

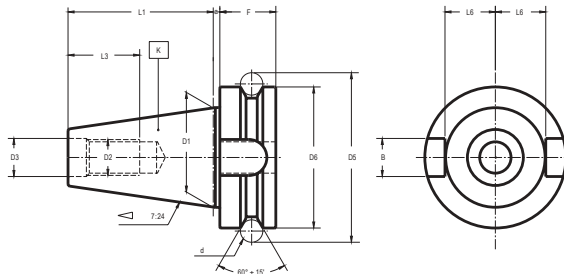


MAS 403 BT
MAS 403 BT

3

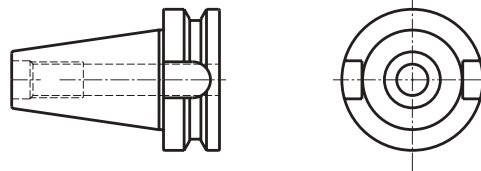
FORM A
Without coolant through.

FORMA A
Sin orificio central pasante.



FORM AD
With central through coolant channel.

FORMA AD
Con orificio central pasante para el paso de refrigerante.

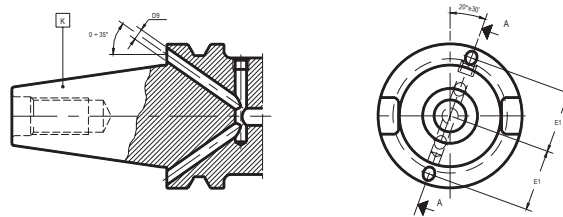


Material:
Case-hardening alloy steel.
Case-hardened and tempered.
Minimum strength in core 880 N/mm².
Surface hardness Rc 57 ÷ 60

Taper tolerance: Grade AT3.

FORM B
With flange through coolant channels.

FORMA B
Con refrigeración a través del collarín.



Material:
Acero aleado de cementación.
Cementado y templado.
Resistencia mínima en el núcleo 880 N/mm².
Dureza superficial Rc 57 ÷ 60

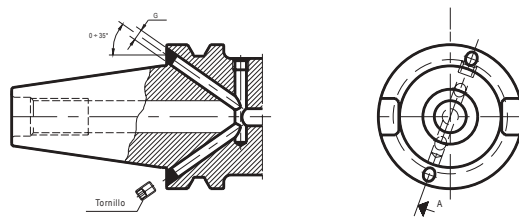
Tolerancia de conicidad: Calidad AT3.

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

Delivery: With two bolts to sealed flange channels.

FORMA AD + B
Con refrigeración a través del collarín y orificio central pasante.

Suministro: con dos tornillos para transformar a forma AD.



NOTE: The rest of the dimensions are according MAS 403-BT

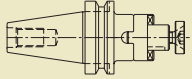
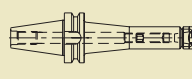
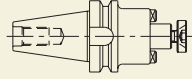
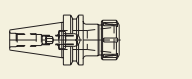
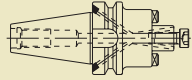
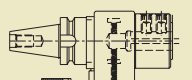


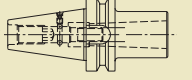
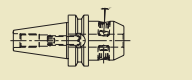
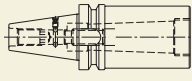
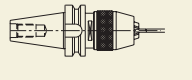
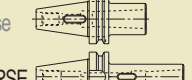
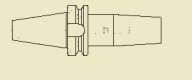
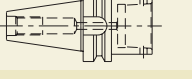
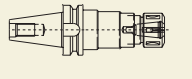
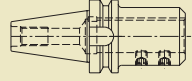
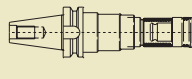
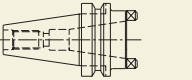
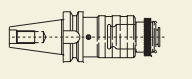
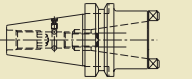
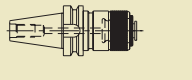
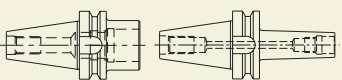
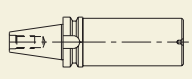
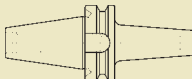
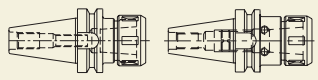
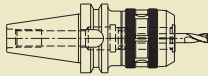
NOTA: Las dimensiones no reflejadas en los dibujos son según norma MAS 403-BT

| K | B H12 | D ₁ | D ₂ | D ₃ H8 | D ₅ | D ₆ h8 | D ₉ | L ₁ ±0.15 | L ₃ mín | L ₆ ⁺⁰ / _{-0.2} | a ⁺⁰ / _{-0.005} | 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 - EQUILBRADO DINAMICO

- WE HAVE THE LATEST METHODS FOR DYNAMIC BALANCING OF OUR TOOLHOLDERS (see page 17/2).
- PLEASE CONTACT US FOR FURTHER INFORMATION.

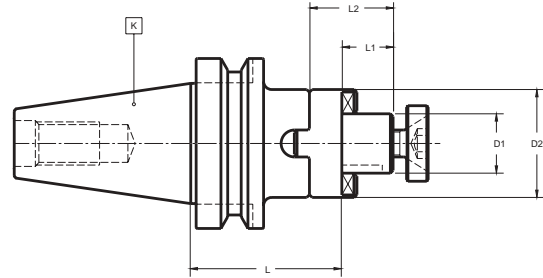
- CONTAMOS CON MODERNOS MEDIOS PARA EL EQUILBRADO DINÁMICO DE NUESTROS PORTAHERRAMIENTAS (ver pág. 17/2)
- INDIQUENOS SUS NECESIDADES.

| DESCRIPTION DENOMINACION | Image | Page Pag. | DESCRIPTION DENOMINACION | Image | Page Pag. |
|---|---|----------------------|---|---|----------------------|
| UNIVERSAL ARBORS PORTAFRESAS COMBINADO |  | 3/4 | COLLET CHUCKS ER TYPE (DIN 6499) PORTAPINZAS DIN 6499 (TIPO ER) |  | 3/21 |
| SHELL END MILL ARBORS PORTAFRESAS CON CHAVETAS FRONTALES |  | 3/5 | COLLET CHUCKS ER TYPE (DIN 6499) PORTAPINZAS DIN 6499 (TIPO ER) |  | 3/22 |
| SHELL END MILL ARBORS FOR CUTTERS WITH INTERNAL COOLING PORTAFRESAS CON CHAVETAS FRONTALES Y REFRIGERACIÓN INTERNA |  | 3/6 | ROTARY COOLANT ADAPTERS ALIMENTADOR ROTATIVO DE REFRIGERACIÓN |  | 3/23 3/24 3/25 |
| DRILL CHUCK ARBORS ADAPTADORES PARA PORTABROCAS |  | 3/7 | WELDON HOLDERS PORTAFRESAS WELDON |  | 3/26 3/27 |
| REDUCING ADAPTERS For Morse taper tools with thread DIN 228-A REDUCTORES A MORSE Para herramientas con rosca |  | 3/8 | WELDON AND WHISTLE-NOTCH HOLDERS PORTAFRESAS WELDON Y/O WHISTLE NOTCH |  | 3/28 |
| REDUCING ADAPTERS For Morse taper tools with thread DIN 228-A REDUCTORES A MORSE Para herramientas con rosca |  | 3/9 | SHORT DRILL CHUCKS PORTABROCAS INTEGRAL |  | 3/29 3/30 |
| EXTENSIONS AND REDUCING ADAPTERS For tapered Morse taper tools DIN 228-B or Morse taper tools with thread DIN 228-A REDUCTORES Y PROLONGADORES A MORSE Para herramientas con lengüeta o rosca |  | 3/10 | SHRINK FIT CHUCKS PORTAFRESAS DE AMARRE POR CONTRACCIÓN TÉRMICA |  | 3/31 3/32 |
| ADAPTERS JIS B 6339-BT TO DIN 69063-HSK ADAPTADORES BT A DIN 69893-HSK |  | 3/11 | TAPPING CHUCKS Self feed and compression system PORTAMACHOS Doble compensación axial y escape |  | 3/33 |
| HOLDERS FOR ADJUSTABLE ADAPTERS DIN 6327 ADAPTADORES PARA HERRAMIENTAS DIN 6327 |  | 3/12 | QUICK-CHANGE TAPPING CHUCKS Self feed and compression system PORTAMACHOS DE CAMBIO RÁPIDO Doble compensación axial y escape |  | 3/34 |
| REDUCING ADAPTERS For tools with DIN 2080, DIN 69871 or MAS-BT taper REDUCTORES A ISO |  | 3/13 | QUICK-CHANGE TAPPING CHUCKS For BILZ system tap adapter PORTAMACHOS DE CAMBIO RÁPIDO Tipo BILZ |  | 3/35 |
| REDUCING ADAPTERS For tools with DIN 2080 taper For tools with DIN 69871 or MAS-BT taper REDUCTORES A ISO Con tirante de doble efecto |  | 3/14 | QUICK-CHANGE SOLID DRIVE TAPPING CHUCKS For synchronized feed control machines PORTAMACHOS RÍGIDO DE CAMBIO RÁPIDO Tipo BILZ |  | 3/36 |
| BASIC ADAPTERS FOR MODULAR TOOLING ADAPTADORES PARA UTILLAJE MODULAR |  | 3/15 | TOOLHOLDER BLANKS PORTAHERRAMIENTAS SEMIACABADOS |  | 3/37 |
| FRONT CONTACT ADAPTERS FOR SCREW IN-TOOLS ADAPTADORES PARA MANGOS ROSCADOS CON APOYO FRONTAL |  | 3/16 | | | |
| COLLET CHUCKS FOR DIN 6388 COLLETS PORTAPINZAS DIN 6388 |  | 3/17 | | | |
| GREAT POWER COLLET CHUCKS PORTAPINZAS DE GRAN APRIETE |  | 3/18 3/19 3/20 | | | |

| TYPE TIPO | TOOL Ø HERRAMIENTA | LENGTH LONGITUD |
|----------------|--------------------|-----------------|
| 30, 40, 45, 50 | 16 - 50 | M L |

Alternative solutions 001 12 05 pg. 3/5
 Soluciones alternativas 001 32 ³³/₃₅ pg. 3/6
 003 ⁷²/₃₂ 54 + 001 54 0³/₅ pgs. 3/15 and 9/3

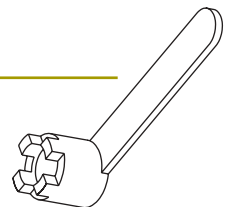
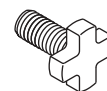
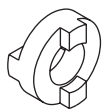
For milling cutters with longitudinal or tenon drive DIN 138
 Para fresas con chavetero longitudinal o transversal DIN 138



Maximum circular deviation between K and D₁ ≤ 0,008
 Desviación circular máxima entre K y D₁ ≤ 0,008

| K MAS 403 BT | D ₁ h6 | LENGTH - LONGITUD | | L ₁ | L ₂ | D ₂ | COD. Form A |
|-----------------|-------------------|-------------------|-----|----------------|----------------|----------------|-----------------|
| | | L | L | | | | |
| 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 16/3 - 16/11
 Accesorios ver págs. 16/3 - 16/11



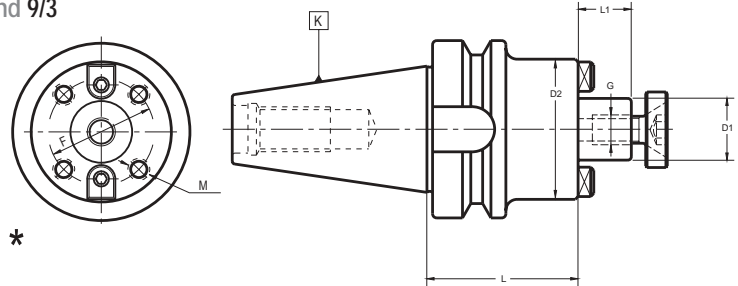
| D ₁ | OPTIONALS - OPCIONALES | | | | | |
|----------------|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 16 | 001 99 02 01 30 | 001 99 01 22 30 | 001 99 01 12 30 | 001 99 03 02 30 | 001 99 01 01 30 | 001 99 04 01 30 |
| 22 | 001 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 |

| | | |
|------------|--------------------|-----------------|
| TYPE TIPO | TOOL Ø HERRAMIENTA | LENGTH LONGITUD |
| 40, 45, 50 | 16 - 60 | M L |

For shell end mills with driving slot DIN 138
Para fresas con chavetero transversal DIN 138

Alternative solutions
Soluciones alternativas

001 12 02 pg. 3/4
001 32³³₃₅ pg. 3/6
003¹²₃₂ 54 + 001 54 0³₅ pgs. 3/15 and 9/3

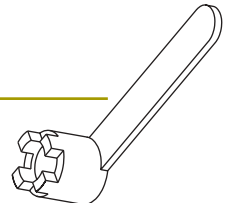
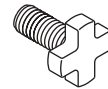


