



Immobilisation and Extrication device XT - XT PRO - XT Floating

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*Read this manual
carefully and keep it
for future reference*

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Ferno Technical Support

Customer Service and Technical Support are important aspects of every Ferno product. Before contacting us, note the serial number of the product and specify it in all written communications. For all queries concerning technical support, contact Ferno S.R.L.:

E-mail	assistenza@ferno.it
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Fax	+39 0516861508

Ferno S.R.L. is authorised to carry out preventive and corrective maintenance (repairs) on all Ferno products in exclusivity.

Any corrective action MUST necessarily be carried out by FERNO personnel and the operations must be carried out using original spare parts. In this way, the warranty is also extended to the components involved in the operation.

Any corrective action carried out by non Ferno personnel will automatically cancel any Civil Liability insurance and any guarantee.

Ferno Customer Service

For further details, please contact Ferno S.R.L.'s Customer Service:

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USER AND MAINTENANCE MANUAL

Additional free copies can be downloaded online at www.ferno.it.

Limitation of liability

This manual contains general instructions on the use and maintenance of the product. The instructions do not cover all possible applications and operations. The user is solely responsible for proper and safe use of the product. The safety information is provided as a service to the user and ensures only the minimum required level of safety to prevent injury to operators and patients. Any other safety measure implemented by the user must comply with applicable regulations. Before using the product, it is strongly recommended that staff be trained in its correct usage. Retain this manual for future reference. In case of change of ownership, ensure that the manual remains with the product. Additional free copies can be downloaded online at www.ferno.it.

Intellectual property declaration

The information in this manual is the property of Ferno S.R.L. - Via Benedetto Zallone 26, 40066 Pieve di Cento (Bologna) Italy. All patent rights, design, construction, reproduction, use and



Serial number XT _____
Placement: Bottom side of the main label.

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It is prohibited to reproduce this manual, either in full or in part, without the prior consent of Ferno S.R.L.

Limited warranty

Ferno products are covered by a 24-month warranty against manufacturing defects. For the full terms and conditions of warranty and liability, see chapter *Warranty*, page 52.

1 - SAFETY INFORMATION

Read this user manual carefully. It is an integral part of the device and must always be stored close at hand. For your personal safety and for that of patients, please observe the following points:

- Before every use, make sure that there are no signs of wear, damage and/or malfunctioning. Refer to section 8.5 *Inspection*, page 44.
- In order to avoid infections and/or bacterial contaminations, follow the indications in sections 8.4 *Disinfection* and *Cleaning*, page 44.

1.1 Warning

The danger symbols draw attention to potentially dangerous situations that, if disregarded, may result in accidents, damage and/or injury.

WARNING

Untrained users may injure themselves, cause damage and/or physical harm. Allow only trained and qualified staff to use the XT extrication device.

Improper use of the extrication device may cause damage and/or injury. Use the XT extrication device as described in this manual.

Unauthorised modifications of the XT extrication device could cause serious damage, injury and/or unforeseeable operating problems. Do not modify or alter the device in any way.

Any damage to the components of the extrication device or to the entire system may affect its performance and safety. Inspect the XT extrication device frequently, especially before and after each use. Place the extrication device out of service if it shows signs of wear or damage.

An unassisted patient is at risk of injury. Never leave the patient alone while tied to the extrication device. Assist the patient throughout all rescue operations.

Any improper use of the restraints can cause the patient to fall and endanger their safety. Always use the patient restraints as described in this manual.

Failure to comply with the instructions in this manual for the application of restraints could cause accidents, damage and/or injury.

Occasional assistants may cause damage and/or physical harm, or injure themselves. Do not allow any occasional assistant to carry out the preparation of the extrication device. Take extreme care when using the device and coordinate any assistants.

Improper maintenance may cause serious accidents and/or damage. Perform maintenance as instructed in this user manual.

The use of improper and/or unauthorised devices may cause accidents, damage, and/or injury. Use only devices that have been approved and authorised by Ferno S.R.L.

WARNING

Unauthorised repairs, and repairs carried out by technicians not authorised by Ferno S.R.L., will render all warranties null and void and may compromise the safety of the extrication device.

Non-original spare parts and inadequate repairs may cause damage and/or injury. Use only original Ferno spare parts and refer exclusively to Ferno S.R.L.'s Customer Support.

1.2 Important

Boxes labelled "Important" contain important information on use and/or maintenance of the device.

Important

1.3 Blood-borne diseases

To reduce risks of exposure to infectious diseases that may be transmitted by blood, such as HIV-1 or Hepatitis, follow the instructions on disinfection and cleaning in this manual carefully.

1.4 Load capacity

Observe the load capacity of the XT extrication device. Refer to section *General specifications*, page 8.

1.5 Compatible accessories

Use only accessories that have been approved and authorised by Ferno. The extrication device includes QHI (Quick Head Immobilizer code QHI-B), triangular head immobiliser (code 038245211), chin strap for QHI (code 25-0601-002), and restraint system (code 25-0500-001).

The XT device has been tested with the following accessories:

- Quick Head Immobilizer
- Kit Floating
- Neck brace WizLoc
- Kit Pro
- Triangular head immobiliser

Ferno S.R.L. shall not be liable for any damage to users or third parties due to improper use of the XT extrication device.

1.6 Glossary of symbols

The symbols used in this manual and/or on the XT extrication device's labels are defined below.

Read the user manual carefully

Two qualified operators are recommended for correct use

Load capacity

This product meets European Union Standards

Do not wash with high pressure water

QR Code

1.7 Information and safety labels

The information and safety labels contain important information that the user needs to know.

Read and follow the label instructions. Replace worn and damaged labels immediately. To obtain replacement labels, contact Ferno S.R.L.'s Customer Service. (page 2).

The label shown below is attached to the device.

Serial Number

WARNING

ALL IMAGES ARE INCLUDED FOR ILLUSTRATIVE PURPOSES. PRODUCTS MAY BE SUBJECT TO CHANGE.

Important

Main Label

2 - OPERATOR TRAINING AND SKILLS

2.1 Skills

Operators who use the extrication device must:

- Have specific experience in patient handling procedures.
- Possess the skills required to assist the patient.

2.2 Training

Operators are required to:

- Carefully read and understand all information in this manual.
- Attend a suitable training course on the use of the extrication device.
- Practice with the extrication device before using it in real situations with patients.

- Log the training sessions. An example of a form for logging the training sessions can be found on page 54.

 **WARNING**

Untrained users may injure themselves, cause damage and/or physical harm. Allow only trained and qualified staff to use the XT extrication device.

Important

Operators must be able to ensure the safety of both themselves and their patients while using the device. They must be able to determine the number of assistants required to handle the patient according to the laws in force.

3 - THE EXTRICATION DEVICE

3.1 Description

The XT extrication device (hereinafter also referred to as "device") is an instrument for the head-spine immobilisation and extrication of trauma and non-trauma patients.

TWO trained and qualified operators are recommended for correct use of the extrication device XT. In case of heavy patients always refer to local protocols.

The device is equipped with 4 adjustable restraints to allow a correct immobilisation of the patient. The upper chest restraints must be applied in a crossed configuration; the lower groin restraints must be secured on the same side.

3.2 CE Compliance


MEDICAL DEVICES DIRECTIVE

Ferno's products meet the requirements of European Directive 93/42/EEC concerning medical devices.

The extrication device is a Class I device.

