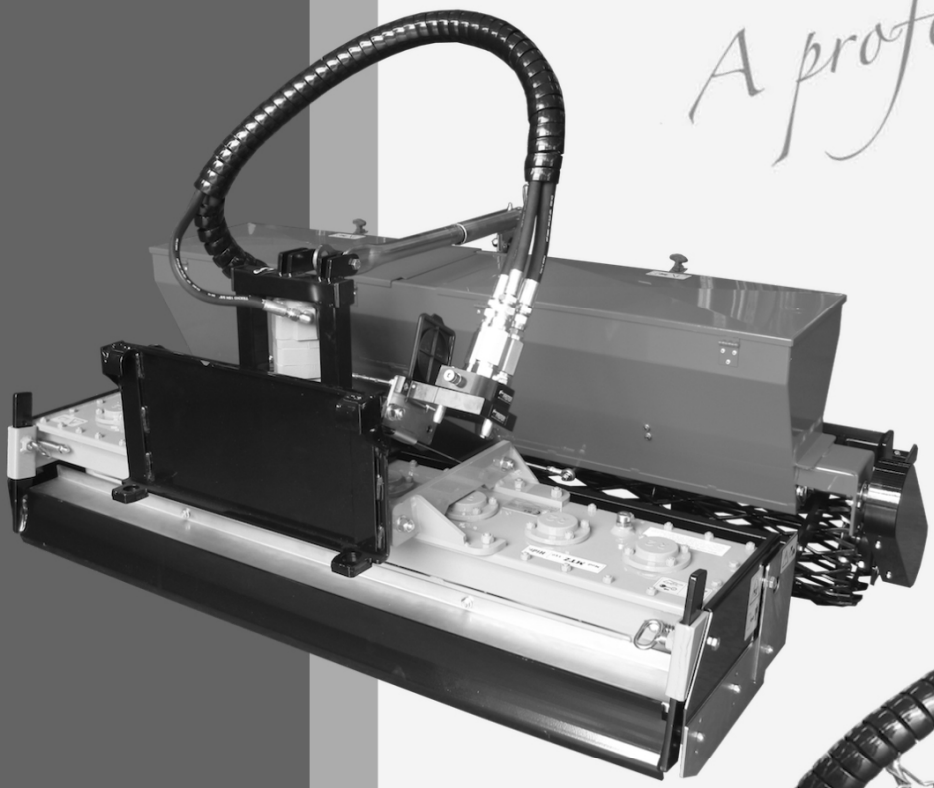
ENGLISH

A professional choice



Mill Grader
Mod. MTZ HI
Instructions and maintenance manual
(Translation of the original instructions)

Rev. 01 – 10 – 2014

Made in Italy
www.R2RINALDI.com

R2

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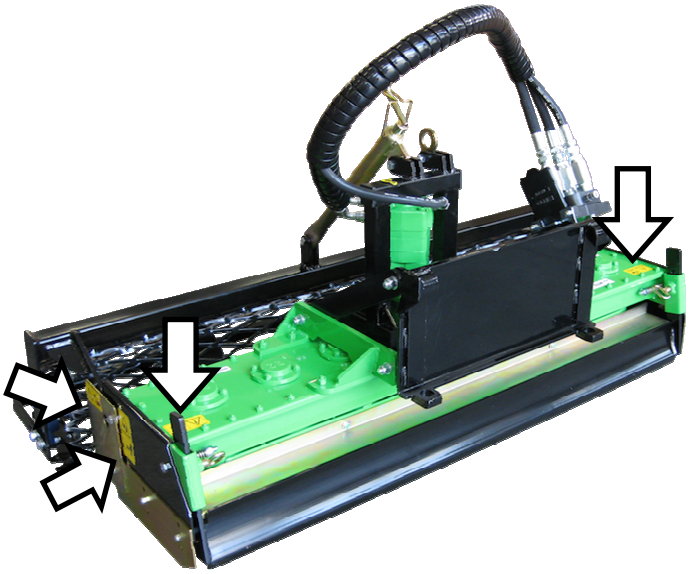
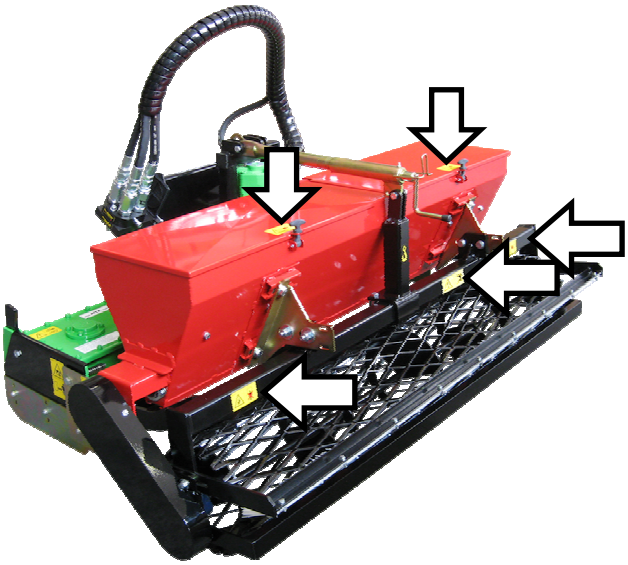
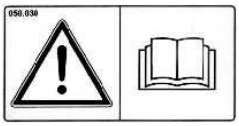
WARNING







