bilz

3D Synchro

Synchro tapping chuck
Tapping and thread forming

M0,5 to M42

RENEWABLE ENERGIES

GENERAL MECHANICAL ENGINEERING

AUTOMOTIVE

ELECTRONICS

OPTICS

FINE MECHANICS

TOOLMAKING

3D Synchro

Features

- Minimum length compensation in tension and compression direction
- Ball bearing (i.e. torque-independent) suspension
- Suitable for internal coolant supply up to 80 bar
- Suitable for taps and thread formers
- Suitable for right-hand and left-hand threads
- Optimised spring/damper technology (± 0.5mm) 3D Synchro
- Fully encapsulated functional space (washable up to 80°C)
- Optimised seal (comparable to IP68)
- 100% SCK compatible

Advantages

- Drastically reduced pressure on machined thread flanks.
- Compensation of synchronisation errors
- ncreased process stability
- Extended tool life of the Tap or Former
- Better thread quality

Tool presetting possible from both sides via axial adjustment screw
(screw is not included in the scope of delivery)

Our
Spring-damper technology
reduces loads for tapping
and thread forming

3D Synchro

Direction of pull
Compensate the synchronization errors (Out-feed)

3D Synchro

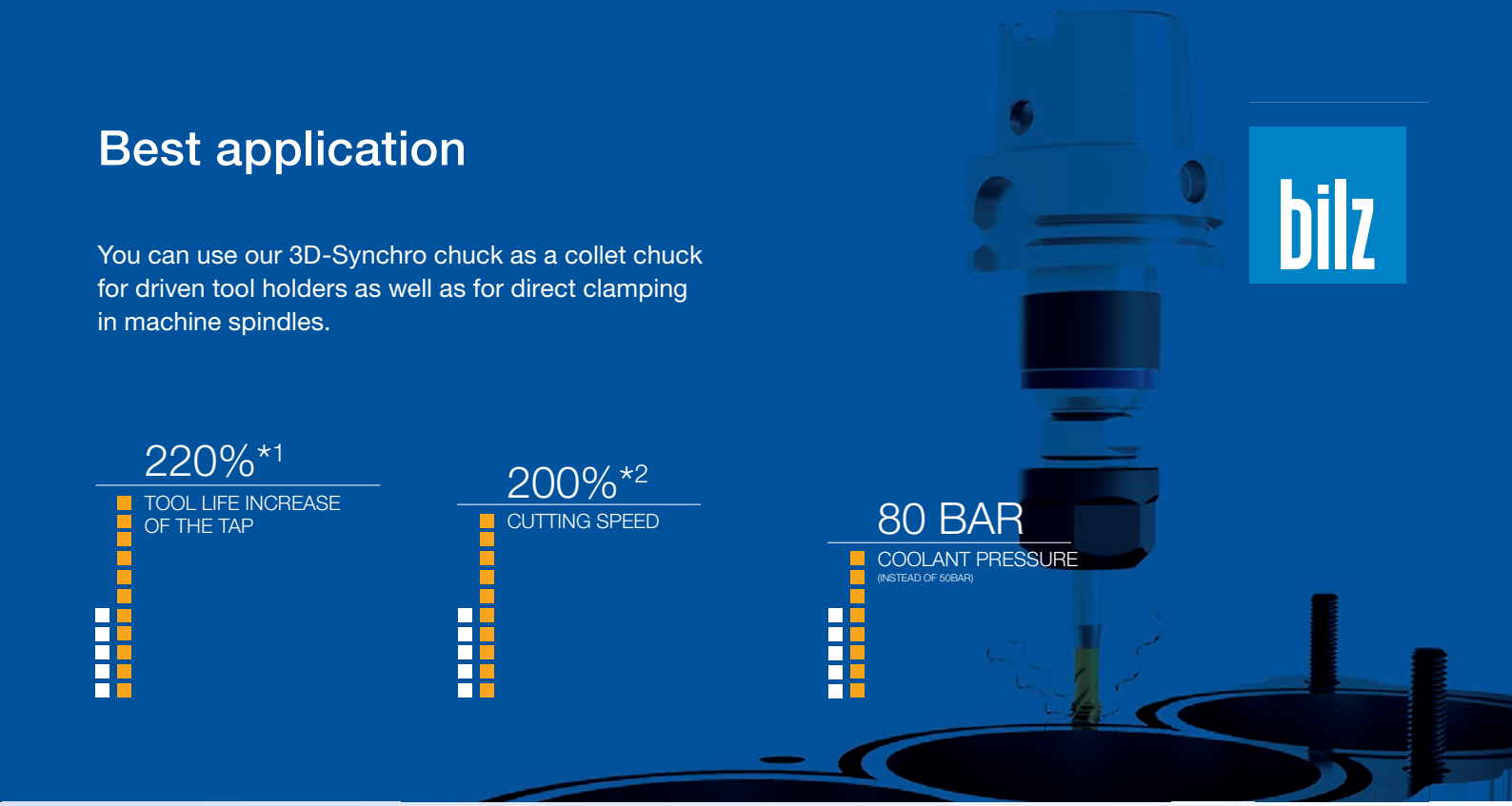
Direction of rotation
Damping during chip breaking

3D Synchro

Compression dampening
Compensates synchronisation errors (In-feed)

Best application

You can use our 3D-Synchro chuck as a collet chuck for driven tool holders as well as for direct clamping in machine spindles.



220%*1
TOOL LIFE INCREASE OF THE TAP

200%*2
CUTTING SPEED

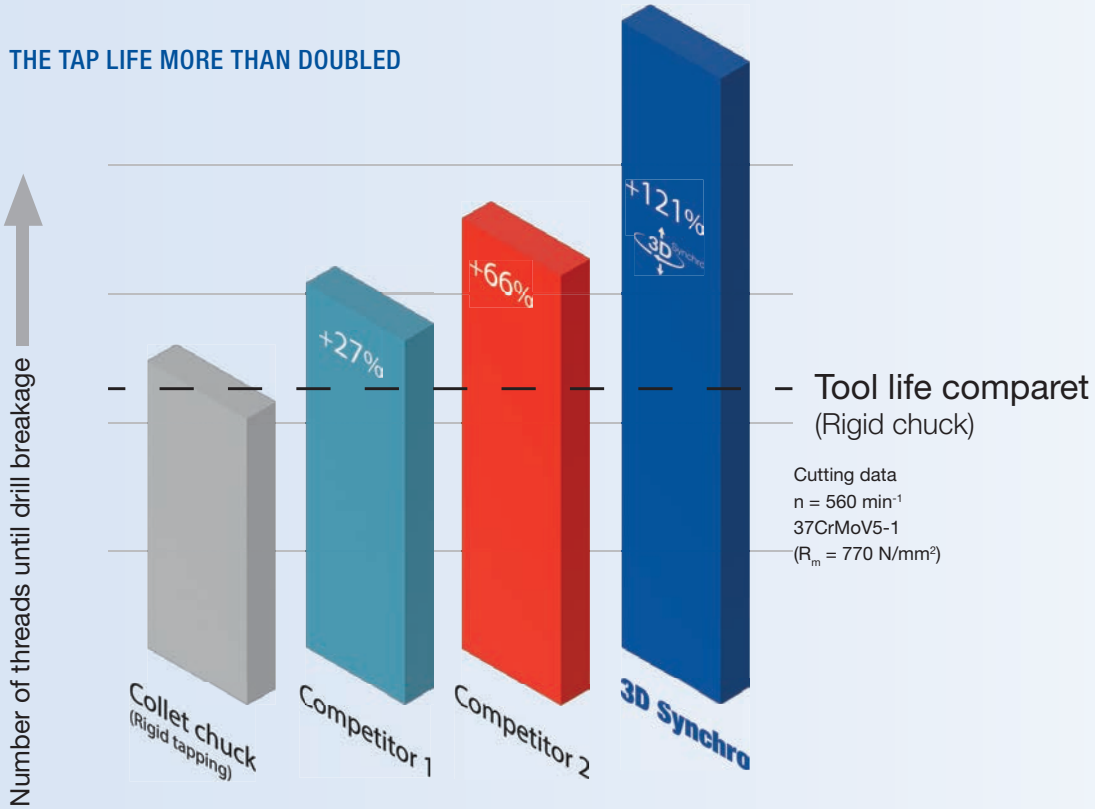
80 BAR
COOLANT PRESSURE
(INSTEAD OF 50BAR)

HIGHER PROCESS STABILITY BETTER THREAD QUALITY LONGER SERVICE LIFE

The latest generation S3D- Synchro chuck has been adapted to the current market requirements. Tool presetting is possible from the machine side and the tool side, the lubricant feed-through has been optimized, thus ensuring a leakage-free transfer to the tap.

The length compensation on tension and compression (e.g. +/- 0.5 mm), as well as the damping in the direction of rotation compensate for the smallest synchronization errors and position deviations. This reduces the pressure on the thread flanks of the tool and minimizes the required.

