

TurnLine

**BOREMEISTER**

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Tungaloy Report No. 517-G



## Vibration-Free Solution for Deep-Hole Boring



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TurnLine

**BOREMEISTER**

TUNGALOY ANTI-VIBRATION TURNING



The ultimate solution for overcoming tool overhang challenges of up to  $L/D = 10$

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Unique anti-vibration mechanism in the tool body reduces vibration during deep hole boring with long overhangs of up to **L/D = 10**

- Minimum bore diameter:  $\varnothing 20$  mm
- Internal coolant supply improves chip evacuation during deep hole machining
- Various types of cutting heads are available to accommodate different insert shapes



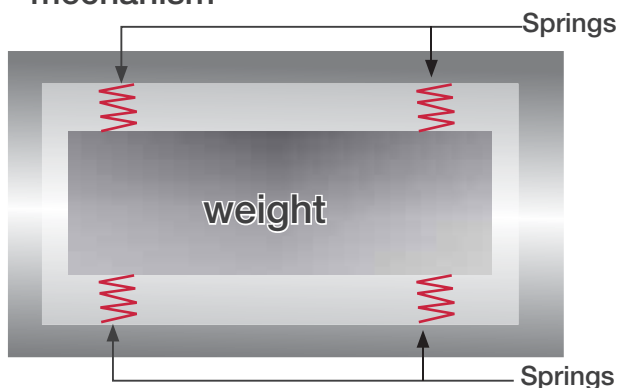
## Vibration Dampening Mechanism

When cutting forces create vibration on a boring bar set up with long overhangs, the bar's dampening mechanism counters the tool's motion and cancels the vibration.

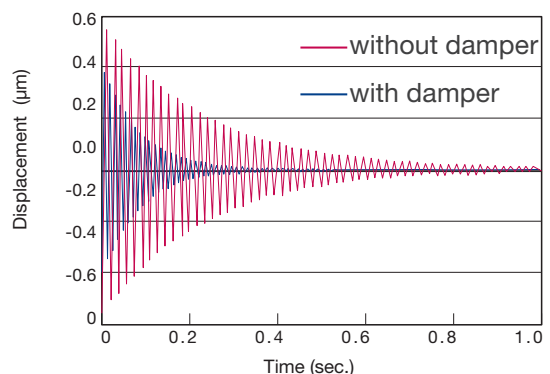
The dampening mechanism consists of a weight supported by spring elements.

The vibrations die out quickly eliminating noise and chatter marks.

### - Concept image of dampening mechanism



### - Tool vibration with and without vibration damper



## Standard Lineup

### BoreMeister anti-vibration bars

| L/D | Shank diameter (mm) |     |     |     |     |     |     |
|-----|---------------------|-----|-----|-----|-----|-----|-----|
|     | ø16                 | ø20 | ø25 | ø32 | ø40 | ø50 | ø60 |
| 7   | ○                   | ○   | ○   | ○   | △   | △   | △   |
| 10  | ●                   | ●   | ○   | ○   | △   | △   | △   |

○ : steel shank

● : carbide shank

△ : on demand

### BoreMeister head

| Insert shape | Shank diameter (mm) |     |     |     |               |
|--------------|---------------------|-----|-----|-----|---------------|
|              | ø16                 | ø20 | ø25 | ø32 | ø40, ø50, ø60 |
| CCMT         | ○                   | ○   | ○   | ○   | △             |
| DCMT         | ○                   | ○   | ○   | ○   | △             |
| VCMT         |                     | ○   | ○   | △   | △             |
| DNMG         |                     |     |     | △   | △             |
| VNMG         |                     |     |     |     | △             |

○ : standard

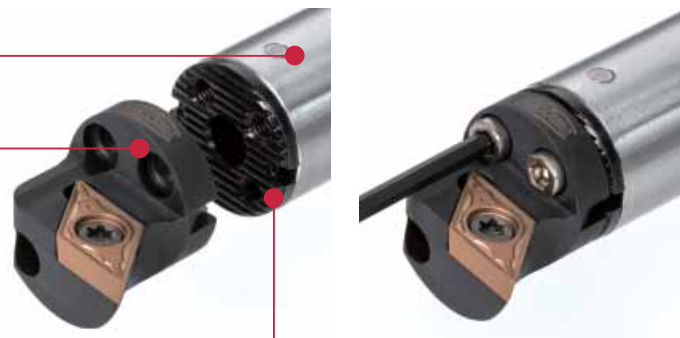
△ : on demand

BoreMeister is comprised of the anti-vibration bar and interchangeable boring head, featuring serrated interfaces for high precision indexing. They are connected by screws, allowing the fitting of a wide range of cutting heads for increased flexibility.

