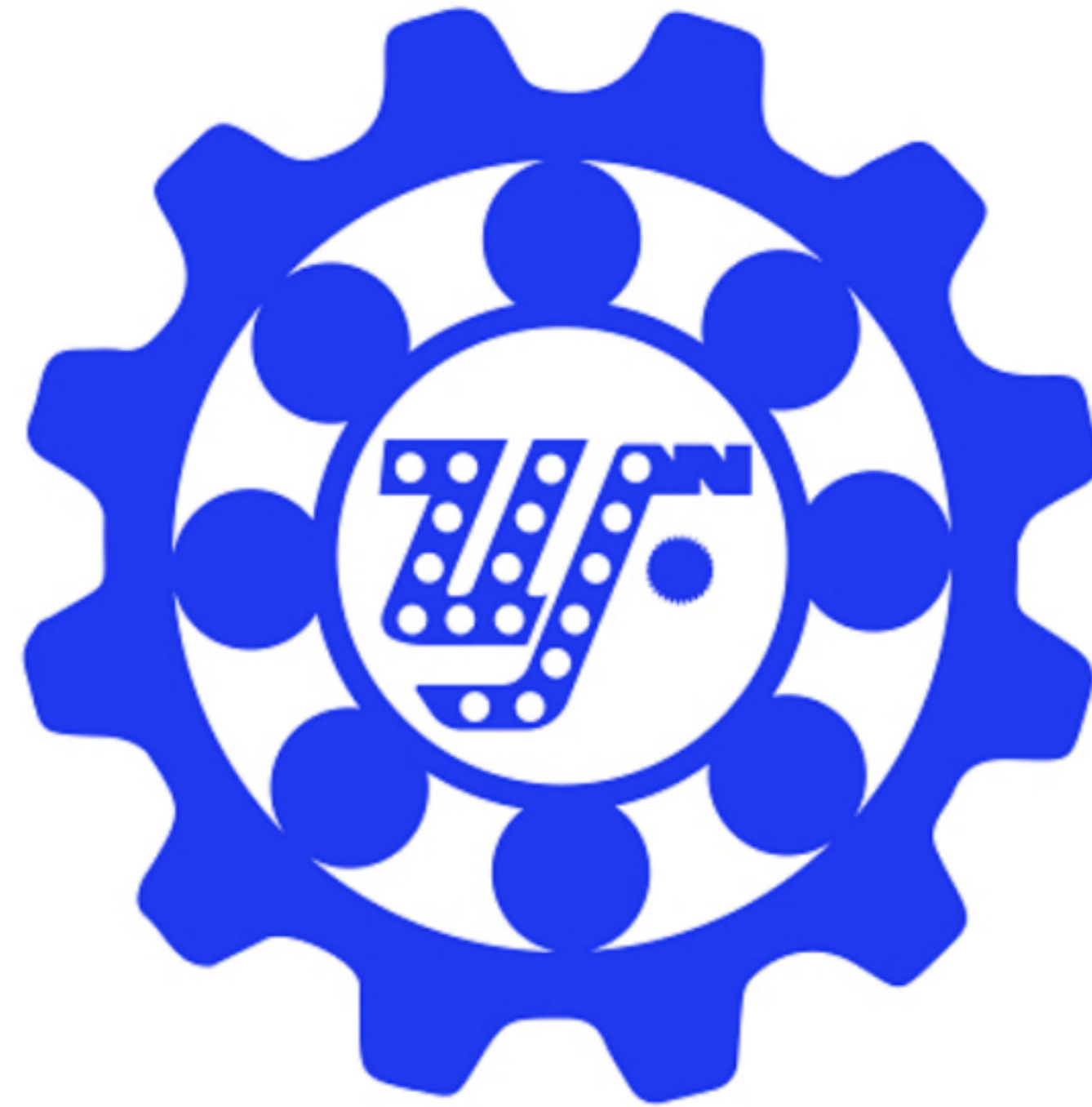




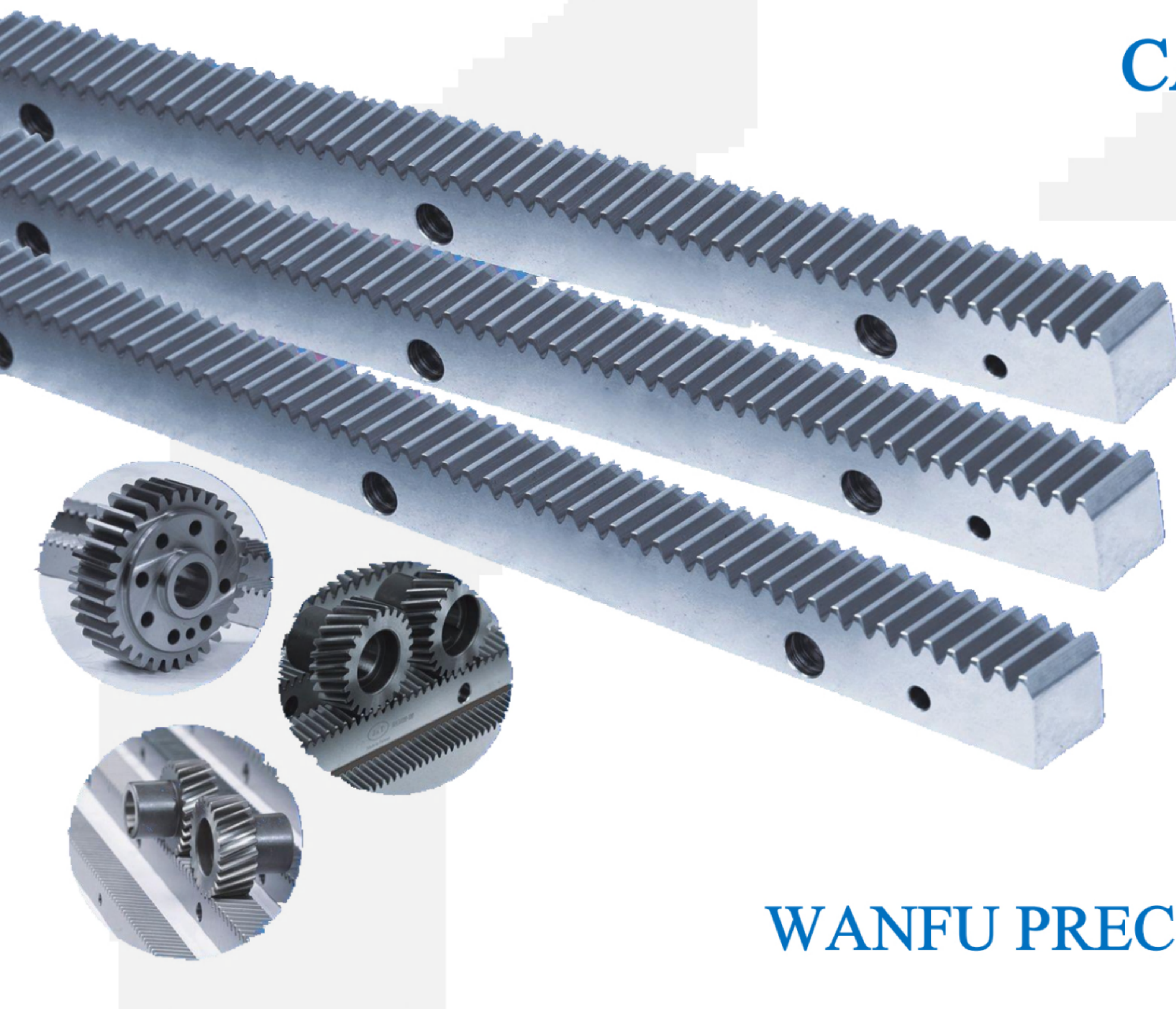
Gear

Design To Customer
Customizaion Design Solution provided in 24 Hours

Gear Rack



WANFU PRECISION
GEAR RACK
CATALOGUE



WANFU PRECISION COMPANY LIMITED

—Member of WANFU Group



ABOUT US

WanFu Precision Co., Limited is established in 2006, is a manufacturer of linear motion systems. Member of WanFu Group, We provide to customers with linear motion customization solutions. Adhering to the business philosophy of "professional, integrity, and efficiency", we look forward to contributing to the world's automated manufacturing.

Our products include:

- ▶ Transmission parts and supporting mechanical parts, such as: ball screw and lead screw, guide rail, ball spline, coupling, support unit, nut seat, motor house, adapter plate, bearing, etc.;
- ▶ Linear transmission components, such as: single axis robot, multi-axis linear modules, electric cylinders, and linear platforms;
- ▶ Motors, controllers, sensors, encoders, etc., such as: stepper motors, servo motors, drivers, etc.;
- ▶ Design, assembly and debugging of non-standard automation equipment.

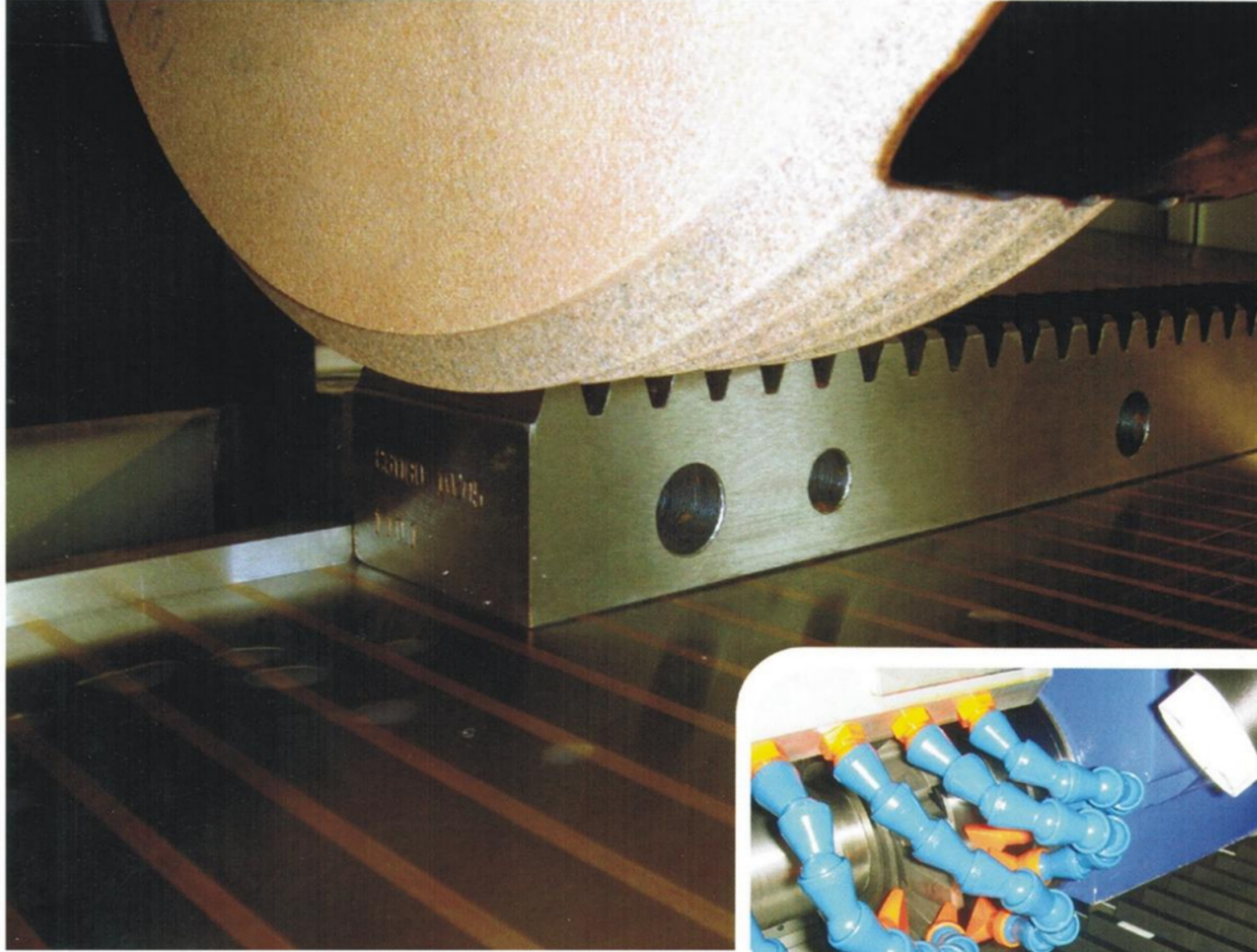
www.wanfgroup.com

MAIN PRODUCTS

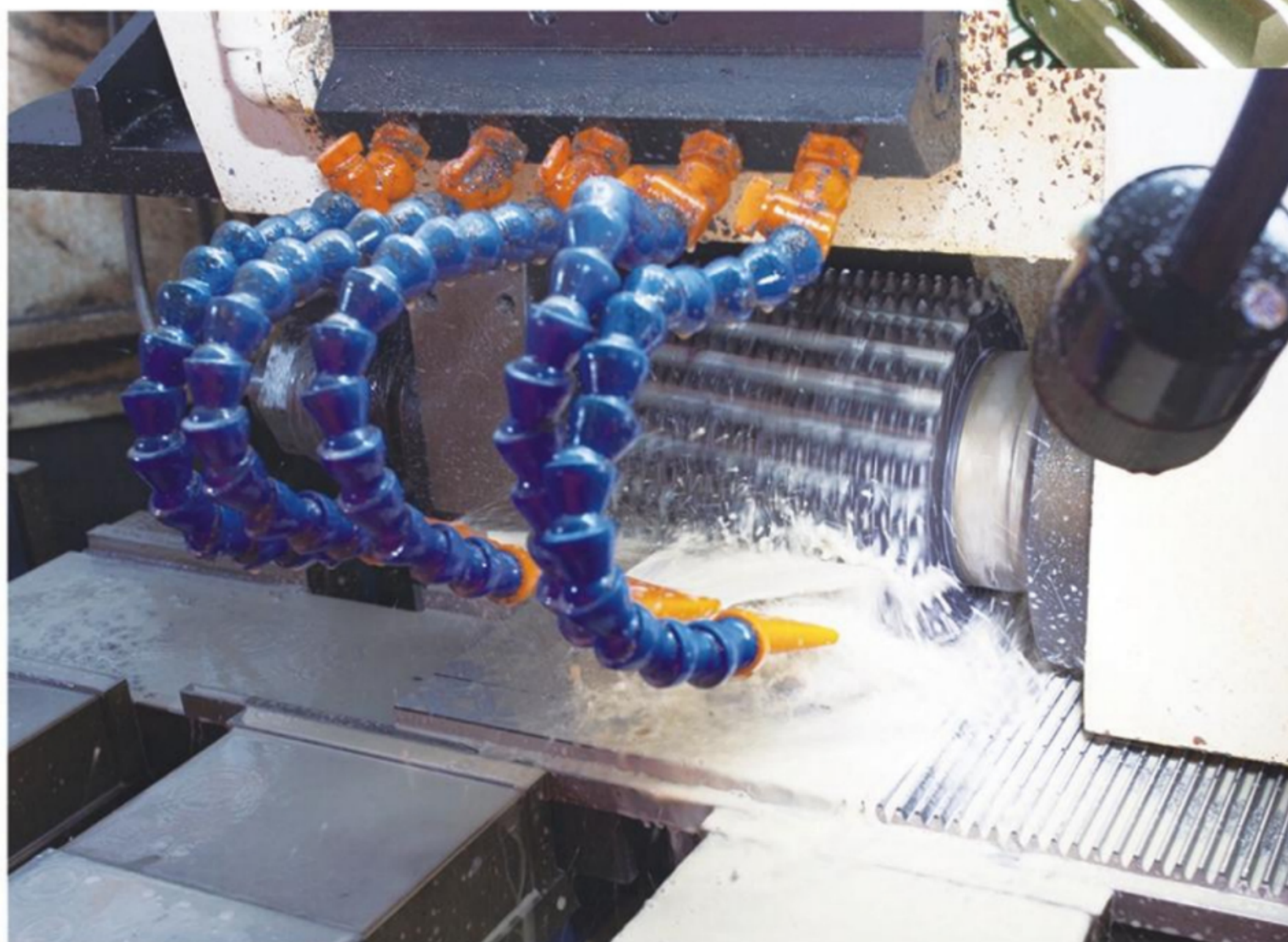
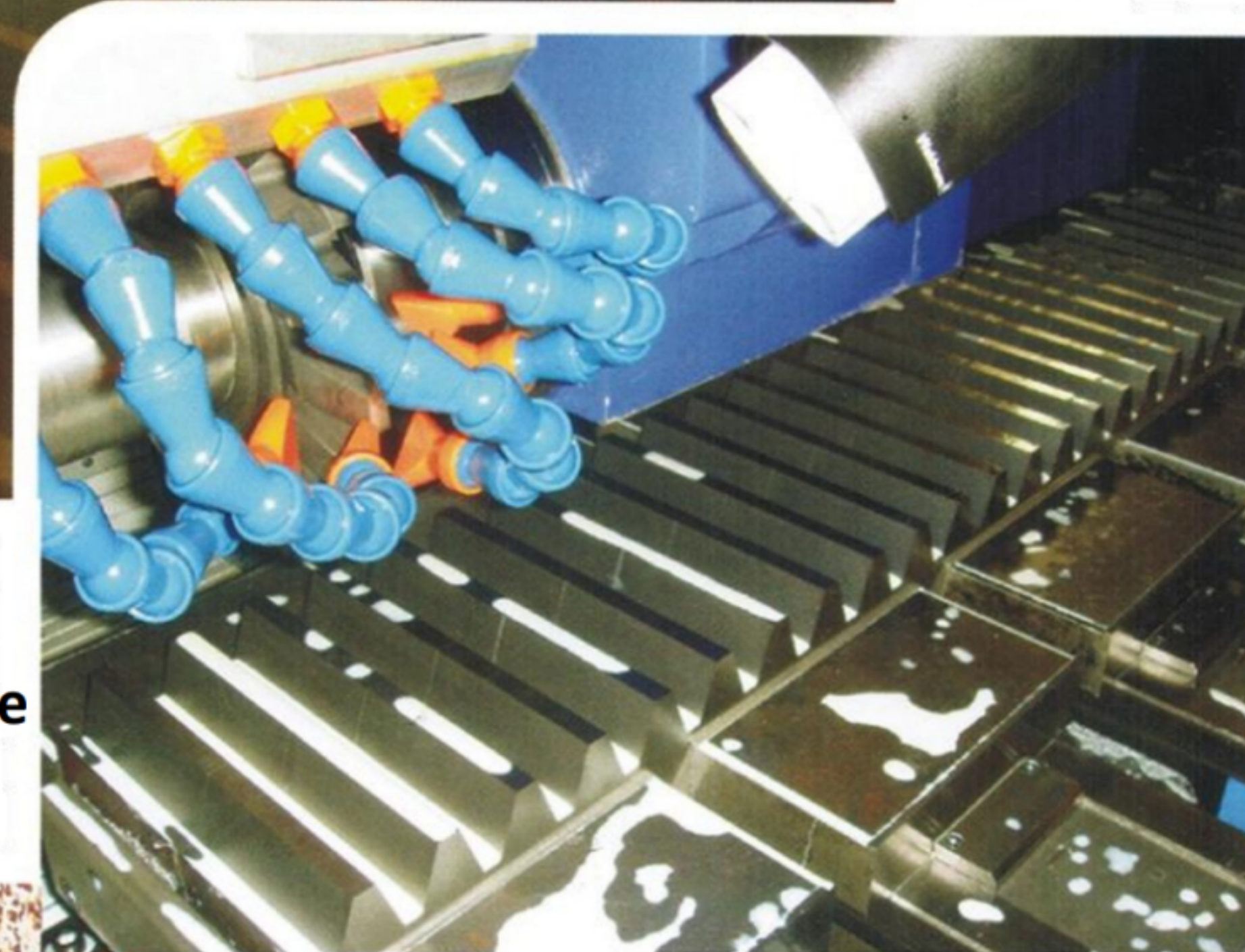




Production Equipment



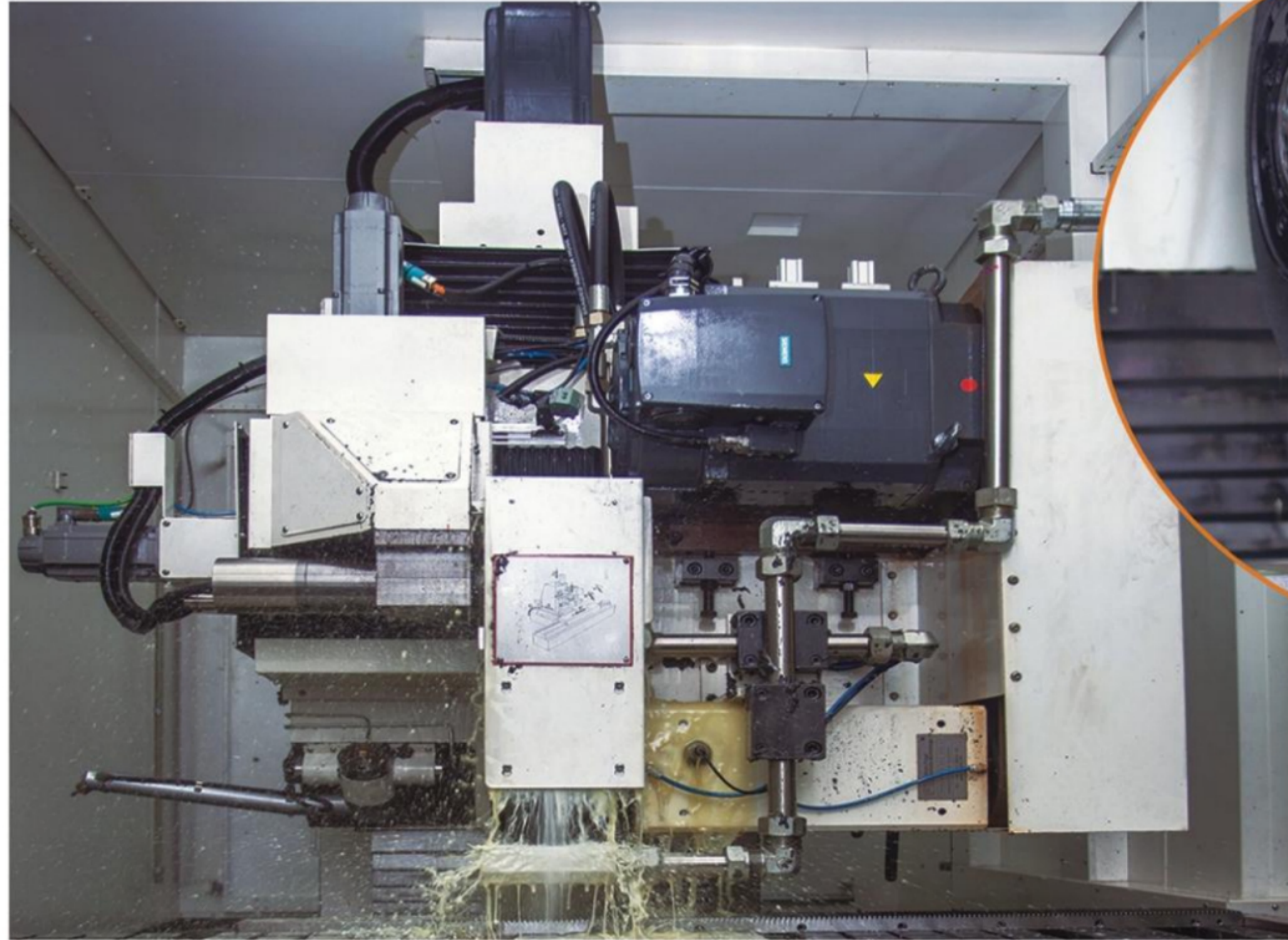
- Germany CNC grinding and milling machine



- Milling the rack tooth



Production Equipment



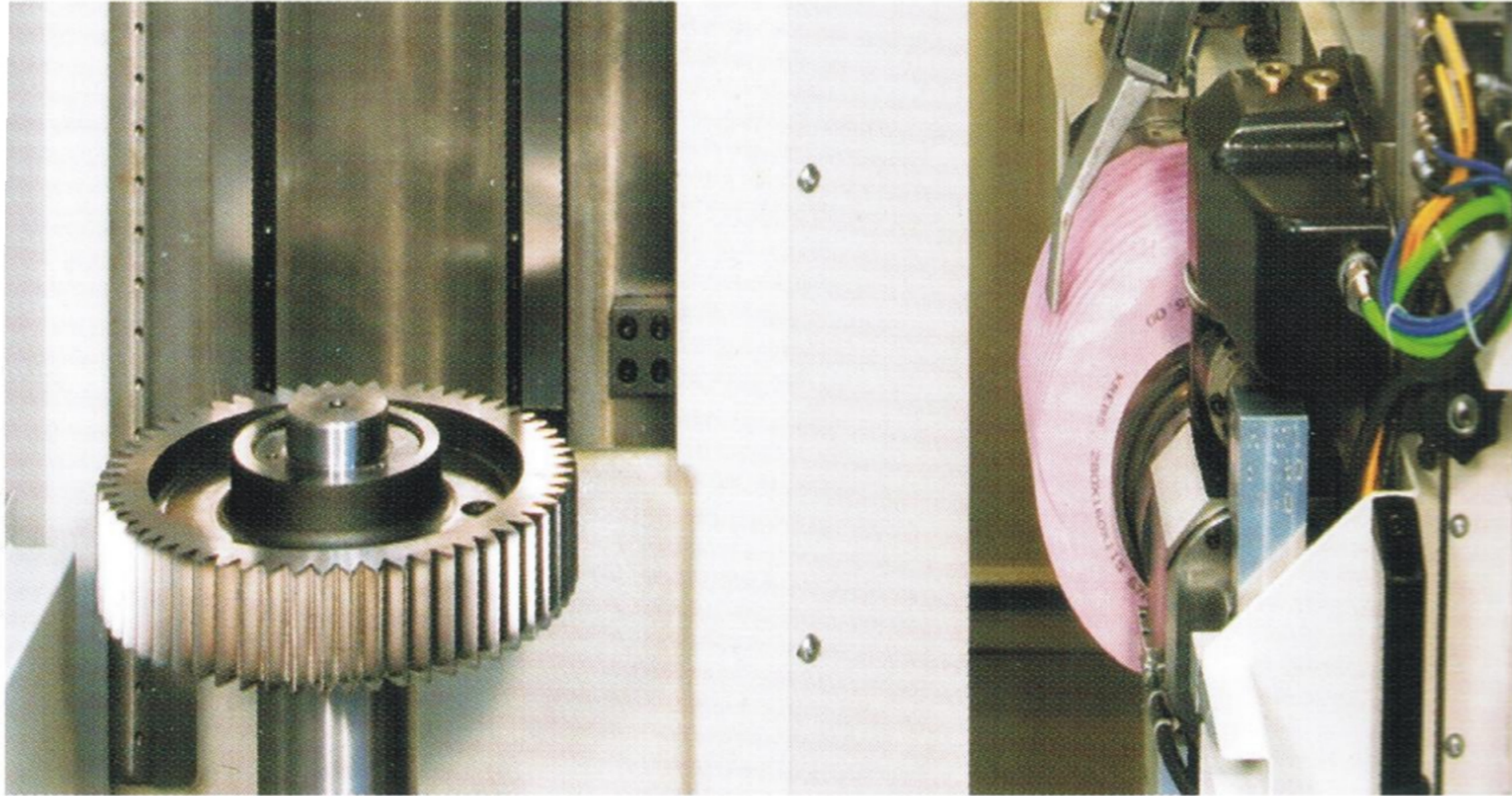
● Grinding the teeth of gear rack



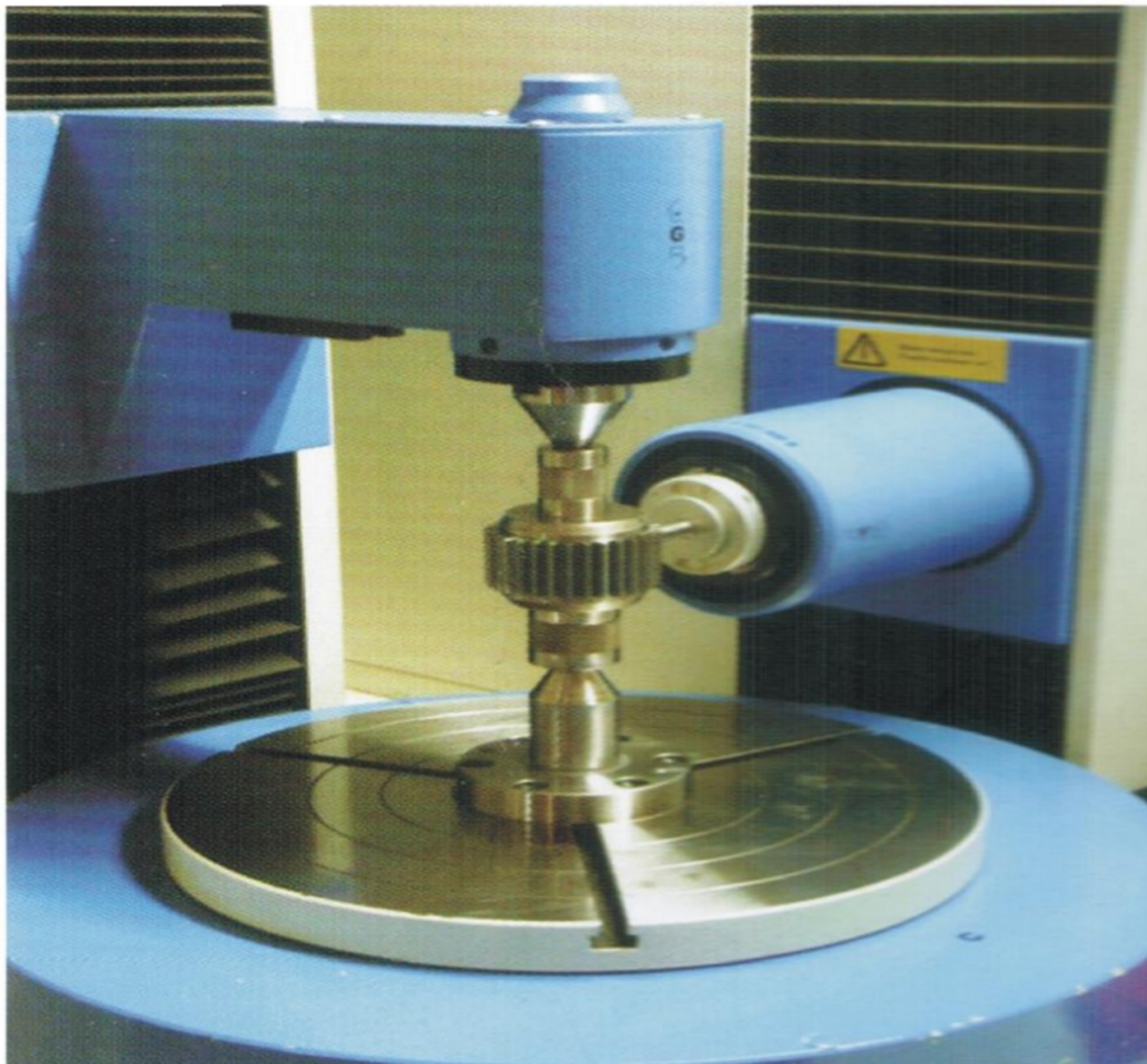
● Testing gear rack



Production Equipment



● Grinding the teeth of pinion



● Testing the pinion

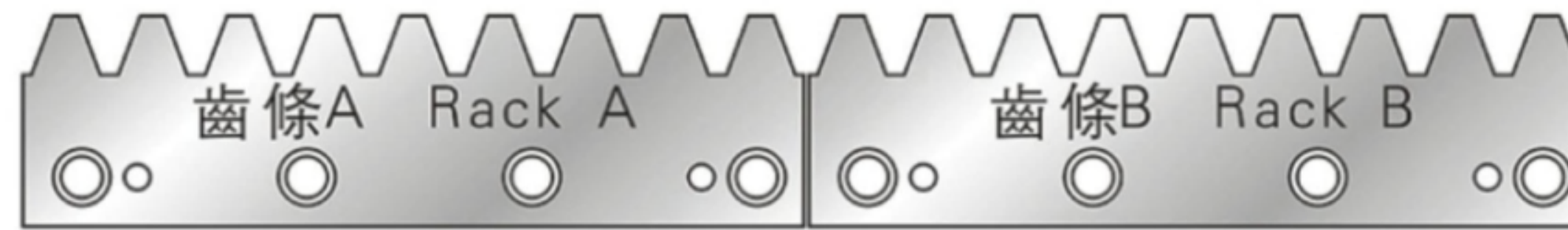


Rack Assembly Steps

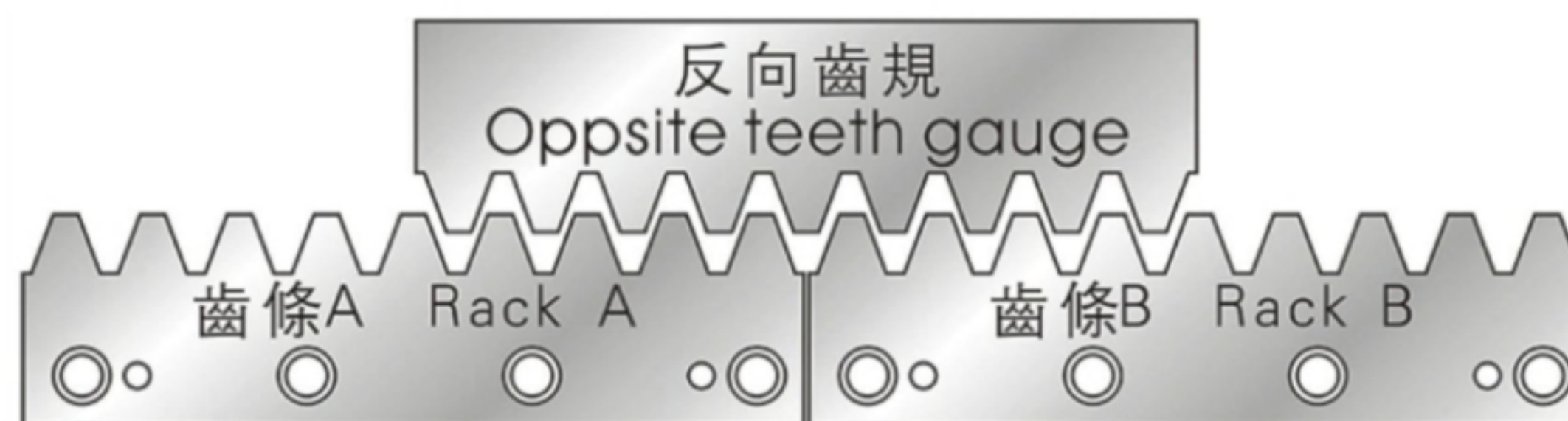
WANFU RACK

- 1 Install the rack A and rack B on the base. (The side of the rack and the base are corresponding to the installation hole.)
- 2 Install the opposite teeth gauge to confirm that the pitch between the rack and the rack is correct. (If the tooth pitch is anomaly,plz contact our technical worker.
- 3 Mount the pin to the hole after confirming.

