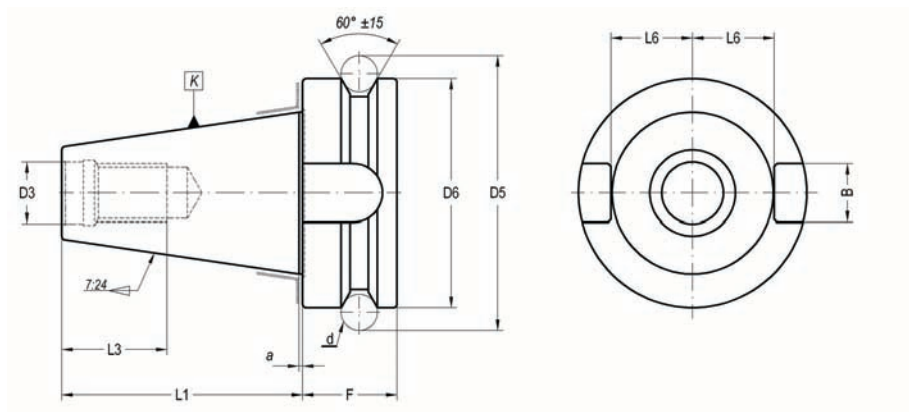




MAS 403 BT-DC

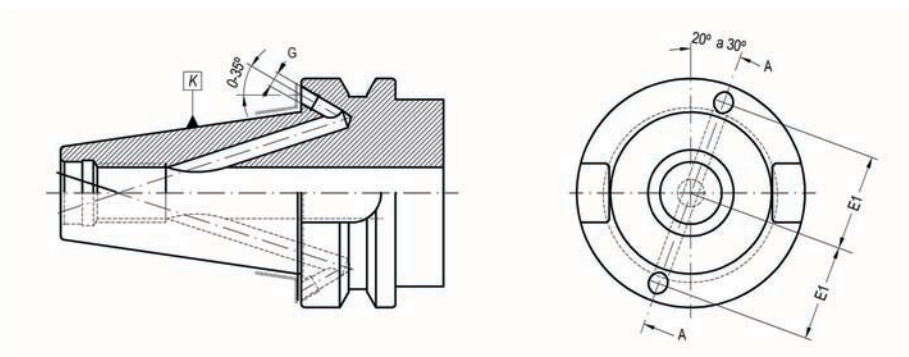
888528888888

FORM A
Without coolant through.



FORM AD + B
With central and flange through coolant channels.

Delivery: with two bolts to sealed flange channels.



K	BH12	D ₁	D ₂	D ₃ H8	D ₅	D ₆ H8	D ₉	L ₁ ±0,15	L3mí n	⁺⁰ L ₁ 0,2	⁺⁰ A 0,005	D	E ₁ ±0,4	F	G
40	16,1	44,45	M-16	17	75,68	63	4	65,4	30	22,6	1	10	27	26	M4
50	25,7	69,85	M-24	25	119,02	100	6	101,8	45	35,4	1,5	15	42	36,7	M6

Material:

Case-hardening and tempered.

Minimum strength in core 880 N/mm².

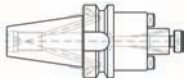
Surface hardness Rc 57-60

Taper tolerance: Grade AT3

Note: the rest of the dimensions are according MAS 403-BT

DYNAMIC BALANCING

- WE HAVE THE LATEST METHODS FOR DYNAMIC BALANCING OF OUR TOOLHOLDERS
- PLEASE CONTACT US FOR FURTHER INFORMATION

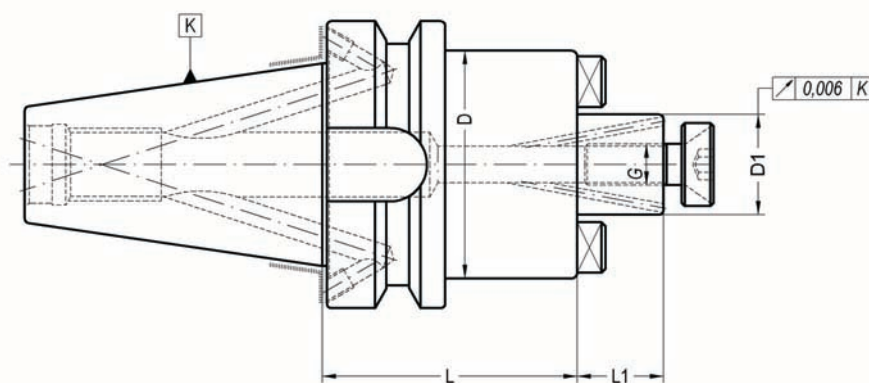
DESCRIPTION		Page
SHELL END MILL ARBORS		96
BASIC ADAPTERS FOR MODULAR TOOLING		97
FRONT CONTACT ADAPTERS FOR SCREW IN-TOOLS		98
COLLET CHUCKS DIN 6499 (ER)		99
COLLET CHUCKS DIN 6499 (ER)		100
GREAT POWER CHUCKS		101

