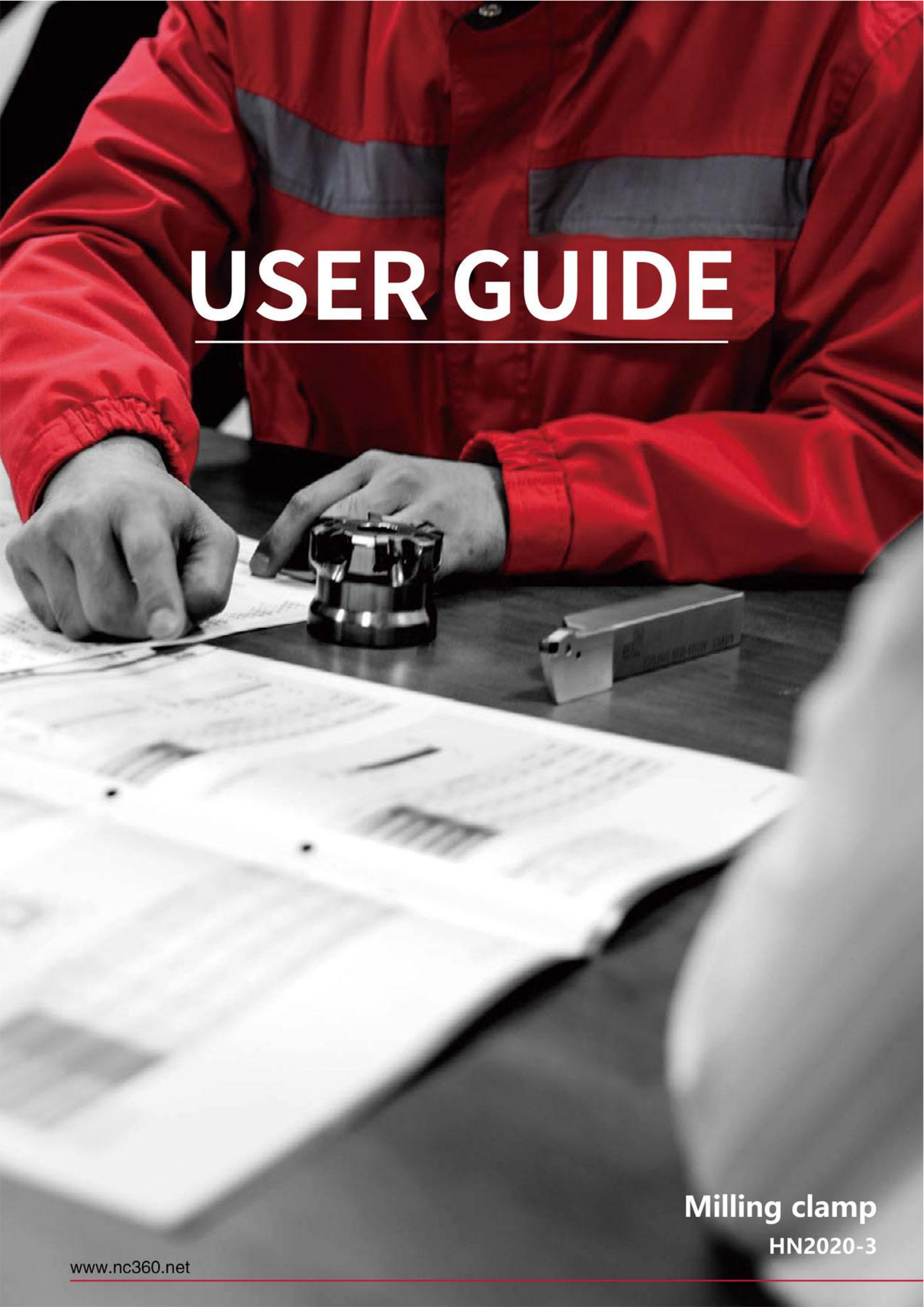




USER GUIDE

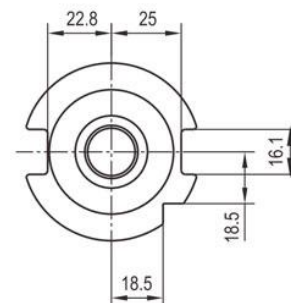
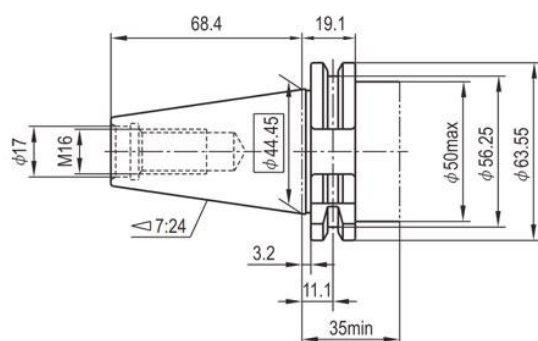
Milling clamp
HN2020-3

● Taper shank form (DIN69871)

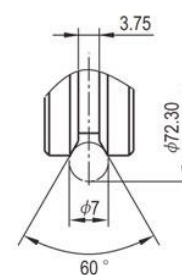
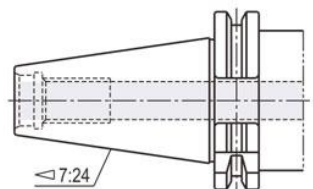


JT40 A/AD

Form A

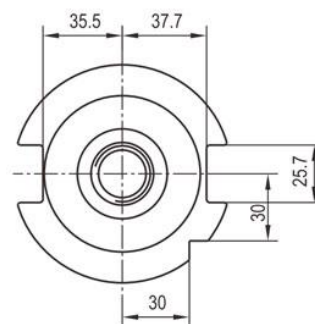
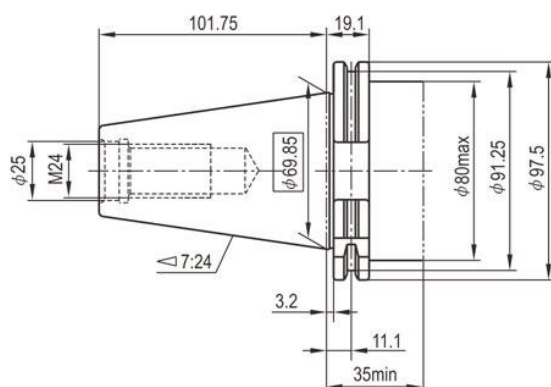


Form AD

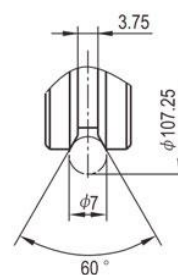
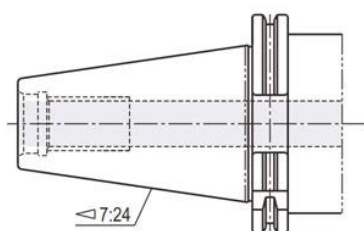


JT50 A/AD

Form A



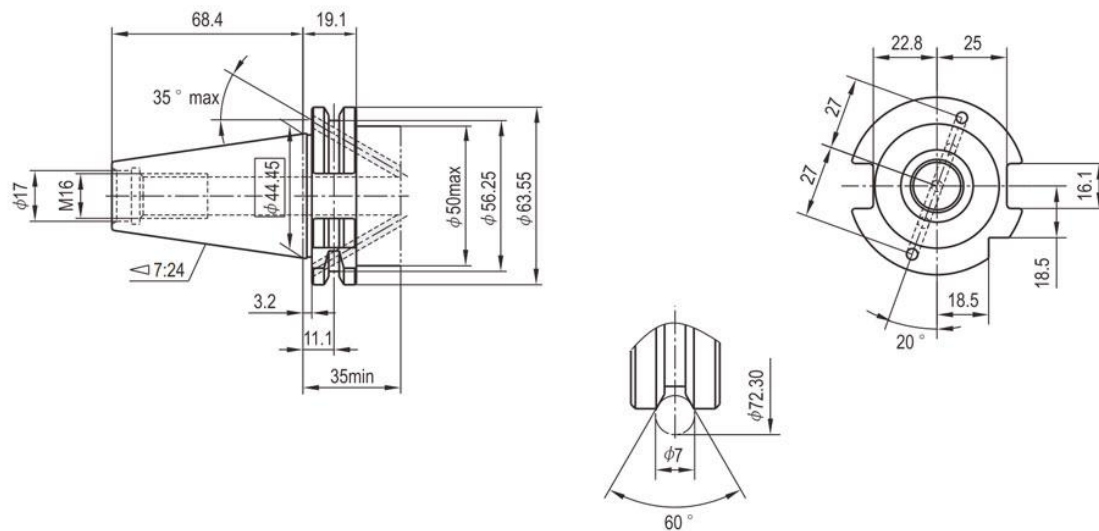
Form AD



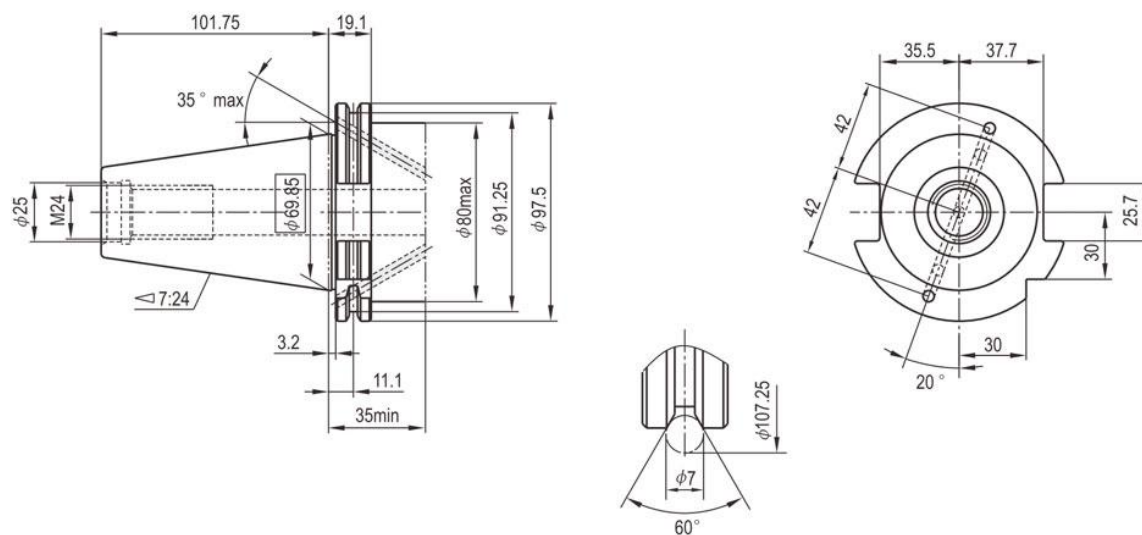
● Taper shank form (DIN69871)



