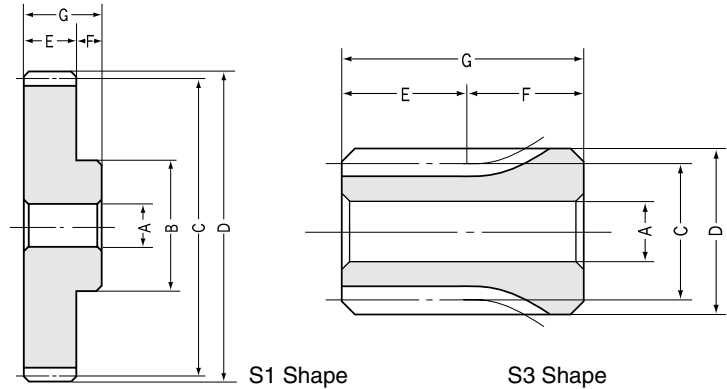




# SS Steel Spur Gears Module 1



## Module 1

Catalog No.	Module	No. of teeth	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.
	m	z	AH7	B	C	D	E	F	G	H	I
SS1- 15	1	15	8	17	15	17	10	20	30	—	—
SS1- 16	1	16	8	18	16	18	10	20	30	—	—
SS1- 17	1	17	8	19	17	19	10	20	30	—	—
SS1- 18	1	18	8	20	18	20	10	20	30	—	—
SS1- 19	1	19	8	21	19	21	10	20	30	—	—
SS1- 20	1	20	8	16	20	22	10	10	20	—	—
SS1- 21	1	21	8	17	21	23	10	10	20	—	—
SS1- 22	1	22	8	18	22	24	10	10	20	—	—
SS1- 23	1	23	8	18	23	25	10	10	20	—	—
SS1- 24	1	24	8	20	24	26	10	10	20	—	—
SS1- 25	1	25	8	20	25	27	10	10	20	—	—
SS1- 26	1	26	8	22	26	28	10	10	20	—	—
SS1- 27	1	27	8	22	27	29	10	10	20	—	—
SS1- 28	1	28	8	22	28	30	10	10	20	—	—
SS1- 29	1	29	8	24	29	31	10	10	20	—	—
SS1- 30	1	30	10	25	30	32	10	10	20	—	—
SS1- 32	1	32	10	26	32	34	10	10	20	—	—
SS1- 34	1	34	10	26	34	36	10	10	20	—	—
SS1- 35	1	35	10	26	35	37	10	10	20	—	—
SS1- 36	1	36	10	28	36	38	10	10	20	—	—
SS1- 38	1	38	10	32	38	40	10	10	20	—	—
SS1- 40	1	40	10	35	40	42	10	10	20	—	—
SS1- 42	1	42	10	35	42	44	10	10	20	—	—
SS1- 44	1	44	10	35	44	46	10	10	20	—	—
SS1- 45	1	45	10	35	45	47	10	10	20	—	—
SS1- 46	1	46	10	35	46	48	10	10	20	—	—
SS1- 48	1	48	10	35	48	50	10	10	20	—	—
SS1- 50	1	50	10	35	50	52	10	10	20	—	—
SS1- 52	1	52	10	35	52	54	10	10	20	—	—
SS1- 54	1	54	10	35	54	56	10	10	20	—	—
SS1- 55	1	55	10	35	55	57	10	10	20	—	—
SS1- 56	1	56	10	35	56	58	10	10	20	—	—
SS1- 58	1	58	10	35	58	60	10	10	20	—	—
SS1- 60	1	60	10	35	60	62	10	10	20	—	—
SS1- 62	1	62	10	40	62	64	10	10	20	—	—
SS1- 64	1	64	10	40	64	66	10	10	20	—	—
SS1- 65	1	65	10	40	65	67	10	10	20	—	—
SS1- 66	1	66	10	40	66	68	10	10	20	—	—
SS1- 68	1	68	10	40	68	70	10	10	20	—	—
SS1- 70	1	70	10	40	70	72	10	10	20	—	—
SS1- 72	1	72	10	40	72	74	10	10	20	—	—
SS1- 75	1	75	10	40	75	77	10	10	20	—	—
SS1- 76	1	76	10	40	76	78	10	10	20	—	—
SS1- 80	1	80	10	40	80	82	10	10	20	—	—
SS1- 84	1	84	10	40	84	86	10	10	20	—	—
SS1- 85	1	85	10	40	85	87	10	10	20	—	—
SS1- 88	1	88	10	40	88	90	10	10	20	—	—
SS1- 90	1	90	10	40	90	92	10	10	20	—	—
SS1- 95	1	95	10	40	95	97	10	10	20	—	—
SS1- 96	1	96	10	40	96	98	10	10	20	—	—
SS1-100	1	100	10	40	100	102	10	10	20	—	—
SS1-110	1	110	15	50	110	112	10	10	20	—	—
SS1-120	1	120	15	50	120	122	10	10	20	—	—
SS1-150	1	150	20	120	150	152	10	10	20	—	—
SS1-200	1	200	20	160	200	202	10	10	20	—	—



## Specifications

Precision grade	JIS N8 grade (JIS B1702-1: 1998) OLD JIS 4 grade (JIS B1702: 1976)	Tooth hardness	Less than 194HB
Gear teeth	Standard full depth	Surface treatment	Black oxide
Pressure angle	20°	Tooth surface finish	Cut
Material	S45C	Datum reference surface for gear cutting	Bore
Heat treatment	—	Secondary Operations	Possible

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			
S3	3.694	0.1746	(0.3767)	(0.0178)	0.08 ~ 0.18	0.03	SS1- 15
S3	4.093	0.201	(0.4174)	(0.0205)	0.08 ~ 0.18	0.04	SS1- 16
S3	4.498	0.2295	(0.4587)	(0.0234)	0.08 ~ 0.18	0.05	SS1- 17
S3	4.909	0.2599	(0.5006)	(0.0265)	0.08 ~ 0.18	0.05	SS1- 18
S3	5.326	0.2922	(0.5431)	(0.0298)	0.08 ~ 0.18	0.06	SS1- 19
S1	5.747	0.3275	(0.586 )	(0.0334)	0.08 ~ 0.18	0.03	SS1- 20
S1	6.171	0.3638	(0.6293)	(0.0371)	0.1 ~ 0.22	0.03	SS1- 21
S1	6.601	0.403	(0.6731)	(0.0411)	0.1 ~ 0.22	0.04	SS1- 22
S1	7.033	0.4452	(0.7172)	(0.0454)	0.1 ~ 0.22	0.04	SS1- 23
S1	7.469	0.4903	(0.7616)	(0.05 )	0.1 ~ 0.22	0.05	SS1- 24
S1	7.908	0.5364	(0.8064)	(0.0547)	0.1 ~ 0.22	0.05	SS1- 25
S1	8.349	0.5825	(0.8514)	(0.0594)	0.1 ~ 0.22	0.06	SS1- 26
S1	8.794	0.6315	(0.8967)	(0.0644)	0.1 ~ 0.22	0.06	SS1- 27
S1	9.241	0.6816	(0.9423)	(0.0695)	0.1 ~ 0.22	0.07	SS1- 28
S1	9.69	0.7345	(0.9881)	(0.0749)	0.1 ~ 0.22	0.08	SS1- 29
S1	10.14	0.7894	(1.034 )	(0.0805)	0.1 ~ 0.22	0.08	SS1- 30
S1	11.05	0.9042	(1.127 )	(0.0922)	0.1 ~ 0.22	0.1	SS1- 32
S1	11.96	1.028	(1.22 )	(0.1048)	0.1 ~ 0.22	0.11	SS1- 34
S1	12.42	1.092	(1.267 )	(0.1114)	0.1 ~ 0.22	0.11	SS1- 35
S1	12.89	1.16	(1.314 )	(0.1183)	0.1 ~ 0.22	0.12	SS1- 36
S1	13.81	1.3	(1.408 )	(0.1326)	0.1 ~ 0.22	0.14	SS1- 38
S1	14.74	1.449	(1.503 )	(0.1478)	0.1 ~ 0.22	0.16	SS1- 40
S1	15.67	1.606	(1.598 )	(0.1638)	0.12 ~ 0.26	0.17	SS1- 42
S1	16.61	1.772	(1.694 )	(0.1807)	0.12 ~ 0.26	0.18	SS1- 44
S1	17.08	1.857	(1.742 )	(0.1894)	0.12 ~ 0.26	0.18	SS1- 45
S1	17.55	1.946	(1.79 )	(0.1984)	0.12 ~ 0.26	0.19	SS1- 46
S1	18.5	2.128	(1.887 )	(0.217 )	0.12 ~ 0.26	0.2	SS1- 48
S1	19.45	2.319	(1.983 )	(0.2365)	0.12 ~ 0.26	0.22	SS1- 50
S1	20.4	2.518	(2.08 )	(0.2568)	0.12 ~ 0.26	0.23	SS1- 52
S1	21.36	2.726	(2.178 )	(0.278 )	0.12 ~ 0.26	0.24	SS1- 54
S1	21.83	2.833	(2.226 )	(0.2889)	0.12 ~ 0.26	0.25	SS1- 55
S1	22.31	2.942	(2.275 )	(0.3 )	0.12 ~ 0.26	0.26	SS1- 56
S1	23.27	3.167	(2.373 )	(0.3229)	0.12 ~ 0.26	0.27	SS1- 58
S1	24.22	3.4	(2.47 )	(0.3467)	0.12 ~ 0.26	0.28	SS1- 60
S1	25.18	3.642	(2.568 )	(0.3714)	0.12 ~ 0.26	0.3	SS1- 62
S1	26.15	3.892	(2.667 )	(0.3969)	0.12 ~ 0.26	0.34	SS1- 64
S1	26.63	4.021	(2.716 )	(0.41 )	0.12 ~ 0.26	0.35	SS1- 65
S1	27.12	4.151	(2.765 )	(0.4233)	0.12 ~ 0.26	0.36	SS1- 66
S1	28.08	4.419	(2.863 )	(0.4506)	0.12 ~ 0.26	0.38	SS1- 68
S1	29.05	4.695	(2.962 )	(0.4788)	0.12 ~ 0.26	0.4	SS1- 70
S1	30.02	4.982	(3.061 )	(0.508 )	0.12 ~ 0.26	0.41	SS1- 72
S1	31.47	5.431	(3.209 )	(0.5538)	0.12 ~ 0.26	0.43	SS1- 75
S1	31.95	5.586	(3.258 )	(0.5696)	0.12 ~ 0.26	0.45	SS1- 76
S1	33.9	6.226	(3.457 )	(0.6349)	0.12 ~ 0.26	0.49	SS1- 80
S1	35.84	6.902	(3.655 )	(0.7038)	0.16 ~ 0.32	0.53	SS1- 84
S1	36.33	7.076	(3.705 )	(0.7216)	0.16 ~ 0.32	0.55	SS1- 85
S1	37.79	7.615	(3.854 )	(0.7765)	0.16 ~ 0.32	0.57	SS1- 88
S1	38.77	7.984	(3.953 )	(0.8142)	0.16 ~ 0.32	0.59	SS1- 90
S1	41.21	8.948	(4.202 )	(0.9125)	0.16 ~ 0.32	0.66	SS1- 95
S1	41.7	9.148	(4.252 )	(0.9328)	0.16 ~ 0.32	0.67	SS1- 96
S1	43.66	9.973	(4.452 )	(1.017 )	0.16 ~ 0.32	0.7	SS1-100
S1	48.56	12.18	(4.952 )	(1.242 )	0.16 ~ 0.32	0.87	SS1-110
S1	53.47	14.66	(5.452 )	(1.495 )	0.16 ~ 0.32	1	SS1-120
S1	68.24	23.64	(6.959 )	(2.411 )	0.16 ~ 0.32	2.23	SS1-150
S1	71.5	33.58	(7.291 )	(3.424 )	0.2 ~ 0.4	4	SS1-200

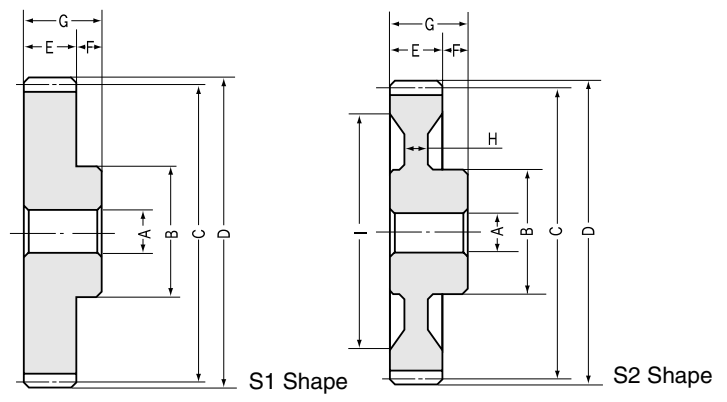
**NOTE 1:** The allowable torques shown in the table are calculated values according to the assumed usage conditions. Please see page 27 for more details.

