

# Spur Gears

Pressure Angle 20°, Module 0.8

**Spur Gears – Pressure Angle 20°, Module 0.8**

Type		Material	Surface Treatment	Accessories
Straight Bore	Straight Bore + Tap			
GEAHBN	GEABN	1045 Carbon Steel or Equivalent	—	Set Screw (4137 Alloy Steel Black Oxide)
GEAHBB	GEABB			
GEAHBG	GEABG			
GEAHB	GEAB			
GEAHS	GEABS	Free-Cutting Brass Bar	—	—
		304 Stainless Steel	—	Set Screw (304 Stainless Steel)

**Gear Shape**

Ⓢ Shaft bores with set screws are not available for Shape A.

Ⓢ Set Screw is not included in Non-tapped Type products.  
Accuracy: Previous JIS B 1702 Class 4 (New JIS B 1702-1 Class 8 Equivalent)

Part Number	No. of Teeth	B	Gear Shape	Shaft Bore Dia. P <sub>17</sub> 1 mm Increment	d Reference Dia.	D Tip Dia.	G Root Dia.	H	L	ℓ <sub>1</sub>	ℓ <sub>2</sub>	M (Coarse)	*Allowable Transmission Force (N-m) Bending Strength		
													1045 Carbon Steel or Equivalent	304 Stainless Steel	Free-Cutting Brass Bar
(Selectable Gear Shapes) Straight Bore (Shape A / Shape B / Shape K) GEAHBN GEAHBB GEAHBG GEAHB GEAHS Straight Bore + Tap (Shape B / Shape K) GEABN GEABB GEABG GEAB GEABS	12	7	K	4 / 5	9.6	11.2	7.6	11.2	20	13		M3	1.11	0.63	0.24
	13				10.4	12	8.4	1.27					0.72	—	
	14				11.2	12.8	9.2	12.8					1.43	0.82	0.31
	15				12	13.6	10	13.6					1.61	0.92	0.35
	16				12.8	14.4	10.8	1.27					0.72	0.28	
	17				1.78	1.01	0.39								
	18				1.40	0.80	—								
	19				1.95	1.11	—								
	20				1.52	0.87	0.33								
	21				2.13	1.22	0.46								
	22	1.65	0.94	—											
	23	2.31	1.32	—											
	24	1.78	1.02	0.39											
	25	2.50	1.42	0.54											
	26	1.91	1.09	—											
	27	2.68	1.53	—											
	28	2.05	1.17	—											
	29	2.87	1.64	—											
	30	2.18	1.24	—											
	31	3.05	1.74	—											
	32	2.32	1.32	0.50											
	33	3.24	1.85	0.71											
	34	2.45	1.40	0.53											
	35	3.43	1.96	0.75											
	36	2.59	1.48	—											
	37	3.62	2.07	—											
	38	2.73	1.56	—											
	39	3.82	2.18	—											
	40	2.87	1.64	0.63											
	41	4.01	2.29	0.88											
	42	3.00	1.71	—											
	43	4.21	2.40	—											
	44	3.14	1.79	0.69											
	45	4.4	2.51	0.96											
	46	4.79	2.74	0.74											
	47	4.99	2.85	—											
	48	5.19	2.96	—											
	49	5.39	3.08	—											
	50	5.59	3.19	0.87											
	5	A	7	4-6 / 6.35	10	14	9 (B=5)	5.99	3.42	—					
								6.2	3.54	—					
								6.4	3.65	1.00					
								6.8	3.88	—					
								7.21	4.11	—					
								7.41	4.23	1.16					
								7.62	4.35	—					
								8.03	4.58	1.26					
								8.23	4.70	—					
								8.44	4.82	1.32					
	B	7	5-8	12.5	14	7 (B=7)	4	M4	5.99	3.42	—				
6.2									3.54	—					
6.4									3.65	1.00					
6.8									3.88	—					
7.21									4.11	—					
7.41									4.23	1.16					
7.62									4.35	—					
8.03									4.58	1.26					
8.23									4.70	—					
8.44									4.82	1.32					

\* Allowable Transmission Forces in the table are reference values calculated based on conditions shown on P.1469. Ⓢ Shaft Bore Diameter 6.35 is available.

