

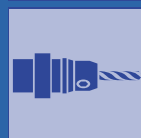
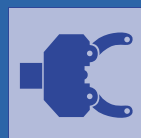
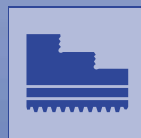
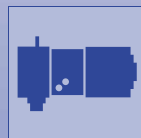
# FORKARDT

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## INTERNATIONAL



### MULTI-BLADE COLLET CHUCKS LZK/LZK-S

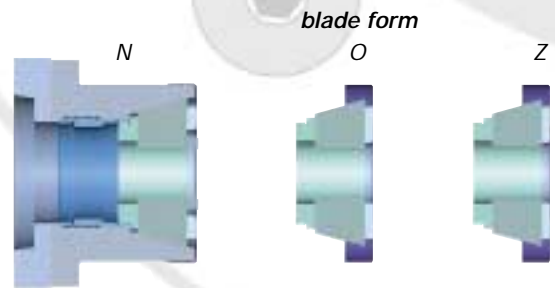
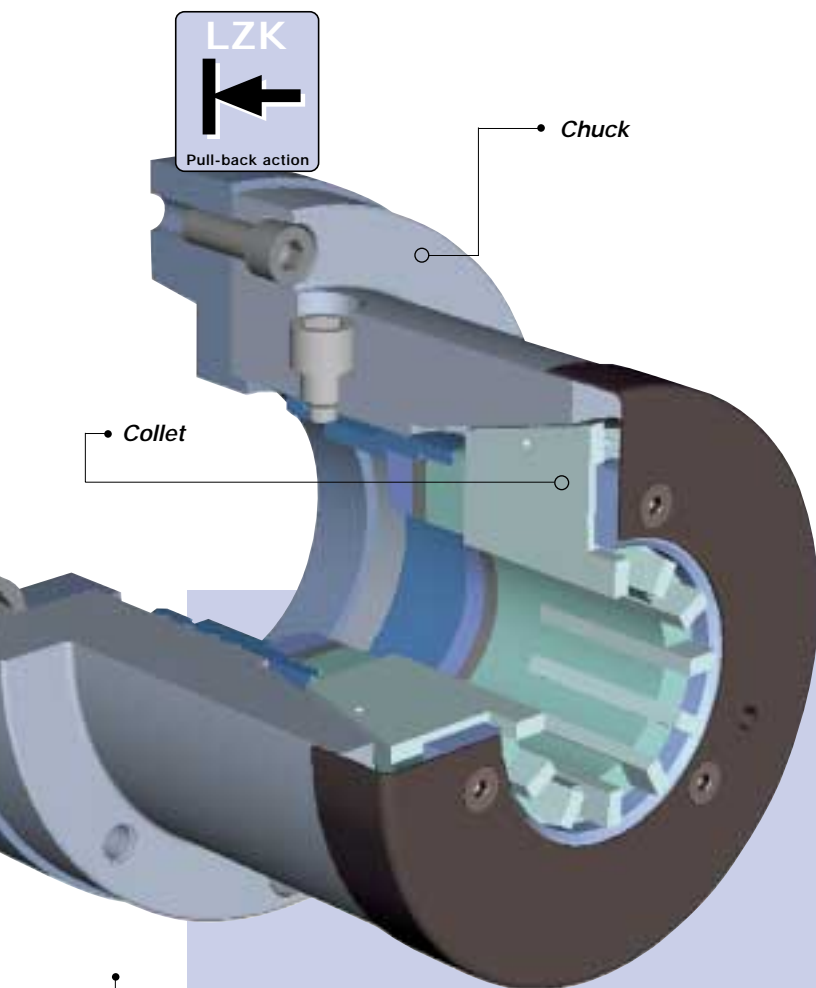


# FORKARDT multi-blade collets c products designed for meeting ti

## Uncompromising clamping geometry

Forkardt multi-blade clamping systems feature an optimum clamping geometry throughout the entire clamping range, maintaining a consistent radial precision of better than 0.01 mm.

In operation, these high precision chucks ensure maximum production quality.



• **System LZK**  
*pull-back action, pull operation,  
low dimension, simple,  
robust and economic*



## Highlights LZK

- Workpiece diameters up to 200 mm can be accommodated
- Clamping of thin walled workpieces without deformation
- Bar material capability due to large thru-hole
- High rotational speeds possible with low centrifugal losses
- Resistant to ingress of chips, etc.

