



MANDO

Efficient and economical





Often complete machining fails for lack of an effective I.D. clamping device. In many cases the jaw chuck is a makeshift solution. However, even conventional mandrels with slotted clamping sleeves quickly reach their limits in terms of accuracy, rigidity, and opening stroke. HAINBUCH segmented mandrels use state-of-the-art clamping technology that is convincing, even in the most critical applications.

The central element is the vulcanized segmented clamping bushing. Because conventional clamping bushings are made of spring steel and are only annealed to spring hardness, they are »soft« and they must »bend« to clamp the workpiece. HAINBUCH segmented bushings, on the other hand, are made of case-hardened chromium-nickel-steel and have segments that are extremely hard, wear resistant and rigid. All contact surfaces are completely ground in one operation guaranteeing optimum run-out accuracy.

Key advantages

- Extremely high clamping force even at the smallest clamping Ø
- Clamping range Ø 8 – 200 mm
- Large clamping range and vibration dampening due to vulcanized clamping elements
- Standard segmented clamping bushings and workpiece end-stops for machining to size available



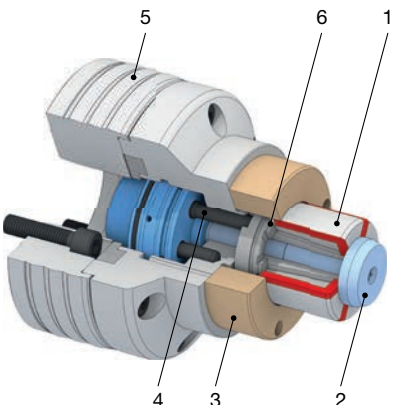
Mandrel MANDO T211 in use



MANDO segmented mandrels at a glance

	MANDO T211	MANDO T212	MANDO T812
			
Description	Pull-back / with draw bolt	Pull-back / without draw bolt for blind bores	Deadlength / without draw bolt for pick-off with the sub spindle
Sizes	0, 1, 2, 3, 4, 5, 6, 7	XXS, XS, S, 0, 1, 2, 3, 4, 5, 6, 7	XXS, XS, S, 0, 1, 2, 3, 4
Clamping range of all sizes [mm]	20 – 200	8 – 190	8 – 100
Actuation	Draw	Draw	Pressure
Advantages	■ Workpiece stabilization through axial draw force applied against the workpiece end-stop ■ Less expensive segmented clamping bushings and end-stops compared to MANDO T212	■ Workpiece stabilization through axial draw force applied against the workpiece end-stop ■ Clamping without draw bolt, consequently ideal for blind bores	■ Radial clamping, no pull-back against workpiece end-stop – ideal for pick-off from the main spindle ■ Clamping without draw bolt, consequently ideal for blind bores
Clamping elements	 Segmented clamping bushing RD	 Segmented clamping bushing RD	 Segmented clamping bushing RD

MANDO T211 in detail

Designation	
1 Vulcanized segmented clamping bushing made of case-hardened steel [60 HRC] 2 Draw bolt [with safeguard to prevent unscrewing when in open position] 3 End-stop 4 Integrated ejector pins for forced opening of the clamping 5 Spindle flange suitable for all standard mandrel sizes 6 Torsional safety lock of segmented clamping bushing	



MANDO T212 in detail

Designation	
1 Vulcanized segmented clamping bushing made of case-hardened steel [60 HRC] 2 Installation aid, recommended for vertical machines from mandrel size 2 and up 3 Torsional safety lock of segmented clamping bushing 4 Coupling ring for fast changing of the segmented clamping bushing 5 Crown-coupling 6 Spindle flange suitable for all standard mandrel sizes 7 End-stop	

MANDO T812 in detail

Designation	
1 Vulcanized segmented clamping bushing made of case-hardened steel [60 HRC] 2 Installation aid, recommended for vertical machines from mandrel size 2 and up 3 Torsional safety lock of segmented clamping bushing 4 Coupling ring for fast changing of the segmented clamping bushing 5 Mandrel body including coupling 6 Spindle flange suitable for all standard mandrel sizes 7 End-stop	



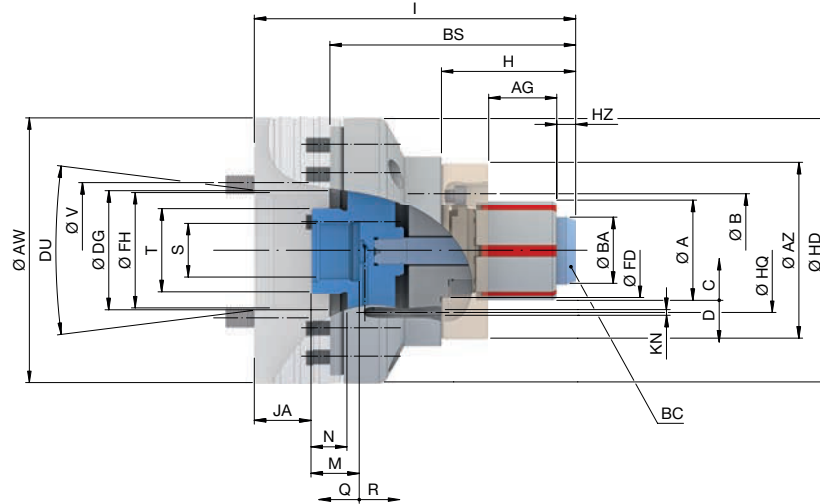
Order overview. MANDO mandrels

Product	Size	Clamping range [mm]	In stock	Material no.
MANDO T211	0	20 – 28	✓	10001871
	1	26 – 38	✓	10001872
	2	36 – 54	✓	10001873
	3	50 – 80	✓	10001874
	4	69 – 120	✓	10001876
	5	100 – 130	✓	10001870
	6	130 – 160	✓	10001882
	7	160 – 200	✓	10001883
MANDO T212	XXS	8 – 13	✓	10001890
	XS	13 – 19	✓	10001891
	S	16 – 21	✓	10001892
	0	20 – 28	✓	10001893
	1	26 – 38	✓	10001894
	2	36 – 54	✓	10001895
	3	50 – 80	✓	10001896
	4	69 – 100	✓	10001897
	5	100 – 130	✓	10001888
	6	130 – 160	✓	10001889
	7	160 – 190	✓	10001906
MANDO T812	XXS	8 – 13	✓	10000545
	XS	13 – 19	✓	10000546
	S	16 – 21	✓	10000547
	0	20 – 28	✓	10000548
	1	26 – 38	✓	10000549
	2	36 – 54	✓	10000550
	3	50 – 80	✓	10000551
	4	69 – 100	✓	10000552

Mandrels without spindle flange.



MANDO T211 size 0. Technical data



Size	0									
Clamping range [mm]	A	20 – 28								
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220	
Run-out ≤ [mm]		0,010								
Max. radial clamping force [kN]		42								
Max. axial drawtube force [pull / push] [kN]		10								
Max. clamping length [mm]	AG	22								
Reserve stroke in Ø [mm]	D	0,3								
Release stroke in Ø [mm]	C	0,4								
RPM n max. [1/min.]		7000								
Reserve stroke axial [mm]	Q	1,5								
Release stroke axial [mm]	R	2								
Max. actuating torque [Nm]	BC	10								
Draw bolt Ø [mm]	BA	19								
Draw bolt head height [mm]	HZ	7,5								
Reception workpiece end-stop	FD	Ø 32 f7								
End-stop outer Ø [mm]	AZ	65								
Bolt hole circle end-stop	B	LK Ø 50 [3 x M6]								
Length [mm]	H	40								
Length 2 [mm]	BS	100								
Total length [mm]	I	140			144		140			
Connecting thread inside	S	M30 x 1,5								
Connecting thread outside	T	M44 x 1,5								
Distance [mm]	JA	30			34		30			
Depth of thread [mm]	M	25,5								
Thread length [mm]	N	19								
Max. drawtube Ø [mm]	DG	54								
Minimum length of DG [mm]		13								
Bore-Ø	FH	61	79,6	103,2	100	77	80	103		
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	
Outer Ø [mm]	AW	140			165	210	140	150	180	230
Outer Ø 2 [mm]	HD	139								
Air sensing control bolt hole circle-Ø [mm]	HQ	64								
Air sensing control bore Ø [mm]	KN	3								
Central air sensing connection Ø optional [mm]		12 H7								
Weight [kg]		8,5	7,9	8,9	13,7	8,1	8,7	10,5	16	



Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Draw bolt

Technical drawing of a mechanical assembly, likely a pump or motor component, showing various dimensions and labels. The drawing is a cross-sectional view of a complex assembly with multiple components and internal features.

Key dimensions and labels include:

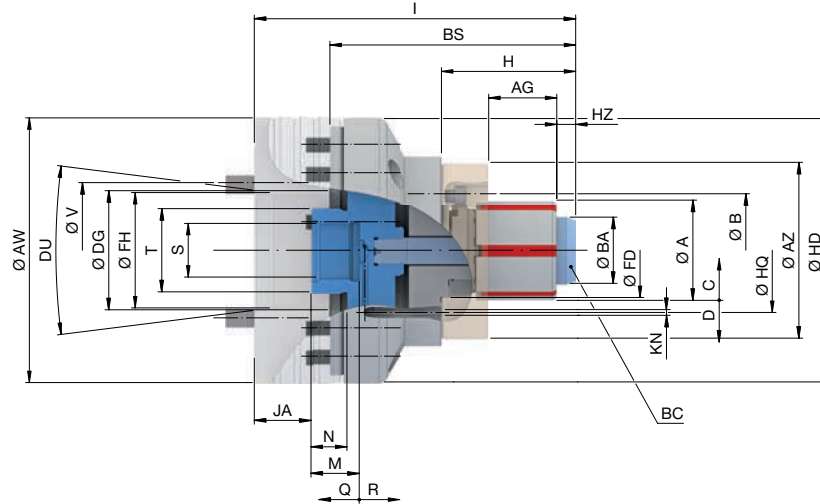
- Overall Dimensions:**
 - $\varnothing AW$: Overall outer diameter at the top.
 - $\varnothing HD$: Overall outer diameter at the bottom.
 - $\varnothing V$: Diameter of a central bore.
 - $\varnothing DG$: Diameter of a bore.
 - $\varnothing FH$: Diameter of a bore.
 - $\varnothing BA$: Diameter of a bore.
 - $\varnothing FD$: Diameter of a bore.
 - $\varnothing A$: Diameter of a bore.
 - $\varnothing B$: Diameter of a bore.
 - $\varnothing HQ$: Diameter of a bore.
 - $\varnothing AZ$: Diameter of a bore.
- Lengths and Distances:**
 - DU : Distance from the top to the start of the central bore.
 - T : Distance between two bores.
 - S : Distance between two bores.
 - BS : Distance from the top to the start of the central bore.
 - H : Distance from the top to the start of the central bore.
 - AG : Distance from the top to the start of the central bore.
 - HZ : Distance from the top to the start of the central bore.
 - JA : Distance from the top to the start of the central bore.
 - N : Distance from the top to the start of the central bore.
 - M : Distance from the top to the start of the central bore.
 - Q : Distance from the top to the start of the central bore.
 - R : Distance from the top to the start of the central bore.
 - KN : Distance from the top to the start of the central bore.
 - D : Distance from the top to the start of the central bore.
 - C : Distance from the top to the start of the central bore.
 - AZ : Distance from the top to the start of the central bore.
- Other Labels:**
 - BC : Label for a component.

