

OPERATION & MAINTENANCE INSTRUCTIONS



Model **HYDRAULIC RAIL TENSIONER**
Type **TH 70 VLA**

GB

Code : H109120_0816

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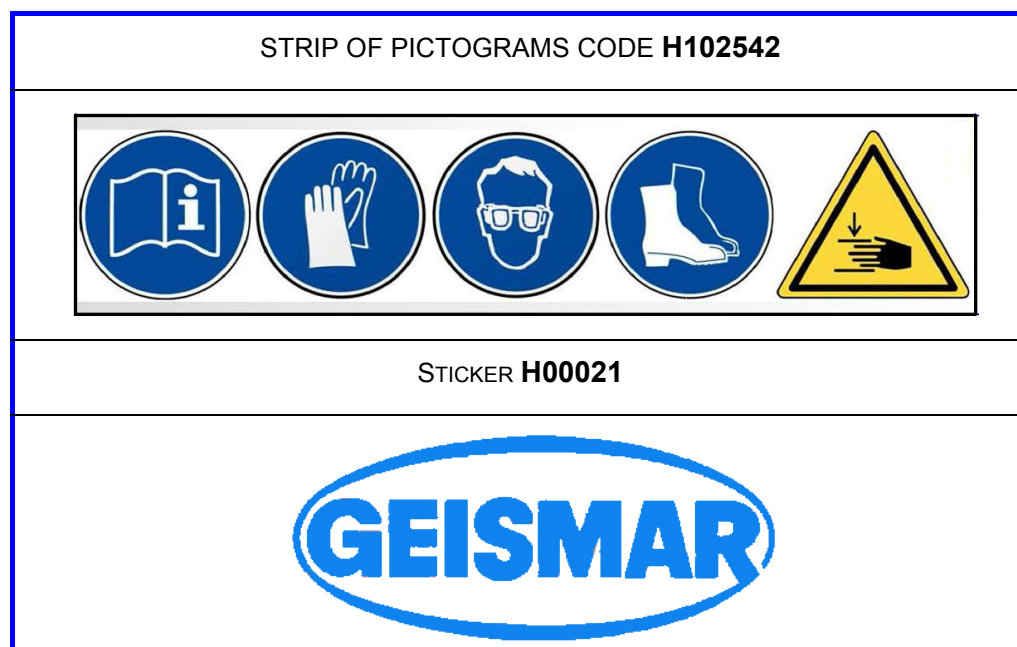
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Tensor Marking





Warnings

THE MANUFACTURER WILL ACCEPT NO LIABILITY IN THE FOLLOWING CASES

- Improper machine use, contrary to the instructions given in the operation and maintenance manual.
- Failure to comply with the periodical checking requirements stipulated by the manufacturer.
- Use by unauthorised persons and/or persons lacking the requisite professional skills.
- Consequences resulting from a misunderstanding of the operation and maintenance manual by the user.
- Failure to comply with the maintenance rules specified herein.
- Modifications or repairs not authorised by the manufacturer
- Use of spare parts whose quality and reliability do not match those of parts supplied by the manufacturer
- Use of lubricants, fuels and consumables different from those recommended in this maintenance manual.
- Exceptional or unforeseeable events.

USE OF THE OPERATION AND MAINTENANCE MANUAL

- The operation and maintenance manual is intended for heads of operations and staff in charge of servicing the machine as well as all workers having to carry out repairs. Their attention is drawn in particular to the chapters dealing with safety at work.
- The operation and maintenance manual provides the necessary information for correct use of the work equipment as intended by the manufacturer.
- The manual provides operation and maintenance instructions for the work equipment. It does not exempt the staff using the equipment from a proper training.
- The operation and maintenance manual is an integral part of the work equipment. It must be kept until the decommissioning of the machine.
- The operating and maintenance manual must be kept in a safe place inside the control station in order to always be at hand when needed.
- In case of loss or destruction of this manual, the user is bound to order a copy from the manufacturer.
- Users may ask the manufacturer to provide additional information and supplement the operation and maintenance manual in their possession with updates. Once provided, these items will become integral part of the operation and maintenance manual.
- If the work equipment is transferred, the user is requested to inform the manufacturer of the new owner's details.
- The user is required to deliver this operation and maintenance manual with the work equipment to the new owner.

In order to ensure permanent compliance with the legislation in force, the manufacturer reserves the right to make improvements to the work equipment and to the operating and maintenance manual without having to update previous editions.

Non contractual photographs illustrations



Dear customer,

Thank you for purchasing this equipment which has been manufactured by the **GEISMAR** group of companies.

We trust your confidence in us is rewarded and that you are completely satisfied with the equipment.

In order to guarantee the quality of its products and in accordance with its commitment to respect the Quality Assurance Procedures ISO 9001, the **GEISMAR** group tests all its products.

If the machine that you have just received is fitted with an hour meter which already displays a number of operating hours, this is due to all the tests and trials which have been carried out prior to its delivery.

Please pay detailed attention to the recommendations contained in this document.

To ensure this equipment continues to provide satisfaction care should be taken to use and maintain it in accordance with the instructions in this manual.

GEISMAR draws your attention to these essential points

- Respect the maintenance periods and use the lubricants recommended
- Use only original parts and do not make any modifications

Failure to do so may affect your warranty rights.

Furthermore, **modification of the machine without our written authorization** could result in the loss of conformity with the relevant standards.

The Group "**GEISMAR**" reminds you that accuracy in ordering of spare parts will enable prompt supply, and consequently ensure the productivity of your equipment.

Our equipment is designed and manufactured in accordance with the latest advanced techniques, and should provide you with the services that you expect.

We remain fully at your disposal.

Société des Anciens Établissements L. GEISMAR

Chapter 1 – Safety

1 – 1 Foreword

The official regulations applied in the user country take priority over the safety regulations and usages described in this chapter. It is up to the person in charge of the equipment to make sure that these instructions are in line with legislation.

The "customer" safety manager will complete these instructions with any safety regulations he judges to be useful in application.

Respecting these regulations will ensure the safety of personnel and property during operations using the equipment. Three types of pictogram are provided to draw your particular attention to specific points:

This symbol identifies a potentially hazardous situation which could have serious or even fatal consequences if the precautions given are not respected.



This pictogram identifies a situation which can lead to personal accident if the precautions given are not taken.



This pictogram is a reminder of safety practices or warns of the consequences that carelessness during an intervention can generate.



Everyone concerned with using, maintaining, storing or keeping this working equipment must be familiar with these rules.

Any user who is the cause of an accident due to failure to respect these rules, will be held fully responsible.

This manual is designed for users and maintenance personnel. It may include details of the various options available. The notes and illustrations provided in this manual may show details and accessories which differ from your equipment.

Indeed, the basic characteristics may be identical, but **GEISMAR** reserves the right to make improvements.

Please contact **GEISMAR** for further information about your equipment working or this manual. For orders of spare parts, requests for information or intervention, please provide the type reference, code and serial number of your equipment.

This information is on the manufacturer's plate. It must be kept legible.

1 – 2 Warning

Before using the working equipment, including maintenance, please read this operating and maintenance manual and its appendices and current workplace safety regulations. You must have the training, skills and tools required to use, maintain and repair this working equipment properly.

General site safety regulations provided by the site manager, must be followed scrupulously, particularly if work is taking place without halting traffic.

The technical documentation and instructions of this equipment will complete the knowledge acquired during training courses. But they can in no way replace theoretical and practical training for a qualification, provided in accordance with professional regulations.

If the company is unable to provide this training adequately for its personnel, The **GEISMAR** Group is ready to provide any support required concerning this training programme. Training

must include explanations of the various working equipment functions, operating and maintenance instructions and safety regulations to be respected, as well as practical exercises.

1 – 3 General safety regulations

The working equipment must be used under normal conditions and must be properly maintained.

We recommend a period of familiarisation with the working equipment before using it operationally.

Do not use the equipment before you are sure of being able to do so under optimal safety conditions.

If in doubt, whether concerning the working equipment or the work to be carried out, ask a qualified person.

Never use the working equipment for any purpose other than that for which it is intended. To prevent any risk of accident or injury, you must wear the clothing or Personal Protective Equipment which meets current safety standards applied in the workplace (see "Marking" chapter).

Do not touch moving parts directly or indirectly as long as the working equipment has not been decommissioned or is in a non-hazardous configuration.

Risk of crushing or shear from all the moving parts of this equipment.

The working equipment must be cleaned regularly. All traces of excess liquid or grease must be removed.

All markings must remain legible and present on the working equipment. Replace any illegible, damaged or missing pictograms.

IMPLEMENTATION / MAINTENANCE / INTERVENTIONS

Maintenance operations must be carried out by qualified personnel who are familiar with the safety regulations applied to the operations concerned.

Draw up an inspection schedule and record all maintenance operations.

Replace any damaged or worn parts.

Never modify the working equipment without a study and the manufacturer's written authorisation.

DURING OPERATION

Know the working area and its particularities; only authorized persons may enter this area.

