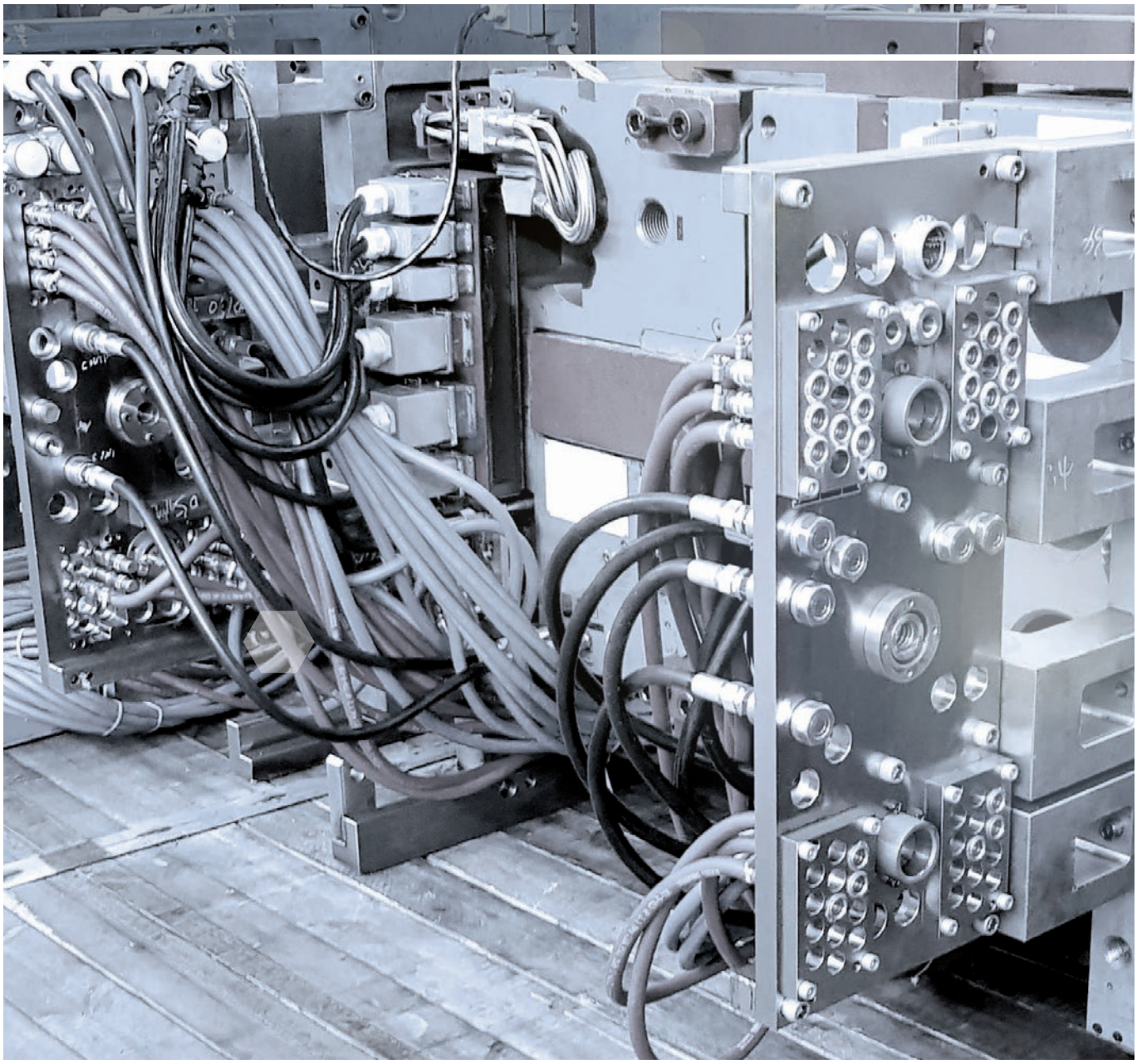
FAST MOVING TECHNOLOGY

STÄUBLI

Simultaneous energy centralisation and connection

MCS concept



Innovative centralised energy connection solutions

Standard manual solutions

Stäubli's manual or automatic systems connect all the energy circuits simultaneously, providing solutions that are ideal for numerous industries and applications.
These all-in-one solutions optimise the efficiency and safety of processes.

Stäubli's expertise in a wide range of industrial sectors includes effective advice and the most appropriate solutions for specific production requirements, choosing from the wealth of products and possibilities for:

- Standard manual solutions,
- Customised manual solutions,
- Customised automatic solutions.

Stäubli's solutions are designed and made using standard components according to a customer's needed specifications:

- Modular electrical connectors and fluid couplings,
- Connection and locking systems,
- Guide and float-mounting components.

