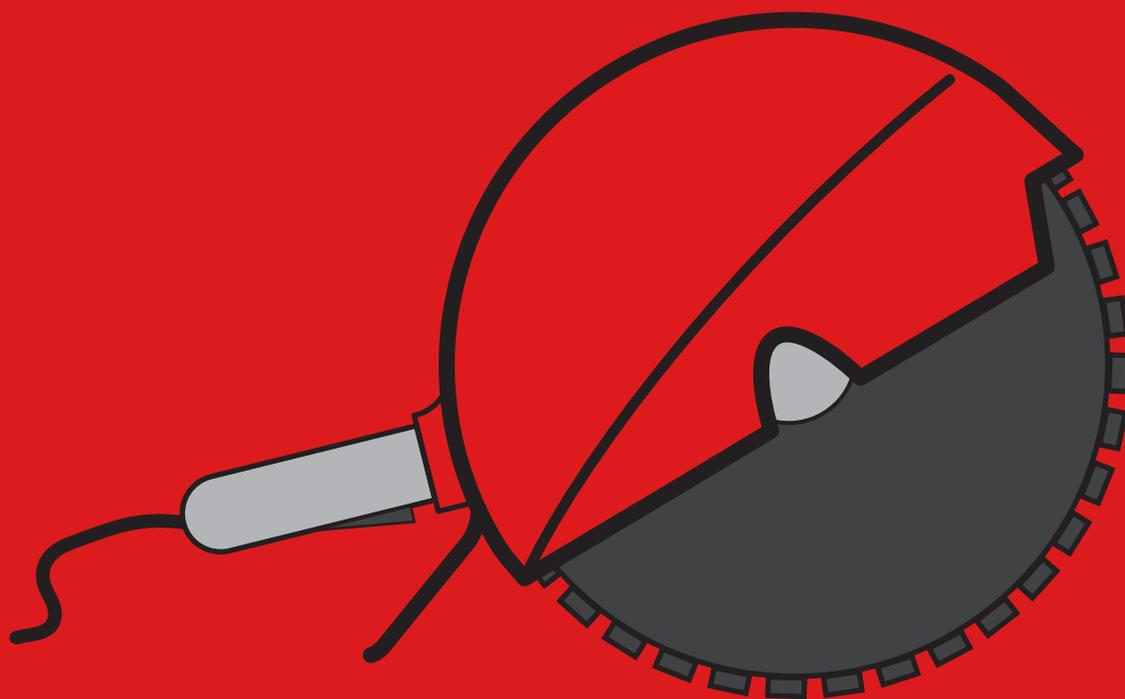
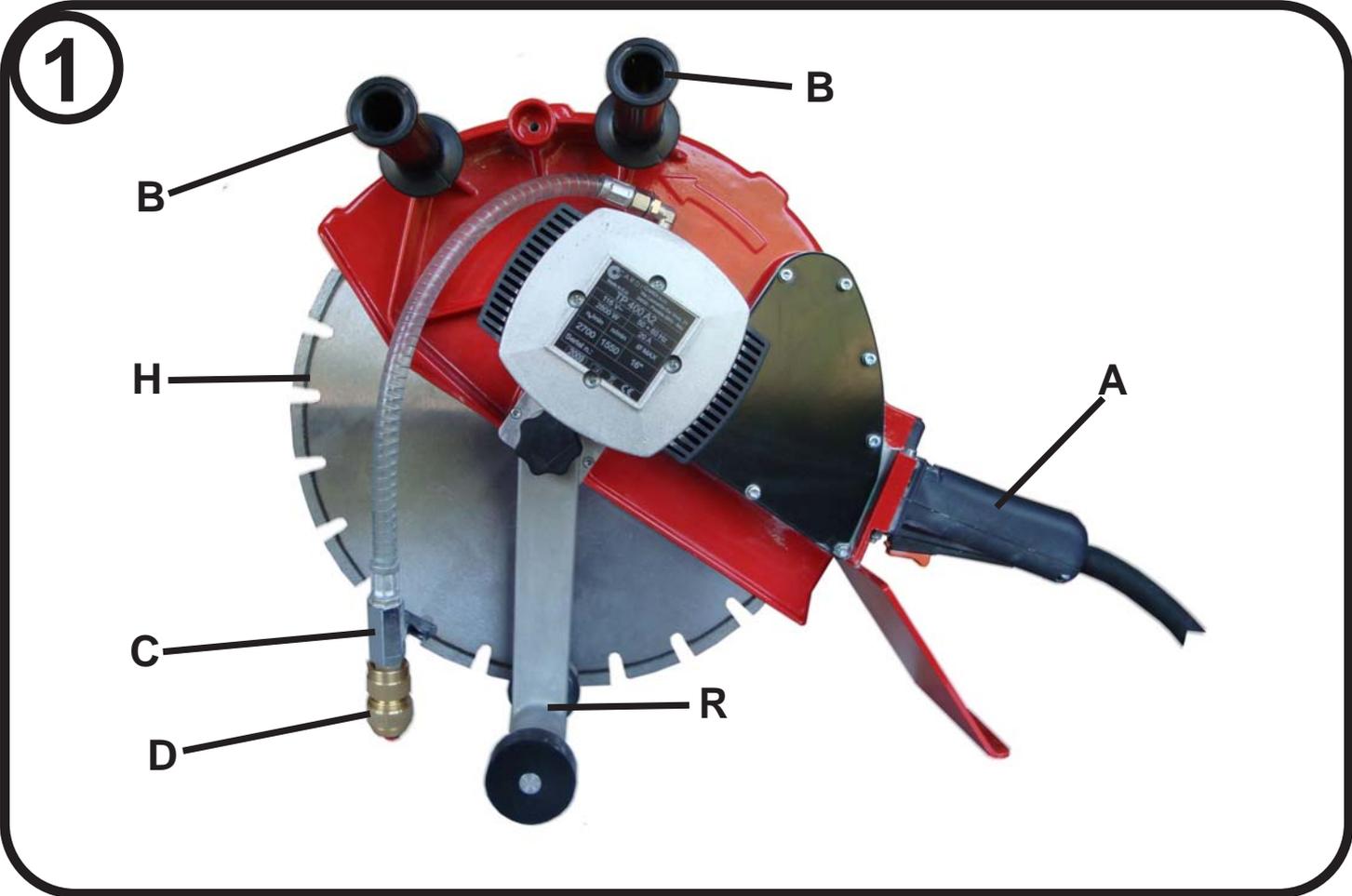