JT40 B



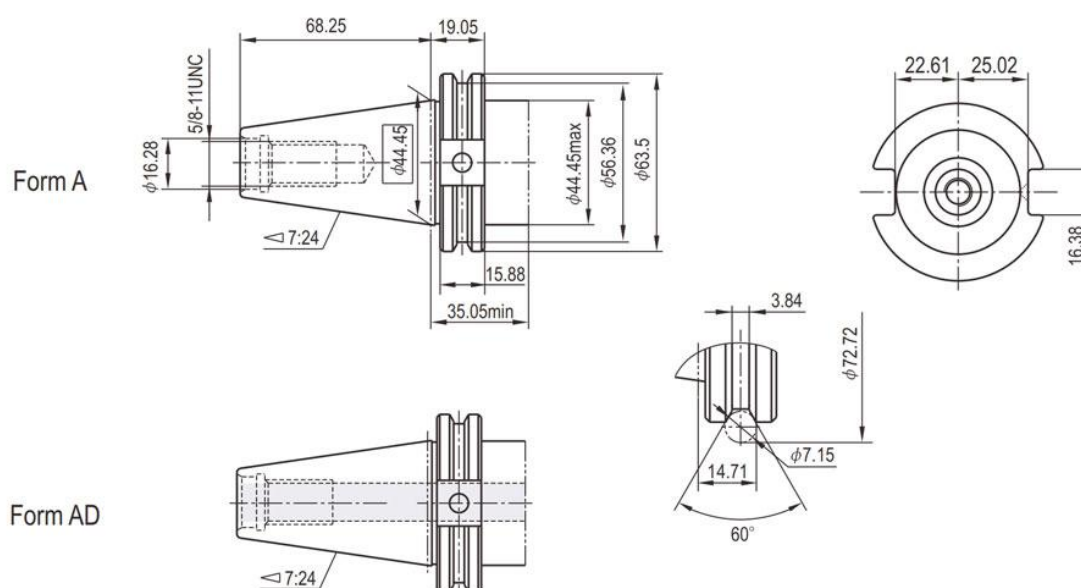
JT50 B



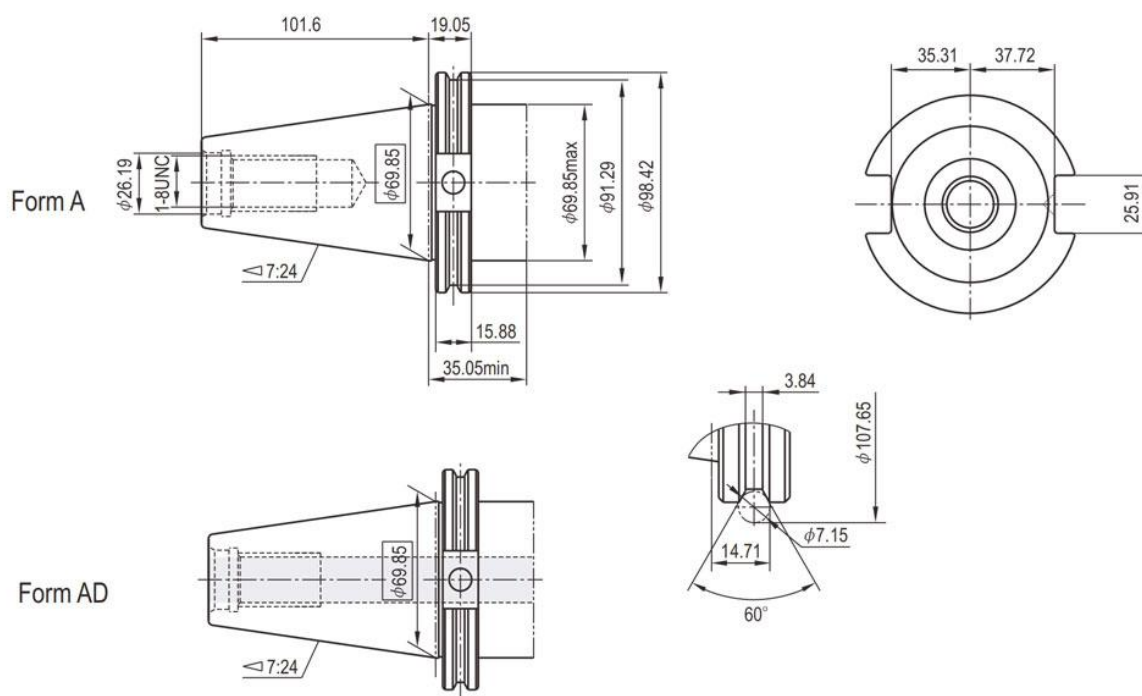
● Taper shank form (ANSI/AMSE B5.50CAT)



CT40 A/AD



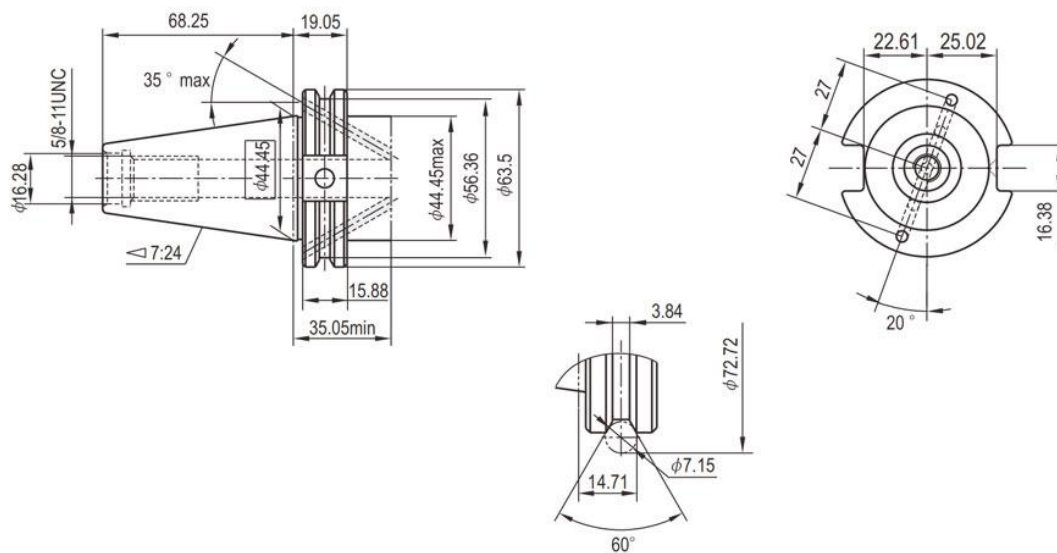
CT50 A/AD



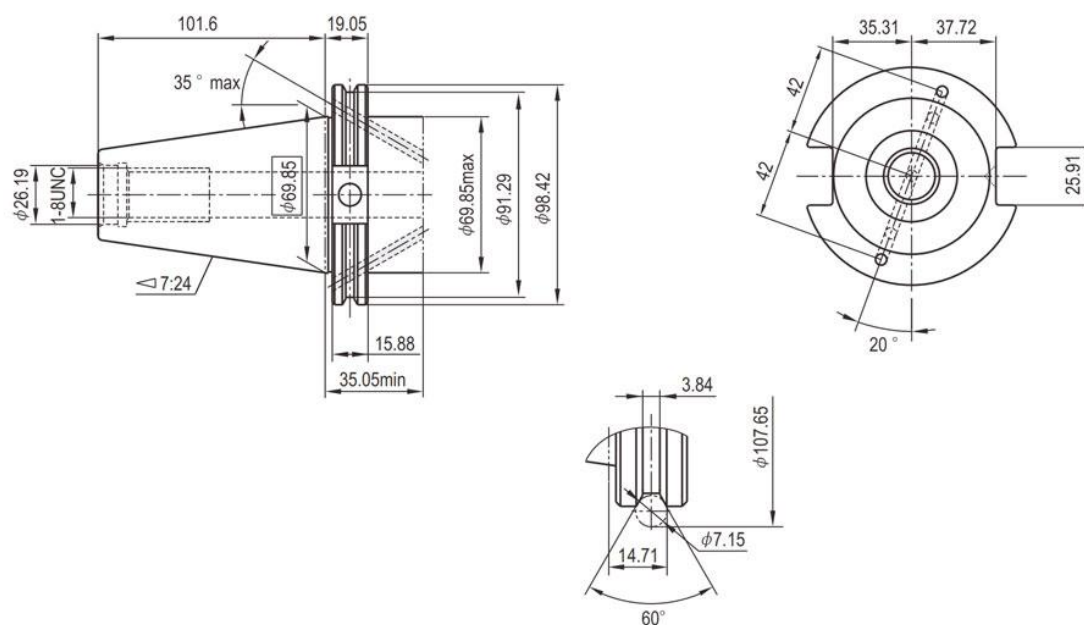
● **Taper shank form (ANSI/AMSE B5.50CAT)**



CT40 B



CT50 B

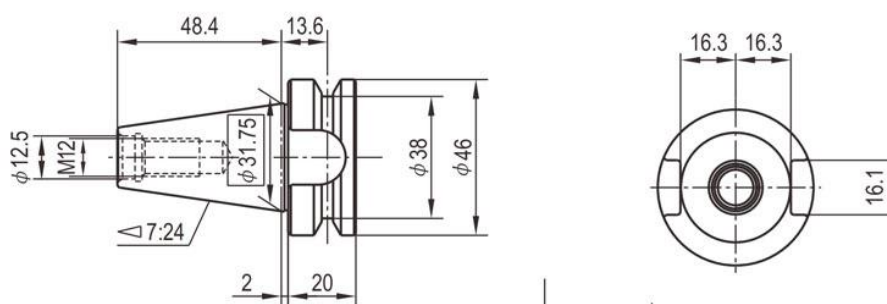


● Taper shank form (JIS B6339)

