SAFETY MANUAL
USE AND MAINTENANCE

CONCRETE CRACKER CC300

CE

TRANSLATION OF THE ORIGINAL VERSION

Rev. 5 3/2020

IMPORTANT

READ THIS MANUAL BEFORE USING THE TOOL

KEEP ALWAYS FOR FUTURE REFERENCES

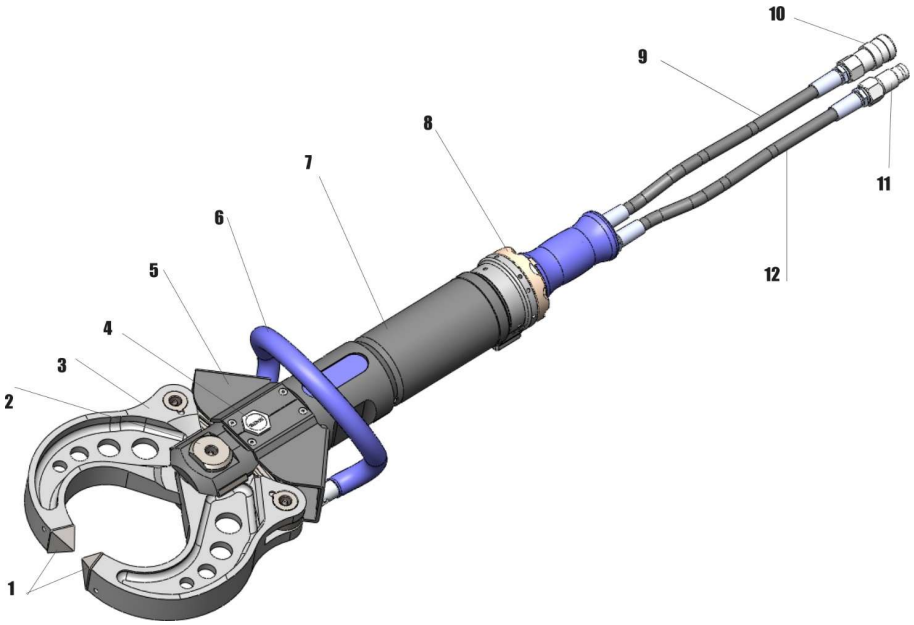
Index PAGE

PART LIST AND EXPLODED VIEW ARE ATTACHED TO THIS MANUAL IN A SEPARATE BOOKLET.

1 Safety Policy

TEHMA tools are designated and developed with the purpose to give the best result and performance when used properly.
Operator safety is one of the first aspect of the product design.
In order to avoid danger of injury, the equipment should only be operated by persons with appropriate training in the safety aspects and with a good knowledge of the equipment too.
It is therefore strictly necessary to read this user manual carefully and pay the utmost attention to the correct and prohibited uses of the tool and to all warnings regarding risks and dangers, before using the equipment.

2 Product Description



1 Hardened Tips
2 Central Pivot bolt
3 Jaw
4 Oil cap
5 Hand guard
6 Handle
7 Hydraulic Cylinder
8 Star Grip
9 High-Pressure Hose
10 Quick-disconnect Coupling Female
11 Quick-disconnect Coupling Male
12 Return Hose

3 Safety Norms

3.1 Prohibited uses

TEHMA tools have been designed exclusively for professional use for demolitions, industrial use and rescue. Any use other than those of this nature is therefore prohibited!

3.2 Risks connected with the use of the product

HUMAN RISK - DANGER

- Before to turn on the equipment, it must be ensured that nobody is endangered by its operations.
- When working close to live components and cables suitable measures must be taken to avoid current transfers to the equipment.
- Inspect the hoses and screwed connections for leaks and externally visible damage!
  Squirting hydraulic fluid can result in injuries, pay close attention and always wear gloves when handling the equipment and the hoses!

- When using the equipment, always wear the appropriate protections:
  - Gloves with a suitable thickness.
  - Helmet with protective visor.
  - Protective clothing for the limbs and the body.
- Please be sure that no clothing gets stuck between the moving parts. Be also careful not to place your fingers between the jaws and the hand guards after the equipment is turned on.
- Please note that when crushing, tearing or breaking can cause falling material or sudden removal of such can cause it to catapult off.

