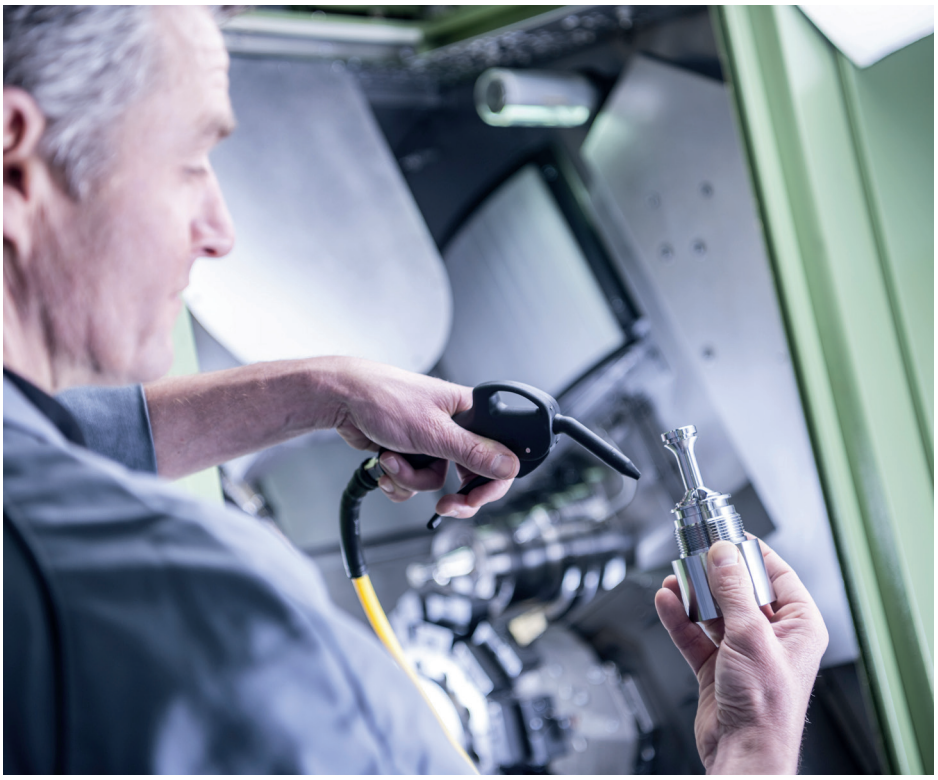
Protecting People and Installations

In today's fast paced environment there is a constant drive for increased productivity within the workplace.
Attaining this goal however must not mean compromising the objective of achieving "zero-risk" for operators as they perform their duties on the factory floor.
There are of course multiple factors which impact productivity levels, including maintenance procedures, for example. Stäubli's high quality quick-release couplings make a valuable contribution to productivity by reducing the time required to disconnect and re-connect energy sources, crucially, without compromising operator safety during these essential operations.



Investing in Risk Prevention

It is a legal obligation for employers to ensure the health and safety of employees at all times, and it goes without saying that eliminating the potential for unforeseen events avoids unnecessary costs. Implementing rigorous preventative maintenance and inspection routines, combined with ongoing training and the use of appropriate equipment, minimises the potential for accidents or incidents.
In addition to the economic benefits it generates, risk prevention is a major factor for improving operational excellence and competitiveness.
It is companies within the SME category that have the highest rate of accidents, therefore they are most likely to realise the greatest return on their investment in safety.

What are the risks?

People

Equipment

The Environment

Economic Considerations

Stäubli products are designed to protect people's safety, ensure the durability and reliability of equipment, protect the environment and maximise productivity levels for companies.

Keeping people safe is the number one priority

Taking appropriate steps to protect the health and safety of employees is an ongoing process for industrial companies. These measures can affect the layout of workstations, determine the configuration of production facilities and influence the choice of any equipment being used by operators or maintenance personnel.

Services such as water, fuel, gas or electricity are at the heart of many industrial processes, and often linked to different areas of production through the use of quick release couplings. In addition to keeping these services operational, the coupling plays a key role in keeping maintenance tasks simple, safe, quick and efficient.

The quick release coupling: a key link for energy circuits

At the heart of the industrial process, the quick release coupling is a «link» which ensures that the energies (water, oil, fuel, gas or electricity) circulate, but its «role» does not end there. The quick release coupling must also make maintenance operations easier, so that there is no risk for operators, while remaining quick and efficient.

