

Production H.C. Starck, Leverkusen

H.C. Starck GmbH (Leverkusen) ...

... a safety conscious company that relies on the safety
brand RS for fluid handling.



Chemical process H.C. Starck



Clean and proper: One flick of the wrist, one turn (made possible by the integrated swivel joint), and the connection already sits.



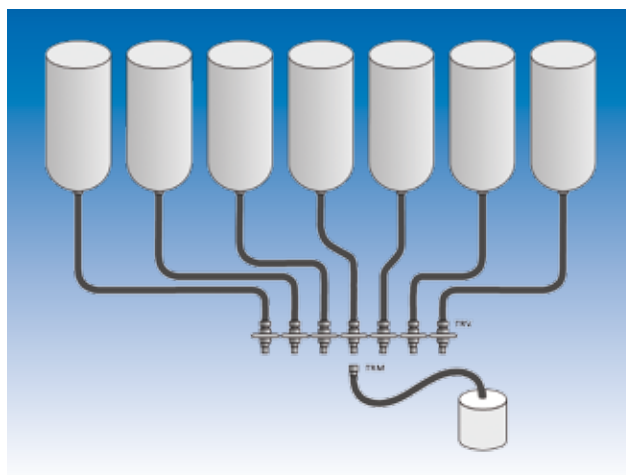
Dry couplings in detail: Starck Industrial Master Michael Harzheim (left) and grad. eng. Mario Bastian, RS Field Representative, discuss the last details.

What prevents leaks around the hose coupling when dealing with hazardous fluids in the chemical industry? And instead provides "dry coupling circumstances"? How can the coupling processes be made safe and with practically just a twist of the wrist? Even with alternating media and when connecting the filling equipment to different pipelines? And that in narrow spaces? Closing and opening without any taps? The answer from H.C. Starck in Leverkusen: the high-tech dry coupling TR from the RS Roman Seliger company. Innovation for being "clean and proper" and for efficient work.

Nano technology in practical use

In the midst of the Bayer Chemical Park in Leverkusen, in Complex B 202, a subsidiary of H.C. Starck GmbH has been headquartered since 2004. Here, research, development and application technology for the product lines Levasil® (Kieselsohl), Baytron® (conductive polymers) and Baymetec® (chemicals for optics and electronics) have been accommodated. But also production facilities for special chemicals. It has been quality certified according to EN ISO 14001:2004 and DIN EN ISO 9001:2000. The Baytron® product family now provides a wide range of connections and formulations for the electronic applications area and is a key component in Starck customer applications. They are sold specifically matched to the customer desires during the manufacture of capacitors, the fabrication of displays as well as during foil coating. Silica sols (Levasile) are colloid dispersions of amorphous silicic acid particles (SiO_2) in water. For example,

Levasil plays a decisive role in the electronics industry. Silicon wafers are polished flat for manufacturing computer chips with silica sol in ultra-high purities. That ensures the later functionality of the electronic microstructures. That is nano technology for practical use. Likewise nano technology in practical use: Fittings technology from RS for "strong" connections between production and filling.



"Interface problems"

Starting situation: There are seven storage tanks with different fluids, but only one drum filling plant. The connection is made flexible with hoses (see sketch!) But that does not solve the challenge of unwanted leaks when mistakes are made operating the locking devices.

Safety in the system

Play it safe: the TR

Dry couplings are needed for that. Because, their valves close automatically during decoupling. At H.C. Starck one decided in favour of this solution. "However, not for just any kind of dry coupling" as Industry Master Michael Harzheim emphasizes as the person responsible for the filling plant. "We had already collected experience with dry fittings that did not suffice our requirements until we replaced them with the TR made by RS Roman Seliger on the suggestion of technical wholesaler Schloemer. And that solved the leakage problems." After installing them, the situation looked like this: On the pipeline side, seven „male valves“ were formed by dry couplings and welded permanently with the flange, the interface between the production process and filling. On the movable side, the hose line which is coupled here and there, is the "female part" of the interface. The required swivel joint is integrated to save space. It prevents hose torsion.



Filling plant: This is where delivery to customers around the world starts, with small packs up to 50 kg.

