




# PRECISION CENTERING TOOLS

Manufactured by IBZ



**Tradition of our  
ancestral. Precision  
of our production.**

 Manufactured by IBZ

It is not about to stun one's opponents, but about overcoming ourselves. We see meaning in improving our products and moving targets higher and higher. The joy of every success and every satisfied customer is the motivation that moves us forward. We produce, because we enjoy it, because we have it in our blood.



# Live centers

The company IBZ group s.r.o. is a continuing manufacturer of the traditional brand precision live and dead centers SKODA. The excellent quality and reliability of our products are a guarantee of security and satisfaction for all customers around the world.

In addition to the top products of the standard assortment, we realize also the production of special centers according to the individual needs of the customer. You can get our whole assortment directly from us or purchase from our authorized dealers and distributors. We provide a comprehensive wide range of technical support.

- Qualified and flexible service.
- Immediate availability of original spare parts.
- Skilled advice, professional approach.

**The technical construction of our products connects high level of useful properties with aesthetic and elegant design.**

- Maximum robustness and wear resistance of the MORSE taper.
- Self-grip MORSE taper (MT) and Metric (Me) series - according to ČSN standard ISO 296.
- Long-term constant accuracy of the tolerance thanks to unique option for fine and precise clearance adjustment.
- Easy maintenance of the bearings with using lithium grease.
- Special static seal ensuring dustproof and waterproof tightness.
- Optimal slenderness ratio guarantees maximum rigidity and long-term functionality.
- Top professional service, the wide range of all products available ex stock and environmentally friendly packaging guarantees maximum satisfaction of our all customers.



PRECISION / TRADITION

# Precision live centers with replaceable inserts and special push-off nut

- ✓ Special seals prevent the ingress of process liquid and dust particles.
- ✓ Replaceable inserts expand the possibilities of using centers.
- ✓ Possibility of using centers on CNC machine tools and grinders.
- ✓ Possibility of using centers during machining or measuring.



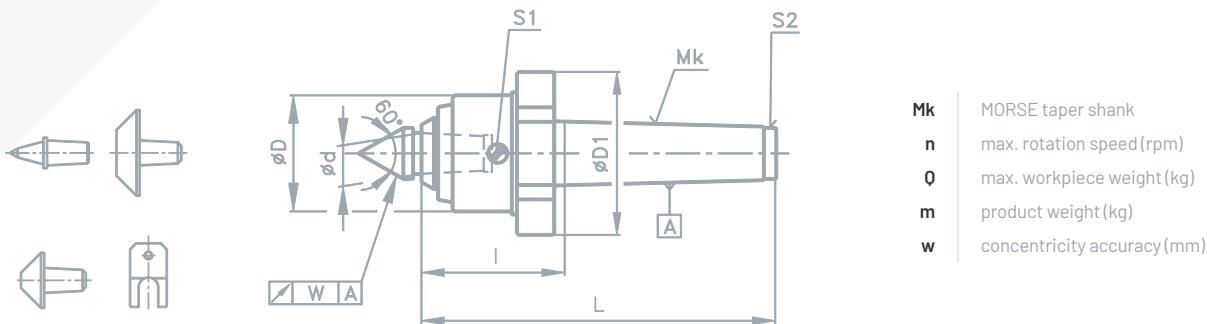
The centers are designed for centering and clamping workpieces on classic NC and CNC lathes. Their clamping part allows easy access of the tool to the workpiece, which is advantageous - when machining shaped parts.

## ČSN 24 3314

The construction of the centers allows adjustment of the clearance in the front radial bearing. The live centers are provided with MORSE taper shank according to ČSN standard ISO 296. Replaceable inserts enable universal use for production of various single workpieces. Depending on the used replaceable insert - the workpieces can be clamped in different ways - for example at the inside diameter of pipes, etc.

The rotating part of the live center is provided with a conical cavity and therefore various clamping inserts can be inserted as needed. The inserts must be pressed into the cavity with a clamping force (tailstock). The clamping insert can be removed with help of a special punching fork. In addition to the use of replaceable inserts, the live center is equipped with a special pusher nut for easy removal from the tailstock of the machine. A special sealing ring prevents the ingress of process liquid and dust particles into the bearing spaces of the live center - which significantly extends its durability.