The benefits brought by a reliable quick release coupling to operator protection

Ergonomics of installation

- Reduces the potential for musculoskeletal problems

Automation of processes

- Keeps individuals safe from hazardous areas, increases productivity and rationalises circuits through common connection solutions
- Eliminates the risk of circuit inversion

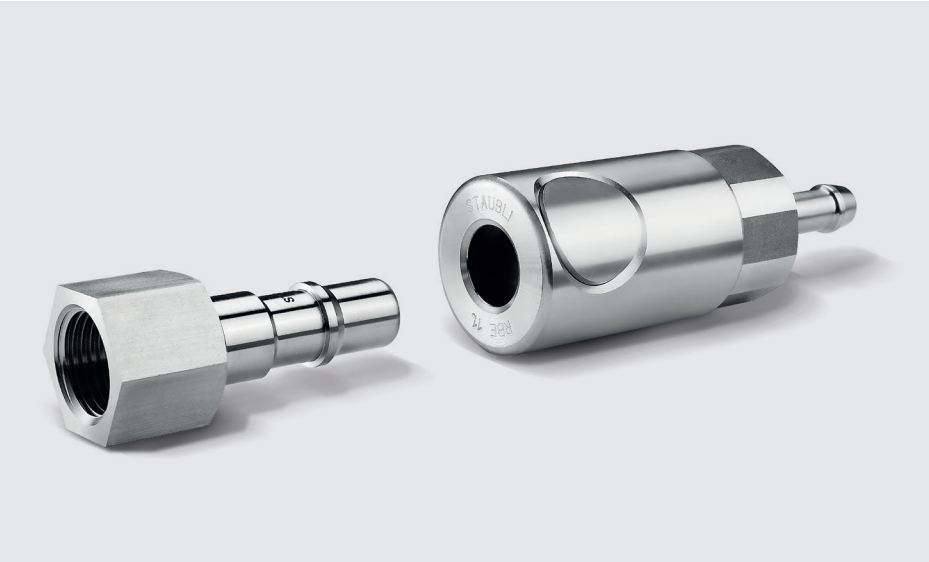
Safety features

- «Anti-hose whip» technology is incorporated in Stäubli quick release compressed air couplings
- Protection of operators in sensitive environments – nuclear and heavy chemicals industries

Did you know?

Compensation and absence due to workplace accidents and work-related illnesses cost 4% of the world's GDP.

Source: International Labour Office



Our "anti-hose whip" system, developed in the 1980s, is a key part of Stäubli's "safety DNA". This pioneering technology is still relevant today because the brand currently produces a modular range of quick release couplings with an integrated and easy to use button lock. The design and quality of the materials optimise the flow rate and contribute to the efficiency and safety of applications, in particular with corrosive gases and liquids.

How can we reconcile industrial performance, the durability of equipment and protection of the environment?

High technology + **Ease of use** = **SAFETY of the quick release coupling**

Preventing connection points between circuits becoming «weak points» that may be prone to losing their seal integrity, requires either automated checks, or regular monitoring by maintenance personnel to be carried out on the couplings. Avoiding costly leaks and breakdowns, through the use of reliable connections, is an essential part of maintaining the highest levels of performance and efficiency.

"Flat face" technology: anti-pollution design

"Flat face" technology incorporated within the quick release coupling provides additional confidence in non-spill operation. This not only increases operator safety, but also ensures the integrity of fluids within the circuit. As no impurities or contaminants can enter the circuits this protects the environment, for example in applications within the chemical industry.

This technology offers real advantages for:

- Sensitive applications such as high temperature, cooling electronics, air conditioning circuits and high-flow hydraulic applications.
- Demanding processes such as food processing, chemicals, pharmaceuticals, etc.

" Stäubli quick release couplings are compact and non-spill. They have an optimum flow rate and ensure the reliability of the connection. "

CRRC, China

Areas of application for quick-release couplings

Quick release connections for fluids, gases and electricity require high-performance quick release couplings that are appropriate for each specific application. Whatever the individual requirements, the technology chosen must provide high performance levels and long-term reliability.

