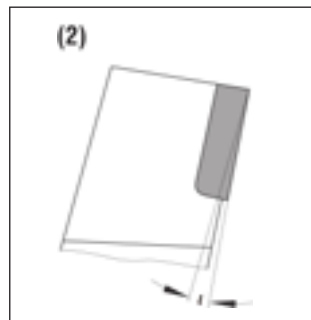
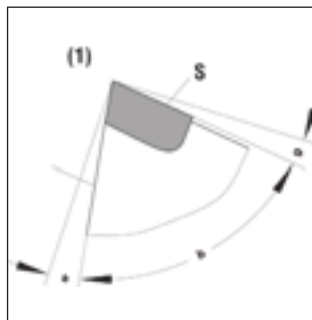
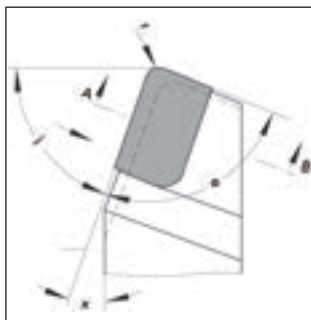


Approximate values for machining with carbide turning tools



- (1) = Cut A - B
- (2) = View Z
- H = Main edge
- F = Flank
- S = Face
- a = Relief angle
- g = Rake angle
- b = Wedge angle
- l = Angle of inclination
- e = Included angle
- j = Setting angle
- w = Main edge angle

Material	Strength or hardness (N/mm ²)	Roughing and interrupted cuts			Edge angle			Finishing and semi-finishing			Edge angle		
		Carbide types	Feed (mm/rev.)	Cut ting speed (m/min)	a°	g°	l°	Carbide types	Feed (mm/rev.)	Cut ting speed (m/min)	a°	g°	l°
Structural steels	< 500	P 20	0,4 - 0,8	70 - 120	6	10 - 12	4						
		P 25/30	0,6 - 1,2	60 - 90	6	10 - 12	4	P 10	0,1 - 0,4	160 - 220	6	12	0
Structural and quenched and tempered steels	500 - 700	P 25/30	0,6 - 1,2	50 - 80	6	10 - 12	4	P 10	0,1 - 0,4	150 - 200	6	12	4
	700 - 1000	P 25/30	0,6 - 1,2	35 - 75	6	10	4	P 20	0,4 - 0,8	60 - 120	6	12	4
Manganese steel, chrome steel, chrome-molybdenum steel and other alloyed steels	850 - 1000	P 25/30	0,6 - 1,2	25 - 60	6	6	4	P 10	0,1 - 0,4	70 - 140	6	12	4
		P 20	0,3 - 0,6	30 - 70	6	6	4	M 10/M 20	0,1 - 0,3	60 - 110	6	12	4
	1000 - 1400	P 20	0,3 - 0,6	30 - 70	6	6	4	P 20	0,4 - 0,8	50 - 90	6	12	4
		P 25/30	0,5 - 1,2	20 - 40	6	6	4	P 10	0,1 - 0,4	40 - 100	6	6	4
Stainless steels	600 - 700	P 20	0,1 - 0,4	50 - 70	6	12	4	M 10/M 20	0,1 - 0,3	80 - 150	6	12	4
		P 10	0,1 - 0,2	70 - 120	6	12 - 15	4	P 20	0,4 - 0,8	60 - 100	6	12	4
		P 20	0,1 - 0,4	50 - 70	6	12	4	K 20	0,2 - 0,4	40 - 80	6	12	6
Tool steels	1500 - 1800	P 20	0,2 - 0,6	25 - 40	6	0	6	P 10	0,1 - 0,3	45 - 55	6	0	4
		P 10	0,1 - 0,3	25 - 40	6	0	6	K 10	0,1 - 0,5	10 - 45	6	0	6
		P 20	0,2 - 0,6	25 - 40	6	0	6	M 10/M 20	0,1 - 0,5	10 - 45	6	0	6
Hardened steels	> 500 HRC	K 10	0,1 - 0,4	4 - 15	6	0	-6						
		M 20	0,1 - 0,4	4 - 15	6	-5	-6						
Cast steel	< 500	P 25/30	0,3 - 1,2	40 - 90	6	12	4	P 10	0,1 - 0,2	130 - 180	6	12	4
		P 10	0,1 - 0,2	40 - 90	6	12	4	M 10/M 20	0,1 - 0,4	100 - 160	6	12	4
		P 20	0,2 - 0,8	40 - 90	6	12	4	P 20	0,2 - 0,8	80 - 120	6	12	4
	500 - 700	P 25/30	0,3 - 1,2	36 - 80	6	12	4	P 10	0,1 - 0,2	90 - 130	6	6	4
Grey cast iron	< 200 HB	K 20	> 0,5	40 - 90	6	6	4	M 10/M 20	0,1 - 0,4	60 - 130	6	6	4
	> 200 HB	K 20	0,3 - 1,2	30 - 70	6	6	4	P 20	0,2 - 0,8	50 - 100	6	12	4
		K 10	> 0,5	40 - 90	6	6	4	K 10	0,1 - 0,5	50 - 100	6	6	4
Alloyed grey cast iron	200 - 250 MHB	M 10/M 20	0,1 - 1,0	20 - 35	6	6	4	K 10	0,1 - 1,0	25 - 40	6	6	4
Black malleable cast iron	< 220 HB	K 20	> 0,4	40 - 50	6	4	4	K 10	0,1 - 0,4	50 - 80	6	6	4
		M 10/M 20	> 0,4	40 - 50	6	4	4	M 10/M 20	0,1 - 0,4	70 - 100	6	6	4
Hardened cast iron	65 - 90 Shore	K 10		4 - 12	6	0	0						
	> 90 Shore	K 10		2 - 5	6	0	0						
Copper		K 20	0,3 - 0,6	400 - 500	10	18	0	K 10	0,1 - 0,3	450 - 600	10	18	0
Red brass		K 20	0,3 - 0,6	400 - 500	10	12	0	K 10	0,1 - 0,3	450 - 600	10	12	0
Zinc alloy		K 20	0,3 - 0,6	200 - 250	6	10	0	K 10	0,1 - 0,3	200 - 300	6	10	0
Pure aluminium		K 20	0,3 - 0,6	400 - 1000	8	20	0	K 10	0,1 - 0,3	500 - 1200	8	20	0