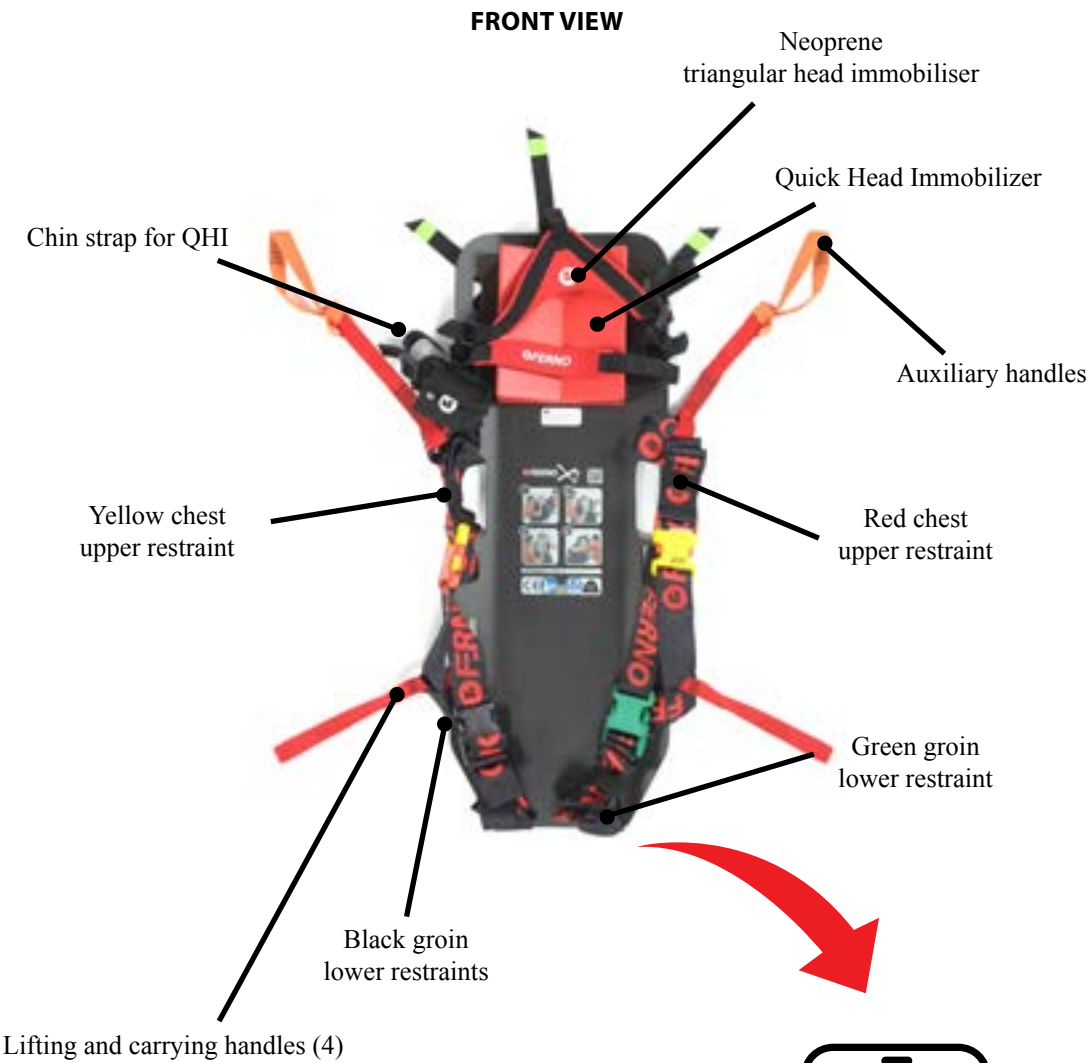


- COMPONENTS OF THE EXTRICATION DEVICE**
- Upper chest restraints, yellow and red (2)
 - Lower groin restraints, black and green (2)
 - The yellow and red chest restraints are provided with red handles for lifting and carrying (4)
 - Holes for restraint securing (15)
 - Ergonomic side handles (2)
 - QHI (Quick Head Immobilizer)
 - Neoprene triangular head immobiliser
 - Chin strap for QHI
- SUPPLIED ACCESSORIES KIT XT PLUS-B**
- Board - carbon fibre composite material (1)
 - Quick Head Immobilizer (1x)
 - Triangular head immobiliser (1x)
 - Chin strap for QHI (1x in a handy bag)
 - Restraints (2x chest and 2x groin restraints)
 - WizLoc neck braces (3x)
 - Carry and storage bag (1x)
 - User's manual

 **WARNING**

Improper use of the extrication device may cause damage and/or injury. Use the XT extrication device as described in this manual.

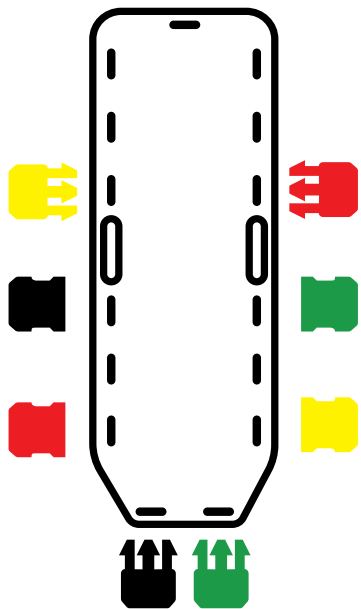
3.3 Components (Extrication device)



USER AND
MAINTENANCE
MANUAL



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3.4 General specifications

Ferno reserves the right to change the specifications without notice. For further details, please contact Ferno's Customer Service (page 2).

XT

Materials	
Board XT	carbon fibre composite material
Quick Head Immobilizer	polyurethane
Restraints	nylon
Buckles	plastic
Triangular head immobiliser and chin strap	neoprene
Length	830 mm
Width	300 mm
Height	60 mm
Weight (including accessories)	2 kg
Load capacity	160 kg

XT Pro

Materials	
Board XT	carbon fibre composite material
Quick Head Immobilizer	polyurethane
Restraints	nylon
Buckles	Aluminum 7075
Triangular head immobiliser and chin strap	neoprene
Length	830 mm
Width	300 mm
Height	60 mm
Weight (including accessories)	3,4 kg
Load capacity	160 kg

XT Floating

Materials	
Board XT	carbon fibre composite material
Quick Head Immobilizer	polyurethane
Restraints	nylon
Buckles	plastic
Triangular head immobiliser and chin strap	neoprene
Length	1200 mm
Width	350 mm
Height	110 mm
Weight (including accessories)	3,3 kg
Load capacity	160 kg

WARNING

Untrained users may injure themselves, cause damage and/or physical harm. Allow only trained and qualified staff to use the XT extrication device.

WARNING

Never exceed the load capacity of the extrication device specified in this manual.

Load capacity

Never exceed the load capacity of the XT extrication device. Inspect the extrication device if the load capacity has been exceeded (see section *Inspection*, page 44).

160 kg
352 lb

4 - CONFIGURATION OF THE EXTRICATION DEVICE

4.1 QHI (Quick Head Immobilizer) application

The Quick Head Immobilizer must be applied before using the XT device.

1. Before its application, make sure that the extrication device is placed on a flat surface and the part where the QHI head immobilizer will be applied is clean and dry.
2. Peel off the sticker film placed under the QHI, ensuring that the black part stays on the QHI (Figure 1A).
3. Centre the QHI (Figure 1B) on the upper part of the extrication device, close to the head end hole no. 1 (to identify the hole see Figure 4, page 10).
4. Press the QHI so that its sticker perfectly adheres to the surface (Figure 1C).

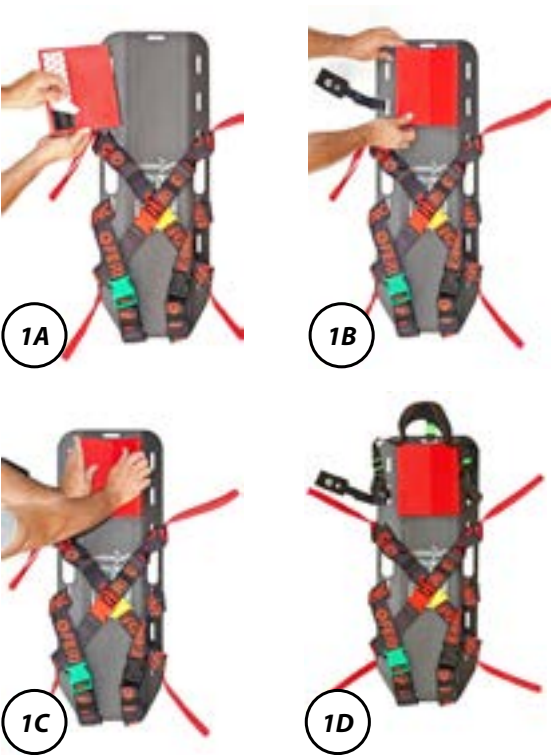


Figure 1 - QHI application
Detail 1D - QHI applied correctly

4.2 Triangular head immobiliser application

In order to apply the triangular head immobiliser correctly, follow these instructions. Starting from the top (head end):

1. Insert the strap (Figure 2A) in the head end hole from inside the device.
2. Insert the strap in the first loop of the fastening buckle (Figure 2B).
3. Then insert it in the second loop (Figure 2C) and pull to fasten the strap (Figure 2D).
2. Repeat the same operations with the other two straps in the two side holes no. 3 and 14 (to identify the holes see Figure 4, page 10).

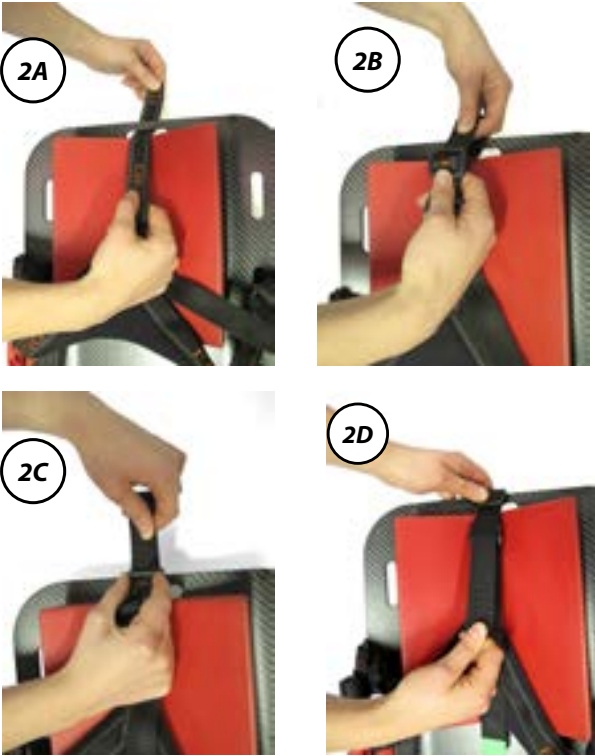


Figure 2 - Triangular head immobiliser application

4.3 Chin strap QHI application

The neoprene chin strap, stored in a special bag, can be secured on the extrication device using side hole no. 14 (to identify the hole see Figure 4, page 10).

