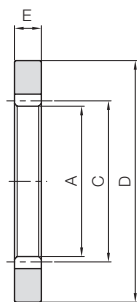




Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating

* The precision grade of products with a module of less than 0.8 is equivalent to the value shown in the table.



T1

Catalog Number	Module	No. of teeth	Shape	Outside dia.				Pitch dia.		Outside dia.		Face width		Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)
				A	C	D	E	A	C	A	C	A	C	Bending strength	Surface durability	Bending strength	Surface durability		
SI0.5-60	m0.5	60	T1	29	30	50	5	3.75	0.67	0.38	0.068	0.04~0.15	0.049	3.75	0.67	0.38	0.068	0.04~0.15	0.049
SI0.5-80		80		39	40	60		4.85	0.75	0.49	0.077			4.85	0.75	0.49	0.077		
SI0.5-100		100		49	50	70		5.97	0.87	0.61	0.089			5.97	0.87	0.61	0.089		
SI0.8-60	m0.8	60		46.4	48	75	8	15.4	2.87	1.57	0.29	0.05~0.16	0.16	15.4	2.87	1.57	0.29	0.05~0.16	0.16
SI0.8-80		80		62.4	64	90		19.9	3.24	2.03	0.33			19.9	3.24	2.03	0.33		
SI0.8-100		100		78.4	80	105		24.5	3.75	2.50	0.38			24.5	3.75	2.50	0.38		
SI1-60	m1	60		58	60	90	10	30.0	5.95	3.06	0.61	0.09~0.21	0.28	30.0	5.95	3.06	0.61	0.09~0.21	0.28
SI1-80		80		78	80	110		38.8	6.59	3.96	0.67			38.8	6.59	3.96	0.67		
SI1-100		100		98	100	130		47.8	7.64	4.87	0.78			47.8	7.64	4.87	0.78		
SI1.5-60	m1.5	60		87	90	130	15	101	20.6	10.3	2.10	0.11~0.25	1.04	101	20.6	10.3	2.10	0.11~0.25	1.04
SI1.5-80		80		117	120	160		131	23.3	13.4	2.38			131	23.3	13.4	2.38		
SI1.5-100		100		147	150	190		161	27.0	16.5	2.75			161	27.0	16.5	2.75		
SI2-60	m2	60		116	120	170	20	240	50.5	24.5	5.15	0.12~0.28	2.28	240	50.5	24.5	5.15	0.12~0.28	2.28
SI2-80		80		156	160	210		311	57.0	31.7	5.81			311	57.0	31.7	5.81		
SI2-100		100		196	200	250		382	65.7	39.0	6.70			382	65.7	39.0	6.70		
SI2.5-60	m2.5	60		145	150	210	25	469	101	47.8	10.3	0.14~0.31	3.33	469	101	47.8	10.3	0.14~0.31	3.33
SI2.5-80		80		195	200	260		607	114	61.9	11.6			607	114	61.9	11.6		

- [Caution on Product Characteristics] ① The backlash values shown in the table are the theoretical values for the normal direction for the internal ring in mesh with an SS spur gear.
- ② The allowable torques shown in the table are calculated values according to the assumed usage conditions. Please see Page 209 for more details.
- ③ Please check for the involute interference, trochoid interference and trimming interference prior to using internal gears.

Ground internal gears are available.



Klingelberg Gear Grinding Machine VIPER 500W

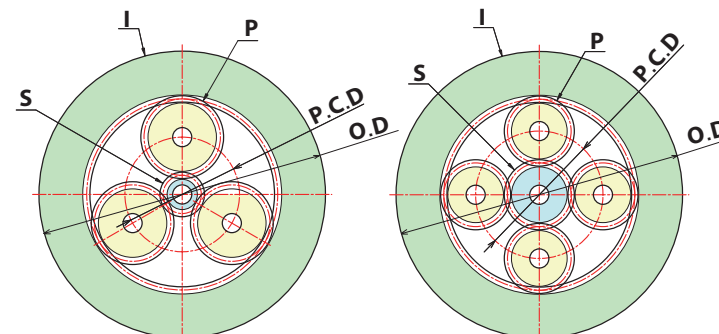
Internal ground gear machining range	
Maximum gear accuracy	JIS B 1702-1:1998 Grade N5 (former JIS Grade 1)
Maximum module	About m4 (DP6, CP12), special sizes available
Max. helix angle	27°, right/left helix direction available
Maximum outer diameter	φ 500mm
Minimum inner diameter	φ 150mm
Maximum weight	500 kgf (jig weight included)



HAHN
FEINWERKTECHNIK GmbH

Oberes Dorf 1
95152 Selbitz

Planetary Gear Systems created by using KHK Stock Gears



3 planetary gears are used

4 planetary gears are used

KHK's stock internal and spur gears working together will allow you to create planetary gear devices. "In the table below, we introduce examples of planetary gear

The Speed ratio ^{Note 1} are for planetary gear systems created with a stationary internal gear. When used as speed reducers, the input is the sun gear and the output is the carrier.