DESCRIPTION		Page
WELDON HOLDERS		102
SHRINK FIT CHUCKS –STANDARD–		103
SHRINK FIT CHUCKS –VULCANO–		104
SHRINK FIT CHUCKS –VULCANO-ELS–		105
BLANK TOOLHOLDERS		106

001 52^{03/05}... SHELL END MILLS ARBORS

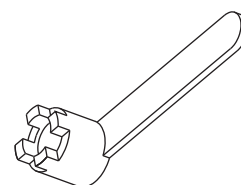
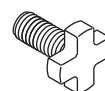


For shell end mills with driving slot DIN 138



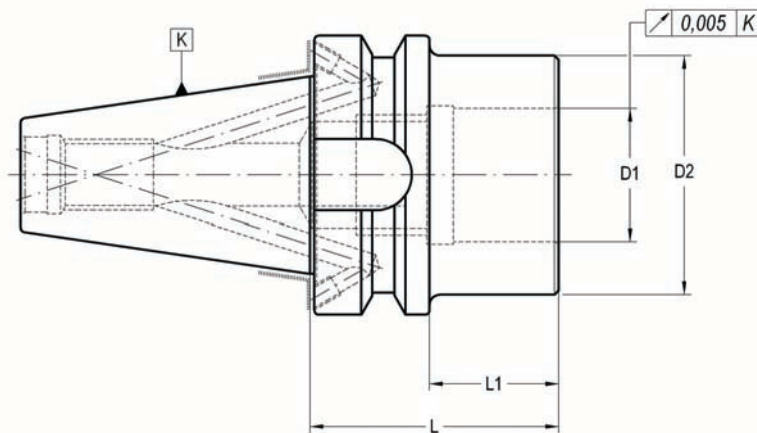
K	D ₁ h6	L	L ₁	D	F	M	G	COD. Form A	COD. Form AD + B
40	16	55	17	38/40	-	-	M-8	001 52 05 02 30	001 52 35 02 30
40	16	120	17	38/40	-	-	M-8	-	001 52 35 02 31
40	22	55	19	48/50	-	-	M-10	001 52 05 02 40	001 52 35 02 40
40	22	120	19	48/50	-	-	M-10	-	001 52 35 02 41
40	27	55	21	60	-	-	M-12	001 52 05 02 50	001 52 35 02 50
40	27	120	21	60	-	-	M-12	-	001 52 35 02 51
40	32	60	24	70	-	-	M-16	001 52 05 02 60	001 52 35 02 60
40	32	120	24	70	-	-	M-16	-	001 52 35 02 61
40	32	160	24	70	-	-	M-16	-	001 52 35 02 62
40	40	60	27	89	66,7	M-12	M-20	-	001 52 33 02 70
40	40	120	27	89	66,7	M-12	M-20	-	001 52 33 02 71
40	40	160	27	89	66,7	M-12	M-20	-	001 52 33 02 72
50	16	55	17	38/40	-	-	M-8	001 52 05 04 30	001 52 35 04 30
50	16	120	17	38/40	-	-	M-8	-	001 52 35 04 31
50	22	55	19	48/50	-	-	M-10	001 52 05 04 40	001 52 35 04 40
50	22	120	19	48/50	-	-	M-10	-	001 52 35 04 41
50	27	55	21	60	-	-	M-12	001 52 05 04 50	001 52 35 04 50
50	27	120	21	60	-	-	M-12	-	001 52 35 04 51
50	32	55	24	70	-	-	M-16	001 52 05 04 60	001 52 35 04 60
50	32	120	24	70	-	-	M-16	-	001 52 35 04 61
50	32	160	24	70	-	-	M-16	-	001 52 35 04 62
50	40	55	27	89	66,7	M-12	M-20	-	001 52 33 04 70
50	40	120	27	89	66,7	M-12	M-20	-	001 52 33 04 71
50	40	160	27	89	66,7	M-12	M-20	-	001 52 33 04 72
50	60	70	40	129	101,6	M-16	-	001 52 03 04 90	001 52 33 04 90
50	60	120	40	129	101,6	M-16	-	-	001 52 33 04 91
50	60	160	40	129	101,6	M-16	-	-	001 52 33 04 92

