


Induction Hardened Spur Gears - Ground

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

■ **Features:** Spur gears with hardened teeth which provide excellent strength, abrasion resistance and high precision. For Rack Gears - Ground, see [P.1529](#).



Type			Material	Surface Treatment	Hardness	Accessory
Straight Bore	Straight Bore + Tap	Keyway, Keyway + Tap				
GEAHBH	GEABH	GEAKBH	S45C Equivalent	Black Oxide	Tooth Induction Hardened 51 ~ 55HRC (Depth 1mm or more)	Set Screw (SCM435 Black Oxide)

⚠ Set Screw is not included in Un-tapped Type products.

Gear Shape

Shape A, Shape B diagrams showing dimensions D, G, P, Hr, L, L1, L2, M, H.

⚠ Keyway Dimension Details [P.1498](#)
⚠ Positioning of keyway and teeth is not fixed.

■ **Tapped Hole Dimension List**

Shaft Bore Dia. P _{Hr}	M (Coarse)	Accessory Set Screw
6~12	M4	M4x3
13~17	M5	M5x4
18~30	M6	M6x5
31~45	M8	M8x6
46~56	M10	M10x8

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

⚠ Tapped shaft bores are not available for Shape A.
⚠ End surface of Shape A may not be surface treated as Shape A is made by cutting the hub of Shape B.

⚠ [shaded] part has no surface treatment.

RoHS 10

Part Number	Type	Module	Number of Teeth	B	Gear Shape	Shaft Hole Dia P _{Hr} (1mm Increment)		d Reference Dia.	D Tip Dia.	G Root Dia.	H	L	L ₁	L ₂	*1. Allowable Transmission Force (N, m) Bending Strength	Unit Price 1 ~ 10 pc(s).										
						Straight Bore	Keyway Keyway + Tap									Straight Bore	Straight Bore + Tap	Keyway Keyway + Tap								
						GEAHBH	GEABH									GEAKBH										
18	Straight Bore (Shape A, Shape B) GEAHBH	1.0	8	A	B	6~10	-	18	20	15.5	15	18	10	5	4.76											
20						6~11	8N, 10N	20	22	17.5	17					5.57										
22																										
24																										
25																										
26																										
28																										
30																										
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45																										
48																										
50																										
60																										
70																										
80																										
100																										
15		Keyway (Shape A) Keyway + Tap (Shape B) GEAKBH	1.5	15	A	B	10~12	10N	22.5	25.5	18.75	18	29	14	7	15.11										
16	10~13						10N, 11N	24	27	20.25	19.5	16.74														
18	10~15						10N~13N	27	30	23.25	22	20.08														
20	10~16						10N~14N	30	33	26.25	24	23.51														
24	12~19						12N~17N	36	39	32.25	28	30.56														
25	12~21						12N~18N	37.5	40.5	33.75	30	32.39														
26	12~22						12N~19N	39	42	35.25	32	31.16														
28	15~25						15N~19N	42	45	38.25	36	34.58														
30	15~26						15N~23N	45	48	41.25	38	37.84														
32	15~28						15N~24N	48	51	44.25	40	41.03														
35	15~29		15N~26N	52.5	55.5	48.75	42	46.51																		
36	15~31		15N~28N	54	57	50.25	45	48.00																		
40	15~35		15N~31N	60	63	56.25	50	54.90																		
45	18~35		18N~31N	67.5	70.5	63.75	50	63.90																		
48								69.20																		
50								72.69																		
60								90.68																		
70								108.59																		

⚠ Shaft bore diameter 6.35 is available for Straight Bore and Straight Bore + Tap. ⚠ Shaft bore diameter 9N is not available for Keyway Bore + Tap.
⚠ Specify 10K as P dimension if keyway width of 4.0mm (height 1.8mm) for Keyway + Tap with shaft bore diameter of 10 is desired. [P.1498](#)
*1 Allowable Transmission Forces in the table are reference values calculated with prescribed conditions. For conditions, see [P.1498](#).

Module 2.0, 2.5, 3.0

Part Number	Type	Module	Number of Teeth	B	Gear Shape	Shaft Hole Dia P _{Hr} (1mm Increment)		d Reference Dia.	D Tip Dia.	G Root Dia.	H	L	L ₁	L ₂	*1. Allowable Transmission Force (N, m) Bending Strength	Unit Price 1 ~ 30 pc(s).				
						Straight Bore	Keyway Keyway + Tap									Straight Bore	Straight Bore + Tap	Keyway Keyway + Tap		
						GEAHBH	GEABH									GEAKBH				
15	Straight Bore (Shape A, Shape B) GEAHBH	2.0	20	A	B	12~17	12N~14N	30	34	25	24	36	16	8	35.81					
16						12~18	12N~15N	32	36	27	26					39.67				
18						12~21	12N~18N	36	40	31	30					47.59				
20																50.67				
22																58.24				
24																65.86				
25																69.81				
28																81.96				
30																89.70				
32																97.27				
36								113.78												
40								130.13												
45								151.46												
48								164.04												
50								172.31												
60								205.60												
16		Straight Bore + Tap (Shape B) GEABH	2.5	25	A	B	15~22	15N~19N	40	45	33.75	32	43	18	9	70.43				
20							18~28	18N~24N	50	55	43.75	40					98.97			
24							18~33	18N~30N	60	65	53.75	48					128.63			
25							20~35	20N~31N	62.5	67.5	56.25	50					136.34			
28	20~42						20N~38N	70	75	63.75	60	160.07								
30	20~45						20N~42N	75	80	68.75	65	175.19								
36	20~49						20N~45N	90	95	83.75	70	222.23								
40	25~49						25N~45N	100	105	93.75	75	254.16								
45	25~52						25N~49N	112.5	117.5	106.25	80	295.82								
48												306.46								
50	25~56		25N~50N	125	130	118.75	80	321.92												
16	Keyway (Shape A) Keyway + Tap (Shape B) GEAKBH		3.0	30	A	B	16~26	16N~23N	48	54	40.5	38	50	20	10	121.71				
20							20~35	20N~31N	60	66	52.5	50					171.01			
24							20~40	20N~37N	72	78	64.5	58					222.27			
25							20~42	20N~38N	75	81	67.5	60					235.60			
30							25~52	25N~49N	90	96	82.5	75					302.72			
32																	328.27			
36																	384.01			
40							25~56	25N~50N	120	126	112.5	80					420.10			

*1 Allowable Transmission Forces in the table are reference values calculated with prescribed conditions. For conditions, see [P.1498](#). ⚠ For orders larger than indicated quantity, please request a quotation.

Ordering Example

Part Number - Number of Teeth - B - Gear Shape - P

GEAKBH2.0 - 30 - 20 - A - 25N

GEABH1.0 - 30 - 8 - B - 15

Alterations

Part Number - Number of Teeth - B - Gear Shape - P - (KC90, KC120...etc.)

GEAKBH2.0 - 40 - 20 - B - 30N - KC90

Alterations Code	Set Screw		Side Through Hole	Side Tapped Hole
	KC90	KC120	KFC, KTC	QFC, QTC
Spec.	Adds another set screw at 90° position. ⚠ Not applicable to Straight Bore Type.	Adds another set screw at 120° position. ⚠ Not applicable to Straight Bore Type.	Machines through holes on the side surface. (KFC, KTC: 1mm Increment, K: 0.5mm 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: 1mm 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 M×1.5 (when B<M×1.5, through)