



HEINTZMANN
Traffic Systems

Installation Manual

acc. to
EN 1317-5

Vario-Guard MÜF

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1. Modifications/Changes

Since the initial testing, no significant changes have been made to the vehicle restraint system.

2. Item list for 36 meter

#	Qty.	Item no.	Item	Dimensions	Norm	Material
1	2	170.01/02	Vario-Guard MÜF terminal start / end	Length: 4000 mm	EN 10025	S235 JR
2	1	170.04	Vario-Guard MÜF standard element	Length: 4000 mm	EN 10025	S235 JR
3	1	170.05	Vario-Guard MÜF with sliding box, beginning	Length: 4000 mm	EN 10025	S235 JR
4	1	170.06	Vario-Guard MÜF with sliding box, end	Length: 4000 mm	EN 10025	S235 JR
5	3	170.12	Connection post	Ø100 x 50 x 4 x 880 mm	EN 10025	S235 JR
6	2	170.10	Post sleeve	Ø127 x 3,6 x 800 mm	EN 10025	S235 JR
7	6	170.11	Anchor post	Ø72 x 6 x 1,400 mm	EN 10025	S235 JR
8	6	170.13	Anchor post	Ø72 x 6 x 515 mm	EN 10025	S235 JR
9	36	40.03	Mushroom head bolt	M16 x 30 + nut		8.8
10	8	40.05	Mushroom head bolt	M16 x 20		8.8
11	4	40.80	Hexagonal bolt	M14 x 30 + nut	DIN 601	4.6
12	44	40.30	Washer	U 18	DIN 126	Steel
13	4	40.82	Washer	U 16	DIN 126	Steel

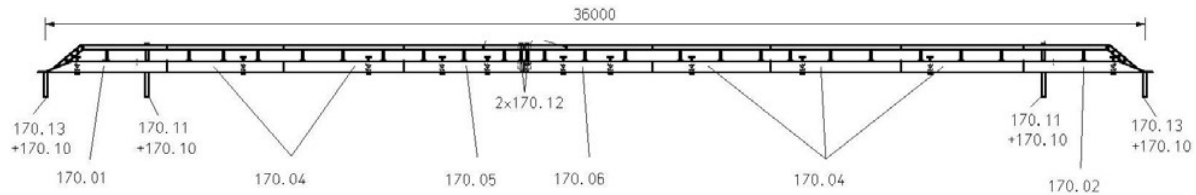
3. Installation length

The installation length according to the initial testing is 36 m including two terminals of 4 m each. Different installation lengths are not permissible.

The terminals must be anchored to the ground appropriately. The anchoring is to be carried out in accordance to the local conditions and to the arrangements made with the client.