Accessories, see pages 267-293



D₁

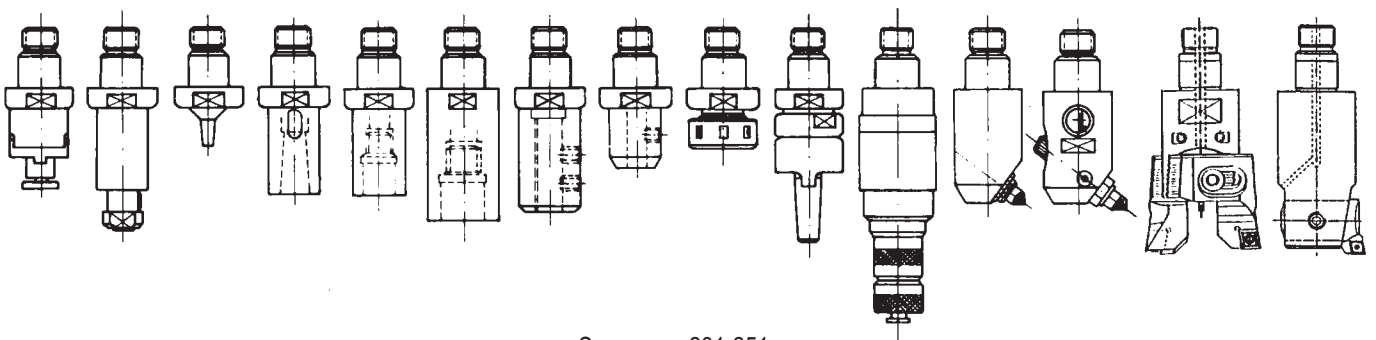
					OPTIONALS	
16	001 99 02 01 30	001 99 01 22 30	001 99 01 12 30	001 99 03 02 30	001 99 01 01 30	001 99 04 01 30
22	001 99 02 01 40	001 99 01 22 40	001 99 01 12 40	001 99 03 02 40	001 99 01 01 40	001 99 04 01 40
27	001 99 02 01 50	001 99 01 22 50	001 99 01 12 50	001 99 03 02 50	001 99 01 01 50	001 99 04 01 50
32	001 99 02 01 60	001 99 01 22 60	001 99 01 12 60	001 99 03 02 60	001 99 01 01 60	001 99 04 01 60
40	001 99 02 01 70	001 99 01 22 70	001 99 01 12 70	001 99 03 02 70	001 99 01 01 70	001 99 04 01 70
50	001 99 02 01 80	001 99 01 22 80	001 99 01 12 80	001 99 03 02 80	001 99 01 01 80	001 99 04 01 80



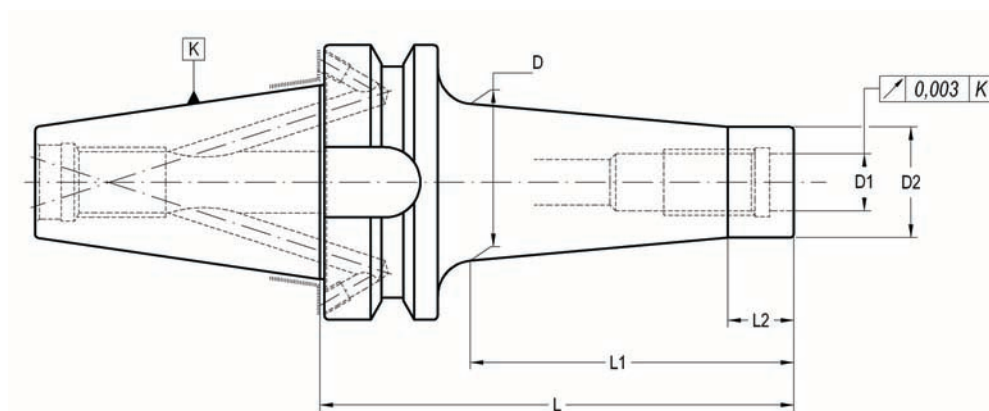
K	D ₁	D	L	L ₁	D ₂	COD. Form AD+B
40	16	23	100	73	27	003 52 54 02 13
40	20	29	100	73	33	003 52 54 02 14
40	26	36	100	73	40	003 52 54 02 15
40	30	46	100	73	50	003 52 54 02 16
40	30	46	55	28	-	003 52 54 02 06
40	46	63	100	73	-	003 52 54 02 07
50	16	23	135	97	28,5	003 52 54 04 13
50	20	29	135	97	34,5	003 52 54 04 14
50	26	36	135	97	41,5	003 52 54 04 15
50	30	46	63	25	-	003 52 54 04 06
50	46	63	63	25	-	003 52 54 04 07
50	46	90	63	25	-	003 52 54 04 08

Interchangeable with C.O. System

For modular tooling see pages...

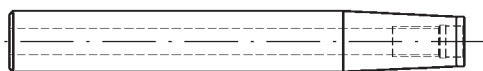


See pages 231-251

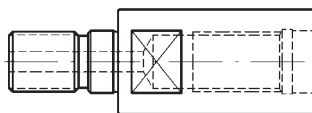


K	G	D	D ₁	D ₂	L	L ₁	L ₂	COD. Form AD + B
40	M-8	12,8	8,5	16	55	25	10	003 52 57 12 02
40	M-8	12,8	8,5	24	105	75	10	003 52 57 32 02
40	M-10	17,8	10,5	20	55	25	10	003 52 57 12 03
40	M-10	17,8	10,5	28	105	75	10	003 52 57 32 03
40	M-12	20,8	12,5	24	55	25	10	003 52 57 12 04
40	M-12	20,8	12,5	32	105	75	10	003 52 57 32 04
40	M-16	28,8	17	30	55	25	10	003 52 57 12 05
40	M-16	28,8	17	38	105	75	10	003 52 57 32 05
50	M-12	20,8	12,5	24	95	50	10	003 52 57 24 04
50	M-12	20,8	12,5	34	145	100	10	003 52 57 44 04
50	M-16	28,8	17	32	95	50	10	003 52 57 24 05
50	M-16	28,8	17	42	145	100	10	003 52 57 44 05

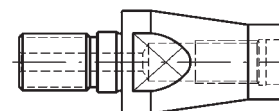
For modular tooling see pages...



