

Arbors and adaptors

Inserts

Face milling
cutters

Square shoulder
cutters

Slot cutters

Porcupine cutters
and sets

Specific applications
and sets

Profile milling

Solid carbide

Drills

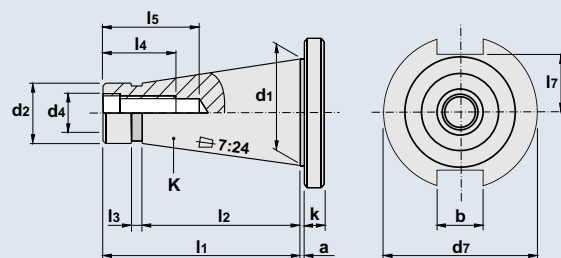
Boring heads

Arbors and
adaptors

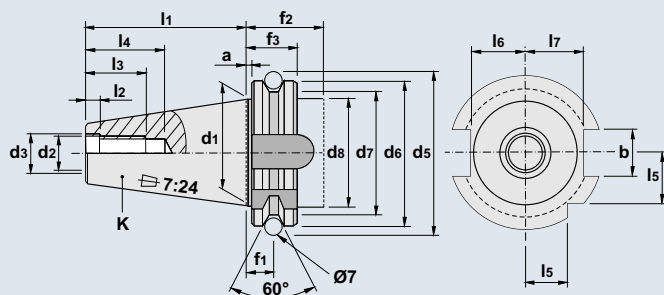


Arbors and adaptors

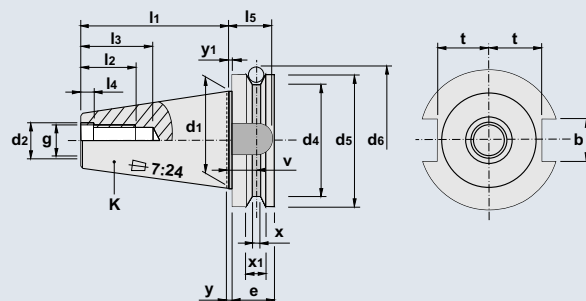
Technical information	K.02
Contents	K.04
Assembly fixture	K.07
DIN 2080	K.08
DIN 69871/A	K.14
MAS BT	K.23
HSK	K.32
DIN 228/A	K.38
R-8	K.41
Cylindrical	K.43
Collets	K.49
Drill chucks	K.51
Accessories	K.53
Sets	K.60

DIN 2080

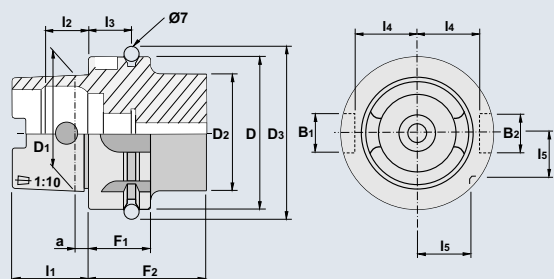
K	a ±0,2	b H12	d1	d2	d4	d7	k	l1	l2	l3	l4	l5 min	l7 max
30	1,6	16,1	31,75	17,4	M12	50,0	8	68,4	48,4	3	24	33,5	16,2
40	1,6	16,1	44,45	25,3	M16	63,0	10	93,4	65,4	5	32	42,5	22,5
45	3,2	19,3	57,15	32,4	M20	80,0	12	106,8	82,8	6	40	52,5	29,0
50	3,2	25,7	69,85	39,6	M24	97,5	12	126,8	101,8	8	47	61,5	35,3
60	3,2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

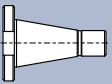
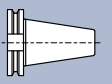
MAS BT

K	D1	l1 ±0,2	d2 H8	g ^{6H}	l2 min	l3 min	l4 +0,5/0	b H12	l5 min	t 0/-0,2	D4	D5 H8	e	v ±0,1	x	x1 ±0,1	y ±0,4	y1 ±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

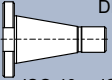
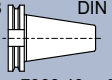
HSK

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

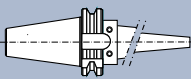
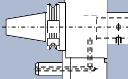
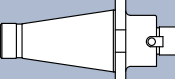
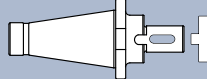
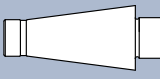
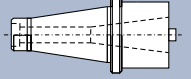
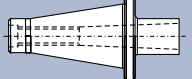
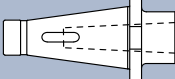
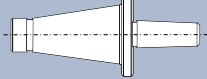
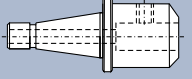
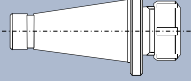
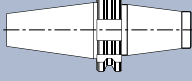
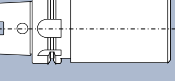
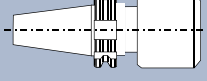
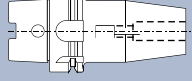
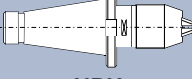
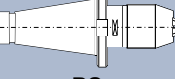
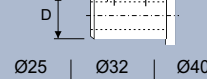
44**1****30****2****16****3****16****4****1**

Short cylindric  00	Short Morse  30	DIN 2080  44	ISO 7388  47
ISO  49	HSK  52	R-8  80	

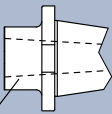
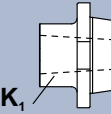
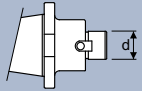
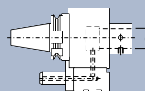
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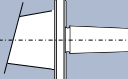
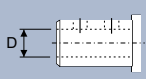
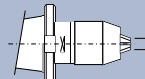
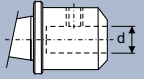
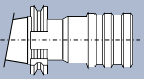
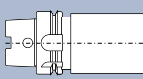
Short cylindric  Ø16 Ø20 Ø25 Ø32 Ø40 16 20 25 32 40	Short Morse  MK2 MK3 MK4 MK5 02 03 04 05	ISO  ISO 30 ISO 40 ISO 50 30 40 50	ISO 7388  7388 30 7388 40 7388 50 30 40 50
BT System  BT 30 BT 40 BT 50 30 40 50	HSK  50 63 100	R-8  80	 21

3

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

4

K₁ - ISO			K₁ - MORSE											
														
30 ISO 40			01 MK1 02 MK2 03 MK3 04 MK4			Ø16 Ø22 Ø27 Ø32 Ø40 Ø60 16 22 27 32 40 60			Ø25 Ø32 Ø40 25 32 40			ER16 16 ER20 20 ER25 25 ER32 32 ER40 40		
40 ISO 40														

