BRUCKNER®
Precision and reliability foremost

Centres for Turning and Grinding

High-performance live centres

Type S, SG
Type SKOP, SKOPG

Angle 60°, angle 60°/40°, extended centres

Type SH, SHG
Type SV, SVG

Carbide-tipped
Solid carbide

Type SE, SEG

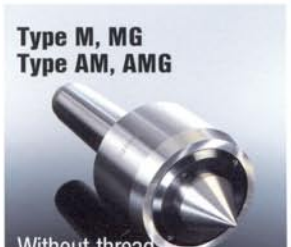
For interchangeable inserts

Type NC, NCE

For high r.p.m applications

High-performance live centres for heavy-duty machining

Type M, MG
Type AM, AMG



Without thread for draw-off nut / With thread for draw-off nut

Type MR, MRG

With tailstock sleeve support

Type MZ, MZR
B-Lo System

With compensation for expansion

High-performance bullnose live centres

Type ZA, ZAG

Without thread for draw-off nut / With thread for draw-off nut

Carbide dead centres

Forms E, L, V

Full centre. To German Industrial Standard (DIN) 806 E, large carbide diameters, extended centre

Forms Z, R, B, HB

Larger carbide diameters up to 100 mm.
Female carbide centres

Tool steel dead centres

Adapter sleeves Reduction sleeves

Forms 255, 256, 257, 258

With thread for draw-off nut.
To DIN 807, to Bruckner Works Standard

Forms 250, 251, 252, 253

To DIN 806
Female, full and half centres

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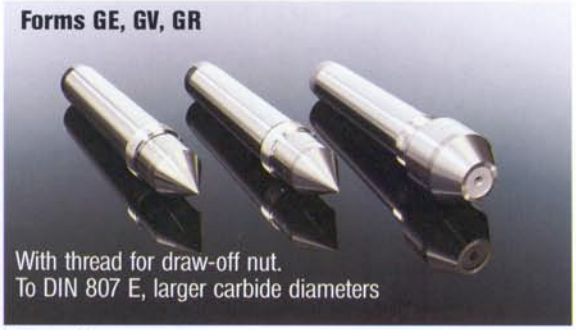

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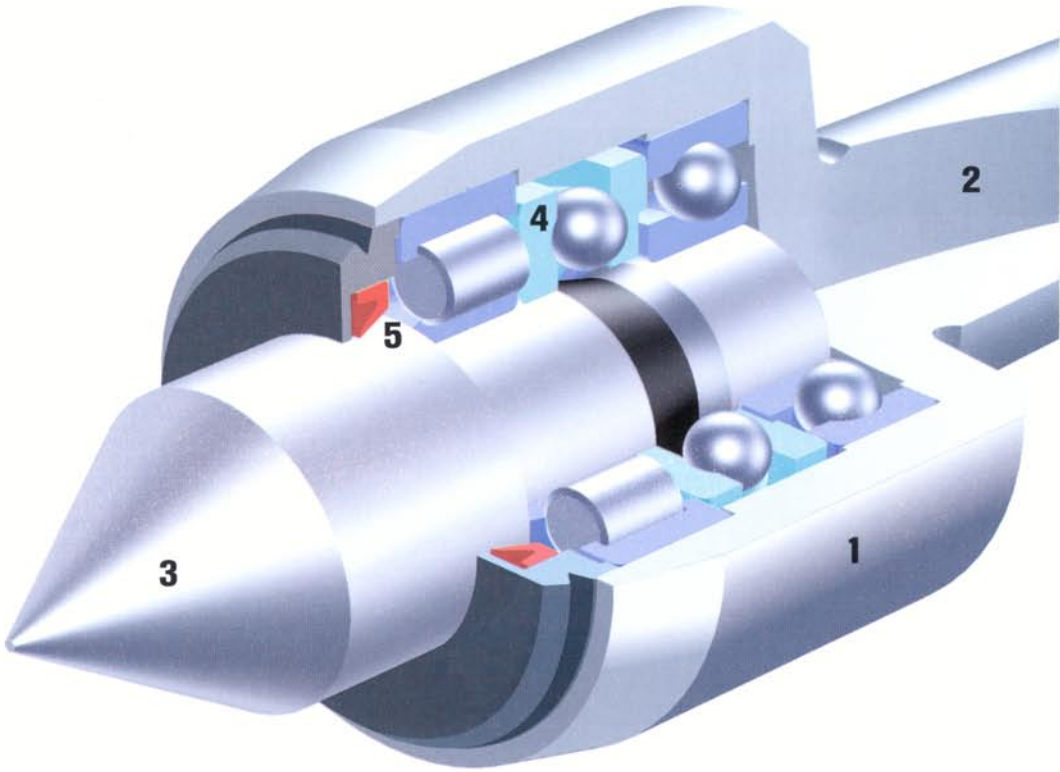
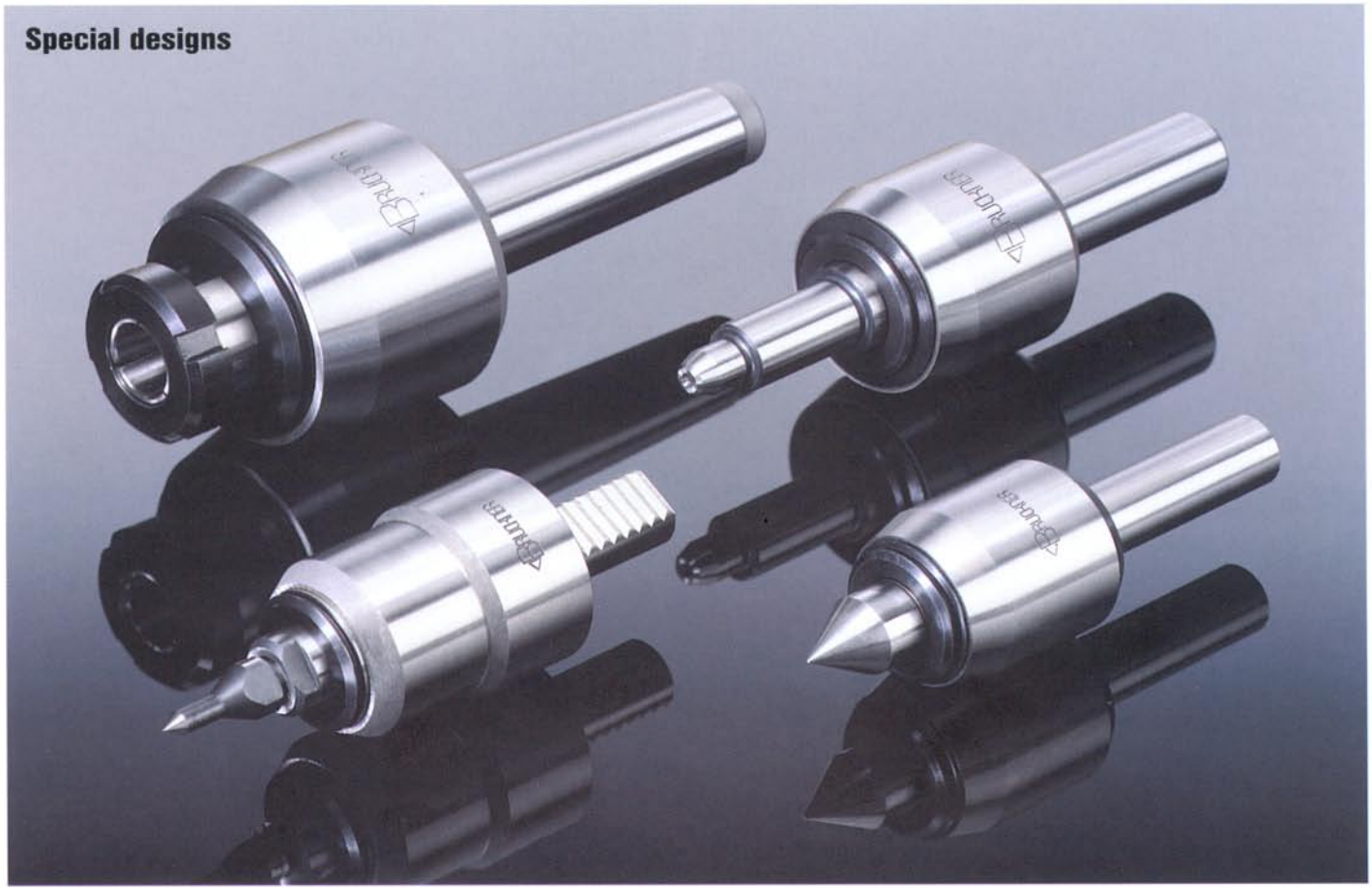
See page 39 for further products in our range

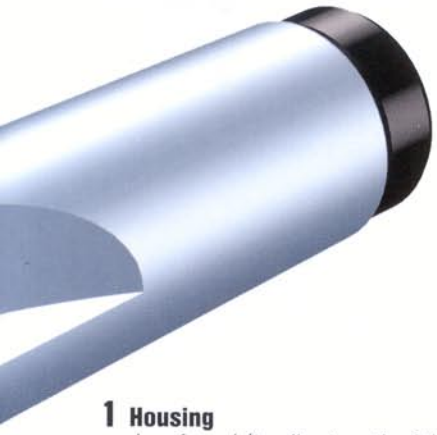
Head bearings: the design

When loaded, every centre's taper shank deflects at the point where the Morse taper emerges from the tailstock. BRUCKNER mounts all the bearings in the head. Thus the unit centrepoint/bearings is placed in front of the deflection diameter. Therefore the taper shank bending stress is not transmitted to the centrepoint.
Result: No premature wear of individual bearings due to running on their edges.



Special designs





1 Housing
drop-forged (tensile strength of the high-quality material used: approx. 1,000 N/mm²).

2 Taper shank without bore
and therefore not weakened. Thus high moments of deflection can be obtained without any permanent bend to the large taper diameter.

3 High concentricity accuracy
guaranteed by the test report.

4 Large-dimensioned precision roller bearings, free from clearance
for taking up the radial and axial forces. No bearings in the taper shank.

5 Seal ring
protects the bearings from dirt and coolant.

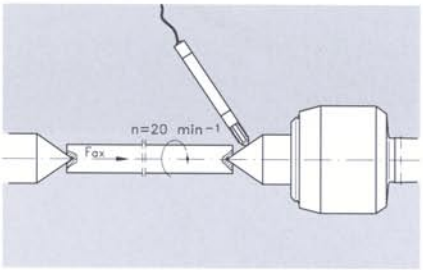
BRUCKNER WORKS STANDARD

Our high-performance live centres - standard as well as special designs - are produced and tested according to our works standard. Materials, production and testing are subject to strict quality guidelines guaranteeing function and performance of our tools.

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

Test report for accuracy of concentricity

Every single BRUCKNER high-performance live centre is tested for its concentricity run-out under axial load. The test result is then stamped into the tool and is guaranteed by the test report.



Example: table „maximum concentricity runout" for type S, SG

Type S	Type SG	Morse taper	Concentricity runout max. mm Type S	Concentricity runout max. mm Type SG	Fax daN
5001	5121	1	0,005	0,003	**80**
5001-2	5121-2	2	0,005	0,003	**80**
5001-3	5121-3	3	0,005	0,003	**80**
5002	5122	2	0,005	0,003	**160**
5003	5123	3	0,005	0,003	**160**
5006	5126	3	0,005	0,003	**210**
5004	5124	4	0,005	0,003	**210**
5007	5127	4	0,005	0,003	**450**
5005	5125	5	0,005	0,003	**600**
5008	5128	5	0,005	0,003	**600**
5009	5129	6	0,005	0,003	**600**

Tolerance of taper shank

The Morse taper is ground according to German Industrial Standard (DIN) 228 AT4 (gauge accuracy). This fine tolerance guarantees a close fit of the high-performance centre in the tailstock and therefore the full utilization of the concentricity accuracy (table for taper tolerance and dimensions: see page 29).

Bearings and seats

The bearing seats in the housing and on the centrepoint have a fine tolerance and are precision-ground. The bearings and their seats are selected to fit.
Result: High stability, concentricity and long life.

Centrepoint

The centrepoint is of through-hardened alloy tool steel resistant to wear and tear.

Housing

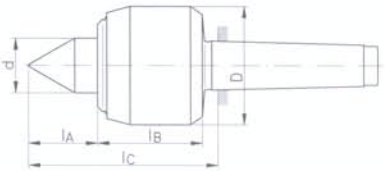
The housing is drop-forged and has, as a consequence, a uniform grain structure. The tensile strength of the high-quality material is approx. 1,000 N/mm². Housing head and shank are case-hardened for protection from damage.

Maintenance

The bearings are maintenance-free due to permanent lubrication.

Repair service

Our repair service is at your disposal for any repairs. We judge the tool's condition and inform you about the extent of necessary repairs.



Type S, SG
centrepoint 60°

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

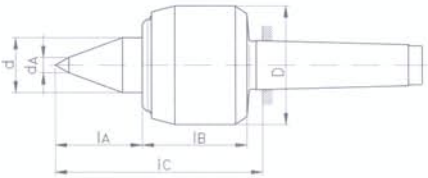
Concentricity runout
Type S max. .005 mm (.0002")
Type SG max. .003 mm (.0001")
with test report

Two series:
- slim design for light-duty work
- with stronger bearings for normal to high-duty service

Application
Type S - for copy-turning, NC-turning, roughing, finishing, fine-turning
Type SG - for turning and grinding operations demanding high accuracy

▶ with thread for draw-off nut: see pages 16/17

For circular grinding operations we recommend the use of our **supplementary seal** (page 7).



Type SKOP, SKOPG
centrepoint 60°/40° extended

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

Concentricity runout
Type SKOP max. 0.005 mm (.0002")
Type SKOPG max. 0.003 mm (.0001")
with test report

Two series:
- slim design for light-duty work
- with stronger bearings for normal to high-duty work

Application
Whenever the working distance between centre and workpiece is confined.
The extended, slim centrepoint can enlarge this space.

Type SKOP - for copy-turning, NC-turning, roughing, finishing, fine-turning
Type SKOPG - for turning operations demanding high accuracy

▶ with thread for draw-off nut: see pages 16/17

For operations involving heavy flows of coolant or large quantities of dust and dirt, we recommend the use of our **supplementary seal** (page 7).

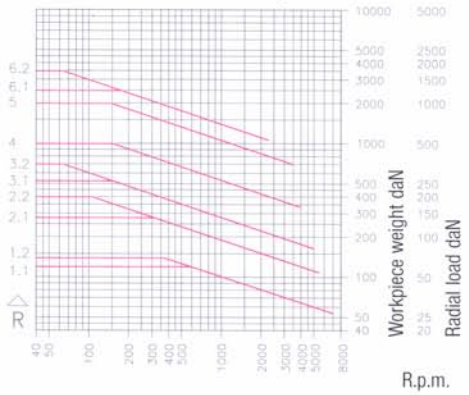
Type S	ID. No.	5001	5001-2	5001-3	5002	5003	5006	5004	5007	5005	5008	5009
Type SG	**ID. No.**	**5121**	**5121-2**	**5121-3**	**5122**	**5123**	**5126**	**5124**	**5127**	**5125**	**5128**	**5129**
Morse taper		**1**	**2**	**3**	**2**	**3**	**3**	**4**	**4**	**5**	**5**	**6**
d mm		13	13	13	20	20	25	25	35	45	58	58
D mm		32	32	32	45	45	58	58	76	95	120	120
l_A mm		20	20	20	25	25	35	35	43	60	64	64
l_B mm		40	40	40	51	51	59	59	68	89	102	102
l_C mm		65	65	65	82	84	102	102	121	160	179	179
Max. workpiece weight daN*		120	140	140	280	400	525	700	1000	2000	2500	3500
Max. r.p.m.*		7000	7000	7000	5500	5500	5000	5000	4000	3500	2300	2300
Radial/axial load graph		R1.1/A1	R1.2/A1	R1.2/A1	R2.1/A2	R2.2/A2	R3.1/A3	R3.2/A3	R4/A4	R5/A5	R6.1/A6	R6.2/A6
Supplementary seal	**ID. No.**	V13	V13	V13	V20	V20	V25	V25	V35	V45	V58	V58

▶ High-performance live centres for heavy-duty work with MT 6 (140006/141006), metric taper, taper 1 : 10 and with tailstock sleeve support: see pages 20 – 23

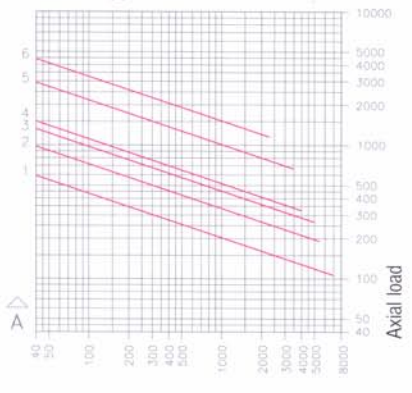
* observe the load graphs

Radial and axial loads for a bearing life of 2,000 operating hours (see example for determination below).

