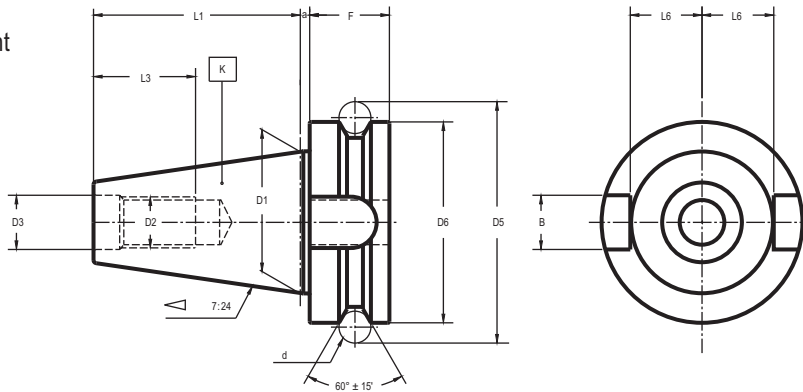




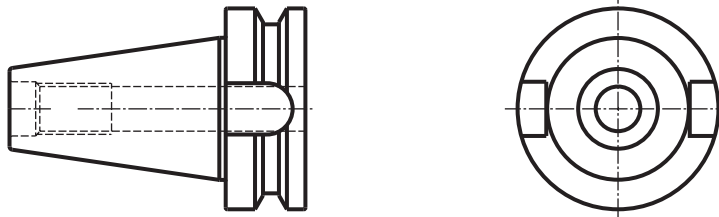
MAS 403-BT



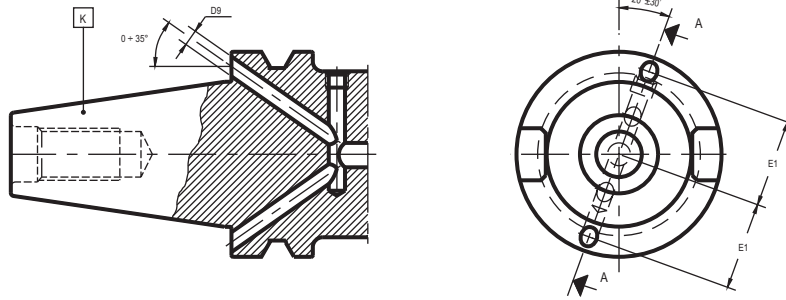
FORM A
Without coolant through.



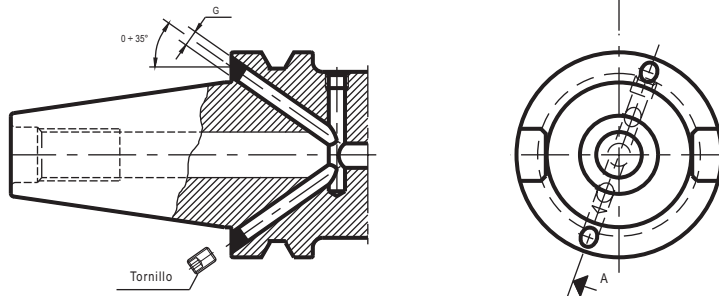
FORM AD
With central through coolant channel.



FORM B
With flange through coolant channels.



FORM AD + B
With central and flange through coolant channels.
Delivery:
With two bolts to sealed flange channels.



Material:
Case-hardening alloy steel.
Case-hardened and tempered.
Minimum strength in core
880 N/mm².
Surface hardness Rc 57 ÷ 60

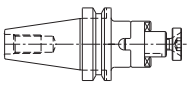
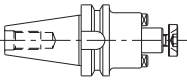
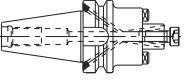
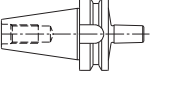
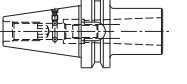
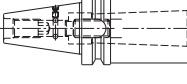
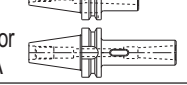
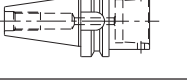

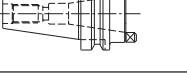
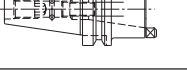

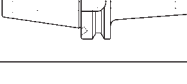


Taper tolerance:
Grade AT3.


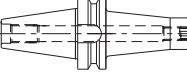
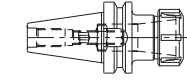
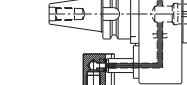
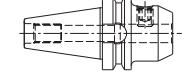
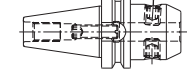
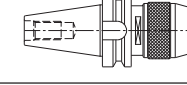
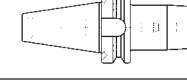



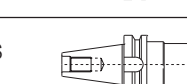
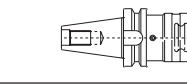



The rest of the dimensions are according to MAS 403-BT

K	B H12	D ₁	D ₂	D ₃ H8	D ₅	D ₆ h8	D ₉	L ₁ ^{+0.15}	L ₃ mí n	L ₆ ⁺⁰ / _{-0.2}	a ^{±0.4}	d	E ₁ ^{±0.4}	F	G
30	16,1	31,75	M-12	12,5	56,14	46	4	48,4	24	16,3	2	8	21	20	M4
35	16,1	38,10	M-12	12,5	65,68	53	4	56,4	24	19,6	2	10	—	22	M4
40	16,1	44,45	M-16	17	75,68	63	4	65,4	30	22,6	2	10	27	25	M4
45	19,3	57,15	M-20	21	100,21	85	5	82,8	38	29,1	3	12	35	30	M6
50	25,7	69,85	M-24	25	119,02	100	6	101,8	45	35,4	3	15	42	35	M6

DYNAMIC BALANCING

- WE HAVE THE LATEST METHODS FOR DYNAMIC BALANCING OF OUR TOOLHOLDERS (see page 303)
- PLEASE CONTACT US FOR FURTHER INFORMATION

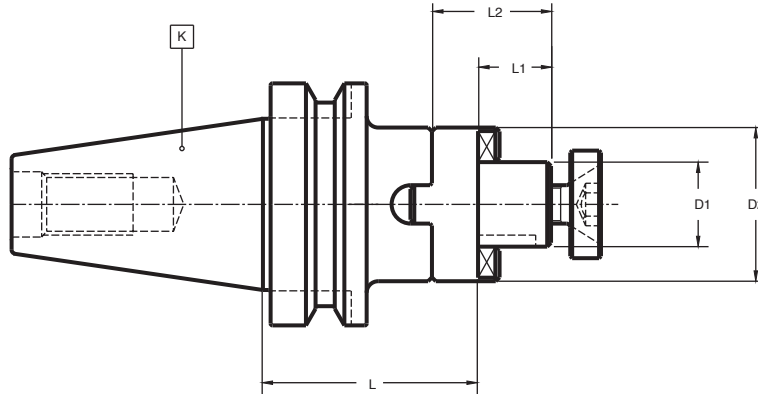
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SHELL END MILL ARBORS		63
SHELL END MILL ARBORS FOR CUTTERS WITH INTERNAL COOLING		64
DRILL CHUCK ARBORS		65
REDUCING ADAPTERS For Morse taper tools with thread DIN 228-A		66
REDUCING ADAPTERS For Morse taper tools with thread DIN 228-A		67
EXTENSIONS AND REDUCING ADAPTERS For tapered Morse taper tools DIN 228-B or Morse taper tools with thread DIN 228-A		68
ADAPTERS JIS B 6339-BT TO DIN 69063-HSK		69
HOLDERS FOR ADJUSTABLE ADAPTERS DIN 6327		70
REDUCING ADAPTERS For tools with DIN 2080, DIN 69871 or MAS-BT taper		71
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COLLET CHUCKS FOR DIN 6388 COLLETS		75
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ROTARY COOLANT ADAPTERS		80 81 82
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SHRINK FIT CHUCKS -SLIM LINE-		88
TAPPING CHUCKS Self feed and compression system		89.1
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QUICK-CHANGE TAPPING CHUCKS Self feed and compression system		89.3
QUICK-CHANGE TAPPING CHUCKS For BILZ system tap adapter		89
QUICK-CHANGE SOLID DRIVE TAPPING CHUCKS For synchronized feed control machines		90
TOOLHOLDER BLANKS		91

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001 32³³₃₅ page 64

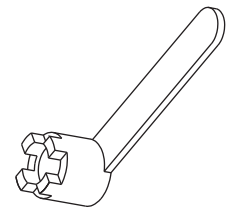
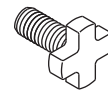
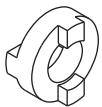
003¹²₃₂ 54 + 001 54 0³₅ pages 73 and 233



Maximum circular deviation between K and D₁ ≤ 0,008

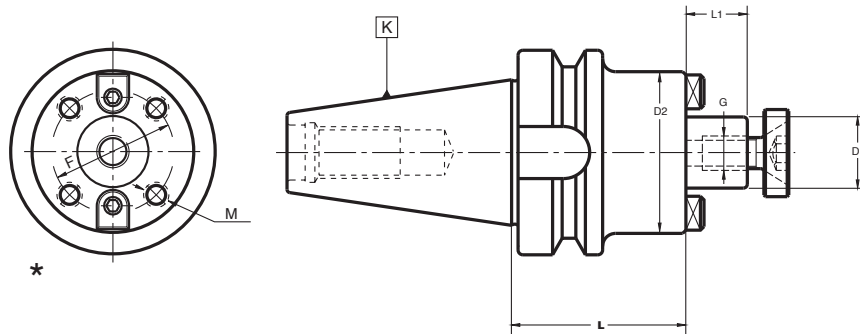
K	D ₁ h6	L	L ₁	L ₂	D ₂	COD. Form A
30	16	50	17	27	32	001 12 02 01 30
30	22	50	19	31	40	001 12 02 01 40
30	27	55	21	33	48	001 12 02 01 50
40	16	55	17	27	32	001 12 02 02 30
40	16	100	17	27	32	001 12 02 02 31
40	22	55	19	31	40	001 12 02 02 40
40	22	100	19	31	40	001 12 02 02 41
40	27	55	21	33	48	001 12 02 02 50
40	27	100	21	33	48	001 12 02 02 51
40	32	60	24	38	58	001 12 02 02 60
40	32	100	24	38	58	001 12 02 02 61
40	40	60	27	41	70	001 12 02 02 70
40	40	100	27	41	70	001 12 02 02 71
50	16	70	17	27	32	001 12 02 04 30
50	16	100	17	27	32	001 12 02 04 31
50	22	70	19	31	40	001 12 02 04 40
50	22	100	19	31	40	001 12 02 04 41
50	27	70	21	33	48	001 12 02 04 50
50	27	100	21	33	48	001 12 02 04 51
50	32	70	24	38	58	001 12 02 04 60
50	32	100	24	38	58	001 12 02 04 61
50	40	70	27	41	70	001 12 02 04 70
50	40	100	27	41	70	001 12 02 04 71
50	50	70	30	46	90	001 12 02 04 80
50	50	125	30	46	90	001 12 02 04 81

Accessories, see pages 267-293





D ₁	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

ALTERNATIVE SOLUTIONS 001 12 02 page 62 / 001 32³³ page 64 / 003¹² 54 + 001 54 0³ pages 73 and 233



Maximum circular deviation between K and D₁ ≤ 0,008

K	D ₁ h6	L	L ₁	D ₂	F	M	G	COD. Form A
40	16	55	17	38/40	—	—	M-8	001 12 05 02 30
40	16	120	17	38/40	—	—	M-8	001 12 05 02 31
40	22	55	19	48/50	—	—	M-10	001 12 05 02 40
40	22	120	19	48/50	—	—	M-10	001 12 05 02 41
40	27	55	21	60	—	—	M-12	001 12 05 02 50
40	27	120	21	60	—	—	M-12	001 12 05 02 51
40	32	60	24	70	—	—	M-16	001 12 05 02 60
40	32	120	24	70	—	—	M-16	001 12 05 02 61
*40	40	60	27	89	66,7	M-12	M-20	001 12 03 02 70
*40	40	120	27	89	66,7	M-12	M-20	001 12 03 02 71
45	16	55	17	40	—	—	M-8	001 12 05 03 30 
*45	40	70	30	89	—	M-12	M-20	001 12 03 03 70 
50	16	55	17	38/40	—	—	M-8	001 12 05 04 30
50	16	120	17	38/40	—	—	M-8	001 12 05 04 31
50	22	55	19	48/50	—	—	M-10	001 12 05 04 40
50	22	120	19	48/50	—	—	M-10	001 12 05 04 41
50	27	55	21	60	—	—	M-12	001 12 05 04 50
50	27	120	21	60	—	—	M-12	001 12 05 04 51
50	32	55	24	70	—	—	M-16	001 12 05 04 60
50	32	120	24	70	—	—	M-16	001 12 05 04 61
*50	40	70	27	89	66,7	M-12	M-20	001 12 03 04 70
*50	40	120	27	89	66,7	M-12	M-20	001 12 03 04 71
*50	60	70	40	129	101,6	M-16	—	001 12 03 04 90
*50	60	120	40	129	101,6	M-16	—	001 12 03 04 91

 Product outside of our present production program. Price subject to availability.

