

High Performance Centres for Turning and Grinding

High performance live centres

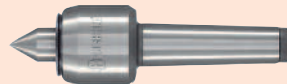
Quick Find

S-Series

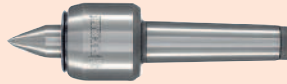
Standard centres (without spring loading) for high precision turning, CNC turning and cylindrical grinding

Technical information

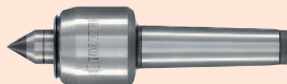
Typ S/SG
60°



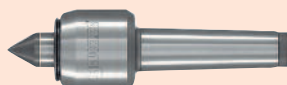
Typ SKOP/SKOPG
60°/40°



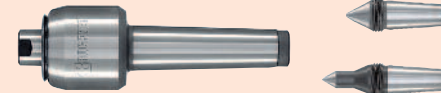
Typ SH/SHG
60° with carbide insert



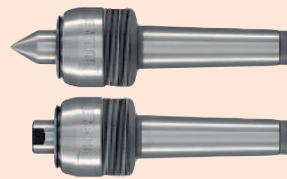
Typ SV/SVG
60° full carbide with **sa.co**® safety core



Typ SE/SEG
for interchangeable inserts



A-Reihe
with draw-off thread

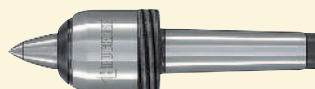


NC-Reihe

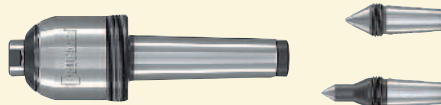
Live centres without spring loading, for turning, high speed CNC turning. Incorporating TOP-SEAL sealing system

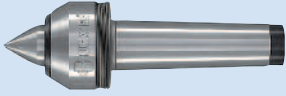
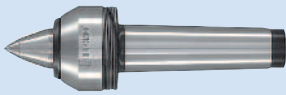





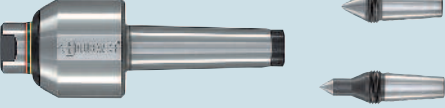

Technical information

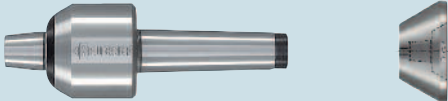
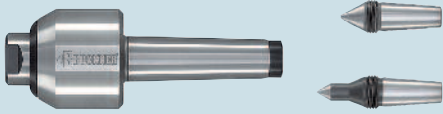
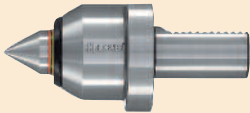

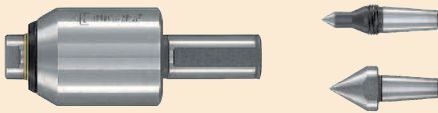
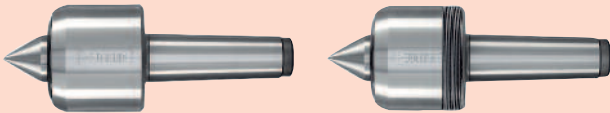
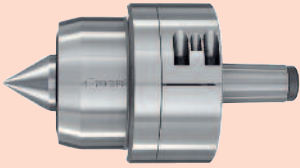
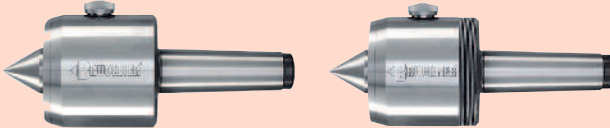

Typ NC
60°/40°






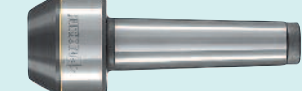












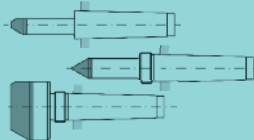
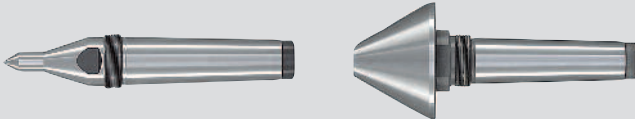

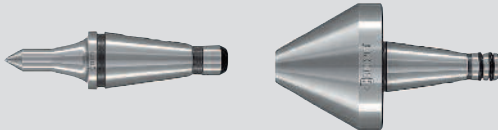


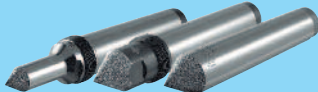
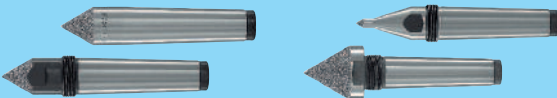
Typ NCE
for interchangeable inserts



| | | | |
|--|---|------------------------------|----------------|
| LK-Series | Live centres without spring loading for high performance turning, hard turning and cylindrical grinding. High stiffness due to short design and optimised bearing arrangement | Technical information | Page 22 |
| Typ LKS 60° |  | Page 23 | |
| Typ LKV 60°/40° |  | Page 24 | |
| Typ LKH 60° with carbide insert |  | Page 25 | |
| BÖKO-Series | | | |
| Type 2000 60° |  | Page 26 | |
| Typ 2030 60°/30° |  | Page 27 | |
| LR/LD-Reihe | | | |
| Spring loaded centres. LR: with pressure indication for turning, CNC turning, for multi-spindle machines, face driver applications LD: without pressure indication for turning, CNC turning, with expansion compensation | Technical information | Page 28/29 | |
| Typ LRS 60° |  | Page 30 | |
| Typ LRV 60°/40° |  | Page 31 | |
| Typ LRE for interchangeable inserts |  | Page 32/33 | |
| Typ LDS 60° |  | Page 34 | |

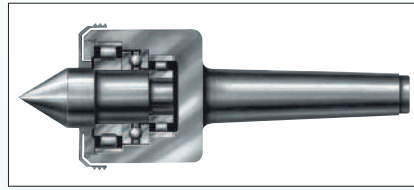
| | | |
|---|--|--------------------------|
| <p>Typ LDA for tapered caps</p> |  | <p>Page 35</p> |
| <p>Typ LDE for interchangeable inserts</p> |  | <p>Page 36/37</p> |
| <p>T-Linie</p> <p>Spring loaded centres with pressure indication for CNC lathes without tailstock and CNC lathes with opposed spindles</p> <p>Technical information</p> <p>Page 38</p> | | |
| <p>VDI 60°, 60°/40° and for centering inserts</p> |  | <p>Page 39</p> |
| <p>CAPTO 60°, 60°/40° and for centering inserts</p> |  | <p>Page 40</p> |
| <p>Zylinderschaft for interchangeable inserts</p> |  | <p>Page 41</p> |
| <p>for heavy-duty machining for turning and cylindrical grinding</p> <p>M Series Centrepoint without spring loading</p> <p>MZ Series Centrepoint with spring loading and pressure indication</p> <p>Technical information</p> <p>Page 42/43</p> | | |
| <p>Typ M/MG Typ AM/AMG 60°, 75°, 90°</p> |  | <p>Page 44</p> |
| <p>Typ MR/MRG 60°, 75°, 90° for interchangeable inserts</p> |  | <p>Page 45</p> |
| <p>Typ MZ/AMZ 60°, 75°, 90°</p> |  | <p>Page 46/47</p> |
| <p>Typ MZR 60°, 75°, 90° with tailstock sleeve support</p> |  | <p>Page 46/47</p> |

| | | |
|--|---|-------------------|
| ZA Series | High performance bullnose live centres for turning, cylindrical grinding of large bore workpieces | Page 48/49 |
| Typ ZA/ZAG without draw-off thread 60°, 75° |  | Page 50/51 |
| Typ ZA/ZAG with draw-off thread 60°, 75° |  | Page 52/53 |
| Carbide dead centres Point angle 60°, out-of-roundness ≤ 0.8 μm | Technical information | Page 54/55 |
| Form E, L |  | Page 56 |
| Form V |  | Page 56 |
| Form Z |  | Page 57 |
| Form R |  | Page 57 |
| Form B |  | Page 57 |
| Form HB |  | Page 57 |
| Forms HE, HL |  | Page 58 |
| Form HS |  | Page 58 |
| Form HV |  | Page 58 |
| Form GE |  | Page 59 |
| Form GV/GZ |  | Page 59 |

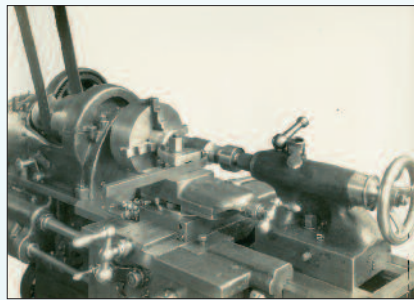
| | | |
|--|--|--|
| Form GR |  | Page 59 |
| Form GHS |  | Page 60 |
| Form GHV |  | Page 60 |
| INES[®] | Interactive system to generate enquiry drawings for carbide dead centres |  Page 61 |
| Tool steel dead centres with and without draw-off thread, point angle 60 | Technical information | Page 62 |
| Form 255/256/257/258 Morse taper metr. taper 1:20, taper 1:10 |  | Page 63 |
| Form 250 Morse taper metr. taper 1:20, taper 1:10 |  | Page 64 |
| Form 220/230 Steep taper 30/40 |  | Page 65 |
| Adapter sleeves for interchangeable inserts |  | Page 66 |
| Reduction sleeves |  | Page 66 |
| CARBIDOR[®] Coated driving centres | Technical information |  Page 67 |
| Form 250CA/255CA 257CA/258CA |  | Page 68 |
| Special Designs | | |
| Tool steel dead centres | | Page 64 |
| Live sleeves Bullnose live centres | | Page 69 |
| High performance live centres | | Page 70 |
| Carbide dead centres | | Page 71 |



Brochure 1940



Rotating high performance centre for heavy-duty machining, with 2 roller bearings (1936)



Lathe with rotating high performance centre from BRUCKNER

> The Past



Company premises in Stuttgart 1920



New building 1963 in Weinstadt-Grossheppach



The founder, Karl Bruckner

In 1918 Karl Bruckner founded his engineering workshop in Stuttgart and laid the cornerstone for a success story which continues today – more than 90 years on. Initially the business focused on the repair and overhaul of machines but his ability to find innovative solutions to technical problems led him to rapidly obtain orders for his own designs of pedestal grinders and small lathes.



Karl-Georg Bruckner

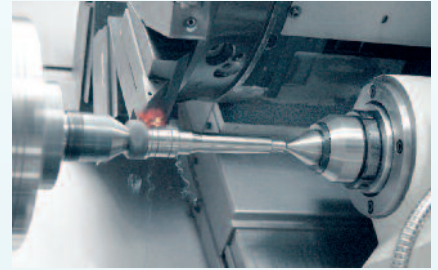
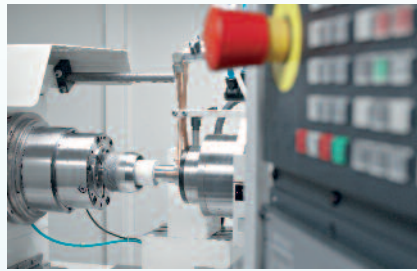
He commenced manufacture of lathe centres and in 1920 as a pioneer in this field he developed and produced his first rotating tailstock centre.

On the early death of Karl Bruckner in 1931 his son Karl Georg Bruckner took over management of the company. By the

end of 1944 bombs had destroyed the factory, which he rebuilt under the very difficult conditions of 1945. In the following years Karl Georg focused on manufacturing and developing both live and dead centres. Diligently and ambitiously he expanded the company and its distribution network.

The company's relocation to its present premises in Weinstadt-Grossheppach about 25 kilometers away was an important step for the company's future growth. In 1979 Karl Georg handed over management of the company to his daughter Hilde and his son Karl-Friedrich. In 1984 the youngest son Manfred joined the company and its management.

> The Present



Administration building



Production halls



Measuring room



Concentricity testing

Today's product range well illustrates the unending Bruckner quest for perfection and precision.

A highly qualified and motivated staff is committed to fulfilling customer demands.

The application of high precision machine tools and the highest in-house standards of measurement have decisive influences on manufacturing.

So Bruckner products by their accuracy and durability directly contribute to the raising of productivity and achievement of international recognition.

Entrepreneurial activity, responsibility to employees and business partners, with commitment to innovation and uncompromising quality have been the decisive policy for the mission of this medium sized family owned company, these values being continuously passed to the fourth generation.

() = catalogue pages

Conventional turning

| Operation requirements | Recommended series/types | | | |
|--|---|-----------------------------|---|----------------------------|
| Workpiece accuracy ≥ 0.004 mm | S Series (9-15) | | Bokö Series (26/27) | |
| Workpiece accuracy ≤ 0.003 mm | S Series 3μm (9-15) | | LK Series 3μm (22-25) | |
| High workpiece surface finish | LK Series (22-25) | | | |
| Hard workpieces (hard turning) | | | | |
| High live centre rigidity | | | | |
| Elimination of or minimum vibrations during operation | | | | |
| Heavy coolant flow | NC Series (18-21) | | | |
| High r.p.m. (> 5.000 1/min.) | NC Series (18-21) | | LK Series (22-25) | |
| Long shafts | LR Series (28-33) | | LD Series (34-37) | |
| Thermal expansion of workpiece due to machining | ZA Series (48-53) | | | |
| Large workpiece centres/bores | | | | |
| Variable clamping possibilities for different workpieces | Types SE/SEG (14/15) | Type NCE (20/21) | Type LRE (32/33) | Type LDE (36/37) |
| High rate of wear on the 60° centre point angle | Types SH/SHG (12) | Types SV/SVG (13) | Types LKH/LKHG (25) | |
| Wear reduction on the 60° angle by carbide tipping | LR Series (28-33) | | | |
| Tailstock without hydraulic force adjustment | | | | |
| Controlling the axial force | | | | |
| Face driver application with mechanical tailstock | | | | |
| Face driver application with hydraulic tailstock | S Series (9-15) | LD Series (34-37) | NC Series (18-21) | |
| Tailstock sleeve design prevents convenient removal of live centre | A Series (16/17) | NC Series (18-21) | LK Series (22-25) | |

CNC turning

| Operation requirements | Recommended series/types | | | |
|--|---|-----------------------------|---|----------------------------|
| Workpiece accuracy ≥ 0.004 mm | S Series (9-15) | NC Series (18-21) | Bokö Series (26/27) | |
| Workpiece accuracy ≤ 0.003 mm | S Series 3μm (9-15) | | LK Series 3μm (22-25) | |
| High workpiece surface finish | LK Series (22-25) | | | |
| Hard workpieces (hard turning) | | | | |
| Elimination of or minimum vibrations during operation | | | | |
| Heavy coolant flow | | | | |
| High r.p.m. (> 5.000 1/min.) | NC Series (18-21) | | LK Series (22-25) | |
| Long shafts | LR Series (28-33) | | LD Series (34-37) | |
| Thermal expansion of workpiece due to machining | ZA Series (48-53) | | | |
| Large workpiece centres/bores | | | | |
| Variable clamping possibilities for different workpieces | Types SE/SEG (14/15) | Type NCE (20/21) | Type LRE (32/33) | Type LDE (36/37) |
| High rate of wear on the 60° centre point angle | Types SH/SHG (12) | Types SV/SVG (13) | Types LKH/LKHG (25) | |
| Wear reduction on the 60° angle by carbide tipping | LR Series (28-33) | | | |
| Tailstock without hydraulic force adjustment | | | | |
| Controlling the axial force | | | | |
| Face driver application with mechanical tailstock | | | | |
| Face driver application with hydraulic tailstock | S Series (9-15) | LD Series (34-37) | NC Series (18-21) | |
| Compensation for varying centre depths and length tolerances of the workpiece at fixed preset tailstock and turret positions | LR Series (28-33) | | T Line (38-41) | |
| Centre in second counter spindle | A Series (16/17) NC Series (18-21) LK Series (22-25) | | | |
| Tailstock sleeve design prevents convenient removal of live centre | | | | |

Cylindrical grinding

() = catalogue pages

| Operation requirements | Recommended series/types | |
|--|---|--|
| Workpiece accuracy | S Series 3µm with additional sealing (9-15) | LK Series 3µm (22-25) |
| High workpiece surface finish | LK Series 3µm (22-25) | |
| Elimination of or minimum vibrations during operation | | |
| Heavy coolant flow | S Series 3µm, with additional sealing (9-15) | |
| Long shafts | S Series 3µm with additional sealing (9-15) | LK Series 3µm (22-25) |
| Large workpiece centres/bores | ZA Series 3µm (48-53) | |
| Variable clamping possibilities for different workpieces | Type SEG with additional sealing (14/15) | |
| Wear reduction on the 60° angle by carbide tipping | Type SHG with additional sealing (12) | Type SVG with additional sealing (13) |
| Tailstock sleeve design prevents convenient removal of live centre | A Series 3µm with additional sealing (16/17) | LK Series 3µm (22-25) |

Heavy-duty machining

| Characteristics/operation requirements | Recommended series/types | |
|---|--------------------------------------|-------------------------|
| Without tailstock sleeve support, without expansion compensation | Types M/MG, Types AM/AMG (44) | |
| Without tailstock sleeve support, with expansion compensation and pressure indication | Types MZ/AMZ (46/47) | |
| With tailstock sleeve support, without expansion compensation | Types MR/MRG (45) | |
| With tailstock sleeve support, with expansion compensation and pressure indication | Type MZR (46/47) | |
| High workpiece surface finish | Types MR/MRG (45) | Type MZR (46/47) |
| Thermal expansion of workpiece due to machining | Types MZ/AMZ (46/47) | |
| Large workpiece centres/bores | ZA Series (48-53) | |
| Tailstock sleeve design prevents convenient removal of live centre | Types AM/AMG (44) | Type AMZ (46/47) |
| Interrupted cut/out of balance workpiece | Types MR/MRG (45) | Type MZR (46/47) |

Measuring/testing

| Operation requirements | Recommended series/types | | |
|--|------------------------------|------------------------------|-----------------------|
| Workpiece accuracy ≤ 0.003 mm and more | S Series 3µm (9-15) | LD Series 3µm (34-37) | |
| Long shafts | S Series 3µm (9-15) | LK Series 3µm (22-25) | |
| Large workpiece centres/bores | ZA Series 3µm (48-53) | | |
| Variable clamping possibilities for different workpieces | Type SEG (14/15) | | |
| Wear reduction on the 60° angle by carbide tipping | Type SHG (12) | Type SVG (13) | Type LKHG (25) |
| Tailstock sleeve design prevents convenient removal of live centre | A Series 3µm (16/17) | LK Series 3µm (22-25) | |

BRUCKNER WORKS STANDARD

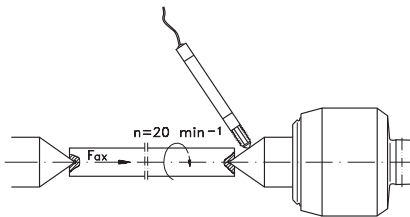
Our high performance live centres – standard as well as special designs – are produced and tested according to our works standard. Materials, production and testing are subject to strict quality guidelines guaranteeing function and performance of our tools.

Test report for concentricity accuracy

Every single BRUCKNER high performance live centre is tested for its runout under axial load. The test result is stamped into the high performance centre and is guaranteed by the test report.



Example: table „maximum runout“ for types S, SG



| Type S | Type SG | Morse taper | Runout max. | | Fax daN |
|--------|---------|-------------|-------------|---------|---------|
| | | | Type S | Type SG | |
| 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 DIN 228 AT4 (gauge accuracy). This fine tolerance guarantees a close fit of the high performance centre in the tailstock and therefore the full utilisation of the concentricity accuracy.

Precision bearings

The bearing seats in the housing and on the centrepoint are precision-ground. The bearings and their seats are selected to fit.

Result: high stability, concentricity and long life.

Load values

The load values given in our tables are calculated with the world wide acknowledged software KISSsoft. When used in keeping with currently valid standards DIN and ISO, this software guarantees a safe and reliable load calculation.



Centrepoint

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

Housing

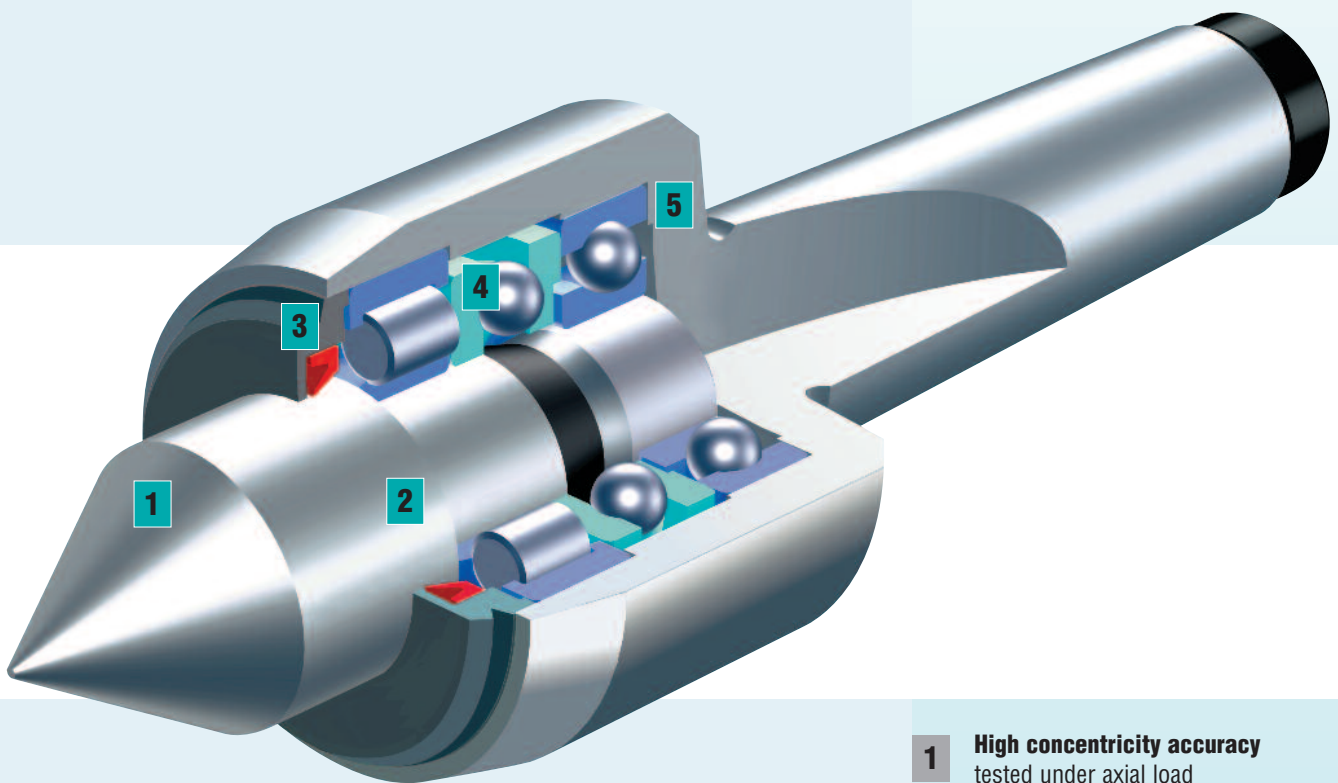
The housing is of alloy tool steel with high tensile strength. Housing head and shank are case-hardened for protection from damage.

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.



S Series – the classic design with head bearings

The all-rounder of our high performance live centres. The centres from our S series offer the user an economic solution for almost every standard workholding situation. From turning and cylindrical grinding to measuring and inspection, centres of the S series fulfil the high requirements of performance, precision and tool life.

Two types:

- ▶ Slim design for light-duty work
- ▶ With stronger bearings for normal to high-duty service

- 1 High concentricity accuracy**
tested under axial load
guaranteed with test report
- 2 Centrepoint**
of through-hardened alloy tool steel
- 3 Seal ring**
protects the bearings from dirt and coolant. Optionally available with supplementary seal (page 10)
- 4 Large-dimensioned precision roller bearings**
for supporting the radial and axial forces.
Maintenance-free due to permanent lubrication
- 5 Housing**
of high tensile alloy tool steel
housing and shank are case-hardened to protect from damage

Types S, SG

Centrepoint 60°

Runout

Type S max. 0.005 mm
 Type SG max. 0.003 mm

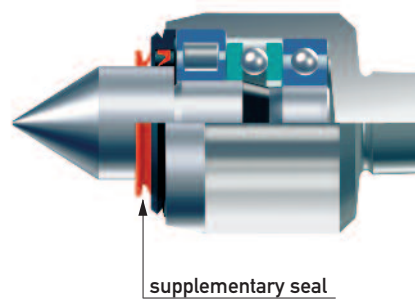
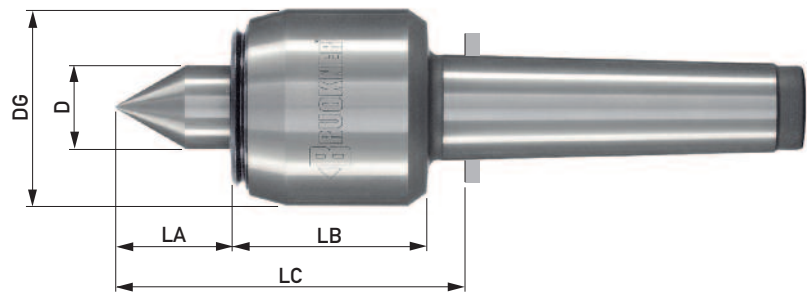
with test report

Application

- Type S** – conventional turning, CNC turning, roughing, finishing
- Type SG** – for turning and grinding operations demanding high accuracy, measuring

Supplementary seal

For operations involving heavy flows of coolant or large quantities of dust and dirt (e. g. cylindrical grinding), a supplementary 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.



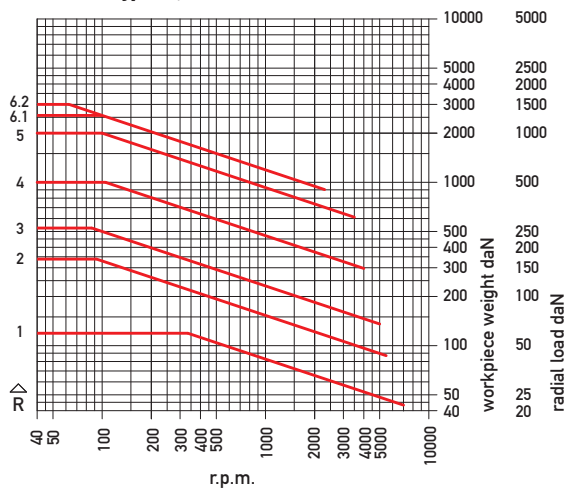
| Type S | ID.No. | 5001 | 5001-2 | 5001-3 | 5002 | 5003 | 5006 | 5004 | 5007 | 5005 | 5008 | 5009 |
|----------------------------|--------|-------|--------|--------|-------|-------|-------|-------|-------|-------|---------|---------|
| Type SG | ID.No. | 5121 | 5121-2 | 5121-3 | 5122 | 5123 | 5126 | 5124 | 5127 | 5125 | 5128 | 5129 |
| Morse taper | | 1 | 2 | 3 | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| D | | 13 | 13 | 13 | 20 | 20 | 25 | 25 | 35 | 45 | 58 | 58 |
| DG | | 32 | 32 | 32 | 45 | 45 | 58 | 58 | 76 | 95 | 120 | 120 |
| LA | | 19 | 19 | 19 | 24 | 24 | 34 | 34 | 43 | 59 | 63 | 63 |
| LB | | 38 | 38 | 38 | 52 | 52 | 58 | 58 | 68 | 89 | 102 | 102 |
| LC | | 63 | 63 | 64 | 82 | 83 | 99 | 101 | 120 | 159 | 178 | 178 |
| Workpiece weight max. daN* | | 120 | 120 | 120 | 340 | 340 | 525 | 525 | 1000 | 2000 | 2500 | 3000 |
| r.p.m. max.* | | 7000 | 7000 | 7000 | 5500 | 5500 | 5000 | 5000 | 4000 | 3500 | 2300 | 2300 |
| Radial/axial load graph | | R1/A1 | R1/A1 | R1/A1 | R2/A2 | R2/A2 | R3/A3 | R3/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 |

► With draw-off thread see pages 16/17

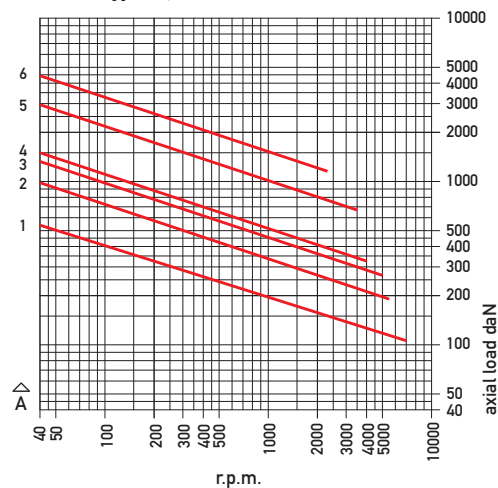
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

Radial – Types S, SG



Axial – Types S, SG



Types SKOP, SKOPG

Centrepoint 60°/40° extended

Runout

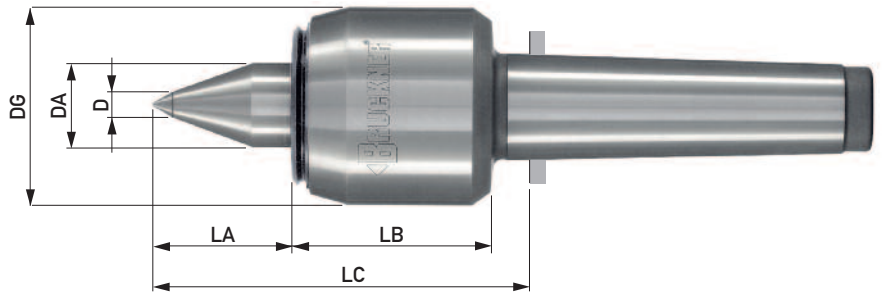
Type SKOP max. 0.005 mm
 Type SKOPG max. 0.003 mm
 with test report

Application

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

Type SKOP – conventional turning, CNC turning, roughing, finishing

Type SKOPG – for turning operations demanding high accuracy



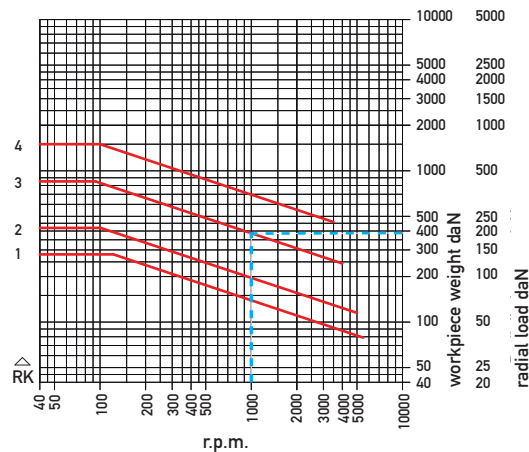
| Type SKOP | ID.No. | 5362 | 5363 | 5366 | 5364 | 5367 | 5365 |
|----------------------------|--------|---------|---------|---------|---------|---------|---------|
| Type SKOPG | ID.No. | 5362G | 5363G | 5366G | 5364G | 5367G | 5365G |
| Morse taper | | 2 | 3 | 3 | 4 | 4 | 5 |
| DA | | 20 | 20 | 25 | 25 | 35 | 45 |
| D | | 6 | 6 | 8 | 8 | 10 | 12 |
| DG | | 45 | 45 | 58 | 58 | 76 | 95 |
| LA | | 30 | 30 | 42 | 42 | 54 | 70 |
| LB | | 51 | 51 | 58 | 58 | 68 | 89 |
| LC | | 87 | 89 | 106 | 108 | 132 | 169 |
| Workpiece weight max. daN* | | 280 | 280 | 420 | 420 | 850 | 1500 |
| r.p.m. max.* | | 5500 | 5500 | 5000 | 5000 | 4000 | 3500 |
| Radial/axial load graph | | RK1/AK1 | RK1/AK1 | RK2/AK2 | RK2/AK2 | RK3/AK3 | RK4/AK4 |
| Supplementary seal | ID.No. | V20 | V20 | V25 | V25 | V35 | V45 |

► With draw-off thread see pages 16/17

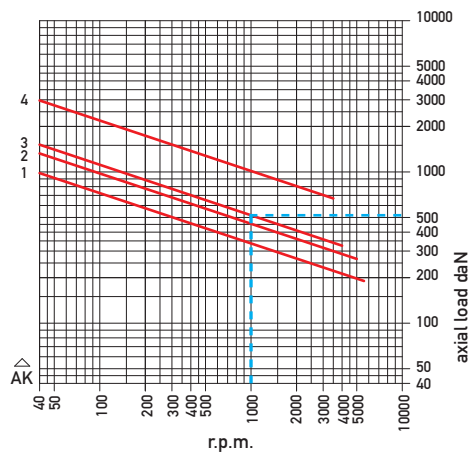
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours

Radial – Types SKOP, SKOPG



Axial – Types SKOP, SKOPG



Determination of admissible load

Example: Type SKOP 5367, MT 4

Load graph: radial RK3/axial AK3
 Permissible load at 1000 r.p.m.
 Radial load $F_R = 190$ daN
 Workpiece weight $F_W = 380$ 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)

Types SH, SHG

Centrepoint 60° carbide-tipped

Regrindable to the regrinding line

Runout

Type SH max. 0.005 mm

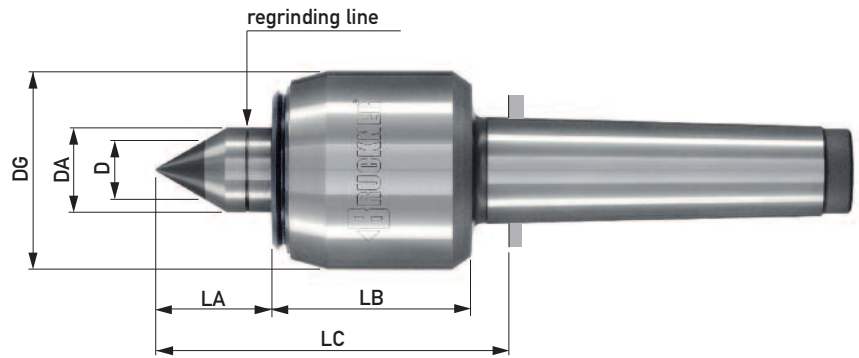
Type SHG max. 0.003 mm

with test report

Application

For cylindrical grinding 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).