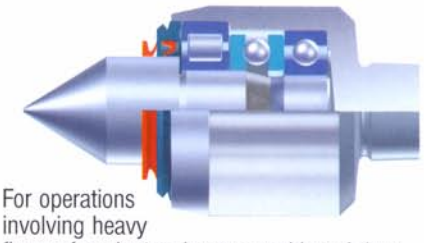
Radial – Type S, SG



Axial – Type S, SG



Supplementary seal



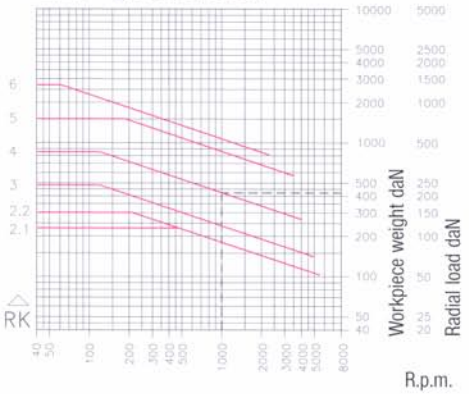
For operations involving heavy flows of coolant or large quantities of dust and dirt (e.g. circular grinding), a supplmentary seal can be fitted onto the centrepoint. The seal turns together with the centrepoint, seals the protection cap and additionally works as a splash ring.

Type SKOP	ID. No.	5362	5363	5366	5364	5367	5365	5369
Type SKOPG	**ID. No.**	**5362 G**	**5363 G**	**5366 G**	**5364 G**	**5367 G**	**5365 G**	**5369 G**
Morse taper		**2**	**3**	**3**	**4**	**4**	**5**	**6**
d mm		20	20	25	25	35	45	58
d_A mm		6	6	8	8	10	12	20
D mm		45	45	58	58	76	95	120
l_A mm		30	30	42	42	54	70	84
l_B mm		51	51	59	59	68	89	102
l_C mm		87	89	109	109	132	170	200
Max. workpiece weight daN*		230	300	480	480	850	1500	2700
Max. r. p. m.*		5500	5500	5000	5000	4000	3500	2300
Radial/axial load graph		RK2.1/AK2	RK2.2/AK2	RK3/AK3	RK3/AK3	RK4/AK4	RK5/AK5	RK6/AK6
Supplementary seal	**ID. No.**	V20	V20	V25	V25	V35	V45	V58

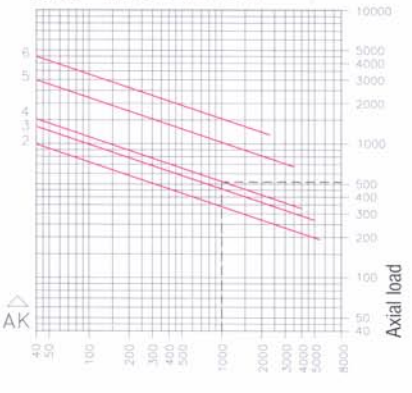
* observe the load graphs

Radial and axial loads for a bearing life of 2,000 operating hours.

Radial – Type SKOP, SKOPG



Axial – Type SKOP, SKOPG



Determination of admissible load

(also see heavy-duty work on page 20)

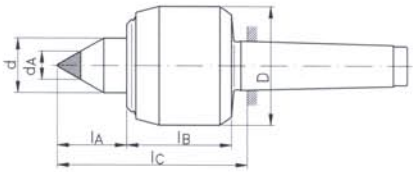
Example: Type SKOP 5367, Type SKOPG 5367G, MT 4

Load graph: radial RK4/axial AK4
Permissible load at 1000 r.p.m.
Radial load F_R = 215 daN
Workpiece weight F_W = 430 daN
Axial load F_A = 510 daN
The radial load F_R determines the radial load capacity of a centre.

$$F_R = \frac{F_W}{2} \pm \text{radial cutting forces} + \text{centrifugal force}^{**}$$

** for unbalanced workpieces

(1 daN = 1,02 kp)



Type SH, SHG

centrepoint 60°
carbide-tipped
regrindable to the indicator line

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

Concentricity runout

Type SH max. 0.005 mm (.0002")
Type SHG max. 0.003 mm (.0001")
with test report

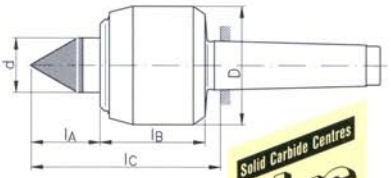
Two series:
- with slim housing
- with stronger bearings

Application

For grinding, fine-turning and turning operations during which additional stress is put on the centrepoint (e.g. large series, change of workpiece when spindle is turning, hard workpieces, extremely small workpiece centres).

▶ with thread for draw-off nut: see pages 16/17

For circular grinding operations we recommend the use of our **supplementary seal** (page 7).



Type SV, SVG

centrepoint 60°
full carbide with safety core
regrindable to the braze line

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

Concentricity runout

Type SV max. 0.005 mm (.0002")
Type SVG max. 0.003 mm (.0001")
with test report

Two series:
- with slim housing
- with stronger bearings

Application

Same as Type SH, SHG.
The point angle of 60° up to the large diameter can be utilized for loading workpieces.

For circular grinding operations we recommend the use of our **supplementary seal** (page 7).

Solid Carbide Centres with the plus on safety

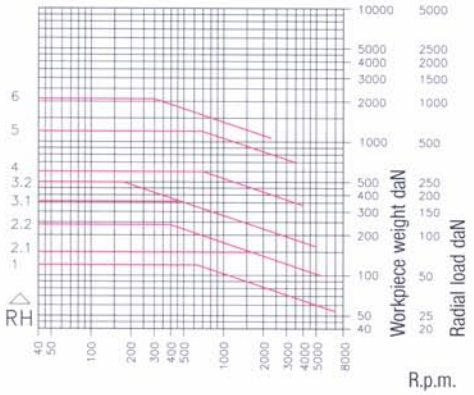
Type SH	ID. No.	5241-2	5241-3	5242	5243	5246	5244	5247	5245	5249
Type SHG	**ID. No.**	**5251-2**	**5251-3**	**5252**	**5253**	**5256**	**5254**	**5257**	**5255**	**5259**
Morse taper		**2**	**3**	**2**	**3**	**3**	**4**	**4**	**5**	**6**
d mm		13	13	20	20	25	25	35	45	58
d_A mm		7	7	11	11	18	18	18	18	30
D mm		32	32	45	45	58	58	76	95	120
l_A mm		20	20	29	29	35	35	43	60	64
l_B mm		40	40	51	51	59	59	68	89	102
l_C mm		65	65	86	88	102	102	121	160	179
Max. workpiece weight daN*		120	120	150	240	360	500	600	1200	2100
Max. r. p. m.*		7000	7000	5500	5500	5000	5000	4000	3500	2300
Radial/axial load graph		RH1/AH1	RH1/AH1	RH2.1/AH2	RH2.2/AH2	RH3.1/AH3	RH3.2/AH3	RH4/AH4	RH5/AH5	RH6/AH6
Supplementary seal	**ID. No.**	V13	V13	V20	V20	V25	V25	V35	V45	V58

MT 1 with technical data corresponding to ID. No. 5241-2 on request

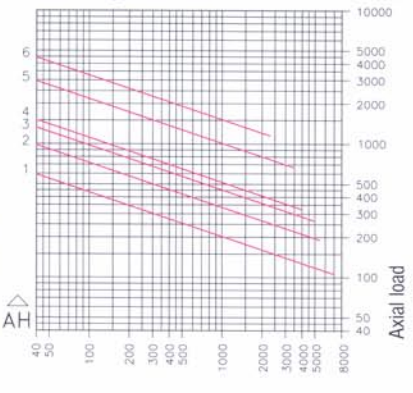
* observe the load graphs

Radial and axial load for a bearing life of 2,000 operating hours (example for determination: see page 7)

Radial – Type SH, SHG



Axial – Type SH, SHG

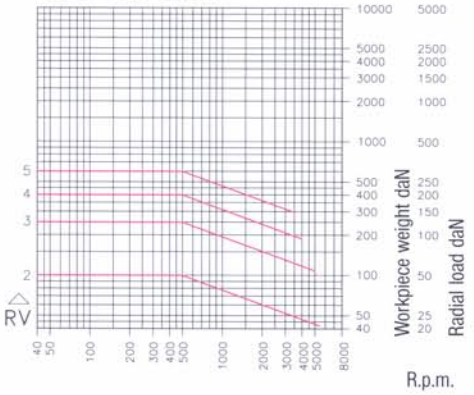


Type SV	ID. No.	5242ZV20	5243ZV20	5246ZV25	5244ZV25	5247ZV35	5245ZV45
Type SVG	**ID. No.**	**5252ZV20**	**5253ZV20**	**5256ZV25**	**5254ZV25**	**5257ZV35**	**5255ZV45**
Morse taper		**2**	**3**	**3**	**4**	**4**	**5**
d mm		20	20	25	25	35	45
D mm		45	45	58	58	76	95
l_A mm		25	25	35	35	43	60
l_B mm		51	51	59	59	68	89
l_C mm		82	84	102	102	121	160
Max. workpiece weight daN*		100	100	250	250	400	600
Max. r. p. m.*		5500	5500	5000	5000	4000	3500
Radial/axial load graph		RV2/AV2	RV2/AV2	RV3/AV3	RV3/AV3	RV4/AV4	RV5/AV5
Supplementary seal	**ID. No.**	V20	V20	V25	V25	V35	V45

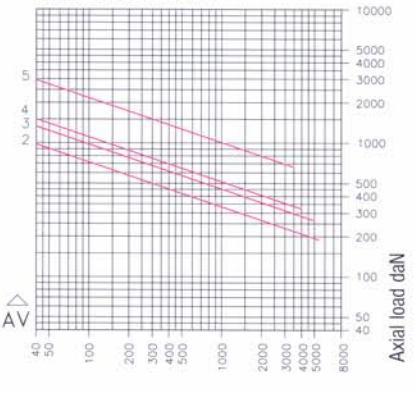
* observe the load graphs

Radial and axial load for a bearing life of 2,000 operating hours (example for determination: see page 7)

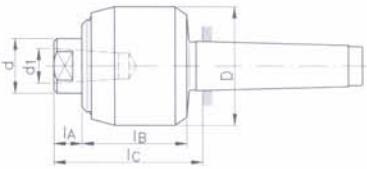
Radial – Type SV, SVG



Axial – Type SV, SVG



A safety core (German Federal Patent) is integrated in the carbide point of type SV, SVG.
If the interface of carbide and base material becomes overstressed, e.g. through operating error or mishandling, the safety core prevents the carbide with the loaded component from slipping. Thus high consequential damage is avoided.



Type SE, SEG

Rotation body with 1:7.5 internal taper for interchangeable inserts

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

Concentricity runout

Type SE max. 0.008 mm (.0003")
Type SEG max. 0.003 mm (.0001")
with test report

Application

For individual, small and serial production.
Advantages:

- If the centrepoint shows signs of wear, only the insert has to be changed. Thus no repair costs or standstill time will accrue. The insert is removed with two spanners applied to the spanner flats.
- Multiple use is made possible by eight different insert styles.

▶ with thread for draw-off nut: see pages 16/17

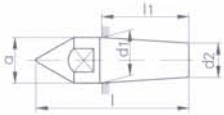
For operations with heavy flows of coolant we recommend the use of our **supplementary seal** (page 7).

Regrinding sleeve type KE

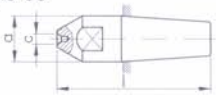
(illustration and table: see page 38) for regrinding interchangeable inserts. Combined with the interchangeable inserts, it can be used as a dead centre in head- and tailstocks for special operations.

Interchangeable inserts

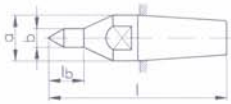
Style AO, 60°



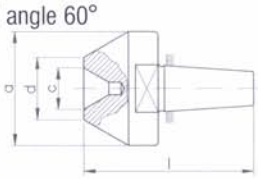
Style B, exterior angle 60°
for hollow parts,
centre 60°
for centreless
workpieces



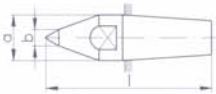
Style ASL, 60°
slim, extended



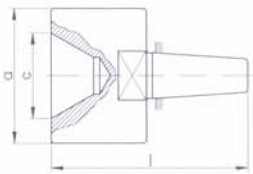
Style C, external angle 60°
for hollow parts,
centre 60°
for centreless
workpieces



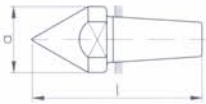
Style AKOP, 60°/40°
extended



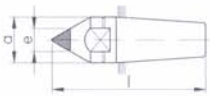
Style D
centre 60°
for centreless
workpieces



Style A, 60°
for hollow parts



Style AOHM, 60°
carbide-tipped



Type SE	ID. No.	5482	5483	5486	5484	5487	5485
Type SEG	**ID. No.**	**5482 G**	**5483 G**	**5486 G**	**5484 G**	**5487 G**	**5485 G**
Morse taper		**2**	**3**	**3**	**4**	**4**	**5**
d mm		20	20	25	25	35	45
D mm		45	45	58	58	76	95
d_1 mm		11,20	11,20	15,14	15,14	22,14	28,33
l_A mm		14	14	17	17	18	20
l_B mm		51	51	59	59	68	89
l_C mm		69	71	82	82	94	116
SW mm		16	16	22	22	30	41
Max. r. p. m.		5500	5500	5000	5000	4000	3500
Corresponding inserts		**482..**	**482..**	**484..**	**484..**	**487..**	**485..**
Supplementary seal	**ID. No.**	V20	V20	V25	V25	V35	V45
Load		The radial load for type SE, SEG is limited by the interchangeable inserts.					

Interchangeable inserts

Basic centre Type: SE, SEG, NCE, KE, FE ID. No.	Inter-changeable inserts ID. No.	Max. load daN	Insert dimensions mm a	b	c	d	e	l	l_b	Taper dimensions mm taper 1:7.5 d_1	d_2	l_1
5482 5482 G 5483 5483 G 34.045-2 34.045-3 5682 5683 2952 A	482 AO	90	14					45		11,2	8	24
	482 ASL	30	14	6				55	15			
	482 AKOP	90	14	5				50				
	482 A	90	17					45				
	482 B	90	14		4x 2			45				
	482 C	90	28		8x 3	12		45				
	482 D	90	28		20x 6			45				
	482 AOHM	60	14				7	45				
5484 5484 G 5486 5486 G 5484 A 5486 A 44.058-3 34.058-4 2953 A	484 AO	220	16					53		15,14	11	31
	484 ASL	100	16	9				65	17			
	484 AKOP	220	16	6				58				
	484 A	220	25					60				
	484 B	110	16		4x 2			53				
	484 C	190	44		15x 5	24		60				
	484 D	190	44		35x12			60				
	484 AOHM	60	16				7	53				
5487 5487 G 5487 A 44.076-4 34.076-5 2954 A	487 AO	325	22,14					74		22,14	16,44	43
	487 ASL	100	22,14	9				86	17			
	487 AKOP	325	22,14	8				80				
	487 A	325	32					82				
	487 B	240	22,14		5x 2,5			74				
	487 C	325	55		20x 6	30		82				
	487 D	325	55		45x15			82				
	487 AOHM	240	22,14				11	74				
5485 5485 G 5485 A 44.095-5 34.095-6 2955 A	485 AO	500	28,33					93		28,33	21	55
	485 ASL	180	28,33	13				110	27			
	485 AKOP	500	28,33	8				105				
	485 A	500	45					105				
	485 B	500	28,33		7x 3			93				
	485 C	500	65		25x 6	35		105				
	485 D	500	65		55x20			105				
	485 AOHM	500	28,33				18	93				

Installation paste

ID. No.	Contents
P 10	100 g
P 25	250 g

Makes insert change easier. Apply thinly and evenly to the insert taper.

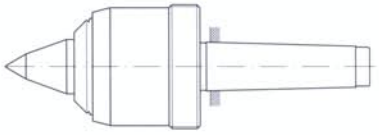
Types NC 33, NC 43

for high r.p.m.
with thread for
draw-off nut
centrepoint 60°/40°
centrepoint 60° on request

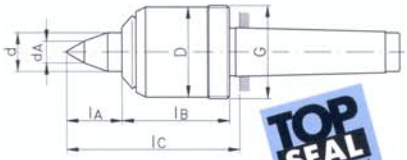
Concentricity runout
max. 0.005 mm (.0002"), with test report

Two series:
- Type NC 33 with slim housing for unhindered operation. Minimum rolling resistance through low-friction bearings. For small and medium workpieces.
- Type NC 43 with extra high-duty bearings for greater loads.

