


# Induction Hardened Spur Gears (Ground Type)

Pressure Angle 20° Module 1.0, 1.5, 2.0, 2.5, 3.0

**Feature:** Spur gears with hardened teeth which provides excellent strength, abrasion resistance and high precision. For Rack Gears – Ground P.1505.

**Induction Hardened Spur Gears – Ground Type – Pressure Angle 20° Module 1.0, 1.5, 2.0, 2.5, 3.0**



RoHS10

Type		Material	Surface Treatment	Hardness	Accessories
Straight Bore	Keyway / Keyway + Tap				
GEAHBH	GEAKBH	1045 Carbon Steel or Equivalent	Black Oxide	Tooth Induction Hardened 51–55 HRC min. (Depth 1 mm or more)	Set Screw (4137 Alloy Steel Black Oxide)

① Set Screw is not included in Non-tapped Type products.

**Tapped Hole Dimension List**

Shaft Bore Dia. P <sub>H7</sub>	M (Coarse Thread)	Accessories Set Screw
6–12	M4	M4 x 3
13–17	M5	M5 x 4
18–30	M6	M6 x 5
31–45	M8	M8 x 6
46–56	M10	M10 x 8

Accuracy: Previous JIS B 1702 Class 2 (New JIS B 1702-1 Class 6 Equivalent)  
 ① Accuracy before shaft bore machining.

**Shaft Bore Specifications (Selectable Gear Shapes)**

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

① Keyway Dimension Details P.1469.  
 ② Positioning of keyway and teeth are not fixed.  
 ③ Tapped shaft bores are not available for Shape A.

① End surface of Shape A may not be surface treated as Shape A is made by cutting the hub of Shape B.

Part Number	Type	Module	Number of Teeth	B	Gear Shape	Shaft Hole Dia P <sub>H7</sub> (1 mm Increment)				d Reference Dia.	D Tip Dia.	G Root Dia.	H	L	ℓ <sub>1</sub>	ℓ <sub>2</sub>	* Allowable Transmission Force (N-m) Bending Strength	Available Types				
						Straight Bore	Keyway	Keyway + Tap	Straight Bore + Tap									GEAHBH	GEABH	GEAKBH		
																					Straight Bore	Keyway
																			4.76	•	•	•
																			5.57	•	•	•
																			6.42	•	•	•
																			7.27	•	•	•
																			7.69	•	•	•
																			8.12	•	•	•
																			9.02	•	•	•
																			9.87	•	•	•
																			10.79	•	•	•
																			12.13	•	•	•
																			12.52	•	•	•
																			13.07	•	•	•
																			15.18	•	•	•
																			16.44	•	•	•
																			17.23	•	•	•
																			21.50	•	•	•
																			25.74	•	•	•
																			29.98	•	•	•
																			38.72	•	•	•
																			15.11	•	•	•
																			16.74	•	•	•
																			20.08	•	•	•
																			23.51	•	•	•
																			30.56	•	•	•
																			32.39	•	•	•
																			31.16	•	•	•
																			34.58	•	•	•
																			37.84	•	•	•
																			41.03	•	•	•
																			46.51	•	•	•
																			48.00	•	•	•
																			54.90	•	•	•
																			63.90	•	•	•
																			69.20	•	•	•
																			72.69	•	•	•
																			90.68	•	•	•
																			108.59	•	•	•

① Shaft bore diameter 6.35 is available for Straight Bore and Straight Bore + Tap. ② Shaft bore diameter 9N is not available for Keyway Bore+Tap.

③ 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 with prescribed conditions. For conditions, refer to P.1469.

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Part Number	Type	Module	No. of Teeth	B	Gear Shape	Shaft Hole Dia P <sub>H7</sub> (1 mm Increment)		d Reference Dia.	D Tip Dia.	G Root Dia.	H	L	ℓ <sub>1</sub>	ℓ <sub>2</sub>	* Allowable Transmission Force (N-m) Bending Strength	
						Straight Bore	Keyway									
																35.81
																39.67
																47.59
																50.67
																58.24
																65.86
																69.81
																81.96
																89.70
																97.27
																113.78
																130.13
																151.46
																164.04
																172.31
																205.60
																70.43
																98.97
																128.63
																136.34
																160.07
																175.19
																222.23
																254.16
																295.82
																306.46
																321.92
																121.71
																171.01
																222.27
																235.60
																302.72
																328.27
																384.01
																420.10

\* Allowable Transmission Forces in the table are reference values calculated based on conditions shown on P.1469.

**Part Number Example**

Part Number: GEAKBH2.0 - No. of Teeth: 30 - B: 20 - Tooth Shape: A - P: 25N

GEABH1.0 - No. of Teeth: 30 - B: 8 - Tooth Shape: B - P: 15

① Gear shape will be "B" when not specified.

**Part Number Alterations**

Part Number: GEAKBH2.0 - No. of Teeth: 40 - B: 20 - Gears Shape: B - P: 30N - (KC90 / KC120...etc.)

Alterations	Set Screw		Side Through Hole		Side Tapped Hole	
	KC90	KC120	KFC / KTC	QFC / QTC		
<b>Spec.</b>	Adds another set screw at the position of 90°. ① Not applicable to Straight Bore Type.	Adds another set screw at position 120°. ① Not applicable to Straight Bore Type.	Machines through holes on the side surface (KFC / KTC: 1 mm Increment / K: 0.5 mm Increment) ① Applicable to Shape A only. ② 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) ① Applicable to A Shape only. ② P+M+4≤QFC(QTC)≤G-M-4 M Selection: M3 / M4 Ordering Code: QFC25-M3 ③ Tapped hole depth M × 1.5 (when B < M × 1.5, through)		