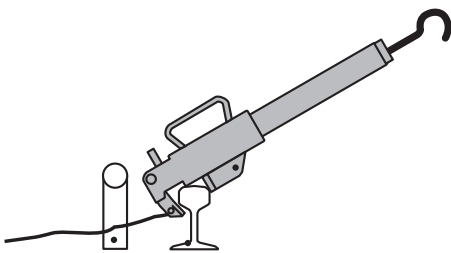


VZ 10



VZ 20

Rail Hooks for Rail-Tank Cars

VZ 10 Pneumatic Rail Hook

VZ 20 Mechanical Rail Hook

Description

The rail hooks are mounted under the tank car on quick-release mechanisms, especially on tank cars carrying pressure-liquefied gas:

- Pneumatic rail hook VZ 10
- Mechanical rail hook VZ 20

The rail hook is the safety link between the tank car and the loading station. This equipment keeps bottom valves on tank cars open.

The hooks may only be used within the admissible pressure and temperature ratings.

Function

The rail hook automatically closes the rapid-action bottom valve of the railway tank car if it rolls away. Together with the rapid-action bottom valve, it forms an internal rapid-closing shutoff mechanism that acts as safety equipment during the carriage of liquefied flammable gases. This safety equipment satisfies the requirements of the RID, section 6.8.3.2.3, for filling and discharge systems for liquefied flammable or toxic gases with a capacity of over 1 m³. The rail hook has a PTFE fire shield. The hook releases in the event of a fire.

Materials

All external parts of the rail hook are made of bronze or brass. The equipment is virtually spark-proof.

Component	VZ 10, VZ 20
Body	CC333G (2.0975.01)
Push rod	CW614N-M (2.0401)
Nose	CC333G (2.0975.01)
Tube	CW614N-M (2.0401)
Hook	CW614N-M (2.0401)

The VZ 10 rail hook features a proximity switch that enables automatic remote triggering when connected to an I&C system.

In order to function as safety equipment, the following conditions must be satisfied:

- The bottom valve of the tank car must be equipped with a cable to DIN EN 12561-3.
- The rail must conform to DIN EN 13674-1 (e.g. profile 49 E 1).

If the rail does not satisfy this condition, as an alternative the equipment may also be attached via a suitable auxiliary device.

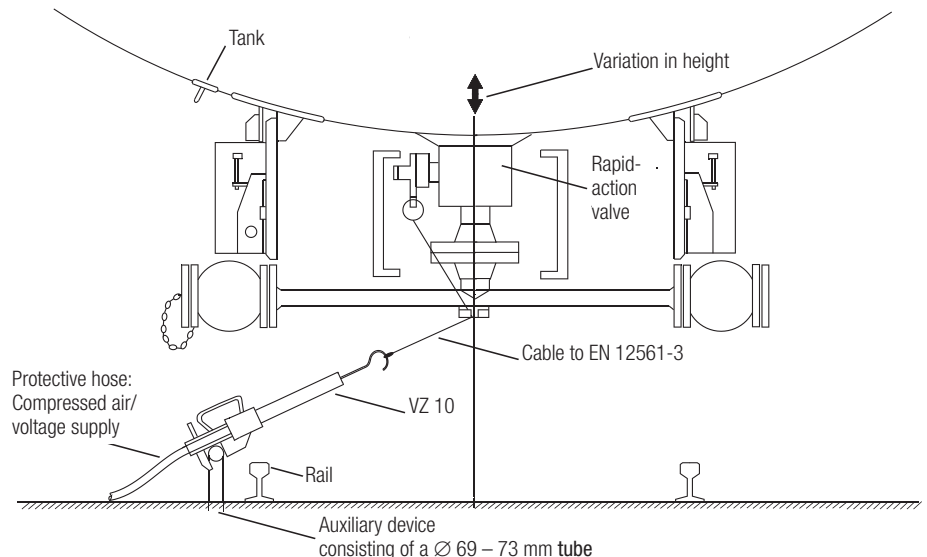
While the tank is being filled or emptied, the rail hook is stretched between the cable and the rail. It keeps the actuator of the bottom valve in the open position. The cable is attached to the hook of the rail hook.

In the VZ 10, the nose is tensioned by compressed air.