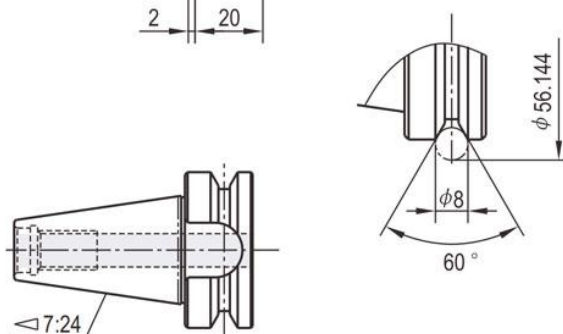


BT30 A/AD

Form A

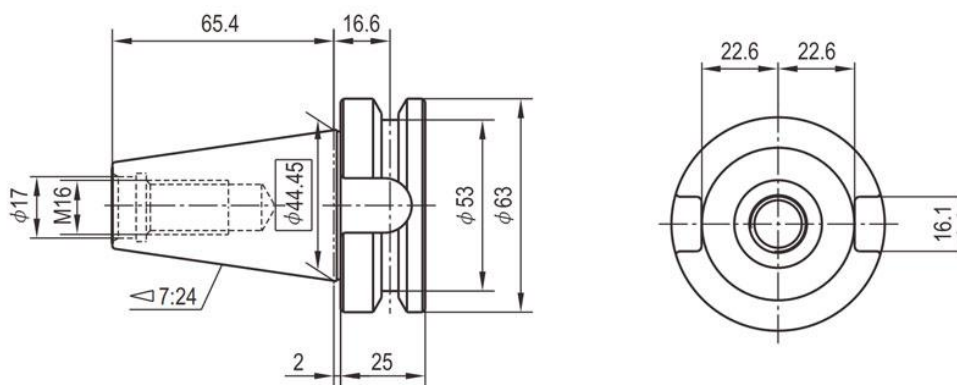


Form AD

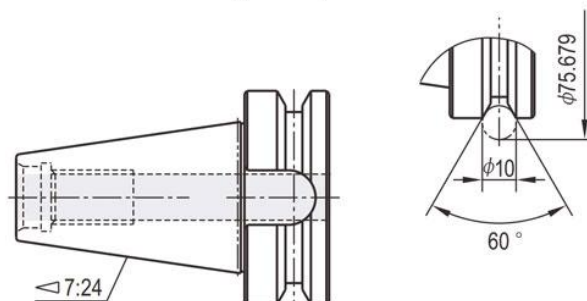


BT40 A/AD

Form A



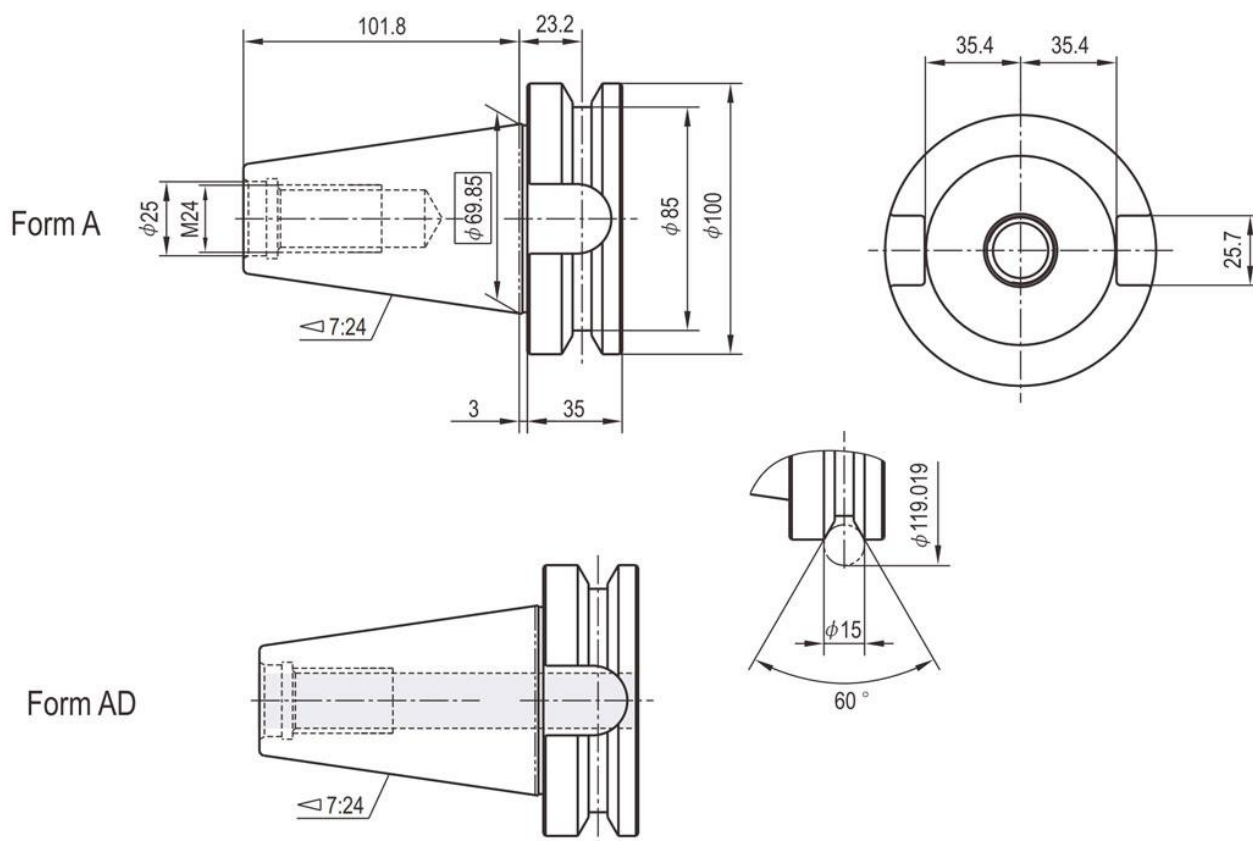
Form AD



● Taper shank form (JIS B6339)



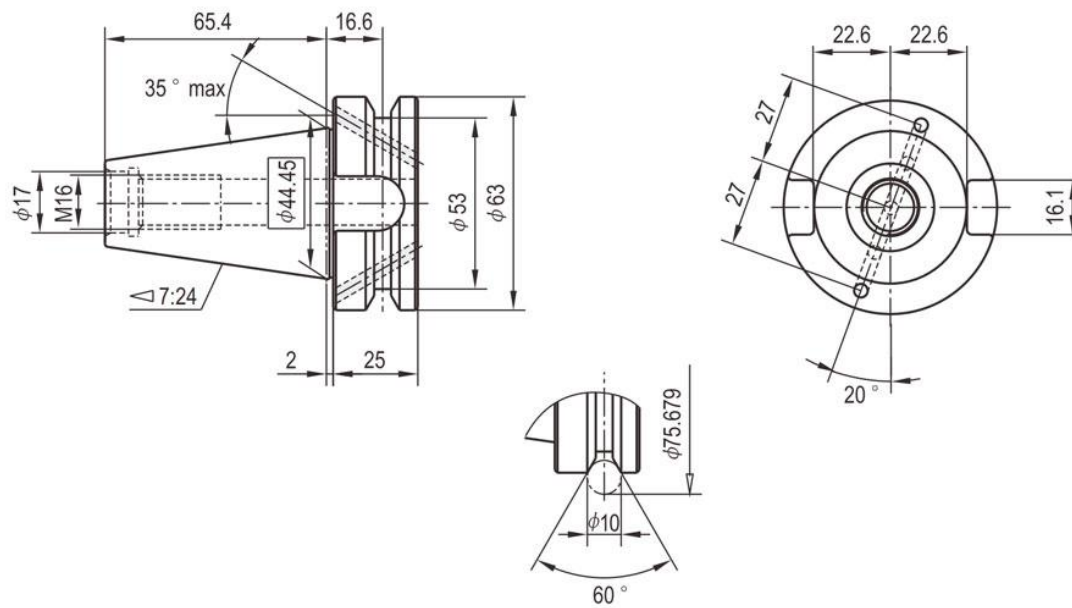
BT50 A/AD



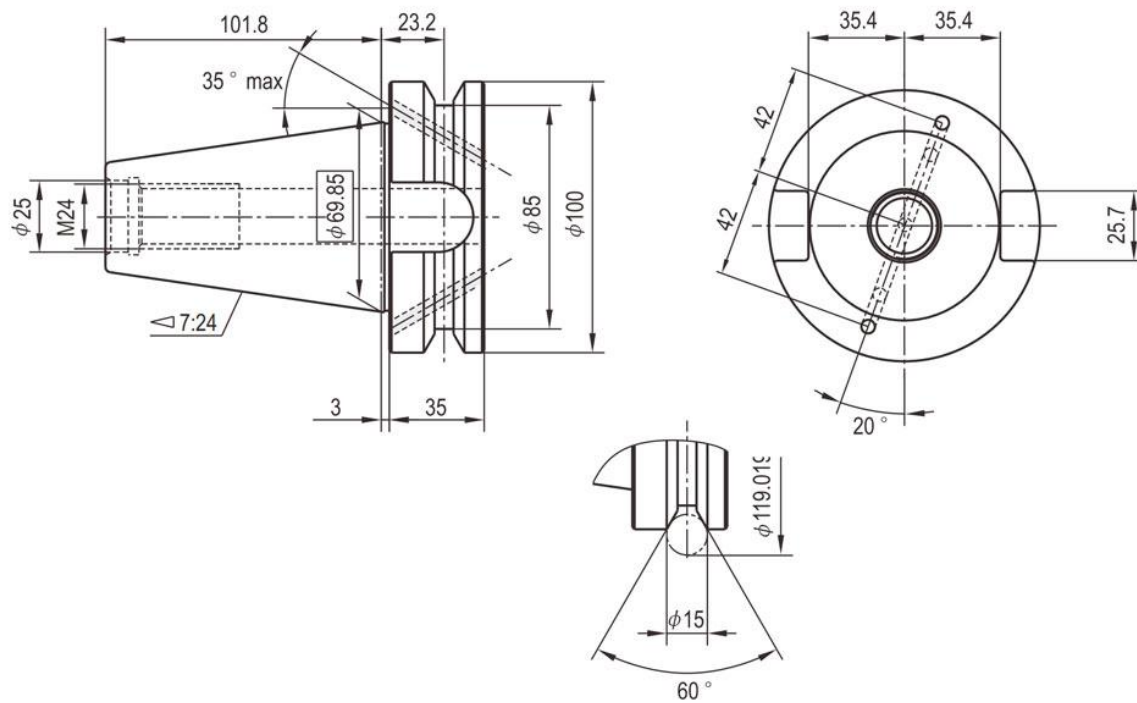
● Taper shank form (JIS B6339)



