

TRANSLATION OF ORIGINAL FRENCH MANUAL

INSTRUCTION, OPERATING, MAINTENANCE AND WARRANTY MANUAL

Designation : **SHORT TOW BAR H160**

Reference : **BR-B160-03-B**

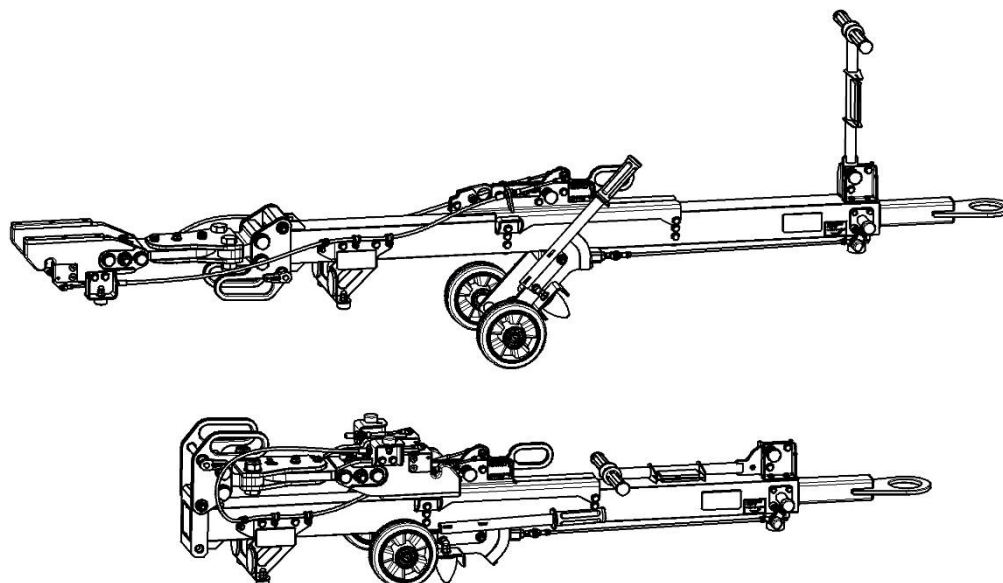
Fabricant : MPEB

Address : 9-11 Boulevard de la capelane
13170 LES PENNES MIRABEAU
FRANCE

WARNING

**MAKE SURE YOU HAVE READ AND FULLY UNDERSTAND THIS MANUAL
BEFORE FIRST USE**

The towing bar should be used by personnel authorised and competent, whether salaried or assimilated. It is necessary to comply with the applicable work regulations in the country of use of it.



® Patent FR2301011

MODIFICATIONS

IND.	PAGE(S) MODIF.	DATE	DESCRIPTION OF THE MODIFICATION	REDACT.	VISAS SERVICE MANAGER	OTHERS MANAGERS OF COMPANY
A	All	17/02/2021	NEW DOCUMENT	MPEB - SO	OK	OK
B	4, 8, 12	18/03/2021	ADDITION OF CONTRAINDICATION TO THE USE OF THE FOLDING HANDLING HANDLE	MPEB - SO	OK	OK
C	All	04/07/2022	MOFIDICATION FUSES KIT REFERENCE ADD BR-COM6-01-K01 OPTION ADDITION OF NEW MAINTENANCE PROCEDURES VARIOUS MODIFICATIONS	MPEB - SO	OK	OK
D	-	15/03/2023	ADDITION OF COMMENTS ON THE CE CERTIFICATE	MPEB - SO	OK	OK
E	23-24	30/08/2024	ADDITION OF WARRANTY CONDITION (§15)	MPEB - LP	OK	OK

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1 General description

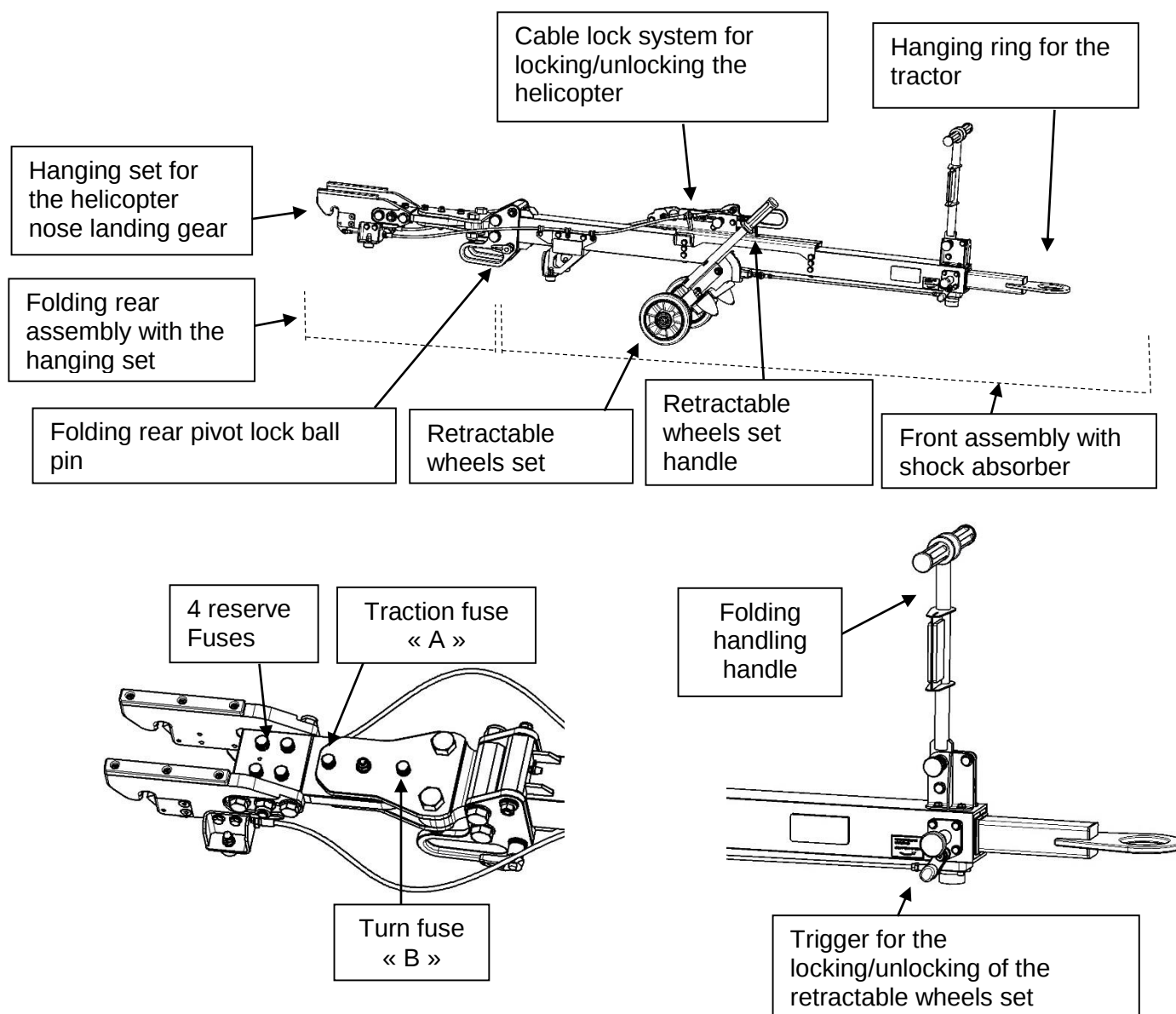
The short tow bar H160 is used only for towing the helicopters H160 of Airbus Helicopters in their version without big option under the nose of the helicopter at the front of the nose landing gear (FLIR, ...).

For this type of operation, it is essential to know the rules of conduct and safety concerning helicopter towing.

This towing bar is equipped with the folding option. This option allows it to be easily stored in small area.

This tow bar has a reduced length compared to other H160 bar models in our range to facilitate towing maneuvers in tight spaces.

Figure 1: short tow bar H160



2 Characteristics

The instructions for the working load applicable to the towing bar are given on the CE certification plate attached to the tooling:

 M.P.E.B. LLEDO AERO TOOLS 9-11 BD DE LA CAPELANE 13170 LES PENNES MIRABEAU FRANCE contact@lledo-aerotools.com			
DESIGNATION		SHORT TOW BAR H160	
Ref. OUTILLAGE Part number	BR-B160-03-B		
N° DE SERIE Serial number		CTRL	
DATE FABRICATION Manufacturing date			
Charge Max. d'Utilisation Maximum Working Load	1720 daN		
Poids Weight	38	Kg	P_{MAX} XXX

General Characteristics	
Mass of tooling	38 Kg / 83,8 lbs
Maximum working load (CMU)	
Maximum working load for traction	1720 daN
Maximum working load in turns	1865 Nm
Maximum helicopter weight qualified by 	5 T 850 Kg 12 900 lbs
Dimension	
Dimension of the towing bar	2400x400x310 mm 94,5x15,8x12,2 inch
Dimension of the towing bar in storage position	1800x400x425 mm 70,9x15,8x16,7 inch

3 Terms of use

This user manual contains the information to use this towing bar in the best conditions for towing the helicopter H160 of Airbus Helicopters. These instructions are in addition to the usual requirements for helicopter towing.

