

Spur Gears

Pressure Angle 20°, Module 3.0

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Type			Material	Surface Treatment	Accessories
Straight Bore	Straight + Tap	Keyway / Keyway + Tap			
GEAHB	GEAB	GEAKB	1045 Carbon Steel or Equivalent	—	Set Screw (4137 Alloy Steel Black Oxide)
GEAHHB	GEABB	GEAKBB			
GEAHBG	GEABG	GEAKBG			
GEAHS	GEAS	GEAKS	304 Stainless Steel	—	Set Screw (304 Stainless Steel)

Shaft Bore Specifications (Selectable Gear Shapes)

Straight Bore (Shape A / B)	Straight Bore + Tap (Shape B)	Keyway (Shape A)	Keyway + Tap (Shape B)

Ⓢ Keyway Dimension Details P.1469.
 Ⓢ Positioning of keyway and teeth are not fixed.
 Ⓢ Set Screw is not included in Non-tapped Type products.
 Ⓢ Shaft bores with set screws are not available for Shape A.

Gear Shape

A Shape

B Shape

Accuracy: Previous JIS B 1702 Class 4 (New JIS B 1702-1 Class 8 Equivalent)

Part Number	Type	Module	Number of Teeth	B	Gear Shape	Shaft Bore Dia. P ₁₇ 1 mm Increment		d Reference Dia.	D Tip Dia.	G Root Dia.	H	L	ℓ ₁	ℓ ₂	M (Coarse)	**Allowable Transmission Force (N-m) Bending Strength	
						Straight Bore	Keyway Keyway+Tap									1045 Carbon Steel or Equivalent	304 Stainless Steel
12		3.0	12	30	A	8-17	8N-12N	36	42	28.5	27				M5	66.64	38.03
13		3.0	13	30	A	8-17	8N-12N	39	45	31.5	27				M5	76.44	43.62
14		3.0	14	30	A	8-22	8N-16N	42	48	34.5	32				M5	86.47	49.34
15		3.0	15	30	A	8-24	8N-19N	45	51	37.5	35				M5	96.73	55.20
16		3.0	16	30	A	8-28	8N-23N	48	54	40.5	40				M5	107.14	61.14
17		3.0	17	30	A	8-28	8N-23N	51	57	43.5	40				M5	117.74	67.19
18		3.0	18	30	A	8-32	8N-27N	54	60	46.5	44				M5	128.51	73.33
19		3.0	19	30	A	8-33	8N-28N	57	63	49.5	45				M5	139.39	79.54
20		3.0	20	30	A	8-38	8N-33N	60	66	52.5	50				M5	150.40	85.83
21		3.0	21	30	A	8-40	8N-35N	63	69	55.5	52				M5	161.48	92.15
22		3.0	22	30	A	8-42	8N-36N	66	72	58.5	54				M5	172.73	98.57
23		3.0	23	30	A	8-44	8N-37N	69	75	61.5	56				M5	183.99	104.99
24		3.0	24	30	A	8-46	8N-39N	72	78	64.5	58				M5	195.41	111.51
25		3.0	25	30	A	8-48	8N-40N	75	81	67.5	60				M5	206.89	118.06
26		3.0	26	30	A	10-53	10N-44N	78	84	70.5	65				M5	218.39	124.63
27		3.0	27	30	A	10-53	10N-44N	81	87	73.5	65				M5	230.05	131.28
28		3.0	28	30	A	10-58	10N-47N	84	90	76.5	70				M5	241.75	137.96
29		3.0	29	30	A	10-58	10N-47N	87	93	79.5	70				M5	253.47	144.65
30		3.0	30	30	A	10-60	10N-50N	90	96	82.5	75				M5	265.20	151.33
31		3.0	31	30	A	10-60	10N-50N	96	102	88.5	75				M5	288.95	164.89
32		3.0	32	30	A	10-60	10N-50N	99	105	91.5	75				M5	300.84	171.68
33		3.0	33	30	A	12-63	12N-50N	102	108	94.5	80				M5	312.90	178.55
34		3.0	34	30	A	12-63	12N-50N	105	111	97.5	80				M5	324.54	185.37
35		3.0	35	30	A	12-63	12N-50N	108	114	100.5	80				M5	336.92	192.26
36		3.0	36	30	A	12-63	12N-50N	114	120	106.5	80				M5	361.19	206.11
37		3.0	37	30	A	12-63	12N-50N	117	123	109.5	80				M5	373.36	213.06
38		3.0	38	30	A	12-65	12N-50N	120	126	112.5	85				M5	385.49	219.98
39		3.0	39	30	A	12-65	12N-50N	126	132	118.5	85				M5	409.88	233.90
40		3.0	40	30	A	20-65	20N-50N	132	138	124.5	90				M6	434.50	247.95
41		3.0	41	30	A	20-65	20N-50N	135	141	127.5	90				M6	446.76	254.94
42		3.0	42	30	A	20-65	20N-50N	138	144	130.5	90				M6	459.10	261.99
43		3.0	43	30	A	20-65	20N-50N	144	150	136.5	90				M6	483.84	276.10
44		3.0	44	30	A	20-65	20N-50N	147	153	139.5	90				M6	496.22	283.17
45		3.0	45	30	A	25-68	25N-50N	150	156	142.5	90				M6	508.67	290.27
46		3.0	46	30	A	25-68	25N-50N	153	159	145.5	90				M6	520.97	297.30
47		3.0	47	30	A	25-68	25N-50N	156	162	148.5	90				M6	533.34	304.35
48		3.0	48	30	A	25-68	25N-50N	162	168	154.5	90				M6	558.25	318.57
49		3.0	49	30	A	25-68	25N-50N	165	171	157.5	90				M6	570.80	325.73
50		3.0	50	30	A	25-68	25N-50N	168	174	160.5	90				M6	583.41	332.92
51		3.0	51	30	A	25-68	25N-50N	171	177	163.5	90				M6	595.82	340.01
52		3.0	52	30	A	25-68	25N-50N	174	180	166.5	90				M6	608.28	347.12
53		3.0	53	30	A	25-68	25N-50N	180	186	172.5	90				M6	633.37	361.43
54		3.0	54	30	A	25-68	25N-50N	186	192	178.5	90				M6	658.65	375.86
55		3.0	55	30	A	25-68	25N-50N	189	195	181.5	90				M6	671.06	382.94
56		3.0	56	30	A	25-68	25N-50N	192	198	184.5	90				M6	683.41	390.01
57		3.0	57	30	A	25-68	25N-50N	195	201	187.5	90				M6	695.82	397.12
58		3.0	58	30	A	25-68	25N-50N	198	204	190.5	90				M6	708.28	404.27
59		3.0	59	30	A	25-68	25N-50N	204	210	196.5	90				M6	754.40	432.78
60		3.0	60	30	A	25-68	25N-50N	207	213	199.5	90				M6	766.81	439.93
61		3.0	61	30	A	25-68	25N-50N	210	216	202.5	90				M6	779.22	447.08

