

L 2

L 1

**ER***SYSTEM*

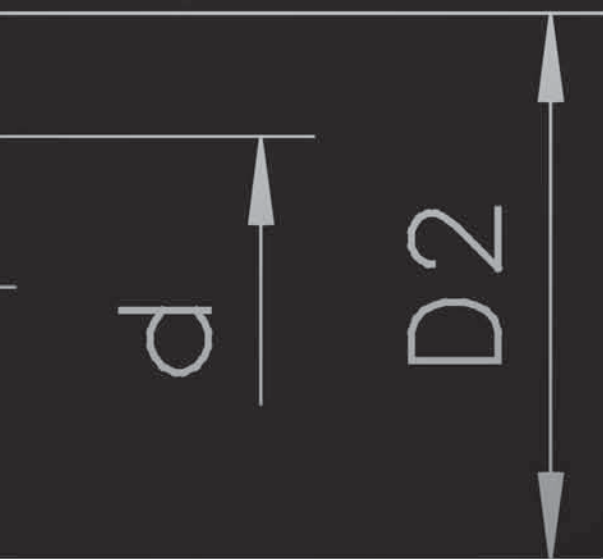
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**powRgrip***SYSTEM*

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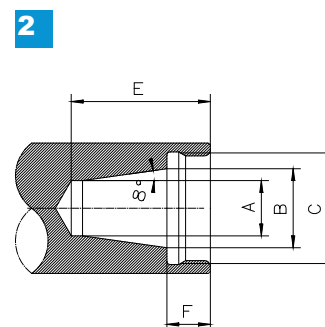
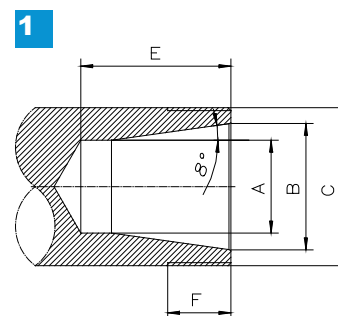


L3

# Collet Cavity Dimensions

## Dimensions for ER Collet Cavities in Machine Spindles and Matching Clamping Nuts

Size	Clamping Range	Hi-Q/ER	Hi-Q/ERC	Hi-Q/ERB	Hi-Q/ERBC	Hi-Q/ERM	Hi-Q/ERMC	ER MS	ER AX	ER AXC	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	Drawing
ER 11	0.5 – 07.00	■	■								7.5	11	M14 x 0.75	17.0	10.0	1
ER 16	0.5 – 10.00	■	■	■	■						10.5	16	M22 x 1.50	22.0	13.0	1
ER 20	0.5 – 13.00	■	■	■	■						13.5	20	M25 x 1.50	26.5	13.5	1
ER 25	0.5 – 17.00	■	■	■	■						18.0	25	M32 x 1.50	29.0	14.0	1
ER 32	1.0 – 22.00	■	■	■	■						23.5	32	M40 x 1.50	34.0	16.0	1
ER 40	2.0 – 30.00	■	■	■	■						30.5	40	M50 x 1.50	38.0	17.0	1
ER 50	4.0 – 36.00	■	■	■	■						38.0	50	M64 x 2.00	48.0	24.0	1
ER 8	0.5 – 05.00					■		■			5.2	8	M10 x 0.75	13.0	8.0	1
ER 11	0.5 – 07.00					■	■	■			7.5	11	M13 x 0.75	17.0	8.5	1
ER 16	0.5 – 10.00					■	■	■			10.5	16	M19 x 1.00	22.0	13.0	1
ER 20	0.5 – 13.00					■	■	■			13.5	20	M24 x 1.00	26.5	13.5	1
ER 25	0.5 – 17.00					■	■	■			18.0	25	M30 x 1.00	29.0	14.0	1
ER 11	0.5 – 07.00								■		7.5	11	M18 x 1.00	23.0	7.0	2
ER 16	0.5 – 10.00								■	■	10.5	16	M24 x 1.00	32.0	10.0	2
ER 20	0.5 – 13.00								■	■	13.5	20	M28 x 1.50	37.5	11.0	2
ER 25	0.5 – 17.00								■	■	18.0	25	M32 x 1.50	41.0	12.0	2
ER 32	1.0 – 22.00								■	■	23.5	32	M40 x 1.50	48.0	14.0	2
ER 40	2.0 – 30.00								■	■	30.5	40	M50 x 1.50	54.0	16.0	2

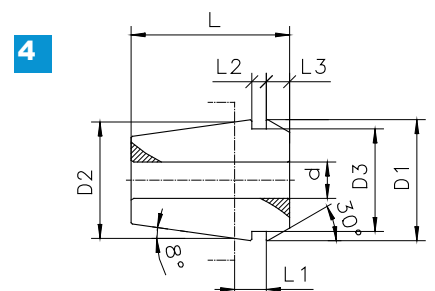
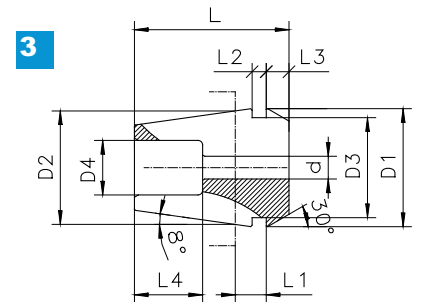
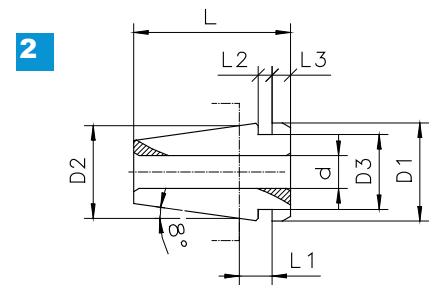
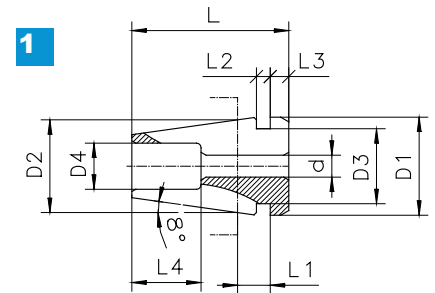