1. Extract the neck strap from the bag attached to the extrication device (Figure 3B).
2. Insert the opposite end of the strap in hole no. 3 on the right (to identify the hole see Figure 4, page 10).
3. Overlap and secure the two Velcro straps to ensure a perfect closure (Figure 3D).

When the strap is not used, store it in the suitable bag.



Figure 3 - Neoprene red strap application

4.4 Restraint configuration

The XT extrication device is equipped with two upper chest restraints (yellow and red) and two lower groin restraints (black and green).

The upper chest restraints must be applied in a crossed configuration, while the groin restraints must be secured on the same side. Each restraint is composed of two parts, one with a male end and the other with a female end. The male end must be fastened to the female end. Always make sure that the two ends are well secured.

The upper chest restraints are provided with red handles for lifting and carrying.

The restraints must be applied before using the XT device.

For their application and the identification of the right hole on the device, refer to Figure 4. In Figure 4 holes are numbered clockwise from 1 to 15.

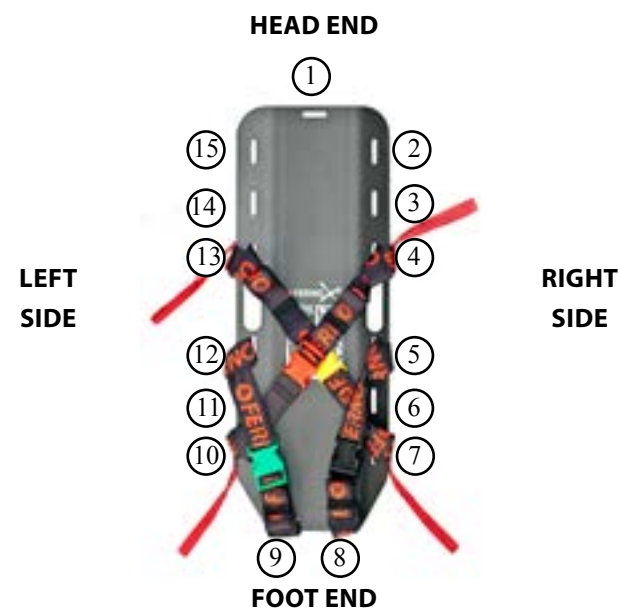


Figure 4 - Restraint configuration (operator view)

CROSSED CONFIGURATION FOR CHEST RESTRAINTS

YELLOW CHEST RESTRAINT

In order to apply the yellow chest restraint proceed as follows:

1. Insert the slot of the restraint part with the male end into hole no. 13 on the left side of the device, with the stitching facing the operator (upwards) (Figure 5A).
2. Pull the restraint and tie a knot by inserting the yellow buckle in the restraint slot (Figure 5B).
3. Firmly tighten the restraint around the hole (Figure 5B).
4. Move the red lifting and carrying handle outwards so that it is always within easy reach of the operator (Figure 5B).
5. Insert the slot of the restraint part with the female end into hole no. 7 on the right side of the device, with the stitching facing the operator (upwards) (Figure 5C).
6. Pull the restraint and tie a knot by inserting the yellow buckle in the restraint slot.
7. Firmly tighten the restraint around the hole (Figure 5C).
8. Move the red lifting and carrying handle outwards so that it is always within easy reach of the operator (Figure 5C).



Figure 5 - Yellow chest restraint application
Detail 5D - Yellow restraint applied and buckled

RED CHEST RESTRAINT

In order to apply the red chest restraint proceed as follows:

1. Insert the slot of the restraint part with the male end into hole no. 4 on the right side of the device, with the stitching facing the operator (upwards).
2. Pull the restraint and tie a knot by inserting the red buckle in the restraint slot.
3. Firmly tighten the restraint around the hole.
4. Move the red lifting and carrying handle outwards so that it is always within easy reach of the operator.
5. Insert the slot of the restraint part with the female end into hole no. 10 on the left side of the device, with the stitching facing the operator (upwards).
6. Pull the restraint and tie a knot by inserting the red buckle in the restraint slot.
7. Firmly tighten the restraint around the hole.
8. Move the red lifting and carrying handle outwards so that it is always within easy reach of the operator.



Figure 6 - Crossed configuration of chest restraints

SAME-SIDE CONFIGURATION FOR GROIN RESTRAINTS

BLACK GROIN RESTRAINT

In order to apply the black groin restraint proceed as follows:

1. Insert the slot of the restraint part with the female end into hole no. 5 on the right side of the device, with the stitching facing the operator (upwards) (Figure 7A).
2. Pull the restraint and tie a knot by inserting the black buckle in the restraint slot.
3. Firmly tighten the restraint around the hole.
4. Insert the slot of the restraint part with the male end into hole no. 8 on the foot end of the device, with the stitching facing the operator (upwards) (Figure 7B).
5. Pull the restraint and tie a knot by inserting the black buckle in the restraint slot (Figure 7C).
6. Firmly tighten the restraint around the hole.



Figure 7 - Black groin restraint application
Detail 7D - Black restraint applied and buckled

GREEN GROIN RESTRAINT

In order to apply the green groin restraint proceed as follows:

1. Insert the slot of the restraint part with the female end into hole no. 12 on the left side of the device, with the stitching facing the operator (upwards) (Figure 8A).
2. Pull the restraint and tie a knot by inserting the green buckle in the restraint slot.
3. Firmly tighten the restraint around the hole (Figure 8B).
4. Insert the slot of the restraint part with the male end into hole no. 9 on the foot end of the device, with the stitching facing the operator (upwards) (Figure 8C).
5. Pull the restraint and tie a knot by inserting the green buckle in the restraint slot.
6. Firmly tighten the restraint around the hole.

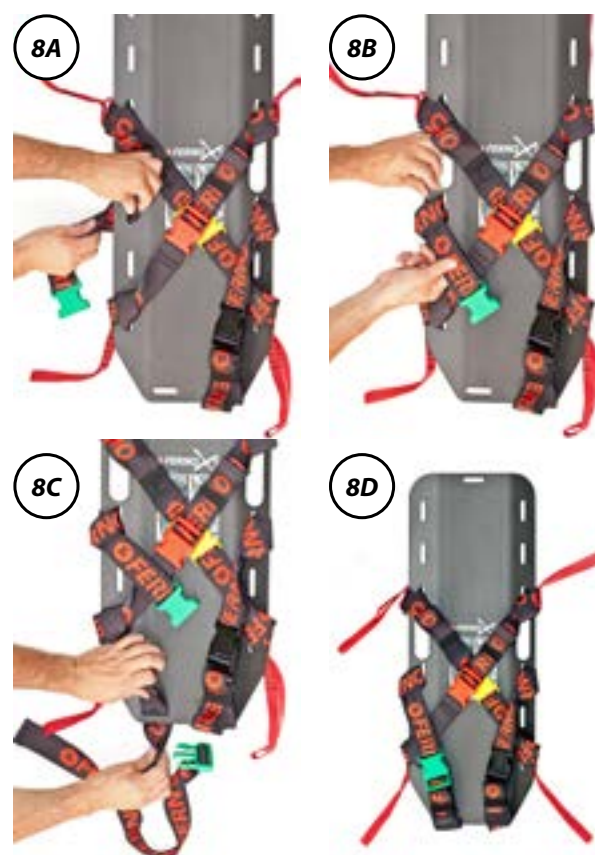


Figure 8 - Green groin restraint application
Detail 8D - Green restraint applied and buckled

5 - USE OF THE EXTRICATION DEVICE

5.1 Before placing the device into service

Staff using the extrication device must have carefully read and understood the information contained in this manual.

- Before performing any operation with the extrication device, make sure that: the Quick Head Immobilizer, the triangular head immobiliser and the chin strap have been correctly applied and are ready for use; the restraints have been correctly applied according to their number (two upper chest restraints and two lower groin restraints).
- Ensure that the device does not show any signs of damage or wear, and that it is fully operational. Refer to section 8.5 *Inspection*, page 44.

WARNING

Never leave the patient alone while tied to the extrication device. Assist the patient throughout all rescue operations.



Read the user manual carefully



At least two qualified operators



Load capacity

5.2 Instructions for Use

- This manual does not provide any medical instructions.
- It is the responsibility of the operators to follow correct procedures and ensure the safety of both the patient and themselves.
- This manual explains the use of the extrication device under ideal conditions and is purely indicative.
- The use of the device requires a minimum of two trained and qualified operators.
- **These operators must work together and coordinate correctly during all operations.**
- Follow procedures while complying with standard regulations for moving the patient in an emergency.
- Lift only the weight that you can safely support. Obtain additional assistance for heavy loads.
- The extrication device can be adapted to a variety of circumstances and different scenarios. The trained staff of the emergency service must assess the patient's conditions and determine the most suitable equipment and procedures.
- In any case, always observe local healthcare instructions and regulations.
- Always assist the patient and never leave them alone during the operations with the device.

WARNING

The use of improper and/or unauthorised devices may cause accidents, damage, and/or injury. Use only devices that have been approved and authorised by Ferno S.R.L.

Important

When the extrication device is not used, store it indoors in a dry place. It is recommended to use its carry bag for storage purposes.

5.3 Quick extrication

A quick extrication requires the presence of an operator to stabilise the patient's head and neck manually and another operator to apply the device and help in the extrication operation.

