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Precision and reliability foremost

# Mechanical face drivers with vibration damping system

# SM

VDS
Vibration damping system
(Europ. Patent)

## Constant reference point + vibration damping

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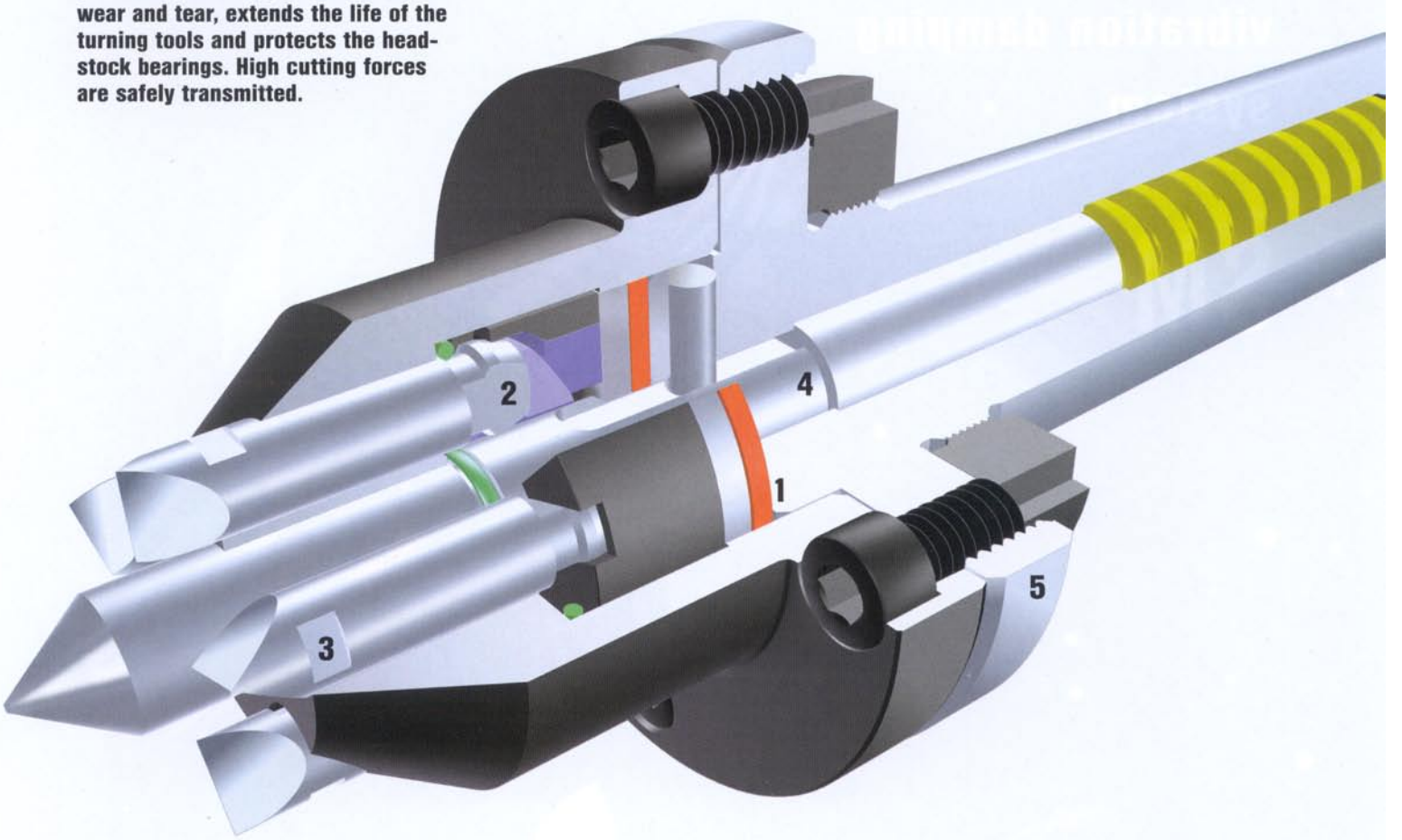
**In the BRUCKNER-face driver the advantages of mechanical compensation are combined with the vibration damping of hydraulics. V D S - the vibration damping system - prevents the driving pins from undue wear and tear, extends the life of the turning tools and protects the head-stock bearings. High cutting forces are safely transmitted.**

VDS
Vibration damping system
(Europ. Patent)




### The design

In conceiving the BRUCKNER-face driver we aimed for minimum overhang and constrictions in the working area.
Available with Morse taper or for flange-mounting for flanges to DIN (German Industrial Standard) or special flanges.
Turning range starting at 6 mm.
Max. concentricity runout 0.02 mm.
Utilization: on lathes and NC lathes.
Cylindrical grinding applications must be examined in each case.

