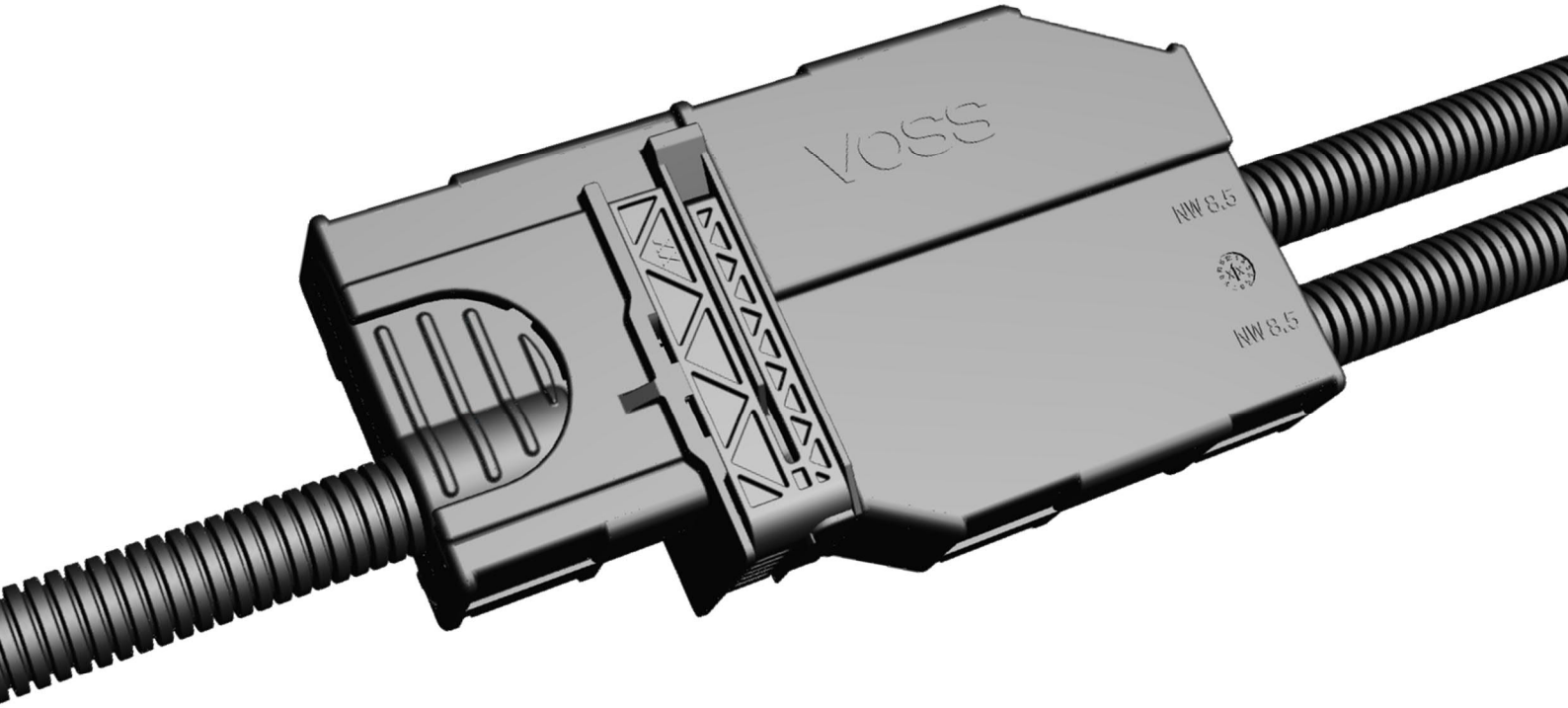
# Assembly instructions
# VOSS manifold 301 *EFSM*

Electric-Fluidic Separation Manifold




Manifold for electrically
heated SCR lines

# A. Important notices

## System properties

- The VOSS manifold 301 *EFSM* is an Electric-Fluidic Separation Manifold for the connection and distribution of electrically heated multi-injection AdBlue®/DEF lines in light vehicles.
- It is the extension of the VOSS QC system 301 *EFSP2* for electrically heated multi-injection SCR systems. The plug side, the system properties as well as the assembly and disassembly are identical (see also "Assembly instructions VOSS quick connect system 301 *EFSP2*").
- The AdBlue®/DEF line and the electrical connections are connected simultaneously in one assembly step.
- Only for Polyphthalamide (PPA) tube 4x1
- Poka Yoke design for a secure and proper connection
- Compatible with high temperature lines

## Please observe before using the manifold

- The VOSS manifold 301 *EFSM* is made for electrically heated SCR systems in light vehicles.
- The temperature range is -40 °C to +120 °C.
- The maximum operating pressure is 10 bar.

