



HILMA.TS

Tower Workholding System

Jaw widths 100 and 125 mm

WS 4.3301, WS 4.3302, WS 4.330Z







STARK INNOVATIVE PROFICIENT INDIVIDUAL SAFE

The high-tech company STARK Spannsysteme was established in 1977 in Rankweil, Austria. It manufactures zero point clamping systems and vices of the highest quality and precision for international clients in the automotive, aviation and medical industries, for example.

STARK Spannsysteme products are a byword for minimal set-up times, faster production and high flexibility.

HILMA vices can be complemented and combined perfectly with STARK zero point clamping systems.





AUTOMOTIVE



MACHINE AND TOOL CONSTRUCTION



AVIATION



MEDICINE

FOCUS ON INDUSTRIES & MARKETS.

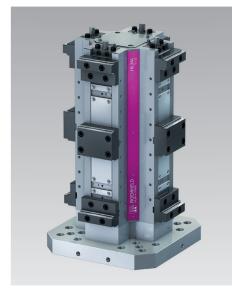
Every customer has specific requirements. Our established and extensive industry expertise allows us to offer you the best solutions, services and products for sustainable and efficient use in your market.

HILMA.TS



Tower Workholding Systems HILMA.TS

clamping against the fixed jaw, mechanically operated jaw widths 100 and 125 mm, with 4 clamping sides



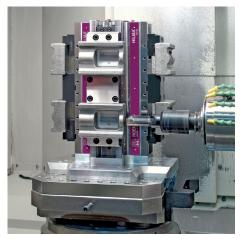
Application

HILMA.TS tower workholding systems are used on horizontal machining centres, in vertical machining in connection with 4th axis, but also on 5-axis machining centres. The applications range from manually equipped machines to pallet stations and fully automated systems.

Customised versions

An experienced team of designers is at your disposal to solve your individual clamping task and to develop customised versions. Please contact us.

Application example



Tower workholding system HILMA.TS 125 with 3rd-hand function

Advantages

- 2 sizes for optimum design to the machining centre
- Clamping of 4, 8 or 16 workpieces with standard jaws
- Clamping of different workpiece dimensions also on one side
- Purely mechanical build up of the clamping force
- Easy and safe operation
- Large jaw openings and high flexibility due to extensive range of clamping jaws
- Highest stability by design as a monoblock
- Optimum protection against contamination and wear through patented guidance and sealing
- Process-safe application of clamping force, also when using grip jaws

Description

The tower workholding systems HILMA.TS convince with their durability and precision. The patented guidance and sealing principle works without any delicate sheet metal covers or plastic wipers. The design as a monoblock, without interfaces to individually screwed workholding systems, stands for high stability and high accuracy. The centrally arranged fixed jaw as a central jaw is without load and thus absolutely zero point stable. The workpieces are positioned close to each other, thus reducing the travel paths of the machining centre to a minimum. The purely mechanical operation enables clamping also with low and always reproducible clamping forces. These characteristics turn the tower workholding systems HILMA.TS into a flexible standard fixture for a wide variety of applications in modern production.

Accessories

The extensive range of clamping jaws see data sheet 4.330Z.

Handling systems can optionally be used for operation. They increase the user-friendliness and improve the ergonomics. We are pleased to offer you the right system for your machine on request.

Consultation

Extensive information such as drawings and CAD models are available on request.

Our experts will be pleased to advise you also on site, and work with you to find the correct clamping solution.

Technical data Clamping sides:

Operation:

Clamping:

HILMA.TS 100

Jaw width: Clamping force: Max. jaw opening: 4 - arrangement 4 x 90° mechanically with a torque wrench against central jaw or fixed jaw arranged on one side

100 mm 25 kN at 55 Nm 1 x 343 mm 2 x 156 mm

HILMA.TS 125

Jaw width: Clamping force: Max. jaw opening: 125 mm 40 kN at 115 Nm 1 x 476 mm 2 x 226 mm 4 x 108 mm

Versions

The optimum adaptation to the machining centre and the machining task is facilitated by 2 versions of the HILMA.TS workholding systems.

Version with 3rd-hand function

The operation is made with only one spindle per clamping side.

The upper and lower clamping jaw are operated together by means of a spindle and clamp against a fixed central jaw or a fixed jaw arranged on one side.

The integrated 3rd-hand function enables to only hold the lower workpiece by operating the spindle. Only after the insertion of the second workpiece above and operating again the spindle, both workpieces are clamped as defined.

