Spur Gear

Pressure Angle 20°, Module 1.0, Shaft Bore Configurable Type

Fixing Parts				Others		
Rotary Shaft	Cantilever Shaft	MechaLock	Parallel Key	Bearing with Housings	Bearing	Shaft Collar
P.1-837 ~ P.1-900	P.1-901 ~ P.1-926	P.1-1521 ~ P.1-1530	P.2-277 ~ P.2-282	P.1-947 ~ P.1-1014	P.1-1017 ~ P.1-1049	P.1-297 ~ P.1-330

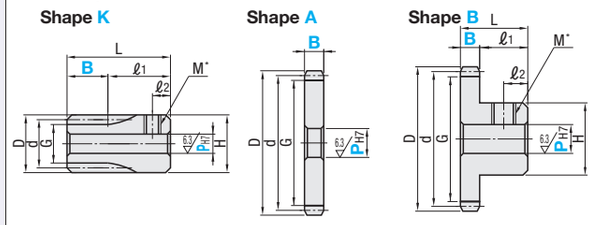
For products uncovered by the e-Catalog Standard, see P.131.

■Standard Type and Thin Type are available.

Type			M Material	S Surface Treatment	A Accessory
Straight Bore	Straight Bore + Tap	Keyway, Keyway + Tap			
GEAHB	GEAB	GEAKB	S45C Equivalent	-	Set Screw (SCM435, Black Oxide)
GEAHBB	GEABB	GEAKBB		Black Oxide	
GEAHBG	GEABG	GEAKBG		Electroless Nickel Plating	
GEAHS	GEAS	GEAKS	SUS304	-	Set Screw (SUS304)

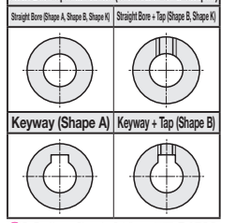
Set Screw is not included in Un-tapped Type products.
Selectable Gear Shapes differ depending on the number of teeth. Check the spec. table.

Gear Shape



Tapped shaft bores are not available for Shape A.

Shaft Bore Specifications (Selectable Gear Shapes)



For Tap, Keyway Dimension Details, see P.1532.
Positioning of keyway and teeth is not fixed.

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

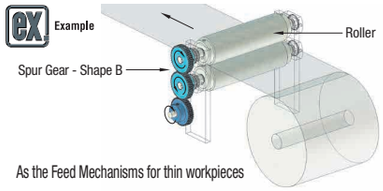
■ Standard Type

When desiring to fix the gear hub onto the shaft through MechaLock, see Keyless Type on P.1557. For configuring the tooth width / hub dimensions, see P.1551.