The live centers are supplied with special lithium-based grease - Mogul LV2-WR. Disassembly of the live centers - except for authorized service - is not recommended.



Mk	Ø D	Ø D1	Ø d	L	I	n	Q	m	w	catalogue no.
3	52	75	15	143	63	5 000	400	1,65		21-14292
4	55	80	20	171	69	4 000	1 300	3,05	0,012	21-14293
5	69,5	95	25	213	84	3 500	2 000	6,1		21-14294



# Precision live centers with small head diameter and with a crest angle 60°

- ✓ Application for centering and clamping workpieces especially on semi-automatic lathes with 2-3 turning carriages.
- ✓ The reduced diameter of the housing allows better access to the workpiece.
- ✓ A special seal prevents the ingress of process liquid and dust particles.
- ✓ Possibility to use the live centers on grinders.

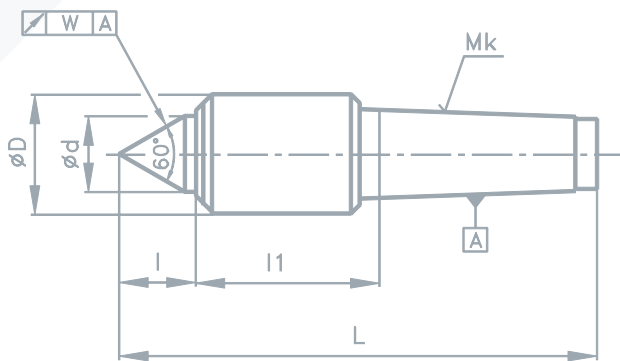


The live centers are designed for workpiece clamping on lathes, possibly also for work on grinders.

## ČSN 24 3315

The construction is characterized by a small diameter of the head  $\varnothing D$  compared to the basic series of other live centers according to ČSN 24 3324, which allows easy access of the tool to the workpiece. The live centers are provided with MORSE taper shank according to ČSN ISO 296. A special shaft seal prevents the penetration of process fluids into the bearing space of the housing, clogging of dust and mechanical impurities during machining – that extends the life of product.

The live centers are supplied with lithium-based grease Mogul LV2-WR. Disassembly of the live centers – except for authorized service – is not recommended.



Mk	MORSE taper shank
n	max. rotation speed (rpm)
Q	max. workpiece weight (kg)
w	concentricity accuracy (mm)

Mk	$\varnothing D$	$\varnothing d$	L	l	l1	n	Q	w	catalogue no.
2	34	15	126	18	44	6 000	180	0,005	21-22041
3	36	16	144	19	44	5 000	400		21-12370
4	42	20	177	24	50,5	5 000	700		21-14296
5	60	30	226	35	61,5	4 000	1000		21-27443

# Precision live centers for hollow workpieces clamping with a centering hole angle 60° or 90°

- ✓ Set of 60° and 90° inserts expanding the production portfolio of workpieces.
- ✓ Wide range of special design options according to customer specifications.
- ✓ Special seals prevent the ingress of process liquid and dust particles.



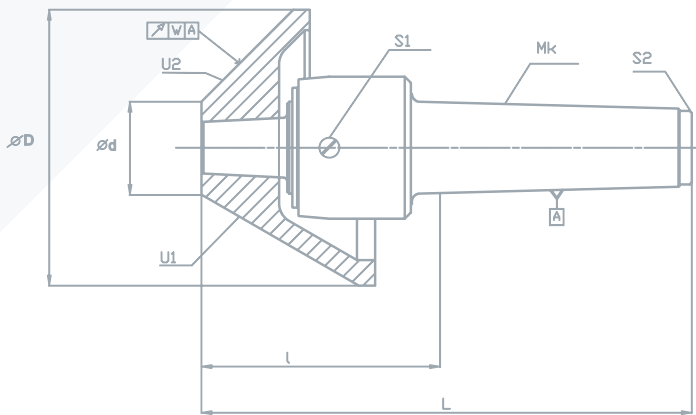
These live centers are designed for turning operations where is necessary the workpieces clamping with cavities of large diameters, which cannot be clamped with live centers of the conventional type.

