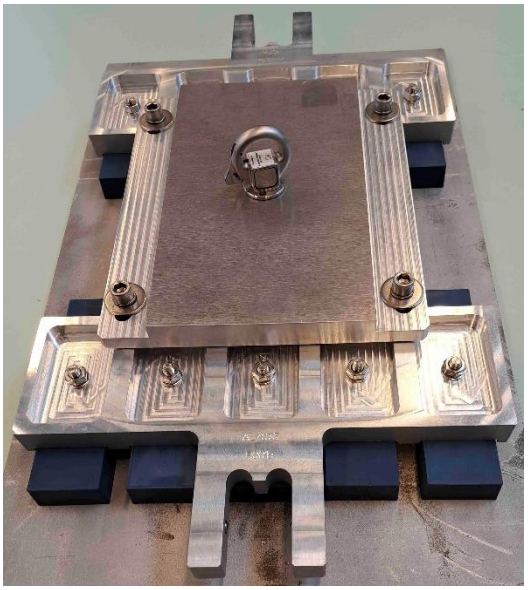


# FALL ARREST DEVICE

# ACCORDING TO EN795: 2012 TYPE B

# TEMPORARY ANCHOR POINT:

# FA10

## User Manual

## and

## Safety Instructions

Version: 0.2

Version control

| Number | Issue | Date | Name |
|---|---|---|---|
| 0.0 | Initial version | 23 10 24 | B. Gravendeel |
| 0.1 | Additions made according to the e-mail from DEKRA 23 11 23.<br>Additions made as followed from “23 11 22 Risk Analysis of FA10 v01”. | 23 11 25 | B. Gravendeel |
| 0.2 | Addition in chapter 1 that in case of reselling the manual must be provided in the proper language.<br>Name of the product in Annex-1 changed to FA10.<br>Product name in the header of Annex-2 in chapter 15, changed in FA10 (product name. | 23 11 27 | B. Gravendeel |

| | | |
|---|---|---|
|  Prepared: B. Gravendeel | Verified: W. van der Graaf | Released: W. van der Graaf |

# Table of Contents

# 1. Introduction

Thank you for purchasing our product.

This manual describes the safe use of the Magnetic Fall Arrest with 10 Rubber Block Magnets (RBM).

The FA10 uses 2 units with 5 RBM and a coupling plate.

Figure 1: overview of the FA10, without the coupling plate

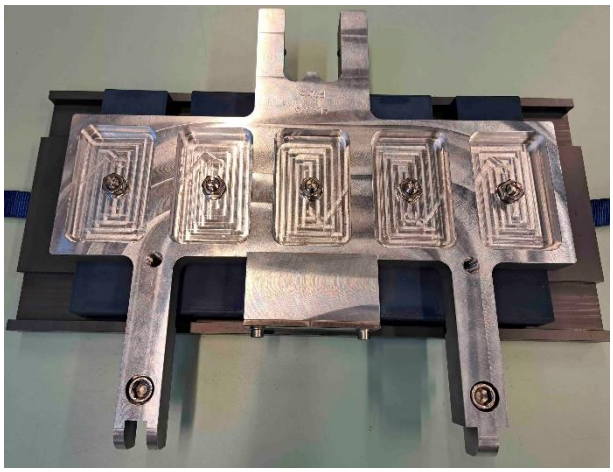


Figure 2: 5 RBM unit (the blue blocks)

When the installation procedure as described is followed the product fulfills the demands of EN795: 2012, type B, temporary anchors.

**WARNING**

The device is for single person use only!

During the installation process the static test as described in section 5.4.4.1 of EN 795: 2012, type B has to be followed by each and every installation of the anchor. The static test force described there is 12 kN. The FA10 reaches this value by coupling the 2 units with 5 RBM's by a coupling plate. Each unit is able to carry at least 6 kN. Coupling of 2 units creates 12 kN for the unit as a whole.

This manual contains all information that is necessary for optimum and safe operation of the FA10. Always store this manual safely together with the FA10, the measuring tools, the wrench SW30 and the Allen wrench 10. You can make a copy of the manual for your archive.

**WARNING**

Always **read** this manual before using the equipment

**Use** the FA10 only after fully understanding the manual.

Upon delivery, check that the product is complete and undamaged. In case the product is damaged or incomplete immediately contact the manufacturer.

**WARNING**

**Never use** a damaged, incomplete or defective product!

**WARNING**

Do not make any alterations or additions to the equipment without prior written consent of the manufacturer. Repair shall only be carried out in accordance with the manufacturer's procedures.

