KENNEDY QUALITY INDUSTRIAL TOOLING HSS-Co 5% KC3 3* Flute Throwaway Milling Cutters

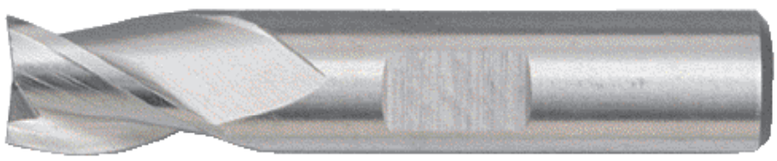
Suitable for slot drilling and end milling. Cutters are held in adaptors/chucks by the action of a set screw which locates on the shank flat giving quick and easy cutter change.

*Except: 1mm cutters, 2mm and 1/16" ball nose cutters all of which have two flutes.

Tolerances		
Diameter Metric	Tolerance +	-
Over 1.00 ~ up to 3.00	0.013	0.033
Over 3.00 ~ up to 6.00	0.020	0.020

Short Series

HSS-Co 5%

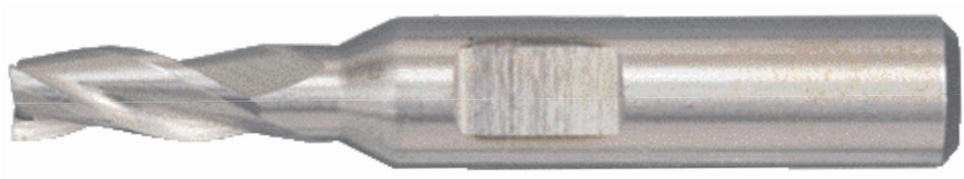


Shank Diameter: 1.00 ~ 6.00 = 6.00mm, 7.00 ~ 10.00 = 10.00mm

Diameter (mm)	Flute Length	Overall Length	Chuck Clearance	Weight each	Order Code KEN-062
1.00	2.0	24.5	8.5	10g	**-0010K**
1.50	2.5	24.5	8.5	10g	**-0020K**
2.00	3.0	25.5	9.5	10g	**-0040K**
3.00	4.5	28.0	11.0	10g	**-0080K**
4.00	6.5	32.5	12.5	10g	**-0120K**
5.00	7.5	36.0	13.5	10g	**-0160K**
6.00	9.5	36.0	15.0	10g	**-0200K**

Long Series

HSS-Co 5%



Diameter (mm)	Flute Length	Overall Length	Chuck Clearance	Weight each	Order Code KEN-062
2.00	4.5	29.0	11.0	10g	**-1040K**
3.00	7.5	34.0	14.5	10g	**-1080K**
3.50	8.5	36.5	15.0	10g	**-1100K**
4.00	9.5	39.0	16.0	10g	**-1120K**
5.00	12.5	44.5	17.5	10g	**-1160K**
6.00	16.0	44.5	20.5	10g	**-1200K**

HSS-Co 5% TiCN-Coated Throwaway Milling Cutters

HSS-Co 5% TiCN

With a micro hardness of 3000HV and a maximum working temperature of 400°C, giving them a better resistance to abrasive wear than TiN coated cutters.

Short Series

Diameter (mm)	Flute Length	Overall Length	Chuck Clearance	Weight each	Order Code KEN-062
1.00	2.0	24.5	8.5	10g	**-5010K**
1.50	2.5	24.5	8.5	10g	**-5020K**
2.00	3.0	25.5	9.5	10g	**-5040K**
2.50	4.0	26.0	10.5	10g	**-5060K**
3.00	4.5	28.0	11.0	10g	**-5080K**
4.00	6.5	32.5	12.5	10g	**-5120K**
5.00	7.5	36.0	13.5	10g	**-5160K**
6.00	9.5	36.0	15.0	10g	**-5200K**

KENNEDY QUALITY INDUSTRIAL TOOLING HSS-Co 5% KC3 3* Flute Throwaway Milling Cutters

Suitable for slot drilling and end milling. Cutters are held in adaptors/chucks by the action of a set screw which locates on the shank flat giving quick and easy cutter change.

*Except: 1mm cutters, 2mm and 1/16" ball nose cutters all of which have two flutes.

Set Contents: short series 1, 2, 3, 4, 5 and 6mm, long series 2, 3, 4, 5 and 6mm.

HSS-Co 5%

11 PIECES

Number of Pieces	Weight each	Order Code KEN-062	List
11	100g	**-9000K**	

Carbide Plain Shank Ripper Fine Pitch

CARBIDE Q-Coat

Centre cutting. To **Manufacturers Standards.** Cutting diameter to **e8**. Shank diameter to **h6**.
RFQ-3*PR Carbide Q-Coat.
*Number varies according to the number of flutes.

Series 82 - Regular Length Dimensions to **DIN 844**

RFQ-3PR Q-Coat

Diameter (mm)	Flute Length	Overall Length	Shank Diameter	Number of Flutes	Order Code SWT-165
6.00	16.0	57.0	6.0	3.0	**-8206A**
8.00	16.0	63.0	8.0	3.0	**-8208A**
10.00	22.0	72.0	10.0	4.0	**-8210A**
12.00	26.0	83.0	12.0	4.0	**-8212A**
16.00	32.0	92.0	16.0	4.0	**-8216A**
20.00	38.0	104.0	20.0	4.0	**-8220A**

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SHERWOOD QUALITY CUTTING TOOLS HSS Threaded Shank Dovetail Cutters (Single Angle Cutters)

Designed to produce dovetail slideways in machine tool tables, jigs and fixtures. Bright finish, straight helix.
Made to **DIN 1833**. Shank to **DIN 1835D**.

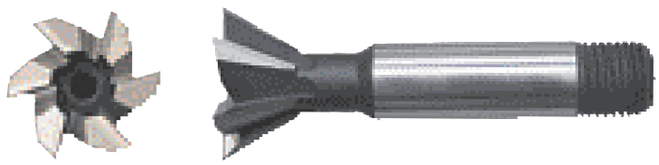
HSS

Metric Limits of Tolerance	Inch Limits of Tolerance
+0.25 - 0.00	+0.010 - 0.000

45° Corner Angle - Metric (Form C)

Diameter (mm)	Cut Length (mm)	Shank Dia. (mm)	Overall Length (mm)	Number of Teeth	Order Code **SHR-061**
13.0	3.0	12.0	63.5	6	**-6200A**
16.0	4.0	12.0	66.5	6	**-6201B**
19.0	5.5	12.0	66.5	6	**-6202C**

60° Corner Angle - Metric (Form C)

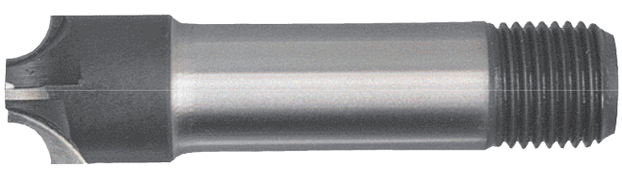


Diameter (mm)	Cut Length (mm)	Shank Dia. (mm)	Overall Length (mm)	Number of Teeth	Order Code **SHR-061**
13.0	4.0	12.0	63.5	6	**-6150A**
16.0	5.5	12.0	66.5	6	**-6151B**
19.0	7.0	12.0	66.5	6	**-6152C**
25.0	12.0	12.0	70.0	8	**-6154E**

HSS Threaded Shank Corner Rounding Cutters

HSS

Designed to produce convex corner radii. For milling structural, carburizing and heat treated steel up to 900N/mm².
Manufactured to works standards.
5° RH Flutes.
Bright finish, straight helix.
Radii tolerance: ± 0.005".
Shank to **DIN 1835/D**.



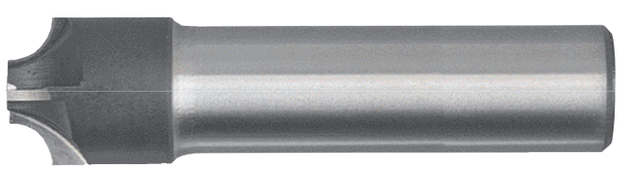
Metric Sizes

Radius (mm)	Head Dia. (mm)	Shank Dia. (mm)	Overall Length (mm)	Number of Teeth	Weight each	Order Code **SHR-061**
2.0	12.0	12.0	60.5	4	50g	**-6408Z**
3.0	12.0	12.0	60.5	4	50g	**-6410A**
4.0	14.0	12.0	60.5	4	54g	**-6411B**
5.0	16.0	16.0	60.5	4	86g	**-6412C**
6.0	22.0	16.0	63.5	4	109g	**-6413D**
8.0	25.0	25.0	73.0	4	250g	**-6414E**
10.0	28.0	25.0	79.5	4	272g	**-6415F**
12.0	35.0	25.0	82.5	4	325g	**-6416G**

HSS Plain Shank Corner Rounding Cutters

HSS

Designed to produce convex corner radii. For milling structural, carburising and heat treated steel up to 900N/mm².
Manufactured to works standards.
5° RH Flutes.
Bright finish, straight helix.
Radii tolerance: ± 0.005".



Metric Sizes

Radius (mm)	Head Dia. (mm)	Shank Dia. (mm)	Overall Length (mm)	Number of Teeth	Weight each	Order Code **SHR-061**
2.0	12.0	12.0	60.5	4	50g	**-4408Z**
3.0	12.0	12.0	60.5	4	50g	**-4410A**
4.0	14.0	12.0	60.5	4	54g	**-4411B**
5.0	16.0	16.0	60.5	4	86g	**-4412C**
6.0	22.0	16.0	63.5	4	109g	**-4413D**
8.0	25.0	25.0	73.0	4	250g	**-4414E**

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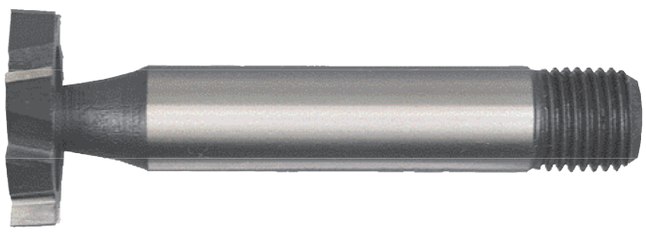
SHERWOOD QUALITY CUTTING TOOLS HSS Threaded Shank Woodruff Cutters

HSS

12mm/½" Shank Ø
Produces closed slots for woodruff keys to **DIN 6888**.
For milling structural, carburising and heat treated steel up to 900N/mm².
Manufactured to **BS 122 : Part 4 : 1980**.
Made to **DIN 850.** Shank to **DIN 1835/D**.

Metric Limits of Tolerances		
Diameter + 0.000		-0.127
Width		
2 up to 4	- 0.014	-0.028
4 up to 7	- 0.020	-0.038
7mm up	- 0.025	-0.047

Inch Limits of Tolerance		
Diameter		+0.015" -0.100"
Width	+0.000"	-0.001"



Metric Sizes

Diameter (mm)	Width (mm)	Overall Length (mm)	Weight each	Order Code SHR-061
10.5	2.0	57.0	44g	**-6500A**
13.5	3.0	57.0	45g	**-6505F**

HSS Plain Shank Woodruff Cutters

HSS

12mm/½" Shank Ø
Produces closed slots for woodruff keys to **DIN 6888**.
For milling structural, carburising and heat treated steel up to 900N/mm².
Manufactured to **BS 122 : Part 4 : 1980**.
Made to **DIN 850**.

Metric Limits of Tolerances		
Diameter + 0.000		-0.127
Width		
2 up to 4	- 0.014	-0.028
4 up to 7	- 0.020	-0.038
7mm up	- 0.025	-0.047

Metric Sizes

Diameter (mm)	Width (mm)	Overall Length (mm)	Weight each	Order Code SHR-061
10.5	2.0	57.0	44g	**-4500A**
10.5	3.0	57.0	44g	**-4502C**
13.5	3.0	57.0	45g	**-4505F**
16.5	4.0	57.0	46g	**-4509K**
16.5	5.0	57.0	46g	**-4510L**

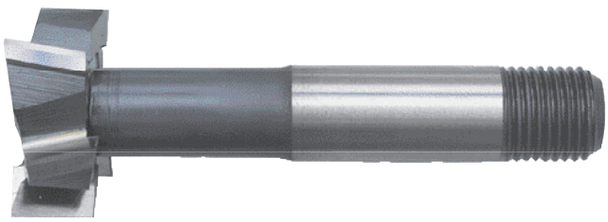
HSS Threaded Shank T-Slot Cutters

HSS

Used for machining T-slots on slide tables, fixtures etc. to **DIN 650**. For milling structural, carburising and heat treated steel up to 900N/mm². Sizes up to 16mm and ½" have six flutes and 18mm and ⅝" upwards have eight flutes.
Made to **DIN 851**. Shank to **DIN 1835/D**.

Flute form 12° RH/LH

Metric Limits of Tolerance	Inch Limits of Tolerance
Diameter +0.13 - 0.13	Diameter +0.005" - 0.005"
Length +0.13 - 0.13	Length +0.005" - 0.005"



Metric Sizes

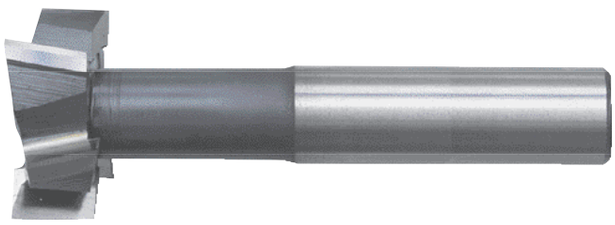
Bolt Size	Head Depth (mm)	Diameter (mm) Cutter	Shank	Neck	Overall Length (mm)	Weight each	Order Code SHR-061
M6.0	6.0	12.5	10.0	5.0	57.0	36g	**-6550A**
M8.0	8.0	16.0	10.0	6.5	62.0	41g	**-6551B**
M10.0	8.0	18.0	12.0	8.0	65.0	50g	**-6552C**
M12.0	10.0	22.0	12.0	10.0	74.0	52g	**-6553D**

HSS Plain Shank T-Slot Cutters

HSS

Used for machining T-slots on slide tables, fixtures etc.
to **DIN 650**. For milling structural, carburising and heat treated steel up to 900N/mm². Sizes up to 16mm and ½" have six flutes and 18mm and ⅝" upwards have eight flutes.
Made to **DIN 851**.

Flute form 12° RH/LH Metric Limits of Tolerance	
Diameter +0.13 - 0.13	
Length +0.13 - 0.13	



Metric Sizes

Bolt Size	Head Depth (mm)	Diameter (mm) Cutter	Shank	Neck	Overall Length (mm)	Weight each	Order Code SHR-061	Price/ 1
M6.0	6.0	12.5	10.0	5.0	57.0	36g	**-4550A**	
M8.0	8.0	16.0	10.0	6.5	62.0	41g	**-4551B**	
M10.0	8.0	18.0	12.0	8.0	65.0	50g	**-4552C**	
M12.0	10.0	22.0	12.0	10.0	74.0	52g	**-4553D**	
M14.0	11.0	25.0	16.0	12.0	82.0	84g	**-4554E**	
M16.0	12.0	28.0	16.0	13.0	85.0	159g	**-4555F**	

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YAMALOY YAMALOY TOOLING • JAPAN Speed Recommendations for Yamaloy Milling Inserts

Use the following table with the specific feed rates of the cutter used (found on the specific cutter page). Feed rates may vary according to work material and machine conditions but the following can be used as a general guide.

Steel Group	**Materials** Colour Defines Similar Machineability	Brinell Hardness HB	Rockwell Hardness HRC	Tensile Strength N/mm²	Speed M/min					
					K20	QK25C	QP25/ QP30P	QP30P	QP40	QX530
1.1	Mild, soft and free machining non-alloy low carbon steels	up to 130	-	up to 400	-	-	140 - 200	180 - 250	80 - 50	150 - 200
1.2	Non-alloy, case hardening, structural and low to medium carbon steels	up to 200	-	up to 700	-	-	130 - 180	150 - 230	75 - 110	130 - 180
1.3	Non-alloy, plain and medium carbon steels and castings	up to 260	up to 26	up to 850	-	-	130 - 160	140 - 210	75 - 95	110 - 150
1.4	Generally low to medium alloy steels and castings	up to 260	up to 26	up to 850	-	-	120 - 160	130 - 200	70 - 90	110 - 140
1.5	Medium to high alloy steels, tool steels and castings	from 260 up to 340	from 26 up to 48	from 850 up to 1200	-	-	110 - 150	120 - 180	65 - 85	100 - 120
1.6	Heat treated alloy steels and castings	up to 230	up to 20	from 1200 up to 1500	-	-	80 - 120	110 - 150	60 - 80	70 - 90
2.1	Soft and generally easy to machine ferritic and martensitic stainless steels and castings	up to 290	up to 30	up to 800	-	-	130 - 180	150 - 200	70 - 100	80 - 120
2.2	Medium strength and easy to machine austenitic stainless steels and castings	up to 340	up to 36	up to 1000	-	-	120 - 170	130 - 180	70 - 100	60 - 100
2.3	Hard and generally difficult to machine ferritic and austenitic (duplex) stainless steels and castings	up to 180	-	up to 1200	-	-	-	40 - 50	25 - 40	50 - 90
3.1	Grey cast iron Hardness - soft to medium	from 180 up to 300	-	-	120 - 150	150 - 250	-	-	-	-
3.2	Grey cast iron Hardness - medium to hard	up to 220	-	-	90 - 130	120 - 200	-	-	-	-
3.3	Malleable and nodular iron - soft to medium	from 220 to 300 max	-	-	80 - 110	150 - 250	-	-	-	-
3.4	Malleable and nodular iron - medium to hard	-	-	-	70 - 100	120 - 200	-	-	-	-
4.1	Pure titanium (also pure nickel)	-	-	up to 700	200 - 300	-	-	-	-	-
4.2	Titanium alloys of a medium and hard nature	-	-	up to 900	50 - 80	-	-	-	-	-
4.3	Titanium alloys of a hard and very hard nature	-	-	from 900 up to 1250	20 - 50	-	-	-	-	-
5.1	Heat resistant super alloys including iron based high temperature alloys	-	-	up to 500	15 - 35	-	-	-	-	-
5.2	Heat resistant super alloys, cobalt or nickel based, of a medium to hard nature to machine	-	-	up to 900	15 - 35	-	-	-	-	-
5.3	Heat resistant super alloys, cobalt or nickel based, of a hard or very hard nature to machine	-	-	from 900 up to 1200	20 - 50	-	-	-	-	-
6.1	Copper	-	-	up to 500	250 - 400	-	-	-	-	-
6.2	Brass (alpha - long chip)	-	-	up to 800	200 - 400	-	-	-	-	-
6.3	Brass (beta - short chip) and soft bronze	-	-	up to 800	200 - 800	-	-	-	-	-
6.4	High strength bronze	-	-	up to 1200	50 - 120	-	-	-	-	-
7.1	Unalloyed: aluminium, magnesium & zinc	-	-	up to 150	500 - 900	-	-	-		-
7.2	Aluminium alloys less than 5% Si magnesium and zinc alloys (long chip)	-	-	from 150 up to 300	600 - 900	-	-	-	-	-
7.3	Aluminium alloys 5% to 10% Si	-	-	from 200 up to 500	300 - 600	-	-	-	-	-
7.4	Aluminium alloys above 10% Si (short chip)	-	-	from 200 up to 500	200 - 500	-	-	-	-	-
8.1	Thermoplastics	-	-	-	300 - 700	-	-	-	-	-
8.2	Thermo-setting plastics	-	-	-	300 - 500	-	-	-	-	-
8.3	Reinforced plastics & composite materials	-	-	-	100 - 300	-	-	-	-	-

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YAMALOY YAMALOY TOOLING • JAPAN

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YAMALOY YAMALOY TOOLING • JAPAN

Insert Grade

K20 Micrograin uncoated. For cast iron, aluminium alloy, other non-ferrous materials including titanium and nickel alloy.

QK25C (K15 - K30) Coated. For milling cast irons.

QM3535 (P20 - P35) PVD TiAlN Coated for milling of steel. Comprehensive grade which covers wide application range due to substrate providing optimal wear resistance and toughness.

QP25 (P25) Uncoated. For medium and finish milling of steels.

QP25C (P10 - P35) CVD coated. Milling grade for steel and some stainless steels.

QP30P (P10 - P35) PVD Coated. Milling grade for steel and some stainless steels.

QP30T (P10 - P35) PVD Coated. Milling grade for steel and some stainless steels.

QP40 (P40) Uncoated. For rough medium and finish milling of tough Steels and Stainless Steels including interrupted cutting.

Chipbreaker

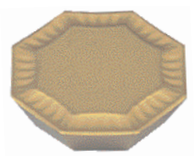
Chip Breaker	Application
AL	Aluminium & non Ferrous (Polished)
EM	Medium
MF	Finish/Light
MM	Medium/Light Roughing

QX530 (P20 - P40, M20 - M30) Coated. A good general purpose steel grade for roughing. Use on steels, cast steel and stainless steel.

APKT

Insert Size **APKT**	Chip-breaker	Grade	Order Code **YML-120**
1003PDR	EM	QK25C	-0028X
	EM	QP30P	-0028W
1604PDR	AL	K10	-0029K
1604PDTR	-	QP30P	-0030W
	-	QK25C	-0030X
	-	K20	-0031V

OFKR



Insert Size **OFKR**	Chip-breaker	Grade	Order Code **YML-120**
05T308	MF	QP25C	-2388W

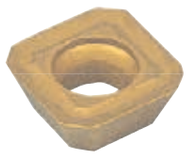
OFKT

Insert Size **OFKT**	Chip-breaker	Grade	Order Code **YML-120**
05T308-SN	MM	QP25C	-2384W

SDMT

Insert Size **SDMT**	Chip-breaker	Grade	Order Code **YML-120**
12T308	-	QX530	-4280E

SEHT

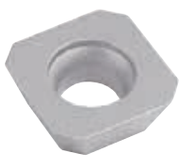


Insert Size **SEHT**	Chip-breaker	Grade	Order Code **YML-120**
1204AFTN	-	K20	-4430V
1204AFTN	-	QP25C	-4430W

SEHT

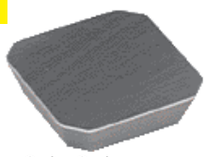
Insert Size **SEHT**	Chip-breaker	Grade	Order Code **YML-120**
120408	-	QP25C	-4432W

SEHW



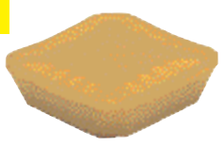
Insert Size **SEHW**	Chip-breaker	Grade	Order Code **YML-120**
1204AFTN05	-	K20	-4445V
		QP25C	-4445W

SEKN



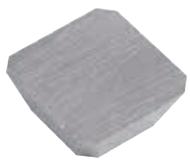
Insert Size **SEKN**	Chip-breaker	Grade	Order Code **YML-120**
1203AFFN	-	K20	-4517V
1203AFSN	-	QM3535	-4527M
1203AFTN	-	QP25	-4527P
	-	QP40	-4527S

SEKR



Insert Size **SEKR**	Chip-breaker	Grade	Order Code **YML-120**
1203AFTN05	-	K20	-4617V
	-	QP25C	-4627W

SEMN



Insert Size **SEMN**	Chip-breaker	Grade	Order Code **YML-120**
1204-AZ	-	QM3535	-4727M

SNKN

Insert Size **SNKN**	Chip-breaker	Grade	Order Code **YML-120**
1204-ENN	-	QP25	-5227P

SPKN

Insert Size **SPKN**	Chip-breaker	Grade	Order Code **YML-120**
1203EDR	-	K20	-6328V
1203EDTR	-	QM3535	-6338M
	-	QP25	-6338P
	-	QP40	-6338S
1504EDTR	-	QP25	-6368P

TPKN

Insert Size **TPKN**	Chip-breaker	Grade	Order Code **YML-120**
1603PPR	-	K20	-8428V
1603PPTR	-	QM3535	-8438M
	-	QP25	-8438P
	-	QP40	-8438S
2204PDR	-	K20	-8458V
2204PDSR	-	QM3535	-8468M
2204PDTR	-	QP25	-8468P
	-	QP40	-8468S

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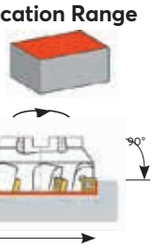
INDEXA-SEIKI XP-90C '4 Square' 90° Shell Mills

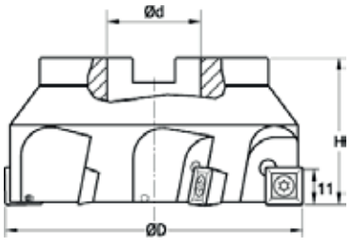
Positive 90° cutter with an exact angle of 90°, square insert allowing depth passes and high feed per teeth. Torx style insert pocket with shim seats to protect the body in case of accident. Plasma Ion coating offers longer tool life and greater hardness that is more resistant to wear.
Through coolant as standard.

Feed Per Tooth (mm)
0.04 - 0.30
See Page 146 for Cutting Speed Information

Application Range



XL XTRA PLASMA COATED BODY



SDMT 12

For Inserts See Below

Spares to suit

Arbor Screw	Shim	Shim Pin	Clamp Screw
	Order Code **IND-107**		
-5354K -5354K -5356K	-2490K	-1570K	-3400K

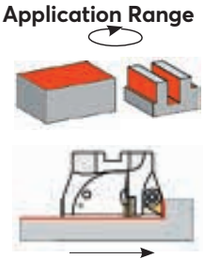
XP-90C '4 Square' 90° Shell Mills for SDMT 12 inserts

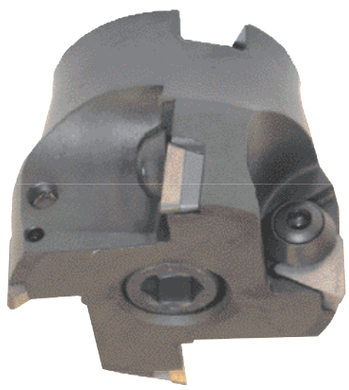
Dia (mm)	d	H	Z	Weight each	Order Code **IND-139**
63	22	40	5	459g	**-7500K**
80	27	50	6	999g	**-7520K**
100	32	50	7	1669g	**-7540K**

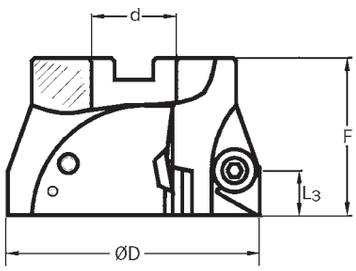
'Tri Square' 90° Shell Mills

Uses top clamping triangular inserts to produce a 90° shoulder at the edge of a milled face. This is of major benefit when taking a number of cuts across a face as the shoulder produced is without steps.

Application Range







Insert Size	Feed Per Tooth (Fz) mm
TPKN 16	0.05 - 0.20
TPKN 22	0.10 - 0.30
See Page 146 for Cutting Speed Information	

For TPKN 1603

Spares to suit

Arbor Screw	Shim	Shim Pin	Clamp Screw	Clamp Ring
	Order Code **IND-107**			
-5354K -5355K	-5360K	-5362K	-0050K	-0440K

Dia (mm)	d	F	L_3	Z	Weight each	Order Code **IND-139**
80	32	50	13	5	1200g	**-3420K**

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Inserts

TPKN

SDMT

Designation	Grade	To Suit	Order Code **YML-120**
TPKN 1603 PPR	K20	Tri-Sq	**-8428V**
TPKN 1603 PPTR	QP25 QP40	Tri-Sq	**-8438P** **-8438S**
TPKN 2204 PDR	K20	Tri-Sq	**-8458V**
TPKN 2204 PDTR	QP25 QP40	Tri-Sq	**-8468P** **-8468S**

Insert Grade Selection

K20 (**K20**) Micrograin uncoated.
For cast irons, aluminium alloys and other non-ferrous materials including titaniums and nickel alloys.

QP25 (**P25**) Uncoated. For medium and finish milling of steels.

QP40 (**P40**) Uncoated. For rough medium and finish milling of tough steels and stainless steels including interrupted cutting.

QX530 (**P20-P40 M20-M30**) Coated. Turning grade for steels, cast steels and stainless steels. A good general purpose steel grade for roughing.

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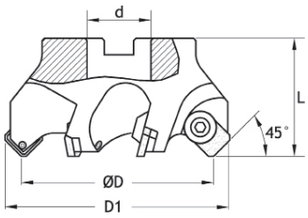
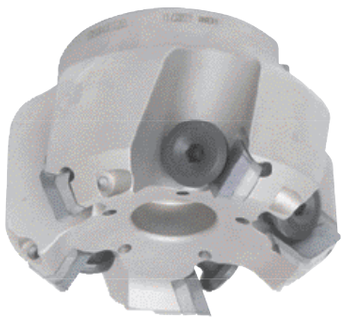
INDEXA-SEIKI XP-45C 'Face Hog' Milling Cutters

Super Positive 45° approach milling cutter, angle decreases cutting forces and allows a quick feed in a limited capacity machine. Clamp style insert pocket with shim seats to protect the body in case of accident. Plasma Ion coating offers longer tool life and greater hardness that is more resistant to wear. Through coolant as standard.

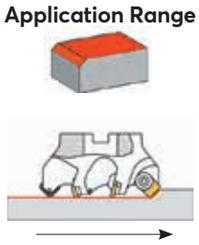
XP XTRA PLASMA COATED BODY





Feed Per Tooth (mm)
0.05 - 0.20
See Page 146 for Cutting Speed Information

Application Range



Dia (mm)	D1	d	L	Z	Order Code IND-139
63	76	22	50	5	-7600K
80	93	27	50	6	-7620K
100	113	32	50	6	-7640K

Spares to suit

Arbor Screw	Shim	Shim Screw	Clamp Screw
	Order Code IND-107		
-5353K -5354K -5356K	-4960K	-5284K	-5290K

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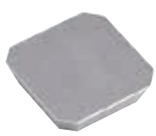


Inserts

Designation	Grade	To Suit	Order Code YML-120
SEKN 1203 AFTN	K20 QP25 QP40	Face Hog	-4517V -4527P -4527S
SEKR 1203 AFTN	K20 QP25C	Face Hog	-4617V -4627W

Insert Grade Description

K20 **(K20)** Micrograin uncoated. For cast irons, aluminium alloys, other non-ferrous materials including titaniums and nickel alloys.

QP25 **(P25)** Uncoated. For medium and finish milling of steels.

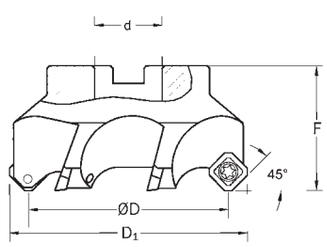
QP25C **(P10-P35)** CVD coated. Milling grade for steels and some stainless steels.

QP40 **(P40)** Uncoated. For rough medium and finish milling of tough steels and stainless steels including interrupted cutting.

INDEXA-SEIKI XP-45C 'Hi Shear' Milling Cutters

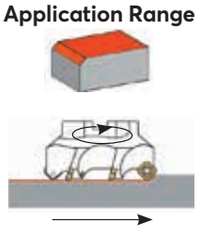
Super Positive 45° approach milling cutter, angle decreases cutting forces and allows a quick feed in a limited capacity machine. Torx screws allow for good chip evacuation. Plasma Ion coating offers longer tool life and greater hardness that is more resistant to wear. Through coolant as standard.

XP XTRA PLASMA COATED BODY



Feed Per Tooth (mm)
0.05 - 0.20
See Page 146 for Cutting Speed Information

Application Range



Dia (mm)	D1	d	F	Z	Order Code IND-139
63	75	22	50	5	-7400K
80	92	27	50	6	-7420K

Spares to suit

Arbor Screw	Clamp Screw
Order Code IND-107	
-5353K -5354K	-5352K

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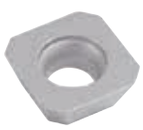

Inserts

Designation	Grade	Order Code YML-120
SEHT 1204 AFTN	K20 QP25C	-4430V -4430W
SEHW 1204 AFTN-05	K20 QP25C	-4445V -4445W

Insert Grade Description

K20 **(K20)** Micrograin uncoated. For cast irons, aluminium alloys, other non-ferrous materials including titaniums and nickel alloys.

QP25C **(P10-P35)** CVD coated. Milling grade for steels and some stainless steels.

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XP-90C 'APT' 90° Shell Mills

Positive 90° approach milling cutter, using size 10/16 inserts allowing depth passes and high feed per teeth. Torx screw allows for good chip evacuation. Plasma Ion coating offers longer tool life and greater hardness that is more resistant to wear. Through coolant as standard.

For Inserts See Below

XP XTRA PLASMA COATED BODY

Insert Size	Feed Per Tooth (Fz) mm
APXT 10	0.05 - 0.20
APXT 16	0.10 - 0.30
See Page 146 for Cutting speed Information	

XP-90C End Mills For AP_T 10 Inserts

D	z	H	C	L	Inserts	Order Code IND-139
16	2	25	16	90	APKT1003	**-4860K**
20	3	25	20	110		**-4900K**

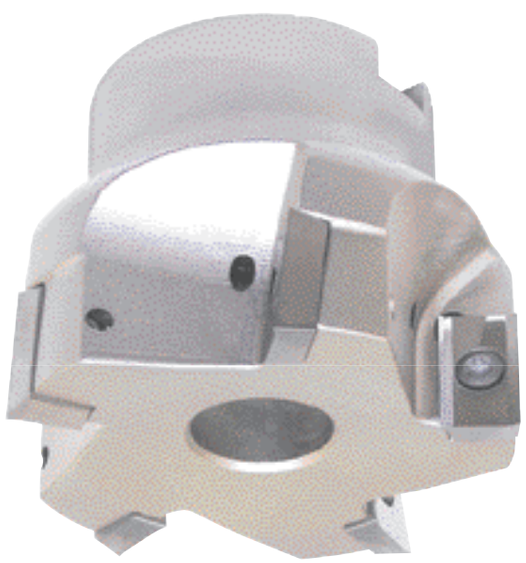
XP-90C End Mills For AP_T 16 Inserts

D	z	H	C	L	Inserts	Order Code IND-139
20	1	37	20	115	APKT1604 or APXT1604	**-5000K**
25	2	40	25	117		**-5020K**
32	3	40	25	126		**-5040K**
40	4	50	32	136		**-5060K**

Spares	Arbor Screw	Clamp Screw	Flag Torx Key
To Suit		Order Code **IND-107**	
10-20 Dia (APKT 10)	-	**-5240K**	-
20-25 Dia (APKT 16)	-	**-5270K**	**-5150K**
32-40 Dia (APKT 16)	-	**-5270K**	**-5150K**

XP-90C 'APT' 90° Shell Mills

Positive 90° approach milling cutter, using size 16 inserts allowing depth passes and high feed per teeth. Torx screw allows for good chip evacuation. Plasma Ion coating offers longer tool life and greater hardness that is more resistant to wear. Through coolant as standard.



XP XTRA PLASMA COATED BODY

Feed Per Tooth (Fz) mm
0.10 - 0.30
See Page 146 for Cutting speed Information

XP-90C Shell Mills For APKT 16 Inserts

D	z	B	C	L	Inserts	Order Code IND-139
50	4	22	10.4	50	APKT1604	**-3920K**
63	5	22	10.4	50	or	**-3940K**
80	6	27	12.7	50	APXT1604	**-3960K**

Spares	Arbor Screw	Clamp Screw	Flag Torx Key
To Suit	Order Code **IND-107**	Order Code **IND-107**	
50 & 63 Dia	**-5354K**		
80 Dia (APKT 16)	**-5354K**	**-5270K**	
100 Dia	**-5355K**		

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Insert Grade Selection

Designation	Grade	To Suit	Weight each	Order Code YML-120
APXT 1604 PDTR	QP30P	Shell Mills	35g	**-0028W**
APXT 1604 PDTR	K20	Combination	85g	**-0031V**
	QK25C	End, APT	92g	**-0030X**

Insert Grade Description

K20 (**K20**) Micrograin uncoated. For cast irons, aluminium alloys, other non-ferrous materials including titaniums and nickel alloys.

QK25C (**K15-K30**) Coated. For milling cast irons.

QP30P (**P10-P35**) PVD coated. Milling grade for steels and some stainless steels.

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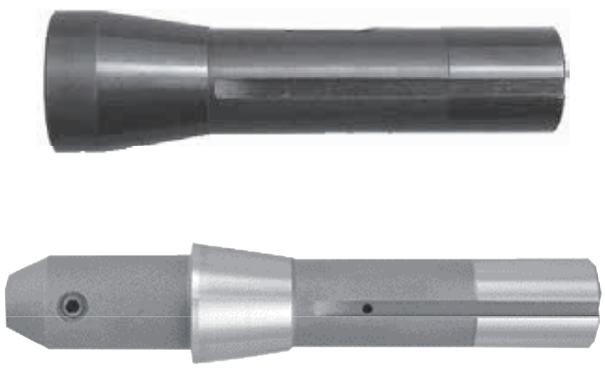
INDEXA-SEIKI Shank Adaptors

R8 Shank Sidelock Adaptors

For Bridgeport type turret milling machine spindles to accept weldon shank **(DIN 1835B)** cutters.

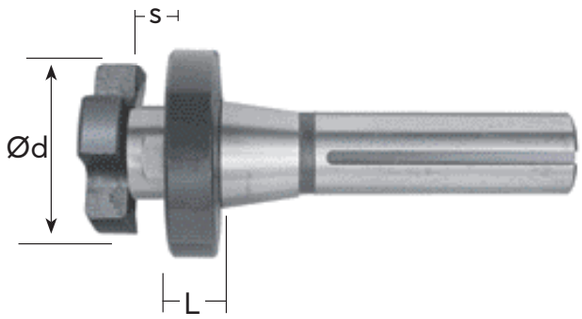


Shank	Bore Size	Weight each	Order Code IND-144
R8	SL25	1952g	**-3570K**

R8 Shank Morse Adaptors

Shank	Bore Size	Weight each	Order Code IND-144
R8	MT1	400g	**-5592K**
R8	MT2	332g	**-5594K**
R8	MT3	881g	**-5596K**

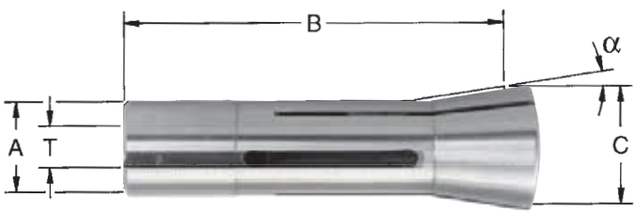
R8 Shank Face Mill Adaptors



Shank	Spigot Size	d	s	Gauge Length (L)	Weight each	Order Code IND-144
R8	FM16	16	6	15	512g	**-4970K**
	FM22	22	10	15	696g	**-4972K**
	FM27	27	12	15	741g	**-4974K**
	FM32	32	16	17	938g	**-4976K**

R8 Collets for Bridgeport

Used directly in the machine spindle for general purpose milling and drilling operations, collets have dedicated bores for specific cutter shank sizes.



Dimensions: A = 24.1mm, B = 102.3mm, C = 31.5mm T = 7/16" UNF.
Angle: a = 8°25'.

Bore Size	Weight each	Order Code IND-144
3.0mm	291g	**-3622K**
6.0mm	298g	**-3580K**
8.0mm	304g	**-3630K**
10.0mm	297g	**-3582K**
11.0mm	299g	**-3634K**
12.0mm	295g	**-3584K**
14.0mm	283g	**-3638K**
16.0mm	275g	**-3586K**
20.0mm	209g	**-3588K**

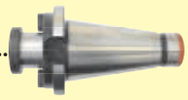
FM - Face Mill Adaptors

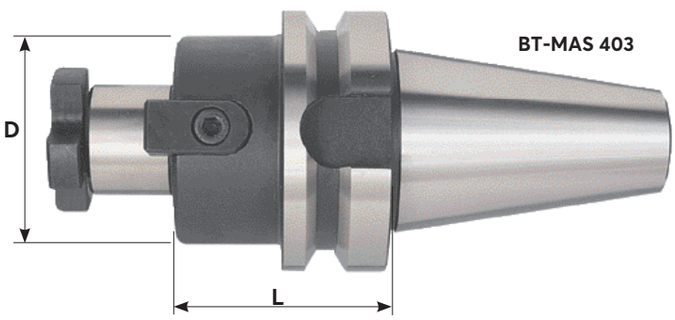
From an extensive programme of quality spindle nose tooling, used with an extensive range of face and shell mills.

BT = BT-MAS 403 (See main picture)

DN = DIN69871/A.....

IS = ISO/DIN 2080/
QC = ISO/DIN 2080 Quick Change.....





Shank	Spigot Diameter	L	D	Weight each	Order Code IND-144
DN40	FM22	60	50	1554g	**-4610K**
	FM27	60	50	1602g	**-4614K**
QC40	FM22	37	40	1125g	**-4810K**
	FM27	37	48	1275g	**-4814K**
	FM32	37	58	1558g	**-4818K**
	FM40	37	70	2025g	**-4822K**

Shank	Spigot Diameter	L	D	Weight each	Order Code IND-144
BT40	FM16	52	36	1.2kg	**-4907K**
	FM22	52	50	1.5kg	**-4910K**
	FM27	52	50	1.5kg	**-4914K**
	FM32	52	78	2.2kg	**-4918K**

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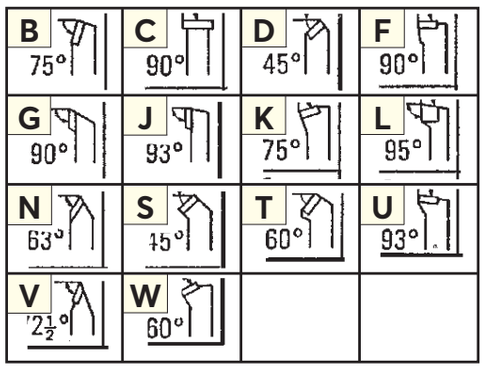
Toolholders - ISO Designation

External Toolholders - ISO Designation

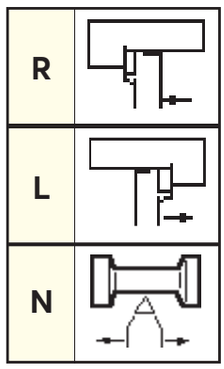
1 Clamping System

C	Clamp
D	"One-Double"
M	Clamp & Pin
P	Lever
S	Screw

3 Lead Angle

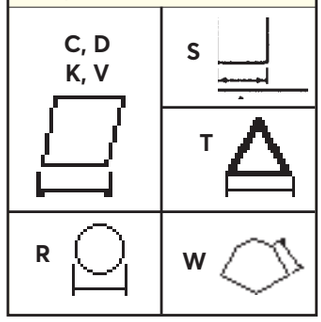


5 Hand



9 Cutting Edge Length

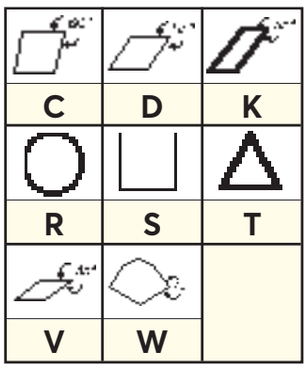
Expressed in millimetres



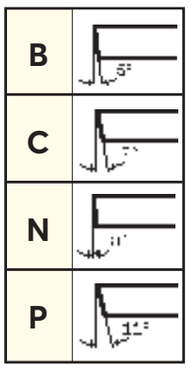
1 2 3 4 5 6 7 8 9

P C K N R 20 20 K 12

2 Insert Shape

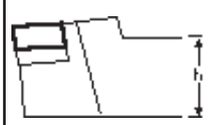


4 Clearance



6 Shank Height

Expressed in millimetres



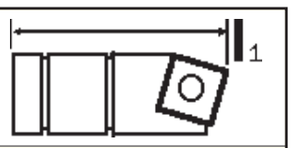
Single Digit Nos. preceded by '0' e.g: h = 8mm is indicated by 08

7 Shank Width

Expressed in millimetres

Single Digit Nos. preceded by '0' e.g: b = 8mm is indicated by 08

8 Tool Length



Length in millimetres

D	60	M	150
E	70	P	170
F	80	Q	180
H	100	R	200
K	125	S	250

Boring Bars - Additional Designation

1 Bar Type

S	Solid Steel Bar
A	Solid Steel With Through Coolant
C	Carbide Shank
E	Carbide Shank with Through Coolant
T	Anti-Vibration Carbide Reinforced Steel Shank

3 Bar Length

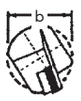
Length in millimetres			
J	110	S	250
K	125	T	300
M	150	U	350
Q	180	V	400
R	200	W	450

1 2 3 4 5 6 7 8 9

S 50 W P S K N R 19

2 Basic Diameter

Expressed in millimetres



Single Digit Nos. preceded by '0' e.g: b = 8mm is indicated by 08

- 4 Clamping System
- 5 Insert Shape
- 6 Lead Angle
- 7 Clearance
- 8 Hand
- 9 Cutting Edge Length

Note: Details as above see External Toolholders

Cartridges - Additional Designation

Note: Cutting Edge Lengths are detailed to the lowest whole number e.g. 12.7mm = 12mm

- 1 Clamping System
- 2 Insert Shape
- 3 Lead Angle
- 4 Clearance
- 5 Hand
- 8 Cutting Edge Length

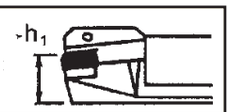
Note: Details as above see External Toolholders

1 2 3 4 5 6 7 8

P T F N R 16 CA 16

6 Cutting Edge Height

Expressed in millimetres



Single Digit Nos. preceded by '0' e.g: h_1 = 8mm is indicated by 08

7 Type of Tool

'C'
Indicates Cartridge

'A'
Indicates that Holder is designed to ISO 5611

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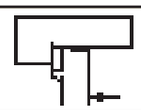
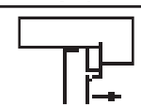
THREADING TOOLHOLDERS - ISO DESIGNATION

1 Clamping System

D	Top Clamp + Screw-on
S	Screw-on
C	Top Clamp

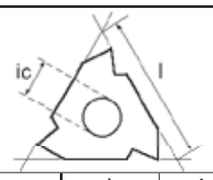
3 Hand

R	
L	

6 Tool Length

Length in millimetres			
H	100	S	250
K	125		
M	150		
P	170		
R	200		

7 Cutting Edge length



	l	ic
06	6mm	5/32"
08	8mm	3/16"
11	11mm	1/4"
16	16.5mm	3/8"
22	22mm	1/2"

1	2	3	4	5	6	7
D	E	R	16	16	H	16

2 Type of holder

E	External
I or N	Internal

4 Shank Height

Round Shank (Boring Bars) = 00

For Rectangular Shanks, Height is expressed in mm

Single Digit Nos. preceded by '0'

E.g. h = 8mm is indicated by 08

5 Shank Width

Round Shank (Boring Bars) = Diameter in mm

For Rectangular Shanks, Width is expressed in mm

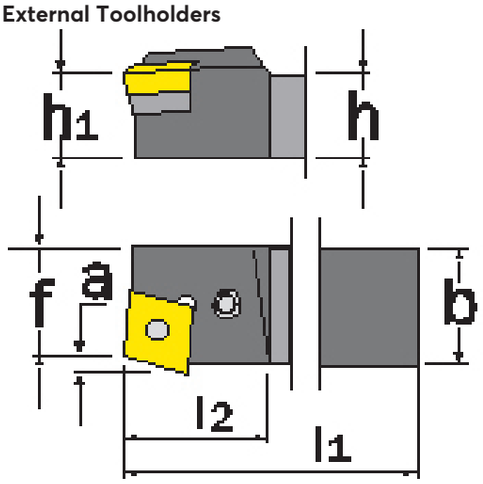
Single Digit Nos. preceded by '0'

E.g. h = 8mm is indicated by 08

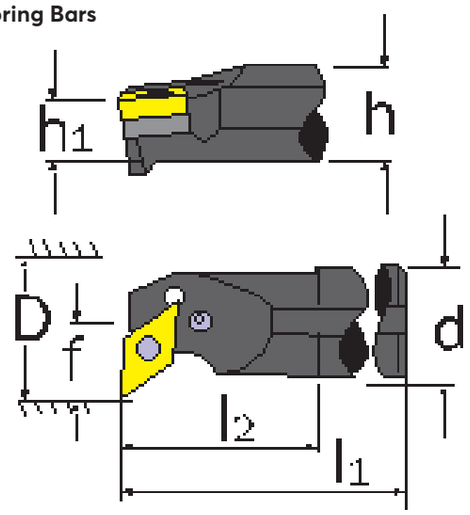
Dimensional Notation

h = Shank Height or A/F Dmin
h_1 = Tip Height
b = Shank Width
d = Shank Diameter
f = Width Offset
a = Insert Approach Length
D = Min. Boring Diameter
l_1 = Overall Length to Tip
l_2 = Neck Length
l_3 = Min. Adjustment Length
d_1 = Clamp Screw Bore Diameter
d_2 = Neck Diameter
x = Clamp Screw Angle
e = Clamp Screw Centre

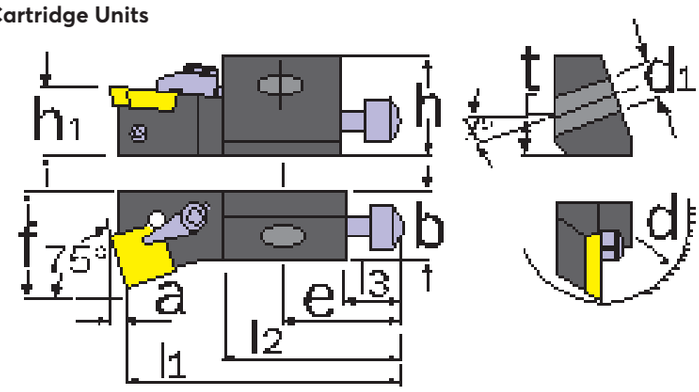
External Toolholders



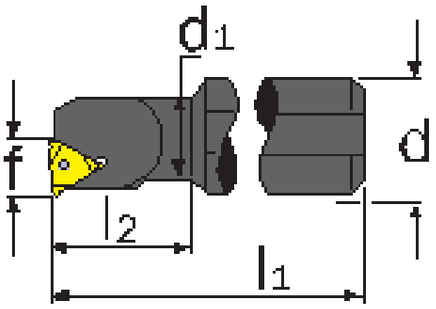
Boring Bars



Cartridge Units



Threading Toolholders



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INDEXA-SEIKI™

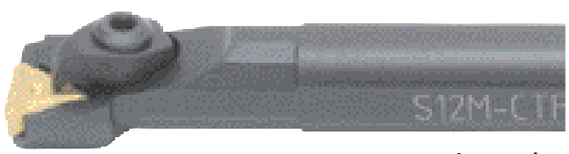
Indexable Toolholders & Boring Bars

Illustrated are a few basic tool styles from a range that covers the majority of applications in turning. Generally Indexable toolholders use shims made of carbide that lie underneath the inserts in the holder pockets, fixed by means of a pin or screw. They provide clearance and maximum support which is achieved for the insert to absorb the cutting force. In the event of insert fracture, they protect the toolholder from damage.

