



MECHANICAL JACKS USE AND MAINTENANCE MANUAL

GENERAL INDEX

CONFORMITY DECLARATION TO THE APPLICABLE DIRECTIVES

1. INTRODUCTION AND SAFETY

- Introduction
- Mechanical jack users
- Symbols used in the manual
- Residual risks and information about mechanical jack use

2. USE AND PRESERVATION OF THE “USE AND MAINTENANCE MANUAL”

- Circumstances that release the manufacturer from any liability

3. TYPES OF MECHANICAL JACKS

- Main types

4. MECHANICAL JACKS COMPONENTS IN THE BASIC VERSION

- Diagram of the mechanical jack with upper crank handle
- Diagram of the mechanical jack with reduction gear and lateral crank handle
- Component features

5. IDENTIFICATION OF THE MECHANICAL JACK AND MANUFACTURING DATE

6. PRELIMINARY PRECAUTIONS ON ASSEMBLING

7. TRANSPORT OR HANDLING INSTRUCTIONS

8. INSTRUCTIONS FOR FITTING THE MECHANICAL JACKS ON MACHINES AND/OR EQUIPMENT

9. INSTRUCTIONS FOR USE

10. INSTRUCTIONS FOR MAINTENANCE AND CHECKS

- Maintenance operations
- Checking operations

11. MECHANICAL JACK OVERHAULING

- Instructions for disassembling the mechanical jack from the machine or equipment
- Instructions for disassembling the mechanical jack
- Instructions for reassembling the mechanical jack

12. REPAIR AND SPARE PARTS

13. DISPOSAL



MECHANICAL JACKS

USE AND MAINTENANCE MANUAL

page 2 of 13

MANUFACTURER'S DECLARATION

Concerning mechanical jack to be incorporated in a machine, according to directive 2006/42/EC.

RIMA S.P.A.

Via Sigalina a Mattina, 32 – 25018 MONTICHIARI (BS) ITALIA,
in the person of its pro tempore Legal Representative, Mr. Giorgio Zonta,

DECLARES

under his responsibility, in accordance with directive 2006/42/EC, that no mechanical jacks manufactured by RIMA S.P.A. may be used until incorporated into the machine it is intended for and until the same machine is declared to conform to directive 2006/42/EC and successive additions by the manufacturer, importer or installer of the machine.

AND FURTHER DECLARES THAT:

- all the mechanical jacks are designed and manufactured applying the safety rules stated in directive 2006/42/EC.
- all the mechanical jacks must operate at a temperature range suitable to the material used (see point 3, components features)

**RIMA S.P.A. DECLINES ALL RESPONSIBILITY FOR IMPROPER
USE OF THE MECHANICAL JACKS**

Rima SpA is the owner of this manual and no part of this can be reproduced nor copied.

Edition 2014 rev.1



MECHANICAL JACKS

USE AND MAINTENANCE MANUAL

page 3 of 13

1 INTRODUCTION

Introduction

This manual has been prepared by **RIMA S.p.A.** to provide the users of its mechanical jacks with information about the safety standards connected to using, maintaining and overhauling the mechanical jacks.

With the purpose of ensuring maximum operating reliability of its mechanical jacks **RIMA S.P.A.** has carefully selected the materials and components used to manufacture the mechanical jacks. All the components have been designed and manufactured to safely resist the stresses in use foreseen.

Jack users

Trained person = a technician who knows about the equipment and rules relevant to the jack and to the machine on which they are fitted.

Informed person = operator who knows about his duties and who has basic information relevant to the specific risks and the right jack use.

Final user = synonym of informed person

Symbols used in the manual



- This symbol indicates behaviour that is important also as far as safety is concerned. In case users do not respect these rules any manufacturer's liability will automatically cease.



- This symbol indicates that all the possible operations have been made on the mechanical jack to eliminate or reduce risks, but there are residual risks which users must be aware of.