For this kind of extrication, the chest and groin restraints should be arranged sideways so as not to interfere with patient positioning (Figure 9).

The triangular head immobiliser must be ready for use and suitably fastened to the upper hole (head end) and the two side holes (the second ones starting from the top, head end). For the application of the triangular head immobiliser, refer to section 4.2 *Triangular head immobiliser application*, page 9.



Figure 9 - Restraints arranged sideways

For the quick extrication procedure, the presence of two trained and qualified operators is recommended:

1. **Operator 1:** moves the patient forwards while holding head and neck to create the necessary space to position the extrication device (Figure 10A).
2. **Operator 2:** inserts the device behind the patient and correctly centres it (Figure 10B).
3. **Operator 1:** repositions the patient on the device (Figure 10B).
4. **Operator 2:** while operator 1 keeps holding the cervical spine of the patient, operator 2 applies the triangular head immobiliser, arranging it with care immediately above the patient's eyebrows (Figure 10C). The correct positioning of the head immobiliser reduces the risk of it moving upwards or downwards.
5. **Operator 2:** before extricating the patient, seizes the two orange upper lifting and carrying handles, making sure that they pass under the patient's armpit (Figure 10D).
6. **Operator 2:** extricates the patient.
7. **Both operators:** take the patient away from the scenario.

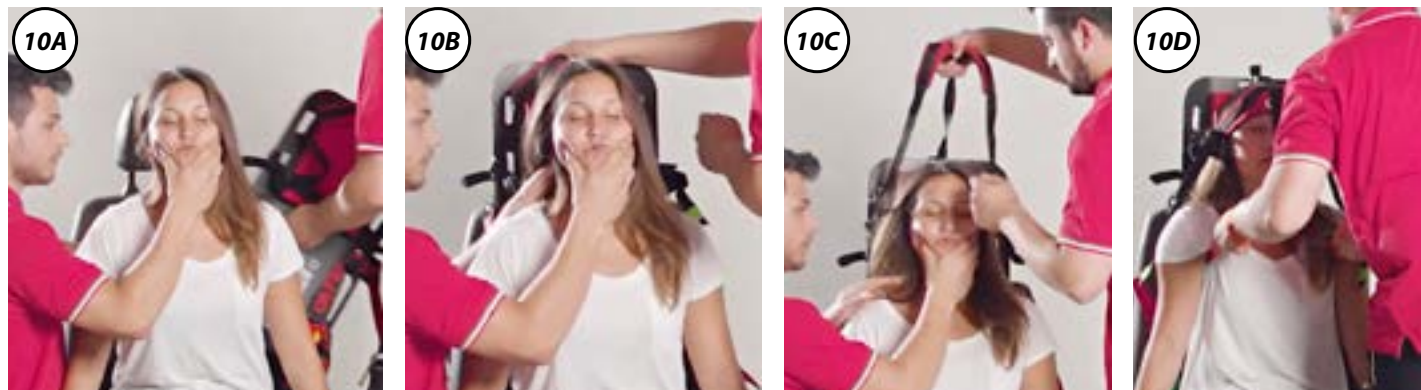


Figure 10 - Quick extrication sequence

5.4 Precautionary extrication

A precautionary extrication requires the presence of two trained and qualified operators, who are able to assess the patient's conditions and are familiar with the correct positioning and use of the extrication device.

For the precautionary extrication procedure, the presence of two trained and qualified operators is recommended:

1. **Operator 1:** holds the cervical spine to make it easier for operator 2 to apply the neck brace (Figure 11).
2. **Operator 2:** applies the neck brace correctly (Figure 12).



Figure 11 - Cervical spine supporting



Figure 12 - Neck brace applied

3. **Operator 1:** moves the patient forwards while holding their head and neck to create the necessary space for operator 2 to place the extrication device behind their back (Figure 13).
4. **Operator 2:** inserts the device behind the patient and correctly centres it, making sure that the chest and groin restraints and the lifting and carrying handles are arranged sideways and ready for use.
5. **Operator 1:** repositions the patient on the device (Figure 14).



Figure 13 - Extrication device insertion



Figure 14 - Patient repositioning

6. **Operator 2:** while operator 1 keeps holding the cervical spine of the patient, operator 2 applies the triangular head immobiliser, arranging it with care immediately above the patient's eyebrows (Figure 15). The correct positioning of the head immobiliser reduces the risk of it moving upwards or downwards.
7. **Both operators:** position the chest restraints (yellow and red) in crossed configuration (Figure 16) and fasten the upper section to the lower one with the buckles provided. If necessary, they suitably adjust the restraints' tension. In this phase, the operators must ensure that the red lifting and carrying handles remain free above the patient's shoulders, in order to find and seize them easily during the final extrication phase.



Figure 15 - Triangular head immobiliser applied



Figure 16 - Application of chest restraints (yellow and red)

8. **Both operators:** position the groin restraints (black and green), arranging them under the patient's legs, each one on its side of the board. They fasten the lower section of the restraint to the upper one using the buckles provided (Figure 17), and suitably adjust their tension to secure the patient to the extrication device. Suitably adjust the restraints to avoid any compression/constriction for the patient.
9. **Operator 1:** once all restraints have been applied and fastened, operator 1 takes the chin strap from its bag, adjusts its length and gives the opposite end to operator 2 (Figure 18).



Figure 17 - Green restraint buckled



Figure 18 - Cervical spine final fastening

10. **Operator 2:** inserts the end of the chin strap in the relevant hole of the extrication device (opposite side). Then, he/she fastens it with the Velcro strap and adjusts it to complete the cervical immobilisation and stabilisation procedure (Figure 19).
11. Before proceeding to extricate the patient, **both operators** must make sure that they have applied and adjusted all fastening systems correctly.
12. **Both operators:** work together to identify the best way out, the safe and correct procedures for themselves and the patient according to the circumstances. Then, using the red lifting and carrying handles, they extricate the patient (Figure 20).



Figure 19 - Cervical spine final fastening



Figure 20 - Extrication with the carrying handles
Detail: Hold the carrying handles

13. **Both operators:** complete the extrication procedure by placing the patient on the chosen medical device (Figure 21).



Figure 21 - Positioning on backboard

6 - XT PRO (extrication device) components

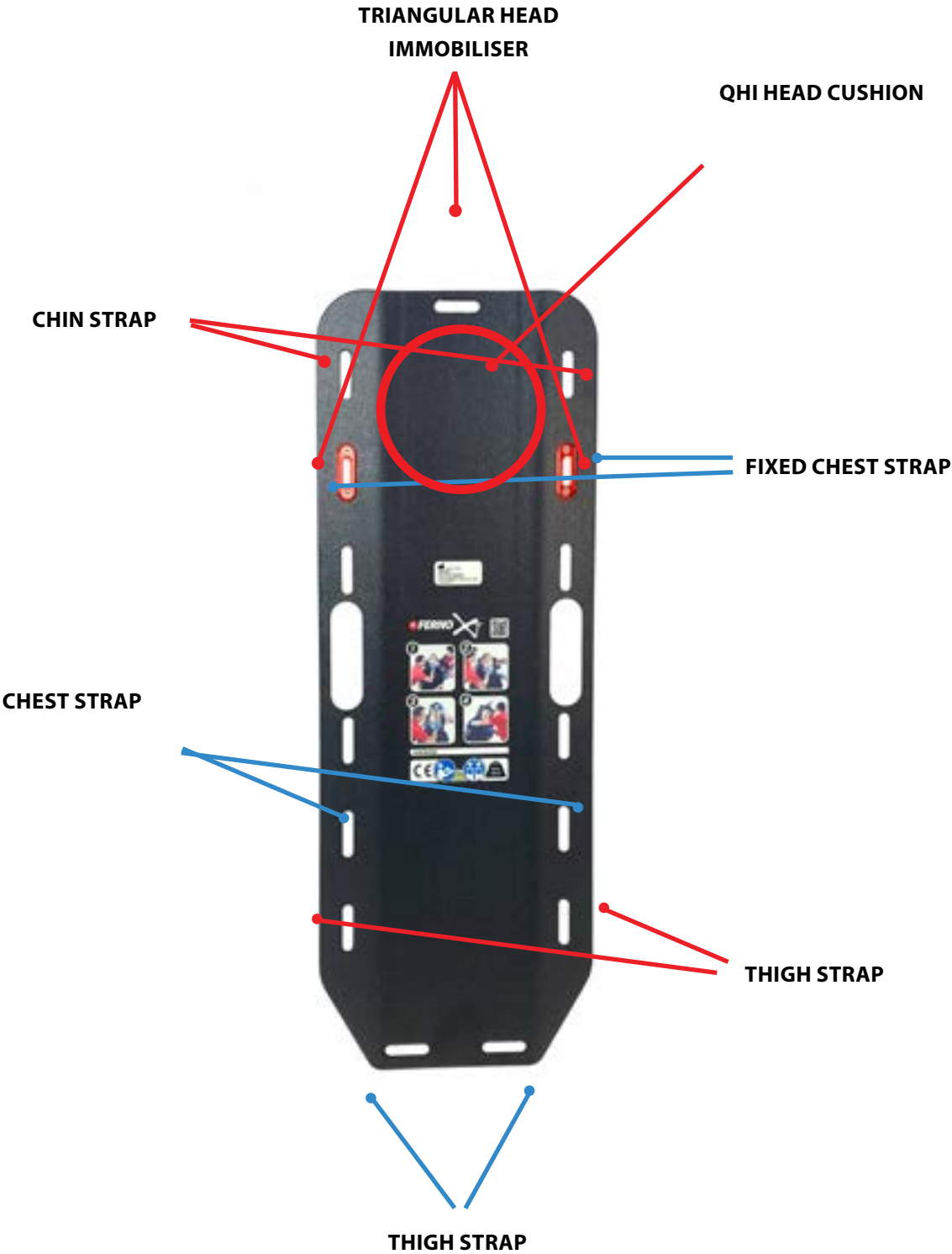
tested according to EN1498



CONFIGURATION OF THE EXTRICATION DEVICE

6.1 Preparation procedures





WARNING
Check that all XT-PRO slots allow the strap to pass.