Respect the general and particular safety regulations applicable to the working area and maintain constant safety vigilance throughout all phases of the operations.

Be familiar with the intervention plans in the event of an incident or accident and the prevention instructions to be respected during different manoeuvres.

Never use equipment in poor condition (wear, deformation...).

In the event of abnormal behaviour, inform the competent personnel.

Never use the equipment to carry people.

Never neutralise the safety devices or limiting equipment.

Make sure that nobody is within the working equipment work zone.

Do not park the machine on a track section with slope.

The track clearance profile must be large enough for the equipment

Traffic routes must be maintained in adequate condition for the working equipment to move around without risk.

Use this working equipment only when visibility conditions make it easy to see the areas in which people are moving and working.

Unless otherwise indicated, this working equipment is not equipped with a lightning protector, so do not use it when meteorological conditions are adverse.

FOLLOWING A PROLONGED PERIOD OF NON-USE OR DURING A PERIODIC INSPECTION

Check tightness and connections between assembly components.

If deformation or abnormal wear is noted, the parts must be replaced.

Chapter 2 – Presentation

2 – 1 General presentation

Manufacturer

Société des Anciens Établissements L. GEISMAR

Boite Postale 50327

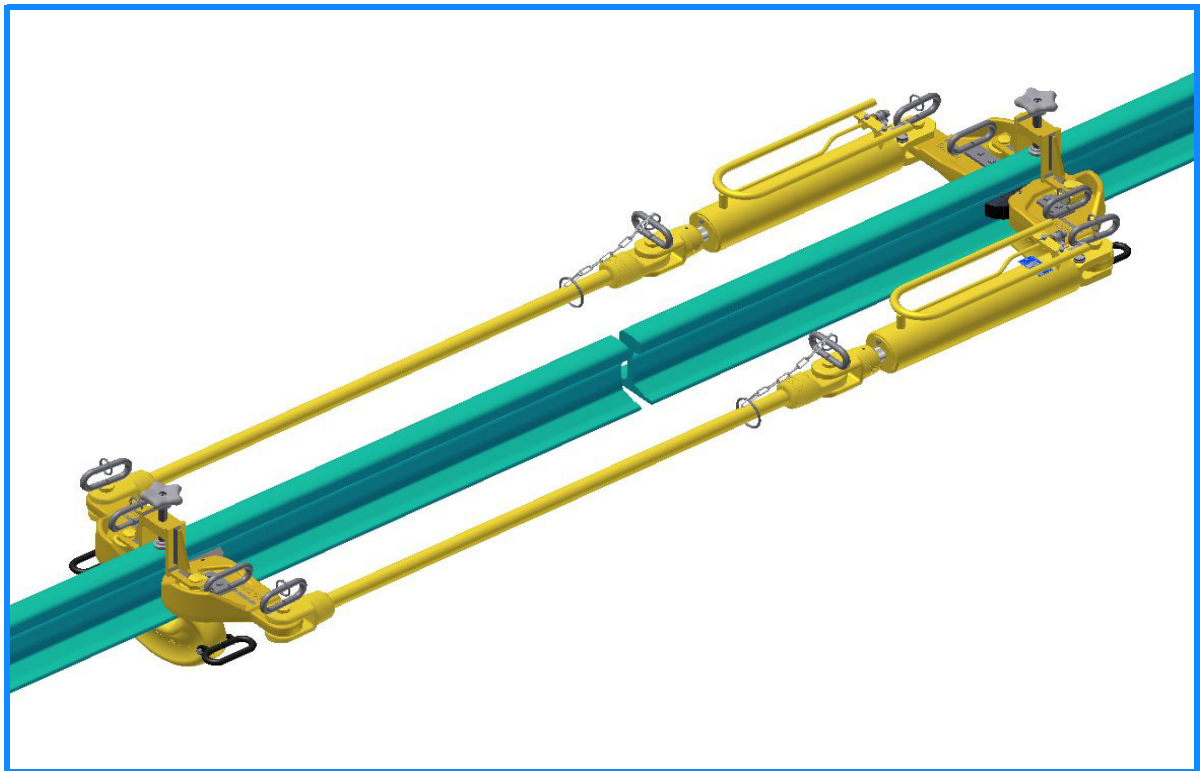
5. rue d'Altkirch

68006 COLMAR CEDEX FRANCE

Description of equipment

Modele : HYDRAULIC RAIL TENSIONER

Type : TH 70 VLA



2 – 2 General information

The TH 70 VLA hydraulic tensioner, easy to install because of the assembly of its various components by articulation forks and pins, is particularly designed to obtain, through controlled mechanical traction, the equilibrium (release) of long welded rails (LWR's). This is achieved by a mechanical deformation of the rails remaining in the elastic domain. A thermal engine drives the hydraulic unit that will supply the cylinders.

The TH 70 VLA hydraulic tensioner can also be used for :

reducing gaps during operations of repairing rails or broken welds;

avoiding the removal of bars in the case of replacement of a defective weld that has not broken or in the case of the creation of a bonded joint on the track;

adjustment of an expansion appliance;

incorporation of appliances.

At any time the traction of thrust force can be modified according to variations in ambient temperature, and therefore that of the rail, by adjusting the hydraulic pressure.

The traction exerted on the ends of the rails helps to maintain the correct position of the latter in the horizontal and vertical planes, thus preventing any deformation during the welding operation and eliminating contraction tensions in the weld.

Thanks to the double-acting cylinders, the hydraulic tensioner can also cancel out the internal stresses in the rails, thus making it possible to carry out sawing and cutting without risk to the users, preventing jamming of the tools.

2 – 3 Using conditions



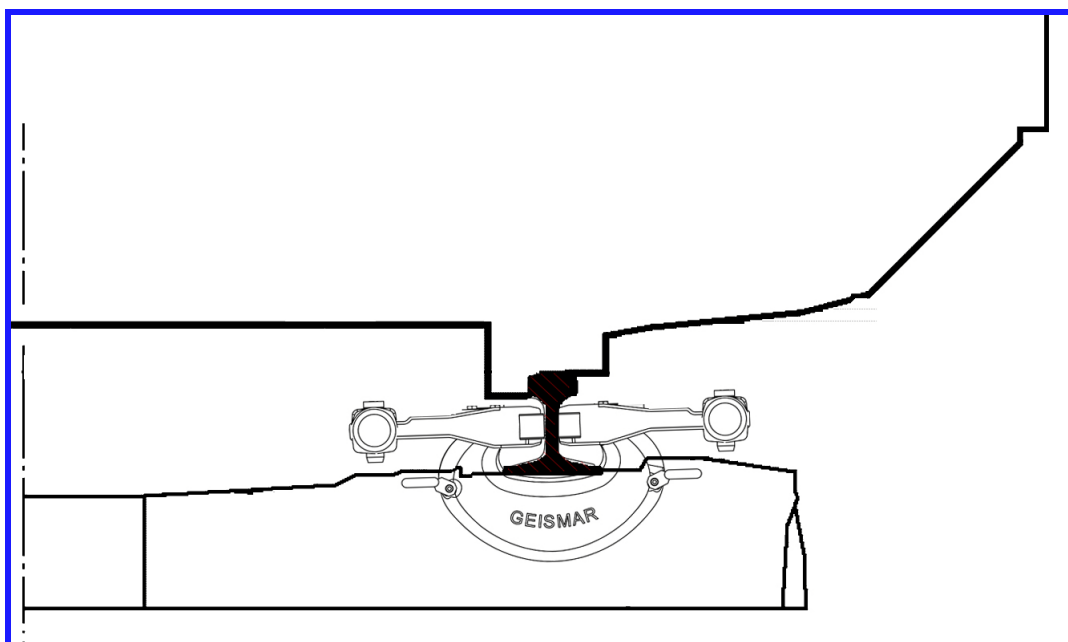
The thrust force must be limited to 200kN with the use of the arches, because of their resistance. The use into thrust must always be carried out without using the rods.

