

# Arbors and adaptors

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

Drills

Boring heads

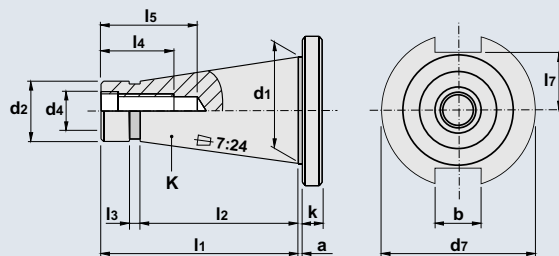
Arbors and adaptors



# Arbors and adaptors

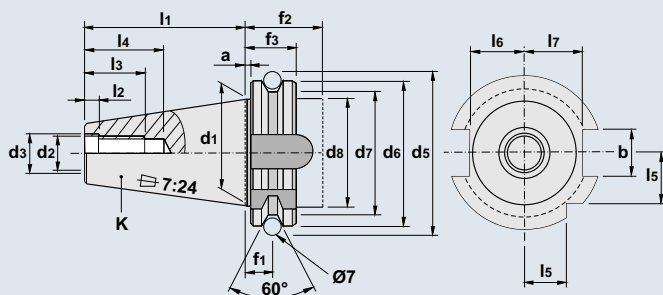
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DIN 69871/A	K.14
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## DIN 2080



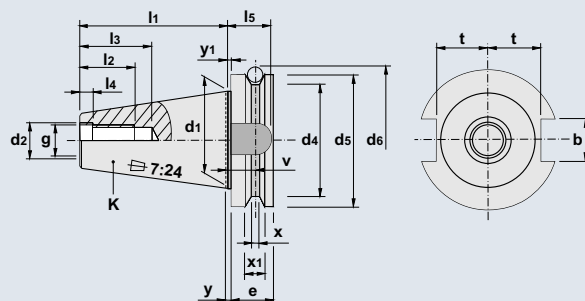
K	a ±0,2	b H12	d1	d2	d4	d7	k	l1	l2	l3	l4	l5 min	l7 max
30	1,6	16,1	31,75	17,4	M12	50,0	8	68,4	48,4	3	24	33,5	16,2
40	1,6	16,1	44,45	25,3	M16	63,0	10	93,4	65,4	5	32	42,5	22,5
45	3,2	19,3	57,15	32,4	M20	80,0	12	106,8	82,8	6	40	52,5	29,0
50	3,2	25,7	69,85	39,6	M24	97,5	12	126,8	101,8	8	47	61,5	35,3
60	3,2	25,7	107,95	60,2	M30	156,0	16	206,8	161,8	10	59	76,0	60,0

## DIN 69871/A



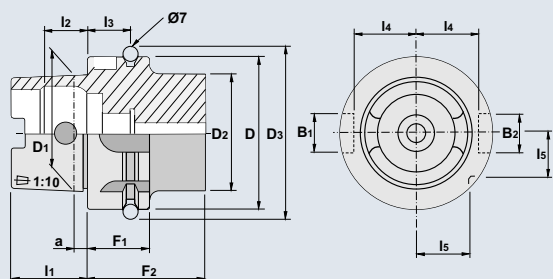
K	f1 ±0,1	f2 min	f3 0 -0,1	l1 0 -0,3	l2 0 0,5	l3 min	l4 min	l5 0 -0,3	l6 0 -0,4	l7 0 -0,4	a ±0,2	b H12	d1	d2	d3 H7	d5 ±0,05	d6 0 -0,1	d7 0 -0,5	d8 max
30	11,1	35	19,1	47,80	5,5	24	33,5	15,0	16,4	19,0	3,2	16,1	31,75	M12	13	59,30	50,00	44,30	45
40	11,1	35	19,1	68,40	8,2	32	42,5	18,5	22,8	25,0	3,2	16,1	44,45	M16	17	72,30	63,55	56,25	50
45	11,1	35	19,1	82,70	10,0	40	52,5	24,0	29,1	31,3	3,2	19,3	57,15	M20	21	91,35	82,55	75,25	63
50	11,1	35	19,1	101,75	11,5	47	61,5	30,0	35,5	37,7	3,2	25,7	69,85	M24	25	107,25	97,50	91,25	80
60	11,1	38	19,1	161,80	14,0	59	76,0	49,0	54,2	59,3	3,2	25,7	107,95	M30	32	164,75	155,00	147,70	130

## MAS BT



K	D1	l1 ±0,2	d2 H8	g H6	l2 min	l3 min	l4 0 0,5	b H12	l5 min	t 0 -0,2	D4	D5 H8	e	v ±0,1	x	x1 0 0,1	y ±0,4	y1 0 0,5
30	31,75	48,4	12,5	M12	24	34	7	16,1	17	16,3	38	46	20	13,6	4	8	2	7
35	38,10	56,4	12,5	M12	24	34	7	16,1	20	19,6	43	53	22	14,6	5	10	2	7
40	44,45	65,4	17,0	M16	30	43	9	16,1	21	22,6	53	63	25	16,6	5	10	2	9
45	57,15	82,8	21,0	M20	38	53	11	19,3	26	29,1	73	85	30	21,2	6	12	3	11
50	69,85	101,8	25,0	M24	45	62	13	25,7	31	35,4	85	100	35	23,2	7	15	3	13

## HSK



HSK	D H10	D1	D2 max	D3 0 -0,1	B1 H10	B2 H10	l1 -0,2	l2 JS10	l3 ±0,1	l4 -0,2	l5 -0,3	a	F1 -0,1	F2 min
32	32	24	26	37,00	9	7	16	8,92	16	13,0	9,5	3,2	20	35
40	40	30	34	45,00	11	9	20	11,42	16	17,0	12,0	4,0	20	35
50	50	38	42	59,30	14	12	25	14,13	18	21,0	15,5	5,0	26	42
63	63	48	53	72,30	18	16	32	18,13	18	26,5	20,0	6,3	26	42
80	80	60	67	88,80	20	18	40	22,85	18	34,0	25,0	8,0	26	42
100	100	75	85	109,75	22	20	50	28,56	20	44,0	31,5	10,0	29	45

<b>44</b>	<b>30</b>	<b>16</b>	<b>16</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

1

Short cylindric DIN-1835-A  <b>00</b>	Short Morse DIN 228  <b>30</b>	DIN 2080  <b>44</b>	ISO 7388 DIN 69871 A  <b>47</b>
ISO  <b>49</b>	BT System HSK  <b>52</b>	R-8  <b>80</b>	

2

Short cylindric DIN-1835-A  Ø16   Ø20   Ø25   Ø32   Ø40 <b>16   20   25   32   40</b>	Short Morse DIN 228 MK2   MK3   MK4   MK5 <b>02   03   04   05</b>	ISO DIN 2080 ISO 30   ISO 40   ISO 50 <b>30   40   50</b>	ISO 7388 DIN 69871 A 7388 30   7388 40   7388 50 <b>30   40   50</b>
BT System  BT 30   BT 40   BT 50 <b>30   40   50</b>	HSK  <b>50   63   100</b>	R-8  <b>80</b>	 <b>21</b>

3

 <b>06</b>	 <b>10</b>	 <b>16</b>	 <b>18</b>	 <b>19</b>
 <b>22</b>	 <b>23</b>	 <b>26</b>	 <b>28</b>	 <b>30</b>
 <b>31</b>	 <b>32</b>	 <b>33</b>	 <b>34</b>	 <b>35</b>
 <b>37</b>	 <b>NPU</b>	 <b>PS</b>	 Ø25   Ø32   Ø40 <b>25   32   40</b>	

4

K <sub>1</sub> - ISO  <b>30</b> ISO 40 <b>40</b> ISO 40	K <sub>1</sub> - MORSE  <b>01</b> MK1 <b>02</b> MK2 <b>03</b> MK3 <b>04</b> MK4	 Ø16   Ø22   Ø27   Ø32   Ø40   Ø60 <b>16   22   27   32   40   60</b>	 Ø25   Ø32   Ø40 <b>25   32   40</b>	 ER16   ER20   ER25   ER32   ER40 <b>16   20   25   32   40</b>
 B12   B16   B18 <b>12   16   18</b>	 Ø16   Ø20   Ø25   Ø32 <b>16   20   25   32</b>	 Ø8   Ø13   Ø16 <b>8   13   16</b>	 Ø6 ..... Ø32 <b>6 .... 32</b>	 M4-M12   M8-M20   M14-M33 <b>12   20   33</b>
	 Ø63   Ø80   Ø100 <b>63   80   100</b>			

Arbors and adaptors

### Assembly fixture

**02.001**  
Adjustable



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**02.003**  
Flat



Page K.07

### DIN 2080

**44.16**  
Mill chuck



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**44.18**  
Mill chuck



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**44.19**  
Centering plug arbor



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**44.22**  
ISO taper adaptor



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**44.23**  
Mill adaptor



Page K.10

**44.26**  
Drill adaptor



Page K.10

**44.28**  
Drill chuck adaptor



Page K.11

**44.30**  
End mill adaptor



Page K.11

**44.31**  
Chuck taper for collets



Page K.12

**HX-DIN** Drill chuck with hexagonal key lock system



Page K.12

**NPU-DIN** Integral drill chuck



Page K.13

### DIN 69871/A

**47.06**  
Modular mill adaptor



Page K.14

**47.10**  
Cooling fluid supply unit



Page K.15

**47.16**  
Mill chuck



Page K.16

**47.16L**  
Mill chuck (Long)



Page K.16

**47.22**  
ISO Taper adaptor



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**47.23**  
Mill adaptor



Page K.17

**47.26**  
Drill adaptor



Page K.18

**47.28**  
Drill chuck adaptor



Page K.18

**47.30**  
End mill adaptor



Page K.19

**47.31**  
Chuck for ER collets



Page K.19

**47.34** Strong hold milling chucks



Page K.20

**47.37** Quick change tapping heads



Page K.20

**HX-ID** Drill chuck with hexagonal key lock system



Page K.21

**NPU-ID** Integral drill chuck



Page K.21

**PS-ID** High precision drill chuck



Page K.22

### MAS BT

**49.06**  
Modular mill adaptor



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**49.10**  
Cooling fluid supply unit



Page K.24

**49.16**  
Mill chuck



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**49.16L**  
Mill chuck (Long)



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**49.22**  
ISO Taper adaptor



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**49.23**  
Mill adaptor



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**49.26**  
Drill adaptor



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**49.28**  
Drill chuck adaptor



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**49.30**  
End mill adaptor



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**49.31**  
Chuck for ER collets



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**49.34** Strong hold milling chucks



Page K.29

**49.37** Quick change tapping heads



Page K.29

**HX-BT** Drill chuck with hexagonal key lock system




Page K.30

**NPU-BT** Integral drill chuck



Page K.30

<p><b>PS-BT</b> High precision drill chuck</p>  <p>Page K.31</p>						
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**HSK**

<p><b>52.06</b> Modular mill adaptor</p>  <p>Page K.32</p>	<p><b>52.16</b> Mill chuck</p>  <p>Page K.32</p>	<p><b>52.18</b> Mill chuck</p>  <p>Page K.33</p>	<p><b>52.26</b> Drill adaptor</p>  <p>Page K.33</p>	<p><b>52.30</b> End mill adaptor</p>  <p>Page K.34</p>	<p><b>52.31</b> Chuck for ER collets</p>  <p>Page K.34</p>	<p><b>52.33</b> Blank boring bars</p>  <p>Page K.36</p>
<p><b>52.35</b> Shrink fit chucks</p>  <p>Page K.35</p>	<p><b>HX-HSK</b> Drill chuck with hexagonal key lock system</p>  <p>Page K.36</p>	<p><b>NPU-HSK</b> Drill chuck</p>  <p>Page K.37</p>				



**DIN 2228/A**

<p><b>CR</b> Drill chucks</p>  <p>Page K.38</p>	<p><b>E</b> Drill sleeves</p>  <p>Page K.38</p>	<p><b>HX-MT</b> Drill chuck with hexagonal key lock system</p>  <p>Page K.39</p>	<p><b>SPS-MT</b> Drill chuck</p>  <p>Page K.39</p>	<p><b>30.31</b> Chuck for ER collets</p>  <p>Page K.40</p>		
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**R-8**

<p><b>80.16</b> Mill chuck</p>  <p>Page K.41</p>	<p><b>80.31</b> Taper for ER collets</p>  <p>Page K.41</p>	<p><b>HX-R8</b> Drill chuck with hexagonal key lock system</p>  <p>Page K.42</p>	<p><b>SPS-R8</b> Drill chuck</p>  <p>Page K.42</p>			
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**Cylindrical**

<p><b>00.31</b> Chuck for ER collets</p>  <p>Page K.43</p>	<p><b>HX-CIL</b> Drill chuck with hexagonal key lock system</p>  <p>Page K.43</p>	<p><b>NPU-CIL</b> Drill chuck</p>  <p>Page K.44</p>	<p><b>00.06</b> Modular cylindrical shank</p>  <p>Page K.45</p>	<p><b>30.06</b> Modular Morse shank</p>  <p>Page K.45</p>	<p><b>06HM</b> Cylindrical shank for milling heads</p>  <p>Page K.47</p>	
<p><b>06</b> Front contact extensions</p>  <p>Page K.48</p>	<p><b>06</b> Front contact reducers</p>  <p>Page K.48</p>					

**Collets**

<p><b>ER</b> Collets</p>  <p>Page K.49</p>	<p><b>C</b> Collets</p>  <p>Page K.50</p>					
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Arbors and adaptors

Inserts
Face milling cutters
Square shoulder cutters
Slot cutters
Porcupine cutters
Specific applications and sets
Profile milling
Solid carbide
Drills
Boring heads
Arbors and adaptors

### Drill chucks

**SP-B**  
Keyless drill chucks



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**SPX-B**  
Keyless drill chucks



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**CK-B**  
Keyless drill chucks



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### Accessories

**2090..2091**  
Clamping nuts-ER collets



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**2092..2094**  
Clamping nuts-ER collets



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**2190..2191**  
Clamping nuts-C collets



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**5116..5120**  
Spanner



Page K.54

**5216..5220**  
Spanner



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**5225..5240**  
Spanner



Page K.54

**HX**  
Spanner



Page K.54

**70XX..73XX**  
Quick-change



Page K.55

**74XX..77XX**  
Quick-change



Page K.55

**1960..1961**  
Pull studs



Page K.57

**1962..1963**  
Pull studs



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**1964..1965**  
Pull studs



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**1966..1967**  
Pull studs



Page K.58

**1968..1969**  
Pull studs



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**1970..1971**  
Pull studs



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**1972..1974**  
Pull studs



Page K.59

### Sets

**00.32 (CLS)**  
Extensions



Page K.60

**SET C-32** Mill chuck



Page K.60

**SER** Collets ER



Page K.61

**SET** Mill chuck



Page K.61



**Characteristics:**  
Adjustable assembly fixture

**Applications:**  
For DIN 2080, DIN 69871/A, MAS BT, HSK, CAPTO and KM types



02.001								
	Types	DIN 2080	DIN 69871/A	MAS BT	HSK	CAPTO	KM	
Ref.	02.30.0010	30	30	X	50	C5	50	7,500
	02.40.0010	40	40	40	63	C6	63	7,000
	02.50.0010	50	50	X	X	X	X	19,000
	02.50.0011	X	X	50	100	X	X	18,000