6.2 HEAD IMMOBILISATION

Fit the QHI head cushion with the relevant Velcro strap.



Fit the triangular head immobiliser with the relevant straps.



Make sure that all three passages in the buckle are correctly realised:

- 1- Insert the straps in the head end hole from inside the extrication device.
- 2- Insert the strap in the first loop of the fastening buckle.
- 3- Then insert it in the second loop and pull to fasten the strap.

Warning!
- Failure to complete the three passages may cause undesired loosening of the strap.



Fit the chin strap.

Warning!

- The fastening buckle is similar to the buckles on the triangular head immobiliser; follow the same instructions to secure it.

6.3 CHEST IMMOBILISATION

Tie the fixed chest straps in a cow hitch.

Warning!

- Take care to leave the carrying handle out of the cow hitch.



Fit the adjustable chest strap following the same procedure.

Warning!

- Make sure that the resulting restraint, once properly buckled, crosses the patient's chest from above the shoulder to the opposite armpit.
- Make sure that the coupled buckles have the same colour code.

Repeat these operations and follow the same instructions for the second chest strap.



6.4 THIGH STRAP APPLICATION

Tie the thigh straps with the same cow hitch as the chest straps.

Warning!

- Make sure that the coupled buckles have the same colour code.
- The resulting restraints, once properly buckled, must not cross the pelvis area but be on the same side.
- Take care to leave the carrying handle out of the cow hitch.



6.5 USING AUXILIARY HANDLES

The red carrying handles are removable and independent, so they can be moved as required. For example, they can be connected to the middle handles to make them longer and allow extrication even with larger patients. They can be directly secured to the board using any available hole.



In case of extrications or transports in complex environments, the XT can be **hanged** by means of an anchor device (Regulation (EU) 2017/745 (MDR)), such as a validated textile ring with a length of 120 cm, and a connector (EN 362).

⚠ WARNING

The ring should be simply put around the board, as the figures show.

⚠ WARNING

For the specific maintenance of textile ring and hook, refer to the manufacturers of the devices.



REAR



If needed a shorter hanging system can be used by applying a ring with the same features and following the procedure below.



**6.6 XT PRO
POSITIONING PROCEDURES**

Prepare the XT PRO with the straps open and ready to fasten the patient.

Warning!
Before use, always check that the straps are correctly placed (according to the manufacturer's instructions), and comply with the operational check and disinfection program.



Position the patient on the XT PRO, ready to be fastened.



WARNING!
FERNO always recommends to protect the cervical spine with a suitable neck brace before using the XT PRO.



WARNING!
Ferno always recommends that an operator immobilises the cervical spine manually during the XT PRO positioning operations.

Secure the patient's head with the triangular head immobiliser and the chin strap.



Now fasten the patient's chest with the colour-coded straps (yellow and red chest straps).



Buckle the yellow chest strap.



Buckle the red chest strap.



WARNING!
Duly adjust the straps' tension, making sure that they are firm and well balanced.

Buckle the black thigh strap.



Buckle the green thigh strap.



To move the patient, use the specific red handles. Follow the reference procedures for patient handling.



7 - Components of the XT Floating Extrication Device



FLOATING KIT
PART NO.
FLOATING KIT

CONFIGURATION OF THE EXTRICATION DEVICE

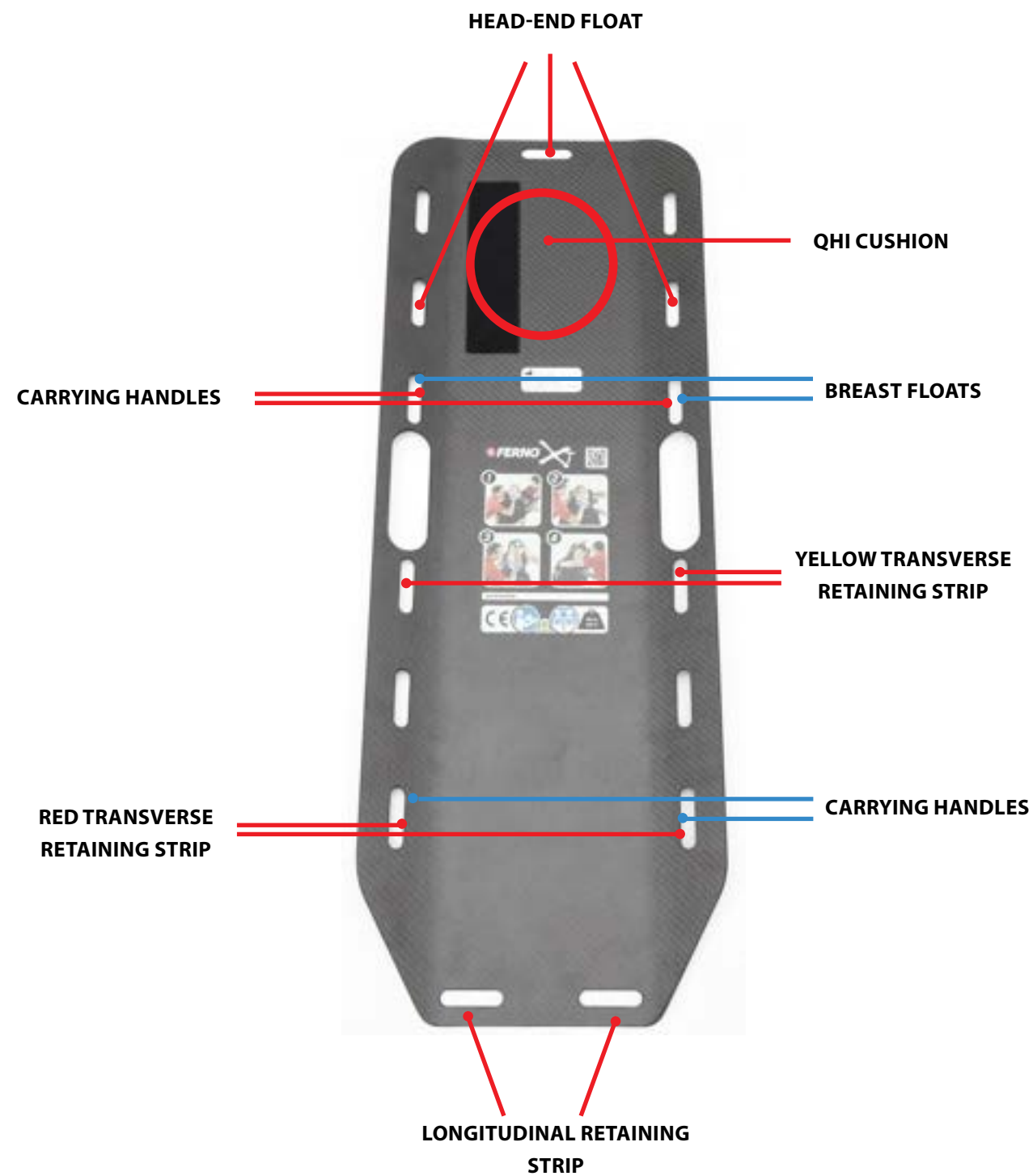
7.1 Preparation procedures

Warning!

Head fastening systems, triangular head immobiliser and chin strap are attached to the head-end float and to the connection above the main floats by means of special rings.



Figure 1 - Restraint configuration (operator view)



WARNING

Head fastening systems, triangular head immobiliser and chin strap are attached to the head-end float and to the connection above the main floats by means of special rings.

7.2 HEAD IMMOBILISATION

Fit the QHI head cushion with the relevant Velcro strap.



Secure the head-end float with the three adjustable straps.



The chin strap is already attached to the ring on one end of this float.



XT-Floating Extrication Device

Warning!

For a correct fitting, stretch the strap as much as possible, as the following figures show.



Once fastened, arrange and lock the excess strap using the buckle on the back of the XT as the side image shows.

Warning!

Repeat the previous operation for all three fastening points.
Always lock the excess strap.



XT-Floating Extrication Device

Repeat the previous operation for all three fastening points.

Warning!

Always lock the excess strap.



Secure the triangular head immobiliser to the top ring only (A).
The fitting will be completed afterwards, using the suitable rings above the main floats. This operation is described subsequently.

Warning!

Rings (B) and (C) are intended for the chin strap.