Residual risks and information about mechanical jack use



- Mechanical jacks must not be used or worked on before reading and completely understanding all parts of this manual
- The safety standards established for the machines or the equipment the mechanical jacks are fitted on are also valid for the mechanical jacks.
- The machine operator is responsible for the correct use of the machine and the equipment. He must therefore know and apply the instructions for use of the mechanical jack described here.
- Only use the mechanical jack to lift objects, the mechanical jack must not be used to lift animals or people. In any case the mechanical jack can only be used when it is fitted on a machine or an equipment according to the rules provided for in this manual. When using the mechanical jack the utmost attention must be paid in the following cases:
 - Unscrewing beyond full stroke may cause the screw to come out of the internal screw thread making the inner pipe fall down; so please pay attention not to unscrew the jack beyond full stroke and, if it is necessary, hold the inner pipe to prevent it falling without control. Never put your feet or hands below it.
 - In the double extension jacks the inner pipe is blocked by means of a pin; when taking the pin away, the pipe may fall down causing damage to people or objects. Therefore hold the pipe in order to guide it and make sure that you do not have your feet or hands below it.
 - If for any reason the jack has no gears protecting cover (only for jack with gears), it is strictly forbidden to use the jack, to move the handle or to work on it.



MECHANICAL JACKS

USE AND MAINTENANCE MANUAL

page 4 of 13

- Do not overcharge the jack beyond the charge allowed.
- Do not use the jack as a support or as a grip to get into the machine or to rest objects on.

2 USE AND PRESERVATION OF THE “USE AND MAINTENANCE MANUAL”

This use and maintenance manual is intended for **RIMA S.P.A.** customers and in particular for the people in charge of: installation, maintenance, overhauling, repair and for all persons concerned with mechanical jack operation.

The parts of the manual to concentrate on most concern the operations with the highest degree of risk. These operations are disciplined by labour safety laws.

The information contained in this manual is useful to indicate the correct use of the mechanical jack according to the established design and construction purposes.

Moreover, information is supplied about handling, installation, maintenance, overhauling and problem solving, all respecting the limits established by the manufacturer and detailed in this manual.

The use and maintenance manual is an integral part of the mechanical jack and must be kept until the same is disposed.

It must be kept in a safe place, always close to the equipment so that it is ready for consultation at any time.

If the manual becomes damaged, the user must request a copy from the manufacturer who is obliged to supply one.

The Rima S.p.A. customer is strictly responsible for following and keeping the instructions in this manual and for passing them to the final user.



Circumstances that release the manufacturer from any liability

- Improper use of the mechanical jack, overcharge or use by persons not trained/informed for professional use
- Use contrary to the specific national standards
- Incorrect installation
- Serious failure to carry out the prescribed maintenance
- Unauthorised changes or interventions
- Use of non original spare parts or ones not specific to the model
- Total or partial failure to comply with these instructions
- Lack of documentation concerning possible maintenance and repair done
- Exceptional events (e.g. floods, earthquakes, fire, car accidents or similar)



MECHANICAL JACKS

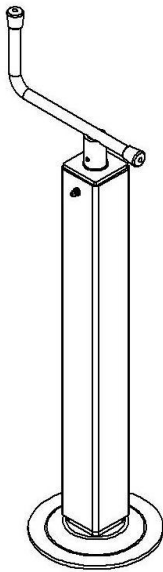
USE AND MAINTENANCE MANUAL

3 TYPES OF MECHANICAL JACKS

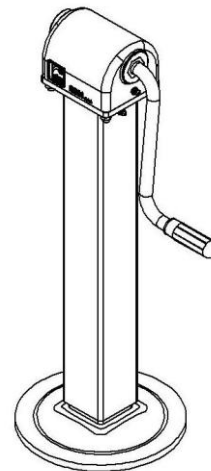
There are different types of mechanical jacks as far as functioning and dimensions are concerned, according to the different type of application and the work they have to perform.