BT40 B



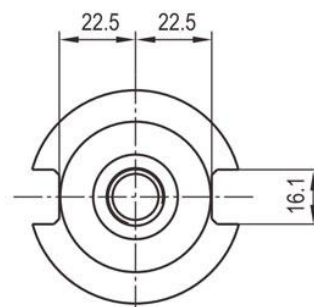
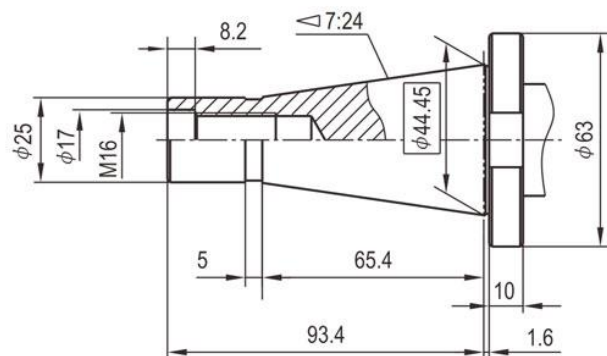
BT50 B



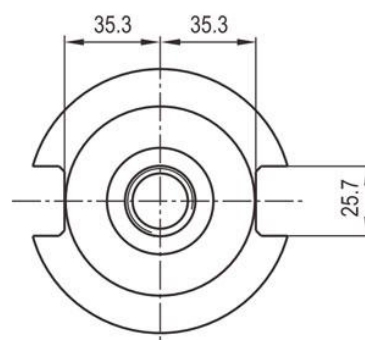
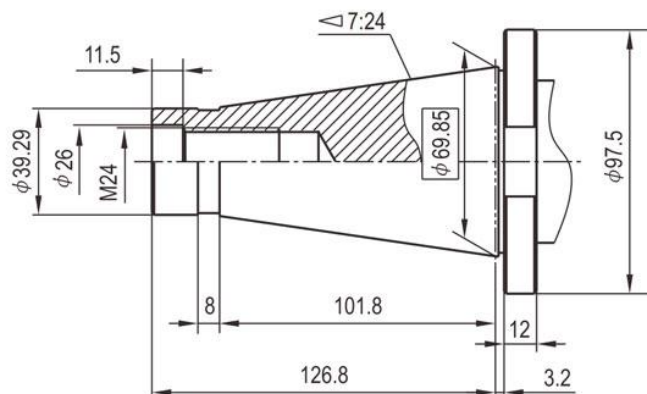
● Taper shank form (DIN2080)



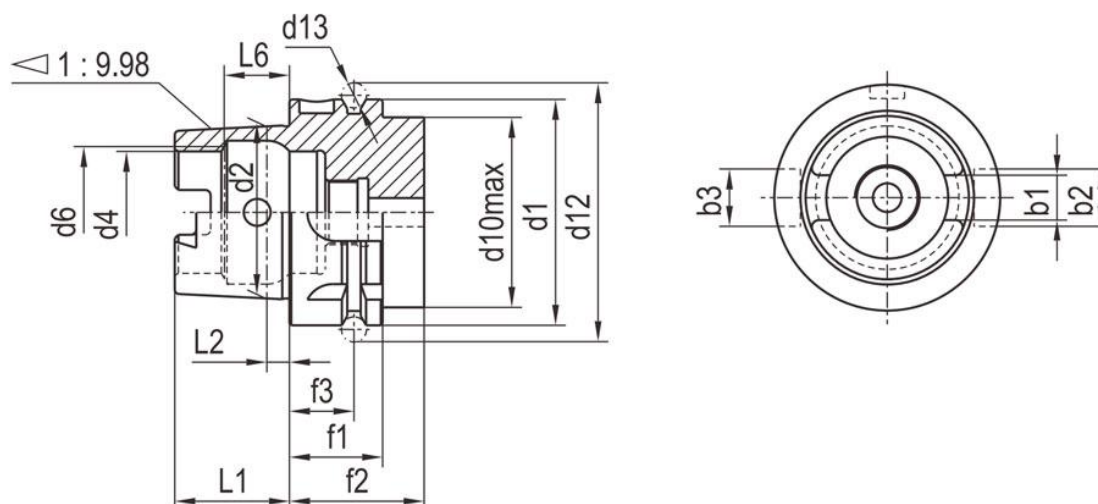
ST40



ST50

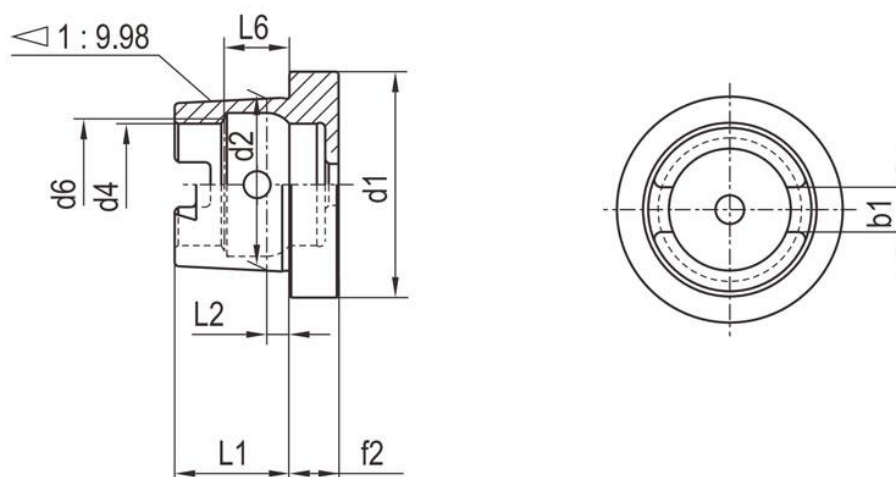


● HSK Short Cone Type A (DIN69893 A)



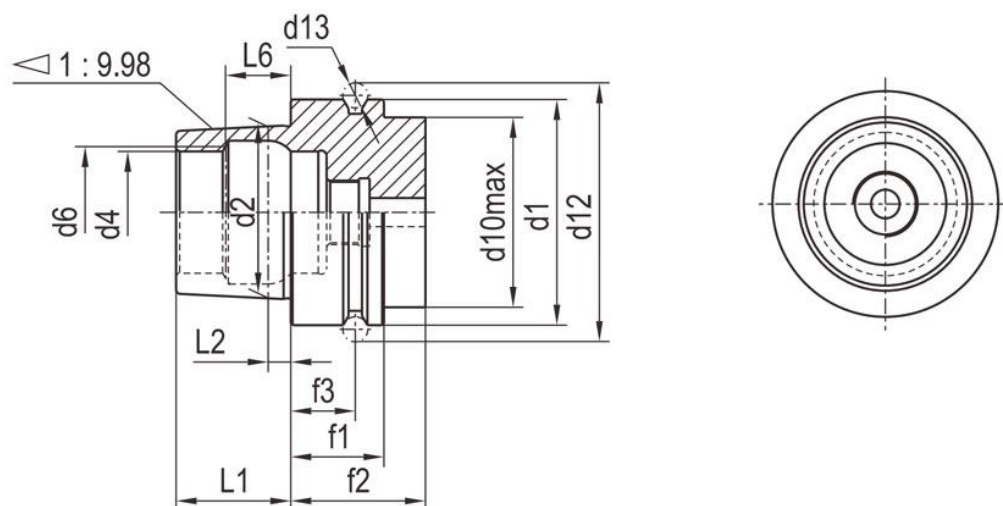
	b1	b2	b3	d1	d2	d4	d6	d10	d12	d13	f1	f2	f3	L1	L2	L6
HSK-A32	7.05	7	9	32	24.007	17	19	26	37	4	20	35	16	16	3.2	8.92
HSK-A40	8.05	9	11	40	30.007	21	23	34	45	4	20	35	16	20	4	11.42
HSK-A50	10.54	12	14	50	38.009	26	29	42	59.3	7	26	42	18	25	5	14.13
HSK-A63	12.54	16	18	63	48.010	34	37	53	72.3	7	26	42	18	32	6.3	18.13
HSK-A100	20.02	20	22	100	75.013	53	58	88	109.75	7	29	45	20	50	10	28.56

● HSK Short Cone Type C (DIN69893 C)



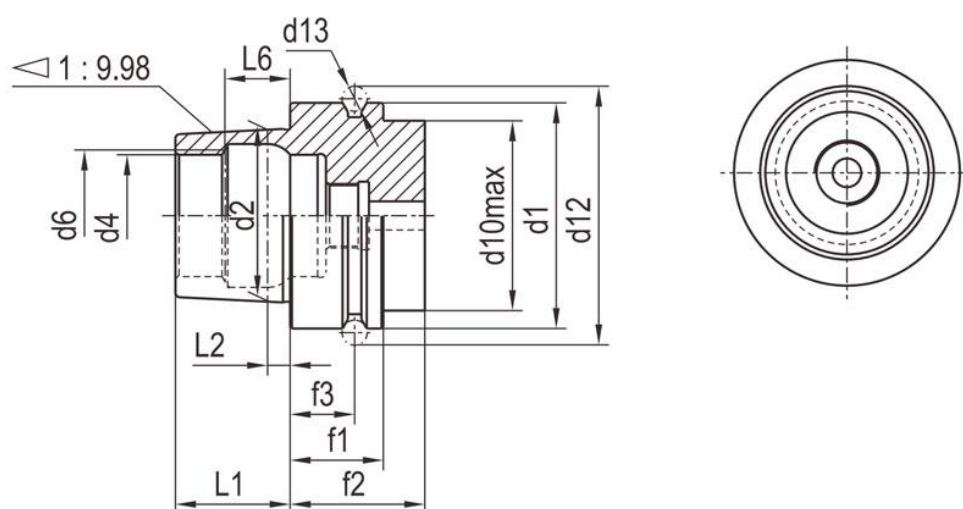
	b1	d1	d2	d4	d6	f2	L1	L2	L6
HSK-C32	7.05	32	24.007	17	19	10	16	3.2	8.92
HSK-C40	8.05	40	30.007	21	23	10	20	4	11.42
HSK-C50	10.54	50	38.009	26	29	12.5	25	5	14.13
HSK-C63	12.54	63	48.010	34	37	12.5	32	6.3	18.13
HSK-C100	20.02	100	75.013	53	58	16	50	10	28.56