Maximum circular deviation between K and D₁ ≤ 0,008
Desviación circular máxima entre K y D₁ ≤ 0,008

| K MAS 403 BT | D ₁ h6 | LENGTH - LONGITUD | | L ₁ | D ₂ | F | M | G | COD. Form A |
|-----------------|-------------------|-------------------|-----|----------------|----------------|-------|------|------|-----------------|
| | | L | L | | | | | | |
| 40 | 16 | 55 | 120 | 17 | 40 | — | — | M-8 | 001 12 05 02 30 |
| 40 | 16 | 55 | 120 | 17 | 40 | — | — | M-8 | 001 12 05 02 31 |
| 40 | 22 | 55 | 120 | 19 | 50 | — | — | M-10 | 001 12 05 02 40 |
| 40 | 22 | 55 | 120 | 19 | 50 | — | — | M-10 | 001 12 05 02 41 |
| 40 | 27 | 55 | 120 | 21 | 60 | — | — | M-12 | 001 12 05 02 50 |
| 40 | 27 | 55 | 120 | 21 | 60 | — | — | M-12 | 001 12 05 02 51 |
| 40 | 32 | 60 | 120 | 24 | 70 | — | — | M-16 | 001 12 05 02 60 |
| 40 | 32 | 60 | 120 | 24 | 70 | — | — | M-16 | 001 12 05 02 61 |
| *40 | 40 | 60 | 120 | 27 | 89 | 66,7 | M-12 | M-20 | 001 12 03 02 70 |
| *40 | 40 | 60 | 120 | 27 | 89 | 66,7 | M-12 | M-20 | 001 12 03 02 71 |
| 45 | 16 | 55 | 120 | 17 | 40 | — | — | M-8 | 001 12 05 03 30 |
| *45 | 40 | 70 | 120 | 30 | 89 | 66,7 | M-12 | M-20 | 001 12 03 03 70 |
| 50 | 16 | 55 | 120 | 17 | 40 | — | — | M-8 | 001 12 05 04 30 |
| 50 | 16 | 55 | 120 | 17 | 40 | — | — | M-8 | 001 12 05 04 31 |
| 50 | 22 | 55 | 120 | 19 | 50 | — | — | M-10 | 001 12 05 04 40 |
| 50 | 22 | 55 | 120 | 19 | 50 | — | — | M-10 | 001 12 05 04 41 |
| 50 | 27 | 55 | 120 | 21 | 60 | — | — | M-12 | 001 12 05 04 50 |
| 50 | 27 | 55 | 120 | 21 | 60 | — | — | M-12 | 001 12 05 04 51 |
| 50 | 32 | 55 | 120 | 24 | 70 | — | — | M-16 | 001 12 05 04 60 |
| 50 | 32 | 55 | 120 | 24 | 70 | — | — | M-16 | 001 12 05 04 61 |
| *50 | 40 | 70 | 120 | 27 | 89 | 66,7 | M-12 | M-20 | 001 12 03 04 70 |
| *50 | 40 | 70 | 120 | 27 | 89 | 66,7 | M-12 | M-20 | 001 12 03 04 71 |
| *50 | 60 | 70 | 120 | 40 | 129 | 101,6 | M-16 | — | 001 12 03 04 90 |
| *50 | 60 | 70 | 120 | 40 | 129 | 101,6 | M-16 | — | 001 12 03 04 91 |

* With 4 tapped holes for front clamping according to DIN 2079
* Con cuatro orificios roscados adicionales para el amarre según DIN 2079

Accessories see pages 16/3 - 16/11
Accesorios ver pág 16/3 - 16/11

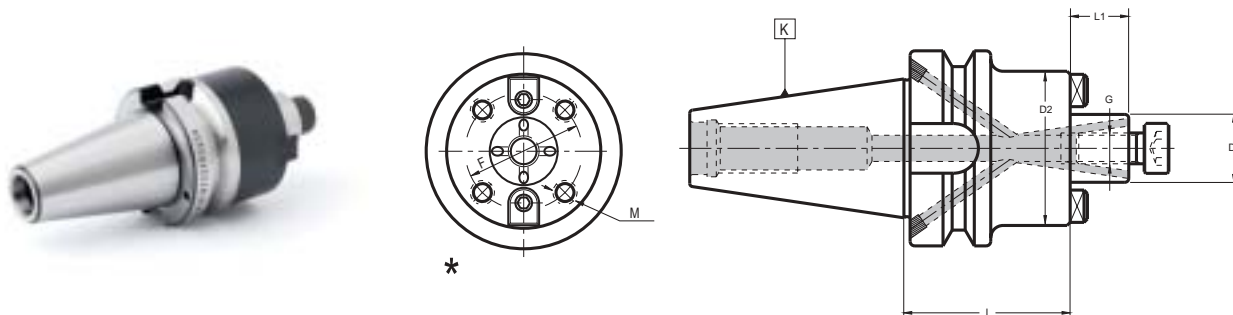


— OPTIONALS - OPCIONALES —

| | | | | | | | |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| D ₁ | | | | | | | |
| 16 | 003 99 01 01 01 | 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 01 01 60 |
| 40 | | | 301 01 01 06 16 | 001 99 01 22 70 | 001 99 01 12 70 | 001 99 01 01 70 | 001 99 01 01 70 |
| 60 | | 303 05 04 00 02 | 301 01 01 12 25 | | | | |

| | | |
|-----------|--------------------|-----------------|
| TYPE TIPO | TOOL Ø HERRAMIENTA | LENGTH LONGITUD |
| 40, 50 | 16 - 60 | M |

For shell end mills with driving slot DIN 138
Para fresas con chavetero transversal DIN 138

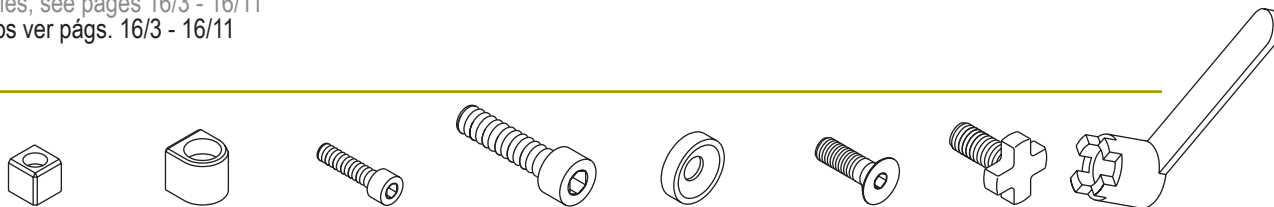


Maximum circular deviation between K and D₁ ≤ 0,008
Desviación circular máxima entre K y D₁ ≤ 0,008

| K MAS 403 BT | D ₁ h6 | LENGTH - LONGITUD L | L ₁ | D ₂ | F | M | G | COD. Form AD + B |
|-----------------|-------------------|------------------------|----------------|----------------|-------|------|------|---------------------|
| 40 | 16 | 55 | 17 | 40 | — | — | M-8 | 001 32 35 02 30 |
| 40 | 22 | 55 | 19 | 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 | 40 | — | — | M-8 | 001 32 35 04 30 |
| 50 | 22 | 55 | 19 | 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 | 66,7 | 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
* Con cuatro orificios roscados adicionales para el amarre según DIN 2079

Accessories, see pages 16/3 - 16/11
Accesorios ver págs. 16/3 - 16/11



| D ₁ | OPCIONALES | | | | | | | | |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--|--|--|--|
| 16 | 003 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 | 003 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 | 003 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 | 003 05 05 00 60 | 301 01 01 05 16 | 301 01 01 16 30 | 001 99 01 01 60 | 001 99 01 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 | | | | |
| 60 | 003 05 04 00 02 | 301 01 01 12 25 | | | | | | | |

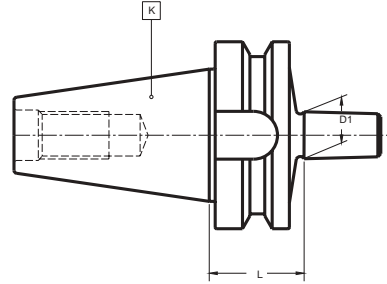
TYPE TIPO
30, 40, 45, 50

TYPE TIPO
B12-B18;J1-J33

LENGTH LONGITUD
M

Alternative solutions 003 ¹²/₃₂ 54 + 001 54 50 pgs. 3/15 and 9/4
Soluciones alternativas

For DIN 238 or JACOBS
Para alojamiento DIN 238 ó JACOBS



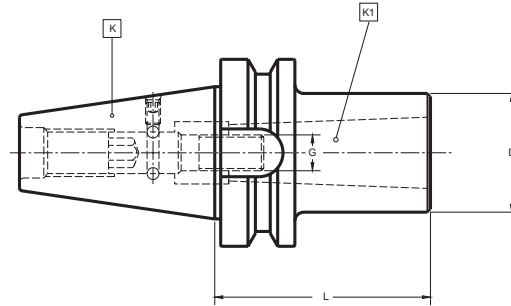
Maximum circular deviation between K and $D_1 \leq 0,008$
Desviación circular máxima entre K y $D_1 \leq 0,008$

| K MAS 403 BT | B - J | LENGTH - LONGITUD 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 |
| 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 |
| 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 |

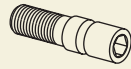


| TYPE TIPO | TYPE TIPO | LENGTH LONGITUD |
|------------|-----------|-----------------|
| 30, 40, 50 | K1 - K5 | M |

DIN 6364 (*)

With double effect pull stud. For Morse taper tools with thread DIN 228-A
Con tirante de doble efecto. Para herramientas con rosca de tiro DIN 228-A



Maximum circular deviation between K and K₁ ≤ 0,008
Desviación circular máxima entre K y K₁ ≤ 0,008

| K MAS 403 BT | K ₁ | LENGTH - LONGITUD 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 | |
| 30 | 3 | 85 | 40 | M-12 | 003 12 02 01 40 | 003 99 08 01 40 | 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 / con arrastre según DIN 2201 see page / ver pág. 3/9 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 / con arrastre según DIN 2201 see page / ver pág. 3/9 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 / con arrastre según DIN 2201 see page / ver pág. 3/9 COD. 003 12 04 04 60 | | | | | | | |

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

* Estas posiciones no cumplen la norma DIN 6364 por carecer de diente de arrastre según DIN 2201.

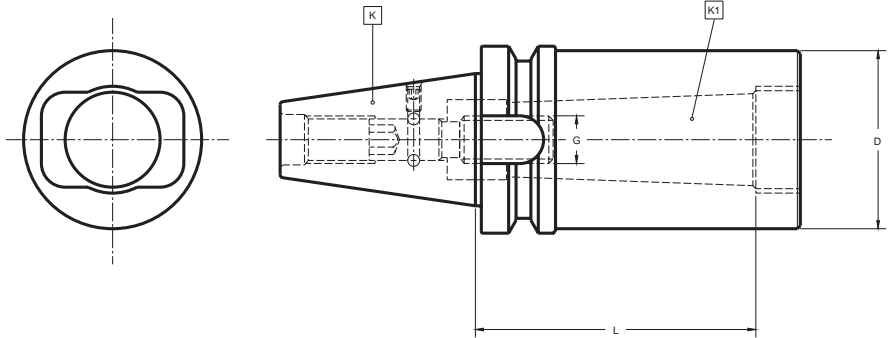
TYPE TIPO
40, 50

TYPE TIPO
K4 - K5

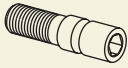


LENGTH LONGITUD
M

DIN 6364 (DIN 2201)

With double effect pull stud. For Morse taper tools with thread DIN 228-A
Con tirante de doble efecto. Para herramientas con rosca de tiro DIN 228-A



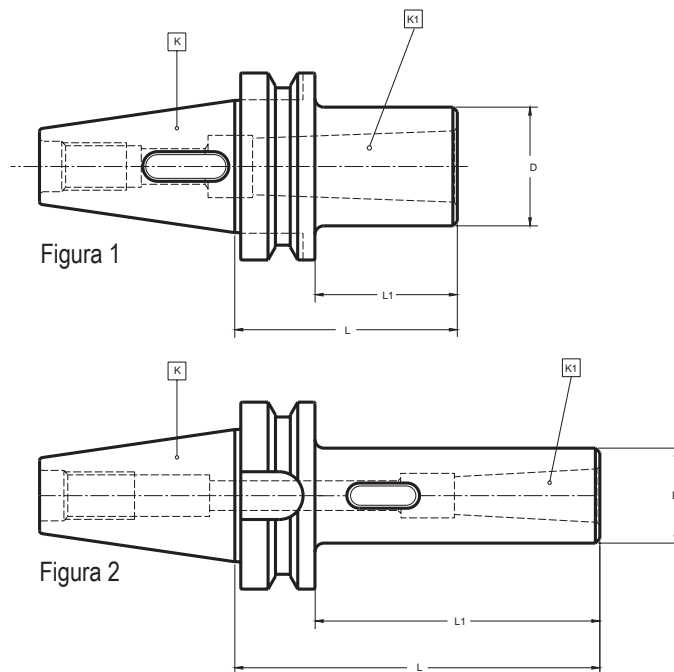
Maximum circular deviation between K and K₁ ≤ 0,008
Desviación circular máxima entre K y K₁ ≤ 0,008

| K MAS 403 BT | K ₁ | LENGTH - LONGITUD 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 / sin arrastre según DIN 2201 see page /ver pág. 3/8 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 / sin arrastre según DIN 2201 see page /ver pág. 3/8 COD. 003 12 02 04 50 | | | | | | |
| 50 | 5 | 103 | 78 | M-20 | 003 12 04 04 60 | 003 99 08 04 60 | 304 01 00 04 00 | 301 01 03 05 12 |
| 50 | 5 | without driving slot / sin arrastre según DIN 2201 see page /ver pág.3/8 COD. 003 12 02 04 60 | | | | | | |

| TYPE TIPO | TYPE TIPO | LENGTH LONGITUD |
|----------------|-----------|-------------------|
| 30, 40, 45, 50 | K1 - K5 | M L |


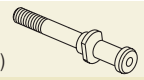
For tapered Morse taper tools DIN 228-B or Morse taper tools with thread DIN 228-A
Para herramientas con lengüeta DIN 228-B o rosca de tiro DIN 228-A

Alternative solutions 003 12 54 + 001 54 12 pgs. 3/15
Soluciones alternativas 003 12 32



Maximum circular deviation between K and K₁ ≤ 0,008
Desviación circular máxima entre K y K₁ ≤ 0,008

See pages 15/15 - 15/8
Ver págs. 15/15 - 15/8

| Figura | K MAS 403 BT | K1 | LENGTH - LONGITUD | | L1 | D | COD. Form AD | (*)  | (*)  |
|--------|-----------------|----|-------------------|-----|-----|----|-----------------|---|---|
| | | | L | L | | | | | |
| 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 |