Main types

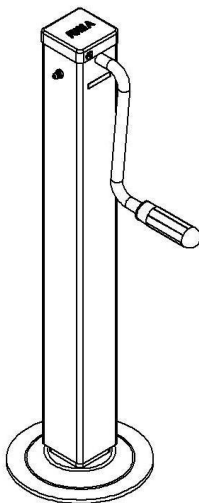
Mechanical jack with upper crank handle;



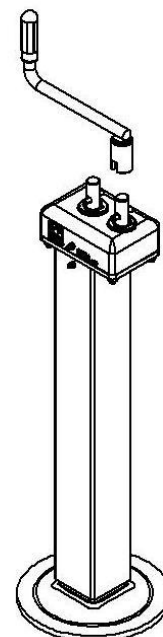
Mechanical jack with reduction gear and lateral crank handle;



Mechanical jack with lateral crank handle;



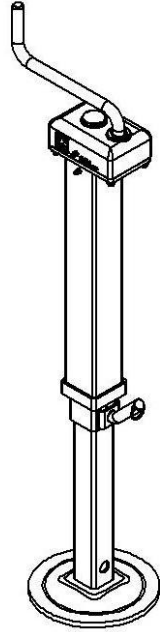
Two-speed mechanical jack ;



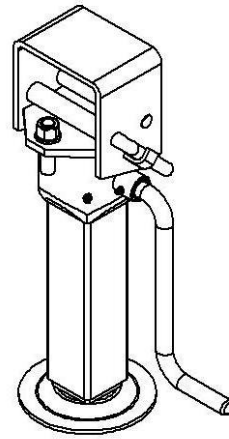


MECHANICAL JACKS USE AND MAINTENANCE MANUAL

Mechanical jack with two extensions;

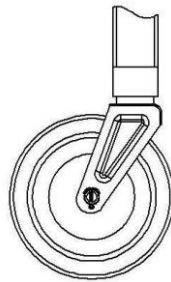


Swivel mechanical jack.

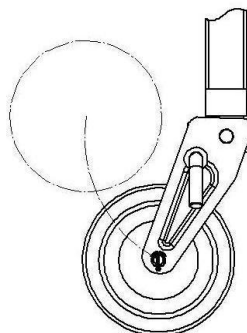


N.B.: as the case may require all the types described above can be equipped with fixed footplate, articulated footplate, wheel or turnover wheel.

Fixed wheel;



Turnover wheel;

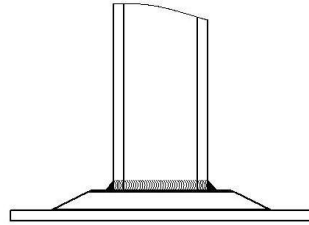




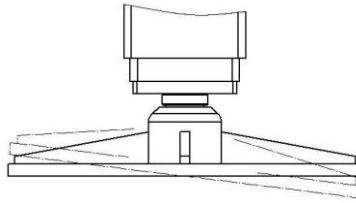
MECHANICAL JACKS

USE AND MAINTENANCE MANUAL

Fixed footplate;