ČSN 24 3319

The rotating part of the live center is ended with a special taper which enables to fit clamping insert with an angle 60° (U1) or 90° (U2) as needed. In the basic version, the live centers are supplied with one set of replaceable clamping inserts corresponding to the MT size.

In the standard version, the live centers are supplied with inserts as required with a maximum Ø of D according to the table. In a special design, non-disassemble live centers are also supplied - the clamping inserts cannot be removed. The special clamping inserts are also supplied as spare parts. The live centers are provided with a MORSE taper shank according to ČSN standard ISO 296.

The live centers are supplied with lithium-based grease Mogul LV2-WR. Disassembly of the live centers - except for authorized service - is not recommended.



Mk	MORSE taper shank
α	head angle (°)
n	max. rotation speed (rpm)
Q	max. workpiece weight (kg)
m	product weight (kg)
m <sub>v</sub>	insert weight (kg)
w	concentricity accuracy (mm)

Mk	α	Ø d	Ø D	L	l	n	Q	m	m <sub>v</sub>	w	catalogue no.
3	60	35	80	162	81	5 000	400	2,1	0,63	0,02	21-71193
	90	32							0,61		
4	60	44	115	194	92	4 000	1300	4,4	1,56		21-71194
	90	47							1,4		
5	60	46	135	240	116	3 500	2 000	8,0	2,76		21-71195
	90	45							2,13		
6	60	64	170	316	136	2 500	4 000	23,5	5,15		21-71196
	90	70							3,85		
	90	96							6,73		

# Precision live centers with crest angle 60°

- ✓ Special seals prevent the ingress of process liquid and dust particles.
- ✓ Possibility to use the live centers on grinders.



60°

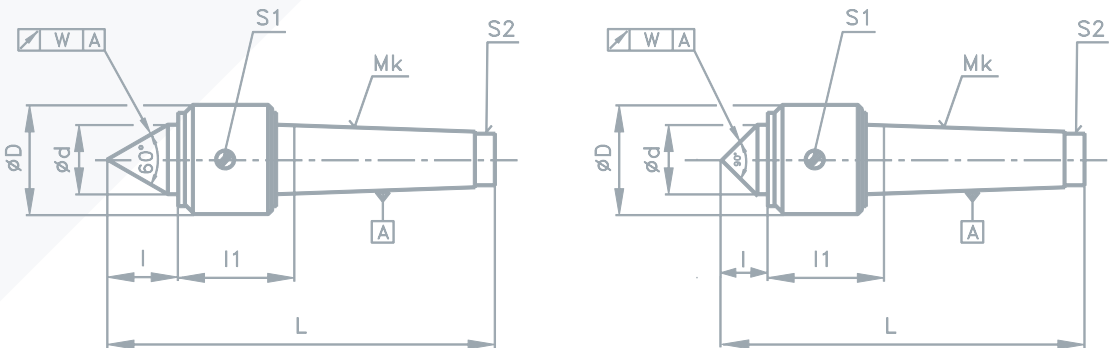
Mk	Ø D	Ø d	L	I	II	n	Q	m	w	catalogue no.
1	34	17	113	19	41	6 000	-	0,25	0,007	21-70241
2	36	20	124,5	17	41	6 000	340	0,34		21-71242
3	47	28	162	29	53	5 000	400	0,8		21-71243
4	55	35	194	35	56,5	4 000	1300	1,37		21-71244
5	70	45	238	43	67	3 500	2 000	3,03		21-71245
6	90	60	318,5	59	79	2 500	4 000	7,18		21-71246

The live centers are designed for workpieces clamping on lathes. Alternatively - for work on grinders, especially when grinding of heavy workpieces.

## ČSN 24 3324

The construction is characterized by a small diameter of the head Ø D, allowing easy access of the tool to the workpiece. For live centers with MORSE taper 2-6 is the clearance adjustment in the front radial bearing very advantageous. The MT 1 live center is of a different construction and is designed for very light workpieces clamping - therefore we do not state the permissible load of this product. The live centers are equipped with a shank with a MORSE taper according to ČSN standard ISO 296.

