

TRI MO TRIMOTERM

Name of product: Gripper for vertical façade FTV panels
Types: PVF (60, 80, 100, 120, 133, 150, 172, 200 and 240 mm)



INSTRUCTIONS FOR USE

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INTRODUCTION - GENERAL INFORMATION

Purpose of instructions

These instructions are written by the manufacturer and should always accompany the gripper working device. The information herein given is intended for professionally qualified persons.

These instructions for gripper usage clearly define the purpose of the gripper and contain all the information necessary to ensure their safe and proper use.

For ease of reading these instructions are divided into several sections; to quickly find an appropriate section use of the index is recommended.

Individual notes or warnings are written in bold print and marked by symbols! Their meanings are described below:



The instructions should be strictly followed. Disregarding these instructions might result in injuries or even death.



Warning about a dangerous situation that might arise during the useful life of the product and might represent a potential danger for personnel, property or financial loss...



Important information



Useful advice related to use of the gripper device.

Gripper producer:


TRIMO d.o.o., Prijateljeva cesta 12, 8210 Trebnje, Slovenia.

Identification of gripper

The basic data about your gripper device is marked on the identification plate fixed on the gripper casing. The following data is stated on it:

- Producer,
- Type of device,
- Load-bearing capacity (max. loading permitted),
- Serial number,
- Year of production.

For panels thickness up to 240 mm:

TRIMO type: PVF _____ Allowed load: 710 kg Serial number: _____ Year and month: 20__ / __	
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Interpretation of data stated on the gripper identification plate:

- Type PVF: PVF - vertical façade gripper; gripper width is stated on the line.
- Panel thickness types are: 60, 80, 100, 120, 133, 150, 172, 200 and 240 millimetres.
- The maximum allowed load for the heaviest panels that can be lifted by a gripper is stated.
- Serial number: the gripper identification sequential number is stated, e.g.: 001, 002, 003, etc.
- Year and month of production 20__/__: The year of production is stated first and the month of production is stated second; example: gripper produced in August in the year 2002, is marked as: 2002/08.

FTV panels - gripper markings for vertical façades

Table 1: Markings of gripper indicating panel thickness

	FTV panel (mm)	Marking (type) of gripper	Gripper weight (kg)
1	60	PVF - 60	7,7
2	80	PVF - 80	8,1
3	100	PVF - 100	8,5
4	120	PVF - 120	9,6
5	133	PVF - 133	10,0
6	150	PVF - 150	10,3
7	172	PVF - 172	11,5
8	200	PVF - 200	12,6
9	240	PVF - 240	14,1

DESCRIPTION OF GRIPPER

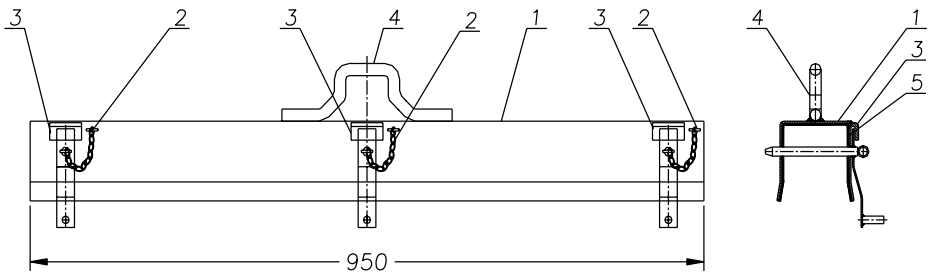
The gripper is exclusively used as an auxiliary tool for vertical assembly of Trimoterm FTV panels. The use of the gripper for all other purposes is strictly prohibited.

All load-bearing elements are made of the material S355. Each panel, depending upon its nominal thickness, has its own grippers, which differ only by their width. The gripping system is the same for all thicknesses. For handling and safe transport of units the most difficult is the FTV panel 240. All calculations and tests are carried out for each of the grippers for these types of panels.

A gripper can be used for lifting panels with a sheet metal thickness 0.5/0.5 mm to 0.8/0.8 mm, and wool density up to 120 kg/m³.

Components of the gripper for panels of thickness 60, 80, 100, 120, 133, 150, 172, 200 and 240 mm

Figure 1: Components of the gripper



- Pos. 1 - Frame of the gripper
- Pos. 2 - Fastener
- Pos. 3 - Guard
- Pos. 4 - Fastener for the gripper
- Pos. 5 - Sealing tape (IDENT 5012487) or coating of rubber

SAFETY PROTOCOL

Safety symbols and warnings

Various symbols, whose meanings are explained in the introduction, are used for warning of dangerous situations and advising on correct gripper use. It is vitally important to follow these instructions and advice to ensure safe work with the grippers.