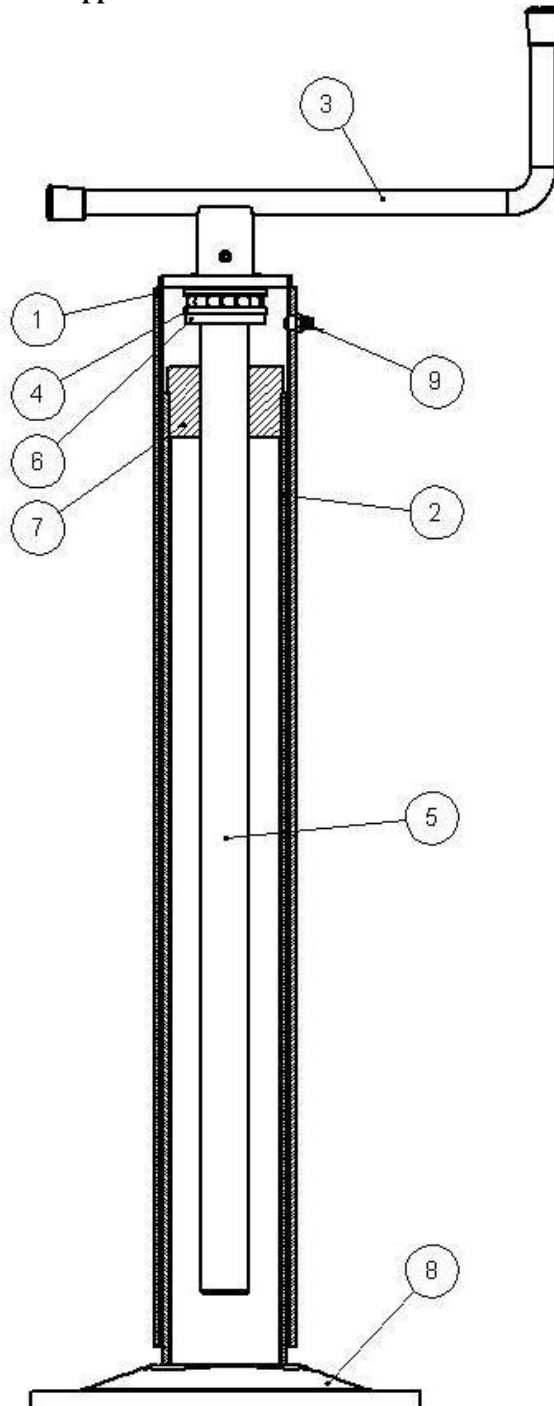


Articulated footplate;



4 MECHANICAL JACK COMPONENTS IN THE BASIC VERSION

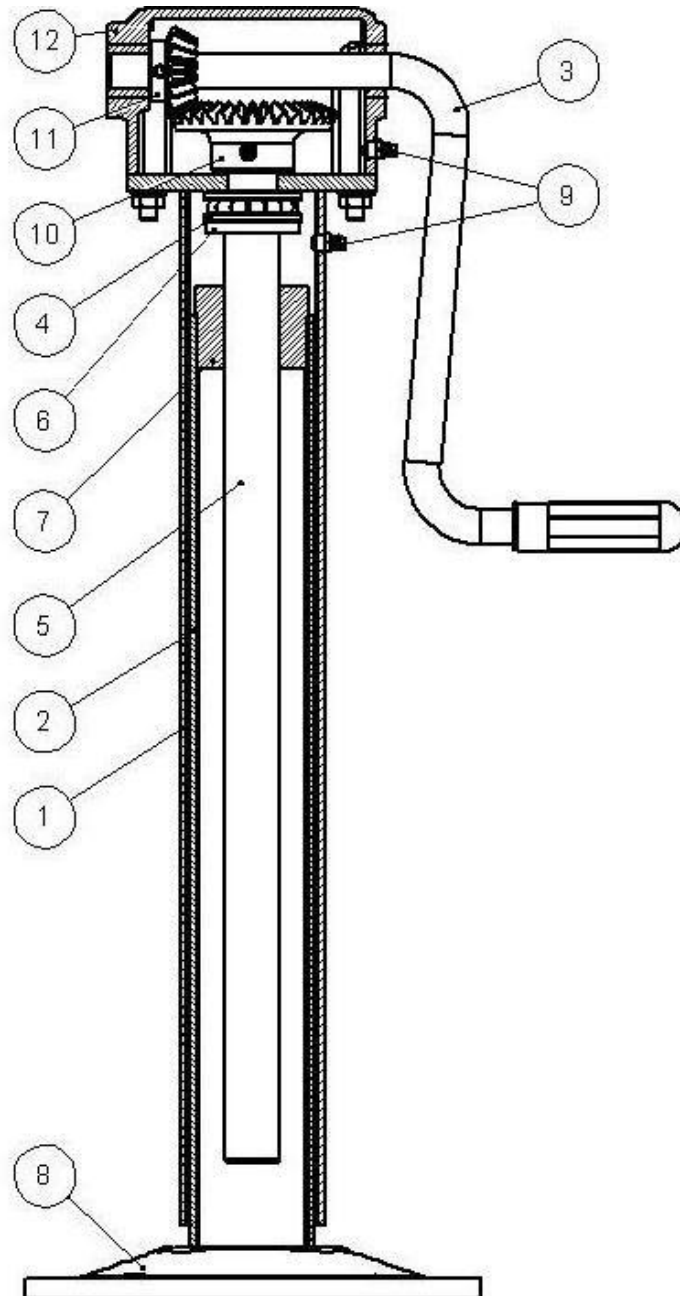
Diagram of the mechanical jack with upper crank handle



