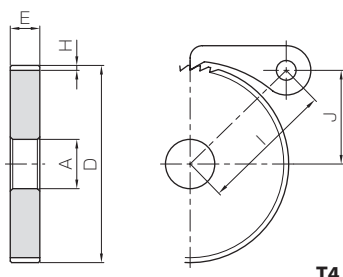
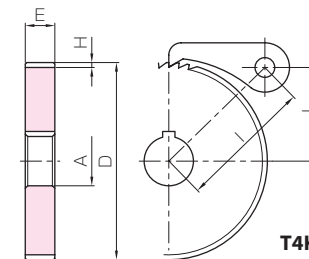




Specifications	
Angle of teeth	60°
Material	S45C
Heat treatment	Induction hardened teeth
Tooth hardness	50 ~ 60HRC
Surface treatment	Black oxide coating



T4



T4K



■ Features of Pawls and Ratchets

- A simple structure used to restrict the rotational direction in one-way.
- The tips of pawls and the teeth of ratchets are induction hardened and therefore have superior durability.

Catalog No.	Pitch	No. of teeth	Shape	Bore		Hub dia.	Outside dia.	Face width	Hub width	Total length	Depth of teeth	Center distance	Mounting distance	Allowable torque (N · m)		Weight (kg)
				A	B									Bending strength	Bending strength	
KSRT2/3-50	2.09	50	T4	10		33.3	6	6	1	33.84	15.67	3.07	0.31	0.035		
KSRT2/3-60		10			4.10										0.42	
KSRT2/3-80		12														
KSRT2/3-90		12														
KSRT2/3-100		12														
KSRT1-50	3.14	50	T4	12			60	12	12	1.6	45.48	23.4	14.7	1.50		0.16
KSRT1-60		15			19.5	1.99										
KSRT1-80		15														
KSRT1-90		15														
KSRT1-100		15														
KSRT2-30	6.28	30	T4	15				80	15	15	3.1	61.23	26.9	29.0	2.96	0.28
KSRT2-40		15			49.2	5.02										
KSRT2-50		15														
KSRT2-60		15														
KSRT3-30		9.42		30			T4									
KSRT3-40	20			158				16.1								
KSRT3-50	20															
KSRT4-30	12.57	30	T4		20		120		25	25	7.4	108.03	72.6	385	39.3	3.53
KSRT4-40		20			559	57.0										
KSRT4-50		20														

(Caution on Product Characteristics) ① Regarding KSRTB ratchets with hubs, please note the direction of teeth, viewed from the hub side. KHK can produce ratchets that have teeth pointed in the opposite direction as a custom order item.

(Caution on Secondary Operations) ① 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).

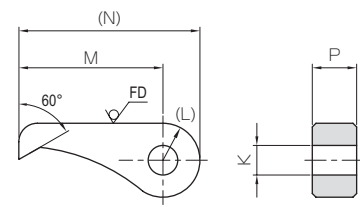
To order J Series products, please specify; Catalog No. + J + BORE

Bore	* The product shapes of J Series items are identified by background color.																	
Keyway Js9	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50
Screw size	4 x 1.8			5 x 2.3			6 x 2.8			8 x 3.3			10 x 3.3		12 x 3.3	14 x 3.8		
Catalog No.	-																	
KSRT2/3-50 J BORE	T4K	T4K	T4K															
KSRT2/3-60 J BORE	T4K	T4K	T4K	T4K	T4K	T4K	T4K											
KSRT2/3-80 J BORE			T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K								
KSRT2/3-90 J BORE			T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K							
KSRT2/3-100 J BORE			T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K					
KSRT1-50 J BORE			T4K	T4K	T4K	T4K	T4K	T4K	T4K									
KSRT1-60 J BORE				T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K							
KSRT1-80 J BORE				T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K				
KSRT1-90 J BORE				T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K		
KSRT1-100 J BORE				T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	
KSRT2-30 J BORE				T4K	T4K	T4K	T4K	T4K	T4K	T4K								
KSRT2-40 J BORE				T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K			
KSRT2-50 J BORE				T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	
KSRT2-60 J BORE				T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K
KSRT3-30 J BORE				T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K
KSRT3-40 J BORE											T4K	T4K	T4K	T4K	T4K	T4K	T4K	T4K
KSRT3-50 J BORE												T4K	T4K	T4K	T4K	T4K	T4K	T4K
KSRT4-30 J BORE													T4K	T4K	T4K	T4K	T4K	T4K
KSRT4-40 J BORE														T4K	T4K	T4K	T4K	T4K
KSRT4-50 J BORE															T4K	T4K	T4K	T4K

- (Caution on J series)
- ① As available-on-request products, requires a lead-time for shipping within 2 working-days (excludes the day ordered), after placing an order. Please allow additional shipping time to get to your local distributor.
  - ② Number of products we can process for one order is 1 to 20 units. For quantities of 21 or more pieces, we need to quote price and lead time.
  - ③ Keyways are made according to JIS B1301 standards, Js9 tolerance.
  - ④ Areas of products which have been re-worked will not be black oxide coated.



Specifications	
Angle of teeth	60°
Material	S45C
Heat treatment	Induction hardened teeth
Tooth hardness	50 ~ 60HRC
Surface treatment	Black oxide coating



\* FD has die-forged finish.

T5

Catalog No.	Shape	K	(L)	M	(N)	P	Weight (kg)
KSRT2/3-C	T5	5	(8)	30	(38)	6	0.020
KSRT1-C		8	(10)	39	(49)	12	0.057
KSRT2-C		10	(12.5)	55	(67.5)	15	0.13
KSRT3-C		12	(15)	65	(80)	20	0.23
KSRT4-C		13	(18)	80	(98)	25	0.38

- (Caution on Product Characteristics)
- ① The pawls are designed to prevent reverse rotation. They are not suitable for use as driving ratchets or driving rotation.
  - ② KSRT2/3-C is manufactured using a lost wax casting method.

■ Application

\* The illustration is a design example, not a design for machinery or a device in actual use.

Example: ratchets used for complete reverse prevention of worm gears

■ Bending Strength of Ratchets

The allowable transmission force Fb (N) of ratchets is the value calculated by the following formula.

$$F_b = \sigma_b \cdot \frac{b \cdot e^2}{6} \cdot \frac{1}{h} \cdot \frac{1}{S_F}$$

Also, the KSRT Ratchet's allowable torque (TN · m) for bending strength is calculated by the following formula.

$$T = F_b \cdot r_f$$

Where

- $\sigma_b$  : Bending stress → Assumed 225.55MPa (23kgf/mm<sup>2</sup>)
  - $b$  : Face width mm → Dimension Table ratchet face width E
  - $e$  : Root length mm
  - $r_f$  : Tooth root radius m
- $e = h \times \tan \left( 60 - \frac{360}{\text{No. of teeth}} \right)$  is the calculation
- $h$  : Depth of teeth mm → Dimension Table ratchet tooth depth H
  - $S_F$  : Safety factor → Assumed 2
  - $r_f = \frac{\text{Outside dia. } D - 2h}{2000}$