

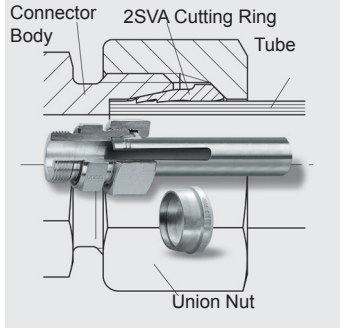
**1. Notes**

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

We recommend the use of preassembly adaptors 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 2SVA 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.

**2. Tube preparation**

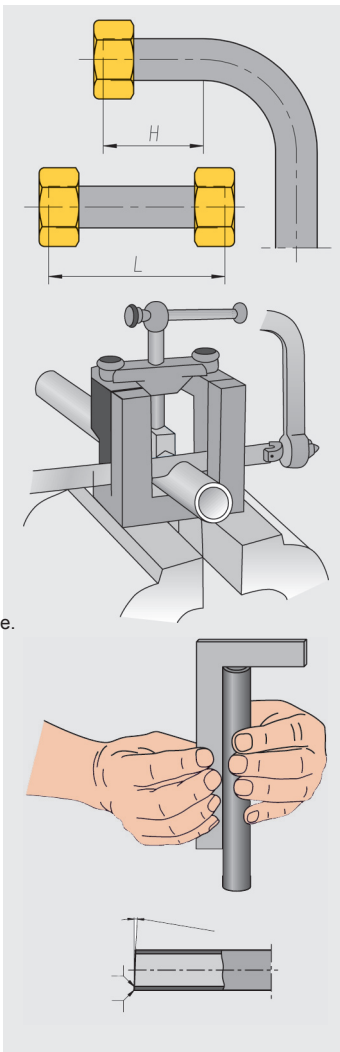
2.1 Minimum dimensions of the straight tube ends must be taken into account for determining the tube lengths. With machine pre-assembly, the minimum lengths are contained in the respective operating instructions of the pre-assembly devices.

Series	Pipe 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	Pipe 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



**CAUTION!**

Tubes sawn off crooked or improperly deburred reduce the service life and freedom from leaks of the coupling.

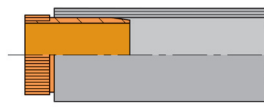
With thin-walled stainless-steel tubes, reinforcing sleeves should be used.

2.4 Tubing assembly with reinforcing sleeves of material 1.4571.

- Reinforcing sleeve required
- Reinforcing sleeve recommended

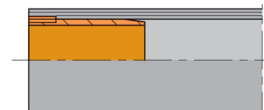
Assembly of VOSS reinforcing sleeves

1. Insert the sleeve into the tube up to knurled neck.



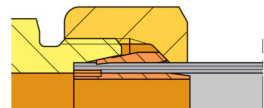
Sleeve inserted

2. Hammer in the sleeve completely with a hammer (of plastic or hard rubber). When doing so, the knurled neck is pressed into the inner wall of the tube and secures the sleeve against sliding or falling out.



Sleeve hammered in

3. Carry out cutting ring assembly.



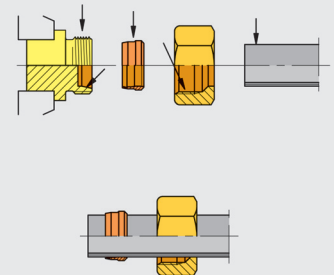
Coupling with reinforcing sleeve

**2.5 Assembly paste**

Lubricate the taper and the thread of the pre-assembly connecting piece, and the cutting ring and the thread of the union nut with assembly paste (e.g. MPE assembly paste).



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



Series	Tube OD	Wall thickness											
		0,5	0,75	1	1,5	2	2,5	3	3,5	4			
LL	4												
	5												
	6	•											
8	•												
L	6	•	•										
	8	•	•										
	10	•	•										
	12	•	•	•	•								
	15	•	•	•	•	•							
	18	•	•	•	•	•	•						
22	•	•	•	•	•	•	•						
	28	•	•	•	•	•	•	•					
	35	•	•	•	•	•	•	•	•				
	42	•	•	•	•	•	•	•	•	•			
S	6	•	•										
	8	•	•										
	10	•	•										
	12	•	•	•	•								
	14	•	•	•	•	•							
	16	•	•	•	•	•	•						
20	•	•	•	•	•	•	•						
	25	•	•	•	•	•	•	•					
	30	•	•	•	•	•	•	•	•				
	38	•	•	•	•	•	•	•	•	•	•		

**3. Pre-assembly in hardened pre-assembly mandrel**

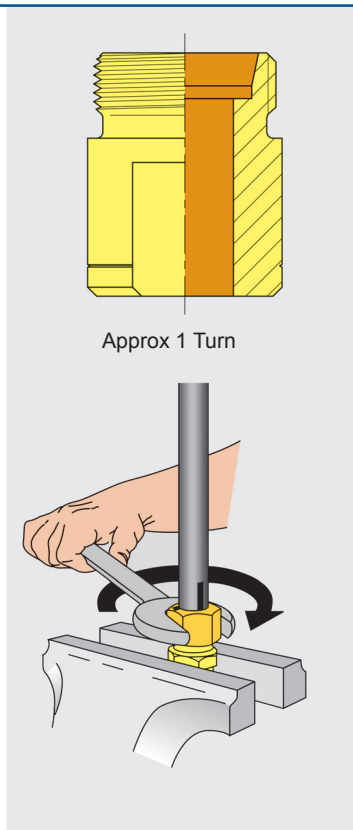
The hardened pre-assembly mandrel is wear-resistant and enable uniform assembly results, as they are more closely tolerated. They should be checked for trueness to gauge size after approx. every 50 pre-assemblies.