				
	Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

- Mandrel without spindle flange / without air sensing adapter
- Draw bolt



MANDO T211 size 2. Technical data



Size	2									
Clamping range [mm]	A	36 – 54								
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220	
Run-out ≤ [mm]		0,010								
Max. radial clamping force [kN]		85								
Max. axial drawtube force [pull / push] [kN]		20								
Max. clamping length [mm]	AG	43								
Reserve stroke in Ø [mm]	D	0,3								
Release stroke in Ø [mm]	C	0,5								
RPM n max. [1/min.]		7000								
Reserve stroke axial [mm]	Q	1,5								
Release stroke axial [mm]	R	2,5								
Max. actuating torque [Nm]	BC	25								
Draw bolt Ø [mm]	BA	35								
Draw bolt head height [mm]	HZ	10								
Reception workpiece end-stop	FD	Ø 50 f7								
End-stop outer Ø [mm]	AZ	93								
Bolt hole circle end-stop	B	LK Ø 78 [3 x M6]								
Length [mm]	H	71								
Length 2 [mm]	BS	130								
Total length [mm]	I	170			174		170			
Connecting thread inside	S	M30 x 1,5								
Connecting thread outside	T	M44 x 1,5								
Distance [mm]	JA	30			34		30			
Depth of thread [mm]	M	25,5								
Thread length [mm]	N	19								
Max. drawtube Ø [mm]	DG	54								
Minimum length of DG [mm]		13								
Bore-Ø	FH	61	79,6	103,2	100	77	80	103		
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	
Outer Ø [mm]	AW	140			165	210	140	150	180	230
Outer Ø 2 [mm]	HD	139								
Air sensing control bolt hole circle-Ø [mm]	HQ	76								
Air sensing control bore Ø [mm]	KN	3								
Central air sensing connection Ø optional [mm]		12 H7								
Weight [kg]		9,3	8,7	9,7	14,5	8,9	9,5	11,3	16,8	



Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Draw bolt

Technical drawing of a mechanical assembly, likely a pump or motor component, showing various dimensions and labels. The drawing is a cross-sectional view of a complex assembly with multiple components and internal features.

Key dimensions and labels include:

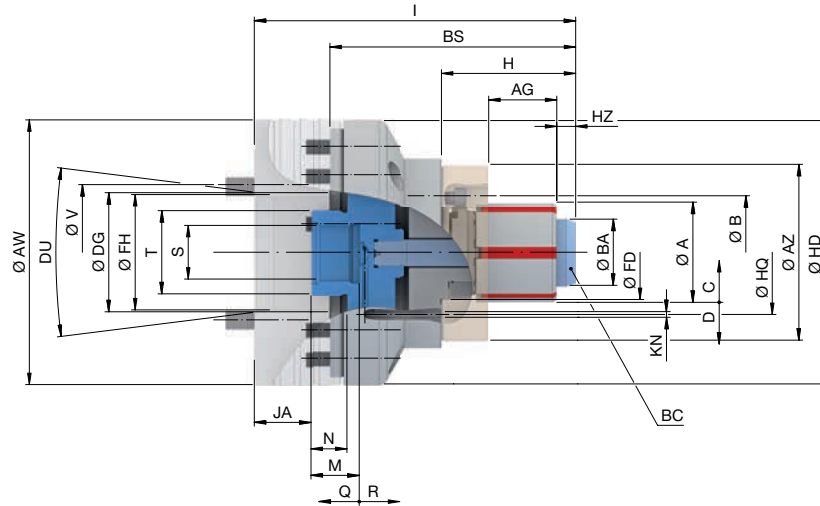
- Overall Dimensions:**
 - $\varnothing AW$: Overall outer diameter at the top.
 - $\varnothing HD$: Overall outer diameter at the bottom.
 - $\varnothing V$: Diameter of a central vertical feature.
 - $\varnothing DG$: Diameter of a feature below $\varnothing V$.
 - $\varnothing FH$: Diameter of a feature below $\varnothing DG$.
 - $\varnothing BA$: Diameter of a feature in the middle section.
 - $\varnothing FD$: Diameter of a feature below $\varnothing BA$.
 - $\varnothing A$: Diameter of a feature below $\varnothing FD$.
 - $\varnothing B$: Diameter of a feature below $\varnothing A$.
 - $\varnothing HQ$: Diameter of a feature below $\varnothing B$.
 - $\varnothing AZ$: Diameter of a feature below $\varnothing HQ$.
- Length and Distance Dimensions:**
 - DU : Distance from the top to the start of the central vertical feature.
 - T : Distance between $\varnothing DG$ and $\varnothing FH$.
 - S : Distance between $\varnothing FH$ and the start of the middle section.
 - BS : Distance from the top to the start of the middle section.
 - H : Distance from the top to the start of the bottom section.
 - AG : Distance from the top to the start of the bottom section.
 - HZ : Distance from the top to the start of the bottom section.
 - C : Distance between $\varnothing A$ and $\varnothing B$.
 - D : Distance between $\varnothing B$ and $\varnothing HQ$.
 - KN : Distance between $\varnothing HQ$ and $\varnothing AZ$.
 - JA : Distance from the top to the start of the bottom section.
 - N : Distance from the top to the start of the bottom section.
 - M : Distance from the top to the start of the bottom section.
 - Q : Distance from the top to the start of the bottom section.
 - R : Distance from the top to the start of the bottom section.
- Other Labels:**
 - BC : Label for a component in the middle section.

				
	Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

- Mandrel without spindle flange / without air sensing adapter
- Draw bolt



MANDO T211 size 4. Technical data



Size	4								
Clamping range [mm]	A	69 – 120							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,010							
Max. radial clamping force [kN]		150							
Max. axial drawtube force [pull / push] [kN]		35							
Max. clamping length [mm]	AG	59							
Reserve stroke in Ø [mm]	D	0,5							
Release stroke in Ø [mm]	C	0,6							
RPM n max. [1/min.]		6000							
Reserve stroke axial [mm]	Q	2,5							
Release stroke axial [mm]	R	3							
Max. actuating torque [Nm]	BC	55							
Draw bolt Ø [mm]	BA	68							
Draw bolt head height [mm]	HZ	16							
Reception workpiece end-stop	FD	Ø 78 f7							
End-stop outer Ø [mm]	AZ	100							
Bolt hole circle end-stop	B	LK Ø 90 [3 x M6]							
Length [mm]	H	98							
Length 2 [mm]	BS	155							
Total length [mm]	I	195				199		195	
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30				34		30	
Depth of thread [mm]	M	27							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	60							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140		165	210	140	150	180	230
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	91							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		11.3	10.7	11.7	16.5	10.9	11.5	13.3	18.8

For size 4, clamping range 101 - 120 mm, a max. speed of 4200 RPM applies.

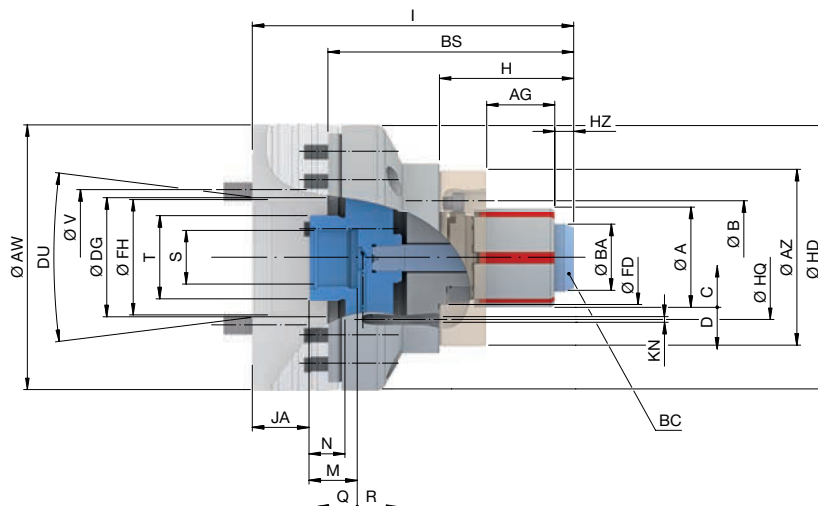
Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Draw bolt