# Collets

DIN 6499/ISO 15488

### Dimensions of ER Collets

Size	d [mm]	D1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	Drawing
ER 8	1.0 – 2.50	8.5	8.0	6.5	4.0	13.6	2.98	1.2	1.5	6.0	1
ER 8	3.0 – 5.00	8.5	8.0	6.5	–	13.6	2.98	1.2	1.5	–	2
ER 11	1.0 – 2.50	11.5	11.0	9.5	5.0	18.0	3.80	2.0	2.5	9.0	3
ER 11	3.0 – 7.00	11.5	11.0	9.5	–	18.0	3.80	2.0	2.5	–	4
ER 16	1.0 – 1.59	17.0	16.0	13.8	7.5	27.5	6.26	2.7	4.0	13.0	3
ER 16	2.0 – 4.76	17.0	16.0	13.8	7.5	27.5	6.26	2.7	4.0	10.0	3
ER 16	5.0 – 10.00	17.0	16.0	13.8	–	27.5	6.26	2.7	4.0	–	4
ER 20	1.0 – 1.59	21.0	20.0	17.4	9.0	31.5	6.36	2.8	4.8	16.0	3
ER 20	2.0 – 6.50	21.0	20.0	17.4	9.0	31.5	6.36	2.8	4.8	13.0	3
ER 20	7.0 – 13.00	21.0	20.0	17.4	–	31.5	6.36	2.8	4.8	–	4
ER 25	1.0 – 1.59	26.0	25.0	22.0	12.0	34.0	6.66	3.1	5.0	18.0	3
ER 25	2.0 – 7.50	26.0	25.0	22.0	12.0	34.0	6.66	3.1	5.0	15.0	3
ER 25	8.0 – 17.00	26.0	25.0	22.0	–	34.0	6.66	3.1	5.0	–	4
ER 32	2.0 – 4.76	33.0	32.0	29.2	15.0	40.0	7.16	3.6	5.5	20.0	3
ER 32	5.0 – 7.50	33.0	32.0	29.2	15.0	40.0	7.16	3.6	5.5	15.0	3
ER 32	8.0 – 22.00	33.0	32.0	29.2	–	40.0	7.16	3.6	5.5	–	4
ER 40	3.0 – 4.76	41.0	40.0	36.2	20.0	46.0	7.66	4.1	7.0	24.0	3
ER 40	5.0 – 8.50	41.0	40.0	36.2	20.0	46.0	7.66	4.1	7.0	18.0	3
ER 40	9.0 – 30.00	41.0	40.0	36.2	–	46.0	7.66	4.1	7.0	–	4
ER 50	6.0 – 10.00	52.0	50.0	46.0	20.0	60.0	12.60	5.5	8.5	32.0	3
ER 50	12.0 – 36.00	52.0	50.0	46.0	–	60.0	12.60	5.5	8.5	–	4



# Clamping Nuts Tightening Torque

## Recommended Tightening Torque

Clamping Nut Type	Collet Type	Ø [mm]	Recommended Torque [Nm]		
			ER	ER-GB	TORCO-FIX
Hi-Q/ER Hi-Q/ERC	ER 11 MB	0.2 – 0.9	8	–	0, I
	ER 11	1.0 – 2.9	8	8	0, I
		3.0 – 7.0	24	16	0, I
		ER 16 MB	0.2 – 0.9	8	–
	ER 16	1.0	8	–	0, I
		1.5 – 3.5	20	–	0, I
		4.0 – 4.5	40	40	I, II
		5.0 – 10.0	56	44	II
	ER 20	1.0	16	–	0, I
		1.5 – 6.5	32	32	I, II
		7.0 – 13.0	80	35	I, II
	ER 25	1.0 – 3.5	24	–	I
		4.0 – 4.5	56	56	I, II
		5.0 – 7.5	80	80	II, III
		8.0 – 17.0	104	104	II, III
	ER 32	2.0 – 2.5	24	–	0, I
		3.0 – 22.0	136	136	II, III
	ER 40	3.0 – 26.0	176	176	II, III
ER 50	6.0 – 36.0	240	300	III	

Clamping Nut Type	Collet Type	Ø [mm]	Recommended Torque [Nm]		
			ER	ER-GB	TORCO-FIX
Hi-Q/ERB Hi-Q/ERCBC	ER 16	1.0	6.4	–	0, I
		1.5 – 3.5	16	–	0, I
		4.0 – 4.5	32	32	I, II
		5.0 – 10.0	56	44	II
	ER 20	1.0	12	–	0, I
		1.5 – 6.5	24	24	0, I, II
		7.0 – 13.0	80	24	0, I, II
	ER 25	1.0 – 3.9	20	–	0, I, II
		4.0 – 4.5	48	48	I, II
		5.0 – 7.5	72	72	II, III
		8.0 – 16.0	104	79	II, III
	ER 32	2.0 – 2.5	20	–	0, I, II
3.0 – 7.5		128	104	II, III	
8.0 – 20.0		136	114	II, III	
ER 40	3.0 – 26.0	176	176	II, III	
ER 50	6.0 – 34.0	240	300	III	

# 13

**!** The maximum torque shall not be more than 25% above the recommended tightening torque. Higher tightening torque may result in the deformation of the toolholder.

