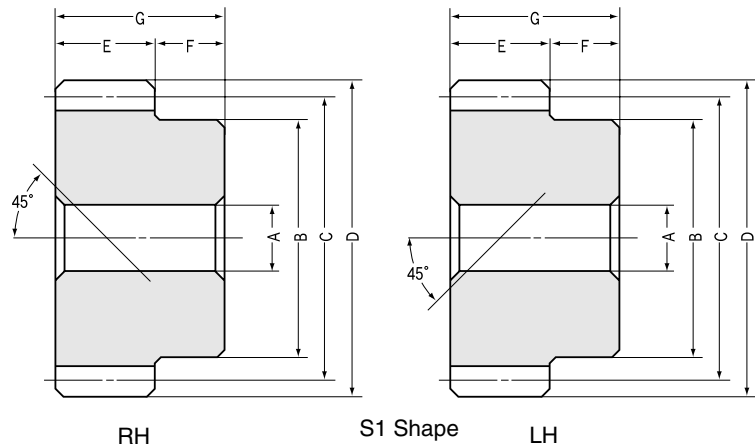




SN Steel Screw Gears Modules 1~2



Module 1

Catalog No.	Hand of helix	Module	No. of teeth	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length
		<i>m</i>	<i>z</i>	AH7	B	C	D	E	F	G
SN1 -13R SN1 -13L	R L	1	13	6	15	18.38	20.38	10	10	20
SN1 -15R SN1 -15L	R L	1	15	6	18	21.21	23.21	10	10	20
SN1 -20R SN1 -20L	R L	1	20	8	25	28.28	30.28	10	10	20
SN1 -26R SN1 -26L	R L	1	26	10	30	36.77	38.77	10	10	20
SN1 -30R SN1 -30L	R L	1	30	10	35	42.43	44.43	10	10	20

Module 1.5

SN1.5-10R SN1.5-10L	R L	1.5	10	8	16	21.21	24.21	15	10	25
SN1.5-13R SN1.5-13L	R L	1.5	13	10	23	27.58	30.58	15	10	25
SN1.5-15R SN1.5-15L	R L	1.5	15	10	25	31.82	34.82	15	10	25
SN1.5-20R SN1.5-20L	R L	1.5	20	12	30	42.43	45.43	15	10	25
SN1.5-26R SN1.5-26L	R L	1.5	26	12	40	55.15	58.15	15	10	25
SN1.5-30R SN1.5-30L	R L	1.5	30	12	45	63.64	66.64	15	10	25

Module 2

SN2 -10R SN2 -10L	R L	2	10	12	22	28.28	32.28	20	15	35
SN2 -13R SN2 -13L	R L	2	13	12	30	36.77	40.77	20	15	35
SN2 -15R SN2 -15L	R L	2	15	12	35	42.43	46.43	20	15	35
SN2 -20R SN2 -20L	R L	2	20	15	45	56.57	60.57	20	15	35
SN2 -26R SN2 -26L	R L	2	26	20	60	73.54	77.54	20	15	35
SN2 -30R SN2 -30L	R L	2	30	20	65	84.85	88.85	20	15	35

CAUTION: For skewed shaft applications, RH and RH or LH and LH are meshed to make up a set of screw gears or crossed-helical gears. For parallel shaft applications, mesh opposite hands of helical gear sets. See the Selection Hints on page 278.

CAUTION: The maximum allowable sliding speed of SN gears mated to SN gears is 2.5 m/s due to heat buildup.



Specifications

Precision grade	JIS N9 grade (JIS B1702-1: 1996) OLD JIS 5 grade (JIS B1702: 1976)	Heat treatment	—
Reference section of gear	Normal plane	Surface treatment	Black oxide
Gear teeth	Standard full depth	Tooth surface finish	Cut
Normal pressure angle	20°	Datum reference surface for gear cutting	Bore
Helix angle	45°	Secondary Operations	Possible
Material	S45C		

Shape	Allowable torque (N·m) <small>NOTE 1</small>		Allowable torque (kgf·m)		Backlash (mm) <small>NOTE 2</small>	Weight (kgf)	Catalog No.
	Bending strength	Surface durability	Bending strength	Surface durability			
S1	—	0.19	—	(0.02)	0.08 ~ 0.18	0.03	SN1 -13R SN1 -13L
S1	—	0.29	—	(0.03)	0.08 ~ 0.18	0.04	SN1 -15R SN1 -15L
S1	—	0.66	—	(0.07)	0.08 ~ 0.18	0.08	SN1 -20R SN1 -20L
S1	—	1.42	—	(0.14)	0.12 ~ 0.22	0.13	SN1 -26R SN1 -26L
S1	—	2.14	—	(0.22)	0.12 ~ 0.22	0.17	SN1 -30R SN1 -30L