Major sectors

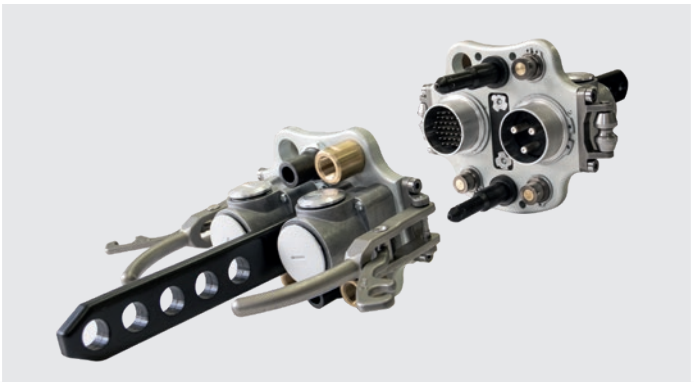
Plastics
- Injection presses
- PET

Automotive
- Engine test benches (cold or hot)
- Stamping – Hydroforming
- Aluminium casting

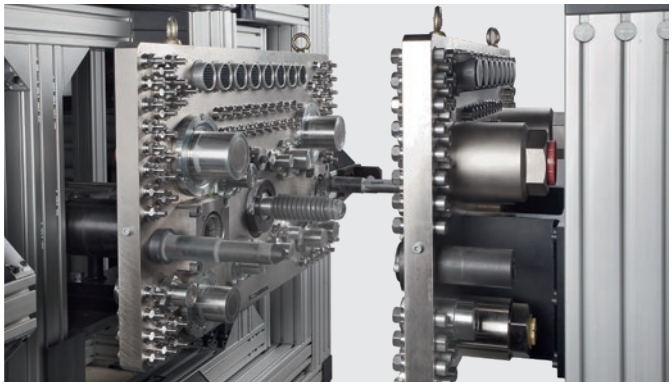
Railway
- Converters

Steel industry (steel − aluminium)
- Rolling mills

Aerospace
- Engine test benches
- Wings and fuselage, etc.



Customised manual solutions



Customised automatic solutions

Stäubli is there to support you...

BEFORE...

Our local services and experience in each industrial market mean that we can give you the right advice. We work closely with you to draw up precise, exhaustive specifications to meet your requirements and industrial challenges.

DURING...

Our passion for innovation combined with our experience of connections in industrial applications enables us to continually develop our multi-connection ranges, to provide an ever-improving response to your expectations, and to the demands of new technologies.

AFTER

Our specialist teams provide you with a range of services including follow-up, assistance, maintenance, support, initiation of other projects, ROI analysis, and long-term commitment.

Read about all Stäubli's solutions in this brochure

- Standard solutions
- Customised manual solutions
- Customised automatic solutions
- Components for customised solutions
- Guide and float-mounting components
- Couplings for direct integration in systems and machines

OUR STANDARD MANUAL SOLUTIONS

Ready-to-use solutions to suit your application

Ready-to-use multi-connections are the first step towards rationalising energy connections. These are a quick solution for optimised, safe connection/ disconnection operations on all energy circuits.
Economical and designed to last, these multi-connections meet the requirements of all applications, providing a significant improvement in productivity.

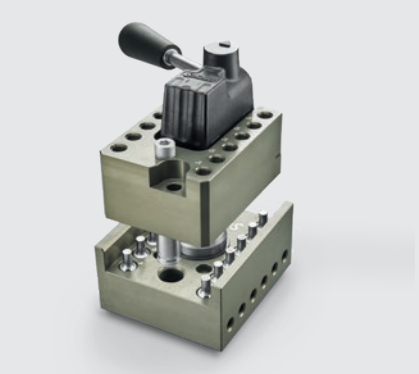
Fluids and electricity
Modular design for energy circuits: compressed air, fluids, hydraulic, power, signals, thermocouples, coaxial cables, fiber optics, and data buses.

Electricity
Centralised connection of cable harnesses for data and power circuits.

Temperature control
Temperature control circuits (water, hot oil).

Hydraulic
High pressure hydraulic circuits, supply to ejection cylinders, core pulls, etc.

Sequential injection
Centralised supply to hydraulic cylinders control the opening and closing pins on sequential injection nozzles.



OUR CUSTOMISED MANUAL SOLUTIONS

Customised solutions Manual connection

The modular design of Stäubli's simple and robust customised manual multi-connections leads to easy installations. These are designed and made based on specifications drawn in collaboration with Stäubli's teams according to specific parameters from customers' applications:

- Connection frequency
- Number of circuits to be connected
- Types of circuits
- Dimensions and accessibility
- Specific environmental constraints: temperature, climate conditions, marine environment, etc.

With its various types of locking options, Stäubli multi-connectors adapt to all types of situation.