- 1 OUTER PART
- 2 INNER PART
- 3 CRANK HANDLE
- 4 BEARING
- 5 SCREW

- 6 WASHER SCREW
- 7 INTERNAL SCREW THREAD
- 8 FOOTPLATE
- 9 GREASE NIPPLE

Diagram of the mechanical jack with reduction gear and lateral crank handle



- | | | | |
|---|--------------|----|-----------------------|
| 1 | OUTER PIPE | 7 | INTERNAL SCREW THREAD |
| 2 | INNER PIPE | 8 | FOOTPLATE |
| 3 | CRANK HANDLE | 9 | GREASE NIPPLE |
| 4 | BEARING | 10 | CROWN |
| 5 | SCREW | 11 | PINION |
| 6 | WASHER SCREW | 12 | BOX |



MECHANICAL JACKS

USE AND MAINTENANCE MANUAL

page 10 of 13

Component features

Materials which are normally used for the different components:

Outer part: steel pipe S235JR UNI EN 10219-1:2006, with closing upper plate and fixing plates to the machine (coupling) depending on the models. Standard dimensions from 40 to 120 mm.

Inner part: steel pipe S235JR UNI EN 10219-1:2006, with internal screw thread, footplate or fork for wheel. Standard dimensions from 30 to 110 mm.

Crank handle: bar in S235JR UNI EN 10277-1:2005, available in different shapes and dimensions.

Internal screw thread: In 11SMnPb30 UNI EN 10087:2000 (AVP) or cast iron EN-GJS-400 UNI EN 1563:2004.

Screw: drawn bar in S235JR UNI EN 10277-2:2000 models with or without bearing seat.

Footplate: Laminated in S235JR UNI EN 10025-1:2005, available in round, square and articulated models. Standard dimensions from 95 to 280 mm.



Rima S.p.A reserve the right to change the above listed materials with no previous notice, while assuring the same functioning. Except in case of specific customer's requests, the jacks are manufactured using structural steel that can be normally used from -10/+80°C, but that are guaranteed from +20/+80°C as JR type.

If the customer needs a warranty for a lower temperature, he must request the appropriate materials.

5 IDENTIFICATION OF THE MECHANICAL JACK AND MANUFACTURING DATE

The products will be only marked if the customers request such on ordering.

6 PRELIMINARY PRECAUTIONS ON ASSEMBLING

Do not use the jacks before reading all the instructions in this manual.

The **RIMA S.P.A.** company forbids its jacks to be put into service until the machine into which they are incorporated conforms to the directive 2006/42/EC; consequently **RIMA S.P.A.** declines all responsibility for the improper use of its mechanical jacks.

Changing or transforming the mechanical jacks or its components without specific authorisation from **RIMA S.P.A.** is forbidden.

Before being fitted to machines or equipment, the mechanical jacks must be painted or galvanized to protect them against aggressive agents and rust. During the paint preparation process, make sure that you cover the mechanical jack parts that must not be painted (fixing plate holes, grease nipples, etc). If there are plastic parts (gear boxes, handles or similar parts), the temperature must not be greater than 90°C during the painting process. If the temperature should exceed this value, the plastic parts could be damaged causing malfunctioning of the jack.

The supports and the movement devices of the machine and of the equipment to which the mechanical jacks are connected as well as the accessible parts of the structures in which the mechanical jacks are positioned must not have any sharp edges or burrs to prevent injury when fitting or removing mechanical jacks.

When activating the jack, the movement of the crank handle must never be blocked by fixed or movable parts of the machine on which it is fitted; these parts could interfere with the movement of the handle itself or cause injury to the operator.

Do not obstruct access to the grease nipples in order to facilitate use and ensure lubrication; whenever possible make them always accessible even in the different jack positions.

In the two extensions jacks or in jacks without stop-stroke, we recommend to further inform the final user about the risk of accidental falling of the inner parts.



7 TRANSPORT OR HANDLING INSTRUCTIONS

RIMA's standard packaging can be handled with standard lifting devices.