The live centers are supplied with lithium-based grease Mogul LV2-WR. Disassembly of the live centers - except for authorized service - is not recommended.



Mk	MORSE taper shank
n	max. rotation speed (rpm)
Q	max. workpiece weight (kg)
m	product weight (kg)
w	concentricity accuracy (mm)

90°

Mk	Ø D	Ø d	L	I	II	n	Q	m	w	catalogue no.
3	47	28	154	22	53	5 000	400	0,7	0,005	21-71249
4	55	35	183	24	56,5	4 000	1300	1,3		21-71240
5	70	45	229	33	67	3 500	2 000	3		21-71247
6	90	60	316,5	57	79	2 500	4 000	7		21-71248

# Precise live centers for heavy workpieces clamping, head angle 60° or 90°

- ✓ Possibility of implementing special designs according to customer specifications.
- ✓ A special seal prevents the ingress of process liquid and dust particles.
- ✓ Option to two accuracies - Normal and Extra.
- ✓ Possibility to use the live centers on grinders.



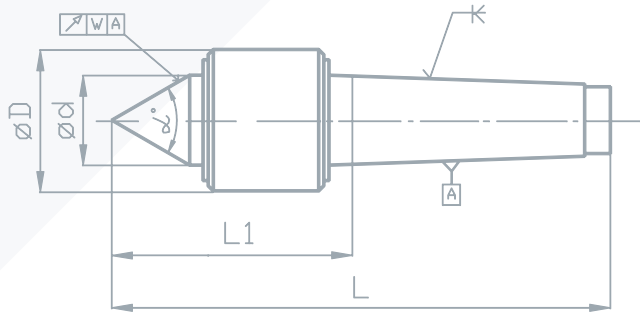
K	Ø D	Ø d	α	L1	L	P	Q	n	m	w	catalogue no.
Me 80	145	65	60	198	390	N	8 000	1 600	20,4	0,05	21-07255
						E				0,01	21-07256
						N				0,05	21-07253
			90	188	380	E				0,01	21-07254
Me 100	175	75				N	12 000	1 300	35,4	0,05	21-07194
			60	230	457	E				0,01	21-07213
						N				0,05	21-07205
			90	220	447	E				0,01	21-07212
Me 120	210	95				N	20 000	900	62,5	0,06	21-07325
			90	263	525	E				0,01	21-07326

The live centers are designed for heavy workpieces clamping on lathes. Very rigid construction and robust bearing of the rotatable part are characterized by very high durability.

## ČSN 24 3325

The advantage is the possibility of adjusting the clearance in the front radial bearing. The bearing spaces are filled with OL-J5 oil. The live centers of the category EXTRA precision are also used to clamp workpieces on grinders. To reduce deformations of the machine (tailstock, carriage, headstock) due to axial clamping forces, we supply the live centers with a head angle of 60° which is especially advantageous for machines loaded in the range of the permissible maximum.

The live centers are provided with a taper shank MORSE 4-7 according to ČSN standard 22 0420 or METRIC (Me) shank according to ČSN 22 0410. The shanks comport to DIN 228 and ISO 296. Disassembly the live centers - except for authorized service - is not recommended.



K	taper shank
α	head angle (°)
P	type of design accuracy
N	normal-accuracy design
E	extra-accuracy design
w	concentricity accuracy (mm)
Q	max. workpiece weight (kg)
n	max. rotation speed (rpm)
m	product weight (kg)

K	Ø D	Ø d	α	L1	L	P	Q	n	m	w	catalogue no.
Mk 4	80	40	60	103	207	N	1 500	3 200	4,1	0,04	21-09001
						E				0,01	21-09002
						N				0,04	21-08999
			90	89	192	E				0,01	21-09000
Mk 5	90	48				N	2 500	2 700	6,2	0,04	21-08988
			60	119	247	E				0,01	21-08989
						N				0,04	21-08976
			90	109	237	E				0,01	21-08987
Mk 6	125	55				N	5 000	1 900	12,4	0,04	21-07249
			60	163	340	E				0,01	21-07250
						N				0,04	21-07222
			90	153	330	E				0,01	21-07248
Mk 7	145	65				N	8 000	1 600	21,5	0,05	21-09024
			60	198	455	E				0,01	21-09025
						N				0,05	21-09022
			90	188	445	E				0,01	21-09023



# Precision live centers with replaceable inserts

- ✓ Special seals prevent the ingress of process liquid and dust particles.
- ✓ Choice of using replaceable inserts.
- ✓ Possibility of implementing other designs of inserts according to customer specifications.