7.3 CHEST IMMOBILISATION, LONGITUDINAL RETAINING STRIP APPLICATION



Fasten the straps to the board by sliding their metal buckle inside the relevant slots.

Repeat the operation for all six fastening points.



Warning!

Arrange the straps so that their length-adjustment end remains outside.



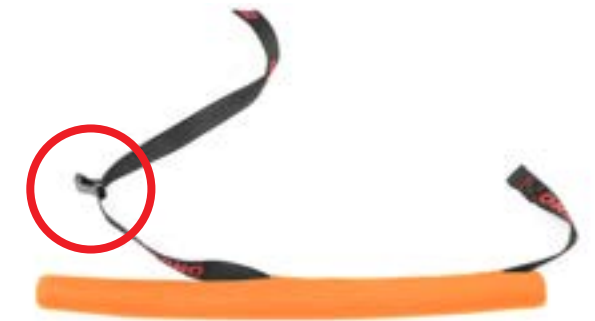
7.4 MAIN FLOATS

The main floats are contained in a cover with a sleeve that allows to connect them to a carrying belt.

Insert the shoulder fastening belt in the sleeve, starting from the side that is closer to the float end.



Insert the female buckle on the belt; this buckle will be closed onto the male buckle under the legs.



Connect the second float in the same way.



To complete the assembly, connect the free end of the shoulder fastening belt to the fixing element on the board.



Warning!

Make sure that all three passages in the buckle are correctly realised.



Fasten the straps to the board by sliding their metal buckle inside the relevant slots.

Repeat the operation for the two points.



7.5 CARRYING HANDLES

Tie the supplied carrying handles in a cow hitch near the pelvis and above the shoulders.



7.6 TRIANGULAR HEAD IMMOBILISER FITTING

Attach the two angles of the triangular head immobiliser to the relevant rings on the shoulder fastening belt.

Warning!

When fixing the shoulder fastening belts, make sure that the side with the rings for the head immobiliser remains outwards.

Warning!

Make sure that all three passages in the buckle are correctly realised.



7.7 XT FLOATING POSITIONING PROCEDURES

Adopt the safety position with the patient in water, leaving the back free for the subsequent positioning of the XT Floating.

Position the XT Floating under the patient's back.

Warning!

- Prepare the board straps so that they do not interfere with this operation.
- For example, tie the straps on the back of the board so they can be extracted when the patient is in place.

Top view (part in contact with the patient)

Untie the buckle of the main floats first.



Close the male buckle of the strap under the legs to the female one.



Adjust the buckle of the strap.

Warning!

It is important that this strap is well stretched, so as to ensure a first immobilisation (although partial) and, above all, allow the patient to float.



Secure the head with the triangular immobiliser and tighten it.

Warning!

- It is important that the triangular immobiliser is well tightened to guarantee the cervical spine alignment.



Warning!

- Usually the head immobiliser firmly secures the head. If deemed necessary, a chin strap can be added to improve immobilisation.



Proceed with closing the red transverse retaining strip on the pelvis.

Warning!

This strap must be well stretched.



Complete the immobilisation by fastening the last yellow transverse retaining strip on the chest.

Warning!

This strap must be well stretched.



Move the patient with the suitable carrying handles.



The same handles can also be used to lift the patient out of water.



Warning!

The part of the floats beyond the pelvis must always remain free to float, without any restraint.



8 - MAINTENANCE

8.1 XT maintenance

INSPECTION BEFORE USE

To ensure optimal use of the device, it is important to keep all the components in good conditions and to remove all traces of dirt, debris and body fluids. The XT must be inspected before and after each use; the XT must be cleaned after use. When not in use, it must be stored in a dry, indoor environment and inspected at least once a month. If wear or damage is found during the inspection, the device must be put out of service.

PREVENTIVE INSPECTION

The XT is a medical device requiring regular maintenance. The user is responsible for preventive inspection operations as listed in the detailed checklist attached to this manual and for filling out the relevant table.

ROUTINE INSPECTION

The XT should undergo a complete overhaul and product certification carried out by Ferno personnel every time that the inspection reveals cracks on the board, deep scratches or wear signs on textile components. After that, the customer is

responsible for contacting Ferno Technical Support Service for repair/maintenance. See chapter Technical Support.

If the XT undergoes particularly heavy use, if it is used in an environment contaminated by hazardous chemical substances or for carrying heavy loads, maintenance should preferably be carried out on a more frequent basis.

Ferno directly carries out repair maintenance operations, without the need of dealers, mechanics or external service centres. You are thus invited to be wary of those who present themselves as Ferno's authorised technician.

8.2 XT-PRO maintenance

INSPECTION BEFORE USE

To ensure optimal use of the device, it is important to keep all the components in good conditions and to remove all traces of dirt, debris and body fluids. The XT- PRO must be inspected before and after each use, and must be cleaned after use. When not in use, it must be stored in a dry, indoor environment and inspected at least once a month. If the inspection reveals cracks on the board, deep scratches or wear signs on textile components, place the device out of service and contact Ferno's technical support.

PREVENTIVE INSPECTION

The XT-PRO is a medical device requiring regular maintenance. The user is responsible for preventive inspection operations as listed in the detailed checklist attached to this manual and for filling out the relevant table.

ROUTINE MAINTENANCE

The XT-PRO should undergo a complete overhaul and product certification carried out by Ferno personnel every year. After that, the customer is responsible for contacting Ferno Technical Support Service for repair/maintenance. See chapter Technical Support.

If the XT-PRO undergoes particularly heavy use, is used in an environment contaminated by hazardous chemical substances or for carrying heavy loads, maintenance should preferably be carried out on a more frequent basis.

Ferno directly carries out repair maintenance operations, without the need of dealers, mechanics or external service centres. You are thus invited to be wary of those who present themselves as Ferno's authorised technician.

TEXTILE COMPONENTS (120CM HANGING RING AND RESTRAINTS)

WARNING: Follow these instructions only if the textile ring (EN 795/B) is branded FERNO. If other brands are used, follow the instructions of the manufacturer (EN 365).

Make sure that all textile parts and stitching on the device are free from cuts, abrasion, frayed borders, wear, corrosion, burns and signs of chemical substances; also check that the stitching is not cut, frayed or loose; finger rope devices all along their length to check that their internal core is free from cuts, empty points, breaking, swelling (any problems in the core are invisible and can be caused by overexertion, local bends, dirt); ensure the integrity of the stitching protective cover (no movements or detachments from its terminal). Before use, also check that the maintenance sheets of each device are correctly updated. During every use: check that the product works properly, and that any other component of the system is well connected and arranged; pay attention to the effects of humidity and frost, as they can compromise the device operation; avoid the contact with sharp edges and, if necessary, use protective equipment; for the operator's safety, the device or the anchor point must always be correctly positioned and the operation must be performed so as to minimise risks and drop height. As far as the textile material is concerned, the MAXIMUM useful life is considered to be equal to 10 years from its first use, so it must be changed after this period of time.

The product must be disposed of:

- After 10 years, if it includes plastic or textile components.
 - After a bad fall (or effort).
 - If the result of the checks is not satisfactory. Its reliability is in doubt.
 - When it becomes obsolete (new laws, standards, techniques or incompatibility with other devices, etc.).
- Avoid any contact with chemical substances, especially acids that can destroy fibres.

8.3 XT-FLOATING maintenance

INSPECTION BEFORE USE

To ensure optimal use of the device, it is important to keep all the components in good conditions and to remove all traces of dirt, debris and body fluids. The XT- FLOATING must be inspected before and after each use, and must be cleaned and dried after use. When not in use, it must be stored in a dry, indoor environment and inspected at least once a month. If the inspection reveals cracks on the board, deep scratches or wear signs on textile components, place the device out of service and contact Ferno's technical support.

PREVENTIVE INSPECTION

The XT-FLOATING is a medical device requiring regular maintenance. The user is responsible for preventive inspection operations as listed in the detailed checklist attached to this manual and for filling out the relevant table.

ROUTINE MAINTENANCE

The XT-FLOATING should undergo a complete overhaul and product certification carried out by Ferno personnel every two years. After that, the customer is responsible for contacting Ferno Technical Support Service for repair/maintenance. See chapter Technical Support.

If the XT-FLOATING undergoes particularly heavy use, if it is used in an environment contaminated by hazardous chemical substances or for carrying heavy loads, maintenance should preferably be carried out on a more frequent basis.

Ferno directly carries out repair maintenance operations, without the need of dealers, mechanics or external service centres. You are thus invited to be wary of those who present themselves as Ferno's authorised technician.

TEXTILE COMPONENTS (FLOATS, COVERS, RESTRAINTS)

Make sure that all textile parts and stitching on the device are free from cuts, abrasion, frayed borders, wear, corrosion, burns and signs of chemical substances; also check that the stitching is not cut, frayed or loose; finger textile devices all along their length to check their integrity. Ensure the integrity of the stitching protective cover (no movements or detachments from its terminal). Before use, also check that the maintenance sheets of each device are correctly updated. During every use regularly check that the product works properly and that any other component of the system is well connected and arranged; pay attention to the effects of humidity and frost, as they can compromise the device operation; avoid the contact with sharp edges and, if necessary, use protective equipment. As far as the textile material is concerned, the MAXIMUM useful life is considered to be equal to 10 years from its first use, so it must be replaced after this period of time.