Customised solutions
Manual connection

Push-button

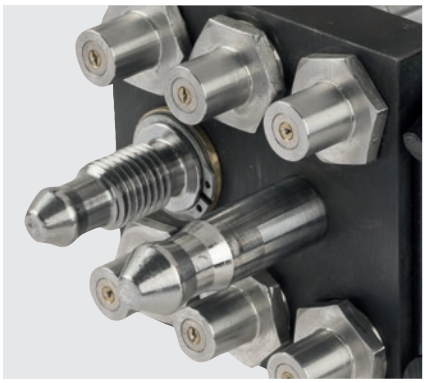
Connection and locking systems.
For small plates and low-pressure applications:

- Connect by simply pushing together
- Disconnect by pressing the button

Screw

For large plates, large bore couplings, when there are high coupling forces, and high pressure applications:

- Safe locking via self-locking thread
- High-helix screw



Toggles

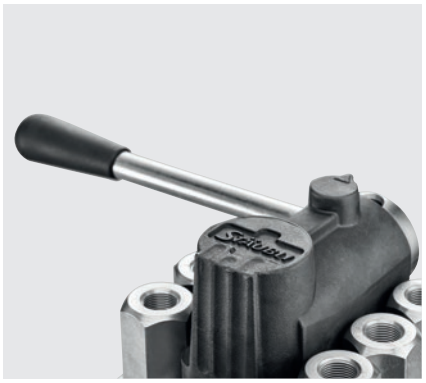
For small and medium sized plates and medium pressure applications:

- Simple, very robust system
- Particularly suitable for very harsh environmental conditions

Bloc lever

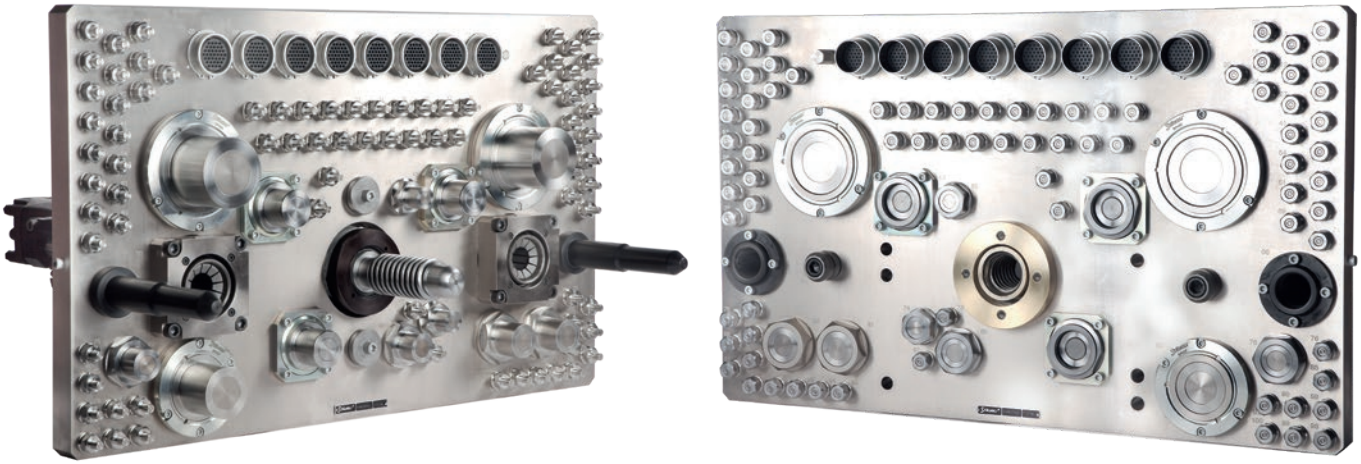
For small and medium sized plates and low or medium pressure applications:

- Connection and disconnection by simply rotating a lever
- Optional safety feature to prevent accidental unlocking



OUR CUSTOMISED AUTOMATIC SOLUTIONS

Customised solutions Automatic connection



As per Stäubli's manual connection solutions, automatic solutions are fully configurable and can be customised to meet the specific criteria for every application.