																	
B12	B16	B18	Ø16	Ø20	Ø25	Ø32	Ø8	Ø13	Ø16	Ø6	Ø32	M4-M12	M8-M20	M14-M33	Ø63	Ø80	Ø100
12	16	18	16	20	25	32	8	13	16	6	32	12	20	33	63	80	100

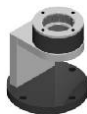
Assembly fixture

02.001
Adjustable



Page K.07

02.003
Flat



Page K.07

DIN 2080

44.16
Mill chuck



Page K.08

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



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44.26
Drill adaptor



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44.28
Drill chuck adaptor



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44.30
End mill adaptor



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44.31
Chuck taper for collets



Page K.12

HX-DIN Drill chuck with
hexagonal key lock system



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NPU-DIN
Integral drill chuck



Page K.13

DIN 69871/A

47.06
Modular mill adaptor



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47.10
Cooling fluid supply unit



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47.16
Mill chuck



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47.16L
Mill chuck (Long)



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47.22
ISO Taper adaptor



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47.23
Mill adaptor



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47.26
Drill adaptor



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47.28
Drill chuck adaptor



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47.30
End mill adaptor



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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



Page K.23

49.10
Cooling fluid supply unit



Page K.24

49.16
Mill chuck



Page K.25

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



Page K.28

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

PS-BT High precision drill chuck

Page K.31

HSK**52.06**
Modular mill adaptor

Page K.32

52.16
Mill chuck

Page K.32

52.18
Mill chuck

Page K.33

52.26
Drill adaptor

Page K.33

52.30
End mill adaptor

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52.31
Chuck for ER collets

Page K.34

52.33
Blank boring bars

Page K.36

52.35
Shrink fit chucks

Page K.35

HX-HSK Drill chuck with hexagonal key lock system

Page K.36

NPU-HSK
Drill chuck

Page K.37

DIN 2228/A**CR**
Drill chucks

Page K.38

E
Drill sleeves

Page K.38

HX-MT Drill chuck with hexagonal key lock system

Page K.39

SPS-MT
Drill chuck

Page K.39

30.31
Chuck for ER collets

Page K.40

R-8**80.16**
Mill chuck

Page K.41

80.31
Taper for ER collets

Page K.41

HX-R8 Drill chuck with hexagonal key lock system

Page K.42

SPS-R8
Drill chuck

Page K.42

Cylindrical**00.31**
Chuck for ER collets

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HX-CIL Drill chuck with hexagonal key lock system

Page K.43

NPU-CIL
Drill chuck

Page K.44

00.06
Modular cylindric shank

Page K.45

30.06
Modular Morse shank

Page K.45

06SC Shank for milling heads

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16SC Cylindrical shank for milling heads

Page K.46

06HM Cylindrical shank for milling heads

Page K.47

06 Front contact extensions

Page K.48

06 Front contact reducers

Page K.48

Collets**ER**
Collets

Page K.49

C
Collets

Page K.50

Drill chucks

SP-B
Keyless drill chucks

Page K.51

SPX-B
Keyless drill chucks

Page K.51

CK-B
Keyless drill chucks

Page K.52

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

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HX
Spanner

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70XX..73XX
Quick-change

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74XX..77XX
Quick-change

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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

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1968..1969
Pull studs

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1970..1971
Pull studs

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1972..1974
Pull studs

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Sets

00.32 (CLS)
Extensions

Page K.60

SET C-32 Mill chuck

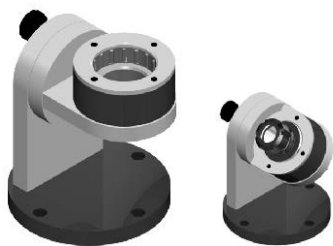
Page K.60

SER Collets ER

Page K.61

SET Mill chuck

Page K.61



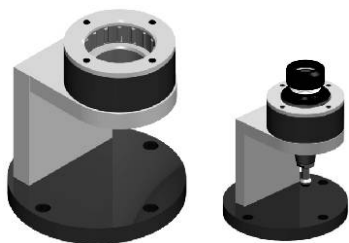
Characteristics:
Adjustable assembly fixture

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
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

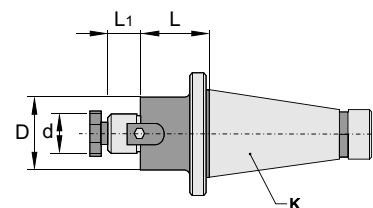
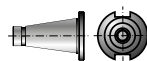
Solid carbide

Drills

Boring heads

Arbors and
adaptors
Characteristics:
 Mill chuck ISO taper with fixed drivers

DIN 2080

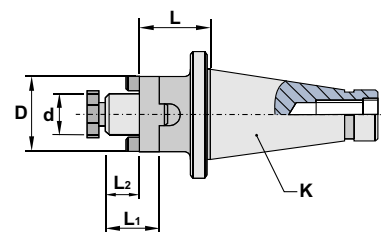
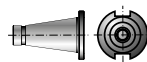


44.16

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

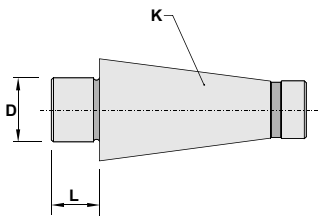


44.18

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
44.40.18.22	50	22	40	55	31	19	3,150
44.40.18.27	50	27	48	55	33	21	3,300
44.40.18.32	50	32	58	55	38	24	3,650
44.40.18.40	50	40	70	55	41	27	4,150



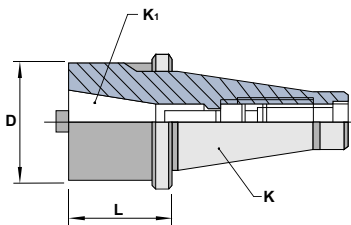
Characteristics:
Centering plug arbor



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



44.22						
		K	K1	D	L	
Ref.	44.40.22.30	40	30	50	50	1,150
	44.50.22.40	50	40	63	50	4,500

Inserts

Face milling
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

Solid carbide

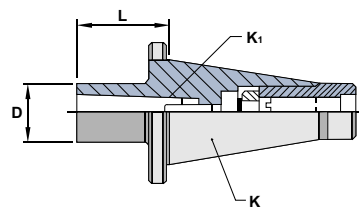
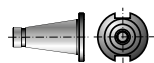
Drills

Boring heads

Arbors and
adaptors**Characteristics:**

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

DIN 2080



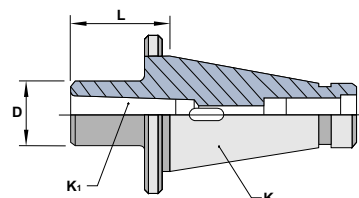
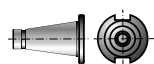
44.23

