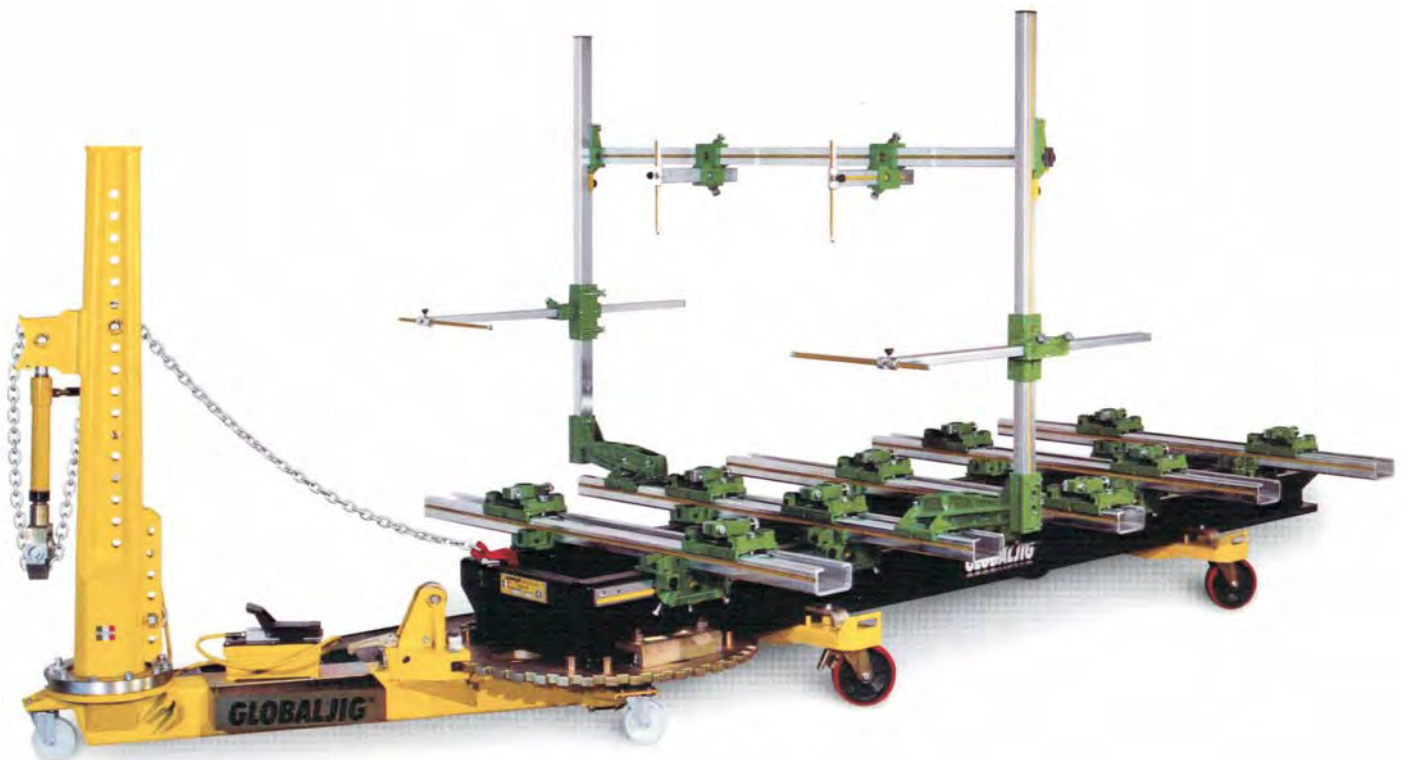


USERS' MANUAL

SYSTEM



GLOBALJIG
International S.r.l.

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Società unipersonale sotto la direzione e controllo della Bellini Srl. - Capitale sociale € 100.000,00 i.v.
Iscritta al Reg. Imprese di Massa Carrara al N° 01064230459

USERS' MANUAL

SYSTEM

Year of Manufacture:

1.	INTRODUCTION	5
2.	SAFETY	7
3.	TECHNICAL CHARACTERISTICS AND DATA	9
4.	TRANSPORT AND UNPACKING	11
5.	INSTALLATION	13
6.	START-UP	17
7.	CONTROLS	19
8.	OPERATIONS	21
9.	MAINTENANCE.....	23
10.	REPAIRS / SPARE PARTS.....	25
11.	DRAWINGS	27
12.	DEMOLITION	35

1. INTRODUCTION

Globaljig International S.r.l., manufacturer of the **SYSTEM** bench with **VECTOR** arm, invites you to thoroughly read the indications in this manual to gain familiarity with the information contained herein.

The Manual explains how to use the Machine, and provides instructions and useful tips to ensure the best possible performance.

The **SYSTEM** straightening bench with **VECTOR** arm has been designed and manufactured to guarantee long life and to ensure safe operations.

The Manual also provides indications on what the User should and should not do to prevent, or reduce to an absolute minimum, any form of injury.

Read the Safety messages indicated with the symbols below and follow them to the letter:

ATTENTION

Non-compliance with these instructions can lead to injury.

WARNING

Non-compliance with these instructions can damage the machine.

This Manual is an INTEGRAL PART of the Machine and must be carefully preserved for the entire life of the machine.

It must be kept complete and intact, as received, and in a safe place protected from damage. Always consult it without damaging it in any way.

The manual must follow the Machine if it changes ownership.

The Manufacturer cannot be held directly or indirectly responsible for any injuries or damages pursuant to non-compliance with the instructions contained in this Manual, improper use of the Machine or any use different from what is outlined herein.

The present Manual makes reference to the EC MACHINE DIRECTIVE 98/37 and subsequent modifications.

The Manufacturer has made a great effort to ensure that the information contained in this Manual is complete and precise. Nevertheless, due to the ongoing evolution in the product, some Machine data may differ from what is reported here. If precise specifications are required, contact our Customer Services Department directly.

2. SAFETY

BEFORE ASSEMBLING AND USING THE MACHINE, READ THIS MANUAL VERY CAREFULLY.

The machine can only be used by specially trained, authorized personnel.

Never tamper with, or modify, the machine without the Manufacturer's authorization. Such acts relieve the Manufacturer of any responsibility for damages that may ensue.

Tampering with, or modifying, the safety devices is in violation with European Safety Standards.

The **SYSTEM** unit can only be used indoors.

It must be installed by Qualified Personnel and in compliance with the instructions contained in this Manual.

We recommend the use of original accessories.

3. TECHNICAL CHARACTERISTICS AND DATA

3.1. CHARACTERISTICS

- Name of the Machine: **SYSTEM** bench with **VECTOR** arm is the market name of this Machine, which is a MECHANICAL ARM. The force of this machine derives from the combined application of a link chain with a hydraulic cylinder. This cylinder is activated by a manual or pneumatic pump and transforms the hydraulic pressure into pulling force. The configuration can be varied, appropriately setting the points where the pulling force is exerted, modifying both the intensity and direction. This makes it possible to use this unit on any deformed part of the body of the vehicle that is to be repaired.

It has three main, mechanically integrated units:

The first consists of a circular notched plate that secures the VECTOR to the SYSTEM bench.

The second consists of a horizontal body that makes the radial movements and supports the vertical body.

The third is the vertical body which supports the hydraulic cylinder, the snub pulley for the chain and the chain itself.

- Operations and Safety

Hydraulic thrust cylinder, driven by a manual or pneumatic pump.

Safety Device to prevent crushing the hand with the lever that engages/releases radial positioning.

All movements and all operations are operator-controlled.

- Use

The VECTOR unit has been designed and built to be used as the arm that exerts the force to straighten wrecked motor vehicles. It is to be used in body shops and can be used on the Benches indicated by the Manufacturer.

Any other use is to be considered improper and, therefore, unreasonable.

