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## **Tirol Kit**

Rel.30092022English



*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 each product by Ferno. Before you contact us, please write down the serial number of the product and specify it in all written communications. For all queries concerning technical support, contact Ferno s.r.l. at:

Telephone (from Italy)	800 501 711
Telephone	(+39) 0516860028
E-mail	info@ferno.it

## Ferno Customer Service

For assistance and further information, contact Ferno s.r.l.'s Customer Service:

### MANUFACTURER


Ferno s.r.l., Via Benedetto Zallone 26  
40066 - Pieve di Cento (BO) - ITALY

Telephone (toll-free from Italy)	800 501 711
Telephone	(+39) 0516860028
Fax	(+39) 0516861508
Website	www.ferno.it

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## Disclaimer

The products sold by Ferno are covered by a 24-month warranty against manufacturing defects. Please refer to the Warranty section for the full terms and conditions of warranty and liability.



**USER AND MAINTENANCE MANUAL**

To request additional free copies of the instruction manual, please contact Ferno s.r.l.'s Customer Service.

## Limitation of Liability

This manual contains general instructions on use and maintenance of the product. The instructions do not cover all the 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 local regulations. It is recommended to train staff in proper use of the product before it is used for the first time. Retain this manual for future reference. In case of change of ownership, make sure that the manual remains with the product. Additional free copies can be obtained from Ferno s.r.l.'s Customer Service.

## Declaration of ownership


The information in this manual is the property of Ferno s.r.l. - Via Benedetto Zallone 26, 40066 Pieve di Cento (BO).



# 1. SAFETY INFORMATION

## 1.1 Warning

Danger signs draw attention to potential dangerous situations that, if ignored, may result in accidents, damage and/or injury.

 <b>WARNING</b>
<p>Untrained users may injure themselves and/or cause damage and/or physical harm. Use of the device must be entrusted to trained and qualified personnel only.</p>
<p>Incorrect use of the device can result in damage and/or injury. Use the device as instructed in this manual.</p>
<p>Casual assistants can cause damage and/or physical harm or injure themselves. Always maintain control of the device and monitor and coordinate the assistants.</p>
<p>An unassisted patient is at the risk of injury. Never leave the patient alone and always assist the patient during use of the device.</p>
<p>Incorrect attachment of the straps can cause displacement of the patient, resulting in injury and/or damage. The straps should be wrapped around the frame of the device.</p>
<p>A failure to use the straps can cause the patient to fall and endanger their safety. Always use the straps to secure the patient.</p>
<p>Improper maintenance can cause serious accidents, injuries and/or damage. Perform maintenance as instructed in this user manual.</p>
<p>The use of improper and unauthorized devices can cause accidents, damage and/or injury. Use only devices that have been approved and authorised by Ferno s.r.l..</p>
<p>Unauthorized repairs and repairs carried out by people not approved by Ferno S.r.l. will render all warranties null and void and could compromise the safety of the device.</p>

 <b>WARNING</b>
<p>Non-original spare parts and inadequate repairs may cause damage and/or injury. Use only original parts by Ferno and contact only Ferno S.r.l.'s Customer Support.</p>

## 1.2 Important

The boxes labeled "Important" contain important information on use and/or maintenance of the device.

<b>Important</b>
------------------

## 1.3 Blood-borne diseases

To reduce the risk of exposure to infectious diseases that may be transmitted by blood, such as HIV-1 or hepatitis, carefully follow the local health protocols. You can check the cleaning and disinfection procedures suggested by Ferno in "Maintenance" section.

## 1.4 Load Capacity



Load capacity

## 1.5 Compatible basket stretchers

The manual describes the basket stretchers intended to be used with the Tirol Kit. You can find them listed below:

Basket stretchers	
REF (Item / Catalog)	Item Description
11-0100A	Titan Tapered SS
11-0101A	Titan Regular SS
11-0115SL	Titan-Ti Split Regular
11-0116SL	Titan-Ti Regular Titanium
11-0118SL	Titan-Ti Tapered Titanium
11-0119SL	Titan-Ti Tapered Split
11-0119TIROL	Titan-Ti Tapered Split with welded plates

 **WARNING**

**The accessories described have been tested and validated for use with the listed basket stretchers. Ferno s.r.l. does not take any responsibility or liability when accessories other than those listed are used.**

For detailed information refer to the product information or contact your local distributor.

## 1.6 Glossary of symbols

The symbols used in this manual and / or on the labels are defined below. The CE mark is present on the stretcher, accessories and in this manual.



Read the user manual carefully



The stretcher requires at least two qualified operators for correct use



Medical Device



Manufacturer



Date and country of manufacture



Do not wash with high pressure water



Load capacity (in kilograms, pounds, and stones)



The product meets European Union Standards



A part number (often abbreviated PN, P/N, part no., or part #) unambiguously identifies a particular design part.



A catalogue number indicates the manufacturer's catalogue number so that the medical device can be identified.



A serial number indicates the manufacturer's serial number so that a specific medical device can be identified.



A batch code indicates the manufacturer's batch code so that the batch or lot can be identified.

## 2. TRAINING AND SKILLS OF OPERATORS

### 2.1 Skills

Operators who use the stretcher must:

- have experience in the specific field of handling and transportation of patients.
- possess appropriate skills to assist patients.
- be aware of Search and Rescue (SAR) assistance procedures.

### 2.2 Training

Users are required to:

- Read and understand all the information in this manual or possibly contact Ferno s.r.l.'s customer service.
- Attend a suitable training course on use.
- Practise using the device before doing so in real situations with patients.
- Keep a record of training sessions. An example of a form for recording the training sessions is located at the end of this manual.
- Follow a training program prepared by the personnel training manager in charge.

The Tirol Kit must be used by trained and qualified personnel and for professional use only by a minimum of two qualified operators. More operators may be required depending on local protocols. Additional assistance may be required to handle heavy patients and/or when the situation demands it, and should always be provided according to local health protocols.



Read the user manual with care



A minimum of two qualified operators are required to use the device.



#### WARNING

**Make sure all the operators are trained and physically able to handle loads.**

## 3. TIROL KIT

### 3.1 Description

The Tirol Kit recovery system is an accessory of the Ferno Titan basket stretchers developed to facilitate rescue operations in arduous environments, making transportation safer. The Tirol Kit is designed to ensure maximum ease of use: it's lightweight and divisible.

The Tirol Kit is available in three different configurations according to the type of handle fixing system applied on the basket stretcher.