**1 V D S**
The vibration-damping element reduces vibrations occurring during operation.
Result:
- Longer life of driving pins and turning tools.
- Improved workpiece surfaces due to smooth running.

**2 Constant point of reference**
The high-speed steel driving pins are supported by a hardened sphere segment within the basic body. Advantage: Exact lengthwise turning. Out-of-square workpiece faces are compensated for. High operating safety.

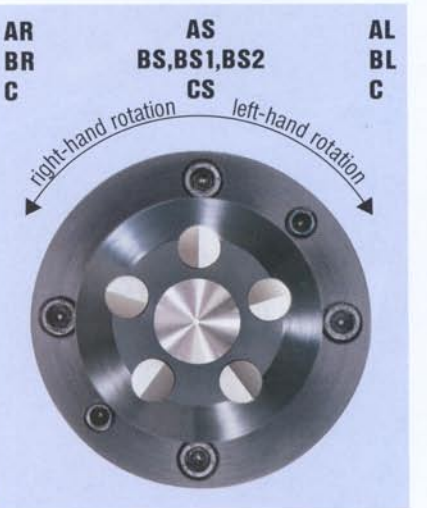
**3 Easy pin changing**
The driving pins and the centrepoint can be taken out from the front. The flats on the sides of the pins enable the user to easily extract them with a screwdriver.

**4 Spring-loaded centrepoint**
Compensates for varying depth of centrebores.

**5 Clamping in chuck jaws**
using the external diameter provided.

**Direction of rotation of the machine spindle**

| right-hand | right- and left-hand | left-hand |
|---|---|---|
| AR | AS | AL |
| BR | BS,BS1,BS2 | BL |
| C | CS | C |



**Mechanical face driver**
**with vibration damping system**

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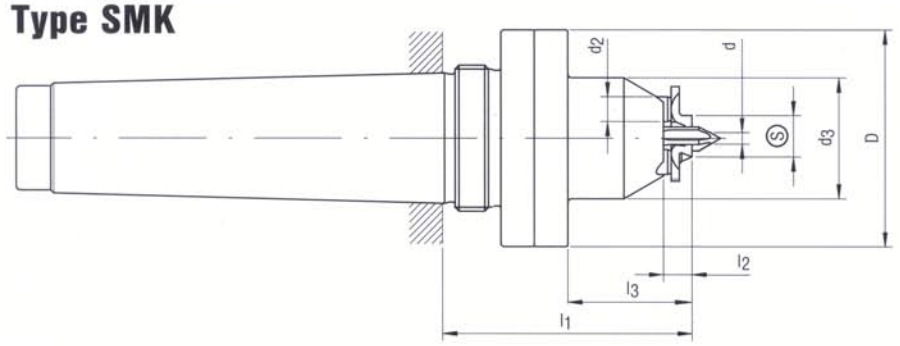
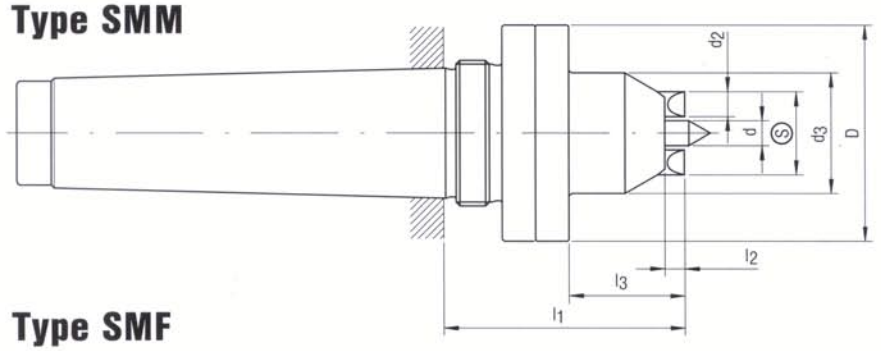
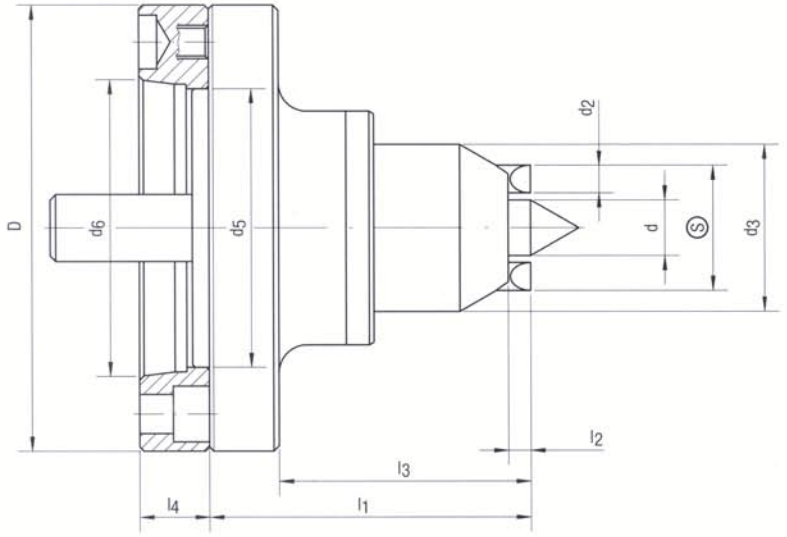
## Type SMK



