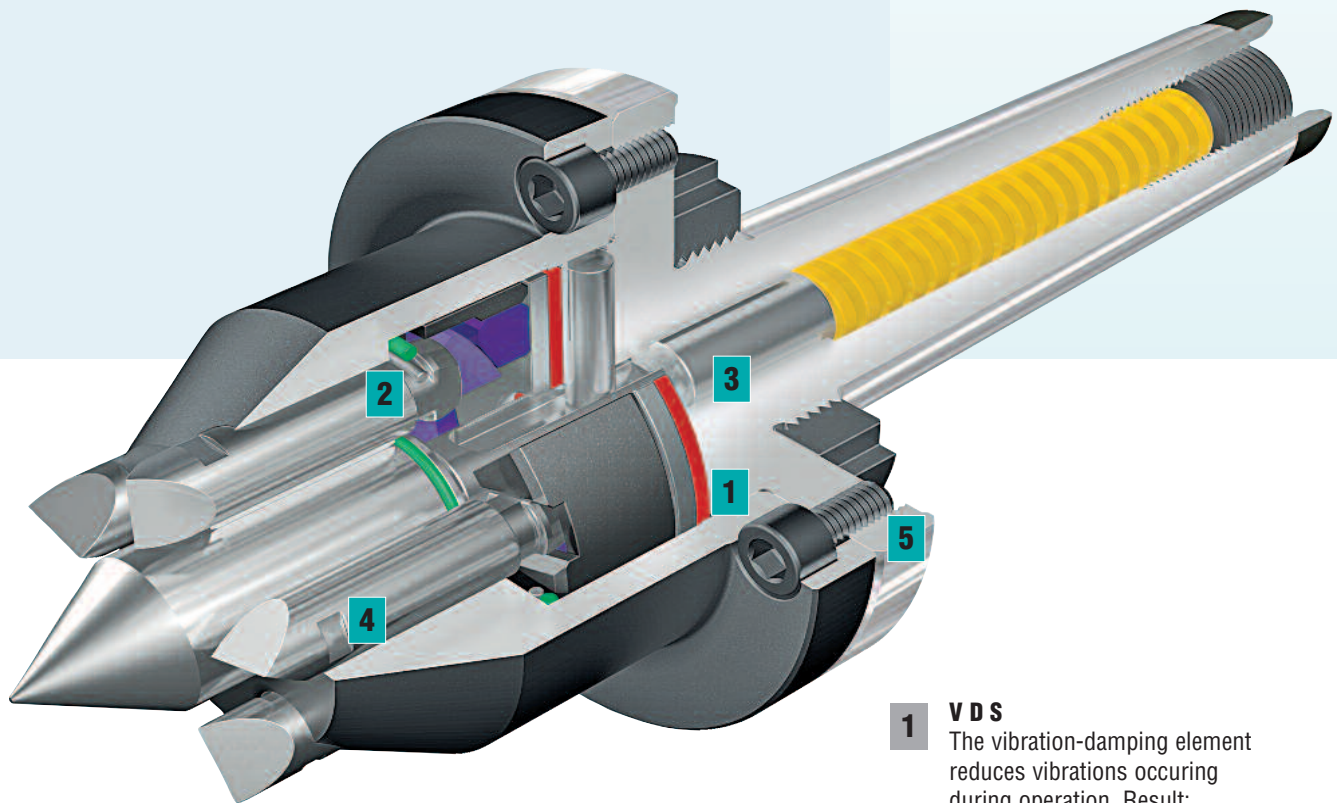




Mechanical Face Drivers
with Vibration Damping System
SM Series

In the BRUCKNER face driver the advantages of mechanical compensation are combined with the vibration damping of hydraulics. VDS – the vibration damping system – prevents the driving pins from undue wear and tear, extends the life of the turning tools and protects the headstock bearings. High cutting forces are safely transmitted.