C-Style Top Clamp

Especially suitable for boring and medium to heavy external turning operations, using positive rakes, various chip breakers and extra side clearance. The clamp is brought down onto the insert by a screw through the clamp. The clamp is designed and positioned so as not to hamper chip flow. When the screw is loosened the clamp lifts and a lug at the back of the clamp keeps it in position. The insert is securely fixed in the two-sided pocket by the positive, direct screw clamp action which gives solid clamping of insert types with no centre hole.

External



Internal

M-Style Combination Clamp & Pin

Suitable for turning and boring operations that require better accessibility than the lever system. The insert is clamped by a top clamp pushing the insert towards a fixed pin. The clamp improves rigidity by wedging the insert against the fixed pin and also clamping the insert down. The insert is held very securely but released through just a slight turn of the screw. The design also provides a clear top face. This design does not provide the same clamping stability as the two sided pocket design of the lever lock type.

External

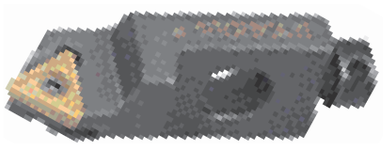
Internal

Cartridge Units

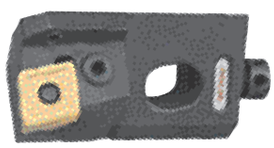
Many boring, external and combination operations require a number of cuts to be made in a single feed of the tool. In other operations it is wise to distribute the depth of cut on several cutting edges. For this purpose special tools are designed based on standard cartridge units.
Compared to tools with fixed insert seats the use of built-in tools gives the following advantage:
Relatively small positional tolerances can be maintained.
If the tool has to be changed, due to minor modification of the workpiece, the built-in units can be adjusted rather than the entire tool. An expensive tool is not damaged should there be an accident.

These items are available on request.
Please contact your distributor for further information.

C-Style



S-Style



P-Style

Widest range of styles and sizes. All compatible with ISO inserts.
Complete range of spares in stock. Full technical support services provided.

Performance Tooling
Assured Quality

OS20_TH_0092.indd 1 22/04/2020 23:07

INDEXA-SEIKI™

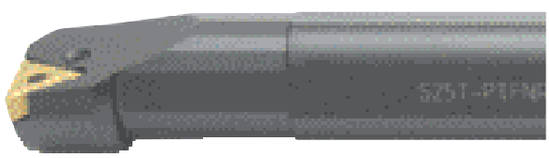
Indexable Toolholders & Boring Bars

Illustrated are a few basic tool styles from a range that covers the majority of applications in turning. Generally Indexable toolholders use shims made of carbide that lie underneath the inserts in the holder pockets, fixed by means of a pin or screw. They provide clearance and maximum support which is achieved for the insert to absorb the cutting force. In the event of insert fracture, they protect the toolholder from damage.

P-Style Lever Lock

For external turning and boring of larger diameter holes. Versatile general purpose system for light to heavy machining, utilising a wide range of negative/positive inserts to cover most applications. Inserts are clamped using the centre hole. A pivoted lever tilts by adjustment of the clamping screw. The lever forces the insert backwards into the pocket locating it firmly against two sides giving excellent stability and locating accuracy. This will ensure unobstructed chip flow over the insert top face. Easy to operate for quick indexing.

External

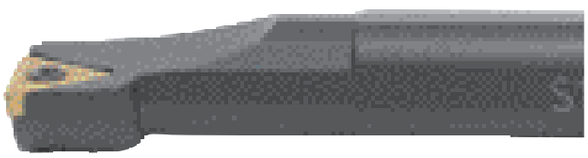


Internal

S-Style Screw-on

For the internal machining of small diameters and for external light roughing to finishing of smaller work pieces. Offers secure insert clamping, excellent repeatability, uninterrupted chip clearance, requires little space and few spares. Suitable for copy turning due to the positive insert being positioned neutrally in the toolholder, giving constant clearance around the periphery and ensuring a clean cut, excellent surface finish and long tool life. The single screw, fits into a hole in the insert pocket holding both insert and shim in place.

External



Internal

Carbide Shank Boring Bars also available

Threading Tools

Widest range of styles and sizes. All compatible with ISO inserts.
Complete range of spares in stock. Full technical support services provided.

Performance Tooling
Assured Quality

OS20_TH_0093.indd 1 22/04/2020 23:09

INDEXA-SEIKI

Combination Top Clamp & Pinlock External Toolholders

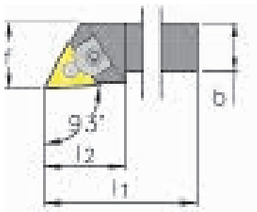
Combination Top Clamp & Pinlock External Toolholders

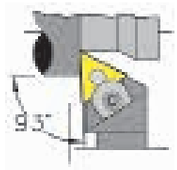
MTJN R

93° approach for negative triangular inserts.

Inserts See Group 120
Sizes : **16** = 1604

TN_A **TN_G**





Designation MTJN....	h=h1	b	l1	l2	f	Weight each	Order Code IND-106
R 2020K **16**	20	20	125	34	25	427g	**-1300K**
R 2525M **16**	25	25	150	34	32	753g	**-1320K**

Spares to Suit Contact your local branch for prices

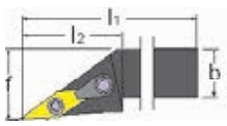
Shim	Lock Pin	Clamp					
Order Code **IND-107**							
-2087K	**-1480K**	**-0943K**	-	-	-	-	-

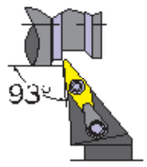
MVJN R/L

93° approach for negative 35° rhombic inserts.

Inserts See Group 120
Sizes **16** = 1604__

VN_A **VN_G**





Designation MVJN....	h=h1	b	l1	l2	f	Weight each	Order Code IND-106
R 2020K **16**	20	20	125	37	25	395g	**-1500K**
L 2020K **16**						398g	**-1510K**
R 2525M **16**	25	25	150	37	32	679g	**-1520K**
L 2525M **16**						688g	**-1530K**

Spares to Suit Contact your local branch for prices

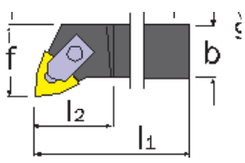
Shim	Lock Pin	Clamp	Clamp Screw			Shim Key	Clamp Key
Order Code **IND-107**						Order Code **KEN-601**	
-2100K	**-1600K**	**-0600K**	**-0900K**	-	-	**-1200K**	**-1300K**
-2100K	**-1600K**	**-0600K**	**-0900K**	-	-	**-1200K**	**-1300K**

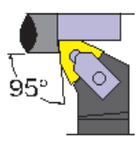
MWLN R/L

95° approach for negative 80° trigon inserts.

Inserts See Group 120
Sizes **08** = 0804__

WN_A **WN_G** **WN_M**





Designation MWLN....	h=h1	b	l1	l2	f	Weight each	Order Code IND-106
R 2020K **08**	20	20	125	34	25	453g	**-1680K**
L 2020K **08**						465g	**-1690K**
R 2525M **08**	25	25	150	34	32	789g	**-1700K**
L 2525M **08**						776g	**-1710K**

Spares to Suit Contact your local branch for prices

Shim	Lock Pin	Clamp	Clamp Screw			Shim Key	Clamp Key
Order Code **IND-107**						Order Code **KEN-601**	
-2920K	**-1680K**	**-0940K**	**-0080K**	-	-	**-1250K**	**-1500K**
-2920K	**-1680K**	**-0940K**	**-0080K**	-	-	**-1250K**	**-1500K**

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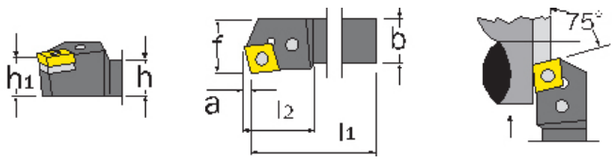
INDEXA-SEIKI Lever Lock External Toolholders Continued

PCKN R/L

75° approach for negative 80° rhombic inserts.

Inserts See Group 120
Sizes **12** = 1204__
CN_A **CN_G**



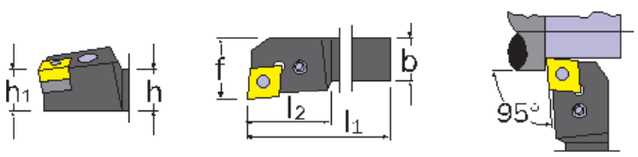
Spares to Suit Contact your local branch for prices

Designation PCKN....		Dimensions (mm) h=h1	b	l1	l2	f	a	Weight each	Order Code IND-106	Shim	Shim Pin	Lever	Lever Screw				Hex Key
										Order Code IND-107								Order Code KEN-601
R 2020K	**12**	20	20	125	28	25	3.1	408g	**-1820K**	**-2150K**	**-3100K**	**-1050K**	**-1400K**	-	-	-	**-1300K**
R 2525M	**12**	25	25	150	34	22	3.8	760g	**-1860K**	**-2150K**	**-3100K**	**-1050K**	**-1400K**	-	-	-	**-1300K**

PCLN R/L

95° approach for negative 80° rhombic inserts.

Inserts See Group 120
Sizes **09** = 0903__
Sizes **12** = 1204__
Sizes **16** = 1606__
Sizes **19** = 1906__
CN_A **CN_G**



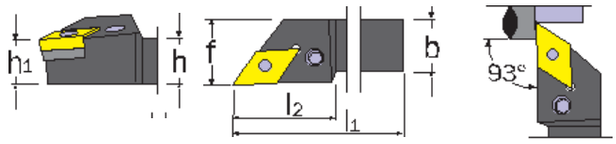
Spares to Suit Contact your local branch for prices

Designation PCLN....		Dimensions (mm) h=h1	b	l1	l2	f	Weight each	Order Code IND-106	Shim	Shim Pin	Lever	Lever Screw				Hex Key
									Order Code IND-107							Order Code KEN-601
R 1616H	**12**	16	16	100	26	20	206g	**-1960K**	**-2150K**	**-3100K**	**-1260K**	**-1500K**	-	-	-	**-1300K**
R 2020K	**12**	20	20	125	28	25	404g	**-2000K**	**-2150K**	**-3100K**	**-1050K**	**-1400K**	-	-	-	**-1300K**
L 2020K	**12**						404g	**-2010K**								
R 2525M	**12**	25	25	150	28	32	742g	**-2040K**	**-2150K**	**-3100K**	**-1050K**	**-1400K**	-	-	-	**-1300K**
L 2525M	**12**						738g	**-2050K**								

PDJN R/L

93° approach for negative 55° rhombic inserts.

Inserts See Group 120
Sizes **11** = 1104__
Sizes **15** = 1506__
= 1504__ (optional)
DN_A **DN_G**



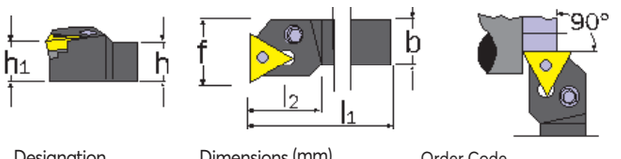
Spares to Suit Contact your local branch for prices

Designation PDJN....		Dimensions (mm) h=h1	b	l1	l2	f	Weight each	Order Code IND-106	1104_ Shim	1506_ Shim	Optional 1504_ Shim	Shim Pin	Lever	Lever Screw		Hex Key
									Order Code IND-107							Order Code KEN-601
R 2020K	**11**	20	20	125	30	25	386g	**-2380K**	**-2800K**	-	-	**-3050K**	**-0950K**	**-1300K**	-	**-1250K**
L 2020K	**11**						383g	**-2390K**								
R 2020K	**15**	20	20	125	34	25	383g	**-2400K**	-	**-2250K**	**-2270K**	**-3100K**	**-1100K**	**-1410K**	-	**-1300K**
L 2020K	**15**						393g	**-2410K**								

PTFN R/L

90° approach for negative triangular inserts.

Inserts See Group 120
Sizes **16** = 1604__
TN_A **TN_G**



Spares to Suit Contact your local branch for prices

Designation PTFN....		Dimensions (mm) h=h1	b	l1	l2	f	Order Code IND-106	Shim	Shim Pin	Lever	Lever Screw				Hex Key
								Order Code IND-107							Order Code KEN-601
R 2020K	**16**	20	20	125	22	25	**-3680K**	**-2450K**	**-3050K**	**-0950K**	**-1300K**	-	-	-	**-1250K**
R 2525M	**16**	25	25	150	22	32	**-3740K**	**-2450K**	**-3050K**	**-0950K**	**-1300K**	-	-	-	**-1250K**

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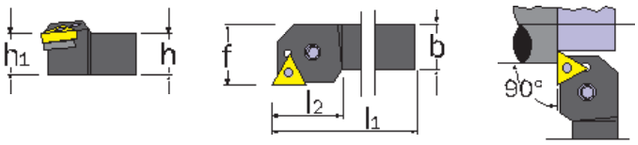
INDEXA-SEIKI Lever Lock External Toolholders Continued

PTGN R/L

90° approach for negative triangular inserts.



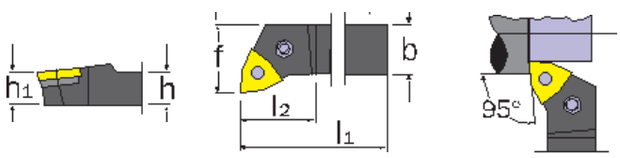
Inserts See Group 120
Size **16** = 1604__
Size **22** = 2204__
TN_A **TN_G**

Spares to Suit Contact your local branch for prices

Designation PTGN....	Dimensions (mm) h=h1	b	l1	l2	f	Order Code IND-106	Shim	Shim Pin	Lever	Clamp Screw				Hex Key
							Order Code IND-107							Order Code KEN-601
R 2020K **16** / L 2020K **16**	20	20	125	22	25	-3940K / -3950K	-2450K	-3050K	-0950K	-1300K	-	-	-	-1250K
R 2525M **16** / L 2525M **16**	25	25	150	22	32	-3960K / -3970K	-2450K	-3050K	-0950K	-1300K	-	-	-	-1250K

PWLN R/L

95° approach for negative 80° trigon inserts.



Inserts See Group 120
Size **06** = 0604__
Size **08** = 0804__
WN_A **WN_G**

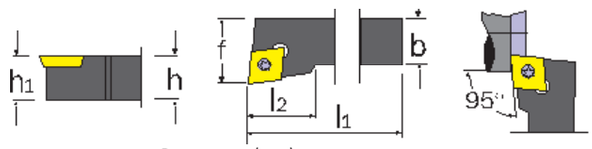
Spares to Suit Contact your local branch for prices

Designation PWLN....	Dimensions (mm) h=h1	b	l1	l2	f	Order Code IND-106	Shim	Shim Pin	Lever	Clamp Screw				Hex Key
							Order Code IND-107							Order Code KEN-601
R 1616H **06**	16	16	100	21	20	-4080K	-2083K	-3050K	-0950K	-1300K	-	-	-	-1250K
R 2020K **06**	20	20	125	25	25	-4090K	-2084K	-3100K	-1050K	-1400K	-	-	-	-1300K
R 2020K **08**	20	20	125	25	25	-4100K	-2083K	-3050K	-0950K	-1300K	-	-	-	-1250K
R 2525M **06**	25	25	150	34	32	-4114K	- 2084K	- 3100K	- 1050K	- 1400K	-	-	-	- 1300K
R 2525M **08**	25	25	150	34	32	-4120K								

INDEXA-SEIKI Screw-On External Toolholders Continued

SCLC R/L

95° approach for 7° positive 80° rhombic inserts.



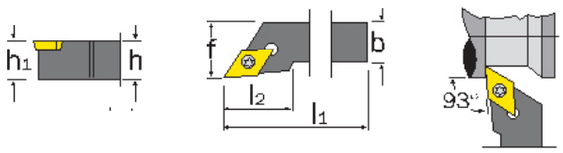
Inserts See Group 120
Size **06** = 0602__
Size **09** = 09T3__
Size **12** = 1204__
CC_T

Spares to Suit Contact your local branch for prices

Designation SCLC....	Dimensions (mm) h=h1	b	l1	l2	f	Order Code IND-106	Shim	Shim Screw	Insert Screw					Torx Key
							Order Code IND-107							
R 1010E **06** / L 1010E **06**	10	10	70	10	12	-4420K / -4430K	-	-	-3250K	-	-	-	-	-5070K
R 1212F **09** / L 1212F **09**	12	12	80	16	16	-4460K / -4470K	-	-	-3270K	-	-	-	-	-5150K
R 1616H **09** / L 1616H **09**	16	16	100	16	20	-4480K / -4490K	-	-	-3270K	-	-	-	-	-5150K
R 2020K **09** / L 2020K **09**	20	20	125	20.5	25	-4500K / -4505K	-	-	-3270K	-	-	-	-	-5150K

SDJC R/L

93° approach for 7° positive 55° rhombic inserts.



Inserts See Group 120
Size **07** = 0702__
Size **11** = 11T3__
DC_T

Spares to Suit Contact your local branch for prices

Designation SDJC....	Dimensions (mm) h=h1	b	l1	l2	f	Order Code IND-106	Shim	Shim Screw	Insert Screw					Torx Key
							Order Code IND-107							
R 1212F **11** / L 1212F **11**	12	12	80	18	16	-4580K / -4590K	-	-	-3400K	-	-	-	-	-5150K
R 2020K **11**	20	20	125	22	25	-4640K	-2246K	-1570K	-3400K	-	-	-	-	-5150K
R 2525M **11**	25	25	150	22	32	-4660K								

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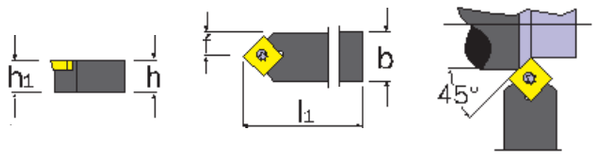
INDEXA-SEIKI Screw-On External Toolholders Continued

SSDC N

45° approach for 7° positive square inserts.

Inserts See Group 120
Sizes **09** = 09T3___
Sizes **12** =1204___
SC_T



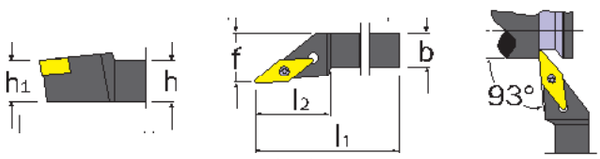
Spares to Suit Contact your local branch for prices

Designation SSDC....		Dimensions (mm) h=h1	b	l1	l2	f	Order Code IND-106	Shim	Shim Screw	Insert Screw					Torx Key
								Order Code **IND-107**							
N 1212F	**09**	12	12	80	-	6	**-5160K**	-	-	**-3270K**	-	-	-	-	**-5150K**
N 1616H	**09**	16	16	100	-	8	**-5180K**	-	-	**-3270K**	-	-	-	-	**-5150K**

SVJN R/L

93° approach for 35° negative rhombic inserts.

Inserts See Group 120
Size **12** = 12T3___
VN_



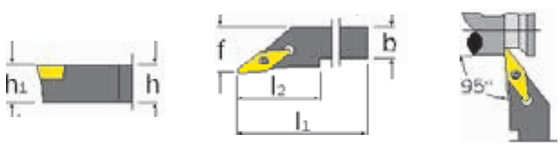
Spares to Suit Contact your local branch for prices

Designation SVJN....		Dimensions (mm) h=h1	b	l1	l2	f	Weight each	Order Code IND-106	List			Insert Screw				Torx Key	Hex Key
												Order Code **IND-107**					Order Code **KEN-601**
R 2020K	**12**	20	20	125	22	25		**-5830K**									
L 2020K	**12**							**-5840K**		-	-	**-3520K**	-	-	-	**-5090K**	**-0080K**
R 2525M	**12**	25	25	150	31	32		**-5850K**		-	-	**-3520K**	-	-	-	**-5090K**	-

SVLB R/L

95° approach for 5° positive 35° rhombic inserts.

Inserts See Group 120
Size : **16** = 1604
VB_T **VB_A** **VB_M**



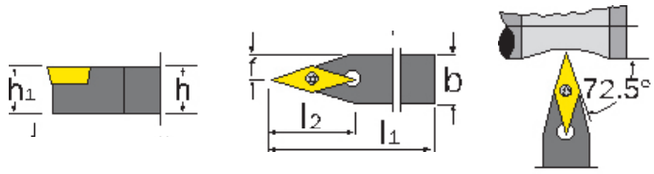
Spares to Suit Contact your local branch for prices

Designation SVLB....		Dimensions (mm) h=h1	b	l1	l2	f	Order Code IND-106	Shim	Shim Screw	Insert Screw					Torx Key
								Order Code **IND-107**							
R 2020K	**16**	20	20	125	42	25	**-5940K**								
L 2020K	**16**						**-5950K**	**-2910K**	**-1570K**	**-3400K**	-	-	-	-	**-5150K**
R 2525M	**16**	25	25	150	42	32	**-6020K**								
L 2525M	**16**						**-6030K**	**-2910K**	**-1570K**	**-3400K**	-	-	-	-	**-5150K**

SVVB N

72.5° approach for 5° positive 35° rhombic inserts.

Inserts See Group 120
Size : **16** = 1604
VB_T **VB_A** **VB_M**



Spares to Suit Contact your local branch for prices

Designation SVVB....		Dimensions (mm) h=h1	b	l1	l2	f	Weight each	Order Code IND-106	List	Shim	Shim Screw	Insert Screw				Torx Key
										Order Code **IND-107**							
N 2020K	**16**	20	20	125	28	10.6		**-6080K**		**-2910K**	**-1570K**	**-3400K**	-	-	-	**-5150K**
N 2525M	**16**	25	25	150	28	13.1		**-6100K**		**-2910K**	**-1570K**	**-3400K**	-	-	-	**-5150K**
N 3225P	**16**	32	25	170	28	13.1		**-6120K**		**-2910K**	**-1570K**	**-3400K**	-	-	-	**-5150K**

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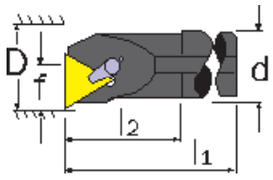
INDEXA-SEIKI Top Clamp Boring Bars

CTFP R/L

90° approach for 11° positive triangular inserts.



Inserts See Group 120
Sizes **11** = 1103__
Sizes **16** = 1603__

TP_R

TP_N

ISO Designation	Dimensions (mm) dg7	h	h1	l1	l2	f	Dmin	Order Code IND-106
S12M CTFPR **11**	12	11	5.5	150	25	9	16	**-6400K**
S16R CTFPR **11**	16	15	7.5	200	30	11	20	**-6410K**
S25T CTFPR **16**	25	23	11.5	300	40	17	31	**-6460K**

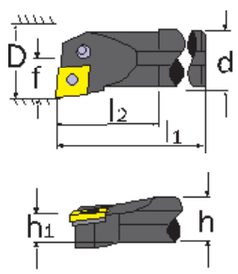
Spares to Suit Contact your local branch for prices

Shim	Shim Pin	Clamp Set					Hex Key
Order Code **IND-107**							Order Code **KEN-601**
-	-	**-4250K**	-	-	-	-	**-1250K**
-	-	**-4210K**	-	-	-	-	**-1250K**
-	-	**-4220K**	-	-	-	-	**-1300K**

Lever Lock Boring Bars

PCLN R/L

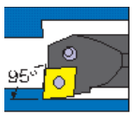
95° approach for 80° negative rhombic inserts.



Inserts See Group 120
Sizes **09** = 0903__
Sizes **12** = 1204__
Sizes **16** = 1606__

CN_A

CN_G



ISO Designation	Dimensions (mm) dg7	h	h1	l1	l2	f	Dmin	Order Code IND-106
S25T PCLNR **12**	25	23	11.5	300	40	17.0	31	**-6820K**
S32U PCLNR **12**	32	30	15.0	350	50	22.0	39	**-6840K**

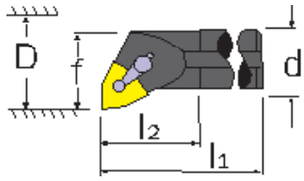
Spares to Suit Contact your local branch for prices

Shim	Shim Pin	Lever	Lever Screw				Hex Key
Order Code **IND-107**							Order Code **KEN-601**
-	**-3100K**	**-1150K**	**-1450K**	-	-	-	**-1250K**
-2150K	**-3100K**	**-126OK**	**-1500K**	-	-	-	**-1300K**

Top Clamp & Pin Lock Boring Bars

MWLN R/L

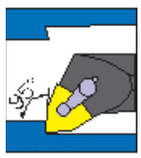
95° approach for 80° negative trigon inserts.



Inserts See Group 120
Sizes **08** = 0804__

WN_A

WN_G



ISO Designation	Dimensions (mm) dg7	h	h1	l1	l2	f	Dmin	Order Code IND-106
S40V MWLNR **08**	40	37	18.5	400	60	27	48	**-6782K**

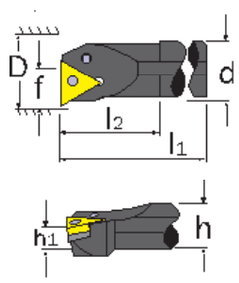
Spares to Suit Contact your local branch for prices

Shim	Lock Pin	Clamp Set	Clamp Screw			Shim Key	Hex Key
Order Code **IND-107**						Order Code **KEN-601**	
-2920K	**-1680K**	**-094OK**	**-1880K**	-	-	**-1250K**	**-1500K**

Lever Lock Boring Bars

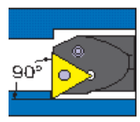
PTFN R/L

90° approach for negative triangular inserts.



Inserts See Group 120
Sizes **16** = 1604__
Sizes **22** = 2204__

TN_G



ISO Designation	Dimensions (mm) dg7	h	h1	l1	l2	f	Dmin	Order Code IND-106
S25T PTFNR **16**	25	23	11.5	300	40	17	31	**-7200K**
S32U PTFNR **16**	32	30	15.0	350	50	22	39	**-7240K**

Spares to Suit Contact your local branch for prices

Shim	Shim Pin	Lever	Lever Screw				Hex Key
Order Code **IND-107**							Order Code **KEN-601**
-	-	**-1000K**	**-1350K**	-	-	-	**-1200K**
-2450K	**-3050K**	**-0950K**	**-1300K**	-	-	-	**-1250K**

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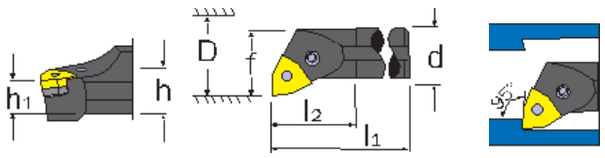
INDEXA-SEIKI Lever Lock Boring Bars Continued

PWLN R/L

95° approach for negative 80° Trigon inserts.

Inserts See Group 120
Sizes **06** = 0604__
Sizes **08** = 0804__
WN_G



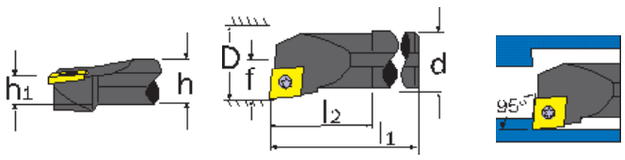
Spares to Suit Contact your local branch for prices

ISO Designation		Dimensions (mm) dg7	h	h1	l1	l2	f	Dmin	Order Code IND-106	Shim	Shim Pin	Lever	Lever Screw				Hex Key
										Order Code **IND-107**								Order Code **KEN-601**
S16R PWLNR	**06**	16	15	9	200	44	10	19	**-7320K**	-	-	**-1000K**	**-1350K**	-	-	-	**-1250K**
S20S PWLNR	**06**	20	18	9	250	42	12	23	**-7324K**	-	-	**-1000K**	**-1350K**	-	-	-	**-1250K**

Screw-On Boring Bars SCLC R/L

95° approach for 7° positive 80° rhombic inserts.

Inserts See Group 120
Sizes **06** = 0602 __
Sizes **09** = 09T3__
CC_T



Spares to Suit Contact your local branch for prices

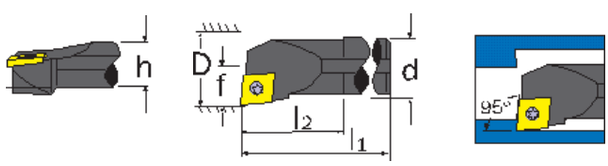
ISO Designation		Dimensions (mm) dg7	h	h1	l1	l2	f	Dmin	Order Code IND-106		Insert Screw						Torx Key
											Order Code **IND-107**						
S08K SCLCR	**06**	8	7	3.5	125	16	5	11	**-7380K**	-	**-3250K**	-	-	-	-	-	**-5070K**
S10M SCLCR	**06**	10	9	4.5	150	25	7	13	**-7400K**	-	**-3250K**	-	-	-	-	-	**-5070K**
S10M SCLCL	**06**								**-7410K**								
S12M SCLCR	**06**	12	11	5.5	150	30	9	17	**-7435K**	-	**-3250K**	-	-	-	-	-	**-5070K**
S12Q SCLCR	**09**	12	11	5.5	180	30	9	17	**-7440K**	-	**-3350K**	-	-	-	-	-	**-5150K**
S16R SCLCR	**09**	16	15	7.5	200	30	11	20	**-7480K**	-	**-3350K**	-	-	-	-	-	**-5150K**
S20S SCLCR	**09**	20	18	9	250	35	13	24	**-7500K**	-	**-3350K**	-	-	-	-	-	**-5150K**

Screw-on Boring Bars (Through Coolant)

95° approach. Uses CCMT 06 inserts.

WITH THROUGH COOLANT

Inserts See Group 120
Sizes **06** = 0602 __
CC_T

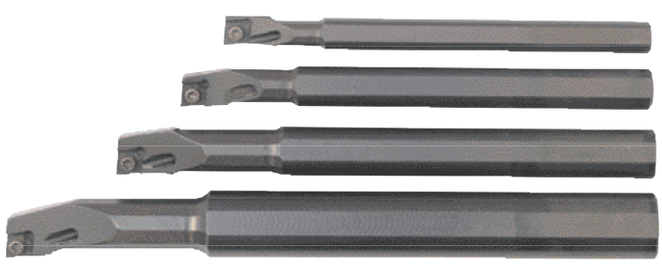


Spares to Suit Contact your local branch for prices

ISO Designation		Dimensions (mm) dg7	h	l1	l2	f	Dmin	Order Code IND-106		Insert Screw						Torx Key
										Order Code **IND-107**						
A0608H SCLC	**06**	6	7	100	25	4	8	**-7530K**	-	**-5240K**	-	-	-	-	-	**-5070K**
A0810J SCLC	**06**	8	9	110	32	6	12	**-7532K**								
A01012K SCLC	**06**	10	11	125	38	7	14	**-7534K**								
A01216M SCLCR	**06**	12	15	150	50	9	18	**-7536K**								

QBC-06 Quad Bore Holder Set – SCLC R

A set featuring 4 SCLCR 95° approach screw-on boring bars in 6, 8, 10 and 12mm diameter, the bars use a CCMT 06 insert. For small diameter bores on manual and CNC lathes.



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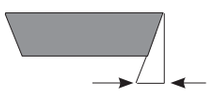
Inserts - ISO Designation

1 Shape

Symbol	Shape	Nose Angle	Figure
H	Hexagonal	120°	
O	Octagonal	135°	
P	Pentagonal	108°	
S	Square	90°	
T	Triangular	60°	
C	Rhombic	80°	
D		55°	
E		75°	
F		50°	
M		86°	
V		35°	
W	Trigon	80°	
L	Rectangular	90°	
A	Parallelogram	85°	
B		82°	
K		55°	
R	Round	-	

2 Relief Angle

Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0
P	11°
O	Others



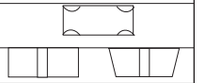
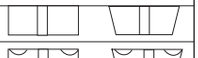
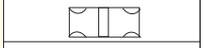
3 Accuracy

Symbol (class)	Tolerance (mm)		
	Corner Height (m)	Thickness (s) (s)	I.C. Dia. (d)
A	±0.005	±0.025	±0.025
F	±0.005	±0.025	±0.013
C	±0.013	±0.025	±0.025
H	±0.013	±0.025	±0.013
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
J	±0.025	±0.13	±0.05 ±0.13 *
K	±0.01	±0.025	±0.05 ±0.13 *
L	±0.025	±0.025	±0.05 ±0.13 *
M	±0.08 ±0.18 *	±0.13	±0.05 ±0.13 *
N	±0.08 ±0.18 *	±0.025	±0.05 ±0.13 *
U	±0.13 ±0.38 *	±0.13	±0.08 ±0.25 *

* Details of accuracy will vary according to shape and size of insert - futher details are available on request.

1	2	3	4	5
T	N	M	G	16

4 Groove and Hole

Symbol	Shape of Hole	Chipbreaker	Shape
N	Without Hole	Without	
R		Single-sided	
F		Double-sided	
A	Cylindrical Hole	Without	
M		Single-sided	
G		Double-sided	
W	With partly cylindrical hole, double-side 40° - 60°	Without	
T		Single-sided	
Q	With partly cylindrical hole, double-side 40° - 60° Countersink	Without	
U		Double-sided	
B	With partly cylindrical hole, single-side 70° - 90° Countersink	Without	
H		Single-sided	
C	With partly cylindrical hole, single-side 70° - 90° Countersink	Without	
J		Double-sided	
X	Special Type		

5 Cutting Edge Length

R		S		C		W		T		D		V		K		I.C. dia. (mm)
Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	
03	3.97	03	3.97	03	4.0	02	2.7	06	6.9	04	4.8	-	-	-	-	3.97
-	-	04	4.76	04	4.8	L3	-	08	8.2	05	5.8	-	-	-	-	4.76
05	5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.0
-	-	05	5.56	05	5.6	03	3.8	09	9.6	06	6.8					5.56
06	6.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.0
-	-	06	6.35	06	6.5	04	4.3	11	11.0	07	7.8	-	-	-	-	6.35
-	-	07	7.94	08	8.1	05	5.4	13	13.8	09	9.7	-	-	-	-	7.94
08	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.0
09	9.525	09	9.525	09	9.7	06	6.5	16	16.5	11	11.6	16	16.6	16	19.7	9.525
10	10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.0
12	12.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.0
12	12.7	12	12.7	12	12.9	08	8.7	22	22.0	15	15.5	22	22.1			12.70
15	15.875	15	15.875	16	16.1	10	10.9	27	27.5	19	19.4					15.875
16	16.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.0
19	19.05	19	19.05	19	19.3	13	13.0	33	33.0	23	23.3					19.05
20	20.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.0
-	-	22	22.225	22	22.6			38	38.5	27	27.1					22.225
25	25.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25.0
25	25.4	25	25.4	25	25.8			44	44.0	31	31.0	-	-	-	-	25.4
31	31.75	31	31.75	32	32.2			55	55.0	38	38.8	-	-	-	-	31.75
32	32.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32.0

Note: For the insert shape "K", the rule for the relationship between the symbol and the dimension differs from those of other shapes.

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Detailed accuracy for **J, K, L, M, N,** and **U** classes
For inserts whose corner angle is larger than 55°

Inscribed circle	Tolerance on inscribed circle dia. (d)		Tolerance on corner height (m)		Insert Shapes applied
	J, K, L, M, N	U	J, K, L, M, N	U	
6.35	±0.05	±0.08	±0.08	±0.13	H M O R P S T C E M
9.525					
12.70	±0.08	±0.13	±0.13	±0.20	
15.875	±0.10	±0.18	±0.15	±0.27	
19.05					
25.40	±0.13	±0.25	±0.18	±0.38	

For D-type inserts whose corner angles are 55°

Inscribed circle	Tolerance on inscribed circle dia. (d)	Tolerance on corner height (m)	Insert Shapes applied
6.35	±0.05	±0.011	D
9.525			
12.70	± 0.08	± 0.15	
15.875	±0.10	±0.11	
19.05			

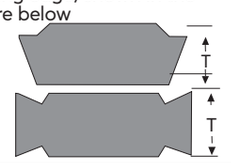
Note: The tolerance for shape V may be increased more than the value above.

7a Edge Preparation (Milling Inserts)

Rake Angle	C_r
A	14°
D	60°
E	75°
F	85°
P	90°
Special	

Relief Angle	α_0
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z	Special

Note on insert thickness
For chipbreaker inserts, the thickness is defined as 'T' (height from the bottom face to the cutting edge) shown in the figure below



6 Thickness

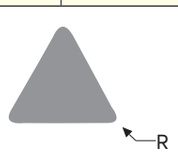
Symbol	Thickness
01	1.59
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

6 7 7a 8 9 10
0 4 0 8 T N - X X

(Optional Symbols)

7 Corner Radius

Symbol	Corner Radius (mm)
00	0.03
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
28	2.8
32	3.2



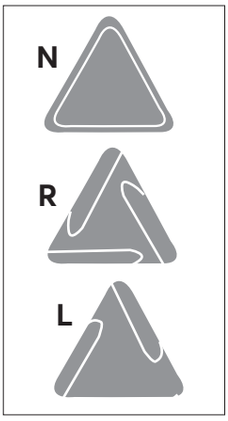
Radius (Turning Inserts)

8 Symbols of major cutting edge (Milling Inserts)

Symbol	Condition of Cutting Edge	Shape
F	Sharp Edge	
E	Honed Rounded edge	
T	Chamfered edge	
S	Combination Chamfered & honed edge	

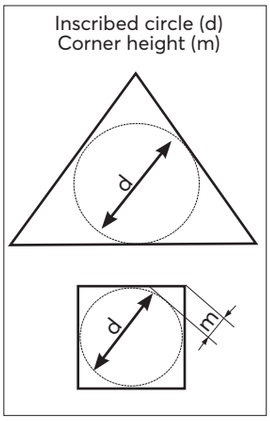
9 Hand of Insert

Symbol	Hand
R	Right
L	Left
N	Neutral



10 Chipbreaker

Chipbreakers are not part of ISO designation. Each manufacturer designates a chipbreaker in their own way.



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Inserts - ISO Turning

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Q-Series Grade Descriptions

QX500 (ISO **P10-P25**) Cement. For high speed finishing and light cutting. Will remain a high class surface finish. Mainly used on steels and can be applied to finish some Stainless steels and Cast Irons.

QX505 (ISO **K05-K15**) Coated. Used for finishing, semi finishing and medium roughing of Cast Irons including Malleable and Nodular Irons, at high speed.

QX510 (ISO **P01-P15 M10-M15 K01-K20**) Coated. Used for finishing on Steels and Stainless Steels, suitable also for turning Cast Irons including Malleable irons at high speeds.

QX5020 (ISO **P10-P35 M10-M30 K10-K30**) CVD Coated. An excellent general purpose grade for medium roughing on Steels, Stainless and Cast Irons.

QX530 (ISO **P25-P35 M15-M25**) Coated. Turning grade for Steels, Cast Steels and Stainless Steels. A good general purpose Steel grade for roughing.

QX5030 (ISO **P20-P40 M20-M30**) CVD Coated.
Medium / rough turning and intermediate cutting of steel / stainless steel. Combination of toughest substrate and alumina coating (MT-TiCN + TiC + AL2O3 + TiN) having superior chipping resistance provide wide coverage.

QX535S (ISO **M10-M30**) CVD Coated. For roughing and finishing turning applications on a wide variety of Stainless Steels.

QX8010 (ISO **M10 S10**) Coated. Excellent grade giving superior results on heat resistant super alloys, especially for the aerospace industry. TiAlN based coating ensures high wear resistance on these demanding materials.

K10 (ISO **K05-K20**) Uncoated. Used in combination with a high rake geometry for matching Aluminiums, Plastics and other soft Non-Ferrous materials.

Material Group	Material Description Like Colour defines similar machineability	Brinell Hardness HB	Rockwell Hardness HRC	Tensile Strength N/mm²	QX500	QX505	QX510	QX5020	QX530	QX5030	QX535S	QX8010	K10
					Speed - m/min								
1.1	Mild, soft & free machining non-alloy low carbon steels	-130	- -	-400	200-270		200-300	180-350	150-200	150-200			
1.2	Non-alloy, case hardening, structural & low to medium carbon steels	-200		-700	180-250		200-300	150-320	130 180	130-180			
1.3	Non alloy, plain & medium carbon steels & castings	-260	-26	-850	150-220		200-300	130-280	110 150	120-150			
1.4	Generally low to medium alloy steels & castings	-260	-26	-850	140-210		170-250	140 210	110 140	120 140			
1.5	Medium to high alloy steels, tool steels & steel	260 -340	26 -48	850 -1200	140-200		140-200	130-200	100 120	100-120			
1.6	Heat treated high alloy steels & castings	340 -450	36 -48	1200 -1500	110-180		90-180	100-170	70 90	70-90			
2.1	Soft, generally easy to machine Ferritic & Martensitic steels & castings	-230	-20	-800	90-190			110-220		70-120	170-220	80-120	
2.2	Medium, reasonable to machine Austenitic stainless steels & castings	-290	-30	-1000	70-160	100-220		70-140	60-100	70-120	120-170	80-120	30-60
2.3	Hard, difficult to machine Ferritic & Austenitic (duplex) stainless & castings	-340	-36	-1200					50 90	50-90	70-120	80-120	30-70
3.1	Grey cast iron - soft to medium	-180			175-280	200-420	150-250	190-400					
3.2	Grey cast iron - medium to hard	180 -300			160-250	160-340	100-180	150-300					
3.3	Malleable & Nodular iron - soft to medium	-220			175-280	110-300	150-250	120-250					
3.4	Malleable & Nodular irons - medium to hard	220 -300			160-250	100-280	100-180	100-200					
4.1	Pure Titanium (also pure Nickel)											30-70	
4.2	Titanium alloys of a medium & hard nature											30-70	
4.3	Titanium alloys of a hard & very hard nature											30-50	
5.1	Heat resistant super alloys including iron based high temperature alloys											30-50	
5.2	Heat resistant super alloys, cobalt or nickel based, medium to hard to machine											30-50	
5.3	Heat resistant super alloys, cobalt or nickel based, hard or very hard to machine											30-50	
6.1	Copper			-500	200-250								200-500
6.2	Brass (Alpha - long chip)			-800	200-250								200-500
6.3	Brass (Beta - short chip) & soft Bronze			-800	200-250								100-500
6.4	High strength Bronze			-1200									
7.1	Unalloyed: Aluminium, Magnesium & Zinc			-150	300-500								400-700
7.2	Aluminium alloys less than 5% Si Magnesium & Zinc alloys (long chip)			150 -300	300-500								400-700
7.3	Aluminium alloys 5% to 10% Si			200 -500	300-500								400-600
7.4	Aluminium alloys above 10% Si (short chip)			200 -500									300-500
8.1	Thermoplastics												400-700
8.2	Thermo-setting plastics												400-700
8.3	Reinforced plastics & composite materials												200-500

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Think *POSITIVE* . . . and NEGATIVE

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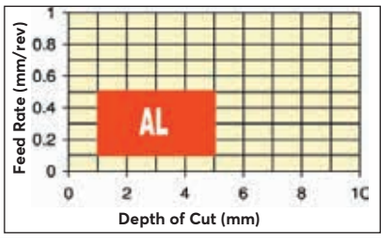
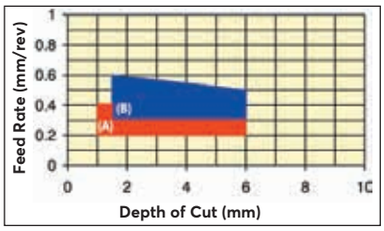
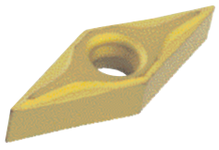
AL - High positive breaker specifically for aluminium alloys.

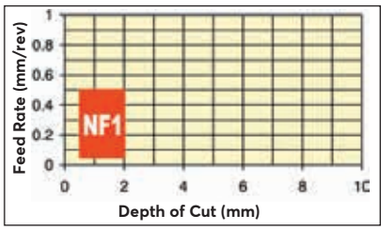


L11 / R11 - General purpose breaker for copy turning.
(A): 05 L/R11.
(B): 10 L/R11.

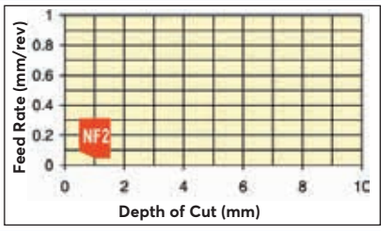


NF1 - Finishing breaker used on small VNMG 12 inserts.

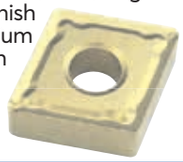


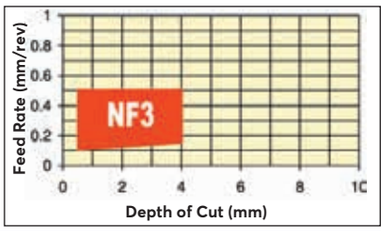


NF2 - A finishing chipbreaker associated with QX500 cermet will provide excellent surface finishes at high speeds on the majority of ferrous materials.

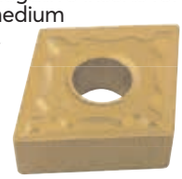


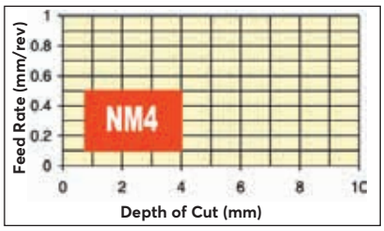
NF3 - Finishing chipbreaker for negative inserts used with QX510 for finishing steel or finish and medium cutting on cast iron.



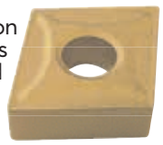


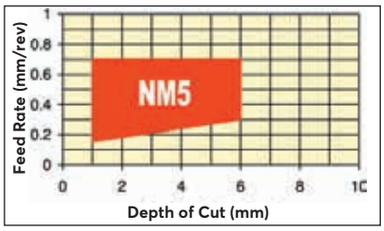
NM4 - Medium breaker used on negative inserts for light to medium roughing.



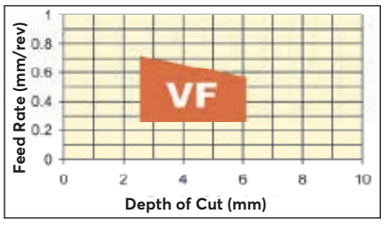


NM5 - General chipbreaker for medium roughing or semi finishing on steels and stainless in combination with grades QX510 and QX520.

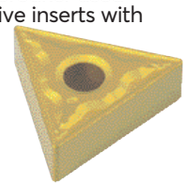


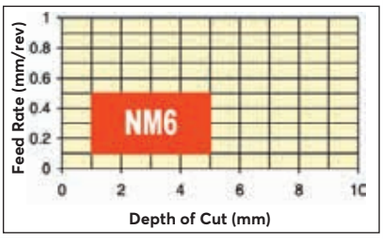


VF - General purpose chipbreaker with a radius groove, used with negative inserts. For light to medium cutting across a wide application band.

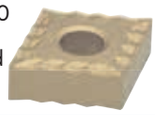


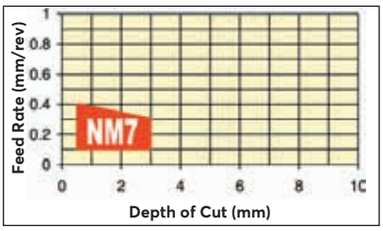
NM6 - General application medium breaker used on negative inserts with tougher grades.



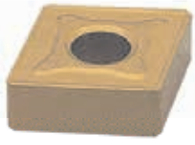


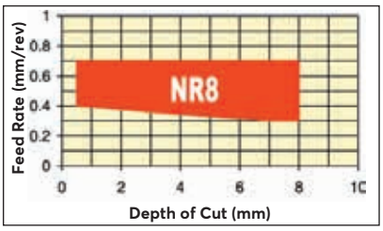
NM7 - A ripple edge breaker ideal for copy turning where cut depth varies and chip control is very important. Use with grade QX520 on steels, stainless and malleable irons.