Version Vector in 2 variants

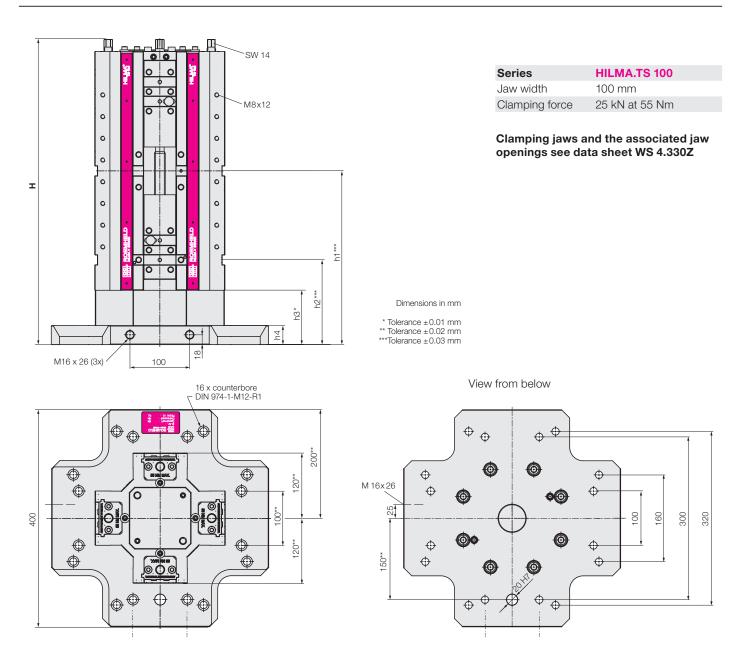
Variant 1: central jaw as fixed jaw Variant 2: 2 x fixed jaw

The operation is made with two spindles per clamping side. The 3rd-hand function is omitted. The Vector versions are particularly suitable for clamping of high workpiece weights (>15 kg). When used as double workholding system, the upper and lower clamping points can be pressurised with different clamping forces.



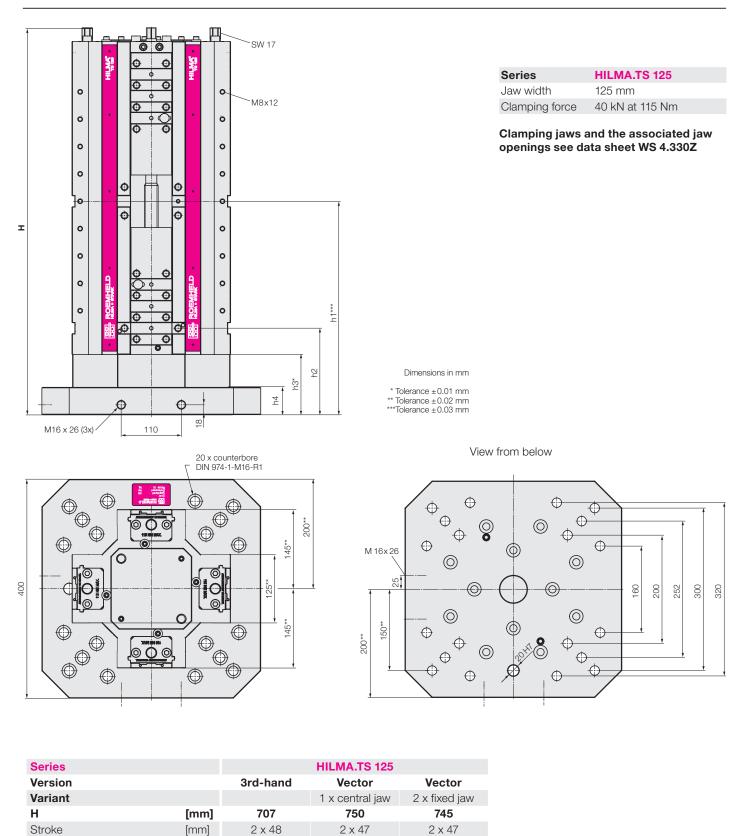


Dimensions HILMA.TS 100



Series		HILMA.TS 100							
Version		3rd-hand	Vector	Vector					
Variant			1 x central jaw	2 x fixed jaw					
н	[mm]	562	599	599					
Stroke	[mm]	2 x 44	2 x 44	2 x 40					
h1	[mm]	320	320	360					
h2	[mm]	156	156	146					
h3	[mm]	100	100	100					
h4	[mm]	35	35	35					
Weight without clamping jaws	[kg]	109	116	115					
Part no. without clamping	aws	933650202	933750202	933950202					

Dimensions HILMA.TS 125



Weight without clamping jaws [kg]

Part no. without clamping jaws

[mm]

[mm]

[mm]

[mm]

[mm]

