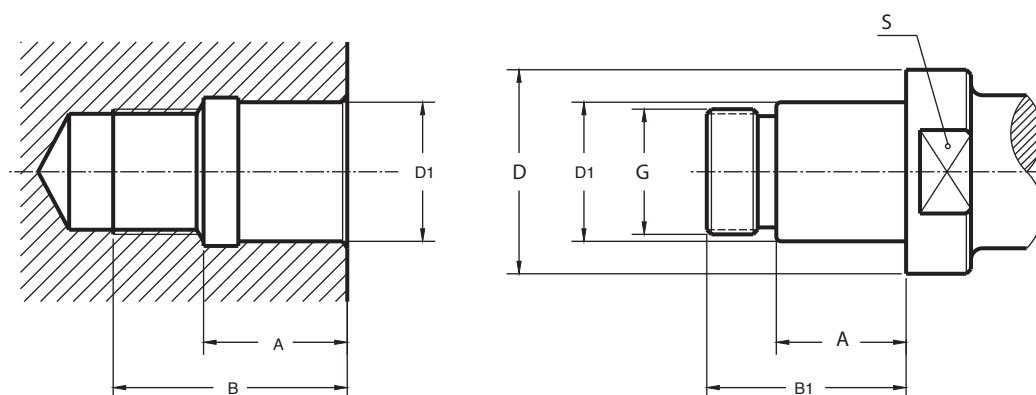




Make sure before assembling the modular system to clean and grease properly every single piece.



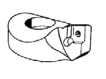
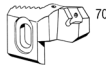
| D    | D1   | G           | A  | B  | A1   | B1   | S  |
|------|------|-------------|----|----|------|------|----|
| 14,5 | 10,5 | M.10 x 1,5  | 9  | 17 | 7,5  | 15,5 | 13 |
| 18,5 | 13   | M.12 x 1,75 | 14 | 24 | 12,5 | 21   | 17 |
| 23   | 16   | M.14 x 2    | 17 | 28 | 15   | 25   | 25 |
| 29   | 20   | M.16 x 2    | 21 | 34 | 19   | 31   | 24 |
| 36   | 26   | M.20 x 2,5  | 27 | 42 | 24   | 39   | 32 |
| 46   | 30   | M.27 x 3    | 30 | 46 | 28   | 43   | 41 |
| 63   | 46   | M.42 x 4,5  | 48 | 70 | 41   | 64   | 55 |
| 90   | 46   | M.42 x 4,5  | 48 | 70 | 41   | 64   | 75 |

#### Material

Case-hardening alloy steel.  
Case-hardened and tempered.  
Minium strength in core 880 N/mm<sup>2</sup>  
Surface hardness Rc 57 ÷ 60

#### Material

Acero aleado de cementación.  
Cementado y templado.  
Resistencia mínima al núcleo 880 N/mm<sup>2</sup>  
Dureza superficial Rc 57 ÷ 60

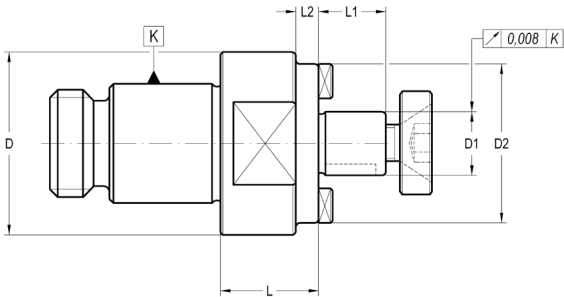
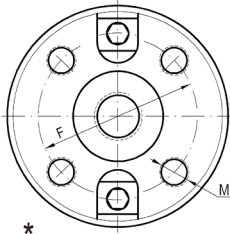
|                                                                                     |                                                                                                                                                  |     |                                                                                     |                                                                                                                                                                                      |     |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|    | SHELL END MILL ARBORS<br>PORTAFRESAS CON CHAVETAS FRONTALES                                                                                      | 224 |    | MICROMETRIC FINE BORING HEADS<br>CABEZAS MICROMÉTRICAS DE MANDRINAR                                                                                                                  | 235 |
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|  | COLLET CHUCKS ER TYPE (DIN 6499)<br>PORTAPINZAS TIPO ER (DIN 6499)                                                                               | 231 |  | TAPPING CHUCKS WITH RELEASING DRIVE SYSTEM<br>Self feed and compression system<br>PORTAMACHOS CON SISTEMA DE ESCAPE<br>Doble compensación axial                                      | 240 |
|  | SHORT BORING BARS<br>CABEZAS PORTACUCHILLAS                                                                                                      | 232 |  | TAPPING CHUCKS WITH RELEASING DRIVE SYSTEM<br>Self feed and compression system<br>PORTAMACHOS CON SISTEMA DE ESCAPE<br>Doble compensación axial                                      | 241 |
|  | SHORT BORING BARS<br>CABEZAS PORTACUCHILLAS                                                                                                      | 233 |  | TOOLHOLDER BLANKS<br>PORTAHERRAMIENTAS SEMIACABADOS                                                                                                                                  | 242 |
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001 54 03  
05 .. ..

SHELL END MILL ARBORS  
PORTAFRESAS COMBINADO



For milling cutters with longitudinal or driving slot DIN 138. Interchangeable with C.O.  
Para fresas con chavetero longitudinal o transversal DIN 138. Intercambiable con C.O.



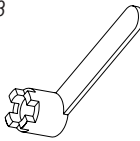
| D   | D1 h6 | L  | L1 | M    | L2 | F    | D2 | COD.            |
|-----|-------|----|----|------|----|------|----|-----------------|
| 36  | 16    | 25 | 17 | –    | 18 | –    | 39 | 001 54 05 05 30 |
| 46  | 16    | 25 | 17 | –    | 6  | –    | 39 | 001 54 05 06 30 |
| 46  | 22    | 25 | 19 | –    | 6  | –    | 49 | 001 54 05 06 40 |
| 46  | 27    | 25 | 21 | –    | 20 | –    | 61 | 001 54 05 06 50 |
| 46  | 32    | 25 | 24 | –    | 18 | –    | 70 | 001 54 05 06 60 |
| 63  | 16    | 30 | 17 | –    | 10 | –    | 39 | 001 54 05 07 30 |
| 63  | 22    | 30 | 19 | –    | 10 | –    | 49 | 001 54 05 07 40 |
| 63  | 27    | 30 | 21 | –    | 8  | –    | 61 | 001 54 05 07 50 |
| 63  | 32    | 30 | 24 | –    | 26 | –    | 70 | 001 54 05 07 60 |
| *63 | 40    | 30 | 27 | M-12 | 22 | 66,7 | 89 | 001 54 03 07 70 |
| 90  | 32    | 30 | 24 | –    | 10 | –    | 70 | 001 54 05 08 60 |
| *90 | 40    | 30 | 27 | M-12 | 10 | 66,7 | 98 | 001 54 03 08 70 |
| 90  | 50    | 30 | 30 | –    | –  | –    | –  | 001 54 05 08 80 |

\* With additional 4 tapped holes for front clamping according to DIN 2079. \* Con 4 agujeros roscados según DIN 2079 para sujeción de la herramienta.

ACCESSORIES INCLUDED Page: 293  
ACCESORIOS INCLUIDOS

| D <sub>1</sub> |  |  |  |
|----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 16             | 001 99 02 01 30                                                                     | 001 99 01 22 30                                                                     | 001 99 01 12 30                                                                     |
| 22             | 001 99 02 01 40                                                                     | 001 99 01 22 40                                                                     | 001 99 01 12 40                                                                     |
| 27             | 001 99 02 01 50                                                                     | 001 99 01 22 50                                                                     | 001 99 01 12 50                                                                     |
| 32             | 001 99 02 01 60                                                                     | 001 99 01 22 60                                                                     | 001 99 01 12 60                                                                     |
| 40             | 001 99 02 01 70                                                                     | 001 99 01 22 70                                                                     | 001 99 01 12 70                                                                     |
| 50             | 001 99 02 01 80                                                                     | 001 99 01 22 80                                                                     | 001 99 01 12 80                                                                     |

OPTIONAL ACCESSORIES Page: 293  
ACCESORIOS OPCIONALES

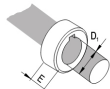
| D <sub>1</sub> |  |  |  |
|----------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 16             | 001 99 03 02 30                                                                     | 001 99 01 01 30                                                                       | 001 99 04 01 30                                                                       |
| 22             | 001 99 03 02 40                                                                     | 001 99 01 01 40                                                                       | 001 99 04 01 40                                                                       |
| 27             | 001 99 03 02 50                                                                     | 001 99 01 01 50                                                                       | 001 99 04 01 50                                                                       |
| 32             | 001 99 03 02 60                                                                     | 001 99 01 01 60                                                                       | 001 99 04 01 60                                                                       |
| 40             | 001 99 03 02 70                                                                     | 001 99 01 01 70                                                                       | 001 99 04 01 70                                                                       |
| 50             | 001 99 03 02 80                                                                     | 001 99 01 01 80                                                                       | 001 99 04 01 80                                                                       |

001 54 25 .. ..

