























STAUFF Connect

Metric tube connectors, assembly tools
and accessories

Product Catalogue

Version
02/2026

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STAUFF Press Cutting Ring Final Assembly Machine Type SPR-PRC-POC-A-A-IOT



Product Description

The STAUFF Press Assembly Machine SPR-PRC-POC-A-A-IOT allows the pressure/position-controlled final assembly of cutting rings from the Extra-Light Series (LL), the Light Series (L) and the Heavy Series (S) according to ISO 8434-1 / DIN 2353 on tube ends with outer diameters between 4 mm and 42 mm.

The machine is designed as a robust table-top device for continuous operation in the workshop. It is used in connection with hardened and wear-resistant assembly studs FI-FMK and support plates FI-GP which are specially designed for the machine-assisted assembly.

The combined pressure/position-control of the device allows wear on the assembly tools to be detected in time before it can have a negative influence on the assembly result. Maximum service life of the tools is achieved through careful handling of the components and practical operation of the assembly machine. Other factors are proper storage (protected against contamination and corrosion), regular cleaning and lubrication (with suitable lubricants) and thorough preparation of the tube ends before assembly (cutting, deburring and cleaning).

Short times for tool changes, setup and assembly make it possible to carry out series assembly of cutting rings as well as assembly of small and medium quantities with a high level of economic efficiency, reproducibility and process reliability. Among other things, this is achieved with the RFID transponders – which are integrated into the support plates for automatic tool size identification as a standard – and with the tool contact switch: this allows assembly processes to be automatically started and completed by simply pushing the tube end into the assembly stud without having to press any buttons. The assembly area is secured against interference by a light grid to comply with current accident prevention regulations.

With machine-assisted **final assembly**, the cutting ring has already cut 100% into the tube and the fitter only has to tighten the union nut by 30° (corresponds to 1/12 turns) from the fix point. Please pay attention to the corresponding assembly instruction.

Final assembly (100%) minimises the risk for errors (insufficient or excessive manual tightening) and the resulting leak potentials which can often lead to time consuming and expensive machine downtimes and environmental impact. Due to the time benefits during final tightening, final assembly by machine also generates clear saving potentials compared to manual direct assembly as well as to machine-assisted pre-assembly.

In case of incorrect or incomplete assembly where pressure and position parameters significantly deviate from the values stored in the machine, it automatically stops the assembly process and displays a corresponding warning message on the operating panel.

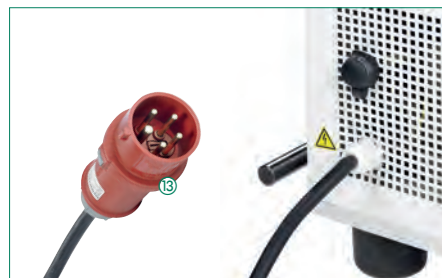
The integrated Cloud connection allows preventive maintenance via remote access and facilitates the documentation of assembly process. For more information please see page 256.



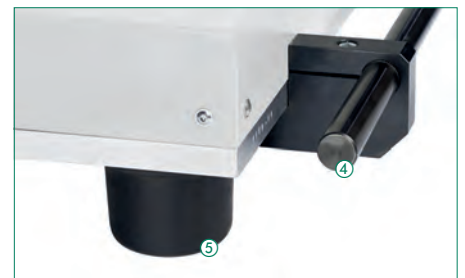
Operating elements of the assembly machine



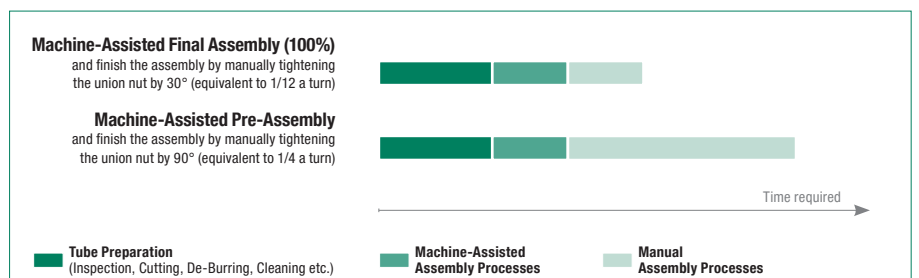
Noise-reducing tool tray with durable rubber mat



Electrical connection plug and Ethernet port (RJ45)



Lateral handle bars and rubber machine feet with suitable clearance height



Comparison of the total times required for the assembly and installation of cutting ring connections (medium size)

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STAUFF Press Cutting Ring Final Assembly Machine Type SPR-PRC-POC-A-A-IOT

Characteristics

Performance

- final assembly (100 %)
- Short times for tool changes, setup and assembly
- Tool size detection via RFID transponders in the support plates
- Automatic assembly start through integrated tool contact switch
- Tool wear detection through combined pressure/position-control
- Internal memory for up to 9 assembly programs which can be selected on the operating panel: predefined are tube materials steel E235 and E355 as well as stainless steel 316; parameters for other materials (copper, CuNiFe, Tungum, polyamide etc.) can be added by the manufacturer if required
- Counters for lot/batch sizes and total quantities (separated by tool size)
- Documented process control through programmable logic control (PLC)
- Predefined menu languages: English, German, French and Italian
- Manual pressure adjustment possible

Design

- ① Robust and ergonomically designed machine housing
- ② Optimised assembly area, which allows processing of tubes with low bending radii (to at least 31 mm distance from the tube axis to the interfering edge of the machine housing) or complex geometries
- ③ Noise-reducing tool tray with durable rubber mat
- ④ Lateral handle bars as attachment points for transport (e.g. with lifting belts)
- ⑤ Secure positioning thanks to flexible rubber machine feet
- ⑥ Type plate, with technical data, serial number, year of manufacture, etc.

Technical Data

Area of Application

- Function: final assembly (100%) of cutting rings on metric tube ends
- Operating principle: Assembly with combined pressure/position-control
- Series and diameters: Extra-Light Series (LL): 4, 6, 8, 10, 12 mm
Light Series (L): 6, 8, 10, 12, 15, 18, 22, 28, 35, 42 mm
Heavy Series (S): 6, 8, 10, 12, 14, 16, 20, 25, 30, 38 mm

Dimensions / Weight

- Dimensions (W x D x H): 780 mm x 650 mm x 305 mm with lateral handle bars (detachable)
- Distance from the tube axis to the interfering edge of the machine housing: 80 mm
- Clearance height: 65 mm (height of the machine feet) enables simple and safe transport using a forklift or pallet jack
- Weight: 95 kg (incl. operating fluid, excl. assembly tools)

Materials

- Machine frame: Aluminium
- Machine housing: Steel, painted
- Tool tray: NBR (Perbunan®)
- Machine feet: Natural rubber
- Assembly studs: Steel, PVD coated
- Support plates: Steel, browned

Operating Elements

- ⑦ Operating panel for display and selection of all relevant settings and assembly parameters
- ⑧ Button for definite confirmation of entries made on the operating panel
- ⑨ Status light to indicate readiness for operation and running assembly processes

Safety Devices

- ⑩ Main power switch (can be secured against unauthorised actuation when required)
- ⑪ Separate emergency stop button to immediately stop all machine movements
- ⑫ Light grid to protect users when reaching into the assembly area

Connections (at the back of the machine)

- ⑬ Electrical connection according to IEC 60309 CEE 16A (cable length: 4 m) and Ethernet connection (RJ45) for maintenance and data input by the manufacturer

Assembly Tools

- ⑭ Wear-resistant assembly stud FI-MFK
- ⑮ Support plate FI-GP with RFID transponder

Motor Configuration

- Power supply: 400 V AC @ 50 Hz - 3 phases
460 V AC @ 60 Hz - 3 phases
- Current consumption: 2,7 A
- Connected load: 0,9 kW
- Electrical connection: Phase reversing plug according to IEC 60309 CEE 16A
- Cable length: 4 m

Alternative motor configurations and plug types are available on request. Please contact STAUFF for details.

Hydraulic System

- Operating fluid: Hydraulic oil Shell Tellus S2 MA 46 or equivalent (filled and ready for operation when delivered)
- Fluid volume: 4 litres
- Max working pressure: 450 bar

Operating Conditions

- Storage temperature: -10°C ... +70°C
- Ambient temperature: +15°C ... +35°C
- Ambient conditions: Dry, no condensing humidity, operation in horizontal position only
- Noise emission: less than 66 dB(A) as per EN ISO 11202 at full-load operation with maximum tube dimensions



STAUFF Maintenance Contracts

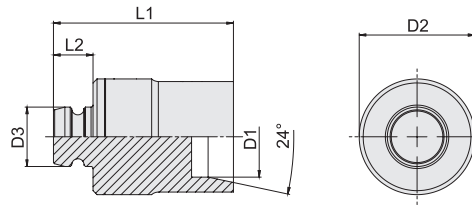
Please contact STAUFF for a maintenance contract, that provides optimum service for your STAUFF assembly machine.



STAUFF Machine Rental

Please contact STAUFF for a rental machine and further details of what this service can offer.

Cutting Ring Assembly Stud for Machine-Assisted Assembly Type FI-MFK ▪ Series LL / L / S



| Series | Tube OD mm | Dimensions mm | | | | | Weight kg ca. per 100 | Ordering Codes |
|--------|---------------|------------------|------|----|-------|-----------------|-----------------------------|----------------|
| | | D1 | D2 | D3 | L1 | L2 | | |
| LL | 4 | 30 | 14,8 | 50 | 10 | 12,98 | FI-MFK-04LL-W100 | |
| | 6 | 30 | 14,8 | 50 | 10 | 13,28 | FI-MFK-06LL-W100 | |
| | 8 | 30 | 14,8 | 50 | 10 | 13,68 | FI-MFK-08LL-W100 | |
| L | 6 | 30 | 14,8 | 50 | 10 | 13,57 | FI-MFK-06L-W100 | |
| | 8 | 30 | 14,8 | 50 | 10 | 14,01 | FI-MFK-08L-W100 | |
| | 10 | 30 | 14,8 | 50 | 10 | 14,63 | FI-MFK-10L-W100 | |
| | 12 | 30 | 14,8 | 50 | 10 | 16,09 | FI-MFK-12L-W100 | |
| | 15 | 30 | 14,8 | 50 | 10 | 16,63 | FI-MFK-15L-W100 | |
| | 18 | 30 | 14,8 | 50 | 10 | 18,23 | FI-MFK-18L-W100 | |
| | 22 | 30 | 14,8 | 49 | 10 | 19,13 | FI-MFK-22L-W100 | |
| | 28 | 33,8 | 14,8 | 48 | 10 | 24,43 | FI-MFK-28L-W100 | |
| | 35 | 42,8 | 14,8 | 45 | 10 | 32,72 | FI-MFK-35L-W100 | |
| | 42 | 49,8 | 14,8 | 44 | 10 | 41,17 | FI-MFK-42L-W100 | |
| S | 6 | 30 | 14,8 | 50 | 10 | 14,14 | FI-MFK-06S-W100 | |
| | 8 | 30 | 14,8 | 50 | 10 | 14,68 | FI-MFK-08S-W100 | |
| | 10 | 30 | 14,8 | 50 | 10 | 15,23 | FI-MFK-10S-W100 | |
| | 12 | 30 | 14,8 | 50 | 10 | 15,89 | FI-MFK-12S-W100 | |
| | 14 | 30 | 14,8 | 49 | 10 | 15,98 | FI-MFK-14S-W100 | |
| | 16 | 30 | 14,8 | 49 | 10 | 16,65 | FI-MFK-16S-W100 | |
| | 20 | 30 | 14,8 | 45 | 10 | 16,43 | FI-MFK-20S-W100 | |
| | 25 | 33,8 | 14,8 | 42 | 10 | 19,02 | FI-MFK-25S-W100 | |
| | 30 | 39,8 | 14,8 | 40 | 10 | 22,88 | FI-MFK-30S-W100 | |
| 38 | 49,8 | 14,8 | 36 | 10 | 26,41 | FI-MFK-38S-W100 | | |

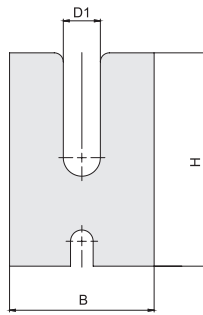
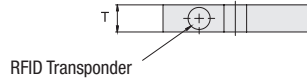
Materials / surface finishings: **W100** Steel, PVD coated

Accessories



Cone Gauges

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Support Plate for Machine-Assisted Assembly
 Type FI-GP ▪ Series LL / L / S


| Series | Tube OD mm | Dimensions mm | | | Weight kg ca. per 100 | Ordering Codes |
|--------|---------------|------------------|-----|----|-----------------------------|-----------------|
| | | D1 | B | H | | |
| LL | 4 | 80 | 118 | 15 | 104,43 | FI-GP-04LL-W101 |
| | 6 | 80 | 118 | 15 | 102,97 | FI-GP-06LL-W101 |
| | 8 | 80 | 118 | 15 | 101,46 | FI-GP-08LL-W101 |
| L | 6 | 80 | 118 | 15 | 102,97 | FI-GP-06L-W101 |
| | 8 | 80 | 118 | 15 | 101,46 | FI-GP-08L-W101 |
| | 10 | 80 | 118 | 15 | 99,93 | FI-GP-10L-W101 |
| | 12 | 80 | 118 | 15 | 98,35 | FI-GP-12L-W101 |
| | 15 | 80 | 118 | 15 | 95,91 | FI-GP-15L-W101 |
| | 18 | 80 | 118 | 15 | 93,40 | FI-GP-18L-W101 |
| | 22 | 80 | 118 | 15 | 89,91 | FI-GP-22L-W101 |
| | 28 | 80 | 118 | 15 | 84,41 | FI-GP-28L-W101 |
| | 35 | 80 | 118 | 15 | 77,56 | FI-GP-35L-W101 |
| | 42 | 80 | 118 | 15 | 70,27 | FI-GP-42L-W101 |
| S | 6 | 80 | 118 | 15 | 102,97 | FI-GP-06S-W101 |
| | 8 | 80 | 118 | 15 | 101,46 | FI-GP-08S-W101 |
| | 10 | 80 | 118 | 15 | 99,93 | FI-GP-10S-W101 |
| | 12 | 80 | 118 | 15 | 98,35 | FI-GP-12S-W101 |
| | 14 | 80 | 118 | 15 | 96,73 | FI-GP-14S-W101 |
| | 16 | 80 | 118 | 15 | 95,08 | FI-GP-16S-W101 |
| | 20 | 80 | 118 | 15 | 91,67 | FI-GP-20S-W101 |
| | 25 | 80 | 118 | 15 | 87,20 | FI-GP-25S-W101 |
| | 30 | 80 | 118 | 15 | 82,50 | FI-GP-30S-W101 |
| | 38 | 80 | 118 | 15 | 74,49 | FI-GP-38S-W101 |

 Materials / surface finishings: **W101** Steel, browned

STAUFF Press
Cloud connection allows preventive maintenance via remote access and facilitates the documentation of assembly processes
Type SPR-PRC-POC-A-A-IOT



Cutting ring assembly machines type SPR-PRC-POC are equipped at the factory with a built-in module for direct connection to a cloud operated by STAUFF. This solution is realised with an integrated SIM card which can be used in all industrial regions of the world.

Customers are given access to the cloud via a protected online portal, where they can get detailed information on the assembly processes performed, among other things.

This enables software updates, for example, without having to connect the machine to a local network on site. Parameter sets, which have been determined by STAUFF for non-standard tube materials can also be transferred quickly and directly to the machine in this way.

The required data security is guaranteed by encryption in both directions.

STAUFF Press
Optional tool holder for tubes with small bending radii
Type SPR-PRC-POC-RTH



The assembly head differs from the standard model by the holder for the cutting ring assembly socket being moved upwards, shortening the distance from the tube axis in the assembly socket to the upper edge of the machine from the standard 77 mm to 31 mm.

The optional assembly head enables tubes with a diameter of 6 to 18 mm in the Light Series and 6 mm to 16 mm in the Heavy Series to be handled.

This means that cutting rings can be fitted with ease to tubes with small axis distances.

Existing assembly tools can also continue to be used. The user simply needs to import new parameter sets into the machine.

If tubes with complex geometries are to be handled (e.g. with short tube end and 90° tail), the safety light barrier, which secures the assembly area, can be disabled if required.

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Assembly Tool Magazine
Type SPR-TM



- Provides safe and convenient storage for up to 10 assembly studs (type FI-MFK) as well as up to 10 support plates (types FI-GP and FI-GP-PRC) for the machine-assisted cutting ring assembly
- Assembly studs and support plates are not included in the scope of delivery for this item and have to be ordered separately

External Foot Control Switch
Type SFO/PRC-POC-FS



- Enables the operator to trigger assembly processes from a larger distance to the machine (cable length: 7 m)

STAUFF Press Combined Cutting Ring Assembly and 37° Tube Flaring Machine with Automatic or Manual Pressure Setting and Control ▪ Type SPR-PRC-MA-D-A

Product Description

The electro-hydraulically operated STAUFF Press Assembly Machine SPR-PRC-MA-D-A allows the assembly of cutting rings in the Light Series (L) as well as in the Heavy Series (S) according to ISO 8434-1 / DIN 2353 on metric tube ends with outer diameters from 4 mm to 42 mm.

Exchangeable heads allows the device to be adapted for 37° flaring of metric and imperial tube ends with outer diameters from 4 mm to 42 mm and from 1/4 in to 1 1/2 in respectively according to DIN 3949 or SAE J514 / ISO 8434-2.

Short times for tool changes, setup and assembly (even when changing the assembly type from cutting ring assembly to 37° tube flaring) make it possible to carry out series production as well as the assembly of small and medium quantities with a high level of economic efficiency, reproducibility and process reliability with considerable reduction of times and cost of assembly of fittings.

The adjustable return stroke of the cylinder helps the operator to further optimise the total cycle times.

The machine is designed as a robust table-top device for continuous operation in the workshop. It is used in connection with hardened and wear-resistant assembly tools which are specially designed for the machine-assisted assembly.



Tooling head for cutting ring assembly based on pre-defined settings / automatic tool size detection



Tooling head for cutting ring assembly based on settings manually defined by the operator



Tooling head for 37° tube flaring based on settings manually defined by the operator



Smart programmable control panel with push/turn button and back-lit parameter display



Noise-reducing tool tray with durable rubber mat



Robust rubber feet providing secure positioning and dampening during operation



USB connection for maintenance and data input by the manufacturer



Electrical connection with a phase reversing plug according to IEC 60309 CEE 16A



Connections for the tool head as well as for the external foot control switch

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STAUFF Press

Combined Cutting Ring Assembly and 37° Tube Flaring Machine with Automatic or Manual Pressure Setting and Control ▪ Type SPR-PRC-MA-D-A

Characteristics

Performance

- Pressure-controlled assembly of cutting rings on metric tube ends as well as 37° tube flaring of metric/imperial tube ends due to exchangeable tool heads
- Cutting ring assembly with Tooling Head SPR-PRC-TH-C-MA based on pre-defined pressure settings (with automatic tool size detection) or with Tooling Head SPR-PRC-TH-C-M based on pressure settings as manually defined by the operator
- Short times for tool and head changes, setup and assembly (even when changing the assembly type from cutting ring assembly to 37° tube flaring)
- Adjustable return stroke of the cylinder in order to further optimise the total cycle times
- Internal memory for up to 8 assembly programs which can be selected on the operating panel: predefined are tube materials steel E235 and E355 as well as stainless steel 316; parameters for other materials (copper, CuNiFe, Tungum, polyamide etc.) can be added by the manufacturer if required
- Counters for lot/batch sizes and total quantities
- Operator-friendly and easy to maintain and service

Design

- ① Robust and compact table-top device allowing for maximum mobility and flexibility
- ② Optimised assembly area with approx. 65 mm distance from the tube axis to the interfering edge of the machine housing, which allows processing of tubes with low bending radii or complex geometries
- ③ Noise-reducing tool tray with durable rubber mat
- ④ Lateral handle bars as attachment points for transport (e.g. with lifting belts)
- ⑤ Robust rubber feet providing secure positioning and dampening during operation
- ⑥ Type plate, with technical data, serial number, year of manufacture, etc.

Technical Data

Area of Application

- Function: Pressure-controlled assembly of cutting rings
Light (L): 6, 8, 10, 12, 15, 18, 22, 28, 35, 42 mm
Heavy (S): 6, 8, 10, 12, 14, 16, 20, 25, 30, 38 mm
- Pressure-controlled 37° flaring of metric tube ends (according to DIN 3949 bzw. SAE J 514 / ISO 8434-2):
Light (L): from 6 x 1 mm to 42 x 4 mm
Heavy (S): from 6 x 1 mm to 38 x 5 mm
- Pressure-controlled 37° flaring of imperial tube ends (according to SAE J 514 / ISO 8434-2):
1/4, 5/16, 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4, 1-1/2 inch

Dimensions / Weight

- Dimensions (W x D x H): 660 mm x 515 mm x 265 mm with lateral handle bars (detachable)
- Distance from the tube axis to the interfering edge of the machine housing: 65 mm
- Clearance height: 30 mm (height of the machine feet)
- Weight (basic machine): 66 kg (incl. operating fluid, excl. assembly tools)
- Weight (tooling heads):
SPR-PRC-TH-C-A: 6,0 kg
SPR-PRC-TH-C-M: 5,5 kg
SPR-PRC-TH-F-M: 19,5 kg

Materials

- Machine frame: Steel
- Machine cover: Plastic
- Tool tray: NBR (Perbunan®)
- Machine feet: Natural rubber
- Assembly tools: Steel, uncoated, hardened

Operating Elements

- ⑦ Push/turn control button to select all relevant settings and assembly parameters
- ⑧ Smart programmable control panel with back-lit parameter display
- ⑨ Button for definite confirmation of entries made on the operating panel
- ⑩ Illuminated pushbutton to reset the cylinder and to indicate incorrect assemblies

Safety Devices

- ⑪ Selector switch to choose the operation mode (can be locked with a key and secured against unauthorised actuation, if required)
- ⑫ Main power switch
- ⑬ Separate emergency stop button to immediately stop all machine movements

Connections

- ⑭ Electrical connection according to IEC 60309 CEE 16A (cable length: 4 m)
- ⑮ USB connection for maintenance and data input by the manufacturer
- ⑯ Connections for tool heads for cutting ring assembly based on pre-defined pressure settings as well as for the external foot control switch SPR-PRC-FS (available on request)

Assembly Tools

- Tooling head SPR-PRC-TH-C-MA for cutting ring assembly based on automatic pressure setting (Pre-assembly is pre-defined) and with tool size detection via the support plates
- Tooling head SPR-PRC-TH-C-M for cutting ring assembly based on manual settings
- Tooling head SPR-PRC-TH-F-M for 37° tube flaring based on manual settings
- Wear-resistant cutting ring assembly stud FI-MFK
- Support plate FI-GP-...-PRC
- Clamping jaws FI-KB-...-PRC for 37° tube flaring

Motor Configuration

- Power supply: 400 V AC @ 50 Hz - 3 phases
- Current consumption: 2,8 A
- Connected load: 1,2 kW
- Electrical connection: Phase reversing plug according to IEC 60309 CEE 16A
- Cable length: 4 m

Alternative motor configurations and plug types are available on request. Please contact STAUFF for details.

Hydraulic System

- Operating fluid: Hydraulic oil Shell Nuto H 32 or equivalent (filled and ready for operation when delivered)
- Fluid volume: 4 litres
- Max working pressure: 200 bar

Operating Conditions

- Storage temperature: -10°C ... +70°C
- Ambient temperature: +10°C ... +50°C
- Ambient conditions: Dry, no condensing humidity, operation in horizontal position only
- Noise emission: less than 60 dB(A) as per EN ISO 11202



STAUFF Maintenance Contracts

Please contact STAUFF for a maintenance contract, that provides optimum service for your STAUFF assembly machine.



STAUFF Machine Rental

Please contact STAUFF for a rental machine and further details of what this service can offer.

Tooling Head for Cutting Ring Assembly (based on pre-defined settings)

Type SPR-PRC-TH-C-MA



- Tooling head SPR-PRC-TH-C-MA for cutting ring pre-assembly based on pre-defined settings and with automatic tool size detection via the support plates
- Requires cutting ring assembly studs FI-MFK and support plates FI-GP-PRC

Tooling Head for Cutting Ring Assembly (based on manual settings)

Type SPR-PRC-TH-C-M



- Tooling head SPR-PRC-TH-C-M for cutting ring pre-assembly based on manual settings
- Requires cutting ring assembly studs FI-MFK and support plates FI-GP-PRC

Tooling Head for 37° Tube Flaring (based on manual settings)

Type SPR-PRC-TH-F-M



- Tooling head SPR-PRC-TH-F-M for 37° tube flaring based on manual settings
- Requires clamping jaws FI-KB-PRC

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Assembly Tool Magazine

Type SPR-TM



- Provides safe and convenient storage for up to 10 assembly studs (type FI-MFK) as well as up to 10 support plates (types FI-GP and FI-GP-PRC) for the machine-assisted cutting ring assembly
- Assembly studs and support plates are not included in the scope of delivery for this item and have to be ordered separately

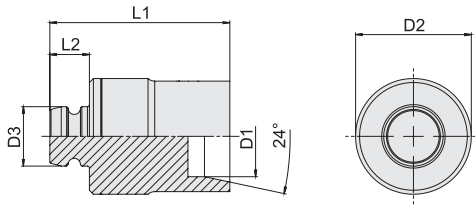
External Foot Control Switch

Type SPR-PRC-FS



- Enables the operator to trigger assembly processes from a larger distance to the machine (cable length: 5 m)

Cutting Ring Assembly Stud for Machine-Assisted Assembly Type FI-MFK • Series LL / L / S



| Series | Tube OD mm | Dimensions mm | | | | Weight kg ca. per 100 | Ordering Codes |
|--------|---------------|------------------|------|----|----|-----------------------------|-----------------|
| | | D1 | D2 | D3 | L1 | | |
| L | 6 | 30 | 14,8 | 50 | 10 | 13,57 | FI-MFK-06L-W100 |
| | 8 | 30 | 14,8 | 50 | 10 | 14,01 | FI-MFK-08L-W100 |
| | 10 | 30 | 14,8 | 50 | 10 | 14,63 | FI-MFK-10L-W100 |
| | 12 | 30 | 14,8 | 50 | 10 | 16,09 | FI-MFK-12L-W100 |
| | 15 | 30 | 14,8 | 50 | 10 | 16,63 | FI-MFK-15L-W100 |
| | 18 | 30 | 14,8 | 50 | 10 | 18,23 | FI-MFK-18L-W100 |
| | 22 | 30 | 14,8 | 49 | 10 | 19,13 | FI-MFK-22L-W100 |
| | 28 | 33,8 | 14,8 | 48 | 10 | 24,43 | FI-MFK-28L-W100 |
| | 35 | 42,8 | 14,8 | 45 | 10 | 32,72 | FI-MFK-35L-W100 |
| | 42 | 49,8 | 14,8 | 44 | 10 | 41,17 | FI-MFK-42L-W100 |
| S | 6 | 30 | 14,8 | 50 | 10 | 14,14 | FI-MFK-06S-W100 |
| | 8 | 30 | 14,8 | 50 | 10 | 14,68 | FI-MFK-08S-W100 |
| | 10 | 30 | 14,8 | 50 | 10 | 15,23 | FI-MFK-10S-W100 |
| | 12 | 30 | 14,8 | 50 | 10 | 15,89 | FI-MFK-12S-W100 |
| | 14 | 30 | 14,8 | 49 | 10 | 15,98 | FI-MFK-14S-W100 |
| | 16 | 30 | 14,8 | 49 | 10 | 16,65 | FI-MFK-16S-W100 |
| | 20 | 30 | 14,8 | 45 | 10 | 16,43 | FI-MFK-20S-W100 |
| | 25 | 33,8 | 14,8 | 42 | 10 | 19,02 | FI-MFK-25S-W100 |
| | 30 | 39,8 | 14,8 | 40 | 10 | 22,88 | FI-MFK-30S-W100 |
| | 38 | 49,8 | 14,8 | 36 | 10 | 26,41 | FI-MFK-38S-W100 |

Materials / surface finishings: **W100** Steel, PVD coated

Accessories



Cone Gauges

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Support Plate for Machine-Assisted Cutting Ring Assembly
Type FI-GP-PRC • Series L / S



| Series | Tube OD mm | Ordering Codes |
|--------|---------------|-----------------------|
| L | 6 | FI-GP-06L/S-PRC-MA-W1 |
| | 8 | FI-GP-08L/S-PRC-MA-W1 |
| | 10 | FI-GP-10L/S-PRC-MA-W1 |
| | 12 | FI-GP-12L/S-PRC-MA-W1 |
| | 15 | FI-GP-15L-PRC-MA-W1 |
| | 18 | FI-GP-18L-PRC-MA-W1 |
| | 22 | FI-GP-22L-PRC-MA-W1 |
| | 28 | FI-GP-28L-PRC-MA-W1 |
| | 35 | FI-GP-35L-PRC-MA-W1 |
| | 42 | FI-GP-42L-PRC-MA-W1 |
| S | 6 | FI-GP-06L/S-PRC-MA-W1 |
| | 8 | FI-GP-08L/S-PRC-MA-W1 |
| | 10 | FI-GP-10L/S-PRC-MA-W1 |
| | 12 | FI-GP-12L/S-PRC-MA-W1 |
| | 14 | FI-GP-14S-PRC-MA-W1 |
| | 16 | FI-GP-16S-PRC-MA-W1 |
| | 20 | FI-GP-20S-PRC-MA-W1 |
| | 25 | FI-GP-25S-PRC-MA-W1 |
| | 30 | FI-GP-30S-PRC-MA-W1 |
| | 38 | FI-GP-38S-PRC-MA-W1 |

