC02L30-040B	PFC063G-15	2	30	0	67.66	63.66	63.66	20.11	41	26	3	80	40	25	11	6.6	6	63
PC02L33-050A	PFC063H-10	2	33	0.393	75.60	70.03	71.50	20.11	36	26	3	80	40	31.5	10	6.6	6	63
PC02L35-050A	PFC063H-10	2	35	-0.0681	78.00	74.27	74	20.11	41	26	3	80	40	31.5	10	6.6	11.5	63
PC02L35-050A	PFC063H-15	2	35	-0.0681	78.00	74.27	74	20.11	41	26	3	80	40	31.5	10	6.6	10	63
PC02L35-050A	PFC063H-22.5	2	35	-0.0681	78.00	74.27	74	20.11	48.5	26	3	80	40	31.5	10	6.6	14.3	63
PC02L40-050A	PFC063H-10	2	40	0	88.88	84.88	84.88	20.11	36	26	3	80	40	31.5	10	6.6	6	63
PC03L20-038A	PFC063F-15	3	20	0.3897	72.00	63.66	65.79	22	46	31	3	80	40	17	11	6.6	6	63
PC03L20-038A	PFC063F-20	3	20	0.3897	72.00	63.66	65.79	22	51	31	3	80	40	17	11	6.6	6	63
PC03L20-038A	PFC063F-25	3	20	0.3897	72.00	63.66	65.79	22	56	31	3	80	40	17	11	6.6	6	63

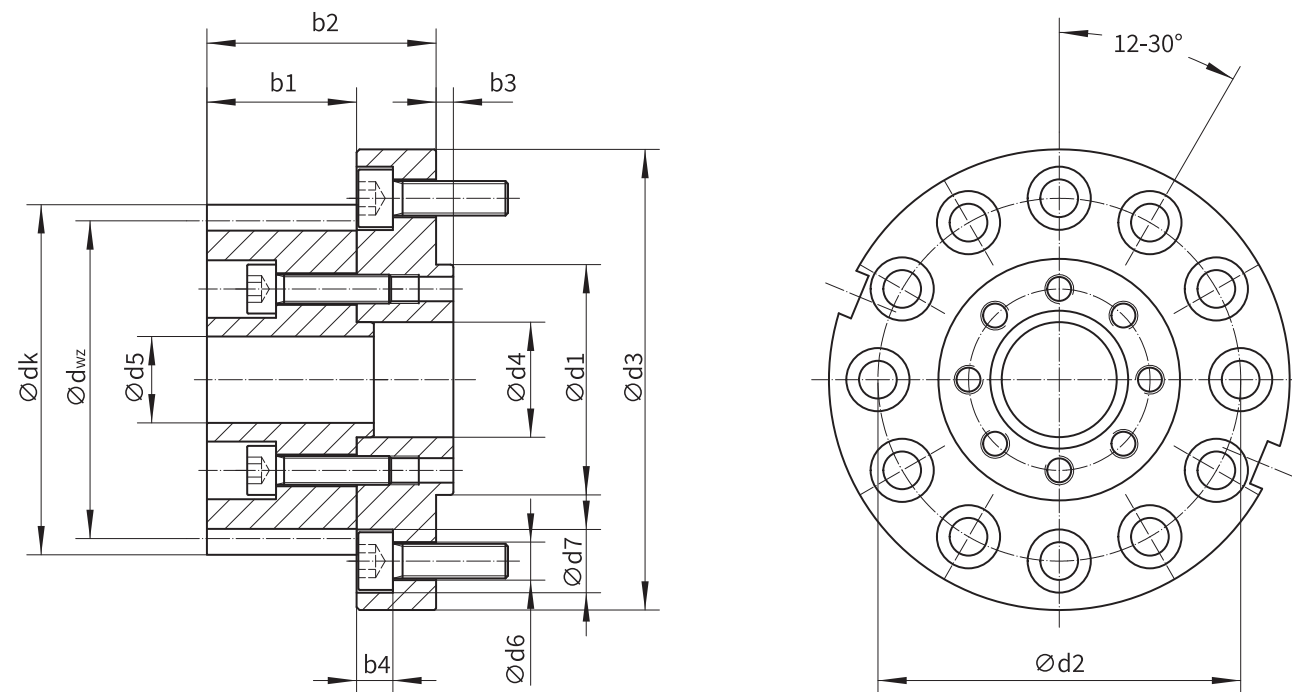
(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

Spur Gear (Direct-Locking Gears)

Accuracy Class 5 GB (Chinese National Standards) / T10095 / Alloy Steel

Spur Gear

Carburizing, quenching, and gear tooth surface grinding.



Bolt circle diameter $\phi 80$

Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	d5	b2	b1	b3	d3	d1	d4	d7	d6	b4	d2
PC03S27-050A	PFC080-050-23	3	27	0	87	81	81.59	20.11	53	29.5	3	100	50	31.5	14	9	8.5	80

Please note: Bolt connections limit the maximum transmissible torque.
Please refer to the table below for the maximum allowable torque.

Ød1	Ød2	Screw Specifications	Maximum transmissible torque (N · m)
31.5	50	M6	175
40	63	M6	335
50	80	M8	810

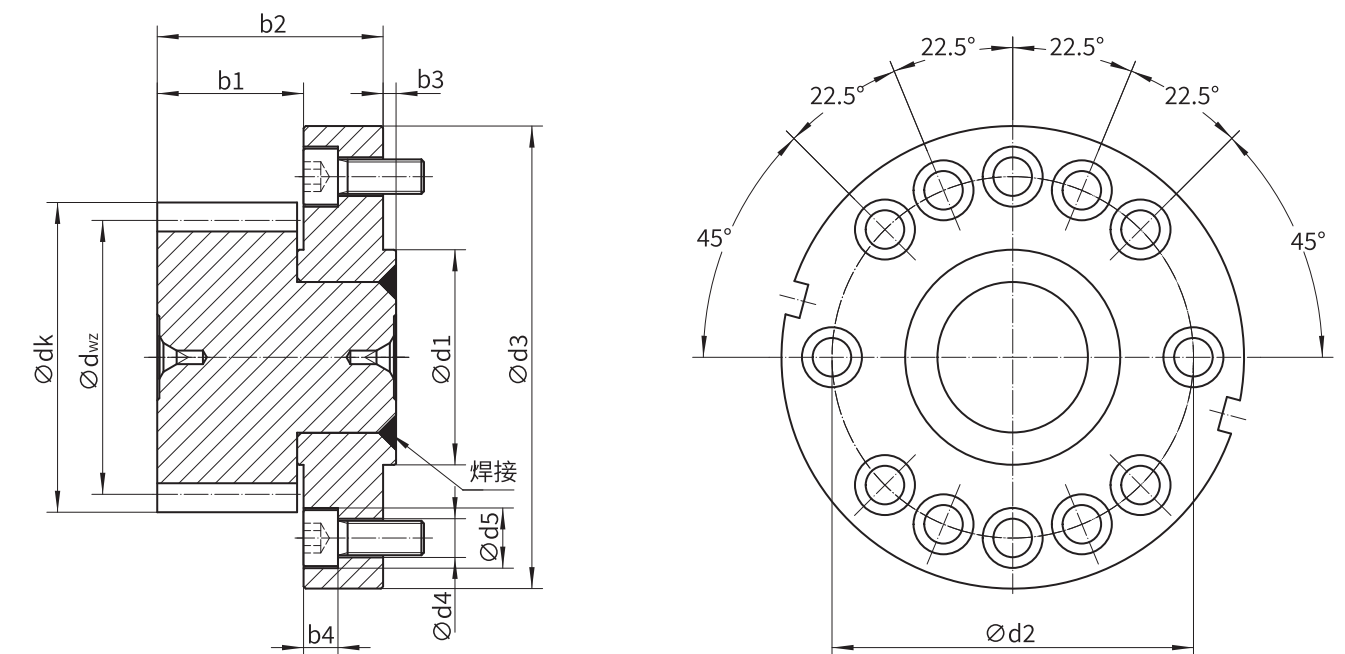
(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

Helical Gear (Split Welded Gear)

Accuracy Class 5 GB (Chinese National Standards) / T10095 / Alloy Steel

Left Hand (LH) Gear

Carburizing, quenching, and gear tooth surface grinding.