#### WARNING

**It is very important to always check the connection of the parts before using the stretcher for practice and in real-life situations.**

Here below you can find the three variants:

A. Tirol Kit for Titan-Ti basket stretcher with welded plates

REF: 21-0120-023



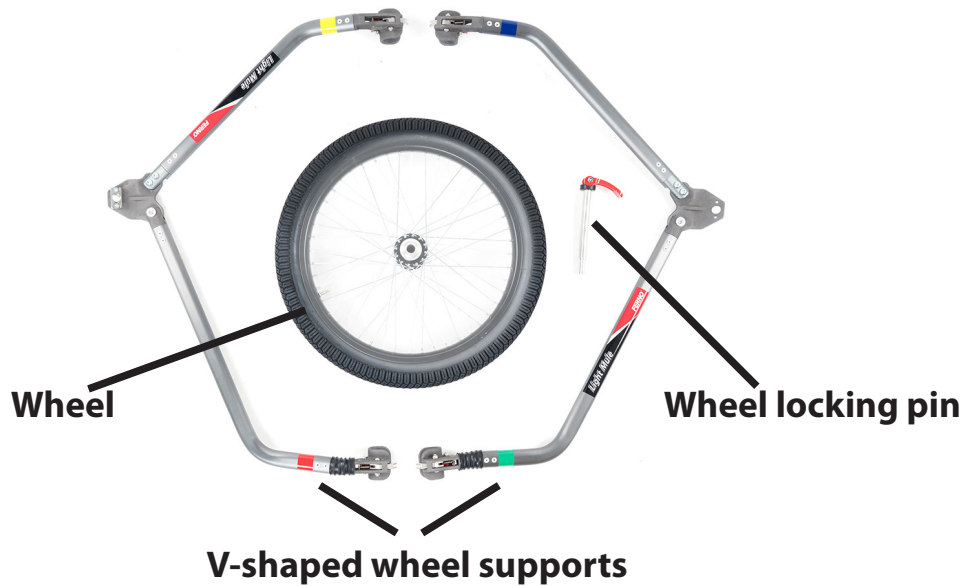
Handle Adjustment Shafts



Shoulder supports



Handles



Bag Tirol Kit Plus



B. Tirol Kit with Tirol Kit Adapter (for the compatible TAPERED basket stretchers)



REF: 21-00034



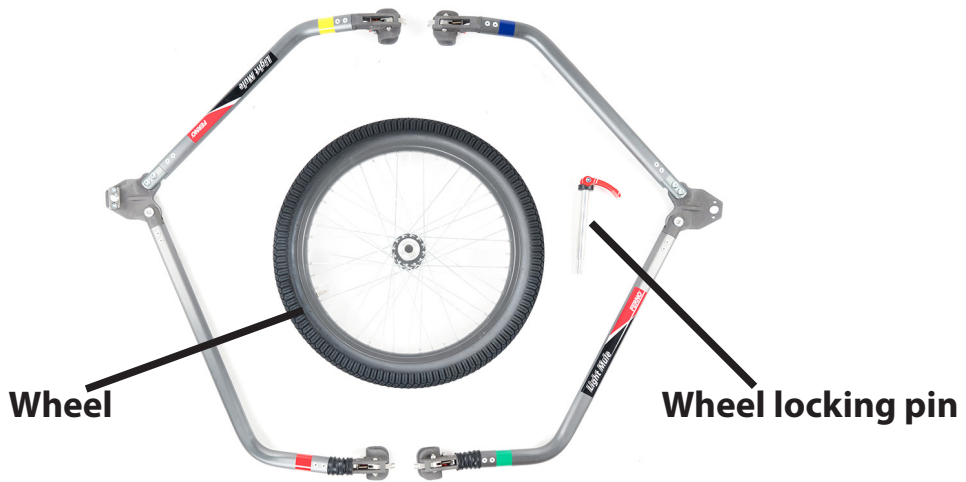
Handle Adjustment Shafts



Shoulder supports



Handles



Wheel

Wheel locking pin

V-shaped wheel supports



Bag Tirol Kit Plus



A

B

Tirol Kit Adapter



REF: 21-00035



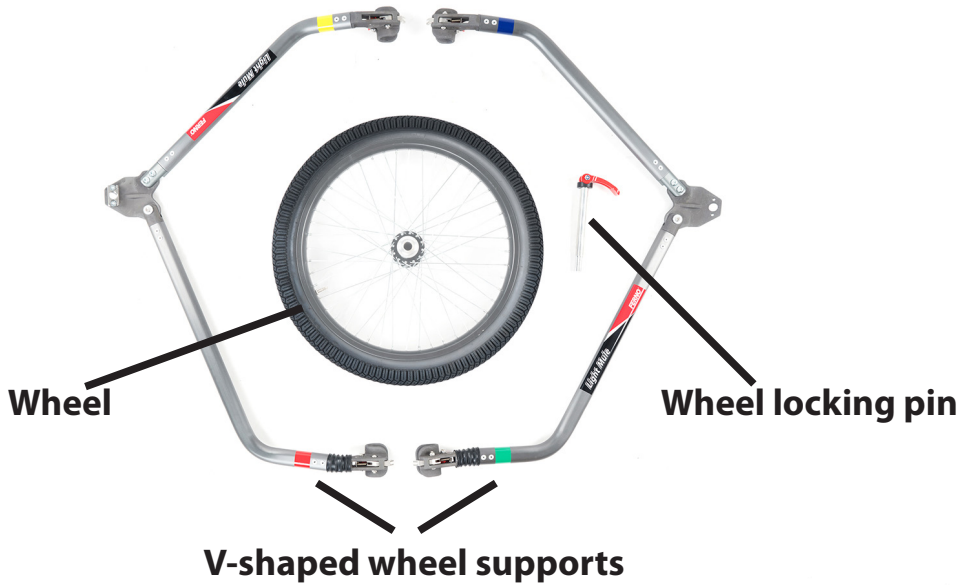
Handle Adjustment Shafts



Shoulder supports



Handles



Bag Tirol Kit Plus



TirolKit Adapter



2 x A

### 3.2 General technical specifications

Ferno reserves the right to change the specifications without notice. For more details, please contact Ferno's Customer Service.



Load capacity

REF	Description	Weight (kg)	Tirol Kit on basket stretcher			Basket stretcher with plates and shafts ONLY		
			width (cm)	max length (cm)	max height (cm)	width (cm)	length (cm)	height (cm)
21-0120-023	Tirol Kit for Titan-Ti with welded plates	11.3	61	312	128	61	212	128
21-00034	Tirol Kit with Tirol Kit Adapter (for the compatible "Tapered" basket stretchers)	12	61	332	128	61	222	128
21-00035	Tirol Kit with Tirol Kit Adapter (for the compatible "Regular" basket stretchers)	12	61	332	128	61	222	128

### 3.3 CE Compliance

Ferno's products meet the requirements of Regulation (EU) 2017/745 (MDR) on medical devices.

The EU declaration of conformity can be downloaded from: [www.ferno.it](http://www.ferno.it)



### 3.4 Reporting accidents

In the event of a serious accident occurring in relation to the device, immediately contact Ferno S.r.l. and the competent authority of the member state in which the user has its main office.