Chapitre 3 – Technical characteristics tensioner

3 – 1 General characteristics

Manufacturer	Société des Anciens Établissements L.GEISMAR
Address	5, rue d'Altkirch 68000 COLMAR
Machine	HYDRAULIC RAIL TENSIONER
Type	TH 70 VLA
Performance	
Pressure while pushing	225 bar
Pressure while pulling	660bar
Maximum retraction force (pulling)	700 kN (≈ 70 t)
Maximum deployed force (pushing)	300 kN (≈ 30 t)
Maximum deployed force (with arches)	200 kN (≈ 20 t)
Travel of cylinders	380 mm
Weight Table (in unit KG)	
Cylinder (2x)	33,5 Kg
Clamping assemblers (2x)	64 Kg
Tie Rods length 1520 (x2)	25 Kg
Fitting Appliance (x2)	4 Kg
Total weigth of mounted assembly	246 Kg

3 – 2 Location in loading clearance

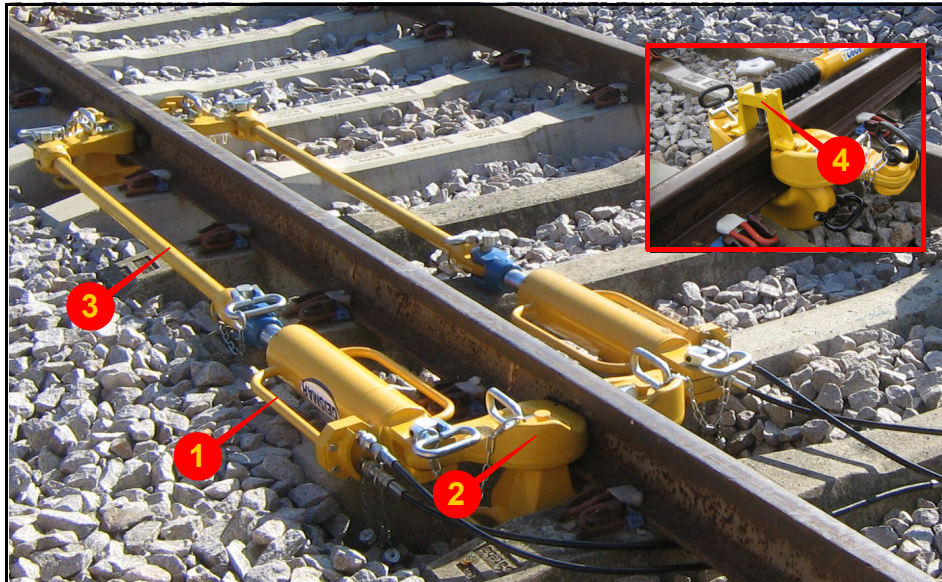


Structure gauge of the track according to Annex B low / standard in 13977:2005

Chapter 4 – Equipment tensioner

4 – 1 Constitution of the TH 70 VLA Rail Tensioner

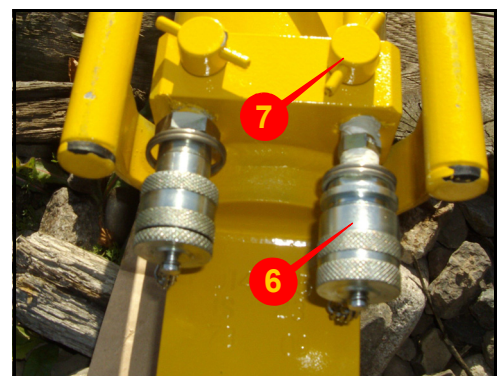
The TH 70 VLA Tensioner consists of:



- 2 hydraulic cylinders (1)
- 2 clamping assemblies (2)
- 2 tie rods (3)
- 2 fitting appliances (4)

HYDRAULIC CYLINDERS

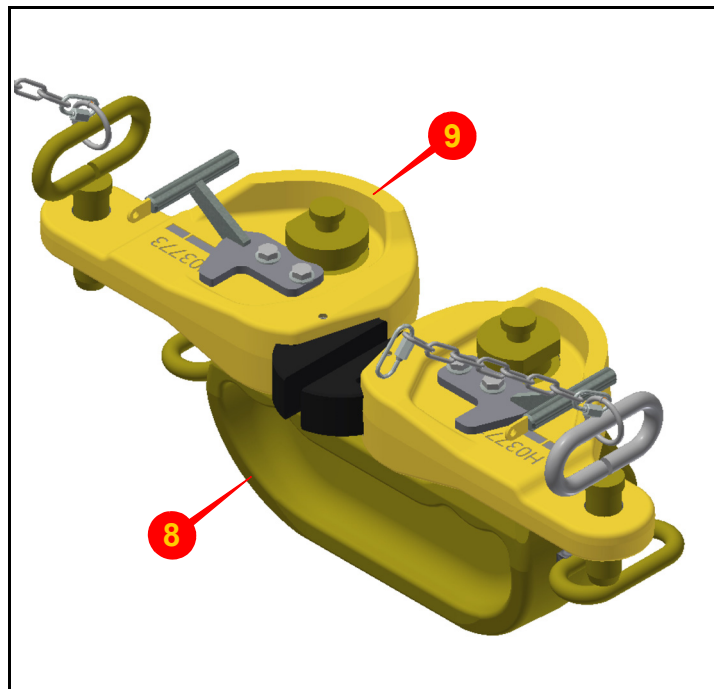
Double-acting, these make it possible to exert on the rail either a traction or a compression. They are equipped with quick screw couplings (6) and 2 drain screws (7). Pressure limiters calibrated in the factory, mounted on the unit, limit the thrust and traction forces. The long travel of the cylinders serves to compensate for any irregularities in travel.



CLAMPING ASSEMBLIES

These each consist of 3 parts removable without tools :

:



- 1 stirrup (8)
- 2 eccentrics provided with floating serrated jaws (9)

The rail is gripped by means of 2 facing jaws that grip the rail web.

TIE RODS

For working in traction, these are connecting components that transmit the traction force from the cylinder rods to the other clamping assembly.

The number of tie rods not being limited, it is possible to frame a piece of rail introduced into an LWR and to carry out connecting welds in the same interception of traffic on a straight portion.

FITTING APPLIANCES



The 2 fitting appliances make it possible to position vertically, with great ease, the serrated jaws of the clamping assemblies as close as possible to the neutral axis of the rail. This gives a clamping force perfectly at right angles to the rail web.

Remove the equipment by the mounted pressure cylinders.
This equipment can be damaged by the stirrups.

Chapter 5 – Operating instructions tensor

5 – 1 Handling instructions

Before any use, we recommend that you refer to chapters:

1-3 - General safety regulations

1-4 - Particular safety regulations

5 – 2 Preamble

When the TH 70 VL tensioner is used, the stirrup deforms elastically in order to return to its initial shape after work. The clamping assemblies are designed for a maximum load exerted by the cylinders (maximum pressure of the hydraulic unit obtained with a factory-calibrated pressure limiter), if the load accidentally exceeds this figure (accidentally or through faulty manipulation, etc.), permanent deformation of the clevis may occur. It is necessary to carry out an inspection in order to check whether it is suitable for fulfilling its function.



Before use : Visually check that there is no external defects, deformations, superficial cracks, wear or corrosion marks (see periodic checks on stirrups)