For cylindrical grinding operations we recommend the use of our **supplementary seal** (fig. on page 10)



| 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 |
| DA | | 13 | 13 | 20 | 20 | 25 | 25 | 35 | 45 | 58 |
| D | | 7 | 7 | 11 | 11 | 18 | 18 | 18 | 18 | 30 |
| DG | | 32 | 32 | 45 | 45 | 58 | 58 | 76 | 95 | 120 |
| LA | | 19 | 19 | 24 | 24 | 34 | 34 | 43 | 59 | 63 |
| LB | | 38 | 38 | 52 | 52 | 58 | 58 | 68 | 89 | 102 |
| LC | | 63 | 64 | 82 | 83 | 99 | 101 | 120 | 159 | 178 |
| Workpiece weight max. daN* | | 120 | 120 | 200 | 200 | 400 | 400 | 600 | 1200 | 2100 |
| r.p.m. max.* | | 7000 | 7000 | 5500 | 5500 | 5000 | 5000 | 4000 | 3500 | 2300 |
| Radial/axial load graph | | RH1/AH1 | RH1/AH1 | RH2/AH2 | RH2/AH2 | RH3/AH3 | RH3/AH3 | RH4/AH4 | RH5/AH5 | RH6/AH6 |
| Supplementary seal | ID.No. | V13 | V13 | V20 | V20 | V25 | V25 | V35 | V45 | V58 |

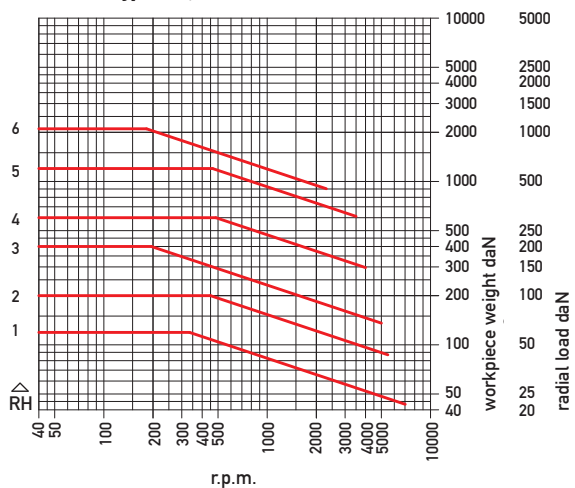
MT1 5241/5251 on request

*observe the load graphs

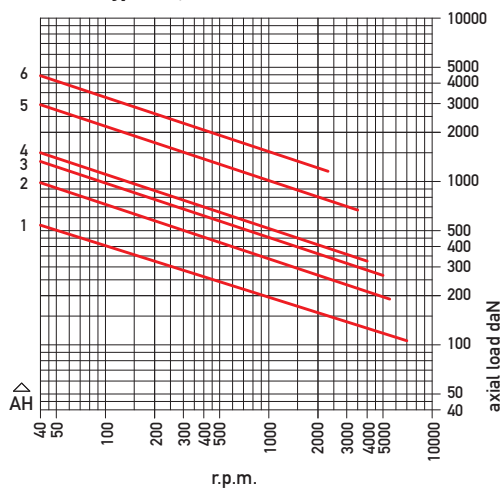
► With draw-off thread see pages 16/17

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

Radial – Types SH, SHG



Axial – Types SH, SHG



Types SV, SVG

Centrepoint 60° full carbide with safety core **sa•co**[®]
 Regrindable to the braze line

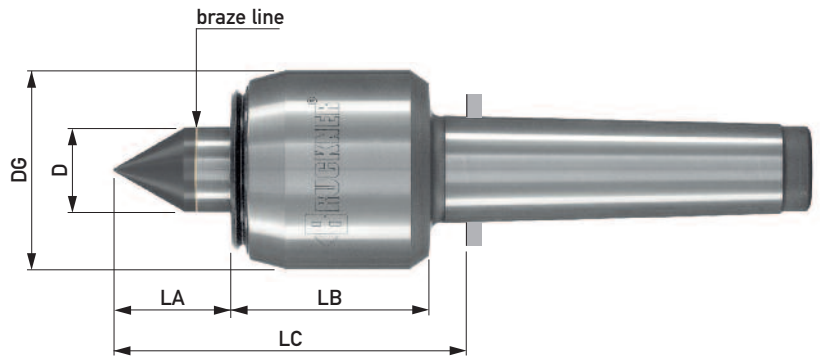
Runout

Type SV max. 0.005 mm
 Type SVG max. 0.003 mm
 with test report

Application

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

For cylindrical grinding operations we recommend the use of our **supplementary seal** (fig. on page 10)



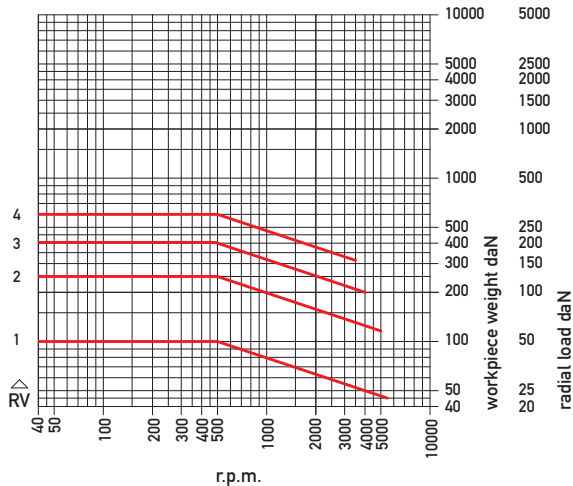
A safety core is integrated in the carbide point of types SV, SVG.
 If the interface of carbide and basic material becomes overstressed, e.g. through operating error or mishandling, the safety core prevents the carbide with the loaded component from slipping. Thus high consequential damage is avoided.

| Type 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 | | 20 | 20 | 25 | 25 | 35 | 45 |
| DG | | 45 | 45 | 58 | 58 | 76 | 95 |
| LA | | 24 | 24 | 34 | 34 | 43 | 59 |
| LB | | 52 | 52 | 58 | 58 | 68 | 89 |
| LC | | 82 | 83 | 99 | 101 | 120 | 159 |
| Workpiece weight max. daN* | | 100 | 100 | 250 | 250 | 400 | 600 |
| r.p.m. max.* | | 5500 | 5500 | 5000 | 5000 | 4000 | 3500 |
| Radial/axial load graph | | RV1/AV1 | RV1/AV1 | RV2/AV2 | RV2/AV2 | RV3/AV3 | RV4/AV4 |
| Supplementary seal | ID.No. | V20 | V20 | V25 | V25 | V35 | V45 |

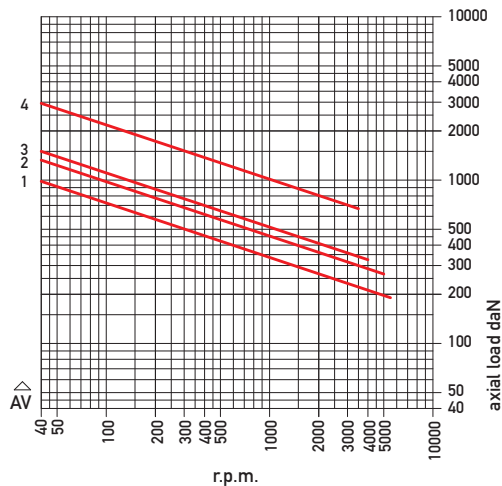
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

Radial – Types SV, SVG



Axial – Types SV, SVG



Types SE, SEG

Centre spindle with 1:7.5 internal taper for interchangeable inserts

Runout

Type SE max. 0.005 mm
Type SEG max. 0.003 mm

with test report

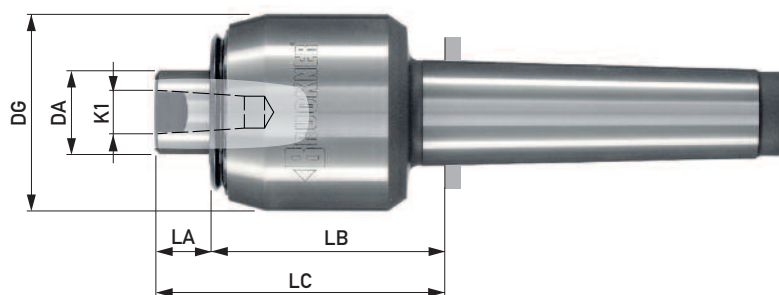
Application

For one off, small and large series production, measuring.

Advantages

As the centre spindle wears only the insert has to be changed and once again the high performance centre is ready for use. Flexibility in application is made possible by a choice of eight different insert styles (page 15).

Depending on the style the insert can be removed by its draw-off thread and draw-off nut or with spanners applied to the spanner flats.



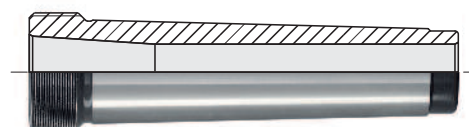
For cylindrical grinding operations we recommend the use of our **supplementary seal** (fig. on page 10)

| Type SE | ID.No. | 5482 | 5483 | 5486 | 5484 | 5487 | 5485 |
|--------------------|---|-------|-------|-------|-------|-------|-------|
| Type SEG | ID.No. | 5482G | 5483G | 5486G | 5484G | 5487G | 5485G |
| Morse taper | | 2 | 3 | 3 | 4 | 4 | 5 |
| DA | | 20 | 20 | 25 | 25 | 35 | 45 |
| DG | | 45 | 45 | 58 | 58 | 76 | 95 |
| K1 | | 11 | 11 | 15 | 15 | 22 | 28 |
| LA | | 14 | 14 | 17 | 17 | 18 | 21 |
| LB | | 52 | 52 | 58 | 58 | 68 | 89 |
| LC | | 71 | 72 | 81 | 83 | 95 | 121 |
| SW (spanner flat) | | 16 | 16 | 22 | 22 | 30 | 41 |
| r.p.m. max.* | | 5500 | 5500 | 5000 | 5000 | 4000 | 3500 |
| Suitable insert | | 482.. | 482.. | 484.. | 484.. | 487.. | 485.. |
| Supplementary seal | ID.No. | V20 | V20 | V25 | V25 | V35 | V45 |
| Load | The load of types SE, SEG is limited by the interchangeable inserts (page 15) | | | | | | |

► With draw-off thread see pages 16/17

Adapter sleeve type KE

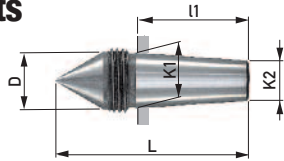
(figure and table: see page 66)
For regrinding interchangeable inserts. Combined with the interchangeable inserts, can be used as a dead centre in head- and tailstocks for special operations.



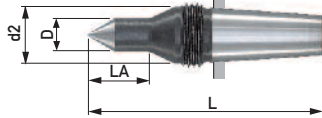
Interchangeable inserts

taper 1:7.5, in gauge accuracy

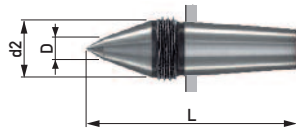
Form AO, 60°
draw-off thread



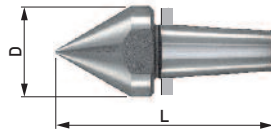
Form ASL, 60°
slim, extended
draw-off thread



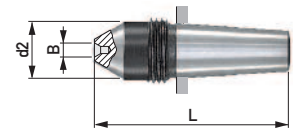
Form AKOP, 60°/40°
extended
draw-off thread



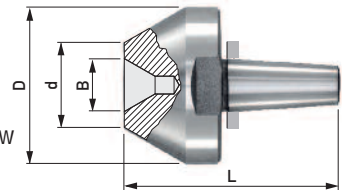
Form A, 60°
for hollow parts
spanner flat (SW)



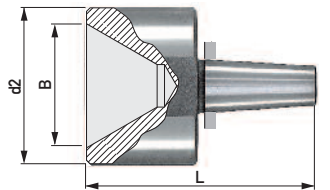
Form B, centre 60°
for centreless workpieces,
draw-off thread



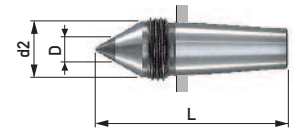
Form C, centre 60°
for centreless workpieces,
external angle 60° for hollow
parts, spanner flat (SW)



Form D, centre 60°
for centreless workpieces,
spanner flat (SW)



Form AOHM, 60°
with carbide insert
draw-off thread



| Basic centre Types: SE, SEG, ASE KE (page 66) | Interchangeable inserts | Radial load max. daN | Insert dimensions | | | | | | Thread SW | Taper dimensions taper 1:7.5 | | |
|---|----------------------------|-------------------------|-------------------|------|-------|----|-----|----------|--------------|---------------------------------|------|------|
| | | | D | d2 | B | d | L | LA | | K1 | K2 | I1 |
| 5482 5482G 5483 5483G 2952A | 482AO | 90 | 11.7 | | | | 45 | | M 14x1.5 | 11 | 8 | 23 |
| | 482ASL | 30 | 6 | 11.7 | | | 55 | 15 | M 14x1.5 | | | |
| | 482AKOP | 90 | 5 | 11.7 | | | 50 | | M 14x1.5 | | | |
| | 482A | 90 | 17 | | | | 45 | | SW14 | | | |
| | 482B | 90 | | 11.7 | 4x2 | | 45 | | M 14x1.5 | | | |
| | 482C | 90 | 28 | | 8x3 | 12 | 45 | | SW24 | | | |
| | 482D | 90 | | 28 | 20x6 | | 45 | | SW24 | | | |
| | 482AOHM | 60 | 7 | 11.7 | | | 45 | | M 14x1.5 | | | |
| 5484 5484G 5486 5486G 5484A 5486A 2953A | 484AO | 160 | 15.7 | | | | 53 | | M 18x1.5 | 15 | 11 | 30 |
| | 484ASL | 100 | 9 | 15.7 | | | 65 | 17 | M 18x1.5 | | | |
| | 484AKOP | 160 | 6 | 15.7 | | | 58 | | M 18x1.5 | | | |
| | 484A | 160 | 25 | | | | 60 | | SW22 | | | |
| | 484B | 110 | | 15.7 | 4x2 | | 53 | | M 18x1.5 | | | |
| | 484C | 160 | 44 | | 15x5 | 24 | 60 | | SW41 | | | |
| | 484D | 160 | | 44 | 35x12 | | 64 | | SW41 | | | |
| | 484AOHM | 60 | 7 | 15.7 | | | 53 | | M 18x1.5 | | | |
| 5487 5487G 5487A 2954A | 487AO | 300 | 21.6 | | | | 74 | | M 24x1.5 | 22 | 16.4 | 42 |
| | 487ASL | 100 | 9 | 21.6 | | | 86 | 17 | M 24x1.5 | | | |
| | 487AKOP | 300 | 8 | 21.6 | | | 80 | | M 24x1.5 | | | |
| | 487A | 300 | 32 | | | | 82 | | SW27 | | | |
| | 487B | 240 | | 21.6 | 5x2.5 | | 74 | | M 24x1.5 | | | |
| | 487C | 300 | 55 | | 20x6 | 30 | 82 | | SW50 | | | |
| | 487D | 300 | | 55 | 45x15 | | 85 | | SW50 | | | |
| 487AOHM | 200 | 11 | 21.6 | | | 74 | | M 24x1.5 | | | | |
| 5485 5485G 5485A 2955A | 485AO | 500 | 27.7 | | | | 93 | | M 30x1.5 | 28 | 21 | 52.5 |
| | 485ASL | 180 | 13 | 27.7 | | | 110 | 27 | M 30x1.5 | | | |
| | 485AKOP | 500 | 8 | 27.7 | | | 105 | | M 30x1.5 | | | |
| | 485A | 500 | 45 | | | | 105 | | SW41 | | | |
| | 485B | 500 | | 27.7 | 7x3 | | 93 | | M 30x1.5 | | | |
| | 485C | 500 | 65 | | 25x6 | 35 | 105 | | SW55 | | | |
| | 485D | 500 | | 65 | 55x20 | | 105 | | SW55 | | | |
| 485AOHM | 500 | 18 | 27.7 | | | 93 | | M 30x1.5 | | | | |

| ID.No. | Content |
|--------|---------|
| P 10 | 100 g |

Installation paste

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

Version A

with draw-off thread

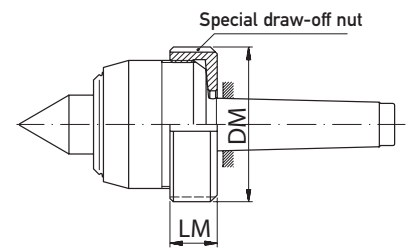
Application

With blind tailstock sleeve (without the possibility to remove the centre via a through hole) or for high precision machine tools to protect the spindle bearings or the tailstock sleeve.

For cylindrical grinding operations we recommend the use of our **supplementary seal** (as shown on page 10).

Special draw-off nut

This nut assures centre removal from the tailstock even if the sleeve diameter is smaller than the centres housing diameter.



Types AS, ASG

60° centrepont

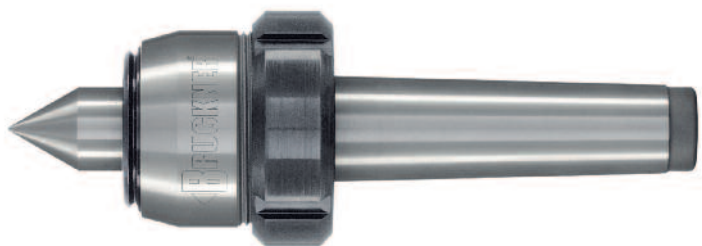
Runout

Type AS max. 0.005 mm

Type ASG max. 0.003 mm

with test report

Technical data: see types S, SG (page 10)



Type ASKOP

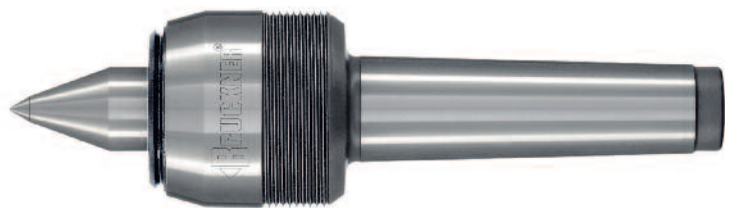
60°/40° centrepont extended

Runout

max. 0.005 mm

with test report

Technical data: see type SKOP (page 11)



Type ASHG

60° centrepont with carbide insert

Runout

max. 0.003 mm

with test report

Technical data: see type SHG (page 12)

Type ASVG on request



Type ASE

Centre spindle with 1:7.5 internal taper for interchangeable inserts

Runout

max. 0.005 mm

with test report

Technical data: see type SE (page 14), inserts (page 15)

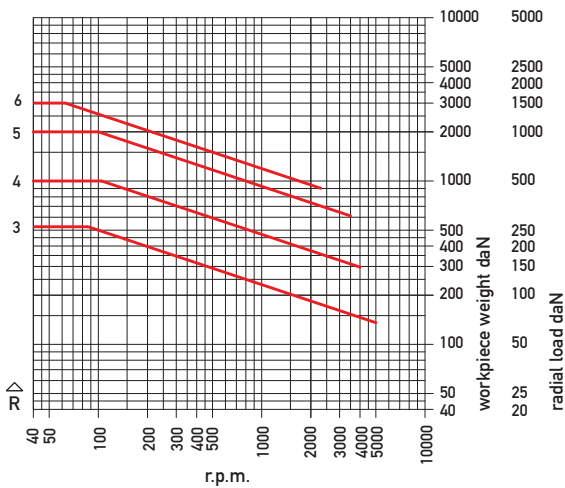


| Morse taper | | 3 | 4 | 4 | 5 | 6 |
|--------------------|-------------------------|--|--------|--------|--------|-------|
| Type AS | ID.No. | 5006A | 5004A | 5007A | 5005A | 5009A |
| | radial/axial load graph | R3/A3 | R3/A3 | R4/A4 | R5/A5 | R6/A6 |
| Type ASG | ID.No. | 5126A | 5124A | 5127A | 5125A | 5129A |
| | radial/axial load graph | R3/A3 | R3/A3 | R4/A4 | R5/A5 | R6/A6 |
| Type ASKOP | ID.No. | 5366A | 5364A | 5367A | 5365A | |
| | radial/axial load graph | RK3/A3 | RK3/A3 | RK4/A4 | RK5/A5 | |
| Type ASHG | ID.No. | 5256A | 5254A | 5257A | 5255A | |
| | radial/axial load graph | RH3/A3 | RH3/A3 | RH4/A4 | RH5/A5 | |
| Type ASE | ID.No. | 5486A | 5484A | 5487A | 5485A | |
| | load | The load of type ASE is limited by the interchangeable inserts (page 15) | | | | |
| Supplementary seal | ID.No. | V25 | V25 | V35 | V45 | V58 |

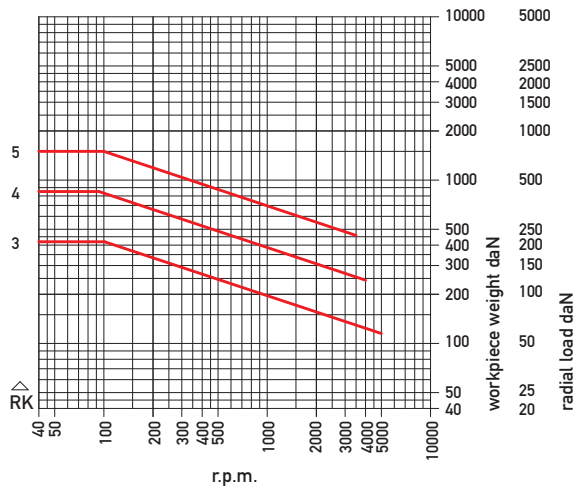
| Special nut for version A | | | | | |
|---------------------------|------|------|------|------|-------|
| ID.No. | M58A | M58A | M76A | M95A | M120A |
| DM | 70 | 70 | 92 | 115 | 138 |
| LM | 24 | 24 | 28 | 39 | 45 |

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

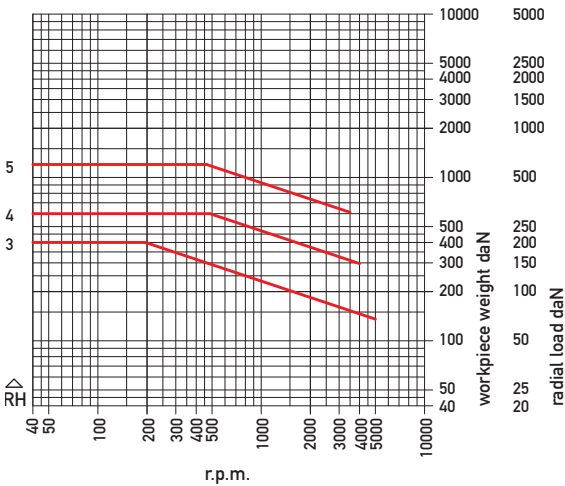
Radial – Types AS, ASG



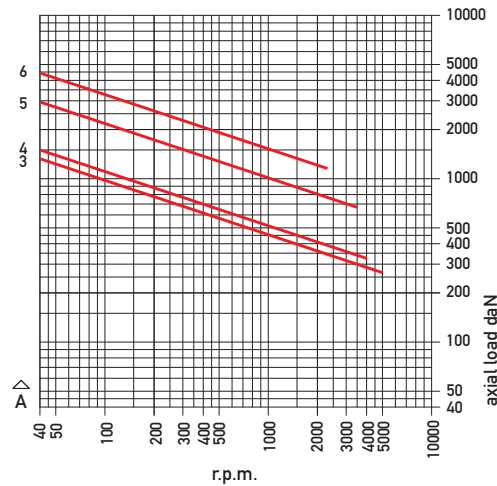
Radial – Type ASKOP

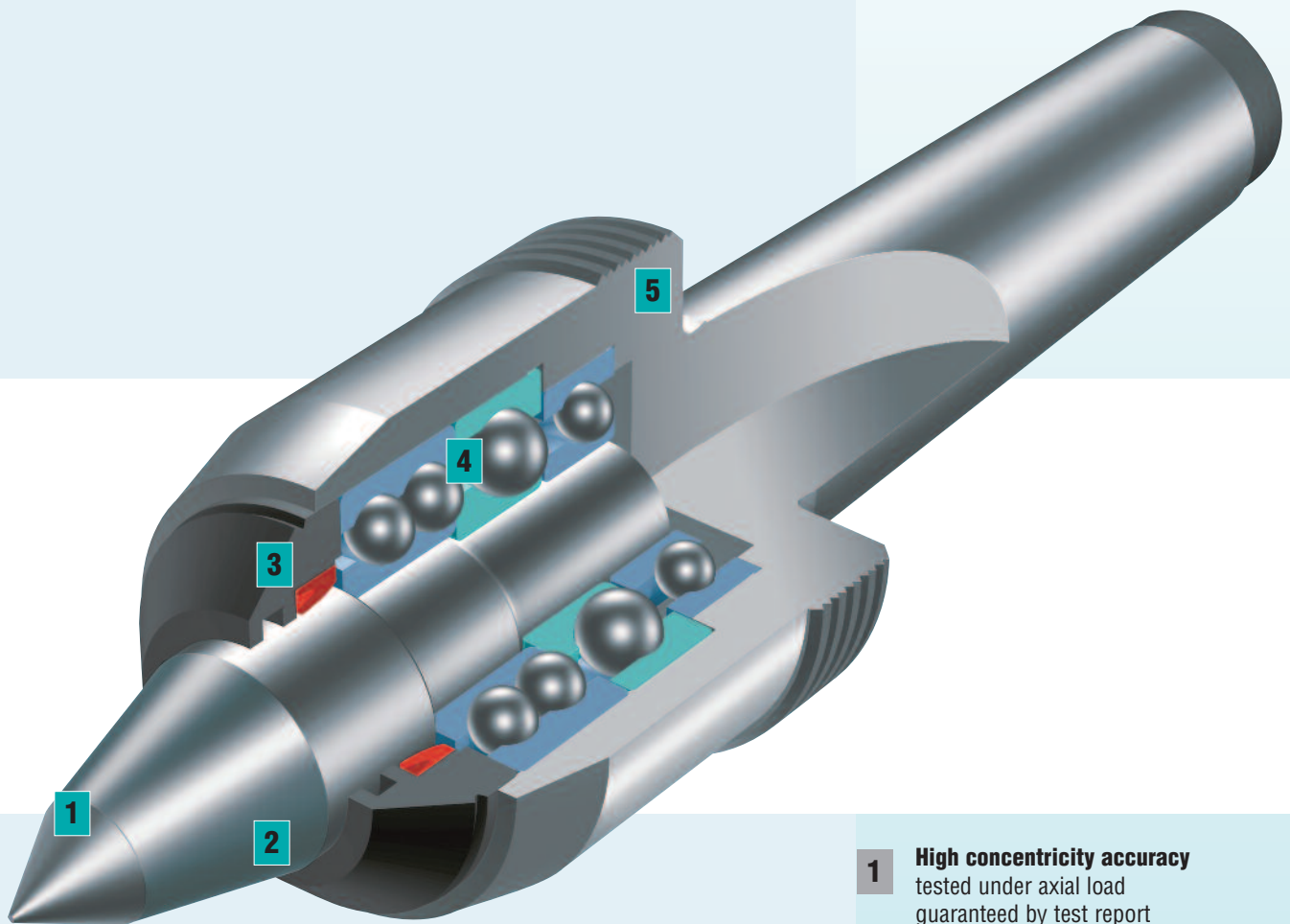


Radial – Type ASHG



Axial – all A Types





NC Series – a class on its own



The BRUCKNER TOP-SEAL-SYSTEM provides a triple-layer protection from dirt and coolant (see the principle on page 20). The robust precision bearings have been specially designed for turning operations requiring high

r.p.m. The NC series user works with high performance centres showing their class particularly when „the going gets tough“.

Two types:

- ▶ Slim design for ease of access, minimum rolling resistance for small and medium work through low-friction bearings
- ▶ With extra high duty bearings for higher loads

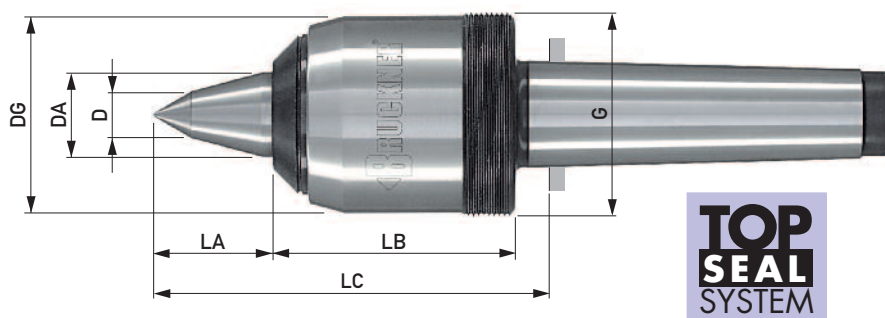
- 1 High concentricity accuracy**
tested under axial load
guaranteed by test report
- 2 Through-hardened alloy tool steel
centrepoint**
- 3 TOP-SEAL-SYSTEM**
protects the bearings from
dirt and coolant
- 4 Large-dimensioned precision
roller bearings**
robust bearings to absorb the radial
and axial forces.
Maintenance-free due to permanent
lubrication
- 5 Housing**
of high tensile alloy tool steel.
Housing and shank are case-
hardened to protect from damage

Types NC 33, NC 43

For high r.p.m.
Centrepoint 60°/40°
 with draw-off thread

Runout
 max. 0.005 mm, with test report

Application
 For turning operations requiring high r.p.m.
 Triple-layer protection of bearings from penetration of coolant by the **TOP-SEAL-SYSTEM** (principle on page 20)



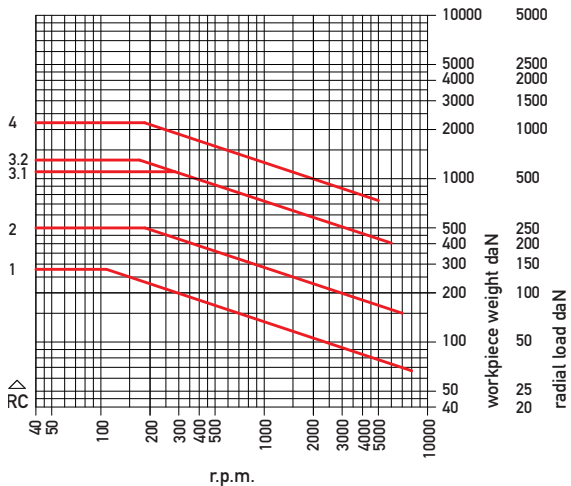
| Type NC | ID.No. | 33.045-2 | 33.045-3 | 43.058-3 | 33.058-4 | 43.076-4 | 33.076-5 | 43.095-5 | 33.095-6 |
|----------------------------|--------|----------|----------|----------|----------|-----------|-----------|----------|----------|
| Draw-off nut | ID.No. | M45A | M45A | M60 | M60 | M80 | M80 | M100 | M100 |
| Morse taper | | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| DA | | 20 | 20 | 25 | 25 | 35 | 35 | 45 | 45 |
| D | | 6 | 6 | 14 | 14 | 16 | 16 | 20 | 20 |
| DG | | 45 | 45 | 58 | 58 | 76 | 76 | 95 | 95 |
| LA | | 25 | 25 | 35 | 35 | 44 | 44 | 54 | 54 |
| LB | | 57 | 57 | 70 | 70 | 81 | 81 | 103 | 103 |
| LC | | 87 | 88 | 112 | 112 | 132 | 132 | 164 | 164 |
| G | | M 45x2 | M 45x2 | M 60x1.5 | M 60x1.5 | M 80x2 | M 80x2 | M 100x2 | M 100x2 |
| Workpiece weight max. daN* | | 280 | 280 | 500 | 500 | 1100 | 1300 | 2200 | 2200 |
| r.p.m. max.* | | 8000 | 8000 | 7000 | 7000 | 6000 | 6000 | 5000 | 5000 |
| Radial/axial load graph | | RC1/AC1 | RC1/AC1 | RC2/AC2 | RC2/AC2 | RC3.1/AC3 | RC3.2/AC3 | RC4/AC4 | RC4/AC4 |

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

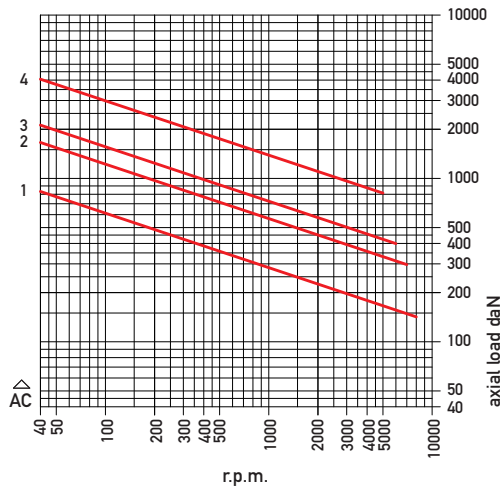
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

Radial – Type NC



Axial – Type NC

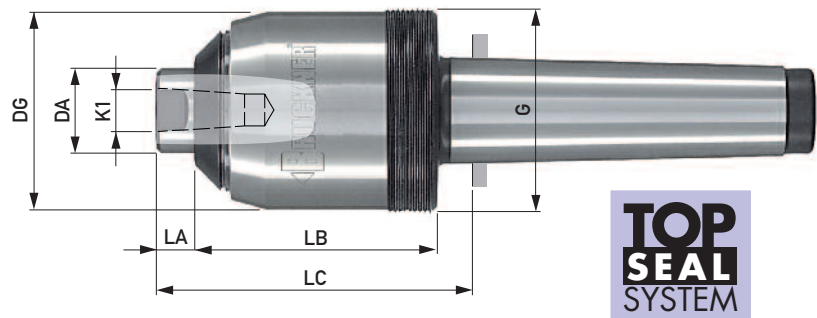


Types NCE 34, NCE 44

For high r.p.m
Centre spindle with internal taper 1:7.5
for interchangeable inserts
 with draw-off thread

Runout
 max. 0.005 mm, with test report

Application
 Variable clamping possibilities for CNC 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.
 Multiple use is made possible by eight different insert styles (page 21).

