

SPEED

Carbide Brazed Tools

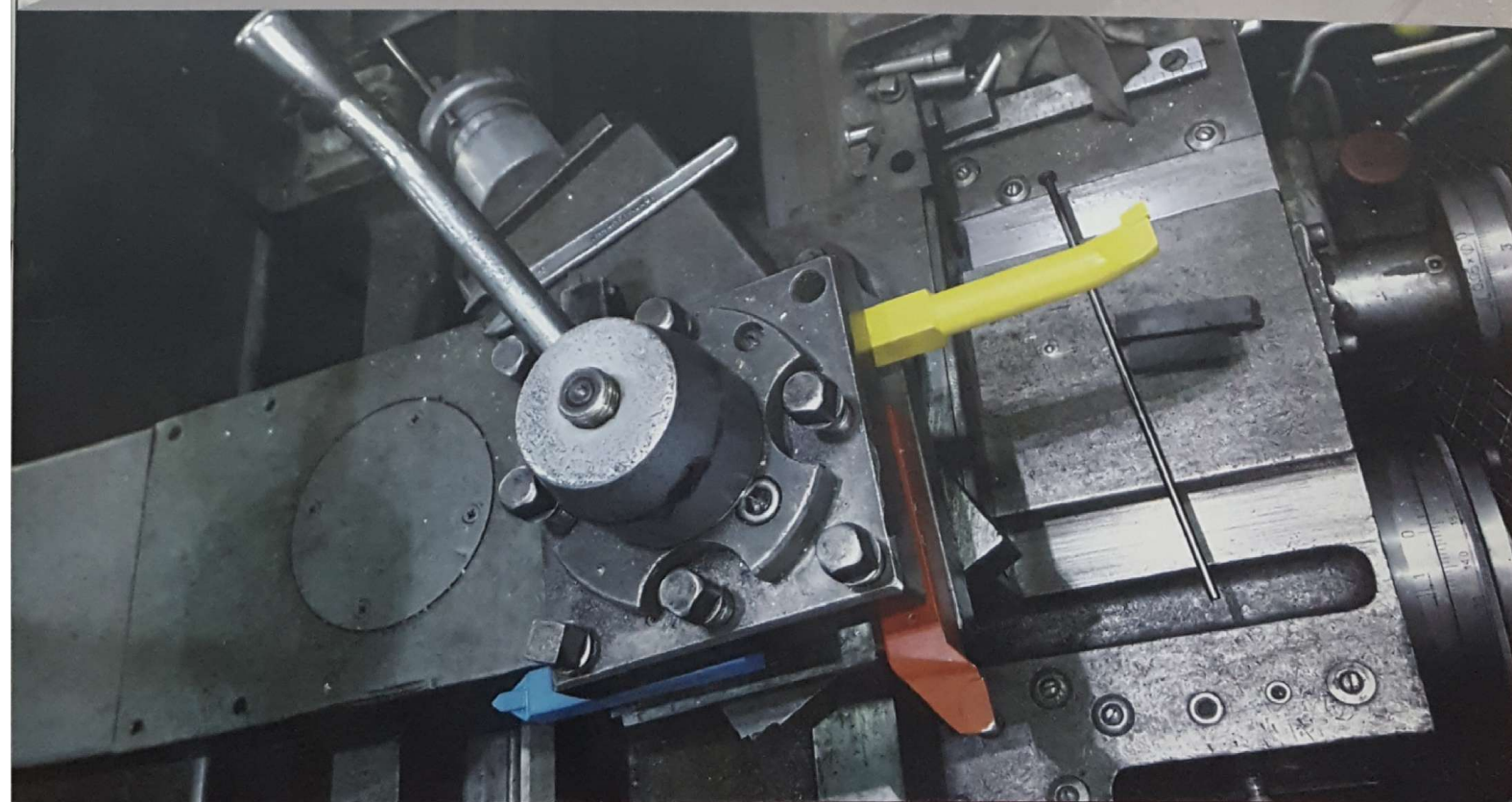
BURRS

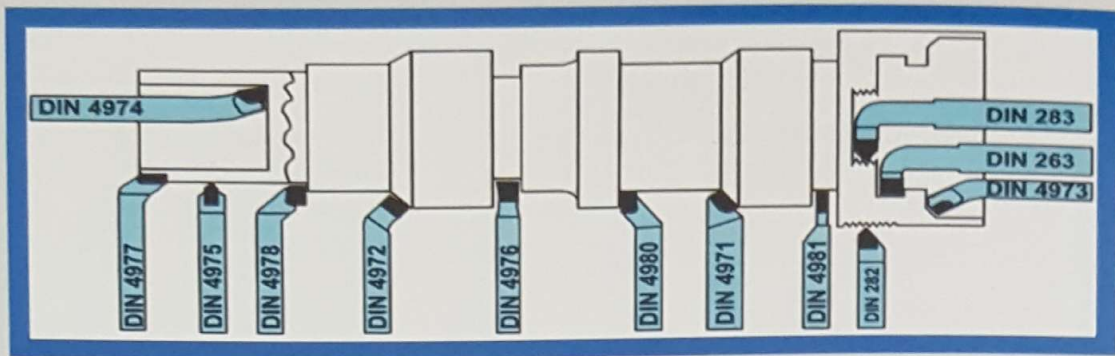
DRILL BITS

HAND TAPS

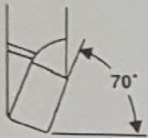
MACHINE TAPS

END MILLS

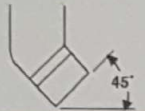




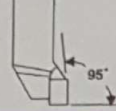
DIN 4971 - Iso 1
Straight Turning Tool



DIN 4972 - Iso 2
Cranked Turning and Facing Tool



DIN 4978 - Iso 3
Cranked Turning and Facing Tool



DIN 4976 - Iso 4
Recessing Tool

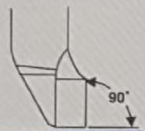


SPEED

DIN 4977 - Iso 5
Cranked Facing Tool



DIN 4980 - Iso 6
Cranked Knife Tool



DIN 4981 - Iso 7
Parting Tool



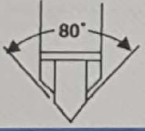
DIN 4973 - Iso 8
Boring Tool



DIN 4974 - Iso 9
Boring and Facing bar



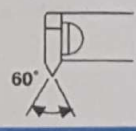
DIN 4975 - Iso 10
Straight Finishing Tool



DIN 282 - Iso 12
Threading Tool, External