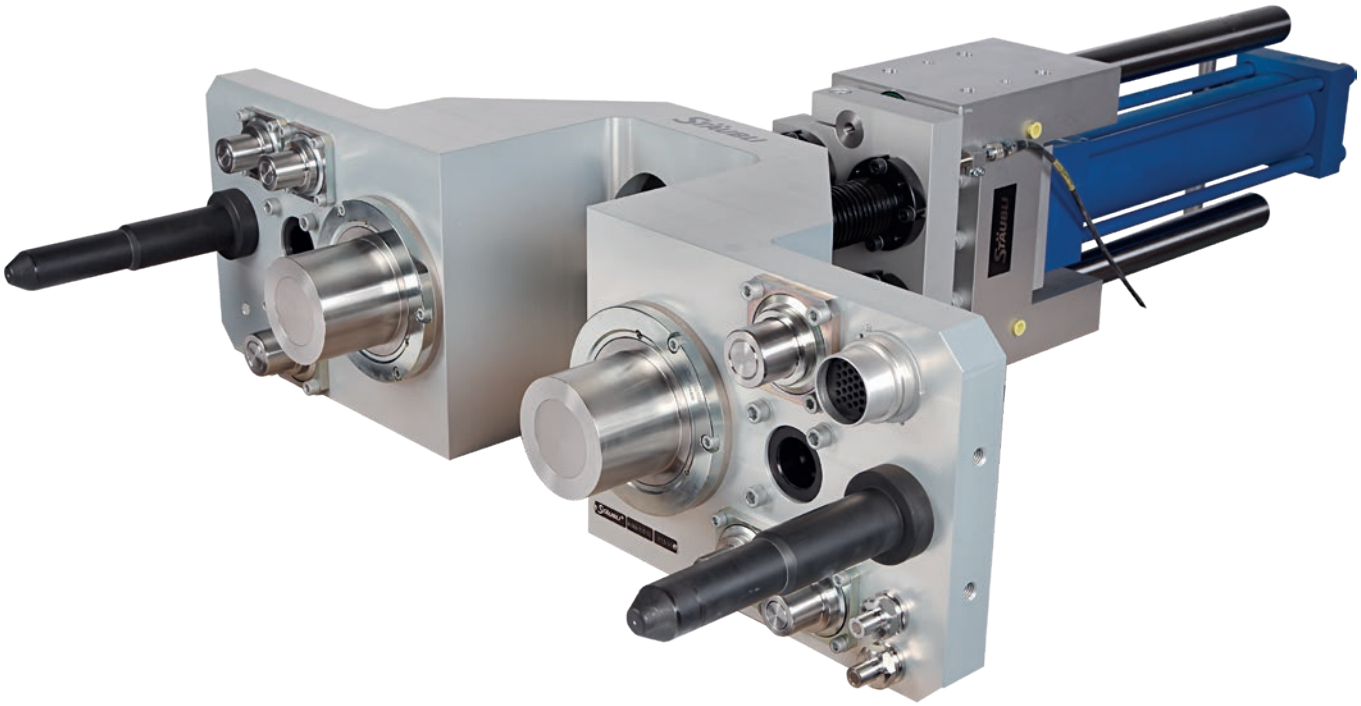
Fully automatic solutions are particularly suitable for environnements with dificult access, in extreme temperatures, for ease of use when there are high connection forces, or very frequent connections/ disconnections.

These are ideal for:

- Large plates
- A large number of couplings and/or
- Large flow diameter couplings

Designed for integration in fully automated production cycles, they adapt to changing processes and to the challenges of the factory of the future.

Connection systems



Pneumatic cylinder

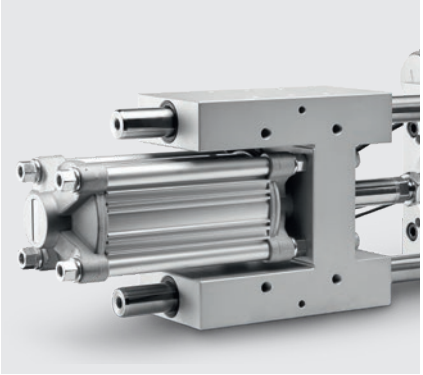
For all sizes of plates.

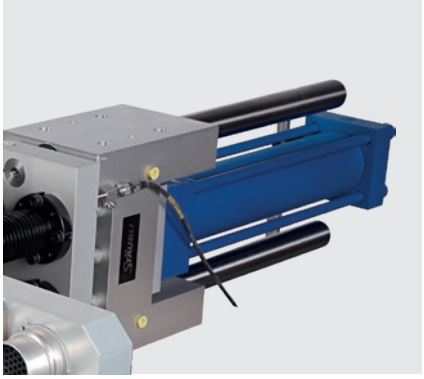
- Automatic connection of plates
- Monitoring of connected/disconnected positions

Hydraulic cylinder

For all sizes of plates.

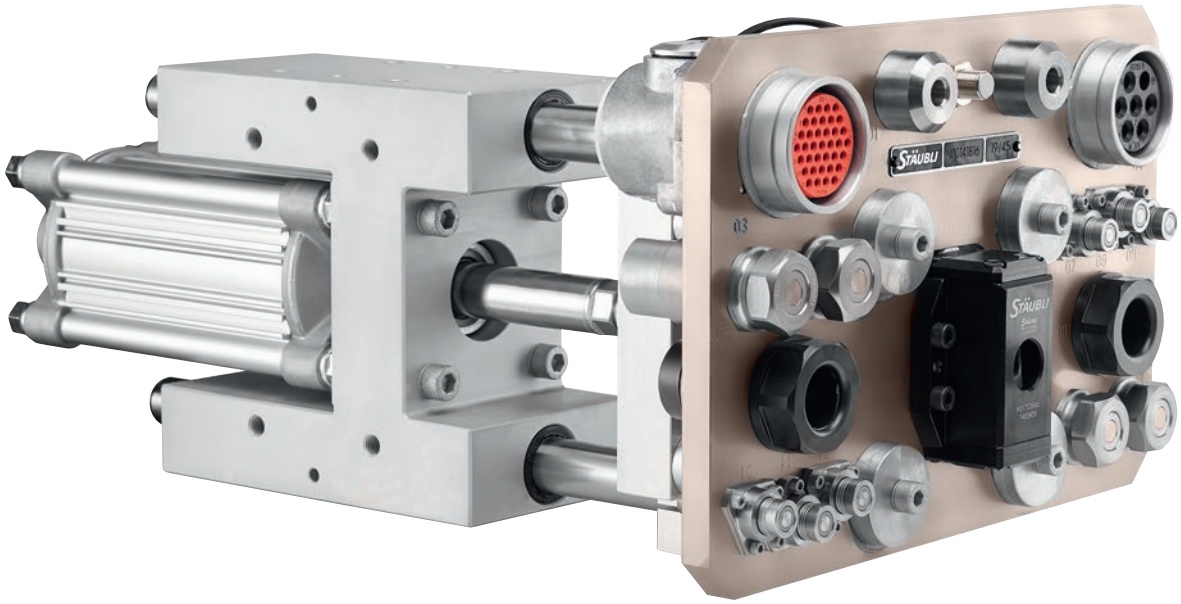
- Automatic connection of plates
- Monitoring of connected/disconnected positions