* With 4 tapped holes for front clamping according to DIN 2079

Accessories, see pages 267-293

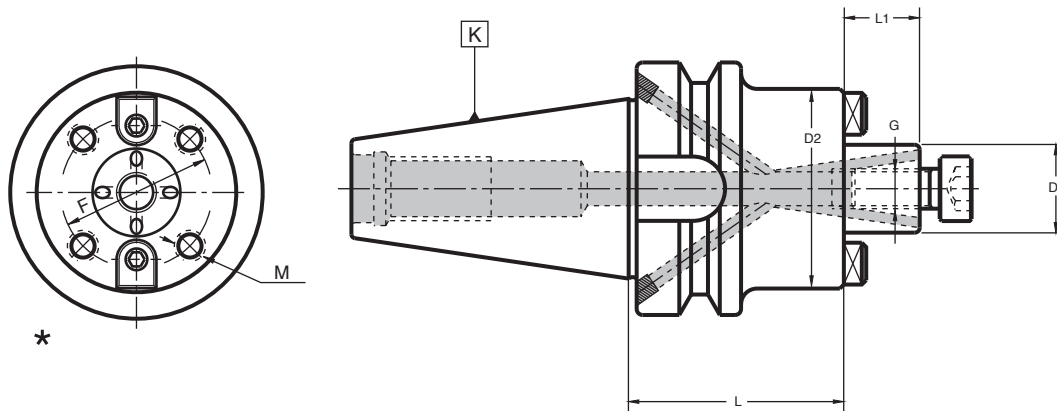


D ₁							OPTIONALS
16	—	303 05 05 00 30	301 01 00 03 15	001 99 01 22 30	001 99 01 12 30	001 99 01 01 30	001 99 04 01 30
22	—	303 05 05 00 40	301 01 01 04 12	001 99 01 22 40	001 99 01 12 40	001 99 01 01 40	001 99 04 01 40
27	—	303 05 05 00 50	301 01 01 05 12	001 99 01 22 50	001 99 01 12 50	001 99 01 01 50	001 99 04 01 50
32	—	303 05 05 00 60	301 01 01 05 16	001 99 01 22 60	001 99 01 12 60	001 99 01 01 60	001 99 04 01 60
40	003 99 01 01 01	—	301 01 01 06 16	001 99 01 22 70	001 99 01 12 70	001 99 01 01 70	001 99 04 01 70
60	—	303 05 04 00 02	301 01 01 12 25	—	—	—	—

001 32 33
35

SHELL END MILL ARBORS FOR CUTTERS WITH INTERNAL COOLING

For shell end mills with driving slot DIN 138

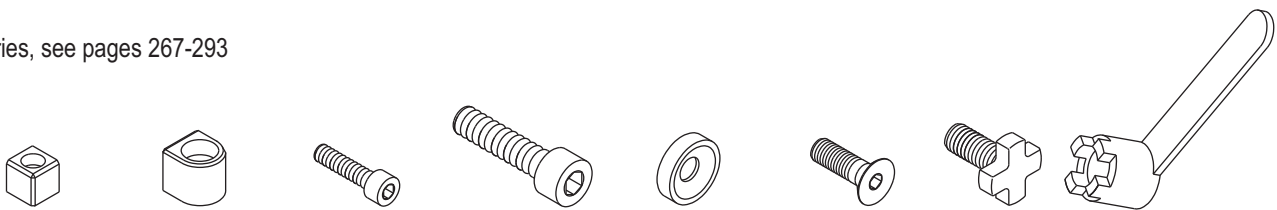


Maximum circular deviation between K and D₁ ≤ 0,008

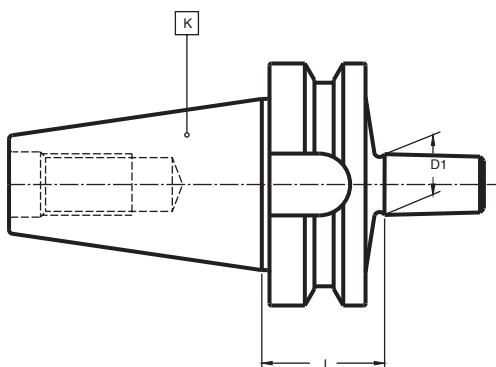
K	D ₁ h6	L	L ₁	D ₂	F	M	G	COD. Form AD + B
40	16	55	17	38/40	—	—	M-8	001 32 35 02 30
40	22	55	19	48/50	—	—	M-10	001 32 35 02 40
40	27	55	21	60	—	—	M-12	001 32 35 02 50
40	32	60	24	70	—	—	M-16	001 32 35 02 60
*40	40	60	27	89	66,7	M-12	M-20	001 32 33 02 70
50	16	55	17	38/40	—	—	M-8	001 32 35 04 30
50	22	55	19	48/50	—	—	M-10	001 32 35 04 40
50	27	55	21	60	—	—	M-12	001 32 35 04 50
50	32	55	24	70	—	—	M-16	001 32 35 04 60
*50	40	55	27	89	101,6	M-12	M-20	001 32 33 04 70
*50	60	70	40	129	101,6	M-16	—	001 32 33 04 90




















* With 4 tapped holes for front clamping according to DIN 2079

Accessories, see pages 267-293



D ₁								OPTIONALS
16	—	303 05 05 00 30	301 01 00 03 15	301 01 09 08 20	—	—	—	001 99 01 01 30 001 99 04 01 30
22	—	303 05 05 00 40	301 01 01 04 12	301 01 09 10 25	—	—	—	001 99 01 01 40 001 99 04 01 40
27	—	303 05 05 00 50	301 01 01 05 12	301 01 01 12 25	—	—	—	001 99 01 01 50 001 99 04 01 50
32	—	303 05 05 00 60	301 01 01 05 16	301 01 01 16 30	—	—	—	001 99 01 01 60 001 99 04 01 60
40	003 99 01 01 01	—	301 01 01 06 16	—	001 99 01 22 70	001 99 01 12 70	—	001 99 01 01 70 001 99 04 01 70
60	—	303 05 04 00 02	301 01 01 12 25	—	—	—	—	—

ALTERNATIVE SOLUTIONS 003 ¹²/₃₂ 54 + 001 54 50 pages 73 and 234Maximum circular deviation between K and D₁ ≤ 0,008

K	B - J	L	D ₁	COD. Form A
30	B.12	25	12,06	001 12 50 01 01 
30	B.16	25	15,73	001 12 50 01 02 
35	B.12	30	12,06	001 12 50 11 01 
35	B.16	30	15,73	001 12 50 11 02 
40	B.12	32	12,06	001 12 50 02 01 
40	B.16	32	15,73	001 12 50 02 02
40	B.18	32	17,78	001 12 50 02 03 
45	B.12	38	12,06	001 12 50 03 01 
50	B.16	43	15,73	001 12 50 04 02
50	B.18	43	17,78	001 12 50 04 03 
30	J.1	25	9,754	001 12 50 01 12 
30	J.2	25	14,199	001 12 50 01 13 
30	J.6	25	17,78	001 12 50 01 18 
35	J.6	30	17,78	001 12 50 11 18 
40	J.2	32	14,199	001 12 50 02 13 
40	J.33	32	15,85	001 12 50 02 19 
45	J.2	38	14,199	001 12 50 03 13 
45	J.33	38	15,85	001 12 50 03 19 
45	J.6	38	17,17	001 12 50 03 18 
50	J.33	43	15,85	001 12 50 04 19 
50	J.3	43	20,599	001 12 50 04 15 

 Product outside of our present production program. Price subject to availability.

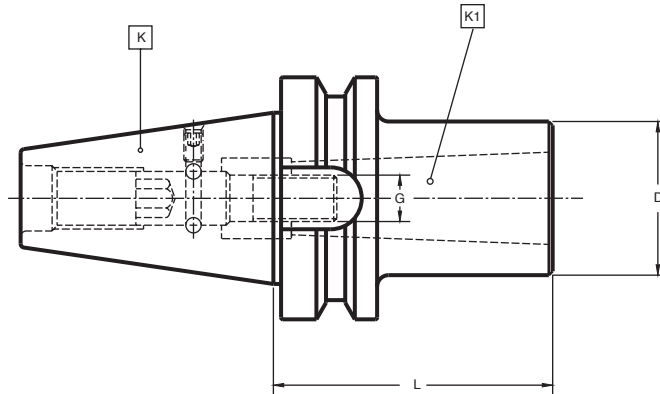
003 12 02

REDUCING ADAPTERS

With double effect pull stud
For Morse taper tools with thread DIN 228-A



DIN 6364 (*)



Maximum circular deviation between K and K₁ ≤ 0,008

K	K ₁	L	D	G	COD. Form A			
30	2	62	32	M-10	003 12 02 01 30	003 99 08 01 30	304 01 00 03 00	301 01 07 04 05
40	1	50	25	M-6	003 12 02 02 20	003 99 08 02 20	304 01 00 04 00	301 01 03 05 08
40	2	50	32	M-10	003 12 02 02 30	003 99 08 02 30	304 01 00 04 00	301 01 03 05 08
40	3	70	40	M-12	003 12 02 02 40	003 99 08 02 40	304 01 00 04 00	301 01 03 05 08
*40	4	95	48	M-16	003 12 02 02 50	003 99 08 02 50	304 01 00 04 00	301 01 03 05 08
40	4	with driving slot DIN 2201 see page 67			COD. 003 12 04 02 50			
50	2	60	32	M-10	003 12 02 04 30	003 99 08 04 30	304 01 00 04 00	301 01 03 05 12
50	3	65	40	M-12	003 12 02 04 40	003 99 08 04 40	304 01 00 04 00	301 01 03 05 12
*50	4	75	48	M-16	003 12 02 04 50	003 99 08 04 50	304 01 00 04 00	301 01 03 05 12
50	4	with driving slot DIN 2201 see page 67			COD. 003 12 04 04 50			
*50	5	103	63	M-20	003 12 02 04 60	003 99 08 04 60	304 01 00 04 00	301 01 03 05 12
50	5	with driving slot DIN 2201 see page 67			COD. 003 12 04 04 60			

Product outside of our present production program. Price subject to availability.

* These positions are not according to DIN 6364 (No driving slot DIN 2201).

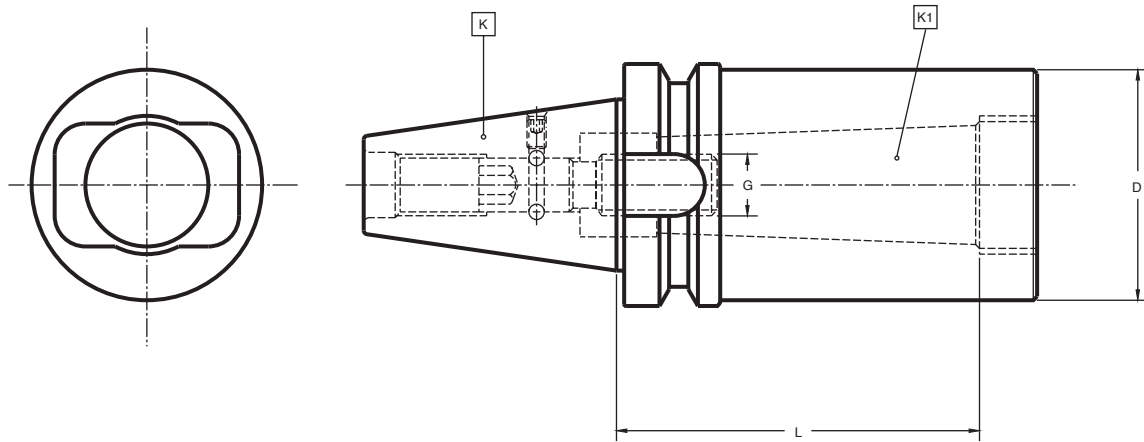
003 12 04 ...

REDUCING ADAPTERS

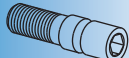




With double effect pull stud
For Morse taper tools with thread DIN 228-A



DIN 6364 (DIN 2201)

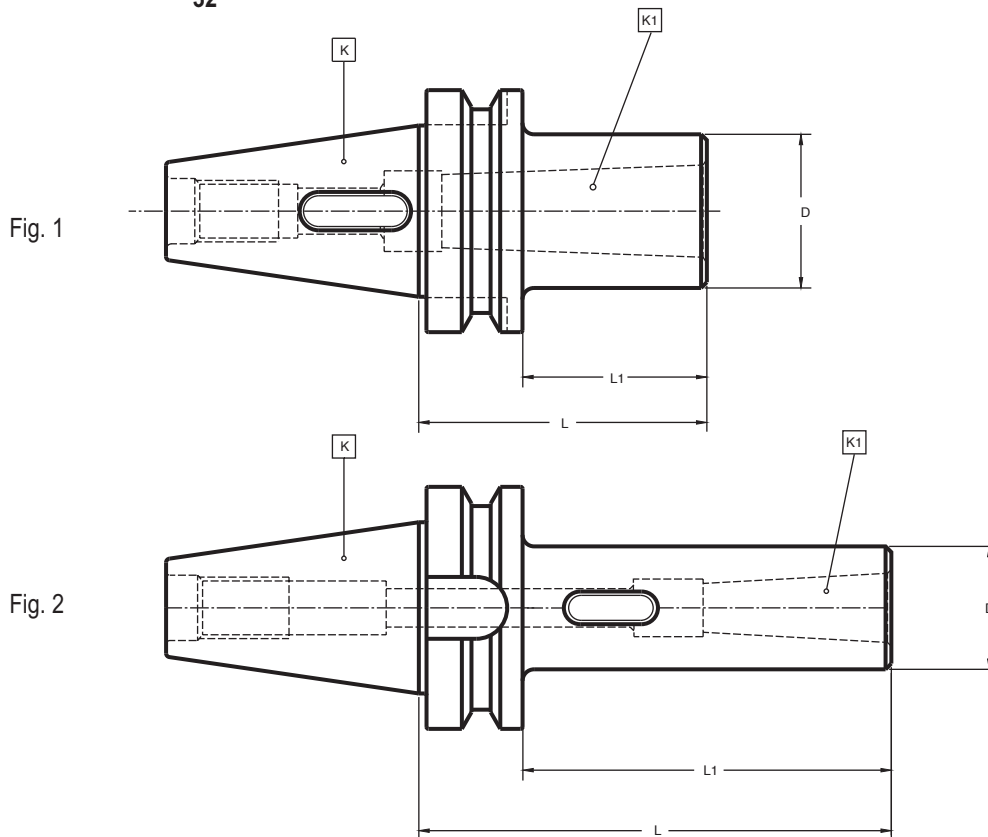


Maximum circular deviation between K and K₁ ≤ 0,008

K	K ₁	L	D	G	COD. Form A			
40	4	95	63	M-16	003 12 04 02 50 	003 99 08 02 50	304 01 00 04 00	301 01 03 05 08
40	4	without driving slot DIN 2201 see page 66 COD. 003 12 02 02 50						
50	4	75	63	M-16	003 12 04 04 50 	003 99 08 04 50	304 01 00 04 00	301 01 03 05 12
50	4	without driving slot DIN 2201 see page 66 COD. 003 12 02 02 50						


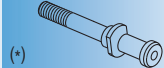

 Product outside of our present production program. Price subject to availability.

ALTERNATIVE SOLUTIONS 003 ¹²/₃₂ 54 + 003 54 12 pages 73 and 236



Maximum circular deviation between K and K₁ ≤ 0,008

See pages 270 - 273

Figura	K	K ₁	L	L ₁	D	COD. Form AD	 (*)	 (*)
1	30	1	50	28	25	003 12 12 01 20	301 01 01 06 30	-
1	30	2	60	38	32	003 12 12 01 30	-	003 99 .. 01 30
1	30	3	80	58	40	003 12 12 01 40	-	003 99 .. 01 40
1	40	1	50	23	25	003 12 12 02 20	301 01 01 06 40	-
2	40	1	110	83	25	003 12 12 02 21	301 01 01 06 80	-
1	40	2	60	33	32	003 12 12 02 30	003 99 07 06 15	-
2	40	2	120	93	32	003 12 12 02 31	003 99 07 06 20	-
1	40	3	75	48	40	003 12 12 02 40	-	003 99 .. 02 40
2	40	3	135	108	40	003 12 12 02 41	-	003 99 .. 02 41
1	40	4	95	68	48	003 12 12 02 50	-	003 99 .. 02 50
2	40	4	165	138	48	003 12 12 02 51	-	003 99 .. 02 51
1	45	2	60	27	32	003 12 12 03 30 	301 01 01 10 50	-
1	50	1	50	12	25	003 12 12 04 20	301 01 01 06 55	-
2	50	1	123	85	25	003 12 12 04 21	301 01 01 06 80	-
1	50	2	50	12	32	003 12 12 04 30	301 01 01 10 50	-
2	50	2	135	97	32	003 12 12 04 31	301 01 01 10 90	-
1	50	3	63	25	40	003 12 12 04 40	301 01 01 12 55	-
2	50	3	155	117	40	003 12 12 04 41	301 01 01 12 10	-
1	50	4	85	47	48	003 12 12 04 50	003 99 07 09 18	-
2	50	4	180	142	48	003 12 12 04 51	003 99 07 09 22	-
1	50	5	108	70	63	003 12 12 04 60	-	003 99 .. 04 60
2	50	5	215	177	63	003 12 12 04 61	-	003 99 .. 04 61

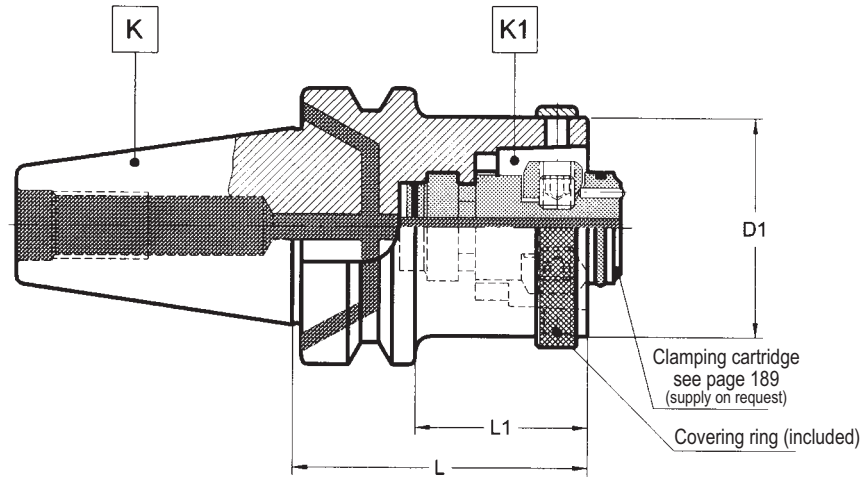
 Product outside of our present production program. Price subject to availability.