All uses other than those detailed in this manual will not be able to hold the manufacturer accountable.

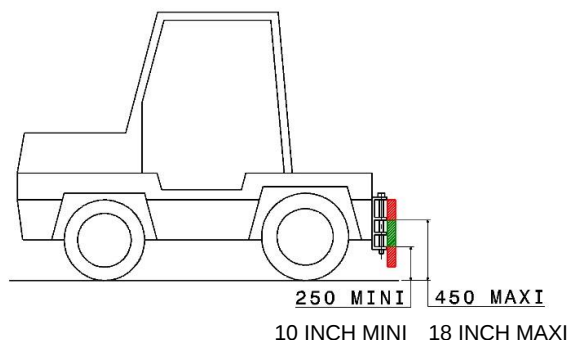
4 Security measure

- ✓ Read this manual carefully.
- ✓ Make sure to always inspect the good appearance of the equipment before use.
- ✓ Only authorized personnel are allowed to use the equipment.
- ✓ Use the adapted individual protection equipment (IPE)
- ✓ Do not use the equipment after having absorbed alcohol, drugs, medication or any substances that could affect safety and the concentration of the operator.
- ✓ Never make any changes on the equipment without the agreement of the manufacturer.
- ✓ Ensure that no foreign element doesn't prevent the good functioning of the equipment.
- ✓ Ensure that the environment is well lit.
- ✓ Adopt a stable and comfortable position for optimal use.
- ✓ Make sure that not authorized persons are not in the work area.
- ✓ Never apply a load or an effort higher than the maximum load authorized on the equipment (cf. CE certification plate)
- ✓ Regular maintenance will prevent any premature damages.
- ✓ Always replace worn or damaged parts by original parts.
- ✓ Make sure to never have apparent deformation.
- ✓ In the event of a fall or significant impact, the bar must be returned for inspection and a thorough revision to the manufacturer.
- ✓ Do not store in a wet or damp environment.
- ✓ Avoid unnecessarily exposing tools to atmospheric agents and the sun which could eventually erase identification tags and markings.
- ✓ The storage will be done in a dry and clean place protected from the elements.
- ✓ The transport or handling of the tow bar is carried out under the responsibility of the user or the transporter.

ATTENTION: All these security measures are added to the rules of procedure of the place where this equipment is used. Noncompliance with these measures be held responsible for the operators.

5 Special security measures

- ✓ Inspect the cable lock system for serviceability before use.
- ✓ Check that the fuses are in good condition due to the lack of movement between the hanging set and the bar set (See §10)
- ✓ Be careful that the towing bar never touch the fuselage when hanging the helicopter.
- ✓ When towing the towing bar without helicopter, never exceed 25 km/h. If necessary, adjust the speed to the state of the ground.
- ✓ Do not tow on public road.
- ✓ To attach the tow bar to the helicopter, it must be unhooked from the tractor
- ✓ To attach the tow bar to the helicopter, the helicopter must be stopped with the brakes locked
- ✓ The attachment of the tow bar to the helicopter can be carried out by only one person
- ✓ The attachment to the tractor must be made at a minimum height of 250 mm (10 inch) and a maximum height of 450 mm (18 inch)
Be careful, however, to adapt the height of attachment to the towing conditions:
 - See usage restrictions §6.3.
 - See the procedure defined in §7.1



- ✓ Towing must be done with at least 2 authorized persons. An operator will be at the controls of the tractor. Another operator will be at the controls of the helicopter and will be ready to brake if there is a problem like a fuse break. Other operators may be needed to secure the move of the helicopter.
- ✓ When towing the helicopter never exceed 10 km/h when moving forward.
- ✓ When towing the helicopter never exceed 5 km/h when moving back.
- ✓ When breaking a fuse, stop towing operations and lock the brake of the helicopter. Detach the tow bar from the tractor and the helicopter and replace the broken fuse.
- ✓ Before using the tow bar, it is necessary to perform the "setting into operation" procedure §7.1

6 Operating context

6.1 Conditions of use

- ✓ The short tow bar H160 has been designed for towing only H160 AIRBUS Helicopters without voluminous options under the nose of the helicopter at the front of the nose landing gear (FLIR, ...)
- ✓ Only trained personnel who are familiar with the safety requirements of tow bar operations could handle the tow bar.

- ✓ The maximum working load (CMU) is given directly on the CE certification plate attached to the towing bar
 - Maximum working load for traction **1720 daN**
 - Maximum working load in turns **1865 Nm**

NOTE: This maximum workload are intend to protect the tow bar or the helicopter during towing (nose landing gear ...). The shock absorber and the fuses present on the tow bar therefore provide protection for the helicopter so as not to exceed these maximum working loads.

6.2 Contraindications

- ✓ This equipment must not be used for any purpose other than that which is dedicated to it, in particular it must not be used for other types of towing
- ✓ Never apply to the tow bar a load greater than the maximum working load (CE certification plate). If this happens, a fuse will break to protect the helicopter.
- ✓ Never use a tow bar that is not in good apparent condition.
- ✓ Never attach to other points of attachment than those provided on the nose landing gear and on the tow bar.
- ✓ Never replace fuses with elements not supplied by the manufacturer
- ✓ The tow bar should never operate without at least one reserve Traction fuse « A » and one reserve Turn fuse « B » on the bar.
- ✓ When the tow bar is locked to the helicopter, do not use the folding handling handle to rotate the helicopter landing nose gear.

7 Commissioning, checking, installation and use

7.1 Commissioning

When using the towing bar at the first time, it is imperative to validate the use of the tow bar with the configuration of the helicopter as well as with the environment of use:

- When hooking and unhooking the bar on the helicopter, check that there is no risk of damaging any equipment on the front of the helicopter.
- Then carry out a towing representative of the future use of the bar (helicopter load, route, etc.) in order to validate the bar for this type of conditions. This validation requires one or more external observers who will be careful to ensure that the bar does not catch either the ground or the helicopter during the entire maneuver.

In case of risk or problem, take appropriate measures:

- hooking up at a different height on the tractor
- land levelling work
- ...

Inform users of potential risks in order to avoid these terms of use.

NOTE: The use of the tow bar remains the responsibility of the user. The manufacturer is not responsible and therefore does not guarantee improper use or improper conditions of use of the tow bar

7.2 Check before use

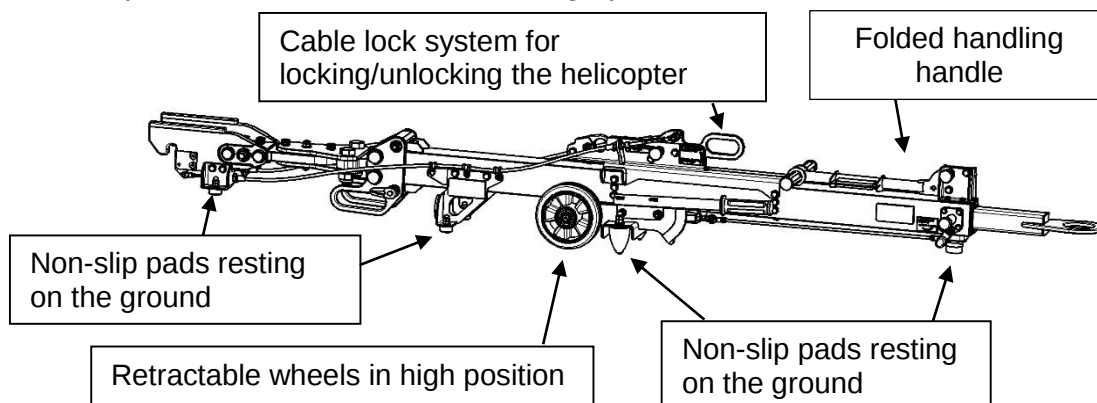
- ✓ Refer to maintenance tasks associated with towing operation
- ✓ Refer to pre-use verification (See §9 et §10)
- ✓ Always inspect the good appearance of the tow bar before and after use.
- ✓ The tow bar must carry its original labelling. If this labelling is no longer visible, the bar must be discarded.
- ✓ Pay special attention when using and handling the tow bar under certain weather conditions: extreme temperatures, rain and humidity. The tow bar can then be slippery or burning and require the use of gloves for handling.
- ✓ Pay particular attention to checking the condition of the tow bar before and after transport, prolonged storage or impact.

Process immediately and in accordance with the regulations in force in the country of use, defects or damages detected and that may affect the safety or the correct functioning of this towing bar.

The manufacturer will not be held responsible in the case of misuse.