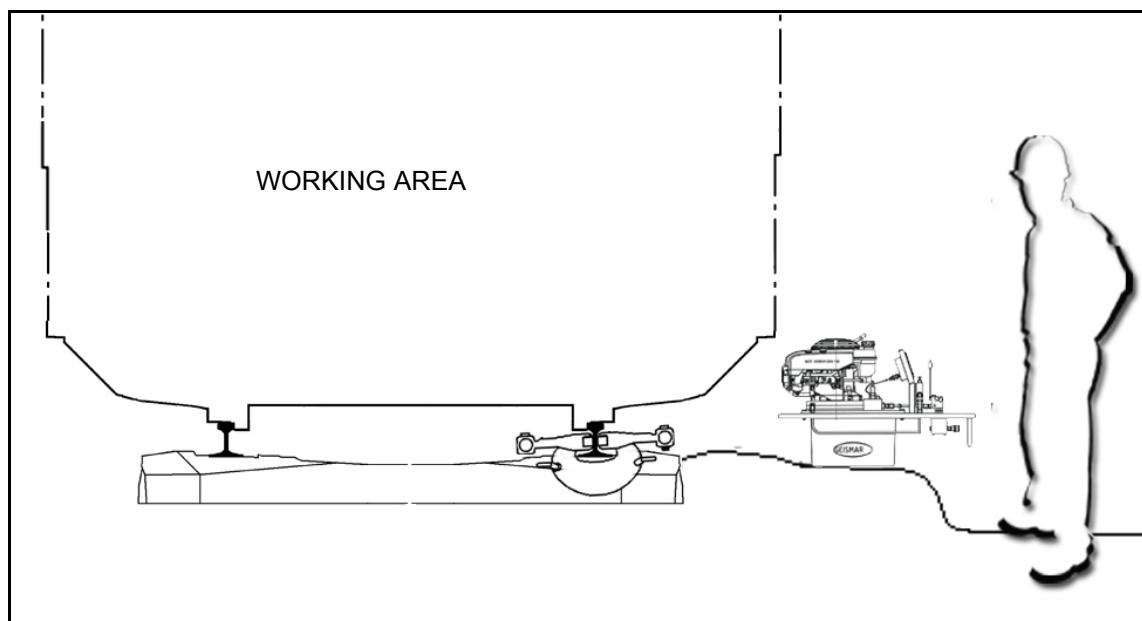
5 – 3 Installation of TH70 VL

5 – 3 – 1 Above all

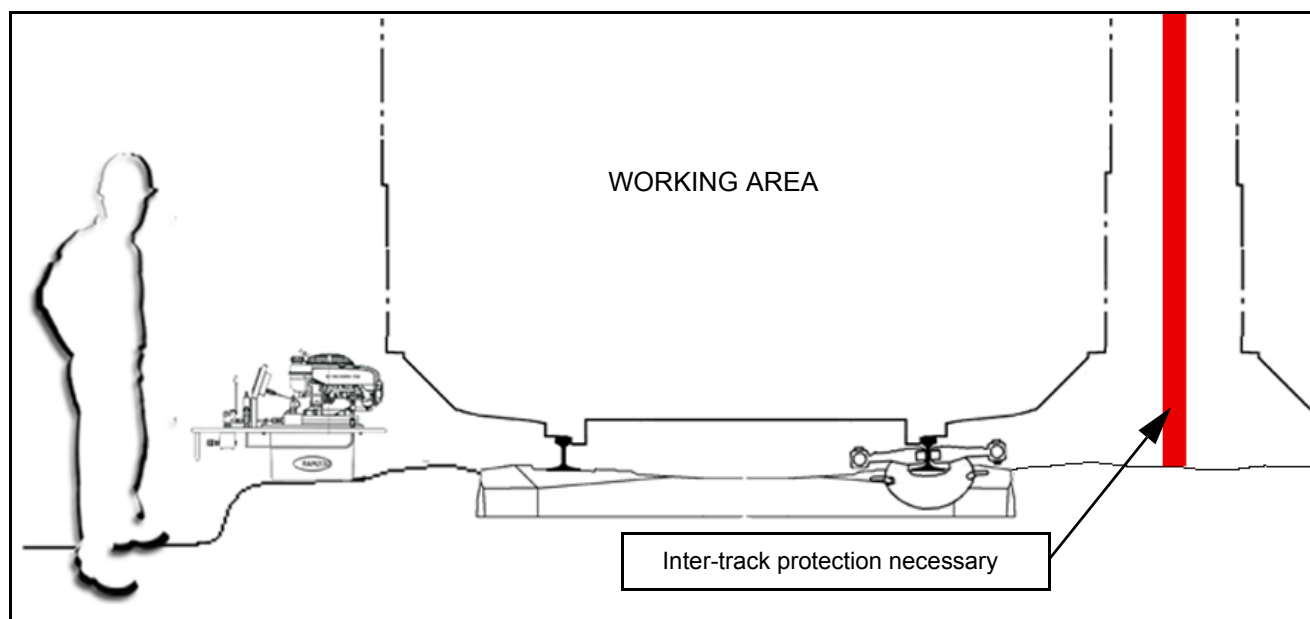
Protect the working area for fitting the TH70 VL tensioner according to the safety instructions in force on the railway where working. Once the tensioner is on the track and under tension and the fitting accessories removed, it is possible for the site machinery to travel. Please leave free the gauge where traffic is permitted.



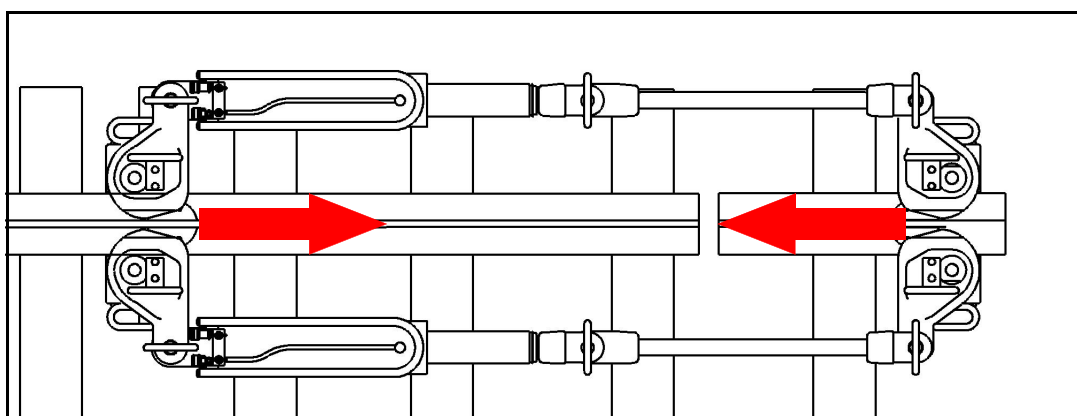
5 – 3 – 2 Placing of TH70 VL on the rail track on the outside



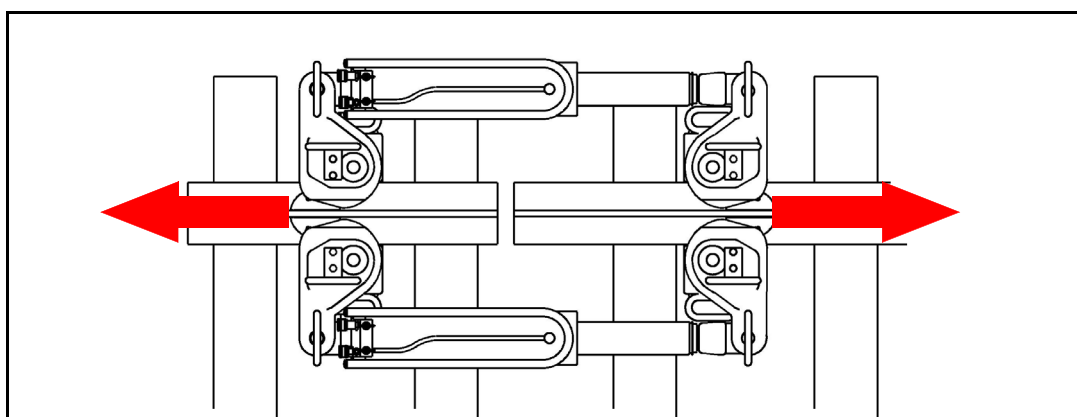
5 – 3 – 3 Placing of TH70 VL on the rail track between the rails



5 – 4 Working method



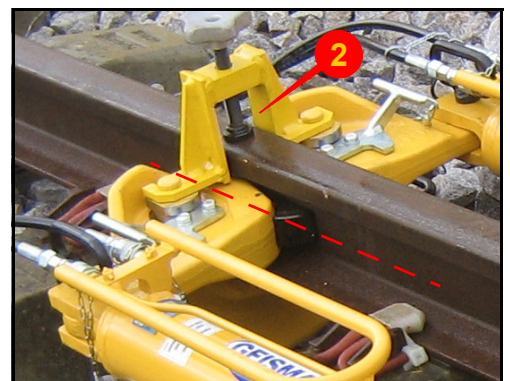
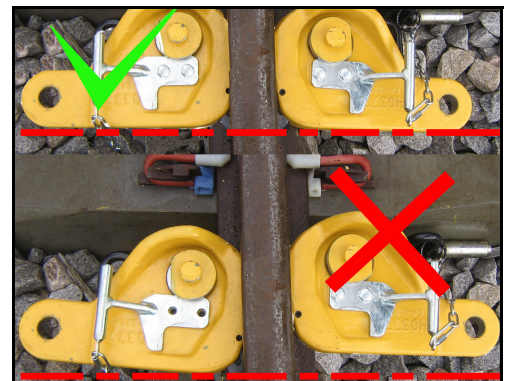
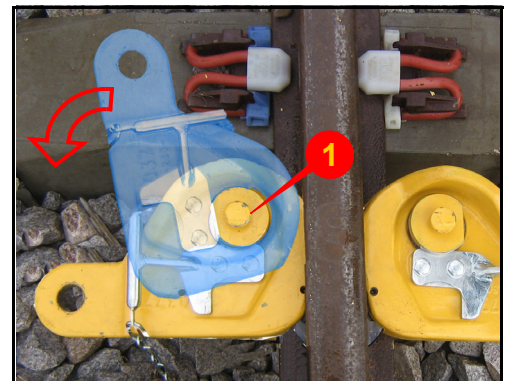
Work in Traction to reduce the gap between 2 rails



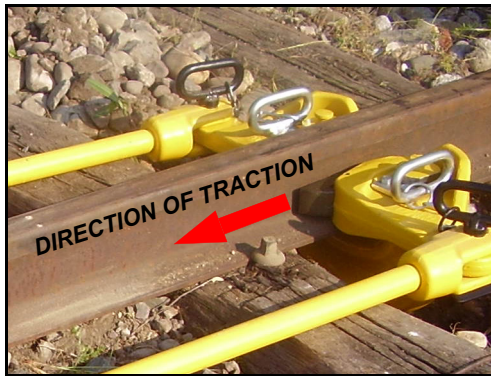
Working under thrust to increase or maintain the gap between 2 rails

5 – 4 – 1 Fitting the TH70 VL in Traction phase

- Clear away ballast to enable the stirrup to be positioned under the rail.
- If necessary wedge the stirrup to facilitate the placing of the eccentrics.
- Engage the eccentrics under the journals on the stirrups (1- 2).
- Pivot the eccentrics until the serrated jaws come into contact with the rail web.
- Pay attention to the orientation according to the working method chosen : (traction,bits striated towards the interior).
- Align the jaws properly to avoid faulty gripping of the rail.
- Using the 2 fitting appliances, position the serrated jaws of the clamping assemblies vertically as close as possible to the neutral axis of the rail.