S1	—	0.29	—	(0.03)	0.1 ~ 0.2	0.05	SN1.5-10R SN1.5-10L
S1	—	0.62	—	(0.06)	0.12 ~ 0.22	0.08	SN1.5-13R SN1.5-13L
S1	—	0.93	—	(0.1)	0.12 ~ 0.22	0.12	SN1.5-15R SN1.5-15L
S1	—	2.14	—	(0.22)	0.12 ~ 0.22	0.21	SN1.5-20R SN1.5-20L
S1	—	4.51	—	(0.46)	0.14 ~ 0.26	0.36	SN1.5-26R SN1.5-26L
S1	—	6.75	—	(0.69)	0.14 ~ 0.26	0.48	SN1.5-30R SN1.5-30L

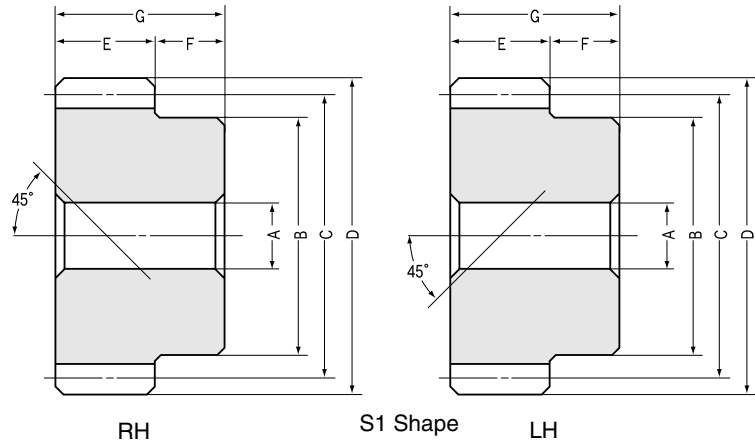
S1	—	0.66	—	(0.07)	0.12 ~ 0.22	0.11	SN2 -10R SN2 -10L
S1	—	1.42	—	(0.14)	0.12 ~ 0.22	0.21	SN2 -13R SN2 -13L
S1	—	2.14	—	(0.22)	0.12 ~ 0.22	0.31	SN2 -15R SN2 -15L
S1	—	4.84	—	(0.49)	0.12 ~ 0.22	0.52	SN2 -20R SN2 -20L
S1	—	10.12	—	(1.03)	0.14 ~ 0.3	0.9	SN2 -26R SN2 -26L
S1	—	15.04	—	(1.53)	0.14 ~ 0.3	1.2	SN2 -30R SN2 -30L

NOTE 1: The allowable torques shown in the table are calculated from the Niemann formula. Please see the "Selection Hints"(page 278) for further details.

NOTE 2: The backlash values shown in the table are the theoretical values in the normal direction of a pair of identical gears in mesh.



SN Steel Screw Gears Modules 2.5~4



Module 2.5

Catalog No.	Hand of helix	Module	No. of teeth	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length
		<i>m</i>	<i>z</i>	A _{H7}	B	C	D	E	F	G
SN2.5-10R SN2.5-10L	R L	2.5	10	12	26	35.36	40.36	22	16	38
SN2.5-13R SN2.5-13L	R L	2.5	13	15	35	45.96	50.96	22	16	38
SN2.5-15R SN2.5-15L	R L	2.5	15	15	40	53.03	58.03	22	16	38
SN2.5-20R SN2.5-20L	R L	2.5	20	20	60	70.71	75.71	22	16	38
SN2.5-26R SN2.5-26L	R L	2.5	26	20	70	91.92	96.92	22	16	38
SN2.5-30R SN2.5-30L	R L	2.5	30	20	80	106.07	111.07	22	16	38

Module 3

SN3 -10R SN3 -10L	R L	3	10	15	34	42.43	48.43	25	18	43
SN3 -13R SN3 -13L	R L	3	13	20	45	55.15	61.15	25	18	43
SN3 -15R SN3 -15L	R L	3	15	20	50	63.64	69.64	25	18	43
SN3 -20R SN3 -20L	R L	3	20	20	60	84.85	90.85	25	18	43
SN3 -26R SN3 -26L	R L	3	26	20	80	110.31	116.31	25	18	43
SN3 -30R SN3 -30L	R L	3	30	20	90	127.28	133.28	25	18	43