Info

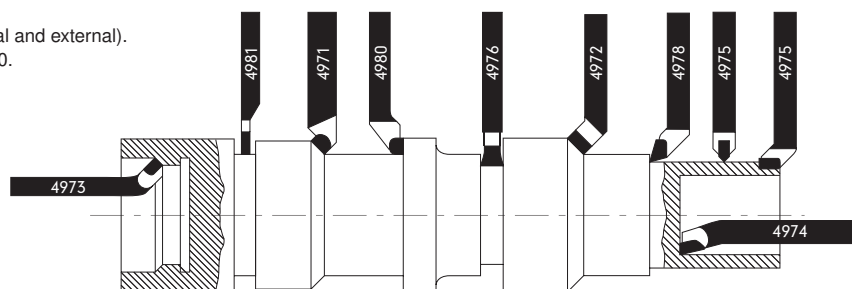
18860 - 18877 Carbide lathe tool

Type

DIN 4971 to DIN 4981 and for threads (internal and external).
With brazed-on ISO cutting edges to DIN 4950.

Quality

Carbide-tipped blades.



18860 - 18861 Straight Turning Tools DIN 4971/ISO 1

18860

Type

Right-hand, setting angle 70°.

18861

Type

Left-hand, setting angle 70°.

18860



Right-hand			P 20	P 25/30	K 10/20
Code	h x b x l ₁ mm	c mm	18860	18860	18860
10q	10 x 10 x 90	4	209	216	223
12q	12 x 12 x 100	5	210	217	224
16q	16 x 16 x 110	6	211	218	225
20q	20 x 20 x 125	8	212	219	226
25q	25 x 25 x 140	10	213	220	227

Left-hand			P 20	P 25/30	K 10/20
Code	h x b x l ₁ mm	c mm	18861	18861	18861
10q	10 x 10 x 90	4	209	216	223
12q	12 x 12 x 100	5	210	217	224
16q	16 x 16 x 110	6	211	218	225
20q	20 x 20 x 125	8	212	219	226
25q	25 x 25 x 140	10	213	220	227

18862 - 18863 Cranked Turning Tools DIN 4972/ISO

18862

Type

Right-hand, setting angle 45°.