E-mail: [eu-regulatory@ferno.it](mailto:eu-regulatory@ferno.it)

Phone +39 051 6860028

Fax +39 0518681508

## 4. CONFIGURATION OF THE TIROL KIT

The Tirol Kit can be configured in different ways according to the chosen handle fixing system and to the compatible basket stretcher on which it is mounted on:

**Tirol Kit for Titan-Ti basket stretcher with welded Plates (REF: 21-0120-023)**

Titan-Ti Tapered Split with welded plates  
REF: 11-0119TIROL



**Tirol Kit with Tirol Kit Adapter for TAPERED basket stretchers (REF: 21-00034)**



Titan Tapered Stainless Steel (SS)  
REF: 11-0100A

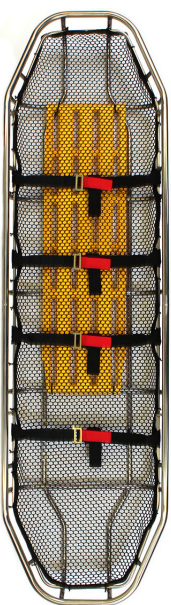


Titan-Ti Tapered Split  
REF: 11-0119SL

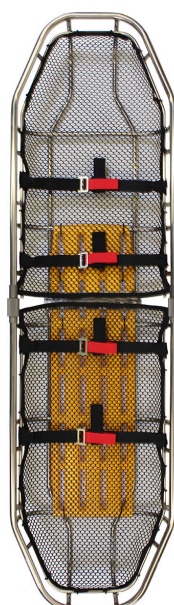


Titan-Ti Tapered Titanium  
REF: 11-0118SL

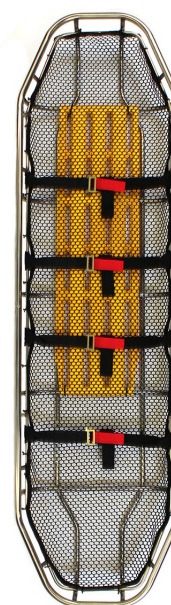
**Tirol Kit with Tirol Kit Adapter for REGULAR basket stretchers (REF: 21-00035)**



Titan Regular Stainless Steel (SS)  
REF: 11-0101A



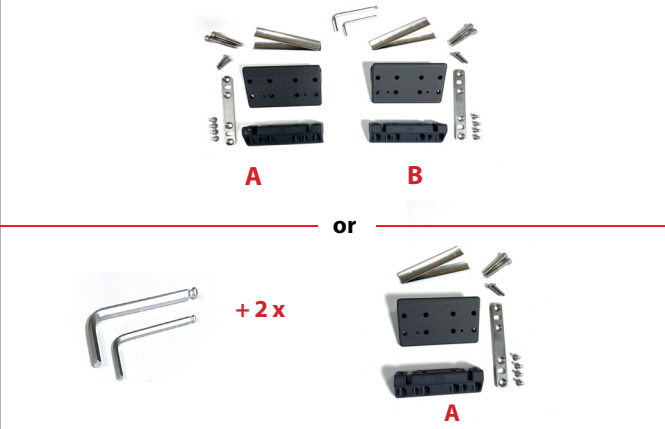




Titan-Ti Split Regular  
REF: 11-0115SL








Titan-Ti Regular Titanium  
REF: 11-0116SL



### 4.1 Tirol Kit components

<p><b>Tirol Kit Adapter</b></p> <p>1 x PN: 25-00082 for Tirol Kit REF: 21-00034 (for TAPERED basket stretchers)</p> <p>or</p> <p>1 x PN: 25-0099 for Tirol Kit REF: 21-00035 (for REGULAR basket stretchers)</p>	
<p><b>Handle Adjustment Shafts</b></p> <p>2 x PN: 25-00114</p>	
<p><b>Screws and washers for Tirol Kit for Titan-Ti with welded plates</b></p>	
<p><b>Screws and washers for Tirol Kit for basket stretcher with Tirol Kit Adapter</b></p>	
<p><b>Wheel</b></p> <p>1 x PN: 25-1603-001</p>	

<p><b>Wheel locking pin</b></p> <p>1 x PN: 25-1602-001</p>	
<p><b>V-Shaped wheel supports</b></p> <p>PN: 25-1608-001_01 (left) PN: 25-1607-001_01 (right)</p>	
<p><b>Handles</b></p> <p>2 x PN: 21-0120-022_5 (Handle pair left+right)</p>	
<p><b>Shoulder supports</b></p> <p>2 x REF: 21-0120-012</p>	
<p><b>Tirol Kit Bag</b></p> <p>1 x REF: BAG TIROL KIT</p>	

### **Important**

Before you start the assembly activities, please check the following:

- All the components of the basket stretcher are present.
- The welds do not bear signs of cracks, fractures or other signs of breaking.
- The tubular structure of the stretcher is not dented, cracked or bent.
- The Durathene mesh on the stretcher is not ripped or torn and is securely attached to the structure.
- The yellow back support is securely fixed to the structure
- The safety warning labels are perfectly visible and legible
- The fabric straps are in good condition, with no cuts or signs of excessive wear
- The buckles of the straps do not bear any obvious signs of damage and work properly



### **WARNING**

**Incorrect use of the device can result in damage and/or injury. Use the device as instructed in this manual.**

## 4.2 Initial setup of the Tirol Kit Adapter (only for REF: 21-00034 and REF: 21-00035)

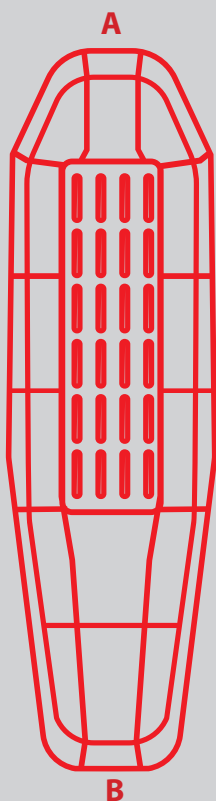
The Tirol Kit Adapter is available in 2 different versions according to the stretcher on which it has to be mounted on:

**PN: 25-00082**  
**for Tirol Kit REF: 21-00034**  
**(for TAPERED basket stretchers)**



**A**                      **B**

Positioning for the Tirol Kit Adapter plates for  
TAPERED basket stretchers:



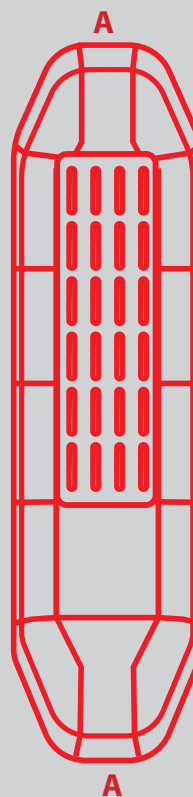
**PN: 25-00099**  
**for Tirol Kit REF: 21-00035**  
**(for REGULAR basket stretchers)**



+ 2 x

**A**                      **B**

Positioning for the Tirol Kit Adapter plates for  
REGULAR basket stretchers:



### 4.2.1 Installation of the Tirol Kit Adapter for TAPERED basket stretchers

#### Components

##### Head end:

- 1 "A" top plate
- 1 "A" bottom plate
- 1 "A" Striker plate
- 2 1mm-thick shims for Tirol Kit Adapter plates
- 2 UNI 5931 A4/80 M5x25 Hexagon socket head cap screws
- 2 UNI 59531 A4/80 M8x50 Hexagon socket head cap adjustment screws
- 4 ISO 10642 A4/70 M6x16 Hexagon socket countersunk head cap screws

##### Foot end:

- 1 "B" Striker plate
- 1 "B" top plate
- 1 "B" bottom plate
- 2 1mm-thick shims for Tirol Kit Adapter plates
- 2 UNI 5931 A4/80 M5x25 Hexagon socket head cap adjustment screws
- 2 UNI 59531 A4/80 M8x50 Hexagon socket head cap screws
- 4 ISO 10642 A4/70 M6x16 Hexagon socket countersunk head cap screws

