

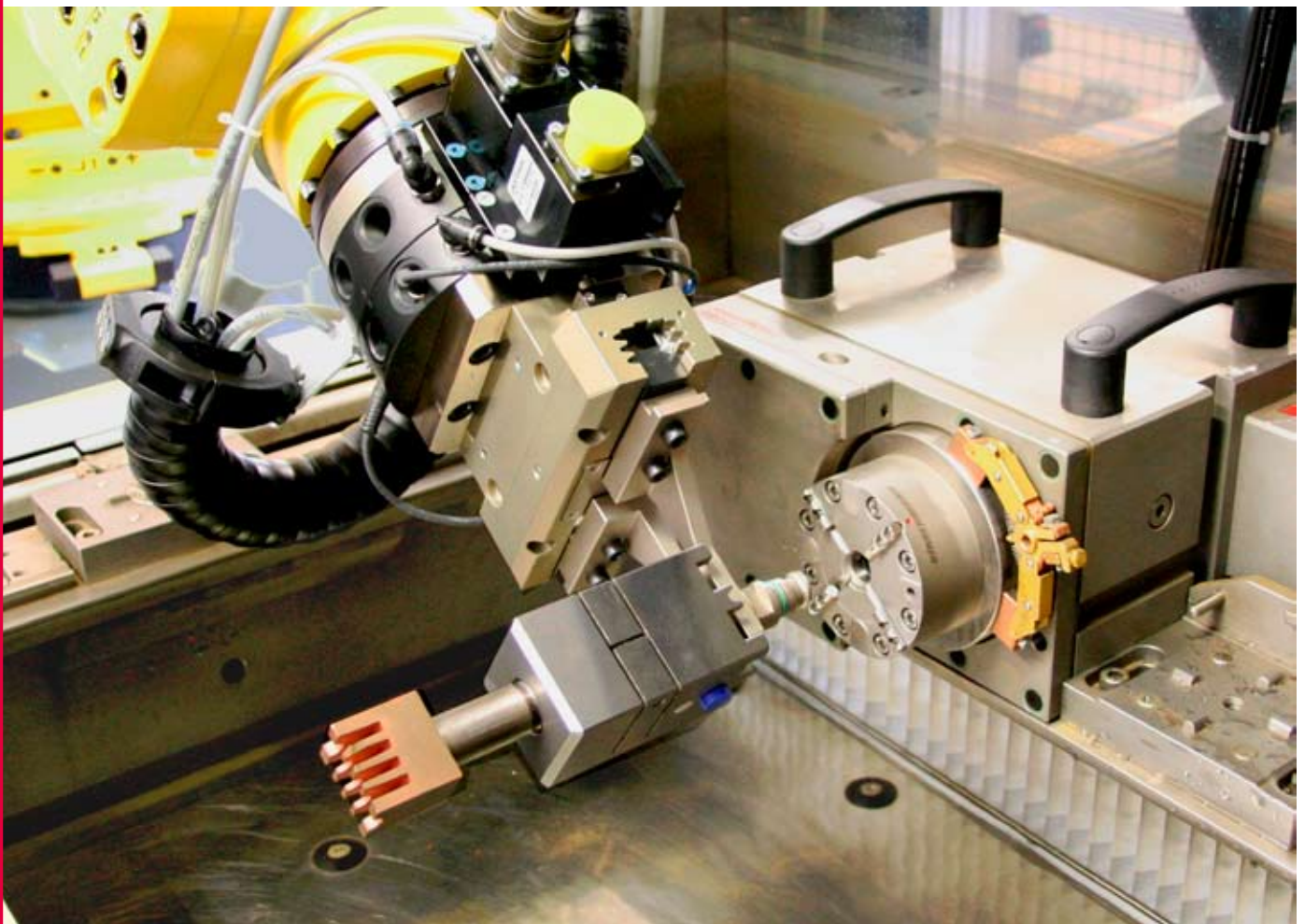
FIXTURING SYSTEM **5000** FOR SINKING EDM



≤ 0.002 mm repetitive accuracy
integrated X-, Y-, and Z- referencing
solid, compact, automation ready

Fast and Precise

- Repeatability without realignment
- Clamping and positioning in one step
- Automatic and manual tool change
- Electrode and workpiece mounting via pallets
- Roughing and finishing through fast and precise exchange
- Direct electrode mounting (*PrisFIX*)



General information

Operation

Most tools are supplied with an operating guide. Correct operation cannot be ensured and danger to personnel and machine cannot be excluded unless these operating instructions or information given in this catalogue are observed.

Accuracy

The individual tool planes incorporate hardened and precision ground X & Y centering prisms and separate Z-supports. This assures positioning accuracy of each tool with a repetitive accuracy (consistency) of < 0,002 mm (0.00008") measured 100 mm below the tool plane.

Service and Maintenance

Since the Fixturing system is subject to mechanical and chemical influences, maintenance and service has to be performed with special care.

Technical Changes

All products shown in this catalogue are subject to ongoing improvements and developments; we reserve the right to make modifications without notice.

Quality EN9100

All products of HIRSCHMANN GmbH are manufactured using the latest production methods. All products are submitted for EN9100 (air and space industry standard) quality assurance.

Warranty

We provide a 12 month warranty for all Fixturing system parts; starting from invoice date, and assuming correct use and maintenance as specified have been observed. The warranty is restricted to replacement or repair, free of charge, of any defective parts. Claims arising from improper use or handling shall not be considered. Warranty claims must be submitted in writing.

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HIRSCHMANN GMBH

Fixturing System 5000 for sinking EDM

Introduction

The HIRSCHMANN Fixturing System 5000 is a universal electrode and tool clamping system which is suitable for use on sink EDM as well as CNC milling machines, lathes, drill presses, grinders, measuring machines, etc. The Fixturing System 5000 offers fast and precise manual or automatic exchange of pallets, electrodes and work pieces in loading devices or robots.

Advantages of using the HIRSCHMANN clamping system

- Electrode or workpiece preparation can be done simultaneous to the machine operation.
- Loading and un-loading in the machine takes place in seconds.
- Location and preparation in the machine tool is not necessary.
- Flexibility to interrupt machining processes for measuring procedures or urgent orders and return accurately.

Characteristics

- Repetitive accuracy ≤ 0.002 mm
- Manual and automatic exchange
- Integrated 4 x 90° indexing
- Integrated x, y and z referencing
- For electrodes and tooling weighing up to 100 kg.
- Rust resistant, continuous accuracy
- Stable, resistant to shock and dirt
- Usable with all Hirschmann tooling systems
- Usable on High Speed Machining Centers, grinders, CNC milling centers, lathes, etc.
- Heat tolerant, during extreme heat conditions the center remains preserved (cross hair centering)

Accuracy

The connection of the pallet or electrode to the clamping device takes place over hardened artificially aged and polished center prisms and separate “Z” references. This “Rock Solid” referencing (no moving parts), achieves a repetitive accuracy of better than ≤ 0.002 mm measured 100 mm under the tool plane.

The pallets or electrodes can also be indexed every 90° on the clamping devices to an accuracy of ≤ 0.004 mm.



Clamping Journal Selection

Clamping Journal H 5.6.. or H 6.6..

All holders and pallets can be equipped with the clamping journal series H 5.6.. or H 6.6..

- Clamping journals H 5.6.. are for manual operation and linear systems
- Clamping journals H 6.6.. are for automatic operation with robots, loading devices and OEM furnished tool change systems. (Also suitable for manual operation and linear systems).

The clamping journals H 5.6.. are only for use with H 8 series clampers. The clamping journals H 6.6.. are only for use with H 6.. series clampers which are recommended to be used for automated loading devices and tool changers of other manufacturers.

Central flushing through the clamping journal is a standard feature with both clamping journal types.



Clamping Journals H 5.611, H 5.620

The clamping journal H 5.611 has been the standard journal used for many years with our 5000 System. Electrodes and palletized holders are used with these clamping journals in HIRSCHMANN fork, linear or disk type magazines. Automated electrode exchange systems are fast and cost effective, and can be used in “pick up type” exchanges.

For applications using these journals the **H 8 series clampers** must be implemented.



Clamping Journals H 6.611, H 6.620

The clamping journals H 6.611 and H 6.620 are suitable for **automatic electrode and pallet exchange** in universal handling and tool-changing devices and robotic systems. The H 6.6 series is fully compatible to magazine and grippers used in other tooling systems and OEM manufactured systems. The clamping journal H 6.611 can also be used with HIRSCHMANN fork, linear or disk type magazines. The H 6.611-3R journal is used with the “combi” system of another manufacturer.

The clamping journals **H 6.6..** are only used with the **H 6 series clampers**.



Reference-Set HPF 5000 *PrisFIX*

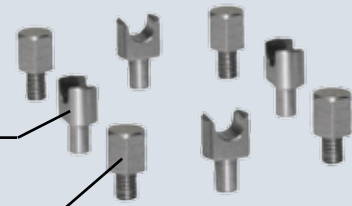
HPF 5000 Referenz-Set *PrisFIX*

The "Low Cost" reference set *PrisFIX* is an inexpensive solution for mounting of electrodes and workpieces in the HIRSCHMANN Fixturing system 5000. The components at the right are mounted to the electrode, pallet or workpiece using threaded and drilled holes (via adhesive) and rigidity set in a Hirschmann clamber for completion.

set consist of:

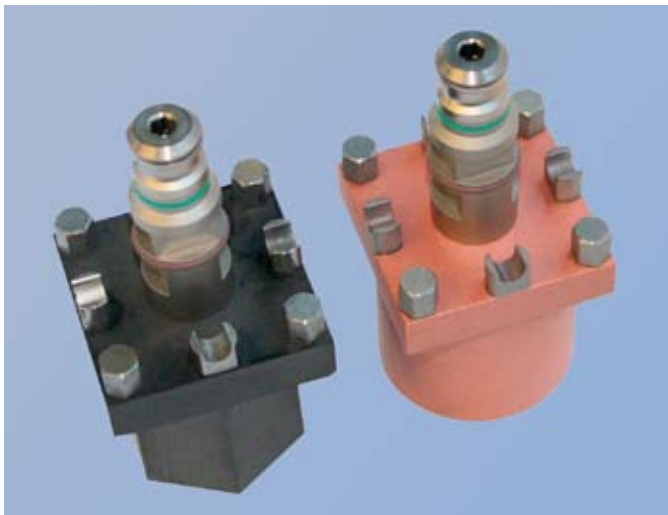
(4) X-Y-reference prisms

(4) Z-referenc columns
with threads

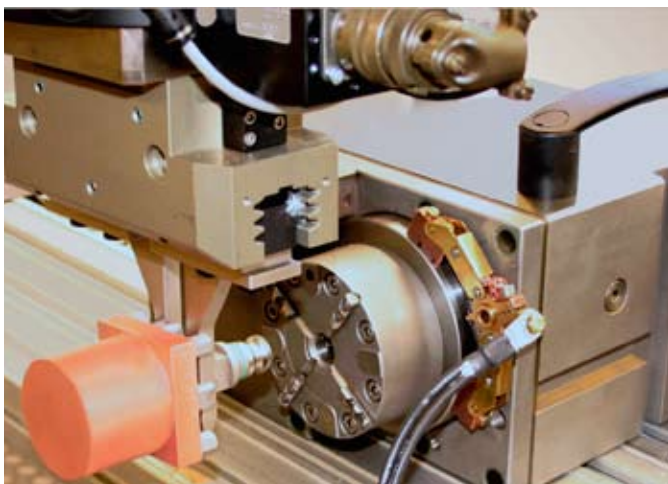


Features

- Automatic loading and un-loading
- Inexpensive, direct to the electrode (no pallet necessary)
- Precise positioning, repeatable accuracy ≤ 0.002 mm
- Reliable precise loading (no intermittent "bad grips" possible)
- For copper and graphite electrodes and tooling (round or square)
- Simple and fast mounting
- For use with all clamping journals



PrisFIX installed on graphite and copper electrodes with H6.611 Journals



Automated Loading (via robot)

Simple and quick mounting:

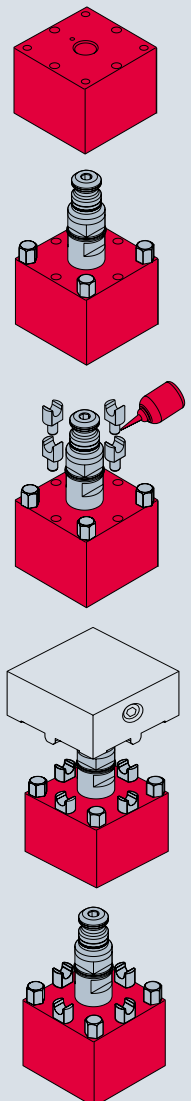
1. Drill and thread the mounting pattern in a blank.

2. Screw in the "Z" reference columns and clamping journal (either) H5.611 or H6.611.

3. Place the X & Y Reference prisms with special adhesive, in the drilled holes.

4. Align and set the X & Y prisms by gripping the assembly in a Hirschmann clamber until the adhesive firmness has been reached (a few minutes).

5.) Remove the blank from the clamber.
Ready for use!



Automation

Automation

HIRSCHMANN manufactures and supplies inexpensive loading devices and complete robotic cells for automatic exchange of pallet mounted electrodes and workpieces in CNC machining centers, EDM's, measuring machines etc. They are compatible with all HIRSCHMANN clamping and palletizing systems as well as systems of other manufacturers. Identification systems can also be incorporated to increase process security.

A PC based production management system for (monitoring, control, administration and visualization) of manufacturing cells provides an overview and control of all production orders and current conditions. It permits quick reaction to changes in order processing and guarantees maximum use and efficiency the machine tools.

Automation	Production cell management software
	Loading devices, robots for manufacturing cells
	Clamping and palletizing solution
	Technical consultation

Individual machine loading with HIRSCHMANN EROBOT

Individual machine tools (EDM's, CNC milling machines, etc) can be integrated to our EROBOT automated loading device.

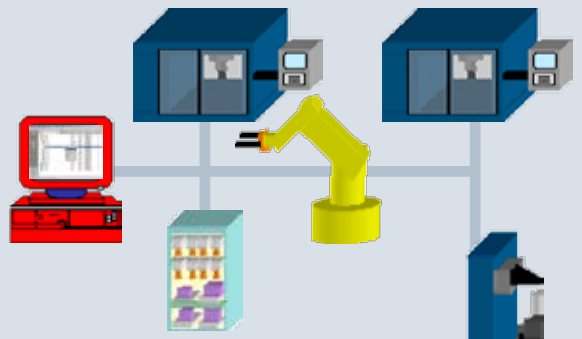


The EROBOT can be controlled directly via the machine tool or through our production management software. Identification systems can also be incorporated to increase process security.