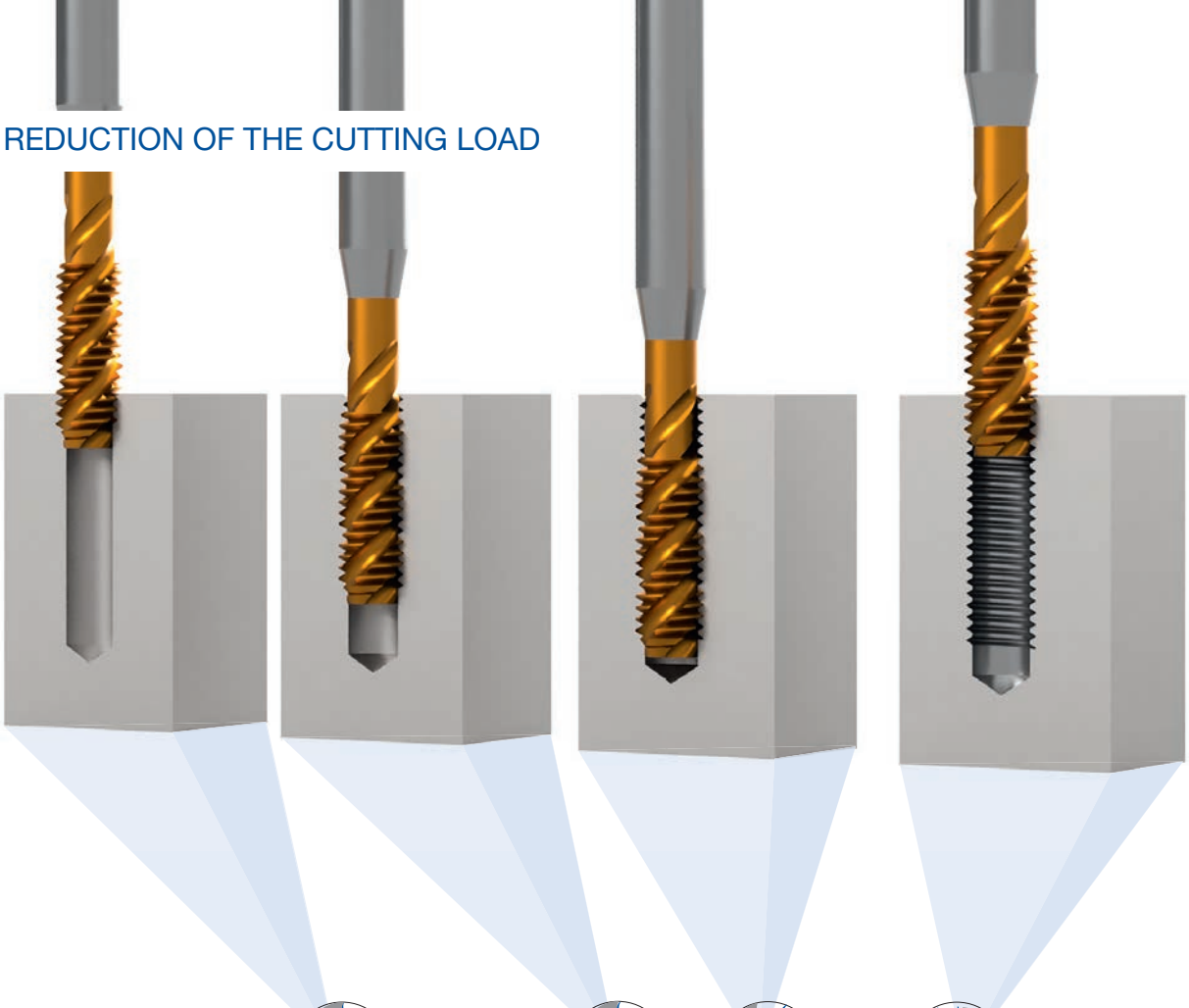
THE TAP LIFE MORE THAN DOUBLED

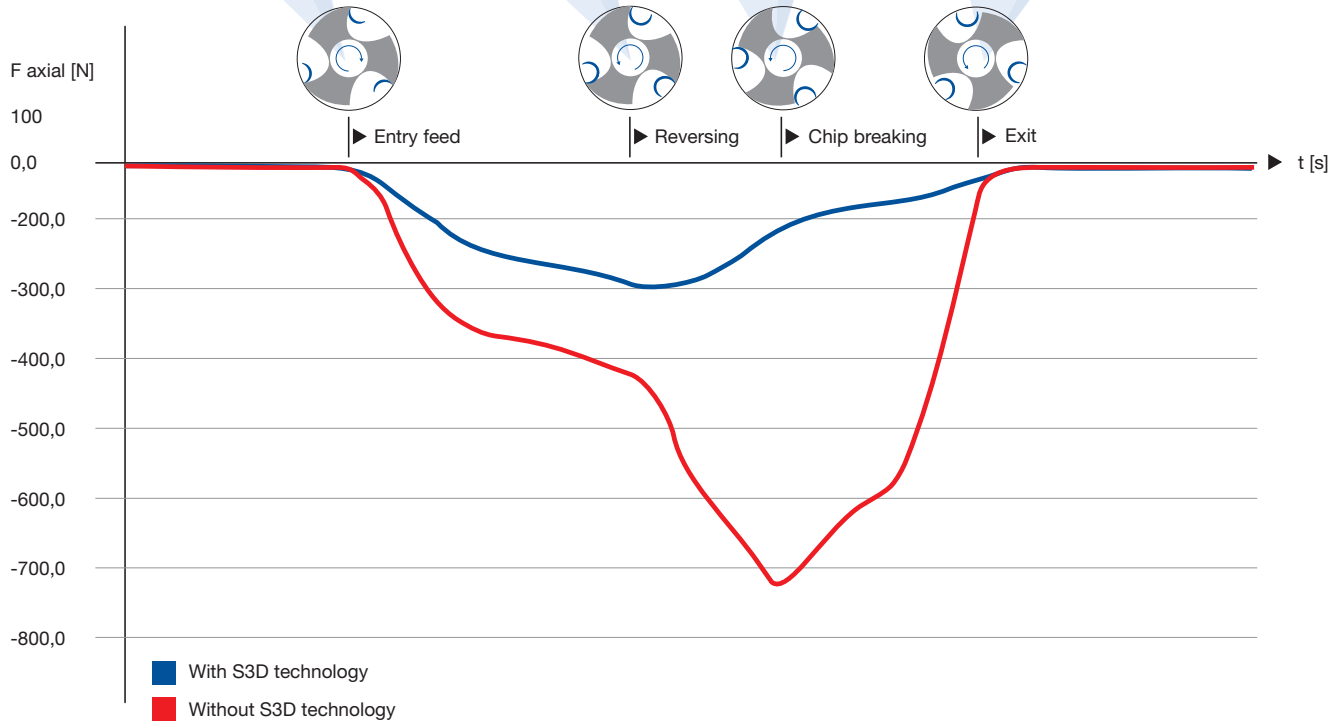


*1 220% tool life of M8 tap in endurance test at n= 560 min-1 in X37CrMoV5-1 (Rm= 770 N/mm2) with the S3D Synchro chuck compared to 100% tool life with a standard collet holder.

*2 200% cutting speed = 25 m/min with M10 tap in grey cast iron GG20 (Rm > 200 N/mm2) with the S3D Synchro chuck compared to 100% = 12.5 25 m/min with a standard collet holder while maintaining thread quality and tolerance. With the standard collet chuck, the cutting speed could not be Increased because the thread forms would no longer be in tolerance.

REDUCTION OF THE CUTTING LOAD





3D Synchro

The elastomers used are design stable and resistant to all coolants/lubricants. Due to the defined length compensation, plastic deformation of the damping elements is excluded.

This results in consistent cutting behavior over the entire life of the tool.

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nano	M0,5-M4,0	Weldon	IC	DIN1835B+E	22
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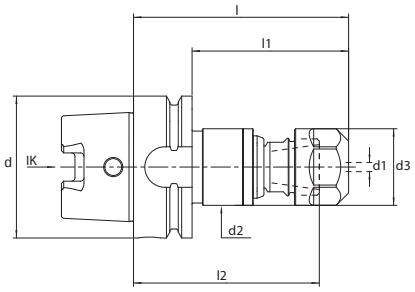
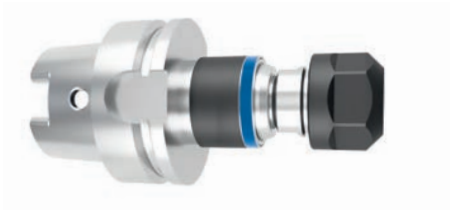
THREAD RANGES AND CHUCK SIZES

Which areas can we cover?

Synchro Chuck	Ideal Thread range	Clamping Ø	Thread range permissible
S3D0...ER11	M0,5 - M4	Ø 1 - 5	M0,5 - M4
S3D1...ER20	M4 - M12	Ø 4,5 - 12	M4 - M12
S3D2...ER32	M8 - M20	Ø 4,5 - 18	M4 - M20
SCK3...ER40	M14 - M30	Ø 10 - 22	M4 - M30
SCK4...ER50	M30 - M42	Ø 22 - 32	M4 - M42

S3D – Synchro Chuck for M4-M12



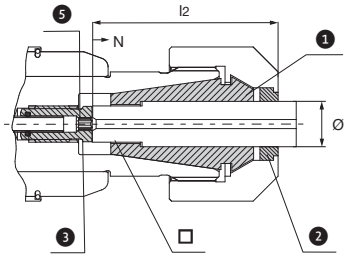


S3D1-ER20-K1-HSKA

d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M4-M12	S3D1-ER20-95,5-K1-HSKA63	+/-0,5	63	34	34	95,5	69,5	82,5
	5181691							
M4-M12	S3D1-ER20-160-K1-HSKA63	+/-0,5	63	34	34	160	134	147
	5185749							
M4-M12	S3D1-ER20-102-K1-HSKA100	+/-0,5	100	34	34	102	73	89
	5185751							

Coolant tube, transfer unit and key are not included in the scope of delivery

ER/ESX20 – Clamping units



1 Collet
2 Sealing disc
3 Screw

N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

Accessories:

Allen key / length adjustment

Designation	Id. Nr.
SCK-2,5-90, (l < 104mm)	5012199
SCK-2,5-180, (l > 104mm)	9172118