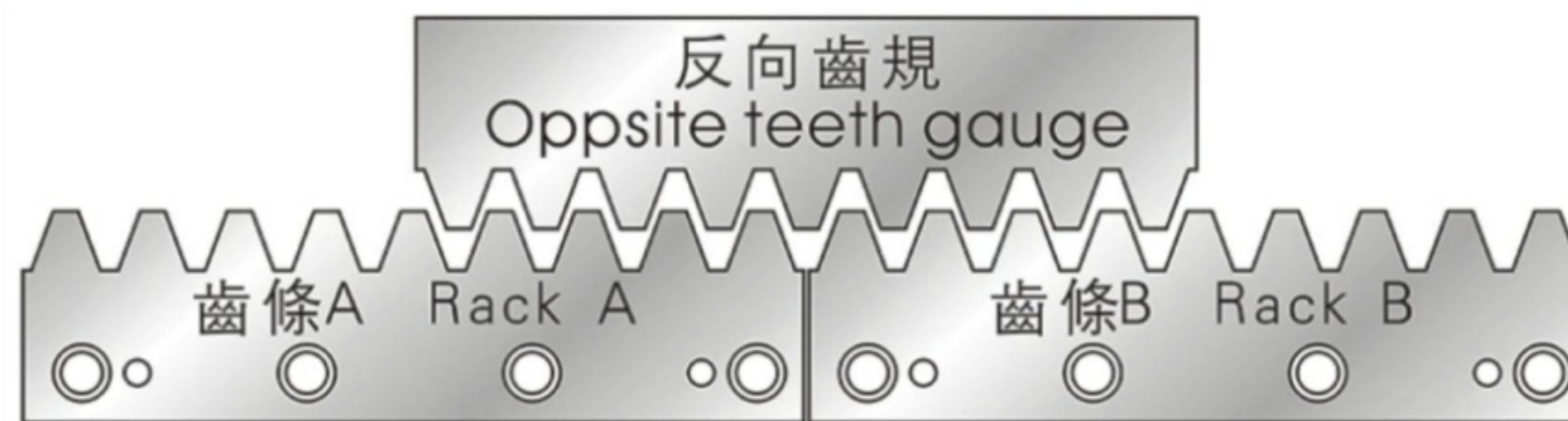
Installation step 1



Installation step 2



Installation step 3



Rack code instruction

1st	2nd	3rd	4th	5th	6th	7th
Material	Type	Teeth Treatment	Hardness	Module	Length	Acaracy Grade
S	S	G	H	020	050/100	DIN
S=S45C R=42CrMo	S=Straight H=Helical	F = Milling G=Grinding	Q=Quenched H = Hardened	M1.5-M10	050 = 500mm 100= 1000mm	DIN5 DIN6 DIN7 DIN8

Pinion code instruction

1st	2nd	3rd	4th	5th	6th	7th	8th
Material	Type	Series	Teeth Treatment	Hardness	Module	No. of Teeth	Acaracy Grade
20CrMnTi	S	L/D	G	H	020	Z	DIN
	S=Straight H=Helical	L = Left hand angle D=Flange	G=Grinding	H = Hardened	M1.5-M10	16~95	DIN6

Remarks: Lengths,holes,materials, surface treatments and other special requirements all could be customized.



WANFU RACK

Directory

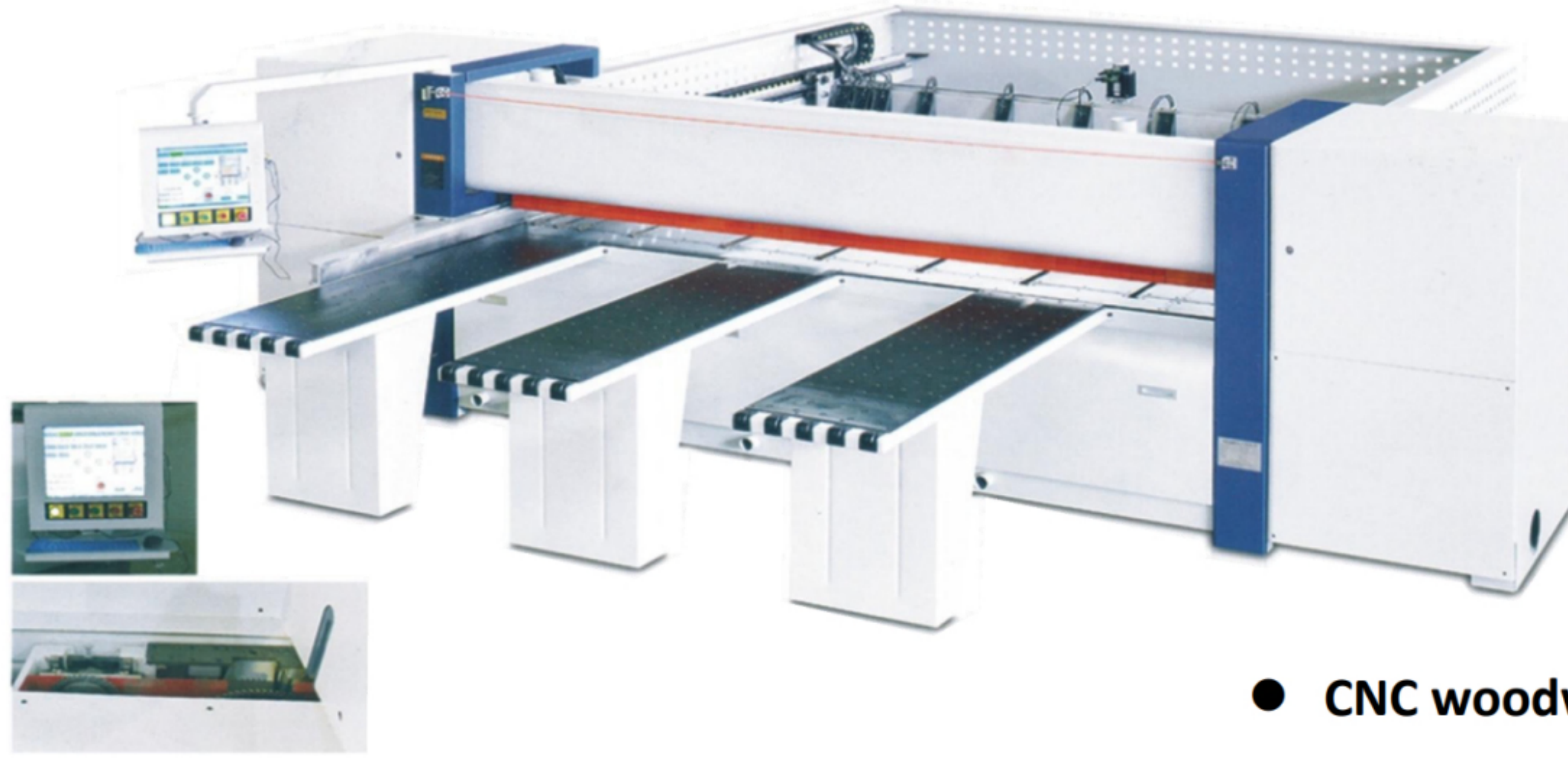
Staight rack Serieese(S45C)		P9-P11
Staight rack Serieese(42CrMo)		P12-P14
Helical rack serieese(S45C)		P15-P17
Helical rack serieese(42CrMo)		P18-P20
Guide rack serieese(S45C)		P21-P22
Pinions(20CrMnTi)	SG16	P23-P26
	HGL18	P27-P30
	HGD180	P31-P32
	HGD280	P33-P34
Caculation Instruction and Caculation example		P35-P40

Applicable Industies

- Laser Cutting Machine
- CNC Woodworking Machine
- Industrial Robot, Machine Hand
- Automation Equipment
- Stone Cutting Machine
- Aluminum Processing Center
- Bending Machine
- Printing Machine
- CNC Glass Cutting Machine
- CNC Plane Type Milling Machine



Range of Application



● CNC woodworking machine



● CNC machining center



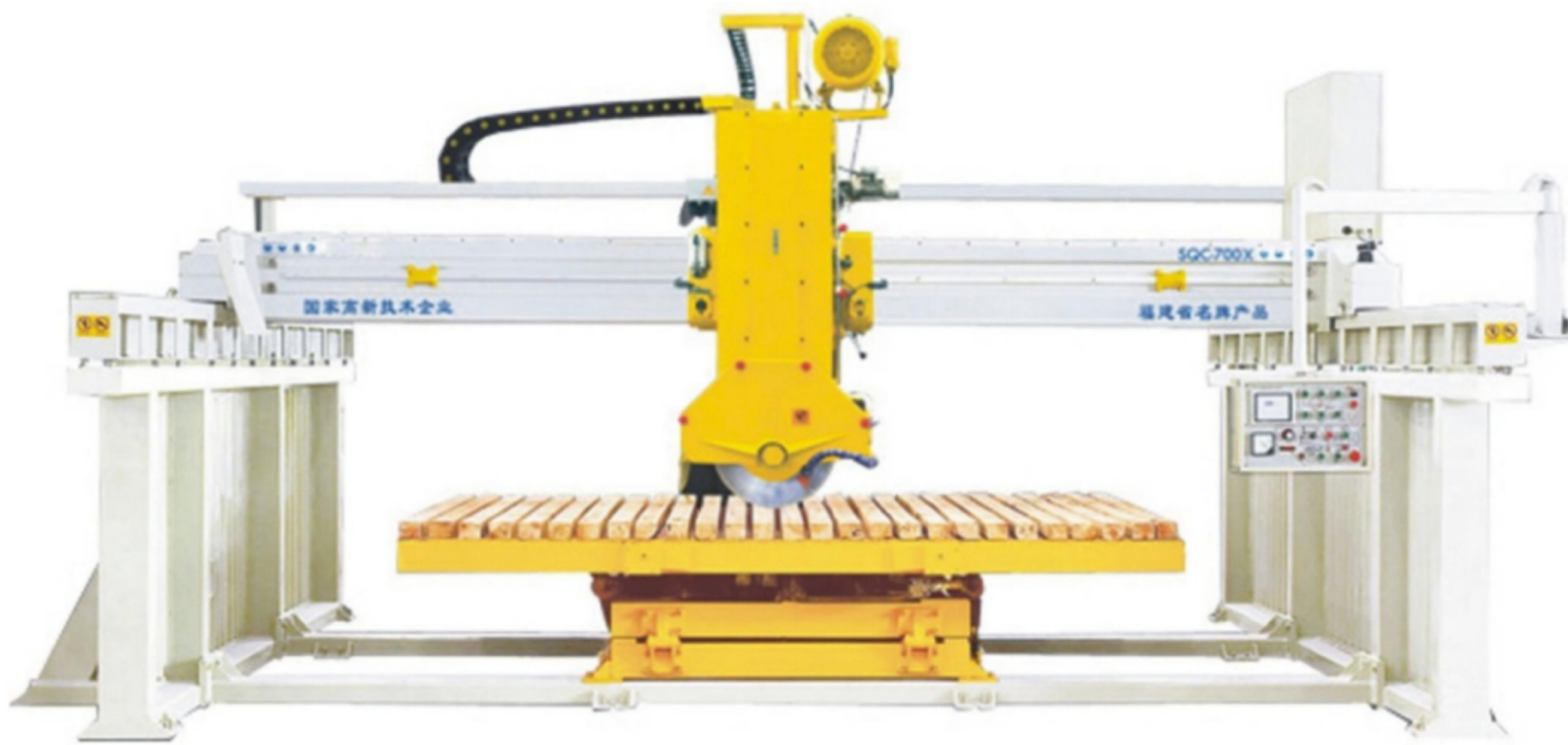
● Laser cutting machine



Range of Application



- CNC 3 axis Gantry multiarm mechanically manual



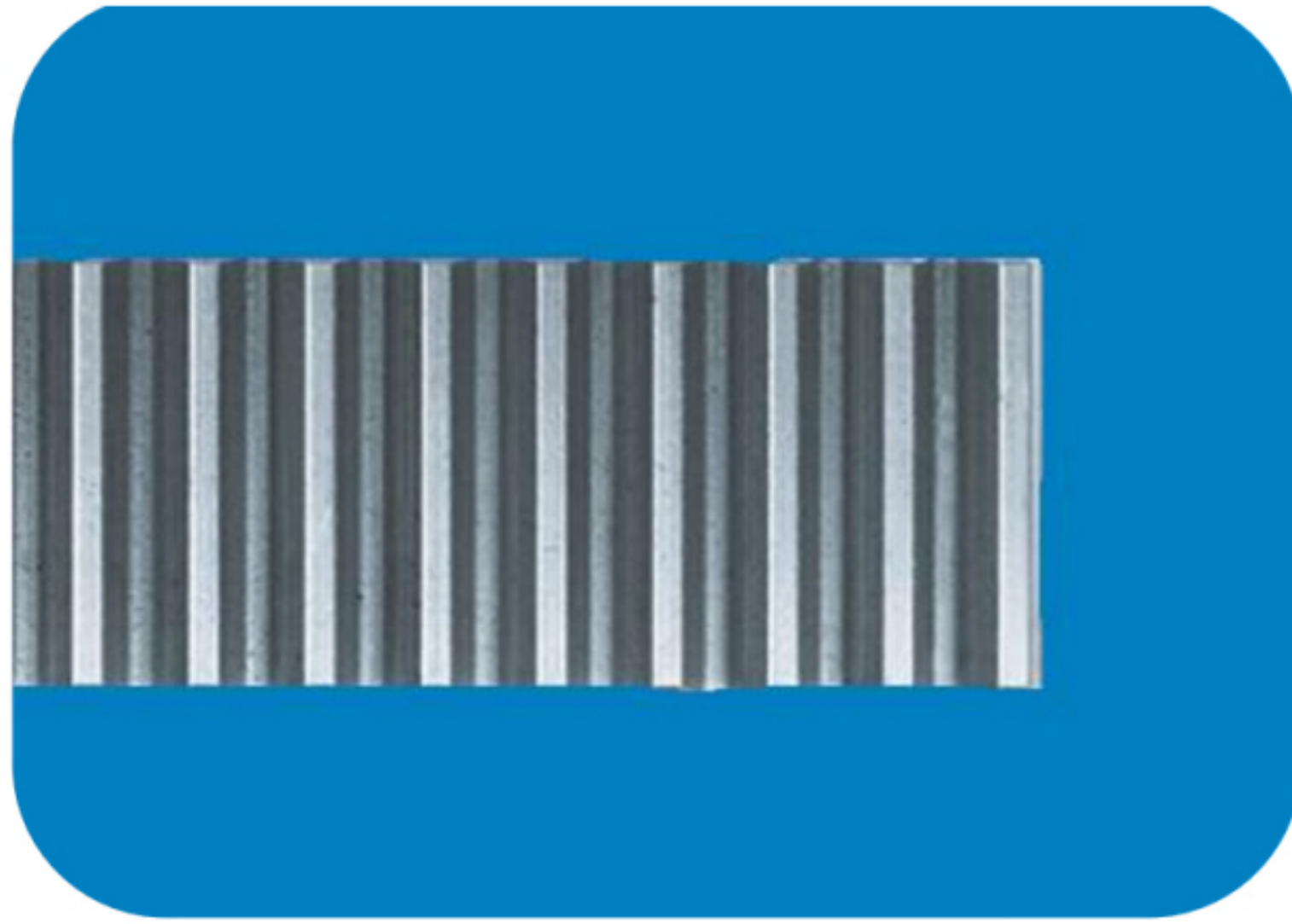
- Marble cutter



- Engraving machine



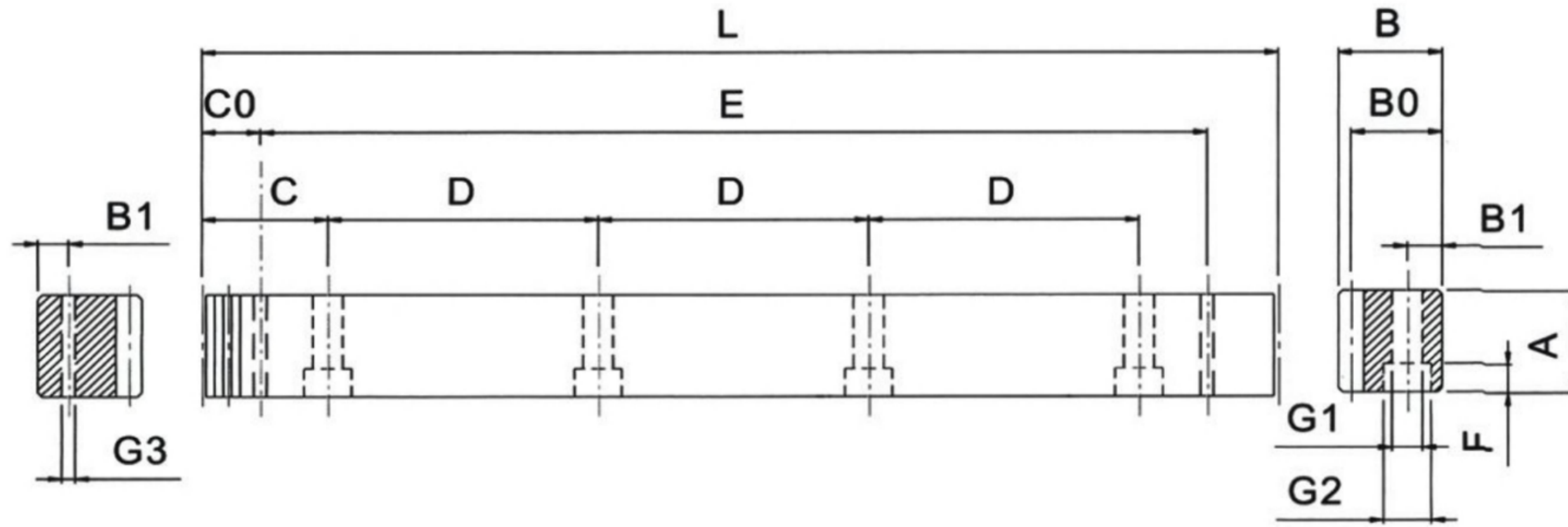
Product data



SSGH

Specifications

Precision grade	DIN 6	Tooth hardness	50~55HRC
Gear teeth	Straight	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Grinding
Material	S45C	Heat treatment	Tooth surface induction hardened

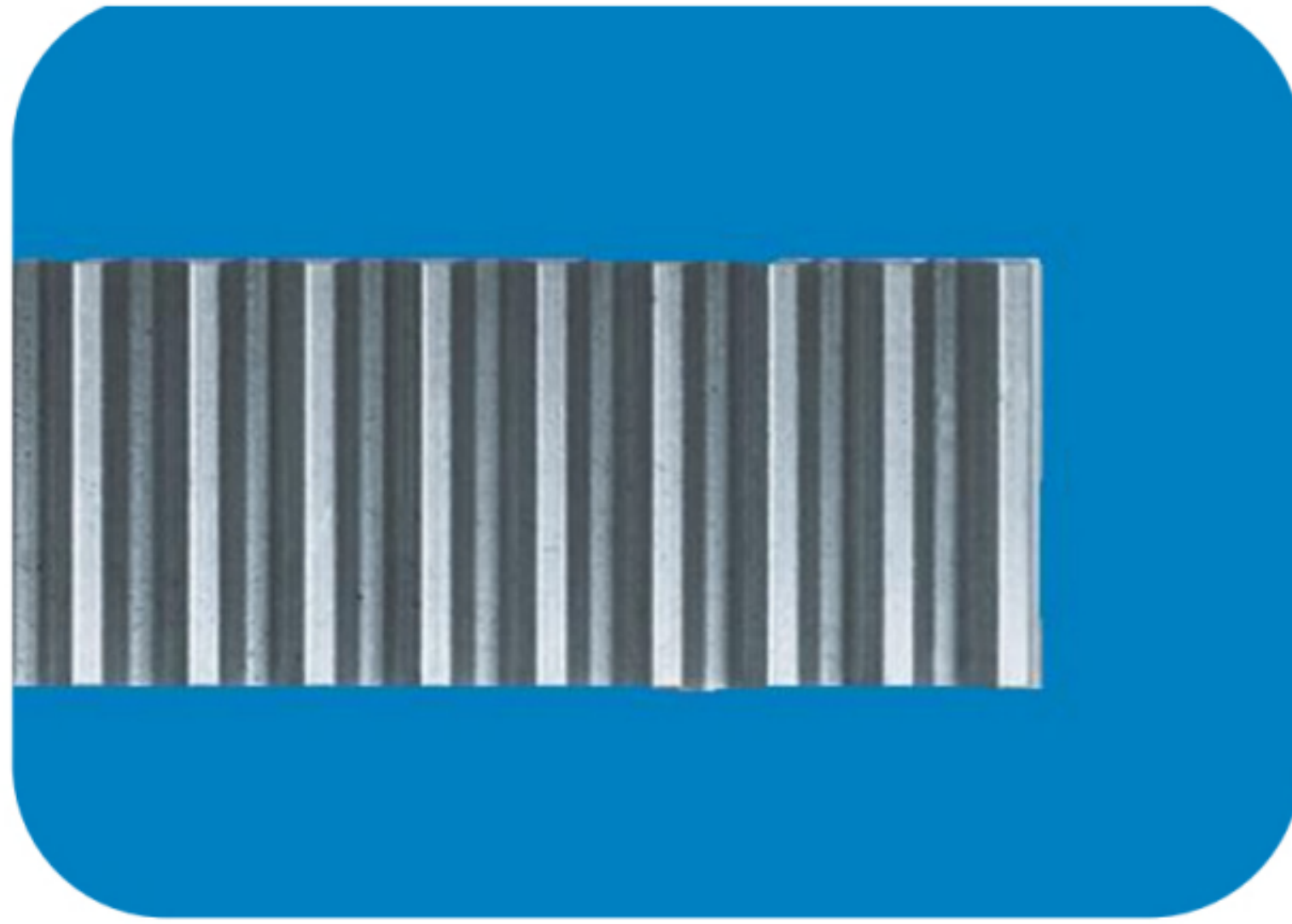


Dimension: mm

Catalog NO.	L	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
SSGH015-050	499.51	106	17	17	15.5	62.44	124.88	4	7	6	9.5	7	29	441.5	5.7	0.021
SSGH015-100	999.03	212	17	17	15.5	62.44	124.88	8	7	6	9.5	7	29	941	5.7	0.021
SSGH020-050	502.64	80	24	24	22	62.83	125.66	4	8	7	11	7	31.3	440.1	5.7	0.022
SSGH020-100	1005.28	160	24	24	22	62.83	125.66	8	8	7	11	7	31.3	942.7	5.7	0.022
SSGH030-050	508.95	54	29	29	26	63.62	127.23	4	9	10	15	9	34.4	440.1	7.7	0.024
SSGH030-100	1017.9	108	29	29	26	63.62	127.23	8	9	10	15	9	34.4	949.1	7.7	0.024
SSGH040-050	502.64	40	39	39	35	62.83	125.66	4	12	10	15	9	37.5	427.7	7.7	0.025
SSGH040-100	1005.28	80	39	39	35	62.83	125.66	8	12	10	15	9	37.5	930.3	7.7	0.025
SSGH050-050	502.65	32	49	39	34	62.83	125.66	4	12	14	20	13	30.1	442.4	11.7	0.025
SSGH050-100	1005.31	64	49	39	34	62.83	125.66	8	12	14	20	13	30.1	945	11.7	0.025
SSGH060-050	508.95	27	59	49	43	63.62	127.23	4	16	18	26	17	31.4	446.1	15.7	0.026
SSGH060-100	1017.9	54	59	49	43	63.62	127.23	8	16	18	26	17	31.4	955	15.7	0.026
SSGH080-050	502.64	20	79	79	71	62.83	125.66	4	25	22	33	21	26.6	449.5	19.7	0.027
SSGH080-100	1005.28	40	79	79	71	62.83	125.66	8	25	22	33	21	26.6	952	19.7	0.027



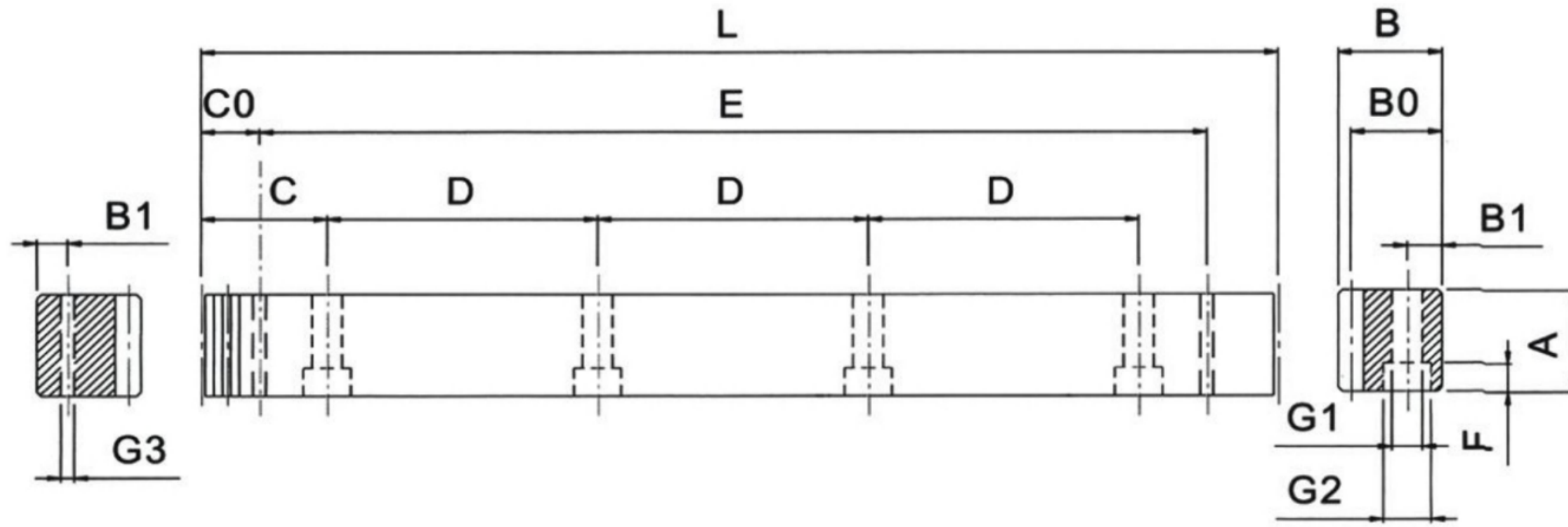
Product data



SSFQ-G

Specifications

Precision grade	DIN 7	Tooth hardness	15~20HRC
Gear teeth	Straight	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Finish cutting
Material	S45C	Heat treatment	Quenched