Application
For turning operations requiring high r.p.m. Triple-layer protection of bearings from penetration of coolant by the **TOP-SEAL-SYSTEM.**



Type NC 43



Type NC 33

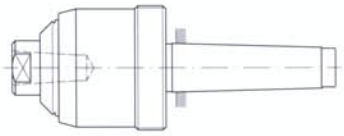
Types NCE 34, NCE 44

for high r.p.m.
with thread for
draw-off nut,
rotating body with
internal taper 1:7.5
for interchangeable inserts (pages 10/11)

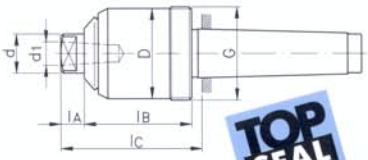
Concentricity runout
max. 0,005 mm (.0002")
with test report

Two series:
- Type NCE 34 with slim housing for unhindered operation. Minimum rolling resistance through low-friction bearings. For small and medium workpieces.
- Type NCE 44 with extra high duty bearings for greater loads.

Application
Variable clamping possibilities for NC-turning through interchangeable inserts.
In the case of a collision or insert wear, type NCE offers the advantage that, simply by changing the insert, the high-performance centre is immediately ready for use again.



Type NCE 44



Type NCE 34

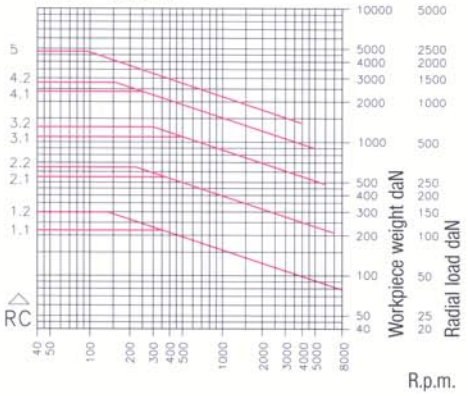
Type NC	ID. No.	33.045-2	33.045-3	43.058-3	33.058-4	43.076-4	33.076-5	43.095-5	33.095-6	43.120-6
Draw-off nut	ID. No.	M 45 A	M 45 A	M 60	M 60	M 80	M 80	M 100	M 100	M 125
Morse taper		2	3	3	4	4	5	5	6	6
d	mm	20	20	25	25	35	35	45	45	58
d_A	mm	6	6	14	14	16	16	20	20	26
D	mm	45	45	58	58	76	76	95	95	120
l_A	mm	24	24	35	35	44	44	54	54	66
l_B	mm	57	57	70	70	81	81	103	103	123
l_C	mm	87	89	110	111	131	131	164	164	196
G	mm	M 45x2	M 45x2	M 60x1,5	M 60x1,5	M 80x2	M 80x2	M 100x2	M 100x2	M 125x2
Max. workpiece weight daN*		230	300	550	650	1100	1300	2400	2800	4800
Max. r. p. m.*		8000	8000	7000	7000	6000	6000	5000	5000	4000
Radial/axial load graph		RC1.1/AC1	RC1.2/AC1	RC2.1/AC2	RC2.2/AC2	RC3.1/AC3	RC3.2/AC3	RC4.1/AC4	RC4.2/AC4	RC5/AC5

The thread structure of ID. Nos. 33.045-2 and 33.045-3
is similar to that of type A, fitting the special nut for type A (page 16)

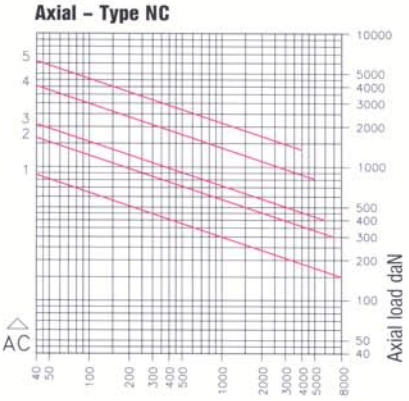
* observe the load graphs

Radial and axial load for a bearing life of 2,000 operating hours (example for determination: see page 7)

Radial – Type NC



Axial – Type NC



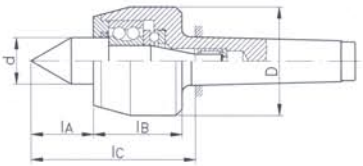
Type NCE	ID. No.	34.045-2	34.045-3	44.058-3	34.058-4	44.076-4	34.076-5	44.095-5	34.095-6
Draw-off nut	ID. No.	M 45 A	M 45 A	M 60	M 60	M 80	M 80	M 100	M 100
Morse taper		2	3	3	4	4	5	5	6
d	mm	20	20	25	25	35	35	45	45
D	mm	45	45	58	58	76	76	95	95
d_1	mm	11,2	11,2	15,14	15,14	22,14	22,14	28,33	28,33
l_A	mm	9	9	11	11	13	13	15	15
l_B	mm	57	57	70	70	81	81	103	103
l_C	mm	72	74	87	87	101	101	124	124
G	mm	M 45x2	M 45x2	M 60x1,5	M 60x1,5	M 80x2	M 80x2	M 100x2	M 100x2
SW	mm	16	16	22	22	30	30	41	41
Max. r. p. m.		8000	8000	7000	7000	6000	6000	5000	5000
Corresponding inserts (page 11)		482..	482..	484..	484..	487..	487..	485..	485..
Load		The radial load of type NCE is limited by the interchangeable inserts (page 11)							

The thread structure of ID. Nos. 34.045-2 and 34.045-3
is similar to that of type A, fitting the special nut for type A (page 16)

Our TOP-SEAL-SYSTEM provides for triple-layer bearing protection from coolant.

High r.p.m. and contaminated coolant impair the function and life of conventional seals. Thus coolant, dust and dirt can penetrate into a live centre and destroy the bearings.

- The coolant does not hit the seal right away, but flows with reduced energy into the first labyrinth channel.
- There the largest part of the coolant is drained through the first drain aperture.
- The small residue is wiped off the seal into the second labyrinth channel and flows through the second drain aperture.



Boks System

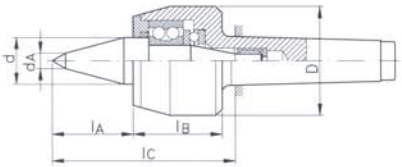
Type 1000
centrepoint 60°
slim housing

Type 2000
centrepoint 60°
with extra high-duty bearings

Concentricity runout
see table

Design: Bearing in the shank
Radial and axial bearing in the housing head and precision needle bearing in the shank. The short protruding length resulting from this design allows a wider working space. Housing hardened, centrepoint of wear-resistant alloy tool steel, through-hardened. Sealed by sealing ring. Maintenance-free due to permanent lubrication.

Application
For all turning operations, for roughing, finishing, copy-turning, NC-turning and fine-turning.
Type 1000
For light-duty turning operations where a small housing dia is needed.
Type 2000
For normal to high-duty work. .



Boks System

Type 2030
centrepoint 60°/30°
extended
Design similar to type 2000

Concentricity runout
see table

Application
Whenever the working space between live centre and workpiece is confined. The extended slim centrepoint allows the tools to work unhindered.

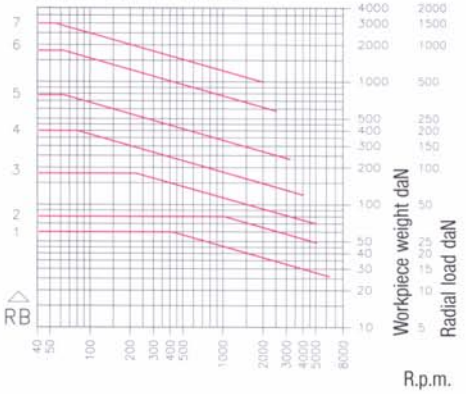
Type	1000				2000					
ID. No.	1.002	1.003	1.004	1.005	2.001**	2.002	2.003	2.004	2.005	2.006
Morse taper	2	3	4	5	1	2	3	4	5	6
d mm	16	18	24	30	12	18	24	30	35	45
D mm	38	40	55	70	30	40	55	70	85	105
l_A mm	22	23	31	40	18	23	31	40	47	60
l_B mm	35	41	45	57	33	41	45	57	67	87
l_C mm	63	71	85	108	56	70	83	106	125	158
Concentricity runout max. mm	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,005	0,01
Max. workpiece weight daN*	80	180	400	780	60	180	400	780	1800	3000
Max. r. p. m.*	5000	5000	4000	3200	6300	5000	4000	3200	2500	2000
Radial/axial load graph	RB2/AB2	RB3/AB3	RB4/AB4	RB5/AB5	RB1/AB1	RB3/AB3	RB4/AB4	RB5/AB5	RB6/AB6	RB7/AB7

** Model 2.001 has all the bearings in the head due to the small taper diameter.

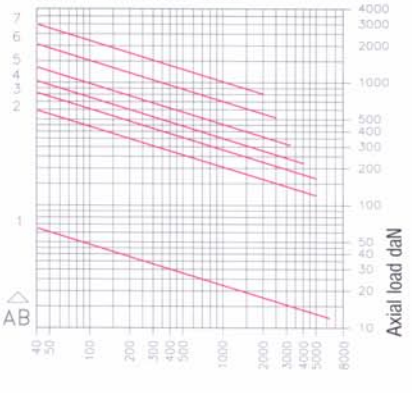
* observe the load graphs

Radial and axial load for a bearing life of 2,000 operating hours (example for determination: see page 7)

Radial – Type 1000, 2000



Axial – Type 1000, 2000

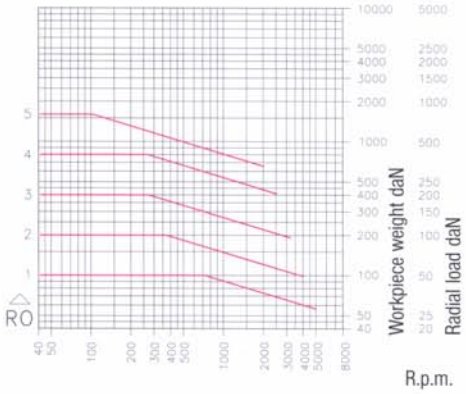


Type	2030				
ID. No.	2.032	2.033	2.034	2.035	2.036
Morse taper	2	3	4	5	6
d mm	18	24	30	35	45
d_A mm	6	8	10	12	14
D mm	40	55	70	85	105
l_A mm	32	42	52	58	75
l_B mm	41	45	57	67	87
l_C mm	79	94	118	136	173
Concentricity runout max. mm	0,005	0,005	0,005	0,005	0,01
Max. workpiece weight daN*	100	200	400	800	1600
Max. r. p. m.*	5000	4000	3200	2500	2000
Radial/axial load graph	RO1/AO1	RO2/AO2	RO3/AO3	RO4/AO4	RO5/AO5

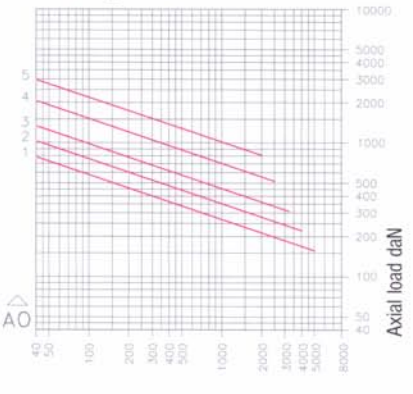
* observe the load graphs

Radial and axial load for a bearing life of 2,000 operating hours (example for determination: see page 7)

Radial – Type 2030



Axial – Type 2030

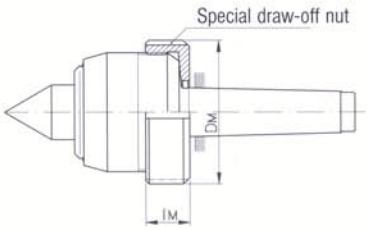


Version A
with thread for draw-off nut

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

Application
For machine tools with tailstock sleeve without bore (without possibility to eject the centre) or for high-precision machine tools, for protection of the spindle bearing or the tailstock sleeve.

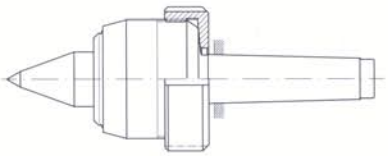
Special draw-off nut
The special draw-off nut guarantees the ejection from the tailstock even if the sleeve diameter is smaller than the centre's housing diameter.



Type AS, ASG
centrepoint 60°

Concentricity runout
Type AS max. 0.005 mm (.0002")
Type ASG max. 0.003 mm (.0001")
with test report

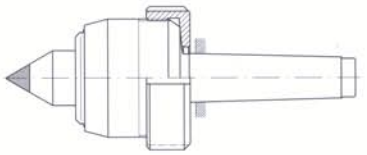
Technical data: see type S, SG (page 7)



Type ASKOP
centrepoint 60°/40°

Concentricity runout
max. 0.005 mm (.0002"), with test report

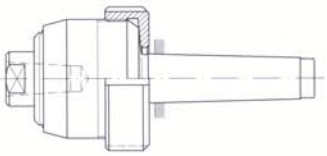
Technical data: see type SKOP (page 7)



Type ASHG
centrepoint 60°
carbide-tipped

Concentricity runout
max. 0.003 mm (.0001"), with test report

Technical data: see type SHG (page 9)
Type ASVG on request



Type ASE
centrepoint with 1:7.5 internal taper for interchangeable inserts
(pages 10/11)

Concentricity runout
max. 0.008 mm (.0003"), with test report

Technical data: see type SE (page 11)

For operations with high coolant flows we recommend the use of our **supplementary seal** (page 7).

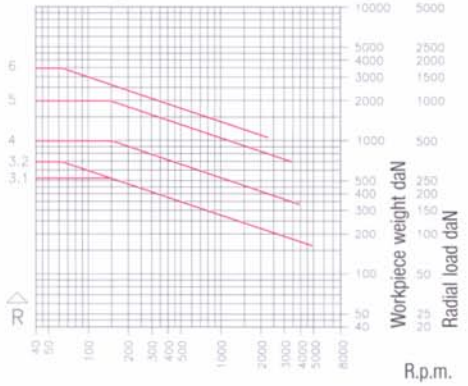
Morse taper		3	4	4	5	6
Type AS	ID. No.	**5006 A**	**5004 A**	**5007 A**	**5005 A**	**5009 A**
	Radial/axial load graph	R3.1/A3	R3.2/A3	R4/A4	R5/A5	R6/A6
Type ASG	ID. No.	**5126 A**	**5124 A**	**5127 A**	**5125 A**	**5129 A**
	Radial/axial load graph	R3.1/A3	R3.2/A3	R4/A4	R5/A5	R6/A6
Type ASKOP	ID. No.	**5366 A**	**5364 A**	**5367 A**	**5365 A**	
	Radial/axial load graph	RK3/A3	RK3/A3	RK4/A4	RK5/A5	
Type ASHG	ID. No.	**5256 A**	**5254 A**	**5257 A**	**5255 A**	**5259 A**
	Radial/axial load graph	RH3.1/A3	RH3.2/A3	RH4/A4	RH5/A5	RH6/A6
Type ASE	ID. No.	**5486 A**	**5484 A**	**5487 A**	**5485 A**	
	load	The load of type ASE is limited by the interchangeable inserts (page 11)				
Supplementary seal	ID. No.	**V 25**	**V 25**	**V 35**	**V 45**	**V 58**

Special draw-off nut for Type A	ID. No.	M 58 A	M 58 A	M 76 A	M 95 A	M 120 A
D_M	mm	70	70	92	115	138
l_M	mm	27	27	28	39	45

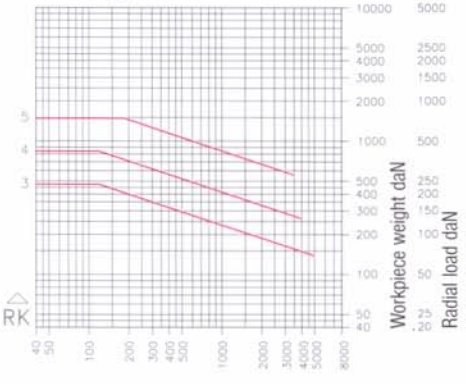
▶ High-performance live centres for heavy-duty work with MT 6, metr. taper, taper 1 : 10 and with tailstock sleeve support: see pages 20 – 23

Radial and axial load for a bearing life of 2,000 operating hours (example for determination: see page 7)

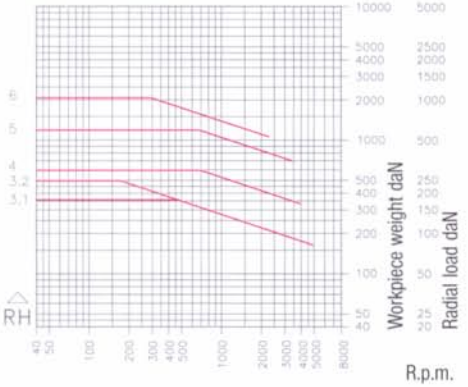
Radial – Type AS, ASG



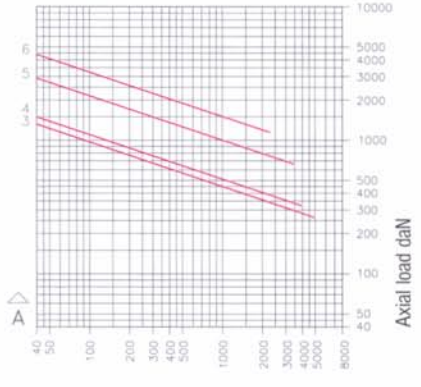
Radial – Type ASKOP



Radial – Type ASHG



Axial – all A types



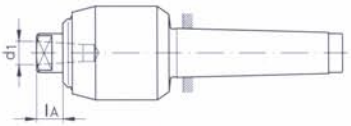
Type F
with compensation for expansion centrepoint 60°

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

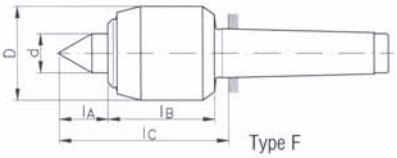
Type FE
with compensation for expansion rotating body with 1:7.5 internal taper for interchangeable inserts
(pages 10/11)

Concentricity runout
max. 0.007 mm (.0003"), with test report

Application
Whenever expansion caused by cutting-generated heat occurs when machining long or slim shafts, the expansion is compensated for by the spring system travel. Thus an overload on machine and/or workpiece and a deflection of the workpiece is avoided.