Materials / surface finishings: **W1** Steel, uncoated, hardened

Clamping Jaws for 37° Tube Flaring Type FI-KB • Series L / S



37° Flaring of Metric Tube Ends

| Series | Tube OD mm | Ordering Codes | | |
|--------|---------------|-----------------------|-------------------------|------------------------|
| | | DIN 3949 | SAE J514 / ISO 8434-2 | |
| L | 6 | FI-KB-06L/S-PRC-MF-W1 | FI-KB-06-PRC-F-W1 | |
| | 8 | FI-KB-08L/S-PRC-MF-W1 | FI-KB-08/5/16-PRC-F-W1 | |
| | 10 | FI-KB-10L/S-PRC-MF-W1 | FI-KB-10-PRC-F-W1 | |
| | 12 | FI-KB-12L/S-PRC-MF-W1 | FI-KB-12-PRC-F-W1 | |
| | 15 | FI-KB-15L-PRC-MF/F-W1 | | |
| | 18 | FI-KB-18L-PRC-MF/F-W1 | | |
| | 22 | FI-KB-22L-PRC-MF/F-W1 | | |
| | 28 | FI-KB-28L-PRC-MF-W1 | FI-KB-28-PRC-F-W1 | |
| | 35 | FI-KB-35L-PRC-MF-W1 | FI-KB-35-PRC-F-W1 | |
| | 42 | FI-KB-42L-PRC-MF-W1 | FI-KB-42-PRC-F-W1 | |
| | S | 6 | FI-KB-06L/S-PRC-MF-W1 | FI-KB-06-PRC-F-W1 |
| | | 8 | FI-KB-08L/S-PRC-MF-W1 | FI-KB-08/5/16-PRC-F-W1 |
| 10 | | FI-KB-10L/S-PRC-MF-W1 | FI-KB-10-PRC-F-W1 | |
| 12 | | FI-KB-12L/S-PRC-MF-W1 | FI-KB-12-PRC-F-W1 | |
| 14 | | FI-KB-14S-PRC-MF/F-W1 | | |
| 16 | | FI-KB-16S-PRC-MF-W1 | FI-KB-16-PRC-F-W1 | |
| 20 | | FI-KB-20S-PRC-MF-W1 | FI-KB-20-PRC-F-W1 | |
| 25 | | FI-KB-25S-PRC-MF-W1 | FI-KB-25-PRC-F-W1 | |
| 30 | | FI-KB-30S-PRC-MF/F-W1 | | |
| 30 x 5 | | FI-KB-30SX5-PRC-MF-W1 | FI-KB-38/1-1/2-PRC-F-W1 | |
| 38 | | FI-KB-38S-PRC-MF-W1 | | |
| 38 x 5 | | FI-KB-38SX5-PRC-MF-W1 | | |

37° Flaring of Imperial Tube Ends

| Tube OD mm | Ordering Codes |
|---------------|-------------------------|
| | SAE J514 / ISO 8434-2 |
| 1/4 | FI-KB-1/4-PRC-F-W1 |
| 5/16 | FI-KB-08/5/16-PRC-F-W1 |
| 3/8 | FI-KB-3/8-PRC-F-W1 |
| 1/2 | FI-KB-1/2-PRC-F-W1 |
| 5/8 | FI-KB-5/8-PRC-F-W1 |
| 3/4 | FI-KB-3/4-PRC-F-W1 |
| 7/8 | FI-KB-7/8-PRC-F-W1 |
| 1 | FI-KB-1-PRC-F-W1 |
| 1-1/4 | FI-KB-1-1/4-PRC-F-W1 |
| 1-1/2 | FI-KB-38/1-1/2-PRC-F-W1 |

Materials / surface finishings: W1 Steel, uncoated, hardened

STAUFF Press Portable Cutting Ring Assembly Machine with Manual Pressure Setting (Set) Type SPR-PRC-H-E-SET

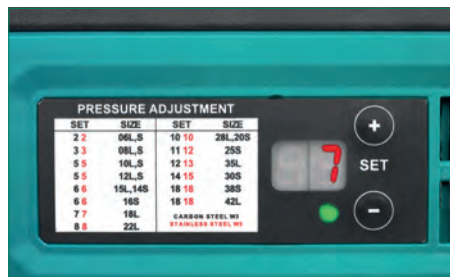
Product Description

With the battery-operated STAUFF Press Assembly Machine SPR-PRC-H-E-SET, STAUFF provides an ergonomically designed, light-weight and at the same time robust device for the assembly of cutting rings made of Carbon Steel and Stainless Steel in the Light Series (L) as well as in the Heavy Series (S) according to ISO 8434-1 / DIN 2353 on metric tube ends with outer diameters from 6 mm to 42 mm.

The machine has been designed for hand-held, tripod- or table-mounted operation and offers the best technical compromise between maximum flexibility, economic efficiency and a high level of process reliability with considerable reduction of time and cost for the assembly of cutting ring fittings.

Short tool change and setup times (with only a few seconds required to manually adjust the assembly pressure) make it possible to carry out the assembly of medium and even small quantities of cutting ring fittings, e.g. during maintenance, servicing, conversion and repair works on hydraulic pipe and tube systems. With the rechargeable battery being able to typically cover more than 200 assembly cycles per charge (depending on pressure settings and other influencing factors), the machine is also suitable for mass processing and production.

The assembly machine is by default supplied in a heavy-duty trolley transport case that is equipped with a range of accessories and also provides suitable space for the assembly studs.



Operating element to adjust the pressure setting (settings indicated on the machine housing) incl. status lights



Assembly machine attached to a tripod stand using a mounting bracket



Heavy-duty trolley transport case



STAUFF Press Portable Cutting Ring Assembly Machine with Manual Pressure Setting (Set) Type SPR-PRC-H-E-SET

Technical Data

Area of Application

- Function: Pressure-controlled assembly of cutting rings made of Carbon Steel and Stainless Steel acc. to ISO 8434-1 / DIN 2353 on metric tube ends
Light (L): 6, 8, 10, 12, 15, 18, 22, 28, 35 and 42 mm
Heavy (S): 6, 8, 10, 12, 14, 16, 20, 25, 30 and 38 mm

Dimensions / Weight

- Dimensions (L x H x W): 440 mm x 330 mm x 80 mm
(including rechargeable battery)
- Weight (basic machine): 6,9 kg
(including rechargeable battery)
- Weight (case): 16,6 kg
(including assembly machine and accessories)
- Case: IP67 certified, equipped with o-ring seal and automatic pressure valve

Materials

- Machine cover: Plastic
- Tool head: Steel, uncoated, hardened
- Assembly studs: Stainless steel, hardened

List of Components

Set supplied in a heavy-duty trolley transport case:

- ① Light-weight and ergonomically designed cutting ring assembly machine for the hand-held, tripod-mounted or table-mounted operation
- ② Rechargeable battery
- ③ Additional replacement battery
- ④ Battery quick charging unit
- ⑤ Clips (to keep the assembly stud in position)
- ⑥ Assembly oil with brush (to lubricate the taper of the assembly stud)
- ⑦ Shoulder strap

Equipment to be ordered separately:

- ⑧ Cutting Ring Assembly Studs **FI-MVK-PRC-H-M-HR**

Spare Parts

- Assembly oil with brush **SPR-PRC-H-M-OS**
(required to lubricate the taper of the assembly stud)
- Rechargeable Battery **SPR-PRC-H-M-BP**
- Battery Quick Charging Unit **SPR-PRC-H-M-BC**

Rechargeable Battery

- Typically covers more than 200 assembly cycles per charge (depending on pressure settings and other influencing factors)
- Battery type: Lithium-ion (18V / 5.0 Ah)

Charging Unit

- Charging time for empty batteries is approximately 75 minutes
- Power supply: 230 V AC @ 50 Hz - single-phase
- Electrical connection: 2-pin grounded safety plug (CEE 7/4, type F / Schuko)
- Cable length: 1,10 m

Accessories



- Tripod Stand **SPR-PRC-H-M-TP**



- Table Stand **SPR-PRC-H-M-TS**



- Mounting Bracket **SPR-PRC-H-M-MH**
(required as a machine holder for both the tripod stand and the table stand)

Cutting Ring Assembly Stud for Machine-Assisted Assembly
Type FI-MVK-PRC-H-M ▪ Series L / S



| Series | Tube OD mm | Ordering Codes |
|--------|------------|-----------------------|
| L | 6 | FI-MVK-06L-PRC-H-M-HR |
| | 8 | FI-MVK-08L-PRC-H-M-HR |
| | 10 | FI-MVK-10L-PRC-H-M-HR |
| | 12 | FI-MVK-12L-PRC-H-M-HR |
| | 15 | FI-MVK-15L-PRC-H-M-HR |
| | 18 | FI-MVK-18L-PRC-H-M-HR |
| | 22 | FI-MVK-22L-PRC-H-M-HR |
| | 28 | FI-MVK-28L-PRC-H-M-HR |
| | 35 | FI-MVK-35L-PRC-H-M-HR |
| | 42 | FI-MVK-42L-PRC-H-M-HR |
| S | 6 | FI-MVK-06S-PRC-H-M-HR |
| | 8 | FI-MVK-08S-PRC-H-M-HR |
| | 10 | FI-MVK-10S-PRC-H-M-HR |
| | 12 | FI-MVK-12S-PRC-H-M-HR |
| | 14 | FI-MVK-14S-PRC-H-M-HR |
| | 16 | FI-MVK-16S-PRC-H-M-HR |
| | 20 | FI-MVK-20S-PRC-H-M-HR |
| | 25 | FI-MVK-25S-PRC-H-M-HR |
| | 30 | FI-MVK-30S-PRC-H-M-HR |
| | 38 | FI-MVK-38S-PRC-H-M-HR |

Materials / surface finishing: **HR** Stainless steel, hardened

Manual Cutting Ring Pre-Assembly Device Type SPR-PRC-MP

Product Description

The manual cutting ring pre-assembly device can be used to pre-assemble hydraulic lines made of steel and stainless steel with an outer diameter of 6 - 42 mm.

For flexible use on site, the tool is supplied in a robust steel case. In the case there is also space for STAUFF cutting ring assembly studs type FI-MFK and support plates type FI-GP-PRC. These are not included in the scope of delivery, but can be purchased separately.



Product Features

- Pressure-controlled, manual assembly of steel and stainless steel cutting rings (ISO 8434-1 / DIN 2353) on metric tube ends from 6 to 42 mm in the light series and 6 to 38 mm in the heavy series
- For cutting rings of the FI-DS, FI-WDDS and FI-WDDS-W5 series
- Pressure values can be read on the device and precisely adjustable via manometer
- incl. robust steel case with storage space for accessories
- Ideally suited for flexible on-site use, e.g. for installation on the construction site without a power supply

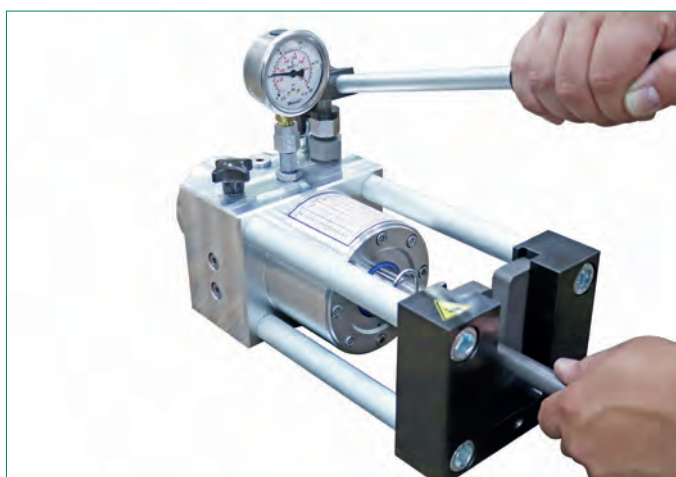
Ordering Code

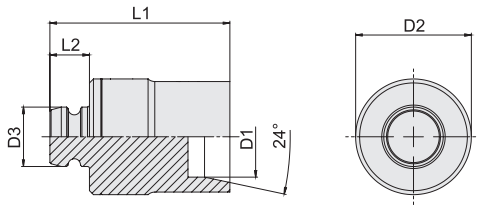
- Manual Cutting Ring Pre-Assembly Device

SPR-PRC-MP

Technical Data

- Dimensions W x D x H (incl. Case):
435,7 mm x 253 mm x 150 mm
(750 mm x 335 mm x 175 mm)
- Weight (incl. Case):
15 kg (23 kg)



**Cutting Ring Assembly Stud for Manual Assembly
Type FI-MFK • Series LL / L / S**


| Series | Tube OD mm | Dimensions mm | | | | Weight kg ca. per 100 | Ordering Codes |
|--------|---------------|------------------|------|----|----|-----------------------------|-----------------|
| | | D1 | D2 | D3 | L1 | | |
| L | 6 | 30 | 14,8 | 50 | 10 | 13,57 | FI-MFK-06L-W100 |
| | 8 | 30 | 14,8 | 50 | 10 | 14,01 | FI-MFK-08L-W100 |
| | 10 | 30 | 14,8 | 50 | 10 | 14,63 | FI-MFK-10L-W100 |
| | 12 | 30 | 14,8 | 50 | 10 | 16,09 | FI-MFK-12L-W100 |
| | 15 | 30 | 14,8 | 50 | 10 | 16,63 | FI-MFK-15L-W100 |
| | 18 | 30 | 14,8 | 50 | 10 | 18,23 | FI-MFK-18L-W100 |
| | 22 | 30 | 14,8 | 49 | 10 | 19,13 | FI-MFK-22L-W100 |
| | 28 | 33,8 | 14,8 | 48 | 10 | 24,43 | FI-MFK-28L-W100 |
| | 35 | 42,8 | 14,8 | 45 | 10 | 32,72 | FI-MFK-35L-W100 |
| | 42 | 49,8 | 14,8 | 44 | 10 | 41,17 | FI-MFK-42L-W100 |
| S | 6 | 30 | 14,8 | 50 | 10 | 14,14 | FI-MFK-06S-W100 |
| | 8 | 30 | 14,8 | 50 | 10 | 14,68 | FI-MFK-08S-W100 |
| | 10 | 30 | 14,8 | 50 | 10 | 15,23 | FI-MFK-10S-W100 |
| | 12 | 30 | 14,8 | 50 | 10 | 15,89 | FI-MFK-12S-W100 |
| | 14 | 30 | 14,8 | 49 | 10 | 15,98 | FI-MFK-14S-W100 |
| | 16 | 30 | 14,8 | 49 | 10 | 16,65 | FI-MFK-16S-W100 |
| | 20 | 30 | 14,8 | 45 | 10 | 16,43 | FI-MFK-20S-W100 |
| | 25 | 33,8 | 14,8 | 42 | 10 | 19,02 | FI-MFK-25S-W100 |
| | 30 | 39,8 | 14,8 | 40 | 10 | 22,88 | FI-MFK-30S-W100 |
| | 38 | 49,8 | 14,8 | 36 | 10 | 26,41 | FI-MFK-38S-W100 |

 Materials / surface finishings: **W100** Steel, PVD coated

Accessories


Cone Gauges

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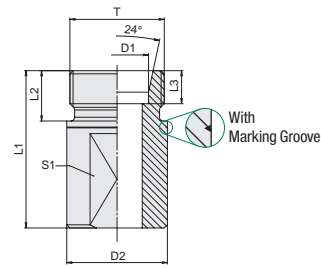
Support Plate for Manual Cutting Ring Assembly
Type FI-GP-PRC • Series L / S



| Series | Tube OD mm | Ordering Codes |
|--------|---------------|-----------------------|
| L | 6 | FI-GP-06L/S-PRC-MA-W1 |
| | 8 | FI-GP-08L/S-PRC-MA-W1 |
| | 10 | FI-GP-10L/S-PRC-MA-W1 |
| | 12 | FI-GP-12L/S-PRC-MA-W1 |
| | 15 | FI-GP-15L-PRC-MA-W1 |
| | 18 | FI-GP-18L-PRC-MA-W1 |
| | 22 | FI-GP-22L-PRC-MA-W1 |
| | 28 | FI-GP-28L-PRC-MA-W1 |
| | 35 | FI-GP-35L-PRC-MA-W1 |
| | 42 | FI-GP-42L-PRC-MA-W1 |
| S | 6 | FI-GP-06L/S-PRC-MA-W1 |
| | 8 | FI-GP-08L/S-PRC-MA-W1 |
| | 10 | FI-GP-10L/S-PRC-MA-W1 |
| | 12 | FI-GP-12L/S-PRC-MA-W1 |
| | 14 | FI-GP-14S-PRC-MA-W1 |
| | 16 | FI-GP-16S-PRC-MA-W1 |
| | 20 | FI-GP-20S-PRC-MA-W1 |
| | 25 | FI-GP-25S-PRC-MA-W1 |
| | 30 | FI-GP-30S-PRC-MA-W1 |
| | 38 | FI-GP-38S-PRC-MA-W1 |

Materials / surface finishings: **W1** Steel, uncoated, hardened

Final Assembly Stud for the Manual Cutting Ring Assembly Type FI-FK • Series LL / L / S



| Series | Tube OD mm | Dimensions mm | | | | | | Weight kg ca. per 100 | Ordering Codes |
|--------|---------------|------------------|----------|----|------|------|-------|-----------------------------|----------------|
| | | D1 | Thread T | D2 | L1 | L2 | L3 | | |
| LL | 4 | M 8 x 1 | 14 | 40 | 8 | 4 | 11 | 3,74 | FI-FK-04LL-HR |
| | 6 | M 10 x 1 | 14 | 40 | 8 | 5,5 | 11 | 3,81 | FI-FK-06LL-HR |
| | 8 | M 12 x 1 | 14 | 41 | 9 | 5,5 | 11 | 4,00 | FI-FK-08LL-HR |
| L | 6 | M 12 x 1,5 | 14 | 43 | 10 | 7 | 11 | 4,21 | FI-FK-06L-HR |
| | 8 | M 14 x 1,5 | 15 | 43 | 10 | 7 | 12 | 4,96 | FI-FK-08L-HR |
| | 10 | M 16 x 1,5 | 17 | 44 | 11 | 7 | 14 | 6,57 | FI-FK-10L-HR |
| | 12 | M 18 x 1,5 | 20 | 44 | 11 | 7 | 17 | 9,06 | FI-FK-12L-HR |
| | 15 | M 22 x 1,5 | 23 | 45 | 12 | 7 | 19 | 12,34 | FI-FK-15L-HR |
| | 18 | M 26 x 1,5 | 29 | 46 | 12 | 7,5 | 24 | 19,62 | FI-FK-18L-HR |
| | 22 | M 30 x 2 | 32 | 48 | 14 | 7,5 | 27 | 25,11 | FI-FK-22L-HR |
| | 28 | M 36 x 2 | 38 | 48 | 14 | 7,5 | 32 | 35,07 | FI-FK-28L-HR |
| | 35 | M 45 x 2 | 48 | 60 | 16 | 10,5 | 41 | 69,87 | FI-FK-35L-HR |
| | 42 | M 52 x 2 | 54 | 60 | 16 | 11 | 46 | 87,41 | FI-FK-42L-HR |
| S | 6 | M 14 x 1,5 | 15 | 45 | 12 | 7 | 12 | 5,34 | FI-FK-06S-HR |
| | 8 | M 16 x 1,5 | 17 | 45 | 12 | 7 | 14 | 6,92 | FI-FK-08S-HR |
| | 10 | M 18 x 1,5 | 20 | 45 | 12 | 7,5 | 17 | 9,44 | FI-FK-10S-HR |
| | 12 | M 20 x 1,5 | 22 | 45 | 12 | 7,5 | 17 | 10,87 | FI-FK-12S-HR |
| | 14 | M 22 x 1,5 | 24 | 47 | 14 | 8 | 19 | 13,59 | FI-FK-14S-HR |
| | 16 | M 24 x 1,5 | 27 | 48 | 14 | 8,5 | 22 | 17,49 | FI-FK-16S-HR |
| | 20 | M 30 x 2 | 32 | 50 | 16 | 10,5 | 27 | 25,83 | FI-FK-20S-HR |
| | 25 | M 36 x 2 | 38 | 62 | 18 | 12 | 32 | 46,15 | FI-FK-25S-HR |
| 30 | M 42 x 2 | 44 | 64 | 20 | 13,5 | 36 | 62,34 | FI-FK-30S-HR | |
| 38 | M 52 x 2 | 54 | 66 | 22 | 16 | 46 | 95,92 | FI-FK-38S-HR | |

Materials / surface finishings: HR Steel, uncoated, hardened

Accessories



Cone Gauges

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STAUFF Form EVO Tube Forming Machine Type SFO-F-A-A-IOT



Product Description

The type SFO-F-A-A-IOT tube forming machine facilitates the economical and most reliable production of tube ends made of steel, stainless steel and other materials with a contour typical for the STAUFF Form EVO tube forming system.

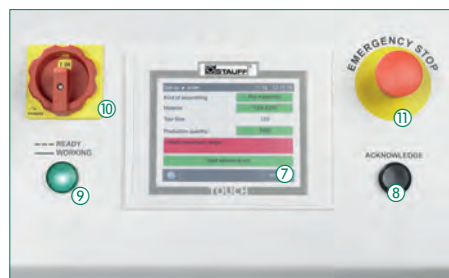
The machine is designed as a robust table-top device for continuous operation in the workshop. It is used in connection with FI-FST tube shapers and FI-FB clamping jaws. Tube shapers with FI-ID internal tube supports are used with selected tube dimensions, which prevent the tube from being constricted in the shaping area.

Tube shapers, clamping jaws and internal tube supports have been specifically designed for the mechanical forming process and can be quickly and simply replaced without the need for any tools, if required. The resulting short tool change and set-up times contribute to the high efficiency of the system as well as ensuring low cycle times.

All the tools needed for the forming process are clearly labelled with the tube dimensions so that assembly errors caused by incorrect assignment can be largely ruled out.



**STAUFF Form EVO Sealing Ring
Type FI-FD, see Page 32**



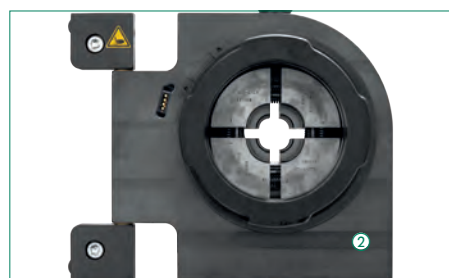
Operating elements of the tube forming machine



Noise-reducing tool tray with durable rubber mat



Lateral handle bars and rubber machine feet with suitable clearance height



Open clamping head with clamping jaws inserted



Inserting the tube shaper into the tool holder – with no tools required



Electrical connections

Cloud connection allows preventive maintenance via remote access and facilitates the documentation of assembly processes



Tube forming machines type SFO-F-A-A are equipped at the factory with a built-in module for direct connection to a cloud operated by STAUFF. This solution is realised with an integrated SIM card which can be used in all industrial regions of the world.

This enables software updates, for example, without having to connect the machine to a local network on site. Parameter sets, which have been determined by STAUFF for non-standard tube materials can also be transferred quickly and directly to the machine in this way.

Customers are given access to the cloud via a protected online portal, where they can get detailed information on the assembly processes performed, among other things.

The required data security is guaranteed by encryption in both directions.

STAUFF Form EVO Tube Forming Machine Type SF0-F-A-A-IOT

Characteristics

Performance

- Constant high process safety, reliability and reproducibility by the position-control of the machine, which performs the shaping process following a manual start and monitors it by means of stored parameters
- Integrated Light Barrier Module in Clamping Head automatically moves to the starting point after each shaping process
- Maximum efficiency thanks to short cycle times – ideal for series production
- Quick and simple replacement of tube shapers (with bayonet lock) and clamping jaws when changing the tube dimensions – with no tools required
- Potential risk of confusion and assembly errors caused by incorrect assignment can virtually be ruled out by the clear labelling of all assembly tools
- Surface-friendly clamping of the tube during the forming process
- Counters for lot/batch sizes and total quantities (separated by tool size)
- Predefined menu languages: English, German, French and Italian
- High degree of user comfort with clear information displayed on the operating panel

Design

- ① Robust and ergonomically designed machine housing
- ② Easily accessible clamping head with Light Barrier Module for simple positioning of the clamping jaws and optimised assembly area with approx. 110 mm distance from the tube axis to the interfering edge of the machine housing, which allows processing of tubes with low bending radii or complex geometries
- ③ Noise-reducing tool tray with durable rubber mat
- ④ Lateral handle bars as attachment points for transport (e.g. with lifting belts)
- ⑤ Secure positioning thanks to flexible rubber machine feet
- ⑥ Type plate, with technical data, serial number, year of manufacture etc.

Technical Data

Area of Application

- **Function:** Cold forming of seamless cold drawn precision steel tubes acc. to EN 10305-1 (materials E235, E355) and stainless steel tubes (material 1.4571 / AISI 316 Ti)

Parameters for alternative materials can be added by the manufacturer, if required. Please contact STAUFF for details.

- **Operating principle:** Tube forming with combined pressure/position-control
- **Series and dimensions:** Light Series (L): 6 x 1,5 mm to 42 x 4 mm
Heavy Series (S): 6 x 1,5 mm to 38 x 6 mm

Dimensions / Weight

- **Dimensions (W x D x H):** 850 mm x 890 mm x 330 mm with lateral handle bars (detachable)
- **Distance from the tube axis to the interfering edge of the machine housing:** 110 mm
- **Clearance height:** 65 mm (height of the machine feet) enables simple and safe transport using a forklift or pallet jack
- **Weight:** 210 kg (including operating fluid, excluding forming tools)

Materials

- **Machine frame:** Aluminium
- **Machine housing:** Steel, painted
- **Tool tray:** NBR (Perbunan®)
- **Machine feet:** Natural rubber
- **Form rings:** Steel, zinc/nickel-plated
- **Form rings (seal):** FKM (Viton®)

Operating Elements

- ⑦ Operating panel for display and selection of all relevant settings and forming parameters
- ⑧ Button for definite confirmation of entries made on the operating panel
- ⑨ Status light to indicate readiness for operation and running assembly processes

Safety Devices

- ⑩ Main power switch (can be secured against unauthorised actuation when required)
- ⑪ Separate emergency stop button to immediately stop all machine movements

Connections (at the back of the machine)

- ⑫ Electrical connection according to IEC 60309 CEE 16A (cable length: 4 m)
- ⑬ Connection for External Foot Control Switch Type SF0/PRC-POC-FS
- ⑭ Ethernet connection (RJ45) for maintenance and data input by the manufacturer
- ⑮ Aerial IoT Gateway for preventive maintenance via remote access and facilitates the documentation of assembly processes
- ⑯ Filter Housing with replaceable filter fleece for clean heat regulation

Tube Forming Tools

- ⑰ Clamping Jaws FI-FB with clear identification of the tube dimension
- ⑱ Version of a Tube Shaper FI-FST with Internal Tube Support FI-ID
- ⑲ Tube Shaper FI-FST with clear identification of the tube dimensions

Motor Configuration

- **Power supply:** 400 V AC @ 50 Hz - 3 phases
460 V AC @ 60 Hz - 3 phases
- **Current consumption:** 2,55 A
- **Connected load:** 1,0 kW
- **Electrical connection:** Phase reversing plug according to IEC 60309 CEE 16A
- **Cable length:** 4 m

Alternative motor configurations and plug types are available on request. Please contact STAUFF for details.

Hydraulic System

- **Operating fluid:** Hydraulic oil Shell Tellus S2 MA 46 or equivalent (filled and ready for operation when delivered)
- **Fluid volume:** 6,1 litres
- **Max working pressure:** 700 bar

Operating Conditions

- **Storage temperature:** -10°C ... +70°C
- **Ambient temperature:** +15°C ... +35°C
- **Ambient conditions:** Dry, no condensing humidity, operation in horizontal position only
- **Noise emission:** less than 69 dB(A) as per EN ISO 11202 at full-load operation with maximum tube dimensions



STAUFF Maintenance Contracts

Please contact STAUFF for a maintenance contract, that provides optimum service for your STAUFF Tube Forming Machine.



STAUFF Machine Rental

Please contact STAUFF for a rental machine and further details of what this service can offer.