Module 4

SN4 -10R SN4 -10L	R L	4	10	20	45	56.57	64.57	30	20	50
SN4 -13R SN4 -13L	R L	4	13	20	60	73.54	81.54	30	20	50
SN4 -15R SN4 -15L	R L	4	15	20	70	84.85	92.85	30	20	50
SN4 -20R SN4 -20L	R L	4	20	20	90	113.14	121.14	30	20	50
SN4 -26R SN4 -26L	R L	4	26	20	100	147.08	155.08	30	20	50
SN4 -30R SN4 -30L	R L	4	30	20	110	169.71	177.71	30	20	50

CAUTION: For skewed shaft applications, RH and RH or LH and LH are meshed to make up a set of screw gears or crossed-helical gears. For parallel shaft applications, mesh opposite hands of helical gear sets. See the Selection Hints on page 278.

CAUTION: The maximum allowable sliding speed of SN gears mated to SN gears is 2.5 m/s due to heat buildup.



Specifications

Precision grade	JIS N9 grade (JIS B1702-1: 1996) OLD JIS 5 grade (JIS B1702: 1976)	Heat treatment	—
Reference section of gear	Normal plane	Surface treatment	Black oxide
Gear teeth	Standard full depth	Tooth surface finish	Cut
Normal pressure angle	20°	Datum reference surface for gear cutting	Bore
Helix angle	45°	Secondary Operations	Possible
Material	S45C		

Shape	Allowable torque (N·m) NOTE 1		Allowable torque (kgf·m)		Backlash (mm) NOTE 2	Weight (kgf)	Catalog No.
	Bending strength	Surface durability	Bending strength	Surface durability			
S1	—	1.26	—	(0.13)	0.12 ~ 0.24	0.2	SN2.5-10R SN2.5-10L
S1	—	2.69	—	(0.27)	0.14 ~ 0.28	0.35	SN2.5-13R SN2.5-13L
S1	—	4.03	—	(0.41)	0.14 ~ 0.28	0.49	SN2.5-15R SN2.5-15L
S1	—	9.07	—	(0.92)	0.14 ~ 0.28	0.95	SN2.5-20R SN2.5-20L
S1	—	18.75	—	(1.91)	0.16 ~ 0.34	1.5	SN2.5-26R SN2.5-26L
S1	—	27.73	—	(2.83)	0.16 ~ 0.34	2.1	SN2.5-30R SN2.5-30L

S1	—	2.14	—	(0.22)	0.14 ~ 0.26	0.34	SN3 -10R SN3 -10L
S1	—	4.51	—	(0.46)	0.16 ~ 0.32	0.55	SN3 -13R SN3 -13L
S1	—	6.75	—	(0.69)	0.16 ~ 0.32	0.78	SN3 -15R SN3 -15L
S1	—	15.04	—	(1.53)	0.16 ~ 0.32	1	SN3 -20R SN3 -20L
S1	—	30.84	—	(3.14)	0.18 ~ 0.38	2.5	SN3 -26R SN3 -26L
S1	—	45.35	—	(4.62)	0.18 ~ 0.38	3.3	SN3 -30R SN3 -30L

S1	—	4.84	—	(0.49)	0.16 ~ 0.34	0.7	SN4 -10R SN4 -10L
S1	—	10.12	—	(1.03)	0.18 ~ 0.38	1.3	SN4 -13R SN4 -13L
S1	—	15.04	—	(1.53)	0.18 ~ 0.38	1.9	SN4 -15R SN4 -15L
S1	—	33.03	—	(3.37)	0.18 ~ 0.38	3.3	SN4 -20R SN4 -20L
S1	—	66.66	—	(6.8)	0.22 ~ 0.44	5.2	SN4 -26R SN4 -26L
S1	—	97.13	—	(9.9)	0.22 ~ 0.44	6.7	SN4 -30R SN4 -30L

NOTE 1: The allowable torques shown in the table are calculated from the Niemann formula. Please see the "Selection Hints"(page 278) for further details.

NOTE 2: The backlash values shown in the table are the theoretical values in the normal direction of a pair of identical gears in mesh.