18863

Type

Left-hand, setting angle 45°.

18862



Right-hand			M 10/20	P 10	P 20	P 25/30	K 10/20
Code	H x W x l ₁ mm	c mm	18862	18862	18862	18862	18862
10q	10 x 10 x 90	6	202	209	216	223	230
12q	12 x 12 x 100	7	203	210	217	224	238
16q	16 x 16 x 110	8	204	211	218	225	239
20q	20 x 20 x 125	10	205	212	219	226	240
25q	25 x 25 x 140	12	206	213	220	227	241
32q	32 x 32 x 170	14			221	228	

Left-hand			P 10	P 20	P 25/30	K 10/20
Code	H x W x l ₁ mm	c mm	18863	18863	18863	18863
10q	10 x 10 x 90	6	209	216	223	230
12q	12 x 12 x 100	7	210	217	224	238
16q	16 x 16 x 110	8	211	218	225	239
20q	20 x 20 x 125	10	212	219	226	240
25q	25 x 25 x 140	12	213	220	227	241
32q	32 x 32 x 170	14		221	228	

18864

Internal Turning Tools DIN 4973/ISO 8

Type
Right-hand, setting angle 75°.

18864



Right-hand				M 10/20	P 10	P 25/30	K 10/20	K 10/20
Code	H x W x l ₁ mm	c mm	for borehole Ø starting at mm	18864	...	18864	...	18864
10q	10 x 10 x 150	4	18	202	209	216	223	229
12q	12 x 12 x 180	5	21	203	210	217	224	230
16q	16 x 16 x 210	6	27	204	211	218	225	231
20q	20 x 20 x 250	8	34	205	212	219	226	232
25q	25 x 25 x 300	10	43	206	213	220	227	233
32q	32 x 32 x 355	12	52			228	234	

18865

Inside Bent Turning Tools DIN 4974/ISO 9

Type
Right-hand, setting angle 88°.

18865



Right-hand				M 10/20	P 10	P 25/30	K 10/20	K 10/20
Code	H x W x l ₁ mm	c mm	for borehole Ø starting at mm	18865	...	18865	...	18865
10q	10 x 10 x 150	4	18	202	209	216	223	237
12q	12 x 12 x 180	5	21	203	210	217	224	238
16q	16 x 16 x 210	6	27	204	211	218	225	239
20q	20 x 20 x 250	8	34	205	212	219	226	240
25q	25 x 25 x 300	10	43	206	213	220	234	241
32q	32 x 32 x 355	12	52	207		221	235	242

18866

Pointed Turning Tools DIN 4975

Type
Setting angle 50°.

18866



Code	H x W x l ₁ mm	P 10	P 20	P 25/30	K 10/20
		18866	...	18866	...
16h	16 x 10 x 110	209	216	223	232
20h	20 x 12 x 125	210	217	224	233
25h	25 x 16 x 140	211	218	225	234

18867

Wide Turning Tools DIN 4976/ISO 4

Type
Setting angle 0°.

18867



Code	H x W x l ₁ mm	P 20	P 25/30	K 10/20
		18867	...	18867
10q	10 x 10 x 90	209		223
12q	12 x 12 x 100	210	217	224
16q	16 x 16 x 110	211	218	225
20q	20 x 20 x 125	212	219	226
25q	25 x 25 x 140	213	220	227
32q	32 x 32 x 170	214		

18868

Offset Face Turning Tools DIN 4977/ISO 5

Type
Right-hand, setting angle 90°.

18868



Right-hand			P 10	P 20	P 25/30	K 10/20
Code	H x W x l ₁ mm	c mm	18868	...	18868	...
16q	16 x 16 x 110	8	211	218	225	232
20q	20 x 20 x 125	10	212	219	226	233
25q	25 x 25 x 140	12		220	227	234
32q	32 x 32 x 170	16		221		242

Carbide turning tools

18869 Offset Bent Turning Tools DIN 4978/ISO 3

Type
Right-hand, setting angle 95°.