Torque wrenches and matching products see page 12.3/12.4.

**!** Higher clamping force of the clamping nut at the same time means higher stress on the toolholder. We recommend the use of REGO-FIX® torque wrench. REGO-FIX® will not be responsible for damages to toolholders or spindles of other manufacturers.

## Clamping Nuts Tightening Torque

### Recommended Tightening Torque

Clamping Nut Type	Collet Type	Ø [mm]	Recommended Torque [Nm]		
			ER	ER-GB	TORCO-FIX
Hi-Q/ERM Hi-Q/ERMC	ER 8 MB	0.2 – 0.9	6	–	0
	ER 8	1.0 – 5.0	6	–	0
	ER 11 MB	0.2 – 0.9	8	–	0, I
	ER 11	1.0 – 2.9	8	8	0, I
		3.0 – 7.0	16	13	0, I
	ER 16 MB	0.2 – 0.9	8	–	0, I
	ER 16	1.0	8	–	0, I
		1.5 – 3.5	20	–	0, I
		4.0 – 10.0	24	24	0, I, II
	ER 20	1.0	16	–	0, I
		1.5 – 13.0	28	28	I, II
	ER 25	1.0 – 3.5	24	–	0, I, II
4.0 – 17.0		32	32	I, II	

ER MS	ER 8 MB	0.2 – 0.9	6	–	0
	ER 8	1.0 – 5.0	6	–	0
	ER 11 MB	0.2 – 0.9	8	–	0, I
	ER 11	1.0 – 7.0	10	–	0, I
	ER 16 MB	0.2 – 0.9	12	–	0, I
	ER 16	1.0	12	–	0, I
		1.5 – 10.00	20	–	0, I
	ER 20	1.0	12	–	0, I
		1.5 – 13.0	18.4	–	0, I

Clamping Nut Type	Collet Type	Ø [mm]	Recommended Torque [Nm]		
			ER	ER-GB	TORCO-FIX
Hi-Q/ERAX Hi-Q/ERAXC	ER 11 MB	0.2 – 0.9	8	–	0, I
	ER 11	1.0 – 2.9	8	8	0, I
		3.0 – 7.0	24	21	0, I, II
	ER 16 MB	0.2 – 0.9	8	–	0, I
	ER 16	1.0	8	–	0, I
		1.5 – 3.5	20	–	0, I, II
		4.0 – 10.0	40	40	I, II
	ER 20	1.0	16	–	0, I
		1.5 – 13.0	52	35	I, II
	ER 25	1.0 – 3.5	24	–	0, I, II
		4.0 – 4.5	56	56	II
		5.0 – 17.0	80	80	II, III
	ER 32	2.0 – 2.5	24	–	0, I, II
		3.0 – 22.0	104	104	II, III
	ER 40	3.0 – 26.0	128	128	II, III

**!** The maximum torque shall not be more than 25% above the recommended tightening torque. Higher tightening torque may result in the deformation of the toolholder.

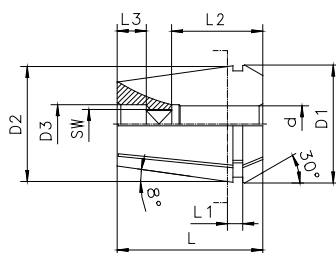
Torque wrenches and matching products see page 12.3/12.4.