STUB ARBORS  
ARBOL PORTAFRESAS

For plain mills with longitudinal keyway DIN 138. Interchangeable with C.O.  
Para fresas con chavetero longitudinal DIN 138. Intercambiable con C.O.

SPACERS  
DISTANCIADORES



| D <sub>1</sub> | E  | COD.            |
|----------------|----|-----------------|
| 16             | 3  | 001 99 09 30 03 |
|                | 6  | 001 99 09 30 04 |
|                | 20 | 001 99 09 30 06 |
| 22             | 3  | 001 99 09 40 03 |
|                | 6  | 001 99 09 40 04 |
|                | 20 | 001 99 09 40 06 |
| 27             | 3  | 001 99 09 50 03 |
|                | 6  | 001 99 09 50 04 |
|                | 20 | 001 99 09 50 06 |
| 32             | 3  | 001 99 09 60 03 |
|                | 6  | 001 99 09 60 04 |
|                | 20 | 001 99 09 60 06 |

| D  | D1 | D2 | COD.            |  |  |
|----|----|----|-----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 46 | 22 | 34 | 001 54 25 06 40 | 001 99 07 01 40                                                                     | 001 99 03 02 40                                                                     |
| 46 | 27 | 40 | 001 54 25 06 50 | 001 99 07 01 50                                                                     | 001 99 03 02 50                                                                     |
| 46 | 32 | 46 | 001 54 25 06 60 | 001 99 07 01 60                                                                     | 303 01 08 07 25                                                                     |

Circular deviation between threaded shank and D1 ≤ 0,008  
Desviación circular entre el mango roscado y D1 ≤ 0,008

OPTIONAL ACCESSORIES      Page: 293  
ACCESORIOS OPCIONALES

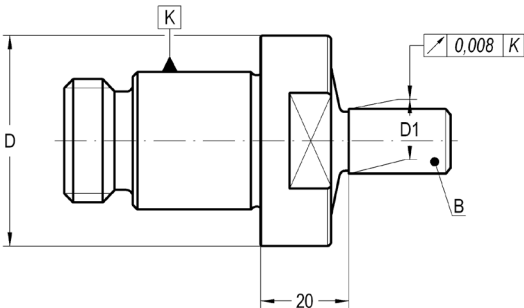


020 99 01 01 ..

001 54 50 .. ..

DRILL CHUCK ARBORS  
ADAPTADORES PARA PORTABROCAS

For DIN 238 or JACOBS. Interchangeable with C.O.  
Para DIN 238 o JACOBS. Intercambiable con C.O.



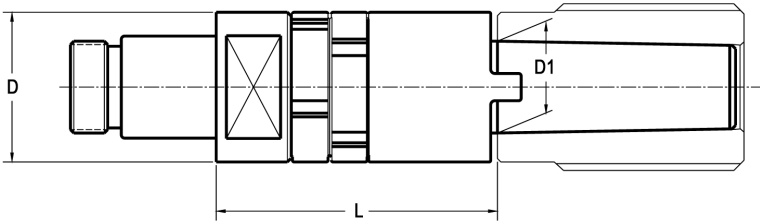
| D  | B-J  | D1    | COD.            |
|----|------|-------|-----------------|
| 46 | B.12 | 12,06 | 001 54 50 06 01 |
| 46 | B.16 | 15,73 | 001 54 50 06 02 |
| 46 | B.18 | 17,78 | 001 54 50 06 03 |
| 46 | J.3  | 20,59 | 001 54 50 06 15 |

001 54 51 .. ..

ARBOR FOR REAMERS  
EJE PORTAESCARIADORES



Interchangeable with C.O.  
Intercambiable con C.O.



| D    | D1 | L   | COD.            |  |  |  |
|------|----|-----|-----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 18,5 | 10 | 40  | 001 54 51 02 10 | 001 99 12 01 10                                                                   | 001 99 11 01 10                                                                     | 001 99 13 01 10                                                                     |
| 23   | 13 | 45  | 001 54 51 03 20 | 001 99 12 01 10                                                                   | 001 99 11 01 20                                                                     | 001 99 13 01 20                                                                     |
| 29   | 16 | 54  | 001 54 51 04 30 | 001 99 12 01 30                                                                   | 001 99 11 01 30                                                                     | 001 99 13 01 30                                                                     |
| 36   | 19 | 62  | 001 54 51 05 99 | 001 99 12 01 30                                                                   | 001 99 11 01 99                                                                     | 001 99 13 01 99                                                                     |
| 36   | 22 | 66  | 001 54 51 05 40 | 001 99 12 01 40                                                                   | 001 99 11 01 40                                                                     | 001 99 13 01 40                                                                     |
| 46   | 22 | 66  | 001 54 51 06 40 | 001 99 12 01 40                                                                   | 001 99 11 01 40                                                                     | 001 99 13 01 40                                                                     |
| 63   | 40 | 108 | 001 54 51 07 70 | 001 99 12 01 60                                                                   | 001 99 11 01 70                                                                     | 001 99 13 01 70                                                                     |
| 63   | 50 | 115 | 001 54 51 07 80 | 001 99 12 01 80                                                                   | 001 99 11 01 80                                                                     | 001 99 13 01 80                                                                     |

Circular deviation between threaded shank and D1 ≤ 0,008  
Desviación circular entre el mango roscado y D1 ≤ 0,008

ACCESSORIES INCLUDED Page: 293  
ACCESORIOS INCLUIDOS



OPTIONAL ACCESSORIES Page: 293  
ACCESORIOS OPCIONALES

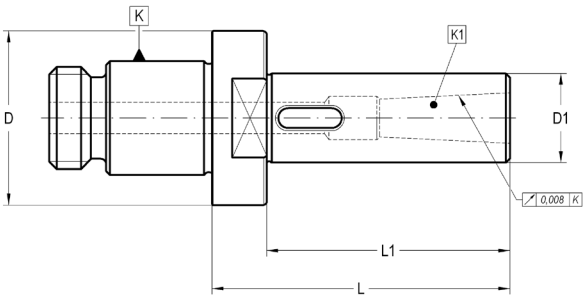
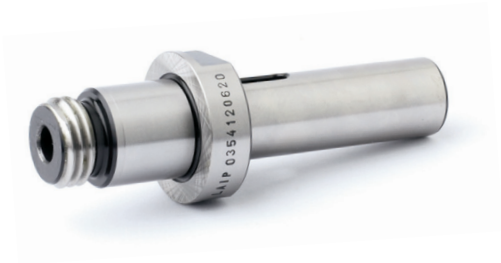


# 003 54 12 .. ..

## REDUCING ADAPTERS TO MORSE REDUCTORES A MORSE



For tanged Morse taper tools DIN 228-B or Morse taper tools with thread DIN 228-A. Interchangeable with C.O.  
Para herramientas con lengüeta DIN 228-B o rosca de tiro DIN 228-A. Intercambiable con C.O.



| D  | K1 | L   | L1  | D1 | COD.            |  |
|----|----|-----|-----|----|-----------------|-------------------------------------------------------------------------------------|
| 23 | 1  | 75  | –   | 23 | 003 54 12 03 20 | –                                                                                   |
| 29 | 2  | 88  | –   | 29 | 003 54 12 04 30 | –                                                                                   |
| 36 | 1  | 83  | 72  | 25 | 003 54 12 05 20 | 301 01 01 06 80                                                                     |
| 36 | 2  | 97  | 86  | 32 | 003 54 12 05 30 |                                                                                     |
| 46 | 1  | 90  | 76  | 25 | 003 54 12 06 20 | 301 01 01 06 60                                                                     |
| 46 | 2  | 100 | 86  | 32 | 003 54 12 06 30 | 301 01 01 10 10                                                                     |
| 46 | 3  | 122 | 108 | 40 | 003 54 12 06 40 | 301 01 01 12 11                                                                     |
| 63 | 3  | 128 | 108 | 40 | 003 54 12 07 40 | 301 01 01 12 65                                                                     |
| 63 | 4  | 155 | 135 | 48 | 003 54 12 07 50 | 301 01 01 16 15                                                                     |
| 63 | 5  | 186 | 166 | 60 | 003 54 12 07 60 | 301 01 01 20 16                                                                     |
| 90 | 5  | 200 | 175 | 63 | 003 54 12 08 60 | 301 01 01 20 17                                                                     |

- 301 01 01 ... Pull stud for drawbar Morse taper
- 301 01 01 ... Tirante necesario para usar herramienta con rosca de tiro.