Cylindrical extensions (see page 219)



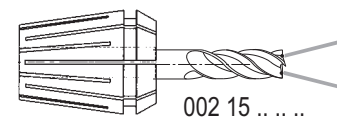
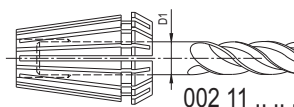
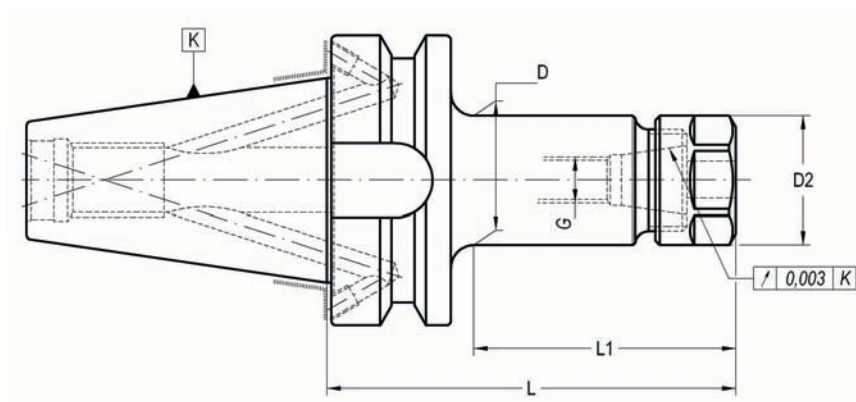
Extensions (see page 239)



Reducers (see page 239)

Delivery:

- Balanced according to ISO 1940-1 up to 15.000 R.p.m.
- We have latest methods for dynamic balancing up to 50.000 R.p.m.
- Coolant tube to be ordered separately.



COLLETS see pages 257-258

K	SIZE	D ₁	L	D	D ₂	L ₁	G	COD. Form AD + B
40	ER 16	0,5 - 10	70	28	-	40	M - 10	004 52 06 02 03
40	ER 16	0,5 - 10	100	28	-	70	M - 10	004 52 06 02 13
40	ER 16	0,5 - 10	160	28	40	85	M - 10	004 52 06 02 33

For tools with cylindrical straight shank DIN 1835-A

Balanced according to ISO 1940-1 up to 10.000 r.p.m.

We have latest methods for dynamic balancing up to 50.000 r.p.m.

Accessories, see pages 267-293

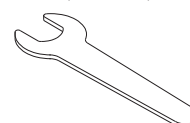
BALANCED
NUT
(STANDARD)



BEARING
NUT
(OPTIONAL)



WRENCH
(OPTIONAL)



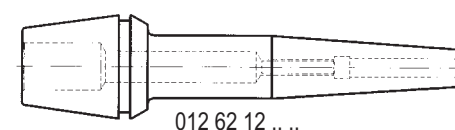
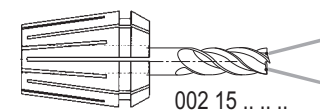
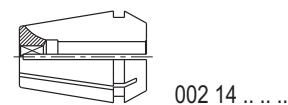
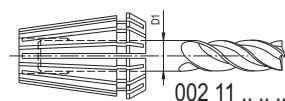
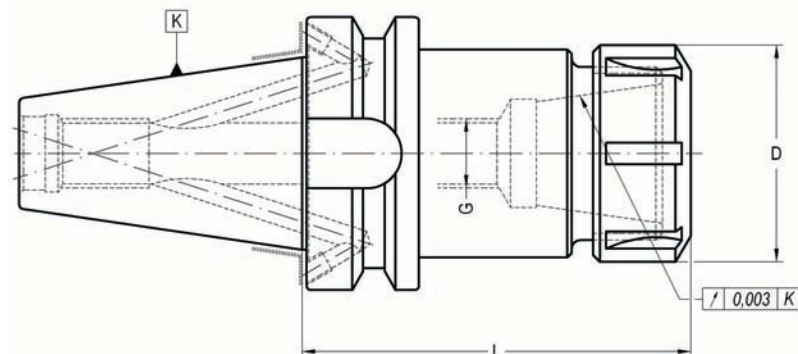
SIZE

ER 16

004 99 01 08 03

004 99 01 04 03

004 99 04 06 25



COLLETS see pages 257-259

K	D ₁	D	L	D	G	COD. Form AD + B
40	ER 25	16	70	42	M-16	004 52 06 02 05
40	ER 25	16	100	42	M-16	004 52 06 02 15
40	ER 25	16	150	42	M-16	004 52 06 02 25
40	ER 32	20	70	50	M-16	004 52 06 02 06
40	ER 32	20	100	50	M-16	004 52 06 02 16
40	ER 32	20	150	50	M-16	004 52 06 02 26
40	ER 40	26	70	63	M-16	004 52 06 02 07
40	ER 40	26	100	63	M-16	004 52 06 02 17
50	ER 32	20	100	50	M-16	004 52 06 04 06
50	ER 32	20	150	50	M-16	004 52 06 04 26
50	ER 32	20	200	50	M-16	004 52 06 04 46
50	ER 40	26	100	63	M-16	004 52 06 04 07
50	ER 40	26	150	63	M-16	004 52 06 04 27
50	ER 40	26	200	63	M-16	004 52 06 04 47

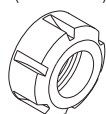
For tools with cylindrical straight shank DIN 1835-A

Balanced according to ISO 1940-1 up to 10.000 r.p.m.
We have latest methods for dynamic balancing up to 50.000 r.p.m.