Optional extras

- VZ 10:
 - Proximity switch: NJ 10-30 GK-N
Length of protective hose: 6 m, 10 m or 15 m
 - Proximity switch: NJ 10-30 GK-SN
Length of protective hose: 6 m or 10 m
 - Proximity switch: NJ 5-30 GK-S1N
Length of protective hose: 6 m or 10 m

Schematic diagram



Operating data

Holding force	350 - 1,100 N
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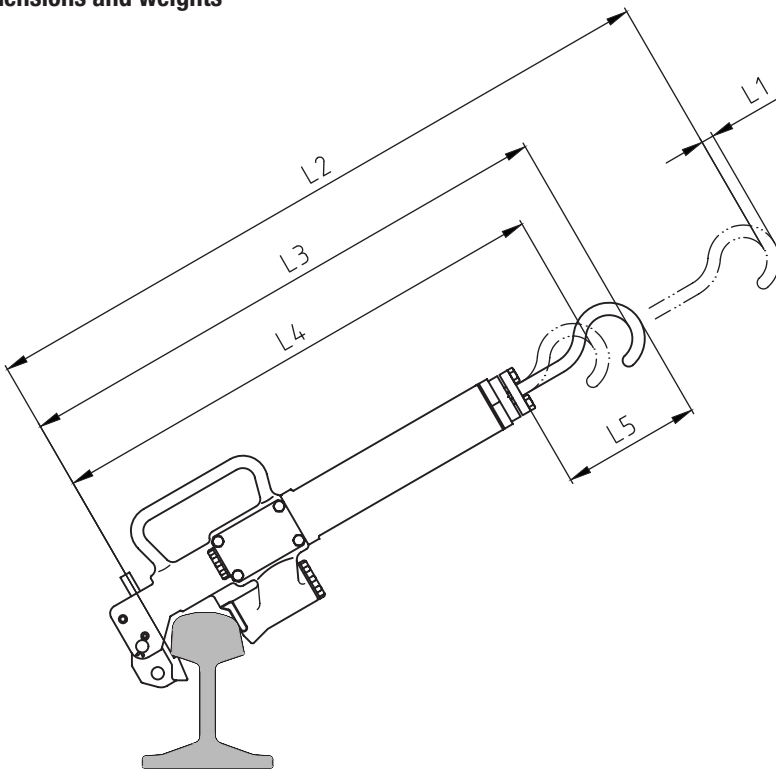
Compressed air supply for VZ 10

Minimum	4.5 bar
Maximum	9 bar

Proximity switch (Pepperl & Fuchs) characteristics in the VZ 10

Type	NJ 10-30 GK-N	NJ 10-30 GK-SN	NJ 5-30 GK-S1N
Rated voltage [V]	8	8	8.2
Power consumption [mA]			
Active surface not covered	≥ 3	≥ 3	≤ 1
Active surface covered	≤ 1	≤ 1	≥ 3
Admissible ambient temperature [°C]	-25 / +100	-50 / +100	-25 / +100
IP rating	IP66/IP68	IP68	IP68

Dimensions and weights



Dimension	VZ 10	VZ 20
L1 [mm]	12	12
L2 [mm]	690	690
L3 [mm]	540	540
L4 [mm]	500	500
L5 [mm]	135	135
W [mm]	100	100
Weight [kg]	see table below	5.7

Weight of VZ 10, depending on hose length

Hose length [m]	Weight [kg]
6	7.9
10	9.4
15	11.2

Rail Hooks for Rail-Tank Cars

VZ 10 Pneumatic Rail Hook

VZ 20 Mechanical Rail Hook

No.	Designation
1	Body
2	Spring for compensating height variation
3	Washer
4	Hook (for attaching the cable)
5	Hexagon screws (M 8 × 20)
6	Ring
7	Tube
8	Cylinder
9	Proximity switch
10	Compressed air hose
11	Protective hose
12	Rail of railway track
13	Fixing lug for slack rope (slack rope not included in delivery)
14	Nose
15	Push rod
16	Compression spring
17	Quad ring
18	Split pin (4 × 32)

This model does not have component numbers 9 to 11, but the other components are identical to the VZ 10.

No.	Designation
18	Split pin (4 × 32)
19	Spring
20	Slack rope (not included in delivery)
21	Spacer