Ref.		K	K ₁	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



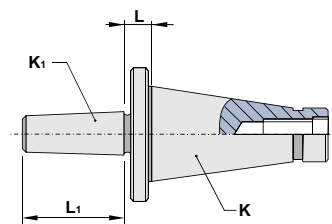
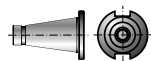
44.26

Ref.		K	K ₁	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



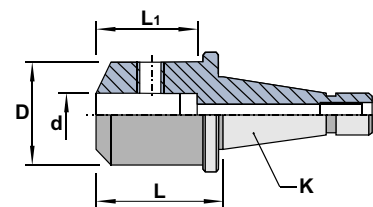
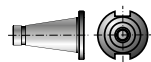
44.28

		K	K ₁	L	L ₁	
Ref.	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

		K	d	D	L	L ₁	
Ref.	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

Face milling
cuttersSquare shoulder
cutters

Slot cutters

Percupine cutters

Specific applications
and sets

Profile milling

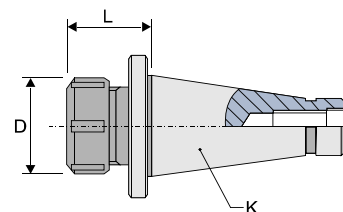
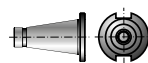
Solid carbide

Drills

Boring heads

Arbors and
adaptors**Characteristics:**

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

DIN 2080**For more information see page:**

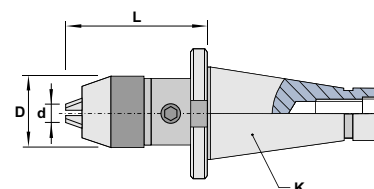
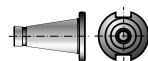
Collets: K.49
 Clamping nuts: K.53
 Spanners: K.54

44.31

		K	L	D	Size of collets	Clamping nut	Collet	
Ref.	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:**

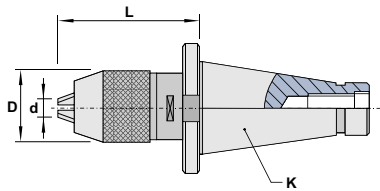
Super precision drill chuck with hexagonal key
 lock system.

DIN 2080**HX-DIN**

		K	d	D	L _{min}	L _{max}	
Ref.	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



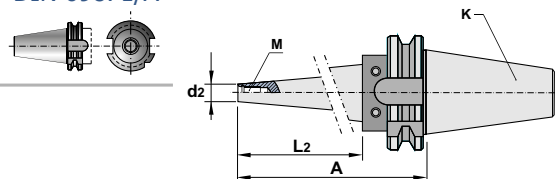
Characteristics:
Integral drill chuck with safety clamping system



NPU-DIN							
		K	d	D	Lmin	Lmax	
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.

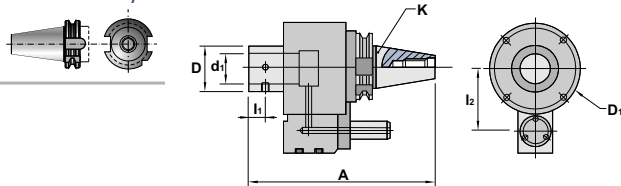
DIN 69871/A**47.06**

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



Characteristics:
Colling fluid supply unit

DIN 69871/A

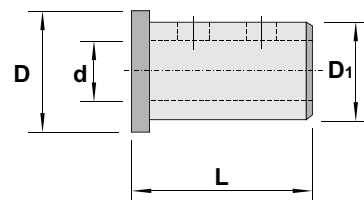


47.10

		K	d ₁	A	D	D ₁	l ₁	l ₂		
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 ₁	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
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

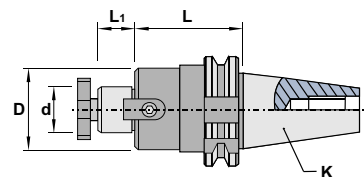
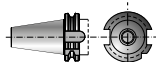
Solid carbide

Drills

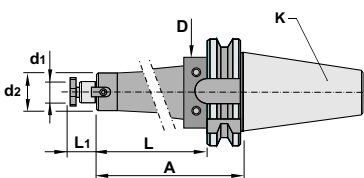
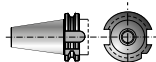
Boring heads

Arbors and
adaptors**Characteristics:**

Mill chuck DIN 69871/A taper with fixed drivers.

DIN 69871/A**47.16**

Ref.	K	d	D	L	L1	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

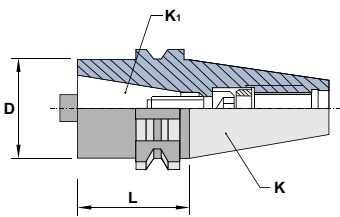
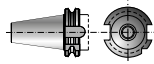
**Characteristics:**Mill chuck DIN 69871/A taper with fixed drivers.
(Long)**DIN 69871/A****47.16L**

Ref.	K	D	A	L	L1	d1	d2	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



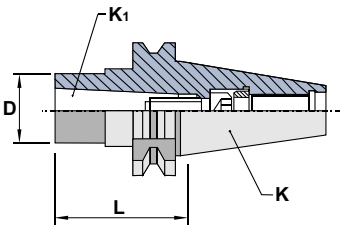
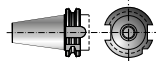
47.22

		K	K ₁	D	L	 kg
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 ₁	D	L	 kg
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

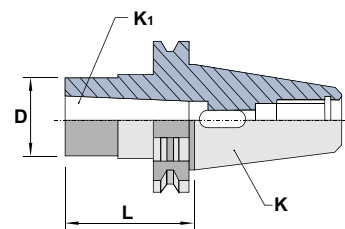
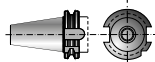
Boring heads

Arbors and
adaptors

Characteristics:

Drill adaptor from DIN 69871/A taper to Morse taper

DIN 69871/A

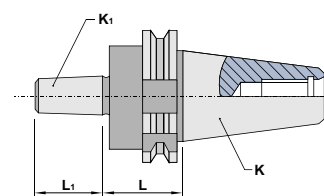
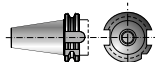

47.26

		K	K1	D	L	 Kg
Ref.	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

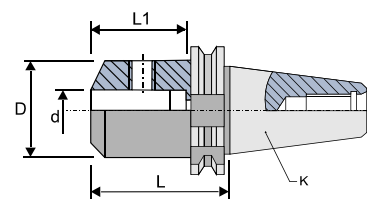
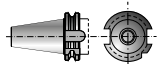

47.28

		K	K1	L	L1	 Kg
Ref.	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



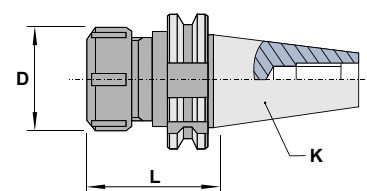
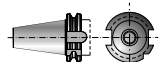
47.30