STAUFF Form EVO Tube Shapers ▪ Type FI-FST
STAUFF Form EVO Internal Tube Supports ▪ Type FI-ID



Materials / surface finishings: **HR Steel**, uncoated, hardened

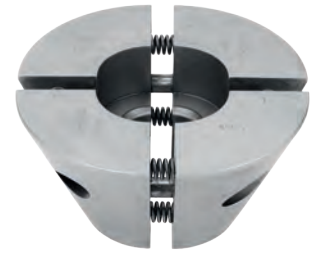
| Tube OD mm | Tube Wall Thickness mm | Weight per piece kg ca. | Ordering Codes | |
|---------------|------------------------------|----------------------------|-----------------------------|------------------------|
| | | | Tube Shapers | Internal Tube Supports |
| 6 | 1,5 | 1,95 | FI-FST-06L/S-F2-S-A | |
| | 2,0 | | | |
| 8 | 1,5 | 1,97 | FI-FST-08L/S-F2-S-A | |
| | 2,0 | | | |
| | 2,5 | | | |
| 10 | 1,5 | 1,98 | FI-FST-10L/S-F2-S-A | |
| | 2,0 | | | |
| | 2,5 | | | |
| | 3,0 | | | |
| 12 | 1,5 | 1,99 | FI-FST-12L/S-1.5-F2-S-A | FI-ID-12x1.5-HR/2 |
| | 2,0 | | FI-FST-12L/S-2/2.5/3-F2-S-A | |
| | 2,5 | | | |
| | 3,0 | | | |
| 15 | 1,5 | 2,0 | FI-FST-15L-F2-S-A | FI-ID-15x1.5-HR/2 |
| | 2,0 | | | FI-ID-15x2.0-HR/2 |
| | 2,5 | | | FI-ID-15x2.5-HR/2 |
| 16 | 1,5 | 2,04 | FI-FST-16S-2/2.5-F2-S-A | FI-ID-18x2.5-HR/2 |
| | 2,0 | | | FI-ID-16x2.0-HR/2 |
| | 2,5 | | | FI-ID-16x2.5-HR/2 |
| | 3,0 | | FI-FST-16S-3/4-F2-S-A | |
| | 4,0 | | | |
| 18 | 2,0 | 1,97 | FI-FST-18L-2/2.5-F2-S-A | FI-ID-18x2.0-HR/2 |
| | 2,5 | | | FI-ID-18x2.5-HR/2 |
| | 3,0 | | FI-FST-18L-3-F2-S-A | |
| | 4,0 | | | |
| 20 | 2,0 | 1,98 | FI-FST-20S-2/2.5-F2-S-A | FI-ID-20x2.0-HR/2 |
| | 2,5 | | | FI-ID-20x2.5-HR/2 |
| | 3,0 | | FI-FST-20S-3/3.5/4-F2-S-A | |
| | 3,5 | | | |
| | 4,0 | | | |
| 22 | 2,0 | 1,95 | FI-FST-22L-2/2.5-F2-S-A | FI-ID-22x2.0-HR/2 |
| | 2,5 | | | FI-ID-22x2.5-HR/2 |
| | 3,0 | | FI-FST-22L-3/3.5-F2-S-A | |
| | 3,5 | | | |
| 25 | 2,0 | 1,96 | FI-FST-25S-2/2.5-F2-S-A | FI-ID-25x2.0-HR/2 |
| | 2,5 | | | FI-ID-25x2.5-HR/2 |
| | 3,0 | | FI-FST-25S-3/3.5/4/5-F2-S-A | |
| | 3,5 | | | |
| | 4,0 | | | |
| 28 | 2,0 | 1,96 | FI-FST-28L-2/2.5/3-F2-S-A | FI-ID-28x2.0-HR/2 |
| | 2,5 | | | FI-ID-28x2.5-HR/2 |
| | 3,0 | | FI-FST-28L-3.5/4-F2-S-A | FI-ID-28x3.0-HR/2 |
| | 3,5 | | | |
| | 4,0 | | | |
| 30 | 2,5 | 1,95 | FI-FST-30S-2.5/3-F2-S-A | FI-ID-30x2.5-HR/2 |
| | 3,0 | | | FI-ID-30x3.0-HR/2 |
| | 4,0 | | FI-FST-30S-4/5/6-F2-S-A | |
| | 5,0 | | | |
| | 6,0 | | | |
| 35 | 2,5 | 2,0 | FI-FST-35L-2.5/3-F2-S-A | FI-ID-35x2.5-HR/2 |
| | 3,0 | | FI-ID-35x3.0-HR/2 | |
| | 4,0 | | FI-FST-35L-4/5-F2-S-A | |
| | 5,0 | | | |
| 38 | 3,0 | 1,82 | FI-FST-38S-3/4-F2-S-A | FI-ID-38x3.0-HR/2 |
| | 4,0 | | | FI-ID-38x4.0-HR/2 |
| | 5,0 | | FI-FST-38S-5/6-F2-S-A | |
| | 6,0 | | | |
| 42 | 3,0 | 1,94 | FI-FST-42L-F2-S-A | FI-ID-42x3.0-HR/2 |
| | 3,5 | | | FI-ID-42x3.5-HR/2 |
| | 4,0 | | | FI-ID-42x4.0-HR/2 |

Please note:

The selection chart is only applicable in conjunction with seamless cold drawn precision steel tubes according to EN 10305-1 (materials E235, E355) and stainless steel tubes (material 1.4571 / AISI 316 Ti).

Please consult STAUFF for information regarding the processing of tubes made from stainless steel and other materials.

STAUFF Form EVO Clamping Jaws ▪ Type FI-FB



| Tube OD | Series | Weight per piece | Ordering Codes |
|---------|--------|------------------|--------------------|
| mm | | kg ca. | |
| 6 | L / S | 2,37 | FI-FB-06L/S-F2-S-A |
| 8 | L / S | 2,36 | FI-FB-08L/S-F2-S-A |
| 10 | L / S | 2,32 | FI-FB-10L/S-F2-S-A |
| 12 | L / S | 2,30 | FI-FB-12L/S-F2-S-A |
| 15 | L | 2,37 | FI-FB-15L-F2-S-A |
| 16 | S | 2,31 | FI-FB-16S-F2-S-A |
| 18 | L | 2,28 | FI-FB-18L-F2-S-A |
| 20 | S | 2,24 | FI-FB-20S-F2-S-A |
| 22 | L | 2,32 | FI-FB-22L-F2-S-A |
| 25 | S | 2,17 | FI-FB-25S-F2-S-A |
| 28 | L | 2,32 | FI-FB-28L-F2-S-A |
| 30 | S | 2,05 | FI-FB-30S-F2-S-A |
| 35 | L | 1,92 | FI-FB-35L-F2-S-A |
| 38 | S | 1,92 | FI-FB-38S-F2-S-A |
| 42 | L | 1,77 | FI-FB-42L-F2-S-A |

 Overview tube dimensions
 Parameter and Tools STAUFF Form EVO

Carbon Steel

| Size | Wallthickness | | | | | | | | |
|------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | 1 | 1,5 | 2 | 2,5 | 3 | 3,5 | 4 | 5 | 6 |
| | E235/ E355 | E235/ E355 | E235/ E355 | E235/ E355 | E235/ E355 | E235/ E355 | E235/ E355 | E235/ E355 | E235/ E355 |
| 6 | - | | - | - | - | - | - | - | - |
| 8 | - | | | | - | - | - | - | - |
| 10 | - | | | | | - | - | - | - |
| 12 | - | ▪ | | | | - | - | - | - |
| 15 | - | ▪ | ▪ | ▪ | - | - | - | - | - |
| 16 | - | ▪ | ▪ | ▪ | | - | | - | - |
| 18 | - | - | ▪ | ▪ | | - | | - | - |
| 20 | - | - | ▪ | ▪ | | | | - | - |
| 22 | - | - | ▪ | ▪ | | | | - | - |
| 25 | - | - | ▪ | ▪ | | | | | - |
| 28 | - | - | ▪ | ▪ | ▪ | | | | - |
| 30 | - | - | - | ▪ | ▪ | | | | |
| 35 | - | - | - | ▪ | ▪ | | | | |
| 38 | - | - | - | - | ▪ | | ▪ | | |
| 42 | - | - | - | - | ▪ | ▪ | ▪ | | |

Parameter set and tools available. To use without tube supports.

Stainless Steel

| Wallthickness | Size | | | | | | | | |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1 | 1,5 | 2 | 2,5 | 3 | 3,5 | 4 | 5 | 6 |
| | 316ti | 316ti | 316ti | 316ti | 316ti | 316ti | 316ti | 316ti | 316ti |
| - | | | | - | - | - | - | - | - |
| - | | | | - | - | - | - | - | - |
| - | | | | - | - | - | - | - | - |
| - | ▪ | | | | - | - | - | - | - |
| - | ▪ | ▪ | ▪ | | - | - | - | - | - |
| - | - | ▪ | ▪ | | - | - | - | - | - |
| - | - | ▪ | ▪ | | - | - | - | - | - |
| - | - | ▪ | ▪ | | - | - | - | - | - |
| - | - | ▪ | ▪ | | - | - | - | - | - |
| - | - | ▪ | ▪ | ▪ | - | - | - | - | - |
| - | - | - | ▪ | ▪ | - | - | - | - | - |
| - | - | - | - | ▪ | - | - | ▪ | - | - |
| - | - | - | - | - | ▪ | - | - | - | - |
| - | - | - | - | - | ▪ | - | - | - | - |

Parameter set and tools available. To use with internal tube supports.

External Foot Control Switch
Type SFO/PRC-POC-FS



- Enables the operator to trigger assembly processes from a larger distance to the machine (cable length: 7 m)

STAUFF Form EVO Oil
Type Oel-Stauff-Form-1L



- Enables faultless, mechanical tube forming with STAUFF Form EVO machines when using stainless steel tubes

STAUFF Oil with brush
Type SPR-PRC-H-M-OS



- Enables faultless, mechanical tube forming with STAUFF Form EVO machines when using stainless steel tubes



Thread Identification Board

FI-TIB

282



Cone Gauges

FI-KOL

283

Thread Identification Board Type FI-TIB

Product Description

The STAUFF Thread Identification Board is intended to be used as a universal tool for workshops, warehouses or sales counters allowing quick and easy determination of common thread types and sizes, e.g. for male stud tube connectors and test couplings.

The board is available in two different versions:

FI-TIB-M/G

13 Metric Parallel Threaded Ports

M8 x 1 / M10 x 1 / M12 x 1,5 / M14 x 1,5 /
M16 x 1,5 / M18 x 1,5 / M20 x 1,5 / M22 x 1,5 /
M26 x 1,5 / M27 x 2 / M33 x 2 / M42 x 2 / M48 x 2

8 Whitworth Parallel Pipe Threaded Ports

G1/8 / G1/4 / G3/8 / G1/2 / G3/4 / G1 / G1 1/4 / G1 1/2

FI-TIB-N/U

8 National Pipe Threaded Ports

1/8–27 NPT / 1/4–18 NPT / 3/8–18 NPT /
1/2–14 NPT / 3/4–14 NPT / 1–11.5 NPT /
1 1/4–11.5 NPT / 1 1/2–11.5 NPT

9 UNF/UN Threaded Ports

7/16–20 UNF / 1/2–20 UNF / 9/16–18 UNF /
3/4–16 UNF / 7/8–14 UNF / 1 1/16–12 UN /
1 5/16–12 UN / 1 5/8–12 UN / 1 7/8–12 UN



Product Features

- Covering all relevant thread type and sizes of male stud tube connectors and test couplings
- Boards made of hardened quality steel
- Finished with an extremely resistant cathodic electrodeposition coating
- Laser markings indicating the thread types and sizes next to the threaded ports
- Non-slip rubber feet providing good stability

Technical Data

- Dimensions (W x D x H): 275 mm x 190 mm x 31 mm
- Clearance height: 13 mm (height of the rubber feet)
- Weight: 6,0 kg

Note

Thread identification boards are intended to be tools for the basic determination of thread types and sizes. They do not replace high-precision thread gauges and measurement devices (should these become necessary at any point).

Q



Cone Gauges Type FI-KOL

Product Description

These cone gauges are designed for wear checks on the 24° cone for all STAUFF final assembly studs 6 - 42 mm. To ensure accuracy during cutting ring assembly, the assembly stud has to be checked for wear and damage after max. 50 assembly processes (DIN 3859-2).

This set is suitable for all final assembly studs of type FI-MFK as well as for manual assembly cones of type FI-FK.

The cone gauges are available individually or as a complete set for all sizes in a convenient case.

Product Features

- Ensure accurate cutting ring assembly because the target cone in the stud can be verified with precision
- Prevents premature replacement of the studs
- Easy handling

Technical Data

- Dimensions Case (W x D x H):
357 mm x 305 mm x 80 mm
- Dimensions Cone Gauges (H)
95 mm



Ordering Code

- Cone Gauge Kit in Box (Size 6 to 42)

FI-Box-Cone-Gauge-Kit-6-42

Single Cone Gauges

| Size | Ordering Codes |
|-------|-----------------|
| 06L/S | FI-KOL-06L/S-W1 |
| 08L/S | FI-KOL-08L/S-W1 |
| 10L/S | FI-KOL-10L/S-W1 |
| 12L/S | FI-KOL-12L/S-W1 |
| 14S | FI-KOL-14S-W1 |
| 15L | FI-KOL-15L-W1 |
| 16S | FI-KOL-16S-W1 |
| 18L | FI-KOL-18L-W1 |
| 20S | FI-KOL-20S-W1 |
| 22L | FI-KOL-22L-W1 |
| 25S | FI-KOL-25S-W1 |
| 28L | FI-KOL-28L-W1 |
| 30S | FI-KOL-30S-W1 |
| 35L | FI-KOL-35L-W1 |
| 38S | FI-KOL-38S-W1 |
| 42L | FI-KOL-42L-W1 |





STAUFF Clean
Pipe, Tube and Hose Cleaning System
SC

286



Manual Tube Bender

TUB-MA

288



Tube Bending and Saw Device

TUBSD-MA

289



Tube Saw Device

TUSD-MA

290



Tube Reamer

TUD-MA

291

STAUFF Clean Pipe, Tube and Hose Cleaning System

Product Description

The STAUFF Clean System comprises of a pneumatic launcher and a range of specially designed nozzles and projectiles.

The launcher uses standard industrial compressed air pressure between 6 and 8 bar to propel a foam projectile through the nozzle and into the pipe, tube or hose bore to have their inside surface cleaned from any unwanted contamination.

This provides a safe and environmentally friendly tool that requires little formal expertise to operate and apply.

The **launcher** is the part of the system that controls the air supply to propel the projectile from start to finish of the cleaning job.

The **nozzles** are specially designed to affect an airtight seal on any pipe, tube or hose with or without end fittings. Its main purpose is to compress the foam projectile allowing it to enter the internal diameter of the pipe, tube or hose to be cleaned.

The **projectile** is the part of the system that does the cleaning: The foam projectile is sized to be approximately 15% larger than the internal diameter of the pipe, tube or hose to be cleaned. The compression of the projectile against the internal wall cleans the internal surface and expels any loose contaminants from the end of the pipe, tube or hose.

The STAUFF Clean System is available as separate components or in a variety of kit forms comprising various nozzle types, adaptor and launcher, all contained in a heavy duty carrying case.



R

STAUFF Clean Launchers / Launcher Kits



Characteristics

- Pneumatic pistol-grip launcher
- Light-weight and ergonomic design
- Easy to operate and apply
- Connection to air supply with quick release coupling
- Suitable for any type of nozzle
- Delivered separately or in a variety of kit forms including carrying case, adaptor ring and nozzles (if required)

Technical Data

- Air compressor requirement: 6 ... 8 bar
- Effective air volume: 250 ... 400 l/min

Ordering Codes

- Launcher only SC-LG
- Launcher kit (launcher, kit and adaptor) SC-LK
- Kit (launcher, kit and adaptor) with set of 10 Universal nozzles SC-10UV-K
- Kit (launcher, kit and adaptor) with set of 18 Metric Tube nozzles SC-18MT-K
- 10 JIC nozzles SC-10J-K
- 7 BSP nozzles SC-7B-K

Contact STAUFF for alternative connection adaptors and couplings.

**STAUFF Clean
Nozzles / Nozzle Sets**
Universal Nozzle Set (SC-U-SET)

The Universal Nozzle is designed with a tapered seat that will allow it to suit for 90% of applications, including Hose, Tube and Pipe, with or without fittings, in hydraulic and pneumatic pipe systems, condenser tubes, boiler tubes and food lines.

The Universal Nozzle kit fits all and will accommodate applications with JIC, SAE and BSP end fittings.

The set of 10 nozzles consists of the following sizes: 6 mm, 8 mm, 10 mm, 13 mm, 16 mm, 19 mm, 25 mm and 32 mm.

JIC Nozzle Set (SC-J-SET)

The JIC Nozzle is designed specifically for use with JIC and SAE type fittings. The nozzles are machined to accommodate both male and female configuration, ensuring a perfect airtight seal every time.

The set of 10 nozzles consist of the following sizes: 6 mm, 8 mm, 10 mm, 13 mm, 16 mm, 19 mm, 25 mm, 32 mm, 38 mm and 50 mm.

Metric Tube Nozzle Set (SC-M-SET)

The Metric Tube Nozzle is intended for use specifically with Metric sized tube and is designed to fit over the outside of the tube or pipe being cleaned.

The inside diameter of the nozzle is reduced to match the inside diameter of the tube. The nozzles are machined from solid bar stock and designed for superior strength.

The set of 18 nozzles consist of the following sizes: 6 mm, 8 mm, 10 mm, 12 mm, 14 mm, 15 mm, 16 mm, 18 mm, 20 mm, 22 mm, 25 mm, 28 mm, 30 mm, 35 mm, 38 mm, 42 mm, 50 mm and 60 mm.

BSP Nozzle Set (SC-B-SET)

The BSP Nozzle is designed specifically for BSP configuration fittings. The nozzles are machined to accommodate both male and female configurations, ensuring a perfect airtight seal every time.

The set of 7 nozzles consist of the following sizes: 6 mm, 10 mm, 13 mm, 16 mm, 19 mm, 25 mm and 32 mm.



Adaptor Ring for Nozzels (SCN-AR)
Required for sizes 6-32 mm / 1/4-1 1/4 in

If required, nozzles can be supplied separately. Contact STAUFF for details.

**STAUFF Clean
Projectiles**
**Standard Projektiles
Type SCP-S**

Intended for the cleaning of hose, tube or pipe without end fittings or restrictions.


**Abrasive Projektiles
Type SCP-A**

Intended for the internal cleaning of metal pipe and tube to remove light contaminants (rust and scale).


**Coupling Projektiles
Type SCP-C**

Intended for the cleaning of hose assemblies or the removal of loose contamination from pipe, tube or hose.


**Grinding Projektiles
Type SCP-G**

Intended for the internal cleaning of metal pipe and tube to remove medium and heavy contamination (rust and scale).



| Size | Pipe / Tube / Hose ID | | Ordering Codes | | | |
|------|-----------------------|--------|-------------------------|-------------------------|-------------------------|-------------------------|
| | (mm) | (in) | Coupling Series (SCP-S) | Coupling Series (SCP-C) | Coupling Series (SCP-A) | Coupling Series (SCP-G) |
| 07 | 4,8 | 3/16 | SCP-S-07 | SCP-C-07 | SCP-A-07 | SCP-G-07 |
| 10 | 6,4 | 1/4 | SCP-S-10 | SCP-C-10 | SCP-A-10 | SCP-G-10 |
| 12 | 7,9 | 5/16 | SCP-S-12 | SCP-C-12 | SCP-A-12 | SCP-G-12 |
| 14 | 9,5 | 3/8 | SCP-S-14 | SCP-C-14 | SCP-A-14 | SCP-G-14 |
| 16 | 11,1 | 7/16 | SCP-S-16 | SCP-C-16 | SCP-A-16 | SCP-G-16 |
| 18 | 12,7 | 1/2 | SCP-S-18 | SCP-C-18 | SCP-A-18 | SCP-G-18 |
| 20 | 14,3 | 9/16 | SCP-S-20 | SCP-C-20 | SCP-A-20 | SCP-G-20 |
| 22 | 15,9 | 5/8 | SCP-S-22 | SCP-C-22 | SCP-A-22 | SCP-G-22 |
| 26 | 19,1 | 3/4 | SCP-S-26 | SCP-C-26 | SCP-A-26 | SCP-G-26 |
| 28 | 20,6 | 13/16 | SCP-S-28 | SCP-C-28 | SCP-A-28 | SCP-G-28 |
| 30 | 22,2 | 7/8 | SCP-S-30 | SCP-C-30 | SCP-A-30 | SCP-G-30 |
| 33 | 25,4 | 1 | SCP-S-33 | SCP-C-33 | SCP-A-33 | SCP-G-33 |
| 36 | 26 / 27 | 1 1/16 | SCP-S-36 | SCP-C-36 | SCP-A-36 | SCP-G-36 |
| 40 | 31,8 | 1 1/4 | SCP-S-40 | SCP-C-40 | SCP-A-40 | SCP-G-40 |
| 45 | 34,9 | 1 3/8 | SCP-S-45 | SCP-C-45 | SCP-A-45 | SCP-G-45 |
| 50 | 38,1 | 1 1/2 | SCP-S-50 | SCP-C-50 | SCP-A-50 | SCP-G-50 |
| 55 | 44,5 | 1 3/4 | SCP-S-55 | SCP-C-55 | SCP-A-55 | SCP-G-55 |
| 60 | 50,8 | 2 | SCP-S-60 | SCP-C-60 | SCP-A-60 | SCP-G-60 |
| 80 | | | SCP-S-80 | SCP-C-80 | SCP-A-80 | SCP-G-80 |

Please note: For optimum cleaning, it is recommended that projectiles are used once and then discarded and disposed of in an appropriate way.

Safety note: A mesh collection bag should be secured to the pipe, tube or hose exit to avoid possible injury to personnel by the projectile exiting at high velocity.

Always wear protective safety glasses, ear protection and a dust mask when operating this system.

R

Manual Tube Bender Typ TUB-MA

Product Description

When used with a commercially available vice, STAUFF manual tube benders, type TUB-MA, enable common hydraulic tubes to be bent manually.

They are suitable for steel and stainless steel tubes with diameters of 6, 8, 10, 12, 14, 15, 16, 18 and 22 mm with a defined minimum wall thickness.

In addition to the metric version, a model for handling inch-gauge tubes with diameters of between 1/4 and 7/8 inches is also available.

The eight bending rollers – six in the imperial version – ensure maximum wear.

A scale lasered onto the bending rollers enhances the accuracy of the required bending angle with superior precision.

The manual tube bender is supplied with all the necessary components and multilingual instructions for use as a complete kit in a high-quality steel case.

Product Features

- Small bending radii allow for compact assemblies
- Optimised bending contour, which enables tube bends free of flattening and constriction
- hard wearing steel bending rolls
- ideal for versatile site use, possibly for installation work on site

Technical Data

- Dimensions (W x D x H):
640 mm x 165 mm x 70 mm
- Weight (incl. Case):
Metric Version 13,8 kg
Imperial Version 12,1 kg



Ordering Codes

- Manual Tube Bender Set in Steelcase (metric Version) **TUB-MA-M622-LV-KIT**
- Manual Tube Bender Set in Steelcase (imperial Version) **TUB-MA-I4140D-LV-KIT**

Spare Parts / Accessories

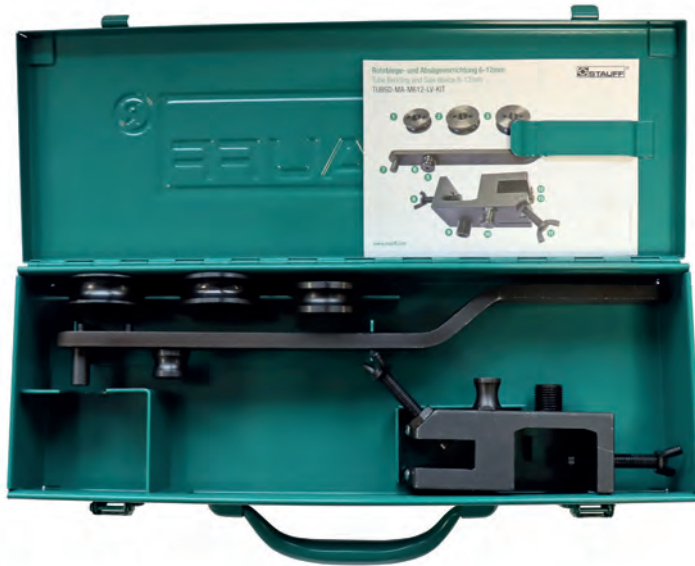
| Description | Ordering Codes |
|-------------------------|------------------------------------|
| Bending Lever | TUB-MA-S-Bending-Lever |
| Baseplate | TUB-MA-S-Baseplate |
| Guide Roller | TUB-MA-S-Guide-Roller-W32 |
| Hold Roll | TUB-MA-S-Hold-Roll-W101 |
| Guide Roller Mount | TUB-MA-S-Guide-Roller-Mount |
| Bolt | TUB-MA-S-Bolt-M12x32 |
| Pivot Pin | TUB-MA-S-Pivot-Pin |
| Bending Lever Support | TUB-MA-S-Bending-Lever-Support-W32 |
| Bending Roller 6/8 mm | TUB-T-BE-M6/8-MIOD-W32 |
| Bending Roller 10 mm | TUB-T-BE-M10-MIOD-W32 |
| Bending Roller 12 mm | TUB-T-BE-M12-M622-W32 |
| Bending Roller 14/15 mm | TUB-T-BE-M14/15-M622-W32 |
| Bending Roller 16 mm | TUB-T-BE-M16-MIOD-W32 |
| Bending Roller 18 mm | TUB-T-BE-M18-M622-W101 |
| Bending Roller 20 mm | TUB-T-BE-M20-M622-W101 |
| Bending Roller 22 mm | TUB-T-BE-M22-MIOD-W101 |
| Bending Roller 1/2" | TUB-T-BE-080D-I4140D-W32 |
| Bending Roller 3/4" | TUB-T-BE-120D-I4140D-W101 |

Parts assignment: www.stauff.com/en/category/025000/025022/025025/025021B



| Outer Diameter | Metric | Inch | Radius | Minimum Wall Thickness |
|-----------------------|--------|------|-----------------|------------------------|
| 6/8 mm (1/4" / 5/16") | • | • | 33 mm / 1.30 in | 1,5 mm / .06 in |
| 10 mm (3/8") | • | | | 1,5 mm / .06 in |
| 12 mm | • | | | |
| 1/2" | | • | 40 mm / 1.57 in | 2,0 mm / .08 in |
| 14 mm | • | | | 1,5 mm / .06 in |
| 15 mm | • | | | |
| 16 mm (5/8") | • | • | 48 mm / 1.89 in | 1,5 mm / .06 in |
| 18 mm | • | | | 2,0 mm / .08 in |
| 3/4" | | • | | |
| 20 mm | • | | | |
| 22 mm (7/8") | • | • | | |

Tube Bending and Saw Device Type TUBSD-MA



Product Description

This sturdy steel case is designed for short-term use on the go, providing all components required for bending and sawing off hydraulic tubes made of steel or stainless steel. The case contains a combined manual tube bending and sawing device which can be attached with a standard vice or directly to a work-bench top with a thickness of up to 35 mm. The contour of the holding fixture ensures that cuts are made at a 90° angle.

Three low-wear bending rollers made of steel allow processing of steel or stainless steel tubes with an outer diameter of 6, 8, 10 or 12 mm. The optimised bending contour of the rollers prevents deformation of the tube even for smaller bending radii. A bending lever is also included in the set.

A standard hacksaw is used for sawing off the tube.

The case also has space for the STAUFF universal internal and external tube reamer for tube diameters from 6 to 35 mm. The reamer is not included in the set, but can be purchased separately, as can all components of this convenient repair set in a robust steel case.

Ordering Code

▪ Tube Bending and Saw Device in Steelcase

TUBSD-MA-M612-LV-KIT

Spare Parts / Accessories

| Description | Ordering Codes |
|-------------------------------------|----------------------------------|
| Bending roll 6/8mm (Radius 19/20mm) | TUBSD-T-BE-M6/8-W101 |
| Bending roll 10mm (Radius 25mm) | TUBSD-T-BE-M10-W101 |
| Bending roll 12mm (Radius 26mm) | TUBSD-T-BE-M12-W101 |
| Bending-Lever-compl | TUBSD-S-Bending-Lever-compl-W101 |
| Baseplate-compl | TUBSD-S-Baseplate-compl-W101 |
| Hold-Roll | TUBSD-S-Hold-Roll-W101 |
| Bending-Roll-Mount | TUBSD-S-Bending-Roll-Mount-W101 |
| Round-Head-Rivet Kit 4 pcs. | Kit-TUBSD-S-Round-Head-Rivet-W5 |
| SAW-Guide Kit 2 pcs. | Kit-TUBSD-S-SAW-Guide-W101 |
| Pivot-Pin | TUBSD-S-Pivot-Pin-W101 |
| Guide-Roller-Mount | TUBSD-S-Guide-Roller-Mount-W101 |
| Guide-Roller | TUBSD-S-Guide-Roller-W101 |
| Butterfly lock bolt | TUBSD-S-Butterfly lock bolt W101 |

Parts assignment: www.stauff.com/en/category/025000/025022/025026/025022D

Product Features

- Bending and sawing with one device
- Wear-resistant steel bending rollers
- Small bending radii for compact installations
- Optimised bending contour: The tube diameter is not deformed during the bending process
- Saw blade guiding ensures 90° cuts
- Can be used with or without a vice
- Ideal for flexible mobile use, e.g. for installation work at a construction site

Technical Data

- Dimensions (W x D x H):
355 mm x 125 mm x 56 mm
- Weight (incl. Case): 3,4kg



Tube Saw Devise Type TUSD-MA

Product Description

This device can be used to cut steel and stainless steel tubes with an outer diameter between 6 and 42 mm at a precise 90° angle. It can either be used with a vice or simply clamped onto the tube for cutting.