On receipt of the goods is essential to open the package and keep it in a protected area (not subject to weather conditions)



If the mechanical jack is so heavy that it cannot be safely moved by hand, it must be lifted with means suitable for its mass. As a lifting sling, it is necessary to use at least two fabric belts which comply with directive 2006/42/EC, having the same length, hung around both ends of the mechanical jack correctly and safely (do not use steel cables or chains in contact with the jack, because the surfaces could be damaged).

Make sure that the lifting operation is performed safely by checking that both the lifting equipment and the slinging belts are capable of lifting the weight of the jack in safety.

8 INSTRUCTIONS FOR FITTING THE MECHANICAL JACKS ON MACHINES AND/OR EQUIPMENT

The operation for installing the mechanical jacks on machines and equipment must be performed by qualified personnel who have read and understood this instruction manual in all its parts.



It is necessary to pay attention that the supports and the moving devices of the machines and of the equipment to which the mechanical jacks are connected are in a centred position with respect to the jack axis. In this way, there will be no transverse forces on the pipes, thus avoiding the premature wear of all the sliding parts of the mechanical jack or the breaking of the jack itself.

The connection of the mechanical jacks to the supports and to the moving devices of the machines and equipment must be performed by welding carried out by specialized personnel according to the ISO 3834 standard, or by means of fixing mechanical systems compatible with the coupling set by the design and manufactured using material and tolerances suitable for safely supporting the maximum load of the mechanical jacks.

After the fitting on the machine, it is necessary to check for correct coupling; the mechanical jacks must be tested to check their correct functioning.

9 INSTRUCTIONS FOR USE



Make sure that the position of the machine on which the jack is fitted is stable and that the jack operation does not cause overbalancing or is dangerous to people and objects.

We recommend using our stabilizers on level and sturdy surfaces.

In case of weak surfaces (e.g. hot asphalt, gritty soils, soft or recently ploughed/milled soils, damp clay, etc.) place the jack in the middle of a metal or wood panel: its thickness and dimension should be appropriate to the weight carried and to the pliancy of the ground. To open the jack, rotate the handle anti-clockwise and rotate it clockwise to close the jack.

For jacks with two extensions it is necessary to take the pin out; before removing the pin, firmly hold the inner pipe to prevent it from falling and guide it into the desired position; then insert the pin again and leave the pipe.



MECHANICAL JACKS

USE AND MAINTENANCE MANUAL

page 12 of 13

10 INSTRUCTIONS FOR MAINTENANCE AND CHECKS

Read this instruction manual before starting the operations of maintenance and checking.

Any operation of maintenance and checking on mechanical jack installed on the machines must be performed by properly trained staff using suitable accident prevention equipment. These operations must be performed with the machine at a standstill, set in a stable position.



MAINTENANCE OPERATIONS. (To be performed every 50 jack working hours or at least twice a year). This operation consists of cleaning the outside of the mechanical jacks, greasing the screw, the internal screw thread and the bearing using the appropriate grease nipples.

CHECKING OPERATIONS. (To be performed every 50 jack working hours or at least twice a year). Check that the handles turn easily without clicking or difficulty. Also check that there are no damaged or deformed parts (e.g. cracks or signs of breaking) either in the jack, in the fittings or in the machine moving devices to which the jacks are connected.

11 MECHANICAL JACK OVERHAULING

All overhauling carried out during the warranty period must be done at Rima S.p.A. or at workshops expressly authorized by Rima S.p.A.

This operation is necessary when difficulty of use or damaged components are discovered after checks have been made.

In these conditions, the machine or the equipment cannot be used and it is therefore necessary to dismount the damaged mechanical jack for overhauling. Trained staff must carry out the operations of removing the mechanical jack from the machine and overhauling.

Instructions for disassembling the mechanical jack from the machine or equipment

The operation to disassemble the mechanical jack from the machine or equipment must be performed with the machine at a standstill, set in a stable position, with the engine switched off and with the key removed.

Before starting to disassemble use suitable means to securely anchor the parts of the machine or the equipment where the jack is connected, so that these parts cannot move during and after jack disassembly.