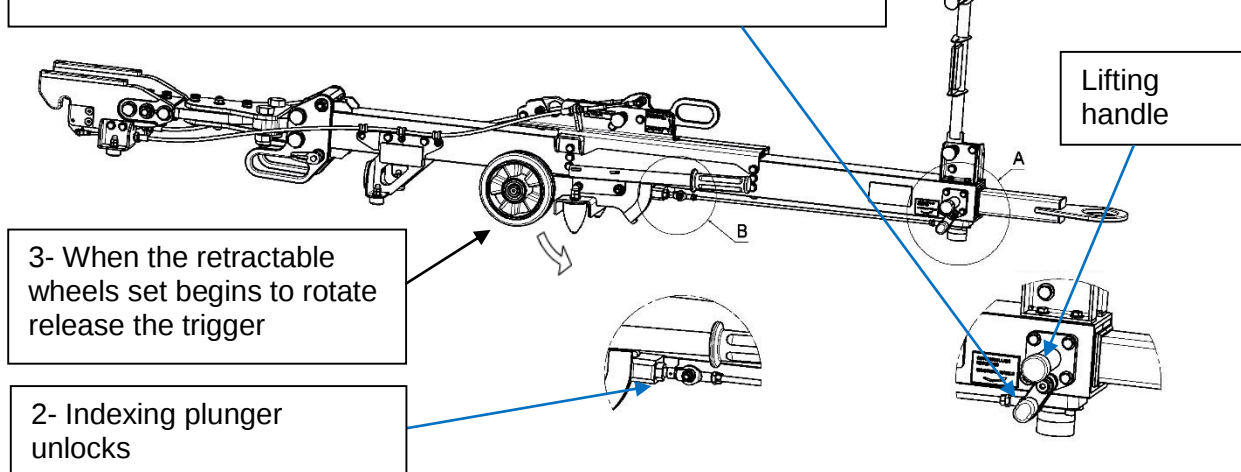
7.3 Installation on the helicopter

- ✓ Step 1 : The tow bar is in the storage position



- ✓ Step 2 : Position retractable wheels set in rolling mode

- 1- Slightly activate the trigger for unlocking the retractable wheels set and lift the front of the tow bar with the lift handle

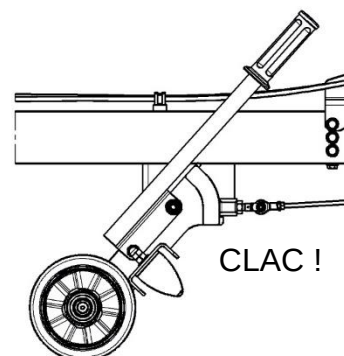
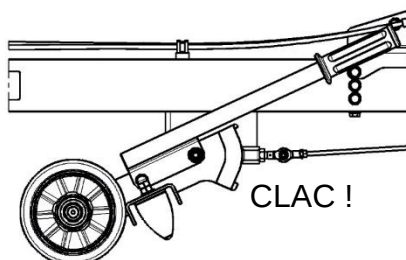
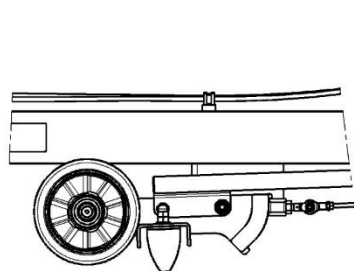


- 4- Lift the front of the bar until the retractable wheels set locks into the desired position

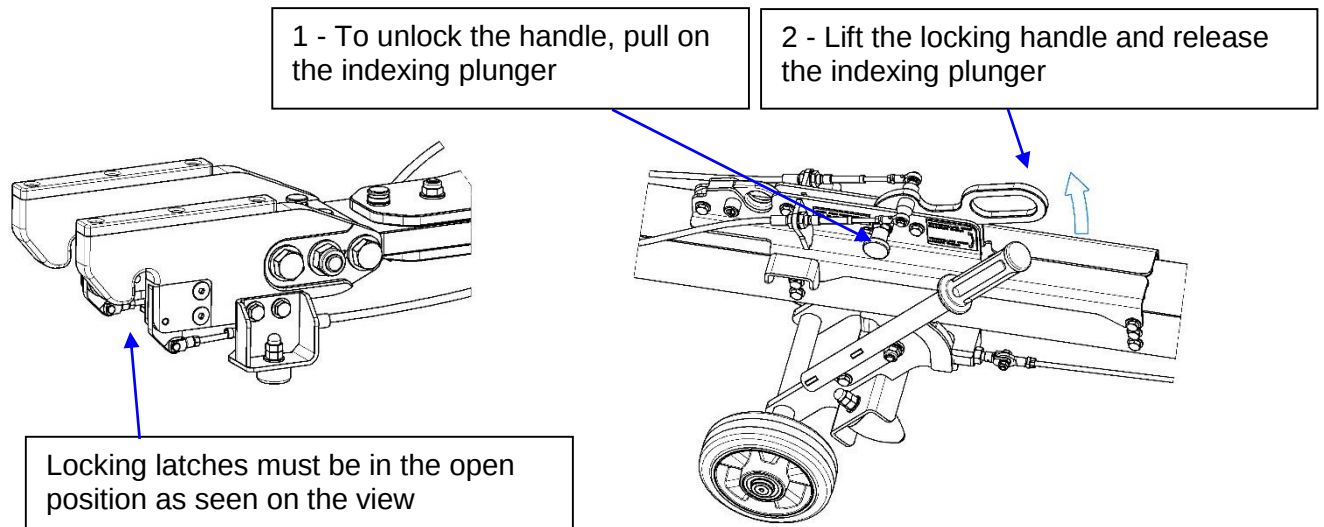
Storage position and towing position with the helicopter

Lowered hooking position

Handling position and rolling position when the bar is towed without the helicopter



✓ Step 3 : Check that the locking handle is raised



✓ Step 4 : Position the tow bar in front of the helicopter

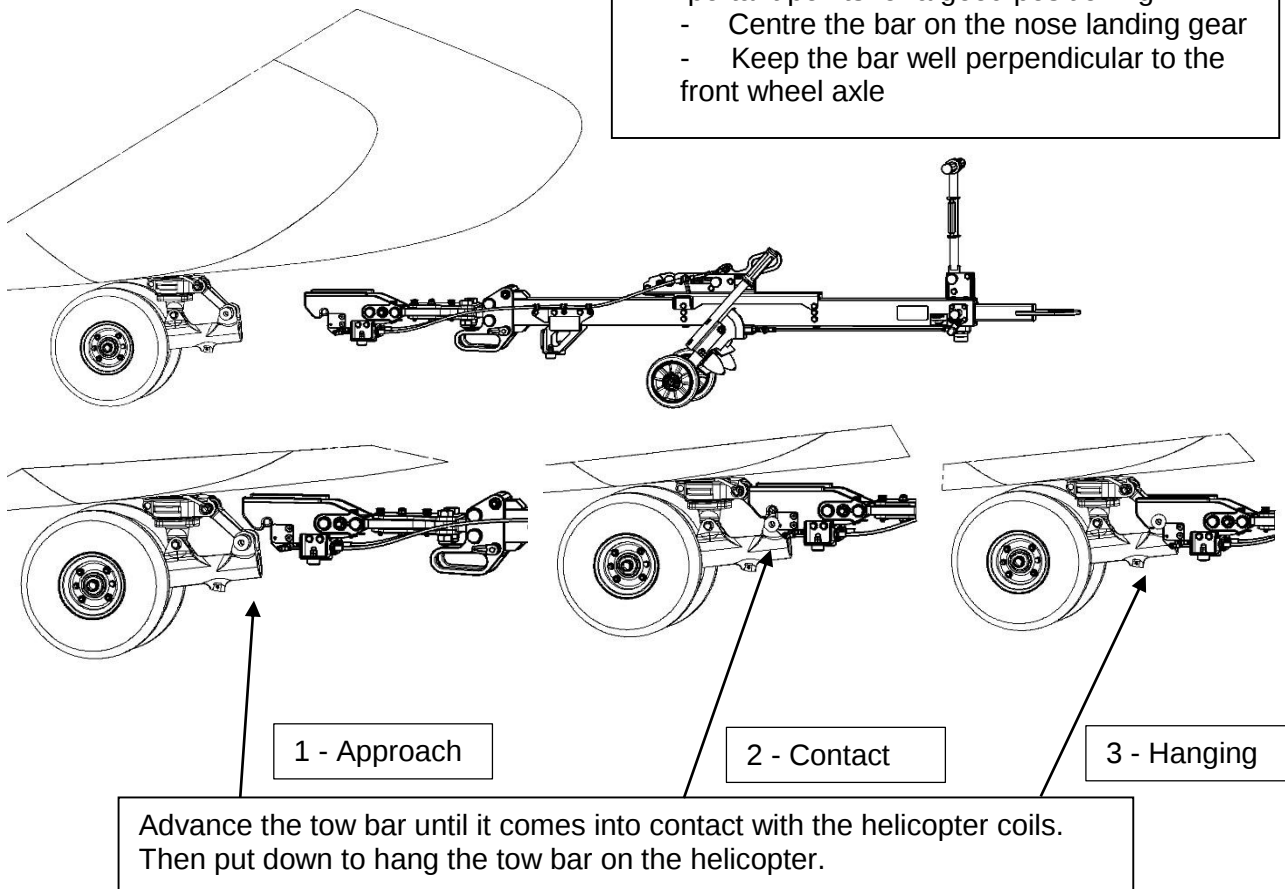
ATTENTION:

Be careful that the tow bar does not touch the fuselage of the helicopter when it is installed.