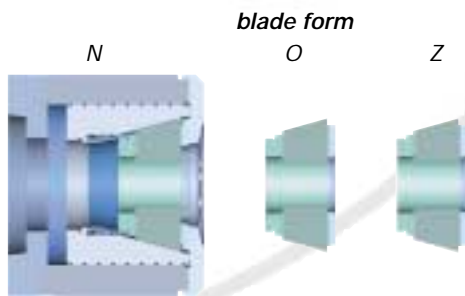
For LKZ see page 4

# hucks – ght production tolerances.

## Unique Forkardt advantages:

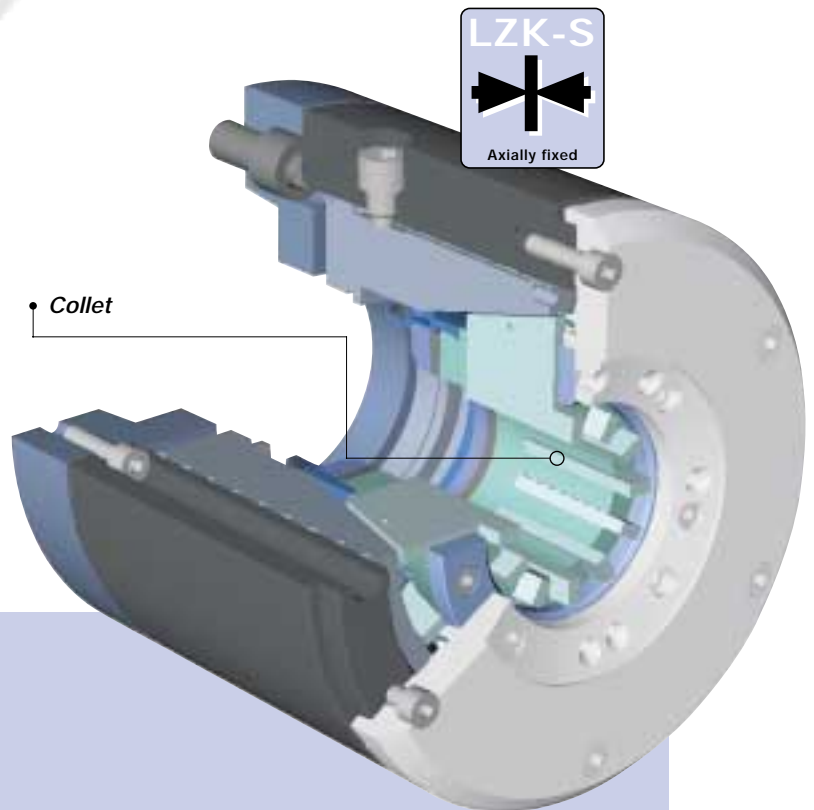
The ability to accommodate larger clamping ranges with one clamping system. For example, the LZK-U range, while retaining the 0.01 mm precision, can handle a considerably extended clamping range of 9 mm. This brings

considerable advantages over all conventional jaw clamping systems. In addition to a more streamlined inventory, machines can be re-set more quickly, cost effectively adding flexibility to production.



### System LZK-S

*Axially fixed, push operation.  
For axially fixed position and for  
the equipping of counter  
spindles (refer to page 11)*



## Highlights LZK-S Axial Fix

- Clamping of workpieces up to 164 mm diameter
- Clamping of thin walled workpieces without deformation
- Bar material capability due to large thru-hole

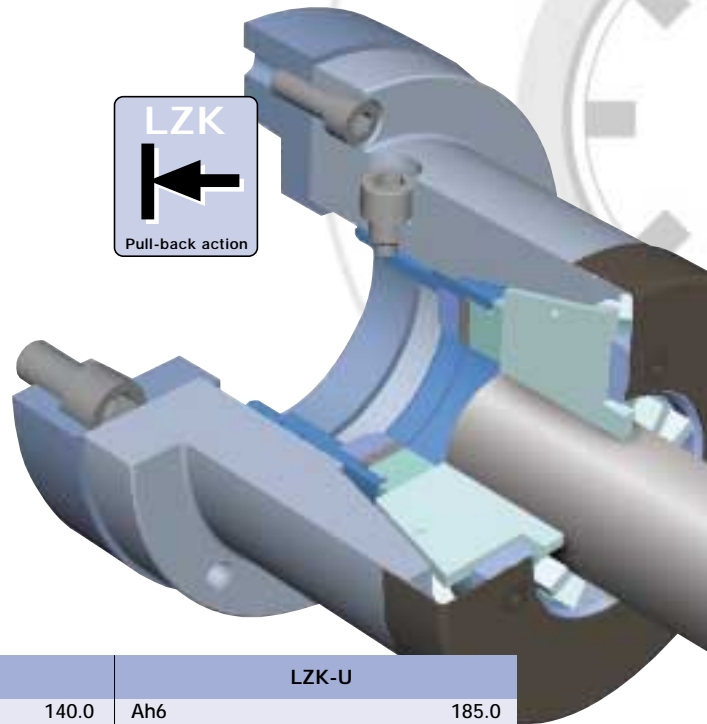
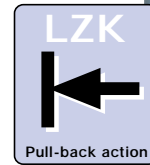
- High rotational speed possible with low centrifugal losses
- Resistant to ingress of chips, etc.

For LZK-S see page 8

# Multi-blade collet chuck LZK for pull operation, with pull-back action.

## Ease of operation and speed when setting

Chucks should be selected in accordance with the required size (dimension A) and the necessary collet clamping range. The collets may be changed by screwing in and out. The set position is then highly resistant to unintentional alteration.



## Multi-blade collet chucks

LZK-A		LZK-B		LZK-U	
Ah6	90.0	Ah6	140.0	Ah6	185.0
B	62.1	B	102.5	B	143.0
C max	80.3	C max	116.0	C max	136.0
c min	71.3	c min	102.5	c min	117.0
D2	25.0	D2	42.5	D2	66.0
EJ6	38.0	EJ6	65.0	EJ6	90.0
F	5.0	F	6.0	F	6.0
G	75.0	G	120.0	G	160.0
H	3 x M6	H	3 x M8	H	3 x M10
J	12.0	J	20.0	J	25.0
K-lift	9.0	K-lift	13.5	K-lift	19.0
L	M32 x 1	L	M50 x 1.5	L	M80 x 1.5
M	38.0	M	64.8	M	89.8
N	33.0	N	49.0	N	71.0
O	13.0	O	20.0	O	24.0
P	16.0	P	26.0	P	45.0
Q	5.7	Q	10.0	Q	10.0
R	4.3	R	7.0	R	9.0
S	M30 x 1.5	S	M50 x 1.5	S	M72 x 1.5
T	16.0	T	20.0	T	15.0
Weight (kg)	1.5	Weight (kg)	4.9	Weight (kg)	10.3
Actuation (daN)	1,000	Actuation (daN)	2,500	Actuation (daN)	3,500
N max (r.p.m.)	6,300	N max (r.p.m.)	6,300	N max (r.p.m.)	6,000
TP2 (kpm2)	0.012	TP2 (kpm2)	0.027	TP2 (kpm2)	0.159
Clamping force (daN)	2,000	Clamping force (daN)	5,000	Clamping force (daN)	7,000