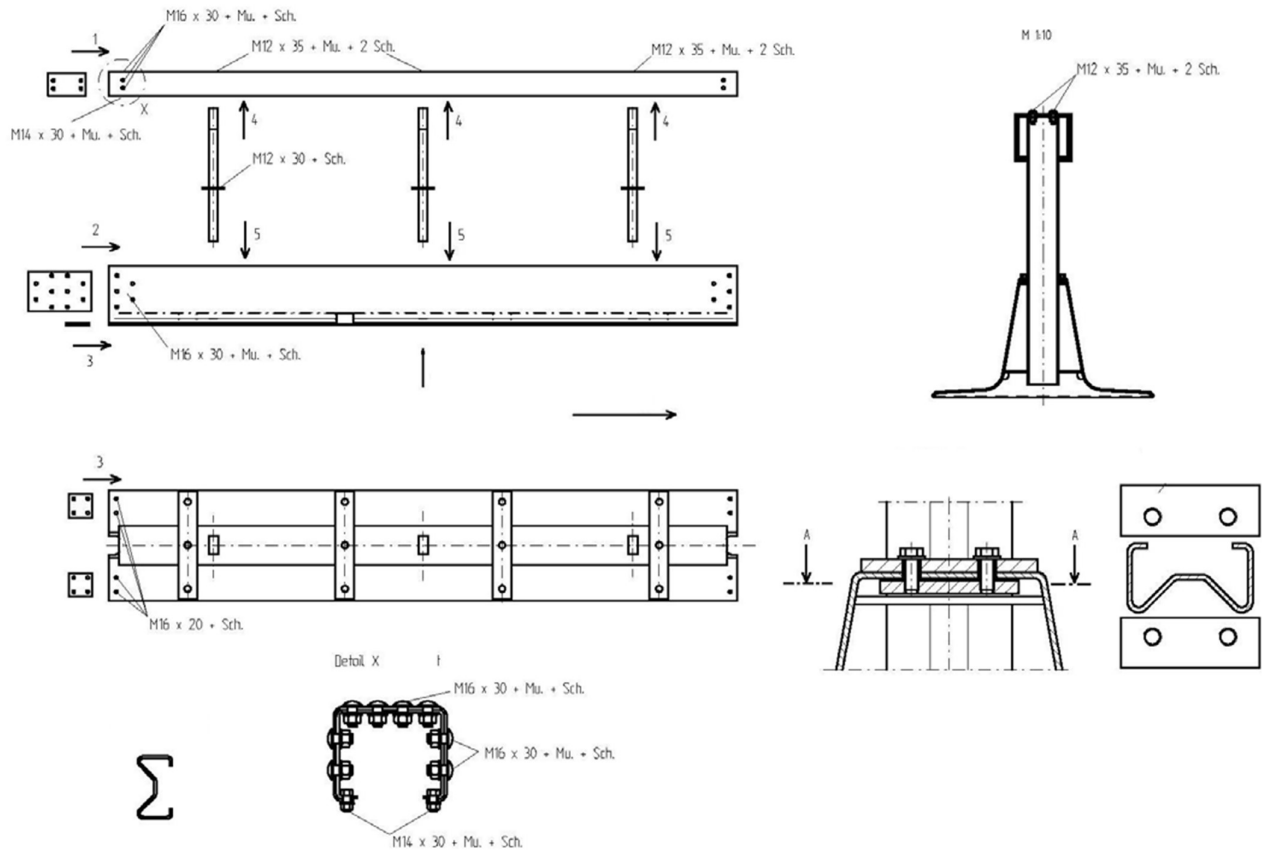
4. Installation



Post : Sigma100
Post distance: 1.33 m
System height: 0.90 m system width: 0.70 m
System length: 36.00 m (9 elements of 4.00 m)



Assembling



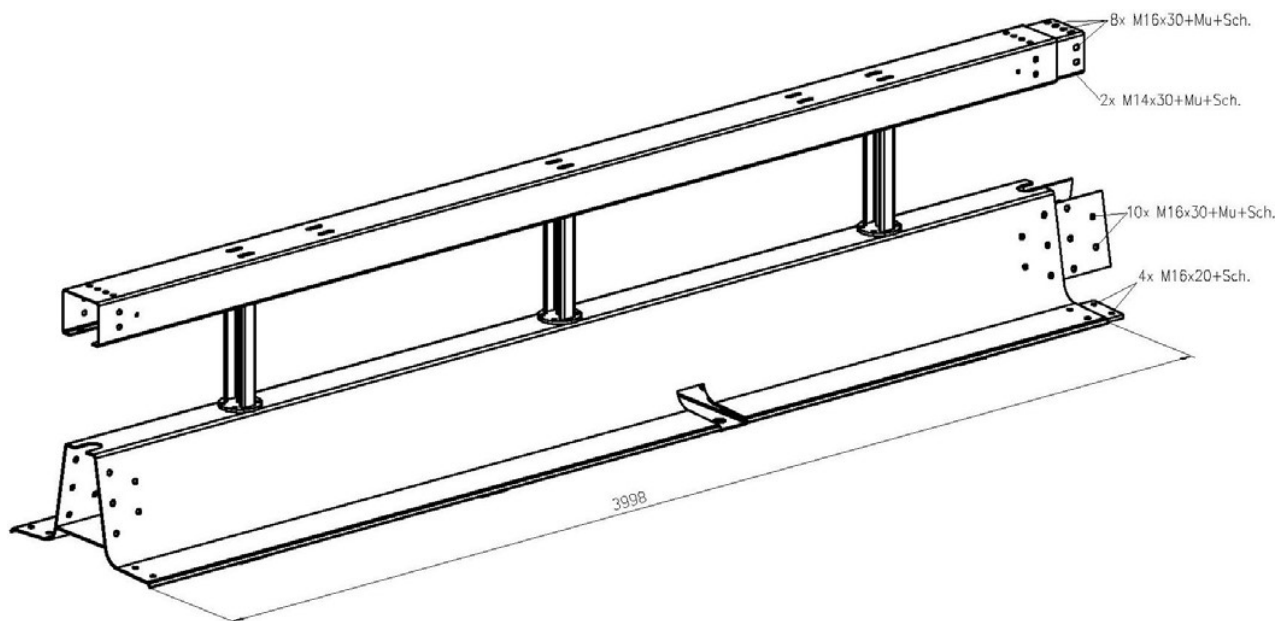
Vario-Guard MÜF is pre-assembled by the manufacturer according to the drawings above and shipped in lengths of 4.00, 8.00 or 12.00 m, respectively.