Type FE



Type F

Boks System
with expansion compensation and pressure indicator

Type MAXIMA 4000
centrepoint 60°

Type MAXIMA 4030
centrepoint 60°/30°

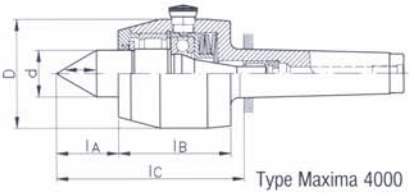
Concentricity runout
max. 0.007 mm (.0003")

Reliable, time-tested design with spring-loaded bearings. Hardened housing, centrepoint of wear-resistant alloy tool steel. The pressure indicator is insensitive to dirt, coolant and shock. Sealed by sealing ring. Maintenance-free due to permanent lubrication.

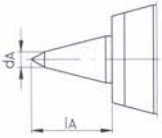
Application
When the axial pressure must not exceed or fall below a defined value in order to clamp the component safely or to avoid workpiece deformation.
Examples:
- For machining workpieces expanding due to cutting-generated heat or for long, slim components which deflect with excessive axial pressure.
- As a counter centre for face drivers, so the machine operator can adjust and control the pressure necessary to assure penetration of the driving teeth into the component.


Pressure too low — Correct pressure — Pressure too high

Adjusting the clamping pressure
The tailstock pressure required is adjusted on the scale ring. When clamping the component, the measuring pin is lifted in proportion to the travel of the centrepoint. The required clamping pressure is reached when measuring pin and scaling ring surface are level.



Type Maxima 4000



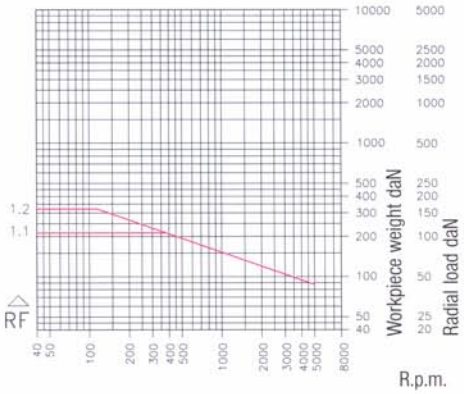
Type Maxima 4030

Type	F		FE	
ID. No.	5602	5603	5682	5683
Morse taper	2	3	2	3
d mm	20	20	20	20
D mm	45	45	45	45
d_1 mm			11,20	11,20
l_A mm	25	25	14	14
l_B mm	57	57	57	57
l_C mm	88	89	77	78
SW mm			16	16
Max. workpiece weight daN*	210	320	See: interchangeable inserts (page 11)	
Max. r. p. m.*	5000	5000	5000	5000
Initial pressure daN	0	0	0	0
Final pressure daN	240	240	240	240
Max. travel of spring system mm	2,3	2,3	2,3	2,3
Axial/radial load graph	RF1.1/AF1	RF1.2/AF1		

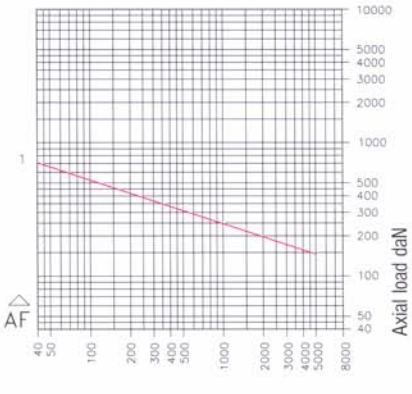
* observe the load graphs

Radial and axial load for a bearing life of 2,000 service hours (example for determination: see page 7)

Radial – Type F



Axial – Type F

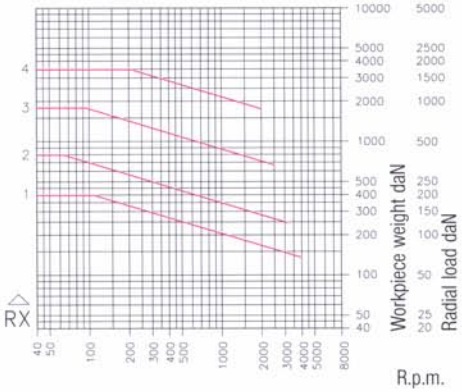


Type	Maxima 4000				Maxima 4030			
ID. No.	4.003	4.004	4.005	4.006	4.033	4.034	4.035	4.036
Morse taper	3	4	5	6	3	4	5	6
d mm	24	30	35	45	24	30	35	45
d_A mm					8	10	12	18
D mm	60	70	85	118	60	70	85	118
l_A mm	31	40	47	60	42	52	61	76
l_B mm	63	72	83	126	63	72	83	126
l_C mm	101	121	141	197	112	133	155	213
Max. workpiece weight daN*	400	800	1800	3500	200	400	800	1600
Max. r. p. m.*	4000	3200	2500	2000	4000	3200	2500	2000
Initial pressure daN	130	300	350	500	130	300	350	500
Final pressure daN	850	1100	1750	4200	850	1100	1750	4200
Max. travel of spring system mm	2	3	3,7	4	2	3	3,7	4
Axial/radial load graph	RX1/AX1	RX2/AX2	RX3/AX3	RX4/AX4	RP1/AX1	RP2/AX2	RP3/AX3	RP4/AX4

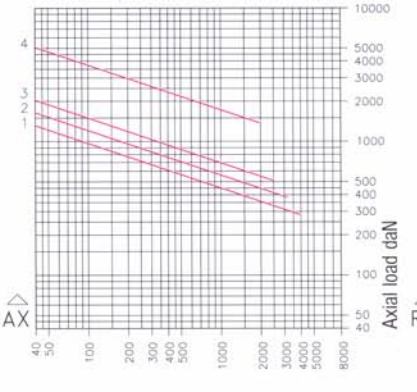
* observe the load graphs

Radial and axial load for a bearing life of 2,000 service hours (example for determination: see page 7)

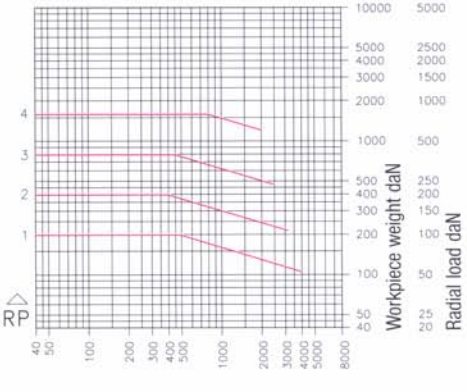
Radial – Type Maxima 4000



Axial – Type Maxima 4000, 4030



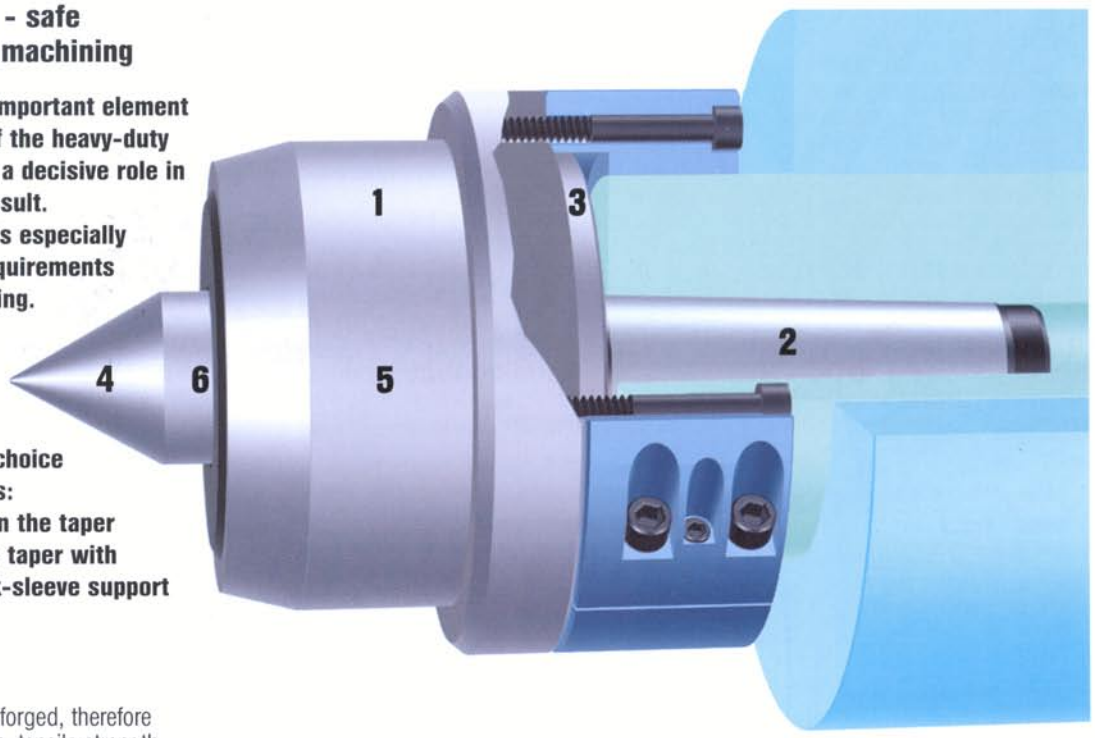
Radial – Type Maxima 4030



Heavy workpieces - safe clamping, precise machining

The live centre is an important element in the force system of the heavy-duty machine tool. It plays a decisive role in the final machining result.
The Bruckner design is especially suited for the high requirements of heavy-duty machining.
The maximum admissible load depends on the taper diameter.
Therefore we offer a choice of two different series:

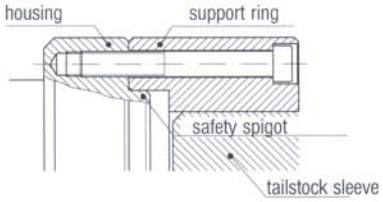
- **load carried only on the taper**
- **load carried on the taper with additional tailstock-sleeve support**



1 Housing
High-quality material, forged, therefore uniform grain structure, tensile strength approx. 1,000 N/mm². Head and shank hardened.

2 Taper shank
without bore and therefore not weakened.

3 Safety spigot (German Federal Patent)
acts as an additional safeguard when connecting the centre housing to the support ring.



4 High concentricity

5 Large precision roller bearings, free from clearance
to absorb the radial and axial forces. No bearings in the taper shank. The bearing seats in the housing and on the rotating body have a fine tolerance and are precision ground. The bearings and their seats are selected to fit.

6 Shaft seal ring
protects the bearings from dirt, dust and coolant.

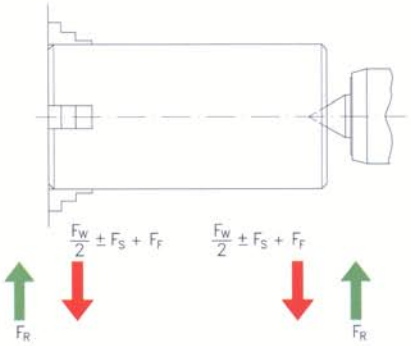
Load capacity of live centres for heavy-duty machining

The data for workpiece weight and load given in our tables and diagrams are based on the dynamic state of the live centre. Taper and centrepoint cross sections are designed for rotary beam endurance limits and not for static tensile strength. The load figures are calculated for the average diameter of the 60 degree angle.

The radial load measured on the clamping diameter of workpiece and centrepoint is relevant. The load can be determined by the following approximation formula:

$$F_R = \frac{F_W}{2} \pm F_S + F_F$$

F_R – Radial load
F_W – Workpiece weight
F_S – Radial cutting forces
F_F – Centrifugal force



The formula is applicable when the workpiece weight FW is equally divided between headstock and tailstock. If the component has an irregular shape, the weight has to be split up correspondingly. The radial cutting force FS has to be either a positive or negative figure, depending on the direction of rotation. Any unbalance of the workpiece has to be allowed for with the centrifugal force FF.

BRUCKNER®

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

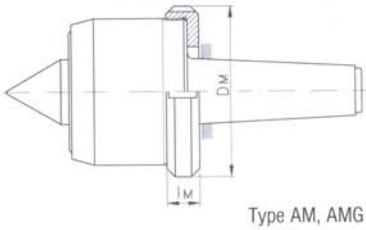
Type M, MG
without thread for draw-off nut centrepoint 60°, 75°, 90°

Type AM, AMG
with thread for draw-off nut centrepoint 60°, 75°, 90°
for machines with tailstock sleeve without bore

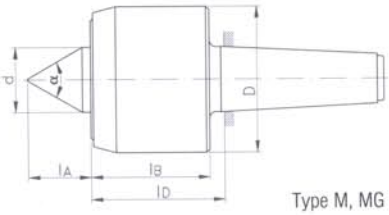
Concentricity runout
Type M, AM max. 0.008 mm (.0003")
Type MG, AMG max. 0.004 mm (.0002")

Application
For turning and grinding of heavy components, e.g. turbines, rolls, crankshafts for large engines, gear trains.

For operations with heavy coolant flows we recommend the use of our **supplementary seal** (page 7).



Type AM, AMG



Type M, MG

Type M	**ID. No.**	**140 006**	**140 080**	**140 081**	**180 080**	**180 081**	**180 100**	**180 101**	**230 120**	**230 121**
Type MG	**ID. No.**	**141 006**	**141 080**	**141 081**	**181 080**	**181 081**	**181 100**	**181 101**	**231 120**	**231 121**
Type AM	**ID. No.**	**140 006 A**	**140 080 A**	**140 081 A**	**180 080 A**	**180 081 A**	**180 100 A**	**180 101 A**		
Type AMG	**ID. No.**	**141 006 A**	**141 080 A**	**141 081 A**	**181 080 A**	**181 081 A**	**181 100 A**	**181 101 A**		
Taper size		**MT 6**	**metr. taper 80 1 : 20**	**taper 80 1 : 10**	**metr. taper 80 1 : 20**	**taper 80 1 : 10**	**metr. taper 100 1 : 20**	**taper 100 1 : 10**	**metr. taper 120 1 : 20**	**taper 120 1 : 10**
d mm		62	62	62	80	80	80	80	100	100
D mm		140	140	140	180	180	180	180	230	230
l_A mm for angle ∢α	**60°**	60	60	60	77	77	77	77	88	88
	75°		46	46	60	60	60	60	68	68
	90°		37	37	49	49	49	49	53	53
l_B mm		121	121	121	146	146	146	146	183	183
l_C mm		135	139	139	164	164	164	164	201	201
Max. workpiece weight daN*		6 000	6 000	6 000	10 000	10 000	15 000	15 000	25 000	25 000
Max. r. p. m.*		1 600	1 600	1 600	1 200	1 200	1 200	1 200	1 100	1 100
Radial/axial load graph		RM1/AM1	RM1/AM1	RM1/AM1	RM2.1/AM2	RM2.1/AM2	RM2.2/AM2	RM2.2/AM2	RM3/AM3	RM3/AM3
Supplementary seal	**ID. No.**	V 60	V 60	V 60	V 80	V 80	V 80	V 80	V 100	V 100
Special draw-off nut for type AM, AMG	**ID. No.**	**M 140 A**	**M 140 A**	**M 140 A**	**M 180 A**	**M 180 A**	**M 180 A**	**M 180 A**		
D_M mm		175	175	175	210	210	210	210		
l_M mm		50	50	50	40	40	40	40		

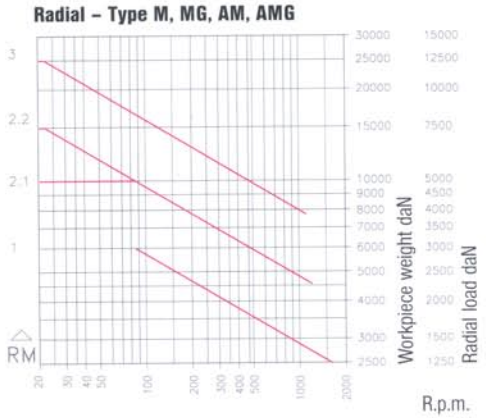
With Morse taper 7 on request

When ordering, please indicate the point angle.