		K	d	D	L	L1	
Ref.	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

		K	L	D	Size of collets	Clamping nut	Collet	
Ref.	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
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

Solid carbide

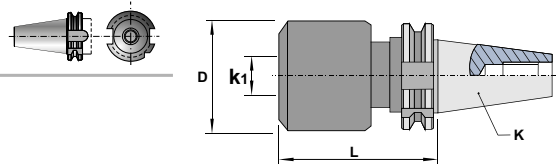
Drills

Boring heads

Arbors and
adaptors

Characteristics:
 Strong hold milling chucks

DIN 69871/A



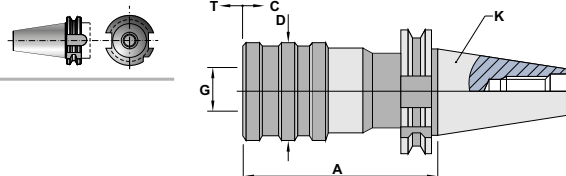
47.34

Ref.		K	K ₁	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

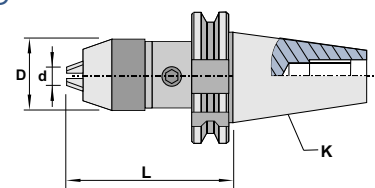
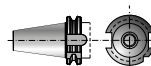
47.37												 Kg	
		K	N°	G	Ø	T	A	D	C				
Ref.	47.40.37.12	40	1	19		9	60	36	9	M4-M12	71XX	75XX	1,050
	47.40.37.20	40	2	31		9	92	53	15	M8-M20	72XX	76XX	1,650
	47.40.37.33	40	3	48		9	138	78	24	M14-M33	73XX	77XX	3,000
	47.50.37.12	50	1	19		9	60	36	9	M4-M12	71XX	75XX	2,800
	47.50.37.20	50	2	31		9	92	53	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



HX-ID

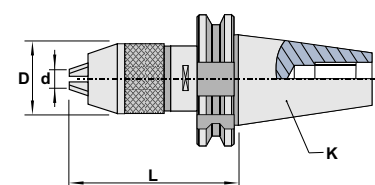
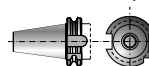
		K	d	D	L _{min}	L _{max}		
Ref.	HX10-ID40	40	0-10	43	77	85,5	-	1,300
	HX10-ID40/R	40	0-10	43	77	85,5	B-AD	1,300
	HX13-ID40	40	1-13	53	91	103,0	-	1,640
	HX13-ID40/R	40	1-13	53	91	103,0	B-AD	1,640
	HX16-ID40	40	3-16	57	94	105,0	-	1,740
	HX16-ID40/R	40	3-16	57	94	105,0	B-AD	1,740
	HX10-ID50	50	0-10	43	79	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



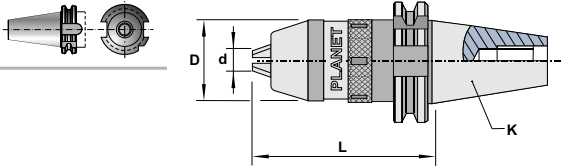
NPU-ID

		K	d	D	L _{min}	L _{max}	
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							
		K	d	D	Lmin	Lmax	
Ref.	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

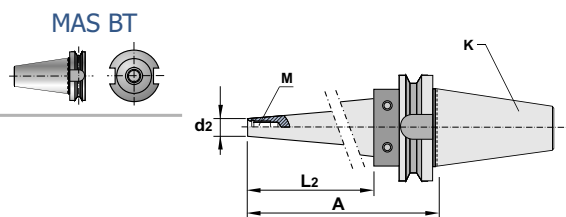
Drills

Boring heads

Arbors and
adaptors



Characteristics:
Adaptor from MAS BT tape for modular mills

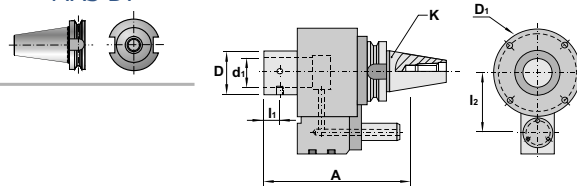


49.06

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

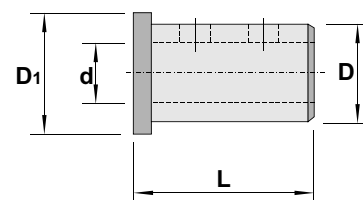

Characteristics:
Colling fluid supply unit

MAS BT



49.10

		K	d ₁	A	D	D ₁	l ₁	l ₂		
Ref.	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


Characteristics:
Reducing bushings


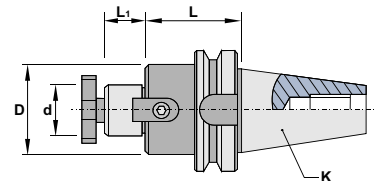
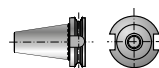
00.21

		D	d	D ₁	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



Characteristics:
Mill chuck MAS BT taper with fixed drivers.

MAS BT



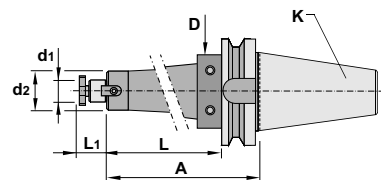
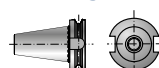
49.16

		K	d	D	L	L1	
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)

MAS BT



49.16L

		K	D	A	L	L1	d1	d2	
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

Inserts

Face milling
cutters

Square shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

Solid carbide

Drills

Boring heads

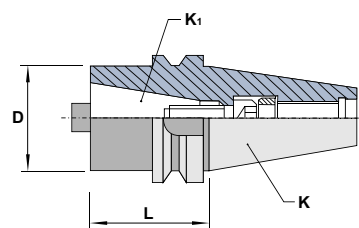
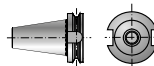
Arbors and
adaptors



Characteristics:

Adaptor from MAS BT to ISO taper with internal pull stud

MAS BT



49.22

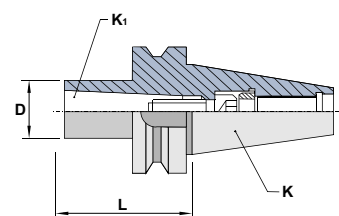
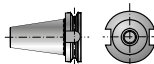
Ref.		K	K1	D	L	
49.50.22.40		50	40	78	70	4,850



Characteristics:

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

MAS BT

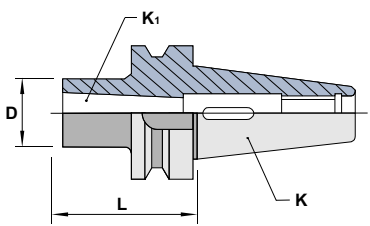
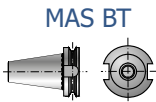


49.23

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

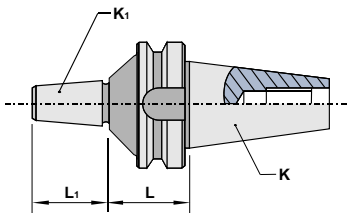
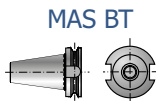


49.26

		K	K1	D	L	
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	
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
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

Solid carbide

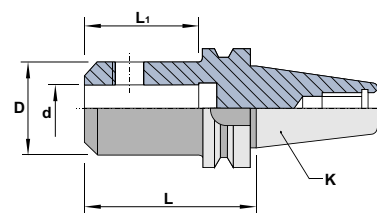
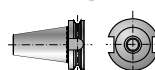
Drills

Boring heads

Arbors and
adaptors

Characteristics:
 End mill adaptor MAS BT taper

MAS BT



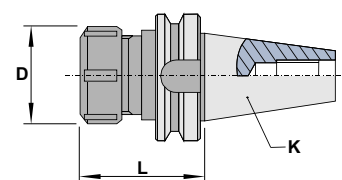
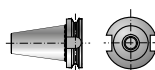
49.30

Ref.	K	d	D	L	L1	Kg
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

MAS BT



For more information see page:

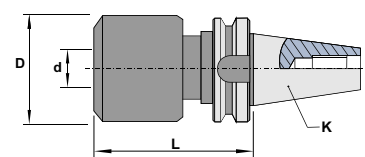
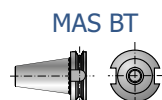
Collets: K.49
 Clamping nuts: K.53
 Spanners: K.54

49.31

Ref.	K	L	D	Size of collets	Clamping nut	Collet	Kg
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

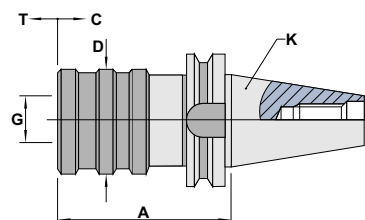


49.34

		K	d	D	L	
Ref.	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



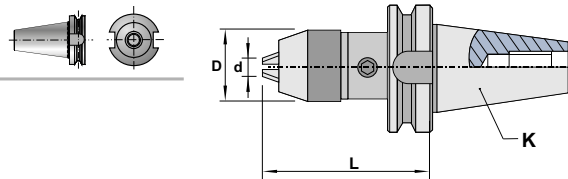
For more information see page:
Tap adaptors: K.55

49.37

49.37													
		K	N°	G	Ø	T	A	D	C				
Ref.	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


Characteristics:

Super precision drill chuck with hexagonal key lock system.

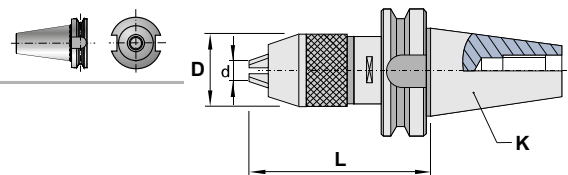
MAS BT/A-B-AD


HX-BT

Ref.		K	d	D	Lmin	Lmax		
	HX10-BT40	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	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

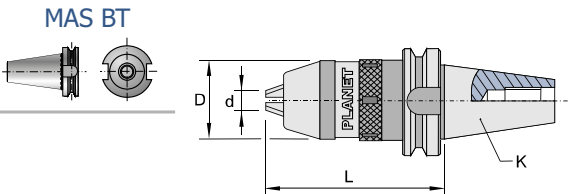
MAS BT


NPU-BT

Ref.		K	d	D	Lmin	Lmax		
	NPU13-BT40	40	1-13	48	78	89		1,550
	NPU16-BT40	40	3-16	55	90	101		2,000
	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



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

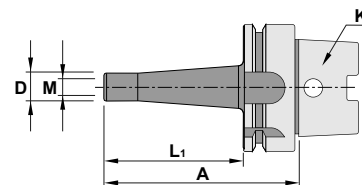
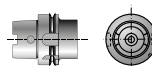
Drills

Boring heads

Arbors and
adaptors

Characteristics:
Adaptor from HSK tape for modular mills.

HSK

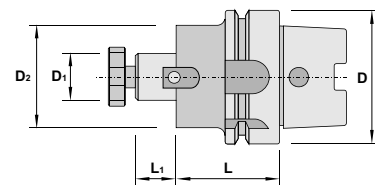
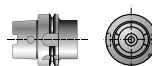


52.06

Ref.		K	L ₁	A	D	M	 Kg
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

HSK - DIN 138

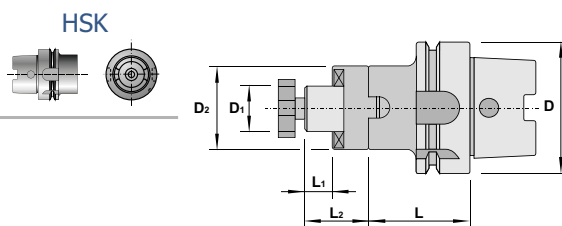


52.16

Ref.		L	L ₁	D	D ₁	D ₂	 Kg
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



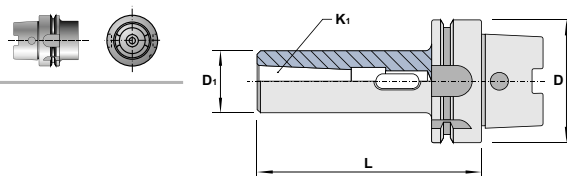
52.18

		L	L ₁	L ₂	D	D ₁	D ₂	
Ref.	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

		L	D	D ₁	K ₁	
Ref.	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
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

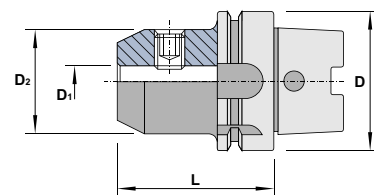
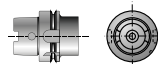
Solid carbide

Drills

Boring heads

Arbors and
adaptors
Characteristics:
 End mill adaptor

HSK - DIN 1835B

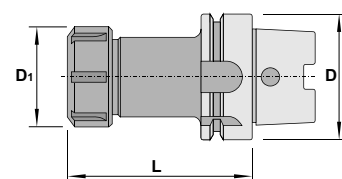
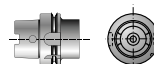