The correct positioning of the towing bar front of the helicopter is very important. At best the bar is positioned, the easiest is the hanging of the helicopter.

2 important points for a good positioning:

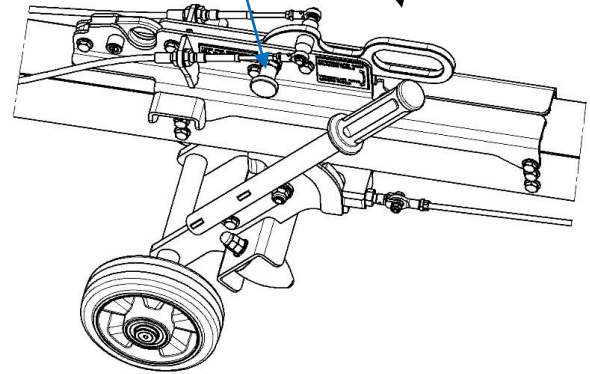
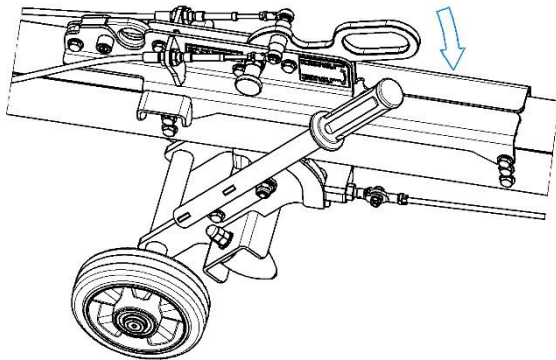
- Centre the bar on the nose landing gear
- Keep the bar well perpendicular to the front wheel axle



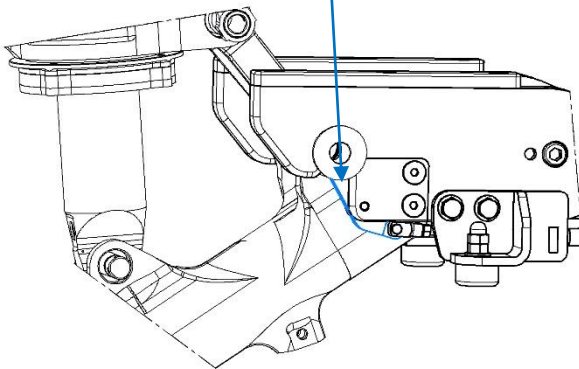
✓ Step 5 : Locking the helicopter

When the tow bar is in position, lower the handle until it locks into the indexing plunger

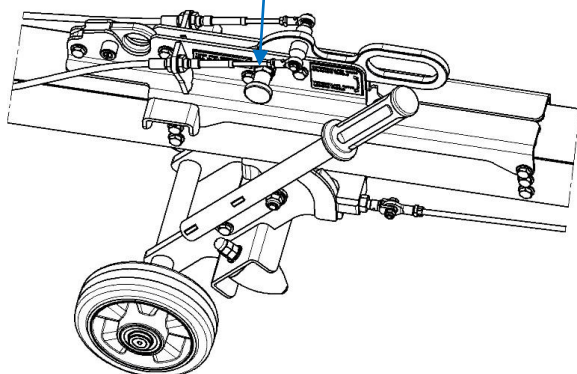
CLAC !



Check that the locking latches are correctly locked

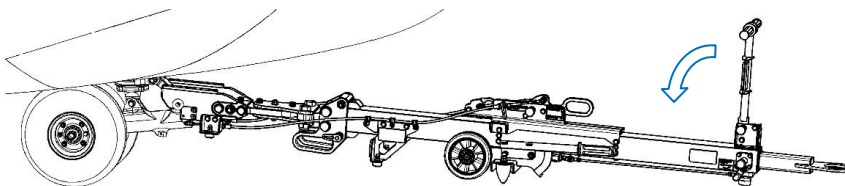


Check that the indexing plunger is locked



Attention!

Before any other handling, check that the tow bar is correctly locked on the helicopter. If it is not properly locked, you will have to perform the previous steps again.

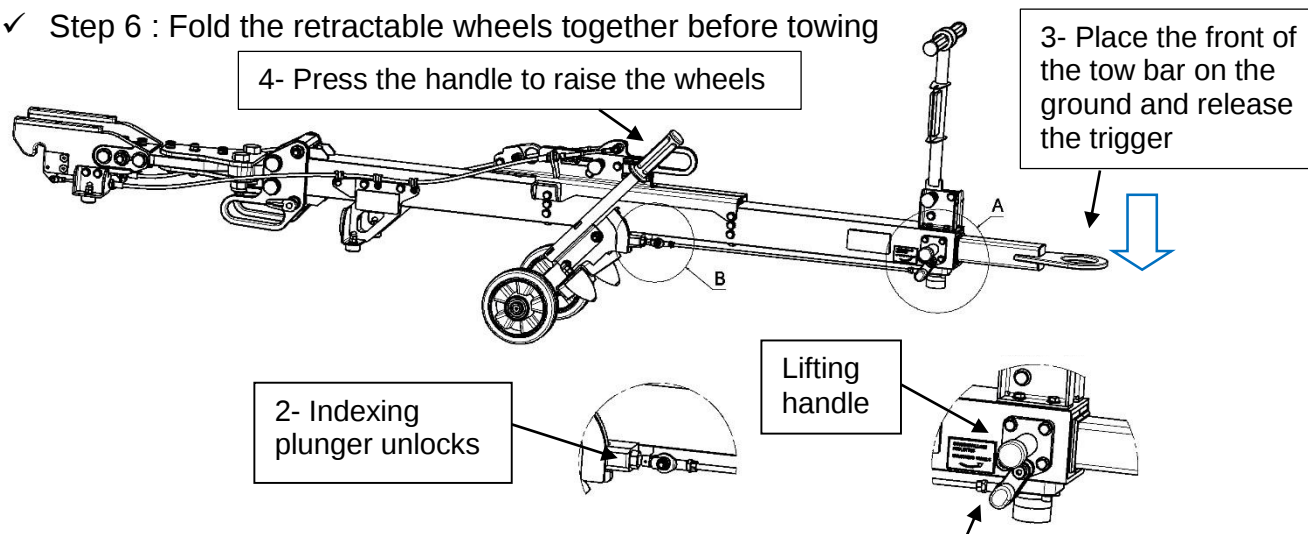


Once the tow bar is locked to the helicopter, fold down the handling handle.

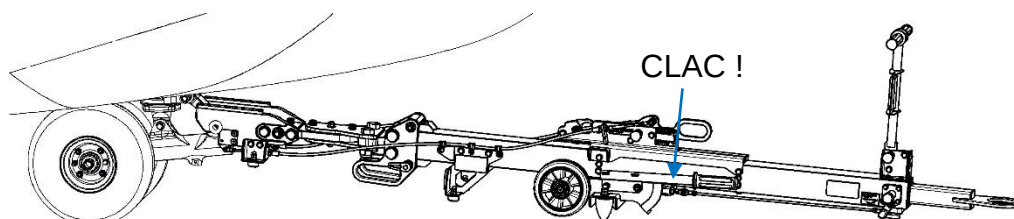
Warning !

Do not use the folding handling handle to rotate the helicopter landing nose gear.

- ✓ Step 6 : Fold the retractable wheels together before towing



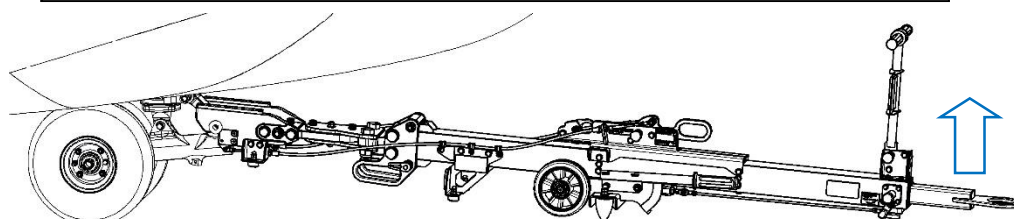
- 1- Slightly activate the trigger for unlocking the retractable wheels set and lift the front of the tow bar slightly with the lift handle



- 5- The bar is ready for towing when the retractable wheels has locked in the raised position

- ✓ Step 7 : Hooking the tow bar on the tractor

- 1- Raise the front of the tow bar to the traction height of the tractor



- 2- Back up the tractor to hang the hook the towing bar

Attention !

- Hook the bar to the tractor at a height validated during the tow bar commissioning procedure (§7.1).
- If the retractable wheels go down, it's because there was a locking problem. Fix the problem before using the bar.

- ✓ Step 8 : the helicopter is ready to be towed

7.4 Towing

- ✓ Towing must be done with at least 2 authorized persons. An operator will be at the controls of the tractor. Another operator will be at the controls of the helicopter
- ✓ Do not go faster than 10 km / h in progress
- ✓ Do not go faster than 5 km / h backwards
- ✓ Operators must be alert to any fuse breakage to stop the towing and secure the helicopter
- ✓ Pay attention to any possible attachment of the helicopter in its environment (main rotor blade, tail boom...). Towing in a restricted environment may require the intervention of several additional operators to secure the move of the helicopter.
- ✓ Attention, when towing the height of the tow bar will vary depending on the configuration of the towing area (bumps, holes, mounted, descents ...):
 - ✓ Take care that the tow bar does not come touching equipment under the nose of the aircraft (risk of damaging the helicopter)
 - ✓ Be careful that the tow bar does not touch on the ground (risk of breakage).