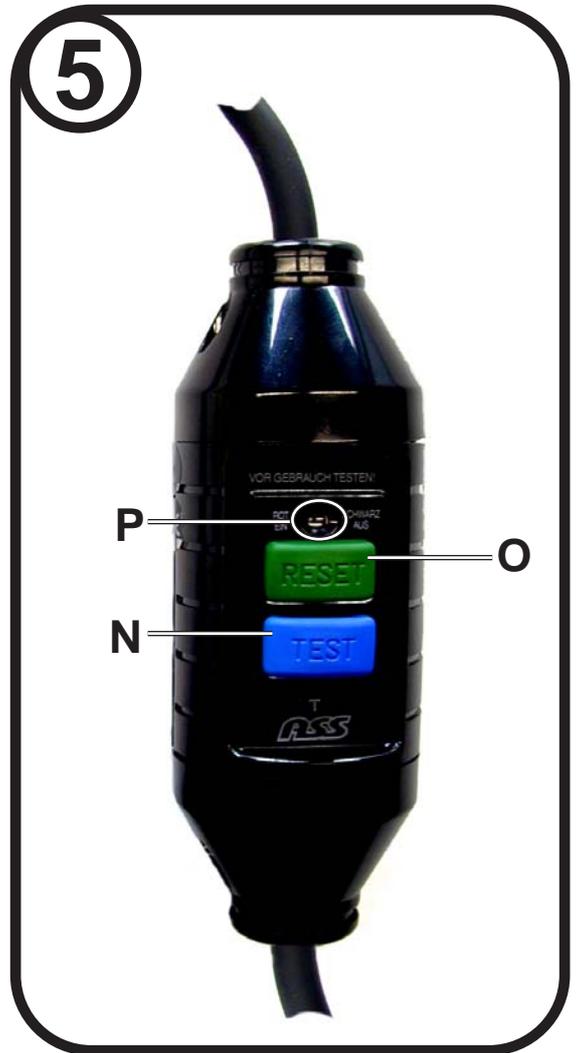