390

158

110

50

214

933660302

h1

h2

h3

h4

390

158

110

50

228

933760302

436

154

110

50

224

933960302

Subject to modifications

Tower Workholding Systems HILMA.TS TriStar

clamping against the fixed jaw, mechanically operated jaw widths 100 and 125 mm, with 3 clamping sides



Advantages

- 3 sizes for optimum design to the machining centre
- Clamping of 3, 6 or 12 workpieces with standard jaws
- Clamping of different workpiece dimensions also on one side
- Purely mechanical build up of the clamping force
- Easy and safe operation
- Large jaw openings and high flexibility due to extensive range of clamping jaws
- Highest stability by design as a monoblock Optimum protection against contamination
- and wear through patented guidance and sealing
- Process-safe application of clamping force, also when using grip jaws
- Optimised accessibility

Description

The tower workholding systems HILMA.TS TriStar convince with their durability and precision. The patented guidance and sealing principle works without any delicate sheet metal covers or plastic wipers. The design as a monoblock, without interfaces to each screwed clamping systems, stands for high stability and high accuracy. The centrally arranged fixed jaw as a central jaw is without load and thus absolutely zero point stable. The workpieces are positioned close to each other, thus reducing the travel paths of the machining centre to a minimum. The purely mechanical operation enables clamping also with low and always reproducible clamping forces. These characteristics turn the tower workholding systems HILMA.TS TriStar into a flexible standard fixture for a wide variety of applications in modern production.

Accessories

The extensive range of clamping jaws see data sheet 4.330Z.

Handling systems can optionally be used for operation. They increase the user-friendliness and improve the ergonomics. We are pleased to offer you the right system for your machine on request.

Consultation

Extensive information such as drawings and CAD models are available on request.

Our experts will be pleased to advise you also on site, and work with you to find the correct clamping solution.

Technical data

Clamping sides: Operation: Clamping:

3 - arrangement 3 x 120° mechanically with a torque wrench against central jaw or fixed jaw arranged on one side

HILMA.TS 100 TriStar

Jaw width: 100 mm 25 kN at 55 Nm Clamping force: Max. jaw opening: 1 x 343 mm 2 x 156 mm

HILMA.TS 125 TriStar

Jaw width: Clamping force: Max. jaw opening: 1 x 476 mm

125 mm 40 kN at 115 Nm 2 x 226 mm

4 x 108 mm

Versions

The optimum adaptation to the machining centre and the machining task is facilitated by 2 versions of the HILMA.TS TriStar workholding systems.

Version with 3rd-hand function

The operation is made with only one spindle per clamping side.

The upper and lower clamping jaw are operated together by means of a spindle and clamp against a fixed central jaw or a fixed jaw arranged on one side.

The integrated 3rd-hand function enables to only hold the lower workpiece by operating the spindle. Only after the insertion of the second workpiece above and operating again the spindle, both workpieces are clamped as defined.

Version Vector in 2 variants

Variant 1: central jaw as fixed jaw Variant 2: 2 x fixed jaw

The operation is made with two spindles per clamping side. The 3rd-hand function is omitted. The Vector versions are particularly suitable for clamping of high workpiece weights (>15 kg). When used as double workholding system, the upper and lower clamping points can be pressurised with different clamping forces.

Application

are used on horizontal machining centres, in vertical machining in connection with 4th axis, but also on 5-axis machining centres. The applications range from manually equipped machines to pallet stations and fully automated systems.

HILMA.TS TriStar tower workholding systems

Customised versions

An experienced team of designers is at your disposal to solve your individual clamping task and to develop customised versions. Please contact us.