THE MANUFACTURER CANNOT BE HELD RESPONSIBLE FOR DAMAGES CAUSED BY IMPROPER, ERRONEOUS OR UNREASONABLE USE OF THE MACHINE.

The noise produced by the machine is always less than 85 dB (A).

- Machine ID

Brand: **Globaljig International S.r.l.**
Via Aurelia Ovest, Km 383
54100 Massa - ITALY

The serial number and CE labelling are reported on the label indicated in the figure below. This label is positioned on the:

- front crossbeam of the **SYSTEM** bench
- Vector work arm close to the engage/release lever



The identification data are reported on the fixed label secured to the Machine structure: never remove, alter or damage these labels.

3.2. TECHNICAL DATA for the *VECTOR* pulling arm

LENGTH: 2.15 m
 WIDTH: 1.0 m
 HEIGHT: 1.77 m
 WEIGHT: 330 daN
 PULLING FORCE: 5/10 t
 HYDRAULIC CYLINDER STROKE: 200 mm
 MAX. OPERATING PRESSURE: 600 bar

4. TRANSPORT AND UNPACKING

4.1. TRANSPORT DATA TABLE

POS.	CODE	DESCRIPTION OF PACKAGE	Qty	WEIGHT [kg]	
				NET	GROSS
01	E428	VECTOR CRATE	1	330	400
02	G101	SYSTEM PALLET	1		

All packages and packaging must be loaded, unloaded, and handled using appropriate procedures and equipment as outlined in current Safety standards.

The personnel performing these operations must wear the necessary personal protective equipment.

Globaljig International S.r.l. declines any responsibility for injury and/or damage caused by neglecting to take suitable precautions and by non-compliance with the procedures and standards regarding transport.

4.2. CHECKING THE PACKAGE

When checking the goods delivered, be sure that:

The package is not dented or broken and shows no signs of dampness or water. This must be done in the presence of the person making the delivery.

Take a good look at the package since the Manufacturer cannot be held responsible for any damage to the equipment derived from shipping.

Globaljig International S.r.l. guarantees the suitability of the materials used in its packaging and the best procedure for setting the goods in these packages.

Depending on the supply conditions, the goods always travel at the customer's risk unless otherwise agreed upon at the order confirmation stage.

5. INSTALLATION

5.1. Bench SYSTEM on wheels

Each operation of assembling, disassembling and substitution of wheels and/or crossbeam of wheel supports must be done without any vehicle on bench.

In case of equipments present these must be fixed in manner that they cannot move in any direction.

The lifting bracket B4525 (see page 33 of this manual) must be used exclusively when the bench is unloaded.

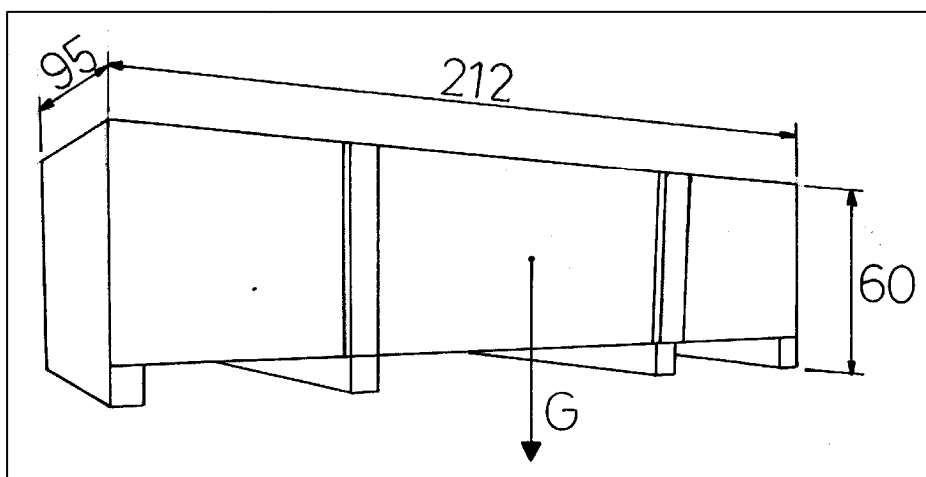
In case of urgent and immediate intervention use a hydraulic jack (of adequate lifting capacity) directly on the lower profile of the bench paying attention and applying always the elementary rules of security.

MAXIMUM WEIGHT CAPACITY OF THE BENCH SYSTEM ON WHEELS Kg 3100.

5.2. HANDLING the SYSTEM bench and VECTOR arm (see page 19)

Once the work area has been selected, move the package into position with a forklift or lift truck.

The package containing the "VECTOR" appears as indicated in
(Fig. 05-01)



The SYSTEM and VECTOR must be installed by Qualified Personnel carefully following the instructions given in this Manual.

5.3. UNPACKING

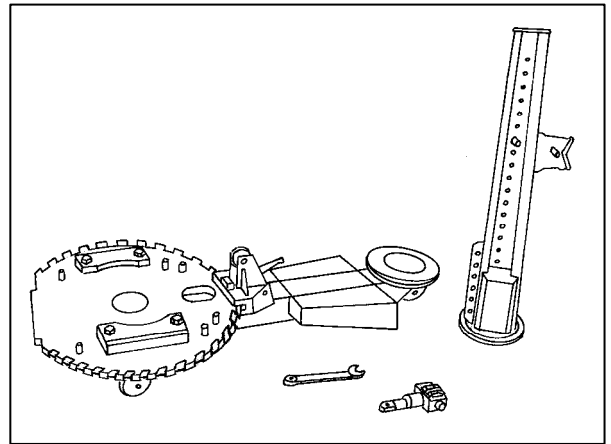
Remove the lid and open one side of the crate. Withdraw all the wooden parts used to lock the unit in place during shipping. Withdraw the vertical body and then push out the horizontal body on its own wheels.

WARNING

Be very careful when performing this operation. Make certain that the wheels do not bang against the floor when the unit is removed from the crate as they could break.

List of the components contained in the package **(Fig. 05 - 02) ↓**

- A horizontal body with tool-holding pocket.
- A vertical body complete with snub pulley chain.
- Upper connection and lower fork connection for application of the hydraulic cylinder.
- A 36 mm. combo hexagonal wrench (to secure the VECTOR to the Bench).

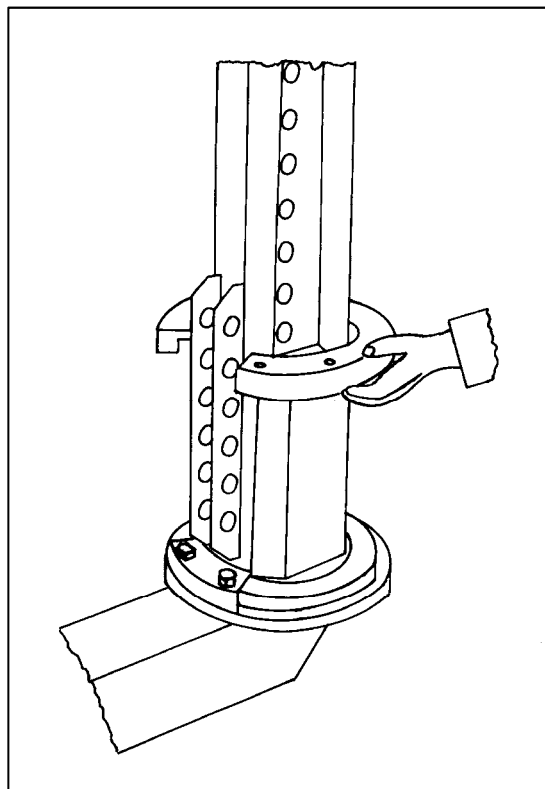
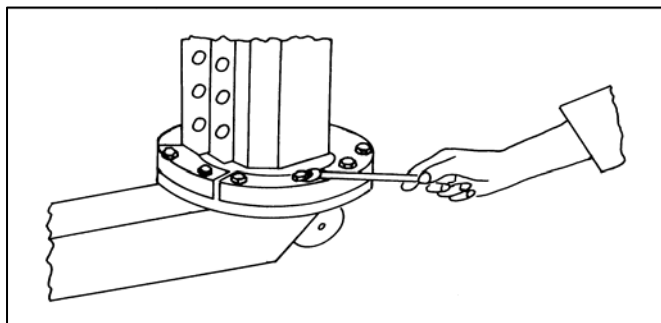


5.4. ASSEMBLY

The horizontal body is delivered preassembled. At this point the tool-holder must be installed by simply inserting it as indicated in **fig. 05 - 02**. Then remove the large half ring from its housing and install the vertical body on the flange.