52.30

		L	D	D ₁	D ₂	 Kg
Ref.	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

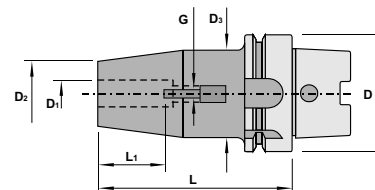
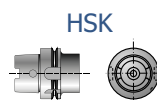
HSK-DIN 6499


For more information see page:

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

52.31

		L	D	D ₁	Collet	Size of collets	 Kg
Ref.	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

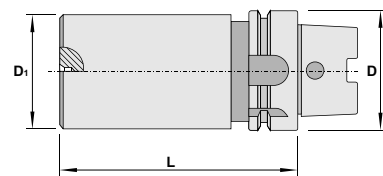
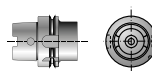

Characteristics:
Shrink fit chucks


52.35

		D	D ₁	D ₂	D ₃	L	L ₁	G	
Ref.	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

Characteristics:

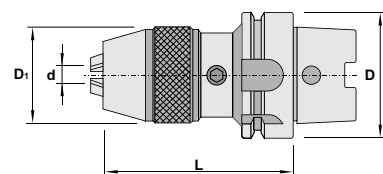
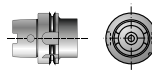
Blank boring bars for the manufacture
of special tools

HSK

52.33

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

Characteristics:

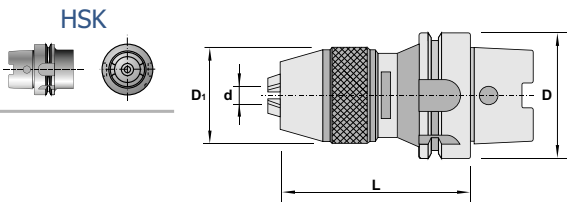
Super precision drill chuck with hexagonal key
lock system.

HSK/A-AD

HX-HSK

		D	d	D1	Lmin	Lmax		 Kg
Ref.	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		D	d	D1	L	L	
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

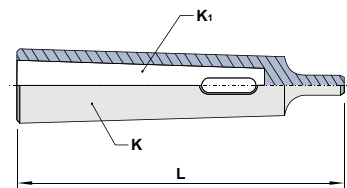
Drills

Boring heads

Arbors and adaptors

Characteristics:
 Precision drill chuck arbors

DIN 228/A



CR

Ref.		K	K1	L	 Kg
	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



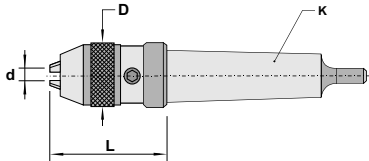
E

Ref.		K	K1	 Kg
	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



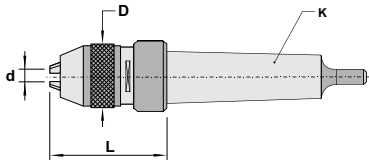
HX-MT

		d	K	D	Lmin	Lmax	
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



SPS-MT

		d	K	Lmin	Lmax	D	
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

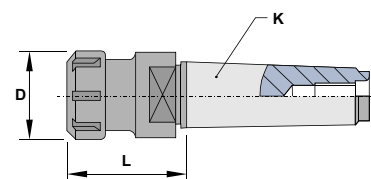
**Characteristics:**

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	
	30.03.31.32	MK3	70	50	2-20	2093	ER32	0,600
	30.03.31.40	MK3	80	63	4-30	2094	ER40	0,950
	30.04.31.32	MK4	60	50	2-20	2093	ER32	0,700
	30.04.31.40	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

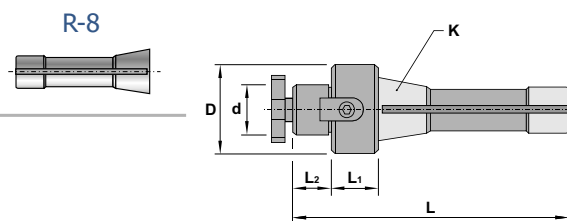
Drills

Boring heads

Arbors and adaptors



Characteristics:
Mill chuck with fixed drivers

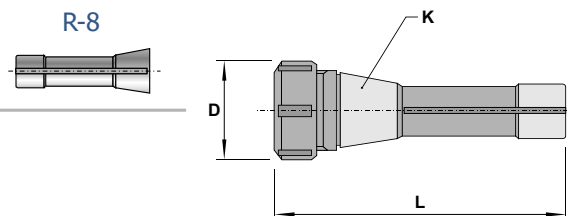


80.16

		K	d	D	L	L ₁	L ₂	
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	
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
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

Solid carbide

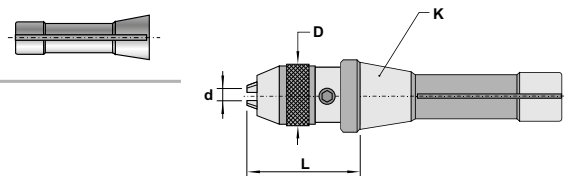
Drills

Boring heads

Arbors and
adaptors**Characteristics:**

Super precision drill chuck with hexagonal key lock system.

R-8

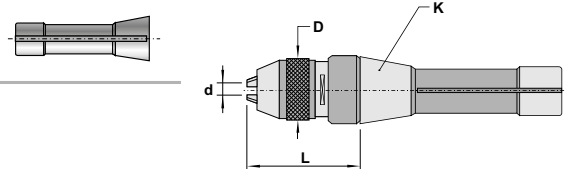
**HX-R8**

Ref.		d	K	D	Lmin	Lmax	Kg
	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

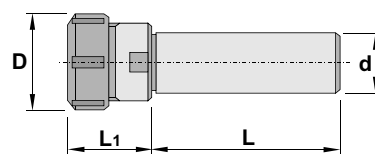
**SPS-R8**

Ref.		d	K	Lmin	Lmax	D	Kg
	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

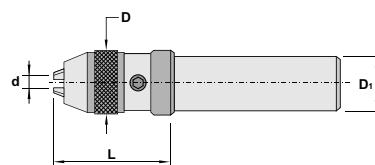
00.31

		d	D	L	L ₁	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	D ₁	D	L _{min}	L _{max}	 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
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

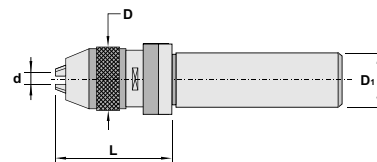
Solid carbide

Drills

Boring heads

Arbors and
adaptors**Characteristics:**

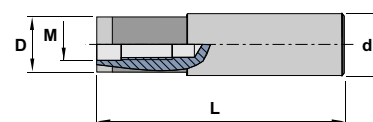
Integral drill chuck with safety clamping system