OUR CUSTOMISED AUTOMATIC SOLUTIONS

Locking systems



Jaws

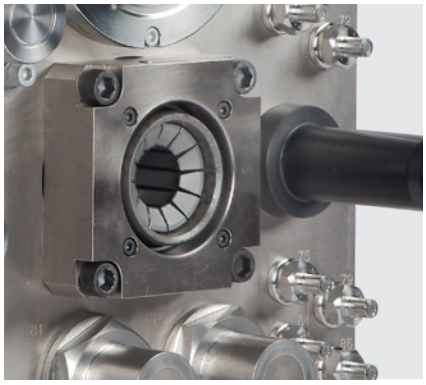
For all sizes of plates.

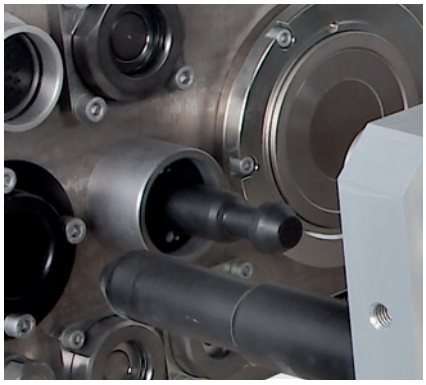
- Suitable for harsh environmental conditions
- Hydraulic control

Bolt

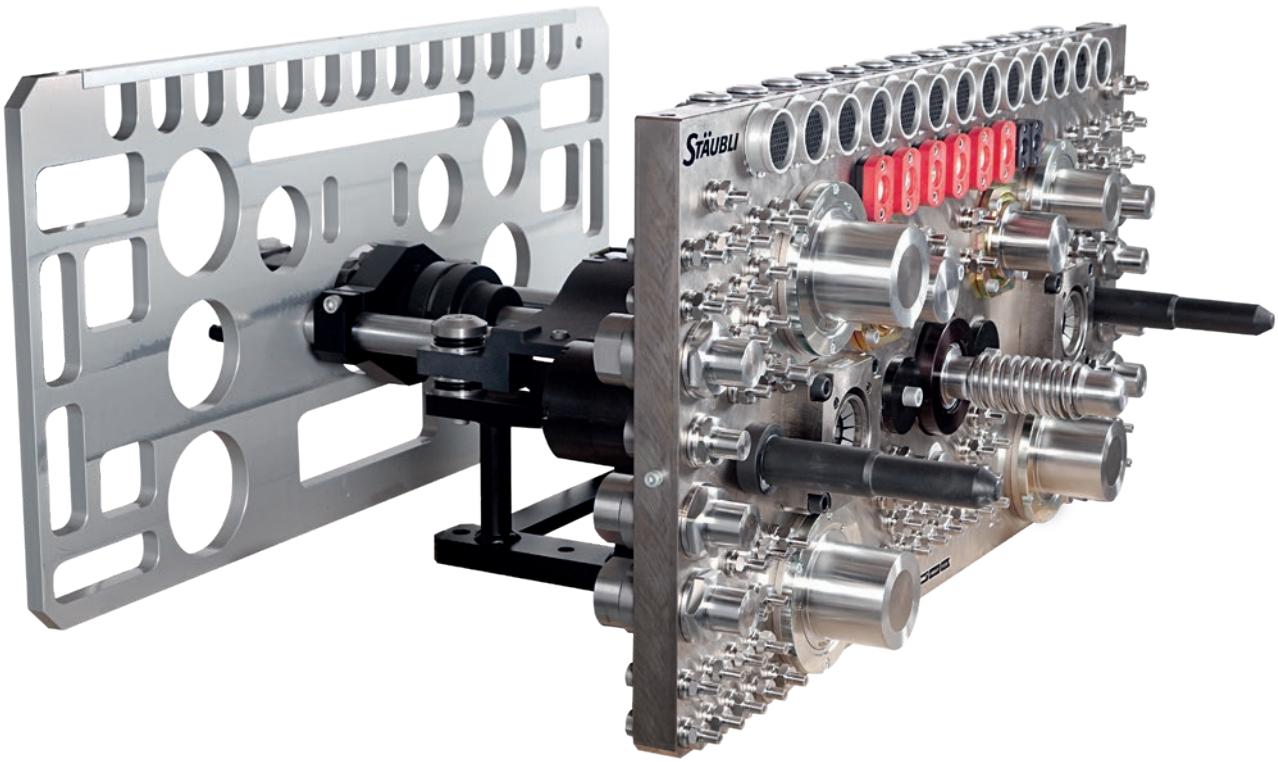
For all sizes of plates.