(*) Pull stud for tools with tightening thread according to DIN 228-A

003 32 14 ...

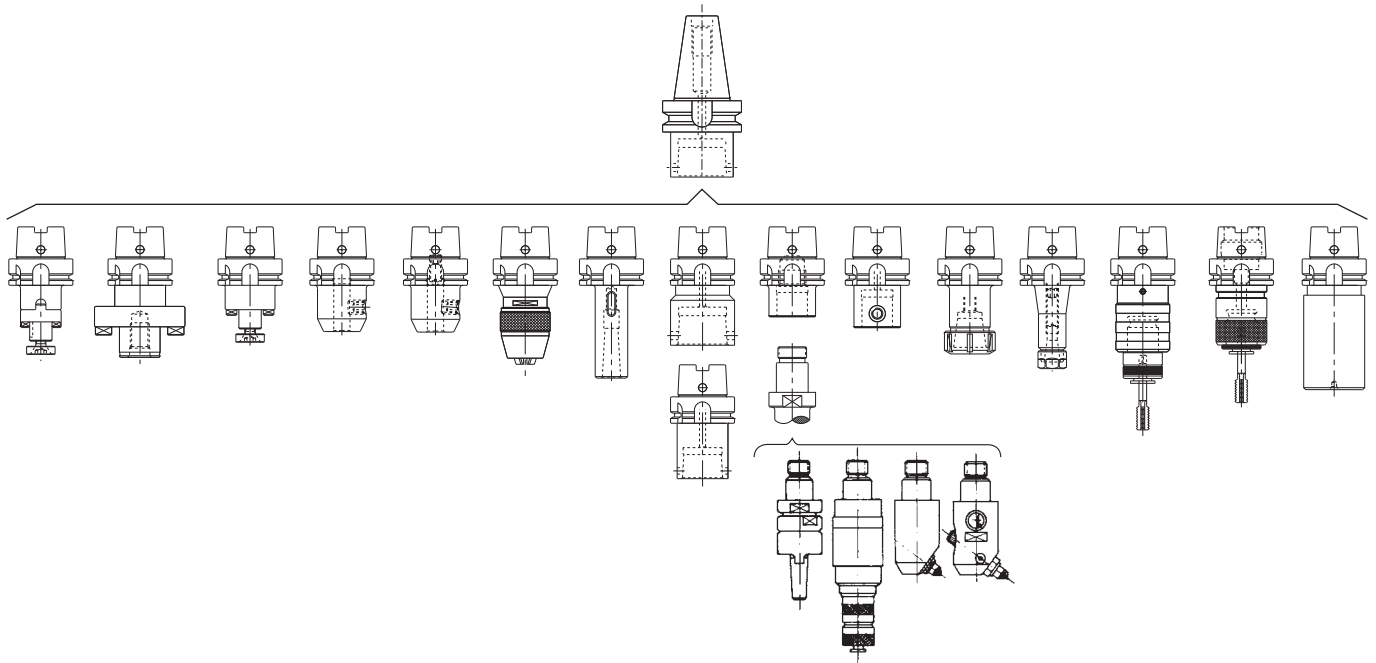
ADAPTERS JIS B 6339-BT TO DIN 69063-HSK

Prepared for MAPAL clamping system



Maximum circular deviation between K and K₁ ≤ 0,002

K	K ₁	D ₁ HSK	L	L ₁	COD. Form AD + B
40	HSK-63	63	70	-	003 32 14 02 04
50	HSK-63	63	60	26,8	003 32 14 04 04

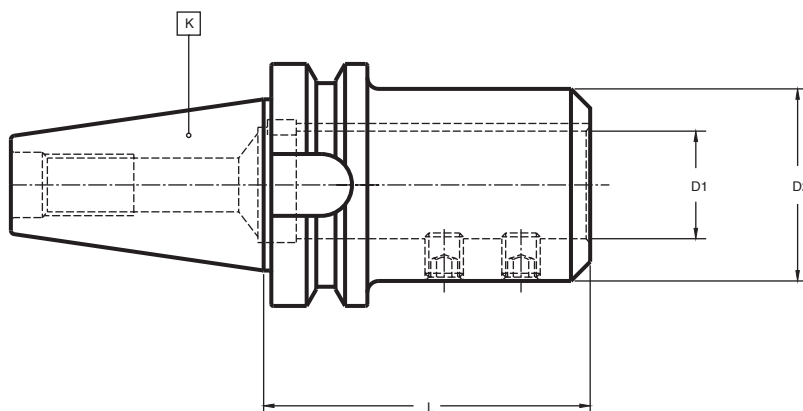


351 03 99 14 .. COVERING RING







Design
For DIN 69893-1 Form A and Form C toolholders.



D ₁ -HSK	COD.
63	351 03 99 14 04



Maximum circular deviation between K and D₁ ≤ 0,008

K	D ₁ H6	L	D ₂	COD. Form AD	
30	28	105	50	003 12 21 01 60 	301 01 03 10 12
40	28	85	50	003 12 21 02 60 	301 01 03 10 12
40	36	120	63	003 12 21 02 80 	301 01 03 12 14
50	28	100	55	003 12 21 04 60 	301 01 03 12 14
50	48	100	80	003 12 21 04 90 	301 01 03 12 16

 Product outside of our present production program. Price subject to availability.



004 51 ..



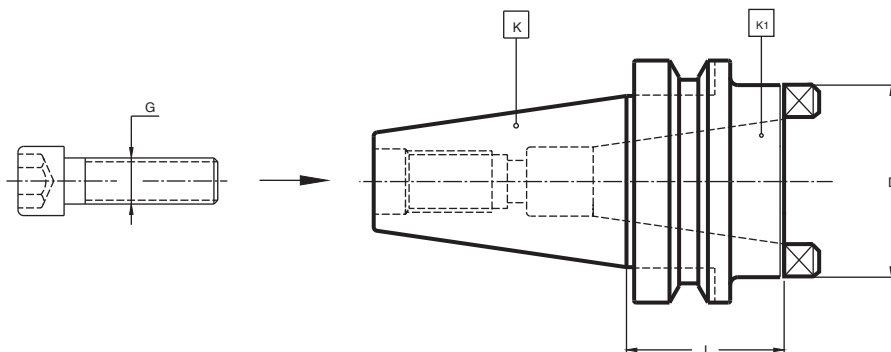
003 51 ..



019 51 ..

See pages 221 - 225

ALTERNATIVE SOLUTIONS 003 12 32 page 72



Maximum circular deviation between K and K₁ ≤ 0,008

K	K ₁	L	D	G	COD. Form AD	(1) 	(2) 
50	40	51	70	M-16	003 12 31 04 02	003 99 07 09 14	003 99 07 09 18

(1) Pull stud necessary to use DIN-2080 shanks.

(2) Pull stud necessary to use DIN-69871 and BT shanks.

These pull studs are supplied on request.

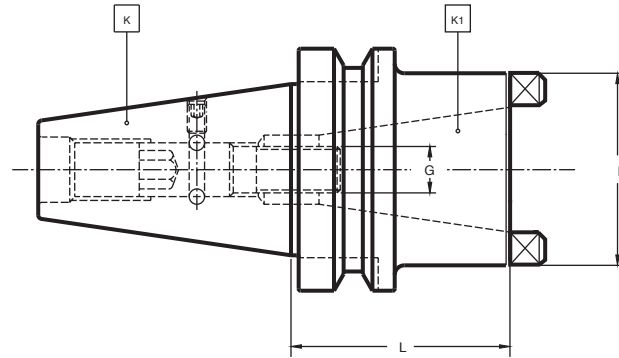
003 12 32 .. 01

REDUCING ADAPTERS

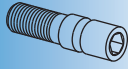


With double effect pull stud
For tools with DIN 2080 taper



ALTERNATIVE SOLUTION 003 12 31 page 71



Maximum circular deviation between K and K₁ ≤ 0,008

K	K ₁	L	D	G	COD. Form AD			
40	30	60	50	M-12	003 12 32 02 01 01	003 99 08 02 40	304 01 00 04 00	301 01 03 05 08
40	40	87	68	M-16	003 12 32 02 02 01	003 99 08 02 50	304 01 00 04 00	301 01 03 05 08
50	40	63	70	M-16	003 12 32 04 02 01	003 99 08 04 50	304 01 00 04 00	301 01 03 05 12

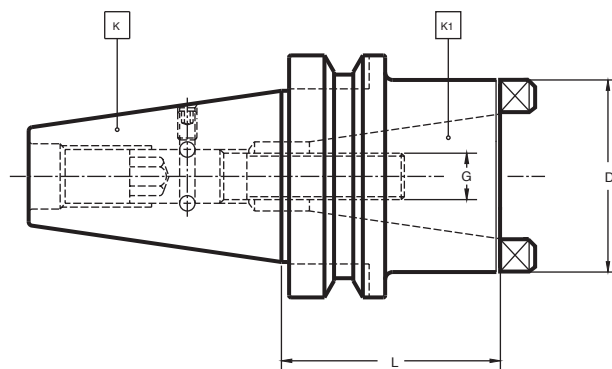
003 12 32 .. 02

REDUCING ADAPTERS

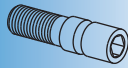


With double effect pull stud
For tools with DIN 69871 or MAS-BT taper

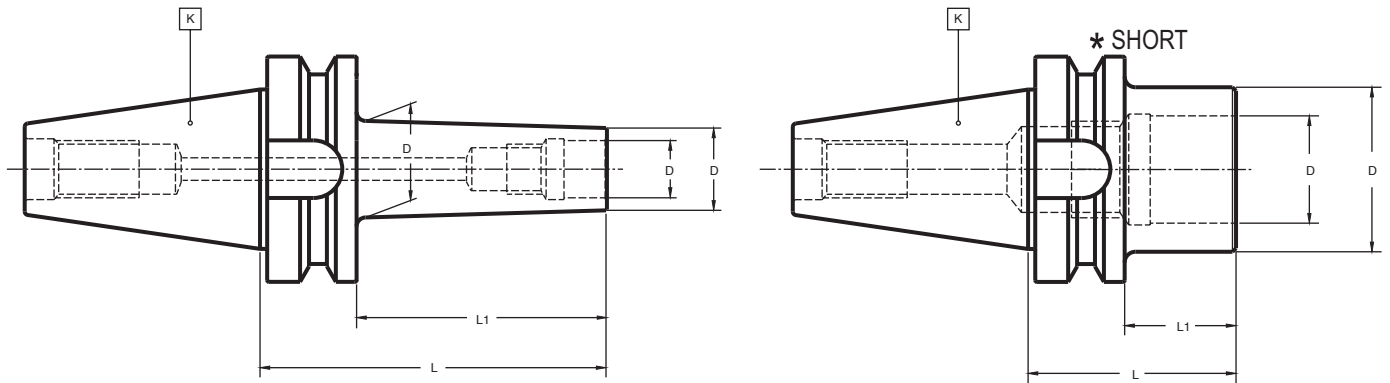


ALTERNATIVE SOLUTION 003 12 31 page 71










Maximum circular deviation between K and K₁ ≤ 0,008

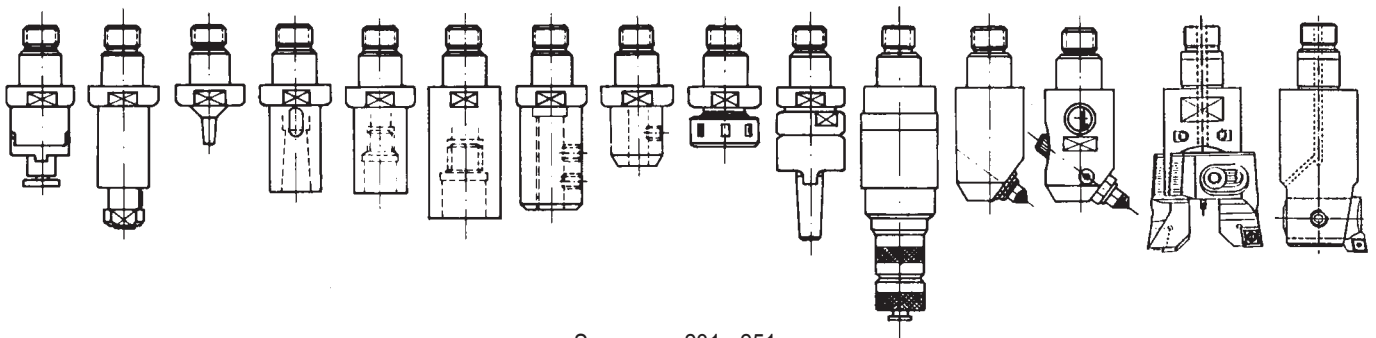
K	K ₁	L	D	G	COD. Form AD			
40	30	60	50	M-12	003 12 32 02 01 02	003 99 08 02 01	304 01 00 04 00	301 01 03 05 08
40	40	87	68	M-16	003 12 32 02 02 02	003 99 08 02 02	304 01 00 04 00	301 01 03 05 08
50	40	63	70	M-16	003 12 32 04 02 02	003 99 08 04 02	304 01 00 04 00	301 01 03 05 12



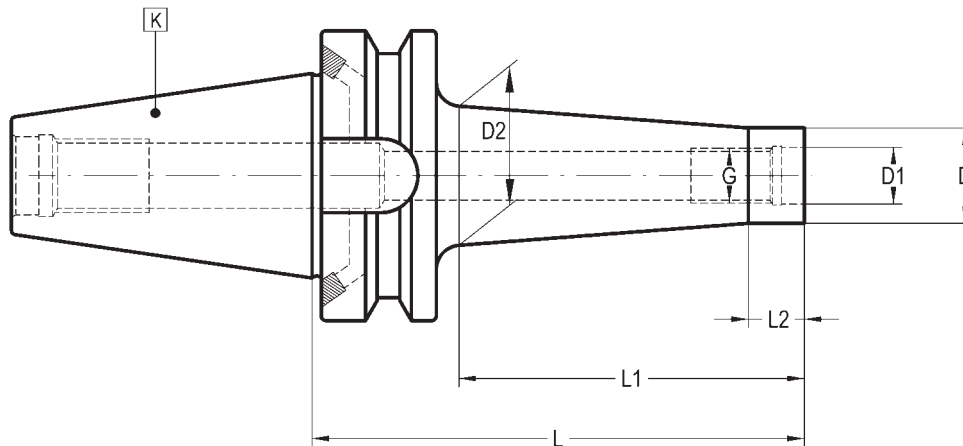
Maximum circular deviation between K and $D_1 \leq 0,005$

K	D ₁	D	L	L ₁	D ₂	COD. Form AD	COD. Form AD+B
30	13	18,5	70	48	21,5	003 12 54 01 12 	-
30	26	36	70	48	39	003 12 54 01 15 	-
*30	30	46	63	41	-	003 12 54 01 06	-
40	10,5	14,5	100	73	18,5	003 12 54 02 11 	-
40	13	18,5	100	73	22,5	003 12 54 02 12	-
40	16	23	100	73	27	003 12 54 02 13	-
40	20	29	100	73	33	003 12 54 02 14	-
40	26	36	100	73	40	003 12 54 02 15	-
*40	30	46	55	28	-	003 12 54 02 06	003 32 54 02 06
*40	46	63	100	73	-	003 12 54 02 07	003 32 54 02 07
45	30	46	63	30	-	003 12 54 03 06 	-
*45	46	63	63	30	-	-	003 32 54 03 07 
50	10,5	14,5	135	97	20	003 12 54 04 11 	-
50	13	18,5	135	97	24	003 12 54 04 12 	-
50	16	23	135	97	28,5	003 12 54 04 13	-
50	20	29	135	97	34,5	003 12 54 04 14	-
50	26	36	135	97	41,5	003 12 54 04 15	-
*50	30	46	63	25	-	003 12 54 04 06	003 32 54 04 06
*50	46	63	63	25	-	003 12 54 04 07	003 32 54 04 07
*50	46	90	63	25	-	003 12 54 04 08	003 32 54 04 08

 Product outside of our present production program. Price subject to availability.

