

manual

444 CE cable break device industrial overhead doors till 400kg

INSTALLATION / MAINTENANCE / USAGE

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ATTENTION! GENERAL WARNINGS!

To install, use and maintain this door safely, a number of precautions must be taken. For the safety of all concerned pay heed to the warnings and instructions given below! If in doubt, contact your supplier.

SPECIAL SAFETY WARNINGS OR REMARKS IN THIS MANUAL ARE INDICATED WITH THIS SYMBOL, READ THESE WARNINGS CAREFULLY.

- This manual has been written for use by experienced fitters and as such is not suitable for d.i.y.purposes or for use by trainee fitters.
- This manual describes the installation of a hardware product. Be sure to supplement this manual if needed with instructions for any additional components not described in this manual.
- ✓ Before starting, read this manual carefully!
- Bottom brackets and cable break devices are under high tension! Do not try to remove, adjust or repair, without releasing the cable tension! Always be careful during installation!
- Certain components may be sharp or have jagged edges. As such you are advised to wear safety gloves.
- This product is designed for use with these specific overhead doors. Replacement or adding additional components may have an adverse effect on the safety of, and the guarantee on, the product and complete door. Also the possible CE-approval which has been granted to this product will be cancelled when components are changed or installation is not done according to this manual! The installer is responsible for this.
- Ouring tensioning, springs can exert large forces. Work carefully. Use the proper equipment. Ensure that you are standing in a steady position.
 - Ensure that there is sufficient light during installation. Remove obstacles and dirt. Make sure that there is no one else present other than the fitters. Other people (children!) may get in the way or endanger themselves during the installation.
- Ensure that the building is constructed strong enough to carry the overhead door construction. It is the responsibility of the installing company to use fixing materials which are strong enough and equipped to fix the overhead door to the building.
- Cutting of the bottom section is not allowed. The forces on cable break devices and bottom brackets are too high. Cutting will weaken the construction of the door at this critical point. If you need to cut the bottom section make sure you can guarantee the strength.
- This product can only be put into use, when all instructions are followed and all documentation has been handed over to the end-user and the end-user has been given instructions and a demonstration of the proper use and functioning of this product.

GUARANTEE, CONDITIONS AND TERMS

Look for the latest applicable guarantee, conditions and terms for this product on: www.flexiforce. com (order / conditions)

CONTACT

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APPLICATION RANGE

The Flexi-Force cable break device 444 can be used on industrial sectional overhead doors, which are manually operated by chain or electrically. The weight of the door leaf lifted by the cables is between 20 kg and maximum 400 kg.

The door tracks (2" rails) have to be of steel with a thickness of 2 mm, Flexi-Force article 2V only. They must be attached by rivets or spot welding with a taper of 10 mm per metre on the vertical diagonal (FF article 9 VB). The relative distance between the connections must be a maximum of 600 mm. For a diverging diagonal or connection the same strength must be ensured in order to guarantee efficient operation. There must not be any machining on the rails such as welding, etc, that could significantly affect safety.

The shape of the track has to be in accordance with the figure in detail C. In order to guarantee a good functioning of the safety device, the sideways movement of the bottom section between the vertical tracks must be limited to max. 10 mm. The cable break device 444 is suitable for 2" tracks and a roller diameter of 46 mm with 11 mm shaft (being Flexi-Force rollers codes 574-60, 574-100, 584-60, 590-25, 575-100. If the door in a low or normal lift system is in the fully opened position, the chisel must be clear of the curve. The recommended section height is 610 mm and the inner radius of the curve is 380 mm. By turning the bolt in the security device the attachment point of the cable can be moved about 20 mm (cable length). We advise you to turn the bolt anti-clockwise, which means that the cable attachment point will move upward (allow to slacken). In this way the forces exerted on the security device are low. Turning the other way is also possible.

The maximum door width by which the cable break device 444 may be adjusted is 6000 mm.

The cable break device must be adapted to an NP, HL, VL with a minimum clear width of 3 m and a maximum clear width of 5 m. For a smaller clear width additional reinforcing brackets must be used.

To prevent damage to the security device bottom rubbers, which when compressed by the closing door have an overall height smaller than 15 mm, must not be used. For this reason the FF bottom rubbers 1037 and 1039 must not be used.

Lift cable fixing and maximum door weight

Model	FF Track type	Max. door weight
444	2V	400 Kg

The cable break devices have approval number **TorFV 6/100** of the TÜV Süd and has been approved by the TÜV (Technische Überwachungs Verein Bayern) at Munich (as Notified Body Nr. 0036).