## Please observe during assembly of the manifold

- The assembly of the manifold must be conducted by professional mechanics subject to these assembly instructions.
- Incorrectly assembled connections can result in leakage or failure of the system.
- The VOSS manifold 301 *EFSM* may only be used with connections and tubes described in chapter B ("Components").
- Before connecting both sides, components must be checked. They have to be clean and must not show any signs of damage.

# B. Components

## VOSS manifold 301 *EFSM*

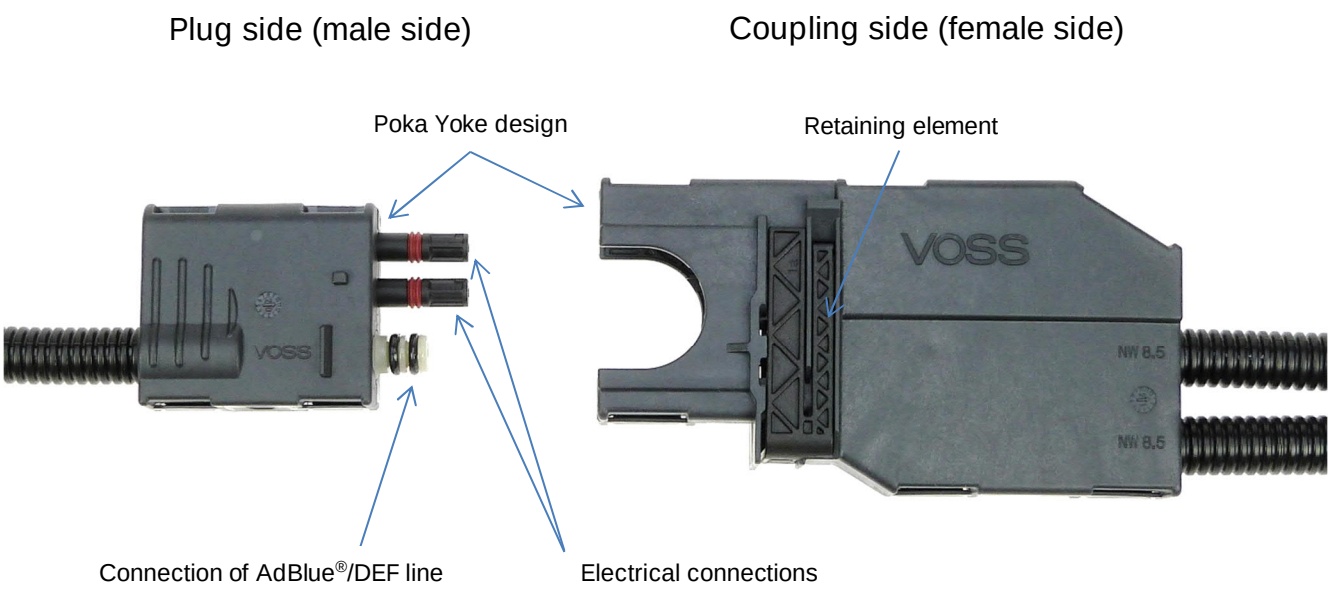



Fig. 1: Components of VOSS manifold 301 *EFSM*

## As-delivered condition VOSS manifold 301 *EFSM*


Fig. 2: VOSS manifold 301 *EFSM* with yellow protective caps (as-delivered condition)

# C. Assembly instructions

Use of arrow symbols in pictures/figures:

Indicates points described in the text that require special attention.

Indicates automatic movements and their direction from components triggered by manual actions.

Indicates necessary manual actions and their direction.

Indicates operations to be avoided.

## 1. Assembly

Before connecting both sides, components must be checked. They have to be clean and must not show any signs of damage.

