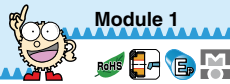
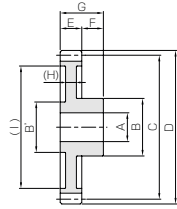


# DS Injection Molded Spur Gears



Specifications	
Precision grade	JIS grade N12 (JIS B1702-1: 1998) * JIS grade 8 (JIS B1702: 1976)
Gear teeth	Standard full depth
Pressure angle	20°
Material	Duracon acetal (M90-44)
Heat treatment	—
Tooth hardness	(110 ~ 120HRR)

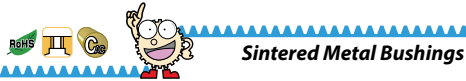
\* The precision grade of this product is equivalent to the value shown in the table.



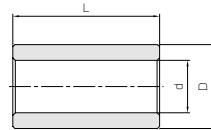
Catalog No.	Module	No. of teeth	Shape	Bore 1		Bore 2		Hub dia. 1		Hub dia. 2		Pitch dia.	Outside dia.	Face width	Hub width
				A	(A')	B	B'	C	D	E	F				
<b>DS1-12</b>	m1	12	S9	4	—	8	6	12	14	6	6	12	14	6	6
<b>DS1-15</b>		15	S9	4	—	8	7	15	17	6	6	15	17	6	6
<b>DS1-16</b>		16	S9	5	—	10	8	16	18	6	6	16	18	6	6
<b>DS1-18</b>		18	S9	5	—	10	8	18	20	6	6	18	20	6	6
<b>DS1-20</b>		20	S9	5	—	11.7	9	20	22	6	6	20	22	6	6
<b>DS1-24</b>		24	S9	5	—	11.7	9	24	26	6	6	24	26	6	6
<b>DS1-25</b>		25	S9	5	—	11.7	9	25	27	6	6	25	27	6	6
<b>DS1-28</b>		28	S9	5	—	11.7	9	28	30	6	6	28	30	6	6
<b>DS1-30</b>		30	S9	6	—	14	12	30	32	6	6	30	32	6	6
<b>DS1-32</b>		32	S9	6	—	14	12	32	34	6	6	32	34	6	6
<b>DS1-35</b>		35	S9	6	—	14	12	35	37	6	6	35	37	6	6
<b>DS1-36</b>		36	S9	6	—	14	12	36	38	6	6	36	38	6	6
<b>DS1-40</b>		40	S9	8	—	16	14	40	42	6	6	40	42	6	6
<b>DS1-45</b>		45	S9	8	—	16	14	45	47	6	6	45	47	6	6
<b>DS1-48</b>		48	S9	8	—	16	14	48	50	6	8	48	50	6	8
<b>DS1-50</b>		50	S9	8	—	16	14	50	52	6	8	50	52	6	8
<b>DS1-56</b>		56	S9	8	—	18	15.6	56	58	6	8	56	58	6	8
<b>DS1-60</b>		60	S9	8	—	18	15.6	60	62	6	8	60	62	6	8
<b>DS1-64</b>		64	S9	8	—	18	15.6	64	66	6	8	64	66	6	8
<b>DS1-70</b>		70	S9	8	—	18	15.6	70	72	6	8	70	72	6	8
<b>DS1-72</b>	72	S9	8	—	18	15.6	72	74	6	8	72	74	6	8	
<b>DS1-80</b>	80	S9	8	—	18	15.6	80	82	6	8	80	82	6	8	

- [Caution on Product Characteristics]
- The allowable torques shown in the table are calculated values according to the assumed usage conditions. Please see Page 31 for more details.
  - The backlash values shown in the table are the theoretical values for the backlash in the normal direction of a pair of identical gears in mesh.
  - The bore tolerance is generally -0.05 to -0.30 but may be + value at the central portion of the hole.
  - To find dimensional precision, see the table "Tolerance of Injection Molded Products".

# BB Sintered Metal Bushings



The table below shows a series of standard metal bushings that can be pressed into standard injection molded gears.



T8

Catalog No.	I.D. of bushing	O.D. of bushing	Length	Products that can use the bushing
	d <sub>h</sub> +0.02/0	D <sub>h</sub> +0.02/-0.01	L <sub>h</sub> ±0.3	
<b>BB30507</b>	3	5	7	DS0.5
<b>BB30608</b>	3	6	8	DS0.5, DS0.8
<b>BB40609</b>	4	6	9	DS0.8
<b>BB40612</b>	4	6	12	DS1
<b>BB50812</b>	5	8	12	DS1
<b>BB50814</b>	5	8	14	DS1

Material : Oil impregnated sintered bronze



# Injection Molded Spur Gears

Total length	Web thickness	Web O.D.	Depth of counterbore	Allowable torque (N·m)	Allowable torque (kgf·m)	Backlash (mm)	Weight (g)	Catalog No.
G	(H)	(I)	(J)	Bending strength	Bending strength			
12	(3)	(8.5)	—	0.44	0.045	0~0.60	1.10	<b>DS1-12</b>
12	(3)	(11)	—	0.65	0.066		1.49	<b>DS1-15</b>
12	(3)	(11.5)	—	0.71	0.073		1.87	<b>DS1-16</b>
12	(3)	(13.5)	—	0.83	0.085		2.15	<b>DS1-18</b>
12	(3)	(15)	—	0.96	0.098		2.85	<b>DS1-20</b>
12	(3)	(17)	—	1.22	0.12		3.81	<b>DS1-24</b>
12	(3)	(20)	—	1.28	0.13		3.76	<b>DS1-25</b>
12	(3)	(23)	—	1.48	0.15		4.39	<b>DS1-28</b>
12	(3)	(24)	—	1.61	0.16		5.46	<b>DS1-30</b>
12	(3)	(26.5)	—	1.75	0.18		5.86	<b>DS1-32</b>
12	(3)	(29)	—	1.96	0.20		6.73	<b>DS1-35</b>
12	(3)	(30)	—	2.04	0.21		7.01	<b>DS1-36</b>
12	(3)	(34)	—	2.33	0.24		8.39	<b>DS1-40</b>
12	(3)	(39.5)	—	2.69	0.27		9.87	<b>DS1-45</b>
14	(3)	(40)	—	2.92	0.30		12.0	<b>DS1-48</b>
14	(3)	(42.5)	—	3.07	0.31		12.6	<b>DS1-50</b>
14	(3)	(48.5)	—	3.49	0.36		15.8	<b>DS1-56</b>
14	(3)	(52.5)	—	3.78	0.39		17.6	<b>DS1-60</b>
14	(3)	(56.5)	—	4.07	0.41		19.4	<b>DS1-64</b>
14	(3)	(62.5)	—	4.50	0.46		22.4	<b>DS1-70</b>
14	(3)	(64)	—	4.65	0.47	23.7	<b>DS1-72</b>	
14	(3)	(72.5)	—	5.23	0.53	27.9	<b>DS1-80</b>	

- [Caution on Secondary Operations]
- Injection molded products may have air bubbles inside of the material; please avoid performing secondary operations.

■ Tolerance of Injection Molded Products. (Unit : mm)

Range	Tolerance
below 3 mm	± 0.20
3 up to 6 mm	± 0.25
6 up to 10 mm	± 0.30
10 up to 18 mm	± 0.35
18 up to 30 mm	± 0.40
30 mm up	± 0.50