Industrial production: three examples of day-to-day risks

1. Leaks on compressed air networks

Air is the most widely used energy source in the industrial sector. It also produces the most leaks, which result in significant energy losses. For example, a 1 mm diameter hole at a pressure of 7 bar can result in a 4.3 m^3/h loss of compressed air, i.e. an average annual cost of 300 € exclusive of tax (at 6 euro cents/kWh)! By eliminating the leaks from the network, it is possible to achieve 15% energy savings and therefore reduce the financial implications of leaks.

Compressed air: a long-standing application at Stäubli

Stäubli's comprehensive range of connection solutions for compressed air provides numerous advantages. Manufactured from high quality materials, Stäubli quick release couplings deliver optimum performance, in particular absolute seal integrity and a high flow rate. The safety of pneumatic applications, whether for connection, operation or disconnection is at the heart of our product design. The ergonomic design and lightweight materials used mean that Stäubli quick release couplings also minimise operator strain.

They also comply with the ISO 4414 safety standard.

Did you know?

In an installation, the breakdown of how compressed air is used is as follows:

70% in pneumatic applications

10% in operation of equipment

20% lost through leaks

2. Lack of breathing air

Breathing air is essential in hazardous or toxic industrial environments, where it prevents operators inhaling dangerous contaminants in applications such as: sanding, cleaning tanks, removing asbestos, tunnelling work or within pharmaceutical or clean room environments. It is essential that users' respiratory protection is efficient, whether the risk is from harmful emissions (vapours, gases or fumes), particles or bacteria. This is why the connection between the PPE and the supply unit must achieve and maintain absolute integrity.

Stäubli safety for breathing air lines

Stäubli quick-release couplings for breathing air lines comply with EN 14594 and EN 14593 safety standards. Stäubli's breathing air ranges are based on over 60 years of expertise in air connection and in-depth knowledge of multiple applications. Complying with the most stringent safety standards and based on sound expertise, Stäubli's breathing air range provides efficient solutions for supply, connection, filtration and distribution functions, taking the requirements of specific working environments into account.

3. Explosions

Those using oxy-fuel (oxygen/fuel gas) processes for welding or cutting metal are exposed to numerous potential hazards. The most dangerous of these include gas emissions, fumes, explosions and fire. For example, flashback or blowback in a blow torch can cause both the hoses and the bottle to explode. This explosion releases a significant amount of energy which can cause fires and, in most cases, serious injuries.

Stäubli safety for welding lines

Stäubli connections comply with the NF EN 730-1 and ISO 5175 heavy class safety standards. The company's technologies protect both users and installations during oxy-fuel welding or cutting operations. Gas distribution is automatically and immediately shut off on disconnection. The "quick-release coupling" function enables the hoses linking the gas bottles and the blow torch to be connected and disconnected in a single movement, in complete safety. The Stäubli design incorporates various safety devices including geometric key locking systems that prevent any risk of circuit inversion. The couplings can be swivelled so that the button is always accessible. Mounted on the regulator outlet and the blow torch inlet, SUPER-PARFLAM couplings protect installations and users with 3 integrated safety devices: gas non-return valve, flame arrester and thermal cut-off.

Did you know?

The earth's atmosphere contains approximately 21% of O2. If breathing air does not contain enough oxygen, the consequences can be fatal. This phenomenon is all the more dangerous as it is impossible to detect an oxygen deficiency by smell alone.