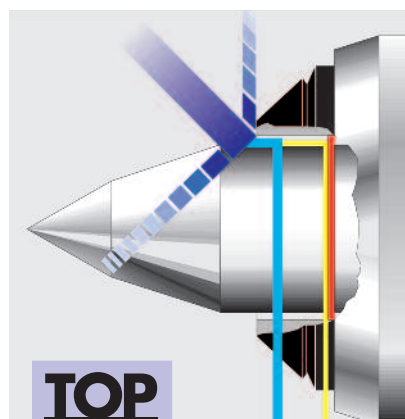


| Type NCE | ID.No. | 34.045-2 | 34.045-3 | 44.058-3 | 34.058-4 | 44.076-4 | 34.076-5 | 44.095-5 | 34.095-6 |
|---------------------------|--|----------|----------|----------|----------|----------|----------|----------|----------|
| Draw-off nut | ID.No. | M45A | M45A | M60 | M60 | M80 | M80 | M100 | M100 |
| Morse taper | | 2 | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| DA | | 20 | 20 | 25 | 25 | 35 | 35 | 45 | 45 |
| DG | | 45 | 45 | 58 | 58 | 76 | 76 | 95 | 95 |
| K1 | | 11 | 11 | 15 | 15 | 22 | 22 | 28 | 28 |
| LA | | 9 | 9 | 11 | 11 | 13 | 13 | 14 | 14 |
| LB | | 57 | 57 | 70 | 70 | 81 | 81 | 103 | 103 |
| LC | | 72 | 73 | 88 | 88 | 101 | 101 | 124 | 124 |
| G | | M 45x2 | M 45x2 | M 60x1,5 | M 60x1,5 | M 80x2 | M 80x2 | M 100x2 | M 100x2 |
| SW (spanner flat) | | 16 | 16 | 22 | 22 | 30 | 30 | 41 | 41 |
| r.p.m. max. | | 8000 | 8000 | 7000 | 7000 | 6000 | 6000 | 5000 | 5000 |
| Suitable insert (page 21) | | 482.. | 482.. | 484.. | 484.. | 487.. | 487.. | 485.. | 485.. |
| Load | The load of type NCE is limited by the interchangeable inserts (page 21) | | | | | | | | |

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

BRUCKNER TOP-SEAL-SYSTEM

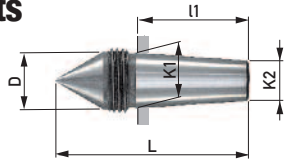
- The coolant does not impact the seal, but flows with reduced energy into the first labyrinth channel.
- There the largest part of the coolant is drained through the first drain aperture.
- The small residue is wiped off the seal into the second labyrinth channel and flows through the second drain aperture.



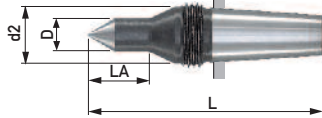
Interchangeable inserts

taper 1:7.5, in gauge accuracy

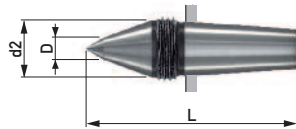
Form AO, 60°
draw-off thread



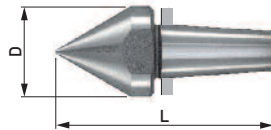
Form ASL, 60°
slim, extended
draw-off thread



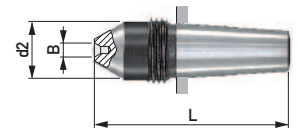
Form AKOP, 60°/40°
extended
draw-off thread



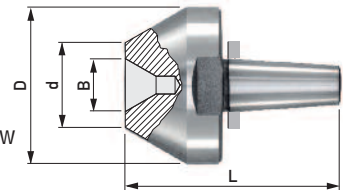
Form A, 60°
for hollow parts
spanner flat



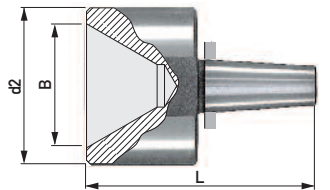
Form B, centre 60°
for centreless workpieces,
draw-off thread



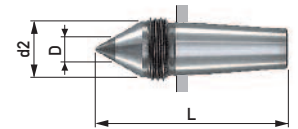
Form C, centre 60°
for centreless workpieces,
external angle 60° for hollow
parts, spanner flat



Form D, centre 60°
for centreless workpieces,
spanner flat



Form AOHM, 60°
with carbide insert
draw-off thread

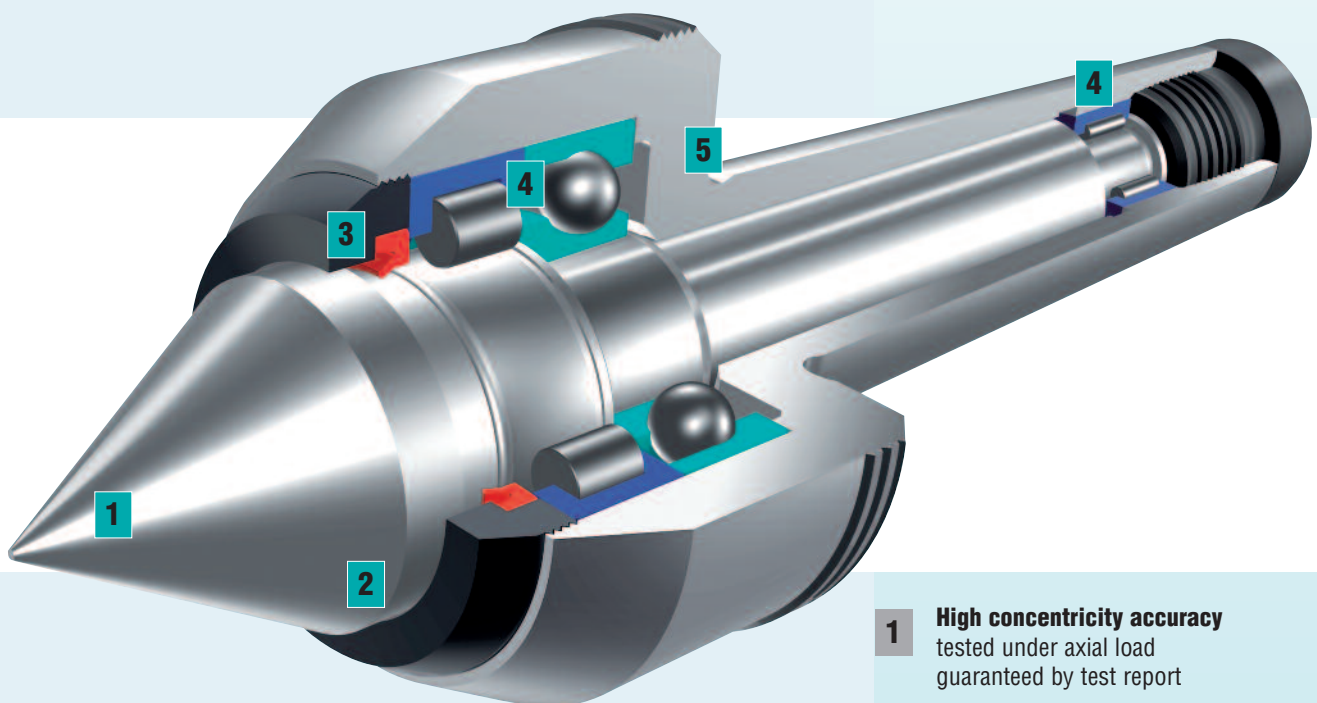


| Basic centre Type: NCE | Interchangeable inserts | Radial load max. daN | Insert dimensions | | | | | | Thread SW | Taper dimensions taper 1:7.5 | | |
|---------------------------|----------------------------|-------------------------|-------------------|------|-------|----|-----|----|--------------|---------------------------------|------|------|
| | | | D | d2 | B | d | L | LA | | K1 | K2 | l1 |
| 34.045-2 34.045-3 | 482AO | 90 | 11.7 | | | | 45 | | M 14x1.5 | 11 | 8 | 23 |
| | 482ASL | 30 | 6 | 11.7 | | | 55 | 15 | M 14x1.5 | | | |
| | 482AKOP | 90 | 5 | 11.7 | | | 50 | | M 14x1.5 | | | |
| | 482A | 90 | 17 | | | | 45 | | SW14 | | | |
| | 482B | 90 | | 11.7 | 4x2 | | 45 | | M 14x1.5 | | | |
| | 482C | 90 | 28 | | 8x3 | 12 | 45 | | SW24 | | | |
| | 482D | 90 | | 28 | 20x6 | | 45 | | SW24 | | | |
| | 482AOHM | 60 | 7 | 11.7 | | | 45 | | M 14x1.5 | | | |
| 44.058-3 34.058-4 | 484AO | 160 | 15.7 | | | | 53 | | M 18x1.5 | 15 | 11 | 30 |
| | 484ASL | 100 | 9 | 15.7 | | | 65 | 17 | M 18x1.5 | | | |
| | 484AKOP | 160 | 6 | 15.7 | | | 58 | | M 18x1.5 | | | |
| | 484A | 160 | 25 | | | | 60 | | SW22 | | | |
| | 484B | 110 | | 15.7 | 4x2 | | 53 | | M 18x1.5 | | | |
| | 484C | 160 | 44 | | 15x5 | 24 | 60 | | SW41 | | | |
| | 484D | 160 | | 44 | 35x12 | | 64 | | SW41 | | | |
| | 484AOHM | 60 | 7 | 15.7 | | | 53 | | M 18x1.5 | | | |
| 44.076-4 34.076-5 | 487AO | 300 | 21.6 | | | | 74 | | M 24x1.5 | 22 | 16.4 | 42 |
| | 487ASL | 100 | 9 | 21.6 | | | 86 | 17 | M 24x1.5 | | | |
| | 487AKOP | 300 | 8 | 21.6 | | | 80 | | M 24x1.5 | | | |
| | 487A | 300 | 32 | | | | 82 | | SW27 | | | |
| | 487B | 240 | | 21.6 | 5x2,5 | | 74 | | M 24x1.5 | | | |
| | 487C | 300 | 55 | | 20x6 | 30 | 82 | | SW50 | | | |
| | 487D | 300 | | 55 | 45x15 | | 85 | | SW50 | | | |
| | 487AOHM | 200 | 11 | 21.6 | | | 74 | | M 24x1.5 | | | |
| 44.095-5 34.095-6 | 485AO | 500 | 27.7 | | | | 93 | | M 30x1.5 | 28 | 21 | 52.5 |
| | 485ASL | 180 | 13 | 27.7 | | | 110 | 27 | M 30x1.5 | | | |
| | 485AKOP | 500 | 8 | 27.7 | | | 105 | | M 30x1.5 | | | |
| | 485A | 500 | 45 | | | | 105 | | SW41 | | | |
| | 485B | 500 | | 27.7 | 7x3 | | 93 | | M 30x1.5 | | | |
| | 485C | 500 | 65 | | 25x6 | 35 | 105 | | SW55 | | | |
| | 485D | 500 | | 65 | 55x20 | | 105 | | SW55 | | | |
| | 485AOHM | 500 | 18 | 27.7 | | | 93 | | M 30x1.5 | | | |

| ID.No. | Content |
|--------|---------|
| P 10 | 100 g |

Installation paste

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



LK Series – with superior stiffness

This high performance live centre was developed for use with advanced turning and grinding technology. With a short design, the bearings and pitch of the bearings distance are matched so that this high performance centre withstands vibrations in all machining situations. The bearings are designed for higher r.p.m.

Result

- ▶ Excellent surface quality
- ▶ Longer tool life
- ▶ Improved machine tool efficiency

Two types for MT4 and MT5

- ▶ Slim design for light machining
- ▶ With stronger bearings for normal to heavy machining

- 1 High concentricity accuracy**
tested under axial load
guaranteed by test report
- 2 Through-hardened alloy tool steel centrepoint**
- 3 Seal ring**
protects the bearings from dirt and coolant
- 4 Precision bearings**
bearings seats of housing and centre spindle are precision ground and matched to the bearings. Maintenance-free due to permanent lubrication
- 5 Housing**
of high tensile alloy tool steel. Housing head and shank are case-hardened for protection against damage

Types LKS, LKSG

Centrepoint 60°

Runout

Type LKS max. 0.005 mm

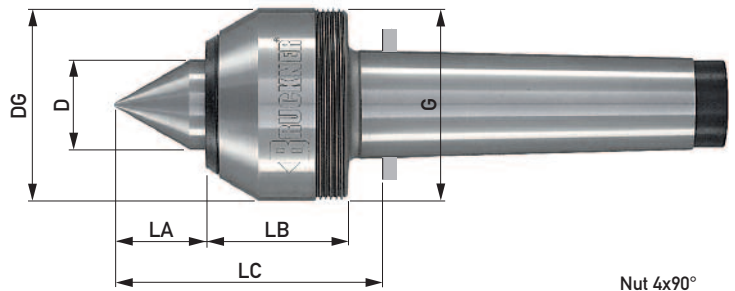
Type LKSG max. 0.003 mm

with test report

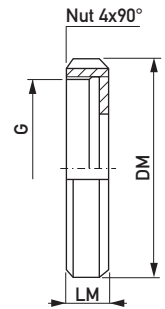
Application

High performance turning, hard turning, fine turning, cylindrical grinding.

Optimum workpiece surface finish due to the short stable anti-vibration design.



| Draw-off nut | | | |
|--------------|----------|----|-----|
| ID.No. | G | LM | DM |
| M55L | M55x1.5 | 10 | 68 |
| M68L(MT4) | M68x1.5 | 15 | 80 |
| M68L-5 (MT5) | M68x1.5 | 15 | 80 |
| M92L | M92x1.5 | 18 | 110 |
| M127L | M127x1.5 | 18 | 145 |

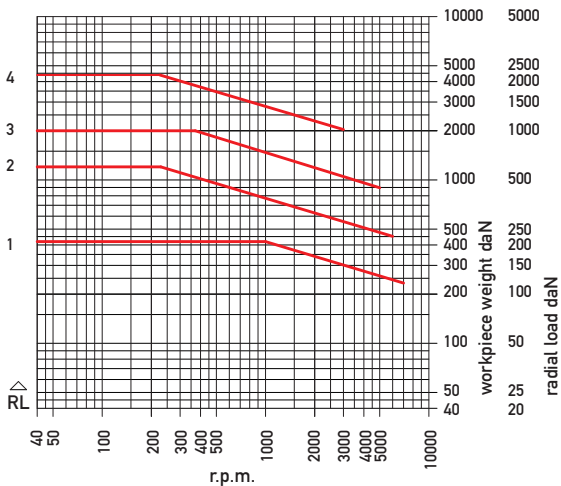


| Type LKS | ID.No. | 750S 055003A | 750S 055004A | 750S 068004A | 750S 068005A | 750S 092005A | 750S 127006A |
|----------------------------|--------|--------------|--------------|--------------|--------------|--------------|--------------|
| Type LKSG | ID.No. | 751S 055003A | 751S 055004A | 751S 068004A | 751S 068005A | 751S 092005A | 751S 127006A |
| Morse taper | | 3 | 4 | 4 | 5 | 5 | 6 |
| D | | 26 | 26 | 36 | 36 | 51 | 71 |
| DG | | 55 | 55 | 68 | 68 | 92 | 127 |
| LA | | 26 | 26 | 35 | 35 | 47 | 65 |
| LB | | 41 | 41 | 51,5 | 51,5 | 60 | 80 |
| LC | | 71 | 72 | 92 | 92 | 113 | 152 |
| G | | M55x1.5 | M55x1.5 | M68x1.5 | M68x1.5 | M92x1.5 | M127x1.5 |
| Workpiece weight max. daN* | | 420 | 420 | 1200 | 1200 | 2000 | 4400 |
| r.p.m. max. * | | 7000 | 7000 | 6000 | 6000 | 5000 | 3000 |
| Radial/axial load graph | | RL1/AL1 | RL1/AL1 | RL2/AL2 | RL2/AL2 | RL3/AL3 | RL4/AL4 |
| Draw-off nut | | M55L | M55L | M68L | M68L-5 | M92L | M127L |

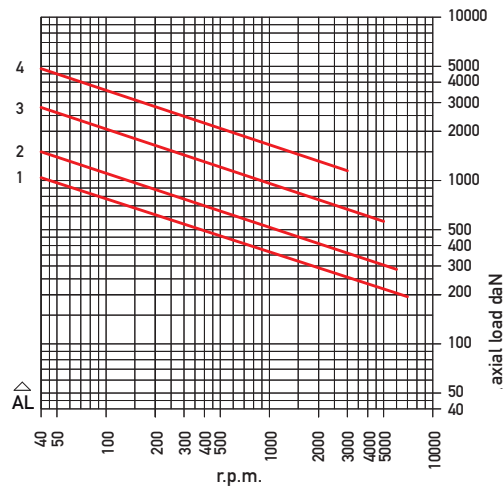
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

Radial – Types LKS/LKSG



Axial – Types LKS/LKSG



Types LKV, LKVG

Centrepoint 60°/40° extended

Runout

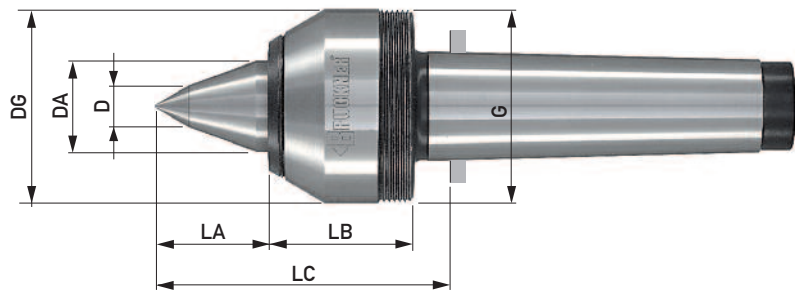
Type LKV max. 0.005 mm

Type LKVG max. 0.003 mm

with test report

Application

High performance turning, hard turning, fine turning, cylindrical grinding. The working space is enlarged due to the extended, slim centrepoint.

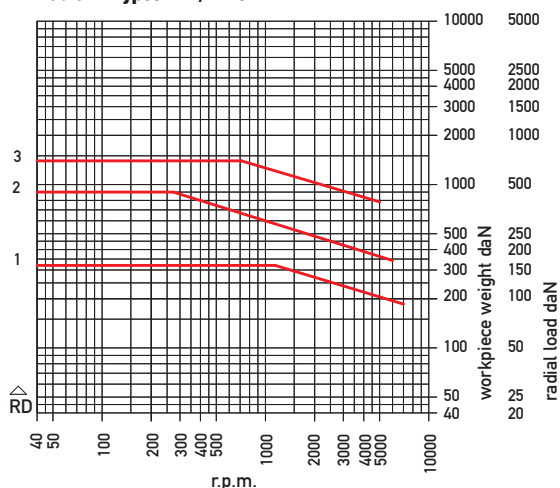


| Type LKV | ID.No. | 750V 055003A | 750V 055004A | 750V 068004A | 750V 068005A | 750V 092005A |
|----------------------------|--------|--------------|--------------|--------------|--------------|--------------|
| Type LKVG | ID.No. | 751V 055003A | 751V 055004A | 751V 068004A | 751V 068005A | 751V 092005A |
| Morse taper | | 3 | 4 | 4 | 5 | 5 |
| DA | | 26 | 26 | 36 | 36 | 51 |
| D | | 12 | 12 | 14 | 14 | 17 |
| DG | | 55 | 55 | 68 | 68 | 92 |
| LA | | 33 | 33 | 45,5 | 45,5 | 64 |
| LB | | 41 | 41 | 51,5 | 51,5 | 60 |
| LC | | 78 | 79 | 102 | 103 | 130 |
| G | | M55x1.5 | M55x1.5 | M68x1.5 | M68x1.5 | M92x1.5 |
| Workpiece weight max. daN* | | 320 | 320 | 900 | 900 | 1400 |
| r.p.m. max.* | | 7000 | 7000 | 6000 | 6000 | 5000 |
| Radial/axial load graph | | RD1/AD1 | RD1/AD1 | RD2/AD2 | RD2/AD2 | RD3/AD3 |
| Draw-off nut (page 23) | | M55L | M55L | M68L | M68L-5 | M92L |

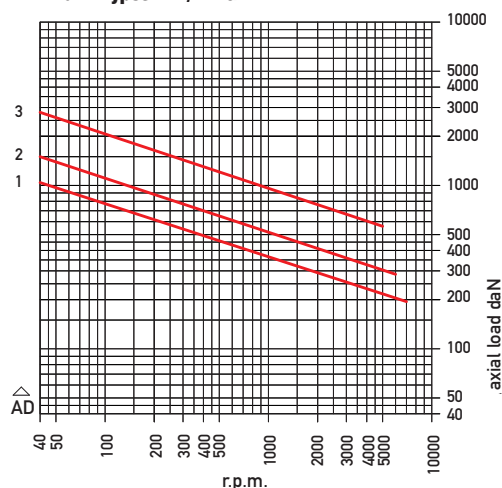
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

Radial – Types LKV/LKVG



Axial – Types LKV/LKVG



Types LKH, LKHG

Centrepoint 60° with carbide insert

Runout

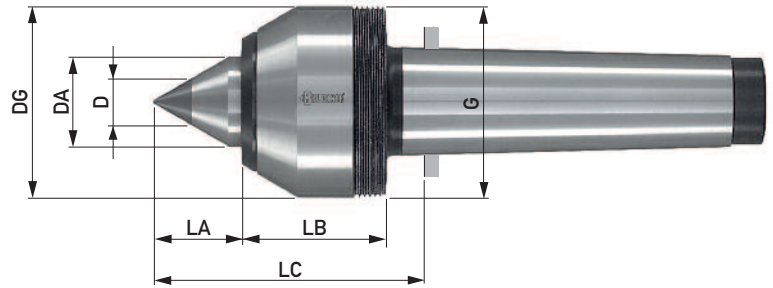
Type LKH max. 0.005 mm

Type LKHG max. 0.003 mm

with test report

Application

High performance turning, hard turning, fine turning, cylindrical grinding.
For operations in which additional stress is put on the centrepoint (e.g. large series, workpiece change when spindle is running, hard workpieces, extremely small workpiece centres).

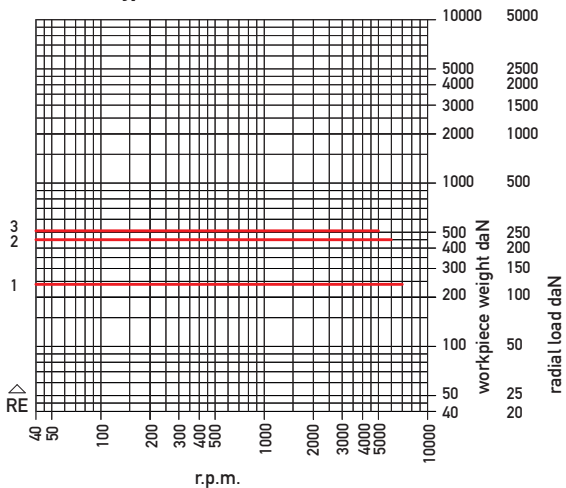


| Type LKH | ID.No. | 750H 055003A | 750H 055004A | 750H 068004A | 750H 068005A | 750H 092005A |
|----------------------------|--------|--------------|--------------|--------------|--------------|--------------|
| Type LKHG | ID.No. | 751H 055003A | 751H 055004A | 751H 068004A | 751H 068005A | 751H 092005A |
| Morse taper | | 3 | 4 | 4 | 5 | 5 |
| DA | | 26 | 26 | 36 | 36 | 51 |
| D | | 14 | 14 | 18 | 18 | 18 |
| DG | | 55 | 55 | 68 | 68 | 92 |
| LA | | 26 | 26 | 35 | 35 | 47 |
| LB | | 41 | 41 | 51,5 | 51,5 | 60 |
| LC | | 71 | 72 | 92 | 92 | 113 |
| G | | M55x1.5 | M55x1.5 | M68x1.5 | M68x1.5 | M92x1.5 |
| Workpiece weight max. daN* | | 240 | 240 | 450 | 450 | 500 |
| r.p.m. max.* | | 7000 | 7000 | 6000 | 6000 | 5000 |
| Radial/axial load graph | | RE1/AE1 | RE1/AE1 | RE2/AE2 | RE2/AE2 | RE3/AE3 |
| Draw-off nut (page 23) | | M55L | M55L | M68L | M68L-5 | M92L |

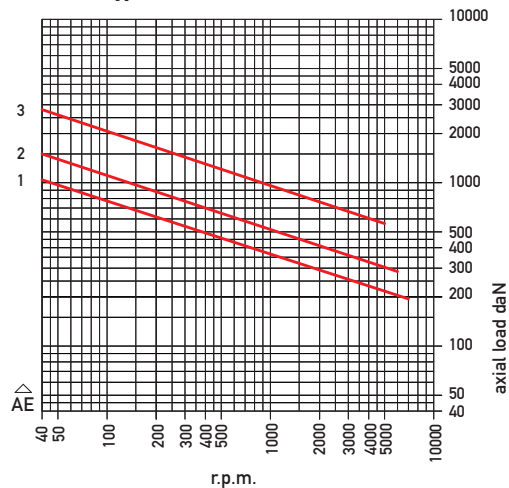
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

Radial – Types LKH/LKHG



Axial – Types LKH/LKHG



Type 2000

Centrepont 60°

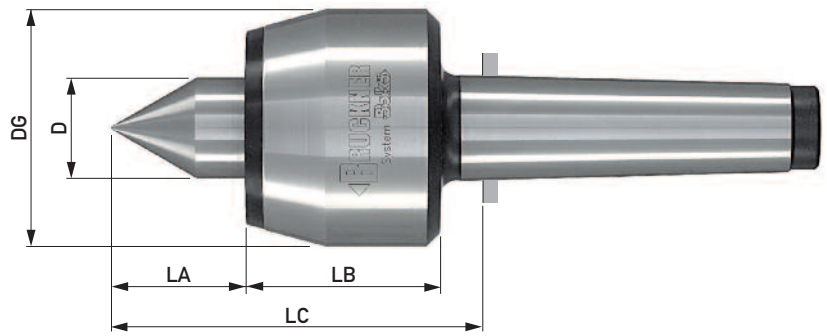
Runout

max. 0.005 mm

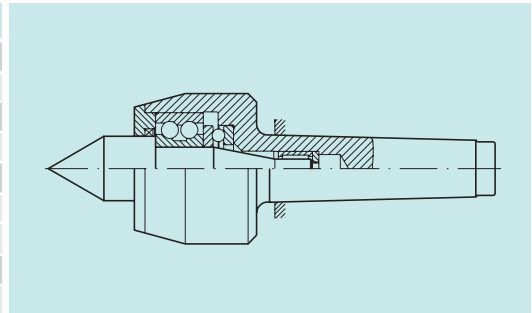
Hardened housing, through-hardened alloy tool steel centrepont. Sealed with seal ring. Maintenance-free due to permanent lubrication.

Application

For normal to high-duty work. For all turning operations, roughing, finishing and CNC turning.



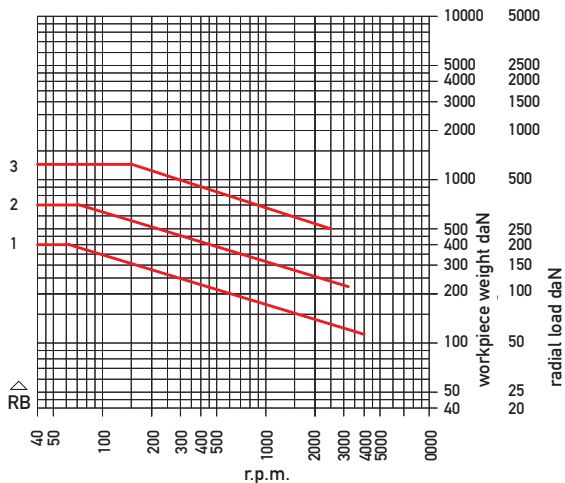
| Type 2000 | ID.No. | 2.003 | 2.004 | 2.005 |
|----------------------------|--------|---------|---------|---------|
| Morse taper | | 3 | 4 | 5 |
| D | | 24 | 30 | 35 |
| DG | | 55 | 70 | 85 |
| LA | | 31 | 40 | 47 |
| LB | | 45 | 57 | 67 |
| LC | | 83 | 106 | 125 |
| Workpiece weight max. daN* | | 400 | 700 | 1240 |
| r.p.m. max.* | | 4000 | 3200 | 2500 |
| Radial/axial load graph | | RB1/AB1 | RB2/AB2 | RB3/AB3 |



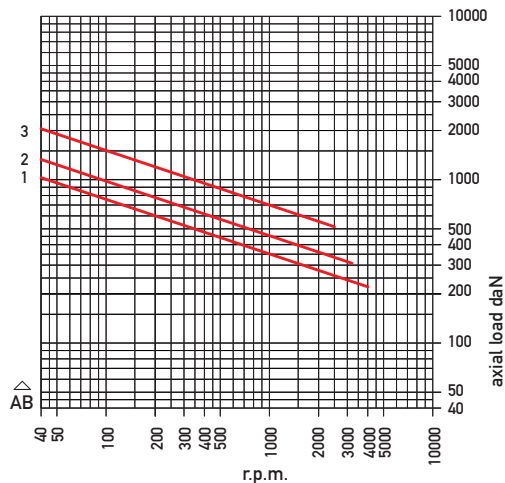
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

Radial - Type 2000



Axial - Type 2000



Type 2030

Centrepoint 60°/30° extended

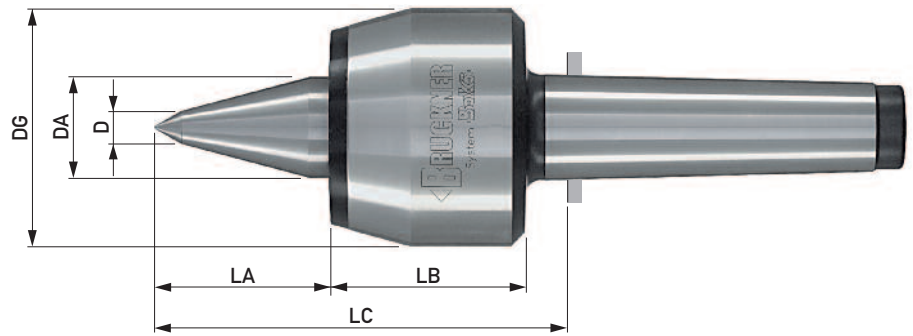
Runout

max. 0.005 mm

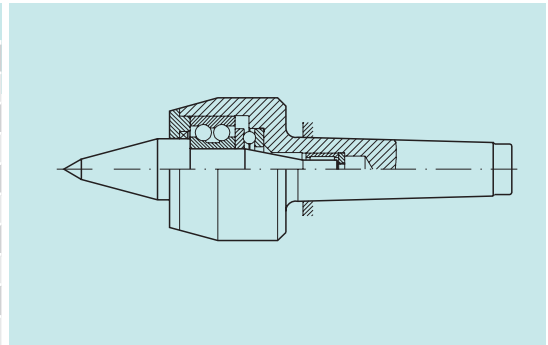
Hardened housing, through-hardened alloy tool steel centrepoint. Sealed construction. Maintenance-free due to permanent lubrication.

Application

Use when the workspace between live centre and workpiece end is confined. The extended slim centrepoint allows improved access for cutting tools.



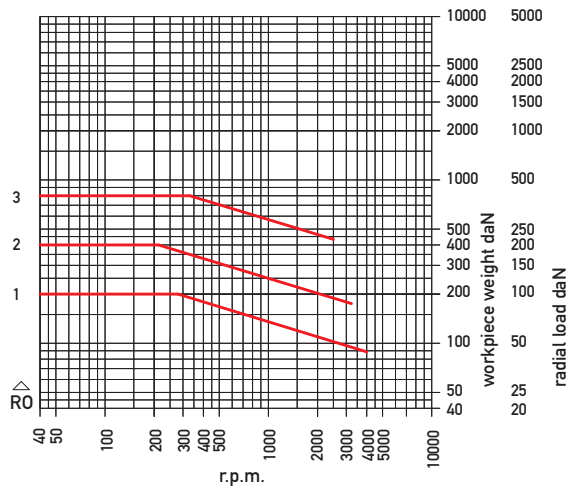
| Type 2030 | ID.No. | 2.033 | 2.034 | 2.035 |
|----------------------------|--------|---------|---------|---------|
| Morse taper | | 3 | 4 | 5 |
| DA | | 24 | 30 | 35 |
| D | | 8 | 10 | 12 |
| DG | | 55 | 70 | 85 |
| LA | | 42 | 52 | 58 |
| LB | | 45 | 57 | 67 |
| LC | | 94 | 118 | 136 |
| Workpiece weight max. daN* | | 200 | 400 | 800 |
| r.p.m. max.* | | 4000 | 3200 | 2500 |
| Radial/axial load graph | | R01/A01 | R02/A02 | R03/A03 |



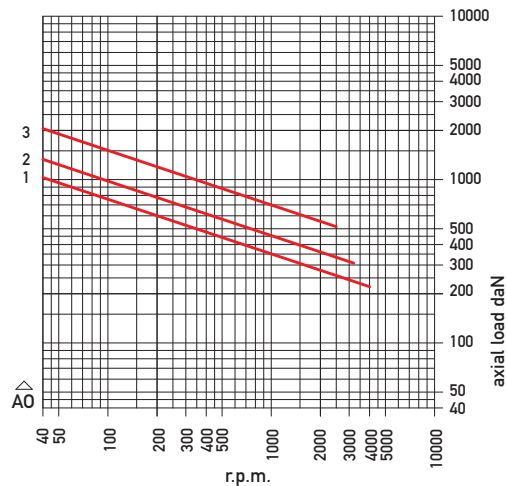
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

Radial – Type 2030



Axial – Type 2030



Technical features LR/LD series

LR series

spring loaded centrepont, pressure indication by yellow, green and red rings

LD series

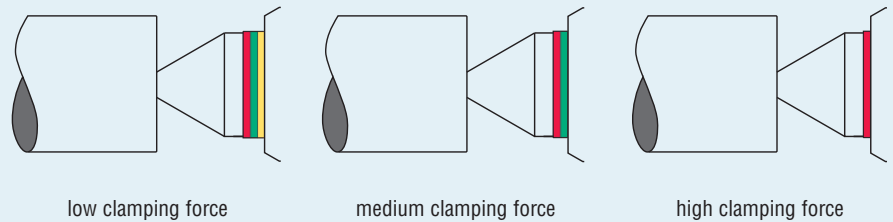
spring loaded centrepont, for expansion compensation, without pressure indication

axial force per coloured ring

| Morse taper | axial force daN | | |
|-------------|-----------------|-------------|-------------|
| 3 | 0 - 250 | 250 - 500 | 500 - 850 |
| 4 | 0 - 350 | 350 - 620 | 620 - 850 |
| 5 | 0 - 570 | 570 - 1000 | 1000 - 1360 |
| 6 | 0 - 1700 | 1700 - 3200 | 3200 - 4600 |

Reduction of spring force through soft spring on request

example of function for design line LR



The yellow, green and red ranges of axial forces are permanently laser marked on the heads of the centre housings.