##### Additional equipment

- 1 4 mm Allen wrench
- 1 6 mm Allen wrench
- 1 Loctite (threadlocker)

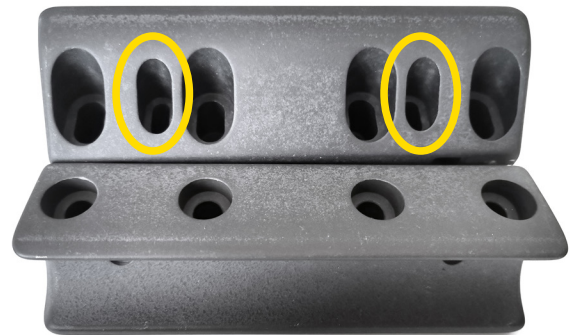
##### Instructions

1. Bring the two "A" top and the "A" bottom plates together.



2. Apply 1 drop of threadlocker on the threaded end of the two M5x25 hexagon socket head screws.

3. Slightly screw them in in the circled holes using the appropriate 4 mm Allen wrench so that the two Tirol Kit Adapter plates are connected but some backlash between them can still be possible.



4. Place the connected plates in a vertical position



5. Apply 1 drop of threadlocker on the threaded end of the two M8x50 adjustment screws.

6. Tighten them in the circled holes using the appropriate 6 mm Allen wrench until there is no more backlash between them.



7. Position the striker plate on the bottom plate so that you can see the adjustment screws, making sure that the recessed hole remain on the outside.



8. Apply 1 drop of threadlocker on the threaded end of the four M6x16 countersunk head screws

9. Using the 6mm Allen wrench slightly tighten the striker plate onto the bottom plate screwing the four M6x16 countersunk head screws.

NOTE: Keep a clearance of some millimetres between the striker and bottom plates.



10. Loosen the adjustment screws with the 6mm Allen wrench so that the Tirol Kit Adapter plates are connected but some backlash between them can still be possible.





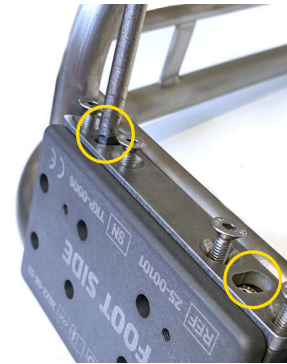


11. Fit the assembly in between the tubes of the Titan stretcher end first applying the assembly on the lowermost tube and then fitting it also on the uppermost one.

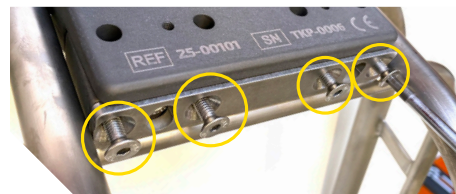


- 12. Turn the stretcher upside-down
- 13. Tighten the two M8x50 hexagon socket head adjustment screws
- 14. Tighten the four M6x16 countersunk head screws until the striker plate firmly adheres to the Tirol Kit Adapter bottom plate
- 15. Loosen the adjustment screws with the 6mm Allen wrench so that the Tirol Kit Adapter plates move apart and adhere to the stretcher's tubes.

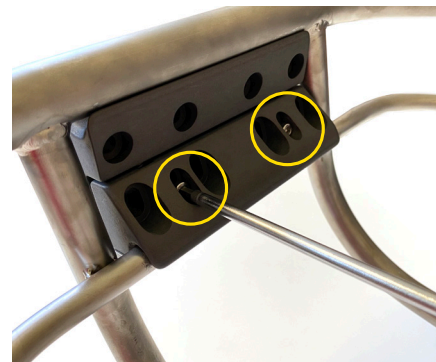
- 16. Turn the stretcher upside
- 17. Firmly tighten the two M5x25 hexagon socket head screws



**a**



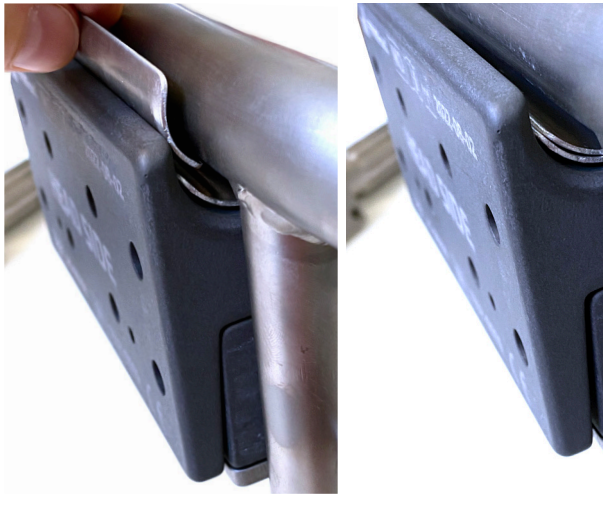
**b**



**c**

### Important

Shouldn't the Tirol Kit Adapter plate assembly adhere firmly to the tubes of the stretcher even after completely loosening the adjustment screws, slightly loosen the whole assembly in order to return to point 5. Before moving on with points 6-12, insert one shim (or two if necessary), between the plates assembly and the stretcher's uppermost tube, before fastening the assembly again in place.



18. Repeat the procedure at the foot end using the "B" plates

### 4.2.2 Tirol Kit Adapter for REGULAR basket stretchers

#### Components

##### Head end:

- 1 "A" top plates
- 1 "A" bottom plates
- 1 "A" Striker plates
- 2 1mm-thick shims for Tirol Kit Adapter plates
- 2 UNI 5931 A4/80 M5x25 Hexagon socket head cap screws
- 2 UNI 59531 A4/80 M8x50 Hexagon socket head cap screws
- 4 ISO 10642 A4/70 M6x16 Hexagon socket countersunk head cap screws

##### Foot end:

- 1 "A" top plates
- 1 "A" bottom plates
- 1 "A" Striker plates

- 2 1mm-thick shims for Tirol Kit Adapter plates
- 2 UNI 5931 A4/80 M5x25 Hexagon socket head cap screws
- 2 UNI 59531 A4/80 M8x50 Hexagon socket head cap screws
- 4 ISO 10642 A4/70 M6x16 Hexagon socket countersunk head cap screws

#### Necessary equipment

- 1 4 mm Allen wrench
- 1 6 mm Allen wrench
- 1 Loctite (threadlocker)

#### Instructions

Follow the same instructions as for the tapered basket stretcher applying 2 "A" Adapter plates instead of 1 "A" plate and 1 "B" plate.