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

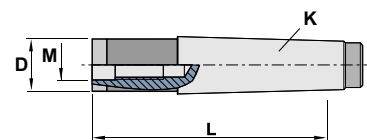


00.06

		d	L	M	D	
Ref.	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

		K	L	M	D	
Ref.	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
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

Solid carbide

Drills

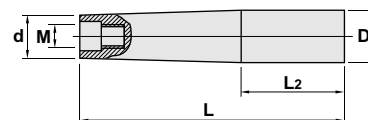
Boring heads

Arbors and
adaptors**Characteristics:**

Solid carbide shanks for milling heads

For more information see page:

Solid carbide milling heads: H.04

**06SC**
 Normally available for immediate delivery ●
 Only available in a limited quantity ○

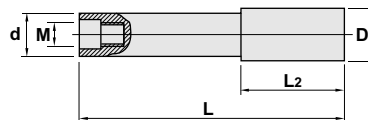
Ref.		d	D	L	L ₂	M	
	16.06.05SC	9	16	105	50	M5	0,135
	16.06.05L165SC	9	16	165	50	M5	0,200
	16.06.06SC	11	16	105	50	M6	0,140
	16.06.06L165SC	11	16	165	50	M6	0,210
	16.06.06L205SC	11	16	205	50	M6	0,250
	20.06.08SC	15	20	130	50	M8	0,270
	20.06.08L165SC	15	20	165	50	M8	0,340
	20.06.08L205SC	15	20	205	50	M8	0,415
	25.06.10SC	18	25	280	50	M10	0,780

**Characteristics:**

Cylindrical solid carbide shanks for milling heads.

For more information see page:

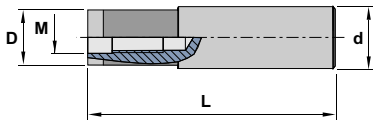
Solid carbide milling heads: H.04

**16SC**
 Normally available for immediate delivery ●
 Only available in a limited quantity ○

Ref.		d	D	L	L ₂	M	
	10.16.05SC	9	10	85	40	M5	0,050
	10.16.05L105SC	9	10	105	40	M5	0,060
	10.16.05L130SC	9	10	130	40	M5	0,070
	10.16.05L165SC	9	10	165	40	M5	0,085
	12.16.06SC	11	12	85	45	M6	0,070
	12.16.06L105SC	11	12	105	45	M6	0,085
	12.16.06L130SC	11	12	130	45	M6	0,100
	12.16.06L165SC	11	12	165	45	M6	0,130
	16.16.08SC	15	16	85	50	M8	0,110
	16.16.08L105SC	15	16	105	50	M8	0,140
	16.16.08L130SC	15	16	130	50	M8	0,170
	16.16.08L165SC	15	16	165	50	M8	0,220
	20.16.10SC	18	20	105	50	M10	0,230
	20.16.10L130SC	18	20	130	50	M10	0,280
	20.16.10L165SC	18	20	165	50	M10	0,350
	20.16.10L205SC	18	20	205	50	M10	0,430



Characteristics:
Heavy metal shanks for modular milling cutters.



02.06HM						
		d	L	M	D	
Ref.	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

Inserts

Face milling
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

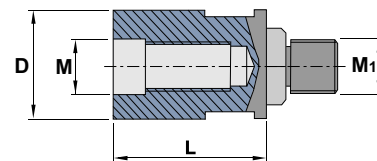
Solid carbide

Drills

Boring heads

Arbors and
adaptors**Characteristics:**

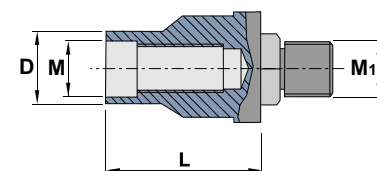
Front contact extensions for modular tools

**06**

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

**Characteristics:**

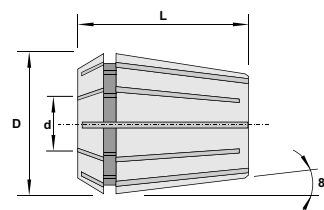
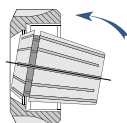
Front contact reducers for modular tools

**06**

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



Characteristics
Collets type (ER) DIN 6499/B



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

Inserts

Face milling
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

Solid carbide

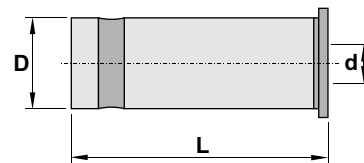
Drills

Boring heads

Arbors and
adaptors

Characteristics

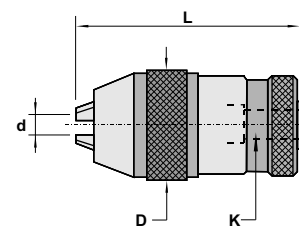
Collets type C



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



Characteristics:
Keyless drill chucks, precision class
DIN 238

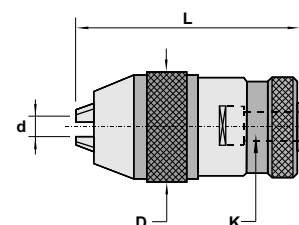


SP-B

		d	K	Lmin	Lmax	D	
Ref.	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

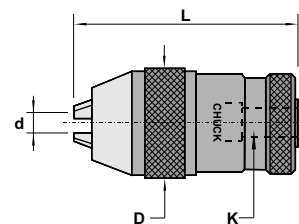


SPX-B

		d	K	Lmin	Lmax	D	
Ref.	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

**Characteristics:**

Keyless drill chucks, standard class

**CK-B**

		d	K	Lmin	Lmax	D	 Kg
Ref.	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

Inserts

Face milling
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

Solid carbide

Drills

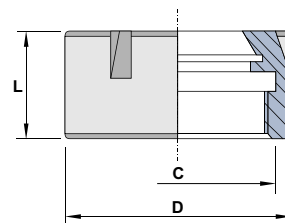
Boring heads

Arbors and
adaptors



Characteristics:
Clamping nuts DIN 6499/E

Applications:
Clamping nuts for collets ER16 and ER20.



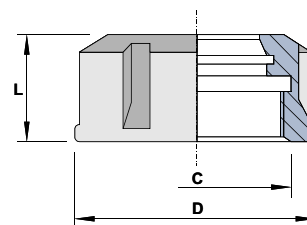
2090..2091

		L	C	D	Collet	
Ref.	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.