Ⓢ Shaft bore diameter 9N is not available for Keyway Bore + Tap. Ⓢ Select 10K as P dimension if you request keyway width of 4.0 mm (height 1.8 mm) for Keyway + Tap with shaft bore diameter of 10. P.1469
 ** Allowable Transmission Forces in the table are reference values calculated based on conditions shown on P.1469.

Spur Gears

Pressure Angle 20°, Module 3.0, *continued*

Part Number Example

Part Number: GEAHB3.0 - No. of Teeth: 15 - B: 30 - Gears Shape: B - P: 8
 GEAHKBG3.0 - No. of Teeth: 30 - B: 30 - Gears Shape: A - P: 10N

Part Number Alterations

Part Number: GEAHB3.0 - No. of Teeth: 30 - B: 30 - Tooth Shape: A - P: 20 - (KC90 / KC120 / TPC / DHL / DHR / WDH / LFC / LTC / KFC / KTC / QFC / QTC) KFC40 - K6.0

Ⓢ Tooth shape will be "B" when not specified.

Alterations	Set Screw	Tapped Hole Dimension	Stepped Hole	Both Ends Stepped Bore
Code	KC90 / KC120	TPC	DHL / DHR	WDH
Spec.	KC90: Adds another set screw at 90° position. KC120: Adds another set screw 120° at position. Ⓢ Not applicable to Shape A. Ⓢ Not applicable to Straight Bore Type.	Changes the tapped hole dimension. Ordering Code: TPC4 Ⓢ Not applicable to Shape A. Ⓢ Not applicable to Straight Bore Type.	Changes shaft bores to stepped bores. (Z: 1 mm Increment / J: 0.1 mm Increment) Ordering Code: DHL-Z20-J4.0 Ⓢ Applicable to Straight Bore Type Only.	Changes shaft bores to both ends stepped hole. (Q, R, S, T: 1 mm Increment) Ⓢ S, T ≥ 3 Ordering Code: WDH-Q10-R10-S5-T5 Ⓢ Applicable to Straight Bore Type Only.

Alterations	Side Slotted Hole	Side Through Hole	Side Tapped Hole
Code	LFC / LTC	KFC / KTC	QFC / QTC
Spec.	Machines slotted holes on the side surface (30°) (LFC / LTC: 1 mm Increment) Ⓢ Applicable to Shape A only. Ⓢ P+C+4 ≤ LFC(LTC) ≤ G-C-4 M Selection: M3 / M4 / M5 / M6 Ordering Code: LFC20-M3	Machines through holes on the side surface. (KFC / KTC: 1 mm Increment / K: 0.5 mm Increment) Ⓢ Applicable to Shape A only. Ⓢ P+K+4 ≤ KFC(KTC) ≤ G-K-4 K Selection: K3.0-K6.0 Ordering Code: KFC20-K3.5	Machines tapped holes on the side surface of the gear (QFC / QTC: 1 mm Increment) Ⓢ Applicable to Shape A only. Ⓢ P+M+4 ≤ QFC(QTC) ≤ G-M-4 M Selection: M3 / M4 Ordering Code: QFC25-M3 Ⓢ Tapped Hole Depth Mx1.5

Alterations	Hub Shortening	Side Through Hole
Code	BS	SRG
Spec.	Cuts the hub length in 0.5mm increments Ordering Code: BS6.5 Ⓢ Not available for K / A shape Ⓢ Straight Bore Type: 0 ≤ BS ≤ ℓ ₁ Ⓢ Straight Bore + Tap Type: BS=0; M+3 ≤ BS ≤ ℓ ₁ Ⓢ Keyway + Tap Type: BS=0; M+3 ≤ BS ≤ ℓ ₁ Ⓢ When BS=0, there are no tapped holes	≥3.5mm, 0.5mm increments Ordering Code: SRG7 Ⓢ Applicable to shaft bore specifications DHL, DHR only. Ⓢ Use retainer ring groove standards for Z dimension Ⓢ n ≤ J-SRG-m

Alterations	Teeth Root Alignment	Side Tapped Hole
Code	GBA	ZFC / ZTC
Spec.	Adjust the tap to align with the gear's teeth root and key groove Ordering Code: GBA Ⓢ Applicable for teeth number 19 or more.	Machines counterbore holes on the side surface of the hub side. U Selection: U3 / U4 / U5 / U6 For B Shape, if selection of reference sides are necessary, use LL for L side, and RR for R side. Ⓢ Only available for Standard Type Ⓢ Not applicable for K Shape