Bolt circle diameter $\phi 63$

Welding assembly code	Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	b2	b1	b3	d1	d3	d4	d5	b4	d2
PBZ063-220L75	PB02L20-30A	PFB063-030-20	2	20	0.4	48.04	42.44	43.89	46	29.5	5	40	80	6.6	11	11.5	63
PBZ063-314L76.5	PB03L14-30A	PB063-030-15	3	14	0.3	52.36	44.56	46.19	47.5	36	4	40	80	6.6	11	5.5	63

Bolt circle diameter $\phi 68$

Welding assembly code	Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	b2	b1	b3	d1	d3	d4	d5	b4	d2
PBZ068-225L65	PB02L25-30A	PFB068-030-10	2	25	0	57.05	53.05	53.05	36	27	7.5	40	82	6.6	11	5	68
PBZ068-225L69.5	PB02L25-30A	PFB068-030-14.5	2	25	0	57.05	53.05	53.05	40.5	30	3	40	82	6.6	11	6	68
PBZ068-225L74	PB02L25-30A	PFB068-030	2	25	0	57.05	53.05	53.05	45	30	3	40	82	6.6	11	6	68
PBZ068-225L80	PB02L25-30A	PFB068-030-25	2	25	0	57.05	53.05	53.05	30	51	3	40	82	6.6	11	12	68
PBZ068-223L69.5	PB02L23-30A	PFB068-030-14.5	2	23	0	52.8	48.81	48.81	40.5	30	3	40	82	6.6	11	6	68

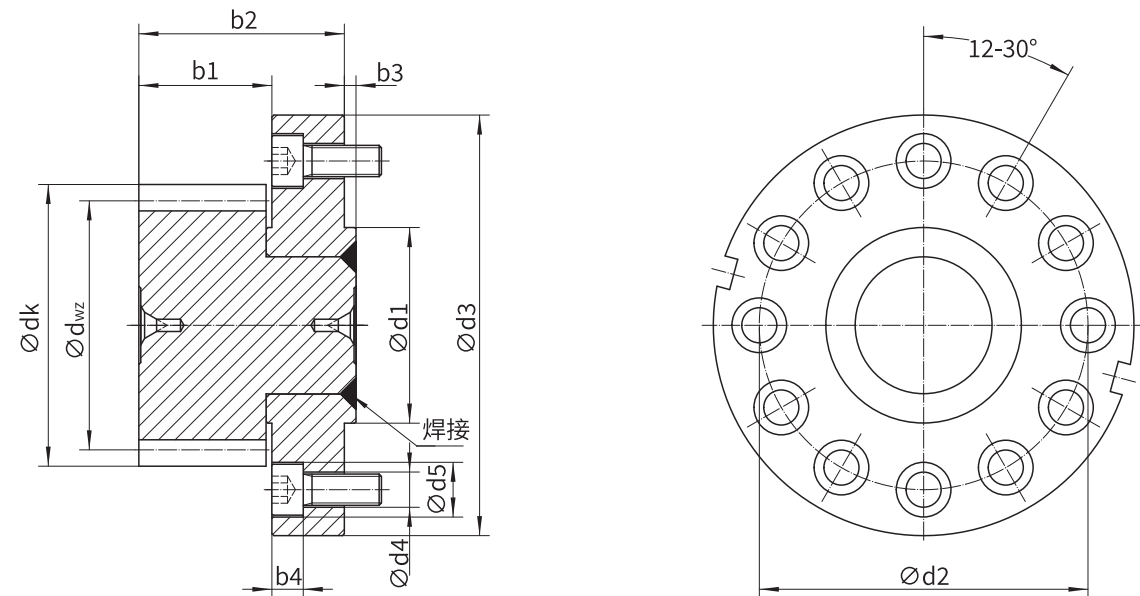
(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

Helical Gear (Split Welded Gear)

Accuracy Class 5 GB (Chinese National Standards)/T10095 / Alloy Steel

Left Hand (LH) Gear

Carburizing, quenching, and gear tooth surface grinding.



Bolt circle diameter $\phi 73$

Welding assembly code	Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	b2	b1	b3	d1	d3	d4	d5	b4	d2
PBZ073-227L69	PB02L27-35A	PFB073-035-14	2	27	0	61.29	57.3	57.3	40	30	3	50	86	6.6	11	6	73

Bolt circle diameter $\phi 80$

Welding assembly code	Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	b2	b1	b3	d1	d3	d4	d5	b4	d2
PBZ080-229L79	PB02L29-35A	PFB080-035-15	2	29	0.415	67.2	61.54	63.08	41	26.5	3.5	50	100	9	15	9	80
PBZ080-316L90	PB03L16-35A	PFB080-035-19.5	3	16	0.1	57.53	50.93	51.51	52	34	3.5	50	100	9	14	8.5	80
PBZ080-317L90	PB03L17-35A	PFB080-035-19.5	3	17	0	60.11	54.11	54.11	52	34	3.5	50	100	9	14	8.5	80
PBZ080-412L103	PB04L12-35A	PFB080-035-20	4	12	0.5	63.93	50.93	54.30	65	46.5	3.5	46.5	100	9	14	8.5	80

Bolt circle diameter $\phi 84$

Welding assembly code	Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	b2	b1	b3	d1	d3	d4	d5	b4	d2
PBZ084-320L84	PB03L20-35A	PFB084-035-13.5	3	20	0.3897	72	63.66	65.79	46	34	9.5	50	107.5	9	14	8	84
PBZ084-320L89	PB03L20-35A	PFB084-035-18.5	3	20	0.3897	72	63.66	65.79	51	34	4.5	50	107.5	9	14	8	84
PBZ084-320L90.5	PB03L20-35A	PFB084-035-20	3	20	0.3897	72	63.66	65.79	52.5	34	3	50	107.5	9	14	8	84
PBZ084-320L98	PB03L20-35A	PFB084-035-27.5	3	20	0.3897	72	63.66	65.79	60	34	3	50	107.5	9	14	9	84

Bolt circle diameter $\phi 125$

Welding assembly code	Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	b2	b1	b3	d1	d3	d4	d5	b4	d2
PBZ125-320L107.5	PB03L20-45A	PFB125-045-25	3	20	0.3897	72	63.66	65.79	57.5	34.5	5	80	148	9	18	11	125
PBZ125-420L120	PB04L20-45A	PFB125-045-25A	4	20	0	92.88	84.88	84.88	70	47	7.5	80	148	9	18	11	125