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



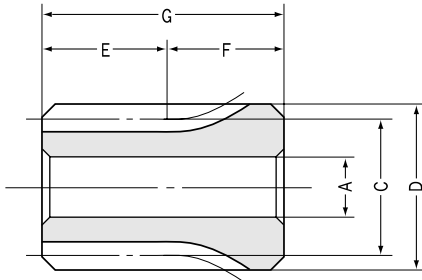
# SS Steel Spur Gears Module 1.5

Spur Gears



## Module 1.5

Catalog No.	Module	No. of teeth	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.
	<i>m</i>	<i>z</i>	AH7	B	C	D	E	F	G	H	I
SS1.5- 12	1.5	12	8	21	18	21	15	15	30	—	—
SS1.5- 13	1.5	13	8	22.5	19.5	22.5	15	15	30	—	—
SS1.5- 14	1.5	14	8	16	21	24	15	10	25	—	—
SS1.5- 15	1.5	15	8	18	22.5	25.5	15	10	25	—	—
SS1.5- 16	1.5	16	8	20	24	27	15	10	25	—	—
SS1.5- 17	1.5	17	8	21	25.5	28.5	15	10	25	—	—
SS1.5- 18	1.5	18	8	22	27	30	15	10	25	—	—
SS1.5- 19	1.5	19	8	23	28.5	31.5	15	10	25	—	—
SS1.5- 20	1.5	20	8	24	30	33	15	10	25	—	—
SS1.5- 21	1.5	21	8	25	31.5	34.5	15	10	25	—	—
SS1.5- 22	1.5	22	8	26	33	36	15	10	25	—	—
SS1.5- 23	1.5	23	8	27	34.5	37.5	15	10	25	—	—
SS1.5- 24	1.5	24	8	28	36	39	15	10	25	—	—
SS1.5- 25	1.5	25	8	30	37.5	40.5	15	10	25	—	—
SS1.5- 26	1.5	26	10	32	39	42	15	10	25	—	—
SS1.5- 27	1.5	27	10	34	40.5	43.5	15	10	25	—	—
SS1.5- 28	1.5	28	10	36	42	45	15	10	25	—	—
SS1.5- 29	1.5	29	10	37	43.5	46.5	15	10	25	—	—
SS1.5- 30	1.5	30	10	38	45	48	15	10	25	—	—
SS1.5- 32	1.5	32	10	40	48	51	15	10	25	—	—
SS1.5- 34	1.5	34	10	40	51	54	15	10	25	—	—
SS1.5- 35	1.5	35	10	42	52.5	55.5	15	10	25	—	—
SS1.5- 36	1.5	36	10	45	54	57	15	10	25	—	—
SS1.5- 38	1.5	38	12	45	57	60	15	10	25	—	—
SS1.5- 40	1.5	40	12	45	60	63	15	10	25	—	—
SS1.5- 42	1.5	42	12	45	63	66	15	10	25	—	—
SS1.5- 44	1.5	44	12	45	66	69	15	10	25	—	—
SS1.5- 45	1.5	45	12	45	67.5	70.5	15	10	25	—	—
SS1.5- 46	1.5	46	12	45	69	72	15	10	25	—	—
SS1.5- 48	1.5	48	12	45	72	75	15	10	25	—	—
SS1.5- 50	1.5	50	12	45	75	78	15	10	25	—	—
SS1.5- 52	1.5	52	15	50	78	81	15	10	25	—	—
SS1.5- 54	1.5	54	15	50	81	84	15	10	25	—	—
SS1.5- 55	1.5	55	15	50	82.5	85.5	15	10	25	—	—
SS1.5- 56	1.5	56	15	50	84	87	15	10	25	—	—
SS1.5- 58	1.5	58	15	50	87	90	15	10	25	—	—
SS1.5- 60	1.5	60	15	50	90	93	15	10	25	—	—
SS1.5- 62	1.5	62	15	55	93	96	15	10	25	—	—
SS1.5- 64	1.5	64	15	55	96	99	15	10	25	—	—
SS1.5- 65	1.5	65	15	55	97.5	100.5	15	10	25	—	—
SS1.5- 66	1.5	66	15	55	99	102	15	10	25	—	—
SS1.5- 68	1.5	68	15	55	102	105	15	10	25	—	—
SS1.5- 70	1.5	70	15	55	105	108	15	10	25	—	—
SS1.5- 72	1.5	72	15	55	108	111	15	10	25	—	—
SS1.5- 75	1.5	75	15	60	112.5	115.5	15	10	25	—	—
SS1.5- 76	1.5	76	15	60	114	117	15	10	25	—	—
SS1.5- 80	1.5	80	15	60	120	123	15	10	25	—	—
SS1.5- 84	1.5	84	15	60	126	129	15	10	25	—	—
SS1.5- 85	1.5	85	15	60	127.5	130.5	15	10	25	—	—
SS1.5- 88	1.5	88	15	60	132	135	15	10	25	—	—
SS1.5- 90	1.5	90	15	60	135	138	15	10	25	—	—
SS1.5- 95	1.5	95	15	60	142.5	145.5	15	10	25	—	—
SS1.5-100	1.5	100	15	60	150	153	15	10	25	9	133
SS1.5-120	1.5	120	15	70	180	183	15	10	25	10	153
SS1.5-150	1.5	150	20	180	225	228	15	10	25	—	—
SS1.5-200	1.5	200	25	240	300	303	15	10	25	—	—



S3 Shape

## Specifications

Precision grade	JIS N8 grade (JIS B1702-1: 1998) OLD JIS 4 grade (JIS B1702: 1976)	Tooth hardness	Less than 194HB
Gear teeth	Standard full depth	Surface treatment	Black oxide
Pressure angle	20°	Tooth surface finish	Cut
Material	S45C	Datum reference surface for gear cutting	Bore
Heat treatment	—	Secondary Operations	Possible

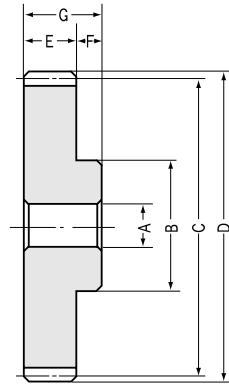
Shape	Allowable torque (N·m) <small>NOTE 1</small>		Allowable torque (kgf·m)		Backlash (mm) <small>NOTE 2</small>	Weight (kgf)	Catalog No.
	Bending strength	Surface durability	Bending strength	Surface durability			
S3	8.59	0.3628	( 0.8759 )	( 0.037 )	0.1 ~ 0.22	0.05	<b>SS1.5-12</b>
S3	9.856	0.4374	( 1.005 )	( 0.0446 )	0.1 ~ 0.22	0.07	<b>SS1.5-13</b>
S1	11.15	0.5158	( 1.137 )	( 0.0526 )	0.1 ~ 0.22	0.06	<b>SS1.5-14</b>
S1	12.47	0.6031	( 1.272 )	( 0.0615 )	0.1 ~ 0.22	0.06	<b>SS1.5-15</b>
S1	13.82	0.6982	( 1.409 )	( 0.0712 )	0.1 ~ 0.22	0.07	<b>SS1.5-16</b>
S1	15.18	0.8012	( 1.548 )	( 0.0817 )	0.1 ~ 0.22	0.09	<b>SS1.5-17</b>
S1	16.57	0.912	( 1.69 )	( 0.093 )	0.1 ~ 0.22	0.09	<b>SS1.5-18</b>
S1	17.98	1.03	( 1.833 )	( 0.105 )	0.1 ~ 0.22	0.11	<b>SS1.5-19</b>
S1	19.4	1.154	( 1.978 )	( 0.1177 )	0.1 ~ 0.22	0.12	<b>SS1.5-20</b>
S1	20.83	1.288	( 2.124 )	( 0.1313 )	0.12 ~ 0.26	0.13	<b>SS1.5-21</b>
S1	22.28	1.428	( 2.272 )	( 0.1456 )	0.12 ~ 0.26	0.15	<b>SS1.5-22</b>
S1	23.74	1.576	( 2.421 )	( 0.1607 )	0.12 ~ 0.26	0.18	<b>SS1.5-23</b>
S1	25.21	1.732	( 2.571 )	( 0.1766 )	0.12 ~ 0.26	0.19	<b>SS1.5-24</b>
S1	26.69	1.897	( 2.722 )	( 0.1934 )	0.12 ~ 0.26	0.2	<b>SS1.5-25</b>
S1	28.18	2.06	( 2.874 )	( 0.2101 )	0.12 ~ 0.26	0.21	<b>SS1.5-26</b>
S1	29.67	2.231	( 3.026 )	( 0.2275 )	0.12 ~ 0.26	0.23	<b>SS1.5-27</b>
S1	31.18	2.409	( 3.18 )	( 0.2457 )	0.12 ~ 0.26	0.24	<b>SS1.5-28</b>
S1	32.7	2.595	( 3.335 )	( 0.2646 )	0.12 ~ 0.26	0.25	<b>SS1.5-29</b>
S1	34.22	2.787	( 3.49 )	( 0.2842 )	0.12 ~ 0.26	0.26	<b>SS1.5-30</b>
S1	37.28	3.192	( 3.802 )	( 0.3255 )	0.12 ~ 0.26	0.3	<b>SS1.5-32</b>
S1	40.37	3.626	( 4.117 )	( 0.3698 )	0.12 ~ 0.26	0.33	<b>SS1.5-34</b>
S1	41.92	3.854	( 4.275 )	( 0.393 )	0.12 ~ 0.26	0.34	<b>SS1.5-35</b>
S1	43.48	4.089	( 4.434 )	( 0.417 )	0.12 ~ 0.26	0.39	<b>SS1.5-36</b>
S1	46.61	4.581	( 4.753 )	( 0.4671 )	0.12 ~ 0.26	0.43	<b>SS1.5-38</b>
S1	49.75	5.1	( 5.073 )	( 0.5201 )	0.12 ~ 0.26	0.44	<b>SS1.5-40</b>
S1	52.91	5.65	( 5.395 )	( 0.5761 )	0.14 ~ 0.32	0.47	<b>SS1.5-42</b>
S1	56.07	6.227	( 5.718 )	( 0.635 )	0.14 ~ 0.32	0.51	<b>SS1.5-44</b>
S1	57.66	6.527	( 5.88 )	( 0.6656 )	0.14 ~ 0.32	0.52	<b>SS1.5-45</b>
S1	59.25	6.834	( 6.042 )	( 0.6969 )	0.14 ~ 0.32	0.57	<b>SS1.5-46</b>
S1	62.44	7.473	( 6.367 )	( 0.762 )	0.14 ~ 0.32	0.58	<b>SS1.5-48</b>
S1	65.65	8.147	( 6.694 )	( 0.8308 )	0.14 ~ 0.32	0.62	<b>SS1.5-50</b>
S1	68.85	8.852	( 7.021 )	( 0.9027 )	0.14 ~ 0.32	0.7	<b>SS1.5-52</b>
S1	72.07	9.588	( 7.349 )	( 0.9777 )	0.14 ~ 0.32	0.74	<b>SS1.5-54</b>
S1	73.68	9.963	( 7.513 )	( 1.016 )	0.14 ~ 0.32	0.75	<b>SS1.5-55</b>
S1	75.29	10.36	( 7.678 )	( 1.056 )	0.14 ~ 0.32	0.77	<b>SS1.5-56</b>
S1	78.52	11.15	( 8.007 )	( 1.137 )	0.14 ~ 0.32	0.86	<b>SS1.5-58</b>
S1	81.77	11.97	( 8.338 )	( 1.221 )	0.14 ~ 0.32	0.87	<b>SS1.5-60</b>
S1	85	12.84	( 8.668 )	( 1.309 )	0.14 ~ 0.32	0.99	<b>SS1.5-62</b>
S1	88.26	13.72	( 9 )	( 1.399 )	0.14 ~ 0.32	1	<b>SS1.5-64</b>
S1	89.89	14.18	( 9.166 )	( 1.446 )	0.14 ~ 0.32	1	<b>SS1.5-65</b>
S1	91.51	14.64	( 9.332 )	( 1.493 )	0.14 ~ 0.32	1.1	<b>SS1.5-66</b>
S1	94.77	15.59	( 9.664 )	( 1.59 )	0.14 ~ 0.32	1.1	<b>SS1.5-68</b>
S1	98.04	16.57	( 9.997 )	( 1.69 )	0.14 ~ 0.32	1.2	<b>SS1.5-70</b>
S1	101.3	17.58	( 10.33 )	( 1.793 )	0.14 ~ 0.32	1.2	<b>SS1.5-72</b>
S1	106.2	19.15	( 10.83 )	( 1.953 )	0.14 ~ 0.32	1.4	<b>SS1.5-75</b>
S1	107.9	19.7	( 11 )	( 2.009 )	0.14 ~ 0.32	1.5	<b>SS1.5-76</b>
S1	114.4	22	( 11.67 )	( 2.243 )	0.14 ~ 0.32	1.5	<b>SS1.5-80</b>
S1	121	24.43	( 12.34 )	( 2.491 )	0.18 ~ 0.38	1.7	<b>SS1.5-84</b>
S1	122.6	25.06	( 12.5 )	( 2.555 )	0.18 ~ 0.38	1.7	<b>SS1.5-85</b>
S1	127.6	26.99	( 13.01 )	( 2.752 )	0.18 ~ 0.38	1.9	<b>SS1.5-88</b>
S1	130.8	28.31	( 13.34 )	( 2.887 )	0.18 ~ 0.38	1.9	<b>SS1.5-90</b>
S1	139.1	31.78	( 14.18 )	( 3.241 )	0.18 ~ 0.38	2.1	<b>SS1.5-95</b>
S2	147.4	35.46	( 15.03 )	( 3.616 )	0.18 ~ 0.38	1.8	<b>SS1.5-100</b>
S2	180.4	52.28	( 18.4 )	( 5.331 )	0.18 ~ 0.38	2.8	<b>SS1.5-120</b>
S1	191.9	70.31	( 19.57 )	( 7.17 )	0.18 ~ 0.38	6.62	<b>SS1.5-150</b>
S1	261.4	130.5	( 26.66 )	( 13.31 )	0.22 ~ 0.46	11.8	<b>SS1.5-200</b>