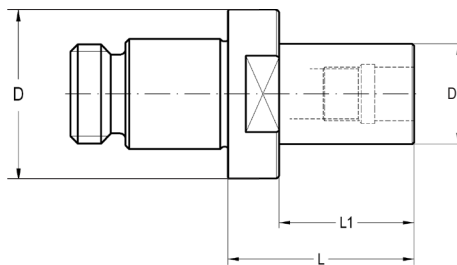
003 54 54 .. .. (1/2)

## MODULAR EXTENSIONS AND REDUCERS

### PROLONGADORES Y REDUCTORES



Interchangeable with C.O.  
Intercambiable con C.O.



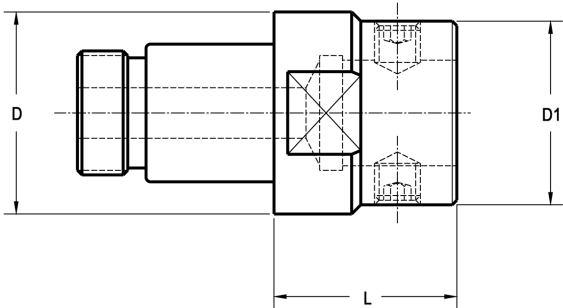
| D    | D1   | L   | L1  | COD.            | OPTIONAL        |
|------|------|-----|-----|-----------------|-----------------|
| 14,5 | 14,5 | 29  | –   | 003 54 54 01 01 | 020 99 01 01 01 |
| 18,5 | 14,5 | 35  | 29  | 003 54 54 02 01 | 020 99 01 01 02 |
| 18,5 | 18,5 | 37  | –   | 003 54 54 02 02 | 020 99 01 01 02 |
| 23   | 14,5 | 36  | 29  | 003 54 54 03 01 | 020 99 01 01 03 |
| 23   | 18,5 | 44  | 37  | 003 54 54 03 02 | 020 99 01 01 03 |
| 23   | 23   | 46  | –   | 003 54 54 03 03 | 020 99 01 01 03 |
| 29   | 14,5 | 38  | 29  | 003 54 54 04 01 | 020 99 01 01 04 |
| 29   | 18,5 | 46  | 37  | 003 54 54 04 02 | 020 99 01 01 04 |
| 29   | 23   | 55  | 46  | 003 54 54 04 03 | 020 99 01 01 04 |
| 29   | 29   | 58  | –   | 003 54 54 04 04 | 020 99 01 01 04 |
| 36   | 14,5 | 40  | 29  | 003 54 54 05 01 | 020 99 01 01 05 |
| 36   | 18,5 | 48  | 37  | 003 54 54 05 02 | 020 99 01 01 05 |
| 36   | 23   | 57  | 46  | 003 54 54 05 03 | 020 99 01 01 05 |
| 36   | 29   | 69  | 58  | 003 54 54 05 04 | 020 99 01 01 05 |
| 36   | 36   | 72  | –   | 003 54 54 05 05 | 020 99 01 01 05 |
| 46   | 14,5 | 43  | 29  | 003 54 54 06 01 | 020 99 01 01 06 |
| 46   | 18,5 | 14  | –   | 003 54 54 06 12 | 020 99 01 01 06 |
| 46   | 18,5 | 51  | 37  | 003 54 54 06 02 | 020 99 01 01 06 |
| 46   | 23   | 14  | –   | 003 54 54 06 13 | 020 99 01 01 06 |
| 46   | 23   | 60  | 46  | 003 54 54 06 03 | 020 99 01 01 06 |
| 46   | 29   | 14  | –   | 003 54 54 06 14 | 020 99 01 01 06 |
| 46   | 29   | 72  | 58  | 003 54 54 06 04 | 020 99 01 01 06 |
| 46   | 36   | 34  | 20  | 003 54 54 06 15 | 020 99 01 01 06 |
| 46   | 36   | 86  | 72  | 003 54 54 06 05 | 020 99 01 01 06 |
| 46   | 46   | 60  | –   | 003 54 54 06 16 | 020 99 01 01 06 |
| 46   | 46   | 92  | –   | 003 54 54 06 06 | 020 99 01 01 06 |
| 63   | 14,5 | 49  | 29  | 003 54 54 07 01 | 020 99 01 01 07 |
| 63   | 18,5 | 59  | 37  | 003 54 54 07 02 | 020 99 01 01 07 |
| 63   | 23   | 66  | 46  | 003 54 54 07 03 | 020 99 01 01 07 |
| 63   | 29   | 78  | 58  | 003 54 54 07 04 | 020 99 01 01 07 |
| 63   | 36   | 92  | 72  | 003 54 54 07 05 | 020 99 01 01 07 |
| 63   | 46   | 20  | –   | 003 54 54 07 16 | 020 99 01 01 07 |
| 63   | 46   | 112 | 92  | 003 54 54 07 06 | 020 99 01 01 07 |
| 63   | 63   | 86  | –   | 003 54 54 07 17 | 020 99 01 01 07 |
| 63   | 63   | 126 | –   | 003 54 54 07 07 | 020 99 01 01 07 |
| 90   | 63   | 85  | 56  | 003 54 54 08 17 | 020 99 01 01 08 |
| 90   | 63   | 155 | 126 | 003 54 54 08 07 | 020 99 01 01 08 |
| 90   | 90   | 90  | –   | 003 54 54 08 18 | 020 99 01 01 08 |
| 90   | 90   | 180 | –   | 003 54 54 08 08 | 020 99 01 01 08 |

003 54 9. . . .

ADAPTERS FROM LAIP MODULAR TOOLING TO OTHERS  
ADAPTADORES A OTROS SISTEMAS MODULARES



Interchangeable with C.O.  
Intercambiable con C.O.



| D    | D1   | L   | MODULAR TOOLING | COD.            |
|------|------|-----|-----------------|-----------------|
| 23   | 19   | 20  | KAISER          | 003 54 91 03 01 |
| 29   | 24   | 30  | KAISER          | 003 54 91 04 02 |
| 46   | 39   | 40  | KAISER          | 003 54 91 06 04 |
| 63   | 50   | 60  | KAISER          | 003 54 91 07 05 |
| 90   | 100  | 80  | PINZBOHR        | 003 54 92 08 08 |
| 46   | 50   | 45  | KOMET           | 003 54 93 06 04 |
| 18,5 | 16,5 | 35  | CAD             | 003 54 96 02 01 |
| 23   | 20   | 35  | CAD             | 003 54 96 03 02 |
| 29   | 25   | 40  | CAD             | 003 54 96 04 03 |
| 46   | 16,5 | 20  | CAD             | 003 54 96 06 01 |
| 46   | 25   | 20  | CAD             | 003 54 96 06 03 |
| 46   | 32   | 25  | CAD             | 003 54 96 06 04 |
| 46   | 42   | 50  | CAD             | 003 54 96 06 05 |
| 46   | 55   | 75  | CAD             | 003 54 96 06 06 |
| 63   | 55   | 30  | CAD             | 003 54 96 07 06 |
| 63   | 72   | 80  | CAD             | 003 54 96 07 07 |
| 90   | 72   | 80  | CAD             | 003 54 96 08 07 |
| 90   | 94   | 105 | CAD             | 003 54 96 08 08 |

OPTIONAL ACCESSORIES    Page: 293  
ACCESORIOS OPCIONALES

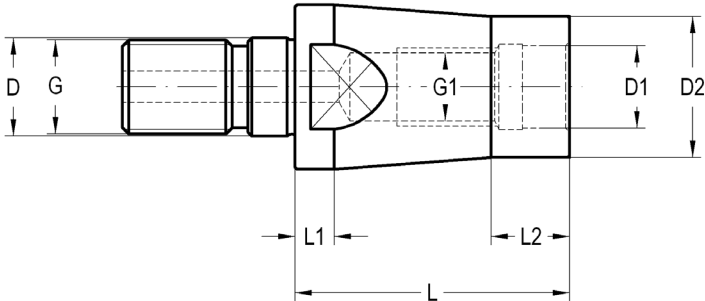


020 99 01 01 ..

003 57 57 .. ..