Dimension: mm

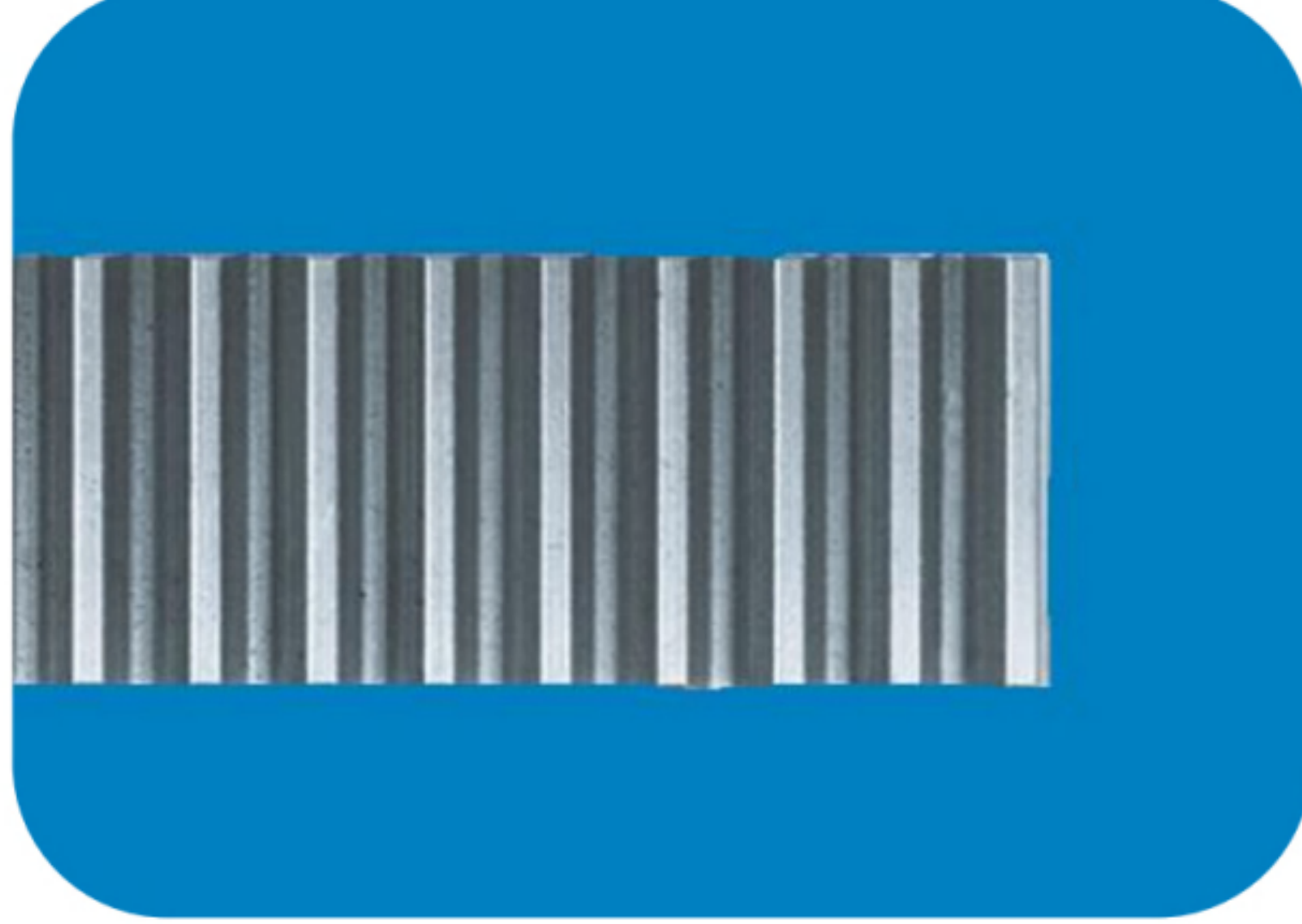
Catalog NO.	L	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
SSFQ015-050	499.51	106	17	17	15.5	62.44	124.88	4	7	6	9.5	7	29.0	441.5	5.7	0.042
SSFQ015-100	999.03	212	17	17	15.5	62.44	124.88	8	7	6	9.5	7	29.0	941.0	5.7	0.042
SSFQ020-050	502.64	80	25	24	22	62.83	125.66	4	8	7	11	7	31.3	440.1	5.7	0.044
SSFQ020-100	1005.28	160	25	24	22	62.83	125.66	8	8	7	11	7	31.3	942.7	5.7	0.044
SSFQ030-050	508.95	54	30	29	26	63.62	127.23	4	9	10	15	9	34.4	440.1	7.7	0.046
SSFQ030-100	1017.9	108	30	29	26	63.62	127.23	8	9	10	15	9	34.4	949.1	7.7	0.046
SSFQ040-050	502.64	40	40	39	35	62.83	125.66	4	12	10	15	9	37.5	427.7	7.7	0.048
SSFQ040-100	1005.28	80	40	39	35	62.83	125.66	8	12	10	15	9	37.5	930.3	7.7	0.048
SSFQ050-050	502.65	32	49	39	34	62.83	125.66	4	12	14	20	13	30.1	442.4	11.7	0.050
SSFQ050-100	1005.31	64	49	39	34	62.83	125.66	8	12	14	20	13	30.1	945	11.7	0.050
SSFQ060-050	508.95	27	59	49	43	63.62	127.23	4	16	18	26	17	31.4	446.1	15.7	0.055
SSFQ060-100	1017.9	54	59	49	43	63.62	127.23	8	16	18	26	17	31.4	955.0	15.7	0.055
SSFQ080-050	502.64	20	79	79	71	62.83	125.66	4	25	22	33	21	26.6	449.5	19.7	0.060
SSFQ080-100	1005.28	40	79	79	71	62.83	125.66	8	25	22	33	21	26.6	952	19.7	0.060



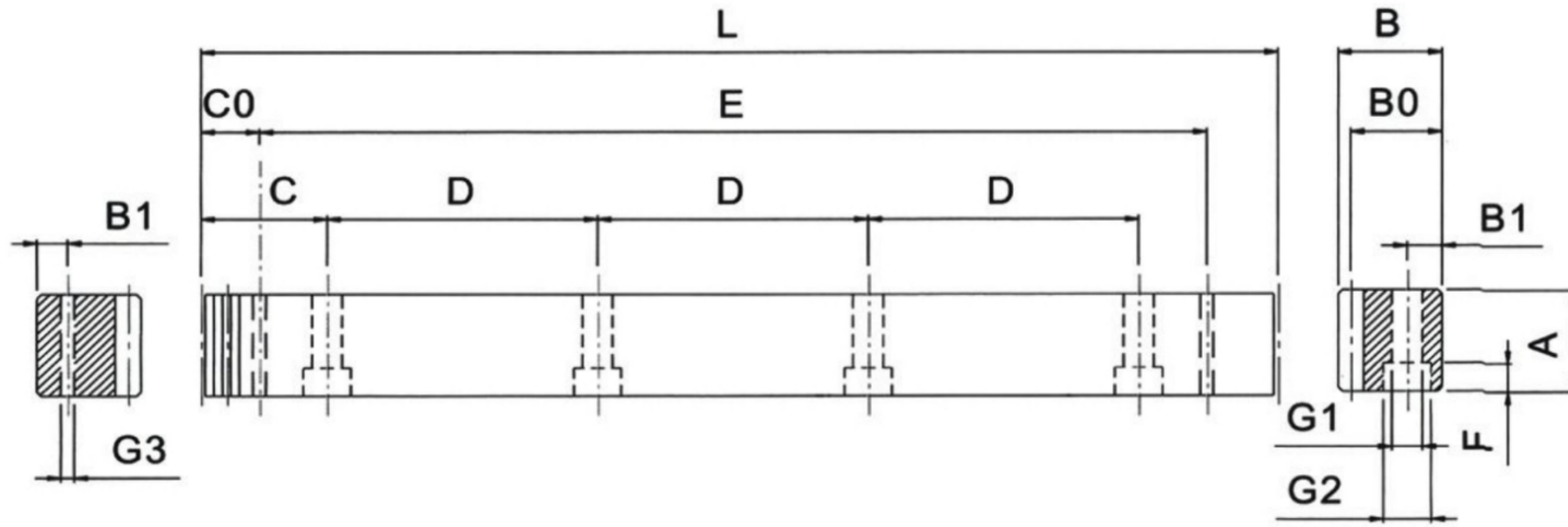
Product data

SSFH-G

Specifications



Precision grade	DIN 7	Tooth hardness	50~55HRC
Gear teeth	Straight	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Finish cutting
Material	S45C	Heat treatment	Tooth surface induction hardened

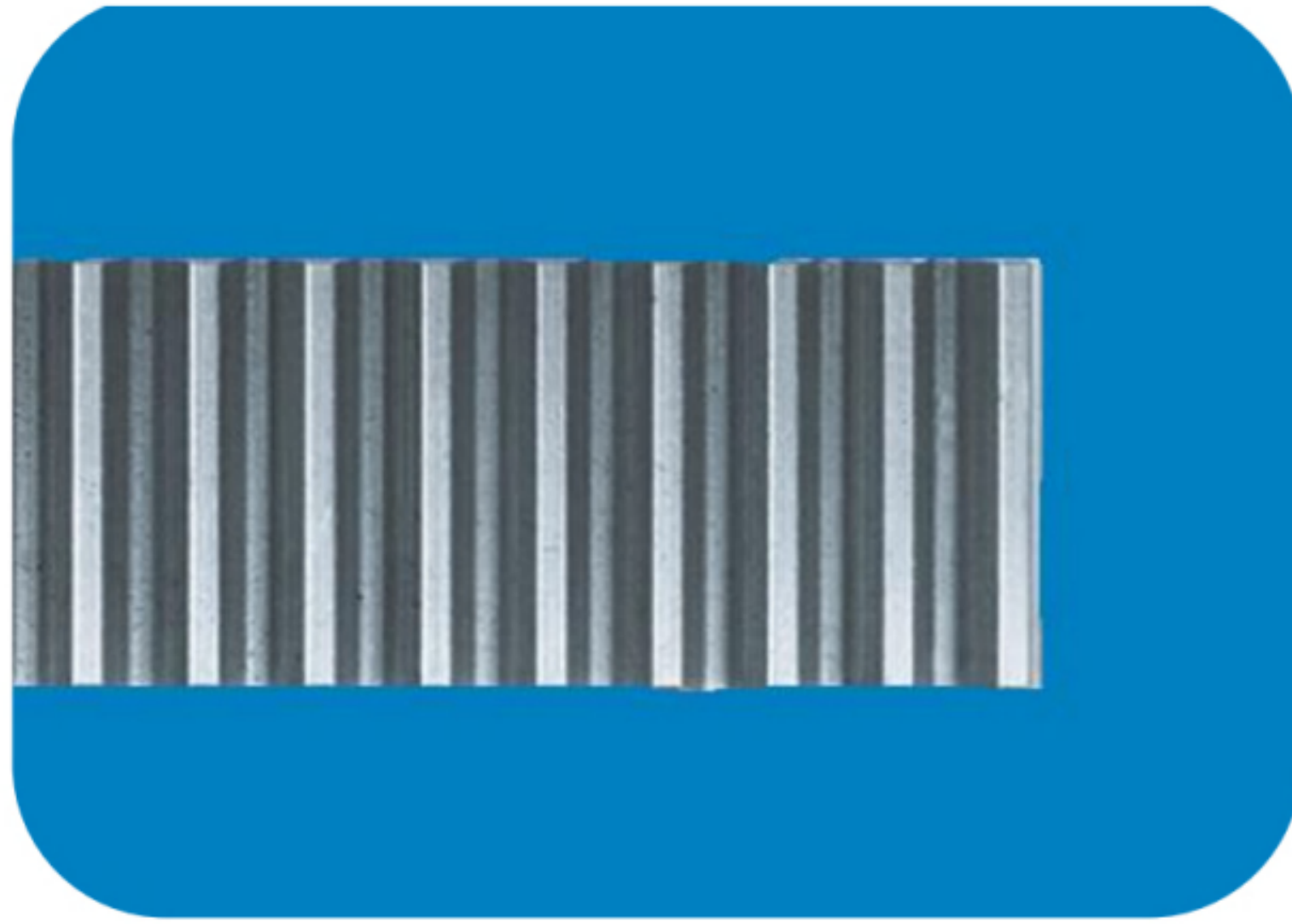


Dimension: mm

Catalog NO.	L	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
SSFH015-050	499.51	106	17	17	15.5	62.44	124.88	4	7	6	9.5	7	29.0	441.5	5.7	0.058
SSFH015-100	999.03	212	17	17	15.5	62.44	124.88	8	7	6	9.5	7	29.0	941.0	5.7	0.058
SSFH020-050	502.64	80	24	24	22	62.83	125.66	4	8	7	11	7	31.3	440.1	5.7	0.059
SSFH020-100	1005.28	160	24	24	22	62.83	125.66	8	8	7	11	7	31.3	942.7	5.7	0.061
SSFH030-050	508.95	54	29	29	26	63.62	127.23	4	9	10	15	9	34.4	440.1	7.7	0.065
SSFH030-100	1017.9	108	29	29	26	63.62	127.23	8	9	10	15	9	34.4	949.1	7.7	0.065
SSFH040-050	502.64	40	39	39	35	62.83	125.66	4	12	10	15	9	37.5	427.7	7.7	0.068
SSFH040-100	1005.28	80	39	39	35	62.83	125.66	8	12	10	15	9	37.5	930.3	7.7	0.068
SSFH050-050	502.65	32	49	39	34	62.83	125.66	4	12	14	20	13	30.1	442.4	11.7	0.070
SSFH050-100	1005.31	64	49	39	34	62.83	125.66	8	12	14	20	13	30.1	945	11.7	0.070
SSFH060-050	508.95	27	59	49	43	63.62	127.23	4	16	18	26	17	31.4	446.1	15.7	0.072
SSFH060-100	1017.9	54	59	49	43	63.62	127.23	8	16	18	26	17	31.4	955.0	15.7	0.072
SSFH080-050	502.64	20	79	79	71	62.83	125.66	4	25	22	33	21	26.6	449.5	19.7	0.075
SSFH080-100	1005.28	40	79	79	71	62.83	125.66	8	25	22	33	21	26.6	952	19.7	0.075



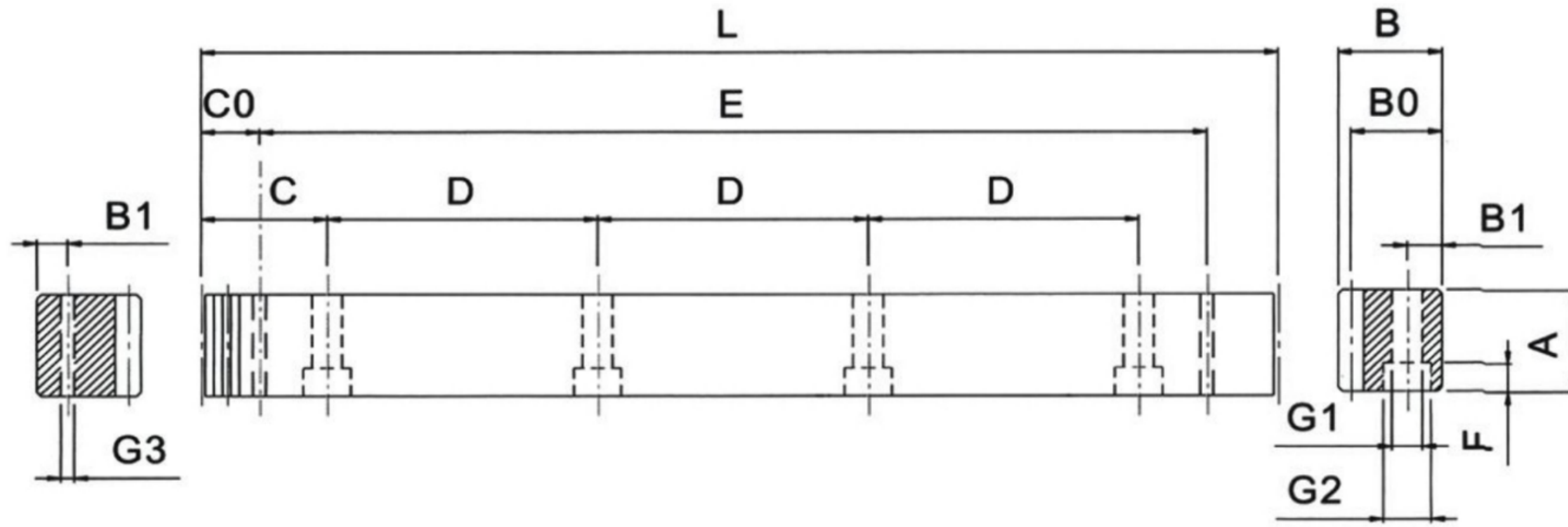
Product data



RSGH-D

Specifications

Precision grade	DIN 6	Tooth hardness	50~55HRC
Gear teeth	Straight	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Grinding
Material	42CrMo	Heat treatment	Tooth surface induction hardened

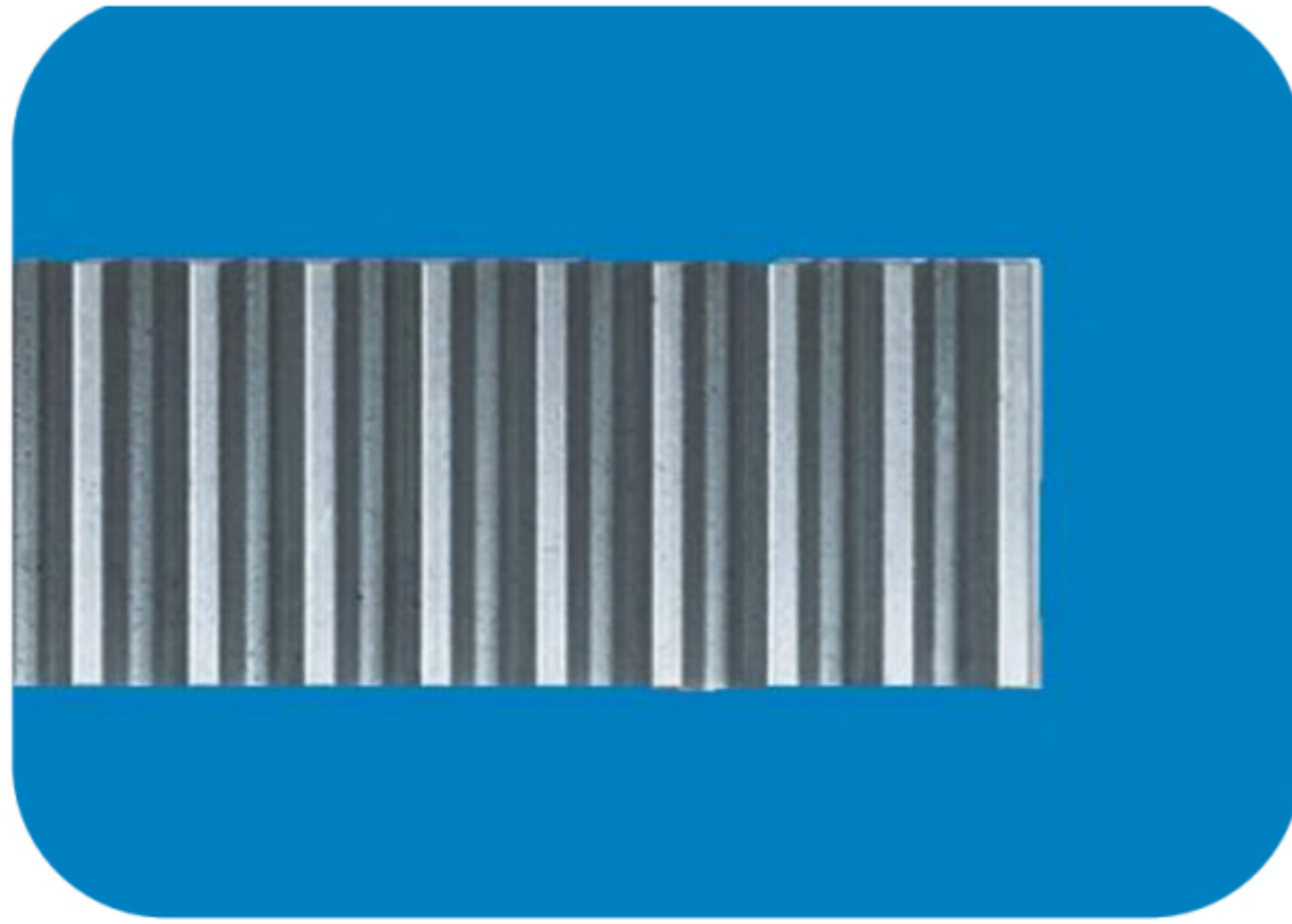


Dimension: mm

Catalog NO.	L	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
RSGH015-050	499.51	106	17	17	15.5	62.44	124.88	4	7	6	9.5	7	29.0	441.5	5.7	0.020
RSGH015-100	999.03	212	17	17	15.5	62.44	124.88	8	7	6	9.5	7	29.0	941.0	5.7	0.025
RSGH020-050	502.64	80	24	24	22	62.83	125.66	4	8	7	11	7	31.3	440.1	5.7	0.020
RSGH020-100	1005.28	160	24	24	22	62.83	125.66	8	8	7	11	7	31.3	942.7	5.7	0.025
RSGH030-050	508.95	54	29	29	26	63.62	127.23	4	9	10	15	9	34.4	440.1	7.7	0.022
RSGH030-100	1017.9	108	29	29	26	63.62	127.23	8	9	10	15	9	34.4	949.1	7.7	0.025
RSGH040-050	502.64	40	39	39	35	62.83	125.66	4	12	10	15	9	37.5	427.7	7.7	0.025
RSGH040-100	1005.28	80	39	39	35	62.83	125.66	8	12	10	15	9	37.5	930.3	7.7	0.025
RSGH050-050	502.65	32	49	39	34	62.83	125.66	4	12	14	20	13	30.1	442.4	11.7	0.025
RSGH050-100	1005.31	64	49	39	34	62.83	125.66	8	12	14	20	13	30.1	945	11.7	0.028
RSGH060-050	508.95	27	59	49	43	63.62	127.23	4	16	18	26	17	31.4	446.1	15.7	0.025
RSGH060-100	1017.9	54	59	49	43	63.62	127.23	8	16	18	26	17	31.4	955.0	15.7	0.028
RSGH080-050	502.64	20	79	79	71	62.83	125.66	4	25	22	33	21	26.6	449.5	19.7	0.030
RSGH080-100	1005.28	40	79	79	71	62.83	125.66	8	25	22	33	21	26.6	952	19.7	0.033



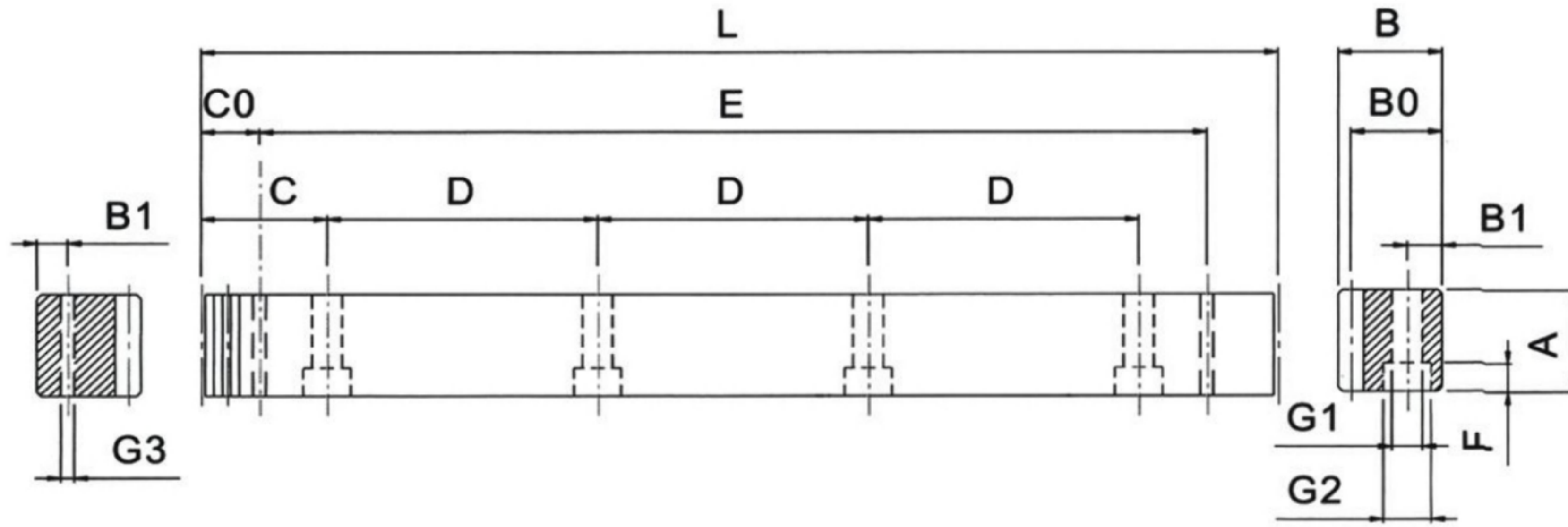
Product data



RSFQ-G

Specifications

Precision grade	DIN 7	Tooth hardness	15~20HRC
Gear teeth	Straight	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Finish cutting
Material	42CrMo	Heat treatment	Quenched

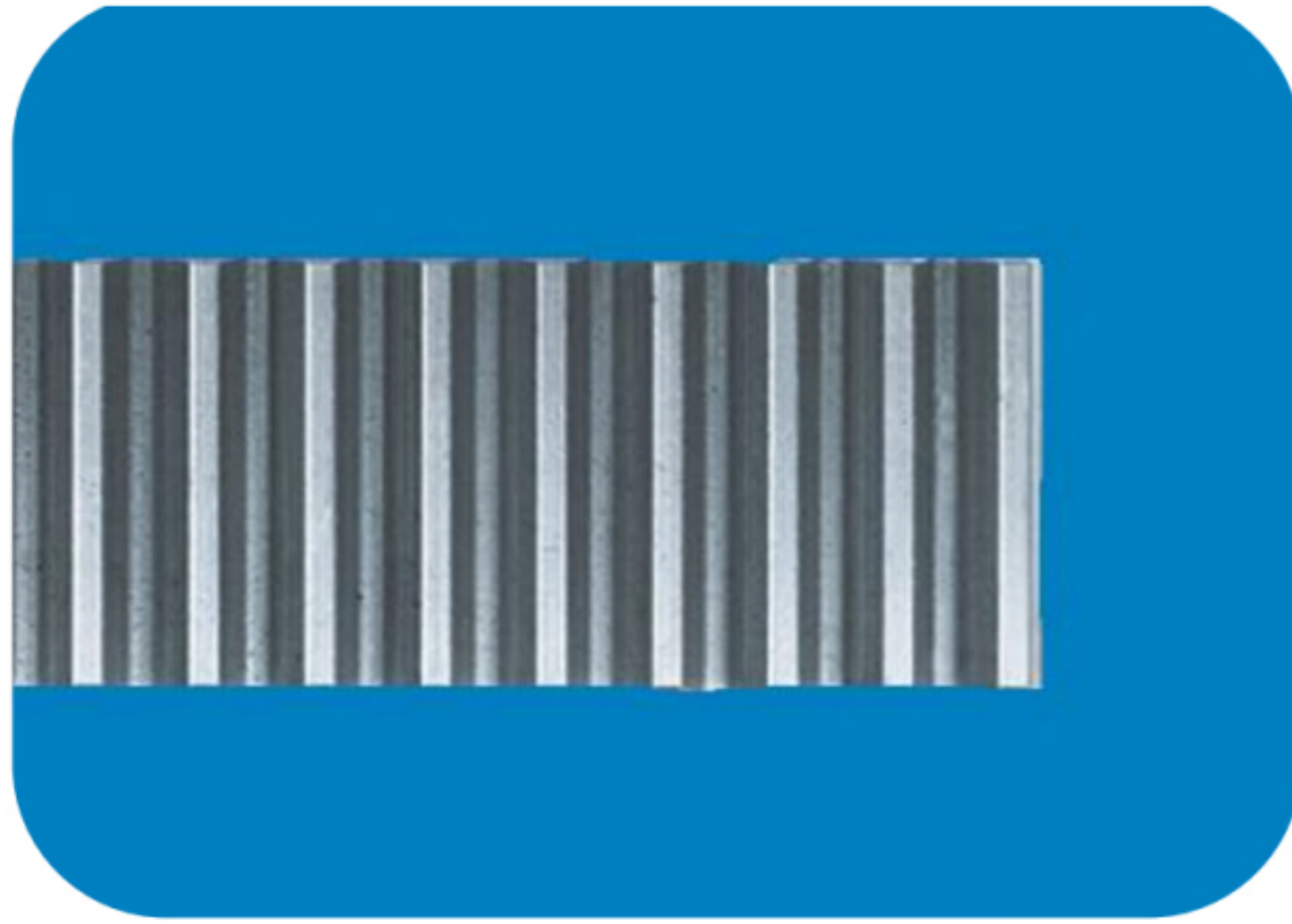


Dimension: mm

Catalog NO.	L	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
RSFQ015-050	499.51	106	17	17	15.5	62.44	124.88	4	7	6	9.5	7	29.0	441.5	5.7	0.042
RSFQ015-100	999.03	212	17	17	15.5	62.44	124.88	8	7	6	9.5	7	29.0	941.0	5.7	0.042
RSFQ020-050	502.64	80	24	24	22	62.83	125.66	4	8	7	11	7	31.3	440.1	5.7	0.044
RSFQ020-100	1005.28	160	24	24	22	62.83	125.66	8	8	7	11	7	31.3	942.7	5.7	0.044
RSFQ030-050	508.95	54	29	29	26	63.62	127.23	4	9	10	15	9	34.4	440.1	7.7	0.046
RSFQ030-100	1017.9	108	29	29	26	63.62	127.23	8	9	10	15	9	34.4	949.1	7.7	0.046
RSFQ040-050	502.64	40	39	39	35	62.83	125.66	4	12	10	15	9	37.5	427.7	7.7	0.048
RSFQ040-100	1005.28	80	39	39	35	62.83	125.66	8	12	10	15	9	37.5	930.3	7.7	0.048
RSFQ050-050	502.65	32	49	39	34	62.83	125.66	4	12	14	20	13	30.1	442.4	11.7	0.050
RSFQ050-100	1005.31	64	49	39	34	62.83	125.66	8	12	14	20	13	30.1	945	11.7	0.050
RSFQ060-050	508.95	27	59	49	43	63.62	127.23	4	16	18	26	17	31.4	446.1	15.7	0.055
RSFQ060-100	1017.9	54	59	49	43	63.62	127.23	8	16	18	26	17	31.4	955.0	15.7	0.055
RSFQ080-050	502.64	20	79	79	71	62.83	125.66	4	25	22	33	21	26.6	449.5	19.7	0.060
RSFQ080-100	1005.28	40	79	79	71	62.83	125.66	8	25	22	33	21	26.6	952	19.7	0.060