The user of the equipment is responsible for the equipment and treats it as if it his/her own.
The FA10 is a safety related product. It should always be treated that way: carefully and professionally.
It is advised to keep a record for the FA10 system as a whole and for each part of the FA10: the two 5 RBM units , the tester (frame and pressure gauge, wrenches) and the coupling plate. See the Annex-2 for an example for the issues to be recorded.
The manual must always be available in the country's language. This also holds in case of reselling the product.

## 2. Basic working principle

The force necessary to hold a person during a fall is created by the magnetic forces of the FA10. These forces are transferred to the surface whereon the magnets are placed. The coupling plate divides the force created by a falling person equally over the 5 RBM units. The magnets carry the force without moving along the surface. On a clean and thick steel surface each RBM is able to carry a perpendicular force of app 3 kN, leading to a shear force of app. 2 kN. Ten RBM's will create a shear force of 20 kN where the EN 795:2012 asks for 12 kN for type B anchors.
In practice surfaces are covered with paint, rust or water. This will influence the maximum reachable forces. Also the thickness of the surface will influence the forces. Therefore the forces have to be

**measured each time** the FA10 is placed. After measuring the force between the two 5 RBM units and is found to be higher than 6 kN the total force of the anchor is guaranteed.

**WARNING**

**Placing an FA10 anchor or replacing a part of it has always to be followed by measuring the force**.

Magnetic forces do not change over time. Once the magnetic force has a certain value after placing the anchor or a part of the anchor on a surface it will not change anymore. But every time when an anchor or a part of an anchor has been taken away and put back again, the measurement of the shear force has to be carried out again.
From literature it has been investigated that the force of the type of magnets used in the RBM reduces 0,8% maximum over a period of 400 days under the condition that the magnets are not exposed to temperatures higher than 80ºC.
The FA10 consists of metallic parts (Al), stainless steel and EPDM rubber.

The overall necessary area for a full installation of the FA10 is app. 0,8 m x 0,4 m area.

Since the FA10 is based on magnetic fields the FA10 can only be used on magnetizable surfaces like steel.

**WARNING**

Never use the system outside its limitations.

Never use the FA10 for any other purpose than described in this manual.

**WARNING**

The FA10 is a permanent magnet system so never get your hand, fingers or feet between the magnet and a magnetizable e.g. steel surface.

In case of a fall the falling force is distributed over the eight RBM's. So the surface has to be able to withstand these forces. The FA10 is able to carry the 12 kN according to EN795: 2012, section B temporary anchors. So the surface has to able to carry this same force. The user has to check the stability of the surface.

The system may be installed by trained staff only. The training may be followed by McNetiq BV, Netherlands. Please contact McNetiq B.V. for further details.

# 3. Safety

The FA10 contains permanent magnets, the RBM's.

**WARNING**

People having a pace maker or other medical implants sensitive to magnetic fields may only use the FA10 after determination that there are no medical risks for them. Also people other than the user have to make sure they don't have implants sensitive to magnetic fields before coming in the vicinity of the FA10. If people are not sure about their health in relation to static magnetic fields a safe distance for them is 1 meter away from the FA10.

WARNING

**ALWAYS test** the FA10 before use.

Since it is a safety application one should never work alone. Always wear the standard PPE like safety shoes, safety helmet and gloves.

The user has to use a certified full body harness according to EN361: 2002 and a safety line with shock absorber according to EN354: 2010 /EN 355: 2002 or a guided fall arrester according to EN353-2: 2002 with a shock absorbing element that limits the force in case of a fall to 6 kN.

The equipment shall only be used by trained and competent people.

A rescue plan shall be made and be in place to deal with any emergencies that could arise during the work.

# 4. Usage

With the system an anchor point according to EN795: 2012 section B, temporary anchors, is created when the instructions are fully followed. For safe working the user has to use (see section 3) a certified full body harness according to EN361: 2002 and a safety line with shock absorber according to EN354: 2010 /EN 355: 2002 or a guided fall arrester according to EN353-2: 2002 with a shock absorbing element that limits the force in case of a fall to 6 kN to be safe when falling together with other PPE for working on height.
The system is intended for use on a horizontal and **flat** surface. The usage is limited to the use for one person.

After following the instructions for placing and testing the device the systems fulfills the demands of EN795: 2012, section B, temporary anchors.
In case the system has been exposed to a fall, STOP working with the system and send the complete system back to the manufacturer for inspection.