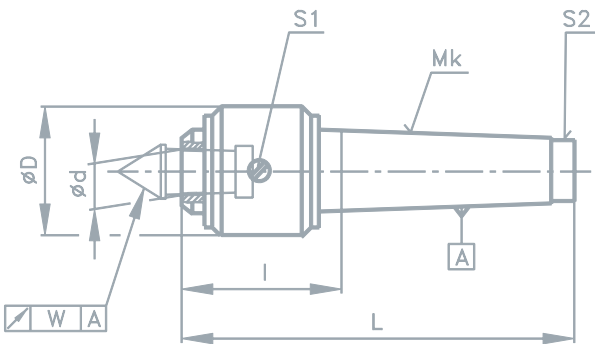
Live centers with replaceable inserts are designed for work on lathes. Their design allows universal use in a various piece production and a wide range of workpieces.

## ČSN 24 3326

Depending on the replaceable insert used - the workpieces can be clamped in a 60° centering hole or workpieces with a 60° rotating taper support cone or for example parts without a drilled hole on the surface, tubes at the inside diameter etc. The rotating part of the live center is closed by a conical cavity which enables clamping of various inserts in the shape of „a ÷ g” as required. The inserts must be pressed into the cavity with a clamping force (by tailstock). The insert is removed out with the ejecting fork (h). The live centers are provided with MORSE taper shanks according to ČSN standard ISO 296.

In the standard version the live centers are supplied with one set of replaceable clamping inserts in shape „a ÷ g” and with one ejecting fork (h). In the required version, the live centers are supplied with a set of inserts of your choice. In a special design, the live centers are supplied according to the customer's specific requirements (the shape of clamping inserts).

The individual clamping inserts are also supplied as spare parts. The live centers are supplied with lithium-based grease Mogul LV2-WR. Disassembly of the live centers - except for authorized service - not recommended.



Mk	MORSE taper shank
n	max. rotation speed (rpm)
Q	max. workpiece weight (kg)
m	product weight (kg)
w	concentricity accuracy (mm)

Mk	Ø D	Ø d	L	l	n	Q	m	w	catalogue no.
2	36	10	110	45,5	6 000	340	0,75	0,012	21-71262
3	47	15	145	62	5 000	400	1,52		21-71263
4	55	20	171	69	4 000	1 300	2,88		21-71264
5	70	25	213	84	3 500	2 000	5,75		21-71265
6	90	30	283,5	103	2 500	4 000	13,85		21-71266

# Replaceable inserts

a

Mk	Ø D	Ø D1	Ø d	L	I	ks	m <sub>v</sub>	catalogue no.
2	15		10	40	21		0,02	21-00418
3	20	0,5	15	51	26		0,05	21-00346
4	25		20	60,5	30,5	1	0,11	21-00377
5	32		25	74	37		0,20	21-00393
6	36	1	30	90	44		0,34	21-00399

b

Mk	Ø D	Ø D1	Ø d	L	I	ks	m <sub>v</sub>	catalogue no.
2	28	4	10	36	17		0,042	21-00419
3	36	6	15	45	20		0,065	21-00353
4	45	10	20	53	23	1	0,135	21-00378
5	56	14	25	65	27		0,27	21-00394
6	70	20	30	80	34		0,72	21-00400