- Always grab the tool in an appropriate manner to prevent it from falling over and injure someone.
  Hold it firmly during operation as it may slip or move suddenly.
- Hold the tool only by means of the handles.
- Never hold the hoses in the hands, nor step on them when the tool is working, and the hoses are under pressure.
- Never trying to cut/squeeze tubes, hoses under gas or liquid pressure, explosive bodies, live cables and hardened parts such as rollers, springs and springs steels.
- Make sure that the jaws are always firmly fixed to the tool body and that the backlash resulting from use is eliminated by periodically adjusting the screw on the central pin.
- The hydraulic fluid contained in the equipment can be dangerous if swallowed or in direct contact with the skin.

DEVICE PROBLEM - CAUTION

- Inspect the equipment every time before and after the use for visible damages and defects.
  If necessary, with the machine stopped and disconnected, clean all the moving parts from dust and dirt.
- Before starting to use the equipment, start the power unit and let it run for a few minutes allowing the oil to reach the right temperature inside the circuit (control unit, pipes and the tool).
- Never use the tool as a lever when it is under pressure. The action of forces external to those deriving from normal operation, could cause serious damage to the internal components of the tool.

- Do not use the tool to demolish rock, marble, granite and any other material other than concrete and bricks.
- Do not use the tool as a hammer.
- During operation, make sure that only the hardened tips are in contact with the object to be demolished and that no other part of the tool, including the body or the jaws, come into contact with it. Using this part to demolish can produce a high mechanical stress on the tool resulting in breakage very dangerous for the operator and the device!
- Make sure that the hoses are at a safe distance from the jaws and moving parts of the tools.
- Make sure to have positioned the tool correctly before starting to use it (see point 5.3).
- Pay attention that during use, rock or concrete fragments do not come into contact with the moving parts (cylinder rod, connecting rods etc.) or accumulate in the space between the body and the cylinder rod, with the consequent risk of damage the tool.
  In this circumstance, rotate it with the jaws downwards and shake it so that the fragments can fall.
- Do not operate the tool free of load moving the jaws at maximum opening / closing
- During breaks, switch off the equipment to prevent the oil from overheating unnecessarily.
- After use, place the tool on the ground making sure that no other object can hit the body or other parts of the tool.
- In case of malfunctions, immediately deactivate the equipment and secure it.
- The maximum pressure noted at the end of this manual may not be exceeded.
- Safety protections may never be deactivated.
- Any changes, additions or conversions to the equipment are prohibited and may result in loss of warranty!

RISK FOR THE ENVIRONMENT

- Remember that hydraulic liquids can have a negative effect on biological systems. Check regularly the device for leaks in order to avoid threats to the environment.
- Always dispose of exhausted hydraulic oil and any rags deriving from cleaning and maintenance operations, in an appropriate manner according with local laws.

NOTE: TEHMA is not liable for any damages resulting from improper use of the equipment or from modifications made to its products.

3.3 Hoses warnings

Hoses are to be inspected for previous damages always before the use. If necessary, they must be replaced. This operation is very important, and the operator is responsible of this control for his safety and the correct working of the device.

When you connect the hoses to the equipment be very careful to:

- Do not bend the hoses.
- Do not connect twisted hoses.
- Do not drag or lay hoses across sharp edges.
- Avoid tensile load and torsion.
- Do not hang any weights on the hoses.
- Never bring the hoses into contact with brake fluid.
  (Make sure the hoses are always cleaned immediately if they come into contact with acids, alcohol, fuel, solvents, battery acids, phosphate ester and lye.)
- Do not exceed the maximum pressure of 600 bar.
- Watch out for hairline cracks.
  (leaking high-pressure oil can involve in grave injuries!)

- Make sure that the hoses are at a safe distance from the jaws and moving parts of the tools.

3.4 Cleaning & Storage of hoses

Couplings must be always cleaned before and after every use of the device.
Dust can be really dangerous if it comes into the circulation of the tool.
Make sure all the red dust protection caps are always put back on before to storage the hoses.
To avoid the premature aging store them in dry, cool and low-dust condition avoiding direct sunlight and UV rays.

4 Set Up

4.1 Tool Presentation

The concrete cracker CC300 is a professional tool designated for the construction industry, specially indicated for all the demolition works as wall openings, partial demolition of concrete components and walls.
The device is particularly recommended in every situation where the work has to be done quickly, accurate avoiding as much as possible dust, noise and cracks on the walls.
The working principle is the compression of the concrete by two opposite jaws moved via a hydraulically activated piston.
The tool does not generate any vibrations and noise.

