Press release

Non-interchangeable security on flexible media interfaces

(Haan/Stuttgart, 07 October 2013) The requirements for flexible media interfaces are varied and go far beyond a fast connection of mobile components with stationary systems. In many production processes, it is important to constructively avoid an incorrect fluidic media line coupling already during the system planning. The basic idea is the Poka yoke principle which means eliminating incorrect actions through appropriate precautions:

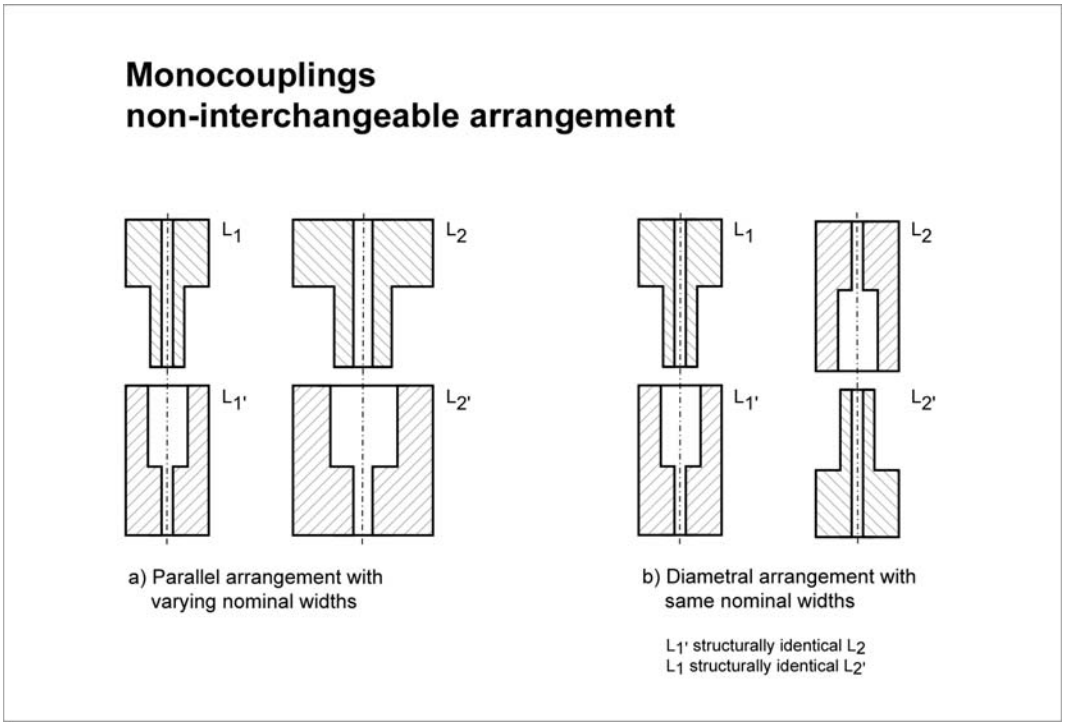

Figure 1: Monocouplings in non-interchangeable arrangement

Process reliability and thus protection against mix-ups is a sensitive issue of increasing importance especially when dealing with aggressive and hazardous

substances like those used in the chemical and pharmaceutical industries. As a technology leader in the area of industrial quick coupling systems, WALTHER-PRÄZISION addressed this challenging issue early on and developed a series of pioneering locking and signal elements designed to connect media interfaces safely, flexibly and without any mix-ups. In this way, optical, mechanical, electronic and a combination of these construction elements are available today.

Mechanical locking elements

With monocouplings, for example, various ring diameters can ensure designs on the guide parts of the locking coupling or mechanical coding so that only coupling halves which belong to each other can be be connected to each other with the corresponding closure. Differently coloured guide parts continue to facilitate the optical classification.

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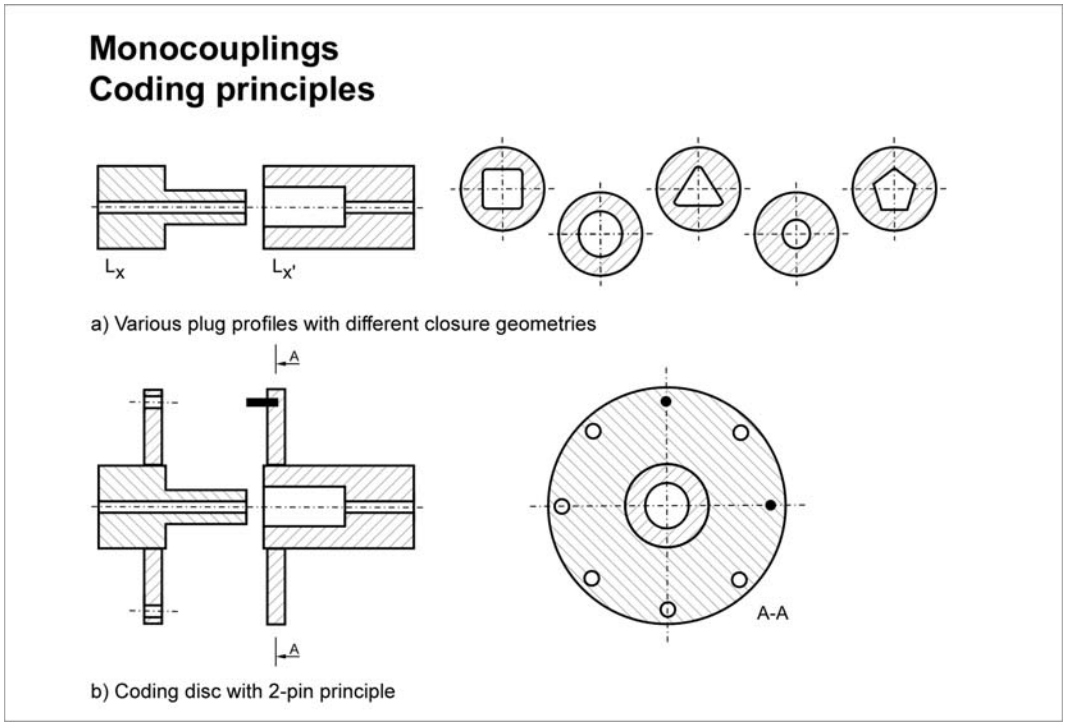