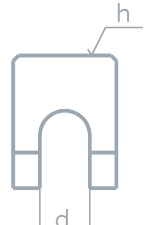
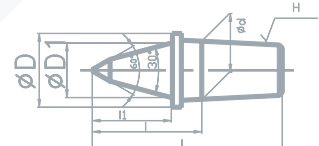
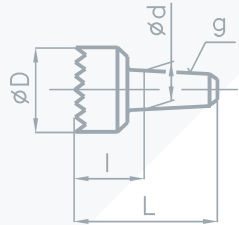
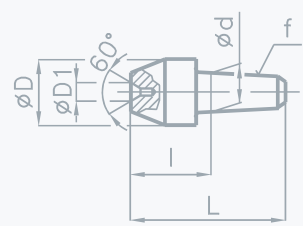
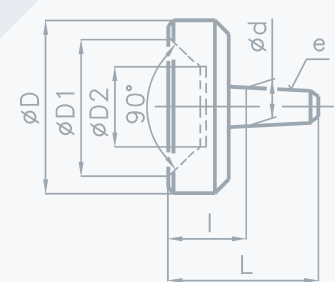
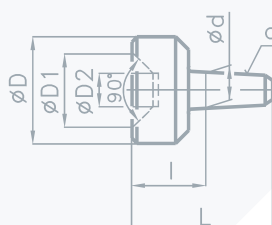
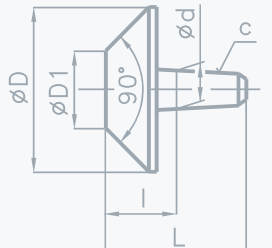
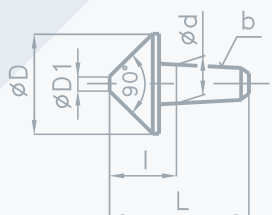
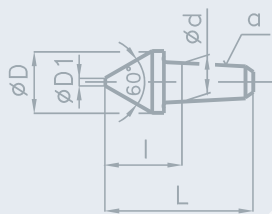
c

Mk	Ø D	Ø D1	Ø d	L	I	ks	m <sub>v</sub>	catalogue no.
2	44	20	10	36	17		0,067	21-00420
3	63	33	15	45	20		0,22	21-00354
4	70	35	20	53	23	1	0,43	21-00379
5	80	38	25	65	27		0,47	21-00395
6	100	50	30	80	34		1,55	21-00401

d

Mk	Ø D	Ø D1	Ø D2	Ø d	L	I	ks	m <sub>v</sub>	catalogue no.
2	28	19	5	10	36	17		0,061	21-00421
3	36	28	12	15	45	20		0,13	21-00371
4	45	37	17	20	53	23	1	0,23	21-00380
5	56	44	20	25	65	27		0,42	21-00396
6	70	58	24	30	80	34		0,92	21-00402

m<sub>v</sub> insert weight (kg)  
ks pieces in a set



e

Mk	Ø D	Ø D1	Ø D2	Ø d	L	I	ks	m <sub>v</sub>	catalogue no.
2	38	28	14	10	36	17		0,11	21-00422
3	45	38	22	15	45	20		0,2	21-00372
4	63	53	30	20	53	23	1	0,41	21-00381
5	70	60	36	25	65	27		0,66	21-00397
6	100	88	54	30	80	34		1,35	21-00403

f

Mk	Ø D	Ø D1	Ø d	L	I	ks	m <sub>v</sub>	catalogue no.
2	15		10	36	17		0,03	21-00423
3	20	2,5	15	45	20		0,06	21-00374
4	25		20	53	23	1	0,123	21-00382
5	32	5	25	65	27		0,23	21-00398
6	36	8	30	80	34		0,38	21-00404

g

Mk	Ø D	Ø d	L	I	ks	m <sub>v</sub>	catalogue no.
2	22	10	36	17		0,055	21-00425
3	25	15	45	20		0,13	21-00386
4	32	20	53	23	1	0,18	21-00384
5	45	25	65	27		0,34	21-00408
6	56	30	80	34		0,50	21-00406

H

Mk	Ø D	Ø D1	Ø d	L	I	I1	ks	m <sub>v</sub>	catalogue no.
3	20	15	12,5	51,5	26,5	19,4		0,09	D21-03349
4	25	20	16,5	64	34	27	1	0,11	D21-00154
5	32	25	22,5	78	40	33		0,21	D21-03442

h

Mk	Ø d	ks	m <sub>v</sub>	catalogue no.
2	11		0,018	21-00424
3	16		0,02	21-00385
4	22	1	0,03	21-00383
5	27		0,06	21-00407
6	32		0,16	21-00405

# Precision live centers for NC and CNC lathes

- ✓ The construction of the live center meets the special functional requirements due to the use of a special bearing.
- ✓ Possibility of using live centers on NC and CNC machine tools.
- ✓ Special seals prevent the ingress of process liquid and dust particles.