**Characteristics:**  
Assembly fixture (Flat)

**Applications:**  
For DIN 2080, DIN 69871/A, MAS BT, HSK, CAPTO and KM types



02.003								
	Types	DIN 2080	DIN 69871/A	MAS BT	HSK	CAPTO	KM	
Ref.	02.40.0030	40	40	40	63	C6	63	5,750
	02.50.0030	50	50	X	X	X	X	15,000
	02.50.0031	X	X	50	100	X	X	15,000



Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

Drills

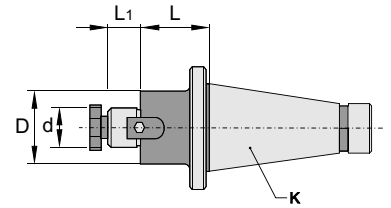
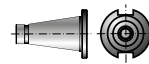
Boring heads

Arbors and adaptors



**Characteristics:**  
 Mill chuck ISO taper with fixed drivers

DIN 2080



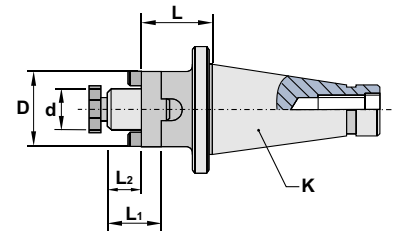
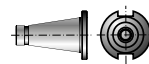
### 44.16

Ref.	K	d	D	L	L1	
44.30.16.16	30	16	32	35	17	0,500
44.30.16.22	30	22	40	35	19	0,650
44.30.16.27	30	27	48	35	21	0,800
44.30.16.32	30	32	58	35	24	1,050
44.40.16.16	40	16	32	37	17	1,000
44.40.16.22	40	22	40	37	19	1,100
44.40.16.27	40	27	48	37	21	1,250
44.40.16.32	40	32	58	37	24	1,500
44.40.16.40	40	40	70	38	27	1,900
44.40.16.60	40	60	128	30	40	4,150
44.50.16.16	50	16	32	40	17	2,900
44.50.16.22	50	22	40	40	19	3,100
44.50.16.27	50	27	48	40	21	3,150
44.50.16.32	50	32	58	40	24	4,200
44.50.16.40	50	40	70	40	27	3,800
44.50.16.60	50	60	128	30	40	7,800



**Characteristics:**  
 Mill chuck with frontal drivers and tongue

DIN 2080



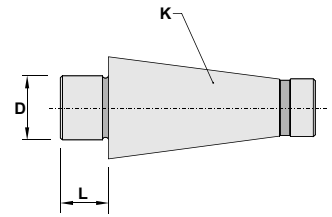
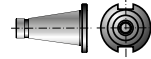
### 44.18

Ref.	K	d	D	L	L1	L2	
44.40.18.16	40	16	32	52	27	17	1,050
44.40.18.22	40	22	40	52	31	19	1,250
44.40.18.27	40	27	48	52	33	21	1,450
44.40.18.32	40	32	58	52	38	24	1,800
44.40.18.40	40	40	70	52	41	27	2,250
44.50.18.16	50	16	32	55	27	17	3,000
44.50.18.22	50	22	40	55	31	19	3,150
44.50.18.27	50	27	48	55	33	21	3,300
44.50.18.32	50	32	58	55	38	24	3,650
44.50.18.40	50	40	70	55	41	27	4,150




**Characteristics:**  
Centering plug arbor

DIN 2080



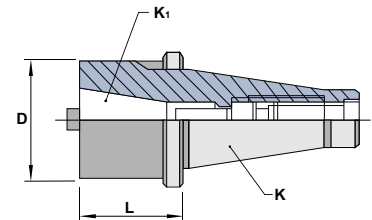
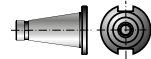
## 44.19

		K	L	D	
Ref.	44.40.19.40	40	30	40	0,700
	44.50.19.60	50	40	60	2,500




**Characteristics:**  
Adaptors from ISO 2080 to ISO taper with internal pull stud

DIN 2080



## 44.22

		K	K <sub>1</sub>	D	L	
Ref.	44.40.22.30	40	30	50	50	1,150
	44.50.22.40	50	40	63	50	4,500

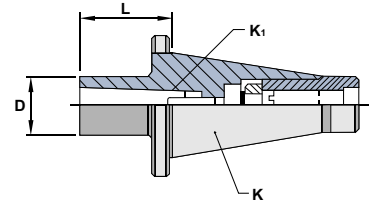
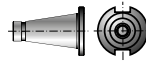
Inserts



**Characteristics:**

Mill adaptor from ISO taper to Morse taper with internal pull stud

DIN 2080



Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

## 44.23

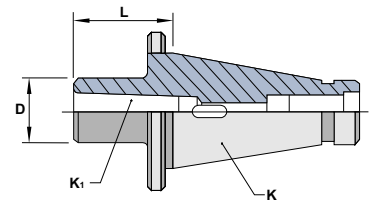
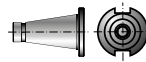
Ref.	K	K <sub>1</sub>	D	L	Kg
44.30.23.02	30	MK2	32	50	0,450
44.30.23.03	30	MK3	40	76	0,700
44.40.23.02	40	MK2	32	50	0,950
44.40.23.03	40	MK3	40	65	1,050
44.40.23.04	40	MK4	48	95	1,400
44.50.23.03	50	MK3	40	65	2,900
44.50.23.04	50	MK4	48	65	2,900



**Characteristics:**

Drill adaptor from ISO taper to Morse taper

DIN 2080



Solid carbide

Drills

Boring heads

Arbors and adaptors

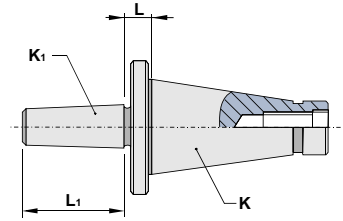
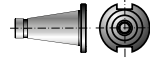
## 44.26

Ref.	K	K <sub>1</sub>	D	L	Kg
44.30.26.02	30	MK2	32	50	0,450
44.30.26.03	30	MK3	40	76	0,700
44.40.26.01	40	MK1	25	50	0,800
44.40.26.02	40	MK2	32	50	0,850
44.40.26.03	40	MK3	40	65	1,000
44.40.26.04	40	MK4	48	95	1,300
44.50.26.03	50	MK3	48	65	2,800
44.50.26.04	50	MK4	63	70	2,800



**Characteristics:**  
Drill chuck adaptor ISO taper

DIN 2080



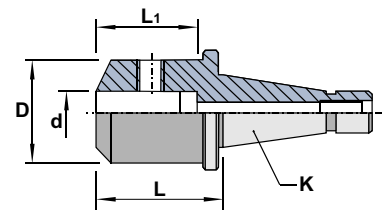
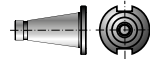
## 44.28

Ref.		K	K1	L	L1	kg
44.30.28.12		30	B12	15	18,5	0,350
44.30.28.16		30	B16	15	24,0	0,350
44.30.28.18		30	B18	15	32,0	0,400
44.40.28.12		40	B12	17	18,5	0,850
44.40.28.16		40	B16	17	24,0	0,850
44.40.28.18		40	B18	17	32,0	0,850
44.50.28.16		50	B16	20	24,0	2,700
44.50.28.18		50	B18	20	32,0	2,750



**Characteristics:**  
End mill adaptor ISO taper

DIN 2080



## 44.30

Ref.		K	d	D	L	L1	kg
44.40.30.10		40	10	35	50	39	0,950
44.40.30.12		40	12	42	50	44	1,050
44.40.30.16		40	16	48	63	47	1,300
44.40.30.20		40	20	52	63	49	1,350
44.40.30.25		40	25	65	80	54	2,100
44.40.30.32		40	32	72	80	58	2,500
44.50.30.16		50	16	48	63	47	3,050
44.50.30.20		50	20	52	63	49	3,150
44.50.30.25		50	25	65	80	54	3,850
44.50.30.32		50	32	72	80	58	4,400

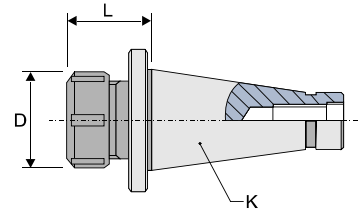
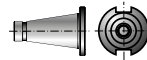
Inserts



**Characteristics:**

Chuck ISO taper for (ER) collets  
 DIN 6499/B

DIN 2080



Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

## 44.31

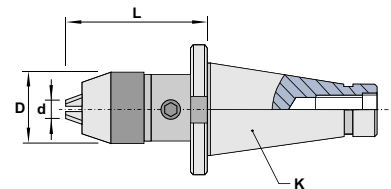
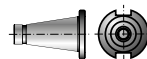
Ref.	K	L	D	Size of collets	Clamping nut	Collet	Kg
44.30.31.16	30	38	24	1-10	2190	ER16	0,400
44.30.31.20	30	38	34	1-13	2191	ER20	0,500
44.30.31.25	30	39	42	1-16	2092	ER25	0,550
44.30.31.32	30	50	50	2-20	2093	ER32	0,600
44.40.31.16	40	50	24	1-10	2190	ER16	0,850
44.40.31.20	40	50	34	1-13	2191	ER20	0,950
44.40.31.25	40	50	42	1-16	2092	ER25	0,850
44.40.31.32	40	50	50	2-20	2093	ER32	1,250
44.40.31.32L	40	120	50	2-20	2093	ER32	1,500
44.40.31.40	40	56	63	4-30	2094	ER40	1,400
44.40.31.40L	40	120	63	4-30	2094	ER40	1,750
44.50.31.32	50	70	50	2-20	2093	ER32	2,950
44.50.31.32L	50	100	50	2-20	2093	ER32	3,500
44.50.31.40	50	70	63	4-30	2094	ER40	3,450
44.50.31.40L	50	100	63	4-30	2094	ER40	3,850



**Characteristics:**

Super precision drill chuck with hexagonal key lock system.

DIN 2080



Solid carbide

Drills

Boring heads

Arbors and adaptors

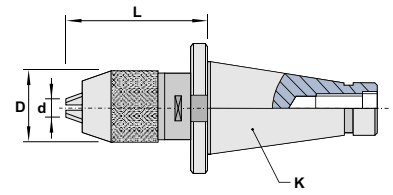
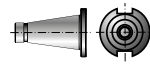
## HX-DIN

Ref.	K	d	D	Lmin	Lmax	Kg
HX10-DIN40	40	0-10	43	72	81	1,220
HX13-DIN40	40	1-13	53	86	97	1,620
HX16-DIN40	40	3-16	57	88	99	1,720
HX10-DIN50	50	0-10	43	74	83	3,000
HX13-DIN50	50	1-13	53	89	101	3,320
HX16-DIN50	50	3-16	57	92	103	3,420




**Characteristics:**  
Integral drill chuck with safety clamping system

DIN 2080



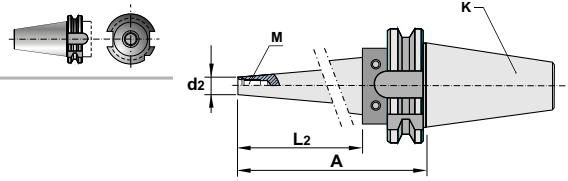
## NPU-DIN

NPU-DIN		K	d	D	L <sub>min</sub>	L <sub>max</sub>	
Ref.	NPU13-DIN40	40	1-13	48	78	89	1,700
	NPU16-DIN40	40	3-16	55	90	101	2,100
	NPU13-DIN50	50	1-13	48	90	101	3,600
	NPU16-DIN50	50	3-16	55	72	83	3,750




**Characteristics:**  
 Adaptor from DIN 69871/A tape for modular mills.

DIN 69871/A



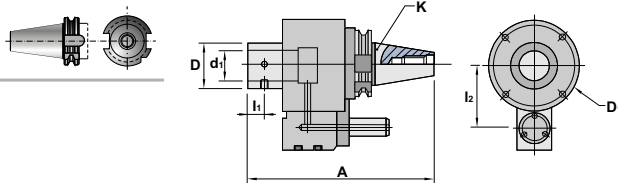
### 47.06

Ref.	K	L <sub>2</sub>	A	d <sub>2</sub>	M	
<b>47.40.06.10</b>	40	50	70	18,0	M10	1,100
<b>47.40.06.10L120</b>	40	100	120	18,0	M10	1,400
<b>47.40.06.10L200</b>	40	158	200	18,0	M10	1,950
<b>47.40.06.10L250</b>	40	202	250	18,0	M10	2,340
<b>47.40.06.10L300</b>	40	258	300	18,0	M10	2,750
<b>47.40.06.12</b>	40	50	70	21,0	M12	1,250
<b>47.40.06.12L120</b>	40	100	120	21,0	M12	1,650
<b>47.40.06.12L200</b>	40	158	200	21,0	M12	2,450
<b>47.40.06.12L250</b>	40	202	250	21,0	M12	2,950
<b>47.40.06.12L300</b>	40	258	300	21,0	M12	3,450
<b>47.40.06.16</b>	40	50	70	29,0	M16	2,750
<b>47.40.06.16L120</b>	40	100	120	29,0	M16	3,300
<b>47.40.06.16L200</b>	40	158	200	29,0	M16	4,250
<b>47.40.06.16L250</b>	40	208	250	29,0	M16	5,350
<b>47.40.06.16L300</b>	40	252	300	29,0	M16	6,850
<b>47.50.06.12</b>	50	50	70	21,0	M12	3,300
<b>47.50.06.12L120</b>	50	100	120	21,0	M12	3,750
<b>47.50.06.12L250</b>	50	197	250	21,0	M12	4,750
<b>47.50.06.12L300</b>	50	247	300	21,0	M12	5,250
<b>47.50.06.12L400</b>	50	347	400	21,0	M12	6,250
<b>47.50.06.16</b>	50	100	120	29,0	M16	5,150
<b>47.50.06.16L170</b>	50	150	170	29,0	M16	6,250
<b>47.50.06.16L250</b>	50	197	250	29,0	M16	7,350
<b>47.50.06.16L300</b>	50	247	300	29,0	M16	8,450
<b>47.50.06.16L400</b>	50	347	400	29,0	M16	10,650
<b>47.50.06.16L500</b>	50	417	500	29,0	M16	12,950



**Characteristics:**  
Colling fluid supply unit

DIN 69871/A

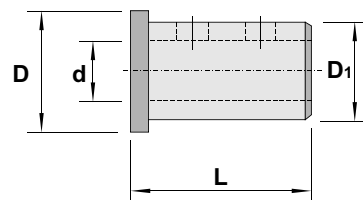


## 47.10

		K	d <sub>1</sub>	A	D	D <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>		
Ref.	47.40.10.25	40	25	152	45	95	15	65	4,650	1516
	47.40.10.32	40	32	152	48	95	16	65	4,750	1516
	47.50.10.32	50	32	152	48	95	16	80	8,150	1516
	47.50.10.40	50	40	166	58	110	17	80	8,250	1516



**Characteristics:**  
Reducing bushings



## 00.21

		D <sub>1</sub>	d	D	L	
Ref.	00.21.25.16	25	16	33	55	0,150
	00.21.25.20	25	20	33	55	0,100
	00.21.32.16	32	16	40	60	0,400
	00.21.32.20	32	20	40	60	0,300
	00.21.32.25	32	25	40	60	0,250
	00.21.40.16	40	16	48	65	0,750
	00.21.40.20	40	20	48	65	0,700
	00.21.40.25	40	25	48	65	0,600
	00.21.40.32	40	32	48	65	0,400



Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

Drills

Boring heads

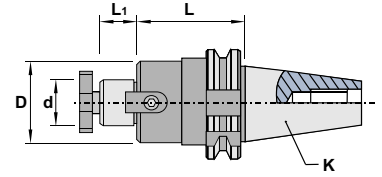
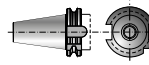
Arbors and adaptors



### Characteristics:

Mill chuck DIN 69871/A taper with fixed drivers.