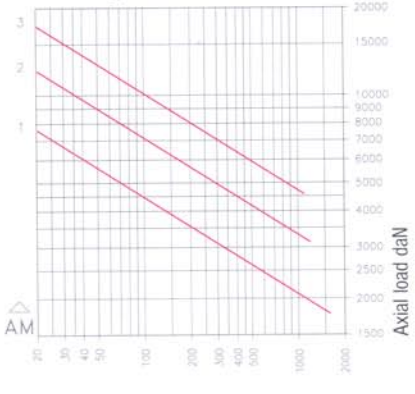
* observe the load graphs

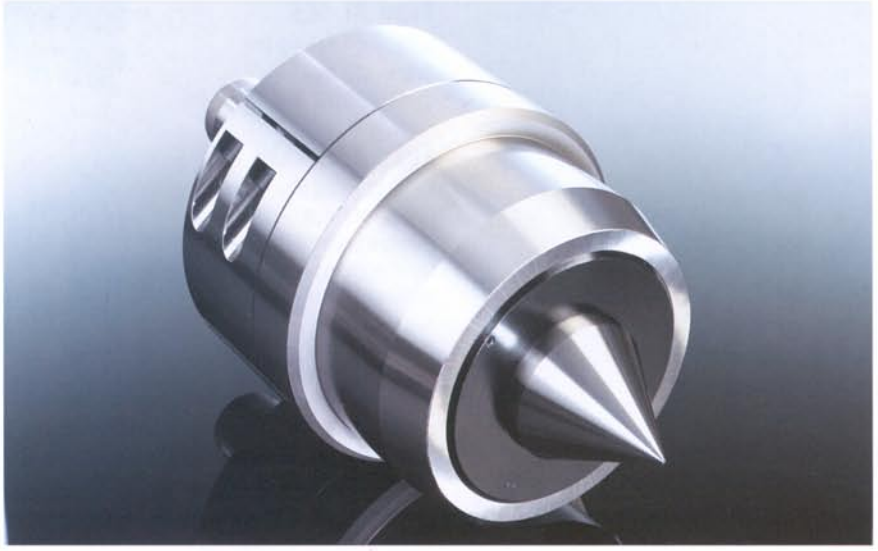
Radial and axial load for a bearing life of 2,000 operating hours (example for determination: see page 7)

Radial – Type M, MG, AM, AMG



Axial – Type M, MG, AM, AMG





Type MR, MRG

with tailstock sleeve support ring
centrepoint 60°, 75°, 90°

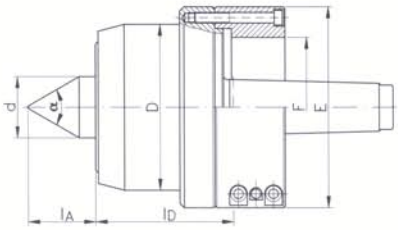
B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

Concentricity runout

Type MR max. 0.008 mm (.0003")
Type MRG max. 0.004 mm (.0002")

Application

- If for very high workpiece weights the load capacity of the mounting taper is not sufficient, the centre is additionally supported on the tailstock sleeve with a support ring. A safety spigot (German Federal Patent) safeguards the screw connection of the centre housing to the support ring.
- The support also diminishes vibration and enhances the centre's life.



When enquiring/ordering, please indicate:
1. Point angle of the centre
2. The tailstock sleeve diameter within 0.01 mm (.004")

B·K·S System

with expansion compensation and pressure indicator

Type MZ

centrepoint 60°, 75°, 90°

Type MZR

with ring-support housing
centrepoint 60°, 75°, 90°

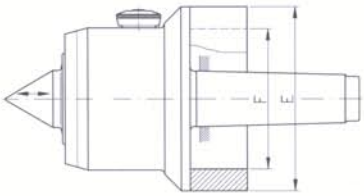
Concentricity runout

max. 0.02 mm (.007")

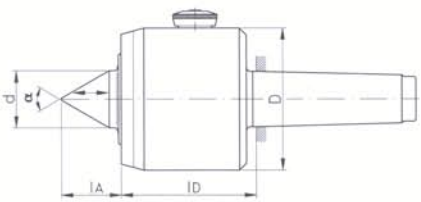
Application

- If the axial pressure must not exceed or fall below a defined value in order to clamp the component safely or to avoid workpiece deformation.
- When machining heavy workpieces prone to heat expansion.

▶ Function of the pressure indicator: see page 14



Type MZR



Type MZ

When enquiring/ordering, please indicate:
1. Point angle of the centre.
2. For version with support ring: tailstock sleeve diameter within 0.01 mm (.004")

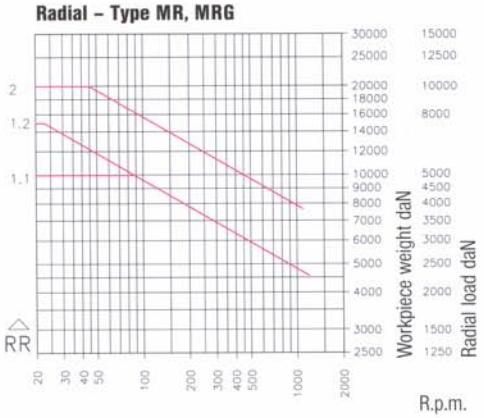
Type MR	ID. No.	190 006 MR	190 080 MR	190 081 MR	230 100 MR	230 101 MR
Type MRG	ID. No.	191 006 MR	191 080 MR	191 081 MR	231 100 MR	231 101 MR
Taper size		MT 6	metr. taper 80 1 : 20	taper 80 1 : 10	metr. taper 100 1 : 20	taper 100 1 : 10
d mm		80	80	80	100	100
D mm		190	190	190	230	230
l_A mm for angle ∢α	60°	77	77	77	88	88
	75°	60	60	60	68	68
	90°	49	49	49	53	53
l_D mm		157	164	164	200	200
E mm		230	230	230	230	230
F mm		≤ 180	≤ 180	≤ 180	≤ 180	≤ 180
Max. workpiece weight daN*		10 000	15 000	15 000	20 000	20 000
Max. r. p. m.*		1 200	1 200	1 200	1 100	1 100
Radial/axial load graph		RR1.1/AR1	RR1.2/AR1	RR1.2/AR1	RR2/AR2	RR2/AR2
Supplementary seal	ID. No.	V 80	V 80	V 80	V 100	V 100

When ordering, please indicate the point angle.

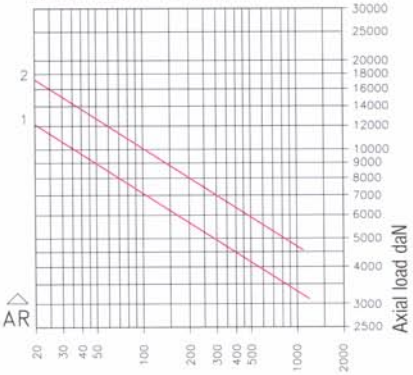
* observe the load graphs

Radial and axial load for a bearing life of 2,000 operating hours (example for determination: see page 7)

Radial – Type MR, MRG



Axial – Type MR, MRG



Type MZ	ID. No.	MZ 06 / MK 6	MZ 06 / M 080	MZ 06 / K 080	MZ 10 / M 080	MZ 10 / K 080	MZ 10 / M 100	MZ 10 / K 100	MZ 15 / M 100	MZ 15 / K 100
Taper size		MT 6	metr. taper 80 1:20	taper 80 1:10	metr. taper 80 1:20	taper 80 1:10	metr. taper 100 1:20	taper 100 1:10	metr.taper 100 1:20	taper 100 1:10
d mm		65	65	65	90	90	90	90	100	100
D mm		162	162	162	210	210	210	210	230	230
l_A mm for angle ∢α	60°	67	67	67	88	88	88	88	95	95
	75°	57	57	57	72	72	72	72	75	75
	90°	52	52	52	60	60	60	60	65	65
l_D mm		157	157	157	194	194	198	198	208	208
Max. workpiece weight daN*		4 000	6 000	6 000	8 000	8 000	10 000	10 000	12 000	12 000
Max. r. p. m.*		1 200	1 200	1 200	1 100	1 100	1 100	1 100	900	900
Initial pressure daN		1 000	1 000	1 000	1 000	1 000	1 000	1 000	3 000	3 000
Final pressure daN		10 000	10 000	10 000	13 000	13 000	13 000	13 000	16 000	16 000
Max. travel of spring system mm		2	2	2	4	4	4	4	2,5	2,5

When ordering, please indicate the point angle.

* observe the load graphs

Type MZR	ID. No.	MZR 06 / MK 6	MZR 10 / MK 6	MZR 10 / M 080	MZR 10 / K 080	MZR 15 / M 080	MZR 15 / K 080	MZR 15 / M 100	MZR 15 / K 100
Taper size		MT 6	MT 6	metr. taper .80 1 : 20	taper 80 1 : 10	metr. taper 80 1 : 20	taper 80 1 : 10	metr. taper 100 1 : 20	taper 100 1 : 10
E mm		210	230	230	230	290	290	290	290
F mm		≤ 160	≤ 180	≤ 180	≤ 180	≤ 220	≤ 220	≤ 220	≤ 220
Max. workpiece weight daN*		6 000	10 000	10 000	10 000	12 000	12 000	15 000	15 000

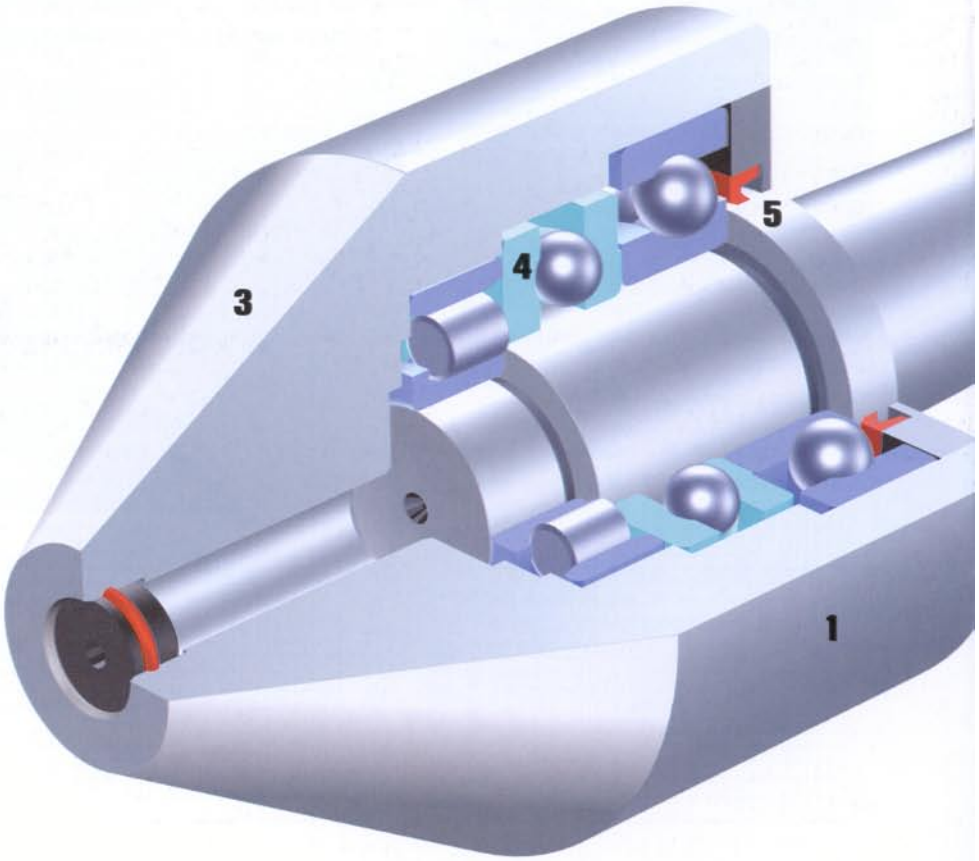
Complete technical data for type MZ, MZR on request.

* observe the load graphs

Robust and precise

Our bullnose live centres have a sturdy cylindrical roller bearing where the load is heaviest. Combined with large axial and radial deep-groove ball bearings this design allows high loads together with high concentricity and long life.
BRUCKNER bullnose live centres sustain their reliability even when the work is rough.

For circular grinding operations BRUCKNER bullnose live centres are market leaders. This work requires bullnose centres with stability reserves for good grinding results.



1 Bullnose head
of alloy tool steel, through-hardened.

2 Taper shank
case-hardened for protection from damage.

3 High concentricity
guaranteed by the test report.

4 Large precision roller bearings, free from clearance
to withstand the radial and axial forces.

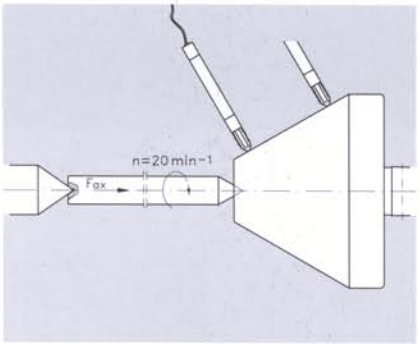
5 Shaft seal
protects the bearings from dirt, dust and coolant.

BRUCKNER WORKS STANDARD

Our high-performance bullnose live centres - standard as well as special designs - are produced and tested according to our works standard. Materials, production and testing are subject to strict quality guidelines guaranteeing function and performance of our tools.

Test report for accuracy of concentricity

Every single BRUCKNER high-performance bullnose live centre is tested for concentricity runout under axial load on the small and on the large diameter. Both test results are then stamped into the tool and guaranteed by the test report.



Example: table „maximum concentricity runout" for type ZA, ZAG

Type ZA	Type ZAG	Morse taper	concentricity runout max. mm Type ZA	Type ZAG	F_{ax} daN
1920–1922	2120–2122	2	0,007	0,003	**160**
1930	2130	3	0,007	0,003	**160**
1831–1933	2031–2133	3	0,007	0,003	**210**
1841–1941	2041–2141	4	0,007	0,003	**210**
1942–1947	2142–2147	4	0,007	0,003	**450**
1952	2152	5	0,007	0,003	**450**
1953	2153	5	0,007	0,003	**600**
1954–1959	2154–2159	5	0,007	0,003	**600**
1964–1969	2164–2169	6	0,007	0,003	**600**

Bullnose centre head and taper shank

The bullnose centre head is of wear-resistant, through-hardened alloy tool steel. In contrast to the usual method of case-hardening, this allows regrinding the centre head several times without any loss of hardness. The taper shank is case-hardened for protection from damage.

Tolerance of taper shank

The Morse taper is ground to German Industrial Standard (DIN) 228 AT4 (gauge accuracy). This fine tolerance guarantees a close fit of the high-performance bullnose centre in the tailstock and therefore the full utilization of the concentricity accuracy (table of taper tolerance and dimensions: see page 29).

Bearings and seats

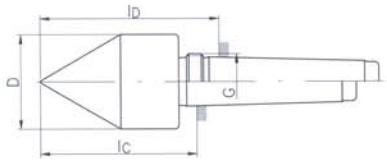
The precision bearings are selected according to the size of the Morse taper. The bearing seats in the head and on the taper shank have fine tolerances and are precision ground. Bearings and seats are selected to fit. Result: High stability, concentricity and long life.

Maintenance

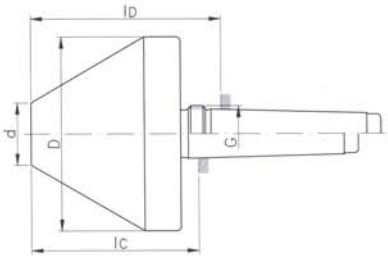
The bearings are maintenance-free due to permanent lubrication.

Repair service

Our repair service is at your disposal for any repairs. We judge the tool's condition and inform you about the extent of necessary repairs.



pointed version



Type ZA, ZAG

without thread for draw-off nut angle 60° or 75°

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

Concentricity

Type ZA max. 0.007 mm (.0003")
Type ZAG max. 0.003 mm (.0001")
with test report

Application

For turning and grinding of tubes and workpieces with large bores.

Mechanical engineering
Main spindles for machine tools, hollow shafts, paper rolls, rings and gears.

Car industry/Motor construction
Support tubes for truck axles, pistons, cylinder liners, crankshafts, wheel hubs.

Aircraft industry/Shipbuilding
Engine main shafts and transmission components, turbines, drive shafts.