4.2 Equipment Check

Before starting to use the equipment, check it for external damages and leakages. This operation is very important and must be done before every use of the device.

4.3 Pump Unit Check

The pump unit must be switched off and set on unpressurised circulation before to be connected to the tool.

NOTE: It is very recommended to use the TEHMA power pack to drive the equipment. If the power unit is a different manufacturer, it is necessary to ensure that it complies with TEHMA specifications in particular make sure the operating pressure of 60 Mpa (600 bar) is not exceeded otherwise potential dangers not deriving from TEHMA may occur.

4.4 Connection of the equipment

On the side of the tool there are two short hoses. The one on the right ending with the female coupling is the high-pressure hose, the other one the return hose. They are connected to the power pack through one or more pair-extension hoses.
The position of the couplings enables unmistakable connection.
The device can be connected only if the hoses are depressurised.
Always connect first the return hose to the tool and disconnect it at final step.

Before coupling remove the dust, protection caps, then pull back the docking sleeve and hold. Connect coupling male and female and release the locking sleeve. The connection is now ready and secure. To decouple, carry out above in reverse order.

ATTENTION: the dust protection caps must put back on every time the hoses are decoupled.

4.5 First Use

The tool needs to be prepared when used for the first time and after a repair. Connect it to the power pack and proceed to open and close completely the jaws two times without any load.
The device is now ready to work.

5 Correct Use

5.1 Commands

Neutral Position (1)

The star grip is in the central position, the tool is set on unpressurised circulation. When released during the compression, the star grip returns to this position automatically guaranteeing the full load-holding function.

Opening (2)

Turning the star grip in a clockwise direction and keeping in this position the tool opens the arms.

Closing (3)

Closing the star grip in an anti-clockwise direction and keeping in this position the tool closes the arms.

(1)

(2)

(3)

5.2 Safety warnings

ATTENTION: Before to start working with the equipment wear always protective clothing, gloves and safety helmet with protective visor.

5.3 Correct Positioning

Once detected the good spot to start working, the correct positioning of the tool is very important to guarantee the safety of the operator and the best performances of the device.
The jaws must be positioned at 90° degree to the object to be broken, ensuring that the body of the tool doesn't get in contact with this part.
When closing the tips of the jaws incises the concrete part up to its breaking point. If the part doesn't crack, you must open again the jaws and restart closing from another spot.

ATTENTION: **When working be sure that only the tips are in contact with the concrete while the arms are not under load!**
Using the internal part of the jaw for breaking can produce a high mechanical stress resulting in a crack very dangerous for the operator and the device!
IMPORTANT: Never use the tool under load to lever and breaking concrete blocks!

5.4 Deactivation & Storage

Once work has been completed, the jaws are to be closed up to a tip distance of 50 mm to relieve the stress on the mechanic parts.
The device has to be cleaned from the dirt which may have become attached during the use. It's recommended a complete lubrification of all the mechanics and mobile parts especially if the equipment is to be stored for a longer period.

ATTENTION: never stock the equipment with the jaws completely open or closed to their limit.
Once the power pack has been deactivated, hoses can be decoupled.
Remember to clean accurately the coupling and to put back on the accompanying red dust protection caps before to storage the hoses.

6 Use & Maintenance

All the mechanic components working inside the device are subject to a very high-mechanical stress. In order to preserve good functioning of the device a visual inspection is to be carried out after every use and at least every 3 months.

6.1 Visual Check

- Existence of external damages on the body of the device
- Torque of the pivot bolt
- Signs of wear and tear on the hardened tips

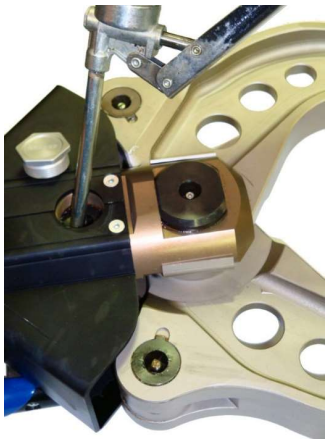
- Signs of wear and tear on the jaws
- Existence of external damages or deformations in the jaws
- Opening width on the tips
- Hand guards in good condition
- Good functioning of the star grip
- Existence of damages or leaks on the hoses
- Availability of the dust protection caps

6.2 Function Check

Every 350 operating hours or in case of doubt regarding the safety and reliability of the equipment, a function check can be performed to verify the existence of problems or damages.
Proceed opening and closing the jaws of the tool. The movement has to be flawless, without any jerks or suspicious noises.