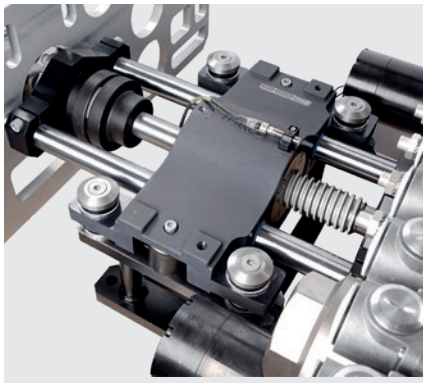
- For mechanical locking of plates
- Pneumatic or hydraulic control
- Monitoring of locked/unlocked positions





Combined connection and locking systems





Screw driving units

For large plates.

- Perform the connection movements and lock the plates in the connected position
- Self-locking screw systems eliminate mechanical stress in the customer's environment
- Several force and stroke options
- Monitoring of connected/disconnected positions

COMPONENTS FOR ALL OUR CUSTOMISED SOLUTIONS

Electrical connectors and couplings for all fluids

All the components — electrical connectors and couplings for fluids – used in Stäubli's customised manual and automatic solutions have the benefit of its wealth of industrial energy connection experience.

Very comprehensive ranges

For connecting all types of energy:

- Pneumatic
- Fluids
- Low and medium pressure hydraulic
- Electricity: power supply, power and data signals, thermocouples, coaxial cables, fiber optics, etc.

For all operating conditions:

- Type of fluid
- Pressure
- Flow rate, etc.

For specific requirements

REA/REP electrical connectors

Electrical circuits for applications ranging from high current to data buses and from power to thermocouples. Wide range of housings, inserts and contact types.

Safety

- Error-free connections: insert/housing and housing/plate indexing
- Metal or plastic housings protected against liquid splashes
- Inserts with integrated earth connection (first contact connected, last contact disconnected)
- Earthed metal housings

Reliability

- Minimum contact resistance and optimum mechanical strength of the contacts guaranteed by the MULTILAM® patented technology
- The crimped contacts have excellent temperature resistance and very good vibration resistance

Easy to maintain

- Prewired connectors are quick to remove

Range

- Housings:
  4 sizes with straight or 90° cable outlet
- Inserts:
  20 different types from 1 to 72 poles
- Contacts:
  40 different types from Ø 1 mm to Ø 11 mm, including thermo-couple contacts

Conformity to standards

- IP67 protection (in connected position) and IP2X protection (in disconnected position on female side) in accordance with standards EN 60529 and IEC 60529
- Clearance and creepage distance in accordance with standard IEC 60664
- DIN EN 61984, DIN VDE 0627
- DIN VDE 0298-4

Construction

- Housings:
  Aluminum, stainless steel, or plastic.
  Shielded or insulated-shielded versions available upon request.
- Inserts:
  NBR synthetic rubber, silicone, chloroprene and PEEK
- Contacts:
  Copper-based alloy, silver-plated or gold-plated.
  Cable connected by crimping.

COMPONENTS FOR ALL OUR CUSTOMISED SOLUTIONS

RMA/RMP
couplings for all types of fluids

Modular range based on Stäubli's proven RBE technology

- Stepped guide
- RBE sockets can be connected to RMA/RMP plugs

Different constructions to suit various applications:

- Standard for compressed air, gas, oil, hydrocarbon, etc. applications
- IA for water, air, gas, oil, etc. applications
- IA/HPL for high pressure liquid applications (RMA range only)
- IA/W for primary vacuum up to 10^{-3} torr

7 seal types

3 shutt-off options:

single, double, or none (full flow)

Range

Ø 03 - 06 - 08 - 11 - 19 mm

Max. allowable pressure (bar)

Depends on flow diameter and construction

- Standard and IA: 50 bar
- IA/HPL: depends on diameter, on RMA range only

Ø (mm)	03	06	08	11	19
Pressure (bar)	400	450	400	350	300

- IA/W: 10^{-3} torr

Construction

- Standard and IA: mainly 17% chrome stainless steel
- IA/HPL: 17% chrome stainless steel and stainless steel 316 series (RMA range only)
- IA/W: internal components stainless steel 316 series

Seals

- Nitrile (NBR) as standard
- Available as options:
  Fluorocarbon (FPM), Ethylene Propylene (EPDM), Perfluoroelastomer (FFKM), Fluorosilicone (FMQ), Chloroprene (CR)