● HSK Short Cone Type E (DIN69893 E)



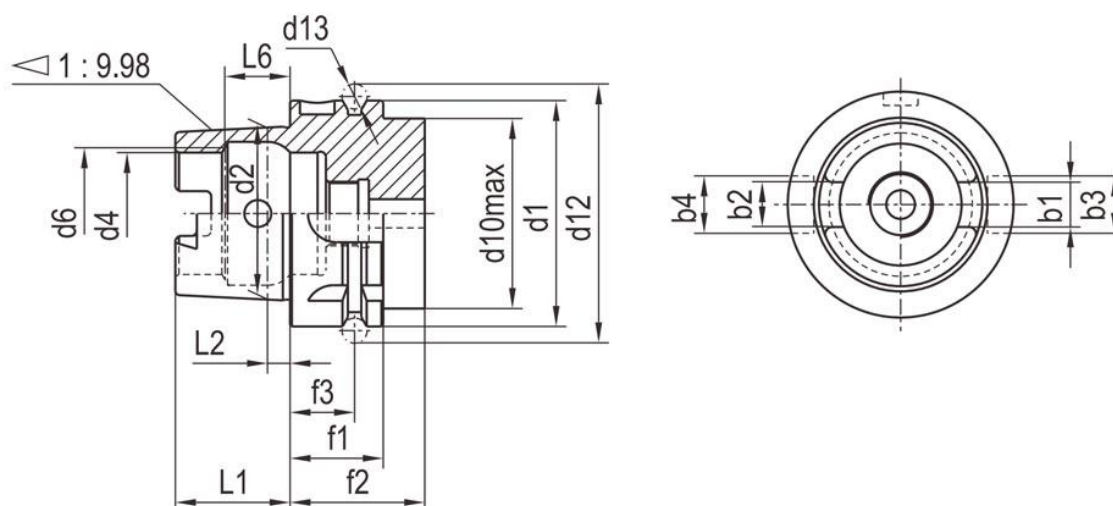
	d1	d2	d4	d6	d10	d12	d13	f1	f2	f3	L1	L2	L6
HSK-E32	32	24.007	17	19	26	37	4	20	35	16	16	3.2	8.92
HSK-E40	40	30.007	21	23	34	45	4	20	35	16	20	4	11.42
HSK-E50	50	38.009	26	29	42	59.3	7	26	42	18	25	5	14.13
HSK-E63	63	48.010	34	37	53	72.3	7	26	42	18	32	6.3	18.13

● HSK Short Cone Type F (DIN69893 F)



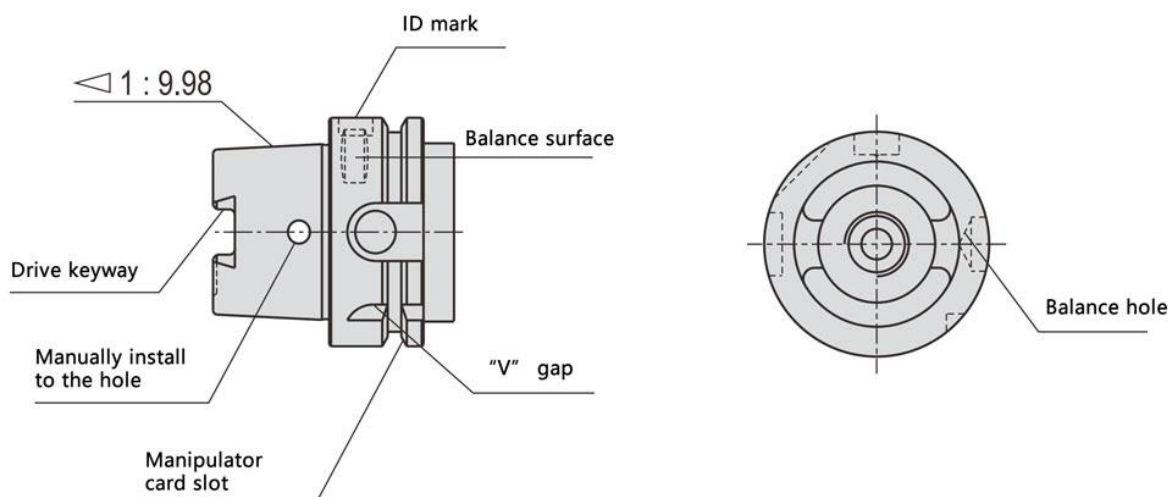
	d1	d2	d4	d6	d10	d12	d13	f1	f2	f3	L1	L2	L6
HSK-F50	50	30.007	21	23	42	59.3	7	26	42	18	20	4	11.42
HSK-F63	63	38.007	26	29	53	72.3	7	26	42	18	25	5	14.13
HSK-F80	80	48.010	34	37	67	88.8	7	26	42	18	32	6.3	18.13

● HSK Short Cone Type T (ISO 12164-3)



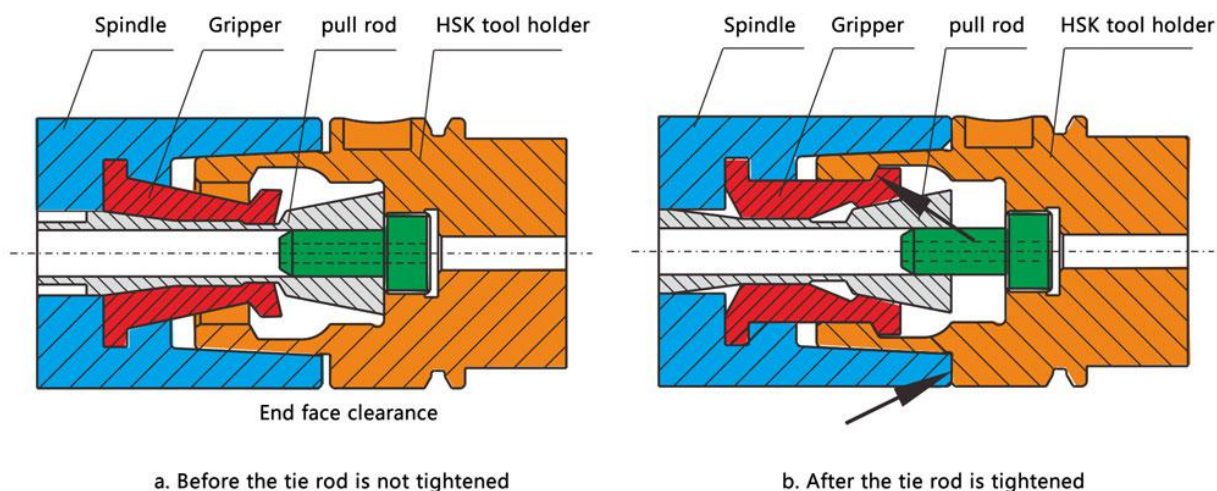
	b1	b2	b3	b4	d1	d2	d4	d6	d10	d12	d13	f1	f2	f3	L1	L2	L6
HSK-T32	7.05	6.932	7	9	32	24.007	17	19	32	37	4	20	23	16	16	3.2	8.92
HSK-T40	8.05	7.932	9	11	40	30.007	21	23	40	45	4	20	23	16	20	4	11.42
HSK-T50	10.54	10.425	12	14	50	38.009	26	29	50	59.3	7	26	30	18	25	5	14.13
HSK-T63	12.54	12.425	16	18	63	48.010	34	37	63	72.3	7	26	30	18	32	6.3	18.13
HSK-T100	20.02	19.910	20	22	100	75.013	53	58	100	109.75	7	29	34	20	50	10	28.56

● HSK short taper shank characteristics



Note: All HSK-A stock products in our company do not have data holes. If necessary, please specify when ordering.

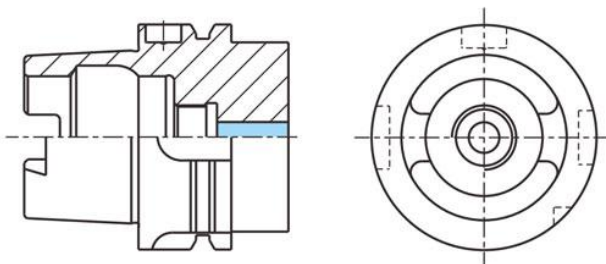
● The working principle of HSK tool system



When the hollow taper shank of the HSK tool holder is in full contact with the spindle hole, there is a gap of about 0.1mm between the end face of the HSK tool holder and the spindle end (see Figure a). Under the action of the clamping mechanism, the pull rod moves to the left, the clamping jaw expands, the outer cone of the clamping jaw is on the 30° cone surface of the hollow taper shank, pulling the HSK tool holder to move to the right, the hollow taper shank is deformed, and the end face of the tool holder Close to the end surface of the spindle, the tool holder can be positioned and clamped simultaneously on the tapered and end surfaces of the spindle (as shown in Figure b).

