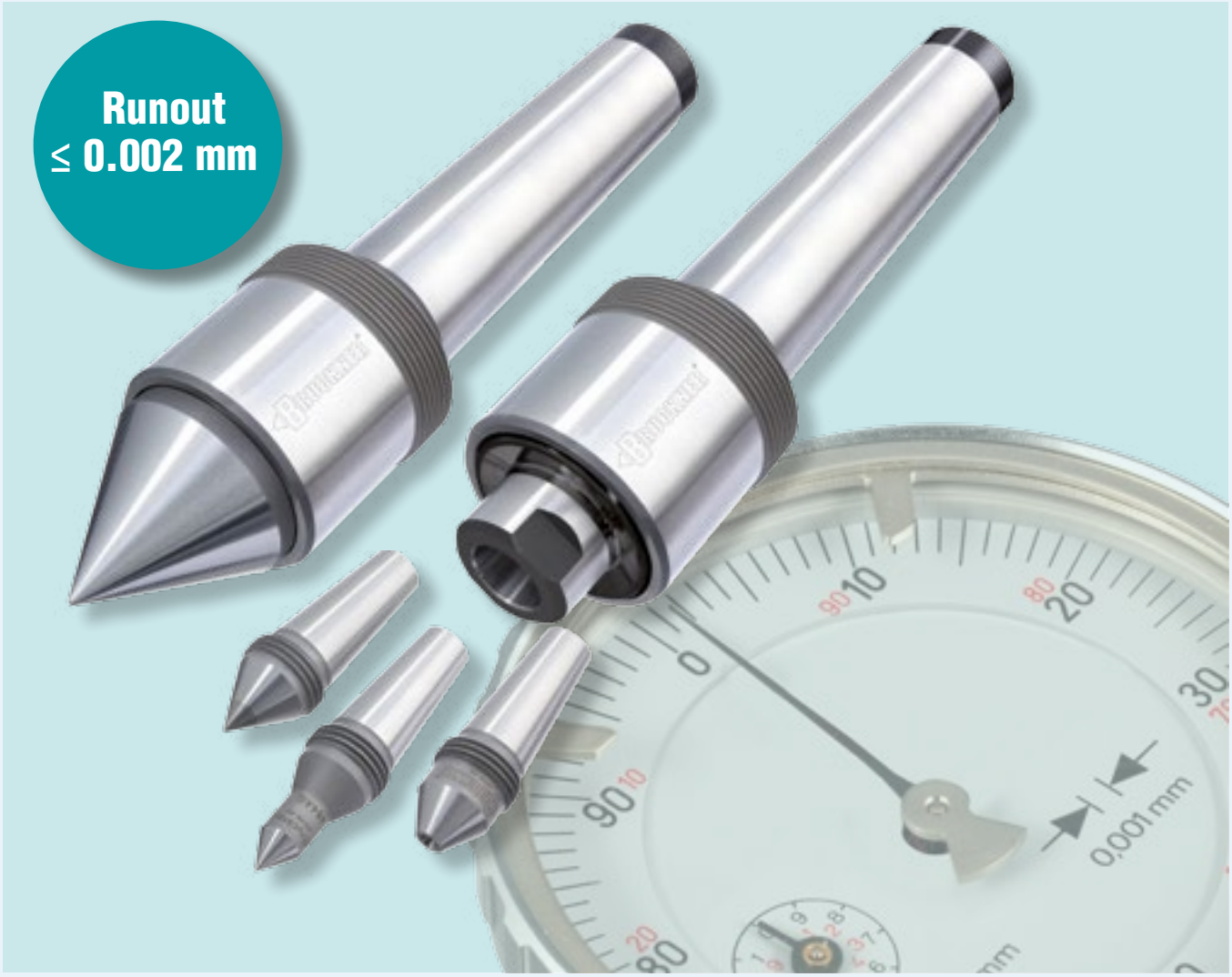
BRUCKNER®
Precision and Reliability first

