



KNURLING WHEEL GUIDE

Welcome to the Knurltec Knurl guide.

If you know the specification of the knurl wheel required, details of the range of products available can be found over the next page.

If the product you require is not listed or your requirement is "special" please phone and ask for Technical Assistance.

Many additional products are available, where volume orders of particular items can be made to order at competitive prices and all special applications can be quoted for.

If you are purchasing a KNURLTEC TOOL details of the knurls to fit the TOOL are noted in the Tool section, for your convenience you will note that KNURLTEC TOOLS are referenced alongside the Knurl products.

If you are new to knurling or looking at a new application please select the tool type from the KNURLTEC Art of Quality Knurling catalogue or call for advice.

Cut Knurling Versus Pressure Knurling

Cut Knurling with sharp edged knurls, actually mills the materials, CUT KNURL HOLDERS of the types K10 and K11 in the KNURLTEC range hold the knurl(s) at an angle to the workpiece producing a very high quality knurl that retains the original pre machined diameter. This method is particularly good and recommended for the knurling of non-ferrous materials such as aluminium or brass and harder metals.

Pressure Knurling to date offers more applications as is indicative of the wide choice of tools available. The main point to note is that **pressure knurling increases the diameter of the workpiece**. See the table of approximate values for your guidance. Pressure knurling can put a high load on the workpiece and in turn, onto the machine tool itself. This is reduced by using tools with opposing knurls, and in the case of small diameters triple head Knurl Tools.

APPROXIMATE INCREASE IN KNURLED DIAMETERS(mm)			
Pitch mm	Straight	Diagonal	Diamond Male
.4	.16	.16	.18
.5	.20	.20	.23
.6	.24	.24	.28
.8	.32	.32	.36
1.0	.40	.40	.45
1.2	.48	.48	.54
1.5	.60	.60	.67
1.6	.64	.64	.72
2.0	.80	.80	.90

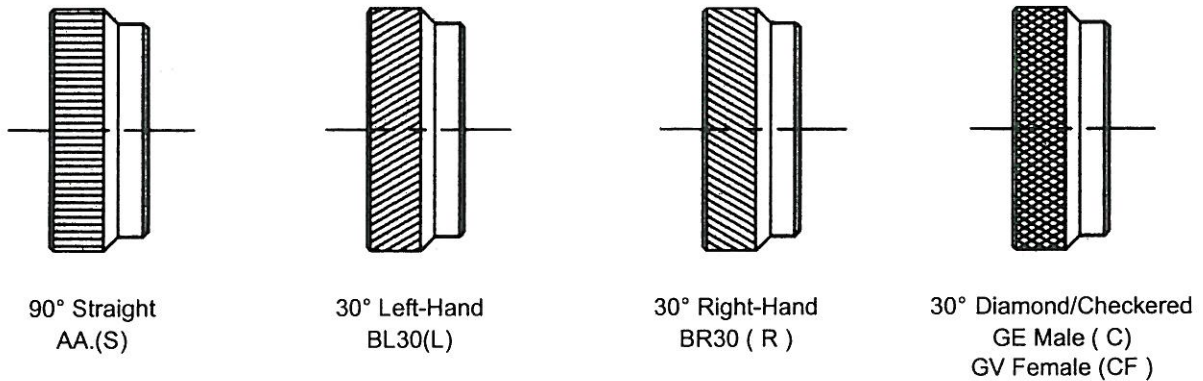
METRIC TO INCH CONVERSION OF PITCH (TPI = TEETH PER INCH)	
Standard Pitches mm	TPI Equivalent
0.4mm	63.5
0.5mm	50.8
0.6mm	42.3
0.8mm	31.8
1.0mm	25.4
1.2mm	21.2
1.5mm	16.9
1.6mm	15.9
2.0mm	12.7

All Knurls supplied in the Knurltec Range are manufactured to extremely high standards from premium quality HSS, offering very good wear resistance characteristics whilst maintaining a tough structure, essential to the Knurling process. Vacuum hardened, and tempered at least twice to a hardness, approximately 63 Rockwell C. For particularly severe Knurling applications such as usage on 303 stainless or semi-hardened steels our knurls can be provided in premium grade Hi-Cobalt Steel, in most cases providing substantial increase in tool life. Most stock knurls are furnished with a lapped tooth form to give a longer life and impart a very high quality to the component. Both sides and bore are finish ground.