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

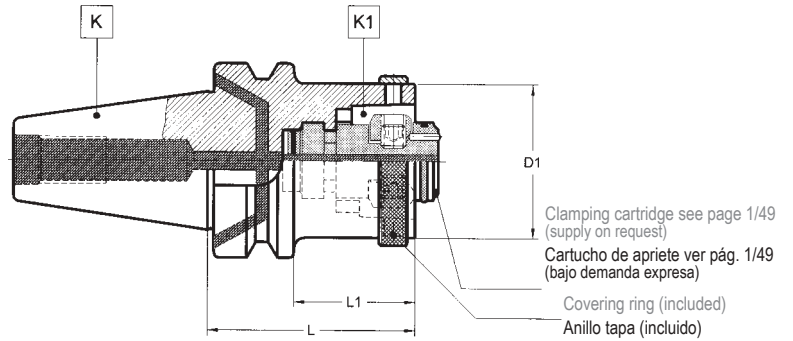
(*) Tirante necesario para usar herramienta con rosca de tiro DIN 228-A

TYPE TIPO
40, 50

TYPE TIPO
HSK63

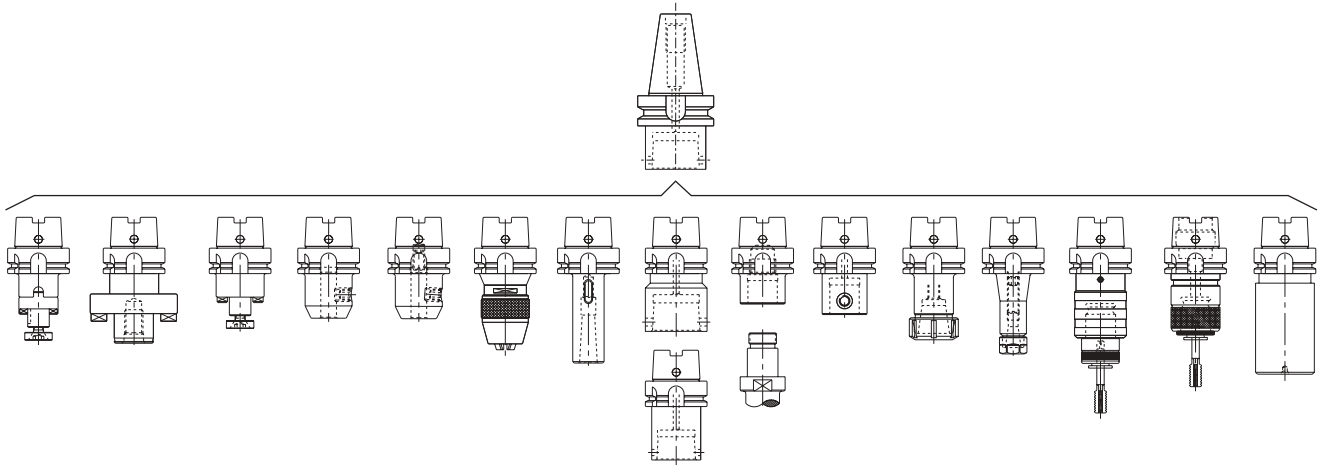
LENGTH LONGITUD
M

Prepared for MAPAL clamping system
Preparados para el sistema de apriete MAPAL



Maximum circular deviation between K and K₁ ≤ 0,002
Desviación circular máxima entre K y K₁ ≤ 0,002

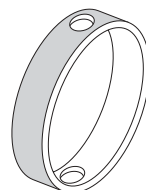
| K MAS 403 BT | K ₁ HSK-A/C | D ₁ | LENGTH - LONGITUD L ± 0,05 | L ₁ | COD. Form AD + B |
|-----------------|---------------------------|----------------|-------------------------------|----------------|---------------------|
| 40 | 63 | 63 | 70 | 43 | 003 32 14 02 04 |
| 50 | 63 | 63 | 60 | 22 | 003 32 14 04 04 |



351 03 99 14 .. Covering ring Anillo tapa

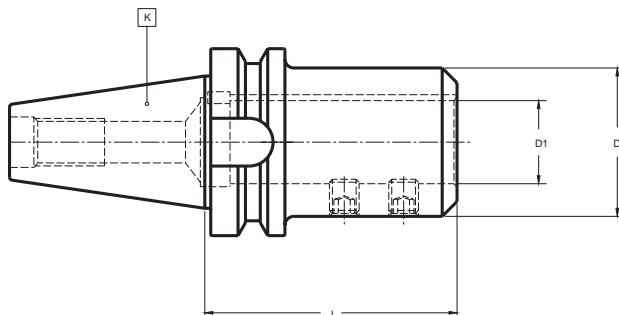
Design
For DIN 69893-1 Form A and Form C
toolholders.

Ejecución
Preparado para recibir portaherramientas
HSK-DIN 69893-1 Forma A y C.




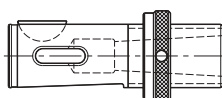
| D ₁ -HSK | COD. |
|---------------------|-----------------|
| 63 | 351 03 99 14 04 |

| TYPE TIPO | Ø | LENGTH LONGITUD |
|------------|---------|-----------------|
| 30, 40, 50 | 25 - 48 | M |

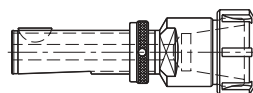


Maximum circular deviation between K and D₁ ≤ 0,008
 Desviación circular máxima entre K y D₁ ≤ 0,008

| K MAS 403 BT | D ₁ H6 | LENGTH - LONGITUD L | D ₂ | COD. Form AD |  |
|-----------------|-------------------|------------------------|----------------|-----------------|---|
| 30 | 28 | 105 | 50 | 003 12 21 01 60 | 301 01 03 10 12 |
| 40 | 25 | 90 | 47 | 003 12 21 02 50 | 301 01 03 08 12 |
| 40 | 28 | 85 | 50 | 003 12 21 02 60 | 301 01 03 10 12 |
| 40 | 32 | 118 | 55 | 003 12 21 02 70 | 301 01 03 08 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 | 36 | 100 | 63 | 003 12 21 04 80 | 301 01 03 12 14 |
| 50 | 48 | 100 | 80 | 003 12 21 04 90 | 301 01 03 12 16 |



003 51 11 ...



004 51 06 ...



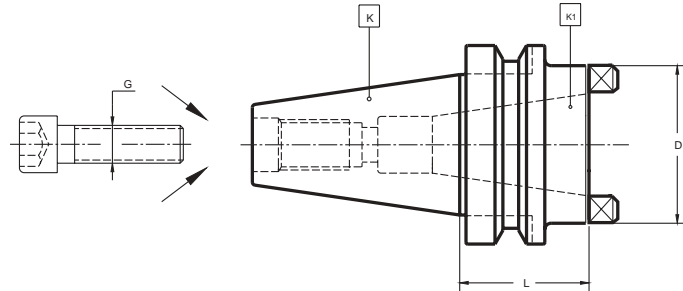
019 51 02 ...

See pages 12/02 - 12/06
 Ver págs. 12/02 - 12/06



| TYPE TIPO | TYPE TIPO | LENGTH LONGITUD |
|-----------|-----------|-----------------|
| 50 | 40 | M |

For tools with DIN 2080, DIN 69871 or MAS-BT taper
Para herramientas con cono DIN 2080, DIN 69871 y MAS-BT

Alternative solutions 003 12 32 pg. 3/14
Soluciones alternativas



Maximum circular deviation between K and K₁ ≤ 0,008
Desviación circular máxima entre K y K₁ ≤ 0,008

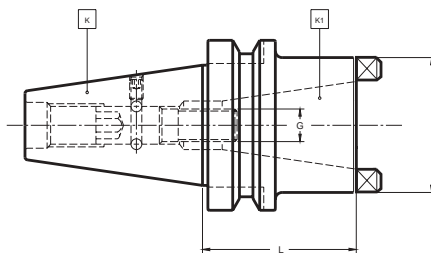
| K MAS 403 BT | K ₁ | LENGTH -LONGITUD L | D | G | COD. Form AD | (1)  | (2)  |
|-----------------|----------------|-----------------------|----|------|-----------------|---|---|
| 50 | 40 | 51 | 70 | M-16 | 003 12 31 04 02 | 003 99 07 09 14 | 003 99 07 09 12 |

- (1) Tirante necesario para usar herramientas DIN-2080.
- (2) Tirante necesario para usar herramientas DIN-69871 y MAS-BT.
- (2) These pull studs are supplied on request.
- Estos tirantes son suministrados bajo demanda expresa.

| TYPE TIPO | TYPE TIPO | LENGTH LONGITUD |
|-----------|-----------|-----------------|
| 40, 50 | 30 - 40 | M |

With double effect pull stud. For tools with DIN 2080 taper
Con tirante de doble efecto. Para herramientas con cono DIN 2080

Alternative solutions 003 12 31 pg. 3/13
Soluciones alternativas



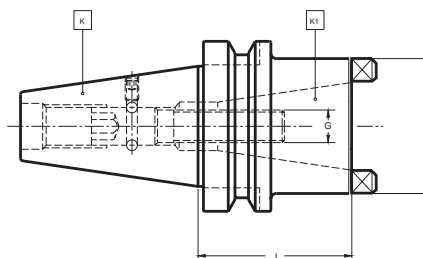
Maximum circular deviation between K and K₁ ≤ 0,008
Desviación circular máxima entre K y K₁ ≤ 0,008

| K MAS 403 BT | K ₁ | LENGTH - LONGITUD L | D | G | COD. Form A | | | |
|-----------------|----------------|------------------------|----|------|--------------------|-----------------|-----------------|-----------------|
| 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 |

| TYPE TIPO | TYPE TIPO | LENGTH LONGITUD |
|-----------|-----------|-----------------|
| 40, 50 | 30 - 40 | M |

With double effect pull stud. For tools with DIN 69871 or MAS-BT taper
Con tirante de doble efecto. Para herramientas con cono DIN 69871 y MAS-BT

Alternative solutions 003 12 31 pg. 3/13
Soluciones alternativas

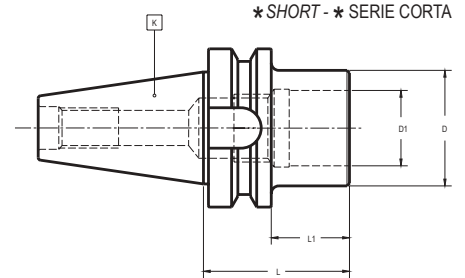
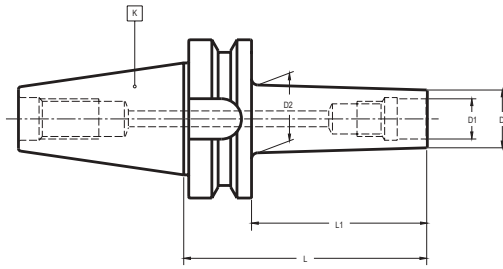


Maximum circular deviation between K and K₁ ≤ 0,008
Desviación circular máxima entre K y K₁ ≤ 0,008

| K MAS 403 BT | K ₁ | LENGTH - LONGITUD L | D | G | COD. Form A | | | |
|-----------------|----------------|------------------------|----|------|--------------------|-----------------|-----------------|-----------------|
| 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 |

| TYPE TIPO | OUTSIDE Ø EXTERIOR | LENGTH LONGITUD |
|----------------|--------------------|-----------------|
| 30, 40, 45, 50 | 14,5 - 90 | M |

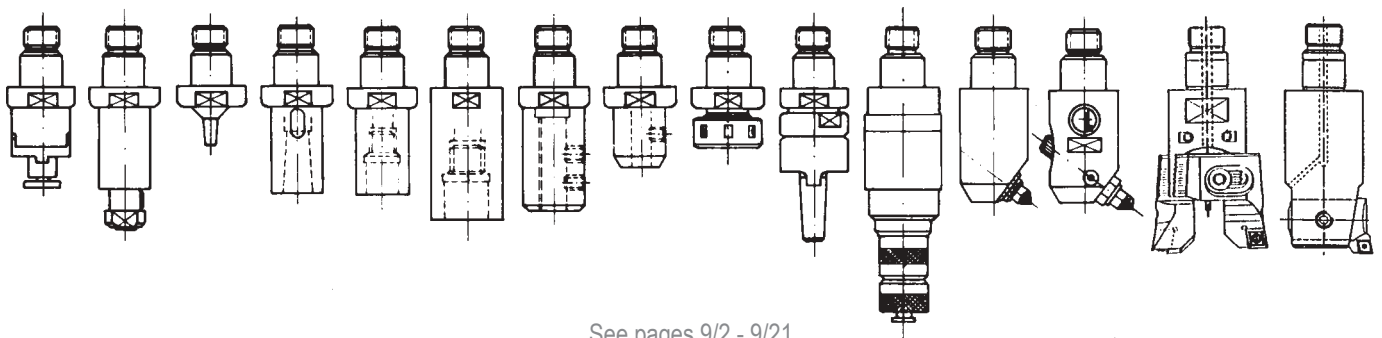
Interchangeable with C.O. system
Intercambiable con el sistema C.O.



*SHORT - *SERIE CORTA

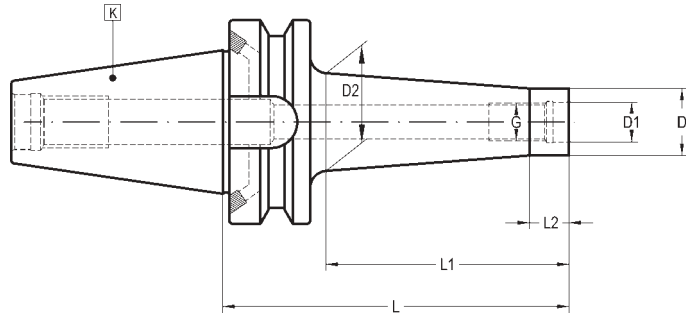
Maximum circular deviation between K and $D_1 \leq 0,005$
Desviación circular máxima entre K y $D_1 \leq 0,005$

| K MAS 403 BT | D_1 | D | LENGTH - LONGITUD L | L_1 | D_2 | COD. Form AD | COD. Form AD + B |
|-----------------|-------|------|------------------------|-------|-------|-----------------|---------------------|
| 30 | 13 | 18,5 | 70 | 48 | 25 | 003 12 54 01 12 | |
| *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 |



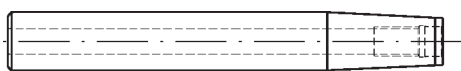
See pages 9/2 - 9/21
Ver págs. 9/2 - 9/21

| TYPE TIPO | THREAD ROSCA | LENGTH LONGITUD | | |
|-----------|--------------|-----------------|---|---|
| 40, 50 | M6 - M16 | S | M | L |

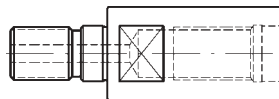


Maximum circular deviation between K and $D_1 \leq 0,003$
Desviación circular máxima entre K y $D_1 \leq 0,003$

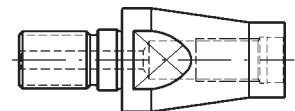
| K MAS 403 BT | G | D | D_1 | D_2 | LENGTH - LONGITUD | | | L_1 | L_2 | COD. Form AD + B |
|-----------------|------|------|-------|-------|-------------------|-----|-----|-------|-------|---------------------|
| | | | | | S | M | L | | | |
| 40 | M-6 | 9,8 | 6,5 | 12 | 55 | | | 25 | 10 | 003 32 57 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 10/7)
Prolongadores cilíndricos (ver pág. 10/7)



Extensions (see page 9/9)
Prolongadores (ver pág. 9/9)



Reducers (see page 9/9)
Reductores (ver pág. 9/9)

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.