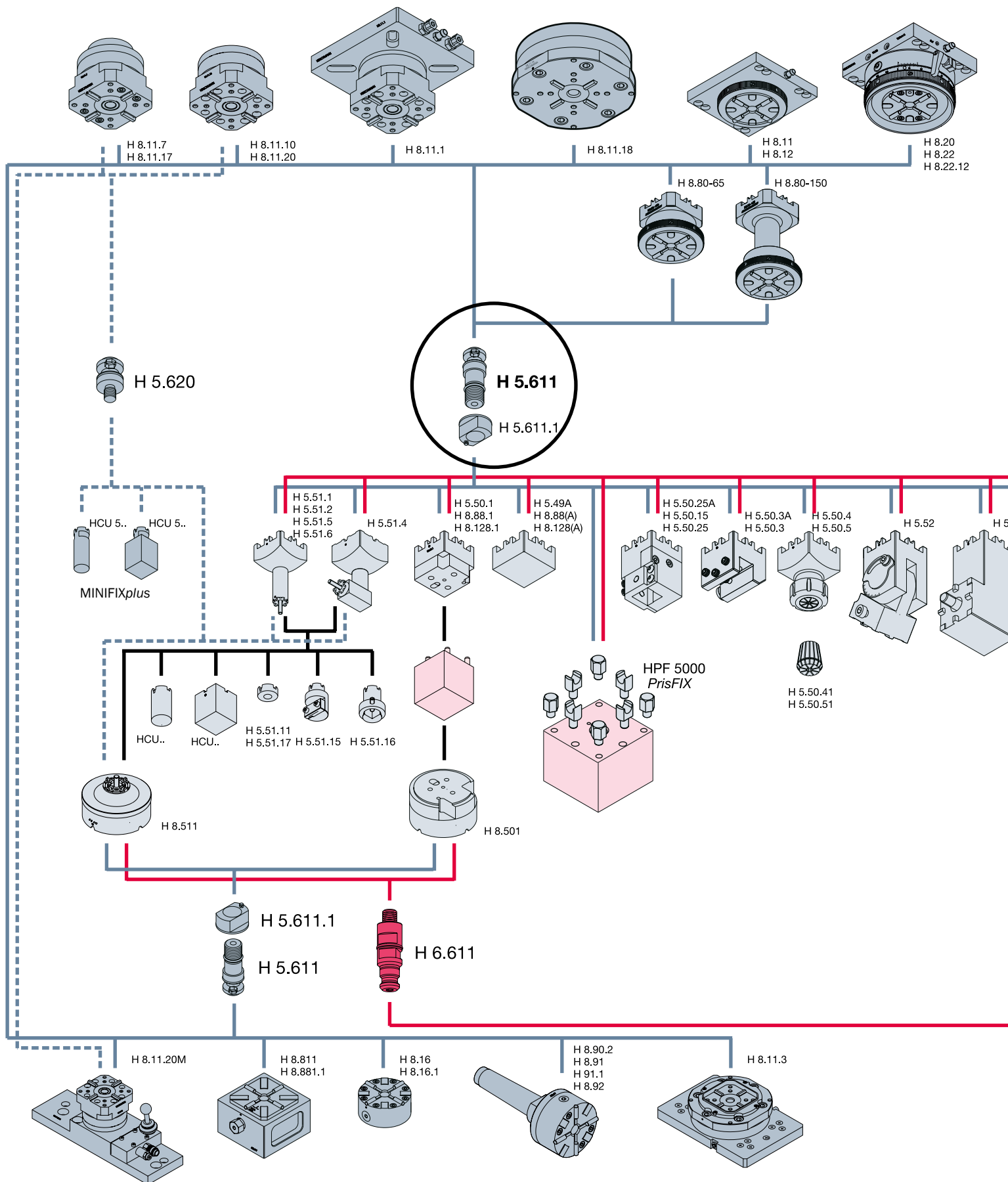
Individual and Multiple machine loading with Robot

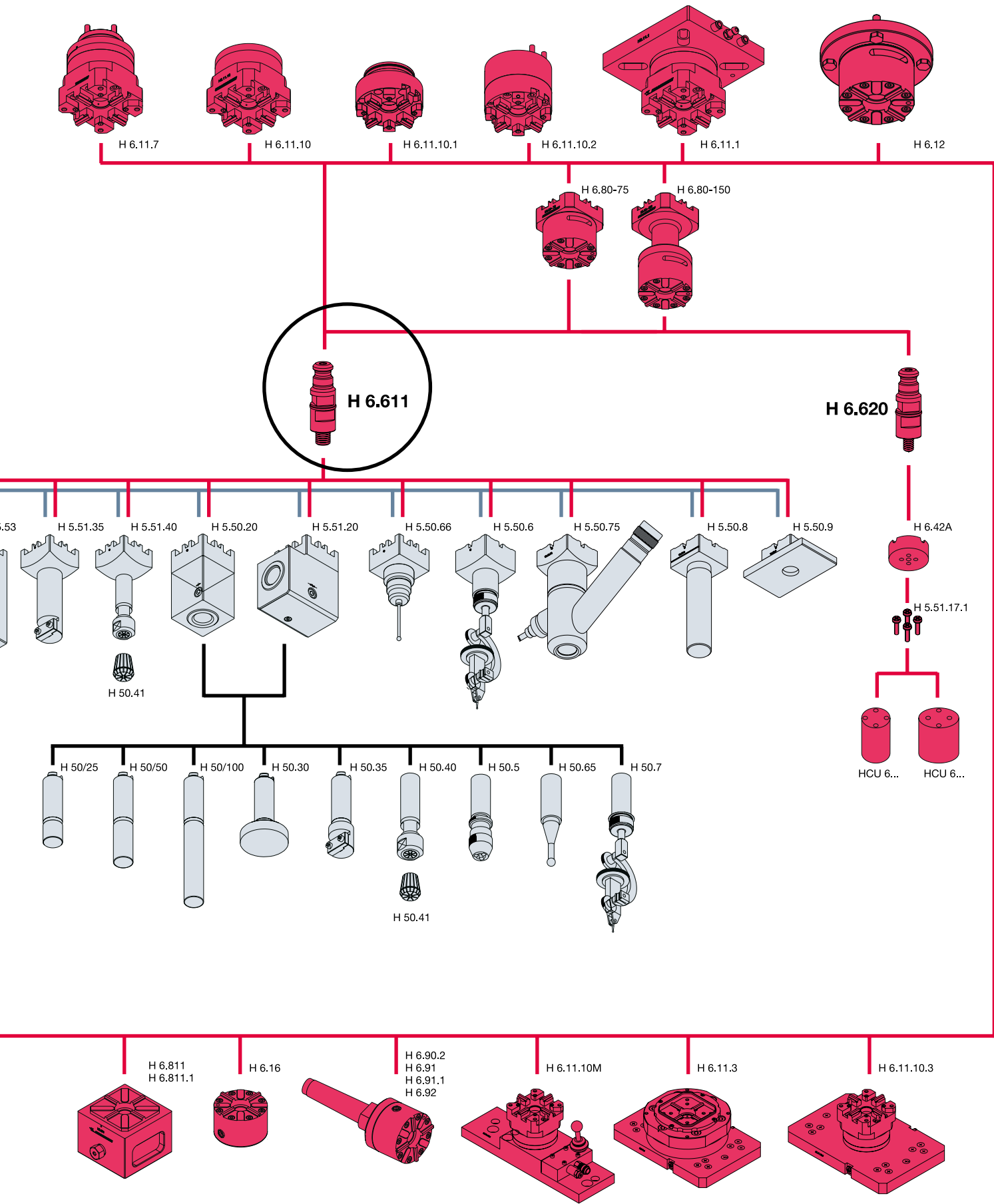
HIRSCHMANN an Automation integrator, offers complete turnkey (from design to install) automated cells for CNC machining centers, EDM's, measuring machines etc. Robots can be configured to load multiple positions on machine tables, load electrodes on sink EDM's, wash parts after machining etc. They can be mounted on tracks or gantry's to service multiple machines.

HIRSCHMANN's production management software is used for monitoring, control, administration and visualization of manufacturing cell.



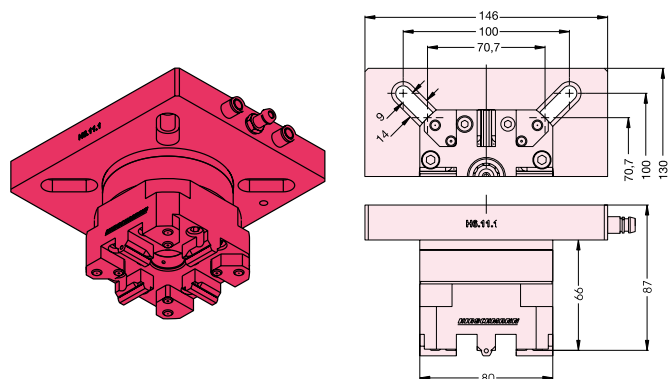
Clamping System Overview





Pneumatic Tool Clamper Series H 6.. for clamping journal H 6.611 and H 6.620

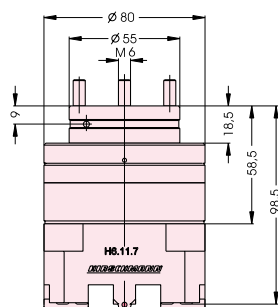
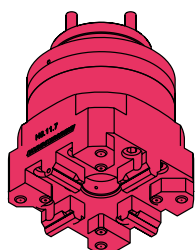
These pneumatic tool clampers are for mounting to the platen or directly to the C-axis of a sink EDM depending upon their configuration. They can be integrated to the machine table to hold pallet mounted workpieces as well. Internal springs are used to close the clampers while pneumatic pressure 6 bar (87psi) is used to open them. The clampers are equipped with integrated "X", "Y" & "Z" reference and pneumatic cleaning holes which are also used for clamping confirmation and monitoring. The Series H6... are fully compatible to magazine and grippers used in other tooling systems and OEM manufactured systems. Alignment should be done using H 5.50.9 or H 5.50.9.



H 6.11.1 Tool Clamper

For mounting on either the machine quill or table. Lateral connections for compressed air and dielectric. The flange bottom is precision ground to the "Z" references.

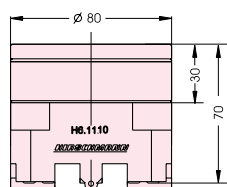
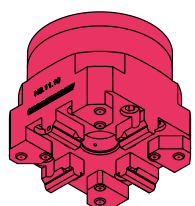
Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	2500 N
Max. electrode weight	50 kg
Max. erosion current	120 A
Compressed air min.	6 bar (87psi)
Weight	7.5 kg



H 6.11.7 Tool Clamper

For installation on machines with C-axis or quill with stepped mounting with (4) M6 SHCS. The connection for pneumatics and dielectric are via the top flange which orientated to the axis center.

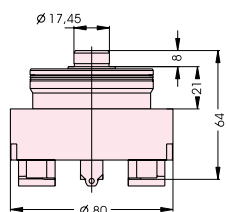
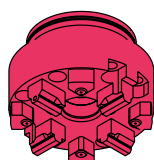
Positional and repetitive accuracy	≤ 0.002 mm
Clamping force	2500 N
Max. electrode weight	50 kg.
Max. erosion current	120 A
Compressed air min.	6 bar (87psi)
Weight	2.6 kg



H 6.11.10 Tool Clamper

For installation on C-axis or quills with flat mounting or for integration into the machine table with (4) M5 and (4) M6 SHCS. The connection for compressed air and dielectric are via the top surface.

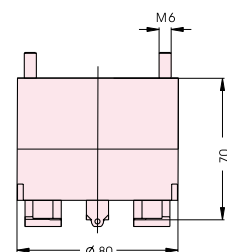
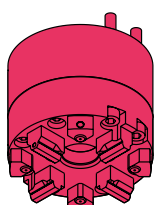
Positional and repetitive accuracy	≤ 0.002 mm
Clamping force	2500 N
Max. electrode weight	50 kg.
Max. erosion current	120 A
Compressed air min.	6 bar (87psi)
Weight	2.2 kg



H 6.11.10.1 Tool Clamper (Installation clamper)

For special installations. Only for pallet series H 5.. and H 6.42A suitable

Positional and repetitive accuracy	≤ 0.002 mm
Clamping force	2500 N
Max. electrode weight	50 kg
Max. erosion current	60 A
Compressed air min.	6 bar (87psi)
Weight	1.5 kg



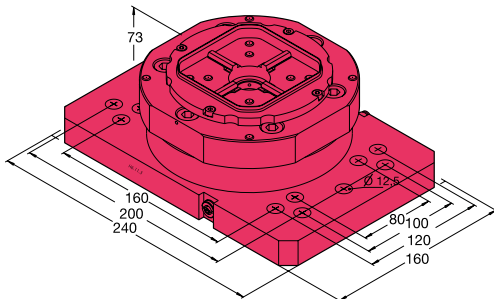
H 6.11.10.2 Tool Clamper

H6.11.10.1, mounted in a housing.

Weight	2.3 kg
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Pneumatic Tool Clamper Series H 6.. for clamping journal H 6.611 and H 6.620

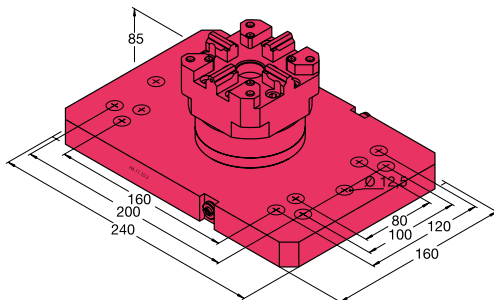
These pneumatic pallet clampers are for use in preparation and machining of electrodes or workpieces in **sink EDM, CNC machining centers, grinders, measuring machines etc.** Internal springs are used to close the clampers while pneumatic pressure 6 bar (87psi) is used to open them. An H8.88A or H8.128A pallet can be used as protection when the clampers are not in use.



H 6.11.3 Pallet Clamper, pneumatic

Sealed for H8.88 and H8.128 pallets and holders. Clamping pressure can be increased up to 18000 N via the additional pneumatic port (suitable for automatic loading using pallet grippers, not journals).

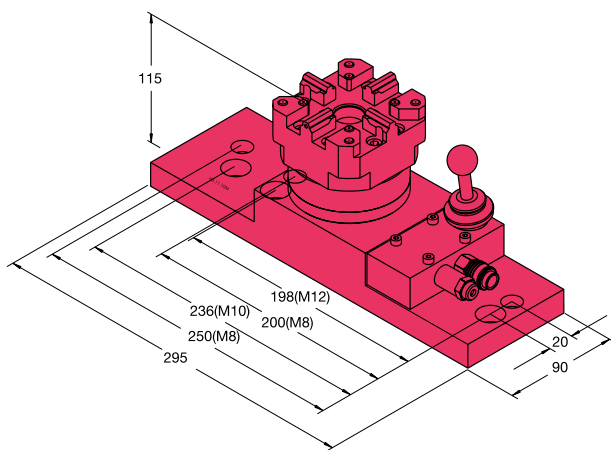
Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	12700 (18000) N
Compressed air min.	6 bar (87psi)
Weight	12 kg



H 6.11.10.3 Pallet Clamper, pneumatic

For manual or automatic loading using journals H 6.611 or H 6.620.

Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	2500 N
Max. workpiece weight	100 kg
Max. erosion current	120 A
Compressed air min.	6 bar (87psi)
Weight	9 kg

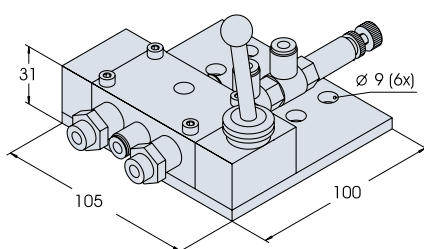


H 6.11.10M Pallet Clamper, pneumatic

Pneumatic pallet clamper with integrated, manual control unit for use on measuring machines (not suited for metal cutting or use in sink EDM).

Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	2500 N
Max. workpiece weight	50 kg
Compressed air min.	6 bar (87psi)
Weight	11 kg

Includes 3 meters of pneumatic hose, 6x1 mm.

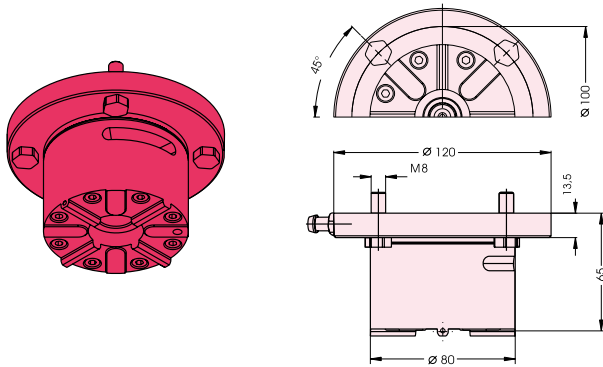


H 4101 Pneumatic Control Unit

Manual control unit for opening, additional clamping pressure and cleaning of pneumatic clampers.

Manual Clamper Series H 6.. for clamping journal H 6.611 and H 6.620

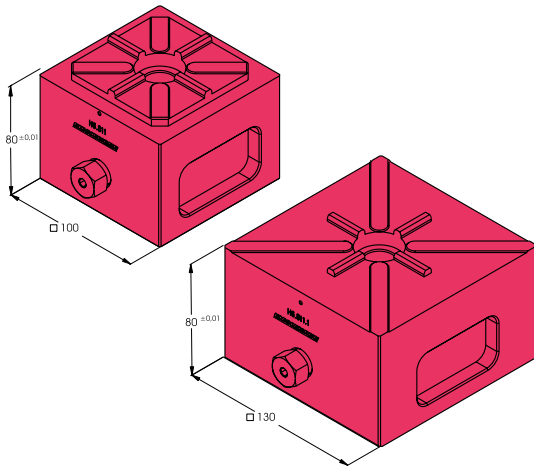
These manual clampers are used for preparation, machining and use of electrodes or workpieces in **sink EDM, CNC machining centers, grinders, measuring machines etc.** They are mechanically activated via a wrench, rotating key or pin wrench.



H 6.12 Tool Clamper, manual

For mounting on the machine quill or table with (4) M8 hex bolts. Includes lateral connection for internal flushing.

Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	9500 N
Max. workpiece weight	100 kg
Max. erosion current	120 A
Weight	3 kg



H 6.811 Pallet Clamper, manual

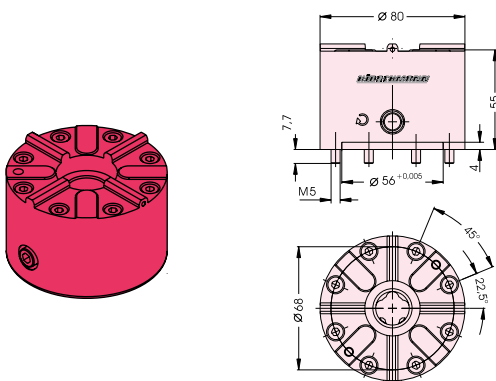
For use in machine tools for electrode preparation and general machining. Incorporates four precision ground surfaces with dowel pins as prisms for pallet alignment. Engraved center distances for alignment and positioning. Suitable for use in dielectric.

Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	10000 N
Weight	4,5 kg

H 6.811.1 Pallet Clamper, manual

Same as H 6.811 with a larger base for additional "Z" support for the pallets H 8.128 and H 8.180.

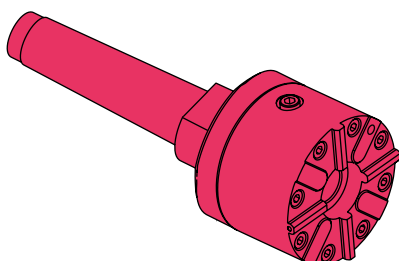
Weight	ca. 9.9 kg
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H 6.16 Pallet Clamper, manual

For cylindrical applications with an internal hexagon tightening screw. Built in center bore for easy mounting alignment. For stationary and rotary use.

Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	6000 N
Suitable for use in dielectric.	



H 6.90.2 Tool Clamper

With taper shank ISO 40 and external thread S20x2.

H 6.91 Tool Clamper

With taper shank MK4 and Internal thread M16.

H 6.91.1 Tool Clamper

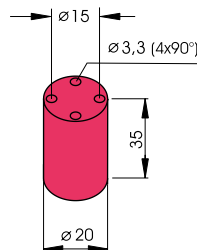
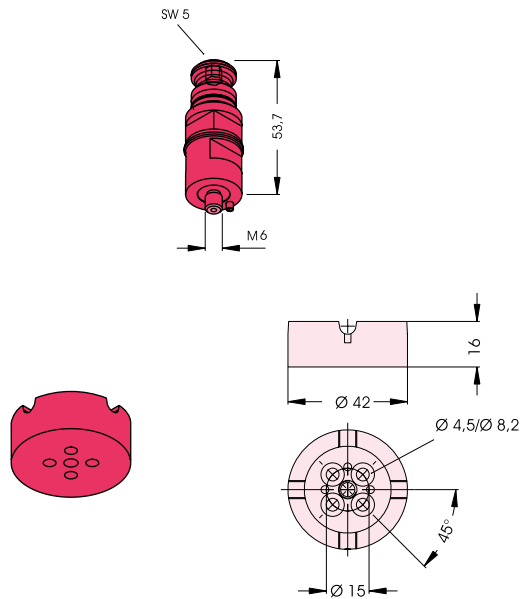
With taper shank MK5 and internal thread M20.

H 6.92 Tool Clamper

With straight cylindrical shank (diameter) 25 mm.

Other shanks available upon request.

Palletized Electrodes with H 6.42A Pallets



H 6.620 Clamping Journal

Central M6 thread for use with the pallet H 6.42A. Includes central flushing hole for dielectric. Suitable for manual or automatic loading

H 6.42A Pallet

Aluminum 42 mm diameter with M6 thread for the H 6.42A journal. For copper electrodes from Ø 20 mm up to 42 mm and graphite electrodes from Ø 23 mm up to 42 mm.

Electrodes attachment with flat head screws H 5.51.17.1 (not included in the delivery).

Weight

0,040 kg

H 6.42A1 Pallet

Same as H 6.42A but with M12 central thread for use with H 6.611 journals.

For copper electrodes from Ø 27 mm up to 42 mm and graphite electrodes from Ø 30 mm up to 42 mm.

H 5.51.17.1 Flat Head Screws

Self tapping flat head screws for electrode attachment to pallet H 6.42A and H 6.42A1.

Delivery set

100 pcs.

HCU 6.20-35 Copper Electrode Blank

CU-electrode blank with 4 tapped holes for use with pallet H 6.42A and screws H 5.51.17.1.

Diameter

20 mm

Length

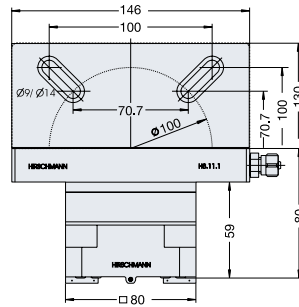
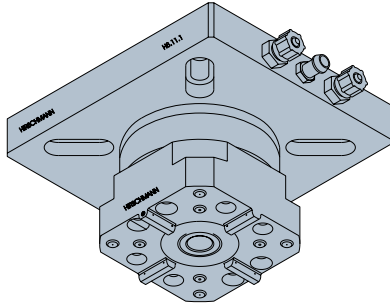
35 mm

Other blank sizes and graphite upon request.

Pneumatic Clamper Series H8.. for clamping journals H 5.611 and H 5.620

These pneumatic tool clampers are for mounting to the platen or directly to the C-axis of an EDM depending upon their configuration. They can be integrated to the machine table to hold pallet mounted workpieces as well. Internal springs are used to close the clampers while pneumatic pressure 6 bar (87psi) is used to open them.

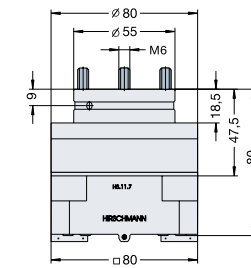
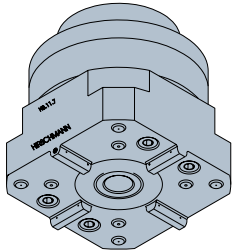
The clampers are equipped with integrated "X", "Y" & "Z" references and pneumatic cleaning holes which are also used for clamping confirmation and monitoring. Electrodes and palletized holders are used with these clampers in HIRSCHMANN fork, linear or disk type magazines.



H 8.11.1 Tool Clamper without MINIFIXplus references

For mounting on either the machine quill or table. Lateral connections for compressed air and dielectric. The flange bottom is precision ground to the "Z" references.

Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	2500 N
Max. workpiece weight	50 kg
Max. erosion current	120 A
Compressed air min.	6 bar (87psi)
Weight	7.5 kg

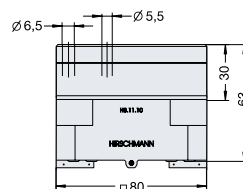
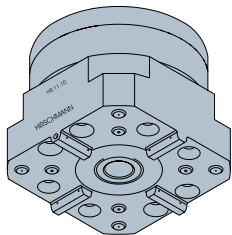
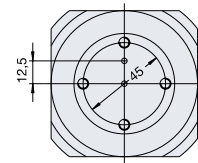


H 8.11.7 Tool Clamper without MINIFIXplus references

H 8.11.17 Tool Clamper with MINIFIXplus references

For installation on machines with C-axis or quill with stepped mounting with (4) M6 SHCS. The connection for pneumatics and dielectric are via the top flange which is mounted first and orientated to the axis center.

Positional and repetitive accuracy	≤ 0,002 mm
Clamping force H 8.11.7	2500 N
Clamping force H 8.11.17	1500 N
Max. electrode weight	50 kg
Max. erosion current	120 A
Compressed air min.	6 bar (87psi)
Weight	2.5 kg

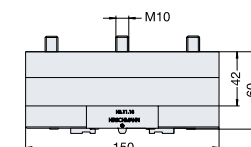
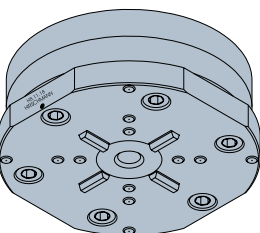
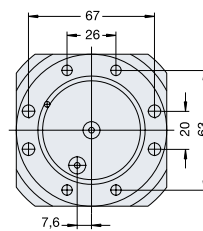


H 8.11.10 Tool Clamper without MINIFIXplus references

H 8.11.20 Tool Clamper with MINIFIXplus references

For installation on C-axis or quillss with flat mounting or for integration into the machine table with (4) M5 and (4) M6 SHCS. The connection for compressed air and dielectric are via the top surface.

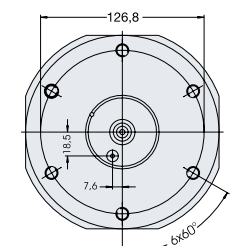
Positional and repetitive accuracy	≤ 0,002 mm
Clamping force H 8.11.10	2500 N
Clamping force H 8.11.20	1500 N
Max. electrode weight	50 kg
Max. erosion current	120 A
Compressed air min.	6 bar (87psi)
Weight	2.15 kg



H 8.11.18 Tool Clamper

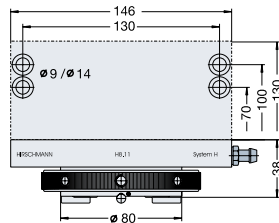
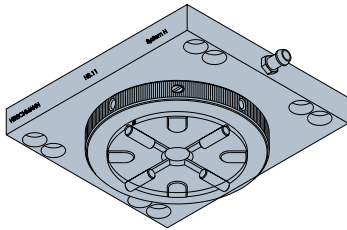
Similar function as H8.11.10 but with additional "Z" supports for the use with standard and larger electrodes mounted on H 8.128 and H 8.180 pallets.

Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	10000 N
Max. electrode weight	100 kg
Max. erosion current	120 A
Compressed air min.	6 bar (87psi)
Weight	8 kg



Manual Clamper Series H 8.. for clamping journals H 5.611

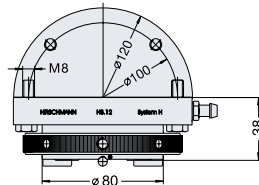
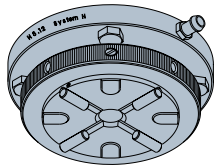
These manual clampers are used for preparation, machining and use of electrodes or workpieces in sink EDM, CNC machining centers, grinders, measuring machines etc. They are mechanically activated via a sliding ring, rotating key or pin wrench.



H 8.11 Tool Clamper, manual

For mounting on the sink EDM quill or machine table with (8) possible mounting locations for M8 SHCS. Includes connection for internal flushing.

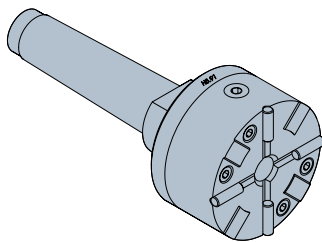
Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	2500 N
Max. electrode/workpiece weight	100 kg
Max. erosion current	120 A
Weight	3.7 kg



H 8.12 Tool Clamper, manual

For mounting on the machine quill or table with (4) M8 hex bolts. Includes lateral connection for internal flushing.

Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	2500 N
Max. electrode/workpiece weight	100 kg
Max. erosion current	120 A
Weight	3.7 kg



H 8.90.2 Tool Clamper

With taper shank ISO 40 and external thread S20x2.

H 8.91 Tool Clamper

With taper shank MK4 and Internal thread M16.

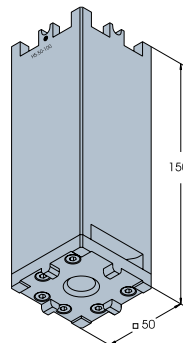
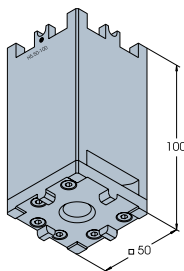
H 8.91.1 Tool Clamper

With taper shank MK5 and internal thread M20.

H 8.92 Tool Clamper

With straight cylindrical shank (diameter) 25 mm.

Other shanks available upon request.

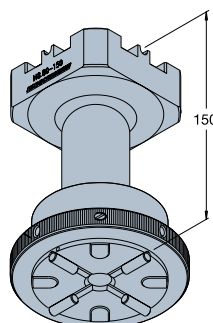
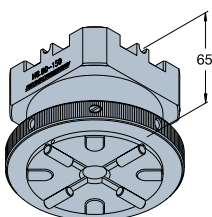


H 5.50-100 Extension, 100 mm long

H 5.50-150 Extension, 150 mm long

Square (□50 mm) extensions for use between a clamper and an electrode, pallet or holder. Internal flushing included. Clamping journal not included.