FRONT CONTACT EXTENSIONS AND REDUCERS  
FOR SCREW IN-TOOLS

PROLONGADORES Y REDUCTORES PARA MANGOS  
ROSCADOS CON APOYO FRONTAL



| D    | G    | G1   | D2   | D1   | L  | L1 | L2 | COD.            |
|------|------|------|------|------|----|----|----|-----------------|
| 9,8  | M-6  | M-6  | 9,8  | 6,5  | 25 | –  | –  | 003 57 57 01 01 |
| 12,8 | M-8  | M-6  | 9,8  | 6,5  | 25 | 5  | 10 | 003 57 57 02 01 |
| 12,8 | M-8  | M-8  | 12,8 | 8,5  | 30 | –  | –  | 003 57 57 02 02 |
| 17,8 | M-10 | M-8  | 12,8 | 8,5  | 30 | 5  | 10 | 003 57 57 03 02 |
| 17,8 | M-10 | M-10 | 17,8 | 10,5 | 35 | –  | –  | 003 57 57 03 03 |
| 20,8 | M-12 | M-10 | 17,8 | 10,5 | 45 | 5  | 10 | 003 57 57 04 03 |
| 20,8 | M-12 | M-12 | 20,8 | 12,5 | 40 | –  | –  | 003 57 57 04 04 |
| 28,8 | M-16 | M-12 | 20,8 | 12,5 | 40 | 5  | 10 | 003 57 57 05 04 |
| 28,8 | M-16 | M-16 | 28,8 | 17   | 45 | –  | –  | 003 57 57 05 05 |

- Delivery: With through coolant channel.

- Ejecución: Con orificio para paso de refrigerante.

RELATIONATED ELEMENTS  
ELEMENTOS RELACIONADOS

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Page: 74

Page: 12

Page: 257



003 32 57 ...

003 33 57 ...

003 14 57 ...

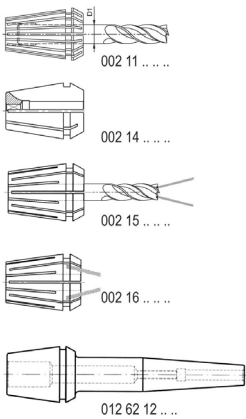
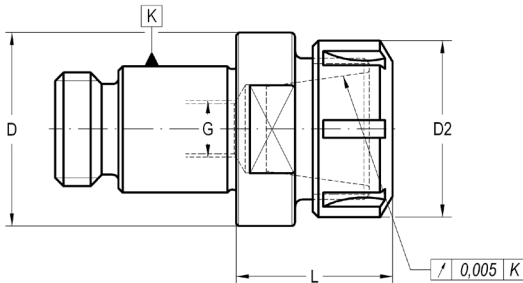
012 50 57 ...

004 54 06 .. ..

COLLET CHUCKS ER TYPE (DIN 6499)  
PORTAPINZAS TIPO ER (DIN 6499)



For tools with cylindrical straight shank DIN 1835-A. Interchangeable with C.O.  
Para herramientas con mango cilíndrico liso DIN 1835-A. Intercambiable con C.O.



| D  | SIZE   | D1 máx. | L  | D2 | COD.            |  |
|----|--------|---------|----|----|-----------------|-------------------------------------------------------------------------------------|
| 29 | (ER16) | 10      | 35 | 28 | 004 54 06 04 03 | 301 01 02 06 20                                                                     |
| 46 | (ER16) | 10      | 75 | 28 | 004 54 06 06 03 | 301 01 02 12 30                                                                     |
| 46 | (ER25) | 16      | 45 | 42 | 004 54 06 06 05 | 301 01 02 12 30                                                                     |
| 46 | (ER32) | 20      | 55 | 50 | 004 54 06 06 06 | 301 01 02 12 30                                                                     |
| 46 | (ER40) | 26      | 65 | 63 | 004 54 06 06 07 | 301 01 02 12 30                                                                     |
| 63 | (ER40) | 26      | 60 | 63 | 004 54 06 07 07 | 301 01 02 20 40                                                                     |

RELATIONATED ELEMENTS  
ELEMENTOS RELACIONADOS

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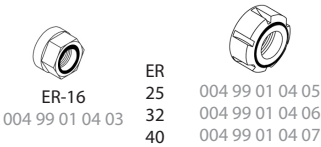
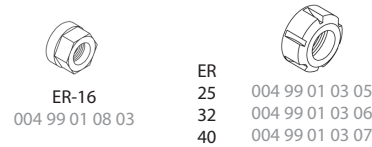
ACCESSORIES INCLUDED  
ACCESORIOS INCLUIDOS

Page: 293

Conventional/Convencional

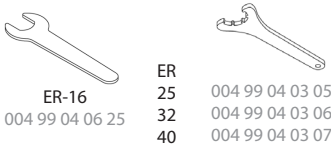
or/o

Bearing shell nut/Con casquillo giratorio



OPTIONAL ACCESSORIES  
ACCESORIOS OPCIONALES

Page: 293



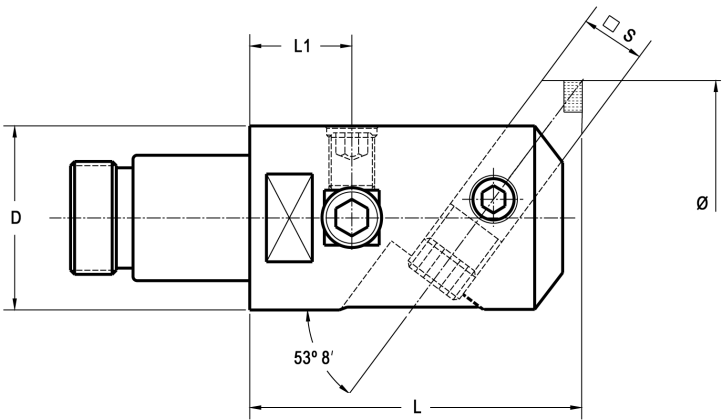
005 54 01 .. ..

SHORT BORING BARS  
CABEZA PORTACUCHILLAS



Interchangeable with C.O.  
Intercambiable con C.O.

DIN 6385 Form C



| D    | 90°<br> | 53° 8'<br> | L (min.) | L1 | S  | COD.            |  90° |  53° 8' |  |
|------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------|----|----|-----------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 14,5 | 16 - 22                                                                                  | 16 - 25                                                                                     | 28       | 8  | 5  | 005 54 01 01 01 | 005 99 01 01 01                                                                         | 005 99 01 02 01                                                                            | 301 01 03 04 05                                                                     |
| 18,5 | 21 - 26                                                                                  | 21 - 32                                                                                     | 40       | 10 | 8  | 005 54 01 01 02 | 005 99 01 01 02                                                                         | 005 99 01 02 02                                                                            | 301 01 03 06 06                                                                     |
| 23   | 25 - 36                                                                                  | 25 - 42                                                                                     | 42       | 10 | 8  | 005 54 01 01 03 | 005 99 01 01 02                                                                         | 005 99 01 02 02                                                                            | 301 01 03 06 06                                                                     |
| 29   | 31 - 47                                                                                  | 31 - 62                                                                                     | 50       | 11 | 10 | 005 54 01 01 04 | 005 99 01 01 03                                                                         | 005 99 01 02 03                                                                            | 301 01 03 08 08                                                                     |
| 36   | 40 - 60                                                                                  | 40 - 72                                                                                     | 60       | 14 | 12 | 005 54 01 01 05 | 005 99 01 01 04                                                                         | 005 99 01 02 04                                                                            | 301 01 03 10 10                                                                     |
| 63   | 69 - 112                                                                                 | 69 - 112                                                                                    | 80       | 20 | 20 | 005 54 01 01 07 | 005 99 01 01 06                                                                         | 005 99 01 02 06                                                                            | 301 01 03 16 16                                                                     |
| 90   | 98 - 150                                                                                 | 98 - 150                                                                                    | 100      | 20 | 25 | 005 54 01 01 08 | 005 99 01 01 07                                                                         | 005 99 01 02 07                                                                            | 301 01 03 20 25                                                                     |

- Special rings to fix the angular position of cutting tool are available.
- Disponemos de arandelas especiales para determinar la posición angular de la herramienta de corte.

OPTIONAL ACCESSORIES      Page: 293  
ACCESORIOS OPCIONALES



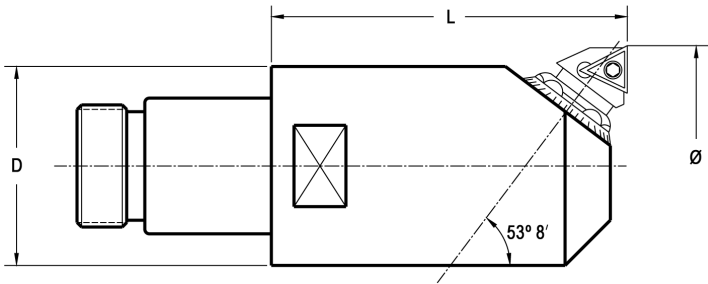
020 99 01 01 ..

005 54 03 .. ..

