



EMERGENCY SAFETY DISCONNECTOR
WITH CABLE CONTROL

NTS-SZ- 1" - 4"

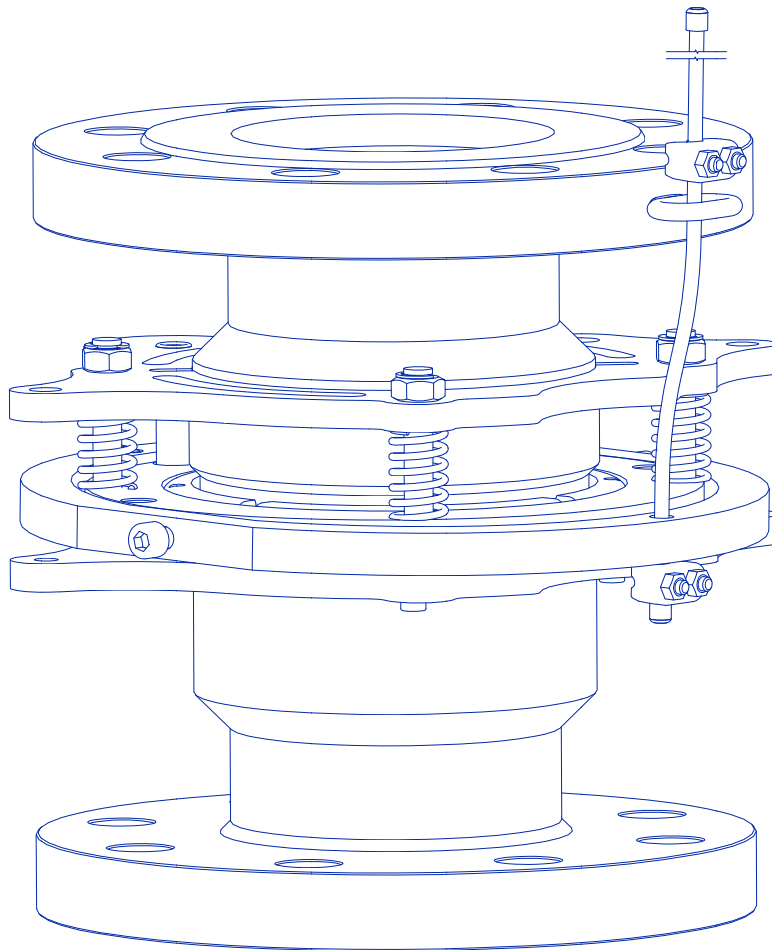


Fig. 1

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1.0 GENERAL DESCRIPTION - NTS-SZ -

1.1 Areas of application

The emergency safety disconnect with cable control (short NTS-SZ) is used to separate pipelines and flexible hose-lines conveying liquid and gaseous media. The NTS-SZ is suitable for integration into loading-arms. Possible applications include the unintentional movement of a tank-truck, rail-tank-car or the drift of a ship or barge during the loading or discharge process.

1.2 Structure of the NTS-SZ

Two non-return valves prevent product loss in the case of emergency separation. The halves of the case are held together with segments by a slide ring. Separation occurs by a lever (disc) using a cable with passive or remote (active) disengagement.

1.3 Function

If the pipe system is overloaded with tension, the cable moves the slide ring which results in a release of the holding segments and the two coupling halves separate. Both coupling ends are protected by spring-loaded, self-closing valves.

1.4 Material

Depending on the area of use and the chemical, media the following combinations are possible:

Housing& Internals: Stainless steel 316, Seals PFE/PTFE/FPM (Viton)

For other materials/seals please contact OPW

1.5 Technical Data:

Sizes: DN25 (1") - DN300 (12")

Pressure rating:	40bar / 580psi	DN 25 (1") - DN 80 (3")
	25bar / 362psi	DN 25 (1") - DN100 (4")
	16bar / 232psi	DN100 (4")

Connections: 1"- 4" female threaded, flanges from DN25 (1") – DN100 (4")

For other connections please contact OPW

Approvals: TUV, CE Certification, ABZ

2.0 OPERATING INSTRUCTIONS - NTS-SZ -

2.1 Mounting of the NTS-SZ

1. In order to guarantee a safe separation, the NTS should be fitted so that when separation occurs, both halves of the NTS-SZ can separate completely from each other. This ensures that both valves will close fully. Following minimum space between the Inline (Fig.2) and the Adapter (Fig.3) is necessary to ensure a secure separation :