Swiss Precision Tools

# ER

## Technical Information



ER | GB  
DIN 6499

### Tapping Collets

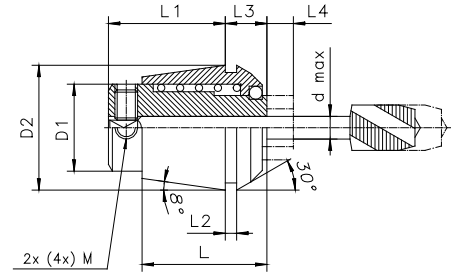
d [mm]	SW [mm]	L2 [mm]	ER 11-GB		ER 16-GB		ER 20-GB		ER 25-GB		ER 32-GB		ER 40-GB		ER 50-GB	
			L3 [mm]	D3 [mm]	L3 [mm]	D3 [mm]	L3 [mm]	D3 [mm]	L3 [mm]	D3 [mm]	L3 [mm]	D3 [mm]	L3 [mm]	D3 [mm]	L3 [mm]	D3 [mm]
2.8	2.1	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.5	2.7	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	3.15 / 3.2	ER 11=14 ER 16-32=15	-	-	4.8	7.5	9.8	9	11.8	12	17.8	15	-	-	-	-
4.5	3.4	ER 11=14 ER 16-32=15	-	-	4.8	7.5	9.8	9	11.8	12	17.8	15	-	-	-	-
5	4	ER 11=14 ER 16-32=18	-	-	4.8	7.5	9.8	9	11.8	12	17.8	15	-	-	-	-
5.5	4.3	18	-	-	4.8	7.5	9.8	9	11.8	12	17.8	15	-	-	-	-
5.5	4.5	18	-	-	4.8	7.5	9.8	9	11.8	12	17.8	15	-	-	-	-
6	4.5	18	-	-	4.8	7.5	8.8	9	10.8	12	16.8	15	22.8	20	-	-
6	4.9	ER 11=14 ER 16-40=18	-	-	4.8	7.5	8.8	9	10.8	12	16.8	15	22.8	20	-	-
6.2	5	18	-	-	4.8	7.5	8.8	9	10.8	12	16.8	15	22.8	20	-	-
6.3	5	18	-	-	4.8	7.5	8.8	9	10.8	12	16.8	15	22.8	20	-	-
7	5.5	18	-	-	3.8	8	7.8	9	9.8	12	15.8	15	21.8	20	-	-
7.1	5.6	18	-	-	3.8	8	7.8	9	9.8	12	15.8	15	21.8	20	-	-
8	6.2 / 6.3	22	-	-	-	-	2.8	10	4.8	12	10.8	15	16.8	20	-	-
8.5	6.5	22	-	-	-	-	2.8	10	4.8	12	10.8	15	16.8	20	-	-
9	7 / 7.1	22	-	-	-	-	2.8	10	3.8	12	9.8	15	15.8	20	-	-
10	8	25	-	-	-	-	-	-	-	-	6.8	15	12.8	20	-	-
10.5	8	25	-	-	-	-	-	-	-	-	6.8	15	12.8	20	-	-
11	9	25	-	-	-	-	-	-	-	-	5.8	15	11.8	20	-	-
11.2	9	25	-	-	-	-	-	-	-	-	5.8	15	11.8	20	-	-
12	9	25	-	-	-	-	-	-	-	-	5.8	15	11.8	20	-	-
12.5	10	25	-	-	-	-	-	-	-	-	4.8	15	10.8	20	-	-
14	11 / 11.2	25	-	-	-	-	-	-	-	-	3.8	17	9.8	20	-	-
15	12	25	-	-	-	-	-	-	-	-	3.8	17	9.8	20	-	-
16	12 / 12.5	25	-	-	-	-	-	-	-	-	2.8	18	8.8	20	-	-
17	13	25	-	-	-	-	-	-	-	-	2.8	19.5	8.8	20	-	-
18	14.5	25	-	-	-	-	-	-	-	-	2.8	21	7.8	21	-	-
20	16	28	-	-	-	-	-	-	-	-	2.8	21.5	3.8	22	-	-
22	18	ER 40=28 ER 50=41	-	-	-	-	-	-	-	-	-	-	3.8	24	-	-
25	20	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	22	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	24	41	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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# ET1

### PCM Tapping Collets

Type	Range	d [mm]	D1 [mm]	D2 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	M [mm]
ET1-12	M 0.5 – M 4	3.55	7	11.5	18	16.5	2.5	5	5.5	2 x M 2.5
ET1-16	M 0.7 – M 6	6.3	11	17	22	20	2.8	7	7	2 x M 4 4 x M 4
ET1-20	M 1 – M 8 (M 10)	7.1	14	21	24	23	2.8	8	7	2 x M 4 4 x M 4 4 x M 5
ET1-25	M 1 – M 10 (M 12)	10	19	26	26	24	3	10	8	2 x M 5 4 x M 5 4 x M 6
ET1-32	M 4 – M 12 (M 16)	12.5	23	33	33	32	3	11	10	2 x M 5 4 x M 5 4 x M 6 4 x M 8
ET1-40	M 6 – M 16 (M 20)	17	28	41	42	42	3	12	13	4 x M 6 4 x M 6



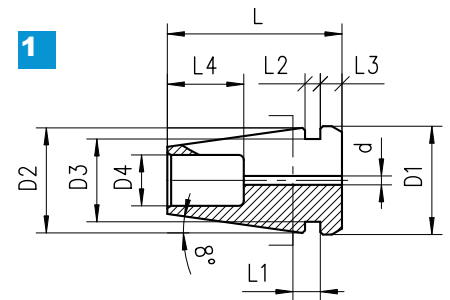
**!** Not for coolant through tools and not for applications with sealing disks.

# ER | MB

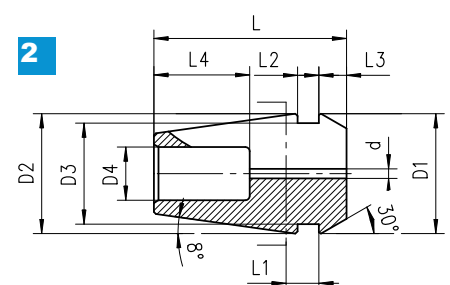
DIN 6499

### Microbore Collets

Size	d [mm]	D1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	Drawing
ER 8-MB	0.2 – 0.9	8.5	8.0	6.5	4.0	13.5	1.2	1.2	1.5	6.0	1
ER 11-MB	0.2 – 0.9	11.5	11.0	9.5	5.0	18.0	2.0	2.0	2.5	9.0	2
ER 16-MB	0.2 – 0.9	17.0	16.0	13.8	7.5	27.5	6.3	2.7	4.0	13.0	2

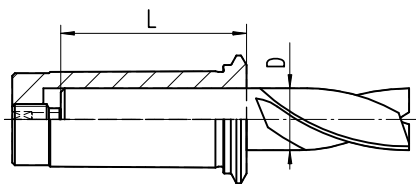


**!** The collets type ER-MB are only available in the above mentioned types. They have no multiple clamping capacity. Only nominal diameters h7 can be clamped!