### Step 1

Initial situation: plug and coupling side separated

Yellow protective caps must be removed before assembly.


Fig. 3: Separated plug and coupling side of manifold 301 *EFSM*

Only one assembly position possible due to Poka Yoke design

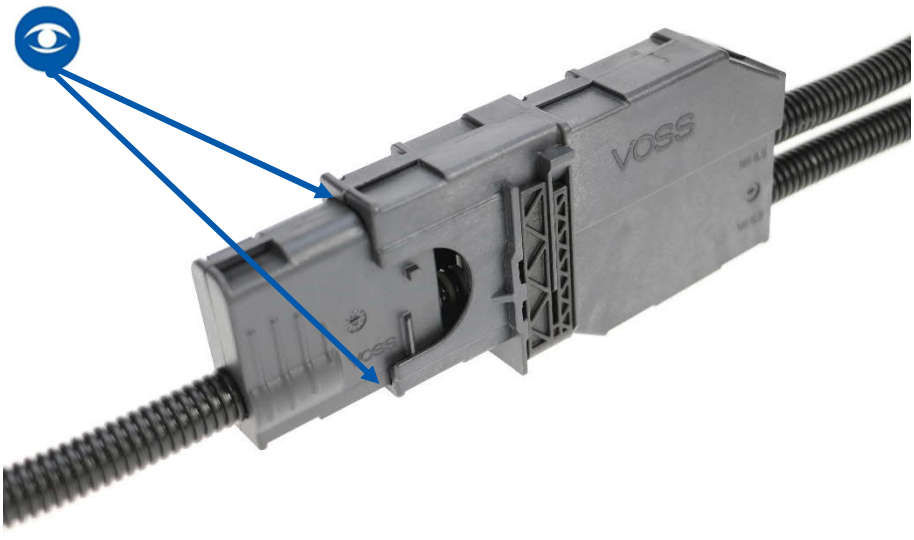



Fig. 4: Poka Yoke design of manifold 301 *EFSM*

## Step 2

Insert the plug side straight into the opening of the coupling side and connect both sides.

- Retaining element moves upwards and is spread apart in the process.

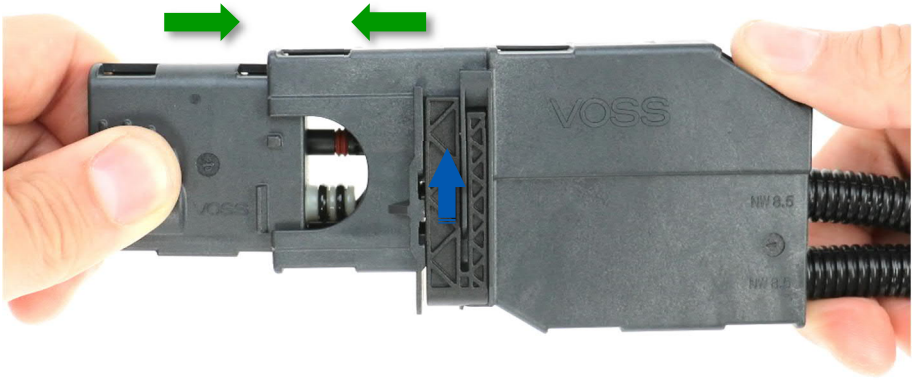



Fig. 5: Merged plug and coupling side of manifold 301 *EFSM*

In case of incomplete insertion (end position not reached), visual identification possible:

- Retaining element is still spread in the upper position and not engaged again.
- Plug side is not plugged flush into the coupling side.
- Manifold must be plugged together until it engages (end position) (see step 3).