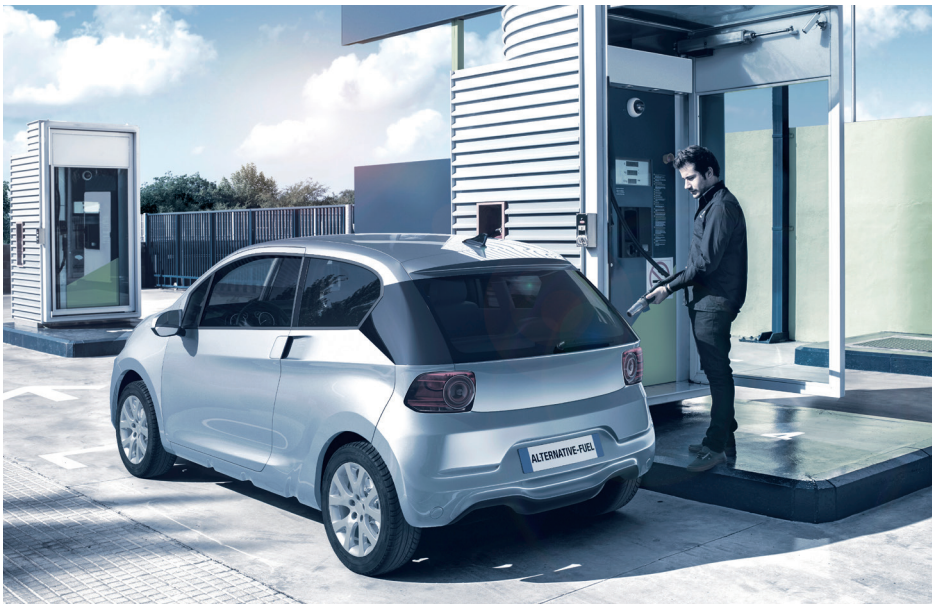
Sector Specific Solutions

In addition to the standard connection applications widely used within industry, Stäubli has also developed numerous solutions aimed at addressing specific issues across many different applications and sectors, ensuring the safety of professionals, operators and technicians.

Preventing moulds from moving or falling in the plastics industry

The QMC 122 magnetic clamping system prevents hazards around mold changes in injection molding machines. The IMAG Editor simulation software eliminates the risks and unproductive times associated with the mold characteristics. This allows teams to address these potential problems upstream. This active safety device, designed by Stäubli, accurately measures the force obtained, compares it to the forces present, and alerts the operator (if necessary). Continuous measurement of the magnetic field on all modules during the production makes it possible to detect even minute variations of this, and stop the press even before the mold moves.

This system therefore contributes effectively to the safety of equipment and operators and increases productivity.



The requirements of the Pressure Equipment directive 2014/68/UE and the ATEX directive 2014/34/UE guarantee user safety.

Avoiding explosions at refuelling pumps

With its wealth of expertise in energy connection, Stäubli supports the development of sustainable mobility, providing solutions for alternative fuels. For example, Stäubli's range of connectors designed specifically for refuelling light or heavy vehicles includes a refuelling nozzle for LPG powered vehicles which is as simple to use as a standard petrol pump nozzle.

This LPG variant is lightweight, ergonomic and incorporates Stäubli flat-face anti-pollution technology, ensuring very low levels of gas are released into the atmosphere and eliminating any risk of fire. An integrated autoclave joint allows the user to open the fuel valve easily, and the device also features Stäubli's Break-Away safety coupling which ensures that the nozzle is never separated from the installation, even if the supply hose is inadvertently pulled.

Preventing motorsport accidents

On the track every action counts towards success, including optimising pit stops to achieve ever-shorter refuelling times, more accurate tyre pressures and faster brake calliper changes.

These are all potentially high-risk operations, as the quest for speed can sometimes be at the expense of safety. Stäubli quick release connections and refuelling systems assure high performance and safety at all times. Anti-pollution technology ensures that drivers and technicians remain safe by preventing any risk of liquid spillages on the ground which could cause accidents around the vehicle during pit stops or during the race.

> “ Using these couplings provides peace of mind and makes life easier. They do not leave any room for error or throw up anything unexpected. ”