18869



Right-hand				M 10/20	P 10	P 20	P 25/30	K 10/20
Code	H x W x l ₁ mm	c mm		18869	...	18869	...	18869
16h	16 x 10 x 110	5		204	211	218	225	239
20h	20 x 12 x 125	6		205	212	219	226	240
25h	25 x 16 x 140	8		206	213	220	227	241
32h	32 x 20 x 170	10				221		242

18870 Offset Bent Turning Tools DIN 4978/ISO 3

Type
Left-hand, setting angle 95°.

18870



Left-hand				P 20	P 25/30	K 10/20
Code	H x W x l ₁ mm	c mm		18870	...	18870
16h	16 x 10 x 110	5		218	225	232
20h	20 x 12 x 125	6		219	226	233
25h	25 x 16 x 140	8		220	227	234
32h	32 x 20 x 170	10			228	

18871 - 18872 Offset Side Turning Tools DIN 4980/ISO 6

18871
Type
Right-hand, setting angle 90°.

18871



18872
Type
Left-hand, setting angle 90°.

Right-hand				M 10/20	P 10	P 20	P 25/30	K 10/20
Code	H x W x l ₁ mm	c mm		18871	...	18871	...	18871
10q	10 x 10 x 90	4		202	209	216	223	237
12q	12 x 12 x 100	5		203	210	217	224	238
16q	16 x 16 x 110	6		204	211	218	225	239
20q	20 x 20 x 125	8		205	212	219	226	240
25q	25 x 25 x 140	10		206	213	220	227	241
32q	32 x 32 x 170	12				221		242

Left-hand				P 10	P 20	P 25/30	K 10/20	
Code	H x W x l ₁ mm	c mm		18872	...	18872	...	18872
10q	10 x 10 x 90	4		209	216	223	237	
12q	12 x 12 x 100	5			217	224	238	
16q	16 x 16 x 110	6		211	218	225	239	
20q	20 x 20 x 125	8		212	219	226	240	
25q	25 x 25 x 140	10		213	220	227	241	
32q	32 x 32 x 170	12			221		242	

18873 Cutting-Off Turning Tools DIN 4981/ISO 7

Type
Right-hand.

18873



Right-hand						M 10/20	P 10	P 20	P 25/30	K 10/20
Code	H x W x l ₁ mm	l ₂ mm	b ₂ mm			18873	...	18873	...	18873
12h	12 x 8 x 100	12	3			203	210	217	224	237
16h	16 x 10 x 110	14	4			204	211	218	225	238
20h	20 x 12 x 125	16	5			205	212	219	226	239
25h	25 x 16 x 140	20	6			206	213	220	227	240
32h	32 x 20 x 170	25	8			207		221	228	241

18874

Cutting-Off Turning Tools DIN 4981/ISO 7

Type
Left-hand.

18874



Left-hand				P 10	P 20	P 25/30	K 10/20				
Code	H x W x l ₁ mm	l ₂ mm	b ₂ mm	18874	...	18874	...	18874	...		
12h	12 x 8 x 100	12	3		210		217		224		231
16h	16 x 10 x 110	14	4		211		218		225		232
20h	20 x 12 x 125	16	5		212		219		226		233
25h	25 x 16 x 140	20	6		213		220		227		234
32h	32 x 20 x 170	25	8						228		235

18875

External Thread Turning Tools

Type
Right-hand, straight, 60°.

18875



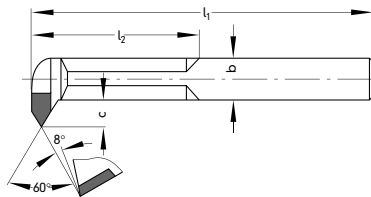
Right-hand			P 20	K 10/20		
Code	H x W x l ₁ mm		18875	...	18875	...
12q	12 x 12 x 110			203		209
16q	16 x 16 x 125			204		210
20q	20 x 20 x 140			205		211
25q	25 x 25 x 160			206		212

18876

Internal Thread Turning Tools

Type
Right-hand, bent, 60°.

18876



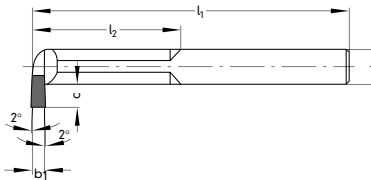
Right-hand					P 20	K 10/20		
Code	H x W x l ₁ mm	c mm	l ₂ mm	for borehole Ø starting at mm	18876	...	18876	...
10q	10 x 10 x 140	6	52	16		202		209
12q	12 x 12 x 160	6	56	20		203		210
16q	16 x 16 x 180	8	63	25		204		211
20q	20 x 20 x 210	10	80	32		205		212
25q	25 x 25 x 250	12	100	40		206		213

18877

Hooked Turning Tools

Type
Right-hand.

