



ROEMHELD
HILMA ■ STARK



HILMA.ASH

Automation clamping system

Long-stroke clamp, hydraulically double-acting

Jaw width 100, 125 mm



ROEMHELD
HILMA ■ STARK



STARK INNOVATIVE PROFICIENT INDIVIDUAL RELIABLE

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



AVIATION



MACHINE AND
TOOL MAKING



MEDICINE

SECTORS & MARKETS IN FOCUS.

Every customer has specific requirements. With our in-depth and extensive industry know-how, we offer you the right solutions, services and products for sustainable and efficient use in your market.

HILMA.ASH

FLEXIBLE

large clamping stroke for different workpieces

COMMUNICATIVE

modern IO-Link interface for process and condition data

INTELLIGENT

fully integrated sensors and data processing

EFFICIENT

reduced set-up times, staff costs and system costs

ROBUST SYSTEM

perfect integration in the STARK and HILMA solution space



HILMA.ASH



HILMA.ASE



HILMA.KNC



HILMA.NC



HILMA.DS



HILMA.UC



HILMA.MCP



HILMA.SCS



HILMA.SCT



HILMA.TS Vector



HILMA.TS TriStar

HILMA

Workpiece clamping systems

More productivity through:

- maximum flexibility in production
- highest process reliability
- reduced manufacturing costs through set-up time optimisation

AUTOMATION

VERTICAL MACHINING

HORIZONTAL MACHINING

5-AXIS MACHINING

HILMA.ASH TABLE OF CONTENTS

Flexible automation clamping system	6-7	Mounting and positioning	16
Function and benefits HILMA.ASH long-stroke clamp	8-9		
HILMA.ASH 100	10	Accessories	17
HILMA.ASH 125	11	Contact strip for spring contact	17
IO-Link interface	12	Check valve	17
From the machine table to the workpiece	13	Positioning pin set	17
		Pump unit	17
Range of jaws	14	List of order numbers	18
Reversible jaw screwed for interchangeable insert	15		
Quick-change jaw for interchangeable insert	15		
Quick-change jaw unmachined	15		
Interchangeable insert with GripPins	15		

HILMA.ASH

Flexible automation clamping system

Quick-change jaws or screwed jaws, workpiece clamping possible from inside and outside

Air outlets for:
cleaning the support surface
workpiece seat check

Locking quick-change jaws

Special cleaning of guide incl.
optional air sealing

Fully integrated sensors



— Basic machine vice

— Options / accessories

DRAFT
confidential

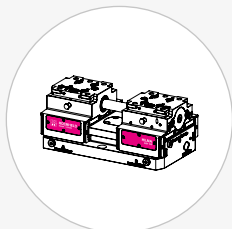


HILMA.ASH 100

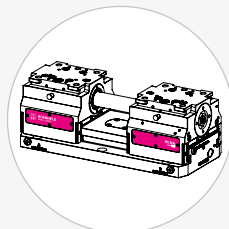
Jaw width 100mm
Clamping stroke 70mm

HILMA.ASH 125

Jaw width 125mm
Clamping stroke 110mm



Hydraulic
operation,
double acting



Pilot-operated check valve
optional in clamping and release line

Side central lubrication via
lubricating nipple or from below

All connections accessible
from below or the side

Installation with screw connection
from top possible



ECONOMIC PRODUCTION

HILMA.ASH long-stroke clamp

+ Maximum flexibility

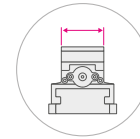
The HILMA.ASH double-acting hydraulic long-stroke clamp, with a stroke of 70 or 110 mm, is ideally suited to automated production of workpieces of different sizes – with minimal set-up effort.

+ Automated processes

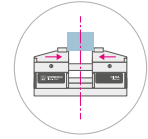
An optional stroke measuring system enables fully automatic set-up procedures and eliminates operator errors; the automatic jaw change also allows workpiece types to be changed without manual intervention.

+ Economic production

When used in conjunction with handling systems, the HILMA.ASH replaces numerous conventional clamping systems, which often have a stroke of just a few millimetres, and significantly reduces unit costs through shorter set-up times and lower staff and system costs.