Then install the large half ring as shown in **fig. 05 - 03** → and tighten all screws.

(**fig. 05 - 04**).

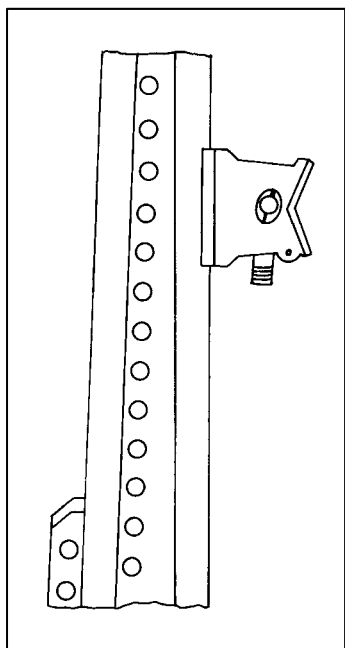
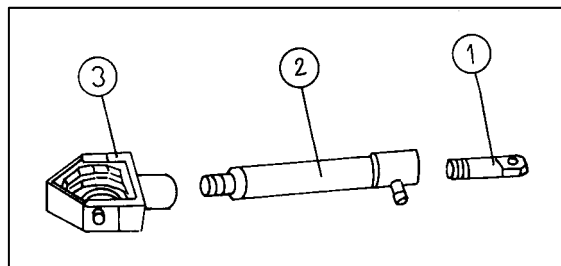
**ATTENTION**

Before starting up the Vector, to prevent risks for yourself and the tool, make certain that all the screws on the two half rings have been thoroughly tightened.

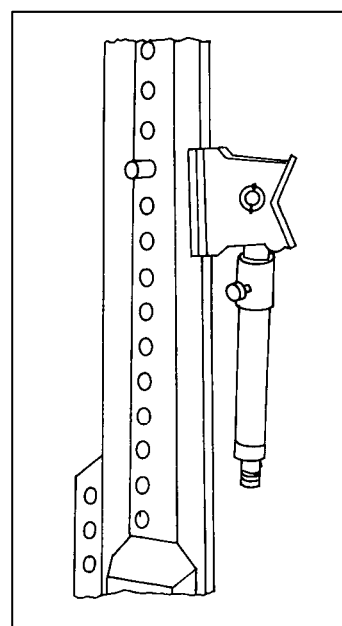
5.5. ASSEMBLY OF THE HYDRAULIC CYLINDER

The components involved are shown in
fig. 05 - 05 →

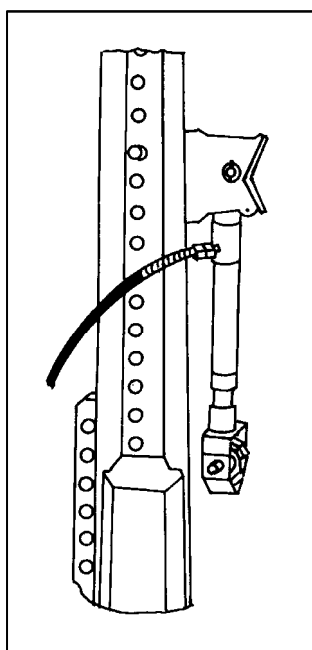
- 1) Male connection**
- 2) Hydraulic cylinder**
- 3) Female connection with fork**



Insert the male connection in its position as shown in
← fig. 05 - 05 and lock it in place with its plug.
Secure the plug with the Safety ring.



Screw down the hydraulic cylinder all the way and
leave the hydraulic connection positioned to the side
as shown in **fig. 05 - 06. →**



Tighten the fork connection all the way.
Insert the pump hose into the connection on the
hydraulic cylinder and tighten the ring nut all the
way.

← Fig. 05 - 07.

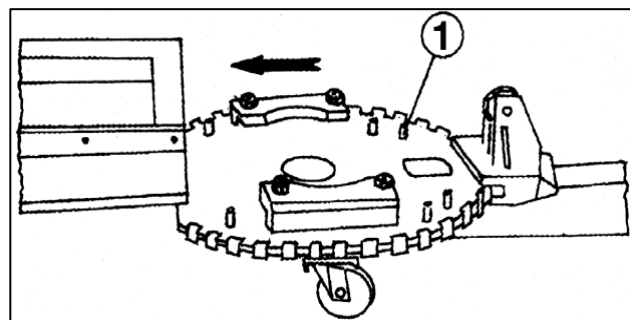
**THE VECTOR IS NOW READY
FOR START-UP.**

6. START-UP

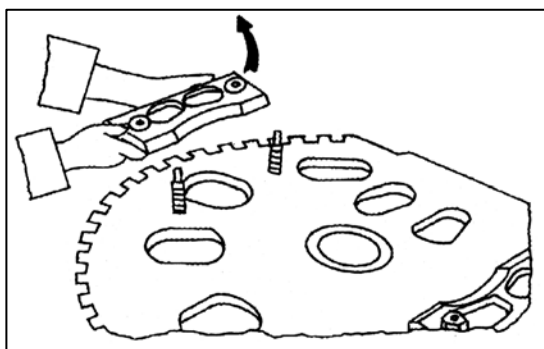
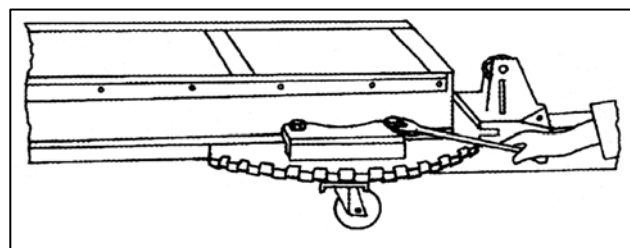
6.1. COUPLING TO THE BENCH

The vector can be inserted and secured to the Bench from both the front and side.

The vector is pushed in from the front, rolling on the three wheels, until it enters the profile of the Bench and is flush with the two pins ① as shown in **fig. 06 - 01**→



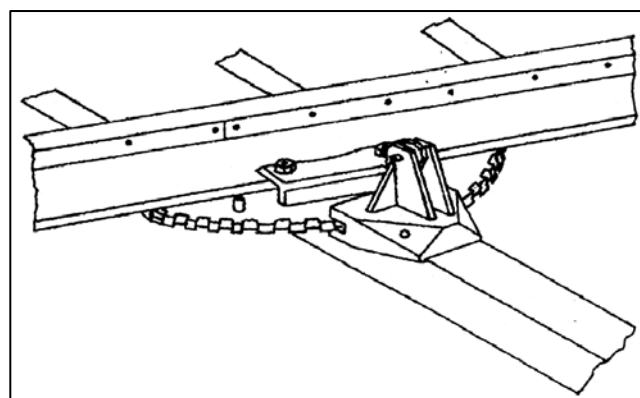
Then the two side brackets are locked in place one at a time and the nuts are tightened all the way with the 36 mm wrench as shown in **fig. 06 - 02**. →



To insert the vector from the side, one of the brackets and its screws must be removed so that the notched wheel can pass under the Bench.