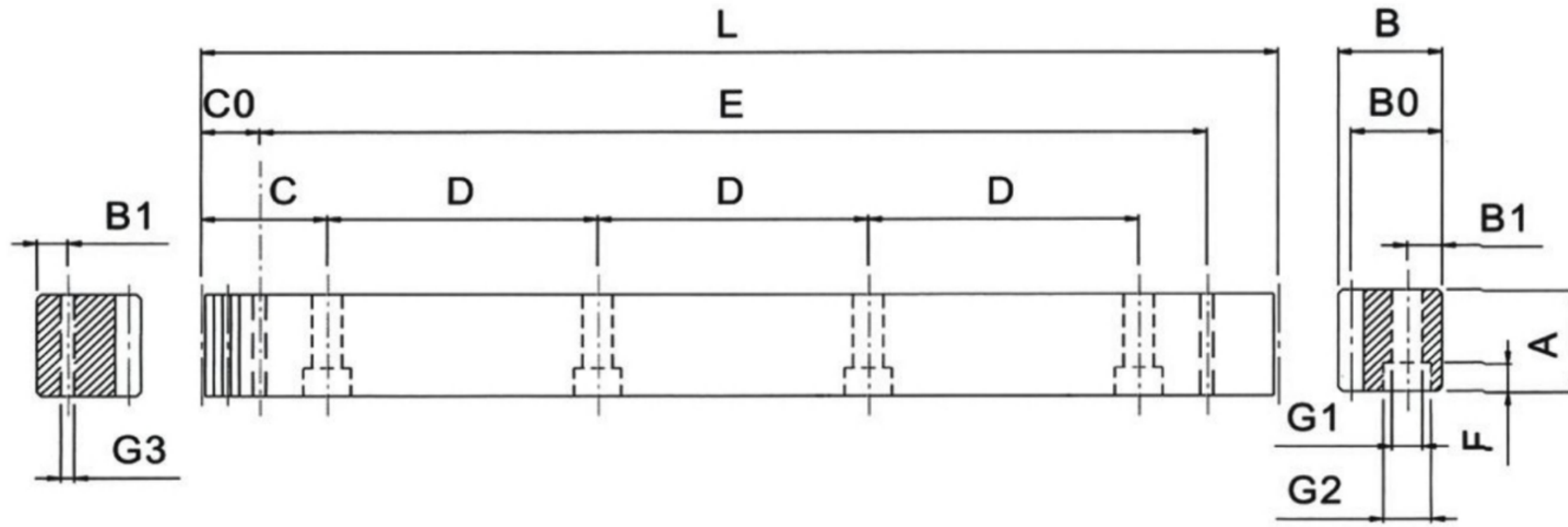


Product data



RSFH-G Specifications

Precision grade	DIN 7	Tooth hardness	50~55HRC
Gear teeth	Straight	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Finish cutting
Material	42CrMo	Heat treatment	Tooth surface induction hardened

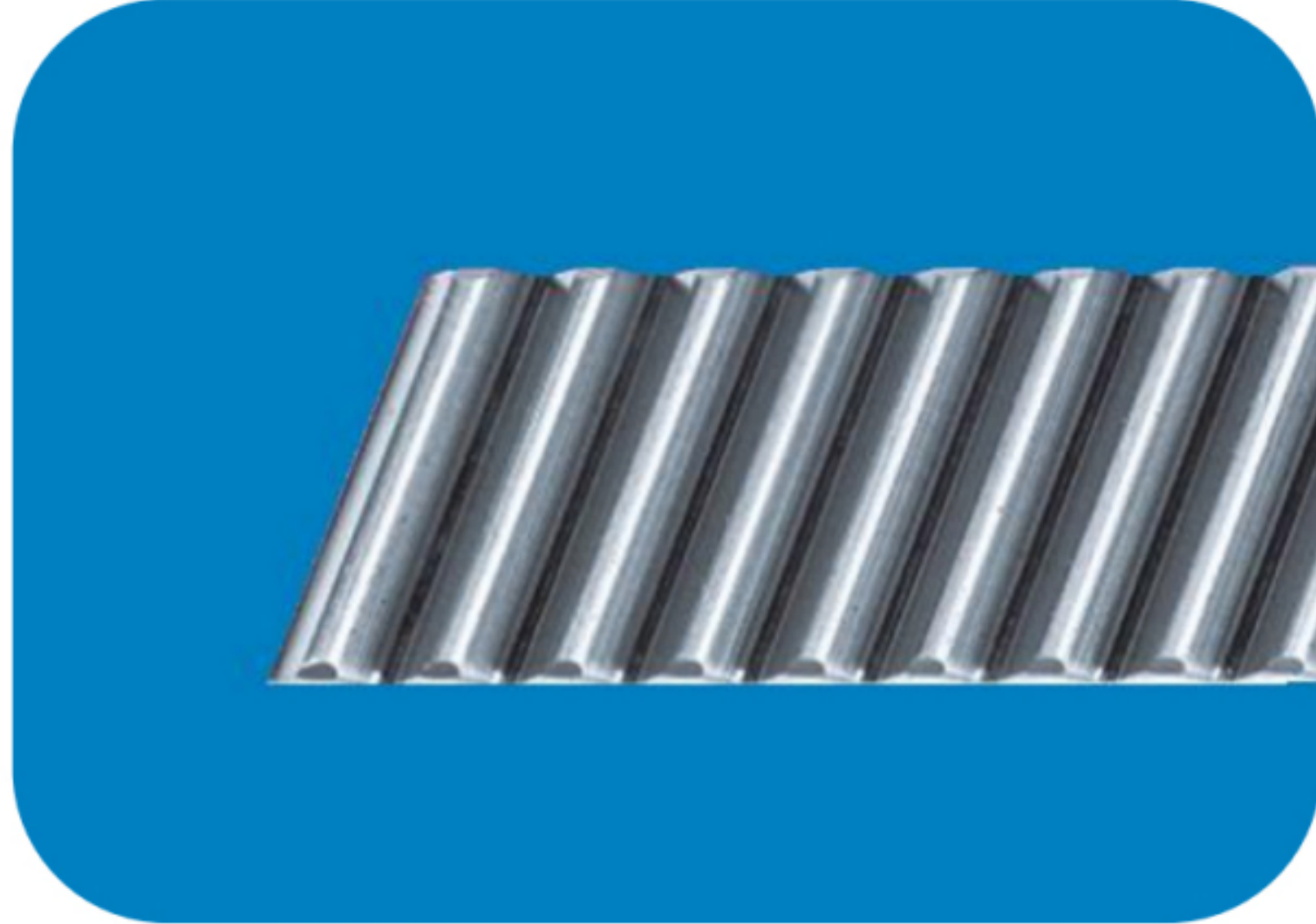


Dimension: mm

Catalog NO.	L	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
RSFH015-050	499.51	106	17	17	15.5	62.44	124.88	4	7	6	9.5	7	29.0	441.5	5.7	0.058
RSFH015-100	999.03	212	17	17	15.5	62.44	124.88	8	7	6	9.5	7	29.0	941.0	5.7	0.058
RSFH020-050	502.64	80	24	24	22	62.83	125.66	4	8	7	11	7	31.3	440.1	5.7	0.059
RSFH020-100	1005.28	160	24	24	22	62.83	125.66	8	8	7	11	7	31.3	942.7	5.7	0.061
RSFH030-050	508.95	54	29	29	26	63.62	127.23	4	9	10	15	9	34.4	440.1	7.7	0.065
RSFH030-100	1017.9	108	29	29	26	63.62	127.23	8	9	10	15	9	34.4	949.1	7.7	0.065
RSFH040-050	502.64	40	39	39	35	62.83	125.66	4	12	10	15	9	37.5	427.7	7.7	0.068
RSFH040-100	1005.28	80	39	39	35	62.83	125.66	8	12	10	15	9	37.5	930.3	7.7	0.068
RSFH050-050	502.65	32	49	39	34	62.83	125.66	4	12	14	20	13	30.1	442.4	11.7	0.070
RSFH050-100	1005.31	64	49	39	34	62.83	125.66	8	12	14	20	13	30.1	945	11.7	0.070
RSFH060-050	508.95	27	59	49	43	63.62	127.23	4	16	18	26	17	31.4	446.1	15.7	0.072
RSFH060-100	1017.9	54	59	49	43	63.62	127.23	8	16	18	26	17	31.4	955.0	15.7	0.072
RSFH080-050	502.64	20	79	79	71	62.83	125.66	4	25	22	33	21	26.6	449.5	19.7	0.075
RSFH080-100	1005.28	40	79	79	71	62.83	125.66	8	25	22	33	21	26.6	952	19.7	0.075



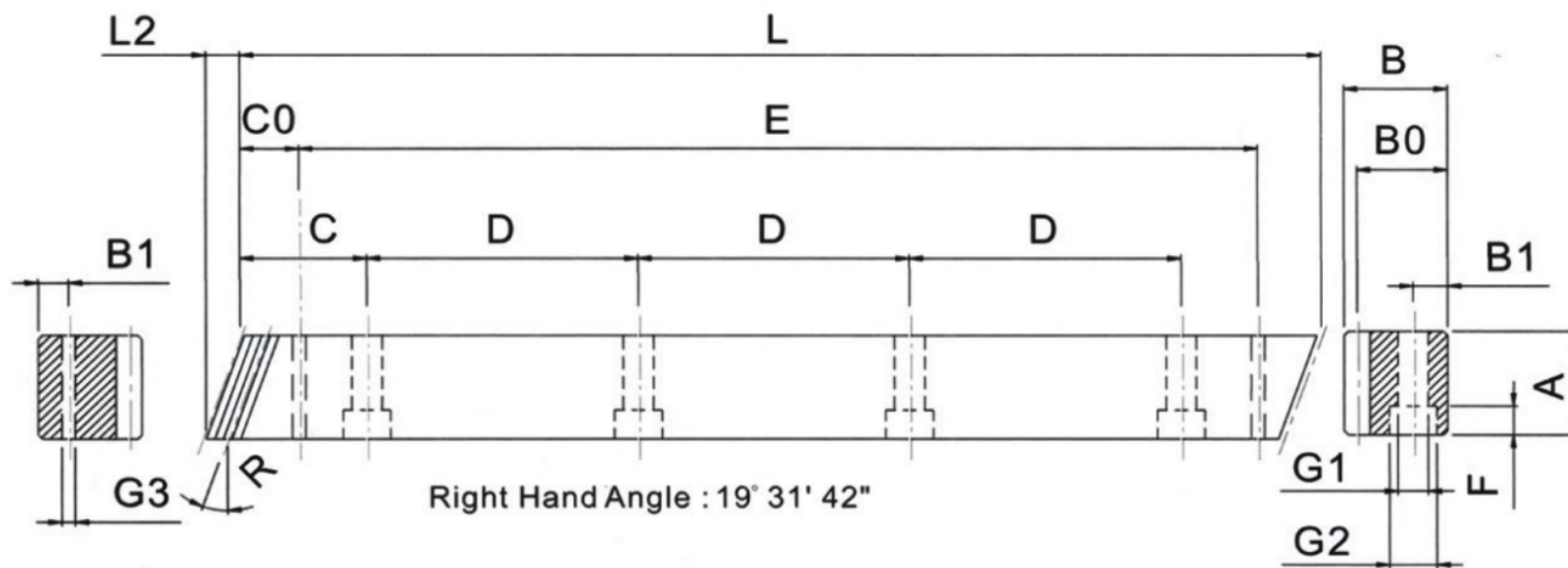
Product data



SHGH

Specifications

Precision grade	DIN 6	Tooth hardness	50~55HRC
Gear teeth	Helical	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Grinding
Material	S45C	Heat treatment	Tooth surface induction hardened
Right hand angle	19° 31' 42"		

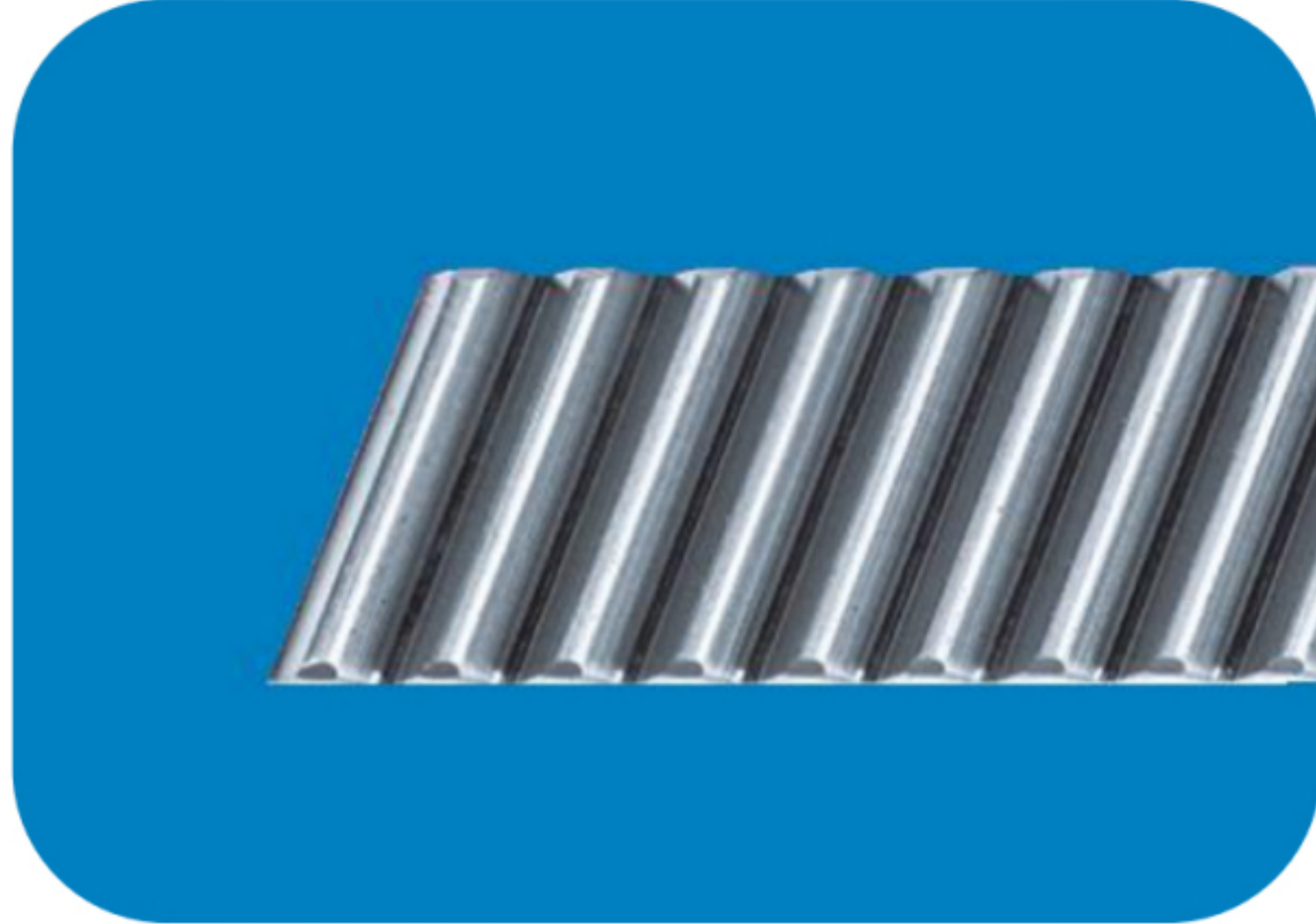


Dimension: mm

Catalog NO.	L	L2	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
SHGH015-050	500.00	6	100	17	17	15.5	62.50	125	4	7	6	9.5	7	31.7	436.6	5.7	0.021
SHGH015-100	1000.0	6	200	17	17	15.5	62.50	125	8	7	6	9.5	7	31.7	936.6	5.7	0.021
SHGH020-050	500.00	8.5	75	24	24	22	62.50	125	4	8	7	11	7	31.7	436.6	5.7	0.022
SHGH020-100	1000.0	8.5	150	24	24	22	62.50	125	8	8	7	11	7	31.7	936.6	5.7	0.022
SHGH030-050	500.00	10.3	50	29	29	26	62.50	125	4	9	10	15	9	35.0	430.0	7.7	0.024
SHGH030-100	1000.0	10.3	100	29	29	26	62.50	125	8	9	10	15	9	35.0	930.0	7.7	0.024
SHGH040-050	506.67	13.8	38	39	39	35	62.50	125	4	12	10	15	9	33.3	433.0	7.7	0.024
SHGH040-100	1000.0	13.8	75	39	39	35	62.50	125	8	12	10	15	9	33.3	933.4	7.7	0.024
SHGH050-050	500.00	17.4	30	49	39	34	62.50	125	4	12	14	20	13	37.5	425.0	11.7	0.025
SHGH050-100	1000.0	17.4	60	49	39	34	62.50	125	8	12	14	20	13	37.5	925.0	11.7	0.025
SHGH060-050	500.00	20.9	25	59	49	43	62.50	125	4	16	18	26	17	37.5	425.0	15.7	0.026
SHGH060-100	1000.0	20.9	50	59	49	43	62.50	125	8	16	18	26	17	37.5	925.0	15.7	0.026
SHGH080-050	480.00	28.0	18	79	79	71	60.00	120	4	25	22	33	21	120.0	240.0	17.7	0.027
SHGH080-100	960.00	28.0	36	79	79	71	60.00	120	8	25	22	33	21	120.0	720.0	17.7	0.027



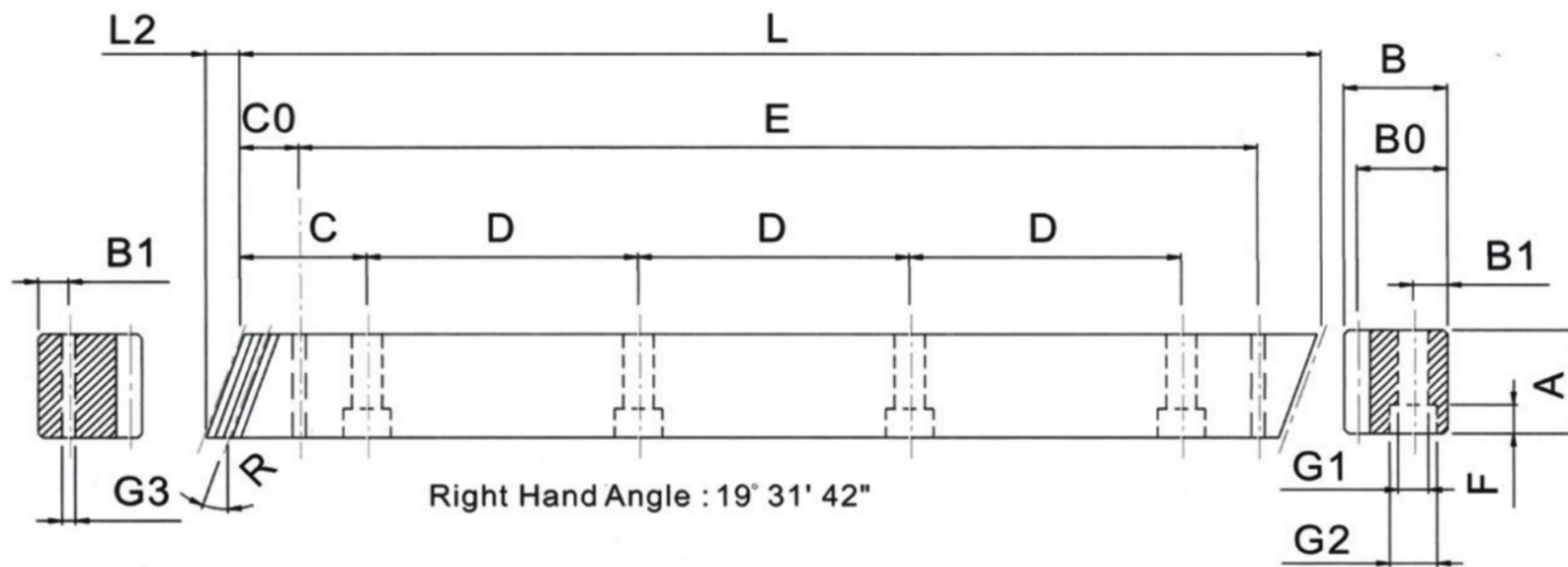
Product data



SHFQ-G

Specifications

Precision grade	DIN 7	Tooth hardness	15~20HRC
Gear teeth	Helical	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Finish cutting
Material	S45C	Heat treatment	Quenched
Right hand angle	19° 31' 42"		

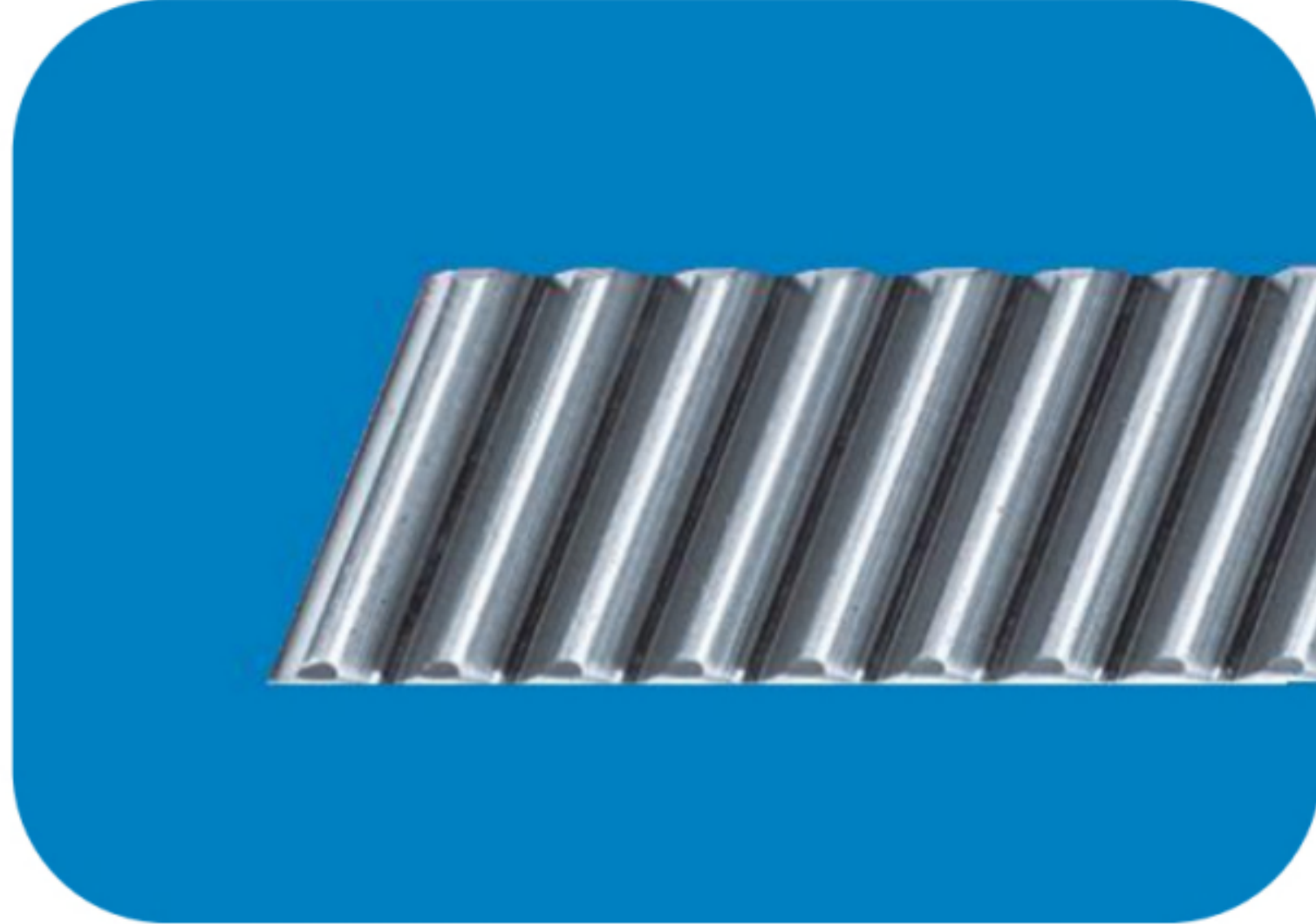


Dimension: mm

Catalog NO.	L	L2	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
SHFQ015-050	500.00	6	100	17	17	15.5	62.50	125	4	7	6	9.5	7	31.7	436.6	5.7	0.042
SHFQ015-100	1000.0	6	200	17	17	15.5	62.50	125	8	7	6	9.5	7	31.7	936.6	5.7	0.042
SHFQ020-050	500.00	8.9	75	25	24	22	62.50	125	4	8	7	11	7	31.7	436.6	5.7	0.044
SHFQ020-100	1000.0	8.9	150	25	24	22	62.50	125	8	8	7	11	7	31.7	936.6	5.7	0.044
SHFQ030-050	500.00	10.6	50	30	29	26	62.50	125	4	9	10	15	9	35.0	430.0	7.7	0.046
SHFQ030-100	1000.0	10.6	100	30	29	26	62.50	125	8	9	10	15	9	35.0	930.0	7.7	0.046
SHFQ040-050	506.67	14.2	38	40	39	35	62.50	125	4	12	10	15	9	33.3	433.0	7.7	0.048
SHFQ040-100	1000.0	14.2	75	40	39	35	62.50	125	8	12	10	15	9	33.3	933.4	7.7	0.048
SHFQ050-050	500.00	17.7	30	50	39	34	62.50	125	4	12	14	20	13	37.5	425.0	11.7	0.050
SHFQ050-100	1000.0	17.7	60	50	39	34	62.50	125	8	12	14	20	13	37.5	925.0	11.7	0.050
SHFQ060-050	500.00	20.9	25	59	49	43	62.50	125	4	16	18	26	17	37.5	425.0	15.7	0.055
SHFQ060-100	1000.0	20.9	50	59	49	43	62.50	125	8	16	18	26	17	37.5	925.0	15.7	0.055
SHFQ080-050	480.00	28.0	18	79	79	71	60.00	120	4	25	22	33	21	120.0	240.0	17.7	0.060
SHFQ080-100	960.00	28.0	36	79	79	71	60.00	120	8	25	22	33	21	120.0	720.0	17.7	0.060



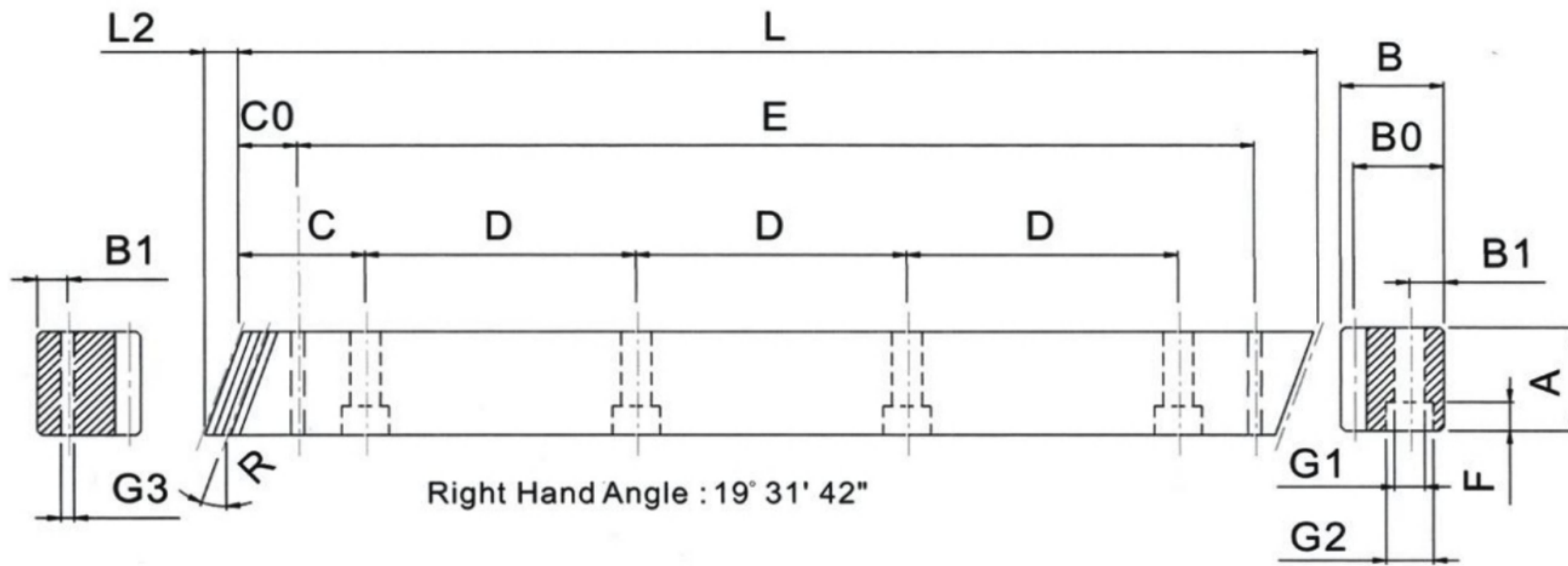
Product data



SHFH-G

Specifications

Precision grade	DIN 7	Tooth hardness	50~55HRC
Gear teeth	Helical	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Finish cutting
Material	S45C	Heat treatment	Tooth surface induction hardened
Right hand angle	19° 31' 42"		