The FA10 may is intended for use in a horizontal plane. Only in that case the FA10 delivers the intended shear forces.

**WARNING**
When using the FA10 choose the position of the FA10 in such a way that both the risk of falling and the potential fall distance are minimized.

The FA10 may be used with the line of the harness up to 360º from the center line of the FA10:

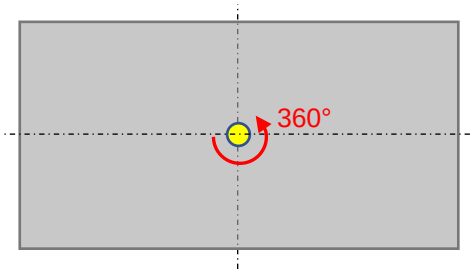



Figure 1. Allowable load angels for an installed FA10.

**WARNING**
If there is any doubt about the quality of the delivery or any doubt about the completeness of the delivery do not use the FA10 and contact the manufacturer and wait for his advice.

**WARNING**
Always check the free space in case of falling to prevent the user from a collision with the ground. The FA10 will not move when it is exposed to a fall.

The FA10 may not be exposed to temperatures higher than 80ºC. Avoid materials that influence the quality of the lanyard, the quality of the EPDM rubber, the quality of the coupling plates or the quality of the RBM's.
Use proper means in case the lanyard loops over sharp edges. Use adequate means to avoid wear on the FA10 or on the lanyards.

DO NOT USE the equipment if one of the below check points is not o.k.

1. The individual RBM's are all clean with no mechanical damage and not rusty nor corroded.
2. The 5 RBM unit as a whole is not rusty nor corroded.
3. The coupling plate is clean, not damaged and not corroded.
4. The central Pushlock Eyebolt is clean, not damaged, not rusty nor corroded and easily rotatable.
5. The testing equipment is clean and not corroded.
6. The bolt and thread in the tester frame is lightly greased. With no load the bolt can easily be rotated by hand.

# 5. Content of the delivery

The delivery consists of the following:

- Two 5 RBM units each on a plastic carrier plate

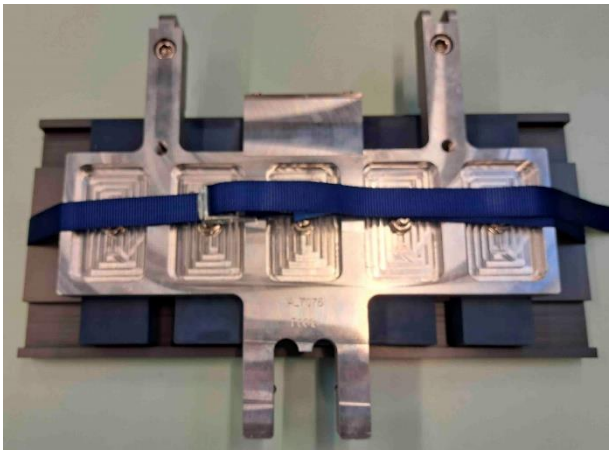


Figure 3. 5 RBM unit on a plastic carrier with belt

Figure 4. coupling plate for coupling the two 5 RBM units

- Test apparatus:

Figure 5. test frame

- Pressure gauge

Figure 6. Pressure gauge

- Tilting tool

Figure 7. Tilting tool

- Wrenches: width30, Allen wrench 10
- Transporting boxes
- Manual

# 6. Operation

The FA10 consists of two 5 RBM units interconnected with a coupling plate. A test set consisting of a frame and a pressure gauge completes the set. The test set shall be used within the temperature range of -25ºC to + 50ºC. Be sure to use adequate safety lines to all parts used to install the FA10. Do not forget to secure the tools that are used during installation and test.

## a. Safety instructions



1. Persons with pacemakers or other medical implants sensitive to magnetic fields should use the FA10 only after it has been established that there is no risk.
2. Never work alone.
3. Always wear safety shoes, safety helmet and gloves.
4. Check the tester and the safety lines (not in the delivery) for damage. Never use a damaged tester or a damaged safety line.
5. Never use the FA10 until this manual has been fully read and understood. In case of doubt: consult the manufacturer.

6. Always follow the placement procedure in full.
7. Never put your hand or foot between the 5 RBM unit and the surface.
8. Only knowledgeable personnel may carry out the placement. McNetiq offers an instruction for this.

9. Never interrupt the placement procedure. Always finish the procedure.
10. Never use the 5 RBM unit as a lifting magnet to transport a load.
11. The temperature of the RBM must not exceed 80°C for a longer time.