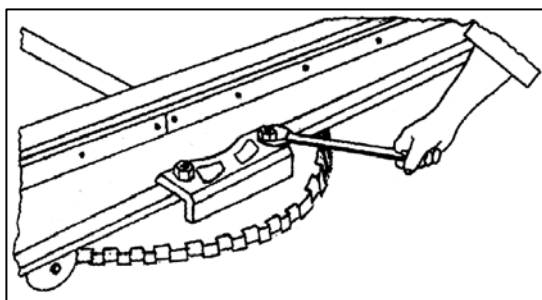
← **(fig. 06 - 03)**.

Push the Vector under the Bench until it is flush with the other bracket which was not removed **(fig. 06-04)** →



Then, on the opposite side, install the two screws with their springs and the bracket which was previously removed. Tighten the nuts on the brackets all the way.

← **(fig. 06 - 05)**.

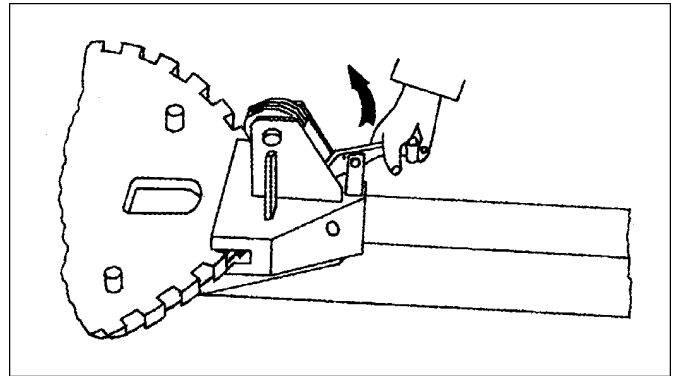


7. CONTROLS

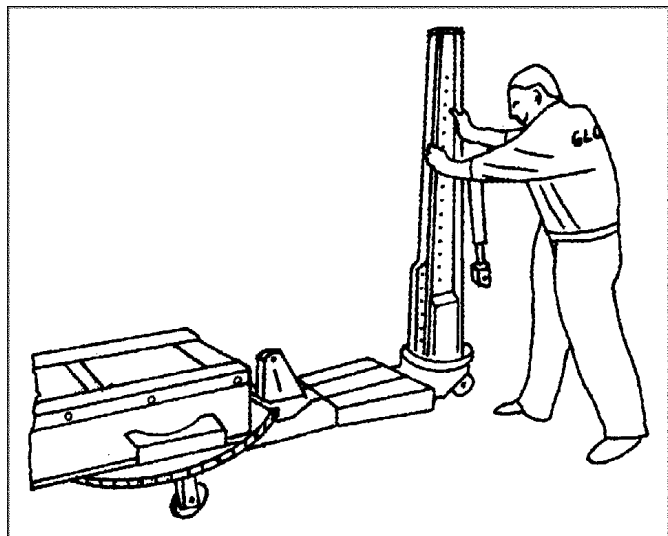
7.1. POSITIONING THE VECTOR

The manual engage/disengage lever on the horizontal body inside the notched plate is used to secure the Vector in the best position for pulling.

Positioning is then performed by moving the lever as shown in **fig. 07 - 01**.



Lever up: the Vector can be set in the best pulling position, pushing the vertical body by hand as shown in fig. 07 - 02. ↓



7.2. OPERATING THE HYDRAULIC CYLINDER

The device that controls the hydraulic cylinder is made up of either a manual or a pneumatic pump.

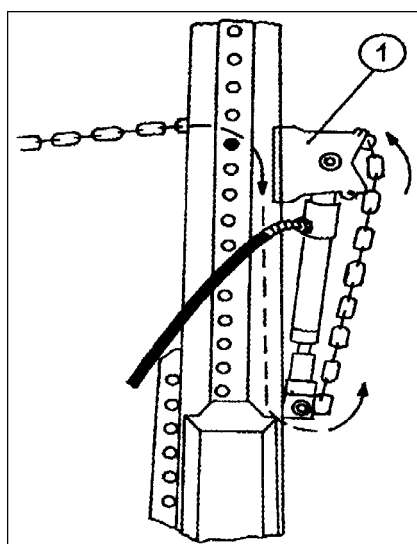
In both cases, the controls let the Operator move and operate from a Safe position.

7.3. APPLYING THE PULLING CHAIN

One end of the 3-meter-long, high resistance steel link chain is free while the other end is fit with a pulling hook.

7.4. DIRECT PULLING

Connect the pulling hook to the terminal secured to the body, insert the free end over the snub pulley located inside the vertical body, positioning it on one of the holes present (the position of the snub pulley determines the pulling direction height). (fig. 07 - 03). →



Lower the end of the chain until the snub pulley is set in the fork connection. Then pull it until it engages the position ① that has been arranged for it ← (fig. 07 - 04).

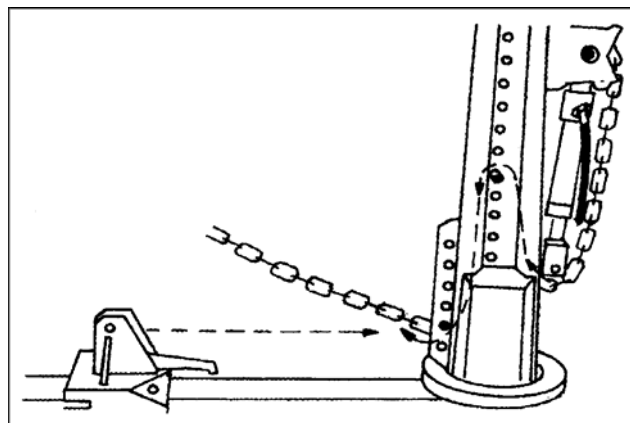
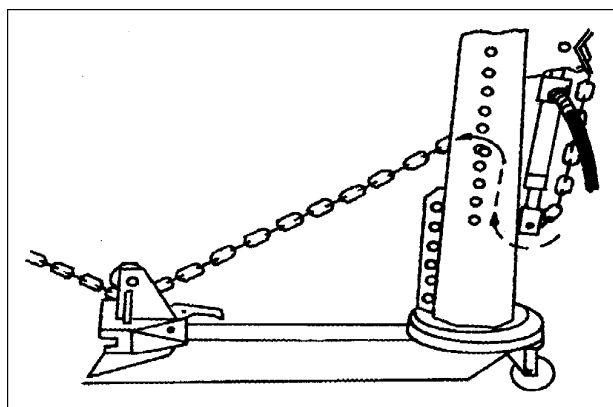
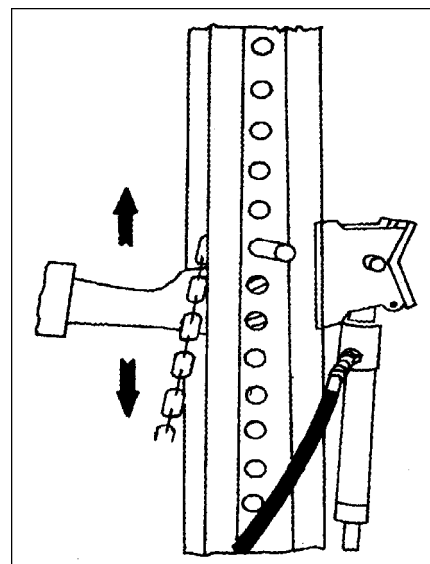


fig. 07 - 05

Depending on the desired pulling direction, the chain runs as indicated in fig. 07 - 05 or fig. 07 - 06.



8. OPERATIONS

8.1. WARNINGS

Once the installation (see Chap. 05) and start-up (see Chap. 06) procedures have been completed, the Vector is ready. It does not require any specific calibration.