DIN 69871/A



## 47.16

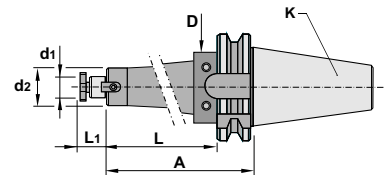
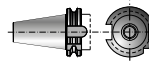
Ref.	K	d	D	L	L1	$\rho_{kg}$
47.40.16.16	40	16	32	44	17	1,050
47.40.16.22	40	22	40	44	19	1,150
47.40.16.27	40	27	48	44	21	1,300
47.40.16.32	40	32	58	59	24	1,700
47.40.16.40	40	40	70	59	27	2,150
47.50.16.16	50	16	32	44	17	2,850
47.50.16.22	50	22	40	44	19	3,000
47.50.16.27	50	27	48	47	21	3,150
47.50.16.32	50	32	58	47	24	3,450
47.50.16.40	50	40	70	59	27	4,200
47.50.16.60	50	60	128	75	40	7,600



### Characteristics:

Mill chuck DIN 69871/A taper with fixed drivers.  
(Long)

DIN 69871/A



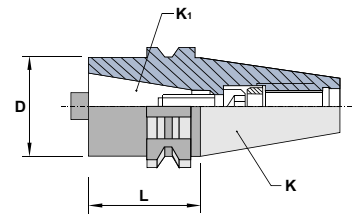
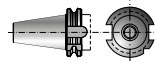
## 47.16L

Ref.	K	D	A	L	L1	d1	d2	$\rho_{kg}$
47.40.16.16L150	40	50	150	131	36	16	36	1,550
47.40.16.16L200	40	50	200	181	36	16	36	1,900
47.40.16.16L250	40	50	250	231	36	16	36	2,300
47.40.16.16L300	40	50	300	281	36	16	36	2,600
47.40.16.22L150	40	50	150	131	19	22	44	1,950
47.40.16.22L200	40	50	200	181	19	22	44	2,500
47.40.16.22L250	40	50	250	231	19	22	44	2,950
47.40.16.22L300	40	50	300	281	19	22	44	3,500
47.40.16.27L150	40	50	150	131	21	27	54	2,500
47.40.16.27L200	40	50	200	181	21	27	54	3,200
47.40.16.27L250	40	50	250	231	21	27	54	4,000
47.40.16.27L300	40	50	300	281	21	27	54	4,700
47.50.16.16L150	50	80	150	131	36	16	36	3,700
47.50.16.16L200	50	80	200	181	36	16	36	4,100
47.50.16.16L250	50	80	250	231	36	16	36	4,400
47.50.16.16L300	50	80	300	281	36	16	36	5,200
47.50.16.16L400	50	80	400	381	36	16	36	6,000
47.50.16.22L200	50	80	200	181	19	22	44	4,300
47.50.16.22L250	50	80	250	231	19	22	44	4,750
47.50.16.22L300	50	80	300	281	19	22	44	5,300
47.50.16.22L400	50	80	400	381	19	22	44	6,300
47.50.16.22L500	50	80	500	481	19	22	44	7,300
47.50.16.27L200	50	80	200	181	21	27	54	5,000
47.50.16.27L250	50	80	250	231	21	27	54	5,800
47.50.16.27L300	50	80	300	281	21	27	54	6,500
47.50.16.27L400	50	80	400	381	21	27	54	7,500
47.50.16.27L500	50	80	500	481	21	27	54	8,500
47.50.16.32L200	50	80	200	181	24	32	64	6,300
47.50.16.32L250	50	80	250	231	24	32	64	7,100
47.50.16.32L300	50	80	300	281	24	32	64	7,800
47.50.16.32L400	50	80	400	381	24	32	64	8,800
47.50.16.32L500	50	80	500	481	24	32	64	9,800




**Characteristics:**  
Adaptor from DIN 69871/A to ISO taper with  
internal pull stud

DIN 69871/A



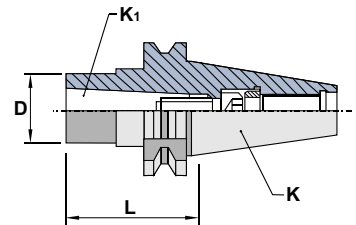
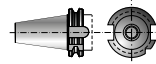
## 47.22

		K	K <sub>1</sub>	D	L	
Ref.	47.50.22.40	50	40	70	63	3,550




**Characteristics:**  
Mill adaptor from DIN 69871/A taper to Morse  
taper with internal pull stud

DIN 69871/A



## 47.23

		K	K <sub>1</sub>	D	L	
Ref.	47.40.23.02	40	MK2	32	50	0,950
	47.40.23.03	40	MK3	40	70	1,100
	47.40.23.04	40	MK4	48	95	1,400
	47.50.23.03	50	MK3	40	65	2,900
	47.50.23.04	50	MK4	48	70	2,950

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

Drills

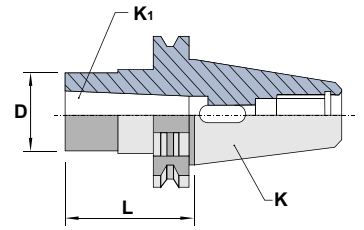
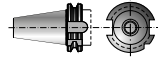
Boring heads

Arbors and adaptors




**Characteristics:**  
 Drill adaptor from DIN 69871/A taper to Morse taper

DIN 69871/A



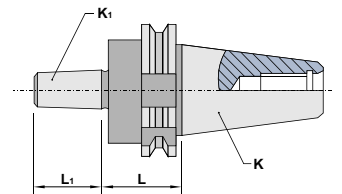
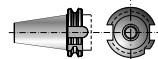
### 47.26

Ref.	K	K1	D	L	
47.40.26.01	40	MK1	25	50	0,850
47.40.26.02	40	MK2	32	50	0,900
47.40.26.03	40	MK3	40	70	1,050
47.40.26.04	40	MK4	48	95	1,300
47.50.26.03	50	MK3	40	65	2,750
47.50.26.04	50	MK4	48	95	3,000




**Characteristics:**  
 Drill chuck adaptor DIN 69871/A taper

DIN 69871/A



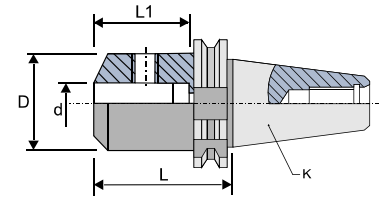
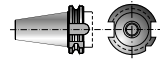
### 47.28

Ref.	K	K1	L	L1	
47.40.28.12	40	B12	25	18,5	0,850
47.40.28.16	40	B16	25	24,0	0,850
47.40.28.18	40	B18	25	32,0	0,900
47.50.28.16	50	B16	25	24,0	2,700
47.50.28.18	50	B18	25	32,0	2,700



**Characteristics:**  
End mill adaptor DIN 69871/A taper

DIN 69871/A



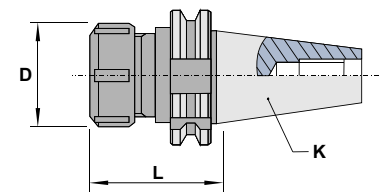
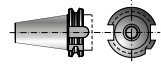
## 47.30

Ref.	K	d	D	L	L1	kg
47.40.30.10	40	10	35	50	39	0,950
47.40.30.12	40	12	42	50	44	1,050
47.40.30.16	40	16	48	63	47	1,250
47.40.30.20	40	20	52	63	49	1,300
47.40.30.25	40	25	65	100	54	2,400
47.40.30.32	40	32	72	100	58	2,500
47.50.30.16	50	16	48	63	47	3,050
47.50.30.20	50	20	52	63	49	3,050
47.50.30.25	50	25	65	80	54	3,750
47.50.30.32	50	32	72	100	58	4,450



**Characteristics:**  
Chuck DIN 69871/A for ER collets  
DIN 6499/B

DIN 69871/A



**For more information see page:**

Collets: K.49  
Clamping nuts: K.53  
Spanners: K.54

## 47.31

Ref.	K	L	D	Size of collets	Clamping nut	Collet	kg
47.40.31.16	40	60	28	1-10	2190	ER16	0,950
47.40.31.20	40	70	34	1-13	2191	ER20	1,000
47.40.31.25	40	70	42	1-16	2092	ER25	0,950
47.40.31.32	40	70	50	2-20	2093	ER32	1,050
47.40.31.32L	40	100	50	2-20	2093	ER32	1,750
47.40.31.40	40	56	63	4-30	2094	ER40	1,250
47.40.31.40L	40	120	63	4-30	2094	ER40	2,050
47.50.31.32	50	70	50	2-20	2093	ER32	3,050
47.50.31.32L	50	100	50	2-20	2093	ER32	3,150
47.50.31.40	50	70	63	4-30	2094	ER40	3,100
47.50.31.40L	50	100	63	4-30	2094	ER40	4,000

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

Drills

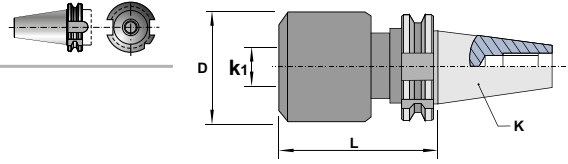
Boring heads

Arbors and adaptors



**Characteristics:**  
 Strong hold milling chucks

DIN 69871/A



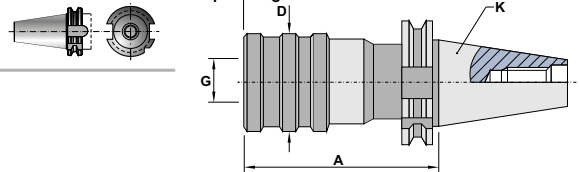
### 47.34

Ref.	K	K <sub>1</sub>	D	L	Kg
47.40.34.20	40	20	54	105	1,800
47.40.34.32	40	32	72	105	2,400
47.50.34.32	50	32	72	105	4,300



**Characteristics:**  
 Quick change tapping heads

DIN 69871/A



**For more information see page:**  
 Tap adaptors: K.55

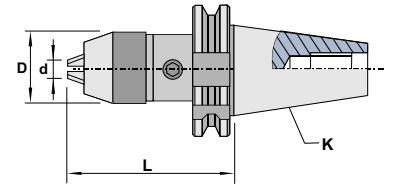
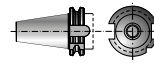
### 47.37



Ref.	K	Nº	G	∅	T	A	D	C		Kg
47.40.37.12	40	1	19	9	60	36	9	M4-M12	71XX 75XX	1,050
47.40.37.20	40	2	31	9	92	53	15	M8-M20	72XX 76XX	1,650
47.40.37.33	40	3	48	9	138	78	24	M14-M33	73XX 77XX	3,000
47.50.37.12	50	1	19	9	60	36	9	M4-M12	71XX 75XX	2,800
47.50.37.20	50	2	31	9	92	53	15	M8-M20	72XX 76XX	2,250
47.50.37.33	50	3	48	9	138	78	24	M14-M33	73XX 77XX	5,000



**Characteristics:**  
Super precision drill chuck with hexagonal key lock system.

DIN 69871/A-B-AD

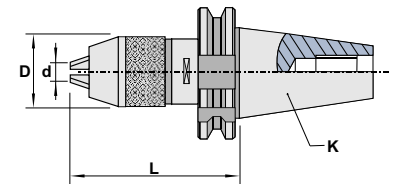
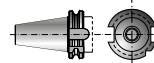



<b>HX-ID</b>		<b>K</b>	<b>d</b>	<b>D</b>	<b>L<sub>min</sub></b>	<b>L<sub>max</sub></b>		
Ref.	HX10-ID40	40	0-10	43	77	85,5	-	1,300
	HX10-ID40/R	40	0-10	43	77	85,5	B-AD	1,300
	HX13-ID40	40	1-13	53	91	103,0	-	1,640
	HX13-ID40/R	40	1-13	53	91	103,0	B-AD	1,640
	HX16-ID40	40	3-16	57	94	105,0	-	1,740
	HX16-ID40/R	40	3-16	57	94	105,0	B-AD	1,740
	HX10-ID50	50	0-10	43	79	87,5	-	3,080
	HX10-ID50/R	50	0-10	43	79	87,5	B-AD	3,080
	HX13-ID50	50	1-13	53	93	105,0	-	3,460
	HX13-ID50/R	50	1-13	53	93	105,0	B-AD	3,460
	HX16-ID50	50	3-16	57	96	107,0	-	3,560
	HX16-ID50/R	50	3-16	57	96	107,0	B-AD	3,560



**Characteristics:**  
Integral drill chuck with safety clamping system

DIN 69871/A

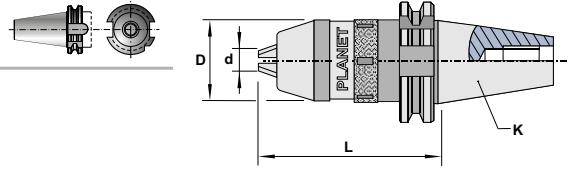


<b>NPU-ID</b>		<b>K</b>	<b>d</b>	<b>D</b>	<b>L<sub>min</sub></b>	<b>L<sub>max</sub></b>	
Ref.	NPU13-ID40	40	1-13	48	80	91	1,700
	NPU16-ID40	40	3-16	55	97	108	2,150
	NPU13-ID50	50	1-13	48	78	89	3,650
	NPU16-ID50	50	3-16	55	76	89	3,750