## Multi-blade collets/clamping range

Smooth clamping surfaces. Serrated version upon request (Z).

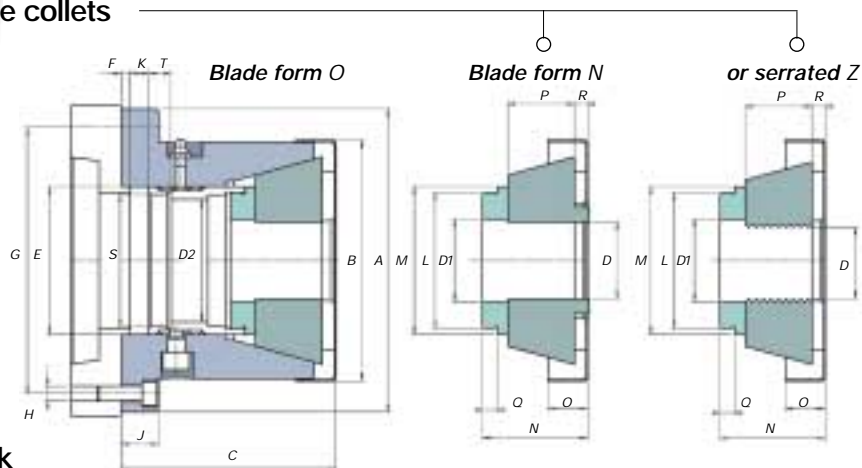
For LZK-A					For LZK-B					For LZK-U				
Size	mm	ØD1	1*	2*	Size	mm	ØD1	1*	2*	Size	mm	ØD1	1*	2*
AN I	1.5-6.0	10.0	N	6	BN 0	2.5-9.0	22.0	N	8	UN 0	4.0-13.0	20.0	N	6
AN II	6.0-10.5	16.0	N	8	BN I	6.0-12.5	22.0	N	8	UN I	9.0-18.0	20.0	N	6
AN III	10.5-15.0	16.0	N	8	BN II	12.5-19.0	22.0	N	8	UN II	18.0-27.0	28.0	N	6
A IV	15.0-19.5	25.0	O	12	BN III	19.0-25.5	28.0	N	8	UN III	27.0-36.0	37.0	N	6
A V	19.5-24.0	25.0	O	12	BN IV	25.5-32.0	34.0	N	8	UN IV	36.0-45.0	46.0	N	12
					BN V	32.0-38.5	40.0	N	8	UN V	45.0-54.0	55.0	N	12
					B VI	35.5-42.0	42.5	O	8	UN VI	54.0-63.0	64.0	N	12
										UN VII	56.0-65.0			O

Legend: 1\* Blade form, 2\* Number of blades; How to order: FORKARDT chuck LZK-A/Multi-blade collet AN III

# external clamping



- Exchangeable multi-blade collets



## Multi-blade collet chuck

LZK-C		LZK-D		LZK-E	
Ah6	205	Ah6	250	Ah6	280
B	163	B	203	B	286
C max	151	C max	197	C max	257
c min	132	c min	176	c min	225
D2	83	D2	104	D2	164
EJ6	100	EJ6	130	EJ6	205
F	6	F	6	F	6
G	180	G	225	G	255
H	3xM10	H	6xM12	H	6xM12
J	25	J	30	J	-
K-lift	19	K-lift	21	K-lift	32
L	M92x1,5	L	M115x1,5	L	Ø 174g6
M	100	M	130	M	202
N	71	N	81	N	89
O	27	O	35	O	40
P	45	P	48	P	55
Q	10	Q	15	Q	6
R	10	R	11	R	18
S	M92x1,5	S	M115x1,5	S	Ø 21
T	15	T	20	T	22
Weight (Kg)	14	Weight (Kg)	29	Weight (Kg)	57
Actuation (daN)	4000	Actuation (daN)	5000	Actuation (daN)	6000
N max (r.p.m.)	4500	N max (r.p.m.)	4000	N max (r.p.m.)	3500
TP2 (kpm2)	0.296	TP2 (kpm2)	0.85	TP2 (kpm2)	4.08
Clamping force (daN)	8,000	Clamping force (daN)	10,000	Clamping force (daN)	12,000

## Multi-blade collet/clamping range

Smooth clamping surfaces. Serrated (Z) or nosed (N) version upon request.