A standard hacksaw is used for sawing off the tube.

Product Features

- 90° cut on tubes up to 42 mm
- Tube diameter is not deformed during the clamping process
- Robust, durable design
- No vice required, device can also simply be clamped onto the tube
- The saw blade guide can easily be replaced separately when it is worn
- Ideal for flexible mobile use, e.g. for installation work at a construction site

Technical Data

- Dimensions (W x D x H):
80 mm x 70 mm x 140 mm
- Weight: 1,6 kg



Ordering Code

- Tube Saw Devise

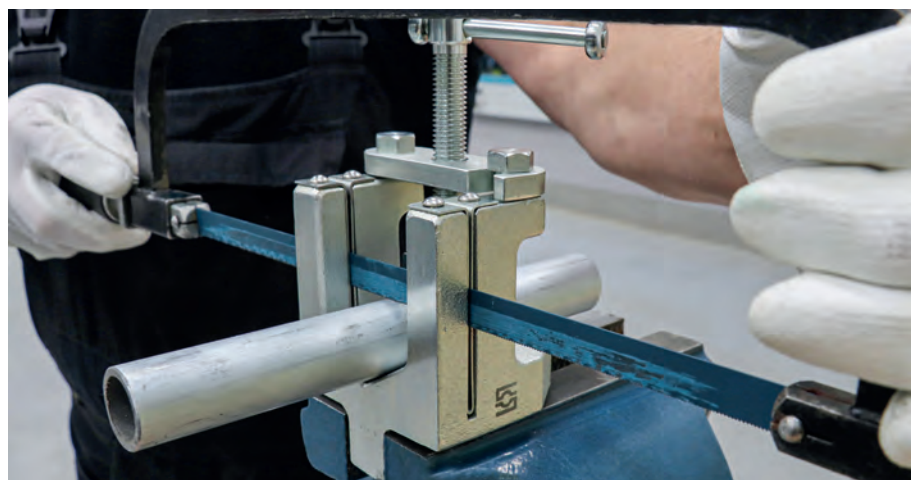
TUSD-MA-M642

Spare Parts / Accessories

| Description | Ordering Codes |
|-----------------------------|---------------------------------|
| Round-Head-Rivet Kit 4 pcs. | Kit-SD-MA-S-Round-Head-Rivet-W5 |
| SAW-Guide Kit 2 pcs. | Kit-SD-MA-S-Saw-Guide-W101 |
| Barcked Bolt Kit 2 pcs. | Kit-SD-MA-S-Bolt-W32 |
| Bracked-compl. | SD-MA-S-Bracked-compl.-W32 |

Parts assignment: www.stauff.com/en/category/025000/025022/025027/025022E

R



Tube Reamer Type TUD-MA

Product Description

The STAUFF universal internal and external tube reamer for tube diameters from 6 to 35 mm features high-quality sharpened cutting edges made of hardened special steel and ensures a flowing, "chatter-free" work process. Also available for tubes with an outer diameter from 10 to 54 mm.

Particularly convenient: An adapter for using the device with an electric drill at low speed is available for both sizes.

Product Features

- Easy and quick burr removal on steel and stainless steel tubes
- High-quality sharpened cutting edges made of hardened special steel
- Chatter-free working

Technical Data

- Dimensions TUD-MA-0635 (Ø x H): 48 mm x 60 mm
- Weight: 0,2 kg

- Dimensions TUD-MA-1054 (Ø x H): 70 mm x 90 mm
- Weight: 0,6 kg

- Dimensions TUD-ADA1-0635 (Ø x H): 65 mm x 85 mm inkl. Welle
- Weight: 0,2 kg

- Dimensions TUD-ADA2-1054 (Ø x H): 91 mm x 92 mm inkl. Welle
- Weight: 0,4 kg



Ordering Codes

| Description | Ordering Codes |
|---------------------------------|----------------|
| Tube reamer 6-35mm | TUD-MA-0635 |
| Adapter for Tube reamer 6-35mm | TUD-ADA1-0635 |
| Tube reamer 10-54mm | TUD-MA-1054 |
| Adapter for Tube reamer 10-54mm | TUD-ADA2-1054 |



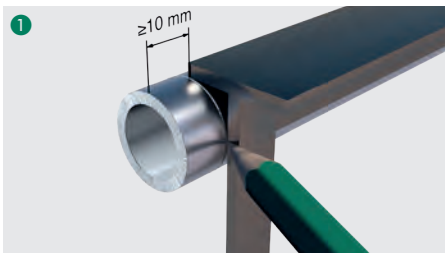
R

| | |
|---|----------------|
| Assembly Instructions for STAUFF Connect 24° Tube Fittings with Double Edge Cutting Ring (Type FI-DS) | 296-303 |
| 100% Assembly with the Manual Final Assembly Stud (Type FI-FK) and Assembly with the Fitting Body | 296 |
| Pre-Assembly with the Manual Pre-Assembly Stud (Type FI-FK) and Assembly with the Fitting Body | 298 |
| Direct Assembly with the Fitting Body | 300 |
| Machine-Assisted 100% Assembly with a STAUFF Press Assembly Machine and Assembly with the Fitting Body | 302 |
| Machine-Assisted Pre-Assembly with a STAUFF Press Assembly Machine and Assembly with the Fitting Body | 303 |
| Assembly Instructions for STAUFF Connect 24° Tube Fittings with Soft-Sealing Cutting Ring (Type FI-WDDS) | 304-309 |
| Pre-Assembly with the Manual Final Assembly Stud (Type FI-FK) and Assembly with the Fitting Body | 304 |
| Direct Assembly with the Fitting Body | 306 |
| Machine-Assisted Pre-Assembly with a STAUFF Press Assembly Machine and Assembly with the Fitting Body | 308 |
| Assembly Instructions for Support Sleeves | 310 |
| Assembly Instructions for STAUFF Form EVO Tube Fittings | 312 |
| Assembly Instructions for STAUFF Connect 37° Flared Tube Fittings | 316 |
| Assembly Instructions for 24° Weld Cones with O-Ring | 320 |
| Assembly Instructions for Tube Fittings with 24° Taper and O-Ring | 322 |
| Assembly Instructions for Tube Fittings with Standpipe | 322 |
| Assembly Instructions for Tube Fittings with Male Threaded Stud | 323 |
| Assembly Instructions for Banjo Fittings | 326 |
| Assembly Instructions for Adjustable Fitting with Locknut (WEE, VEE, TEE, LEE) | 327 |

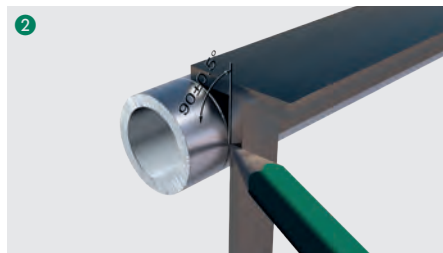
Assembly Instructions for STAUFF Connect 24° Tube Fittings with Double Edge Cutting Ring (Type FI-DS)

100% Assembly with the Manual Final Assembly Stud (Type FI-FK) and Assembly with the Fitting Body

1. Tube Preparation



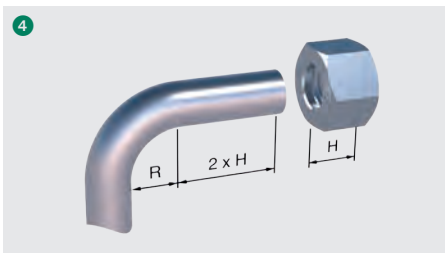
1 Saw off tube in right angle and at least 10 mm from the cut made by the tube manufacturer / supplier in order to avoid failures caused during shipment.



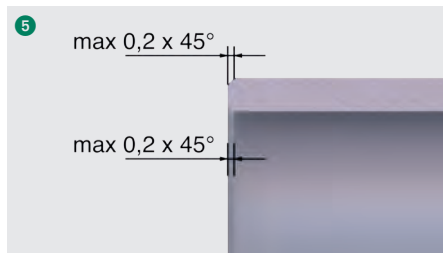
2 A maximum angular deviation / tolerance of $\pm 0,5^\circ$ relative to the tube axis is permissible.



3 Only use proper tube sawing machinery or equipment. Do not use tube cutters or grinders as this may result in unwanted angled cuts and cause severe burring.



4 For tube bends, the length of the straight section of the tube end to the start of the bending radius has to be twice the height of the union nut.



5 Slightly deburr inside and outside of the tube end (max $0,2 \times 45^\circ$). The assembly area of the tube has to be free of contamination, chips and paint.

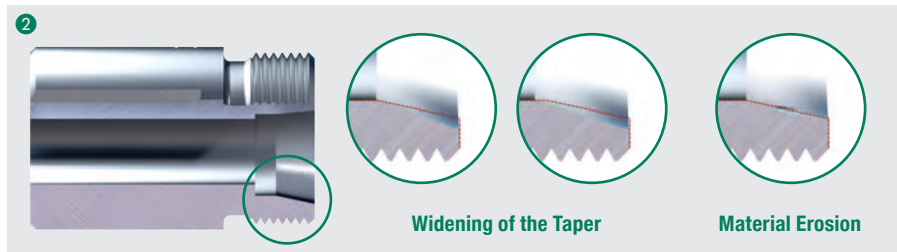


6 Please note: Improperly prepared and contaminated tubes will affect the service life of the connection and may result in leakage.

2. Assembly Preparation

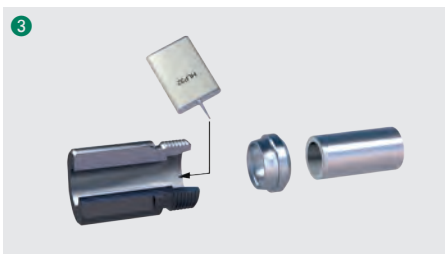


1 Please note: Hardened final assembly studs are wear-resistant, thus allowing for consistent assembly results with a maximum degree of accuracy, reliability and process stability.



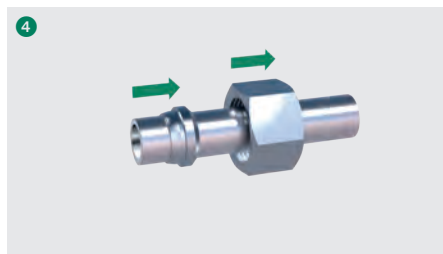
2 However, they have to be checked for dimensional accuracy regularly. Assembly studs that are damaged and/or dimensionally not accurate must be replaced under any circumstances!

Typical damages include widening of the 24° angle or the entire taper, as well as material erosion.



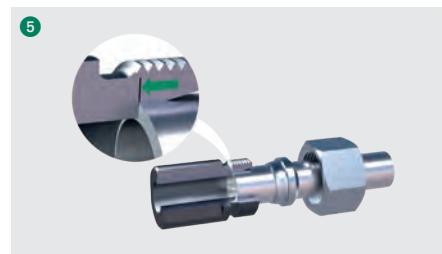
3 Lightly lubricate the 24° taper of the final assembly stud (e.g. using mineral-oil based hydraulic fluid HLP32). Do not use lubricating grease!

Immediately proceed with the assembly in order to avoid exposure to contamination.



4 Consecutively put the union nut first and then the cutting ring onto the tube end.

Pay attention to the correct alignment of the cutting ring: The cutting edges have to face to the tube end.



5 Carefully insert the tube end into the 24° taper of the final assembly stud and push it firmly against the inner stop.

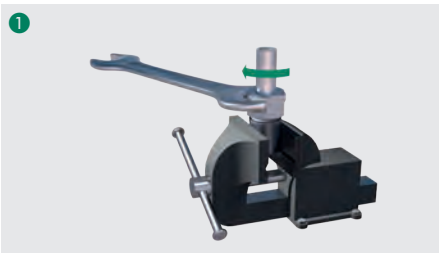
The tube must be held in this position during the entire assembly process in order to avoid faulty assembly.

S

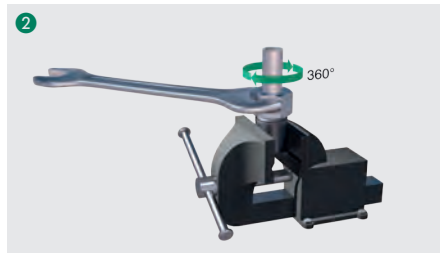
Assembly Instructions for STAUFF Connect 24° Tube Fittings with Double Edge Cutting Ring (Type FI-DS)

100% Assembly with the Manual Final Assembly Stud (Type FI-FK) and Assembly with the Fitting Body

3. Assembly in the Assembly Stud

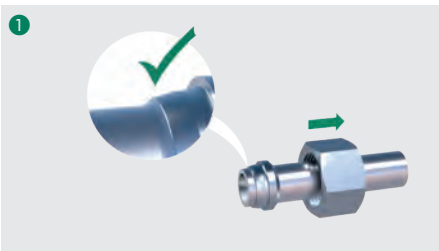


Tighten the union nut until the noticeable increase in force (pressure point). The cutting ring now grips the tube, which can no longer be rotated.



Use a suitable spanner to tighten the union nut another full turn (360°) beyond the pressure point. In doing so, the cutting ring will uniformly cut into the tube.

4. Inspection



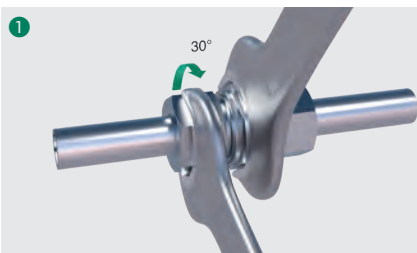
Fully untighten the union nut for a visual inspection after the assembly. The material accumulation must be clearly visible in front of the cutting edge and should almost completely cover the cutting edge.

In this position, it is still permissible for the cutting ring to turn on the tube, but not to be displaced in axial direction of the tube.



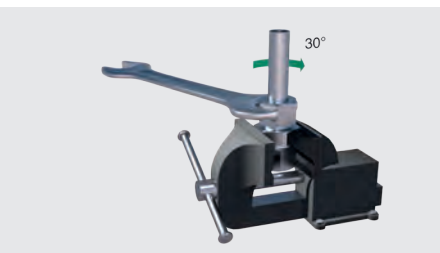
Please note: If not enough tube material has been raised in front of the cutting edge or if the cutting ring is still capable of being displaced in axial direction, the assembly procedure must be repeated by using more force, and the result must be re-checked.

5. Final-Assembly with the Fitting Body



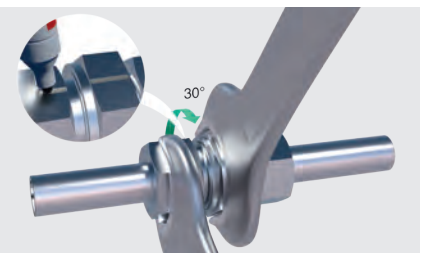
Carefully insert the assembled tube end into the 24° taper of the fitting body.

Use a suitable spanner to tighten the union nut until the noticeable increase in force, and then finish the assembly with another approximately 1/12 a turn (30°) beyond this point.



Always use a second spanner to hold the fitting body during the entire assembly procedure.

In case of unfavourable mounting conditions or larger tube dimensions, use a bench vice for the assembly.



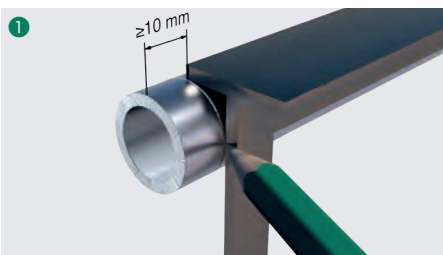
A marking line applied on the union nut and the fitting body makes it easier to indicate the sufficient tightening angle.

6. Repeated Assembly

For repeated assemblies, please use a suitable spanner to tighten the union nut until the noticeable increase in force, and then finish the assembly with another approximately 1/12 a turn (30°) beyond this point.

Assembly Instructions for STAUFF Connect 24° Tube Fittings with Double Edge Cutting Ring (Type FI-DS) Assembly with the Manual Pre-Assembly Stud (Type FI-FK) and Assembly with the Fitting Body

1. Tube Preparation



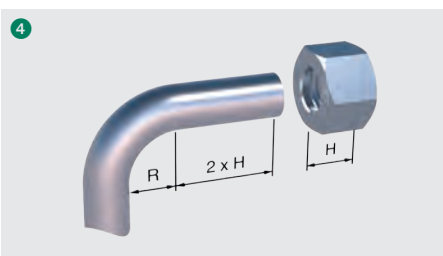
1 Saw off tube in right angle and at least 10 mm from the cut made by the tube manufacturer / supplier in order to avoid failures caused during shipment.



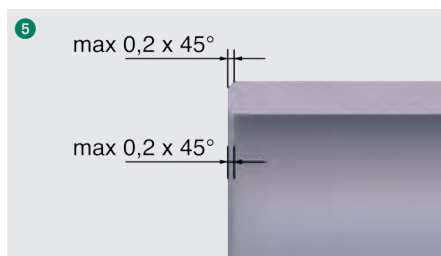
2 A maximum angular deviation / tolerance of $\pm 0,5^\circ$ relative to the tube axis is permissible.



3 Only use proper tube sawing machinery or equipment. Do not use tube cutters or grinders as this may result in unwanted angled cuts and cause severe burring.



4 For tube bends, the length of the straight section of the tube end to the start of the bending radius has to be twice the height of the union nut.



5 Slightly deburr inside and outside of the tube end (max $0,2 \times 45^\circ$). The assembly area of the tube has to be free of contamination, chips and paint.

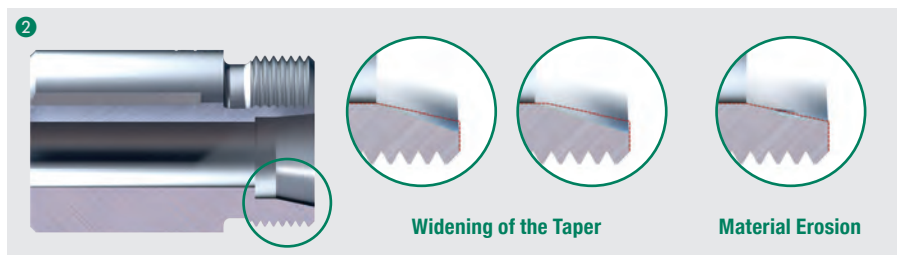


6 Please note: Improperly prepared and contaminated tubes will affect the service life of the connection and may result in leakage.

2. Assembly Preparation

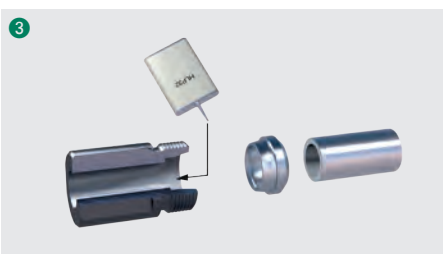


1 Please note: Hardened pre-assembly studs are wear-resistant, thus allowing for consistent assembly results with a maximum degree of accuracy, reliability and process stability.



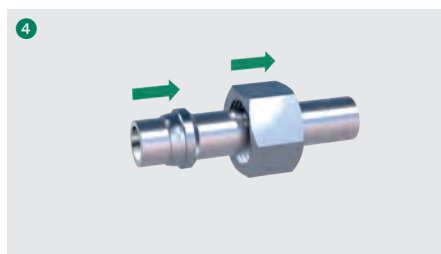
2 However, they have to be checked for dimensional accuracy regularly. Assembly studs that are damaged and/or dimensionally not accurate must be replaced under any circumstances!

Typical damages include widening of the 24° angle or the entire taper, as well as material erosion.



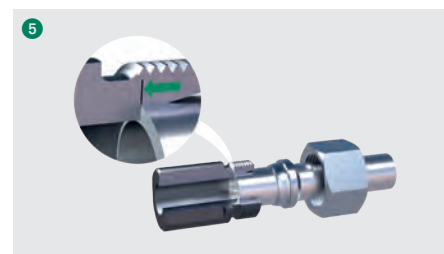
3 Lightly lubricate the 24° taper of the pre-assembly stud (e.g. using mineral-oil based hydraulic fluid HLP32). Do not use lubricating grease!

Immediately proceed with the assembly in order to avoid exposure to contamination.



4 Consecutively put the union nut first and then the cutting ring onto the tube end.

Pay attention to the correct alignment of the cutting ring: The cutting edges have to face to the tube end.



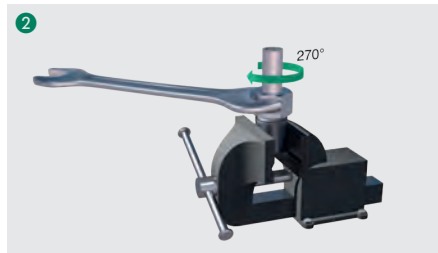
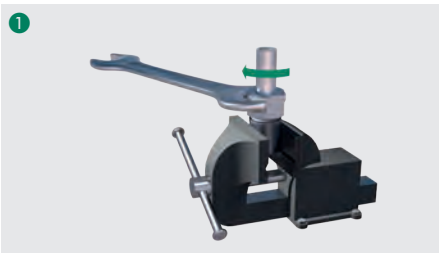
5 Carefully insert the tube end into the 24° taper of the pre-assembly stud and push it firmly against the inner stop.

The tube must be held in this position during the entire assembly process in order to avoid faulty assembly.

S

Assembly Instructions for STAUFF Connect 24° Tube Fittings with Double Edge Cutting Ring (Type FI-DS) Assembly with the Manual Pre-Assembly Stud (Type FI-FK) and Assembly with the Fitting Body

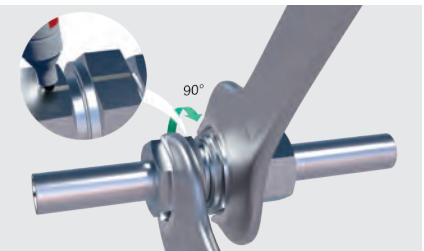
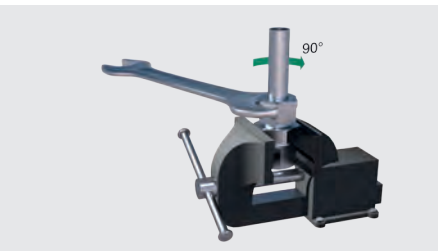
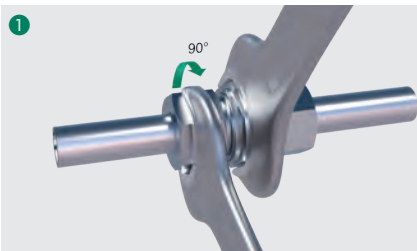
3. Pre-Assembly in the Assembly Stud



Tighten the union nut until the noticeable increase in force (pressure point). The cutting ring now grips the tube, which can no longer be rotated.

Use a suitable spanner to tighten the union nut another 3/4 a turn (270°) beyond the pressure point. In doing so, the cutting ring will uniformly cut into the tube.

4. Final-Assembly with the Fitting Body



Carefully insert the assembled tube end into the 24° taper of the fitting body.

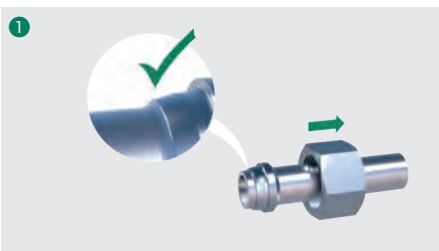
Always use a second spanner to hold the fitting body during the entire assembly procedure.

A marking line applied on the union nut and the fitting body makes it easier to indicate the sufficient tightening angle.

Use a suitable spanner to tighten the union nut until the noticeable increase in force, and then finish the assembly with another approximately 1/4 a turn (90°) beyond this point.

In case of unfavourable mounting conditions or larger tube dimensions, use a bench vice for the assembly.

5. Inspection



Fully untighten the union nut for a visual inspection after the assembly. The material accumulation must be clearly visible in front of the cutting edge and should cover the cutting edge approx. 80%.

Please note: If not enough tube material has been raised in front of the cutting edge or if the cutting ring is still capable of being displaced in axial direction, the assembly procedure must be repeated by using more force, and the result must be re-checked.

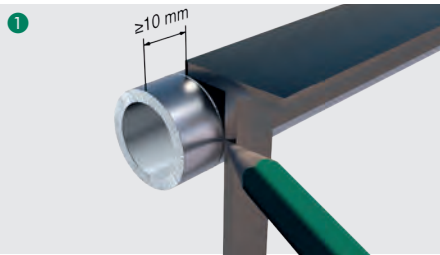
In this position, it is still permissible for the cutting ring to turn on the tube, but not to be displaced in axial direction of the tube.

6. Repeated Assembly

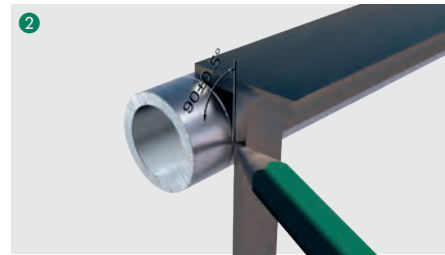
For repeated assemblies, please use a suitable spanner to tighten the union nut until the noticeable increase in force, and then finish the assembly with another approximately 1/12 a turn (30°) beyond this point.

Assembly Instructions for STAUFF Connect 24° Tube Fittings with Double Edge Cutting Ring (Type FI-DS) Direct Assembly with the Fitting Body

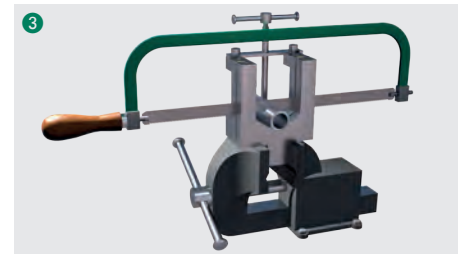
1. Tube Preparation



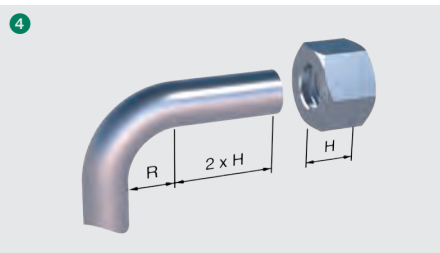
1 Saw off tube in right angle and at least 10 mm from the cut made by the tube manufacturer / supplier in order to avoid failures caused during shipment.



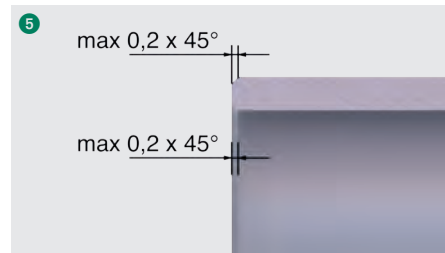
2 A maximum angular deviation / tolerance of $\pm 0,5^\circ$ relative to the tube axis is permissible.



3 Only use proper tube sawing machinery or equipment. Do not use tube cutters or grinders as this may result in unwanted angled cuts and cause severe burring.



4 For tube bends, the length of the straight section of the tube end to the start of the bending radius has to be twice the height of the union nut.

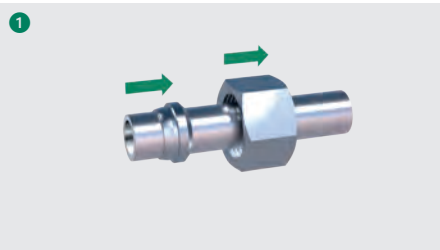


5 Slightly deburr inside and outside of the tube end (max $0,2 \times 45^\circ$). The assembly area of the tube has to be free of contamination, chips and paint.

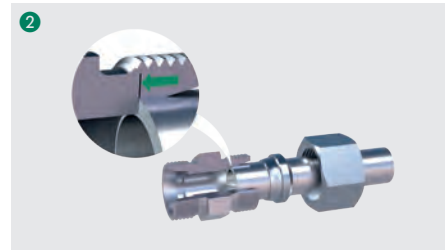


6 Please note: Improperly prepared and contaminated tubes will affect the service life of the connection and may result in leakage.