Anti vibration bar

Boring head

Serration



## Boring bar selection guide

For machining of long overhangs over  $5xL/D$ , the use of an anti-vibration bar is highly effective.

### Tool selection according to length-to-diameter ratio

| Steel shank  | Carbide reinforced | Carbide shank | BoreMeister   |
|--------------|--------------------|---------------|---------------|
| $L/D \leq 3$ | $L/D \leq 4$       | $L/D \leq 5$  | $L/D \leq 10$ |

For custom tooling inquiries, contact Tungaloy

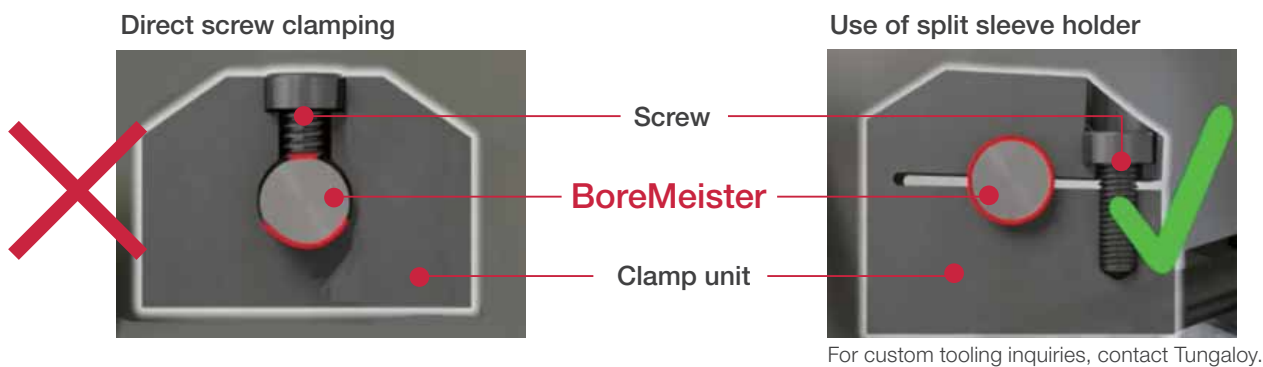


## General use recommendations

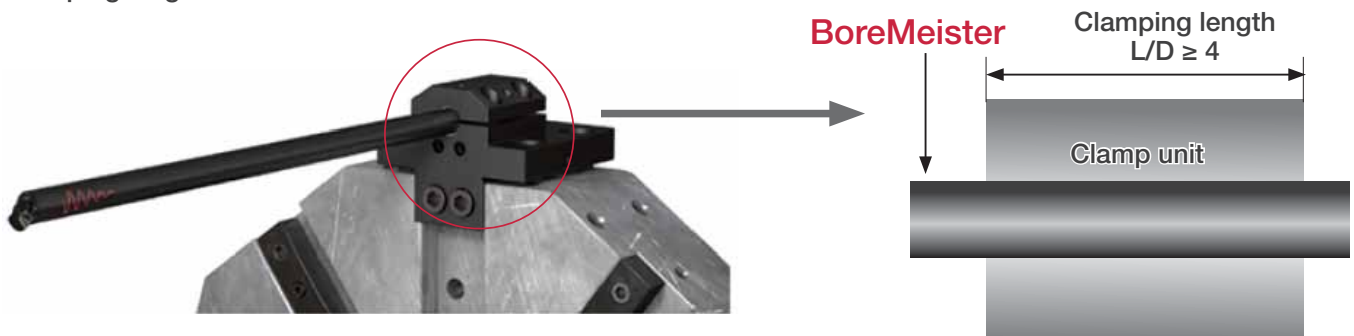
### 1. Machine clamping recommendation

For BoreMeister to maximize its vibration dampening capability, clamping stability is extremely important. When clamping the cylindrical boring bar, Tungaloy recommends the use of a split sleeve holders, which encompass the tool shank, securing maximum contact area. Never use a conventional screw clamp method as it may damage the tool and will not properly prevent vibration.

#### Clamping method



Clamping length of BoreMeister should be  $L/D = 4$  or more.