Model sizes from DN25 (1") - DN100 (4") at least 100mm (4 inches)

Fig. 2 Inline

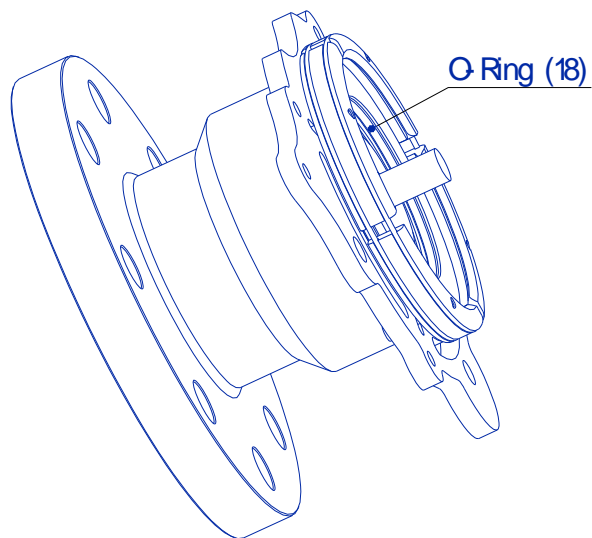
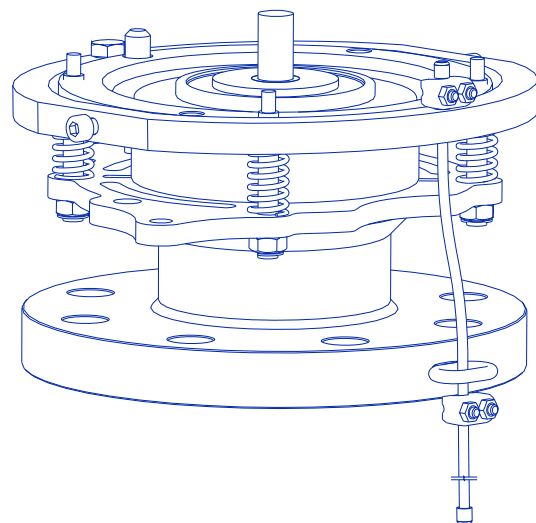
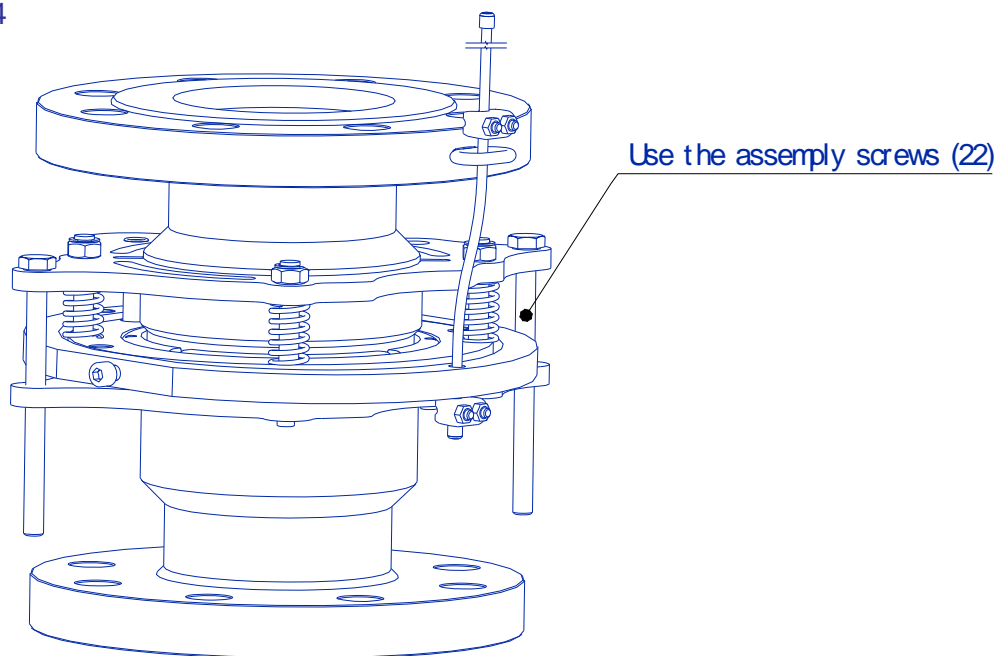


