

Assembly Instructions for 2S Tube Couplings

1. Notes

These assembly instructions describe the two assembly options provided for in the German standard DIN 3859 Part 2:

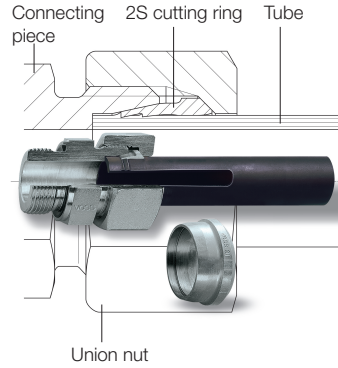
- Direct assembly in the coupling connecting piece.
- Pre-assembly in hardened pre-assembly mandrel.

All the data below were determined under the following preconditions:

- Seamless steel tubes for precision applications to EN 10305-1.
- Tube material 1.0255+N to DIN 1630.
- Corrosion protection VOSS Zink-Nickel.

We recommend the use of VOSS pre-assembly devices for series-production assembly. The specifications in the respective operating instructions apply to the assembly procedures here.

Compliance with the assembly instructions is extremely important for fulfilling the functions of the 2S cutting ring couplings. Improper handling leads to risks with regard to safety and freedom from leaks, which can also result in the complete failure of the coupling under certain conditions.



Caution!
Please observe the safety instructions for installation and the recommendation on the use of tube supports (see VOSS Catalogue).

2. Tube preparation

2.1 Minimum dimensions of the straight tube ends must be taken into account for determining the tube lengths.

With machine pre-assembly, the minimum lengths are contained in the respective operating instructions of the pre-assembly devices.

Series	Tube-OD	H	L
L	6/ 8	31	39
L	10/12	33	42
L	15	36	45
L	18	38	48
L	22/28	42	53
L	35/42	48	60

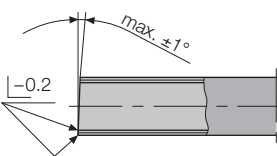
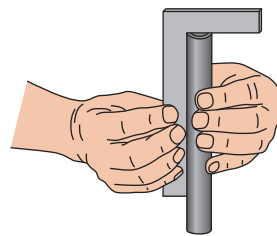
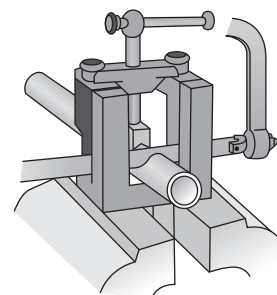
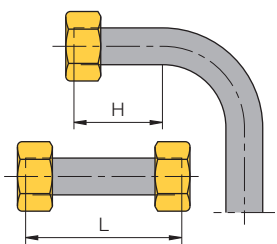
Series	Tube-OD	H	L
S	6/ 8	35	44
S	10/12	37	47
S	14/16	43	54
S	20	50	63
S	25	54	68
S	30	58	72
S	38	65	82

2.2 Saw off tube at a right angle. An angular tolerance of $\pm 1^\circ$ is permissible. Do not use tube cutters or abrasive cutting machines.

2.3 Slightly deburr tube ends inside and outside. Clean tube.

Caution!

- Tubes cut crooked or improperly deburred reduce the service life and freedom from leaks of the coupling.
- With thin-walled steel tubes or soft tubes of non-ferrous metals, reinforcing sleeves should be used (see VOSS Catalogue).



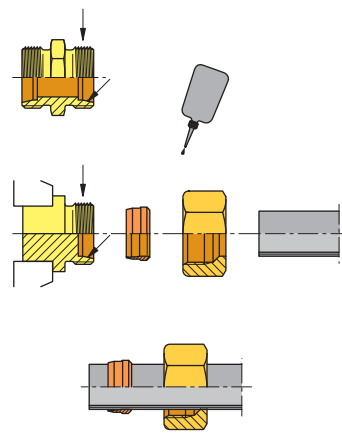
3. Assembly preparation

3.1 To simplify assembly, we recommend lubricating the mating pieces of the coupling or the manual pre-assembly mandrel.

3.2 Push the union nut and the 2S cutting ring onto the tube end consecutively. The cutting edges of the 2S cutting ring face the tube end.

Caution!

Ensure the proper position of the 2S cutting ring, or otherwise incorrect assembly will result.



4. Direct assembly in coupling connecting piece

4.1 Insert the tube end into the coupling connecting piece as far as possible and press on. During the assembly process the tube must be held on the stop to prevent incorrect assembly.

4.2 Screw on the union nut by hand until the coupling connecting piece, the 2S cutting ring and the union nut are felt to make contact.