**Characteristics:**  
 High precision drill chuck for CNC machine centre and milling machines

DIN 69871/A



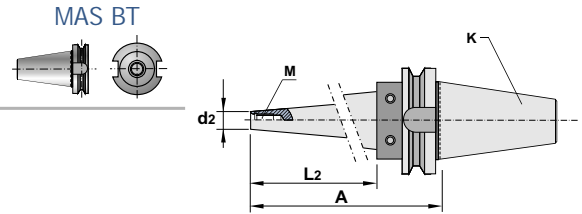
### PS-ID

Ref.		K	d	D	Lmin	Lmax	
PS13-ID40		40	1-13	57	113	125	2,250
PS13-ID50		50	1-13	57	93	105	4,050

- Inserts
- Face milling cutters
- Square shoulder cutters
- Slot cutters
- Porcupine cutters
- Specific applications and sets
- Profile milling
- Solid carbide
- Drills
- Boring heads
- Arbors and adaptors



**Characteristics:**  
Adaptor from MAS BT tape for modular mills



## 49.06

Ref.		K	L2	A	d2	M	Kg
49.40.06.10		40	50	80	18,0	M10	1,250
49.40.06.10L130		40	100	130	18,0	M10	1,550
49.40.06.10L200		40	158	200	18,0	M10	2,100
49.40.06.10L250		40	208	250	18,0	M10	2,490
49.40.06.10L300		40	258	300	18,0	M10	2,900
49.40.06.12		40	50	80	21,0	M12	1,400
49.40.06.12L130		40	100	130	21,0	M12	1,800
49.40.06.12L200		40	158	200	21,0	M12	2,600
49.40.06.12L250		40	208	250	21,0	M12	3,100
49.40.06.12L300		40	258	300	21,0	M12	3,600
49.40.06.16		40	50	80	29,0	M16	2,900
49.40.06.16L130		40	100	130	29,0	M16	3,600
49.40.06.16L200		40	158	200	29,0	M16	4,400
49.40.06.16L250		40	208	250	29,0	M16	5,500
49.40.06.16L300		40	258	300	29,0	M16	7,000
49.50.06.12		50	100	140	21,0	M12	3,700
49.50.06.12L190		50	150	190	21,0	M12	4,050
49.50.06.12L250		50	197	250	21,0	M12	4,450
49.50.06.12L300		50	247	300	21,0	M12	5,650
49.50.06.12L400		50	347	400	21,0	M12	6,650
49.50.06.16		50	100	140	29,0	M16	5,550
49.50.06.16L190		50	150	190	29,0	M16	6,650
49.50.06.16L250		50	197	250	29,0	M16	7,750
49.50.06.16L300		50	247	300	29,0	M16	9,000
49.50.06.16L400		50	347	400	29,0	M16	11,000
49.50.06.16L500		50	447	500	29,0	M16	13,400

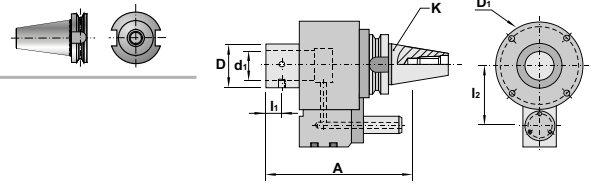


Inserts



**Characteristics:**  
Colling fluid supply unit

MAS BT



Face milling cutters

Square shoulder cutters



Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

### 49.10

Ref.	K	d <sub>1</sub>	A	D	D <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>		
49.40.10.25	40	25	152	45	95	15	65	1516	4,400
49.40.10.32	40	32	152	48	95	16	65	1516	4,500
49.50.10.32	50	32	152	48	95	16	80	1516	7,900
49.50.10.40	50	40	166	58	110	17	80	1516	8,000

Solid carbide

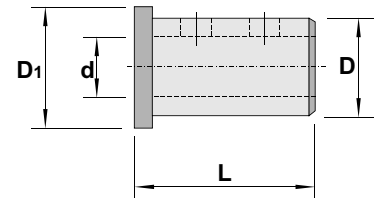
Drills

Boring heads


Arbors and adaptors



**Characteristics:**  
Reducing bushings

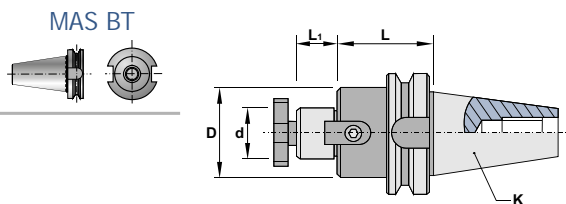


### 00.21

Ref.	D	d	D <sub>1</sub>	L	
00.21.25.16	25	16	33	55	0,150
00.21.25.20	25	20	33	55	0,100
00.21.32.16	32	16	40	60	0,400
00.21.32.20	32	20	40	60	0,300
00.21.32.25	32	25	40	60	0,250
00.21.40.16	40	16	48	65	0,750
00.21.40.20	40	20	48	65	0,700
00.21.40.25	40	25	48	65	0,600
00.21.40.32	40	32	48	65	0,400



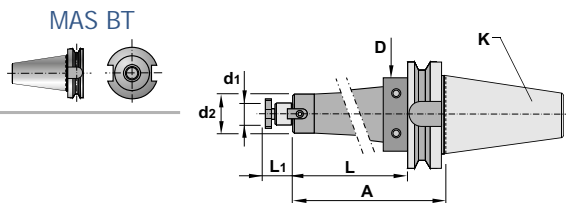
**Characteristics:**  
Mill chuck MAS BT taper with fixed drivers.



49.16		K	d	D	L	L1	kg
Ref.	49.40.16.16	40	16	32	44	17	1,150
	49.40.16.22	40	22	40	44	19	1,250
	49.40.16.27	40	27	48	47	21	1,400
	49.40.16.32	40	32	58	50	24	1,650
	49.40.16.40	40	40	70	52	27	2,050
	49.50.16.16	50	16	32	55	17	3,800
	49.50.16.22	50	22	40	55	19	3,900
	49.50.16.27	50	27	48	58	21	4,100
	49.50.16.32	50	32	58	61	24	4,350
	49.50.16.40	50	40	70	63	27	4,800
	49.50.16.60	50	60	128	25	40	8,100



**Characteristics:**  
Mill chuck MAS BT taper with fixed drivers.  
(Long)



49.16L		K	D	A	L	L1	d1	d2	kg
Ref.	49.40.16.16L150	40	50	150	116	36	16	36	1,700
	49.40.16.16L200	40	50	200	166	36	16	36	2,050
	49.40.16.16L250	40	50	250	216	36	16	36	2,450
	49.40.16.16L300	40	50	300	266	36	16	36	2,750
	49.40.16.22L150	40	50	150	116	19	22	44	2,100
	49.40.16.22L200	40	50	200	166	19	22	44	2,650
	49.40.16.22L250	40	50	250	216	19	22	44	3,100
	49.40.16.22L300	40	50	300	266	19	22	44	3,650
	49.40.16.27L150	40	56	150	116	21	27	54	2,650
	49.40.16.27L200	40	56	200	166	21	27	54	3,350
	49.40.16.27L250	40	56	250	216	21	27	54	4,150
	49.40.16.27L300	40	56	300	266	21	27	54	4,850
	49.50.16.16L150	50	80	150	112	36	16	36	4,100
	49.50.16.16L200	50	80	200	162	36	16	36	4,500
	49.50.16.16L250	50	80	250	212	36	16	36	4,800
	49.50.16.16L300	50	80	300	262	36	16	36	5,600
	49.50.16.16L400	50	80	400	362	36	16	36	6,400
	49.50.16.22L200	50	80	200	162	19	22	44	4,700
	49.50.16.22L250	50	80	250	212	19	22	44	5,150
	49.50.16.22L300	50	80	300	262	19	22	44	5,700
	49.50.16.22L400	50	80	400	362	19	22	44	6,700
	49.50.16.22L500	50	80	500	462	19	22	44	7,700
	49.50.16.27L200	50	80	200	162	21	27	54	5,400
	49.50.16.27L250	50	80	250	212	21	27	54	6,200
	49.50.16.27L300	50	80	300	262	21	27	54	6,900
	49.50.16.27L400	50	80	400	362	21	27	54	7,900
	49.50.16.27L500	50	80	500	462	21	27	54	8,900
	49.50.16.32L200	50	80	200	162	24	32	64	6,700
	49.50.16.32L250	50	80	250	212	24	32	64	7,500
	49.50.16.32L300	50	80	300	262	24	32	64	8,200
	49.50.16.32L400	50	80	400	362	24	32	64	9,200
	49.50.16.32L500	50	80	500	462	24	32	64	10,200

Arbors and adaptors

Inserts

Face milling  
cutters

Square shoulder  
cutters

Slot cutters

Porcupine cutters

Specific applications  
and sets

Profile milling

Solid carbide

Drills

Boring heads

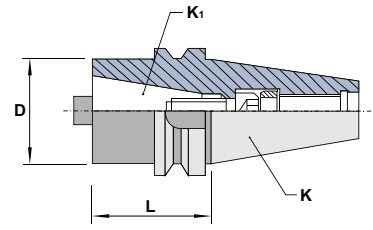
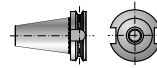
Arbors and  
adaptors




**Characteristics:**

Adaptor from MAS BT to ISO taper with internal pull stud

MAS BT



### 49.22

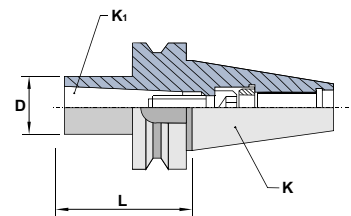
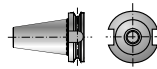
Ref.	K	K1	D	L	
49.50.22.40	50	40	78	70	4,850




**Characteristics:**

Mill adaptor from MAS BT taper to Morse taper with internal pull stud

MAS BT

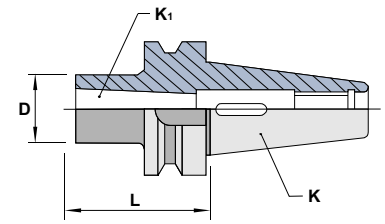
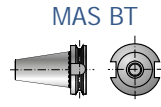


### 49.23

Ref.	K	K1	D	L	
49.40.23.02	40	MK2	32	50	1,050
49.40.23.03	40	MK3	40	70	1,200
49.40.23.04	40	MK4	48	95	1,450
49.50.23.03	50	MK3	40	65	3,700
49.50.23.04	50	MK4	48	70	3,900



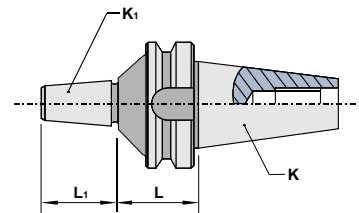
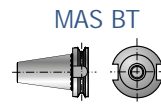
**Characteristics:**  
Drill adaptor from MAS BT taper to Morse taper



49.26		K	K1	D	L	kg
Ref.	49.40.26.01	40	MK1	25	50	1,000
	49.40.26.02	40	MK2	32	50	1,000
	49.40.26.03	40	MK3	40	70	1,100
	49.40.26.04	40	MK4	48	95	1,350
	49.50.26.03	50	MK3	40	65	3,600
	49.50.26.04	50	MK4	48	95	3,500



**Characteristics:**  
Drill chuck adaptor MAS BT taper



49.28		K	K1	L	L1	kg
Ref.	49.40.28.12	40	B12	32	18,5	1,000
	49.40.28.16	40	B16	32	24,0	1,000
	49.40.28.18	40	B18	32	32,0	1,050
	49.50.28.16	50	B16	43	24,0	3,700
	49.50.28.18	50	B18	43	32,0	4,200

Inserts

Face milling  
cutters

Square shoulder  
cutters

Slot cutters

Porcupine cutters

Specific applications  
and sets

Profile milling

Solid carbide

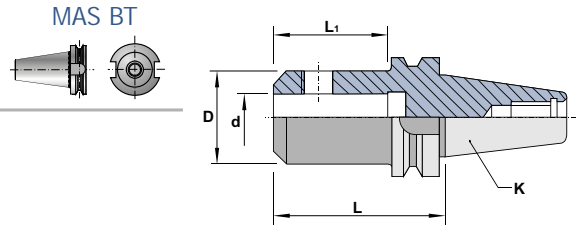
Drills

Boring heads

Arbors and  
adaptors



**Characteristics:**  
End mill adaptor MAS BT taper

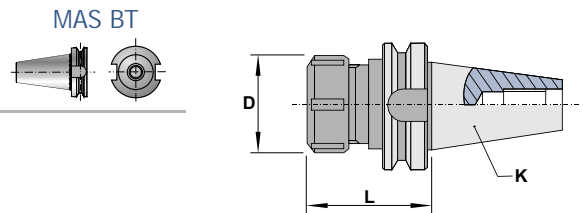


### 49.30

Ref.	K	d	D	L	L1	
49.40.30.10	40	10	35	63	39	1,150
49.40.30.12	40	12	42	63	44	1,250
49.40.30.16	40	16	48	63	47	1,300
49.40.30.20	40	20	52	63	49	1,350
49.40.30.25	40	25	65	90	54	2,200
49.40.30.32	40	32	72	100	58	2,700
49.50.30.16	50	16	48	80	47	3,900
49.50.30.20	50	20	52	80	49	3,950
49.50.30.25	50	25	65	100	54	4,700
49.50.30.32	50	32	72	105	58	5,150



**Characteristics:**  
Chuck MAS BT for ER collets DIN 6499/B



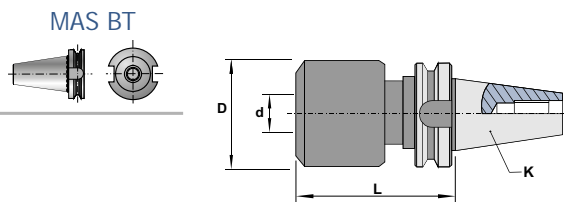
**For more information see page:**  
 Collets: K.49  
 Clamping nuts: K.53  
 Spanners: K.54

### 49.31

Ref.	K	L	D	Size of collets	Clamping nut	Collet	
49.40.31.16	40	60	28	1-10	2190	ER16	1,050
49.40.31.20	40	70	34	1-13	2191	ER20	1,100
49.40.31.25	40	70	42	1-16	2092	ER25	1,100
49.40.31.32	40	70	50	2-20	2093	ER32	1,150
49.40.31.32L	40	100	50	2-20	2093	ER32	1,600
49.40.31.40	40	80	63	4-30	2094	ER40	1,200
49.40.31.40L	40	135	63	4-30	2094	ER40	2,050
49.50.31.32	50	80	50	2-20	2093	ER32	3,800
49.50.31.32L	50	100	50	2-20	2093	ER32	4,400
49.50.31.40	50	80	63	4-30	2094	ER40	3,900
49.50.31.40L	50	120	63	4-30	2094	ER40	4,700



**Characteristics:**  
Strong hold milling chucks

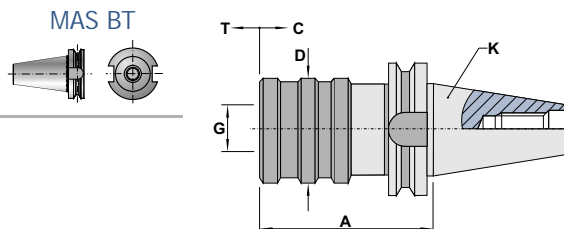


## 49.34

Ref.		K	d	D	L	kg
49.40.34.20		40	20	54	105	1,950
49.40.34.32		40	32	72	105	2,550
49.50.34.32		50	32	72	105	4,450



**Characteristics:**  
Quick change tapping heads



**For more information see page:**  
Tap adaptors: K.55

## 49.37

Ref.	K	N°	G	∅	T	A	D	C			kg	
49.40.37.12	40	1	19		9	60	36	9	M3-M12	71XX	75XX	1,200
49.40.37.20	40	2	31		9	92	53	15	M8-M20	72XX	76XX	1,650
49.40.37.33	40	3	48		9	138	78	24	M14-M33	73XX	77XX	3,200
49.50.37.12	50	1	19		9	60	36	9	M3-M12	71XX	75XX	3,900
49.50.37.20	50	2	31		9	92	53	15	M8-M20	72XX	76XX	4,200
49.50.37.33	50	3	48		9	138	78	24	M14-M33	73XX	77XX	5,500

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

Drills

Boring heads

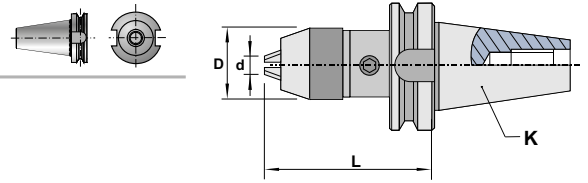
Arbors and adaptors



### Characteristics:

Super precision drill chuck with hexagonal key lock system.