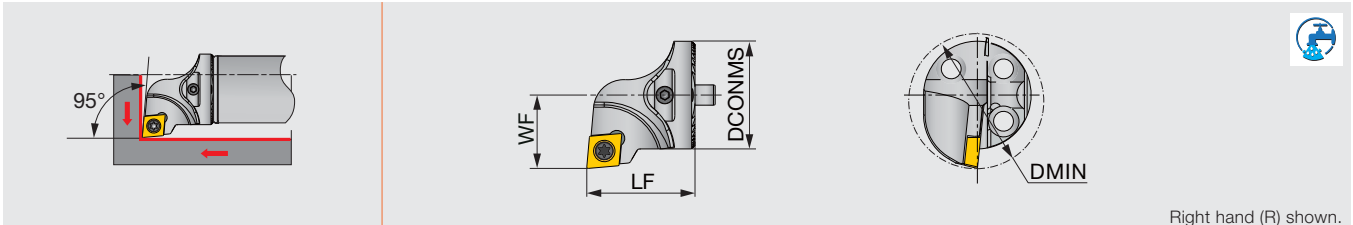
### 2. Center height positioning

Precise center height positioning is another important factor to achieve the right dimensional tolerances and surface finish. BoreMeister has no flats on its cylindrical shank to secure the tool center. Use a dial gauge to properly adjust the tool center height while fine-sliding the boring head on the serrated interface.



## S-SCLCR/L-H

Screw-on clamp interchangeable boring heads for positive 80° rhombic inserts



Right hand (R) shown.

| Designation      | DMIN | DCONMS | WF | LF | Shank size    | Insert      |
|------------------|------|--------|----|----|---------------|-------------|
| S16-SCLCR/L06-H  | 20   | 16     | 11 | 20 | D/G16         | CC**0602... |
| S20-SCLCR/L09-H  | 25   | 20     | 13 | 20 | D/G20         | CC**09T3... |
| S25-SCLCR/L09-H  | 32   | 25     | 17 | 22 | D25           | CC**09T3... |
| S32-SCLCR/L09-H  | 40   | 30     | 22 | 32 | D32           | CC**09T3... |
| S40-SCLCR/L12T-H | 50   | 40     | 27 | 38 | D40, D50, D60 | CC**1204... |

Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SCLCL\*\* type), and the left hand insert (L) is used for the right hand toolholders (SCLCR\*\* type).

### SPARE PARTS

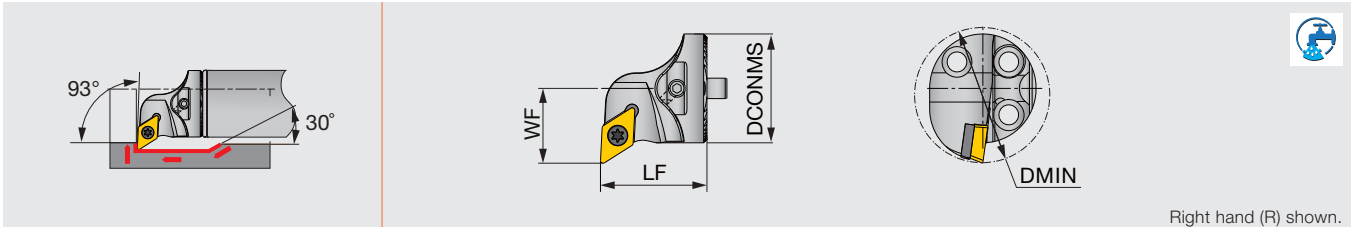


| Designation      | Clamping screw | Wrench | Shim   | Shim screw |
|------------------|----------------|--------|--------|------------|
| S16-SCLCR/L06-H  | SR14-548       | T-7/5  | -      | -          |
| S20-SCLCR/L09-H  | SR16-236       | T-15/5 | -      | -          |
| S25-SCLCR/L09-H  | SR16-236       | T-15/5 | -      | -          |
| S32-SCLCR/L09-H  | SR16-236       | T-15/5 | -      | -          |
| S40-SCLCR/L12T-H | SR16-212       | T-20/5 | TCC4-2 | SRTC-4     |



## S-SDUCR/L-H

Screw-on clamp interchangeable boring heads for positive 55° rhombic inserts



Right hand (R) shown.