Coolant pipe / transfer unit

Designation	Id. Nr.
UE4/HSK63	5025376
UE4/HSK100	5028428

Mounting key

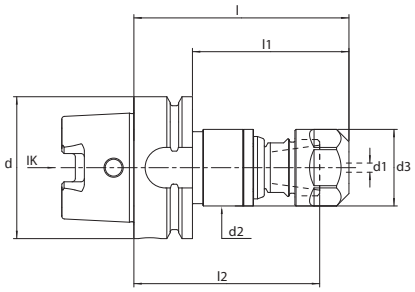
Designation	Id. Nr.
HSK63	6738421
HSK100	6738303

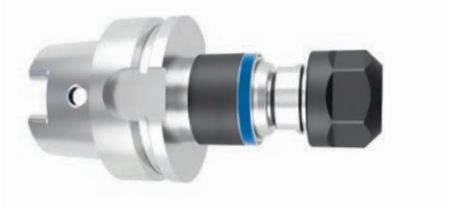
ER/ESX..GB auf DIN6499B / ISO15488B / 428E

Clamping unit– ER Version C (consisting of collet, sealing disc, adjusting screw)

Ø x □	Designation/Id. Nr.	S3D.../ ER...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
4,5 x 3,4	SPE4,5x3,4C-ESX20	ER20/ ESX20	M4	M6		29	3	2,5
	5013770							
5,0 x 4,0	SPE5x4C-ESX20				M5	30		
	5013774							
6,0 x 4,9	SPE6x4,9C-ESX20		M5, M6	M8		31		
	5012479							
6,3 x 5,0	SPE6,3x5C-ESX20				M6 M8			
	5073202							
7,0 x 5,5	SPE7x5,5C-ESX20		M7	M9, M10				
	5208940							
7,1 x 5,6	SPE7,1x5,6C-ESX20				M9			
	5073203							
8,0 x 6,2/6,3	SPE8x6,2/6,3C-ESX20		M8	M11	M8 M10	36		
	5012481							
9,0 x 7,0/7,1	SPE9x7/7,1C-ESX20		M9	M12	M12	37		
	5012482							
10,0 x 8,0	SPE10x8C-ESX20		M10		M10	41		
	5012483							
11,0 x 9,0	SPE11x9C-ESX20			M14		42		
	5013775							
11,2 x 9,0	SPE11,2x9C-ESX20				M14			
	5035343							
12 x 9,0	SPE12X9C-ESX20		M12					
	5198365							

S3D – Synchro Chuck for M8-M20



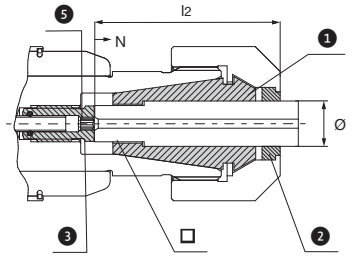


S3D2-ER32-K1-HSKA

d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M8-M20	S3D2-ER32-109-K1-HSKA63	+/-0,5	63	50	50	109	83	94,5
	5190093							
M8-M20	S3D2-ER32-115,5-K1-HSKA100	+/-0,5	100	50	50	115,5	86,5	101
	5190624							

Coolant tube, transfer unit and key are not included in the scope of delivery

ER/ESX20 – Clamping units



1 Collet
2 Sealing disc
3 Screw

N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

Accessories:

Allen key / length adjustment

Designation	Id. Nr.
SCK-3-90, (l < 104mm)	5012201
SCK-3-180, (l > 104mm)	9172126

Coolant pipe / transfer unit

Designation	Id. Nr.
UE4/HSK63	5025376
UE4/HSK100	5028428

Mounting key

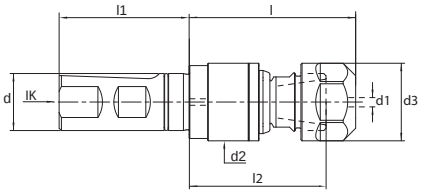
Designation	Id. Nr.
HSK63	6738421
HSK100	6738303

ER/ESX..GB auf DIN6499B / ISO15488B / 470E

Clamping unit– ER Version C (consisting of collet, sealing disc, adjusting screw)

Ø x □	Designation/Id. Nr.	S3D.../ ER...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
6,0 x 4,9	SPE6x4,9C-ESX32	ER32/ ESX32	M5, M6	M8		31	3	3
	5013821							
6,3 x 5,0	SPE6,3x5C-ESX32							
	5073204							
7,0 x 5,5	SPE7x5,5C-ESX32		M7	M9, M10				
	5013822							
7,1 x 5,6	SPE7,1x5,6C-ESX32							
	5073205							
8,0 x 6,2/6,3	SPE8x6,2/6,3C-ESX32		M8	M11	M8 M10	36		
	5013823							
9,0 x 7,0/7,1	SPE9x7/7,1C-ESX32		M9	M12	M12	37		
	5012485							
10,0 x 8,0	SPE10x8C-ESX32		M10		M10	41		
	5012486							
11,0 x 9,0	SPE11x9C-ESX32			M14		42		
	5012487							
11,2 x 9,0	SPE11,2x9C-ESX32				M14			
	5073206							
12,0 x 9,0	SPE12x9C-ESX32		M12	M16				
	5012488							
12,5x10	SPE12,5x10C-ESX32				M16			
	5035344							
14,0 x 11,0/11,2	SPE14x11/11,2C-ESX32			M18	M18	44		
	5012489							
16,0 x 12,0/12,5	SPE16x12/12,5C-ESX32			M20	M22	45		
	5012490							
18,0 x 14,5	SPE18x14,5C-ESX32			M22, M24		47		
	5013787							

S3D – Synchro Chuck for M4-M12



S3D1-ER20-K1-W DIN1835B+E

d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M4-M12	S3D1-ER20-73-K1-W20	+/-0,5	20	34	34	73		60
	5185755							
M4-M12	S3D1-ER20-73-K1-W25	+/-0,5	25	34	34	73		60
	5181694							

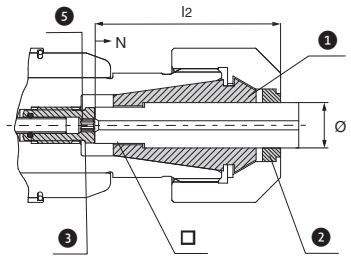
Allen key is not included in delivery

Accessories:

Allen key / length adjustment

Designation	Id. Nr.
SCK-2,5-90, (l < 104mm)	5012199
SCK-2,5-180, (l > 104mm)	9172118

ER/ESX20 – Clamping units



1 Collet
2 Sealing disc
3 Screw

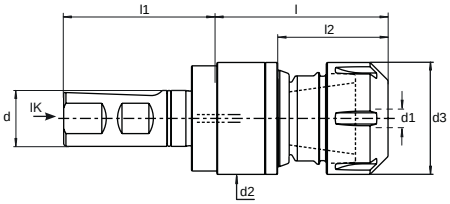
N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

ER/ESX..GB auf DIN6499B / ISO15488B / 428E

Clamping unit– ER Version C (consisting of collet, sealing disc, adjusting screw)

Ø x □	Designation/Id. Nr.	S3D.../ ER...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
4,5 x 3,4	SPE4,5x3,4C-ESX20	ER20/ ESX20	M4	M6		29		2,5
	5013770							
5,0 x 4,0	SPE5x4C-ESX20				M5	30	3	
	5013774							
6,0 x 4,9	SPE6x4,9C-ESX20		M5, M6	M8		31		
	5012479							
6,3 x 5,0	SPE6,3x5C-ESX20				M6 M8			
	5073202							
7,0 x 5,5	SPE7x5,5C-ESX20		M7	M9, M10				
	5208940							
7,1 x 5,6	SPE7,1x5,6C-ESX20				M9			
	5073203							
8,0 x 6,2/6,3	SPE8x6,2/6,3C-ESX20		M8	M11	M8 M10	36		
	5012481							
9,0 x 7,0/7,1	SPE9x7/7,1C-ESX20		M9	M12	M12	37		
	5012482							
10,0 x 8,0	SPE10x8C-ESX20		M10		M10	41		
	5012483							
11,0 x 9,0	SPE11x9C-ESX20			M14		42		
	5013775							
11,2 x 9,0	SPE11,2x9C-ESX20				M14			
	5035343							
12,0 x 9,0	SPE12X9C-ESX20		M12					
	5198365							

S3D – Synchro Chuck for M8-M20



S3D2-ER32-K1-W DIN1835B+E

d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M8-M20	S3D2-ER32-87,5-K1-W25	+/-0,5	25	50	50	87,5		73
	5190629							

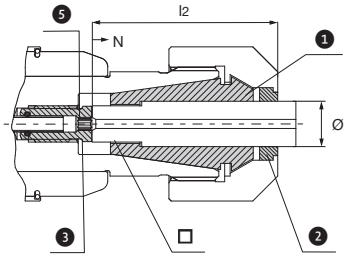
Allen key is not included in delivery

Accessories:

Allen key / length adjustment

Designation	Id. Nr.
SCK-3-90, (l < 104mm)	5012201
SCK-3-180, (l > 104mm)	9172126

ER/ESX32 – Clamping units



1 Collet
2 Sealing disc
3 Screw

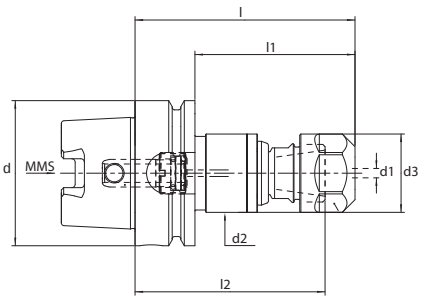
N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