Weight	2 or 2.5 kg
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H 8.80/65 Extension, 65 mm long

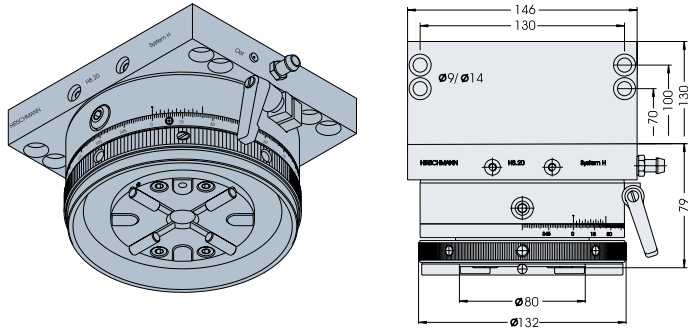
H 8.80/150 Extension, 150 mm long

Extension for larger electrodes, pallets or holders. Built with an integral 88 mm base and clamper similar to an H8.12. Internal flushing included. Clamping journal not included

Weight	2.5 or 3 kg
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Dividing Head Series H 8... for clamping journal H 5.611

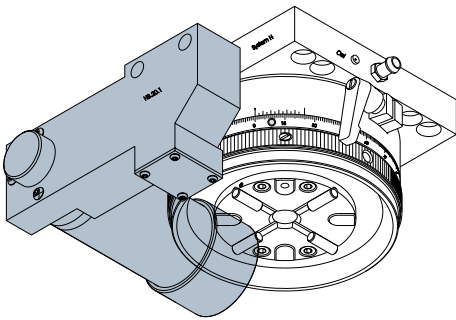
These manual “C” axes or dividing heads mount to the EDM quill. They can also be used as rotating spindles. Angular settings are achieved using a vernier scale and friction locked with a lever. Pallets or holders are secured with a locking ring and supplied with connections for the central flushing. Not suitable for submersion in dielectric fluid.



H 8.20 Dividing Head, manual

Manual C-axis for mounting directly to the machine quill. 360° indexing or continuous rotation using the H 8.20.1 drive and H 20.2 control. Flushing connection on the side.

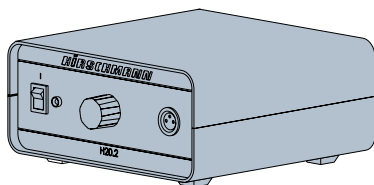
Setting accuracy (vernier scale)	< 5 min.
Radial runout	<0.01 mm
Max. electrode weight rotating / stationary	10 / 100 kg,
Max. erosion current rotating / stationary	30 / 90 A
Speed range of rotary spindle	20 to 150 rpm
Weight	8 kg



H 8.20.1 Rotary Drive for H 8.20

Drive with a DC motor, infinitely variable via the H 20.2 Control Unit. Maintenance free, with quick connection drive via a pinion. The EDM current is transferred to the ground portion of the locking ring of the dividing head via a contact brush (spring loaded)

Connection cable length to the controller H 20.2	2.5 m.
Weight approx..	1.5 kg



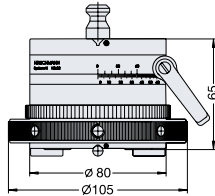
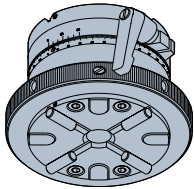
H 20.2 Controller

For H 8.20.1, H 8.22.1, H 25, H 25.10 and H 80R.M.

The control unit is equipped with a potentiometer for setting the required speed of the dividing head or the rotating spindle. With power cord 2 m long.

Weight approx. 2.5 kg

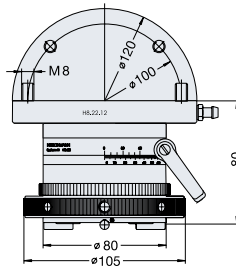
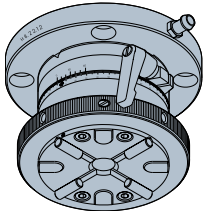
Dividing Head Series H8.. for clamping journal H 5.611



H 8.22 Dividing Head, manual

For quick change mounting directly a machine quill equipped with series H8.. clamping (ie: H 8.12). 360° indexing or continuous rotation using the H 8.22.1 drive and H 20.2 control. Internal flushing via the connection journal.

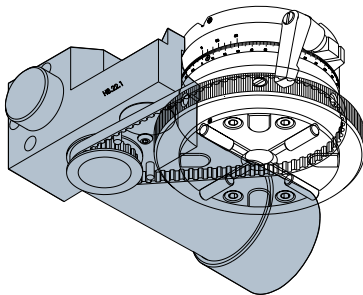
Setting accuracy (vernier scale)	< 5 min.
Radial runout	<0.01 mm
Max. electrode weight rotating / stationary	5 / 50 kg,
Max. erosion current rotating / stationary	15 / 60 A
Speed range of rotary spindle	20 to 150 rpm
Weight	2.5 kg



H 8.22.12 Dividing Head, manual

For mounting directly on the machine quill with (4) M8 hex bolts. 360° indexing or continuous rotation using the H 8.22.1 drive and H 20.2 control. External flushing connection.

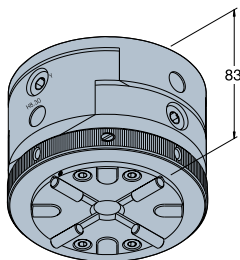
Setting accuracy (vernier scale)	< 5 min.
Radial runout	<0.01 mm
Max. electrode weight rotating / stationary	5 / 50 kg,
Max. erosion current rotating / stationary	15 / 60 A
Speed range of rotary spindle	20 to 150 rpm
Weight	2.6 kg



H 8.22.1 Rotary Drive for H 8.22 and H 8.22.12

Drive with a DC motor, infinitely variable when using the H 20.2 Control Unit. Maintenance free with quick connection drive via a cog belt. The EDM current is transferred to the ground portion above the locking ring of the dividing head via a contact brush (spring loaded)

Connection cable length to the controller H 20.2	2.5 m
Weight	1.5 kg



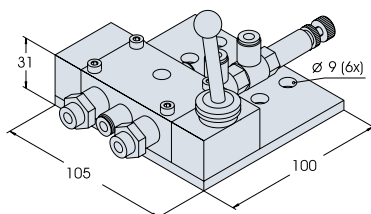
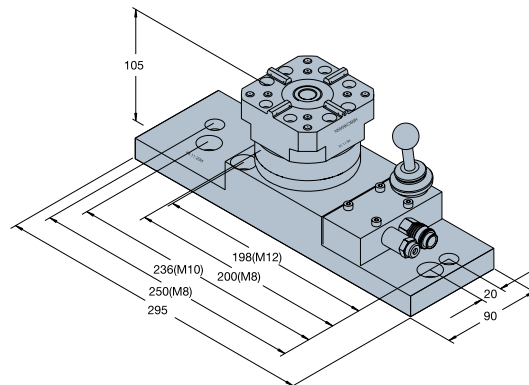
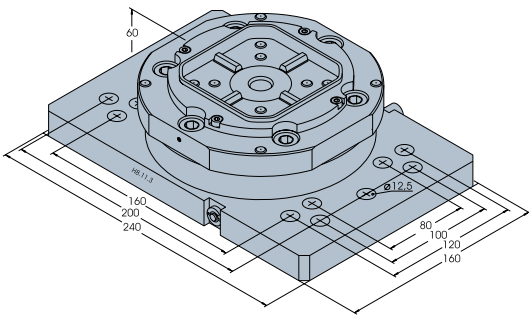
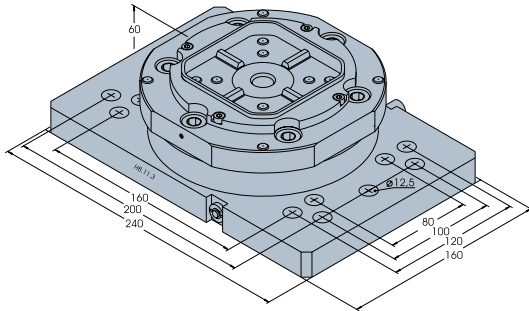
H 8.30 Tilting Head

For vertically align the electrode within ($\pm 1.5^\circ$). The tilting head is used when electrodes have not been made or machined in the clamping system, and must be aligned in the machine quill.

Alignment range	$\pm 1.5^\circ$
Max. electrode weight	50 kg.
Weight	4.2 kg

Pneumatic Pallet Clamper Series H 8.. for clamping journal H 5.611

These pneumatic pallet clampers are for use in preparation and machining of electrodes or workpieces in sink EDM, CNC machining centers, grinders, measuring machines etc. Internal springs are used to close the clampers while pneumatic pressure 6 bar (87psi) is used to open them. An H 8.88A or H 8.128A pallet can be used as protection when the clampers are not in use.



H 8.11.3 Pallet Clamper, pneumatic

Sealed for H 8.88 and H 8.128 and H 8.180 pallets and holders. Clamping pressure can be increased up to 18000 N via the additional pneumatic port (suitable for automatic loading using pallet grippers, not journals).

Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	10000 (18000) N
Max. workpiece weight	100 kg
Compressed air min.	6 bar (87psi)
Weight	11 kg

H 8.11.3.3 Pallet Clamper, pneumatic

Same as H 8.11.3 but with 2 reference Ø 20 mm H7 bores at 200 mm centers.

H 8.86 Power Clamper, pneumatic

Similar function as H 8.11.3 but for heavy machining work. Clamping pressure can be increased up to 25000N via the additional pneumatic port.

Incl. one clamping journal H 8.611.

Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	10000 (25000) N
Compressed air min.	6 bar (87psi)

H 8.86.3 Power Clamper, pneumatic

Same as H 8.86 but with 2 reference Ø 20 mm H7 bores at 200 mm centers.

H 8.611 Clamping Journal

Clamping Journal for H 8.86.

H 8.11.20M Pallet Clamper, pneumatic

Pneumatic pallet clamper with MINIFIXplus and an integrated manual control unit for use on measuring machines (not suited for metal cutting or use in sink EDM).

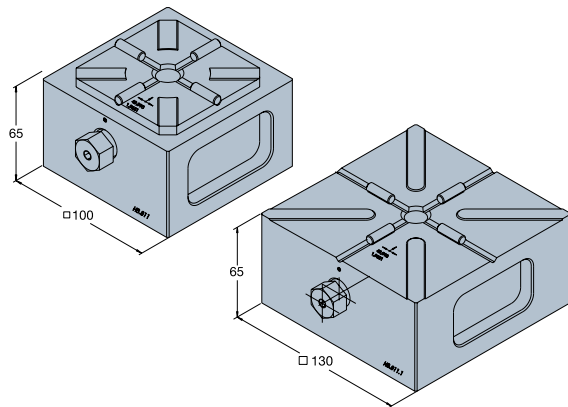
Positional and repetitive accuracy	≤ 0,002 mm
Clamping force	1500 N
Max. loading weight	50 kg
Compressed air min.	6 bar (87psi)
Weight	11 kg

Includes 3 meters of pneumatic hose, 6x1 mm.

H 4101 Pneumatic Control Unit

Manual control unit for opening, additional clamping pressure and cleaning of pneumatic clampers.

Manual Pallet Clamper Series H 8.. for clamping journal H 5.611



H 8.811 Pallet Clamper, manual

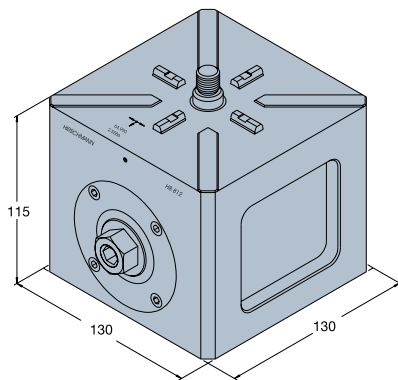
For use in machine tools for electrode preparation and general machining. Incorporates four precision ground surfaces with dowel pins as prisms for pallet alignment. Engraved center distances for alignment and positioning. Suitable for use in dielectric.

Positional and repetitive accuracy	$\leq 0,002 \text{ mm}$
Clamping force	10000 N
Weight	3.5 kg

H 8.811.1 Pallet Clamper, manual

Same as H 8.811 with a larger base for additional "Z" support for the pallets H 8.128 and H 8.180.

Weight	6.5 kg
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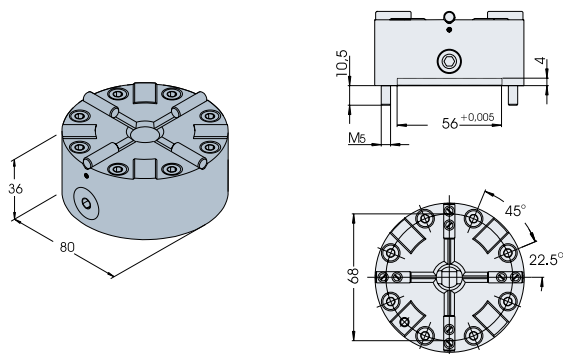


H 8.812 Pallet Clamper, manual

For heavy machining work on workpieces mounted on pallets H 8.88, H 8.128 and H 8.180. Incorporates precision ground contact prisms for pallet alignment and engraved center distances for alignment and positioning.

Uses a built in manual central power clamping screw (no journals).

Positional and repetitive accuracy	$\leq 0,002 \text{ mm}$
Clamping force	15000 N
Weight	12 kg



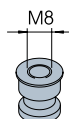
H 8.16 Pallet Clamper, manual

For cylindrical applications with an internal hexagon tightening screw. Built in center bore for easy mounting alignment. For stationary and rotary use.

Positional and repetitive accuracy	$\leq 0,002 \text{ mm}$
Clamping force	6000 N

H 8.16.1 Pallet Clamper, manual

Same as H 8.16 but with a male hexagon clamping screw like the H 8.811. For stationary use.



H 4205 Adapter Peg for System 4000

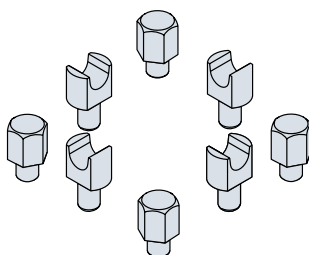
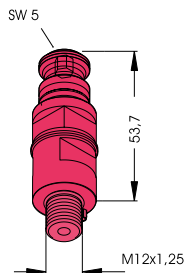
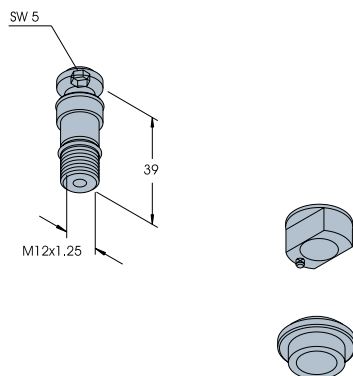
Used to clamp pallets H 4005, H 4105, H 4110M and H 4110P of the HIRSCHMANN System 4000 to the Pallet Clampers H 8.16 and H 8.16.1.