18877

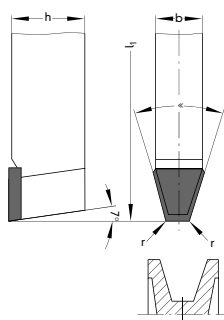


Right-hand						P 20	K 10/20		
Code	H x W x l ₁ mm	c mm	l ₂ mm	b ₁ mm	for borehole Ø starting at mm	18877	...	18877	...
10q	10 x 10 x 140	6	52	3	16		202		209
12q	12 x 12 x 160	6	56	4	20		203		210
16q	16 x 16 x 180	8	63	5	25		204		211
20q	20 x 20 x 210	10	80	6	32		205		212
25q	25 x 25 x 250	12	100	8	40		206		213
32q	32 x 32 x 300	14	125	10	50		207		

18878 Turning Tools for Vee-Belt Profiles

Type
With brazed-on carbide blades,
profile angle 34°.

Quality
Carbide quality K 10.



18878

Code	for belt width mm	H x W x l ₁ mm	18878 ...
16 h	8	16 x 10 x 110	204
20 h	10	20 x 12 x 125	205
25 h	13	25 x 16 x 140	206
32 h	17	32 x 20 x 170	207



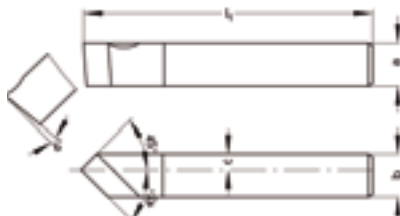
Info 18885 - 18896 HSS-Co lathe tool

Type
10 mm made of heavy-duty high-speed steel, above that with butt-welded HSS-Co head.

18885 Straight Turning Tools HSS-Co

Type
Similar to DIN 4951, **right-hand**. Setting angle 45°.

Right-hand			
	l ₁	c	18885 ...
mm	mm	mm	
10	100	2,0	201
12	110	2,5	202
16	140	3,0	203
20	160	4,0	204



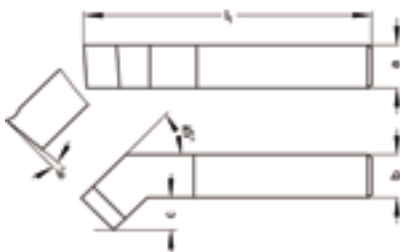
18885



18886 Bent Turning Tools HSS-Co

Type
Similar to DIN 4952, **right-hand**. Setting angle 45°.

Right-hand			
	l ₁	c	18886 ...
mm	mm	mm	
10	100	6	201
12	110	8	202
16	140	10	203
20	160	14	204



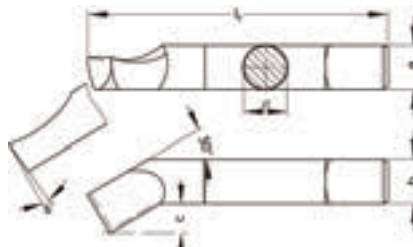
18886



18887 Internal Turning Tools HSS-Co

Type
Similar to DIN 4953, **right-hand**. Setting angle 30°.

Right-hand			
	l ₁	c	18887 ...
mm	mm	mm	
10	160	5	201
12	180	6	202
16	180	6	203
20	220	8	204



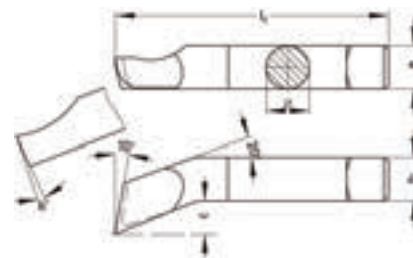
18887



18888 Inside Bent Turning Tools HSS-Co

Type
Similar to DIN 4954, **right-hand**. Setting angle 20°.

Right-hand			
	l ₁	c	18888 ...
mm	mm	mm	
10	160	5	201
12	180	6	202
16	180	6	203
20	220	8	204



18888