| Designation      | DMIN | DCONMS | WF | LF | Shank size    | Insert      |
|------------------|------|--------|----|----|---------------|-------------|
| S16-SDUCR/L07-H  | 20   | 16     | 11 | 20 | D/G16         | DC**0702... |
| S20-SDUCR/L11-H  | 25   | 20     | 13 | 20 | D/G20         | DC**11T3... |
| S25-SDUCR/L11-H  | 32   | 25     | 17 | 20 | D25           | DC**11T3... |
| S32-SDUCR/L11T-H | 40   | 32     | 22 | 32 | D32           | DC**11T3... |
| S40-SDUCR/L11T-H | 50   | 40     | 27 | 32 | D40, D50, D60 | DC**11T3... |

Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SDUCL\*\* type), and the left hand insert (L) is used for the right hand toolholders (SDUCR\*\* type).

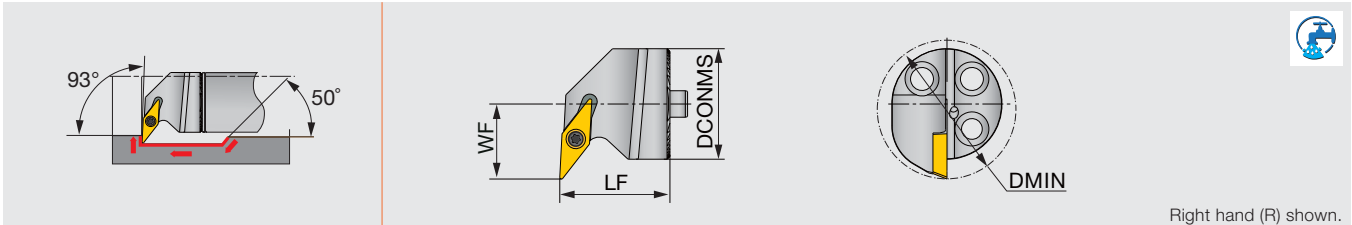
### SPARE PARTS



| Designation      | Clamping screw | Wrench | Shim    | Shim screw |
|------------------|----------------|--------|---------|------------|
| S16-SDUCR/L07-H  | SR14-548       | T-7/5  | -       | -          |
| S20-SDUCR/L11-H  | SR16-236P      | T-15/5 | -       | -          |
| S25-SDUCR/L11-H  | SR16-236P      | T-15/5 | -       | -          |
| S32-SDUCR/L11T-H | SR16-236P      | T-15/5 | TDC3-1P | SRTC-3P    |
| S40-SDUCR/L11T-H | SR16-236P      | T-15/5 | TDC3-1P | SRTC-3P    |

## S-SVUCR/L-H

Screw-on clamp interchangeable boring heads for positive 35° rhombic inserts



Right hand (R) shown.

| Designation     | DMIN | DCONMS | WF | LF | Shank size | Insert      |
|-----------------|------|--------|----|----|------------|-------------|
| S20-SVUCR/L11-H | 27   | 20     | 16 | 20 | D/G20      | VC**1103... |
| S25-SVUCR/L11-H | 31   | 25     | 17 | 25 | D25        | VC**1103... |

Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SVUCL\*\* type), and the left hand insert (L) is used for the right hand toolholders (SVUCR\*\* type).

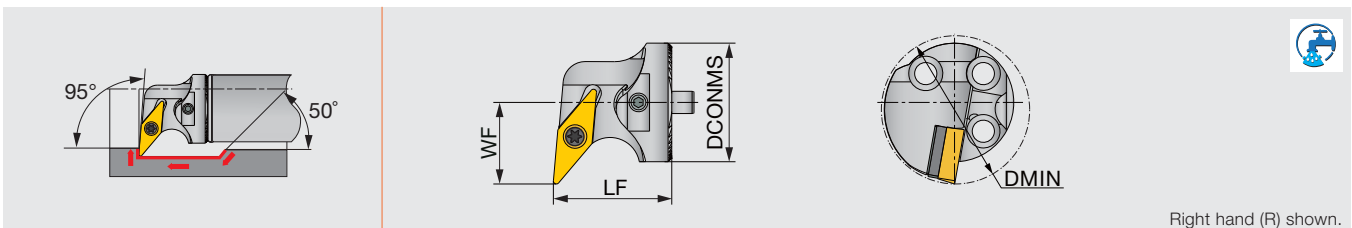
### SPARE PARTS



| Designation     | Clamping screw | Wrench |
|-----------------|----------------|--------|
| S20-SVUCR/L11-H | SR14-560       | T-8/5  |
| S25-SVUCR/L11-H | SR14-560       | T-8/5  |

