



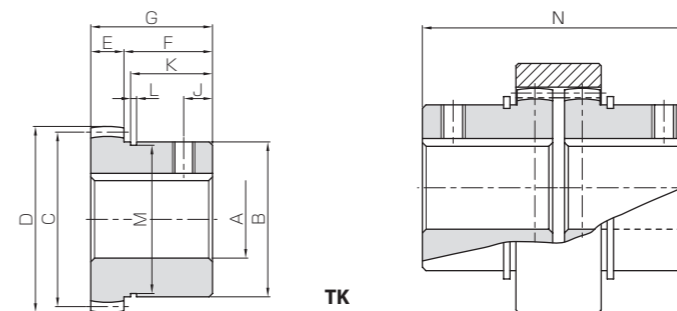
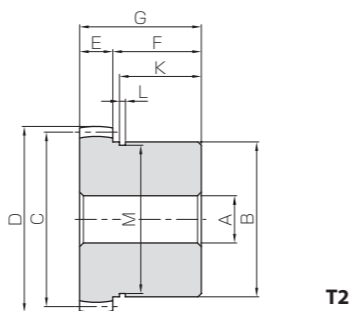
# KGC Gear Couplings (Inner hub)

Module 2 ~ 2.5

KGC



Specifications	
Gear teeth	Standard full depth (Inner hubs are Crowning)
Pressure angle	20°
Material	S45C
Heat treatment	Tooth surface induction hardened
Tooth hardness	50 ~ 60HRC
Surface treatment	Trivalent chromate



## Gear Couplings (Inner hub)

Catalog No.	Module	No. of teeth	Shape	Bore							Set Screw	
				A <sub>H8</sub>	B	C	D	E	F	G	Size	J
KGC1-12S	m2	25	T2	12	45	50	54	10	25	35	—	—
KGC1-20			TK	20							M5	10
KGC1-22			TK	22							M6	10
KGC1-25			TK	25							M6	10
KGC2-20S	m2	40	T2	20	70	80	84	15	40	55	—	—
KGC2-30			TK	30							M6	13
KGC2-32			TK	32							M10	13
KGC2-35			TK	35							M10	13
KGC2-40			TK	40							M10	13
KGC3-20S	m2.5	42	T2	20	90	105	110	20	45	65	—	—
KGC3-45			TK	45							M10	20
KGC3-50			TK	50							M10	20

C-Shaped Snap Ring Groove			Total Width of Gear Coupling N	Keyway WidthxDepth	Allowable torque (N · m) Shear strength of keyways	Allowable torque (kgf · m) Shear strength of keyways	Backlash (mm)	Weight (kg)	Catalog No.		
K	L	M									
23	1.95	42.5	73	5 x 2.3 7 x 3 7 x 3	68.7 98.1 137	7.00 10.0 14.0	0.40~0.60	0.43 0.37 0.35 0.32	KGC1-12S KGC1-20 KGC1-22 KGC1-25		
37	2.7	67		115	7 x 3 10 x 3.3 10 x 3.3 10 x 3.3	245 294 392 490		25.0 30.0 40.0 50.0	0.40~0.60	1.66 1.48 1.42 1.36 1.23	KGC2-20S KGC2-30 KGC2-32 KGC2-35 KGC2-40
42	3.2	86.5			135	12 x 3.3 12 x 3.3		785 883		80.0 90.0	0.40~0.60

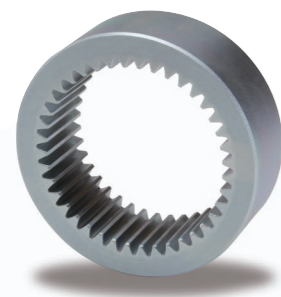
- [Caution on Product Characteristics]
- S-type products are of minimum bore depth. Keyways are made according to JIS B1301 standards, Js 9 tolerance.
  - For products with a snap ring and a tapped hole, a set screw is included as an accessory.
  - The allowable torques in the table are obtained from the shear strength of keyways. The shear strength of keyway is assumed to be 49MPa (5kgf/mm<sup>2</sup>).
  - Since trivalent-chromate treatment is applied, changes may occur in the dimensions of the bore, keyway etc., decreasing by a few μm.
- [Caution on Secondary Operations]
- Due to the gear teeth being induction hardened, no secondary operations can be performed on tooth areas including the bottom land (approx. 2 to 3 mm).



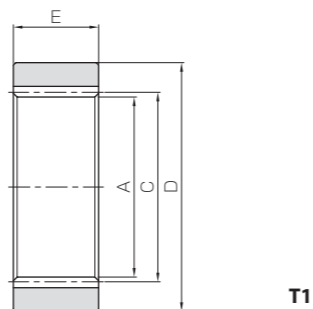
# KGC-I Gear Couplings (Outer ring)

Module 2 ~ 2.5

KGC-I



Specifications	
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Tooth surface induction hardened
Tooth hardness	50 ~ 60HRC
Surface treatment	Trivalent chromate



Catalog No.	Module	No. of teeth	Shape	Bore				Backlash (mm)	Weight (kg)
				A	C	D	E		
KGC1-I	m2	25	T1	46	50	68	25	0.40~0.60	0.33
KGC2-I	m2	40		76	80	105	36		1.03
KGC3-I	m2.5	42		100	105	145	48		2.96

- [Caution on Secondary Operations]
- Due to the gear teeth being induction hardened, no secondary operations can be performed on tooth areas including the bottom land (approx. 2 to 3 mm).

## Characteristics of Gear Couplings

- There are many ways to couple shafts to transmit power. We have developed these standardized gear couplings of our own design. They are easier to connect or disconnect than chain couplings.
- The gear teeth (inner hubs) are crowned to allow for up to 5° of shaft angle offset.
- Due to the induction hardened gear teeth, these couplings have excellent durability. All surfaces are plated (trivalent chromate).
- The units are machined complete with keyways, set screw holes and finished bores and are ready for immediate installation. We also offer minimum bore models for users who want to perform their own secondary operations.

## Gear Coupling Ordering Method

Gear coupling outer rings and inner hubs can each be purchased individually; however, normal usage requires a set of 1 outer ring and 2 inner hubs.

<E.g.> For 1 set of GC2-30 GC2-I (outer ring) x 1 piece and GC2-30 (inner hub) x 2 piece set.

## Strength of Gear Couplings

The allowable torque of the gear couplings are determined in accordance with the shear strength of the keys. Allowable shear force of keys F (N) is calculated from the following formula.

$$F = b \cdot L \cdot \sigma \cdot \frac{1}{S}$$

Additionally, allowable torques T(N · m) of the inner hubs of the gear coupling, versus shear force of keys, can be calculated from the formula below.

$$T = \frac{F \cdot d}{2000}$$

b : Key Width mm → Keyway width of inner hubs of the GC Gear Coupling  
L : Key Length mm → Set at -2 mm from the total length of the inner hub of the GC Gear Coupling

σ : Allowable Shear Force of keys → Set at 49MPa (5kgf/mm<sup>2</sup>)  
S : Safety Factor → Optionally set

d : Bore size (mm) → Bore size A of the inner hub of the GC Gear Coupling

Caution: Safety Factor (S) must be set at a value between 1 to 3, depending on the load types or the coupling displacement.