GESTRA®

Pneumatic Rail Hook

VZ 10

EN
English

Original Installation Instructions

810748-01

Contents

Dimensions

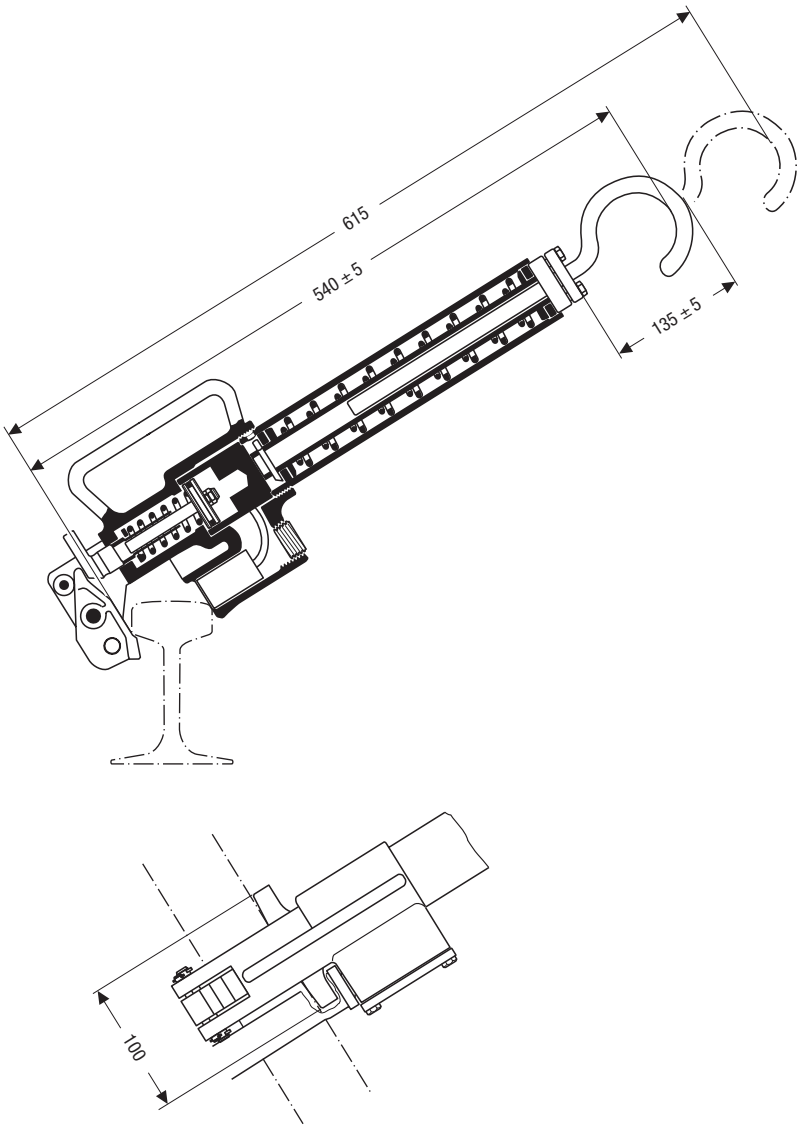

Fig. 1

Functional Elements

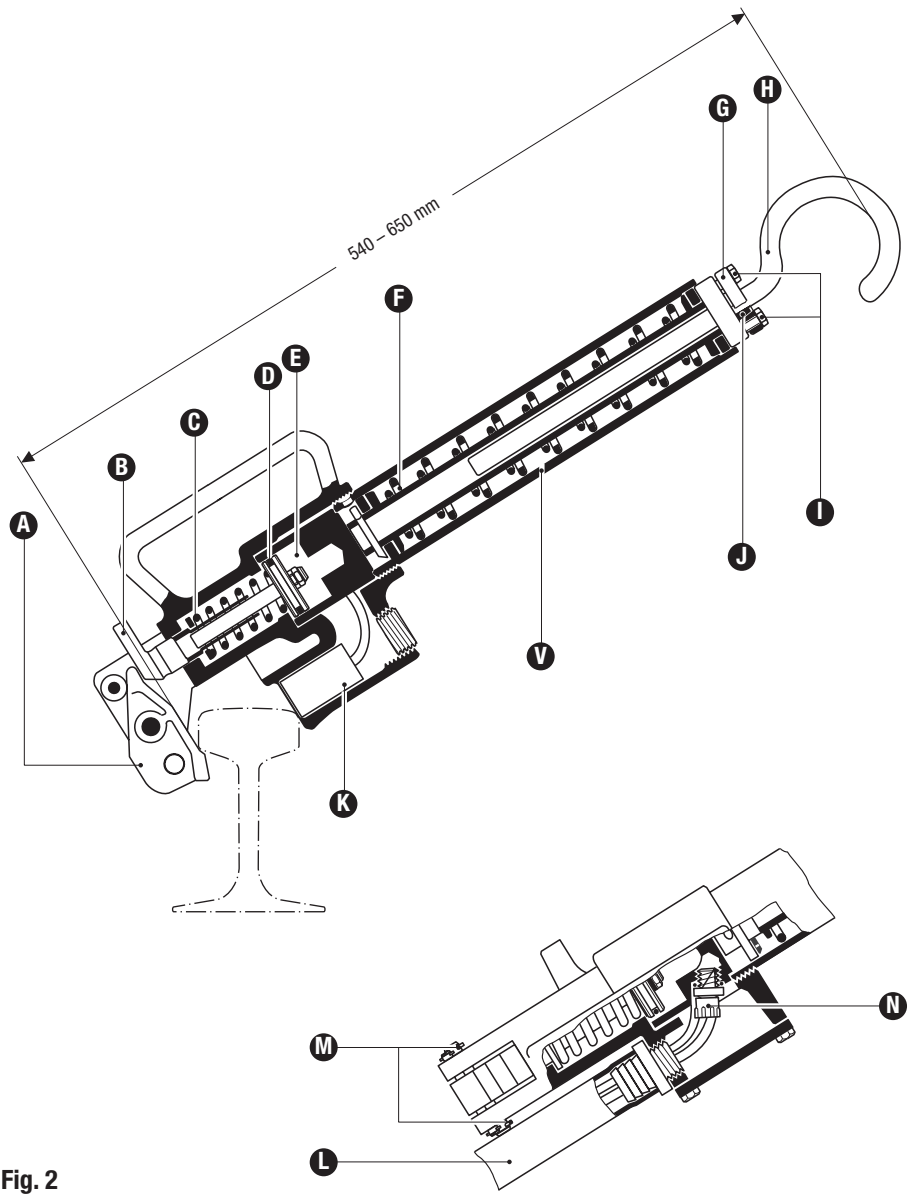

Fig. 2

Function

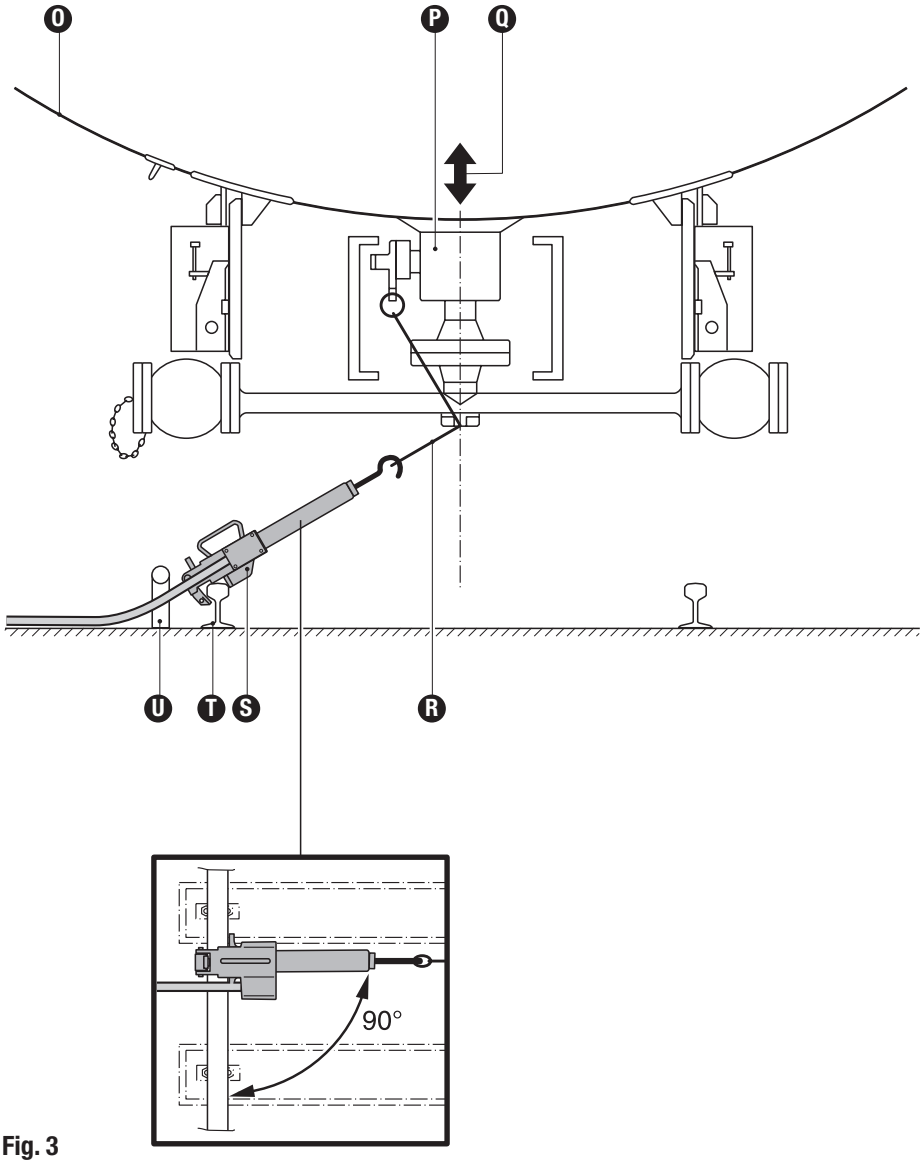

Fig. 3

Key

- **A** Nose
- **B** Push rod
- **C** Compression spring
- **D** O-ring
- **E** Compressed air cylinder
- **F** Spring for compensating the height variation
- **G** Washer
- **H** Hook for attaching to the cable
- **I** Hexagon screws M 8 x 20
- **J** Ring
- **K** Proximity switch
- **L** Protective hose
- **M** Split pin
- **N** Compressed air hose with rapid-action threaded coupling
- **O** Tank of the tank car
- **P** Rapid-action bottom valve