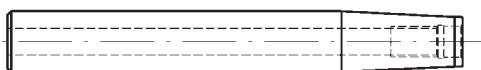


See pages 231 - 251

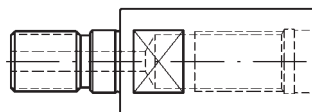


Maximum circular deviation between K and $D_1 \leq 0,003$

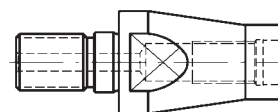
K	G	D	D ₁	D ₂	L	L ₁	L ₂	COD. Form AD+B
40	M-6	9,8	6,5	12	55	25	10	003 32 57 12 01
40	M-6	9,8	6,5	20	105	75	10	003 32 57 32 01
40	M-8	12,8	8,5	16	55	25	10	003 32 57 12 02
40	M-8	12,8	8,5	24	105	75	10	003 32 57 32 02
40	M-8	12,8	8,5	26	130	100	10	003 32 57 42 02
40	M-10	17,8	10,5	20	55	25	10	003 32 57 12 03
40	M-10	17,8	10,5	28	105	75	10	003 32 57 32 03
40	M-10	17,8	10,5	32	130	100	10	003 32 57 42 03
40	M-12	20,8	12,5	24	55	25	10	003 32 57 12 04
40	M-12	20,8	12,5	32	105	75	10	003 32 57 32 04
40	M-12	20,8	12,5	36	130	100	10	003 32 57 42 04
40	M-16	28,8	17	30	55	25	10	003 32 57 12 05
40	M-16	28,8	17	38	105	75	10	003 32 57 32 05
40	M-16	28,8	17	42	130	100	10	003 32 57 42 05
50	M-8	12,8	8,5	20	95	50	10	003 32 57 24 02
50	M-8	12,8	8,5	28	145	100	10	003 32 57 44 02
50	M-8	12,8	8,5	36	195	150	10	003 32 57 64 02
50	M-10	17,8	10,5	24	95	50	10	003 32 57 24 03
50	M-10	17,8	10,5	32	145	100	10	003 32 57 44 03
50	M-10	17,8	10,5	40	195	150	10	003 32 57 64 03
50	M-12	20,8	12,5	24	95	50	10	003 32 57 24 04
50	M-12	20,8	12,5	43	145	100	10	003 32 57 44 04
50	M-12	20,8	12,5	44	195	150	10	003 32 57 64 04
50	M-16	28,8	17	32	95	50	10	003 32 57 24 05
50	M-16	28,8	17	42	145	100	10	003 32 57 44 05
50	M-16	28,8	17	52	195	150	10	003 32 57 64 05



Cylindrical extensions (see page 219)



Extensions (see page 239)



Reducers (see page 239)

Delivery

- K40 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.

004 12 01 51 (*)
32 01

COLLET CHUCKS FOR DIN 6388 COLLETS
MILLING AND TAPPING(1) COLLET CHUCKS

For tools with cylindrical straight shank DIN 1835-A or threaded cylindrical shank DIN 1835-D

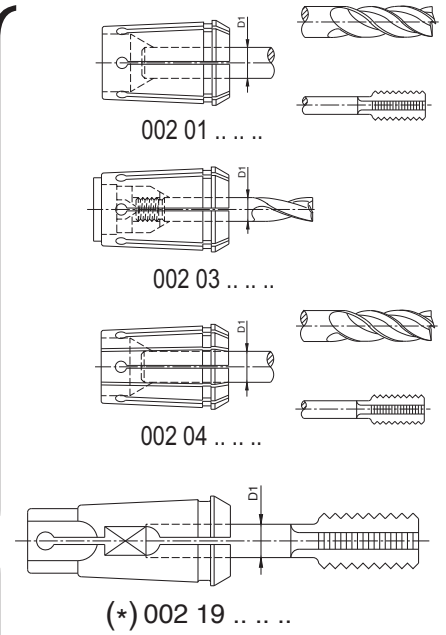
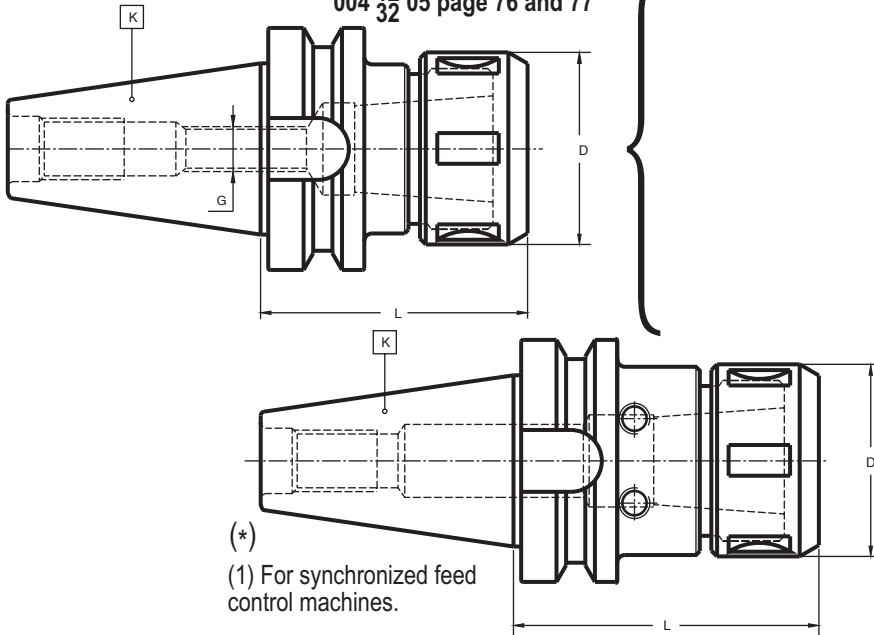


ALTERNATIVE SOLUTIONS

004 ¹²/₃₂ 06 pages 78 and 79

003 ¹²/₃₂ 54 + 004 54 06 pages 73 and 240

004 ¹²/₃₂ 05 page 76 and 77



COLLETS see pages 255-256

Maximum circular deviation between outer taper and collet housing $\leq 0,003$

K	D ₁ máx.	L	D	G	COD. Form AD	COD. Form AD+B
*30	16	73	43	-	004 12 51 01 03	-
30	25	80	60	M-12	004 12 01 01 05	-
35	16	65	43	M-18	004 12 01 11 03	-
35	25	80	60	M-22	004 12 01 11 05	-
*40	16	78	43	-	004 12 51 02 03	-
40	16	70	43	M-16	-	004 32 01 02 03
*40	20	83	50	-	004 12 51 02 04	-
40	32	90	72	M-16	004 12 01 02 06	004 32 01 02 06
50	20	100	50	-	004 12 51 04 04	-
50	25	100	60	M-16	004 12 01 04 05	004 32 01 04 05
50	32	100	72	M-16	004 12 01 04 06	004 32 01 04 06
50	40	100	85	M-16	004 12 01 04 07	004 32 01 04 07

⚠ Product outside of our present production program. Price subject to availability.

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

K³⁰₄₀ - 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

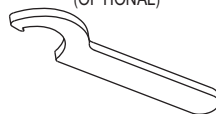
BALANCED NUT (STANDARD)



BEARING NUT (OPTIONAL)



WRENCH (OPTIONAL)

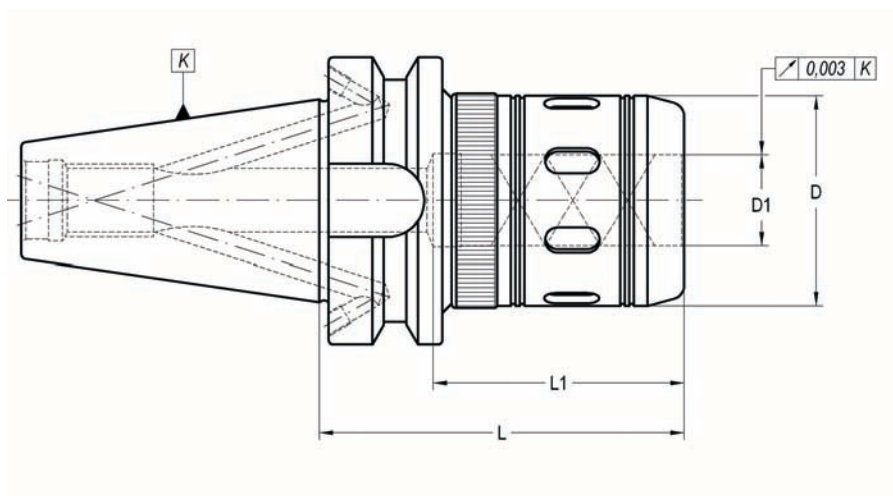




1 - LENGTH ADJUSTMENT SCREW
2 and 3 - LENGTH ADJUSTMENT SCREW WITH THROUGH HOLE

D₁ max.

10	004 99 01 01 02	-	004 99 04 09 06
16	-	004 99 01 02 03	004 99 04 09 08
20	004 99 01 01 04	004 99 01 02 04	004 99 04 09 09
25	004 99 01 01 05	004 99 01 02 05	004 99 04 09 11
32	004 99 01 01 06	004 99 01 02 06	004 99 04 09 12
40	-	004 99 01 02 07	004 99 04 09 13

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

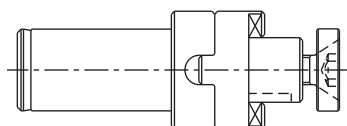


K	D ₁	L	D	L ₁	COD.		 OPTIONAL
40	20	80	46	60	004 32 15 02 04	004 99 04 02 06	004 99 04 09 09
40	20	105	46	60	004 32 15 02 14	004 99 04 02 06	004 99 04 09 09
40	32	85	62	75	004 32 15 02 06	004 99 04 02 06	004 99 04 09 11
40	32	105	62	80	004 32 15 02 16	004 99 04 02 06	004 99 04 09 11
50	20	100	46	60	004 32 15 04 04	004 99 04 02 06	004 99 04 09 09
50	32	100	62	80	004 32 15 04 06	004 99 04 02 06	004 99 04 09 11
50	32	135	62	80	004 32 15 04 26	004 99 04 02 06	004 99 04 09 11

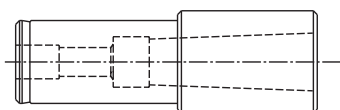
For tools with cylindrical straight shanks
 For an optimum performance of the chuck it is highly recommended to use h6 cylindrical tools
 For tools with nominal diameter collet there is no need.

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.

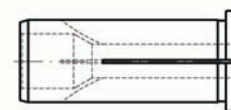
Accessories, see pages...



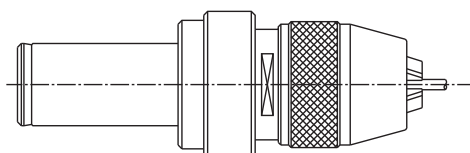
001 50 02 06 ..
See page 214



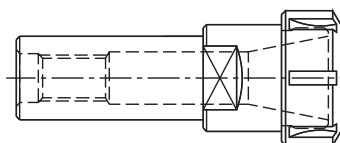
003 50 12 06 ..
See page 214



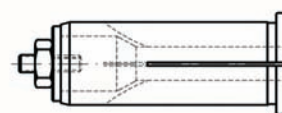
002 05 ..
See page 262



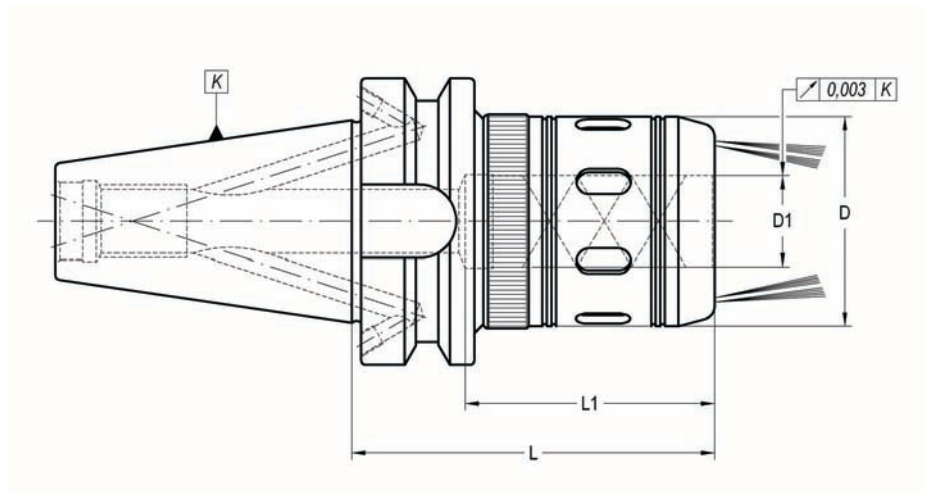
012 50 09 ...
See page 216





004 50 06 ...
See page 215

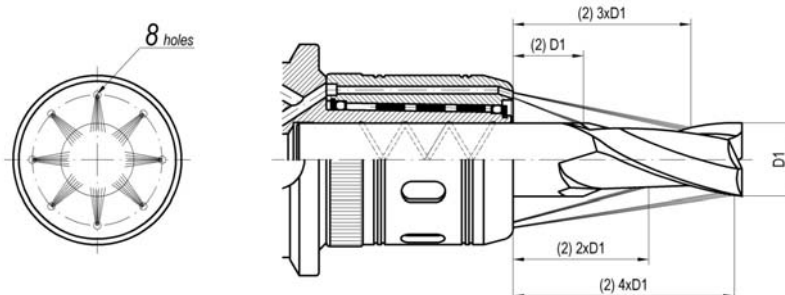


002 09 ...
See page 262



K	D ₁	L	D	L ₁	COD.		 OPTIONAL
40	20	80	46	60	004 32 25 02 04	004 99 04 02 06	004 99 04 09 09
40	32	85	62	75	004 32 25 02 06	004 99 04 02 06	004 99 04 09 11
50	32	100	62	80	004 32 25 04 06	004 99 04 02 06	004 99 04 09 11

COLLETS, see page 262



- Without o-rings, washers, rings, etc.
- No pressure limit
- Coolant directed to the cutting tool
- 8 coolant exits with different directions to assure correct cooling of the cutting tool.