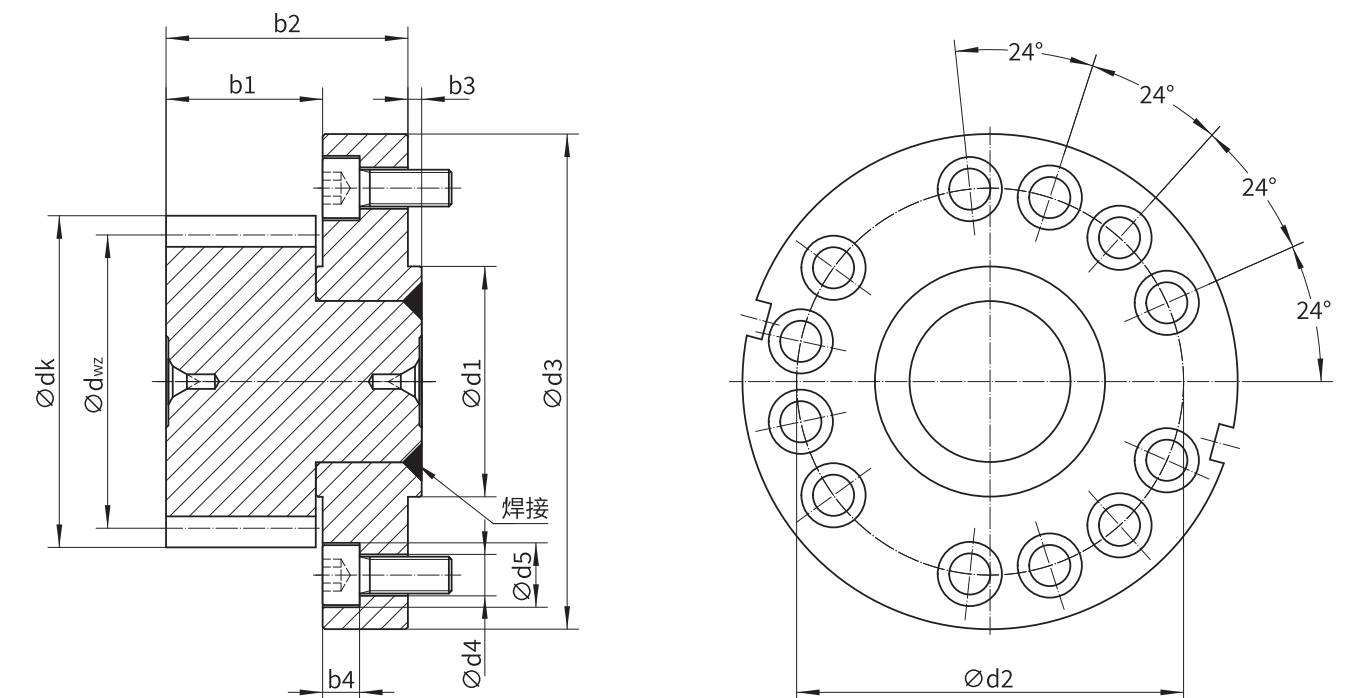
(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

Helical Gear (Split Welded Gear)

Accuracy Class 5 GB (Chinese National Standards)/T10095 / Alloy Steel

Left Hand (LH) Gear

Carburizing, quenching, and gear tooth surface grinding.



Bolt circle diameter $\phi 140$

Welding assembly code	Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	b2	b1	b3	d1	d3	d4	d5	b4	d2
PBZ140-424L141	PB04L24-60A	PFB140-060-30	4	24	0	109.86	101.86	101.86	75	47	5	100	180	17	25	16	140
PBZ140-519L155	PB05L19-60A	PFB140-060-34	5	19	0.05	111.3	100.8	101.29	89	57	6	100	180	17	25	16	140

Bolt circle diameter $\phi 160$

Welding assembly code	Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	b2	b1	b3	d1	d3	d4	d5	b4	d2
PBZ160-519L172	PB05L19-75A	PFB160-060-42	5	19	0.05	111.3	100.8	101.29	97	59	6.5	100	200	22	32	23	160

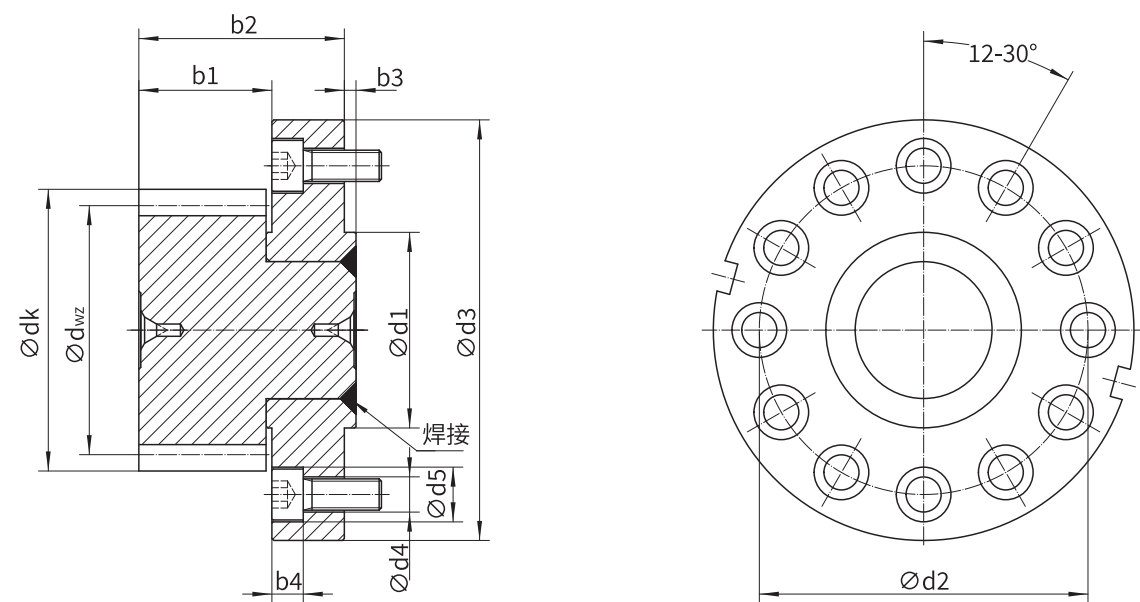
(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

Spur GearGear (Welded Gear)

Accuracy Class5 GB (Chinese National Standards)/T10095 / Alloy Steel

Spur Gear

Carburizing, quenching, and gear tooth surface grinding.



Bolt circle diameter $\phi 84$

Welding assembly code	Gear Code	Adapter Plate Code	Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	b2	b1	b3	d1	d3	d4	d5	b4	d2
PBZ084-320S90.5	PB03S20-080A	PFB084-035-20	3	20	0.08	66.48	60	60.89	52	34	3	50	107.5	9	14	8	84

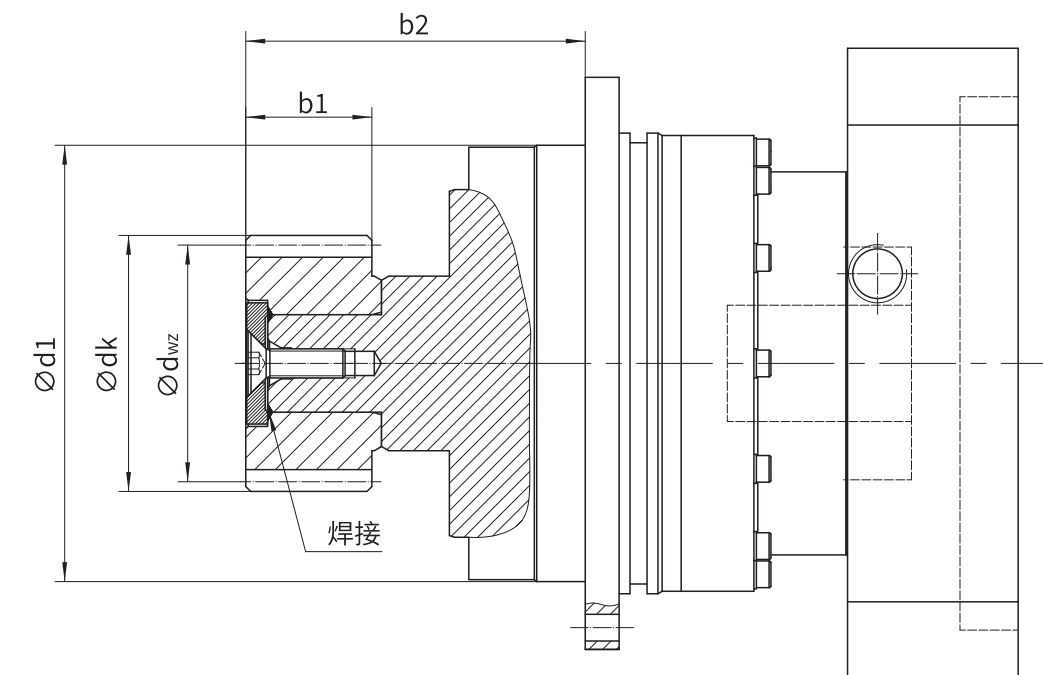
(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