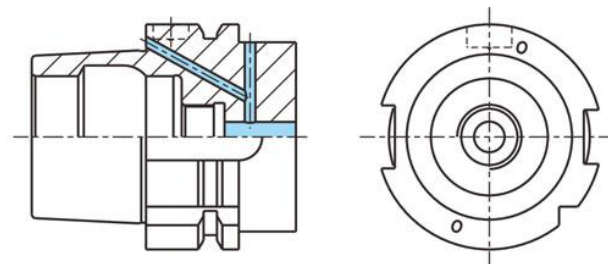
● Various features and uses of HSK

DIN 69893 - HSK-A



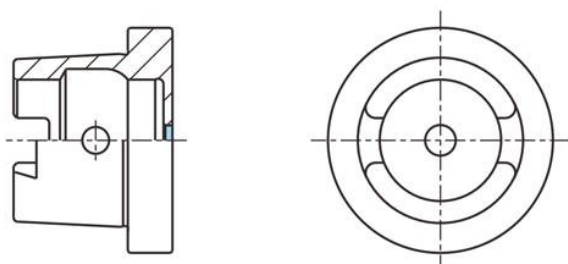
Purpose: Machining Center
Central cooling hole
V groove for ATC groove positioning
ID notch hole

DIN 69893 - HSK-B



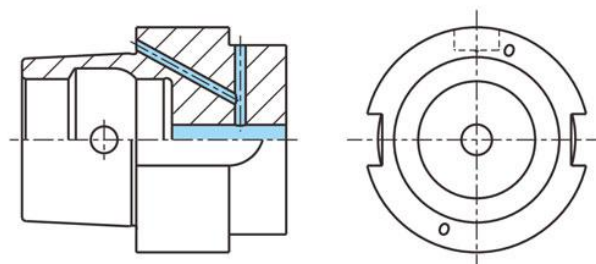
Uses: machining centers, milling machines, lathes
Large diameter flange
The cooling hole passes through the flange
Groove positioning
ID notch hole

DIN 69893 - HSK-C



Purpose: line transmission and machine tools without ATC device
Central cooling hole
Torque transmission with drive switch on flange

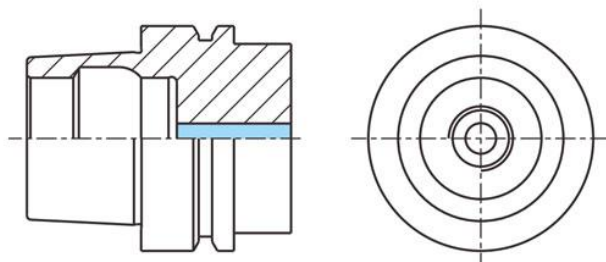
DIN 69893 - HSK-D



Purpose: line transmission and machine tools without ATC device
Large diameter flange
The cooling hole passes through the flange

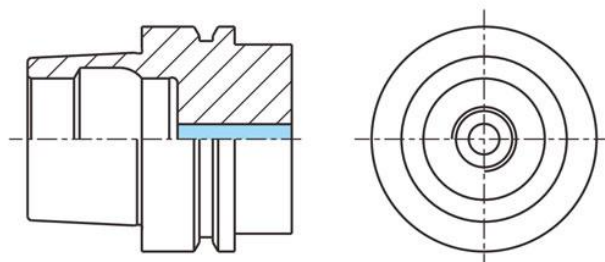
● Various features and uses of HSK

DIN 69893 - HSK-E



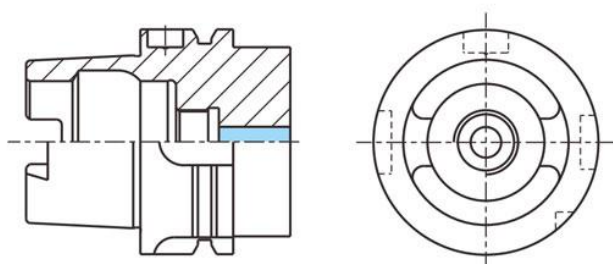
- Purpose: High-speed machining center, woodworking machinery
- Fully symmetrical, without drive switch
- Friction torque transmission
- Central cooling hole

DIN 69893 - HSK-F



- Purpose: High-speed machining center
- Large diameter flange
- Central cooling hole

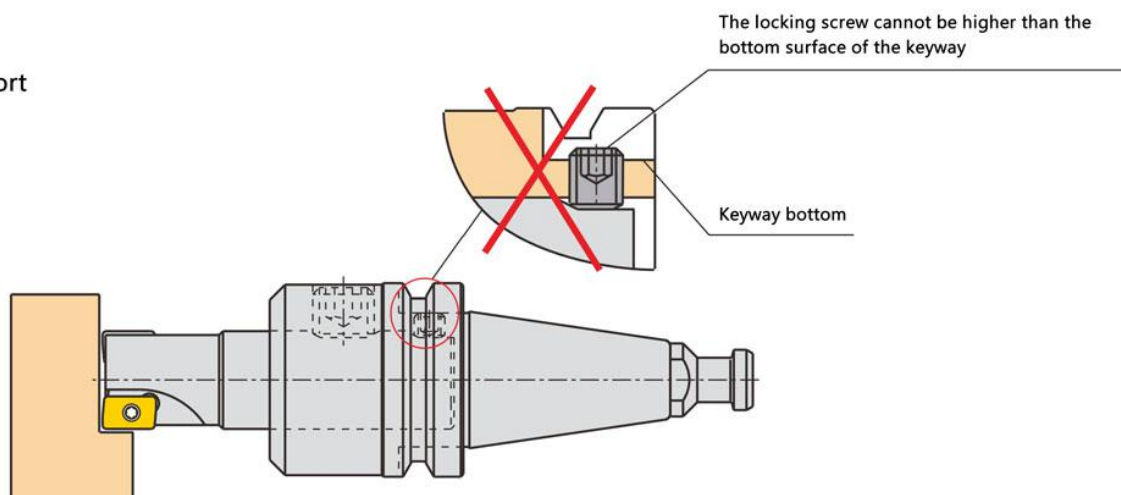
ISO12164-3- HSK-T



- Purpose: Machining center and turning-milling compound machine tool
- Central cooling hole
- Torque transmission with drive switch on flange
- Precise circumferential positioning, especially suitable for static tools
- V groove for ATC groove positioning
- ID notch hole

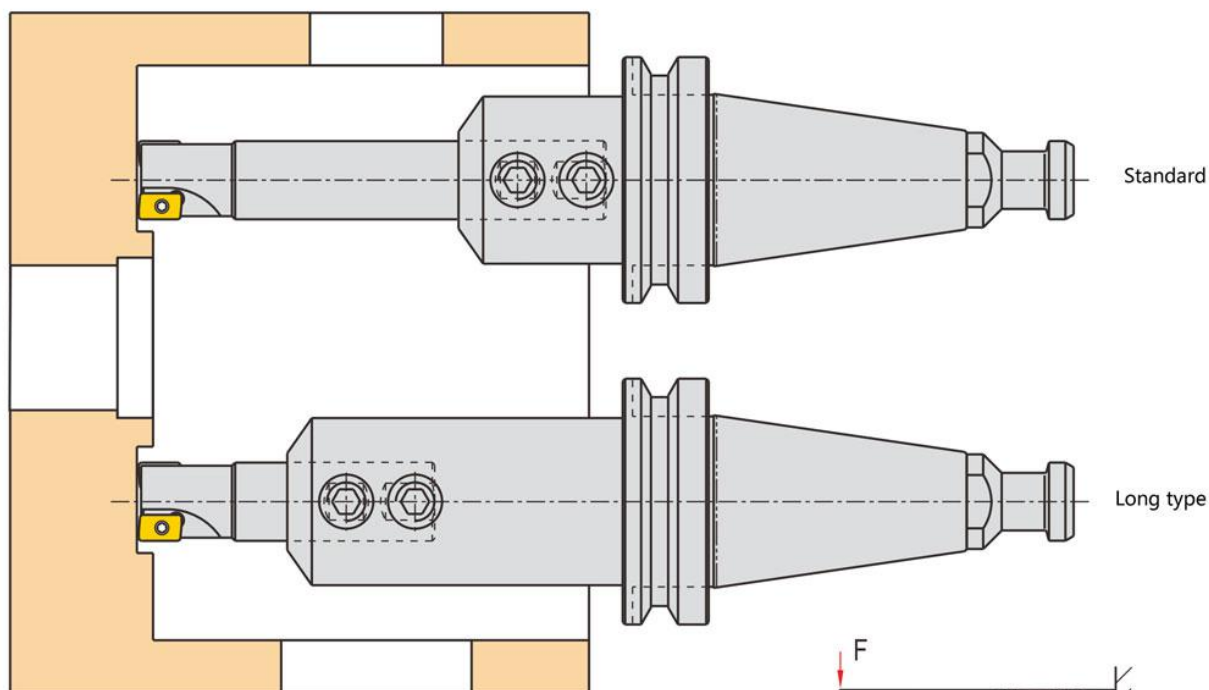
● Side-fixed handle

Short



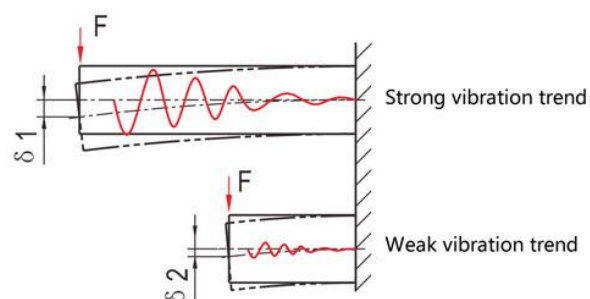
Technical Information

- Note that the length of the compression screw should not be too long, and the screw should not be higher than the bottom surface of the keyway of the tool holder after compression
- The shorter the handle, the better the rigidity
- Mainly suitable for vertical machining centers



Technical Information

- In order to ensure the total length of the tool, the use of a long tool holder can reduce the overhang of the tool bar and improve the rigidity of the system, which is suitable for deep cavity processing.
- It is suitable for horizontal machining center to extend the total tool length.