Example type LRS, 700S 068004

- Yellow 0-350 daN
- Green 350-620 daN
- Red 620-850 daN

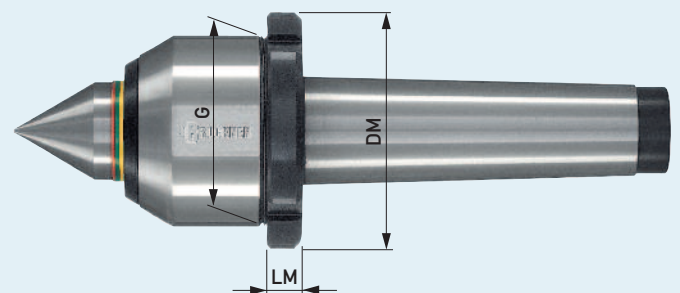


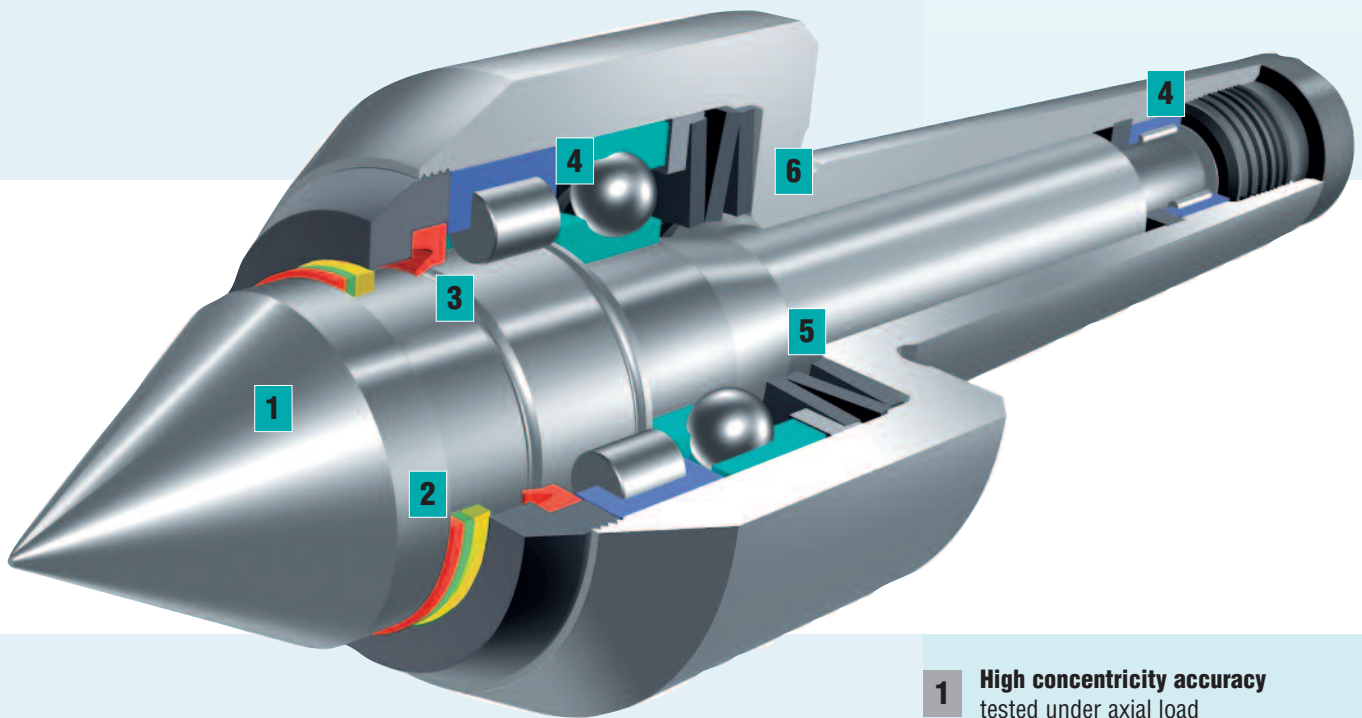
Design A with draw-off thread and draw-off nut

All sizes of LR and LD are available with draw-off thread. Simply add a capital **A** to the ID.No.

Order example for type LRS MT4:
ID.No.: 700S 068004**A**

| Draw-off nut | | | | |
|--------------|--|----|-----|-----------|
| ID.No. | for centre with housing diameter \varnothing | LM | DM | G |
| M45L | 45 | 9 | 55 | M 45x1.5 |
| M55L | 55 | 10 | 68 | M 55x1.5 |
| M68L | 68 | 15 | 80 | M 68x1.5 |
| M92L | 92 | 18 | 110 | M 92x1.5 |
| M127L | 127 | 18 | 145 | M 127x1.5 |





LR Series – simultaneous clamping and regulation

The spring loaded centrepoint with coloured rings for pressure indication allows simple adjustment and reading of the axial pressure. The spring loading compensates for workpiece thermal expansion and variation of workpiece length. LR series centres are essential for operations using face drivers or machine tools without pressure indication. The ideal arrangement of the high precision roller bearings prove the strength of the LR types for higher speed.

- 1 High concentricity accuracy**
tested under axial load guaranteed by test report
- 2 Spring loaded centrepoint**
of through-hardened alloy wear resistant tool steel. With coloured rings for pressure indication
- 3 Seal ring**
protects the bearings from dirt and coolant
- 4 Precision bearings**
with precision ground bearing seats of housing and on the centre spindle. The bearing seats are matched to the bearings. Maintenance-free due to permanent lubrication
- 5 Spring loading**
- 6 Housing**
of high tensile tool steel. Housing head and shank are case hardened for protection against damage

Produced according to BRUCKNER WORKS STANDARD (page 8)

Types LRS, LRS G

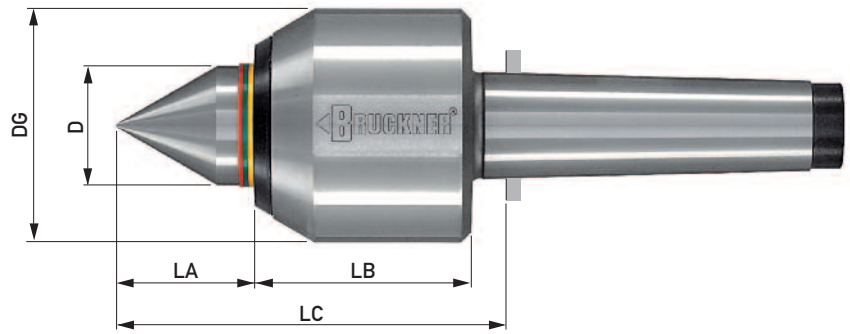
Centrepoint 60° spring loaded
Pressure indication by coloured rings

Runout

Type LRS max. 0.005 mm
Type LRS G max. 0.003 mm
with test report

Application

Turning, CNC turning with multi-spindle machines or CNC lathes with twin tool turrets.
As a tailstock centre when using face drivers



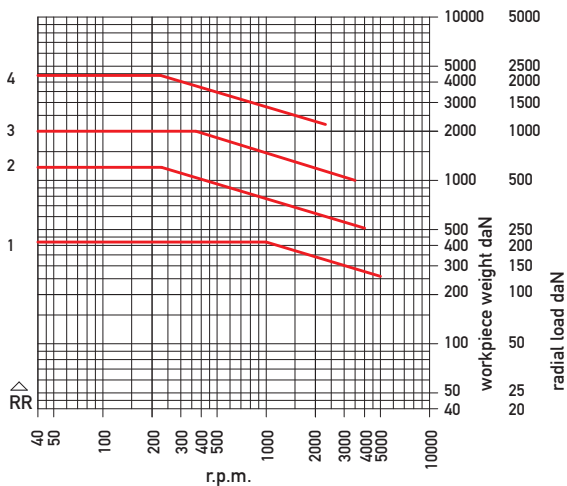
| Type LRS | ID.No. | 700S 055003 | 700S 068004 | 700S 092005 | 700S 127006 |
|--------------------------------|--------|-------------|-------------|-------------|-------------|
| Type LRS G | ID.No. | 701S 055003 | 701S 068004 | 701S 092005 | 701S 127006 |
| Morse taper | | 3 | 4 | 5 | 6 |
| D | | 25 | 35 | 50 | 70 |
| DG | | 55 | 68 | 92 | 127 |
| LA | | 28 | 40 | 57 | 74 |
| LB | | 51 | 63 | 82 | 109 |
| LC | | 84 | 108 | 145 | 190 |
| Max. workpiece weight max daN* | | 420 | 1200 | 2000 | 4400 |
| Spring travel | | 2.7 | 4.2 | 5.4 | 8.4 |
| r.p.m. max.* | | 5000 | 4000 | 3500 | 2300 |
| Radial/axial load graph | | RR1/AR1 | RR2/AR2 | RR3/AR3 | RR4/AR4 |
| Axial force per coloured ring | | page 28 | | | |

Available with draw-off thread and draw-off nut (design A, page 28)

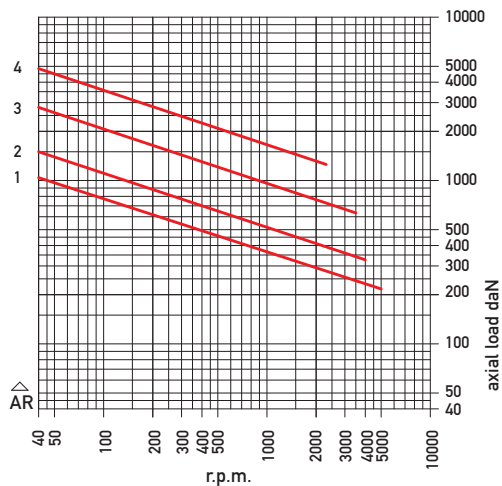
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

Radial – Types LRS, LRS G



Axial – Types LRS, LRS G



Type LRV

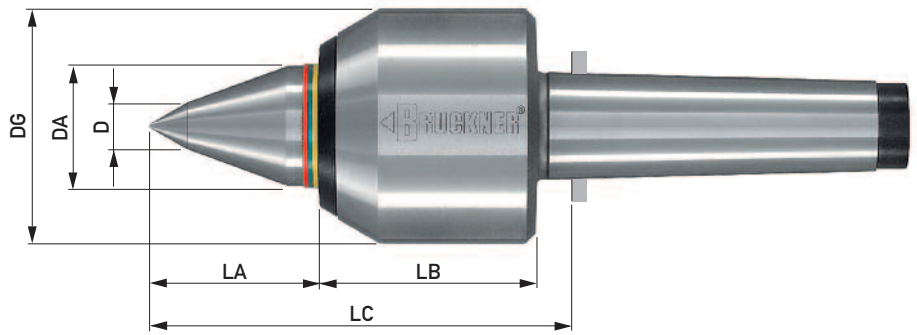
Centrepoint 60°/40° extended spring loaded with pressure indication by coloured rings

Runout

max. 0.005 mm with test report
max. 0.003 mm high precision design on request

Application

Turning, CNC turning.
With multi-spindle machines or CNC lathes with twin tool turrets.
As a tailstock centre when using face drivers. The extended slim centrepoint allows improved access for cutting tools



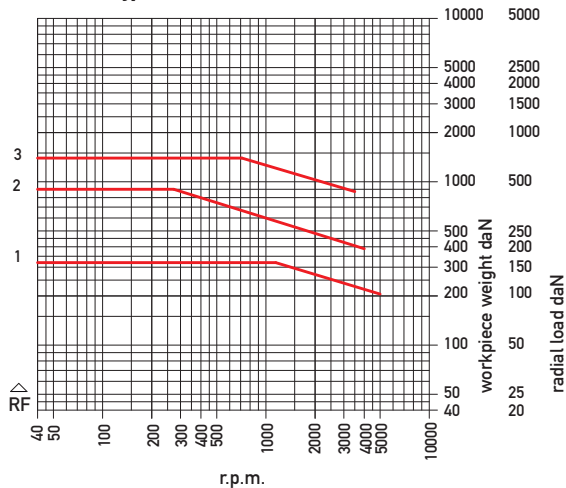
| Type LRV | ID.No. | 700V 055003 | 700V 068004 | 700V 092005 |
|-------------------------------|--------|-------------|-------------|-------------|
| Morse taper | | 3 | 4 | 5 |
| DA | | 25 | 35 | 50 |
| D | | 12 | 14 | 18 |
| DG | | 55 | 68 | 92 |
| LA | | 37 | 49 | 69 |
| LB | | 51 | 63 | 82 |
| LC | | 93 | 117 | 157 |
| Workpiece weight max. daN* | | 320 | 900 | 1400 |
| Spring travel | | 2.7 | 4.2 | 5.4 |
| r.p.m. max.* | | 5000 | 4000 | 3500 |
| Radial/axial load graph | | RF1/AF1 | RF2/AF2 | RF3/AF3 |
| Axial force per coloured ring | | page 28 | | |

Available with draw-off thread and draw-off nut (design A, page 28)

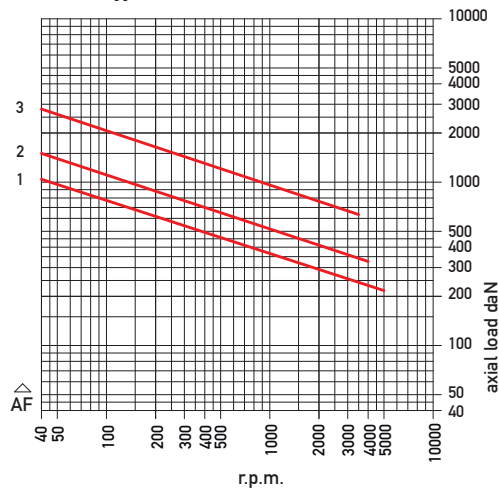
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (calculation example on page 11)

Radial – Type LRV



Axial – Type LRV



Type LRE

Spring loaded centre spindle with 1:7.5 internal taper for interchangeable inserts. Pressure indication by coloured rings

Runout

max. 0.005 mm with test report
max. 0.003 mm high precision design on request

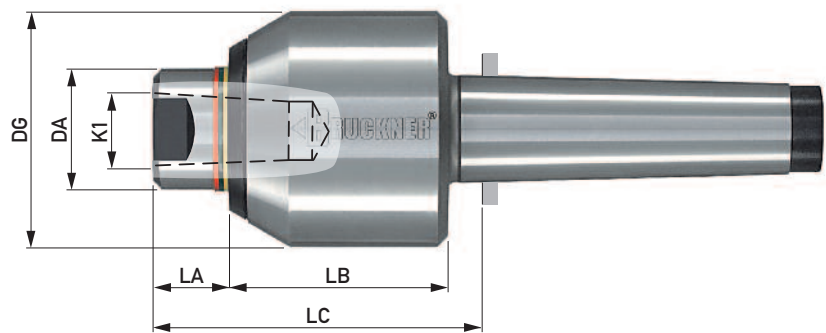
Application

Turning, CNC turning with multi-spindle machines or CNC lathes with twin tool turrets.
As a tailstock centre when using face drivers.

Advantages

As the centrepoint wears only the insert has to be changed and once again the high performance centre is ready for use. Flexibility in application is made possible by a choice of eight different insert styles (page 33).

Depending on the style the insert can be removed by its draw-off thread and draw-off nut or with spanners applied to the spanner flats.



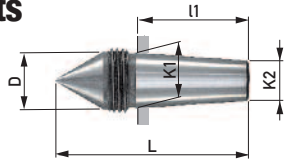
| Type LRE | ID.No. | 700E 055003 | 700E 068004 | 700E 092005 |
|-------------------------------|--|-------------|-------------|-------------|
| Morse taper | | 3 | 4 | 5 |
| DA | | 25 | 35 | 50 |
| K1 | | 15 | 22 | 28 |
| DG | | 55 | 68 | 92 |
| LA | | 15 | 21 | 28 |
| LB | | 51 | 63 | 82 |
| LC | | 71 | 89 | 116 |
| Spring travel | | 2.7 | 4.2 | 5.4 |
| r.p.m. max. | | 5000 | 4000 | 3500 |
| Suitable inserts | | 484.. | 487.. | 485.. |
| Load | The radial load of type LRE is restricted by the interchangeable inserts (page 33) | | | |
| Axial force per coloured ring | page 28 | | | |

Available with draw-off thread and draw-off nut (design A, page 28)
MT2 on request (700E 045002)

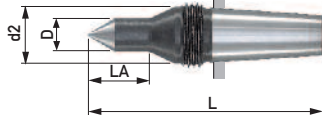
Interchangeable inserts

taper 1:7.5, in gauge accuracy

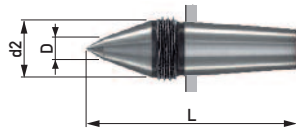
Form AO, 60°
draw-off thread



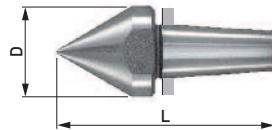
Form ASL, 60°
slim, extended
draw-off thread



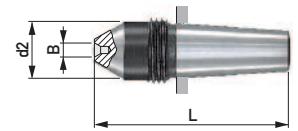
Form AKOP, 60°/40°
extended
draw-off thread



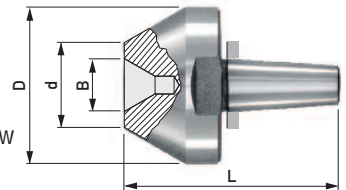
Form A, 60°
for hollow parts
spanner flat (SW)



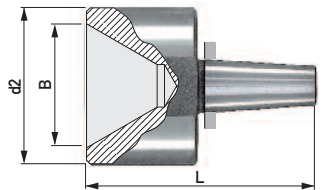
Form B, centre 60°
for centreless workpieces,
draw-off thread



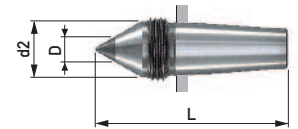
Form C, centre 60°
for centreless workpieces,
external angle 60° for hollow
parts, spanner flat (SW)



Form D, centre 60°
for centreless workpieces,
spanner flat (SW)



Form AOHM, 60°
with carbide insert
draw-off thread



| Basic body Type: LRE | Interchangeable inserts | Radial load max. daN | Insert dimensions | | | | | | Thread SW | Taper dimensions | | |
|-------------------------|----------------------------|-------------------------|-------------------|------|-------|----|---|-----|--------------|------------------|------|------|
| | | | D | d2 | B | d | L | LA | | taper 1:7.5 | | |
| ID.No | ID.No | | | | | | | | K1 | K2 | I1 | |
| 700E 055003 | 484AO | 160 | 15.7 | | | | | 53 | | 15 | 11 | 30 |
| | 484ASL | 100 | 9 | 15.7 | | | | 65 | 17 | | | |
| | 484AKOP | 160 | 6 | 15.7 | | | | 58 | | | | |
| | 484A | 160 | 25 | | | | | 60 | | | | |
| | 484B | 110 | | 15.7 | 4x2 | | | 53 | | | | |
| | 484C | 160 | 44 | | 15x5 | 24 | | 60 | | | | |
| | 484D | 160 | | 44 | 35x12 | | | 64 | | | | |
| | 484AOHM | 60 | 7 | 15.7 | | | | 53 | | | | |
| 700E 068004 | 487AO | 300 | 21.6 | | | | | 74 | | 22 | 16.4 | 42 |
| | 487ASL | 100 | 9 | 21.6 | | | | 86 | 17 | | | |
| | 487AKOP | 300 | 8 | 21.6 | | | | 80 | | | | |
| | 487A | 300 | 32 | | | | | 82 | | | | |
| | 487B | 240 | | 21.6 | 5x2,5 | | | 74 | | | | |
| | 487C | 300 | 55 | | 20x6 | 30 | | 82 | | | | |
| | 487D | 300 | | 55 | 45x15 | | | 85 | | | | |
| | 487AOHM | 200 | 11 | 21.6 | | | | 74 | | | | |
| 700E 092005 | 485AO | 500 | 27.7 | | | | | 93 | | 28 | 21 | 52.5 |
| | 485ASL | 180 | 13 | 27.7 | | | | 110 | 27 | | | |
| | 485AKOP | 500 | 8 | 27.7 | | | | 105 | | | | |
| | 485A | 500 | 45 | | | | | 105 | | | | |
| | 485B | 500 | | 27.7 | 7x3 | | | 93 | | | | |
| | 485C | 500 | 65 | | 25x6 | 35 | | 105 | | | | |
| | 485D | 500 | | 65 | 55x20 | | | 105 | | | | |
| | 485AOHM | 500 | 18 | 27.7 | | | | 93 | | | | |

| ID.No. | Content |
|--------|---------|
| P 10 | 100 g |

Installation paste

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

Type LDS

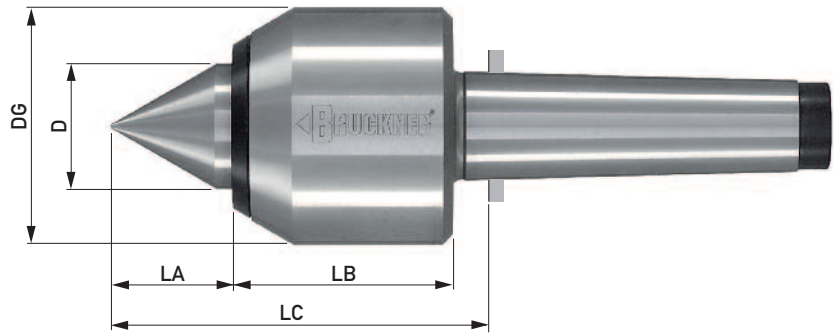
Centrepoint 60°
Spring loaded for expansion compensation,
without pressure indication

Runout

max. 0.005 mm, with test report
 max. 0.003 mm high precision design on request

Application

Turning, CNC turning, precision design for cylindrical grinding and measuring



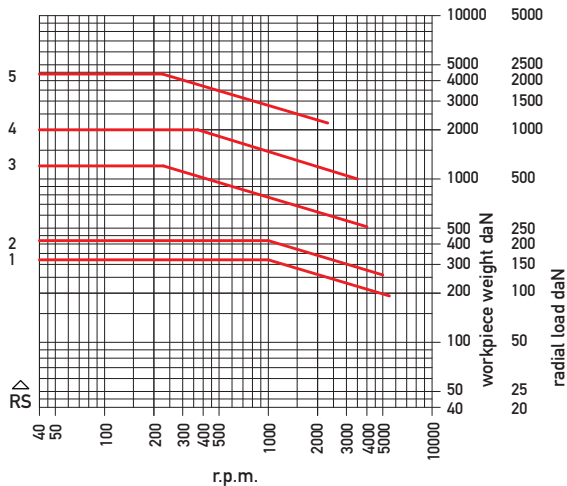
| Type LDS | ID.No. | 710S 045002 | 710S 055003 | 710S 068004 | 710S 092005 | 710S 127006 |
|----------------------------|--------|-------------|-------------|-------------|-------------|-------------|
| Morse taper | | 2 | 3 | 4 | 5 | 6 |
| D | | 19 | 26 | 36 | 51 | 71 |
| DG | | 45 | 55 | 68 | 92 | 127 |
| LA | | 24 | 26 | 35 | 47 | 65 |
| LB | | 45 | 51 | 63 | 82 | 109 |
| LC | | 72 | 82 | 103 | 135 | 181 |
| Workpiece weight max. daN* | | 320 | 420 | 1200 | 2000 | 4400 |
| Spring travel | | 0.85 | 0.95 | 1.4 | 1.8 | 2.8 |
| r.p.m. max.* | | 5500 | 5000 | 4000 | 3500 | 2300 |
| Radial/axial load graph | | RS1/AS1 | RS2/AS2 | RS3/AS3 | RS4/AS4 | RS5/AS5 |

Available with draw-off thread and draw-off nut (design A, page 28)

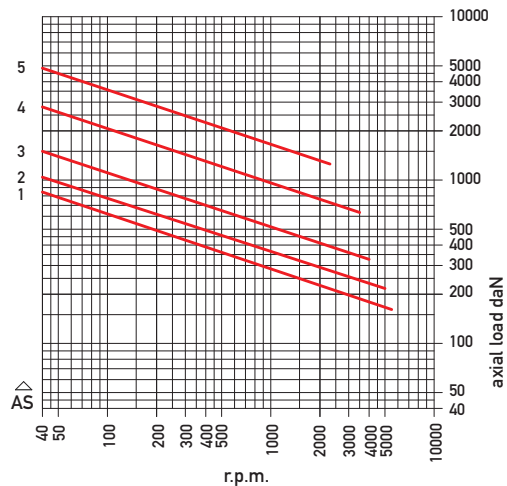
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (see calculation example on page 11)

Radial – Type LDS



Axial – Type LDS



Type LDA

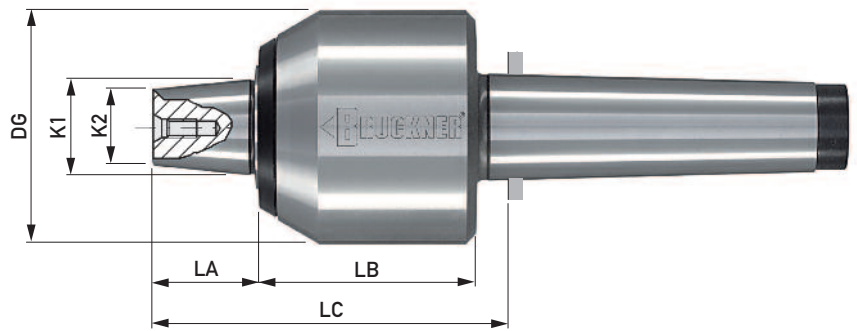
Centre spindle with 1:5 external taper for interchangeable tapered caps.
Spring loaded for expansion compensation, without pressure indication

Runout

max. 0.005 mm, with test report

Application

Workpieces with large bores.
Retaining and extraction screws are included with these centres.



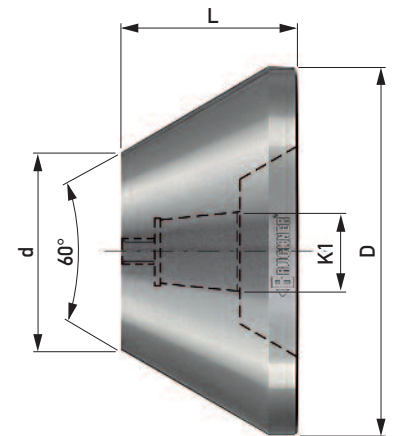
| Type LDA | ID.No. | 710A 045002 | 710A 055003 | 710A 068004 | 710A 092005 | 710A 127006 |
|----------------------------|--------|-------------|-------------|-------------|-------------|-------------|
| Morse taper | | 2 | 3 | 4 | 5 | 6 |
| K1 | | 18 | 23 | 28 | 38 | 48 |
| K2 | | 14.3 | 18.4 | 22.3 | 30.4 | 37.6 |
| DG | | 45 | 55 | 68 | 92 | 127 |
| LA | | 22 | 26 | 31 | 42 | 58 |
| LB | | 45 | 51 | 63 | 82 | 109 |
| LC | | 70 | 82 | 99 | 129 | 173 |
| Workpiece weight max. daN* | | 280 | 320 | 900 | 1400 | 3600 |
| Spring travel | | 0.85 | 0.95 | 1.4 | 1.8 | 2.8 |
| r.p.m. max.* | | 5500 | 5000 | 4000 | 3500 | 2300 |
| Radial/axial load graph | | RA1/AA1 | RA2/AA2 | RA3/AA3 | RA4/AA4 | RA5/AA5 |

Available with draw-off thread and draw-off nut (design A, page 28)

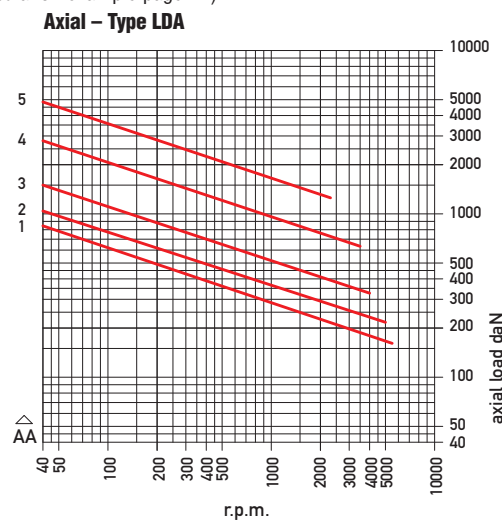
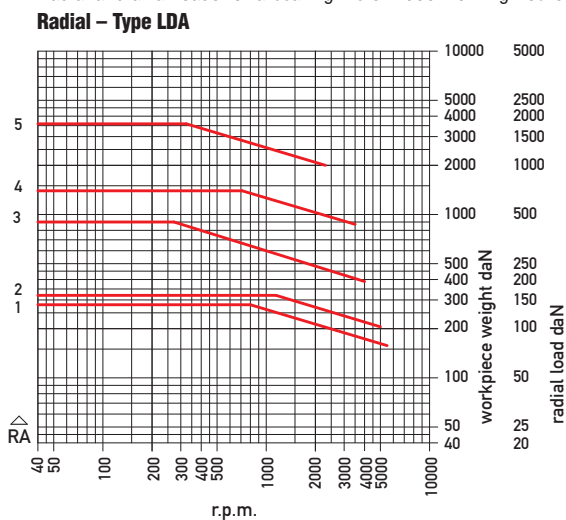
*observe the load graphs

| Basic body Type LDA ID.No. | Tapered cap KA internal taper 1:5 through hardened alloy tool steel | | | | |
|----------------------------------|---|-----|-----|----|-----|
| | ID.No. | D | d | K1 | L |
| 710A 045002 | 7KA2.056 | 56 | 15 | 18 | 44 |
| 710A 055003 | 7KA3.068 | 68 | 18 | 23 | 51 |
| | 7KA3.110 | 110 | 60 | 23 | 53 |
| 710A 068004 | 7KA4.080 | 80 | 20 | 28 | 60 |
| | 7KA4.130 | 130 | 70 | 28 | 62 |
| 710A 092005 | 7KA5.110 | 110 | 30 | 38 | 80 |
| | 7KA5.175 | 175 | 95 | 38 | 80 |
| 710A 127006 | 7KA6.150 | 150 | 45 | 48 | 101 |
| | 7KA6.225 | 225 | 120 | 48 | 101 |

Special dimensions on request



Radial and axial loads for a bearing life of 2000 working hours (see calculation example page 11)



Type LDE

Centre spindle with 1:7.5 internal taper for interchangeable inserts. Spring loaded for expansion compensation, without pressure indication

Runout

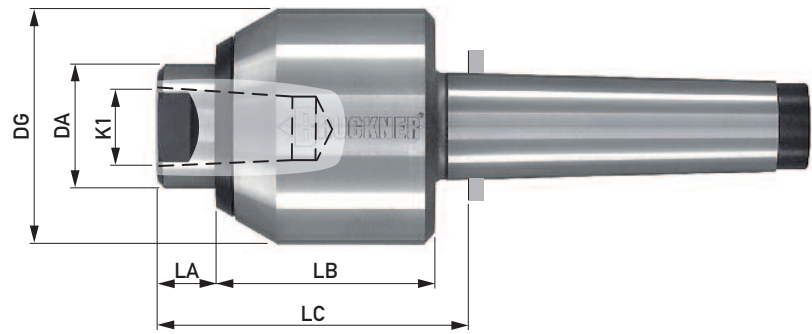
max. 0.005 mm, with test report
max. 0.003 mm high precision design on request

Application

Turning, CNC turning

Advantages

As the centrepoint wears only the insert has to be changed and once again the high performance centre is ready for use. Flexibility in application is made possible by a choice of eight different insert styles (page 37). Depending on the style the insert can be removed by its draw-off thread and draw-off nut or with spanners applied to the spanner flats.



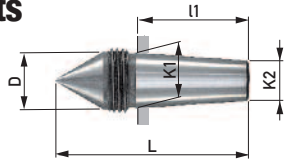
| Type LDE | ID.No. | 710E 045002 | 710E 055003 | 710E 068004 | 710E 092005 |
|------------------|--|-------------|-------------|-------------|-------------|
| Morse taper | | 2 | 3 | 4 | 5 |
| DA | | 19 | 26 | 36 | 51 |
| K1 | | 11 | 15 | 22 | 28 |
| DG | | 45 | 55 | 68 | 92 |
| LA | | 9 | 14 | 18 | 20 |
| LB | | 45 | 51 | 63 | 82 |
| LC | | 57 | 70 | 86 | 107 |
| Spring travel | | 0.85 | 0.95 | 1.4 | 1.8 |
| r.p.m. max. | | 5500 | 5000 | 4000 | 3500 |
| Suitable inserts | | 482.. | 484.. | 487.. | 485.. |
| Load | The radial load of type LDE is restricted by the interchangeable inserts (page 37) | | | | |

Available with draw-off thread and draw-off nut (design A, page 28)

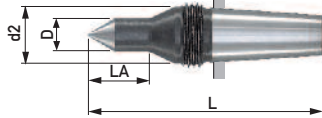
Interchangeable inserts

taper 1:7.5, in gauge accuracy

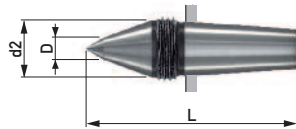
Form AO, 60°
draw-off thread



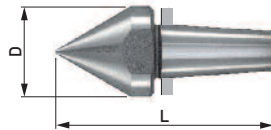
Form ASL, 60°
slim, extended
draw-off thread



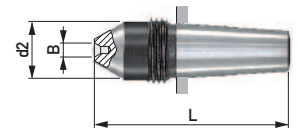
Form AKOP, 60°/40°
extended
draw-off thread



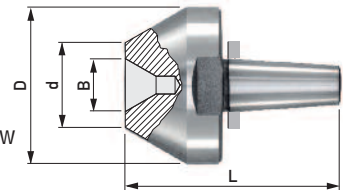
Form A, 60°
for hollow parts
spanner flat (SW)



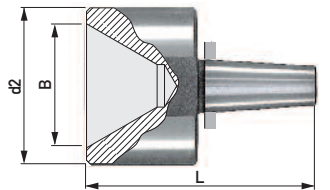
Form B, centre 60°
for centreless workpieces,
draw-off thread



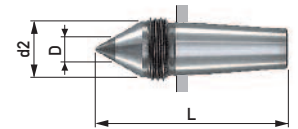
Form C, centre 60°
for centreless workpieces,
external angle 60° for hollow
parts, spanner flat (SW)



Form D, centre 60°
for centreless workpieces,
spanner flat (SW)



Form AOHM, 60°
with carbide insert
draw-off thread



| Basic Centre Types: LDE, TRE | Interchangeable Inserts | Radial load max. daN | Insert dimensions | | | | | | Thread SW | Taper dimensions taper 1:7.5 | | |
|--|----------------------------|-------------------------|-------------------|------|-------|----|-----|----|--------------|---------------------------------|------|------|
| | | | D | d2 | B | d | L | LA | | K1 | K2 | I1 |
| 710E 045002 | 482AO | 90 | 11.7 | | | | 45 | | M 14x1.5 | 11 | 8 | 23 |
| | 482ASL | 30 | 6 | 11.7 | | | 55 | 15 | M 14x1.5 | | | |
| | 482AKOP | 90 | 5 | 11.7 | | | 50 | | M 14x1.5 | | | |
| | 482A | 90 | 17 | | | | 45 | | SW14 | | | |
| | 482B | 90 | | 11.7 | 4x2 | | 45 | | M 14x1.5 | | | |
| | 482C | 90 | 28 | | 8x3 | 12 | 45 | | SW24 | | | |
| | 482D | 90 | | 28 | 20x6 | | 45 | | SW24 | | | |
| | 482AOHM | 60 | 7 | 11.7 | | | 45 | | M 14x1.5 | | | |
| 710E 055003 700E 055VDI30 700E 055CO4 700E 055Zy125,4 700E 055Zy125 700E 055Zy132 | 484AO | 160 | 15.7 | | | | 53 | | M 18x1.5 | 15 | 11 | 30 |
| | 484ASL | 100 | 9 | 15.7 | | | 65 | 17 | M 18x1.5 | | | |
| | 484AKOP | 160 | 6 | 15.7 | | | 58 | | M 18x1.5 | | | |
| | 484A | 160 | 25 | | | | 60 | | SW22 | | | |
| | 484B | 110 | | 15.7 | 4x2 | | 53 | | M 18x1.5 | | | |
| | 484C | 160 | 44 | | 15x5 | 24 | 60 | | SW41 | | | |
| | 484D | 160 | | 44 | 35x12 | | 64 | | SW41 | | | |
| | 484AOHM | 60 | 7 | 15.7 | | | 53 | | M 18x1.5 | | | |
| 710E 068004 700E 068VDI40 700E 068CO5 700E 068CO6 700E 068Zy132 700E 068Zy140 | 487AO | 300 | 21.6 | | | | 74 | | M 24x1.5 | 22 | 16.4 | 42 |
| | 487ASL | 100 | 9 | 21.6 | | | 86 | 17 | M 24x1.5 | | | |
| | 487AKOP | 300 | 8 | 21.6 | | | 80 | | M 24x1.5 | | | |
| | 487A | 300 | 32 | | | | 82 | | SW27 | | | |
| | 487B | 240 | | 21.6 | 5x2,5 | | 74 | | M 24x1.5 | | | |
| | 487C | 300 | 55 | | 20x6 | 30 | 82 | | SW50 | | | |
| | 487D | 300 | | 55 | 45x15 | | 85 | | SW50 | | | |
| | 487AOHM | 200 | 11 | 21.6 | | | 74 | | M 24x1.5 | | | |
| 710E 092005 | 485AO | 500 | 27.7 | | | | 93 | | M 30x1.5 | 28 | 21 | 52.5 |
| | 485ASL | 180 | 13 | 27.7 | | | 110 | 27 | M 30x1.5 | | | |
| | 485AKOP | 500 | 8 | 27.7 | | | 105 | | M 30x1.5 | | | |
| | 485A | 500 | 45 | | | | 105 | | SW41 | | | |
| | 485B | 500 | | 27.7 | 7x3 | | 93 | | M 30x1.5 | | | |
| | 485C | 500 | 65 | | 25x6 | 35 | 105 | | SW55 | | | |
| | 485D | 500 | | 65 | 55x20 | | 105 | | SW55 | | | |
| | 485AOHM | 500 | 18 | 27.7 | | | 93 | | M 30x1.5 | | | |

| ID.No. | Content |
|--------|---------|
| P 10 | 100 g |

Installation paste

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



Technical features:

- ▶ Spring loaded centres with pressure indication by yellow, green, red rings.
- ▶ Designed for high radial and axial loads and for higher speeds.
- ▶ High precision bearings in the head of the housing and within the taper. The bearing seats of housing and centre spindle are matched to the bearings and ground to precise tolerances.
- ▶ High concentricity accuracy tested under axial load and guaranteed with test report.
- ▶ Housings and centre spindles are hardened.
- ▶ Rotary seals protect bearings from dirt and coolant.
- ▶ Maintenance-free due to permanent lubrication.