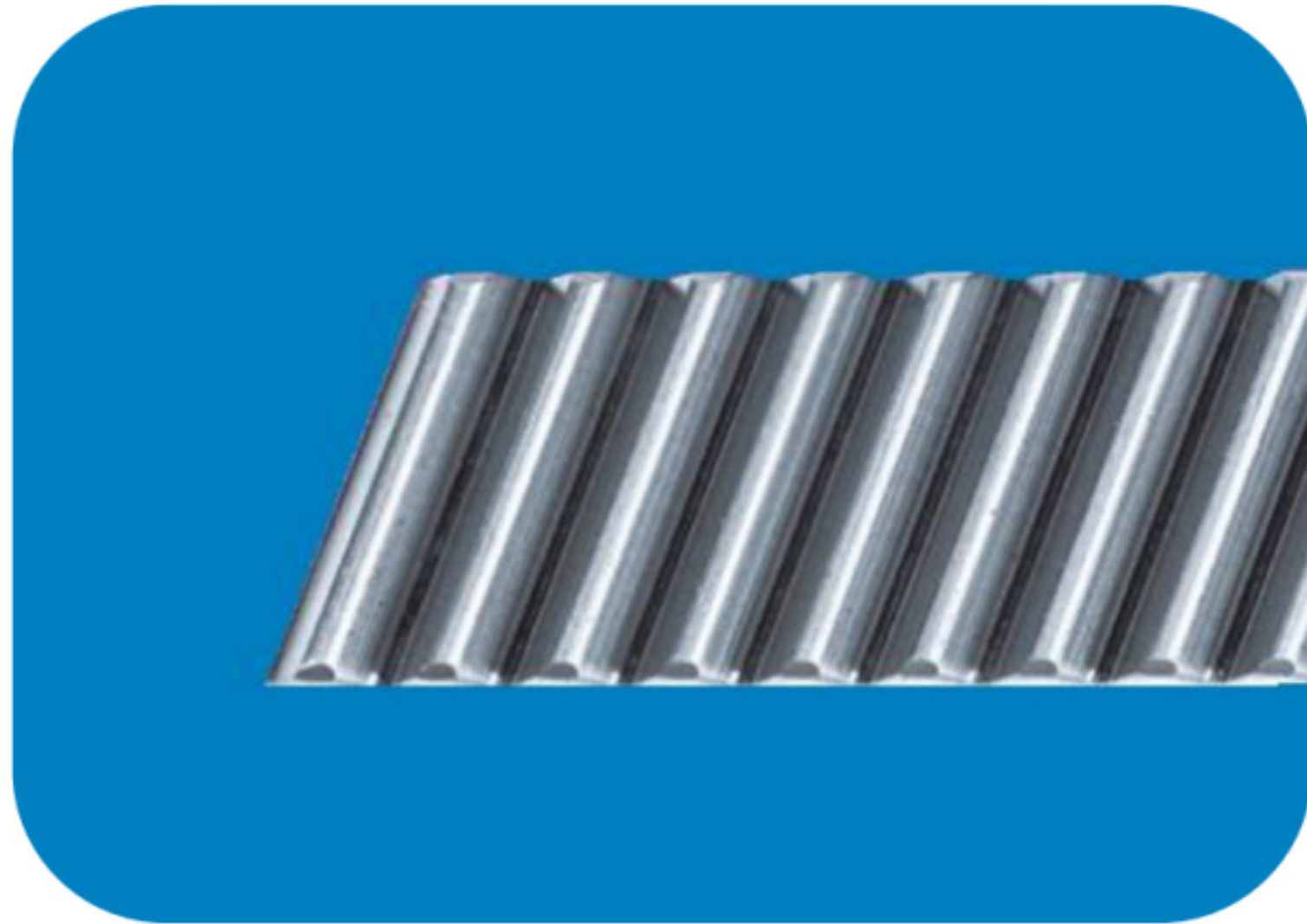


Dimension: mm

Catalog NO.	L	L2	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
SHFH015-050	500.00	6	100	17	17	15.5	62.50	125	4	7	6	9.5	7	31.7	436.6	5.7	0.059
SHFH015-100	1000.0	6	200	17	17	15.5	62.50	125	8	7	6	9.5	7	31.7	936.6	5.7	0.059
SHFH020-050	500.00	9.2	75	24	24	22	62.50	125	4	8	7	11	7	31.7	436.6	5.7	0.061
SHFH020-100	1000.0	9.2	150	24	24	22	62.50	125	8	8	7	11	7	31.7	936.6	5.7	0.061
SHFH030-050	500.00	11.0	50	29	29	26	62.50	125	4	9	10	15	9	35.0	430.0	7.7	0.065
SHFH030-100	1000.0	11.0	100	29	29	26	62.50	125	8	9	10	15	9	35.0	930.0	7.7	0.065
SHFH040-050	506.67	14.5	38	39	39	35	62.50	125	4	12	10	15	9	33.3	433.0	7.7	0.068
SHFH040-100	1000.0	14.5	75	39	39	35	62.50	125	8	12	10	15	9	33.3	933.4	7.7	0.068
SHFH050-050	500.00	17.7	30	49	39	34	62.50	125	4	12	14	20	13	37.5	425.0	11.7	0.070
SHFH050-100	1000.0	17.7	60	49	39	34	62.50	125	8	12	14	20	13	37.5	925.0	11.7	0.070
SHFH060-050	500.00	21.3	25	59	49	43	62.50	125	4	16	18	26	17	37.5	425.0	15.7	0.072
SHFH060-100	1000.0	21.3	50	59	49	43	62.50	125	8	16	18	26	17	37.5	925.0	15.7	0.072
SHFH080-050	480.00	28.7	18	79	79	71	60.00	120	4	25	22	33	21	120.0	240.0	17.7	0.075
SHFH080-100	960.00	28.7	36	79	79	71	60.00	120	8	25	22	33	21	120.0	720.0	17.7	0.075



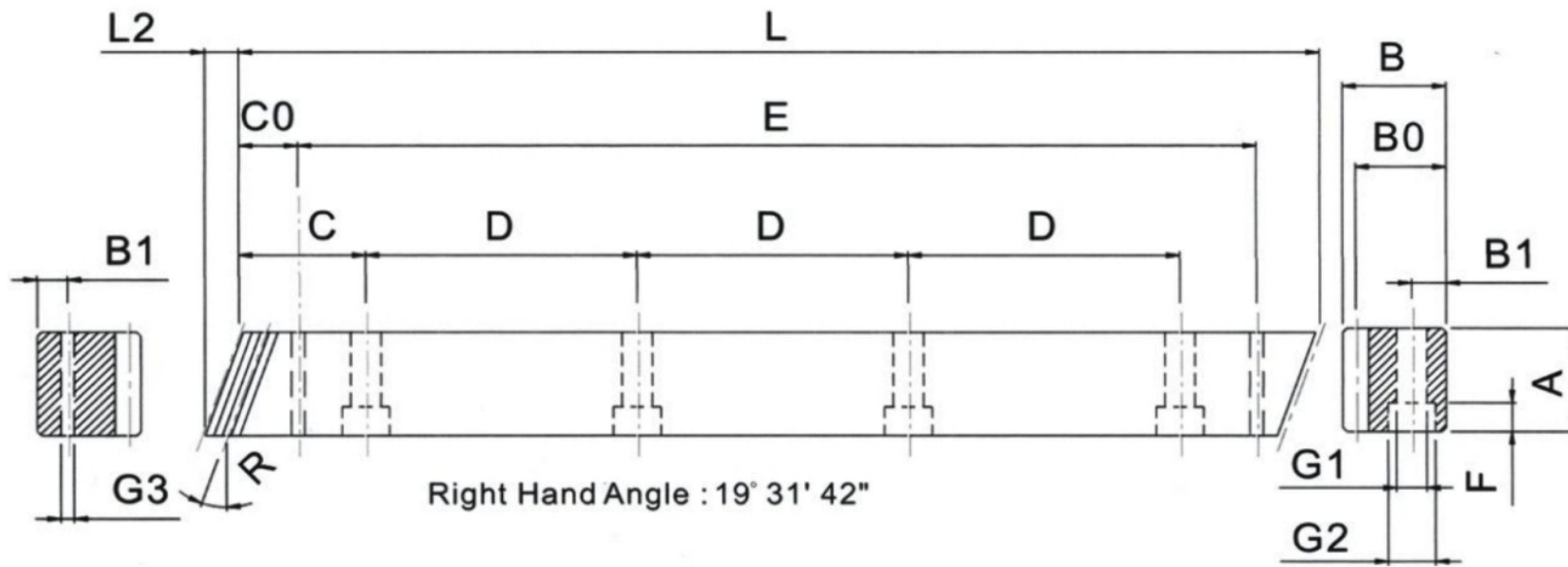
Product data



RHGH

Specifications

Precision grade	DIN 6	Tooth hardness	50~55HRC
Gear teeth	Helical	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Grinding
Material	42CrMo	Heat treatment	Tooth surface induction hardened
Right hand angle	19° 31' 42"		

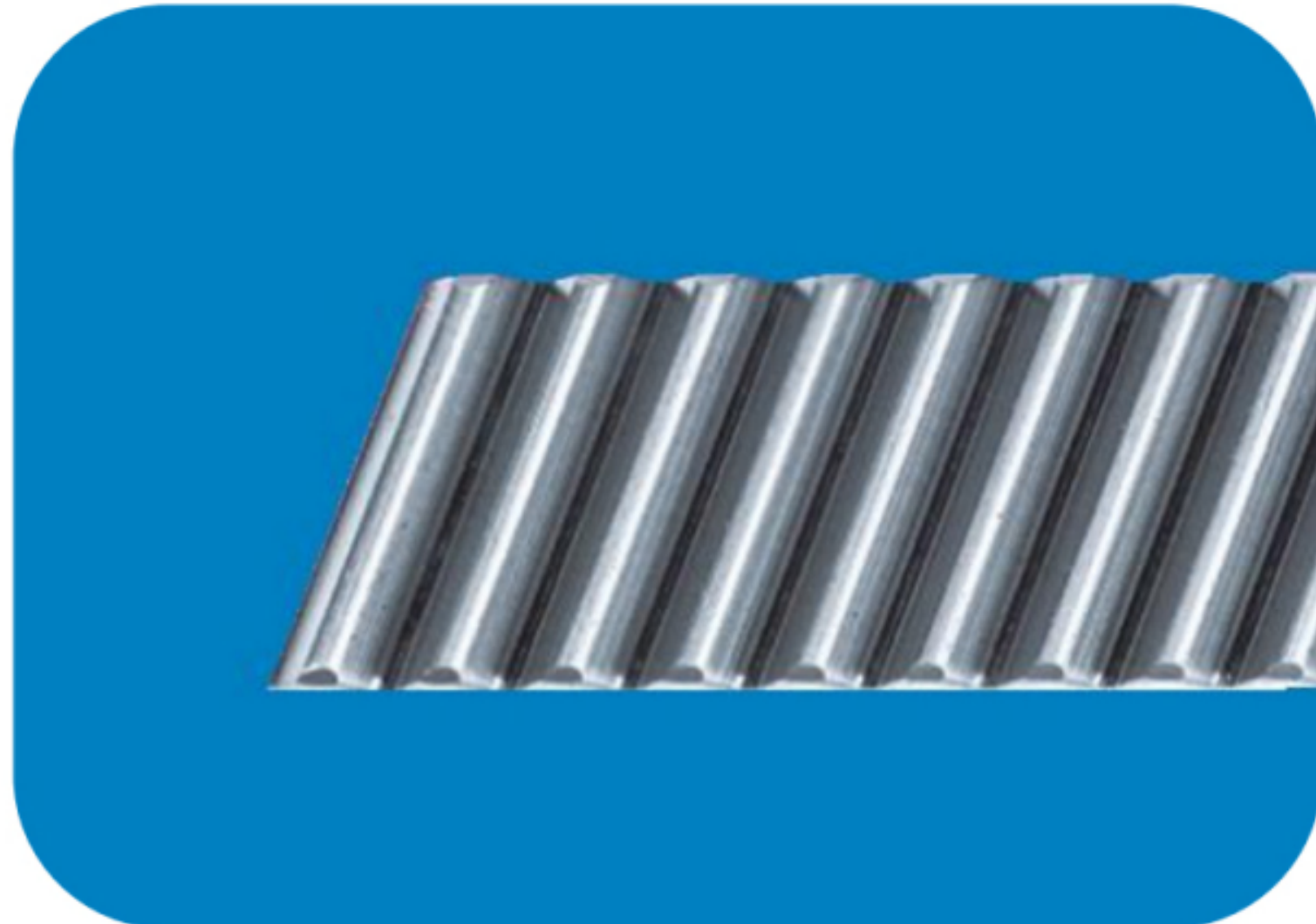


Dimension: mm

Catalog NO.	L	L2	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
RHGH015-050	500.00	6	100	17	17	15.5	62.50	125	4	7	6	9.5	7	31.7	436.6	5.7	0.021
RHGH015-100	1000.0	6	200	17	17	15.5	62.50	125	8	7	6	9.5	7	31.7	936.6	5.7	0.021
RHGH020-050	500.00	8.5	75	24	24	22	62.50	125	4	8	7	11	7	31.7	436.6	5.7	0.022
RHGH020-100	1000.0	8.5	150	24	24	22	62.50	125	8	8	7	11	7	31.7	936.6	5.7	0.022
RHGH030-050	500.00	10.3	50	29	29	26	62.50	125	4	9	10	15	9	35.0	430.0	7.7	0.024
RHGH030-100	1000.0	10.3	100	29	29	26	62.50	125	8	9	10	15	9	35.0	930.0	7.7	0.024
RHGH040-050	506.67	13.8	38	39	39	35	62.50	125	4	12	10	15	9	33.3	433.0	7.7	0.024
RHGH040-100	1000.0	13.8	75	39	39	35	62.50	125	8	12	10	15	9	33.3	933.4	7.7	0.024
RHGH050-050	500.00	17.4	30	49	39	34	62.50	125	4	12	14	20	13	37.5	425.0	11.7	0.025
RHGH050-100	1000.0	17.4	60	49	39	34	62.50	125	8	12	14	20	13	37.5	925.0	11.7	0.025
RHGH060-050	500.00	20.9	25	59	49	43	62.50	125	4	16	18	26	17	37.5	425.0	15.7	0.026
RHGH060-100	1000.0	20.9	50	59	49	43	62.50	125	8	16	18	26	17	37.5	925.0	15.7	0.026
RHGH080-050	480.00	28.0	18	79	79	71	60.00	120	4	25	22	33	21	120.0	240.0	17.7	0.027
RHGH080-100	960.00	28.0	36	79	79	71	60.00	120	8	25	22	33	21	120.0	720.0	17.7	0.027

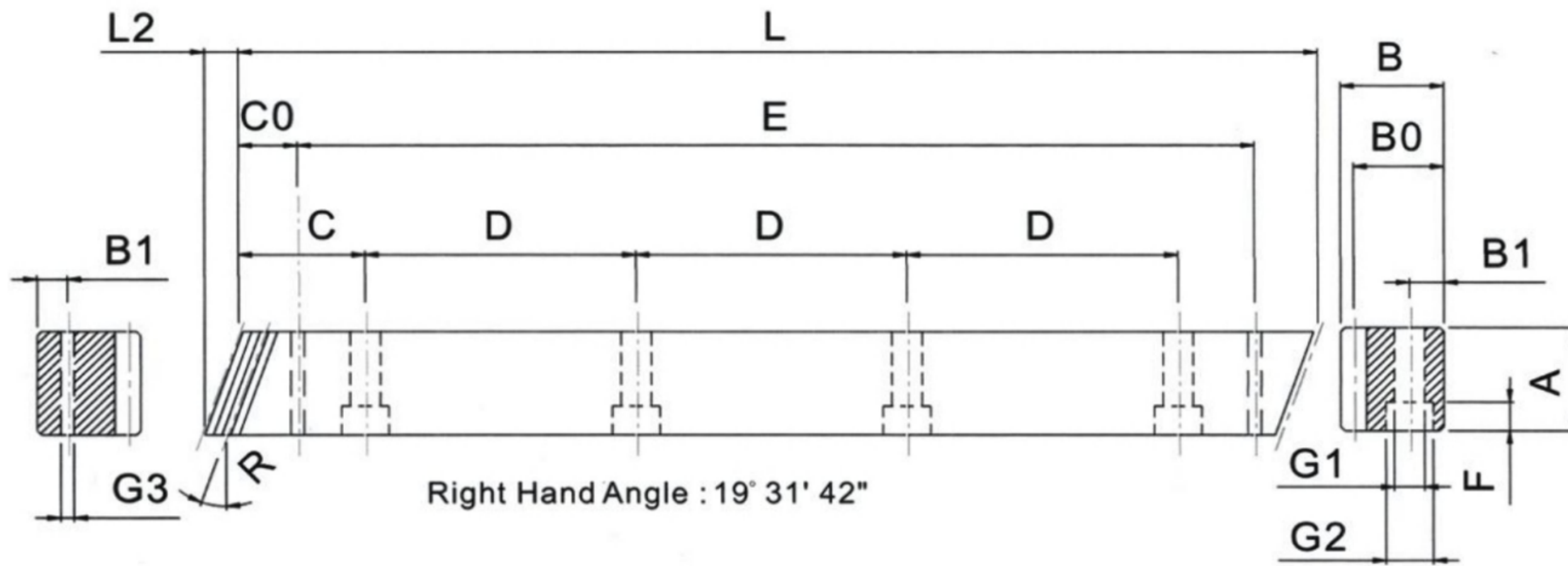


Product data



RHFQ-G Specifications

Precision grade	DIN 7	Tooth hardness	15~20HRC
Gear teeth	Helical	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Finish cutting
Material	42CrMo	Heat treatment	Quenched
Right hand angle	19° 31' 42"		

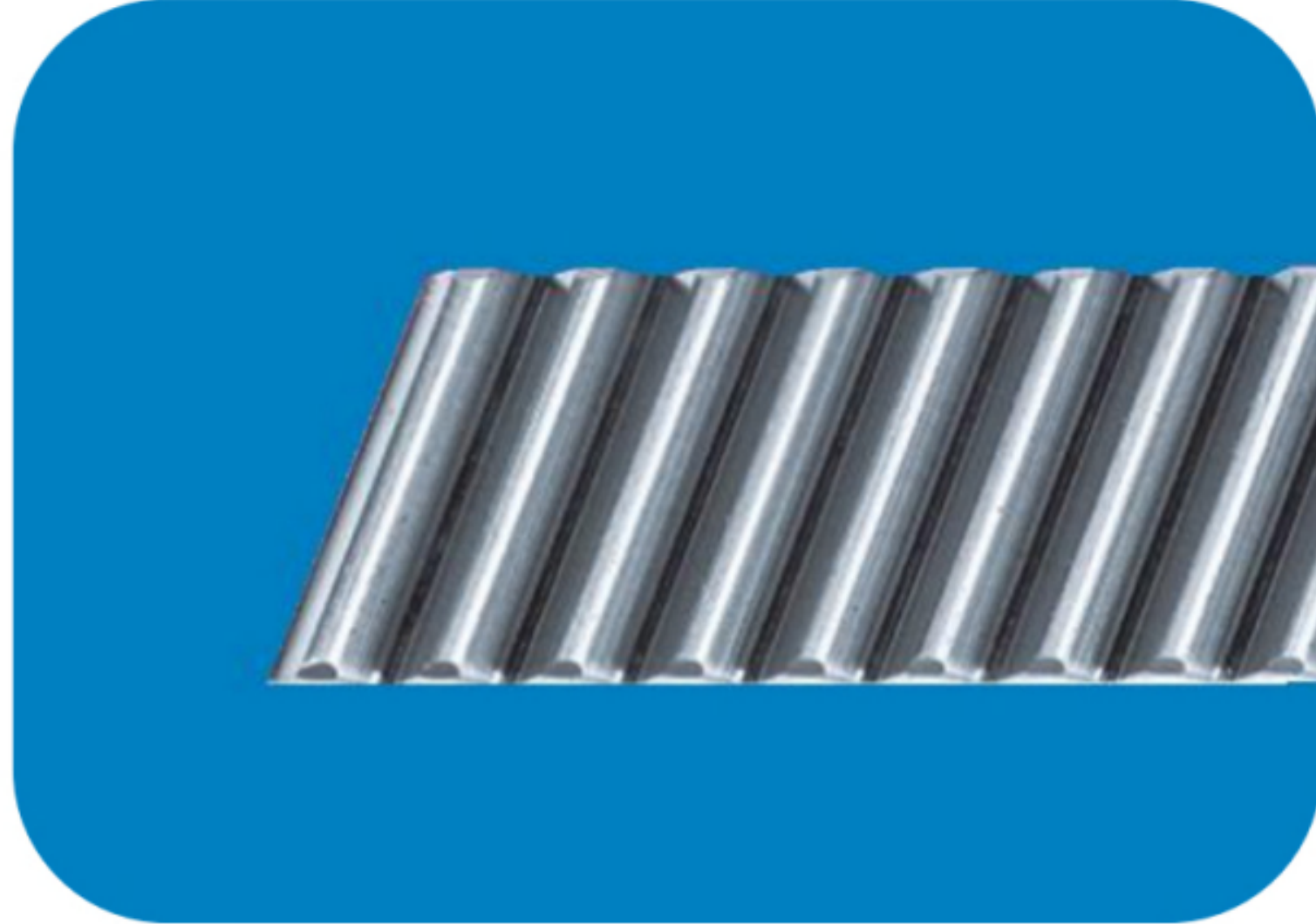


Dimension: mm

Catalog NO.	L	L2	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
RHFQ015-050	500.00	6	100	17	17	15.5	62.50	125	4	7	6	9.5	7	31.7	436.6	5.7	0.042
RHFQ015-100	1000.0	6	200	17	17	15.5	62.50	125	8	7	6	9.5	7	31.7	936.6	5.7	0.042
RHFQ020-050	500.00	8.9	75	25	24	22	62.50	125	4	8	7	11	7	31.7	436.6	5.7	0.044
RHFQ020-100	1000.0	8.9	150	25	24	22	62.50	125	8	8	7	11	7	31.7	936.6	5.7	0.044
RHFQ030-050	500.00	10.6	50	30	29	26	62.50	125	4	9	10	15	9	35.0	430.0	7.7	0.046
RHFQ030-100	1000.0	10.6	100	30	29	26	62.50	125	8	9	10	15	9	35.0	930.0	7.7	0.046
RHFQ040-050	506.67	14.2	38	40	39	35	62.50	125	4	12	10	15	9	33.3	433.0	7.7	0.048
RHFQ040-100	1000.0	14.2	75	40	39	35	62.50	125	8	12	10	15	9	33.3	933.4	7.7	0.048
RHFQ050-050	500.00	17.7	30	50	39	34	62.50	125	4	12	14	20	13	37.5	425.0	11.7	0.050
RHFQ050-100	1000.0	17.7	60	50	39	34	62.50	125	8	12	14	20	13	37.5	925.0	11.7	0.050
RHFQ060-050	500.00	20.9	25	59	49	43	62.50	125	4	16	18	26	17	37.5	425.0	15.7	0.055
RHFQ060-100	1000.0	20.9	50	59	49	43	62.50	125	8	16	18	26	17	37.5	925.0	15.7	0.055
RHFQ080-050	480.00	28.0	18	79	79	71	60.00	120	4	25	22	33	21	120.0	240.0	17.7	0.060
RHFQ080-100	960.00	28.0	36	79	79	71	60.00	120	8	25	22	33	21	120.0	720.0	17.7	0.060



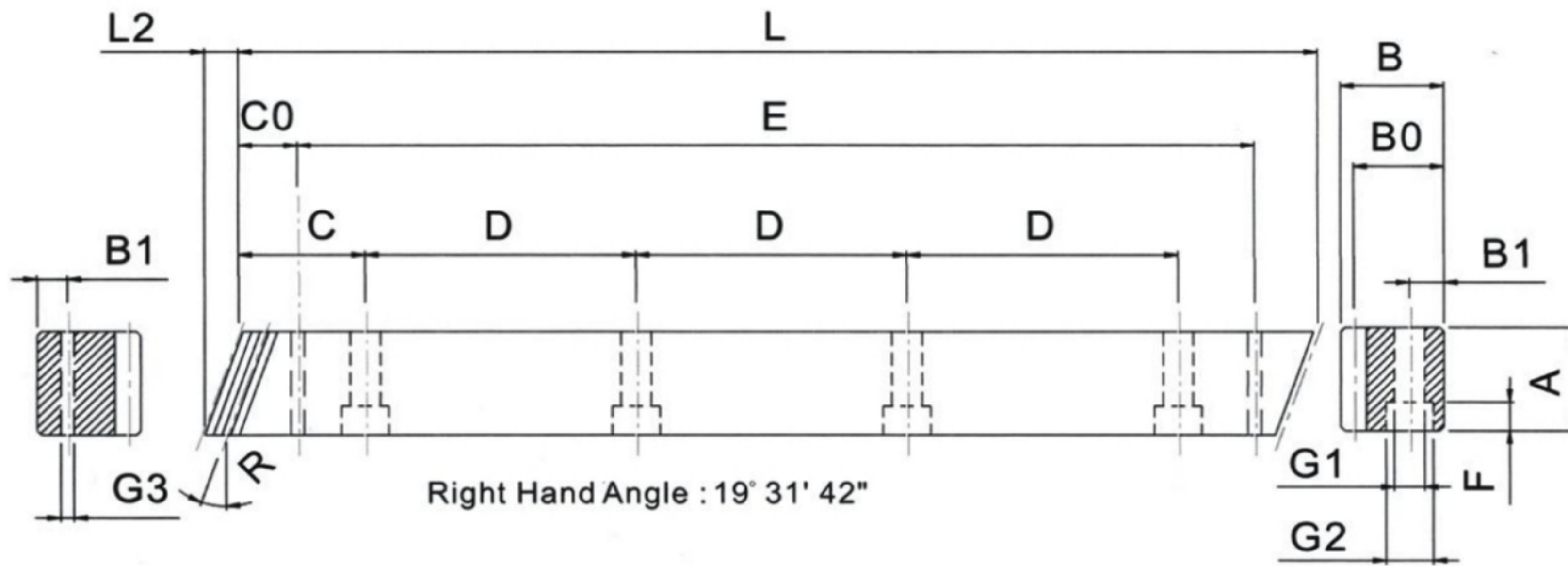
Product data



RHFH-G

Specifications

Precision grade	DIN 8	Tooth hardness	50~55HRC
Gear teeth	Helical	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Finish cutting
Material	42CrMo	Heat treatment	Tooth surface induction hardened
Right hand angle	19° 31' 42"		

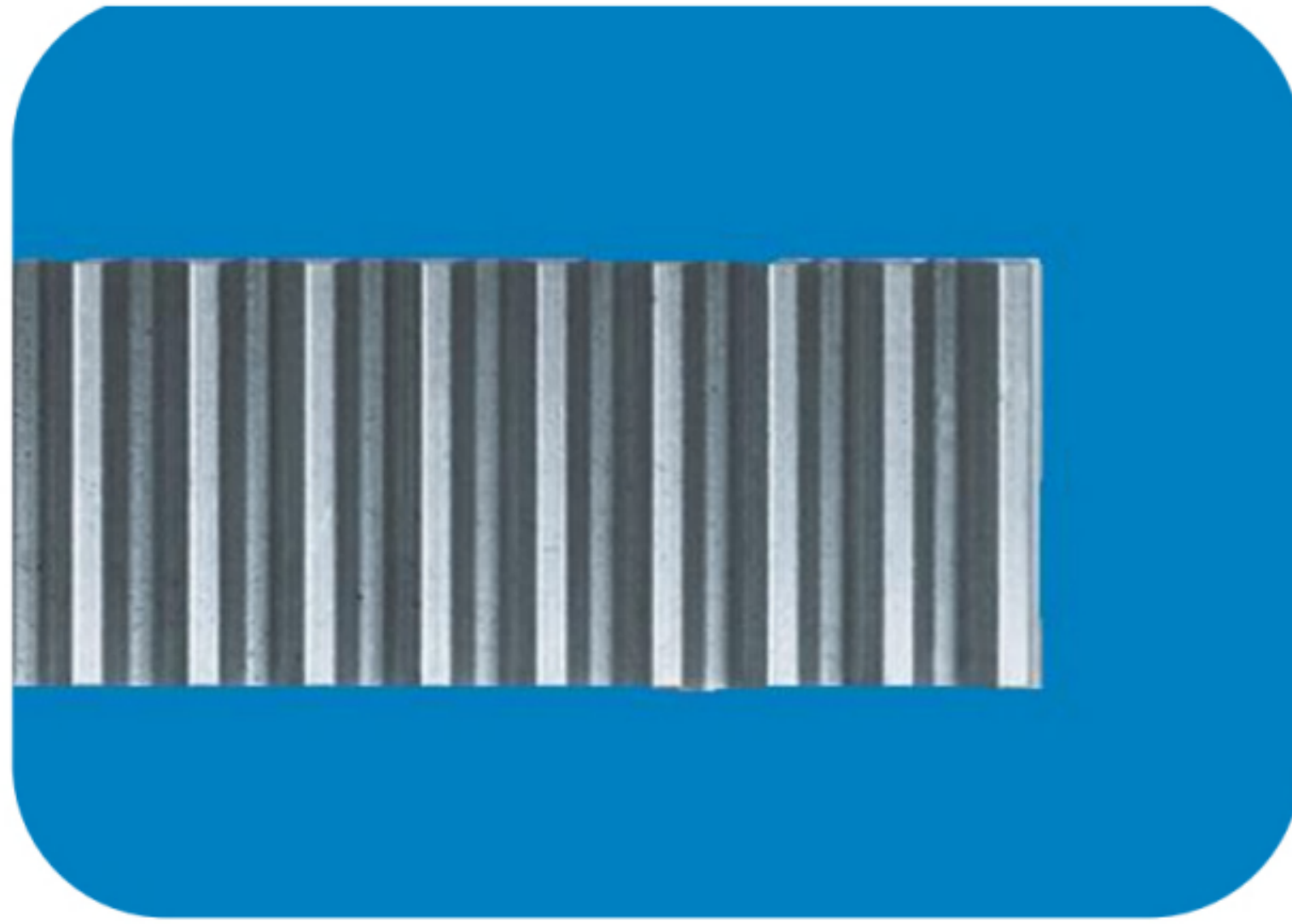


Dimension: mm

Catalog NO.	L	L2	Tooth NO.	A	B	B0	C	D	Hole NO.	B1	G1	G2	F	CO	E	G3	PichError /300mm
RHFH015-050	500.00	6	100	17	17	15.5	62.50	125	4	7	6	9.5	7	31.7	436.6	5.7	0.059
RHFH015-100	1000.0	6	200	17	17	15.5	62.50	125	8	7	6	9.5	7	31.7	936.6	5.7	0.059
RHFH020-050	500.00	9.2	75	24	24	22	62.50	125	4	8	7	11	7	31.7	436.6	5.7	0.061
RHFH020-100	1000.0	9.2	150	24	24	22	62.50	125	8	8	7	11	7	31.7	936.6	5.7	0.061
RHFH030-050	500.00	11.0	50	29	29	26	62.50	125	4	9	10	15	9	35.0	430.0	7.7	0.065
RHFH030-100	1000.0	11.0	100	29	29	26	62.50	125	8	9	10	15	9	35.0	930.0	7.7	0.065
RHFH040-050	506.67	14.5	38	39	39	35	62.50	125	4	12	10	15	9	33.3	433.0	7.7	0.068
RHFH040-100	1000.0	14.5	75	39	39	35	62.50	125	8	12	10	15	9	33.3	933.4	7.7	0.068
RHFH050-050	500.00	17.7	30	49	39	34	62.50	125	4	12	14	20	13	37.5	425.0	11.7	0.070
RHFH050-100	1000.0	17.7	60	49	39	34	62.50	125	8	12	14	20	13	37.5	925.0	11.7	0.070
RHFH060-050	500.00	21.3	25	59	49	43	62.50	125	4	16	18	26	17	37.5	425.0	15.7	0.072
RHFH060-100	1000.0	21.3	50	59	49	43	62.50	125	8	16	18	26	17	37.5	925.0	15.7	0.072
RHFH080-050	480.00	28.7	18	79	79	71	60.00	120	4	25	22	33	21	120.0	240.0	17.7	0.075
RHFH080-100	960.00	28.7	36	79	79	71	60.00	120	8	25	22	33	21	120.0	720.0	17.7	0.075