Clamping Journals H 5.611/H 6.611 and *PrisFIX* Reference Set

General Information

The clamping journals of both series H 5.611 and H 6.611 can be used for all pallets, holders and *PrisFIX* mounted electrodes and workpieces. They can be used for both manual and automatic type loading.

All pallets and holders are supplied **WITHOUT** clamping journals and must be ordered separately. The clamping journal H 5.611 for the H 8.. series and the clamping journal H 6.611 for the H 6.. series clampers.



H 5.611 (H 5.611R) Clamping journal (rustfree) H 5.611.1 (H 5.611.1R) Centering Bush

Used with the series H 8.. clampers (H 8.11.10 etc.) and with disc and linear magazines equipped with H 5.60 or H 5.62 type forks. Bored for central flushing.

Order both parts to make a complete journal.

H 5.611.2 Distance Bush

Used in place of H 5.611.1 for older installations using H 5.57 style forks.

H 6.611 (H 6.611R) Clamping Journal (rustfree)

Used with the series **H 6..** clampers (H 6.11.10 etc.) and with disc and linear magazines equipped with H 5.60 or H 5.62 type forks. For automatic operation with HIRSCHMANN Ero-bots, robots, loading devices and OEM furnished tool change systems. Bored for central flushing.

HPF 5000 Reference-Set *PrisFIX*

PrisFIX is an inexpensive referencing solution for mounting of electrodes and workpieces in the HIRSCHMANN Fixturing System 5000 (see page 6). A set consist of (4) X & Y- reference prisms and (4) Z- reference columns with threads for direct mounting to electrodes or workpieces from □ 50 mm or Ø 67 mm.

Delivered in: sets of 10

Order clamping journals H 5.611 or H 6.611 separately (not included in sets).

Assembly instructions included in the set (see page 6).

HPF 5000K Adhesive

LOCTITE® 603, universal semi-quick setting adhesive for setting the X-Y- reference prism in copper, graphite, steel etc.

Bottle volume: 10 ml.

HPF 5000KG Adhesive

LOCTITE® 480, universal quick setting adhesive for setting the X-Y- reference prism in graphite.

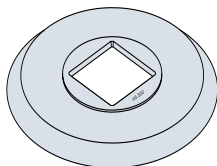
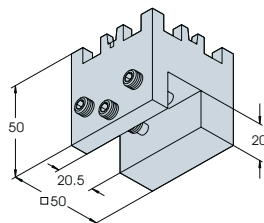
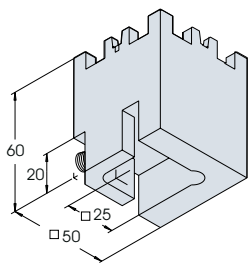
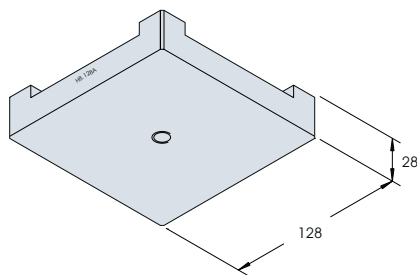
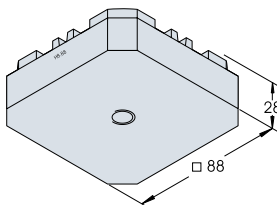
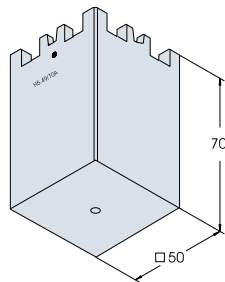
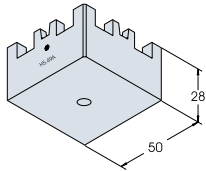
Bottle volume: 20 ml

LOCTITE® is a registered trademark of Henkel

Aluminum Pallets and Holders

Economy aluminum pallets and holders for use in sink as well as wire EDM.

All pallets and holders are shipped without clamping journals which must be ordered separately



H5.49A Pallet

For copper electrodes up to 75 mm (3") \varnothing or graphite electrodes up to 100 mm (4") \varnothing , machined on series H6.. and H8.. clampers. Pallet is blank for custom mounting.

Delivered in (without clamping journals): set of 9 pieces
Weight: 0,12 kg

H5.49/70A Pallet (for custom machining)

Same as H5.49A, but 70 mm. long.

Delivered in (without clamping journals): set of 9 pieces
Weight: 0.25 kg

H8.88A Pallet

For copper electrodes up to 100mm (4") \varnothing , or graphite electrodes up to 150mm (6") \varnothing , machined on series H6.. and H8.. clampers. Pallet is blank for custom mounting.

Delivered in (without clamping journals): set of 5 pieces
Weight: 0.5 kg

H8.128A Pallet

For copper electrodes up to 160mm (6.5") \varnothing , or graphite electrodes up to 250 mm (10") \varnothing , machined on H6.811.1 and H8.811.1 clampers. Pallet is blank for custom mounting.

Delivered in (without clamping journals): 1 or set of 5 pieces
Weight: 0.5 kg

H5.50.25A V-Holder

Aluminium „V“ block holder for electrode blanks up to 25 mm (1") \varnothing .

Delivered in (without clamping journals): set of 9 pieces
Weight: 0.15 kg

H5.50.3A F-Holder

Aluminum "Rib" holder for holding flat electrode blanks up to 20 mm (0.8") thickness.

Delivered in (without clamping journals): set of 9 pieces
Weight: 0.15 kg

H5.500 Chip Guard

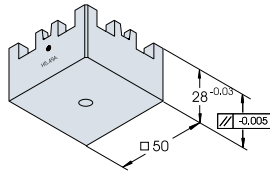
For protection of clampers when machining pallets and electrode holders of the H5.50... size range.

Delivered in: set of 2 pieces

Steel Pallets

These steel pallets and holders are nickel plated to protect against rust. The centering prisms and Z-supports are inductively hardened to guarantee a high repetitive accuracy and long life span. The pallets H 5.50R, H 8.88R are available in stainless steel for use in wire EDM.

All pallets and holders are shipped without clamping journals which must be ordered separately.



H 5.50 Pallet

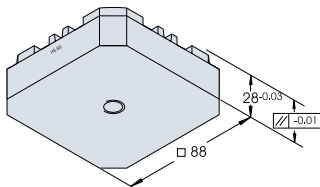
For copper electrodes and workpieces up to 75 mm (3") \varnothing □, or graphite electrodes up to 100 mm (4") \varnothing □, machined on series H 6.. and H 8.. clampers. Pallet is blank for custom mounting. Without clamping journals.

Weight

0,5 kg

H 5.50R Stainless Pallet

Same as H 5.50 but made of stainless (use stainless steel clamping journals H 5.611R, H 5.611.1R and/or H 6.611R).



H 8.88 Palette

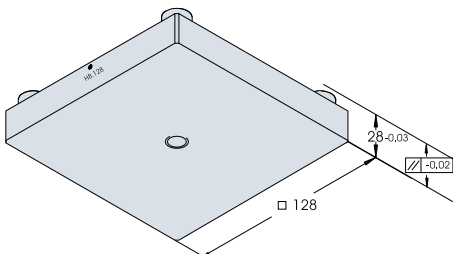
For copper electrodes and workpieces up to 100 mm (4") \varnothing □, or graphite electrodes up to 150 mm (6") \varnothing □. Pallet is blank for custom mounting. Without clamping journal.

Weight

1.2 kg

H 8.88R Stainless Pallet

Same as H 8.88 but made of stainless (use stainless steel clamping journals H 5.611R, H 5.611.1R and/or H 6.611R).

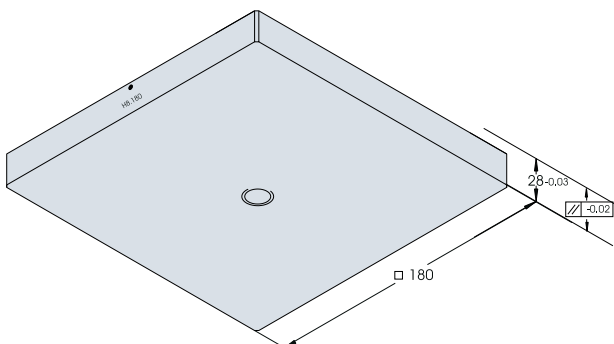


H 8.128 Pallet

For copper electrodes and workpieces up to 160 mm (6.5") \varnothing □, or graphite electrodes up to 250 mm (10") \varnothing □ machined on H 6.811.1 and H 8.611.1 clampers.

Weight

2.5 kg



H 8.180 Pallet

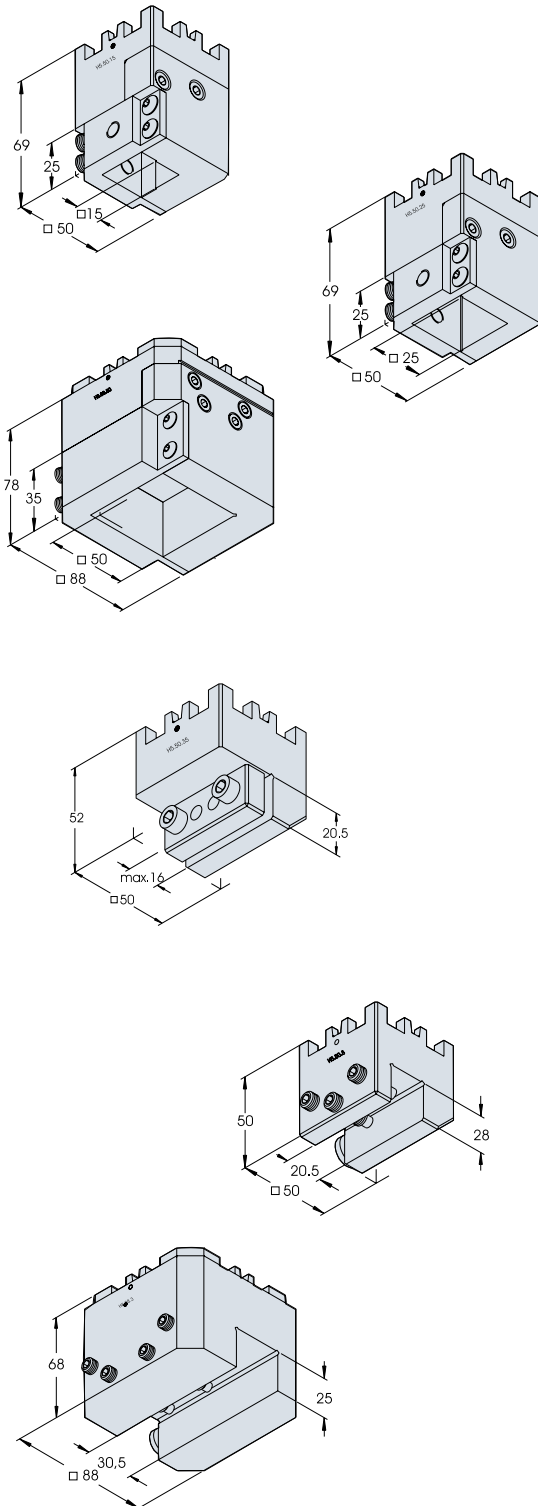
For copper electrodes and workpieces up to 200 mm (8") \varnothing □, or graphite electrodes up to 300 mm (12") \varnothing □ machined on H 6.811.1 and H 8.611.1 clampers.

Weight

5 kg.

All pallets are shipped without clamping journals which must be ordered separately.

Universal Steel Holders



H 5.50.15 V-Holder

Precision "V" block holder for mounting electrodes up to 15mm (.6") \square . Holders are hardened, nickel plated and ground parallel to the centering prisms. Repetitive and positioning accuracy between multiple holders measured 50 mm below the clamping surface is <0.01 mm. Includes an external flushing connection.

Shipped without clamping journals which must be ordered separately.

Weight 0.75 kg

H 5.50.25 V-Holder

Same as H5.50.15, for mounting electrodes up to 25 mm (1").

Weight 0.70 kg

H 8.88.50 V-Holder

Same as H5.50.15, but for mounting electrodes up to 50 mm (2") \square .

Weight 3.4 kg

H 5.50.35 F-Holder

Precision holder for mounting thin-walled electrodes up to 16 mm (.63") thick secured via a pressure plate with screws. Holders are hardened, nickel plated and ground parallel to the centering prisms. Repetitive and positioning accuracy between multiple holders measured 50 mm below the clamping surface is <0.01 mm. Includes an external flushing connection.

Weight 0.6 kg

H 5.50.3 F-Holder

Precision holder for mounting thin-walled electrodes up to 20 mm (.8") thick secured with "Dog Point" set screws. Holders are hardened, nickel plated and ground parallel to the centering prisms. Repetitive and positioning accuracy between multiple holders measured 50 mm below the clamping surface is <0.01 mm.

Includes an external flushing connection and side stop for electrode location.

Weight 0.6 kg

H 8.88.3 F-Holder

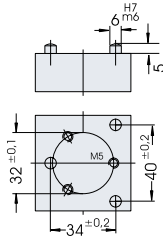
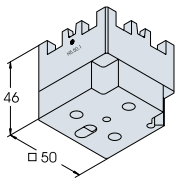
Same as H5.50.3 but for mounting electrodes and workpieces up to 30 mm (1.2") thick. Without lateral flushing connector.

Weight 3.1 kg

All holders are shipped without clamping journals which must be ordered separately.

U-Holders

Universal precise holders for directly mounting electrode blanks to the holder or via the adapter plates H 5.50.11, H 8.88.11 or H 8.128.11. Two reference pins mounted in the blank or adapter are used for location while one additional pin is used to position the blank while being secured with internal screws. The electrode can be used and re-mounted to the holder with high repetitive accuracy. All U-Holders are shipped without clamping journals which must be ordered separately.

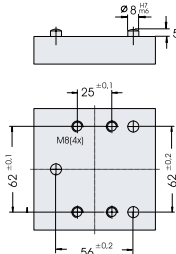
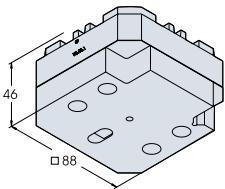


H 5.50.1 U-Holder

For copper electrodes up to 60 mm (2.4") \square , or graphite electrodes up to 100 mm (4") \square .

Threaded inserts are recommended for graphite electrodes.

Repetitive accuracy (same holder)	0.002 mm
Changing accuracy (different holder)	0.005 mm
Weight	0.75 kg

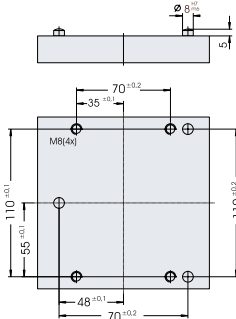
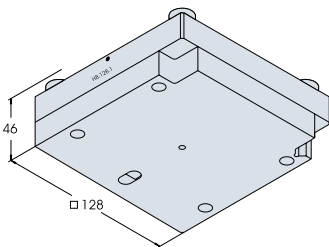


H 8.88.1 U-Holder

For copper electrodes up to 100 mm (4") \square , or graphite electrodes up to 180 mm (7") \square .