Safety mechanisms

“Human factor”

The gripper is a mechanical device without any rotating parts. The use of the latch prevents accidental usage. Grippers produced for a particular purpose should only be used for the assembly (see panel type and type of gripper in table No. 1). Lifting should not begin until the device is correctly placed on the panel.

System of panel gripping

Panel gripping is provided mechanically by the fastener for the gripper.

TRANSPORT AND STORING

Grippers should be transported individually and manually, one in each hand. Special attention should be paid during carrying since the device should not be dropped or should not damage the feet and/or other parts of the body. When carrying and transporting three or more grippers these are transported in a case or any other packaging. Grippers should not get physically damaged during transport. When storing them, grippers should be protected against weather conditions and mechanical damage.

USE



Before use the gripper should be visually checked. If any mechanical defects are visible, the device should be eliminated from the working process. Any repair or replacement of damaged parts of the device is strictly prohibited.

User obligations

- The gripper can be used only for the purpose for which the gripper has been produced.
- The use of the gripper is allowed only in compliance with the instructions of the producer.
- Users of grippers should keep records about their use (records are in the appendix to these instructions).
- Personnel are not allowed to stand under the panel when it is being transferred by the PVF grippers.

Loading of the gripper

One gripper PHF can take a maximum load of 710 kg.

Table 2: Weight of panels regarding length and type (steel sheet 0.5/0.5 mm, MW 120 kg/m³, width 1000 mm)

Length	FTV 60	FTV 80	FTV 100	FTV 120	FTV 133	FTV 150	FTV 172	FTV 200	FTV 240
2 m	31.5	36.3	42.1	45.9	49.1	53.1	58.5	65.1	74.7
4 m	62.9	72.5	82.1	91.7	98.1	106.1	116.9	130.1	149.3
6 m	94.4	108.8	123.2	137.6	147.2	159.2	175.4	195.2	224.0
8 m	125.8	145.0	164.2	183.4	196.2	212.2	233.8	260.2	298.6
10 m	157.3	181.3	205.3	229.3	245.3	265.3	292.3	325.3	373.3
12 m	188.8	217.6	246.4	275.2	294.4	318.4	350.8	390.4	448.0
14 m	220.2	253.8	287.4	321.0	343.4	371.4	409.2	455.4	522.6

Note: Panel weights stated above are in kg.

Table 3: Weight of panels regarding length and type (steel sheet 0.8/0.8 mm, MW 120 kg/m³, width 1000 mm)

Length	FTV 60	FTV 80	FTV 100	FTV 120	FTV 133	FTV 150	FTV 172	FTV 200	FTV 240
2 m	49.1	54.8	60.6	66.3	70.2	75.0	81.5	89.4	100.9
4 m	98.1	109.6	121.2	132.7	140.4	150.0	162.9	178.8	201.8
6 m	147.2	164.4	181.7	199.0	210.5	224.9	244.4	268.1	302.7
8 m	196.2	219.3	242.3	265.3	280.7	300.0	325.8	357.5	403.6
10 m	245.3	274.1	302.9	331.7	350.9	374.9	407.3	446.9	504.5
12 m	294.3	328.9	363.5	398.0	421.1	449.9	488.7	536.3	605.4
14 m	393.4	383.7	424.0	464.4	491.2	524.8	570.2	625.6	706.3

Note: Panel weights stated above are in kg.

Table 4: Weight of individual panel type per m² with steel sheet 0.6/0.6 mm and MW 120 kg/m³

FTV	60	80	100	120	133	150	172	200	240
Weight (kg/m ²)	17.3	19.7	22.1	24.5	26.1	28.1	30.8	34.1	38.9

Table 5: Weight of individual panel type per m² with steel sheet 0.7/0.7 mm and MW 120 kg/m³

FTV	60	80	100	120	133	150	172	200	240
Weight (kg/m ²)	18.9	21.3	23.7	26.1	27.7	29.7	32.4	35.7	40.5

Table 6: Weight of individual panel type per m² with steel sheet 0.8/0.8 mm and MW 120 kg/m³

FTV	60	80	100	120	133	150	172	200	240
Weight (kg/m ²)	20.4	22.8	25.2	27.6	29.2	31.2	33.9	37.2	42.9