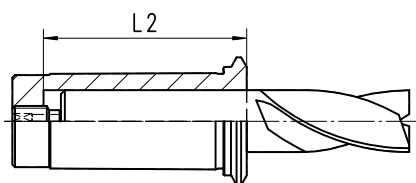
# 13

# Presetting Range



### Presetting Range of powRgrip® Collets

D [mm]	D [Inch]	DIN 1835-1/ DIN 6535 L [mm]	PG 10		PG 15		PG 25		PG 32	
			L min. [mm]	L max. [mm]	L min. [mm]	L max. [mm]	L min. [mm]	L max. [mm]	L min. [mm]	L max. [mm]
0.20 – 1.00	–	–	20.0	24.0	–	–	–	–	–	–
1.50	1/16"	–	16.0	20.0	–	–	–	–	–	–
2.00 – 2.50	–	28.0	25.0	30.0	–	–	–	–	–	–
3.00 – 5.50	1/8", 3/16"	28.0	25.0	30.0	25.0	30.0	25.0	32.5	–	–
6.00	1/4"	36.0	30.0	35.0	33.0	38.0	33.0	40.5	33.5	40.9
7.00 – 9.00	5/16"	36.0	–	–	33.0	38.0	33.0	40.5	33.5	40.9
10.00	3/8"	40.0	–	–	37.0	40.5	37.0	44.5	35.5	44.9
11.00	7/16"	40.0	–	–	–	–	37.0	44.5	35.5	44.9
12.00 – 15.00	1/2", 9/16"	45.0	–	–	–	–	42.0	49.5	40.5	49.9
16.00 – 18.00	5/8", 11/16"	48.0	–	–	–	–	45.5	50.0	43.5	52.9
20.00	3/4"	50.0	–	–	–	–	47.5	50.0	45.5	54.9
22.00	7/8"	50.0	–	–	–	–	–	–	45.5	54.9
25.00	1"	56.0	–	–	–	–	–	–	49.5	58.0



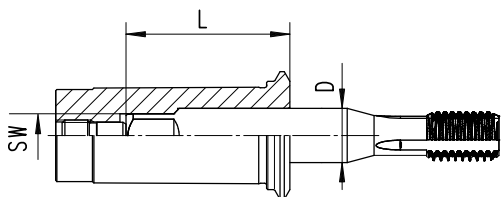
Size	PG 10	PG 15	PG 25	PG 32
L2 max	–	40.5	50.0	58.0

L2 = max. depth (without adjusting screw)



Never clamp a powRgrip® collet without a tool.  
Collet may be damaged!

## Presetting Range TAP

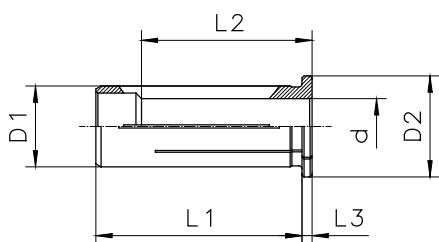


### Presetting Range of powRgrip® Tapping Collets

D [mm]	SW [mm]	PG 15-TAP		PG 25-TAP	
		L min. [mm]	L max. [mm]	L min. [mm]	L max. [mm]
3.5	2.7	27.0	29.0	–	–
4.5	3.4	27.0	29.0	–	–
6.0	4.9	29.0	31.0	–	–
7.0	5.5	29.0	31.0	–	–
8.0	6.2	33.5	36.0	33.5	36.0
9.0	7.0	34.5	37.0	34.5	37.0
10.0	8.0	35.5	38.0	38.5	41.0
11.0	9.0	–	–	39.5	42.0
12.0	9.0	–	–	39.5	42.0
14.0	11.0	–	–	41.5	44.0
16.0	12.0	–	–	42.5	45.0



Never clamp a powRgrip® collet without a tool.  
Collet may be damaged!



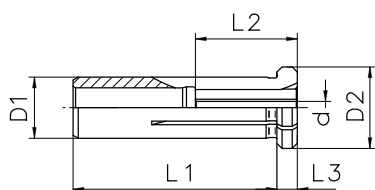
# HS 12(-CF) | HS 12-MB | HS 20(-CF)

### Reduction Sleeves HS 12 | HS 12-CF

Type	d [mm]	d [Inch]	D1 [mm]	D2 [mm]	L1 [mm]	L2 [mm]	L3 [mm]
HS 12 / Ø 3.00	3.000		12	16	40	29	4
HS 12 / Ø 1/8"	3.175	1/8"	12	16	40	29	4
HS 12 / Ø 4.00	4.000		12	16	40	29	4
HS 12 / Ø 3/16"	4.763	3/16"	12	16	40	29	4
HS 12 / Ø 5.00	5.000		12	16	40	29	4
HS 12 / Ø 6.00	6.000		12	16	40	36	4
HS 12 / Ø 1/4"	6.350	1/4"	12	16	40	36	4
HS 12 / Ø 7.00	7.000		12	16	40	37	4
HS 12 / Ø 5/16"	7.938	5/16"	12	16	40	37	4
HS 12 / Ø 8.00	8.000		12	16	40	37	4
HS 12 / Ø 9.00	9.000		12	16	40	37	4
HS 12 / Ø 3/8"	9.525	3/8"	12	16	40	40	4
HS 12 / Ø 10.00	10.000		12	16	40	40	4