Read this instruction manual before using the implement

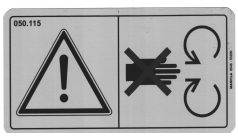
Before working on the implement, lean the implement on earth, turn off the loader, release the residual pressure, remove the key and read the present instruction manual

Keep a safe distance from the side and from the rear of the implement to prevent the risk of injuries and collision.
Always check that there are no people in range of the implement's movement and operation.

Anchor point for lifting the implement

Do not climb on the machine; do not transport anybody on the machine.

Warning: risk of ejection of stones and other materials.



Risk of entanglement and crushing! Do not put your hands in the hopper. (only for models with optional seeder).

Introduction

Above all, we want to start by thanking you for choosing us. We hope that you will be happy with the choice that you have made.
To get the best and longest performance from your **MILL GRADER Mod. MTZ HI**, please pay careful attention to the instructions for operation and maintenance given in this manual.
Compliance with the instructions will prevent mishaps and accidents due to negligence or non-compliance for which the **R2** company hereby declines all liability.
This operation and maintenance manual should be considered an integral part of the implement, and therefore it must always accompany it when it is sold, even when sold to a third party.
Keep this manual in a safe place and in good condition so that you or whoever uses the implement can consult it without difficulty and in its entirety at all times.

Description of the symbols used in this manual

		
This symbol is used in this manual to indicate actions (improper use of the implement), elements, behaviours and situations that can put your safety or the safety of other persons in danger.	Round symbols with white icons on a blue background in this manual indicate the personal protective equipment needed while using the implement or working on it.	This symbol is used herein to indicate that the described operation must be done with the tractor turned off and with the key removed.

For assembly, use and maintenance of the seeder (optional), refer to the related instruction manual.
The descriptions and illustrations in this manual, which do not include the implement with the seeder, refer to both the standard implement (implement with roller unit, without seeder unit) and the implement with the seeder unit attached.

1- Implement identification

Each R2 implement bears a plate with the CE mark indicating main identification data for R2 and the implement (Fig. 1).The plate is located on the main casing of the implement (milling unit).

Fig. 1

2 – Description of the implement and its appropriate use

The **MILL GRADER Mod. MTZ HI** is a hydraulic working interchangeable mechanical implement, designed and realized for milling and compacting the soil in one operation.
As can be seen from the illustrations (Fig. 2), the implement has a height-adjustable grader blade in front to move the soil. In the centre, there is a rotary harrow for smoothing the ground and, on the back, a special mesh roller that allows you to adjust the working depth of the rotary harrow and to compact the soil. By installing the seeder unit (optional) a seeding operation can be added.
The use of the **MILL GRADER Mod MTZ HI** consists in preparing the soil for lawns, gardens, sports fields, vegetable gardens and in optimal milling, levelling and compacting the soil.