Helical GearGear (Direct-locking gears)

Accuracy Class5 GB (Chinese National Standards)/T10095 / Alloy Steel

Left Hand (LH) Gear

Carburizing, quenching, and gear tooth surface grinding.



Model ND090

Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	b1	b2	d1
2	23	0	52.80	48.81	48.81	26	70	90

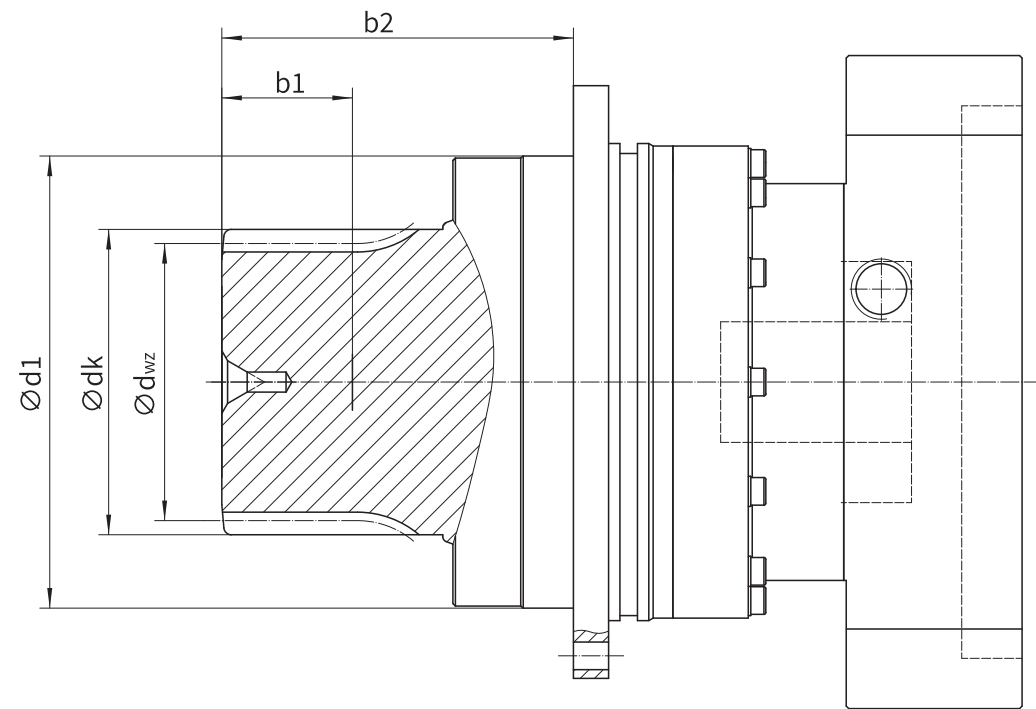
Model NDV140

Module	Z ⁽¹⁾	X ⁽²⁾	dk ⁽³⁾	d _{wz} ⁽⁴⁾	d _w ⁽⁵⁾	b1	b2	d1
3	20	0.3897	72.00	63.66	65.79	31	69	140
4	20	0.2	94.48	84.88	86.40	41	95	140

(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

Helical GearGear (Integral Type Gear)

Accuracy Class5 GB (Chinese National Standards)/T10095 / Alloy Steel
Left Hand (LH)Gear
Carburizing, quenching, and gear tooth surface grinding.



Model ND090

Module	$Z^{(1)}$	$\chi^{(2)}$	$dk^{(3)}$	$d_{wz}^{(4)}$	$d_w^{(5)}$	b1	b2	d1
2	20	0.4	48.04	42.44	43.89	26	70	90
2	26	0.4	60.80	55.17	56.65	26	70	90

Model NDV110

Module	$Z^{(1)}$	$\chi^{(2)}$	$dk^{(3)}$	$d_{wz}^{(4)}$	$d_w^{(5)}$	b1	b2	d1
2	20	0.4	48.04	42.44	43.89	26	69.5	110
2	26	0.407	60.80	55.17	56.67	26	69.5	110

Model NDV140

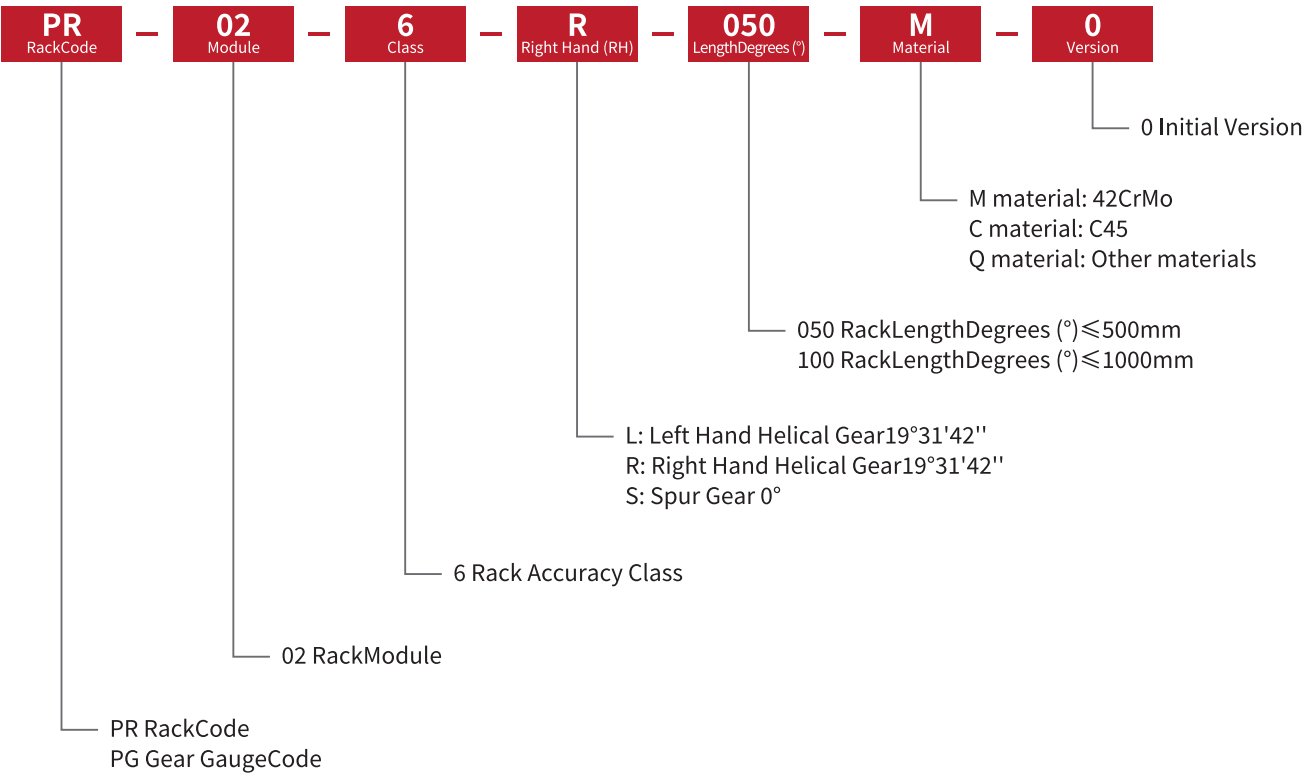
Module	$Z^{(1)}$	$\chi^{(2)}$	$dk^{(3)}$	$d_{wz}^{(4)}$	$d_w^{(5)}$	b1	b2	d1
2	20	0.4	48.04	42.44	43.89	26	95	140
2	29	0.4	67.20	61.54	63.03	26	79	140