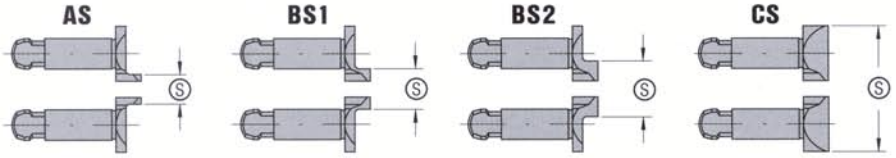

## Type SMM




## Type SMF

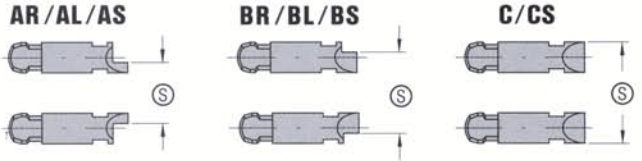


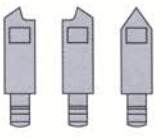

### Driving pins for type SMK




**Symmetrical form**
Form AS, form BS 1, form BS 2, form CS for right- and left-hand rotation during the same turning operation.

### Driving pins for types SMM and SMF



**AR AL AS**
**BR BL BS**
**C C CS**

**Saw-tooth form**
Form C for right- or left-hand rotation (by turning the cutting edge by 180°). Forms AR and BR for right-hand rotation, Forms AL and BL for left-hand rotation.

**Symmetrical form**
Form AS, form BS, form CS for right- and left-hand rotation during the same turning operation.

# Mechanical face driver with vibration damping system

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## Basic body incl. draw-off nut, without driving pins