Suministro

- Equilibrado dinámico según ISO 1940-1 hasta 15.000 r.p.m.
- Disponemos de medios para el equilibrado hasta 50.000 r.p.m.

| TYPE TIPO | Ø max | LENGTH LONGITUD |
|----------------|---------|-----------------|
| 30, 35, 40, 50 | 10 - 40 | M |

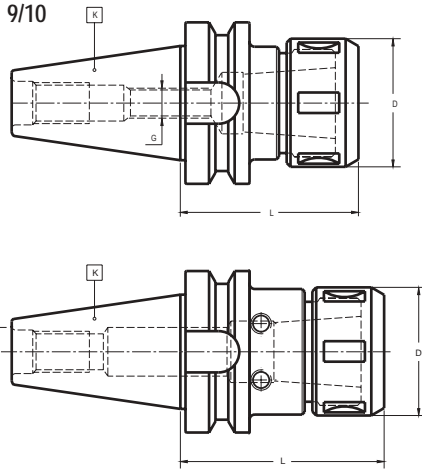
For tools with cylindrical straight shank DIN 1835-A or threaded cylindrical shank DIN 1835-D
Para herramientas con mango cilíndrico liso DIN 1835-A o cilíndrico roscado DIN 1835-D

Alternative solutions
Soluciones alternativas

004 12⁰⁶₃₂ 06 pgs. 3/21 and 3/22
003 12⁵⁴₃₂ 54 + 004 54 06 pgs. 3/15 and 9/10
004 12⁰⁵₃₂ 05 pg. 3/19



(*)
- For synchronized feed control machines.
- Para máquinas con control de roscado rígido.



002 01
002 03
002 04
(*) 002 19

Collets see pages 14/3 - 14/4
Pinzas ver págs. 14/3 - 14/4

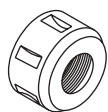
Maximum circular deviation between outer taper and collet housing ≤ 0,003
Desviación circular máxima entre el cono exterior e interior ≤ 0,003

| K MAS 403 BT | D ₁ máx. | LENGTH - LONGITUD | | D | G | COD. Form AD | COD. Form AD + B |
|-----------------|---------------------|-------------------|---|----|------|-----------------|---------------------|
| | | L | L | | | | |
| 30 | 10 | 50 | | 30 | M-12 | 004 12 01 01 02 | |
| *30 | 16 | 73 | | 43 | — | 004 12 51 01 03 | |
| *30 | 20 | 78 | | 50 | — | 004 12 51 01 04 | |
| 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 | 25 | 70 | | 60 | M-16 | 004 12 01 02 05 | 004 32 01 02 05 |
| 40 | 32 | 90 | | 72 | M-16 | 004 12 01 02 06 | 004 32 01 02 06 |
| 50 | 20 | 100 | | 50 | M-16 | 004 12 01 04 04 | |
| *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 |

For boxes and composition of different sets, see pages 4/2.
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 16/3 - 16/11

Estuches y composición de diferentes juegos, ver págs. 4/2.
K³⁰₄₀ - Equilibrado dinámico según ISO 1940-1 hasta 10.000 r.p.m.
Disponemos de medios para el equilibrado para velocidades de hasta 50.000 r.p.m.
Accesorios ver págs. 16/3 - 16/11

BALANCED NUT
TUERCA EQUILIBRADA
(STANDARD - ESTÁNDAR)



D₁ máx.

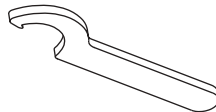
| | |
|----|-----------------|
| 10 | 004 99 01 01 02 |
| 16 | — |
| 20 | 004 99 01 01 04 |
| 25 | 004 99 01 01 05 |
| 32 | 004 99 01 01 06 |
| 40 | — |

BEARING NUT
TUERCA GIRATORIA
(OPTIONAL - OPCIONAL)



| | |
|---|-----------------|
| — | 004 99 01 02 03 |
| — | 004 99 01 02 04 |
| — | 004 99 01 02 05 |
| — | 004 99 01 02 06 |
| — | 004 99 01 02 07 |

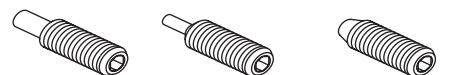
WRENCH
LLAVE
(OPTIONAL - OPCIONAL)



| |
|-----------------|
| 004 99 04 09 06 |
| 004 99 04 09 08 |
| 004 99 04 09 09 |
| 004 99 04 09 11 |
| 004 99 04 09 12 |
| 004 99 04 09 13 |

OPTIONALS - OPCIONALES

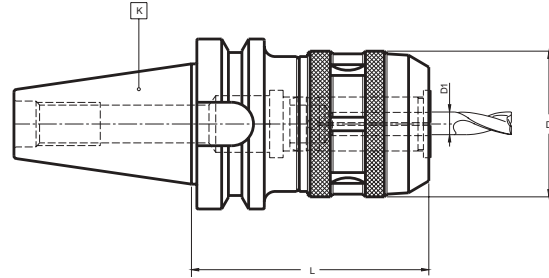
- 1 - LENGTH ADJUSTMENT SCREW
- 2 and 3 - LENGTH ADJUSTMENT SCREW WITH THROUGH HOLE
- 1 - TORNILLO DE REGULACION
- 2 y 3 - TORNILLO DE REGULACION CON ORIFICIO PARA PASO DE REFRIGERANTE





| 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 |

| TYPE TIPO | Ø max | LENGTH LONGITUD |
|-----------|---------|-----------------|
| 40, 50 | 20 - 32 | M |

For tools with plain cylindrical straight shank
Para herramientas con mango cilíndrico



Maximum circular deviation between outer taper and collet housing $\leq 0,003$
Desviación circular máxima entre el cono exterior y el alojamiento de la pinza $\leq 0,003$

| K MAS 403 BT | D ₁ máx. | LENGTH - LONGITUD L | D | COD. Form AD | COD. Form AD + B |  |  OPCIONAL |
|-----------------|---------------------|------------------------|----|-----------------|---------------------|---|---|
| 40 | 20 | 80 | 54 | 004 12 05 02 04 | 004 32 05 02 04 | 004 99 04 02 06 | 004 99 04 09 10 |
| 40 | 32 | 90 | 72 | 004 12 05 02 06 | 004 32 05 02 06 | 004 99 04 02 06 | 004 99 04 09 12 |
| 50 | 20 | 90 | 54 | 004 12 05 04 04 | 004 32 05 04 04 | 004 99 04 02 06 | 004 99 04 09 10 |
| 50 | 32 | 105 | 72 | 004 12 05 04 06 | 004 32 05 04 06 | 004 99 04 02 06 | 004 99 04 09 12 |

In order to achieve best results we recommend to use cylindrical tools with h6 tolerance.
When tool shank diameter is 'D₁ máx.', there is no need of any collet.

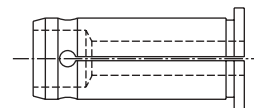
For boxes and composition of different sets see pages 14/12

K 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.

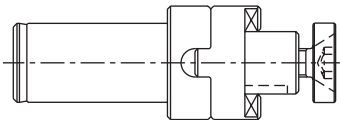
Para un máximo rendimiento del portapinzas se recomienda utilizar herramientas de mango cilíndrico con tolerancia h6
La herramienta cuyo diámetro corresponda a 'D₁ máx.', se sujeta sin necesidad de pinza.

Estuches y composición de diferentes juegos, ver págs. 14/12

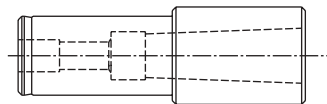
K 40 - Equilibrado dinámico según ISO 1940-1 hasta 10.000 r.p.m.
Disponemos de medios para el equilibrado para velocidades de hasta 50.000 r.p.m.



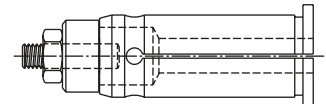
002 05
See page 14/9 - Ver pág. 14/9



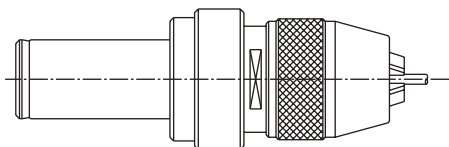
001 50 02 06 ..
See page 10/3 - Ver pág. 10/3



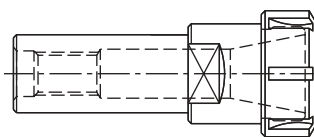
003 50 12 06 ..
See page 10/3 - Ver pág. 10/3



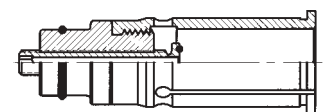
002 07
See page 14/9 - Ver pág. 14/9



012 50 09
See page 10/5 - Ver pág. 10/5



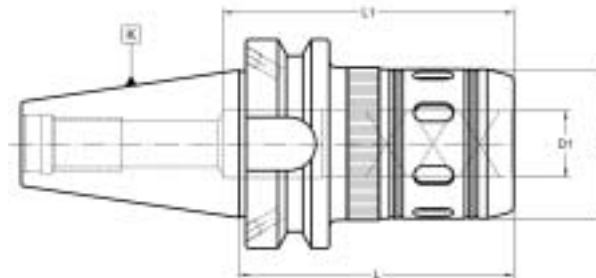
004 50 06
See page 10/4 - Ver pág. 10/4





002 09
See page 14/9 - Ver pág. 14/9

| TYPE TIPO | Ø max | LENGTH LONGITUD |
|-----------|---------|-----------------|
| 40, 50 | 20 - 32 | S M |

For tools with cylindrical straight shanks.
Para herramientas con mango cilíndrico.



Maximum circular deviation between outer taper and collet housing $\leq 0,003$ mm.
Desviación circular máxima entre el cono exterior y el alojamiento de la pinza $\leq 0,003$ mm.

| K MAS 403 BT | D ₁ máx. | LENGTH - LONGITUD | | L ₁ | D | COD. Form AD+B |  |  |
|-----------------|---------------------|-------------------|-----|----------------|----|-------------------|---|---|
| | | L | L | | | | | |
| 40 | 20 | 80 | | 60 | 46 | 004 32 15 02 04 | 004 99 04 02 06 | 004 99 04 09 09 |
| 40 | 20 | | 105 | 60 | 46 | 004 32 15 02 14 | 004 99 04 02 06 | 004 99 04 09 09 |
| 40 | 32 | 85 | | 75 | 62 | 004 32 15 02 06 | 004 99 04 02 06 | 004 99 04 09 11 |
| 40 | 32 | | 105 | 80 | 62 | 004 32 15 02 16 | 004 99 04 02 06 | 004 99 04 09 11 |
| 50 | 20 | 100 | | 60 | 46 | 004 32 15 04 04 | 004 99 04 02 06 | 004 99 04 09 09 |
| 50 | 32 | 100 | | 80 | 62 | 004 32 15 04 06 | 004 99 04 02 06 | 004 99 04 09 11 |
| 50 | 32 | | 135 | 80 | 62 | 004 32 15 04 26 | 004 99 04 02 06 | 004 99 04 09 11 |

- 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.

- Para un máximo rendimiento del portapinzas se recomienda utilizar herramientas de mango cilíndrico con tolerancia h6.
- La herramienta cuyo diámetro corresponda a "D₁ máx.", se sujeta sin necesidad de pinza.

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.

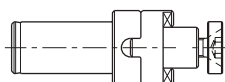
K40 Equilibrado dinámico según ISO 1940-1 hasta 15.000 r.p.m.
K50 Equilibrado dinámico según ISO 1940-1 hasta 10.000 r.p.m.
Disponemos de medios para el equilibrado para velocidades de hasta 50.000 r.p.m.

ACCESSORIES - ACCESORIOS

UNIVERSAL ARBOR PORTAFRESAS COMBINADO

001 50 02 06 ..

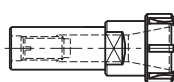
See page 10/3
Ver pág 10/3



(ER) CILINDRICAL CHUCK PORTAPINZAS CILÍNDRICO (ER)

004 50 06 ..

See page 10/4
Ver pág 10/4



COLLETS PINZAS

002 05.. ..

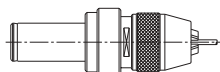
See page 10/9
Ver pág 10/9



DRILL CHUCK PORTABROCAS INTEGRAL

012 50 09 16 13

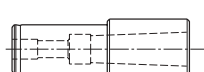
See page 10/5
Ver pág 10/5



MORSE ADAPTOR REDUCTOR A CONO MORSE

003 50 12 06 ..