However, remember, no equipment is risk-free during operations. Therefore, always apply the following precautions:

- ⇒ Before using the Vector check that all bolts securing it to the Bench and securing the half rings are fully tightened.
- ⇒ Check that the engage/release lever is in the horizontal position (locked).
- ⇒ Check that the chain, running from the Hook → Connection, is fully aligned and **there are no loops**.
- ⇒ Make certain that the pulley pins and hydraulic cylinder connections are fully secured with the supplied Safety rings.

8.2. OPERATIONS

Starting conditions: vehicle to be repaired secured to the Bench following the indications in the GLOBALJIG data sheet.

- Determine what part of the body needs to be straightened.
- Position the Vector on the SYSTEM Bench following the instructions in Chapter 06. Then arrange it to achieve the correct pulling direction by correctly positioning the snub pulley-chain on the axial wheels of the vertical arm and on the radial rotation of the horizontal body.
- Body side: connect the chain Hook to the terminal secured to the body sheet.
- Vector side: pull and stretch the chain until the free end of the chain engages the arranged hooking site.
- Start up the manual or pneumatic pump that drives the hydraulic cylinder so the Vector can apply the pulling force.

9. MAINTENANCE

Scheduled maintenance is limited to general cleaning of the Vector at the end of the work shift and after vehicle repair cycle.

Maintenance of the hydraulic pump must only be performed by Qualified Personnel following the instructions given in the User's Manual supplied with the pump itself.

9.1. CHECKS AND MAINTENANCE OPERATIONS

The notched plate and the Bench securing bracket must be kept free of dust and dirt, oil deposits and any other form of dirt that may fall from the vehicle being repaired.

The operations required for the hydraulic cylinder are limited to a periodic "visual" check for any oil leaks. A dry unit, free of any traces of oil indicates that the hydraulic circuit is tight. Check and if necessary tighten the connections.

WARNING

For general cleaning operations, do not use water, gasoline or flammable liquids. Use rags or paper and possibly jets of dry, compressed air.

PERIODICALLY CHECK THE SCREWS ON THE HALF RINGS FOR TIGHTNESS.

10. REPAIRS / SPARE PARTS

10.1. REPAIRS

A breakdown of the hydraulic system may depend on a pump or cylinder malfunction.

To determine the cause of the defect, include all components in the troubleshooting procedure. Do not remove the components. Contact an Authorized Service Centre for assistance.

10.2. SPARE PARTS

The drawing in **CHAPTER 11** shows the mechanical parts that make up the **VECTOR** unit.

Please note that it is not possible to supply all the parts in the blowup and, specifically, all the structural components. If problems arise in these parts, the Manufacturer reserves the right to make a detailed examination at its own facilities or at one of the shops in its technical services network.

Globaljig International S.r.l. is at your complete disposal for any clarification you may require regarding parts to ensure that your Machine keeps running perfectly.

The hydraulic parts are supplied after the Manufacturer has adequately examined the technical reason for the problem.