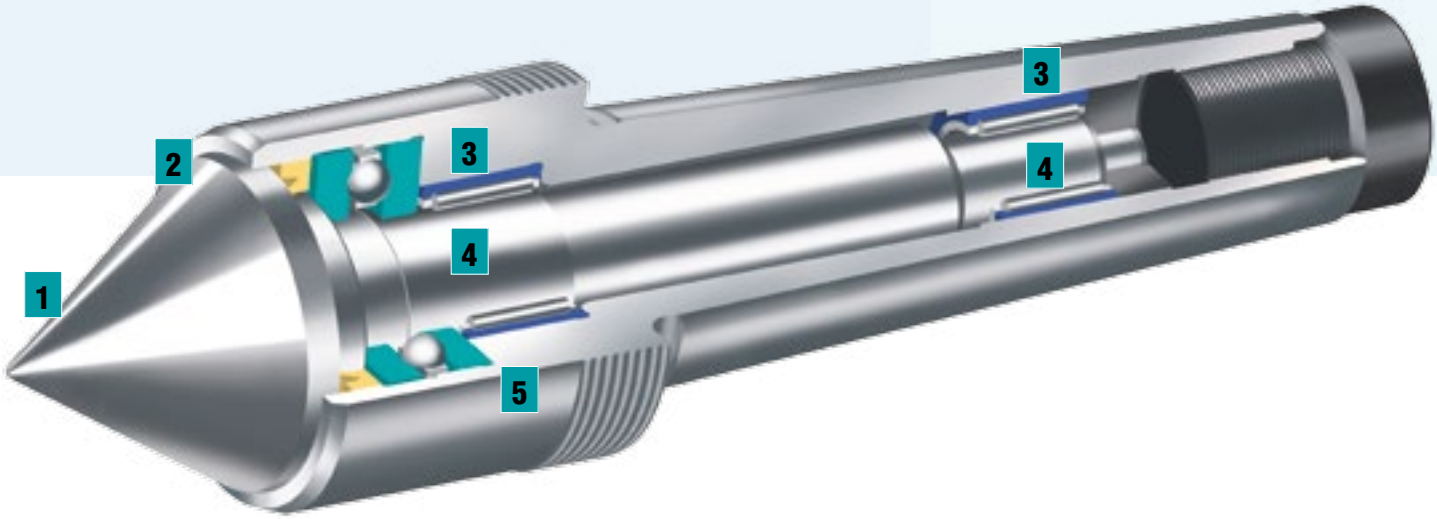


High Performance Live Centres

Types CSM/CEM

Short design with small housing diameter

For measuring, inspection and testing



Type CSM/CEM
Compact precision design for measuring, inspection and testing

With its short anti-vibration design, maximum runout within 0.002 mm and anti-friction precision bearings our types CSM and CEM are ideal for all between centres measuring and testing work.

For especially challenging measuring and testing processes a high precision live centre with max. runout of 0.001 mm can be supplied on special request.

1 **High concentricity accuracy**
tested under axial load, guaranteed by test report

2 **Extended clamping range**
through larger centre spindle diameter

3 **Needle bearing with outer ring**
in case of needle bearing wear the housing is not damaged and can be re-used for repair

4 **Precision bearings**
bearing seats of housing and centre spindle are precision ground and matched to the bearings

5 **Housing**
of high tensile alloy tool steel. Housing head and shank are case-hardened for protection against damage