Jaw width
100 mm | 125 mm



Clamping principle
concentric



Clamping force
2 × 25 kN | 2 × 50 kN

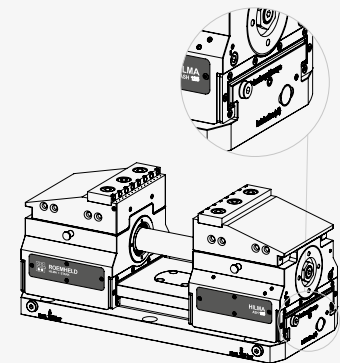


Clamping stroke
70 mm | 110 mm



High stability with variable clamping force

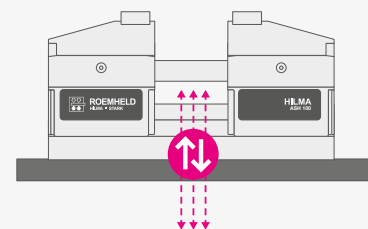
- Optimised design and size with high clamping force
- Special wiper and seal designs
- The guideway can be cleaned using optional air sealing
- Optional central lubrication or manual side lubrication
- + Maximum clamping force with minimal installation space for flexible workpiece sizes
- + Small interference contour for optional accessibility
- + Maximum protection against contamination and reduced maintenance-related failure



Integrated sensors

- Absolute acquisition of opening position
- Integrated clamping pressure/clamping force measurement
- Acquisition of equipment check
- Continual condition monitoring
- Standardized IO-Link interface
- + Easy integration in existing control and monitoring systems
- + Full control via clamping conditions during the process
- + Immediate detection of deviations in the clamping process
- + Predictive maintenance reduces unplanned downtime

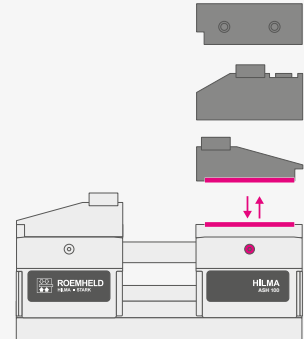
► More about IO interface on page 12





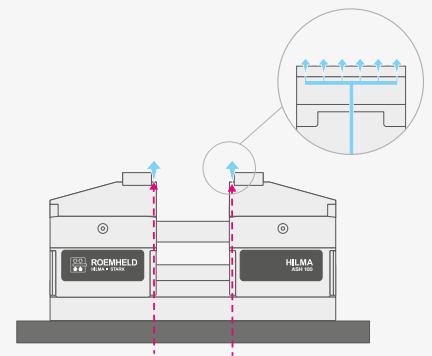
Jaw interface

- Optionally screwed or quick jaw change system
 - Option for locking the quick-change jaw
 - + Maximum flexibility
 - + Individual adaptation to complex workpiece geometries
 - + High process reliability, even under dynamic loads
- More about the range of jaws on page 14



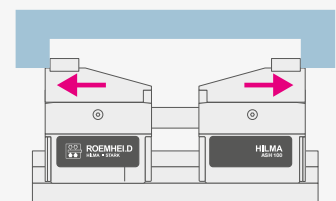
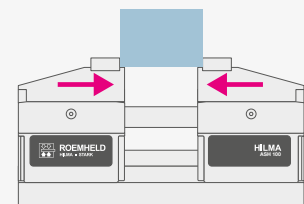
Media transfer slide/jaw

- Media transfer integrated in slide and jaw
- Cleaning of workpiece contact surface
- + Equipment check using dynamic pressure (flow rate)
- + No external interference contours in the working space
- + Constant clamping quality for harsh machinery space environment
- + Extended functionality integrated directly in the clamping device



Exterior and interior clamping

- Exterior and interior clamping can be implemented as standard
- Quick-change system in both versions
- High clamping forces in both versions
- + Maximum variety of applications with only one clamping system
- + Quick change between clamping types
- + Process stability regardless of clamping direction