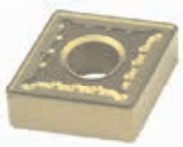


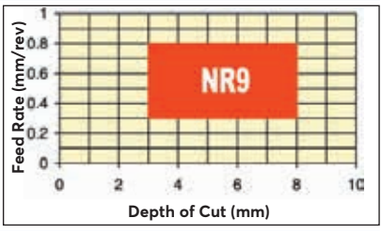
NR8 - Roughing breaker for steels and stainless with grades QX520.



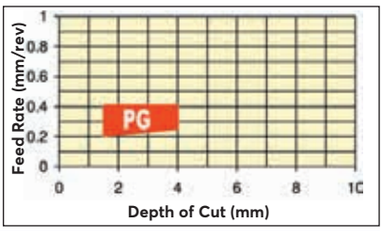


NR9 - General application roughing breaker, suitable for intermittent cuts on negative inserts.

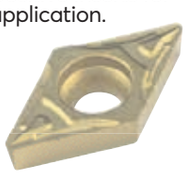


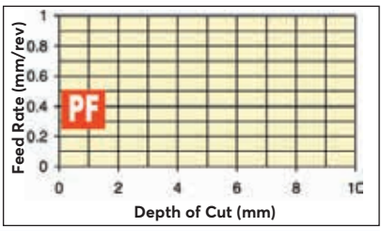


PG - General application finishing and light to medium roughing in conjunction with SPMR and TPMR positive inserts.

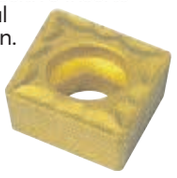


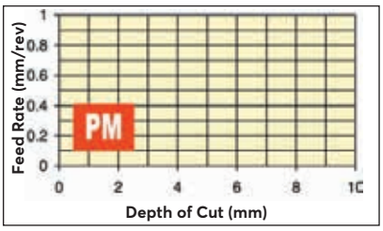
PF - Finishing breaker used on positive inserts for general application.



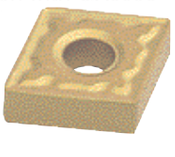


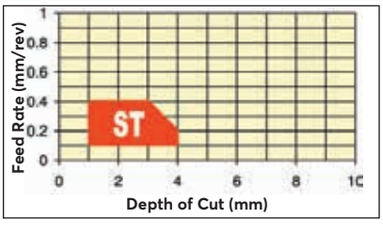
PM - Medium breaker used on positive inserts for general application.





ST - Light to medium roughing breaker used in conjunction with QX535S grade for turning stainless steels.





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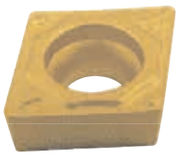
CCGT

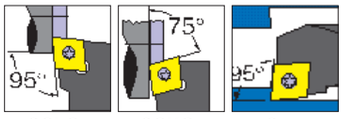
P	STEEL
M	STAINLESS STEEL
K	CAST IRON
N	ALUMINIUM
S	SUPER ALLOYS
H	HARDENED STEEL



Chip Breaker	Application
PF	Finish
AL	Med Cut (Alum)

Grade	ISO Designation P	M	K				
K10	-	-	05 - 20				✓
QX500	10 - 25	-	-	✓	✓	✓	✓
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓	
QX530	20 - 40	20 - 30	-	✓	✓		

Suitable for External/Internal Toolholders:



SCLC- SCKC- S_ _ _SCLC-

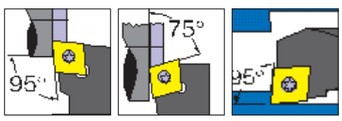
Insert Size **CCGT**	Chip-breaker	Grade	Order Code **YML-120**
060202	AL	K10	**-0121N**
060204	PF	QX500	**-0223A**
	PF	QX520	**-0223D**
	AL	K10	**-0131N**
09T302	AL	K10	**-0151N**
09T304	PF	QX500	**-0263A**
	PF	QX520	**-0263D**
	AL	K10	**-0161N**
09T308	AL	K10	**-0169N**
120402	AL	K10	**-0171N**
120404	AL	K10	**-0181N**
120408	AL	K10	**-0191N**

CCMT

Chip Breaker	Application
PM	Med Cut

Grade	ISO Designation P	M	K				
K10	-	-	05 - 20				✓
QX500	05 - 15	-	-	✓	✓	✓	✓
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓	
QX5020	10 - 35	10 - 30	10 - 30	✓	✓	✓	
QX5030	25 - 35	15 - 25	-	✓	✓		

Suitable for External/Internal Toolholders:

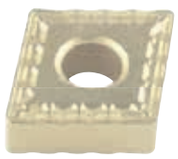


SCLC- SCKC- S_ _ _SCLC-

Insert Size **CCMT**	Chip-breaker	Grade	Order Code **YML-120**
060202	PM	QX500	**-0351A**
	PM	QX5020	**-0351G**
060204	PM	QX500	**-0355A**
	PM	QX520	**-0355D**
	PM	QX5030	**-0355H**
09T304	PM	QX500	**-0403A**
	PM	QX520	**-0403D**
	PM	QX5030	**-0403H**
09T308	PM	QX500	**-0406A**
	PM	QX5020	**-0406G**
120404	PM	QX5020	**-0410G**

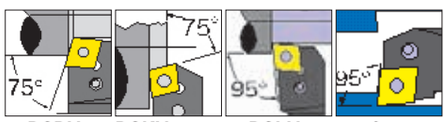
CNMG

Chip Breaker	Application
NF3	Finish
NSA	Light Cut
NM5	Med Cut
NM6	Med Cut
NM7	Med/Rough



Grade	ISO Designation P	M	K				
QX510	01 - 15	10 - 15	01 - 20	✓		✓	
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓	
QX530	20 - 40	20 - 30	-	✓	✓		
QX5030	25 - 35	15 - 25	-	✓	✓		
QX535S	-	10 - 30	-		✓		
QX8010	10	10	10	✓	✓	✓	✓

Suitable for External/Internal Toolholders:

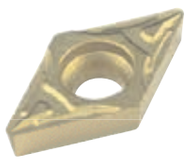


PCBN- PCKN- PCLN- S_ _ _PCLN-

Insert Size **CNMG**	Chip-breaker	Grade	Order Code **YML-120**
120404	NM6	QX5030	**-0711H**
120408	NSA	QX8010	**-0724K**
	NM6	QX5030	**-0716H**

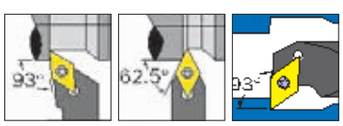
DCGT

Chip Breaker	Application
PF	Finish
AL	Med Cut (Alum)



Grade	ISO Designation P	M	K				
K10	-	-	05 - 20				✓
QX500	10 - 25	-	-	✓	✓	✓	✓
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓	
QX530	20 - 40	20 - 30	-	✓	✓		

Suitable for Internal/External Toolholders:



SDJC- SDNC- SDUC-

Insert Size **DCGT**	Chip-breaker	Grade	Order Code **YML-120**
070202	AL	K10	**-1021N**
070204	AL	K10	**-1031N**
11T302	AL	K10	**-1051N**
11T304	PF	QX530	**-1263E**
	AL	K10	**-1061N**
11T308	AL	K10	**-1071N**

DCMT

Chip Breaker	Application
PM	Med Cut

Grade	ISO Designation P	M	K				
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓	
QX5030	25 - 35	15 - 25			✓	✓	

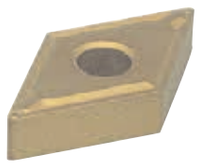
Suitable for Internal/External Toolholders:

SDNC- SDJC- S_ _ _SDUC-

Insert Size **DCMT**	Chip-breaker	Grade	Order Code **YML-120**
070204	PM	QX520	**-1314D**
11T304	PM	QX520	**-1328D**
	PM	QX5030	**-1328H**
11T308	PM	QX5020	**-1335G**
	PM	QX5030	**-1335H**

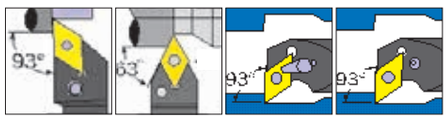
DNMG

Chip Breaker	Application
NM4	Med Cut
NM5	Med Cut
NM6	Med Cut



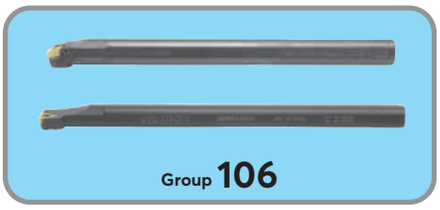
Grade	ISO Designation P	M	K				
QX505	-	-	05 - 15	✓		✓	
QX520	10 - 35	10 - 30	10 - 30	✓	✓	✓	
QX530	20 - 40	20 - 30	-	✓	✓		
QX5030	25 - 35	15 - 25	-	✓	✓		
QX535S	-	10 - 30	-		✓		
QX8010	10	10	10	✓	✓	✓	✓

Suitable for Internal/External Toolholders:



PDJN PDNN S_ _ _MDUN- S_ _ _PDUN-

Insert Size **DNMG**	Chip-breaker	Grade	Order Code **YML-120**
110404	NM4	QX5020	**-1574G**
110408	NM4	QX5020	**-1575G**
150604	NM6	QX530	**-1696E**
150608	NM6	QX5030	**-1716H**



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KNUX

Chip Breaker	Application
R11	Rough

Grade	ISO Designation P	M	K			
QX520	10 - 35	**10 - 30**	10 - 30	✓	✓	✓
QX530	20 - 40	**20 - 30**	-	✓	✓	

Suitable for External Toolholders:

CKJN-

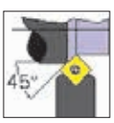
Insert Size Chip- KNUX breaker	Grade	Order Code **YML-120**
	R11	QX5030 **-2223H**
160405	R11	QX520 **-2213D**
	R11	QX530 **-2213E**

SCGT

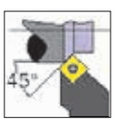
Chip Breaker	Application
AL	Medium (Alum)

Grade	ISO Designation P	M	K	
K10	-	-	05 - 20	✓

Suitable for External Toolholders:

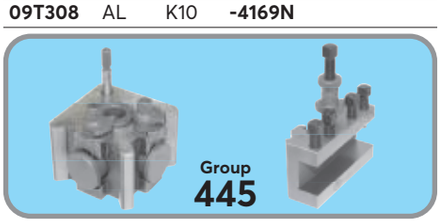


SSDC-



SSSC-

Insert Size Chip- SCGT breaker	Grade	Order Code **YML-120**
09T308	AL K10	**-4169N**

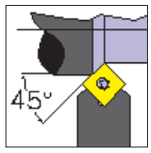


SCMT

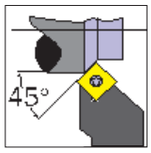
Chip Breaker	Application
PM	Medium

Grade	ISO Designation P	M	K			
QX520	10 - 35	**10 - 30**	10 - 30	✓	✓	✓

Suitable for External Toolholders:



SSDC-



SSSC-

Insert Size Chip- SCMT breaker	Grade	Order Code **YML-120**
09T304	PM QX520	**-0425D**

SNMG

Chip Breaker	Application
NM6	Med Cut
NM7	Med/Rough
NR8	Rough

Grade	ISO Designation P	M	K			
QX510	01 - 15	**10 - 15**	01 - 20	✓		✓
QX520	10 - 35	**10 - 30**	10 - 30	✓	✓	✓
QX530	20 - 40	**20 - 30**	-	✓	✓	
QX5030	25 - 35	**15 - 25**		✓	✓	
QX535S		**10 - 30**			✓	

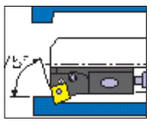
Suitable for Internal/External Toolholders:

PSBN-

PSDN-

PSKN-

S_ _ _PSKN-



PSKN-

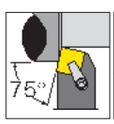
Insert Size Chip- SNMG breaker	Grade	Order Code **YML-120**
120408	NM6 QX5030	**-5336H**

SPMR

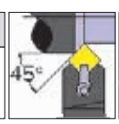
Chip Breaker	Application
PG	Medium

Grade	ISO Designation P	M	K			
QX520	10 - 35	**10 - 30**	10 - 30	✓	✓	✓
QX530	20 - 40	**20 - 30**	-	✓	✓	
QX5020	10 - 35	**10 - 30**	10 - 30	✓	✓	✓
QX5030	25 - 35	**15 - 25**		✓	✓	

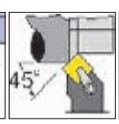
Suitable for Internal/External Toolholders:



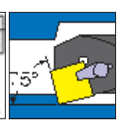
CSBP-



CSDP-



CSSP-



S_ _ _CSKP

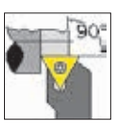
Insert Size Chip- SPMR breaker	Grade	Order Code **YML-120**
120304	PG QX520	**-6642D**
120308	PG QX5020	**-6662G**
	PG QX5030	**-6662H**

TCGT

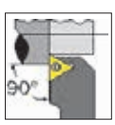
Chip Breaker	Application
PF	Finish
AL	Medium

Grade	ISO Designation P	M	K	
K10	-	-	05 - 20	✓
QX520	10 - 35	**10 - 30**	10 - 30	✓ ✓ ✓
QX5020	10 - 35	**10 - 30**	10 - 30	✓ ✓ ✓

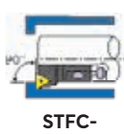
Suitable for Internal/External Toolholders:



STFC-



STGC-



STFC-

STTC-

STGC-

Insert Size Chip- TCGT breaker	Grade	Order Code **YML-120**
110202	AL K10	**-6931N**
110204	AL K10	**-6941N**
16T304	AL K10	**-6971N**
16T308	AL K10	**-6981N**

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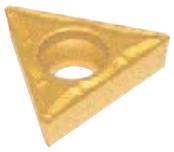
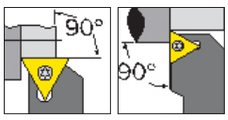
TCMT

Chip Breaker	Application
PM	Med Cut

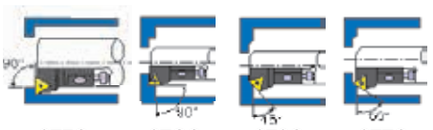


Grade	ISO Designation P	M	K			
QX500	10 - 25	-	-	✓	✓	✓
QX520	10 - 35	**10 - 30**	10 - 30	✓	✓	✓

Suitable for Internal/External Toolholders:



STFC- **STGC-**

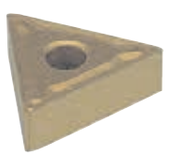


STFC- **STGC-** **STSC-** **STTC-**

Insert Size Chip- TCMT breaker	Grade	Order Code YML-120
090204 PM	QX5020	**-7110G**
110204 PM	QX500	**-7120A**
PM	QX520	**-7120D**
16T304 PM	QX500	**-7140A**
PM	QX5020	**-7140G**
16T308 PM	QX5020	**-7145G**

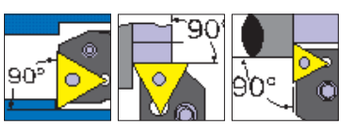
TNMG

Chip Breaker	Application
NF3	Finish
NM5	Med Cut
NM6	Med Cut
NM7	Med Cut
NR8	Rough
NR9	Rough



Grade	ISO Designation P	M	K			
QX500	10 - 25	-	-	✓	✓	✓
QX520	10 - 35	**10 - 30**	10 - 30	✓	✓	✓
QX5030	25 - 35	**15 - 25**	-	✓	✓	
QX535S	-	**10 - 30**	-		✓	

Suitable for Internal/External Toolholders:



S_ _ _PTFN- **PTFN-** **PTGN-**

PTFN **PTSN-** **PTTN-** **PTWN-**

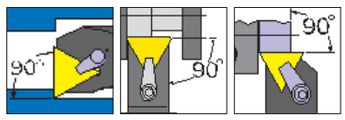
Insert Size Chip- TNMG breaker	Grade	Order Code YML-120
160404 NM6	QX5030	**-7516H**
160408 NM6	QX5030	**-7526H**

TPMR

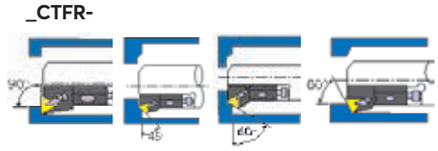
Chip Breaker	Application
PG	Med/Cut

Grade	ISO Designation P	M	K			
QX520	10 - 35	**10 - 30**	10 - 30	✓	✓	✓
QX530	20 - 40	**20 - 30**		✓	✓	
QX5020	10 - 35	**10 - 30**	10 - 30	✓	✓	✓
QX5030	25 - 35	**15 - 25**		✓	✓	

Suitable for Internal/External Toolholders:



S_ _ _CTFR- **CTCP-** **CTFP-**



CTFP- **CTSP-** **CTTP-** **CTWP-**

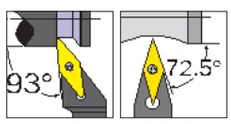
Insert Size Chip- TPMR breaker	Grade	Order Code YML-120
110304 PG	QX5020	**-8742G**
PG	QX5030	**-8742H**
160304 PG	QX520	**-8772D**
160308 PG	QX520	**-8782D**
PG	QX5030	**-8782H**

VCGT

Chip Breaker	Application
AL	Med Cut

Grade	ISO Designation P	M	K	
K10	-	-	05 - 20	✓

Suitable for External Toolholders:



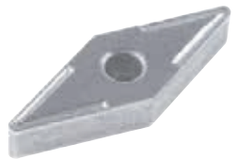
SVJC- **SVVCN**

Insert Size Chip- VCGT breaker	Grade	Order Code YML-120
110302 AL	K10	**-9101N**
110304 AL	K10	**-9111N**
160404 AL	K10	**-9141N**
160408 AL	K10	**-9151N**
160412 AL	K10	**-9161N**

Group **447**

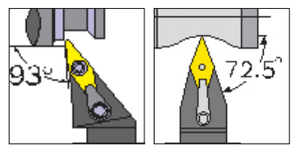
VNMG

Chip Breaker	Application
NFI	Finish
VF	Finish



Grade	ISO Designation P	M	K				
QX500	10 - 25	-	-	✓	✓	✓	✓
QX520	10 - 35	**10 - 30**	10 - 30	✓	✓	✓	
QX530	20 - 40	**20 - 30**	-	✓	✓		
QX5030	25 - 35	**15 - 25**	-	✓	✓		

Suitable for External Toolholders:

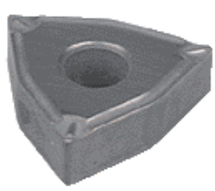


MVJNL- **MVVN-**

Insert Size Chip- VNMG breaker	Grade	Order Code YML-120
12T302 NFI	QX530	**-9402E**
12T304 NFI	QX500	**-9404A**
NFI	QX530	**-9404E**
12T308 NFI	QX5030	**-9408H**

WNMG

Chip Breaker	Application
NSS	Light/Medium
NM4	Med Cut
NM5	Med Cut
NM6	Med Cut



Grade	ISO Designation P	M	K			
QX510	01 - 15	**10 - 15**	01 - 20	✓	✓	
QX520	10 - 35	**10 - 30**	10 - 30	✓	✓	
QX5030	25 - 35	**15 - 25**	-	✓	✓	
QX535S	-	**10 - 30**	-	✓	✓	
QX8010	10	**10**	10	✓	✓	✓

Suitable for Internal/External Toolholders:

S_ _ _MWLN- **PWLN-**

Insert Size Chip- WNMG breaker	Grade	Order Code YML-120
060404 NM4	QX520	**-9774D**
060408 NSS	QX8010	**-9780K**
080408 NM6	QX5030	**-9836H**

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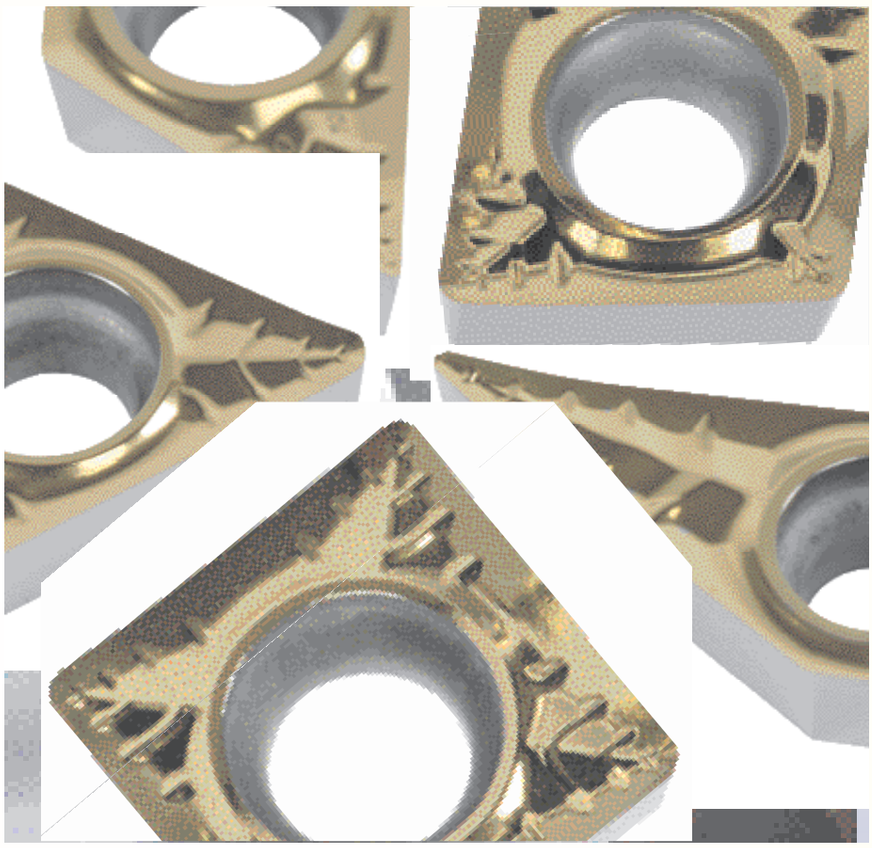
YAMALOY YAMALOY TOOLING • JAPAN

Think *POSITIVE*... and NEGATIVE

YAMALOY YAMALOY TOOLING • JAPAN

Insert Geometry for Finishing & Semi-finishing of Aluminium & Aluminium Alloys

- Optimised edge and radius geometry.
- Improved surface finish.
- Improved chip control.
- 'G' Tolerance for high repeatability.
- First choice for machining pure aluminium.
- 30% longer insert life compared to uncoated grade.



Grade K10C

ISO N05-N15 PVD Coated. Micrograin carbide for machining aluminium and aluminium alloys, 30% higher tool life against uncoated grade. Smooth coating and polished surface gives better chip control.

ALC Geometry

For finishing and semi finishing of aluminium and aluminium alloys. A unique breaker design gives a sharp cutting edge and positive rake angle. Special edge preparation and surface treatment produce better surface quality and greater chip control, reduced friction and vibration. 'G' tolerance inserts for higher repeatability.

Feed Rates

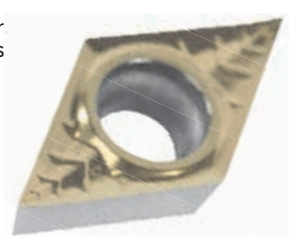
For Machining Pure Aluminium
Ap. DOC = 0.02 ~ 4.80 (mm)
F = 0.05~0.50 (mm/r)

For Machining Aluminium Alloys
Ap. DOC = 0.02 ~ 3.50 (mm)
F = 0.05~0.40 (mm/r)

30% LONGER INSERT LIFE COMPARED TO UNCOATED GRADE

DCGX

Fits the same Internal/Exterr Toolholders as DCGT



Insert Size	Chip-breaker	Grade	Order Code YML-120
070204	ALC	K10C	**-1282N**
11T304	ALC	K10C	**-1291N**

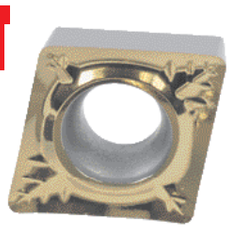
TCGX

Fits the same Internal/External Toolholders as TCGT

Insert Size	Chip-breaker	Grade	Order Code YML-120
16T308	ALC	K10C	**-7096N**

CCGX

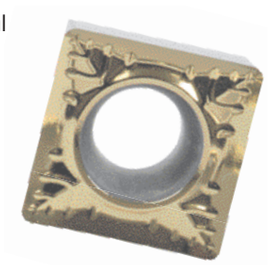
Fits the same Internal/External Toolholders as CCGT



Insert Size	Chip-breaker	Grade	Order Code YML-120
060202	ALC	K10C	**-0312N**
060204	ALC	K10c	**-0314N**
09T304	ALC	K10C	**-0318N**
09T308	ALC	K10C	**-0320N**
120404	ALC	K10C	**-0324N**
120408	ALC	K10C	**-0326N**

SCGX

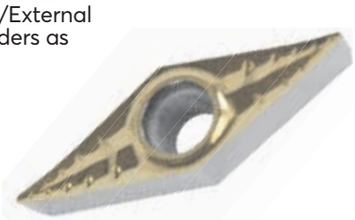
Fits the same Internal/External Toolholders as SCGT



Insert Size	Chip-breaker	Grade	Order Code YML-120
120408	ALC	K10C	**-4173N**

VCGX

Fits the same Internal/External Toolholders as VCGT



Insert Size	Chip-breaker	Grade	Order Code YML-120
110302	ALC	K10C	**-9201N**
110304	ALC	K10C	**-9203N**
160404	ALC	K10C	**-9233N**

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KENNEDY QUALITY INDUSTRIAL TOOLING Brazed Tip Turning & Boring Tools

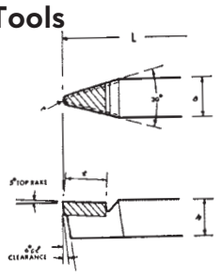
Manufactured in three standard grades (all sizes are nominal). Manufactured to **ISO DIN BHMA Standards.**

P40 **P40:** Roughing to heavy roughing of steel and steel castings using heavy feeds and low to medium cutting speeds. Also used under unfavourable conditions, particularly where intermittent cutting is involved. This grade is also suitable for planing operations and for machining manganese steel.

P30 **P30:** Carbide tipped tools are suitable for heavy duty turning and boring on all classes of steel. Suitable also for interrupted cutting and machining at low speeds and heavy feeds.

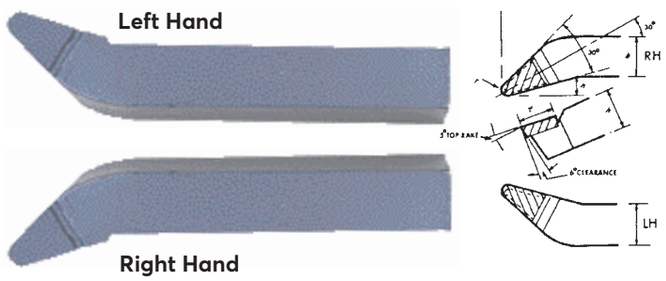
K20 **K20:** General purpose tools for most applications. Ideal for machining cast iron, non-ferrous metals, bakelite etc. Combines wear resistance with toughness when rough turning at moderate cutting speeds. Suitable for high feed rates.

Straight Round Nosed Turning Tools



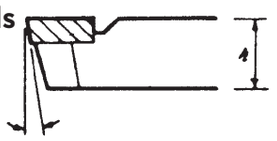
Tool No.	Cut	Shank Height x Width	Weight each	Order Code KEN-100 P40	P30	K20
010	N	3/8" x 3/8"	160g	-	-0100K	-
012	N	1/2" x 1/2"	190g	-	-0140K	-0150K
016	N	5/8" x 5/8"	240g	-	-0190K	-0200K
020	N	3/4" x 3/4"	410g	-	-0230K	-0240K
024	N	1" x 3/4"	520g	-	-0270K	-
026	N	1" x 1"	760g	-	-0310K	-

Cranked Round Nosed Turning Tools



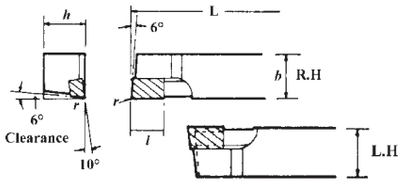
Tool No.	Cut	Shank Height x Width	Weight each	Order Code KEN-100 P40	P30	K20
12	RH	1/2" x 1/2"	110g	-	-0510K	-0520K
13	LH	1/2" x 1/2"	110g	-	-0530K	-0540K
16	RH	5/8" x 5/8"	240g	-	-0590K	-0600K
17	LH	5/8" x 5/8"	240g	-	-0610K	-
20	RH	3/4" x 3/4"	410g	-	-0690K	-0700K
21	LH	3/4" x 3/4"	410g	-	-0710K	-0720K
26	RH	1" x 1"	720g	-	-0820K	-
27	LH	1" x 1"	720g	-	-0840K	-

Light Turning & Boring Tools

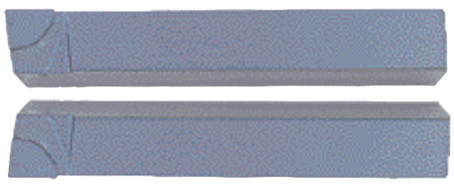


Tool No.	Cut	Shank Height x Width	Weight each	Order Code KEN-100 P40	P30	K20
40	N	3/8" x 3/8"	70g	-	-1000K	-
44	N	1/2" x 1/2"	120g	-	-1060K	-1070K
60	N	3/4" x 3/4"	430g	-	-1660K	-

Bar Turning Tools



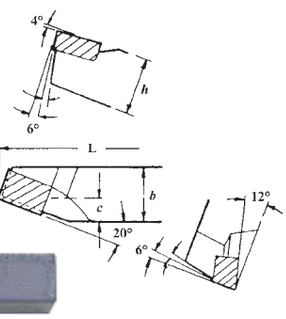
Left Hand



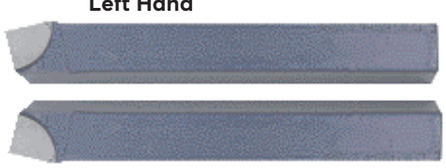
Right Hand

Tool No.	Cut	Shank Height x Width	Weight each	Order Code KEN-100 P40	P30	K20
100	RH	3/8" x 3/8"	70g	-	-2010K	-
101	LH	3/8" x 3/8"	70g	-	-2040K	-
102	RH	1/2" x 1/2"	120g	-2055K	-2060K	-2080K
103	LH	1/2" x 1/2"	120g	-	-2100K	-2110K
106	RH	5/8" x 5/8"	260g	-	-2180K	-
110	RH	3/4" x 3/4"	440g	-	-2280K	-2290K
111	LH	3/4" x 3/4"	440g	-	-2300K	-

Bar & Knee Turning Tools



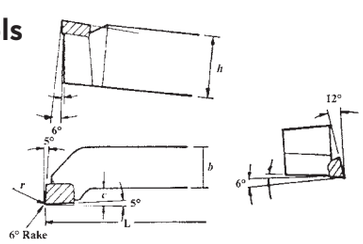
Left Hand



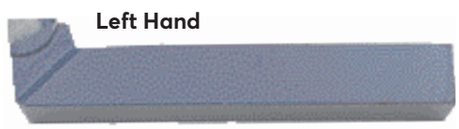
Right Hand

Tool No.	Cut	Shank Height x Width	Weight each	Order Code KEN-100 P40	P30	K20
132	RH	1/2" x 1/2"	120g	-	-2550K	-
140	RH	3/4" x 3/4"	430g	-	-2610K	-
141	LH	3/4" x 3/4"	430g	-	-2630K	-

Cranked Turning Tools



Left Hand



Right Hand

Tool No.	Cut	Shank Height x Width	Weight each	Order Code KEN-100 P40	P30	K20
160	RH	3/8" x 3/8"	70g	-	-2780K	-2790K
161	LH	3/8" x 3/8"	70g	-	-2800K	-
162	RH	1/2" x 1/2"	130g	-	-2830K	-2860K
163	LH	1/2" x 1/2"	130g	-	-2870K	-2880K
166	RH	5/8" x 5/8"	270g	-	-2940K	-
167	LH	5/8" x 5/8"	270g	-	-	-2990K
170	RH	3/4" x 3/4"	460g	-	-3040K	-3070K
171	LH	3/4" x 3/4"	460g	-	-3080K	-3090K

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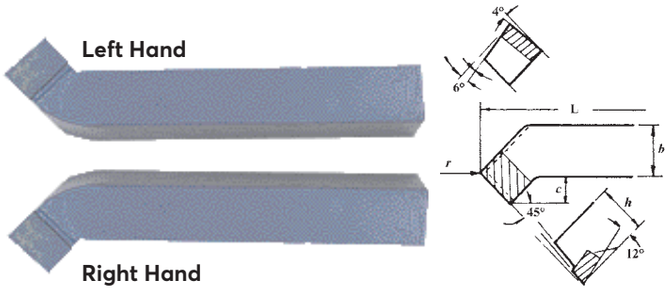
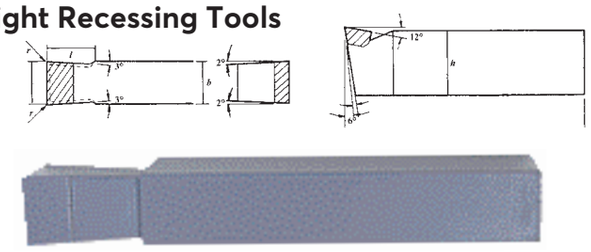
KENNEDY QUALITY INDUSTRIAL TOOLING Brazed Tip Cranked Turning & Facing Tools



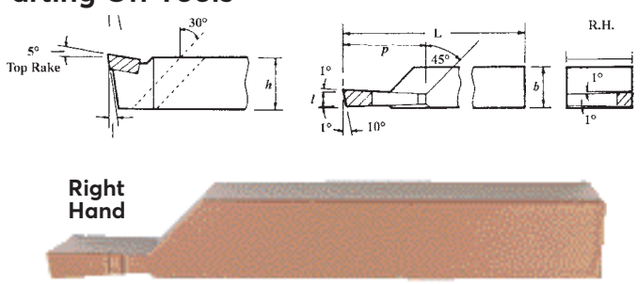
Tool No.	Cut	Shank Height x Width	Weight each	Order Code KEN-100 P40	P30	K20
192	RH	½" x ½"	110g	-	-3410K	-3420K
196	RH	⅝" x ⅝"	260g	-3490K	-3500K	-
197	LH	⅝" x ⅝"	260g	-	-3520K	-
200	RH	¾" x ¾"	430g	-3680K	-3690K	-3710K
201	LH	¾" x ¾"	430g	-	-3720K	-
206	RH	1" x 1"	790g	-	-	-3850K
207	LH	1" x 1"	790g	-3855K	-	-

Straight Recessing Tools



Tool No.	Cut	Shank Height x Width	Weight each	Order Code KEN-100 P40	P30	K20
230	N	⅜" x ⅜"	64g	-	-4370K	-
232	N	½" x ½"	120g	-	-4460K	-
236	N	⅝" x ⅝"	250g	-	-4620K	-

Parting Off Tools



Right Hand

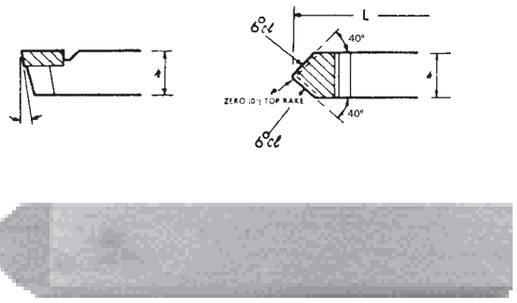
Tool No.	Tip	Shank Height x Width	Weight each	Order Code KEN-100 P40	P30	K20
260	3/32"	⅝" x ⅜"	120g	-5200K	-5210K	-5220K
262	⅛"	¾" x ½"	220g	-5260K	-5270K	-5280K
264	3/16"	1" x ⅝"	390g	-5320K	-5330K	-5350K
265	¼"	1" x ¾"	480g	-5420K	-5430K	-
270	3/32"	⅝" x ⅜"	110g	-	-5610K	-
272	⅛"	¾" x ½"	220g	-	-5690K	-5710K
274	3/16"	1" x ⅝"	390g	-	-5750K	-5770K
275	¼"	1" x ¾"	460g	-5810K	-5820K	-5840K
276	5/16"	1¼" x ¾"	700g	-	-5880K	-5900K

Square Shank Boring Tools Held at 90° in Bar

Right Hand

Tool No.	Cut	Shank H	Shank W	Weight each	Order Code KEN-100 P40	P30	K20
280	RH	¼"	¼"	11g	-	-6180K	-
288	RH	½"	½"	109g	-	-6340K	-

Square Shank Boring Tools Held at 80° in Bar

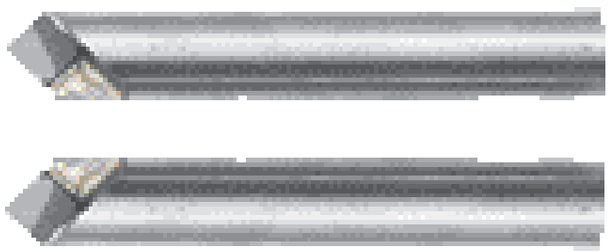


Tool No.	Cut	Shank H	Shank W	Weight each	Order Code KEN-100 P40	P30	K20
300	N	¼"	¼"	11g	-	-6580K	-
308	N	⅜"	⅜"	16g	-	-6750K	-
316	N	½"	½"	109g	-	-6920K	-

Light Duty Round Shank Boring Tools Used at 45° in Bar

EXTENDED RANGE

Right Hand

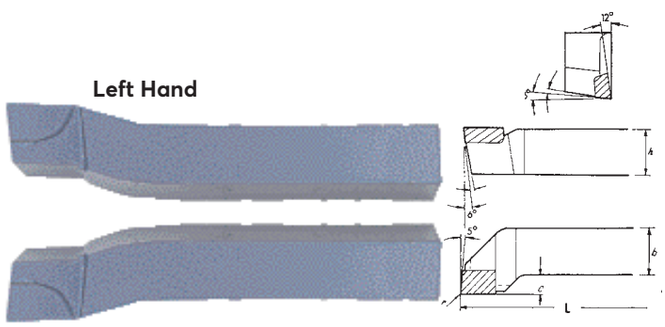


Left Hand

Tool No.	Cut	Shank Dia. x Length	Weight each	Order Code KEN-100 P40	P30	K20
375	LH	5/16" x 1½"	13g	-	-8110K	-
376	RH	⅜" x 2½"	30g	-	-8130K	-
377	LH	⅜" x 2½"	30g	-	-8150K	-8160K
380	RH	½" x 5"	65g	-	-8220K	-

Cranked Knife Turning Tools

Left Hand



Right Hand

Tool No.	Cut	Shank Height x Width	Weight each	Order Code KEN-100 P40	P30	K20
2130	RH	⅜" x ⅜"	70g	-	-8970K	-
2132	RH	½" x ½"	120g	-	-9010K	-9020K
2133	LH	½" x ½"	120g	-	-9030K	-
2136	RH	⅝" x ⅝"	260g	-	-9230K	-9250K
2137	LH	⅝" x ⅝"	260g	-	-9260K	-
2140	RH	¾" x ¾"	430g	-9380K	-9390K	-9400K
2141	LH	¾" x ¾"	430g	-	-9420K	-
2146	RH	1" x 1"	800g	-	-9670K	-

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KENNEDY QUALITY INDUSTRIAL TOOLING® Butt Welded Tools

Manufactured from top quality sintered steels. For use on a wide range of applications from roughing to finishing.
Manufactured to **BS 1296 : Part 3 : 1978.**

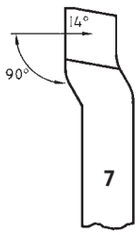
Light Turning & Facing

Right Hand

Shape No.1RH Rake & Clearance Angles	
Top Rake	14°
Front Clearance	6°
Approach Angle	-2°
Trail Angle	15°
Side Clearance	6°
Corner Radius	-

Shank (mm)	Overall Length	Order Code KEN-010
12 x 12	100	**-0120K**
16 x 16	110	**-0160K**

Knife or Side Cutting



Right Hand

Shape No.7RH Rake & Clearance Angles	
Top Rake	14°
Front Clearance	6°
Approach Angle	-2°
Trail Angle	4 - 10°
Side Clearance	6°
Corner Radius	-

Shank (mm)	Overall Length	Order Code KEN-010
12 x 12	100	**-1120K**
16 x 16	110	**-1160K**

External Screw Cutting Right Hand

No Rake

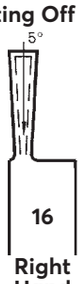
Also available for cutting left hand thread - No.13LH

No.13 RH
(No.14 LH
available on request)

Shape No.13RH Rake & Clearance Angles	
Top Rake	0°
Front Clearance	12°
Approach Angle	30°
Trail Angle	60°
Side Clearance	60°
Corner Radius	-

Shank (mm)	Overall Length	Order Code KEN-010
12 x 12	100	**-2120K**
16 x 16	110	**-2160K**

Parting Off

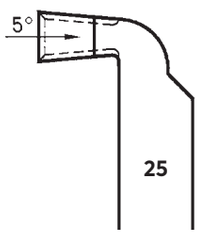


Right Hand

Shape No.16RH Rake & Clearance Angles	
Top Rake	5°
Front Clearance	6°
Approach Angle	90°
Trail Angle	0°
Side Clearance	1-2°
Corner Radius	-

Shank (mm)	Overall Length	Order Code KEN-010
12 x 12	100	**-3120K**
16 x 16	110	**-3160K**

Right Angle Recessing



Right Hand

Shape No.25RH Rake & Clearance Angles	
Top Rake	5°
Front Clearance	6°
Approach Angle	0°
Trail Angle	2°
Side Clearance	3°
Corner Radius	-

Shank (mm)	Overall Length	Order Code KEN-010
16 x 16	110	**-6160K**

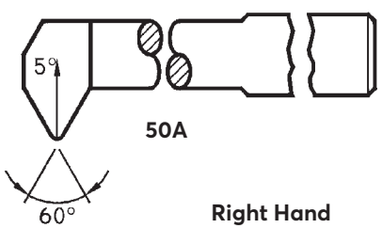
Facing

Right Hand

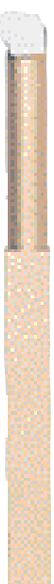
Shape No.19RH Rake & Clearance Angles	
Top Rake	14°
Front Clearance	6°
Approach Angle	-30°
Trail Angle	15°
Side Clearance	6°
Corner Radius	3 - 8°

Shank (mm)	Overall Length	Order Code KEN-010
12 x 12	100	**-5120K**
16 x 16	110	**-5160K**

Internal Screw Cutting Tools



Right Hand

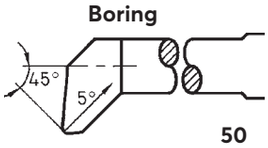


Shape No. 50A Rake & Clearance Angles	
Top Rake	5°
Front Clearance	6°
Approach Angle	0°
Trail Angle	1°
Side Clearance	1°
Corner Radius	-

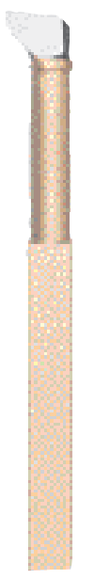
Shank (mm)	Overall Length	Order Code KEN-010
20 x 12	160	**-8620K**

Boring Tools & Through Boring Tools

Boring



Right Hand



Rake & Clearance Angles	Shape No. 50
Top Rake	5°
Front Clearance	6°
Approach Angle	-1°
Trail Angle	4°
Side Clearance	6°
Corner Radius	-3°
Cutting Angle	30°

Shank (mm)	Overall Length	Order Code KEN-010
12 x 12	160	**-8120K**
16 x 16	200	**-8160K**

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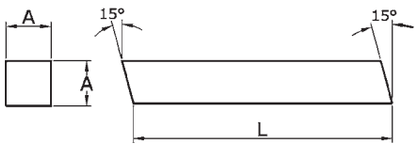
KENNEDY QUALITY INDUSTRIAL TOOLING Toolbits HSS

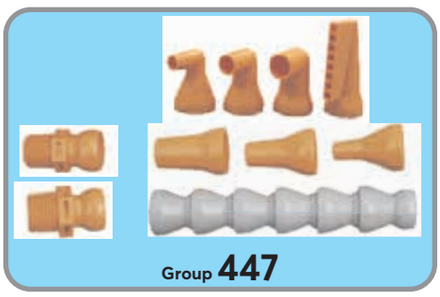
Cut faster, 'stand up' longer and reduce costs. Square and rectangular toolbits supplied with 15° bevelled ends. Parting-off blades supplied with 2° side taper, 10° bevel (top and bottom).



HSS Square Inch

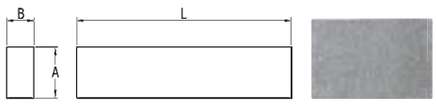
A	L	Weight each	Order Code KEN-090
3/16"	2½"	12g	-0040K
1/4"	2½"	21g	-0050K
1/4"	3"	25g	-0060K
1/4"	4"	33g	-0070K
5/16"	2½"	32g	-0100K
5/16"	3"	40g	-0110K
5/16"	4"	52g	-0130K
5/16"	6"	80g	-0140K
3/8"	3"	56g	-0160K
3/8"	4"	75g	-0180K
3/8"	6"	112g	-0190K
7/16"	4"	100g	-0220K
1/2"	3"	100g	-0250K
1/2"	4"	130g	-0270K
1/2"	6"	200g	-0280K
5/8"	4"	210g	-0300K
5/8"	6"	310g	-0330K
3/4"	4"	300g	-0350K
3/4"	5"	374g	-0360K
3/4"	6"	450g	-0370K
3/4"	8"	600g	-0380K
1"	6"	800g	-0390K

Group 732



Group 447

5% Cobalt Rectangular Inch HSS-Co 5%



B x A	L	Weight each	Order Code KEN-090
3/16" - 1/2"	6"	72g	-5100K
1/4" - 3/8"	4"	50g	-5110K
1/4" - 1/2"	4"	70g	-5120K
5/16" - 1/2"	6"	120g	-5130K
3/8" - 1/2"	4"	100g	-5140K
3/8" - 1/2"	6"	150g	-5150K
3/8" - 5/8"	4"	125g	-5160K
3/8" - 5/8"	6"	190g	-5170K
3/8" - 3/4"	4"	150g	-5180K
3/8" - 3/4"	6"	230g	-5190K
3/8" - 1"	6"	300g	-5200K
1/2" - 5/8"	6"	240g	-5210K
1/2" - 3/4"	4"	200g	-5220K
1/2" - 3/4"	6"	315g	-5240K
1/2" - 1"	6"	390g	-5250K
5/8" - 3/4"	6"	370g	-5270K
5/8" - 1"	6"	490g	-5290K

5% Cobalt Square Metric HSS-Co 5%

A (mm)	L (mm)	Weight each	Order Code KEN-090
5.00	80.0	10g	-3500K
6.00	40.0	15g	-3600K
6.00	80.0	22g	-3610K
6.00	100.0	30g	-3620K
6.00	160.0	44g	-3640K
8.00	80.0	50g	-3670K
8.00	100.0	52g	-3680K
8.00	160.0	90g	-3700K
8.00	200.0	110g	-3710K
10.00	80.0	70g	-3730K
10.00	100.0	81g	-3740K
10.00	125.0	110g	-3750K
10.00	160.0	122g	-3760K
12.00	100.0	120g	-3800K
12.00	125.0	152g	-3810K
12.00	160.0	190g	-3820K
14.00	100.0	155g	-3860K
14.00	160.0	240g	-3880K
16.00	100.0	210g	-3920K
16.00	160.0	335g	-3925K
20.00	160.0	440g	-3930K
20.00	200.0	650g	-3940K
25.00	160.0	760g	-3950K
25.00	200.0	1010g	-3960K

5% Cobalt Square Inch HSS-Co 5%

A	L	Weight each	Order Code KEN-090
3/16"	2½"	12g	-3020K
3/16"	3"	14g	-3030K
3/16"	4"	14g	-3040K
1/4"	2½"	21g	-3050K
1/4"	3"	25g	-3060K
1/4"	4"	33g	-3070K
1/4"	6"	50g	-3080K
5/16"	2½"	32g	-3100K
5/16"	3"	40g	-3110K
5/16"	4"	52g	-3130K
5/16"	6"	80g	-3140K
3/8"	3"	56g	-3160K
3/8"	4"	75g	-3180K
3/8"	6"	112g	-3190K
1/2"	3"	100g	-3250K
1/2"	4"	130g	-3270K
1/2"	6"	200g	-3280K
5/8"	4"	210g	-3300K
5/8"	6"	310g	-3330K
3/4"	4"	300g	-3350K
3/4"	6"	450g	-3370K
1"	6"	800g	-3390K

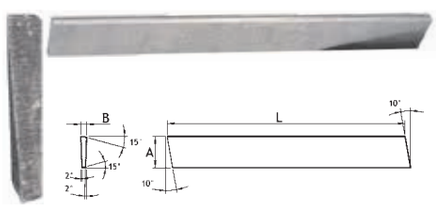
HSS Round Inch HSS

A	L	Weight each	Order Code KEN-090
3/16"	3"	11g	-1100K
1/4"	3"	20g	-1140K
1/4"	4"	27g	-1150K
5/16"	3"	31g	-1170K
5/16"	4"	42g	-1180K
3/8"	3"	45g	-1200K
3/8"	4"	60g	-1210K
1/2"	4"	110g	-1260K
1/2"	6"	160g	-1280K
5/8"	4"	170g	-1290K
5/8"	6"	250g	-1300K
3/4"	4"	240g	-1310K
3/4"	6"	360g	-1320K

5% Cobalt Round Metric HSS-Co 5%

A (mm)	L (mm)	Weight each	Order Code KEN-090
4.00	80.0	8g	-4510K
5.00	80.0	12g	-4530K
6.00	80.0	18g	-4550K
6.00	100.0	24g	-4570K
8.00	80.0	31g	-4590K
8.00	100.0	40g	-4630K
8.00	125.0	60g	-4610K
8.00	160.0	63g	-4650K
10.00	80.0	50g	-4670K
10.00	100.0	65g	-4690K
10.00	125.0	90g	-4710K
12.00	63.0	65g	-4730K
12.00	80.0	70g	-4750K
12.00	100.0	94g	-4770K
12.00	160.0	141g	-4810K
14.00	125.0	190g	-4830K
16.00	125.0	160g	-4870K
16.00	160.0	250g	-4890K
20.00	100.0	260g	-4930K
20.00	160.0	390g	-4950K

5% Cobalt Parting-Off Inch HSS-Co 5%



B x A	L	Weight each	Order Code KEN-090
3/32" - 1/2"	4½"	22g	-5410K
3/32" - 5/8"	5"	30g	-5430K
1/8" - 3/4"	6"	60g	-5450K
1/8" - 7/8"	7"	80g	-5470K
3/16" - 1"	8"	160g	-5490K
3/16" - 1 1/8"	9"	200g	-5510K

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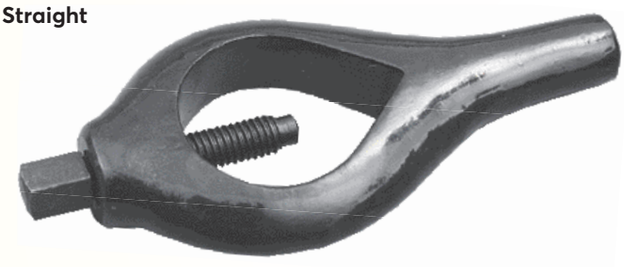
INDEXA Industrial Lathe Carriers

Available with straight or bent tail. Manufactured from high grade, malleable cast iron with high tensile strength. Smooth action square head clamping screw.