6.3 Pivots Lubrification

The pivots must be lubricated every 10 operative hours.
In order to proceed to the lubrification of the four pivots, it's necessary to unscrew the oil cap and closing the jaws until to see the central nipple. Then lubricate the four nipples with a grease gun as shown in the picture.



ATTENTION: make sure the special grease used to lubricate complies with THEMA specifications. (see Technical Data)

6.4 General Care

The exterior of the equipment is to be cleaned from time to time. Especially dust and impurities must be removed with a humid cloth or compressed air carefully.
Oil is to be applied to the metallic surfaces to protect them from external corrosion.

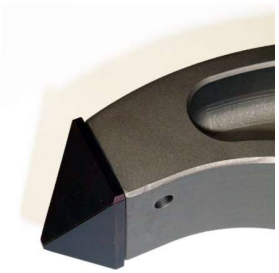
7 Repairs

All the mechanic components working inside the device are subject to a very high-mechanical stress and they must be checked after 150 operative hours at latest. Nevertheless, appearances of attrition or wear can be detected early avoiding breakages by timely replacement of these worn parts.
Servicing may only be carried out by the manufacturer or personnel trained by the manufacturer and by the authorised *TEHMA* dealers.
Only *TEHMA* spare parts may be used to replace all components.

ATTENTION: Before to proceed to with repair works ensure the complete cleanliness of all components and the device.
Tools appropriate for the job and protective clothing are essential.

7.1 Replacement the Hardened Tips

The tips of the jaws are realised with a very high-resistance steel and designed to last for a long time. Nevertheless, worn tips can be replaced easily in few minutes as shown in the pictures below.



7.2 Replacement of the jaws

Even the jaws as the tips are made of high strength steel and designed to last a long time. However, if necessary, the replacement procedure is very simple and consists of the following steps:

1) Closing of the jaws
2) Overturn the tool
3) Remove the flange that holds it in place the central pivot
4) Remove the locking pins on the side
5) Remove the central and the lateral pivots
6) Remove the jaws

ATTENTION: the flange that holds the central pivot of the jaws is locked by means of a screw, stop in turn by a grain on the side.
It's important to block properly the grain, once replaced the jaws and tightened again the pin.

To reassemble the jaws, follow these steps:

1) Repositioning of the jaws
2) Repositioning of the central pivots and lateral
3) Closing of the lateral pins
4) Closing of the flange that holds it in place the central pivot
5) Closing of wheat which prevents screw loosening of the central pin

ATTENTION: during the locking procedure of the lateral pins make sure that their flaps are firstly perfectly in position in the seat of the jaw before to tighten the cap on the pin in order to prevent their breakage.

7.3 Changing the Hydraulic Fluid

The hydraulic fluid inside the tool must be changed after 300 operative hours, after two years at least and every time the hydraulic fluid inside the pump unit is changed to prevent the fresh fluid from becoming contaminated by the used one inside the tool.
Steps:

1) Close the jaw until the limit
2) Change the fluid of the pump.
3) Screw off the return hose in the proximity of the nut before the quick coupling and put it into a separate collecting basin.
4) Open the jaws slowly enabling the old fluid running via the return hose into the basin.
5) Reconnect the return hose.
6) Deaerate the crusher.

ATTENTION: Respect the environment the old hydraulic fluid is to be disposed according to principles of environmental protection and international norms.

8 Disposal and scraping

- **THE HYDRAULIC OIL**
- **THE FLEXIBLE HOSES**

Are DANGEROUS WASTES that must be disposed of according to the local regulation of your country

ATTENTION: don’t throw away liquids and materials of the above-mentioned list. The infringement of the rules regarding the disposal of dangerous wastes implies legal responsibilities.

Also, the storing and purchase/sales of the materials of the above-mentioned list have to be run according to the specific regulation.
For information about the handling and disposal of the dangerous wastes contact the Environment department of your local municipality.

At the end of their life, all components of the machine must be separated and disposed of in compliance with the laws in force in your country.

Except for the liquids and materials of the previous list, the other components of the products manufactured by TEHMA are fabricated with recyclable materials that can be stored, disposed and scrapped without particular cautions.

Materials and components used by TEHMA do not contain asbestos or other elements that require special caution for their use.