MANDO T211 size 5. Technical data



Size	5			
Clamping range [mm]	A	100 – 130		
Spindle nose	DU	A2-6	A2-8	A2-11
Run-out ≤ [mm]			0,010	
Max. radial clamping force [kN]			170	
Max. axial drawtube force [pull / push] [kN]			40	
Max. clamping length [mm]	AG		86	
Reserve stroke in Ø [mm]	D		0,6	
Release stroke in Ø [mm]	C		0,6	
RPM n max. [1/min.]			5000	
Reserve stroke axial [mm]	Q		3	
Release stroke axial [mm]	R		3	
Max. actuating torque [Nm]	BC		65	
Draw bolt Ø [mm]	BA		97	
Draw bolt head height [mm]	HZ		16	
Reception workpiece end-stop	FD		Ø 102 f7	
End-stop outer Ø [mm]	AZ		150	
Bolt hole circle end-stop	B		LK Ø 117 [3 x M6]	
Length [mm]	H		120	
Length 2 [mm]	BS		195	
Total length [mm]	I	258,5	262,5	268,5
Connecting thread inside	S		M30 x 1,5	
Connecting thread outside	T		M44 x 1,5	
Distance [mm]	JA	53,5	57,5	63,5
Depth of thread [mm]	M		25,5	
Thread length [mm]	N		19	
Max. drawtube Ø [mm]	DG		97	
Minimum length of DG [mm]			12	
Bore-Ø	FH	103,2	136,2	155
Bolt hole circle	V	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 235 [6 x M20]
Outer Ø [mm]	AW	235		280
Outer Ø 2 [mm]	HD	230		
Air sensing control bolt hole circle-Ø [mm]	HQ	116		
Air sensing control bore Ø [mm]	KN	3		
Weight [kg]		36	35	45

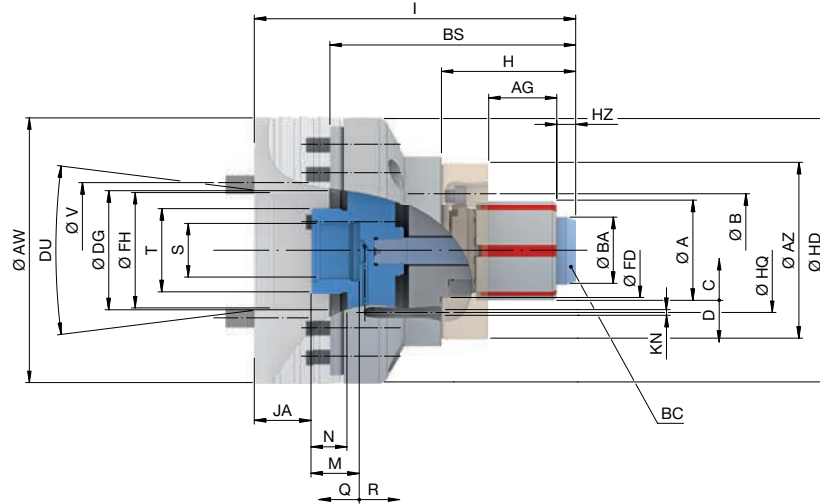
Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Draw bolt



MANDO T211 size 6. Technical data



Size	6		
Clamping range [mm]	A	130 – 160	
Spindle nose	DU	A2-6	A2-8
Run-out ≤ [mm]			0,010
Max. radial clamping force [kN]			170
Max. axial drawtube force [pull / push] [kN]			40
Max. clamping length [mm]	AG		96
Reserve stroke in Ø [mm]	D		0,6
Release stroke in Ø [mm]	C		0,6
RPM n max. [1/min.]			4000
Reserve stroke axial [mm]	Q		3
Release stroke axial [mm]	R		3
Max. actuating torque [Nm]	BC		65
Draw bolt Ø [mm]	BA		125
Draw bolt head height [mm]	HZ		25
Reception workpiece end-stop	FD		Ø 132 f7
End-stop outer Ø [mm]	AZ		180
Bolt hole circle end-stop	B		LK Ø 148 [3 x M6]
Length [mm]	H		137
Length 2 [mm]	BS		220
Total length [mm]	I	283,5	287,5
Connecting thread inside	S		M30 x 1,5
Connecting thread outside	T		M44 x 1,5
Distance [mm]	JA	53,5	57,5
Depth of thread [mm]	M		25,5
Thread length [mm]	N		19
Max. drawtube Ø [mm]	DG		120
Minimum length of DG [mm]			12
Bore-Ø	FH	103,2	136,2
Bolt hole circle	V	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	235	280
Outer Ø 2 [mm]	HD		230
Air sensing control bolt hole circle-Ø [mm]	HQ		146
Air sensing control bore Ø [mm]	KN		3
Weight [kg]		43	53

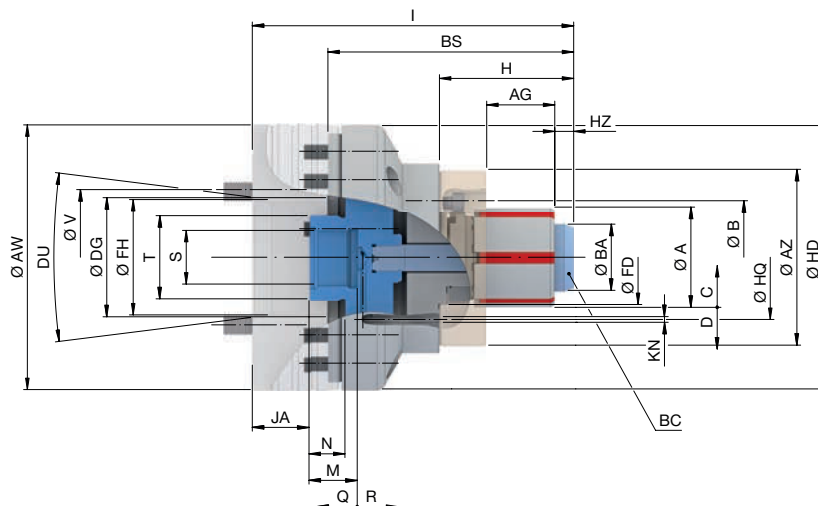


Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Draw bolt



MANDO T211 size 7. Technical data



Size	7		
Clamping range [mm]	A	160 – 200	
Spindle nose	DU	A2-6	A2-8
Run-out ≤ [mm]			0,020
Max. radial clamping force [kN]			170
Max. axial drawtube force [pull / push] [kN]			45
Max. clamping length [mm]	AG		94
Reserve stroke in Ø [mm]	D		0,6
Release stroke in Ø [mm]	C		0,8
RPM n max. [1/min.]			3200
Reserve stroke axial [mm]	Q		3
Release stroke axial [mm]	R		3
Max. actuating torque [Nm]	BC		65
Draw bolt Ø [mm]	BA		156
Draw bolt head height [mm]	HZ		29,5
Reception workpiece end-stop	FD		Ø 162 f7
End-stop outer Ø [mm]	AZ		220
Bolt hole circle end-stop	B		LK Ø 177 [3 x M8]
Length [mm]	H		155
Length 2 [mm]	BS		245
Total length [mm]	I	308,5	312,5
Connecting thread inside	S		M30 x 1,5
Connecting thread outside	T		M44 x 1,5
Distance [mm]	JA	53,5	57,5
Depth of thread [mm]	M		25,5
Thread length [mm]	N		19
Max. drawtube Ø [mm]	DG		140
Minimum length of DG [mm]			12
Bore-Ø	FH	103,2	136,2
Bolt hole circle	V	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	235	280
Outer Ø 2 [mm]	HD		230
Air sensing control bolt hole circle-Ø [mm]	HQ		175
Air sensing control bore Ø [mm]	KN		3
Weight [kg]		55	54

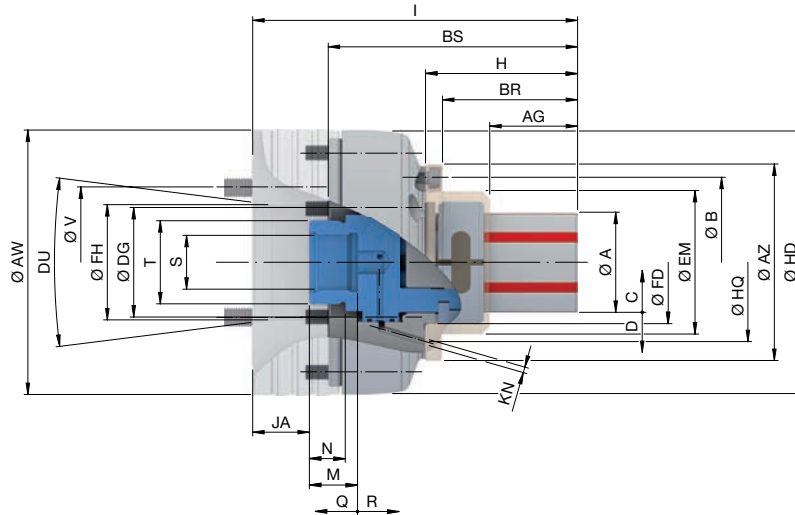
Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Draw bolt



MANDO T212 size XXS. Technical data



Size	XXS								
Clamping range [mm]	A	8 – 13							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,020							
Max. radial clamping force [kN]		42							
Max. axial drawtube force [pull / push] [kN]		10							
Max. clamping length [mm]	AG	12,9							
Reserve stroke in Ø [mm]	D	0,2							
Release stroke in Ø [mm]	C	0,2							
RPM n max. [1/min.]		7000							
Reserve stroke axial [mm]	Q	1,5							
Release stroke axial [mm]	R	1,5							
Reception workpiece end-stop	FD	Ø 34 f7							
End-stop outer Ø [mm]	AZ	65							
End-stop outer Ø 2 [mm]	EM	41							
Bolt hole circle end-stop	B	LK Ø 53 [3 x M5]							
Length [mm]	H	45,5							
Length 2 [mm]	BS	100,5							
Total length [mm]	I	140,5			144,5		140		
Depth [mm]	BR	36,50							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30			34		30		
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140			165		210		
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	56							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		9,1	8,5	9,5	14,3	8,7	9,3	11,1	16,6

Please note: The maximum clamping length [AG] varies from 6 to 12.9 mm depending on the clamping diameter.