SHORT BORING BARS  
CABEZA PORTACUCHILLAS



For RIGIBORE and MICROBORE cartridges. Interchangeable with C.O.  
Con alojamientos para cartuchos RIGIBORE y MICROBORE. Intercambiable con C.O.



| D    | Ø       | L (min.) | COD.            | CARTRIDGE SIZE | INSERT      |
|------|---------|----------|-----------------|----------------|-------------|
| 18,5 | 22 - 29 | 40       | 005 54 03 02 02 | R2A2           | TCM. 06T1.. |
| 23   | 28 - 35 | 42       | 005 54 03 03 02 | TR2A2          | TCM. 06T1.. |
| 29   | 35 - 47 | 50       | 005 54 03 04 03 | TR3A2          | TCM. 0902.. |
| 36   | 44 - 63 | 60       | 005 54 03 05 05 | TR5A2          | TCM. 1102.. |

- One graduation of dial scale = 0,01 mm in radius.
- Cartridges supply on request.
- Special rings to fix the angular position of cutting tool are available.

- Una división de la escala = 0,01 mm en radio.
- Los cartuchos se suministran bajo demanda expresa.
- Disponemos de arandelas especiales para determinar la posición angular de la herramienta de corte.

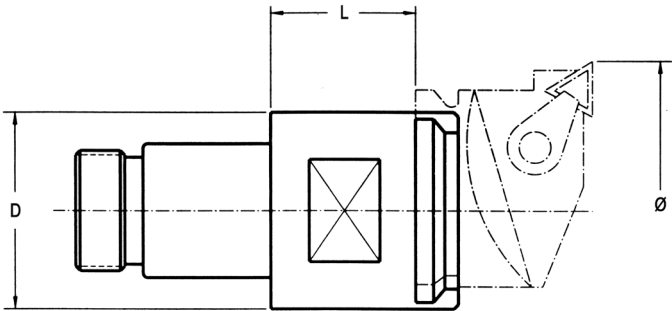


005 54 04 .. ..

ADAPTER FOR SANDVIK COROMANT INSERTS  
HEADS  
ADAPTADORES PARA CABEZAS PORTACUCHILLAS  
SANDVIK COROMANT



Interchangeable with C.O.  
Intercambiable con C.O.



| D  | Ø         | L  | COD.            | SANDVIK HEAD          |
|----|-----------|----|-----------------|-----------------------|
| 63 | 80 - 112  | 60 | 005 54 04 07 02 | R479 S - 637245 - 16  |
|    | 100 - 142 |    |                 | R471.5 - 808056 - 16  |
| 90 | 100 - 142 | 80 | 005 54 04 08 01 | R448 S - 808056 - 16  |
|    | 130 - 160 |    |                 | R448 S - 809072 - 16  |
|    | 160 - 190 |    |                 | R448 S - 809087 - 16  |
|    | 190 - 220 |    |                 | R448 S - 8090102 - 16 |
|    | 220 - 250 |    |                 | R448 S - 8090117 - 16 |

OPTIONAL ACCESSORIES    Page: 293  
ACCESORIOS OPCIONALES



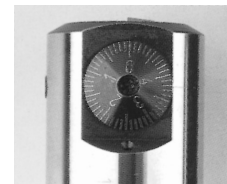
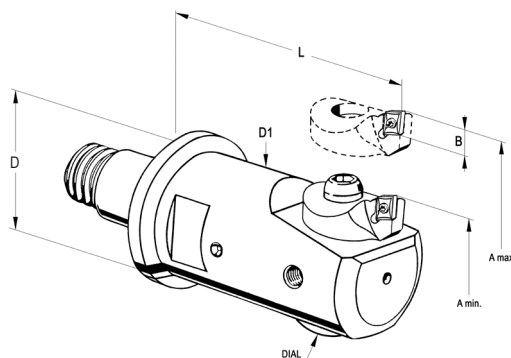
020 99 01 01 ..

005 54 06 .. ..

MICROMETRIC FINE BORING HEADS  
CABEZAS MICROMETRICAS DE MANDRINAR



For finishing. Interchangeable with C.O.  
Para acabado. Intercambiable con C.O.



- For boring bars with a shank diameter of 16mm and fine boring bridges.
- Diametrical adjustment with maximal reduced reversal backlash.
- 0,01mm diametrical adjustment resp. 0,002mm by nonius.
- With inner coolant supply.

| D  | D1 | A min | A max | L   | COD.            |
|----|----|-------|-------|-----|-----------------|
| 23 | 20 | 24    | 31    | 43  | 005 54 06 03 02 |
| 29 | 25 | 31    | 40    | 50  | 005 54 06 04 03 |
| 36 | 32 | 40    | 51    | 65  | 005 54 06 05 04 |
| 46 | 42 | 51    | 67    | 80  | 005 54 06 06 05 |
| 63 | 55 | 67    | 87    | 100 | 005 54 06 07 06 |
| 63 | 72 | 87    | 116   | 120 | 005 54 06 07 07 |
| 90 | 94 | 116   | 153   | 150 | 005 54 06 08 08 |

- Special rings to fix the angular position of cutting tool are available.

- Disponemos de arandelas especiales para determinar la posición angular de la herramienta de corte.

RELATIONATED ELEMENTS  
ELEMENTOS RELACIONADOS

Page: 242



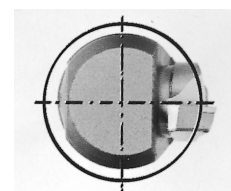
020 54 03 .. ..

OPTIONAL ACCESSORIES  
ACCESORIOS OPCIONALES

Page: 293



020 99 01 01 ..



Optimum cutting edge geometry by accurate alignment of the inserts to boring center. Clamping for rhombic insert system with TORX screw.

ACCESSORIES INCLUDED  
ACCESORIOS INCLUIDOS

015 06 01 .. ..

INSERT HOLDERS FOR MICROMETRIC FINE BORING HEADS 005 54 06 .. ..  
PORTAPLACAS PARA CABEZAS MICROMÉTRICAS DE MANDRINAR. 005 54 06 .. ..



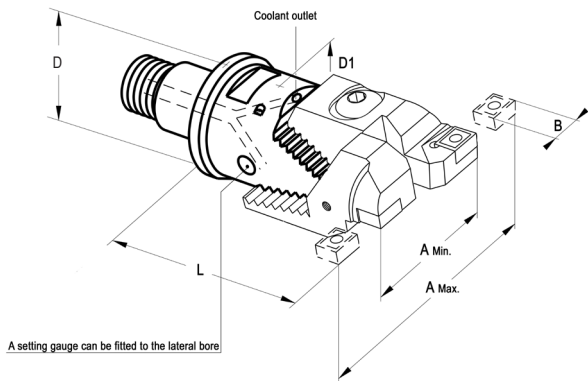
|                 |                   |                  | B |                    |                    |                    |
|-----------------|-------------------|------------------|---|--------------------|--------------------|--------------------|
| 005 54 06 03 02 | 015 06 01 02 01   | ISO CCMT 0602..  | 6 | 351 15 06 01 02 00 | 351 05 54 06 12 00 | 351 05 54 06 22 00 |
| 005 54 06 04 03 | 015 06 01 03 01   | ISO CCMT 0602..  | 6 | 351 15 06 01 02 00 | 351 05 54 06 13 00 | 351 05 54 06 23 00 |
| 005 54 06 05 04 | 015 06 01 04 01   | ISO CCMT 0602..  | 6 | 351 15 06 01 02 00 | 351 05 54 06 14 00 | 351 05 54 06 24 00 |
| 005 54 06 06 05 | 015 06 01 05 01   | ISO CCMT0 0602.. | 6 | 351 15 06 01 02 00 | 351 05 54 06 15 00 | 351 05 54 06 25 00 |
| 005 54 06 07 06 | * 015 06 01 06 01 | ISO CCMT 0602..  | 6 | 351 15 06 01 02 00 | 351 05 54 06 16 00 | 351 05 54 06 26 00 |
| 005 54 06 07 07 | * 015 06 01 06 02 | ISO CCMT 09T3    | 9 | 351 15 06 01 03 00 | 351 05 54 06 16 00 | 351 05 54 06 27 00 |
| 005 54 06 08 08 |                   |                  |   |                    | 351 05 54 06 16 00 | 351 05 54 06 28 00 |

005 54 07 .. ..