The 444 has been approved for "Safe opening" The results are included in the INITIAL TYPE TESTING REPORT (EN13241-1) of the SP Institute in Sweden (as Certifying Body No. 0402)

METHOD OF OPERATION

See Fig. 2

The weight of the door leaf (D) on the lift cables (E) gives tension and makes the U-bracket (N) pivot downwards. The U-bracket will be stopped by the nocks (J) of the base plate (F); the double torsion springs (G) will be tensioned further. The door can now be opened and closed freely. In case of a cable breakage the double torsion spring (G) will cause the U-bracket (N) and chisel (K)- to pivot upwards at the same time as the door falls. By simultaneously pivoting and falling, the chisel (K) will catch into the track (C) and stop the falling door. The switch (L) will cut the current to the motor and thus avoiding further unwinding of the lifting cables or one-sided lifting, to prevent further damage.

INSTALLATION INSTRUCTIONS CABLE BREAK DEVICE

See Fig. 1 and 2

In order to guarantee good functioning of the safety device, the sideways movement of the bottom section between the vertical tracks must be limited to max. 10 mm. Mechanical operated doors (e.g. by chain hoist or electrical operation) need adequate measure to achieve a simultaneous move of the door leaf with the operation. E.g. by fitting the horizontal tracks under a small slope or by using a cable tension device, long spring bumpers or similar.

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Mount the cable to the cable break device by placing the loop of the cable around the knob of the cable connector. (The cable should be passed over the roller above).

CE Warning: Make sure you use cable of which the cable connection meets the standard EN12604 (90% of the breaking force of the cable)

- Place roller (B) with a shaft diameter of 11 mm in the pivot tube (A). and "rotate" this in the vertical guide tracks. (One of the two 2. bottom consoles may be fitted beforehand on the panel). The cable break device has to be installed on the door panel where normally the bottom brackets are installed. It is important to ensure that the fixing area is flat with no protruding fixings. To connect the cable break device to the panel, the base plate has 8 holes.
- Pre-drill the holes for the screws. Preferably use a drilling mould, according to the hole template shown in figure 1. The strength 3. of the connection depends on the quality of the panel and the fixing material. The installer must make sure that the connection is reliable.
- 4. Connect with 8 screws, preferably Flexi-Force codes 1053BV or 1055BV.

INNOVATIONS FOR OVERHEAD D

1.

- When necessary shorten the bottom rubber to make room between the end of the used sensor and the inside of the cable con-5. nector of the cable break device.
- Remove the temporary blocking (H) (locking pin) of the U-bracket (N). 6.
- Check that the bracket (N) can rotate freely in the track (C). Ensure the knife does not come into contact with the rails! Check 7. that the rails are not damaged (no machining) and that there are no stickers in the area of the knife. WARNING: BE CAREFUL DURING INSTALLATION. THE EDGE OF THE KNIFE IS VERY SHARP! Check that the pressure clip on the cable can move freely on impact. The dimensions of the pressure clip must be the same or smaller than is shown in Figure 8.
 - Insert the temporary blocking (H) (locking pin) again in the old position 8.
 - 9. Finish the installation of the door by attaching the cables to the drums and balancing the door. The cables will than get the maximum tension.

10. Remove the temporary blocking (H) (locking pin) again

- 11. Adjust the position of the door leaf by turning the bolt (M). Preferably turn the bolt anti-clockwise. This will lower the door on concerning side.
- 12. Check on both cable break devices after adjusting, if the bolt is still inside the full length of the nut which is inside the cable connector. This can be seen at the bottom side of the cable connector.
- 13. Finally mount (click) the safety cover on the 3 nocks and the loop of the torsion spring. See INSTALLATION INSTRUCTIONS SAFETY COVER.

ATTENTION!

To prevent injuries and to facilitate inspection (if the chisel has been activated) the tape on the chisel may not be removed!

SWITCHES

On electrically operated doors install switches on both devices. Make sure that the U-bracket (N) activates the switch. See figure 4. The switch must be wired to the drive in order to stop the drive when activated. A switch with a breaker contact must be used.