HILMA.ASH 100

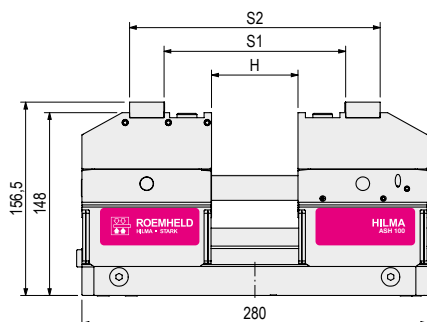
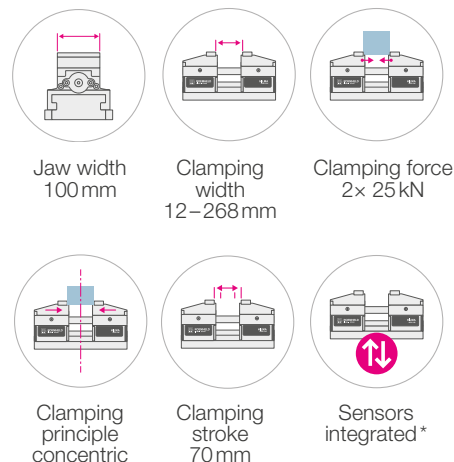
The HILMA.ASH is a double-acting hydraulic long-stroke clamp with a jaw width of 100 mm and a large clamping stroke of 70 mm. It can be optionally combined with screwed clamping jaws or with quick-change jaws. Depending on the version, integrated sensors are available. In versions with an IO-Link interface, process and system data can be read via spring contacts or a side cable outlet.



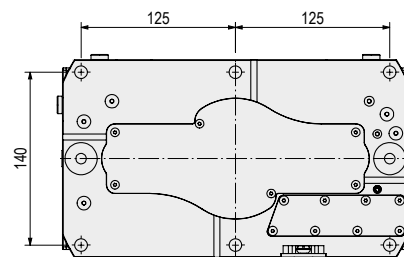
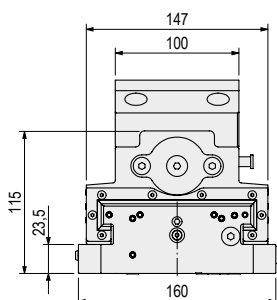
Figure: 958850301
Standard scope of delivery:
1x hydraulic clamp
5x O-ring

- Designed for exterior or interior clamping
- Hydraulic safety valve prepared
- Integrated sensors* for process control and maintenance
- Optional cleaning of workpiece support surface
- Optional air sealing at guideways
- Optional clamping jaw quick-change system
- Optional central lubrication or lubricating nipple

- Operating manual: WM-021-514



Z_958850301_01



HILMA.ASH 100 958850301 with reversible jaw 958856803
All dimensions in [mm]
All lateral connections G1/8
Fixing holes for M10 / DIN912

Series		HILMA.ASH 100
Clamping principle		concentric
Operation		hydraulic, double-acting
Jaw width	[mm]	100
Lower part length	[mm]	280
Height	[mm]	113
Clamping force	[kN/bar]	external 2× 20 kN / 200 bar internal 2× 25 kN / 200 bar
Clamping stroke	[mm]	70
Clamping range S1 / S2**	[mm]	12–268
Weight (without jaws)	[kg]	23
Part no. HILMA.ASH 100 with IO-Link interface, spring contacts		958850101
Part no. HILMA.ASH 100 with IO-Link interface, cable outlet		958850201
Part no. HILMA.ASH 100 without interface		958850301

* integrated sensors depending on version

** depending on clamping jaw and exterior or interior clamping used ► More on page 14 & 15

HILMA.ASH 125

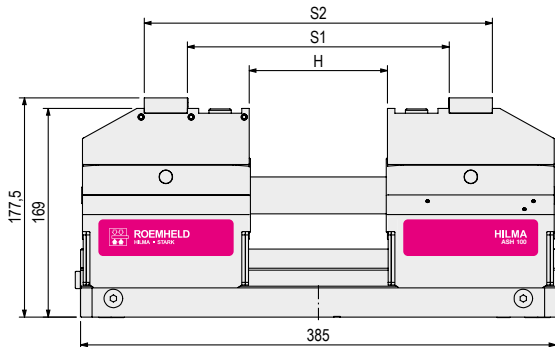
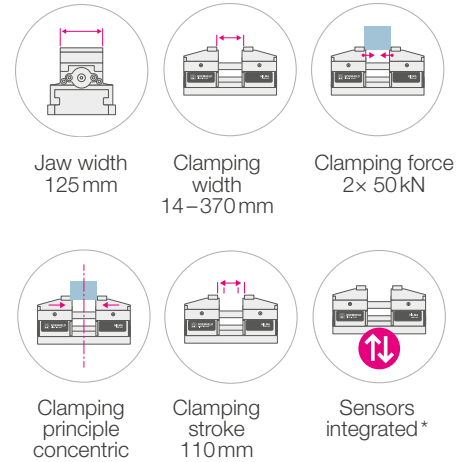
The HILMA.ASH is a double-acting hydraulic long-stroke clamp with a jaw width of 125 mm and a large clamping stroke of 110 mm. It can be optionally combined with screwed clamping jaws or with quick-change jaws. Depending on the version, integrated sensors are available. In versions with an IO-Link interface, process and system data can be read via spring contacts or a side cable outlet.