### Reduction Sleeves HS 20 | HS 20-CF

Type	d [mm]	d [Inch]	D1 [mm]	D2 [mm]	L1 [mm]	L2 [mm]	L3 [mm]
HS 20 / Ø 3.00	3.000		20	25	50	28	4
HS 20 / Ø 1/8"	3.175	1/8"	20	25	50	28	4
HS 20 / Ø 4.00	4.000		20	25	50	28	4
HS 20 / Ø 3/16"	4.763	3/16"	20	25	50	28	4
HS 20 / Ø 5.00	5.000		20	25	50	28	4
HS 20 / Ø 6.00	6.000		20	25	50	36	4
HS 20 / Ø 1/4"	6.350	1/4"	20	25	50	36	4
HS 20 / Ø 7.00	7.000		20	25	50	38	4
HS 20 / Ø 5/16"	7.938	5/16"	20	25	50	37	4
HS 20 / Ø 8.00	8.000		20	25	50	37	4
HS 20 / Ø 9.00	9.000		20	25	50	38	4
HS 20 / Ø 3/8"	9.525	3/8"	20	25	50	38	4
HS 20 / Ø 10.00	10.000		20	25	50	40	4
HS 20 / Ø 11.00	11.000		20	25	50	40	4
HS 20 / Ø 12.00	12.000		20	25	50	45	4
HS 20 / Ø 1/2"	12.700	1/2"	20	25	50	45	4
HS 20 / Ø 13.00	13.000		20	25	50	45	4
HS 20 / Ø 14.00	14.000		20	25	50	45	4
HS 20 / Ø 15.00	15.000		20	25	50	45	4
HS 20 / Ø 5/8"	15.875	5/8"	20	25	50	48	4
HS 20 / Ø 16.00	16.000		20	25	50	48	4

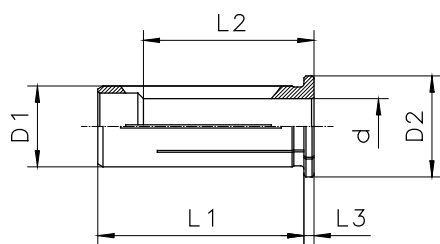


### Reduction Sleeves Microbore HS 12-MB

Type	d [mm]	d [Inch]	D1 [mm]	D2 [mm]	L1 [mm]	L2 [mm]	L3 [mm]
HS 12-MB / Ø 1.00	1.000	-	12	16	40	20	4
HS 12-MB / Ø 1.50	1.500	-	12	16	40	20	4
HS 12-MB / Ø 2.00	2.000	-	12	16	40	20	4
HS 12-MB / Ø 2.50	2.500	-	12	16	40	20	4



Never clamp a reduction sleeve without a tool.  
Reduction sleeve may be damaged!



### Reduction Sleeves HS 25

Type	d [mm]	d [Inch]	D1 [mm]	D2 [mm]	L1 [mm]	L2 [mm]	L3 [mm]
HS 25 / Ø 3.00	3.000		25	30	56	29	4
HS 25 / Ø 1/8"	3.175	1/8"	25	30	56	29	4
HS 25 / Ø 4.00	4.000		25	30	56	29	4
HS 25 / Ø 3/16"	4.763	3/16"	25	30	56	29	4
HS 25 / Ø 5.00	5.000		25	30	56	29	4
HS 25 / Ø 6.00	6.000		25	30	56	37	4
HS 25 / Ø 1/4"	6.350	1/4"	25	30	56	37	4
HS 25 / Ø 7.00	7.000		25	30	56	37	4
HS 25 / Ø 5/16"	7.938	5/16"	25	30	56	37	4
HS 25 / Ø 8.00	8.000		25	30	56	37	4
HS 25 / Ø 9.00	9.000		25	30	56	38	4
HS 25 / Ø 3/8"	9.525	3/8"	25	30	56	38	4
HS 25 / Ø 10.00	10.000		25	30	56	40	4
HS 25 / Ø 7/16"	11.112	7/16"	25	30	56	40	4
HS 25 / Ø 12.00	12.000		25	30	56	46	4
HS 25 / Ø 1/2"	12.700	1/2"	25	30	56	46	4
HS 25 / Ø 14.00	14.000		25	30	56	47	4
HS 25 / Ø 9/16"	14.288	9/16"	25	30	56	47	4
HS 25 / Ø 5/8"	15.875	5/8"	25	30	56	48	4
HS 25 / Ø 16.00	16.000		25	30	56	48	4
HS 25 / Ø 11/16"	17.461	11/16"	25	30	56	48	4
HS 25 / Ø 18.00	18.000		25	30	56	48	4
HS 25 / Ø 3/4"	19.050	3/4"	25	30	56	48	4
HS 25 / Ø 20.00	20.000		25	30	56	50	4
HS 25 / Ø 13/16"	20.638	13/16"	25	30	56	50	4