The principle of safety (valves)

The → **TR dry couplings** used here in the nominal width DN 25 comprise two coupling halves (male and female part) with one each cut-off valve. When closing the coupling, they are tightly connected through a radial cam roller mechanism. A bayonet rotation movement of 10° suffices for safe hydraulic connection. With an additional rotational movement of the female part to the male part of 120°, both valves open. The full flow cross-section to the connected nominal width of the hose line is then available. When separating, the cut-off valve closes in the coupling halves. Only then does the mechanical separation take place. Closing the valve simultaneously and free of dead-space does not merely prevent uncontrolled draining of the pipe or hose line; it reduces the residual volume flow to practically zero. That serves the interests of the environment as well as employee health.

User friendly

Along with the good feeling of more safety, Michael Harzheim and his colleagues also appreciate the fast, easy operation. Coupling and decoupling – both are performed at "Formula 1 speed". And the good flow behaviour, achieved by extending the entire cinematic comprising the flow passages in the external area, optimises the conveyance process and enables good flushing facilities during the monthly maintenance and pipeline cleaning step. The high quality of the valves makes themselves felt positively especially from the economic and maintenance aspects. That is because the RS dry couplings in the TR series are distinguished by their long longevity. The conically sealing closing-cone ensures reduced O-ring wear. No wonder that during the last plant expansion from ten to 18 pipelines, the decision fell in favour of the proven RS-fittings.

The conveyed media at H.C. Starck, according to the Water Resources Act, count in part among the water-hazardous substances. One more reason to go to the highest safety level in coupling safety. The sophisticated valve technology in the → **TR dry coupling** guarantees that problematic fluids are consequently locked already at the decoupling moment, so leaks do not occur.

Leak-free coupling



Why we rely on RS



Dr. Martin Stürmann,
Electronics and Optics
Business Group H.C. Starck
GmbH (Leverkusen):

"We avow to the principles of Responsible Care und Sustainable Development. In the fittings technology sector that is expressed in the decision in favour of safe dry couplings, RS brand, for example."

Michael Harzheim,
Industry Master H.C. Starck
GmbH (Leverkusen):

"During practical use the TR convinces with its easy and fast handling when changing the connections and through its safety. Practically no leaks mean clean work for us."



Peter Badners, Schloemer GmbH
Techn. Großh. (Recklinghausen):

"As a dealer and prefabricator of hoses and fittings confronted week for week with having to prove ourselves in practical use, we rely on RS as our partner. The highest quality with a great deal of innovativeness and individual service form the basis of our cooperation."

What RS is doing for safety



Grad. eng. Birger Buhk,
Chief Design/Development
RS Roman Seliger (Norder-
stedt near Hamburg):

"The requirements in the market are high. Our mission: We develop innovative products with the greatest customer benefits."

Grad. eng. Mario Bastian
RS field representative
(Norderstedt bei Hamburg):

"Together with our partners in technical wholesales, we are permanently onsite in dialogue with those who use our fittings. That is the only way to develop a solution that, in the final outcome, really benefits all those involved."



RS
Roman Seliger
Armaturenfabrik GmbH
An'n Slagboom 20
D-22848 Norderstedt
Fon +49 40 523064-0
Fax +49 40 523064-25
info@rs-seliger.de

www.rs-seliger.de



H.C. Starck GmbH

Facts – figures – data

International and the Carlyle Group, employs more than 3,400 employees at 6 sites worldwide. Headquartered in Goslar produces a powder range from the refraction metals tungsten, molybdenum, tantalum, niobium, rhenium and other compounds (borides, carbides, nitrides, oxides, silicides, sulfides), which is unique worldwide. Other important production areas are ceramic powders, sintered metal powder, thermal spray powder, non-ferrous metals; nickel & cobalt and their salts along with boron and boron compounds. Apart from metal powders, semi and finished goods such as molybdenum, tungsten, tantalum, niobium, titanium, zirconium and nickel and their alloys are produced. Besides manufacturing standard components, H.C. Starck is also the ideal partner for fabricating components made according to customer specification. For the electronics industry, H.C. Starck produces specially formulated electrical conductive polymers and silica sols. In the engineering ceramic sector, H.C. Starck has an extensive range of ceramic raw materials. The Chief Executive Officer is Dr. Heinz Heumüller.