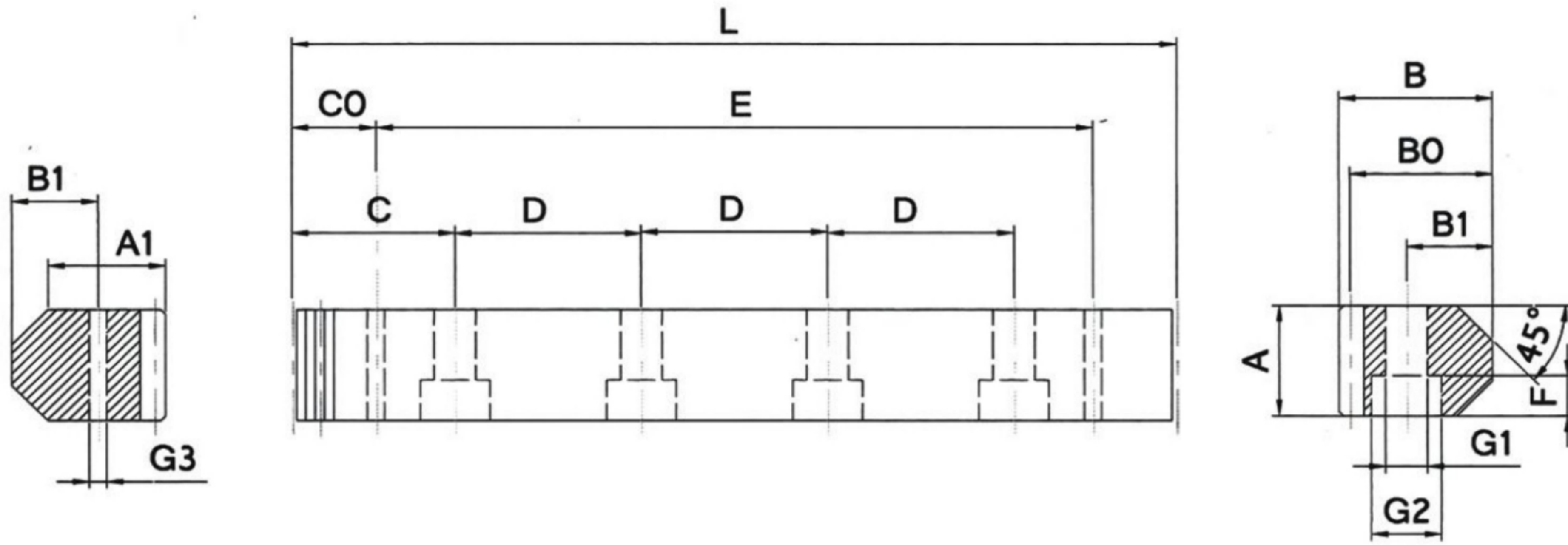
Product data



SVGH

Specifications

Precision grade	DIN 6	Tooth hardness	50~55HRC
Gear teeth	Straight	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Grinding
Material	S45C	Heat treatment	Tooth surface induction hardened

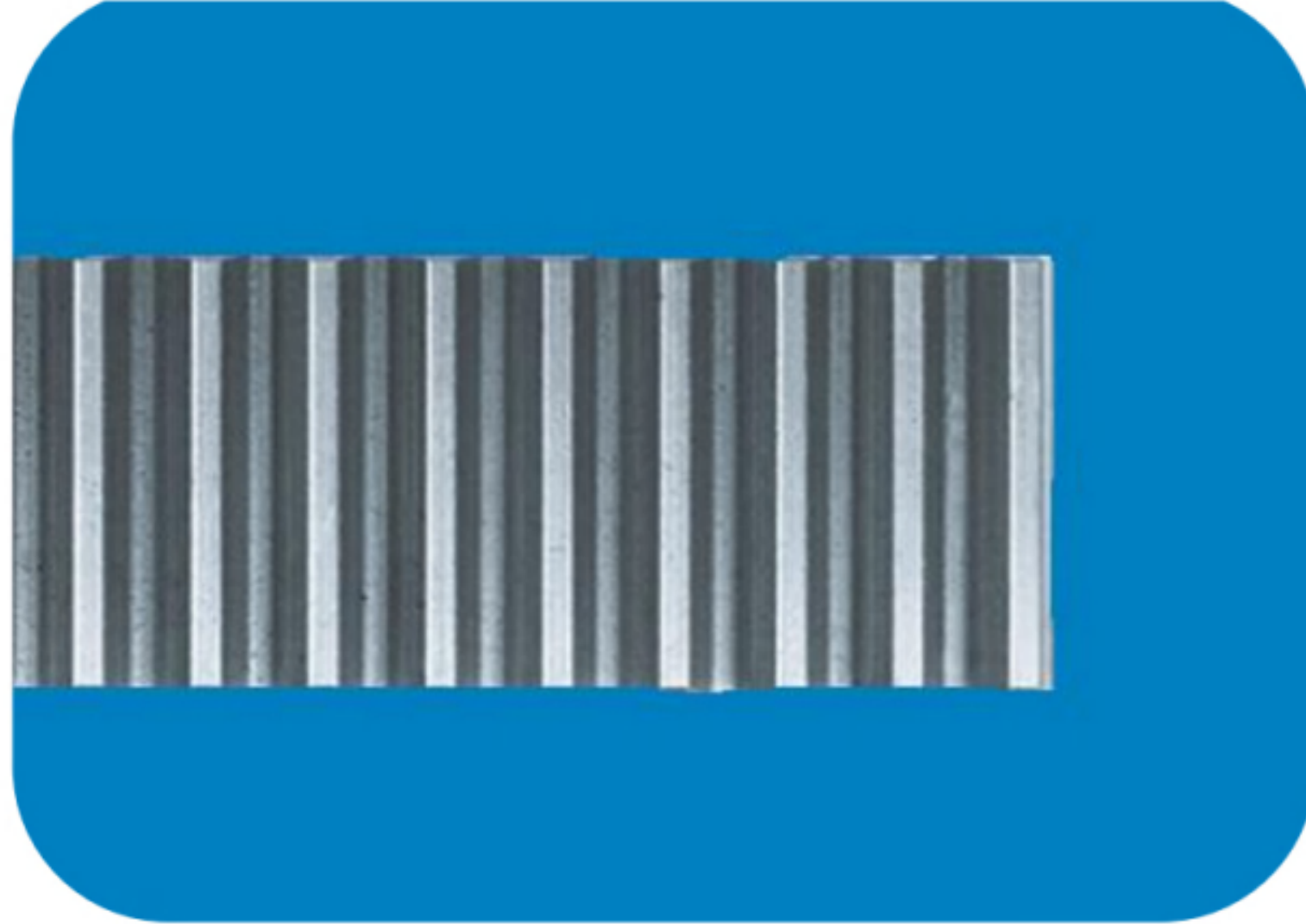


Dimension: mm

Catalog NO.	L	M	A	B	B0	C	D	Hole NO.	B1	B2	G1	G2	F	CO	E	G3
SVGH015-050	500	1.5915	14.5	24.5	22.9	62.50	125	4	13	20	7	11	7	30	440	5.7
SVGH015-100	1000	1.5915	14.5	24.5	22.9	62.50	125	8	13	20	7	11	7	30	940	5.7
SVGH020-050	500	1.5915	19.5	29.5	27.9	62.50	125	4	15.5	23.5	9	15	9	30	440	5.7
SVGH020-100	1000	1.5915	19.5	29.5	27.9	62.50	125	8	15.5	23.5	9	15	9	30	940	5.7
SVGH025-050	502.5	2.3873	24.7	33	30.61	62.81	125.625	4	18.5	25.2	9	15	9	30	442.5	5.7
SVGH025-100	1005	2.3873	24.7	33	30.61	62.81	125.625	8	18.5	25.2	9	15	9	30	945	5.7
SVGH035-050	500	3.1831	34.6	46.6	43.41	62.50	125	4	28.6	36.7	11	18	11	30	440	7.7
SVGH035-100	1000	3.1831	34.6	46.6	43.41	62.50	125	8	28.6	36.7	11	18	11	30	940	7.7



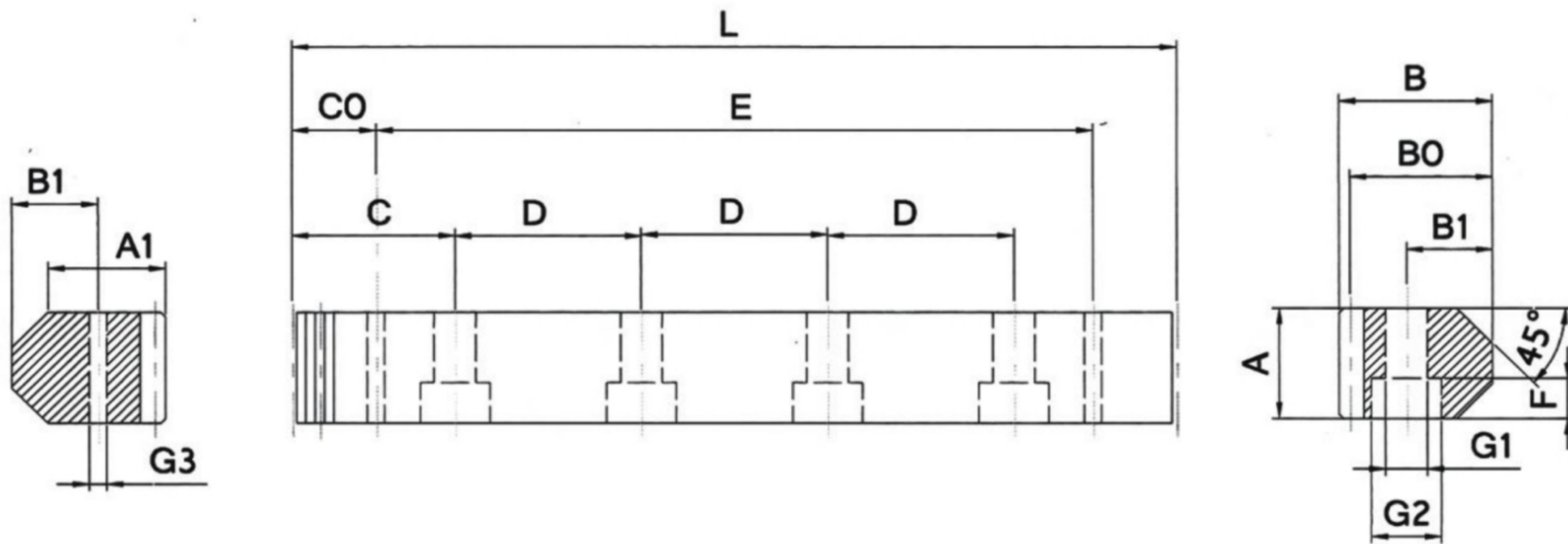
Product data



SVFH-G

Specifications

Precision grade	DIN 8	Tooth hardness	50~55HRC
Gear teeth	Straight	Surface treatment	Grinding
Pressure angle	20°	Treatment of Tooth	Finish cutting
Material	S45C	Heat treatment	Tooth surface induction hardened



Dimension: mm

Catalog NO.	L	M	A	B	B0	C	D	Hole NO.	B1	B2	G1	G2	F	CO	E	G3
SVFH015-050	500	1.5915	14.5	24.5	22.9	62.50	125	4	13	20	7	11	7	30	440	5.7
SVFH015-100	1000	1.5915	14.5	24.5	22.9	62.50	125	8	13	20	7	11	7	30	940	5.7
SVFH020-050	500	1.5915	19.5	29.5	27.9	62.50	125	4	15.5	23.5	9	15	9	30	440	5.7
SVFH020-100	1000	1.5915	19.5	29.5	27.9	62.50	125	8	15.5	23.5	9	15	9	30	940	5.7
SVFH025-050	502.5	2.3873	24.7	33	30.61	62.81	125.625	4	18.5	25.2	9	15	9	30	442.5	7.7
SVFH025-100	1005	2.3873	24.7	33	30.61	62.81	125.625	8	18.5	25.2	9	15	9	30	945	7.7
SVFH035-050	500	3.1831	34.6	46.6	43.41	62.50	125	4	28.6	36.7	11	18	11	30	440	7.7
SVFH035-100	1000	3.1831	34.6	46.6	43.41	62.50	125	8	28.6	36.7	11	18	11	30	940	7.7



Product data

SG16 Grinding Spur Gears

Module 2

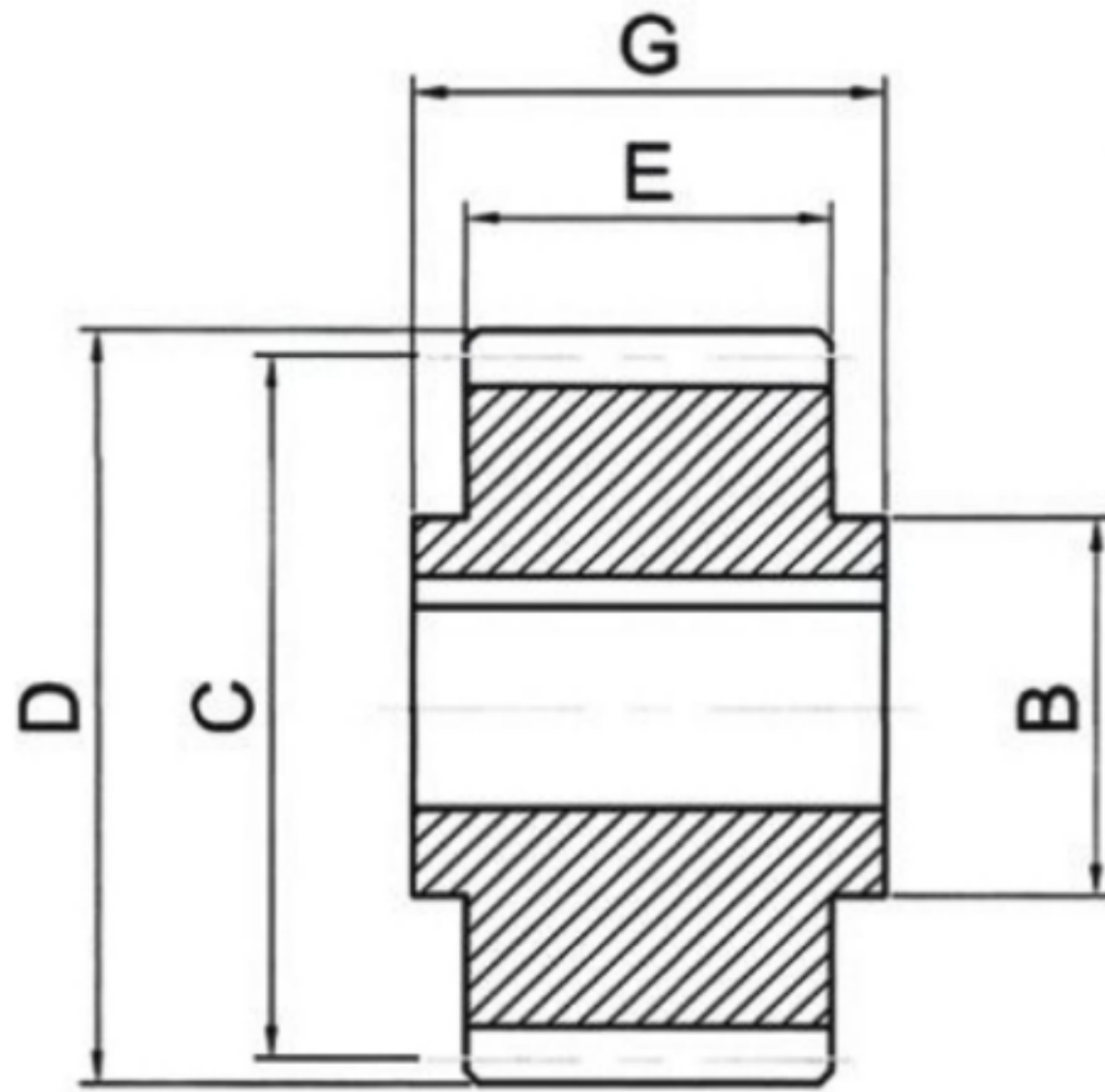


Fig.1

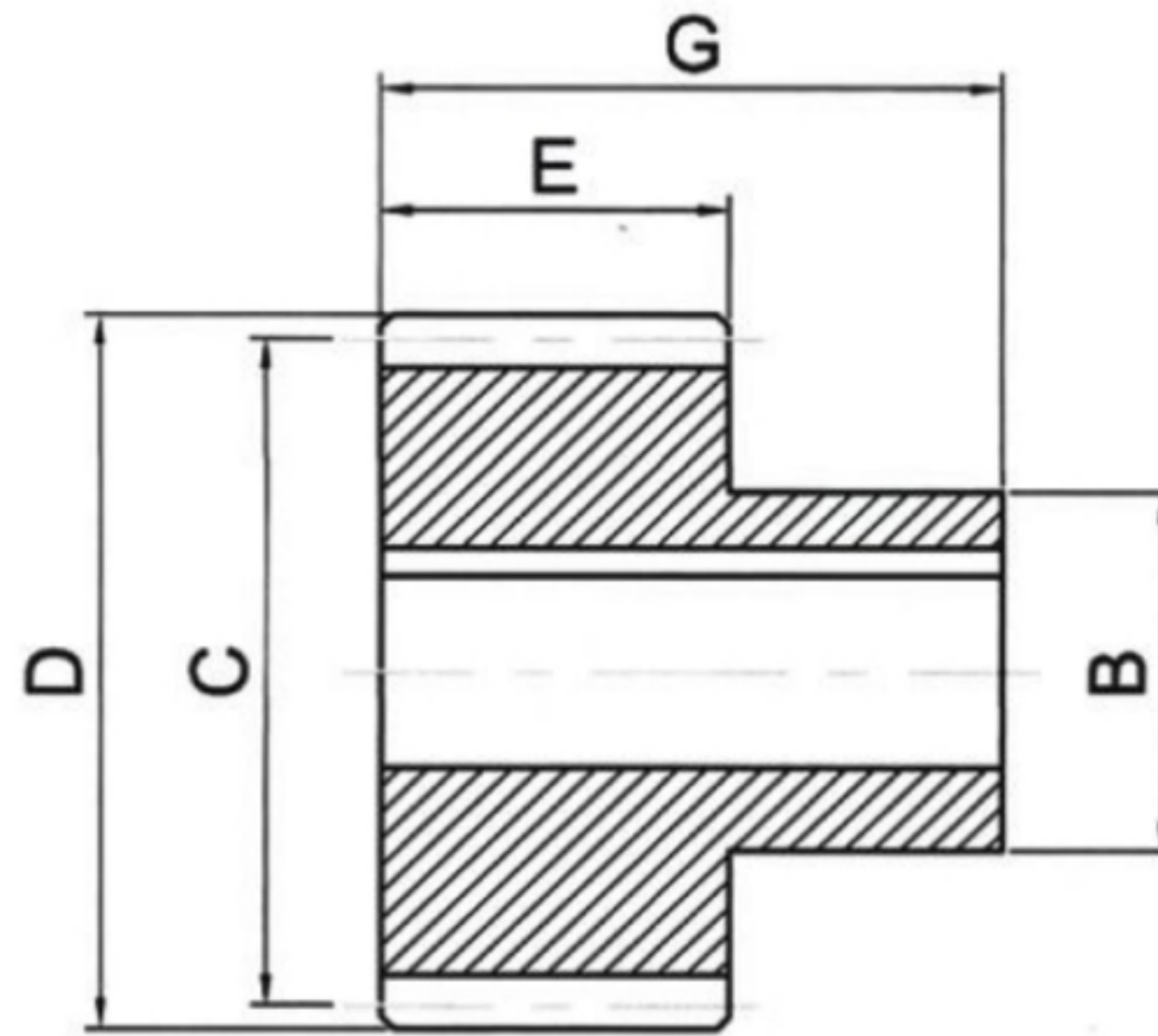
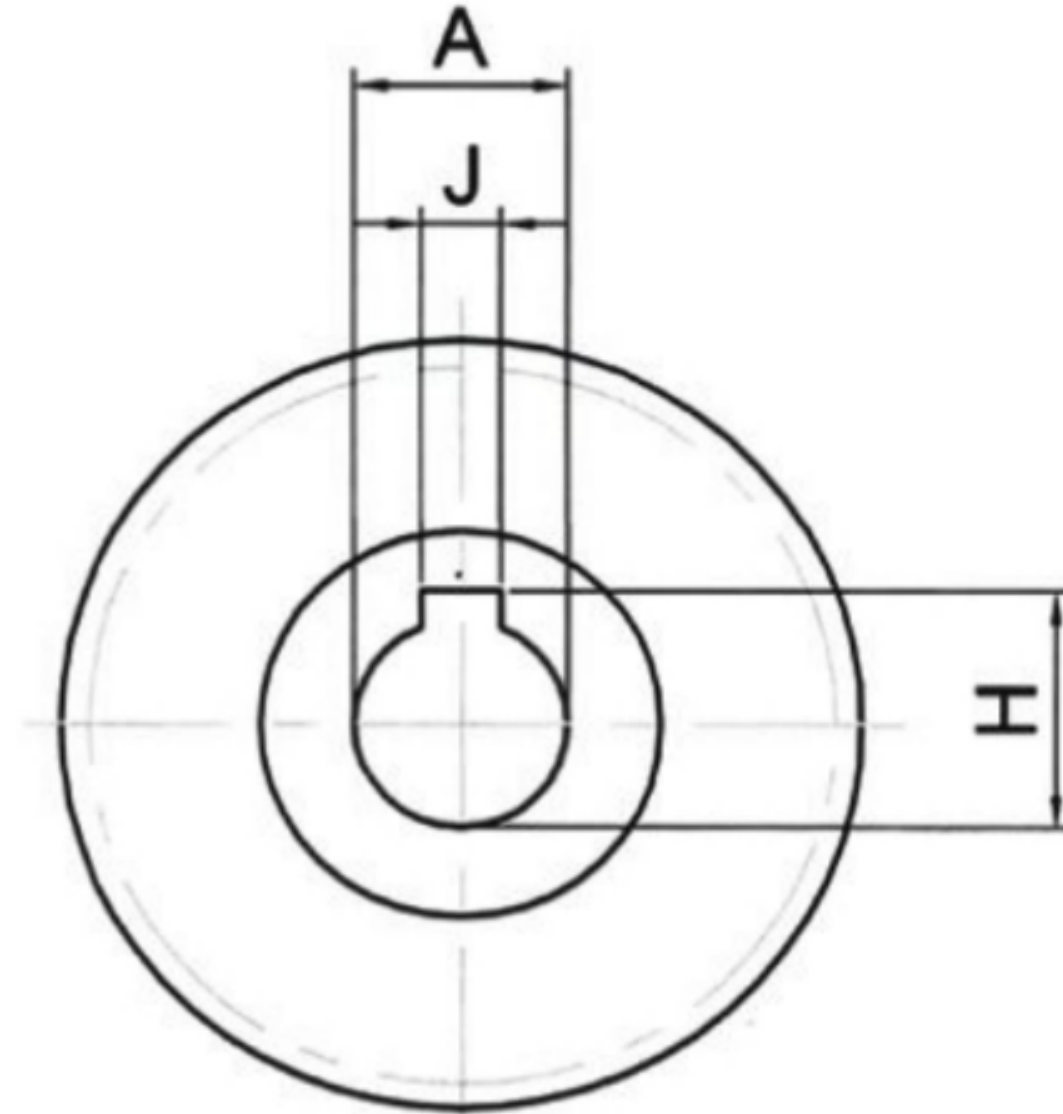


Fig. 2



Module 2

Dimension: mm

Catalog NO.	Fig.	Z	Bore	Hua dia	Pitch.dia	Out.dia	Width	Length	J	H
			Ah7	B	C	D	E	G		
SG16-M2-16-15-1	1	16	15	25	32	36	28	30	5	17.3
SG16-M2-18-15-1	1	18	15	30	36	40	28	30	5	17.3
SG16-M2-18-20-1	1	18	20	25	36	40	28	30	6	22.8
SG16-M2-20-15-1	1	20	15	25	40	44	28	30	5	17.3
SG16-M2-20-20-1	1	20	20	30	40	44	28	30	6	22.8
SG16-M2-22-15-1	1	22	15	25	44	48	28	30	5	17.3
SG16-M2-22-25-1	1	22	25	36	44	48	28	30	8	28.3
SG16-M2-25-22-2	2	25	22	36	50	54	28	56	6	24.8
SG16-M2-25-30-1	1	25	30	45	50	54	28	30	8	33.3
SG16-M2-28-30-2	2	28	30	50	56	60	28	60	8	33.3
SG16-M2-28-35-1	1	28	35	48	56	60	28	30	10	38.3
SG16-M2-32-16-2	2	32	16	30	64	68	28	54	5	18.3
SG16-M2-32-22-2	2	32	22	36	64	68	28	56	6	24.8
SG16-M2-32-25-1	1	32	25	36	64	68	28	30	8	28.3
SG16-M2-32-32-2	2	32	32	55	64	68	28	65	10	35.3
SG16-M2-36-25-1	1	36	25	36	72	76	28	30	8	28.3
SG16-M2-36-40-2	2	36	40	62	72	76	28	65	12	43.3
SG16-M2-40-25-1	1	40	25	36	80	84	28	30	8	28.3
SG16-M2-40-32-2	2	40	32	55	80	84	28	65	10	35.3
SG16-M2-40-45-2	2	40	45	68	80	84	28	65	14	48.8



Product data

Module 3

Specification



Precision grade	DIN 6	Tooth hardness	55~60HRC
Gear teeth	Standard full depth	Surface treatment	---
Pressure angle	20°	Treatment of Tooth	Grinding
Material	20CrMnTi	Datum reference	Bore
Heat treatment	Induction hardened	Secondary operations	Possible except on the teeth

Module 3

Dimension: mm

Catalog NO.	Fig.	Z	Bore	Hua dia	Pitch.dia	Out.dia	Width	Length	J	H
			Ah7	B	C	D	E	G		
SG16-M3-18-25-1	1	18	25	36	54	60	28	30	8	28.3
SG16-M3-20-25-1	1	20	25	36	60	66	28	30	8	28.3
SG16-M3-20-35-1	1	20	35	48	60	66	28	30	10	38.3
SG16-M3-22-22-2	2	22	22	36	66	72	28	56	6	24.8
SG16-M3-22-25-2	2	22	25	44	66	72	28	60	8	28.3
SG16-M3-22-30-1	1	22	30	45	66	72	28	30	8	33.3
SG16-M3-22-32-2	2	22	32	55	66	72	28	65	10	35.3
SG16-M3-25-25-1	1	25	25	36	75	81	28	30	8	28.3
SG16-M3-25-40-2	2	25	40	62	75	81	28	65	12	43.3
SG16-M3-25-45-1	1	25	45	58	75	81	28	30	14	48.3
SG16-M3-28-22-2	2	28	22	36	84	90	28	56	6	24.8
SG16-M3-28-30-1	1	28	30	45	84	90	28	30	8	33.3
SG16-M3-28-32-2	2	28	32	55	84	90	28	65	10	35.3
SG16-M3-28-35-2	2	28	35	55	84	90	28	65	10	38.3
SG16-M3-28-45-2	2	28	45	68	84	90	28	65	14	48.8
SG16-M3-32-25-1	1	32	25	36	96	102	28	30	8	28.3
SG16-M3-32-40-2	2	32	40	62	96	102	28	65	12	43.3
SG16-M3-32-45-1	1	32	45	58	96	102	28	30	14	48.8
SG16-M3-36-35-1	1	36	35	48	108	114	28	30	10	38.3
SG16-M3-36-45-2	2	36	45	68	108	114	28	65	14	48.8



