SCHAAF®

GripLoc

The optimum connection for shafts and axles
Powerful – Play-free – Unique

GripLoc – Powerful, connecting, gripping.

SCHAAF®

PG 35-39

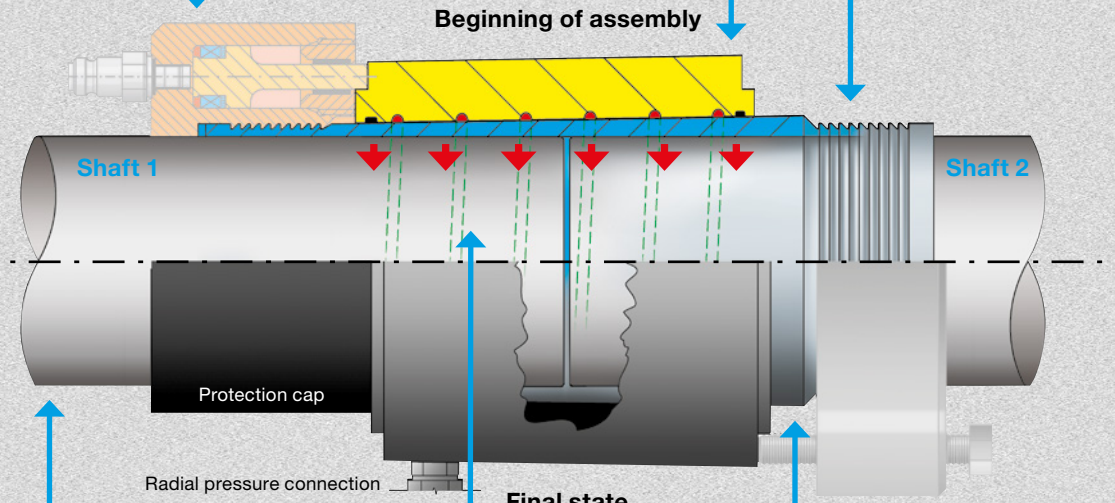
GripLoc PG 35

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

Removable two-piece Hydraulic Nut with saw-tooth profile for quick-clamp connection.

Outer sleeve of high tensile steel with tapered inner bore is mounted without wear by widening with hydraulic pressure.

Saw-toothed quick clamp profile for quick mounting of SafeLoc element.



Optimum shaft and axle connection even in extremely limited space. Maximum torque transfer even when direction is changed abruptly.

Pressure distribution grooves on tapered surface for easy installation and removal even after years of service – reusability guaranteed.

Removable SafeLoc guarantees axial positioning security even when radial pressure is relieved.

Inner tapered sleeve of tough, high tensile strength steel for maximum transfer of force.

Application

For installing several **GripLoc** units using the same tool (saving tool costs).

Versions

The SCHAAF **GripLoc PG 35** consists of the following components on a standard basis:

- Inner and Outer tapered sleeves made from high tensile strength steel for maximum strength and durability
- Two-piece, removable Hydraulic Nut and SafeLoc with saw-toothed quick clamp lock
- Pressure connection bore and pressure distribution grooves on tapered surface to achieve and release pressed fit

Inquiry form and animated operating instructions under **www.schaaf-gmbh.com**

GripLoc and **SafeLoc** are patented.

This **GripLoc** and accessory equipment is a milestone in the research and development of **SCHAAF** hydraulic high-pressure equipment and shows the world leadership in that field.

Areas of Application

SCHAAF **GripLoc** couplings are the optimum solution wherever high torques (forces) must be transmitted and, at the same time, easy and quick assembly / removal must be ensured. Contact us for optimally dimensioning your shaft and axle connections.

Functional principle GripLoc

By radial shrinking of a hydraulically pre-extended external body **GripLoc** generates a radial stress on the two shaft or axle stubs to be connected. **GripLoc** is to be clamped and released rapidly.