Figure 2: Mono-couplings with a) fitting and b) coding

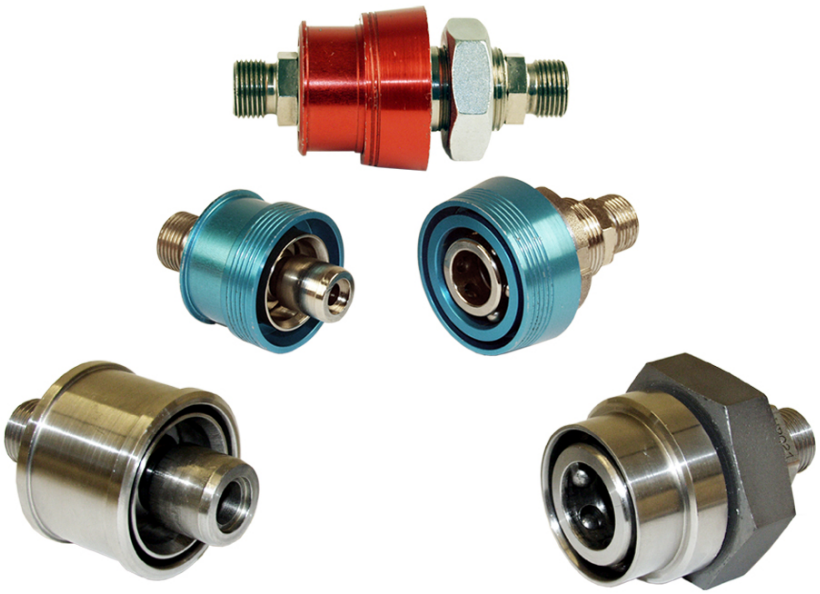

Figure 3: Non-interchangeable couplings by WALTHER - here with different ring diameters (UM series).

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Classic shapes for non-interchangeable monocouplings are triangular, square or pentagonal heads. The distinctive forms of closure make an optical classification easily possible.

Figure 4: Non-interchangeable couplings by WALTHER-PRÄZISION, UF series

Multicouplings - built-in non-interchangeable security

Multicoupling systems by WALTHER PRÄZISION are non-interchangeably designed. A variety of liquid, electrical or gas lines can be process-reliably and non-interchangeably connected at the same time with customised systems for multichannel media interfaces.

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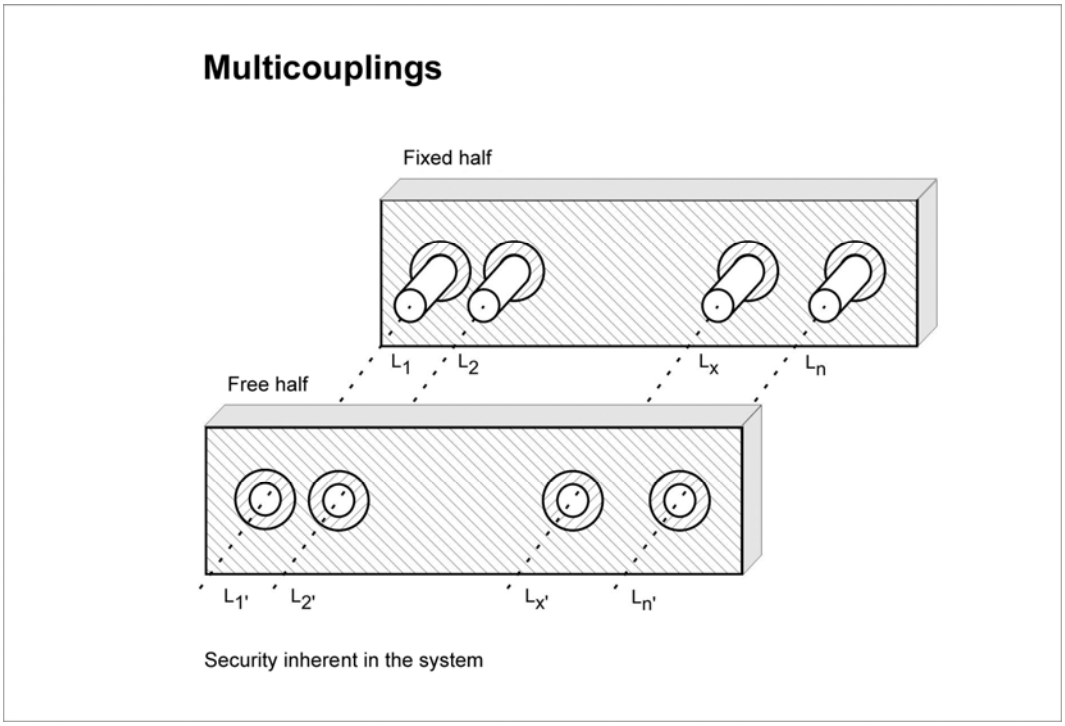