**NOTE 1:** The allowable torques shown in the table are calculated values according to the assumed usage conditions. Please see page 27 for more details.

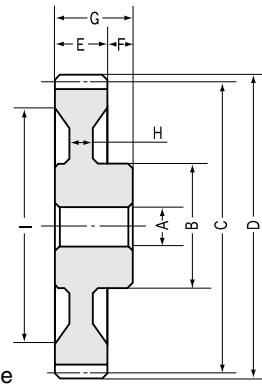
**NOTE 2:** The backlash values shown in the table are the theoretical values of a pair of identical gears in mesh.



# SS Steel Spur Gears **Module 2**



S1 Shape



S2 Shape

## Module 2

Catalog No.	Module	No. of teeth	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.
	m	z	AH7	B	C	D	E	F	G	H	I
SS2- 12	2	12	10	18	24	28	20	10	30	—	—
SS2- 13	2	13	10	20	26	30	20	10	30	—	—
SS2- 14	2	14	10	20	28	32	20	10	30	—	—
SS2- 15	2	15	12	24	30	34	20	10	30	—	—
SS2- 16	2	16	12	26	32	36	20	10	30	—	—
SS2- 17	2	17	12	28	34	38	20	10	30	—	—
SS2- 18	2	18	12	30	36	40	20	10	30	—	—
SS2- 19	2	19	12	31	38	42	20	10	30	—	—
SS2- 20	2	20	12	32	40	44	20	10	30	—	—
SS2- 21	2	21	12	34	42	46	20	10	30	—	—
SS2- 22	2	22	12	36	44	48	20	10	30	—	—
SS2- 23	2	23	12	37	46	50	20	10	30	—	—
SS2- 24	2	24	12	38	48	52	20	10	30	—	—
SS2- 25	2	25	12	40	50	54	20	10	30	—	—
SS2- 26	2	26	12	42	52	56	20	10	30	—	—
SS2- 27	2	27	12	45	54	58	20	10	30	—	—
SS2- 28	2	28	12	45	56	60	20	10	30	—	—
SS2- 29	2	29	12	47	58	62	20	10	30	—	—
SS2- 30	2	30	12	50	60	64	20	10	30	—	—
SS2- 32	2	32	12	50	64	68	20	10	30	—	—
SS2- 34	2	34	12	50	68	72	20	10	30	—	—
SS2- 35	2	35	12	52	70	74	20	10	30	—	—
SS2- 36	2	36	12	55	72	76	20	10	30	—	—
SS2- 38	2	38	12	55	76	80	20	10	30	—	—
SS2- 40	2	40	15	55	80	84	20	10	30	—	—
SS2- 42	2	42	15	55	84	88	20	10	30	—	—
SS2- 44	2	44	15	55	88	92	20	10	30	—	—
SS2- 45	2	45	15	55	90	94	20	10	30	—	—
SS2- 46	2	46	15	55	92	96	20	10	30	—	—
SS2- 48	2	48	15	55	96	100	20	10	30	—	—
SS2- 50	2	50	15	55	100	104	20	10	30	—	—
SS2- 52	2	52	15	55	104	108	20	10	30	—	—
SS2- 54	2	54	15	55	108	112	20	10	30	—	—
SS2- 55	2	55	15	55	110	114	20	10	30	—	—
SS2- 56	2	56	15	55	112	116	20	10	30	—	—
SS2- 58	2	58	15	60	116	120	20	10	30	—	—
SS2- 60	2	60	15	60	120	124	20	10	30	—	—
SS2- 62	2	62	15	60	124	128	20	10	30	—	—
SS2- 64	2	64	15	60	128	132	20	10	30	—	—
SS2- 65	2	65	15	60	130	134	20	10	30	—	—
SS2- 66	2	66	15	60	132	136	20	10	30	—	—
SS2- 68	2	68	15	60	136	140	20	10	30	—	—
SS2- 70	2	70	15	60	140	144	20	10	30	—	—
SS2- 72	2	72	15	60	144	148	20	10	30	—	—
SS2- 75	2	75	20	60	150	154	20	10	30	—	—
SS2- 76	2	76	20	60	152	156	20	10	30	—	—
SS2- 80	2	80	20	60	160	164	20	10	30	12	136
SS2- 84	2	84	20	70	168	172	20	10	30	12	140
SS2- 85	2	85	20	70	170	174	20	10	30	12	146
SS2- 88	2	88	20	70	176	180	20	10	30	12	150
SS2- 90	2	90	20	70	180	184	20	10	30	12	156
SS2- 95	2	95	20	70	190	194	20	10	30	12	166
SS2-100	2	100	20	70	200	204	20	10	30	12	176
SS2-120	2	120	20	90	240	244	20	10	30	12	210
SS2-150	2	150	25	240	300	304	20	10	30	—	—



## Specifications

Precision grade	JIS N8 grade (JIS B1702-1: 1998) OLD JIS 4 grade (JIS B1702: 1976)	Tooth hardness	Less than 194HB
Gear teeth	Standard full depth	Surface treatment	Black oxide
Pressure angle	20°	Tooth surface finish	Cut
Material	S45C	Datum reference surface for gear cutting	Bore
Heat treatment	—	Secondary Operations	Possible

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	20.36	0.8816	( 2.076 )	( 0.0899 )	0.12 ~ 0.26	0.09	<b>SS2- 12</b>
S1	23.36	1.067	( 2.382 )	( 0.1088 )	0.12 ~ 0.26	0.1	<b>SS2- 13</b>
S1	26.42	1.264	( 2.694 )	( 0.1289 )	0.12 ~ 0.26	0.1	<b>SS2- 14</b>
S1	29.56	1.479	( 3.014 )	( 0.1508 )	0.12 ~ 0.26	0.11	<b>SS2- 15</b>
S1	32.74	1.712	( 3.339 )	( 0.1746 )	0.12 ~ 0.26	0.15	<b>SS2- 16</b>
S1	35.99	1.962	( 3.67 )	( 0.2001 )	0.12 ~ 0.26	0.18	<b>SS2- 17</b>
S1	39.28	2.233	( 4.005 )	( 0.2277 )	0.12 ~ 0.26	0.2	<b>SS2- 18</b>
S1	42.61	2.521	( 4.345 )	( 0.2571 )	0.12 ~ 0.26	0.22	<b>SS2- 19</b>
S1	45.97	2.827	( 4.688 )	( 0.2883 )	0.12 ~ 0.26	0.22	<b>SS2- 20</b>
S1	49.38	3.153	( 5.035 )	( 0.3215 )	0.14 ~ 0.3	0.28	<b>SS2- 21</b>
S1	52.81	3.496	( 5.385 )	( 0.3565 )	0.14 ~ 0.3	0.3	<b>SS2- 22</b>
S1	56.27	3.858	( 5.738 )	( 0.3934 )	0.14 ~ 0.3	0.32	<b>SS2- 23</b>
S1	59.75	4.238	( 6.093 )	( 0.4322 )	0.14 ~ 0.3	0.35	<b>SS2- 24</b>
S1	63.26	4.638	( 6.451 )	( 0.4729 )	0.14 ~ 0.3	0.4	<b>SS2- 25</b>
S1	66.8	5.037	( 6.812 )	( 0.5136 )	0.14 ~ 0.3	0.42	<b>SS2- 26</b>
S1	70.35	5.452	( 7.174 )	( 0.556 )	0.14 ~ 0.3	0.47	<b>SS2- 27</b>
S1	73.92	5.885	( 7.538 )	( 0.6001 )	0.14 ~ 0.3	0.5	<b>SS2- 28</b>
S1	77.52	6.334	( 7.905 )	( 0.6459 )	0.14 ~ 0.3	0.58	<b>SS2- 29</b>
S1	81.12	6.801	( 8.272 )	( 0.6935 )	0.14 ~ 0.3	0.58	<b>SS2- 30</b>
S1	88.39	7.784	( 9.013 )	( 0.7938 )	0.14 ~ 0.3	0.64	<b>SS2- 32</b>
S1	95.7	8.838	( 9.759 )	( 0.9012 )	0.14 ~ 0.3	0.74	<b>SS2- 34</b>
S1	99.34	9.39	( 10.13 )	( 0.9575 )	0.14 ~ 0.3	0.75	<b>SS2- 35</b>
S1	103.1	9.963	( 10.51 )	( 1.016 )	0.14 ~ 0.3	0.8	<b>SS2- 36</b>
S1	110.5	11.17	( 11.27 )	( 1.139 )	0.14 ~ 0.3	0.9	<b>SS2- 38</b>
S1	117.9	12.45	( 12.02 )	( 1.27 )	0.14 ~ 0.3	0.93	<b>SS2- 40</b>
S1	125.4	13.81	( 12.79 )	( 1.408 )	0.18 ~ 0.36	1	<b>SS2- 42</b>
S1	132.9	15.23	( 13.55 )	( 1.553 )	0.18 ~ 0.36	1.1	<b>SS2- 44</b>
S1	136.7	15.97	( 13.94 )	( 1.628 )	0.18 ~ 0.36	1.1	<b>SS2- 45</b>
S1	140.4	16.73	( 14.32 )	( 1.706 )	0.18 ~ 0.36	1.2	<b>SS2- 46</b>
S1	148	18.3	( 15.09 )	( 1.866 )	0.18 ~ 0.36	1.3	<b>SS2- 48</b>
S1	155.6	19.94	( 15.87 )	( 2.033 )	0.18 ~ 0.36	1.4	<b>SS2- 50</b>
S1	163.2	21.65	( 16.64 )	( 2.208 )	0.18 ~ 0.36	1.5	<b>SS2- 52</b>
S1	170.8	23.44	( 17.42 )	( 2.39 )	0.18 ~ 0.36	1.6	<b>SS2- 54</b>
S1	174.7	24.36	( 17.81 )	( 2.484 )	0.18 ~ 0.36	1.6	<b>SS2- 55</b>
S1	178.5	25.3	( 18.2 )	( 2.58 )	0.18 ~ 0.36	1.7	<b>SS2- 56</b>
S1	186.1	27.27	( 18.98 )	( 2.781 )	0.18 ~ 0.36	1.8	<b>SS2- 58</b>
S1	193.8	29.33	( 19.76 )	( 2.991 )	0.18 ~ 0.36	1.9	<b>SS2- 60</b>
S1	201.5	31.47	( 20.55 )	( 3.209 )	0.18 ~ 0.36	2	<b>SS2- 62</b>
S1	209.2	33.69	( 21.33 )	( 3.435 )	0.18 ~ 0.36	2.1	<b>SS2- 64</b>
S1	213.1	34.82	( 21.73 )	( 3.551 )	0.18 ~ 0.36	2.3	<b>SS2- 65</b>
S1	216.9	35.98	( 22.12 )	( 3.669 )	0.18 ~ 0.36	2.4	<b>SS2- 66</b>
S1	224.7	38.35	( 22.91 )	( 3.911 )	0.18 ~ 0.36	2.6	<b>SS2- 68</b>
S1	232.4	40.81	( 23.7 )	( 4.161 )	0.18 ~ 0.36	2.6	<b>SS2- 70</b>
S1	240.2	43.34	( 24.49 )	( 4.419 )	0.18 ~ 0.36	2.7	<b>SS2- 72</b>
S1	251.7	47.29	( 25.67 )	( 4.822 )	0.18 ~ 0.36	2.9	<b>SS2- 75</b>
S1	255.7	48.64	( 26.07 )	( 4.96 )	0.18 ~ 0.36	3.1	<b>SS2- 76</b>
S2	271.2	54.26	( 27.65 )	( 5.533 )	0.18 ~ 0.36	2.6	<b>SS2- 80</b>
S2	286.7	60.2	( 29.24 )	( 6.139 )	0.2 ~ 0.44	3	<b>SS2- 84</b>
S2	290.7	61.73	( 29.64 )	( 6.295 )	0.2 ~ 0.44	3	<b>SS2- 85</b>
S2	302.3	66.46	( 30.83 )	( 6.777 )	0.2 ~ 0.44	3.4	<b>SS2- 88</b>
S2	310.2	69.7	( 31.63 )	( 7.108 )	0.2 ~ 0.44	3.4	<b>SS2- 90</b>
S2	329.7	78.19	( 33.62 )	( 7.973 )	0.2 ~ 0.44	3.7	<b>SS2- 95</b>
S2	291.1	72.74	( 29.68 )	( 7.418 )	0.2 ~ 0.44	3.8	<b>SS2-100</b>
S2	356.5	107.7	( 36.35 )	( 10.98 )	0.2 ~ 0.44	6.2	<b>SS2-120</b>
S1	454.9	174	( 46.39 )	( 17.74 )	0.2 ~ 0.44	14.5	<b>SS2-150</b>