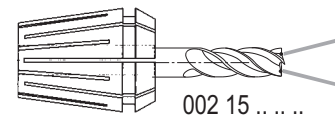
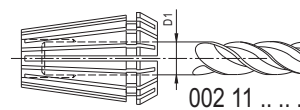
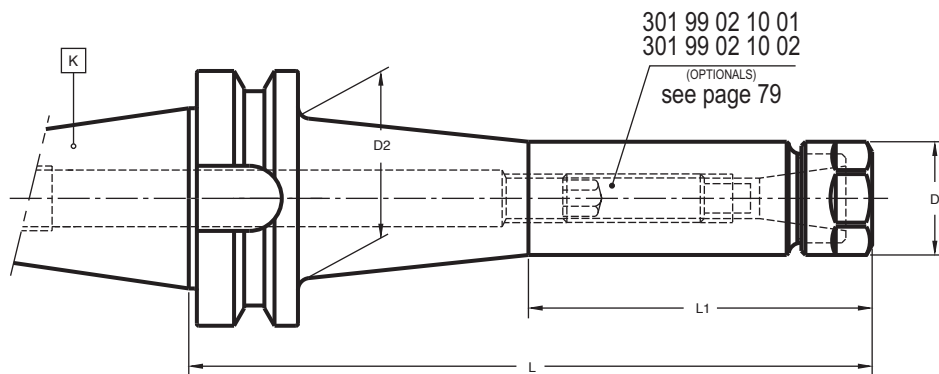
004 12 06 (1/2)
32 06

COLLET CHUCKS ER TYPE (DIN 6499)

For tools with cylindrical straight shank DIN 1835-A



ALTERNATIVE SOLUTIONS 003 ¹²/₃₂ 54 + 004 54 06 pages 73 and 240



PINZAS ver págs. 257-258

Maximum circular deviation between outer taper and collet housing $\leq 0,003$

K	TAMAÑO	D ₁	L	D	D ₂	L ₁	COD. Form AD	COD. Form AD+B
30	(ER16)	0,5 - 10	55	28	—	30	004 12 06 01 03	—
30	(ER16)	0,5 - 10	100	28	—	75	004 12 06 01 13	—
40	(ER16)	0,5 - 10	70	28	—	40	004 12 06 02 03	004 32 06 02 03
40	(ER16)	0,5 - 10	100	28	—	70	004 12 06 02 13	004 32 06 02 13
40	(ER16)	0,5 - 10	160	28	40	85	004 12 06 02 33	004 32 06 02 33
50	(ER16)	0,5 - 10	100	28	—	60	004 12 06 04 13	004 32 06 04 13
50	(ER16)	0,5 - 10	200	28	40	95	004 12 06 04 43	004 32 06 04 43

K ³⁰/₄₀ - 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

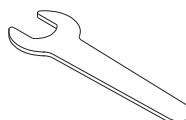
BALANCED NUT (STANDARD)



BEARING NUT (OPTIONAL)



WRENCH (OPTIONAL)



SIZE
ER 16

004 99 01 08 03

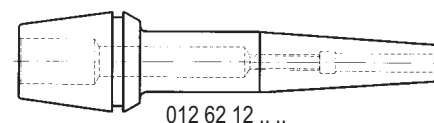
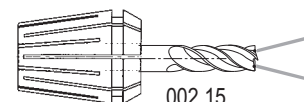
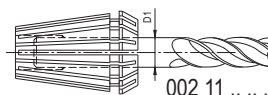
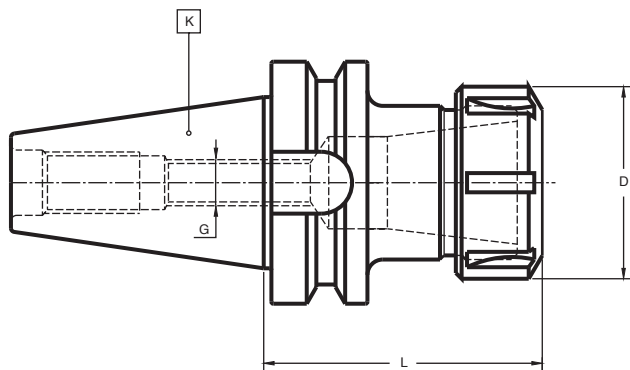
004 99 01 04 03

004 99 04 06 25

ALTERNATIVE SOLUTIONS 004 12 01 page 75

003 32 15 page 76 and 77

003 12 54 + 004 54 06 pages 73 and 240



K ³⁰/₄₀ - 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.

Maximum circular deviation between outer taper and collet housing ≤ 0,003

COLLETS see pages 257-259

K	TAMAÑO	D ₁ máx.	L	D	G	COD. Form AD	COD. Form AD+B
30	(ER 25)	16	55	42	M-12	004 12 06 01 05	-
30	(ER 25)	16	100	42	M-12	004 12 06 01 15	-
30	(ER 32)	20	60	50	M-12	004 12 06 01 06	-
30	(ER 32)	20	100	50	M-12	004 12 06 01 16	-
40	(ER 25)	16	70	42	M-16	004 12 06 02 05	004 32 06 02 05
40	(ER 25)	16	100	42	M-16	004 12 06 02 15	004 32 06 02 15
40	(ER 25)	16	150	42	M-16	-	004 32 06 02 25
40	(ER 32)	20	70	50	M-16	004 12 06 02 06	004 32 06 02 06
40	(ER 32)	20	100	50	M-16	004 12 06 02 16	004 32 06 02 16
40	(ER 32)	20	150	50	M-16	004 12 06 02 26	004 32 06 02 26
40	(ER 40)	26	70	63	M-16	004 12 06 02 07	004 32 06 02 07
40	(ER 40)	26	100	63	M-16	004 12 06 02 17	004 32 06 02 17
40	(ER 50)	34	85	78	M-16	004 12 06 02 08	-
50	(ER 25)	16	100	42	M-16	-	004 32 06 04 05
50	(ER 25)	16	150	42	M-16	-	004 32 06 04 25
50	(ER 32)	20	100	50	M-16	004 12 06 04 06	004 32 06 04 06
50	(ER 32)	20	150	50	M-16	004 12 06 04 26	-
50	(ER 32)	20	200	50	M-16	004 12 06 04 46	-
50	(ER 40)	26	100	63	M-16	004 12 06 04 07	004 32 06 04 07
50	(ER 40)	26	150	63	M-16	004 12 06 04 27	-
50	(ER 40)	26	200	63	M-16	004 12 06 04 47	-
50	(ER 50)	34	100	78	M-16	004 12 06 04 08	004 32 06 04 08
50	(ER 50)	34	150	78	M-16	004 12 06 04 28	-

Product outside of our present production program. Price subject to availability.

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

Accessories, see pages 267-293

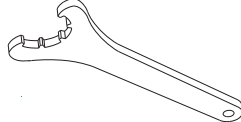
BALANCED NUT (STANDARD)



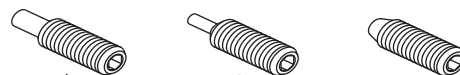
BEARING NUT (OPTIONAL)



WRENCH (OPTIONAL)



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



SIZE

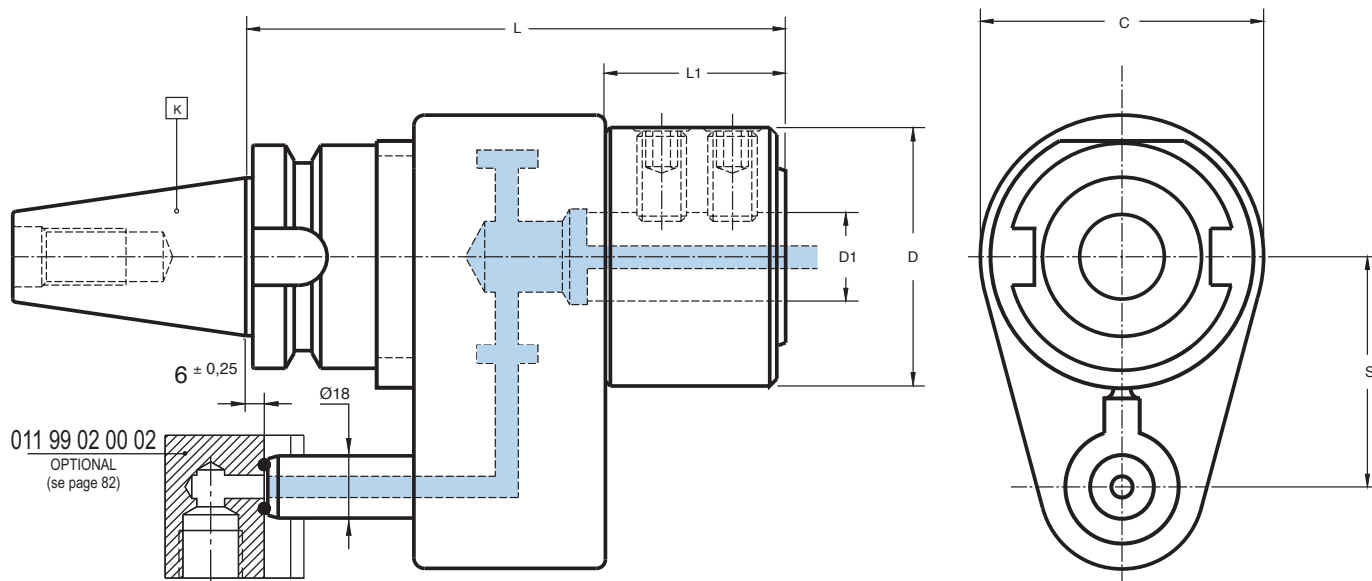
ER 25	004 99 01 03 05	004 99 01 04 05	004 99 04 03 05
ER 32	004 99 01 03 06	004 99 01 04 06	004 99 04 03 06
ER 40	004 99 01 03 07	004 99 01 04 07	004 99 04 03 07
ER 50	004 99 01 03 08	004 99 01 04 08	004 99 04 03 08

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

011 12 03 ...

ROTARY COOLANT ADAPTERS

For tools with cylindrical straight shank with locking surface

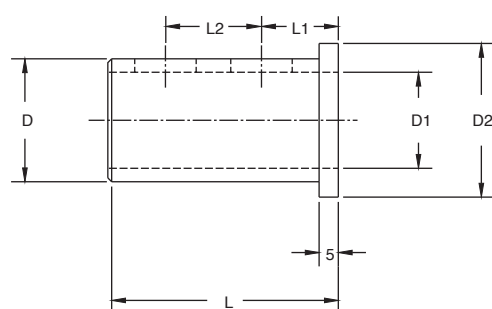


SPECIFICATIONS	
Max. RPM	6.000 rpm
Max. coolant pressure	20 bar
Min. coolant pressure	2 bar

Operating Instructions, see page 300

K	D ₁	D	L	L ₁	S	C	COD.	
40	25	50	153	48	65	80	011 12 03 02 25	301 01 08 16 15
40	32	73	153	48	65	80	011 12 03 02 32	301 01 08 16 20
50	32	65	165	50	80	100	011 12 03 04 32	301 01 08 16 20
50	40	88	165	50	80	100	011 12 03 04 40	301 01 08 16 30

REDUCING ADAPTERS

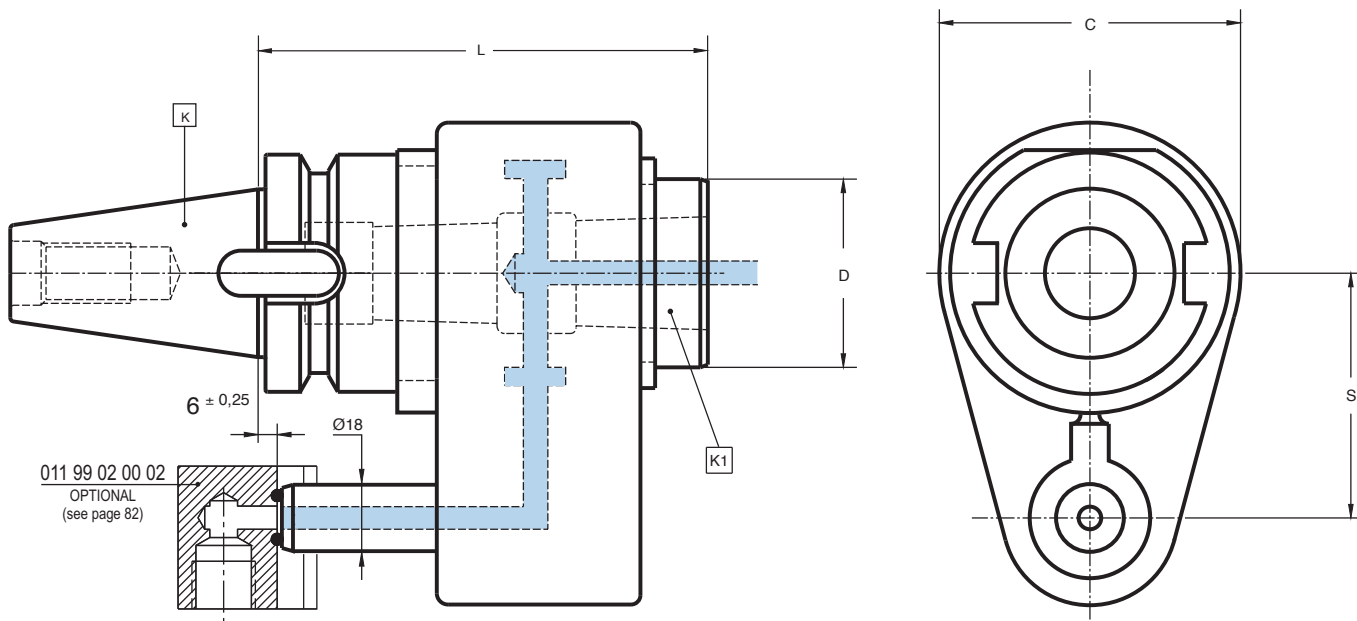


D	D ₁	D ₂	L	L ₁	L ₂	COD.
25	16	33	55	20	–	011 99 03 03 01
25	20	33	55	20	–	011 99 03 03 02
32	16	38	60	20	–	011 99 03 04 01
32	20	38	60	20	–	011 99 03 04 02
32	25	38	60	20	20	011 99 03 04 03
40	16	48	65	20	–	011 99 03 05 01
40	20	48	65	20	–	011 99 03 05 02
40	25	48	65	20	25	011 99 03 05 03
40	32	48	65	20	25	011 99 03 05 04

011 12 11 ...