### Reduction Sleeves HS 32

Type	d [mm]	d [Inch]	D1 [mm]	D2 [mm]	L1 [mm]	L2 [mm]	L3 [mm]
HS 32 / Ø 3/16"	4.763	3/16"	32	36	60	29	4
HS 32 / Ø 5.00	5.000		32	36	60	29	4
HS 32 / Ø 6.00	6.000		32	36	60	36	4
HS 32 / Ø 1/4"	6.350	1/4"	32	36	60	36	4
HS 32 / Ø 7.00	7.000		32	36	60	37	4
HS 32 / Ø 5/16"	7.938	5/16"	32	36	60	36	4
HS 32 / Ø 8.00	8.000		32	36	60	36	4
HS 32 / Ø 9.00	9.000		32	36	60	37	4
HS 32 / Ø 3/8"	9.525	3/8"	32	36	60	37	4
HS 32 / Ø 10.00	10.000		32	36	60	40	4
HS 32 / Ø 11.00	11.000		32	36	60	40	4
HS 32 / Ø 7/16"	11.112	7/16"	32	36	60	45	4
HS 32 / Ø 12.00	12.000		32	36	60	45	4
HS 32 / Ø 1/2"	12.700	1/2"	32	36	60	45	4
HS 32 / Ø 13.00	13.000		32	36	60	45	4
HS 32 / Ø 14.00	14.000		32	36	60	46	4
HS 32 / Ø 9/16"	14.288	9/16"	32	36	60	46	4
HS 32 / Ø 15.00	15.000		32	36	60	46	4
HS 32 / Ø 5/8"	15.875	5/8"	32	36	60	46	4
HS 32 / Ø 16.00	16.000		32	36	60	48	4
HS 32 / Ø 17.00	17.000		32	36	60	48	4
HS 32 / Ø 11/16"	17.461	11/16"	32	36	60	48	4
HS 32 / Ø 18.00	18.000		32	36	60	49	4
HS 32 / Ø 19.00	19.000		32	36	60	49	4
HS 32 / Ø 3/4"	19.050	3/4"	32	36	60	50	4
HS 32 / Ø 20.00	20.000		32	36	60	50	4
HS 32 / Ø 13/16"	20.638	13/16"	32	36	60	50	4
HS 32 / Ø 22.00	22.000		32	36	60	50	4
HS 32 / Ø 7/8"	22.225	7/8"	32	36	60	50	4
HS 32 / Ø 15/16"	23.813	15/16"	32	36	60	52	4
HS 32 / Ø 25.00	25.000		32	36	60	56	4
HS 32 / Ø 1"	25.400	1"	32	36	60	56	4



Never clamp a reduction sleeve without a tool.  
Reduction sleeve may be damaged!



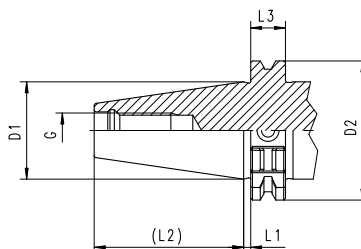
Swiss  
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Tools

## Technical Information

# Standards

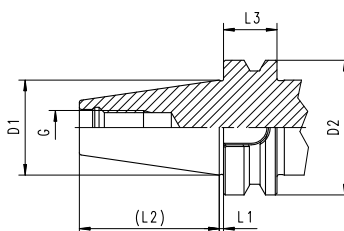
### TC DIN 69871

Type	D1 [mm]	D2 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	G
TC30	31.75	50.00	3.20	47.80	15.85	M12
TC40	44.45	63.55	3.20	68.40	15.85	M16
TC50	69.85	97.50	3.20	101.75	15.85	M24



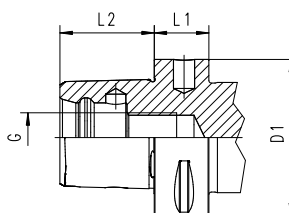
### BT MAS 403

Type	D1 [mm]	D2 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	G
BT30	31.75	46	2	48.40	20	M12
BT40	44.45	63	2	65.40	25	M16
BT50	69.85	100	3	101.80	35	M24



### Polygon Shank ISO 26623

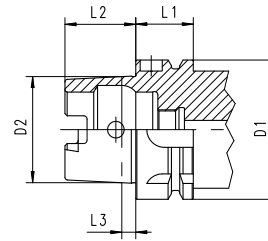
Type	D1 [mm]	L1 [mm]	L2 [mm]	G
Polygon Shank C3	32	15	19	M12 x 1.5
Polygon Shank C4	40	20	24	M14 x 1.5
Polygon Shank C5	50	20	30	M16 x 1.5
Polygon Shank C6	63	22	38	M20 x 2.0
Polygon Shank C8	80	30	48	M20 x 2.0



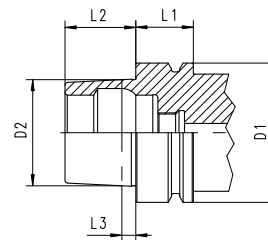
## HSK DIN 69893

Type	D1 [mm]	D2 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Drawing
HSK-A 25	25	19	10	13	2.5	1
HSK-C 25	25	19	8	13	2.5	1
HSK-E 25	25	19	10	13	2.5	2
HSK-A 32	32	24	20	16	3.2	1
HSK-C 32	32	24	10	16	3.2	1
HSK-E 32	32	24	20	16	3.2	2
HSK-A 40	40	30	20	20	4	1
HSK-C 40	40	30	10	20	4	1
HSK-E 40	40	30	20	20	4	2
HSK-A 50	50	38	26	25	5	1
HSK-C 50	50	38	12.5	25	5	1
HSK-E 50	50	38	26	25	5	2
HSK-F 50	50	30	26	20	4	2
HSK-A 63	63	48	26	32	6.3	1
HSK-C 63	63	48	12.5	32	6.3	1
HSK-E 63	63	48	26	32	6.3	2
HSK-F 63	63	38	26	25	5	2
HSK-A 80	80	60	26	40	8	1
HSK-C 80	80	60	16	40	8	1
HSK-F 80	80	48	26	32	6.3	2
HSK-A 100	100	75	29	50	10	1
HSK-C 100	100	75	16	50	10	1
HSK-E 100	100	70	29	50	10	2