Applications:

- ▶ Multi-spindle machines
- ▶ CNC lathes without tailstock
- ▶ CNC lathes with opposed spindle

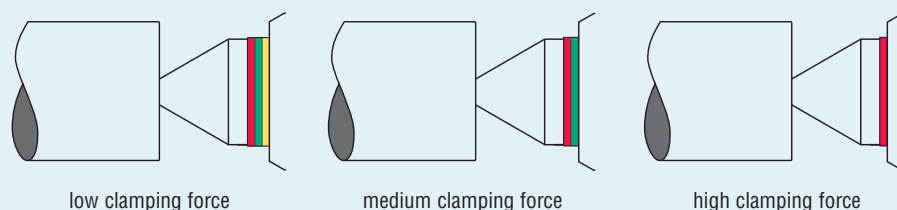
Design principle on page 29, type LR

Range of axial force per coloured ring

| Housing \varnothing DG | axial force daN | | |
|-----------------------------|-----------------|---------|---------|
| 55 | 0-250 | 250-500 | 500-850 |
| 68 | 0-350 | 350-620 | 620-850 |

Reduction of spring force through soft spring on request

Example of function for T Line

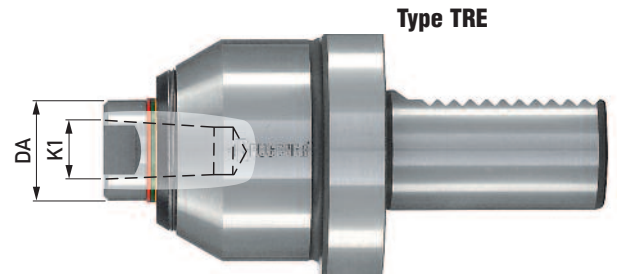
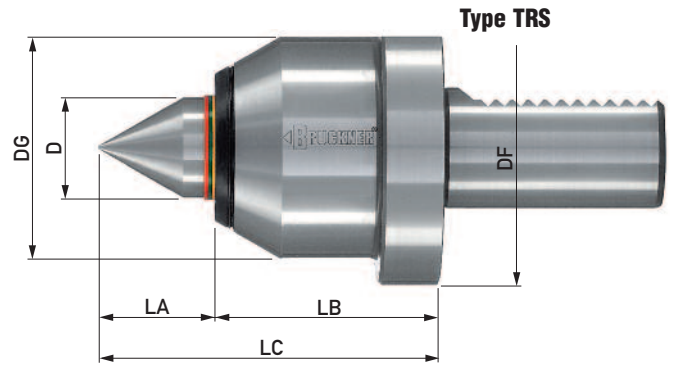


VDI shank

- Type TRS** – centrepoint 60°
- Type TRV** – centrepoint 60°/40° extended
- Type TRE** – centre spindle with 1:7.5 internal taper for interchangeable inserts (page 37)

Runout

max. 0.005 mm with test report
 max. 0.003 mm high precision design
 on request



Interchangeable inserts for type TRE on page 37

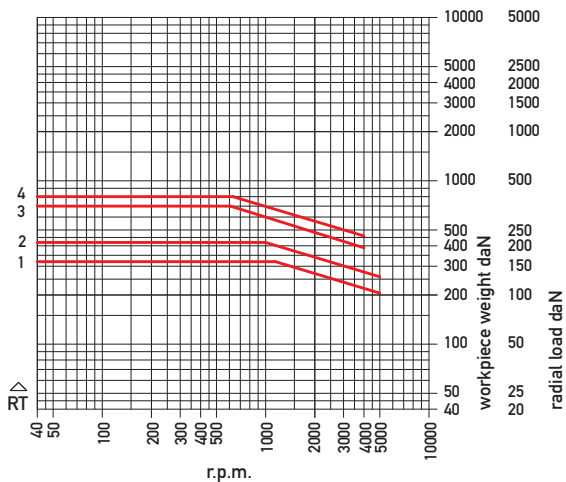
| Type | TRS | TRV | TRE | TRS | TRV | TRE |
|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| ID.No. | 700S 055VDI30 | 700V 055VDI30 | 700E 055VDI30 | 700S 068VDI40 | 700V 068VDI40 | 700E 068VDI40 |
| Shaft size VDI | 30 | 30 | 30 | 40 | 40 | 40 |
| DG | 55 | 55 | 55 | 68 | 68 | 68 |
| DA | - | 25 | 25 | - | 35 | 35 |
| D | 25 | 12 | - | 35 | 14 | - |
| DF | 68 | 68 | 68 | 83 | 83 | 83 |
| K1 | - | - | 15 | - | - | 22 |
| LA | 28 | 37 | 13 | 40 | 49 | 21 |
| LB | 56 | 56 | 56 | 68 | 68 | 68 |
| LC | 84 | 93 | 68,5 | 108 | 117 | 90 |
| Workpiece weight max. daN* | 420 | 320 | * | 800 | 700 | * |
| Spring travel | 2.7 | 2.7 | 2.7 | 4.2 | 4.2 | 4.2 |
| r.p.m. max.* | 5000 | 5000 | 5000 | 4000 | 4000 | 4000 |
| Radial/axial load graph | RT2/AT1 | RT1/AT1 | * | RT4/AT2 | RT3/AT2 | * |
| Suitable inserts | - | - | 484.. | - | - | 487.. |

*The radial load of type TRE is limited by the interchangeable inserts (page 37)

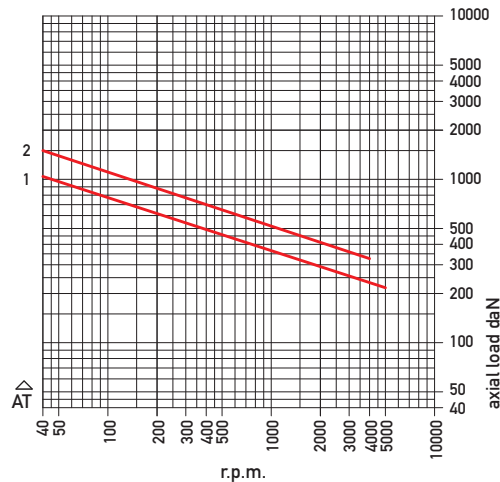
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (see calculation example page 11)

Radial – Types TRS/TRV VDI



Axial – Types TRS/TRV VDI



Capto shank

Type TRS – centrepoint 60°

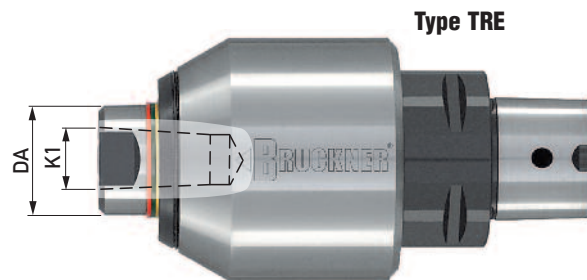
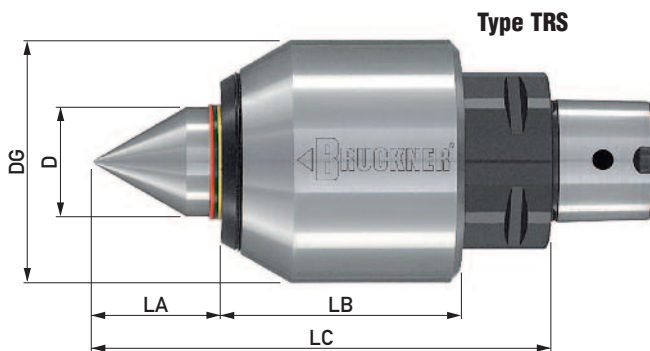
Type TRV – centrepoint 60°/40° extended

Type TRE – centre spindle with 1:7.5 internal taper for interchangeable inserts (page 37)

Runout

max. 0.005 mm with test report

max. 0.003 mm high precision design on request



Interchangeable inserts for type TRE on page 37

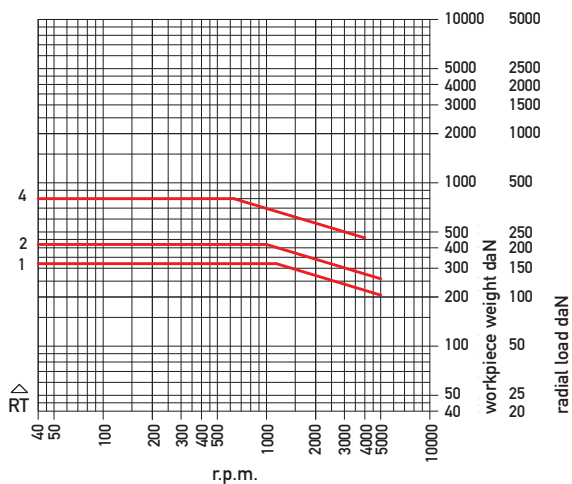
| Type | TRS | TRV | TRE | TRS | TRE | TRS | TRE |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| ID.No. | 700S 055C04 | 700V 055C04 | 700E 055C04 | 700S 068C05 | 700E 068C05 | 700S 068C06 | 700E 068C06 |
| Shaft size Capto | C4 | C4 | C4 | C5 | C5 | C6 | C6 |
| DG | 55 | 55 | 55 | 68 | 68 | 68 | 68 |
| DA | - | 25 | 25 | - | 35 | - | 35 |
| D | 25 | 12 | - | 35 | - | 35 | - |
| K1 | - | - | 15 | - | 22 | - | 22 |
| LA | 28 | 37 | 13 | 40 | 21 | 40 | 21 |
| LB | 54 | 54 | 54 | 74 | 74 | 76 | 76 |
| LC | 103 | 112 | 87 | 134 | 116 | 138 | 120 |
| Workpiece weight max. daN* | 420 | 320 | * | 800 | * | 800 | * |
| Spring travel | 2.7 | 2.7 | 2.7 | 4.2 | 4.2 | 4.2 | 4.2 |
| r.p.m. max.* | 5000 | 5000 | 5000 | 4000 | 4000 | 4000 | 4000 |
| Radial/axial load graph | RT2/AT1 | RT1/AT1 | * | RT4/AT2 | * | RT4/AT2 | * |
| Suitable inserts | - | - | 484.. | - | 487.. | - | 487.. |

*The radial load of type TRE is limited by the interchangeable inserts (page 37)

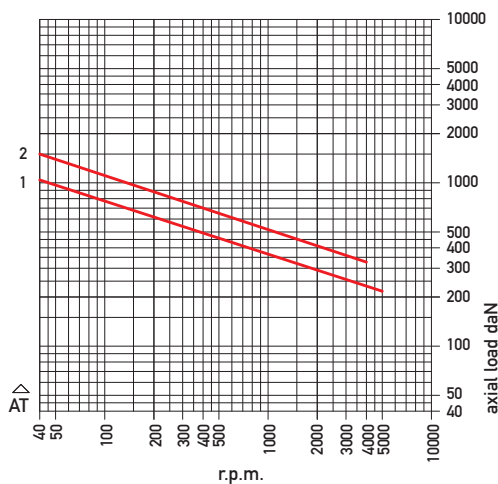
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (see calculation example page 11)

Radial – Types TRS/TRV Capto



Axial – Types TRS/TRV Capto

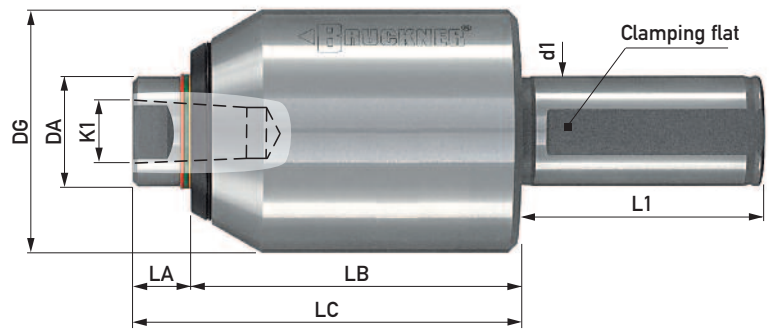


Cylindrical shank

Type TRE – centre spindle with internal taper 1:7.5 for interchangeable inserts (page 37)
 centrepoint 60° on request

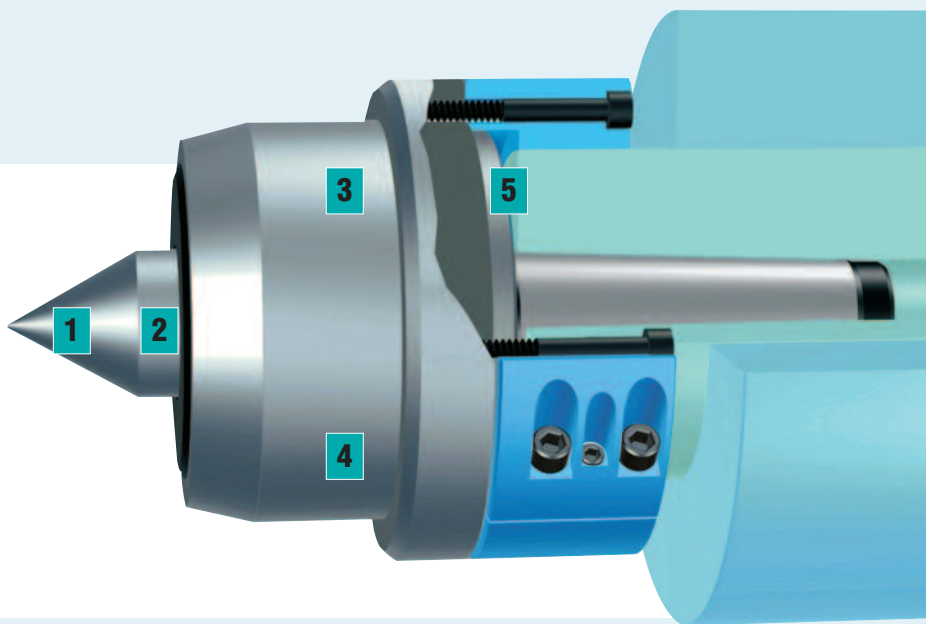
Runout

max. 0.005 mm with test report
 max. 0.003 mm high precision design on request.



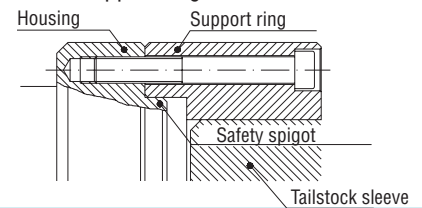
Interchangeable inserts for type TRE on page 37

| Type TRE | ID.No. | 700E 055Zyl25.4 | 700E 055Zyl25 | 700E 055Zyl32 | 700E 068Zyl32 | 700E 068Zyl40 |
|------------------|---|-----------------|---------------|---------------|---------------|---------------|
| Shaft size d1 | | 25.4 (1") | 25 | 32 | 32 | 40 |
| DG | | 55 | 55 | 55 | 68 | 68 |
| DA | | 25 | 25 | 25 | 35 | 35 |
| K1 | | 15 | 15 | 15 | 22 | 22 |
| LA | | 13 | 13 | 13 | 21 | 21 |
| LB | | 74 | 74 | 74 | 89 | 89 |
| LC | | 87 | 87 | 87 | 110 | 110 |
| L1 | | 55 | 55 | 65 | 65 | 80 |
| Spring travel | | 2.7 | 2.7 | 2.7 | 4.2 | 4.2 |
| r.p.m. max. | | 5000 | 5000 | 5000 | 4000 | 4000 |
| Suitable inserts | | 484.. | 484.. | 484.. | 487.. | 487.. |
| Load | The radial load of type TRE is limited by the interchangeable inserts (page 37) | | | | | |



- 1 High concentricity accuracy**
- 2 Shaft seal ring**
protects the bearings from dirt and coolant
- 3 Housing**
high quality material, forged, therefore uniform grain structure, tensile strength approx. 1000 N/mm²
Head and shank hardened
- 4 Large zero clearance precision roller bearings**
to absorb radial and axial forces. No bearings in the taper shank. Bearing seats in the housing and on the centre spindle are precision ground to ultra fine tolerances. The bearings and their seats are selected for optimum fit. Maintenance-free due to permanent lubrication

- 5 Safety spigot (patented)**
acts as an additional safeguard when connecting the centre housing to the support ring

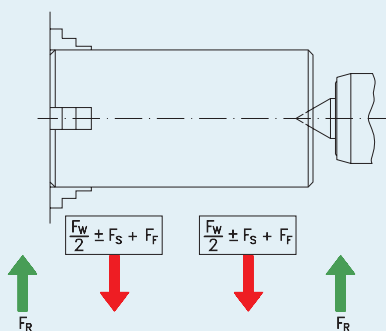


Heavy workpieces – safe clamping, precision machining

The live centre is an important element in a load system of a heavy-duty machine tool and plays a decisive role in the final machining result. The BRUCKNER design is especially suited to the high requirements of heavy-duty machining.

The maximum admissible load depends on the mounting taper diameter and we therefore offer a choice of two different designs:

- ▶ Load carried only on the taper
- ▶ Load carried on the taper with additional tailstock-sleeve support



The formula is applicable when the workpiece weight F_W 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 F_S 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 F_F .

Load capacity of live centres for heavy-duty machining

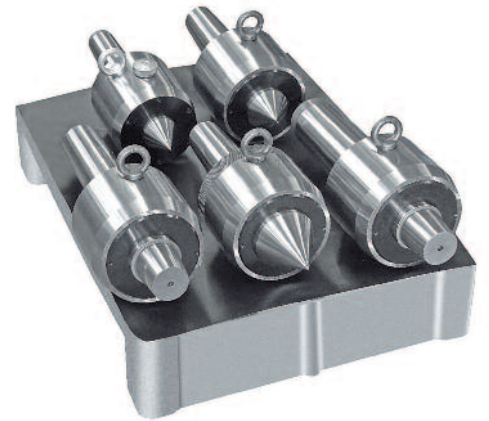
The data for workpiece weight and load given in our tables and diagrams are based on the dynamic state of the live centre. Taper and centrepoint cross sections are designed for actual operating criteria and not for static conditions. The load figures are calculated for the average diameter of the 60° 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

BRUCKNER high performance live centres for heavy duty machining are used on lathes and cylindrical grinding machines in the heavy industry. Manufacturers of turbines, large engines, rollers, machined parts for the oil industry etc. focus on BRUCKNER high performance live centres due to their reliability, safety and accuracy.



Load values

The load values given in our tables are calculated with the world wide acknowledged software KISSsoft. When used in keeping with currently valid standards DIN and ISO, this software guarantees a safe and reliable load calculation.

Types M, MG

Centrepoint 60°, 75°, 90°

Types AM, AMG

With draw-off thread

Centrepoint 60°, 75°, 90°

for machines with tailstock sleeves without through bore

Runout

Type M, AM max. 0.008 mm

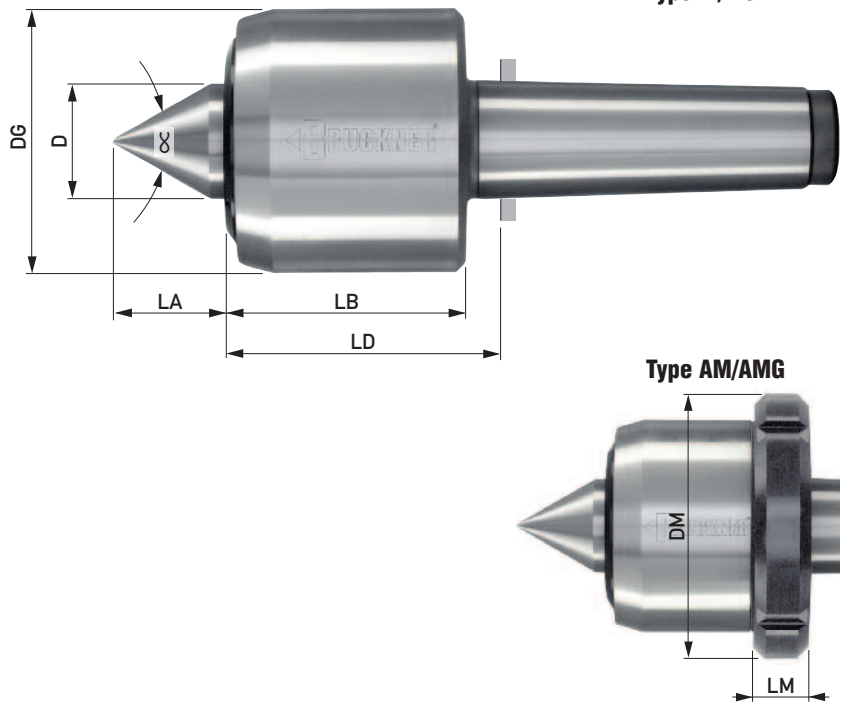
Type MG, AMG max. 0.004 mm

Types MG, 141006, 141006A max. 0.003 mm

Application

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

For operations with heavy coolant flows we recommend the use of our supplementary seal (page 10)

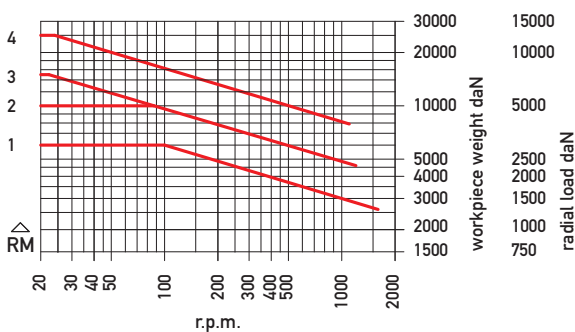


| Type M | ID.No. | 140006 | 140081 | 180007 | 180080 | 180081 | 180100 | 180101 | 230120 | 230121 | |
|------------------------------|----------|---------|---------------|---------|---------------|---------------|----------------|----------------|----------------|----------------|----|
| Type MG | ID.No. | 141006 | 141081 | 181007 | 181080 | 181081 | 181100 | 181101 | 231120 | 231121 | |
| Type AM | ID.No. | 140006A | 140081A | 180007A | 180080A | 180081A | 180100A | 180101A | on request | | |
| Type AMG | ID.No. | 141006A | 141081A | 181007A | 181080A | 181081A | 181100A | 181101A | on request | | |
| Taper size | | MT 6 | Taper 80 1:10 | MT 7 | Metr. 80 1:20 | Taper 80 1:10 | Metr. 100 1:20 | Taper 100 1:10 | Metr. 120 1:20 | Taper 120 1:10 | |
| D | | 62 | 62 | 80 | 80 | 80 | 80 | 80 | 100 | 100 | |
| DG | | 140 | 140 | 180 | 180 | 180 | 180 | 180 | 230 | 230 | |
| LA for $\angle \infty$ | standard | 60° | 60 | 60 | 77 | 77 | 77 | 77 | 88 | 88 | |
| | optional | 75° | 47 | 47 | 60 | 60 | 60 | 60 | 60 | 68 | 68 |
| | | 90° | 38 | 38 | 49 | 49 | 49 | 49 | 49 | 54 | 54 |
| LB | | 124 | 124 | 146 | 146 | 146 | 146 | 146 | 183 | 183 | |
| LD | | 135 | 142 | 164 | 164 | 164 | 164 | 164 | 201 | 201 | |
| Workpiece weight max. daN* | | 6000 | 6000 | 10000 | 10000 | 10000 | 15000 | 15000 | 25000 | 25000 | |
| r.p.m. max. * | | 1600 | 1600 | 1200 | 1200 | 1200 | 1200 | 1200 | 1100 | 1100 | |
| Radial/axial load graph | | RM1/AM1 | RM1/AM1 | RM2/AM2 | RM2/AM2 | RM2/AM2 | RM3/AM2 | RM3/AM2 | RM4/AM3 | RM4/AM3 | |
| Supplementary seal | ID.No. | V60 | V60 | V80 | V80 | V80 | V80 | V80 | V100 | V100 | |
| Draw-off nut for Typ AM, AMG | ID.No. | M140A | M140A | M180A | M180A | M180A | M180A | M180A | | | |
| DM | | 175 | 175 | 210 | 210 | 210 | 210 | 210 | | | |
| LM | | 36 | 36 | 40 | 40 | 40 | 40 | 40 | | | |

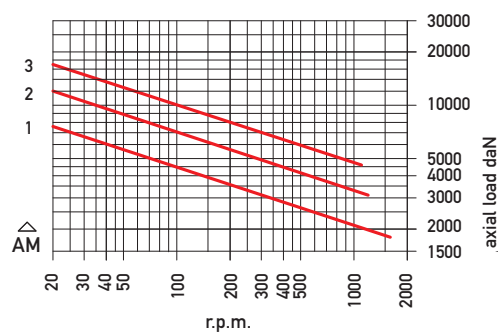
*observe the load graphs

Radial and axial loads for a bearing life of 2000 operating hours (see calculation example page 11)

Radial – Types M, MG, AM, AMG



Axial – Types M, MG, AM, AMG



Types MR, MRG

with tailstock sleeve support ring and patented safety spigot
Centrepoint 60°, 75°, 90°

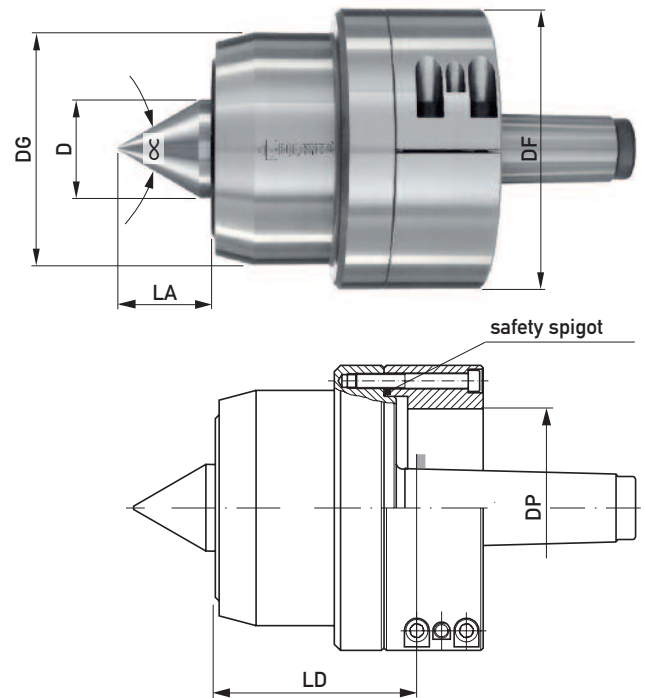
Runout

Type MR max. 0.008 mm
Type MRG max. 0.004 mm

Application

If, for very high workpiece weights the load capacity on the mounting taper is insufficient, the centre is additionally supported on the tailstock sleeve with a support ring. A patented safety spigot safeguards the screw fastening of the centre housing to the support ring.

The support also diminishes vibration and enhances the centre life.



| Type MR | ID.No. | 190006MR | 190007MR | 190080MR | 190081MR | 230100MR | 230101MR |
|----------------------------|----------|----------|----------|---------------|---------------|----------------|----------------|
| Type MRG | ID.No. | 191006MR | 191007MR | 191080MR | 191081MR | 231100MR | 231101MR |
| Taper size | | MT 6 | MT 7 | Metr. 80 1:20 | Taper 80 1:10 | Metr. 100 1:20 | Taper 100 1:10 |
| D | | 80 | 80 | 80 | 80 | 100 | 100 |
| DG | | 190 | 190 | 190 | 190 | 230 | 230 |
| LA for $\angle \infty$ | standard | 60° | 77 | 77 | 77 | 88 | 88 |
| | optional | 75° | 60 | 60 | 60 | 68 | 68 |
| | | 90° | 49 | 49 | 49 | 49 | 54 |
| LD | | 157 | 164 | 164 | 164 | 201 | 201 |
| DF | | 230 | 230 | 230 | 230 | 230 | 230 |
| DP | | 100-180 | 100-180 | 100-180 | 100-180 | 100-180 | 100-180 |
| Workpiece weight max. daN* | | 10 000 | 15 000 | 15 000 | 15 000 | 20 000 | 20 000 |
| r.p.m. max.* | | 1200 | 1200 | 1200 | 1200 | 1100 | 1100 |
| Radial/axial load graph | | RP1/AP1 | RP2/AP1 | RP2/AP1 | RP2/AP1 | RP3/AP2 | RP3/AP2 |
| Supplementary seal | ID.No. | V80 | V80 | V80 | V80 | V100 | V100 |

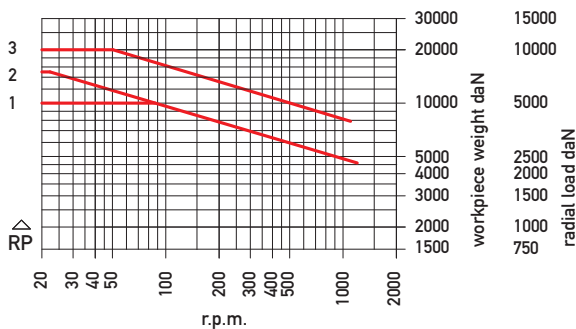
*observe the load graphs

When inquiring/ordering please indicate:

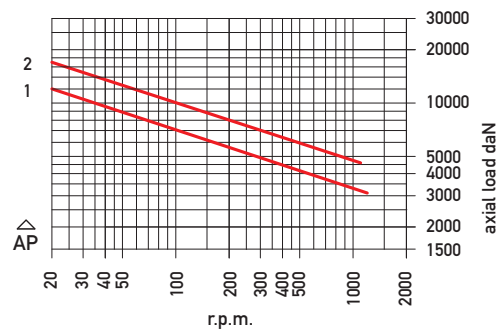
1. Point angle of the centre
2. For design with support ring the tailstock sleeve diameter within 0.01 mm

Radial and axial loads for a bearing life of 2000 operating hours (see calculation example page 11)

Radial – Types MR, MRG



Axial – Types MR, MRG



Type MZ

with expansion compensation
and pressure indication by graduated dial
Centrepoint 60°, 75°, 90°

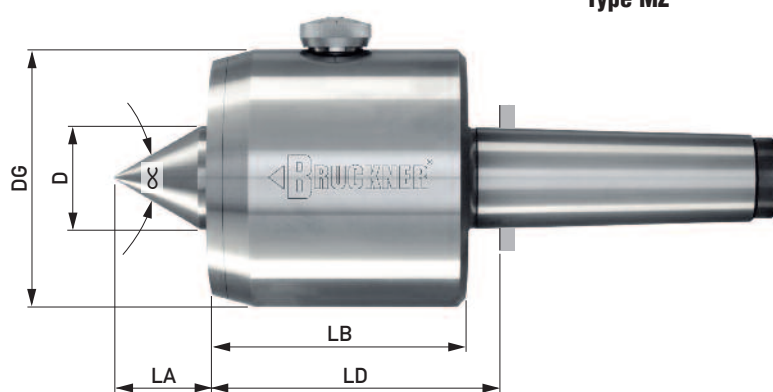
Runout

max. 0.008 mm
max. 0.004 mm on request

Application

If the axial pressure must not exceed or fall below a defined value to clamp the component safely or to avoid workpiece deformation.

When machining heavy workpieces prone to heat expansion.