Straight



Type	Capacity	Weight each	Order Code **IND-445**
Straight	12.5mm	0.10kg	**-9000K**
	19.0mm	0.15kg	**-9010K**
	25.0mm	0.30kg	**-9020K**
	38.0mm	0.70kg	**-9040K**
	50.0mm	1.50kg	**-9060K**

Bent

Type	Capacity	Weight each	Order Code **IND-445**
Bent	12.5mm	0.10kg	**-9200K**
	38.0mm	0.70kg	**-9240K**
	50.0mm	1.50kg	**-9260K**

INDEXA Self-Centring Geared Scroll Lathe Chucks

Universal. Scrolls are forged, balanced and hardened. Thread flanks are ground on both sides. All models have grease nipples for easy lubrication and are supplied with two sets of solid jaws - internal and external stepped.

Cast Iron 3 Jaw Plain Back Chuck
DIN 6350 (form A).
Three jaw plain back with adaptor recess.
Model 003-204
Rear mounting.
Model 003-274
Front mounting.

Chuck Size (mm)	Through Hole	Weight each	Order Code **IND-475** 003-204 Rear Mount	003-274 Front Mount
80	16	1.51kg	**-1010K**	-
100	20	2.98kg	**-1030K**	**-1230K**
125	32	4.84kg	**-1040K**	**-1240K**
160	42	9.78kg	**-1060K**	**-1260K**
200	55	16.0kg	**-1070K**	**-1270K**
250	76	27.9kg	**-1080K**	**-1280K**
315	103	47.5kg	**-1090K**	**-1290K**

Steel 3 Jaw Plain Back Chuck
DIN 6350 (form A).
Three jaw plain back with adaptor recess.
Model 003-504
Rear mounting.

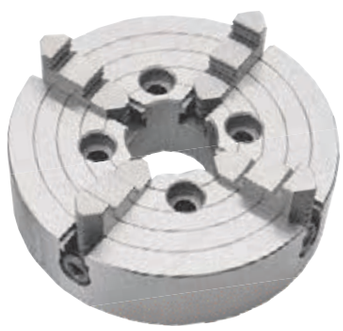
Chuck Size (mm)	Through Hole	Weight each	Order Code **IND-475**
100	20	3.0kg	**-1630K**
125	35	5.0kg	**-1640K**
160	42	8.5kg	**-1660K**
200	55	16.0kg	**-1670K**
250	76	32.0kg	**-1680K**
315	103	50.0kg	**-1690K**

Cast Iron 3 Jaw Plain Back Chuck
DIN 6350 (form A).
Three jaw plain back with adaptor recess.
Model 003-275
Front mounting, reversible jaws.

Chuck Size (mm)	Through Hole	Weight each	Order Code **IND-475**
125	32	5.0kg	**-1450K**
160	42	10.8kg	**-1460K**
200	55	17.5kg	**-1470K**
250	76	29.2kg	**-1480K**
315	103	50.0kg	**-1490K**

Independent Jaw Lathe Chucks

Cast Iron 4 Jaw Plain Back Chuck Type 004-304
Front mounted. Independently adjustable jaws. Allows firm gripping of irregular shaped work and the four jaws allow a square component to be perfectly centred to the chuck while achieving maximum gripping force. Steel body (sizes 85 - 160mm) or high quality cast iron (sizes 200 - 800mm).
Carbon steel hardened jaws. Supplied with reversible solid jaws.
With T-Slots. **DIN 6531**.



Chuck Jaws available on request

Chuck Size (mm)	Through Hole	Weight each	Order Code **IND-475**
200	50	14kg	**-5050K**
250	65	25kg	**-5060K**
315	80	39kg	**-5070K**

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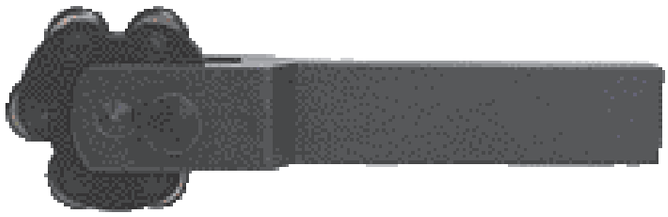
JHL Six Knurl Toolholder

Machine ground high grade steel, black mottle finish.
Revolving head. Knurls available separately, see table below.
For use with knurl size 3/4" x 3/8" x 1/4".



Size	Knurls Fitted	Weight each	Order Code **JHL-450**
1/2" x 1 1/8" x 6 1/2"	- 1110B & - 1210B	640g	**-8000A**

Two Knurl Toolholder

Machine ground high grade steel, black mottle finish.
Self-adjusting head. Knurls available separately, see table below.
For use with knurl size 3/4" x 3/8" x 1/4".

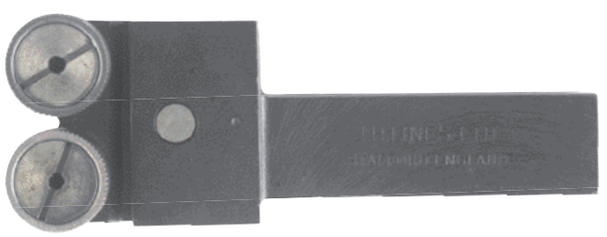
Size	Knurls Fitted	Weight each	Order Code **JHL-450**
1/2" x 7/8" x 6 1/2"	- 1110B & - 1210B	290g	**-8020C**

3/4" x 3/8" x 1/4" Knurls to suit Toolholders above

Style	Weight each	Order Code **JHL-450** Coarse	Medium	Fine
Straight	10g	**-1000A**	**-1010B**	**-1020C**
Right Hand	10g	**-1100A**	**-1110B**	**-1120C**
Left Hand	10g	**-1200A**	**-1210B**	**-1220C**

Two Knurl Toolholder

Side knurling up to a face or shoulder. Knurls available separately, see table below. For use with knurl size 25 x 10 x 16mm.



Size	Knurls Fitted	Weight each	Order Code **JHL-450**
20 x 25 x 85mm	- 3110B & - 3210B	900g	**-8040E**

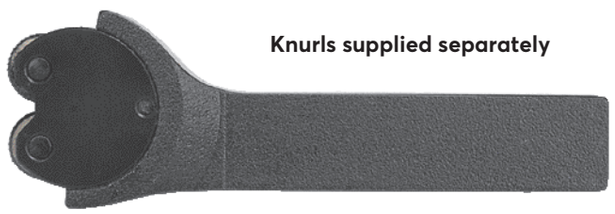
25 x 10 x 16mm Knurls to suit Toolholder above

Style	Weight each	Order Code **JHL-450** Coarse	Medium	Fine
Straight	10g	**-3000A**	**-3010B**	**-3020C**
Right Hand	10g	**-3100A**	**-3110B**	**-3120C**
Left Hand	10g	**-3200A**	**-3210B**	**-3220C**

Two Knurl Toolholder

Machine ground high grade steel, black mottle finish.
Self-adjusting head. Knurls available separately, see table below.
For use with knurl size 5/8" x 5/16" x 7/32".

Knurls supplied separately



Size	Knurls Fitted	Weight each	Order Code **JHL-450**
3/8" x 7/8" x 5 1/2"	Supplied separately	390g	**-8030D**

5/8" x 5/16" x 7/32" Knurls to suit Toolholder above

Style	Weight each	Order Code **JHL-450** Coarse	Medium	Fine
Straight	10g	**-2000A**	**-2010B**	**-2020C**
Right Hand	10g	**-2100A**	**-2110B**	**-2120C**
Checkered	10g	**-2300A**	**-2310B**	**-2320C**

Single Knurl Toolholder

Machine ground high grade steel, black mottle finish.
Knurls available separately, see table below.
For use with knurl size 3/4" x 1/4" x 1/4".

Size	Knurls Fitted	Weight each	Order Code **JHL-450**
1/2" x 1/2" x 4"	- 1510B	140g	**-8050F**

3/4" x 1/4" x 1/4" Knurls to suit Toolholder above

Style	Weight each	Order Code **JHL-450** Coarse	Medium	Fine
Straight	10g	**-1500A**	**-1510B**	**-1520C**
Right Hand	10g	**-1600A**	**-1610B**	**-1620C**
Checkered	10g	**-1800A**	**-1810B**	**-1820C**

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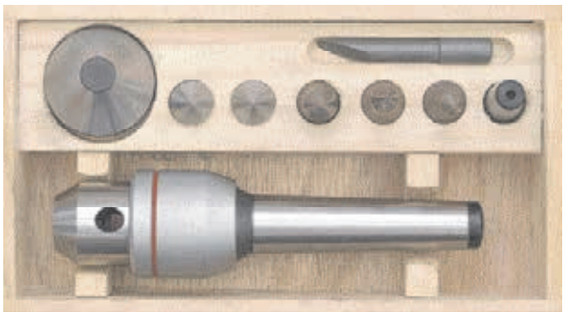
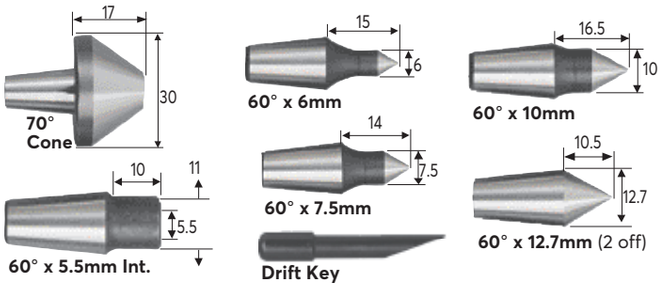
Standard Duty Interchangeable Revolving Centre Sets

Manufactured from high alloy steel, precision ground internally and externally with pre-lubricated bearings. A versatile revolving centre with interchangeable points for a wide variety of applications. Ideal for toolroom or manufacture of small turned components. Points fit into body by means of a taper and are removed by use of the drift key supplied. All mating surfaces are precision ground and the set is supplied in a varnished wooden storage box.

Morse Taper	Axial Load at 100rpm	Radial Load at 100rpm	Max rpm	Max Runout
No. 2	200Kgf	100Kgf	4000	0.005mm
No. 3	400Kgf	200Kgf	3000	0.005mm





Morse Taper	Length (mm)	Diameter (mm)	Weight each	Order Code **KEN-488**
No.2	124	33	0.85kg	**-1320K**
No.3	152	42	1.10kg	**-1330K**

Replacement Interchangeable Points

A complete range of interchangeable points to complement the revolving centre sets.

Description	Weight each	Order Code **KEN-489**
60° Point x 6mm Dia.	20g	**-1020K**
60° Point x 7.5mm Dia.	20g	**-1030K**
60° Point x 10mm Dia.	25g	**-1040K**
60° Point x 12.7mm Dia.	20g	**-1050K**

ATLAS WORKHOLDERS Standard Duty Revolving Centres

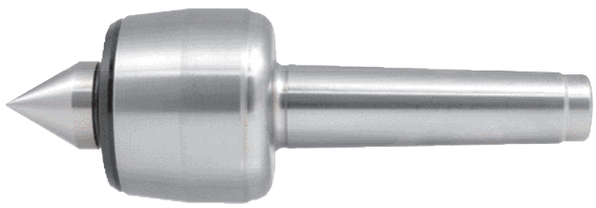
Manufactured from high alloy steel hardened and tempered then precision ground externally. Precision bearings are fitted as standard and the centres have a 60° point.
Maximum runout: 0.005mm.

Morse Taper	Max rpm	Radial Load (rpm) @100 (kgf)	Radial Load (rpm) @max (kgf)	Axial Load(rpm) @100 (kgf)	Axial Load(rpm) @3000 (kgf)	Weight each	Order Code **ATL-488**
No.2	7000	200	50	250	50	0.50kg	**-1020K**
No.3	6000	300	80	380	90	0.80kg	**-1030K**
No.4	5000	800	220	900	270	2.30kg	**-1040K**

INDEXA Heavy Duty Revolving Centres

Manufactured from high alloy steel, heat treated and precision ground. Fitted with heavy duty precision taper roller and thrust bearings to support both radial and axial loads. The 60° point is ground after assembly for absolute concentricity. Designed for heavy load and high production applications where durability is the main criteria. Mounting Tapers are accurate to **DIN228** Form A, Tolerance Class AT5.

Maximum runout:
No.2 to 5 taper: 0.005mm.
No.6 taper: 0.010mm.



Morse Taper	Max rpm	Radial Load (rpm) @100 (kgf)	Radial Load (rpm) @max (kgf)	Axial Load(rpm) @100 (kgf)	Axial Load(rpm) @3000 (kgf)	Weight each	Order Code **IND-488**
No.1	5000	35	10	190	50	0.25kg	**-2010K**
No.2	5000	85	20	350	100	0.35kg	**-2020K**
No.3	4000	175	50	700	200	0.92kg	**-2030K**
No.4	3000	350	125	700	200	1.45kg	**-2040K**
No.5	2500	800	350	1200	500(1)	3.55kg	**-2050K**
No.7	1000	3500	2000	4500	1800(3)	22.80kg	**-2070K**

(1)@2500rpm; (2)@2000rpm; (3)1000rpm

KENNEDY QUALITY INDUSTRIAL TOOLING Standard Duty Revolving Centres

Manufactured from high alloy steel hardened and tempered then precision ground externally. Precision bearings are fitted as standard and the centres have a 60° point.
Mounting Tapers are accurate to **DIN228** Form A, Tolerance Class AT5.

Maximum runout:
No.1 to 4 taper: 0.005mm.
No.5 to 6 taper: 0.010mm.

Morse Taper	Max rpm	Radial Load (rpm) @100 (kgf)	Radial Load (rpm) @max (kgf)	Axial Load(rpm) @100 (kgf)	Axial Load(rpm) @3000 (kgf)	Weight each	Order Code **KEN-488**
No.1	7000	80	32	250	50	0.37kg	**-1010K**
No.2	7000	200	55	275	60	0.43kg	**-1020K**
No.3	6000	300	70	400	70	0.67kg	**-1030K**
No.4	5000	600	75	500	125	1.23kg	**-1040K**
No.5	4000	800	280	570	230	3.00kg	**-1050K**

Industrial Solid Centres

Manufactured from high quality tool steel, hardened and ground with 60° point and spanner flats as standard. Mounting Tapers are accurate to **DIN228** Form A, Tolerance Class AT5.

Morse Taper	Diameter (mm)	Across Flats	Length (mm)	Weight each	Order Code **KEN-487**
No.1	12.20	10	78	60g	**-1010K**
No.2	18.00	13	90	200g	**-1020K**
No.3	24.10	19	138	300g	**-1030K**
No.4	31.60	24	138	450g	**-1040K**

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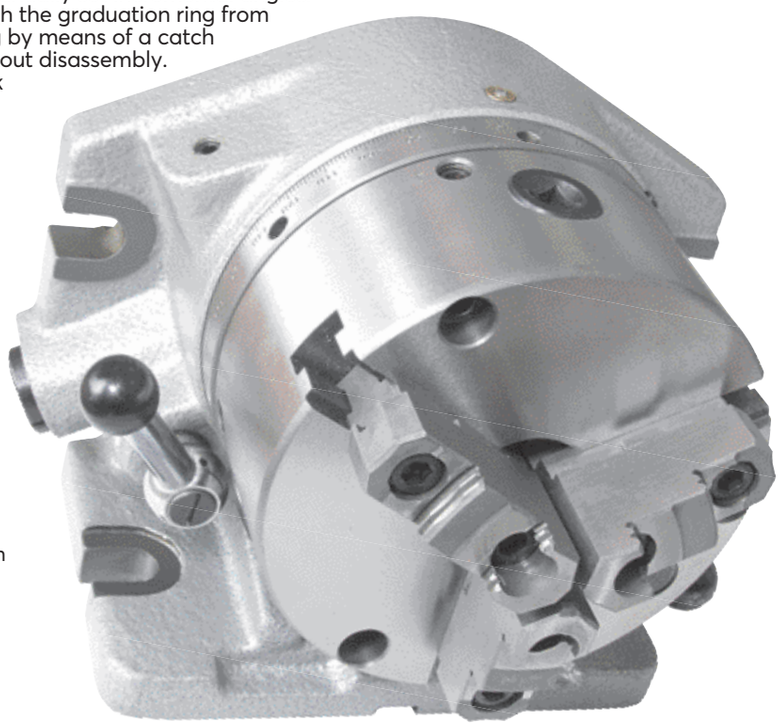
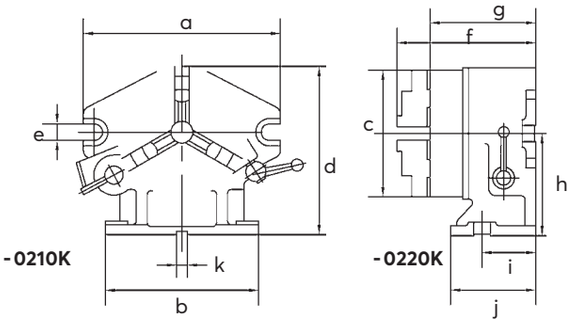
INDEXA Horizontal & Vertical Index Unit Chucks

Ideal for indexing items to be machined in pre-set or manually set incremental angles. Indexing accuracy 25 seconds. Angular indexing through the graduation ring from 0 to 360 degrees in 1 degree increments. Basic indexing by means of a catch device permitting divisions of 2, 3, 4, 6, 8, 12 and 24 without disassembly. Fitted with standard three jaw self-centring scroll chuck with set of jaws, for inside and outside clamping.

Bore diameters:
- 0210K 80.00mm,
- 0220K 119.77mm.



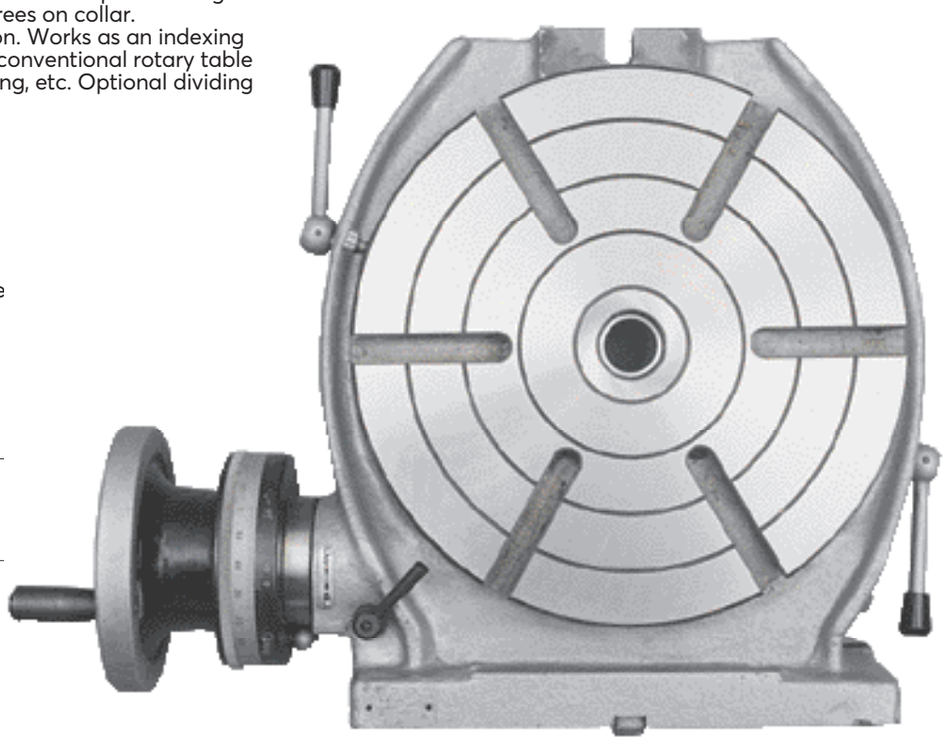


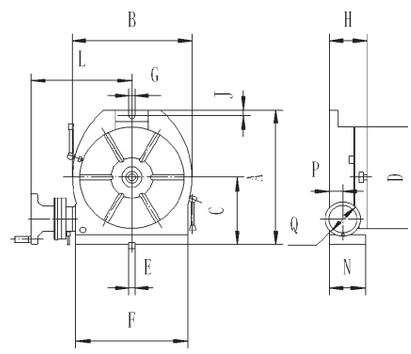
Chuck Diameter	Dimensions (mm) A	B	C	D	E	F	G	H	I	J	K	Weight each	Order Code IND-437
167mm	260	220	167	220.00	18	197.5	155.5	130.00	70	130	16	17.8kg	**-0210K**
220mm	310	255	210	255.25	18	214.0	171.5	149.25	80	150	16	94.0kg	**-0220K**

Type SOPP Horizontal & Vertical Rotary Tables

With a disengageable worm gear which allows rapid indexing. One rotation of handle equals four degrees on collar. The table is made of high grade cast iron. Works as an indexing unit in the vertical position as well as a conventional rotary table for circular cutting, boring or angle setting, etc. Optional dividing plates are available separately.

Accuracy:
Parallelism of clamping surface to base:
Flatness of clamping surface:
True running cylindrical centre bore:
True running of tapered centre bore:
Squareness of clamping surface to centre





Optional Extras

Description	Order Code IND-437
Dividing Plate for INDEXA Rotary Tables	**-1000K**

Rotary Tables

Diameter D	Max. Capacity C	Centre Hole M	Dimensions (mm) A	B	E	F	G	H	J	L	N	P	Q	No. of T-slots	Weight each	Order Code IND-437
200mm	150	3 MT	285	236	14	208	14	100	15	211	99	48	125	4	42kg	**-0500K**
250mm	170	3 MT	328	286	14	253	14	110	16	241	106	48	125	6	57kg	**-0510K**
320mm	210	4 MT	410	360	18	320	18	120	16	273	118	48	140	6	92kg	**-0520K**

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KENNEDY QUALITY INDUSTRIAL TOOLING Industrial Power/ Machine Saw Blades

Designed for use across a wide range of ferrous and non-ferrous materials.

Power Saw Blade Selection

Power Saw Hacksaw Blade Tooth Recommendations

TPI	Suitable for Section Width
18	up to 13mm (up to ½")
14	6 to 19mm (¼" to ¾")
10	8 to 25mm (5/16" to 1)
6	13 to 38mm (½" to 1 ½")
4	19mm and above (¾" and above)

Type of Machine	Coolant Required	Unannealed Tool Steel & Hard Metals	Annealed Tool Steel	Machinery Steel & Soft Metal
Light	No	40spm	50 - 60spm	50-60spm
Medium	No	40spm	50 - 60spm	50-60spm
Medium	Yes	60spm	60 - 90spm	100-110spm
Heavy	Yes	60spm	90spm	110-120spm
Ex. Heavy	Yes	60spm	90spm	110-120spm

18 Teeth Per Inch
Recommended for cutting thin cross-sections such as tubing, small bars and light angle iron. Because blades are relatively thin they should be used only on light machines.

10 - 14 Teeth Per Inch
Recommended for cutting small cross sections and hard stock. This is the most popular choice for machine shops that are cutting a wide variety of materials.

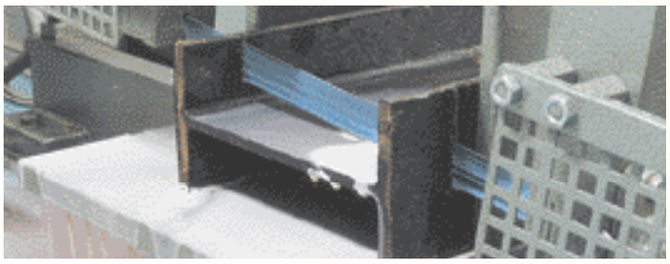
4 - 6 Teeth Per Inch
Recommended for cutting large sections of softer ferrous metals, most alloy steels and all non-ferrous metals. The increased gullet clearance is able to handle heavy chips without clogging.

Operating Recommendations
Lower speeds and higher feed give best results. Ensure that the machine lifts the blade slightly on the return stroke. Exact speed and feed for each job can be established only from tests. The table below is to be used for guidance only.

When matching a section thickness against a suitable Blade TPI there are usually a number of blade options - Use coarse pitches (less TPI) for faster cutting and finer pitches (more TPI) for better surface finishes.

HSS All Hard Power Saw Blades

Recommended for cutting thin cross-sections such as tubing, small bars and light angle iron. Because blades are relatively thin they should be used only on light machines.



Length	Width	Thickness	TPI	Weight per 10	Order Code KEN-040
12"	5/8"	.032"	18T	0.36kg	**-4630K**
12"	1"	.050"	10T	0.78kg	**-5030K**
12"	1"	.050"	14T	0.79kg	**-5040K**
14"	1"	.050"	10T	0.93kg	**-5130K**
14"	1"	.050"	14T	0.80kg	**-5140K**
14"	1¼"	.062"	6T	1.30kg	**-5200K**
14"	1¼"	.062"	10T	1.30kg	**-5220K**
14"	1¼"	.062"	14T	1.30kg	**-5230K**
16"	1¼"	.062"	6T	1.40kg	**-5390K**
16"	1¼"	.062"	10T	0.90kg	**-5410K**
16"	1¼"	.062"	14T	1.60kg	**-5420K**
16"	1½"	.062"	4T	2.20kg	**-5490K**
16"	1½"	.062"	6T	2.20kg	**-5500K**
17"	1¼"	.062"	10T	1.80kg	**-5530K**
18"	1¼"	.062"	6T	1.90kg	**-5550K**
18"	1¼"	.062"	10T	1.60kg	**-5570K**
18"	1½"	.075"	6T	2.55kg	**-5650K**
19"	1¾"	.088"	6T	3.80kg	**-5720K**
20"	1½"	.075"	6T	3.20kg	**-5750K**
21"	1½"	.075"	6T	3.00kg	**-5770K**
21"	1½"	.075"	10T	3.00kg	**-5790K**
21"	1¾"	.088"	6T	5.30kg	**-5820K**
24"	2"	.100"	6T	6.30kg	**-5960K**

Speeds & Feeds - Recommended speeds, strokes per minute and TPI.

Group 80mm	Materials	Brinell Hardness HB	Rockwell Hardness HRC	Tensile Strength N/mm²	Cutting Speed m/min	Strokes Per Min	Section Thickness or diameter-Recommended TPI			
							Below 10mm	10-40 mm	40-80 mm	Above
1.1 to 1.2	General purpose steels mild and structural	<200	-	<700	25 - 35	70 - 90	14	10 - 6	6 - 4	4
1.3	Non-alloy, plain and medium carbon steels and castings	<260	<26	<850	20 - 30	50 - 70	14	10 - 6	6 - 4	4 - 3
1.4	Alloy steels generally low to medium steels and castings	<260	<26	<850	20 - 30	50 - 70	14	10 - 6	6 - 4	4 - 3
1.5	Medium to high alloy steels tool steels and steel castings	>260 <340	>26 <36	>850 <1200	18 - 28	40 - 60	14	10 - 6	6 - 4	4 - 3
1.6	Heat treated high alloy steels and castings	>340 <450	>36 <48	>1200 <1500	15 - 25	30 - 45	14	10 - 6	6 - 4	4 - 3
2.1 to 2.3	Stainless steels free machine and austenitic	<290	<30	<1000	10 - 25	40 - 60	14	10 - 6	6 - 4	4 - 3
3.1 to 3.2	Grey cast iron	<300	-	-	30 - 40	70 - 90	14	10 - 6	6 - 4	4 - 3
3.3 to 3.4	S.G. iron nodular and malleable	<300	-	-	30 - 40	70 - 90	14	10 - 6	6 - 4	4 - 3
6.1 to 6.3	Non ferrous metals brass, copper and bronze	-	-	<800	40 - 60	80 - 115	14	10 - 6	6 - 4	4 - 3
7.1 to 7.4	Aluminium alloys to zinc and magnesium	-	-	<50	40 - 60	80 - 115	14 - 10	10 - 6	6 - 4	4 - 3

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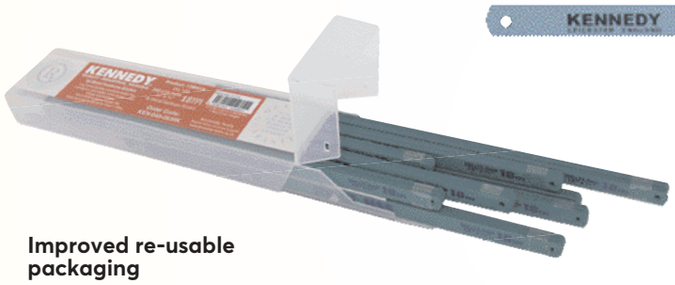
KENNEDY QUALITY INDUSTRIAL TOOLING Flexible Back Bi-metal Hacksaw Blades

The perfect combination of shatter resistant spring steel, used as the backing material, and tough, wear-resistant HSS teeth - Electron-beam welded together. Ideal for interrupted cuts in cramped places or where the blade is subject to stress caused by twisting or bending. Provides optimum tooth strength/life and reduced breakage and fracture when compared to traditional all-hard blades.
Made to BS 1919 : Part 1: 1993.



Improved re-usable packaging

Length	Width	Thickness	TPI	Weight per 100	Order Code KEN-040
10"	½"	.025	18T	1.50kg	**-2130K**
10"	½"	.025	24T	1.40kg	**-2250K**
10"	½"	.025	32T	1.40kg	**-2320K**
12"	½"	.025	14T	1.70kg	**-2510K**
12"	½"	.025	18T	1.70kg	**-2630K**
12"	½"	.025	24T	1.70kg	**-2750K**
12"	½"	.025	32T	1.70kg	**-2870K**

TPI Selection Guide

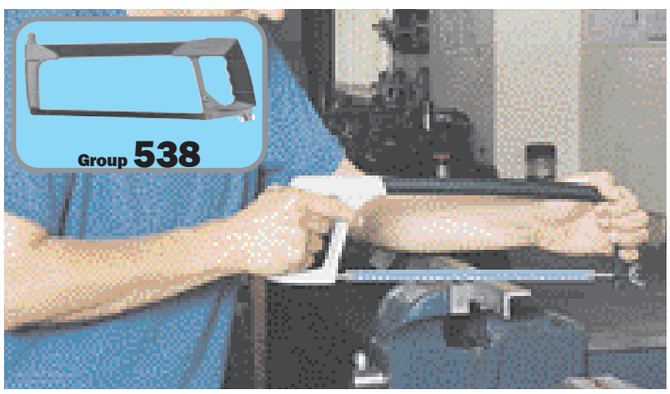
Group 5mm	Materials	Brinell Hardness HB	Rockwell Hardness HRC	Tensile Strength N/mm2	Number of Teeth per Inch Section thickness or diameter Below 2mm	2 - 5 mm	Above
1.1	Mild steel	<200	-	<700	32	24	18
1.4 to 1.5	Alloy steel & tool steel low to medium	<260	<26	<850	32	24	18 - 24
1.6	High alloy steel	>340	>36	>1200	32	24	24
2.1	Stainless steels	<290	<30	<1000	32	24	28
3.1	Grey cast iron	<300	-	-	24 - 32	18 - 24	18
6.1	Asbestos and copper	-	-	<500	24 - 32	18 - 24	18
6.3	Brass and bronze	-	-	<500	24 - 32	18 - 24	18
7.1	Aluminium	-	-	<500	24 - 32	18 - 24	18
8.1	Hard plastic	-	-	-	24 - 32	18 - 24	18

HSS All Hard Hacksaw Blades

Fully hardened for extra long tooth life and maximum straightness of cut. For use where workpiece is held securely in place.
Made to **BS 1919 : Part 1: 1993**.

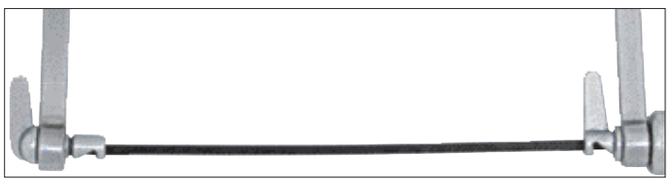
Improved re-usable packaging

Length	Width	Thickness	TPI	Weight per 100	Order Code KEN-040
10"	½"	.025	18T	1.40kg	**-3130K**
10"	½"	.025	24T	1.40kg	**-3250K**
12"	½"	.025	14T	1.70kg	**-3510K**
12"	½"	.025	18T	1.70kg	**-3630K**
12"	½"	.025	24T	1.70kg	**-3750K**
12"	½"	.025	32T	1.70kg	**-3870K**



Coping Saw Blades

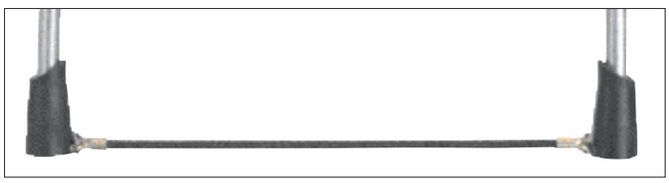
For cutting and shaping in wood. Supplied in packs of 10.



Length	TPI	Weight per 100	Order Code KEN-040	0
150mm (6")	14	250g	**-1020K**	

Tile Saw Blades

For cutting and shaping ceramic tiles.



Length	Grit Size	Pack Qty	Order Code KEN-040
150mm (6")	Medium	1	**-1400K**

Junior Hand Saw Blades

Designed for use across a wide range of ferrous and non-ferrous materials. Suitable for mini hand saws and junior hacksaws.
Made to **BS 6271 : 1990**.

Type	Length	TPI	Pack Quantity	Weight per 100	Order Code KEN-040
Metal	150mm (6")	32	10	420g	**-0620K**
Wood	150mm (6")	14	1	390g	**-0640K**

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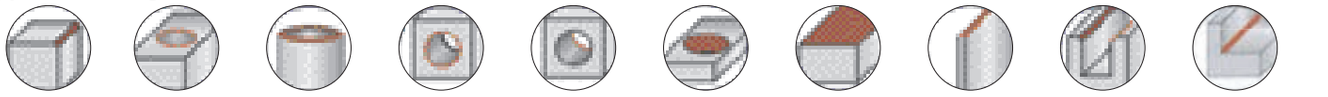
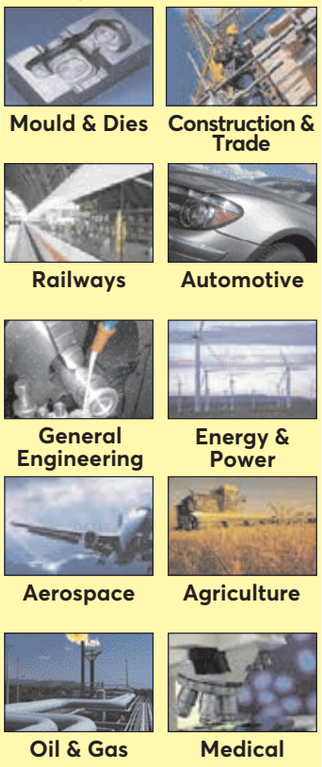
SWISS+BURR Modular Deburring Tools

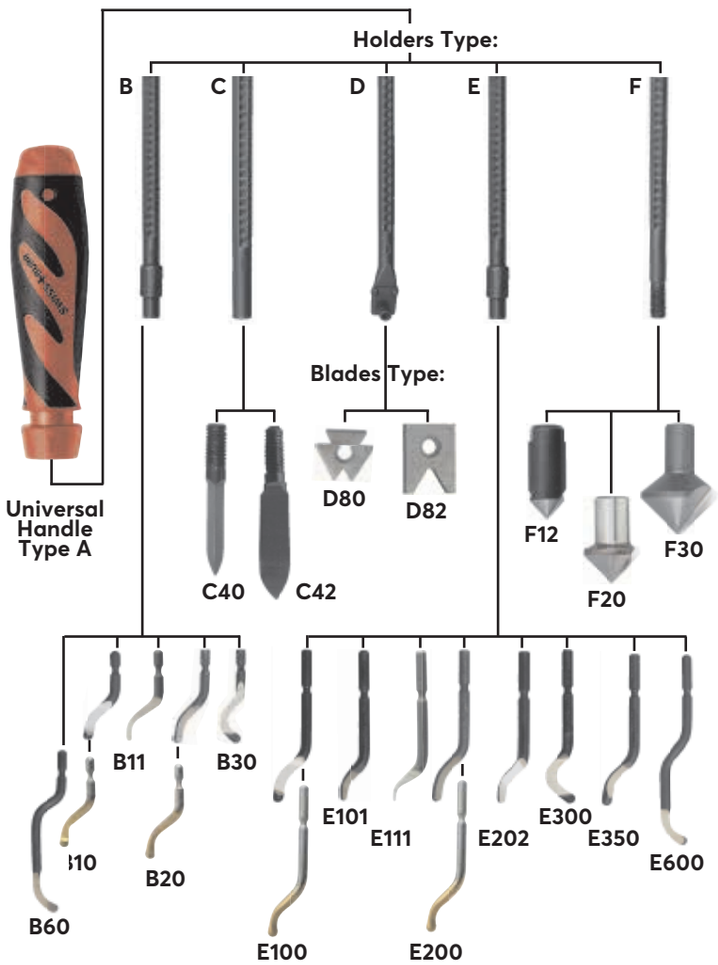
An interchangeable system of handle, holders and blades designed to cover all hand applications of deburring.
Made up of HSS and carbide blades, countersinks and scrapers along with ergonomically designed handles.
This is one of the most comprehensive ranges available.
Blades are interchangeable with commonly available brands including Kennedy®, Noga®, Ruko®, Seco®, Snap-Tap® and Stellram®.

Application Range

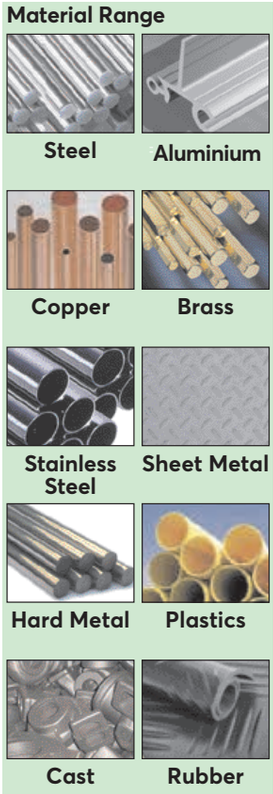


Industry Sectors





Material Range



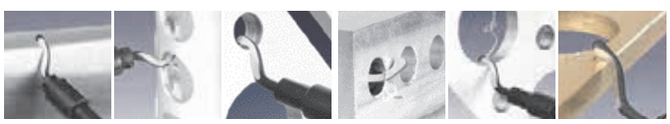
Universal Ergonomic Handle

Modern ergonomic handle design, with an easy to use spring release mechanism. Pulling back on the locking head collar releases the telescopic blade holder for optimal length.
Works with all **SWISS+BURR** holders and blades.

Type	To Suit	Weight each	Order Code SWT-109
A	B, C, D, E & F Holders	130g	-1010A

Holders

Type	Suitable For Type	Weight each	Order Code SWT-109
B	B Blades	50g	-1020B
C	C Scrapers	40g	-1200K
E	E Blades	40g	-1400A
F	F Countersinks	50g	-1600P



Heavy Duty Slim Grip Handle SB2000

SWISS+BURR hand deburring tools are a fast, effective and efficient way of deburring holes, slots and edges. **SWISS+BURR** is a totally modular system of interchangeable handles, holders and blades designed to cover all applications. A choice of HSS or carbide blades, countersinks and scrapers are available to suit your specific application. **SWISS+BURR** blades are also interchangeable with commonly available brands including Kennedy®, Noga®, Ruko®, Seco®, Snap-Tap® and Stellram®.

Product Number	Suitable for Type	Order Code SWT-109
SB2000	E Blades	-6010A

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SWISS+BURR Modular Deburring Tools

Application Table (by Material)

Material Blade	Steel	Aluminium	Copper	Brass	Cast Iron	Plastics	Stainless Steel	Hardened Steels
B10	●	●	●			●		
B10 TiN	●	●	●			●	●	
B10 HSSCo	●	●	●			●	●	
B11	●	●	●			●		
B20				●	●	●		
B20 TiN				●	●	●		
B30	●	●	●			●		
B60	●	●	●			●		
C40/C42	●	●	●	●	●	●	●	
D80/D82	●	●	●	●	●	●	●	●
E100/E101	●	●	●			●		
E100 TiN	●	●	●				●	●
E111	●	●	●			●		
E200/E202				●	●	●		
E200 TiN				●	●	●		
E300	●	●	●			●		
E350				●	●			
E600	●	●	●			●		
F12/F20/F30	●	●	●	●	●	●	●	
N80	●	●	●			●	●	
N80K	●	●	●	●	●	●	●	

Light Duty Blades

B10
HSS Blade for straight and hole edge deburring.

HSS-Co

TiN

B11
B10 geometry with thin nose for small diameter holes down to 2mm.

B20
HSS Blade for straight and hole edge deburring, blade design allows clockwise and anti-clockwise movement.

TiN

B30
HSS Blade for Cross-Hole and both edges, blade will simultaneously deburr the inside and outside of the hole. For use on holes up to 4mm thick.

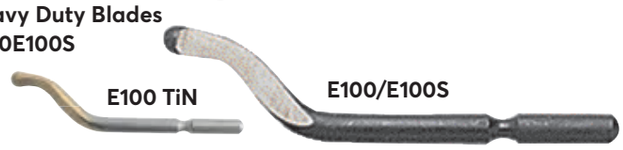
B60
HSS Blade for deburring back edges on holes, will remove burrs from the back edge of holes up to 20mm thick.

Type	Description	Weight each	Order Code SWT-109
B10	Steel & Aluminium	30g/10	**-1030C**
B10 TiN	Steel & Aluminium	30g/10	**-1031B**
B10 HSSCo	Steel & Aluminium	30g/10	**-1031M**
B11	Steel & Aluminium	30g/10	**-1032C**
B20 TiN	Steel & Aluminium	30g/10	**-1041B**
B20	Brass & Cast Iron	30g/10	**-1040D**
B30	Sheet & Tubing, Front & Rear Cut	20g/10	**-1050E**
B60	Rear Cut - Extra Length	30g/10	**-1060F**

Modular Deburring Tools

Heavy Duty Blades

E100E100S



HSS heavy duty blade for use on straight and hole edges, for deburring materials with spiral chips. E100S has additional cobalt content for use on hardened materials.

E101

HSS heavy duty blade for use on straight and hole edges, E style shank with B10 cutting geometry, for use on materials with spiral chips and holes with minimum diameter of 2mm.

E111

HSS heavy duty blade is for straight and hole edge deburring, for use on materials with spiral chips, steel, aluminium, copper and plastic.

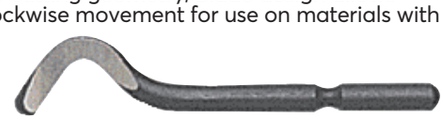
E200

HSS heavy duty blade for use on straight and hole edges, blade design allows clockwise and anti-clockwise movement for use on materials with powdery chips.

E202

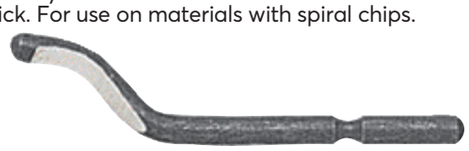
HSS heavy duty blade for use on straight and hole edges, E style shank with B20 cutting geometry, blade design allows clockwise and anti clockwise movement for use on materials with powdery chips.

E300



HSS heavy duty blade for use on cross-hole and both edges, blade will simultaneously deburr the inside and outside of the hole up to 6.mm thick. For use on materials with spiral chips.

E350



HSS heavy duty blade for use on straight and hole edges, blade design allows clockwise and anti-clockwise movement for use on materials with powdery chips.

E600

Heavy duty blade for removing burrs from the back edges of holes up to 20mm thick.

Type	Description	Weight each	Order Code SWT-109
E100	Steel & Aluminium	40g/10	**-1420C**
E100 TiN	Steel & Aluminium	40g/10	**-1421B**
E100S	Steel & Aluminium	40g/10	**-1422C**
E101	Steel & Aluminium, Extra Fine Point	50g/10	**-1430D**
E111	Steel & Aluminium	40g/10	**-1431B**
E200	Brass & Cast Iron	40g/10	**-1440E**
E200 TiN	Steel & Aluminium	40g/10	**-1441B**
E202	Brass & Cast Iron, Extra Fine Point	40g/10	**-1450F**
E300	Sheet & Tubing, Front & Rear Cut	50g/10	**-1460G**
E350	For Deburring Grooves	40g/10	**-1480J**
E600	Rear Cut - Extra Length	30g/ 5	**-1500L**

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SWISS+BURR B4 Hand Deburring Set

The **SWISS+BURR™** B4 deburring set is a popular choice for deburring holes, slots and edges on metals and plastics.

The B4 set contains: SWISS+BURR™ 1x universal handle, 1x B-holder, B10 and B20 blades.

4 PIECES

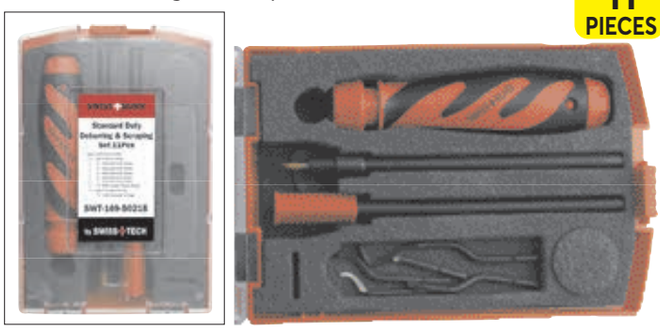
Number of Pieces	Order Code SWT-109
4	-5020B

B & C Standard Duty Deburring & Scraping Set

The **SWISS+BURR™** B & C Standard Duty Deburring and Scraping Set is ideal for general deburring and scraping use on holes, slots and edges.

The set contains: SWISS+BURR™ 1x Type A universal handle, 1x Type B Blade holder, 1x B10, 1x B11, 1x B20 TiN, 1x B30, 1x B60, 1x B70 carbide tipped, 1x Type C scraper and 1x C40 triangular scraper.

11 PIECES



Number of Pieces	Order Code SWT-109
11	-5021B

E & C Heavy Duty Deburring & Scraping Set

The **SWISS+BURR™** E & C Standard Duty Deburring and Scraping Set is ideal for intense deburring and scraping use on holes, slots and edges.

The set contains: SWISS+BURR™ 1x Type A universal handle, 1x Type C scraper, 1x C42 triangular scraper, 1x Type E blade holder, 1x E100 TiN blade, 1x E111 blade, 1x E200 blade, 1x E300 two sided blade, 1x E600 rear cutting blade and 1x E700 blade.

11 PIECES

Number of Pieces	Order Code SWT-109
11	-5061B

E5 Heavy Duty Hand Deburring Set

For holes, slots and edges.
The **SWISS+BURR™** E-Type modular hand deburring system is supplied with high speed steel blades, and scrapers along with an ergonomically designed handle and blade holder.

The E5 set contains: SWISS+BURR™ 1x universal handle, 1x E-holder, 1x E100 blade, 1x E101 blade, 1x E200 blade.

5 PIECES

Number of Pieces	Order Code SWT-109
5	-5050E

E7 Heavy Duty Hand Deburring Set

For holes, slots and edges.
Modern ergonomic handle design, with an easy to use spring release mechanism. Pulling back on the locking head collar releases the telescopic blade holder for optimal length.
Works with all **SWISS+BURR™** holders and blades.

The E7 set contains: SWISS+BURR™ 1x universal handle, 1x E-holder, 1x E100 blade, 1x E101 blade, 1x E200 blade, 1x E202 blade, 1x E300 blade.

7 PIECES

Number of Pieces	Order Code SWT-109
7	-5060F

Diamond Coated Filing & Deburring Set

The set contains: SWISS+BURR™
1x extra close handle, 1x E100S and 1x E400 blades plus five different shaped diamond coated files: rectangular, square, triangular, round and half round.