1



2





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# TAP Dimensions

## Shank Diameter of Taps

Thread		ISO 529*		ISO 2283		DIN 371		DIN 357 DIN 376		DIN 352		JIS B 4430 1998		ASME B 94.9 1999	
[mm]	[Inch]	[Ø]	[□]	[Ø]	[□]	[Ø]	[□]	[Ø]	[□]	[Ø]	[□]	[Ø]	[□]	[Ø]	[□]
M 1.0		2.50	2.00	–	–	2.50	2.10	–	–	2.50	2.10	3.00	2.50	–	–
M 1.1		2.50	2.00	–	–	2.50	2.10	–	–	2.50	2.10	3.00	2.50	–	–
M 1.2		2.50	2.00	–	–	2.50	2.10	–	–	2.50	2.10	3.00	2.50	–	–
M 1.4		2.50	2.00	–	–	2.50	2.10	–	–	2.50	2.10	3.00	2.50	–	–
M 1.6	1/16	2.50	2.00	–	–	2.50	2.10	–	–	2.50	2.10	3.00	2.50	0.141	0.110
M 1.7		–	2.00	–	–	2.50	2.10	–	–	2.50	2.10	3.00	2.50	–	–
M 1.8		2.50	2.00	–	–	2.50	2.10	–	–	2.50	2.10	3.00	2.50	0.141	0.110
M 2.0		2.50	2.00	–	–	2.80	2.10	–	–	2.80	2.10	3.00	2.50	0.141	0.110
M 2.2		2.80	2.24	–	–	2.80	2.10	–	–	2.80	2.10	3.00	2.50	0.141	0.110
M 2.3		–	–	–	–	2.80	2.10	–	–	2.80	2.10	3.00	2.50	–	–
M 2.5	3/32	2.80	2.24	–	–	2.80	2.10	–	–	2.80	2.10	3.00	2.50	0.141	0.110
M 2.6		–	–	–	–	2.80	2.10	–	–	2.80	2.10	3.00	2.50	–	–
M 3.0	1/8	3.15	2.50	2.24	1.80	3.50	2.70	2.20	–	3.50	2.70	4.00	3.20	0.141	0.110
M 3.5		3.55	2.80	2.50	2.00	4.00	3.00	2.50	2.10	4.00	3.00	4.00	3.20	0.141	0.110
M 4.0	5/32	4.00	3.15	3.15	2.50	4.50	3.40	2.80	2.10	4.50	3.40	5.00	4.00	0.168	0.131
M 4.5	3/16	4.50	3.55	3.55	2.80	6.00	4.90	3.50	2.70	6.00	4.90	5.00	4.00	0.194	0.152
M 5.0		5.00	4.00	4.00	3.15	6.00	4.90	3.50	2.70	6.00	4.90	5.50	4.50	0.194	0.152
M 6.0	1/4	6.30	5.00	4.50	3.55	6.00	4.90	4.50	3.40	6.00	4.90	6.00	4.50	0.255	0.191
M 7.0	5/16	7.10	5.60	5.60	4.50	7.00	5.50	5.50	4.30	6.00	4.90	6.20	5.00	0.318	0.238
M 8.0		8.00	6.30	6.30	5.00	8.00	6.20	6.00	4.90	6.00	4.90	6.20	5.00	0.318	0.238
M 9.0		9.00	7.10	7.10	5.60	9.00	7.00	7.00	5.50	7.00	5.50	7.00	5.50	–	–
M 10.0	3/8	10.00	8.00	8.00	6.30	10.00	8.00	7.00	5.50	7.00	5.50	7.00	5.50	0.381	0.286
M 11.0		8.00	6.30	8.00	6.30	–	–	8.00	6.20	8.00	6.20	8.00	6.00	–	–
M 12.0	1/2	9.00	7.10	9.00	7.10	–	–	9.00	7.00	9.00	7.00	8.50	6.50	0.367	0.275
M 14.0	9/16	11.20	9.00	11.20	9.00	–	–	11.00	9.00	11.00	9.00	10.50	8.00	0.429	0.322
M 16.0	5/8	12.50	10.00	12.50	10.00	–	–	12.00	9.00	12.00	9.00	12.50	10.00	0.480	0.360
M 18.0	11/16	14.00	11.20	14.00	11.20	–	–	14.00	11.00	14.00	11.00	14.00	11.00	0.542	0.406
M 20.0	13/16	14.00	11.20	14.00	11.20	–	–	16.00	12.00	16.00	12.00	15.00	12.00	0.652	0.489
M 22.0	7/8	16.00	12.50	16.00	12.50	–	–	18.00	14.50	18.00	14.50	17.00	13.00	0.697	0.523
M 24.0	15/16	18.00	14.00	18.00	14.00	–	–	18.00	14.50	18.00	14.50	19.00	15.00	0.760	0.570
M 27.0	1/16	20.00	16.00	–	–	–	–	20.00	16.00	20.00	16.00	20.00	15.00	0.896	0.672
M 30.0	3/16	20.00	16.00	–	–	–	–	22.00	18.00	22.00	18.00	23.00	17.00	1.021	0.766

\*M3-M10 with reinforced shank.

All dimensions in mm (except US Standard ASME B 94.9 in Inch).