Nominal	Pitch – Imperial	Pitch – Metric	<i>Pitches Available</i>								
Fine	40 (TPI)	.6	STRAIGHT								
Medium	25 (TPI)	1.0		0.5	0.6	0.8	1.0	1.2	1.5	1.6	2.0
Coarse	16 (TPI)	1.6	DIAMOND								

Commonly accepted pitches for Fine – Medium – Coarse, along with examples of metric pitches available. For the full range of forms and pitches for each knurl size see following pages. We would be pleased to quote for any type or size of knurl you may require.

Standard Knurl Forms



Pressure Knurls

Metric Pressure Knurls are supplied with a bevelled edge. Convex knurls are available. Checkered knurls do not traverse axially, these will produce a diamond pattern but better results may be obtained by using a Left and Right spiral pair in a twin wheeled holder. Counterbored knurls for tools styled for use up to a shoulder are shown above.

Imperial knurls are predominantly supplied with sharp edges but are also available bevelled. Convex knurls are extensively available in this range. Imperial knurls are noted by their standard series identification and again OD, width and bore in fractions of an inch.

Knurltec products are available to suit a wide range of metric holders including Zeus and Quick, along with most imperial holders from Jones and Shipman, Brown and Sharp and others. For metric sized knurls the OD, width and bore should be matched up with a product on the list over the page.

Cut Knurling

All Knurls are sharp.

BL30 or BR30 in a single wheel holder e.g. Knurltec K10 will produce a straight knurl whilst the AA will produce a 30° spiral. Two AA knurls in a twin wheel holder e.g. Knurltec K11 will produce a diamond pattern whilst the BL15 and BR15 pair will produce a cross pattern.

Metric “Cut” Knurls 90° Form with sharp corners

Knurl type	OD	W	ID	Pitches available: AA,BL30,BR30,BL15*,BR15*	Knurltec Reference	Other Manufacturers
KW1435*	14.50	3.00	5.00	0.4/0.5/0.6/0.7/0.8/1.0/1.2	K10 K11	Quick
KW1548	15.00	4.00	8.00	0.4/0.5/0.6/0.8/1.0/1.2		Zeus
KW215-*	21.50	5.00	8.00	0.4/0.5/0.6/0.7/0.8/1.0/1.2/1.4/1.5/1.6/1.8/2.0	K10 K11	Quick
KW2568	25.00	6.00	8.00	0.4/0.5/0.6/0.8/1.0/1.2/1.5/1.6/2.0		Zeus

Metric “Pressure” Knurls 90° Form with bevelled edges

Knurl type	OD	W	ID	Pitches available in 90° Straight, 30° L/R	Knurltec Reference	Other Manufacturers
KW1044	10.00	4.00	4.00	0.3/0.4/0.5/0.6/0.7/0.8/1.0/1.2	M6	Zeus
KW1054	10.00	5.00	4.00	0.4/0.5/0.6/0.7/0.8/1.0/1.2	M6	
KW1544	15.00	4.00	4.00	0.5/0.6/0.8/1.0/1.2/1.5		Zeus
KW1555	15.00	5.00	5.00	0.4/0.5/0.6/0.7/0.8/1.0/1.2	M6	
KW1564	15.00	6.00	4.00	0.5/0.6/0.8/1.0/1.2/1.5		Zeus
KW1565	15.00	6.00	5.00	0.4/0.5/0.6/0.7/0.8/1.0/1.2	M6	
KW168-	16.00	7.50	6.35	0.6/0.8/1.0/1.2/1.5	K3	
KW196-	19.00	6.25	6.35	0.5/0.6/0.8/1.0/1.2/1.5	K2	
KW2066	20.00	6.00	6.00	0.5/0.6/0.8/1.0/1.2/1.5	M6 R2	Zeus
KW2086	20.00	8.00	6.00	0.5/0.6/0.8/1.0/1.2/1.5	M2 M3 M6	Zeus
KW20A6	20.00	10.00	6.00	0.4/0.5/0.6/0.7/0.8/1.0/1.2/1.4/1.5/1.6/1.8/2.0	M6	
KW2586	25.00	8.00	6.00	0.4/0.5/0.6/0.7/0.8/1.0/1.2/1.4/1.5/1.6/1.8/2.0		Zeus
KW2588	25.00	8.00	8.00	0.4/0.5/0.6/0.7/0.8/1.0/1.2/1.4/1.5/1.6/1.8/2.0	K6 K7	
KW25A8	25.00	10.00	8.00	0.4/0.5/0.6/0.7/0.8/1.0/1.2/1.4/1.5/1.6/1.8/2.0	K6 K7 M12	
KW25C8	25.00	12.00	8.00	0.4/0.5/0.6/0.7/0.8/1.0/1.2/1.4/1.5/1.6/1.8/2.0	K6 K7	

Counterbored Metric Pressure Knurls for “Up to Shoulder” tools.