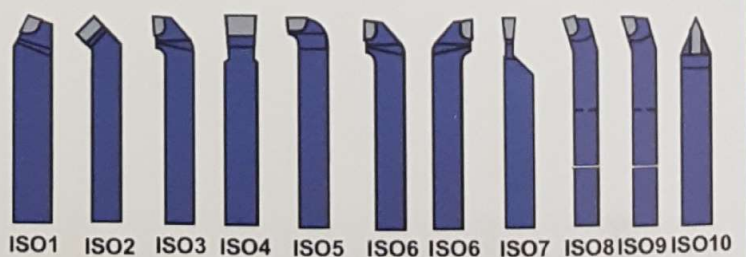


DIN 283 - Iso 13
Threading Tool, Internal



Carbide Brazed Tools

DIN 235
Straight round nose turning tool



ISO1 ISO2 ISO3 ISO4 ISO5 ISO6 ISO6 ISO7 ISO8 ISO9 ISO10

		ISO	ANSI	TOUGHNESS	WEAR RESISTANCE
STEEL	P	P40-P50 P30-P40 P20-P30 P10-P20	C5 C6 C7 C8		
STAINLESS	M	M30-M40 M20-M30 M10-M20			
IRON	K	K30-K40 K20-K30 K10-K20 K01-K05	C1 C2 C3 C4		

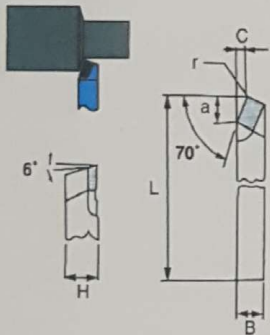
P: Turning of steel and cast steel.

M: Turning of steel, cast steel, manganese steels, austenitic steels, malleable cast iron, fire resistant alloys.

K: Turning of grey cast steel, malleable cast iron, free - cutting steel, hardened steel, aluminium based alloys, nonferrous metals, wood and plastics

SPEED

DIN 4971 - Iso 1 Straight Turning Tool



Right Hand Style Shown

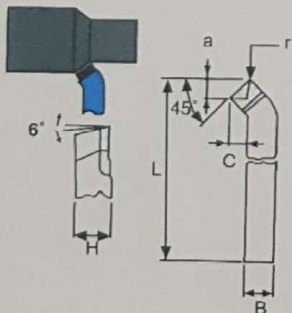
Rake angle: 10°
Angle of inclination: 10°