The design

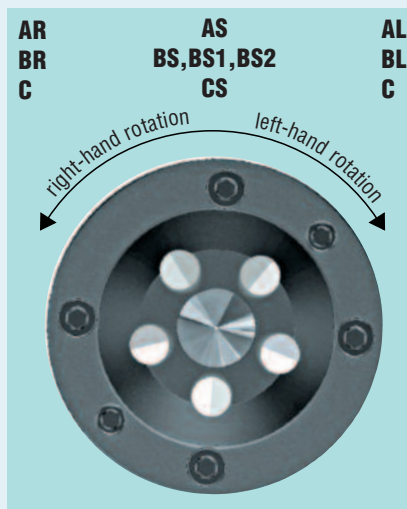
Concept of the BRUCKNER face driver:

- ▶ Vibration damping
- ▶ Slim design, no constrictions in the working area
- ▶ Minimum overhang
- ▶ Available with Morse taper or for flange-mounting for flanges to DIN or special flanges
- ▶ Turning range from 6 mm to 162 mm
- ▶ Runout max. 0.02 mm

Application: turning applications. Cylindrical grinding applications must be examined in each case.

Direction of rotation on the machine spindle

right-hand right-and left-hand left-hand



1 VDS
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

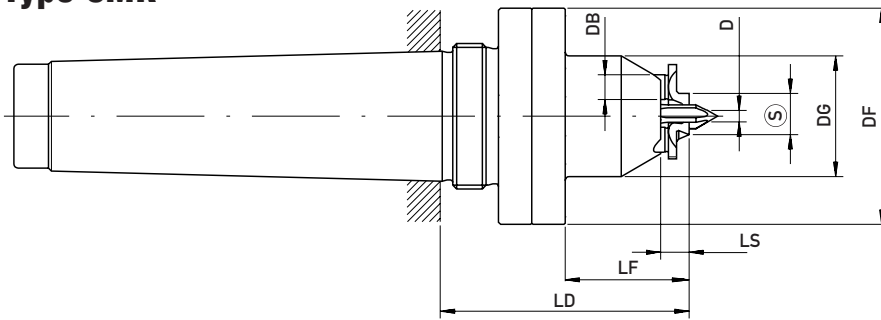
2 Constant point of reference
The high-speed steel driving pins are supported by a hardened sphere segment within the basic body. Advantage:
▶ Exact lengthwise turning. Out-of-square workpiece faces are compensated for.
▶ High operating safety

3 Spring-loaded centrepoint
Compensates for varying depth of centrebores

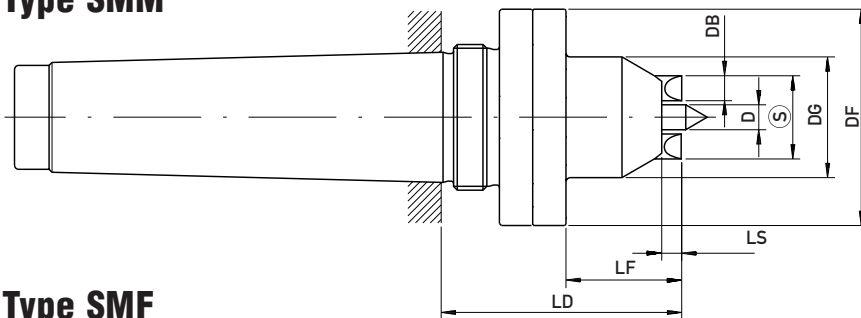
4 Easy pin changing
The driving pins and the centrepoint can be taken out from the front. The flats on the side of the pins enable the user to easily extract them with a screwdriver.