When supporting the jack during disassembly, use means suitable for its mass. If the jack is so heavy that it cannot be handled manually in safety, it is necessary to sling it using fabric bands of a suitable capacity, as described in point 7. This operation must be performed in safe conditions.

Check how the jack is fixed to the machine or equipment and go on with disassembly as described depending on the type :

- Jack fixed using screws or nuts; remove them using appropriate wrenches or devices.
- Welded jacks: cut the welding with an angle grinder but make sure that neither the frame of the machine nor the tubular part of the jack is damaged.

Instructions for disassembling the mechanical jack

A bench with a vice and a jack support are indispensable for the jack disassembly operations. This support must be adjustable in height and be robust to support the weight of the jack safely. In addition, if the jack is so heavy that it cannot be lifted manually, it must be lifted with a sling, as described in point 7, using means suitable for its mass.

To disassemble, proceed in the following way:

- Fix the outer side of the jack body in the vice and rest the inner part on a support; put some rags between the jack and the vice so as not to damage the paint.
- Using a pin punches take the pin out of the hub of the handle (in some cases the pin is substituted by a screw) and take the handle out of its seat; in case of a reduction gear jack, unscrew all the screws, take the box away, take the pin out of the hub of the handle and take the handle out of the seat.



MECHANICAL JACKS

USE AND MAINTENANCE MANUAL

page 13 of 13

- Then remove the inner part; pay attention not to lose the bearing, if there is one.
- Then fix the inner part to the vice and rest the inner part on an adjustable support in order not to damage its surface.

To disassemble the screw it is necessary to check that it does not have a stop-stroke pin; in this case first of all it is necessary to take it out putting the pin at the height of the appropriate inner pipe hole; afterwards unscrew the screw until it completely comes out of the internal screw thread.

In case there is a welded stop-stroke it is not possible to disassemble the inner part.

Completely wash all the components of the mechanical jack, preferably using naphtha, kerosene or another degreasing agent that is not aggressive and blow with compressed air until the pieces are completely clean.

Scrupulously check all the components to identify any parts that are worn or damaged. In particular, check the welding of the footplate, the plate, the screw washer and the inner and outer pipe fittings. Check also that the thread of the screw and the internal screw thread are not too worn or that they show no signs of weakness. If you find components worn to the extent that they can no longer be used, contact **RIMA S.P.A.** asking for spare parts (do not replace components with pieces that are not original).

The grease nipples and the bearings must be all replaced with new ones. These are easy to find as they have standardised sizes and profiles. If you experience problems in finding them, contact the **RIMA S.P.A.** company.

Instructions for re-assembling the mechanical jack

A bench with a vice and a jack support are indispensable for the jack re-assembly operations. This support must be adjustable in height and be robust, to safely support the weight of the jack. In addition, if the jack is so heavy that it cannot be lifted manually, it must be lifted with a sling, as described in point 7, using means suitable for its mass.

To re-assemble it, proceed in the following way: place the outer part in the vice (place rags to protect the paint from possible damage from the vice) and after having greased the screw, screw in the internal screw thread. In case of stop-stroke, re-position the pin on the screw after assembling it.

To assemble the inner part, fix the outer part in the vice, position the bearing or the anti-friction washer in the correct screw and insert the inner part until the screw head is centred with the hole of the upper closing plate of the outer pipe.

For the model with reduction gear, first fix the box to the external pipes by means of screws (or rivets) and then proceed to fixing the handle on.

Position the handle on the head of the screw and block using the pin (or the screw, applying the correct tightening torque as set in the standard tables).

Grease the jack and verify that it functions correctly before re-assembling on the machine or equipment.

12 REPAIR AND SPARE PARTS

For any repair operation and/or the replacement of the various spare parts of the mechanical jack, not due to normal maintenance or overhaul, as indicated in the previous chapters, please contact **RIMA S.P.A.**, which will supply or give information on the subject.

13 DISPOSAL

Mechanical jack disposal must be carried out in conformity with the laws in force; therefore, the parts made of metal shall be scrapped while those made of plastic or rubber shall be disposed of in appropriate containers. When possible, grease and oil should be recycled and taken to the obligatory Cooperative used mineral oil deposits. (www.coou.it).