7.5 Dismounting

- ✓ Proceed in the opposite direction of installation at §7.3

8 Work area

8.1 Description of the work area

Means work area, the area covered by the displacement of the towing bar with or without the helicopter.

8.2 Specific training of personnel for the use

- ✓ The tools must be used only by authorized and competent personnel. This personnel must have completed training and should have read and understood this manual.
- ✓ Staff must be able to meet the security requirements that include the maintenance operations with the towing bar.

8.3 Protection of personnel

To ensure the safety of staff during use and maintenance tools, use appropriate personal protective equipment.

8.4 Information on residual risks despite security

Refer to the regulations in force in the country of use.

Refer to the regulations in force at the place of use (airport, heliport...)

9 Various maintenance operations

9.1 General maintenance

The table below is provided by the manufacturer for example. Other remarks can be added.

PERIODICITY	TASKS	OBSERVATIONS	RISK	REQUIRED ACTIONS
BEFORE USE	Visual inspection of good condition	- Deformation, breaks, scratches, corrosion, - Traces of heating and wear - Presence of abnormal play	Mechanical failure Corrosion	- Replace the failed component or do a repair at the manufacturer - Protection anticorrosion, greasing - appropriate storage
BEFORE USE	Visual inspection of good condition	Check the correct operation of the locking system and the retractable wheels set (See §9.2 and §10)	Mechanical failure	- Replace the failed component or do a repair at the manufacturer - Protection anticorrosion, greasing
BEFORE USE	Visual inspection of good condition	Check the presence of reserve fuse on the towing bar	Be on the runway without reserve fuse when a fuse has broken	Always have reserve fuse
DURING USE	Fuse replacement	Breakage of a fuse when towing	Towing impossible	Replace the broken fuse
AFTER USE	Maintenance	- Deformation, breaks, scratches, corrosion ... - Replacement of broken fuses if necessary	Mechanical failure Corrosion	Protection Anticorrosion Appropriate storage
MONTHLY	Maintenance	Check the wear of the fuses	Jolts Mechanical failure	Adjustment Replacement if necessary
	Maintenance	Check the locking system	Failure of cables Abnormal clearance of the axes Indexing plunger does not lock the handle	Adjustment Greasing Replace the failed component if necessary
	Maintenance	Check the retractable wheels set	Failure of the trigger system Abnormal clearance wheel lock	Adjustment Greasing Replace the failed component if necessary
	Maintenance	Check the shock absorber (See §10)	Abnormal clearance Mechanical failure	Replace the failed component if necessary
18 to 36 months	Major maintenance	Shock absorber replacement and general check	Mechanical failure	Replacement of components if necessary

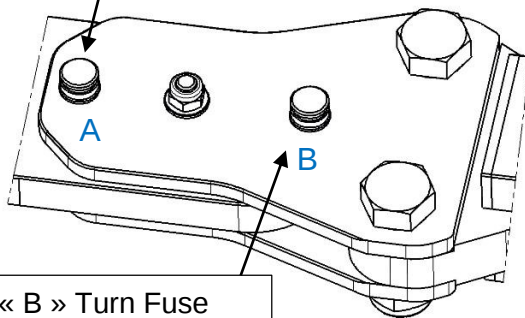
Comply with the legislation in force in the country of use of the equipment as well as with the user's own rules of procedure regarding maintenance operations.

9.2 Specific maintenance

- ✓ Before carrying out maintenance, refer to the assembly diagrams and the general nomenclature §11.

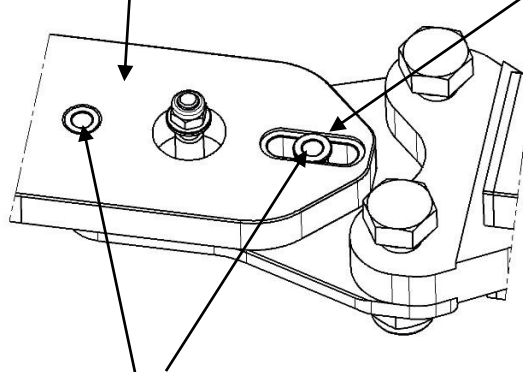
- ✓ Replacement of the fuses

« A » Traction/Braking Fuse



« B » Turn Fuse

View without upper plate

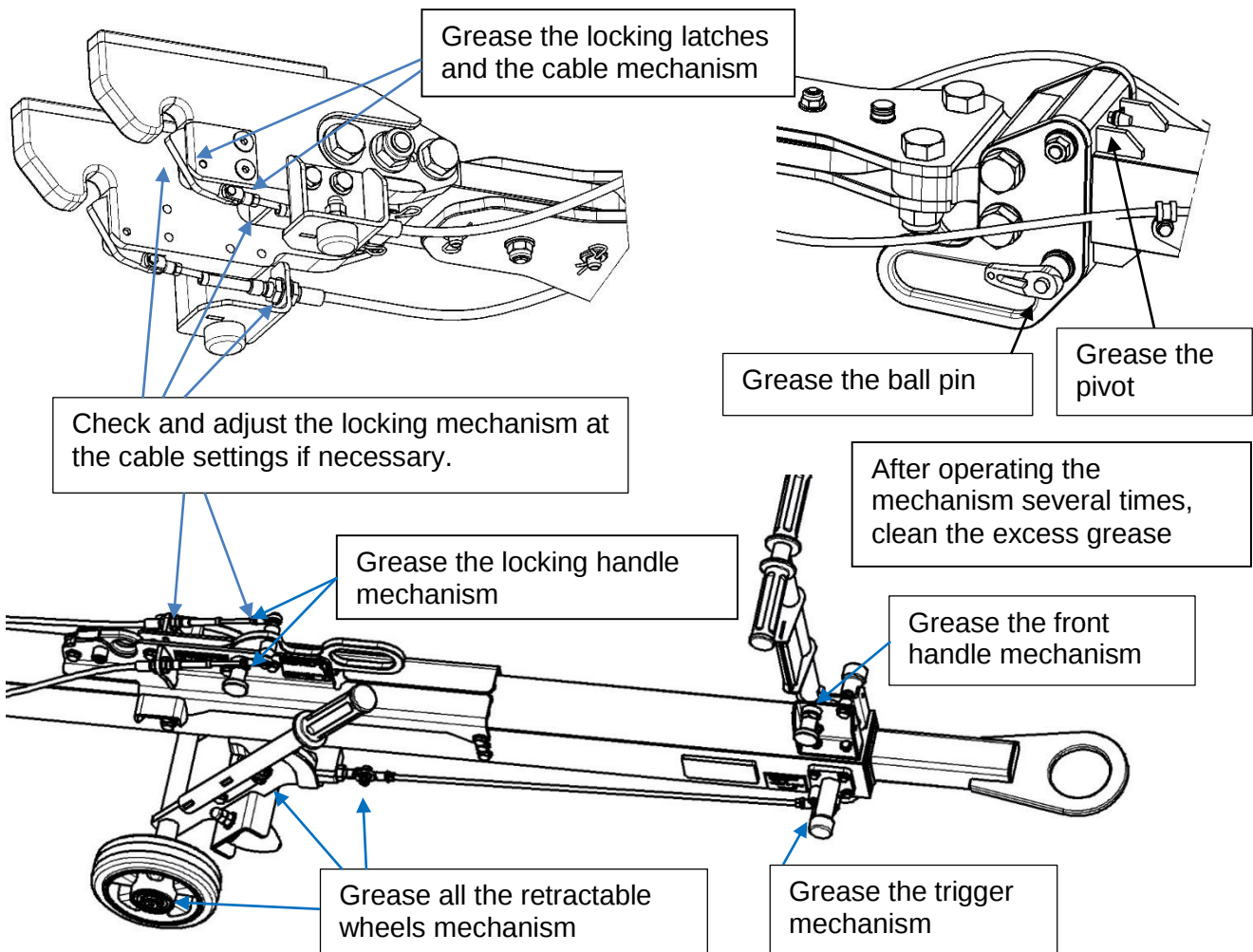


Take care to align the fuse socket correctly before fitting a new fuse

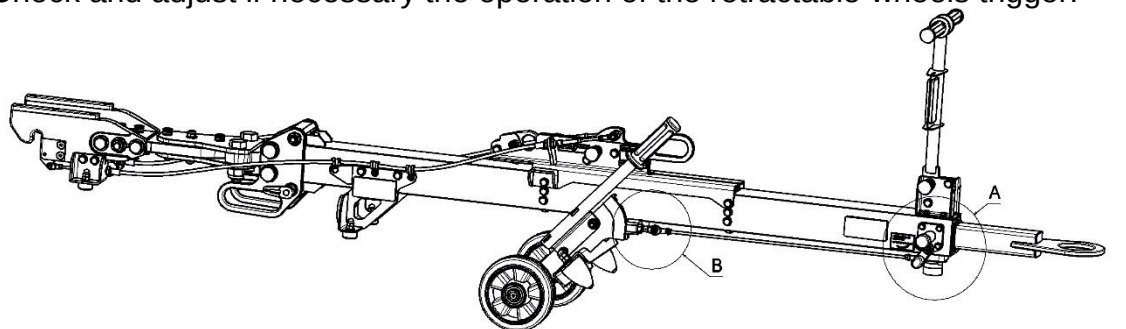
Attention, when a fuse breaks, the 3 broken pieces must be recovered