(1) Number of teeth (2) Profile shift coefficient (3) Tip diameter (4) Reference diameter (5) Working pitch diameter

RACK

We provide customers with high precision, high rigidity, high torque prdcision planetary gearbox.

Code Meaning



Example: PR026R050M0

Maximum Driving Force

Module	1.5		2		3		4		5		6		8	
Accuracy Class	6	8	6	8	6	8	6	8	6	8	6	8	6	8
RackMaterial	45/42CrMo	45	45/42CrMo	45	45/42CrMo	45	45/42CrMo	45	45/42CrMo	45	45/42CrMo	45	45/42CrMo	45
RackHeat Treatment	Induction Hardening	Quenching and Tempering	Induction Hardening	Quenching and Tempering	Induction Hardening	Quenching and Tempering	Induction Hardening	Quenching and Tempering	Induction Hardening	Quenching and Tempering	Induction Hardening	Quenching and Tempering	Induction Hardening	Quenching and Tempering
Maximum Driving Force(N)	8385	2700	13900	5150	24000	8900	43100	16000	67800	25100	98000	36500	175100	65000

GrindingInduction Hardening / Helical Gear

Material

45

Induction Hardening

HRC50-55

Pressure Angle

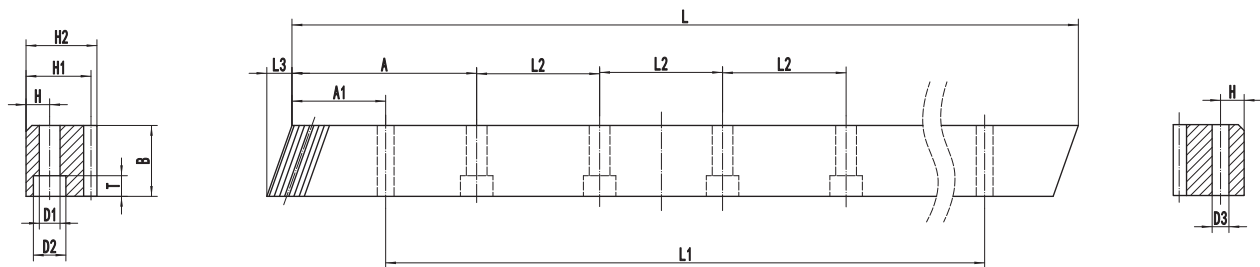
20°

Precision

6

Helix Angle

Right Hand (RH) 19°31'42"



Specification Code	Module	L	L3	Number of Teeth	B	H2	H1	A	L2	Number of Holes	H	D1	D2	T	A1	L1	D3	Cumulative Pitch Error
PR156R050C0	1.5	500	6.7	100	19	19	17.5	62.5	125	4	8	7	11	7	31.7	436.6	5.7	0.029
PR156R100C0	1.5	1000	6.7	200	19	19	17.5	62.5	125	8	8	7	11	7	31.7	936.6	5.7	0.033
PR026R050C0	2	500	8.5	75	24	24	22	62.5	125	4	8	7	11	7	31.7	436.6	5.7	0.029
PR026R100C0	2	1000	8.5	150	24	24	22	62.5	125	8	8	7	11	7	31.7	936.6	5.7	0.034
PR036R050C0	3	500	10.3	50	29	29	26	62.5	125	4	9	10	15	9	35	430	7.7	0.032
PR036R100C0	3	1000	10.3	100	29	29	26	62.5	125	8	9	10	15	9	35	930	7.7	0.037
PR046R050C0	4	506.67	13.8	38	39	39	35	62.5	125	4	12	10	15	9	33.3	433	7.7	0.034
PR046R100C0	4	1000	13.8	75	39	39	35	62.5	125	8	12	10	15	9	33.3	933.4	7.7	0.04
PR056R050C0	5	500	17.4	30	49	39	34	62.5	125	4	12	14	20	13	37.5	425	11.7	0.034
PR056R100C0	5	1000	17.4	60	49	39	34	62.5	125	8	12	14	20	13	37.5	925	11.7	0.04
PR066R050C0	6	500	20.9	25	59	49	43	62.5	125	4	16	18	26	17	37.5	425	15.7	0.034
PR066R100C0	6	1000	20.9	50	59	49	43	62.5	125	8	16	18	26	17	37.5	925	15.7	0.04
PR086R050C0	8	480	28	18	79	79	71	60	120	4	25	22	33	21	120	240	19.7	0.037
PR086R100C0	8	960	28	36	79	79	71	60	120	8	25	22	33	21	120	720	19.7	0.043