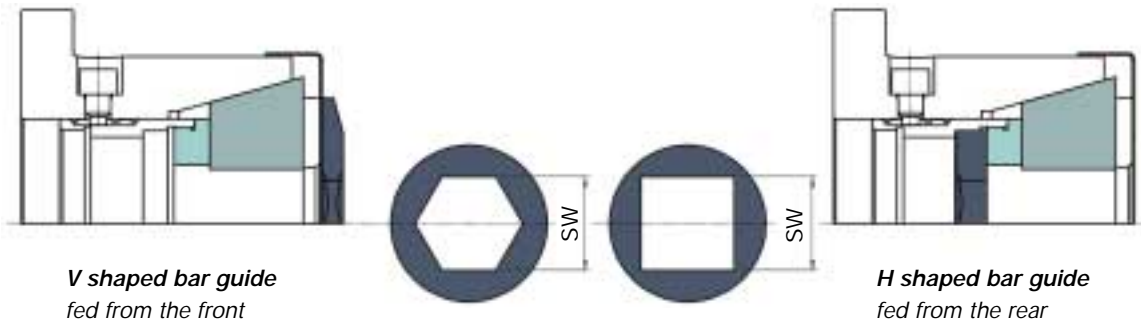
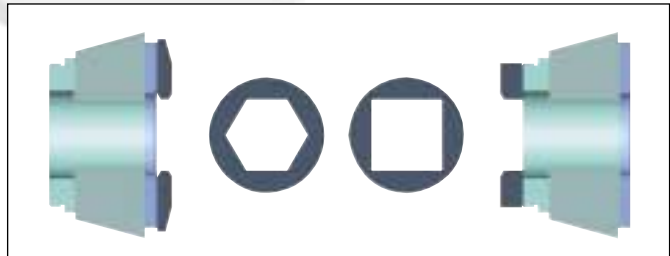
For LZK-C					For LZK-D					For LZK-E				
Size	mm	ØD1	1*	2*	Size	mm	ØD1	1*	2*	Size	mm	ØD1	1*	2*
C 0	4.0-13.0	20.0	O	6	D 0	28.0-37.0	57.0	O	12	E 0-So	27.0-42.0			(special)
C I	10.0-19.0	20.0	O	6	D I	37.0-46.0	57.0	O	12	E I	42.0-57.0	59.0	O	12
C II	19.0-28.0	29.0	O	6	D II	46.0-55.0	57.0	O	12	E II	57.0-72.0	74.0	O	12
C III	28.0-37.0	38.0	O	6	D III	55.0-64.0	66.0	O	12	E III	72.0-87.0	89.0	O	12
C IV	37.0-46.0	47.0	O	12	D IV	64.0-73.0	75.0	O	18	E IV	87.0-102.0	104.0	O	12
C V	46.0-55.0	56.0	O	12	D V	73.0-82.0	84.0	O	18	E V	102.0-117.0	119.0	O	12
C VI	55.0-64.0	65.0	O	16	D VI	82.0-92.0	94.0	O	18	E VI	117.0-132.0	134.0	O	12
C VII	64.0-73.0	74.0	O	16	D VII	92.0-102.0	104.0	O	18	E VII	132.0-147.0	149.0	O	12
C VIII	73.0-82.0	83.0	O	16	D VIII-So	95.0-105.0			(special)	E VIII	147.0-162.0	164.0	O	12

Legend: 1\* Blade form, 2\* Number of blades; How to order: FORKARDT chuck LZK-C/Multi-blade collet CIV

# Multi-blade collet inserts LZK.

## Serrated/hex/square

Multi-blade collets of special design for sectional bars.



*V shaped bar guide  
fed from the front*

*H shaped bar guide  
fed from the rear*

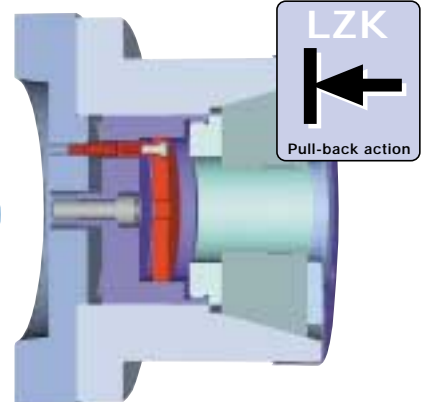
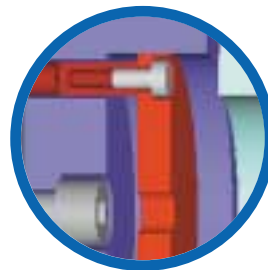
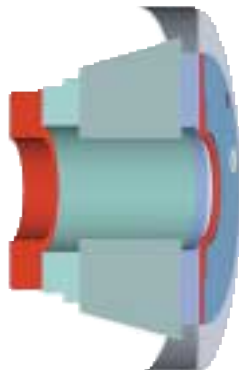
## Versions

Type	Design	Size I	Size II	Size III	Size IV	Size V	Size VI	Size VII	Size VIII
B	Z = serrated	6 - 12.5	12.5 - 19	19 - 25.5	25.5 - 32	32 - 38.5	35.5 - 42		
	SW - hexagonal	6 - 12.5	12.5 - 19	19 - 25.5	25.5 - 32				
	SW - square	6 - 12.5	12.5 - 19	19 - 25.5					
U	Z = serrated	9 - 18	18 - 27	27 - 36	36 - 45	45 - 54	54 - 63		
	SW - hexagonal	9 - 18	18 - 27	27 - 36	36 - 45	45 - 54			
	SW - square	9 - 18	18 - 27	27 - 36	36 - 45				
C	Z = serrated	10 - 19	19 - 28	28 - 37	37 - 46	46 - 55	55 - 64	64 - 73	73 - 82
	SW - hexagonal	10 - 19	19 - 28	28 - 37	37 - 46	46 - 55	55 - 64	64 - 68	
	SW - square	10 - 19	19 - 28	28 - 37	37 - 46	46 - 55			
D	Z = serrated	37 - 46	46 - 55	55 - 64	64 - 73	73 - 82	82 - 92	92 - 102	
	SW - hexagonal	37 - 46	46 - 55	55 - 64	64 - 73				
	SW - square	37 - 46	46 - 55	55 - 64					