### MAS BT/A-B-AD



## HX-BT

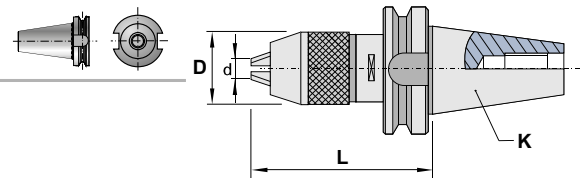
Ref.		K	d	D	Lmin	Lmax		
HX10-BT40	HX10-BT40	40	0-10	43	77	85,5	-	1,300
	HX10-BT40/R	40	0-10	43	77	85,5	B-AD	1,300
	HX13-BT40	40	1-13	53	91	103,0	-	1,640
	HX13-BT40/R	40	1-13	53	91	103,0	B-AD	1,640
	HX16-BT40	40	3-16	57	94	105,0	-	1,740
	HX16-BT40/R	40	3-16	57	94	105,0	B-AD	1,740
HX10-BT50	HX10-BT50	50	0-10	43	79	87,5	-	3,080
	HX10-BT50/R	50	0-10	43	79	87,5	B-AD	3,080
	HX13-BT50	50	1-13	53	93	105,0	-	3,460
	HX13-BT50/R	50	1-13	53	93	105,0	B-AD	3,460
	HX16-BT50	50	3-16	57	96	107,0	-	3,560
	HX16-BT50/R	50	3-16	57	96	107,0	B-AD	3,560



### Characteristics:

Integral drill chuck with safety clamping system

### MAS BT

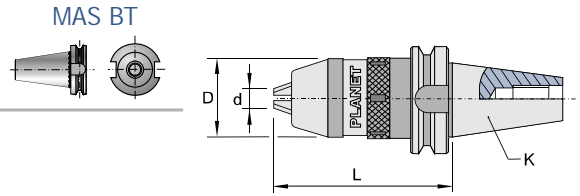


## NPU-BT

Ref.		K	d	D	Lmin	Lmax	
NPU13-BT40	NPU13-BT40	40	1-13	48	78	89	1,550
	NPU16-BT40	40	3-16	55	90	101	2,000
NPU13-BT50	NPU13-BT50	50	1-13	48	74	85	4,150
	NPU16-BT50	50	3-16	55	72	83	4,300



**Characteristics:**  
High precision drill chuck for CNC machine centre and milling machines



<b>PS-BT</b>		<b>K</b>	<b>d</b>	<b>D</b>	<b>Lmin</b>	<b>Lmax</b>	<b>kg</b>
Ref.	<b>PS13-BT40</b>	40	1-13	57	99	110	2,250
	<b>PS16-BT40</b>	40	3-16	57	101	112	2,300
	<b>PS13-BT50</b>	50	1-13	57	110	122	4,950
	<b>PS16-BT50</b>	50	3-16	57	110	121	5,200



Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

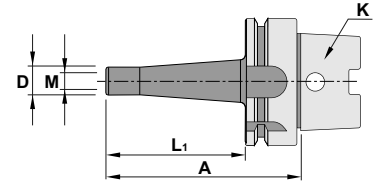
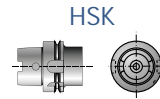
Drills

Boring heads


Arbors and adaptors



**Characteristics:**  
 Adaptor from HSK tape for modular mills.

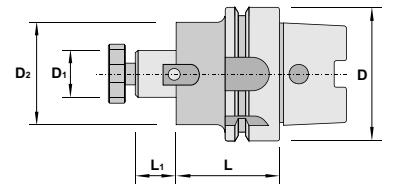
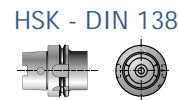


## 52.06


Ref.	K	L <sub>1</sub>	A	D	M	
52.40.06.06	40	25	50	9,8	M6	0,550
52.40.06.06L	40	75	100	9,8	M6	0,670
52.40.06.08	40	25	50	12,8	M8	0,580
52.40.06.08L	40	75	100	12,8	M8	0,700
52.50.06.08	50	25	55	12,8	M8	0,950
52.50.06.08L	50	75	105	12,8	M8	1,070
52.50.06.10	50	25	55	12,8	M10	0,980
52.50.06.10L	50	75	105	12,8	M10	1,100



**Characteristics:**  
 Integral drill chuck with safety clamping system

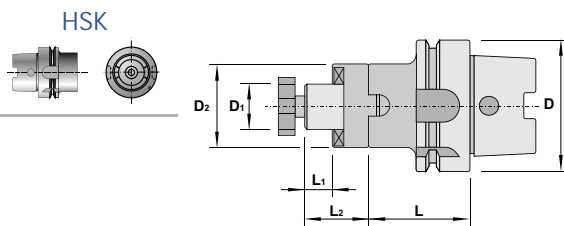


## 52.16

Ref.	L	L <sub>1</sub>	D	D <sub>1</sub>	D <sub>2</sub>	
52.50.16.22	60	19	50	22	50	0,500
52.50.16.27	60	21	50	27	60	0,850
52.63.16.22	50	19	63	22	50	0,950
52.63.16.27	60	21	63	27	60	1,350
52.63.16.32	60	24	63	32	70	1,950
52.63.16.40	60	27	63	40	89	2,675
52.100.16.22	50	19	100	22	50	1,700
52.100.16.27	50	21	100	27	60	2,000
52.100.16.32	50	24	100	32	70	2,700



**Characteristics:**  
Mill chuck with frontal drivers and tongue



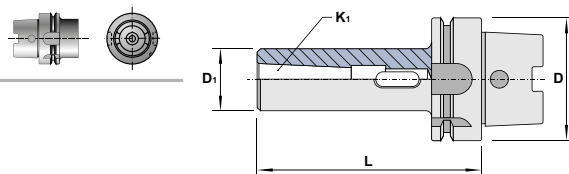
## 52.18

Ref.		L	L1	L2	D	D1	D2	kg
52.50.18.16		40	17	27	50	16	32	0,500
52.50.18.22		38	19	31	50	22	40	0,700
52.50.18.27		53	21	33	50	27	48	0,950
52.50.18.32		51	24	38	50	32	58	1,100
52.63.18.16		50	17	27	63	16	32	0,900
52.63.18.22		48	19	31	63	22	40	1,100
52.63.18.27		48	21	33	63	27	48	1,300
52.63.18.32		46	24	38	63	32	58	1,600
52.63.18.40		56	27	41	63	40	70	2,350
52.100.18.16		50	17	27	100	16	32	1,700
52.100.18.22		48	19	31	100	22	40	1,900
52.100.18.27		48	21	33	100	27	48	2,100
52.100.18.32		46	24	38	100	32	58	2,400
52.100.18.40		56	27	41	100	40	70	3,150



**Characteristics:**  
Morse taper drill adaptor

HSK - DIN 228B



## 52.26

Ref.		L	D	D1	K1	kg
52.50.26.01		100	50	25	MK1	0,650
52.50.26.02		120	50	32	MK2	0,800
52.50.26.03		140	50	40	MK3	1,000
52.63.26.01		100	63	25	MK1	1,100
52.63.26.02		120	63	32	MK2	1,250
52.63.26.03		140	63	40	MK3	1,450
52.63.26.04		160	63	48	MK4	1,650
52.100.26.01		110	100	25	MK1	1,850
52.100.26.02		120	100	32	MK2	2,000
52.100.26.03		150	100	40	MK3	3,200
52.100.26.04		170	100	48	MK4	3,450
52.100.26.05		200	100	63	MK5	4,500

Inserts

Face milling  
cutters

Square shoulder  
cutters

Slot cutters

Porcupine cutters

Specific applications  
and sets

Profile milling

Solid carbide

Drills

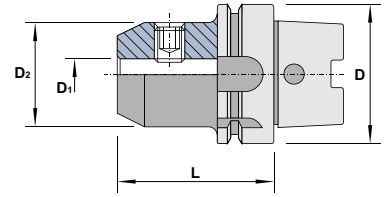
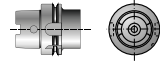
Boring heads

Arbors and  
adaptors




**Characteristics:**  
End mill adaptor

HSK - DIN 1835B



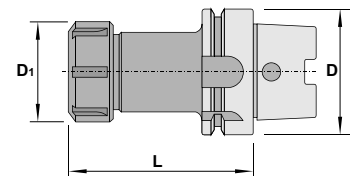
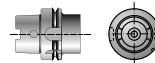
## 52.30

Ref.	L	D	D1	D2	
52.50.30.06	65	50	6	25	0,300
52.50.30.08	65	50	8	28	0,400
52.50.30.10	65	50	10	35	0,500
52.50.30.12	80	50	12	42	0,750
50.50.30.14	80	50	14	44	0,850
50.50.30.16	80	50	16	48	0,900
52.50.30.18	80	50	18	50	0,950
52.50.30.20	80	50	20	52	1,050
52.63.30.06	65	63	6	25	0,780
52.63.30.08	65	63	8	28	0,800
52.63.30.10	65	63	10	35	0,900
52.63.30.12	80	63	12	42	1,150
52.63.30.14	80	63	14	44	1,200
52.63.30.16	80	63	16	48	1,300
52.63.30.18	80	63	18	50	1,350
52.63.30.20	80	63	20	52	1,400
52.63.30.25	110	63	25	65	2,250
52.63.30.32	110	63	32	72	2,500
52.100.30.06	80	100	6	25	1,580
52.100.30.08	80	100	8	28	1,600
52.100.30.10	80	100	10	35	1,700
52.100.30.12	80	100	12	42	1,950
52.100.30.14	80	100	14	44	2,000
52.100.30.16	100	100	16	48	2,100
52.100.30.18	100	100	18	50	2,150
52.100.30.20	100	100	20	52	2,200
52.100.30.25	100	100	25	65	3,000
52.100.30.32	100	100	32	72	3,300



**Characteristics:**  
Chuck for ER collets DIN 6499/B


HSK-DIN 6499



**For more information see page:**

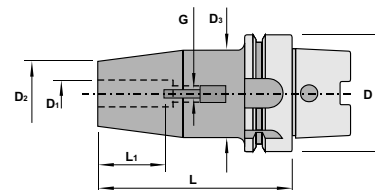
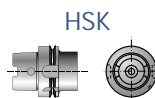
Collets: K.49  
 Clamping nuts: K.53  
 Spanners: K.54

## 52.31

Ref.	L	D	D1	Collet	Size of collets	
52.50.31.32	100	50	50	ER32	2-20	1,000
52.63.31.32	100	63	50	ER32	2-20	1,400
52.63.31.40	120	63	63	ER40	3-26	1,750
52.100.31.32	100	100	50	ER32	2-20	2,600
52.100.31.40	120	100	63	ER40	3-26	2,950



**Characteristics:**  
Shrink fit chucks



## 52.35

Ref.		D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	L	L <sub>1</sub>	G	kg
	52.40.35.06	40	6	21	27	80	36	M5	0,530
	52.40.35.08	40	8	21	27	80	36	M6	0,530
	52.40.35.10	40	10	24	32	80	42	M8	0,580
	52.40.35.12	40	12	24	32	90	47	M10	0,610
	52.40.35.14	40	14	28	34	90	47	M10	0,660
	52.40.35.16	40	16	28	34	90	50	M12	0,700
	52.50.35.06	50	6	21	27	80	36	M5	0,660
	52.50.35.08	50	8	21	27	80	36	M6	0,660
	52.50.35.10	50	10	24	32	85	42	M8	0,720
	52.50.35.12	50	12	24	32	90	47	M10	0,750
	52.50.35.14	50	14	28	34	90	47	M10	0,830
	52.50.35.16	50	16	28	34	95	50	M12	0,860
	52.50.35.18	50	18	33	42	95	50	M12	1,000
	52.50.35.20	50	20	33	42	100	52	M16	1,050
	52.63.35.06.L80	63	6	21	27	80	36	M5	1,050
	52.63.35.06.L120	63	6	21	27	120	36	M5	1,450
	52.63.35.06.L160	63	6	21	27	160	36	M5	1,850
	52.63.35.08.L80	63	8	21	27	80	36	M6	1,050
	52.63.35.08.L120	63	8	21	27	120	36	M6	1,450
	52.63.35.08.L160	63	8	21	27	160	36	M6	1,850
	52.63.35.10.L85	63	10	24	32	85	42	M8	1,100
	52.63.35.10.L120	63	10	24	32	120	42	M8	1,600
	52.63.35.10.L160	63	10	24	32	160	42	M8	2,100
	52.63.35.12.L90	63	12	24	32	90	47	M10	1,150
	52.63.35.12.L120	63	12	24	32	120	47	M10	1,550
	52.63.35.12.L160	63	12	24	32	160	47	M10	2,150
	52.63.35.14	63	14	27	34	90	47	M10	1,220
	52.63.35.16	63	16	27	34	95	50	M12	1,270
	52.63.35.18	63	18	33	42	95	50	M12	1,400
	52.63.35.20	63	20	33	42	100	52	M16	1,450
	52.63.35.25	63	25	44	53	115	58	M20	1,700
	52.63.35.32	63	32	44	53	120	58	M20	2,100
	52.80.35.06	80	6	21	27	85	36	M5	1,660
	52.80.35.08	80	8	21	27	85	36	M6	1,660
	52.80.35.10	80	10	24	32	90	42	M8	1,720
	52.80.35.12	80	12	24	32	95	47	M10	1,750
	52.80.35.14	80	14	28	34	95	47	M10	1,830
	52.80.35.16	80	16	28	34	100	50	M12	1,860
	52.80.35.18	80	18	33	42	100	50	M12	2,000
	52.80.35.20	80	20	33	42	105	52	M16	2,050
	52.80.35.25	80	25	44	53	115	58	M20	2,350
	52.80.35.32	80	32	44	53	120	58	M20	2,750
	52.100.35.06	100	6	21	27	85	36	M5	2,260
	52.100.35.08	100	8	21	27	85	36	M6	2,260
	52.100.35.10	100	10	24	32	90	42	M8	2,320
	52.100.35.12	100	12	24	32	95	47	M10	2,350
	52.100.35.14	100	14	28	34	95	47	M10	2,430
	52.100.35.16	100	16	28	34	100	50	M12	2,460
	52.100.35.18	100	18	33	42	100	50	M12	2,600
	52.100.35.20	100	20	33	42	105	52	M16	2,650
	52.100.35.25	100	25	44	53	115	58	M20	2,950
	52.100.35.32	100	32	44	53	120	58	M20	3,350

