

Gears

Overview / Technical Data, *continued*

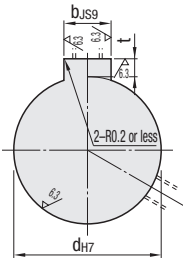
Allowable Transmission Power (Bending Strength) Calculation

Material	1045 Carbon Steel or Equivalent	1045 Carbon Steel or Equivalent	304 Stainless Steel	Free-Cutting Brass Bar	MC Nylon	Polyacetal
	—	Tooth Surface Induc. Hardened				
Formula	JGMA401-01				Lewis Formula	
Mating Gear	Same Material, Same No. of Teeth				—	Metal Material
Speed	100 rpm	500 rpm	100 rpm		100 rpm	
Lubrication Type	—	—	—	—	Non-Lubricated	
Ambient Temperature	—	—	—	—	40°C	20°C
Stress Cycles	More than 107 times				—	107
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 maximum fatigue limit because load is bidirectional.

Keyway Dimensions

N: New JIS (B1301) Keyway Dimensions



Number	d _{H7}	b _{JS9}	t Tolerance	Number	d _{H7}	b _{JS9}	t Tolerance	Number	d _{H7}	b _{JS9}	t Tolerance					
8N	8	±0.015 0	3 ±0.0125	1.4	23N	23	±0.0180	3.3	39N	39	±0.0215	+0.2 0				
10N	10				24N	24			40N	40						
10K	10	4	1.8	25N	25	8			+0.021 0	41N			41	12	3.3	
11N	11			26N	26					42N			42			
12N	12	±0.0150	2.3	+0.1 0	27N	27			±0.0180	3.3			43N	43	14	3.8
13N	13				28N	28							44N	44		
14N	14	±0.0150	2.3	+0.1 0	29N	29			±0.0180	3.3			45N	45	+0.025 0	+0.2 0
15N	15				30N	30							46N	46		
16N	16	±0.0150	2.3	+0.1 0	31N	31			±0.0180	3.3			47N	47	14	3.8
17N	17				32N	32							48N	48		
18N	18	±0.0150	2.3	+0.1 0	33N	33	±0.0180	3.3	49N	49	+0.025 0	+0.2 0				
19N	19				34N	34			50N	50						
20N	20	±0.0150	2.3	+0.1 0	35N	35	±0.0180	3.3								
21N	21				36N	36										
22N	22	±0.0150	2.3	+0.1 0	37N	37	±0.0180	3.3								
					38N	38										