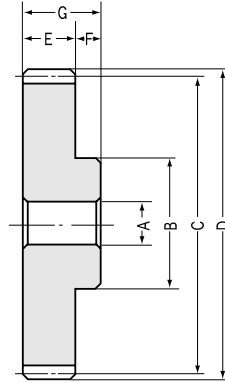
**NOTE 1:** The allowable torques shown in the table are calculated values according to the assumed usage conditions. Please see page 27 for more details.

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

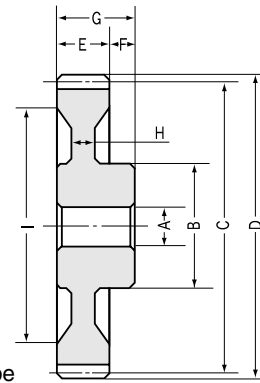


# SS Steel Spur Gears Module 2.5

Spur Gears



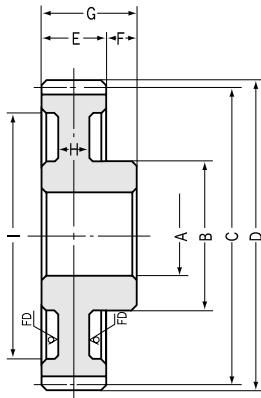
S1 Shape



S2 Shape

## Module 2.5

Catalog No.	Module	No. of teeth	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.
	<i>m</i>	<i>z</i>	AH7	B	C	D	E	F	G	H	I
SS2.5-12	2.5	12	12	23	30	35	25	12	37	—	—
SS2.5-13	2.5	13	12	25	32.5	37.5	25	12	37	—	—
SS2.5-14	2.5	14	12	25	35	40	25	12	37	—	—
SS2.5-15	2.5	15	15	30	37.5	42.5	25	12	37	—	—
SS2.5-16	2.5	16	15	32	40	45	25	12	37	—	—
SS2.5-17	2.5	17	15	35	42.5	47.5	25	12	37	—	—
SS2.5-18	2.5	18	15	38	45	50	25	12	37	—	—
SS2.5-19	2.5	19	15	39	47.5	52.5	25	12	37	—	—
SS2.5-20	2.5	20	15	40	50	55	25	12	37	—	—
SS2.5-21	2.5	21	15	42	52.5	57.5	25	12	37	—	—
SS2.5-22	2.5	22	15	44	55	60	25	12	37	—	—
SS2.5-23	2.5	23	15	46	57.5	62.5	25	12	37	—	—
SS2.5-24	2.5	24	15	48	60	65	25	12	37	—	—
SS2.5-25	2.5	25	15	50	62.5	67.5	25	12	37	—	—
SS2.5-26	2.5	26	15	55	65	70	25	12	37	—	—
SS2.5-27	2.5	27	15	60	67.5	72.5	25	12	37	—	—
SS2.5-28	2.5	28	15	60	70	75	25	12	37	—	—
SS2.5-29	2.5	29	15	62	72.5	77.5	25	12	37	—	—
SS2.5-30	2.5	30	15	65	75	80	25	12	37	—	—
SS2.5-32	2.5	32	15	70	80	85	25	12	37	—	—
SS2.5-34	2.5	34	15	70	85	90	25	12	37	—	—
SS2.5-35	2.5	35	15	70	87.5	92.5	25	12	37	—	—
SS2.5-36	2.5	36	15	70	90	95	25	12	37	—	—
SS2.5-38	2.5	38	20	70	95	100	25	12	37	—	—
SS2.5-40	2.5	40	20	70	100	105	25	12	37	—	—
SS2.5-42	2.5	42	20	70	105	110	25	12	37	—	—
SS2.5-44	2.5	44	20	70	110	115	25	12	37	—	—
SS2.5-45	2.5	45	20	70	112.5	117.5	25	12	37	—	—
SS2.5-46	2.5	46	20	70	115	120	25	12	37	—	—
SS2.5-48	2.5	48	20	70	120	125	25	12	37	—	—
SS2.5-50	2.5	50	20	70	125	130	25	12	37	—	—
SS2.5-52	2.5	52	20	70	130	135	25	12	37	—	—
SS2.5-54	2.5	54	20	70	135	140	25	12	37	—	—
SS2.5-55	2.5	55	20	70	137.5	142.5	25	12	37	—	—
SS2.5-56	2.5	56	20	70	140	145	25	12	37	—	—
SS2.5-58	2.5	58	20	70	145	150	25	12	37	—	—
SS2.5-60	2.5	60	25	70	150	155	25	12	37	10	127
SS2.5-62	2.5	62	25	80	155	160	25	12	37	15	130
SS2.5-64	2.5	64	25	80	160	165	25	12	37	15	131
SS2.5-65	2.5	65	25	80	162.5	167.5	25	12	37	15	134
SS2.5-66	2.5	66	25	80	165	170	25	12	37	15	140
SS2.5-68	2.5	68	25	80	170	175	25	12	37	15	140
SS2.5-70	2.5	70	25	80	175	180	25	12	37	15	146
SS2.5-72	2.5	72	25	80	180	185	25	12	37	15	151
SS2.5-75	2.5	75	25	80	187.5	192.5	25	12	37	15	159
SS2.5-76	2.5	76	25	80	190	195	25	12	37	15	160
SS2.5-80	2.5	80	25	80	200	205	25	12	37	10	177
SS2.5-90	2.5	90	30	90	225	230	25	12	37	10	202
SS2.5-100	2.5	100	30	90	250	255	25	12	37	10	227
SS2.5-120	2.5	120	30	100	300	305	25	12	37	10	277



S4 Shape

\* FD has the die-forged finish.

## Specifications

Precision grade	JIS N8 grade (JIS B1702-1: 1998) OLD JIS 4 grade (JIS B1702: 1976)	Tooth hardness	Less than 194HB
Gear teeth	Standard full depth	Surface treatment	Black oxide
Pressure angle	20°	Tooth surface finish	Cut
Material	S45C	Datum reference surface for gear cutting	Bore
Heat treatment	—	Secondary Operations	Possible