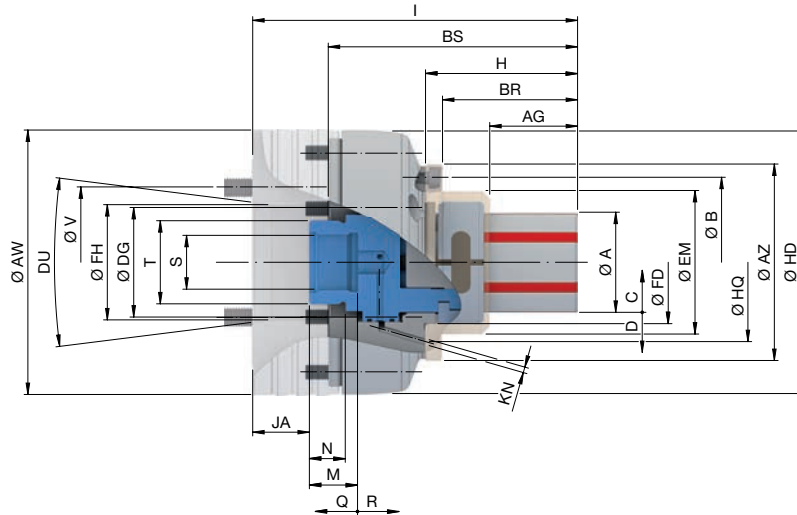
Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Mounting aid depending on size



MANDO T212 size XS. Technical data



Size	XS								
Clamping range [mm]	A	13 – 19							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,020							
Max. radial clamping force [kN]		42							
Max. axial drawtube force [pull / push] [kN]		10							
Max. clamping length [mm]	AG	14							
Reserve stroke in Ø [mm]	D	0,3							
Release stroke in Ø [mm]	C	0,4							
RPM n max. [1/min.]		7000							
Reserve stroke axial [mm]	Q	1,5							
Release stroke axial [mm]	R	2							
Reception workpiece end-stop	FD	Ø 36 f7							
End-stop outer Ø [mm]	AZ	65							
End-stop outer Ø 2 [mm]	EM	42							
Bolt hole circle end-stop	B	LK Ø 53 [3 x M5]							
Length [mm]	H	40							
Length 2 [mm]	BS	95							
Total length [mm]	I	135			139	135			
Depth [mm]	BR	36,50							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30			34	30			
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140			165	210	140	150	180 230
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	56							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		8,7	8,1	9,1	13,9	8,3	8,9	10,7	16,2

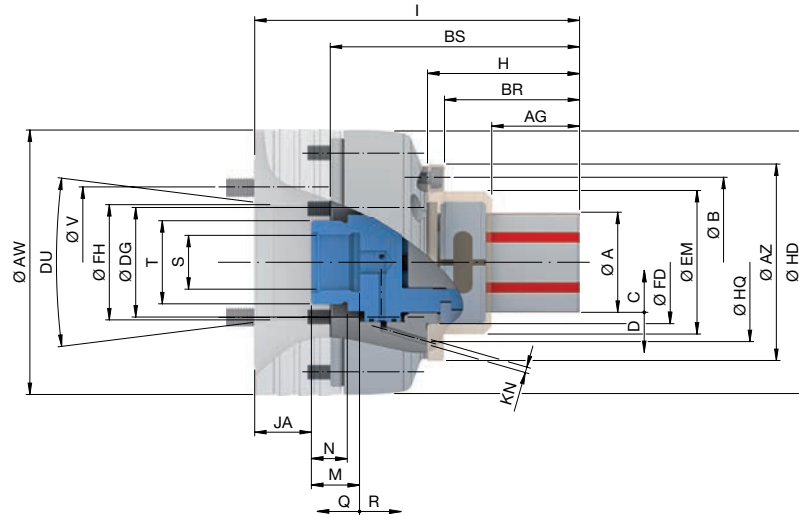


Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T212 size S. Technical data



Size		S									
Clamping range [mm]	A	16 – 21									
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220		
Run-out ≤ [mm]		0,020									
Max. radial clamping force [kN]		42									
Max. axial drawtube force [pull / push] [kN]		10									
Max. clamping length [mm]	AG	15									
Reserve stroke in Ø [mm]	D	0,3									
Release stroke in Ø [mm]	C	0,4									
RPM n max. [1/min.]		7000									
Reserve stroke axial [mm]	Q	1,5									
Release stroke axial [mm]	R	2									
Reception workpiece end-stop	FD	Ø 39 f7									
End-stop outer Ø [mm]	AZ	70									
End-stop outer Ø 2 [mm]	EM	45									
Bolt hole circle end-stop	B	LK Ø 57 [3 x M5]									
Length [mm]	H	47,5									
Length 2 [mm]	BS	97									
Total length [mm]	I	137			141		137				
Depth [mm]	BR	38,00									
Connecting thread inside	S	M30 x 1,5									
Connecting thread outside	T	M44 x 1,5									
Distance [mm]	JA	30			34		30				
Depth of thread [mm]	M	25,5									
Thread length [mm]	N	19									
Max. drawtube Ø [mm]	DG	54									
Minimum length of DG [mm]		13									
Bore-Ø	FH	61	79,6	103,2	100	77	80	103			
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]		
Outer Ø [mm]	AW	140			165		210	140	150	180	230
Outer Ø 2 [mm]	HD	139									
Air sensing control bolt hole circle-Ø [mm]	HQ	60									
Air sensing control bore Ø [mm]	KN	3									
Central air sensing connection Ø optional [mm]		12 H7									
Weight [kg]		8,8	8,2	9,2	14	8,4	9	10,8	16,3		

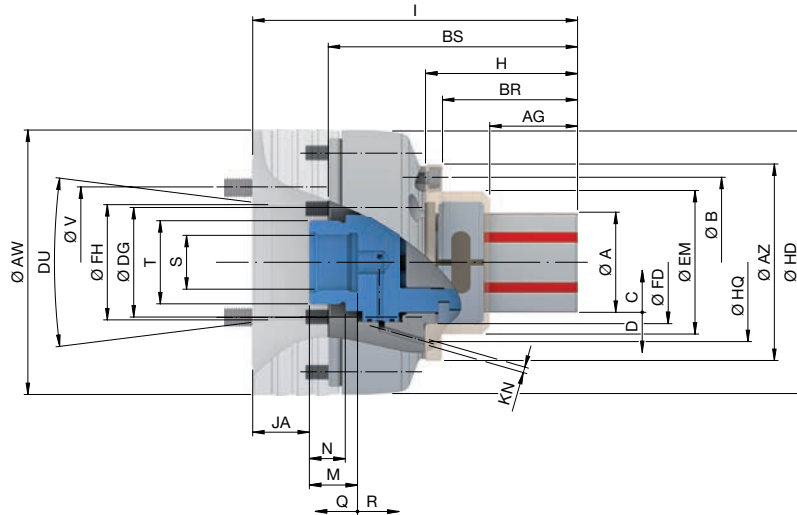


Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T212 size 0. Technical data



Size	0										
Clamping range [mm]	A	20 – 28									
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220		
Run-out ≤ [mm]		0,010									
Max. radial clamping force [kN]		42									
Max. axial drawtube force [pull / push] [kN]		10									
Max. clamping length [mm]	AG	21									
Reserve stroke in Ø [mm]	D	0,3									
Release stroke in Ø [mm]	C	0,4									
RPM n max. [1/min.]		7000									
Reserve stroke axial [mm]	Q	1,5									
Release stroke axial [mm]	R	2									
Reception workpiece end-stop	FD	Ø 47 f7									
End-stop outer Ø [mm]	AZ	90									
End-stop outer Ø 2 [mm]	EM	54									
Bolt hole circle end-stop	B	LK Ø 70 [3 x M6]									
Length [mm]	H	58,5									
Length 2 [mm]	BS	108									
Total length [mm]	I	148			152		148				
Depth [mm]	BR	44									
Connecting thread inside	S	M30 x 1,5									
Connecting thread outside	T	M44 x 1,5									
Distance [mm]	JA	30			34		30				
Depth of thread [mm]	M	25,5									
Thread length [mm]	N	19									
Max. drawtube Ø [mm]	DG	54									
Minimum length of DG [mm]		13									
Bore-Ø	FH	61	79,6	103,2	100	77	80	103			
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]		
Outer Ø [mm]	AW	140			165		210	140	150	180	230
Outer Ø 2 [mm]	HD	139									
Air sensing control bolt hole circle-Ø [mm]	HQ	70									
Air sensing control bore Ø [mm]	KN	3									
Central air sensing connection Ø optional [mm]		12 H7									
Weight [kg]		9,5	8,9	9,9	14,7	9,1	9,7	11,5	17		