EN SAFETY AND USER MANUAL FOR:
TP400 HAND-HELD WALL SAW







7

SERIAL #

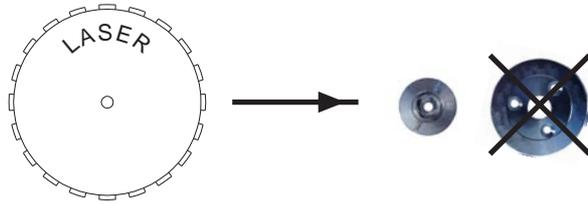
CARDI s.r.l. Via Leonardo Da Vinci, 21 24030 - Pontida (BG) - Italy			
TP 400			
3000 W	230 V~	14 A	50 + 60 Hz
n ₀ /min	n/min	Ø MAX	
2500	1650	400 mm	
Serial n.: Matricola			
Made in Italy (2008)			

8

9

OK

10



10/A



10/B



10/C



10/D



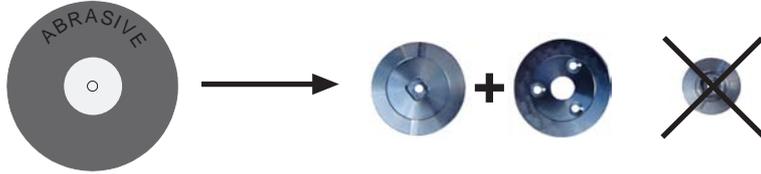
10/E



10/F



11



11/A



11/B



11/C



11/D



11/E



11/F



12

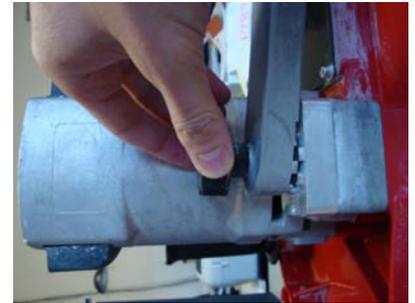
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2500	1650	400 mm	
Serial n.: Matricola			
Made In E.U. 2008   			

13

13/A



13/B



14

14/A



14/B



14/C



14/D



14/E



14/F



SEZIONE MINIMA DEI CONDUTTORI PER CAVI DI PROLUNGA
MINIMUM WIRE SIZE FOR EXTENSION CABLE

MIN. ADERDURCHMESSER FÜR VERLÄNGERUNGSKABEL

SECÇÃO MINIMA DE CABO

EXTENSIÓN DEL CABLE

SECTION DU CONDUCTEUR POUR CORDON PROLONGATEUR

MINIMUM STØRRELSE PÅ FORLÆNGERKABEL

ΕΛΑΧΙΣΤΟ ΜΕΓΕΘΟΣ ΑΓΩΓΩΝ ΓΙΑ ΚΑΛΩΔΙΟ ΠΡΟΕΚΤΑΣΗΣ

MINIMALE DOORSNEDE ADERS VERLENGSNOER

AMPERE (A)	LUNGHEZZA - LENGTH - LÄNGE - LARGURA - LARGO LONGUEUR - LÆNGDE - ΜΗΚΟΣ - LENGTE					
	7,5 m	15 m	25 m	30 m	45 m	60 m
5,1 ÷ 7	2,5 mm ²	2,5 mm ²	2,5 mm ²	2,5 mm ²	2,5 mm ²	2,5 mm ²
7,1 ÷ 10	2,5 mm ²	2,5 mm ²	2,5 mm ²	2,5 mm ²	2,5 mm ²	4 mm ²
10,1 ÷ 16	4 mm ²	4 mm ²	4 mm ²	6 mm ²	6 mm ²	6 mm ²
16,1 ÷ 22	4 mm ²	4 mm ²	6 mm ²	6 mm ²	6 mm ²	-
<p>Caratteristiche dei cavi di prolunga: 3 CONDUTTORI (1 fase + 1 neutro + terra) per motori monofase 5 CONDUTTORI (3 fasi + 1 neutro + terra) per motori trifase</p>						
<p>Característicos cables: con 3 CABLES (2 polos+tierra) para motores mono-fase con 5 CABLES (3 polos+neutral+tierra) para motores tri-fase</p>						
<p>Extension Cable: 3 WIRES (2 Pole + Ground) for single phase motors. 5 WIRES (3 Pole + Ground + neutral) for three phase motors.</p>						
<p>Forlænger kabel: 3 LEDERE (2 poler + jord) for enkeltfaset motor 5 LEDERE (3 poler + jord + neutral) for trefaset motor.</p>						
<p>Vergrößerungskabel: 3 ADRIG (2 Pole + Erde) für Einphasenmotoren 5 ADRIG (3 Pole + Nulleiter + Erde) für Dreiphasenmotoren</p>						
<p>Καλώδιο προέκτασης: 3 ΑΓΩΓΟΙ (2 πόλοι + γείωση) για μονοφασικούς κινητήρες 5 ΑΓΩΓΟΙ (3 πόλοι + γείωση + ουδέτερος) για τριφασικούς κινητήρες</p>						
<p>Características dos cabos: Com 3 CABOS (2 polos + terra) para motores mono-fasicos. Com 5 CABOS (3 polos + neutro + terra) para motores tri-fasicos.</p>						
<p>Verlængsnoer: 3-aderig (2 polen plus aarde) voor eenfasemotoren 5-aderig (3 polen plus aarde plus neutraal) voor driefasemotoren</p>						
<p>Le cordon prolongateur doit être : 3 CONDUCTEUR (2 Pole + Terre) pour moteurs monophasé. 5 CONDUCTEUR (3 Pole + Terre + neutral) pour moteurs triphasé.</p>						