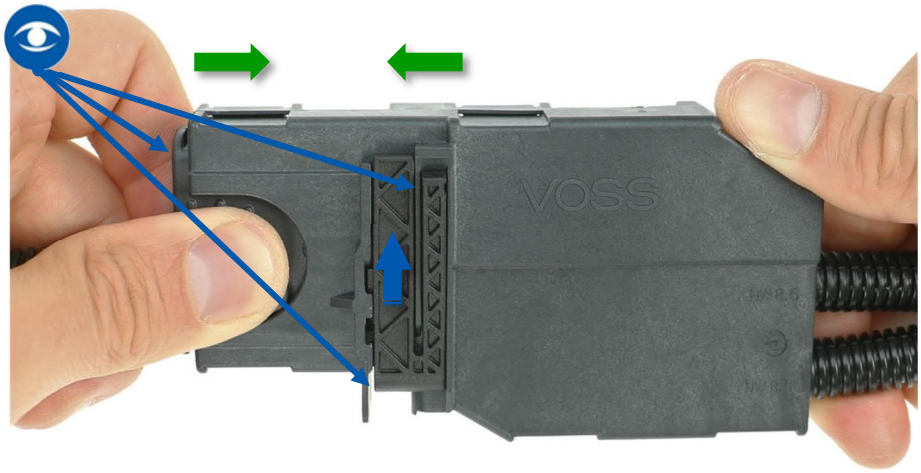



Fig. 6: Incomplete assembly step of manifold 301 *EFSM*

In case of incomplete insertion (end position not reached), visual identification possible:

- Retaining element is still spread in the upper position and not engaged again.
- Plug side is not plugged flush into the coupling side.
- Manifold must be plugged together until it engages (end position) (see step 3).

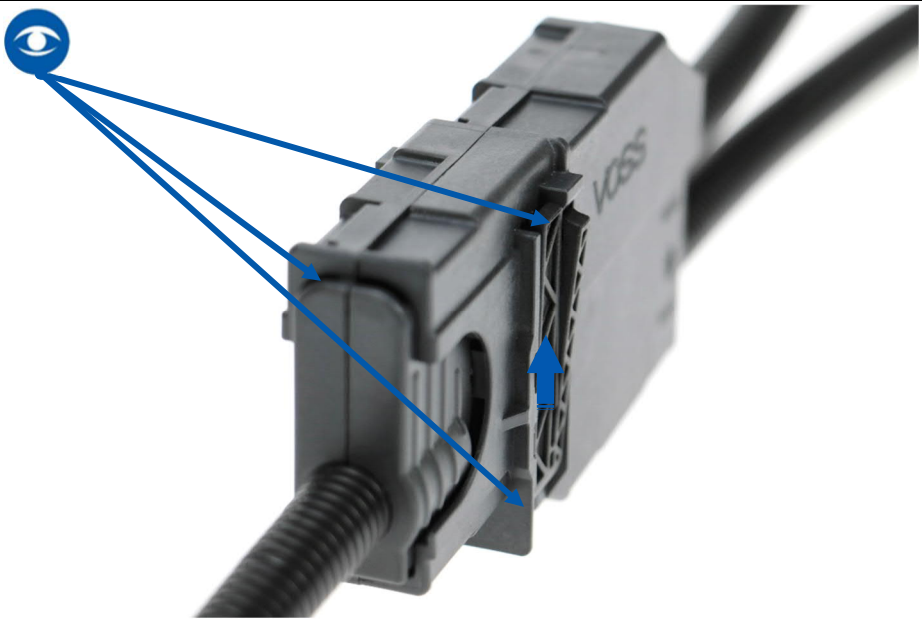



Fig. 7: Incomplete assembly step of manifold 301 *EFSM* – side view

## Step 3

Connect plug and coupling side completely together until they engage (end position). Acoustic and visual identification possible:

- Retaining element audibly and visibly engages and jumps back down to initial position.
- Plug side is plugged flush into the coupling side.
- Fluidic and electrical connections are now simultaneously established.