8 PIECES

Number of Pieces	Order Code SWT-109
8	-1350Z

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SWISS+BURR C3 Hand Scraper Set

Three cutting edges which when combined with a telescopic holder allow easy access to deburr small holes etc in difficult positions.

The C3 set contains: SWISS+BURR™ 1x ergonomic handle, 1x **C** type blade holder, and 1x **C42** blade.

3 PIECES

Number of Pieces	Order Code SWT-109
3	-5030C

Scraper Blades

C40 HSS Small Triangular Scraper (4.00mm)
For precision work on back edge and inner surface of holes and flat surfaces.

C42 HSS Small Triangular Scraper (8.00mm)
For precision work on back edge and inner surface of holes and flat surfaces.

Type	Description	Weight each	Order Code SWT-109
C40	Triangular 4 x 20mm	10g	-1220M
C42	Triangular 8 x 30mm	10g	-1230N

D3 Hand Deburring Set

For scraping surfaces and deburring sheet metal up to 3mm thick. **The D3 set contains: SWISS+BURR™** 1x ergonomic handle, 1x **D** type blade holder and 1x **D80** blade.

3 PIECES

Number of Pieces	Order Code SWT-109
3	-5040D

Corner Chamfering Blades

D80 Solid Carbide Blade
For sheet metal and flat surfaces, for scraping surfaces and deburring sheet metal up to 3mm thick.

D82 Solid Carbide Heavy Duty Blade
With double edge for deburring sheet metal, for deburring sheet metal up to 9mm thick.

Type	Description	Weight each	Order Code SWT-109
D80	Sheet up to 3mm	5g	-1340V
D82	Sheet up to 8mm	9g	-1350W

DB3 Double Burr Hand Deburring Set

For deburring materials with single or double straight edges up to 14.00mm thick. Blade holder fitted with safety hand guard.

The DB3 set contains: SWISS+BURR™ 1x ergonomic handle, 1x blade holder and 2x **N80** blades.

3 PIECES

Number of Pieces	Description	Order Code SWT-109
3	DB3 Double Burr Hand Deburring Set	-2400K

F3 Hand Chamfering & Countersinking Set

For hole edges up to 20.00mm.

The F3 set contains:
SWISS+BURR™ 1x ergonomic handle, 1x **F** type blade holder and 1x **F20** countersink.

3 PIECES

Number of Pieces	Order Code SWT-109
3	-5070G

Countersinks - 90° Included Angle

F12
HSS countersink for hole edges up to 12mm dia.

F20
HSS countersink for hole edges up to 20mm dia.

F30
HSS countersink for hole edges up to 30mm dia.

Type	Description	Weight each	Order Code SWT-109
F12 (C12)	Drilled holes up to 12mm Diameter	30g/1	-1610Q
F20 (C20)	Drilled holes up to 20mm Diameter	30g/1	-1620R
F30 (C30)	Drilled holes up to 30mm Diameter	90g/1	-1630S

Mini Burr Set

Lightweight reinforced plastic handle with easy grip and pocket clip. Handle will hold all **E** style heavy duty blades, supplied with 1x **E100** blade. Removable cap for blade storage.

2 PIECES

Number of Pieces	Order Code SWT-109
2	-2600P

N80 Replacement Blade
HSS double edged round blade for straight edge and sheet metal deburring on materials with spiral chips.

Type	For use with	Weight each	Order Code SWT-109
N80	Type DB3	10g/2	-2080M

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Carbide Burrs

Cut 3 - Rapid Cut
For use on softer non-ferrous and plastic materials,
i.e. aluminium, fibreglass, plastics, hard rubber and zinc alloy.

Cut 6 - Double Cut
Crosscut and double cut to improve control and chipbreaks. Manufactured from high grade tungsten carbide for general-purpose use.

Cut 9 - Chipbreaker
Chipbreaker fast stock removal for improved control and reduced chips for use on hard materials,
i.e. steel alloy 50RC, 60RC, carbon and cast iron.

Suitable for deburring and polishing of cast iron, cast steel, carbon steel, alloy steel and stainless steel etc. up to HRC65 hardness.

Please note:
- Workpiece and tools should always be steady and well supported.
- Carbide burrs are not suitable for 'milling' large amounts of material, they are for light stock removal at high rpm's **'LOW FEED - HIGH SPEED'**.
- Always ensure that at least 70% of the shank length is clamped by the collet or chuck of the tool being used.
- Always ensure that the tool is rated to the recommended operating speed of the burr.

List Diameter	Recommended Operating Speeds (rpm)	Surface Speed
3	64,000 - 75,000	600 - 700 m/min
6	32,000 - 38,000	
8	24,000 - 28,000	
10	19,000 - 22,000	
12	16,000 -18,750	
16	12,000 - 14,000	

KENNEDY QUALITY INDUSTRIAL TOOLING Carbide Burrs

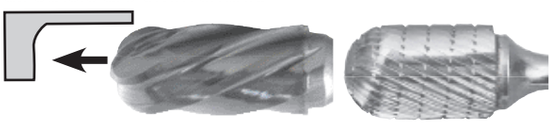
Cylindrical-End Cutting
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.

Head Size ∅ x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
3 x 14*	-	-0080K
6 x 12*	-	-0120K
6 x 18	-0140K	-0160K
8 x 20	-	-0200K
10 x 20	-0220K	-0240K
12 x 20	-	-0280K
12 x 25	-0340K	-0360K
16 x 25	-	-0400K

Cylindrical Plain End
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.

Head Size ∅ x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
3 x 14*	-	-0580K
6 x 12*	-	-0620K
6 x 18	-	-0660K
8 x 20	-	-0700K
10 x 20	-	-0740K
12 x 20	-	-0780K
12 x 25	-0840K	-
16 x 25	-	-0900K
19 x 25	-0980K	-

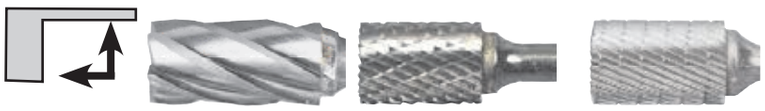
Cylindrical Ball Nosed
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.



Head Size ∅ x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
3 x 12*	-	-1080K
6 x 12*	-	-1120K
6 x 18	-1140K	-1160K
8 x 20	-	-1200K
10 x 20	-1220K	-1240K
12 x 25	-1300K	-1320K
16 x 25	-	-1400K

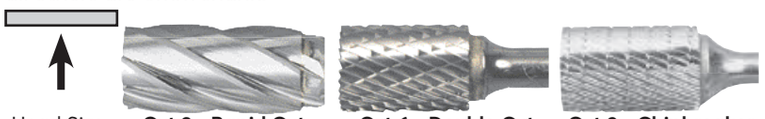
YORK ABRASIVES Carbide Burrs

Cylindrical-End Cutting
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.



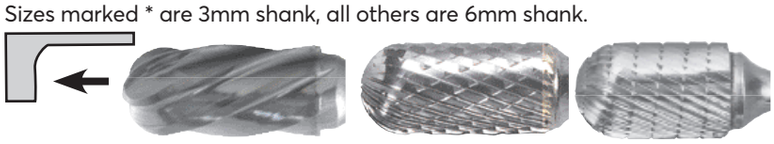
Head Size ∅ x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
3 x 12*	-	-	-0129K
3 x 14*	-	-0086K	-0089K
6 x 15*	-	-0126K	-
6 x 16	-	-0166K	-0169K
6 x 19	-0143K	-	-
8 x 19	-	-0206K	-0209K
10 x 19	-	-0246K	-0249K
13 x 25	-	-0286K	-0289K
16 x 25	-0383K	-0406K	-0409K

Cylindrical Plain End
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.



Head Size ∅ x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
3 x 14*	-	-0586K	-0589K
4 x 13*	-	-	-0629K
6 x 13*	-	-0626K	-
6 x 16	-	-0666K	-0669K
6 x 19	-0643K	-	-
8 x 19	-	-0706K	-0709K
10 x 19	-0723K	-0746K	-0749K
13 x 25	-	-0786K	-0789K
16 x 25	-	-0906K	-0909K

Cylindrical Ball Nosed
All sizes are nominal.
Sizes marked * are 3mm shank, all others are 6mm shank.



Head Size ∅ x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
3 x 14*	-	-1086K	-1089K
6 x 13*	-	-1126K	-1129K
6 x 16	-	-1166K	-1169K
8 x 19	-	-1206K	-1209K
10 x 19	-	-1246K	-1249K
11 x 25	-	-	-1329K
13 x 25	-	-1326K	-
16 x 25	-	-1406K	-1409K

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YORK ABRASIVES Carbide Burrs

Round Tree
All sizes are nominal.
Sizes marked * are 3mm shank, all others are 6mm shank.

Head Size Ø x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
3 x 13*	-	-3086K	-3089K
6 x 16	-	-3166K	-3169K
6 x 19	-	-	-
10 x 19	-	-3246K	-3249K
13 x 25	-	-3326K	-3329K
16 x 25	-	-	-3409K

Flame Shape
All sizes are nominal.
Sizes marked * are 3mm shank, all others are 6mm shank.

Head Size Ø x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
3 x 6*	-	-2126K	-2129K
8 x 19	-	-2166K	-2169K
13 x 32	-	-2326K	-2329K
16 x 36	-	-	-2409K

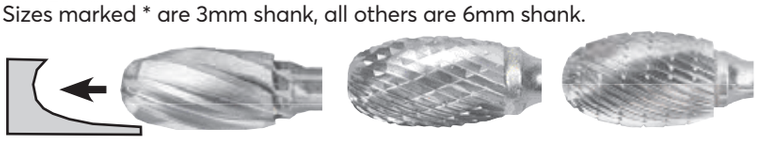
Pointed Tree
All sizes are nominal.
Sizes marked * are 3mm shank, all others are 6mm shank.

Head Size Ø x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
3 x 13*	-	-4126K	-4129K
6 x 13*	-	-4166K	-4169K
10 x 19	-	-4246K	-4249K
13 x 19	-	-	-4289K
13 x 25	-	-4326K	-4329K
16 x 25	-	-4406K	-4409K

Ball Shape
All sizes are nominal.
Sizes marked * are 3mm shank, all others are 6mm shank.

Head Size Ø x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
3 x 3*	-	-6086K	-6089K
5 x 4*	-	-6126K	-6129K
6 x 5	-	-6166K	-6169K
8 x 6	-	-6206K	-6209K
11 x 10	-	-6246K	-6249K
13 x 11	-	-6326K	-6329K
16 x 14	-	-	-6369K

Oval
All sizes are nominal.
Sizes marked * are 3mm shank, all others are 6mm shank.



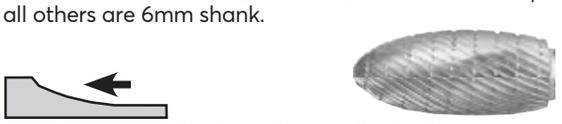
Head Size Ø x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
3 x 6*	-	-5126K	-
6 x 10*	-	-5166K	-5169K
10 x 16	-	-5206K	-5209K
13 x 22	-	-5246K	-5249K
16 x 25	-	-	-5329K

KENNEDY QUALITY INDUSTRIAL TOOLING Carbide Burrs

Round Tree
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.

Head Size Ø x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
3 x 12	-	-3080K
6 x 18	-	-3160K
10 x 20	-3220K	-3240K
12 x 25	-3300K	-3320K
16 x 25	-3380K	-3400K

Flame Shape
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.



Head Size Ø x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
3 x 6*	-	-2120K
8 x 20	-	-2160K
12 x 32	-	-2320K

Pointed Tree
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.

Head Size Ø x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
3 x 12*	-	-4120K
6 x 12*	-	-4160K
10 x 20	-	-4240K
12 x 20	-	-4280K
12 x 25	-	-4320K
16 x 25	-	-4400K

Ball Shape
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.

Head Size Ø x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
3 x 3*	-	-6080K
4 x 4*	-	-6120K
6 x 6*	-	-6160K
8 x 8	-	-6200K
10 x 10	-6220K	-6240K
12 x 12	-	-6320K
16 x 15	-	-6360K

Oval Shape
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.

Head Size Ø x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
3 x 6*	-	-5120K
6 x 10*	-	-5160K
9.5 x 15	-	-5200K
12 x 20	-	-5240K
16 x 25	-5300K	-5320K

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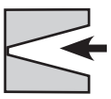
KENNEDY QUALITY INDUSTRIAL TOOLING Carbide Burrs

Conical
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.



Head Size Æ x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
3 x 11*	-	-7120K
6 x 12*	-	-7160K
6 x 20	-	-7200K
10 x 20	-	-7240K
12 x 25	-	-7320K
16 x 25	-	-7400K

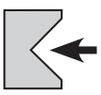
Conical 14°
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.

Head Size Æ x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
3 x 11*	-	-8120K
6 x 12*	-	-8160K
8 x 22	-	-8200K
10 x 26	-8220K	-8240K
12 x 28	-8300K	-8320K

Conical 60° Inc. Angle
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.

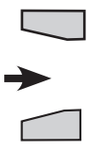
Head Size Æ x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
6 x 4	-	-8620K
16 x 14	-	-8660K

Conical 90° Inc. Angle
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.



Head Size Æ x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
6 x 3	-	-8910K
10 x 4	-	-8930K
12 x 6	-	-8950K

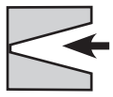
Inverted Cone
All sizes are nominal. Sizes marked * are 3mm shank, all others are 6mm shank.



Head Size Æ x L (mm)	Cut 3 - Rapid Cut Order Code KEN-210	Cut 9 - Chipbreaker Order Code KEN-210
13 x 12	-	-9320K
19 x 16	-	-9480K

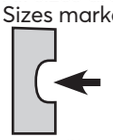
YORK ABRASIVES Carbide Burrs

Conical
All sizes are nominal.
Sizes marked * are 3mm shank, all others are 6mm shank.



Head Size Æ x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
3 x 11*	-	-7126K	-7129K
6 x 13*	-	-7166K	-7169K
6 x 19	-	-7206K	-7209K
10 x 16	-	-7246K	-7249K
13 x 22	-	-7326K	-7329K
16 x 25	-	-7406K	-

Conical 14°
All sizes are nominal.
Sizes marked * are 3mm shank, all others are 6mm shank.

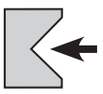


Head Size Æ x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
3 x 13*	-	-8126K	-
5 x 13*	-	-	-8129K
6 x 12	-	-8166K	-
6 x 16*	-	-	-8168K
6 x 16	-	-	-8169K
8 x 22	-	-8206K	-8209K
10 x 27	-	-8246K	-8249K
13 x 28	-	-8326K	-8329K
16 x 30	-	-8406K	-8409K

Conical 60° Inc. Angle
All sizes are nominal.
Sizes marked * are 3mm shank, all others are 6mm shank.

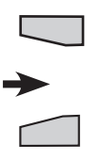
Head Size Æ x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
10 x 8	-	-	-8649K
16 x 14	-	-	-8669K

Conical 90° Inc. Angle
All sizes are nominal.
Sizes marked * are 3mm shank, all others are 6mm shank.



Head Size Æ x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
6 x 3	-	-	-8919K
13 x 6	-	-	-8959K

Inverted Cone
All sizes are nominal.
Sizes marked * are 3mm shank, all others are 6mm shank.



Head Size Æ x L (mm)	Cut 3 - Rapid Cut Order Code YRK-210	Cut 6 - Double Cut Order Code YRK-210	Cut 9 - Chipbreaker Order Code YRK-210
12.7 x 12.7	-	-	-9329K
19 x 16	-	-	-9489K

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YORK ABRASIVES 'Speedway' Burr Sets

Unique flute design: fine pitch and coarse pitch flutes for rapid material removal, while maintaining a smooth surface finish.

Contains 1x each:
10 x 19mm cylindrical end cutting,
cylindrical plain end, cylindrical ball end, round tree, pointed tree,
6 x 5mm spherical,
6 x 19mm conical,
10 x 27 conical 14°.

UNIQUE 'DUAL CUT' DESIGN

8 PIECES

Shank Size	Order Code YRK-210
3mm	-9940K
6mm	-9920K

Carbide Burr Sets

Sets of various style burrs now in a metal case. Ideal for the shop floor workman with various deburring tasks.

Operating speeds: 6,000 - 40,000rpm.

Cut 6 - 6mm Shank
Contents 1x each:
10 x 19mm cylindrical end cutting,
cylindrical plain end, cylindrical ball end, round tree, pointed tree,
6 x 5mm spherical,
6 x 19mm conical,
10 x 27 conical 14°.

Cut 6 - 3mm Shank
Contents 1x each:
3 x 14mm cylindrical end cutting,
3 x 14mm cylindrical plain end,
3 x 14mm cylindrical ball end,
6 x 13mm pointed tree,
6 x 10mm oval,
3 x 3mm spherical,
3 x 11mm conical,
6 x 19mm conical 14°.

8 PIECES

Shank Size	Order Code YRK-210
3mm	-9896K
6mm	-9886K

KENNEDY QUALITY INDUSTRIAL TOOLING Carbide Burr Set

Cut 9
Chipbreaker fast stock removal for improved control and reduced chips for use on hard materials,
i.e. steel alloy 50RC, 60RC, carbon and cast iron.

Operating speeds:
6,000 - 40,000rpm.
6mm shank.

Contents 1 each:
10 x 20 and 12 x 25mm ball nose.
12 x 25mm Plain cylindrical.
12 x 25 and 10 x 20mm round tree.
12 x 12mm ball.
9.5 x 15mm oval.
10 x 20mm pointed tree.

8 PIECES

Order Code KEN-210
-9880K

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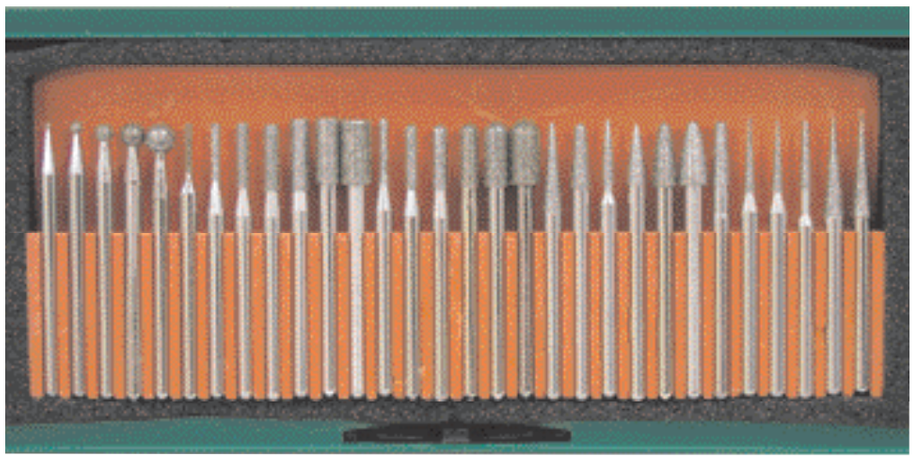
YORK ABRASIVES Diamond Coated Burr Set

Set of various style burrs packaged in a handy pocket 'glasses case' style plastic holder. Ideal for the shop floor workman with various deburring tasks. Assorted sizes of ball shape, cylindrical, ball nose cylindrical, tree shape and conical.
Up to 4.5mm diameter.
3m shank.
Overall length: 45mm.

DIAMOND

30 PIECES



Order Code YRK-210
-9900K

Diamond Coated Burrs

3mm shank. Overall length 45mm. Diamond grip mesh is 120/140. Recommended operating speeds 15,000 - 30,000rpm.
Suitable for precision grinding of carbide gems, ceramics, tough alloys, cermets, tool steels etc.

Cylindrical

DIAMOND

Head Dia. x Length (mm)	Order Code YRK-210
1.0 x 9	-9010K
1.5 x 9	-9015K
2.0 x 10	-9020K
2.5 x 10	-9025K
3.0 x 10	-9030K
4.0 x 10	-9040K
5.0 x 10	-9050K

Cylindrical Ball Nosed

DIAMOND

Head Dia. x Length (mm)	Order Code YRK-210
1.5 x 9	-9115K
2.0 x 10	-9120K
2.5 x 10	-9125K
3.0 x 10	-9130K
4.0 x 10	-9140K
5.0 x 10	-9150K

Pointed Tree

DIAMOND

Head Dia. x Length (mm)	Order Code YRK-210
2.0 x 9	-9220K
3.0 x 9	-9230K
4.0 x 10	-9240K
5.0 x 10	-9250K

Ball Nosed

DIAMOND

Head Dia. x Length (mm)	Order Code YRK-210
1.0 x 1.0	-9310K
2.0 x 2.0	-9320K
3.0 x 3.0	-9330K
4.0 x 4.0	-9340K
5.0 x 5.0	-9350K

Round Tree

DIAMOND

Head Dia. x Length (mm)	Order Code YRK-210
2.0 x 10	-9510K
3.0 x 10	-9570K
3.3 x 10	-9610K
3.3 x 10	-9620K

Conical

DIAMOND

Included Angle	Head Dia. x Length	Order Code YRK-210
7°	2 x 12	-9770K
10°	3 x 15	-9800K

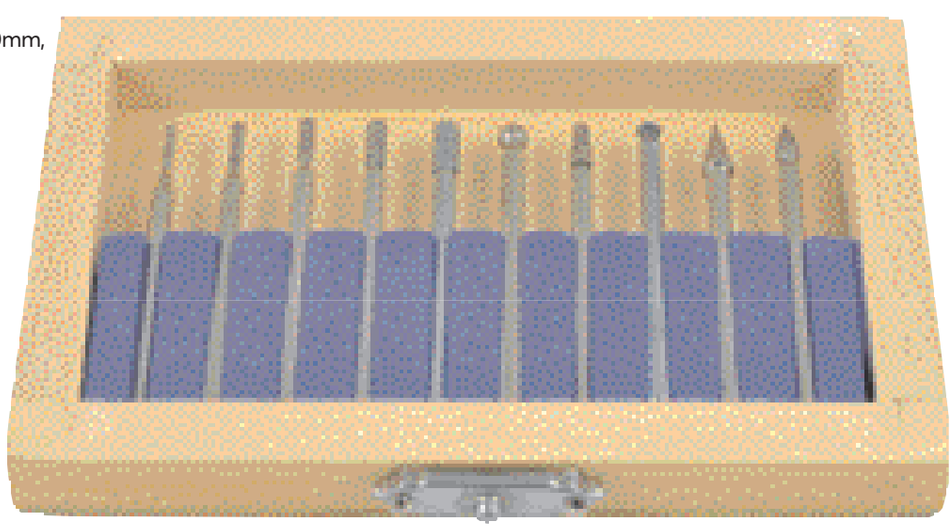
SENATOR QUALITY TOOLING Diamond Coated Burr Set

10 piece assortment of burrs, all diamond coated, in a fitted wooden box.

Contents (with 3mm shank) 1x each:
cylindrical 2 x 8mm, 3 x 10mm and 5 x 10mm,
cylindrical ball nosed 5 x 10mm,
pointed tree 2 x 10mm and 3 x 10mm,
ball 2mm, 3mm and 5mm,
10° conical 0.5/3mm x 15mm.

DIAMOND

10 PIECES



Order Code SEN-210
-8980K

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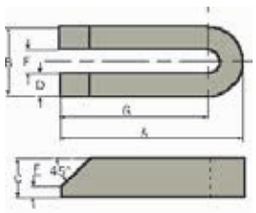
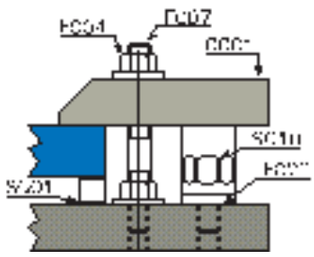
INDEXA CC01 - U-Clamp

Open end permits quick and easy installation.



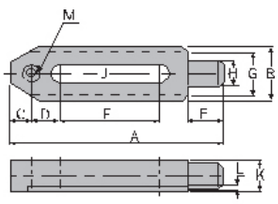


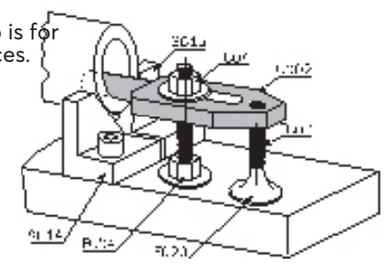
Material: Medium Carbon Steel.
Heat treated to: HRC 32 - 38.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	E	F	G	Weight each	Order Code IND-425
CC010112	100 x 38mm	22	12.5	13	6	81	0.41kg	**-1005D**
CC010316	150 x 50mm	30	16.5	17	8	125	1.10kg	**-1005J**
CC010420	200 x 60mm	35	19.5	21	10	170	2.10kg	**-1005M**

CC02 - Bore Clamp

The cylindrical pin minimises the contact area. This clamp is for clamping inside horizontal bores and onto concave surfaces.



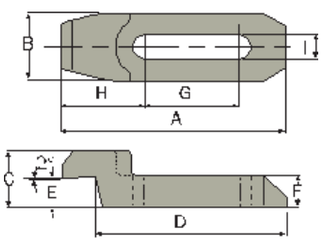


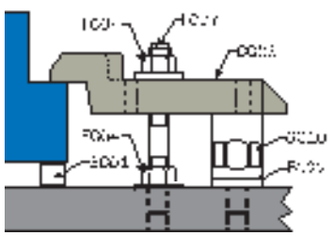
Material: Medium Carbon Steel.
Heat treated to: HR C32 - 38.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	E	F	G	H	J	K	L	M	Weight each	Order Code IND-425
CC020112	150 x 38mm	15	20	70	25	30	18	13	22	4	M12	0.58kg	**-1010D**
CC020216	150 x 48mm	20	25	40	35	40	24	17	32	5	M16	1.12kg	**-1010G**

CC03 - Swan Necked Clamp

Low profile design helps eliminate cutter interference.



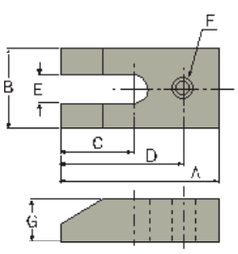


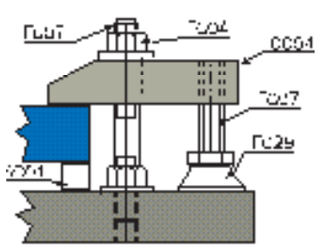
Material: Medium Carbon Steel.
Heat treated to: HRC 32 - 38.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	E	F	G	H	I	Weight each	Order Code IND-425
CC030112	120 x 36mm	30	102	16	17	50	45	13	0.49kg	**-1015H**
CC030216	150 x 48mm	48	130	25	25	55	60	17	1.30kg	**-1015K**
CC030320	175 x 60mm	60	150	30	30	65	70	21	2.26kg	**-1015N**

CC04 - Tapped End U-Clamp

Open end design
permits easy assembly.





Material: Medium Carbon Steel.
Heat treated to: HRC 32 - 38.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	E	F	G	Weight each	Order Code IND-425
CC040616	150 x 50mm	95	130	17	M16	25	1.50kg	**-1020R**

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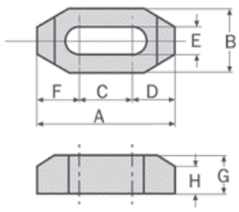
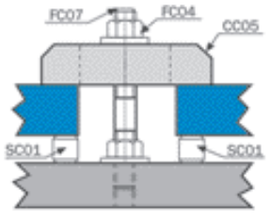
INDEXA CC05 - Plain Clamp



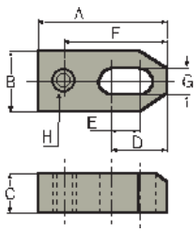


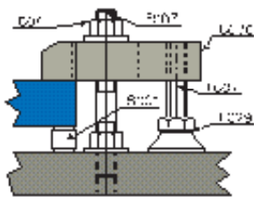
Material: Medium Carbon Steel.
Heat treated to: HRC 32 - 38.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	E	F	G	H	Weight each	Order Code IND-425
CC050112	65 x 32mm	25	20.0	13	20.0	19	13	0.22kg	**-1025D**
CC050212	100 x 32mm	40	30.0	13	30.0	19	13	0.33kg	**-1025G**
CC050316	80 x 38mm	24	28.0	17	28.0	22	14	0.34kg	**-1025J**
CC050416	125 x 38mm	41	42.0	17	42.0	22	14	0.57kg	**-1025M**
CC050520	100 x 38mm	32	34.0	21	34.0	22	14	0.41kg	**-1025P**
CC050620	125 x 38mm	40	42.5	21	42.5	25	15	0.62kg	**-1025R**

CC06 - Tapped End Plain Clamp

For use with various knobs, jack screws, clamps and pads.

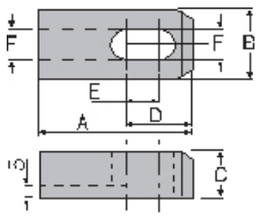


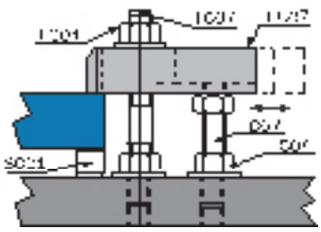


Material: Medium Carbon Steel.
Heat treated to: HRC 32 - 38.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	E	F	G	H	Weight each	Order Code IND-425
CC060112	65 x 32mm	19	32	14	52	13	M12	0.22kg	**-1030D**
CC060212	80 x 32mm	19	48	25	69	13	M12	0.27kg	**-1030F**
CC060312	100 x 32mm	19	60	40	89	13	M12	0.33kg	**-1030H**
CC060416	80 x 38mm	19	40	17	65	17	M16	0.32kg	**-1030J**
CC060516	100 x 38mm	25	55	30	85	17	M16	0.53kg	**-1030L**
CC060616	125 x 38mm	25	70	45	110	17	M16	0.65kg	**-1030N**
CC060720	150 x 50mm	25	82	50	134	21	M20	1.10kg	**-1030P**
CC060820	200 x 50mm	25	112	80	184	21	M20	1.90kg	**-1030R**

CC07 - Slotted End Clamp



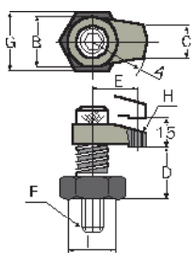


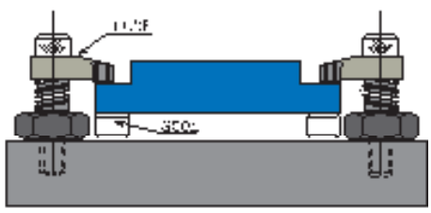
Material: Medium Carbon Steel.
Hardness: HRC 32 - 38.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	E	F	Weight each	Order Code IND-425
CC070212	80 x 32mm	22	48	25	13	0.31kg	**-1035F**
CC070616	125 x 38mm	25	70	45	17	0.65kg	**-1035N**

CC08 - Swing Clamp

A small clamp with good holding power, ideal for tight spaces, full swing away feature permits easy part loading.





Material: Case Hardened Steel.
Hardness: HRC 38 - 42.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	E	F	G	H	I	Weight each	Order Code IND-425
CC080112	30 x 28mm	16	40	-	M12	29	-	21	0.29kg	**-1040D**
CC080212	50 x 32mm	20	45	40	M12	36	M12	26	0.50kg	**-1040G**
CC080316	60 x 40mm	25	45	45	M16	41	M16	32	0.75kg	**-1040J**

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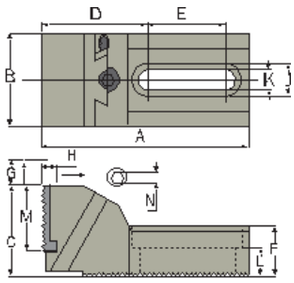
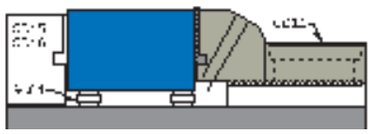
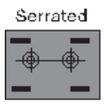
INDEXA CC11 - Free Vice Jaw

Clamping force in two directions, with serrated jaws for holding large or irregular shapes.





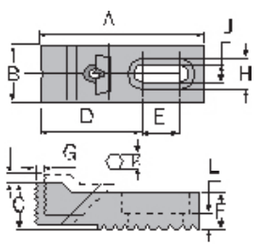


Material: Body: Grey Cast Iron. Jaw: Medium Carbon Steel EN8D.
Hardness: Jaw Only: HRC 45 - 48.
Surface finish: Jaw: Black Oxide.

Product Number	Type	Length x Width A x B	Dimensions (mm) C	D	E	F	G	H	J	K	L	M	N	Weight each	Order Code IND-425
CC110112	Serrated	133 x 60mm	54.5	68	50	32	16	6	22	13	16.8	42	10	2.0kg	**-1045D**

CC12 - Adjustable Clamp

Low profile clamp that keeps top surfaces clear for machining. Ideal for rough or finished parts.

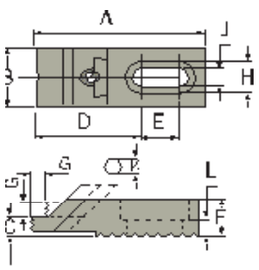


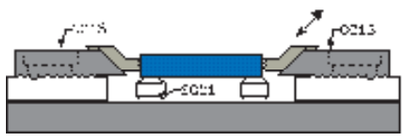
Material: Medium Carbon Steel.
Hardness: Jaw Only: HRC 38.
Surface finish: Black Oxide.
Jaws: Surface treated with high frequency quenching.

Product Number	Type	Length x Width x Height A x B x C	Dimensions (mm) D	E	F	G	H	J	K	L	Weight each	Order Code IND-425
CC120108		73.45 x 25 x 18mm	46.95	16.5	16	7	14	8.5	4	7	0.18kg	**-1050D**
CC120212	Serrated	106.64 x 35 x 27.5mm	62.14	30.0	22	12	20	13.5	6	9	0.52kg	**-1050F**
CC120316		134.64 x 40 x 37.5mm	82.14	35.0	30	14	26	17.0	8	13	1.02kg	**-1050H**
CC120408		72.00 x 25 x 20.0mm	45.00	16.0	16	7	14	8.5	4	7	0.16kg	**-1050J**
CC120512	Ground	104.64 x 35 x 27.5mm	62.14	30.0	22	12	20	13.5	6	9	0.52kg	**-1050M**
CC120616		134.64 x 40 x 37.5mm	82.14	35.0	30	14	26	17.0	8	13	1.02kg	**-1050R**

CC13 - Adjustable Stepped Clamp

Low profile clamp for holding thin parts and keeping top surfaces clear for machining.

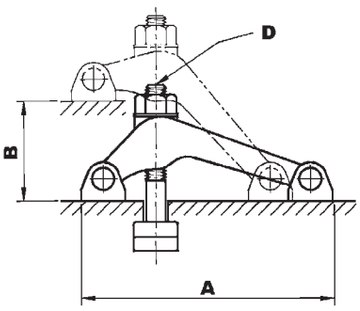


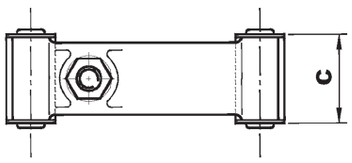


Material: Medium Carbon Steel.
Heat treated to: HRC 38.
Surface finish: Black Oxide.
Jaws: Surface treated with high frequency quenching.

Product Number	Type	Length x Width x Height A x B x C	Dimensions (mm) D	E	F	G	H	J	K	L	Weight each	Order Code IND-425
CC130108	Serrated	73.45 x 25 x 18mm	46.95	16.5	16.5	7	14	8.5	5	7	0.18kg	**-1055D**
CC130212		106.64 x 35 x 27.5mm	64.14	30.0	22.0	12	20	13.5	6	9	0.52kg	**-1055F**
CC130316	Ground	133.14 x 40 x 14mm	90.00	30.0	30.0	14	26	17.0	8	13	0.85kg	**-1055H**

CC19 - Forged Swivel Clamp





Material: Medium Carbon Steel/Steel Forging.
Heat treated to: 32 - 38°.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	Weight each	Order Code IND-425
CC19-NC50	131 x 75mm	46.5	M12-125	1.50kg	**-1085D**

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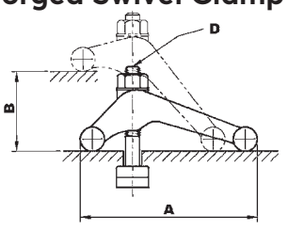
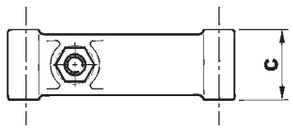
OS20_TH_0129.indd 1 22/04/2020 23:07

INDEXA CC20 - Forged Swivel Clamp

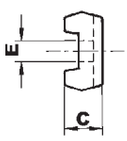


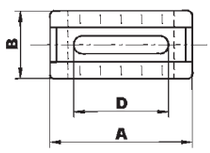


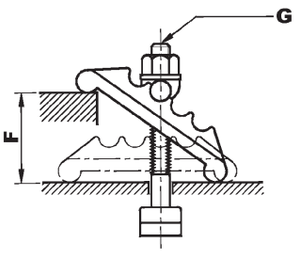
Material: Medium Carbon Steel/Steel Forging.
Heat treated to: 32 - 38°.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	Weight each	Order Code IND-425
CC20-NC6	150 x 85mm	52	M16-150	2.42kg	**-1090M**
CC20-NC8	194 x 105mm	58	M20-175	4.50kg	**-1090T**

CC21 - Swivel Rack Clamp



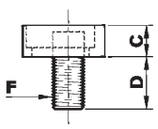


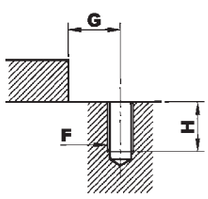


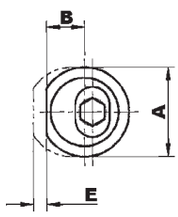
Material: Medium Carbon Steel/Steel Forging.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	E	F	G	Weight each	Order Code IND-425
CC21-0216	125 x 56mm	33	84	18	65	M16	2.10kg	**-1095M**

CC24 - Eccentric Cam Lock



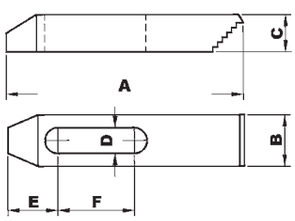




Material: Medium Carbon Steel.
Hardness: HRC 35.
Surface finish: Black Oxide.

Product Number	Dimensions (mm) A	B	C	D	E	F	G	H	Weight each	Order Code IND-425
CC240210	26	11.8	8	14.3	4	M10	12.5	22	.03kg	**-1110C**
CC240312	30	13.5	9	19	5	M12	14.5	22	.06kg	**-1110G**
CC240416	38	16.0	12	23	6	M16	17.5	26	.12kg	**-1110P**

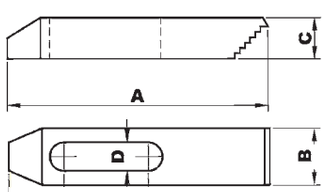
CC25 - Step Clamp



Material: Medium Carbon Steel.
Hardness: HRC 32 - 38.
Surface finish: Black Oxide.

Product Number	Length x Width A x B	Dimensions (mm) C	D	E	F	To Suit Stud Size	Weight each	Order Code IND-425
CC251463	63 x 25mm	13	15	20	14	M14	0.12kg	**-1130C**
CC2514100	100 x 32mm	19	15	29	34	M14	0.38kg	**-1130G**
CC2514150	150 x 32mm	22	15	32	50	M14	0.68kg	**-1130J**
CC2516100	100 x 32mm	19	17	31	26	M16	0.42kg	**-1135G**
CC2516150	150 x 30mm	22	17	40	47	M16	0.72kg	**-1135J**

ATLAS WORKHOLDERS Step Clamp



Material: Medium Carbon Steel.
Hardness: HRC 32 - 38.
Surface finish: Black Oxide.

Product Number	To Suit Stud Size	Dimensions (mm) A x B	C	D	Order Code ATL-425
SC105222		55 x 25	12	13	**-2020K**
SC108825	M10/⅜" UNC	88 x 25	16	11	**-2040K**
SC1012828		128 x 28	19	11	**-2060K**
SC126428		64 x 28	12	13	**-2120K**
SC1210032	M12/½" UNC	100 x 32	19	13	**-2140K**
SC1215032		150 x 32	22	13	**-2160K**

Product Number	To Suit Stud Size	Dimensions (mm) A x B	C	D	Order Code ATL-425
SC146428		64 x 28	12	15	**-2220K**
SC1410035	M14	100 x 35	19	15	**-2240K**
SC1415032		150 x 32	22	15	**-2260K**
SC166432		64 x 32	12	17	**-2420K**
SC1610038	M16/⅝" UNC	100 x 38	20	17	**-2440K**
SC1615038		150 x 38	22	17	**-2460K**

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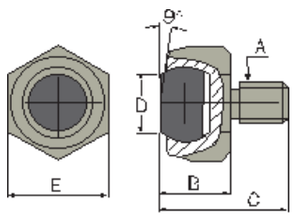
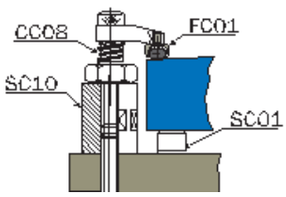
OS20_TH_0130.indd 1 22/04/2020 23:12

INDEXA FC01 - Plain Ball End

Precision swivel ball that can be used either as a contact bolt or rest pad. As contact pads these swivel ball units are ideal for evenly distributing clamping pressure on sloped or uneven surfaces.



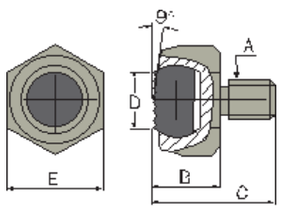


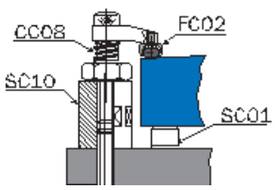
Material:
Body - Medium Carbon Steel.
Ball - Through Hardened Steel **EN 31**.
Hardness:
Bolt - HRC 35.
Ball - HRC 62.
Surface finish:
Black Oxide.

Product Number	Thread A	Dimensions (mm) B	C	D	E	Weight each	Order Code IND-425
FC010216	M16 x 2.00	26	42	14	27	0.14kg	**-2010R**

FC02 - Serrated Ball End

Precision swivel ball that can be used either as a contact bolt or rest pad. As contact pads these swivel ball units are ideal for evenly distributing clamping pressure on sloped or uneven surfaces.

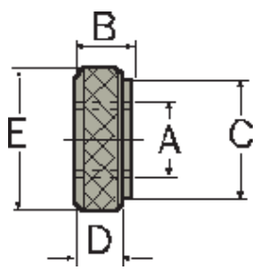




Material:
Body - Medium Carbon Steel.
Ball - Through Hardened Steel **EN 31**.
Hardness:
Bolt - HRC 35.
Ball - HRC 62.
Surface finish:
Black Oxide.

Product Number	Thread A	Dimensions (mm) B	C	D	E	Weight each	Order Code IND-425
FC010112	M12 x 1.75	22	35	12	22	0.070kg	**-2015J**
FC010216	M16 x 2.00	26	42	14	27	0.14kg	**-2015R**

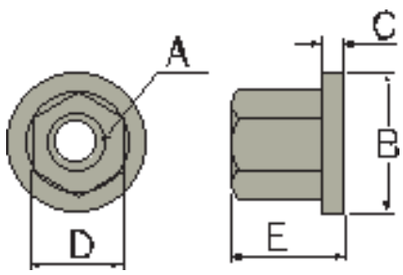
FC03 - Knurled Nut



Material: Medium Carbon Steel.
Hardness: HRC 30 - 35.
Surface finish: Black Oxide.

Product Number	Thread A	Dimensions (mm) B	C	D	E	Weight each	Order Code IND-425
FC030210	M10	10	20	8	25	0.030kg	**-2020K**
FC030416	M16	12	25	10	30	0.045kg	**-2020R**

FC04 - Flanged Nut



Material: Medium Carbon Steel.
Hardness: HRC 30 - 35.
Surface finish: Black Oxide.

Product Number	Thread A	Dimensions (mm) B	C	D	E	Weight each	Order Code IND-425
FC040110	M10	22	3	17	13	0.020kg	**-2025G**
FC040212	M12	28	4	19	17	0.040kg	**-2025K**
FC040214	M14	28	4	22	17	0.040kg	**-2025M**
FC040316	M16	33	5	24	20	0.060kg	**-2025P**
FC040420	M20	40	6	30	25	0.110kg	**-2025T**

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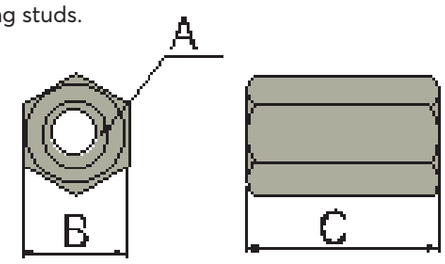
FC05 - Extension Nut

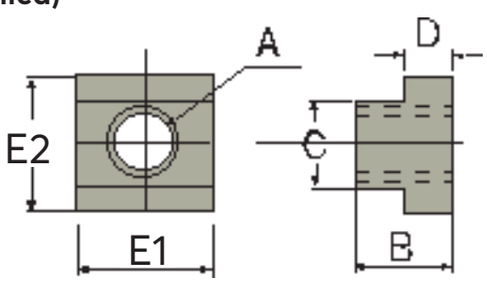
Extends the length of clamping studs.



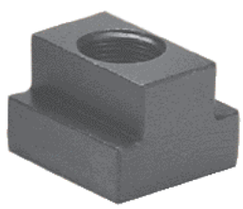
Material: Medium Carbon Steel.
Hardness: HRC 30 - 35.
Surface Finish: Black Oxide.

Product Number	Size A	Dimensions (mm) B	C	Weight each	Order Code **IND-425**
FC050110	M10	17	30	0.030kg	**-2030F**
FC050212	M12	19	36	0.046kg	**-2030K**
FC050314	M14	22	42	0.065kg	**-2030M**
FC050316	M16	24	48	0.110kg	**-2030N**
FC050420	M20	30	60	0.220kg	**-2030R**

FC06 - T-Slot Nut (Milled)

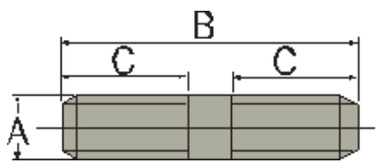


Material: Medium Carbon Steel.
Hardness: HRC 30 - 35.
Surface finish: Black Oxide.



Product Number	Size A	Dimensions (mm) B	C	D	E1	E2	Weight each	Order Code **IND-425**
FC060110	M10	14.0	11.8	7.0	22	18.0	0.022kg	**-2035G**
FC060212	M12	16.0	13.8	8.0	28	22.0	0.048kg	**-2035K**
FC050314	M14	16.0	15.8	8..0	28	25.0	0.057kg	**-2035M**
FC060316	M16	20.0	17.7	10.5	30	28.5	0.085kg	**-2035P**
FC060420	M20	25.0	22.0	14.0	38	36.0	0.190kg	**-2035T**

FC07 - Engineer's Stud



Material:
Medium Carbon Steel.
Hardness:
HRC 30 - 35.
Surface finish:
Black Oxide.

Product Number	Size A x B	Dimension C (mm)	Weight each	Order Code **IND-425**
FC070110	M10 x 50mm	22	30g	**-2120S**
FC070210	M10 x 75mm	30	42g	**-2125S**
FC070310	M10 x 100mm	38	55g	**-2130S**
FC070510	M10 x 150mm	50	90g	**-2140S**
FC070612	M12 x 50mm	22	40g	**-2145S**
FC070712	M12 x 75mm	30	60g	**-2150S**
FC070812	M12 x 100mm	38	80g	**-2155S**
FC070912	M12 x 125mm	38	100g	**-2160S**
FC071012	M12 x 150mm	50	125g	**-2165S**
FC071112	M12 x 200mm	65	160g	**-2170S**
FC071212	M12 x 300mm	80	240g	**-2175S**
FC071214	M14 x 75mm	30	65g	**-2176S**
FC071214	M14 x 100mm	38	85g	**-2177A**
FC071214	M14 x 125mm	38	105g	**-2177G**
FC071214	M14 x 150mm	50	130g	**-2177K**
FC071214	M14 x 200mm	65	165g	**-2177T**
FC071316	M16 x 75mm	20	120g	**-2180S**
FC071416	M16 x 100mm	38	145g	**-2185S**
FC071516	M16 x 125mm	38	180g	**-2190S**
FC071616	M16 x 150mm	50	230g	**-2195S**
FC071616	M16 x 175mm	50	240g	**-2197S**
FC071716	M16 x 200mm	65	290g	**-2200S**
FC071816	M16 x 250mm	65	350g	**-2205S**
FC071916	M16 x 300mm	80	450g	**-2210S**
FC072016	M16 x 400mm	100	580g	**-2215S**
FC072116	M16 x 500mm	100	700g	**-2220S**
FC072220	M20 x 75mm	30	170g	**-2225S**
FC072320	M20 x 100mm	38	230g	**-2230S**
FC072420	M20 x 125mm	38	280g	**-2235S**
FC072520	M20 x 150mm	50	360g	**-2240S**
FC072620	M20 x 200mm	65	450g	**-2245S**
FC072720	M20 x 250mm	65	550g	**-2250S**
FC072820	M20 x 300mm	80	700g	**-2255S**
FC072920	M20 x 400mm	100	880g	**-2260S**
FC073020	M20 x 500mm	100	1100g	**-2265S**

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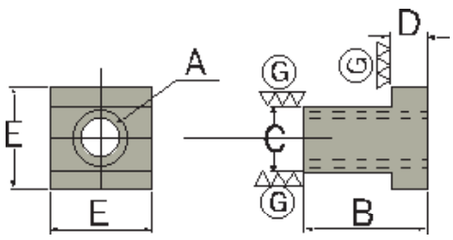
OS20_TH_0132.indd 1 22/04/2020 23:05

INDEXA FCO8 - T-Slot Nut (Ground)

Ground surfaces provide accurate positioning inside of T-slot.