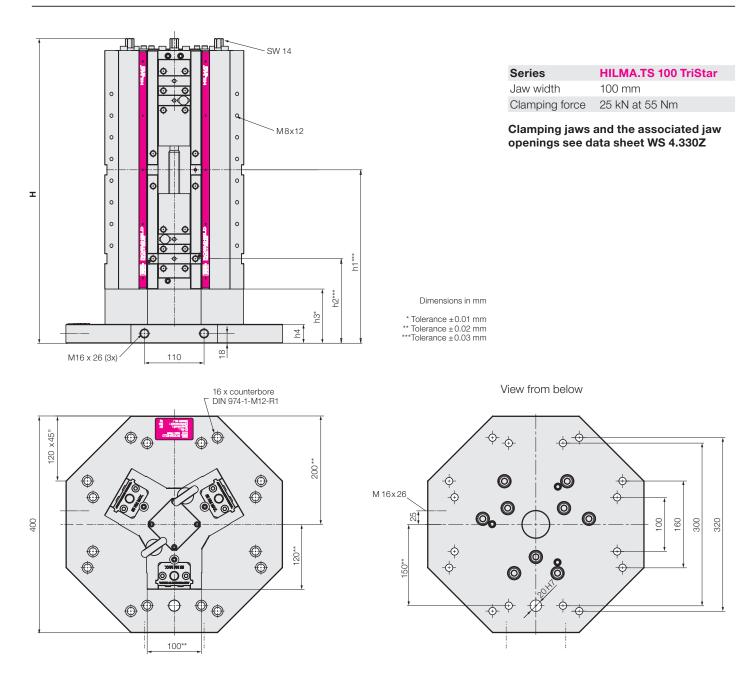
Application example



Tower workholding system HILMA.TS TriStar, a workholding system with connection to Matsurra MAM 72

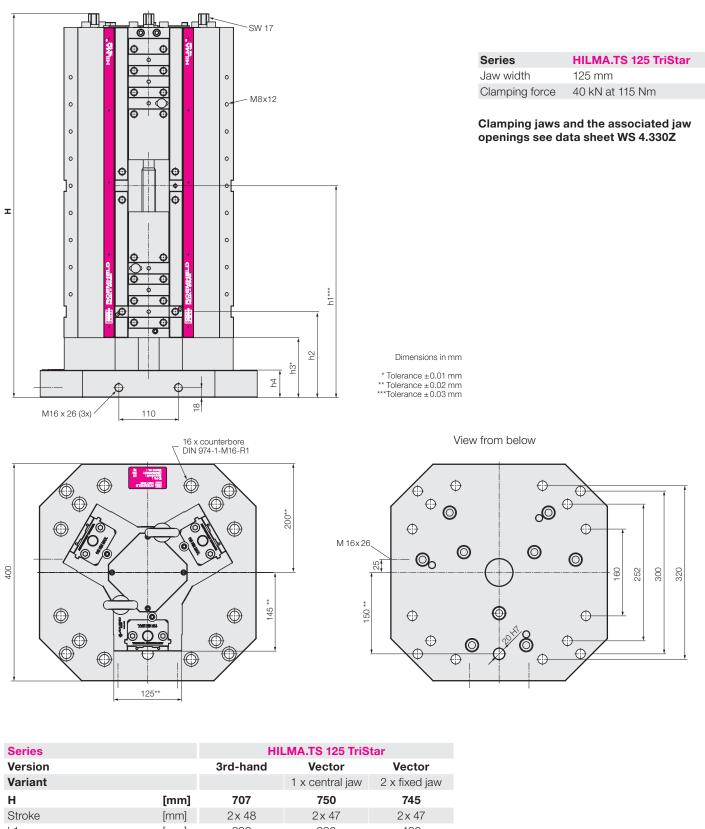


Dimensions HILMA.TS 100 TriStar



Series		HILMA.TS 100 TriStar						
Version		3rd-hand	Vector	Vector				
Variant			1 x central jaw	2 x fixed jaw				
н	[mm]	562	599	599				
Stroke	[mm]	2 x 44	2 x 44	2 x 40				
h1	[mm]	320	320	360				
h2	[mm]	156	156	146				
h3	[mm]	100	100	100				
h4	[mm]	35	35	35				
Weight without clamping jaws	[kg]	104	107	107				
Part no. without clamping	jaws	933650232	933750232	933950232				

Dimensions HILMA.TS 125 TriStar



VEISION		Siu-nanu	Vector	Vector
Variant			1 x central jaw	2 x fixed jaw
н	[mm]	707	750	745
Stroke	[mm]	2 x 48	2 x 47	2 x 47
h1	[mm]	390	390	436
h2	[mm]	158	158	154
h3	[mm]	110	110	110
h4	[mm]	50	50	50
Weight without clamping jaws	[kg]	174	185	183
Part no. without clamping j	aws	933660332	933760332	933960332



WS 4.330Z

Accessories for Tower Workholding Systems HILMA.TS, HILMA.TS TriStar and HILMA.TS Vector Clamping jaws and jaw openings - Accessories for operation



Delivery of clamping jaws

All clamping jaws are supplied with the associated fixing screws. For clamping jaws with jaw inserts, please make your selection tailored to your application.

Important notes

- By the use of clamping jaws with jaw inserts, the jaw opening is reduced by approx. 4 mm per clamping point.
- When using jaw inserts, the dimension "h" indicated in the figures is increased by 4 mm.
- Technical information and application recommendations for jaw inserts see data sheet WS 12-SE.