DOUBLE CUTTER HEADS  
CABEZAS DE MANDRINAR DE DOBLE CORTE



For roughing. Interchangeable with C.O.  
Para desbaste. Intercambiable con C.O.



| D  | D1 | A min | A max | L   | COD.            |  |  |  | *  |
|----|----|-------|-------|-----|-----------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 23 | 20 | 23,5  | 30,5  | 43  | 005 54 07 03 02 | 351 05 54 07 12 00                                                                | 351 05 54 07 21 00                                                                 | 351 05 54 07 31 00                                                                  | 351 05 54 07 42 00                                                                    |
| 29 | 25 | 29,5  | 40    | 50  | 005 54 07 04 03 | 351 05 54 07 13 00                                                                | 351 05 54 07 22 00                                                                 | 351 05 54 07 32 00                                                                  | 351 05 54 07 43 00                                                                    |
| 36 | 32 | 39,5  | 50,5  | 65  | 005 54 07 05 04 | 351 05 54 07 14 00                                                                | 351 05 54 07 23 00                                                                 | 351 05 54 07 33 00                                                                  | 351 05 54 07 44 00                                                                    |
| 46 | 42 | 49,5  | 66,5  | 80  | 005 54 07 06 05 | 351 05 54 07 15 00                                                                | 351 05 54 07 24 00                                                                 | 351 05 54 07 34 00                                                                  | 351 05 54 07 45 00                                                                    |
| 63 | 55 | 65,5  | 87,5  | 100 | 005 54 07 07 06 | 351 05 54 07 16 00                                                                | 351 05 54 07 25 00                                                                 | 351 05 54 07 35 00                                                                  | 351 05 54 07 46 00                                                                    |
| 63 | 72 | 86,5  | 115,5 | 120 | 005 54 07 07 07 | 351 05 54 07 17 00                                                                | 351 05 54 07 26 00                                                                 | 351 05 54 07 36 00                                                                  | 351 05 54 07 47 00                                                                    |
| 90 | 94 | 114,5 | 153   | 150 | 005 54 07 08 08 | 351 05 54 07 18 00                                                                | 351 05 54 07 27 00                                                                 | 351 05 54 07 37 00                                                                  | 351 05 54 07 48 00                                                                    |

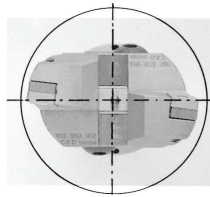
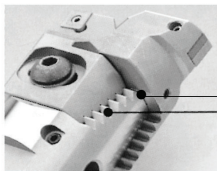
- Optimum cutting edge geometry of the boring heads by accurate alignment of the inserts to boring center allows a maximum of productivity.  
- Special rings to fix the angular position of cutting tool are available.

- La óptima posición de las herramientas con respecto del agujero a mecanizar asegura la máxima productividad.

RELATIONATED ELEMENTS Page: 242  
ELEMENTOS RELACIONADOS



020 54 03 .. ..



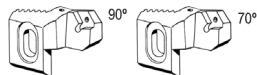
1. The two surfaces are always in contact. Thereby, obtaining an increased dynamic rigidity.  
*Las dos superficies perfectamente rectificadas están siempre en contacto logrando así una rigidez dinámica excelente.*

2. As a result of larger cog siyes, there is a much higher surface contact.  
*Como resultado de una mayor profundidad del estriado, obtenemos una mayor superficie de contacto entre la cabeza propiamente dicha y los portaplaquitas.*

Optimum cutting edge geometry of the boring heads by accurate alignment of the inserts to boring center allows a maximum of productivity.

*Una óptima posición de las herramientas con respecto del agujero a mecanizar asegura la máxima productividad.*

ACCESSORIES INCLUDED Page: 237  
ACCESORIOS INCLUIDOS



015 07 01 .. .. 015 07 02 .. ..

\* ACTUAL / ACTUAL

OLD / ANTIGUO



OPTIONAL ACCESSORIES Page: 293  
ACCESORIOS OPCIONALES

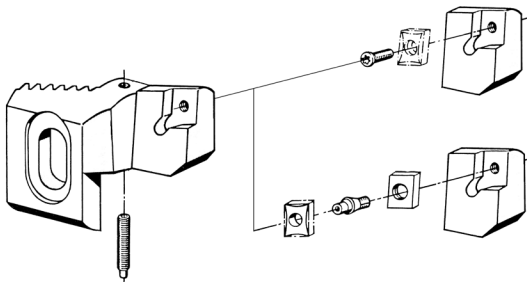
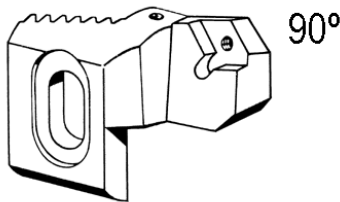


020 99 01 01 ..

015 07 01 .. ..

INSERT HOLDERS FOR DOUBLE CUTTER HEADS 005 54 07....

PORTAPLACAS PARA CABEZAS DE MANDRINAR DE DOBLE CORTE. 90°. 005 54 07...



|  | COD.            |  |  |  |  |  | B  |
|-----------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|
| 005 54 07 03 02                                                                   | 015 07 01 02 01 | 351 15 07 01 02                                                                   | 351 15 06 01 02 00                                                                | -                                                                                 | -                                                                                   | ISO CCMT 0602                                                                       | 6  |
| 005 54 07 04 03                                                                   | 015 07 01 03 01 | 351 15 07 01 03                                                                   | 351 15 06 01 02 00                                                                | -                                                                                 | -                                                                                   | ISO CCMT 0602                                                                       | 6  |
| 005 54 07 05 04                                                                   | 015 07 01 04 02 | 351 15 07 01 04                                                                   | 351 15 06 01 03 00                                                                | -                                                                                 | -                                                                                   | ISO CCMT 09T3                                                                       | 9  |
| 005 54 07 06 05                                                                   | 015 07 01 05 02 | 351 15 07 01 05                                                                   | 351 15 06 01 03 00                                                                | -                                                                                 | -                                                                                   | ISO CCMT 09T3                                                                       | 9  |
| 005 54 07 07 06                                                                   | 015 07 01 06 03 | 351 15 07 01 06                                                                   | -                                                                                 | 351 15 07 03 05                                                                   | 351 15 07 04 05                                                                     | ISO CNMM 1204                                                                       | 12 |
| 005 54 07 07 07                                                                   | 015 07 01 07 04 | 351 15 07 01 07                                                                   | -                                                                                 | 351 15 07 03 06                                                                   | 351 15 07 04 06                                                                     | ISO CNMM 1606                                                                       | 16 |
| 005 54 07 08 08                                                                   | 015 07 01 08 04 | 351 15 07 01 08                                                                   | -                                                                                 | 351 15 07 03 06                                                                   | 351 15 07 04 06                                                                     | ISO CNMM 1606                                                                       | 16 |

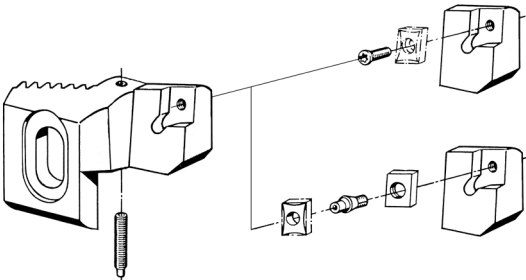
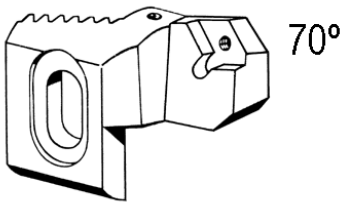
The rigid clamping system of the inserts prevents any interference with the chip flow.

La perfecta sujeción de la placa de corte en un alojamiento mecanizado con precisión, hace innecesario cualquier elemento de sujeción que pueda interferir en el rizado y evacuación de la viruta.

015 07 02 .. ..

INSERT HOLDERS FOR DOUBLE CUTTER HEADS 005 54 07....

PORTAPLACAS PARA CABEZAS DE MANDRINAR DE DOBLE CORTE. 70°. 005 54 07....



|  | COD.            |  |  |  |  |  | B  |
|-------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----|
| 005 54 07 03 02                                                                     | 015 07 02 02 01 | 351 15 07 01 02                                                                     | 351 15 06 01 02 00                                                                  | -                                                                                   | -                                                                                     | ISO CCMT 0602                                                                         | 6  |
| 005 54 07 04 03                                                                     | 015 07 02 03 01 | 351 15 07 01 03                                                                     | 351 15 06 01 02 00                                                                  | -                                                                                   | -                                                                                     | ISO CCMT 0602                                                                         | 6  |
| 005 54 07 05 04                                                                     | 015 07 02 04 02 | 351 15 07 01 04                                                                     | 351 15 06 01 03 00                                                                  | -                                                                                   | -                                                                                     | ISO CCMT 09T3                                                                         | 9  |
| 005 54 07 06 05                                                                     | 015 07 02 05 02 | 351 15 07 01 05                                                                     | 351 15 06 01 03 00                                                                  | -                                                                                   | -                                                                                     | ISO CCMT 09T3                                                                         | 9  |
| 005 54 07 07 06                                                                     | 015 07 02 06 03 | 351 15 07 01 06                                                                     | -                                                                                   | 351 15 07 03 05                                                                     | 351 15 07 04 05                                                                       | ISO CNMM 1204                                                                         | 12 |
| 005 54 07 07 07                                                                     | 015 07 02 07 04 | 351 15 07 01 07                                                                     | -                                                                                   | 351 15 07 03 06                                                                     | 351 15 07 04 06                                                                       | ISO CNMM 1606                                                                         | 16 |
| 005 54 07 08 08                                                                     | 015 07 02 08 04 | 351 15 07 01 08                                                                     | -                                                                                   | 351 15 07 03 06                                                                     | 351 15 07 04 06                                                                       | ISO CNMM 1606                                                                         | 16 |

The rigid clamping system of the inserts prevents any interference with the chip flow.