Knurl type	OD	W	ID	Pitches available in 90° Straight, 30° L/R	Knurltec Reference	Other Manufacturers
KW255-	25.00	10.00	11/15	0.6/0.8/1.0/1.2/1.45/1.6/1.85/2.0	K8 K9	
KW256-	25.00	10.00	16/20	0.6/0.8/1.0/1.2/1.5	K4 K5	
KW208	25.00	8.00	10/12	0.5/0.6/0.8/1.0/1.2/1.6/2.0		Zeus

Inch “Pressure” Knurls 90° Form with sharp edges (Option for Bevelled Edges)

Knurl type	OD	W	ID	Pitches Available in 90° Straight See Guide Page for other forms	Knurltec Reference	Other Manufacturers
BP-...	5/16	5/32	1/8	20/25/30/35/40/50/60/70/80/90/100	M12 R5	Numerous
EP-...	1/2	3/16	3/16	16/20/25/30/32/35/40/41/47/50/53/60/70/80	M12 R5	
GK-...	5/8	1/4	1/4	12/16/19/20/24/25/29/30/32/35/40/41/47/50/80	M12 R5	
KN-...	3/4	1/4	1/4	10/12/14/16/19/20/24/25/29/30/35/40/41/50/80		
KP-...	3/4	3/8	1/4	08/10/12/14/16/20/21/25/30/33/35/40/50/80	R5	
KR-...	3/4	1/2	1/4	16/20/25/30		
PH-...	1-1/4	1/2	1/2	12/16/20/25/30		

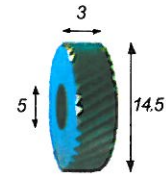
Note

- Where possible ATM will match quotations for goods of equal type and quality
- This is only a small part of the range of Knurls available – we can provide excellent prices on reasonable volume orders for almost any type of Knurl
- Specials quoted

Metric Cut Knurls

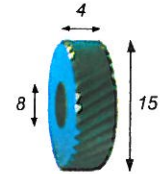


FORM	PITCHES AVAILABLE											
	.4	.5	.6	.7	.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0
AA-	04S	05S	06S	07S	08S	10S	12S	-	-	-	-	-
BL30-	04L	05L	06L	07L	08L	10L	12L	-	-	-	-	-
BR30-	04R	05R	06R	07R	08R	10R	12R	-	-	-	-	-
BL15-	04L15	05L15	06L15	07L15	08L15	10L15	12L15	-	-	-	-	-
BR15-	04R15	05R15	06R15	07R15	08R15	10R15	12R15	-	-	-	-	-



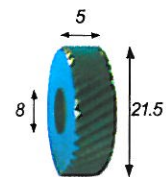
**KW
1435**

AA-	04S	05S	06S	-	08S	10S	12S	-	-	-	-	-
BL30-	04L	05L	06L	-	08L	10L	12L	-	-	-	-	-
BR30-	04R	05R	06R	-	08R	10R	12R	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-



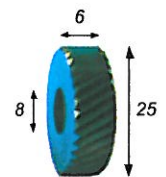
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AA-	04S	05S	06S	07S	08S	10S	12S	14S	15S	16S	18S	20S
BL30-	04L	05L	06L	07L	08L	10L	12L	14L	15L	16L	18L	20L
BR30-	04R	05R	06R	07R	08R	10R	12R	14R	15R	16R	18R	20R
BL15-	04L15	05L15	06L15	07L15	08L15	10L15	12L15	14L15	15L15	16L15	18L15	20L15
BR15-	04R15	05R15	06R15	07R15	08R15	10R15	12R15	14R15	15R15	16R15	18R15	20R15



**KW
216**

AA-	04S	05S	06S	-	08S	10S	12S	-	15S	16S	-	20S
BL30-	04L	05L	06L	-	08L	10L	12L	-	15L	16L	-	20L
BR30-	04R	05R	06R	-	08R	10R	12R	-	15R	16R	-	20R
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-