ER/ESX..GB auf DIN6499B / ISO15488B / 428E

Clamping unit– ER Version C (consisting of collet, sealing disc, adjusting screw)

Ø x □	Designation/Id. Nr. Designation/Id. No.	S3D.../ ER...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
6,0 x 4,9	SPE6x4,9C-ESX32 5013821	ER32/ ESX32	M5, M6	M8		31	3	3
6,3 x 5,0	SPE6,3x5C-ESX32 5073204							
7,0 x 5,5	SPE7x5,5C-ESX32 5013822		M7	M9, M10				
7,1 x 5,6	SPE7,1x5,6C-ESX32 5073205							
8,0 x 6,2/6,3	SPE8x6,2/6,3C-ESX32 5013823		M8	M11	M8 M10	36		
9,0 x 7,0/7,1	SPE9x7/7,1C-ESX32 5012485		M9	M12	M12	37		
10,0 x 8,0	SPE10x8C-ESX32 5012486		M10		M10	41		
11,0 x 9,0	SPE11x9C-ESX32 5012487			M14		42		
11,2 x 9,0	SPE11,2x9C-ESX32 5073206				M14			
12,0 x 9,0	SPE12x9C-ESX32 5012488		M12	M16				
12,5x10	SPE12,5x10C-ESX32 5035344				M16			
14,0 x 11,0/11,2	SPE14x11/11,2C-ESX32 5012489			M18	M18	44		
16,0 x 12,0/12,5	SPE16x12/12,5C-ESX32 5012490			M20	M22	45		
18,0 x 14,5	SPE18x14,5C-ESX32 5013787			M22, M24		47		

S3D – Synchro Chuck for M4-M12 MQL-1 Channel Version



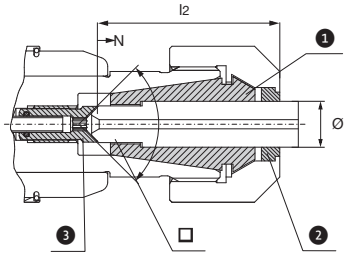
S3D1-ER20-M1-HSKA								
d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M4-M12	S3D1-ER20-95,5-M1-HSKA63	+/-0,5	63	34	34	95,5	69,5	82,5
	5181692							
M4-M12	S3D1-ER20-160-M1-HSKA63	+/-0,5	63	34	34	160	134	147
	5185771							
M4-M12								
	S3D1-ER20-102-M1-HSKA100	+/-0,5	100	34	34	102	73	89
	5194488							

MQL transfer unit included
Allen key is not included in delivery

Accessories:

Allen key / length adjustment	
Designation	Id. Nr.
SCK-2,5-90, (l < 104mm)	5012199
SCK-2,5-180, (l > 104mm)	9172118

ER/ESX20 – Clamping units MQL Ausführung

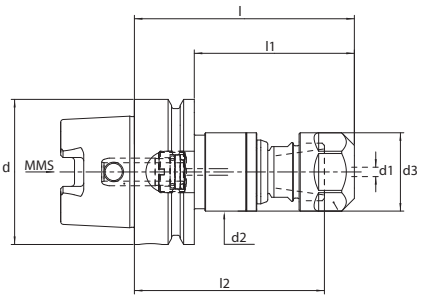


1 Collet
2 Sealing disc
3 Screw

N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

ER/ESX..GB auf DIN6499B / ISO15488B / 428E								
Clamping unit– ER Version B (consisting of collet, sealing disc, adjusting screw)								
Ø x □	Designation/Id. Nr.	S3D.../ ER...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
4,5 x 3,4	SPE4,5x3,4B-ESX20 5047586	ER20/ ESX20	M4	M6		29	2	2,5
5,0 x 4,0	SPE5x4B-ESX20 5047587				M5	30		
6,0 x 4,9	SPE6x4,9B-ESX20 5011485		M5, M6	M8		31	3	
7,0 x 5,5	SPE7x5,5B-ESX20 5011486		M7	M9, M10		31		
8,0 x 6,2/6,3	SPE8x6,2/6,3B-ESX20 5011487		M8	M11	M8, M10	36	3	
9,0 x 7,0/7,1	SPE9x7/7,1B-ESX20 5011488		M9	M12	M12	37		
10,0 x 8,0	SPE10x8B-ESX20 5011489		M10		M10	41		
11,0 x 9,0	SPE11x9B-ESX20 5045461			M14		42		
12,0 x 9,0	SPE12x9B-ESX20 517747		M12					

S3D – Synchro Chuck for M8-M20 MQL-1 Channel Version



S3D2-ER32-M1-HSKA

d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M8-M20	S3D2-ER32-109-M1-HSKA63	+/-0,5	63	50	50	109	83	94,5
	5189297							
M8-M20	S3D2-ER32-115,5-M1-HSKA100	+/-0,5	100	50	50	115,5	86,5	101
	5190128							

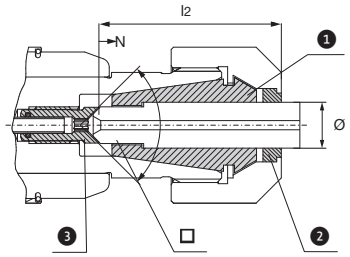
MQL transfer unit included
Allen key is not included in delivery

Accessories:

Allen key / length adjustment

Designation	Id. Nr.
SCK-3-90, (l < 104mm)	5012201
SCK-3-180, (l > 104mm)	9172126

ER/ESX32 – Clamping units MQL Ausführung



1 Collet
2 Sealing disc
3 Screw

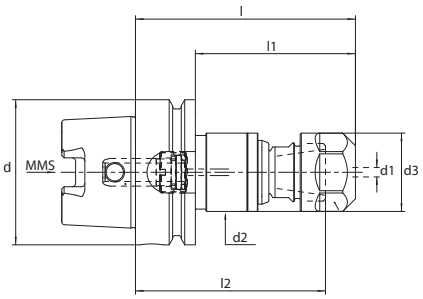
N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

ER/ESX..GB auf DIN6499B / ISO15488B / 470E

Clamping unit– ER Version B (consisting of collet, sealing disc, adjusting screw)

Ø x □	Designation/Id. Nr.	S3D.../ ER...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
8,ü x 6,2	SPE8x6,2, B/ESX32 5113650	ER32/ ESX32	M8	M11	M8, M10	36	3	3
9,0 x 7,0/7,1	SPE9x7/7,1B-ESX32 5012108		M9	M12	M12	37		
10,0 x 8,0	SPE10x8B-ESX32 5012109		M10		M10	41		
11,0 x 9,0	SPE11x9B-ESX32 5012110			M14		42		
12,0 x 9,0	SPE12x9B-ESX32 5012111		M12	M16				
14,0 x 11,0	SPE14x11B-ESX32 5012112			M18	M18	44		
16,0 x 12,0/12,5	SPE16x12,5B-ESX32 5012113			M20	M22	45		

S3D – Synchro Chuck for M4-M12 MQL-2 Channel Version



S3D1-ER20-M2-HSKA

d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M4-M12	S3D1-ER20-95,5-M2-HSKA63	+/-0,5	63	34	34	95,5	69,5	82,5
	5181693							
M4-M12	S3D1-ER20-160-M2-HSKA63	+/-0,5	63	34	34	160	134	147
	5185773							
M4-M12	S3D1-ER20-102-M2-HSKA100	+/-0,5	100	34	34	102	73	89
	5185772							

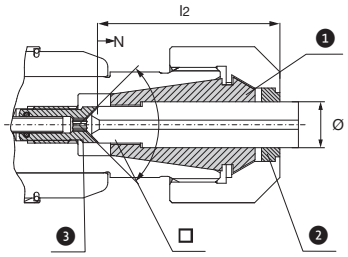
MQL transfer unit included
Allen key is not included in delivery

Accessories:

Allen key / length adjustment

Designation	Id. Nr.
SCK-2,5-90, (l < 104mm)	5012199
SCK-2,5-180, (l > 104mm)	9172118

ER/ESX20 – Clamping units MQL Ausführung



1 Collet
2 Sealing disc
3 Screw

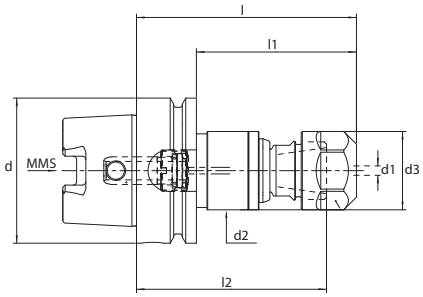
N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

ER/ESX..GB auf DIN6499B / ISO15488B / 428E

Spanneinheit – ER Ausführung B (bestehend aus Collet chuck, Sealing disc, Screw)

Ø x □	Designation/Id. Nr.	S3D.../ ER...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
4,5 x 3,4	SPE4,5x3,4B-ESX20 5047586	ER20/ ESX20	M4	M6,		29	2	2,5
5,0 x 4,0	SPE5x4B-ESX20 5047587				M5	30		
6,0 x 4,9	SPE6x4,9B-ESX20 5011485		M5, M6	M8		31	3	
7,0 x 5,5	SPE7x5,5B-ESX20 5011486		M7	M9, M10		31		
8,0 x 6,2/6,3	SPE8x6,2/6,3B-ESX20 5011487		M8	M11	M8, M10	36	3	
9,0 x 7,0/7,1	SPE9x7/7,1B-ESX20 5011488		M9	M12	M12	37		
10,0 x 8,0	SPE10x8B-ESX20 5011489		M10		M10	41		
11,0 x 9,0	SPE11x9B-ESX20 5045461			M14		42		
12x9,0	SPE12x9B-ESX20 517747		M12					