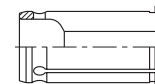
See page 10/3
Ver pág 10/3



COLLETS PINZAS

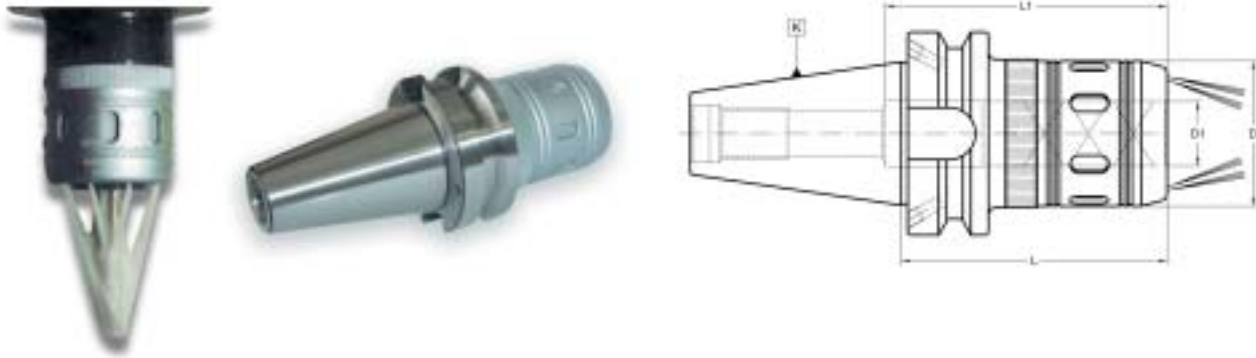
002 09.. ..

See page 10/9
Ver pág 10/9





| TYPE TIPO | Ø MAX | LENGTH LONGITUD |
|-----------|---------|-----------------|
| 40, 50 | 20 - 32 | <u>S</u> |

For tools with cylindrical straight shanks.
Para herramientas con mango cilíndrico.



Maximum circular deviation between outer taper and collet housing $\leq 0,003$ mm.
Desviación circular máxima entre el cono exterior y el alojamiento de la pinza $\leq 0,003$ mm.

| K MAS 403 BT | D ₁ máx. | LENGTH - LONGITUD L | L ₁ | D | COD. Form AD+B |  | OPCIONAL  |
|-----------------|---------------------|------------------------|----------------|----|-------------------|--|--|
| 40 | 20 | 80 | 60 | 46 | 004 32 25 02 04 | 004 99 04 02 06 | 004 99 04 09 09 |
| 40 | 32 | 85 | 75 | 62 | 004 32 25 02 06 | 004 99 04 02 06 | 004 99 04 09 11 |
| 50 | 32 | 100 | 80 | 62 | 004 32 25 04 06 | 004 99 04 02 06 | 004 99 04 09 11 |

- 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.

- Para un máximo rendimiento del portapinzas se recomienda utilizar herramientas de mango cilíndrico con tolerancia h6.
- La herramienta cuyo diámetro corresponda a "D₁ máx.", se sujeta sin necesidad de pinza.

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.

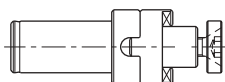
K40 Equilibrado dinámico según ISO 1940-1 hasta 15.000 r.p.m.
K50 Equilibrado dinámico según ISO 1940-1 hasta 10.000 r.p.m.
Disponemos de medios para el equilibrado para velocidades de hasta 50.000 r.p.m.

ACCESORIES - ACCESORIOS

UNIVERSAL ARBOR PORTAFRESAS COMBINADO

001 50 02 06 ..

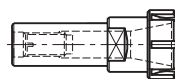
See page 10/3
Ver pág 10/3



(ER) CILINDRICAL CHUCK PORTAPINZAS CILÍNDRICO (ER)

004 50 06

See page 10/4
Ver pág 10/4



COLLETS PINZAS

002 05..

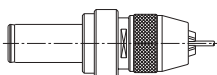
See page 10/9
Ver pág 10/9



DRILL CHUCK PORTABROCAS INTEGRAL

012 50 09 16 13

See page 10/5
Ver pág 10/5



MORSE ADAPTOR REDUCTOR A CONO MORSE

003 50 12 06 ..

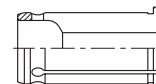
See page 10/3
Ver pág 10/3



COLLETS PINZAS

002 09..

See page 10/9
Ver pág 10/9



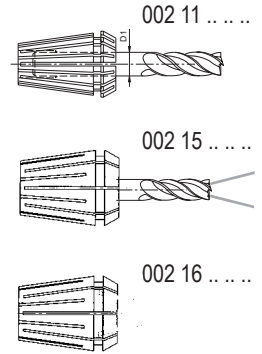
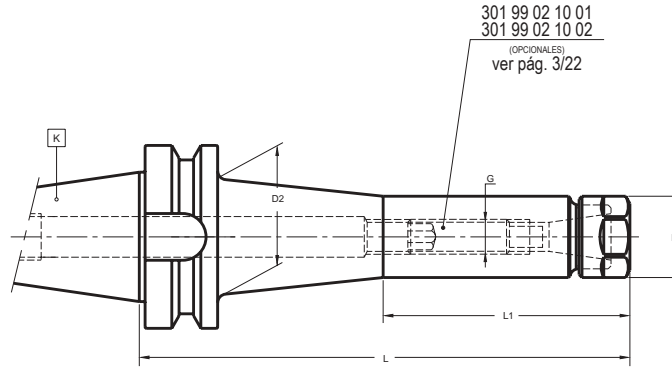
TYPE TIPO
30, 40, 50

TYPE TIPO
ER 16

LENGTH LONGITUD
S M L

For tools with cylindrical straight shank DIN 1835-A
Para herramientas con mango cilíndrico liso DIN 1835-A

Alternative solutions 003 12 54 + 004 54 06 pages 3/15 and 9/10
Soluciones alternativas 32



Collets see pages 14/5 - 14/6
Pinzas ver págs. 14/5 - 14/6

Maximum circular deviation between outer taper and collet housing $\leq 0,003$
Desviación circular máxima entre el cono exterior e interior $\leq 0,003$

| K MAS 403 BT | SIZE TAMAÑO | D ₁ | LENGTH - LONGITUD L | | | D | D ₂ | L ₁ | G | COD. Form AD | COD. Form AD + B |
|-----------------|----------------|----------------|------------------------|-----|--|----|----------------|----------------|------|-----------------|---------------------|
| 30 | (ER16) | 0,5 - 10 | 55 | | | 28 | — | 30 | M-10 | 004 12 06 01 03 | |
| 30 | (ER16) | 0,5 - 10 | 100 | | | 28 | — | 75 | M-10 | 004 12 06 01 13 | |
| 40 | (ER16) | 0,5 - 10 | 70 | | | 28 | — | 40 | M-10 | 004 12 06 02 03 | 004 32 06 02 03 |
| 40 | (ER16) | 0,5 - 10 | 100 | | | 28 | — | 70 | M-10 | 004 12 06 02 13 | 004 32 06 02 13 |
| 40 | (ER16) | 0,5 - 10 | 160 | | | 28 | 40 | 85 | M-10 | 004 12 06 02 33 | 004 32 06 02 33 |
| 50 | (ER16) | 0,5 - 10 | 100 | | | 28 | — | 60 | M-10 | 004 12 06 04 13 | 004 32 06 04 13 |
| 50 | (ER16) | 0,5 - 10 | | 200 | | 28 | 40 | 95 | M-10 | 004 12 06 04 43 | 004 32 06 04 43 |

- 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.

- Equilibrado dinámico según ISO 1940-1 hasta 10.000 r.p.m.
Disponemos de medios para el equilibrado para velocidades de hasta 50.000 r.p.m.

Accessories, see pages 16/3 - 16/11
Accesorios ver págs. 16/3 - 16/11

BALANCED
NUT
(STANDARD)

TUERCA
EQUILIBRADA
(ESTÁNDAR)



SIZE - TAMAÑO
ER 16

004 99 01 08 03

BEARING
NUT
(OPTIONAL)

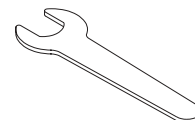
TUERCA
GIRATORIA
(OPCIONAL)



004 99 01 04 03

WRENCH
(OPTIONAL)

LLAVE
(OPCIONAL)



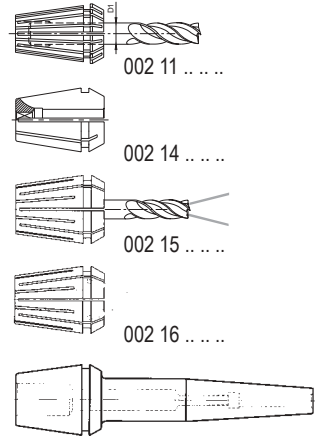
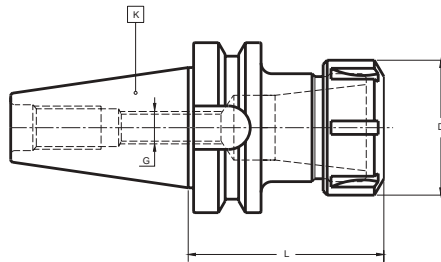
004 99 04 06 25

| TYPE TIPO | | TYPE TIPO | | LENGTH LONGITUD | | |
|------------|--|-----------|--|-----------------|---|---|
| 30, 40, 50 | | ER25-ER50 | | S | M | L |

For tools with cylindrical straight shank DIN 1835-A
Para herramientas con mango cilíndrico liso DIN 1835-A

Alternative solutions
Soluciones alternativas

- 004 12 01 page 3/17
- 004 32 150 page 3/19
- 003 12 54 + 004 54 06 pages 3/15 and 9/10



Maximum circular deviation between outer taper and collet housing $\leq 0,003$
Desviación circular máxima entre el cono exterior e interior $\leq 0,003$

Collets see pages 14/15 - 14/7
Pinzas ver págs. 14/15 - 14/7

| K MAS 403 BT | SIZE TAMAÑO | D ₁ máx. | LENGTH - LONGITUD L | | | D | G | COD. Form AD | COD. Form AD + B |
|-----------------|----------------|---------------------|------------------------|-----|--|----|------|-----------------|---------------------|
| 30 | (ER25) | 16 | 55 | | | 42 | M-12 | 004 12 06 01 05 | |
| 30 | (ER25) | 16 | 100 | | | 42 | M-12 | 004 12 06 01 15 | |
| 30 | (ER32) | 20 | 60 | | | 50 | M-12 | 004 12 06 01 06 | |
| 30 | (ER32) | 20 | 100 | | | 50 | M-12 | 004 12 06 01 16 | |
| 40 | (ER25) | 16 | 70 | | | 42 | M-16 | 004 12 06 02 05 | 004 32 06 02 05 |
| 40 | (ER25) | 16 | 100 | | | 42 | M-16 | 004 12 06 02 15 | 004 32 06 02 15 |
| 40 | (ER25) | 16 | | 150 | | 42 | M-16 | 004 32 06 02 25 | |
| 40 | (ER32) | 20 | 70 | | | 50 | M-16 | 004 12 06 02 06 | 004 32 06 02 06 |
| 40 | (ER32) | 20 | 100 | | | 50 | M-16 | 004 12 06 02 16 | 004 32 06 02 16 |
| 40 | (ER32) | 20 | | 150 | | 50 | M-16 | 004 12 06 02 26 | 004 32 06 02 26 |
| 40 | (ER40) | 26 | 70 | | | 63 | M-16 | 004 12 06 02 07 | 004 32 06 02 07 |
| 40 | (ER40) | 26 | 100 | | | 63 | M-16 | 004 12 06 02 17 | 004 32 06 02 17 |
| 40 | (ER50) | 34 | 85 | | | 78 | M-16 | 004 12 06 02 08 | 004 32 06 02 08 |
| 50 | (ER25) | 16 | 100 | | | 42 | M-16 | | 004 32 06 04 05 |
| 50 | (ER25) | 16 | 150 | | | 42 | M-16 | | 004 32 06 04 25 |
| 50 | (ER32) | 20 | 100 | | | 50 | M-16 | 004 12 06 04 06 | 004 32 06 04 06 |
| 50 | (ER32) | 20 | 150 | | | 50 | M-16 | 004 12 06 04 26 | 004 32 06 04 26 |
| 50 | (ER32) | 20 | | 200 | | 50 | M-16 | 004 12 06 04 46 | |
| 50 | (ER40) | 26 | 100 | | | 63 | M-16 | 004 12 06 04 07 | 004 32 06 04 07 |
| 50 | (ER40) | 26 | 150 | | | 63 | M-16 | 004 12 06 04 27 | |
| 50 | (ER40) | 26 | | 200 | | 63 | M-16 | 004 12 06 04 47 | |
| 50 | (ER50) | 34 | 100 | | | 78 | M-16 | 004 12 06 04 08 | 004 32 06 04 08 |
| 50 | (ER50) | 34 | 150 | | | 78 | M-16 | 004 12 06 04 28 | |

- 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.
- Equilibrado dinámico según ISO 1940-1 hasta 10.000 r.p.m.
Disponemos de medios para el equilibrado para velocidades de hasta 50.000 r.p.m.