ROTARY COOLANT ADAPTERS

For tapered Morse taper tools DIN 228-B



SPECIFICATIONS	
Max. RPM	6.000 rpm
Max. coolant pressure	20 bar
Min. coolant pressure	2 bar

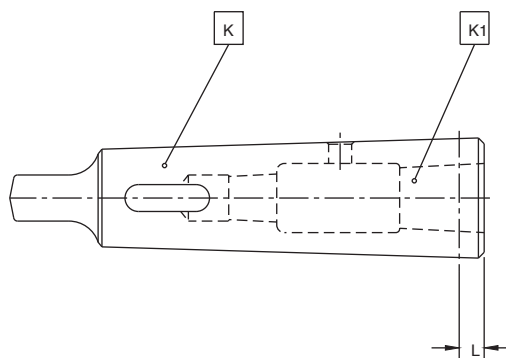
Operating Instructions, see page 300

K	K ₁	D	L	S	C	COD.
40	4	50	120	65	80	011 12 11 02 50

⚠ Product outside of our present production program. Price subject to availability.

REDUCING ADAPTERS

For rotary coolant adapters



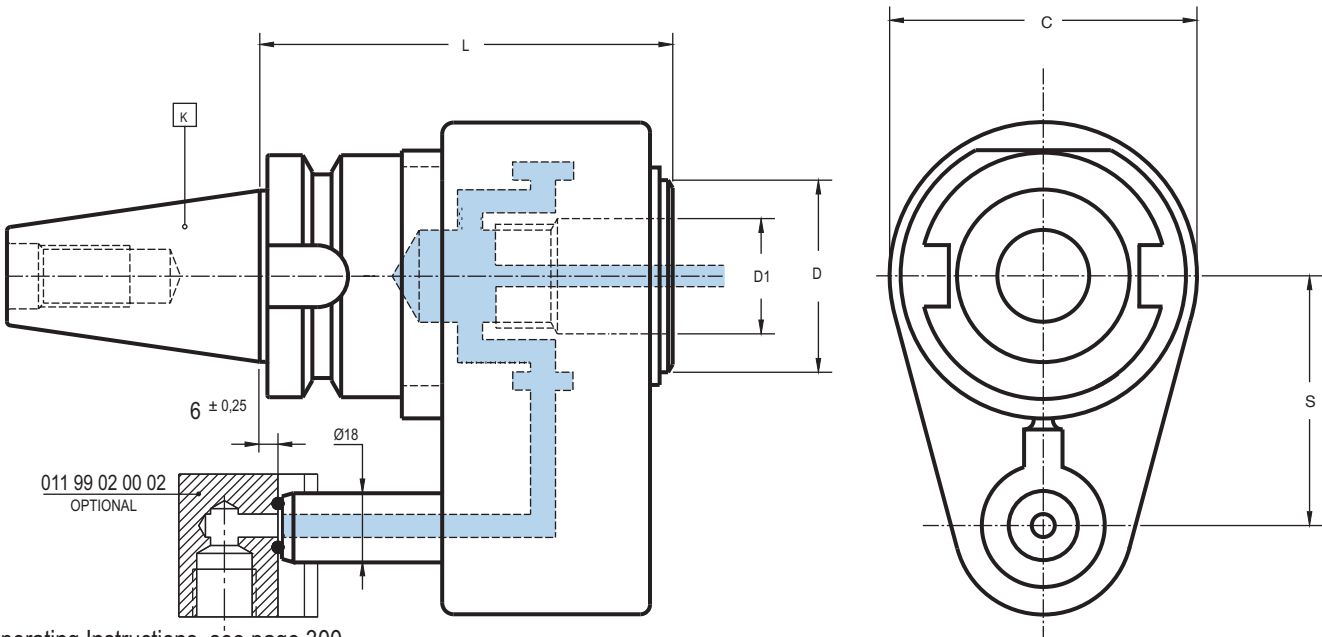
K	K ₁	L	COD.
4	1	6,5	011 99 05 05 20
4	2	6,5	011 99 05 05 30
4	3	22,5	011 99 05 05 40

⚠ Product outside of our present production program. Price subject to availability.

011 12 54 ...

ROTARY COOLANT ADAPTERS

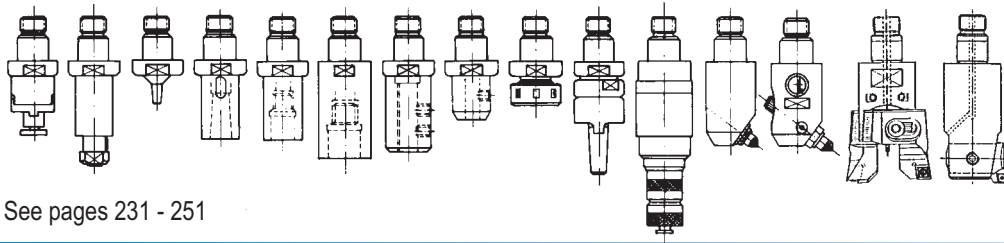
For C.O. modular system tooling



Operating Instructions, see page 300

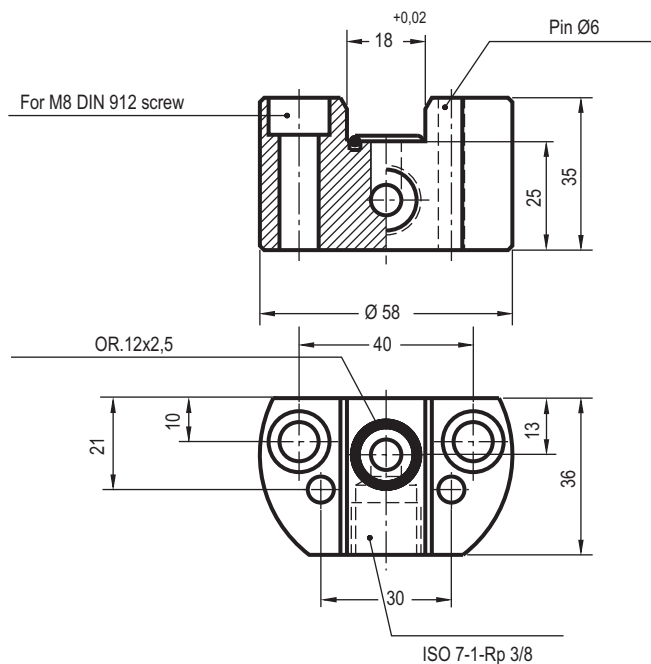
K	D ₁	D	L	S	C	COD.
40	30	46	110	65	80	011 12 54 02 06

50	46	63	120	80	100	011 12 54 04 07
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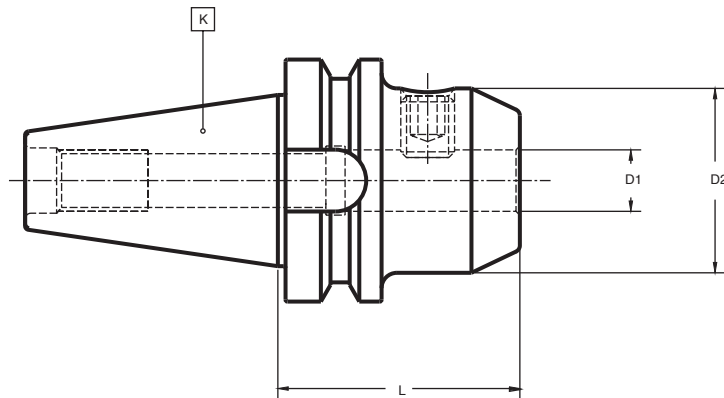


See pages 231 - 251


011 99 02 00 02 POSITIONING BLOCK



ALTERNATIVE SOLUTIONS 003 ¹²/₃₂ 54 + 012 54 04 pages 73 and 248



*Maximum circular deviation between K and D₁ ≤ 0,003

K	D ₁	* tol.	L	D ₂	COD. Form AD	COD. Form AD+B	
40	6		50	25	012 12 01 12 06	012 32 01 12 06	301 01 05 06 10
40	6		120	25	-	012 32 01 22 06	301 01 05 06 10
40	8		50	28	012 12 01 12 08	012 32 01 12 08	301 01 05 08 10
40	8		120	28	-	012 32 01 22 08	301 01 05 08 10
40	10		63	35	012 12 01 12 10	012 32 01 12 10	301 01 05 10 12
40	10		120	35	-	012 32 01 22 10	301 01 05 10 12
40	12	+0,005 -0	63	42	012 12 01 12 12	012 32 01 12 12	301 01 05 12 16
40	12		120	42	-	012 32 01 22 12	301 01 05 12 16
40	14		63	44	012 12 01 12 14	012 32 01 12 14	301 01 05 12 16
40	14		120	44	-	012 32 01 22 14	301 01 05 12 16
40	16		63	48	012 12 01 12 16	012 32 01 12 16	301 01 05 14 16
40	16		120	48	-	012 32 01 22 16	301 01 05 14 16
40	18		63	50	012 12 01 12 18	012 32 01 12 18	301 01 05 14 16
40	18		120	50	-	012 32 01 22 18	301 01 05 14 16
40	20		63	52	012 12 01 12 20	012 32 01 12 20	301 01 05 16 16
40	20		120	52	-	012 32 01 22 20	301 01 05 16 16
40	25	+0,007 -0	95	65	012 12 01 12 25	012 32 01 12 25	301 01 05 18 20
40	25		160	65	-	012 32 01 32 25	301 01 05 18 20
40	32		100	72	012 12 01 12 32	012 32 01 12 32	301 01 05 20 20
40	32		160	72	-	012 32 01 32 32	301 01 05 20 20
40	40	+0,009 -0	110	80	-	012 32 01 12 40	301 01 05 20 20
40	40		160	80	-	012 32 01 32 40	301 01 05 20 20
45	6		63	25	012 12 01 13 06	-	301 01 05 06 10
45	8	+0,005 -0	63	28	012 12 01 13 08	-	301 01 05 08 10
45	10		63	35	012 12 01 13 10	-	301 01 05 10 12
45	12		63	42	012 12 01 13 12	-	301 01 05 12 16
50	6		63	25	012 12 01 14 06	012 32 01 14 06	301 01 05 06 10
50	6		120	25	-	012 32 01 24 06	301 01 05 06 10
50	8		63	28	012 12 01 14 08	012 32 01 14 08	301 01 05 08 10
50	8		120	28	-	012 32 01 24 08	301 01 05 08 10
50	10		65	35	012 12 01 14 10	012 32 01 14 10	301 01 05 10 12
50	10		120	35	-	012 32 01 24 10	301 01 05 10 12
50	12	+0,005 -0	80	42	012 12 01 14 12	012 32 01 14 12	301 01 05 12 16
50	12		120	42	-	012 32 01 24 12	301 01 05 12 16
50	14		80	44	012 12 01 14 14	012 32 01 14 14	301 01 05 12 16
50	14		120	44	-	012 32 01 24 14	301 01 05 12 16
50	16		80	48	012 12 01 14 16	012 32 01 14 16	301 01 05 14 16
50	16		120	48	-	012 32 01 24 16	301 01 05 14 16
50	18		80	50	012 12 01 14 18	012 32 01 14 18	301 01 05 14 16
50	18		120	50	-	012 32 01 24 18	301 01 05 14 16

 Product outside of our present production program. Price subject to availability.

012 12 01 (2/2)
32 01

WELDON HOLDERS

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



K	D ₁	* tol.	L	D ₂	COD. Form AD	COD. Form AD+B	
50	20		80	52	012 12 01 14 20	012 32 01 14 20	301 01 05 16 16
50	20		120	52	-	012 32 01 24 20	301 01 05 16 16
50	25	+ 0,007	100	65	012 12 01 14 25	012 32 01 14 25	301 01 05 18 20
50	25	- 0	160	65	-	012 32 01 34 25	301 01 05 18 20
50	32		105	72	012 12 01 14 32	012 32 01 14 32	301 01 05 20 20
50	32		160	72	-	012 32 01 34 32	301 01 05 20 20
50	40		105	80	012 12 01 14 40	012 32 01 14 40	301 01 05 20 20
50	40	+ 0,009	160	80	-	012 32 01 34 40	301 01 05 20 20
50	50	- 0	125	98	012 12 01 14 50	012 32 01 14 50	301 01 05 24 25
50	50		200	98	-	012 32 01 44 50	301 01 05 24 25

⚠ Product outside of our present production program. Price subject to availability.

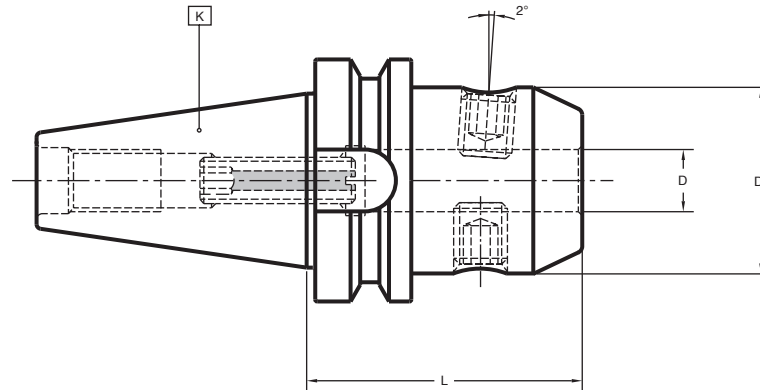
* The hole diameter and circular deviation tolerances have been significantly tightened up compared with DIN 1835 in order to achieve the highest levels of machining precision.

K³⁰ - Balanced according to ISO 1940-1 up to 10.000 R.p.m.



K⁴⁰ We have latest methods for dynamic balancing up to 50.000 R.p.m.

D₁ = > 25 mm: two clamping holes.

ALTERNATIVE SOLUTIONS 003 ¹²/₃₂ 54 + 012 54 04 pages 73 and 248



*Maximum circular deviation between K and D₁ ≤ 0,003

K	D ₁	* tol.	L	D ₂	COD. Form AD	COD. Form AD+B			
30	6		50	25	012 12 04 11 06	-	301 02 70 05 01	301 01 05 06 10	
30	8		50	28	012 12 04 11 08	-	301 02 70 06 01	301 01 05 08 10	
30	10	+0,005	50	35	012 12 04 11 10	-	301 02 70 08 01	301 01 05 10 12	
30	12	-0	55	42	012 12 04 11 12	-	301 02 70 10 01	301 01 05 12 16	
30	14		55	44	012 12 04 11 14	-	301 02 70 10 01	301 01 05 12 16	
30	16		63	46	012 12 04 11 16	-	301 02 70 12 01	301 01 05 14 16	
40	6		50	25	-	012 32 04 12 06	301 02 70 05 01	301 01 05 06 10	
40	8		50	28	012 12 04 12 08	012 32 04 12 08	301 02 70 06 01	301 01 05 08 10	
40	10		63	35	012 12 04 12 10	012 32 04 12 10	301 02 70 08 01	301 01 05 10 12	
40	12	+0,005	63	42	012 12 04 12 12	012 32 04 12 12	301 02 70 10 01	301 01 05 12 16	
40	14	-0	63	44	-	012 32 04 12 14	301 02 70 10 01	301 01 05 12 16	
40	16		63	48	-	012 32 04 12 16	301 02 70 12 01	301 01 05 14 16	
40	18		63	50	-	012 32 04 12 18	301 02 70 12 01	301 01 05 14 16	
40	20		63	52	-	012 32 04 12 20	301 02 70 16 01	301 01 05 16 16	
40	25	+0,007	95	65	-	012 32 04 12 25	301 02 70 20 01	301 01 05 18 20	
40	32	-0	100	72	-	012 32 04 12 32	301 02 70 20 01	301 01 05 20 20	
50	6		63	25	012 12 04 14 06	012 32 04 14 06	301 02 70 05 01	301 01 05 06 10	
50	8		63	28	-	012 32 04 14 08	301 02 70 06 01	301 01 05 08 10	
50	10		65	35	012 12 04 14 10	012 32 04 14 10	301 02 70 08 01	301 01 05 10 12	
50	12	+0,005	80	42	012 12 04 14 12	012 32 04 14 12	301 02 70 10 01	301 01 05 12 16	
50	14	-0	80	44	012 12 04 14 14	012 32 04 14 14	301 02 70 10 01	301 01 05 12 16	
50	16		80	48	-	012 32 04 14 16	301 02 70 12 01	301 01 05 14 16	
50	18		80	50	-	012 32 04 14 18	301 02 70 12 01	301 01 05 14 16	
50	20		80	52	012 12 04 14 20	012 32 04 14 20	301 02 70 16 01	301 01 05 16 16	
50	25	+0,007	100	65	-	012 32 04 14 25	301 02 70 20 01	301 01 05 18 20	
50	32	-0	105	72	-	012 32 04 14 32	301 02 70 20 01	301 01 05 20 20	

⚠ Product outside of our present production program. Price subject to availability.