### 4.3 Setup of the Tirol Kit Handle Adjustment Shafts

#### 4.3.1 Handle Adjustment Shafts installation on a Titan-Ti basket stretcher with welded plates

#### Necessary equipment

- 2 Tirol Kit Handle Adjustment Shafts
- 8 VTBTXM8X16A2 screws
- 8 VTBTXM8X20A2 screws
- 16 RPIM8X16A2 washer
- 1 Loctite (threadlocker)



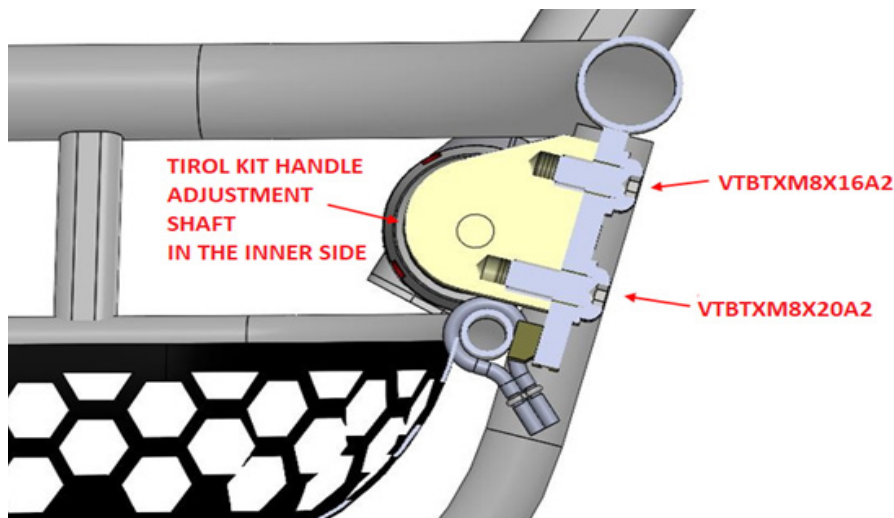


## Instructions

1. Insert the one RPIM8X16A2 washer on each screw
2. Apply the threadlocker on the threaded edge of the four VTBTXM8X16A2 screws
3. Insert four VTBTXM8X16A2 screws into the uppermost through holes of the welded plate from the outer side of the plate
4. Apply the threadlocker on the threaded edge of the four VTBTXM8X20A2 screws
5. Insert four VTBTXM8X20A2 screws into the lowermost through holes of the welded plate from the outer side of the plate
6. Place the Tirol Kit Handle Adjustment Shaft against the inner side of the welded plate so that the yellow line is at the top and the red one at the bottom.



7. Screw it in place with a Torx wrench T40.



## 4.3.2 Handle Adjustment Shafts installation on basket stretcher with Tirol Kit Adapter

### Necessary equipment

- 1 5 mm Allen wrench
- 2 Tirol Kit Handle Adjustment Shafts
- 16 UNI9327A4M8x35 Hexagon socket head caps crews with low head
- 1 Loctite (threadlocker)



### Important

To allow the Tirol Kit with Tirol Kit Adapter to be compatible also with the Titan-Ti basket stretcher with welded plates, Ferno includes in the supplied material also the screws necessary to mount the handle adjustment hubs on the Titan-Ti basket stretcher with welded plates.

Please note that in case you opt for the installation of the Tirol Kit with Tirol Kit Adapter on a basket stretcher without the welded plates, you will end up having the following unused additional material:

8pc VTBTXM8X20A2 screws

8pc VTBTXM8X16A2 screws

16pc RPIM8X16A2 washer

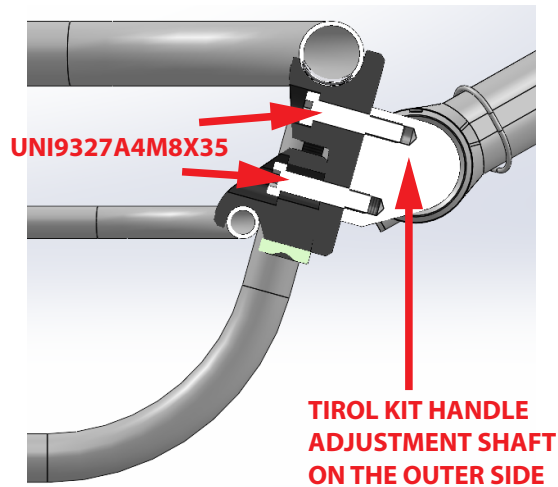


### Instructions

1. Place the Tirol Kit Handle Adjustment Shaft against the assembly plate on the outer side of the plate.
2. Apply 1 drop of threadlocker on each M8x35 hexagon socket head screw.
3. Insert the eight M8x35 hexagon socket head screws into the through holes of the welded plate from the inner side of the plate.
4. Place the Tirol Kit Handle Adjustment Shaft against the outer side of the welded plate so that the red line is at the top and the yellow one at the bottom .



5. Screw it in place with the 8 M8x35 hexagon socket head screws.



## 4.4 Installation of the wheel

### 4.4.1 Two operators mounting procedure

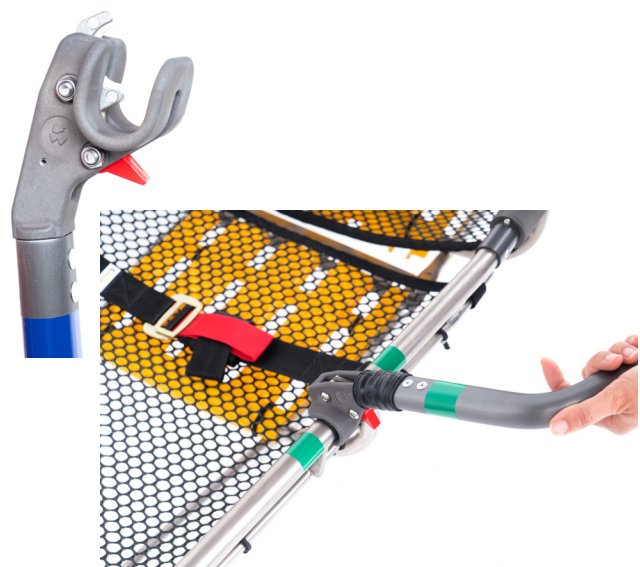
#### MOUNTING THE V-SHAPED WHEEL SUPPORTS

After mounting the handle adjustment shafts on the stretcher, place the stretcher with the handle adjustment hubs, place the stretcher on the ground.

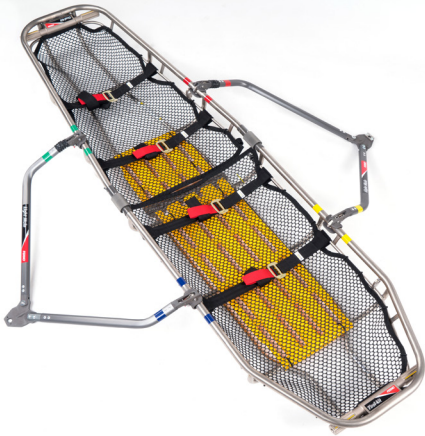
Take the two V-shaped wheel supports and, following the color coded labels, apply them on the upper tube in between the colored stripes.

To attach the V- shaped wheel supports you only need to press firmly the quick release ends against the upper tube of the stretcher.

#### QUICK RELEASE SYSTEM



Check that the V- shaped wheel supports are correctly engaged and can turn around the tube smoothly.



Repeat this procedure on both sides of the stretcher.

### MOUNTING THE TRANSPORT WHEEL

1. Once the V- shaped wheel supports have been mounted and checked, an operator can lift the stretcher with or without the aid of the carrying handles to facilitate assembly.
2. Pass the V- shaped wheel supports underneath the stretcher
3. Fit the wheel between the wheel forks of the V- shaped wheel supports and insert the wheel locking pin making sure that it can turn and is positioned on the right side.