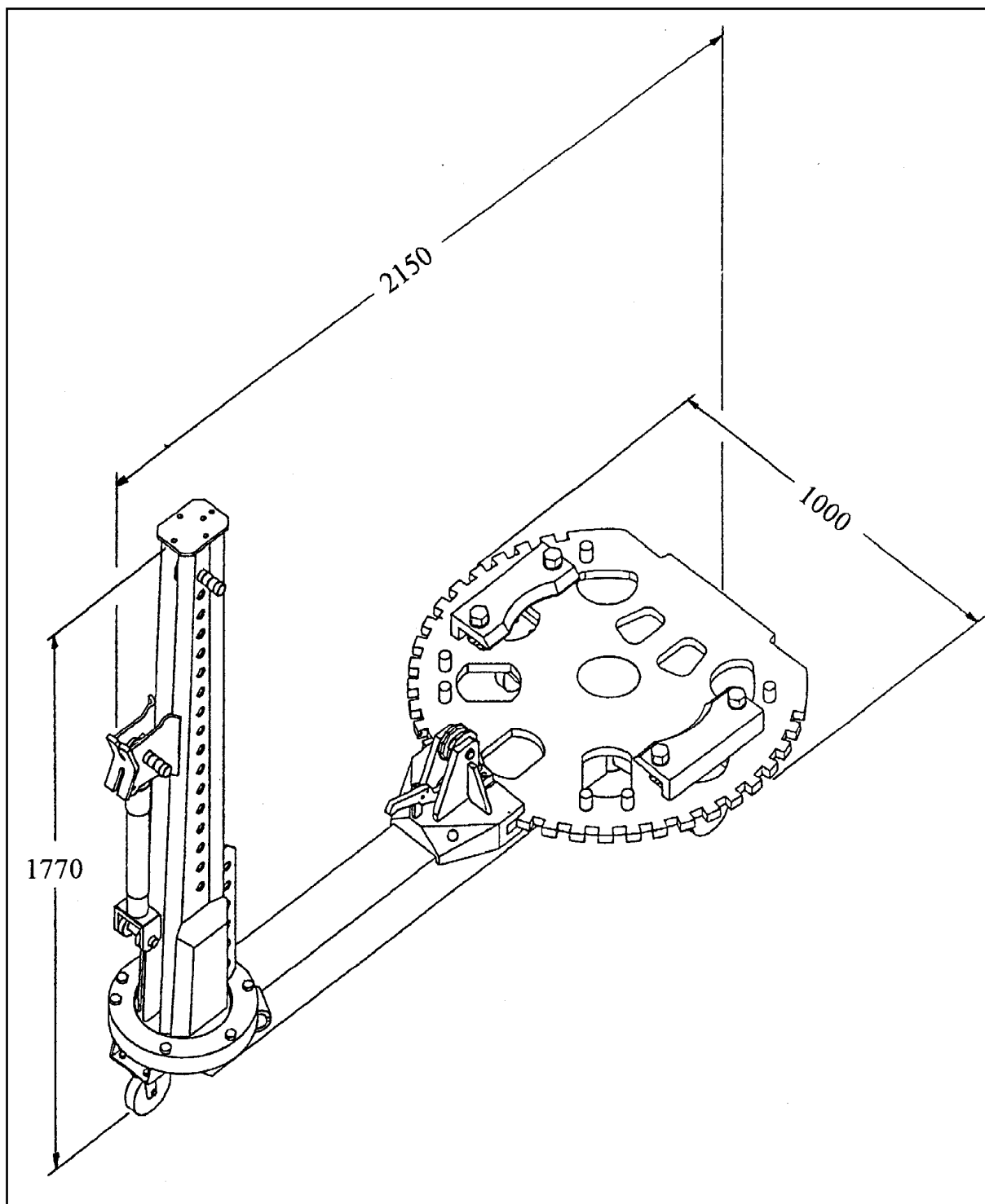
WARNING

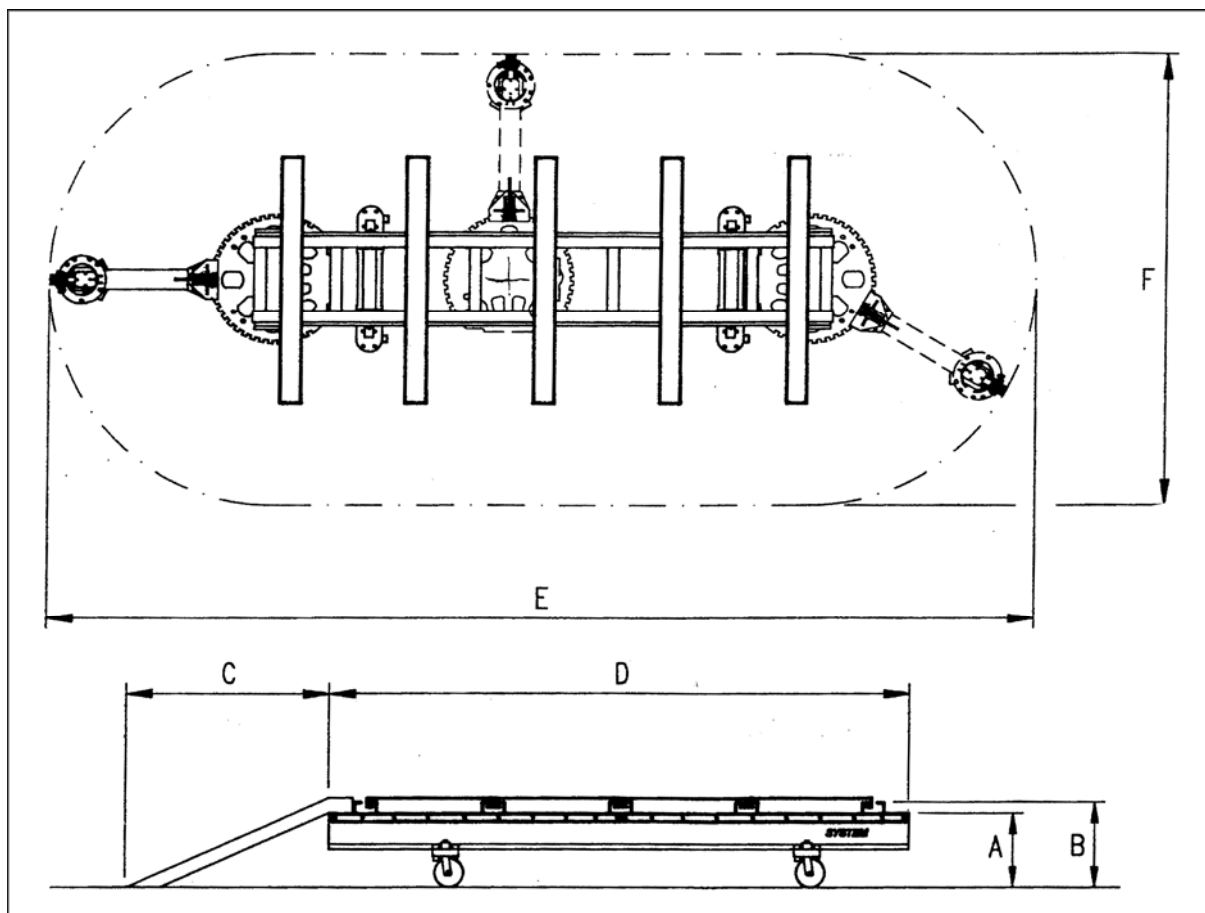
The supply and technical services are always performed through Authorized, Qualified Retailers. Contact your dealer for spare parts and repairs.

- The Manufacturer cannot be held responsible for injury or damages pursuant to repairs performed outside its own Site or by Personnel which are not part of its own organization.