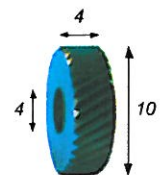


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2568**

Metric Pressure Knurls

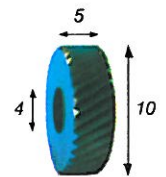


FORM	PITCHES AVAILABLE											
	.4	.5	.6	.7	.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0
AA-	04S	05S	06S	07S	08S	10S	12S	-	-	-	-	-
BL30-	04L	05L	06L	07L	08L	10L	12L	-	-	-	-	-
BR30-	04R	05R	06R	07R	08R	10R	12R	-	-	-	-	-
GE30-	04C	05C	06C	07C	08C	10C	12C	-	-	-	-	-
GE30-	04F	05F	06F	07F	08F	10F	12F	-	-	-	-	-



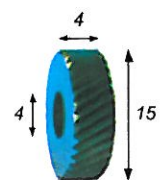
**KW
1044**

AA-	04S	05S	06S	07S	08S	10S	12S	-	-	-	-	-
BL30-	04L	05L	06L	07L	08L	10L	12L	-	-	-	-	-
BR30-	04R	05R	06R	07R	08R	10R	12R	-	-	-	-	-
GE30-	04C	05C	06C	07C	08C	10C	12C	-	-	-	-	-
GV30-	04F	05F	06F	07F	08F	10F	12F	-	-	-	-	-



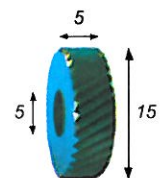
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1054**

AA-	-	05S	06S	-	08S	10S	12S	-	15S	-	-	-
BL30-	-	05L	06L	-	08L	10L	12L	-	15L	-	-	-
BR30-	-	05R	06R	-	08R	10R	12R	-	15R	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-



**KW
1544**

AA-	04S	05S	06S	07S	08S	10S	12S	-	-	-	-	-
BL30-	04L	05L	06L	07L	08L	10L	12L	-	-	-	-	-
BR30-	04R	05R	06R	07R	08R	10R	12R	-	-	-	-	-
GE30-	04C	05C	06C	07C	08C	10C	12C	-	-	-	-	-
GV30-	04F	05F	06F	07F	08F	10F	12F	-	-	-	-	-



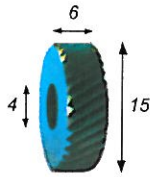
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1555**

All knurls are available from high quality High Speed Steel (HSS) with the option for Titanium Nitride (TiN).

Cut knurls are available to a premium quality using High Cobalt Steel with the finest Tooth Profiles.

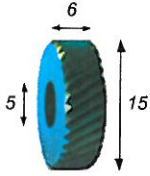
Other coatings are available upon request.

KW 1564



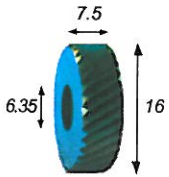
FORM	PITCHES AVAILABLE											
	.4	.5	.6	.7	.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0
AA-	-	05S	06S	07S	08S	10S	12S	-	15S	-	-	-
BL30-	-	05L	06L	07L	08L	10L	12L	-	15L	-	-	-
BR30-	-	05R	06R	07R	08R	10R	12R	-	15R	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-

KW 1565



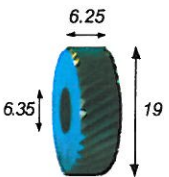
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BL30-	04L	05L	06L	07L	08L	10L	12L	-	-	-	-	-
BR30-	04R	05R	06R	07R	08R	10R	12R	-	-	-	-	-
GE30-	04C	05C	06C	07C	08C	10C	12C	-	-	-	-	-
GV30-	04F	05F	06F	07F	08F	10F	12F	-	-	-	-	-

KW 168



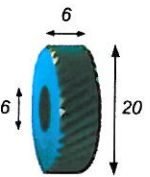
AA-	-	-	06S	-	08S	10S	12S	-	15S	-	-	-
BL30-	-	-	06L	-	08L	10L	12L	-	15L	-	-	-
BR30-	-	-	06R	-	08R	10R	12R	-	15R	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-

KW 196



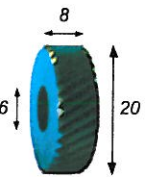
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BL30-	-	-	-	-	-	-	-	-	-	-	-	-
BR30-	-	-	-	-	-	-	-	-	-	-	-	-
GE30-	-	05C	06C	-	08C	10C	12C	-	15R	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-

KW 2066



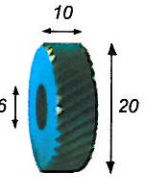
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BL30-	04L	05L	06L	07L	08L	10L	12L	14L	15L	16L	18L	20L
BR30-	04R	05R	06R	07R	08R	10R	12R	14R	15R	16R	18R	20R
GE30-	04C	05C	06C	07C	08C	10C	12C	14C	15C	16C	18C	20C
GV30-	04F	05F	06F	07F	08F	10F	12F	14F	15F	16F	18F	20F