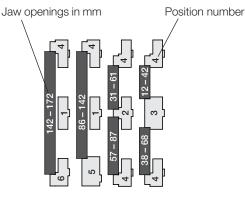
Clamping jaws

Jaw openings

HILMA.TS 80 and HILMA.TS 80 TriStar

Design: with 3rd-hand function

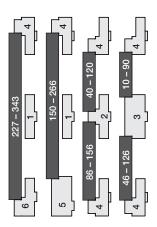
Position	Description	Part no.
1	Guide plate	937914140
2	Central step jaw 16 mm	937914111
3	Central step jaw 54 mm	937914121
4	Reversible step jaw	937914211
5	Fixed step jaw	937914341
6	Fixed step jaw	937914311



HILMA.TS 100 and HILMA.TS 100 TriStar

Designs: 3rd-hand function and Vector with 1 central jaw

Position	Description	Part no.
1	Guide plate	937915140
2	Central step jaw 26 mm	937915111
3	Central step jaw 86 mm	937915121
4	Reversible step jaw	937915211
5	Fixed step jaw	937915341
6	Fixed step jaw	937915311
Position	Clamping jaws for jaw inserts	
2	Central step jaw for 1 jaw insert	937915711
3	Central step jaw for 2 jaw inserts	937915721
4	Reversible step jaw for 1 jaw insert	937915811
5	Fixed step jaw for 1 jaw insert	937915941
6	Fixed step jaw for 1 jaw insert	937915911

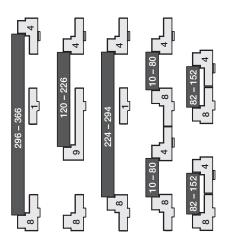


Actual issue see www.stark-roemheld.com

HILMA.TS 100 and HILMA.TS 100 TriStar

Design: HILMA.TS Vector with 2 fixed jaws

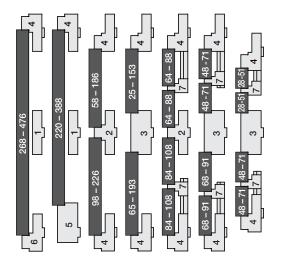
Position	Description	Part no.
1	Guide plate	937915143
4	Reversible step jaw	937915211
8	Fixed reversible step jaw	937915371
9	Fixed step jaw, long	937915381
Position	Clamping jaws for jaw inserts	
4	Reversible step jaw for 1 jaw insert	937915811
8	Fixed reversible step jaw for 1 jaw insert	937915971
9	Fixed step jaw, long, for 1 jaw insert	937915981



HILMA.TS 125 and HILMA.TS 125 TriStar

Designs: 3rd-hand function and Vector with 1 central jaw

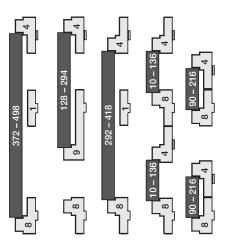
Position	Description	Part no.
1	Guide plate	937916142
2	Central step jaw 24 mm	937916151
3	Central step jaw 90 mm	937916161
4	Reversible step jaw	937916211
5	Fixed step jaw	937916351
6	Fixed step jaw	937916311
7	Floating central jaw	937916511
Position	Clamping jaws for jaw inserts	
2	Central step jaw for 1 jaw insert	937916751
3	Central step jaw for 2 jaw inserts	937916761
4	Reversible step jaw for 1 jaw insert	937916811
5	Fixed step jaw for 1 jaw insert	937916951
6	Fixed step jaw for 1 jaw insert	937916911
6	Fixed step jaw for 1 jaw insert	937916911



HILMA.TS 125 and HILMA.TS 125 TriStar

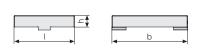
Design: HILMA.TS Vector with 2 fixed jaws

Position	Description	Part no.
1	Guide plate	937916143
4	Reversible step jaw	937916211
8	Fixed reversible step jaw	937916371
9	Fixed step jaw, long	937916381
Position	Clamping jaws for jaw inserts	
4	Reversible step jaw for 1 jaw insert	937916811
8	Fixed reversible step jaw for 1 jaw insert	937916971
9	Fixed step jaw, long, for 1 jaw insert	937916981



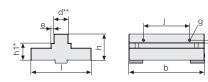
Subject to modifications

Dimensions of clamping jaws

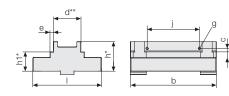


Position 1: Guide plates for 3rd-hand function and Vector Design with 1 central jaw Туре Part no. L b h h1 С d е g **TS 80** 937914140 64 80 12 **TS 100** 937915140 96 100 16 **TS 125** 125 19 937916142 100