High Performance Live Centre – Type CSM

small housing diameter, short design

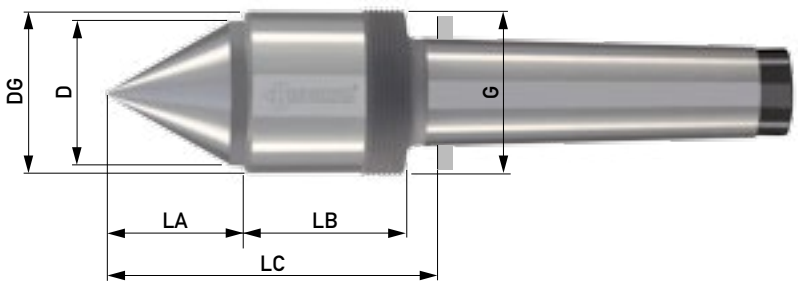
Type CSM

Centre spindle 60°
Low-friction running

Runout
max. 0.002 mm
also available with max. 0.001 mm
with test report

Application
for measuring and testing

Note: only for coolant, dust and dirt free operations

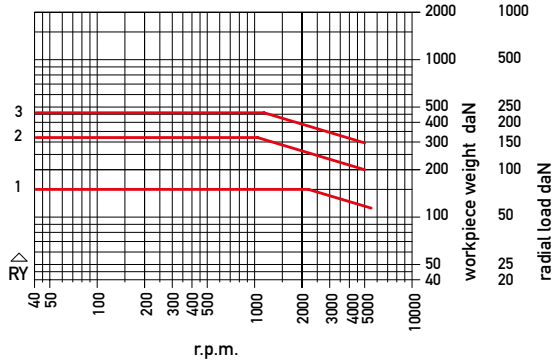


Type CSM ID.No.	650S 032002A	650S 035003A	650S 046004A
Morse taper	**2**	**3**	**4**
D	27.6	29.6	39.6
DG	32	35	46
LA	27	29	37.5
LB	34	42.5	45
LC	66	76	88.5
G	M35x1.5	M38x1.5	M48x1.5
Workpiece weight max. daN*	150	325	460
r.p.m. max.*	5500	5000	5000
Radial/axial load graph	RY1/AY1	RY2/AY2	RY3/AY3
Draw-off nut (page 4)	M35DIN1804	M38DIN1804	M48DIN1804

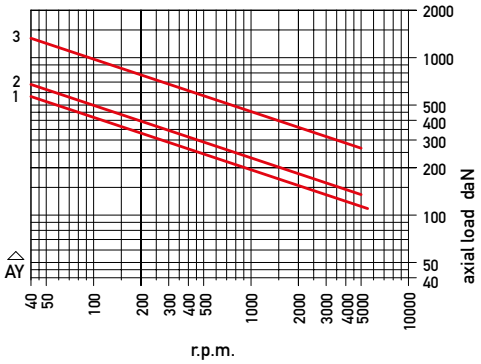
*observe the load graphs

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

Radial – Type CSM



Axial – Type CSM



All dimensions in mm

small housing diameter, short design

Type CEM

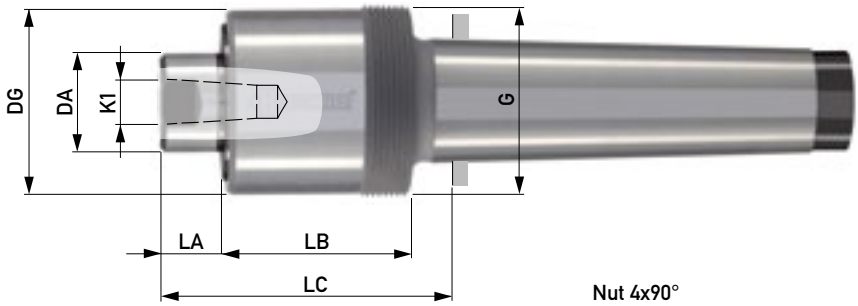
Centre spindle with internal taper 1:7.5 for interchangeable inserts low-friction running

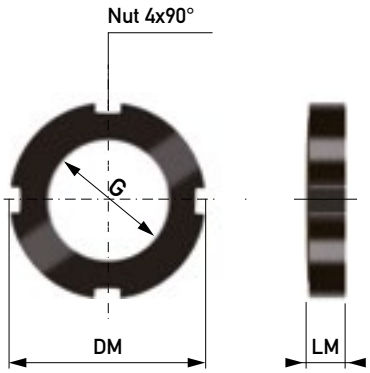
Runout
max. 0.002 mm inside the internal taper
also available with max. 0.001 mm,
with test report

Runout of the system can be minimized by twisting the insert in the internal taper

Application
for measuring, inspection and testing.
Multiple options through 8 interchangeable inserts