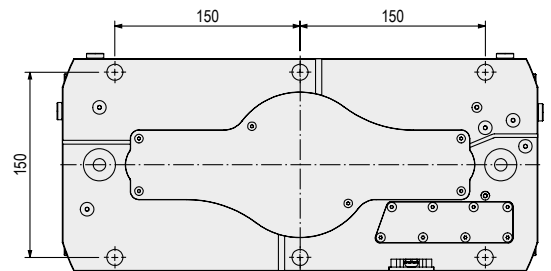
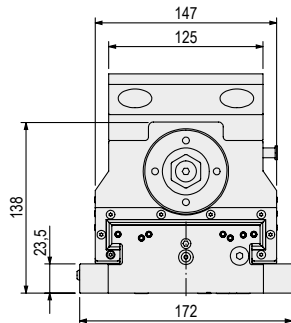
Figure: 958860301
Standard scope of delivery:
1x hydraulic clamp
5x O-ring

- Designed for exterior or interior clamping
- Hydraulic safety valve prepared
- Integrated sensors* for process control and maintenance
- Optional cleaning of workpiece support surface
- Optional air sealing at guideways
- Optional clamping jaw quick-change system
- Optional central lubrication or lubricating nipple

- Operating manual: WM-021-514



Z_958860301_01



HILMA.ASH 125 958860301 with reversible jaw 958866806
All dimensions in [mm]
All lateral connections G1/8
Fixing holes for M12 / DIN912

Series		HILMA.ASH 125
Clamping principle		concentric
Operation		hydraulic, double-acting
Jaw width	[mm]	125
Lower part length	[mm]	382
Height	[mm]	138
Clamping force	[kN/bar]	external 2x 40 kN / 200 bar internal 2x 50 kN / 200 bar
Clamping stroke	[mm]	110
Clamping range S1 / S2**	[mm]	14–370
Weight (without jaws)	[kg]	40
Part no. HILMA.ASH 125 with IO-Link interface, spring contacts		958860101
Part no. HILMA.ASH 125 with IO-Link interface, cable outlet		958860201
Part no. HILMA.ASH 125 without interface		958860301

* integrated sensors depending on version

** depending on clamping jaw and exterior or interior clamping used ► More on page 14 & 15

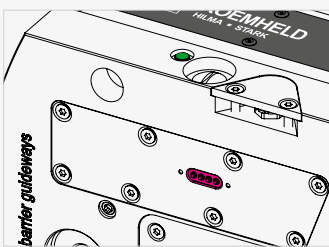


STANDARDIZED COMMUNICATION FOR MAXIMUM PROCESS RELIABILITY

IO-Link interface

The hydraulic vice is equipped with a modern IO-Link interface, which enables reliable and standardized data communication with higher-level control systems. IO-Link enables operating states such as the current clamping force and position to be measured and transmitted in real time. This ensures easy integration into automated manufacturing environments and continuous process monitoring. In addition, the vice's operating data is continuously monitored, enabling condition diagnostics and allowing potential faults to be identified at an early stage.

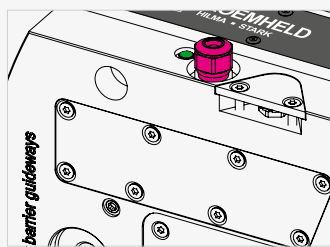
- Standardised IO-Link interface
- Acquisition of opening position
- Integrated clamping force measurement (release and clamping pressure)
- Measurement of dynamic pressure for equipment check
- Continual condition monitoring of the clamping system



Spring contacts on the lower side

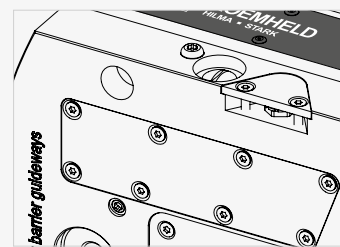
The IO-Link signal can be transmitted to the pallet or machine table via a spring-loaded contact on the underside.