Threaded inserts are recommended for graphite electrodes.

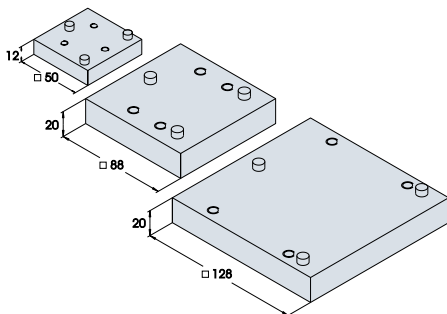
Repetitive accuracy (same holder)	0.005 mm
Changing accuracy (different holder)	0.010 mm
Weight	0.75 kg



H 8.128.1 U-Holder

For copper electrodes up to 130 mm (5") \square , or graphite electrodes up to 210 mm (8.3") \square . Threaded inserts are recommended for graphite electrodes.

Repetitive accuracy (same holder)	0.01 mm
Changing accuracy (different holder)	0.01 mm
Weight	4 kg



H 5.50.11 Adapter Plate

For use with U-Holder H 5.50.1, aluminum 50 mm \square , with pins. Machined directly on H 8.501 Milling Adapter.

Delivered in: set of 10 pieces

H 8.88.11 Adapter Plate

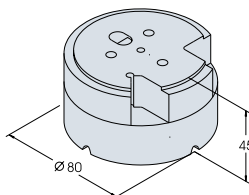
For use with U-Holder H 8.88.1, aluminium, \square 88 mm.

Delivered in: set of 10 pieces

H 8.128.11 Adapter Plate

For use with U-Holder H 8.128.1, aluminium, \square 128 mm.

Delivered in: set of 10 pieces



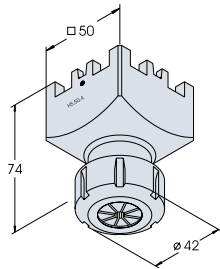
H 8.501 Milling Adapter

Mounts directly to the series H6.. and H8.. clampers for machining electrode blanks for the H 5.50.1 U-Holders.

Without clamping journal.

Weight	0.8 kg.
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Collet Holders



H 5.50.4 Collet Holder

For ER/ESX 25 collets with a range of 0.5 - 16 mm (0.02" - 0.63"). Built-in and easily replaceable sealing disc with a 3.7 mm hole and five extras without hole included with delivery. Central internal flush connection.

Radial run-out (clamping taper to the centering prisms) < 0.01 mm

Weight

1 kg

H 5.50.41 Collet ER/ESX 25

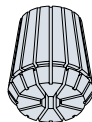
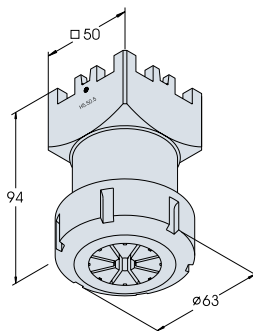
Clamping range 0.5 - 16 mm (.02" - 0.63") infinitely variable in 0.5 mm (0.02") increments. Radial run-out up to 0.02 mm (0.0008") depending on diameter.

H 5.50.42 Replacement Seals

Set with 5 pieces, without hole for H 5.50.4

H 5.50.43 Hook Spanner Wrench (not pictured)

For tightening the collet in the holder H 5.50.4.



H 5.50.5 Collet Holder

For ER/ESX 40 collets with a range of 3 - 26 mm (0.12" - 1.02"). Built-in and easily replaceable sealing disc with a 2.7 mm hole and five extras without hole included with delivery. Central internal flush connection.

Radial run-out (clamping taper to the centering prisms) < 0.01 mm

Weight

1.2 kg

H 5.50.51 Collet ER/ESX 40

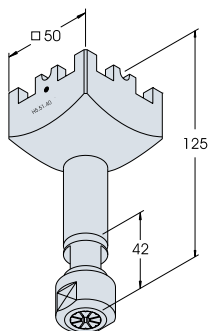
Clamping range 3 - 26 mm (.12" - 1.024") infinitely variable in 1 mm (0.04") increments. Radial run-out up to 0.025 mm (0.001") depending on diameter.

H 5.50.52 Replacement Seals

Set with 5 pieces, without hole for H 5.50.5

H 5.50.53 Hook Spanner Wrench (not pictured)

For tightening the collet in the holder H 5.50.5.



H 5.51.40 Collet Holder

For ER/ESX 16 collets with a range of 0.5 - 10 mm (0.02" - 0.39"). Built-in and easily replaceable sealing disc with a 3.7 mm hole and five extras without hole included with delivery. Central internal flush connection.

Weight

0.8 kg

H 50.41 Collet ER/ESX 16

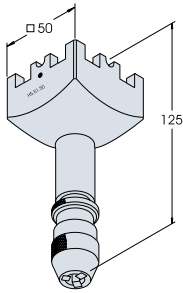
Clamping range 0.5 - 10 mm (.02" - 0.39") infinitely variable in 0.5 mm (0.02") increments. Radial run-out up to 0.02 mm (0.0008") depending on diameter.

H 50.42 Replacement Seals

Set with 5 pieces, without hole for H 5.51.40

All holders are shipped without clamping journals which must be ordered separately.

Universal Holders



H 5.51.50 Precision Tubing Chuck

For mounting small tubular electrodes.

Clamping range 0 - 3 mm (0 - 0.12").

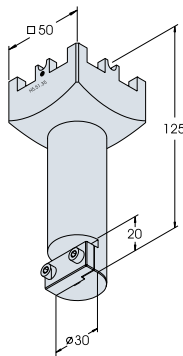
Hardened and nickel-plated with central internal flush connection including five easily replaceable sealing sleeves.

Radial run-out < 0.05 mm

Weight 0.8 kg

H 50.51 Replacement Seals

Set with 5 pieces, without hole for H 5.51.50

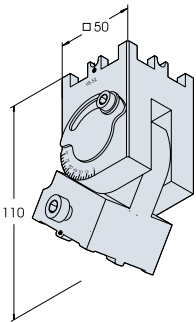


H 5.51.35 Flat Electrode Holder

For holding small thin flat electrodes.

Clamping range up to 5 x 12 mm.

Weight 0.8 kg

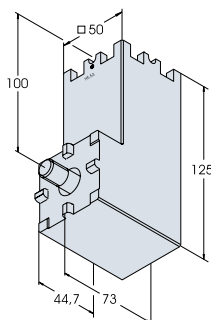


H 5.52 Swivel Holder

For use with all H5... pallets and holders. Swivels from 0 - 90 degrees, with solid stops at 0 and 90 degrees. Other angles are set via a vernier scale or sine rule H 4416.

Hardened and nickel-plated with central internal flush connection.

Weight 1.8 kg



H 5.53 Horizontal Holder

For use with all H5... pallets and holders fixed at 90 degrees.

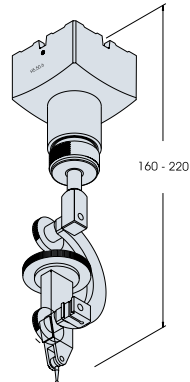
Pallet and holders are clamped using an internal clamping bolt.

Hardened and nickel-plated.

Weight 1.8 kg.

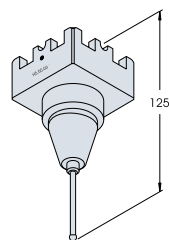
All holders are shipped without clamping journals which must be ordered separately.

Alignment Devices



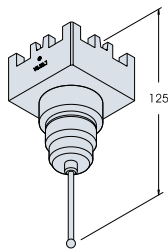
H 5.50.6 Centering Spindle (without dial gauge)

For finding the center position of holes and or round parts. Also used with the H 5.50.9. Aligning Gauge to find the axis position of the series H 6.. and H 8.. clampers when used to hold workpieces.



H 5.50.61 Dial Indicator

For centering spindle H 5.50.6 with 0.002 (0.00008") graduations.



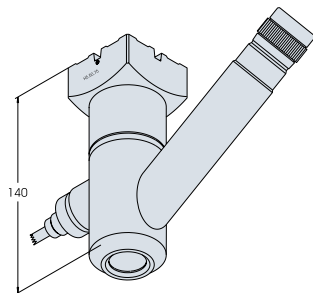
H 5.50.66/2 Ball-type Surface Finder (not flexible)

For finding the coordinate positions of workpieces or clampers via contacting edges.

Hardened steel 2mm diameter ball (+0.002, -0.005).

H 5.50.66/5 Ball-type Surface Finder (not flexible)

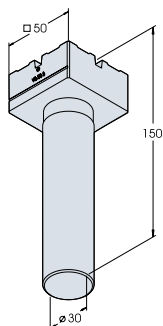
Same as H 5.50.66/2 but with 5mm diameter ball (+0.002, -0.005).



H 5.50.7 3D Surface Finder (flexible)

For finding the coordinate positions of workpieces or clampers via contacting edges. One (1) mm of overrun protection is incorporated in all three directions.

The repetitive accuracy in X-, Y- and Z planes	0.002 mm.
Ball diameter	5mm

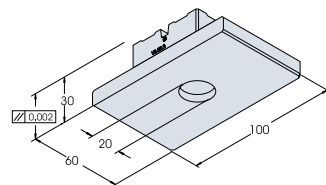


H 5.50.75 Centering Microscope

For optically finding the position of holes or workpiece edges.

30 x magnification.

With sight angle and transformer 110-240/3-8 V.

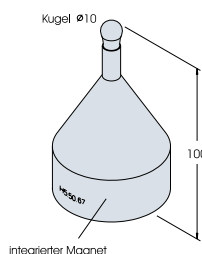


H 5.50.8 Control Rule

For checking axis and clamber concentricity, alignment and radial position.

H 5.50.9 Aligning Gauge

For aligning and checking pallet clampers in the X & Y directions. With a precision bore for checking center positions on clampers.



H 5.50.67 Reference Surface Ball (with magnetic base)

For determining position of the electrode to machine coordinates and measuring electrode wear.

Ball diameter	10 mm
Magnetic base diameter	58 mm

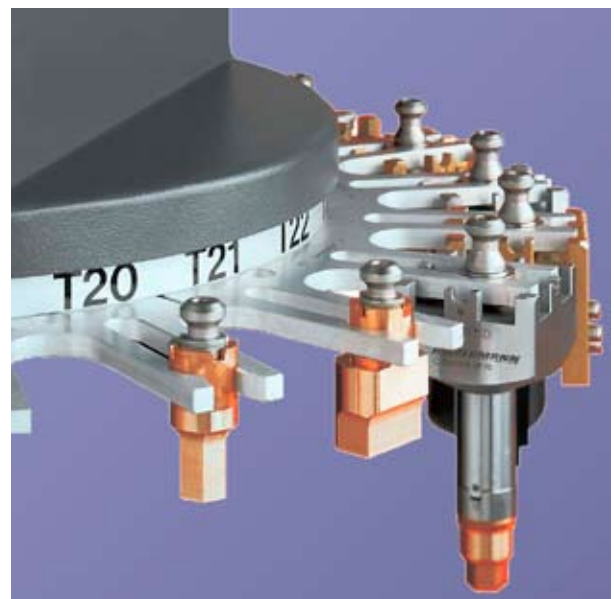
Electrode palletizing with MINIFIX

MINIFIX

For small electrodes up to 30mm Ø in copper and 40mm Ø in graphite. An assortment of pallets, holders and copper blanks are readily available for use in conjunction with the various holders show on the following page or directly to the EDM clamber. Electrodes can be secured to the pallets and holders via screws, clamps, glue etc.

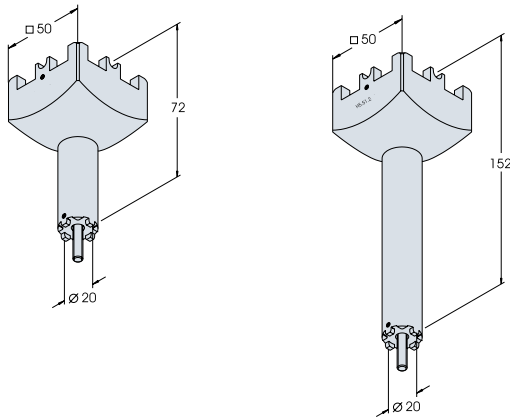
The **MINIFIX copper electrode** blanks and aluminum pallets (shown on page 30) are equipped with pre-milled centering prism slots and mounting holes. The slots in these blanks or pallets are first “coined” by gripping them in the milling adapter H 8.511 assuring a high degree of repeatability. They are then ready for machining in either the H 8.511 or respective P-Holder. The H 5.51.12 - .16 are made of stainless steel and are pre-coined.

The **MINIFIXplus copper electrode** blanks are equipped with a slot allowing for automatic changing in machines with magazine fork type linear or disk tool changers. Using the H 5.620 journal the MINIFIXplus blanks can be automatically or manually exchanged in an EDM machine equipped with either the H 8.11.17 or H 8.11.20 clampers with or without P-Holders. The blanks must first be “coined” as described above.



MINIFIX-Holders und Adapters

MINIFIX holders are made of stainless steel and suitable for use in both sink and wire EDM machines. Supplied with a central pallet clamping screw which is center bored for flushing. Clamping journals are not included.



H 5.51.1 P-Holder (Length 72 mm)

H 5.51.2 P-Holder (Length 152 mm)

For precise mounting of MINIFIX and MINIFIXplus electrodes, pallets and holders. Stainless steel with external and internal flush connections.

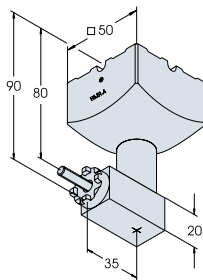
Shank body diameter (not a locating surface)	20 mm
Accuracy with MINIFIX electrode or pallets:	
Repetitive accuracy (same holder)	< 0.005 mm
Repetitive accuracy (holder to holder)	< 0.01 mm
Overall length (holder to holder)	< 0.01 mm
Weight	0.6 kg/0.8 kg

H 5.51.5 P-Holder (Length 72 mm)

H 5.51.6 P-Holder (Length 152 mm)

Same as the H 5.51.1 and H 5.51.2 in length but with 40 mm shank body diameter.

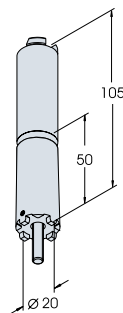
Weight	1.2 kg/1.8 kg
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H 5.51.4 Horizontal Holder

For horizontal mounting of MINIFIX and MINIFIXplus electrodes, pallets and holders. Same design as for H 5.51.1 with external flushing but without internal flushing.

Accuracy with MINIFIX electrode or pallets:	
Repetitive accuracy (same holder)	< 0.005 mm
Repetitive accuracy (holder to holder)	< 0.01 mm
Weight	0.8 kg

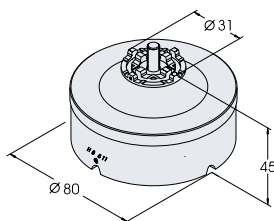


H 51.50 P-Shank (20 mm diameter)

For mounting in the hydraulic chuck H 5.50.20 and H 5.51.20. Not stainless steel.

Similar function as a P-holder.