Note: only for coolant, dust and dirt free operations





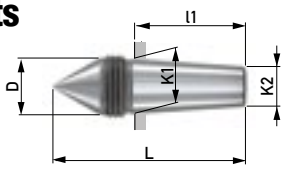
Draw-off nut			
ID.No.	**G**	**LM**	**DM**
M35DIN1804	M35x1.5	11	55
M38DIN1804	M38x1.5	11	58
M48DIN1804	M48x1.5	13	75

Type CEM	**ID.No.**	**650E 032002A**	**650E 035003A**	**650E 046004A**
Morse taper		**2**	**3**	**4**
DA		20	22	25
DG		32	35	46
K1		11	11	15
LA		12	13	15
LB		35.5	43.5	46
LC		52.5	61	67
G		M35x1.5	M38x1.5	M48x1.5
SW		16	16	22
r.p.m. max.		5500	5000	5000
Load		The radial load of type CE is restricted by the interchangeable inserts (page 5)		
Draw-off nut		M35DIN1804	M38DIN1804	M48DIN1804
Suitable inserts (page 5)		**482**	**482**	**484**

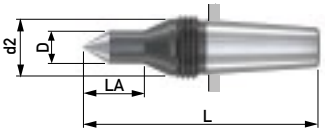
Interchangeable inserts

taper 1:7.5, in gauge accuracy

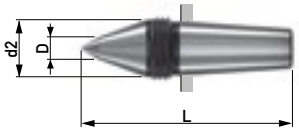
Form AO, 60°
with draw-off nut



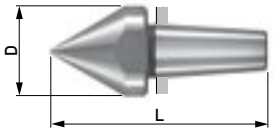
Form ASL, 60°
slim, extended
with draw-off nut



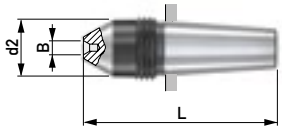
Form AKOP, 60°/40°
extended
with draw-off nut



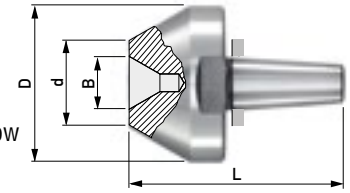
Form A, 60°
for hollow parts
spanner flat (SW)



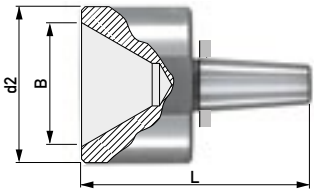
Form B, centre 60°
for centreless workpieces,
with draw-off nut



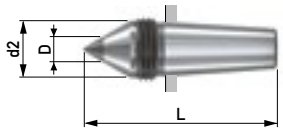
Form C, centre 60°
for centreless workpieces,
external angle 60° for hollow
parts, spanner flat (SW)



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



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



Basic centre Type: CEM	Interchangeable inserts	Radial load max. daN	Insert dimensions						Thread SW	Taper dimensions taper 1:7.5		
ID.No.	ID.No.		D	d2	B	d	L	LA		K1	K2	l1
650E 032002A 650E 035003A	482AO	90	11.7				45		M14x1.5	11	8	23
	482ASL	30	6	11.7			55	15	M14x1.5			
	482AKOP	90	5	11.7			50		M14x1.5			
	482A	90	17				45		SW14			
	482B	90		11.7	4x2		45		M14x1.5			
	482C	90	28		8x3	12	45		SW24			
	482D	90		28	20x6		45		SW24			
	482AOHM	60	7	11.7			45		M14x1.5			
650E 046004A	484AO	160	15.7				53		M18x1.5	15	11	30
	484ASL	100	9	15.7			65	17	M18x1.5			
	484AKOP	160	6	15.7			58		M18x1.5			
	484A	160	25				60		SW22			
	484B	110		15.7	4x2		53		M18x1.5			
	484C	160	44		15x5	24	60		SW41			
	484D	160		44	35x12		64		SW41			
	484AOHM	60	7	15.7			53		M18x1.5			

ID.No	Content
P 10	100 g

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

Changing of inserts
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

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High performance Live Centres and Face Drivers

CSM/CEM 0816 E