9 Problems & Resolutions

PROBLEM	CHECK	CAUSE	SOLUTION
Equipment doesn't work with the full power	Dose the pump unit work properly?	Too little hydraulic fluid in the system	Top up hydraulic fluid and deaerated the device.
	Is the hydraulic fluid above minimum level?		
The tool is unable to reach maximum pressure	Does the pressure rise when the jaws reach maximum opening / closing?	Possible presence of dirt in the circuit	Try to perform some opening and closing cycles. If the problem persists, have the tool repaired by an authorized TEHMA dealer
	Are there any oil leaks from the tool?	A seal can be broken	Have the tool repaired by an authorized TEHMA dealer.
Jaws move slowly or jerkily when activated	Dose the pump unit work properly?	Possible air in the hydraulic system	Deaerate the device
	Are the hoses connected properly?		
Following release, the star grip doesn't return automatically to the central position.	Cover damaged or star grip hard to move?	Possible dirt inside the mechanism	Try to clean the star grip.
		Damage to the torsion spring	Have the tool repaired by an authorized TEHMA dealer.
Hoses cannot be coupled	Hoses cannot be coupled	The hoses are pressurized	The pump unit must be switched off and set on unpressurised circulation.

Damage or decomposition on the surface on the hoses		Scratch or possible contact with aggressive agents.	Replace hoses.
Leaks from the hoses or connections	Can you tighten more the connections?	Possible damage	Replace the hoses.
	Are the hoses defective?		
Leaks from the couplings	Are the couplings connected properly?		Replace the coupling with TEHMA spare part.
	Is the coupling damaged?		
Leaks from the piston rod		Piston damaged	Have the tool repaired by an authorized TEHMA dealer.
		Defective rod seal	

If the malfunctions can't be resolved, please inform an authorised TEHMA dealer immediately.

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10 Technical Data

CONCRETE CRACKER CC300		
Model		CC300
Dimensions L x W x H	(mm)	849 x 304 x 190
Max. Opening at tips	(mm)	299
Min. Opening at tips	(mm)	14
Weight (hydraulic fluid included)	(kg)	23
Operative Pressure	(Mpa)	60 (600 bar)
Operating Fluid		MOBIL DTE 10 Excel 32
Grease for the pivots		Grease for industrial purposes

11 Warranty

- All parts produced by TEHMA are guaranteed for a period of twelve months from the date of delivery to the final customer, against defect of: material, workmanship-assembly. Cost of labour and transports are not covered by warranty and should be paid by the customer. Parts and complete components not produced by TEHMA such as engines, compressors, alternators, etc., are covered by the warranty of the manufacturer.
- Batteries of power packs and "worn out" accessories, such as quick couplers, metal inserts, tips, flexible hoses or other accessories that have not an identification number, are covered by a warranty of three months from the date of delivery to the final customer.
- TEHMA reserves the right to substitute only those parts recognized to be defective after an inspection of TEHMA engineers under warranty at its own expenses and in its own plant. If the repairs during the warranty period are performed by the customers, TEHMA will reject any charge for labour expenses.

The warranty will be automatically voided if:

- Repairs are performed using non original, adapted or modified parts.
- The maximum hydraulic values of pressure, back pressure and flow are exceeded, or the filtration and other operative conditions of the hydraulic circuits are inadequate to power TEHMA tools.
- If the tool has been modified or used in excessive heavy applications or different from its natural applications.

In any case the warranty excludes any redraft or reimbursement for damages of any kind and there are no other explicit or implicit warranties besides the above mentioned one.

For additional information please read carefully the document "Warranty and general sales conditions" attached to this manual in a separate booklet.

FOR ANY CONTROVERSY, THE COMPETENT COURT IS IN LUGANO-SWITZERLAND.

12 Manufacturer and European authorized representative (E.A.R.)

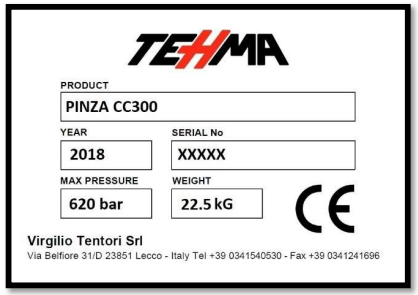
Manufacturer:

TEHMA SA
Vicolo Concordia 1, 6932
Lugano - Breganzona, Switzerland

European authorized representative (E.A.R.):