Figure 5: Multicoupling, schematic

Depending on customer requirements, the multicouplings are equipped with additional signal elements. The use of these sensors allows monitoring of individual coupling conditions. This enables the integration of the multicoupling into an automatically controlled process.

Customised high-tech solutions

With the remote monitoring of processes, electronic safety and signal elements play a decisive role in the constant monitoring of the status of a separable connection. Especially in complex production plants,

the apparent condition check is often dangerous or even impossible.

Non-contacting switch elements by WALTHER-PRÄZISION are used in these cases such as e.g. initiators which are attached to a side of the coupling. The matching counterparts of these couplings are equipped with the corresponding encoders. They address the initiators in a specific, defined code pattern and document, for example, which storage tank is connected to which station. Of course, free coding or the use of data carriers in conjunction with the corresponding readers or the use of the most modern RFID identifiers is also possible.

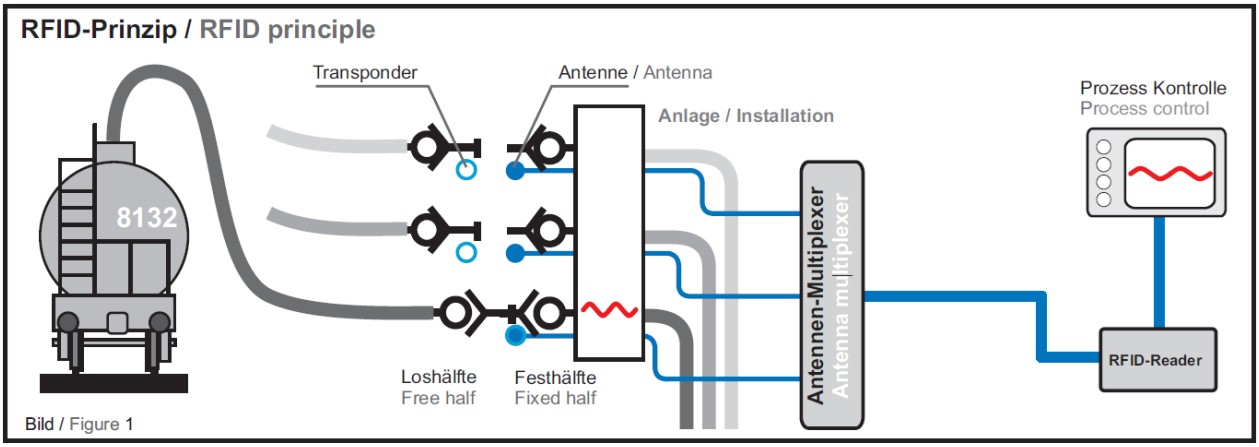

Figure 6: RFID in the schematic layout

Here, the RFID antenna in a permanently installed coupling half (fixed half) identifies the RFID transponder located in another coupling half (free coupling) non-interchangeably after their full coupling (see Fig. 1). In the coupled state, all important information (including transponder data

storage) is transmitted contact-free by the transponder from the free side to the fixed side. The coupling point is now clearly identifiable through the RFID transponder coding. The controller can automatically start subsequent process steps. Since a lot of information can be stored on the transponder, a complex process control is possible. Equipped with such a RFED, an incorrect manual operation is virtually excluded and each coupling process can be clearly documented and each filling operation controlled.

A multiple mechanical coding can also be done using an integrated pin system to mechanically exclude any mix-up.

A typical application area is the loading of chemicals into mobile containers because with improper operation or control of such systems, hazardous liquids or gases can escape. Such accidents can be avoided through the use of modern process monitoring having RFID technology.

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Figure 6: A series of electronically coded WALTHER couplings

Conclusions:

The economically optimal use of large-scale systems is often only achieved with fluidic lines which are flexibly connected to defined coupling joints. Quick coupling systems by WALTHER-PRÄZISION offer safe, fast and comfortable solutions. Robust, reliable and upon request, non-interchangeable and fully integrated into customer processes - ideal for safety and maximum productivity.

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