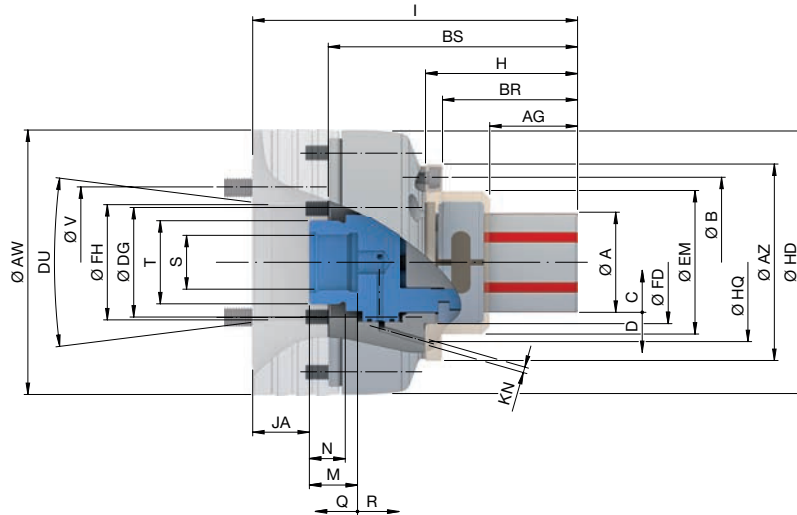


Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T212 size 1. Technical data



Size	1										
Clamping range [mm]	A	26 – 38									
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220		
Run-out ≤ [mm]		0,010									
Max. radial clamping force [kN]		42									
Max. axial drawtube force [pull / push] [kN]		10									
Max. clamping length [mm]	AG	25									
Reserve stroke in Ø [mm]	D	0,3									
Release stroke in Ø [mm]	C	0,4									
RPM n max. [1/min.]		7000									
Reserve stroke axial [mm]	Q	1,5									
Release stroke axial [mm]	R	2									
Reception workpiece end-stop	FD	Ø 55 f7									
End-stop outer Ø [mm]	AZ	90									
End-stop outer Ø 2 [mm]	EM	62									
Bolt hole circle end-stop	B	LK Ø 75 [3 x M6]									
Length [mm]	H	64,5									
Length 2 [mm]	BS	114									
Total length [mm]	I	154			159		154				
Depth [mm]	BR	47									
Connecting thread inside	S	M30 x 1,5									
Connecting thread outside	T	M44 x 1,5									
Distance [mm]	JA	30			34		30				
Depth of thread [mm]	M	25,5									
Thread length [mm]	N	19									
Max. drawtube Ø [mm]	DG	54									
Minimum length of DG [mm]		13									
Bore-Ø	FH	61	79,6	103,2	100	77	80	103			
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]		
Outer Ø [mm]	AW	140			165		210	140	150	180	230
Outer Ø 2 [mm]	HD	139									
Air sensing control bolt hole circle-Ø [mm]	HQ	70									
Air sensing control bore Ø [mm]	KN	3									
Central air sensing connection Ø optional [mm]		12 H7									
Weight [kg]		9,5	8,9	9,9	14,7	9,1	9,7	11,5	17		

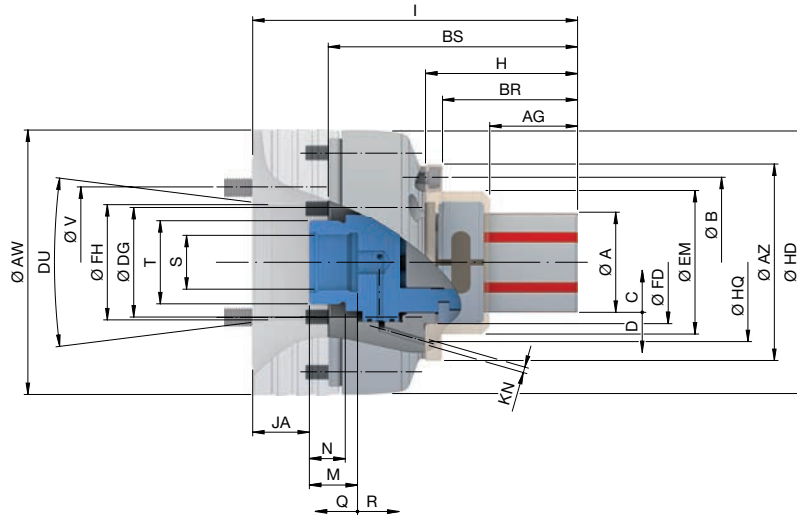
Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T212 size 2. Technical data



Size	2								
Clamping range [mm]	A	36 – 54							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,010							
Max. radial clamping force [kN]		85							
Max. axial drawtube force [pull / push] [kN]		20							
Max. clamping length [mm]	AG	40							
Reserve stroke in Ø [mm]	D	0,3							
Release stroke in Ø [mm]	C	0,5							
RPM n max. [1/min.]		7000							
Reserve stroke axial [mm]	Q	1,5							
Release stroke axial [mm]	R	2							
Reception workpiece end-stop	FD	Ø 65 f7							
End-stop outer Ø [mm]	AZ	104							
End-stop outer Ø 2 [mm]	EM	76							
Bolt hole circle end-stop	B	LK Ø 90 [3 x M6]							
Length [mm]	H	80,5							
Length 2 [mm]	BS	132							
Total length [mm]	I	172			176		172		
Depth [mm]	BR	71,5							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30			34		30		
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140			165		210	140	150
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	84							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		10,4	9,8	10,8	15,6	10	10,6	12,4	17,9

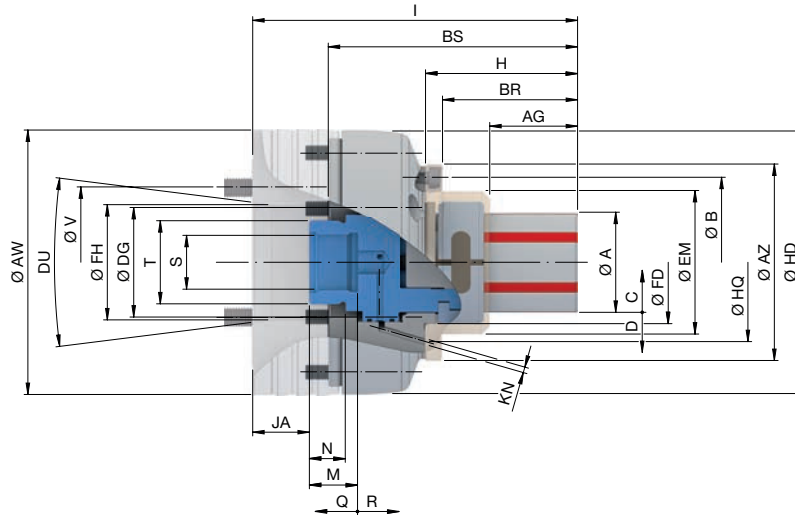


Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T212 size 3. Technical data



Size	3										
Clamping range [mm]	A	50 – 80									
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220		
Run-out ≤ [mm]		0,010									
Max. radial clamping force [kN]		105									
Max. axial drawtube force [pull / push] [kN]		25									
Max. clamping length [mm]	AG	44,5									
Reserve stroke in Ø [mm]	D	0,4									
Release stroke in Ø [mm]	C	0,5									
RPM n max. [1/min.]		6000									
Reserve stroke axial [mm]	Q	2									
Release stroke axial [mm]	R	2,5									
Reception workpiece end-stop	FD	Ø 83 f7									
End-stop outer Ø [mm]	AZ	120									
End-stop outer Ø 2 [mm]	EM	105									
Bolt hole circle end-stop	B	LK Ø 104 [3 x M6]									
Length [mm]	H	87,5									
Length 2 [mm]	BS	140									
Total length [mm]	I	180			184		180				
Depth [mm]	BR	66,50									
Connecting thread inside	S	M30 x 1,5									
Connecting thread outside	T	M44 x 1,5									
Distance [mm]	JA	30			34		30				
Depth of thread [mm]	M	25,5									
Thread length [mm]	N	19									
Max. drawtube Ø [mm]	DG	54									
Minimum length of DG [mm]		13									
Bore-Ø	FH	61	79,6	103,2	100	77	80	103			
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]		
Outer Ø [mm]	AW	140			165		210	140	150	180	230
Outer Ø 2 [mm]	HD	139									
Air sensing control bolt hole circle-Ø [mm]	HQ	100									
Air sensing control bore Ø [mm]	KN	3									
Central air sensing connection Ø optional [mm]		12 H7									
Weight [kg]		11,3	10,7	11,7	16,5	10,9	11,5	13,3	18,8		

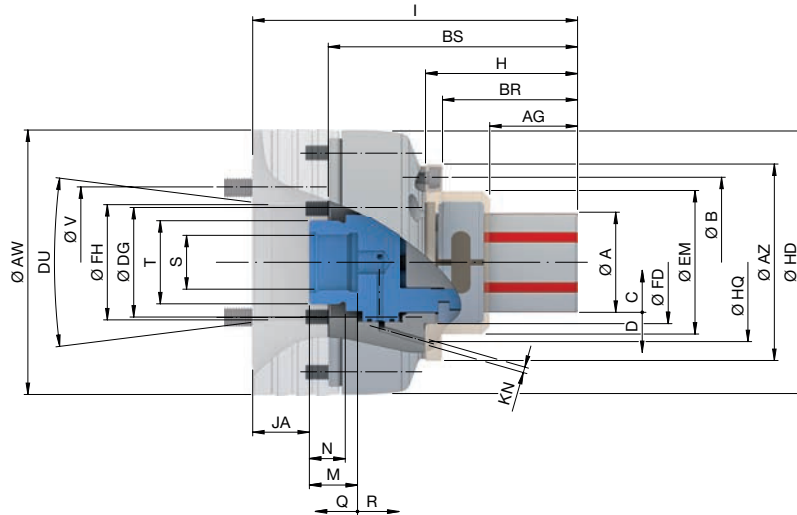


Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T212 size 4. Technical data



Size	4								
Clamping range [mm]	A	69 – 100							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,010							
Max. radial clamping force [kN]		150							
Max. axial drawtube force [pull / push] [kN]		35							
Max. clamping length [mm]	AG	52,5							
Reserve stroke in Ø [mm]	D	0,5							
Release stroke in Ø [mm]	C	0,6							
RPM n max. [1/min.]		6000							
Reserve stroke axial [mm]	Q	2,5							
Release stroke axial [mm]	R	3							
Reception workpiece end-stop	FD	Ø 103 f7							
End-stop outer Ø [mm]	AZ	138							
End-stop outer Ø 2 [mm]	EM	124							
Bolt hole circle end-stop	B	LK Ø 124 [3 x M6]							
Length [mm]	H	97,5							
Length 2 [mm]	BS	148,5							
Total length [mm]	I	188,5			192,5		188,5		
Depth [mm]	BR	77,50							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30			34		30		
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140			165		210	140	150
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	116							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		12,5	11,9	12,9	17,7	12,1	12,7	14,5	20