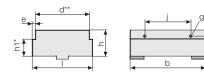
Position 1:		Guide plates for Vector Design with 2 fixed jaws											
Туре	I	b	h	h1	С	d	е	g	j	Part no.			
TS 100	72	100	16							937915143			
TS 125	78	125	19							937916143			



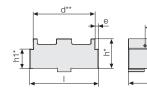
Position 2:	Cent	ral ste	ep jaw	/S						
Туре	I	b	h	h1	с	d	е	g	j	Part no.
TS 80	64	80	28	16	5	16	5	M4x6	50	937914111
TS 100	96	100	40	25	5	26	5	M4x6	60	937915111
TS 125	100	125	43	28	5	24	5	M4x6	76	937916151

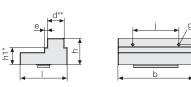


Positio	n 2:	Cent	Central step jaws for 1 jaw insert											
Туре		I.	b	h	h1	С	d	е	g	j	Part no.			
TS 100		96	100	40	25	5	34	З	M4x6	60	937915711			
TS 125		100	125	43	28	5	40	5	M4x6	76	937916751			



Position 3:	Central step jaws												
Туре	I	b	h	h1	С	d	е	g	j	Part no.			
TS 80	64	80	28	16	5	54	5	M4x6	50	937914121			
TS 100	96	100	40	25	5	86	5	M4x6	60	937915121			
TS 125	100	125	43	28	5	90	5	M4x6	76	937916161			

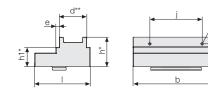




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Position 3:	Cent	Central step jaws for 2 jaw inserts											
Туре	I.	b	h	h1	С	d	е	g	j	Part no.			
TS 100	96	100	40	25	5	90	3	M4x6	60	937915721			
TS 125	100	125	43	28	5	90	5	M4x6	76	937916761			

	Position 4:	Reve	rsible	step	jaws						
	Туре	I	b	h	h1	С	d	е	g	j	Part no.
	TS 80	48.5	80	28	16	5	18	5	M4x6	50	937914211
т	TS 100	72	100	40	25	5	26	5	M4x6	60	937915211
	TS 125	78	125	43	28	5	28	5	M4x6	76	937916211

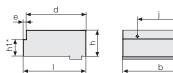


	Position 4:	Reve	rsible	step	jaws f	for 1 j	aw ins	ert			
_	Туре	1	b	h	h1	С	d	е	g	j	Part no.
-	TS 100	72	100	40	25	5	34	З	M4x6	60	937915811
	TS 125	81	125	43	28		40	5	M4x6	76	937916811

* Tolerance ±0.01 mm ** Tolerance ±0.02 mm

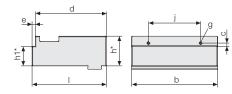
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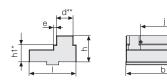


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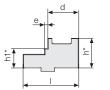
Position 5:	Fixed	d step	jaws							
Туре	1	b	h	h1	С	d	е	g	j	Part no.
TS 80	71	80	28	16	5	66	5	M4x6	50	937914341
TS 100	88	100	40	25	5	83	5	M4x6	60	937915341
TS 125	104	125	43	28	5	99	5	M4x6	76	937916351

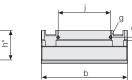


Position 5:	Fixed	Fixed step jaws for 1 jaw insert											
Туре	I.	b	h	h1	С	d	е	g	j	Part no.			
TS 100	90	100	40	25	5	85	5	M4x6	60	937915941			
TS 125	108	125	43	28	5	103	5	M4x6	76	937916951			

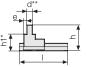


Position 6:	Fixed	Fixed step jaws, used for a large clamping range											
Туре	I.	b	h	h1	С	d	е	g	j	Part no.			
TS 80	49	80	28	16	5	15	5	M4x6	50	937914311			
TS 100	72	100	40	25	5	26	5	M4x6	60	937915311			
TS 125	78	125	43	28	5	28	5	M4x6	76	937916311			



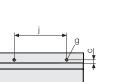


Position 6:	Fixed	d step	jaws	for 1 j	aw in	sert				
Туре	1	b	h	h1	с	d	е	g	j	Part no.
TS 100	80	100	40	25	5	34	5	M4x6	60	937915911
TS 125	88	125	43	28	5	40	5	M4x6	76	937916911

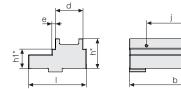


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Position 7:	Float	Floating central jaws												
Туре	I.	b	h	h1	с	d	е	g	j	Part no.				
TS 125	50/80	124	43	28	5	10	5	M4x6	76	937916511				