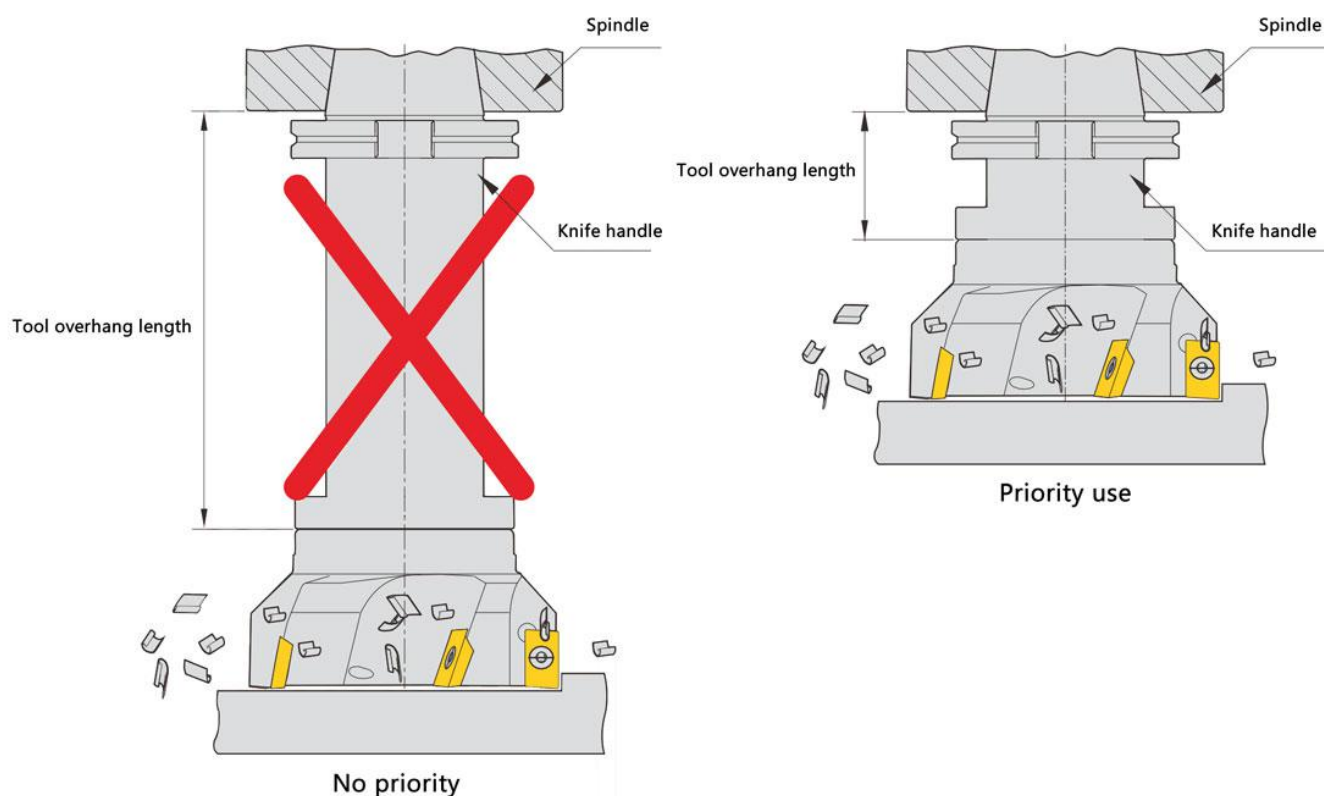
● Tool holder and tool length selection

In order to achieve the best rigidity of tool holders and tools, it is usually best to choose short series products. However, the processing of deep cavity often requires long tool holders or tools. At this time, reducing the spindle speed, feed, and depth of cut can reduce the vibration generated during the cutting process.

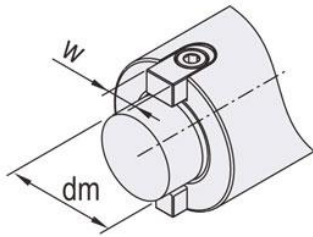
● Handle storage

The knife handle should be stored in a dry environment. During long-term storage, the taper handle and working parts should be coated with anti-rust oil.

Note: Use short series products first

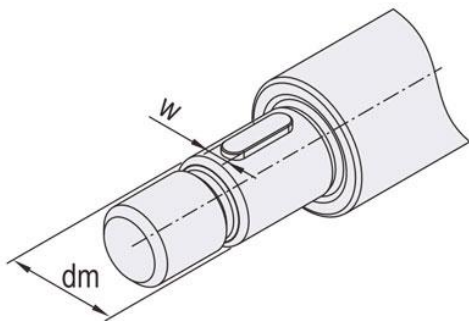


● Keyway size of face milling cutter shank



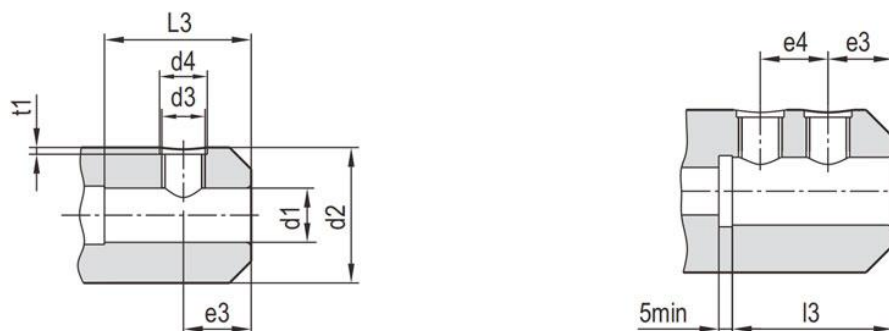
Metric			British system		
Model	dm(mm)	w(mm)	Model	dm(mm)	w(mm)
FMB16	16	8	FMA12.7	12.7	6.35
FMB22	22	10	FMA19.05	19.05	7.93
FMB27	27	12	FMA25.4	25.4	9.52
FMB32	32	14	FMA31.75	31.75	12.7
FMB40	40	16	FMA38.1	38.1	15.87
FMB60	60	25.4	FMA50.8	50.8	19.05
-	-	-	FMA63.5	63.5	25.4

● Three-sided milling cutter shank keyway size



Metric			British system		
Model	dm(mm)	w(mm)	Model	dm(mm)	w(mm)
SCA13	13	-	SCA12.7	12.7	-
SCA16	16	4	SCA19.05	19.05	-
SCA22	22	6	SCA25.4	25.4	6.35
SCA27	27	7	SCA31.75	31.75	7.92
SCA32	32	8	SCA38.1	38.1	9.52
SCA40	40	10	SCA50.8	50.8	-

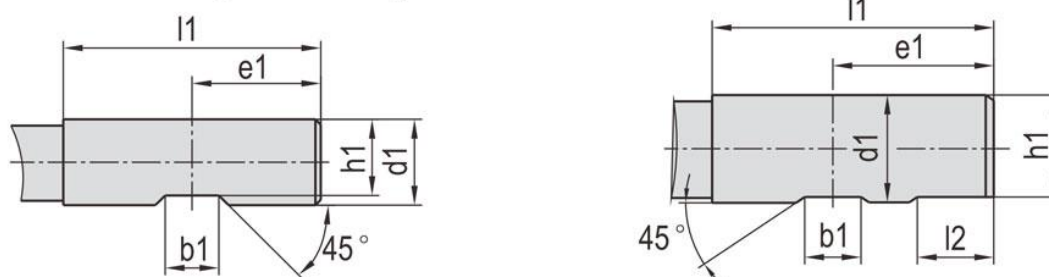
● Side-fixed tool holder interface form (DIN 1835-B)



Size (mm)

d1 (H5)	d2 ($\frac{0}{-1}$)	d3 (6H)	d4 min	e3 ($\frac{0}{-1}$)	e4 (± 0.5)	l3 (± 1)	t1	Recommended torque for pressing solid carbide tools
6	25	M6	8	18.0	-	35	1.0	5Nm
8	28	M8	10	18.0	-	35	1.3	10Nm
10	35	M10	12	20.0	-	39	1.5	16Nm
12	42	M12	14	22.5	-	44	1.6	28Nm
14	44	M12	14	22.5	-	44	1.6	28Nm
16	48	M14	16	24.0	-	47	1.7	42Nm
18	50	M14	16	24.0	-	47	1.7	42Nm
20	52	M16	18	25.0	-	49	2.1	50Nm
25	65	M18x2	20	24.0	25	54	2.1	60Nm
32	72	M20x2	22	24.0	28	58	2.2	60Nm
40	84	M20x2	22	30.0	32	68	2.2	60Nm

● Flat shank tool form (DIN 1835-B)



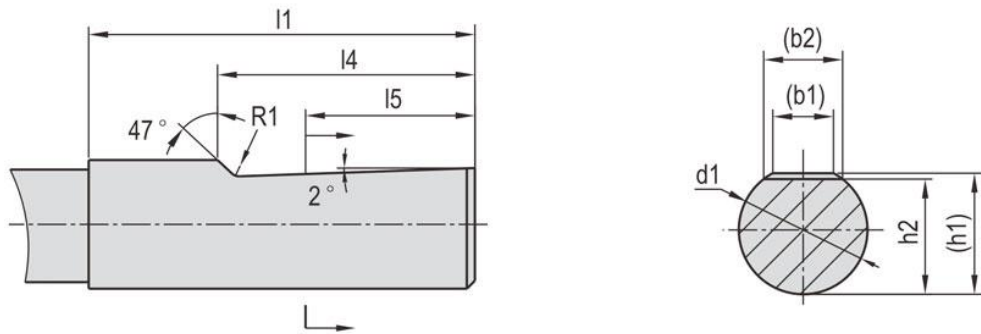
Size (mm)

● Apply to d1=φ6~φ20

● Apply to d1=φ20~φ40

d1 (h6)	l1 ($\frac{+2}{0}$)	b1 ($\frac{+0.05}{0}$)	l2 ($\frac{+1}{0}$)	e1 ($\frac{0}{-1}$)	h1 (h11)
6	36	4.2	-	18.0	5.1
8	36	5.5	-	18.0	6.9
10	40	7.0	-	20.0	8.5
12	45	8.0	-	22.5	10.4
14	45	8.0	-	22.5	12.7
16	48	10.0	-	24.0	14.2
18	48	10.0	-	24.0	16.2
20	50	11.0	-	25.0	18.2
25	56	12.0	17	32.0	23.0
32	60	14.0	19	35.0	30.0
40	70	14.0	19	40.0	38.0

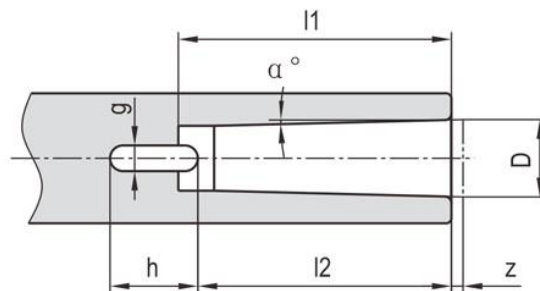
● 2° Side-fixed tool holder interface form (DIN 1835-E)



Size (mm)

d1 (h6)	(b1) ≈	(b2)	(h1)	h2 (h13)	l1 (+2 0)	l4 ($\frac{0}{-1}$)	l5	R1 min
6	3.5	4.8	5.4	4.8	36	25	18	1.2
8	4.7	6.1	7.2	6.6	36	25	18	1.2
10	5.7	7.3	9.1	8.4	40	28	20	1.2
12	6.0	8.2	11.2	10.4	45	33	22.5	1.2
16	7.6	10.1	15.0	14.2	48	36	24	1.6
20	8.4	11.5	19.1	18.2	50	38	25	1.6
25	9.3	13.6	24.1	23.0	56	44	32	1.6
32	9.9	15.5	31.2	30.0	60	48	35	1.6
40	12.4	18.2	39.0	37.8	68	56	41	1.6