For boxes and composition of different sets see pages 265-266

Accessories, see pages 267-293

BALANCED
NUT
(STANDARD)



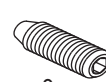
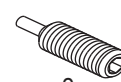
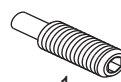
BEARING
NUT
(OPTIONAL)



WRENCH
(OPTIONAL)



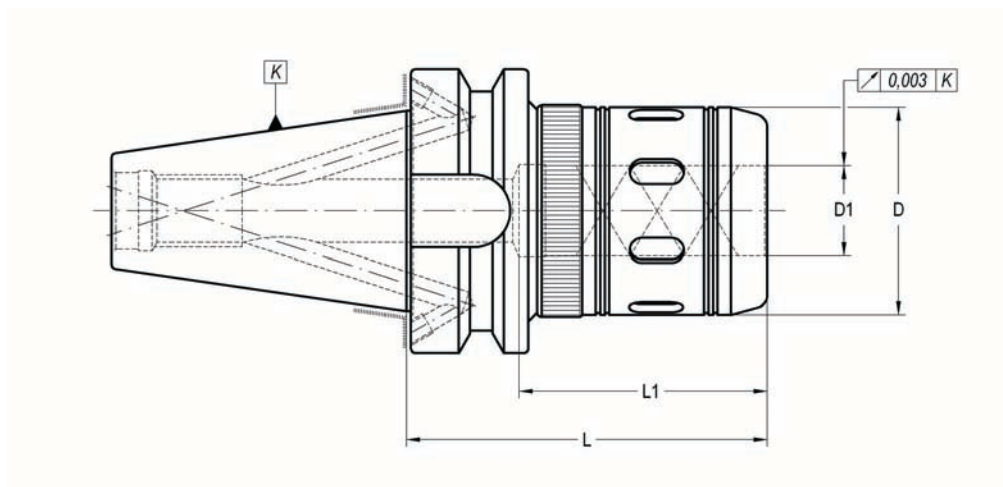
1 - LENGTH ADJUSTMENT SCREW
2 and 3 - LENGTH ADJUSTMENT SCREW WITH
THROUGH HOLE



G	1	2	3
M-12	301 99 02 12 01	301 99 02 12 02	—
M-16	301 99 02 16 01	301 99 02 16 02	301 99 02 16 03

SIZE

ER 25	004 99 01 03 05	004 99 01 04 05	004 99 04 03 05
ER 32	004 99 01 03 06	004 99 01 04 06	004 99 04 03 06
ER 40	004 99 01 03 07	004 99 01 04 07	004 99 04 03 07
ER 50	004 99 01 03 08	004 99 01 04 08	004 99 04 03 08



K	D ₁ máx.	L	D	L ₁	COD. Form AD+B		 OPTIONAL
40	20	80	46	60	004 52 15 02 04	004 99 04 02 06	004 99 04 09 09
40	20	105	46	60	004 52 15 02 14	004 99 04 02 06	004 99 04 09 09
40	32	85	62	75	004 52 15 02 06	004 99 04 02 06	004 99 04 09 11
40	32	105	62	80	004 52 15 02 16	004 99 04 02 06	004 99 04 09 11
50	20	100	46	60	004 52 15 04 04	004 99 04 02 06	004 99 04 09 09
50	32	100	62	80	004 52 15 04 06	004 99 04 02 06	004 99 04 09 11
50	32	135	62	80	004 52 15 04 26	004 99 04 02 06	004 99 04 09 11
50	40	115	85	90	004 52 15 04 07	004 99 04 02 06	004 99 04 09 13
50	50	115	99	90	004 52 15 04 09	004 99 04 02 06	004 99 04 09 14

For tools with cylindrical straight shanks

For an optimum performance of the chuck it is highly recommended to use h6 cylindrical tools

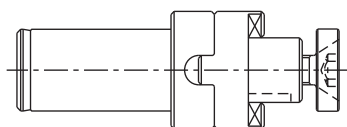
For tools with nominal diameter collet there is no need.

K40 balanced according to ISO 1940-1 up to 15.000 r.p.m.

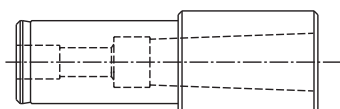
K50 balanced according to ISO 1940-1 up to 10.000 r.p.m.

We have latest methods for dynamic balancing up to 50.000 r.p.m.

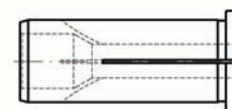
Accessories, see pages...