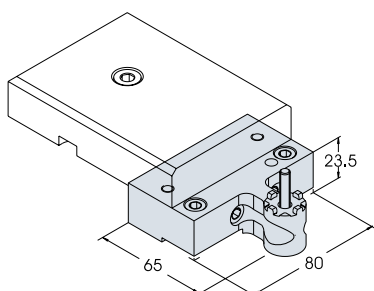
Weight	0.4 kg
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H 8.511 Milling Adapter

For precise and positive "coining" and machining of MINIFIX and MINIFIXplus electrode blanks and pallets. Mounts directly to the series H 6.. and H 8.. clampers for machining electrode blanks

Weight	0.8 kg
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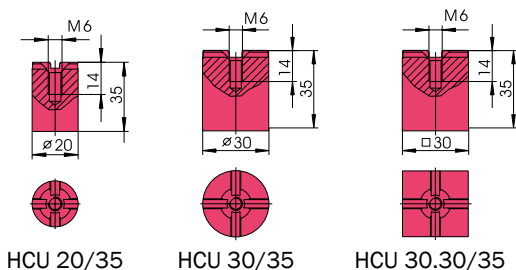
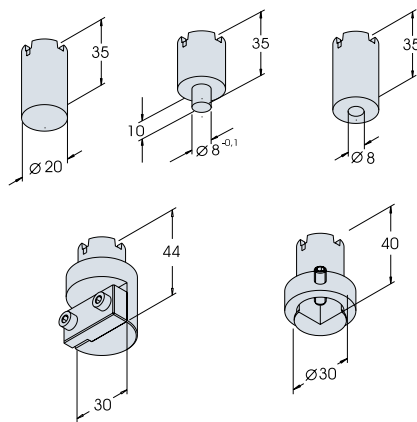
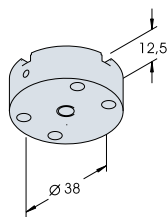
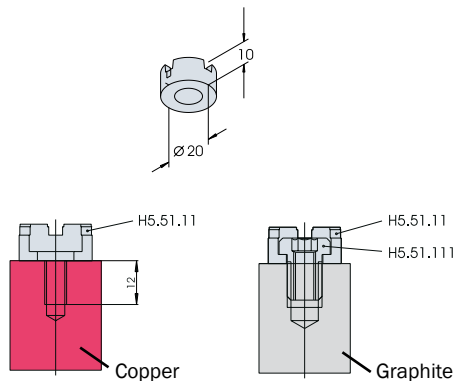


H 4246 MINIFIX-Holder

For mounting MINIFIX and MINIFIXplus electrodes and pallets in a EDM using the HIRSCHMANN 4000 System. (See catalogue Fixturing System 4000).

Weight	1 kg
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MINIFIX pallets, holders and copper electrodes



H 5.51.11 Pallet

20 mm diameter pallet made of aluminum with a reference dot for visual alignment. The electrode blank must first be prepared with one flat surface and either an M6 (copper) or M10 (graphite) threaded bore.

The blank is fixed to the pallet using the glue H 50K and secured to the holder with the M6 thread.

Delivered in: set of 30 pieces

H 5.51.111 Screw (for graphite electrodes)

For attaching the H 5.51.11 pallet to graphite blanks (M10 threaded bore). With an internal M6 threaded bore for securing the pallet to MINIFIX holders.

Delivered in: set of 30 pieces.

H 5.51.17 Pallet

38 mm diameter aluminium pallet for use with H 5.51.1 - H 5.51.6 P-Holders. With central 6 mm threaded bore and (4) electrode mounting hole for M4 screws.

Delivered in: set of 20 pieces.

H 5.51.12, H 5.51.13, H 5.51.14 Pallets

Stainless steel unhardened 20mm diameter, reference dot. Electrode mounting via glue, screws or soldering

Delivered in: set of 20 pieces

H 5.51.15 F-Holder

Stainless nitrated steel with reference dot. For holding small flat electrodes up to 5 x 12 mm. Delivered as single piece.

H 5.51.16 V-Holder

Stainless nitrated steel with reference dot. For holding small electrodes up to 10 mm \varnothing \square . Delivered as single piece..

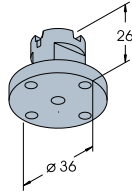
HCU.. MINIFIX copper electrode blanks

With pre-milled centering prism slots and mounting holes. Must be "coined" first by gripping them in the milling adapter H 8.511 to assure repeatability.

HCU 20/35, 20mm \varnothing x 35mm long,	set of 10 pcs.
HCU 30/35, 30mm \varnothing x 35mm long,	set of 10 pcs.
HCU 30.30/35, 30mm \square x 35mm long,	set of 10 pcs.
HCU 233, (4)20/35, (4)30/35, (2)30.30/35	10 pieces mixed,
Supplied in cartridges.	

Additional sizes and graphite blanks upon request.

MINIFIXplus Copper Electrode Blanks and Pallets

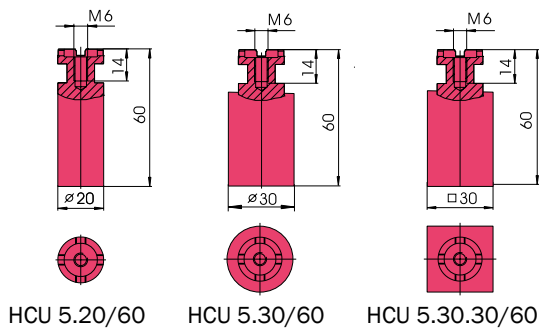


H 5.20.1 MINIFIXplus Pallet

36 mm diameter pallet made of aluminum. Reference dot and (4) electrode mounting hole for M4 screws. With slots allowing for automatic changing in machines with magazine fork type tool changers. Using the H 5.620 journal the pallet can be automatically or manually exchanged in an EDM machine equipped with either the H 8.11.17 or H 8.11.20 clampers with or without P-Holders.

Delivered in: sets of 20 pcs.

Order clamping journal H 5.620 separately when used directly in a clamber



HCU 5.. MINIFIXplus Copper Blanks

Similar to the MINIFIX copper blanks but with slots allowing for automatic changing in machines with magazine fork type linear or disk tool changers as with the H 5.20.1

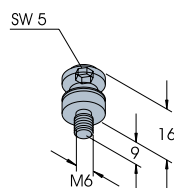
HCU 5.20/60, 20 mm \varnothing x 60 mm long set of 10 pcs.

HCU 5.30/60, 30 mm \varnothing x 60 mm long set of 10 pcs.

HCU 5.30.30/60, 30 mm \square x 60 mm long set of 10 pcs.

HCU 5.233, (4) 20/60, (4) 30/60, (2) 30.30/60 10 piece mixed

Supplied in cartridges.



H 5.620 Clamping Journal

For mounting the MINIFIXplus copper electrodes HCU5... and pallet H 5.20.1 to the clampers H 8.11.17, H 8.11.20 or H 8.11.20M.

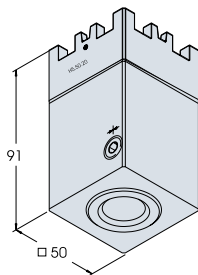
Delivered in: sets of 10 pcs. (H 5.620S)

Hydraulic Clampers

General information

Electrode blanks are first secured to the shanks shown on the following page. The electrode shanks are then clamped in the hydraulic clampers H 83.20, H 95.22, H 96.20, H 96.21 or H 97.20 below where the electrodes are machined for use in the EDM. They are then transferred to the H 5.50.20 or H 5.51.20 for quick mounting and use in the 5000 System in the EDM.

The holders H 5.50.2 and H 5.51.2 are shipped without clamping journals which must be ordered separately.

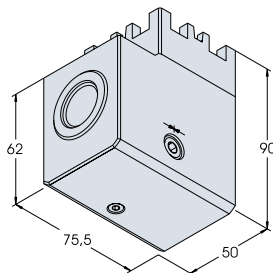


H 5.50.20 Hydraulic Clamper

For precise mounting and alignment of electrode shanks by means of a hardened pin positioned across the center hole of the chuck and aligned with the pallet prisms. Hardened and nickel-plated with a reference dot for visual alignment and external and internal flush connections.

Delivered without clamping journal.

Changing accuracy of a shank	< 0.005mm
Repetitive accuracy	< 0.002mm
Vertical height accuracy from unit to unit	< 0.01 mm
Weight:	2 kg

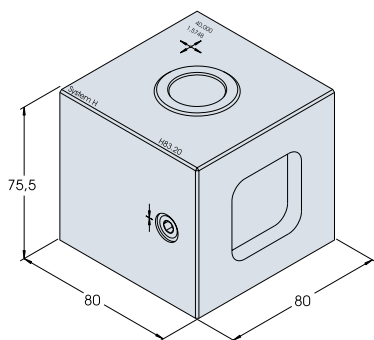


H 5.51.20 Horizontal Hydraulic Clamper

Same design as for H 5.50.20. Provided with four reference pins, each offset by 90°, so that the electrode shanks can be indexed 4 x 90°. Delivered without clamping journal.

The dimension from the Z plane to the shank hole is identical from unit to unit (± 0.01 mm)

Weight	2.5 kg
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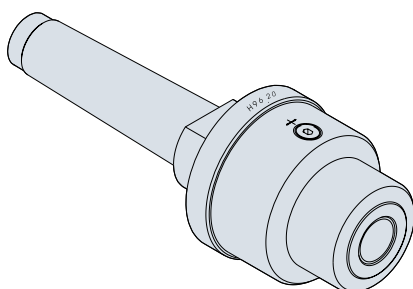


H 83.20 Hydraulic Machining Block

For mounting and precise angular alignment of the electrode shanks, with four reference pins each offset by 90° so that the electrode shanks can be indexed 4 x 90°. With five precision ground contact surfaces. Used for electrode manufacture on milling, drilling and grinding machines etc.

The dimension from the center to the contact surfaces is engraved on the face side and is used for alignment of the hydraulic clamping block. Suitable for use in dielectric.

Weight	3.3 kg
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H 95.22 Hydraulic Clamper

With taper shank ISO 40 and external thread S20 x 2.

H 96.20 Hydraulic Clamper

With taper shank MK4 and internal thread M16.

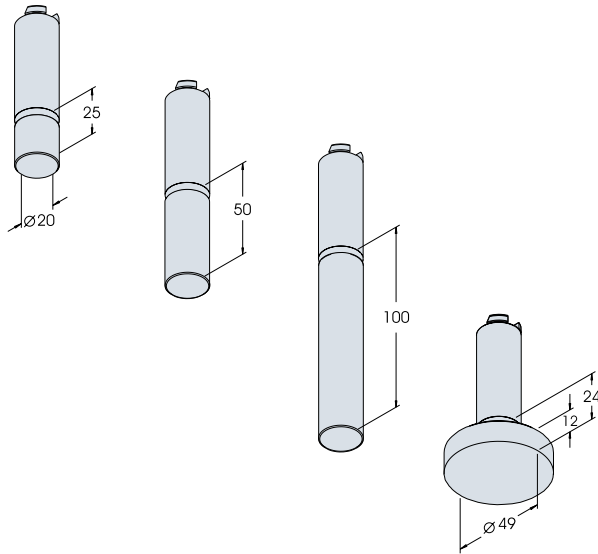
H 96.21 Hydraulic Clamper

With taper shank MK5 and internal thread M20.

H 97.20 Hydraulic Clamper

With cylindrical shank, 25 mm.

Electrode Shanks and Holders for hydraulic clammer



H 50/25 Electrode Shank (work length 25 mm)

20 mm diameter with 30° bevel on the end of the shank for alignment in the hydraulic clammers. The reference diameter bevels are inductively hardened and precision-ground with a flushing hole started. The electrode end is unhardened, for fastening the electrode blank by solder, glue or screws etc. Max. electrode weight 5 kg. Delivered in sets of 10 or 30.

H 50/50 Electrode Shank (work length 50 mm)

Same as H 50/25 but with a work of length 50 mm. Delivered in sets of 10 or 30

H 50/100 Electrode Shank (work length 100 mm)

Same as H 50/25 but with a work of length 100 mm. Delivered in sets of 10

H 50.30 Electrode Shank

Work length 24 mm with unhardened 49 mm diameter flange. Max. electrode weight 10 kg. Delivered in sets of 2



H 50K Quick Setting Adhesive

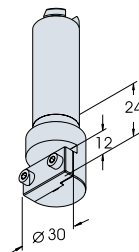
For attachment electrodes to electrode shanks, holders or pallets. Enables a short setting time (90-150 sec.) and high tensile shear strength (~ 27 N/mm²). The surfaces to be glued must be absolutely free of grease and used at room temperature.

Storage at +20°C approx. 6 months, at -20°C approx. 12 months.

Delivered in bottles

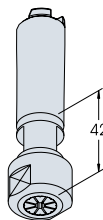
contents 50 gr.

Ensure contact between electrode and electrode holder.



H 50.35 Flat Electrode Holder

For holding small flat electrodes up to 5 x 12 mm.



H 50.40 Collet Holder

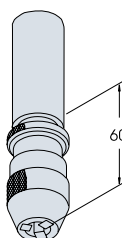
For ER/ESX 16 collets with a range of 0.5 - 10 mm (0.02" - 0.39") Ø. Built-in and easily replaceable sealing disc with a 3.7 mm hole and five extras without hole included with delivery

H 50.41 Collet ER/ESX 16

Clamping range 0.5 - 10 mm (.02" - 0.39") infinitely variable, in 1 mm (0.02") increments. Radial run-out 0.01 mm up to 0.02 mm (0.0008") depending on diameter.

H 50.42 Replacement Seals

Set with 5 pieces, without hole for H 50.40



H 50.5 Precision Tubing Chuck

For mounting small tubular electrodes. Clamping range 0 - 3 mm (0 - 0.12"). Central internal flushing including five easily replaceable sealing sleeves.

Radial run-out

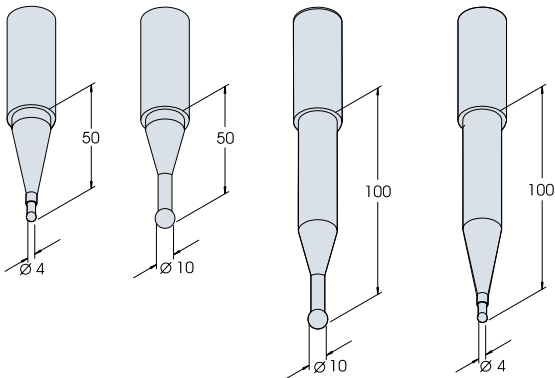
< 0.05 mm

Supplied in a wood box.

H 50.51 Replacement Seals

Set with 5 pieces, without hole for H 50.5

Alignment Tools for Hydraulic Clampers

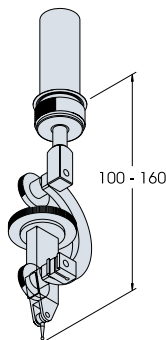


H 50.65 Ball – type Surface Finder

For determining the position of workpieces. 50mm long. Hardened steel ball 4 or 10 mm diameter. (+0.002 mm.)

H 50.66 Ball – type Surface Finder

Same as H50.65 but 100 mm long.