4.3 Tighten the union nut with the open-end spanner.

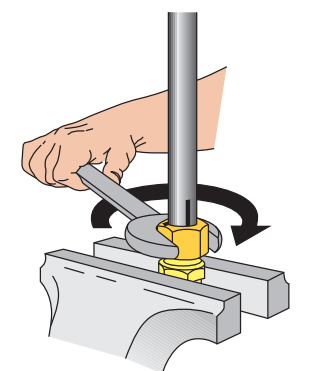
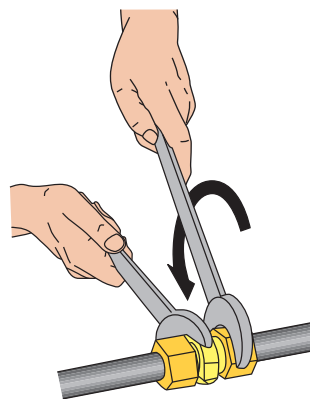
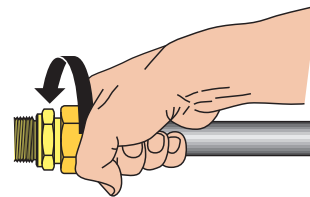
- up to a tube OD of 18 mm 1 1/2 turns
- from a tube OD of 20 mm 1 1/4 turns

Notes:

- For assembly within the tube, tighten the coupling connecting piece with a spanner.
- To comply with the specified number of turns, it is recommended that marking lines be applied to the union nut and the tube.
- The assembly specification in 4.3 also applies to pre-assembly in a vice.

Caution!

- Each coupling body may only be used once for initial assembly. In the case of multiple use, malfunctions can occur.
- Following assembly a visual inspection including checking of the correct assembly is absolutely necessary (see point 6. Checking).



5. Pre-assembly in hardened pre-assembly mandrel

The hardened pre-assembly mandrel is wear-resistant and enable uniform assembly results, as they are more closely toleranced. They should be checked for trueness to gauge size after approx. every 50 pre-assemblies.

Replace pre-assembly mandrels which are not true to gauge size or are damaged in the cone area to prevent incorrect assembly.

5.1 Insert the tube end into the pre-assembly mandrel as far as possible and press on. During the assembly process the tube must be held on the stop to prevent incorrect assembly.

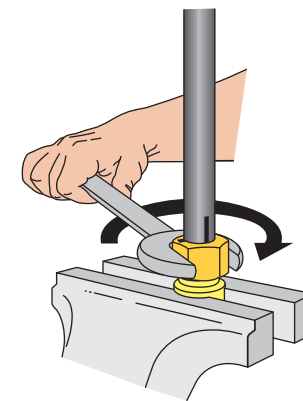
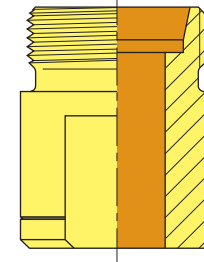
5.2 Screw on the union nut by hand until the pre-assembly mandrel, the 2S cutting ring and the union nut are felt to make contact.

5.3 Tighten the union nut with the open-end spanner.

- up to a tube OD of 18 mm 1 1/2 turns
- from a tube OD of 20 mm 1 1/4 turns

Caution!

Following each pre-assembly a visual inspection including checking of the correct assembly is absolutely necessary (see point 6. Checking).



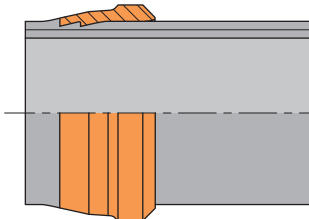
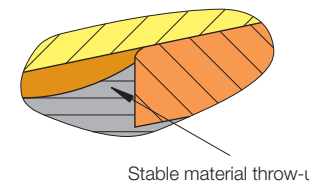
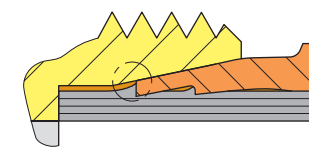
6. Checking

Unscrew union nut and check the shoulder throw-up. The shoulder throw-up must cover at least 80% of the cutting-edge face surface.

It may be possible to turn the cutting ring on the tube in this position. Possible soiling must be removed.

Caution!

If the shoulder throw-up is insufficient, repeat assembly with application of increased force. The result must be checked again.



7. Finish assembly

7.1 Carefully reinsert the **tube end mounted** in the coupling connecting piece in which it was assembled. Then tighten the union nut hand-tight and stress-free.

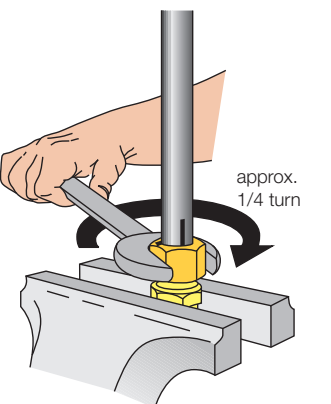
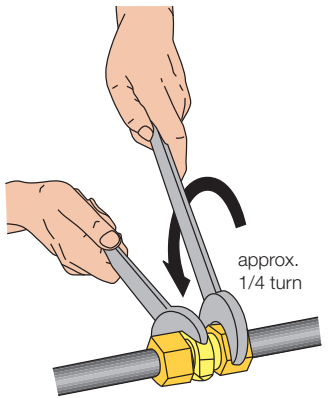
7.1.1 Tighten union nut with spanner (without extension) up to noticeable increase in force.

7.1.2 Then tighten another 1/4 turn.

7.2 Carefully insert the **tube end pre-assembled** in the hardened pre-assembly mandrel or machine pre-assembled in a (new) coupling connecting piece not yet used for assembly and tighten the union nut hand-tight and stress-free.

7.2.1 Tighten union nut with spanner (without extension) up to noticeable increase in force.

7.2.2 Then tighten another 1/4 turn.



8. Repeat assembly

Repeated installations can be carried out on the tube coupling. When doing so, the union nut is tightened again with the same amount of force as during the initial assembly.