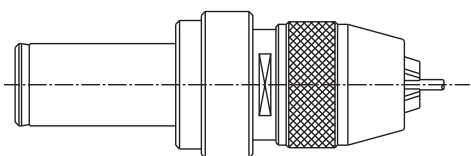
001 50 02 06 ..
See page 214



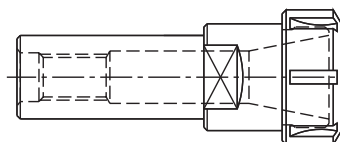
003 50 12 06 ..
See page 214



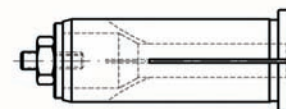
002 05 ..
See page 262



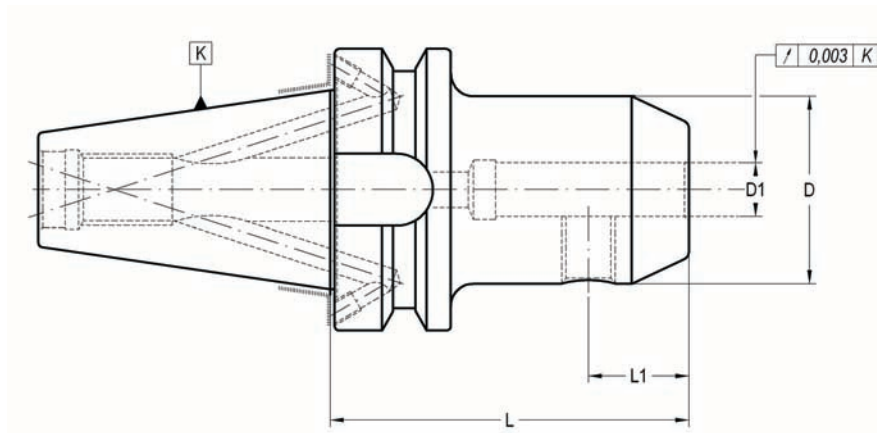
012 50 09
See page 216



004 50 06
See page 215



002 009
See page 262



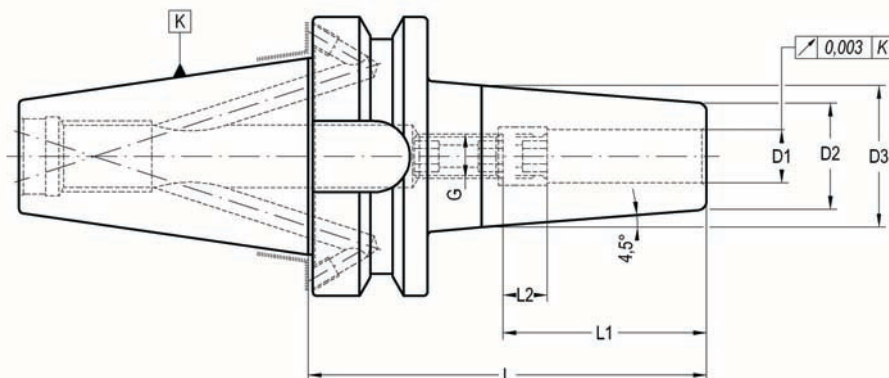
K	D ₁	*tol.	L	D	COD. Form AD+B	
40	6	+ 0,005 0	50	25	012 52 01 12 06	301 01 05 06 10
40	8		50	28	012 52 01 12 08	301 01 05 08 10
40	10		63	35	012 52 01 12 10	301 01 05 10 12
40	12		63	42	012 52 01 12 12	301 01 05 12 16
40	14		63	44	012 52 01 12 14	301 01 05 12 16
40	16		63	48	012 52 01 12 16	301 01 05 14 16
40	18		63	50	012 52 01 12 18	301 01 05 14 16
40	20	+ 0,007 0	63	52	012 52 01 12 20	301 01 05 16 16
40	25		95	65	012 52 01 12 25	301 01 05 18 20
40	32		100	72	012 52 01 12 32	301 01 05 20 20
40	40	+ 0,009 0	100	80	012 52 01 12 40	301 01 05 20 20
50	6	+ 0,005 0	63	25	012 52 01 14 06	301 01 05 06 10
50	8		63	28	012 52 01 14 08	301 01 05 08 10
50	10		65	35	012 52 01 14 10	301 01 05 10 12
50	12		80	42	012 52 01 14 12	301 01 05 12 16
50	14		80	44	012 52 01 14 14	301 01 05 12 16
50	16		80	48	012 52 01 14 16	301 01 05 14 16
50	18		80	50	012 52 01 14 18	301 01 05 14 16
50	20	+ 0,007 0	80	52	012 52 01 14 20	301 01 05 16 16
50	25		100	65	012 52 01 14 25	301 01 05 18 20
50	32		105	72	012 52 01 14 32	301 01 05 20 20
50	40	+ 0,009 0	105	80	012 52 01 14 40	301 01 05 20 20
50	50		125	98	012 52 01 14 50	301 01 05 24 25

For end mills with shank DIN 1835-B DIN 6535 HB.

*The hole diameter and circular desviation tolerances have been significantly tightened up compared with DIN 1835 in order to achieve the highest levels of machining precision.

K40- Balanced according to ISO 1940-1 up to 10.000 r.p.m. We have latest methods for dynamic balancing up to 50.000 r.p.m.