Position 8:	Fixe	d reve	rsible	step j	aws					
Туре	1	b	h	h1	С	d	е	g	j	Part no.
TS 100	72	100	40	25	5	26		M4x6	60	937915371
TS 125	78	125	43	28	5	28		M4x6	76	937916371



Position 8:	Fixed	Fixed reversible step jaws for 1 jaw insert											
Туре	I	b	h	h1	С	d	е	g	j	Part no.			
TS 100	81	100	40	25	5	34	5	M4x6	60	937915971			
TS 125	88	125	43	28	5	40	5	M4x6	76	937916971			

* Tolerance ±0.01 mm ** Tolerance ±0.02 mm

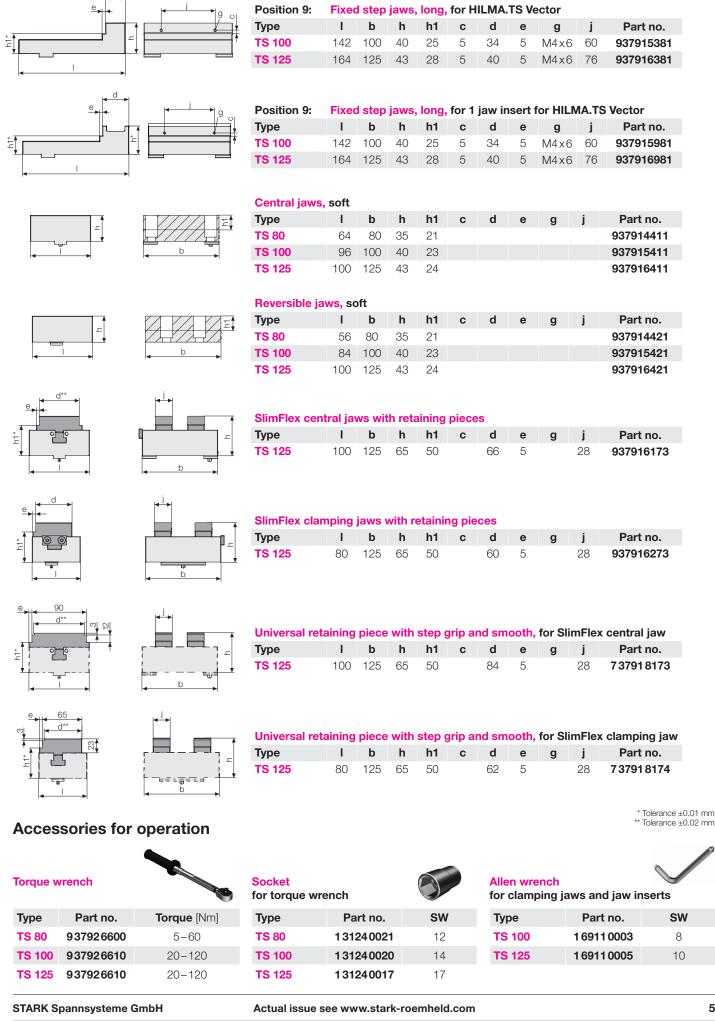
Actual issue see www.stark-roemheld.com

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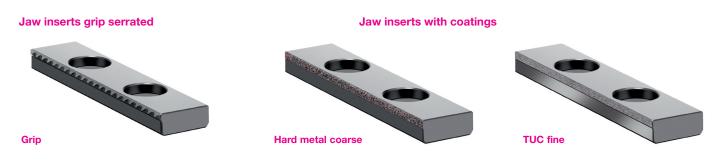
Accessories Clamping jaws and clamping jaws for jaw inserts

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Accessories Jaw inserts



Jaw inserts, see also data sheet WS 12-SE: Technical information "Jaw inserts for clamping jaws"

Recommendation for jaw inserts to increase the retention forces

Workpiece surface Workpiece material	rolled / cast / forged	drawn	sawn	milled	ground
Steel, e.g. C45, 20 Mn Cr5, 31 Cr Mo V9	HM coarse, grip	TUC	HM coarse, grip	TUC	TUC
Heat-treated steel e.g. C45 induction-hardened, 20 Mn Cr 5 case-hardened, 31 Cr Mo V9 nitrided				TUC	TUC
Cast e.g. GG, red bronze	HM coarse, grip			TUC	TUC
Titanium		TUC		TUC	TUC
Aluminium	HM coarse, grip		Grip		TUC
Non-ferrous metals			Grip		TUC