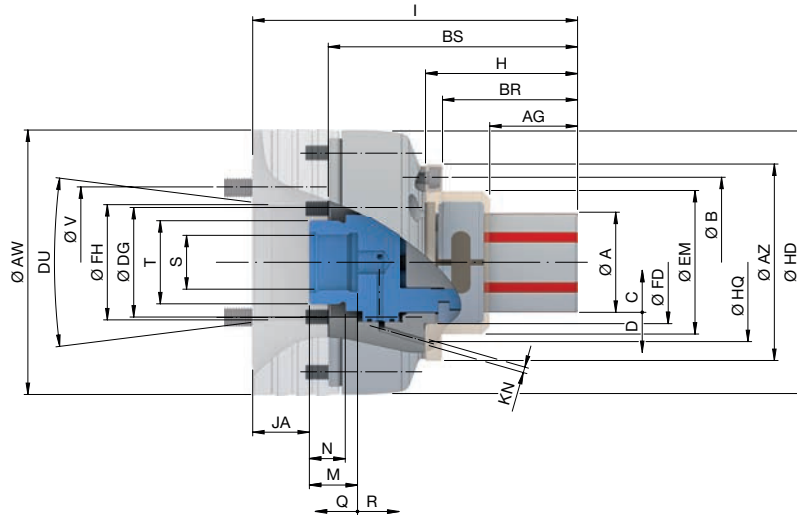
Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T212 size 5. Technical data



Size	5			
Clamping range [mm]	A	100 – 130		
Spindle nose	DU	A2-6	A2-8	A2-11
Run-out ≤ [mm]			0,010	
Max. radial clamping force [kN]			170	
Max. axial drawtube force [pull / push] [kN]			40	
Max. clamping length [mm]	AG		53	
Reserve stroke in Ø [mm]	D		0,6	
Release stroke in Ø [mm]	C		0,6	
RPM n max. [1/min.]			5000	
Reserve stroke axial [mm]	Q		3	
Release stroke axial [mm]	R		3	
Reception workpiece end-stop	FD		Ø 140 f7	
End-stop outer Ø [mm]	AZ		195	
End-stop outer Ø 2 [mm]	EM		160	
Bolt hole circle end-stop	B		LK Ø 176 [3 x M8]	
Length [mm]	H		112	
Length 2 [mm]	BS		175	
Total length [mm]	I	238,5	242,5	248,5
Depth [mm]	BR		92	
Connecting thread inside	S		M30 x 1,5	
Connecting thread outside	T		M44 x 1,5	
Distance [mm]	JA	53,5	57,5	63,5
Depth of thread [mm]	M		25,5	
Thread length [mm]	N		19	
Max. drawtube Ø [mm]	DG		118	
Minimum length of DG [mm]			13	
Bore-Ø	FH	103	136	155
Bolt hole circle	V	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 235 [6 x M20]
Outer Ø [mm]	AW	235		280
Outer Ø 2 [mm]	HD		230	
Air sensing control bolt hole circle-Ø [mm]	HQ		170	
Air sensing control bore Ø [mm]	KN		3	
Central air sensing connection Ø optional [mm]			12 H7	
Weight [kg]		40	39	49

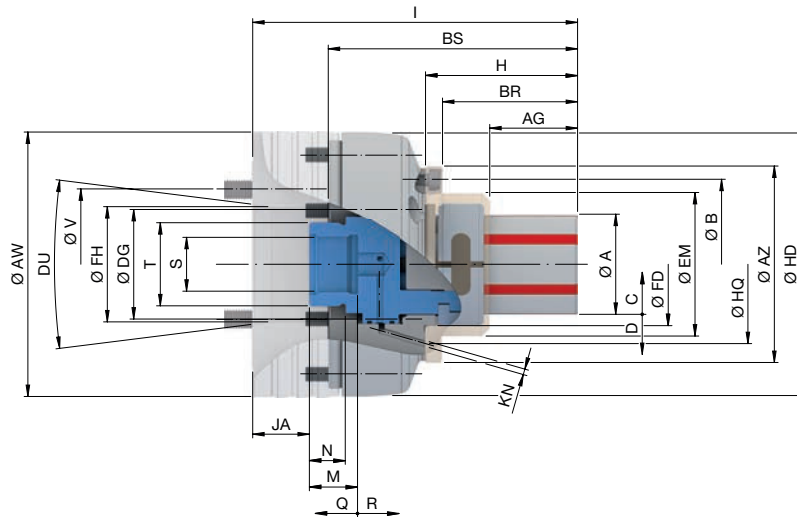


Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T212 size 6. Technical data



Size	6			
Clamping range [mm]	A	130 – 160		
Spindle nose	DU	A2-6	A2-8	A2-11
Run-out ≤ [mm]			0,010	
Max. radial clamping force [kN]			170	
Max. axial drawtube force [pull / push] [kN]			40	
Max. clamping length [mm]	AG		61	
Reserve stroke in Ø [mm]	D		0,6	
Release stroke in Ø [mm]	C		0,6	
RPM n max. [1/min.]			4000	
Reserve stroke axial [mm]	Q		3	
Release stroke axial [mm]	R		3	
Reception workpiece end-stop	FD		Ø 164 f7	
End-stop outer Ø [mm]	AZ		226	
End-stop outer Ø 2 [mm]	EM		190	
Bolt hole circle end-stop	B		LK Ø 200 [3 x M8]	
Length [mm]	H		121,5	
Length 2 [mm]	BS		188,5	
Total length [mm]	I	252	256	262
Depth [mm]	BR		87	
Connecting thread inside	S		M30 x 1,5	
Connecting thread outside	T		M44 x 1,5	
Distance [mm]	JA	53,5	57,5	63,5
Depth of thread [mm]	M		25,5	
Thread length [mm]	N		19	
Max. drawtube Ø [mm]	DG		142	
Minimum length of DG [mm]			13	
Bore-Ø	FH	103	136	155
Bolt hole circle	V	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 235 [6 x M20]
Outer Ø [mm]	AW		235	280
Outer Ø 2 [mm]	HD		231	
Air sensing control bolt hole circle-Ø [mm]	HQ		192	
Air sensing control bore Ø [mm]	KN		3	
Central air sensing connection Ø optional [mm]			12 H7	
Weight [kg]		45		55

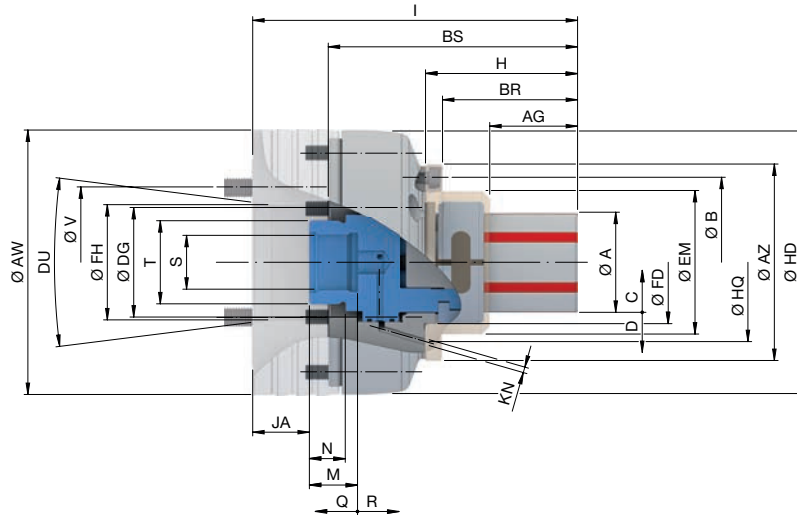


Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T212 size 7. Technical data



Size	7			
Clamping range [mm]	A	160 – 190		
Spindle nose	DU	A2-6	A2-8	A2-11
Run-out ≤ [mm]			0,010	
Max. radial clamping force [kN]			190	
Max. axial drawtube force [pull / push] [kN]			45	
Max. clamping length [mm]	AG		55	
Reserve stroke in Ø [mm]	D		0,6	
Release stroke in Ø [mm]	C		0,8	
RPM n max. [1/min.]			3200	
Reserve stroke axial [mm]	Q		3	
Release stroke axial [mm]	R		4	
Reception workpiece end-stop	FD		Ø 192 f7	
End-stop outer Ø [mm]	AZ		234	
End-stop outer Ø 2 [mm]	EM		212	
Bolt hole circle end-stop	B		LK Ø 216 [3 x M8]	
Length [mm]	H		115	
Length 2 [mm]	BS		188,5	
Total length [mm]	I	247,5	251,5	257,5
Depth [mm]	BR		101	
Connecting thread inside	S		M30 x 1,5	
Connecting thread outside	T		M44 x 1,5	
Distance [mm]	JA	53,5	57,5	63,5
Depth of thread [mm]	M		25,5	
Thread length [mm]	N		19	
Max. drawtube Ø [mm]	DG		142	
Minimum length of DG [mm]			0	
Bore-Ø	FH	103	136	155
Bolt hole circle	V	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 235 [6 x M20]
Outer Ø [mm]	AW	235		280
Outer Ø 2 [mm]	HD		237	
Air sensing control bolt hole circle-Ø [mm]	HQ		216	
Air sensing control bore Ø [mm]	KN		3	
Central air sensing connection Ø optional [mm]			12 H7	
Weight [kg]		49		58

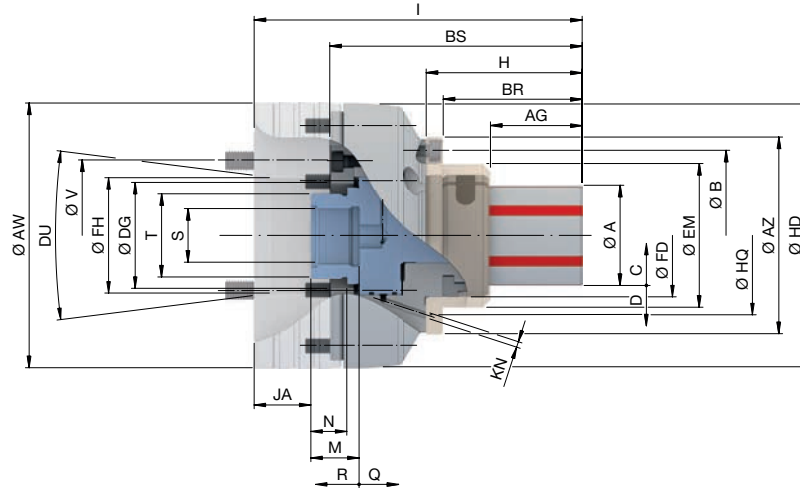


Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T812 size XXS. Technical data