D1 ≥ 25 with two clamping holes.



K	D ₁	D ₂	D ₃	L	L ₁	L ₂	G	COD. Form AD+B	
40	3	12	18	90	15	-	-	012 52 12 12 03	-
40	4	14	20	90	15	-	-	012 52 12 12 04	-
40	5	16	22	90	20	-	-	012 52 12 12 05	-
40	6	21	27	90	36	10	M-5	012 52 12 12 06	301 02 33 05 02
40	6	21	27	120	36	10	M-5	012 52 12 22 06	301 02 33 05 02
40	8	21	27	90	36	10	M-6	012 52 12 12 08	301 02 33 06 02
40	8	21	27	120	36	10	M-6	012 52 12 22 08	301 02 33 06 02
40	10	24	32	90	41	10	M-8	012 52 12 12 10	301 02 33 08 02
40	10	24	32	120	41	10	M-8	012 52 12 22 10	301 02 33 08 02
40	12	24	32	90	46	10	M-10	012 52 12 12 12	301 02 33 10 02
40	12	24	32	120	46	10	M-10	012 52 12 22 12	301 02 33 10 02
40	14	27	34	90	46	10	M-10	012 52 12 12 14	301 02 33 10 02
40	14	27	34	120	46	10	M-10	012 52 12 22 14	301 02 33 10 02
40	16	27	34	90	49	10	M-12	012 52 12 12 16	301 02 33 12 02
40	16	27	34	120	49	10	M-12	012 52 12 22 16	301 02 33 12 02
40	18	33	42	90	49	10	M-12	012 52 12 12 18	301 02 33 12 02
40	18	33	42	120	49	10	M-12	012 52 12 22 18	301 02 33 12 02
40	20	33	42	90	51	10	M-16	012 52 12 12 20	301 02 33 16 02
40	20	33	42	120	51	10	M-16	012 52 12 22 20	301 02 33 16 02
40	25	44	53	110	57	10	M-16	012 52 12 12 25	301 02 33 16 02
40	32	44	53	110	61	10	M-16	012 52 12 12 32	301 02 33 16 02
50	6	21	27	100	36	10	M-5	012 52 12 14 06	301 02 33 05 02
50	8	21	27	100	36	10	M-6	012 52 12 14 08	301 02 33 06 02
50	10	24	32	100	41	10	M-8	012 52 12 14 10	301 02 33 08 02
50	12	24	32	100	46	10	M-10	012 52 12 14 12	301 02 33 10 02
50	14	27	34	100	46	10	M-10	012 52 12 14 14	301 02 33 10 02
50	16	27	34	100	49	10	M-12	012 52 12 14 16	301 02 33 12 02
50	18	33	42	100	49	10	M-12	012 52 12 14 18	301 02 33 12 02
50	20	33	42	100	51	10	M-16	012 52 12 14 20	301 02 33 16 02
50	25	44	53	100	57	10	M-16	012 52 12 14 25	301 02 33 16 02
50	32	44	53	100	61	10	M-16	012 52 12 14 32	301 02 33 16 02

Characteristics:

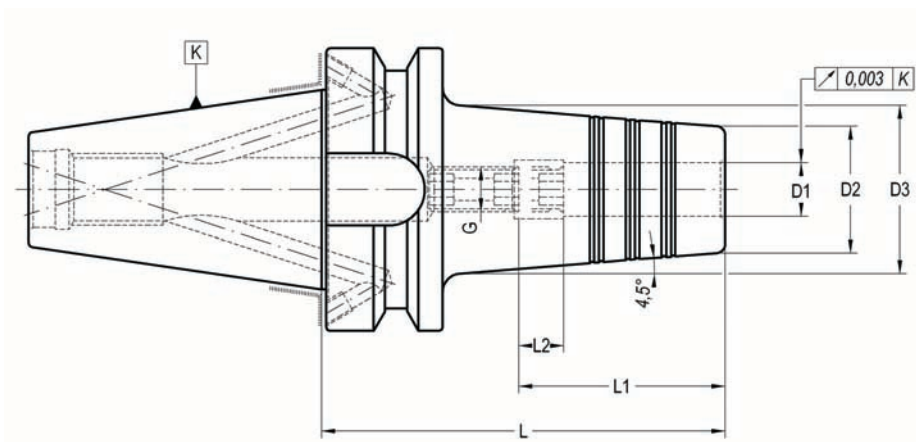
- Heat resistant hot-working steel.
- Tempered: 54 -2 HRc.
- Taper manufactured according similar to BT
- Balanced according to ISO-1940-1 to G2,5 at 25.000 rpm.

Application:

- Machining where it requires a exceptional high accuracy.
- For carbide, cermet and HSS tools with h6 tolerance.

Delivery:

- With built-in bored through stop screw.
- With two screws to AD form transform.