8.4 Cleaning

The device has to be cleaned as needed

1. Remove any restraint, handle, headrest and in case accessories.
2. Wash all components of the product with a cloth or sponge dampened with detergent solution (rinsing the sponge frequently with clean water).
3. If necessary, remove stains with a stiff bristle brush (not metal), or a light solvent, paying attention to the labels.
4. Use a cloth to rinse and dry the treated surfaces, make sure that all the device's components are completely dry before using them.
5. After cleaning, be sure to refit the device with restraints, handles, headrest and any other accessory that has been removed.

Warning: during disinfection, use gloves and any appropriate PPE. Also ensure there are no signs of wear and/or damage.

8.5 Inspection

To ensure optimal use of the device, it is important to keep all the components in good conditions and to remove all traces of dirt, debris and body fluids. The extrication device must be inspected and cleaned before and after each use. When not in use, it must be stored in a dry, indoor environment and inspected at least once a month.

The extrication device should be inspected regularly by maintenance personnel. If signs of wear or damage are found during inspection, discontinue use of the device and immediately contact Ferno's Technical Support Service to request repairs or maintenance. See section Technical Support.

8.6 Disinfection

To be carried out after each use, disinfect the surfaces of the device with a non-abrasive product.

1. Remove restraints, handles, headrest and any other accessory from the product.
2. In case of surfaces visibly contaminated by organic substances proceed with decontamination according to the following procedure:

Remove the material using a disposable cloth and/or paper and dispose of it in the specific container for special waste and proceed with cleaning operations.

Preventive Maintenance intervals	After each use	Whenever necessary	Every month
Disinfection	•	•	
Cleaning		•	
Inspection	•	•	•

3. Disinfect all equipment (including accessories such as head immobiliser, restraints, etc.) with a cloth or sponge dampened with disinfectant solution, let it sit for 10-20 minutes; use brushes to rub and clean the least accessible parts;

4. Use a cloth to rinse and dry the treated surfaces, make sure that all the device's components are completely dry before using them.

Warning:

Concerning points 3 and 4 in any case check the procedures recommended by the disinfectant manufacturer.

Do not immerse the device directly in disinfectant.

During disinfection, use gloves and the appropriate PPE according to the risk assessment guide.

Also ensure there are no signs of wear and/or damage.

CLEANING AND DISINFECTING RESTRAINTS WITH METAL BUCKLES

The sanitisation of restraints must be carried out at the end of the shift or after each transport, if necessary.

WARNING: never immerse the restraints completely in water and never wash them in the washing machine.

* When there is no contamination from organic substances, it is possible to just disinfect the restraint by just spraying disinfectant and leave it to dry.

* In case of surfaces visibly contaminated by organic substances (blood, urine, vomit, faeces, etc.) proceed with decontamination according to the following procedure:

1. Wear suitable PPE based on the Risk Assessment Document.
2. Remove the material using a disposable cloth and/or paper and dispose of it in the specific container for special waste.
3. Sanitise.
4. Before starting sanitisation, move all restraint hooks upwards.
5. Sanitisation is carried out by immersing the restraints in a container and leaving them to soak in water with sanitising product, and leaving the metal parts outside the container.

Leave to soak for approx. 10-20 minutes then dry with paper.

6. Afterwards hook up all hooks together and hang the restraints to a support.

7. Clean by directly spraying the cleaning and disinfecting product then leave it to dry.

8. Re-fit the restraints only once they are dry.

CLEANING RESTRAINTS WITH PLASTIC BUCKLES


1. Remove the restraints from the product.
2. Place the restraints inside a mesh bag (not supplied with the products) and put it in the washing machine.
3. Wash the restraints with hot water using a cleaning and disinfecting product and selecting a cycle for delicate items, with slow spin. Do not bleach.
4. Remove the restraints from the mesh bag and let them dry in the open air. Do not tumble dry.
5. Re-fit the restraints only once they are dry.

CLEANING FLOATS, LEG HOOPS AND TRIANGULAR HEAD IMMOBILISER

1. Remove triangular head immobiliser, floats or leg hoops from the board.
2. Open the float zipper and extract the stuffing.
3. Immerse the triangular head immobiliser, leg hoops, stuffing and covers in a container and leave them to soak in water with sanitising product. Check that the stuffing is completely immersed in liquid.

Leave to soak for approx. 10-20 minutes then dab with paper and leave it dry with paper in a dry and clean place.

4. Once they have dried, refit stuffing inside covers and fit the board with floats or leg hoops and triangular head immobiliser.

 **WARNING**

Disinfectants and detergents containing phenols (if above the threshold of 2500 ppm), chlorine (bleach) or iodine-based solutions can cause damage. Do not use products containing these chemicals.

 **WARNING**

Improper maintenance may cause serious accidents and/or damage. Perform maintenance operation as described in this user manual.


Important

When not in use, store the device in an indoor environment that is dry and protected from direct sunlight.

Important

After disinfection/cleaning, ensure that the device and its components are completely dry before use.

Important



DO NOT WASH WITH HIGH PRESSURE WATER
Do not use high pressure water to clean the device.

Advice

On our site you can find the products tested to clean Ferno devices: <https://www.ferno.it/prodotti-sanificazione-ambulanza>

8.7 Storage

The extrication device must be stored clean, indoors, in a dry place and away from direct sunlight. When not in use, it can be put into its handy carry bag (Figure 22).

It is recommended to store the extrication device in the bag in its “ready-to-use” configuration:

1. The chest and groin restraints must be arranged sideways, leaving the central space free to accommodate the patient.
2. The triangular head immobiliser and the neck strap must be correctly installed on the device and readily available for the operator. In particular, the strap must be stored in its bag so as to be extracted when necessary.

3. The QHI must be correctly applied on the extrication device.



Figure 22 - XT carry bag

Important

Store the XT extrication device indoors, in a dry place and away from direct sunlight. If exposed to sunlight for a long time, the materials of the device and its accessories could deteriorate.





CHECK-LIST FOR INSPECTION OF THE XT EXTRICATION DEVICE





- Are all the components present?
- Does the device show any signs of damage and/or wear?
- Are chest and groin restraints, QHI, triangular head immobiliser and neck strap present?
- Are the accessories correctly installed?
- Are the restraints correctly installed?
- Are the restraints in good conditions? Do they show cuts or worn edges?
- Do restraint buckles show visible damage? Do they work correctly?
- Is the neck strap correctly installed on the device?
- Is the neck strap in good conditions? Does it show cuts or worn edges?
- Is the triangular immobiliser correctly installed on the device?
- Is the triangular immobiliser in good conditions? Does it show cuts or worn edges?
- Is the QHI firmly secured on the device?
- Does the QHI show clear signs of damage/wear, or seem like it is coming off the device?
- Do the device and its accessories show visible signs of damage?





XT PRO - INSPECTION SHEET





XT PRO		User Data	
Serial no.		company	
Manufacturing year			
Purchased on		internal serial no.	
First used on		user name	
Inspection frequency		Person in charge of inspection	
Overhaul frequency			
Product service life			

Product log:	
Notes on use conditions and differences from the last inspection	

				N.A.
yes	schedule maintenance	maintenance	out of order	not applicable

Board					N.A.
The graphical instructions on the board are still readable					
Every portion of the board is undamaged and rigid					
No scratches or cracks more than 1 mm deep on both sides					
No damage or sharp edges on external borders					
The slots for fitting the belts are undamaged					

Quick Head Immobilizer					N.A.
The cushion is undamaged					
It remains quite strongly attached to the board					

Head immobilisers					N.A.
The triangular head immobiliser does not show any damage or cuts					
The triangular head immobiliser is firmly fastened to the board					
The fastening buckles on the triangular head immobiliser are undamaged and allow to adjust the straps properly					
The chin strap does not show any damage or cuts					
The chin strap is firmly fastened to the board					
The fastening buckles on the chin strap are undamaged and allow to adjust the straps properly					

Chest and thigh straps					N.A.
The straps do not show any damage or cuts					
The straps are correctly positioned, according to Ferno's instructions and colour code					
The straps are firmly fastened to the board					
The cow hitch that connects the straps to the board has been tied as Ferno requires					
The fastening buckles are undamaged, free from any deformation, cracks or crevices					
The fastening buckles are working properly (they can be opened and closed effortlessly)					
The straps are easily passed into the buckles to adjust their tension and remain locked in the desired position					

Hanging system					N.A.
Textile ring EN 795/B (refer to the specific instructions of the manufacturer)					
Connector EN 362 (refer to the specific instructions of the manufacturer)					

Notes for user and for next inspection	
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Final assessment of the device					
Suitable for use		Schedule maintenance		Not suitable	
		FERNO Tel 800501711 info@ferno.it			

Inspection data			
Routine inspection		Extraordinary inspection (overhaul)	
Inspector name			
Company			
Date of inspection			
Date of next inspection			

XT FLOATING - INSPECTION SHEET

XT FLOATING		User Data	
Serial no.		company	
Manufacturing year			
Purchased on		internal serial no.	
First used on		user name	
Inspection frequency		Person in charge of inspection	
Overhaul frequency			
Product service life			

Product log:	
Notes on use conditions and differences from the last inspection	

				N.A.
yes	schedule maintenance	maintenance	out of order	not applicable

Board					N.A.
The graphical instructions on the board are still readable					
Every portion of the board is undamaged and rigid					
No scratches or cracks more than 1 mm deep on both sides					
No damage or sharp edges on external borders					
The slots for fitting the belts are undamaged					


Quick Head Immobilizer					N.A.
The cushion is undamaged					
It remains quite strongly attached to the board					

Head immobilisers					N.A.
The triangular head immobiliser does not show any damage or cuts					
The triangular head immobiliser is firmly fastened to the board					
The fastening buckles on the triangular head immobiliser are undamaged and allow to adjust the straps properly					
The chin strap does not show any damage or cuts					
The chin strap is firmly fastened to the board					
The fastening buckles on the chin strap are undamaged and allow to adjust the straps properly					

9 - ACCESSORIES

Ferno offers various approved accessories for use with the XT extrication device. Always follow the directions in this instruction manual.