*How to order: FORKARDT chuck: LZK-D, Multi-blade collet hex-UZII, bar guide H*

## Accessories

**Swarf protection**  
Perfect sealing  
efficiently protecting  
against the ingress  
of chips

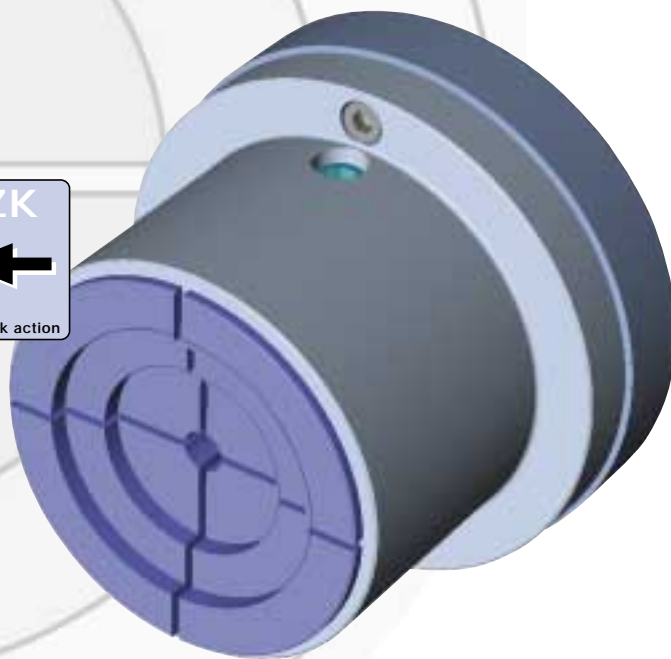


**Stop unit**  
Optional stop unit  
with simple length adaptation

## Soft collet blank

Particularly suitable for annular shaped workpieces installed into power operated multi-blade LZK collet chucks where short clamping lengths are not possible (outside of cone support range).

For clamping thin walled rings, flat and disc-shaped workpieces as well as parts having a short clamping length and special contours, the multi-blade collet can be replaced by a soft collet blank.



The required clamping section is prepared in the pre-tensioned soft collet blank such that the workpieces are in correct contact from the technical clamping point of view.

The soft collet blank is pull-operated by the hydraulically operated cylinder to produce a slight pull-back action.

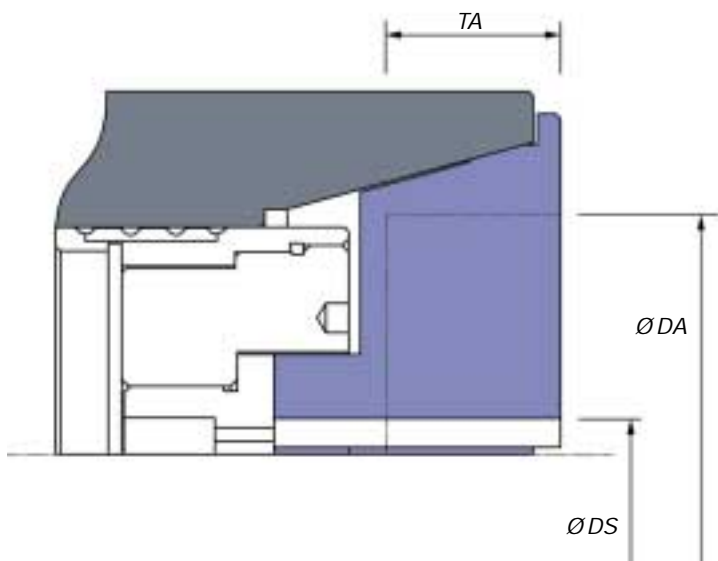
## Technical advantages

- Positive clamping of thin walled workpieces
- High rotational speeds
- Resistance against soiling

## Soft collet blanks/clamping range

Type	Ø DA	TA	Ø DS
BG	70	20	16
UG	90	30	16
CG	110	32	18
DG	130	35	20

**How to order:** FORKARDT chuck LZK, soft collet blank UG



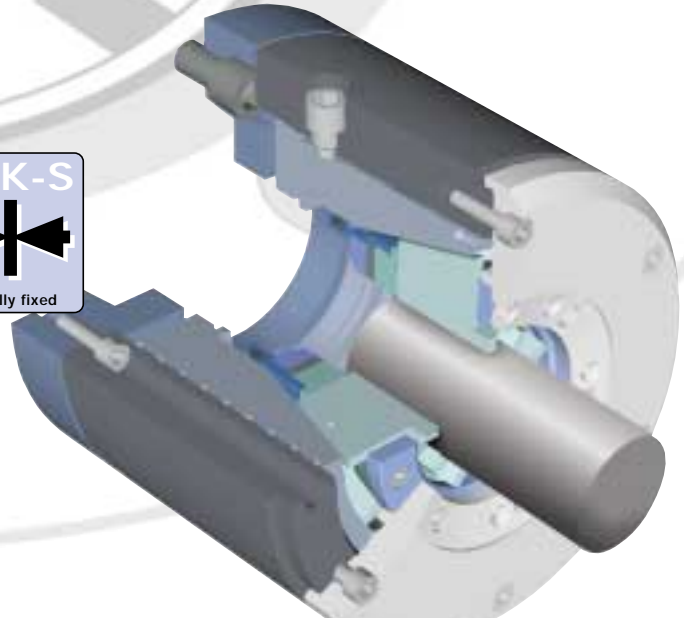
**Pre-tensioning pin**  
to work-in the clamping surfaces

# Multi-blade LZK-S chucks for ex and push-operation without pull

## • For fixed axial positions

For equipping counter-spindles, refer to page 11.