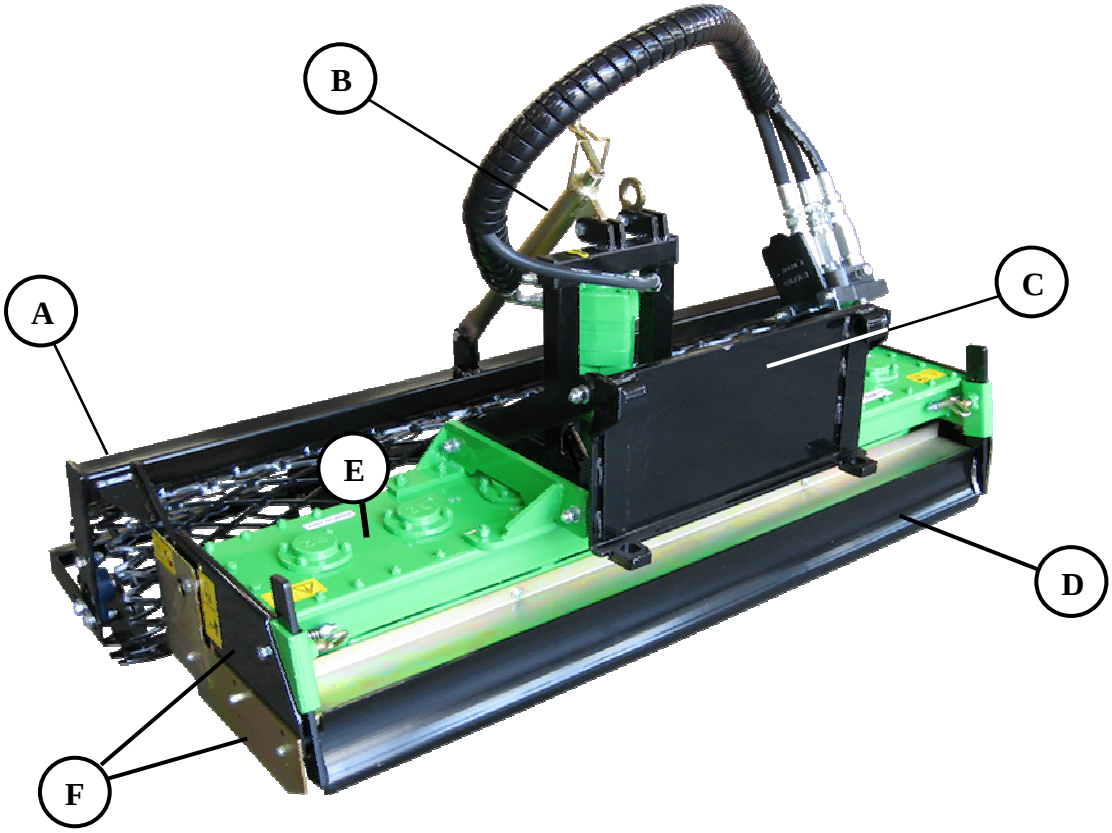
THE MILL GRADERS Mod. MTZ HI are designed and realized to be attached exclusively to hydraulic driven, professional loaders with suitable power (see the data sheet in the next paragraph). The purpose of the implement is exclusively to work the soil.
The optional seeder unit has been designed exclusively to scatter seed broadcast for grasslands and must be applied exclusively to the R2 mill grader MTZ HI.