Virgilio Tentori Srl
Via Belfiore 31/D, 23900
Lecco, Italy

13 Label



14 Fac-simile EU declaration of conformity

DICHIARAZIONE CE DI CONFORMITÀ
DIRETTIVA 2006/42/EC
(Allegato II, parte 1, Sezione A)

Noi Virgilio Tentori Srl nella qualità di mandatario, per conto della ditta TEHMA SA, Lugano (CH) dichiariamo sotto la Ns. esclusiva responsabilità che la macchina sotto descritta:

DENOMINAZIONE:	***PINZA DEMOLITRICE***
TIPO:	***"CC300"***
NUMERO DI MATRICOLA:	CC3-XXX
ANNO DI COSTRUZIONE:	2020

è conforme ai requisiti essenziali di sicurezza previsti dalle seguenti disposizioni legislative:

Direttiva 2006/42/CE e successive modifiche ed integrazioni (Direttiva macchine);

Sono state inoltre applicate le seguenti norme:

UNI EN 12100
EN ISO 4413
UNI EN 13857

Galbiate: 15/01/2020

Il legale Rappresentante e custode e detentore del F.T.
Virgilio Tentori

Sede Legale: 23900 LECCO (Lc) - Via Belfiore 31/D - Sede Operativa e invio corrispondenza: 23851 GALBIATE (Lc) - Frazione Ceppo, 1

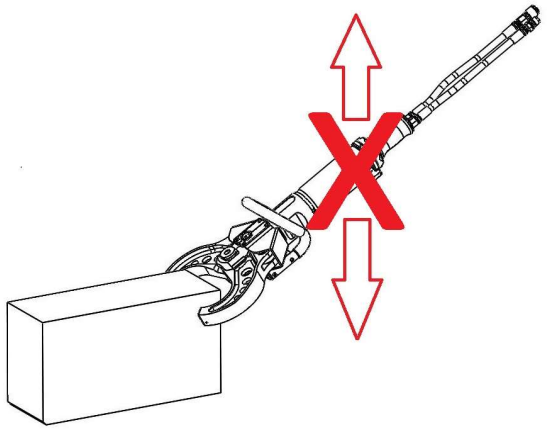
Start Up / After Work Procedure Check List - Rev. 7-2020

Start Up

No	Description	Checked
1	Remove the equipment from the cases and place them on the ground, being careful that the surface is free from hindrances. **Note**: The power unit must be placed horizontally, in a ventilated place.	
2	Inspect the equipment every time before use for visible damages / defects.	
3	Inspect the hoses and screwed connections for leaks and externally visible damage. Squirting hydraulic fluid under pressure can result in injuries!	
4	Connect the tool with the hoses and finally with the power pack making sure each quick coupling is correctly coupled and firmly held.	
5	Ensure hoses are not bent or twisted. Inspect to watch out for hairline cracks on the hoses.	
6	Move the flow lever of the power unit to a central - neutral position.	
7	Connect the electric plug (electric model only)	
8	Start the power unit and let it run for a minute allowing the oil to reach the right temperature.	
9	Select the channel where the tool is connected and let the equipment run for a further 2 minutes in order to allow the tool and the seals to reach the right temperature.	
10	Run a few complete cycles, being careful that pressure never exceeds 100~150 bar at the maximum opening / closing of the tool jaws / the central wedge (hydraulic model).	

After Work

No	Description	Checked
1	Inspect the equipment and hoses every time after use for visible damages / defects / cracks.	
2	Move the flow lever to a central - neutral position and turn off the power pack.	
3	Place the tool on a surface free from hindrances.	
4	Clean the tool from powder and debris.	
5	Clean the hoses, and couplings from powder and debris.	
6	Grease all pins including that central under the “grease” cap.	
7	Run a few complete cycles, being careful that pressure never exceeds 100-150 bar at the maximum opening / closing of the tool jaws.	
8	Perform a final cycle, being careful to not leave the jaws / the central wedge (hydraulic splitter) at the maximum opening / closing in order to avoid possible tensions on the internal components.	
9	Disconnect the tool and ensure reposition the red safety caps on the quick couplings.	
9	Lay the equipment in the cases and store them in a dry place.	



DEVICE PROBLEM – CAUTION

NEVER USE THE TOOL AS A LEVER WHEN IT IS UNDER PRESSURE!!! THE ACTION OF FORCES EXTERNAL TO THOSE DERIVING FROM THE NORMAL OPERATION COULD CAUSE SERIOUS DAMAGE TO THE INTERNAL COMPONENTES OF THE TOOL.