H 50.7 Centering Spindle (without dial gauge)

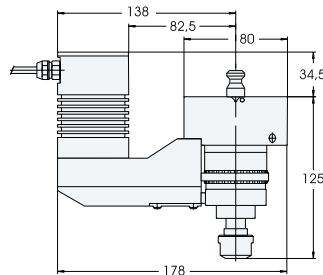
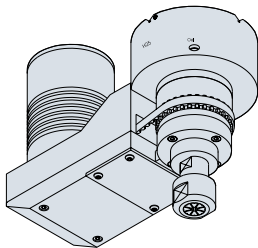
For finding the center position of holes and or round parts. Also used with the H 5.50.9 Aligning Gauge to find the axis position of the series H 6.. and H 8.. clampers when used to hold workpieces.

H 5.50.61 Dial Indicator

For centering spindle H 5.50.7 with 0.002 (0.00008") graduations.

Rotary Spindles

Using rotary spindles can improve the accuracy when eroding small deep holes. In addition, flushing conditions are improved to allow deeper penetration without problems. Variable RPM settings help achieve a constant smooth cutting rate. Central flushing connection through the clamping journals is standard.



H25 Rotary Spindle (for clamber H8.. only)

For use with tubular electrodes from 0.5 - 10 mm using ER/ESX 16 collets. Easily replaceable sealing disc with a 3.7 mm hole and five extras without hole included with delivery. Built in H 5.611 journal for use with H8 series clammers only. Connection cable 2.5m long. Control H 20.2 must be ordered separately.

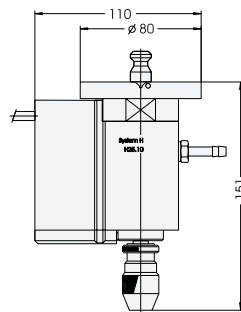
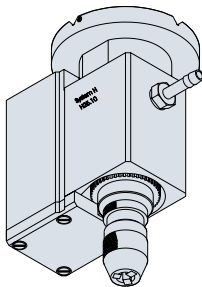
Speed range	20-1500 RPM
Radial runout	0.02 mm
Max. electrode weight	0.5 kg
Max. erosion current	5A
Weight	3.2 kg.

H 50.41 Collet ER/ESX 16

Clamping range 0.5 – 10 mm (.02" - 0.39") infinitely variable in 0.5 mm (0.02") increments. Radial run-out up to 0.02 mm

H 50.42 Replacement Seals (for H25)

Set with 5 pieces, without hole.



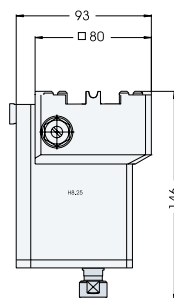
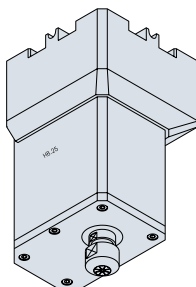
H25.10 Rotary Spindle (for clamber H8..)

With 3-jaw chuck up to 3mm diameter. Built in H5.611 journal for use with H8 series clammers only. Standard with easily replaceable sealing disc and five extras without hole included with delivery. Connection to the controller H 20.2 is via a 2.5m long cable. H 20.2 must be ordered separately.

Speed range	20-1500 RPM
Radial runout	<0.05 mm.
Max. electrode weight	0.1 kg
Max. erosion current	5A
Weight	1.8 kg

H 50.52 Spare Seals, for H25.10

Set with 5 pieces.



H8.25 Rotary Spindle, pneumatic

With integrated collet chuck for ER/ESX12 collets with a clamping range of 0.5-7mm diameter. Pneumatic drive (max. 6 bar) supplied via the Z references (automatically exchange is possible). Central flushing through the journal.

Order clamping journal H5.6.. or H6.6.. separately!

Speed range when air supplied by:

Direct connection	400-1650 RPM
H 8.11.17, H 8.11.20 clammers	400-600 RPM
H 6(8).11.7, H 6(8).11.10 clammers	400-900 RPM
Radial runout	<0.05 mm
Max. electrode weight	0.1 kg
Max. erosion current	5A.
Max. flushing pressure	14 bar
Weight	2.8 kg

H 8.25.41 Collet ER/ESX 12

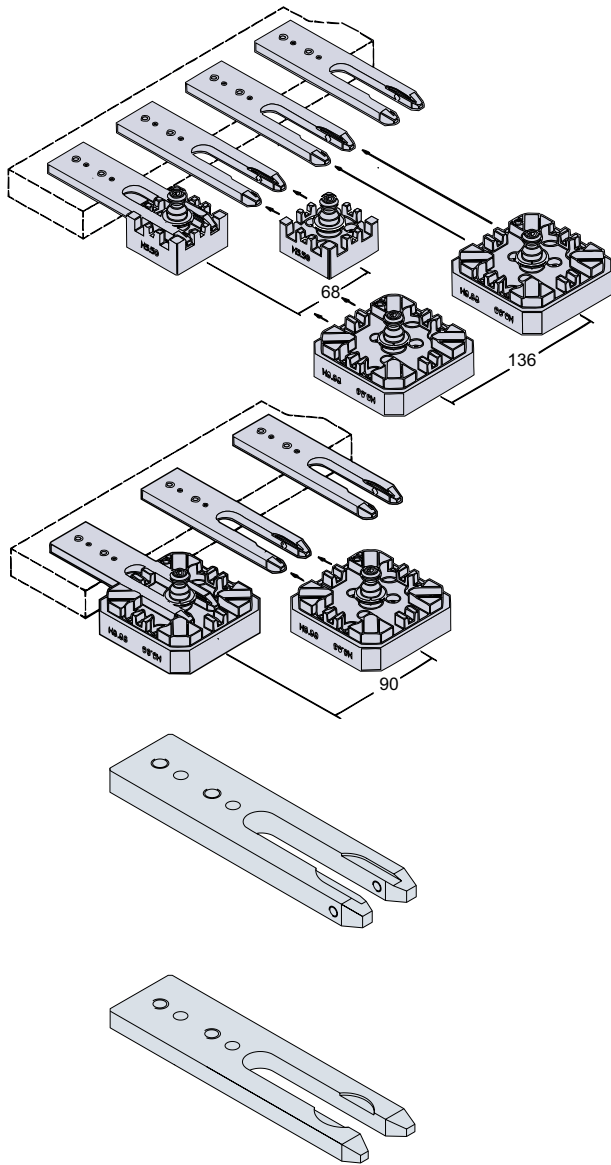
Collet sizes: 1,0/1,5/2,0/2,5/3,0/4,0/5,0/6,0/7,0 mm

H 8.25.42 Spare Seals, for H8.25.

Set of 5 pieces.

Magazines and Magazine forks

Equipping sink EDM machines with automatic electrode changing devices increases productivity. Cost effective magazines are used with the standard pallets and holders of the system.



General Information

Magazine forks can be used for Hirschmann electrode holders, pallets, PrisFIX, MINIFIXplus etc as well as holders of other manufacturer's tooling systems. The clamping journals H 6.611 or H 5.611/H 5.611.1 are used to store the holders in the magazines.

The clammer on the EDM machine is used to "pick-up" the electrodes during automatic exchange. The magazine forks are mounted on linear and round magazines.

Standard spacing of the forks is 68 mm which allows a 50mm pallet at each position or and 88mm pallet at every other one.

Spacing the forks at 90 mm allows the use of 88 mm pallets at every fork.

H 5.62.. Magazine Fork (with ball detent)

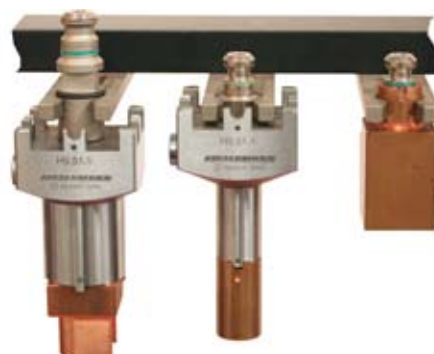
For mounting pallets with the clamping journal combination H 5.611/H 5.611.1 or H 6.611. The journals are held in the fork via a spring loaded ball and released by moving in the X or Y direction.

H 5.60.. Magazine fork (with recess)

For mounting pallets with the clamping journal combination H 5.611/H 5.611.1 or H 6.611. The clamping journal is hung in a counter bore for retention and must be lifted 1.5 mm before moving in either the X or Y direction for exchange.



Holders in a disc type magazine



Storing with different clamping journals
(H 6.611, H 5.511 and MINIFIXplus HCU5...)

Pick-Up Type and Custom Exchange Units

HIRSCHMANN manufactures linear, disk and chain type magazines for holders and pallets in System 5000, HSK for gun drilling machines, small hole EDM and other systems. Detailed technical data and development available upon request.



HP8. 200.., HP8.330.. Linear magazine

With 4, 5, 6 or 8 magazine fork positions.

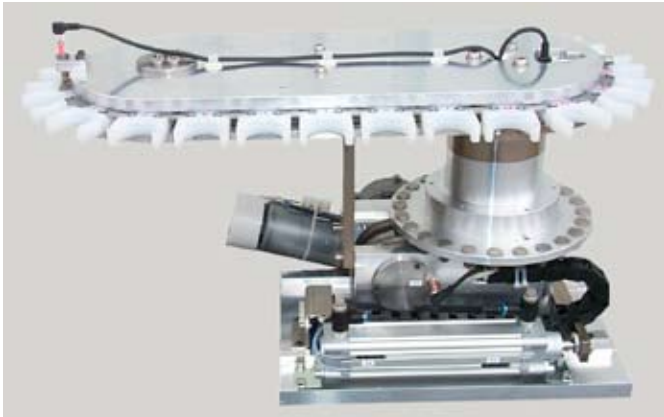
Stroke	200 or 330 mm.
Electrode size (every place occupied)	< 60 mm dia.
Electrode size (every other place occupied)	<120mm dia.
Individual electrode weight	max. 8 kg
Total load weight	20 kg.



Disk Magazine

With 20 or 30 magazine positions. Can be supplied with horizontal shuttle up to 300 mm.

Technical data and equipment dependant upon machine type.



Chain Magazine

With up to 100 magazine positions. Can be supplied with horizontal shuttle. Technical data and equipment development upon request.



Chain Magazine

With up to 100 magazine positions and double grip arm with horizontal shuttle.

Technical data and equipment development upon request.

Handling devices and robots for automatic operation

Handling Devices, Robots

Individual machine tools (EDM's, CNC milling machines, etc) can be integrated to our EROBOT automated loading device. The EROBOT can be controlled directly via the machine tool to increase productivity.

HIRSCHMANN an Automation integrator, offers complete turnkey (from design to install) automated cells for CNC machining centers, EDM's, measuring machines etc. Robots can be configured to load multiple positions on machine tables, load electrodes on sink EDM's, wash parts after machining etc. They can be mounted on tracks or gantry's to service multiple machines.



EROBOT

For automatic electrode and workpiece exchange.

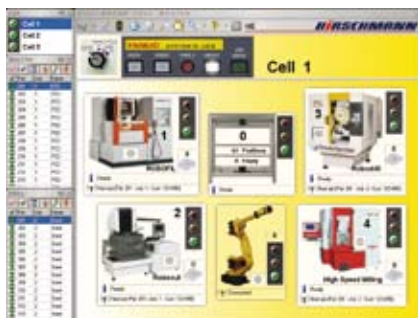
Electrode magazine places	max. 60
Workpiece magazine places	up to 24
Transport weight	max. 140 kg
Equipment details and dimensions upon request.	



Robotic Cells using 6-axes Robots

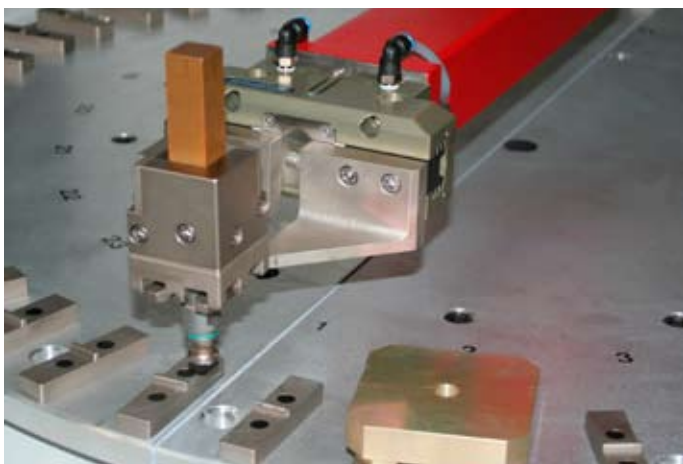
HIRSCHMANN offers complete layout, design and development of turn-key installations utilizing the benefits of 6-axes robots.

Specifications and technical details are application dependant.



Cell Management Software

A PC based production management system for monitoring, control, administration and visualization of manufacturing cells that provides an overview and control of all production orders and current conditions. It permits quick reaction to changes in order processing and guarantees maximum use and efficiency the machine tools.



Rotary Tables / C-Axes / Drilling Spindle



Rotary tables / A-Axes

NC-controlled rotary tables and A-Axes can be mounted horizontally or vertically in wire, sink and small hole EDM machines. They are completely seal for full submersion and are not air purged. A variety of tool clamping plate designs and spindles noses are offered.

Refer to the HIRSCHMANN catalogue "Rotary Tables and Axis" for complete information.



C-Axes

C-axes are available for adaptation to OEM machine builders either as internal or external units. They are normally equipped with the standard pneumatic clamber mounting used in the H 8.11.10. Clambers of other manufacturers can also be used. The electronic drive unit and integration is done by the OEM.

Small indexing step	0.001° / 3.6"
Indexing accuracy	±5"
Repetitive accuracy	±2"
Speed	1 - 50 rpm
Max. electrode weight in clamber	50 kg

Other information and technical data upon request.



HDC1000 EDM Drilling Spindle (AC-drive)

High speed spindle for small hole EDM and standard EDM machines.

For use with small tubing electrodes using high pressure flushing. With pneumatic clamber for automatic change of electrode tubes.

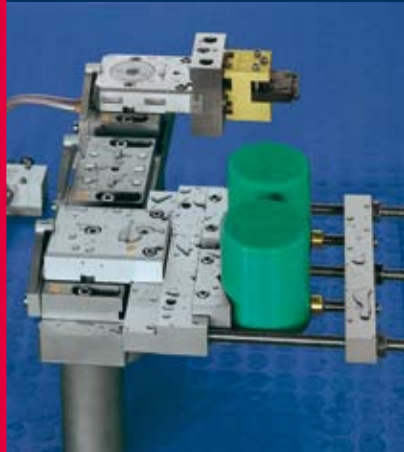
Flush pressure via special seal	up to 100 bar
Speed	up to 1500 RPM

FIXTURING SYSTEM 5000
for Sinking EDM



PRODUCT OVERVIEW

FIXTURING SYSTEM 4000
for Wire EDM



PALLETIZING SYSTEM 8000
for Machine Tools



FIXTURING SYSTEM 9000
Modular Zero-Point Fixturing



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ROTARY INDEXING TABLES
for Wire and Sinking EDM



Catalogues upon request