Without the fitting appliance, it is not possible to position the tensioner correctly



–Fit the cylinders and tie rods using the pins.



–To couple the cylinders and tie rods, connect the hoses to the hydraulic unit, ensuring that they pass under the rail and do not engage the lower gauge.



–Deploy the cylinder rods to the maximum extent to leave working travel. Fit the pins.

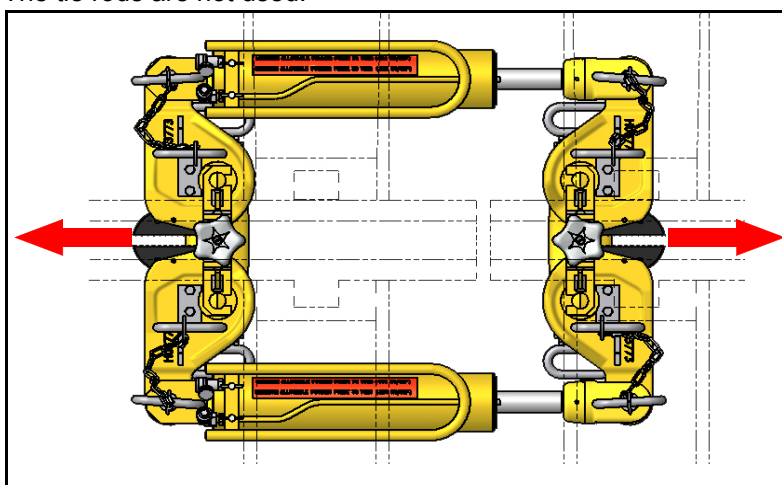
FEATURES

The distance between the tensile rods is 1520 mm, so that the tensor can be set up without any need of moving the sleepers. The sleeper spacing irregularities are compensated for by a very long stroke of the rams.

5 – 4 – 2 Fitting the TH70 VL in Thrust phase

Same process as for putting under traction, except :

- The clamping assemblies are mounted in the other direction.
- The tie rods are not used.



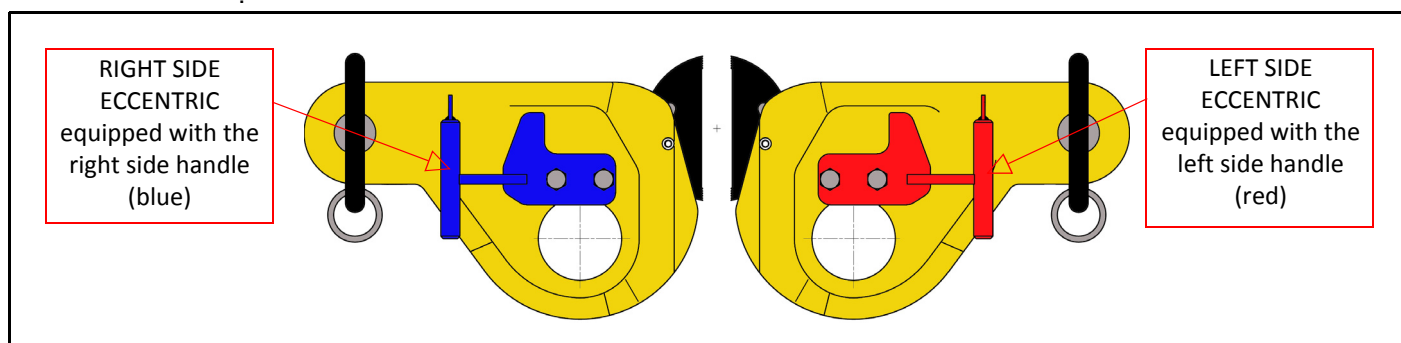
5 – 4 – 3 Positioning the tensor in reverse phase

5 – 4 – 3 – 1 Reminder

When the tensioner is on the track in reverse phase, traffic is impossible. Please make arrangements before you begin maintenance activities.



In standard operating mode, the handles are positioned in such a way that the swiveling of the eccentric alone is enough to disengage it from the stirrups

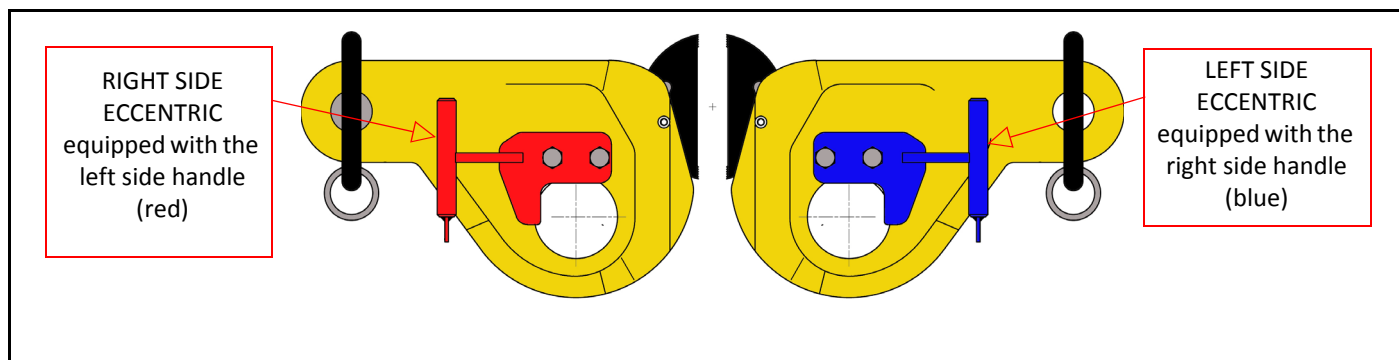


To prevent any risk that the eccentrics fall off during operation in reverse phase, it is mandatory to swap these handles.

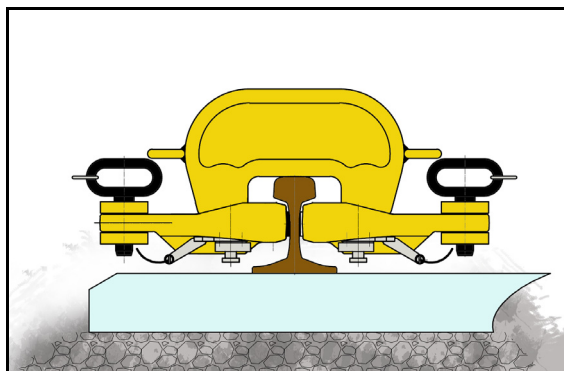
This exchange shall be performed during the assembly of the tightening unit prior to operation in reverse phase.

5 – 4 – 3 – 2 Assembling the tightening unit in reverse phase

- Unscrew the handles on the eccentrics;
- Engage the eccentrics on the pivots of the stirrups;
- Permute the handles and fit them onto the eccentrics so that they are tightened on the stirrups.



Install the tightening unit on the rail, make sure that the direction of the serrated jaws matches the selected work mode.

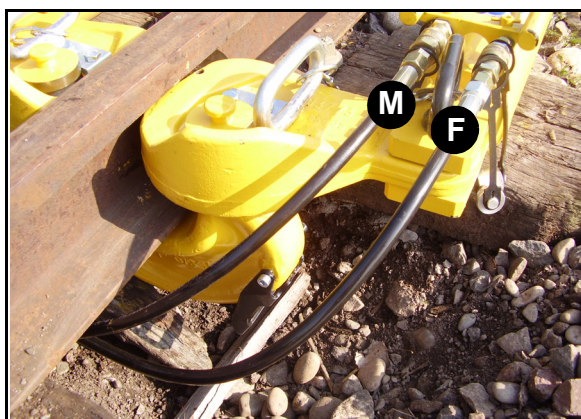


- Swivel the eccentrics until contact of the jaws with the web of the rail;
- Connect the cylinders rods and connect the hoses to the hydraulic unit the same way as for the standard operation mode.

5 – 5 Connection to the energy group

The hydraulic tensor TH 70 – VL is used in combination with a hand pump or a motorized hydraulic group.

The hydraulic connection is carried out very easily and very quickly by means of the quick couplings fitted on each flexible hose end. The feed piping - cylinder bottom side - for the outgoing of the piston rods is provided with male half-couplings (**M**). The feed piping-cylinder-cylinder rod side for the bringing in of the piston rods is provided with female half couplings (**F**). Such an arrangement prevents any inversion i.e. any connection error.



- In standard mode, always have the hydraulic hoses pass under the rail to prevent bottom gauge fouling;
- Connect the hoses to the cylinders and tighten the knurled ring.

For the handling of the hydraulic tensor TH 70 – VL with his energy group, refer to the instructions for use and maintenance of the groups records.



Chapter 6 – Maintenance tensioner

6 – 1 General maintenance instructions

Before starting operations, the parts which will be in contact with the machine must be cleaned carefully as well as the neighbouring zones, to prevent impurities from getting into the machine's mechanisms.

6 – 1 – 1 Rules to be followed

- Draw up an inspection schedule and record all maintenance operations;
- Replace any suspicious or worn parts;
- Never neutralise the prevention or limiting equipment;
- Never use the machine as an "earth" for welding operations.