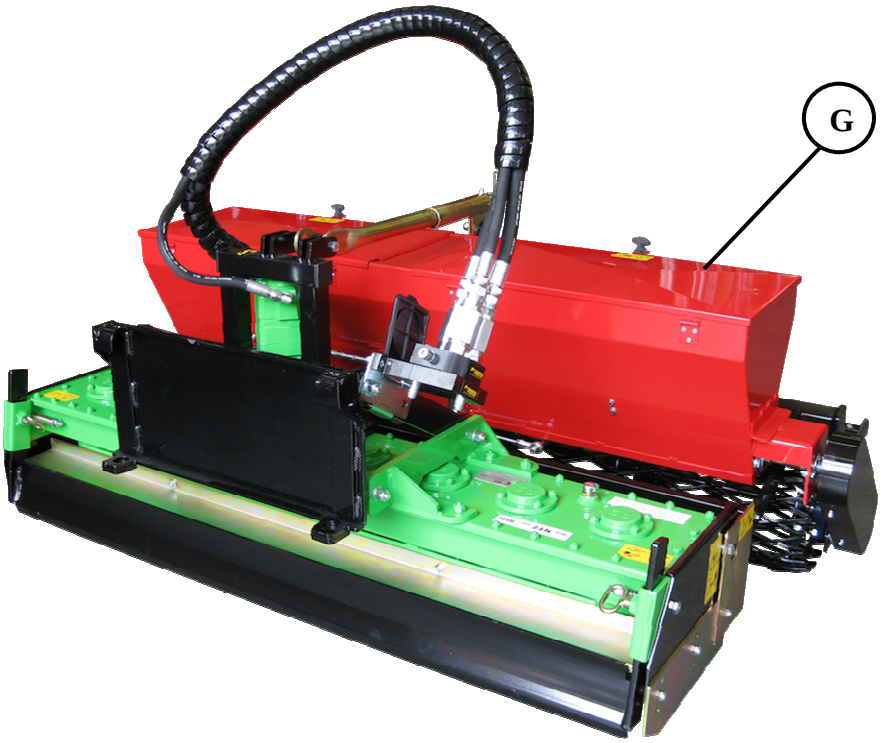
Any other use is considered improper and therefore dangerous. If at any time the **MILL GRADER Mod. MTZ HI and the optional SM seeder** might be used in different ways and/or for purposes other than those described in this manual, the manufacturer declines any liability for damages to persons and/or property of any kind.
Before assembling the implement to the loader, before using the implement and before any maintenance operation on it, read and follow carefully the instructions given in this manual as well as in the operator's manual of the loader which will be connected with the implement.

The proper use of the implement also involves the adhering to the following points:

- The MILL GRADER mod. MTZ HI and the SM seeder (optional) must be used, maintained and repaired by qualified personnel only, using R2 original spare parts exclusively.
- Prior to setting at work the MILL GRADER mod. MTZ HI and the SM seeder (optional), the user must know the contents of this manual and the operator's manual of the loader to which the mill grader is attached.
- The staff qualified to use the MILL GRADER mod. MTZ HI and the SM seeder (optional) should be adequately trained and informed on the proper use of the equipment, the risks that it may entail and the measures taken for prevention and protection against risks.
- The user of the MILL GRADER mod. MTZ HI and the SM seeder (optional) must respect the standards and legislation in effect on fire prevention, occupational safety and traffic on public roads.
- The MILL GRADER mod. MTZ HI and the SM seeder (optional) must be used only by personnel trained for this task and who are at the minimum age provided by law.

Fig. 2





A. Roller assembly
B. Roller adjuster
C. Quick attach plate
D. Grader blade
E. Milling group
F. Side panel and side panel extension
G. Seeder assembly (optional)