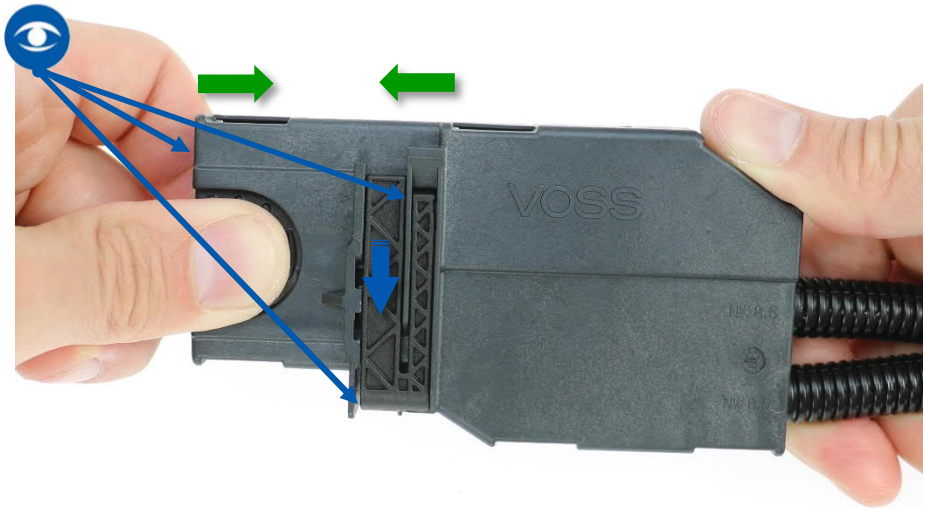



Fig. 8: Engaged manifold 301 *EFSM*

Connect plug and coupling side completely together until they engage (end position). Acoustic and visual identification possible:

- Retaining element audibly and visibly engages and jumps back down to initial position.
- Plug side is plugged flush into the coupling side.
- Fluidic and electrical connections are now simultaneously established.

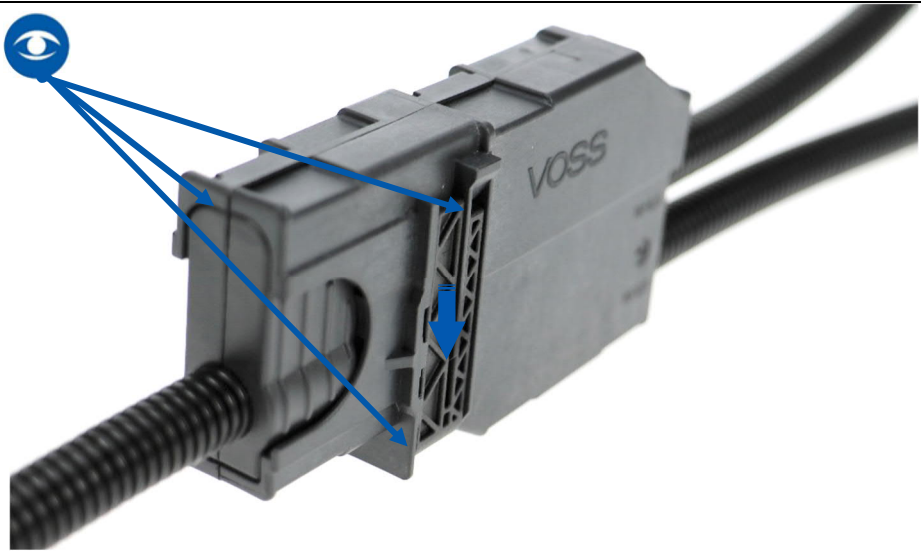



Fig. 9: Engaged manifold 301 *EFSM* – side view

## Step 4

Execute counter-pull test: try to pull apart plug and coupling side

- When correctly assembled, the sides cannot be pulled apart.

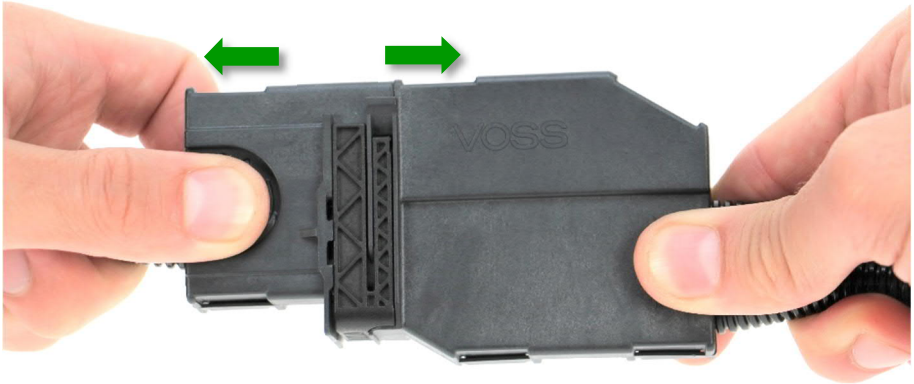



Fig. 10: Counter-pull test manifold 301 *EFSM*

## Step 5

Final situation: Completely assembled and locked manifold


Fig. 11: Completely assembled and locked manifold 301 *EFSM*

# 2. Disassembly

Before disconnecting, the line must be free of pressure and the area of the retaining element must be free of dirt.