- **Q** Height variation
- **R** Cable as per DIN 26 026
- **S** VZ 10
- **T** Rail
- **U** Auxiliary device (consisting of a tube, ∅ 63 mm)
- **V** Tube

Important Notes

Use for the intended purpose

Do not use the pneumatic rail hook VZ 10 for any purpose other than keeping the bottom valves of tank cars open.

Safety Note

The device may only be installed by qualified staff. “Qualified staff” are those persons who have achieved a recognised level of competence appropriate to the installation and commissioning of this critical safety device.

Danger

When the rail hook is released, there is a danger of injury to the legs and feet.

Explanatory Notes

Scope of Supply

VZ 10

1 Rail hook

1 Installation instructions

Description

According to TRB 851 Paragraph 4.2.5.3, loading plants for combustible gases in the region of storage facilities with a capacity exceeding 30 t must be equipped with an emergency shut-down system. In the emergency shut-down system and in other dangerous situations, the rail hook VZ 10 serves as the safety link between the loading plant and the tank car. To ensure reliable functioning, there are two necessary prerequisites:

- The hydraulic or mechanical equipment of the tank car's bottom valve must be equipped with a cable as per DIN 26026 or UIC 573.
- The rail on which the tank car is standing must have a cross-section corresponding to DIN 5902 type S-49. If this is not the case, the rail hook can be attached to the auxiliary device Ⓤ.