SG16 Grinding Spur Gears

Module 4

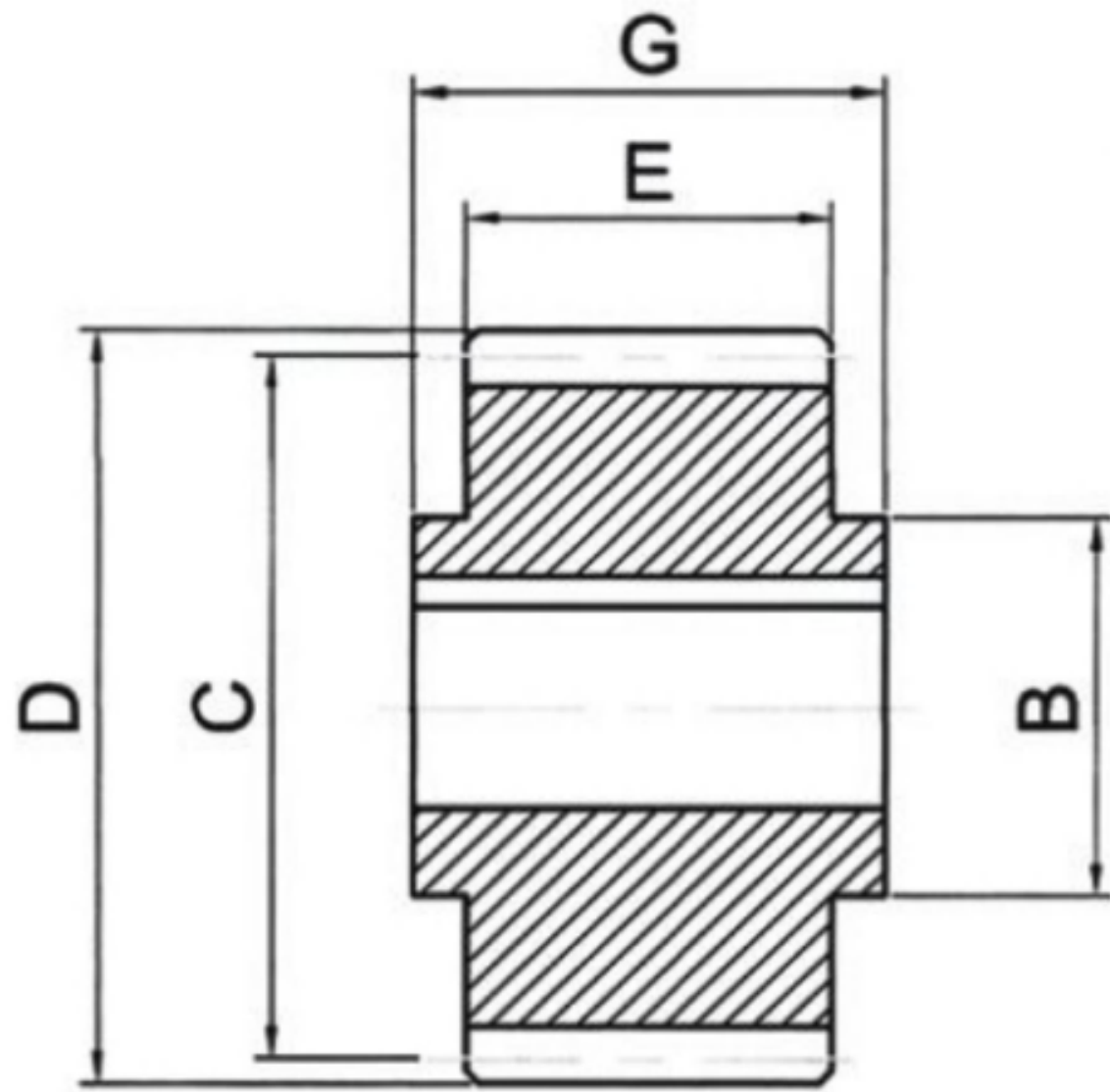


Fig.1

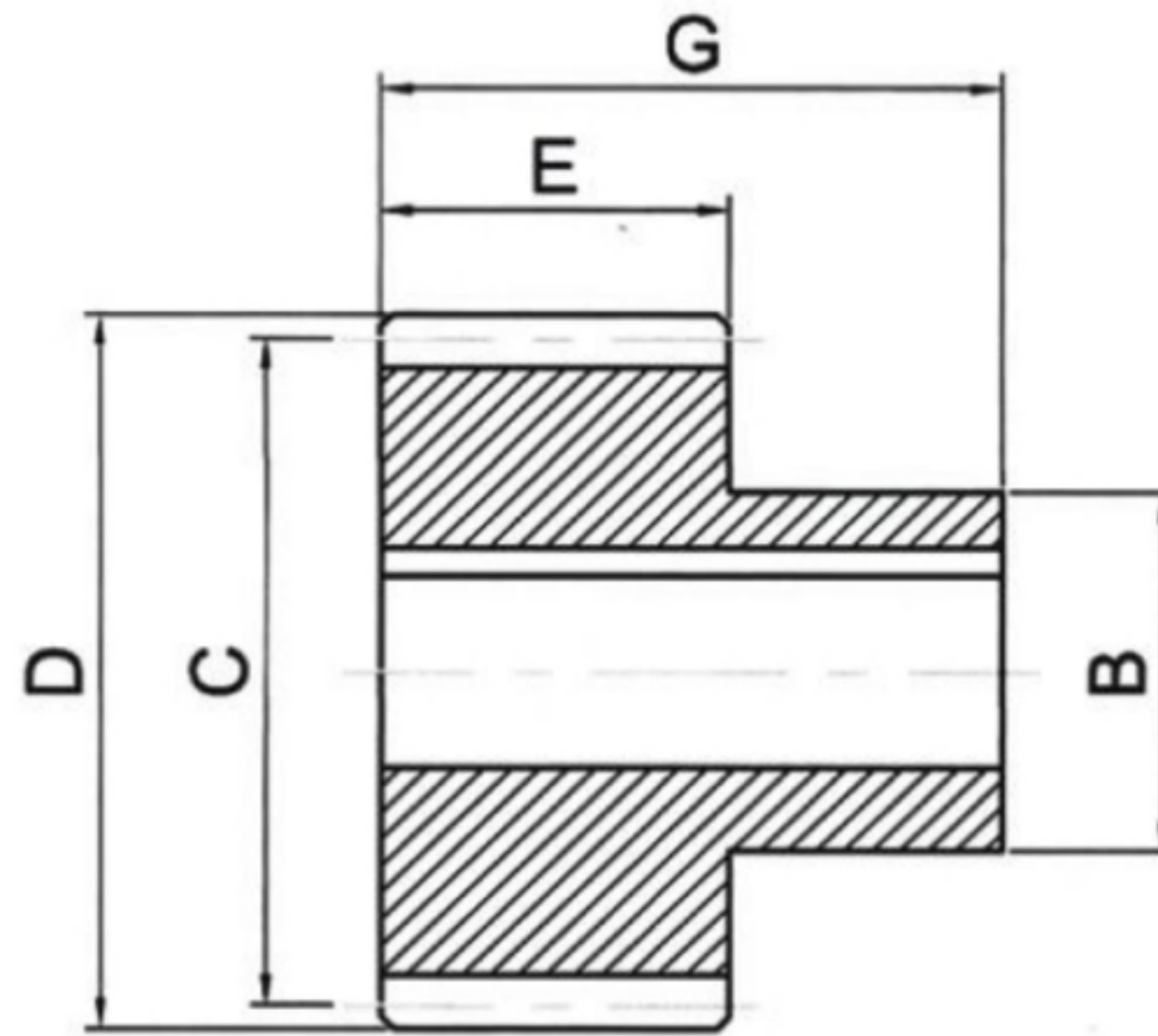
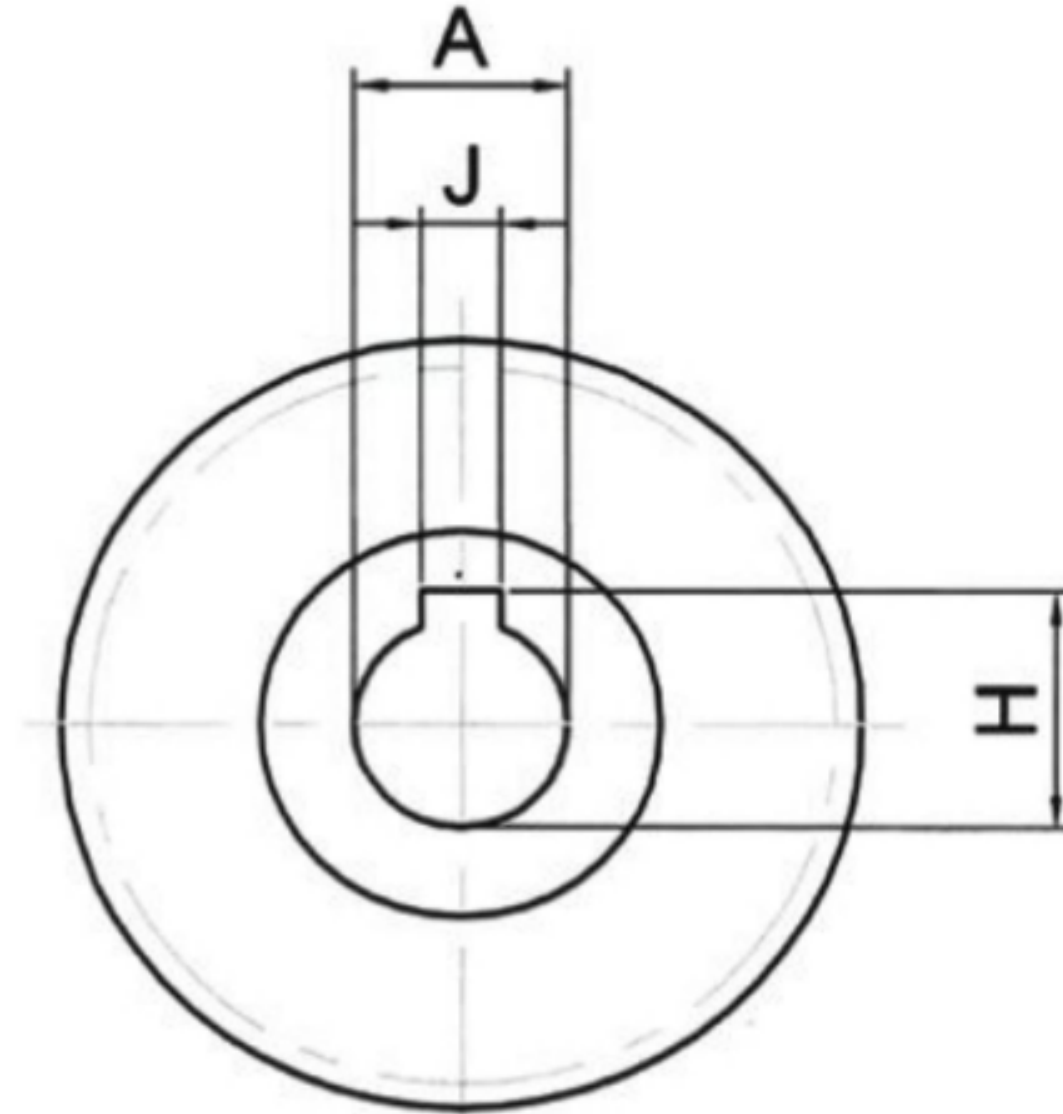


Fig. 2



Module 4

Dimension: mm

Catalog NO.	Fig.	Z	Bore	Hua dia	Pitch.dia	Out.dia	Width	Length	J	H
			Ah7	B	C	D	E	G		
SG16-M4-20-32-2	2	20	32	55	80	88	40	75	10	35.3
SG16-M4-20-35-1	1	20	35	52	80	88	40	50	10	38.3
SG16-M4-20-40-2	2	20	40	62	80	88	40	75	12	43.3
SG16-M4-20-45-1	1	20	45	65	80	88	40	50	14	48.8
SG16-M4-22-35-1	1	22	35	52	88	96	40	50	10	38.3
SG16-M4-22-45-2	2	22	45	68	88	96	40	75	14	48.8
SG16-M4-25-32-2	2	25	32	55	100	108	40	75	10	35.3
SG16-M4-25-35-2	2	25	35	55	100	108	40	75	10	38.3
SG16-M4-25-40-2	2	25	40	62	100	108	40	75	12	43.3
SG16-M4-25-45-1	1	25	45	65	100	108	40	50	14	48.8
SG16-M4-25-55-2	2	25	55	80	100	108	40	80	16	59.3
SG16-M4-28-35-1	1	28	35	52	112	120	40	50	10	38.3
SG16-M4-28-45-2	2	28	45	68	112	120	40	75	14	48.8
SG16-M4-32-35-1	1	32	35	52	128	136	40	50	10	38.3
SG16-M4-32-45-1	1	32	45	65	128	136	40	50	14	48.8
SG16-M4-32-55-2	2	32	55	80	128	136	40	80	16	59.3
SG16-M4-32-75-2	2	32	75	110	128	136	40	100	20	80.4
SG16-M4-40-45-1	1	40	45	65	160	168	40	50	14	48.8
SG16-M4-40-60-1	1	40	60	80	160	168	40	50	18	64.4
SG16-M4-40-75-2	2	40	75	110	160	168	40	100	20	80.4



Product data

Specification



Precision grade	DIN 6	Tooth hardness	55~60HRC
Gear teeth	Standard full depth	Surface treatment	---
Pressure angle	20°	Treatment of Tooth	Grinding
Material	20CrMnTi	Datum reference	Bore
Heat treatment	Induction hardened	Secondary operations	Possible except on the teeth

Module 5

Dimension: mm

Catalog NO.	Fig.	Z	Bore	Hua dia	Pitch.dia	Out.dia	Width	Length	J	H
			Ah7	B	C	D	E	G		
SG16-M 5-21-45-2	2	21	45	68	105	115	50	85	14	48.8
SG16-M 5-21-55-2	2	21	55	80	105	115	50	90	16	59.3
SG16-M5-25-45-2	2	25	45	68	125	135	50	85	14	48.8
SG16-M5-25-55-2	2	25	55	80	125	135	50	90	16	59.3
SG16-M5-25-75-2	2	25	75	110	125	135	50	110	20	80.4

Module 6

Dimension: mm

Catalog NO.	Fig.	Z	Bore	Hua dia	Pitch.dia	Out.dia	Width	Length	J	H
			Ah7	B	C	D	E	G		
SG16-M6-21-55-2	2	21	55	80	126	138	60	100	16	59.3
SG16-M6-21-75-2	2	21	75	110	126	138	60	120	20	79.9
SG16-M6-25-55-2	2	25	55	80	150	162	60	100	16	59.3
SG16-M6-25-75-2	2	25	75	110	150	162	60	120	20	79.9



Product data

HGL18 Grinding Spur Gears

Module 2

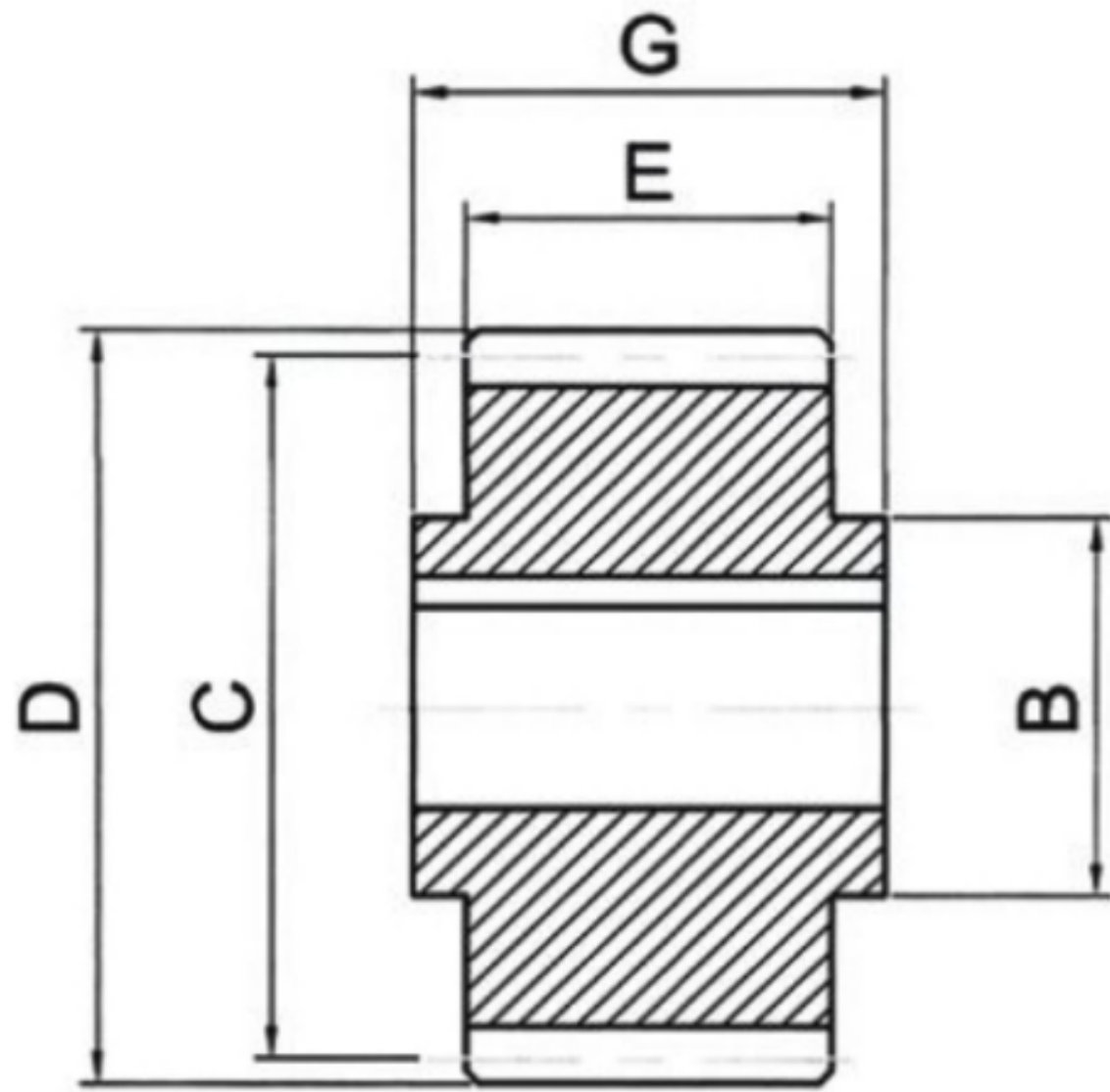


Fig.1

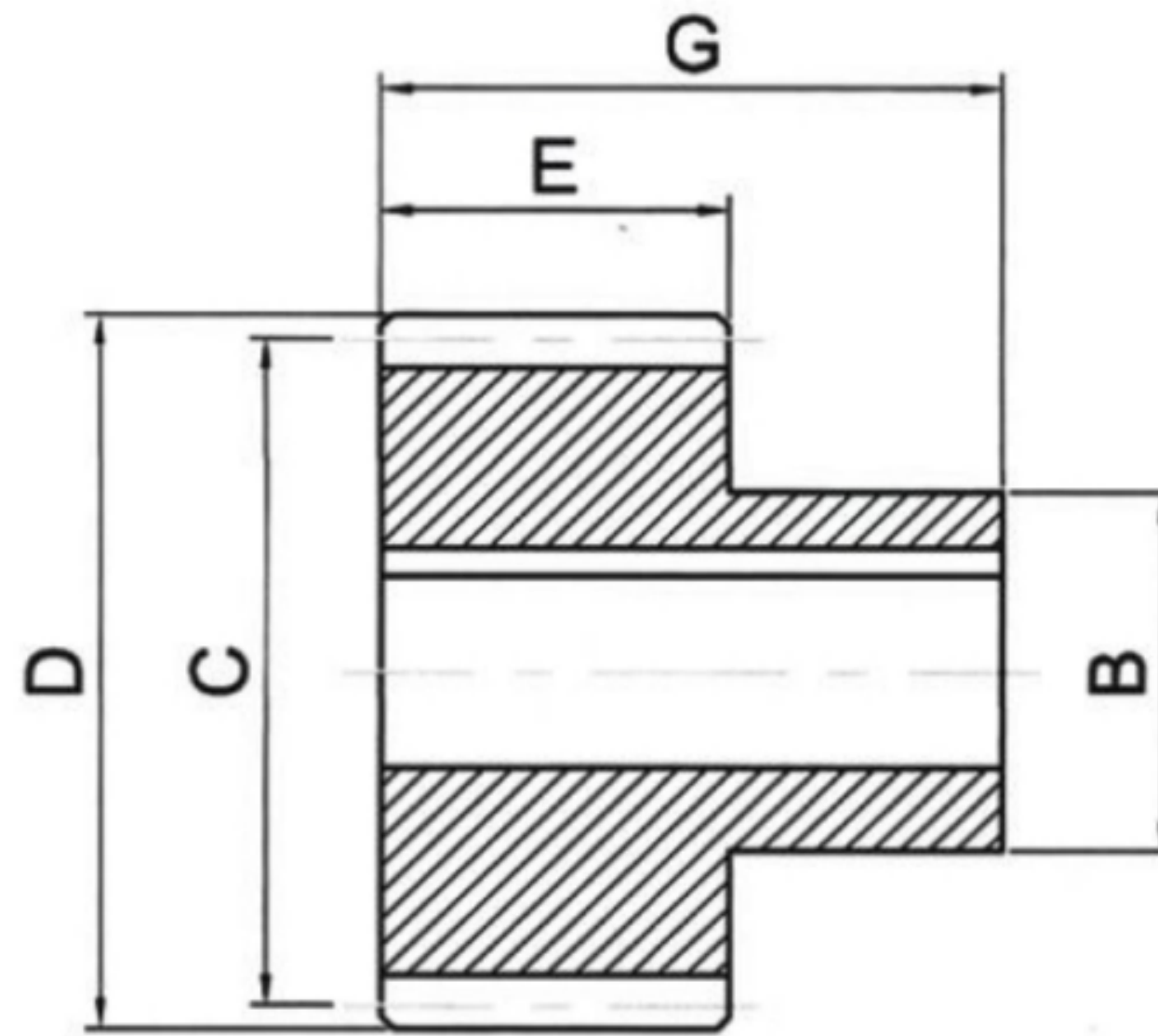
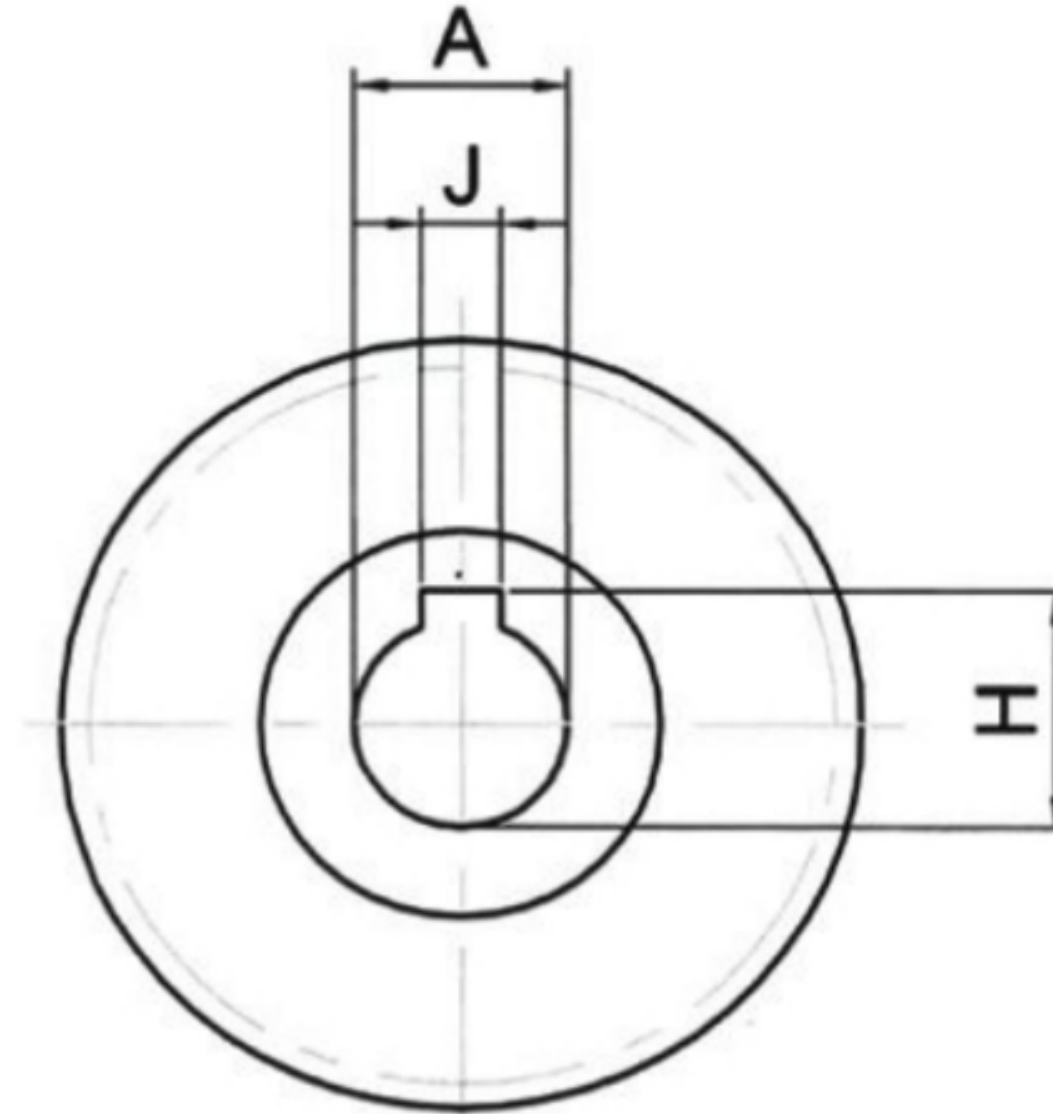


Fig. 2



Module 2

Dimension: mm

Catalog NO.	Fig.	Z	Bore	Hua dia	Pitch.dia	Out.dia	Width	Length	J	H
			Ah7	B	C	D	E	G		
HGL18-M2-20-20-1	1	20	20	30	42.44	46.4	28	30	6	22.8
HGL18-M2-20-22-1	1	20	22	30	42.44	46.4	28	30	6	24.8
HGL18-M2-21-16-1	1	21	16	25	44.56	48.6	28	30	5	18.3
HGL18-M2-21-22-2	2	21	22	36	44.56	48.6	28	56	6	24.8
HGL18-M2-25-20-1	1	25	20	30	53.05	57.1	28	30	6	22.8
HGL18-M2-25-25-1	1	25	25	36	53.05	57.1	28	30	8	28.3
HGL18-M2-28-35-1	1	28	35	48	59.42	63.4	28	30	10	38.3
HGL18-M2-30-16-1	1	30	16	25	63.66	67.7	28	30	5	18.3
HGL18-M2-30-20-1	1	30	20	30	63.66	67.7	28	30	6	22.8
HGL18-M2-30-22-2	2	30	22	36	63.66	67.7	28	56	6	24.8
HGL18-M2-30-25-1	1	30	25	36	63.66	67.7	28	30	6	28.3
HGL18-M2-30-30-2	2	30	30	50	63.66	67.7	28	60	8	33.3
HGL18-M2-30-32-2	2	30	32	55	63.66	67.7	28	65	10	35.3
HGL18-M2-32-20-1	1	32	20	30	67.91	71.9	28	30	6	22.8
HGL18-M2-32-25-1	1	32	25	36	67.91	71.9	28	30	8	28.3
HGL18-M2-32-32-2	2	32	32	50	67.91	71.9	28	51	10	35.3
HGL18-M2-32-35-1	1	32	35	48	67.91	71.9	28	30	10	38.3
HGL18-M2-36-35-1	1	36	35	48	76.39	80.4	28	30	10	38.3
HGL18-M2-39-32-2	2	39	32	55	82.76	86.8	28	65	10	35.3
HGL18-M2-40-35-1	1	40	35	48	84.88	88.9	28	30	10	38.3



Product data

Specification



Precision grade	DIN 6	Tooth hardness	55~60HRC
Gear teeth	Standard full depth	Heat treatment	Induction hardened
Pressure angle	20°	Treatment of Tooth	Grinding
Left hand angle	19.528°	Datum reference	Bore
Material	20CrMnTi	Secondary operations	Possible except on the teeth

Module 3

Dimension: mm

Catalog NO.	Fig.	Z	Bore	Hua dia	Pitch.dia	Out.dia	Width	Length	J	H
			Ah7	B	C	D	E	G		
HGL18-M3-20-22-2	2	20	22	36	63.66	69.7	28	56	6	24.8
HGL18-M3-20-25-2	2	20	25	44	63.66	69.7	28	60	8	28.3
HGL18-M3-20-30-1	1	20	30	45	63.66	69.7	28	30	8	33.3
HGL18-M3-20-30-2	2	20	30	50	63.66	69.7	28	60	8	33.3
HGL18-M3-20-32-2	2	20	32	55	63.66	69.7	28	65	10	35.3
HGL18-M3-20-35-1	1	20	35	48	63.66	69.7	28	30	10	38.3
HGL18-M3-22-25-1	1	22	25	36	70.03	76	28	30	8	28.3
HGL18-M3-22-30-1	1	22	30	45	70.03	76	28	30	8	33.3
HGL18-M3-22-35-1	1	22	35	48	70.03	76	28	30	10	38.3
HGL18-M3-25-22-2	2	25	22	36	79.58	85.6	28	56	6	24.8
HGL18-M3-25-25-1	1	25	25	36	79.58	85.6	28	30	8	28.3
HGL18-M3-25-25-2	2	25	25	44	79.58	85.6	28	60	8	28.3
HGL18-M3-25-30-1	1	25	30	45	79.58	85.6	28	30	8	33.3
HGL18-M3-25-30-2	2	25	30	50	79.58	85.6	28	60	8	33.3
HGL18-M3-25-32-2	2	25	32	55	79.58	85.6	28	65	10	35.3
HGL18-M3-25-35-1	1	25	35	48	79.58	85.6	28	30	10	38.3
HGL18-M3-25-40-1	1	25	40	70	79.58	85.6	28	50	12	43.3
HGL18-M3-25-40-2	2	25	40	70	79.58	85.6	28	70	12	43.3
HGL18-M3-30-32-2	2	30	32	55	95.5	101.5	28	60	10	35.3
HGL18-M3-30-40-2	2	30	40	70	95.5	101.5	28	70	12	45.3