"Selection of the number of teeth also enables you to create various planetary gear devices with different transmission

Speed ratio Note 1	Stock gears used in the system											Allowable transmission torque (kgf·m)				Total weight (kg)
	Internal gears (I)			Planetary gears (P)					Sun gear (S)		Sun gear _T ₁		Planetary carrier _T ₂			
	OD(mm)	Catalog Number	No. of teeth	Catalog Number	No. of teeth	Quantity	P.C.D(mm)	Equal angles	Catalog Number	No. of teeth	Bending strength	Surface durability	Bending strength	Surface durability		
6	90	SI1-60	60	SSA1-24	24	3	36	120°	SSS1-12	12	0.58	0.0023	3.47	0.11	0.48	
	130	SI1.5-60		SSA1.5-24			54		SS1.5-12		1.77	0.0081	10.7	0.40	1.20	
	170	SI2-60		SSA2-24			72		SS2-12		4.21	0.020	25.2	0.99	2.66	
	210	SI2.5-60		SSA2.5-24			90		SS2.5-12		8.21	0.040	49.3	1.98	5.03	
	110	SI1-80	80	SSA1-32	32	3	48	120°	SS1-16	16	0.99	0.0047	5.96	0.24	0.57	
	160	SI1.5-80		SSA1.5-32			72		SS1.5-16		3.35	0.026	20.1	1.32	1.72	
	210	SI2-80		SSA2-32			96		SS2-16		7.95	0.064	47.7	3.22	3.85	
	260	SI2.5-80		SSA2.5-32			120		SS2.5-16		15.5	0.13	93.2	6.45	7.33	
	105	SI0.8-100	100	SS0.8-40A	40	4	48	90°	SS0.8-20A	20	0.95	0.0082	5.68	0.41	0.59	
	130	SI1-100		SSA1-40			60		SS1-20		1.85	0.016	11.1	0.82	0.84	
	190	SI1.5-100		SSA1.5-40			90		SS1.5-20		6.24	0.058	37.5	2.90	2.62	
	250	SI2-100		SSA2-40			120		SS2-20		14.8	0.14	88.8	7.09	6.01	
5	60	SI0.5-80	80	SS0.5-30B	30	4	25	90°	SS0.5-20A	20	0.23	0.0012	1.13	0.070	0.12	
	90	SI0.8-80		SS0.8-30C			40		SS0.8-20A		0.93	0.0050	4.65	0.30	0.40	
	110	SI1-80		SSA1-30			50		SS1-20		1.82	0.010	9.08	0.60	0.59	
	160	SI1.5-80		SSA1.5-30			75		SS1.5-20		6.13	0.035	30.63	2.13	1.86	
	210	SI2-80		SSA2-30			100		SS2-20		14.5	0.087	72.6	5.21	4.18	
	260	SI2.5-80		SSA2.5-30			125		SS2.5-20		28.4	0.17	142	10.4	7.97	
3	60	SI0.5-80	80	SS0.5-20A	20	4	30	90°	SSSG0.5-40B	40	0.46	0.0016	1.39	0.10	0.13	
	90	SI0.8-80		SS0.8-20A			48		SS0.8-40A		1.89	0.0068	5.68	0.41	0.35	
	110	SI1-80		SSA1-20			60		SS1-40		3.70	0.014	11.1	0.82	0.60	
	160	SI1.5-80		SSA1.5-20			90		SS1.5-40		12.5	0.048	37.5	2.91	1.77	
	210	SI2-80		SSA2-20			120		SS2-40		29.6	0.12	88.8	7.12	3.93	
	260	SI2.5-80		SSA2.5-20			150		SS2.5-40		57.8	0.24	173	14.3	7.47	
	70	SI0.5-100	100	SS0.5-25B	25	3	37.5	120°	SS0.5-50B	50	0.47	0.0020	1.42	0.12	0.16	
	130	SI1-100		SSA1-25			75		SS1-50		3.79	0.017	11.4	1.01	0.75	
	190	SI1.5-100		SSA1.5-25			112.5		SS1.5-50		12.8	0.060	38.4	3.58	2.24	
	250	SI2-100		SSA2-25			150		SS2-50		30.4	0.15	91.1	8.79	5.02	

Calculation of Allowable Transmission Torque

M ... Made to Order

One advantage of a planetary gear system is that they share load burdens by grouping multiple planetary gears.

This enables high torque capacity transmission.

The following formula is the calculation method for T1 (Allowable transmission torque of Sun Gear) and T2 (Allowable transmission torque of Planetary Carrier), shown in the table.

$$T1 = Ts \cdot Z_p \cdot \eta \quad (\text{kgf} \cdot \text{m}) \quad \dots \dots \dots (1)$$

$$T2 = Ts \cdot Z_p \cdot u \cdot \eta \quad (\text{kgf} \cdot \text{m}) \quad \dots \dots \dots (2)$$

Here,

Ts : Allowable transmission torque for a Sun gear (kgf·m) on a meshed pair of sun gear and planetary gear.

For a sun gear meshed with a planetary gear, the number of revolutions is set to 100rpm.

Zp : Number of planetary gears used in the system