Function

During the loading and unloading process, the rail hook VZ 10 is stretched between the cable and the rail (see Fig. 3) and keeps the bottom valves open. The compressed air supply is not used to open the bottom valves (it only serves the purpose of applying a compressive force to the compression spring Ⓒ). The spring Ⓕ for compensating height variations prevents the rail hook from being torn off the rail during emptying of the tank car. The proximity switch Ⓚ triggers the emergency shut-down system if the rail hook comes off the rail because of unintentional movement of the tank car.

Danger

Only dry instrument air may be used.
There is a danger of ice formation in the compressed air cylinder.

Design

VZ 10

- Rail hook with pneumatic control and proximity switch.

Technical Data

Control air
Pressure min. 3 bar
Pressure max. 10 bar

Length of compressed air hose and sensor cable
6 m

Response temperature of fire protection system
150 °C

Holding force of rail hook
350 N

Release of rail hook
Tank car movement distance ≤ 500 mm

Materials of the casing
External parts bronze/brass (spark-proof).

Weight
Approx. 5.3 kg

Proximity switch

Type (Pepperl & Fuchs)	**NJ 10-30 GK-N**	**NJ 10-30 GK-SN**
Rated voltage	8 V	8 V
Current consumption Active surface exposed Active surface covered	 ≤ 3 mA ≤ 1 mA	 ≤ 3 mA ≤ 1 mA
Permissible ambient temperature	–25 °C to +100°C	–40 °C to +100°C
Protection	IP 68 to DIN 40050	IP 68 to DIN 40050

Operation

1. **If rail type is not S-49:** Install an auxiliary device consisting of a tube, ∅ 63 mm Ⓤ. **Fig. 3**
2. Push back the push rod Ⓑ and position the nose Ⓐ so that it is at right angles to the longitudinal axis of the rail hook.
3. Via the compressed air hose Ⓝ, apply compressed air to the cylinder Ⓔ at a pressure in the range 3 bar to 10 bar.
   Insert the hook Ⓗ in the eye of the cable, and pull the rail hook towards yourself. Before the rail hook is attached to the rail, the distance between the washer Ⓖ and the tube Ⓥ should be approximately 40 to 50 mm.
4. If the distance is greater than 50 mm, the hook Ⓗ must be adjusted so that the distance described is achieved.
5. To adjust the hook Ⓗ, undo the hexagon screws Ⓘ M 8 and either pull the hook Ⓗ out or push it in.
6. Tighten the hexagon screws Ⓘ, and use the rail hook as described in 3.
7. After the end of the loading process, remove the rail hook from the rail **by hand**. The bottom valves close at the same time.

Danger

Switching off the compressed air after the end of the loading process produces a very high risk of injury due to the rail hook flying off the rail. Similarly, during this operating step there is a risk of breakage of the rail hook.

Tools

- Open-end spanner, 13 mm A. F.

Annex

Spare Parts

Part	Part No.	Name	Stock code
Ⓐ	3	Nose, 2.0975.01	048 417
Ⓑ	2	Push rod, complete, 2.0401	079739
Ⓒ	6	Compression spring, 1.4310	079756
Ⓓ	7.3	O-ring 34, 52 x 3, 53, Busak + Luyken, NBR	079759
Ⓖ	9.80	Washer, 2.0401	079745
Ⓗ	9.10	Hook, 2.0401	079752
Ⓙ	9.7	Ring, split, PA	043420
Ⓚ	10	Proximity switch NJ10-30GK-SN or proximity switch NJ10-30GK-N Pepperl & Fuchs	079757 079851
Ⓛ	11.6	Compressed air hose DN 19, DIN 73411, rubber with fabric insert	079763
Ⓜ	4.4	Split pin 4 x 20 DIN 94, brass	013993
Ⓝ	11.3	Rapid-action threaded coupling CK-1/4-PK-6-Festo, AL	079761

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