Girls Racing Team,
Paul Ricard circuit, France

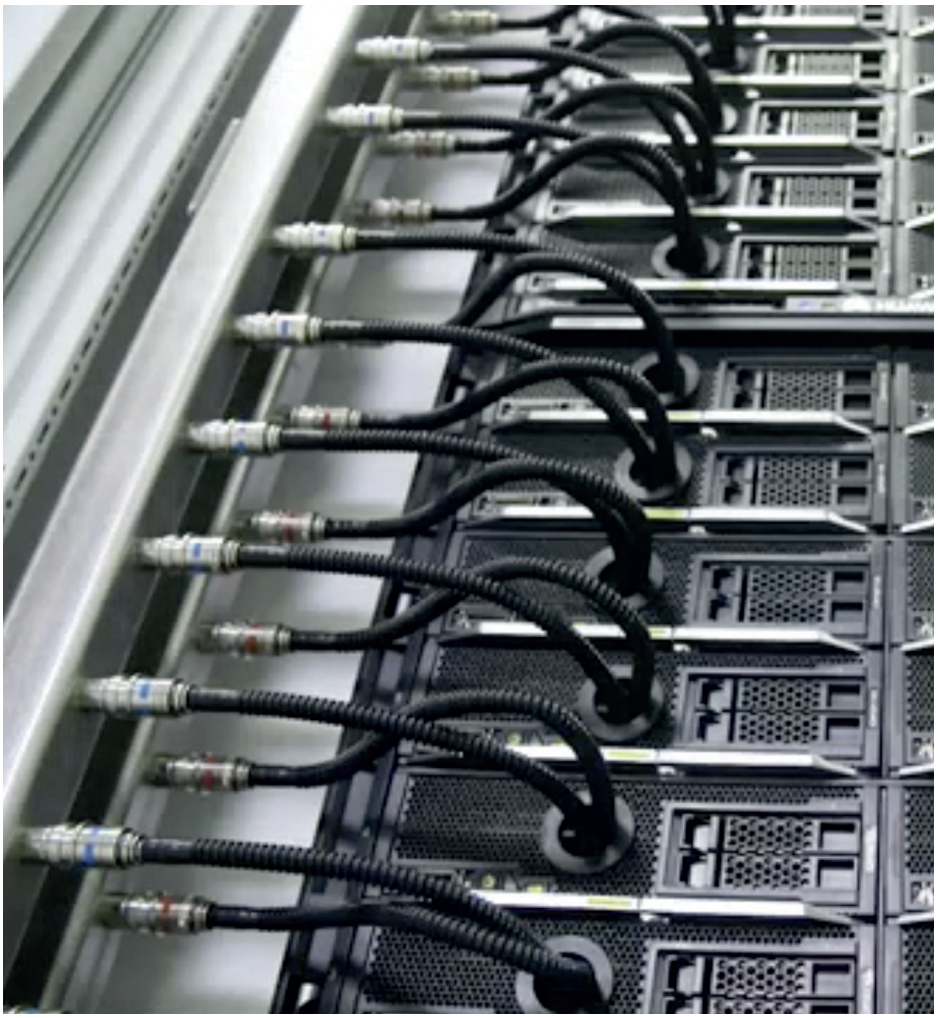
Preventing contact with hazardous fluids

Safety is particularly important in the chemicals and pharmaceutical sectors when transferring hazardous fluids. At stake is the safety of operators and installations, the integrity of products, the durability of industrial equipment and of course compliance with industry standards. Stäubli has addressed these major challenges through the use of high quality materials, reliable components and cutting-edge anti-pollution technology.

Preventing overheating in IT systems

Overheating of electronic components in Datacentres can seriously affect the continuity of service for the end customer. To keep these essential components at optimum temperature, they are cooled using hydraulic circuits, which are much more efficient than using just air. Also, operators and maintenance personnel must be able to carry out work on these items quickly, however the presence of electronics means that, to avoid damaging the equipment, it is essential that no leaks or accidental disconnection occurs.

The quick release couplings used within this environment must ensure absolute seal integrity for these state-of-the-art applications. Stäubli's compact, lightweight quick release couplings provide the necessary security together with ease of use and maximum safety for users which is guaranteed over time.



Preventing contamination in the food processing industry

Cleanliness of the environment within the food processing industry is vital. Stäubli connection systems meet stringent health and safety requirements, as well as the regulatory, technical and economic demands of this industry. They enable full control of all the energy connections on various applications such as: high pressure cleaning, compressed air networks and breathing air, etc.

All Stäubli connection solutions have been designed to ensure the safety of people, to protect production units and ensure process flexibility.

Which is the right quick release coupling for my installation?