S3D – Synchro Chuck for M8-M20 MQL-2 Channel Version



S3D2-ER32-M2-HSKA

d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M8-M20	S3D2-ER32-109-M2-HSKA63	+/-0,5	63	50	50	109	83	94,5
	5190631							
M8-M20	S3D2-ER32-115,5-M2-HSKA100	+/-0,5	100	50	50	115,5	86,5	101
	5194491							

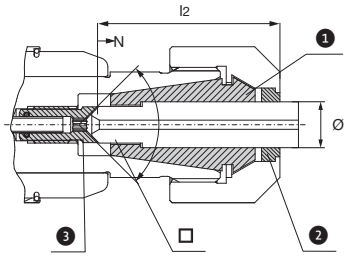
MQL transfer unit included
Allen key is not included in delivery

Accessories:

Allen key / length adjustment

Designation	Id. Nr.
SCK-3-90, (l < 104mm)	5012201
SCK-3-180, (l > 104mm)	9172126

ER/ESX32 – Clamping units MQL Ausführung



1 Collet
2 Sealing disc
3 Screw

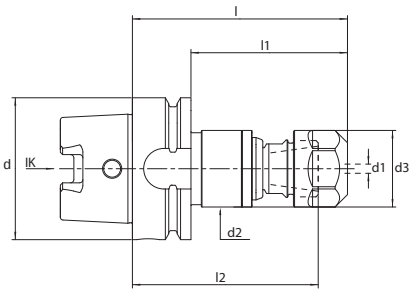
N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

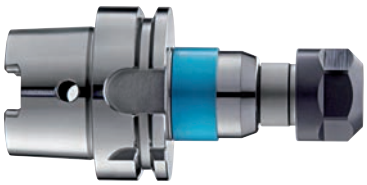
ER/ESX..GB auf DIN6499B / ISO15488B / 470E

Spanneinheit – ER Ausführung B (bestehend aus Collet chuck, Sealing disc, Screw)

Ø x □	Designation/Id. Nr.	S3D.../ ER...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
8,ü x 6,2	SPE8x6,2, B/ESX32 5113650	ER32/ ESX32	M8	M11	M8, M10	36	3	3
9,0 x 7,0/7,1	SPE9x7/7,1B-ESX32 5012108		M9	M12	M12	37		
10,0 x 8,0	SPE10x8B-ESX32 5012109		M10		M10	41		
11,0 x 9,0	SPE11x9B-ESX32 5012110			M14		42		
12,0 x 9,0	SPE12x9B-ESX32 5012111		M12	M16				
14,0 x 11,0	SPE14x11B-ESX32 5012112			M18	M18	44		
16,0 x 12,0/12,5	SPE16x12,5B-ESX32 5012113			M20	M22	45		

SCK – Synchro Chuck for M14-M30



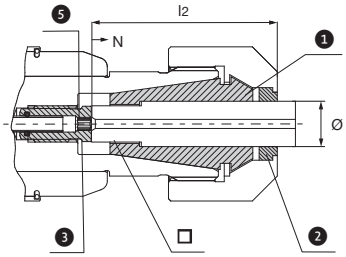


SCK3/HSK-A – ESX40

d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M14-M30	SCK3-146,5/HSK-A63-ESX40-BL	+/-0,8	63	63	63	146,5	120,5	50,3
11 - 22	5017524							
M14-M30	SCK3-136/HSK-A80-ESX40-BL	+/-0,8	80	63	63	136	110	50,3
11 - 22	5040638							
M14-M30	SCK3-138/HSK-A100-ESX40-BL	+/-0,8	100	63	63	138	109	50,3
11 - 22	5017526							

Coolant tube, coolant transfer unit (CT) and adjustment key included

ER/ESX40 – Clamping units IK



1 Collet
2 Sealing disc
3 Screw

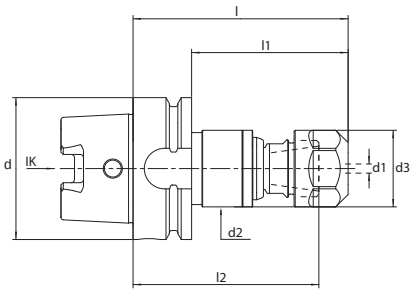
N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

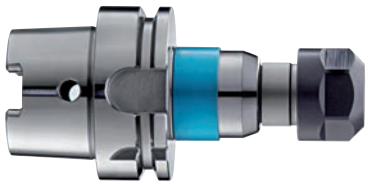
ER/ESX..GB auf DIN6499B /ISO15488B / 472E

Clamping unit– ER Version C (consisting of collet, sealing disc, adjusting screw)

Ø x □	Designation/Id. Nr.	SCK.../ ESX...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
10,0 x 8,0	SPE10x8C-ESX40 5016652	ER40/ ESX40	M10		M10	41	3	3
11,0 x 9,0	SPE11x9C-ESX40 5016653			M14		42		
11,2 x 9	SPE11,2x9C-ESX40 5073207				M14			
12,0 x 9,0	SPE12x9C-ESX40 5016654		M12	M16				
14,0 x 11,0/11,2	SPE14x11/11,2C-ESX40 5016655			M18	M20	44		
16,0 x 12,0/12,5	SPE16x12/12,5C-ESX40 5016656			M20	M22	45		
18,0 x 14,5	SPE18x14,5C-ESX40 5016657			M22		47		
20,0 x 16,0	SPE20x16C-ESX40 5016658			M27	M27 M30	52		
22,0 x 18,0	SPE22x18C-ESX40 5016659			M30		54		

SCK – Synchro Chuck for M30-M42

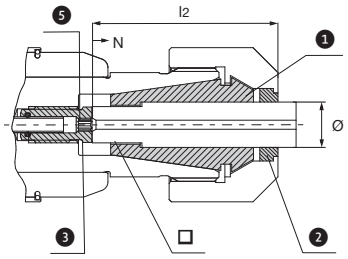




SCK3/HSK-A – ESX50								
d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M30-M42	SCK4-205/HSK-A100-ESX50-BL	+/-2,0	100	100	78	205	176	66
22 - 32	5085403							

Coolant tube, coolant transfer unit (CT) and adjustment key included

ER/ESX50 – Clamping units IK

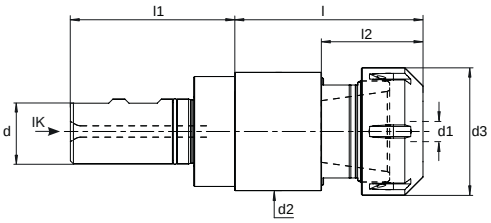


1 Collet
2 Sealing disc
3 Screw

N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

ER/ESX..GB auf DIN6499B /ISO15488B / 477E								
Clamping unit– ER Version C (consisting of collet, sealing disc, adjusting screw)								
Ø x □	Designation/Id. Nr.	SCK.../ ESX...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
22 x 18	SPE22x18C-ESX50	ER50/ ESX50		M30		69	4	6
	5085426							
25 x 20	SPE25x20C-ESX50			M33	M36	71		
	5085427							
28 x 22	SPE28x22C-ESX50			M36		73		
	5085428							
32 x 24	SPE32x24C-ESX50			M39 M42		75		
	5085429							

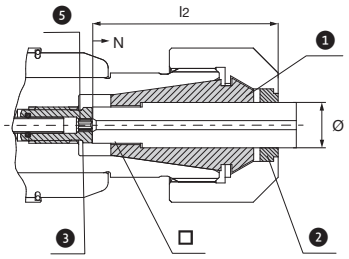
SCK – Synchro Chuck for M14-M30



SCK3/W – ESX40 DIN1835B+E								
d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M14-M30	SCK3-113,5//W32-ESX40-BL	+/-0,8	32	63	63	113,5	61	50,3
11 - 22	5017528							

Adjustment key included!

ER/ESX40 – Clamping units IK

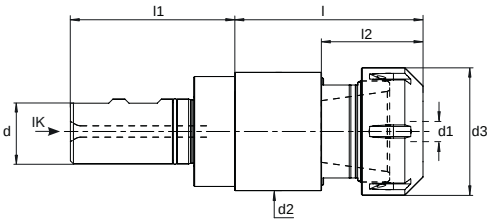


1 Collet
2 Sealing disc
3 Screw

N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

ER/ESX..GB auf DIN6499B /ISO15488B / 472E								
Clamping unit– ER Version C (consisting of collet, sealing disc, adjusting screw)								
Ø x □	Designation/Id. Nr.	SCK.../ ESX...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
10,0 x 8,0	SPE10x8C-ESX40 5016652	ER40/ ESX40	M10		M10	41	3	6
11,0 x 9,0	SPE11x9C-ESX40 5016653			M14		42		
11,2 x 9	SPE11,2x9C-ESX40 5073207				M14			
12,0 x 9,0	SPE12x9C-ESX40 5016654		M12	M16				
14,0 x 11,0/11,2	SPE14x11/11,2C-ESX40 5016655			M18	M18	44		
16,0 x 12,0/12,5	SPE16x12/12,5C-ESX40 5016656			M20	M22	45		
18,0 x 14,5	SPE18x14,5C-ESX40 5016657			M22		47		
20,0 x 16,0	SPE20x16C-ESX40 5016658			M27	M27 M30	52		
22,0 x 18,0	SPE22x18C-ESX40 5016659			M30		54		

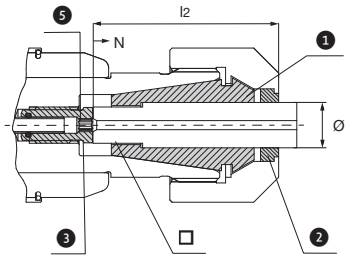
SCK – Synchro Chuck for M30-M42



SCK4/W – ESX50 DIN1835B+E								
d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2
M30-M42	SCK4-176/W40-ESX50-BL	+/-2,0	40	100	78	176	71	66
22 - 32	5085404							

Adjustment key included!