The chuck should be selected in accordance with the required size (dimension A) and the necessary collet clamping range. Loosening the cover plate allows the collets to be quickly and easily replaced.



## Multi-blade collet chucks

LZK-AS			LZK-BS			LZK-US		
A		92.0	A		140.0	A		190.0
B		25.0	B		42.5	B		66.0
C		80.0	C		119.0	C		145.0
C1		47.0	C1		70.5	C1		85.0
E J6		60.0	E J6		100.0	E J6		140.0
F		5.0	F		6.0	F		6.0
G		76.0	G		118.0	G		164.0
H	6xM6		H	6xM8		H	6xM8	
J		6.0	J		11.0	J		15.0
K-lift		8.8	K-lift		13.5	K-lift		19.0
L	M32 x 1		L	M50 x 1.5		L	M80 x 1.5	
M		38.0	M		64.8	M		89.8
N		32.2	N		48.0	N		70.0
O		5.7	O		10.0	O		10.0
P		16.0	P		26.0	P		45.0
R		3.5	R		6.0	R		8.0
R1		7.5	R1		11.5	R1		14.0
R2		5.0	R2		5.8	R2		6.0
S	M32 x 1.5		S	M50 x 1.5		S	M72 x 1.5	
S1	M8		S1	M12		S1	M12	
T		8.0	T		12.0	T		15.0
Actuation	(daN) max.	2,000	Actuation	(daN) max.	3,500	Actuation	(daN) max.	4,000
N max	(r.p.m.)	6,300	N max	(r.p.m.)	6,300	N max	(r.p.m.)	6,000
TP2	(kpm <sup>2</sup> )	0.016	TP2	(kpm <sup>2</sup> )	0.129	TP2	(kpm <sup>2</sup> )	0.458
Weight	(Kg)	3.5	Weight	(Kg)	9.2	Weight	(Kg)	23.0
Clamping force	(daN)	4,000	Clamping force	(daN)	7,000	Clamping force	(daN)	8,000

## Multi-blade collets/clamping range

Smooth clamping surfaced, serrated version (Z) upon request.

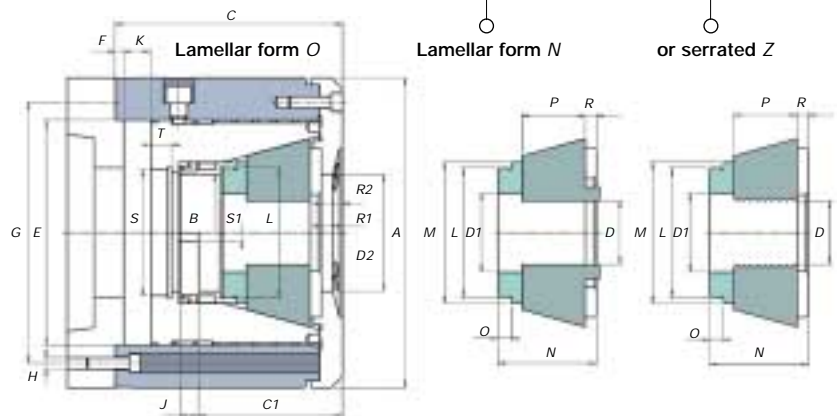
For LZK-AS						For LZK-BS						For LZK-US					
Size	mm	ØD1	ØD2	1*	2*	Size	mm	ØD1	ØD2	1*	2*	Size	mm	ØD1	ØD2	1*	2*
ASN I	1.5-6.0	10.0	25.0	N	6	BSN 0	2.5-9.0	22.0	42.5	N	8	USN 0	4.0-13.0	20.0	66.0	N	6
ASN II	6.0-10.5	16.0	16.0	N	8	BSN I	6.0-12.5	22.0	42.5	N	8	USN I	9.0-18.0	20.0	66.0	N	6
ASN III	10.5-15.0	16.0	16.0	N	8	BSN II	12.5-19.0	22.0	42.5	N	8	USN II	18.0-27.0	28.0	66.0	N	6
ASN IV	15.0-19.5	25.0	25.0	O	12	BSN III	19.0-25.5	28.0	42.5	N	8	USN III	27.0-36.0	37.0	66.0	N	6
ASN V	19.5-24.0	25.0	25.0	O	12	BSN IV	25.5-32.0	34.0	42.5	N	8	USN IV	36.0-45.0	46.0	66.0	N	12
						BSN V	32.0-38.5	40.0	42.5	N	8	USN V	45.0-54.0	55.0	66.0	N	12
						BS VI	35.5-42.0	42.5	42.5	O	8	USN VI	54.0-63.0	64.0	66.0	N	12
												US VII	56.0-65.0			O	