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	39.77	1.766	( 4.055 )	( 0.1801 )	0.14 ~ 0.28	0.14	<b>SS2.5- 12</b>
S1	45.61	2.138	( 4.651 )	( 0.218 )	0.14 ~ 0.28	0.17	<b>SS2.5- 13</b>
S1	51.61	2.532	( 5.263 )	( 0.2582 )	0.14 ~ 0.28	0.2	<b>SS2.5- 14</b>
S1	57.73	2.964	( 5.887 )	( 0.3022 )	0.14 ~ 0.28	0.23	<b>SS2.5- 15</b>
S1	63.96	3.429	( 6.522 )	( 0.3497 )	0.14 ~ 0.28	0.25	<b>SS2.5- 16</b>
S1	70.29	3.932	( 7.168 )	( 0.401 )	0.14 ~ 0.28	0.28	<b>SS2.5- 17</b>
S1	76.72	4.471	( 7.823 )	( 0.4559 )	0.14 ~ 0.28	0.35	<b>SS2.5- 18</b>
S1	83.22	5.045	( 8.486 )	( 0.5145 )	0.14 ~ 0.28	0.4	<b>SS2.5- 19</b>
S1	89.79	5.656	( 9.156 )	( 0.5768 )	0.14 ~ 0.28	0.44	<b>SS2.5- 20</b>
S1	96.44	6.304	( 9.834 )	( 0.6428 )	0.16 ~ 0.34	0.49	<b>SS2.5- 21</b>
S1	103.2	6.987	(10.52 )	( 0.7125 )	0.16 ~ 0.34	0.53	<b>SS2.5- 22</b>
S1	109.9	7.708	(11.21 )	( 0.786 )	0.16 ~ 0.34	0.58	<b>SS2.5- 23</b>
S1	116.7	8.465	(11.9 )	( 0.8632 )	0.16 ~ 0.34	0.65	<b>SS2.5- 24</b>
S1	123.6	9.259	(12.6 )	( 0.9442 )	0.16 ~ 0.34	0.7	<b>SS2.5- 25</b>
S1	130.4	10.05	(13.3 )	( 1.025 )	0.16 ~ 0.34	0.83	<b>SS2.5- 26</b>
S1	137.4	10.88	(14.01 )	( 1.109 )	0.16 ~ 0.34	0.92	<b>SS2.5- 27</b>
S1	144.4	11.74	(14.72 )	( 1.197 )	0.16 ~ 0.34	1	<b>SS2.5- 28</b>
S1	151.4	12.64	(15.44 )	( 1.289 )	0.16 ~ 0.34	1.1	<b>SS2.5- 29</b>
S1	158.5	13.58	(16.16 )	( 1.385 )	0.16 ~ 0.34	1.2	<b>SS2.5- 30</b>
S1	172.6	15.56	(17.6 )	( 1.587 )	0.16 ~ 0.34	1.3	<b>SS2.5- 32</b>
S1	186.9	17.69	(19.06 )	( 1.804 )	0.16 ~ 0.34	1.4	<b>SS2.5- 34</b>
S1	194.1	18.81	(19.79 )	( 1.918 )	0.16 ~ 0.34	1.5	<b>SS2.5- 35</b>
S1	201.3	19.96	(20.53 )	( 2.035 )	0.16 ~ 0.34	1.6	<b>SS2.5- 36</b>
S1	215.7	22.37	(22 )	( 2.281 )	0.16 ~ 0.34	1.7	<b>SS2.5- 38</b>
S1	230.4	24.92	(23.49 )	( 2.541 )	0.16 ~ 0.34	1.8	<b>SS2.5- 40</b>
S1	244.9	27.62	(24.97 )	( 2.816 )	0.18 ~ 0.4	2	<b>SS2.5- 42</b>
S1	259.6	30.45	(26.47 )	( 3.105 )	0.18 ~ 0.4	2.1	<b>SS2.5- 44</b>
S1	266.9	31.92	(27.22 )	( 3.255 )	0.18 ~ 0.4	2.2	<b>SS2.5- 45</b>
S1	274.3	33.46	(27.97 )	( 3.412 )	0.18 ~ 0.4	2.3	<b>SS2.5- 46</b>
S1	289.1	36.67	(29.48 )	( 3.739 )	0.18 ~ 0.4	2.5	<b>SS2.5- 48</b>
S1	303.9	40.02	(30.99 )	( 4.081 )	0.18 ~ 0.4	2.7	<b>SS2.5- 50</b>
S1	318.7	43.53	(32.5 )	( 4.439 )	0.18 ~ 0.4	3	<b>SS2.5- 52</b>
S1	333.6	47.19	(34.02 )	( 4.812 )	0.18 ~ 0.4	3.1	<b>SS2.5- 54</b>
S1	341.1	49.08	(34.78 )	( 5.005 )	0.18 ~ 0.4	3.2	<b>SS2.5- 55</b>
S1	348.6	51	(35.55 )	( 5.201 )	0.18 ~ 0.4	3.3	<b>SS2.5- 56</b>
S1	363.5	54.98	(37.07 )	( 5.606 )	0.18 ~ 0.4	3.7	<b>SS2.5- 58</b>
S4	378.5	59.1	(38.6 )	( 6.027 )	0.18 ~ 0.4	2.7	<b>SS2.5- 60</b>
S2	393.5	63.39	(40.13 )	( 6.464 )	0.18 ~ 0.4	3.1	<b>SS2.5- 62</b>
S2	408.6	67.82	(41.67 )	( 6.916 )	0.18 ~ 0.4	3.5	<b>SS2.5- 64</b>
S2	416.1	70.1	(42.43 )	( 7.148 )	0.18 ~ 0.4	3.7	<b>SS2.5- 65</b>
S2	423.6	72.42	(43.2 )	( 7.385 )	0.18 ~ 0.4	3.9	<b>SS2.5- 66</b>
S2	438.7	77.17	(44.74 )	( 7.869 )	0.18 ~ 0.4	4.1	<b>SS2.5- 68</b>
S2	453.8	82.07	(46.28 )	( 8.369 )	0.18 ~ 0.4	4.2	<b>SS2.5- 70</b>
S2	468.9	87.14	(47.82 )	( 8.886 )	0.18 ~ 0.4	4.4	<b>SS2.5- 72</b>
S2	491.7	95.03	(50.14 )	( 9.69 )	0.18 ~ 0.4	4.7	<b>SS2.5- 75</b>
S2	499.3	97.73	(50.91 )	( 9.966 )	0.18 ~ 0.4	5	<b>SS2.5- 76</b>
S4	441.4	90.93	(45.01 )	( 9.272 )	0.18 ~ 0.4	4.1	<b>SS2.5- 80</b>
S4	504.8	117.2	(51.48 )	(11.95 )	0.22 ~ 0.48	7.6	<b>SS2.5- 90</b>
S4	568.5	147	(57.97 )	(14.99 )	0.22 ~ 0.48	7.8	<b>SS2.5-100</b>
S4	696.3	217.5	(71 )	(22.18 )	0.22 ~ 0.48	11	<b>SS2.5-120</b>

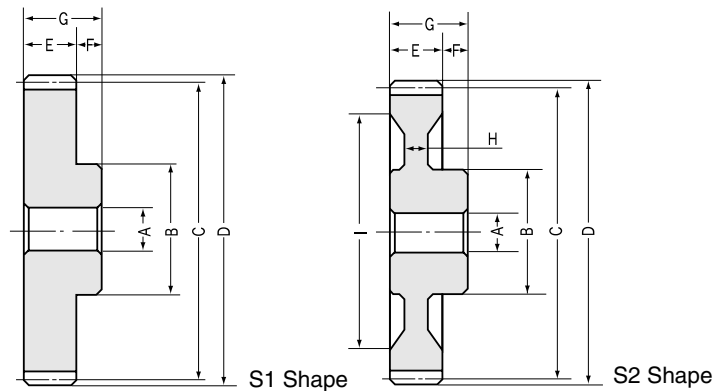
**NOTE 1:** The allowable torques shown in the table are calculated values according to the assumed usage conditions. Please see page 27 for more details.

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



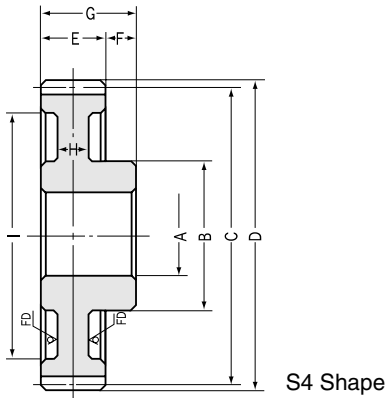
# SS Steel Spur Gears Module 3

Spur Gears



## Module 3

Catalog No.	Module	No. of teeth	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.
	<i>m</i>	<i>z</i>	AH7	B	C	D	E	F	G	H	I
SS3- 12	3	12	15	28	36	42	30	15	45	—	—
SS3- 13	3	13	15	30	39	45	30	15	45	—	—
SS3- 14	3	14	15	32	42	48	30	15	45	—	—
SS3- 15	3	15	15	36	45	51	30	15	45	—	—
SS3- 16	3	16	15	38	48	54	30	15	45	—	—
SS3- 17	3	17	15	39	51	57	30	15	45	—	—
SS3- 18	3	18	15	40	54	60	30	15	45	—	—
SS3- 19	3	19	15	45	57	63	30	15	45	—	—
SS3- 20	3	20	15	50	60	66	30	15	45	—	—
SS3- 21	3	21	15	52	63	69	30	15	45	—	—
SS3- 22	3	22	15	54	66	72	30	15	45	—	—
SS3- 23	3	23	15	56	69	75	30	15	45	—	—
SS3- 24	3	24	15	58	72	78	30	15	45	—	—
SS3- 25	3	25	20	60	75	81	30	15	45	—	—
SS3- 26	3	26	20	65	78	84	30	15	45	—	—
SS3- 27	3	27	20	65	81	87	30	15	45	—	—
SS3- 28	3	28	20	70	84	90	30	15	45	—	—
SS3- 29	3	29	20	70	87	93	30	15	45	—	—
SS3- 30	3	30	20	75	90	96	30	15	45	—	—
SS3- 32	3	32	20	75	96	102	30	15	45	—	—
SS3- 34	3	34	20	80	102	108	30	15	45	—	—
SS3- 35	3	35	20	80	105	111	30	15	45	—	—
SS3- 36	3	36	20	80	108	114	30	15	45	—	—
SS3- 38	3	38	25	80	114	120	30	15	45	—	—
SS3- 40	3	40	25	80	120	126	30	15	45	—	—
SS3- 42	3	42	25	80	126	132	30	15	45	—	—
SS3- 44	3	44	25	80	132	138	30	15	45	—	—
SS3- 45	3	45	25	80	135	141	30	15	45	—	—
SS3- 46	3	46	25	80	138	144	30	15	45	—	—
SS3- 48	3	48	25	80	144	150	30	15	45	—	—
SS3- 50	3	50	25	80	150	156	30	15	45	10	123
SS3- 52	3	52	25	80	156	162	30	15	45	16	126
SS3- 54	3	54	25	80	162	168	30	15	45	16	132
SS3- 55	3	55	25	80	165	171	30	15	45	16	131
SS3- 56	3	56	25	80	168	174	30	15	45	16	134
SS3- 58	3	58	25	80	174	180	30	15	45	16	144
SS3- 60	3	60	25	80	180	186	30	15	45	10	153
SS3- 62	3	62	25	80	186	192	30	15	45	16	150
SS3- 64	3	64	25	80	192	198	30	15	45	16	158
SS3- 65	3	65	25	80	195	201	30	15	45	16	161
SS3- 66	3	66	25	90	198	204	30	15	45	16	160
SS3- 68	3	68	25	90	204	210	30	15	45	16	170
SS3- 70	3	70	25	90	210	216	30	15	45	16	176
SS3- 72	3	72	25	90	216	222	30	15	45	16	182
SS3- 75	3	75	25	90	225	231	30	15	45	16	190
SS3- 76	3	76	25	90	228	234	30	15	45	16	190
SS3- 80	3	80	30	90	240	246	30	15	45	10	213
SS3- 90	3	90	30	100	270	276	30	15	45	16	240
SS3-100	3	100	30	100	300	306	30	15	45	10	273
SS3-120	3	120	30	130	360	366	30	15	45	10	333



\* FD has the die-forged finish.

Specifications			
Precision grade	JIS N8 grade (JIS B1702-1: 1998) OLD JIS 4 grade (JIS B1702: 1976)	Tooth hardness	Less than 194HB
Gear teeth	Standard full depth	Surface treatment	Black oxide
Pressure angle	20°	Tooth surface finish	Cut
Material	S45C	Datum reference surface for gear cutting	Bore
Heat treatment	—	Secondary Operations	Possible