INSTALLATION INSTRUCTIONS SWITCH

See Fig. 3

- Place the switch (L) onto the back side of the lip. The switch must be mounted between the lip and the pivoting shaft (tube). The 1. wire (I) of the switch must point upwards.
- Fasten the switch with the supplied bolts, nuts and washers. Assemble the bolts from the front to the back 2.
- Lead the cable through the opening (Z) which is in the base plate 3.
- 4 Connect the cable to the control box which is mounted onto the door leaf.
- 5. Ensure the cable is long enough for the operation not to be adversely affected.
- 6. In the cover there is a hole (see Fig. 9) through which the cable passes to the control unit. The cable can be attached to the cover by a tie-wrap passing through the hole



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INSTALLATION INSTRUCTIONS SAFETY COVER

The safety cover covers a mounted 2" cable break device, with internal cable fixing, completely. This is according to CE-norms. When installing the safety cover, make sure the locking pin is removed.

- 1. When the switch 445SW is used, break out the small break out piece (X) that will give access for the cable of the switch to come out of the safety cover and go to the control box on the door (Fig. 5).
- 2. When a long roller (575-100) is used, break out the large break out piece (Y) that will give access for the back side of the roller to come out of the safety cover (fig. 6 and 7).
- 3. Place the safety cover at the bottom side of the cable break device, by hooking it over the sharp nock of the base plate and the loop of the double torsion spring
- 4. Rotate the cover towards the cable break device
- 5. Ensure the cable is long enough for the operation not to be adversely affected.
- 6. In the cover there is a hole (see Fig. 9) through which the cable passes to the control unit. The cable can be attached to the cover by a tie-wrap passing through the hole

WHAT TO DO AFTER BLOCKING OF THE DEVICE AFTER CABLE BREAKAGE

- 1. The installer has to prevent the door from falling by supporting the bottom section (e.g. by placing the forks of a forklift truck under the section).
- 2. Lift the door panels so the chisel (K) comes loose from the track and the U-brackets (N) can be pivoted backwards.
- 3. Block temporarily the U-bracket by placing a bolt or a nail into the hole (H).
- 4. Remove carefully the very sharp burr on the track which is caused by the chisel and/or repair the track in order to have a flush surface again (if necessary replace the track).
- 5. If the cable break device has been activated due to cable breakage, the device has to be replaced completely by a new one (including a new roller in the cable break device).
- 6. Check if other parts of the door like rollers, tracks etc. show any deformation resulting from the falling and blocking.
 7. Remove the temporarily blocking.

MALFUNCTIONING

In case of malfunctioning of the cable break device the cause has to be determined and solved. If necessary the cable break device has to be replaced and sent to the manufacturer explaining:

- 1. nature of malfunctioning
- 2. the door leaf weight applied

The manufacturer will research the reason of the malfunctioning.

TESTS

A skilled door installer has to check during the regular six months maintenance the following things:

- 1. If the tape on the chisel is damaged, which can be caused by: The door has fallen due to cable breakage (track is damaged by the chisel). Follow the instructions: What to do after blocking.
- 2. The chisel touches the track.
- 3. If the chisel shows damages: replace the cable break device .
- 4. If the double torsion spring (G) is broken, replace the cable break device
- 5. Check the free movement of the U-bracket with chisel to the track.
- 6. Check on electrically operated doors if the switch (L) will be activated by the U-bracket (N) (Fig. 4).

MAINTENANCE

- 1. Check that dirt has not accumulated.
- 2. Check for corrosion
- 3. Check that the rails are not damaged (no machining) and that there are no stickers in the area of the knife.
- 4. If the cover rubs on the rails the door must be adjusted, the shuttle is too big.

















Figure. 2









Figure. 4





Figure. 5



Figure. 7

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Figure. 6















INSTALLATION LEAFLET CABLE BREAK DEVICE 444 WARNING: BE CAREFUL DURING INSTALLATION. THE EDGE OF THE KNIFE IS VERY SHARP!

1. Mount the cable to the knob of the cable break device and mount the cable break device onto the door leaf by turning the roller into the tracks. The cable should be passed over the roller above.





2. Remove the locking pin (prevent the chisel from coming into contact with the tracks!). Check if the bracket with the chisel can rotate freely to the track





- 3. Insert the locking pin in the old position again. Attach the cables onto the drums and balance the door. **Remove the locking** pin again!
- 4. Turn the bolt to level the door. Preferably turn the bolt anti-clockwise. This will lower the door on concerning side. Check after levelling if the bolt is in the nut over the full height.





- 5. Assemble (click) the safety cover over the 3 nocks and the loop of the double torsion spring
- 5.





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