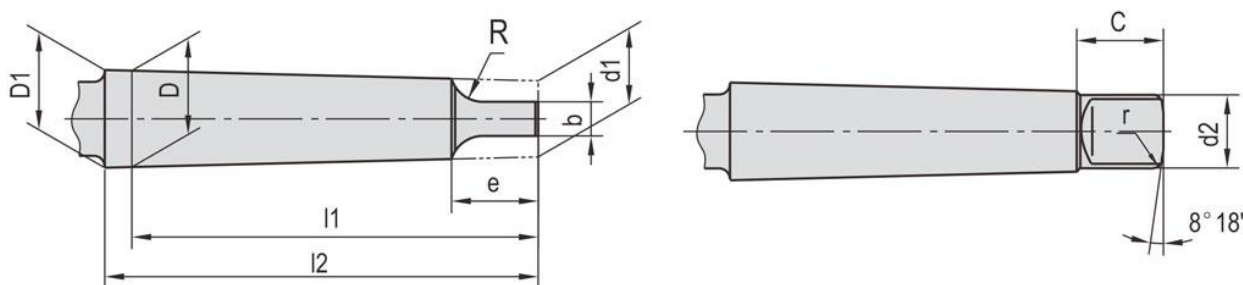
● Connection dimensions of Morse taper shank with flat tail (DIN 228-d)



Size (mm)

Taper Number	Taper		Cone angle (α°)	D	l1 (min)	l2	g	h	z	Corresponding drill diameter range (mm)
MT0	1/19.212	0.05205	1° 29' 27"	9.045	52	49	4.1	15	1	-
MT1	1/20.047	0.04988	1° 25' 43"	12.065	56	52	5.4	19	1	3.00-14.00
MT2	1/20.020	0.04995	1° 25' 50"	17.780	67	62	6.6	22	1	14.00-23.00
MT3	1/19.922	0.05020	1° 26' 16"	23.825	84	78	8.2	27	1	23.00-32.00
MT4	1/19.254	0.05194	1° 29' 15"	31.267	107	98	12.2	32	1.5	32.00-50.00
MT5	1/19.002	0.05263	1° 30' 26"	44.399	135	125	16.2	38	1.5	50.00-75.00
MT6	1/19.180	0.05214	1° 29' 36"	63.348	188	177	19.3	47	2	75.00-100.00
MT7	1/19.231	0.05200	1° 29' 22"	83.058	258	241	28.8	69	2	-

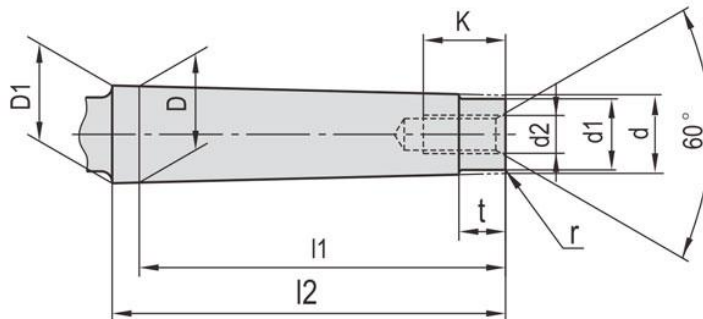
Side-fixed tool holder interface form (DIN 1835-B)



Size (mm)

Taper Number	D	D1	d1	d2	l1	l2	b	c	e	R	r	Corresponding drill diameter range (mm)
MT0	9.045	9.201	6.104	6	56.5	59.5	3.9	6.5	10.5	4	1	-
MT1	12.065	12.240	8.972	8.7	62.0	65.5	5.2	8.5	13.5	5	1.2	3.00-14.00
MT2	17.780	18.030	14.034	13.5	75.0	80.0	6.3	10.0	16.0	6	1.6	14.00-23.00
MT3	23.825	24.076	19.107	18.5	94.0	99.0	7.9	13.0	20.0	7	2	23.00-32.00
MT4	31.267	31.605	25.164	24.5	117.5	124.0	11.9	16.0	24.0	8	2.5	32.00-50.00
MT5	44.399	44.741	36.531	35.7	149.5	156.0	15.9	19.0	29.0	10	3	50.00-75.00
MT6	63.348	63.765	52.399	51.0	210.0	218.0	19.0	27.0	40.0	13	4	75.00-100.00
MT7	83.058	83.578	68.185	66.8	286.0	296.0	28.6	35.0	54.0	19	5	-

Morse taper shank without flat tail (DIN 228-A)

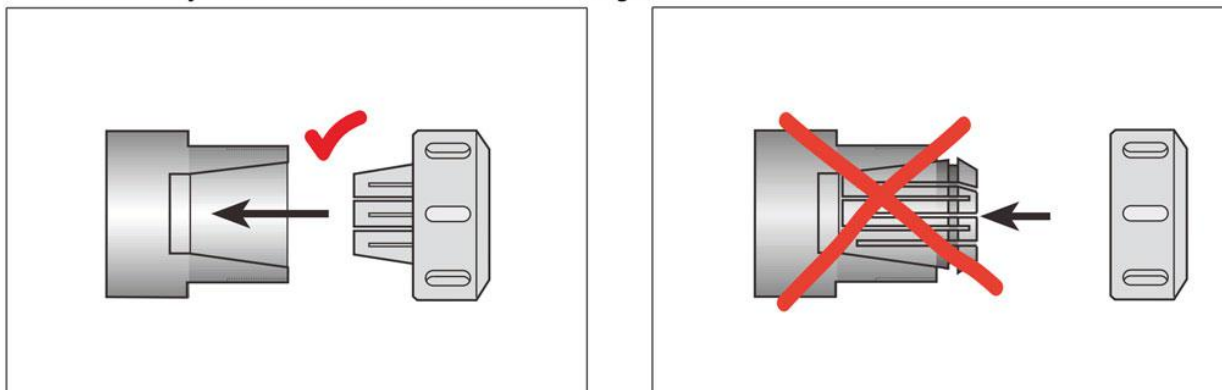


Size (mm)

Taper Number	D	D1	d	d1	l1	l2	t	r	d2	K	Corresponding milling cutter diameter range (mm)
MT0	9.045	9.201	6.442	6	50	53	4	0.2	-	-	-
MT1	12.065	12.240	9.396	9	53.5	57	5	0.2	M6	16	6.00-12.00
MT2	17.780	18.030	14.583	14	64	69	5	0.2	M10	24	14.00-20.00
MT3	23.825	24.076	19.759	19	81	86	7	0.6	M12	28	22.00-36.00
MT4	31.267	31.605	25.943	25	102.5	109	9	1.0	M16	32	32.00-56.00
MT5	44.399	44.741	37.584	25.7	129.5	136	9	2.5	M20	40	40.00-63.00
MT6	63.348	63.765	53.859	51	182	190	12	4.0	M24	50	-
MT7	83.058	83.578	70.052	65	250	260	18.5	5.0	M33	60	-

● Installation of spring chuck

- ※ Before installing the collet, the ER circlip must be installed in the nut. As shown in the figure, in order to obtain the best performance, the ER circlip, the threaded part of the ER nut, the positioning surface, and the taper surface of the jacket must be cleaned before installing the collet!



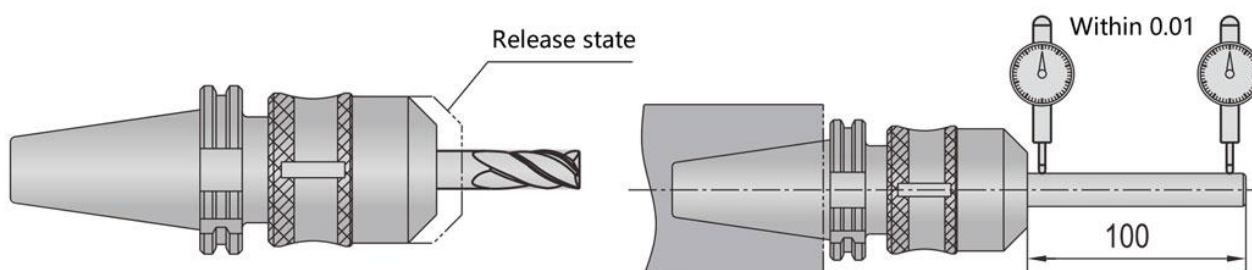
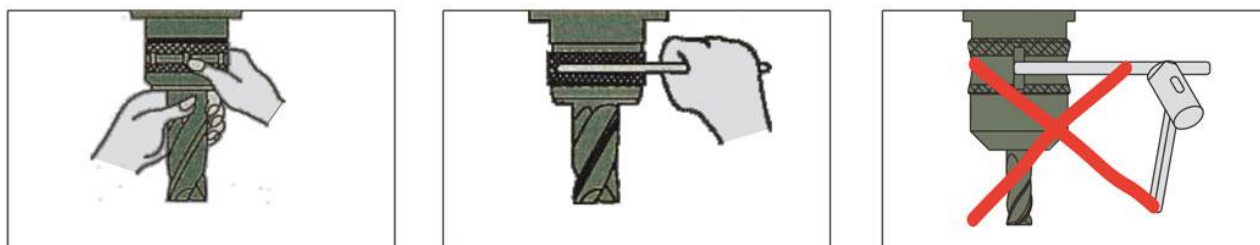
● Recommended torque for ER clamping nut:

Nut model	ER11M	ER11A	ER16M	ER16A	ER20M	ER20A	ER25UM	ER32UM	ER40UM
Torque (Nm)	16	24	24	56	28	80	100	130	170

- ※ The torque in the table is calculated based on the maximum diameter of the ER circlip. When a smaller size tool holder is used, the torque should be appropriately reduced.

● Features of powerful milling chuck holder:

- ※ Maximum clamping force, easy to use-safe and reliable clamping



- High precision, long life --- more conducive to the protection of tools, prolong tool life
- Rigid model --- it is with large cutting volume processing
- Excellent durability - the pressure is distributed on the needle roller of cage

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