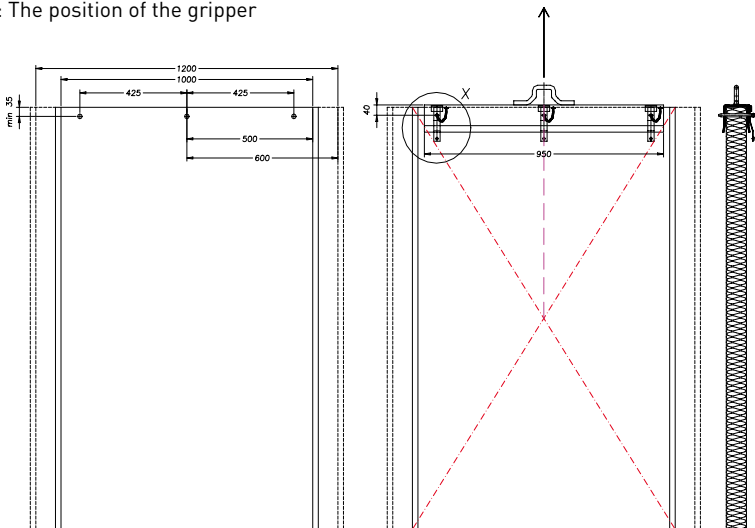
danger

Check element weight before using the grippers.

Mounting of gripper

The use of a gripper is allowed for panel length up to 14 metres. Grippers must be affixed in such a way that the gravity axis of the panel passes through the gripper fastener as shown in Figure 2.

Figure 2: The position of the gripper

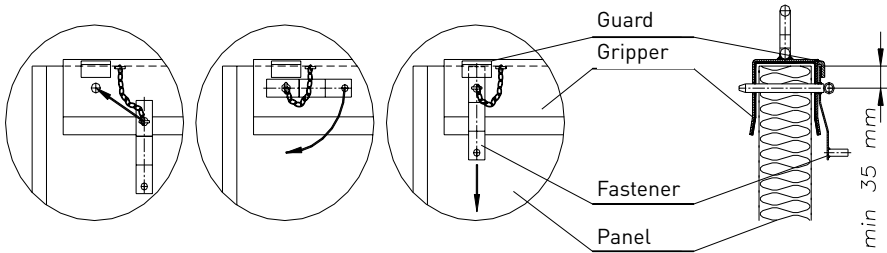


Gripper affixation for vertical assembly of panels

Prior to affixing the gripper it is necessary to place polystyrene foam under the panel and move the panel 200 mm in order to drill holes in it. It is necessary to drill three $\varnothing 14$ holes for 60, 80 and 100 FTV panels (Figure 2). Panel thicknesses of 120, 133, 150, 172, 200 and 240 mm demand three $\varnothing 18$ holes. The centre of the hole must be at least 35 mm away from the edge of the panel. Before drilling, place the gripper onto the panel so that the edge of the panel rests against the bottom of the gripper.

After drilling, place the gripper so that it rests against the top of the panel and connect the panel to the gripper with the help of the fastener (Fig. 3). Before fastening, the lever should be in a horizontal position; and after fastening, the lever should be in a vertical position. Before lifting the panel with the gripper all three fasteners need to be properly affixed.

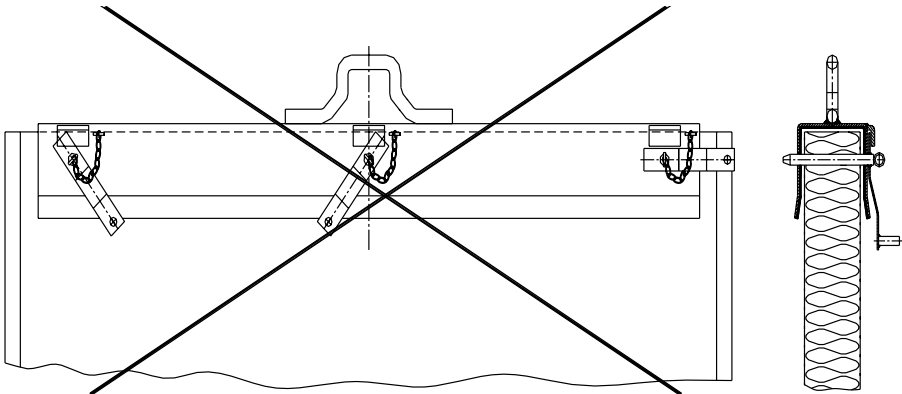
Figure 3: Affixing the gripper



warning

Lifting without a properly affixed fastener is prohibited (Figure 4)!

