

# CUTTING TOOLS

## KNURLING

### **KNURLING**

#### **HOLDERS**

KH S	P.210
KH S1	P.210
HOLDER	P.211

#### **WHEELS**

KNS	P.210
54-S	P.211
54-R	P.211
54-L	P.211

JSR GROUP

# KNURLING

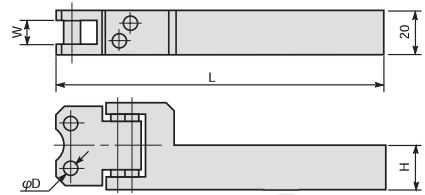
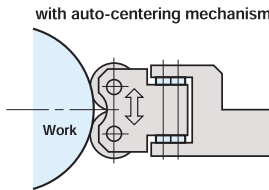
ลูกกลิ้งลาย



Knurling  
ลูกกลิ้งลาย

หัวจับลูกกลิ้ง เลื่อนอัตโนมัติ รุ่น KHS

## ROLL AUTO-SLIDING KNURLING HOLDER "KH S"



• without wheel  
• with pin for wheel installation

### For domestic standard knurling wheel : cross cut

#### Features

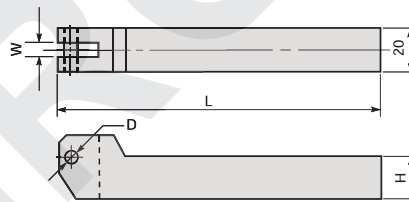
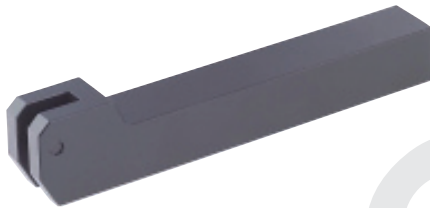
- Easy installation
- Original positioning mechanism is provided in the supporting part of the knurling wheel. The clear original position enables a easy installation to Auto and NC lathe.
- No-need for accurate positioning
- The tolerance of center is adjustable with the auto-sliding mechanism. The centering range is within +/- 2.5mm to the center position.
- Fine finish
- Up and down movement of the knurling wheel supporting part for auto-sliding knurling holder reduces the difference of rolling power between knurling wheels and even knurling processed depth.

Unit : mm

Order No.	W	D	H	L	Knurling range	Weight (g)	Applicable knurling wheel	Remarks
<b>KH S</b>	6.5	4.7	20	147	Ø10 ~ Ø250	550	KNS RL14 ~ 50	

หัวจับลูกกลิ้ง รุ่น S1

## ROLL KNURLING HOLDER "S1-MODEL"



• without wheel  
• with pin for wheel installation

### For domestic standard knurling wheel : plain cut

#### Features

Workable for domestic standard knurling wheel

Unit : mm

Order No.	W	D	H	L	Knurling range	Weight (g)	Applicable knurling wheel	Remarks
<b>KH S1</b>	6.5	4.7	20	147	Ø10 ~ Ø250	420	KNSF14 ~ F50	

ลูกกลิ้งลาย รุ่น KNS

## ROLL KNURLING WHEEL "KNS"

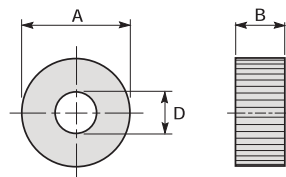


RL (Cross cut)



F (Plain cut)

(material SKS-31)