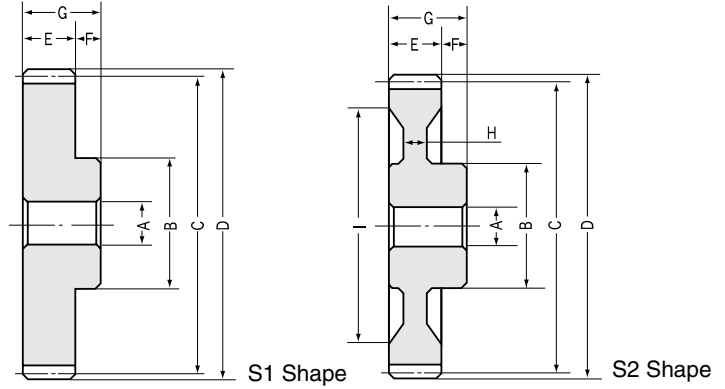
Shape	Allowable torque (N·m) NOTE 1		Allowable torque (kgf·m)		Backlash (mm) NOTE 2	Weight (kgf)	Catalog No.
	Bending strength	Surface durability	Bending strength	Surface durability			
S1	68.71	3.116 ( 7.007)	( 0.3177)	0.14 ~ 0.32	0.25	<b>SS3- 12</b>	
S1	78.83	3.773 ( 8.038)	( 0.3847)	0.14 ~ 0.32	0.3	<b>SS3- 13</b>	
S1	89.18	4.468 ( 9.094)	( 0.4556)	0.14 ~ 0.32	0.35	<b>SS3- 14</b>	
S1	99.73	5.225 ( 10.17 )	( 0.5328)	0.14 ~ 0.32	0.4	<b>SS3- 15</b>	
S1	110.5	6.045 ( 11.27 )	( 0.6164)	0.14 ~ 0.32	0.5	<b>SS3- 16</b>	
S1	121.5	6.926 ( 12.39 )	( 0.7063)	0.14 ~ 0.32	0.65	<b>SS3- 17</b>	
S1	132.6	7.872 ( 13.52 )	( 0.8027)	0.14 ~ 0.32	0.67	<b>SS3- 18</b>	
S1	143.8	8.88 ( 14.66 )	( 0.9055)	0.14 ~ 0.32	0.73	<b>SS3- 19</b>	
S1	155.1	9.954 ( 15.82 )	( 1.015 )	0.14 ~ 0.32	0.8	<b>SS3- 20</b>	
S1	166.6	11.09 ( 16.99 )	( 1.131 )	0.18 ~ 0.38	1	<b>SS3- 21</b>	
S1	178.2	12.29 ( 18.17 )	( 1.253 )	0.18 ~ 0.38	1.1	<b>SS3- 22</b>	
S1	189.9	13.55 ( 19.36 )	( 1.382 )	0.18 ~ 0.38	1.1	<b>SS3- 23</b>	
S1	201.6	14.89 ( 20.56 )	( 1.518 )	0.18 ~ 0.38	1.2	<b>SS3- 24</b>	
S1	213.5	16.3 ( 21.77 )	( 1.662 )	0.18 ~ 0.38	1.3	<b>SS3- 25</b>	
S1	225.5	17.7 ( 22.99 )	( 1.805 )	0.18 ~ 0.38	1.5	<b>SS3- 26</b>	
S1	237.4	19.17 ( 24.21 )	( 1.955 )	0.18 ~ 0.38	1.6	<b>SS3- 27</b>	
S1	249.5	20.7 ( 25.44 )	( 2.111 )	0.18 ~ 0.38	1.7	<b>SS3- 28</b>	
S1	261.6	22.3 ( 26.68 )	( 2.274 )	0.18 ~ 0.38	1.7	<b>SS3- 29</b>	
S1	273.8	23.95 ( 27.92 )	( 2.442 )	0.18 ~ 0.38	1.8	<b>SS3- 30</b>	
S1	298.3	27.44 ( 30.42 )	( 2.798 )	0.18 ~ 0.38	2.1	<b>SS3- 32</b>	
S1	323	31.18 ( 32.94 )	( 3.179 )	0.18 ~ 0.38	2.4	<b>SS3- 34</b>	
S1	335.4	33.14 ( 34.2 )	( 3.379 )	0.18 ~ 0.38	2.5	<b>SS3- 35</b>	
S1	347.8	35.16 ( 35.47 )	( 3.585 )	0.18 ~ 0.38	2.6	<b>SS3- 36</b>	
S1	372.8	39.4 ( 38.02 )	( 4.018 )	0.18 ~ 0.38	3	<b>SS3- 38</b>	
S1	397.9	43.99 ( 40.58 )	( 4.486 )	0.18 ~ 0.38	3.1	<b>SS3- 40</b>	
S1	423.3	48.85 ( 43.16 )	( 4.981 )	0.2 ~ 0.44	3.4	<b>SS3- 42</b>	
S1	448.6	53.97 ( 45.74 )	( 5.503 )	0.2 ~ 0.44	3.7	<b>SS3- 44</b>	
S1	461.3	56.63 ( 47.04 )	( 5.775 )	0.2 ~ 0.44	3.8	<b>SS3- 45</b>	
S1	474	59.36 ( 48.34 )	( 6.053 )	0.2 ~ 0.44	4.2	<b>SS3- 46</b>	
S1	499.5	65.01 ( 50.94 )	( 6.629 )	0.2 ~ 0.44	4.3	<b>SS3- 48</b>	
S4	525.1	70.92 ( 53.55 )	( 7.232 )	0.2 ~ 0.44	3.6	<b>SS3- 50</b>	
S2	550.8	77.11 ( 56.17 )	( 7.863 )	0.2 ~ 0.44	4.5	<b>SS3- 52</b>	
S2	576.5	83.57 ( 58.79 )	( 8.522 )	0.2 ~ 0.44	4.6	<b>SS3- 54</b>	
S2	589.5	86.9 ( 60.11 )	( 8.861 )	0.2 ~ 0.44	4.8	<b>SS3- 55</b>	
S2	602.3	90.3 ( 61.42 )	( 9.208 )	0.2 ~ 0.44	4.8	<b>SS3- 56</b>	
S2	628.2	97.29 ( 64.06 )	( 9.921 )	0.2 ~ 0.44	5.5	<b>SS3- 58</b>	
S4	654.1	104.5 ( 66.7 )	( 10.66 )	0.2 ~ 0.44	4.5	<b>SS3- 60</b>	
S2	680.1	112.1 ( 69.35 )	( 11.43 )	0.2 ~ 0.44	6	<b>SS3- 62</b>	
S2	588.4	99.93 ( 60 )	( 10.19 )	0.2 ~ 0.44	6.2	<b>SS3- 64</b>	
S2	599.2	103.4 ( 61.1 )	( 10.54 )	0.2 ~ 0.44	6.3	<b>SS3- 65</b>	
S2	610.1	106.8 ( 62.21 )	( 10.89 )	0.2 ~ 0.44	6.5	<b>SS3- 66</b>	
S2	631.8	113.9 ( 64.43 )	( 11.61 )	0.2 ~ 0.44	6.8	<b>SS3- 68</b>	
S2	653.5	121.2 ( 66.64 )	( 12.36 )	0.2 ~ 0.44	7.4	<b>SS3- 70</b>	
S2	675.3	128.8 ( 68.86 )	( 13.13 )	0.2 ~ 0.44	7.6	<b>SS3- 72</b>	
S2	708	140.6 ( 72.2 )	( 14.34 )	0.2 ~ 0.44	8	<b>SS3- 75</b>	
S2	718.9	144.7 ( 73.31 )	( 14.76 )	0.2 ~ 0.44	8.7	<b>SS3- 76</b>	
S4	762.7	161.6 ( 77.77 )	( 16.48 )	0.2 ~ 0.44	7.2	<b>SS3- 80</b>	
S2	872.3	208.2 ( 88.95 )	( 21.23 )	0.26 ~ 0.52	10.5	<b>SS3- 90</b>	
S4	982.6	261.1 ( 100.2 )	( 26.62 )	0.26 ~ 0.52	10.2	<b>SS3-100</b>	
S4	1203	386.1 ( 122.7 )	( 39.37 )	0.26 ~ 0.52	14.9	<b>SS3-120</b>	

**NOTE 1:** The allowable torques shown in the table are calculated values according to the assumed usage conditions. Please see page 27 for more details.

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

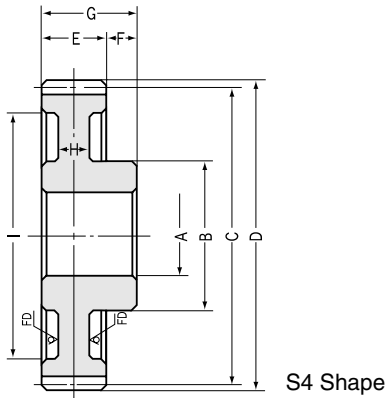


# SS Steel Spur Gears **Module 4**



## Module 4

Catalog No.	Module	No. of teeth	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.
	m	z	AH7	B	C	D	E	F	G	H	I
SS4-12	4	12	20	35	48	56	40	20	60	—	—
SS4-13	4	13	20	38	52	60	40	20	60	—	—
SS4-14	4	14	20	40	56	64	40	20	60	—	—
SS4-15	4	15	20	45	60	68	40	20	60	—	—
SS4-16	4	16	20	50	64	72	40	20	60	—	—
SS4-17	4	17	20	53	68	76	40	20	60	—	—
SS4-18	4	18	20	55	72	80	40	20	60	—	—
SS4-19	4	19	20	60	76	84	40	20	60	—	—
SS4-20	4	20	20	65	80	88	40	20	60	—	—
SS4-21	4	21	20	69	84	92	40	20	60	—	—
SS4-22	4	22	20	73	88	96	40	20	60	—	—
SS4-23	4	23	20	77	92	100	40	20	60	—	—
SS4-24	4	24	20	80	96	104	40	20	60	—	—
SS4-25	4	25	20	84	100	108	40	20	60	—	—
SS4-26	4	26	20	87	104	112	40	20	60	—	—
SS4-27	4	27	20	90	108	116	40	20	60	—	—
SS4-28	4	28	20	95	112	120	40	20	60	—	—
SS4-29	4	29	20	95	116	124	40	20	60	—	—
SS4-30	4	30	20	100	120	128	40	20	60	—	—
SS4-32	4	32	22	100	128	136	40	16	56	—	—
SS4-34	4	34	22	100	136	144	40	16	56	—	—
SS4-35	4	35	22	100	140	148	40	16	56	—	—
SS4-36	4	36	22	100	144	152	40	16	56	—	—
SS4-38	4	38	22	100	152	160	40	16	56	—	—
SS4-40	4	40	25	100	160	168	40	16	56	—	—
SS4-42	4	42	25	100	168	176	40	16	56	—	—
SS4-44	4	44	25	100	176	184	40	16	56	—	—
SS4-45	4	45	25	100	180	188	40	16	56	—	—
SS4-46	4	46	25	100	184	192	40	16	56	—	—
SS4-48	4	48	25	100	192	200	40	16	56	26	150
SS4-50	4	50	30	100	200	208	40	16	56	12	168
SS4-52	4	52	30	100	208	216	40	16	56	26	165
SS4-54	4	54	30	100	216	224	40	16	56	26	175
SS4-55	4	55	30	100	220	228	40	16	56	26	178
SS4-56	4	56	30	100	224	232	40	16	56	26	182
SS4-58	4	58	30	110	232	240	40	16	56	26	190
SS4-60	4	60	30	110	240	248	40	16	56	12	208
SS4-62	4	62	30	110	248	256	40	16	56	20	210
SS4-64	4	64	30	110	256	264	40	16	56	16	214
SS4-65	4	65	30	110	260	268	40	16	56	16	218
SS4-66	4	66	30	120	264	272	40	16	56	16	220
SS4-68	4	68	30	120	272	280	40	16	56	16	225
SS4-70	4	70	30	120	280	288	40	16	56	12	248
SS4-80	4	80	30	120	320	328	40	16	56	12	288



\* FD has the die-forged finish.

Specifications			
Precision grade	JIS N8 grade (JIS B1702-1: 1998) OLD JIS 4 grade (JIS B1702: 1976)	Tooth hardness	Less than 194HB
Gear teeth	Standard full depth	Surface treatment	Black oxide
Pressure angle	20°	Tooth surface finish	Cut
Material	S45C	Datum reference surface for gear cutting	Bore
Heat treatment	—	Secondary Operations	Possible