| Type | ID.No. | Morse taper | d mm | d2 mm | d3 mm | D mm | l1 mm | l2 mm | l3 mm |
|---|---|---|---|---|---|---|---|---|---|
| SMK | 6712 | 2 | 3 | 6 | 29 | 52 | 66 | 8 | 34 |
| | 6713 | 3 | 3 | 6 | 29 | 52 | 66 | 8 | 34 |
| | 6714 | 4 | 3 | 6 | 29 | 52 | 66 | 8 | 34 |
| | 6715 | 5 | 3 | 6 | 29 | 52 | 66 | 8 | 34 |
| SMM | 6722 | 2 | 6 | 6 | 29 | 52 | 64 | 6 | 32 |
| | 6723 | 3 | 6 | 6 | 29 | 52 | 64 | 6 | 32 |
| | 6724 | 4 | 6 | 6 | 29 | 52 | 64 | 6 | 32 |
| | 6725 | 5 | 6 | 6 | 29 | 52 | 64 | 6 | 32 |
| SMM | 6733 | 3 | 12 | 8 | 43 | 70 | 78 | 7 | 46 |
| | 6734 | 4 | 12 | 8 | 43 | 70 | 79 | 7 | 46 |
| | 6735 | 5 | 12 | 8 | 43 | 70 | 81 | 7 | 46 |
| SMM | 6744 | 4 | 20 | 10 | 60 | 86 | 89 | 8 | 56 |
| | 6745 | 5 | 20 | 10 | 60 | 86 | 91 | 8 | 56 |
| SMM | 6755 | 5 | 25 | 18 | 90 | 110 | 126 | 13 | 78 |
| | 6756 | 6 | 25 | 18 | 90 | 110 | 131 | 13 | 78 |

## Driving pins

| ID.No. | Turning range mm | Clamping-Ø Ⓢ/mm |
|---|---|---|
| 671AS | 6 - 10 | 5,8 |
| 671BS1 | 9 - 13 | 8 |
| 671BS2 | 12 - 16 | 11 |
| 671CS | | * |
| 672 AL/AR/AS | 13 - 20 | 12 |
| 672 BL/BR/BS | 17 - 40 | 16 |
| 672 C/CS | 21 - 50 | 20 |
| 673 AL/AR/AS | 22 - 38 | 21 |
| 673 BL/BR/BS | 27 - 62 | 25 |
| 673 C/CS | 32 - 77 | 31 |
| 674 AL/AR/AS | 33 - 58 | 31 |
| 674 BL/BR/BS | 40 - 92 | 37 |
| 674 C/CS | 46 - 112 | 45 |
| 675 AL/AR/AS | 42 - 90 | 41 |
| 675 BL/BR/BS | 54 - 132 | 53 |
| 675 C/CS | 66 - 162 | 65 |

*to be ground to suit specific diameters

## Version for flange-mounting without driving pins

| Type | ID.No. | d mm | d2 mm | d3 mm | D mm | d5 mm | l1 mm | l2 mm | l3 mm |
|---|---|---|---|---|---|---|---|---|---|
| SMF | 6710 | 3 | 6 | 29 | 160 | 100 | 117 | 8 | 92 |
| | 6720 | 6 | 6 | 29 | 160 | 100 | 115 | 6 | 90 |
| | 6730 | 12 | 8 | 43 | 160 | 100 | 115 | 7 | 90 |
| | 6740 | 20 | 10 | 60 | 160 | 100 | 115 | 8 | 90 |
| | 6750 | 25 | 18 | 90 | 160 | 100 | 119 | 13 | 99 |

## Driving pins

| | |
|---|---|
| 671 | AS/BS1/BS2/CS |
| 672 | AL/AR/AS/BL/BR/BS/C/CS |
| 673 | |
| 674 | |
| 675 | |

## Intermediate flanges

| DIN* | ID.No. | size | D mm | d5 mm | d6 mm | l4 mm |
|---|---|---|---|---|---|---|
| 55026-A | 6705.26 | 5 | 160 | 100 | 82.563 | 25 |
| 55026-A | 6706.26 | 6 | 160 | 100 | 106.375 | 25 |
| 55026-A | 6708.26 | 8 | 210 | 100 | 139.719 | 30 |
| 55026-A | 6711.26 | 11 | 280 | 100 | 196.869 | 35 |
| 55027 | 6705.27 | 5 | 160 | 100 | 82.563 | 25 |
| 55027 | 6706.27 | 6 | 160 | 100 | 106.375 | 25 |
| 55027 | 6708.27 | 8 | 210 | 100 | 139.719 | 30 |
| 55027 | 6711.27 | 11 | 280 | 100 | 196.869 | 35 |