La perfecta sujeción de la placa de corte en un alojamiento mecanizado con precisión, hace innecesario cualquier elemento de sujeción que pueda interferir en el rizado y evacuación de la viruta.

The 70° tool holders allow a 100% use of the chambic shaped insert (2 angles with 90° tool holders serie 015 07 01 angles and 2 angles with the 70° tool holders, serie 015 07 02).

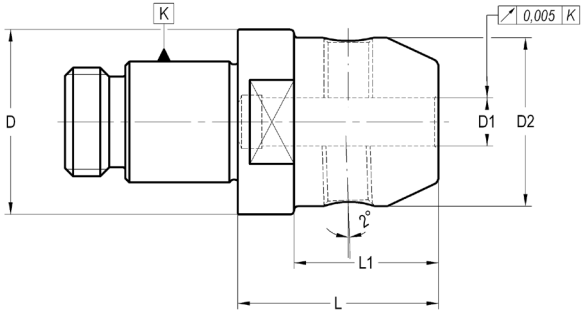
Los portaplaquitas de 70° permiten la utilización de los dos ángulos de corte de la placa rómbica que no han podido ser usados en los portaplaquitas de 90°, 015 07 01, llegando de este modo al aprovechamiento de los cuatro ángulos de corte de la placa.

012 54 04 .. ..

WELDON AND WHISTLE-NOTCH END MILL  
HOLDERS  
PORTAFRESAS WELDON Y WHISTLE-NOTCH



For end mills with shank DIN 1835 - B and / or DIN 1835 - E. Interchangeable with C.O.  
Para fresas con mango cilíndrico con encaste DIN 1835-B y/o plano inclinado DIN 1835-E. Intercambiable con C.O. x 2 1



| D  | D1 H5 | L  | L1 | D2 | G    | COD.            |  |  |
|----|-------|----|----|----|------|-----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 46 | 6     | 40 | 26 | 25 | M-5  | 012 54 04 16 06 | 301 02 70 05 01                                                                     | 301 01 05 06 10                                                                     |
| 46 | 8     | 40 | 26 | 28 | M-6  | 012 54 04 16 08 | 301 02 70 06 01                                                                     | 301 01 05 08 10                                                                     |
| 46 | 10    | 44 | 30 | 35 | M-8  | 012 54 04 16 10 | 301 02 70 08 01                                                                     | 301 01 05 10 12                                                                     |
| 46 | 12    | 50 | 36 | 42 | M-10 | 012 54 04 16 12 | 301 02 70 10 01                                                                     | 301 01 05 12 16                                                                     |
| 46 | 14    | 50 | 36 | 44 | M-10 | 012 54 04 16 14 | 301 02 70 10 01                                                                     | 301 01 05 12 16                                                                     |
| 46 | 16    | 60 | –  | 46 | M-12 | 012 54 04 16 16 | 301 02 70 12 01                                                                     | 301 01 05 14 16                                                                     |
| 46 | 18    | 60 | –  | 46 | M-12 | 012 54 04 16 18 | 301 02 70 12 01                                                                     | 301 01 05 14 16                                                                     |
| 46 | 20    | 65 | –  | 46 | M-16 | 012 54 04 16 20 | 301 02 70 16 01                                                                     | 301 01 05 16 16                                                                     |
| 63 | 20    | 65 | 45 | 52 | M-16 | 012 54 04 17 20 | 301 02 70 16 01                                                                     | 301 01 05 16 16                                                                     |
| 63 | 25    | 70 | –  | 63 | M-20 | 012 54 04 17 25 | 301 02 70 20 01                                                                     | 301 01 05 18 20                                                                     |
| 63 | 32    | 75 | –  | 63 | M-20 | 012 54 04 17 32 | 301 02 70 20 01                                                                     | 301 01 05 20 20                                                                     |

- D1 ≥ 25mm: two clamping holes. - D1≥25 mm: con dos orificios para sujeción de herramienta.

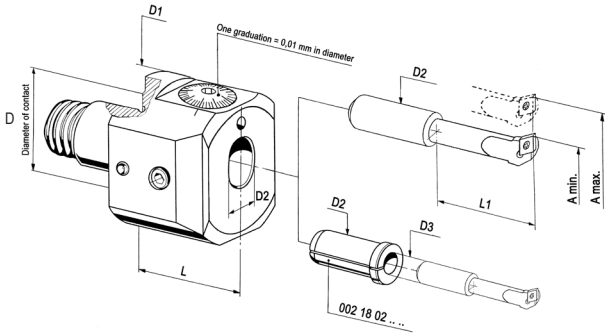


005 54 08 06 11

MICROMETRIC FINE BORING HEADS  
CABEZAS MICROMÉTRICAS DE MANDRINAR



Intercambiable con C.O.  
Interchangeable with C.O.

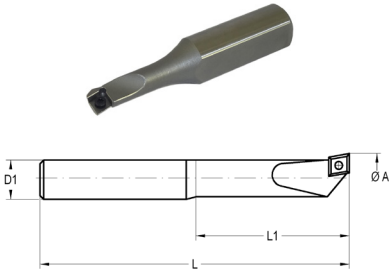


| D  | D1 | A mín. | A máx. | D2 | L  | COD.            |
|----|----|--------|--------|----|----|-----------------|
| 46 | 55 | 3      | 53     | 16 | 53 | 005 54 08 06 11 |

- Special rings to fix the angular position of cutting tool are available.
- Disponemos de arandelas especiales para determinar la posición angular de la herramienta de corte.

015 09  
19 .. ..

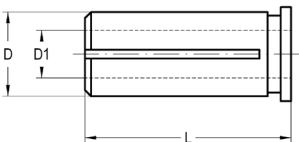
TOOL FOR MICROMETRIC FINE BORING HEADS  
COD. 005 54 08 06 11 (005 54 08 07 02)  
CUCHILLAS PARA CABEZAS MICROMÉTRICAS DE  
MANDRINAR COD. 005 54 08 06 11 (005 54 08 07 02)



| D1 | A mín. | A máx. | L   | L1 | COD.            | INSERT     |
|----|--------|--------|-----|----|-----------------|------------|
| 10 | 3      | 8      | –   | 20 | 015 19 01 10 03 | –          |
| 10 | 5      | 10     | –   | 25 | 015 19 01 10 05 | –          |
| 16 | 9,75   | 15,1   | 75  | 30 | 015 19 02 16 10 | CC..0602.. |
| 16 | 11,75  | 17,1   | 80  | 35 | 015 09 02 16 12 | CC..0602.. |
| 16 | 13,75  | 19,1   | 85  | 35 | 015 19 02 16 14 | CC..0602.. |
| 16 | 17,75  | 23,1   | 100 | 40 | 015 19 02 16 18 | CC..0602.. |
| 16 | 21,75  | 27,1   | 110 | 85 | 015 19 02 16 22 | CC..09T3.. |
| 16 | 24,75  | 30,1   | 115 | 85 | 015 19 02 16 25 | CC..09T3.. |
| 16 | 27,75  | 33,1   | 115 | 85 | 015 19 02 16 28 | CC..09T3.. |
| 16 | 31,75  | 37,1   | 115 | 85 | 015 19 02 16 32 | CC..09T3.. |
| 16 | 34,75  | 40,1   | 115 | 85 | 015 19 02 16 35 | CC..09T3.. |
| 16 | 38,7   | 44,1   | 115 | 85 | 015 19 02 16 39 | CC..09T3.. |
| 16 | 42,75  | 48,1   | 115 | 85 | 015 19 02 16 43 | CC..09T3.. |
| 16 | 47,75  | 53,1   | 115 | 85 | 015 19 02 16 48 | CC..09T3.. |

002 18 .. .. .

REDUCING ADAPTER FOR MICROMETRIC FINE  
BORING HEADS COD.  
REDUCTORES PARA CABEZA DE MANDRINAR  
MICROMÉTRICA COD. 005 54 08 06 11 (005 54 08 07 02)



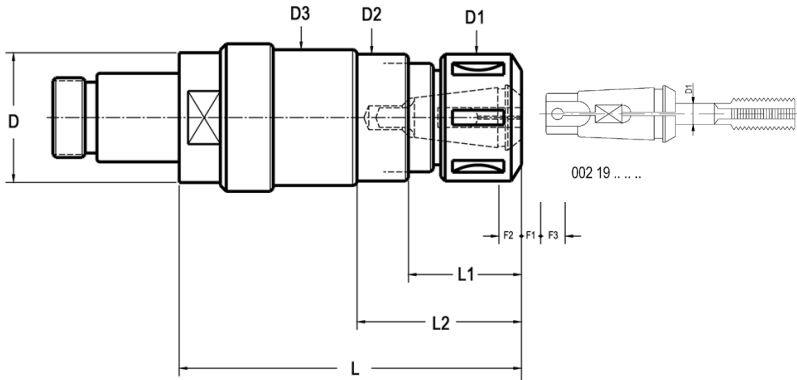
| D  | D1 | L    | COD.            |
|----|----|------|-----------------|
| 10 | 6  | 29,5 | 002 18 02 06 00 |
| 10 | 8  | 29,5 | 002 18 02 08 00 |
| 16 | 6  | 37   | 002 18 03 06 00 |
| 16 | 8  | 37   | 002 18 03 08 00 |
| 16 | 10 | 37   | 002 18 03 10 00 |
| 16 | 12 | 37   | 002 18 03 12 00 |

019 54 51 .. .. 2.

