SCHAAF®

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A powerful and compact connection
Shaft connections for high performances

Whether between the ship's propulsion and propeller or in highly stressed drive trains of steam turbines, in reciprocating compressors or wind power plants: the requirements are set very high, since the connections must often cope with high dynamic and changing torsional forces in addition to partly axial forces. It is precisely to this demanding requirement profile of shaft and axle connections that the experienced specialists for hydraulic high pressure tools from Schaaf have tailored the new GripLoc coupling.

The GripLoc system is capable of safely transferring high forces (torques and axial forces) in the smallest installation space. Furthermore, the system is easily and rapidly installed and just as easy to disassemble again even after prolonged and intensive stress. GripLoc operates according to the principle of a radial shrinkage connection, but without the serious disadvantages of this type of connection.

Two bushes, an internal tapered bush in tough, high-strength steel in conjunction with the internal counterpart with a conical internal drilling reliably guarantee the non-positive connection. In order to displace the two bushes against one another and release the connection again even after a long period of use, GripLoc operates with an integrated and removable hydraulic nut and SafeLoc element.

The working principle of the system is simple, but extremely efficient. GripLoc is pushed centrally on to the shafts to be connected. The outer bush is slightly widened with the aid of the hydraulics. A closed liquid film results between the internal and external bush. During the second stage, the external bush is pushed with defined force over the internal bush with the aid of the high-pressure hydraulic nut. The specialists from Schaaf have pre-estimated beforehand the precise forces and the advancement distances of the external bush for optimum radial compression. By releasing the pressure from the external bush, the latter shrinks and the shafts to be connected are securely connected to each other by the frictional engagement.

The smallest dimensions of the entire coupling are rendered feasible by the friction coefficient increase developed by Schaaf, which functions like micro-toothing. With the friction coefficient increase, GripLoc achieves friction coefficients of up to $\mu = 0.7$. In comparison to standard friction coefficients of $\mu = 0.14$, this means that for the same structural size, the system is capable of transferring markedly higher forces, or it allows a considerably compacter construction.

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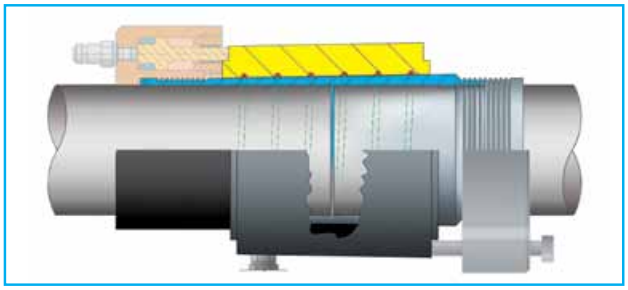
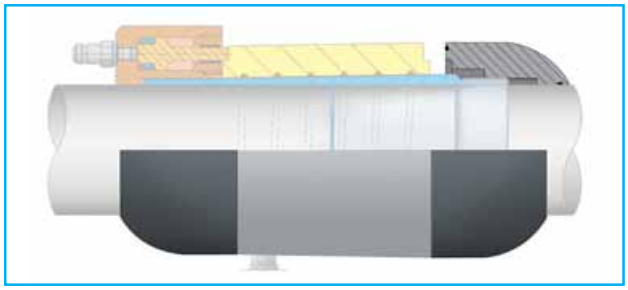
This connection remains securely maintained until released again. Only the same tools as for establishment of the connection are required for release. Owing to the new construction of GripLoc, the system can be assembled and disassembled rapidly and as often as desired without any wear, all without any loss of the excellent frictional engagement properties.

All systems are subject to strict quality control and are tested among other aspects for material quality, dimensional stability, function and safety under pressure. Material test certificates in addition to attestations and factory test certificates of the renowned acceptance associations are available on request.

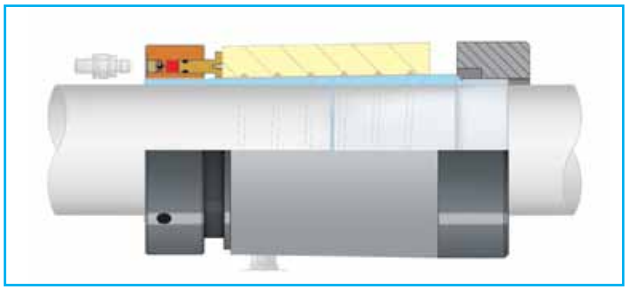
Captures



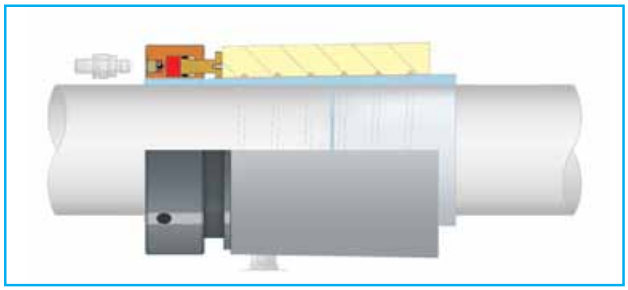
Shaft and axle connection with removable, two-piece Hydraulic Nut and two-piece SafeLoc element (PG35)



Shaft and axle connection with removable, two-piece Hydraulic Nut and flow caps (PG36)



Solidly fixed Hydraulic Nut for fast clamping connection with SafeLoc element screwed on (PG37)



Solidly fixed Hydraulic Nut for fast clamping connection with SafeLoc integrated in the Hydraulic Nut (PG38)