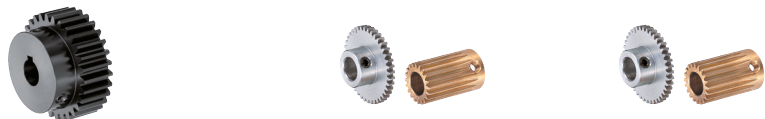


Gears

Gears



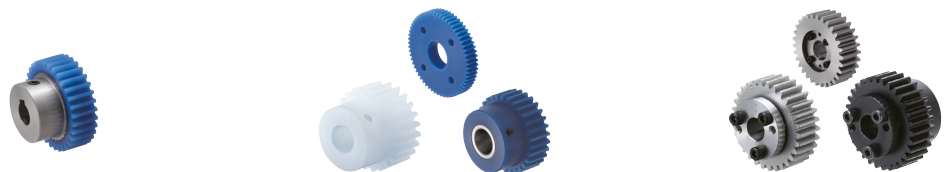
Product Name	Module 0.5, 0.8, 1.0, 1.5, 2.0, 2.5, 3.0, Shape B, Dimension Fixed	Spur Gears - Module 0.5	Module 0.8
Page	1499	1501	1502



Module 1.0	Module 1.5	Module 2.0
1503	1505	1507



Module 2.5	Module 3.0	Spur Gears - Tooth Width, Hub Dimensions Configurable	Induction Hardened Spur Gears - Ground, Module 1.0, 1.5, 2.0, 2.5, 3.0
1509	1511	1513	1515



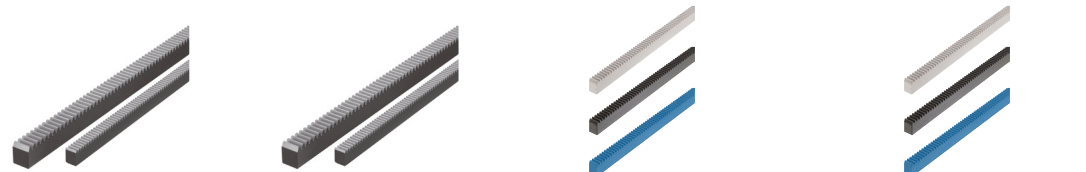
Bonded Plastic Spur Gears - Module 1.0, 1.5, 2.0, 2.5, 3.0	Plastic Spur Gears - Module 0.5, 0.8, 1.0, 1.5, 2.0, 2.5, 3.0	Keyless Hub Spur Gears - Module 1.0, 1.5, 2.0, 2.5, 3.0 (Steel)
1517	1519	1521



Bevel Gears - Module 1.0, 1.5, 2.0	Helical Gears - Module 1.0, 1.5, 2.0, 2.5, 3.0	Non-Contact Magnetic Transmission Drives Standard / Economy Type
1523	1524	1525~1526



Spur Gears - Bearing Built-In, Module 1.0, 1.5, 2.0	Round Rack Gears - L Fixed / Configurable	Worm	Worm Wheel
1527	1528	1528	1528



Induction Hardened Rack Gears - Ground	Ground, Hole Position Configurable Type	Rack Gears - L Fixed	Rack Gears - L Configurable (One End Machined)
1529	1530	1531	1532

Gears - Overview / Technical Data

The product lineup includes: high performance induction hardened gears and bonded plastic spur gears, keyless hub spur gears and bearing built-in gears. In addition to spur gears, various types of gears like bevel, helical and rack gears are also available.