ER/ESX50 – Clamping units IK



1 Collet
2 Sealing disc
3 Screw

N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

ER/ESX..GB auf DIN6499B /ISO15488B / 477E								
Clamping unit– ER Version C (consisting of collet, sealing disc, adjusting screw)								
Ø x □	Designation/Id. Nr.	SCK.../ ESX...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
22 x 18	SPE22x18C-ESX50 5085426	ER50/ ESX50		M30		69	4	6
25 x 20	SPE25x20C-ESX50 5085427			M33	M36	71		
28 x 22	SPE28x22C-ESX50 5085428			M36		73		
32 x 24	SPE32x24C-ESX50 5085429			M39 M42		75		

bilz

3D Synchro

Slim design

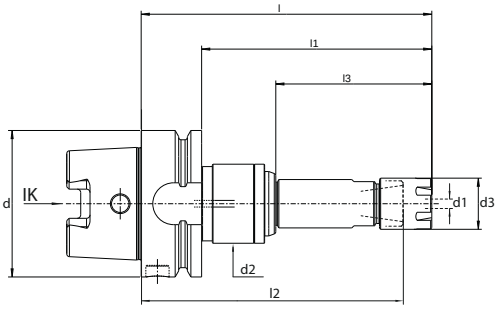
Synchro tapping chuck
Tapping and thread forming

M4 to M10

RENEWABLE ENERGY
GENERAL MECHANICAL ENGINEERING
AUTOMOTIVE
ELEKTRONIC
OPTICS
PRECISION ENGINEERING
TOOLMAKING

3D Synchro

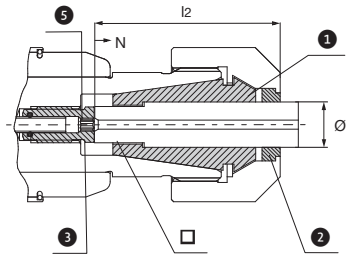
S3D – Synchro Chuck for M4-M10 Slim design



S3D1-ER16M-K1-HSKA63									
d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2	l3
M4-M10	S3D1-ER16M-125-K1-HSKA63	+/- 0,5	63	34	22	125	99	113,5	67,1
	5216277								
	S3D1-ER16M-150-K1-HSKA63	+/- 0,5	63	34	22	150	124	138,5	92,1
	5216278								
	S3D1-ER16M-175-K1-HSKA63	+/- 0,5	63	34	22	175	149	163,5	117,1
	5216279								
	S3D1-ER16M-200-K1-HSKA63	+/- 0,5	63	34	22	200	174	188,5	142,1
	5216280								
S3D1-ER16M-K1-HSKA100									
M4-M10	S3D1-ER16M-125-K1-HSKA100	+/- 0,5	63	34		125	99	113,5	60,6
	5216329								
	S3D1-ER16M-150-K1-HSKA100	+/- 0,5	63	34	22	150	124	138,5	85,6
	5216330								
	S3D1-ER16M-175-K1-HSKA100	+/- 0,5	63	34	22	175	149	163,5	110,6
	5216331								
	S3D1-ER16M-200-K1-HSKA100	+/- 0,5	63	34	22	200	174	188,5	135,6
	5216332								

Coolant tube, transfer unit and key are not included in the scope of delivery

ER/ESX16 – Clamping units



1 Collet
2 Sealing disc
3 Screw

N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

Accessories:

Allen key / length adjustment

Designation	Id. Nr.
SCK-2,5-90, l = (0 - 100mm)	5012201
SCK-2,5-190, l = (101 - 190mm)	9172126
SCK-2,5-320, l = (191 - 330mm)	9173934

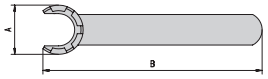
Coolant pipe / transfer unit

Designation	Id. Nr.
UE4/HSK63	5025376
UE4/HSK100	5028428

Mounting key

Designation	Id. Nr.
HSK63	6738421
HSK100	6738303

Wrench



Designation	Id. Nr.
E16M	6932510

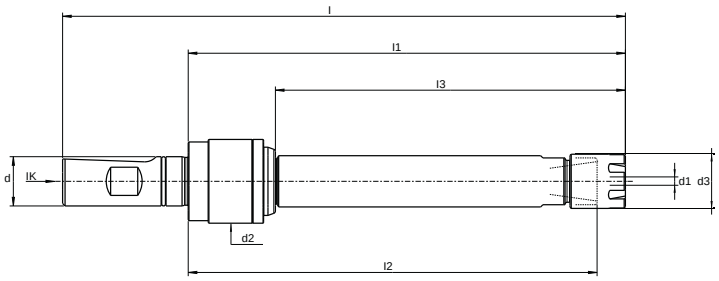
ER/ESX..GB auf DIN6499B / ISO15488B / 470E

Clamping unit– ER Version C (consisting of collet, sealing disc, adjusting screw)

Ø x □	Designation/Id. Nr.	S3D.../ ER...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
4,5x3,4	SPE4,5x3,4C-ESX16	ER16/ ESX16	M4	M6		29	2	2
	5046280							
5,0x4,0	SPE5x4C-ESX16				M5	30	3	
	5046279							
6,0x4,9	SPE6x4,9C-ESX16		M5, M6	M8		31		2,5
	5046276							
7,0x5,5	SPE7x5,5C-ESX16		M7	M9, M10		31		
	5046275							
8,0x6,2	SPE8x6,2C-ESX16		M8	M11	M8, M10	36		
	5046274							
9,0x7,0	SPE9x7C-ESX16		M9	M12*	M12*	37		
	5033588							

* For easy processing

S3D – Synchro Chuck for M4-M10 Slim design



S3D1-ER16M-K1-W20 - DIN1835 Form B und E

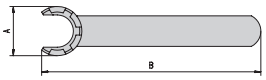
d1	Designation/Id. Nr.		d	d2	d3	l	l1	l2	l3
M4-M10	S3D1-ER16M-102,5-K1-W20	+/- 0,5	20	34	22	153,5	102,5	91	67,1
	5222040								
	S3D1-ER16M-127,5-K1-W20	+/- 0,5	20	34	22	178,5	127,5	116	92,1
	5222041								
	S3D1-ER16M-152,5-K1-W20	+/- 0,5	20	34	22	203,5	152,5	141	117,1
	5222042								
	S3D1-ER16M-177,5-K1-W20	+/- 0,5	20	34	22	228,5	177,5	166	142,1
	5222043								

Accessories:

Allen key / length adjustment

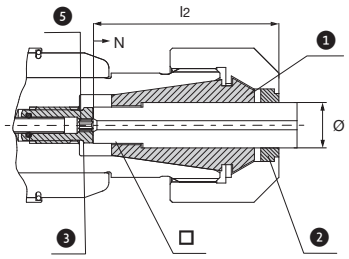
Designation	Id. Nr.
SCK-2,5-90, l = (0 - 100mm)	5012201
SCK-2,5-190, l = (101 - 190mm)	9172126
SCK-2,5-320, l = (191 - 330mm)	9173934

Wrench



Designation	Id. Nr.
E16M	6932510

ER/ESX16 – Clamping units



1 Collet
2 Sealing disc
3 Screw

N = Adjustment
l2 = Insert depth
Ø = Shaft diameter
□ = Drive square

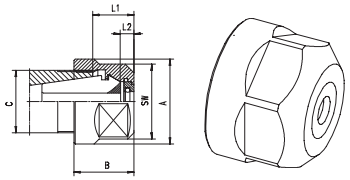
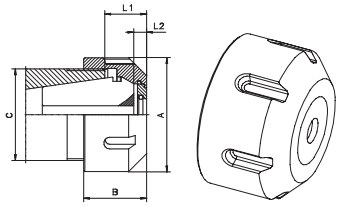
ER/ESX..GB auf DIN6499B / ISO15488B / 470E

Clamping unit– ER Version C (consisting of collet, sealing disc, adjusting screw)

Ø x □	Designation/Id. Nr.	S3D.../ ER...	DIN 371	DIN 374 DIN 376	ISO	l2	N	⬢ 5
4,5x3,4	SPE4,5x3,4C-ESX16	ER16/ ESX16	M4	M6		29	2	2
	5046280							
5,0x4,0	SPE5x4C-ESX16				M5	30	3	
	5046279							
6,0x4,9	SPE6x4,9C-ESX16		M5, M6	M8		31		2,5
	5046276							
7,0x5,5	SPE7x5,5C-ESX16		M7	M9, M10		31		
	5046275							
8,0x6,2	SPE8x6,2C-ESX16		M8	M11	M8, M10	36		
	5046274							
9,0x7,0	SPE9x7C-ESX16		M9	M12*	M12*	37		
	5033588							

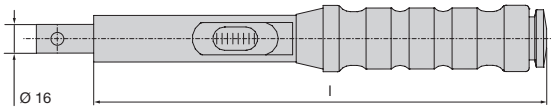
* For easy processing

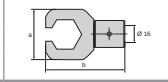
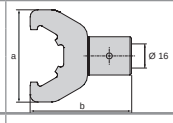
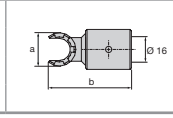
Accessories for S3D and SCK

Variant	Designation Id. Nr.		A	B	C	L1		L2	SW
	Clamping Nut for sealing disc					Collet chuck with Drive square	Collet chuck without Drive quare		
S3D1 **ER16***	EX16-IC 6931372		28	22,5	M22x1,5	12	12,0–15,5	5	25
S3D1 **ER20**	EX20-IC 6931227		34	24	M25x1,5	13	13,0–16,5	5	30
S3D2 **ER25**	EX25-IC 6941678		42	25	M32x1,5	13,5	13,5–17,0	5	
S3D2 **ER32**	EX32-IC 6933897		50	27,5	M40x1,5	14,5	14,5–18,0	5	
SCK3 **ESX40**	EX40-IC 6948425		63	30,5	M50x1,5	16,5	16,5–20,0	5	
SCK4 **ESX50**	EX50-IC 5085410		78	40,3	M64x2	19	19,0–26,0	7	

* Not compatible with S3D...ER16M...