Dimensions in mm

Catalogue Code	H	B	L	C	A	R
ISO1 R/L 1010	10	10	90	4	7.5	0.4
ISO1 R/L 1212	12	12	100	5	9.4	0.4
ISO1 R/L 1616	16	16	110	6	11.2	0.4
ISO1 R/L 2020	20	20	125	8	15	0.8
ISO1 R/L 2525	25	25	140	10	18.8	1.2
ISO1 R/L 3232	32	32	170	12	23.5	1.2
ISO1 R/L 4040	40	40	200	16	30	1.6
ISO1 R/L 1610	16	10	110	4	9.4	0.4
ISO1 R/L 2012	20	12	125	5	11.2	0.4
ISO1 R/L 2516	25	16	140	6	15	0.8
ISO1 R/L 3220	32	20	170	8	18.8	1.2
ISO1 R/L 4025	40	25	200	10	23.5	1.2
ISO1 R/L 5032	50	32	240	12	30	1.6

Carbide Brazed Tools

DIN 4972 - Iso 2 Cranked Turning and Facing Tool



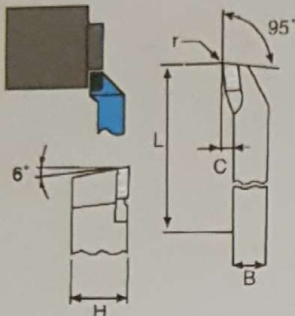
Right Hand Style Shown

Rake angle: 10°
Angle of inclination: 10°

Dimensions in mm

Catalogue Code	H	B	L	C	A	R
ISO2 R/L 1010	10	10	90	6	5.6	0.4
ISO2 R/L 1212	12	12	100	7	7	0.4
ISO2 R/L 1616	16	16	110	8	8.5	0.4
ISO2 R/L 2020	20	20	125	8	11.3	0.8
ISO2 R/L 2525	25	25	140	12	14.1	1.2
ISO2 R/L 3232	32	32	170	14	17.6	1.2
ISO2 R/L 4040	40	40	200	18	22.6	1.6
ISO2 R/L 1610	16	10	110	7	7	0.4
ISO2 R/L 2012	20	12	125	8	8.5	0.4
ISO2 R/L 2516	25	16	140	10	11.3	0.8
ISO2 R/L 3220	32	20	170	12	14.1	1.2
ISO2 R/L 4025	40	25	200	14	17.6	1.2
ISO2 R/L 5032	50	32	240	18	22.6	1.6

DIN 4978 - Iso 3 Cranked Turning and Facing Tool



Right Hand Style Shown

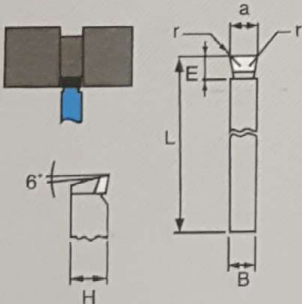
Rake angle: 10°
Angle of Inclination: 10°

Dimensions in mm

Catalogue Code	H	B	L	C	E	A	R
ISO3 R/L 1010	10	10	90	5	-	-	0.4
ISO3 R/L 1212	12	12	100	6	-	-	0.4
ISO3 R/L 1616	16	16	110	8	-	-	0.4
ISO3 R/L 2020	20	20	125	10	-	-	0.8
ISO3 R/L 2525	25	25	140	12	-	-	1.2
ISO3 R/L 3232	32	32	170	14	-	-	1.2
ISO3 R/L 4040	40	40	200	20	-	-	1.6
ISO3 R/L 1610	16	10	110	5	-	-	0.4
ISO3 R/L 2012	20	12	125	6	-	-	0.4
ISO3 R/L 2516	25	16	140	8	-	-	0.4
ISO3 R/L 3220	32	20	170	10	-	-	0.8
ISO3 R/L 4025	40	25	200	12	-	-	1.2
ISO3 R/L 5032	50	32	240	14	-	-	1.2

SPEED

DIN 4976 - Iso 4 Recessing Tool



Right Hand Style Shown

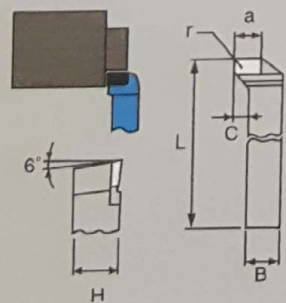
Rake angle: 10°
Angle of Inclination: 0°

Dimensions in mm

Catalogue Code	H	B	L	C	E	A	R
ISO3 1010	10	10	90	5	-	-	0.4
ISO3 1212	12	12	100	6	-	-	0.4
ISO3 1616	16	16	110	8	-	-	0.4
ISO3 2020	20	20	125	10	-	-	0.8
ISO3 2525	25	25	140	12	-	-	1.2
ISO3 3232	32	32	170	14	-	-	1.2
ISO3 4040	40	40	200	20	-	-	1.6
ISO3 1610	16	10	110	5	-	-	0.4
ISO3 2012	20	12	125	6	-	-	0.4
ISO3 2516	25	16	140	8	-	-	0.4
ISO3 3220	32	20	170	10	-	-	0.8
ISO3 4025	40	25	200	12	-	-	1.2
ISO3 5032	50	32	240	14	-	-	1.2