For boxes and composition of different sets see pages 14/13.
Estuches y composición de diferentes juegos, ver págs. 14/13

Accessories, see pages 16/3 - 16/11
Accesorios ver págs. 16/3 - 16/11

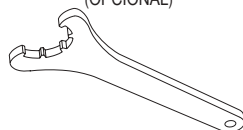
TUERCA
EQUILIBRADA
(ESTÁNDAR)



TUERCA
GIRATORIA
(OPCIONAL)

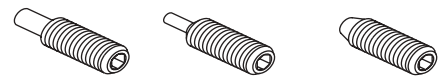


LLAVE
(OPCIONAL)



OPTIONALS - OPCIONALES

- 1- LENGTH ADJUSTMENT SCREW
- 2 and 3- LENGTH ADJUSTMENT SCREW WITH THROUGH HOLE
- 1- TORNILLO DE REGULACION
- 2 y 3- TORNILLO DE REGULACION CON ORIFICIO PARA PASO DE REFRIGERANTE



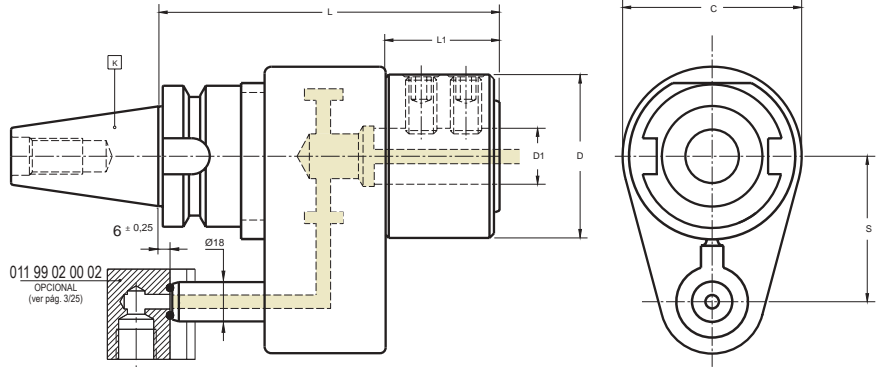
SIZE - TAMAÑO

| SIZE | 004 99 01 03 05 | 004 99 01 04 05 | 004 99 04 03 05 |
|-------|-----------------|-----------------|-----------------|
| 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 |

| | 1 | 2 | 3 |
|------|-----------------|-----------------|-----------------|
| M-10 | 301 99 02 10 01 | 301 99 02 10 02 | — |
| 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 |


| TYPE TIPO | Ø | LENGTH LONGITUD |
|-----------|---------|-----------------|
| 40, 50 | 25 - 40 | M |

For tools with cylindrical straight shank with locking surface
Para herramientas de mango cilíndrico con plano de apriete



| ESPECIFICACIONES | |
|--------------------------------|-----------|
| Máx. RPM | 6.000 rpm |
| Máx. presión admitida | 20 bar |
| Mín. presión de funcionamiento | 2 bar |

Operating Instructions, see page 17/3
Instrucciones de puesta en marcha, ver pág. 17/3

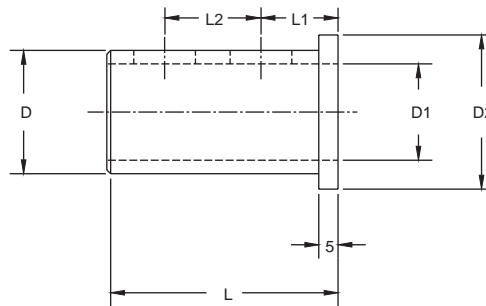
| K MAS 403 BT | D ₁ | D | LENGTH - LONGITUD L | L ₁ | S | C | COD. |  |
|-----------------|----------------|----|------------------------|----------------|----|-----|-----------------|---|
| 40 | 25 | 50 | 153 | 48 | 65 | 80 | 011 12 03 02 25 | 301 01 08 16 15 |
| 40 | 32 | 73 | 153 | 48 | 65 | 80 | 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

For rotary coolant adapters

CASQUILLO REDUCTOR

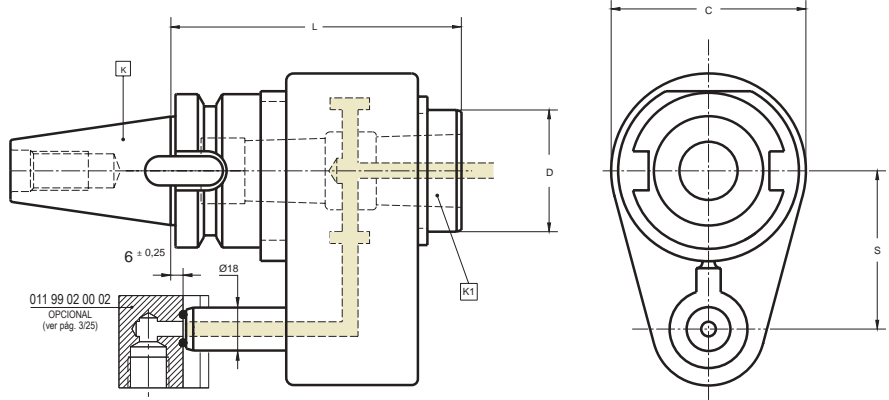
Para alimentador rotativo



| K MAS 403 BT | 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 |

| TYPE TIPO | TYPE TIPO | LENGTH LONGITUD |
|-----------|-----------|-----------------|
| 40, 50 | M-4 | M |

For tanged Morse taper tools DIN 228-B
Para herramientas con cono Morse DIN 228 Forma BK



| ESPECIFICACIONES | |
|--------------------------------|-----------|
| Máx. RPM | 6.000 rpm |
| Máx. presión admitida | 20 bar |
| Mín. presión de funcionamiento | 2 bar |

Operating Instructions, see page 17/3
Instrucciones de puesta en marcha, ver pág. 17/3

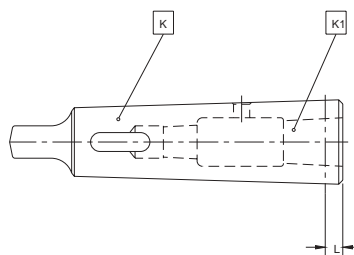
| K MAS 403 BT | K ₁ | D | LENGTH - LONGITUD L | S | C | COD. |
|-----------------|----------------|----|------------------------|----|-----|-----------------|
| 40 | 4 | 50 | 120 | 65 | 80 | 011 12 11 02 50 |
| 50 | 4 | 65 | 125 | 80 | 100 | 011 12 11 04 50 |

REDUCING ADAPTERS

For rotary coolant adapters

CASQUILLO REDUCTOR

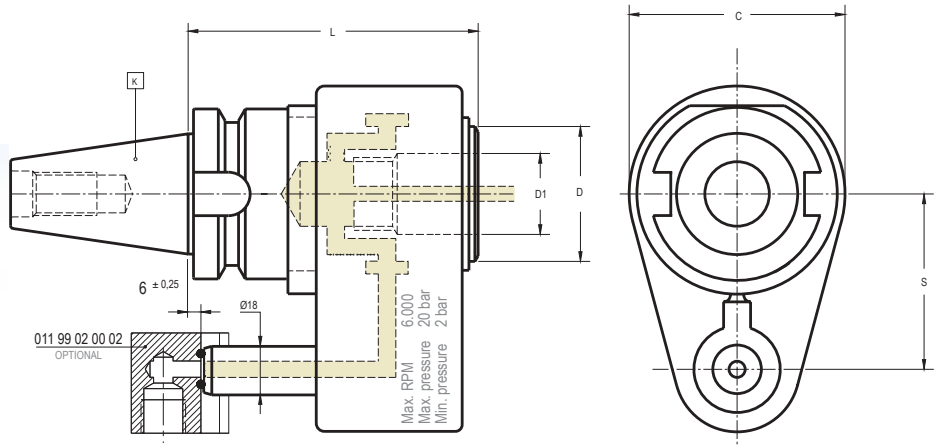
Para alimentador rotativo



| 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 |

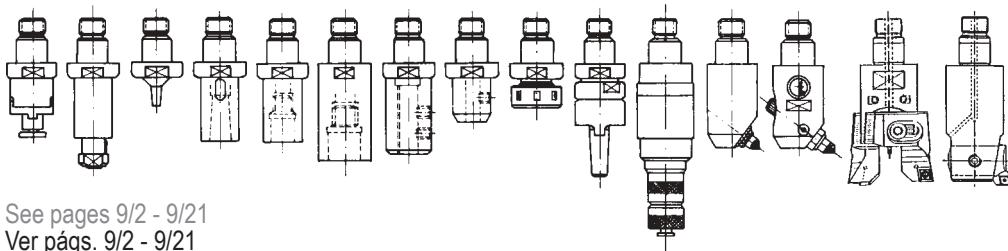
| | | |
|-----------|-------------|-----------------|
| TYPE TIPO | \emptyset | LENGTH LONGITUD |
| 40, 50 | 46 - 63 | M |

For C.O. modular system tooling
Acoplamiento para utillaje modular sistema C.O.



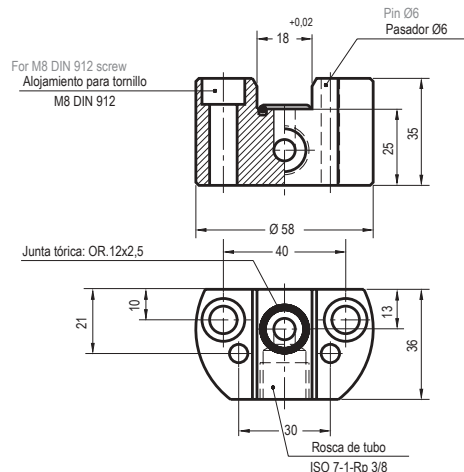
Operating Instructions, see page 17/13
Instrucciones de puesta en marcha, ver pág. 17/13

| K | D ₁ | D | LENGTH - LONGITUD | S | C | COD. |
|------------|----------------|----|-------------------|----|-----|-----------------|
| MAS 403 BT | | | L | | | |
| 40 | 30 | 46 | 110 | 65 | 80 | 011 12 54 02 06 |
| 50 | 46 | 63 | 120 | 80 | 100 | 011 12 54 04 07 |



See pages 9/2 - 9/21
Ver págs. 9/2 - 9/21

| | | |
|-----------|-------------|-----------------|
| TYPE TIPO | \emptyset | LENGTH LONGITUD |
| 40, 50 | 30 - 46 | L |

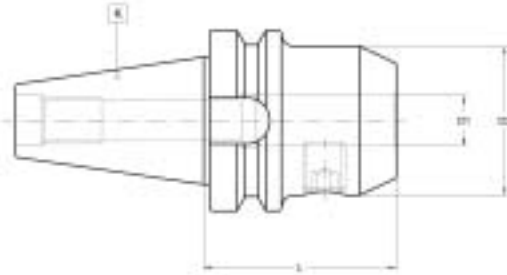


| TYPE TIPO | TOOL Ø HERRAMIENTA | LENGTH LONGITUD |
|----------------|--------------------|-----------------|
| 30, 40, 45, 50 | 6 - 50 | M L |

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


Para fresas con mango cilíndrico con encaste DIN 1835 Forma B y DIN 6535 Forma HB

Alternative solutions 003 ¹²/₃₂ 54 + 012 54 04 pgs. 3/15 and 9/18
Soluciones alternativas



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

*Desviación circular máxima entre K y D₁ ≤ 0,003

| K MAS 403 BT | D ₁ | * tol. | LENGTH - LONGITUD | | D ₂ | COD. Form AD | COD. Form AD + B |  |
|-----------------|----------------|----------------|-------------------|-----|----------------|-----------------|---------------------|---|
| | | | L | L | | | | |
| 40 | 6 | + 0,005 - 0 | 50 | 120 | 25 | 012 12 01 12 06 | 012 32 01 12 06 | 301 01 05 06 10 |
| 40 | 6 | | 25 | 120 | 25 | | 012 32 01 22 06 | 301 01 05 06 10 |
| 40 | 8 | | 50 | 120 | 28 | 012 12 01 12 08 | 012 32 01 12 08 | 301 01 05 08 10 |
| 40 | 8 | | 28 | 120 | 28 | | 012 32 01 22 08 | 301 01 05 08 10 |
| 40 | 10 | | 63 | 120 | 35 | 012 12 01 12 10 | 012 32 01 12 10 | 301 01 05 10 12 |
| 40 | 10 | | 35 | 120 | 35 | | 012 32 01 22 10 | 301 01 05 10 12 |
| 40 | 12 | | 63 | 120 | 42 | 012 12 01 12 12 | 012 32 01 12 12 | 301 01 05 12 16 |
| 40 | 12 | | 42 | 120 | 42 | | 012 32 01 22 12 | 301 01 05 12 16 |
| 40 | 14 | | 63 | 120 | 44 | 012 12 01 12 14 | 012 32 01 12 14 | 301 01 05 12 16 |
| 40 | 14 | | 44 | 120 | 44 | | 012 32 01 22 14 | 301 01 05 12 16 |
| 40 | 16 | | 63 | 120 | 48 | 012 12 01 12 16 | 012 32 01 12 16 | 301 01 05 14 16 |
| 40 | 16 | | 48 | 120 | 48 | | 012 32 01 22 16 | 301 01 05 14 16 |
| 40 | 18 | | 63 | 120 | 50 | 012 12 01 12 18 | 012 32 01 12 18 | 301 01 05 14 16 |
| 40 | 18 | | 50 | 120 | 50 | | 012 32 01 22 18 | 301 01 05 14 16 |
| 40 | 20 | + 0,007 - 0 | 63 | 120 | 52 | 012 12 01 12 20 | 012 32 01 12 20 | 301 01 05 16 16 |
| 40 | 20 | | 52 | 120 | 52 | | 012 32 01 22 20 | 301 01 05 16 16 |
| 40 | 25 | | 95 | 160 | 65 | 012 12 01 12 25 | 012 32 01 12 25 | 301 01 05 18 20 |
| 40 | 25 | | 65 | 160 | 65 | | 012 32 01 32 25 | 301 01 05 18 20 |
| 40 | 32 | + 0,009 - 0 | 100 | 160 | 72 | 012 12 01 12 32 | 012 32 01 12 32 | 301 01 05 20 20 |
| 40 | 32 | | 72 | 160 | 72 | | 012 32 01 32 32 | 301 01 05 20 20 |
| 40 | 40 | 110 | 160 | 80 | | 012 32 01 12 40 | 012 32 01 32 40 | 301 01 05 20 20 |
| 40 | 40 | 80 | 160 | 80 | | | 012 32 01 32 40 | 301 01 05 20 20 |
| 45 | 6 | + 0,005 - 0 | 63 | | 25 | 012 12 01 13 06 | | 301 01 05 06 10 |
| 45 | 8 | | 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 |

* 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.

K 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.

D₁ ≥ 25 mm., two clamping holes.

* Para un mejor rendimiento, hemos restringido considerablemente las tolerancias que para el diámetro D₁ y la excentricidad establece la norma DIN 1835

K 40 - Equilibrado dinámico según ISO 1940-1 hasta 10.000 r.p.m.

Disponemos de medios para el equilibrado para velocidades de hasta 50.000 r.p.m.