*German Industrial Standard

Other flange versions on request

## Workpiece weight max.

| ID.No. | max. daN (1daN = 1,02 kp) |
|---|---|
| 6712 to 6715, 6710 | 20 |
| 6722 to 6725, 6720 | 25 |
| 6733 to 6735, 6730 | 40 |
| 6744, 6745, 6740 | 70 |
| 6755, 6756, 6750 | 120 |

## Spare centrepoints

| Version | ID.No. | Ø (mm) | length (mm) |
|---|---|---|---|
| 671.. | 671ZS | 6 | 50 |
| 672.. | 672ZS | 6 | 50 |
| 673.. | 673ZS | 12 | 70 |
| 674.. | 674ZS | 20 | 90 |
| 675.. | 675ZS | 25 | 127 |

## Selecting the driving pins

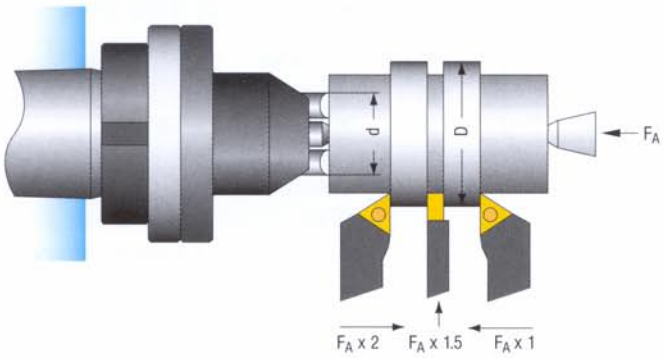
**ID. No. face driver** — **ID. No. pins**

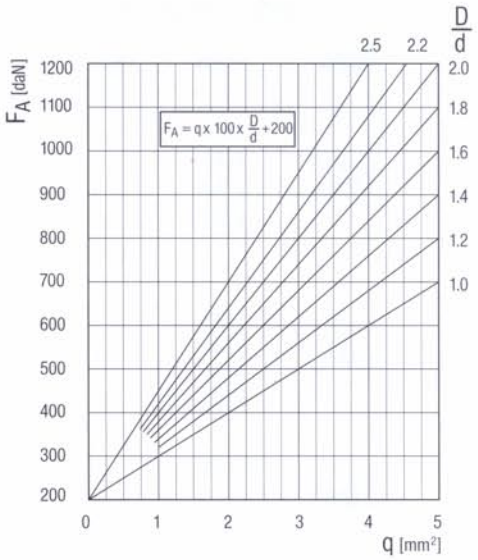
eg 673 4 — 673 - BL/BR/BS

4 = Morse taper type

BL/BR/BS = pin form

## Determination of tailstock force




### Criteria for the determination of the tailstock force $F_A$

**Tensile strength of material**
The diagram is valid for a material with a tensile strength of up to 700 N/mm². The tailstock force must be increased by 10% for every additional 100 N/mm².

**Number of cutting tools**
When using several cutting tools the cutting diameters have to be added up.

**Mode of operation**
Depending on the method of working, the tailstock force $F_A$ is to be multiplied with the following factors:

| Mode of operation | factor |
|---|---|
| feed against headstock | 1.0 |
| feed against tailstock | 2.0 |
| recessing | 1.5 |

**Calculation example**

| | |
|---|---|
| cutting depth | a = 5 mm |
| feed per revolution | s = 0.3 mm |
| chip section | q = a x s<br>= 5 mm x 0.3 mm<br>= 1.5 mm² |
| turning diameter | D = 100 mm |
| clamping diameter | d = 45 mm |
| clamping ratio | $S = \frac{D}{d} = \frac{100\ mm}{45\ mm} = 2.2$ |
| **Tailstock force** | **$F_A$ = 530 daN** |

When using symmetrical driving pins the tailstock force must be increased by approx. 20%.

**BRUCKNER face driver HS system Bokö with hydraulic compensation, with a working range of up to 500 mm.**
Please ask for our detailed information brochures.

## The BRUCKNER tool range also includes:

**High-performance live centres and bullnose live centres**

**High-performance centres for heavy-duty work**

**Carbide dead centres**

**Tool steel dead centres**

**Tapered sleeves**
**Reduction sleeves**

**Tailstock sleeves**

**Face drivers system Bokö**

**Work drivers**

**Special designs**

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