- Contact strip available as an accessory
Page 16



Side cable outlet

Alternatively, a side cable outlet is also available for customised assembly of the open end.



Without interface

Even without integrated sensors, the clamp can be operated without limitations.

IO-Link process data

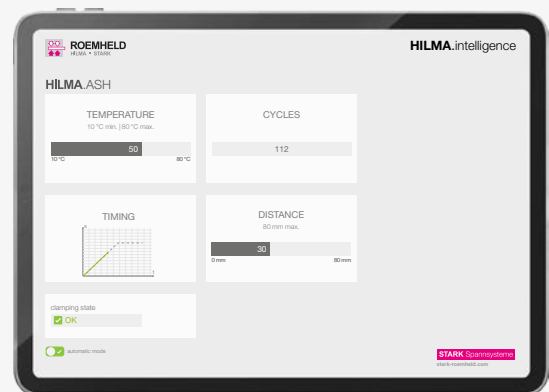
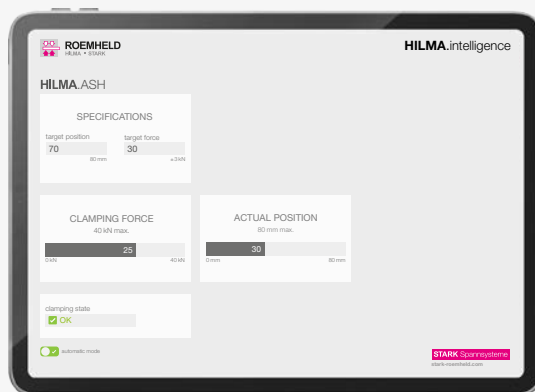
Integration into an IO-Link design can be implemented easily using the supplied IODD description file.

Visualisation process screen:

- Specification (position & clamping force)
- Current clamping force
- Current position
- Status of the clamp

Visualisation CMS screen:

- Temperature
- Cycles
- Timing (monitoring)
- Distance
- Status of the clamp



CONSISTENT SYSTEM SOLUTION

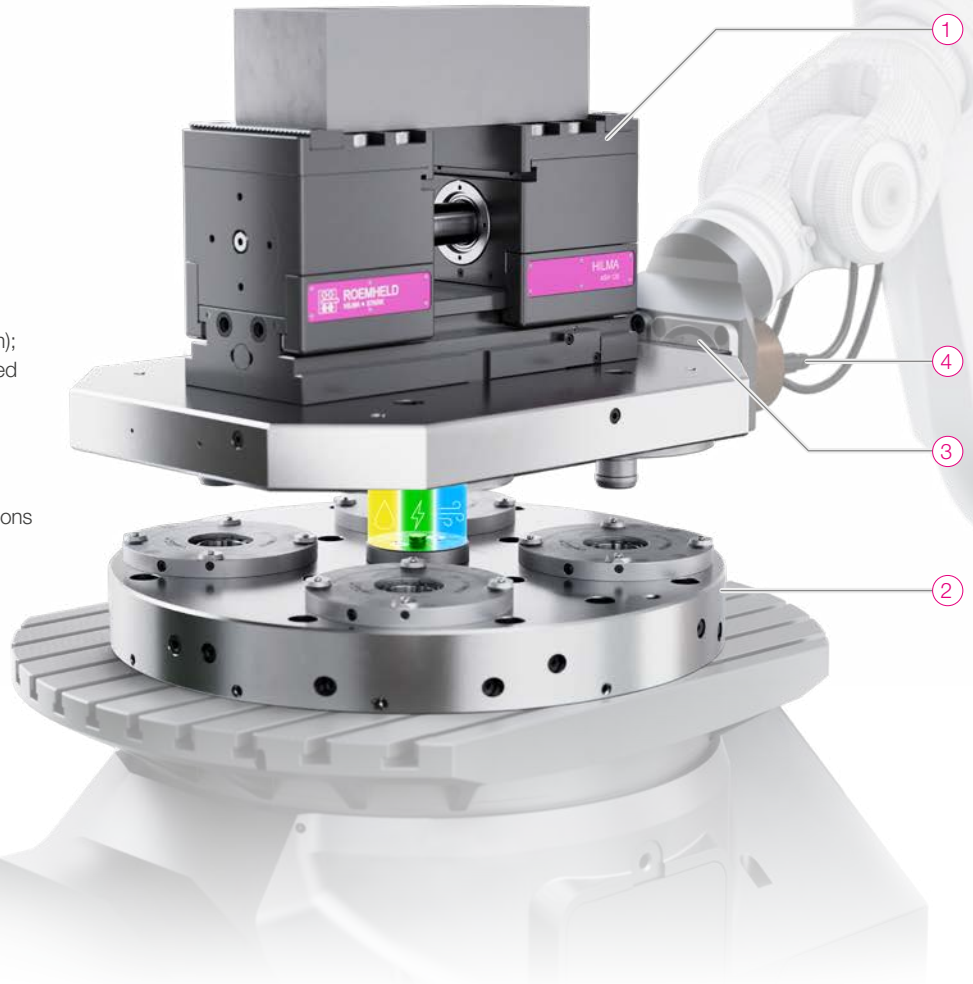
From the machine table to the workpiece

As a systems provider in clamping technology, STARK offers far more than just the HILMA.ASH series of hydraulic long-stroke clamps. With our high-performance zero point clamping systems and the corresponding hydraulic and electrical connections, we supply perfectly matched components designed for maximum efficiency and precision. In addition, we develop customer-specific clamping solutions that are optimally adapted to the workpiece and the application. The result is a comprehensive, complete package – from the machine table interface to reliable workpiece clamping – all from a single source.

- STARK.classic.NG
- STARK.MD and STARK.eMD
- Customer-specific jaws

APPLICATION EXAMPLE

- ① Automation clamping system
HILMA.ASH 125 with customer specific special jaws on zero point clamping system
- ② Fast closing plate with 4 elements STARK.classic.NG, STARK.MD and STARK.eMD
- ③ Coupling unit with zero point clamping system (fixture pallet – handling system); 2 elements STARK.airtec with integrated query
- ④ Connections for handling system
 - 1× pneumatic connection
 - 1× signal line with M12 plug connections
- ⑤ Process safety
 - Release control
 - Clamping monitoring
 - Seat check
 - Blow-off



THE OPTIMUM JAW FOR EVERY WORKPIECE

Range of jaws

The HILMA.ASH features a universal jaw interface that can meet a wide range of different requirements.

For example, the standard reversible step jaws or tall special jaws can be screwed directly onto the slide. Alternatively, the robot-operated quick jaw change can be used. The clamping jaw is held in position by spring-loaded contact bolts and can optionally be locked in place using a side pin.



Blank, second side
Screwed reversible jaw



Blank, second side
Quick-change jaw

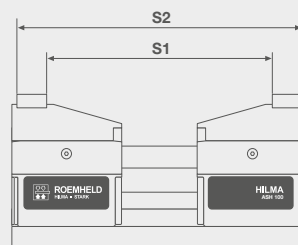
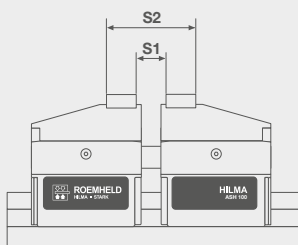


Customised
Special jaw

INFO

Clamping range

The jaw interface of the HILMA.ASH is designed so that the jaws can be mounted rotated by 180°, for example to achieve interior clamping or simply to increase the clamping range.



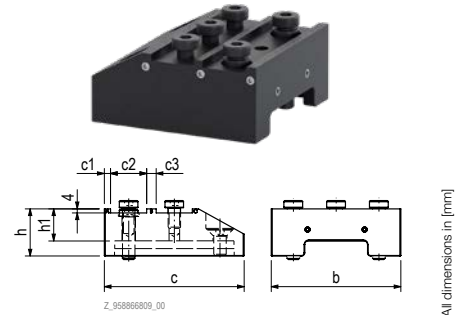
- S1** Clamping range, exterior clamping
- S2** Clamping range, interior clamping

Clamping jaws

Reversible jaw screwed for interchangeable insert

Reversible jaw suitable for HILMA.ASH for interchangeable insert. Support surface with cleaning function. Interchangeable inserts are required for the clamping jaw.
Scope of delivery: Reversible jaw, 5 fixing screws, without insert