Part Number Type	Module	Number of Teeth	B	Gear Shape	Shaft Bore Dia. PH7 (1mm Increment) Straight Bore / Straight Bore + Tap	Keyway, Keyway + Tap	d Reference Dia.	D Tip Dia.	G Root Dia.	H	L	ℓ1	ℓ2	M (Coarse)	*1 Allowable Transmission Force (N·m) Bending Strength S45C Equivalent	SUS304	Unit Price Straight Bore GEAHB	GEAHBB	GEAHBG	GEAHS	Straight Bore + Tap GEAB	GEABB	GEABG	GEAS	Keyway Keyway + Tap GEAKB	GEAKBB	GEAKBG	GEAKS
Straight Bore (Shape A, Shape B, Shape K) GEAHB GEAHBB GEAHBG GEAHS; Straight Bore + Tap (Shape B, Shape K) GEAB GEABB GEABG GEAS; Keyway (Shape A) (19 teeth or more); Keyway + Tap (Shape B) (19 teeth or more) GEAKB GEAKBB GEAKBG GEAKS	1	12	10	K	6~8	-	12	14	9.5	14	30	20 (B=10) 18 (B=12)	5	M4	2.47	1.41									-	-	-	-
		*13					13	15	10.5	15					2.83	-				-				-	-	-	-	-
		14		A	6~10		14	16	11.5	16				M5	3.2	1.83									-	-	-	-
		15					15	17	12.5	17					3.58	2.04									-	-	-	-
		*16		K	6~12		16	18	13.5	18					3.97	-				-				-	-	-	-	-
		*17					17	19	14.5	19					4.36	-				-				-	-	-	-	-
		*18					18	20	15.5	20					4.76	-				-				-	-	-	-	-
		*19			6~10	8N	19	21	16.5	16		10 (B=10) 8 (B=12)	4	M4	5.16	-				-				-				-
		20			6~10		20	22	17.5						5.57	3.18												
		21			6~12	8N, 10N	21	23	18.5	18					5.98	3.41												
		*22					22	24	19.5						6.41	-				-				-				-
		*23					23	25	20.5	20					6.82	-				-				-				-
		24					24	26	21.5						7.24	4.13												
		*25					25	27	22.5						7.68	-				-				-				-
		26			6~15	8N~12N	26	28	23.5	22					8.12	4.64												
		*27					27	29	24.5	24					8.55	-				-				-				-
		28			8~17	10N~12N	28	30	25.5						9.02	5.14												
		*29			6~18	8N~15N	29	31	26.5	26					9.42	-				-				-				-
		30			8~18		30	32	27.5	27			5	M5	9.87	5.63												
		32	12	A	8~18	10N~15N	32	34	29.5	28		20			10.7	6.11												
		*34					34	36	31.5						11.69	-				-				-				-
		35			8~22	10N~17N	35	37	32.5	30					12.13	6.92												
		36					36	38	33.5						12.52	7.14												
		38					38	40	35.5						13.46	7.68												
		40					40	42	37.5						14.31	8.17												
		42					42	44	39.5						15.24	8.7												
		*44					44	46	41.5						16.18	-				-				-				-
		45					45	47	42.5						16.66	9.51												
		*46					46	48	43.5						17.14	-				-				-				-
		48			8~32	10N~30N	48	50	45.5	44					18.04	10.3												
		50			8~34	10N~32N	50	52	47.5	46					18.95	10.82												
		52					52	54	49.5						19.87	11.34												
		54					54	56	51.5						20.8	11.87												
		55					55	57	52.5						21.32	12.16												
		56					56	58	53.5						21.84	12.46												
		58					58	60	55.5						22.69	12.95												
		60			10~38	10N~36N	60	62	57.5	50					23.64	13.49												
		62					62	64	59.5						24.5	13.98												
		64					64	66	61.5						25.47	14.54												
		65					65	67	62.5						25.9	14.78												
		66					66	68	63.5						26.45	15.1												
		68					68	70	65.5						27.44	15.66												
		70			10~44	12N~42N	70	72	67.5	56					28.31	16.16												
		72					72	74	69.5						29.19	16.66												
		75					75	77	72.5						30.63	17.48												
		80			10~48	12N~46N	80	82	77.5	60					32.98	18.82												
		84				15N~46N	84	86	81.5						34.9	19.92												
		85					85	87	82.5						35.35	20.17												
		90					90	92	87.5						37.74	21.53												
		95					95	97	92.5						40.15	22.91												
		96					96	98	93.5						40.6	23.17												
		100			17~50	17N~48N	100	102	97.5						42.59	24.31												
		110			17~58	17N~50N	110	112	107.5	70					47.11	26.88												
		120					120	122	117.5						51.87	29.6												

* marked number of teeth is not available for stainless steel type (GEAHS, GEAS and GEAKS).
Shaft bore diameter 9N is not available for Keyway Bore + Tap.
Specify 10K as the P dimension if keyway width of 4.0mm (height 1.8mm) for Keyway + Tap with shaft bore diameter of 10 is desired P.1532.
Shaft bore diameter 6.35 is available for Straight Bore and Straight Bore + Tap. The "-" text on the above table means that any Shaft Bore Dia. is not selectable.
*1. Allowable Transmission Forces in the table are reference values calculated with prescribed conditions. For conditions, see P.1534. Calculation is performed based on 10mm of the tooth width.