5 Clamping in chuck jaws
Using the external diameter provided

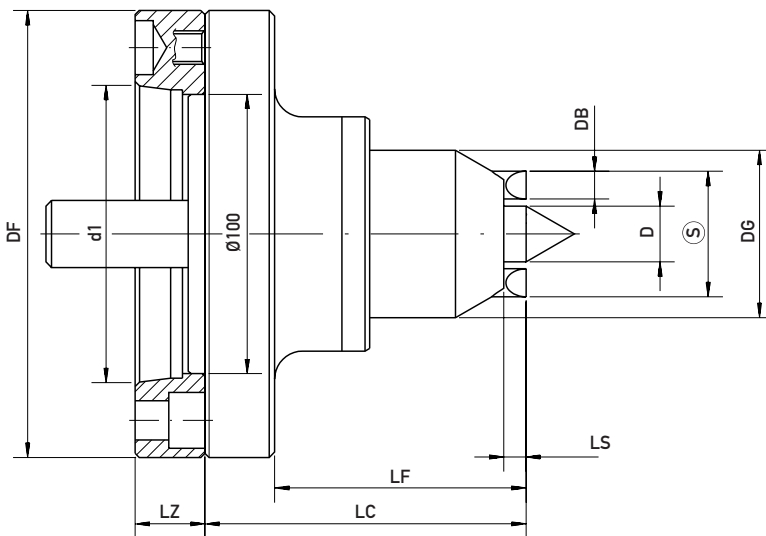
Type SMK



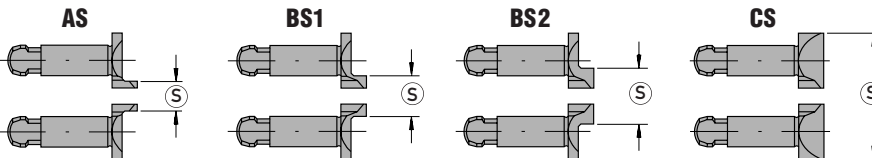
Type SMM



Type SMF



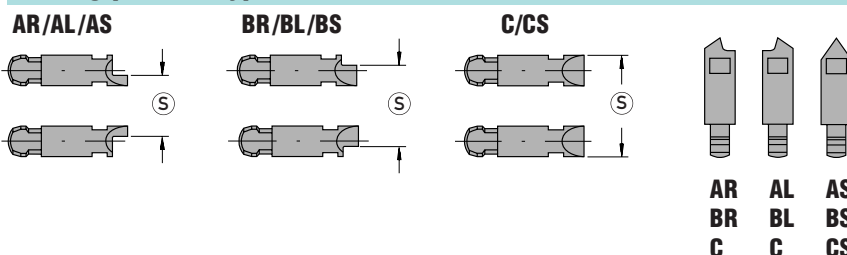
Driving pins for type SMK



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



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.

Basic body, with centrepoint and draw-off nut, without driving pins

Type	ID. No.	Morse taper	D	DB	DG	DF	LD	LF	LS
SMK	6712	2	3	6	29	52	66	34	8
	6713	3	3	6	29	52	66	34	8
	6714	4	3	6	29	52	66	34	8
	6715	5	3	6	29	52	66	34	8
SMM	6722	2	6	6	29	52	64	32	6
	6723	3	6	6	29	52	64	32	6
	6724	4	6	6	29	52	64	32	6
	6725	5	6	6	29	52	64	32	6
SMM	6733	3	12	8	43	70	78	46	7
	6734	4	12	8	43	70	79	46	7
	6735	5	12	8	43	70	81	46	7
SMM	6744	4	20	10	60	86	89	56	8
	6745	5	20	10	60	86	91	56	8
SMM	6755	5	25	18	90	110	126	78	13
	6756	6	25	18	90	110	131	78	13

Driving pins

ID. No.	Turning range	Clamping-Ø Ⓢ
671AS	6-10	5,8
671BS1	9-13	8
671BS2	12-16	11
671CS		*
* To be ground to suit specific diameters		
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

Version for flange-mounting, with centrepoint, without driving pins

Type	ID. No.	D	DB	DG	DF	LC	LF	LS
SMF	6710	3	6	29	160	117	92	8
	6720	6	6	29	160	115	90	6
	6730	12	8	43	160	115	90	7
	6740	20	10	60	160	115	90	8
	6750	25	18	90	160	119	99	13

Driving pins

ID. Numbers and ranges	see tables above
671	AS/BS1/BS2/CS
672	AL/AR/AS/BL/BR/BS/C/CS
673	
674	
675	

Intermediate flanges

DIN	ID. No.	Size	DF	d1	LZ
55026-A	6705.26	5	160	82.563	25
55026-A	6706.26	6	160	106.375	25
55026-A	6708.26	8	210	139.719	30
55026-A	6711.26	11	280	196.869	35
55027	6705.27	5	160	82.563	25
55027	6706.27	6	160	106.375	25
55027	6708.27	8	210	139.719	30
55027	6711.27	11	280	196.869	35