2. Assembly Preparation



1 Consecutively put the union nut first and then the cutting ring onto the tube end.



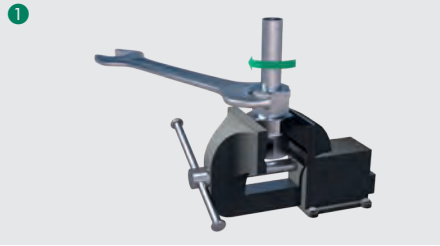
2 Carefully insert the tube end into the 24° taper of the fitting body and push it firmly against the inner stop.

Pay attention to the correct alignment of the cutting ring: The cutting edges have to face to the tube end.

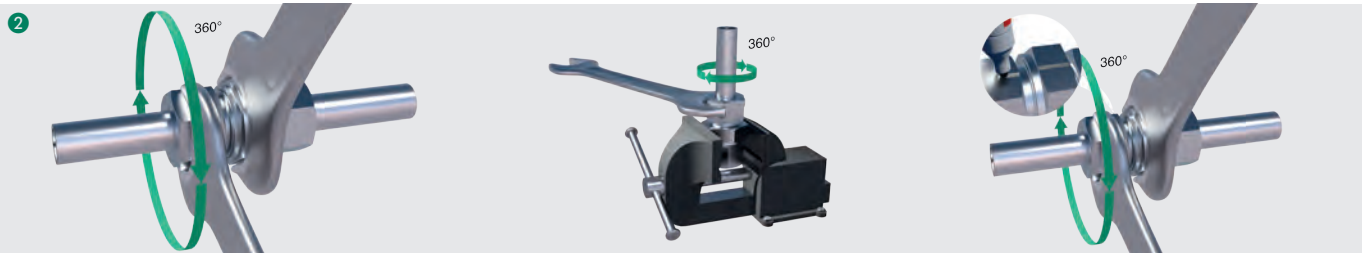
The tube must be held in this position during the entire assembly process in order to avoid faulty assembly.

Assembly Instructions for STAUFF Connect 24° Tube Fittings with Double Edge Cutting Ring (Type FI-DS) Direct Assembly with the Fitting Body

3. Direct Assembly in the Fitting Body



Tighten the union nut until the noticeable increase in force (pressure point). The cutting ring now grips the tube, which can no longer be rotated.



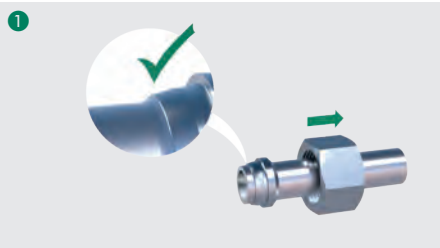
Use a suitable spanner to tighten the union nut another full turn (360°) beyond the pressure point. In doing so, the cutting ring will uniformly cut into the tube.

Always use a second spanner to hold the fitting body during the entire assembly procedure.

A marking line applied on the union nut and the fitting body makes it easier to indicate the sufficient tightening angle.

In case of unfavourable mounting conditions or larger tube dimensions, use a bench vice for the assembly.

4. Inspection



Fully untighten the union nut for a visual inspection after the assembly. The material accumulation must be clearly visible in front of the cutting edge and should almost completely cover the cutting edge.

In this position, it is still permissible for the cutting ring to turn on the tube, but not to be displaced in axial direction of the tube.



Please note: If not enough tube material has been raised in front of the cutting edge or if the cutting ring is still capable of being displaced in axial direction, the assembly procedure must be repeated by using more force, and the result must be re-checked.

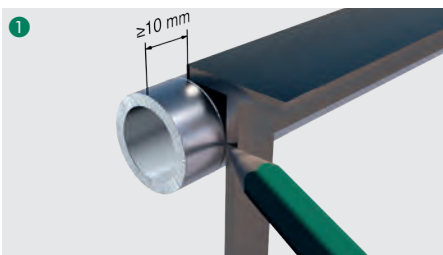
5. Repeated Assembly

For repeated assemblies, please use a suitable spanner to tighten the union nut until the noticeable increase in force, and then finish the assembly with another approximately 1/12 a turn (30°) beyond this point.

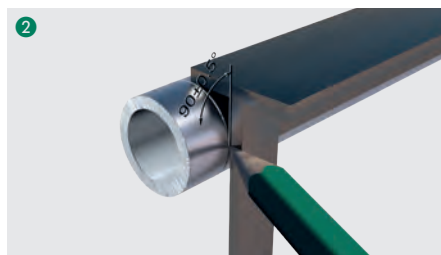
Assembly Instructions for STAUFF Connect 24° Tube Fittings with Double Edge Cutting Ring (Type FI-DS)

Machine-Assisted 100% Assembly with a STAUFF Press Assembly Machine and Assembly with the Fitting Body

1. Tube Preparation



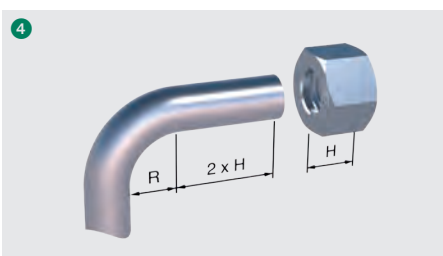
1 Saw off tube in right angle and at least 10 mm from the cut made by the tube manufacturer / supplier in order to avoid failures caused during shipment.



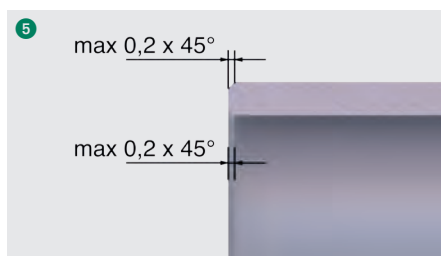
2 A maximum angular deviation / tolerance of $\pm 0,5^\circ$ relative to the tube axis is permissible.



3 Only use proper tube sawing machinery or equipment. Do not use tube cutters or grinders as this may result in unwanted angled cuts and cause severe burring.



4 For tube bends, the length of the straight section of the tube end to the start of the bending radius has to be twice the height of the union nut.



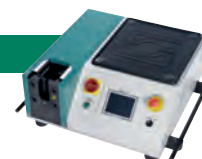
5 Slightly deburr inside and outside of the tube end (max $0,2 \times 45^\circ$). The assembly area of the tube has to be free of contamination, chips and paint.



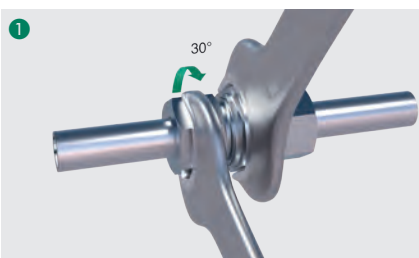
6 Please note: Improperly prepared and contaminated tubes will affect the service life of the connection and may result in leakage.

2. Assembly Preparation, Machine-Assisted Assembly and Inspection

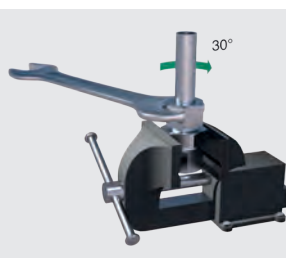
With regards to assembly preparation, the actual assembly as well as the inspection of assembled tube ends, please follow the detailed instructions in the operating manual of the machine.



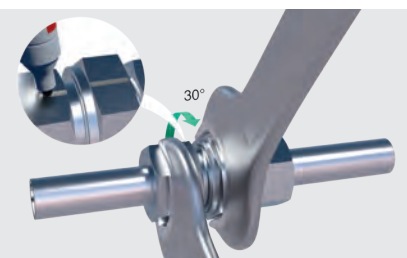
3. Final-Assembly with the Fitting Body



1 Carefully insert the assembled tube end into the 24° taper of the fitting body.



Always use a second spanner to hold the fitting body during the entire assembly procedure.



A marking line applied on the union nut and the fitting body makes it easier to indicate the sufficient tightening angle.

Use a suitable spanner to tighten the union nut until the noticeable increase in force, and then finish the assembly with another approximately 1/12 a turn (30°) beyond this point.

In case of unfavourable mounting conditions or larger tube dimensions, use a bench vice for the assembly.

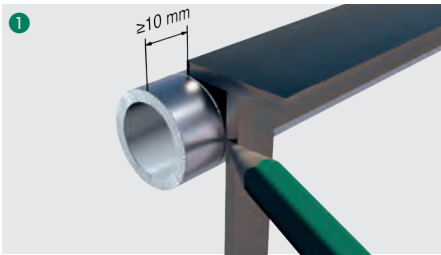
4. Repeated Assembly

For repeated assemblies, please use a suitable spanner to tighten the union nut until the noticeable increase in force, and then finish the assembly with another approximately 1/12 a turn (30°) beyond this point.

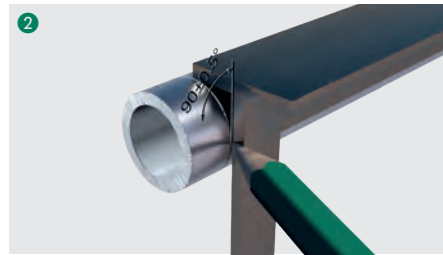
Assembly Instructions for STAUFF Connect 24° Tube Fittings with Double Edge Cutting Ring (Type FI-DS)

Machine-Assisted Pre-Assembly with a STAUFF Press Assembly Machine and Assembly with the Fitting Body

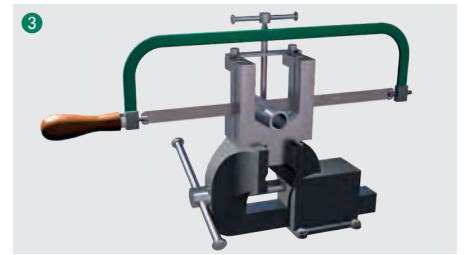
1. Tube Preparation



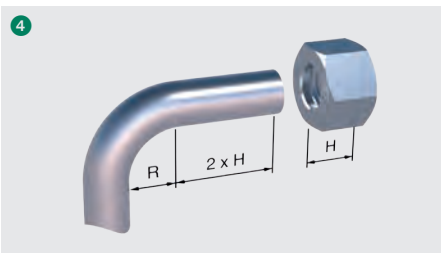
1 Saw off tube in right angle and at least 10 mm from the cut made by the tube manufacturer / supplier in order to avoid failures caused during shipment.



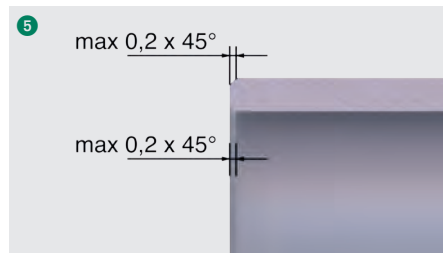
2 A maximum angular deviation / tolerance of $\pm 0,5^\circ$ relative to the tube axis is permissible.



3 Only use proper tube sawing machinery or equipment. Do not use tube cutters or grinders as this may result in unwanted angled cuts and cause severe burring.



4 For tube bends, the length of the straight section of the tube end to the start of the bending radius has to be twice the height of the union nut.



5 Slightly deburr inside and outside of the tube end (max $0,2 \times 45^\circ$). The assembly area of the tube has to be free of contamination, chips and paint.



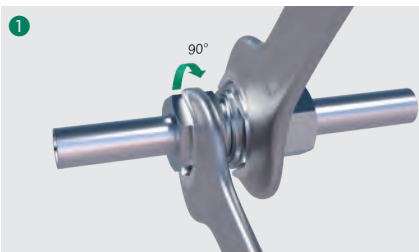
6 Please note: Improperly prepared and contaminated tubes will affect the service life of the connection and may result in leakage.

2. Assembly Preparation, Machine-Assisted Assembly and Inspection

With regards to assembly preparation, the actual assembly as well as the inspection of assembled tube ends, please follow the detailed instructions in the operating manual of the machine.



3. Final-Assembly with the Fitting Body



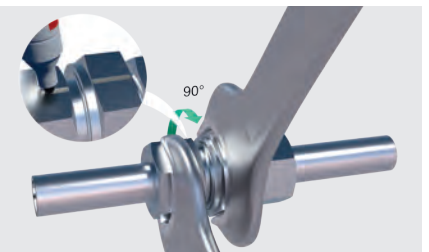
1 Carefully insert the assembled tube end into the 24° taper of the fitting body.

Use a suitable spanner to tighten the union nut until the noticeable increase in force, and then finish the assembly with another approximately 1/4 a turn (90°) beyond this point.



Always use a second spanner to hold the fitting body during the entire assembly procedure.

In case of unfavourable mounting conditions or larger tube dimensions, use a bench vice for the assembly.



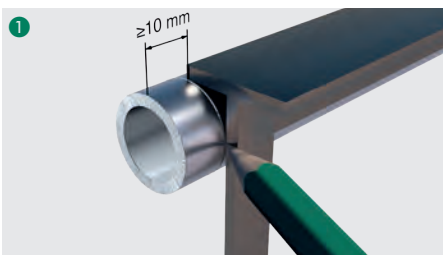
A marking line applied on the union nut and the fitting body makes it easier to indicate the sufficient tightening angle.

4. Repeated Assembly

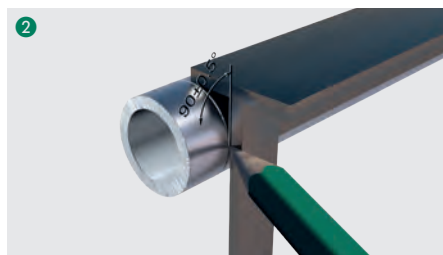
For repeated assemblies, please use a suitable spanner to tighten the union nut until the noticeable increase in force, and then finish the assembly with another approximately 1/12 a turn (30°) beyond this point.

Assembly Instructions for 24° Tube Connectors with Soft-Sealing Cutting Ring (Type FI-WDDS/FI-WDDS-W5) Pre-Assembly with the Manual Final Assembly Stud Type FI-FK and Assembly in the Fitting Body

1. Tube Preparation



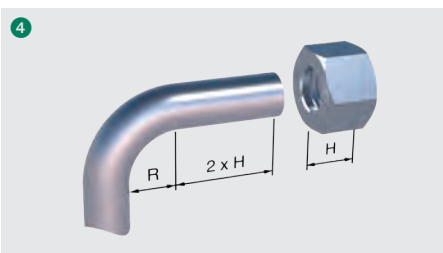
1 Saw off tube at a right angle (90°) and at least 10 mm from the cut made by the manufacture / supplier.



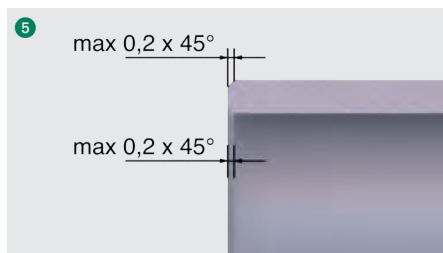
2 A maximum angular deviation of $\pm 0.5^\circ$ to the tube axis is permissible.



3 Do not use tube cutters or grinders.



4 The length of the straight sections of the tube of tube bends has to be twice the length of the union nut.



5 Slightly deburr the inside and outside of the tube end (max $0.2 \times 45^\circ$). The assembly area of the tube has to be free of dirt, chips and paint.



6 Please note: Improperly prepared and contaminated tubes will affect the service life of the tube connectors and may result in leakage. Poorly deburred tube ends can result in damage to the internal O-ring!

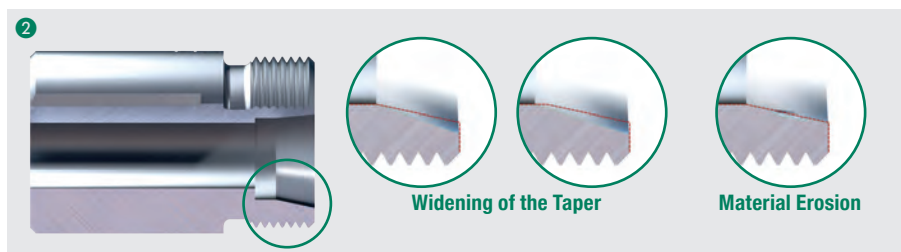


Please note: Assembly of reinforcing sleeves is essential when using thin-walled tubes. Refer to page 310.

2. Assembly Preparation

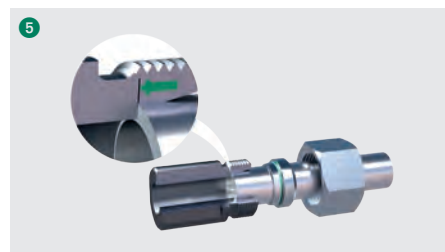
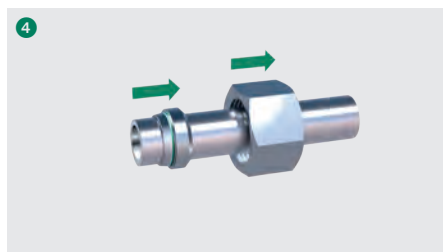
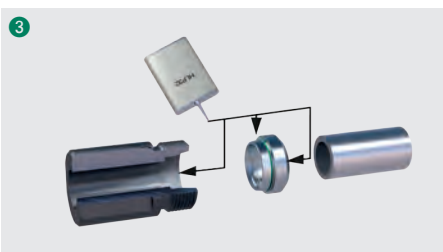


1 Hardened assembly studs are wear-resistant, thus allowing for consistent assembly results with a maximum degree of accuracy, reliability and process stability.



2 Assembly studs must be checked regularly for damage and dimensional accuracy. Replace assembly studs that are damaged and/or dimensionally inaccurate in all cases.

Typical damage includes the partial or complete widening of the 24° taper, as well as material erosion.



Please note when use FI-WDDS-W5 with Stainless Steel Fitting Body: Thread and 45° cone of the union nut and thread of the fitting body grease with special stainless steel fitting grease or use a silver coated union nut.

Lubricate the 24° taper of the assembly stud as well as the two soft-sealing elements of the cutting ring (e.g. using hydraulic oil HLP32). Do not use lubricating grease!

Immediately proceed with assembly to avoid the adhesion of dirt.

Consecutively push the union nut and then the cutting ring onto the tube end.

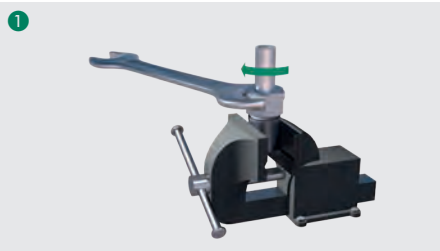
Pay attention to the correct alignment of the cutting ring: the cutting edges of the cutting ring have to face the tube end.

Carefully insert the tube end into the 24° taper of the assembly stud until it is flush with the stop.

The tube must be held in this position during the entire assembly process.

Assembly Instructions for 24° Tube Connectors with Soft-Sealing Cutting Ring (Type FI-WDDS/FI-WDDS-W5) Pre-Assembly with the Manual Final Assembly Stud Type FI-FK and Assembly in the Fitting Body

3. Pre-Assembly in the Assembly Stud



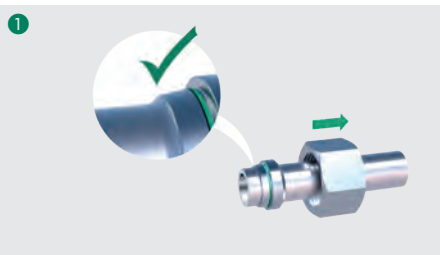
Please note when use FI-WDDS-W5 with Stainless Steel Fitting Body: Thread and 45° cone of the union nut and thread of the fitting body grease with special stainless steel fitting grease or use a silver coated union nut.

Use a suitable spanner.
Tighten the union nut to the point where there is a first increase in force, the pressure point.
The pressure point defines the point at which the cutting ring starts gripping the tube.

The tube can then no longer be rotated in the fitting.
Now tighten the union nut to the end of the assembly.
The end of the assembly is situated approx. 1 turn (360°) beyond the pressure point and is signalled by a significant increase in force.

The cutting ring comes into contact with the face side of the fitting body.

4. Inspection



Fully loosen the union nut to visually inspect the assembly. There must be raised material clearly visible in front of the cutting edge and should cover the cutting edge approx. 80%.

Under certain circumstances, it is still possible at this time to turn the cutting ring on the tube (radial direction). It can no longer be moved in the direction of the tube (axial direction).

5. Final-Assembly with the Fitting Body



Please note when use FI-WDDS-W5 with Stainless Steel Fitting Body: Thread and 45° cone of the union nut and thread of the fitting body grease with special stainless steel fitting grease or use a silver coated union nut.

Lightly lubricate the soft-sealing element located on the 24° taper of the cutting ring (e.g. using hydraulic oil HLP32). Do not use lubricating grease!

Immediately proceed with assembly to avoid the adhesion of dirt.

Carefully insert the assembled tube end into the 24° taper of the fitting body.

Tighten the union nut to the point where there is a first increase in force. Then tighten the union nut to the end of the assembly.

The cutting ring comes into contact with the face side of the fitting body after approx. 90°-120°. The end of the assembly is once again indicated by a significant increase in force.

Use a suitable spanner to hold the fitting body within the tube during the entire assembly process. Use a bench vice for assembly in the event of unfavourable assembly conditions or larger tube dimensions.

A marking line on the union nut and the fitting body makes it easier to note and check the correct tightening angle.

6. Repeated Assembly

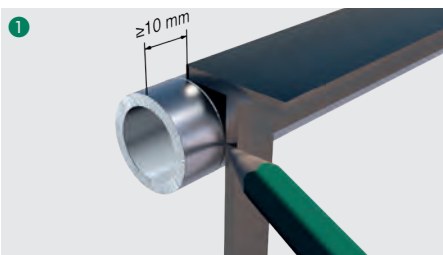
Check the soft-sealing element located on the 24° taper of the cutting ring for possible damage.

Carefully insert the tube end into the 24° taper of the fitting body.

Then tighten the union nut to the end of the assembly. The cutting ring comes into contact with the face side of the fitting body after approx. 90°-120°. The end of the assembly is once again indicated by a significant increase in force.

Assembly Instructions for 24° Tube Connectors with Soft-Sealing Cutting Ring (Type FI-WDDS/FI-WDDS-W5) Direct Assembly in the Fitting Body

1. Tube Preparation



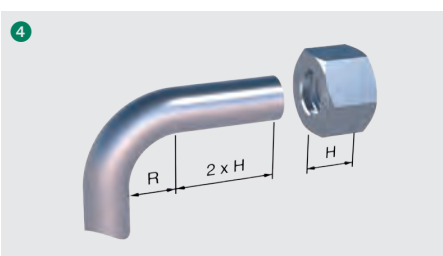
1 Saw off tube at a right angle (90°) and at least 10 mm from the cut made by the manufacture / supplier.



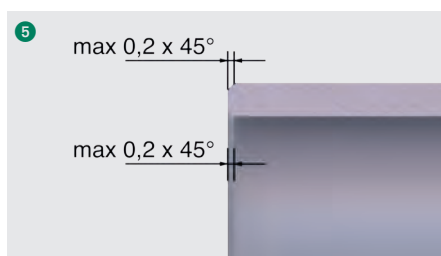
2 A maximum angular deviation of $\pm 0.5^\circ$ to the tube axis is permissible.



3 Do not use tube cutters or grinders.



4 The length of the straight sections of the tube of tube bends has to be twice the length of the union nut.



5 Slightly deburr the inside and outside of the tube end (max $0.2 \times 45^\circ$). The assembly area of the tube has to be free of dirt, chips and paint.

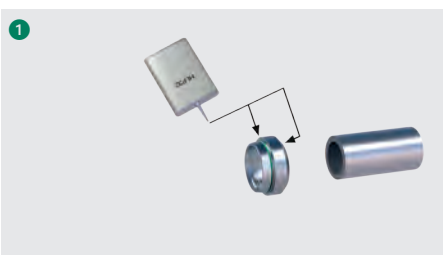


6 Please note: Improperly prepared and contaminated tubes will affect the service life of the tube connectors and may result in leakage. Poorly deburred tube ends can result in damage to the internal O-ring!



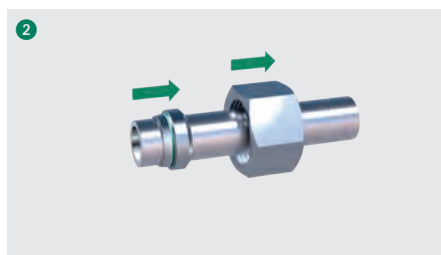
Please note: Assembly of reinforcing sleeves is essential when using thin-walled tubes. Refer to page 310.

2. Assembly Preparation



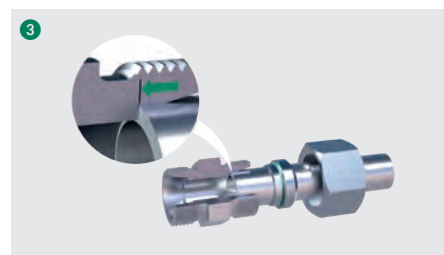
1 Lightly lubricate the two soft-sealing elements of the cutting ring (e.g. using hydraulic oil HLP32). Do not use lubricating grease!

Immediately proceed with assembly to avoid the adhesion of dirt.



2 Consecutively push the union nut and then the cutting ring onto the tube end.

Pay attention to the correct alignment of the cutting ring: the cutting edges of the cutting ring have to face the tube end.



3 Carefully insert the tube end into the 24° taper of the fitting body until it is flush with the stop.

The tube must be held in this position during the entire assembly process.



Please note when use FI-WDDS-W5 with Stainless Steel Fitting Body: Thread and 45° cone of the union nut and thread of the fitting body grease with special stainless steel fitting grease or use a silver coated union nut.

Assembly Instructions for 24° Tube Connectors with Soft-Sealing Cutting Ring (Type FI-WDDS/FI-WDDS-W5) Direct Assembly in the Fitting Body

3. Pre-Assembly in the Fitting Body



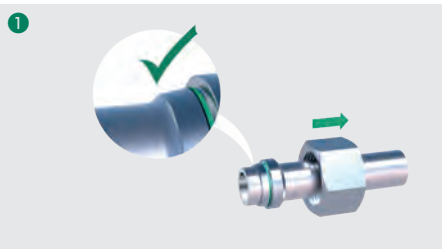
Please note when use FI-WDDS-W5 with Stainless Steel Fitting Body: Thread and 45° cone of the union nut and thread of the fitting body grease with special stainless steel fitting grease or use a silver coated union nut.

Use a suitable spanner. Tighten the union nut to the point where there is a first increase in force, the pressure point. The pressure point defines the point at which the cutting ring starts gripping the tube.

The tube can then no longer be rotated in the fitting. Now tighten the union nut to the end of the assembly. The end of the assembly is situated approx. 1 turn (360°) beyond the pressure point and is signalled by

a significant increase in force. The cutting ring comes into contact with the face side of the fitting body.

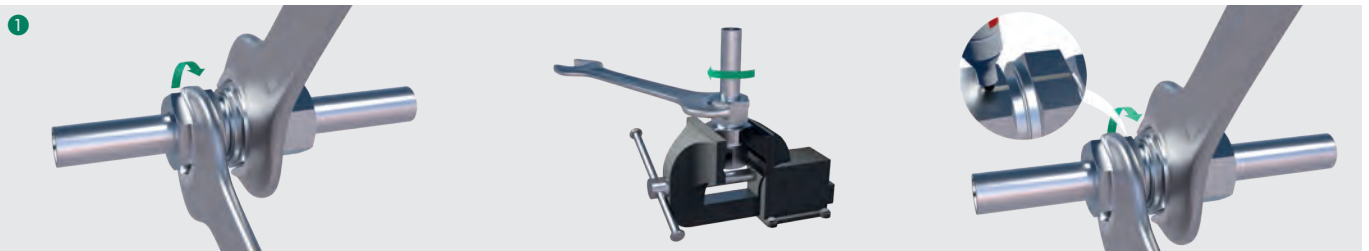
4. Inspection



Fully loosen the union nut to visually inspect the assembly. There must be raised material clearly visible in front of the cutting edge and should cover the cutting edge approx. 80%.

Under certain circumstances, it is still possible at this time to turn the cutting ring on the tube (radial direction). It can no longer be moved in the direction of the tube (axial direction).

5. Final-Assembly with the Fitting Body



Please note when use FI-WDDS-W5 with Stainless Steel Fitting Body: Thread and 45° cone of the union nut and thread of the fitting body grease with special stainless steel fitting grease or use a silver coated union nut.

Lightly lubricate the soft-sealing element located on the 24° taper of the cutting ring (e.g. using hydraulic oil HLP32). Do not use lubricating grease!

Immediately proceed with assembly to avoid the adhesion of dirt.

Carefully insert the assembled tube end into the 24° taper of the fitting body.

Tighten the union nut to the point where there is a first increase in force. Then tighten the union nut to the end of the assembly.

The cutting ring comes into contact with the face side of the fitting body after approx. 90°-120°. The end of the assembly is once again indicated by a significant increase in force.

Use a suitable spanner to hold the fitting body within the tube during the entire assembly process. Use a bench vice for assembly in the event of unfavourable assembly conditions or larger tube dimensions.

A marking line on the union nut and the fitting body makes it easier to note and check the correct tightening angle.