Example



As the Feed Mechanisms for thin workpieces

■ Thin Type

Part Number Type	Module	Number of Teeth	B	Gear Shape	Shaft Bore Dia. PH7 (1mm Increment) Straight Bore / Straight Bore + Tap	Keyway, Keyway + Tap	d Reference Dia.	D Tip Dia.	G Root Dia.	H	L	ℓ1	ℓ2	M (Coarse)	*1 Allowable Transmission Force (N·m) Bending Strength S45C Equivalent	SUS304	Unit Price Straight Bore GEAHB	GEAHBB	GEAHBG	GEAHS	Straight Bore + Tap GEAB	GEABB	GEABG	GEAS	Keyway Keyway + Tap GEAKB	GEAKBB	GEAKBG	GEAKS
Straight Bore (Shape A, Shape B, Shape K) GEAHB GEAHBB GEAHBG GEAHS; Straight Bore + Tap (Shape B, Shape K) GEAB GEABB GEABG GEAS; Keyway (Shape A) (19 teeth or more); Keyway + Tap (Shape B) (19 teeth or more) GEAKB GEAKBB GEAKBG GEAKS	1	*14	6	K	6~10	-	14	16	11.5	16	25	19 (B=6) 17 (B=8)	4	M4	1.92	-				-				-	-	-	-	-
		15					15	17	12.5	17					2.15	1.23									-	-	-	-
		16			6~12		16	18	13.5	18					2.38	1.36									-	-	-	-
		*17		A	6~12		17	19	14.5	19					2.62	-				-				-	-	-	-	-
		18					18	20	15.5	20					2.86	1.63									-	-	-	-
		19	8		6~10	8N	19	21	16.5	16	16	10 (B=6) 8 (B=8)			3.09	1.77												
		20					20	22	17.5						3.34	1.91												
		21			6~12	8N, 10N	21	23	18.5	18					3.59	2.05												
		22					22	24	19.5						3.85	2.19												
		*23					23	25	20.5	20					4.09	-				-				-				-
		24					24	26	21.5						4.35	2.48												
		25					25	27	22.5						4.61	2.63												
		26			6~15	8N~12N	26	28	23.5	22					4.87	2.78												
		*27					27	29	24.5	24					5.13	-				-				-				-
		28			6~17	8N~15N	28	30	25.5						5.41	3.09												
		29					29	31	26.5	26					5.65	3.23												
		30					30	32	27.5	25					5.92	3.38												
		32					32	34	29.5						6.42	3.66												
		*34					34	36	31.5	28					7.01	-				-				-				-
		35					35	37	32.5						7.28	4.15												
		36					36	38	33.5	25					7.51	4.29												
		*38			8~17		38	40	35.5				5	M5	8.08	-				-				-				-
		40					40	42	37.5	28					8.59	4.9												
		42					42	44	39.5						9.14	5.22												
		*44					44	46	41.5						9.71	-				-				-				-
		*45					45	47	42.5						10	-				-				-				-
		*46			8~20	8N~17N	46	48	43.5	30					10.29	-				-				-				-
		48		A		8N~26N	48	50	45.5		16				10.83	6.18												
		50					50	52	47.5						11.37	6.49												
		*52			8~28		52	54	49.5						11.92	-				-				-				-
		54		B		10N~26N	54	56	51.5	40					12.48	7.12												
		55					55	57	52.5						12.79	7.3												
		56					56	58	53.5						13.1	7.48												
		58					58	60	55.5						13.61	7.77												
		60	6		8~32	10N~30N	60	62	57.5						14.19	8.1												
		62			10~32	10N~30N	62	64	59.5						14.7	8.39												
		64					64	66	61.5	44					15.28	8.72												
		65					65	67	62.5						15.54	8.87												
		66					66	68	63.5						15.87	9.06												
		68					68	70	65.5						16.47	9.4												
		70			10~36	10N~34N	70	72	67.5	48					16.99	9.69												
		72					72	74	69.5						17.51	9.99												
		75					75	77	72.5						18.38	10.49												
		80			10~38	10N~36N	80	82	77.5	50					19.79	11.29												
		84			15~38	15N~36N	84	86	81.5						20.94	11.95												
		85					85	87	82.5						21.21	12.1												
		90					90	92	87.5						22.64	12.92												
		95					95	97	92.5						24.09	13.75												
		96					96	98	93.5						24.36	13.9												
		100					100	102	97.5						25.56	14.58												
		110					110	112	107.5						28.27	16.13												
		120				15N~36N	120	122	117.5	54					31.12	17.76												