Others flange versions on request

Spare centrepoints

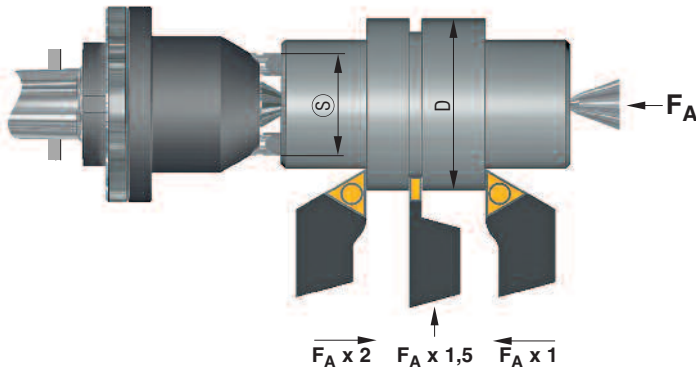
Version	ID. No.	Ø	length
671..	671ZS	6	50
672..	672ZS	6	50
673..	673ZS	12	70
674..	674ZS	20	90
675..	675ZS	25	127

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

Selecting the driving pins

ID. No. face driver	ID. No. pins
eg. 673 4	673 - BL/BR/BS
Morse taper type	pin form



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 700N/mm². The tailstock force must be increased by 10% for every additional 100N/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 $a = 5 \text{ mm}$
 feed per revolution $s = 0.3 \text{ mm}$

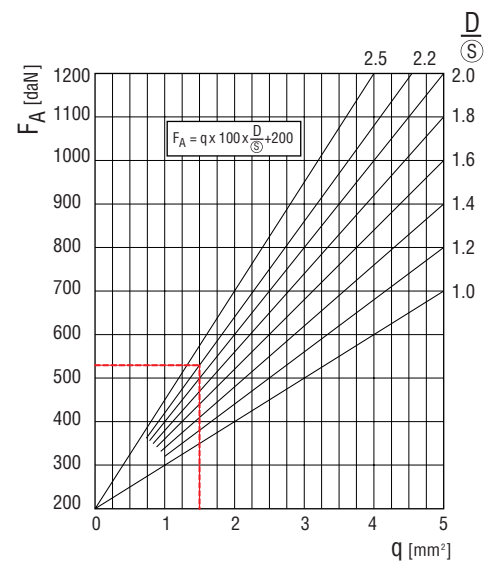
chip section $q = a \times s$
 $= 5 \text{ mm} \times 0.3 \text{ mm}$
 $= 1.5 \text{ mm}^2$

turning diameter $D = 100 \text{ mm}$
 clamping diameter $S = 45 \text{ mm}$

clamping ratio $\frac{D}{S} = \frac{100 \text{ mm}}{45 \text{ mm}} = 2.2$

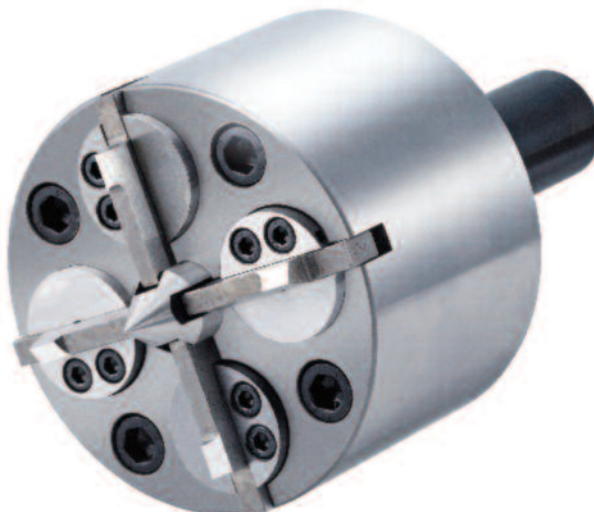
Tailstock force $F_A = 530 \text{ daN}$

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



BRUCKNER face driver HS with hydraulic compensation, working range up to 500 mm

- ▶ Precision face driving with high load transmission
- ▶ Large working range by interchangeable carrier knives
- ▶ Even contact of the carrier knives by hydraulic compensation
- ▶ Transmission of high torques
- ▶ Vibration compensation by means of the hydraulic, by that, the knife-edges do not notch early.
- ▶ Eccentricity max. 0.02 mm
- ▶ Maintenance-free hydraulic through spring initial tension
- ▶ Application: turning



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