11. DRAWINGS

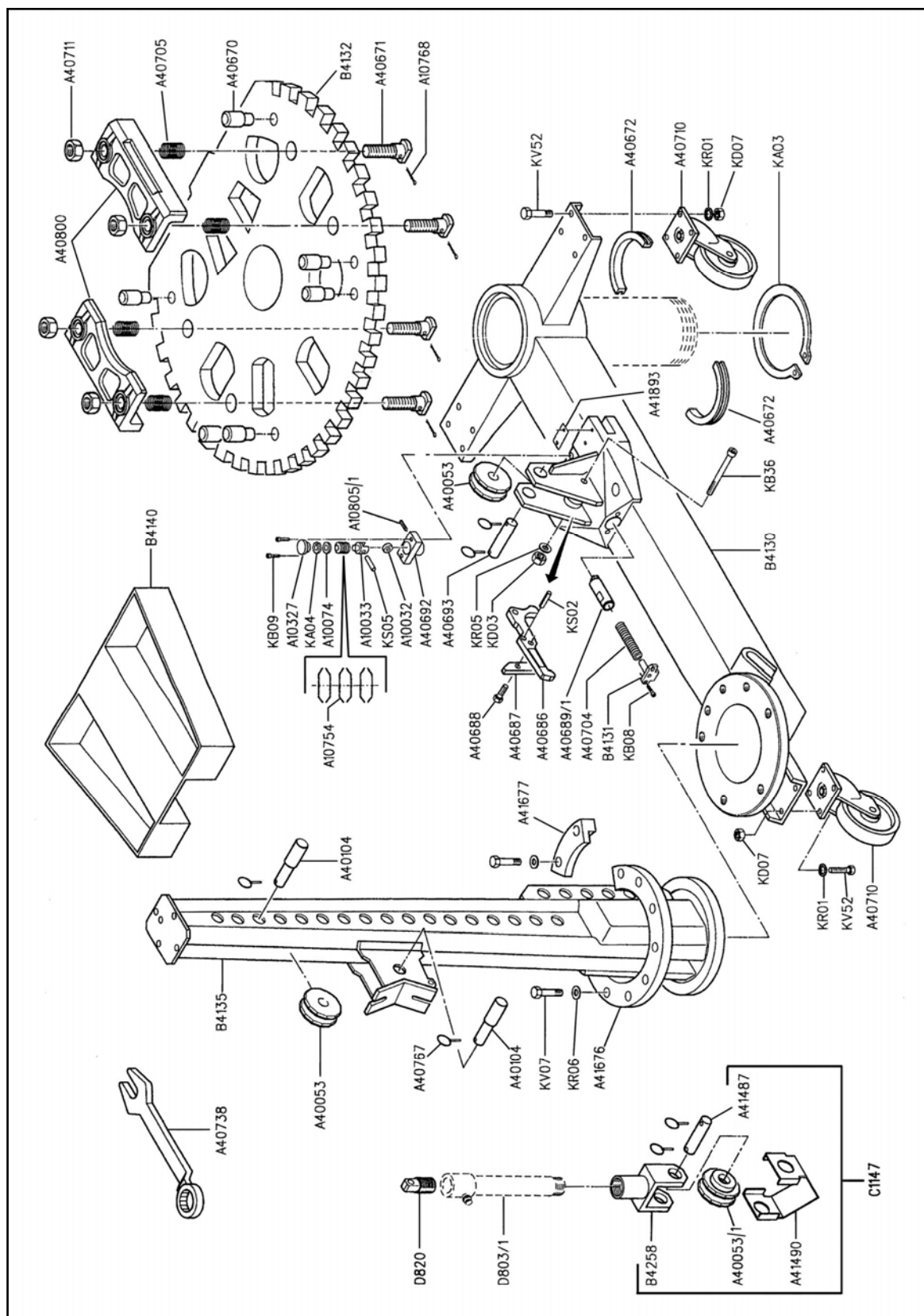
11.1. VECTOR WORKING ARM DIMENSIONS



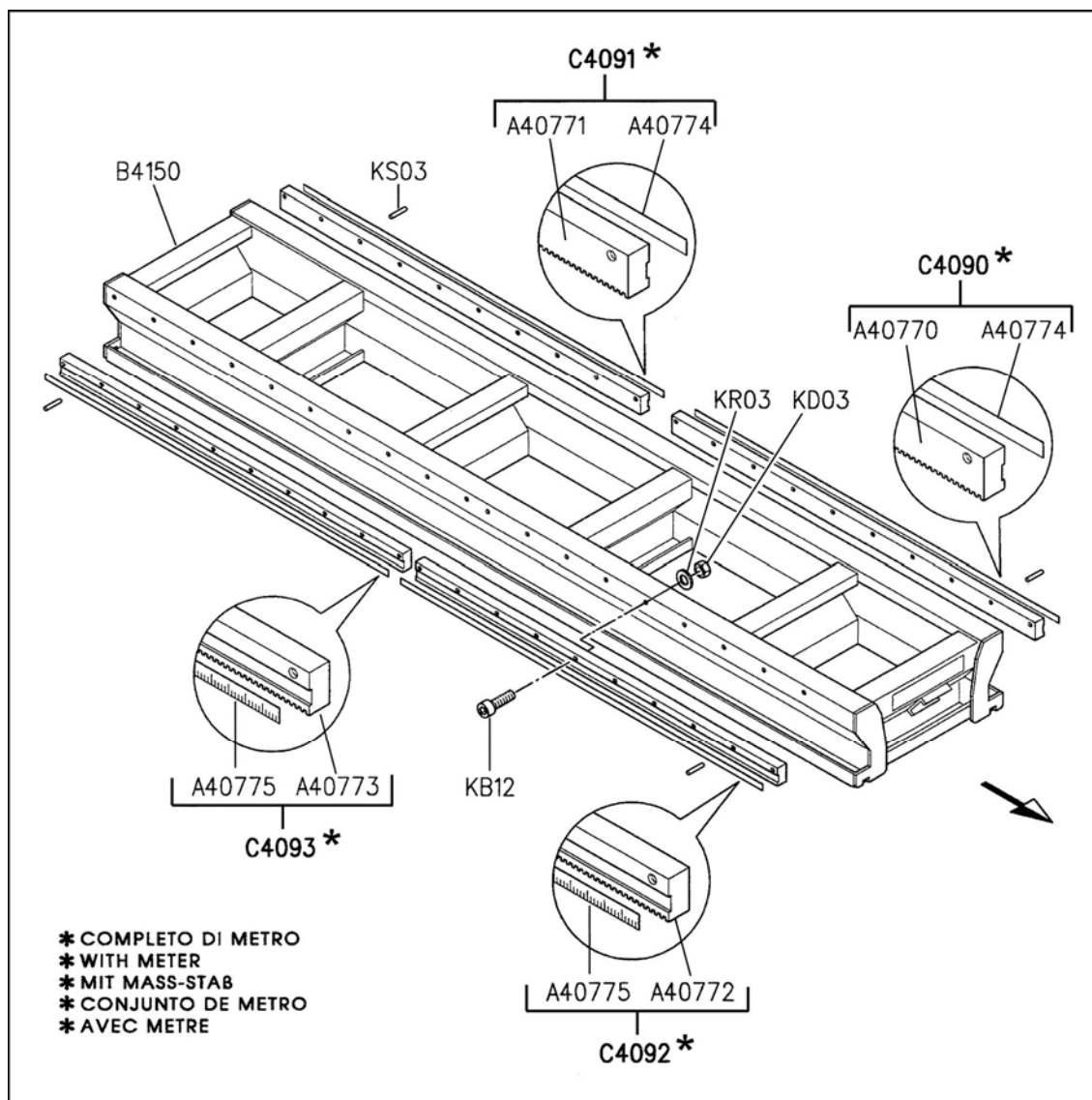
11.2. SYSTEM BENCH WORK AREA AND DIMENSIONS