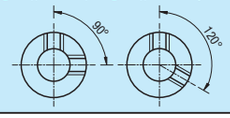
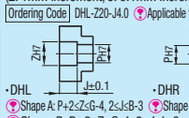
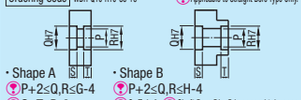
* marked number of teeth is not available for stainless steel type (GEAHS, GEAS and GEAKS). Shaft bore diameter 9N is not available for Keyway Bore + Tap. The "-" text on the above table means that any Shaft Bore Dia. is not selectable.
Specify 10K as the P dimension if keyway width of 4.0mm (height 1.8mm) for Keyway + Tap with shaft bore diameter of 10 is desired P.1532. Shaft bore diameter 6.35 is available for Straight Bore and Straight Bore + Tap.
*1. Allowable Transmission Forces in the table are reference values calculated with prescribed conditions. For conditions, see P.1534.
Calculation is performed based on 6mm of the tooth width.

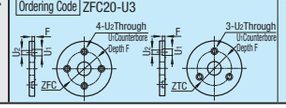
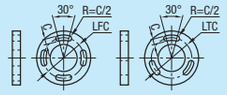
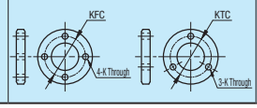
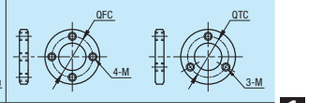
Ordering Example

Part Number	-	Number of Teeth	-	B	-	Gear Shape	-	P
GEAB1.0	-	25	-	12	-	B	-	8
GEAKB1.0	-	38	-	10	-	A	-	10N
GEAS1.0	-	18	-	6	-	K	-	10

Alterations

Part Number	-	Number of Teeth	-	B	-	Gear Shape	-	P	-	(KC90, KC120, QFC, QTC ··· etc.)
GEAB1.0	-	25	-	12	-	B	-	8	-	KC120
GEAHB1.0	-	40	-	6	-	A	-	10	-	KTC20-K4.0

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. ℓ1-ℓ2>TPC/2 M: M4, M5; TPC: M3 M5, M4 M6	Changes shaft bores to stepped bores. Not applicable to Shape K. (Z: 1mm Increment, J: 0.1mm Increment) Ordering Code DHL-Z20-J4.0 Applicable to Straight Bore Type Only.  ·DHL ·DHR Shape A: P+2≤Z≤G-4, 2≤J≤B-3 Shape B: P+2≤Z≤H-4, 2≤J≤ℓ1 Shape B: P+2≤Z≤G-4, 2≤J≤L-3	Changes shaft bores to both ends stepped hole. Not applicable to Shape K. (Q, R, S, T: 1mm Increment) Ordering Code WDH-D10-R10-S3-T3 S,T≥3 Applicable to Straight Bore Type Only.  ·Shape A ·Shape B P+2≤Q,R≤G-4 P+2≤Q,R≤H-4 S+T≤B-3 S+T≤L-3 Shaft Bore Dia. P is general tolerance.

Alterations / Code	Side Counterbored ZFC, ZTC	Side Slotted Hole LFC, LTC	Side Through Hole KFC, KTC	Side Tapped Hole QFC, QTC
Spec.	Machines counterbored holes on the side surface. (ZFC, ZTC: 1mm Increment) P+U1+3≤ZFC(ZTC)≤G-U1-4 Applicable to Shape A only. Applicable to Standard Type only. U Selection U3,U4,U5,U6 Ordering Code ZFC20-U3  U Selection: 3 6.5 3.5 3.5; 4 8 4.5 4.5; 5 9.5 5.5 5.5; 6 11 6.5 6.5	Machines slotted holes on the side surface (30°). (LFC, LTC: 1mm Increment) P+C+4≤LFC(LTC)≤G-C-4 Applicable to Shape A only. M Selection M3,M4,M5,M6 Ordering Code LFC20-M3  M: M3 3.5; M4 4.5; M5 5.5; M6 6.5	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 Mx1.5 (When B<Mx1.5, through)