Carbide Brazed Tools

DIN 4977 - Iso 5 Cranked Facing Tool



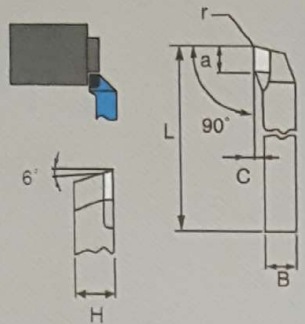
Right Hand Style Shown

Rake angle: 10°
Angle of Inclination: 4°

Dimensions in mm

Catalogue Code	H	B	L	C	A	R
ISO5 R/L 1010	10	10	90	5	8	0.4
ISO5 R/L 1212	12	12	100	6	10	0.4
ISO5 R/L 1616	16	16	110	8	12	0.4
ISO5 R/L 2020	20	20	125	10	16	0.8
ISO5 R/L 2525	25	25	140	12	20	1.2
ISO5 R/L 3232	32	32	170	16	25	1.2
ISO5 R/L 4040	40	40	200	20	32	1.6
ISO5 R/L 1610	16	10	110	6	10	0.4
ISO5 R/L 2012	20	12	125	8	12	0.4
ISO5 R/L 2516	25	16	140	10	16	0.8
ISO5 R/L 3220	32	20	170	12	20	1.2
ISO5 R/L 4025	40	25	200	16	25	1.2
ISO5 R/L 5032	50	32	240	20	32	1.6

DIN 4980 - Iso 6 Cranked Knife Tool



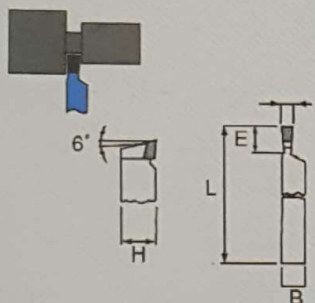
Rake angle: 10°
Angle of inclination: 0°

Dimensions in mm

Catalogue Code	H	B	L	C	A	R
ISO6 R/L 1010	10	10	90	4	8	0.4
ISO6 R/L 1212	12	12	100	5	10	0.4
ISO6 R/L 1616	16	16	110	6	12	0.4
ISO6 R/L 2020	20	20	125	8	16	0.8
ISO6 R/L 2525	25	25	140	10	20	1.2
ISO6 R/L 3232	32	32	170	12	25	1.2
ISO6 R/L 4040	40	40	200	14	32	1.6
ISO6 R/L 1610	16	10	110	5	10	0.4
ISO6 R/L 2012	20	12	125	6	12	0.4
ISO6 R/L 2516	25	16	140	8	16	0.8
ISO6 R/L 3220	32	20	170	10	20	1.2
ISO6 R/L 4025	40	25	200	12	25	1.2
ISO6 R/L 5032	50	32	240	14	32	1.6

SPEED

DIN 4981 - Iso 7 Parting Tool



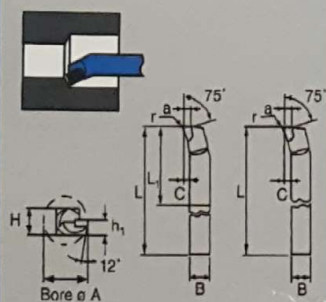
Rake angle: 10°
Angle of inclination: 0°

Dimensions in mm

Catalogue Code	H	B	L	E	A
ISO7 R/L 1010	10	6	90	12	3
ISO7 R/L 1212	12	8	100	12	3
ISO7 R/L 1616	16	10	110	14	4
ISO7 R/L 2020	20	12	125	16	5
ISO7 R/L 2525	25	16	140	20	6
ISO7 R/L 3232	32	20	170	25	8
ISO7 R/L 4040	40	25	200	32	10
ISO7 R/L 1610	50	32	240	40	12