When a fuse breaks, check that the 3rd piece of fuse does not remain in the sockets

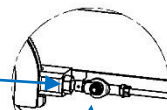
- ✓ Inspection and lubrication of the different assemblies of the towing bar and adjustment of the locking mechanism if necessary



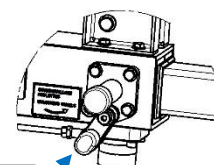
- ✓ Check and adjust if necessary the operation of the retractable wheels trigger:



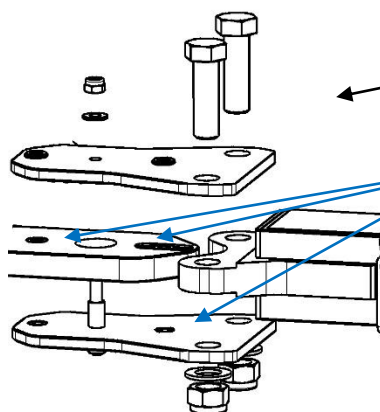
Grease the indexing plunger



The adjustment is done with the nut on the command rod



- ✓ Adjusting and grease the fuse system (to be done at least once a year)



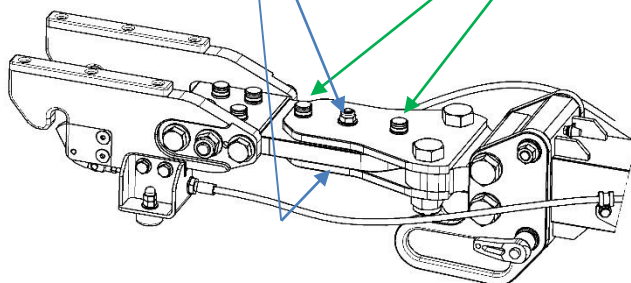
1- Remove the 2 fuses and the 3 screws to clean the connection between the 3 plates as well as the socket of the turn fuse

2- Grease the bearing faces between the plates and the socket of the turn fuse

3- Reassemble the set
Change the screw and the nut if necessary with CL8.8 zinc plated minimum
Tightening torque M22 Screw: 300 Nm

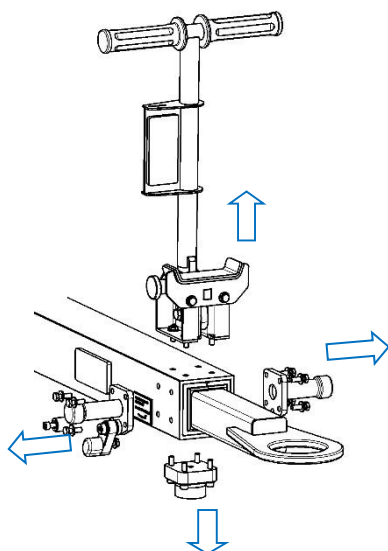
4- Tighten or loosen the M10 nuts so:
- That there is no gap between the front of the bar and the rear U.
- That the rear U must however be able to slide in the front part without too much effort

5- Grease and Reassemble the 2 fuses.
Be sure that the fuses are in good position
Replace fuses if necessary

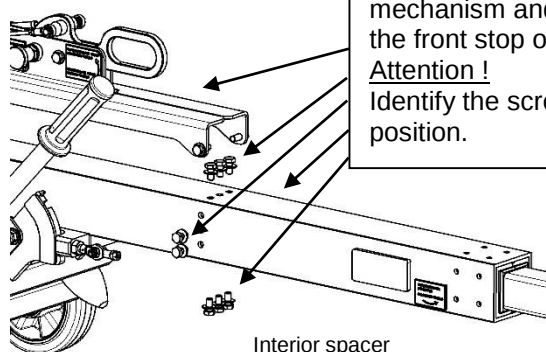


✓ Repair of the shock absorber and guide rails (major maintenance):

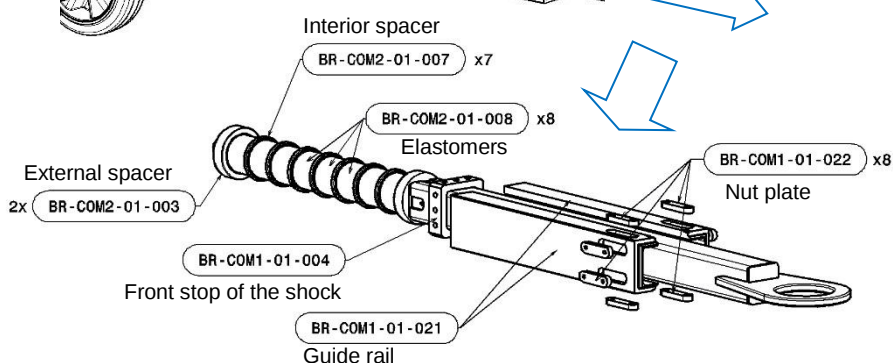
1. Remove the 2 side handles, the handling handle and the protective rubber



2. Remove the locking handle mechanism and the 12 screws from the front stop of the shock absorber
Attention !
Identify the screws lengths and their position.

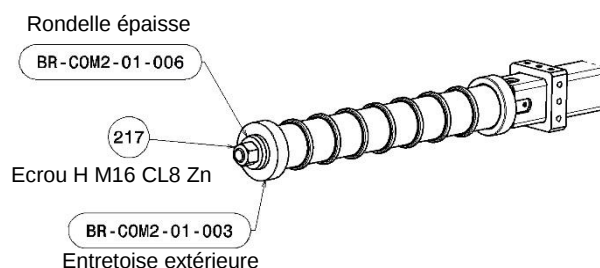


3. Take out the shock absorber



4. Remove the nut Item.217 then replace all the components of the shock absorber

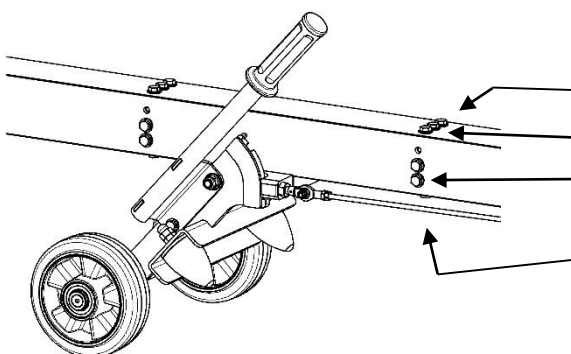
5. Reassemble the spacers, the elastomers, the thick washer and the nut identically.
Attention !
Use medium strength thread locking adhesive for the nut Item.217 (LOCTITE 243)
Tightening torque: 150 Nm



6. Reassemble the shock absorber in the main tube with the guide rail BR-COM1-01-021 and the nut plate BR-COM1-01-022

Note:

Use one or more M8 L8 grub screws to hold in position the front stop of the shock absorber (BR-COM1-01-004) in its mounting position for the step 7. Once in position remove the grub screw(s).



7. Reassemble the 10 screws of the front stop of the shock absorber (Screw H M8 16 CL8.8 Zn)

Attention !

Screws have different lengths

The position marked during disassembly must be observed. Poor positioning can cause serious damage.

Attention !

Don't forget the washers. Forgetting a washer can cause serious damage.

Attention !

Use medium strength thread locking adhesive for the screws (LOCTITE 243)

Tightening torque: 23 Nm

8. Reassemble the locking handle mechanism with its 4 screws H M8 20 CL8.8 Zn

Attention !

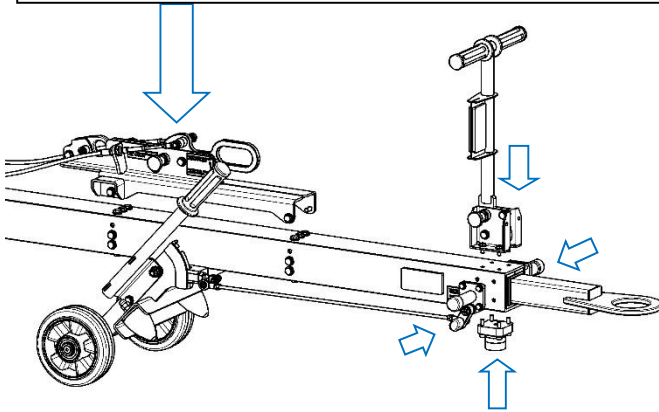
Respect the length of the screw. Wrong screw length can cause serious damage.

Attention !

Don't forget the washers. Forgetting a washer can cause serious damage. (Zn Washer)

Attention !