To take care to maintain this equipment in good state, it conditions the safety of the users.



6 – 2 Controls

6 – 2 – 1 Flexible hoses

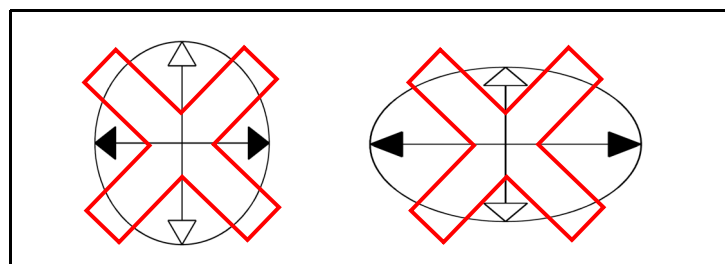
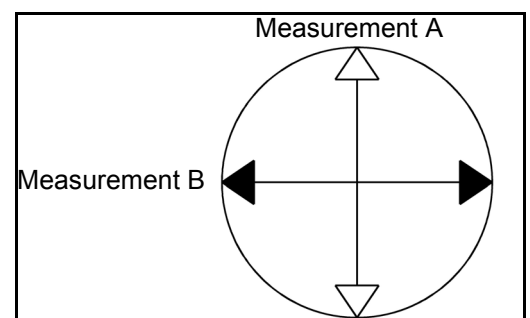
- Check tightness and connection tightening;
- If any flexible hose has been damaged in any way, it must be replaced by a new one.

6 – 2 – 2 Stirrups

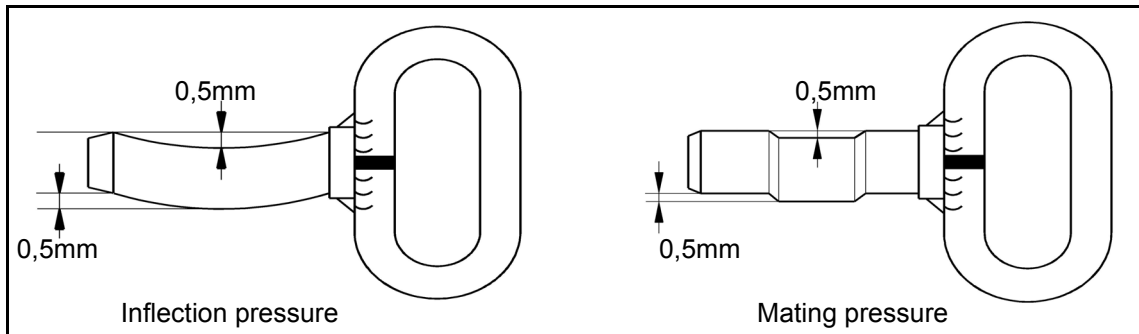
- To check bores of : clevises, tenons and eccentrics (ovalization defect);
- To check the pins (deformation defect);
- To check the Stirrup (search for cracks, deformation).

MEASURE OF OVALIZATION DEFECT

When the difference between 2 dimensions measured (A and B) at 90° in the same bore exceeds 0.5 mm, it is essential to replace the part having this ovalization defect.

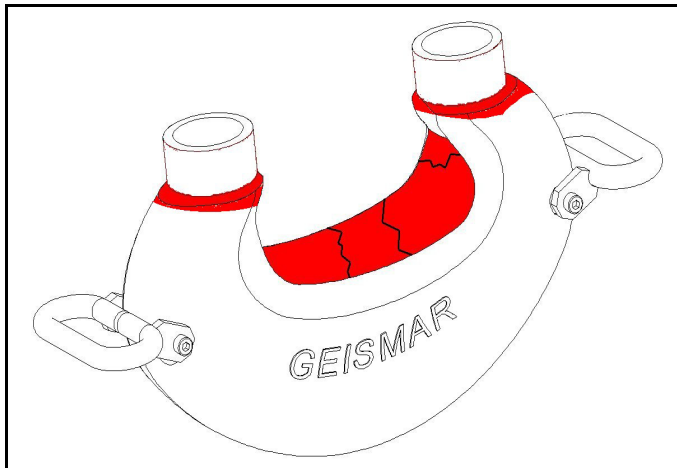


MEASURE OF DEFORMATION DEFECT



Any pin having a straightness defect equal to or greater than 0.5 mm must be replaced by an original part.

PERIODIC CHECKING OF STIRRUP



Carry out a visual check to detect any cracks. This check may be limited to the areas shown in red.

If cracks are found, please contact us to determine the procedure to be followed.

6 – 3 Maintenance

6 – 3 – 1 Controls

- Check the fluidtightness and general state of the cylinders periodically;
- Replace the oil in the cylinders every year by disconnecting one coupling on the cylinder;
- Check that the couplings are fluidtight and properly tightened;
- Replace the hoses as soon as damage to or a tear on the hose has been noticed. Ensure that they are maintained in good condition since the safety in use of the tensioner depends on this equipment.

6 – 3 – 2 Cleaning

As far as maintenance is concerned, the term cleaning is to be taken in its widest sense and it includes all routine maintenance operations, such as lubrication and tightening. Regular cleaning is a form of inspection, during which those involved can discover leaks, irregularities and damage at an early stage and will be able to deal with them before these deteriorations lead to a breakdown or an incident.

6 – 3 – 3 Greasing

To lubricate, using a brush, them: axes, pins, covers and screw.

6 – 3 – 4 Table of equivalences for greases

IMPERATOR	LC 3002
TOTAL	MULTIS COMPLEXE EP2
ELF	MULTIPLEX
BP	ENERGREASE LC 2
SHELL	ALBIDA HD 2
CASTROL	LM GREASE

6 – 3 – 5 Hydraulic oil

Approved hydraulic oil : TOTAL EQUIVIS ZS 32.

Technical features : - Viscosity à 40° : 32,3 Cst - Viscosity index 160 - Flow point 39°C.

6 – 3 – 6 Table of equivalences for hydraulic oils

TOTAL	EQUIVIS ZS32
ELF	VISGA 32
TEXACO	RANDO OIL HD Z-32
SHELL	TELLUS T 32
CASTROL	CASTROL HYSPIN AWH M32
BP	BARTRAN HV32
MOBIL	MOBIL DTE 13M

Chapter 7 – Storage and recycling

7 – 1 General storage instructions

During periods when work equipment is not being used, it is essential to store it so as to maintain its integrity. Badly stored equipment risks being damaged when commissioned. It is therefore important for the staff in charge of storage operations to carry out this storage carefully and to abide by the measures laid down.

7 – 1 – 1 Choice of storage conditions

The choice of storage conditions depends on 2 main factors

- the storage duration and the storage type ("sheltered" storage building, closed shed, open shed, canopy, etc...).

7 – 1 – 2 Storage premises

As a general rule, premises intended for storage of work equipment must provide full protection against

- dusts, exhaust gases, dampness;
- direct sunlight;
- rapid temperature variations.

7 – 1 – 3 Putting into storage

The condition of the work equipment when put to work after storage depends on how well it was prepared and protected before being placed in storage

Before resuming work after storage, clean the equipment (when cleaning, protect the moving parts with grease).

A technical inspection should be carried out to uncover any possible anomalies.

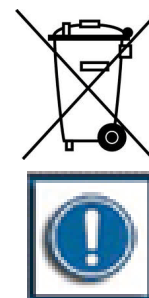
7 – 2 Decommissioning - Disassembly - Disposal

When work equipment presents a state of aging that may cause risks, there is a requirement for the user to ensure the disposal of this equipment, namely putting out of work.

Decommissioning or disposal requires to remove used fluids which will be given to a relevant department.

IMPORTANT In addition to those listed in the instruction manual, some precautions must be taken into account when decommissioning this work equipment to avoid any risk during dismantling and transport, and to minimize a possible environmental impact of its sub-parts or products.

The equipment must be disposed of by an approved body complying with the local standards in force for recovery of waste.



Chapter 8 – Spare parts

8 – 1 Foreword

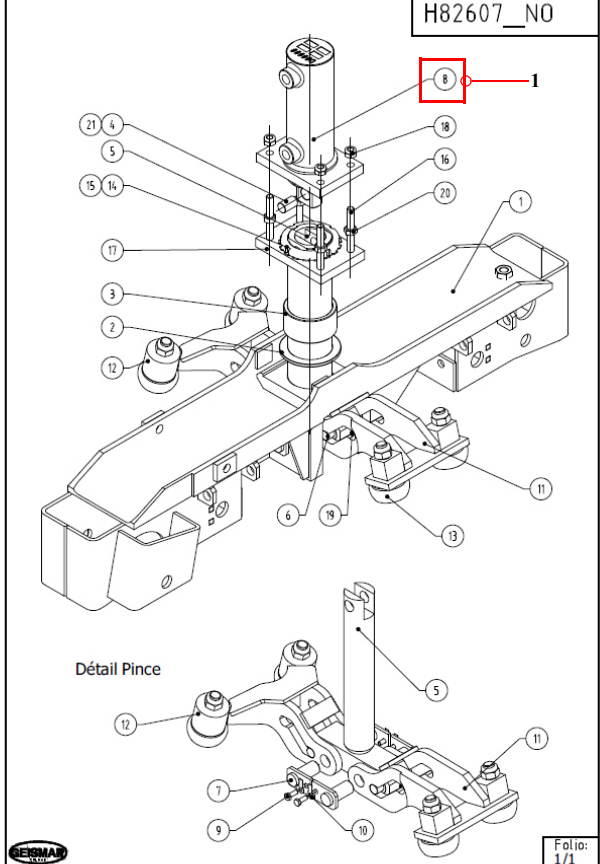
The spare parts catalogue is made up of coded plates comprising a list and a drawing.