Product data

HGL18 Grinding Spur Gears

Module 4

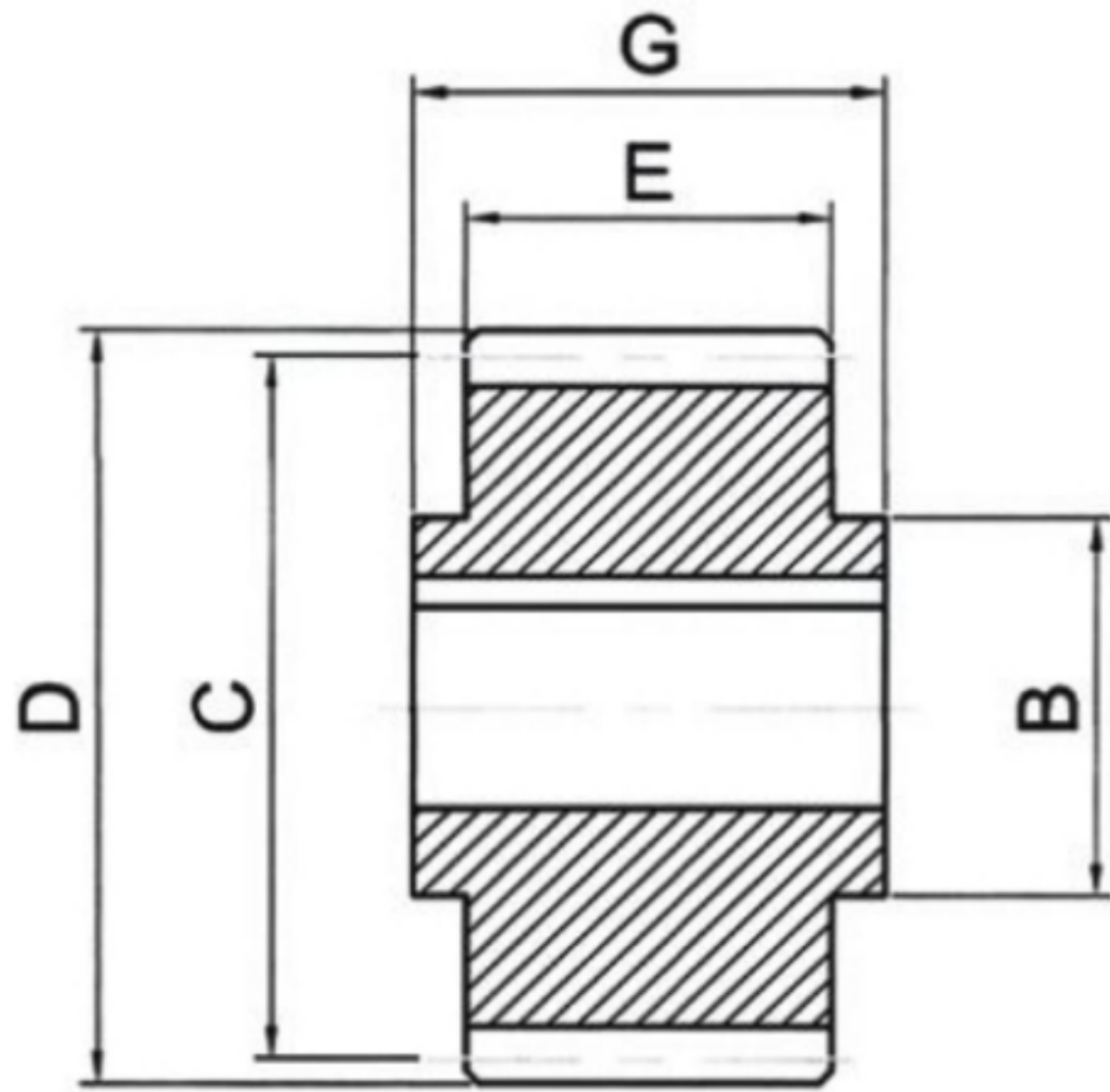


Fig.1

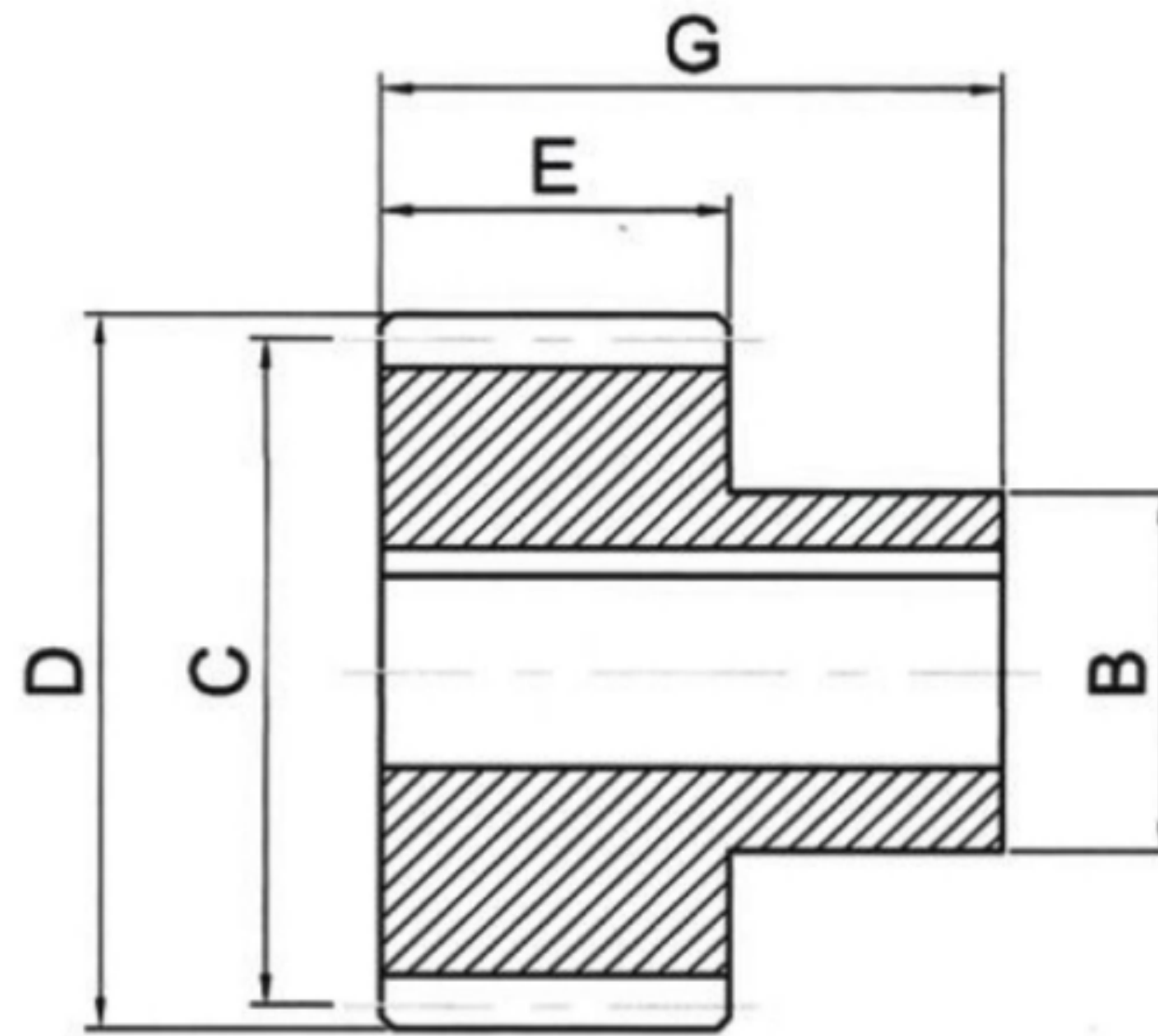
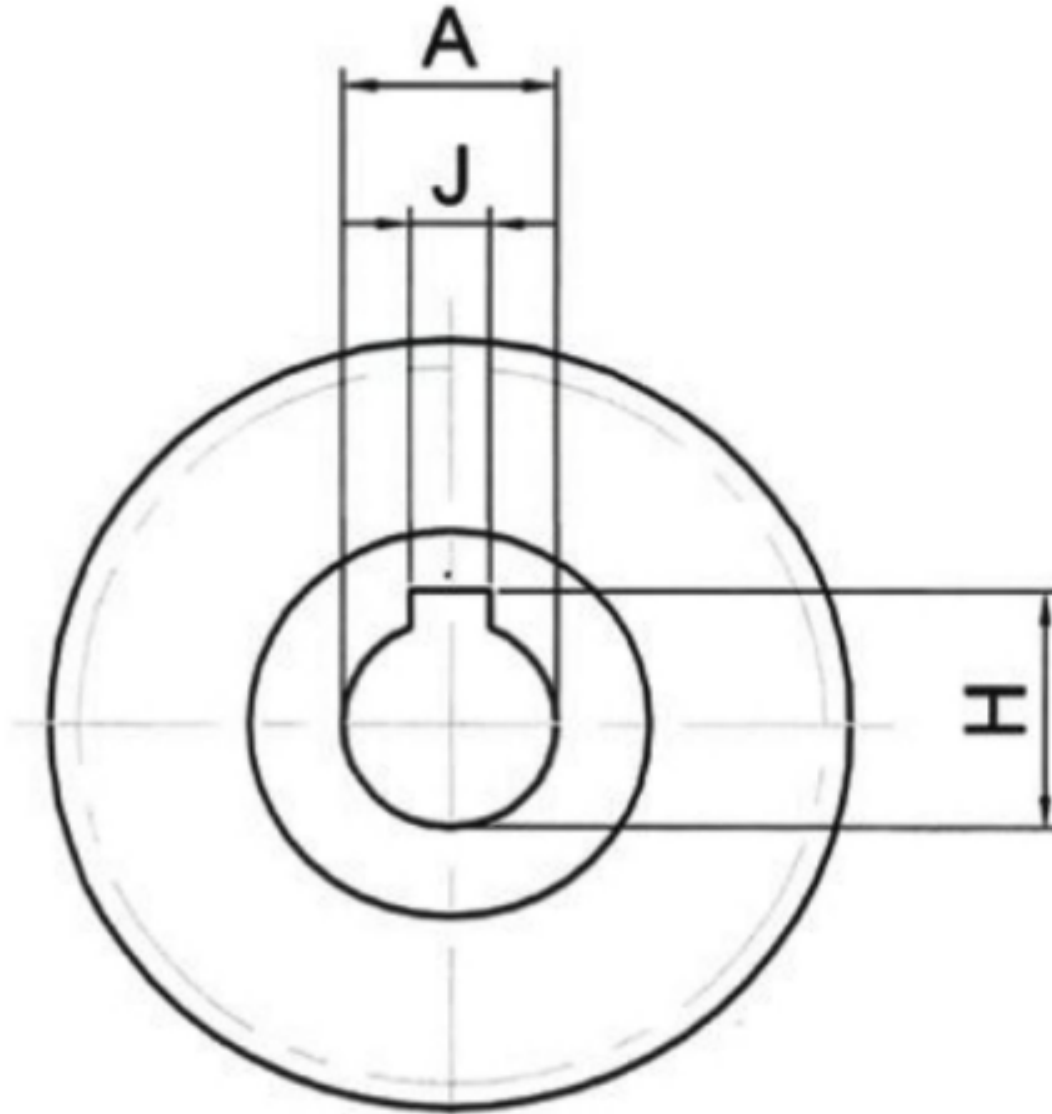


Fig. 2



Module 4

Dimension: mm

Catalog NO.	Fig.	Z	Bore	Hua dia	Pitch.dia	Out.dia	Width	Length	J	H
			Ah7	B	C	D	E	G		
HGL18-M4-15-35-1	1	15	35	52	63.66	71.7	40	50	10	38.3
HGL18-M4-18-32-2	2	18	32	55	76.39	84.4	40	75	10	35.3
HGL18-M4-20-35-1	1	20	35	52	84.88	92.9	40	50	10	38.3
HGL18-M4-20-45-1	1	20	45	65	84.88	92.9	40	50	14	48.8
HGL18-M4-21-32-2	2	21	32	55	89.13	97.1	40	75	10	35.3
HGL18-M4-21-35-2	2	21	35	55	89.13	97.1	40	75	10	38.3
HGL18-M4-21-40-2	2	21	40	62	89.13	97.1	40	75	12	43.3
HGL18-M4-21-45-2	2	21	45	68	89.13	97.1	40	75	14	48.8
HGL18-M4-22-35-1	1	22	35	52	93.37	101.4	40	50	10	38.3
HGL18-M4-22-45-1	1	22	45	65	93.37	101.4	40	50	14	48.8
HGL18-M4-24-32-2	2	24	32	55	101.86	109.9	40	75	10	35.3
HGL18-M4-24-35-2	2	24	35	55	101.86	109.9	40	75	10	38.3
HGL18-M4-24-40-2	2	24	40	62	101.86	109.9	40	75	12	43.3
HGL18-M4-24-45-2	2	24	45	68	101.86	109.9	40	75	14	48.8
HGL18-M4-24-55-2	2	24	55	80	101.86	109.9	40	80	16	59.3
HGL18-M4-25-35-1	1	25	35	52	106.1	114.1	40	50	10	38.3
HGL18-M4-25-45-1	1	25	45	65	106.1	114.1	40	50	14	48.8
HGL18-M4-27-40-2	2	27	40	75	114.6	122.6	40	80	12	43.3
HGL18-M4-30-40-2	2	30	40	80	127.33	135.33	40	80	12	43.3
HGL18-M4-30-45-2	2	30	45	80	127.33	135.33	40	80	15	48.8



Product data

Module 5

Specification



Precision grade	DIN 6	Tooth hardness	55~60HRC
Gear teeth	Standard full depth	Heat treatment	Induction hardened
Pressure angle	20°	Treatment of Tooth	Grinding
Left hand angle	19.528°	Datum reference	Bore
Material	20CrMnTi	Secondary operations	Possible except on the teeth

Module 5

Dimension: mm

Catalog NO.	Fig.	Z	Bore	Hua dia	Pitch.dia	Out.dia	Width	Length	J	H
			Ah7	B	C	D	E	G		
HGL18-M5-18-45-2	2	18	45	68	95.49	105.5	50	85	14	48.8
HGL18-M5-24-45-2	2	24	45	68	127.32	137.0	50	85	14	48.8
HGL18-M5-24-55-2	2	24	55	80	127.32	137.3	50	90	16	59.3
HGL18-M5-24-75-2	2	24	75	110	127.32	137.3	50	110	20	79.9

Module 6

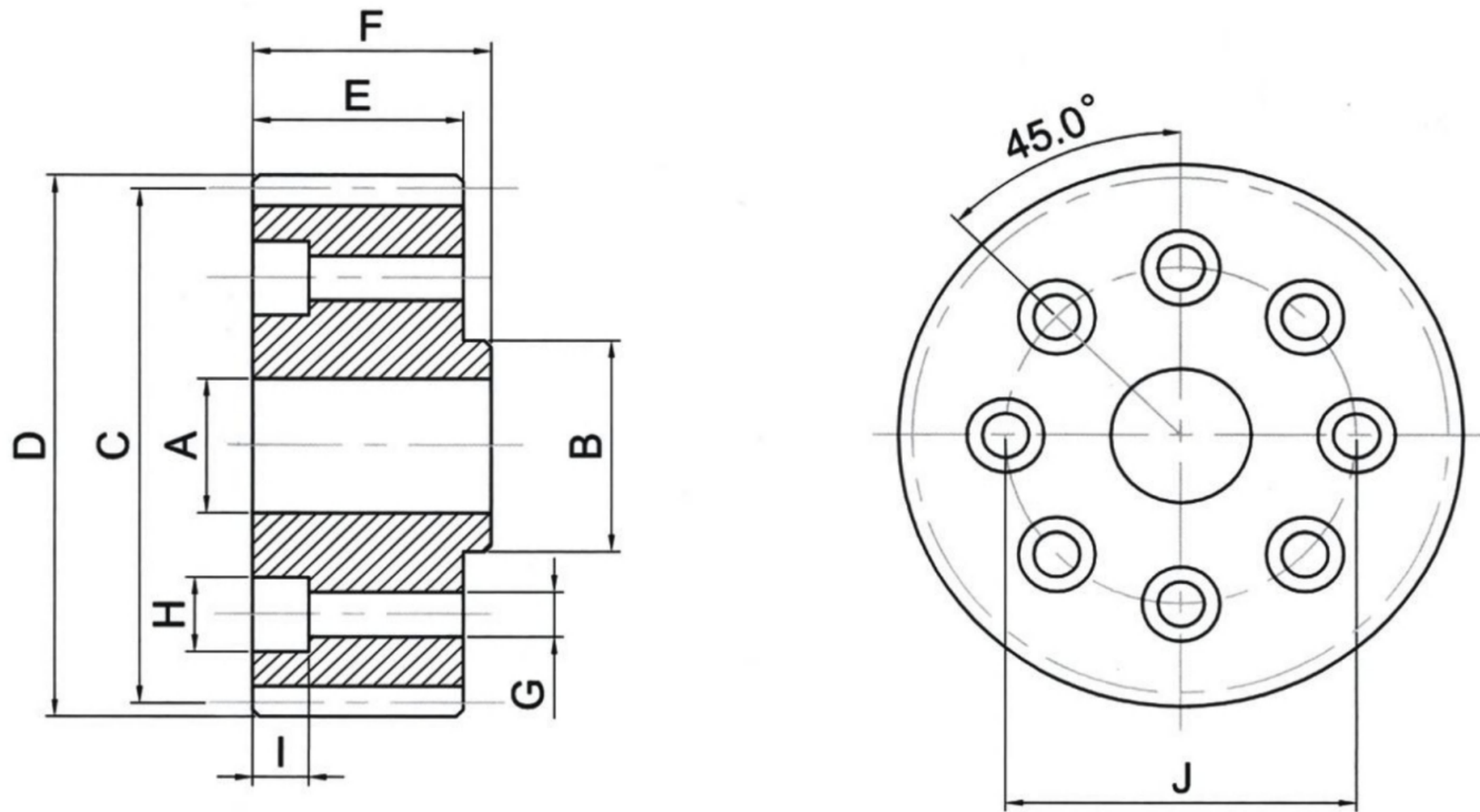
Dimension: mm

Catalog NO.	Fig.	Z	Bore	Hua dia	Pitch.dia	Out.dia	Width	Length	J	H
			Ah7	B	C	D	E	G		
HGL18-M6-20-55-2	2	20	55	80	127.32	139.3	60	100	16	59.3
HGL18-M6-20-75-2	2	20	75	110	127.32	139.3	60	120	20	79.9
HGL18-M6-25-55-2	2	25	55	80	159.16	171.2	60	100	16	59.3
HGL18-M6-25-75-2	2	25	75	110	159.16	171.2	60	120	20	79.9



Product data

HGD180 Grinding Spur Gears



Dimension: mm

Catalog NO.	M	Z	Bore	Hua dia	Pitch dia	Out.dia	Width	Length	G	H
			Ah6	Bh6	C	D	E	F		
HGD180-M2-26-15	2	26	15	20.0	55.20	60.50	26	29.0	5.5	10
HGD180-M2-27-15	2	27	15	20.0	57.29	61.29	30	33.5	5.5	10
HGD180-M2-29-15	2	29	15	20.0	61.54	66.50	26	29.0	5.5	10
HGD180-M2-35-15	2	35	15	20.0	74.30	79.50	26	29.0	5.5	10
HGD180-M2-29-20	2	29	20	25.0	61.54	67.00	26	30.0	6.6	11
HGD180-M2-33-20	2	33	20	31.5	70.00	75.00	26	30.0	6.6	11
HGD180-M2-36-20	2	36	20	31.5	76.39	80.39	30	34.0	6.6	11
HGD180-M2-37-20	2	37	20	31.5	78.50	83.50	26	30.0	6.6	11
HGD180-M3-31-20	3	31	20	31.5	98.70	106.50	31	35.5	6.6	11



Product data

Module 5

Specification



Precision grade	DIN 6	Tooth hardness	55~60HRC
Gear teeth	Standard full depth	Heat treatment	Induction hardened
Pressure angle	20°	Treatment of Tooth	Grinding
Left hand angle	19.528°	Datum reference	Bore
Material	20CrMnTi	Secondary operations	Possible except on the teeth

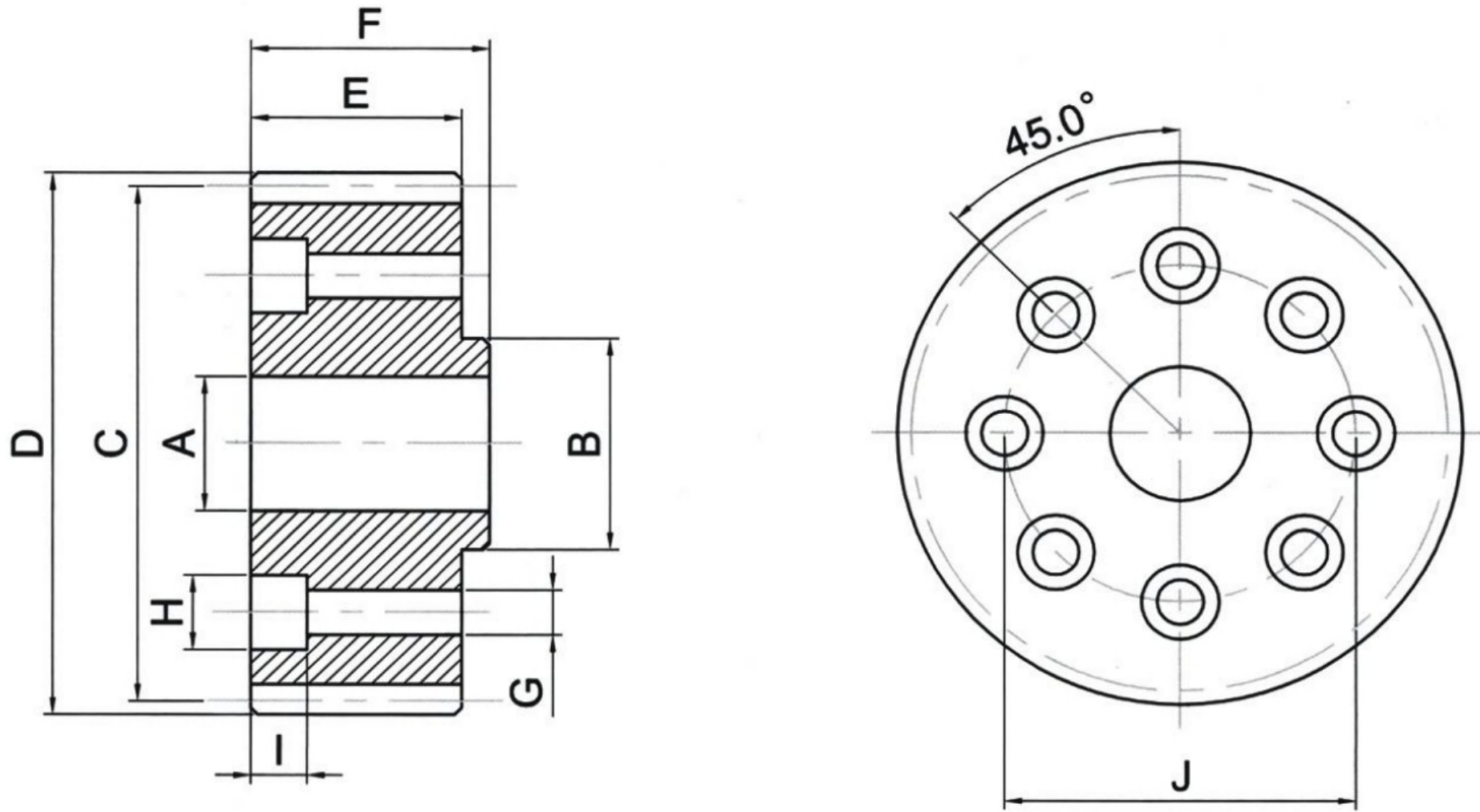
Dimension: mm

Catalog NO.	I	J	L	X	Kg
HGD180-M2-26-15	12	31.5	173.33	0.4065	0.4
HGD180-M2-27-15	11	31.5	180.00	0	0.5
HGD180-M2-29-15	12	31.5	193.33	0.4150	0.5
HGD180-M2-35-15	12	31.5	233.33	0.3819	0.8
HGD180-M2-29-20	14	40.0	193.33	0.4150	0.5
HGD180-M2-33-20	14	50.0	220.00	0.3928	0.7
HGD180-M2-36-20	8	50.0	240.00	0	1.2
HGD180-M2-37-20	14	50.0	246.76	0.4209	0.9
HGD180-M3-31-20	9	50.0	310.00	0.3540	1.8



Product data

HGD280 Grinding Spur Gears



Dimension: mm

Catalog NO.	M	Z	Bore	Hua dia	Pitch.dia	Out.dia	Width	Length	G	H
			Ah6	Bh6	C	D	E	F		
HGD280-M2-40-31.5	2	40	31.5	40	84.90	90	26	30	6.6	11
HGD280-M2-45-31.5	2	45	31.5	40	95.50	100	26	30	6.6	11
HGD280-M3-30-20	3	30	20	40	95.49	101.49	35	39	6.6	11



Product data

Specification



Precision grade	DIN 6	Tooth hardness	55~60HRC
Gear teeth	Standard full depth	Heat treatment	Induction hardened
Pressure angle	20°	Treatment of Tooth	Grinding
Left hand angle	19.528°	Datum reference	Bore
Material	20CrMnTi	Secondary operations	Possible except on the teeth

Dimension: mm

Catalog NO.	I	J	L	X	Kg
HGD280-M2-40-31.5	14	63	266.69	0.3792	1.0
HGD280-M2-45-31.5	14	63	300.00	0.3267	1.4
HGD280-M3-30-20	10	63	300.00	0	1.5



The datas of the detail table are based on the conditin fully and smooth lubricated. But the pratical application varied. So the approprite parameter need to be taken in account: SB, KA, LKHB and Fn (see symbol note)to match correspoding working condition.

Tangential force design formulars

$$a=V/tb$$

$$Fu=(m.g+m.a)/1000 \text{ (suitable for vertical axis)}$$

$$Fu=(m.g.\mu.+m.a) \text{ (suitable for horizontal axis)}$$

$$Fuzul+Fu Tab/(K_A.S_B.F_n.L_{KH\beta})$$

The condition $Fu < Fu_{zul}$ must be satisfied

Loading coefficient KA

Driver	The loading types depend on the driven parts		
	Uniform	Medium driven	High driven
Uniform	1.00	1.25	1.75
Light driven	1.25	1.50	2.00
Medium driven	1.50	1.75	2.25

Safety factor SB

The safety factor can be caculated basing on the empirical data.(SB=1.1~1.4)

Life factor Fn

Consider the pinion thread speed and lubrication

Lubrication		kontin.	Every day	Every month
Total pinion speed				
m/spec				
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 coefficien $L_{kh\beta}$

The linear load distribution coefficient is considering of to release the pressure and discription the load coefficient at the range of tooth wide.

$$L_{KH\beta}=1.1 \text{ Bearing support}$$

$$L_{KH\beta}=1.2 \text{ The output shaft end is preloading bearings.}$$

$$L_{KH\beta}=1.5 \text{ The output shaft end is the general bearings.}$$



Examples of calculation

Vertical running

The mess be moved $m=300\text{kg}$
 Speed $v=1.08\text{m/s}$
 Acceleration time $t_b=0.27\text{s}$
 Acceleration of gravity $g=9.81\text{m/s}^2$
 Load cefficient $K_A=1.2$
 Life factor $f_n=1.1(\text{continuous lubrication})$
 Safe factor $S_B=1.2$
 Life load distribution coefficient $L_{KH\beta}=1.2$

Calculate

$$a=v/t_b \quad a=1.08/0.27=4\text{m/s}^2$$

$$F_u=(m.g+m.a)/1000$$

$$F_u=(300 \times 9.81 + 300 \times 4)/1000=4.1\text{KN}$$

Hypothetical driving force: Rack SJGH020-100 high iduction, 2 module helical pinion, 20CrMnTi 20 tooth, the maximum driving force allowed

$$F_u \text{ Tab}=11.5\text{KN}$$

$$F_u \text{ zul}=F_u \text{ Tab}/(K_A \cdot S_B \cdot f_n \cdot L_{KH\beta})$$

$$F_u \text{ zul}=11.5/(1.2 \times 1.2 \times 1.1 \times 1.2)=6.05\text{KN}$$

The condition

$$F_u \text{ zul} > F_u: 6.5\text{KN} > 4.1\text{KN} \text{ Satisfied}$$

Result

Rack:SHGH020-100

Pinion:HGL18-M2-20-20



Horizontal running

The mess be moved $m=820\text{kg}$
 Speed $v=2\text{m/s}$
 Acceleration time $t_b=1\text{s}$
 Acceleration of gravity $g=9.81\text{m/s}^2$
 Friction coefficient $\mu=0.1$
 Load cefficient $K_A=1.5$
 Life factor $f_n=1.05(\text{continuous lubrication})$
 Safe factor $S_B=1.2$
 Life load distribution coefficient $L_{KH\beta}=1.5$

Calculate

$a=v/t_b \quad a=2/1=2\text{m/s}^2$
 $F_u=(m.g.\mu.+m.a)/1000$
 $F_u=(820 \times 9.81 + 820 \times 2)/1000=2.44\text{KN}$
 Hypothetical driving force: Rack SSFH030-100 high iduction, 3 module straight pinion, 20CrMnTi 20 tooth, the maximum driving force allowed
 $F_u \text{ Tab}=11.5\text{KN}$
 $F_u \text{ zul}=F_u \text{ Tab}/(K_A.S_B.f_n.L_{KH\beta})$
 $F_u \text{ zul}=11.5/(1.5 \times 1.2 \times 1.05 \times 1.5)=4.06\text{KN}$
 The condition
 $F_u \text{ zul} > F_u: 4.06\text{KN} > 2.44\text{KN}$ Satisfied

Result

Rack:SSFH030-100
 Pinion:SG16-M3-20-20



Maximum permissible drive of pinion and rack drive

Under the great condition of grease lubrication system, the speed is 1.5m/s, SB=1.0, the linear distribution coefficient is 1.0, the pinion material is 20CrMnTi, carburized and hardened. The data of the table below is the maximum recomended value under the best condition.

Module 2.0

Table with 9 columns: quantity, Pitch diameter (mm), Quenched rack (SSFQ), Hardened rack (SSFH), Grinding rack (SSGH), Pitch diameter (mm), Quenched rack (SHFQ), Hardened rack (SHFH), Grinding rack (SHGH). Rows include values for quantities 15, 18, 20, 21, 25, 27, 30, 32, 36, 40.

Module 3.0

Table with 9 columns: quantity, Pitch diameter (mm), Quenched rack (SSFQ), Hardened rack (SSFH), Grinding rack (SSGH), Pitch diameter (mm), Quenched rack (SHFQ), Hardened rack (SHFH), Grinding rack (SHGH). Rows include values for quantities 15, 18, 20, 22, 25, 28, 30, 32, 36, 40.



Module 4.0

quantity	Maximum driving force of straight teeth(KN)				The Maximum driving force of helical teeth(KN)			
	Pitch diameter (mm)	Quenched rack	Hardened rack	Grinding rack	Pitch diameter (mm)	Quenched rack	Hardened rack	Grinding rack
		SSFQ	SSFH	SSGH		SHFQ	SHFH	SHGH
15	60	6	17	20	63.66	7.5	17	27.5
18	72	8	20	26.5	76.39	9	21	33.5
20	80	9	22.5	30	84.88	10.5	23.5	37
22	88	10	24.5	33	93.37	11.5	26	41
25	100	11.5	28	37.5	106.1	13	30	47
28	112	13	28.5	40.5	118.84	15	31	49.5
32	128	15	29	41	135.82	17	31.5	50.5
36	144	17	29.5	41.5	152.79	19.5	31.5	51
40	160	18.5	29.5	42	169.77	21.5	32	51.5

Module 5.0

quantity	Maximum driving force of straight teeth(KN)				The Maximum driving force of helical teeth(KN)			
	Pitch diameter (mm)	Quenched rack	Hardened rack	Grinding rack	Pitch diameter (mm)	Quenched rack	Hardened rack	Grinding rack
		SSFQ	SSFH	SSGH		SHFQ	SHFH	SHGH
12	60	7	17.5	19	63.66	7.5	17.5	28
15	75	9.5	26.5	31.5	79.58	12	27	43
18	90	12.5	31.5	42	95.49	14.5	33	52.5
21	105	15	37	49.5	111.41	17	39	61.5
24	120	17	42.5	57.5	127.32	20	45	71
25	125	18	44	59.5	132.63	20.5	47	74.5
27	135	19.5	45	61	143.24	22.5	48	75.5
30	150	22	45.5	62	159.16	25	49	76



Module 6.0

quantity	Maximum driving force of straight teeth(KN)				The Maximum driving force of helical teeth(KN)			
	Pitch diameter (mm)	Quenched rack	Hardened rack	Grinding rack	Pitch diameter (mm)	Quenched rack	Hardened rack	Grinding rack
		SSFQ	SSFH	SSGH		SHFQ	SHFH	SHGH
13	78	12	30	33.5	82.76	12	30	47
15	90	15.2	38	45.5	95.5	15.6	39	62.5
18	108	18.4	46	61	114.6	19	47.5	76
20	120	20.4	51	68	127.33	21.4	53.5	85
23	138	23.4	58.5	79	146.43	24.8	62	98.5
25	150	24.6	61.5	86	159.16	26.6	66.5	107
30	180	25.2	63	89	190.99	29.7	67.5	109

Module 8.0

quantity	Maximum driving force of straight teeth(KN)				The Maximum driving force of helical teeth(KN)			
	Pitch diameter (mm)	Quenched rack	Hardened rack	Grinding rack	Pitch diameter (mm)	Quenched rack	Hardened rack	Grinding rack
		SSFQ	SSFH	SSGH		SHFQ	SHFH	SHGH
12	96	19.1	45.5	49.5	101.86	19.1	45.5	72.5
15	120	28.6	68	82	127.33	29.4	70	111.5
18	144	34.5	82	109	152.79	35.7	85	135.5
20	160	38.2	91	121.5	169.77	40.11	95.5	151.5
23	184	43.8	104.5	141	195.24	46.41	110.5	176
25	200	45.4	108	152.5	212.21	48.93	116.5	187
30	240	46.2	110	155.5	254.66	49.77	118.5	191

The system accuracy of pnion and rack drive

The system accuracy includes gap error and backlash, refer to the following table:

The system precision grade	Rack code	Rack precision grade	Rack pitch error mm/1000	Rack back lash mm
High precision	SSGH, SHGH	DIN 6	0.036	0.02
Medium precision	SHFH SSFH SHFQ SSFQ	DIN 7	0.06	0.03
		DIN 8	0.08	0.04
		DIN 9	0.12	0.06