3 - Technical characteristics and dimensions

	Model									
	MTZ 100	**MTZ 100 + SM**	**MTZ 120**	**MTZ 120 +SM**	**MTZ 135**	**MTZ 135 +SM**	**MTZ 150**	**MTZ 150 + SM**	**MTZ 170**	**MTZ 170 + SM**
Milling width (cm) (Fig. 3a – Rif. A)	90	90	105	105	122	122	140	140	155	155
Levelling width (cm) (Fig. 3a – Rif. B)	90	90	105	105	122	122	140	140	155	155
Compacting width (roller width) (cm) (Fig. 3a – Rif. C)	100	100	116	116	132	132	150	150	170	170
Depth (cm) (Fig. 3a – Rif. D) (Fig. 4a – Rif. B)	75	120	75	120	75	120	75	120	75	120
Max. height from soil (cm) (Fig. 3b – Rif. A) (Fig. 4b – Rif. A)	76	74	76	74	76	74	76	74	76	74
Maximum working depth (cm)	16	16	16	16	16	16	16	16	16	16
Minimum working depth (cm)										
With flank extensions • high position (Fig 5 Rif. A)	3	3	3	3	3	3	3	3	3	3
With flank extensions • medium position (Fig 5 – Rif. B)	6	6	6	6	6	6	6	6	6	6
With flank extensions • low position (Fig. 5 – Rif. c)	8	8	8	8	8	8	8	8	8	8
Number of hoes	10	10	10	10	10	10	10	10	10	10
Weight (in models with seeder, total weight including the empty hopper given) (Kg)	115	150	180	200	220	250	250	285	280	320
Seeder unit weight (with empty hopper) (Kg)	-	64	-	70	-	78	-	95	-	105
Hopper volume (L)	-	50	-	57	-	62	-	68	-	76
Sowing width (Fig. 4a – Rif. A) (cm)	-	99	-	110	-	119	-	134	-	146
Required oil pressure (bar)	150 - 180		150 - 180		150 - 180		150 - 180		150 - 180	
Lubricant (grease) for the main body of the implement and the roller adjuster: ROLOIL LITEX - EP/0										
Lubricant roller gearing chain – hopper brush (optional seeder SM): spray lubricant										

Note on noise emission: the noise produced by the implement varies according to the characteristics of the soil worked. Exposure also closely depends on the noise produced by the loader. From the data in the literature on similar implements, a value indicating the exposure to noise (determined by the implement and the loader) from 90 dB(A) to 95 dB(A) may be assumed.

Use appropriate measures to check the specific level of exposure for the operation performed.
Follow the legislative references of your own country to identify the necessary personal protective equipment.