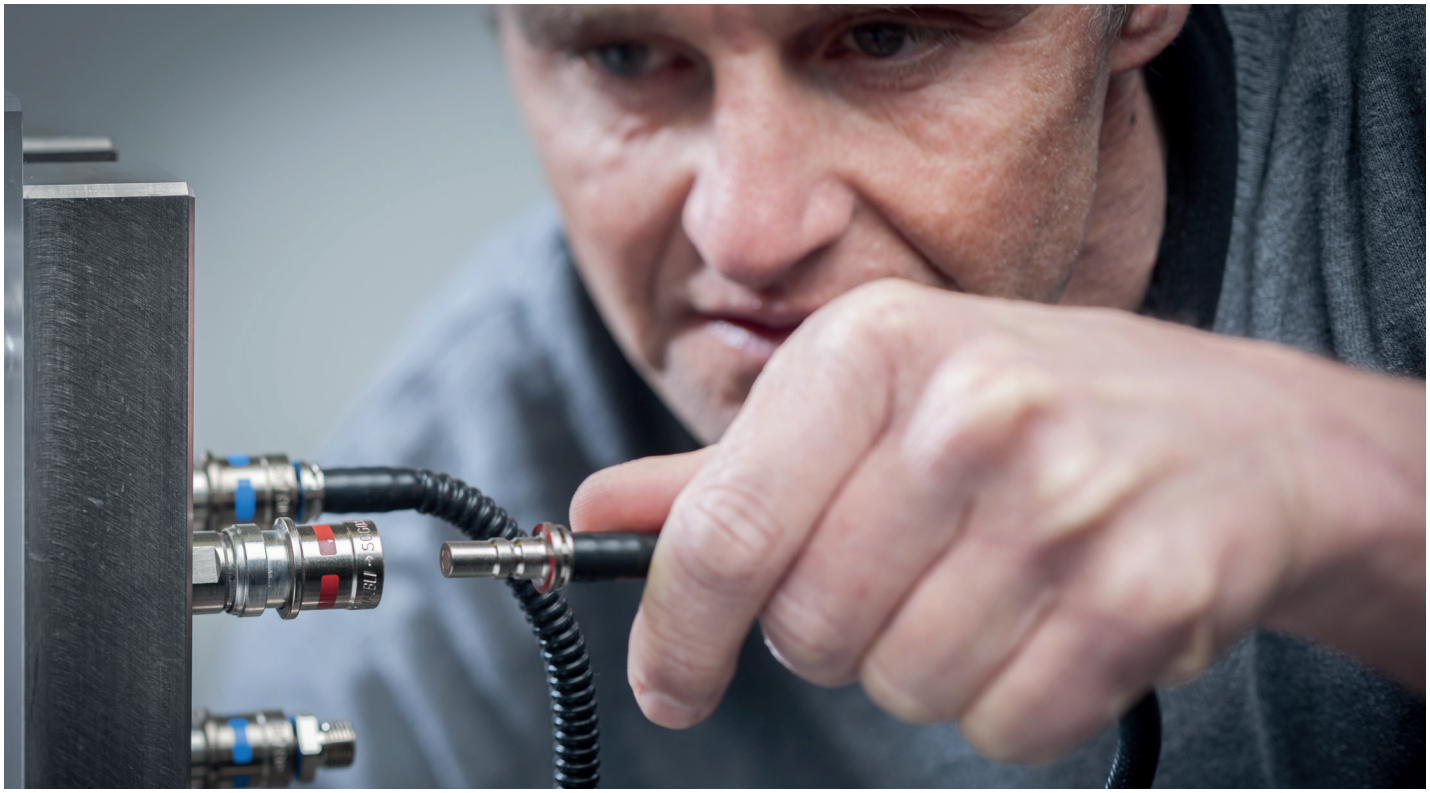
This question can only be answered by an expert, if the specific requirements of each application area are to be taken into account. Therefore, speaking with a specialist is essential to establish if:

- The quick release coupling has all of the correct characteristics for a specific application.
- It has been carefully defined together with one of our experts.