IN THIS EXAMPLE

We wish to replace **Cylinder 8 (1)** of subassembly **H82607_NO**

Rep	Qté	Désignation	Code	Éa : 12/11
CHARIOT DE TRANSLATION				
1	1	CHÂSSIS	H72576	
2	1	RONDELLE	H00721	
3	2	BAGUE	H00722	
4	1	AXE	H00723	
5	1	TIRANT AVEC BAGUES	H29911	
6	2	AXE	H02030	
7	4	AXE	H09091	
8	1	VÉRIN DE PINCE À RAILS	V10016_NO	
9	4	VIS	C00331	
10	4	RONDELLE	C02221	
11	1	BRAS DE PINCE INTERIEUR	H54214	
12	1	BRAS DE PINCE EXTERIEUR	H54215	
13	4	GALET Ø 60 MONTÉ	H20037	
14	1	RONDELLE	D03505	
15	1	ÉCROU	D03485	
16	4	GOIJON	H71641	
17	1	SUPPORT VÉRIN	H12526	
18	4	ÉCROU	C00143	
19	2	VIS	C00802	
20	4	ÉCROU	C00120	
21	1	VIS	C02088	

H82607_NO



Détail Pince

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Folio: 1/1

You will find the code for this cylinder (**V10016_NO**) in parts list (2).
Enter this information on your parts replacement request.

8 – 2 After-sales service contact details

Tel **+33 (0) 3 89 80 41 90**
Fax **+33 (0) 3 89 80 42 28**
e-mail **sav@geismar.com**

SPARE PARTS CATALOG

Model **HYDRAULIC RAIL TENSIONER**
Type **TH 70 VLA**



Code :

H109120_0816

HYDRAULIC RAIL TENSIONER TYPE TH 70 VLA.....	H109120_NO.....	4
ECCENTRIC ASSEMBLY	H90108_NO.....	6
TENSIONER CYLINDER - TH 70 VLA.....	H82725_NO.....	8
FITTING APPLIANCES	H02741_NO.....	10

HYDRAULIC RAIL TENSIONER

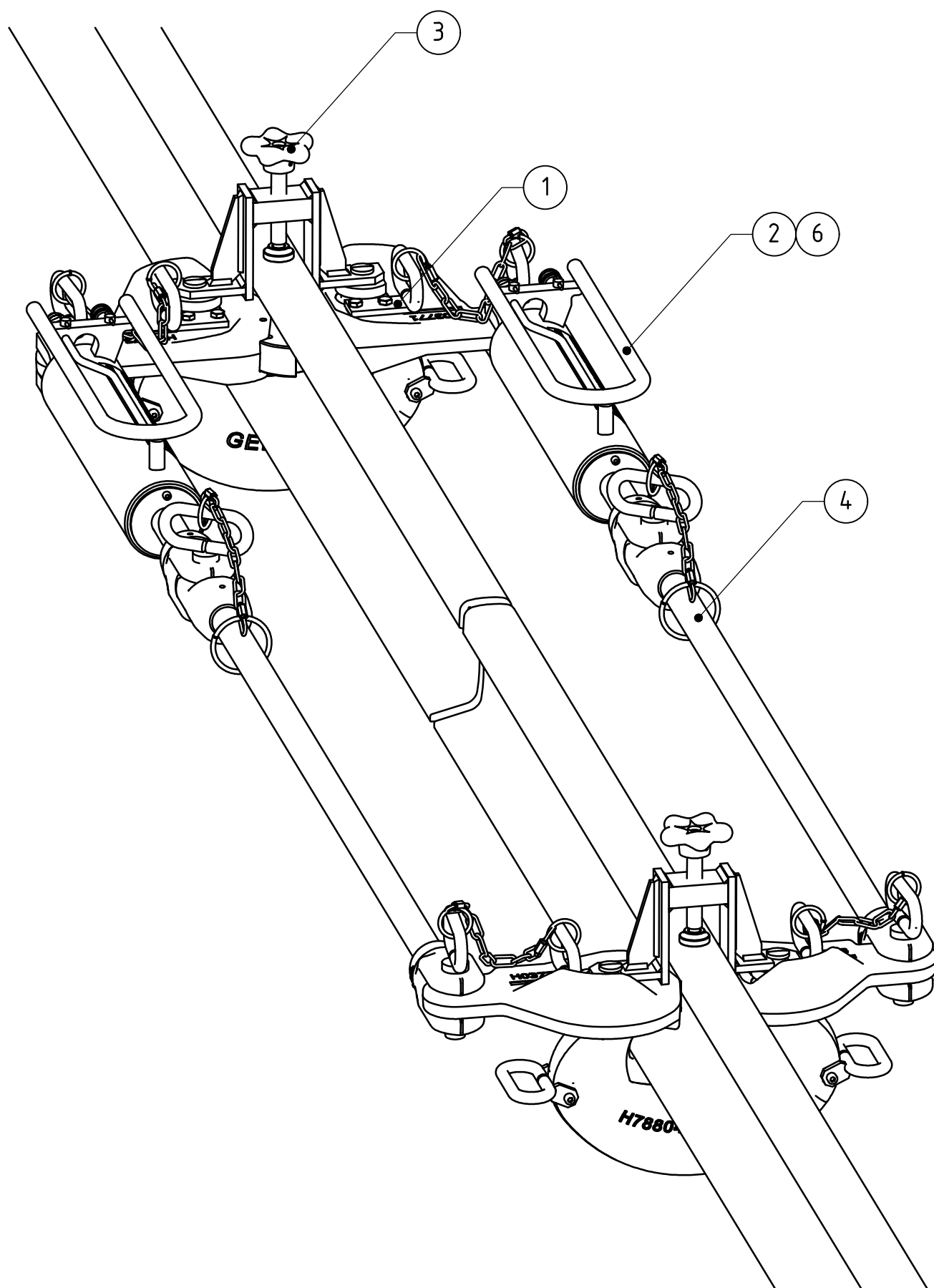
TYPE TH 70 VLA

SUMMARY**H109120_0816**

Item	Qty	Description	Code	Ed 08/16
		HYDRAULIC RAIL TENSIONER TYPE TH 70 VLA	H109120_NO	
1	2	ECCENTRIC ASSEMBLY	H90108_NO	
2	2	HYDRAULIC CYLINDER.....	H82725_NO	
3	2	FITTING APPLIANCES	H02741_NO	
4	2	TIE RODS WITH PIN.....	H00856	
6	1	IDENTIFICATION PLATE SET	H102540	