Type MZ

Type MZ without draw-off thread

Type AMZ with draw-off thread

for machines with tailstock sleeve
without through bore (draw-off nut page 44)

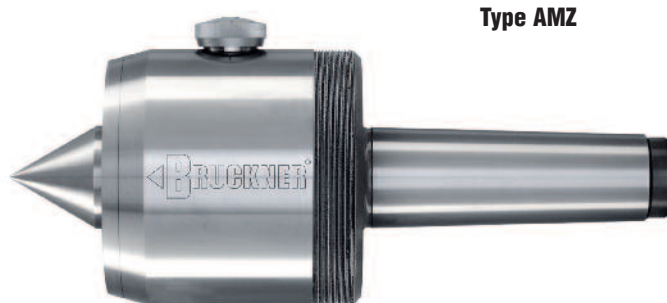
Type MZR with tailstock sleeve support ring and patented safety spigot (page 42)

The tailstock sleeve support:

- ▶ makes the connection between tailstock sleeve and centre housing sturdier
- ▶ minimises the possibility of machining vibrations

We recommend our tailstock sleeve support design when

- ▶ machining heavy workpieces, unbalanced and/or interrupted cuts
- ▶ high quality workpiece surface finishes are required



Type AMZ



Type MZR

Adjusting the clamping pressure

The tailstock pressure required is adjusted on the graduated dial. When clamping the component, the central measuring pin is lifted in proportion to the travel of the centre spindle.

The required clamping force is reached when measuring pin and scaling ring surface are level.



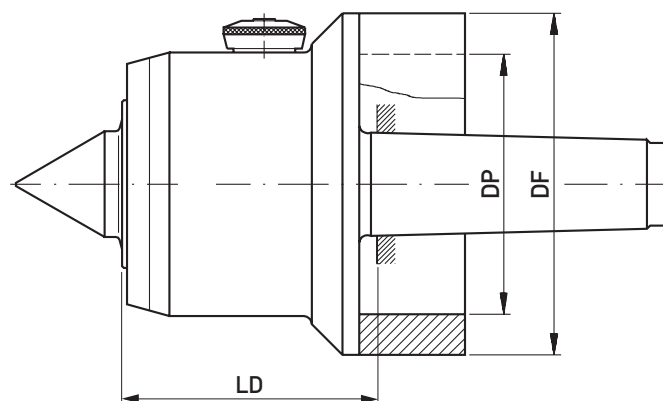
Pressure too low



Correct pressure



Pressure too high



| Type MZ | ID.No. | MZ164006 | MZ194M080 | MZ194K080 | MZ194M100 | MZ194K100 | MZ224M100 | MZ224K100 |
|---------------------------------|----------|-----------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| Type AMZ | ID.NO. | MZ164006A | MZ194M080A | MZ194K080A | MZ194M100A | MZ194K100A | on request | on request |
| Taper size | | MT 6 | Metr. 80 1:20 | Taper 80 1:10 | Metr. 100 1:20 | Taper 100 1:10 | Taper 100 1:20 | Taper 100 1:10 |
| D | | 65 | 90 | 90 | 90 | 90 | 100 | 100 |
| DG | | 160 | 190 | 190 | 190 | 190 | 220 | 220 |
| LA for $\angle \infty$ | standard | 60° | 62 | 86 | 86 | 86 | 86 | 95 |
| | optional | 75° | 48.5 | 67.5 | 67.5 | 67.5 | 67.5 | 74 |
| | | 90° | 39 | 54 | 54 | 54 | 54 | 60 |
| LB | | 157 | 169 | 169 | 169 | 169 | 187 | 187 |
| LD | | 168 | 187 | 187 | 187 | 187 | 205 | 205 |
| Workpiece weight max. daN* | | 6000 | 10000 | 10000 | 10000 | 10000 | 15000 | 15000 |
| r.p.m. max.* | | 1600 | 850 | 850 | 850 | 850 | 750 | 750 |
| Initial pressure daN* | | 800 | 1200 | 1200 | 1200 | 1200 | 1500 | 1500 |
| Final pressure daN* | | 8000 | 12000 | 12000 | 12000 | 12000 | 16200 | 16200 |
| Max. travel of spring system mm | | 2.3 | 2.8 | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 |
| Radial/axial load graph | | RX1/AX1 | RX2/AX2 | RX2/AX2 | RX2/AX2 | RX2/AX2 | RX3/AX3 | RX3/AX3 |
| Draw-off nut for Type AMZ** | ID.No. | M140 A | M180 A | M180 A | M180 A | M180 A | | |

**dimensions of draw-off nut page 44

*observe the load graphs

| Type MZR | ID.No. | MZR194006 | MZR194M080 | MZR194K080 | MZR224M080 | MZR224K080 |
|----------------------------|--------|-----------|------------------|------------------|------------------|------------------|
| Taper size | | MT 6 | Metr. 80 1:20 | Taper 80 1:10 | Metr. 80 1:20 | Taper 80 1:10 |
| D | | 90 | 90 | 90 | 100 | 100 |
| DG | | 190 | 190 | 190 | 220 | 220 |
| DF | | 230 | 230 | 230 | 230 | 230 |
| DP | | 100-180 | 100-180 | 100-180 | 100-180 | 100-180 |
| LD | | 180 | 187 | 187 | 205 | 205 |
| Workpiece weight max. daN* | | 10000 | 10000 | 10000 | 15000 | 15000 |
| Radial/axial load graph | | RX2/AX2 | RX2/AX2 | RX2/AX2 | RX3/AX3 | RX3/AX3 |

**All other dimensions see similar type MZ

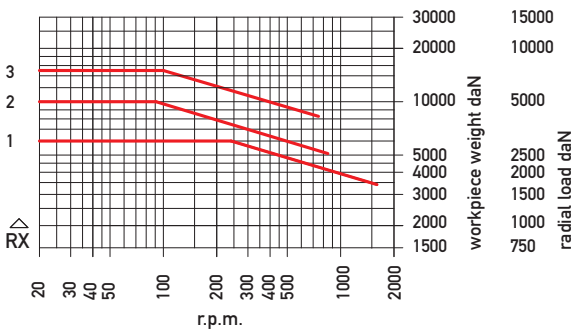
*observe the load graphs

When inquiring/ordering please indicate:

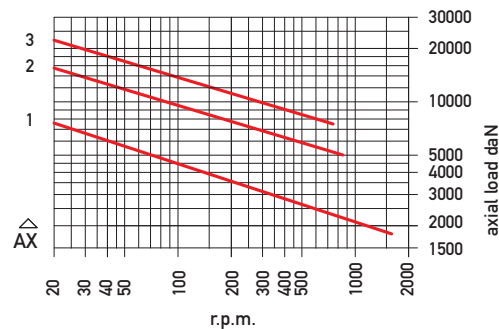
1. Point angle of the centre
2. For type MZR the tailstock sleeve diameter within 0.01 mm

Radial and axial loads for a bearing life of 2000 operating hours (see calculation example page 11)

Radial – Types MZ, AMZ, MZR



Axial – Types MZ, AMZ, MZR



BRUCKNER WORKS STANDARD

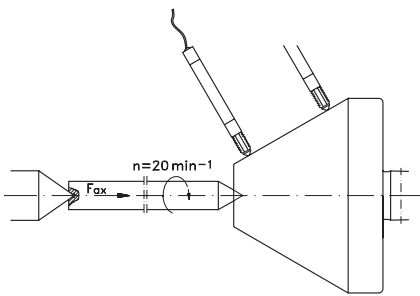
Our high performance bullnose live centres – standard as well as special designs – are produced and tested according to our own stringent works standard. Materials, production and testing are subject to strict quality guidelines guaranteeing function and performance of our tools.

Test report for concentricity accuracy

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



Example: table „maximum runout“ for types ZA, ZAG



| Type ZA | Type ZAG | Morse taper | Runout max. | | Fax daN |
|-----------|-----------|-------------|-------------|----------|---------|
| | | | Type ZA | Type ZAG | |
| 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 |
| 1964-1970 | 2164-2170 | 6 | 0.007 | 0.003 | 600 |
| 1983-1985 | 2183-2185 | 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 usual case-hardening, this allows the head of the centre to be reground 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 according to DIN 228 AT4 (gauge accuracy). This fine tolerance guarantees a close fit of the high performance bullnose centre in the tailstock and the full utilisation of the concentricity accuracy.

Load values

The load values given in our tables are calculated with the world wide acknowledged software KISSsoft. When used in keeping with currently valid standards DIN and ISO, this software guarantees a safe and reliable load calculation.

Precision bearings

The bearings are selected according to the size of the Morse taper. The bearing seats of the head and the taper shank are matched to the bearings and ground to precise tolerances. Bearings and their seats are selected to fit.

Result: high stability, minimum runout and long life.

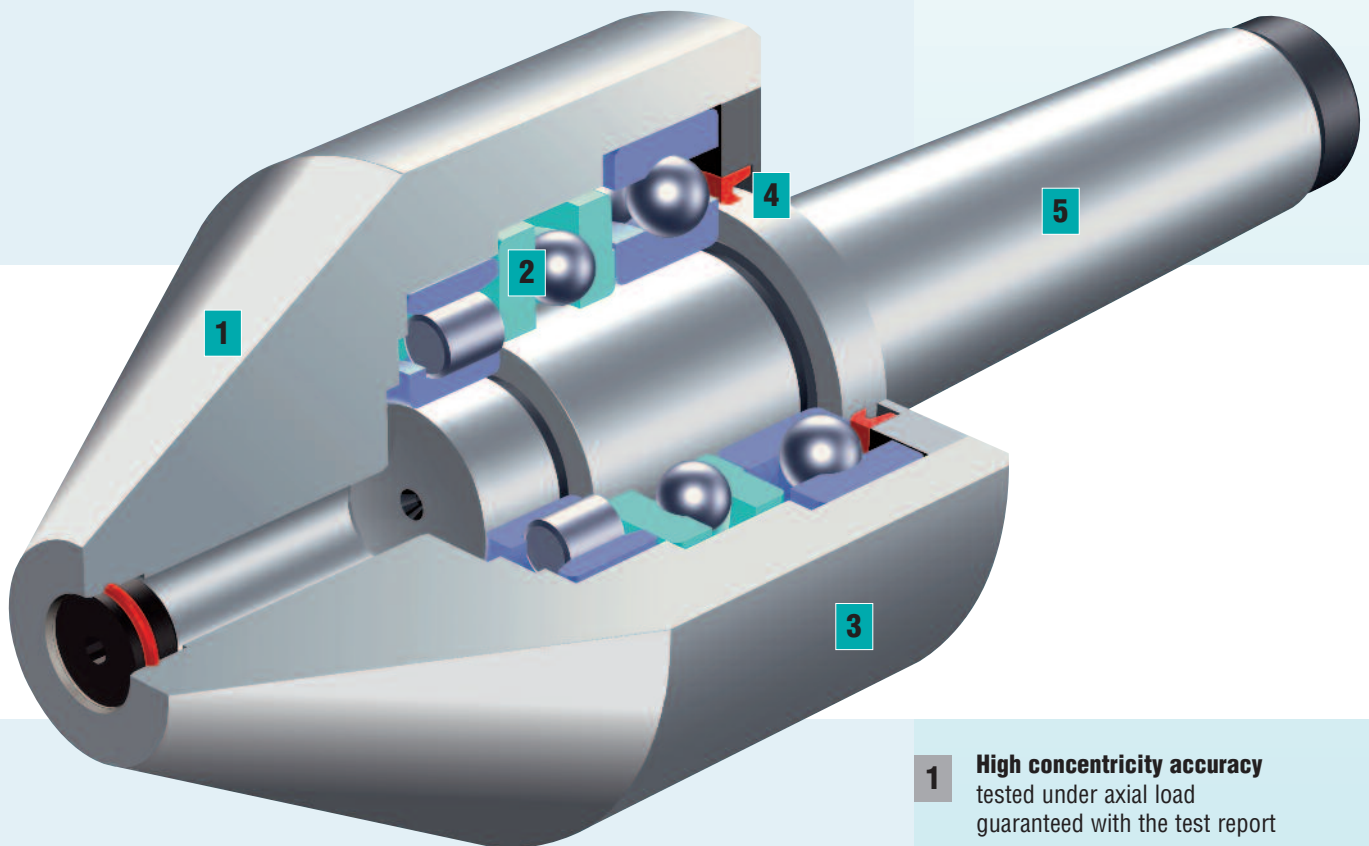
Maintenance

The bearings are maintenance free due to permanent lubrication.

Repair service

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





Robust and precise

Our bullnose live centres have sturdy roller bearings where the loads are heaviest. Combined with large axial and radial deep section ball bearings this design allows high loads with high concentricity and long life. BRUCKNER bullnose live centres sustain their reliability even when conditions are tough. For cylindrical grinding operations BRUCKNER bullnose live centres are market leaders. Such work demands bullnose centres with reserves of stability for good grinding results.

- 1 High concentricity accuracy**
tested under axial load
guaranteed with the test report
- 2 Large precision roller bearings, free from clearance**
to withstand the axial and radial forces.
Maintenance-free due to permanent lubrication
- 3 Bullnose head**
of alloy tool steel, through-hardened
- 4 Shaft seal**
protects the bearings from dirt and coolant
- 5 Taper shank**
case hardened for protection from damage

Types ZA, ZAG

Angle 60°, 75°
without draw-off thread

Runout

Type ZA max. 0.007 mm
Type ZAG max. 0.003 mm
with test report

Application

For turning and grinding tubes and workpieces with large bores

Mechanical engineering

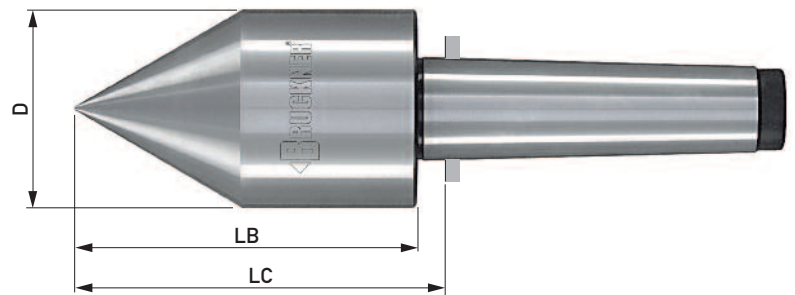
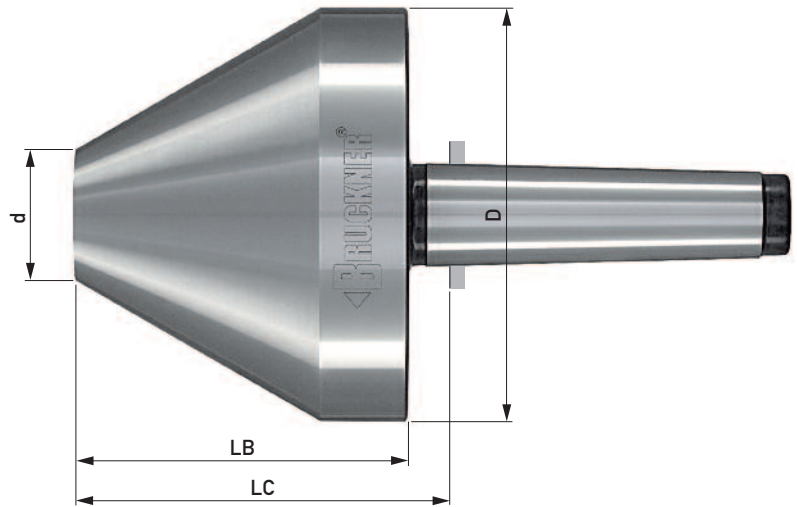
Main spindles for machine tools, hollow shafts, paper rolls, rings and gears

Car industry/Motor construction

Truck axial tubes, pistons, cylinder liners, crankshafts, wheel hubs

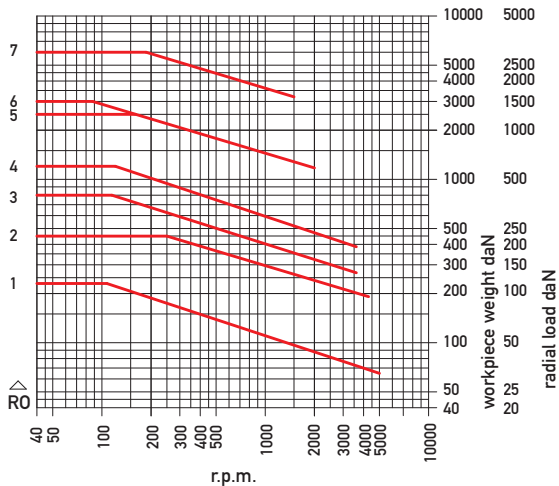
Aircraft industry/Shipbuilding

Engine main shafts and transmission components, turbines, drive shafts

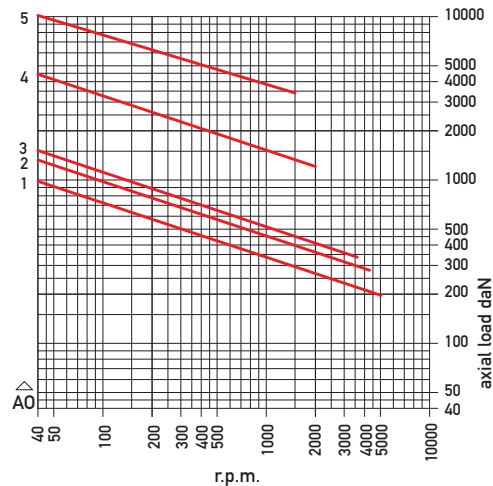


Radial and axial loads for a bearing life of 2000 operating hours (see calculation example page 11)

Radial – Types ZA, ZAG without draw-off-thread



Axial – Types ZA, ZAG without draw-off-thread



| Types ZA, ZAG 60° without draw-off thread | | | | | | | | | | |
|---|---------|---------|-----|-----|-----|-----|----------------------------|--------------|------------|-------|
| Morse taper | ID.No. | | D | d | LC | LB | Workpiece weight max. daN* | r.p.m. max.* | Load graph | |
| | ZA | ZAG | | | | | | | radial | axial |
| 2 | 1920:60 | 2120:60 | 45 | 15 | 78 | 70 | 230 | 5000 | R01 | A01 |
| 2 | 1821:60 | 2021:60 | 60 | 1 | 93 | 85 | | | | |
| 2 | 1921:60 | 2121:60 | 60 | 20 | 74 | 66 | | | | |
| 2 | 1922:60 | 2122:60 | 80 | 25 | 70 | 62 | | | | |
| 3 | 1930:60 | 2130:60 | 45 | 15 | 78 | 70 | | | | |
| 3 | 1831:60 | 2031:60 | 60 | 1 | 111 | 104 | | | | |
| 3 | 1931:60 | 2131:60 | 60 | 20 | 95 | 88 | 450 | 4300 | R02 | A02 |
| 3 | 1932:60 | 2132:60 | 80 | 25 | 95 | 88 | | | | |
| 3 | 1933:60 | 2133:60 | 100 | 35 | 95 | 88 | | | | |
| 4 | 1841:60 | 2041:60 | 60 | 1 | 113 | 104 | | | | |
| 4 | 1941:60 | 2141:60 | 60 | 20 | 97 | 88 | | | | |
| 4 | 1942:60 | 2142:60 | 80 | 25 | 113 | 100 | | | | |
| 4 | 1943:60 | 2143:60 | 100 | 35 | 113 | 100 | 1200 | 3600 | R04 | A03 |
| 4 | 1944:60 | 2144:60 | 125 | 40 | 113 | 100 | | | | |
| 4 | 1945:60 | 2145:60 | 150 | 50 | 113 | 100 | 800 | 3600 | R03 | A03 |
| 4 | 1947:60 | 2147:60 | 200 | 75 | 135 | 122 | | | | |
| 5 | 1952:60 | 2152:60 | 80 | 25 | 113 | 100 | 1200 | 3600 | R04 | A03 |
| 5 | 1953:60 | 2153:60 | 100 | 35 | 113 | 100 | | | | |
| 5 | 1954:60 | 2154:60 | 125 | 40 | 144 | 130 | 2500 | 2000 | R05 | A04 |
| 5 | 1955:60 | 2155:60 | 150 | 50 | 136 | 122 | | | | |
| 5 | 1957:60 | 2157:60 | 200 | 75 | 136 | 122 | | | | |
| 5 | 1958:60 | 2158:60 | 250 | 130 | 136 | 122 | | | | |
| 5 | 1959:60 | 2159:60 | 300 | 180 | 136 | 122 | | | | |
| 6 | 1964:60 | 2164:60 | 125 | 40 | 146 | 130 | | | | |
| 6 | 1965:60 | 2165:60 | 150 | 50 | 138 | 122 | | | | |
| 6 | 1967:60 | 2167:60 | 200 | 75 | 138 | 122 | | | | |
| 6 | 1968:60 | 2168:60 | 250 | 130 | 138 | 122 | | | | |
| 6 | 1969:60 | 2169:60 | 300 | 180 | 138 | 122 | | | | |
| 6 | 1970:60 | 2170:60 | 350 | 230 | 138 | 122 | | | | |
| 6 | 1983:60 | 2183:60 | 250 | 100 | 176 | 160 | 6000 | 1500 | R07 | A05 |
| 6 | 1985:60 | 2185:60 | 350 | 180 | 186 | 170 | | | | |

Bullnose centres with other shanks on request

*observe the load graphs

| Types ZA, ZAG 75° without draw-off thread | | | | | | | | | | |
|---|---------|---------|-----|-----|-----|-----|----------------------------|--------------|------------|-------|
| Morse taper | ID.No. | | D | d | LC | LB | Workpiece weight max. daN* | r.p.m. max.* | Load graph | |
| | ZA | ZAG | | | | | | | radial | axial |
| 5 | 1953:75 | 2153:75 | 100 | 25 | 109 | 96 | 1200 | 3600 | R04 | A03 |
| 5 | 1954:75 | 2154:75 | 125 | 30 | 144 | 130 | | | | |
| 5 | 1955:75 | 2155:75 | 150 | 50 | 134 | 120 | 2500 | 2000 | R05 | A04 |
| 5 | 1957:75 | 2157:75 | 200 | 75 | 124 | 110 | | | | |
| 5 | 1958:75 | 2158:75 | 250 | 110 | 124 | 110 | | | | |
| 5 | 1959:75 | 2159:75 | 300 | 160 | 124 | 110 | | | | |
| 6 | 1964:75 | 2164:75 | 125 | 30 | 146 | 130 | 3000 | 2000 | R06 | A04 |
| 6 | 1965:75 | 2165:75 | 150 | 50 | 136 | 120 | | | | |
| 6 | 1967:75 | 2167:75 | 200 | 75 | 126 | 110 | | | | |
| 6 | 1968:75 | 2168:75 | 250 | 110 | 126 | 110 | | | | |
| 6 | 1969:75 | 2169:75 | 300 | 160 | 126 | 110 | | | | |
| 6 | 1970:75 | 2170:75 | 350 | 190 | 138 | 122 | | | | |
| 6 | 1983:75 | 2183:75 | 250 | 75 | 181 | 165 | 6000 | 1500 | R07 | A05 |
| 6 | 1985:75 | 2185:75 | 350 | 120 | 186 | 170 | | | | |

Bullnose centres with other shanks on request

*observe the load graphs

Types ZA, ZAG

Angle 60°, 75°

With draw-off thread and draw-off nut

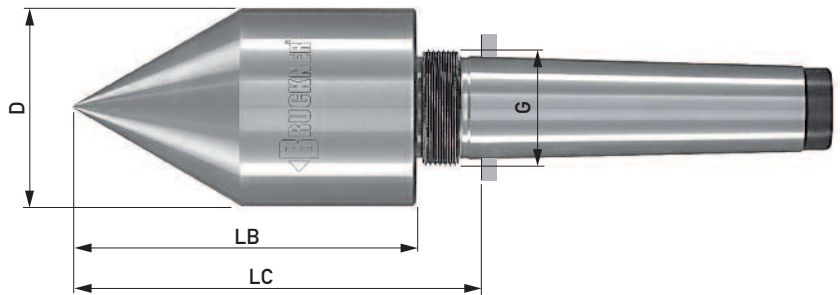
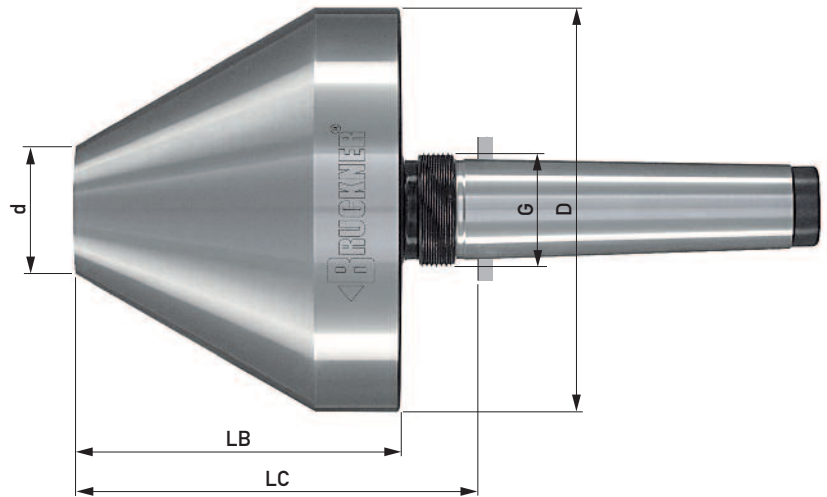
Runout

Type ZA max. 0.007 mm

Type ZAG max. 0.003 mm
with test report

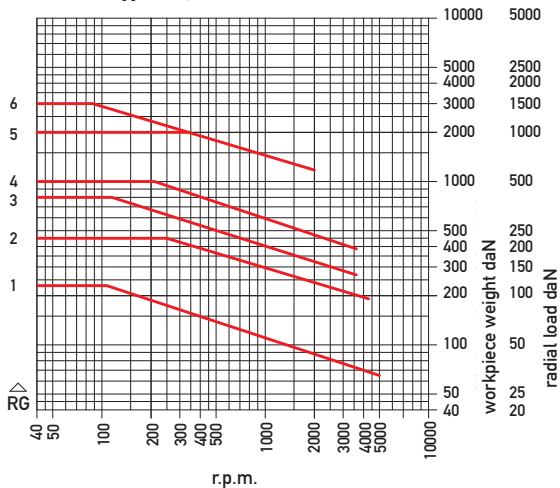
Application

As for types ZA/ZAG on page 50, but for machine tools with tailstock sleeves without through bores (without the possibility to eject centres) or for high precision machine tools for the protection of the spindle bearings or the tailstock sleeve

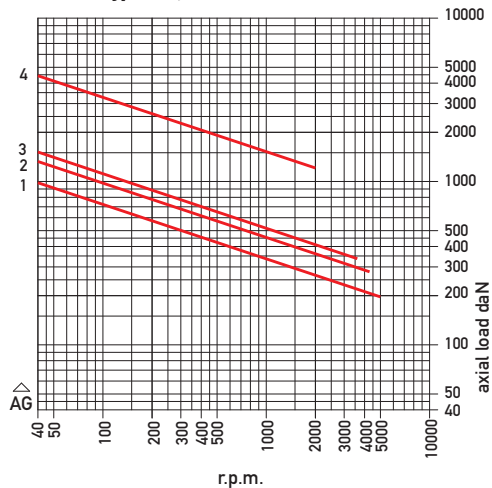


Radial and axial loads for a bearing life of 2000 operating hours (see calculation example page 11)

Radial – Types ZA, ZAG with draw-off thread



Axial – Types ZA, ZAG with draw-off thread



| Types ZA, ZAG 60° with draw-off thread and draw-off nut | | | | | | | | | | | |
|---|----------|----------|-----|-----|-----|-----|----------|----------------------------|--------------|------------|-------|
| Morse taper | ID.No. | | D | d | LC | LB | G | Workpiece weight max. daN* | r.p.m. max.* | Load graph | |
| | ZA | ZAG | | | | | | | | radial | axial |
| 2 | 1920:60A | 2120:60A | 45 | 15 | 86 | 70 | M 22x1.5 | 230 | 5000 | RG1 | AG1 |
| 2 | 1821:60A | 2021:60A | 60 | 1 | 101 | 85 | M 22x1.5 | | | | |
| 2 | 1921:60A | 2121:60A | 60 | 20 | 82 | 66 | M 22x1.5 | | | | |
| 2 | 1922:60A | 2122:60A | 80 | 25 | 78 | 62 | M 22x1.5 | | | | |
| 3 | 1930:60A | 2130:60A | 45 | 15 | 86 | 70 | M 28x1.5 | 450 | 4300 | RG2 | AG2 |
| 3 | 1831:60A | 2031:60A | 60 | 1 | 120 | 104 | M 28x1.5 | | | | |
| 3 | 1931:60A | 2131:60A | 60 | 20 | 104 | 88 | M 28x1.5 | | | | |
| 3 | 1932:60A | 2132:60A | 80 | 25 | 104 | 88 | M 28x1.5 | | | | |
| 3 | 1933:60A | 2133:60A | 100 | 35 | 104 | 88 | M 28x1.5 | 1000 | 3600 | RG4 | AG3 |
| 4 | 1841:60A | 2041:60A | 60 | 1 | 120 | 104 | M 35x1.5 | | | | |
| 4 | 1941:60A | 2141:60A | 60 | 20 | 104 | 88 | M 35x1.5 | | | | |
| 4 | 1942:60A | 2142:60A | 80 | 25 | 119 | 100 | M 35x1.5 | | | | |
| 4 | 1943:60A | 2143:60A | 100 | 35 | 119 | 100 | M 35x1.5 | 800 | 3600 | RG3 | AG3 |
| 4 | 1944:60A | 2144:60A | 125 | 40 | 119 | 100 | M 35x1.5 | | | | |
| 4 | 1945:60A | 2145:60A | 150 | 50 | 119 | 100 | M 35x1.5 | | | | |
| 4 | 1947:60A | 2147:60A | 200 | 75 | 141 | 122 | M 35x1.5 | | | | |
| 5 | 1952:60A | 2152:60A | 80 | 25 | 129 | 100 | M 48x1.5 | 1000 | 3600 | RG4 | AG3 |
| 5 | 1953:60A | 2153:60A | 100 | 35 | 129 | 100 | M 48x1.5 | | | | |
| 5 | 1954:60A | 2154:60A | 125 | 40 | 158 | 130 | M 50x1.5 | 2000 | 2000 | RG5 | AG4 |
| 5 | 1955:60A | 2155:60A | 150 | 50 | 150 | 122 | M 50x1.5 | | | | |
| 5 | 1957:60A | 2157:60A | 200 | 75 | 150 | 122 | M 50x1.5 | | | | |
| 5 | 1958:60A | 2158:60A | 250 | 130 | 150 | 122 | M 50x1.5 | | | | |
| 5 | 1959:60A | 2159:60A | 300 | 180 | 150 | 122 | M 50x1.5 | 3000 | 2000 | RG6 | AG4 |
| 6 | 1964:60A | 2164:60A | 125 | 40 | 159 | 130 | M 68x1.5 | | | | |
| 6 | 1965:60A | 2165:60A | 150 | 50 | 151 | 122 | M 68x1.5 | | | | |
| 6 | 1967:60A | 2167:60A | 200 | 75 | 151 | 122 | M 68x1.5 | | | | |
| 6 | 1968:60A | 2168:60A | 250 | 130 | 151 | 122 | M 68x1.5 | 3000 | 2000 | RG6 | AG4 |
| 6 | 1969:60A | 2169:60A | 300 | 180 | 151 | 122 | M 68x1.5 | | | | |
| 6 | 1970:60A | 2170:60A | 350 | 230 | 151 | 122 | M 68x1.5 | | | | |

Bullnose centres with other shanks on request

*observe the load graphs

| Types ZA, ZAG 75° with draw-off thread and draw-off nut | | | | | | | | | | | |
|---|----------|----------|-----|-----|-----|-----|----------|----------------------------|--------------|------------|-------|
| Morse taper | ID.No. | | D | d | LC | LB | G | Workpiece weight max. daN* | r.p.m. max.* | Load graph | |
| | ZA | ZAG | | | | | | | | radial | axial |
| 5 | 1953:75A | 2153:75A | 100 | 25 | 125 | 96 | M 48x1.5 | 1000 | 3600 | RG4 | AG3 |
| 5 | 1954:75A | 2154:75A | 125 | 30 | 158 | 130 | M 50x1.5 | 2000 | 2000 | RG5 | AG4 |
| 5 | 1955:75A | 2155:75A | 150 | 50 | 148 | 120 | M 50x1.5 | | | | |
| 5 | 1957:75A | 2157:75A | 200 | 75 | 138 | 110 | M 50x1.5 | | | | |
| 5 | 1958:75A | 2158:75A | 250 | 110 | 138 | 110 | M 50x1.5 | | | | |
| 5 | 1959:75A | 2159:75A | 300 | 160 | 138 | 110 | M 50x1.5 | 3000 | 2000 | RG6 | AG4 |
| 6 | 1964:75A | 2164:75A | 125 | 30 | 159 | 130 | M 68x1.5 | | | | |
| 6 | 1965:75A | 2165:75A | 150 | 50 | 149 | 120 | M 68x1.5 | | | | |
| 6 | 1967:75A | 2167:75A | 200 | 75 | 139 | 110 | M 68x1.5 | | | | |
| 6 | 1968:75A | 2168:75A | 250 | 110 | 139 | 110 | M 68x1.5 | 3000 | 2000 | RG6 | AG4 |
| 6 | 1969:75A | 2169:75A | 300 | 160 | 139 | 110 | M 68x1.5 | | | | |
| 6 | 1970:75A | 2170:75A | 350 | 190 | 151 | 122 | M 68x1.5 | | | | |

Bullnose centres with other shanks on request

*observe the load graphs

BRUCKNER WORKS STANDARD

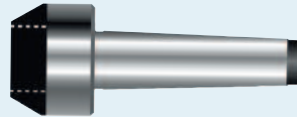
Our high performance live centres – standard as well as special designs – are produced and tested according to our works standard. Materials, production and testing are subject to strict quality guidelines guaranteeing function and performance.

Regrinding line

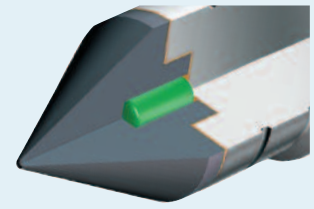
As a rule, BRUCKNER centres feature a regrinding line showing the useful end of the carbide. Forms R and GR do not have this line. Here the useful limit is marked by the braze line.



Regrinding line



Braze line (form R/GR)

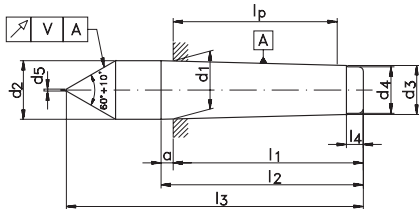


sa•co®

safety core from BRUCKNER

In BRUCKNER solid carbide dead centres (forms V, GV, Z, GZ and HZ) with a carbide diameter of 20 to 45 mm the **safety core sa•co®** is integrated. If there is a fissure in the joint between carbide and base material, e.g. caused by operating or handling errors, **sa•co®** prevents the carbide point with the mounted workpiece from slipping. Thus high consequential costs are avoided.