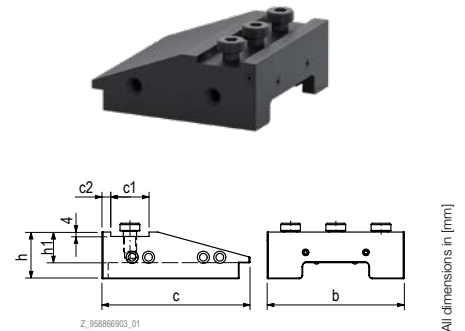
Type	Part no.	Jaw width b	Dimensions					Clamping width S1	Clamping width S2
			c	c1	c2	h	h1		
ASH 100	958856803	100	105	28	6	45.5	33	12–212	68–268
ASH 125	958866806	125	135	35	6	45.5	31	14–300	84–370



Quick-change jaw for interchangeable insert

Quick-change jaw suitable for HILMA.ASH for interchangeable insert. Support surface with cleaning function. Side recesses for robot gripper mount. Interchangeable inserts are required for the clamping jaw.
Scope of delivery: Quick-change jaw, 3 fixing screws, without insert

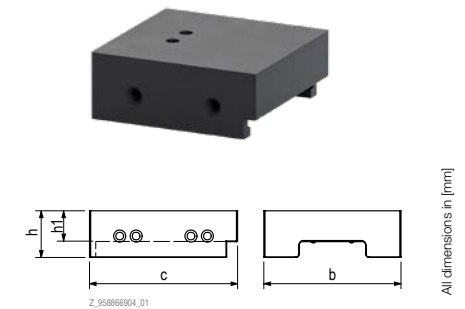
Type	Part no.	Jaw width b	Dimensions					Clamping width S1	Clamping width S2
			c	c1	c2	h	h1		
ASH 100	958856903	100	105	28	9.5	40.5	28	19–89	191–261
ASH 125	958866903	125	135	35	8	42.5	28	18–128	256–366



Quick-change jaw unmachined

Soft quick-change jaw suitable for HILMA.ASH with a height of 28mm.
Side recesses for robot gripper mount.
Scope of delivery: Quick-change jaw

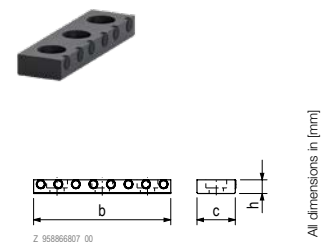
Type	Part no.	Jaw width b	Abmessungen		
			c	h	h1
ASH 100	958856904	100	105	40.5	28
ASH 125	958866904	125	135	42.5	28



Interchangeable insert with GripPins

Insert with GripPins
Scope of delivery: insert

Type	Part no.	Jaw width b	Dimensions		Clamping depth	Number of pins
			c	h		
ASH 100	958856804	100	28	12.5	8.5	6
ASH 125	958866807	125	35	12.5	8.5	8