MODEL	A	B	C	D	E	F
SYSTEM (4 m.)	500	585	1630	4020	6700	3340
SYSTEM (5 m.)	500	585	1630	5020	7700	3340

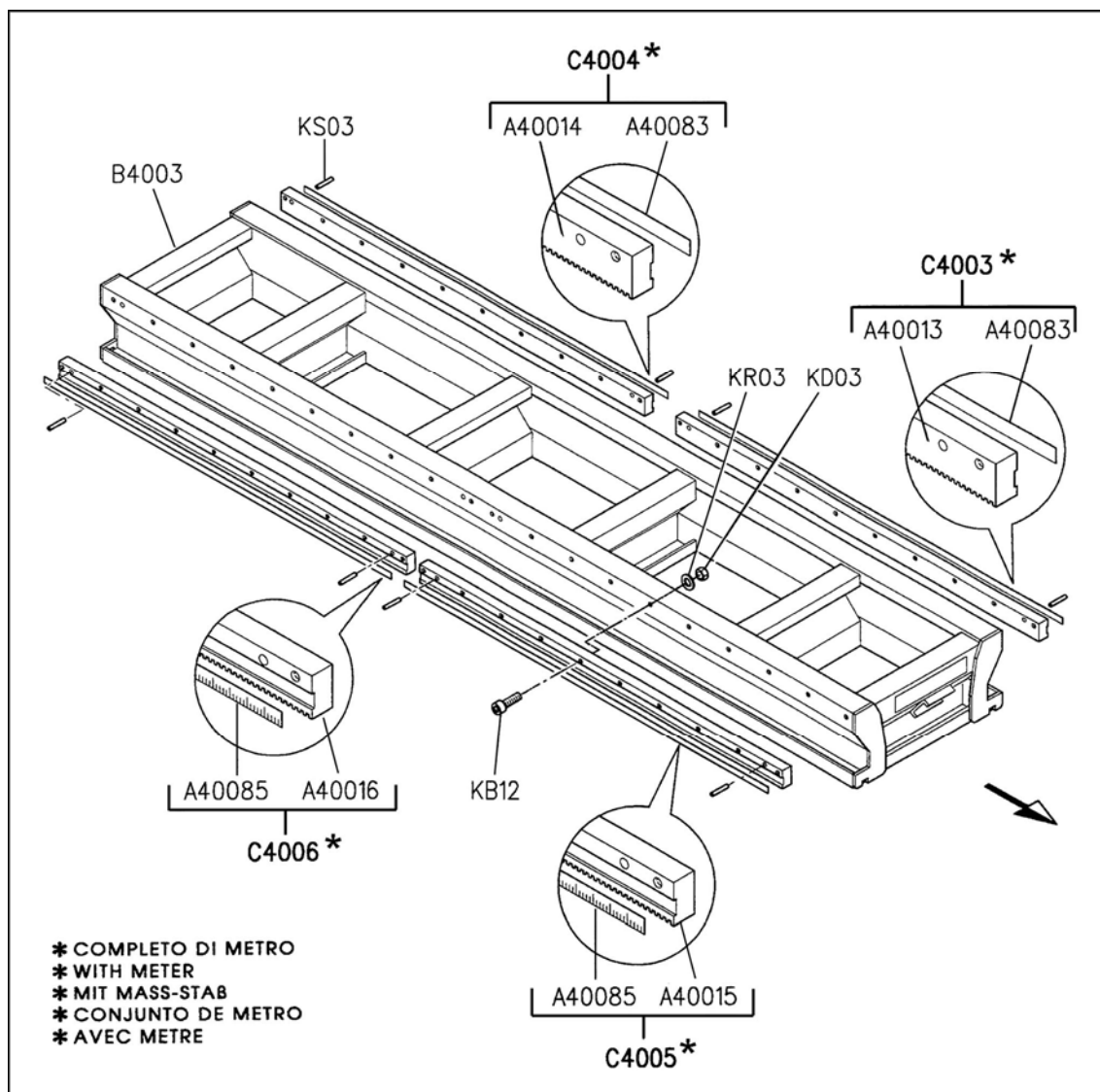
11.3. BREAKDOWN OF VECTOR WORK ARM



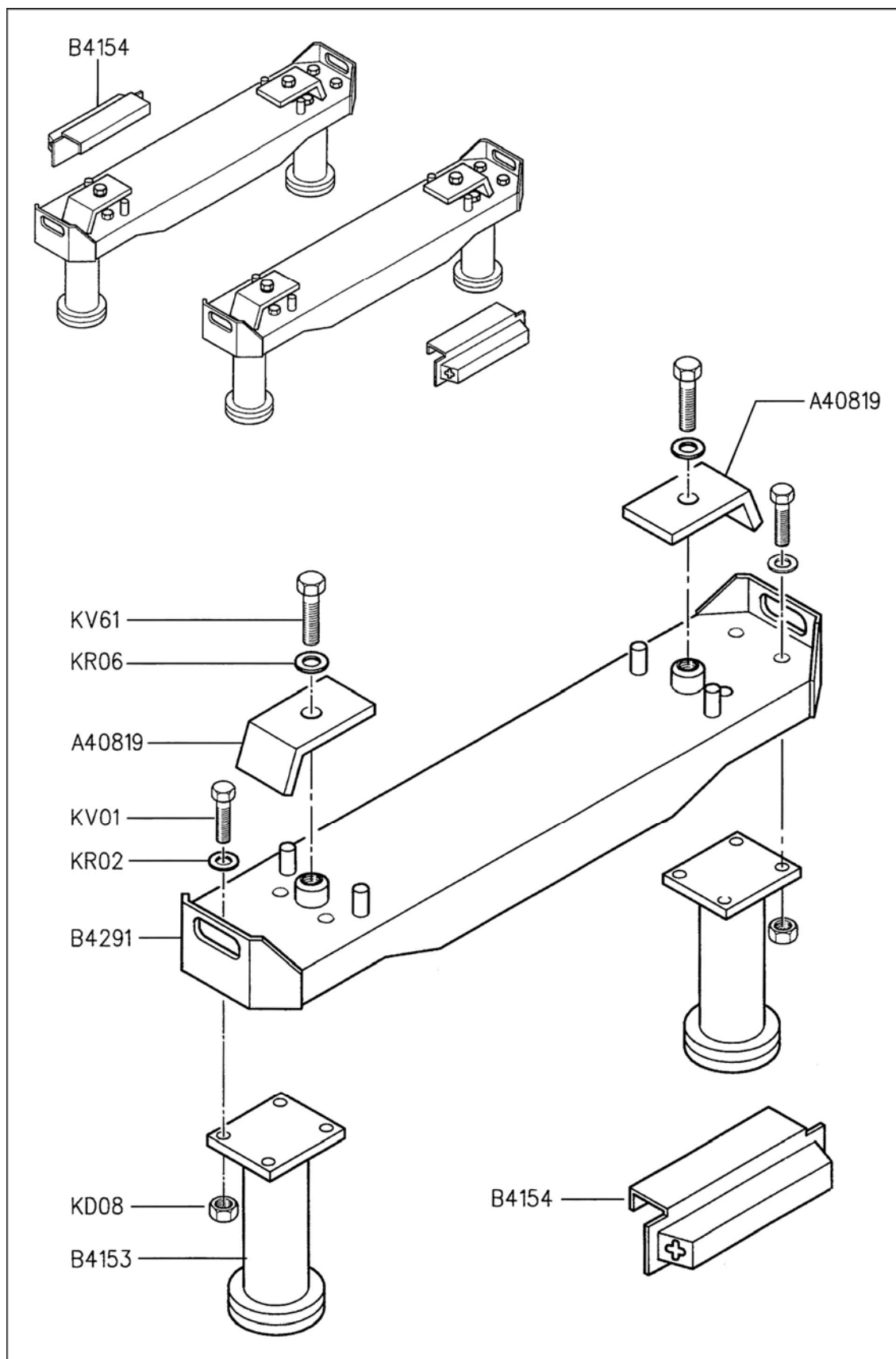
11.4. D435 - SYSTEM 5m BENCH



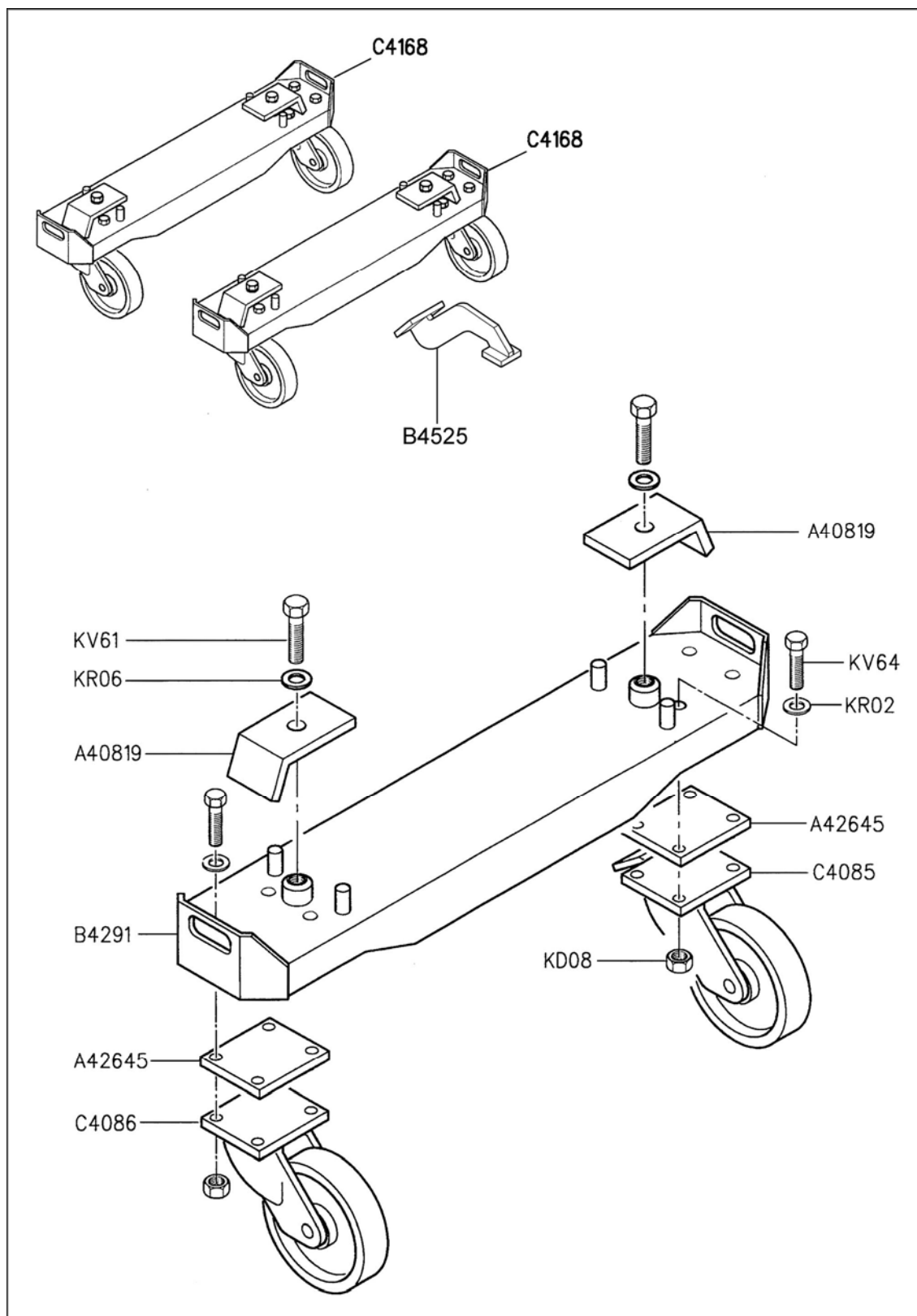
11.5. D436 - SYSTEM 4m BENCH



11.6. D445 – Series of bench feet with supports for anchoring to the floor



11.7. D448 – SERIES OF BENCH WHEELS



12. DEMOLITION

If the System/Vector is to be demolished, the User must remember that this operation must not create any Health or Environmental risks.

The **SYSTEM/VECTOR** is considered **special waste**:

- The components must be classified referring to the degree of disposal and recycling in compliance with current law. Remove the parts of the Machine and sort them by type according to the above-mentioned classification.
- Collect the oil contained in the hydraulic cylinder, preventing it from leaking onto the ground. Deliver it to the local Agency that collects and disposes of spent oils.
- The user is directly responsible for the above in compliance with current law.
- The Manufacturer is relieved of any responsibility for non-compliance with

GLOBALJIG *International S.r.l.*

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