KW 2086



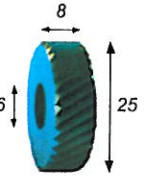
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BL30-	04L	05L	06L	07L	08L	10L	12L	14L	15L	16L	18L	20L
BR30-	04R	05R	06R	07R	08R	10R	12R	14R	15R	16R	18R	20R
GE30-	04C	05C	06C	07C	08C	10C	12C	14C	15C	16C	18C	20C
GV30-	04F	05F	06F	07F	08F	10F	12F	14F	15F	16F	18F	20F

KW 20A6



AA-	04S	05S	06S	07S	08S	10S	12S	14S	15S	16S	18S	20S
BL30-	04L	05L	06L	07L	08L	10L	12L	14L	15L	16L	18L	20L
BR30-	04R	05R	06R	07R	08R	10R	12R	14R	15R	16R	18R	20R
GE30-	04C	05C	06C	07C	08C	10C	12C	14C	15C	16C	18C	20C
GV30-	04F	05F	06F	07F	08F	10F	12F	14F	15F	16F	18F	20F

KW 2586



AA-	-	05S	06S	-	08S	10S	12S	-	15S	-	-	-
BL30-	-	05L	06L	-	08L	10L	12L	-	15L	-	-	-
BR30-	-	05R	06R	-	08R	10R	12R	-	15R	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-

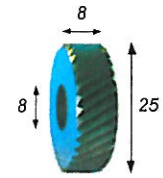
All knurls are available from high quality High Speed Steel (HSS) with the option for Titanium Nitride (TiN). Other coatings are available upon request.

Metric Pressure Knurls



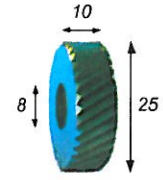
PITCHES AVAILABLE

FORM	.4	.5	.6	.7	.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0
AA-	04S	05S	06S	07S	08S	10S	12S	14S	15S	16S	18S	20S
BL30-	04L	05L	06L	07L	08L	10L	12L	14L	15L	16L	18L	20L
BR30-	04R	05R	06R	07R	08R	10R	12R	14R	15R	16R	18R	20R
GE30-	04C	05C	06C	07C	08C	10C	12C	14C	15C	16C	18C	20C
GV30-	04F	05F	06F	07F	08F	10F	12F	14F	15F	16F	18F	20F



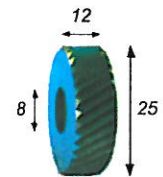
**KW
2588**

FORM	.4	.5	.6	.7	.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0
AA-	04S	05S	06S	07S	08S	10S	12S	14S	15S	16S	18S	20S
BL30-	04L	05L	06L	07L	08L	10L	12L	14L	15L	16L	18L	20L
BR30-	04R	05R	06R	07R	08R	10R	12R	14R	15R	16R	18R	20R
GE30-	04C	05C	06C	07C	08C	10C	12C	14C	15C	16C	18C	20C
GV30-	04F	05F	06F	07F	08F	10F	12F	14F	15F	16F	18F	20F



**KW
25A8**

FORM	.4	.5	.6	.7	.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0
AA-	04S	05S	06S	07S	08S	10S	12S	14S	15S	16S	18S	20S
BL30-	04L	05L	06L	07L	08L	10L	12L	14L	15L	16L	18L	20L
BR30-	04R	05R	06R	07R	08R	10R	12R	14R	15R	16R	18R	20R
GE30-	04C	05C	06C	07C	08C	10C	12C	14C	15C	16C	18C	20C
GV30-	04F	05F	06F	07F	08F	10F	12F	14F	15F	16F	18F	20F



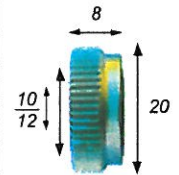
**KW
25C8**

Counterbored Metric Pressure Knurls



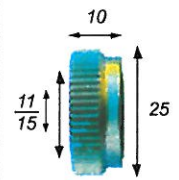
PITCHES AVAILABLE

FORM	.4	.5	.6	.7	.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0
AA-	-	05S	06S	-	08S	10S	12S	-	-	16S	-	20S
BL30-	-	05L	06L	-	08L	10L	12L	-	-	16L	-	20L
BR30-	-	05R	06R	-	08R	10R	12R	-	-	16R	-	20R
GE30-	-	-	-	-	-	-	-	-	-	-	-	-
GV30-	-	-	-	-	-	-	-	-	-	-	-	-