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

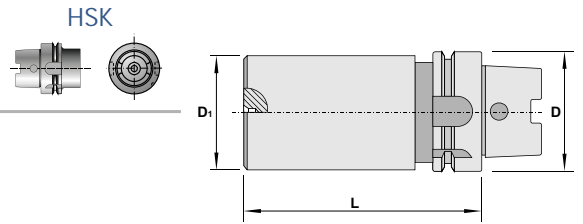
Drills

Boring heads


Arbors and adaptors



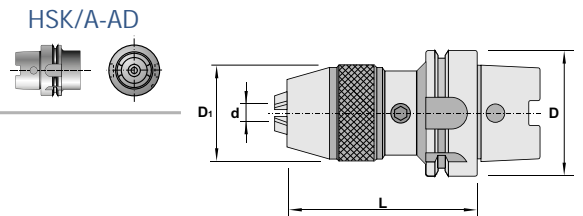
**Characteristics:**  
 Blank boring bars for the manufacture of special tools





## 52.33

Ref.	L	D	D1	 Kg
52.50.33.63	200	50	63	6,500
52.63.33.80	200	63	80	9,500
52.63.33.100	250	63	100	15,100

**Characteristics:**  
 Super precision drill chuck with hexagonal key lock system.

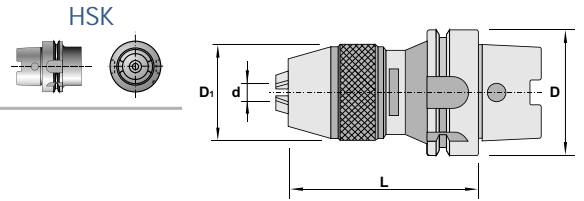


## HX-HSK

Ref.	D	d	D1	Lmin	Lmax		 Kg
HX13-HSK50	50	1-13	53	116,0	127,0	-	1,680
HX13-HSK50/R	50	1-13	53	116,0	127,0	AD	1,680
HX16-HSK50	50	3-16	57	119,0	131,0	-	1,780
HX16-HSK50/R	50	3-16	57	119,0	131,0	AD	1,780
HX13-HSK63	63	1-13	53	115,0	126,0	-	2,200
HX13-HSK63/R	63	1-13	53	115,0	126,0	AD	2,200
HX16-HSK63	63	3-16	57	117,5	129,5	-	2,600
HX16-HSK63/R	63	3-16	57	117,5	129,5	AD	2,600
HX13-HSK100	100	1-13	53	108,5	119,5	-	3,080
HX13-HSK100/R	100	1-13	53	108,5	119,5	AD	3,080
HX16-HSK100	100	3-16	57	111,0	123,0	-	3,160
HX16-HSK100/R	100	3-16	57	111,0	123,0	AD	3,160



**Characteristics:**  
Integral drill chuck with safety  
clamping system



## NPU-HSK

NPU-HSK		D	d	D <sub>1</sub>	L	L	kg
Ref.	NPU13-HSK50	50	1-13	48	120	131	2,100
	NPU13-HSK63	63	1-13	48	120	131	2,300
	NPU16-HSK100	100	3-16	55	134	145	4,400

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

Drills

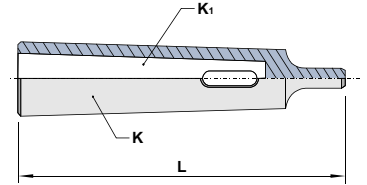
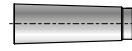
Boring heads

Arbors and adaptors




**Characteristics:**  
 Precision drill chuck arbors

DIN 228/A



### CR

Ref.	K	K1	L	
CR-2x1	MK2	MK1	92	0,100
CR-3x1	MK3	MK1	99	0,200
CR-3x2	MK3	MK2	112	0,200
CR-4x2	MK4	MK2	124	0,450
CR-4x3	MK4	MK3	140	0,400
CR-5x3	MK5	MK3	156	1,200
CR-5x4	MK5	MK4	171	1,050




**Characteristics:**  
 Drill sleeves

DIN 228/A



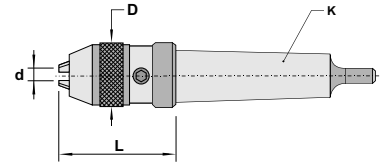
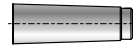
### E

Ref.	K	K1	
E-12/2	MK2	B-12	0,150
E-16/2	MK2	B-16	0,200
E-18/2	MK2	B-18	0,200
E-16/3	MK3	B-16	0,350
E-18/3	MK3	B-18	0,350
E-16/4	MK4	B-16	0,650
E-18/4	MK4	B-18	0,650



**Characteristics:**  
Super precision drill chuck with hexagonal key lock system.

DIN 228/A

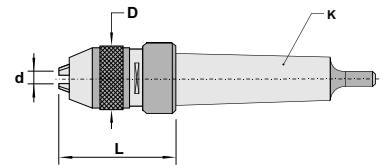


<b>HX-MT</b>		<b>d</b>	<b>K</b>	<b>D</b>	<b>Lmin</b>	<b>Lmax</b>	<b>kg</b>
Ref.	HX13-MT-2	1-13	MT-2	53	95,5	106,5	1,320
	HX16-MT-2	3-16	MT-2	57	98,0	107,0	1,420
	HX13-MT-3	1-13	MT-3	53	95,5	106,5	1,480
	HX16-MT-3	3-16	MT-3	57	98,0	107,0	1,560
	HX13-MT-4	1-13	MT-4	53	95,5	106,5	1,800
	HX16-MT-4	3-16	MT-4	57	98,0	107,0	1,880



**Characteristics:**  
Super precision drill chucks with integrated sleeve.

DIN 228/A



<b>SPS-MT</b>		<b>d</b>	<b>K</b>	<b>Lmin</b>	<b>Lmax</b>	<b>D</b>	<b>kg</b>
Ref.	SPS13-MT3	1-13	MK3	80	92	48	1,350
	SPS16-MT3	3-16	MK3	85	96	54	1,750
	SPS16-MT4	3-16	MK4	85	96	54	2,000

Arbors and adaptors

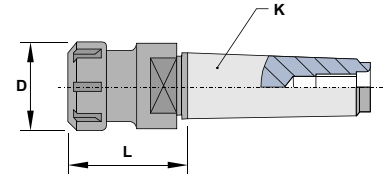
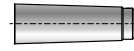




**Characteristics:**

Threaded Morse taper chuck for ER collets DIN 6499/B


DIN 228/A



**For more information see page:**

Collets: K.49  
 Clamping nuts: K.53  
 Spanners: K.54

### 30.31

Ref.	K	L	D	Size of collets	Clamping nut	Collet	
<b>30.03.31.32</b>	MK3	70	50	2-20	2093	ER32	0,600
<b>30.03.31.40</b>	MK3	80	63	4-30	2094	ER40	0,950
<b>30.04.31.32</b>	MK4	60	50	2-20	2093	ER32	0,700
<b>30.04.31.40</b>	MK4	81	63	4-30	2094	ER40	1,200

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

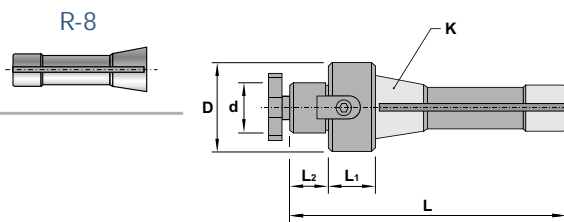
Drills

Boring heads

Arbors and adaptors



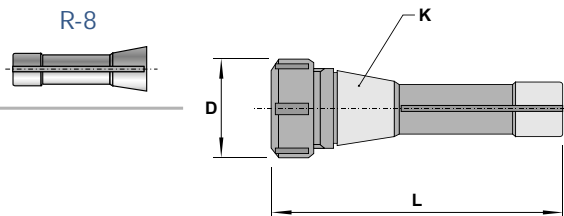
**Characteristics:**  
Mill chuck with fixed drivers



80.16		K	d	D	L	L1	L2	kg
Ref.	80.80.16.16	R8	16	32	137	25	17	0,550
	80.80.16.22	R8	22	41	137	25	19	0,700
	80.80.16.27	R8	27	43	137	25	21	0,900
	80.80.16.32	R8	32	64	143	25	24	1,000
	80.80.16.40	R8	40	70	143	40	27	1,700



**Characteristics:**  
Chuck R-8 taper for ER collets DIN 6499/B



**For more information see page:**  
Collets: K.49  
Clamping nuts: K.53  
Spanners: K.54

80.31		K	L	D	Size of collets	Clamping nut	Collet	kg
Ref.	80.80.31.16	R8	133	28	0,5-10	2090	ER16	0,450
	80.80.31.32	R8	133	50	2-20	2093	ER32	0,550
	80.80.31.40	R8	143	63	4-30	2094	ER40	1,100

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

Drills

Boring heads

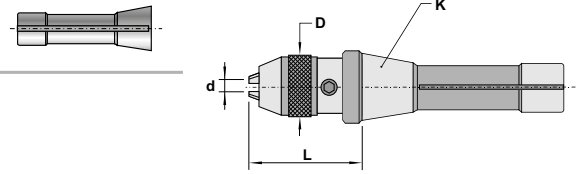
Arbors and adaptors




**Characteristics:**

Super precision drill chuck with hexagonal key lock system.

R-8



**HX-R8**

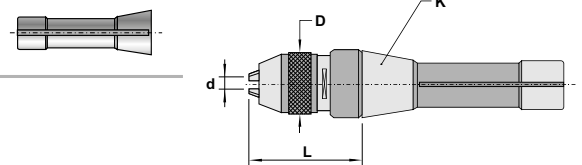
Ref.		d	K	D	Lmin	Lmax	
HX13-R8		1-13	R-8	53	95,0	106,0	1,580
HX16-R8		3-16	R-8	57	97,0	109,5	1,660




**Characteristics:**

Integral drill chuck with safety clamping system

R-8



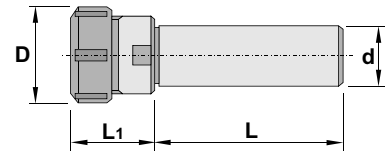
**SPS-R8**

Ref.		d	K	Lmin	Lmax	D	
SPS13-R8		1-13	R-8	65	72	37	1,150



**Characteristics:**  
Chuck with cylindrical shank for ER  
collets DIN 6499/B

DIN 1835-A



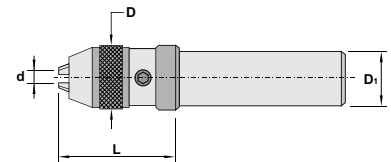
**For more information see page:**  
Collets: K.49  
Clamping nuts: K.53  
Spanners: K.54

00.31		d	D	L	L1	Size of collets	Clamping nut	Collet	kg
Ref.	00.16.31.16	16	22	160	30	1-10	2090	ER16	0,250
	00.20.31.16	20	22	160	30	1-10	2090	ER16	0,400
	00.20.31.32	20	50	100	53	2-20	2093	ER32	0,550
	00.25.31.32	25	50	100	53	2-20	2093	ER32	0,650
	00.32.31.32	32	50	100	53	2-20	2093	ER32	0,550
	00.32.31.40	32	63	130	53	4-30	2094	ER40	1,200
	00.40.31.32	40	50	120	53	2-20	2093	ER32	0,800
	00.40.31.40	40	63	120	60	4-30	2094	ER40	1,350



**Characteristics:**  
Super precision drill chuck with hexagonal key lock  
system.

DIN 1835-A



HX-CIL		d	D1	D	Lmin	Lmax	kg
Ref.	HX13-CIL-20	1-13	20	53	92,5	103,5	1,300
	HX16-CIL-20	3-16	20	57	95,0	107,0	1,400
	HX13-CIL-25	1-13	25	53	92,5	103,5	1,400
	HX16-CIL-25	3-16	25	57	95,0	107,0	1,480
	HX13-CIL-32	1-13	32	53	92,5	103,5	1,560
	HX16-CIL-32	3-16	32	57	95,0	107,0	1,640
	HX13-CIL-40	1-13	40	53	92,5	103,5	1,860
	HX16-CIL-40	3-16	40	57	95,0	107,0	1,940

Inserts

Face milling  
cutters

Square shoulder  
cutters

Slot cutters

Porcupine cutters

Specific applications  
and sets

Profile milling

Solid carbide

Drills

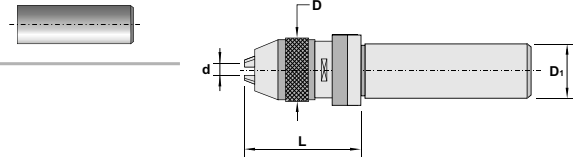
Boring heads

Arbors and  
adaptors



**Characteristics:**  
 Integral drill chuck with safety clamping system

DIN 1835-A

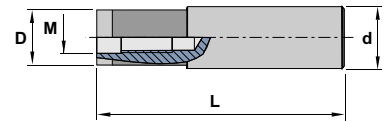


## NPU-CIL

Ref.		d	D1	D	Lmin	Lmax	Kg
NPU08-CIL25		0-8	25	38	101	107	0,850
NPU13-CIL32		1-13	32	48	96	107	2,250
NPU16-CIL40		3-16	40	55	120	131	3,650



**Characteristics:**  
Steel cylindric shanks for modular milling heads

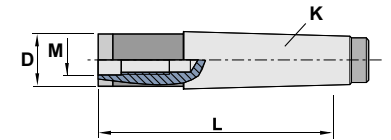


## 00.06

Ref.		d	L	M	D	kg
00.16.06.08		16	73	M8	13	0,090
00.20.06.10		20	80	M10	18	0,150
00.25.06.12		25	86	M12	21	0,260



**Characteristics:**  
Steel Morse shanks for modular milling heads



## 30.06

Ref.		K	L	M	D	kg
30.03.06.08		3	101	M8	13	0,080
30.03.06.10		3	101	M10	18	0,160
30.03.06.12		3	96	M12	21	0,200
30.04.06.12		4	121	M12	21	0,250
30.04.06.16		4	96	M16	28	0,370

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

Drills

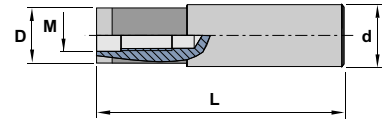
Boring heads

Arbors and adaptors




**Characteristics:**

Heavy metal shanks for modular milling cutters.