Application of European Directives

Pressure Equipment Directive

ATEX Directive

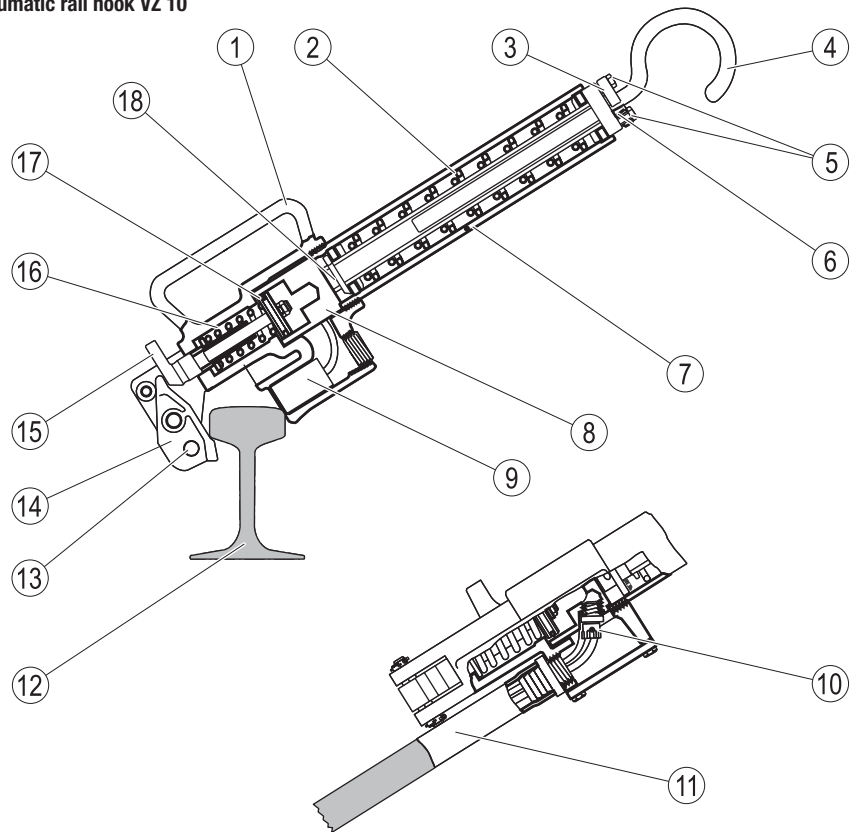
The equipment has classification: CE Ex II 2G Ex h IIC T6 Gb. For use in potentially explosive atmospheres in zones (surrounding atmosphere to Directive 1999/92/EC) 1 and 2, please read and pay attention to the following information: The equipment is made of non-sparking material (bronze/brass). When triggered, the equipment can produce sparks mechanically due to impacts with metal or similar. The impact velocity when triggered is over 1m/s. The impact energy is over 500 J. The plant manufacturer or owner must take this into consideration when dividing into zones. If used in potentially explosive atmospheres, the plant manufacturer or owner is responsible for discharging or preventing possible static charge.

The ATEX classification of the proximity switch in the VZ 10 pneumatic rail hook is stated on the VZ 10 sub-assembly rating plate.

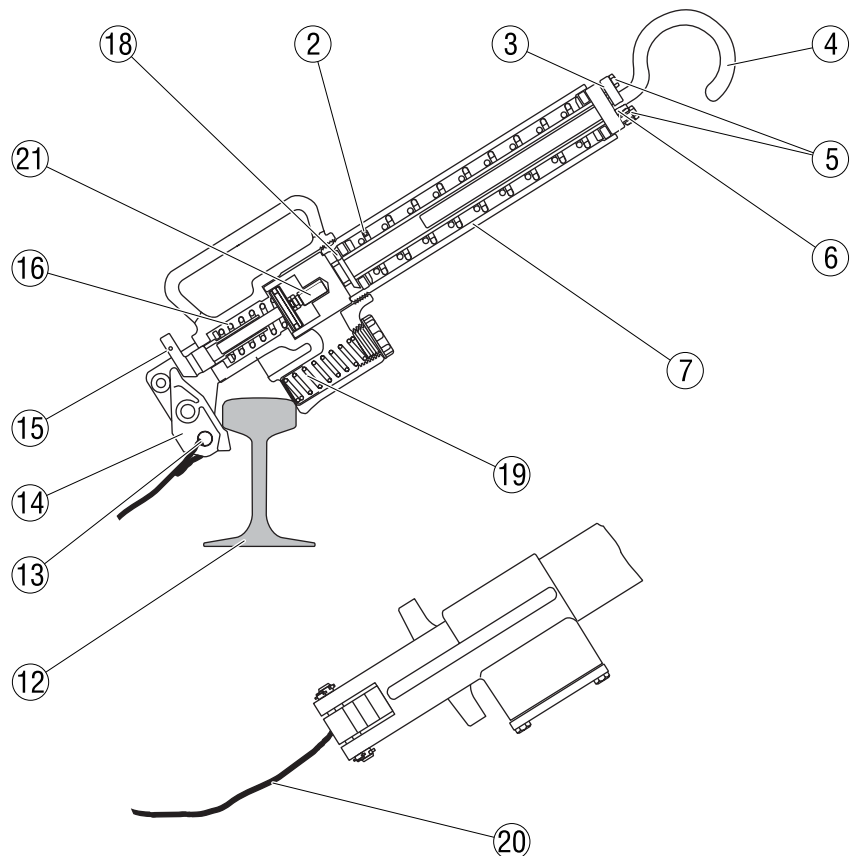
Please note our general terms of business.

Equipment specification

Pneumatic rail hook VZ 10



Mechanical rail hook VZ 20



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