Fig. 3 Adapter



2. Units with flanged end connections are best mounted when fully assembled. Units with threaded ends are best mounted separated to avoid damaging unit during assembly.
 - A) in connection with a hose line:
The Adapter (Fig.3) should always be on the hose side and
The Inline (Fig.2) on the opposite side either connected to a dry break coupler or to a stationary tank.
 - b) Connection to a loading arm:
The Adapter (Fig.3) is attached to the end of the loading arm (on the loading arm itself) followed by the Inline (Fig.2) at the end of the loading arm - facing towards the mobile tank or dry break coupler.
3. The pull cable should not be under tension when fitting the NTS-SZ.
4. The cable guide must always be in line with the levers 6 (Fig.4).
5. The cable must always be shorter than the piping/hose line. The opening path of the pull cable is approx. 80mm (3 inches) for model sizes DN25 (1") - DN100 (4").

Fig. 4



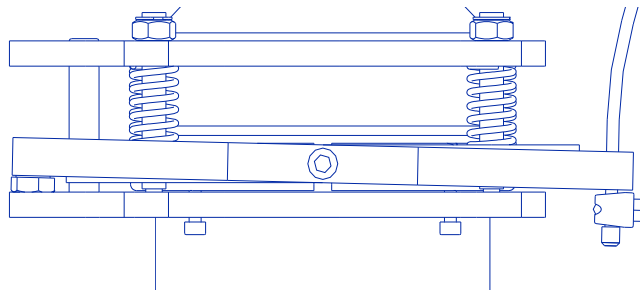
6. **The mounting screws 7 (Fig.4) must be removed as otherwise emergency separation will be prevented.**
7. The NTS-SZ must be checked for function according to the qualification approval.
8. The operating manual (operating and assembly instructions) must be part of the directive.
9. We recommend that the mounting screws and the assembling instructions should be stored near the NTS-SZ.

2.2 Assembly of the NTS-SZ after separation by the cable-pull

Depending on the size and the placement it might be advantageous to remove the coupler from the manifold in order to reassemble it.

1. Depressurize and empty line
2. Release cable
3. Inspect O-ring 18 (Fig.2) at the separation side for mechanical damage and grease with Teflon lubricant: the O-rings, segments 7 on the inside (Fig.6) and sliding ring 8 (Fig6) on the outside.
4. Using the assembly nuts 13 (Fig.6), evenly lower the sliding ring 4 (Fig.6) all the way down onto the adaptor (Fig. 7).
5. Placing the adaptor on to the Inline (**locator pin over the locator bore**).
6. Lever 11 (Fig.6) should be in the shown position Fig.5.
7. Use the assembly screws (22) to tighten adaptor and inline until the holding segments slide into position and the coupler allows for a split free reassembly.
8. Evenly loosen the assembly nuts 13 (Fig.7). During this procedure the sliding ring 8 (Fig.6) should come to rest on the holding segments and lever / release ring (11) should be in the position as shown in Fig 5.

Fig. 5



9. Remove assembly screws; otherwise no emergency separation is possible!

10. After every replacement of the NTS-SZ into the hose / loading arm the cable must be replaced into the correct location hooked up to a fixed point.
11. Fig. 7 shows the completely assembled NTS-SZ in a ready-to-use status.