## S-SVLCR/L-H

Screw-on clamp interchangeable boring heads for positive 35° rhombic inserts



Right hand (R) shown.

| Designation      | DMIN | DCONMS | WF | LF | Shank size    | Insert      |
|------------------|------|--------|----|----|---------------|-------------|
| S32-SVLCR/L16T-H | 40   | 32     | 22 | 32 | D32           | VC**1604... |
| S40-SVLCR/L16T-H | 50   | 40     | 27 | 32 | D40, D50, D60 | VC**1604... |

Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SVLCL\*\* type), and the left hand insert (L) is used for the right hand toolholders (SVLCR\*\* type).

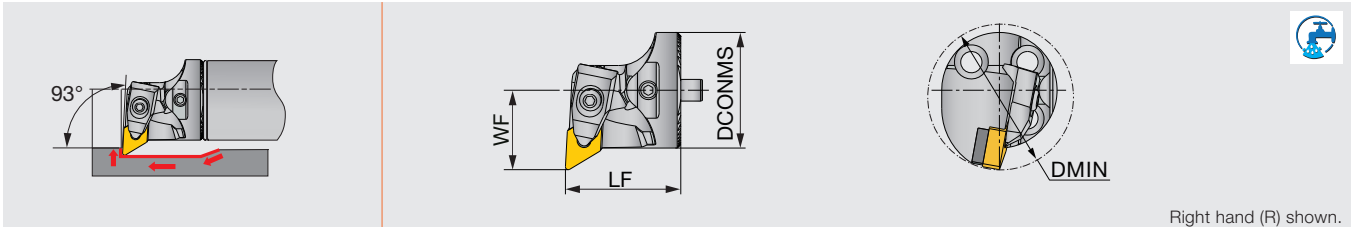
### SPARE PARTS



| Designation      | Clamping screw | Wrench | Shim     | Shim screw |
|------------------|----------------|--------|----------|------------|
| S32-SVLCR/L16T-H | SR16-236P      | T-15/5 | TVC 3-1P | SRTC-3P    |
| S40-SVLCR/L16T-H | SR16-236P      | T-15/5 | TVC 3-1P | SRTC-3P    |

## S-DDUNR/L-H

Double clamp interchangeable boring heads for negative 55° rhombic inserts



Right hand (R) shown.

| Designation                     | DMIN | DCONMS | WF | LF | Shank size    | Insert      |
|---------------------------------|------|--------|----|----|---------------|-------------|
| S32-DDUNR/L11T-H                | 40   | 32     | 22 | 32 | D32           | DN**1104... |
| S40-DDUNR/L15T-H <sup>(1)</sup> | 50   | 40     | 27 | 32 | D40, D50, D60 | DN**1506... |

Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (DDUNL\*\* type), and the left hand insert (L) is used for the right hand toolholders (DDUNR\*\* type).

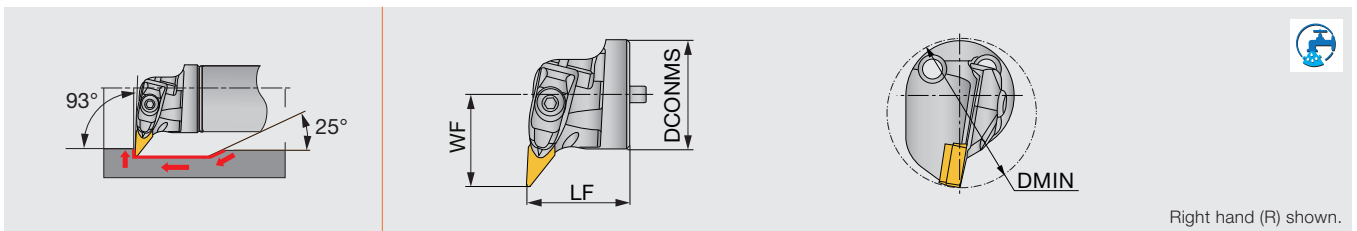
(1) DN\*\*1504... inserts require a separate shim (# RDT443).