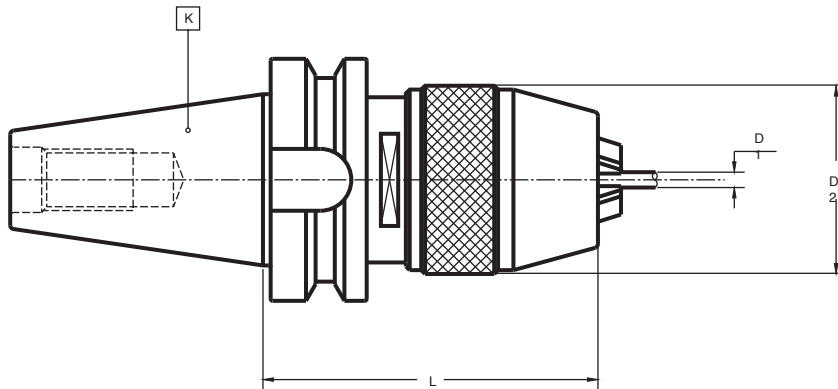
* The hole diameter and circular deviation tolerances have been significantly tightened up compared with DIN 1835 in order to achieve the highest levels of machining precision.

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

D₁ = > 25 mm: two clamping holes.

012 12 09

SHORT DRILL CHUCKS



K	D ₁	L	D ₂	COD. Form A			
30	0-8	86	36	012 12 09 11 08	351 02 60 00 08	351 02 61 00 08	020 99 03 00 08
40	1-13	86	48	012 12 09 12 13	351 02 60 01 13	351 02 61 01 13	020 99 03 01 13
40	3-16	103	54	012 12 09 12 16	351 02 60 03 16	351 02 61 03 16	020 99 03 03 16
50	1-13	97	54	012 12 09 14 16	351 02 60 03 16	351 02 61 03 16	020 99 03 03 16

K₄₀³⁰ - Balanced according to ISO 1940-1 up to 10.000 R.p.m.

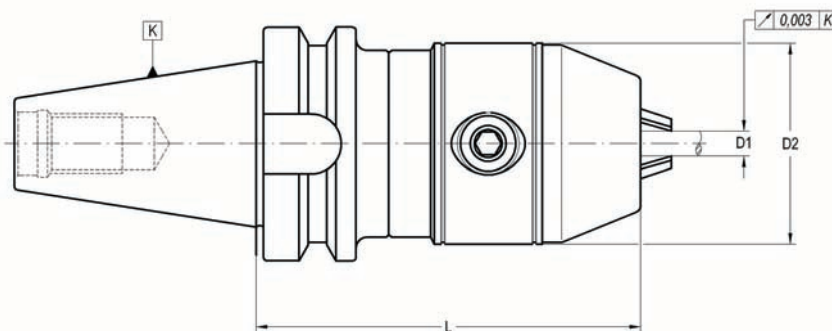
We have latest methods for dynamic balancing up to 50.000 R.p.m.

012 12 32 19

SHORT DRILL CHUCKS – HIGH PRECISION –



CENTRAL COOLANT

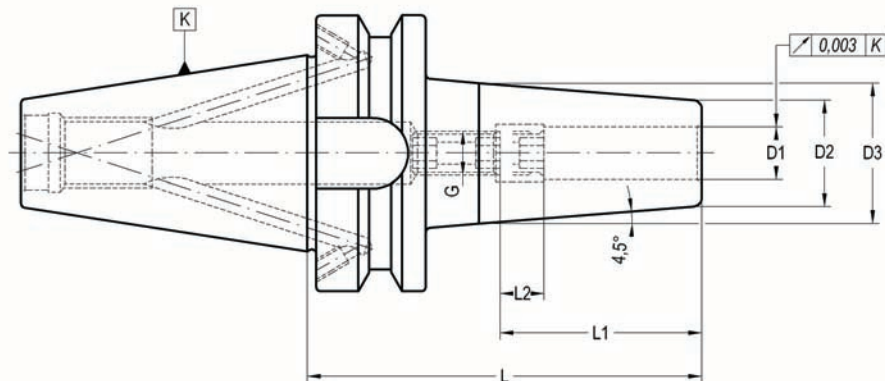



K	D ₁	D ₂	L	COD. Form A	COD. Form AD + B
40	1-13	54	96	012 12 19 12 13	–
40	1-13	54	96	–	012 32 19 12 13
40	3-16	57	99	012 12 19 12 16	–
40	3-16	57	99	–	012 32 19 12 16
50	1-13	54	107	012 12 19 14 13	–
50	1-13	54	110	–	012 32 19 14 13
50	3-16	57	107	012 12 19 14 16	–
50	3-16	57	110	–	012 32 19 14 16

K₄₀³⁰ - 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.

Similar to
DIN 69882-8



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

Characteristics:

- Heat resistant hot-working steel.
- Tempered: 54 -2 HRC.
- Taper manufactured according MAS 403-BT JIS B 6339
- Balanced according to ISO-1940-1 to G2,5 at 25.000 rpm.

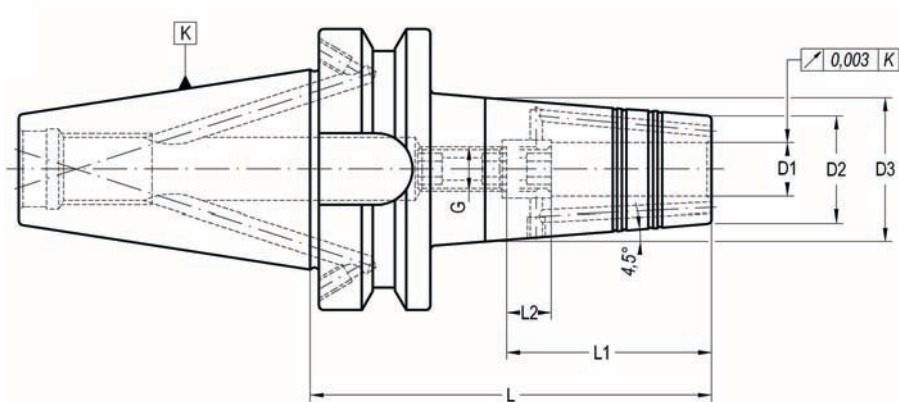
Application:


- 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.

Similar to
DIN 69882-8



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

Other dimension on request.

Characteristics:

- Heat resistant hot-working steel.
- Tempered: 54 -2 HRC.
- Taper manufactured according MAS 403 BT JIS B 6339
- Balanced according to ISO-1940-1 to G2,5 at 25.000 rpm.

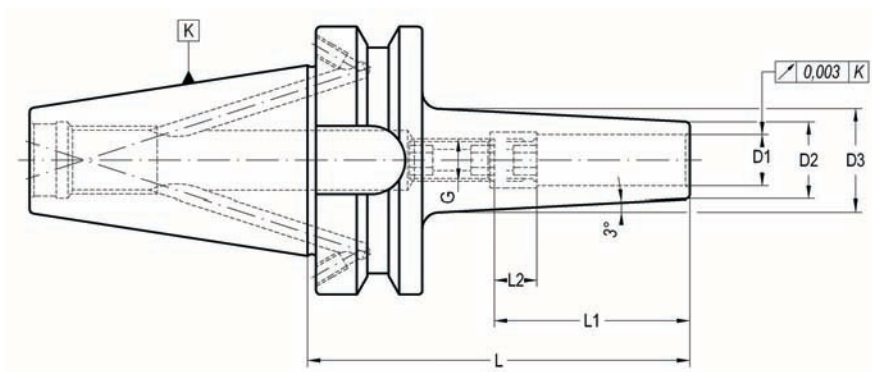
Application:


- 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.

Similar to
DIN 69882-8



K	D ₁	D ₂	L ₁	L ₂	G	L	COD. Form AD+B	
40	3	8	20	-	-	90	012 32 32 12 03	-
40	4	9	20	-	-	90	012 32 32 12 04	-
40	5	10	25	-	-	90	012 32 32 12 05	-
40	6	12	36	10	M-5	90	012 32 32 12 06	301 02 33 05 02
40	8	14	36	10	M-6	90	012 32 32 12 08	301 02 33 06 02
40	10	16	41	10	M-8	90	012 32 32 12 10	301 02 33 08 02
40	12	18	46	10	M-10	90	012 32 32 12 12	301 02 33 10 02

Characteristics:

- Heat resistant hot-working steel.
- Tempered: 54 -2 HRc.
- Taper manufactured according MAS 403-BT JIS B 6339
- 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.

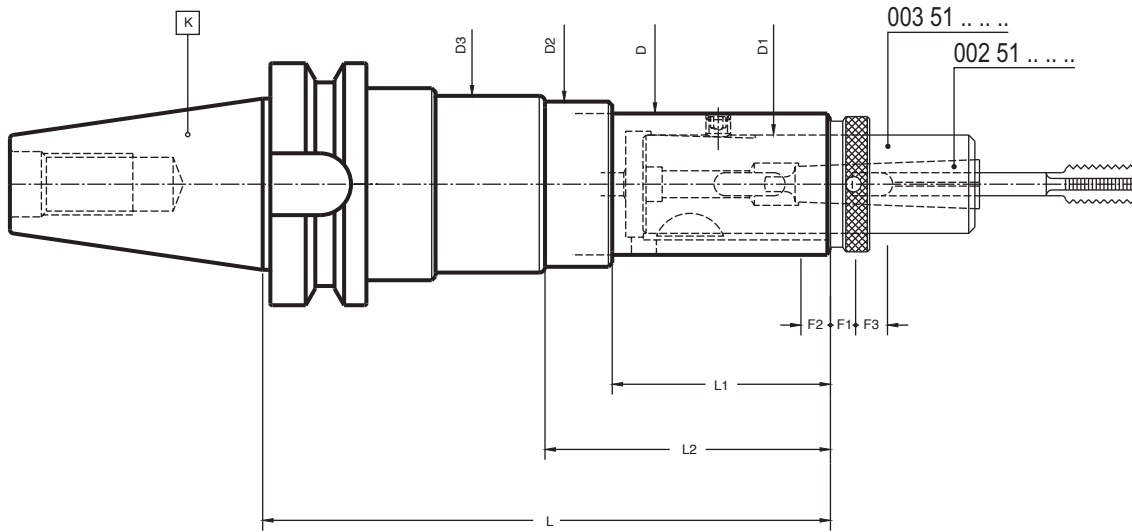
019 12 51 .. 1.

TAPPING CHUCKS

Self feed and compression system. Releasing drive system.
For axial adjustable adapter DIN 6327



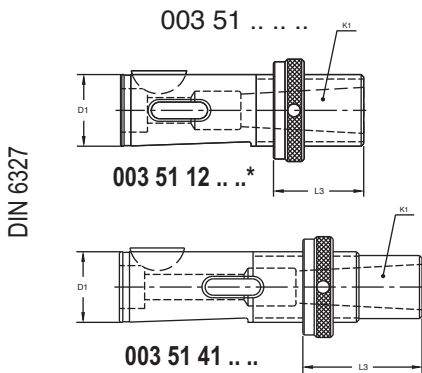
ALTERNATIVE SOLUTIONS 003 ¹²/₃₂ 54 page 81



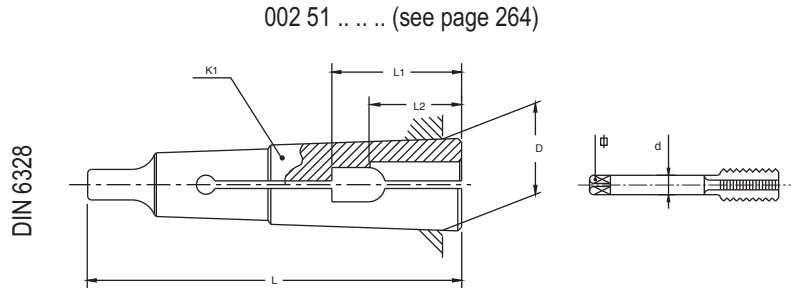
K	CAP.	D ₁	L	D	L ₁	D ₂	L ₂	D ₃	F ₁	F ₂	F ₃	COD. Form A
40	M3-M16	25	145	37	61	44	80	49	5	10	10	019 12 51 02 02 12 ▼
40	M8-M24	32	186	51	59	60	85	66	6	10	12	019 12 51 02 03 13 ▼
50	M3-M16	25	155	37	61	44	80	49	5	10	10	019 12 51 04 02 12 ▼
50	M8-M24	32	186	51	59	60	85	66	6	10	12	019 12 51 04 03 13 ▼

▼ Product outside of our present production program. Price subject to availability.

Axial compensation (compression and extensions) values are F₁ and F₂. F₃ is the release value (the tap receives only reversing rotation). The release system allows to easily and accurately set up tapping depth, specially adapt for blind holes.