Assembly / Clamping

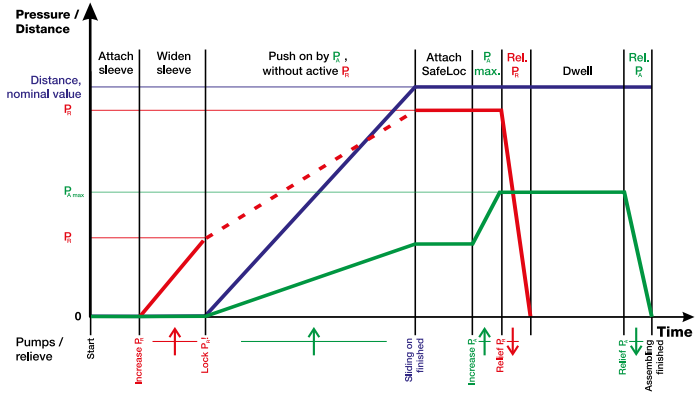
GripLoc is axially slided on the middle of components to be connected. Then the radial pressure connection is made and the outer sleeve is hydraulically widened under low pressure so that a closed liquid film is generated between the inner and outer sleeve on nearly the whole length of the outer sleeve. Then the radial pressure connection is locked. The high pressure pump is connected to the Hydraulic Nut which is destined to generate the axial force. By increasing pressure on the Hydraulic Nut the outer sleeve is moved as far as the slide on distance (or radial pressure) which is necessary for generating the radial pressfit has been reached. Then the SafeLoc element is attached and moved against the sleeve. The axial hydraulic pressure is increased to its maximum pressure. Subsequently the radial pressure is released, the radial pressing force is transmitted to the shaft and axle stubs by shrinkage of the tapered sleeve. The friction connection is completed. After a short waiting time the axial pressure can be relieved. Depending on the **GripLoc** version the Hydraulic Nut can be removed or rest on **GripLoc**.

Disassembly / Disconnecting

At first the SafeLoc, if not yet fitted on **GripLoc**, is attached and moved against the outer sleeve. A high pressure pump is connected to the Hydraulic Nut which is pressurized to maximum hydraulic pressure. Then the high pressure pump is connected to the outer sleeve, followed by maximum radial pressurization. Then the outer sleeve is locked and the pressure is released. The outer sleeve swims down from the inner sleeve. When disconnecting position is reached and the axial pressure has dropped to 0, radial pressure can be relieved. **GripLoc** now is disconnected and can be moved on the shafts or axles.

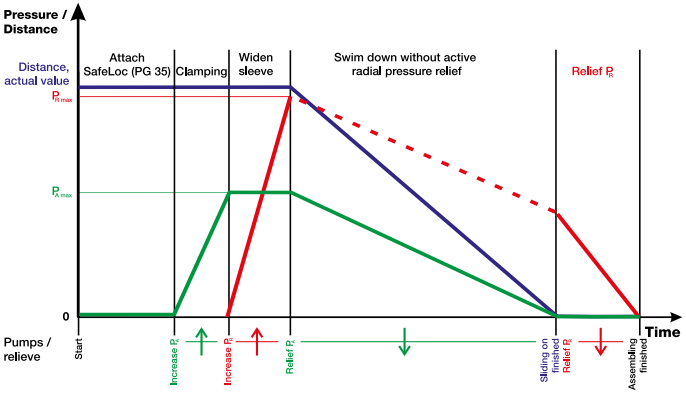
Hydraulic Nuts and SafeLoc may have various forms and can be built at best to the customer‘s requirements.

Pressure / displacement performance on assembling



Radial pressure (P_R) · Axial pressure (P_A) · Displacement (Distance)

Pressure / displacement performance on disassembling



Radial pressure (P_R) · Axial pressure (P_A) · Displacement (Distance)