### SPARE PARTS

| Designation      | Shim 1 | Shim 2 (Optional) | Shim screw | Clamp  | Clamping screw | Spring | Wrench |
|------------------|--------|-------------------|------------|--------|----------------|--------|--------|
| S32-DDUNR/L11T-H | RDT3-2 | -                 | SR40085I   | LCGR-3 | SRRC3          | KSP3   | HW2.5  |
| S40-DDUNR/L15T-H | RDT433 | (RDT443)          | SR14-506   | DLM4   | DLS4           | DSP4   | HW3.0  |

## S-DVUNR/L-H

Double clamp interchangeable boring heads for negative 35° rhombic inserts



Right hand (R) shown.

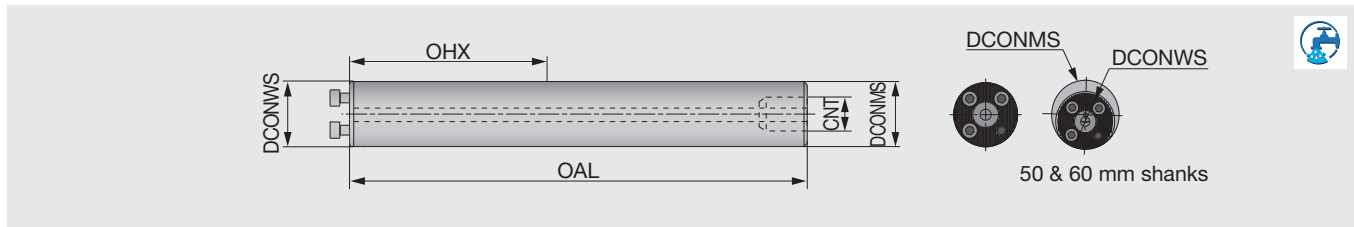
| Designation      | DMIN | DCONMS | WF | LF | Shank size    | Insert      |
|------------------|------|--------|----|----|---------------|-------------|
| S40-DVUNR/L16T-H | 56   | 40     | 34 | 38 | D40, D50, D60 | VN**1604... |

### SPARE PARTS

| Designation      | Shim   | Shim screw | Clamp | Clamping screw | Spring | Wrench |
|------------------|--------|------------|-------|----------------|--------|--------|
| S40-DVUNR/L16T-H | ASV322 | SR35080I   | DLM3V | SR10402267     | KSP5   | HW4.0  |

## Straight Shank

Anti-vibration bars with through coolant for interchangeable turning heads



| Designation    | Material | DCONWS | DCONMS | OAL   | OHX | CNT  |
|----------------|----------|--------|--------|-------|-----|------|
| D16-L156-7D-C  | Steel    | 16     | 16     | 156.3 | 92  | G1/8 |
| G16-L204-10D-E | Carbide  | 16     | 16     | 204.3 | 140 | -    |
| D20-L200-7D-C  | Steel    | 20     | 20     | 200.3 | 120 | G1/4 |
| G20-L260-10D-E | Carbide  | 20     | 20     | 260.3 | 180 | -    |
| D25-L255-7D-C  | Steel    | 25     | 25     | 257.5 | 155 | G1/4 |
| D25-L330-10D-C | Steel    | 25     | 25     | 332.5 | 230 | G1/4 |
| D32-L320-7D-C  | Steel    | 32     | 32     | 323   | 192 | G3/8 |
| D32-L416-10D-C | Steel    | 32     | 32     | 419   | 288 | G3/8 |
| D40-L408-7D-C  | Steel    | 40     | 40     | 411   | 248 | G1/2 |
| D40-L528-10D-C | Steel    | 40     | 40     | 531   | 368 | G1/2 |
| D50-L518-7D-C  | Steel    | 40     | 50     | 523   | 318 | G1/2 |
| D50-L668-10D-C | Steel    | 40     | 50     | 673   | 468 | G1/2 |
| D60-L628-7D-C  | Steel    | 40     | 60     | 633   | 388 | G3/4 |
| D60-L808-10D-C | Steel    | 40     | 60     | 813   | 568 | G3/4 |