Carbide Brazed Tools

DIN 4973 - Iso 8 Boring Tool

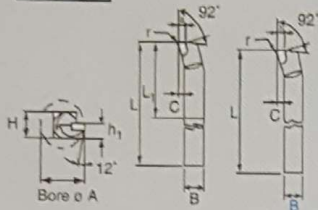


Rake angle: 10°
Angle of inclination: 0°

Dimensions in mm

Catalogue Code	H/B/D	H1	L	L1	C	A	R	A min
ISO8 R 0808	8	5.9	125	40	3	3.8	0.4	14
ISO8 R 1010	10	7.5	150	50	4	3.8	0.4	18
ISO8 R 1212	12	9.1	180	63	5	4.8	0.4	21
ISO8 R 1616	16	12.3	210	80	6	5.8	0.4	27
ISO8 R 2020	20	15.5	250	100	8	7.7	0.4	34
ISO8 R 2525	25	19.5	300	125	10	9.6	0.8	43
ISO8 R 3232	32	25.1	355	160	12	11.6	0.8	52
ISO8 R 08	8	5.9	125	-	3	3.8	0.4	14
ISO8 R 10	10	7.5	150	-	4	3.8	0.4	18
ISO8 R 12	12	9.1	180	-	5	4.8	0.4	21
ISO8 R 16	16	12.3	210	-	6	5.8	0.4	27
ISO8 R 20	20	15.5	250	-	8	7.7	0.4	34
ISO8 R 25	25	19.5	300	-	10	9.6	0.8	43
ISO8 R 32	32	25.1	355	-	12	11.6	0.8	52

DIN 4974 - Iso 9 Boring And Facing Bar



Right Hand Style Shown

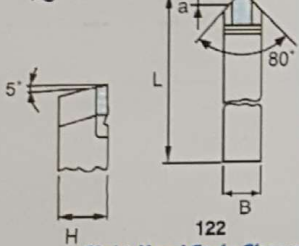
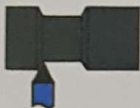
Rake angle: 10°
Angle of inclination: 0°

Dimensions in mm

Catalogue Code	H/B/D	H1	L	L1	C	A	R	A min
ISO9 R 0808	8	5.9	125	40	3	3.5	0.4	14
ISO9 R 1010	10	7.5	150	50	4	3.5	0.4	18
ISO9 R 1212	12	9.1	180	63	5	4.4	0.4	21
ISO9 R 1616	16	12.3	210	80	6	5.3	0.4	27
ISO9 R 2020	20	15.5	250	100	8	7.1	0.4	34
ISO9 R 2525	25	19.5	300	125	10	8.9	0.8	43
ISO9 R 3232	32	25.1	355	160	12	10.7	0.8	52
ISO9 R 08	8	5.9	125	-	3	3.5	0.4	14
ISO9 R 10	10	7.5	150	-	4	3.5	0.4	18
ISO9 R 12	12	9.1	180	-	5	4.4	0.4	21
ISO9 R 16	16	12.3	210	-	6	5.3	0.4	27
ISO9 R 20	20	15.5	250	-	8	7.1	0.4	34
ISO9 R 25	25	19.5	300	-	10	8.9	0.8	43
ISO9 R 32	32	25.1	355	-	12	10.7	0.8	52

SPEED

DIN 4975 - ISO 10 Straight Finishing Tool



Right Hand Style Shown

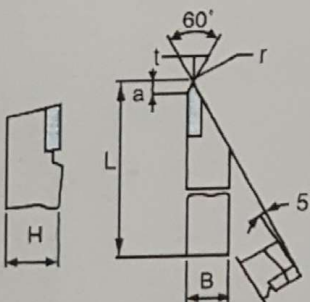
Rake angle: 10°
Angle of inclination: 0°

Dimensions in mm

Catalogue Code	H	B	L	A	R
ISO10 - 1010	10	10	90	3	0.4
ISO10 - 1212	12	12	100	3.6	0.4
ISO10 - 1616	16	16	110	4.8	0.4
ISO10 - 2020	20	20	125	6	0.8
ISO10 - 2525	25	25	140	7.1	1.2
ISO10 - 3232	32	32	170	9.5	1.2
ISO10 - 4040	40	40	200	14.9	1.6
ISO10 - 1610	16	10	110	3.6	0.4
ISO10 - 2012	20	12	125	4.8	0.4
ISO10 - 2516	25	16	140	6	0.8
ISO10 - 3220	32	20	170	7.1	1.2
ISO10 - 4025	40	25	200	9.5	1.2
ISO10 - 5032	50	32	240	11.9	1.6

Carbide Brazed Tools

DIN 282 - Iso 12 Threading Tool, External



Right Hand Style Shown

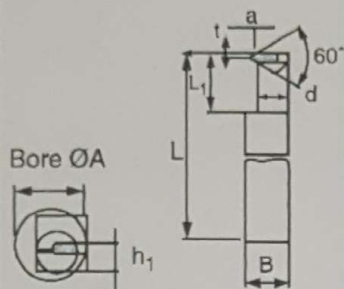
Rake angle: 0°
Angle of inclination: 0°

Dimensions in mm

Catalogue Code

	H	B	L	A	T
ISO13-1212	12	8	100	3	2.5
ISO13-1616	16	10	110	4	2.5
ISO13-2020	20	12	140	5	3

DIN 283 - Iso 13 Threading Tool, Internal



Right Hand Style Shown

Rake angle: 0°
Angle of Inclination: 0°

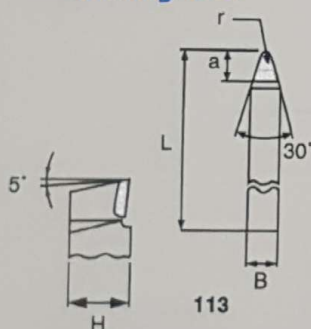
Dimensions in mm

Catalogue Code

	H	B	L	L1	H1	A	D	T	R/min
ISO13-1010	10	10	145	50	10	4	10	2	18
ISO13-1212	12	12	160	55	12	4	12	2.5	20
ISO13-1616	16	16	185	65	12	5	16	3	24
ISO13-2020	20	20	215	80	12	7	20	4	30