GrindingInduction Hardening / Spur Gear

Material

42CrMo

Induction Hardening

HRC50-55

Pressure Angle

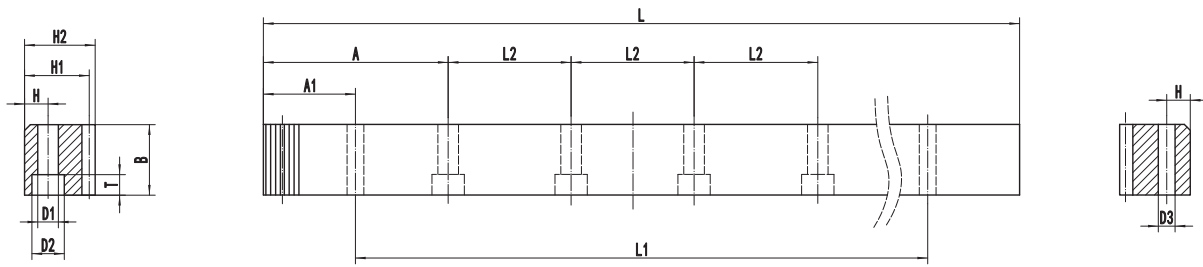
20°

Precision

6

Helix Angle

0



Specification Code	Module	L	Number of Teeth	B	H2	H1	A	L2	Number of Holes	H	D1	D2	T	A1	L1	D3	Cumulative Pitch Error
PR156S050M0	1.5	499.51	106	17	17	15.5	62.44	124.88	4	8	6	9.5	7	29	441.5	5.7	0.029
PR156S100M0	1.5	999.03	212	17	17	15.5	62.44	124.88	8	8	6	9.5	7	29	941	5.7	0.033
PR026S050M0	2	502.65	80	24	24	22	62.83	125.66	4	8	7	11	7	31.3	440.1	5.7	0.029
PR026S100M0	2	1005.31	160	24	24	22	62.83	125.66	8	8	7	11	7	31.3	942.7	5.7	0.034
PR036S050M0	3	508.94	54	29	29	26	63.62	127.23	4	9	10	15	9	34.4	440.1	7.7	0.032
PR036S100M0	3	1017.88	108	29	29	26	63.62	127.23	8	9	10	15	9	34.4	949.1	7.7	0.037
PR046S050M0	4	502.65	40	39	39	35	62.83	125.66	4	12	10	15	9	37.5	427.7	7.7	0.034
PR046S100M0	4	1005.31	80	39	39	35	62.83	125.66	8	12	10	15	9	37.5	930.3	7.7	0.04
PR056S050M0	5	502.65	32	49	39	34	62.83	125.66	4	12	14	20	13	30.1	442.4	11.7	0.034
PR056S100M0	5	1005.31	64	49	39	34	62.83	125.66	8	12	14	20	13	30.1	945	11.7	0.04
PR066S050M0	6	508.94	27	59	49	43	63.62	127.23	4	16	18	26	17	31.4	446.1	15.7	0.034
PR066S100M0	6	1017.88	54	59	49	43	63.62	127.23	8	16	18	26	17	31.4	955	15.7	0.04
PR086S050M0	8	502.65	20	79	79	71	62.83	125.66	4	25	22	33	21	26.6	449.5	19.7	0.037
PR086S100M0	8	1005.31	40	79	79	71	62.83	125.66	8	25	22	33	21	26.6	952	19.7	0.043

GrindingInduction Hardening / Helical Gear

Material

42CrMo

Induction Hardening

HRC50-55

Pressure Angle

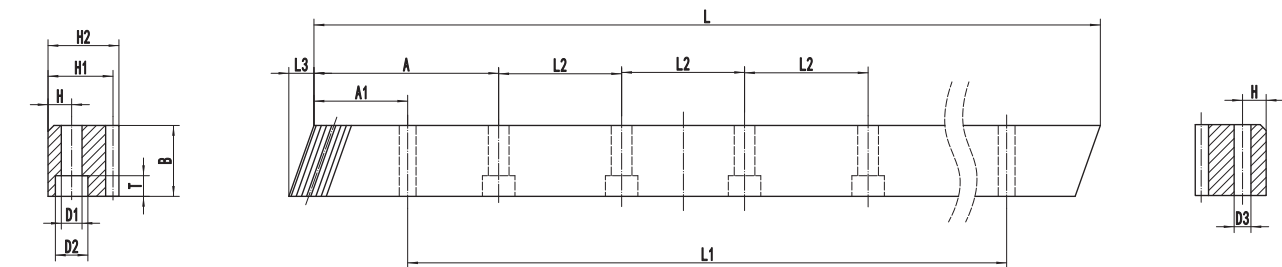
20°

Precision

6

Helix Angle

Right Hand (RH) 19°31'42"



Specification Code	Module	L	L3	Number of Teeth	B	H2	H1	A	L2	Number of Holes	H	D1	D2	T	A1	L1	D3	Cumulative Pitch Error
PR156R050M0	1.5	500	6.7	100	19	19	17.5	62.5	125	4	8	7	11	7	31.7	436.6	5.7	0.029
PR156R100M0	1.5	1000	6.7	200	19	19	17.5	62.5	125	8	8	7	11	7	31.7	936.6	5.7	0.033
PR026R050M0	2	500	8.5	75	24	24	22	62.5	125	4	8	7	11	7	31.7	436.6	5.7	0.029
PR026R100M0	2	1000	8.5	150	24	24	22	62.5	125	8	8	7	11	7	31.7	936.6	5.7	0.034
PR036R050M0	3	500	10.3	50	29	29	26	62.5	125	4	9	10	15	9	35	430	7.7	0.032
PR036R100M0	3	1000	10.3	100	29	29	26	62.5	125	8	9	10	15	9	35	930	7.7	0.037
PR046R050M0	4	506.67	13.8	38	39	39	35	62.5	125	4	12	10	15	9	33.3	433	7.7	0.034
PR046R100M0	4	1000	13.8	75	39	39	35	62.5	125	8	12	10	15	9	33.3	933.4	7.7	0.04
PR056R050M0	5	500	17.4	30	49	39	34	62.5	125	4	12	14	20	13	37.5	425	11.7	0.034
PR056R100M0	5	1000	17.4	60	49	39	34	62.5	125	8	12	14	20	13	37.5	925	11.7	0.04
PR066R050M0	6	500	20.9	25	59	49	43	62.5	125	4	16	18	26	17	37.5	425	15.7	0.034
PR066R100M0	6	1000	20.9	50	59	49	43	62.5	125	8	16	18	26	17	37.5	925	15.7	0.04
PR086R050M0	8	480	28	18	79	79	71	60	120	4	25	22	33	21	120	240	19.7	0.037
PR086R100M0	8	960	28	36	79	79	71	60	120	8	25	22	33	21	120	720	19.7	0.043

GrindingInduction Hardening / Spur Gear

Material

45

Induction Hardening

HRC50-55

Pressure Angle

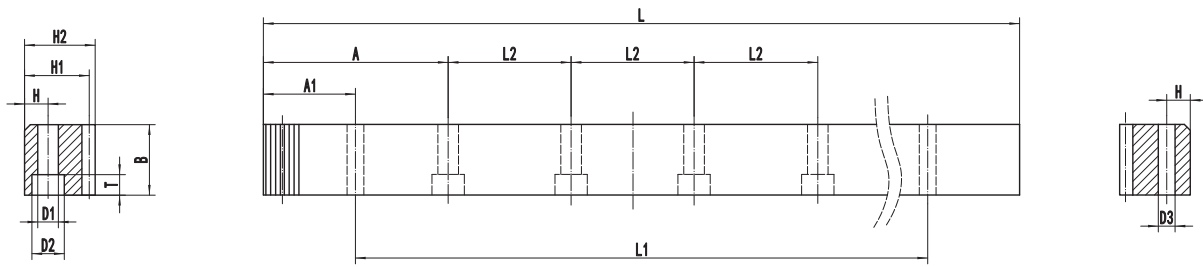
20°

Precision

6

Helix Angle

0



Specification Code	Module	L	Number of Teeth	B	H2	H1	A	L2	Number of Holes	H	D1	D2	T	A1	L1	D3	Cumulative Pitch Error
PR156S050C0	1.5	499.51	106	17	17	15.5	62.44	124.88	4	8	6	9.5	7	29	441.5	5.7	0.029
PR156S100C0	1.5	999.03	212	17	17	15.5	62.44	124.88	8	8	6	9.5	7	29	941	5.7	0.033
PR026S050C0	2	502.65	80	24	24	22	62.83	125.66	4	8	7	11	7	31.3	440.1	5.7	0.029
PR026S100C0	2	1005.31	160	24	24	22	62.83	125.66	8	8	7	11	7	31.3	942.7	5.7	0.034
PR036S050C0	3	508.94	54	29	29	26	63.62	127.23	4	9	10	15	9	34.4	440.1	7.7	0.032
PR036S100C0	3	1017.88	108	29	29	26	63.62	127.23	8	9	10	15	9	34.4	949.1	7.7	0.037
PR046S050C0	4	502.65	40	39	39	35	62.83	125.66	4	12	10	15	9	37.5	427.7	7.7	0.034
PR046S100C0	4	1005.31	80	39	39	35	62.83	125.66	8	12	10	15	9	37.5	930.3	7.7	0.04
PR056S050C0	5	502.65	32	49	39	34	62.83	125.66	4	12	14	20	13	30.1	442.4	11.7	0.034
PR056S100C0	5	1005.31	64	49	39	34	62.83	125.66	8	12	14	20	13	30.1	945	11.7	0.04
PR066S050C0	6	508.94	27	59	49	43	63.62	127.23	4	16	18	26	17	31.4	446.1	15.7	0.034
PR066S100C0	6	1017.88	54	59	49	43	63.62	127.23	8	16	18	26	17	31.4	955	15.7	0.04
PR086S050C0	8	502.65	20	79	79	71	62.83	125.66	4	25	22	33	21	26.6	449.5	19.7	0.037
PR086S100C0	8	1005.31	40	79	79	71	62.83	125.66	8	25	22	33	21	26.6	952	19.7	0.043