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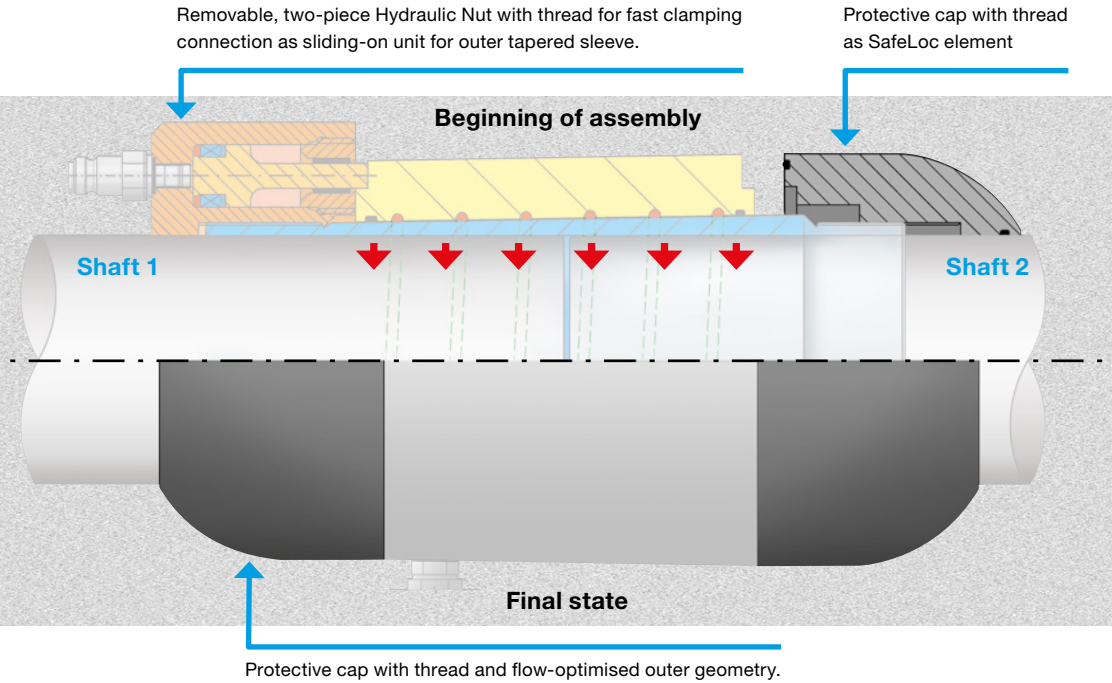
PG 36

GripLoc PG 36

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



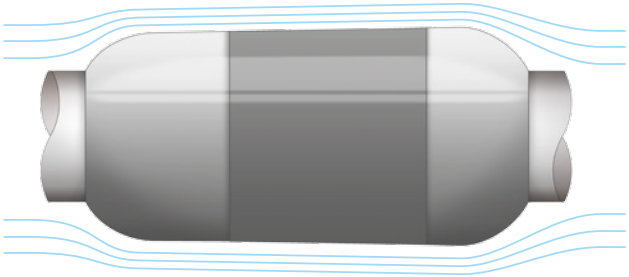
Application

When **GripLoc** is used in areas which require optimised flow dynamics for example an outboard shaft connection near the propeller.

Versions

The SCHAAF **GripLoc PG 36** consists of the following components on a standard basis:

- Inner and Outer tapered sleeves made from high tensile strength steel for maximum strength and durability
- Removable, two-piece Hydraulic Nut with thread for fast clamping lock
- Flow-optimised protective caps



Inquiry form and animated operating instructions under **www.schaaf-gmbh.com**

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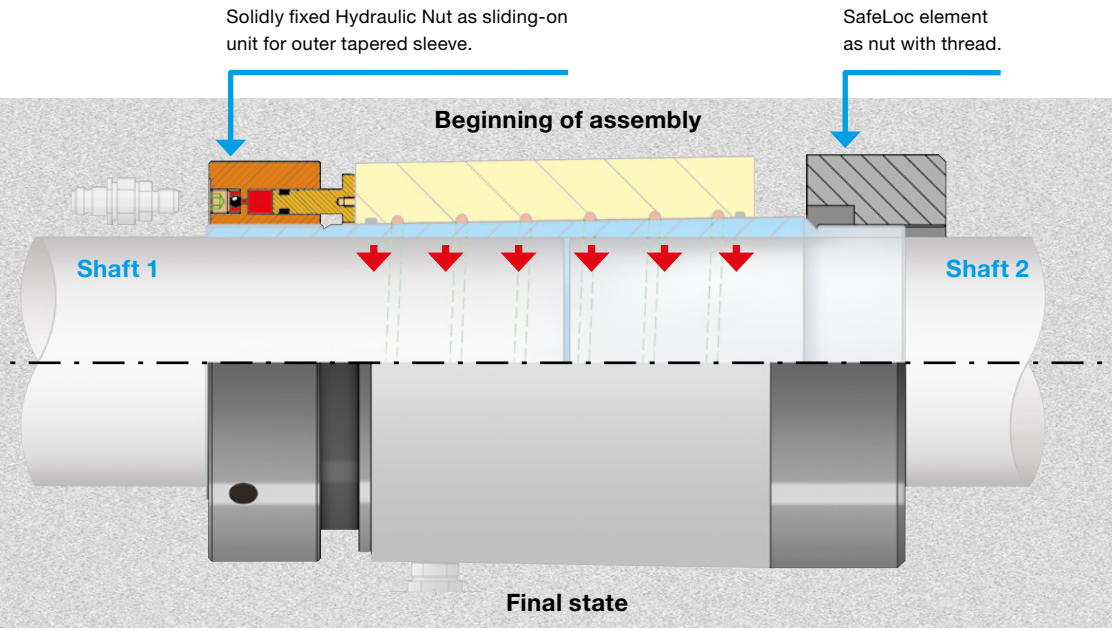
PG 37

GripLoc PG 37

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



Application

When **GripLoc** shall be used in restricted installation spaces or just one connection is completed.