For more product information, contact Ferno Customer Service (page 2).

 **WARNING**

The use of improper and unauthorised accessories may cause accidents, damage, and/or injury. Use only accessories that have been approved and authorised by Ferno S.R.L.

9.1 Accessories for XT extrication device

Description	Code
Red head immobiliser with triangle and neck strap (black bag included)	QHI-B
Storage and carry bag for extrication device XT and XT Pro	10-1605-001
Storage and carry bag for extrication device XT Floating	10-1605-002
Set of 4 black restraints (coloured plastic buckles)	25-0500-001
Chin strap (black bag included)	25-0601-002
Neoprene triangular head immobiliser	038245211
Floating kit (4 handling rings, 3 floating cylinders, 2 retaining restraints, 1 longitudinal retaining restraint)	FLOATING KIT
Pro kit (4 restraints with coloured buckles, 2 handling rings, 2 stuffing for restraints, 1 snap hook, 1 lifting tape)	PRO KIT

10 - TECHNICAL SUPPORT

Ferno Technical Support

Customer Service and Technical Support are important aspects of every Ferno product. Before contacting us, note the serial number of the product and specify it in all written communications. For all queries concerning technical support, contact Ferno S.R.L.:

E-mail assistenza@ferno.it

Website dedicated to support - Ferno SOS www.fernossos.it

Phone +39 0516860028

Telephone (toll-free in Italy) 800.501.711

Fax +39 0516861508

 **WARNING**

Non-original spare parts and inadequate repairs may cause damage and/or injury. Use only original Ferno spare parts and refer exclusively to Ferno S.R.L.'s Customer Support.





 **WARNING**

Unauthorised modifications of the XT extrication device could cause serious damage, injury and/or unforeseeable operating problems. Do not modify or alter the device in any way.




Ferno S.R.L. is authorised to carry out preventive and corrective maintenance (repairs) on all Ferno products in exclusivity.

Any corrective action MUST necessarily be carried out by FERNO personnel and the operations must be carried out using original spare parts. In this way, the warranty is also extended to the components involved in the operation.

Any corrective action carried out by non Ferno personnel will automatically cancel any Civil Liability insurance and any guarantee.

Straps and floating system					N.A.
The straps do not show any damage or cuts					
The straps do not show any damage near the slots of the XT carbon board					
The straps are correctly positioned, according to Ferno's instructions and colour code					
The straps are firmly fastened to the board					
The floats and their sleeves are undamaged and uncut					
All floats are present and contained in the relevant sleeves, as Ferno's manual describes					
The floats are firmly fastened, as per Ferno's instructions					
The fastening buckles are undamaged, free from any deformation, cracks or crevices					
The fastening buckles are working properly (they can be opened and closed effortlessly)					
The straps are easily passed into the buckles to adjust their tension and remain locked in the desired position					

Notes for user and for next inspection	
--	--

Final assessment of the device					
Suitable for use		Schedule maintenance FERNO Tel 800501711 info@ferno.it		Not suitable	

Inspection data			
Routine inspection		Extraordinary inspection (overhaul)	
Inspector name			
Company			
Date of inspection			
Date of next inspection			

11 - WARRANTY

11.1 Legal warranty

The legal guarantee is applicable to all products sold by Ferno S.R.L. and being so defined according to the law, it has to be fully referred to:

- Private Customers, namely subjects purchasing for purposes unrelated to their professional or business activity; the seller applies the Consumer Code. This guarantee includes product conformity defects and is reserved only to the private consumer (a natural person who buys products for purposes not related to his/her professional activity or purchased without indicating a VAT number reference). The legal warranty is valid for 2 years from delivery of the goods and covers product conformity defects, which must be reported within 2 months from discovery. In the event of a conformity defect, Ferno S.R.L., at no cost to the Customer, shall restore the product conformity by repairing/replacing the product or reducing of the price, until the termination of the contract, in any case always in accordance with current legislation.
- Professional Customers, purchasing with a VAT number; the legal guarantees referred to in articles 1490 et seq. of the Italian Civil Code will apply. (the action is statute-barred within 1 year of delivery, under the conditions of law, with notification of the defect within 8 days of discovery).

11.2 Conventional warranty

- The goods produced by Ferno S.R.L. are covered by this conventional warranty.
- By virtue of this conventional warranty, Ferno S.R.L. guarantees its products against manufacturing defects for a period of 24 months; this conventional warranty is reduced to 12 months for spare parts and 90 days for external finishing such as gelcoat/resin, paint, powder coating, decals, ribbons, writings, etc.. This conventional warranty starts from the date of shipment of the product indicated on the Ferno S.R.L. transport document.
- During the conventional warranty period, Ferno S.R.L. will repair and/or replace any parts found to have manufacturing defects free of charge.
- Repairs are performed by trained technical staff at the Ferno S.R.L. site in Via Zallone 26- 40066 Pieve di Cento (BO), Italy or at the Customer's premises if suitable arrangements with Ferno S.R.L.'s Customer Service have been made.

- Repairs at the Customer's premises must be agreed and include the payment of labour costs and expenses incurred. For information on the costs of technical support, please contact the relevant department at Ferno S.R.L.
- The warranty does not cover consumables or parts subject to wear and tear due to normal use of the product, all parts typically subjected to sliding or rolling friction (bearings, brushes, lubricants, shoes, tracks, etc.), parts potentially exposed to oxidation or corrosion (copper or metal alloy contacts, electrical, electronic and mechanical equipment), and batteries.
- Repairs are guaranteed for 6 months from the date of repair. This warranty applies only when the product is used according to the instructions in the user manual provided. Misuse and negligence invalidate this warranty.
- However, warranty does not cover travel, shipping, transport and packing costs.
- Ferno S.R.L. is not liable for damages incurred during shipment or due to misuse of the product.
- The warranty is rendered null and void in the case of:
 - failure to observe the operating instructions;
 - misuse;
 - inappropriate use or handling;
 - repairs by non-authorised persons;
 - damage during transport due to improper packaging of items returned by the user;
 - inadequate maintenance;
 - failure to use original spare parts.
- Products sold by Ferno S.R.L., but not bearing the "Ferno" trademark, retain any conventional guarantees of the product manufacturer. Ferno S.R.L. does not extend the warranty periods of other manufacturers; Ferno S.R.L. assumes no responsibility for products manufactured by other manufacturers (without prejudice to legal warranties).

11.2.1 Limitation of liability

- With regard to the conventional warranty, if a product proves to be defective, Ferno S.R.L., at its discretion, will repair, replace or refund the purchase price.
- Under no circumstances can Ferno S.R.L. be held liable for more than the selling price of the product.
- The buyer accepts these conditions for all types of damage.
- Ferno S.R.L. does not offer other warranties, either express or implied, or any implied warranties of saleability or fitness for a particular purpose for its own products, or

those manufactured by others.

- Ferno S.R.L. reserves the right to terminate the warranty of the products sold:
 - if the labels or plates bearing the Manufacturer's logo and/ or the serial or registration number are rendered illegible or removed;
 - if the product has undergone modifications, repairs or treatment not authorised by Ferno S.R.L. and by staff not authorised by Ferno S.R.L.;
 - if the product is not used in compliance with the instructions, or for purposes other than those for which it was designed.
 - further to the conditions indicated in section “Warranty Terms and Conditions”.
- Ferno S.R.L. cannot, in any event, be held liable for direct or indirect damage due to usage that is non-compliant with the instructions in the user manual or the intended purpose of the product.

11.2.2. Warranty claims and complaints

- Contact Ferno's Customer Service immediately if you receive a product that is defective or suspected to be defective.
- Any complaint must be communicated to Ferno S.R.L. within 5 days of receipt of the product or of discovery of the alleged defect.
- The Customer Service will assist the customer through the complaints procedure. Before returning a product to Ferno S.R.L., contact Ferno’s Customer Service to request authorisation.
- Claims or disputes regarding a single product shall not release the buyer from the obligation to collect and pay for other products in the order, unless otherwise agreed with Ferno S.R.L..

11.2.3 Return authorisation

- No product will be accepted without the prior approval of Ferno S.R.L.
- Products returned for business reasons, or for reasons not relating to nonconformity, will in case be accepted in accordance with the law only after verification of their condition by Ferno S.R.L. personnel.

Product User and Maintenance Manual, required to operate the product safely, maintain its efficiency and reliability, and comply with the terms of the warranty.

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