



The lubricant is integrated into Stauff's zinc-nickel coating.
Images: Stauff

Hydraulic tube connectors

The simpler the assembly, the more secure the connection

When connecting hydraulic tubes, the external threads of the connectors generally need to be lightly lubricated. This step is not necessary with the tube connectors from the Stauff Connect range, as the lubricant is part of the zinc/nickel coating of this range.

The reliability of hydraulic line systems is a crucial factor in the operation of mobile machinery. Leaks cause environmental pollution and machine downtime. This, in turn, can lead to significant loss of revenue for users, particularly in the agricultural sector, where there are often only weather-related time windows available for individual operations. Assembly errors are the most common cause of leaks. From the initial design of its Stauff Connect tube connector range, Stauff therefore placed particular emphasis on ensuring that its connections could be fitted simply, cost-effectively and in as few steps as possible. Stauff's zinc-nickel coating is a key element of this approach. This coating is known on the market for its excellent durability and corrosion resistance. Until now, however, the full-liner has communicated very little about a feature of all the components of hydraulic line systems, which offers particular assembly benefits to the manufacturers of mobile

machines: the 'sealer', that is the lubricant that normally has to be applied to the connector in a separate work step, is actually part of the coating itself. So one less work step. And a further step, namely tightening the connector, becomes easier and thus safer.

Excellent assembly safety without lubrication

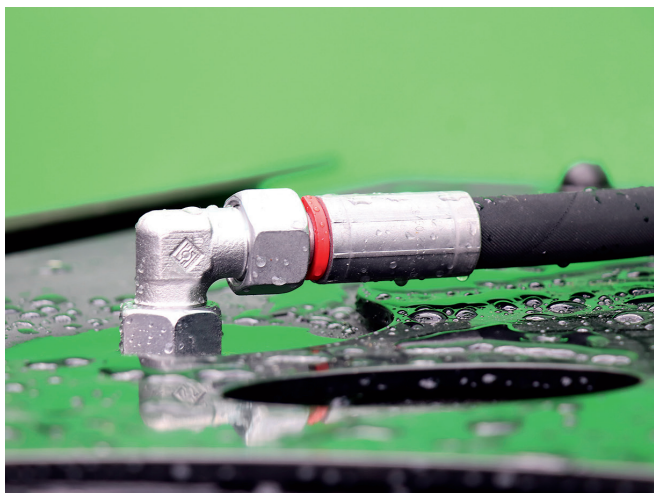
When tube connectors have to be lubricated, a step that is necessary with most manufacturers' products, the assembly methods differ between lubricated and non-lubricated connections.

The angles of rotation can differ by up to 40% with the same force. Fitters cannot therefore simply and intuitively adopt a standard assembly strategy, but instead need to work with different torques and tightening angles.

However, if the lubricant is already contained, as is the case with Stauff's zinc-nickel coating, then the

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André Degen,
Application
Engineer at Stauff



Stauff tube and hose connectors are simple to assemble and guarantee leak safety in agricultural technology.



Original equipment manufacturers can also have the coating tested for its resistance to fertilisers, pesticides etc.

torque remains the same across all assembly operations. The installation methods are identical, whether the connectors are lubricated or non-lubricated. There are also other benefits apart from saving time and fitting safety: the nuts also move very smoothly due to the lubricant contained within the coating.

This 'integrated' lubricant also lasts longer than a lubricant that is applied separately. In turn, this saves resources, even if only small amounts of lubricant are used in each assembly process. It also avoids false leaks, which can easily occur if the user identifies the lubricant as escaping hydraulic oil. When the mobile unit is delivered, there are also no remains of lubricant adhered to the connectors where dirt can easily accumulate.

Corrosion resistance tests for agriculture

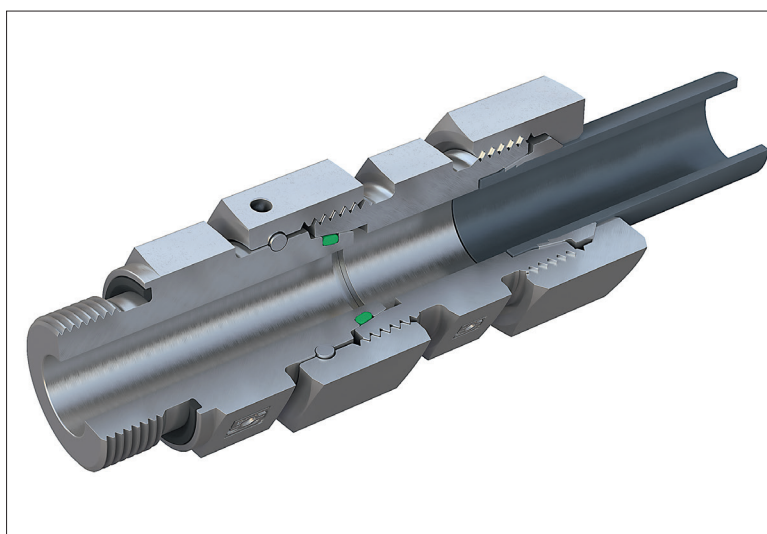
The operating conditions of agricultural equipment are naturally demanding: moisture, abrasive dust and fertilisers or pesticides have a particularly adverse impact on agricultural implements. Stauff's zinc-nickel coating on its components is therefore tested in the salt spray test according to DIN EN ISO 9227. It is also confronted with aggressive media, such as hydraulic, lubricating and engine oil or fuels, refrigerants or brake fluids, in the company's own research laboratory. Agricultural machinery manufacturers can also order additional tests and have Stauff document the resistance of the coating to specific fertilisers, pesticides, cleaning agents and other substances.

Intuitive handling with over-tightening protection

The omission of the need to lubricate the threads when assembling connectors, with all the associated benefits, is just one of many examples of how simple and intuitive workflows can be designed with connectors from the Stauff Connect range. A further example of this is the assembly of the frequently used 24° taper fitting with O-ring. Fitters simply tighten the union nut until the force increases significantly, and then tighten it by 120°. There is no absolute need for a torque wrench. Nonetheless, users can be completely sure that the line is correctly connected. Over-tightening can thus be reliably ruled

out, as the face of the fitting hits a ledge at the end of the taper, with the result that the fitting cannot be impermissibly extended. André Degen, Application Engineer at Stauff: "Stauff always has the user's situation in mind during the development of its products. The handling and properties of our connection systems are also communicated in an easy-to-understand manner in assembly training courses at our customers' premises, including the manufacturers of agricultural machinery." These detailed engineering solutions provide clear practical advantages: "For decades, Stauff has been familiar with the requirements of original equipment supplies in all sectors, and not just since the development of our own tube fitting range. Once customers have met Stauff Connect, they become convinced of the assembly benefits and tests under practical conditions, and then include our products in their list," continues Degen, talking about his experience with customers. Stauff will be exhibiting at agritechnica on Stand E31 in Hall 16.

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The design of the frequently used 24° taper fitting with O-ring reliably rules out over-tightening.