4. Tightly screw the wheel locking pin and close the red locking lever into place.

**NOTE:** if the lever can't be completely closed, slightly loosen the wheel locking pin until it can be correctly fixed.



### DISMANTLING THE WHEEL

- Remove the pin.
- Remove the wheel.
- Disengage the locking system by holding down the red triangular button under the locking system.



- Remove the V-shaped wheel support from the upper tube.



## 4.4.2 One operator mounting procedure

### MOUNTING THE V-SHAPED WHEEL SUPPORTS

After mounting the handle adjustment shafts on the stretcher, place the stretcher upside down on the ground. Take the two V-shaped wheel supports and, following the color coded labels, apply them on the upper tube in between the colored stripes.

To attach the V- shaped wheel supports you only need to press firmly the quick release ends against the upper tube of the stretcher.



Check that the V- shaped wheel supports are correctly engaged and can turn around the tube smoothly.

Repeat this procedure on both sides of the stretcher.

### MOUNTING THE TRANSPORT WHEEL

1. Once the V- shaped wheel supports have been mounted and checked, put together the wheel forks of the V-shaped wheel supports
2. Fit the wheel between the wheel forks and insert the wheel locking pin making sure that it can turn and is positioned on the right side



3. Tightly screw the wheel locking pin and close the red locking lever into place.



**NOTE:** if the lever can't be completely closed, slightly loosen the wheel locking pin until it can be correctly fixed.



### DISMANTLING THE WHEEL

- Remove the pin.
- Remove the wheel.
- Disengage the locking system by holding down the red triangular button under the locking system.



- Remove the V-shaped wheel support from the upper tube.

### 4.5 Installation of the handles

To mount the handles make sure that the basket stretcher is already equipped with either the welded plates plus the handle adjustment shafts or the Tirol kit Adapter with the handle adjustment shafts.

To mount the handle, disengage the pin by pressing the red button and pulling it outwards.



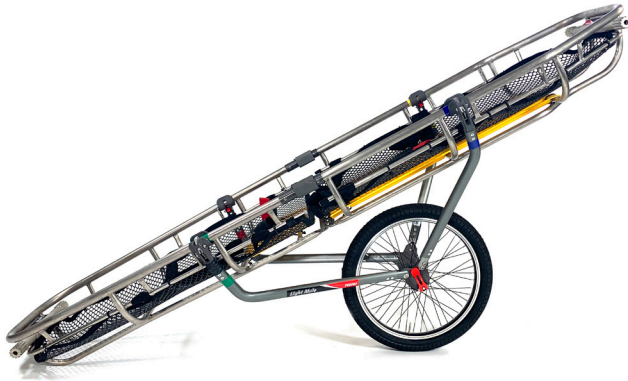
Insert the handle hub on the shaft and secure the pin pushing it inside while pressing the red button.



Repeat the procedure for all the handles.

For the one operator procedure, once the wheel has been mounted, turn the assembly upwards and place the foot end on the ground so that the stretcher remains in balance without the help of a second operator and then proceed applying the handles on the head side.





Once the 2 handles at head side have been mounted you can repeat the process on the other side, using the head side handles as a support.

#### 4.5.1 Adjusting the angle of the handles

The handles can be adjusted in twelve different positions to meet the needs of any operators and situations.

To adjust the angle of a handle extract it by disengaging the pin as explained above.

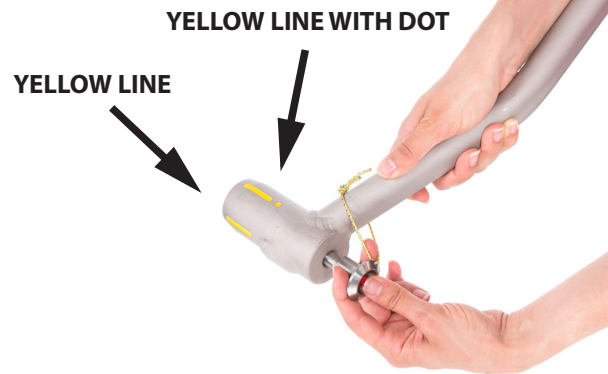
Choose the desired angle and reinsert the handle.

### Important

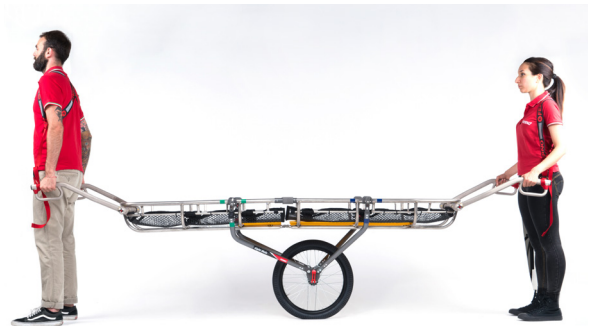
#### YELLOW MARKINGS ON THE HANDLES

On the handles' hub you will find two yellow markings:

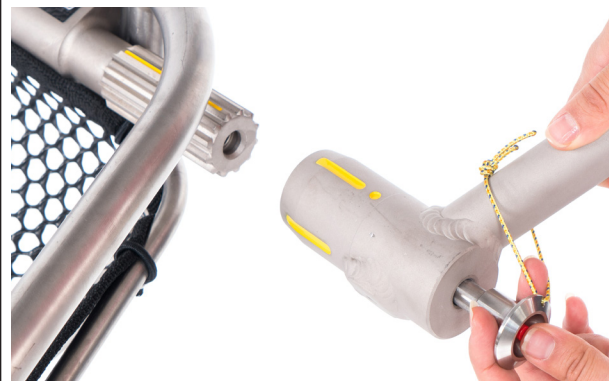
- One yellow line
- One yellow line with a dot