# Spur Gears

Pressure Angle 20°, Module 0.8, *continued*

Part Number	No. of Teeth	B	Gear Shape	Shaft Bore Dia. P <sub>17</sub> 1 mm Increment	d Reference Dia.	D Tip Dia.	G Root Dia.	H	L	ℓ <sub>1</sub>	ℓ <sub>2</sub>	M (Coarse)	*Allowable Transmission Force (N-m) Bending Strength		
													1045 Carbon Steel or Equivalent	304 Stainless Steel	Free-Cutting Brass Bar
Straight Bore (Shape A / Shape B / Shape K) GEAHBN GEAHBB GEAHBG GEAHB GEAHS	0.8	7	A	Straight Bore + Tap (Shape B / Shape K)	10-18	40.8	42.4	38.8	30			M5	8.64	4.93	—
						41.6	43.2	39.6					8.85	5.05	—
						43.2	44.8	41.2					9.26	5.29	—
						44	45.6	42					9.47	5.40	—
						44.8	46.4	42.8					9.68	5.52	—
						45.6	47.2	43.6					9.89	5.64	—
						46.4	48	44.4					10.09	5.76	—
						48	49.6	46					10.51	6.00	—
						49.6	51.2	47.6					10.93	6.24	—
						50.4	52	48.4					11.13	6.35	—
						51.2	52.8	49.2					11.35	6.47	—
						52	53.6	50					11.55	6.59	—
						52.8	54.4	50.8					11.76	6.71	—
						54.4	56	52.4					12.18	6.95	—
						55.2	56.8	53.2					12.39	7.07	—
						56	57.6	54					12.60	7.19	—
						57.6	59.2	55.6					13.02	7.43	—
						60	61.6	58					13.65	7.79	—
						60.8	62.4	58.8					13.86	7.91	—
						61.6	63.2	59.6					14.07	8.03	—
62.4	64	60.4	14.28	8.15	—										
64	65.6	62	14.70	8.39	—										
64.8	66.4	62.8	14.91	8.51	—										
67.2	68.8	65.2	15.55	8.87	—										
68	69.6	66	15.76	8.99	—										
70.4	72	68.4	16.40	9.36	—										
72	73.6	70	16.82	9.60	—										
72.8	74.4	70.8	17.03	9.72	—										
73.6	75.2	71.6	17.24	9.84	—										
76	77.6	74	17.88	10.20	—										
76.8	78.4	74.8	18.09	10.32	—										
78.4	80	76.4	18.51	10.56	—										
79.2	80.8	77.2	18.73	10.69	—										
80	81.6	78	18.94	10.81	—										
96	97.6	94	23.20	13.24	—										

**Part Number Example** Part Number - No. of Teeth - B - Gear Shape - P  
 GEAB0.8 - 25 - 5 - B - 6  
 GEAHB0.8 - 30 - 7 - A - 8  
 GEABS 0.8 - 15 - 7 - K - 5

When gear shape is not specified, number of teeth 12-15 will be Shape K, 16-50 will be Shape B.

**Part Number Alterations** Part Number - No. of Teeth - B - Gear Shape - P - (KC90, TPC, DHL, WDH...etc.)  
 GEAB0.8 - 30 - 7 - B - 6 - KC120  
 GEAHB0.8 - 40 - 5 - A - 8 - QTC16-M4

Alterations Code	Set Screw KC90 / KC120	Tapped Hole Dimension TPC	Stepped Hole DHL / DHR	Both Ends Stepped Bore WDH
Spec.	KC90: Adds another set screw at 90° position. KC120: Adds another set screw at 120° 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-220-J2.0 Ⓢ Applicable to Straight Bore Type Only.	Changes shaft bores to both ends stepped bore. (Q / R / S / T: 1 mm Increment) Ⓢ S, T=3 Ordering Code: WDH-Q10-R10-S5-T5 B Shape

Alterations Code	Side Slotted Hole LFC / LTC	Side Through Hole KFC / KTC	Side Tapped Hole QFC / QTC	Side Counter Bore Hole ZFC / ZTC
Spec.	Machines slotted holes on the side surface (30°) (LFC / LTC: 1 mm Increment) Ⓢ Applicable to A shape only. Ⓢ P+C+4≤LFC(LTC)≤G-C-4 M Selection: M3 / M4 Ordering Code: LFC20-M3	Machines through holes on the side surface. (KFC/KTC 1 mm increment / K:0.5mm Increment) -M Selection: K3.0-K6.0 A Shape Ⓢ P+K+4≤KFC(KTC)≤G-K-4 Ordering Code: KFC20-K3.5 B Shape Ⓢ P+K+4≤KFC(KTC)≤H-K-4 Ⓢ H+K+4≤KFC(KTC)≤G-K-4 Ordering Code: KFC20-K3.5	Machines tapped holes on the side surface of the gear. A Shape (K Shape Applicable) Ⓢ P+M+4≤QFC(QTC)≤G-M-4 M Selection: M3/M4 Tap hole depth M x 2.0 (When B < M x 2.0, it penetrates) Ordering Code: QFC25-M3 Ⓢ Tapped Hole Depth Mx1.5 (When B<Mx1.5, Through)	Machines counter bore holes on the side surface. (ZFC/ZTC: 1 mm Increment) U Selection: U3, U4, U5, U6 Machining reference plane selection is required for B type. L side designation symbol LL, R side designation symbol RR Applicable Condition - K shape applicable - Only applicable to S45C/SUS304 - Only applicable to tooth width of 7mm A Shape Ordering Code: ZFC20-U3 Ⓢ P+U1+3≤ZFC(ZTC)≤G-U1-4 B Shape (W>0) Ordering Code: ZFC25-M3-RR L Side: QFC25-M3-LL Conditions Ⓢ P+M+4≤QFC(QTC)≤H-M-4 Ⓢ H+M+4≤QFC(QTC)≤G-M-4 Specify R Side