### 02.06HM

Ref.	d	L	M	D	 Kg
02.16.06.08HM	16	200	M8	13	0,200
02.20.06.10HM	20	225	M10	18	1,100
02.25.06.12HM	25	270	M12	21	2,100



A large rectangular area containing 25 horizontal lines, intended for writing notes.



Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and sets

Profile milling

Solid carbide

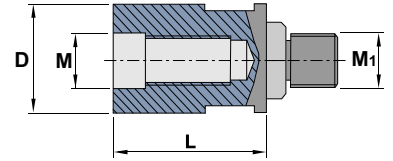
Drills

Boring heads

Arbors and adaptors



**Characteristics:**  
 Front contact extensions for modular tools

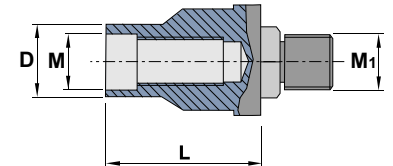


### 06

Ref.	D	L	M	M <sub>1</sub>	Kg
<b>06.08.08</b>	12,7	30	8	8	0,020
<b>06.10.10</b>	17,7	35	10	10	0,050
<b>06.12.12</b>	20,7	40	12	12	0,075
<b>06.16.16</b>	28,7	40	16	16	0,150



**Characteristics:**  
 Front contact reducers for modular tools

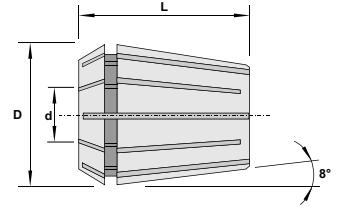
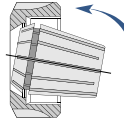


### 06

Ref.	D	L	M	M <sub>1</sub>	Kg
<b>06.08.10</b>	17,7	30	8	10	0,040
<b>06.10.12</b>	20,7	35	10	12	0,060
<b>06.12.16</b>	28,7	40	12	16	0,150
<b>06.08.12</b>	20,7	40	8	12	0,075
<b>06.10.16</b>	28,7	60	10	16	0,240



**Characteristics**  
Collets type (ER) DIN 6499/B



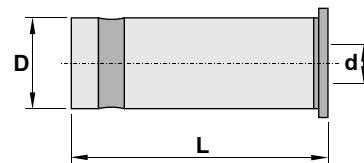
<b>ER</b>		<b>L</b>	<b>D</b>	<b>d</b>	<b>kg</b>	<b>REF</b>	<b>L</b>	<b>D</b>	<b>d</b>	<b>kg</b>	
Ref.	<b>ER1601</b>	27	17,5	1	0,020	Ref.	<b>ER3219</b>	40	33,0	19	0,095
	<b>ER1602</b>	27	17,5	2	0,020		<b>ER3220</b>	40	33,0	20	0,085
	<b>ER1603</b>	27	17,5	3	0,020						
	<b>ER1604</b>	27	17,5	4	0,020		<b>ER4003</b>	46	41,0	3	0,250
	<b>ER1605</b>	27	17,5	5	0,020		<b>ER4004</b>	46	41,0	4	0,255
	<b>ER1606</b>	27	17,5	6	0,020		<b>ER4005</b>	46	41,0	5	0,255
	<b>ER1607</b>	27	17,5	7	0,020		<b>ER4006</b>	46	41,0	6	0,260
	<b>ER1608</b>	27	17,5	8	0,015		<b>ER4007</b>	46	41,0	7	0,260
	<b>ER1609</b>	27	17,5	9	0,015		<b>ER4008</b>	46	41,0	8	0,255
	<b>ER1610</b>	27	17,5	10	0,015		<b>ER4009</b>	46	41,0	9	0,255
							<b>ER4010</b>	46	41,0	10	0,260
	<b>ER2001</b>	31	21,0	1	0,040		<b>ER4011</b>	46	41,0	11	0,270
	<b>ER2002</b>	31	21,0	2	0,040		<b>ER4012</b>	46	41,0	12	0,265
	<b>ER2003</b>	31	21,0	3	0,040		<b>ER4013</b>	46	41,0	13	0,260
	<b>ER2004</b>	31	21,0	4	0,040		<b>ER4014</b>	46	41,0	14	0,255
	<b>ER2005</b>	31	21,0	5	0,040		<b>ER4015</b>	46	41,0	15	0,245
	<b>ER2006</b>	31	21,0	6	0,040		<b>ER4016</b>	46	41,0	16	0,240
	<b>ER2007</b>	31	21,0	7	0,035		<b>ER4017</b>	46	41,0	17	0,250
	<b>ER2008</b>	31	21,0	8	0,035		<b>ER4018</b>	46	41,0	18	0,230
	<b>ER2009</b>	31	21,0	9	0,030		<b>ER4019</b>	46	41,0	19	0,225
	<b>ER2010</b>	31	21,0	10	0,025		<b>ER4020</b>	46	41,0	20	0,215
	<b>ER2011</b>	31	21,0	11	0,025		<b>ER4021</b>	46	41,0	21	0,210
	<b>ER2012</b>	31	21,0	12	0,020		<b>ER4022</b>	46	41,0	22	0,200
	<b>ER2013</b>	31	21,0	13	0,020		<b>ER4023</b>	46	41,0	23	0,190
							<b>ER4024</b>	46	41,0	24	0,180
	<b>ER2501</b>	35	26,0	1	0,075		<b>ER4025</b>	46	41,0	25	0,170
	<b>ER2502</b>	35	26,0	2	0,075		<b>ER4026</b>	46	41,0	26	0,155
	<b>ER2503</b>	35	26,0	3	0,075						
	<b>ER2504</b>	35	26,0	4	0,070						
	<b>ER2505</b>	35	26,0	5	0,070						
	<b>ER2506</b>	35	26,0	6	0,070						
	<b>ER2507</b>	35	26,0	7	0,070						
	<b>ER2508</b>	35	26,0	8	0,070						
	<b>ER2509</b>	35	26,0	9	0,065						
	<b>ER2510</b>	35	26,0	10	0,065						
	<b>ER2511</b>	35	26,0	11	0,065						
	<b>ER2512</b>	35	26,0	12	0,060						
	<b>ER2513</b>	35	26,0	13	0,060						
	<b>ER2514</b>	35	26,0	14	0,055						
	<b>ER2515</b>	35	26,0	15	0,045						
	<b>ER2516</b>	35	26,0	16	0,045						
	<b>ER3202</b>	40	33,0	2	0,130						
	<b>ER3203</b>	40	33,0	3	0,135						
	<b>ER3204</b>	40	33,0	4	0,140						
	<b>ER3205</b>	40	33,0	5	0,140						
	<b>ER3206</b>	40	33,0	6	0,135						
	<b>ER3207</b>	40	33,0	7	0,135						
	<b>ER3208</b>	40	33,0	8	0,135						
	<b>ER3209</b>	40	33,0	9	0,140						
	<b>ER3210</b>	40	33,0	10	0,135						
	<b>ER3211</b>	40	33,0	11	0,130						
	<b>ER3212</b>	40	33,0	12	0,130						
	<b>ER3213</b>	40	33,0	13	0,125						
	<b>ER3214</b>	40	33,0	14	0,120						
	<b>ER3215</b>	40	33,0	15	0,115						
	<b>ER3216</b>	40	33,0	16	0,110						
	<b>ER3217</b>	40	33,0	17	0,105						
	<b>ER3218</b>	40	33,0	18	0,100						

- Inserts
- Face milling cutters
- Square shoulder cutters
- Slot cutters
- Porcupine cutters
- Specific applications and sets
- Profile milling
- Solid carbide
- Drills
- Boring heads
- Arbors and adaptors



### Characteristics

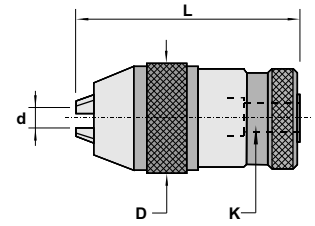
Collets type C



<b>C</b>		<b>d</b>	<b>D</b>	<b>L</b>	<b>kg</b>
Ref.	<b>C2006</b>	6	20	55	0,100
	<b>C2008</b>	8	20	55	0,090
	<b>C2010</b>	10	20	55	0,080
	<b>C2012</b>	12	20	55	0,065
	<b>C2016</b>	16	20	55	0,045
	<b>C3206</b>	6	32	65	0,255
	<b>C3208</b>	8	32	65	0,250
	<b>C3210</b>	10	32	65	0,260
	<b>C3212</b>	12	32	65	0,255
	<b>C3216</b>	16	32	65	0,235
	<b>C3220</b>	20	32	65	0,215
	<b>C3225</b>	25	32	65	0,155



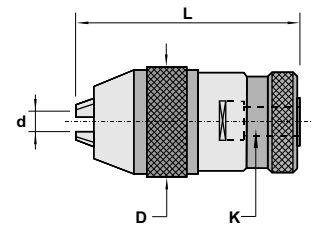
**Characteristics:**  
Keyless drill chucks, precision class  
DIN 238



<b>SP-B</b>							
Ref.		d	K	Lmin	Lmax	D	kg
	SP08-B12	0-8	B12	67	74	38	0,450
	SP10-B12	0-10	B12	81	89	43	0,700
	SP10-B16	0-10	B16	81	89	43	0,700
	SP13-B16	1-13	B16	88	103	49	1,000
	SP16-B16	3-16	B16	95	107	55	1,300
	SP16-B18	3-16	B18	95	107	55	1,300



**Characteristics:**  
Keyless drill chucks, with supplementary gripping tongue,  
precision class  
DIN 238



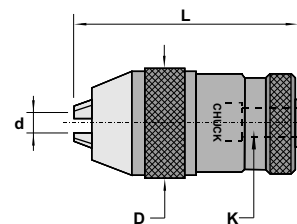
<b>SPX-B</b>							
Ref.		d	K	Lmin	Lmax	D	kg
	SPX08-B12	0-8	B12	67	74	38	0,700
	SPX13-B16	1-13	B16	91	103	49	1,200
	SPX16-B16	3-16	B16	95	107	55	1,550
	SPX16-B18	3-16	B18	95	107	55	1,550

- Inserts
- Face milling cutters
- Square shoulder cutters
- Slot cutters
- Porcupine cutters
- Specific applications and sets
- Profile milling
- Solid carbide
- Drills
- Boring heads
- Arbors and adaptors



**Characteristics:**

Keyless drill chucks, standard class



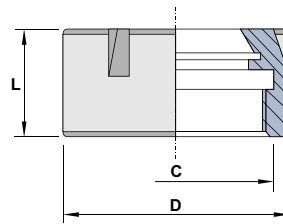
## CK-B

Ref.		d	K	Lmin	Lmax	D	Kg
CK08-B12		0-8	B12	61	68	34	0,300
CK10-B12		0-10	B12	73	80	39	0,450
CK13-B16		1-13	B16	86	95	44	0,650
CK16-B16		3-16	B16	102	115	51	1,100
CK16-B18		3-16	B18	102	115	51	1,100
CK20-B18		5-20	B18	127	140	64	2,250



**Characteristics:**  
Clamping nuts DIN 6499/E

**Applications:**  
Clamping nuts for collets ER16 and ER20.



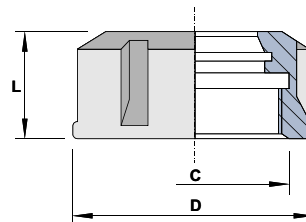
## 2090..2091

Ref.		L	C	D	Collet	kg
2090		18	M19X1	22	ER16	0,020
2091		19	M24X1	28	ER20	0,030



**Characteristics:**  
Clamping nuts DIN 6499/E

**Applications:**  
Clamping nuts for collets ER25 to ER40.



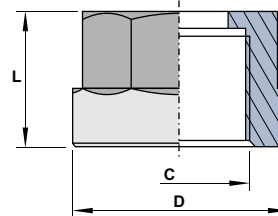
## 2092..2094

Ref.		L	C	D	Collet	kg
2092		20,0	M32x1,5	42	ER25	0,100
2093		22,3	M40x1,5	50	ER32	0,150
2094		25,3	M50x1,5	63	ER40	0,270



**Characteristics:**  
Clamping nuts DIN 6499/E

**Applications:**  
Clamping nuts for collets ER16 and ER20.



## 2190..2191

Ref.		L	C	D	Collet	kg
2190		17	M22x1,5	28	ER16	0,030
2191		19	M25x1,5	34	ER20	0,060

Inserts



**Characteristics:**  
Spanners for clamping nuts

**Applications:**  
For 2190 and 2191 clamping nuts



Face milling cutters

## 5116..5120

### Clamping nut



Ref.	5116	2190	0,125
	5120	2191	0,150

Square shoulder cutters

Slot cutters



**Characteristics:**  
Spanners for clamping nuts

**Applications:**  
For 2090 and 2091 clamping nuts



Porcupine cutters

## 5216..5220

### Clamping nut



Ref.	5216	2090	0,040
	5220	2091	0,050

Specific applications and sets

Profile milling



**Characteristics:**  
Spanners for clamping nuts

**Applications:**  
For 2092, 2093 and 2094 clamping nuts



Solid carbide

## 5225..5240

### Clamping nut



Ref.	5225	2092	0,220
	5232	2093	0,370
	5240	2094	0,500

Drills

**Characteristics:**  
Hexagonal key lock system

Boring heads



**Applications:**  
For HX system Arbors.

Arbors and adaptors

## HX

h

L

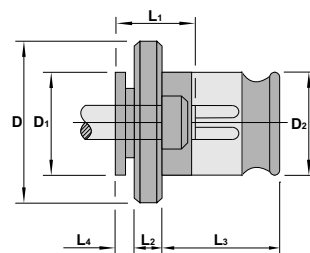
H



Ref.	HX-12	9	100	100	0,070
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**Characteristics:**  
Quick-change tap adaptor