Version A

with thread for draw-off nut and nut
(ordering example: 1920:60A)

For machine tools with tailstock-sleeves without bores (without the possibility to eject centres) or for high-precision machine tools, for protection of the spindle bearings or the tailstock sleeve.

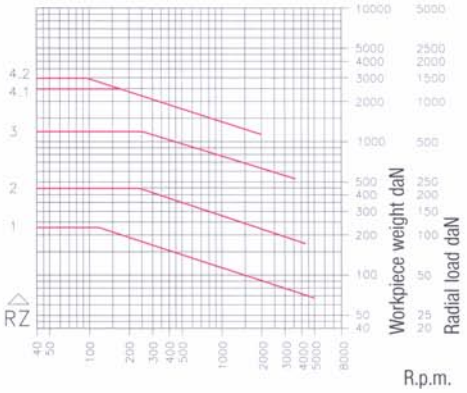
Morse taper	Angle 60° ID. No. ZA	Angle 60° ID. No. ZAG	Angle 60° D mm	Angle 60° d mm	Angle 60° l_C mm	Angle 60° l_D mm	Angle 75° ID. No. ZA	Angle 75° ID. No. ZAG	Angle 75° D mm	Angle 75° d mm	Angle 75° l_C mm	Angle 75° l_D mm	Workpiece weight max. daN	R. p. m. max.	Load graph radial	Load graph axial
2	1920:60	2120:60	45	15	79	88							230	5 000	RZ 1	AZ 1
2	1921:60	2121:60	60	20	74	83										
2	1922:60	2122:60	80	25	70	79										
3	1930:60	2130:60	45	15	78	87										
*3	1831:60	2031:60	60	1	112	120							450	4 300	RZ 2	AZ 2
3	1931:60	2131:60	60	20	96	105										
3	1932:60	2132:60	80	25	96	105										
3	1933:60	2133:60	100	35	96	105										
*4	1841:60	2041:60	60	1	113	121										
4	1941:60	2141:60	60	20	98	107										
4	1942:60	2142:60	80	25	112	122	1942:75	2142:75	80	20	112	122	1 200	3 600	RZ 3	AZ 3
4	1943:60	2143:60	100	35	112	122	1943:75	2143:75	100	25	108	118				
4	1944:60	2144:60	125	40	112	122	1944:75	2144:75	125	30	108	118				
4	1945:60	2145:60	150	50	112	122	1945:75	2145:75	150	50	96	106				
4	1947:60	2147:60	200	75	112	122										
5	1952:60	2152:60	80	25	113	127										
5	1953:60	2153:60	100	35	113	127	1953:75	2153:75	100	25	142	156				
5	1954:60	2154:60	125	40	168	182	1954:75	2154:75	125	30	157	171	2 500	2 000	RZ 4.1	AZ 4
5	1955:60	2155:60	150	50	159	173	1955:75	2155:75	150	50	149	163				
5	1957:60	2157:60	200	75	140	154	1957:75	2157:75	200	75	138	152				
5	1958:60	2158:60	250	100	165	179	1958:75	2158:75	250	100	135	149				
5	1959:60	2159:60	300	150	165	179	1959:75	2159:75	300	100	158	172				
6	1964:60	2164:60	125	40	171	188	1964:75	2164:75	125	30	160	177	3 000	2 000	RZ 4.2	AZ 4
6	1965:60	2165:60	150	50	162	179	1965:75	2165:75	150	50	152	169				
6	1967:60	2167:60	200	75	143	160	1967:75	2167:75	200	75	141	158				
6	1968:60	2168:60	250	100	168	185	1968:75	2168:75	250	100	138	155				
6	1969:60	2169:60	300	150	168	185	1969:75	2169:75	300	100	161	178				

* pointed version
When ordering a bullnose live centre with thread for draw-off nut, please add an "A" to the ID.No., e. g. 1920:60 A

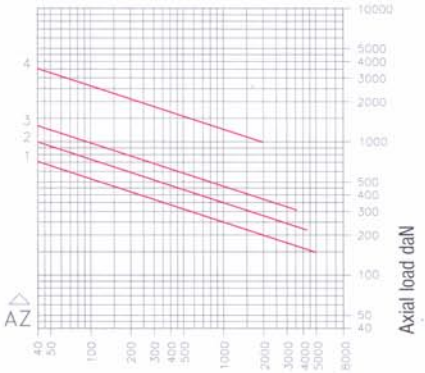
* observe the load graphs

Radial and axial load for a bearing life of 2,000 operating hours (example for determination: see page 7)

Radial – Type ZA, ZAG



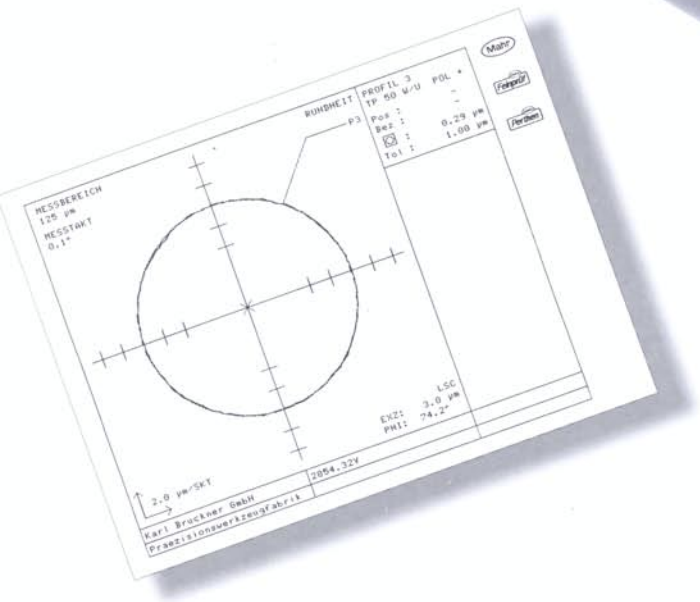
Axial – Type ZA, ZAG



Roundness achieves roundness

When grinding, the out-of-roundness of a dead centre is transferred to the workpiece.
BRUCKNER carbide dead centres guarantee best grinding results.
Out-of-roundness of the carbide:

- **Standard version ◯ ≤ 0.001 mm (.00003")**
- **Special version ◯ ≤ 0.0003 mm (.00001")**



Special designs

BRUCKNER WORKS STANDARD

Our carbide dead centres - standard as well as special designs - are produced and tested according to our works standard. Materials, production and testing are subject to strict quality guidelines guaranteeing both function and performance.

Roundness of the carbide

Out-of-roundness ◯ ≤ 0,001 mm (.00003")

Taper shank tolerance

The deviation of taper 'Z' is ≤ AT4 (gauge accuracy) to DIN 228 (German Industrial Standard). I.e., precision seating of centre in tailstock sleeve.

Out-of-roundness

Very narrow eccentricity 'V' of the 60° point to the taper shank according to table (compared with DIN 806, the out-of-roundness has been reduced by up to 70%).

Hardened taper shank

The taper shank is case-hardened for protection from damage. A faulty or damaged taper can shift in its sleeve or in the spindle leading to poor grinding results.

Carbide

To achieve maximum safety in the application of our carbide dead centres, we use only top-quality carbides. Shape and diameter of the respective carbide body determine the method of fixing and the class of carbide.

Regrinding line

As a rule, BRUCKNER centres feature a regrinding line showing the useful end of the carbide. Forms R and GR do not have this line. Here the usable limit is marked by the braze line.

Regrinding line

Braze line

Patented safety core

In BRUCKNER solid carbide dead centres (Forms V, Z, GV and GZ) with a carbide diameter of 20 to 45 mm a patented safety core is integrated. If there is a fissure in the joint between carbide and base metal, e.g. caused by operating or handling errors, the safety core prevents the carbide point with the mounted workpiece from slipping. Thus high consequential damage is avoided.

User Information

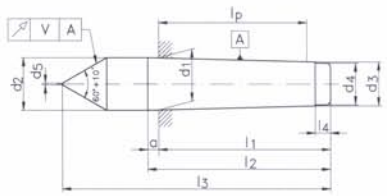
In our "User Information" you will find hints and tips for the use of our carbide centres, e.g. on work safety, causes and removal of roundness errors on the workpiece etc. Please advise us if you would like copies.

Repair service

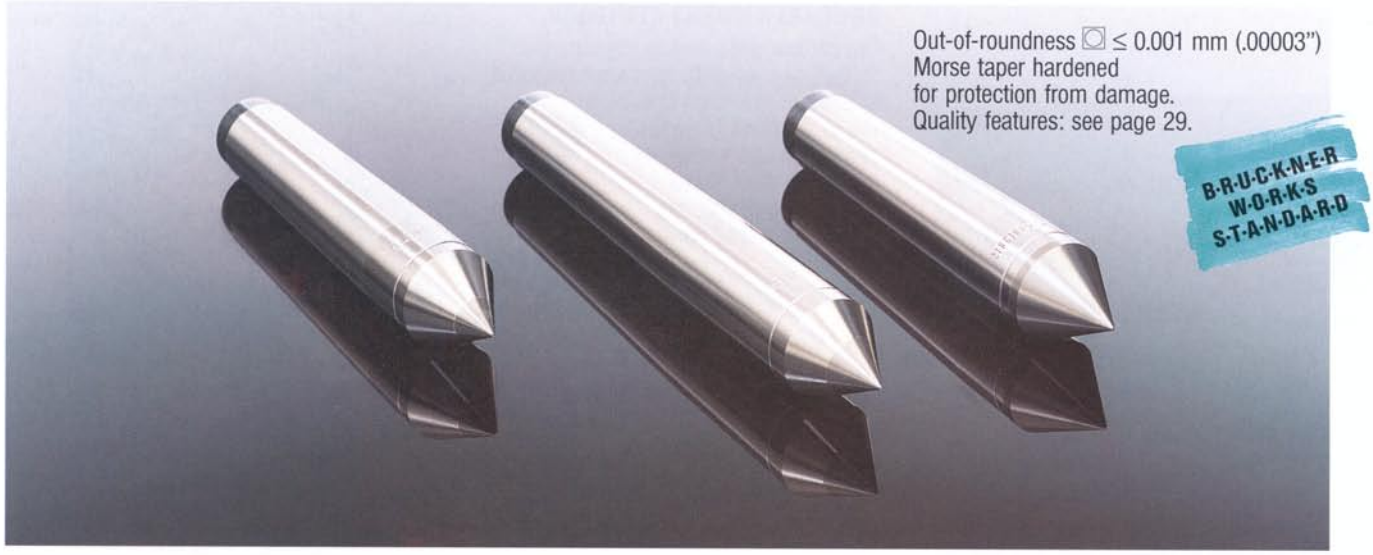
Our repair service is at your disposal for any repairs. We judge the tool's condition and inform you about the extent of necessary repairs.

Excerpt from DIN 806, DIN 228 and BRUCKNER WORKS STANDARD (dimensions in mm)

		DIN										DIN	Bruckner Works Standard	
Dimension		d_1	d_2	d_3	d_4	d_5	l_1	l_2	l_3	l_4	a	V	V	Z
Morse taper	0	9,045	9,2	6,4	6	0,5	50	53	70	4	3	0,01	0,003	0,002
	1	12,065	12,2	9,4	9	0,5	53,5	57	80	5	3,5	0,01	0,003	0,003
	2	17,780	18,0	14,6	14	0,8	64	69	100	5	5	0,01	0,003	0,003
	3	23,825	24,1	19,8	19	0,8	81	86	125	7	5	0,01	0,004	0,004
	4	31,267	31,6	25,9	25	1	102,5	109	160	9	6,5	0,01	0,004	0,005
	5	44,399	44,7	37,6	36	1,6	129,5	136	200	10	6,5	0,01	0,004	0,006
	6	63,348	63,8	53,9	51	2	182	190	270	16	8	0,01	0,004	0,006
Metric taper	80	80	80,4	70,2	67		196	204		24	8		0,005	0,006
	100	100	100,5	88,4	85		232	242		30	10		0,005	0,007
	120	120	120,6	106,6	102		268	280		36	12		0,005	0,008



V = permissible eccentricity
Z = maximum taper error
taper increasing towards the large diameter along the tested length lp

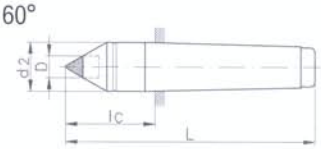


Form	Morse taper	ID. No.	D mm	d_2 mm	l_C mm	L mm
E	1	2801 H	7	12,2	26,5	80
	2	2802 H	7	18	36	100
	3	2803 H	11	24,1	44	125
	4	2804 H	14	31,6	57,5	160
	5	2805 H	18	44,7	70,5	200
	6	2806 H	18	63,8	88	270
L	2	2802.11 - 135	11	18	71	135
	2	2802.14	14	18	36	100
	3	2803.14	14	24,1	44	125
	3	2803.14 - 150	14	24,1	69	150
	3	2803.18	18	28	47	128
	4	2804.18	18	31,6	57,5	160
	4	2804.18 - 180	18	31,6	77,5	180
	4	2804.18 - 200	18	31,6	97,5	200
	5	2805.18 - 250	18	44,7	120,5	250
	6	2806.35	35	63,8	88	270
V	* 1	2801.12 V - 080	12		26,5	80
	* 2	2802.18 V - 110	18		46	110
	2	2802.24 V - 110	24		46	110
	3	2803.24 V - 125	24,1		44	125
	3	2803.24 V - 150	24,1		69	150
	4	2804.32 V - 160	31,6		57,5	160
	4	2804.32 V - 180	31,6		77,5	180
	4	2804.32 V - 200	31,6		97,5	200
	5	2805.45 V - 200	44,7		70,5	200
	5	2805.45 V - 250	44,7		120,5	250
	** 6	2806.64 V - 270	63,8		88	270

* without safety core, carbide brazed in tapered seating
** without safety core, carbide outer shell with base metal core

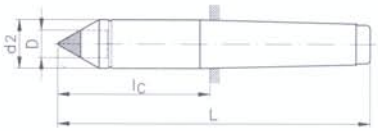
Form E

to DIN 806 E
full centre, 60°



Form L

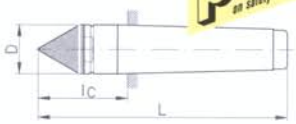
full centre, 60°
larger carbide diameter
length to DIN and extended



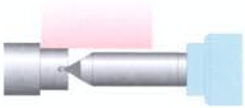
Form V

solid carbide point, 60°
with safety core
length to DIN and extended

Solid Carbide Centres with the plus on safety

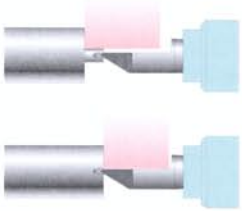


Your grinding task - our carbide-tipped centres

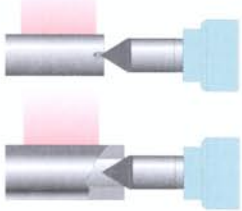


Short grinding length, wide grinding wheel. Extended carbide centre.
Form L

Large centrebore.
Carbide centre with large truncated carbide body.
Form Z, Form R, Form GR



Small diameter and short grinding length or face grinding. Extended carbide half centre with extra small flat height.
Form HS, Form GHS



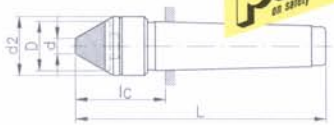
Small to large centres.
Carbide centre with solid carbide 60° point.
Form V, Form GV

Form	Morse taper	ID. No.	D mm	d mm	d_2 mm	l_C mm	L mm
Z	2	2802.32x10	32	10	38	46	110
R	2	2802.40x20	40	20		41	105
	2	2802.50x30	50	30		41	105
	2	2802.60x40	60	40		41	105
	2	2802.70x50	70	50		41	105
Z	3	2803.32x10	32	10	38	50	131
R	3	2803.40x20	40	20		44	125
	3	2803.50x30	50	30		44	125
	3	2803.60x40	60	40		44	125
	3	2803.70x50	70	50		44	125
Z	4	2804.24	24	1	31,6	57,5	160
	4	2804.32x10	32	10	38	57,5	160
R	4	2804.40x20	40	20		57,5	160
	4	2804.50x30	50	30		57,5	160
	4	2804.60x40	60	40		57,5	160
	4	2804.70x50	70	50		57,5	160
	4	2804.80x60	80	60		57,5	160
	4	2804.100x75	100	75		57,5	160
Z	5	2805.32x10	32	10	44,7	70,5	200
R	5	2805.40x20	40	20		70,5	200
	5	2805.60x40	60	40		70,5	200
	5	2805.70x50	70	50		70,5	200
	5	2805.80x60	80	60		70,5	200
	5	2805.100x75	100	75		70,5	200

Form Z

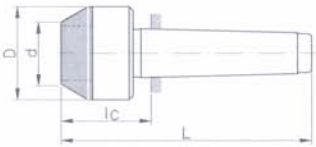
full centre, 60°
large carbide insert
with safety core