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

- 3.1 Insert the tube end into the preassembly mandrel as far as possible and press on. During the assembly process the tube must be held on the stop to prevent incorrect assembly.
- 3.2 Screw on the union nut by hand until the pre-assembly connecting piece, the 2SVA cutting ring and the union nut are felt to make contact.
- 3.3 Tighten the union nut approx. 1 rotation. The cutting edges penetrate into the tube OD and produce a visible material throw-up in front of the first cutting edge

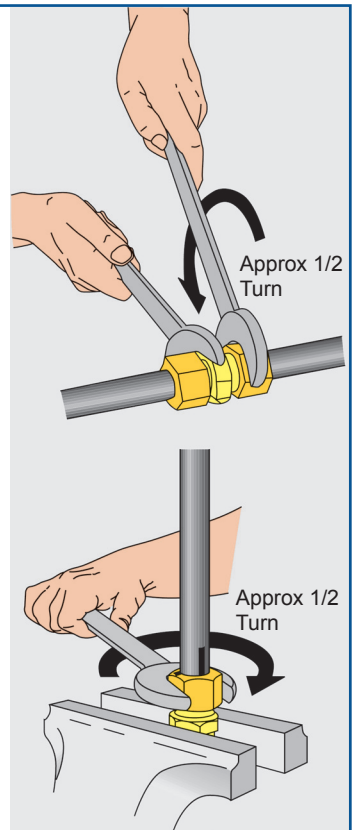
**Caution!**

Following each pre-assembly a visual inspection including checking of the correct assembly is absolutely necessary (see point 4 Checking).



**5. Finish assembly**

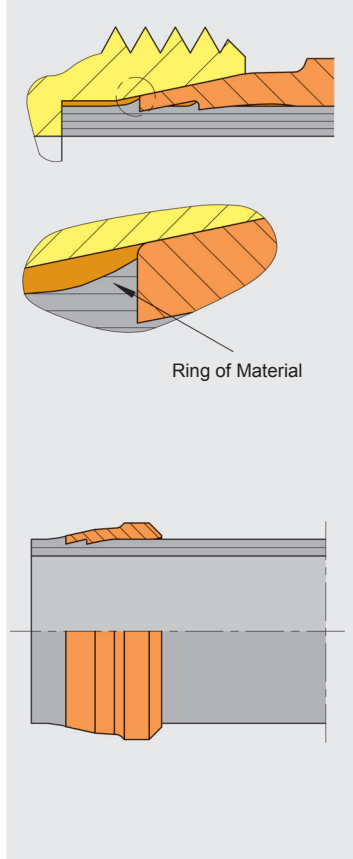
- 5.1 Carefully insert the tube end preassembled in the hardened manual pre-assembly connecting piece or machine pre-assembled in a new coupling connecting piece and tighten the union nut hand-tight and stress-free
- 5.2 Tighten union nut with spanner (without extension) up to noticeable increase in force. Then tighten another 1/2 turn



**4. Checking**

Unscrew union nut and check the ring penetration. The shoulder throw-up must cover approx. 70 % of the cutting-edge face surface. It can still be possible to turn the cutting ring in this position.

Remove possible contamination.



**Caution!**

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

**6. Repeat assembly**

6.1 Repeat assemblies can be carried out on the tube coupling as often as desired.

6.2 During the new finish assembly, tighten the union nut until a noticeable increase in force is felt. Then tighten another 1/2 turn.

**CAUTION!**

The assembly result, such as shoulder throw-up etc., must be checked (see 4. Checking).

**7. Tightening torques**

Distance-dependent assembly can be checked by checking the torque applied.

The tightening torques are approximate values. They were determined under the following conditions:

Seamless cold-drawn stainless steel tubes with tolerances according to EN 10305-1, bright annealed and heat-treated qualities according to DIN 17458, of material 1.4571+m

Use of MPE assembly paste

Series	Tube OD x s	Tightening Torque Nm ±5 %
L	6x1	20
L	8x1	28
L	10x1/1,5	42/45
L	12x1/1,5	60/65
L	15x1,5/2/2,5	85/85/100
L	18x1,5/2/2,5	125/145/150
L	22x1,5/2	175/195
L	28x2/3	215/250
L	35x2/3	300/395
L	42x2/3/4	340/450/500
Series	Tube OD x s	Tightening Torque Nm ±5 %
S	6x1,5/2	30/35
S	8x1,5/2/2,5	40/45/45
S	10x2/2,5/3	50/60/60
S	12x2/2,5/3	70/75/75
S	14x2/3/4	100
S	16x2/3	120
S	20x3/3,5	210
S	25x4/4,5	250/290
S	30x4/5	350
S	38x5/6	600