Use medium strength thread locking adhesive for the screws (LOCTITE 243) + Tightening torque: 23 Nm



9. Reassemble the 2 side handles, the handling handle and the protective rubber

Attention !

M6 screws (CL8.8 + Zn) have different lengths. The position marked during disassembly must be observed. Don't forget the washers. A mounting error can cause serious damage.

Attention !

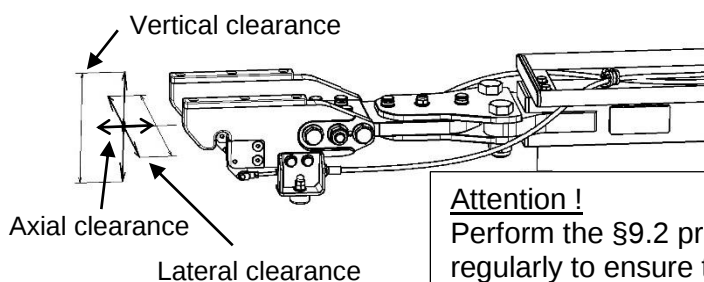
Use medium strength thread locking adhesive for the screws (LOCTITE 243)

Tightening torque: 9 Nm

- ✓ Imperatively rinse tooling after use in saline atmospheric environment (use on ship).
- ✓ After use in a sandy environment clean the tow bar by blowing

10 Failure detection and reparation

- ✓ The towing bar must be rejected if it presents :
 - Breakthrough primers
 - Excessive corrosion
 - An elongation or a deformation compared to the original dimensions.
 - One of the components is damaged.
- ✓ The client will draw up a logbook mentioning :
 - The detail of the inspection results and the reparation
 - The name and function of the interveners
 - The dates of the interventions
- ✓ This logbook will use the data in the "9 - Various operations maintenance" section of this manual.
- ✓ Checking the fuse system



Attention !

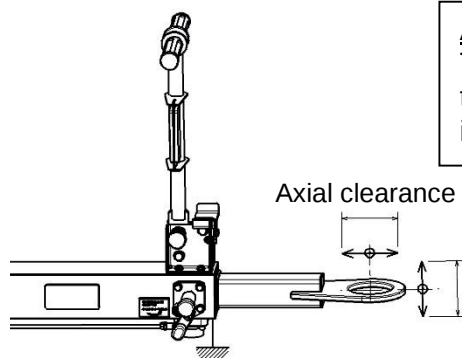
The measurement is carried out by blocking the main body of the bar and manually actuating the rear fitting (F = 5 à 10 daN) in one direction then in the other.

Attention !

Perform the §9.2 procedure "Adjusting and grease the fuse system" regularly to ensure the proper functioning of the assembly.

- If there is a vertical clearance, adjust the operating clearance on the fuse system (§9.2)

- If there is axial or lateral clearance, check that the fuses are in good condition and replace them if necessary.
- If abnormal clearance persists after adjustment, send the tow bar to the manufacturer for an inspection.
- ✓ Checking the shock absorber :
 - Measure the axial clearance of the shock absorber, when the clearance exceeds 10 mm, it is necessary to repair the shock absorber (Ref.BR-COM2-02-K02).
 - Measure the radial clearance (vertical and lateral) of the shock absorber, when the clearance exceeds 3 mm, it is necessary to replace the 2 guide rails (Ref.BR-COM2-03-K03).



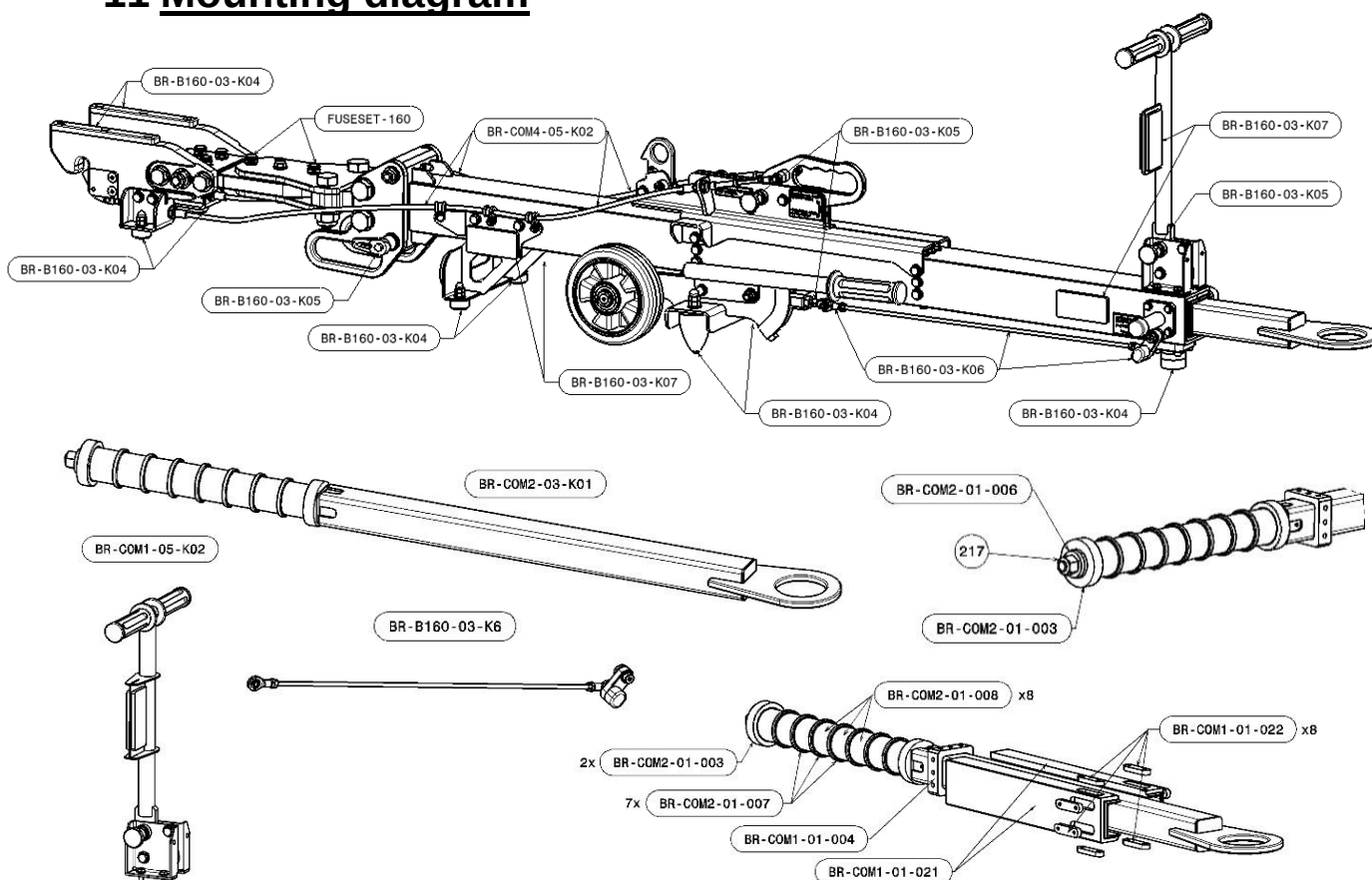
Attention !

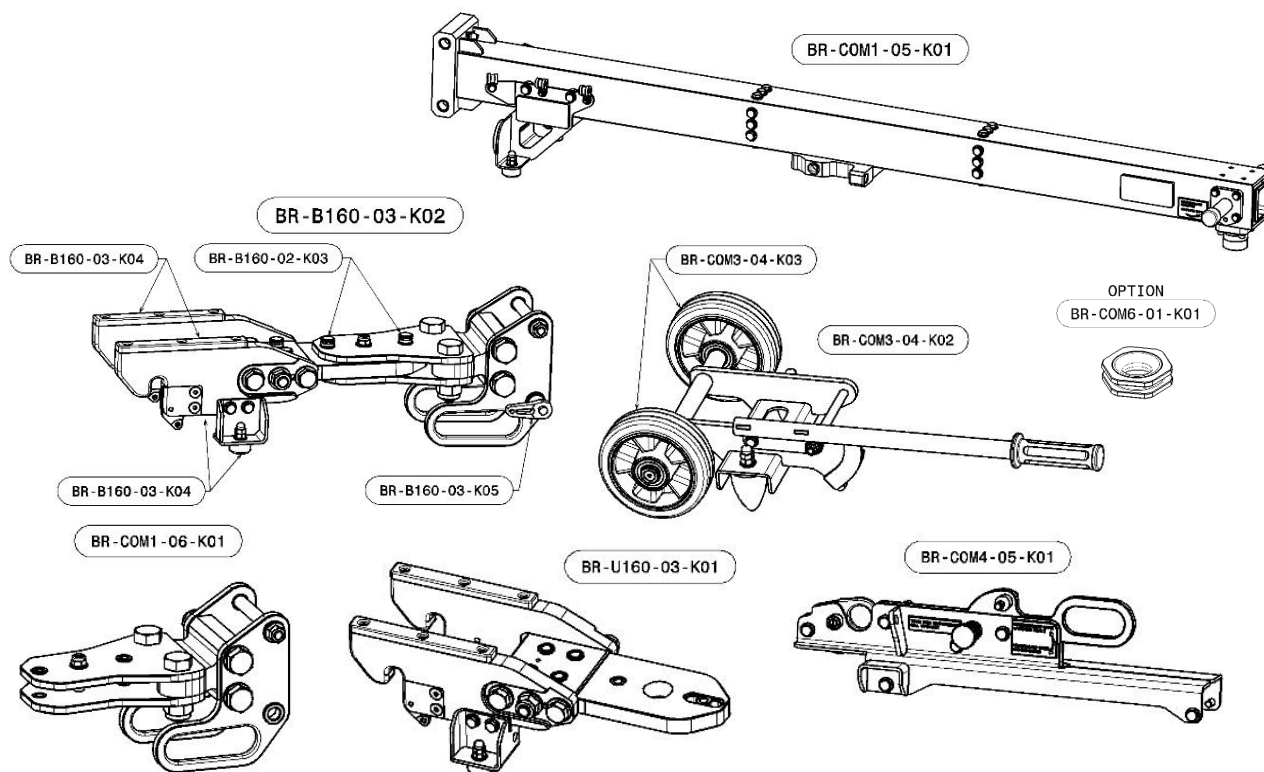
The measurement is carried out by blocking the main body of the bar and manually actuating the towing ring ($F = 2 \text{ à } 3 \text{ daN}$) in one direction then the other.