SPEED

DIN 235 Straight Round Nose Turning Tool



Right Hand Style Shown

Rake angle: 5°
Angle of Inclination: 0°

Dimensions in mm

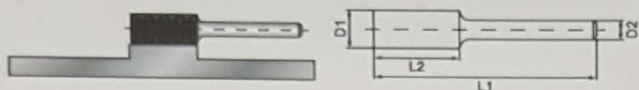
Catalogue Code	H	B	L	C	A	R
235 - 1010	10	10	90	-	12	1
235 - 1212	12	12	100	-	14	1.5
235 - 1616	16	16	110	-	17	2.5
235 - 2020	20	20	125	-	20	3.5
235 - 2525	25	25	140	-	23	4.5
235 - 3232	32	32	170	-	27	6
235 - 4040	40	40	200	-	32	8
235 - 1610	16	10	110	-	12	1
235 - 2012	20	12	125	-	14	1.5
235 - 2516	25	16	140	-	17	2.5
235 - 3220	32	20	170	-	20	3.5
235 - 4025	40	25	200	-	23	4.5
235 - 5032	50	32	240	-	27	6

Carbide Burrs



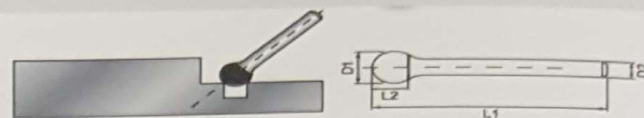
TUNGSTEN CARBIDE BURRS

SHAPE A



D1	L2	L1	D2
mm	mm	mm	mm
3	15	38	3
6	16	58	6
8	20	60	6
10	20	60	6
12	25	65	6
16	25	65	6

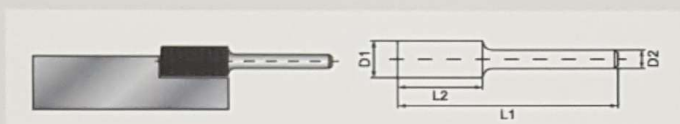
SHAPE D



D1	L2	L1	D2
mm	mm	mm	mm
3	15	38	3
6	16	58	6
8	20	60	6
10	20	60	6
12	25	65	6
16	25	65	6

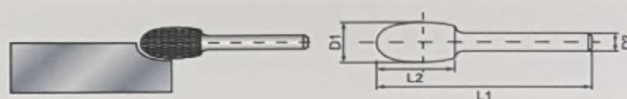
SPEED

SHAPE B



D1	L2	L1	D2
mm	mm	mm	mm
3	15	38	3
6	16	58	6
8	20	60	6
10	20	60	6
12	25	65	6
16	25	65	6

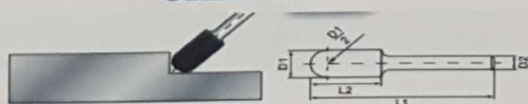
SHAPE E



D1	L2	L1	D2
mm	mm	mm	mm
3	15	38	3
6	16	58	6
8	20	60	6
10	20	60	6
12	25	65	6
16	25	65	6

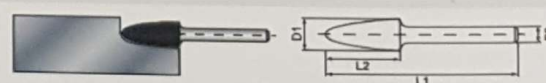
Carbide Burrs

SHAPE C



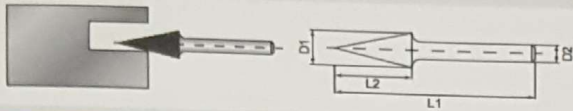
D1	L2	L1	D2
mm	mm	mm	mm
3	15	38	3
6	16	58	6
8	20	60	6
10	20	60	6
12	25	65	6
16	25	65	6

SHAPE F



D1	L2	L1	D2
mm	mm	mm	mm
3	15	38	3
6	16	58	6
8	20	60	6
10	20	60	6
12	25	65	6
16	25	65	6

SHAPE M



D1	L2	L1	D2
mm	mm	mm	mm
3	15	38	3
6	16	58	6
8	20	60	6
10	20	60	6
12	25	65	6
16	25	65	6