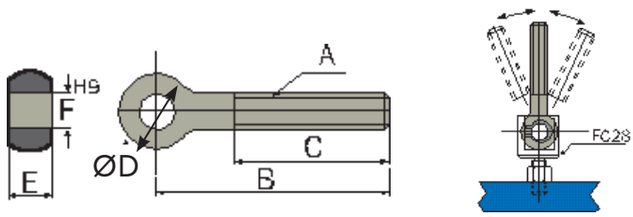


Material: Medium Carbon Steel.
Hardness: HRC 30 - 35.

Product Number	Thread A	Dimensions (mm) B	C (h6)	D	E	Weight each	Order Code IND-425
FC008112	M12	22	14	8	22	45g	**-2505J**
FC008216	M16	30	18	10	28	80g	**-2505R**

FC09 - Swing Bolt

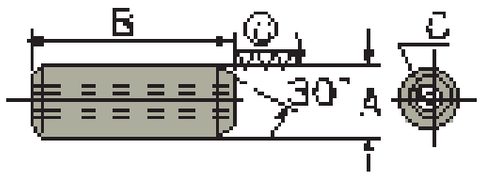
Reamed hole for smooth swivelling.



Material: Medium Carbon Steel.
Hardness: HRC 30 - 35.

Product Number	Size A x B	Dimensions (mm) C	D	E	F	Weight each	Order Code IND-425
FC040110	M10 x 75mm	40	20	12	10	60g	**-2510E**
FC090210	M10 x 100mm	40	20	12	10	80g	**-2510H**
FC090412	M12 x 100mm	60	25	14	12	120g	**-2510N**
FC090516	M16 x 125mm	60	32	17	16	250g	**-2510P**
FC090616	M16 x 150mm	75	32	17	16	300g	**-2510R**

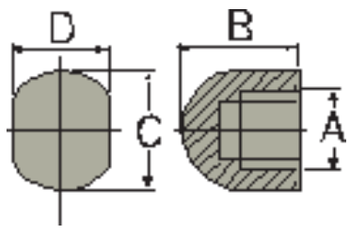
FC11 - Internal Threaded Dowel



Material: Medium Carbon Steel **EN19B**.
Hardness: HRC 55 - 58.

Product Number	Size A (h6) x B	Threaded C	Weight each	Order Code IND-425
FC110108	8 x 25mm	M4	10g	**-2520E**
FC110210	10 x 30mm	M5	15g	**-2520H**
FC110312	12 x 34mm	M6	30g	**-2520K**

FC15 - Domed Rest Nut



Material:
Case Hardened Steel EN19A.
Hardness:
HRC 60.
Surface finish:
Black Oxide.

Product Number	Thread A	Dimensions (mm) B	C	D	Weight each	Order Code IND-425
FC150112	M12	20	22	19	42g	**-2540J**
FC150216	M16	25	28	24	63g	**-2540R**

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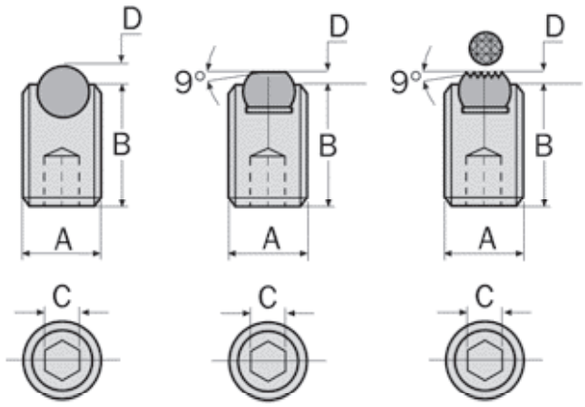
FC16 - Swivel Clamping Screw

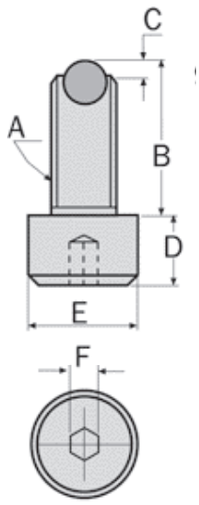


Material:
Body - Medium Carbon Steel **EN198**.
Point - Through Hardened Steel **EN 31**.
Hardness:
Body - HRC 32 - 38.
Point - HRC 62.
Surface finish:
Point - Hardened and Ground.

Ball Point **Dog Point** **Serrated Point**

Thread x Length A x B	mm C	Weight each	Ball Point Product Number	mm D	Order Code IND-425	Dog Point Product Number	mm D	Order Code IND-425	Serrated Point Product Number	mm D	Order Code IND-425
M6 x 15mm	3	2.4g	FC160206	1.4	**-2610H**	-			-		
M6 x 25mm	3	3.8g	FC160306	1.4	**-2610N**	-			-		
M8 x 12mm	4	3.2g	FC160408	1.9	**-2615D**	FC162208	0.6	**-2645D**	-		
M8 x 20mm	4	5.8g	FC160508	1.9	**-2615H**	FC162308	0.6	**-2645H**	-		
M8 x 30mm	4	9.0g	FC160608	1.9	**-2615N**	-			-		
M10 x 15mm	5	6.7g	FC160710	2.4	**-2620D**	-			-		
M10 x 25mm	5	11.2g	FC160810	2.4	**-2620H**	FC162610	0.7	**-2650H**	-		
M10 x 35mm	5	16.2g	-			FC162710	0.7	**-2650N**	-		
M12 x 30mm	6	20.0g	-			FC162912	0.9	**-2655H**	-		
M12 x 50mm	6	40.0g	FC161312	2.9	**-2625T**	-			-		
M16 x 55mm	8	55.0g	-			FC163516	1.0	**-2660R**	-		
M16 x 65mm	8	65.0g	-			-			FC165416	1.0	**-2690T**

FC17 - Swivel Shoulder Clamping Screw



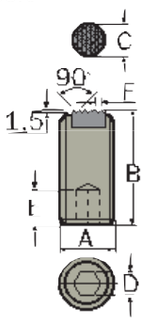
Material:
Body - Medium Carbon Steel **EN198**.
Point - Through Hardened Steel **EN 31**.
Hardness:
Body - HRC 32 - 38.
Point - HRC 62.
Surface finish:
Point - Hardened and Ground.

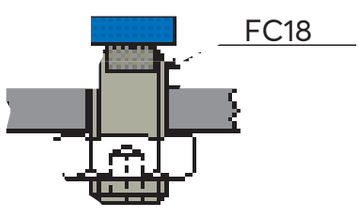
Ball Point

Thread x L A x B (mm)	Dimensions D	E	F	Weight each	Ball Point Product Number	mm C	Order Code IND-425
M8 x 40	8	13	6	24g	FC170608	1.9	**-2725N**
M12 x 65	12	18	10	70g	FC171212	2.9	**-2735N**
M16 x 40	16	24	14	90g	FC171416	4.0	**-2740D**

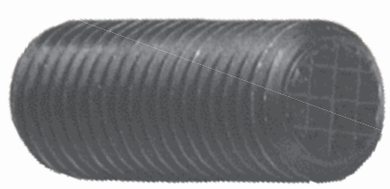
FC18 - Grip Point Screw

Multi-purpose work support and clamping unit, ideal for rough parts.





Material: Medium Carbon Steel **EN19B**.
Hardness: HRC 32 - 38.
Tooth plate HRC 60.
Serrated surface: Induction Hardened.
Surface finish: Black Oxide.



Product Number	Thread x Length A x B	Dimensions (mm) C	D	E	F	Weight each	Order Code IND-425
FC180110	M10 x 25mm	6.5	5	4	2.3	15g	**-2825D**
FC180616	M16 x 50mm	11.5	8	6	3.0	78g	**-2825R**

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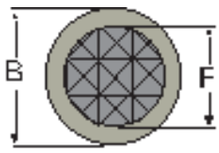
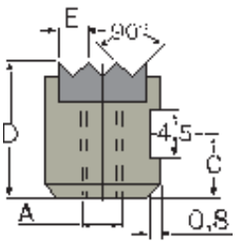
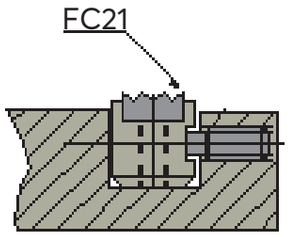
INDEXA FC21 - Round Grip Pad

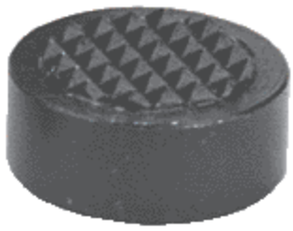
Multi-purpose work support and clamping unit, ideal for rough parts.







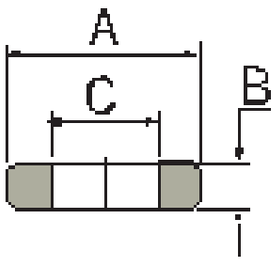
Material: Hardened Steel **EN16M**.
Hardness: HRC 60.
Surface finish: Black Oxide.



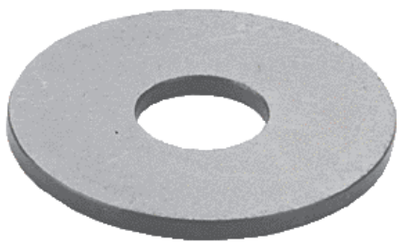
Product Number	Thread x Dia A x B	Dimensions (mm) C	D	E	F	Weight each	Order Code IND-425
FC210110	M5 x 10mm	3.4	10	2.3	8.1	5g	**-2840D**
FC210212	M6 x 12mm	4.0	12	3.0	9.6	8g	**-2840G**
FC210525	M6 x 25mm	4.0	12	3.0	19.5	40g	**-2840P**

FC22 - Spacer

For use with jig components for increasing height or extending length.

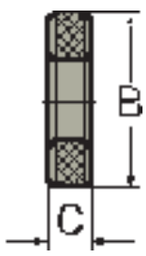


Material: Medium Carbon Steel.
Hardness: HRC 40.



Product Number	Dimensions (mm) A	B	C	Weight each	Order Code IND-425
FC220616	50	5	17	70g	**-2845P**
FC220716	50	10	17	350g	**-2845T**

FC23 - 'C' Washer

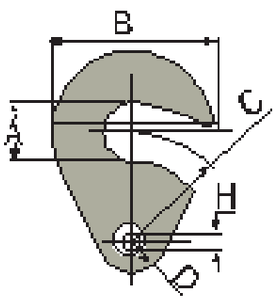


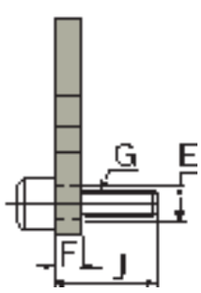
Material: Medium Carbon Steel.
Hardness: HRC 40.
Surface finish: Black Oxide.

Product Number	Dimensions (mm) A	B	C	Weight each	Order Code IND-425
CC010212	13	55	10	150g	**-2850G**

FC24 - Swing 'C' Washer

Can be reversed to swing into position either clockwise or counter-clockwise.





Material: Medium Carbon Steel.
Hardness: HRC 40.
Surface finish: Black Oxide.

Product Number	Dimensions (mm) A	B	C	D	E	F	G	H	J	Weight each	Order Code IND-425
FC240212	13.5	40	27	20	10	8	M8	10	20	90g	**-2855G**

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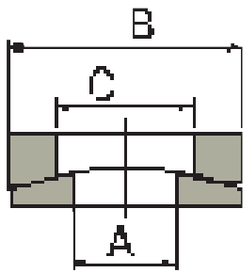
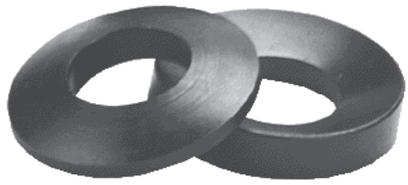
INDEXA FC25 - Spherical Washer Set

2 piece washer set that compensates whenever a stud and clamping surface are not exactly perpendicular.



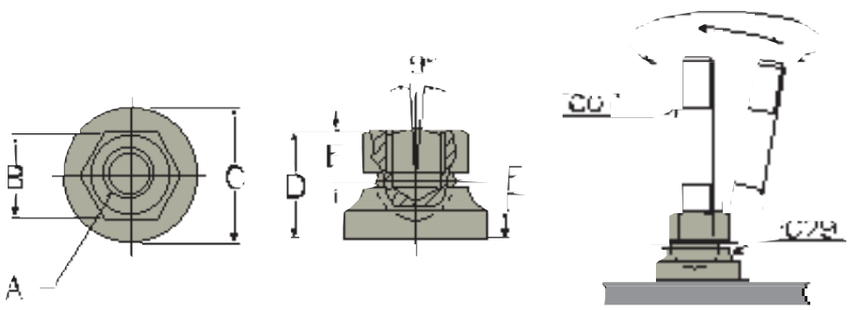
Material: Medium Carbon Steel.
Hardness: HRC 38.
Surface finish: Black Oxide.



Product Number	Dimensions (mm) A	B	C	D	Weight each	Order Code IND-425
FC250112	13	26	15	7.5	20g	**-2860D**
FC250216	17	32	19	9.0	30g	**-2860G**
FC250320	21	40	23	12.0	50g	**-2860L**

FC29 - Swivel Foot

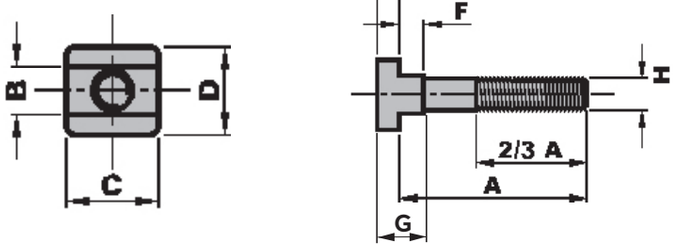
Used for supporting uneven surfaces.



Material: Medium Carbon Steel.
Hardness: HRC 32 - 38.
Surface finish: Black Oxide.

Product Number	Size A	Dimensions (mm) B	C	D	E	F	Weight each	Order Code IND-425
FC290112	M12	19	35	24	11	7	80g	**-2870D**
FC290216	M16	24	40	29	13	8	150g	**-2870G**

FC40 - T-Slot Bolt



Material: Medium Carbon Steel.
Hardness: HRC 32 - 38.
Surface finish:
Black Oxide.

Product Number	Dimensions (mm) A	B	C	D	E	F	G	H	Weight each	Order Code IND-425	List
FC40- 1250	50								54g	**-2900D**	
FC40- 1275	75								57g	**-2900F**	
FC40- 12100	100								110g	**-2900H**	
FC40- 12125	125	12	26	22	7	6	13	M12	125g	**-2900K**	
FC40- 12150	150								140g	**-2900M**	
FC40- 12175	175								170G	**-2900P**	
FC40- 12200	200								185g	**-2900R**	
FC40- 1650	50								130g	**-2910D**	
FC40- 1675	75								160g	**-2910F**	
FC40- 16100	100								200g	**-2910H**	
FC40- 16125	125	16	32	27	8	8	16	M16	230g	**-2910K**	
FC40- 16150	150								270g	**-2910M**	
FC40- 16175	175								305g	**-2910P**	
FC40- 16200	200								325g	**-2910R**	
FC40- 2075	75								290g	**-2920F**	
FC40- 20100	100								350g	**-2920H**	
FC40- 20125	125	20	40	30	11	11	22	M20	400g	**-2920K**	
FC40- 20150	150								455g	**-2920M**	
FC40- 20175	175								505g	**-2920P**	
FC40- 20200	200								560g	**-2920R**	
FC40- 24150	150	24	50	44	16	15	31	M24	775g	**-2930M**	
FC40- 24200	200								925g	**-2930R**	

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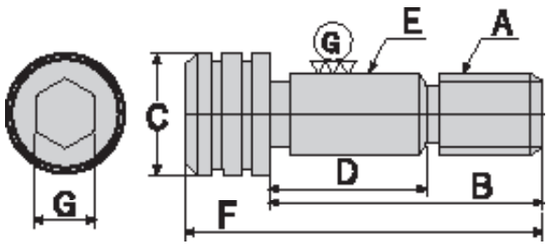
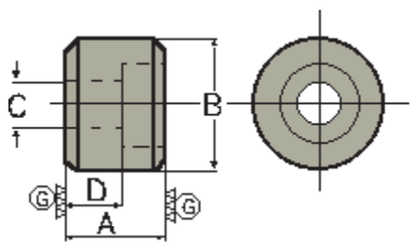
FC31 - Ground Dowel Bolt

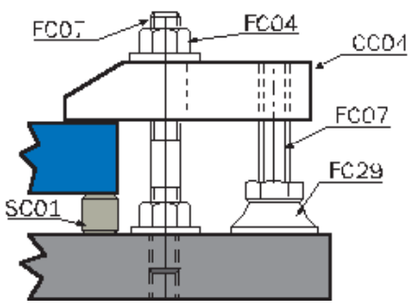


Material: Medium Carbon Steel **EN19B**.
Hardness: HRC 32 - 38.

Product Number	Diameter x Length A x B	Dimensions (mm) C	D	E	F	G	Weight each	Order Code IND-425
FC310212	M12 x 55mm	18	33	Ø12	67	10	60g	**-2880G**
FC310312	M12 x 65mm	18	43	Ø12	77	10	70g	**-2880J**
FC310516	M16 x 55mm	24	30	Ø16	72	14	120g	**-2880N**
FC310716	M16 x 75mm	24	50	Ø16	92	14	150g	**-2880T**

SC01 - Support Spacer

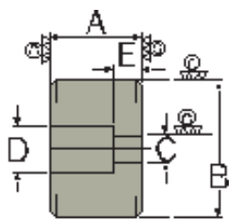


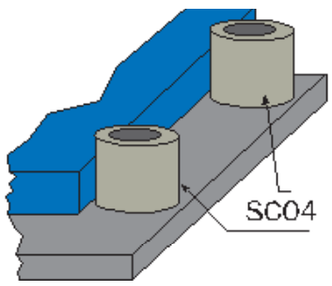


Material: Medium Carbon Steel.
Hardness: HRC 40.
Surface finish: Black Oxide.

Product Number	Height x Diameter A (±0.01) x B	Dimensions (mm) C	D	Weight each	Order Code IND-425
SC010112	30 x 40mm	M12	17	240g	**-3005D**

SC04 - Location Collar

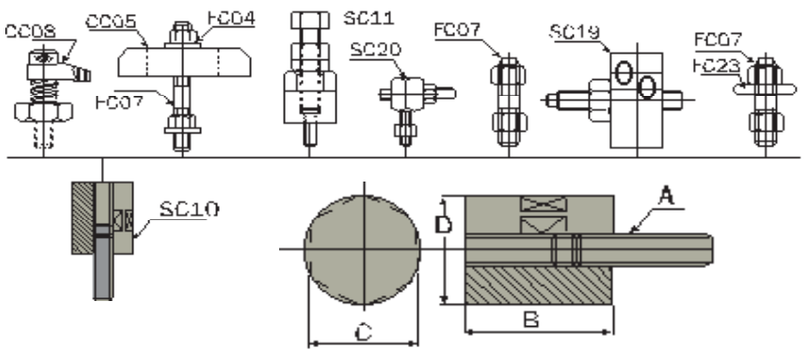




Material: Medium Carbon Steel.
Hardness: HRC 40.
Surface finish: Black Oxide.

Product Number	Height x Diameter A (±0.01) x B (±0.01)	Dimensions (mm) C	D	E	Weight each	Order Code IND-425
SC040212	40 x 40mm	Ø 12	Ø 20	12	320g	**-3020F**

SC10 - Extension Pillar



Material: Medium Carbon Steel.
Hardness: HRC 40.
Surface finish: Black Oxide.

Product Number	Height x Diameter A x B	Dimensions (mm) C	D	Weight each	Order Code IND-425
SC100265	M12 x 65	36	40	540g	**-3050F**
SC100450	M16 x 50	46	50	820g	**-3050J**

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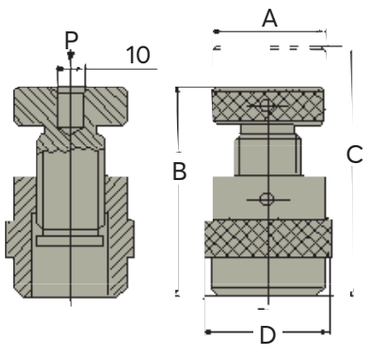
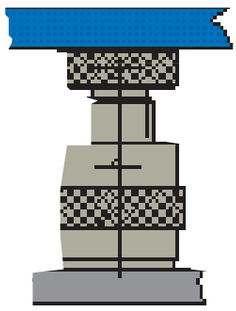
OS20_TH_0137.indd 1 22/04/2020 23:11

INDEXA SC11A - Screw Jack

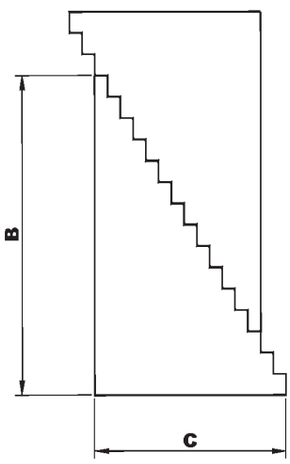




Material: Medium Carbon Steel.
Hardness: HRC 40.
Surface finish: Black Oxide.

Product Number	Diameter x Height A x B (Min)	Dimensions (mm) C	D	Holding Load (kN)	Weight each	Order Code IND-425
SC20032050	32 x 40mm	60	32	72	230g	**-3057D**
SC20070140	65 x 100mm	150	70	135	274g	**-3057P**

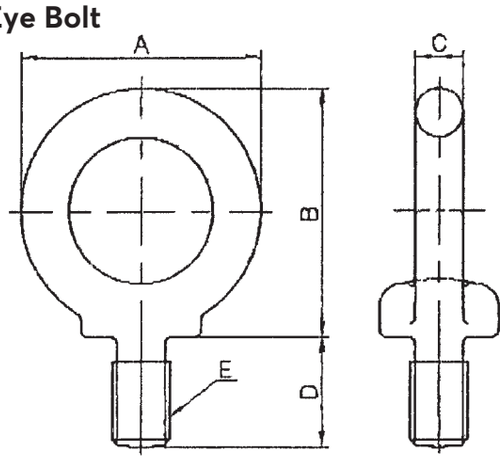
SU25 - Step Block



Material: Medium Carbon Steel.
Hardness: HRC 32 - 36.
Surface finish:
Black Oxide.

Product Number	Supporting Height	Dimensions (mm) A	B	C	Weight each	Order Code IND-425
SU252530	19 - 49		29	17	0.05kg	**-3125E**
SU252545	28 - 68	25	45	27	0.12kg	**-3125H**
SU252597	58 - 150		97.5	57	0.50kg	**-3125L**
SU253259	38 - 90		59	35	0.24kg	**-3132J**
SU253297	58 - 150	32	97.5	57	0.62kg	**-3132L**
SU2532139	82 - 210		139	81	1.32kg	**-3132P**

SEB - Shoulder Eye Bolt



Product Number	Thread (E)	Dimensions (mm) A	B	C	D	Load	Weight each	Order Code IND-425
SEB1017	M10	41	41.5	8	18	150kg	0.063kg	**-3210S**
SEB1220	M12	50	51	10	22	220kg	0.125kg	**-3212S**
SEB1525	M16	60	60	12.5	27	450kg	0.216kg	**-3216S**
SEB2030	M20	72	71	16	30	630kg	0.4kg	**-3220S**

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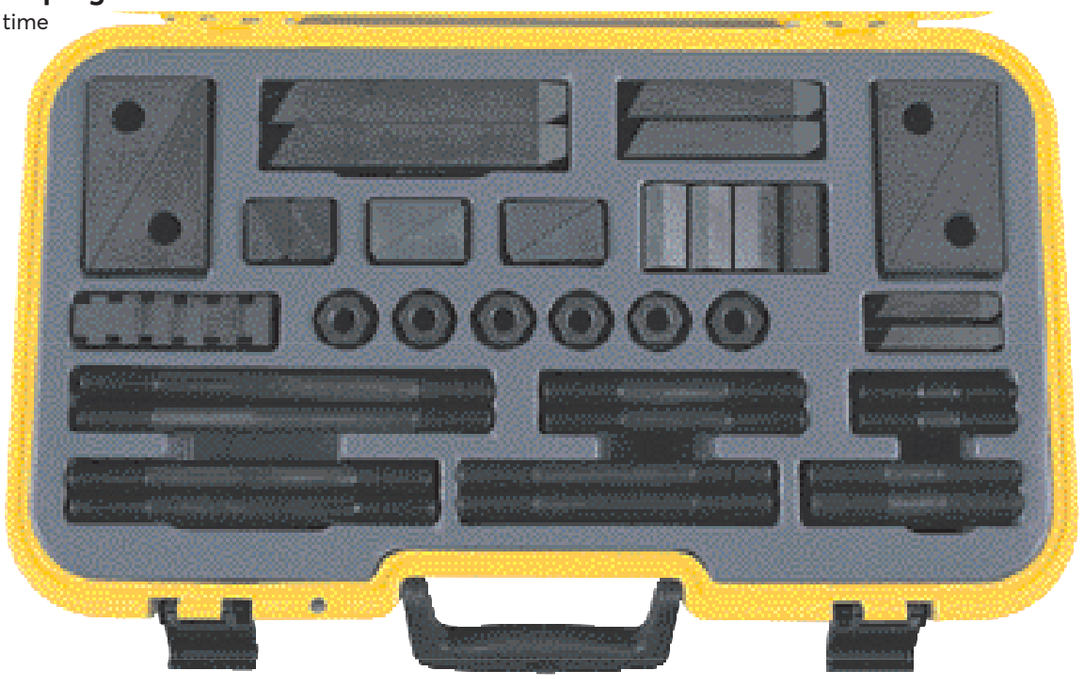
INDEXA Indexa T-Slot Clamping Kits

Designed to save set up time and solve most T-Slot clamping problems. All components are manufactured from **S45C (JIS)/CK45 (DIN)** grade non-alloy carbon steel, heat treated to HRC 28 - 32 and have a manganese phosphate surface finish. Supplied in a robust plastic case.



T-Slot Size	Thread Size	Part Number	Weight each	Order Code **IND-425**
12mm	M10	TK10	9kg	**-3610T**
14mm	M12	TK12	10kg	**-3612T**
16mm	M14	TK14	11kg	**-3614T**
18mm	M16	TK16	14kg	**-3616T**

ATLAS WORKHOLDERS T-Slot Steel Clamping Sets

Designed to save set up time and solve most clamping problems. Manufactured to high standards. All step clamps are forged and hardened and the step blocks are made from high quality steel. All components (other than the studs) are heat treated and finished in black oxide. Available to suit a full range of metric and imperial T-Slot widths. Supplied in steel racks which can be wall mounted or fitted to workbenches for ease of storage (except M16 set which is supplied in wooden box).

Engineer's Stud

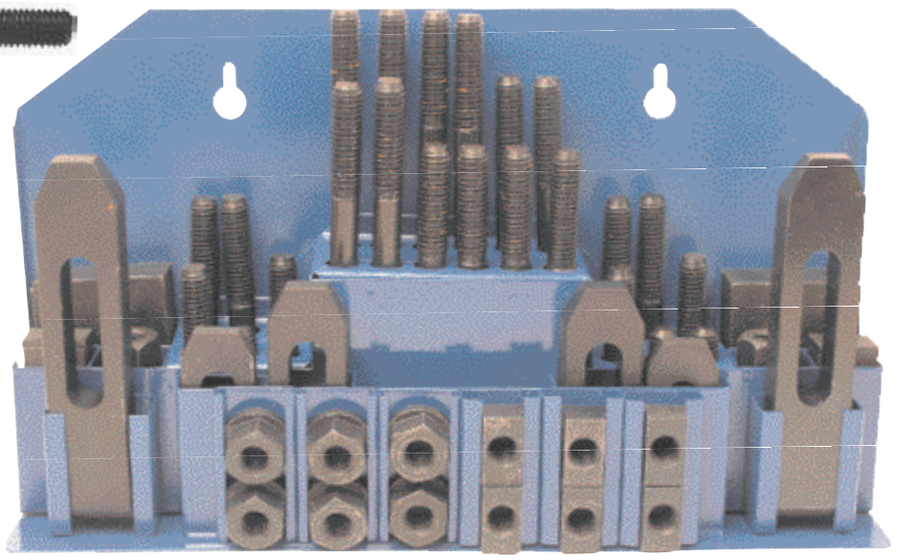
Step Block

T-Slot Nut

Flanged Nut

Extension Nut

Step Clamp



58 Pieces Metric Sets
(Quantity of each component part given in brackets)

Product Number	T-Slot Nut Size x W x L (mm)	Thread Size	Weight each	Order Code **ATL-425**
CK120100	12 x 18 x 14	M10	10kg	**-1120K**
CK140120	14 x 22 x 16	M12	12kg	**-1140K**
CK160140	16 x 25 x 18	M14	12kg	**-1160K**
CK180140	18 x 25 x 18	M14	12kg	**-1180K**
CK200160	20 x 28 x 20	M16	14kg	**-1200K**

58 Pieces Inch Sets
(Quantity of each component part given in brackets)

Product Number	T-Slot Nut Size x W x L (mm)	Thread Size	Weight each	Order Code **ATL-425**
CK500375	½" x 11/16" x 17/32"	3/8" UNC	10kg	**-1320K**
CK62500	9/16" x 7/8" x 6/8"	½" UNC	12kg	**-1360K**
CK62550	5/8" x 7/8" x 6/8"	½" UNC	12kg	**-1400K**
CK750625	¾" x 1⅜" x 1⅛"	5/8" UNC	12kg	**-1480K**

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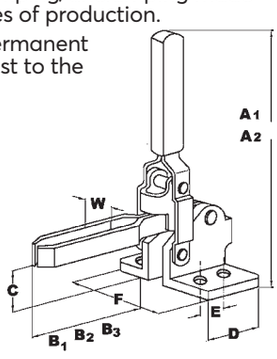
INDEXA Vertical Industrial Toggle Clamp

Designed to improve performance in fabrication and engineering clamping applications. The rapid clamping/unclamping made possible by the use of toggle clamps can greatly reduce machine/operator 'down-time' during all stages of production.

Clamping Capacity - the forces stated are the maximum loads that can be applied without causing permanent deformation. Due to leverage ratios, the holding capacity will be greatest at the point on the bar nearest to the handle of the clamp and forces stated have been achieved at this point.

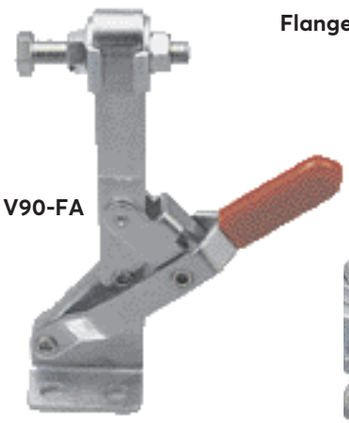


Vertical Clamp Dimensions (mm)

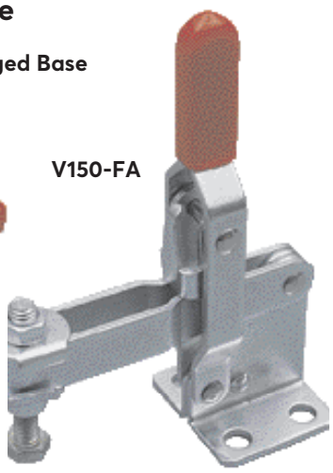
Holding Capacity	A_1 Flanged Base	A_2 Straight Base	B_1 Adj. Bar	B_2 Fixed Bar	B_3 Solid Bar	C Flanged Base	D	E	F Flanged Base	W
50kg	75.0	83.8	24.5	–	–	19.0	25.4	15.9	33.3	5.2
90kg	95.2	107.1	33.2	33.2	–	23.0	25.4	12.7	39.7	6.4
150kg	139.0	160.0	63.0	–	–	38.0	43.0	33.0	50.0	11.0
227kg	139.7	154.0	71.4	–	57.2	31.8	34.9	31.8	46.0	8.3
300kg	285.0	330.0	120.0	–	–	50.0	60.0	30.0	77.0	13.5
450kg	225.4	257.5	125.4	–	–	50.8	50.8	31.8	64.2	13.5
550kg	304.8	352.4	153.0	–	153.0	82.6	76.2	50.8	95.2	16.7

'U' Bar (Adjustable) Type

Flanged Base



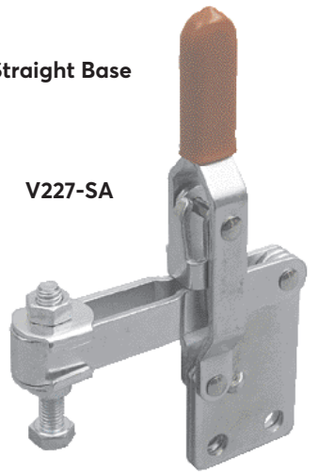
V90-FA



V150-FA

V90-SA

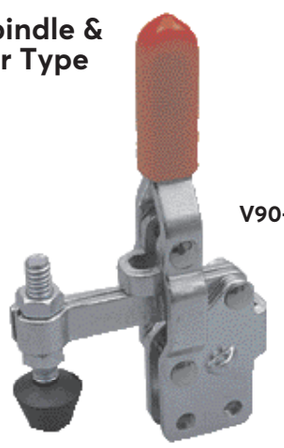
Straight Base



V227-SA

Product Number	Holding Capacity	Movement Handle	Movement Bar	Base Type	Supplied With	Weight each	Order Code IND-443
V50-FA	50kg	56°	100°	Flanged	Tipped Spindle (No.10) and Flanged Washer	60g	-1020K
V90-FA	90kg	60°	100°		Spindle (¼") and Flanged Washer		-1220K
V150-FA	150kg	45°	94°		Hex Head Spindle (M8) and Bolt Retainer	320g	-1320K
V227-FA	227kg	60°	100°		Tipped Spindle (5/16") and Flanged Washer	355g	-1420K
V300-FA	300kg	67°	140°		Hex Head Spindle (M10)	1250g	-1620K
V450-FA	450kg	70°	135°		Hex Head Spindle (½") and Flanged Washer	1140g	-1720K
V550-FA	550kg	60°	140°		Hex Head Spindle (⅝") and Flanged Washer	2540g	-1920K
V340-FA	340kg	58°	105°		Tipped Spindle (⅜") and Flanged Washer	635g	-1590K
V50-SA	50kg	56°	100°	Straight	Tipped Spindle (No.10) and Flanged Washer	60g	-1070K
V90-SA	90kg	60°	100°		Spindle (¼") and Flanged Washer	170g	-1270K
V150-SA	150kg	45°	94°		Hex Head Spindle (M8) and Bolt Retainer	320g	-1370K
V227-SA	227kg	60°	100°		Tipped Spindle (5/16") and Flanged Washer	355g	-1470K
V300-SA	300kg	67°	140°		Hex Head Spindle (M10)	1140g	-1670K
V450-SA	450kg	70°	135°		Hex Head Spindle (⅝") and Flanged Washer	1250g	-1770K

Fixed Spindle & Solid Bar Type



V90-SF

Fixed Spindle Type Flanged Base

V227-FS

V450-FS

Product Number	Holding Capacity	Movement Handle	Movement Bar	Base Type	Supplied With	Weight each	Order Code IND-443
V100-FF	90kg	60°	100°	Flanged	Fixed Spindle (¼")	170g	-1120K
V90-SF	90kg	60°	100°	Straight	Fixed Spindle (¼")	170g	-1170K
V227-FS	227kg	60°	100°	Flanged	Solid Bar Hex Head (5/16") and Bolt Retainer*	340g	-1520K
V450-FS	450kg	70°	135°		Solid Bar Hex Head Spindle (½") and Bolt Retainer*	1250g	-1820K
V550-FS	550kg	60°	140°		Solid Bar Hex Head Spindle (⅝") and Bolt Retainer*	2540g	-1940K
V227-SS	227kg	60°	100°	Straight	Solid Bar Tipped Spindle (5/16") and Bolt Retainer*	340g	-1570K
V450-SS	450kg	70°	135°		Solid Bar Hex Head Spindle (⅝") and Bolt Retainer*	1250g	-1870K

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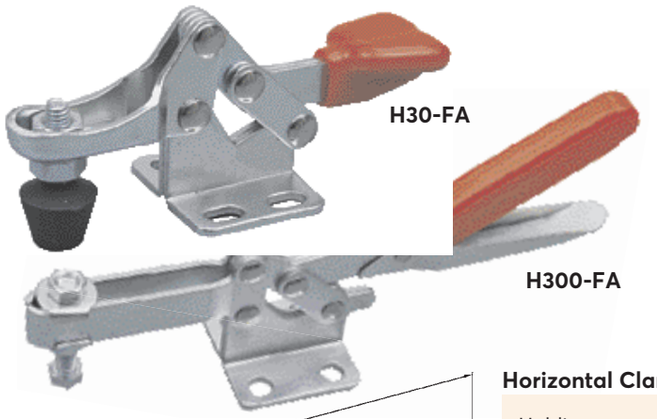
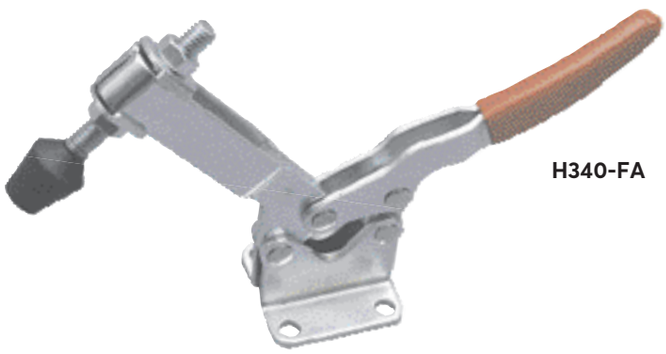
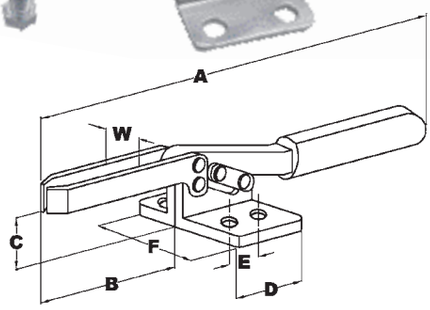
INDEXA Horizontal Industrial Toggle Clamp

With a low profile design suitable for use in applications requiring increased access to the actual workpiece. Available in eight sizes for general application in areas where a lower profile is required. Force applied downwards 90° to bar.







Horizontal Clamp Dimensions (mm)

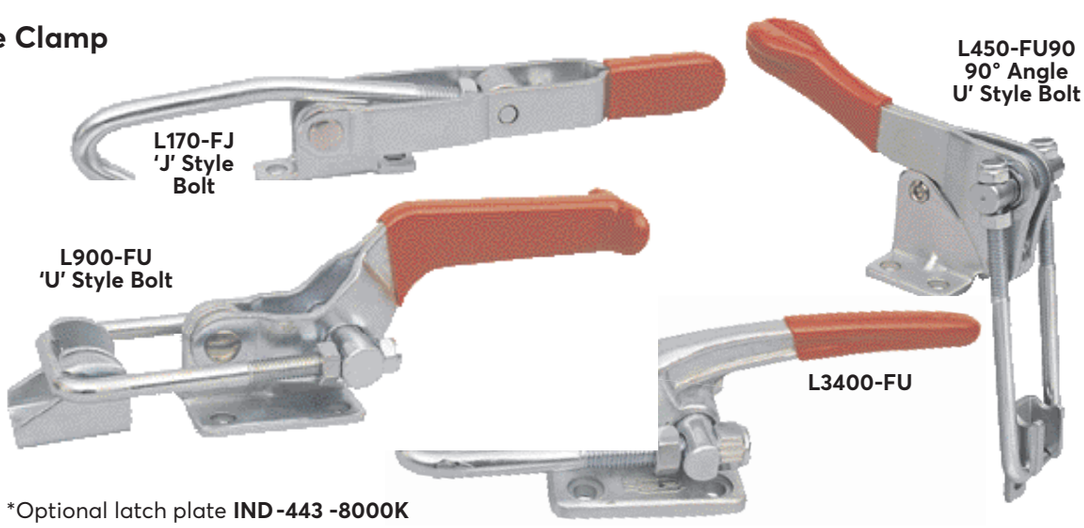
Holding Capacity	A	B	C	D	E	F	W
30kg	76.5	28.0	12.5	24.0	11.5	28.5	8.5
90kg	138.0	55.0	25.4	37.0	25.4	36.0	7.4
227kg	168.0	70.0	34.9	38.0	25.4	35.0	8.3
300kg	270.0	85.0	36.5	58.0	34.0	60.0	11.0
340kg	262.0	107.5	46.9	57.1	41.3	57.2	11.0
400kg	240.0	60.0	54.0	70.0	42.0	50.0	12.6
500kg	270.0	91.2	38.0	58.0	37.0	70.0	11.0
636kg	272.0	76.2	51.0	90.0		48.0	12.7

Product Number	Holding Capacity	Movement Handle	Movement Bar	Base Type	Supplied with	Weight each	Order Code IND-443
H65-FA	75kg	76°	94°		Hex Head Spindle (M5) Moulded PVC Handles	100g	-1960K
H86-FA	150kg	76°	94°		Hex Head Spindle (M6) Moulded PVC Handles	230g	-1970K
H217-FA	250kg	76°	94°		Hex Head Spindle (M8) Moulded PVC Handles	430g	-1980K
H30-FA	30kg	88°	80°		Tipped Spindle (M4)	40g	-2020K
H90-FA	90kg	60°	85°		Tipped Spindle (¼") and Flanged Washer	130g	-2120K
H227-FA	227kg	65°	90°	Flanged	Tipped Spindle (5/16") and Flanged Washer	255g	-2220K
H300-FA	300kg	85°	80°		Hexagon Head Spindle (⅜") and Flanged Washer	490g	-2320K
H340-FA	340kg	50°	85°		Tipped Spindle (⅜") and Flanged Washer	640g	-2420K
H400-FA	400kg	85°	84°		Tipped Spindle (⅜") and Flanged Washer	600g	-2520K
H500-FA	500kg	85°	65°		Hexagon Head Spindle (M10) and Flanged Washer	450g	-2620K
H636-FA	636kg	94°	91°		Hexagon Head Spindle (½") and Flanged Washer**	1220g	-2720K

**Single mounting centre hole 13mm diameter for 'Tee' bolt mounting

Latch Type Toggle Clamp

Suitable for sealing chamber doors or mould closures. The latched bolts are threaded to allow easy adjustment and provide positive connection with latch plate.



*Optional latch plate **IND-443 -8000K**

Product Number	Holding Capacity	Drawing Movement	Drawing Adjust	Base Type	Description	Weight each	Order Code IND-443
L164-FU	164kg	30mm	9.9mm		U-Style Bolt	80g	-4070K
L318-FU	318kg	45mm	9.6mm		U-Style Bolt	225g	-4010K
L900-FU	900kg	80mm	23.8mm		U-Style Bolt	680g	-4130K
L1818-FU	1818kg	88.9mm	19mm		U-Style Bolt*	1260g	-4170K
L3400-FU	3400kg	55.6mm	28.6mm		U-Style Bolt*	1480g	-4210K
L170-FJ	170kg	100mm	6.5mm	Flanged	J-Style Bolt	270g	-4030K
L170-FJ	170kg	105mm	35mm		J-Style Bolt	255g	-4050K
L340-FJ	340kg	140mm	40mm		J-Style Bolt	340g	-4190K
L225-FU90	225kg	25mm	15mm		90° Angle U-Style Bolt	113g	-4090K
L450-FU90	450kg	65mm	33mm		90° Angle U-Style Bolt	250g	-4110K
L900-FU90	900kg	45mm	40mm		90° Angle U-Style Bolt	700g	-4150K

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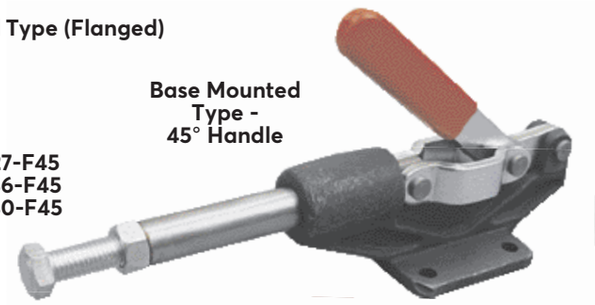
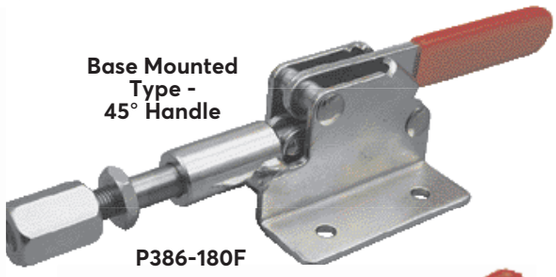
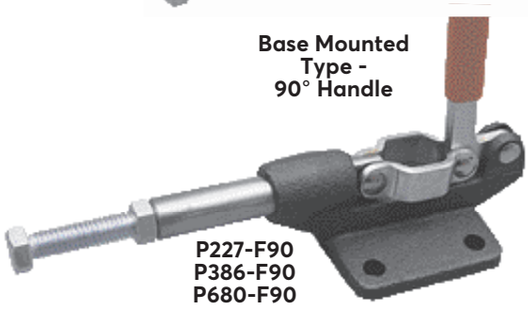
INDEXA Push Pull Industrial Toggle Clamp

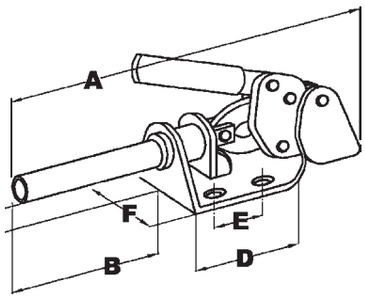
The straight line action which gives these plunger-style clamps extremely high loading capacities whilst maintaining compactness. These clamps also lock in the open position which allows a 'pull' to be exerted (for instance, in use with foam moulds). All models have tapped spindles for use with adjustable spindles.