Positioning

Bolting

- 18 pcs. bolt mushroom head M16x30 8.8 6 with nut and washer (40.03/40.30) per joint
- 2 pcs. bolt hexagonal head M14x30 4.6 with nut and washer (40.80/40.82) per joint
- 4 pcs. Bolt mushroom head M16x20 8.8 6 with washer (40.05/40.30) per joint



Torques

- Bolt M12: 50Nm, max. 80Nm
- Bolt M14, M16: 70Nm, max. 140Nm

Orientation:

Closed side of sigma posts in driving direction.



5. Staff requirements

The installation is to be carried out by trained installation personnel with all necessary expertise.

All national regulations and guidelines concerning road work site protection must be obeyed.

6. Installation equipment

For installation, the following equipment must be available:

- Compressor
- Pressure wrenches
- Sockets for M12, M14 and M16
- Torque wrench (for M12, M14 and M16)
- Wrench (for M12, M14 and M16)
- Spike
- Sledgehammer
- Tape measure
- Truck-mounted cranes

7. Storage and handling

The single elements of Vario-Guard MÜF can be packed in batches of up to 7 elements side by side. Not more than two of those batches can be stored or carried one upon the other. The cargo must be secured in accordance with the specifications.

During transport and handling, make sure that no damage occurs to the structural components and mounting hardware.

8. Installation conditions

After transport, all bolted connections have to be checked and re-tightened where necessary to ensure the provided functionality of Vario-Guard MÜF (also see section 4).

The system should be placed only on solid ground which must be cleaned of sand and flint before installation.

When positioning Vario-Guard MÜF make sure that the system has enough space to move sideways on an even surface in case of a vehicle impact. The minimum space required is 140 cm to each side.

Be aware that the maximum radius that can be achieved with 4m standard elements is 150 m. For smaller radii, shorter elements have to be used (e.g. 1.33m Vario-Guard).

Make sure that the Vario-Guard MÜF elements are positioned in a visually perfect alignment. Adjust where necessary.

In regions where the minimum outdoor air temperature (T_{\min} in accordance with EN 1991-1-5/NA) is lower than $-24\text{ }^{\circ}\text{C}$, a written permission of the manufacturer must be obtained prior to installation.

The manufacturer does not accept any liability in case of an installation non-compliant to any of the provisions of this manual. For deviant conditions, adequate special measures have to be authorized by the client and the manufacturer by prior written agreement.



9. Repairing and Maintenance

In case of damages, all damaged parts have to be replaced. Damaged parts are to be dismantled and discarded for recycling. It is strongly recommended to replace the entire element concerned and to repair it off-site

All repairing is to be carried out in accordance with the provisions of this manual. Make sure that no other parts become damaged due to the repairing

The installed Vario-Guard typically requires no special maintenance. Contaminated parts can be easily cleaned with a pressure washer.

Regular maintenance only is necessary in connection to expansion joints, which have to be checked for function and corrosion once a year.

10. Information on toxic substances

This system does not contain hazardous substances that would require monitoring