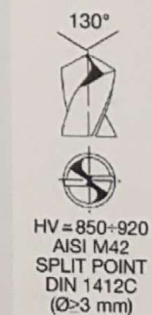
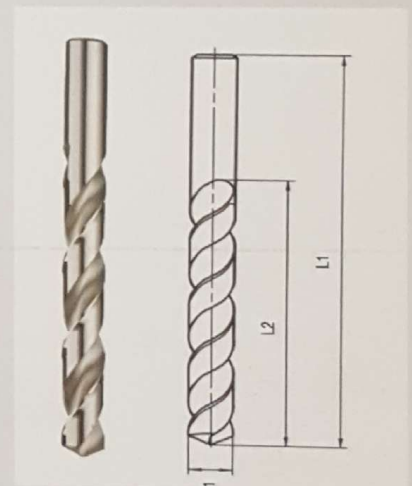


SPEED

DRILL BITS HSS-CO 8% DIN 338

Ø	L1	L2
1	34	12
1.5	40	18
2	49	24
2.5	57	30
2.8	61	33
3	61	33
3.2	65	35
3.5	70	39
4	75	43
4.2	75	43
4.5	80	47
5	86	52
5.2	86	52
5.5	93	57
6	93	57
6.5	101	63
7	109	69
7.5	109	69
8	117	75
8.5	117	75
9	125	81
9.5	125	81

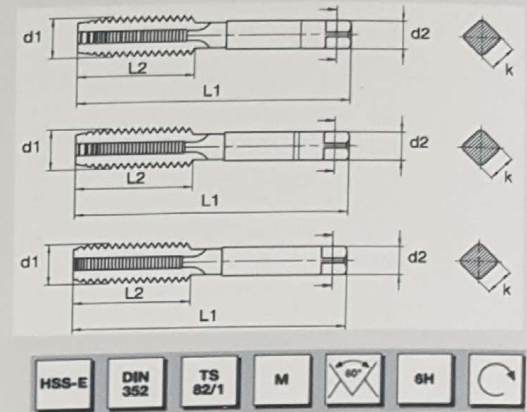
Ø	L1	L2
10	133	87
10.5	133	87
11	142	94
11.5	151	94
12	151	101
12.5	151	101
13	151	101
13.5	160	108
14	160	108
14.5	169	114
15	169	114
15.5	178	120
16	178	120
16.5	184	125
17	184	125
17.5	191	130
18	191	130
18.5	198	135
19	198	135
19.5	205	140
20	205	140



**High performance in
cutting stainless steel,
alloy steel up to**
 $R \leq 1400 \text{ N} / \text{mm}^2$

METRIC HAND TAPS DIN 352

D1	P	L1	L2	D2	K
mm	(Pitch)	mm	mm	mm	mm
M2	0.4	38	10	3.5	2
M2.5	0.45	40	10	3.5	2
M3	0.5	40	11	3.5	2.7
M4	0.7	45	13	4.5	3.4
M5	0.8	50	16	6	4.9
M6	1	50	19	6	4.9
M8	1.25	56	22	6	4.9
M10	1.5	70	24	7	5.5
M12	1.75	75	29	9	7
M14	2	80	30	11	9
M16	2	80	32	12	9
M18	2.5	95	40	14	11
M20	2.5	95	40	16	12



SPEED

STRAIGHT FLUTE

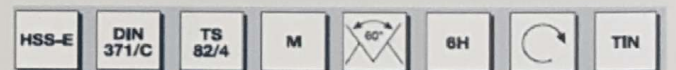
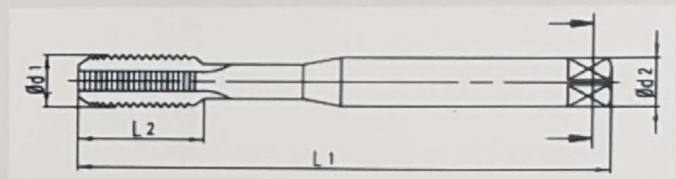
D1	P	L1	L2	D2	K
mm	(Pitch)	mm	mm	mm	mm
M2	0.4	45	8	3	2.5
M2.5	0.45	45	8	3	2.5
M3	0.5	56	10	3.5	2.7
M4	0.7	63	12	4.5	3.4
M5	0.8	70	15	6	4.9
M6	1	80	18	6	4.9
M8	1.25	90	20	8	6.2
M10	1.5	100	22	10	8
M12	1.75	110	28	12	9

DESCRIPTION:

TS 82/4, HSS-E %5 Co alloyed high steel, straight flute, reinforced shank, iso (6H), 60°, right cutting TIN coated

APPLICATION:

Used for short screw-in length in THROUGH hole. Suitable for threading in low-alloyed steels, cast nodular cast iron, stainless steel, tempered, cast and the other metals. Long tool life and tensile strength.