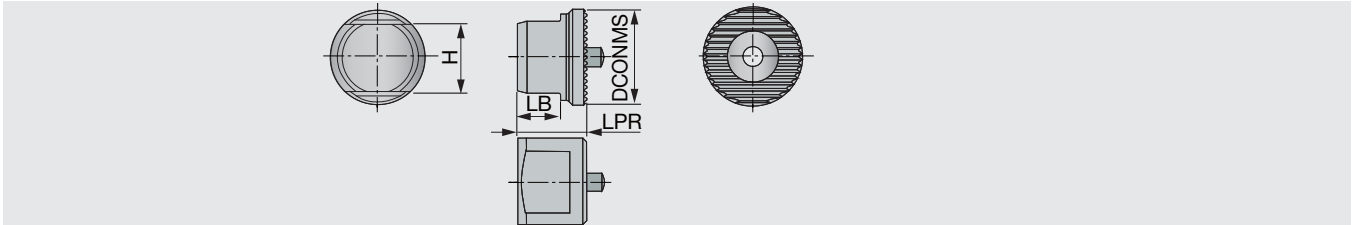
### SPARE PARTS



| Designation                  | Clamping screw     | Wrench |
|------------------------------|--------------------|--------|
| D16-L..., G16-L...           | SRM3X10DIN912      | HW2.5  |
| D20-L..., G20-L...           | SRM3.5X10DIN912    | HW2.5  |
| D25-L...                     | SRM4X12DIN912      | HW3.0  |
| D32-L...                     | SRM5X12DIN912      | HW4.0  |
| D40-L..., D50-L..., D60-L... | SRM6X16DIN912-12.9 | HW5.0  |

## AVC-SET

Center height set up device

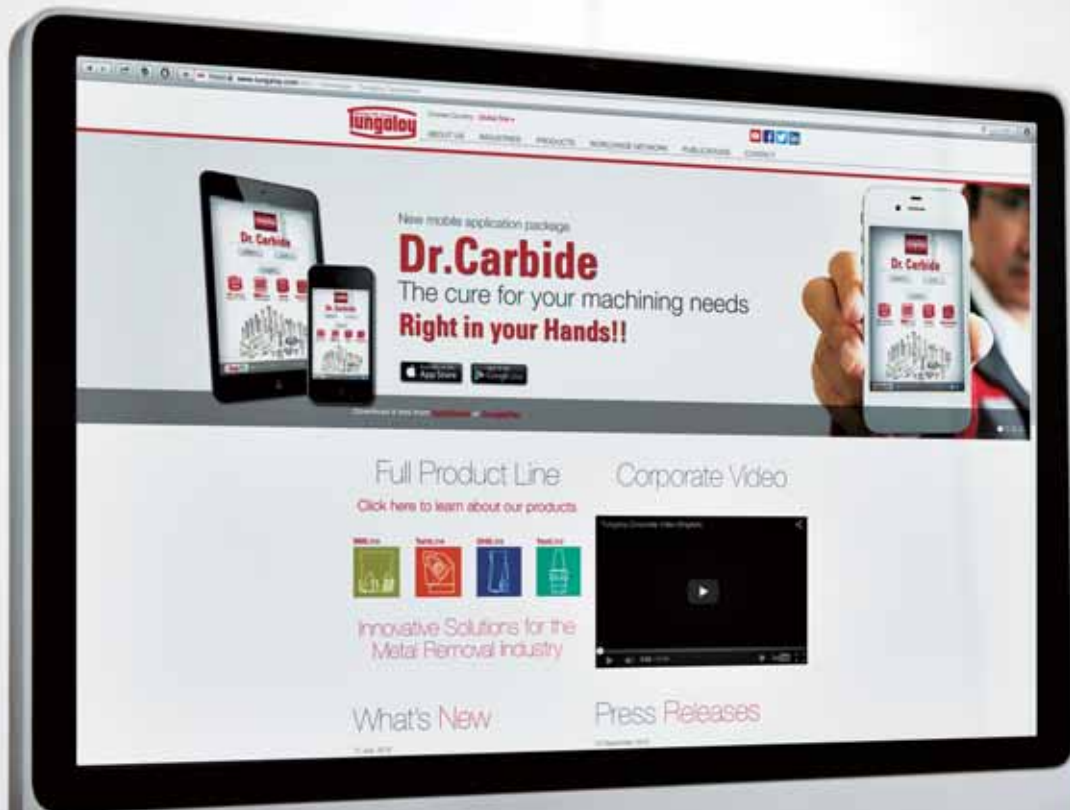


| Designation   | DCONMS | H  | LPR  | LB    | Applicable shank |
|---------------|--------|----|------|-------|------------------|
| AVC-SET 16-25 | 20     | 15 | 14.5 | 8.9   | 16, 20, 25       |
| AVC-SET 32-60 | 29     | 16 | 17.5 | 11.43 | 32, 40, 50, 60   |

# MEMO

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.

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