**Legend:** 1\* Lamellar shape, 2\* Number of lamellae; **How to order:** FORKARDT chuck LZK-AS/lamellar collet ASN II

# Internal clamping -back action.



• **Exchangeable multi-blade collets**



## Multi-blade collet chuck

LZK-CS		LZK-DS		LZK-ES	
A	220.0	A	250.0	A	330.0
B	83.0	B	104.0	B	164.0
C	160.0	C	184.0	C	210.0
C1	101.8	C1	117.5	C1	131.0
E J6	160.0	E J6	190.0	E J6	275.0
F	6.0	F	6.0	F	6.0
G	185.0	G	220.0	G	300.0
H	6 x M8	H	6 x M10	H	6 x M12
J	13.0	J	13.0	J	12.0
K-lift	19.0	K-lift	21.0	K-lift	32.0
L	M 92 x 1.5	L	M 115 x 1.5	L	Ø 174 g6
M	100.0	M	130.0	M	202.0
N	69.8	N	80.0	N	87.0
O	10.0	O	15.0	O	6.0
P	45.0	P	48.0	P	55.0
R	7.8	R	10.0	R	16.0
R1	15.0	R1	16.5	R1	19.0
R2	8.0	R2	8.7	R2	10.0
S	M 92 x 1.5	S	M 115 x 1.5	S	M 120 x 1.5
S1	M 12	S1	M 16	S1	M 16
T	15.0	T	15.0	T	20.0
Actuation (daN) max.	5,000	Actuation (daN) max.	6,000	Actuation (daN) max.	7,000
n max (r.p.m.)	4,500	n max (r.p.m.)	4,000	n max (r.p.m.)	3,500
TP2 (kpm <sup>2</sup> )	1.05	TP2 (kpm <sup>2</sup> )	1.82	TP2 (kpm <sup>2</sup> )	6,305
Weight (Kg)	37.0	Weight (Kg)	49	Weight (Kg)	78
Clamping force (daN)	10,000	Clamping force (daN)	12,000	Clamping force (daN)	14,000

## Multi-blade collet/clamping range

Smooth clamping surfaces. Serrated (Z) or nosed (N) version upon request.

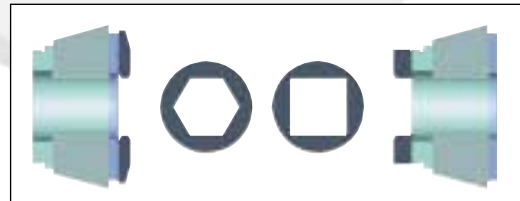
For LZK-CS						For LZK-DS						For LZK-ES					
Size	mm	ØD1	ØD2	1*	2*	Size	mm	ØD1	ØD2	1*	2*	Size	mm	ØD1	ØD2	1*	2*
CS 0	4.0-13.0	20.0	83.0	O	6	DS 0	28.0-37.0	57.0	104.0	O	12	ES 0	27.0-42.0				(special)
CS I	10.0-19.0	20.0	83.0	O	6	DS I	37.0-46.0	57.0	104.0	O	12	ES I	42.0-57.0	59.0	164.0	O	12
CS II	19.0-28.0	29.0	83.0	O	6	DS II	46.0-55.0	57.0	104.0	O	12	ES II	57.0-72.0	74.0	164.0	O	12
CS III	28.0-37.0	38.0	83.0	O	6	DS III	55.0-64.0	66.0	104.0	O	12	ES III	72.0-87.0	89.0	164.0	O	12
CS IV	37.0-46.0	47.0	83.0	O	12	DS IV	64.0-73.0	75.0	104.0	O	18	ES IV	87.0-102.0	104.0	164.0	O	12
CS V	46.0-55.0	56.0	83.0	O	12	DS V	73.0-82.0	84.0	104.0	O	18	ES V	102.0-117.0	119.0	164.0	O	12
CS VI	55.0-64.0	65.0	83.0	O	16	DS VI	82.0-92.0	94.0	104.0	O	18	ES VI	117.0-132.0	134.0	164.0	O	12
CS VII	64.0-73.0	74.0	83.0	O	16	DS VII	92.0-102.0	104.0	104.0	O	18	ES VII	132.0-147.0	149.0	164.0	O	12
CS VIII	73.0-82.0	83.0	83.0	O	16	DS VIII	95.0-105.0		(special)			ES VIII	147.0-162.0	164.0	164.0	O	12

**Legend:** 1\* Blade shape, 2\* Number of blades; **How to order:** FORKARDT chuck LZK-CS/Multi-blades collet CS V

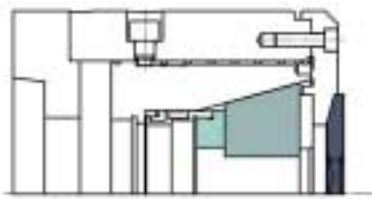
# Inserts for multi-blade LZK-S collets.

## Serrated/hex/square

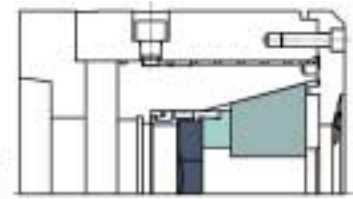
Multi-blade collets of special design for sectional bars.