Material

45

Induction Hardening

HRC50-55

Pressure Angle

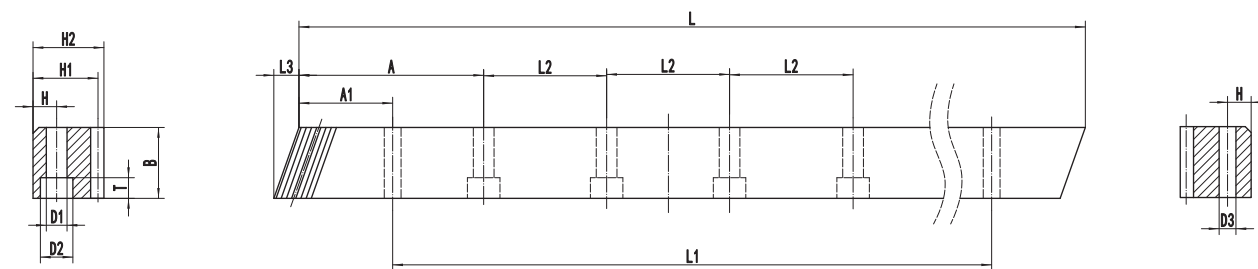
20°

Precision

8

Helix Angle

Right Hand (RH) 19°31'42"



Specification Code	Module	L	L3	Number of Teeth	B	H2	H1	A	L2	Number of Holes	H	D1	D2	T	A1	L1	D3	Cumulative Pitch Error
PR158R050C0	1.5	500	6.7	100	17	17	15.5	62.5	125	4	6	6	10	6	31.7	436.6	5.7	0.057
PR158R100C0	1.5	1000	6.7	200	17	17	15.5	62.5	125	8	6	6	10	6	31.7	936.6	5.7	0.066
PR028R050C0	2	500	8.5	75	24	24	22	62.5	125	4	8	7	11	7	31.7	436.6	5.7	0.057
PR028R100C0	2	1000	8.5	150	24	24	22	62.5	125	8	8	7	11	7	31.7	936.6	5.7	0.066
PR038R050C0	3	500	10.3	50	29	29	26	62.5	125	4	9	10	15	9	35	430	7.7	0.066
PR038R100C0	3	1000	10.3	100	29	29	26	62.5	125	8	9	10	15	9	35	930	7.7	0.072
PR048R050C0	4	506.67	13.8	38	39	39	35	62.5	125	4	12	10	15	9	33.3	433	7.7	0.068
PR048R100C0	4	1000	13.8	75	39	39	35	62.5	125	8	12	10	15	9	33.3	933.4	7.7	0.078
PR058R050C0	5	500	17.4	30	49	39	34	62.5	125	4	12	14	20	13	37.5	425	11.7	0.068
PR058R100C0	5	1000	17.4	60	49	39	34	62.5	125	8	12	14	20	13	37.5	925	11.7	0.078
PR068R050C0	6	500	20.9	25	59	49	43	62.5	125	4	16	18	26	17	37.5	425	15.7	0.068
PR068R100C0	6	1000	20.9	50	59	49	43	62.5	125	8	16	18	26	17	37.5	925	15.7	0.078
PR088R050C0	8	480	28	18	79	79	71	60	120	4	25	22	33	21	120	240	19.7	0.073
PR088R100C0	8	960	28	36	79	79	71	60	120	8	25	22	33	21	120	720	19.7	0.085

Material

45

Induction Hardening

HRC50-55

Pressure Angle

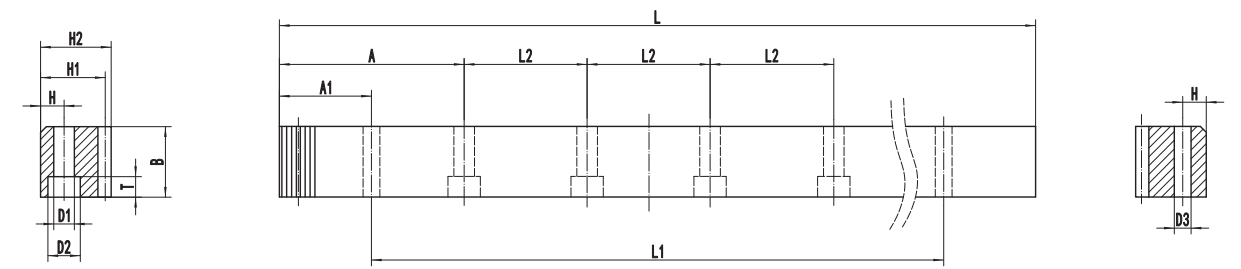
20°

Precision

8

Helix Angle

0



Specification Code	Module	L	Number of Teeth	B	H2	H1	A	L2	Number of Holes	H	D1	D2	T	A1	L1	D3	Cumulative Pitch Error
PR158S050C0	1.5	499.51	106	17	17	15.5	62.44	124.88	4	8	6	9.5	7	29	441.5	5.7	0.057
PR158S100C0	1.5	999.03	216	17	17	15.5	62.44	124.88	8	8	6	9.5	7	29	941	5.7	0.066
PR028S050C0	2	502.65	80	24	24	22	62.83	125.66	4	8	7	11	7	31.3	440.1	5.7	0.057
PR028S100C0	2	1005.31	160	24	24	22	62.83	125.66	8	8	7	11	7	31.3	942.7	5.7	0.066
PR038S050C0	3	508.94	54	29	29	26	63.62	127.23	4	9	10	15	9	34.4	440.1	7.7	0.066
PR038S100C0	3	1017.88	108	29	29	26	63.62	127.23	8	9	10	15	9	34.4	949.1	7.7	0.072
PR048S050C0	4	502.65	40	39	39	35	62.83	125.66	4	12	10	15	9	37.5	427.7	7.7	0.068
PR048S100C0	4	1005.31	80	39	39	35	62.83	125.66	8	12	10	15	9	37.5	930.3	7.7	0.078
PR058S050C0	5	502.65	32	49	39	34	62.83	125.66	4	12	14	20	13	30.1	442.4	11.7	0.068
PR058S100C0	5	1005.31	64	49	39	34	62.83	125.66	8	12	14	20	13	30.1	945	11.7	0.078
PR068S050C0	6	446.1	27	59	49	43	63.62	127.23	4	16	18	26	17	31.4	446.1	15.7	0.068
PR068S100C0	6	1017.88	54	59	49	43	63.62	127.23	8	16	18	26	17	31.4	995	15.7	0.078
PR088S050C0	8	502.65	20	79	79	71	62.83	125.66	4	25	22	33	21	26.6	449.5	19.7	0.073
PR088S100C0	8	1005.31	40	79	79	71	62.83	125.66	8	25	22	33	21	26.6	952	19.7	0.085