Torque wrench TORCO-FIX

	Designation	Id.Nr.	L1	Torque Nm
	TORCO-FIX I	6734177	335	10 – 50
	TORCO-FIX II	6734178	465	40 – 200
	TORCO-FIX III	6734179	565	60 – 300

Variant	Assembly keys TORCO-FIX					
		Designation	Nr	TORCO-Fix	a	b
ER11 ER16 ER20		A-E11P	5047900	I	32	61
		A-E16P	6953670	I, II	44	71
		A-E20P	5003125	II	52	81
ER25 ER32 ESX40 ESX50		A-E25	6953671	II	70	72
		A-E32	6952304	II, III	80	72
		A-E40	5000742	II, III	96	82
		A-E50	5003124	III	111	94
ER11M ER16M ER20M ER25M		A-E11M	5047901	I	16,8	54,4
		A-E16M	5047902	I, II	22,5	56,2
		A-E20M	5047903	I, II	29	68,2
		A-E25M	5076778	I, II	36	70,0

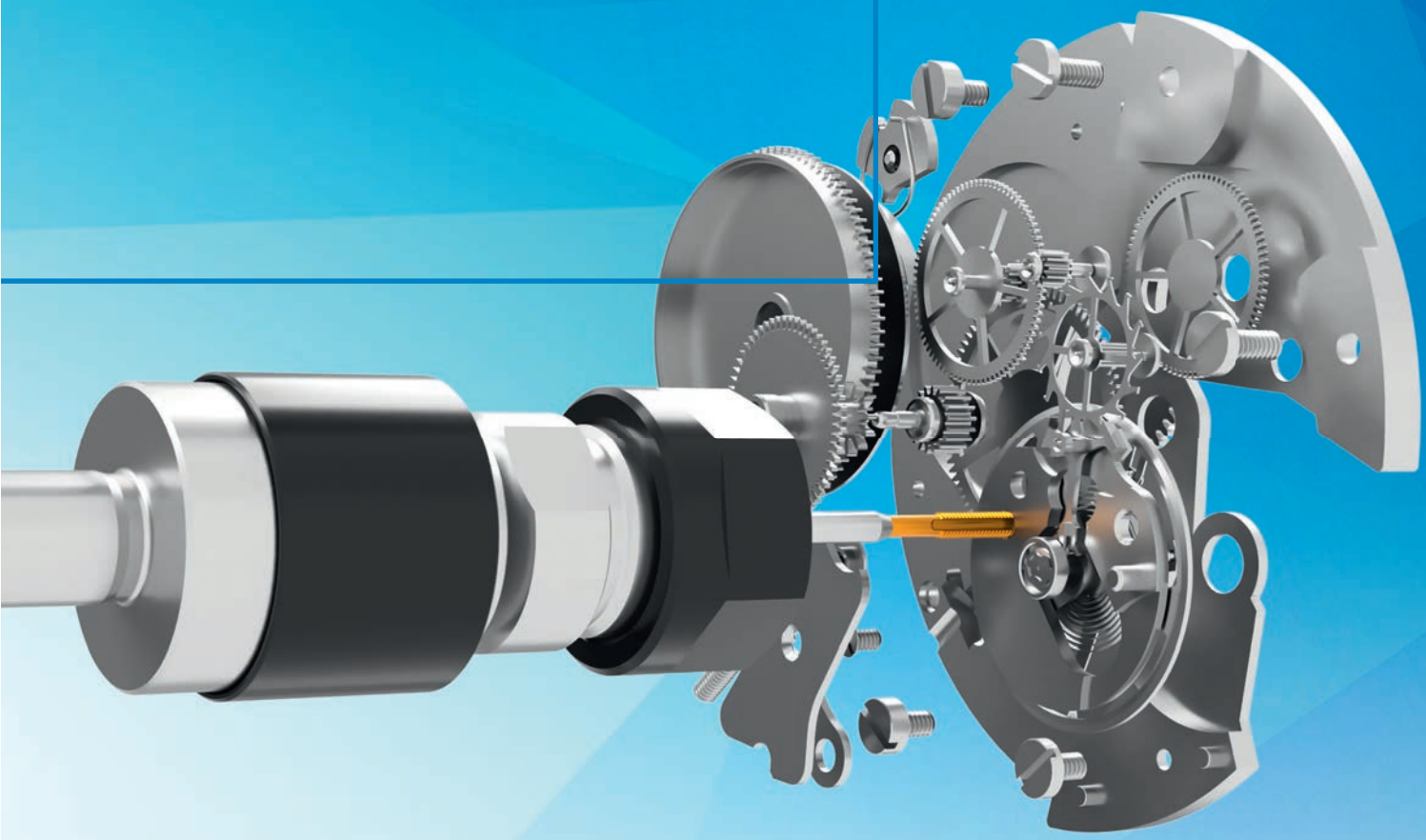
Mounting fixture

Designation/Id. Nr.	h mm	l mm	b mm
S3D0-SCK3 5195314	220	108	200
Compatible with S3D... ER11M, ...ER16M, ...ER20, ... ER32 und SCK...ESX40			

Nano Synchro

Synchro tapping chuck
Tapping and thread forming

M0,5 to M4



ELECTRONIC
VISUAL OPTICS
PRECISION ENGINEERING
TOOLMAKING

Features

- Minimum tension and compression compensation
- Ball bearing technology, (application without turning moment) dampening
- Suitable for cutting and forming taps
- Suitable for right and lefthand threads
- Optimised spring and dampening compensation (+/- 0,5mm)
- Suitable for internal coolant supply up to 50 bar

Advantages

- Highest process stability
- Extended tapping tool-life
- Improved thread quality
- Reduction of thread flank cutting-pressures
- Compensates spindle synchronisation errors.

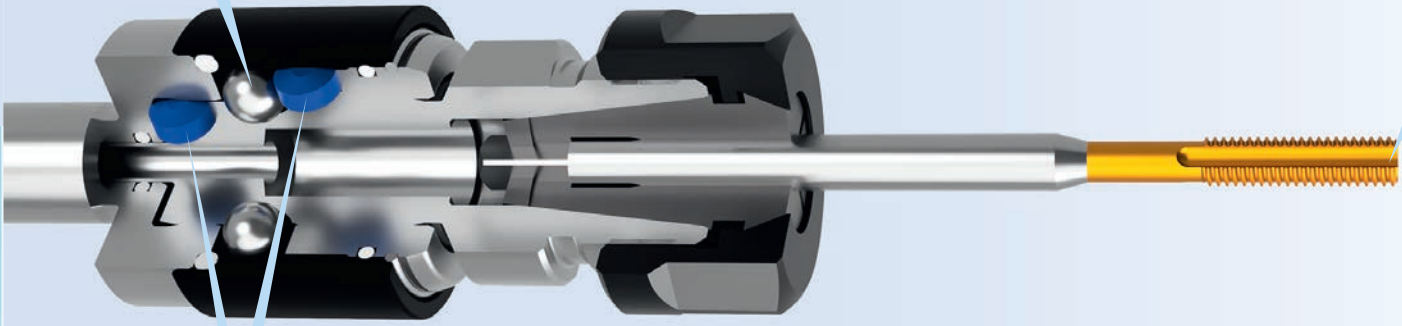
TECHNOLOGY IN HIGHEST PRECISION FOR LIGHTEST APPLICATIONS

Highest technology precision for your applications.

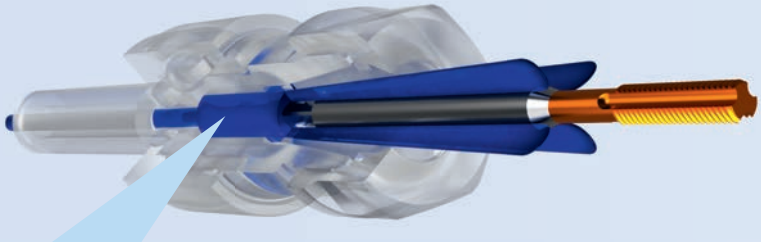
nano

Ball bearing technology, (application without turning moment) dampening

Thread cutting and forming M0.5 to M4



Optimised spring and dampening compensation (+/- 0.5mm)



Internal coolant supply (max 50 bar) for optimum supply of lubricant through the collet chuck slots directly to the cutting edge of the Tapping.