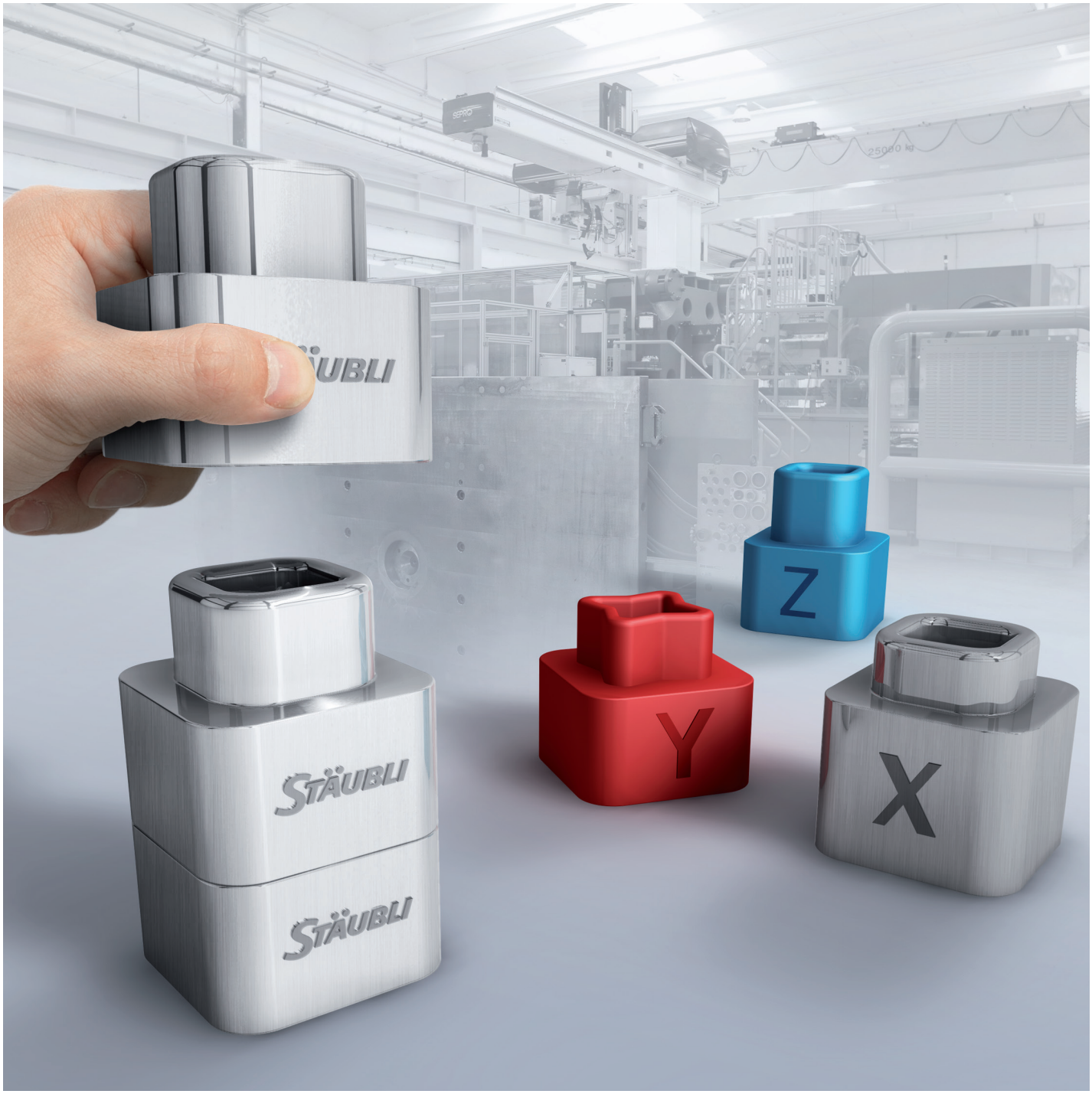
Establishing the quality of the pair

The perfect operation of a quick release coupling in a circuit, regardless of the medium it transports (air, oil, water or electricity), is dependent on the quality of the pair used.

- It optimises the ease of use of the parts being considered and the safety of the operators.
- It ensures the reliability and speed of maintenance processes, and also product integrity.
- It ensures equipment safety.
- IIt increases the reliability of installations by eliminating the risk of leaks.



Safety is in our DNA



Safety is incorporated within our product ranges, from the earliest stages of design. It guides all our developments, for people's health, respect for the environment and the integrity of industrial equipment. It is important that our customer's realise that using inferior copies of Stäubli products poses risks to people and equipment, in addition to the possibility of legal action.

Stäubli actions changes in line with market demand and always complies with the increasingly stringent regulations and standards applicable to individual markets. This rigorous approach to approval and certification is the hallmark of our group. Using products where quality and origin are not guaranteed can result in serious damage and lead to legal proceedings.

The design of all Stäubli coupling ranges reflect the importance of innovation, quality and safety. The safety of your operators and the performance of your equipment can only be guaranteed through the systematic and exclusive connection offered by Stäubli plugs and sockets.

Stäubli, your partner of choice for markets with stringent requirements

High quality products for reliable installations

Stäubli embraces a policy of innovation and stringent R&D. Our manufacturing and inspection processes, and our logistics, are recognised worldwide for ensuring the safety, reliability and seal integrity of our products.

The sensitive markets that we supply, such as: aerospace, medical, pharmaceutical, etc. have the assurance of traceability on all of our products.

Durable solutions for all sectors

Stäubli quick connection solutions are always safe, efficient, reliable and compact. They optimise energy consumption, whilst increasing flexibility and productivity of every process.