SPH hydraulic couplings

Non-spill on circuits and in work environments

- Wide range
- Excellent flow rate, regardless of the direction of flow of the fluid (socket-plug or plug-socket orientation)
- Individual sockets available for Ø 04, 06, 08 and 12 mm for sampling or testing individual circuits

Range

- Ø 04 - 06 - 08 - 12 - 15 - 20 - 25 (MA version)
- Ø 37-50-75 mm (MA2 version)
- 04 to 12 mm (MP version)

Max. allowable pressure (bar)

Depends on flow diameter and construction

Ø (mm)	04	06	08	12	15	20	25	37	50	75
Standard	-	-	-	-	-	-	16	16	16	10
IA	160	160	160	160	160	160	-			
IB	500	500	500	250	250	250	250			

Construction

3 versions depending on flow diameter, for low, medium, or high pressure:

- Standard - Ø 25 to 75 mm:
  18/9 stainless steel and brass with surface treatment
- IA - Ø 04 to 20 mm:
  high-strength stainless steel, 17% chrome stainless steel and brass
  BF (brass free) option available on IA version
- IB - Ø 04 to 25 mm:
  high-strength stainless steel and 18/9 stainless steel

Seals

- Nitrile (NBR) as standard
- Available as options:
  Fluorocarbon (FPM), Ethylene Propylene (EPDM), Perfluoroelastomer (FFKM), or Fluorosilicone (FMQ)
- Polyurethane (PU) in the fluid stream, from SPH 06 to SPH 20

COMPONENTS FOR ALL OUR CUSTOMISED SOLUTIONS

HPX/MA very high pressure hydraulic couplings

For applications with high dynamic stresses, harsh operating conditions (hydroforming, steel industry, etc.), pulsating conditions and/or high levels of vibration

- Non-spill
- Excellent flow rate, regardless of the direction of flow of the fluid (socket-plug or plug-socket orientation)
- High fluid speed

Range

Ø 08 - 12 - 20 - 25 - 33 mm

Max. allowable pressure (bar)

Depends on flow diameter and construction

Ø (mm)	08	12	20	25	33
Pressure (bar)	500	500	500	500	350

Construction

Mainly high mechanical strength stainless steel

Seals

- Nitrile (NBR) as standard
- Available as options: Fluorocarbon (FPM), or Polyurethane (PU) in the fluid stream

HVA very high speed hydraulic couplings

US Patent
8.397.754
and other countries

Range for very high fluid flow speeds, providing a maximum flow rate for a minimum flow area

- Compact integration and simplified maintenance
- Non-spill
- 3 flow diameters providing the same flow rates as the SPH 4 to SPH 37 range

Range

Ø 04 - 09 - 15 mm

Max. allowable pressure (bar)

250 bars

Construction

- IA: High-strength stainless steel

Seals

- Standard Nitrile (NBR)
- Available as options: Fluorocarbon (FFKM), Ethylene-Propylene (EPDM)

COMPONENTS FOR ALL OUR CUSTOMISED SOLUTIONS

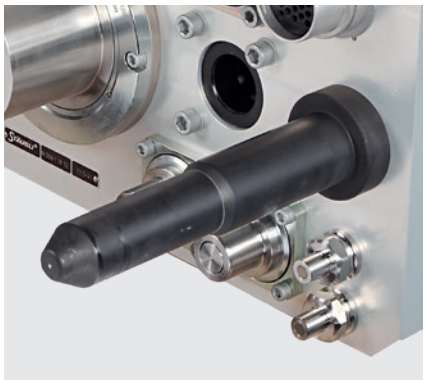
Guide and float-mounting components

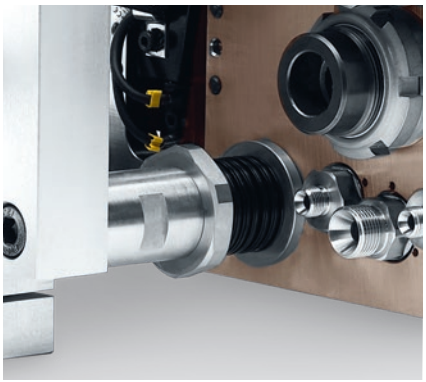
Guide components

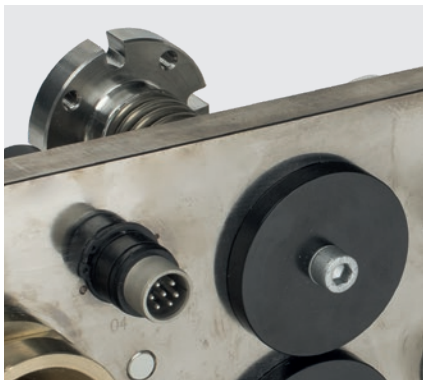
- Ensure there are no misalignments between plates
- Precise guiding of the plates before connection of the circuits
- Mechanical end-stop function
- Various guide pin profiles are customised to the plates, allowing positioning errors to be corrected automatically

Float-mounting components

- Compensate for misalignments
- 2 concepts:
  - For parallel plates
  - For plates with angular errors: systems with elastic compensation