Solid Carbide Centres with the plus on safety



Form R

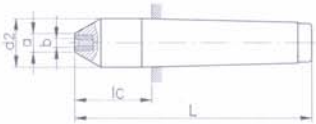
full centre, 60°
large carbide ring, diameter up to 100 mm



Female centre with ground centrebore in the carbide, 60°

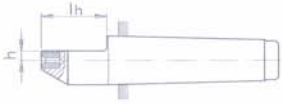
Form	Morse taper	ID. No.	b mm	a mm	d_2 mm	h mm	l_h mm	l_C mm	L mm
B	1	2821	2,8 x 1,5	6	12,2			23,5	77
	2	2822	4,0 x 2,0	9	18,0			32	96
	3	2823	5,0 x 2,5	9	24,1			38	119
	4	2824	6,0 x 3,0	12	31,6			49,5	152
	5	2825	6,0 x 3,0	12	44,7			59,5	189
HB	1	2831	2,8 x 1,5	6	12,2	3	19	23,5	77
	2	2832	4,0 x 2,0	9	18,0	4	26	32	96
	3	2833	5,0 x 2,5	9	24,1	5	32	38	119
	4	2834	6,0 x 3,0	12	31,6	5,5	42	49,5	152
	5	2835	6,0 x 3,0	12	44,7	5,5	52	59,5	189

Form B

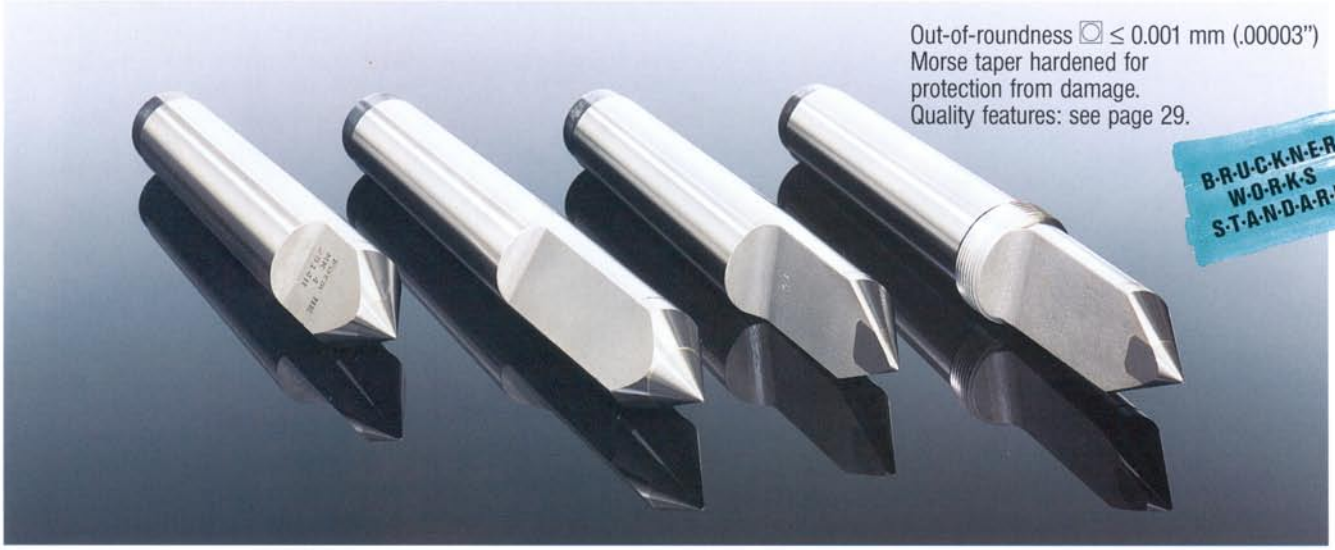


Form HB

with flat



BRUCKNER®



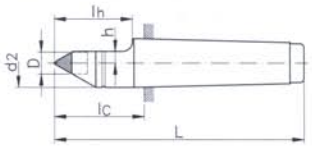
Out-of-roundness ◯ ≤ 0.001 mm (.00003")
Morse taper hardened for
protection from damage.
Quality features: see page 29.

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

Form	Morse taper	ID. No.	D mm	d_2 mm	h mm	l_h mm	l_c mm	L mm	G mm
HE	1	2811 H	7	12,2	4	22	26,5	80	
	2	2812 H	7	18	4	30	36	100	
	3	2813 H	11	24,1	6	38	44	125	
	4	2814 H	14	31,6	7,5	50	57,5	160	
	5	2815 H	18	44,7	9,5	63	70,5	200	
	6	2816 H	18	63,8	9,5	79	88	270	
HL	2	2812.11 - 135	11	18	6	65	71	135	
	2	2812.14	14	18	7,5	30	36	100	
	3	2813.14	14	24,1	7,5	38	44	125	
	3	2813.14 - 150	14	24,1	7,5	63	69	150	
	3	2813.18	18	28	9,5	40	47	128	
	4	2814.18	18	31,6	9,5	50	57,5	160	
	4	2814.18 - 180	18	31,6	9,5	70	77,5	180	
	4	2814.18 - 200	18	31,6	9,5	90	97,5	200	
	5	2815.18 - 250	18	44,7	9,5	113	120,5	250	
HS	2	2812 H / 1,5	7	18	1,5	40	46	110	
	2	2812 H / 2,5	7	18	2,5	40	46	110	
	3	2813 H / 1,5	11	24,1	1,5	63	69	150	
	3	2813 H / 2,5	11	24,1	2,5	63	69	150	
	3	2813 H / 4,0	11	24,1	4,0	63	69	150	
	4	2814 H / 1,5	14	31,6	1,5	70	77,5	180	
	4	2814 H / 2,5	14	31,6	2,5	70	77,5	180	
	4	2814 H / 4,0	14	31,6	4,0	70	77,5	180	
GHS	3	2853/4,0-138	14	24,1	4,0	39,5	57,0	138	M 27 x 1,5
	4	2854/4,0-175	14	31,6	4,0	51,5	72,5	175	M 36 x 1,5
	4	2854/4,0-200	14	31,6	4,0	76,5	97,5	200	M 36 x 1,5
	5	2855/6,0-217	18	44,7	6,0	64,5	87,5	217	M 48 x 1,5
	5	2855/6,0-250	18	44,7	6,0	97,5	120,5	250	M 48 x 1,5

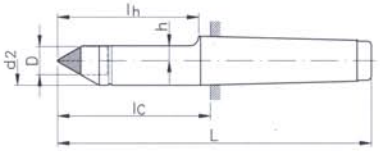
Form HE

similar to DIN 806 HE, 60°
half centre



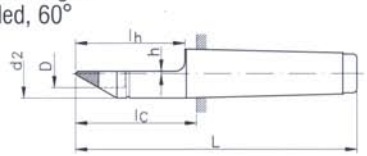
Form HL

half centre
larger carbide diameter, 60°
length to DIN and extended



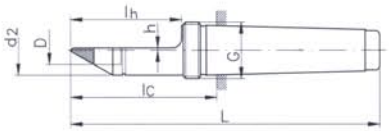
Form HS

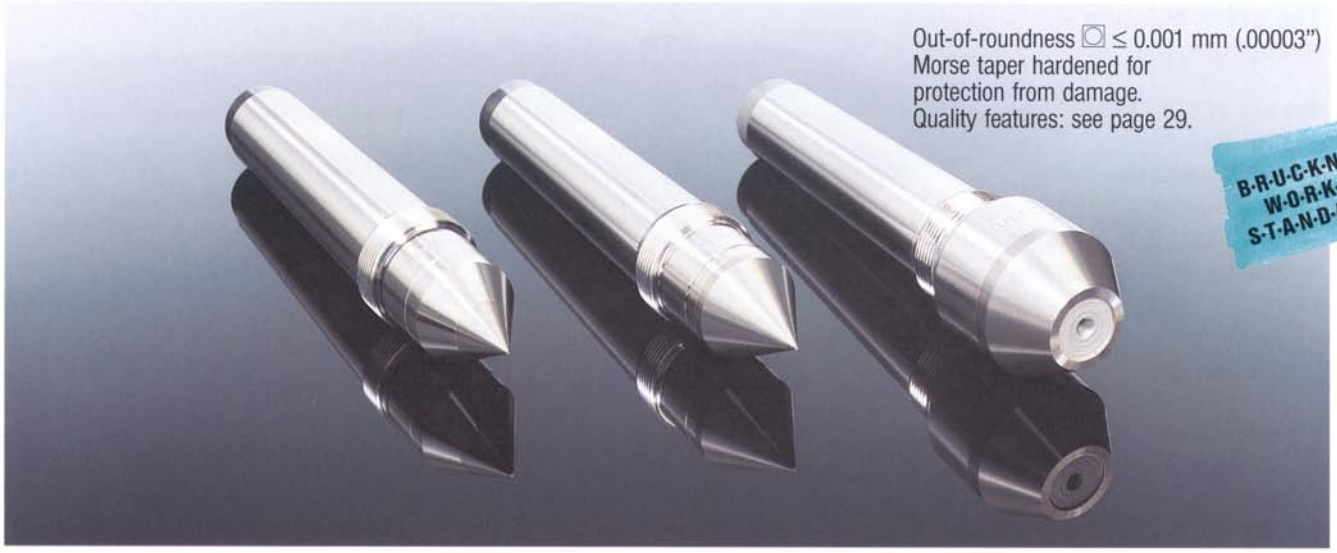
extra flat height
extended, 60°



Form GHS

extra flat height
with thread for draw-off nut
length to DIN and extended



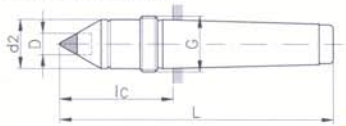


Form	Morse taper	ID. No.	D mm	d mm	d_2 mm	l_C mm	L mm	G mm
GE	2	2852	7		18	48	112	M 22 x 1,5
	3	2853	11		24,1	57	138	M 27 x 1,5
	3	2853.18	18		24,1	57	138	M 27 x 1,5
	4	2854	14		31,6	72,5	175	M 36 x 1,5
	4	2854.18	18		31,6	72,5	175	M 36 x 1,5
	4	2854.18 - 200	18		31,6	97,5	200	M 36 x 1,5
	5	2855	18		44,7	87,5	217	M 48 x 1,5
	5	2855.18 - 250	18		44,7	120,5	250	M 48 x 1,5
	6	2856	18		63,8	108	290	M 68 x 1,5
	6	2856.35	35		63,8	108	290	M 68 x 1,5
GV	*2	2852.18 V	18,0			48	112	M 22 x 1,5
	3	2853.24 V	24,1			57	138	M 27 x 1,5
	4	2854.32 V	31,6			72,5	175	M 36 x 1,5
	4	2854.32 V - 200	31,6			97,5	200	M 36 x 1,5
	5	2855.45 V	44,7			87,5	217	M 48 x 1,5
	5	2855.45 V - 250	44,7			120,5	250	M 48 x 1,5
	**6	2856.64 V	63,8			108	290	M 68 x 1,5
GZ	3	2853.32 x 10	32	10	38	57	138	M 27 x 1,5
GR	3	2853.45 x 25	45	25		57	138	M 27 x 1,5
	4	2854.45 x 25	45	25		72,5	175	M 36 x 1,5
	4	2854.60 x 40	60	40		72,5	175	M 36 x 1,5
	5	2855.45 x 25	45	25		87,5	217	M 48 x 1,5
	5	2855.60 x 40	60	40		87,5	217	M 48 x 1,5

* without safety core, carbide brazed in tapered seat
** without safety core, carbide outer shell with base metal core

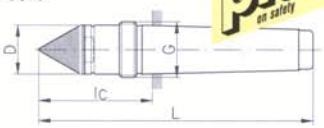
Form GE

with thread for draw-off nut
full centre, 60°
length to DIN and extended



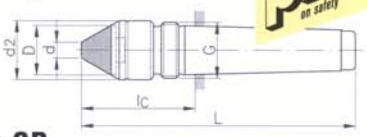
Form GV

with thread for draw-off nut
solid carbide point, 60°
with safety core



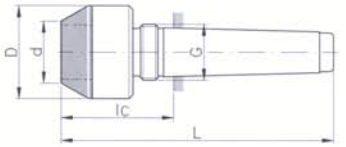
Form GZ

with thread for draw-off nut
full centre, 60°
large carbide insert
with safety core



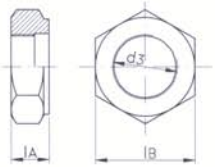
Form GR

with thread for draw-off nut
full centre, 60°
large carbide ring



Draw-off nut to DIN 807

Draw-off nut to DIN 807 ID. No.	d_3 mm	l_A mm	l_B mm
M 252	M 22 x 1,5	15,5	32
M 253	M 27 x 1,5	17,5	41
M 254	M 36 x 1,5	21	55
M 255	M 48 x 1,5	23	75
M 256	M 68 x 1,5	25,5	100



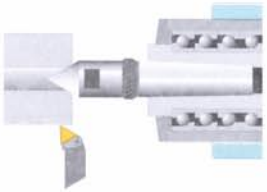
The quick solution – systematically

The use of BRUCKNER centres for revolving tailstock sleeves enables a flexible reaction to changing workpiece forms and turning tasks.

Material
high-quality tool steel, through-hardened

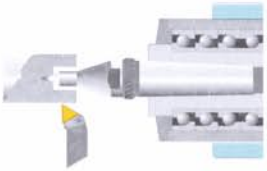
Out-of-roundness
max. 0.003 mm (.0001")

Taper shank tolerance
The deviation of taper 'Z' is ≤ AT4 (gauge accuracy) to DIN 228 (German Industrial Standard). This means a precise seating of the centre in the tailstock sleeve (see table on page 29).

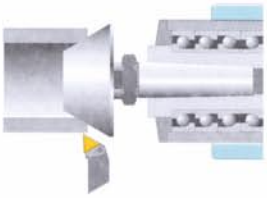


Form 255
for small and large centrebores

Form 256
for limited work space



Form 257
for threading and for centrebores deep inside a workpiece



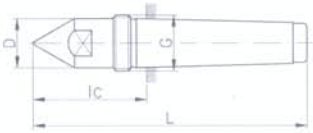
Form 258
for large centrebores

Form	Morse taper	ID. No.	D mm	d mm	G mm	SW mm	l mm	l_C mm	L mm	Draw-off nut
255	MT 2	2552	18		M 22 x 1,5	17		48	112	M 252
	MT 3	2553	24,1		M 27 x 1,5	22		57	138	M 253
		2553 – 150	24,1		M 27 x 1,5	22		69	150	M 253
		2553 – 170	24,1		M 27 x 1,5	22		89	170	M 253
	MT 4	2554	31,6		M 36 x 1,5	27		72,5	175	M 254
		2554 – 190	31,6		M 36 x 1,5	27		87,5	190	M 254
		2554 – 230	31,6		M 36 x 1,5	27		127,5	230	M 254
	MT 5	2555	44,7		M 48 x 1,5	41		87,5	217	M 255
		2555 – 250	44,7		M 48 x 1,5	41		120,5	250	M 255
	MT 6	2556	63,8		M 68 x 1,5	55		108	290	M 256
	Metr. taper 80 1 : 20	2557.20	80		M 85 x 2	–		134	330	M 257
	taper 80 1 : 10	2557.10	80		M 85 x 2	–		130	330	M 257
256	MT 2	2562	18	6	M 22 x 1,5	17		48	112	M 252
	MT 3	2563	24,1	8	M 27 x 1,5	22		57	138	M 253
	MT 4	2564	31,6	10	M 36 x 1,5	27		72,5	175	M 254
	MT 5	2565	44,7	12	M 48 x 1,5	41		87,5	217	M 255
	MT 6	2566	63,8	15	M 68 x 1,5	55		108	290	M 256
257	MT 2	2572.06 – 120	18	6,5	M 22 x 1,5	17	15	52	120	M 252
		2572.09 – 120	18	9	M 22 x 1,5	17	17	52	120	M 252
		2572.11 – 120	18	11	M 22 x 1,5	17	21	52	120	M 252
	MT 3	2573.09 – 150	24,1	9	M 27 x 1,5	19	17	69	150	M 253
		2573.13 – 150	24,1	13	M 27 x 1,5	19	25	69	150	M 253
	MT 4	2574.09 – 190	31,6	9	M 36 x 1,5	27	17	87,5	190	M 254
		2574.13 – 190	31,6	13	M 36 x 1,5	27	27	87,5	190	M 254
		2574.19 – 190	31,6	19	M 36 x 1,5	27	53	87,5	190	M 254
258	MT 2	2582.40	40	1	M 22 x 1,5	36		64	128	M 252
		2582.80 x 20	80	20	M 22 x 1,5	36		88	152	M 252
	MT 3	2583.80 x 20	80	20	M 27 x 1,5	36		89	170	M 253
	MT 4	2584.80 x 20	80	20	M 36 x 1,5	36		89,5	192	M 254
		2584.125 x 65	125	65	M 36 x 1,5	36		89,5	192	M 254
	MT 5	2585.80 x 20	80	20	M 48 x 1,5	46		100,5	230	M 255
		2585.100 x 50	100	50	M 48 x 1,5	46		90,5	220	M 255
		2585.125 x 65	125	65	M 48 x 1,5	46		100,5	230	M 255