Part numbers for jaw inserts

Jaw inserts for HILMA.TS 100 and HILMA.TS 100 Vector jaw width 100

Designation	Part no. for reversible step jaws	Part no. for fixed jaws and central jaws
Jaw inserts Grip / smooth	5 5050 0632	5 5050 0548
Jaw inserts Grip / Grip	-	5 5050 0630
Jaw inserts HM coarse / smooth	5 5050 0631	5 5050 0749
Jaw inserts HM coarse / HM coarse	-	5 5050 0629
Jaw inserts TUC / smooth	5 5050 0770	5 5050 0769
Jaw inserts TUC / TIC	-	5 5050 0768
Jaw inserts smooth / smooth	-	5 5050 0628

Jaw inserts for HILMA.TS 125 jaw width 125

Designation	Part no. for reversible step jaws	Part no. for fixed jaws and central jaws
Jaw inserts Grip / smooth	5 5050 0627	5 5050 0729
Jaw inserts Grip / Grip	-	5 5050 0625
Jaw inserts HM coarse / smooth	5 5050 0626	5 5050 0694
Jaw inserts HM coarse / HM coarse	-	5 5050 0624
Jaw inserts TUC / smooth	5 5050 0767	5 5050 0777
Jaw inserts TUC / TIC	-	5 5050 0768
Jaw inserts smooth / smooth	-	5 5050 0623

Jaw inserts for HILMA.TS 125 Vector with 2 fixed jaws jaw width 125

Designation	Part numbers for reversible step jaws	Part numbers for fixed jaws
Jaw inserts Grip / smooth	5 5050 0627	550500627
Jaw inserts HM coarse / smooth	550500626	550500626
Jaw inserts TUC / smooth	550500767	5 5050 0767

PROGRAMMÜBERSICHT HILMA.TS

Tower clamping systems for horizontal machining (4-axis)				
	HILMA.TS	HILMA.TS TriStar	HILMA.TS Vector	HILMA.TS TriStar Vector
Series				
Jaw widths (max. clamping force)	100 mm (25 kN) 125 mm (40 kN)	100 mm (25 kN) 125 mm (40 kN)	100 mm (25 kN) 125 mm (40 kN)	100 mm (25 kN) 125 mm (40 kN)
Operation	mechanical	mechanical	mechanical	mechanical
hydraulic	_	_	on request	_
force transmission	clamping against fixed jaw	clamping against fixed jaw	clamping against fixed jaw	clamping against fixed jaw
Clamping principle	manual loading	manual loading	manual loading / automation	manual loading / automation
Application Machining centre	horizontal	horizontal	horizontal	horizontal
Special features / Options	 patented guide and sealing system with 4 clamping sides 4 × 90° operation with 1 spindle per side with third-hand function 	 patented guide and sealing system with 3 clamping sides 3 × 120° operation with 1 spindle per side with third-hand function 	 patented guide and sealing system with 4 clamping sides 4 × 90° operation with 2 spindles (introduction of different clamping forces) with central fixed jaw or 2 × fixed jaws 	 patented guide and sealing system with 3 clamping sides 3 × 120° Operation with 2 spindles (introduction of different clamping forces) with central fixed jaw or 2 × fixed jaws
Overall lengths	562 / 707 mm	248707 mm	599750 mm	599750 mm



HILMA-SCHRAUBSTÖCKE LASSEN SICH PERFEKT MIT STARK-NULLPUNKT-SPANNSYSTEMEN ERGÄNZEN UND KOMBINIEREN.

SYNERGIEN NUTZEN



- Automations-Spannsystem HILMA.ASH 125 auf STARK Nullpunkt-Spannsystem
- STARK Schnellverschlussplatte mit 4 Elementen STARK.classic.NG.2 Twister und Mediendurchführung zum Spannen/Lösen des Schraubstocks
- Kupplungseinheit mit Nullpunktspannsystem (Vorrichtungspalette Handlingssystem); 2 Elemente STARK.airtec mit integrierter Abfrage

A COMPANY OF THE ROEMHELD GROUP

STARK Spannsysteme

The ROEMHELD Group consists of 5 companies at locations in Germany and Austria, each with different products and orientations. With numerous subsidiaries, sales partners and service companies on all continents and in more than 50 countries, rapid and intensive customer support is provided in the mechanical engineering, medical technology, automotive, aviation and agricultural industries.

As part of the ROEMHELD Group, STARK benefits from the security and experience of a family-run traditional company as well as from the worldwide sales and service network. At the same time, this background provides the independence to pursue dynamic and innovative goals for new market-driven developments and customer-specific solutions with which STARK maintains its leading technological position.





A company of the ROEMHELD Group

STARK Spannsysteme GmbH Römergrund 14 | 6830 Rankweil Austria

+43 5522 37 400-0 info@stark-roemheld.com