TAPPING CHUCKS  
PORTAMACHOS



Self feed and compression system. Releasing drive system. For LAIP 00219 collet.  
Interchangeable with C.O.  
*Doble compensación axial y escape. Para pinzas LAIP 00219.*  
*Intercambiable con C.O.*



| D  | CAP.   | L   | D1 | L1 | D2 | L2 | D3 | F1 | F2 | F3 | COD.               |
|----|--------|-----|----|----|----|----|----|----|----|----|--------------------|
| 63 | M8-M28 | 157 | 50 | 42 | 60 | 68 | 66 | 6  | 10 | 12 | 019 54 51 07 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.

RELATIONATED ELEMENTS

ELEMENTOS RELACIONADOS

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002 19 .. ..

ACCESSORIES INCLUDED

ACCESORIOS INCLUIDOS

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004 99 01 02 ..

OPTIONAL ACCESSORIES

ACCESORIOS OPCIONALES

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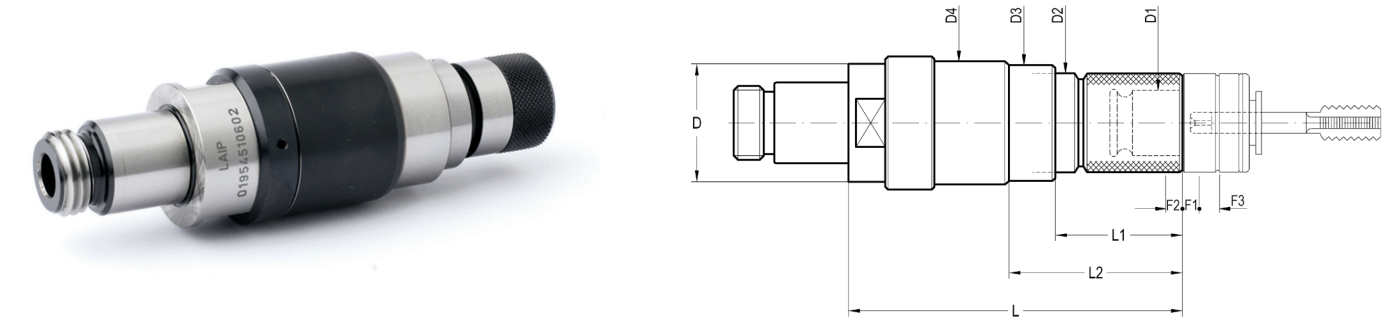
020 99 01 01 .. 004 99 04 09 ..

019 54 51 .. .. 3.

QUICK-CHANGE TAPPING CHUCKS  
PORTAMACHOS DE CAMBIO RÁPIDO



Self feed and compression system. Releasing drive system. For BILZ system tap adapter. Interchangeable with C.O.  
Doble compensación axial y escape. Para sistemas BILZ. Intercambiable con C.O.



| D  | CAP.          | D1 | L   | D2 | L1 | D3 | L2 | D4 | F1 | F2 | F3 | COD.               |
|----|---------------|----|-----|----|----|----|----|----|----|----|----|--------------------|
| 46 | M3-M12 (M16)* | 19 | 133 | 37 | 44 | 44 | 63 | 49 | 5  | 10 | 10 | 019 54 51 06 02 32 |
| 63 | M8-M20 (M30)* | 31 | 178 | 51 | 63 | 60 | 89 | 10 | 12 | 10 | 12 | 019 54 51 07 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.
- \* With 002 22 .. .. and 002 24 .. .. adapters

- 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.
- \*Con adaptadores 002 22 .. .. y 002 24 .. ..

RELATIONATED ELEMENTS

ELEMENTOS RELACIONADOS

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OPTIONAL ACCESSORIES

ACCESORIOS OPCIONALES

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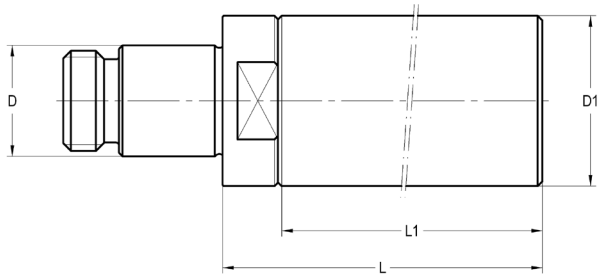
020 99 01 01 ..

020 54 02 .. ..

TOOLHOLDER BLANKS  
PORTAHERRAMIENTAS SEMIACABADOS



Interchangeable with C.O.  
Intercambiable con C.O.



| D    | D1   | L   | L1  | COD.            |
|------|------|-----|-----|-----------------|
| 14,5 | 14,5 | 75  | 65  | 020 54 02 01 01 |
| 18,5 | 18,5 | 75  | 65  | 020 54 02 02 01 |
| 23   | 23   | 100 | 88  | 020 54 02 03 01 |
| 29   | 29   | 100 | 85  | 020 54 02 04 01 |
| 36   | 36   | 100 | 82  | 020 54 02 05 01 |
| 46   | 46   | 150 | 130 | 020 54 02 06 01 |
| 63   | 63   | 150 | 125 | 020 54 02 07 01 |
| 90   | 90   | 200 | 170 | 020 54 02 08 01 |

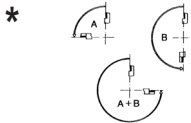
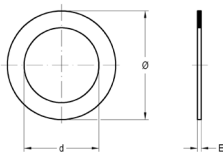
- The area of diameter D1 and length L1 has approximately 700N/mm<sup>2</sup>.

- Rest is hardened to 57 ÷ 60 Rc.
- La zona del diámetro D1 y longitud L1 están tratadas con una resistencia aproximada de 700N/mm<sup>2</sup>.

- Las restantes zonas están cementadas, templadas, rectificadas con una dureza de 57 ÷ 60 Rc.

020 54 03 .. ..

RINGS TO FIX THE ANGULAR POSITION OF BORING HEADS (MODULAR TOOLING)  
ARANDELA PARA POSICIONAMIENTO ANGULAR DE LAS CABEZAS PORTA-CUCHILLAS EN EL UTILLAJE MODULAR



| Ø    | d    | E    | COD.            | * | ANGULAR CORRECTION | ACCUMULATED ANGULAR CORRECTION A + B |
|------|------|------|-----------------|---|--------------------|--------------------------------------|
| 14,5 | 10,5 | 0,37 | 020 54 03 01 01 | A | 90°                | 270°                                 |
| 14,5 | 10,5 | 0,75 | 020 54 03 01 02 | B | 180°               | 270°                                 |
| 18,5 | 13   | 0,44 | 020 54 03 02 01 | A | 90°                | 270°                                 |
| 18,5 | 13   | 0,87 | 020 54 03 02 02 | B | 180°               | 270°                                 |
| 23   | 16   | 0,5  | 020 54 03 03 01 | A | 90°                | 270°                                 |
| 23   | 16   | 1    | 020 54 03 03 02 | B | 180°               | 270°                                 |
| 29   | 20   | 0,5  | 020 54 03 04 01 | A | 90°                | 270°                                 |
| 29   | 20   | 1    | 020 54 03 04 02 | B | 180°               | 270°                                 |
| 36   | 26   | 0,62 | 020 54 03 05 01 | A | 90°                | 270°                                 |
| 36   | 26   | 1,25 | 020 54 03 05 02 | B | 180°               | 270°                                 |
| 46   | 30   | 0,75 | 020 54 03 06 01 | A | 90°                | 270°                                 |
| 46   | 30   | 1,5  | 020 54 03 06 02 | B | 180°               | 270°                                 |
| 63   | 46   | 1,12 | 020 54 03 07 01 | A | 90°                | 270°                                 |
| 63   | 46   | 2,25 | 020 54 03 07 02 | B | 180°               | 270°                                 |
| 90   | 46   | 1,12 | 020 54 03 08 01 | A | 90°                | 270°                                 |
| 90   | 46   | 2,25 | 020 54 03 08 02 | B | 180°               | 270°                                 |