12. Never bring devices that are sensitive to magnetic fields near the FA10. The devices can be irreparably damaged. Think of mobile phones, watches, PC or laptop, etc.

**NOTE -- PAY ATTENTION -- WATCH OUT -- PAY ATTENTION -- WATCH OUT -- NOTE**

Beware of pace makers

Clamping Hazard in case of injudicious use

## b. Check apparatus

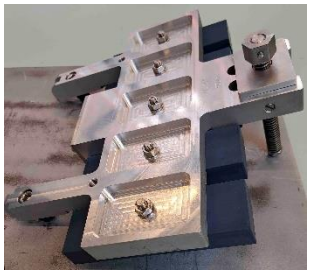
Before installing the anchor point check the parts of the FA10 on any irregularities:

- The 5*RBM units must be clean with no mechanical damage and not rusty.
- The coupling plate has to be clean, not damaged and not corroded.
- The tester has to be clean, not corroded or damaged.
- The thread of the bolt in the test frame has to be lightly greased. With no load it must be possible to turn the bolt easily by hand.
- Clean the surface where the anchor will be positioned. Undo the location of loose dirt and other parts that may influence the magnetic force unnecessary.

The direction of use for the FA10 is in parallel with the active face of the RBM's.

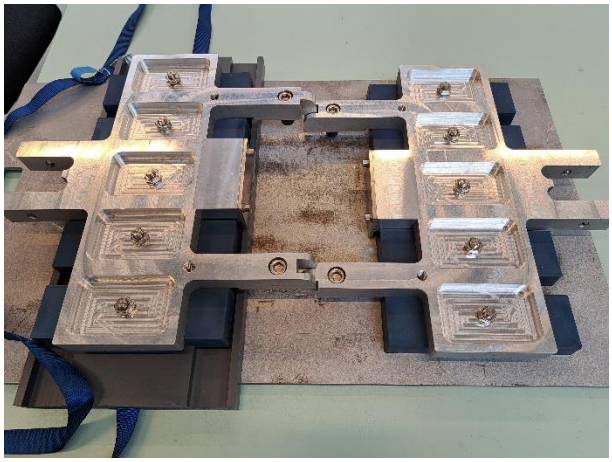
## c. Placing and testing of the FA10

1. Position the first 5 RBM unit.
   a. Untie the belt. Keep the belt with the plastic carrier.
   b. Slide the tilting tool in the fork until it snaps.
   c. Turn the bolt clockwise to lift the 5 RBM unit until the bolt reaches the end. Do not force the last turns.
   d. Remove the plastic carrier plate.
   e. Turn the bolt of the tilting tool counter clockwise until the 5 RBM unit reaches the surface.



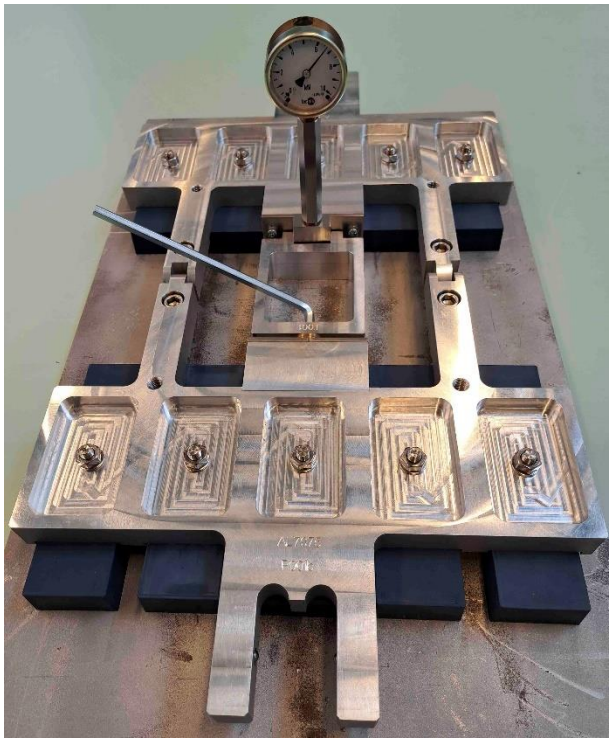
   f. Remove the tilting tool.