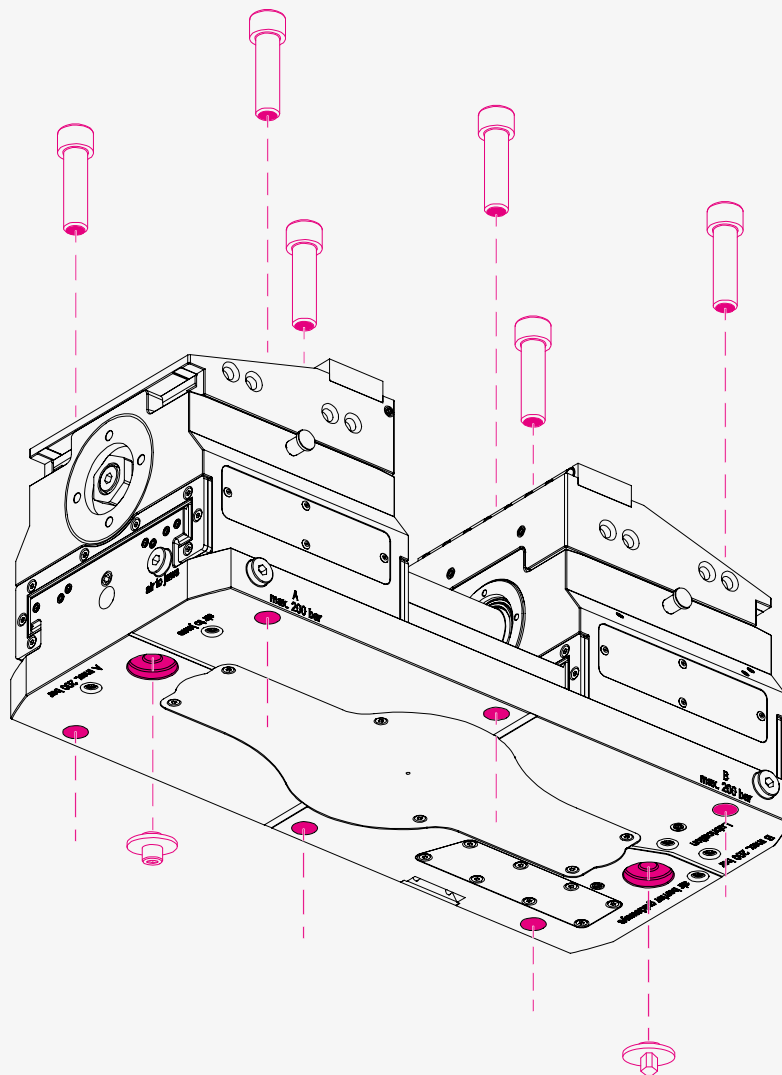


FASTENING ON THE MACHINE TABLE

Fastening & positioning

Stable fastening on the machine table is of great importance to ensure precise machining.

Fastening with screws



Positioning with positioning pins

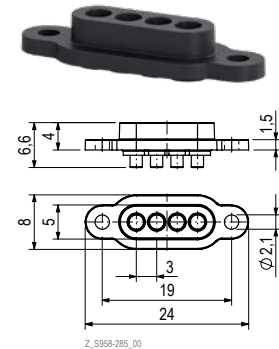
Accessories

Contact strip for spring contact

Contact strip for the pallets side as a counterpart to the spring contact of the HILMA.ASH 100/125. The contact strip enables the IO-Link connection between pallet and clamping system and serves for reliable signal transmission of the integrated sensors.

Scope of delivery: Contact strip with 2 fixing screws and O-ring

Part no.	
958860502	Contact strip 4x



Check valve

Pilot-operated check valve for retrofitting in clamping circuit A or B.

Scope of delivery: 1x check valve

Part no.	
958860501	Pilot-controlled check valve

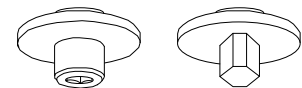


Positioning pin set

Positioning pin set for the alignment of machine vises - positioning pin with zero point, positioning pin with equaliser, 3 shims with different thicknesses

Scope of delivery: 1x position pin with zero point, 1x position pin with compensation, 3x shim

Part no.	
939200103	Positioning pin set Ø25/12 mm



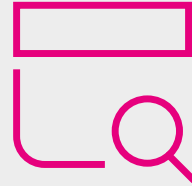
INFO

Hydro-pump unit

We offer suitable clamping units for the hydraulic control of the hydraulic clamping system. Completely equipped with the required electrical and hydraulic controls, with the desired operating element and integration into the machine control system.

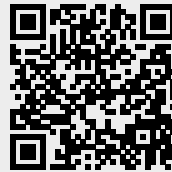
If the stroke measuring system integrated into HILMA.ASH is used, the desired insertion position can be approached very easily via a closed-loop control system. If the stroke measurement option is not used, positioning can also be achieved using a special logic circuit in the clamping unit or via a flow rate measurement.





Product Finder

Find the right clamping
solution quickly



<https://www.stark-roemheld.com/hilma-productfinder/>

With the HILMA Product Finder, you can filter vices, clamping jaws and accessories according to specific technical criteria and gain direct access to CAD data, catalogues and operating instructions.

Order number list

939200103	17	958860201	11
958850101	10	958860301	11
958850201	10	958860501	17
958850301	10	958860502	17
958856803	15	958866806	15
958856804	15	958866807	15
958856903	15	958866903	15
958856904	15	958866904	15
958860101	11		

A COMPANY OF THE
ROEMHELD GROUP

STARK

Spannsysteme

The ROEMHELD Group is represented in Germany and Austria 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.



ROEMHELD
HILMA ■ STARK

STARK Spannsysteme

A company of the ROEMHELD Group

STARK Spannsysteme GmbH
Römergrund 14 | 6830 Rankweil
Austria

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

stark-roemheld.com