Your CARDI hand-held hand saw (or hand saw) is a power tool designed to make straight cuts in stone-like materials (ex. reinforced concrete, bricks, masonry, natural stone) using laser-welded diamond blades or metal using abrasive blades.



Warning: do NOT use circular saw blades or other kind of blades not suitable for this product. Failure to follow this warning may result in serious personal injury (fig. 8 and 9).

General safety rules

WARNING! Read all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. The term "power tool" in all of the warnings listed below refers to your mains operated (corded) power tool or battery operated (cordless) powertool.

SAVE THESE INSTRUCTIONS

1) Work area

- a) **Keep working area clean and well lit.** Cluttered and dark areas invite accidents.
- b) **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
- c) **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

2) Electrical safety

- a) **Power tool plugs must match the outlet. Never modify the plug in any way.** Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- b) **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
- c) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
- e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.

3) Personal safety

- a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- b) **Use safety equipments: always wear eye protection.** Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- c) **Avoid accidental starting. Ensure the switch is in the off position before plugging in.** Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.

- d) **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- f) **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewellery and long hair can be caught in moving parts.
- g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of these devices can reduce dust related hazards.
- h) **Use auxiliary handles supplied with the tool.** Loss of control can cause personal injury.

4) Power tool use and care

- a) **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
- b) **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- c) **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation.** If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- f) **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- g) **Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from intended could result in a hazardous situation.

5) Service

- a) **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

Additional safety rules for hand saws

Always wear safety goggles



Always wear safety gloves



Always wear ear protection



Always wear safety shoes



Always wear dust mask

Instructions before use

Read carefully the data written on the *Technical Data* sheet that you will find in the package together with your product.

In the following text, figures are identified by numbers, details inside the figures by letters. Figures are depicted on the first pages of this user manual.

Power supply**Ground**

- the metallic parts of your hand saw are connected to the ground.
- make sure that the socket and any extension cords and plugs have the ground connection and that your electrical system is properly connected to the ground.



Warning: for your safety, it is important that the whole system (electrical system, extension cords, sockets etc.) is connected to the ground. If you are not sure, ask a qualified electrician for a check.

Extension cords

- when you have to operate with your hand saw far from an electrical outlet, you can use an extension cord. If you use it make sure that the section of the cord is suitable and that the cord is provided with ground conductor;
- the extension cord (made up of cable, plug and socket) must be suitable for outdoor use. It is better if the cord is made of rubber and it is H07RN-F;
- follow the chart shown in figure 15 on this manual for the choice of the right section of the conductors;
- if you use more than one extension cord make sure that every cable in each extension cord has a section not lower than the value shown on the chart in figure 15, considering the total length of the extension cords;
- remember the longer an extension cord the higher the drop in voltage. This causes loss of rpm and therefore cooling as well as loss of power operating your hand saw. Don't use extension cords if you have to operate too far from the electrical outlet.

Preliminary operations

In order to prepare your hand saw to operate, proceed as follows, make sure before you start that your machine is unplugged.

- fasten the auxiliary handles (B) in the more comfortable position according to the kind of cut you are going to perform. See figure 1;



Warning: not using auxiliary and main handles can result in loss of control of your hand saw and serious personal injury.

- connect the quick hose connector (figure 1 D) to a proper water supply, keep the valve C close till you start to cut;

- select the cutting depth: see paragraph *Setting cutting depth*.