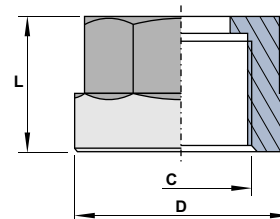
2092..2094

		L	C	D	Collet	
Ref.	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

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

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:
 Spanners for clamping nuts

Applications:
 For 2190 and 2191 clamping nuts



5116..5120

Clamping nut



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



Characteristics:
 Spanners for clamping nuts

Applications:
 For 2090 and 2091 clamping nuts



5216..5220

Clamping nut



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



Characteristics:
 Spanners for clamping nuts

Applications:
 For 2092, 2093 and 2094 clamping nuts



5225..5240

Clamping nut



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



Characteristics:
 Hexagonal key lock system

Applications:
 For HX system Arbors.

HX

h

L

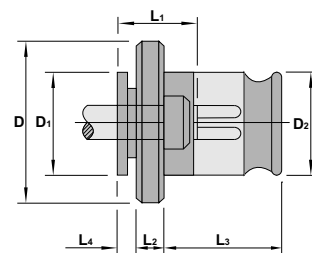
H



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



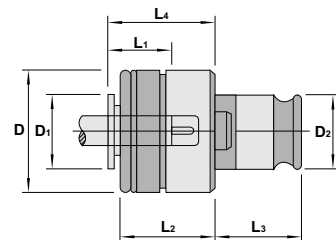
70..73

Ref.	Thread range	D	D1	D2	L1	L2	L3	L4	
70XX	M1-M10	22	13	13	15	4	19,5	7	0,020 - 0,040
71XX	M3-M12	30	19	19	17	4	21,5	7	0,045 - 0,060
72XX	M8-M20	48	30	31	30	5	35,0	11	0,195 - 0,265
73XX	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



74..77

Ref.	Thread range	D	D1	D2	L1	L2	L3	L4	
74XX	M1-M10	22	13	13	15	20	19,5	21	0,060 - 0,100
75XX	M3-M12	30	19	19	17	25	21,5	25	0,140 - 0,150
76XX	M8-M20	48	30	31	30	31	35,0	34	0,495 - 0,510
77XX	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

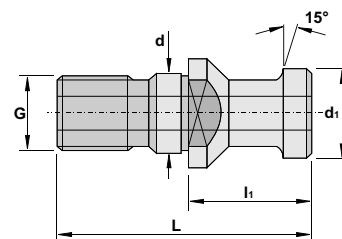
Table of adaptors

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		
43	10 x 8,0		M10		3/8		3/8	
44	11,2 x 9,0	M14		9/16		9/16		
45	12,5 x 10	M16		5/8		5/8		
46	14 x 11	M18 M20		3/4		11/16 3/4		
47	16 x 12,5	M22		7/8		7/8		
48	18 x 14	M24		1		1		
49	20 x 16	M27 M30		1 1/8		1 1/8		
50	22,4 x 18	M33		1 1/4		1 1/4		
51	25 x 20	M36		1 3/8		1 3/8		
52	28 x 22,4	M39 M42		1 1/2		1 1/2		
53	31,5 x 25	M45 M48		1 3/4		1 3/4		
54	35,5 x 28	M52		2		2		



Characteristics:
Pull studs
DIN 69872 - FORM A

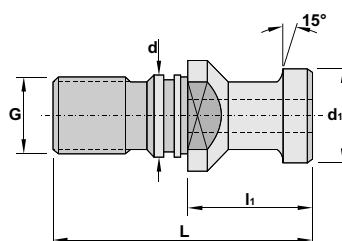


1960..1961

		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

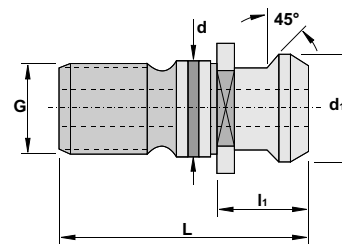


1962..1963

		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

Face milling
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

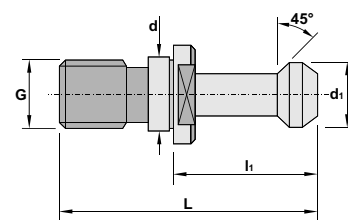
Solid carbide

Drills

Boring heads

Arbors and
adaptors

Characteristics:
Pull studs
MAS BT - TYPE I

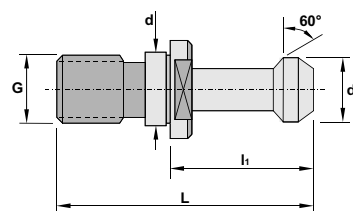


1966..1967

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



Characteristics:
Pull studs
MAS BT - TYPE II

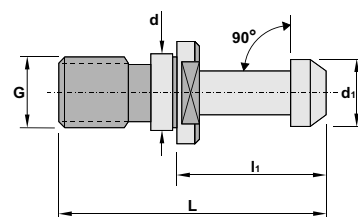


1968..1969

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



Characteristics:
Pull studs
MAS BT - TYPE III

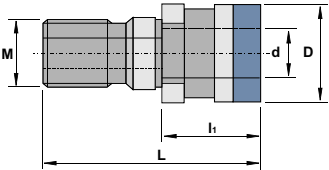


1970..1971

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



Characteristics:
Pull studs
DIN 2080



1972..1974

		M	d	D	l ₁	L	
Ref.	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
cuttersSquare shoulder
cutters

Slot cutters

Porcupine cutters

Specific applications
and sets

Profile milling

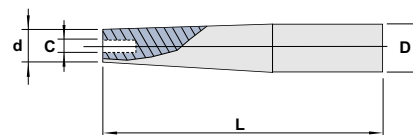
Solid carbide

Drills

Boring heads

Arbors and
adaptors**Characteristics:**

Complete case with CLS extensions and spanner

**00.32**

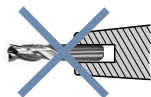
		C	d	L	D	Kg
Ref.	00.20.32.06	6	12	150	20	0,180
	00.20.32.08	8	15	150	20	0,350
	00.20.32.10	10	18	150	20	0,450
	00.20.32.12	12	20	150	20	0,530

CUTTING CONDITIONS SUGGESTED

		A	B		
Ref.	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		

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.



Incorrect



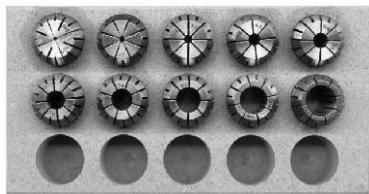
Correct

**Characteristics:**

Strong hold milling chucks and collets

**SET C32**

		Composition	Kg
Ref.	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

**Characteristics:**

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

SER**Size of collets**

Ref.			
	SER16	ER16 = 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10	0,250
	SER20	ER20 = 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13	0,650
	SER25	ER25 = 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 - 16	1,600
	SER32	ER32 = 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 20	2,500
	SER40	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

SET**Chuck****Collet****Size of collets****Clamping nut**

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