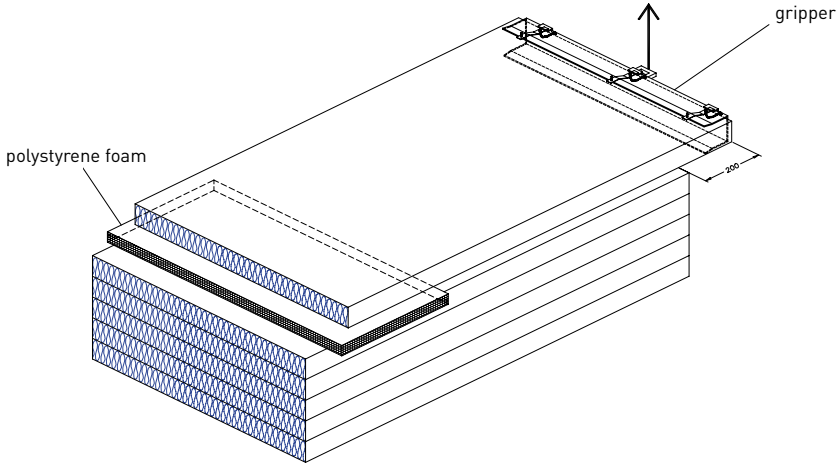
Figure 4: Improper affixation of the gripper



Panel lifting

During lifting it is necessary to hold the bottom part of the plate by the polystyrene foam so that the panel does not slip onto the adjacent panel. Lifting should be even and without blows or knocks, and care should be taken to prevent damage when lifting the panels (Figure 5).

Figure 5: Lifting of a panel



danger

Standard parts are used (steel wire cables, shackles) as connecting parts between the hoisting equipment (lift) and the gripper, and these connecting parts must comply with the appropriate standards (in dimensions, fastening systems). These connecting parts are not described in these instructions and are not an integral part of the gripper system.



advice

It is recommended to use a shackle as a connecting element between the gripper and the steel wire cable.



warning

Use protective gloves when using the gripper.
Do not wear loose clothing when lifting using a gripper.
After the grippers have been mounted and before the beginning of lifting all persons should move away and back - a safe distance should be kept danger of panel swinging, function defect.



Always use protective gloves when using the gripper.



All potential problems and dangers should be evident at the initial stage of lifting when part of the panel is still on the ground.

Unfastening the grippers

Unfastening of grippers is performed in the opposite sequence to fastening. The gripper is fixed with a load-bearing cable during the complete procedure.

MAINTENANCE

The gripper should be protected against external (weather and mechanical) influences. The gripper that gets scraped very badly during use should be protected against corrosion. Before each use the gripper should be visually checked. If any deformations of the load-bearing elements (safety pin, latches, cover, holder) are observed they should be measured. If they exceed 1 mm, the gripper should be eliminated from use.

Useful life of a gripper

When the gripper has lifted 10,000 m² of FTV panels, or after one year of use, the gripper should be eliminated from use (records of gripper use). During daily inspection if it is noticed that individual parts are worn or bending by more than 10% from their normal state, the gripper should be eliminated from use.

Control page

Period of checking	Type of activity	Type of check	Method of checking	Person checking	Note
Daily	Cleaning, Anti-corrosion protection	Complete device	Visual	Operator - Connecting person	See MAINTENANCE
Half-yearly	Cleaning, Anti-corrosion protection	Complete device	Visual, anticorrosion protection if required	Operator - Connecting person	See MAINTENANCE

RECORD OF GRIPPER USE

(THIS RECORD MUST BE COMPLETED AFTER EACH USE)

Type of gripper: _____

Serial number: _____

Month and year of production: _____

No.	Date of use		Location	Project	Country	Quantity of built in FTV panels (m ²)	Accepted by (Name and Surname)	Notes
	From	To						
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								

Note: LOLER expires after 6 months from date of issue of certificate.

DECLARATION OF CONFORMITY

In accordance with the Machinery Safety Rules, the Official Gazette of the Republic of Slovenia, no. 75/2008, 66/2010

TRIMO d.o.o.
Prijateljjeva cesta 12, 8210 Trebnje, Slovenia

declares with ultimate responsibility that

THE GRIPPER OF FTV PANELS FOR VERTICAL FAÇADES PVF

**Type: PVF (60, 80, 100, 120, 133, 150, 172, 200 and 240
mm)**

Year of manufacture: 2013

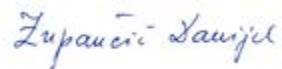
is produced according to the requirements of the following regulations:
- Machinery Safety Rules, the Official Gazette of the Republic of Slovenia,
no. 75/2008,
66/2010 (MD 2006/42/EC),
- SIST EN ISO 12100:2011,
- SIST DIN 15018-1:1996; SIST EN 13155:2004+A2:2009; SIST EN 1993

NOTE:

The gripper for FTV vertical facades is intended for lifting and carrying panels with a thickness of 60, 80, 100, 120, 133, 150, 172, 200 and 240 mm.

Date and place:
Trebnje, 01.06.2013

Signature of authorized person:
Danijel Zupančič, MA
Deputy General Manager for the Technical
Sector



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