Versions

The SCHAAF **GripLoc PG 37** consists of the following components on a standard basis:

- Inner and Outer tapered sleeves made from high tensile strength steel for maximum strength and durability
- Solidly fixed Hydraulic Nut
- Solidly fixed SafeLoc element as nut with thread

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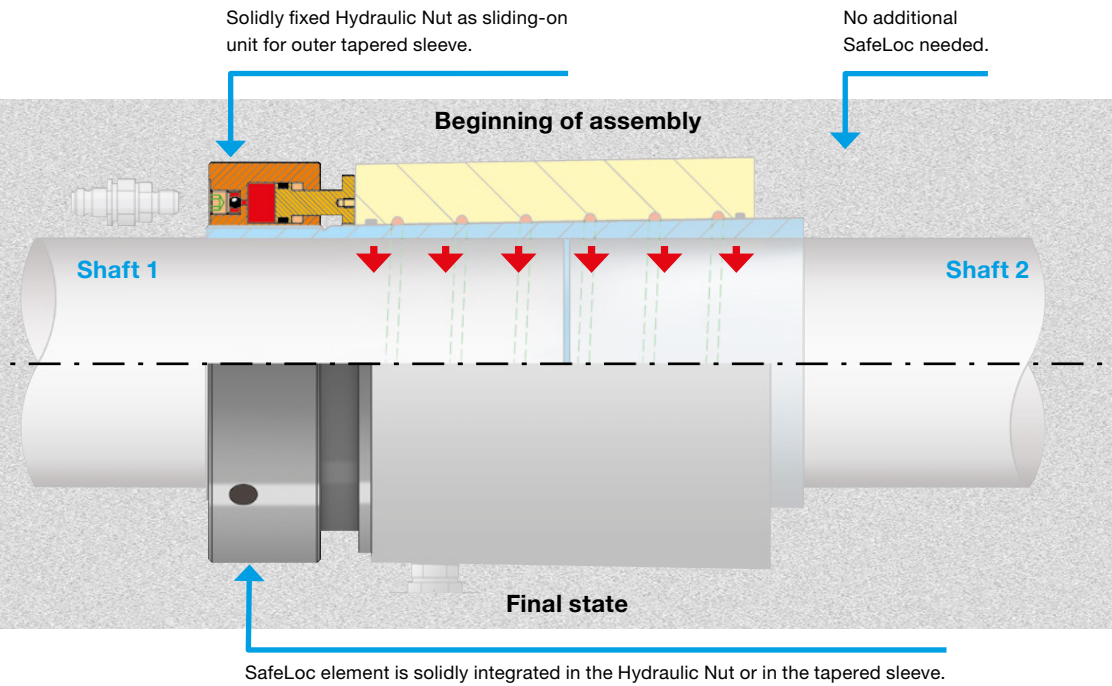
PG 38

GripLoc PG 38

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



Application

In case connections have been designed for a firmly defined sliding on, for example for a faster assembly or installation spaces reduced in length.

Versions

The SCHAAF **GripLoc PG 38** consists of the following components on a standard basis:

- Inner and Outer tapered sleeves made from high tensile strength steel for maximum strength and durability
- Solidly fixed Hydraulic Nut with integrated SafeLoc

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Complete solution from SCHAAF

The accessories for **GripLoc** such as high-pressure hoses and couplings as well as the manual, electric or air-operated high-pressure generators are aligned to the functions = 100 % system solution.

Combining possibilities

GripLoc	PG 35	PG 36	PG 37	PG 38
Removable Hydraulic Nut	X	X		
Solidly fixed Hydraulic Nut			X	X
Flow caps		X		
Removable SafeLoc	X			
Solidly fixed SafeLoc		X	X	
SafeLoc in the Hydraulic Nut				X

Individual solutions

The different **GripLoc** characteristics by SCHAAF can be combined among each other. So for example **GripLoc** can be built integrated together with the SafeLoc mechanism in a removable Hydraulic Nut. An optimal solution is therefore guaranteed for each application.