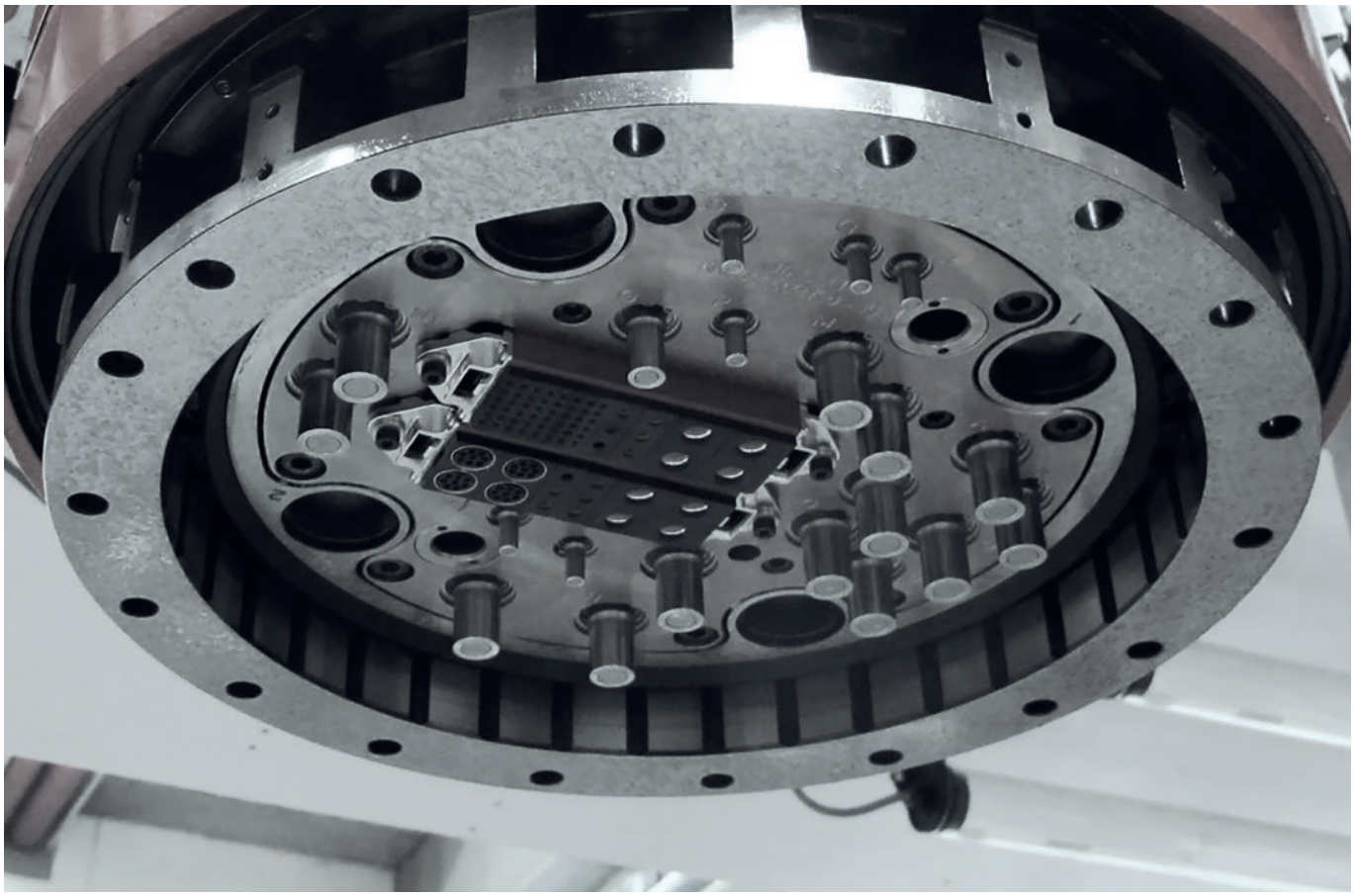






COMPONENTS FOR FULLY INTEGRATED SOLUTIONS

SPC hydraulic couplings



Compact for full integration in systems

- Self-aligning couplings
- Recessed installation of plugs and sockets for optimum space-saving
- No interface between plug and socket saves additional space
- No connection between hoses or piping and plug/socket for quick maintenance

Range

Ø 03 - 05 - 08 - 12 - 20 mm

Max. allowable pressure (bar)

Depends on flow diameter

Ø (mm)	03	05	08	12	20
Pressure (bar)	450	300	250	160	160

Construction

High-strength stainless steel

Seals

- Nitrile (NBR) as standard
- Available as options: Ethylene-Propylene (EPDM), Fluorocarbon (FPM)
- Perfluoroelastomer (FFKM) in the fluid stream, from SPC 03 to SPC 12
- Other types available upon request. Please contact us for more information.

2 installation versions

- Recessed on both sides
- Plug screwed in and socket recessed

RZ5150302A

■ Stäubli Units ○ Representatives/Agents

Global presence of the Stäubli Group

www.staubli.com

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