Base Mounted Type (Flanged)







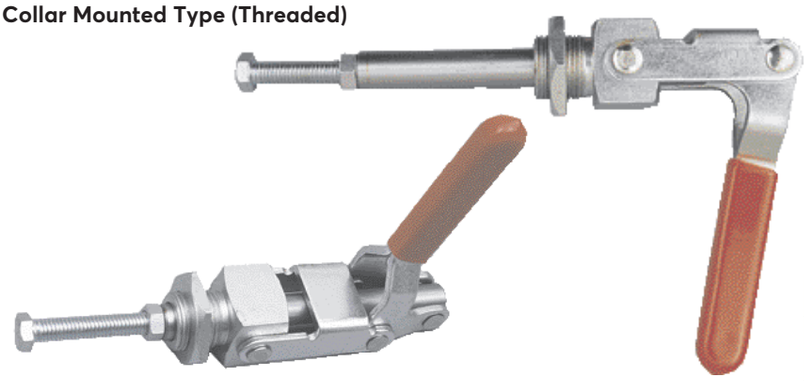


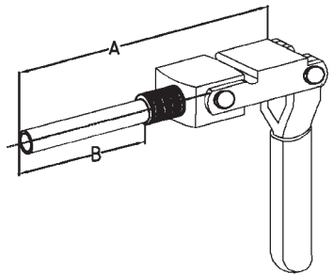
Dimensions (mm)

Holding Capacity	A – Excluding Handle	B	C	D	E	F
45kg	72.2	38.9	9.5	33.3	15.0	27.0
50kg	71.9	16.9	13.0	49.0	24.0	42.0
136kg	138.0	47.0	24.6	48.0	35.0	56.0
160kg	146.0	76.0	15.5	70.0	40.0	72.0
200kg	124.5	41.5	14.0	48.0	40.0	50.0
227kg	125.4	52.4	19.0	52.4	35.0	57.2
295kg	204.0	112.0	17.7	92.0	60.0	83.0
386kg	158.8	81.0	23.8	58.8	41.4	57.2
680kg	238.2	120.8	35.0	73.2	50.8	71.4
1136kg	178.6	50.8	12.5	127.8	34.9	56.2
1136kg	178.6	50.8	12.5	127.8	41.3 (6 holes)	56.2
1600kg	310.0	87.0	47.0	227.0	80.0	107.0

Product Number	Holding Capacity	Spindle Thread	Handle Movement	Handle Position	Base Type	Supplied With	Weight each	Order Code IND-443
P45-F45	45kg	¼" UNC x 12 Deep	190°			Nylon Spindle	50g	**-3030K**
P136-F45	136kg	M8	180°			Hexagon Head Spindle	300g	**-3060K**
P200-F45	180kg	M8 x 1.25	144.5°			Hexagon Head Spindle	345g	**-3090K**
P180-FA	180kg	M8 x 1.25	145°			Hexagon Head Spindle	35g	**-3100K**
P227-F45	227kg	M8	180°	45° Extended	Flanged	Hexagon Head Spindle	340g	**-3120K**
P386-F45	386kg	M10	180°			Hexagon Head Spindle	580g	**-3180K**
P680-F45	680kg	M12	180°			Hexagon Head Spindle	1480g	**-3240K**
P1136-F45	1136kg	M10	180°			Hexagon Head Spindle	935g	**-3300K**
P1600-F45	1600kg	M8 x 1.25	180°			Hexagon Head Spindle		**-3330K**
P227-F90	227kg	M8 x 30 Deep	180°			Hexagon Head Spindle	340g	**-3150K**
P386-F90	386kg	M10 x 40 Deep	180°	90° Extended	Flanged	Hexagon Head Spindle	580g	**-3210K**
P680-F90	680kg	M12 x 50 Deep	180°			Hexagon Head Spindle	1480g	**-3270K**
P50-180F	50kg	M5	66°			Hexagon Head Spindle	100g	**-3700K**
P386-180F	160kg	M10	45°	180° Extended	Flanged	Hexagon Head Spindle	454g	**-3730K**
P680-180F	295kg	½" UNC	45°			Hexagon Head Spindle	1270g	**-3760K**

Collar Mounted Type (Threaded)





Dimensions (mm)

Holding Capacity	A – Excluding Handle	B
91kg	30.3	20.6
136kg	115.0	37.7
318kg	169.5	65.3

Product Number	Holding Capacity	Spindle Thread	Collar Thread	Handle Movement	Base Type	Supplied with	Weight each	Order Code IND-443
P91-FT	91kg	¼" UNC	M16	180°		Nylon Spindle	113g	**-3530K**
P136-FT	136kg	5/16" UNC	M20	180°	Flanged	Hexagon Head Spindle	270g	**-3560K**
P318-FT	318kg	⅜" UNC	M27	180°		Hexagon Head Spindle	690g	**-3590K**

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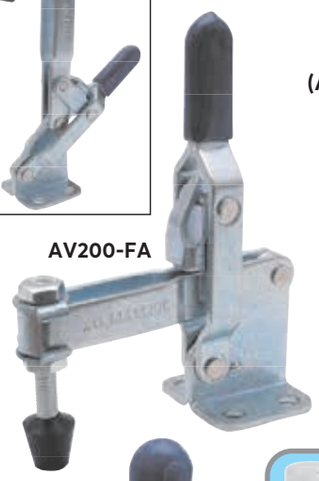
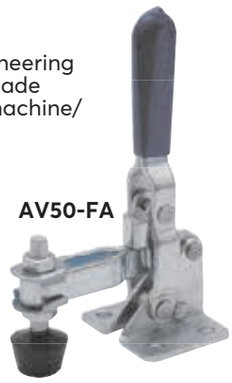
ATLAS WORKHOLDERS Vertical Industrial Toggle Clamp

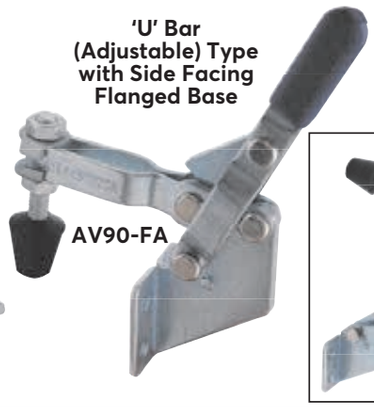
Designed to improve performance in fabrication and engineering clamping applications. The rapid clamping/unclamping made possible by the use of toggle clamps can greatly reduce machine/operator 'down-time' during all stages of production.

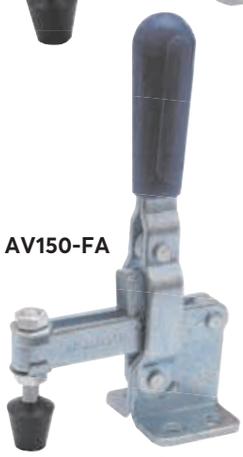


'U' Bar (Adjustable) Type with Flanged Base

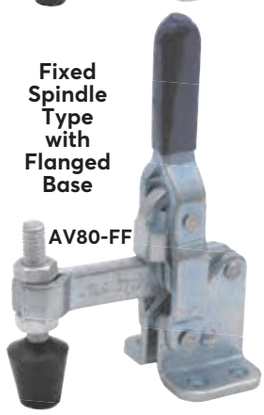


'U' Bar (Adjustable) Type with Side Facing Flanged Base

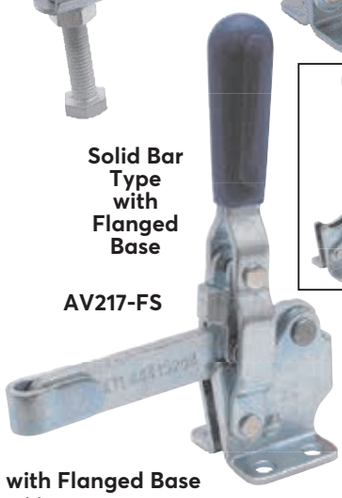




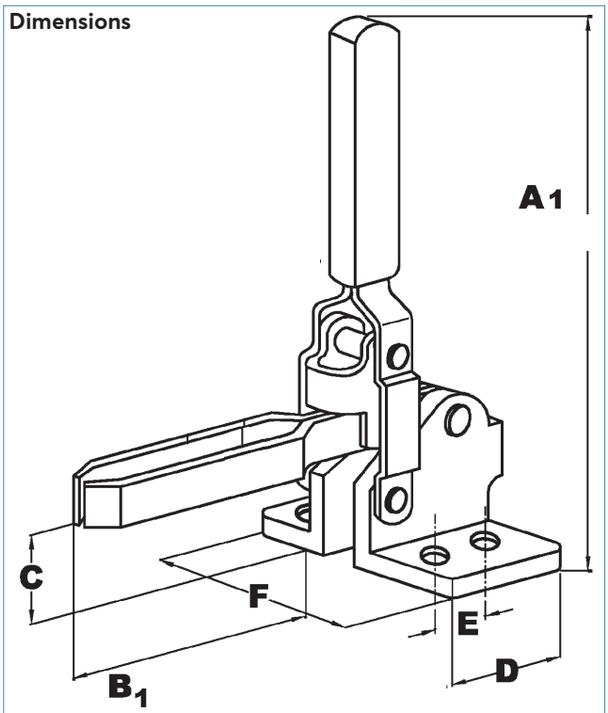
Fixed Spindle Type with Flanged Base



Solid Bar Type with Flanged Base



Dimensions



'U' Bar (Adjustable) Type with Flanged Base

Product Number	A_1 Flanged Base	B_1 Flanged Base	C Flanged Base	D	E	F Flanged Base
AV50-FA	75.0	24.5	19.0	25.4	15.9	39.7
AV90-FA	93.0	39.0	23.0	29.0	14.0	28.0
AV150-FA	143.0	44.0	31.0	19.0	12.7	42.0
AV200-FA	139.0	63.0	38.0	43.0	24.0	50.0
AV217-FA	139.7	71.4	31.8	34.9	19.0	46.0
AV450-FA	272.0	125.0	62.0	70.0	40.0	70.0

Fixed Spindle Type with Flanged Base

Product Number	A_1 Flanged Base	B_1 Flanged Base	C Flanged Base	D	E	F Flanged Base
AV80-FF	100.0	27.0	23.8	25.4	12.7	39.7
AV217-FS	139.7	57.2	31.8	34.9	19.0	46.0

'U' Bar (Adjustable) Type with Flanged Base

Product Number	Holding Capacity	Movement Handle	Movement Bar	Base Type	Supplied With	Weight each	Order Code ATL-443
AV50-FA	50kg	56°	100°	Flanged	Tipped Spindle (M5) and Flanged Washers	60g	**-1020K**
AV90-FA**	90kg	60°	100°		Spindle (M6) and Bolt Retainer	115g	**-1220K**
AV150-FA	150kg	70°	108°		Hex Head Spindle (M6) Moulded PVC Handle	230g	**-1970K**
AV200-FA	200kg	45°	94°		Hex Head Spindle (M8) and Flanged Washers	370g	**-1320K**
AV217-FA	217kg	60°	100°		Tipped Spindle (M8) and Flanged Washers	310g	**-1420K**
AV450-FA	450kg	70°	135°		Hex Head Spindle (M12) and Flanged Washers	1220g	**-1720K**

** Model AV90-FA has Side Flange - All other FA models listed have Flat Flanges

Fixed Spindle Type with Flanged Base

Product Number	Holding Capacity	Movement Handle	Movement Bar	Base Type	Supplied With	Weight each	Order Code ATL-443
AV80-FF	90kg	60°	100°	Flanged	Fixed Spindle (M8)	170g	**-1120K**
AV217-FS	217kg	60°	100°		Solid Bar and Bolt Retainer (M8)*	310g	**-1520K**

*Please note that the bolt retainer supplied needs to be welded in to position by the user

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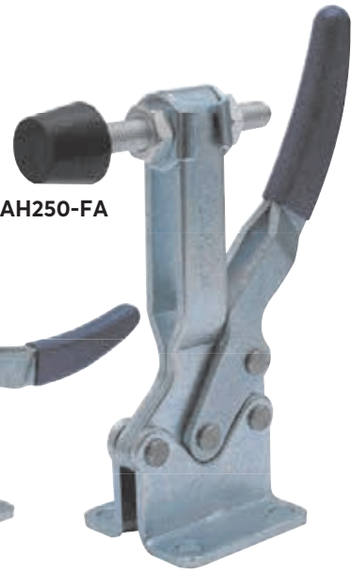
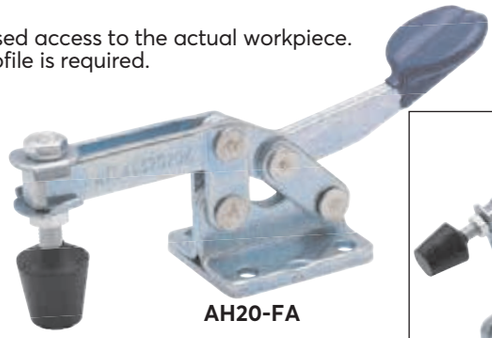
ATLAS WORKHOLDERS Horizontal Industrial Toggle Clamps

With a low profile design suitable for use in applications requiring increased access to the actual workpiece.
Available in eight sizes for general application in areas where a lower profile is required.
Force applied downwards 90° to bar.

'U' Bar (Adjustable) Type with Flanged Base

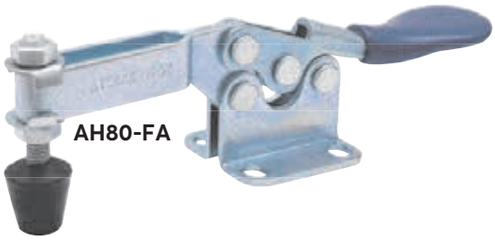


AH250-FA



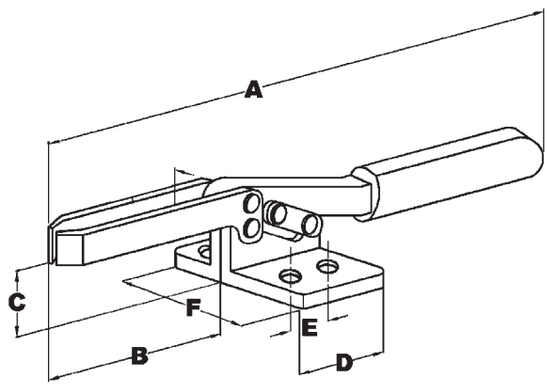
AH20-FA

AH340-FA



AH80-FA

Dimensions



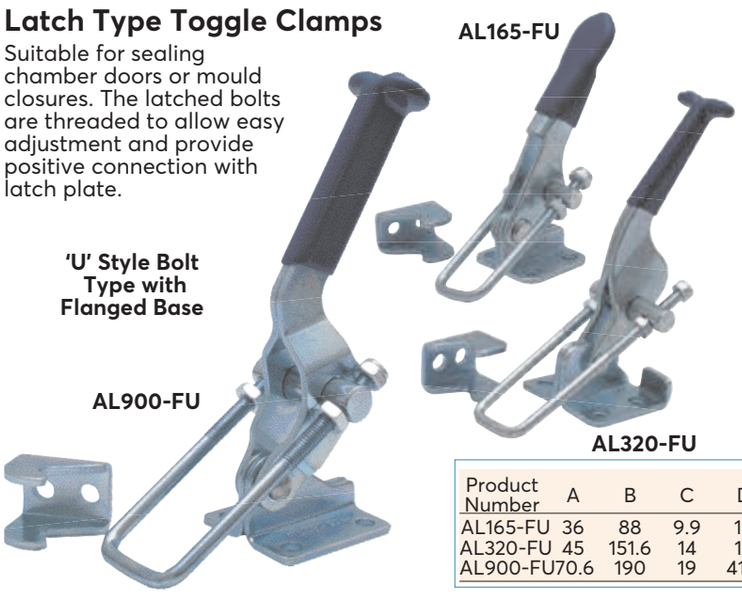
Product Number	A	B	C	D	E	F
AH20-FA	110.0	37.5	24.8	36.5	24.0	30.0
AH80-FA	138.1	55.0	25.4	36.5	25.4	38.0
AH217-FA	168.0	70.0	34.9	38.0	53.4	35.0
AH250-FA	274.0	108.0	45.0	59.0	41.2	59.0
AH340-FA	263.5	108.0	44.4	57.2	41.3	57.2

Product Number	Holding Capacity	Movement Handle	Movement Bar	Base Type	Supplied with	Weight each	Order Code ATL-443
AH20-FA	30kg	88°	80°	Flanged	Tipped Spindle (M6) and Flanged Washers	100g	**-2020K**
AH80-FA	80kg	60°	85°		Tipped Spindle (M6) and Flanged Washers	130g	**-2120K**
AH217-FA	217kg	65°	90°		Tipped Spindle (M8) and Flanged Washers	312g	**-2220K**
AH250-FA	250kg	94°	76°		Hexagon Head Spindle (M10) and Flanged Washers	500g	**-2620K**
AH340-FA	340kg	50°	85°		Tipped Spindle ((M10) and Flanged Washers	265g	**-2420K**

Latch Type Toggle Clamps

Suitable for sealing chamber doors or mould closures. The latched bolts are threaded to allow easy adjustment and provide positive connection with latch plate.

'U' Style Bolt Type with Flanged Base

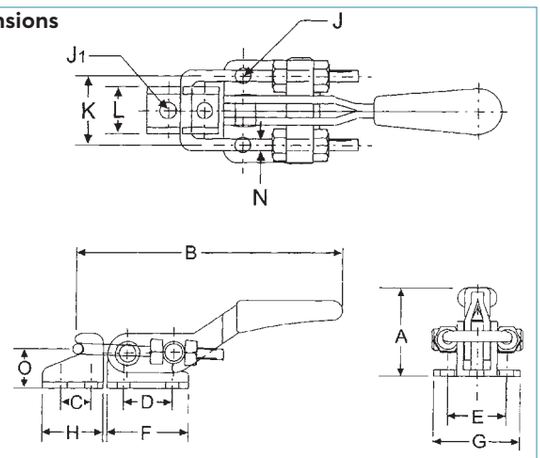


AL165-FU

AL900-FU

AL320-FU

Dimensions



Product Number	A	B	C	D	E	F	G	H	J	J1	K	L	N	O
AL165-FU	36	88	9.9	16	19	26	28	45	4.3	4.3	19	13.2	3.3	12
AL320-FU	45	151.6	14	19	31.8	39.6	44.5	25	6.8	6.8	25.4	17.5	4	17
AL900-FU	70.6	190	19	41.4	38	60.5	54	38	8.4	8.4	44.5	30.0	8	24

Product Number	Holding Capacity	Drawing Movement	Drawing Adjust	Base Type	Description	Weight each	Order Code ATL-443
AL165-FU	165kg	30mm	9.9mm	Flanged	U-Style Bolt	68g	**-4070K**
AL320-FU	320kg	45mm	9.6mm		U-Style Bolt	225g	**-4010K**
AL900-FU	900kg	80mm	23.8mm		U-Style Bolt	650g	**-4130K**

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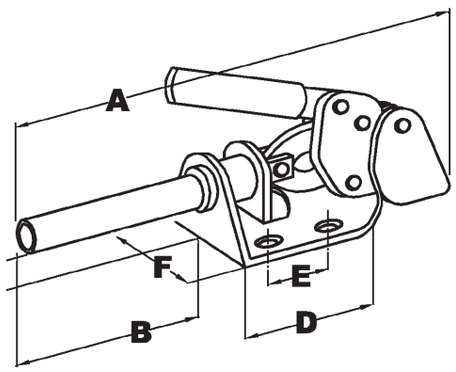
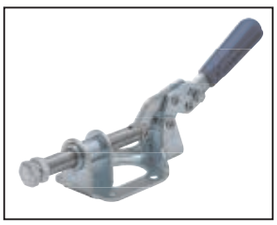
ATLAS WORKHOLDERS Push Pull Industrial Toggle Clamps

The straight line action which gives these plunger-style clamps extremely high loading capacities whilst maintaining compactness. These clamps also lock in the open position which allows a 'pull' to be exerted (for instance, in use with foam moulds). All models have tapped spindles for use with adjustable spindles.

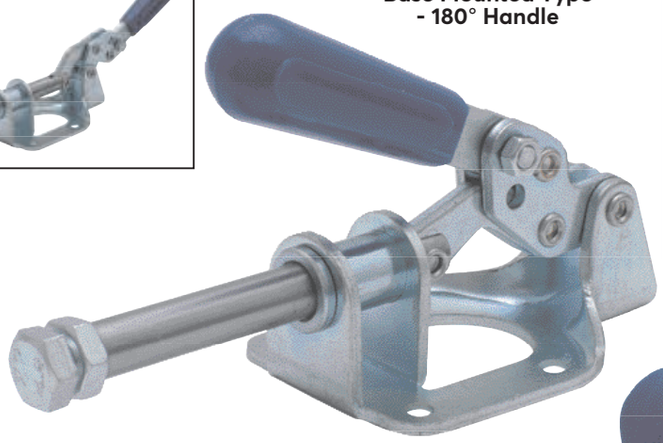
Dimensions



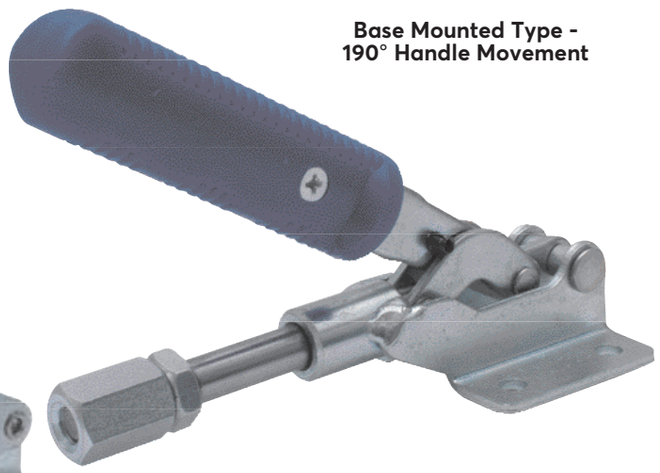
Product Number	A – Excl. Handle	B	C	D	E	F
AP136	138.1	49.2	24.6	88.9	34.9	55.6
AP200	124.5	41.5	14.0	83.0	40.0	50.0
AP227	151.0	63.0	15.0	88.0	32.0	63.0

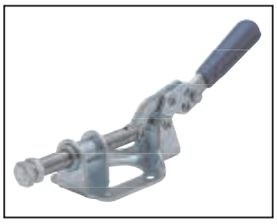


Base Mounted Type - 180° Handle

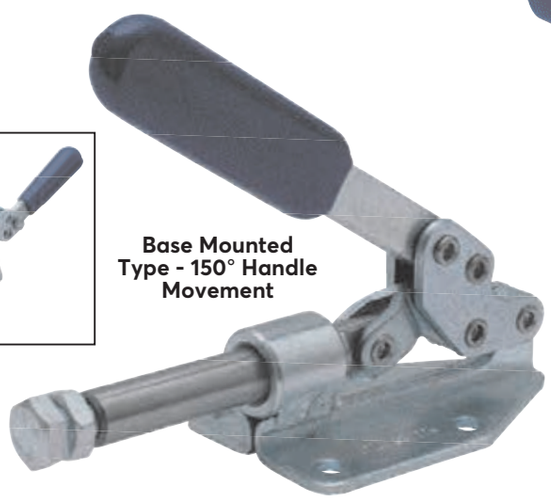


Base Mounted Type - 190° Handle Movement





Base Mounted Type - 150° Handle Movement



Product Number	Holding Capacity	Spindle Thread	Handle Movement	Handle Position	Base Type	Supplied With	Weight each	Order Code **ATL-443**
AP136	136kg	M8	180°			Hexagon Head Spindle	285g	**-3060K**
AP200	200kg	M8 x 1.25	150°	45°	Flanged	Hexagon Head Spindle	330g	**-3090K**
AP227	227kg	M8 x 30 Deep	190°	Extended		Hexagon Head Spindle	540g	**-3150K**

INDEXA Heavy-Duty Weldable Toggle Clamps

Hold down action suitable for high production automotive type applications. Heavy duty forged components with hardened and ground pivot points. The users provide their own handle and bar and weld them to the clamp which is then welded to a base. The flexible mounting of these clamps allows them to be used in situations where standard clamps are not effective.

Holding Capacity	Base Width	Clamp Height with Handle	Weight each	Order Code **IND-443**
700kg	28mm	110mm	808g	**-5010K**
700kg	45mm	130mm	915g	**-5030K**
1100kg	50mm	170mm	1574g	**-5070K**
2200kg	63mm	205mm	2881g	**-5110K**

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INDEXA Latch Plates

For use with latch type toggle clamps.

Base Size	Hook Width	Order Code IND-443
80 x 55mm	22mm	**-8000K**

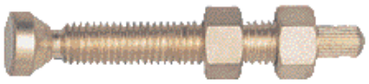
Flanged Washers

For use in conjunction with all spindles on clamps with adjustable 'U' bars.

To fit Spindle	Weight each	Order Code IND-443
5/32" (No.8/M4)	2g	**-8700K**
1/4"	4g	**-8740K**
5/16" (M8)	10g	**-8780K**
3/8" (M10)	15g	**-8800K**
1/2"	37g	**-8820K**
5/8"	49g	**-8840K**

Swivel Foot Spindles

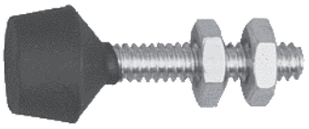
As Neoprene capped but suitable for clamping onto irregular shapes or angled workpieces.



Size	Length	Weight each	Order Code IND-443
1/4" UNC	2 1/4"	018g	**-8500K**
5/16"UNC	2 3/4"	031g	**-8520K**
1/2"UNC	4"	115g	**-8560K**

Neoprene Capped Spindles

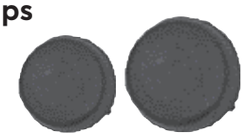
For use with adjustable 'U' bar type clamps and solid bar type clamps that have bolt retainers.



Size	Length	Weight each	Order Code IND-443
M4 x 0.70	25mm	5g	**-8020K**
M8 x 1.25	63mm	34g	**-8100K**
M10 x 1.5	85mm	64g	**-8140K**
No 10UNC	1 3/8"	9g	**-8200K**
1/4" UNC	1 3/4"	16g	**-8220K**
5/16" UNC	2 1/2"	31g	**-8260K**
3/8" UNC	3 1/2"	58g	**-8300K**
1/2" UNC	3 3/4"	125g	**-8340K**

Neoprene Caps

For standard adjustable spindles.

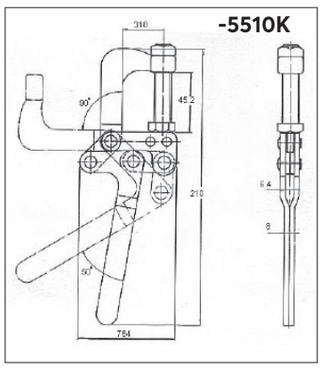


To fit Spindle	Weight each	Order Code IND-443
1/4"	08g	**-8600K**
5/16"	15g	**-8620K**
3/8"	24g	**-8640K**
1/2"	45g	**-8660K**

Cam Type Toggle G-Clamp (Pull Back Clamp)

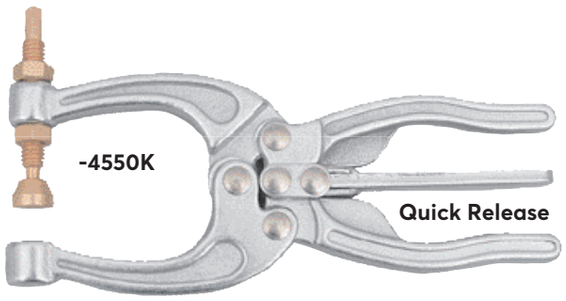
To securely fix the clamp into position the base can be welded to the work surface.

Holding Capacity	Jaw Opening	Jaw Movement	Handle Movement	Order Code IND-443
340kg	45.2mm	90°	50°	**-5510K**

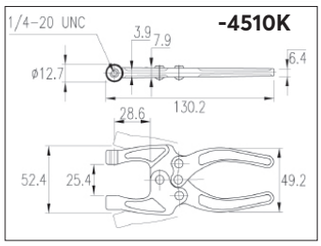


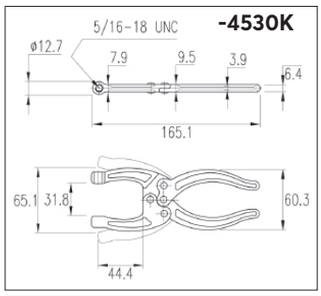
Toggle Pliers

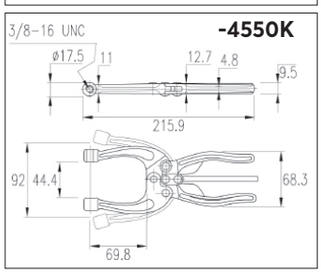
Toggle pliers have the advantage of a pivoting jaw mechanism to allow a deep throat depth to open and close easily when clamping awkward profiles such as steel angle section. The jaw spindle can be pre-set to achieve the optimum clamping distance and pressure and so is most useful for repetitious clamping applications.

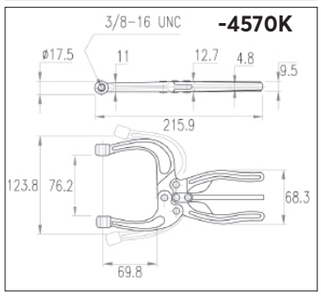


Holding Capacity	Jaw Opening Min	Jaw Opening Max	Standard Spindle Supplied	Order Code IND-443
90kg	25.4	52.4	Hex. Head	**-4510K**
318kg	44.4	92.0	Swivel	**-4550K**
318kg	76.2	123.8	Hex. Head & Swivel	**-4570K**





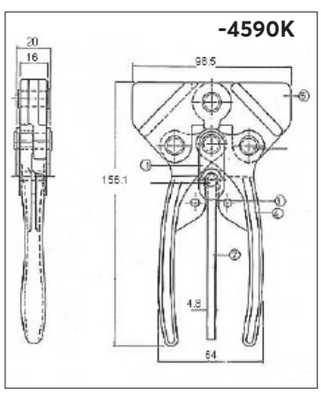




'Stub' Type Toggle Pliers

With two stub arms for easy linking to special jaw extensions.

Holding Capacity	Closed Head Width (mm)	Overall Length (mm)	Order Code IND-443
500kg	95.6	156.1	**-4590K**



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KENNEDY PROFESSIONAL Steel Bench Vices

These premium quality bench vices are as good as you get, made from solid steel with replaceable jaws, integral pipe jaws and anv
Availabl
100mm (
150mm (
200mm

Model Number	Opening (mm)	Jaw Width (mm)	Weight each	Order Code KEN-445
VBS100	100 (4″)	90 (3 9/16″)	6.30kg	-0500K
VBS150	150 (6″)	150 (6″)	18.25kg	-0540K
VSB200	200 (8″)	205 (8″)	25.00kg	-0300K

KENNEDY QUALITY INDUSTRIAL TOOLING Engineer's Vice

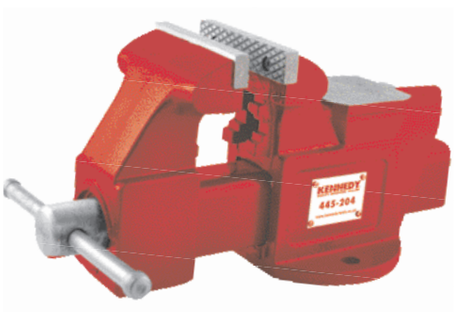
Manufactured from the highest quality castings with precision cut screw mechanisms and precision machined jaws. Suitable for workshop, automotive and engineering use.

Do Not Strike With A Hammer

Model Number	Opening (mm)	Jaw Width (mm)	Weight each	Order Code KEN-445
KECV75	100 (4″)	75 (3″)	4.50kg	-0230K
KECV100	140 (5 5/8″)	100 (4″)	9.50kg	-0240K
KECV125	170 (6 3/4″)	125 (5″)	18.0kg	-0250K
KECV150	190 (7 5/8″)	150 (6″)	25.0kg	-0260K
KECV200	210 (8 1/4″)	200 (8″)	40.0kg	-0280K

Workshop Vice - American Pattern

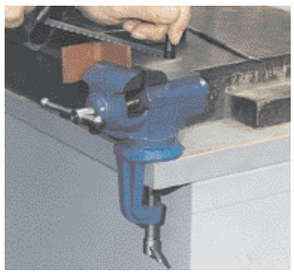
American pattern, bench mounting steel vice with anvil suitable for workshop, garage and machine-shop use. Fixed base directly mounts onto work bench. Cast iron body with steel jaws and a cross drilled threaded handle with adjustable T-bar for extra leverage.



Opening (mm)	Jaw Width (mm)	Weight each	Order Code KEN-445
127 (5″)	100 (4″)	12.3kg	-2040K
178 (7″)	150 (6″)	25.0kg	-2060K

SENATOR QUALITY TOOLING Portable Bench Vice

Lightweight and portable with a swivel base and light duty anvil. Ideal for model makers, DIY and light industrial use. Can be fitted to any convenient work surface. Solid cast grey iron body with steel guide rods and main screw.

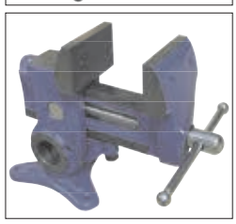


Opening (mm)	Jaw Width (mm)	Weight each	Order Code SEN-445
70 (2 3/4″)	60	2.8kg	-0600K

125mm (5″) Universal Vice

Can be bench mounted either vertically or horizontally, and on either side. Unique design permits the vice to rotate a full 360° then self-lock when jaws are tightened.

Jaw height: 54mm (2 1/8″).



Opening (mm)	Jaw Width (mm)	Jaw Height (mm)	Weight each	Order Code SEN-445
125 (5″)	90 (3 1/2″)	54 (2 1/8″)	8.2kg	-4050K

Light Duty Bench Vice

For light workshop, engineering and automotive use. Cast iron body with precision cut screw mechanism. The base bolts directly to the work bench surface for stability.

Opening (mm)	Jaw Width (mm)	Weight each	Order Code SEN-445
127 (5″)	100 (4″)	5.5kg	-0510K
170 (6 1/2″)	125 (5″)	11.3kg	-0520K
190 (7 1/2″)	150 (6″)	15.3kg	-0530K

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SENATOR QUALITY TOOLING Drill Press Vice

Suitable for use on pillar/bench drills to steady the workpiece in all light duty drilling applications for the garage or small workshop. Cast construction with machined slots which are spaced to fit all popular drill stand bases. Cross drilled handle with sliding T-bar for extra leverage.

Jaw Width	Maximum Opening	Jaw Height	O/all Dimensions Length x Height	Weight each	Order Code SEN-445
75mm	55	23	200 x 45	1.90kg	**-0750K**
100mm	95	25	250 x 55	3.25kg	**-1000K**

ATLAS WORKHOLDERS Machine Vices

Machine Vices without Swivel Base
Manufactured in accordance with high quality criteria. Designed for general purpose milling, planing and drilling applications.

Machine Vices with Swivel Base Type
Also available complete with a swivel base designed for milling, planing and drilling applications. Graduated to 1°.

Jaw Width	Max. Opening	Jaw Height	O/all Dimensions L x W x H	Weight each	Order Code ATL-445
Without Swivel Base					
100mm	80	35	245 x 115 x 89	8kg	**-0100K**
160mm	125	51	411 x 187 x 120	34kg	**-0150K**
200mm	160	63	440 x 220 x 140	46kg	**-0200K**
With Swivel Base					
100mm	80	35	195 x 145 x 110	17kg	**-1100K**
160mm	125	51	411 x 187 x 167	43kg	**-1150K**
200mm	160	63	440 x 220 x 187	57kg	**-1200K**

Swivel Ba… Ty…

…e fully in pairs

Spare Jaws to suit Atlas Machine Vices

Width	Order Code ATL-445
100mm	**-1040K**
160mm	**-1060K**
200mm	**-1080K**

Toolmaker's Vice - V-Groove Jaw

Made from alloy steel, case hardened.
With a quick release mechanism.

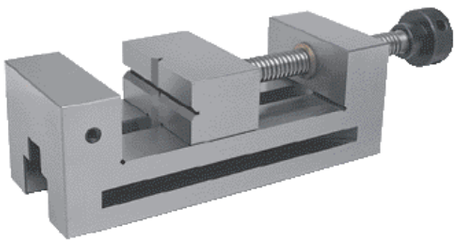
Accuracy:
0.005mm.

Jaw Dimensions Width x Opening x Height	Overall Length	Weight each	Order Code ATL-445
50 x 65 x 25mm	135	3kg	**-0310K**

Toolmaker's Vices

Manufactured from high carbon steel, precision ground on all faces. Phosphor bronze bush, 90° vee on clamping jaws.

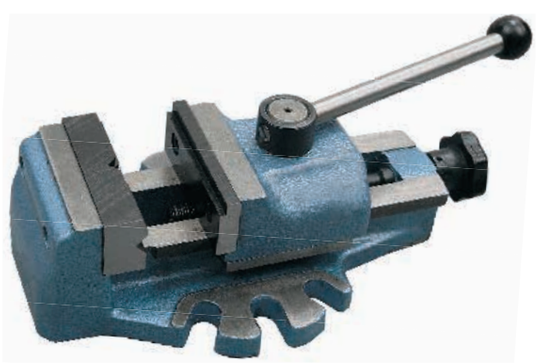
Standard Precision Toolmaker's Vices
Squareness and parallelism to within **0.005mm**.



Jaw Dimensions Width x Opening x Height	Overall Length	Weight each	Order Code ATL-445
63 x 85 x 32mm	185	3.80kg	**-2010K**
100 x 125 x 45mm	255	13.00kg	**-2050K**

INDEXA Quick Grip Drill Press Vices

Fixed Jaw
Quick acting cam can be set instantly to hold work. Fixed jaw with V-block to handle flat or round pieces, vertically or horizontally. Jaw inserts are hardened and ground. The heavy base can be clamped down to a milling machine or drill press.



Jaw Width	Jaw Height	Maximum Opening	Weight each	Order Code IND-445
80mm	30mm	80mm	5.2kg	**-0170K**
100mm	35mm	100mm	8.9kg	**-0180K**

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Machine Vices/ Bench Shears

INDEXA Drill Press Vices

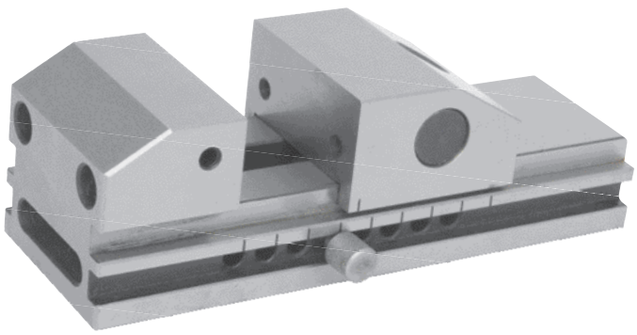
Available in four different jaw widths. For drilling, light milling, vertical and horizontal work.One grooved and one plain replaceable jaw for square and hexagonal shapes across flats or corners, thin strips and discs. Jaws and lead screw are hardened and ground.

Jaw Width	Jaw Opening	Order Code **IND-445**
85mm	70mm	**-0010K**
100mm	85mm	**-0020K**
120mm	120mm	**-0030K**
150mm	150mm	**-0040K**

Toolmaker's Vices - Plain Jaw

Manufactured from high quality alloy steel, case hardened to HRC 58 - 62. For wire cutting, machining, measurement and inspection. With a dowel pin quick release mechanism with linear scale for accurate alignment.

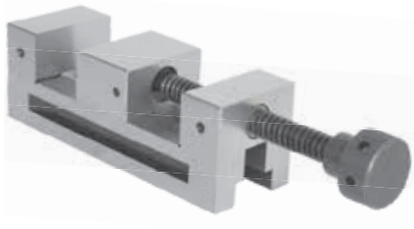
Accuracy: 0.003mm.



Jaw Dimensions Width x Opening x Height	Overall Length	Weight each	Order Code **IND-445**
60 x 80 x 28mm	175mm	3.9kg	**-0200K**

Precision Toolmaker's Vices

Squareness and parallelism to within **0.003mm**. Designed for precision grinding and many other tool room applications.

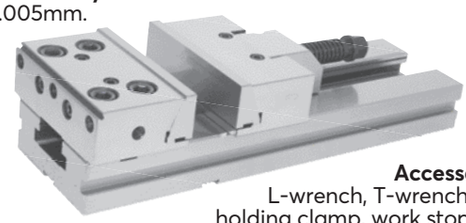


Jaw Dimensions Width x Opening x Height	Overall Length	Weight each	Order Code **IND-445**
73 x 100 x 35mm	205	5.00kg	**-0430K**
100 x 125 x 45mm	255	13.00kg	**-0450K**

Modular Precision Machine Vices

Precision modular vices are designed to be used on standard and CNC machines for precision grinding and milling. The vice could be set up individually or work in multiples, on tables or palletised components depending on the machined material dimensions. Made from hardened high grade alloy steel.

Perpendicular accuracy: 0.005mm.
Parallelism: 0.005mm.



Accessories:
L-wrench, T-wrench, vice holding clamp, work stop with main bolt, positioning key-nuts etc.

Jaw Width x Opening x Height	Overall Length	Clamping Force	Weight each	Order Code **IND-445**
125 x 150 x 40mm	345mm	3000kg	12.70kg	**-0620K**
150 x 200 x 50mm	420mm	5000kg	25.60kg	**-0640K**
150 x 300 x 50mm	520mm	5000kg	29.50kg	**-0660K**

Toolmaker's Vice - V-Groove Jaw

Manufactured from high quality alloy steel, case hardened to HRC 58 - 62. With a rack quick release mechanism.

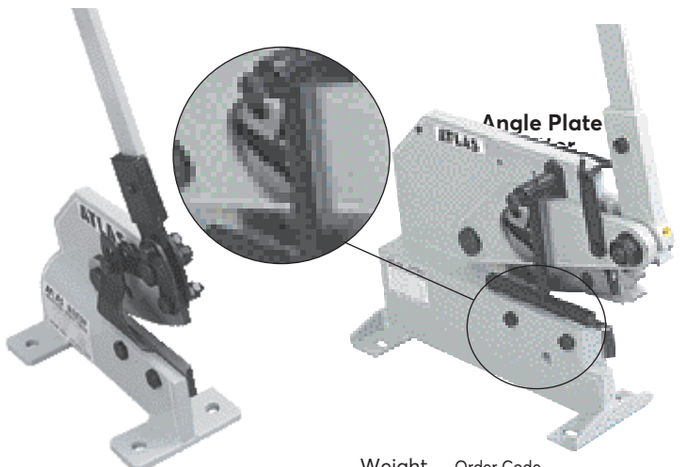
Accuracy: 0.003mm.

Jaw Dimensions Width x Opening x Height	Overall Length	Weight each	Order Code **IND-445**
63 x 85 x 32mm	170mm	2.95kg	**-0330K**

ATLAS WORKHOLDERS Bench Shears

Hand operated, compound bench shears. Capable of through metal plate, strip Solid steel frame for rigidit strength. With hardened a ground blades for accurat Adjustable blade guard.

Model Number	Plate (mm)	Angle Plate	Maximum Strip	Bar (mm)	Jaw Width	Weight each	Order Code **ATL-448**
BS120	4	-	5 x 70	10	120	8.3kg	**-1200K**
BS200	6	-	7 x 70	13	200	20.1kg	**-2000K**
BS406	8	40 x 6	10 x 100	16	200	46.6kg	**-3000K**



Description	Weight each	Order Code **ATL-567**
Top Blade for ATL-448- 1200K Shear	445g	**-3100K**
Bottom Blade for ATL-448- 1200K Shear	250g	**-3110K**
Top Blade for ATL-448- 2000K Shear	1.4kg	**-3150K**
Bottom Blade for ATL-448- 2000K Shear	790g	**-3160K**
Top Blade for ATL-448- 3000K Shear	430g	**-3200K**
Bottom Blade for ATL-448- 3000K Shear	220g	**-3210K**

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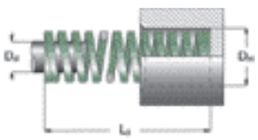
INDEXA Die Springs

The heat and surface treatment plus the high quality of steel used in the manufacturing process ensure the springs will bear a high number of stresses without breaking or without appreciable loss of load. Every batch of springs is subject to a rigorous testing procedure to ensure that a consistent quality is maintained. Longer springs should be guided along their course.

Light Load Spi Colour-Coded



Product Number	Diameter DH	Diameter Dd	L_0 (mm)	Rigidity (N/mm)	Weight each	Order Code IND-460
V10 x 25	10	4.5	25	10	4g	-8000A
V10 x 32	10	4.5	32	8.5	6g	-8001B
V10 x 38	10	4.5	38	6.8	7g	-8002C
V10 x 44	10	4.5	44	6.0	7g	-8003D
V10 x 51	10	4.5	51	5.0	8g	-8004E
V10 x 64	10	4.5	64	4.3	10g	-8005F
V10 x 76	10	4.5	76	3.2	11g	-8006G
V10 x 305	10	4.5	305	1.1	45g	-8007H
V13 x 25	13	7.0	25	17.9	6g	-8108J
V13 x 32	13	7.0	32	16.4	7g	-8109K
V13 x 38	13	7.0	38	13.6	9g	-8110L
V13 x 44	13	7.0	44	12.1	11g	-8111M
V13 x 51	13	7.0	51	11.4	12g	-8112N
V13 x 64	13	7.0	64	9.3	14g	-8113P
V13 x 76	13	7.0	76	7.1	16g	-8114Q
V13 x 305	13	7.0	305	1.4	63g	-8115R
V16 x 25	16	8.0	25	23.4	9g	-8216S
V16 x 32	16	8.0	32	22.9	11g	-8217T
V16 x 38	16	8.0	38	19.3	13g	-8218V
V16 x 44	16	8.0	44	17.1	17g	-8219W
V16 x 51	16	8.0	51	15.7	18g	-8220X
V16 x 64	16	8.0	64	10.7	22g	-8221Y
V16 x 76	16	8.0	76	10.0	26g	-8222Z
V16 x 102	16	8.0	102	7.8	35g	-8224B
V20 x 25	20	10.0	25	55.8	15g	-8326D
V20 x 32	20	10.0	32	45.0	20g	-8327E
V20 x 38	20	10.0	38	33.30	22g	-8328F
V20 x 44	20	10.0	44	30.0	28g	-8329G
V20 x 51	20	10.0	51	24.5	31g	-8330H
V20 x 64	20	10.0	64	20.0	40g	-8331J
V20 x 76	20	10.0	76	16.0	47g	-8332K
V20 x 89	20	10.0	89	14.0	54g	-8333L
V20 x 102	20	10.0	102	12.0	110g	-8334M
V20 x 115	20	10.0	115	10.9	123g	-8335N
V20 x 127	20	10.0	127	9.5	135g	-8336P
V20 x 152	20	10.0	152	7.5	90g	-8338R
V25 x 25	26	12.5	25	100.0	27g	-8440T
V25 x 32	26	12.5	32	80.3	35g	-8441V
V25 x 38	26	12.5	38	62.0	44g	-8442W
V25 x 51	26	12.5	51	44.0	57g	-8444Y
V25 x 64	26	12.5	64	35.2	71g	-8445Z
V25 x 76	26	12.5	76	28.0	87g	-8446A
V25 x 89	26	12.5	89	29.0	96g	-8447B
V25 x 102	26	12.5	102	21.1	110g	-8448C
V25 x 115	26	12.5	115	18.7	125g	-8449D
V25 x 127	26	12.5	127	16.7	135g	-8450E
V25 x 152	26	12.5	152	14.0	165g	-8452G
V25 x 203	26	12.5	203	10.4	215g	-8454J
V32 x 38	32	16.0	38	94.0	60g	-8557M
V32 x 76	32	16.0	76	44.0	132g	-8561R
V32 x 115	32	16.0	115	29.0	190g	-8564V
V32 x 152	32	16.0	152	21.5	262g	-8567Y
V32 x 178	32	16.0	178	18.2	300g	-8568Z
V32 x 203	32	16.0	203	1.40	350g	-8569K
V40 x 64	40	20.0	64	73.0	165g	-8673E
V40 x 102	40	20.0	102	43.0	247g	-8676H
V50 x 64	50	25.0	64	156.0	305g	-8785S
V50 x 76	50	25.0	76	125.0	450g	-8786T
V50 x 102	50	25.0	102	94.0	470g	-8788W
V50 x 115	50	25.0	115	81.0	590g	-8789X

Medium Load Springs Colour-Coded Blue

Product Number	Diameter DH	Diameter Dd	L_0 (mm)	Rigidity (N/mm)	Weight each	Order Code IND-460
B10 x 25	10	4.5	25	16.0	3g	-6000A
B10 x 32	10	4.5	32	13.0	4g	-6001B
B10 x 38	10	5.0	44	11.9	4g	-6002C
B10 x 44	10	4.5	44	10.3	5g	-6003D
B10 x 51	10	4.5	51	8.9	7g	-6004E
B10 x 64	10	4.5	64	7.5	9g	-6005F
B10 x 76	10	4.5	76	5.3	11g	-6006G
B10 x 305	10	4.5	305	1.6	45g	-6007H
B13 x 25	13	7.0	25	30.0	6g	-6108J
B13 x 32	13	7.0	32	24.8	8g	-6109K
B13 x 38	13	7.0	38	21.4	10g	-6110L
B13 x 44	13	7.0	44	18.5	12g	-6111M
B13 x 51	13	7.0	51	15.5	13g	-6112N
B13 x 64	13	7.0	64	12.1	15g	-6113P
B13 x 76	13	7.0	76	10.2	17g	-6114Q
B13 x 305	13	7.0	305	2.1	73g	-6115R
B16 x 25	16	8.0	25	49.4	12g	-6216S
B16 x 32	16	8.0	32	37.1	14g	-6217T
B16 x 38	16	8.0	38	33.9	15g	-6218V
B16 x 44	16	8.0	44	30.0	19g	-6219W
B16 x 51	16	8.0	51	26.4	21g	-6220X
B16 x 64	16	8.0	64	20.5	27g	-6221Y
B16 x 76	16	8.0	76	17.8	33g	-6222Z
B16 x 102	16	8.0	102	13.5	43g	-6224B
B20 x 25	20	10.0	25	98.0	19g	-6326D
B20 x 32	20	10.0	32	72.6	23g	-6327E
B20 x 38	20	10.0	38	56.0	26g	-6328F
B20 x 44	20	10.0	44	47.5	32g	-6329G
B20 x 51	20	10.0	51	41.7	35g	-6330H
B20 x 64	20	10.0	64	32.3	46g	-6331J
B20 x 76	20	10.0	76	25.1	55g	-6332K
B20 x 89	20	10.0	89	22.0	61g	-6333L
B20 x 102	20	10.0	102	19.8	68g	-6334M
B20 x 127	20	10.0	127	16.6	85g	-6336P
B20x152	20	10.0	152	1.30	103g	-6338R
B25 x 25	26	12.5	25	147.0	33g	-6440T
B25 x 32	26	12.5	32	118.0	42g	-6441V
B25 x 38	26	12.5	38	93.0	48g	-6442W
B25 x 44	26	12.5	44	80.8	56g	-6443X
B25 x 51	26	12.5	51	68.6	65g	-6444Y
B25 x 64	26	12.5	64	53.0	90g	-6445Z
B25 x 76	26	12.5	76	43.2	96g	-6446A
B25 x 89	26	12.5	89	38.2	118g	-6447B
B25 x 102	26	12.5	102	33.0	131g	-6448C
B25 x 152	26	12.5	152	20.8	190g	-6452G
B32 x 38	32	16.0	38	185.0	80g	-6557M
B32 x 44	32	16.0	44	158.0	90g	-6558N
B32 x 51	32	16.0	51	134.0	100g	-6559P
B32 x 64	32	16.0	64	99.0	130g	-6560Q
B32 x 76	32	16.0	76	80.5	152g	-6561R
B32 x 102	32	16.0	102	58.8	203g	-6563T
B32 x 115	32	16.0	115	51.5	223g	-6564V
B32 x 127	32	16.0	127	44.8	252g	-6565W
B32 x 152	32	16.0	152	37.8	292g	-6567Y
B32 x 178	32	16.0	178	32.5	320g	-6568Z
B40 x 51	40	20.0	51	181.6	157g	-6672D
B40 x 64	40	20.0	64	140.0	194g	-6673E
B40 x 89	40	20.0	89	90.7	265g	-6675G
B40 x 102	40	20.0	102	81.0	300g	-6676H
B50 x 64	51	25.0	65	209.0	340g	-6785S
B50 x 76	51	25.0	76	168.0	395g	-6786T

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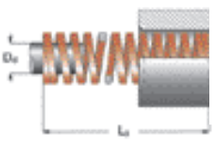
INDEXA Die Springs

The heat and surface treatment plus the high quality of steel used in the manufacturing process ensure the springs will bear a high number of stresses without breaking or without appreciable loss of load. Every batch of springs is subject to a rigorous testing procedure to ensure that a consistent quality is maintained. Longer springs should be guided along their course.