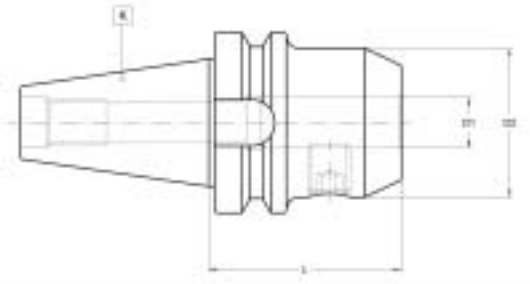
D₁ ≥ 25 mm., con dos orificios para sujeción de herramienta.

| TYPE TIPO | TOOL Ø HERRAMIENTA | LENGTH LONGITUD |
|----------------|--------------------|-----------------|
| 30, 40, 45, 50 | 6 - 50 | M L |

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

Para fresas con mango cilíndrico con encaste DIN 1835 Forma B y DIN 6535 Forma HB

Alternative solutions 003 12 54 + 012 54 04 pgs. 3/15 and 9/18
Soluciones alternativas 32



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

*Desviación circular máxima entre K y D₁ ≤ 0,003

| K MAS 403 BT | D ₁ | * tol. | LENGTH - LONGITUD | | D ₂ | COD. Form AD | COD. Form AD + B | | |
|-----------------|----------------|----------------|-------------------|-----|----------------|-----------------|---------------------|-----------------|-----------------|
| | | | L | L | | | | | |
| 50 | 6 | + 0,005 - 0 | 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 | | | 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 | |
| 50 | 20 | + 0,007 - 0 | 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 | | | 100 | | 65 | 012 12 01 14 25 | 012 32 01 14 25 | 301 01 05 18 20 |
| 50 | 25 | | | 160 | 65 | | 012 32 01 34 25 | 301 01 05 18 20 | |
| 50 | 32 | + 0,009 - 0 | 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 32 01 14 40 | 012 32 01 14 40 | 301 01 05 20 20 |
| 50 | 40 | | | 160 | 80 | | 012 32 01 34 40 | 301 01 05 20 20 | |
| 50 | 50 | | 125 | | 98 | 012 32 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 | | |

* 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.

K 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.

D₁ ≥ 25 mm., two clamping holes.

* Para un mejor rendimiento, hemos restringido considerablemente las tolerancias que para el diámetro D₁ y la excentricidad establece la norma DIN 1835

K 40 - Equilibrado dinámico según ISO 1940-1 hasta 10.000 r.p.m.

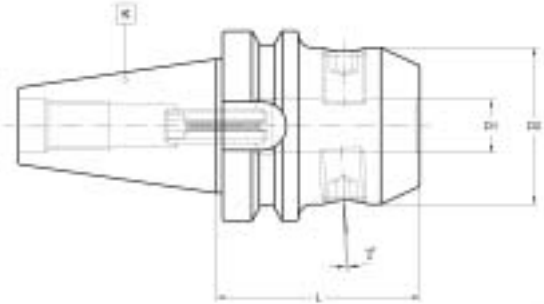
Disponemos de medios para el equilibrado para velocidades de hasta 50.000 r.p.m.

D₁ ≥ 25 mm., con dos orificios para sujeción de herramienta.



| TYPE TIPO | TOOL Ø HERRAMIENTA | LENGTH LONGITUD |
|------------|--------------------|-----------------|
| 30, 40, 50 | 6 - 32 | M |

For end mills with shank DIN 1835-B and / or DIN 1835-E
 Para fresas con mango cilíndrico con encaste DIN 1835 Forma B y/o plano inclinado DIN 1835-Forma E

Alternative solutions 003 12 54 + 012 54 04 pages 3/15 and 9/18
 Soluciones alternativas



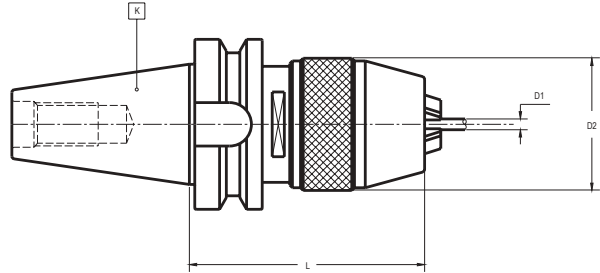
*Maximum circular deviation between K and D₁ ≤ 0,003
 *Desviación circular máxima entre K y D₁ ≤ 0,003




| K MAS 403 BT | D ₁ | * tol. | LENGTH - LONGITUD 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 12 04 12 06 | 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 | + 0,005 | 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 | 63 | 42 | 012 12 04 12 12 | 012 32 04 12 12 | 301 02 70 10 01 | 301 01 05 12 16 |
| 40 | 14 | | 63 | 44 | 012 12 04 12 14 | 012 32 04 12 14 | 301 02 70 10 01 | 301 01 05 12 16 |
| 40 | 16 | | 63 | 48 | 012 12 04 12 16 | 012 32 04 12 16 | 301 02 70 12 01 | 301 01 05 14 16 |
| 40 | 18 | | 63 | 50 | 012 12 04 12 18 | 012 32 04 12 18 | 301 02 70 12 01 | 301 01 05 14 16 |
| 40 | 20 | | 63 | 52 | 012 12 04 12 20 | 012 32 04 12 20 | 301 02 70 16 01 | 301 01 05 16 16 |
| 40 | 25 | + 0,007 | 95 | 65 | 012 12 04 12 25 | 012 32 04 12 25 | 301 02 70 20 01 | 301 01 05 18 20 |
| 40 | 32 | - 0 | 100 | 72 | 012 12 04 12 32 | 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 12 04 14 08 | 012 32 04 14 08 | 301 02 70 06 01 | 301 01 05 08 10 |
| 50 | 10 | + 0,005 | 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 | 80 | 42 | 012 12 04 14 12 | 012 32 04 14 12 | 301 02 70 10 01 | 301 01 05 12 16 |
| 50 | 14 | | 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 12 04 14 16 | 012 32 04 14 16 | 301 02 70 12 01 | 301 01 05 14 16 |
| 50 | 18 | | 80 | 50 | 012 12 04 14 18 | 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 12 04 14 25 | 012 32 04 14 25 | 301 02 70 20 01 | 301 01 05 18 20 |
| 50 | 32 | - 0 | 105 | 72 | 012 12 04 14 32 | 012 32 04 14 32 | 301 02 70 20 01 | 301 01 05 20 20 |

* 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.
 D₁ ≥ 25 mm., two clamping holes.

* Para un mejor rendimiento, hemos restringido considerablemente las tolerancias que para el diámetro D₁ y la excentricidad establece la norma DIN 1835
 D₁ ≥ 25 mm., con dos orificios para sujeción de herramienta.

| TYPE TIPO | TOOL Ø HERRAMIENTA | LENGTH LONGITUD |
|------------|--------------------|-----------------|
| 30, 40, 50 | 0 - 16 | M |

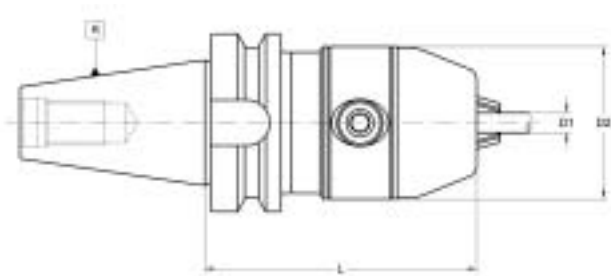


| K MAS 403 BT | D ₁ | LENGTH - LONGITUD L | D ₂ | COD. Form A |  |  |  |
|-----------------|----------------|------------------------|----------------|-----------------|--|---|---|
| 30 | 0-8 | 86 | 36 | 012 12 09 11 08 | 351 02 60 00 08 | 351 02 61 00 08 | 020 99 03 00 08 |
| 40 | 1-13 | 86 | 48 | 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 | 48 | 012 12 09 14 13 | 351 02 60 01 13 | 351 02 61 01 13 | 020 99 03 01 13 |
| 50 | 3-16 | 95 | 54 | 012 12 09 14 16 | 351 02 60 03 16 | 351 02 61 03 16 | 020 99 03 03 16 |

³⁰
K₄₀ - Balanced according to ISO 1940-1 to 10.000 r.p.m.
We use latest methods for balancing up to 50.000 r.p.m.

³⁰
K₄₀ - Equilibrado según ISO 1940-1 hasta 10.000 R.p.m
Disponemos de medios para el equilibrado para velocidades de hasta 50.000 r.p.m

| TYPE TIPO | TOOL Ø HERRAMIENTA | LENGTH LONGITUD |
|-----------|--------------------|-----------------|
| 40, 50 | 1 - 16 | M |



*Maximum circular deviation between K and $D_1 \leq 0,03$

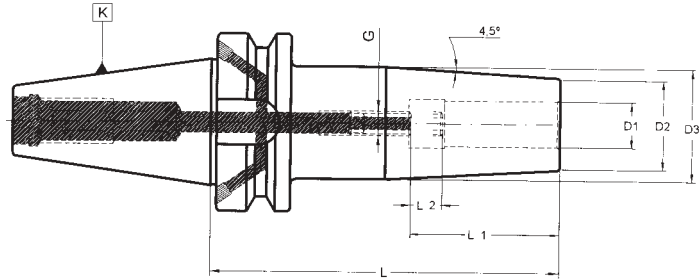
*Desviación circular máxima entre K y $D_1 \leq 0,03$

| K MAS 403 BT | D_1 | D_2 | LENGTH - LONGITUD L | COD. Form AD | 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 |

K 40 - Balanced according to ISO 1940-1 to 10.000 r.p.m.
We use latest methods for balancing up to 50.000 r.p.m.


K40 - Equilibrado según ISO 1940-1 hasta 10.000 r.p.m
Disponemos de medios para el equilibrado para velocidades de hasta 50.000 r.p.m

| TYPE TIPO | TOOL Ø HERRAMIENTA | LENGTH LONGITUD |
|-----------|--------------------|-----------------|
| 40, 50 | 3 - 32 | S M |



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

*Desviación circular máxima entre K y D₁ ≤ 0,003

| K MAS 403 BT | D ₁ | D ₂ | D ₃ | L ₁ | L ₂ | G | LENGTH - LONGITUD | | COD. Form AD+B |  |
|-----------------|----------------|----------------|----------------|----------------|----------------|------|-------------------|-----|-------------------|---|
| | | | | | | | L | L | | |
| 40 | 3 | 12 | 18 | 20 | 5 | M-5 | | 120 | 012 32 12 22 03 | 301 02 33 05 12 |
| 40 | 4 | 14 | 20 | 20 | 5 | M-5 | | 120 | 012 32 12 22 04 | 301 02 33 05 22 |
| 40 | 5 | 16 | 22 | 25 | 5 | M-5 | | 120 | 012 32 12 22 05 | 301 02 33 05 32 |
| 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 | 20 | 33 | 42 | 51 | 10 | M-16 | 90 | | 012 32 12 12 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 |

Other dimensions on request.

Otras medidas bajo pedido.

Design:

For Carbide, Cermet and HSS tool shanks with tolerance h6.

Utilización:

Sujeción de herramientas de metal duro, Cermet, o HSS, con mango totalmente cilíndrico con tolerancia en diámetro h6.

Performance:

Balanced according to ISO 1940-1 to 15.000 r.p.m. G 2,5.

Ejecución:

G 2,5 equilibrado
ISO 1940-1 15.000 r.p.m.

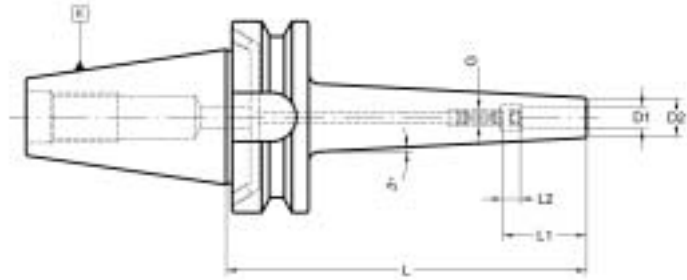
Delivery:

We use latest methods for balancing up to 50.000 r.p.m. With built-in bored through stop screw.


Suministro:

Con tornillo de regulación provisto de orificio para paso de refrigerante. Disponemos de medios para el equilibrado hasta 50.000 r.p.m.

| TYPE TIPO | TOOL Ø HERRAMIENTA | LENGTH LONGITUD |
|-----------|--------------------|-----------------|
| 40 | 3 - 12 | M |



Circular deviation between K and D1 $\leq 0,003$
Desviación circular entre K y D1 $\leq 0,003$

| K MAS 403 BT | D ₁ | D ₂ | L ₁ | L ₂ | G | LENGTH - LONGITUD L | COD. Form AD+B |  |
|-----------------|----------------|----------------|----------------|----------------|------|------------------------|-------------------|---|
| 40 | 3 | 8 | 20 | 5 | — | 90 | 012 32 32 12 03 | — |
| 40 | 4 | 9 | 20 | 5 | — | 90 | 012 32 32 12 04 | — |
| 40 | 5 | 10 | 25 | 5 | — | 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 |

Other dimensions on request.
Otras medidas bajo pedido.

Design:

For Carbide, Cermet and HSS tool shanks with tolerance h6.

Utilización:

Sujeción de herramientas de metal duro, Cermet, o HSS, con mango totalmente cilíndrico con tolerancia en diámetro h6.

Performance:

Balanced according to ISO 1940-1 to 15.000 r.p.m. G 2,5.

Ejecución:

G 2,5 equilibrado
ISO 1940-1 15.000 r.p.m.

Delivery:

We use latest methods for balancing up to 50.000 r.p.m.
With built-in bored through stop screw.