Extract from DIN 806, DIN 228 and BRUCKNER WORKS STANDARD



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

| Taper size | DIN | | | | | | | | | | DIN | BRUCKNER WORKS STANDARD | | |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|-----|-------------------------|-------|-------|
| | 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 | 17.78 | 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 |
| Metric taper | 6 | 63.348 | 63.8 | 53.9 | 51 | 2 | 182 | 190 | 270 | 16 | 8 | 0.01 | 0.004 | 0.006 |
| | 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 |

* not standardized

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.

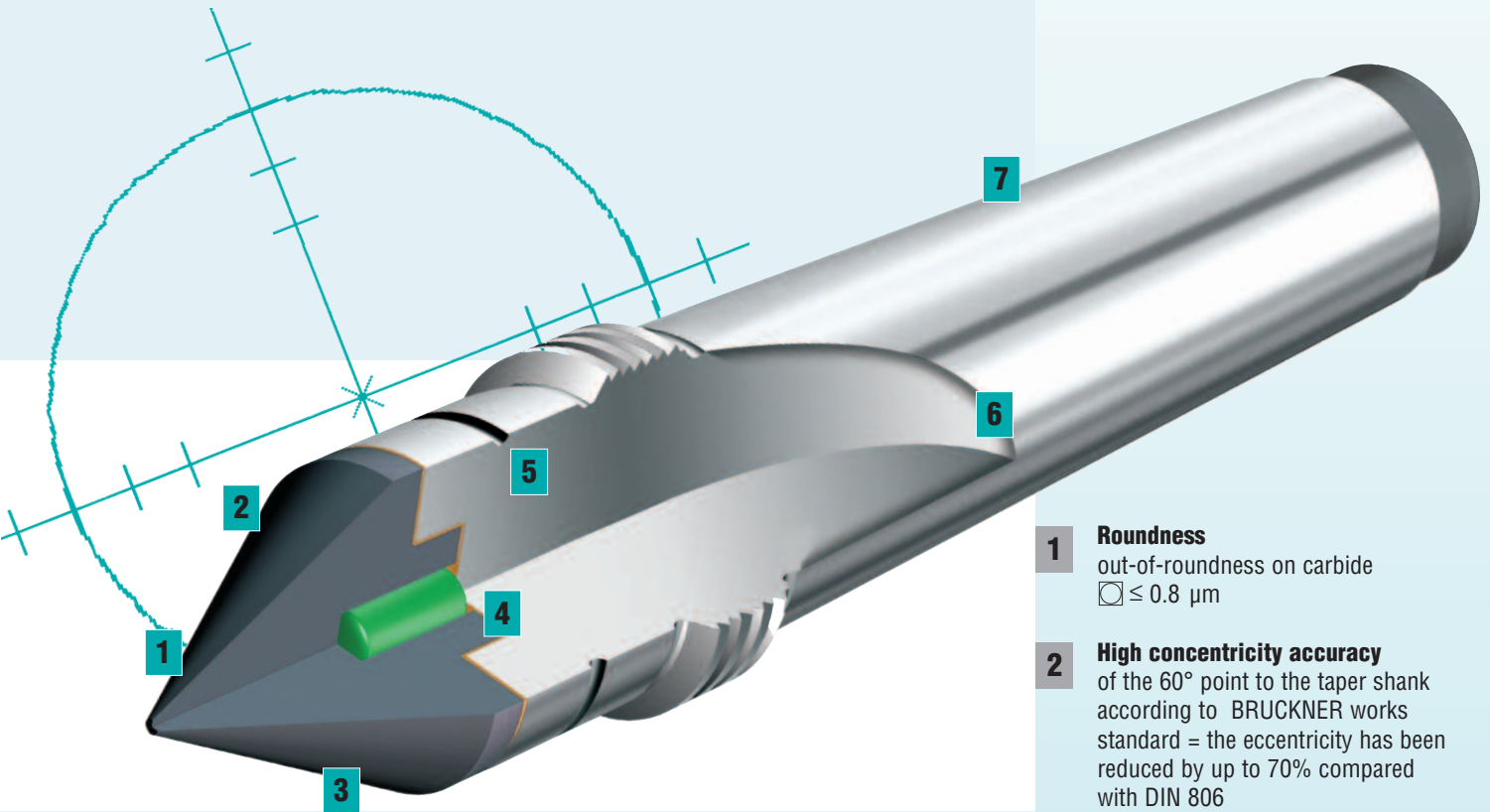


Repair service

We check the dead centre (also other makes) for:

- ▶ Damage/cracks in the carbide
- ▶ Sufficient fixing of the carbide in the base material
- ▶ Damaged taper shank

We inform you about the extent of the necessary repair/regrinding work with a cost estimate.



BRUCKNER carbide dead centres – the benchmark

Due to their superior roundness and high product quality BRUCKNER dead centres set the benchmark in terms of economic efficiency and productivity. Our know-how, our experience and our background in the high precision manufacture of our centres guarantee the features of our own products at the highest level.

The BRUCKNER guarantee for standard dead centres
Out-of-roundness $\ominus \leq 0.8 \mu\text{m}$.

We supply standard dead centres and special designs
 with **out-of-roundness** $\ominus \leq 0.3 \mu\text{m}$. Test report on request.

- 1 Roundness**
out-of-roundness on carbide
 $\ominus \leq 0.8 \mu\text{m}$
- 2 High concentricity accuracy**
of the 60° point to the taper shank according to BRUCKNER works standard = the eccentricity has been reduced by up to 70% compared with DIN 806
- 3 Top-quality carbides**
safely fixed in the base material
- 4 sa•co® – the safety core**
maximum safety through the integrated safety core (forms V, GV, Z, GZ and HZ with carbide diameter 20-45 mm)
- 5 Regrinding line**
marking the useful end of the centre
- 6 Hardened taper shank**
the taper is case hardened for protection from damage
- 7 Taper shank tolerance**
deviation of taper AT4 to DIN 228 (gauge accuracy)

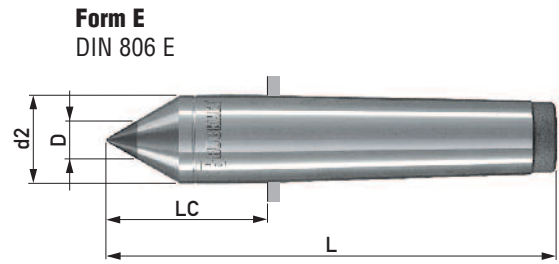
Carbide Dead Centres, Full Centre 60° without Draw-Off Thread



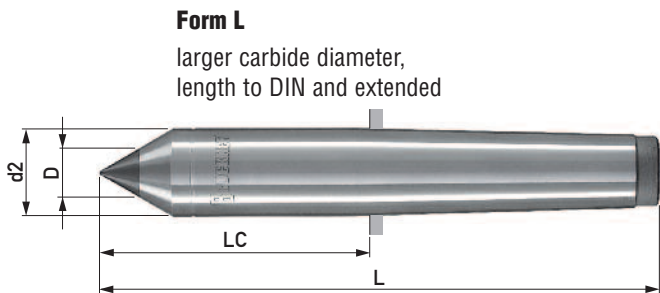
Form E – L – V

Out-of-roundness $\square \leq 0.8 \mu\text{m}$. Morse taper hardened for protection from damage. Quality features see page 54/55.

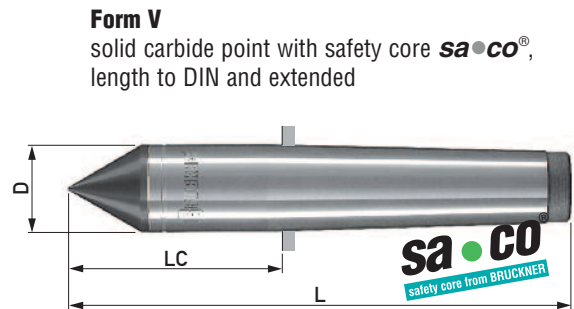
| Form | Morse taper | ID.No. | D | d2 | LC | L |
|------|-------------|--------|----|------|------|-----|
| E | 1 | 2801H | 7 | 12.2 | 26.5 | 80 |
| | 2 | 2802H | 7 | 18 | 36 | 100 |
| | 3 | 2803H | 11 | 24.1 | 44 | 125 |
| | 4 | 2804H | 14 | 31.6 | 57.5 | 160 |
| | 5 | 2805H | 18 | 44.7 | 70.5 | 200 |
| | 6 | 2806H | 18 | 63.8 | 88 | 270 |



| Form | Morse taper | ID.No. | D | d2 | LC | L |
|------|-------------|-------------|----|------|-------|-----|
| 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 |
| | 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 |

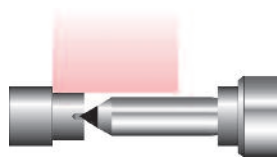


| Form | Morse taper | ID.-No. | D | LC | L |
|------|-------------|--------------|------|-------|-----|
| V | *1 | 2801.12V-080 | 12 | 26.5 | 80 |
| | *2 | 2802.18V-110 | 18 | 46 | 110 |
| | 2 | 2802.24V-110 | 24 | 46 | 110 |
| | 3 | 2803.24V-125 | 24.1 | 44 | 125 |
| | 3 | 2803.24V-150 | 24.1 | 69 | 150 |
| | 4 | 2804.32V-160 | 31.6 | 57.5 | 160 |
| | 4 | 2804.32V-180 | 31.6 | 77.5 | 180 |
| | 4 | 2804.32V-200 | 31.6 | 97.5 | 200 |
| | 5 | 2805.45V-200 | 44.7 | 70.5 | 200 |
| | 5 | 2805.45V-250 | 44.7 | 120.5 | 250 |
| | **6 | 2806.64V-270 | 63.8 | 88 | 270 |

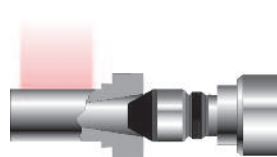


* without safety core, carbide brazed in tapered seating
** without safety core, carbide outer shell with base material core

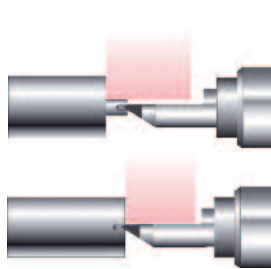
Your Grinding Task – Our Carbide-Tipped Centres



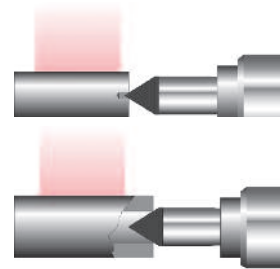
Short grinding length, wide grinding wheel, extended carbide centre
Form L



Larger centrebore, carbide centre with large truncated carbide body
Form Z, R, GR



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



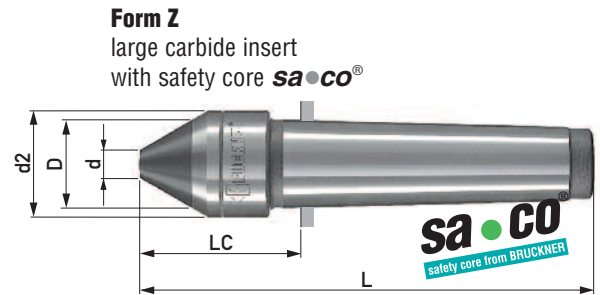
Small to large centres. Carbide centre with solid carbide 60° point
Form V, GV

Carbide Dead Centres, Full Centre 60° without Draw-Off Thread

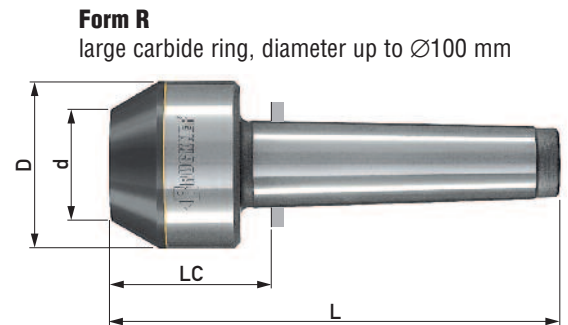
Form Z – R – B* – HB*

Out-of-roundness $\square \leq 0.8\mu\text{m}$. Morse taper hardened for protection from damage. Quality features see page 54/55.

| Form | Morse taper | ID.No. | D | d | d2 | LC | L |
|------|-------------|------------|----|----|------|------|-----|
| Z | 2 | 2802.32x10 | 32 | 10 | 38 | 46 | 110 |
| | 3 | 2803.32x10 | 32 | 10 | 38 | 50 | 131 |
| | 4 | 2804.24 | 24 | 1 | 31.6 | 57.5 | 160 |
| | 4 | 2804.32x10 | 32 | 10 | 38 | 57.5 | 160 |
| | 5 | 2805.32x10 | 32 | 10 | 44.7 | 70.5 | 200 |

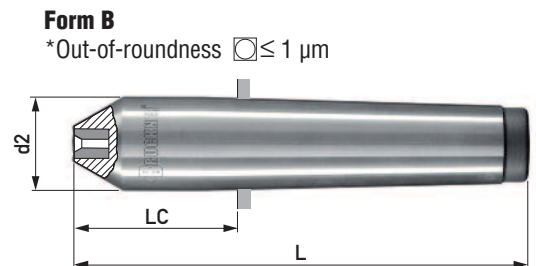


| Form | Morse taper | ID.No. | D | d | LC | L |
|------|-------------|-------------|-----|----|------|-----|
| R | 2 | 2802.40x20 | 40 | 20 | 41 | 105 |
| | 2 | 2802.50x30 | 50 | 30 | 41 | 105 |
| | 2 | 2802.60x40 | 60 | 40 | 41 | 105 |
| | 2 | 2802.70x50 | 70 | 50 | 41 | 105 |
| | 3 | 2803.40x20 | 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 |
| | 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 |
| | 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 |

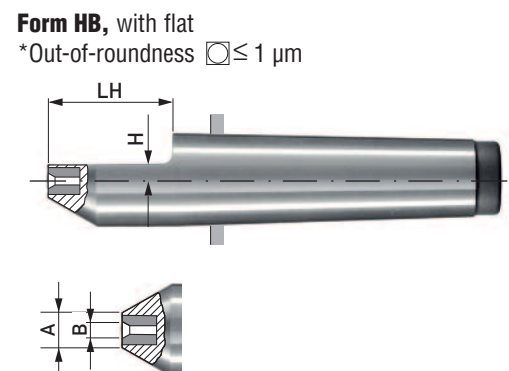


Carbide Dead Centres with 60° Ground Centrebore

| Form | Morse taper | ID.No. | B | A | d2 | LC | L |
|------|-------------|--------|---------|----|------|------|-----|
| B | 1 | 2821 | 2.8x1.5 | 6 | 12.2 | 23.5 | 77 |
| | 2 | 2822 | 4.0x2.0 | 9 | 18.0 | 32 | 96 |
| | 3 | 2823 | 5.0x2.5 | 9 | 24.1 | 38 | 119 |
| | 4 | 2824 | 6.0x3.0 | 12 | 31.6 | 49.5 | 152 |



| Form | Morse taper | ID.No. | B | A | d2 | H | LH | LC | L |
|------|-------------|--------|---------|----|------|-----|----|------|-----|
| HB | 1 | 2831 | 2.8x1.5 | 6 | 12.2 | 3 | 19 | 23.5 | 77 |
| | 2 | 2832 | 4.0x2.0 | 9 | 18.0 | 4 | 26 | 32 | 96 |
| | 3 | 2833 | 5.0x2.5 | 9 | 24.1 | 5 | 32 | 38 | 119 |
| | 4 | 2834 | 6.0x3.0 | 12 | 31.6 | 5.5 | 42 | 49.5 | 152 |



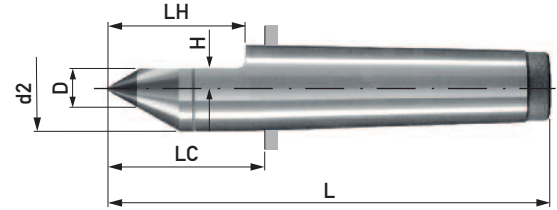
Carbide Dead Centres, Half Centre 60° without Draw-Off Thread

Form HE – HL – HS – HV

Out-of-roundness $\square \leq 0.8\mu\text{m}$. Morse taper hardened for protection from damage. Quality features see page 54/55.

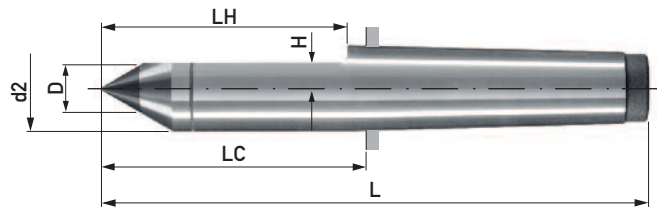
| Form | Morse taper | ID.No. | D | d2 | H | LH | LC | L |
|------|-------------|--------|----|------|-----|----|------|-----|
| HE | 1 | 2811H | 7 | 12.2 | 4 | 22 | 26.5 | 80 |
| | 2 | 2812H | 7 | 18 | 4 | 30 | 36 | 100 |
| | 3 | 2813H | 11 | 24.1 | 6 | 38 | 44 | 125 |
| | 4 | 2814H | 14 | 31.6 | 7.5 | 50 | 57.5 | 160 |
| | 5 | 2815H | 18 | 44.7 | 9.5 | 63 | 70.5 | 200 |

Form HE
similar to DIN 806 HE



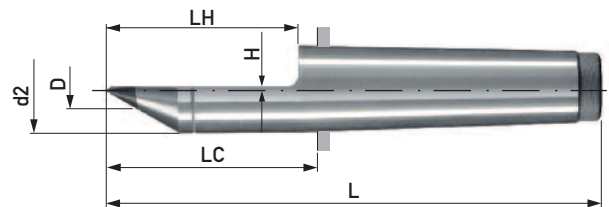
| Form | Morse taper | ID.No. | D | d2 | H | LH | LC | L |
|------|-------------|-------------|----|------|-----|-----|-------|-----|
| HL | 2 | 2812.11-135 | 11 | 18 | 6 | 65 | 71 | 135 |
| | 2 | 2812.14 | 14 | 18 | 7.5 | 30 | 36 | 100 |
| | 3 | 2813.14 | 14 | 24.1 | 7.5 | 38 | 44 | 125 |
| | 3 | 2813.14-150 | 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 |

Form HL
larger carbide diameter,
length to DIN and extended



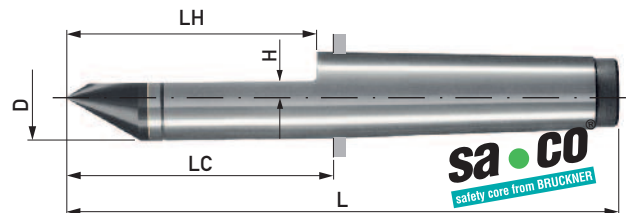
| Form | Morse taper | ID.No. | D | d2 | H | LH | LC | L |
|------|-------------|-----------|----|------|-----|----|------|-----|
| HS | 2 | 2812H/1,5 | 7 | 18 | 1.5 | 40 | 46 | 110 |
| | 2 | 2812H/2,5 | 7 | 18 | 2.5 | 40 | 46 | 110 |
| | 3 | 2813H/1,5 | 11 | 24.1 | 1.5 | 63 | 69 | 150 |
| | 3 | 2813H/2,5 | 11 | 24.1 | 2.5 | 63 | 69 | 150 |
| | 3 | 2813H/4,0 | 11 | 24.1 | 4.0 | 63 | 69 | 150 |
| | 4 | 2814H/1,5 | 14 | 31.6 | 1.5 | 70 | 77.5 | 180 |
| | 4 | 2814H/2,5 | 14 | 31.6 | 2.5 | 70 | 77.5 | 180 |
| | 4 | 2814H/4,0 | 14 | 31.6 | 4.0 | 70 | 77.5 | 180 |

Form HS
extra flat height, extended



| Form | Morse taper | ID.No. | D | H | LH | LC | L |
|------|-------------|-------------------|------|-----|----|------|-----|
| HV | 3 | 2813.24V/H5-150 | 24.1 | 5 | 63 | 69 | 150 |
| | 3 | 2813.24V/H7.5-150 | 24.1 | 7.5 | 63 | 69 | 150 |
| | 4 | 2814.32V/H5-200 | 31.6 | 5 | 90 | 97.5 | 200 |
| | 4 | 2814.32V/H9-200 | 31.6 | 9 | 90 | 97.5 | 200 |

Form HV
extra flat height, solid carbide point with
safety core **sa•co**[®]



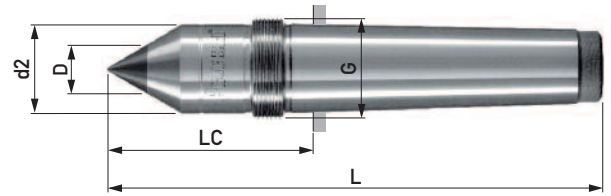
Carbide Dead Centres, Full Centre 60° with Draw-Off Thread

Form GE – GV – GZ – GR

Out-of-roundness $\square \leq 0.8\mu\text{m}$. Morse taper hardened for protection from damage. Quality features see page 54/55.

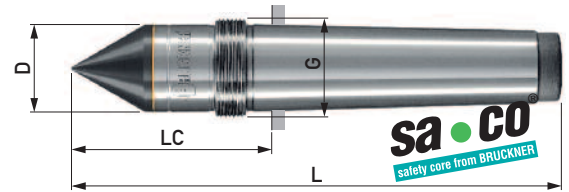
| Form | Morse taper | ID.No. | D | d2 | LC | L | G |
|------|-------------|-------------|----|------|-------|-----|----------|
| GE | 2 | 2852 | 7 | 18 | 48 | 112 | M 22x1.5 |
| | 3 | 2853 | 11 | 24.1 | 57 | 138 | M 27x1.5 |
| | 3 | 2853.18 | 18 | 24.1 | 57 | 138 | M 27x1.5 |
| | 4 | 2854 | 14 | 31.6 | 72.5 | 175 | M 36x1.5 |
| | 4 | 2854.18 | 18 | 31.6 | 72.5 | 175 | M 36x1.5 |
| | 4 | 2854.18-200 | 18 | 31.6 | 97.5 | 200 | M 36x1.5 |
| | 5 | 2855 | 18 | 44.7 | 87.5 | 217 | M 48x1.5 |
| | 5 | 2855.18-250 | 18 | 44.7 | 120.5 | 250 | M 48x1.5 |
| | 6 | 2856 | 18 | 63.8 | 108 | 290 | M 68x1.5 |
| | 6 | 2856.35 | 35 | 63.8 | 108 | 290 | M 68x1.5 |

Form GE
length to DIN and extended



| Form | Morse taper | ID.No. | D | LC | L | G |
|------|-------------|--------------|------|-------|-----|----------|
| GV | *2 | 2852.18V | 18 | 48 | 112 | M 22x1.5 |
| | 3 | 2853.24V | 24.1 | 57 | 138 | M 27x1.5 |
| | 4 | 2854.32V | 31.6 | 72.5 | 175 | M 36x1.5 |
| | 4 | 2854.32V-200 | 31.6 | 97.5 | 200 | M 36x1.5 |
| | 5 | 2855.45V | 44.7 | 87.5 | 217 | M 48x1.5 |
| | 5 | 2855.45V-250 | 44.7 | 120.5 | 250 | M 48x1.5 |
| | **6 | 2856.64V | 63.8 | 108 | 290 | M 68x1.5 |

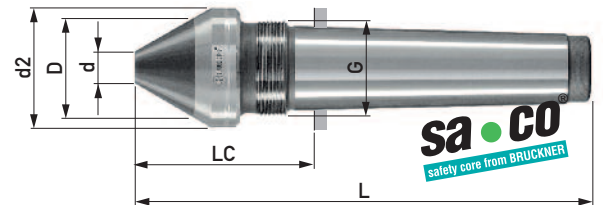
Form GV
solid carbide point
with safety core **sa•co**[®]



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

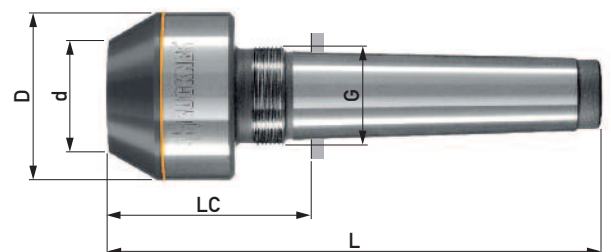
| Form | Morse taper | ID.No. | D | d | d2 | LC | L | G |
|------|-------------|------------|----|----|----|----|-----|----------|
| GZ | 3 | 2853.32x10 | 32 | 10 | 38 | 57 | 138 | M 27x1.5 |

Form GZ
large carbide insert
with safety core **sa•co**[®]

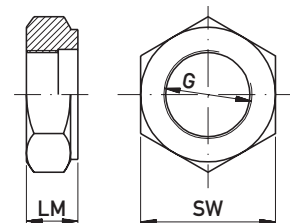


| Form | Morse taper | ID.No. | D | d | LC | L | G |
|------|-------------|------------|----|----|------|-----|----------|
| GR | 3 | 2853.45x25 | 45 | 25 | 57 | 138 | M 27x1.5 |
| | 4 | 2854.45x25 | 45 | 25 | 72.5 | 175 | M 36x1.5 |
| | 4 | 2854.60x40 | 60 | 40 | 72.5 | 175 | M 36x1.5 |
| | 5 | 2855.45x25 | 45 | 25 | 87.5 | 217 | M 48x1.5 |
| | 5 | 2855.60x40 | 60 | 40 | 87.5 | 217 | M 48x1.5 |

Form GR
large carbide ring



| Draw-off nut DIN 807 | | | |
|----------------------|----------|------|-----|
| ID.No. | G | LM | SW |
| M252 | M 22x1.5 | 15.5 | 32 |
| M253 | M 27x1.5 | 17.5 | 41 |
| M254 | M 36x1.5 | 21 | 55 |
| M255 | M 48x1.5 | 23 | 75 |
| M256 | M 68x1.5 | 25.5 | 100 |



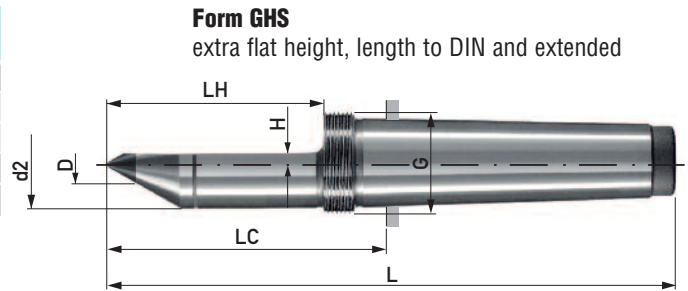
Carbide Dead Centres, Half Centre 60° with Draw-Off Thread



Form GHS – GHV

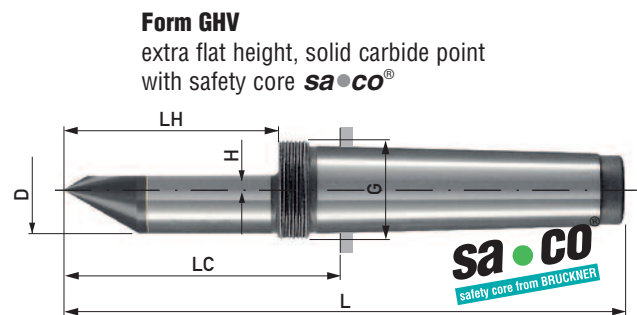
Out-of-roundness $\square \leq 0.8 \mu\text{m}$. Morse taper hardened for protection from damage. Quality features see page 54/55.

| Form | Morse taper | ID.No. | D | d2 | H | LH | LC | L | G |
|------|-------------|--------------|----|------|-----|------|-------|-----|----------|
| GHS | 3 | 2853/4.0-138 | 14 | 24.1 | 4.0 | 39.5 | 57.0 | 138 | M 27x1.5 |
| | 4 | 2854/4.0-175 | 14 | 31.6 | 4.0 | 51.5 | 72.5 | 175 | M 36x1.5 |
| | 4 | 2854/4.0-200 | 14 | 31.6 | 4.0 | 76.5 | 97.5 | 200 | M 36x1.5 |
| | 5 | 2855/6.0-217 | 18 | 44.7 | 6.0 | 64.5 | 87.5 | 217 | M 48x1.5 |
| | 5 | 2855/6.0-250 | 18 | 44.7 | 6.0 | 97.5 | 120.5 | 250 | M 48x1.5 |



Form GHS
extra flat height, length to DIN and extended

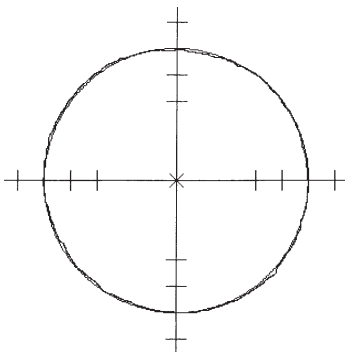
| Form | Morse taper | ID.No. | D | H | LH | LC | L | G |
|------|-------------|-----------------|------|---|------|------|-----|----------|
| GHV | 3 | 2853.24V/H5-150 | 24.1 | 5 | 51.5 | 69 | 150 | M 27x1.5 |
| | 4 | 2854.32V/H5-200 | 31.6 | 5 | 76.5 | 97.5 | 200 | M 36x1.5 |
| | 4 | 2854.32V/H9-200 | 31.6 | 9 | 76.5 | 97.5 | 200 | M 36x1.5 |



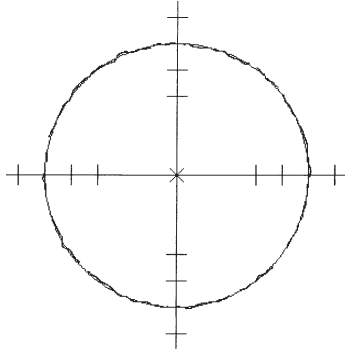
Form GHV
extra flat height, solid carbide point
with safety core **sa•co**[®]

„Roundness achieves roundness“ – Grinding test with standard centres from BRUCKNER

BRUCKNER 2804H in the headstock
Out-of-roundness $\square 0.42 \mu\text{m}$



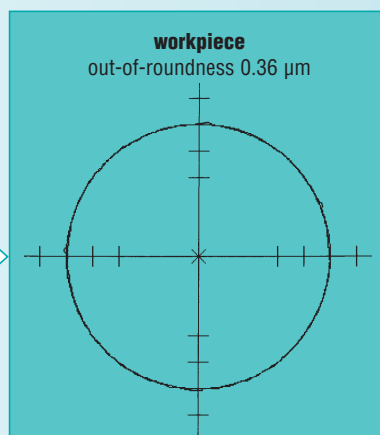
BRUCKNER 2814H in the tailstock
Out-of-roundness $\square 0.48 \mu\text{m}$



test conditions

cylindrical grinding machine STUDER S33

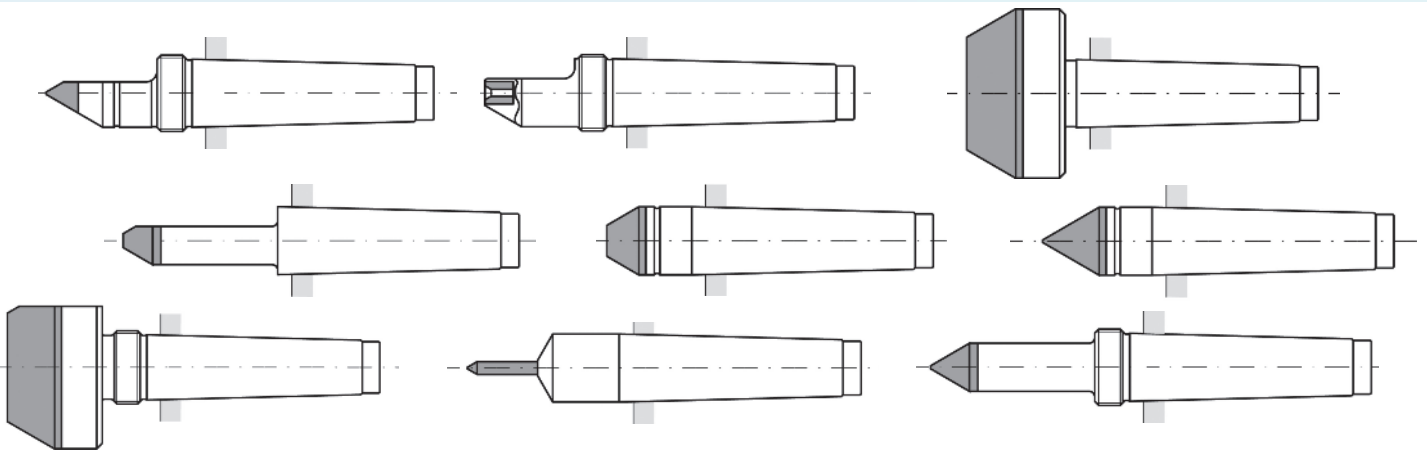
workpiece 100Cr6, 62 HRC, $\varnothing 35 \text{ mm}$,
un-ground centre DIN 332A



Result:
Out-of-roundness achieved
with standard centres from
BRUCKNER $\square 0.36 \mu\text{m}$.

> **INES^H**

The interactive system for the generation of enquiry drawings for special designs of carbide dead centres

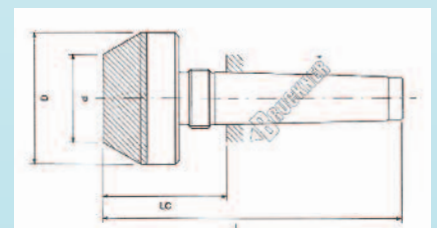
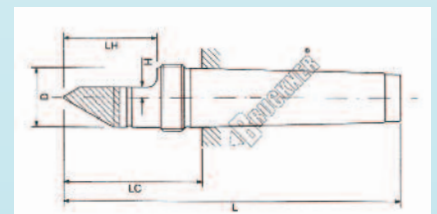
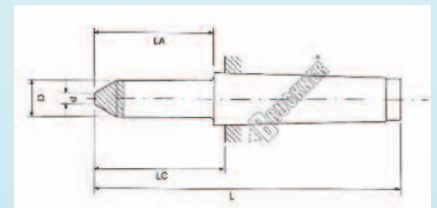


In 4 steps generate your enquiry drawing/s at www.karlbruckner.de/ines

- 1 enter Morse taper size
- 2 determine the basic form
- 3 select the special form
- 4 print the enquiry form and enquiry drawing

Enter the number of pieces in the enquiry form and complete the enquiry drawing/s with dimensions and details.