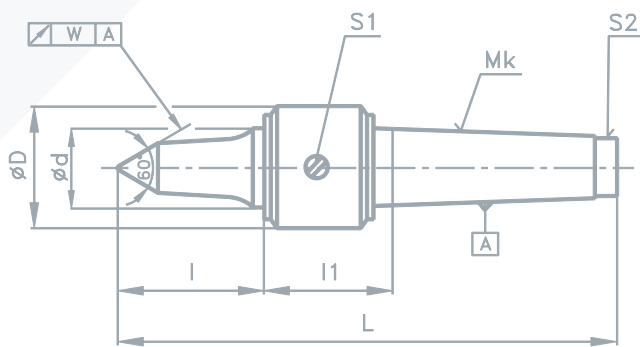


The live centers are designed for workpieces clamping on NC and CNC machine tools. The clamping part allows an easy access of the tool to the workpiece, which is advantageous when machining shaped parts.

## ČSN 24 3327

The construction of the live centers allows adjustment of the clearance in the front radial bearing. The live centers are equipped with a shank with a MORSE taper according to ČSN standard ISO 296.

The live centers are supplied with lithium-based grease Mogul LV2-WR. Disassembly of the live centers - except for authorized service - is not recommended.

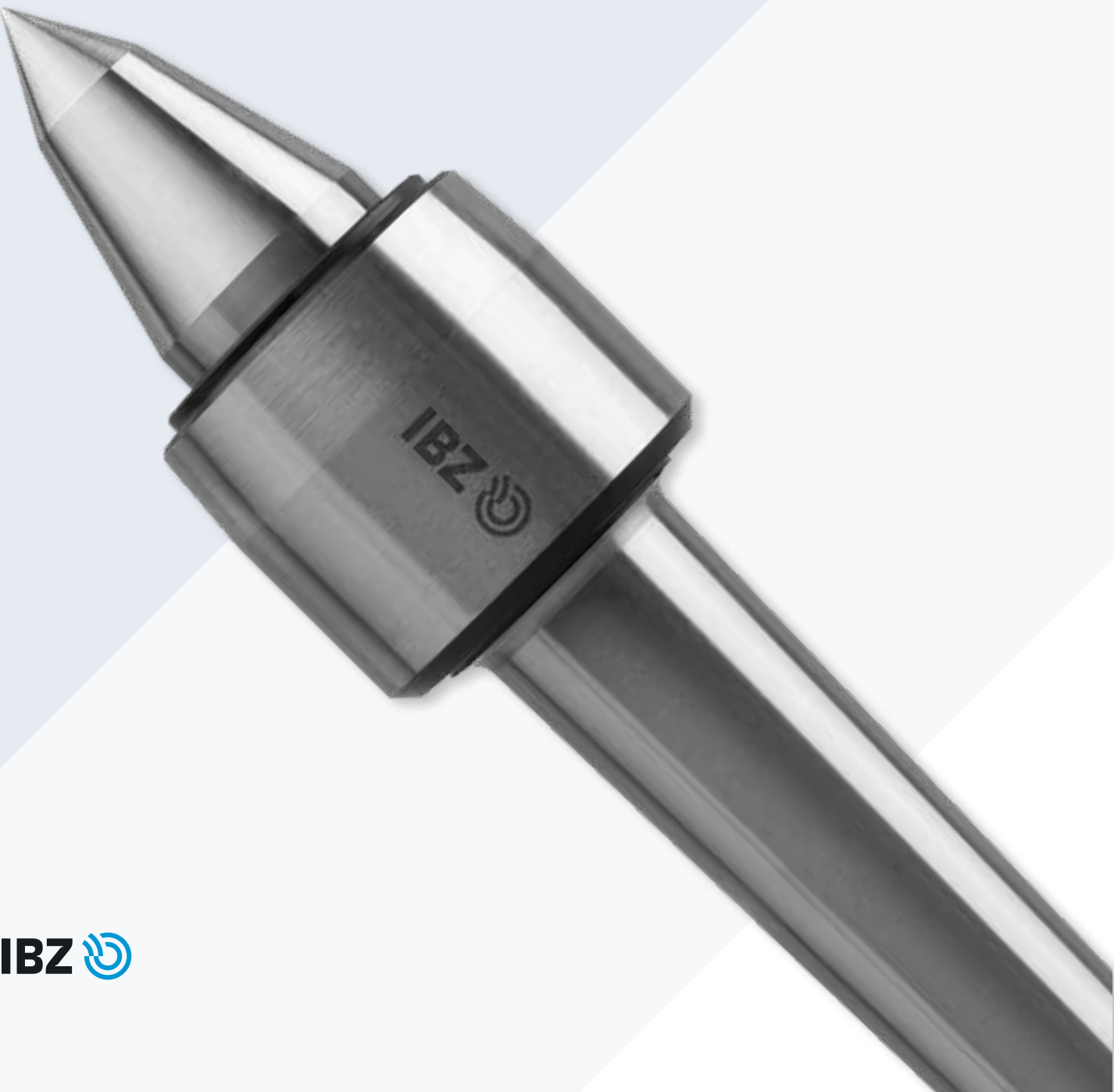


Mk	MORSE taper shank
n	max. rotation speed (rpm)
Q	max. workpiece weight (kg)
m	product weight (kg)
w	concentricity accuracy (mm)

Mk	Ø D	Ø d	L	l	l1	n	Q	m	w	catalogue no.
2	36	17	131	26	42	6 000	270	0,39	0,005	21-70272
3	47	25	170	33	57	5 000	320	0,89		21-70273
4	55	30	206	42	62	4 000	1000	1,4		21-70274
5	70	40	257	54	73	3 500	1600	3,2	0,002	21-70275

# Precision live centers extended, with head angle 60°

- ✓ Possibility of using the live centers on CNC machine tools.
- ✓ Special seals prevent the ingress of process liquid and dust particles.