Heavy-Load Springs
Colour Coded Red



Product Number	Diameter D_H	Diameter D_d	L_0 (mm)	Rigidity (N/mm)	Weight each	Order Code IND-460
R10 x 25	10	4.5	25	22.10	4g	-1000A
R10 x 32	10	4.5	32	17.50	5g	-1001B
R10 x 38	10	4.5	38	17.10	6g	-1002C
R10 x 44	10	5.0	180	15.00	8g	-1003D
R10 x 51	10	4.5	51	12.80	8g	-1004E
R10 x 64	10	4.5	64	10.7	11g	-1005F
R13 x 25	13	7.0	25	42.1	12g	-1108J
R13 x 38	13	7.0	38	29.3	13g	-1110L
R13 x 44	13	7.0	44	24.6	15g	-1111M
R13 x 51	13	7.0	51	19.6	17g	-1112N
R13 x 64	13	7.0	64	15.0	21g	-1113P
R13 x 76	13	7.0	76	13.2	24g	-1114Q
R16 x 25	16	8.0	25	75.7	12g	-1216S
R16 x 32	16	8.0	32	52.8	14g	-1217T
R16 x 38	16	8.0	38	48.5	17g	-1218V
R16 x 44	16	8.0	44	42.8	20g	-1219W
R16 x 51	16	8.0	51	37.1	23g	-1220X
R16 x 64	16	8.0	64	30.3	27g	-1221Y
R16 x 76	16	8.0	76	25.7	34g	-1222Z
R20 x 25	20	10.0	25	216.0	20g	-1326D
R20 x 32	20	10.0	32	168.0	28g	-1327E
R20 x 38	20	10.0	38	129.0	32g	-1328F
R20 x 44	20	10.0	44	112.0	38g	-1329G
R20 x 51	20	10.0	51	94.0	44g	-1330H
R20 x 64	20	10.0	64	72.1	54g	-1331J
R20 x 76	20	10.0	76	59.7	63g	-1332K
R20 x 89	20	10.0	89	50.5	75g	-1333L
R20 x 102	20	10.0	102	44.2	88g	-1334M
R20 x 127	20	10.0	127	34.1	107g	-1336P
R25 x 32	26	12.5	32	297.0	48g	-1441V
R25 x 38	26	12.5	38	219.0	56g	-1442W
R25 x 44	26	12.5	44	187.0	57g	-1443X
R25 x 51	26	12.5	51	156.0	63g	-1444Y
R25 x 64	26	12.5	64	123.0	85g	-1445Z
R25 x 76	26	12.5	76	99.0	110g	-1446A
R25 x 89	26	12.5	89	84.0	139g	-1447B
R25 x 102	26	12.5	102	73.0	144g	-1448C
R25 x 115	26	12.5	115	65.0	168g	-1449D
R25 x 127	26	12.5	127	57.7	182g	-1450E
R25 x 152	26	12.5	152	47.8	222g	-1452G
R32 x 38	32	16.0	38	388.0	93g	-1557M
R32 x 44	32	16.0	44	324.0	105g	-1558N
R32 x 51	32	16.0	51	272.0	117g	-1559P
R32 x 64	32	16.0	64	212.0	148g	-1560Q
R32 x 76	32	16.0	76	172.0	178g	-1561R
R32 x 89	32	16.0	89	141.0	204g	-1562S
R32 x 102	32	16.0	102	122.0	230g	-1563T
R32 x 152	32	16.0	152	78.0	380g	-1567Y
R32 x 178	32	16.0	178	67.2	410g	-1568Z
R40 x 51	40	20.0	51	350.0	181g	-1672D
R40 x 64	40	20.0	64	269.0	220g	-1673E
R40 x 76	40	20.0	76	219.0	261g	-1674F
R40 x 102	40	20.0	102	163.0	341g	-1676H
R40 x 127	40	20.0	127	128.0	420g	-1678K
R40 x 152	40	20.0	152	105.0	500g	-1680M
R50 x 64	51	25.0	64	413.0	416g	-1785S
R50 x 76	51	25.0	76	339.0	438g	-1786T

Product Number	Diameter D_H	Diameter D_d	L_0 (mm)	Rigidity (N/mm)	Weight each	Order Code IND-460
G10 x 25	10	4.5	25	36.8	5g	-3000A
G10 x 32	10	4.5	32	27.9	7g	-3001B
G10 x 38	10	4.5	38	23.7	8g	-3002C
G10 x 44	10	4.5	44	19.2	9g	-3003D
G10 x 51	10	4.5	51	16.5	10g	-3004E
G10 x 64	10	5.0	64	13.2	11g	-3005F
G13 x 25	13	7.0	25	58.5	11g	-3108J
G13 x 32	13	7.0	32	43.9	11g	-3109K
G13 x 38	13	7.0	38	3.70	13g	-3110L
G13 x 44	13	7.0	44	30.3	15g	-3111M
G13 x 51	13	7.0	51	26.2	80g	-3112N
G13 x 64	13	7.0	64	21.2	22g	-3113P
G16 x 32	16	8.0	32	89.0	17g	-3217T
G16 x 38	16	8.0	38	72.1	22g	-3218V
G16 x 44	16	8.0	44	60.9	25g	-3219W
G16 x 51	16	8.0	51	52.3	29g	-3220X
G16 x 64	16	8.0	64	41.2	36g	-3221Y
G16 x 76	16	8.0	76	34.1	42g	-3222Z
G20 x 25	20	10.0	25	293.0	23g	-3326D
G20 x 32	20	10.0	32	224.0	28g	-3327E
G20 x 38	20	10.0	38	177.0	33g	-3328F
G20 x 44	20	10.0	44	149.0	39g	-3329G
G20 x 51	20	10.0	51	128.0	45g	-3330H
G20 x 64	20	10.0	64	99.0	56g	-3331J
G20 x 76	20	10.0	76	81.7	64g	-3332K
G20 x 89	20	10.0	89	69.5	73g	-3333L
G20 x 102	20	10.0	102	60.6	86g	-3334M
G25 x 32	26	12.5	32	374.4	48g	-3441V
G25 x 38	26	12.5	38	346.0	60g	-3442W
G25 x 44	26	12.5	44	244.0	70g	-3443X
G25 x 51	26	12.5	51	207.5	80g	-3444Y
G25 x 64	26	12.5	64	161.0	99g	-3445Z
G25 x 76	26	12.5	76	130.8	114g	-3446A
G25 x 89	26	12.5	89	110.5	134g	-3447B
G25 x 102	26	12.5	102	96.3	151g	-3448C
G25 x 115	25	12.5	115	85.7	174g	-3449D
G32 x 38	32	16.0	38	528.2	98g	-3557M
G32 x 44	32	16.0	44	424.4	115g	-3558N
G32 x 51	32	16.0	51	353.0	131g	-3559P
G32 x 64	32	16.0	64	269.2	163g	-3560Q
G32 x 76	32	16.0	76	218.5	200g	-3561R
G32 x 102	32	16.0	102	155.0	252g	-3563T
G32 x 140	32	16.0	140	112.3	350g	-3566X
G32 x 152	32	16.0	152	102.0	380g	-3567Y
G40 x 51	40	20.0	51	628.0	190g	-3672D
G40 x 64	40	20.0	64	487.0	238g	-3673E
G40 x 76	40	20.0	76	379.0	275g	-3674F
G40 x 89	40	20.0	89	321.0	330g	-3675G
G50 x 64	50	25.0	64	709.0	410g	-3785S
G50 x 89	51	25.0	89	475.0	593g	-3787V

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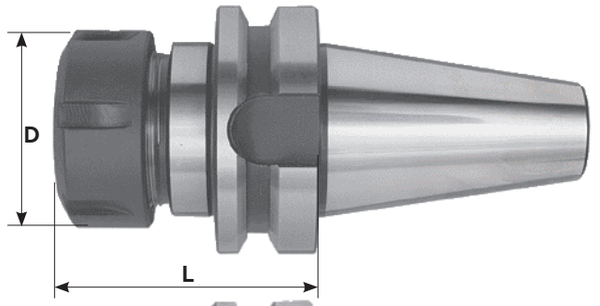
INDEXA-SEIKI ER - Collet Chucks

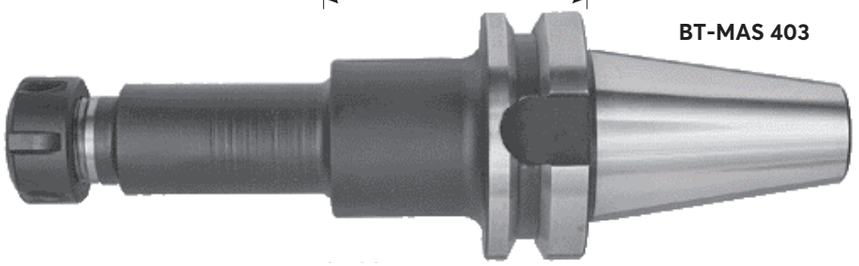
Europe's most popular collet system. Collapsing collet design can be used for a range of diameters and maintains concentricity for drilling and milling. Long reach options available to give access into deep recesses.

BT = BT-MAS 403.....(See main picture)

DN = DIN69871/A.....



BT-MAS 403

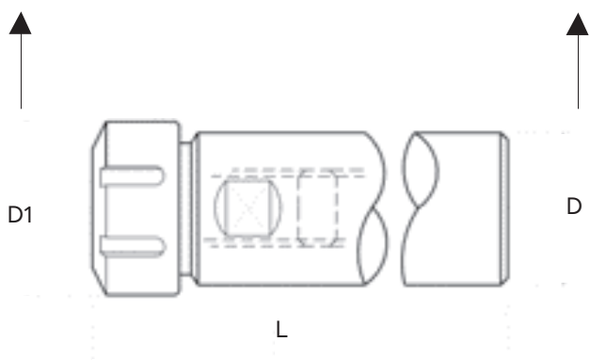


DN = DIN 69871/A

Shank	Collet Diameter	L	D	Weight each	Order Code IND-144
DN40	ER16	100	28	929g	**-2710K**
	ER32	70	50	1253g	**-2716K**
	ER32	130	50	1744g	**-2718K**
	ER40	70	63	1293g	**-2720K**

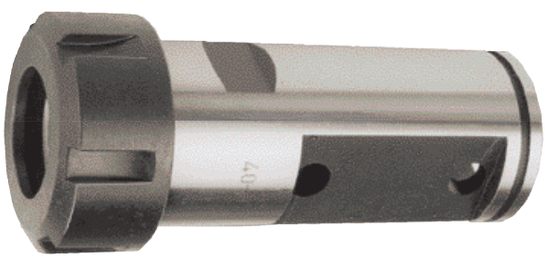
Shank	Collet Diameter	L	D	Weight each	Order Code IND-144
BT30	ER16	60	32	539g	**-2792K**
	ER32	60	50	1100g	**-2796K**
BT40	ER16	100	28	1240g	**-2800K**
	ER16	150	28	1240g	**-2802K**
	ER25	60	42	1155g	**-2804K**
	ER32	70	50	1299g	**-2806K**
	ER32	130	50	2177g	**-2808K**
	ER40	70	63	1334g	**-2810K**

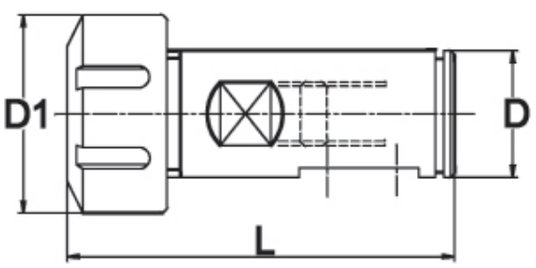
Straight Shank - Mini Extension



Product Number	Collet Diameter	D_1	L	D	Weight each	Order Code IND-144
SSE20	ER16	22	160	20	305g	**-2880K**

Straight Shank





Product Number	Collet Diameter	D_1	L	D	Weight each	Order Code IND-144
SS32	ER32	50	098	32	655g	**-2850K**
SS40	ER32	50	118	40	913g	**-2860K**

INDEXA Tool Locking Fixtures

Universal
Made from cast aluminium with machined carbon steel fittings, these fixtures are an invaluable asset in your machine shop. Universal in use, suitable for BT, DIN and CAT tool holders. Designed to give maximum protection for your tool holder whilst enabling strong gripping power to be exerted in both horizontal and vertical positions. It is tough but remains light in weight and its compact design makes it ideal for mounting on a work table or tool cart.

Overall dimensions (L x W x H)
Taper size 40: 200 x 155 x 100mm.
Taper size 50: 270 x 210 x 145mm.

Horizontal

Vertical

Taper Size BT-DIN-CAT	Weight each	Order Code IND-140
30	1.9kg	**-6630K**
40	1.9kg	**-6640K**
50	4.2kg	**-6650K**

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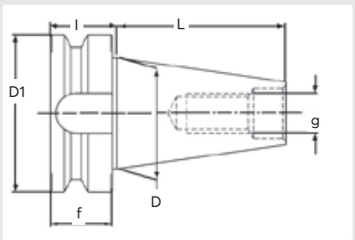
INDEXA-SEIKI

Japanese Standard
BT-MAS 403

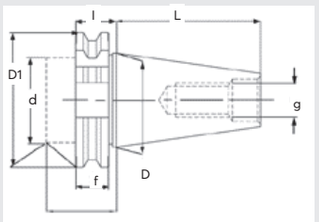
International Standards
DIN 69871/A - ISO7388/1 - NFE 62540
Commonly interchangeable with ANSI/Caterpillar Shanks

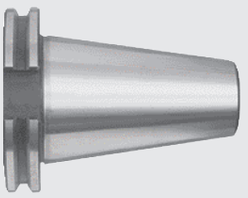
BT



Taper	D	D1	f	g	l	L
30	31.75	46	20	M12	22	48.4
35	38.10	53	22	M12	24	56.5
40	44.45	63	25	M16	27	65.4
45	57.15	85	30	M20	33	82.8
50	69.85	100	35	M24	38	101.8

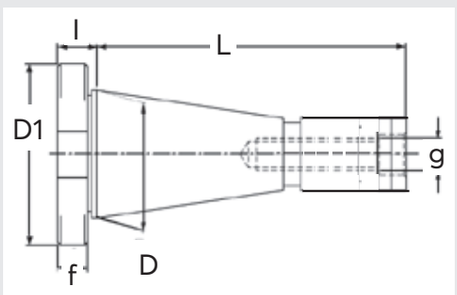
DIN





Taper	D	D1	d max	f	g	L	l	l1min
30	31.75	50	45	15.9	M12	47.8	19.1	35
40	44.45	63.55	50	15.9	M16	68.4	19.1	35
45	57.15	82.55	63	15.9	M20	82.7	19.1	35
50	69.85	97.5	80	15.9	M24	101.75	19.1	35

ISO Including Quick Change.



ISO Standard
IS0 R 297-2583 - DIN 2080

ISO

Taper	D	D1	f	g	l	L	L1
30	31.75	50	8	M12	9.61	68.39	-
40	44.45	63	10	M16	11.6	93.40	7
45	57.15	80	12	M20	15.2	106.8	-
50	69.85	97.5	12	M24	15.2	126.8	13

Quick Change

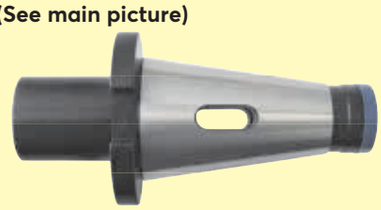
Taper	D	D1	L	f	l	g
30	31.75	46.0	69	8.76	10.7	M12
40	44.45	63.5	93	7.98	9.9	M16

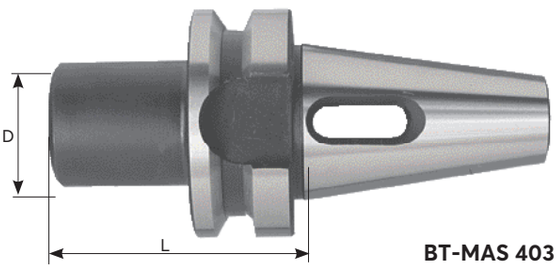
MT - Morse Taper Adaptors

With internal morse taper socket. For use on drilling machines etc.
For drills, core drills, reamers etc. Manufactured to stringent quality standards.

BT = BT-MAS 403.....(See main picture)

QC = ISO/DIN 2080 Quick Change.....





BT-MAS 403

Shank	Morse Taper	L	D	Weight each	Order Code **IND-144**
QC40	2	50	32	882g	**-5826K**
	3	65	40	1008g	**-5830K**
	4	95	48	1304g	**-5834K**

Shank	Morse Taper	L	D	Weight each	Order Code **IND-144**
BT40	2	50	32	1050g	**-5926K**
	3	70	40	1186g	**-5930K**
	4	95	48	1394g	**-5934K**
BT50	3	65	40	3750g	**-5974K**

INDEXA-SEIKI

ER Industrial Hook Wrench

For ER8/ER40 collet nuts. Adjustable size, drop forged steel. Single hand adjustment. One spanner will cover 35 - 105 collet nuts.

To suit collets: ER 8, 16, 25, 32 and 40.
Metric sizes: 35, 50, 60, 70, 80, 90 and 105mm.

Description	Weight each	Order Code **IND-140**
Adjustable	500g	**-8100K**

Spanners & Locknuts

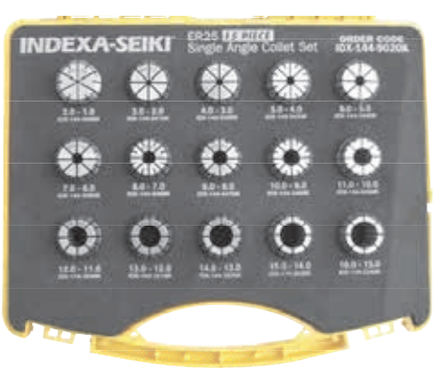
Suitable for all collet chucks including straight shank.

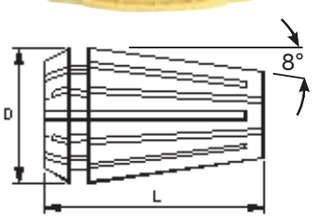
Spanners

Chuck Type	Order Code **KEN-580**
ER16 Mini	**-5160K**
ER16	**-5300K**
ER25	**-5400K**
ER32	**-5450K**

ER - Collet Sets

Manufactured from hardened and tempered high alloy steel. All supplied in hard wearing bench cases. Conform to **DIN 6499**.





Collet Dimensions (mm)

Type	Capacity	D	L
ER11	1.0-7.0	11.5	18.0
ER16	0.5-10	17.0	27.0
ER20	3.0-13	21.0	31.5
ER25	1.0-16	26.0	35.0
ER32	2.0-20	33.0	40.0
ER40	3.0-26	41.0	46.0

Collet Type	Number of Collets	Range Dia. (mm)	Weight each	Order Code **IDX-144**
ER11	13	1.0 - 7.0	490g	**-2898K**
ER16	9	1.0 - 10.0	535g	**-9010K**
ER20	11	2.0 - 13.0	637g	**-9015K**
ER25	15	1.0 - 16.0	1207g	**-9020K**
ER32	18	2.0 - 20.0	4.8kg	**-9030K**

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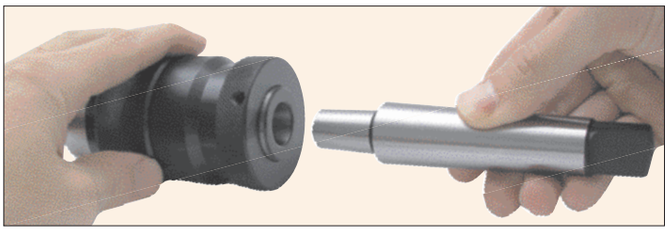
KENNEDY QUALITY INDUSTRIAL TOOLING Industrial Drill Chuck Arbors

Precision machined, fully hardened and ground to give maximum surface contact.

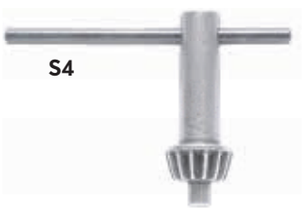
Morse Taper Drive to Jacobs Taper

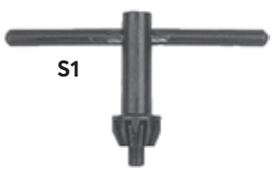


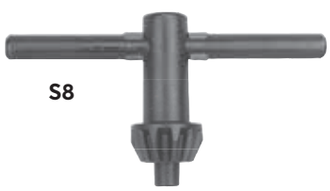
Description	Overall Length	Weight each	Order Code KEN-442
No.1 MT x 1JT	90mm	70g	**-9110K**
No.1 MT x 2JT	95mm	80g	**-9120K**
No.1 MT x 6JT	96mm	100g	**-9160K**
No.1 MT x 33JT	95mm	90g	**-9190K**
No.2 MT x 1JT	100mm	150g	**-9210K**
No.2 MT x 2JT	105mm	160g	**-9220K**
No.2 MT x 3JT	115mm	220g	**-9230K**
No.2 MT x 4JT	125mm	370g	**-9240K**
No.2 MT x 6JT	110mm	180g	**-9260K**
No.2 MT x 33JT	110mm	180g	**-9290K**
No.3 MT x 1JT	120mm	310g	**-9310K**
No.3 MT x 2JT	125mm	330g	**-9320K**
No.3 MT x 3JT	135mm	380g	**-9330K**
No.3 MT x 4JT	145mm	520g	**-9340K**
No.3 MT x 5JT	150mm	680g	**-9350K**
No.3 MT x 6JT	130mm	340g	**-9360K**
No.3 MT x 33JT	125mm	340g	**-9390K**
No.4 MT x 2JT	135mm	700g	**-9420K**
No.4 MT x 3JT	160mm	730g	**-9430K**
No.4 MT x 4JT	170mm	860g	**-9440K**
No.4 MT x 5JT	175mm	1000g	**-9450K**
No.4 MT x 6JT	155mm	690g	**-9460K**
No.4 MT x 33JT	155mm	680g	**-9490K**
No.5 MT x 3JT	190mm	1700g	**-9530K**
No.5 MT x 5JT	210mm	1900g	**-9550K**

KENNEDY QUALITY INDUSTRIAL TOOLING Chuck Keys

Suitable for use with all industrial keyed chucks.







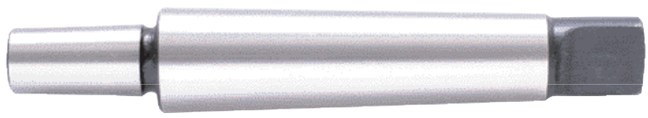
Ref No.	For Use With Chuck Number	Weight each	Order Code KEN-441
S2	440-132/440-139 440-146/440-148 440-153/440-158 440-246/440-248 440-464	50g	**-0040K**
S8	440-506/440-508	50g	**-0160K**
S9	440-510	30g	**-0180K**

Morse Taper Drive to Threaded

Description	Overall Length	Weight each	Order Code KEN-442
No.1 MT ½ x 20	92mm	100g	**-1120K**
No.1 MT ⅜ x 24	95mm	80g	**-1380K**
No.2 MT ½ x 20	105mm	170g	**-2120K**
No.2 MT ⅜ x 24	105mm	170g	**-2380K**
No.2 MT ⅝ x 16	105mm	180g	**-2580K**
No.3 MT ½ x 20	125mm	360g	**-3120K**
No.3 MT ⅝ x 16	125mm	370g	**-3580K**

KD Type - Morse Taper Shank to DiN Taper Arbors

Fully hardened and ground Morse Taper to **DIN 228**.
Chuck taper to **DIN 238**.



Morse Taper	Chuck Taper	Overall length	Order Code KEN-442
No.2 MT	B12	106.5mm	**-5220K**
No.2 MT	B16	111.5mm	**-5260K**
No.3 MT	B12	125.0mm	**-5320K**
No.3 MT	B16	134.0mm	**-5360K**
No.4 MT	B16	159.0mm	**-5420K**
No.4 MT	B22	176.0mm	**-5460K**

Bridgeport Drive to Jacobs Taper

Description	Overall Length	Weight each	Order Code KEN-442
R8 x 1JT	130mm	420g	**-9610K**
R8 x 2JT	135mm	440g	**-9620K**
R8 x 3JT	145mm	510g	**-9630K**
R8 x 6JT	135mm	450g	**-9660K**
R8 x 33JT	135mm	460g	**-9690K**

KOBE Chuck Keys

Ref No.	For Use With Chuck Number	Order Code KBE-441
KK	440-102/440-103 440-152/440-153	**-2020B**

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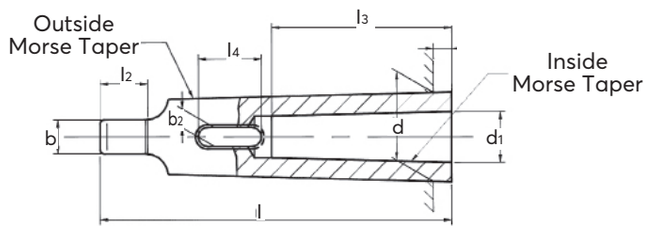
KENNEDY QUALITY INDUSTRIAL TOOLING Morse Taper Tooling

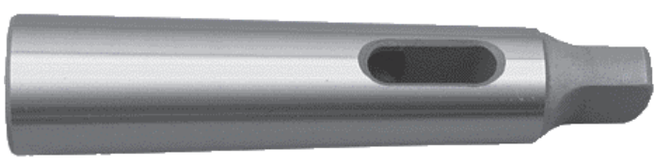
A range of quality traditional workholding equipment. Manufactured from high quality steel and case hardened all over. All sleeves and sockets are fully hardened and ground internally and externally.
ISO 238 BS 1660 : 2.

Morse Taper Sleeve Data



MT Inside	MT Outside	l	d	b	l2	d1	l3	l4	b2
1	2	92.00	17.780	6.350	11.112	12.065	52.388	19.050	5.410
1	3	99.00	23.825	7.938	14.288	12.065	52.388	19.050	5.410
2	3	112.00	23.825	7.938	14.288	17.780	63.500	22.225	6.604
1	4	124.00	31.267	11.906	15.875	12.065	52.388	19.050	5.410
2	4	124.00	31.267	11.906	15.875	17.780	63.500	22.225	6.604
3	4	140.00	31.267	11.906	15.875	23.825	77.788	30.162	8.179
1	5	156.00	44.399	15.875	19.050	12.065	52.388	19.050	5.410
2	5	156.00	44.399	15.875	19.050	17.780	63.500	22.225	6.604
3	5	156.00	44.399	15.875	19.050	23.825	77.788	30.162	8.179
4	5	171.00	44.399	15.875	19.050	31.267	98.425	31.750	12.141
1	6	218.00	63.348	19.050	28.575	12.065	52.388	19.050	5.410
2	6	218.00	63.348	19.050	28.575	17.780	63.500	22.225	6.604
3	6	218.00	63.348	19.050	28.575	23.825	77.788	30.162	8.179
4	6	218.00	63.348	19.050	28.575	31.267	98.425	31.750	12.141
5	6	218.00	63.348	19.050	28.575	44.399	125.412	38.100	16.129

Drill Sleeves



Taper Inside x Outside	Length (mm)	Weight each	Order Code KEN-482
1 x 2 MT	95	110g	**-2120K**
1 x 3 MT	97	220g	**-2130K**
1 x 4 MT	120	560g	**-2140K**
1 x 5 MT	152	1500g	**-2150K**
2 x 3 MT	110	200g	**-2230K**
2 x 4 MT	123	490g	**-2240K**
2 x 5 MT	155	1500g	**-2250K**
3 x 4 MT	140	430g	**-2340K**
3 x 5 MT	155	1200g	**-2350K**
4 x 5 MT	170	1100g	**-2450K**
4 x 6 MT	215	3600g	**-2460K**
5 x 6 MT	225	2800g	**-2560K**

Extension Sockets

Taper Inside x Outside	Length (mm)	Weight each	Order Code KEN-482
1 x 2 MT	160	290g	**-4120K**
2 x 3 MT	194	710g	**-4230K**
3 x 2 MT	194	620g	**-4320K**
3 x 4 MT	255	1400g	**-4340K**
4 x 3 MT	255	1500g	**-4430K**
5 x 4 MT	300	2500g	**-4540K**

Drill Drifts

To release Morse Taper Tooling without damaging machine socket or tools.

To Release Morse Taper	Weight each	Order Code KEN-482
0	40g	**-9500K**
1 & 2	80g	**-9520K**
3	220g	**-9530K**
3 & 5	380g	**-9540K**
5 & 6	760g	**-9560K**

Drill Sleeve & Drift Set

Set of three drill sleeves 1 - 2, 2 - 3, 3 - 4 MT. Fully hardened and ground inside and out. Two drill drifts to release 1 - 2 and 3 - 4 MT.

5 PIECES

Weight Set	Order Code KEN-482
995g	**-9900K**

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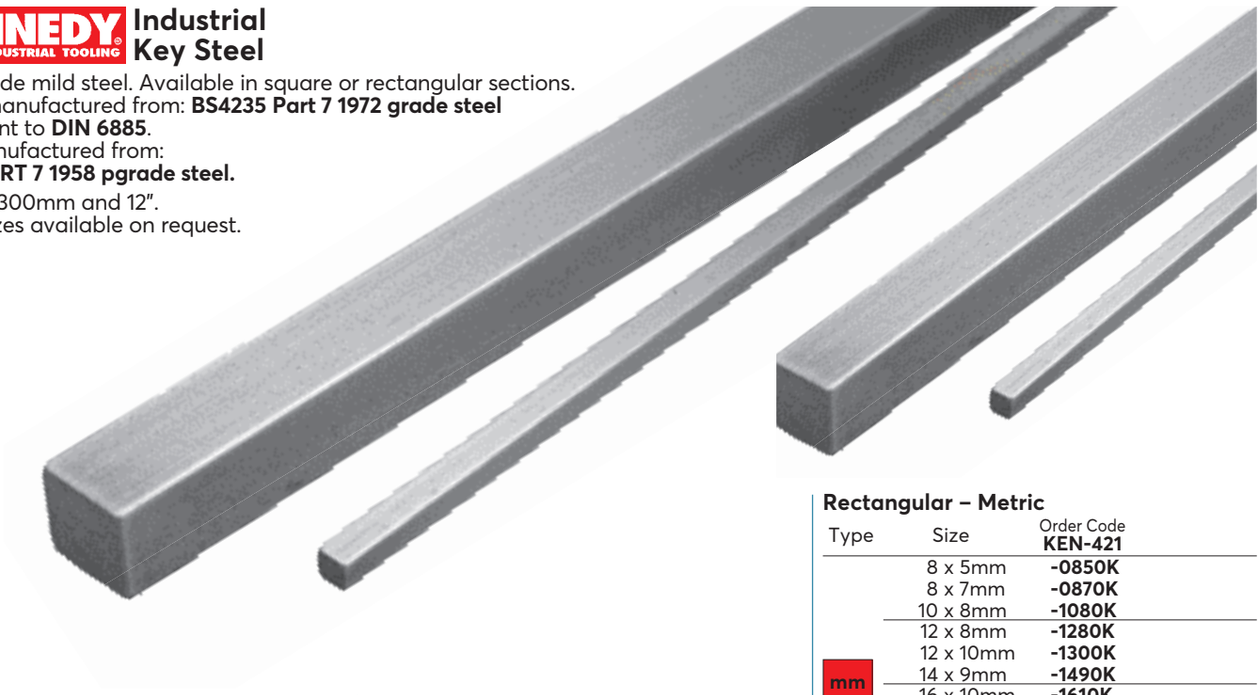
Key Steel/Rack Clamps

KENNEDY QUALITY INDUSTRIAL TOOLING Industrial Key Steel

High grade mild steel. Available in square or rectangular sections.
Metric manufactured from: **BS4235 Part 7 1972 grade steel** equivalent to **DIN 6885**.
Inch manufactured from:
BS46 PART 7 1958 pgrade steel.

Length: 300mm and 12".
Other sizes available on request.



Set Metric Square

Contents: 4, 5, 6, 8, 10 and 12mm Square

No.of Pieces	Weight each	Order Code KEN-421
6	850g	**-0500K**

Square – Metric

Type	Size	Order Code KEN-421
mm	2mm	**-0020K**
	4mm	**-0040K**
	5mm	**-0050K**
	6mm	**-0060K**
	7mm	**-0070K**
	8mm	**-0080K**
	10mm	**-0100K**
	12mm	**-0120K**
	14mm	**-0140K**
	16mm	**-0160K**
	18mm	**-0180K**
	20mm	**-0200K**
	22mm	**-0220K**
	25mm	**-0250K**

Square – Inch

Type	Size	Order Code KEN-421
inch	3/32"	**-3060K**
	1/8"	**-3080K**
	5/32"	**-3100K**
	3/16"	**-3120K**
	1/4"	**-3160K**
	5/16"	**-3200K**
	3/8"	**-3240K**
	7/16"	**-3280K**
	1/2"	**-3320K**
	9/16"	**-3360K**
	3/4"	**-3480K**
	5/8"	**-3400K**
	7/8"	**-3560K**
	1"	**-3640K**
	1 1/4"	**-3740K**

Rectangular – Metric

Type	Size	Order Code KEN-421
mm	8 x 5mm	**-0850K**
	8 x 7mm	**-0870K**
	10 x 8mm	**-1080K**
	12 x 8mm	**-1280K**
	12 x 10mm	**-1300K**
	14 x 9mm	**-1490K**
	16 x 10mm	**-1610K**
	18 x 11mm	**-1910K**
	20 x 12mm	**-2120K**
	22 x 14mm	**-2400K**
	25 x 14mm	**-2420K**
	28 x 16mm	**-2550K**
	32 x 18mm	**-2650K**
	36 x 20mm	**-2700K**

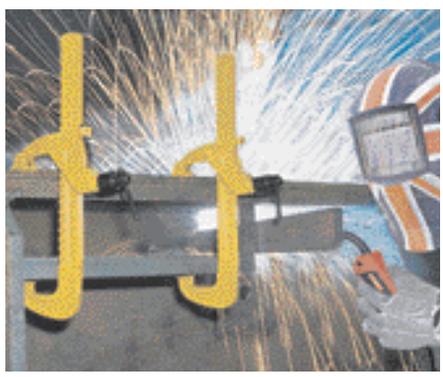
Rectangular – Inch

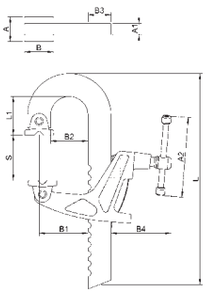
Type	Size	Order Code KEN-421
inch	5/16" x 1/4"	**-4200K**
	3/8" x 1/4"	**-4230K**
	3/8" x 5/16"	**-4240K**
	7/16" x 5/16"	**-4270K**
	1/2" x 5/16"	**-4310K**
	1/2" x 3/8"	**-4320K**
	5/8" x 3/8"	**-4460K**
	5/8" x 7/16"	**-4480K**
	5/8" x 1/2"	**-4500K**
	3/4" x 1/2"	**-4680K**
	7/8" x 5/8"	**-4800K**
	1" x 5/8"	**-4920K**
	1" x 3/4"	**-4960K**
	1 1/4" x 7/8"	**-5140K**

INDEXA Industrial Rack Clamps

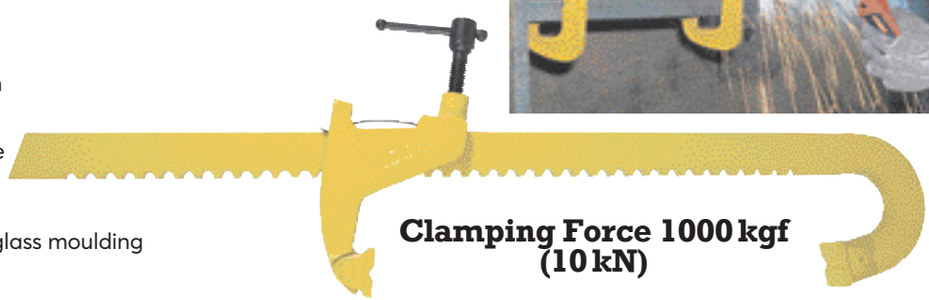
For various engineering and maintenance applications across all industrial sectors. A bright yellow epoxy coating gives the sliding jaw and J-bar added protection, preventing significant deterioration and prolonging the working life of the working parts.

Features: Spring loaded jaw that stays in position when pressure removed. Jaw moves to securely clamp angled surfaces. No long screws to bend. Tightening the clamps does not impose rotation to the workpiece.





Applications:
Metal fabrication
Welding
Machining
Site maintenance
Moulding box and die holding
Toolroom
Plastic and fibreglass moulding
Plate fabrication



Product Number	Description	Capacity (S)	Load (kN)	Weight kg	A	A1	A2	B	B1	B2	B3	B4	L	L1	Order Code IND-420
SD150	Standard Duty Rack Clamp	150	10	1.3	25	10	76	32	60	47	30	76	279	43.5	**-7815K**
SD300		300		1.9									429		**-7830K**
SD500		500		2.4									629		**-7850K**
SD750		750		3.1									879		**-7875K**

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INDEXA Steel Shims

Metric sizes:
150mm x 2.5m roll in a range of thicknesses from 0.050mm to 0.800mm. Also available in a 8 piece pack - 150mm x 300mm covering thicknesses from 0.05mm to 0.50mm.

8 PIECES

Assorted pack - Metric
Contains one of each of the following thickness of shim: 0.05mm - 0.50mm, 150mm x 300mm.

Size W x L (mm x m)	Weight each	Order Code IND-415
150 x 300	3.65kg	**-2170A**

Assorted pack - Inch sizes
Contains one of each of the following thickness of shim: 0.001" - 0.020", 6 x 12".

Size W x L (mm x m)	Weight each	Order Code IND-415
6 x 12"	3.1kg	**-2110A**

Assorted pack - Metric
Contains one of each of the following thickness of shim: 0.05mm - 0.50mm, 150mm x 300mm.

Size W x L (mm x m)	Weight each	Order Code IND-415
150 x 300	6.58g	**-2010A**

Assorted pack - Inch sizes
Contains one of each of the following thickness of shim: 0.001" - 0.015", 6" x 12".

12 PIECES

Size W x L	Weight each	Order Code IND-415
6" x 12"	6.0kg	**-1050A**

INDEXA Brass Shims

Available in 6" x 100" roll in a range of thicknesses from 0.001" to 0.025". Also available in a 12 piece pack - 6" x 12" rolls covering thicknesses from 0.001"-0.015".

Assorted pack
Contains one of each of the following thickness of shim: 0.001" - 0.015", 6 x 12"

12 PIECES

Weight each	Order Code IND-415	List	Offer
6.96kg	**-2250A**		

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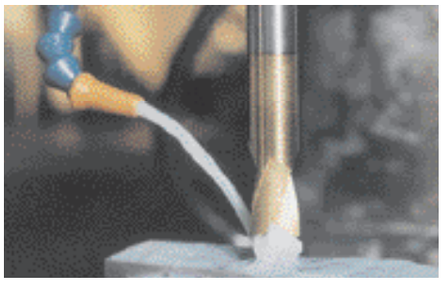
OS20_TH_0157.indd 1 22/04/2020 23:10

INDEXA Modular Coolant Hose System

Modular coolant hose system is ideal for coolants, fluids and air lines. Suitable for all wet machining, spark erosion and air line operations up to 50PSI air and 30PSI liquid. Flow direction is easily and accurately positioned with no spring-back. All parts are fully interchangeable and fully replaceable if a single section is damaged. Manufactured from acetal - non-conductive and chemical resistant. Available with 1/4", 1/2" and 3/4" bore. Hose is green, all other fittings are orange.



Starter Packs

Contents	Weight each	Order Code IND-447
1/4" Bore		
12" Hose 4 Nozzles 2 Connectors	40g	**-6910K**
1/2" Bore		
13" Hose 3 Nozzles 2 Connectors	91g	**-7910K**
3/4" Bore		
14" Hose 2 Nozzles 1 Connectors	126g	**-8910K**

Tube Segments

Bore Size	Weight each	Order Code IND-447
11" Lengths (Green)		
1/4"	40g	**-6210K**
1/2"	69g	**-7210K**
3/4"	102g	**-8210K**
25ft Bulk Pack (Green)		
1/4"	886g	**-6250K**
1/2"	1637g	**-7250K**
3/4"	2381g	**-8250K**

Modular Manifold Kits

Description	Bore Size	Weight each	Order Code IND-447
4x T-Pieces, 2x Plug,	1/4"	109g	**-6450K**

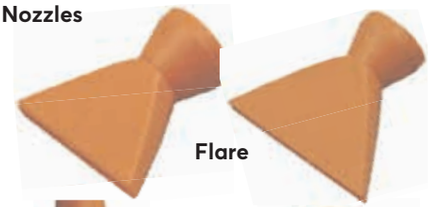
Modular Coolant Hose System

Threaded Spigots

Male Spigot

Bore Size	Inlet Size	Weight each	Order Code IND-447
1/4"	1/8" NPT Female	2g	**-6710K**
	1/4" NPT Female	2g	**-6730K**
1/4"	1/8" NPT Male	2g	**-6170K**
	1/4" NPT Male	2g	**-6190K**
1/2"	3/8" NPT Male	7g	**-7170K**
	1/2" NPT Male	7g	**-7190K**
	1/2" NPT Female	7g	**-7730K**
3/4"	3/4" NPT Male	10g	**-8170K**

Nozzles



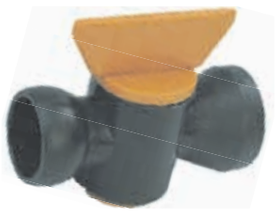
Flare

Pointed

Type	Size	Weight each	Order Code IND-447
1/4" Bore			
Pointed	1/16"	5g	**-6610K**
	1/8"	5g	**-6630K**
	3/16"	5g	**-6640K**
	1/4"	5g	**-6650K**
Flare	1"	5g	**-6670K**
1/2" Bore			
Pointed	1/4"	5g	**-7610K**
	3/8"	5g	**-7630K**
	1/2"	5g	**-7650K**
Flare	1 3/4"	5g	**-7670K**
	2 1/2"	5g	**-7690K**
3/4" Bore			
Pointed	5/8"	10g	**-8610K**
	3/4"	10g	**-8630K**
Flare	3"	10g	**-8650K**

Plastic Valves

1/4 turn fitting.



Bore Size	Inlet Type	Weight each	Order Code IND-447
1/4"	In-line	10g	**-6050K**
1/2"	In-line	30g	**-7050K**

Metal Ball Valves

Threaded fitting 1/4 turn.

NPT Threads Male x Female	Weight each	Order Code IND-447
1/8" x 1/8"	81g	**-6070K**
1/4" x 1/4"	80g	**-6090K**
3/8" x 3/8"	76g	**-7070K**
1/2" x 1/2"	114g	**-7090K**
3/4" x 3/4"	200g	**-8070K**

Modular Coolant Hose System

Junction Pieces

L-Piece **Y-Piece**

Type	Weight each	Order Code IND-447
1/4" Bore		
Y-Piece	3g	**-6310K**
T-Piece	3g	**-6350K**
L-Piece	4g	**-6370K**
1/2" Bore		
Y-Piece	9g	**-7310K**
T-Piece	9g	**-7350K**

Junction Reducers

Type	Weight each	Order Code IND-447
1/2" Bore		
1/2" to 2 x 1/4"	4g	**-7330K**
1/2" to 1/4"	3g	**-7510K**
3/4" Bore		
3/4" to 1/2"	5g	**-8510K**

INDEXA Quick Set Machine Shields

14" (3/4" bore) hose length. Suitable for small machine tools. Fully adjustable with magnetic base.

Visor Size	Weight each	Order Code IND-447
Shield (complete)		
6" x 8"	500g	**-0250K**
7 1/2" x 10"	570g	**-0260K**

Quick Action Assembly Pliers

Bore Size	Order Code IND-447
1/4"	**-0010K**
1/2"	**-0020K**

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Bench Pillar Drill

01700 B13-13
Powerful 350w motor.
13mm drilling capacity (steel).
1.5-13mm chuck capacity.
5 speeds.
Easy lock motor adjustment.

Model Number	Voltage	Motor	Order Code SIP-277	Offer
01700	230V	35kW	**-0762K**	

Bench Pillar Drill

01702 B16-16
375w powerful motor.
16mm drilling capacity (steel).
3mm-16mm chuck capacity.
16 speeds.
Fan cooling for improved heat dissipation.

Model Number	Voltage	Motor	Order Code SIP-277	Offer
01702	230V	37.5kW	**-0762P**	

Floor Pillar Drill

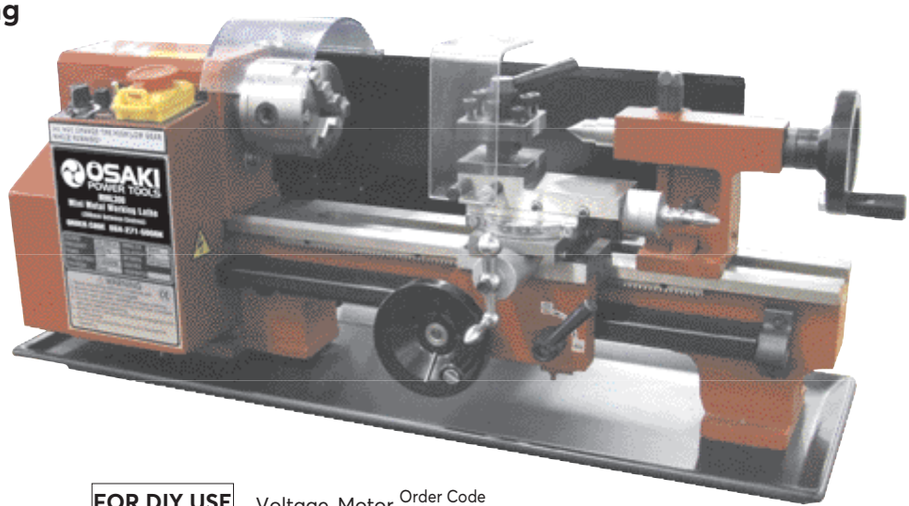
01705 F20-16
Powerful 550w motor.
16mm drilling capacity (steel).
3mm - 16mm chuck capacity.
Easy lock motor adjustment.
Sturdy cast iron

Model Number	Voltage	Motor	Order Code SIP-277	Offer
01705	230V	55kW	**-0763R**	

Mini Metalworking Lathe

MML300
Ideal for model-making etc. Supplied with a self-centring three jaw chuck, four-way tool post, swarf tray, rear splash guard, emergency stop button and chuck guard. Manufactured to meet European Machinery Directive 98/37/EC and is both CE and RoSH compliant.

Swing over bed: 180mm.
Distance between centres: 300mm.
Hole through spindle: 20mm.
Spindle taper: MT#3.
Tailstock taper: MT#2.
Spindle speed: low range:
0 - 1,100rpm ±10%,
high range: 0 - 2500rpm ±10%.
Motor power: 300W.
Range of threads: metric 0.4 - 2.00mm (10 thread pitches) or inch 12 - 52 TP (8 thread pitches).
Net/gross weight: 37/40kg.
Packing size: 770 x 330 x 330mm.

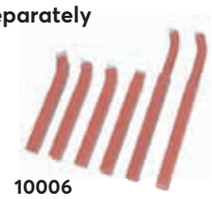


FOR DIY USE
Not warranted for Industrial Use

Voltage	Motor	Order Code OSA-271
240	300W	**-5000K**

Optional Accessories - Supplied Separately

10005



10006

10130

10061

10010

10007

10007A

Product Number	Description	Order Code OSA-280
10007	160mm Diameter Face Plate	**-2400A**
10007A	Clamping Kit for Face Plate	**-2401A**
10010	4 Jaw Chuck (Independent)	**-2402A**
10005	11 Piece Brazed Turning Tool Set	**-2403A**
10006	6 Piece Brazed Turning Tool Set	**-2404A**
10130	Knurling Attachment	**-2405A**
10061	Milling Attachment	**-2406A**
–	Chuck Guard Assembly	**-2407A**

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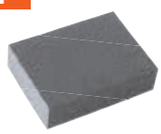
Group 200 Abrasive Sheets & Coils

Page ..... 162 - 163

Group 201 Abrasive Sponges

Page 163

Group 202 Fibre Backed Discs

Page 185

Group 203 Hook-N-Loop & Adhesive Backed Discs

Page ..... 165 - 166

Group 204 Sanding Belts

Page ..... 166 - 167

Group 205 Sanding Bands & Cartridge Rolls

Page ..... 168 - 169

Group 205 Surface Preparation

Page 170

Group 210 Carbide/ Diamond Burrs

Page ..... 171 - 175

Group 220 Flap Discs & Flap Wheels

Page ..... 176 - 177

Group 230 Cutting & Grinding Discs

Page ..... 178 - 179

Group 235 Grinding Wheels

Page 180

Group 240 Jigsaw Blades

Page ..... 182 - 183

Group 245 Fibre Abrasives

Page ..... 184 - 185

Group 247 Polishing & Lapping

Page ..... 186 - 187

Group 250 Mounted Points

Page ..... 188 - 189

Group 255 Oilstones

Page ..... 190 - 191

Abrasives