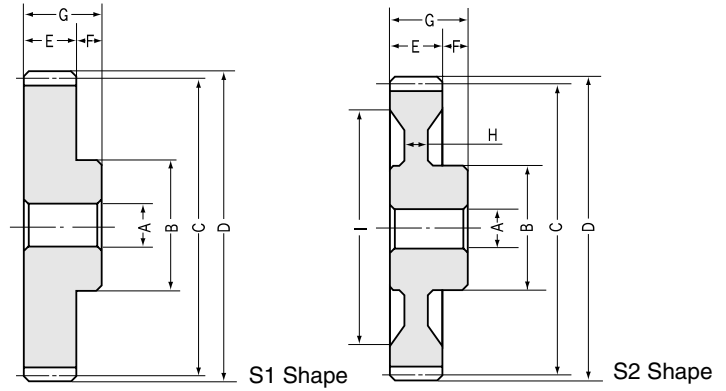
Shape	Allowable torque (N·m) <sup>NOTE 1</sup>		Allowable torque (kgf·m)		Backlash (mm) <small>NOTE 2</small>	Weight (kgf)	Catalog No.
	Bending strength	Surface durability	Bending strength	Surface durability			
S1	162.9	7.624	( 16.61 )	( 0.7774 )	0.18 ~ 0.38	0.55	<b>SS4-12</b>
S1	186.8	9.222	( 19.05 )	( 0.9404 )	0.18 ~ 0.38	0.67	<b>SS4-13</b>
S1	211.4	10.91	( 21.56 )	( 1.113 )	0.18 ~ 0.38	0.8	<b>SS4-14</b>
S1	236.4	12.75	( 24.11 )	( 1.3 )	0.18 ~ 0.38	0.95	<b>SS4-15</b>
S1	261.9	14.74	( 26.71 )	( 1.503 )	0.18 ~ 0.38	1.1	<b>SS4-16</b>
S1	287.9	16.88	( 29.36 )	( 1.721 )	0.18 ~ 0.38	1.3	<b>SS4-17</b>
S1	314.2	19.18	( 32.04 )	( 1.956 )	0.18 ~ 0.38	1.5	<b>SS4-18</b>
S1	340.9	21.66	( 34.76 )	( 2.209 )	0.18 ~ 0.38	1.7	<b>SS4-19</b>
S1	367.7	24.3	( 37.5 )	( 2.478 )	0.18 ~ 0.38	1.9	<b>SS4-20</b>
S1	395	27.1	( 40.28 )	( 2.763 )	0.2 ~ 0.44	2.2	<b>SS4-21</b>
S1	422.5	30.05	( 43.08 )	( 3.064 )	0.2 ~ 0.44	2.4	<b>SS4-22</b>
S1	450.1	33.17	( 45.9 )	( 3.382 )	0.2 ~ 0.44	2.6	<b>SS4-23</b>
S1	478.1	36.44	( 48.75 )	( 3.716 )	0.2 ~ 0.44	2.9	<b>SS4-24</b>
S1	506.1	39.87	( 51.61 )	( 4.066 )	0.2 ~ 0.44	3.2	<b>SS4-25</b>
S1	534.4	43.31	( 54.49 )	( 4.416 )	0.2 ~ 0.44	3.5	<b>SS4-26</b>
S1	562.8	46.89	( 57.39 )	( 4.781 )	0.2 ~ 0.44	3.8	<b>SS4-27</b>
S1	591.4	50.6	( 60.31 )	( 5.16 )	0.2 ~ 0.44	4.2	<b>SS4-28</b>
S1	620.2	54.54	( 63.24 )	( 5.562 )	0.2 ~ 0.44	4.4	<b>SS4-29</b>
S1	649	58.66	( 66.18 )	( 5.982 )	0.2 ~ 0.44	4.5	<b>SS4-30</b>
S1	707.1	67.37	( 72.1 )	( 6.87 )	0.2 ~ 0.44	4.8	<b>SS4-32</b>
S1	765.6	76.71	( 78.07 )	( 7.822 )	0.2 ~ 0.44	5.5	<b>SS4-34</b>
S1	795	81.61	( 81.07 )	( 8.322 )	0.2 ~ 0.44	5.6	<b>SS4-35</b>
S1	824.5	86.67	( 84.08 )	( 8.838 )	0.2 ~ 0.44	5.7	<b>SS4-36</b>
S1	883.8	97.28	( 90.12 )	( 9.92 )	0.2 ~ 0.44	7.1	<b>SS4-38</b>
S1	943.4	108.6	( 96.2 )	(11.07 )	0.2 ~ 0.44	7.2	<b>SS4-40</b>
S1	1003	120.4	(102.3 )	(12.28 )	0.24 ~ 0.52	7.7	<b>SS4-42</b>
S1	1063	132.9	(108.4 )	(13.55 )	0.24 ~ 0.52	8.2	<b>SS4-44</b>
S1	1093	139.4	(111.5 )	(14.22 )	0.24 ~ 0.52	8.8	<b>SS4-45</b>
S1	1124	146.1	(114.6 )	(14.9 )	0.24 ~ 0.52	9.7	<b>SS4-46</b>
S2	986.5	133.3	(100.6 )	(13.59 )	0.24 ~ 0.52	9	<b>SS4-48</b>
S4	1038	145.5	(105.8 )	(14.84 )	0.24 ~ 0.52	7.8	<b>SS4-50</b>
S2	1088	158.3	(110.9 )	(16.14 )	0.24 ~ 0.52	10	<b>SS4-52</b>
S2	1139	171.7	(116.1 )	(17.51 )	0.24 ~ 0.52	10.5	<b>SS4-54</b>
S2	1164	178.7	(118.7 )	(18.22 )	0.24 ~ 0.52	11	<b>SS4-55</b>
S2	1190	185.7	(121.3 )	(18.94 )	0.24 ~ 0.52	11.5	<b>SS4-56</b>
S2	1241	200.2	(126.5 )	(20.42 )	0.24 ~ 0.52	12	<b>SS4-58</b>
S4	1293	215.4	(131.8 )	(21.97 )	0.24 ~ 0.52	10.5	<b>SS4-60</b>
S2	1343	231.1	(137 )	(23.57 )	0.24 ~ 0.52	12.5	<b>SS4-62</b>
S2	1394	247.5	(142.2 )	(25.24 )	0.24 ~ 0.52	12.5	<b>SS4-64</b>
S2	1420	256	(144.8 )	(26.1 )	0.24 ~ 0.52	12.8	<b>SS4-65</b>
S2	1446	264.5	(147.5 )	(26.97 )	0.24 ~ 0.52	13	<b>SS4-66</b>
S2	1497	281.9	(152.7 )	(28.75 )	0.24 ~ 0.52	14	<b>SS4-68</b>
S4	1549	300.1	(158 )	(30.6 )	0.24 ~ 0.52	14.4	<b>SS4-70</b>
S4	1808	399.7	(184.4 )	(40.76 )	0.24 ~ 0.52	19	<b>SS4-80</b>

**NOTE 1:** The allowable torques shown in the table are calculated values according to the assumed usage conditions. Please see page 27 for more details.

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

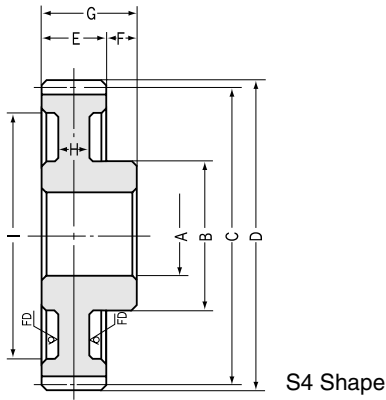


# SS Steel Spur Gears Module 5



## Module 5

Catalog No.	Module	No. of teeth	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.
	m	z	AH7	B	C	D	E	F	G	H	I
SS5-12	5	12	22	46	60	70	50	25	75	—	—
SS5-13	5	13	22	50	65	75	50	25	75	—	—
SS5-14	5	14	22	52	70	80	50	25	75	—	—
SS5-15	5	15	22	60	75	85	50	25	75	—	—
SS5-16	5	16	22	65	80	90	50	25	75	—	—
SS5-17	5	17	22	68	85	95	50	25	75	—	—
SS5-18	5	18	22	70	90	100	50	25	75	—	—
SS5-19	5	19	22	76	95	105	50	25	75	—	—
SS5-20	5	20	22	82	100	110	50	25	75	—	—
SS5-21	5	21	25	90	105	115	50	25	75	—	—
SS5-22	5	22	25	95	110	120	50	25	75	—	—
SS5-23	5	23	25	100	115	125	50	25	75	—	—
SS5-24	5	24	25	100	120	130	50	25	75	—	—
SS5-25	5	25	25	105	125	135	50	25	75	—	—
SS5-26	5	26	25	110	130	140	50	25	75	—	—
SS5-27	5	27	25	110	135	145	50	25	75	—	—
SS5-28	5	28	25	110	140	150	50	25	75	—	—
SS5-29	5	29	25	115	145	155	50	25	75	—	—
SS5-30	5	30	25	120	150	160	50	25	75	—	—
SS5-32	5	32	30	120	160	170	50	21	71	—	—
SS5-34	5	34	30	120	170	180	50	21	71	—	—
SS5-35	5	35	30	120	175	185	50	21	71	—	—
SS5-36	5	36	30	120	180	190	50	21	71	—	—
SS5-38	5	38	30	120	190	200	50	21	71	—	—
SS5-40	5	40	30	120	200	210	50	21	71	36	160
SS5-42	5	42	30	120	210	220	50	21	71	36	170
SS5-44	5	44	30	120	220	230	50	21	71	36	175
SS5-45	5	45	30	120	225	235	50	21	71	36	185
SS5-46	5	46	30	120	230	240	50	21	71	30	185
SS5-48	5	48	30	120	240	250	50	21	71	30	200
SS5-50	5	50	30	120	250	260	50	21	71	16	212
SS5-52	5	52	30	130	260	270	50	21	71	30	220
SS5-54	5	54	30	130	270	280	50	21	71	30	230
SS5-55	5	55	30	130	275	285	50	21	71	30	235
SS5-56	5	56	30	130	280	290	50	21	71	30	240
SS5-58	5	58	30	130	290	300	50	21	71	30	240
SS5-60	5	60	30	130	300	310	50	21	71	20	260



\* FD has the die-forged finish.

Specifications			
Precision grade	JIS N8 grade (JIS B1702-1: 1998) OLD JIS 4 grade (JIS B1702: 1976)	Tooth hardness	Less than 194HB
Gear teeth	Standard full depth	Surface treatment	Black oxide
Pressure angle	20°	Tooth surface finish	Cut
Material	S45C	Datum reference surface for gear cutting	Bore
Heat treatment	—	Secondary Operations	Possible

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	318.1	15.23	( 32.44 )	( 1.553 )	0.2 ~ 0.44	1.2	<b>SS5-12</b>
S1	364.9	18.41	( 37.21 )	( 1.877 )	0.2 ~ 0.44	1.5	<b>SS5-13</b>
S1	412.9	21.76	( 42.1 )	( 2.219 )	0.2 ~ 0.44	1.7	<b>SS5-14</b>
S1	461.8	25.46	( 47.09 )	( 2.596 )	0.2 ~ 0.44	2	<b>SS5-15</b>
S1	511.7	29.47	( 52.18 )	( 3.005 )	0.2 ~ 0.44	2.3	<b>SS5-16</b>
S1	562.3	33.79	( 57.34 )	( 3.446 )	0.2 ~ 0.44	2.6	<b>SS5-17</b>
S1	613.7	38.42	( 62.58 )	( 3.918 )	0.2 ~ 0.44	2.9	<b>SS5-18</b>
S1	665.8	43.37	( 67.89 )	( 4.423 )	0.2 ~ 0.44	3.5	<b>SS5-19</b>
S1	718.3	48.63	( 73.25 )	( 4.959 )	0.2 ~ 0.44	3.8	<b>SS5-20</b>
S1	771.5	54.2	( 78.67 )	( 5.527 )	0.24 ~ 0.5	4.4	<b>SS5-21</b>
S1	825.1	60.08	( 84.14 )	( 6.127 )	0.24 ~ 0.5	4.8	<b>SS5-22</b>
S1	879.2	66.34	( 89.65 )	( 6.765 )	0.24 ~ 0.5	5.5	<b>SS5-23</b>
S1	933.7	73.02	( 95.21 )	( 7.446 )	0.24 ~ 0.5	5.7	<b>SS5-24</b>
S1	988.5	80.04	( 100.8 )	( 8.162 )	0.24 ~ 0.5	6.1	<b>SS5-25</b>
S1	1043	87.05	( 106.4 )	( 8.877 )	0.24 ~ 0.5	6.6	<b>SS5-26</b>
S1	1099	94.38	( 112.1 )	( 9.624 )	0.24 ~ 0.5	7.6	<b>SS5-27</b>
S1	1155	102	( 117.8 )	( 10.4 )	0.24 ~ 0.5	8	<b>SS5-28</b>
S1	1211	109.9	( 123.5 )	( 11.21 )	0.24 ~ 0.5	8.2	<b>SS5-29</b>
S1	1268	118.2	( 129.3 )	( 12.05 )	0.24 ~ 0.5	8.8	<b>SS5-30</b>
S1	1381	135.6	( 140.8 )	( 13.83 )	0.24 ~ 0.5	9.8	<b>SS5-32</b>
S1	1495	154.4	( 152.5 )	( 15.74 )	0.24 ~ 0.5	11.8	<b>SS5-34</b>
S1	1552	164.2	( 158.3 )	( 16.74 )	0.24 ~ 0.5	12	<b>SS5-35</b>
S1	1610	174.3	( 164.2 )	( 17.77 )	0.24 ~ 0.5	12	<b>SS5-36</b>
S1	1726	195.4	( 176 )	( 19.93 )	0.24 ~ 0.5	14	<b>SS5-38</b>
S2	1536	181.8	( 156.6 )	( 18.54 )	0.24 ~ 0.5	13	<b>SS5-40</b>
S2	1633	202	( 166.5 )	( 20.6 )	0.28 ~ 0.58	14	<b>SS5-42</b>
S2	1731	223.3	( 176.5 )	( 22.77 )	0.28 ~ 0.58	15	<b>SS5-44</b>
S2	1780	234.4	( 181.5 )	( 23.9 )	0.28 ~ 0.58	16	<b>SS5-45</b>
S2	1829	245.8	( 186.5 )	( 25.06 )	0.28 ~ 0.58	16	<b>SS5-46</b>
S2	1927	269.3	( 196.5 )	( 27.46 )	0.28 ~ 0.58	17	<b>SS5-48</b>
S4	2026	294	( 206.6 )	( 29.98 )	0.28 ~ 0.58	15	<b>SS5-50</b>
S2	2125	319.9	( 216.7 )	( 32.62 )	0.28 ~ 0.58	18	<b>SS5-52</b>
S2	2224	347	( 226.8 )	( 35.38 )	0.28 ~ 0.58	19	<b>SS5-54</b>
S2	2274	360.9	( 231.9 )	( 36.8 )	0.28 ~ 0.58	20	<b>SS5-55</b>
S2	2324	375.1	( 237 )	( 38.25 )	0.28 ~ 0.58	21	<b>SS5-56</b>
S2	2423	404.5	( 247.1 )	( 41.25 )	0.28 ~ 0.58	22	<b>SS5-58</b>
S4	2523	435	( 257.3 )	( 44.36 )	0.28 ~ 0.58	23	<b>SS5-60</b>

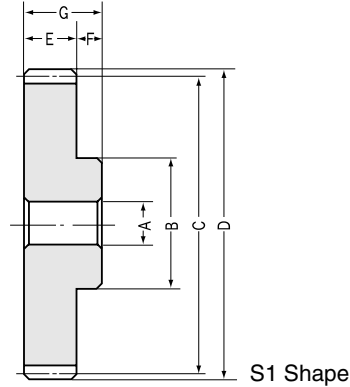
**NOTE 1:** The allowable torques shown in the table are calculated values according to the assumed usage conditions.