A stable group

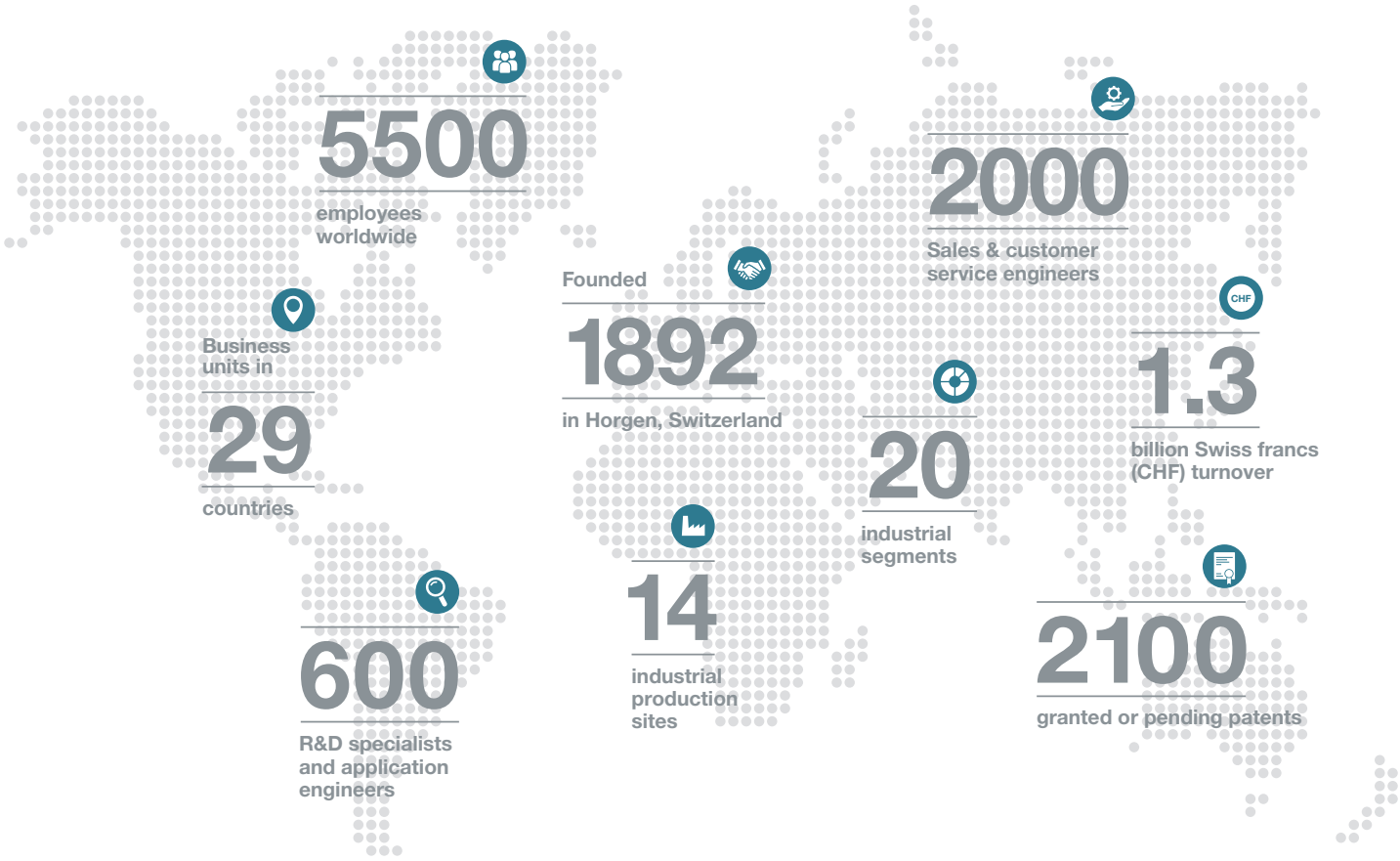
The financial stability and permanence of the Stäubli group ensure that our partnerships are long-lasting.

A local partner able to respond to your requirements.

Stäubli is a long-term, reliable partner for industry. We have a worldwide presence and work closely with customers to provide the highest levels of service and support. Our expertise means that we can meet all of their requirements on a daily basis.

Our relationship with our customers is based on the transparency and quality of our discussions and compliance with our commitments.

Stäubli worldwide



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