PRCD-GFI: portable residual current device or GFI: Ground Fault Interrupter

- your hand saw is equipped with a safety portable residual current device (PRCD or GFI) assembled on the cord. This device is shown in figure 5;
- never use hand saw without PRCD-GFI;
- before starting to cut make sure the PRCD-GFI works properly. In order to do so, plug the hand saw in and press the green button Reset (O): a red led will light up (P) showing that electricity is available to the hand saw. Then press the blue button Test (N) that tests if the device works properly. When you press it, the circuit breaker inside the PRCD-GFI should cut the power off leading the switch automatically to go to the off position and the red led to go off;
- if, during operation, the PRCD-GFI cuts the power: stop working, put the main switch of you hand saw on the OFF position and bring your hand saw to an authorized service centre in order to remove the causes of the electrical malfunction.

ON/OFF switch

See figure 6 in order to understand how to use the switch (figure 2 E).

Your switch is equipped with a safety *lock* device. With this device you can switch on the motor only if you follow first step I and than step II, as shown in figure 6. This prevents the hand saw from starting accidentally.



Caution: after switching off, the machine will not be idle immediately.

Connection to a water supply

Wet cutting reduces risks connected with dusty environment. We recommend operating your hand saw with water. Make sure the blade is suitable for wet cutting. If you want to cut without water wear a proper dust mask to protect yourself from dust inhalation.

While wet cutting:

- use only the water hose (figure 1) provided with your hand saw. The water hose includes also a valve (C) and a *quick hose connector* (D);
- the maximum pressure of incoming water cannot exceed 4 bar;
- use always clean water;
- control the flow of water by turning the valve (C). A small amount of water is enough to suppress saw dust;
- prevent water from entering the motor or other electrical components;
- check at regular intervals that none of the water system components are damaged. Check in particular the valve (C), the *quick hose connector* (D) and the pipe.

Setting cutting depth

Refer to figure 13, proceed as follows:

- unlock the roller guide R by loosening the S knob; than turn the roller guide to select the cutting depth (13/A);
- to lock the guide, tighten the S knob, making sure that the guide is engaged as shown in figure 13/B;

For applications where the guide is not needed, fasten the guide fully turned toward the switch.

Flush cutting accessory

To mount the flush cutting accessory refer to figure 14.



Warning: always use blades with countersunk holes suitable for the flange (this kind of blades are available as accessory).



Warning: do not use abrasive blades when flush cutting.

Proceed as follows:

- remove the guard by loosening the 5 screws (14/A);
- loosen the blade-tightening screw and remove the flange and the blade (14/B);
- remove the internal flange by unscrewing the 3 screws using the provided Allen key (14/C);
- position the flange provided together with the flush cutting accessory as shown in figure (14/D);
- position a suitable blade and fasten it by tightening all 4 (or 6) screws (14/E);
- position and fasten the flush cutting guard by tightening the 5 screws (14/F).

Checks and precautions to avoid structural damages and damages to objects

Before starting any cutting activity, talk with the construction manager or the planner in order to make sure that the cut doesn't:

- make any damage to the structure of the building and doesn't change the structural characteristics of the construction;
- damage any water or gas pipeline or any electrical circuits.

Blade choice

Your Cardi hand saw has been designed to cut building materials such as concrete, reinforced concrete, bricks, masonry, natural stone, tiles etc, using laser welded diamond blades (figure 10 and 11) or metal using abrasive blades.



Warning: Do NOT use circular saw blades or other kind of blades not laser-welded. Failure to follow this warning may result in serious personal injury. See figure 10 and 11.

Ask your dealer about the best blade for your application. The blade must have:

- a) maximum diameter: 400 mm (16 inches)
- b) arbor hole diameter 25,4 mm (1 inch). You can use a blade with a 30 mm arbor hole using a proper distance piece;
- c) width between 2 and 3 mm (0.08 – 0.12 inch);
- d) maximum rotating speed (provided by the blade manufacturer), higher than the maximum rotating speed of the arbor of your hand saw, shown on the data plate (see figure 14 I).

Use blades with diameter, arbor hole and rotating speed compatible with your specific hand saw model. Use of blades with inappropriate dimensions can result in misalignment, vibrations, irregular rotation and loss of control causing serious injury.

Check the blade before use. Do not use damaged blades.