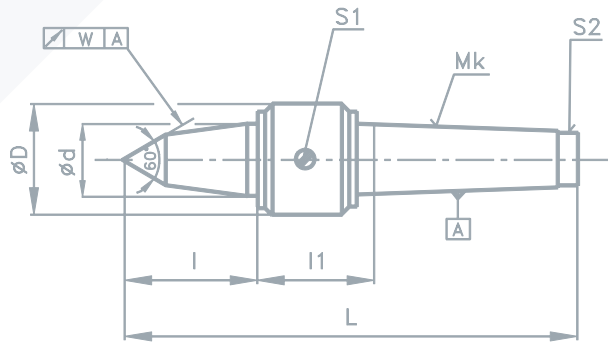


The live centers are designed for work on lathes. The extended clamping part allows easy access of the tool to the workpiece, which is very advantageous when machining with replaceable tool bits.

## ČSN 24 3328

The construction of the live centers allows the radial clearance to be adjusted. The centers have a MORSE taper shank according to ČSN standard ISO 296. In a special design – the live centers can be manufactured with the shape and lining of the rotating part according to the customer's requirements.

The live centers are supplied with lithium-based grease Mogul LV2-WR. Disassembly of the live centers – except for authorized service – is not recommended.



Mk	MORSE taper shank
n	max. rotation speed (rpm)
Q	max. workpiece weight (kg)
m	product weight (kg)
w	concentricity accuracy (mm)

Mk	Ø D	Ø d	L	l	l1	n	Q	m	w	catalogue no.
2	36	20	128,5	24	41	6 000	270	0,36		21-71282
3	47	28	167	34	53	5 000	320	0,84		21-71283
4	55	35	207,5	49	56,5	4 000	1 000	1,45	0,01	21-71284
5	69,5	45	259	66	63	3 500	1 600	3,2		21-71285
6	89	60	341	82	79	2 500	3 200	7,75		21-71286





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PRECISION / TRADITION