Attention !

After using the tow bar, wait one hour before carrying out a clearance measurement.

11 Mounting diagram





Reference	Designation
BR-B160-03-K01	Complete front assembly
BR-B160-03-K02	Complete rear assembly
FUSESET-160	Fuses Kit (10 tractions A + 10 turns B)
BR-B160-03-K04	Rubber Kit (9 pieces)
BR-B160-03-K05	3 indexing plungers and 2 ball lock pins kit
BR-B160-03-K06	Castor linkage kit
BR-B160-03-K07	Visibility Kit (6 pieces)
BR-COM1-05-K01	Front structure assembly
BR-COM1-05-K02	Folding front handle assembly
BR-COM2-03-K01	Drawbar assembly with shock absorber
BR-COM2-03-K02	Shock absorber Kit (8x BR-COM2-01-008 + 2x BR-COM2-01-003 + 7x BR-COM2-01-007 + BR-COM2-01-006 + 217)
BR-COM2-03-K03	Guide rails Kit (2x BR-COM1-01-021)
BR-COM3-04-K02	Roller assembly
BR-COM3-04-K03	Wheels kit (2 wheels)
BR-COM1-06-K01	Rear structure assembly
BR-COM4-05-K01	Locking handle assembly
BR-COM4-05-K02	Locking cables kit (2 cables with end caps)
BR-U160-03-K01	Hanging assembly
Option	
BR-COM6-01-K01	Hanging ring reduction bush Ø76mm → Ø42mm

12 Spare parts

- ✓ Each spare parts must be ordered from the manufacturer or with the agreement of the manufacturer.
- ✓ Before any dismantling of spare parts refer to the maintenance manual.

N°DOCUMENT BR-B160-03-B - NIA

INDICE E

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MPEB, 9-11 Bd de la Capelane, 13170 Les Pennes Mirabeau, France TEL. : +33(4) 42 02 96 74 - WEB. : www.lledo-industries.com -

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- ✓ Refer to the general nomenclature of the maintenance manual to find the parts reference.
- ✓ Fuses must be changed as soon as they are damaged. The tow bar should never operate without at least one reserve fuse on the bar.
- ✓ Do not reverse A and B fuses
- ✓ Always use original fuses
- ✓ Always have a low clearance in the shock absorber (see §10). If the clearance becomes too great, initiate major maintenance to replace the guide rails or repair the shock absorber.
- ✓ Always have a lack of clearance and a good condition of the bushings.
- ✓ Always have a lack of clearance and a good condition of the cables. Replaced them if necessary.
- ✓ The tow bar must carry its original labelling. If this labelling is no longer visible, it must be changed by new original labels. Contact the manufacturer.
- ✓ Always have a lack of clearance and a good condition of the screws. Replaced them if necessary.
- ✓ Use medium strength thread locking adhesive (LOCTITE 243) to secure and seal screws and nuts.
- ✓ Tighten the screws to the torque indicated on this manual.
- ✓ Any repair of the tow bar, whatever the method is strongly discouraged. Return the tow bar for repair to the manufacturer.

13 In case of incident

In the event of an incident, it is necessary to refer to the competent rescue organizations of the country of use.

14 Limitations of liability

The liability, both civil and criminal of the company MPEB, can in no way be sought by the user, following any bodily injury or material damage that may occur due to:

- A problem with missing maintenance, poor maintenance or major maintenance that is not carried out by MPEB or a person authorized by MPEB.
- Improper use or use not in accordance with the intended use of the product.
- Use that does not comply with this manual
- A problem that arose while transporting the tow bar.
- Loss of control or improper maneuvering when moving the helicopter.
- Use that does not comply with the regulations in force in the country of use.

15 Warranty

We take a particular care to select high-quality materials and to use manufacturing techniques that allow us to create and manufacture products that are ergonomic, robust and durable over time.

LLEDO AERO-TOOLS tow bar benefit from a 1-year manufacturer's warranty on parts and labor covering manufacturing defects from the date of purchase or the date of delivery for use in accordance with these instructions, operating and maintenance manual.

If the tow bar is defective, we undertake to repair or replace it within a reasonable time.

To file a claim under this warranty, you must provide proof of purchase of the new tow bar from an authorized reseller or delivery as an on-board package with your helicopter. The warranty does not apply to use products.

Any replacement product provided under this warranty will only be warranted until the expiration of the original warranty period.

This guarantee covers failures and malfunctions of the tow bar, provided that the tow bar has been used in accordance with these instructions, operating and maintenance manual.

This 1 year warranty does not cover defects and damage caused by:

- Normal wear and tear,
- Damage that may result from improper use,
- Negligence, accident or misuse,
- A modification of the tow bar unless otherwise indicated by the manufacturer.

This warranty does not cover defects or damage caused by or resulting from:

- Cut antiskid rubber pad or wheel elastomer,
- Tire antiskid rubber pad or wheel elastomer,
- Repair attempted by someone other than an authorized service provider,
- Replacement of original parts with parts that do not come from the manufacturer,
- Accidental damage or modifications,
- Failure to follow the manufacturer's instructions.

For shipping Aero-tools products back, safety and regulatory standards must be followed by the customer when shipping products to LLEDO AEROTOOLS. Damage to products resulting from inappropriate packaging or identification is the responsibility of the customer.

Returns must be clearly identified on the outside of the package with:

- The Return Material Authorization (RMA) number
- The content of the shipment
- The serial number of the tow bar

Upon receipt, LLEDO AEROTOOLS will evaluate the product and inform the customer of the final disposition of the product with regard to warranty.

The following different cases may result in costs payable by the customer:

- Tow bar assessed in good condition after inspection and tests.
- Replacement of worn or damaged parts not covered by this warranty.

As part of the warranty, return costs are the responsibility of LLEDO AEROTOOLS. Shipping costs to the manufacturer will remain the responsibility of the customer.

Return details:

MPEB - LLEDO AEROTOOLS
9 – 11, Boulevard de la Capelane
13170 Les Pennes Mirabeau
France

Phone : 00 33 4 42 02 96 74

Mail : contact@lledo-aerotools.com



MPEB

9-11 Boulevard de la capelane
13170 Les Pennes Mirabeau
France

**DECLARE QUE LA MACHINE DESIGNEE CI-DESSOUS
DECLARES THAT THE MACHINE DESCRIBED BELOW**

Désignation : **BARRE DE REMORQUAGE COURTE H160**
Designation : **SHORT TOW BAR H160**
Référence : **BR-B160-03-B**
Part Number :

Numéro de série :
Serial Number :

Date de fabrication :
Manufacture date :

CMU Traction / Virage: **1720 daN / 1865 Nm**
Max. Working load
Traction / Turning:

EST CONFORME AUX DISPOSITIONS DE LA (DES) DIRECTIVE (S) :
CONFORMS TO THE REQUIREMENTS OF THE:
DIRECTIVE 2006/42/CE



EST CONFORME AUX DISPOSITIONS DE LA (DES) NORMES (S)
CONFORMS TO THE REQUIREMENTS OF THE SPECIFICATION (S):
ISO 9667:2016

A ETE EPROUVE PAR UN ESSAI EN CHARGE DE TYPE A 1,5x CMU PENDANT 15 MINUTES ET N'A SUBIT
AUCUNE DEFORMATION PERMANENTE
HAS BEEN TESTED BY A TYPE LOAD TEST AT 1,5x MAXIMUM WORKING LOAD FOR 15 MINUTES AND
HAS NOT UNDERGONE ANY PERMANENT DEFORMATION

Fait à (lieu) : **LES PENNES MIRABEAU - FRANCE**

Le (date) : 12/05/2022

Nom et fonction du signataire : G. LLEDO, *General Director*

Signature :