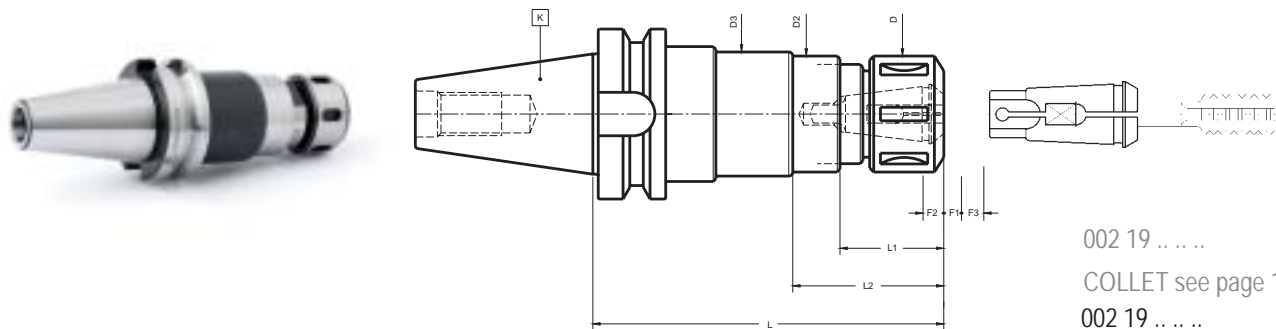
Suministro:

Con tornillo de regulación provisto de orificio para paso de refrigerante.
Disponemos de medios para el equilibrado hasta 50.000 r.p.m.

| TYPE TIPO | CAP. | LENGTH LONGITUD |
|-----------|--------|-----------------|
| 40, 50 | M3-M28 | M |

Self feed and compression system. Releasing drive system. For LAIP 0219 collet
Doble compensación axial y escape

Alternative solutions 003 ¹²/₃₂ 54 + 019 54 51 .. 2. pgs. 3/15 and 9/19
Soluciones alternativas



002 19
COLLET see page 14/4
002 19
PINZAS ver pág. 14/4

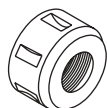
| K MAS 403 BT | CAP. | LENGTH - LONGITUD L | D | L ₁ | D ₂ | L ₂ | D ₃ | F ₁ | F ₂ | F ₃ | COD. Forma A |
|-----------------|--------|------------------------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------|
| 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 |

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.

Las letras F₁ y F₂ corresponden a los recorridos de extensión y compresión respectivamente, siendo F₃ el recorrido en el que el macho no recibe movimiento de rotación en tanto no se invierta el sentido de giro (mecanismo de escape). Este mecanismo de escape o pérdida de arrastre, permite determinar exactamente la profundidad de roscado, facilitando enormemente el roscado de agujeros ciegos.

Accessories, see pages 16/3 - 16/11
Accesorios ver págs. 16/3 - 16/11

BALANCED NUT
TUERCA EQUILIBRADA
(STANDARD - ESTÁNDAR)



CAP.
M3-M16
M8-M28

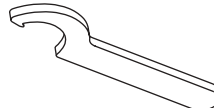
-
004 99 01 01 04

BEARING NUT
TUERCA GIRATORIA
(OPTIONAL - OPCIONAL)



004 99 01 02 03
004 99 01 02 04

WRENCH
LLAVE
(OPTIONAL - OPCIONAL)

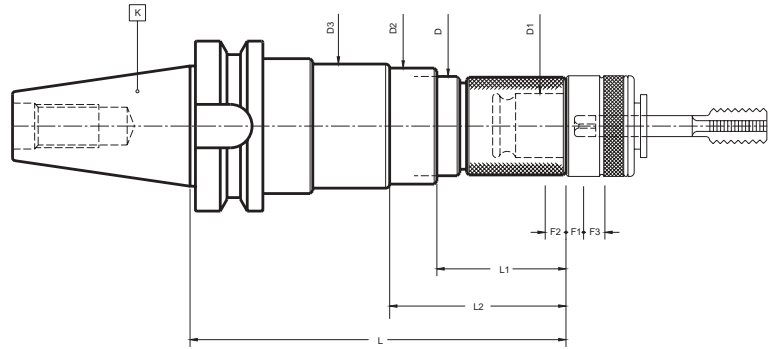


004 99 04 09 08
004 99 04 09 09

| | | |
|-----------|--------|-----------------|
| TYPE TIPO | CAP. | LENGTH LONGITUD |
| 40, 50 | M3-M30 | M |

Self feed and compression system. Releasing drive system. For BILZ system tap adapter
Doble compensación axial y escape

Alternative solutions Soluciones alternativas 003 ¹²/₃₂ 54 + 019 54 51 .. 3. pgs. 3/15 and 9/20



BILZ Adapter
Acoplamiento tipo BILZ

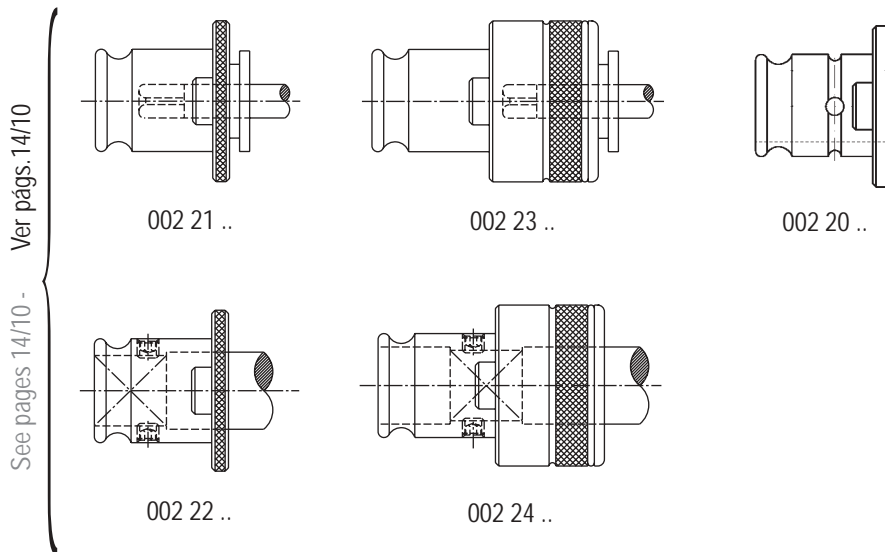
| K MAS 403 BT | CAP. | D ₁ | LENGTH - LONGITUD L | D | L ₁ | D ₂ | L ₂ | D ₃ | F ₁ | F ₂ | F ₃ | COD. Forma A |
|-----------------|---------------|----------------|------------------------|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------|
| 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 |

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.

Las letras F₁ y F₂ corresponden a los recorridos de extensión y compresión respectivamente, siendo F₃ el recorrido en el que el macho no recibe movimiento de rotación en tanto no se invierta el sentido de giro (mecanismo de escape). Este mecanismo de escape o pérdida de arrastre, permite determinar exactamente la profundidad de roscado, facilitando enormemente el roscado de agujeros ciegos.

* With 002 22 and 002 24 adapters

* Con adaptadores 002 22 y 002 24

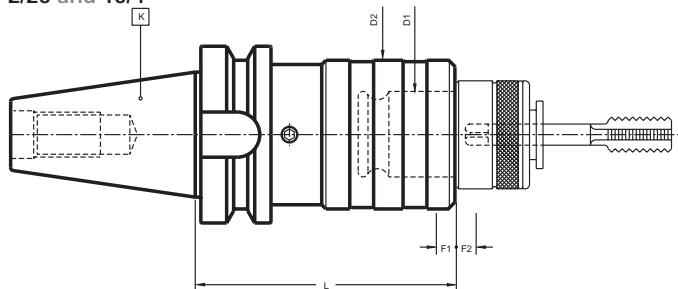


| D ₁ | OPTIONAL - OPCIONAL | | | |
|----------------|---------------------|-----------|-----------|-----------|
| 19 | 002 21 02 | 002 22 02 | 002 23 02 | 002 24 02 |
| 31 | 002 21 03 | 002 22 03 | 002 23 03 | 002 24 03 |

| | | |
|------------|--------|-----------------|
| TYPE TIPO | CAP. | LENGTH LONGITUD |
| 30, 40, 50 | M3-M48 | M |

With self feed and compression system. For BILZ system tap adapter
Doble compensación axial

Alternative solutions 019 12 51 pgs. 3/33 - 3/34
Soluciones alternativas 012 12 01 + 019 55 52 pgs. 2/27 - 2/28 and 13/4



BILZ Adapter
Acoplamiento tipo BILZ

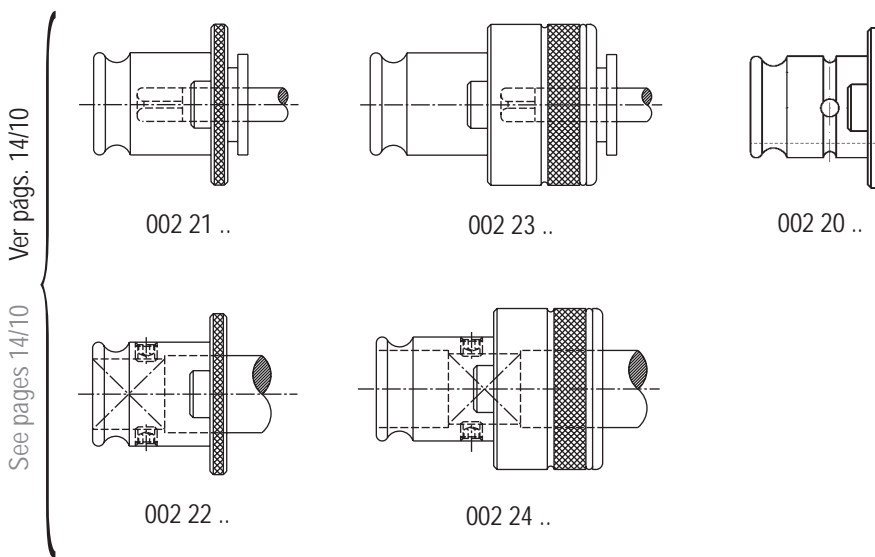
| K MAS 403 BT | CAP. | D ₁ | LENGTH - LONGITUD L | D ₂ | F ₁ | F ₂ | COD. Forma A |
|-----------------|----------------|----------------|------------------------|----------------|----------------|----------------|-----------------|
| 30 | M3-M12 (M16)* | 19 | 65 | 36 | 7,5 | 7,5 | 019 12 52 01 02 |
| 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

F₁ Recorrido de compresión
F₂ Recorrido de extensión

* With 002 22 and 002 24 adapters

* Con adaptadores 002 22 y 002 24



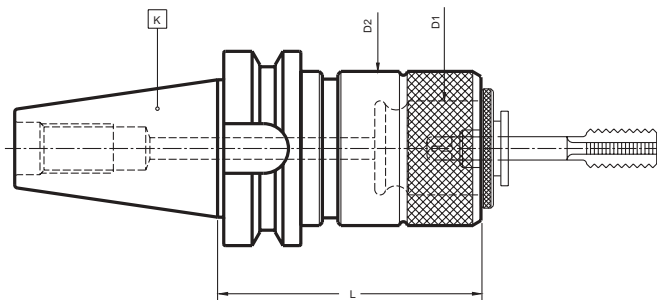
D₁ OPTIONAL - OPCIONAL

| | | | | |
|----|-----------|-----------|-----------|-----------|
| 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 |

| | | |
|------------|----------|-----------------|
| TYPE TIPO | CAP. | LENGTH LONGITUD |
| 30, 40, 50 | M3 - M48 | M |

For synchronized feed control machines
Exclusivo para máquinas con control de roscado rigido

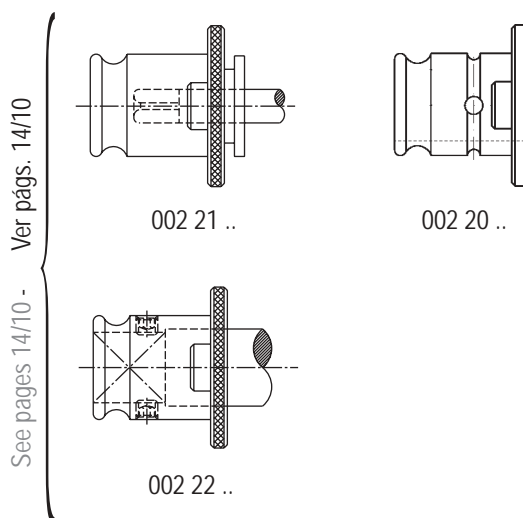
Alternative solutions 004 12 51 pg. 3/17
Soluciones alternativas



BILZ Adapter
Acoplamiento tipo BILZ

| K MAS 403 BT | CAP. | D ₁ | LENGTH - LONGITUD 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
* Con adaptadores 002 22 ...

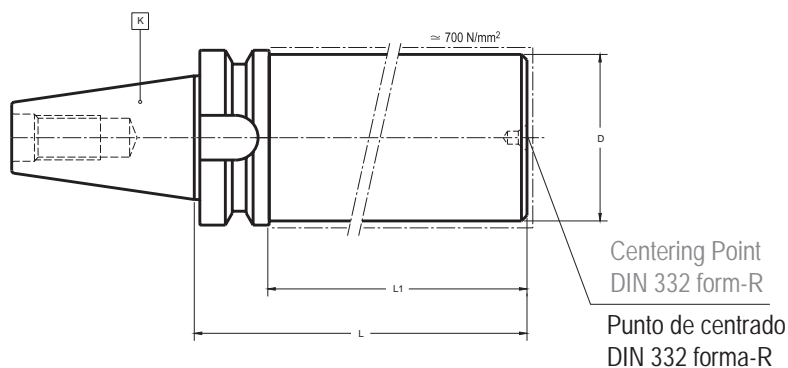


D₁ OPTIONAL - OPCIONAL

| | | |
|----|-----------|-----------|
| 19 | 002 21 02 | 002 22 02 |
| 31 | 002 21 03 | 002 22 03 |
| 48 | 002 21 04 | 002 22 04 |

| TYPE TIPO | Ø | LENGTH LONGITUD |
|------------|---------|-----------------|
| 30, 40, 50 | 45 - 90 | M |

Alternative solutions
Soluciones alternativas 003¹²₃₂ 54 + 020 54 02 pgs. 3/15 and 9/21



| K MAS 403 BT | D | LENGTH - LONGITUD L | L ₁ | COD. Forma AD |
|-----------------|----|------------------------|----------------|------------------|
| 30 | 45 | 100 | 78 | 020 12 02 01 51 |
| 40 | 63 | 160 | 133 | 020 12 02 02 73 |
| 40 | 63 | 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.
- La zona de diámetro D y longitud L₁, se encuentra tratada con una resistencia aproximada de 700 N/mm².
- Las restantes zonas están cementadas, templadas y rectificadas con una dureza de 57 ÷ 60 Rc.