Size	XXS								
Clamping range [mm]	A	8 – 13							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,025							
Max. radial clamping force [kN]		42							
Max. axial compression force [kN]		10							
Max. clamping length [mm]	AG	12,9							
Reserve stroke in Ø [mm]	D	0,2							
Release stroke in Ø [mm]	C	0,2							
RPM n max. [1/min.]		7000							
Reserve stroke axial [mm]	Q	1,5							
Release stroke axial [mm]	R	1,5							
Reception workpiece end-stop	FD	Ø 34 f7							
End-stop outer Ø [mm]	AZ	65							
End-stop outer Ø 2 [mm]	EM	41							
Bolt hole circle end-stop	B	LK Ø 53 [3 x M5]							
Length [mm]	H	44							
Length 2 [mm]	BS	96							
Total length [mm]	I	136		140		136			
Depth [mm]	BR	35							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30		34		30			
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140		165		210		140	150
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	56							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		9,1	8,5	9,5	14,4	8,7	9,3	11,1	16,6

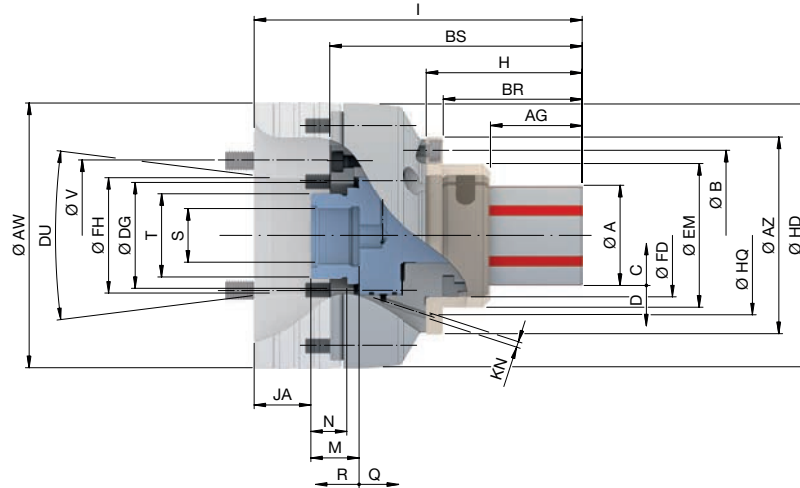
Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T812 size XS. Technical data



Size		XS							
Clamping range [mm]	A	13 – 19							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,025							
Max. radial clamping force [kN]		42							
Max. axial compression force [kN]		10							
Max. clamping length [mm]	AG	14							
Reserve stroke in Ø [mm]	D	0,3							
Release stroke in Ø [mm]	C	0,4							
RPM n max. [1/min.]		7000							
Reserve stroke axial [mm]	Q	1,5							
Release stroke axial [mm]	R	2							
Reception workpiece end-stop	FD	Ø 36 f7							
End-stop outer Ø [mm]	AZ	65							
End-stop outer Ø 2 [mm]	EM	42							
Bolt hole circle end-stop	B	LK Ø 53 [3 x M6]							
Length [mm]	H	47,5							
Length 2 [mm]	BS	99							
Total length [mm]	I	137		141		137			
Depth [mm]	BR	39,5							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30		34		30			
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140		165		210	140	150	180 230
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle- Ø [mm]	HQ	56							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		9	8,4	9,4	14,3	8,6	9,2	11	16,5

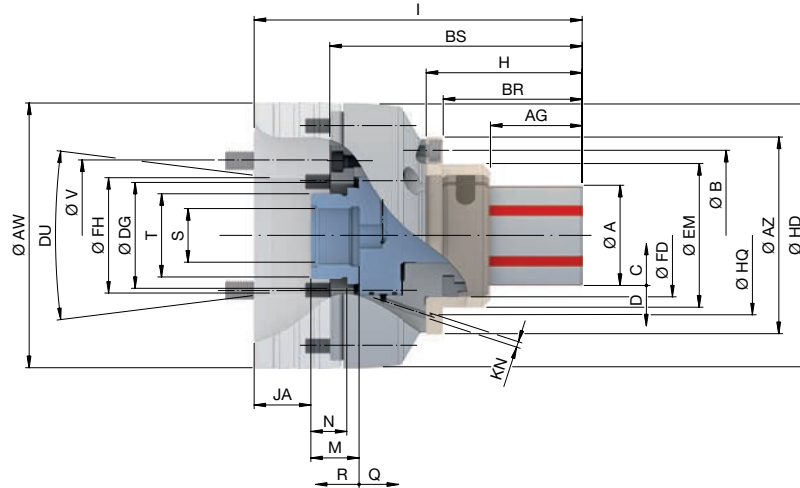
Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T812 size S. Technical data



Size	S								
Clamping range [mm]	A	16 – 21							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,025							
Max. radial clamping force [kN]		42							
Max. axial compression force [kN]		10							
Max. clamping length [mm]	AG	15							
Reserve stroke in Ø [mm]	D	0,3							
Release stroke in Ø [mm]	C	0,4							
RPM n max. [1/min.]		7000							
Reserve stroke axial [mm]	Q	1,5							
Release stroke axial [mm]	R	2							
Reception workpiece end-stop	FD	Ø 39 f7							
End-stop outer Ø [mm]	AZ	70							
End-stop outer Ø 2 [mm]	EM	45							
Bolt hole circle end-stop	B	LK Ø 57 [3 x M6]							
Length [mm]	H	49,5							
Length 2 [mm]	BS	102							
Total length [mm]	I	139		143		139			
Depth [mm]	BR	41,5							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30		34		30			
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140		165		210	140	150	180 230
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	60							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		9,2	8,6	9,6	14,5	8,8	9,4	11,2	16,7

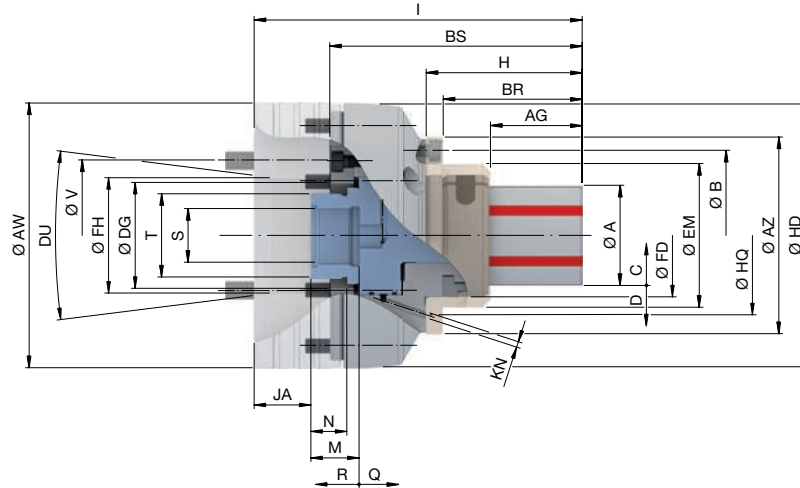
Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T812 size 0. Technical data



Size	0								
Clamping range [mm]	A	20 – 28							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,015							
Max. radial clamping force [kN]		42							
Max. axial compression force [kN]		10							
Max. clamping length [mm]	AG	21							
Reserve stroke in Ø [mm]	D	0,3							
Release stroke in Ø [mm]	C	0,4							
RPM n max. [1/min.]		7000							
Reserve stroke axial [mm]	Q	1,5							
Release stroke axial [mm]	R	2							
Reception workpiece end-stop	FD	Ø 47 f7							
End-stop outer Ø [mm]	AZ	90							
End-stop outer Ø 2 [mm]	EM	54							
Bolt hole circle end-stop	B	LK Ø 70 [3 x M6]							
Length [mm]	H	60,5							
Length 2 [mm]	BS	114							
Total length [mm]	I	152		156		152			
Depth [mm]	BR	51,5							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30		34		30			
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140		165		210		140	150
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	70							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		9,9	9,3	10,3	15,2	9,5	10,1	11,9	17,4

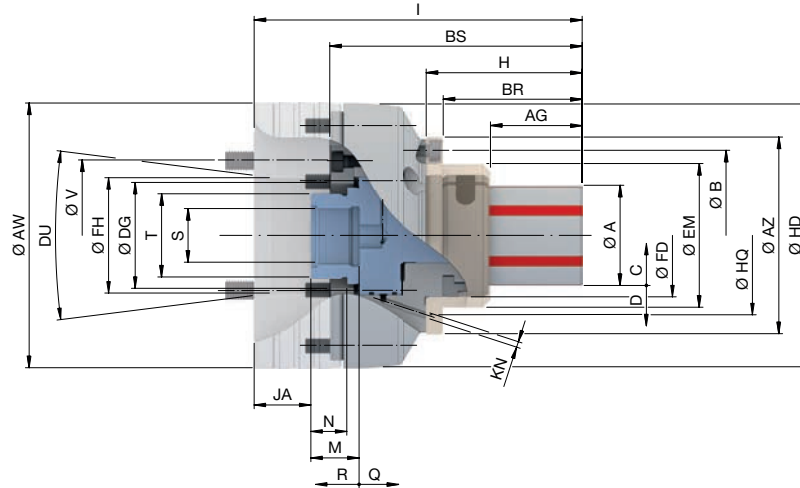


Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T812 size 1. Technical data



Size	1								
Clamping range [mm]	A	26 – 38							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,015							
Max. radial clamping force [kN]		42							
Max. axial compression force [kN]		10							
Max. clamping length [mm]	AG	25							
Reserve stroke in Ø [mm]	D	0,3							
Release stroke in Ø [mm]	C	0,4							
RPM n max. [1/min.]		7000							
Reserve stroke axial [mm]	Q	1,5							
Release stroke axial [mm]	R	2							
Reception workpiece end-stop	FD	Ø 55 f7							
End-stop outer Ø [mm]	AZ	90							
End-stop outer Ø 2 [mm]	EM	62							
Bolt hole circle end-stop	B	LK Ø 75 [3 x M6]							
Length [mm]	H	66,5							
Length 2 [mm]	BS	117,5							
Total length [mm]	I	156		160		156			
Depth [mm]	BR	57,5							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30		34		30			
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	133,4	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 103,2 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140		165		210	140	150	180 230
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	70							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		10	9,3	10,3	15,2	9,5	10	12	17,4

