



"Raw Material" and "Gear Precision Grade" Equivalent Tables

Comparison of raw materials

Carbon and alloy steels			
JIS	AISI / SAE	ISO	DIN
S45C	1045	C45	Ck45
SCM415			
(SCr415)		16MnCr5	17Cr3
SCM435	4137	34CrMo4	34CrMo4
SCM440	4140	42CrMo4V	42CrMo4V
SNCM220	8615	20NiCrMo2	21NiCrMo2
SNCM420	4320		
SNCM439	4340		
Stainless steels			
JIS	AISI / UNS	ISO	DIN
SUS303	303 / S30300	13	X10CrNiS18 9
SUS304	304 / S30400	6	X5CrNi18 10
SUS316	316 / S31600	26	X5NiMo17 12 2
SUS420J2	420 / S42000	51	X20Cr13
SUS440C	440C / S44004		
SUS630	S17400 / S17400	58	
Copper alloy			
JIS	ASTM	EN	DIN
CAC502C	C90700	CC480K	CuSn10
CAC503C	C91000	CC483K	CuSn12
CAC702C	C95400	CC332G	CuAl9Ni
CAC703C	C95800	CC333G	CuAl10Ni

Notes:

1

SCr415 (including corresponding materials of SCr415) is defined as material equivalent to SCM415.

For carburizing (case hardening), SCM415 is normally used.

If a harder material is required, SNCM220 and/or SNCM420 is normally used.

2

Hardness values are determined by production condition.

For the actual expected hardness value, please refer to the recorded gear quotation.

Comparison of gear precision grades

Standard	Gear Precision Grade					
JIS B 1702-1976	0	1	2	3	4	5
JIS B 1702-1,2:1998	N4	N5	N6	N7	N8	N9
DIN 3962	4	5	6	7	8	9
AGMA 390.03(1973)						
Pitch Tolerance	13	12	10	9	8	7
Profile Tolerance	14	12	11	10	9	8
Runout Tolerance	13	12	11	10	9	8
Lead Tolerance	11	10	10	9	8	7

Notes:

Above-mentioned equivalent grades are for reference only.

Not all grades completely match each other.