### Domestic standard knurling wheel (for holder, KH S and KH S1)

Unit : mm

Order No.		Knurls	No. of knurl per inch	Pitch	Module	External dia. A	Width B	Hold dia. D	Remarks
Cross cut (a pair)	Plain cut								
<b>KNS RL14</b>	<b>KNS F14</b>	Coarse	14	1.81	0.58	19.2	6.35	4.76	
<b>KNS RL16</b>	<b>KNS F16</b>		16	1.59	0.51				
<b>KNS RL18</b>	<b>KNS F18</b>		18	1.41	0.45				
<b>KNS RL20</b>	<b>KNS F20</b>		20	1.27	0.40				
<b>KNS RL22</b>	<b>KNS F22</b>	Medium	22	1.15	0.37				
<b>KNS RL24</b>	<b>KNS F24</b>		24	1.06	0.34				
<b>KNS RL26</b>	<b>KNS F26</b>		26	1.00	0.32				
<b>KNS RL28</b>	<b>KNS F28</b>		28	0.92	0.30				
<b>KNS RL30</b>	<b>KNS F30</b>	Fine	30	0.85	0.27				
<b>KNS RL32</b>	<b>KNS F32</b>		32	0.79	0.25				
<b>KNS RL34</b>	<b>KNS F34</b>		34	0.75	0.24				
<b>KNS RL40</b>	<b>KNS F40</b>		40	0.64	0.20				
<b>KNS RL50</b>	<b>KNS F50</b>		50	0.51	0.16				

หัวจับลูกกลิ้ง

**ROLL KNURLING HOLDER**



Knurling

ลูกกลิ้งลาย

Knurling

ลูกกลิ้งลาย

Order No.	Remarks
<b>HANDLE</b>	

**KEEP**

ลูกกลิ้งลาย

**ROLL KNURLING WHEELS**



Unit : mm

Flat	Order No.		Teeth from	Round hole	Thickness	Diameter
	R	L				
<b>54-S-16</b>	-	-	1.58	4.8	6.5	19.7
<b>54-S-20</b>	-	-	1.27			
<b>54-S-22</b>	<b>54-R-22</b>	<b>54-L-22</b>	1.54			
<b>54-S-24</b>	<b>54-R-24</b>	<b>54-L-22</b>	1.05			

## FEATURE and PROCESSING CONDITIONS of CUT KNURLING

### • FEATURE

Processing productivity is enhanced compared with the rotating forming method.  
(productivity depends on materials, processing length, applied machines, etc.)

1. The cut knurling method can be applied to difficult-to-process materials (such as copper alloy, aluminum, stainless steel, resin, and so on)
2. Expansion of the diameter of materials can be reduced to a minimum through cut knurling processing.
3. The head of the holder is designed to be minimum in size and sturdy to be as diverse as possible.
4. The load given to the machine at time of cut knurling processing is reduced enough to ensure the retention of precision of precision. Small-diameter and cylindrical materials can be processed.
5. Special ball bearings are provided between the knurling wheel and rotating axis to realize a smooth rotation and to avoid the clogging and sticking of cut chips, thereby lengthening the life of and preventing the damage to the wheel.

### • PROCESSING CONDITIONS

-Processing Conditions table (Estimated Value)

Outside diameter	Materials	Carbon Steel	Mild steel	Stainless Steel	Aluminum	Copper	Brass	Nylon resin *Remarks
		Ø3 ~ Ø12	Velocity V (m/min)	40	50	30	80	50
	Speed S' (mm/rev)	0.08	0.10	0.06	0.16	0.10	0.10	0.08
Ø12 ~ Ø50	Velocity V (m/min)	40	50	30	80	50	60	50
	Speed S' (mm/rev)	0.10	0.12	0.08	0.20	0.12	0.12	0.10
Ø50 ~ Ø250	Velocity V (m/min)	35	45	25	75	45	55	45
	Speed S' (mm/rev)	0.10	0.12	0.08	0.20	0.12	0.12	0.10

\*Caution : the figure is indicated with reference to MC nylon (MC901) and dulacon (M90-44). Please contact us for figures of other materials.

#### ① Cut Speed (Revolution Speed)

$$V_m / \text{min} = \frac{\pi \cdot D \cdot N}{1000}$$

D=Diameter of processing material  
N=No. of revolution per minute rpm

#### ② Feeding Speed

$$S_{\text{mm}} / \text{min} = N \cdot S'$$

S'=Feeding value per revolution mm  
N=No. of revolution per minute rpm

#### ③ Cutting Value

The cutting value of the cut knurling holder is based on approximately 80% of the knurling pitch.

$$TA = P \cdot 0.8 \quad P = \text{knurling pitch}$$