2. Positioning of the second 5 RBM unit.
   g. Take the second 5 RBM unit and position it opposite the first already mounted unit. The openings has to fit in each other.
   h. Untie the belt. Keep the belt with the plastic carrier.



i. Slide the tilting tool in the fork until it snaps.
j. Turn the bolt clockwise to lift the 5 RBM unit until the bolt reaches the end. Do not force the last turns.
k. During the turning of the bolt of the tilting tool push the unit tightly to the first already placed unit.
l. Remove the plastic carrier plate.
m. Turn the bolt of the tilting tool counter clockwise until the 5 RBM unit reaches the surface.
n. Remove the tilting tool.

3. Testing of the force
   o. Mount the test frame between the two 5 RBM units.
   p. Place the pressure gauge carefully with the pointer towards the inside so it can be read during building up the pressure.

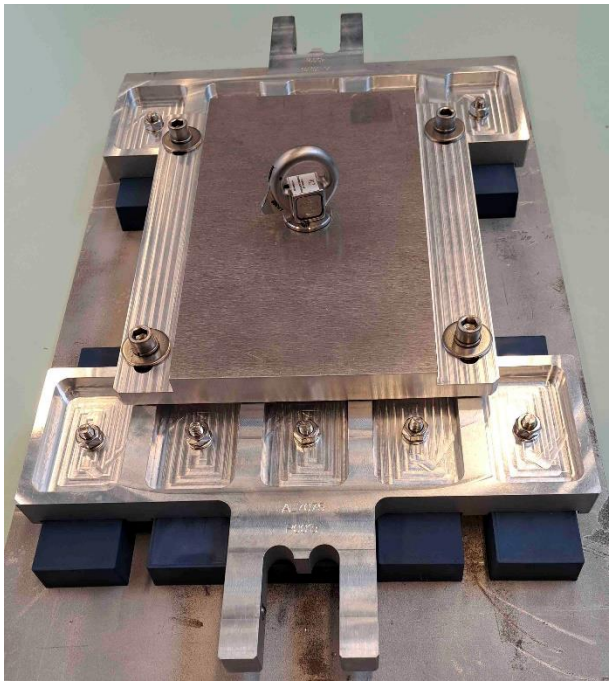


   q. Use the Allen wrench to create a force between the units.

r. Turn the Allen wrench clockwise until 6 kN is reached.
s. Take away the pressure by turning the bolt in the test frame counterclockwise.
t. Remove the pressure gauge and the test frame and store them safely.

After passing the test each 5 RBM unit is now able to carry at least 6 kN. When coupled they together are able to carry at least 2*6kN = 12 kN.

4. Mount the coupling plate with the Pushlock eyebolt.



The FA10 now fulfils the demands of EN795:2012, type B, temporary anchors.
The FA10 is ready for use.

# 7. In case of a fall

If the system has been exposed to a fall do not use the FA10 any further. Dismount the full FA10. Make a description of what has happened to the FA10 including all serial numbers, tested forces, date and location of the incident, name of the person who mounted and tested the FA, the persons certificate, numbers and all other issues that might be of importance.
Sent the full FA10 including the description of what has happened back to the manufacturer.

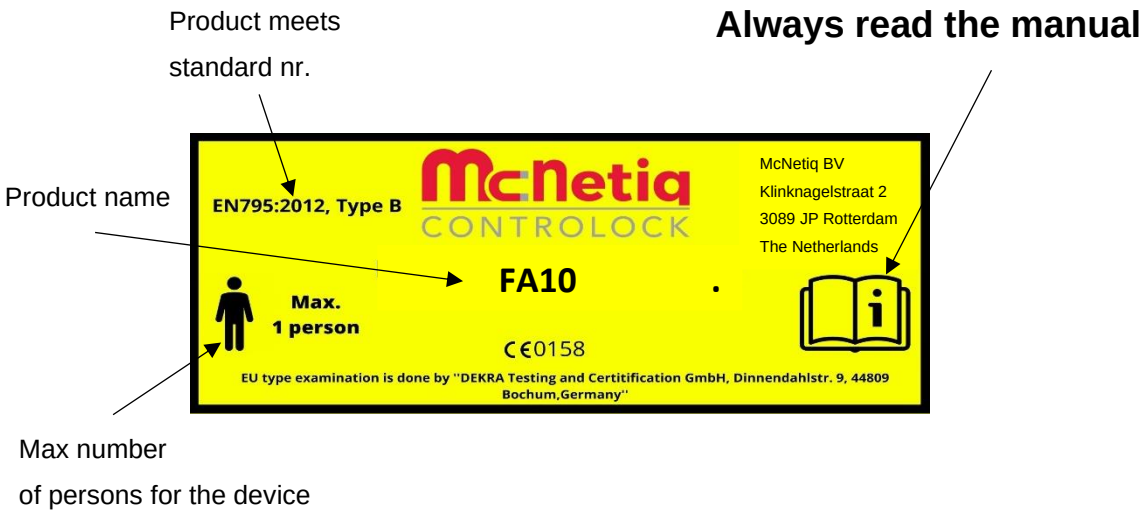
## 8. Content of delivery

The delivery contains the following items:

- Two 5 RBM units
- 1 coupling plate with Pushlock Eyebolt
- 1 test frame
- 1 pressure gauge
- Wrench SW 30 and Allen wrench
- 3 Transport boxes

## 9. Markings

The FA10 consists of 2 5 RBM plates and a coupling plate. The coupling plate and the two 5 RBM units are marked at the top with a unique serial number(engraved), the type of material (engraved) and a sticker:




## 10. Certification

The device has been tested and certified in accordance with EN 795: 2021, type B, temporary anchors by:
DEKRA Testing and Certification GmbH
Dinndahlstr. 9,
44809 Bochum
Germany.

# 11. Maintenance and storage

The FA10 should be checked at least every year by the manufacturer or a delegated party according to manufacturer's procedures.

After each usage:

- Clean the FA10 and its parts with a dry cloth.
- Check the coupling plate with the Pushlock eybolt for any irregularities.
- Check for the identification stickers being present and legible on the 5 RBM units.
- Check for the identification stickers being present and legible on the coupling plate.
- Check for the completeness of the product: two 5 RBM plates on a plastic carrier with belt, 1 coupling plate with Pushlock eyebolt, 4 flat washers, 4 spring washers and 4 nuts, 1 wrench, 1 Allen wrench.
- Once the product has dried place the different parts in the boxes with the lids a little bit opened so air can ventilate the box

- Store all parts in a dry and clean place with temperatures between -25ºC and 50ºC.
- Be aware of the fact that the system consist of PERMANENT magnets. So keep magnetizable parts like steel and iron away from the system.
- Grease the thread of the bolt in the test frame and the tilting tool lightly.

If any irregularities are found please contact the manufacturer for advice.
In case of doubt check the manufacturer.

# 12. Warranty

The warranty term for these products is 1 year after delivery. Warranty is void:

a. if the operation and maintenance instructions are not observed or if the product is used in an abnormal manner;
b. in case of normal wear and tear;
c. in case of changes or repairs not performed by the manufacturer or an authorized workshop and/or performed without prior written permission of the manufacturer.

For further information, please refer to the general delivery conditions. Always include the data found on the product's type plate in any communication.
It is not permitted to sell the product to others than the original manufacturer.

# 13. Manufacturer Contact Details

McNetiq BV
Klinknagelstraat 2
3089 JP Rotterdam
The Netherlands
Phone: +316 4940 4750
Email: info@mcnetiq.nl
www.mcnetiq.com

# 14. Annex-1

Please find below the table where the outcome of the measurement can be written. Use a new page for each placement.

Persons' name who mounted the FA10:

Location of usage:

Serial numbers of the two 5 RBM units:

Serial number of the coupling plate:

Serial number of the tester used.

Measurements:

| Pressure (> 6 kN) in kN | date | Name | Approved |
|---|---|---|---|
| | | | |

Sketch or photo of the situation after installation:

Inspection of the FA10 (each usage and at last each year):

| Inspection date | Name | Remarks |
|---|---|---|
| | | |
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# 15. Annex-2

Table for keeping a record for your product and its parts. If there is not enough space for the findings please refer to a document with a unique and traceable identification.

| | |
|---|---|
| Product name | FA10 |
| Manufacturer | McNetiq BV<br>Klinknagelstraat 2<br>3089 JP Rotterdam<br>The Netherlands<br>Phone: +316 4940 4750<br>Email: info@mcnetiq.nl<br>www.mcnetiq.com |
| Serial number plates (a and b) | |
| Serial number tester | |
| Serial number pressure gauge | |
| Year of manufacturing | |
| Date of purchase | |
| Periodic examinations and repairs, to include: the dates and details of each periodic examination and repair, and the name and signature of the competent person who carried out the periodic examination or repair. | Use a separate traceable document in which the details are written. Link the document to this table. |

Periodic examinations and repairs: from the date purchase.

| Date | Reason | Damages | Name and signature | Date of next inspection |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

Linked document(s) (if any):