Spur Gear

Module	Spur Gear				Keyless Hub Spur Gear	Spur Gears - Bearing Built-In
	EN 1.1191 Equiv., EN 1.4301 Equiv., Free-Cutting Brass Bar	EN 1.1191 Equiv. Induction Hardening Ground Tooth	Plastic Bonded	Plastic	EN 1.1191 Equiv.	EN 1.1191 Equiv., Plastic
	Standard spur gears most widely used.	Excels in strength and friction resistance.	Plastic Spur Gears that can be mounted solidly on shafts.	Plastic Type is relatively quiet when engaged.	Spur gears that don't require machining to shafts. Easy phase matching.	Bearing built-in spur gears suitable for rotation reversing idler gear.
0.5	P.1499~P.1514	-	-	P.1519	-	-
0.8		P.1515	P.1517		P.1521	P.1527
1.0						
1.5						
2.0						
2.5						
3.0						

Other Gears

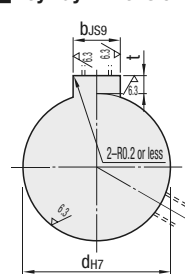
Module	Rack Gear	Rack Gears - Ground	Round Rack Gear	Bevel Gear	Helical Gear	Worm, Worm Wheel	Non-Contact Magnetic Transmission Drives
	EN 1.1191 Equiv., EN 1.4301 Equiv., Plastic, Free-Cutting Brass Bar	EN 1.1191 Equiv. Induction Hardened	EN 1.1191 Equiv., EN 1.4305 Equiv.	EN 1.1191 Equiv., EN 1.4301 Equiv.	EN 1.1191 Equiv., EN 1.4301 Equiv., Plastic	EN 1.1191 Equiv., EN CC480K Equiv.	Magnets, etc.
	Converts between rotating motion and linear motion. Length and mounting hole machining can be specified.	High precision rack gears excellent in strength and friction resistance.	Convenient for reciprocal motion of the rack side.	Used for perpendicular transmission.	Used for perpendicular transmission of unparallel shafts.	Perpendicular transmission of unparallel shafts makes these gears suitable for power transmission of large deceleration and high torque.	Non-contact transmission of motive force. Ultra-low particle generation and can be used semi-permanently with no required maintenance.
0.5	P.1531, 1532	-	P.1528	-	-	-	-
0.8		P.1529, 1530		P.1523	P.1524		
1.0							
1.5							
2.0							
2.5							
3.0							

Calculation Conditions of Spur Gears' Allowable Transmission Power (Bending Strength)

Formula	Material	EN 1.1191 Equiv.	EN 1.1191 Equiv. Tooth Surface Induction Hardened	EN 1.4301 Equiv.	Free-Cutting Brass Bar	MC Nylon	Polyacetal
			-	-	-	-	-
Mating Gear	Same Material, Same Number of Teeth					Lewis Formula	
Speed	100rpm	500rpm	100rpm	-	-	100rpm	Metal Material
Lubrication Type	-	-	-	-	-	Non-lubricated	
Ambient Temperature	-	-	-	-	-	40°C	20°C
Stress Cycles	More than 10 ⁷ times					-	10 ⁷
Impact from Motor	Equal Load					-	Equal Load
Impact from the Mating Gear	Equal Load					-	Equal Load
Load Direction	Bidirectional					-	-
Allowable Tooth Root Bending Stress (kgf/mm ²) *	18.4	23.0	10.5	4.0	-	-	-
Safety Factor	1.2					-	-

* Allowable Tooth Root Bending Stress is 2/3 of a fatigue limit because of the load is bidirectional.

Keyway Dimensions



N: New JIS (B1301) Keyway Dimensions

Nominal	dh7	bjs9	t Tolerance	Nominal	dh7	bjs9	t Tolerance	Nominal	dh7	bjs9	t Tolerance
8N	8	+0.015	3 ±0.0125	1.4	23N	23		39N	39		
10N	10	0			24N	24		40N	40		
10K	10				25N	25		41N	41		
11N	11		4	1.8	26N	26	+0.021	42N	42	12	3.3
12N	12				27N	27	0	43N	43		
13N	13				28N	28		44N	44	+0.025	
14N	14	+0.018			29N	29		45N	45	0	
15N	15	0	5	2.3	+0.1			46N	46		
16N	16		±0.0150		30N	30		47N	47		
17N	17				31N	31		48N	48		
18N	18				32N	32		49N	49		
19N	19				33N	33		50N	50		
20N	20	+0.021	6	2.8	34N	34	+0.025				
21N	21	0			35N	35	0				
22N	22				36N	36					
					37N	37					
					38N	38					