METRIC MACHINE TAPS

SPIRAL FLUTE

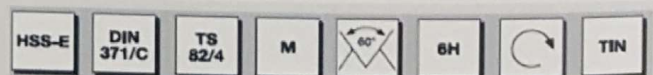
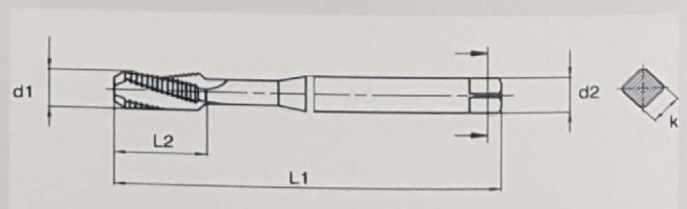
D1	P	L1	L2	D2	K
mm	(Pitch)	mm	mm	mm	mm
M2	0.4	45	8	3	2.5
M2.5	0.45	45	8	3	2.5
M3	0.5	56	10	3.5	2.7
M4	0.7	63	12	4.5	3.4
M5	0.8	70	15	6	4.9
M6	1	80	18	6	4.9
M8	1.25	90	20	8	6.2
M10	1.5	100	22	10	8
M12	1.75	110	28	12	9

DESCRIPTION:

TS 82/4, HSSE %5 Co alloy high speed steel, spiral flute, reinforced shank, ISO (6H), 60°, right cutting direction.

APPLICATION

Used for short screw-in length in BLIND hole. Suitable for threading in low-alloyed steels, cast, nodular cast iron, stainless steel, tempered steel, cast and the other metals. Long tool life and tensile strength.



TWO FLUTES CARBIDE END MILLS TIALN COATED

D	d	L	I	Z
1	3	50	8	4
1.5	3	52	10	4
2	3	54	10	4
3	3	56	12	4
4	4	63	19	4
5	5	68	24	4
6	6	100	40	4
8	8	100	40	4
10	10	100	40	4
12	12	100	40	4
14	14	110	53	4
16	16	123	63	4
18	18	123	63	4
20	20	141	75	4



TWO TYPES OF CARBIDE END MILLS
ARE AVAILABLE IN
OUR STOCK, TIALN OR NaCo COATED
(SHORT & LONG SIZE)

TWO FLUTES CARBIDE END MILLS TIALN COATED

D	d	L	I	Z
1	3	50	5	2
1.5	3	50	5	2
2	3	50	6	2
3	3	50	12	2
4	4	50	14	2
5	5	50	15	2
6	6	50	16	2
8	8	60	20	2
10	10	70	25	2
12	12	75	25	2
14	14	80	35	2
16	16	90	40	2
18	18	95	40	2
20	20	100	45	2

FOUR FLUTES HSS M2 END MILLS

D	d	L	I	Z
2	6	52	8	4
3	6	52	8	4
4	6	55	11	4
5	6	57	13	4
6	6	57	13	4
8	8	63	19	4
10	10	72	22	4
12	12	83	26	4
14	14	83	26	4
16	16	92	32	4
18	18	92	32	4
20	20	104	38	4
22	22	104	38	4
24	24	121	45	4
25	25	121	45	4



FOUR FLUTES HSS M42 Co8% END MILLS

D	d	L	I	Z
2	6	52	8	4
3	6	52	8	4
4	6	55	11	4
5	6	57	13	4
6	6	57	13	4
8	8	63	19	4
10	10	72	22	4
12	12	83	26	4
14	14	83	26	4
16	16	92	32	4
18	18	92	32	4
20	20	104	38	4
22	22	104	38	4
24	24	121	45	4
25	25	121	45	4

FOUR FLUTES LONG HSS M2 END MILLS

D	d	L	I	Z
2	6	68	18	4
3	6	68	18	4
4	6	68	20	4
5	6	68	24	4
6	6	68	24	4
8	8	82	38	4
10	10	95	45	4
12	12	110	53	4
14	14	110	53	4
16	16	123	63	4
18	18	123	63	4
20	20	141	75	4
22	22	141	75	4
24	24	166	90	4
25	25	166	90	4



FOUR FLUTES LONG HSS M42 Co8% END MILLS

D	d	L	I	Z
2	6	68	18	4
3	6	68	18	4
4	6	68	20	4
5	6	68	24	4
6	6	68	24	4
8	8	82	38	4
10	10	95	45	4
12	12	110	53	4
14	14	110	53	4
16	16	123	63	4
18	18	123	63	4
20	20	141	75	4
22	22	141	75	4
24	24	166	90	4
25	25	166	90	4