Fig. 3a

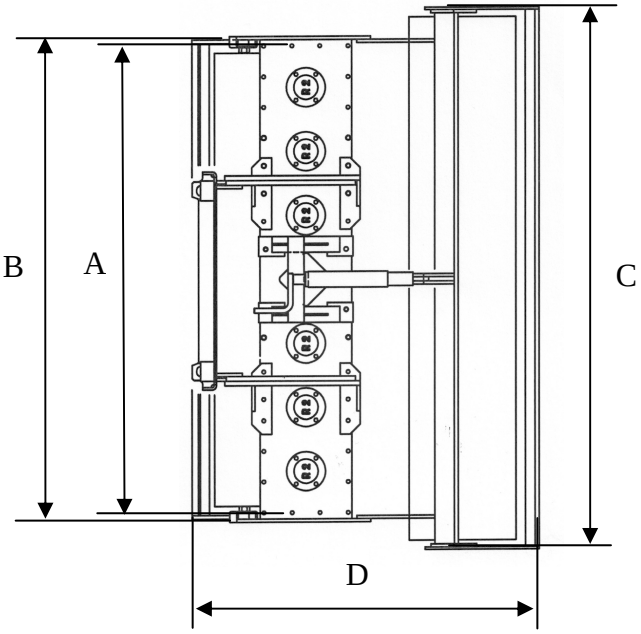


Fig. 3b

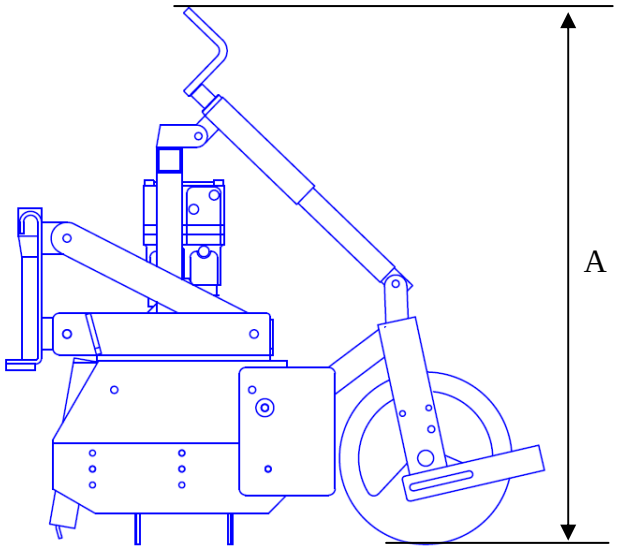


Fig. 4a

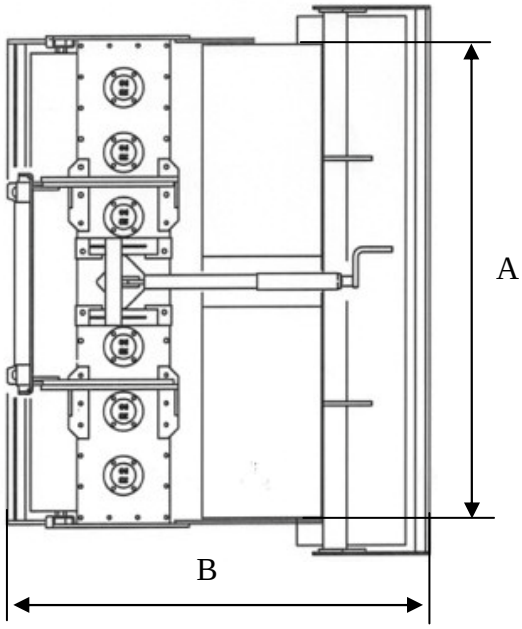


Fig. 4b

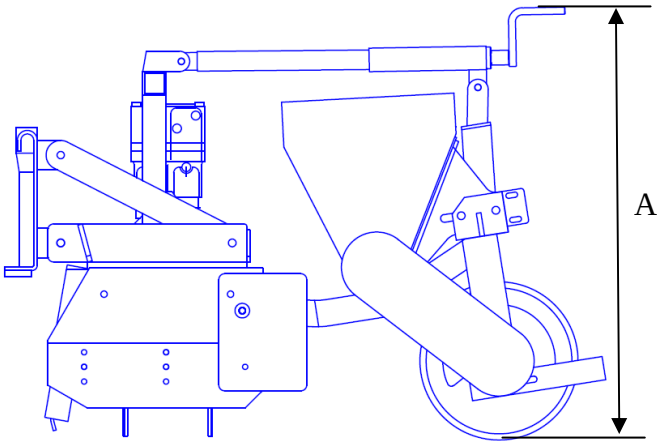
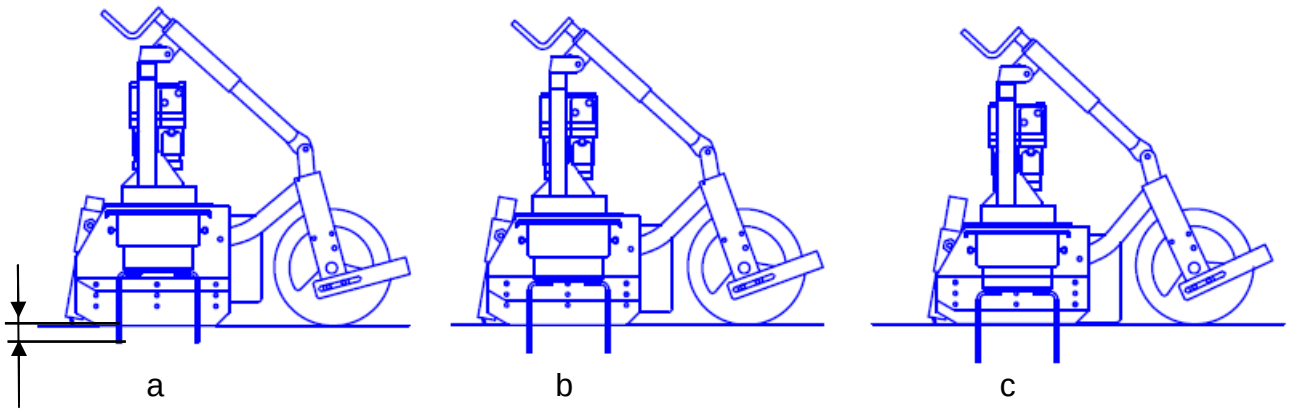


Fig. 5



4 – Handling and transporting the implement

The implement must be handled with lifting equipment. Ensure that the lifting equipment (including belts, ropes and chains) has a capacity sufficient for the weight to be lifted and that the equipment is in good repair.