GrindingInduction Hardening / Helical Gear

Material

45

Induction Hardening

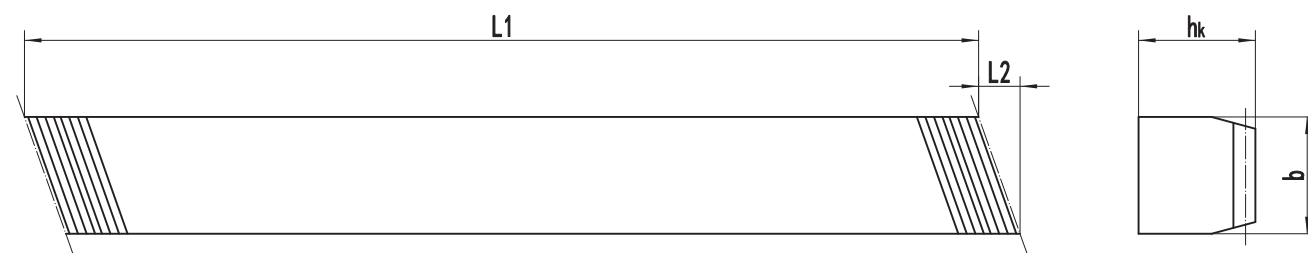
HRC50-55

Pressure Angle

20°

Helix Angle

Left Hand (LH) 19°31'42"



Specification Code	Module	L1	Number of Teeth	L2	b	h_k
PG15L050C0	1.5	150	30	4.9	17	17
PG15L050C1	1.5	150	30	4.9	19	19
PG02L050C0	2	200	30	8.87	25	24
PG03L050C0	3	200	20	10.64	30	29
PG04L050C0	4	200	15	14.19	40	39
PG05L050C0	5	200	12	17.73	50	39
PG06L050C0	6	200	10	21.28	60	49
PG08L050C0	8	213.33	8	28.37	80	79

*Left Hand (LH) Rack Mounting Block Matching Right Hand (RH) Rack

GrindingInduction Hardening / Spur Gear

Material

45

Induction Hardening

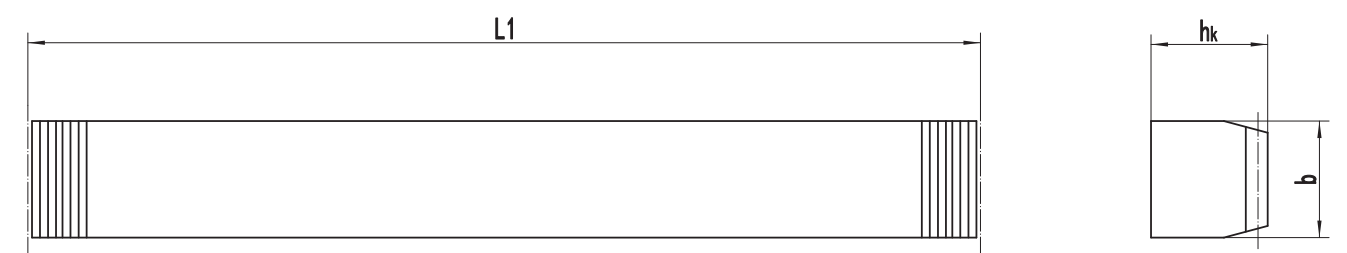
HRC50-55

Pressure Angle

20°

Helix Angle

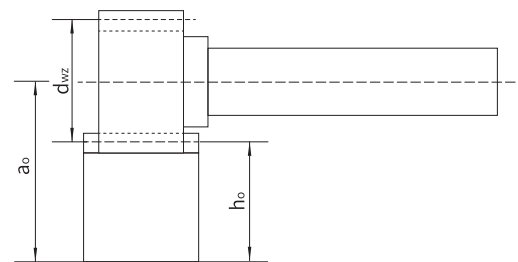
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Specification Code	Module	L1	Number of Teeth	b	h_k
PG15S050C0	1.5	141.37	30	17	17
PG02S050C0	2	188.49	30	25	24
PG03S050C0	3	188.49	20	30	29
PG04S050C0	4	188.49	15	40	39
PG05S050C0	5	188.49	12	50	39
PG06S050C0	6	188.49	10	60	49
PG08S050C0	8	201.06	10	80	79

*Left Hand (LH) Rack Mounting Block Matching Right Hand (RH) Rack

PART 1: Calculation of centre distance a between gearwheel and rack.



$$a_o = \frac{d_{wz}}{2} + h_o$$

Set consists of order code gear and order code flange.

PART 2: Calculation of tangential force on gears and racks

The data provided in the load table is based on fully lubricated conditions with uniform, smooth grease. However, actual application scenarios are diverse, so appropriate factors: S_B , K_A , $L_{KH\beta}$, and F_n (see symbol notes) should be considered to match the corresponding operating conditions.

Tangential Force Calculation Formula

$$a = \frac{v}{t_b} \quad [m/s^2]$$

$$F_u = \frac{m \cdot g + m \cdot a}{1000} \quad (\text{For vertical shaft}) \quad [kN]$$

$$F_u = \frac{m \cdot g \cdot \mu + m \cdot a}{1000} \quad (\text{For horizontal shaft}) \quad [kN]$$

$$F_{u \text{ zul}} = \frac{F_{u \text{ Tab}}}{K_A \cdot S_B \cdot f_n \cdot L_{KH\beta}} \quad [kN]$$

*For dimension formulas, please refer to page ZD-3.
The condition $F_u < F_{u \text{ zul}}$ must be satisfied.

a	Acceleration or Deceleration	m/s ²
v	Travel / Lifting Speed	mm
t _b	Acceleration Time	s
F _u	External Force on Gear (Theoretical Value)	N
m	Moved Mass	kg
g	Gravitational Acceleration	9.81m/s ²
μ	Friction Coefficient	-
K _A	Load Factor	-
S _B	Safety Factor	-
f _n	Service Life Factor	-
L _{KHβ}	Linear Load Distribution Factor	-
F _{u zul}	External Force on Gear (Actual Value)	N

Load Factor K_A

Drive	Load type depends on the driven components		
	Uniform	Medium impact	Heavy impact
Uniform	1,00	1,25	1,75
Light impact	1,25	1,50	2,00
Medium impact	1,50	1,75	2,25
Safety Factor S _B The safety factor can be calculated based on empirical data (S = 1.1 ÷ 1.4) Service Life Factor f _n			

PART 3: Appropriate coefficient

Consider the gear pitch line velocity and lubrication conditions

Lubrication	Kontin	Daily	Monthly
Gear Pitch Line Velocity m/sec m/min			
0,5 30	0,85	0,95	von 3 bis 10
1,0 60	0,95	1,10	
1,5 90	1,00	1,20	
2,0 120	1,05	1,30	
3,0 180	1,10	1,50	
5,0 300	1,25	1,90	

Linear Load Distribution Factor L_{KHβ}

The linear load distribution factor accounts for contact pressure and describes the load distribution across the face width of the gear teeth.

$$L_{KH\beta} = \sqrt{K_{H\beta}}$$

$L_{KH\beta} = 1.1$ for bearing supports

= 1.2 when the output shaft end uses preloaded bearings

= 1.5 when the output shaft uses standard bearings

Load Factor K_A

Drive	Load type depends on the driven components		
	Uniform	Medium impact	Heavy impact
Uniform	1,00	1,25	1,75
Light impact	1,25	1,50	2,00
Medium impact	1,50	1,75	2,25

Operating Time Factor b_B

Operating Time	4-8 h	8-12 h	>12 h
Operating Time Factor	1,00	1,20	1,35
Safety Factor S _B The safety factor can be calculated based on empirical data (S = 1.1 to 1.4)			