Advantages

Shrinkage and expansion of the tapered sleeves provide the following advantages:

- Patented **GripLoc** sliding-on procedures for destruction-free interference fit assembling
- **GripLoc** can be removed simply and quickly even after years of use – again and again wearless
- High torque transmission, completely free from backlash
- Torsionally and flexurally rigid connection even with sudden changes in the rotational speed, torque, or direction of rotation
- Maximum torque transfer even in minimum installation space thanks to SCHAAF friction increase
- Separate, removable Hydraulic Nut – only one for a number of couplings (GripLoc PG 35, PG 36)
- Removability is always ensured if replacement of defective Hydraulic Nut seal is ever required
- Time saving on assembly and disassembly

Quality Assurance

All **GripLoc** are checked for material quality, dimensional accuracy, correct functioning and load-resistance. During order execution, they are subject to continuous quality assurance measures and are supplied together with detailed technical documentation.

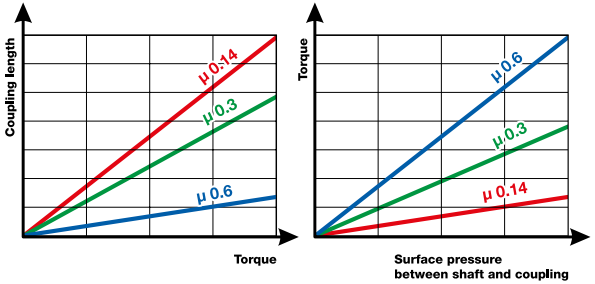
Services

GripLoc are, of course, supplied packaged, ready for installation and use.

SCHAAF **GripLoc** couplings are user-friendly, reliable, and manufactured in accordance with the highest level of technical know-how. Our highly-motivated staff would be pleased to train your personnel, in situ or at our works, in mounting and dismantling the bolts.

SCHAAF is certified in accordance with DIN EN ISO 9001 and, in addition, fulfils all requirements of all other classification societies.

GripLoc offers a safety factor five times higher than similar products.



Conventional = μ 0.14 · μ 0.3 · GripLoc = μ 0.6

The force is transferred to the contact surfaces by friction-increasing measures. **GripLoc** achieves friction values of up to μ=0.6 (Standard μ=0.14) and can therefore transfer significantly higher forces or allows the size to be reduced accordingly.

Certificates

- Approvals from classification societies
- Material test reports
- Specific test reports
- Certificates as per special customer requirements

Accessories manufactured by SCHAAF

- ShrinkNut
- GripCon
- ExpaTen Bolts, ExpaTen Bolts QL
- ExpaHub
- Bolt tensioners (SSV) manually operated, electric, or air-operated
- High-pressure generators: manually operated, electric, or air-operated
- High-pressure hydraulic hoses
- Couplings, nipples, adapters, distributor blocks for pressures up to 4000 bar

SCHAAF®

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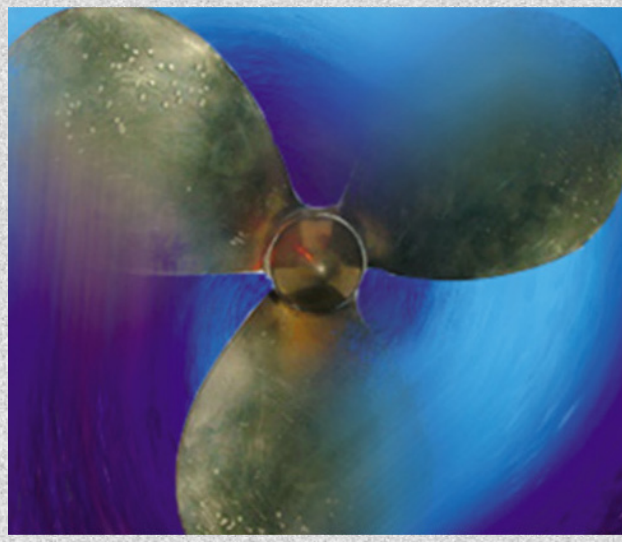

Visit us on the internet and convince yourself of our innovative services and products.

www.schaaf-gmbh.com

TÜVRheinland® CERT ISO 9001 ID:0910070172

SCHAAF has been developing and manufacturing high-pressure hydraulic tools since 1954.