*V shaped bar guide fed from the front*



*H shaped bar guide fed from the rear*



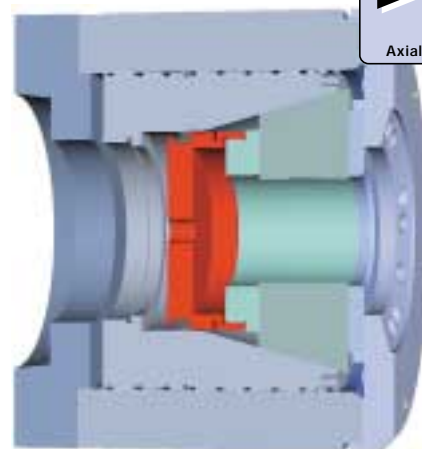
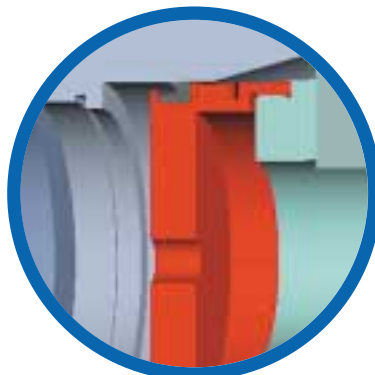
## Versions

Type	Design	Size I	Size II	Size III	Size IV	Size V	Size VI	Size VII	Size VIII
BS	Z = serrated	6 - 12.5	12.5 - 19	19 - 25.5	25.5 - 32	32 - 38.5	35.5 - 42		
	SW - hexagonal	6 - 12.5	12.5 - 19	19 - 25.5	25.5 - 32				
	SW - square	6 - 12.5	12.5 - 19	19 - 25.5					
US	Z = serrated	9 - 18	18 - 27	27 - 36	36 - 45	45 - 54	54 - 63		
	SW - hexagonal	9 - 18	18 - 27	27 - 36	36 - 45	45 - 54			
	SW - square	9 - 18	18 - 27	27 - 36	36 - 45				
CS	Z = serrated	10 - 19	19 - 28	28 - 37	37 - 46	46 - 55	55 - 64	64 - 73	73 - 82
	SW - hexagonal	10 - 19	19 - 28	28 - 37	37 - 46	46 - 55	55 - 64	64 - 68	
	SW - square	10 - 19	19 - 28	28 - 37	37 - 46	46 - 55			
DS	Z = serrated	37 - 46	46 - 55	55 - 64	64 - 73	73 - 82	82 - 92	92 - 102	
	SW - hexagonal	37 - 46	46 - 55	55 - 64	64 - 73				
	SW - square	37 - 46	46 - 55	55 - 64					

*How to order: FORKARDT chuck LZK-CS, Multi-blade collet square-CS III, bar guide V*

## Accessories

**Stop unit**  
Optional stop unit with simple length adjustment



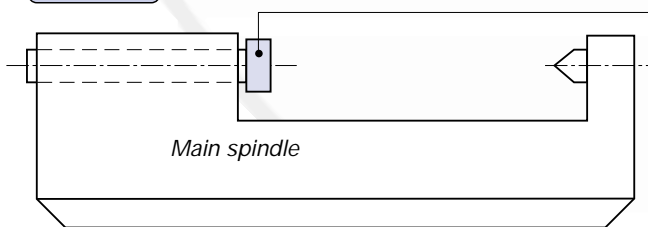
# A few other possibilities offered by the FORKARDT LZK range of clamping products.

## Practical clamping system combinations

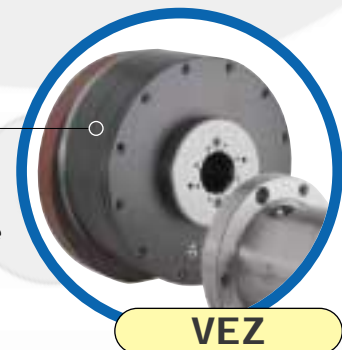
for single-spindle and multi-spindle lathes with LZK and LZK-S.



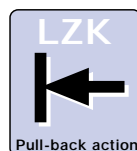
Single-spindle lathe



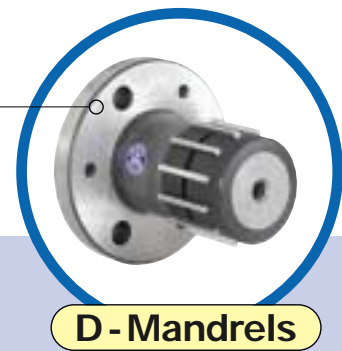
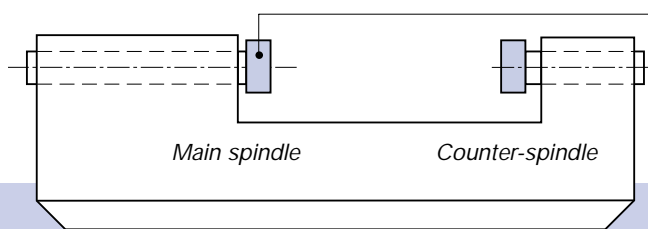
Numerous other multi-blade clamping systems can be offered for special applications:



Front end multi-blade chuck



Double-spindle lathe



Multi-blade mandrels

- Automatic or manual loading
- Handling of bar stock material
- Machining of individual parts (pulled to stop)
- Machining of individual parts (with transfer to counter-spindle)

Extension components, such as spindle flanges, pulling tubes, adapters and clamping cylinders are all readily available from FORKARDT, ready for installation.

• Workholding and toolholding solutions are our business



• For more information, visit our website at:

[www.forkardt.com](http://www.forkardt.com)

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