6. Repeated Assembly

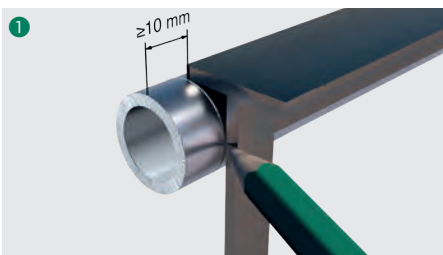
Check the soft-sealing element located on the 24° taper of the cutting ring for possible damage.

Carefully insert the tube end into the 24° taper of the fitting body.

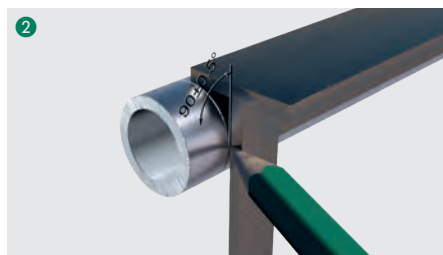
Then tighten the union nut to the end of the assembly. The cutting ring comes into contact with the face side of the fitting body after approx. 90°-120°. The end of the assembly is once again indicated by a significant increase in force.

Assembly Instructions for 24° Tube Connectors with Soft-Sealing Cutting Ring (Type FI-WDDS/FI-WDDS-W5) Machine-Assisted Pre-Assembly with a STAUFF Press Assembly Machine and Assembly with the Fitting Body

1. Tube Preparation



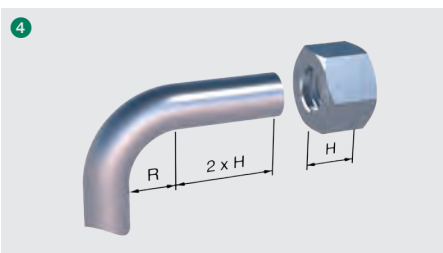
1 Saw off tube at a right angle (90°) and at least 10 mm from the cut made by the manufacture / supplier.



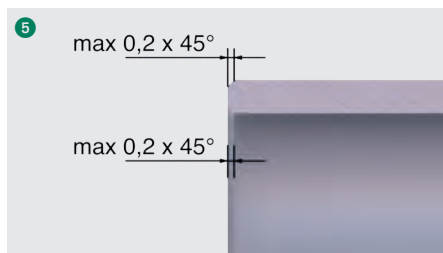
2 A maximum angular deviation of $\pm 0.5^\circ$ to the tube axis is permissible.



3 Do not use tube cutters or grinders.



4 The length of the straight sections of the tube of tube bends has to be twice the length of the union nut.



5 Slightly deburr the inside and outside of the tube end (max $0.2 \times 45^\circ$). The assembly area of the tube has to be free of dirt, chips and paint.



6 Please note: Improperly prepared and contaminated tubes will affect the service life of the tube connectors and may result in leakage. Poorly deburred tube ends can result in damage to the internal O-ring!



Please note: Assembly of reinforcing sleeves is essential when using thin-walled tubes. Refer to page 310.

2. Assembly Preparation, Machine-Assisted Assembly and Inspection



Please refer to the detailed instructions in the operating manual for the machine with regard to assembly preparation, actual assembly and inspection of the assembled tube ends.

3. Final-Assembly with the Fitting Body



Please note when use FI-WDDS-W5 with Stainless Steel Fitting Body: Thread and 45° cone of the union nut and thread of the fitting body grease with special stainless steel fitting grease or use a silver coated union nut.

Lightly lubricate the soft-sealing element located on the 24° taper of the cutting ring (e.g. using hydraulic oil HLP32). Do not use lubricating grease!

Immediately proceed with assembly to avoid the adhesion of dirt.

Carefully insert the assembled tube end into the 24° taper of the fitting body.

Tighten the union nut to the point where there is a first increase in force. Then tighten the union nut to the end of the assembly.

The cutting ring comes into contact with the face side of the fitting body after approx. 90° - 120° . The end of the assembly is once again indicated by a significant increase in force.

Use a suitable spanner to hold the fitting body within the tube during the entire assembly process. Use a bench vice for assembly in the event of unfavourable assembly conditions or larger tube dimensions.

A marking line on the union nut and the fitting body makes it easier to note and check the correct tightening angle.

6. Repeated Assembly

Check the soft-sealing element located on the 24° taper of the cutting ring for possible damage.

Carefully insert the tube end into the 24° taper of the fitting body.

Then tighten the union nut to the end of the assembly. The cutting ring comes into contact with the face side of the fitting body after approx. 90° - 120° . The end of the assembly is once again indicated by a significant increase in force.



Please note when use FI-WDDS-W5 with Stainless Steel Fitting Body: Thread and 45° cone of the union nut and thread of the fitting body grease with special stainless steel fitting grease or use a silver coated union nut.

Assembly Instructions for Support Sleeves (Type FI-VH)

Selection Chart for Tubes made of Steel / Stainless Steel

| Series | Tube OD mm | Tube Wall Thickness mm | | | | | | | | | |
|--------|---------------|---------------------------|------|-----|-----|-----|-----|-----|-----|-----|--|
| | | 0,5 | 0,75 | 1,0 | 1,5 | 2,0 | 2,5 | 3,0 | 3,5 | 4,0 | |
| LL | 4 | | | | | | | | | | |
| | 6 | ● | | | | | | | | | |
| | 8 | ● | | | | | | | | | |
| L | 6 | ● | ● | | | | | | | | |
| | 8 | ● | ● | | | | | | | | |
| | 10 | ● | ● | | | | | | | | |
| | 12 | ● | ● | ○ | | | | | | | |
| | 15 | ● | ● | ● | | | | | | | |
| | 18 | ● | ● | ● | ○ | | | | | | |
| | 22 | ● | ● | ● | ○ | ○ | | | | | |
| | 28 | ● | ● | ● | ○ | ○ | ○ | | | | |
| | 35 | ● | ● | ● | ● | ○ | ○ | ○ | | | |
| | 42 | ● | ● | ● | ● | ○ | ○ | | | | |
| | S | 6 | ● | ● | | | | | | | |
| 8 | | ● | ● | | | | | | | | |
| 10 | | ● | ● | | | | | | | | |
| 12 | | ● | ● | ○ | | | | | | | |
| 14 | | ● | ● | ● | | | | | | | |
| 16 | | ● | ● | ● | ○ | | | | | | |
| 20 | | ● | ● | ● | ● | ○ | | | | | |
| 25 | | ● | ● | ● | ● | ○ | | | | | |
| 30 | | ● | ● | ● | ● | ● | ○ | | | | |
| 38 | | ● | ● | ● | ● | ● | ● | ○ | ○ | | |

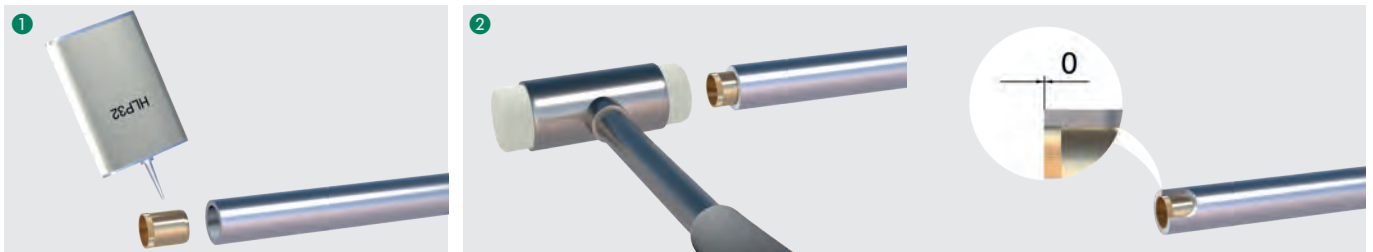
Selection Chart for Tubes made of Non-Ferrous Metals

| Series | Tube OD mm | Tube Wall Thickness mm | | | | | | | | | |
|--------|---------------|---------------------------|------|-----|-----|-----|-----|-----|-----|-----|---|
| | | 0,5 | 0,75 | 1,0 | 1,5 | 2,0 | 2,5 | 3,0 | 3,5 | 4,0 | |
| LL | 4 | | | | | | | | | | |
| | 6 | ● | ● | | | | | | | | |
| | 8 | ● | ● | | | | | | | | |
| L | 6 | ● | ● | ● | | | | | | | |
| | 8 | ● | ● | ● | | | | | | | |
| | 10 | ● | ● | ● | ○ | | | | | | |
| | 12 | ● | ● | ● | ● | | | | | | |
| | 15 | ● | ● | ● | ● | | | | | | |
| | 18 | ● | ● | ● | ● | ● | | | | | |
| | 22 | ● | ● | ● | ● | ● | ● | | | | |
| | 28 | ● | ● | ● | ● | ● | ● | ● | | | |
| | 35 | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | 42 | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | S | 6 | ● | ● | ● | | | | | | |
| 8 | | ● | ● | ● | | | | | | | |
| 10 | | ● | ● | ● | | | | | | | |
| 12 | | ● | ● | ● | | | | | | | |
| 14 | | ● | ● | ● | ● | | | | | | |
| 16 | | ● | ● | ● | ● | ● | | | | | |
| 20 | | ● | ● | ● | ● | ● | ● | | | | |
| 25 | | ● | ● | ● | ● | ● | ● | ● | | | |
| 30 | | ● | ● | ● | ● | ● | ● | ● | ● | | |
| 38 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

● Generally required ○ Highly recommended, especially for adverse operating conditions (vibrations, risks of self-loosening of fittings etc.)

Support sleeves are generally required for use with tubes made of plastics.

Assembly



1 Lubricate the outside of the support sleeve (e.g. using mineral-oil based hydraulic fluid HLP32) and insert it into the tube end up to the knurled section.

2 Use a hammer (plastic or rubber) to fully drive the support sleeve into the tube end, so that the knurled section is pressed against the inner wall of the tube and the sleeve is firmly flush with the tube end.

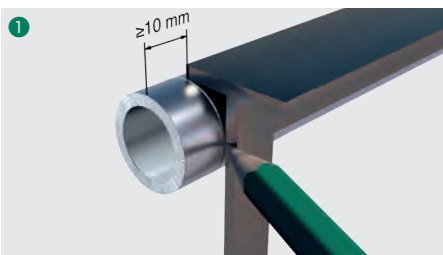
In doing so, the support sleeve is prevented from subsequent turning, sliding and falling out.

S

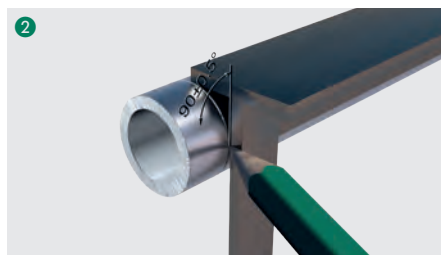
Assembly Instructions for STAUFF Form EVO Tube Fittings

Tube End Forming with a STAUFF Form EVO Machine and Assembly with the Fitting Body

1. Tube Preparation



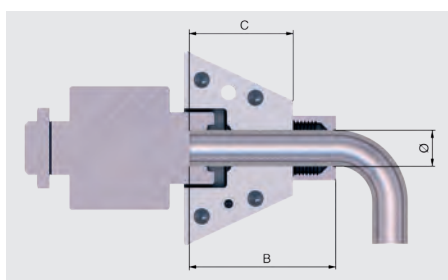
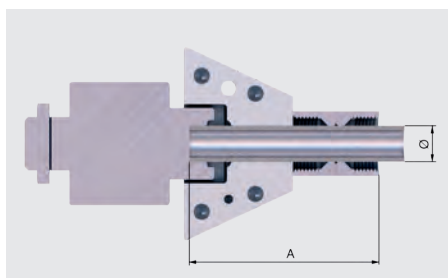
1 Saw off tube in right angle and at least 10 mm from the cut made by the tube manufacturer / supplier in order to avoid failures caused during shipment.



2 A maximum angular deviation / tolerance of $\pm 0,5^\circ$ relative to the tube axis is permissible.

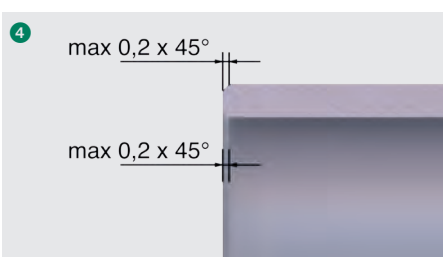


3 Only use proper tube sawing machinery or equipment. Do not use tube cutters or grinders as this may result in unwanted angled cuts and cause severe burring.



| Series | Tube OD mm | Minimum Length A | Minimum Length B | Insertion Depth C incl. 10 mm Door thickness mm |
|--------|---------------|--------------------------|---|---|
| | | Straight Tube Ends mm | Straight Sections next to Tube Bends mm | |
| L | 6 | 75 | 52 | 52 |
| | 8 | 75 | 52 | 52 |
| | 10 | 74 | 52 | 52 |
| | 12 | 75 | 54 | 54 |
| | 15 | 89 | 66 | 59 |
| | 18 | 99 | 74 | 67 |
| | 22 | 106 | 82 | 72 |
| | 28 | 112 | 87 | 75 |
| S | 35 | 138 | 106 | 81 |
| | 42 | 139 | 106 | 81 |
| | 6 | 77 | 54 | 54 |
| | 8 | 77 | 54 | 52 |
| | 10 | 77 | 54 | 52 |
| | 12 | 78 | 56 | 54 |
| | 16 | 98 | 72 | 61 |
| | 20 | 115 | 84 | 70 |
| | 25 | 129 | 96 | 79 |
| | 30 | 148 | 111 | 82 |
| 38 | 170 | 126 | 94 | |

Please note the minimum lengths for straight tube ends (dimension A) as well as for straight tube sections next to tube bends (dimension B) that are listed in the table.



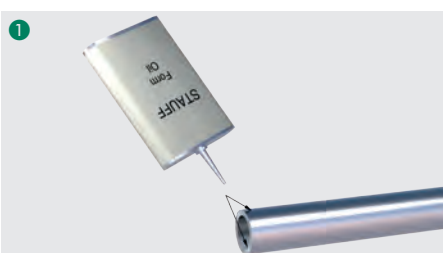
4 Slightly deburr inside and outside of the tube end (max $0,2 \times 45^\circ$). The assembly area of the tube has to be free of contamination, chips and paint.



5 Please note: Improperly prepared and contaminated tubes will affect the service life of the connection and may result in leakage.



2. Preparation and Machine-Assisted Tube Forming



1 Lightly lubricate the inside and outside of the tube end (e.g. with a thin film of mineral-oil based hydraulic fluid HLP32) before starting the machine-assisted tube forming process. Do not use lubricating grease!

Important: For tube ends made of stainless steel, always and only use original STAUFF Form EVO Oil. The use of any other fluid is not allowed and may result in damage of the assembly tools.

Immediately proceed with the assembly in order to avoid exposure to contamination.

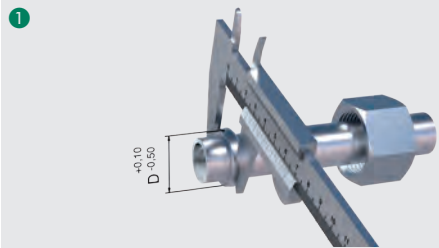
If the lubricant film on the outside of the tube end is too thick, fluid will be trapped between the forming tool and the tube end, thus resulting in inaccurate contours.

With regards to the actual tube forming process, please follow the detailed instructions in the operating manual of the machine.

Assembly Instructions for STAUFF Form EVO Tube Fittings

Tube End Forming with a STAUFF Form EVO Machine and Assembly with the Fitting Body

3. Inspection

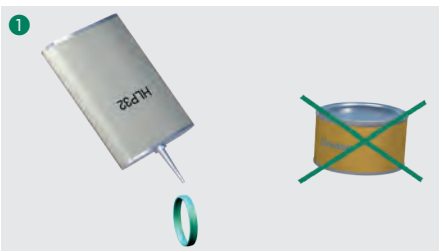


Use a suitable measuring device (caliper gauge) to check control diameter D (Tolerance D +0.1/-0.5) of the formed tube end based on the dimension table on the right.

Note: The function is fulfilled when the control diameter is reached, even if the contour of the forming may differ visually depending on the tube diameter.

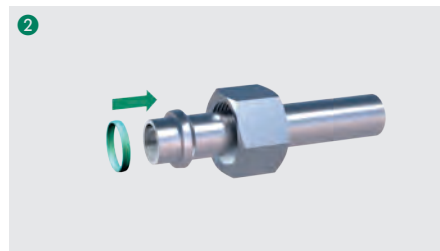
| Series | Tube OD | Dimensions |
|--------|---------|------------|
| | mm | D mm |
| L | 6 | 9,5 |
| | 8 | 12,1 |
| | 10 | 14,0 |
| | 12 | 16,1 |
| | 15 | 20,1 |
| | 18 | 23,7 |
| | 22 | 27,1 |
| | 28 | 33,1 |
| | 35 | 42,1 |
| | 42 | 49,4 |
| S | 6 | 9,5 |
| | 8 | 12,1 |
| | 10 | 14,0 |
| | 12 | 16,1 |
| | 16 | 21,7 |
| | 20 | 26,1 |
| | 25 | 31,1 |
| | 30 | 37,1 |
| | 38 | 46,9 |

4. Assembly with the Fitting Body

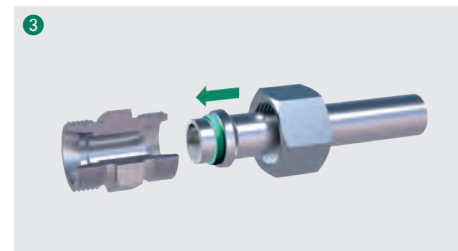


Lightly lubricate the inside and outside of the sealing element of the form ring (e.g. using mineral-oil based hydraulic fluid HLP32). Do not use lubricating grease!

Immediately proceed with the assembly in order to avoid exposure to contamination.



Slide the sealing ring onto the formed tube end (laterally identical profile to avoid assembly errors).

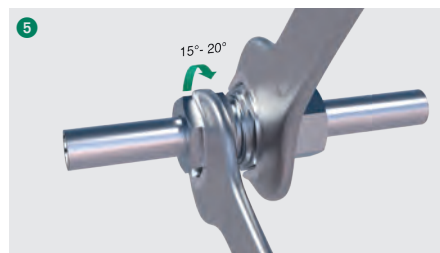


Carefully insert the formed tube end with the assembled sealing into the 24° taper of the fitting body.



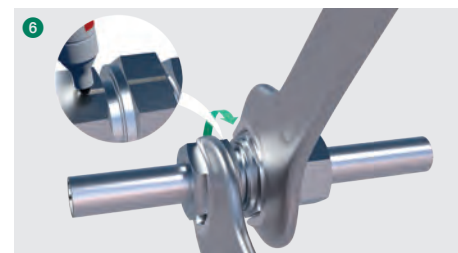
Use a suitable spanner to tighten the nut until there is a noticeable increase in force required (fixed point).

Avoid over-tightening by gripping the spanner close to the union nut.



Finish the assembly by using a suitable spanner to tighten the union nut approximately 15-20° beyond the fixed point. Always use a second spanner to hold the fitting body during the entire assembly procedure.

Alternatively, the assembly can be done via a torque.
Table with torques see point 6.



A marking line applied on the union nut and the fitting body makes it easier to indicate the sufficient tightening angle.



Please note when using stainless steel components: Thread and 45° cone of the union nut and thread of the fitting body grease with special stainless steel fitting grease or use a silver coated union nut.

5. Repeated Assembly

For repeated assemblies, please follow the instructions from point 4 on.

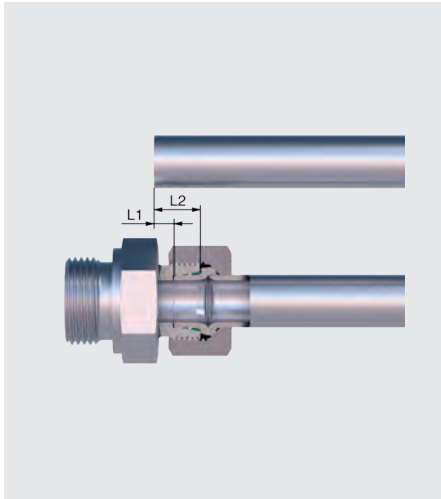
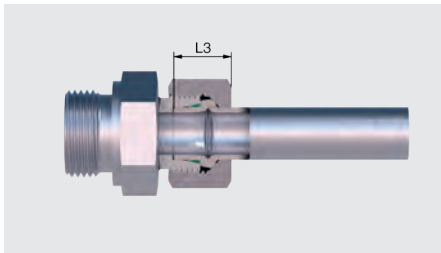
Assembly Instructions for STAUFF Form EVO Tube Fittings
 Tube End Forming with a STAUFF Form Machine and Assembly with the Fitting Body

6. Torques for alternative assembly for STAUFF Form EVO Tube Fittings

| Series | Tube OD mm | Dimensions mm Thread | Turn till increase in force (fix point), than Assembly Angle | Torque N-m |
|--------|------------|-------------------------|--|------------|
| L | 6 | M 12 x 1,5 | 15° ... 20° | 23 |
| | 8 | M 14 x 1,5 | | 32 |
| | 10 | M 16 x 1,5 | | 40 |
| | 12 | M 18 x 1,5 | | 50 |
| | 15 | M 22 x 1,5 | | 65 |
| | 18 | M 26 x 1,5 | | 110 |
| | 22 | M 30 x 2 | | 120 |
| | 28 | M 36 x 2 | | 160 |
| | 35 | M 45 x 2 | | 275 |
| | 42 | M 52 x 2 | | 410 |
| S | 6 | M 14 x 1,5 | | 30 |
| | 8 | M 16 x 1,5 | | 40 |
| | 10 | M 18 x 1,5 | | 55 |
| | 12 | M 20 x 1,5 | | 60 |
| | 16 | M 24 x 1,5 | | 85 |
| | 20 | M 30 x 2 | | 160 |
| | 25 | M 36 x 2 | | 200 |
| | 30 | M 42 x 2 | | 270 |
| | 38 | M52 x 2 | 400 | |

Assembly Instructions for STAUFF Form EVO Tube Fittings

Tube End Forming with a STAUFF Form EVO Machine and Assembly with the Fitting Body

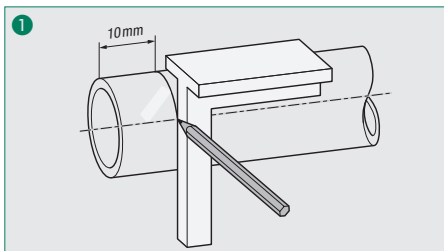
Calculation Dimensions


| Tube OD mm | Tube Wall Thickness mm | L1 mm | L2 mm | L3 mm |
|---------------|------------------------------|----------|----------|----------------------|
| 6 | 1,5 | 7,3 | 13,8 | 14,6 (L+S) |
| | 2,0 | 7,6 | 14,1 | |
| 8 | 1,5 | 7,5 | 14,0 | 14,6 (L+S) |
| | 2,0 | 7,1 | 13,6 | |
| | 2,5 | 6,6 | 13,1 | |
| 10 | 1,5 | 6,0 | 12,4 | 14,5 (L) 15,5 (S) |
| | 2,0 | 6,3 | 12,7 | |
| | 2,5 | 6,0 | 12,4 | |
| | 3,0 | 5,7 | 12,1 | |
| 12 | 1,5 | 5,2 | 11,7 | 14,6 (L) 15,6 (S) |
| | 2,0 | 5,4 | 11,9 | |
| | 2,5 | 5,1 | 11,6 | |
| | 3,0 | 4,9 | 11,4 | |
| 15 | 1,5 | 6 | 12,5 | 15,6 |
| | 2,0 | 6,4 | 12,9 | |
| | 2,5 | 6,4 | 12,9 | |
| 16 | 1,5 | 6,9 | 14,8 | 18,4 |
| | 2,0 | 7,4 | 15,3 | |
| | 2,5 | 7,0 | 14,9 | |
| | 3,0 | 7,0 | 14,9 | |
| | 4,0 | 6,2 | 14,1 | |
| 18 | 2,0 | 6,8 | 13,7 | 16,4 |
| | 2,5 | 6,5 | 13,4 | |
| | 3,0 | 6,8 | 13,7 | |
| | 4,0 | 6,4 | 13,3 | |
| 20 | 2,0 | 7,7 | 17,7 | 21,6 |
| | 2,5 | 7,8 | 17,8 | |
| | 3,0 | 7,7 | 17,7 | |
| | 3,5 | 7,4 | 17,4 | |
| | 4,0 | 7,3 | 17,3 | |
| 22 | 2,0 | 5,5 | 12,5 | 17,5 |
| | 2,5 | 5,7 | 12,7 | |
| | 3,0 | 5,8 | 12,8 | |
| | 3,5 | 5,9 | 12,9 | |
| 25 | 2,0 | 7,1 | 18,6 | 24,5 |
| | 2,5 | 7,6 | 19,1 | |
| | 3,0 | 7,7 | 19,2 | |
| | 3,5 | 7,7 | 19,2 | |
| | 4,0 | 7,8 | 19,3 | |
| 28 | 2,0 | 5,4 | 12,4 | 18 |
| | 2,5 | 5,8 | 12,8 | |
| | 3,0 | 5,7 | 12,7 | |
| | 3,5 | 5,3 | 12,3 | |
| | 4,0 | 6,2 | 13,2 | |
| 30 | 2,5 | 7,9 | 20,8 | 27,2 |
| | 3,0 | 8,0 | 20,9 | |
| | 4,0 | 8,2 | 21,1 | |
| | 5,0 | 8,5 | 21,4 | |
| | 6,0 | 8,2 | 21,1 | |
| 35 | 2,5 | 7,7 | 17,6 | 22 |
| | 3,0 | 7,8 | 17,7 | |
| | 4,0 | 8,6 | 18,5 | |
| | 5,0 | 8,7 | 18,6 | |
| 38 | 3,0 | 9,8 | 25,2 | 31 |
| | 4,0 | 11,0 | 26,4 | |
| | 5,0 | 11,3 | 26,7 | |
| | 6,0 | 11,4 | 26,8 | |
| 42 | 3,0 | 8,1 | 18,5 | 22,7 |
| | 3,5 | 7,9 | 18,3 | |
| | 4,0 | 8,6 | 19,0 | |

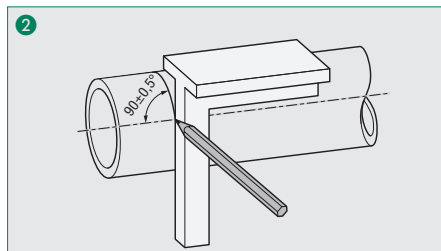
Assembly Instructions for STAUFF Connect 37° Flared Tube Fittings

Tube Flaring with a STAUFF Press Machine and Assembly with the Fitting Body

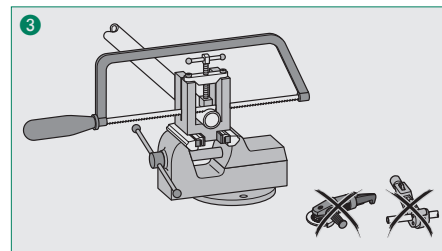
1. Tube Preparation



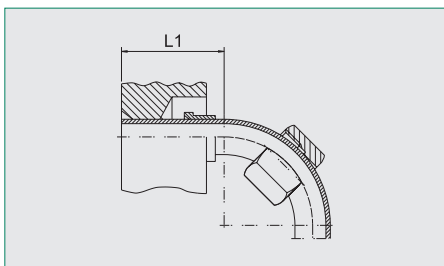
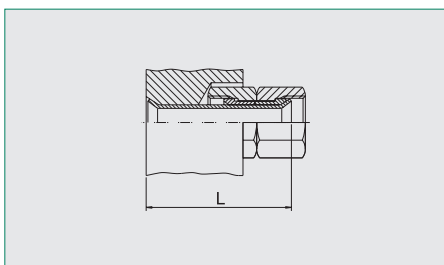
Saw off tube in right angle and at least 10 mm from the cut made by the tube manufacturer / supplier in order to avoid failures caused during shipment.



A maximum angular deviation / tolerance of $\pm 0,5^\circ$ relative to the tube axis is permissible.

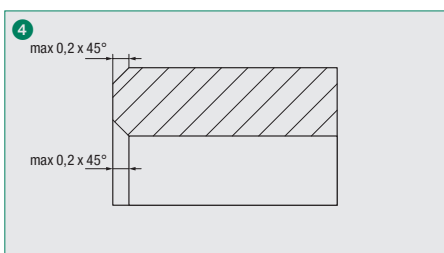


Only use proper tube sawing machinery or equipment. Do not use tube cutters or grinders as this may result in unwanted angled cuts and cause severe burring.



| Series | Tube OD mm | Mimimum Length L Straight Tube Sections mm | Mimimum Length L1 Straight Tube Sections next to Tube Bends mm |
|--------|---------------|--|--|
| L | 6 | 59 | 43 |
| | 8 | 62 | 44 |
| | 10 | 64 | 46 |
| | 12 | 67 | 47 |
| | 15 | 75 | 50 |
| | 18 | 76 | 58 |
| | 22 | 81 | 60 |
| | 28 | 88 | 60 |
| | 35 | 92 | 62 |
| | 42 | 130 | 70 |
| S | 6 | 61 | 43 |
| | 8 | 64 | 44 |
| | 10 | 66 | 46 |
| | 12 | 68 | 47 |
| | 16 | 79 | 52 |
| | 20 | 82 | 58 |
| | 25 | 94 | 60 |
| | 30 | 96 | 62 |
| 38 | 136 | 70 | |

Please note the minimum lengths for straight tube ends (dimension L) as well as for straight tube sections next to tube bends (dimension L1) that are listed in the table. If installation situations demand that the length of straight tube sections next to tube bends (dimension L1) has to be shorter than indicated in the table, tube bending has to be carried out after flaring.