## Step 1

Initial situation: The plug side is inserted flush into the coupling side.


Fig. 12: Initial situation disassembly manifold 301 *EFSM*

## Step 2

Use the fingertip to correctly actuate the retaining element (push it in as far as it will go).

Do not use the flat finger, as this will prevent the retaining element from being actuated correctly.

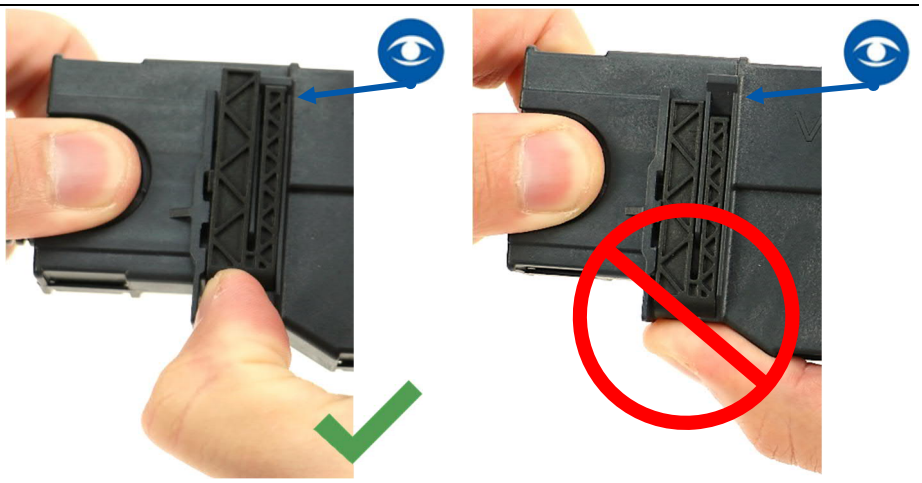


Fig. 13: Correct actuating of the retaining element with fingertip

Actuate the retaining element with the fingertip (push it in as far as it will go) and hold it down, …


Fig. 14: Pushing in the retaining element of manifold 301 *EFSM*

## Step 3

… while doing so, pull the plug and coupling side apart …


Fig. 15: Pulling apart plug and coupling side of manifold 301 *EFSM*

… until the two sides are completely separated.

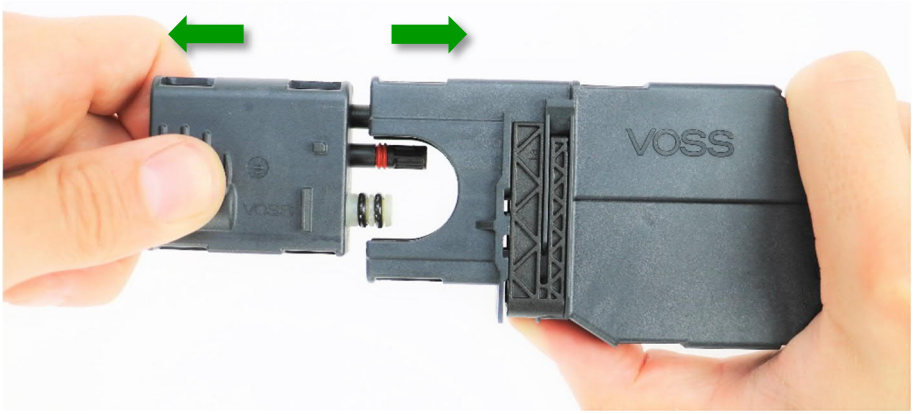



Fig. 16: Separation of plug and coupling side of manifold 301 *EFSM*

## Step 4

Final situation: Completely separated plug and coupling side


Fig. 17: Completely separated plug and coupling side of manifold 301 *EFSM*

## Customer service

Contact VOSS for questions concerning quick connect systems, nylon tubes, line routing, etc.

## Property rights



Technical modifications and errors excepted.

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