Send form and drawing to:
 Fax **+49(0)71 51/96 71 220** or
 E-Mail **ines@karlbruckner.de**



Material

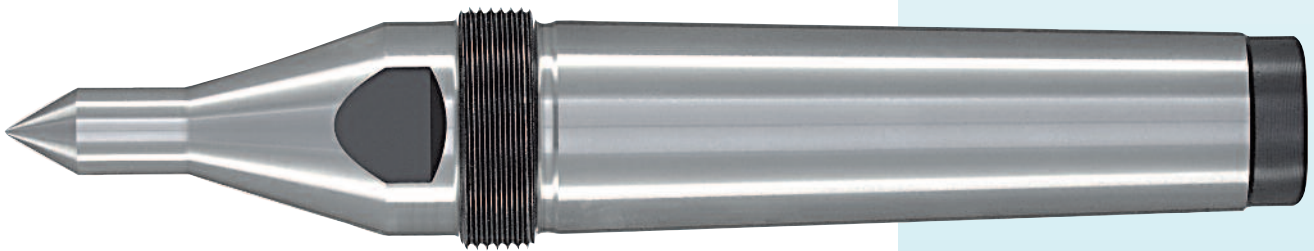
High quality tool steel, through-hardened

Runout

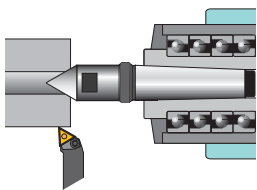
See table on page 54

Taper shank

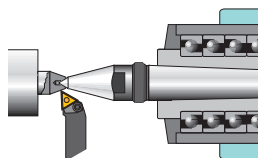
Manufactured in gauge accuracy to DIN 228 \leq AT4. This means a precise seating of the centre in the tailstock sleeve (see table on page 54)

**The quick solution – systematically**

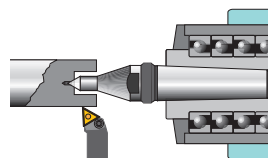
The use of BRUCKNER centres for revolving tailstock sleeves enables a flexible reaction to changing workpiece forms and turning operations.



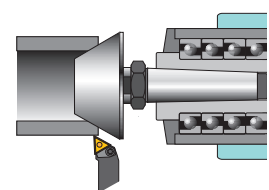
Form 255
for small and large centrebores



Form 256
for limited work space



Form 257
for threading and for centrebores deep inside a workpiece



Form 258
for large centrebores

Tool Steel Dead Centres with Draw-Off Thread

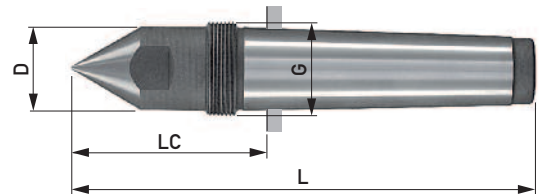
Morse taper, metr. 80 1:20, taper 80 1:10

Form 255 – 256 – 257 – 258

Interchangeable dead centres, through-hardened for revolving tailstock sleeves

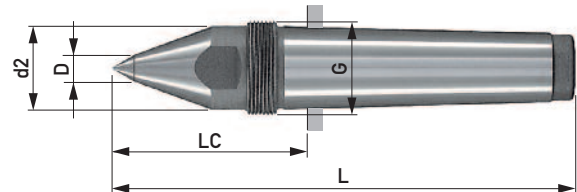
| Form | Taper size | ID.No. | D | G | SW | LC | L | Draw-off nut |
|---------------|------------|----------|--------|----------|-----|-------|------|--------------|
| 255 | MT 2 | 2552 | 18 | M 22x1.5 | 16 | 48 | 112 | M252 |
| | | 2553 | 24.1 | M 27x1.5 | 22 | 57 | 138 | M253 |
| | MT 3 | 2553-150 | 24.1 | M 27x1.5 | 22 | 69 | 150 | M253 |
| | | 2553-170 | 24.1 | M 27x1.5 | 22 | 89 | 170 | M253 |
| | MT 4 | 2554 | 31.6 | M 36x1.5 | 27 | 72.5 | 175 | M254 |
| | | 2554-190 | 31.6 | M 36x1.5 | 27 | 87.5 | 190 | M254 |
| | | 2554-230 | 31.6 | M 36x1.5 | 27 | 127.5 | 230 | M254 |
| | MT 5 | 2555 | 44.7 | M 48x1.5 | 41 | 87.5 | 217 | M255 |
| | | 2555-250 | 44.7 | M 48x1.5 | 41 | 120.5 | 250 | M255 |
| | MT 6 | 2556 | 63.8 | M 68x1.5 | 55 | 108 | 290 | M256 |
| Metr. 80 1:20 | 2557.20 | 80 | M 85x2 | - | 134 | 330 | M257 | |
| Taper 80 1:10 | 2557.10 | 80 | M 85x2 | - | 130 | 330 | M257 | |

Form 255
similar to DIN 807 and extended



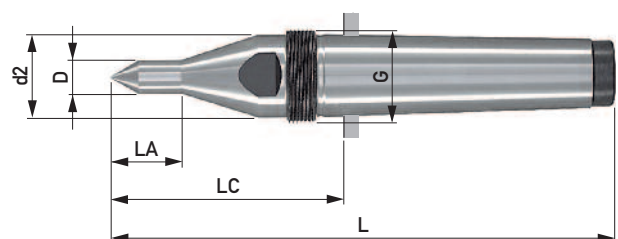
| Form | Taper size | ID.No. | D | d2 | G | SW | LC | L | Draw-off nut |
|------|------------|--------|----|------|----------|----|------|-----|--------------|
| 256 | MT 2 | 2562 | 6 | 18 | M 22x1.5 | 16 | 48 | 112 | M252 |
| | MT 3 | 2563 | 8 | 24.1 | M 27x1.5 | 22 | 57 | 138 | M253 |
| | MT 4 | 2564 | 10 | 31.6 | M 36x1.5 | 27 | 72.5 | 175 | M254 |
| | MT 5 | 2565 | 12 | 44.7 | M 48x1.5 | 41 | 87.5 | 217 | M255 |
| | MT 6 | 2566 | 15 | 63.8 | M 68x1.5 | 55 | 136 | 318 | M256 |

Form 256
copying centre 60°/40°



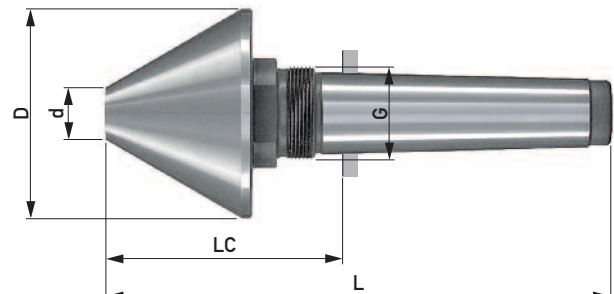
| Form | Taper size | ID.No. | D | d2 | G | SW | LA | LC | L | Draw-off nut | |
|------|------------|-------------|-------------|------|----------|----------|----|------|------|--------------|------|
| 257 | MT 2 | 2572.06-120 | 6 | 18 | M 22x1.5 | 16 | 15 | 56 | 120 | M252 | |
| | | 2572.09-120 | 9 | 18 | M 22x1.5 | 16 | 17 | 56 | 120 | M252 | |
| | | 2572.11-120 | 11 | 18 | M 22x1.5 | 16 | 21 | 56 | 120 | M252 | |
| | MT 3 | 2573.09-150 | 9 | 24.1 | M 27x1.5 | 19 | 17 | 69 | 150 | M253 | |
| | | 2573.13-150 | 13 | 24.1 | M 27x1.5 | 19 | 25 | 69 | 150 | M253 | |
| | MT 4 | 2574.09-190 | 9 | 31.6 | M 36x1.5 | 27 | 17 | 87.5 | 190 | M254 | |
| | | 2574.13-190 | 13 | 31.6 | M 36x1.5 | 27 | 27 | 87.5 | 190 | M254 | |
| | | | 2574.19-190 | 19 | 31.6 | M 36x1.5 | 27 | 53 | 87.5 | 190 | M254 |

Form 257
slim design 60°/30°



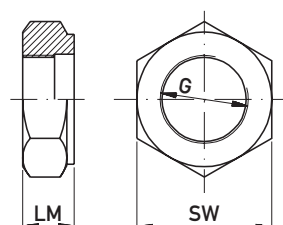
| Form | Taper size | ID.No. | D | d | G | SW | LC | L | Draw-off nut | |
|------|------------|-------------|-------------|-----|----------|----------|-------|-------|--------------|------|
| 258 | MT 2 | 2582.40 | 40 | 1 | M 22x1.5 | 36 | 64 | 128 | M252 | |
| | | 2582.80x20 | 80 | 20 | M 22x1.5 | 36 | 88 | 152 | M252 | |
| | MT 3 | 2583.40 | 40 | 1 | M 27x1.5 | 36 | 65 | 146 | M253 | |
| | | 2583.80x20 | 80 | 20 | M 27x1.5 | 36 | 89 | 170 | M253 | |
| | MT 4 | 2584.80x20 | 80 | 20 | M 36x1.5 | 36 | 89.5 | 192 | M254 | |
| | | 2584.125x65 | 125 | 65 | M 36x1.5 | 36 | 89.5 | 192 | M254 | |
| | MT 5 | 2585.80x20 | 80 | 20 | M 48x1.5 | 50 | 100.5 | 230 | M255 | |
| | | 2585.100x50 | 100 | 50 | M 48x1.5 | 50 | 90.5 | 220 | M255 | |
| | | | 2585.125x65 | 125 | 65 | M 48x1.5 | 50 | 100.5 | 230 | M255 |

Form 258
bullnose dead centre 60°



Draw-off nut to DIN 807

| ID.No. | G | LM | SW |
|--------|----------|------|-----|
| M252 | M 22x1.5 | 15.5 | 32 |
| M253 | M 27x1.5 | 17.5 | 41 |
| M254 | M 36x1.5 | 21 | 55 |
| M255 | M 48x1.5 | 23 | 75 |
| M256 | M 68x1.5 | 25.5 | 100 |
| M257 | M 85x2.0 | 40 | 130 |



Tool Steel Dead Centres without Draw-Off Thread

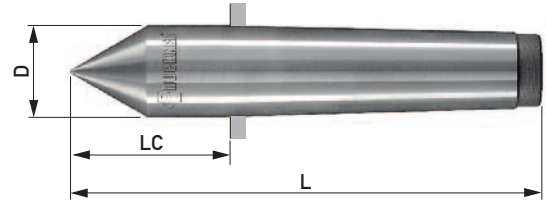
Morse taper, metr. 80 1:20, taper 80 1:10

Form 250

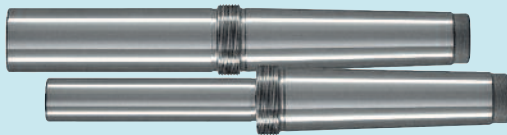
Dead centres – to DIN 806 – through-hardened

| Form | Taper size | ID.No. | D | LC | L |
|------|---------------|---------|------|-------|-----|
| 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. 80 1:20 | 2507.20 | 80.4 | 124.0 | 320 |
| | Taper 80 1:10 | 2507.10 | 80.8 | 120.0 | 320 |

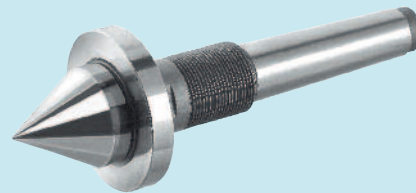
Form 250
to DIN 806, full centre 60°



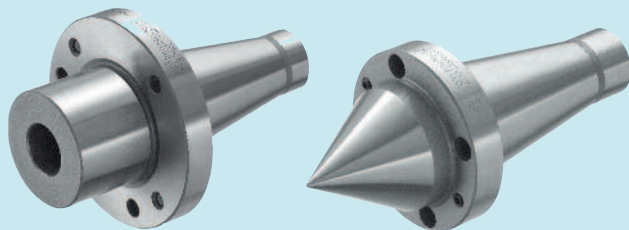
Tool Steel Dead Centres – Special Designs



setting mandrels



centre with measuring bands



SK 45 with face contact
cylindrical mounting for caps

60° centre



extension sleeve MT 5 to MT 5



double diameter 60° dead centre
with draw-off thread



bullnose dead centre with SK 30 mounting taper

Tool Steel Dead Centres

Steep tapers SK 30, SK 40

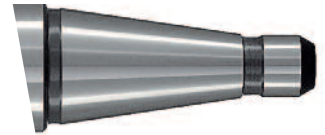


Form 220 – 230

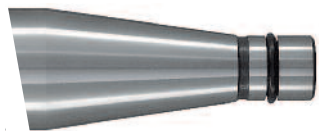
Interchangeable dead centres, through-hardened, runout max. 0.004 mm, for revolving tailstock sleeves

| Taper form | Steep taper | Group | ID.No. | D | d | d2 | LC | LA | L | |
|---|-------------|---------------|---------------|---------------|------|------|-------|-------|-----|-----|
| 220 is suitable for Index | 30 | A | 2230.10 A-130 | 10 | | 32.5 | 61.6 | | 130 | |
| | | | 2230.10 A-150 | 10 | | 32.5 | 81.6 | | 150 | |
| | | B | 2230.09 B-120 | 9 | | 32.5 | 51.6 | 17 | 120 | |
| | | | 2230.13 B-125 | 13 | | 32.5 | 56.6 | 27 | 125 | |
| | | | 2230.19 B-135 | 19 | | 32.5 | 66.6 | 57 | 135 | |
| | | | 2230.25 B-145 | 25 | | 32.5 | 76.6 | 67 | 145 | |
| | | C | 2230.36 C-116 | 36 | | | 47.6 | | 116 | |
| | | | 2230.36 C-130 | 36 | | | 61.6 | | 130 | |
| | | D | 2230.80x20 D | 80 | 20 | | 71.6 | | 140 | |
| | | | 2230.125x65 D | 125 | 65 | | 71.6 | | 140 | |
| 40 | C | 2240.48 C-152 | 48 | | | 59 | | 152 | | |
| 230 is suitable for MAG (Boehringer) | 30 | A | 2330.10 A-130 | 10 | | 32.2 | 61.6 | | 130 | |
| | | | 2330.10 A-150 | 10 | | 32.2 | 81.6 | | 150 | |
| | | | 2330.10 A-170 | 10 | | 32.2 | 101.6 | | 170 | |
| | | B | 2330.09 B-120 | 9 | | 32.2 | 51.6 | 17 | 120 | |
| | | | 2330.09 B-150 | 9 | | 32.2 | 81.6 | 17 | 150 | |
| | | | 2330.13 B-125 | 13 | | 32.2 | 56.6 | 27 | 125 | |
| | | | 2330.13 B-170 | 13 | | 32.2 | 101.6 | 27 | 170 | |
| | | | 2330.19 B-135 | 19 | | 32.2 | 66.6 | 50 | 135 | |
| | | | 2330.19 B-170 | 19 | | 32.2 | 101.6 | 50 | 170 | |
| | | | 2330.25 B-145 | 25 | | 32.2 | 76.6 | 63 | 145 | |
| | | C | 2330.32 C-116 | 32.2 | | | 47.6 | | 116 | |
| | | | 2330.32 C-130 | 32.2 | | | 61.6 | | 130 | |
| | | | 2330.32 C-150 | 32.2 | | | 81.6 | | 150 | |
| | | | 2330.32 C-170 | 32.2 | | | 101.6 | | 170 | |
| | | | 2330.45 C-130 | 45 | | | 61.6 | | 130 | |
| | | D | 2330.80x20 D | 80 | 20 | | 71.6 | | 140 | |
| | | | 2330.125x65 D | 125 | 65 | | 71.6 | | 140 | |
| | | 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 |

Form 220
is suitable for Index

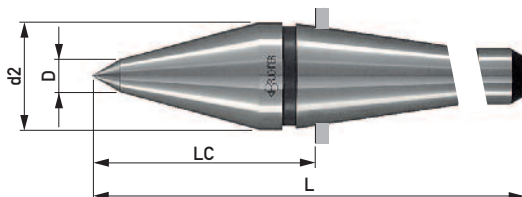


Form 230
is suitable for MAG (Boehringer)

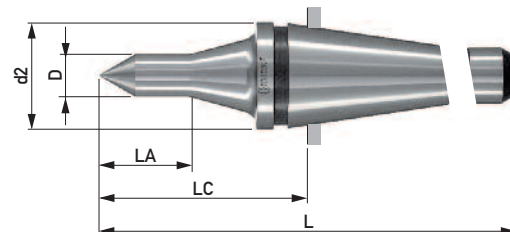


We make special forms, larger steep tapers or carbide-tipped designs to your requirements.

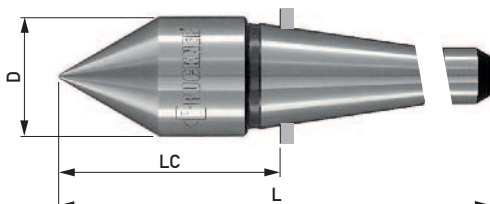
Group A – Copying centre 60°/30°



Group B – Slim centre 60°



Group C – Full centre 60°



Group D – Bullnose dead centre 60°



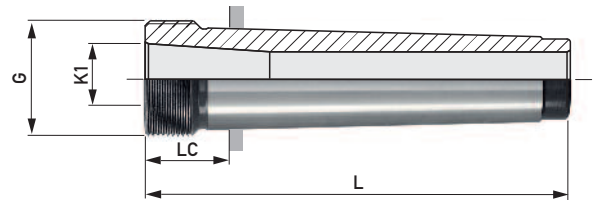
Adapter sleeve Type KE

With internal taper 1:7.5
 Made from alloy case-hardening steel,
 hardened, with draw-off thread,
 internally and externally precision-ground

Runout
 max. 0.003 mm

Application
 For regrinding interchangeable inserts.
 Combined with the inserts (page 15)
 use as a dead centre in the headstock
 and tailstock for special applications.

► Draw-off nut to DIN 807, see page 59



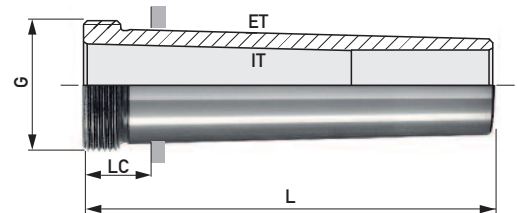
| Morse taper | Type KE ID.No. | Draw-off nut | K1 | G | LC | L | Insert size (page 15) |
|-------------|----------------|--------------|----|----------|------|-----|-----------------------|
| 2 | 2952A | M252 | 11 | M 22x1.5 | 16 | 80 | 482.. |
| 3 | 2953A | M253 | 15 | M 27x1.5 | 21 | 102 | 484.. |
| 4 | 2954A | M254 | 22 | M 36x1.5 | 25.5 | 128 | 487.. |
| 5 | 2955A | M255 | 28 | M 48x1.5 | 30.5 | 160 | 485.. |

Reduction sleeve Type SPHA

of alloy case-hardening steel, hardened,
 with draw-off thread, internally and externally
 precision-ground

Runout
 Max. 0.003 mm

► Draw-off nut to DIN 807, see page 59



| Taper size | | Type SPHA | | | | |
|------------------|----------|-----------|---------------------|------|----------|------|
| external | internal | ID.No. | Draw-off nut ID.No. | LC | G | L |
| ET | IT | | | | | |
| MT 3 | MT 2 | 6032A | M253 | 17.5 | M 27x1.5 | 91.5 |
| MT 4 | MT 2 | 6042A | M254 | 16.5 | M 36x1.5 | 110 |
| | MT 3 | 6043A | M254 | 16.5 | M 36x1.5 | 110 |
| MT 5 | MT 2 | 6052A | M255 | 16.5 | M 48x1.5 | 132 |
| | MT 3 | 6053A | M255 | 16.5 | M 48x1.5 | 132 |
| | MT 4 | 6054A | M255 | 16.5 | M 48x1.5 | 132 |
| MT 6 | MT 4 | 6064A | M256 | 21.5 | M 68x1.5 | 166 |
| | MT 5 | 6065A | M256 | 21.5 | M 68x1.5 | 166 |
| Metr. 80 1:20 | MT 5 | 6805A | M80* | 20 | M 80x2 | 192 |
| | MT 6 | 6806A | M80* | 20 | M 80x2 | 192 |
| Taper 80 1:10 | MT 6 | 6806.1A | M80* | 20 | M 80x2 | 192 |

*Similar to DIN 1804

CARBIDOR® features

Permanent connection with the carrier material, impact resistant

High hardness 74 – 78 HRC

Surface roughness:

CARBIDOR®-F Rz 15 µm

CARBIDOR®-M Rz 17 µm

CARBIDOR®-G Rz 19 µm

Coating thickness approx. 25 µm

In case of wear recoating is possible.

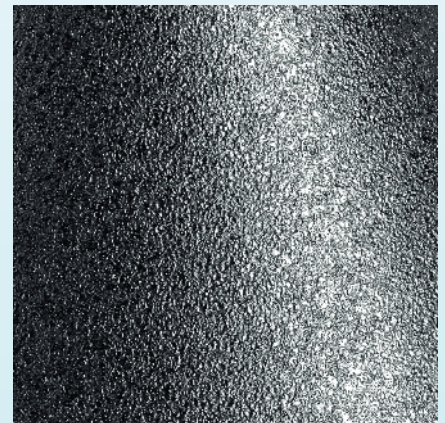


CARBIDOR® coated tool steel dead centres for gear cutting, fine turning, finishing, measuring/inspection

CARBIDOR®

is tungsten carbide based coating especially developed to drive workpieces. The coating can be applied to all hard tool steels and particularly features wear resistance, high coefficient of friction and low coating thickness.

CARBIDOR® is applied to enhance friction between workpiece and clamping tool. In this case almost all shapes can be coated. To drive by a workpiece centre, the centre must be $\geq 4 \times 2$ mm. The axial pressure should be as high as possible.



CARBIDOR® surface structure

CARBIDOR® coating is applicable to

- ▶ BRUCKNER standard tool steel dead centres (pages 63 – 65)
- ▶ tool steel dead centres in special design
- ▶ all soft, hardened components of tool steel and stainless steel, jaws, spheres, collets etc.

Please pay attention to our safety tips for process reliability of driving coatings.

www.karlbruckner.de/prse

Tool Steel Dead Centres with CARBIDOR®-M Coating

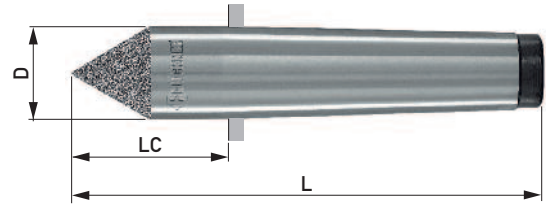


Form 250CA – 255CA – 257CA – 258CA



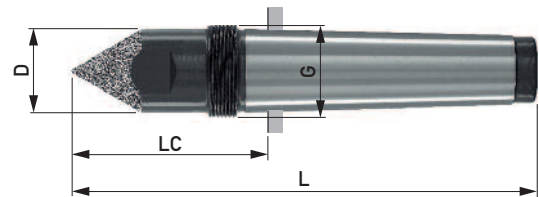
| Form | MT | ID.No. | D | LC | L |
|-------|----|--------|------|------|-----|
| 250CA | 2 | 2502CA | 18.0 | 36.0 | 100 |
| | 3 | 2503CA | 24.1 | 44.0 | 125 |
| | 4 | 2504CA | 31.6 | 57.5 | 160 |

Form 250CA
full centre 60°, without draw-off thread



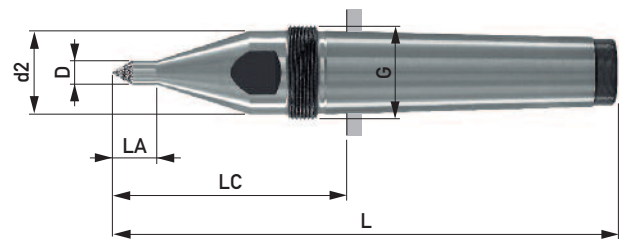
| Form | MT | ID.No. | D | G | SW | LC | L | Draw-off nut |
|-------|----|--------|------|---------|----|------|-----|--------------|
| 255CA | 2 | 2552CA | 18.0 | M22x1.5 | 16 | 48 | 112 | M252 |
| | 3 | 2553CA | 24.1 | M27x1.5 | 22 | 57 | 138 | M253 |
| | 4 | 2554CA | 31.6 | M36x1.5 | 27 | 72.5 | 175 | M254 |

Form 255CA
full centre 60°, with draw-off thread



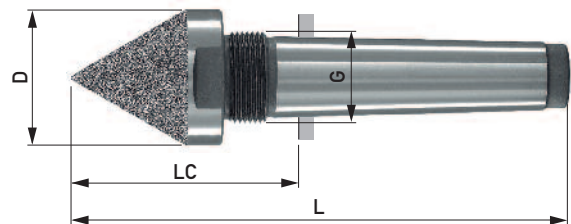
| Form | MT | ID.No. | D | d2 | G | SW | LA | LC | L | Draw-off nut |
|-------|----|---------------|----|------|---------|----|----|------|-----|--------------|
| 257CA | 2 | 2572.06-120CA | 6 | 18 | M22x1.5 | 16 | 15 | 56 | 120 | M252 |
| | 2 | 2572.09-120CA | 9 | 18 | M22x1.5 | 16 | 17 | 56 | 120 | M252 |
| | 2 | 2572.11-120CA | 11 | 18 | M22x1.5 | 16 | 21 | 56 | 120 | M252 |
| | 3 | 2573.09-150CA | 9 | 24.1 | M27x1.5 | 19 | 17 | 69 | 150 | M253 |
| | 3 | 2573.13-150CA | 13 | 24.1 | M27x1.5 | 19 | 25 | 69 | 150 | M253 |
| | 4 | 2574.09-190CA | 9 | 31.6 | M36x1.5 | 27 | 17 | 87.5 | 190 | M254 |
| | 4 | 2574.13-190CA | 13 | 31.6 | M36x1.5 | 27 | 27 | 87.5 | 190 | M254 |
| | 4 | 2574.19-190CA | 19 | 31.6 | M36x1.5 | 27 | 53 | 87.5 | 190 | M254 |

Form 257CA
slim centre 60°/30°, with draw-off thread

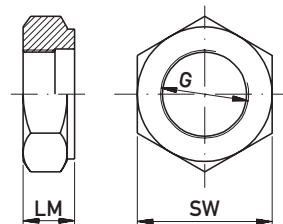


| Form | MT | ID.No. | D | G | SW | LC | L | Draw-off nut |
|-------|----|-----------|----|---------|----|----|-----|--------------|
| 258CA | 2 | 2582.40CA | 40 | M22x1.5 | 36 | 64 | 128 | M252 |
| | 3 | 2583.40CA | 40 | M27x1.5 | 36 | 65 | 146 | M253 |

Form 258CA
bullnose dead centre 60°, with draw-off thread

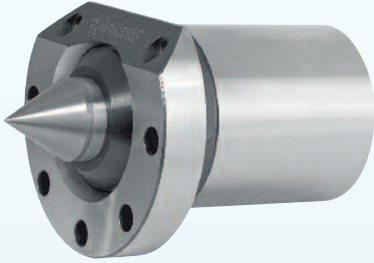


| Draw-off nut to DIN 807 | | | |
|-------------------------|----------|------|----|
| ID.No. | G | LM | SW |
| M252 | M 22x1.5 | 15.5 | 32 |
| M253 | M 27x1.5 | 17.5 | 41 |
| M254 | M 36x1.5 | 21 | 55 |

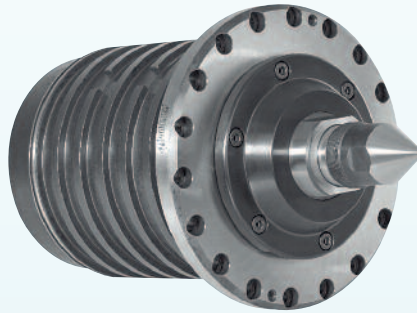


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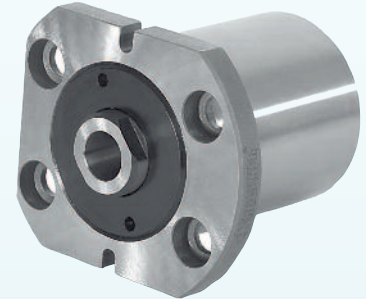
for hard turning



for vertical turning machines



with internal taper 1:7.5 for interchangeable inserts

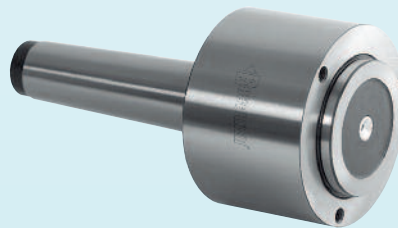


with spring and coloured pressure indication



High Performance Bullnose Live Centres Special Designs

for mounting chucks



pointed design

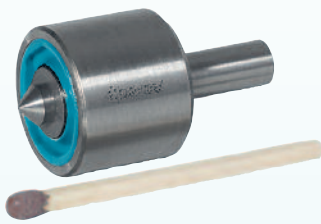


with carbide cap and flange mounting

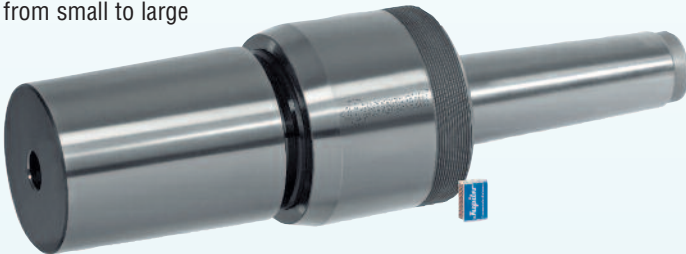


with carbide triple contact pads

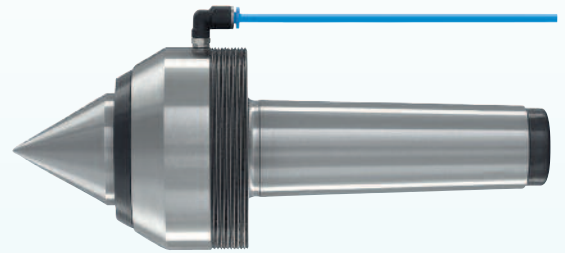




from small to large



HSK40



with sealing air connection



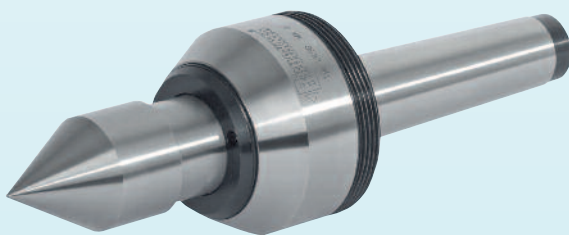
ABS50



Captor4



large centrepoint



carbide spherical centre



live collet chuck



flange mounted centres, flat and full



flange mounted carbide centres with flat and full carbide

12° driving ring



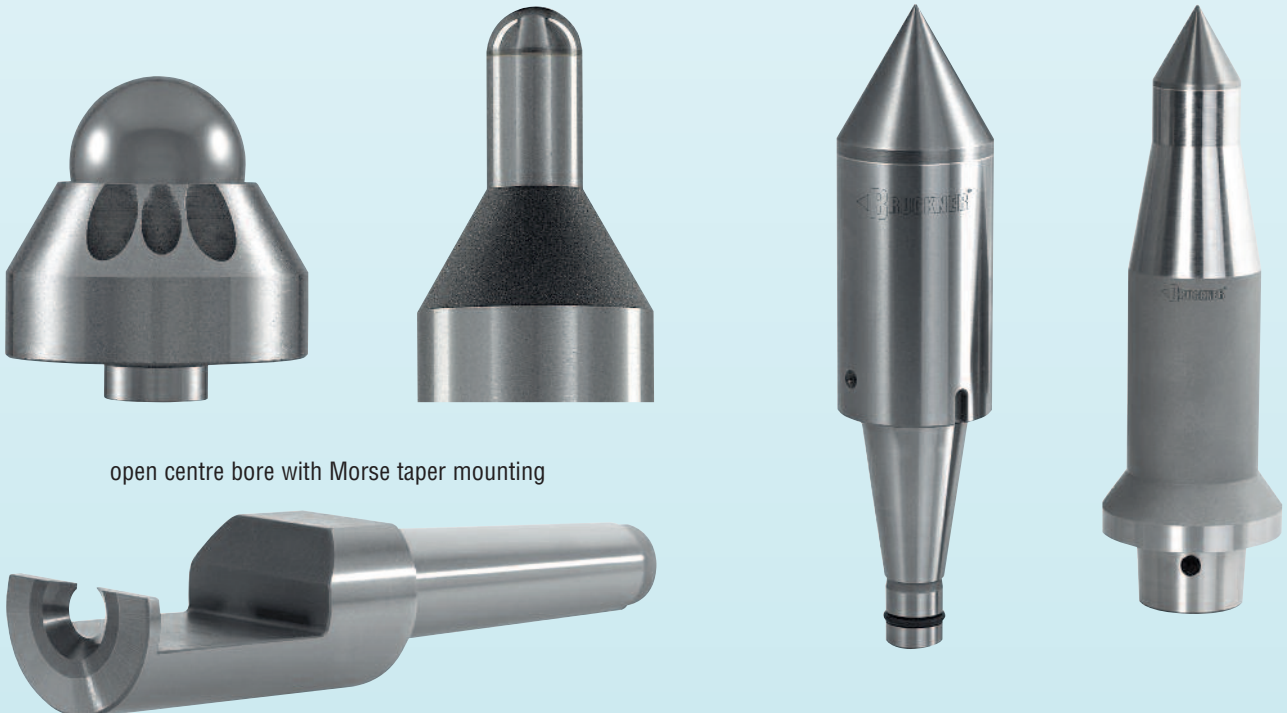
Ø 52

carbide ball

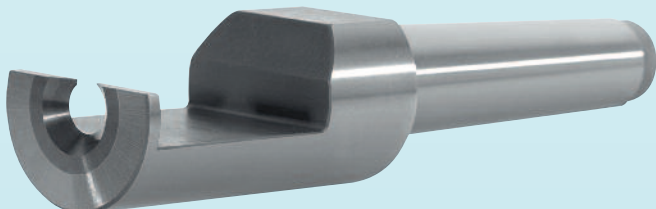
Ø 20

steep taper with full carbide

HSK with full carbide



open centre bore with Morse taper mounting





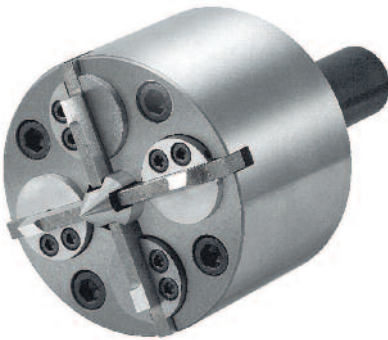
Karl Bruckner GmbH
Präzisionswerkzeugfabrik

P.O. Box 3146
71373 WEINSTADT
GERMANY
Bruckwiesenstrasse 13
71384 WEINSTADT
GERMANY

Phone +49 (0) 7151 9671-0
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