2.3 Assembling the NTS-SZ

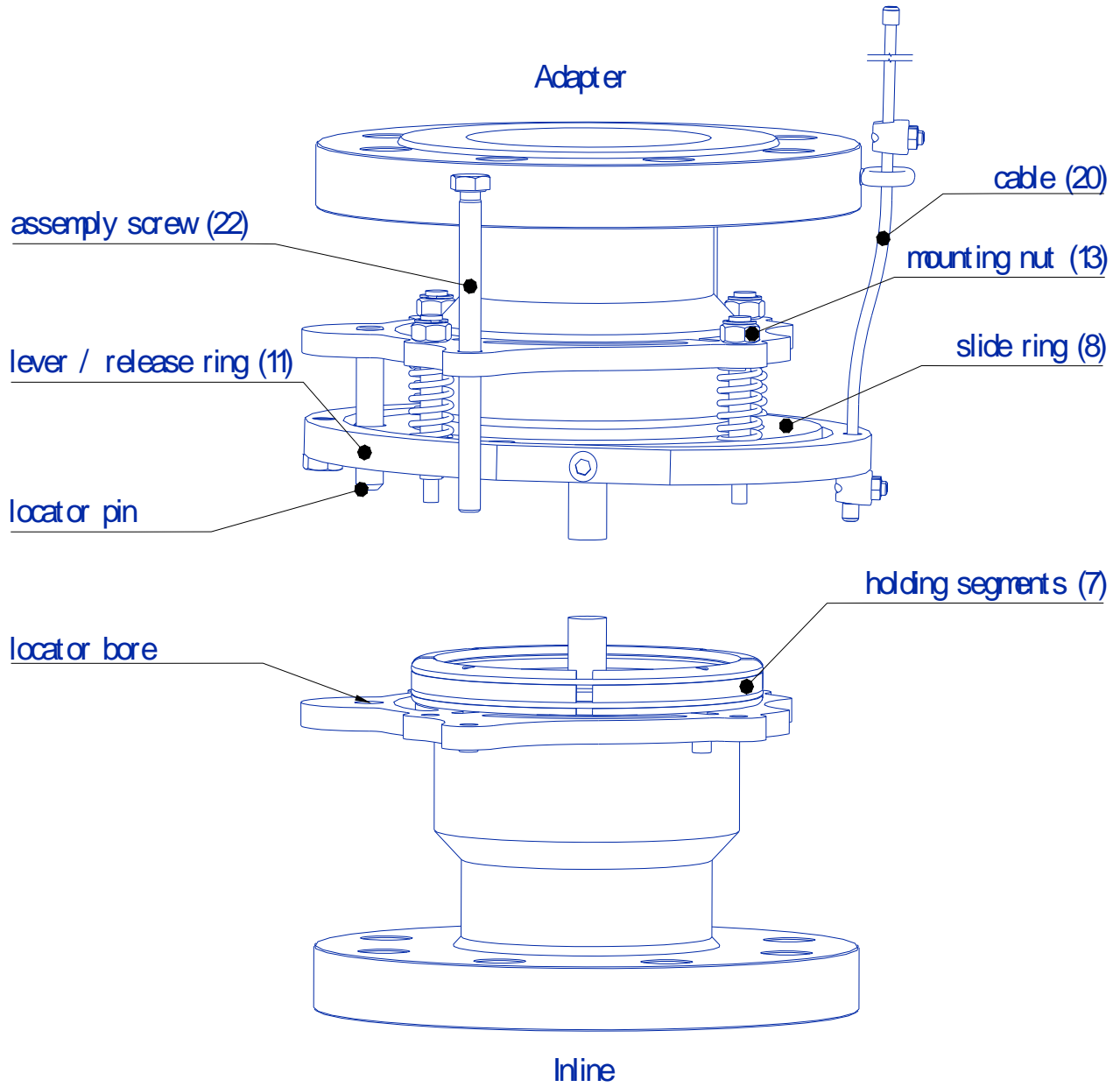


Fig.6

2.4 Assembled NTS-SZ

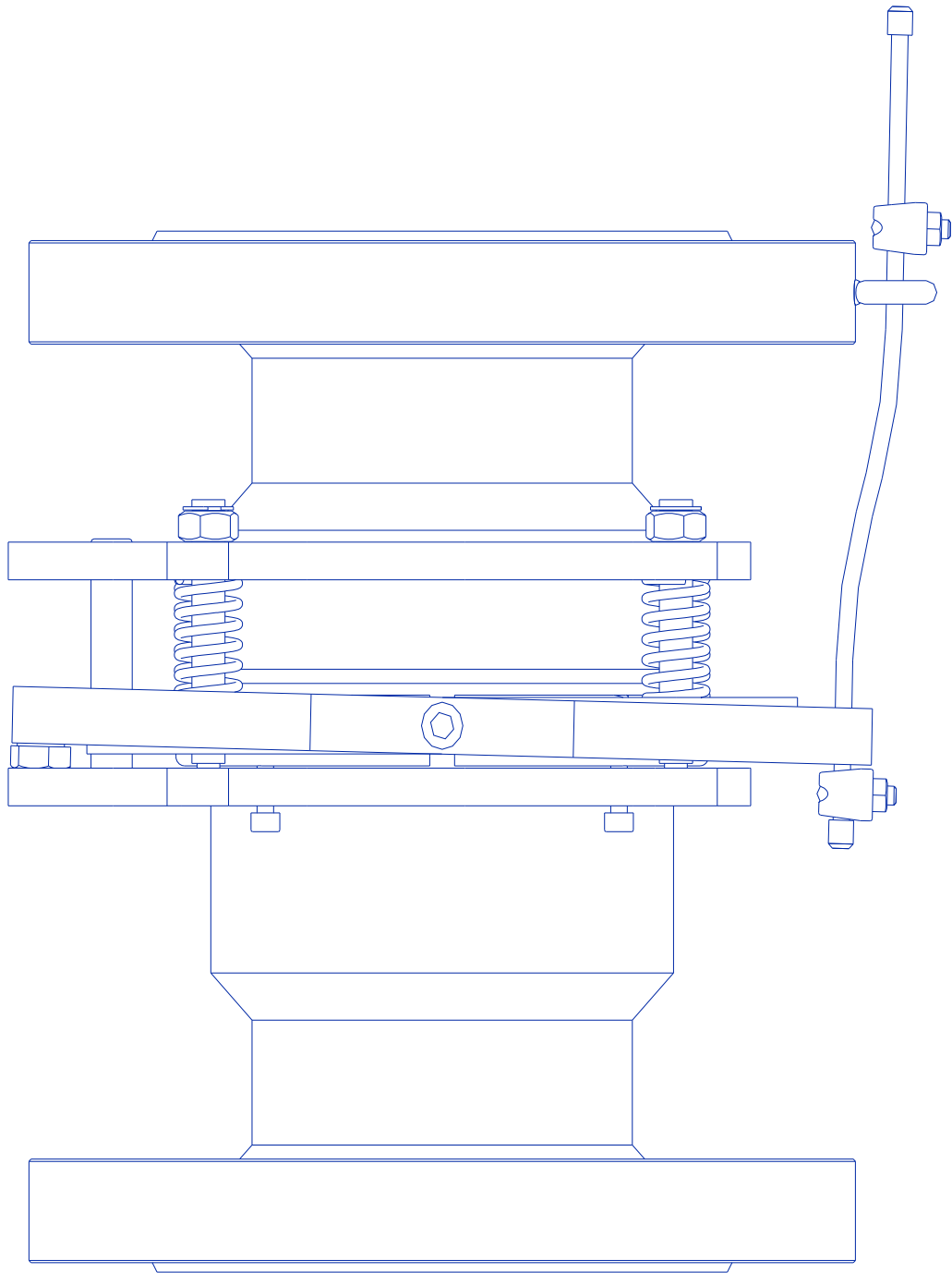


Fig.7

TESTING AND MAINTENANCE RECOMMENDATIONS

- NTS-SZ -

3.1 Testing intervals of emergency release couplers

Independently from jurisdiction and government regulations we recommend regularly scheduled maintenance of the couplers. Thermoplastic elastomer hose lines for example should be test broken down at least 1x per year. At that time the O-rings should be inspected, too.

A more rigorous use warrants a tighter maintenance schedule. Corrosion resistance can be substantially affected by factors such as high temperatures, varying concentrations, content of contaminants, abrasive particles as well as the flow pattern.

3.2 Testing procedure

Type and extent of the testing (e.g. pressure testing of the two coupling halves, of the assembled coupling, separation testing or visual inspection) is determined by the "authorized person" in accordance with the plant safety directive. The results are to be documented in written form.

3.3 Pressure testing of the coupling halves

Check adaptor and inline consecutively for leakage under pressure. Mount the respective halve to the threaded or flanged testing connection fill testing unit with liquid until allowable working pressure is reached. Increase pressure stepwise under continuous inspection of the coupling halve for leakage.

3.4 Pressure testing of the assembled coupler adapter and inline coupled

Seal off on side of the coupling to be tested with a blind flange/threaded end, put the NTS-SZ upright, fill it with liquid, attach to the respective connection of the test unit and increase pressure to max. Allowable working pressure. Pressure increase should be stepwise under constant inspection for leakage.

3.5 Maintenance

All NTS-SZ require little maintenance. Check all guidance elements, O-rings and gasket for wear and tear and porosity.

If desired, we will train your operators in the use of the coupler, either at OPW or at your plant.

Spare parts for the NTS-SZ can be ordered by description of the part and the part number which can be found on the fitting.

3.6 Repairs

Repairs on the NTS-SZ must be followed by a testing, marking and written documentation and can only be conducted by authorized personnel in the sense of the plant safety directive.

3.7 Cleaning recommendations

The emergency release breakaway must be cleaned before any testing.