K	D ₁	D ₂	D ₃	L	L ₁	L ₂	G	COD. Form AD+B	
40	12	27	37	90	46	10	M-10	012 52 42 12 12	301 02 33 10 02
40	16	33	43	90	49	10	M-12	012 52 42 12 16	301 02 33 12 02
40	20	44	53	90	51	10	M-16	012 52 42 12 20	301 02 33 16 02
40	25	48	53	110	57	10	M-16	012 52 42 12 25	301 02 33 16 02
50	12	27	36	100	46	10	M-10	012 52 42 14 12	301 02 33 10 02
50	16	33	42	100	49	10	M-12	012 52 42 14 16	301 02 33 12 02
50	20	44	54	100	51	10	M-16	012 52 42 14 20	301 02 33 16 02
50	25	48	56	120	57	10	M-16	012 52 42 14 25	301 02 33 16 02

Other dimension on request.

Characteristics:

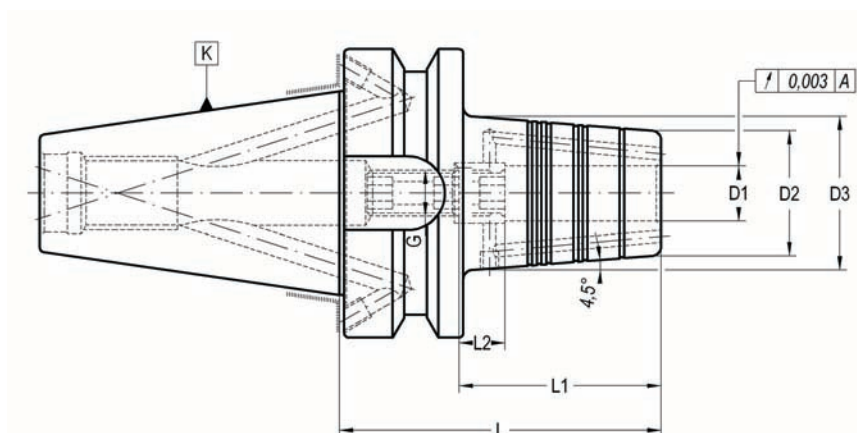
- Heat resistant hot-working steel.
- Tempered: 54 -2 HRc.
- Taper manufactured similar to BT
- Balanced according to ISO-1940-1 to G2,5 at 25.000 rpm.

Application:

- Machining where it requires a exceptional high accuracy.
- Only for hard metal tools with h6 tolerance.

Delivery:

- With built-in bored through stop screw.
- With two screws to AD form transform.



K	D ₁	D ₂	D ₃	L	L ₁	L ₂	G	COD. Form AD+B	
40	12	27	34	70	46	10	M-10	012 52 62 02 12	301 02 33 10 04
40	16	33	41	75	49	10	M-12	012 52 62 02 16	301 02 33 12 04
40	20	44	52	75	51	10	M-16	012 52 62 02 20	301 02 33 16 04
40	25	48	53	85	57	10	M-16	012 52 62 02 25	301 02 33 16 04
50	12	27	33	80	46	10	M-10	012 52 62 04 12	301 02 33 10 04
50	16	33	40	85	49	10	M-12	012 52 62 04 16	301 02 33 12 04
50	20	44	51	85	51	10	M-16	012 52 62 04 20	301 02 33 16 04
50	25	48	56	95	57	10	M-16	012 52 62 04 25	301 02 33 16 04

Other dimension on request.

Characteristics:

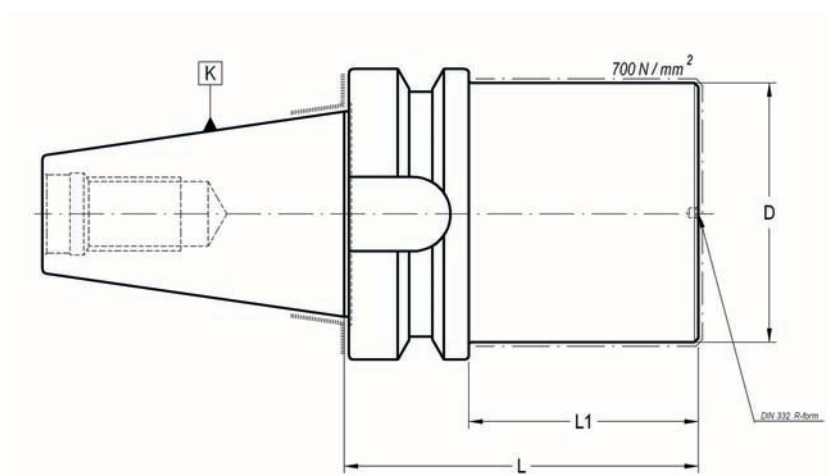
- Heat resistant hot-working steel.
- Tempered: 54 -2 HRc.
- Taper manufactured similar to BT
- Balanced according to ISO-1940-1 to G2,5 at 25.000 rpm.

Application:

- Machining where it requires a exceptional high accuracy.
- Only for hard metal tools with h6 tolerance.

Delivery:

- With built-in bored through stop screw.
- With two screws to AD form transform.



K	D	L	COD. Form A
40	63	160	020 52 02 02 73
40	63	250	020 52 02 02 75
50	90	160	020 52 02 04 93
50	90	250	020 52 02 04 95

The area of diameter D and length L1 has 700N/ mm²
 Rest is hardened to 57-60Rc