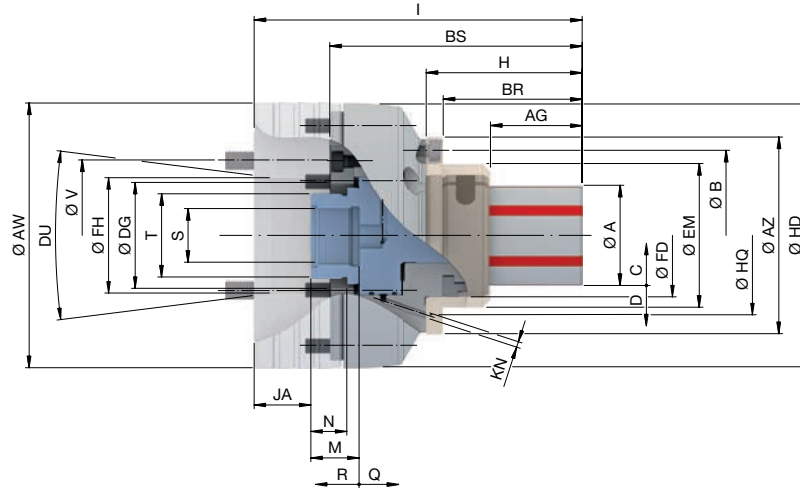
Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T812 size 2. Technical data



Size	2								
Clamping range [mm]	A	36 – 54							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,015							
Max. radial clamping force [kN]		85							
Max. axial compression force [kN]		20							
Max. clamping length [mm]	AG	40							
Reserve stroke in Ø [mm]	D	0,3							
Release stroke in Ø [mm]	C	0,5							
RPM n max. [1/min.]		7000							
Reserve stroke axial [mm]	Q	1,5							
Release stroke axial [mm]	R	2,5							
Reception workpiece end-stop	FD	Ø 65 f7							
End-stop outer Ø [mm]	AZ	104							
End-stop outer Ø 2 [mm]	EM	76							
Bolt hole circle end-stop	B	LK Ø 90 [3 x M6]							
Length [mm]	H	82,5							
Length 2 [mm]	BS	133,5							
Total length [mm]	I	173,5		176		172			
Depth [mm]	BR	73,5							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30		34		30			
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140		165	210	140	150	180	230
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	84							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		10,7	10	11	16	10,3	11	12,7	18,2

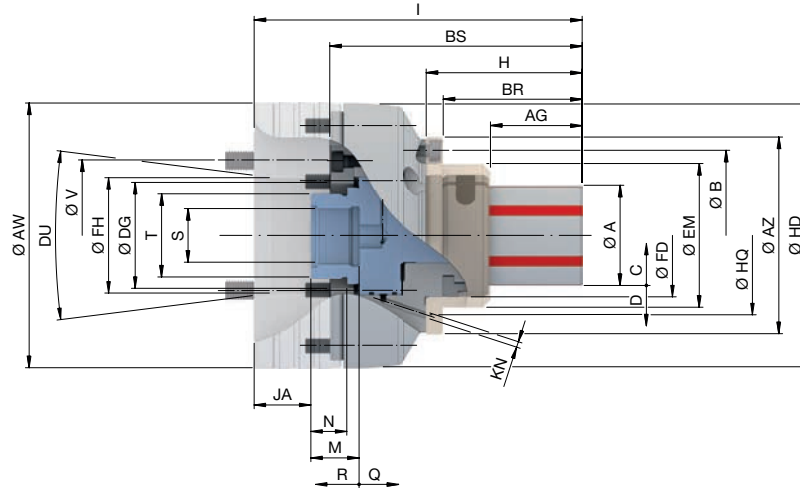


Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T812 size 3. Technical data



Size	3								
Clamping range [mm]	A	50 – 80							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,015							
Max. radial clamping force [kN]		105							
Max. axial compression force [kN]		25							
Max. clamping length [mm]	AG	44,5							
Reserve stroke in Ø [mm]	D	0,4							
Release stroke in Ø [mm]	C	0,5							
RPM n max. [1/min.]		6000							
Reserve stroke axial [mm]	Q	2							
Release stroke axial [mm]	R	2,5							
Reception workpiece end-stop	FD	Ø 83 f7							
End-stop outer Ø [mm]	AZ	120							
End-stop outer Ø 2 [mm]	EM	105							
Bolt hole circle end-stop	B	LK Ø 104 [3 x M6]							
Length [mm]	H	89,5							
Length 2 [mm]	BS	141,5							
Total length [mm]	I	179		183		179			
Depth [mm]	BR	80,0							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30		34		30			
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140		165	210	140	150	180	230
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	100							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		11,8	11,2	12,2	17	11,4	12	13,8	19,3

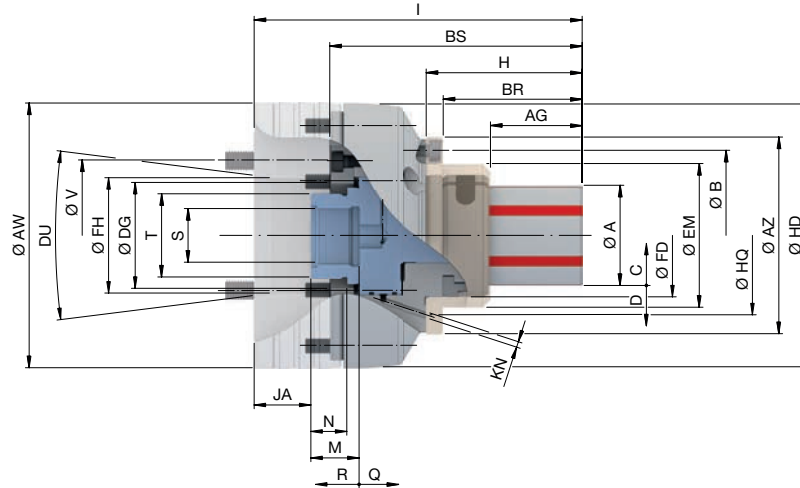
Segmented clamping bushings Page 442	Flanges Page 208	Actuating units Page 226	Accessory overview Page 478

Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



MANDO T812 size 4. Technical data



Size	4								
Clamping range [mm]	A	69 – 100							
Spindle nose	DU	A2-4	A2-5	A2-6	A2-8	AP120	AP140	AP170	AP220
Run-out ≤ [mm]		0,015							
Max. radial clamping force [kN]		150							
Max. axial compression force [kN]		35							
Max. clamping length [mm]	AG	52,5							
Reserve stroke in Ø [mm]	D	0,5							
Release stroke in Ø [mm]	C	0,6							
RPM n max. [1/min.]		6000							
Reserve stroke axial [mm]	Q	2,5							
Release stroke axial [mm]	R	3							
Reception workpiece end-stop	FD	Ø 103 f7							
End-stop outer Ø [mm]	AZ	138							
End-stop outer Ø 2 [mm]	EM	124							
Bolt hole circle end-stop	B	LK Ø 124 [3 x M6]							
Length [mm]	H	100							
Length 2 [mm]	BS	151,5							
Total length [mm]	I	189		193		189			
Depth [mm]	BR	90,5							
Connecting thread inside	S	M30 x 1,5							
Connecting thread outside	T	M44 x 1,5							
Distance [mm]	JA	30		34		30			
Depth of thread [mm]	M	25,5							
Thread length [mm]	N	19							
Max. drawtube Ø [mm]	DG	54							
Minimum length of DG [mm]		13							
Bore-Ø	FH	61	79,6	103,2	100	77	80	103	
Bolt hole circle	V	LK Ø 82,6 [3 x M10]	LK Ø 104,8 [6 x M10]	LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]	LK Ø 104,8 [6 x M10]		LK Ø 133,4 [6 x M12]	LK Ø 171,4 [6 x M16]
Outer Ø [mm]	AW	140		165		210	140	150	180 230
Outer Ø 2 [mm]	HD	139							
Air sensing control bolt hole circle-Ø [mm]	HQ	116							
Air sensing control bore Ø [mm]	KN	3							
Central air sensing connection Ø optional [mm]		12 H7							
Weight [kg]		13,2	12,6	13,6	18,5	12,8	13,4	15,2	20,7



Scope of delivery

- Mandrel without spindle flange / without air sensing adapter
- Coupling ring
- Trimming sleeve for SAD segmented clamping bushings
- Mounting aid depending on size



Order overview. Flanges for MANDO mandrels

Size	Figure	Spindle nose DU	Flange height [mm] AP	Interface X	Outer Ø [mm] AW	Bolt hole circle V	In stock	Material no.
XXS – 4 / A – F		A2-4	40	Ø 131	140	LK Ø 82,6 [3 x M10]	✓	10014772
		A2-5	77			LK Ø 104,8 [6 x M10]	✓	10014771
			85				✓	10014781
			40				✓	10014782
		A2-6	60		165	LK Ø 133,4 [6 x M12]	✓	10014770
			80				✓	10014783
			100				✓	10014784
			✓				10014785	
	A2-8	44	210		LK Ø 171,4 [6 x M16]	✓	10014773	
		AP120	40		140	LK Ø 104,8 [6 x M10]	✓	10014774
		AP140			150		✓	10014775
		AP170			180	LK Ø 133,4 [6 x M12]	✓	10014776
		AP220			230	LK Ø 171,4 [6 x M16]	✓	10014777
5 – 7			A2-6	63,5	Ø 219	235	LK Ø 133,4 [6 x M12]	✓
	A2-8		67,5	LK Ø 171,4 [6 x M16]			✓	10014779
	A2-11		73,5	280		LK Ø 235 [6 x M20]	✓	10014780

Flanges size 5 – 7 AP upon request.
Machine spindle standard DIN ISO 702-1.