Please see page 27 for more details.

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



# SS Steel Spur Gears Modules 6 ~ 10



## Module 6

Catalog No.	Module	No. of teeth	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.
	m	z	AH7	B	C	D	E	F	G	H	I
SS6-12	6	12	25	55	72	84	60	28	88	—	—
SS6-13	6	13	25	58	78	90	60	28	88	—	—
SS6-14	6	14	25	60	84	96	60	28	88	—	—
SS6-15	6	15	25	70	90	102	60	28	88	—	—
SS6-16	6	16	25	75	96	108	60	28	88	—	—
SS6-17	6	17	25	78	102	114	60	28	88	—	—
SS6-18	6	18	25	80	108	120	60	28	88	—	—
SS6-19	6	19	25	90	114	126	60	28	88	—	—
SS6-20	6	20	25	100	120	132	60	28	88	—	—
SS6-21	6	21	28	105	126	138	60	28	88	—	—
SS6-22	6	22	28	110	132	144	60	28	88	—	—
SS6-23	6	23	28	115	138	150	60	28	88	—	—
SS6-24	6	24	28	120	144	156	60	28	88	—	—
SS6-25	6	25	28	125	150	162	60	28	88	—	—
SS6-26	6	26	28	130	156	168	60	28	88	—	—
SS6-27	6	27	28	135	162	174	60	28	88	—	—
SS6-28	6	28	28	140	168	180	60	28	88	—	—
SS6-30	6	30	30	150	180	192	60	28	88	—	—
SS6-32	6	32	30	150	192	204	60	23	83	—	—
SS6-34	6	34	30	150	204	216	60	23	83	—	—
SS6-35	6	35	30	150	210	222	60	23	83	—	—
SS6-36	6	36	30	150	216	228	60	23	83	—	—
SS6-38	6	38	30	150	228	240	60	23	83	—	—
SS6-40	6	40	30	150	240	252	60	23	83	—	—
SS6-42	6	42	40	150	252	264	60	23	83	—	—
SS6-44	6	44	40	150	264	276	60	23	83	—	—
SS6-45	6	45	40	180	270	282	60	23	83	—	—
SS6-46	6	46	40	180	276	288	60	23	83	—	—
SS6-48	6	48	40	180	288	300	60	23	83	—	—
SS6-50	6	50	40	180	300	312	60	23	83	—	—

## Module 8

SS8-12	8	12	28	75	96	112	75	35	110	—	—
SS8-13	8	13	28	80	104	120	75	35	110	—	—
SS8-14	8	14	28	85	112	128	75	35	110	—	—
SS8-15	8	15	28	90	120	136	75	35	110	—	—
SS8-16	8	16	28	100	128	144	75	35	110	—	—
SS8-17	8	17	28	105	136	152	75	35	110	—	—
SS8-18	8	18	28	110	144	160	75	35	110	—	—
SS8-19	8	19	28	120	152	168	75	35	110	—	—
SS8-20	8	20	28	130	160	176	75	35	110	—	—
SS8-21	8	21	30	140	168	184	75	35	110	—	—
SS8-22	8	22	30	150	176	192	75	35	110	—	—
SS8-23	8	23	30	155	184	200	75	35	110	—	—
SS8-24	8	24	30	160	192	208	75	35	110	—	—
SS8-25	8	25	30	170	200	216	75	35	110	—	—
SS8-26	8	26	30	170	208	224	75	35	110	—	—
SS8-27	8	27	30	170	216	232	75	35	110	—	—
SS8-28	8	28	30	180	224	240	75	35	110	—	—
SS8-30	8	30	30	180	240	256	75	35	110	—	—

## Module 10

SS10-15	10	15	30	115	150	170	90	40	130	—	—
SS10-20	10	20	30	165	200	220	90	40	130	—	—
SS10-25	10	25	40	200	250	270	90	40	130	—	—



## Specifications

Precision grade	JIS N8 grade (JIS B1702-1: 1998) OLD JIS 4 grade (JIS B1702: 1976)	Tooth hardness	Less than 194HB
Gear teeth	Standard full depth	Surface treatment	Black oxide
Pressure angle	20°	Tooth surface finish	Cut
Material	S45C	Datum reference surface for gear cutting	Bore
Heat treatment	—	Secondary Operations	Possible

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	549.7	26.76	( 56.05 )	( 2.729 )	0.22 ~ 0.48	2	<b>SS6-12</b> <b>SS6-13</b> <b>SS6-14</b> <b>SS6-15</b> <b>SS6-16</b>
S1	630.6	32.42	( 64.3 )	( 3.306 )	0.22 ~ 0.48	2.5	
S1	713.4	38.39	( 72.75 )	( 3.915 )	0.22 ~ 0.48	2.8	
S1	798.1	44.91	( 81.38 )	( 4.58 )	0.22 ~ 0.48	3.4	
S1	884.2	51.96	( 90.16 )	( 5.299 )	0.22 ~ 0.48	3.9	
S1	971.7	59.56	( 99.09 )	( 6.073 )	0.22 ~ 0.48	4.4	<b>SS6-17</b> <b>SS6-18</b> <b>SS6-19</b> <b>SS6-20</b> <b>SS6-21</b>
S1	1060	67.68	(108.1 )	( 6.902 )	0.22 ~ 0.48	5	
S1	1150	76.4	(117.3 )	( 7.791 )	0.22 ~ 0.48	5.8	
S1	1242	85.85	(126.6 )	( 8.754 )	0.22 ~ 0.48	6.5	
S1	1333	95.88	(135.9 )	( 9.777 )	0.26 ~ 0.56	7.5	
S1	1426	106.5	(145.4 )	(10.86 )	0.26 ~ 0.56	8.1	<b>SS6-22</b> <b>SS6-23</b> <b>SS6-24</b> <b>SS6-25</b> <b>SS6-26</b>
S1	1519	117.7	(154.9 )	( 12 )	0.26 ~ 0.56	8.9	
S1	1613	129.4	(164.5 )	(13.2 )	0.26 ~ 0.56	9.8	
S1	1708	141.8	(174.2 )	(14.46 )	0.26 ~ 0.56	10.5	
S1	1803	154.3	(183.9 )	(15.73 )	0.26 ~ 0.56	11.4	
S1	1900	167.1	(193.7 )	(17.04 )	0.26 ~ 0.56	12.1	<b>SS6-27</b> <b>SS6-28</b> <b>SS6-30</b> <b>SS6-32</b> <b>SS6-34</b>
S1	1996	180.6	(203.5 )	(18.42 )	0.26 ~ 0.56	12.7	
S1	2191	209.2	(223.4 )	(21.33 )	0.26 ~ 0.56	15.1	
S1	1989	199.9	(202.8 )	(20.38 )	0.26 ~ 0.56	18	
S1	2154	227.7	(219.6 )	(23.22 )	0.26 ~ 0.56	19	
S1	2236	242.4	(228 )	(24.72 )	0.26 ~ 0.56	19	<b>SS6-35</b> <b>SS6-36</b> <b>SS6-38</b> <b>SS6-40</b> <b>SS6-42</b>
S1	2319	257.6	(236.5 )	(26.27 )	0.26 ~ 0.56	22	
S1	2486	289.4	(253.5 )	(29.51 )	0.26 ~ 0.56	23	
S1	2654	323.1	(270.6 )	(32.95 )	0.26 ~ 0.56	24	
S1	2821	358.9	(287.7 )	(36.6 )	0.3 ~ 0.64	27	
S1	2990	396.7	(304.9 )	(40.45 )	0.3 ~ 0.64	30	<b>SS6-44</b> <b>SS6-45</b> <b>SS6-46</b> <b>SS6-48</b> <b>SS6-50</b>
S1	3075	416.3	(313.6 )	(42.45 )	0.3 ~ 0.64	31	
S1	3160	436.4	(322.2 )	(44.5 )	0.3 ~ 0.64	34	
S1	3330	478.3	(339.6 )	(48.77 )	0.3 ~ 0.64	35	
S1	3501	522	(357 )	(53.23 )	0.3 ~ 0.64	37	

S1	1222	62.63	(124.6 )	( 6.387 )	0.28 ~ 0.58	4.8	<b>SS8-12</b> <b>SS8-13</b> <b>SS8-14</b> <b>SS8-15</b> <b>SS8-16</b>
S1	1401	75.16	(142.9 )	( 7.664 )	0.28 ~ 0.58	4.8	
S1	1586	88.89	(161.7 )	( 9.064 )	0.28 ~ 0.58	6.6	
S1	1773	104.1	(180.8 )	(10.62 )	0.28 ~ 0.58	7.6	
S1	1965	120.7	(200.4 )	(12.31 )	0.28 ~ 0.58	8.9	
S1	2159	138.6	(220.2 )	(14.13 )	0.28 ~ 0.58	10	<b>SS8-17</b> <b>SS8-18</b> <b>SS8-19</b> <b>SS8-20</b> <b>SS8-21</b>
S1	2357	157.8	(240.3 )	(16.09 )	0.28 ~ 0.58	12	
S1	2557	178.2	(260.7 )	(18.17 )	0.28 ~ 0.58	13	
S1	2759	200.1	(281.3 )	(20.4 )	0.28 ~ 0.58	15	
S1	2963	223.2	(302.1 )	(22.76 )	0.32 ~ 0.66	17	
S1	3168	247.6	(323.1 )	(25.25 )	0.32 ~ 0.66	19	<b>SS8-22</b> <b>SS8-23</b> <b>SS8-24</b> <b>SS8-25</b> <b>SS8-26</b>
S1	3376	273.4	(344.3 )	(27.88 )	0.32 ~ 0.66	20	
S1	2988	249.9	(304.7 )	(25.48 )	0.32 ~ 0.66	22	
S1	3164	272.8	(322.6 )	(27.82 )	0.32 ~ 0.66	24	
S1	3340	296.8	(340.6 )	(30.27 )	0.32 ~ 0.66	28	
S1	3518	321.9	(358.7 )	(32.83 )	0.32 ~ 0.66	30	<b>SS8-27</b> <b>SS8-28</b> <b>SS8-30</b>
S1	3696	348.2	(376.9 )	(35.51 )	0.32 ~ 0.66	33	
S1	4056	403.9	(413.6 )	(41.19 )	0.32 ~ 0.66	36	

S1	3325	202.6	(339.1 )	(20.66 )	0.34 ~ 0.68	15	<b>SS10-15</b> <b>SS10-20</b> <b>SS10-25</b>
S1	4310	323.3	(439.5 )	(32.97 )	0.34 ~ 0.68	28.2	
S1	5931	529.3	(604.8 )	(53.97 )	0.36 ~ 0.76	43.3	

**NOTE 1:** The allowable torques shown in the table are calculated values according to the assumed usage conditions. Please see page 27 for more details.

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