Thermogrip® Shrink Chucks Catalogue

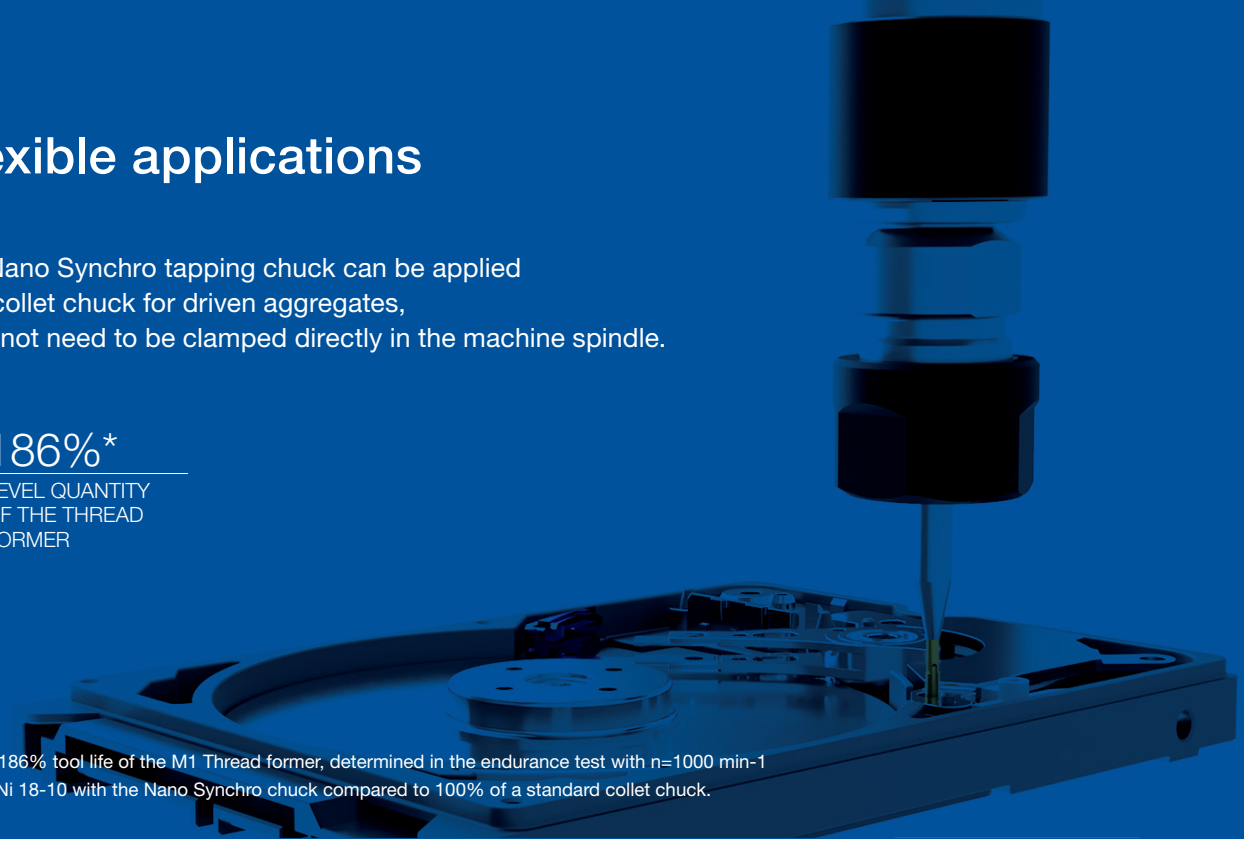
CNC Catalogue

Flexible applications

Our Nano Synchro tapping chuck can be applied
as a collet chuck for driven aggregates,
does not need to be clamped directly in the machine spindle.

186%*

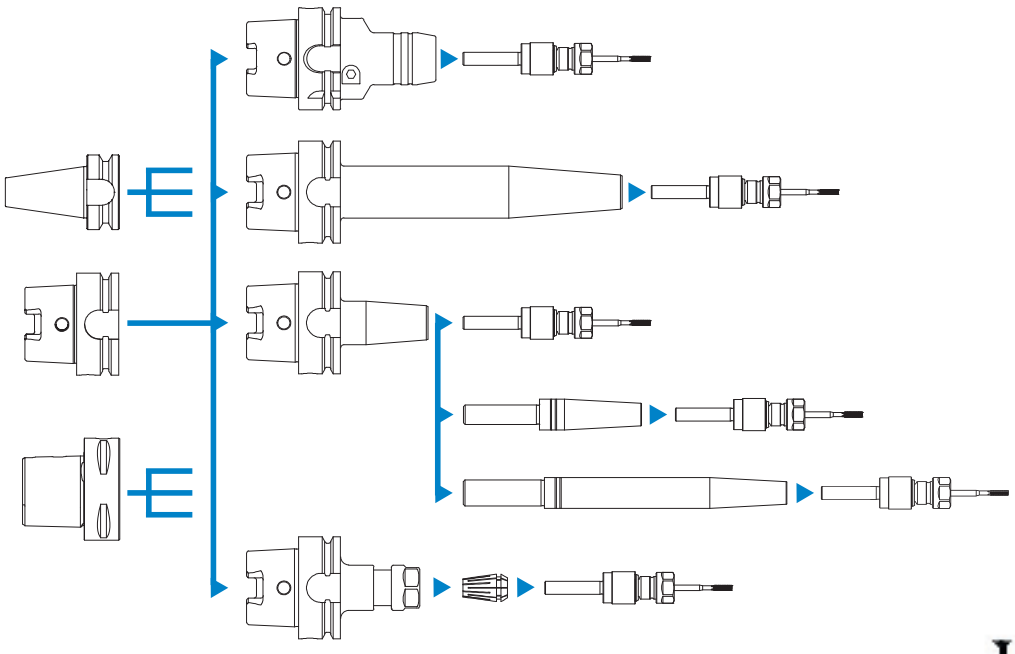
LEVEL QUANTITY
OF THE THREAD
FORMER

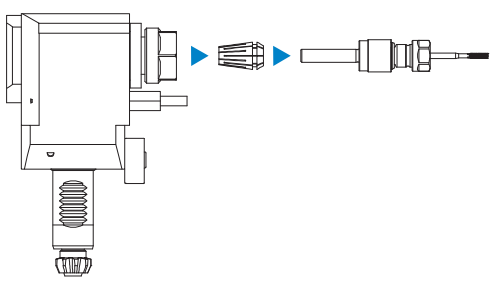


* Up to 186% tool life of the M1 Thread former, determined in the endurance test with n=1000 min-1 in X5CrNi 18-10 with the Nano Synchro chuck compared to 100% of a standard collet chuck.

MECHANICAL CLAMPING, SHRINKING OR SELF LOCKING

Many possibilities to use our Nano Synchro chuck in your current process strategy.

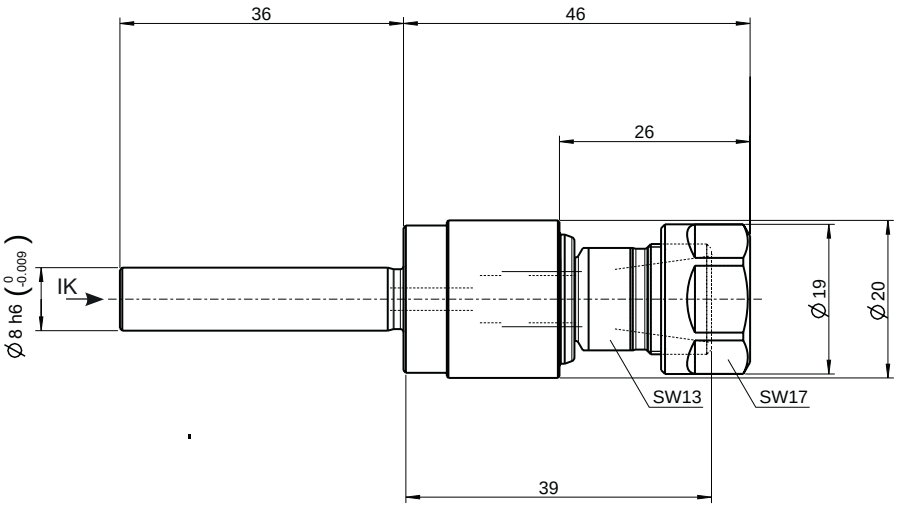




The suitable clamping devices for our Nano Synchro can be found in our ThermoGrip or CNC catalogue with link via the QR-Code on the opposite page.

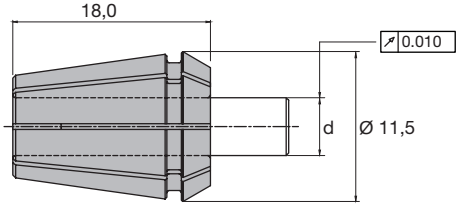
Nano Synchro

Tapping and thread forming M0.5 to M4



Nano Synchro			
	Description	Ident Nr.	
M0,5 - M4	S3D0-ER11-44-K1-Z0800	5216345	+/-0,5

Accessories:



Tap				Collets DIN 6499 System ER 11	
DIN 371	DIN 376	JIS	Shank Ø (mm)	Clamping range d (mm)	Ident Nr.
				Ø 1.0 - Ø 0.5	5056179
	M1,6-M1,8		Ø 1,2	Ø 2.0 - Ø 1.0	5056181
	M2		Ø 1,4		
	M2,2-M2,3		Ø 1,6		
	M2,5-M2,6		Ø 1,8		
	M3		Ø 2,2	Ø 3.0 - Ø 2.0	5056182
M1-M1,8	M3,5		Ø 2,5 x □ 2,1		
M2-M2,6	M4		Ø 2,8 x □ 2,1		
		M1-M2,6	Ø 3,0 x □ 2,5		
M3			Ø 3,5 x □ 2,7	Ø 4.0 - Ø 3.0	5056184
M3,5			Ø 4,0 x □ 3,0		
		M3	Ø 4,0 x □ 3,2		
M4			Ø 4,5 x □ 3,4	Ø 5.0 - Ø 4.0	5056187
		M4	Ø 5,0 x □ 4,0		

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