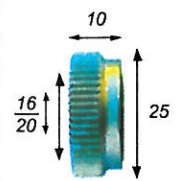
**KW
208**

FORM	.4	.5	.6	.7	.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0
AA-	04S	05S	06S	07S	08S	10S	12S	14S	15S	16S	18S	20S
BL30-	04L	05L	06L	07L	08L	10L	12L	14L	15L	16L	18L	20L
BR30-	04R	05R	06R	07R	08R	10R	12R	14R	15R	16R	18R	20R
GE30-	04C	05C	06C	07C	08C	10C	12C	14C	15C	16C	18C	20C
GV30-	04F	05F	06F	07F	08F	10F	12F	14F	15F	16F	18F	20F



**KW
255**

FORM	.4	.5	.6	.7	.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0
AA-	-	-	06S	-	08S	10S	12S	-	15S	-	-	-
BL30-	-	-	06L	-	08L	10L	12L	-	15L	-	-	-
BR30-	-	-	06R	-	08R	10R	12R	-	15R	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-



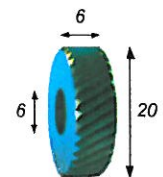
**KW
256**

Convex Metric Pressure Knurls



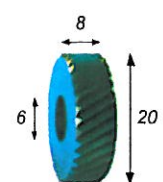
PITCHES AVAILABLE

FORM	.4	.5	.6	.7	.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0
AA-	04S	05S	06S	-	08S	10S	12S	-	15S	16S	-	20S
BL30-	04L	05L	06L	-	08L	10L	12L	-	15L	16L	-	20L
BR30-	04R	05R	06R	-	08R	10R	12R	-	15R	16R	-	20R
-	-	-	-	-	-	-	-	-	-	-	-	-
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**KC
2066**

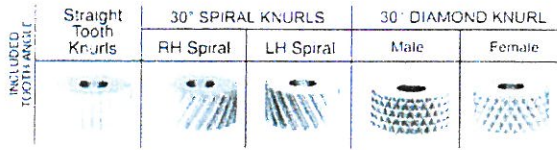
FORM	.4	.5	.6	.7	.8	1.0	1.2	1.4	1.5	1.6	1.8	2.0
AA-	-	05S	06S	-	08S	10S	12S	-	15S	-	-	20S
BL30-	-	05L	06L	-	08L	10L	12L	-	15L	-	-	20L
BR30-	-	05R	06R	-	08R	10R	12R	-	15R	-	-	20R
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-



**KC
2086**

All knurls are available from high quality High Speed Steel (HSS) with the option for Titanium Nitride (TiN). Other coatings are available upon request. Convex knurls are TiN coated as standard.

Series	O/D	Width	I/D
BP	5/16	5/32	1/8
EP	1/2	3/16	3/16
GK	5/8	1/4	1/4
KN	3/4	1/4	1/4
KP	3/4	3/8	1/4
KR	3/4	1/2	1/4
PH	1 1/4	1/2	1/2



S Straight Tooth
 R R.H Spiral 30°
 L L.H Spiral 30°
 M Male Diamond 30°
 F Female Diamond 30°

TPI	Included tooth angle = 90°																	Included tooth angle = 70°									
	208	210	212	214	216	219	220	221	224	225	229	230	232	233	235	240	241	247	435	440	450	453	460	470	480	490	500
BPS																											
BPR																											
BPL																											
BPM																											
BPF																											
EPS																											
EPR																											
EPL																											
EPM																											
EPF																											
GKS																											
GKR																											
GKL																											
GKM																											
GKF																											
KNS																											
KNR																											
KNL																											
KNM																											
KNF																											
KPS																											
KPR																											
KPL																											
KPM																											
KPF																											
KRS																											
KRR																											
KRL																											
KRM																											
KRF																											
PHS																											
PHR																											
PHL																											
PHM																											
PHF																											
TPI	208	210	212	214	216	219	220	221	224	225	229	230	232	233	235	240	241	247	435	440	450	453	460	470	480	490	500

- Item available as standard knurl in HSS, Hi-Cobalt option
- ⊙ Item available as standard knurl in HSS or convex in Hi-Cobalt steel with TiN option

When ordering standard knurls e.g. **GKS 225**
 When ordering convex knurl add V. e.g. **KNRV 240**