Blade mounting and replacement

Before mounting or replacing the blade (figure 1 H), make sure the hand saw is unplugged. Refer to the following directions depending on the kind of blade you are using:

Diamond blades (no internal flange + small flange)

For blade mounting and replacement refer to figure 10. Proceed as follows:

- loosen and remove the blade-tightening screw (10/A) using the key provided;
- remove the flange and the blade (if already mounted) (10/B);
- using the Allen key provided loosen the screws and remove the internal flange (10/C) (if not already removed);
- position the diamond blade (10/D), making sure the arrow on the blade meets the direction of rotation on the guard;
- mount the **small** flange as shown in figure (10/E).
- fasten the blade by tightening the blade tightening screw (10/F);

Abrasive blades (internal flange + big flange)

For blade mounting and replacement refer to figure 11. Proceed as follows:

- loosen and remove the blade-tightening screw (11/A) using the key provided;
- remove the flange and the blade (if already mounted) (11/B);
- make sure the internal flange is mounted (11/C). If not, assemble the flange and fasten it by tightening the screws. Use the Allen key provided;
- position the abrasive blade (11/D);
- mount the **big** flange (11/E), make sure the flange is the right one;
- position and tighten the blade-tightening screw (11/F);



Warning: for your safety, when using abrasive blades, make sure the internal flange is mounted to the machine and make sure that the external flange is the big one.

Fastening the work piece and size of the work piece

- if the work object is a block and not part of a structure, fasten it in order to prevent its movement;
- prevent the work piece from shifting, moving or falling when you are cutting.

Environmental conditions

- do not expose the hand saw to rain, ice or snow;
- prevent water or any other liquid from coming into contact with the electrical parts of your machine;
- do not use the hand saw in explosive atmospheres, for instance flammable liquids, gas or dust. The electric hand saw produces sparks which can ignite fumes, dust or smoke.

Overhead cutting (ceiling cutting)



Warning: your hand saw is NOT intended to perform overhead cutting (upward).

Operating Instructions

After having followed the instructions given in the previous *Preliminary operations* paragraph, proceed as follows in order to perform the cut.



Warning: do not touch any moving parts of your hand saw, in particular the blade, when operating.

- turn your hand saw on and move closer to the material to be cut. When the blade touches the surface, push the hand saw toward the material and let the blade going inside the material till you reach the desired cutting depth. Then move the hand saw parallel to the surface in order to perform the cut;
- your hand saw is intended to perform straight cuts only;
- avoid friction between the blade-side and the work piece: move the hand saw just forward avoiding side movement of the blade. The friction can overload the motor;



Warning: When working, make sure you stand safely. Always hold your machine with both hands. The blade can jam, so be always ready to face this event: the electronic of your machine allows you to move the machine out, to free the blade and to continue cutting.

- use the handles and hold your hand saw firmly with both hands (see figure 3 and 4) and be ready to resist to possible saw's movements;
- cutting materials containing wood, cork, rubber, foam polystyrene can result in problems moving forward the machine. If you have this kind of problems, stop cutting and remove all materials listed before and proceed with cutting operations. If you cannot remove these materials, stop cutting and cut in another position;
- in case the electric power goes off, position the switch in the off position to prevent the machine from accidentally self starting;
- when you complete the cut, switch off your hand saw and wait till the blade comes to a complete stop. Then pull the hand saw out of the cut and close the water valve (C). Watch out! The blade and the cutting area can be very hot and cause severe burns.

Electronic devices

Your hand saw is equipped with a CARDI multifunction electronic device that includes a *soft-start* and an *electronic clutch*:

- the soft-start allows the motor to start gradually, reducing peak current that occurs when you switch the motor on, helps you when you begin cutting, allowing gradual blade rotation and avoiding jerks at the operator's arm. It allows you to use your hand saw connected to household electrical outlet.
- the electronic clutch cuts off power to the motor in case of excessive overload, increasing the operator safety and preventing damage to the motor. When the overload is over, the device gives back power to the motor that begins working again;
- if the electronic clutch operates frequently means that the hand saw is not used properly. Possible causes can be a not suitable forward speed, an excessive friction between the blade-side and the material, excessive cutting depth. In these cases, stop cutting and let the machine turn with no load for some seconds, helping the motor cool down.