Interchangeable dead centres with thread for draw-off nut and spanner flat for revolving tailstock-sleeves

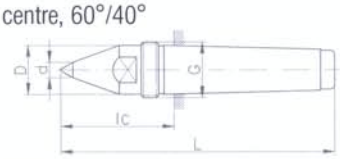
Form 255

to DIN 807 and extended, 60°



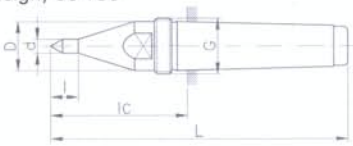
Form 256

copying centre, 60°/40°



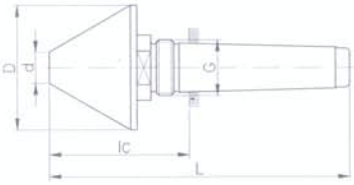
Form 257

slim design, 60°/30°



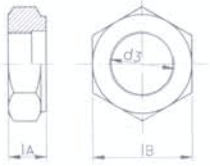
Form 258

bullnose dead centre, 60°



Draw-off nut to DIN 807

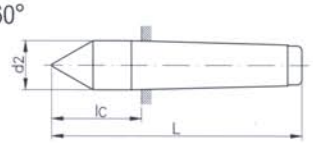
Draw-off nut to DIN 807 ID. No.	d_3 mm	l_A mm	l_B mm
M 252	M 22 x 1,5	15,5	32
M 253	M 27 x 1,5	17,5	41
M 254	M 36 x 1,5	21	55
M 255	M 48 x 1,5	23	75
M 256	M 68 x 1,5	25,5	100
M 257	M 85 x 2,0	40	130



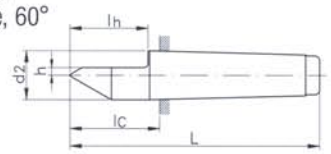
Form	Taper size	ID. No.	d_2 mm	l_c mm	L mm	a mm	b mm	h mm	l_h mm
250	MT 0	2500	9,2	20,0	70				
	MT 1	2501	12,2	26,5	80				
	MT 2	2502	18,0	36,0	100				
	MT 3	2503	24,1	44,0	125				
	MT 4	2504	31,6	57,5	160				
	MT 5	2505	44,7	70,5	200				
	MT 6	2506	63,8	88,0	270				
	Metr. taper 80 1:20	2507.20	80,4	124,0	320				
	Taper 80 1:10	2507.10	80,8	120,0	320				
251	MT 1	2511	12,2	26,5	80			1,5	22
	MT 2	2512	18,0	36,0	100			2	30
	MT 3	2513	24,1	44,0	125			3	38
	MT 4	2514	31,6	57,5	160			5	50
	MT 5	2515	44,7	70,5	200			7	63
	MT 6	2516	63,8	88,0	270			10	79
252	MT 1	2521	12,2	23,5	77	4	3 x 1		
	MT 2	2522	18,0	32,0	96	6	4 x 1,5		
	MT 3	2523	24,1	38,0	119	8	5 x 2		
	MT 4	2524	31,6	49,5	152	10	6 x 2,5		
253	MT 1	2531	12,2	23,5	77	4	3 x 1	2	19
	MT 2	2532	18,0	32,0	96	6	4 x 1,5	3	26
	MT 3	2533	24,1	38,0	119	8	5 x 2	4	32
	MT 4	2534	31,6	49,5	152	10	6 x 2,5	5	42

Centres to DIN 806
Hardened tool steel

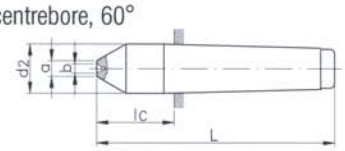
Form 250
to DIN 806
full centre, 60°



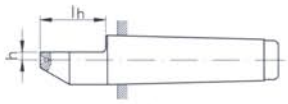
Form 251
to DIN 806
half centre, 60°

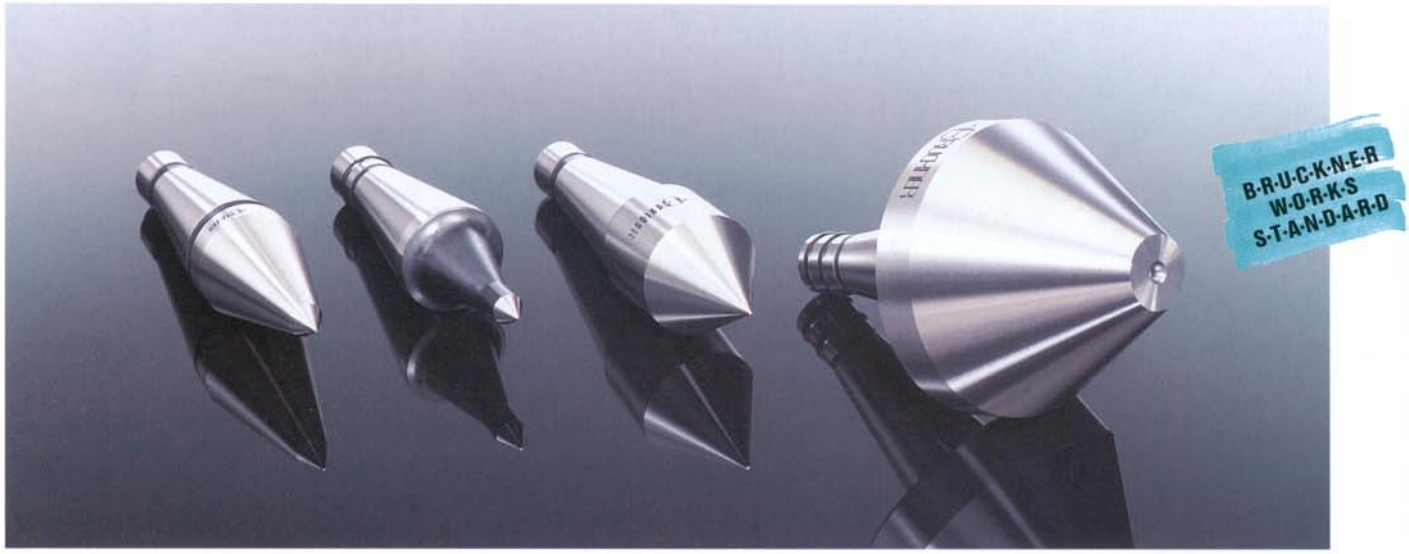


Form 252
ground centrebore, 60°



Form 253
same as Form 252,
but half centre





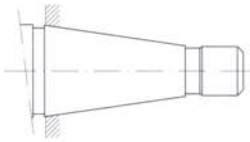
Taper form	Steep taper	Group	ID. No.	D mm	d mm	lc mm	l mm	L mm
220 (suitable for Index)	SK 30	A	2230.10 A – 130	32,22	10	61,6		130
			2230.10 A – 150	32,22	10	81,6		150
		B	2230.09 B – 120	32,22	9	51,6	17	120
			2230.13 B – 125	32,22	13	56,6	27	125
			2230.19 B – 135	32,22	19	66,6	53	135
			2230.25 B – 145	32,22	25	76,6	66,5	145
		C	2230.36 C – 116	36		47,6		116
			2230.36 C – 130	36		61,6		130
		D	2230. 80 x 20 D	80	20	71,6		140
			2230.125 x 65 D	125	65	71,6		140
	SK 40	C	2240.48 C – 152	48		59		152
			2240.48 C – 181	48		88		181
230 (suitable for Voest, Boehringer)	SK 30	A	2330.10 A – 130	32,22	10	61,6		130
			2330.10 A – 150	32,22	10	81,6		150
			2330.10 A – 170	32,22	10	101,6		170
		B	2330.09 B – 120	32,22	9	51,6	17	120
			2330.09 B – 150	32,22	9	81,6	17	150
			2330.13 B – 125	32,22	13	56,6	27	125
			2330.13 B – 170	32,22	13	101,6	27	170
			2330.19 B – 135	32,22	19	66,6	53	135
			2330.19 B – 170	32,22	19	101,6	53	170
			2330.25 B – 145	32,22	25	76,6	66,5	145
			2330.25 B – 170	32,22	25	101,6	66,5	170
		C	2330.32 C – 116	32,22		47,6		116
			2330.32 C – 130	32,22		61,6		130
			2330.32 C – 150	32,22		81,6		150
			2330.32 C – 170	32,22		101,6		170
			2330.45 C – 130	45		61,6		130
		D	2330. 80 x 20 D	80	20	71,6		140
			2330.125 x 65 D	125	65	71,6		140
	SK 40	C	2340.44 C – 152	44,9		58,6		152
			2340.44 C – 172	44,9		78,6		172
			2340.44 C – 200	44,9		106,6		200

We make larger steep tapers or carbide-tipped designs to your requirements.

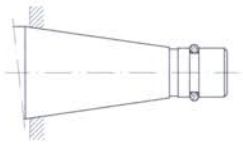
Interchangeable dead centres with steep taper for revolving tailstock sleeves hardened tool steel

Out-of-roundness
max. 0.003 mm (.00001")

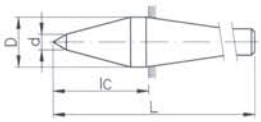
Taper form 220
suitable for Index



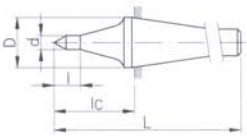
Taper form 230
suitable for Boehringer, Voest



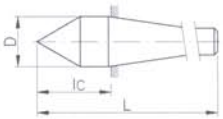
A - Copying centre, 60°/40°



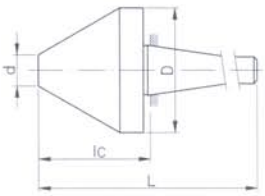
B - Slim centre, 60°

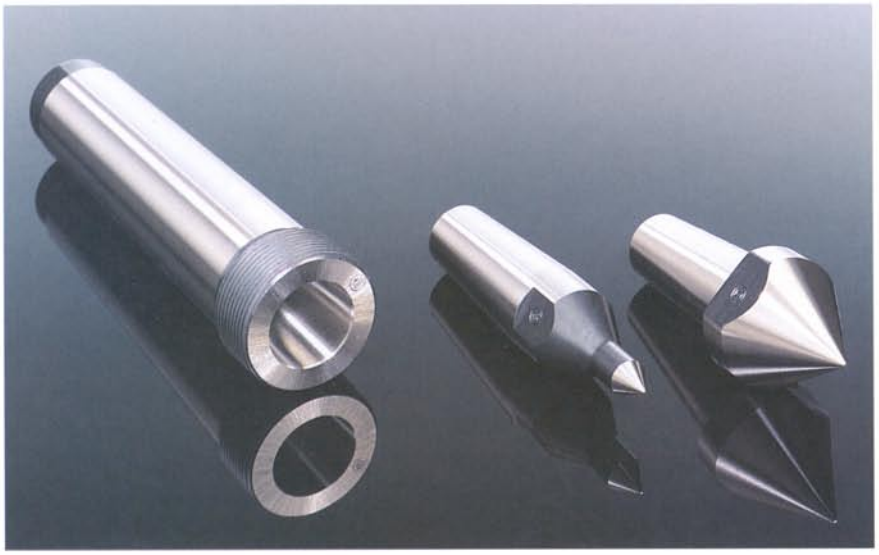


C - Full centre, 60°



D - Bullnose dead centre, 60°





Adapter sleeve Type KE

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

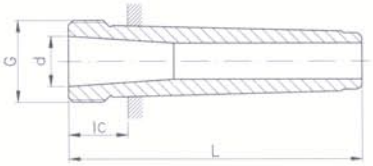
hardened tool steel, internally and externallly precision-ground

Out-of-roundness
max. 0.003 mm (.0001")

Application
Regrinding and adapter sleeve for the interchangeable inserts shown on pages 10/11. Internal taper 1:7.5. With thread for draw-off nut. Hardened, precision-ground.

▶ Draw-off nut to DIN 807: see page 35

Morse taper	Type KE ID. No.	Draw-off nut	d mm	G mm	l_C mm	L mm	Insert size (pages 10/11)
2	2952 A	M 252	11,2	M 22 x 1,5	14	78	482..
3	2953 A	M 253	15,14	M 27 x 1,5	21	102	484..
4	2954 A	M 254	22,14	M 36 x 1,5	26	128	487..
5	2955 A	M 255	28,33	M 48 x 1,5	31	160	485..



Reduction sleeves

B·R·U·C·K·N·E·R W·O·R·K·S S·T·A·N·D·A·R·D

alloy case-hardening steel, hardened, precision-ground

Type SPHG

without thread for draw-off nut

Type SPHA

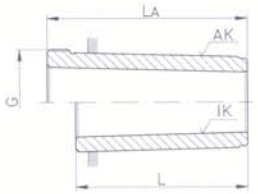
with thread for draw-off nut

Out-of-roundness
max. 0.003 mm (.0001")

Application
For reduction of the tailstock/headstock taper to accept centres, face drivers etc.

▶ Draw-off nut to DIN 807: see page 35

Taper size		Without thread	With thread				
External	Internal	Type SPHG	Type SPHA				
AK	IK	ID. No.	ID. No.	Draw-off nut ID. No.	L mm	G mm	L_A mm
MT 3	MT 2	6032G	6032A	M 253	70	M 27 x 1,5	80
MT 4	MT 2	6042G			70		
	MT 3	6043G	6043A	M 254	70	M 36 x 1,5	82
MT 5	MT 2	6052G	6052A	M 255	77	M 48 x 1,5	142
	MT 3	6053G	6053A	M 255	77	M 48 x 1,5	142
	MT 4	6054G	6054A	M 255	77	M 48 x 1,5	142
MT 6	MT 4	6064G	6064A	M 256	110	M 68 x 1,5	128
	MT 5	6065G	6065A	M 256	110	M 68 x 1,5	128
Metr. 80	MT 5	6805G	6805A	M 80*	110	M 80 x 2	130
1:20	MT 6	6806G	6806A	M 80*	110	M 80 x 2	130
taper80	MT 5	6805.1G	6805.1A	M 80*	110	M 80 x 2	130
1:10	MT 6	6806.1G	6806.1A	M 80*	110	M 80 x 2	130



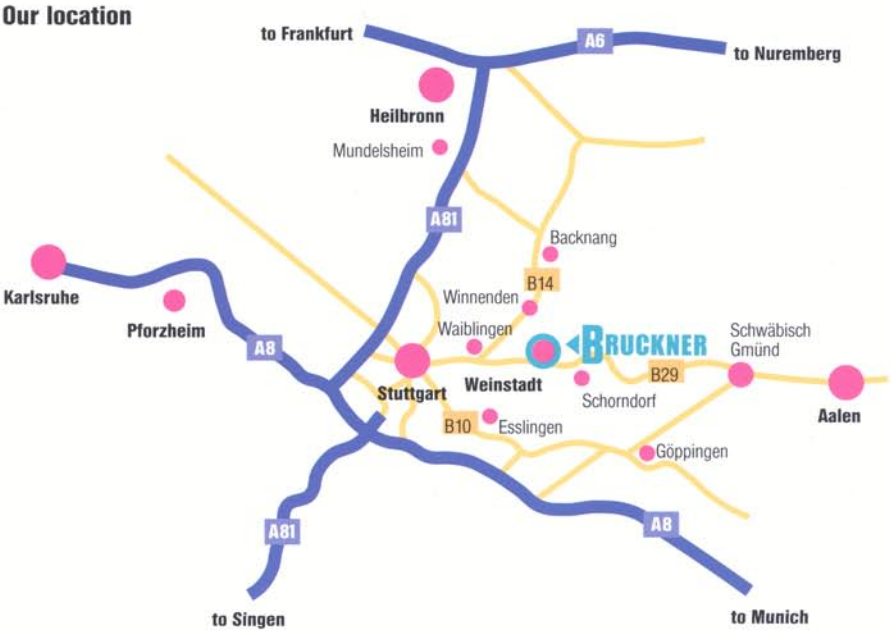
*Similar DIN 1804

BRUCKNER - History

In the year 1918 Karl Bruckner founded the company. Since then it has been family-owned.
At the start, dead centres were produced, but soon the live centre was developed.
BRUCKNER has an excellent world-wide reputation rooted in innovation and high quality standards.

The takeover of Bohner & Köhle's centres and drivers program in 1995 has added new features especially to the "face driver" range and initiated dynamic developments in this field.
We are proud that BRUCKNER is today a leading manufacturer and a competent partner for "Centres and Face Drivers".

Our location



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Precision and reliability foremost

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Precision Tool Manufacturers

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