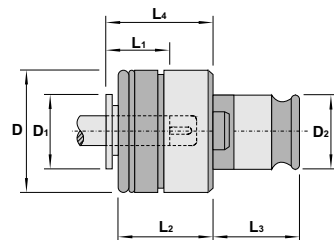


<b>70..73</b>		Thread range	D	D1	D2	L1	L2	L3	L4	
Ref.	<b>70XX</b>	M1-M10	22	13	13	15	4	19,5	7	0,020 - 0,040
	<b>71XX</b>	M3-M12	30	19	19	17	4	21,5	7	0,045 - 0,060
	<b>72XX</b>	M8-M20	48	30	31	30	5	35,0	11	0,195 - 0,265
	<b>73XX</b>	M14-M33	70	48	48	44	6	55,5	14	0,720 - 0,830

"xx": Two digits indicating the sizes of shank diameter and square of the tap, according to tables on page K.56



**Characteristics:**  
Quick-change tap adaptor with clutch



<b>74..77</b>		Thread range	D	D1	D2	L1	L2	L3	L4	
Ref.	<b>74XX</b>	M1-M10	22	13	13	15	20	19,5	21	0,060 - 0,100
	<b>75XX</b>	M3-M12	30	19	19	17	25	21,5	25	0,140 - 0,150
	<b>76XX</b>	M8-M20	48	30	31	30	31	35,0	34	0,495 - 0,510
	<b>77XX</b>	M14-M33	70	48	48	44	41	55,5	45	1,525 - 1,500

"xx": Two digits indicating the sizes of shank diameter and square of the tap, according to tables on page K.56



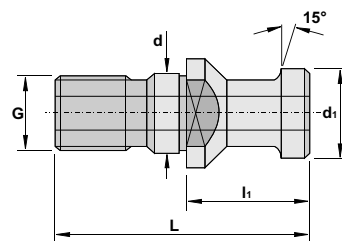
### Table of adaptors

DIN	Ø x □	DIN 352	DIN 5156/5157	DIN 371	DIN 374	DIN 376	DIN 371	DIN 374/376
01	2,5 x 2,1	M1/1,8		M 1/1,8	M3,5	M3,5	1/16" Nr. 0/1	
02	2,8 x 2,1	M2 M2,2 M2,5		M2 M2,2 M2,5	M4	M4	3/32" Nr. 2 Nr. 3	
03	3,5 x 2,7	M3		M3	M5	M5	1/8" Nr. 4 Nr. 5	
04	4 x 3	M3,5		M3,5	M5,5	M5,5	Nr. 6	
05	4,5 x 3,4	M4		M4	M6	M6	5/32" Nr. 8	
06	5,5 x 4,3	-			M7	M7		
07	6 x 4,9	M4,5 M5 M6 M7 M8	G 1/16"	M4,5 M5 M6	M8	M8	Nr. 10/12 3/16" 7/32"	1/4" 5/16"
08	7 x 5,5	M10	G 1/8"	M7	M10	M10	1/4"	3/8"
09	8 x 6,2	M11		M8	M11	M11	5/16"	7/16"
10	9 x 7	M12		M9	M12	M12	3/8"	1/2"
11	10 x 8			M10				
12	11 x 9	M14	G 1/4"		M14	M14		9/16"
13	12 x 9	M16	G 3/8"		M16	M16		5/8"
14	14 x 11	M18			M18	M18		11/16" 3/4"
15	16 x 12	M20	G 1/2"		M20	M20		13/16"
16	18 x 14,5	M22 M24	G 5/8"		M22 M24	M22 M24		7/8" 15/16"
17	20 x 16	M27	G 3/4"		M27	M27		1"
18	22 x 18	M30	G 7/8"		M30	M30		1 1/8"
19	25 x 20	M33	G 1"		M33	M33		1 1/4"
20	28 x 22	M36	G 1 1/8 "		M36	M36		1 3/8"
21	32 x 24	M39 M42	G 1 1/4 "		M39 M42	M39 M42		1 1/2" 1 5/8"
22	36 x 29	M45 M48	G 1 3/8" G 1 1/2"		M45 M48	M45 M48		1 3/4" 1 7/8"

ISO 529	Ø x □	M - MF		UNC - UNF		BSW - BSF		BA
		Reduced Shank	Reinforced Shank	Reduced Shank	Reinforced Shank	Reduced Shank	Reinforced Shank	Reduced Shank
30	2,24 x 1,8	M3		Nr. 5		1/8		
31	2,5 x 2,0	M3,5	M1/2	Nr. 6	Nr. 0 Nr. 1			Nr. 11 Nr. 10 Nr. 9
32	2,8 x 2,24		M2,2 M2,5		Nr. 2 Nr. 3			Nr. 8 Nr. 7 Nr. 6
33	3,15 x 2,5	M4	M3	Nr. 8	Nr. 4 Nr. 5		1/8	Nr. 5
34	3,55 x 2,8	M4,5	M3,5	Nr. 10	Nr. 6	3/16		Nr. 4
35	4,0 x 3,15	M5	M4	Nr. 12		7/32		
36	4,5 x 3,55	M6	M4,5	1/4	Nr. 8	1/4		Nr. 3
37	5,0 x 4,0		M5		Nr. 10		3/16	Nr. 2
38	5,6 x 4,5	M7			Nr. 12	9/32	7/32	Nr. 1
39	6,3 x 5,0	M8	M6	5/16	1/4	5/16	1/4	Nr. 0
40	7,1 x 5,6	M9	M7	3/8		3/8	9/32	
41	8,0 x 6,3	M10	M8	7/16	5/16	7/16	5/16	
42	9,0 x 7,1	M12	M9	1/2		1/2		
11	10 x 8,0		M10		3/8		3/8	
43	11,2 x 9,0	M14		9/16		9/16		
44	12,5 x 10	M16		5/8		5/8		
45	14 x 11	M18 M20		3/4		11/16 3/4		
46	16 x 12,5	M22		7/8		7/8		
47	18 x 14	M24		1		1		
17	20 x 16	M27 M30		1 1/8		1 1/8		
48	22,4 x 18	M33		1 1/4		1 1/4		
19	25 x 20	M36		1 3/8		1 3/8		
49	28 x 22,4	M39 M42		1 1/2		1 1/2		
50	31,5 x 25	M45 M48		1 3/4		1 3/4		
51	35,5 x 28	M52		2		2		



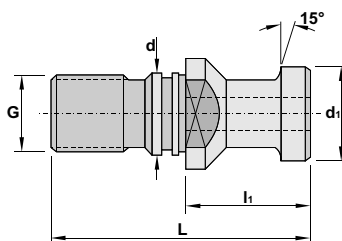
**Characteristics:**  
Pull studs  
DIN 69872 - FORM A



1960..1961		ISO	G	d	d1	L	l1	⚖️
Ref.	1960	40	M16	17	19	54	26	0,070
	1961	50	M24	25	28	74	34	0,200



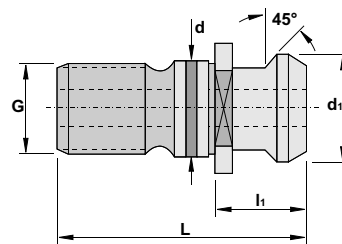
**Characteristics:**  
Pull studs  
DIN 69872 - FORM B



1962..1963		ISO	G	d	d1	L	l1	⚖️
Ref.	1962	40	M16	17	19	54	26	0,075
	1963	50	M24	25	28	74	34	0,250



**Characteristics:**  
Pull studs  
ISO 7388/2 - FORM B

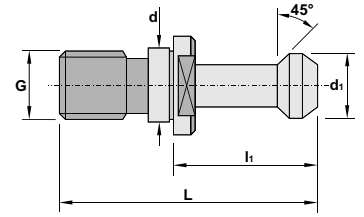


1964..1965		ISO	G	d	d1	L	l1	⚖️
Ref.	1964	40	M16	17	18,95	44,5	16,40	0,050
	1965	50	M24	25	29,10	65,5	25,55	0,200

Inserts



**Characteristics:**  
 Pull studs  
 MAS BT - TYPE I



Face milling cutters

## 1966..1967

Ref.	ISO	G	d	d1	L	l1	Kg
1966	40	M16	17	15	60	35	0,070
1967	50	M24	25	23	85	45	0,250

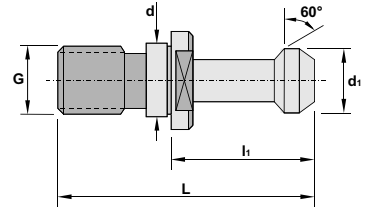
Square shoulder cutters

Slot cutters

Porcupine cutters



**Characteristics:**  
 Pull studs  
 MAS BT - TYPE II



Specific applications and sets

## 1968..1969

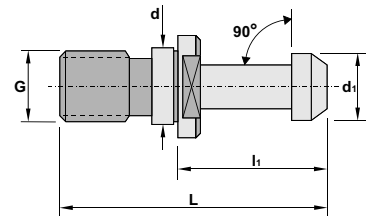
Ref.	ISO	G	d	d1	L	l1	Kg
1968	40	M16	17	15	60	35	0,070
1969	50	M24	25	23	85	45	0,300

Profile milling

Solid carbide



**Characteristics:**  
 Pull studs  
 MAS BT - TYPE III



Drills

Boring heads

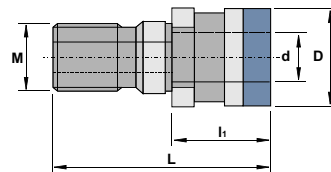
## 1970..1971


Ref.	ISO	G	d	d1	L	l1	Kg
1970	40	M16	17	15	60	35	0,070
1971	50	M24	25	23	85	45	0,250

Arbors and adaptors

**Characteristics:**

Pull studs  
DIN 2080

**1972..1974**

Ref.		M	d	D	l <sub>1</sub>	L	
1972		M16	M16	25,00	53	25	0,080
1973		M16	M16	25,00	56	28	0,090
1974		M24	M24	39,29	68	25	0,200

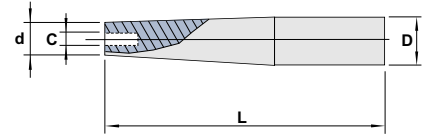
Inserts



Face milling cutters

**Characteristics:**

Complete case with CLS extensions and spanner



Square shoulder cutters

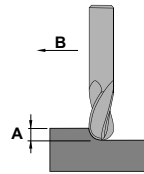
## 00.32

Ref.	C	d	L	D	Kg
00.20.32.06	6	12	150	20	0,180
00.20.32.08	8	15	150	20	0,350
00.20.32.10	10	18	150	20	0,450
00.20.32.12	12	20	150	20	0,530

Slot cutters

**CUTTING CONDITIONS SUGGESTED**

Ref.	A	B
00.20.32.06	1,0	0,05 x Z
00.20.32.08	1,0	0,05 x Z
00.20.32.10	1,5	0,05 x Z
00.20.32.12	1,5	0,05 x Z



	5204	5201
	5204	5201
	5205	5201
	5205	5201

Porcupine cutters

**Instructions:**

To obtain from CLS extensions a proper operation is very important to insert the end mill completely. CLS handle could get damaged due to a bad end mill position.



Specific applications and sets

Profile milling



**Characteristics:**

Strong hold milling chucks and collets

Solid carbide

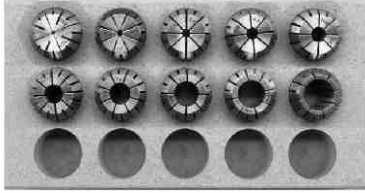
## SET C32

Ref.	Composition	Kg
SET BT40 C20	1 49.40.34.20 + 5 collets C20: Ø6, 8, 10, 12, 16	4,500
SET TC40 C20	1 47.40.34.20 + 5 collets C20: Ø6, 8, 10, 12, 16	4,500
SET BT40 C32	1 49.40.34.32 + 7 collets C32: Ø6, 8, 10, 12, 16, 20, 25	6,800
SET TC40 C32	1 47.40.34.32 + 7 collets C32: Ø6, 8, 10, 12, 16, 20, 25	6,700
SET BT50 C32	1 49.50.34.32 + 7 collets C32: Ø6, 8, 10, 12, 16, 20, 25	9,300
SET TC50 C32	1 47.50.34.32 + 7 collets C32: Ø6, 8, 10, 12, 16, 20, 25	9,150

Drills

Boring heads

Arbors and adaptors

**Characteristics:**

Set of collets in case type (ER) DIN 6499/B

<b>SER</b>		<b>Size of collets</b>	<b>kg</b>
Ref.	<b>SER16</b>	ER16 = 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10	0,250
	<b>SER20</b>	ER20 = 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13	0,650
	<b>SER25</b>	ER25 = 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 - 16	1,600
	<b>SER32</b>	ER32 = 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 20	2,500
	<b>SER40</b>	ER40 = 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 20 - 21 - 22 - 23 - 24 - 25 - 26	5,600

**Characteristics:**

Complete case with chuck, spanner and collets

<b>SET</b>		<b>Chuck</b>	<b>Collet</b>	<b>Size of collets</b>	<b>Clamping nut</b>	<b>kg</b>
Ref.	<b>SET 443016</b>	44.30.31.16	ER16	10 (1-10)	2090	0,950
	<b>SET 443020</b>	44.30.31.20	ER20	12 (2-13)	2091	1,300
	<b>SET 443025</b>	44.30.31.25	ER25	15 (2-16)	2092	2,300
	<b>SET 443032</b>	44.30.31.32	ER32	18 (3-20)	2093	4,750
	<b>SET 443040</b>	44.30.31.40	ER40	23 (4-26)	2094	9,000
	<b>SET 444032</b>	44.40.31.32	ER32	18 (3-20)	2093	5,200
	<b>SET 444040</b>	44.40.31.40	ER40	23 (4-26)	2094	9,200
	<b>SET 445032</b>	44.50.31.32	ER32	18 (3-20)	2093	7,200
	<b>SET 445040</b>	44.50.31.40	ER40	23 (4-26)	2094	12,550
	<b>SET 474032</b>	47.40.31.32	ER32	18 (3-20)	2093	5,000
	<b>SET 474040</b>	47.40.31.40	ER40	23 (4-26)	2094	9,350
	<b>SET 475032</b>	47.50.31.32	ER32	18 (3-20)	2093	7,200
	<b>SET 475040</b>	47.50.31.40	ER40	23 (4-26)	2094	11,850
	<b>SET 494032</b>	49.40.31.32	ER32	18 (3-20)	2093	5,100
	<b>SET 494040</b>	49.40.31.40	ER40	23 (4-26)	2094	9,250
	<b>SET 495032</b>	49.50.31.32	ER32	18 (3-20)	2093	7,900
	<b>SET 495040</b>	49.50.31.40	ER40	23 (4-26)	2094	12,350