Maintenance - Service - Warranty

Periodic maintenance

- at the end of the work, after having removed the blade, blow compressed air inside the rotating motor in order to remove dust and powder. Do this operation wearing protective goggles;
- before starting any other cleaning, maintenance or lubrication operation make sure that the hand saw is unplugged;
- keep your hand saw clean and dry, in particular its handles and its moving parts;
- never use solvents or other harsh chemicals for cleaning your hand saw;
- after use put your hand saw in a dry, safe place inaccessible to children place;
- gears are lubricated by lubricating oil and grease which are suited for any external temperature. You don't have to check the oil level or to fill it up.
- always unplug the hand saw during check or blade replacement;
- never unplug the hand saw by pulling the cord;
- inspect often the power cable and extension cords, making sure that they don't have any damage like cuts, abrasions or exposed wires. If you find a damage, ask to a CARDI authorized service centre for replacement;
- do not use the hand saw with damaged components or with malfunctions, in particular when the switch doesn't work properly. In these cases, ask a CARDI authorized service centre for replacement.

Service

- after 250 hours of work, bring your hand saw to a CARDI authorized service centre for periodical check;
- any repairing on your hand saw must be carried out by CARDI authorized service personnel only. Ask your dealer for the list of the CARDI authorized service centres;
- your machine's serial number is stamped on the machine or printed on the data plate as shown in figure 7;
- use original CARDI spare parts only.

Warranty

Your product is under CARDI warranty for 12 months, starting from the date of purchase. This warranty is against faulty workmanship, flaws in material and design problems. The warranty covers free components replacement, manpower needed for replacement and wearing materials such as oil and lubricants if intact before the repairing operation. The warranty doesn't cover the replacement of:

- components of the product replaced or modified by people not authorized by CARDI;
- components damaged by carelessness, not suitable use or overloaded;
- components of products from which safety devices have been removed;
- worn out wearing parts replaced during repair.

This warranty does not apply to products that have been damaged by carelessness like water entering the hand saw, lack of periodic cleaning and maintenance, damage of the threaded components or the spindle etc.

The life of wearing parts is variable depending on using time and the kind of job they are used for. Examples of wearing parts are: cables, switches and plugs, brushes, armatures,

clutch plates, ball and roller bearing not in oil, sealing rings, transmission spindles, filters, etc.

If during repairing under warranty, a wearing part is worn and this can affect the safety and the operation of your product, the customer is asked to pay for the replacement of these components not under warranty. If the customer refuses this, no repairing operation will be carried out.

The warranty covers free replacement of components which are defective due to wrong manufacturing or assembly, if the product is brought to an authorized service centre and if:

- the product is together with a purchasing document stating when the product has been purchased. Valid purchasing documents are invoices or delivery certificates including serial numbers;
- maintenance operations have been carried out every 250 working hours, replacing the worn wearing parts;
- no unauthorized people have operated on the product;
- the product has not been misused and it has been used accordingly with the directions given in this user manual;
- all safety directions have been followed.

Your CARDI product is not under warranty if:

- the product has been serviced by people not authorized by CARDI.
- damages are due to incorrect use and/or carelessness. Dents due to drops or strokes will be considered evidence of carelessness;

- damages have been caused by mechanical or electrical overload;
- damages have been caused by water, mud or any other liquid entering the product.

When your product is under warranty, in some cases, for example when CARDI authorized service personnel think the repairing is too expensive to be carried out, the free substitution of the product is possible. In addition, the substitution under warranty is provided after two fruitless reparation attempts and after the authorization of a CARDI service manager. In case of substitution, the customer is, usually, requested to pay for the worn wearing parts of the product that has been replaced.

User-replaceable components

No components of your CARDI product can be replaced by the user. Replacement must be carried out by CARDI authorized personnel only.

CARDI service centres - Address list:

Ask your dealer for a CARDI service centres address list.

Package Contents

For the list of contents refer to the *Spare Parts List*, specific for your model, located in the package together with this manual.

WARNING:
THE MANUFACTURER DECLINES ALL RESPONSIBILITY
IN CASE OF NO RESPECT OF THE ABOVE WRITTEN
"SAFETY AND OPERATING INSTRUCTIONS".

Disposal of the product



The symbol on the left, that you can find on the product or on its packaging indicates that this product may not be treated as household waste. At the end of its life the products must be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

Be sure that this product is disposed correctly. You will help prevent potential negative consequences for the environment and human health. For more detailed information about what to do when your product doesn't work and is not fixable, contact the dealer where you did purchase the product.

Your product has been introduced new on the market after August 13th 2005.

This manual is subject to modifications without notice.



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