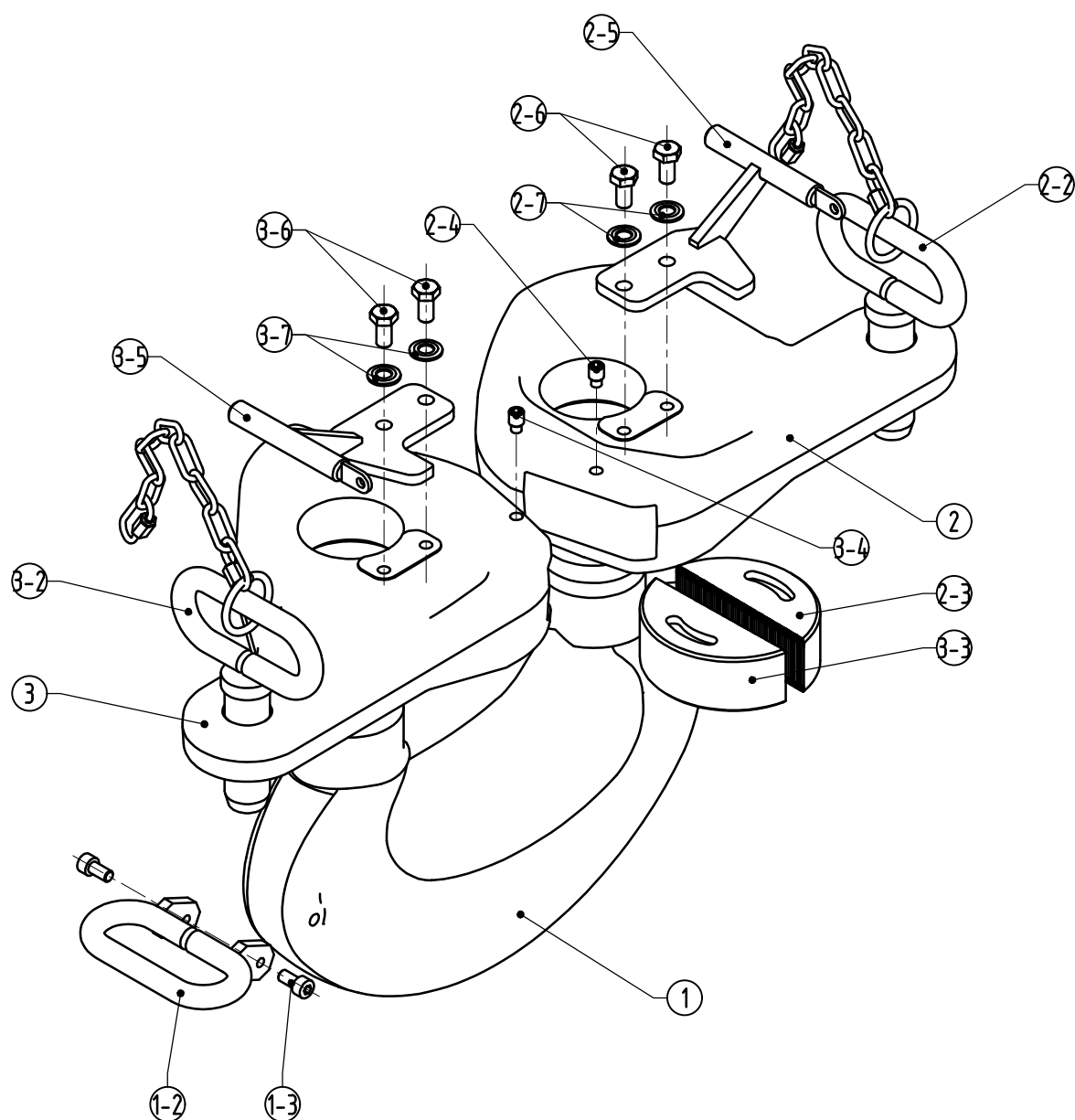
IMPORTANT : To allow prompt and correct delivery of spare parts, always state : Fabrication year and n° of the machine - Serial number - Order n° and description of spare parts



Item	Qty	Description	Code	Ed 03/16
ECCENTRIC ASSEMBLY			H90108_NO	
1	1	COMPLETE STIRRUP	H78818	
1-2	2	HANDLE	H82431	
1-3	4	SCREW	C00518	
2	1	RIGHT ECCENTRIC COMPLETE	H77662	
2-2	1	PIN	H107222	
2-3	1	JAW WITH RUBBER TIP	H00230	
2-4	1	SCREW	C01636	
2-5	1	STOP PLATE WITH HANDLE	H107685	
2-6	2	SCREW	C00354	
2-7	1	WASHER	C01813	
3	1	LEFT ECCENTRIC COMPLETE	H77663	
3-2	1	PIN	H107222	
3-3	1	JAW WITH RUBBER TIP	H00230	
3-4	1	SCREW	C01636	
3-5	1	STOP PLATE WITH HANDLE	H107226	
3-6	2	SCREW	C00354	
3-7	1	WASHER	C01813	



IMPORTANT : To allow prompt and correct delivery of spare parts, always state : Fabrication year and n° of the machine - Serial number - Order n° and description of spare parts



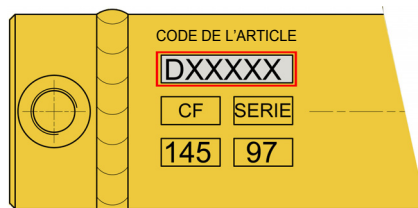
Item Qty Description

Code

TENSIONER CYLINDER - TH 70 VLA

H82725_NO

NOTA : for cylinders spare parts give the indication of the code number incrusted on the cylinder body, then refer to the following table for reference batches of parts (**A, B, C**,...)



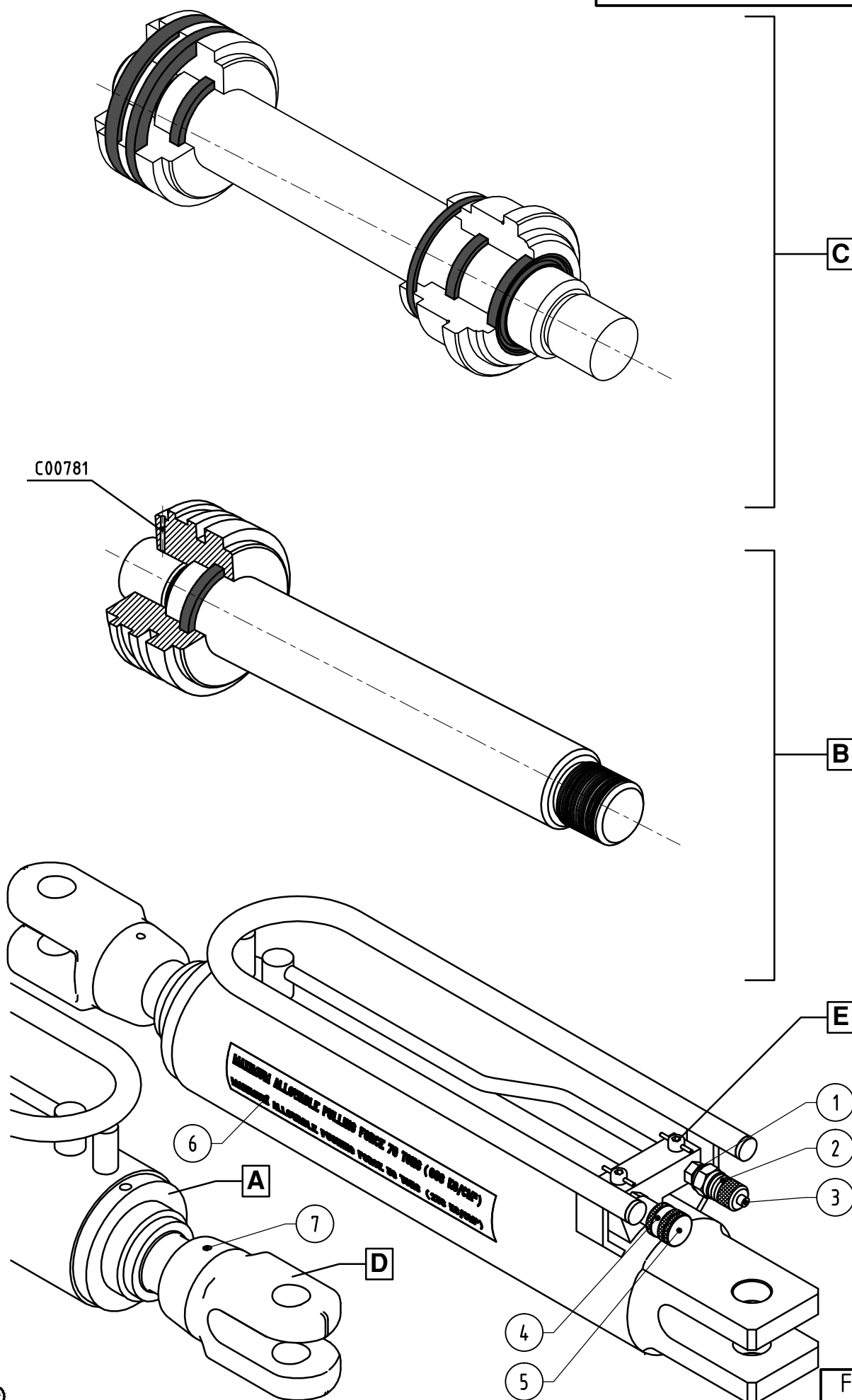
CODE HYDRAULIC CYLINDER	GUIDING BUSH CODE A	PISTON KIT CODE B	SET OF SEALS CODE C	ARTICULATION FORK CODE D	DRAIN SCREW CODE E
D17799	D17926	D17927	D17928	H77750	D19136
D20216					

1	1	ADAPTER.....	D00438
2	1	MALE HALF COUPLING	D00470
3	1	CAP	D00492
4	1	FEMALE HALF COUPLING	D00472
5	1	PLUG	D00486
6	1	AUTOCOLLANT	H81531
7	1	SCREW	C00780



! IMPORTANT : To allow prompt and correct delivery of spare parts, always state : Fabrication year and n° of the machine - Serial number - Order n° and description of spare parts

H82725 _ NO



Item	Qty	Description	Code	Ed 01/92
		FITTING APPLIANCES	H02741_NO	
3	1	MANIPULATING SCREW	H06423	
7	1	SILL-WASHER	D04522	
9	1	PIN.....	C01153	



IMPORTANT : To allow prompt and correct delivery of spare parts, always state : Fabrication year and n° of the machine - Serial number - Order n° and description of spare parts