Slightly deburr inside and outside of the tube end (max 0,2 x 45°). The assembly area of the tube has to be free of contamination, chips and paint.



Please note: Improperly prepared and contaminated tubes will affect the service life of the connection and may result in leakage.

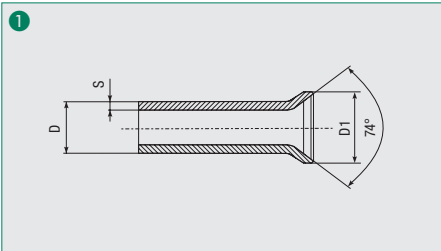
2. Preparation and Machine-Assisted Tube Flaring

With regards to assembly preparation as well as the actual tube flaring process, please follow the detailed instructions in the operating manual of the machine.

Assembly Instructions for STAUFF Connect 37° Flared Tube Fittings

Tube Flaring with a STAUFF Press Machine and Assembly with the Fitting Body

3. Inspection



Check the flared tube end for cracking and impurities after flaring.

Always verify the dimensional accuracy of the flare.

The checking diameter corresponds to the outside diameter D1 of the flared tube end (according to dimension table on the right). The flare must be at right angle to the tube axis and concentric with the tube.

Please note: If the flare is eccentric, too short or not wide enough, perfect function of the tube fitting cannot be guaranteed!

4. Assembly with the Fitting Body

Lubricate the o-rings of the 24°/37° flared tube adaptor (e.g. using mineral-oil based hydraulic fluid HLP32) and carefully insert it into the 24° taper of the fitting body.

It is recommended to use a bench vice to press and permanently capture the 24°/37° flared tube adaptor into the 24° taper of the tube fitting – a great help to the tube fitter during re-assembly. In this case, please make sure that all components are suitably protected against damage.

Apply the flared tube end to the 24°/37° flared tube adaptor, which is attached to the fitting body, tighten the union nut until the noticeable increase in force, and then finish the assembly with another approximately 1/2 a turn (180°) beyond this point.

Important: Always use a spanner to hold the fitting body during the assembly procedure.

| Tube OD D mm | Dimensions S mm | D1 _{min} mm | D1 _{max} mm |
|--------------------|-----------------------|-------------------------|-------------------------|
| 6 | 1 | 9,1 | 10 |
| | 1,5 | | |
| 8 | 1 | 11,3 | 12 |
| | 1,5 | | |
| | 2 | | |
| 10 | 1 | 13,1 | 14 |
| | 1,5 | | |
| | 2 | | |
| 12 | 1 | 15,3 | 16 |
| | 1,5 | | |
| | 2 | | |
| 14 | 1,5 | 18,6 | 19,6 |
| | 2 | | |
| | 2,5 | | |
| | 3 | | |
| 15 | 1,5 | 19,1 | 20 |
| | 2 | | |
| | 2,5 | | |
| 16 | 1,5 | 20,6 | 22 |
| | 2 | | |
| | 2,5 | | |
| | 3 | | |
| 18 | 1,5 | 23,2 | 24 |
| | 2 | | |
| | 2,5 | | |
| 20 | 2 | 25,6 | 26,8 |
| | 2,5 | | |
| | 3 | | |
| | 3,5 | | |
| | 1,5 | | |
| 22 | 2 | 26,5 | 27,5 |
| | 2,5 | | |
| | 3 | | |
| | 3 | | |
| 25 | 2 | 31,1 | 33 |
| | 2,5 | | |
| | 3 | | |
| | 4 | | |
| 28 | 2 | 32,7 | 33,3 |
| | 2,5 | | |
| | 3 | | |
| | 3 | | |
| | 2 | | |
| 30 | 2,5 | 37 | 38,7 |
| | 3 | | |
| | 3 | | |
| | 4 | | |
| | 5 | | |
| 35 | 2 | 41,8 | 42,7 |
| | 2,5 | | |
| | 3 | | |
| | 4 | | |
| 38 | 2,5 | 46 | 47,2 |
| | 3 | | |
| | 4 | | |
| | 4 | | |
| | 5 | | |
| 42 | 2 | 48,8 | 49,8 |
| | 3 | | |
| | 4 | | |

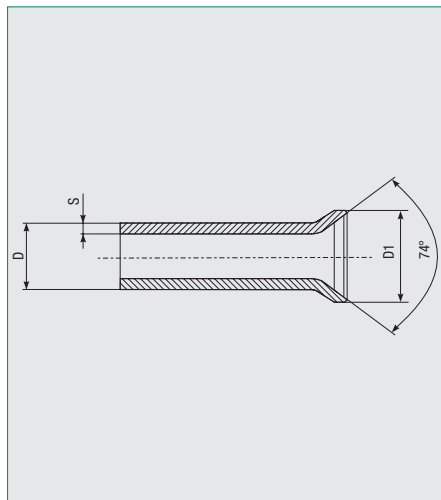
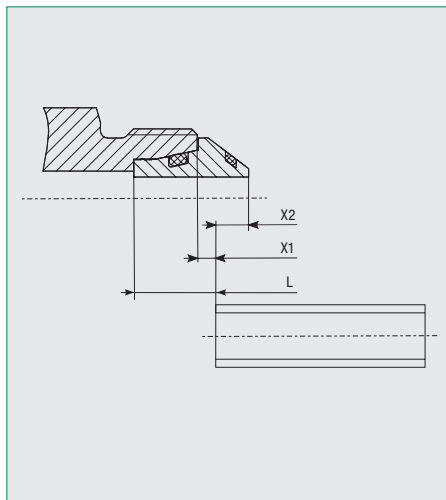
5. Repeated Assembly

For repeated assembly, the union nut has to be tightened using exactly the same force as for the original assembly.

Assembly Instructions for STAUFF Connect 37° Flared Tube Fittings

Tube Flaring with a STAUFF Press Machine and Assembly with the Fitting Body

Calculation Dimensions



| Tube OD mm D | Dimensions mm | | | | D1 min | D1 max |
|--------------------|------------------|------|-----|------|--------|--------|
| | S | X1 | X2 | L | | |
| 6 | 1 | 1 | 3,5 | 8 | 9,1 | 10 |
| | 1,5 | 2 | 2,5 | 9 | | |
| 8 | 1 | 1 | 4 | 8 | 11,3 | 12 |
| | 1,5 | 2 | 3 | 9 | | |
| | 2 | 2,5 | 2,5 | 9,5 | | |
| 10 | 1 | 1 | 4,5 | 8 | 13,1 | 14 |
| | 1,5 | 2 | 3,5 | 9 | | |
| | 2 | 3 | 2,5 | 10 | | |
| 12 | 1 | 1 | 4,5 | 8 | 15,3 | 16 |
| | 1,5 | 2 | 3,5 | 9 | | |
| | 2 | 3 | 2,5 | 10 | | |
| 14 | 1,5 | 0,5 | 5,5 | 8,5 | 18,6 | 19,6 |
| | 2 | 1 | 5 | 9 | | |
| | 2,5 | 2 | 4 | 10 | | |
| | 3 | 3 | 3 | 11 | | |
| 15 | 1,5 | 1 | 4,5 | 8 | 19,1 | 20 |
| | 2 | 2 | 3,5 | 9 | | |
| | 2,5 | 3 | 2,5 | 10 | | |
| 16 | 1,5 | 0 | 6,5 | 8,5 | 20,6 | 22 |
| | 2 | 1 | 5,5 | 9,5 | | |
| | 2,5 | 1,5 | 5 | 10 | | |
| | 3 | 2,5 | 4 | 11 | | |
| 18 | 1,5 | 0 | 5,5 | 7,5 | 23,2 | 24 |
| | 2 | 1 | 4,5 | 8,5 | | |
| | 2,5 | 1,5 | 4 | 9 | | |
| 20 | 2 | 1 | 7 | 11,5 | 25,6 | 26,8 |
| | 2,5 | 2 | 6 | 12,5 | | |
| | 3 | 3 | 5 | 13,5 | | |
| | 3,5 | 4 | 4 | 14,5 | | |
| | 1,5 | 1 | 5,7 | 8,5 | | |
| 22 | 2 | 2 | 4,7 | 9,5 | 26,5 | 27,5 |
| | 2,5 | 3 | 3,7 | 10,5 | | |
| | 3 | 3,5 | 3,2 | 11 | | |
| | 3,5 | 4 | 4 | 12 | | |
| 25 | 2 | 1 | 7 | 13 | 31,1 | 33 |
| | 2,5 | 1,5 | 6,5 | 13,5 | | |
| | 3 | 2,5 | 5,5 | 14,5 | | |
| | 4 | 4 | 4 | 16 | | |
| | 2 | 1,5 | 5,7 | 9 | | |
| 28 | 2,5 | 2,5 | 4,7 | 10 | 32,7 | 33,3 |
| | 3 | 3 | 4,2 | 10,5 | | |
| | 2 | -0,5 | 9 | 13 | | |
| 30 | 2,5 | 0,5 | 8 | 14 | 37 | 38,7 |
| | 3 | 1 | 7,5 | 14,5 | | |
| | 4 | 3 | 5,5 | 16,5 | | |
| | 5 | 4,5 | 4 | 18 | | |
| | 2 | 1,5 | 6,5 | 12 | | |
| 35 | 2,5 | 2 | 6 | 12,5 | 41,8 | 42,7 |
| | 3 | 3 | 5 | 13,5 | | |
| | 4 | 4,5 | 3,5 | 15 | | |
| | 2,5 | 0 | 10 | 16 | | |
| 38 | 3 | 0,5 | 9,5 | 16,5 | 46 | 47,2 |
| | 4 | 2 | 8 | 18 | | |
| | 5 | 4 | 6 | 20 | | |
| | 2 | 1,5 | 7 | 12,5 | | |
| 42 | 3 | 3 | 6,5 | 14 | 48,8 | 49,8 |
| | 4 | 4,5 | 5 | 15,5 | | |

The correct tube length can be determined by measuring the distance between the 24°/37° flared tube adaptors pressed into the fitting bodies. Dimension X2 has then to be added for each of the connections.

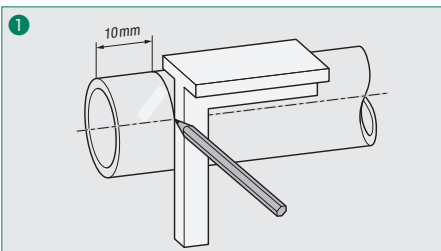
The correct tube length can also be determined by measuring the distance between the fitting bodies. Dimension X1 has then to be subtracted for each of the connections.

Dimension L corresponds to the difference in tube length compared to cutting ring fittings. When changing over from cutting ring fittings to flared tube fittings, the tube has to be shortened by dimension L.

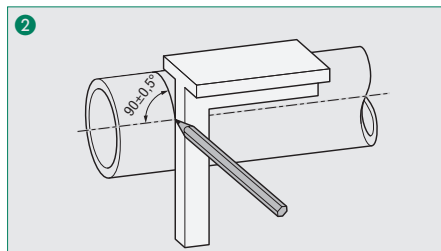
Always verify the dimensional accuracy of the flare. The checking diameter corresponds to the outside diameter D1 of the flared tube end (according to dimension table on the right). The flare must be at right angle to the tube axis and concentric with the tube. Please note: If the flare is eccentric, too short or not wide enough, perfect function of the tube fitting cannot be guaranteed!

Assembly Instructions for 24° Weld Cones with O-Ring

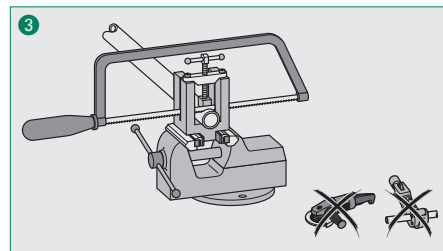
1. Tube Preparation



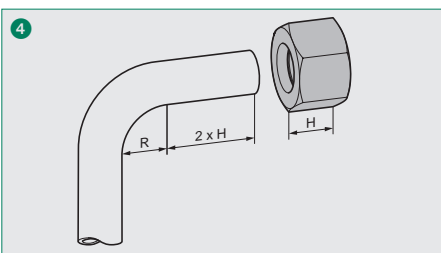
Saw off tube in right angle and at least 10 mm from the cut made by the tube manufacturer / supplier in order to avoid failures caused during shipment.



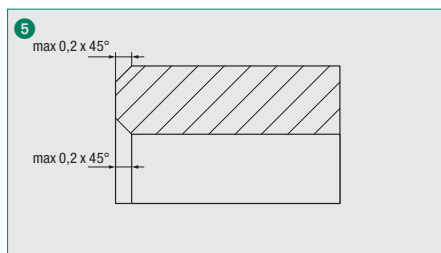
A maximum angular deviation / tolerance of $\pm 0,5^\circ$ relative to the tube axis is permissible.



Only use proper tube sawing machinery or equipment. Do not use tube cutters or grinders as this may result in unwanted angled cuts and cause severe burring.



For tube bends, the length of the straight section of the tube end to the start of the bending radius has to be twice the height of the union nut.



Slightly deburr inside and outside of the tube end (max 0,2 x 45°). The assembly area of the tube has to be free of contamination, chips and paint.



Please note: Improperly prepared and contaminated tubes will affect the service life of the connection and may result in leakage.

2. Assembly Preparation and Welding

Place the union nut on the weld cone.

Remove the o-ring from the front end of the weld cone before welding (usually supplied separately).

Weld the weld cone and the tube end according to any applicable guidelines for welding.

The user is fully responsible for the quality of the welding work.

Descal the welded area and clean the o-ring groove.

Assemble the o-ring and make sure that it is located in the groove of the weld cone without being twisted.

Lubricate the o-ring of the weld cone (e.g. using mineral-oil based hydraulic fluid HLP32). Do not use lubricating grease!

Immediately proceed with the assembly in order to avoid exposure to contamination.

3. Assembly with the Fitting Body

Carefully insert the weld cone into the 24° taper of the fitting body.

Tighten the union nut until the noticeable increase in force.

Then finish the assembly with another approximately 1/3 a turn (120°) beyond this point.

A marking line applied on the union nut and the fitting body makes it easier to indicate the sufficient tightening turns.

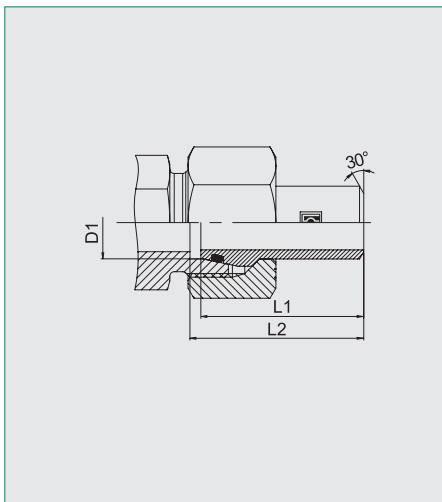
4. Repeated Assembly

For repeated assembly, the union nut has to be tightened using exactly the same force as for the original assembly.

The o-ring has to be checked for possible damages and, if necessary, replaced prior to the re-assembly.

Assembly Instructions for 24° Weld Cones with O-Ring

Calculation Dimensions



| Series | Tube OD | Dimensions | |
|----------|----------|------------|----------|
| | D1 mm | L1 mm | L2 mm |
| L | 6 | 31 | 32 |
| | 8 | 31 | 32 |
| | 10 | 32,5 | 33,5 |
| | 12 | 32,5 | 33,5 |
| | 15 | 35 | 36 |
| | 18 | 36 | 37 |
| | 22 | 38,5 | 39,5 |
| | 28 | 41,5 | 42,5 |
| | 35 | 47 | 49,5 |
| | 42 | 47 | 50 |
| | S | 6 | 31 |
| 8 | | 31 | 32 |
| 10 | | 32,5 | 33,5 |
| 12 | | 32,5 | 33,5 |
| 14 | | 38,5 | 39,5 |
| 16 | | 39 | 41 |
| 20 | | 44,5 | 47 |
| 25 | | 49,5 | 53,5 |
| 30 | | 52,5 | 57,5 |
| 38 | | 56,5 | 64,5 |

Assembly Instructions for Tube Fittings with 24° Taper and O-Ring

1. Assembly Preparation

Make sure that the o-ring is located in the groove of the taper without being twisted.

Lubricate the o-ring of the taper fitting (e.g. using mineral-oil based hydraulic fluid HLP32). Do not use lubricating grease!

Immediately proceed with the assembly in order to avoid exposure to contamination.

2. Assembly with the Fitting Body

Keep the taper fitting aligned and carefully insert it into the 24° taper of the fitting body.

Tighten the wire-pin nut until the noticeable increase in force, and then finish the assembly with another approximately 1/3 a turn (120°) beyond this point.

A marking line applied on the nut and the fitting body makes it easier to indicate the sufficient tightening turns.

Important: Always use a spanner to hold the fitting body during the assembly procedure.

| Series | Tube OD (mm) | Dimensions (mm) Thread | Turn till increase in force, then Assembly Angle | Torque (N·m) |
|--------|--------------|------------------------|--|--------------|
| L | 6 | M 12 x 1,5 | 120° (1/3 turns) | 20 |
| | 8 | M 14 x 1,5 | | 30 |
| | 10 | M 16 x 1,5 | | 40 |
| | 12 | M 18 x 1,5 | | 50 |
| | 15 | M 22 x 1,5 | | 65 |
| | 18 | M 26 x 1,5 | | 110 |
| | 22 | M 30 x 2 | | 120 |
| | 28 | M 36 x 2 | | 160 |
| | 35 | M 45 x 2 | | 275 |
| | 42 | M 52 x 2 | | 410 |
| S | 6 | M 14 x 1,5 | | 30 |
| | 8 | M 16 x 1,5 | | 40 |
| | 10 | M 18 x 1,5 | | 50 |
| | 12 | M 20 x 1,5 | | 70 |
| | 14 | M 22 x 1,5 | | 78 |
| | 16 | M 24 x 1,5 | | 85 |
| | 20 | M 30 x 2 | | 160 |
| | 25 | M 36 x 2 | | 200 |
| | 30 | M 42 x 2 | | 270 |
| | 38 | M 52 x 2 | | 400 |

Assembly Instructions for Tube Fittings with Standpipe

1. Assembly Preparation

Standpipe fittings are always supplied with factory-assembled cutting rings and union nuts.

2. Assembly with the Fitting Body

Keep the fitting with standpipe aligned and carefully insert it into the 24° taper of the fitting body.

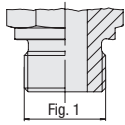
Tighten the union nut until the noticeable increase in force, and then finish the assembly with another approximately 1/12 a turn (30°) beyond this point.

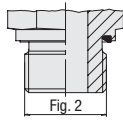
Important: Always use a spanner to hold the fitting body during the assembly procedure.

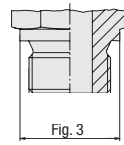
A marking line applied on the nut and the fitting body makes it easier to indicate the sufficient tightening turns.

Assembly Instructions for Tube Fittings with Male Threaded Stud Whitworth Parallel Pipe Thread

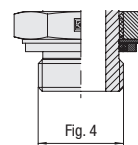
Tightening Torques


Metallic Sealing Edge

 Whitworth Parallel Pipe Thread
 DIN 3852-2 (Form B) / ISO 1179-4 (Type B)

Profile Sealing Ring

 Whitworth Parallel Pipe Thread
 ISO 1179-2 (Type E)

Sealing Surface for Gaskets

Whitworth Parallel Pipe Thread


**O-Ring with Retaining Ring
(Adjustable)**

Whitworth Parallel Pipe Thread

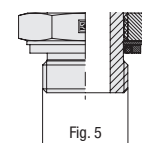
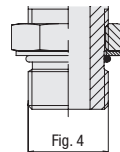
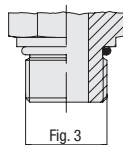
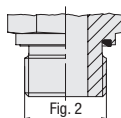
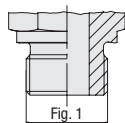
| Series | Thread | Male Threaded Studs | | | Check Valves | Adjustable Male Threaded Studs | Blanking Screws | | |
|--------|---------|---|--|---|--|---|--|--|--|
| | | fig. 1 Metallic Sealing Edge Torque (N-m) ca. | fig. 2 Profile Sealing Ring Torque (N-m) ca. | fig. 3 Sealing Surface for Gaskets Torque (N-m) ca. | fig. 2 Profile Sealing Ring Torque (N-m) ca. | fig. 4 O-Ring with Retaining Ring Torque (N-m) ca. | FI-VSV fig. 2 Profile Sealing Ring Torque (N-m) ca. | FI-VS fig. 1 Metallic Sealing Edge Torque (N-m) ca. | fig. 2 Profile Sealing Ring Torque (N-m) ca. |
| L | G 1/8 | 25 | 18 | 20 | 18 | 25 | 18 | 25 | 15 |
| | G 1/4 | 55 | 35 | 50 | 35 | 50 | 33 | 40 | 25 |
| | G 3/8 | 95 | 70 | 80 | 70 | 80 | 70 | 95 | 50 |
| | G 1/2 | 185 | 90 | 140 | 90 | 105 | 90 | 130 | 70 |
| | G 3/4 | 250 | 180 | 190 | 180 | 220 | 180 | 250 | 120 |
| | G 1 | 400 | 310 | 330 | 310 | 370 | 250 | 400 | 200 |
| | G 1 1/4 | 670 | 450 | 540 | 450 | 500 | 400 | 600 | 320 |
| S | G 1 1/2 | 800 | 540 | 630 | 540 | 600 | 500 | 800 | 400 |
| | G 1/8 | 30 | 25 | | | | 18 | 25 | 15 |
| | G 1/4 | 80 | 55 | 60 | 55 | 50 | 33 | 40 | 25 |
| | G 3/8 | 130 | 80 | 100 | 80 | 80 | 70 | 95 | 50 |
| | G 1/2 | 220 | 115 | 160 | 115 | 105 | 90 | 130 | 70 |
| | G 3/4 | 350 | 180 | 280 | 180 | 220 | 181 | 250 | 120 |
| | G 1 | 700 | 310 | 440 | 310 | 370 | 250 | 400 | 200 |
| | G 1 1/4 | 850 | 450 | 580 | 450 | 500 | 400 | 600 | 320 |
| G 2 | 1200 | 750 | | | | 500 | 800 | 400 | |

Please note: The tightening torques for male threaded studs listed in this catalogue are Approximate values with a tolerance of +10% and always refer to original components of the STAUFF Connect range made of steel with the default Zinc/Nickel coating and a steel mating material.

Please contact STAUFF prior to the assembly for recommended tightening torques for use with any mating materials other than Steel!

Assembly Instructions for Tube Fittings with Male Threaded Stud Metric Parallel Thread

Tightening Torques



Metallic Sealing Edge

Profile Sealing Ring

O-Ring

**O-Ring without Retaining Ring
(Adjustable)**

**O-Ring with Retaining Ring
(Adjustable)**

Metric Parallel Thread
DIN 3852-1 (Form B) /
ISO 9974-3 (Type B)

Metric Parallel Thread
ISO 9974-2 (Type E)

Metric Parallel Thread
ISO 6149-2 /-3

Metric Parallel Thread
ISO 6149-2 /-3

Metric Parallel Thread

| Series | Thread | Male Threaded Studs | | | Check Valves | Adjustable Male Threaded Studs | | Blanking Screws | | |
|----------|-------------------------|---|--|---|--|--|---|--|---|---|
| | | fig. 1 Metallic Sealing Edge Torque (N-m) ca. | fig. 2 Profile Sealing Ring Torque (N-m) ca. | fig. 3 O-Ring Torque (N-m) ca. | fig. 2 Profile Sealing Ring Torque (N-m) ca. | fig. 5 O-Ring with Retaining Ring Torque (N-m) ca. | fig. 4 O-Ring Torque (N-m) ca. | FI-VSV fig. 2 Profile Sealing Ring Torque (N-m) ca. | FI-VS fig. 2 Profile Sealing Ring Torque (N-m) ca. | fig. 3 O-Ring Torque (N-m) ca. |
| L | M 8 x 1 | 14 | | | | | | | 10 | |
| | M 10 x 1 | 25 | 18 | 15 | 18 | 18 | 15 | 12 | 12 | 15 |
| | M 12 x 1,5 | 45 | 25 | 25 | 25 | 35 | 25 | 25 | 23 | 22 |
| | M 14 x 1,5 | 70 | 45 | 35 | 45 | 55 | 35 | 45 | 30 | 45 |
| | M 16 x 1,5 | 90 | 55 | 40 | 55 | 80 | 40 | 55 | 50 | 55 |
| | M 18 x 1,5 | 120 | 70 | 45 | 70 | 105 | 45 | 70 | 65 | 70 |
| | M 22 x 1,5 | 170 | 125 | 60 | 125 | 125 | 60 | 125 | 90 | 100 |
| | M 26 x 1,5 ² | 230 | 180 | | 180 | | | 180 | 100 | 170 |
| | M 27 x 2 | | 180 | 100 | | 200 | 100 | 180 | 130 | 180 |
| | M 33 x 2 | 400 | 310 | 160 | 310 | 370 | 160 | 250 | 250 | 215 |
| M 42 x 2 | 700 | 450 | 210 | 450 | 500 | 210 | 400 | 310 | 330 | |
| M 48 x 2 | 900 | 540 | 260 | 540 | 600 | 260 | 500 | 380 | 420 | |
| S | M 12 x 1,5 | 60 | 35 | 35 | 35 | 35 | 35 | 25 | 23 | 22 |
| | M 14 x 1,5 | 80 | 55 | 40 | 55 | 55 | 45 | 45 | 30 | 45 |
| | M 16 x 1,5 | 130 | 70 | 55 | 70 | 80 | 55 | 55 | 50 | 55 |
| | M 18 x 1,5 | 190 | 90 | 70 | 90 | 105 | 70 | 70 | 65 | 70 |
| | M 20 x 1,5 | 220 | 125 | | 125 | | | 80 | 80 | |
| | M 22 x 1,5 | 300 | 135 | 100 | 135 | 125 | 100 | 125 | 90 | 100 |
| | M 26 x 1,5 | | 180 | | | | | 180 | 100 | 170 |
| | M 27 x 2 | 420 | 180 | 170 | 180 | 220 | 170 | 180 | 130 | 180 |
| | M 33 x 2 | 600 | 310 | 310 | 310 | 370 | 310 | 250 | 250 | 215 |
| | M 42 x 2 | 700 | 450 | 330 | 450 | 500 | 330 | 400 | 310 | 330 |
| M 48 x 2 | 950 | 540 | 420 | 540 | 600 | 420 | 500 | 380 | 420 | |

²M 27 x 2 according to ISO 6149.

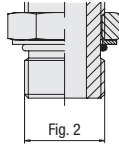
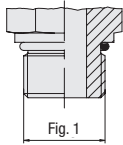
Please note: The tightening torques for male threaded studs listed in this catalogue are Approximate values with a tolerance of +10% and always refer to original components of the STAUFF Connect range made of steel with the default Zinc/Nickel coating and a steel mating material.

S

Please contact STAUFF prior to the assembly for recommended tightening torques for use with any mating materials other than Steel!

Assembly Instructions for Tube Fittings with Male Threaded Stud UN/UNF-Thread

Tightening Torques



**O-Ring without Retaining Ring
(Non-Adjustable)**

**O-Ring without Retaining
Ring (Adjustable)**

UN/UNF-Thread

UN/UNF-Thread
ISO 11926-2/-3

| Series | Thread | Male Threaded Studs | Adjustable Male Threaded Studs |
|-------------|--------------|---|---|
| | | fig. 1 O-Ring Torque N·m ca. | fig. 2 O-Ring Torque N·m ca. |
| L | 7/16-20 UNF | 18 | 18 |
| | 1/2-20 UNF | 28 | |
| | 9/16-18 UNF | 30 | 34 |
| | 3/4-16 UNF | 50 | 55 |
| | 7/8-14 UNF | 60 | 80 |
| | 1 1/16-12 UN | 95 | 100 |
| | 1 5/16-12 UN | 150 | 150 |
| | 1 5/8-12 UN | 200 | 290 |
| S | 1 7/8-12 UN | 325 | 325 |
| | 7/16-20 UNF | 20 | 20 |
| | 9/16-18 UNF | 35 | 46 |
| | 3/4-16 UNF | 70 | 80 |
| | 7/8-14 UNF | 100 | 80 |
| | 1 1/16-12 UN | 170 | 185 |
| | 1 5/16-12 UN | 270 | |
| | 1 5/8-12 UN | 285 | 340 |
| 1 7/8-12 UN | 415 | 415 | |

Please note: The tightening torques for male threaded studs listed in this catalogue are Approximate values with a tolerance of +10% and always refer to original components of the STAUFF Connect range made of steel with the default Zinc/Nickel coating and a steel mating material.