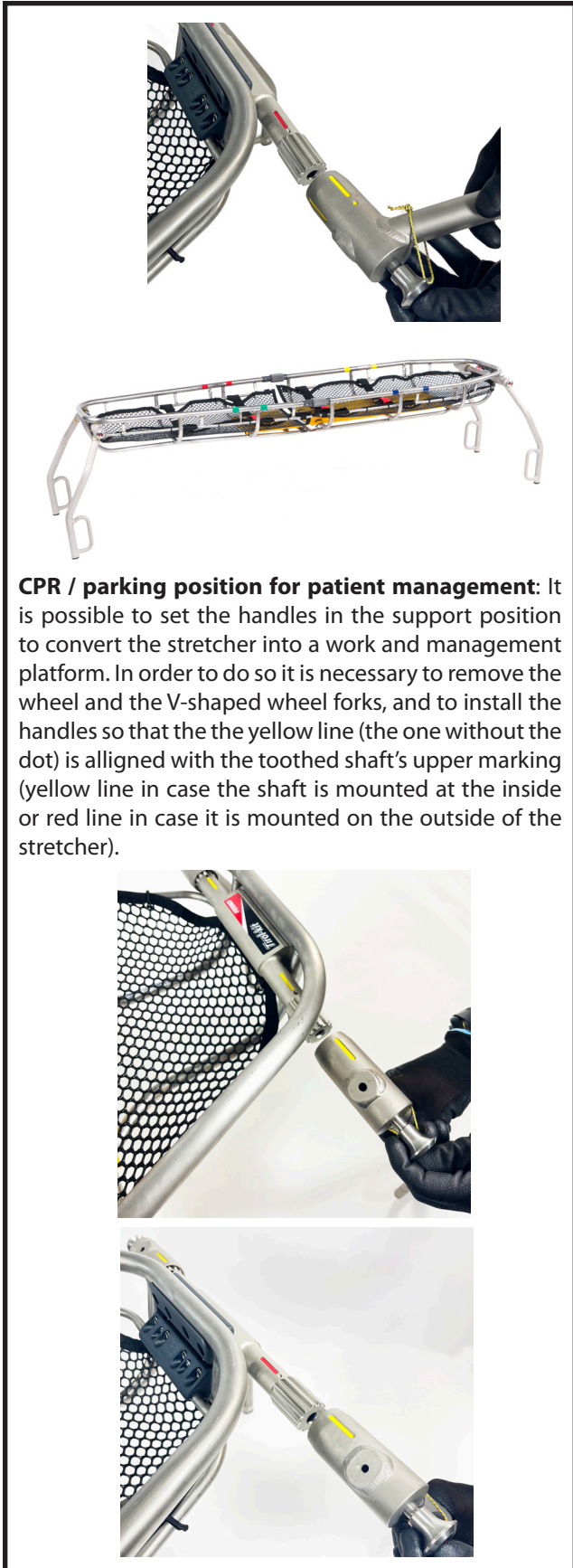


These markings are meant to indicate the following suggested positions:



**Transport position:** corresponds to the handles' position most commonly chosen by the operators during transport. It can be obtained installing the handles so that the the yellow line with the dot is aligned with the toothed shaft's upper marking (yellow line in case the shaft is mounted at the inside or red line in case it is mounted on the outside of the stretcher).





**CPR / parking position for patient management:** It is possible to set the handles in the support position to convert the stretcher into a work and management platform. In order to do so it is necessary to remove the wheel and the V-shaped wheel forks, and to install the handles so that the yellow line (the one without the dot) is aligned with the toothed shaft's upper marking (yellow line in case the shaft is mounted at the inside or red line in case it is mounted on the outside of the stretcher).

## 4.6 Shoulder support transport harnesses

After mounting the handles: it is possible to put on a set of dedicated straps for handling loads.

The Shoulders Supports consist of an harness that has a loop, at each of the two ends, detachable by means of a cobra buckle.

To secure the Shoulders Supports to the handles:

- Wear the harness like a backpack



- Detach one end at a time by opening the cobra buckle
- Pass the harness' extremity inside the handle and wrap it around the tube passing the cobra buckle inside the harness' loop and making sure that the knot is made in such a way to remain at the upper outermost corner of the handle with one loop on the horizontal tube and the other on the vertical one



## 5. MAINTENANCE

### 5.1 Periodic maintenance and preventive checks.



- Connect the two straps with the cobra buckle and adjust the length of the harness by tightening or loosening the strap's extremity



#### Important

The use of products containing chlorine, phenols and iodine may harm the product. Do not use products containing these agents for cleaning/disinfection.

The accessories are the medical devices requiring regular maintenance, hence you are recommended to comply with the following schedule:

\* PERIODIC maintenance: the accessories have to be subjected to a yearly maintenance operation by Ferno qualified technicians.

\* PREVENTIVE checks: preventive maintenance operations are to be carried out by the user, as specified in the table below.

Minimum maintenance schedule	After each use	Whenever necessary	Every month
Disinfection	•	•	
Cleaning		•	•
Inspection	•	•	•
Lubrication		•	
Adjusting the tightness		•	

If the device undergoes particularly heavy use, checks should preferably be carried out on a more frequent basis. If there are signs of wear and damage, discontinue the use of the device and immediately contact Ferno's Technical Support Service.

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.

#### Important

If the accessories are not going to be used, store them indoors in a dry place out of direct sunlight.



### Important

Before disinfection/cleaning, make sure to remove the straps and seats.

After disinfection/cleaning, make sure that the stretcher and its components are fully and completely dry before use.

## 5.2 Disinfection/Decontamination

1. After each use, clean the accessories with a non-abrasive cloth and disinfectant or mild detergent in warm water, and rinse thoroughly.
2. Do not put the device directly in the disinfectant.
3. During disinfection, check that there are no signs of wear and/or damage.
4. Pat dry with a cloth. Make sure that all the components of the device are completely dry before reusing them.

It is advisable to wear suitable gloves (e.g. household or disposable gloves) during disinfection.

## 5.3 Disinfecting/Cleaning the Shoulders Supports

1. Remove the Shoulders Supports from the stretcher as instructed.
2. Fasten the straps to prevent damage to these or to the washing machine.
3. Place the fastened Shoulders Supports in a fabric bag (not supplied), and then in an industrial washing machine.
4. Wash at low temperature with detergent and use a gentle cycle. Do not use bleach or other aggressive products.
5. Remove the Shoulders Supports from the bag and leave them out to dry. Do not put in a tumble dryer.

## 5.4 Wheel Cleaning

After using the device on muddy or very dirty ground, it is advisable to clean the wheel carefully. Here below you can find the procedure for proper maintenance.

1. First try to remove as much dirt and dust as possible using compressed air from a distance to avoid damaging the product
2. Clean the wheel and the wheel locking pin with water and tap them dry.

Now that the dirt has been removed from the surfaces, if necessary it is possible to lubricate the hub using a nautical grease or water resistant grease.



## 5.5 Inspection

To ensure optimal use of the devices, it is important to keep all the components in good condition and to remove all traces of dirt, debris and body fluids. The devices must be inspected before and after each use and cleaned after each use. If the devices are not used, they must be stored in a dry indoor environment and should be inspected at least once a month.

The device must be inspected by the maintenance personnel on a regular basis. Perform the various checks written in this manual.

If any signs of wear or damage are found during inspection, discontinue use of the stretcher immediately and contact Ferno's Technical Support Service to request repairs/maintenance. See the chapter on Technical Support.

## 5.6 Lubrication of the stretcher

Disinfect and clean the device before applying the lubricant.

There are two areas of lubrication in the Tirol Kit:

- On the quick locking release mechanism of the V-shaped wheel forks
- In the holes that accommodate the wheel locking pin

Lubricate with a drop of SAE 30 oil, and then move the mechanism back and forth several times to work the oil into the guide.

Remove any excess lubricant with a cloth.