D ₁	K ₁	L ₃	COD.
25	MORSE 1	12- 42	003 51 12 05 20*
		37- 67	003 51 41 05 21
		62- 92	003 51 41 05 22
		87-117	003 51 41 05 23
		112-142	003 51 41 05 24
		32	MORSE 2
37- 67	003 51 41 05 31		
62- 92	003 51 41 05 32		
87-117	003 51 41 05 33		
112-142	003 51 41 05 34		
32	MORSE 3		
		42- 80	003 51 41 07 31
		72-110	003 51 41 07 32
		102-140	003 51 41 07 33
		132-170	003 51 41 07 34
		12- 50	003 51 12 07 40*
		42- 80	003 51 41 07 41
		72-110	003 51 41 07 42
		102-140	003 51 41 07 43
		132-170	003 51 41 07 44



To order: CODE + Diameter d x ϕ • Example: 002 51 02 - 4 x 3

D	L	d	2,5	2,8	3,15	3,5	3,55	4	4,5	5	5,5	5,6	6	6,3	7	7,1	8
		ϕ	2,1	2,1	2,5	2,7	2,8	3	3,4	4	4,3	4,5	4,9	5	5,5	5,6	6,2
L ₁	19	22	21	22	21	25	24	25	26	28	26	28	26	28	26	28	27
L ₂	15	18	16	18	16	19	18	19	19,5	22	23	24	26	25	26	25	26

D	L	d	4,5	5	5,5	5,6	6	6,3	7	7,1	8	9	9,5	10	11	11,2	12	12,5
		ϕ	3,4	4	4,3	4,5	4,9	5	5,5	5,6	6,2	7	8	8	9	9	10	11
L ₁	21	25	24	25	26	28	26	28	27	30	32	34	36	36	36	36	36	36
L ₂	16	19	18	19	19,5	22	19,5	22	19,5	22	23	24	26	25	26	25	26	26

D	L	d	8	9	9,5	10	11	11,2	12	12,5	14	16	18
		ϕ	6,2	7	8	9	10	11	11,2	12	12,5	14	16
L ₁	27	30	32	34	36	38	44	48	48	48	48	48	
L ₂	19,5	22	23	24	26	25	26	30	33	33	33	33	

Complete program, see pages 221-225

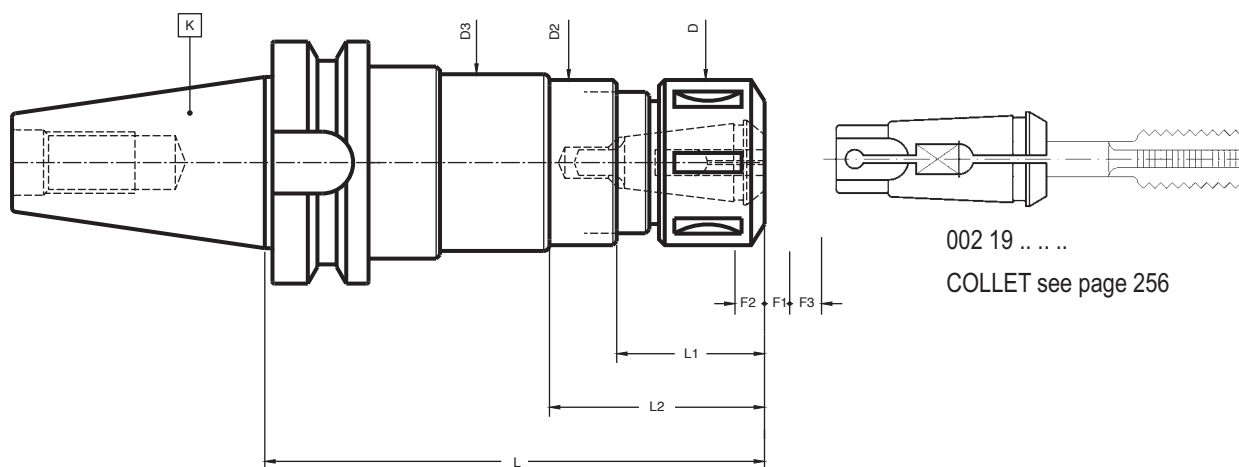
019 12 51 .. 2.

TAPPING CHUCKS

Self feed and compression system. Releasing drive system.
For LAIP 0219 collet



ALTERNATIVE SOLUTIONS 003 ¹²/₃₂ 54 + 019 54 51 .. 2. pages 81 and 252



K	CAP.	L	D	L ₁	D ₂	L ₂	D ₃	F ₁	F ₂	F ₃	COD. Form A
40	M3-M16	125	43	39	44	58	49	5	10	10	019 12 51 02 02 22
40	M8-M28	156	50	42	60	68	66	6	10	12	019 12 51 02 03 23
50	M3-M16	135	43	39	44	58	49	5	10	10	019 12 51 04 02 22
50	M8-M28	156	50	42	60	68	66	6	10	12	019 12 51 04 03 23

Product outside of our present production program. Price subject to availability.

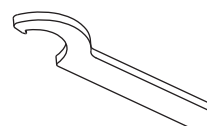
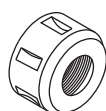
Axial compensation (compression and extensions) values are F₁ and F₂. F₃ is the release value (the tap receives only reversing rotation). The release system allows to easily and accurately set up tapping depth, specially adapt for blind holes.

Accessories, see pages 267-293

BALANCED NUT (STANDARD)

BEARING NUT (OPTIONAL)

WRENCH (OPTIONAL)



CAP.

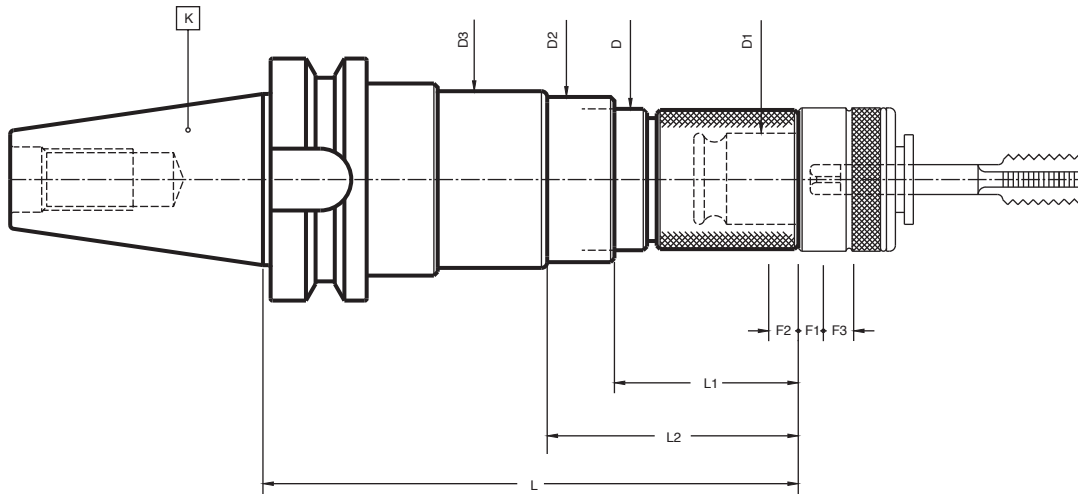
M3-M16
M8-M28

—
004 99 01 01 04





004 99 01 02 03
004 99 01 02 04

004 99 04 09 08
004 99 04 09 09

ALTERNATIVE SOLUTIONS 003 ¹²/₃₂ 54 + 019 54 51 .. 3. pages 81 and 253



BILZ Adapter

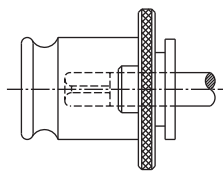
K	CAP.	D ₁	L	D	L ₁	D ₂	L ₂	D ₃	F ₁	F ₂	F ₃	COD. Form A
40	M3-M12 (M16)*	19	128	37	44	44	63	49	5	10	10	019 12 51 02 02 32 
40	M8-M20 (M30)*	31	176	51	63	60	89	66	6	10	12	019 12 51 02 03 33 
50	M3-M12 (M16)*	19	139	37	44	44	63	49	5	10	10	019 12 51 04 02 32 
50	M8-M20 (M30)*	31	178	51	63	60	89	66	6	10	12	019 12 51 04 03 33 

 Product outside of our present production program. Price subject to availability.

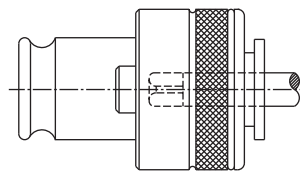
Axial compensation (compression and extensions) values are F₁ and F₂. F₃ is the release value (the tap receives only reversing rotation). The release system allows to easily and accurately set up tapping depth, specially adapt for blind holes.

* With 002 22 and 002 24 adapters

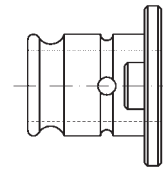
See page 263



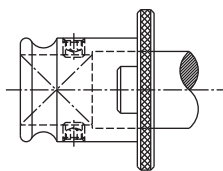
002 21 ..



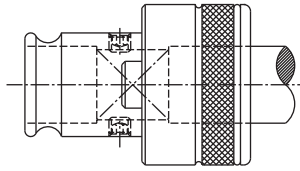
002 23 ..



002 20 ..



002 22 ..

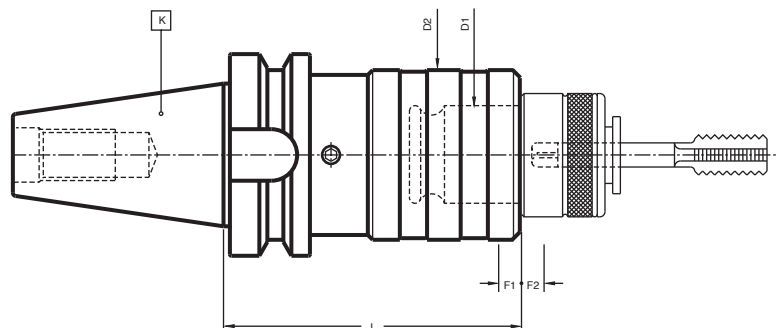


002 24 ..

D₁

19	002 21 02	002 22 02	002 23 02	002 24 02
31	002 21 03	002 22 03	002 23 03	002 24 03

ALTERNATIVE SOLUTION 012 12 ⁰¹/₀₄ + 019 55 52 pages 83 and 84 + 229



BILZ adapter

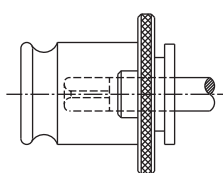
K	CAP.	D ₁	L	D ₂	F ₁	F ₂	COD. Forma A
30	M3-M12 (M16)*	19	65	36	7,5	7,5	019 12 52 01 02
40	M3-M12 (M16)*	19	60	36	7,5	7,5	019 12 52 02 02
40	M8-M20 (M30)*	31	98	53	12,5	12,5	019 12 52 02 03
40	M14-M33 (M48)*	48	153	78	20	20	019 12 52 02 04
50	M3-M12 (M16)*	19	90	36	7,5	7,5	019 12 52 04 02
50	M8-M20 (M30)*	31	103	53	12,5	12,5	019 12 52 04 03
50	M14-M33 (M48)*	48	140	78	20	20	019 12 52 04 04

F₁ Compression run

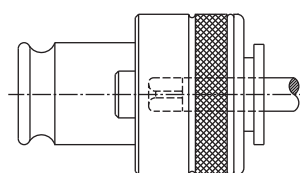
F₂ Extension run

* With 002 22 and 002 24 adapters

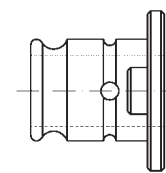
See page 263



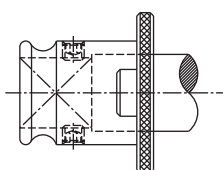
002 21 ..



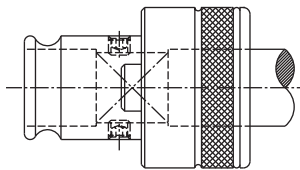
002 23 ..



002 20 ..



002 22 ..

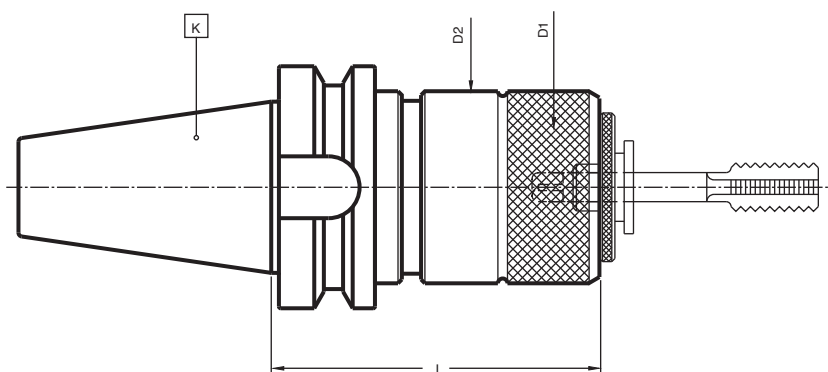


002 24 ..

D₁

19	002 21 02	002 22 02	002 23 02	002 24 02
31	002 21 03	002 22 03	002 23 03	002 24 03
48	002 21 04	002 22 04	002 23 04	002 24 04

ALTERNATIVE SOLUTION 004 12 51 page. 75

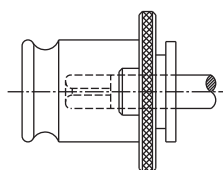


BILZ adapter

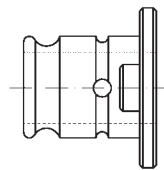
K	CAP.	D ₁	L	D ₂	COD. Forma A
30	M3-M12 (M16)*	19	55	32	019 12 53 01 02
40	M3-M12 (M16)*	19	65	32	019 12 53 02 02
40	M8-M20 (M30)*	31	85	50	019 12 53 02 03
50	M3-M12 (M16)*	19	75	32	019 12 53 04 02
50	M8-M20 (M30)*	31	95	50	019 12 53 04 03
50	M14-M33 (M48)*	48	125	72	019 12 53 04 04

* With 002 22 adapters

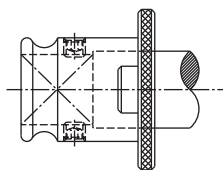
See page 263



002 21 ..



002 20 ..

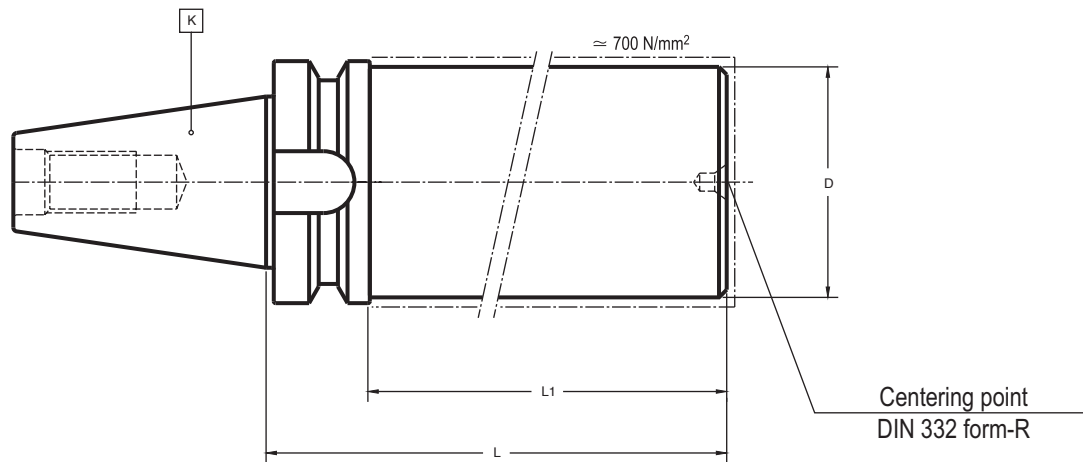


002 22 ..

D ₁		
19	002 21 02	002 22 02
31	002 21 03	002 22 03
48	002 21 04	002 22 04

020 12 02 ... TOOLHOLDER BLANKS

ALTERNATIVE SOLUTION 003¹²₃₂ 54 + 020 54 02 pages 73 and 251



K	D	L	L ₁	COD. Forma A
30	45	100	78	020 12 02 01 51
40	62	160	133	020 12 02 02 73
40	62	250	223	020 12 02 02 75
50	90	160	122	020 12 02 04 93
50	90	250	212	020 12 02 04 95

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