Please contact STAUFF prior to the assembly for recommended tightening torques for use with any mating materials other than Steel!

Assembly Instructions for Banjo Fittings

1. Assembly Preparation

Lubricate the o-ring of the banjo bolt (e.g. using mineral-oil based hydraulic fluid HLP32).
Do not use lubricating grease!

Immediately proceed with the assembly in order to avoid exposure to contamination.

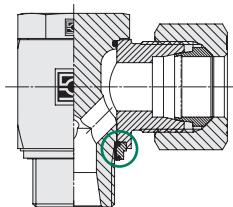
2. Assembly with the Fitting Body

Place the external metallic sealing ring or the retaining ring with captive seal on the opposite side of the banjo fitting into the larger bore and center it through the thread for the banjo bolt. Retaining rings with captive seal are additionally centered through the bore in the fitting body – any clearance between the ring and the fitting body is not allowed.

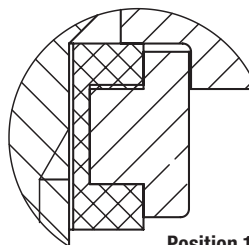
Align the body of the banjo fitting and tighten the banjo bolt with a spanner until the noticeable increase in force (pressure point).

Use a suitable spanner to finish the assembly with either another approximately 1/6 a turn (60°, applicable for retaining rings with captive seal) or 1/4 a turn (90°, applicable for external metallic sealing rings) beyond this point while holding the body of the banjo fitting in position using a second spanner.

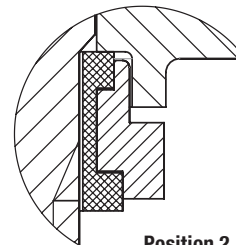
Positioning and Orientation of Retaining Rings with Captive Seal



Applicable for RSWND / RSW / RST



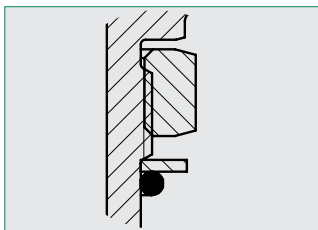
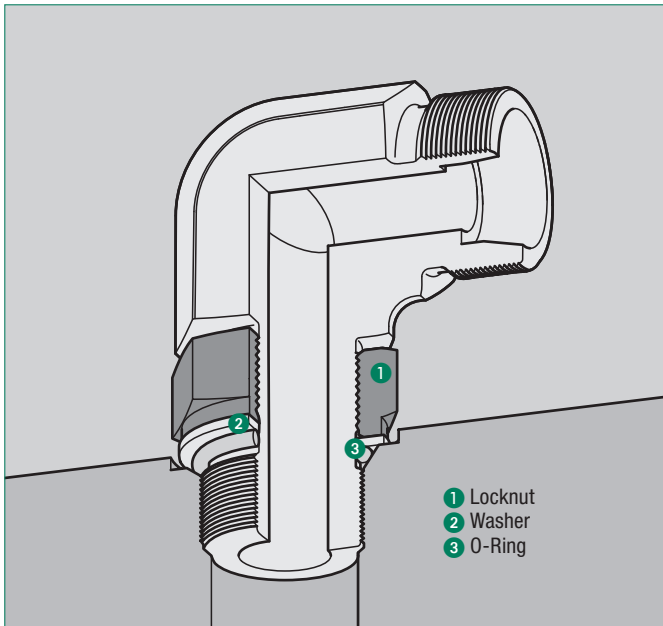
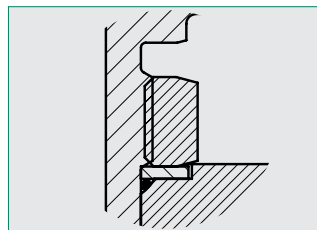
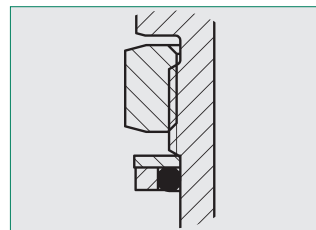
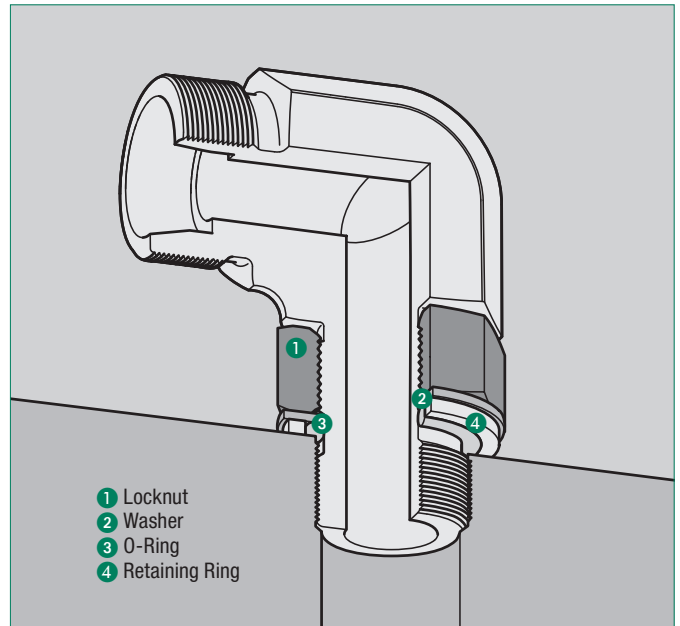
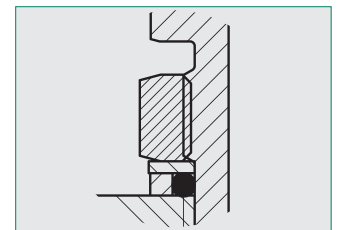
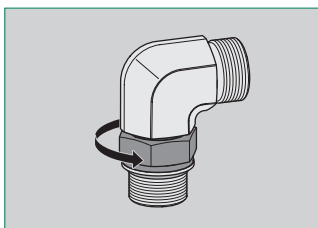
Position 1



Position 2

| Series | Tube OD mm | Thread | Position |
|--------|---------------|---------|----------|
| L | 6 | G 1/8 | 2 |
| | 8 | G 1/4 | 2 |
| | 10 | G 1/4 | 2 |
| | 12 | G 3/8 | 1 |
| | 15 | G 1/2 | 1 |
| | 18 | G 1/2 | 1 |
| | 22 | G 3/4 | 1 |
| | 28 | G 1 | 1 |
| | 35 | G 1 1/4 | 1 |
| | 42 | G 1 1/2 | 1 |
| S | 6 | G 1/4 | 2 |
| | 8 | G 1/4 | 2 |
| | 10 | G 3/8 | 1 |
| | 12 | G 3/8 | 1 |
| | 14 | G 1/2 | 1 |
| | 16 | G 1/2 | 1 |
| | 20 | G 3/4 | 1 |
| | 25 | G 1 | 1 |
| | 30 | G 1 1/4 | 1 |
| | 38 | G 1 1/2 | 1 |

| Series | Tube OD mm | Thread | Position |
|--------|---------------|----------|----------|
| L | 6 | M 10x1 | 2 |
| | 8 | M 12x1,5 | 1 |
| | 10 | M 14x1,5 | 2 |
| | 12 | M 16x1,5 | 1 |
| | 15 | M 18x1,5 | 1 |
| | 18 | M 22x1,5 | 1 |
| | 22 | M 26x1,5 | 1 |
| | 28 | M 33x2 | 1 |
| | 35 | M 42x2 | 1 |
| | 42 | M 48x2 | 1 |
| S | 6 | M 12x1,5 | 1 |
| | 8 | M 14x1,5 | 2 |
| | 10 | M 16x1,5 | 1 |
| | 12 | M 18x1,5 | 1 |
| | 14 | M 20x1,5 | 1 |
| | 16 | M 22x1,5 | 1 |
| | 20 | M 27x2 | 1 |
| | 25 | M 33x2 | 1 |
| | 30 | M 42x2 | 1 |
| | 38 | M 48x2 | 1 |

Assembly Instructions for Adjustable Fitting with Locknut (WEE, VEE, TEE, LEE)
For use in Ports to ISO 6149 and SAE UNO

Pre-assembly

Post-assembly
For use in Ports Form X acc. to DIN 3852-2, ISO 1179-1

Pre-assembly

Post-assembly
1. Assembly Preparation


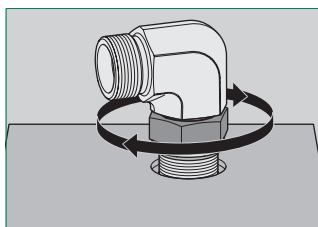
Lubricate the o-ring (e.g. using mineral-oil based hydraulic fluid HLP32).
Do not use lubricating grease!

Immediately proceed with the assembly in order to avoid exposure to contamination.

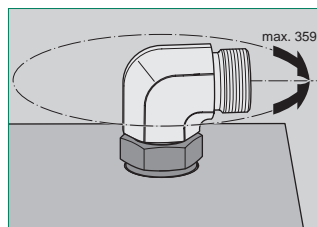
Ensure that the Locknut, O-Ring and Washer are fully raised.



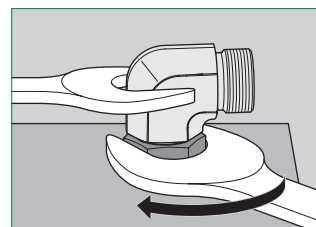
Please Note:
For use in Ports Form X, ensure that the Retaining Ring is placed.

2. Assembly


Fully screw in the fitting body.



Adjust the direction.
Caution: Turn back by no more than one rotation against the direction in which the fitting body was installed!



Tighten the locknut with the defined torque (see p. 171-179) while using a spanner to counter the fitting body in the direction of adjustment.

S

Product-Specific Abbreviations

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Product-Specific Abbreviations

| Abbreviation | Product Category | Product Description | Page |
|-------------------------|--|---|---------|
| FI-AB | Connecting Parts | 37° Flared Tube Fitting Set | 37 |
| FI-AS | Weld Fittings | Straight Weld Fitting | 114 |
| FI-ASV | Weld Fittings | Straight Weld Fitting for Tubes | 120 |
| FI-BA | Connecting Parts | 24°/37° Flared Cone Adaptor with O-Rings | 34 |
| FI-BH | Connecting Parts | Support Sleeve for 37° Flared Tube Fittings | 35 |
| FI-BM | Connecting Parts | Union Nut for 37° Flared Tube Fittings | 36 |
| FI-Box-... (FI-KOL-...) | Measuring and Test Equipment | Cone Gauge Kit | 283 |
| FI-BUZ | Spare Parts / Accessories | Blanking Plug with Sealing Edge | 235 |
| FI-DGWE-...-M-WD | Swivel Fittings | Swivel Elbow | 197 |
| FI-DGWE-...-R-WD | Swivel Fittings | Swivel Elbow | 196 |
| FI-DIR | Spare Parts / Accessories | Retaining Ring with Captive Seal for Male Studs of Banjo Fittings | 245 |
| FI-DKI | Spare Parts / Accessories | Internal Metallic Sealing Ring for Female Studs of Gauge Fittings | 246 |
| FI-DKR | Spare Parts / Accessories | External Metallic Sealing Ring for Male Studs of Banjo Fittings | 244 |
| FI-DS | Connecting Parts | Double-Edge Cutting Ring | 28 |
| FI-EGE-...-M | Standpipe Fittings | Straight Male Stud Standpipe Fitting | 157 |
| FI-EGE-...-M-WD | Standpipe Fittings | Straight Male Stud Standpipe Fitting | 160 |
| FI-EGE-...-N | Standpipe Fittings | Straight Male Stud Standpipe Fitting | 161 |
| FI-EGE-...-R | Standpipe Fittings | Straight Male Stud Standpipe Fitting | 156 |
| FI-EGE-...-R-WD | Standpipe Fittings | Straight Male Stud Standpipe Fitting | 158 |
| FI-EGED-...-M-WD | Fittings with 24° Taper / O-Ring (DKO) | Straight Male Stud Fitting with 24° Taper / O-Ring | 136 |
| FI-EGED-...-N | Fittings with 24° Taper / O-Ring (DKO) | Straight Male Stud Fitting with 24° Taper / O-Ring | 137 |
| FI-EGED-...-R-WD | Fittings with 24° Taper / O-Ring (DKO) | Straight Male Stud Fitting with 24° Taper / O-Ring | 134 |
| FI-EL | Standpipe Fittings | Adjustable Standpipe Barrel Tee | 168 |
| FI-ELD | Fittings with 24° Taper / O-Ring (DKO) | Adjustable Barrel Tee with 24° Taper / O-Ring (DKO) | 153 |
| FI-EMA-...-R | Female Stud / Gauge Fittings | Gauge Standpipe Fitting | 131 |
| FI-EMAD-...-R | Female Stud / Gauge Fittings | Gauge Fitting with 24° Taper / O-Ring | 130 |
| FI-ES | Bulkhead Fittings | Straight Bulkhead Weld Fitting | 110 |
| FI-ET | Standpipe Fittings | Adjustable Standpipe Branch Tee | 167 |
| FI-ETD | Fittings with 24° Taper / O-Ring (DKO) | Adjustable Branch Tee with 24° Taper / O-Ring (DKO) | 152 |
| FI-EVD | Fittings with 24° Taper / O-Ring (DKO) | Adjustable Elbow (45°) with 24° Taper / O-Ring | 151 |
| FI-EW | Standpipe Fittings | Adjustable Standpipe Elbow | 166 |
| FI-EWD | Fittings with 24° Taper / O-Ring (DKO) | Adjustable Elbow (90°) with 24° Taper / O-Ring | 150 |
| FI-FB | Assembly Tools / Devices | Clamping Jaws | 275 |
| FI-FD | Connecting Parts | STAUFF Form EVO Sealing Ring | 32 |
| FI-FK | Assembly Tools / Devices | Final Assembly Stud for the Manual Cutting Ring Assembly | 270 |
| FI-FST | Assembly Tools / Devices | Tube Shapers | 274 |
| FI-G | Tube Fittings / Unions | Straight Union | 96 |
| FI-G | Tube Fittings / Unions | Straight Reducer | 97 |
| FI-GA-...-M | Female Stud / Gauge Fittings | Straight Female Stud Fitting | 126 |
| FI-GA-...-N | Female Stud / Gauge Fittings | Straight Female Stud Fitting | 127 |
| FI-GA-...-R | Female Stud / Gauge Fittings | Straight Female Stud Fitting | 124 |
| FI-GE-...-M | Male Stud Fittings | Straight Male Stud Fitting | 44 |
| FI-GE-...-Mk | Male Stud Fittings | Straight Male Stud Fitting | 64 |
| FI-GE-...-M-OR | Male Stud Fittings | Straight Male Stud Fitting | 57 |
| FI-GE-...-M-WD | Male Stud Fittings | Straight Male Stud Fitting | 52 |
| FI-GE-...-N | Male Stud Fittings | Straight Male Stud Fitting | 65 |
| FI-GE-...-R | Male Stud Fittings | Straight Male Stud Fitting | 40 |
| FI-GE-...-R-DF | Male Stud Fittings | Straight Male Stud Fitting | 55 |
| FI-GE-...-Rk | Male Stud Fittings | Straight Male Stud Fitting | 60 |
| FI-GE-...-R-WD | Male Stud Fittings | Straight Male Stud Fitting | 48 |
| FI-GE-...-U | Male Stud Fittings | Straight Male Stud Fitting | 70 |
| FI-GP | Assembly Tools / Devices | Support Plate for Machine-Assisted Assembly | 253 |
| FI-GP-PRC | Assembly Tools / Devices | Support Plate for Machine-Assisted Cutting Ring Assembly | 260/268 |
| FI-GS | Bulkhead Fittings | Straight Bulkhead Fitting | 108 |
| FI-ID | Assembly Tools / Devices | Internal Tube Supports | 274 |
| FI-K | Tube Fittings / Unions | Equal Cross | 104 |
| FI-KB | Assembly Tools / Devices | Clamping Jaws for 37° Tube Flaring | 261 |
| FI-KR | Spare Parts / Accessories | Retaining Ring (Small) for Male Studs of Fittings with Lock Nut | 247 |
| FI-LE-...-M | Male Stud Fittings | Male Stud Barrel Tee | 89 |
| FI-LE-...-Mk | Male Stud Fittings | Male Stud Barrel Tee | 91 |
| FI-LE-...-N | Male Stud Fittings | Male Stud Barrel Tee | 92 |
| FI-LE-...-R | Male Stud Fittings | Male Stud Barrel Tee | 88 |
| FI-LE-...-Rk | Male Stud Fittings | Male Stud Barrel Tee | 90 |
| FI-LEE-...-M-OK | Fittings with Lock Nut | Adjustable Male Stud Barrel Tee with Lock Nut | 175 |
| FI-LEE-...-M-OR | Fittings with Lock Nut | Adjustable Male Stud Barrel Tee with Lock Nut | 177 |
| FI-LEE-...-R-OK | Fittings with Lock Nut | Adjustable Male Stud Barrel Tee with Lock Nut | 173 |
| FI-LEE-...-U | Fittings with Lock Nut | Adjustable Male Stud Barrel Tee with Lock Nut | 179 |
| FI-M | Connecting Parts | Union Nut | 33 |
| FI-MA-...-R | Female Stud / Gauge Fittings | Gauge Fitting | 129 |
| FI-MFK | Assembly Tools / Devices | Cutting Ring Assembly Stud for Machine-Assisted Assembly | 252/259 |
| FI-MFK | Assembly Tools / Devices | Cutting Ring Assembly Stud for Machine-Assisted Assembly | 267 |
| FI-MVK-PRC-H-M | Assembly Tools / Devices | Cutting Ring Assembly Stud for Machine-Assisted Assembly | 264 |
| FI-RED-...-R | Spare Parts / Accessories | Thread Reducer | 226 |
| FI-RED-...-R-WD | Spare Parts / Accessories | Thread Reducer | 224 |
| FI-REDS | Standpipe Fittings | Straight Standpipe Reducer | 162 |
| FI-RESD | Fittings with 24° Taper / O-Ring (DKO) | Straight Reducer for Tube Ends with 24° Taper / O-Ring | 144 |
| FI-RESD | Fittings with 24° Taper / O-Ring (DKO) | Distance Adaptors with 24° Taper / O-Ring | 148 |
| FI-RST-...-M-DK | Banjo Fittings | Banjo Tee (High-Pressure Version) | 191 |
| FI-RST-...-M-WD | Banjo Fittings | Banjo Tee (High-Pressure Version) | 193 |

Product-Specific Abbreviations

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|--------------------|--|--|---------|
| FI-RST-...-R-DK | Banjo Fittings | Banjo Tee (High-Pressure Version) | 190 |
| FI-RST-...-R-WD | Banjo Fittings | Banjo Tee (High-Pressure Version) | 192 |
| FI-RSW-...-M-DK | Banjo Fittings | Banjo Elbow (High-Pressure Version) | 187 |
| FI-RSW-...-M-WD | Banjo Fittings | Banjo Elbow (High-Pressure Version) | 189 |
| FI-RSW-...-R-DK | Banjo Fittings | Banjo Elbow (High-Pressure Version) | 186 |
| FI-RSW-...-R-WD | Banjo Fittings | Banjo Elbow (High-Pressure Version) | 188 |
| FI-RSWND-...-M-DK | Banjo Fittings | Banjo Elbow (Medium-Pressure Version) | 183 |
| FI-RSWND-...-M-WD | Banjo Fittings | Banjo Elbow (Medium-Pressure Version) | 185 |
| FI-RSWND-...-R-DK | Banjo Fittings | Banjo Elbow (Medium-Pressure Version) | 182 |
| FI-RSWND-...-R-WD | Banjo Fittings | Banjo Elbow (Medium-Pressure Version) | 184 |
| FI-RV | Hydraulic Valves | Check Valve | 200 |
| FI-RVA | Hydraulic Valves | Check Valve | 201 |
| FI-RVI-...-R | Hydraulic Valves | Female Stud Check Valve | 210 |
| FI-RVIA-...-R | Hydraulic Valves | Female Stud Check Valve | 211 |
| FI-RVV-...-M-WD | Hydraulic Valves | Male Stud Check Valve | 203 |
| FI-RVV-...-R-WD | Hydraulic Valves | Male Stud Check Valve | 202 |
| FI-RVVA-...-M-WD | Hydraulic Valves | Male Stud Check Valve | 205 |
| FI-RVVA-...-R-WD | Hydraulic Valves | Male Stud Check Valve | 204 |
| FI-RVZ-...-M-WD | Hydraulic Valves | Male Stud Check Valve | 207 |
| FI-RVZ-...-R-WD | Hydraulic Valves | Male Stud Check Valve | 206 |
| FI-RVZA-...-M-WD | Hydraulic Valves | Male Stud Check Valve | 209 |
| FI-RVZA-...-R-WD | Hydraulic Valves | Male Stud Check Valve | 208 |
| FI-S | Connecting Parts | Single-Edge Cutting Ring | 28 |
| FI-SKM | Spare Parts / Accessories | Hexagon Lock Nut | 237 |
| FI-SN | Weld Fittings | 24° Weld Cone with O-Ring | 116 |
| FI-SNR | Weld Fittings | 24° Weld Cone Reducer with O-Ring | 118 |
| FI-SNV | Fittings with 24° Taper / O-Ring (DKO) | Straight Male Stud Fitting with 24° Taper / O-Ring | 138 |
| FI-SNV | Fittings with 24° Taper / O-Ring (DKO) | Straight Reducer with 24° Taper / O-Ring | 140 |
| FI-T | Tube Fittings / Unions | Equal Tee | 100 |
| FI-T | Tube Fittings / Unions | Tee Reducer | 101 |
| FI-TE-...-M | Male Stud Fittings | Male Stud Branch Tee | 83 |
| FI-TE-...-Mk | Male Stud Fittings | Male Stud Branch Tee | 85 |
| FI-TE-...-N | Male Stud Fittings | Male Stud Branch Tee | 86 |
| FI-TE-...-R | Male Stud Fittings | Male Stud Branch Tee | 82 |
| FI-TE-...-Rk | Male Stud Fittings | Male Stud Branch Tee | 84 |
| FI-TEE-...-M-OK | Fittings with Lock Nut | Adjustable Male Stud Branch Tee with Lock Nut | 175 |
| FI-TEE-...-M-OR | Fittings with Lock Nut | Adjustable Male Stud Branch Tee with Lock Nut | 177 |
| FI-TEE-...-R-OK | Fittings with Lock Nut | Adjustable Male Stud Branch Tee with Lock Nut | 173 |
| FI-TEE-...-U | Fittings with Lock Nut | Adjustable Male Stud Branch Tee with Lock Nut | 179 |
| FI-TIB | Measuring and Test Equipment | Thread Identification Board | 282 |
| FI-VD | Spare Parts / Accessories | Blanking Plug with 24° Taper / O-Ring (DKO) | 234 |
| FI-VEE-...-M-OK | Fittings with Lock Nut | Adjustable Male Stud Elbow (45°) with Lock Nut | 175 |
| FI-VEE-...-M-OR | Fittings with Lock Nut | Adjustable Male Stud Elbow (45°) with Lock Nut | 177 |
| FI-VEE-...-R-OK | Fittings with Lock Nut | Adjustable Male Stud Elbow (45°) with Lock Nut | 173 |
| FI-VEE-...-U | Fittings with Lock Nut | Adjustable Male Stud Elbow (45°) with Lock Nut | 179 |
| FI-VES | Hydraulic Valves | Check Valve Installation Kit | 212 |
| FI-VH | Connecting Parts | Support Sleeve | 31 |
| FI-VS-...-M-OR | Spare Parts / Accessories | Blanking Screw for Ports | 233 |
| FI-VS-...-M-WD | Spare Parts / Accessories | Blanking Screw for Ports | 231 |
| FI-VS-...-R | Spare Parts / Accessories | Blanking Screw for Ports | 232 |
| FI-VS-...-R-WD | Spare Parts / Accessories | Blanking Screw for Ports | 230 |
| FI-VSK | Spare Parts / Accessories | Blanking Plug for Tube Ends | 236 |
| FI-VSV-...-M-WD | Spare Parts / Accessories | Blanking Screw for Ports (Heavy Duty) | 229 |
| FI-VSV-...-R-WD | Spare Parts / Accessories | Blanking Screw for Ports (Heavy Duty) | 228 |
| FI-W | Tube Fittings / Unions | Straight Reducer | 99 |
| FI-WAS | Weld Fittings | Elbow Weld Fitting | 115 |
| FI-WDDS | Connecting Parts | Soft-Sealing Cutting Ring | 29 |
| FI-WDDS-W5 | Connecting Parts | Soft-Sealing Cutting Ring (Stainless Steel) | 30 |
| FI-WE-...-M | Male Stud Fittings | Male Stud Elbow | 75 |
| FI-WE-...-Mk | Male Stud Fittings | Male Stud Elbow | 78 |
| FI-WE-...-N | Male Stud Fittings | Male Stud Elbow | 80 |
| FI-WE-...-R | Male Stud Fittings | Male Stud Elbow | 74 |
| FI-WE-...-Rk | Male Stud Fittings | Male Stud Elbow | 76 |
| FI-WEE-...-M-OK | Fittings with Lock Nut | Adjustable Male Stud Elbow (90°) with Lock Nut | 174 |
| FI-WEE-...-M-OR | Fittings with Lock Nut | Adjustable Male Stud Elbow (90°) with Lock Nut | 176 |
| FI-WEE-...-R-OK | Fittings with Lock Nut | Adjustable Male Stud Elbow (90°) with Lock Nut | 172 |
| FI-WEE-...-U | Fittings with Lock Nut | Adjustable Male Stud Elbow (90°) with Lock Nut | 178 |
| FI-WS | Bulkhead Fittings | Elbow Bulkhead Fittings | 109 |
| FI-WV | Hydraulic Valves | Alternating Valve | 213 |
| Oel-Stauff-Form-1L | Assembly Tools / Devices | STAUFF Form EVO Oel | 276 |
| O-RING | Spare Parts / Accessories | O-Ring for Male Studs | 239 |
| O-RING | Spare Parts / Accessories | O-Ring for 24°/37° Flared Cone Adaptors | 240 |
| O-RING | Spare Parts / Accessories | O-Ring for DKO Taper Fittings / 24° Weld Cones | 242 |
| O-RING | Spare Parts / Accessories | O-Ring for Banjo Bolts of Banjo Fittings | 243 |
| SFO/PRC-POC-FS | Assembly Tools / Devices | External Foot Control Switch | 254/276 |
| SFO-F-A-A-IOT | Assembly Tools / Devices | Tube Forming Machine with Cloud connection | 272 |
| SPR-PRC-FS | Assembly Tools / Devices | External Foot Control Switch | 258 |
| SPR-PRC-H-M-OS | Assembly Tools / Devices | STAUFF Oil with brush | 276 |

Product-Specific Abbreviations

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|---------------------|---------------------------|---|-----------|
| SPR-PRC-H-E-SET | Assembly Tools / Devices | Portable Cutting Ring Assembly Machine with Manual Pressure Setting (Set) | 262 |
| SPR-PRC-MA-D-A | Assembly Tools / Devices | Combined Cutting Ring Assembly and 37° Tube Flaring Machine | 256 |
| SPR-PRC-MP | Assembly Tools / Devices | Manual Cutting Ring Pre-Assembly Device | 266 |
| SPR-PRC-POC-A-A-IOT | Assembly Tools / Devices | Cutting Ring Final Assembly Machine with Cloud connection | 250 / 254 |
| SPR-PRC-POC-RTH | Assembly Tools / Devices | Optional tool holder for tubes with small bending radii | 254 |
| SPR-PRC-TH-C-M | Assembly Tools / Devices | Tooling Head for Cutting Ring Assembly (based on manual settings) | 258 |
| SPR-PRC-TH-C-MA | Assembly Tools / Devices | Tooling Head for Cutting Ring Assembly (based on pre-defined settings) | 258 |
| SPR-PRC-TH-F-M | Assembly Tools / Devices | Tooling Head for 37° Tube Flaring (based on manual settings) | 258 |
| SPR-TM | Assembly Tools / Devices | Assembly Tool Magazine | 254/258 |
| STAUFF CLEAN | Tube Manipulation | Pipe, Tube and Hose Cleaning System | 286 |
| TUB-MA | Tube Manipulation | Manual Tube Bender | 288 |
| TUBSD-MA | Tube Manipulation | Tube Bending and Saw Device | 289 |
| TUD-MA | Tube Manipulation | Tube Reamer | 291 |
| TUSD-MA | Tube Manipulation | Tube Saw Device | 290 |
| WDG | Spare Parts / Accessories | Profile Sealing Ring for Male Studs | 238 |
| WDG | Spare Parts / Accessories | Profile Sealing Ring for Male Studs | 238 |