 **WARNING**

**Do not lubricate parts unnecessarily as this can cause dirt and particles to deposit on the lubricated parts and cause damage. Lubricate only the points indicated.**

 **WARNING**








**Improper maintenance can cause serious accidents, injuries and/or damage. Perform maintenance as instructed in this user manual.**





**CHECKLIST FOR INSPECTION OF THE DEVICES**

- Are all the components present?
- Does the device show signs of wear or oxidation?
- Are all the screws, bolts, pins in place and securely mounted?
- Do all the moving parts work properly?
- Do all the locking devices work properly?
- Are all labels present and clearly legible?
- Do the handles work properly?
- Do the handles show cracks, dents or signs of wear and/or deformation?
- Do the V-shaped wheel supports show cracks, dents or signs of wear and/or deformation?
- Is the wheel in good condition and without cracks, dents or signs of wear and/or deformation?
- Do the wheel tire show tears, holes or signs of wear?
- Does the inner tube of the tire remain inflated or tends to deflate anomalously?
- Are the shoulder supports in good condition, without tears or frayed edges?
- Are the shoulder supports' buckles undamaged and do they work properly?
- Do the Tiro! Kit and the other eventual additional accessories work properly without interfering with use of the stretcher?




## 6. AVAILABLE SPARE PARTS AND ACCESSORIES

### 6.1 Spare parts list








PN (item/catalog)	Item Description	Picture
25-00082	Tirol Kit ADAPTER for Titan Basket stretcher TAPERED	
25-00099	Tirol Kit ADAPTER for Titan Basket stretcher REGULAR	
25-00114	Handle Adjustment Hub (single)	
21-0120-021	Light Mule Assembly (Wheel + Wheel locking pin + V-Shaped wheel supports)  <b>IMPORTANT: this is a mere spare part kit. This item is not certified do be used without the Tirol Kit handles.</b>	
25-1603-001	Tirol Kit Wheel (only)	
25-1602-001	Tirol Kit wheel locking pin	
25-1607-001_01	V-Shaped wheel support right side (red and yellow)	

25-1608-001_01	V-Shaped wheel support left side (green and blue)	
21-0120-022_5	Handles' pair (LH+RH) for Titan Basket stretcher	
21-0120-012	Shoulder Support transport harness (single)	
BAG TIROL KIT	Bag tirol kit	

## 6.2 Other compatible accessories

REF (Item/Catalog)	Item Description	Picture	Compatibility
21-0120-019	Winter Kit for Tirol Kit		ONLY compatible with the Tirol Kit for Titan-Ti with welded plates (cod. 21-0120-023)
KIT TIRE	Inner tube + Pump + Repair Kit		Compatible with the Tirol Kit in all its three versions.
EARS	Antirotation sails (Ears)		Compatible with all Ferno Titan basket stretchers

## Tirol Kit

15-0106	SOFT Eye Bridles		Compatible with all Ferno Titan basket stretchers
15-0105	HARD Eye Bridles		Compatible with all Ferno Titan basket stretchers
10-2916-001	Backpack harness for Titan-Ti and Tirol Kit		Compatible with the Tirol Kit and the Titan-Ti cod. 11-0119SL, 11-0119TIROL
TIROL KIT BAG PLUS	Tirol Kit Bag Plus		Compatible with the Tirol Kit and the Titan-Ti cod. 11-0119SL, 11-0119TIROL
21-0120-010	Titan protection in Polietilene		Compatible with all Ferno Titan basket stretchers
21-0120-010_1	Titan protection in polyethylene Split		Compatible with all Ferno splittable Titan basket stretchers
11-0124A	Toboga Flotation Collar		Compatible with all Ferno Titan basket stretchers
0822097	Patient Shield		Compatible with all Ferno basket stretchers
740000/740005	Litter Shield /Litter Shield Plus		Compatible with all Ferno Titan basket stretchers

## 7. TECHNICAL SUPPORT

### Technical Support Service.

For technical support concerning the products, please contact Ferno s.r.l.'s Technical Support Service.

Telephone (toll-free from Italy)	800 501 711
Telephone	(+39) 0516860028
Fax	(+39) 0516861508
E-mail	info@ferno.it
Website	www.ferno.it

For information on use of the Ferno device and to schedule training courses on correct use of the device, contact Ferno s.r.l.'s Customer Service.

Telephone (toll-free from Italy)	800 501 711
Telephone	(+39) 0516860028
Fax	(+39) 0516861508
E-mail	info@ferno.it
Website	www.ferno.it

### WARNING

**Non-original spare parts and inadequate repairs may cause damage and/or injury. Use only original parts by Ferno and contact only Ferno s.r.l.'s Customer Support.**

### WARNING

**Unauthorized modification of the stretcher can cause serious damage, injury and/or unforeseeable operational problems. Do not modify or alter the stretcher in any way.**

## 8. WARRANTY

### 8.1 Warranty terms and conditions

Ferno's products are guaranteed against manufacturing defects for a period of 24 months from the date on the Ferno s.r.l. shipping document.

Ferno s.r.l. guarantees its spare parts for a period of 12 months.

During the warranty period, Ferno will repair and/or replace any parts found to have manufacturing defects free of charge, excluding the costs of labour, travel, transport, and packaging.

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, mechanical equipment).

The surface finishes (gelcoat/resin, paint, powder paint, decals, tape, inscriptions, etc.) are guaranteed for 90 days.

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.

Technical support at the Customer's premises must be arranged beforehand and involves a refund of costs incurred and documented on request.

For information on the costs of technical support, please

contact the relevant department at Ferno s.r.l.

Repairs performed by Ferno s.r.l. 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.

The warranty is valid from the day the product is shipped from Ferno s.r.l., and the shipping costs are not covered by this warranty. Ferno s.r.l. is not liable for damages incurred during shipment or due to misuse of the product.

Products sold by Ferno s.r.l. that do not bear the Ferno trademark are covered by the warranty of the original 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 others.

The warranty is rendered null and void in the case of:

- failure to observe the operating instructions,
- misuse,
- inappropriate use or handling,
- repairs of critical parts (not included in the list of section 7) performed by unauthorized personnel,
- damage during transport due to improper packaging of items returned by the user,
- failure to perform periodic maintenance or preventive checks (see definitions in section 6.1 under Maintenance),



- failure to use original spare parts.

In cases not covered by the warranty, Ferno s.r.l. will not cover the transport costs for sending or returning the product.

### 8.2 Limitation of liability

If a product is found to be defective, Ferno s.r.l. will repair and replace it, or, at its own discretion, 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, including implied warranties of saleability or fitness for a particular purpose, for its own products or those manufactured by others.

In case of infringement of the limited warranty, any legal actions must be filed within one year from the date on which the infringement was, or should have been, discovered. The warranty on purchased products becomes void and Ferno s.r.l. does not guarantee their safety under the following circumstances:

- 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 other operations not authorized by Ferno s.r.l. and performed by personnel not authorised by Ferno s.r.l., excluding non-critical components and parts listed in section 7 and properly installed according to the operating instructions.

- if the product is not used in compliance with the instructions, or for purposes other than those for which it was designed.

- if the warranty is denied due to the reasons set out in section 9.1.

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.

### 8.3 Warranty claims

Contact Ferno's Customer Service immediately if you receive a product that is suspected to be defective. An agent 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.

### 8.4 Complaints

Any complaints must be communicated to the reseller, or to Ferno s.r.l.'s Customer Service, within 5 days of receipt of the product or of discovery of the alleged defect.

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 the seller.

### 8.5 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 be accepted only after verification of their condition by Ferno s.r.l.'s qualified personnel.











*User and maintenance manual of the product, required to operate safely, maintain the efficiency and reliability of the product, and ensure the validity of the warranty.*

## Rel.30092022English

### **Ferno s.r.l.**

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