Removing the components from the packaging:

- Standard implement: anchor the implement to the lifting system using the appropriate eyelet secured to the roller adjuster bracket (Fig. 6 and Fig. 6a).
- Roller and seeder units: anchor the lifting system to the eyelets provided for attaching the roller register (Fig. 7 and Fig. 7a).

WARNING: Due to the location of the center of gravity, when lifting, the implement with optional (empty) seeder tilts about 22° (Fig. 6a).

To carry out the handling operations safely, always wear safety shoes, maintain a safety zone around the hazardous area and make sure that there are no persons or animals in the area of operation.

- The implement must be delivered using professional means of transport (truck, van, etc.). Do not use a passenger car for transport. Before beginning transport, make sure that you have anchored the implement with ropes or straps to make it stable. The anchor points may be the roller unit bracket, the screw adjustment support and the front grader blade (Fig. 8). Make sure that the adjusting and fastening screws of the grader blade are well tightened. For more secure anchoring, place wedges against the rear roller to prevent it from rolling (Fig. 8). Adjust the roller by lifting it, so that the hoes rest on the floor of the transport vehicle.

- The implement will be transported directly hitched to the loader. If driving on the road, observe the rules and the road traffic legislation of your country. **WARNING:** The stability and the steering of the loader can change due to the presence of the implement, To keep low the center of gravity during transport, keep the MTZ HI mill grader in the lowest position and as close as possible to the loader. Follow the instructions given in the operation and maintenance manual of the loader.
- Always check that any walkways, ramps, etc. that must be crossed during transport are well anchored and have a suitable capacity of supporting the total load.

- When using ramps for loading the loader on the transport vehicle, verify that the ramps have a suitable capacity to support the total weight, that they are well anchored to the transport vehicle and that the transport vehicle has the handbrake on. Place the provided wedges to block the wheels of the transport vehicle.

Fig. 6

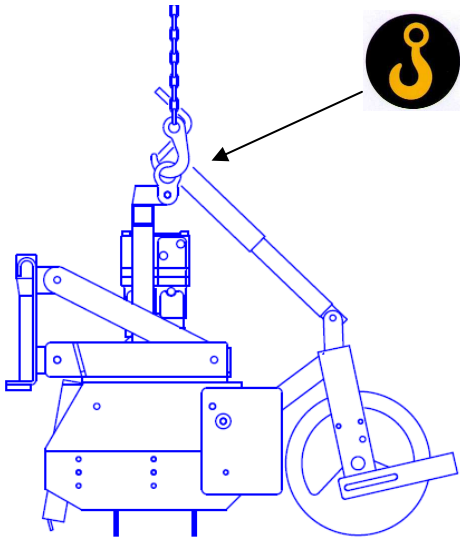


Fig. 6a

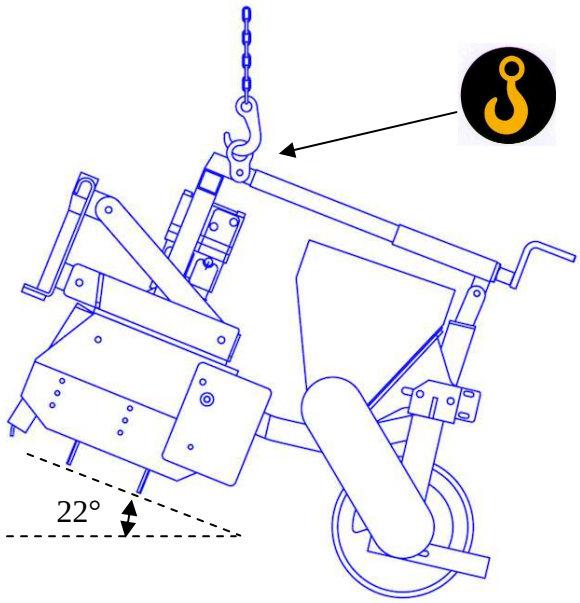


Fig. 7 SM 135- 150- 170

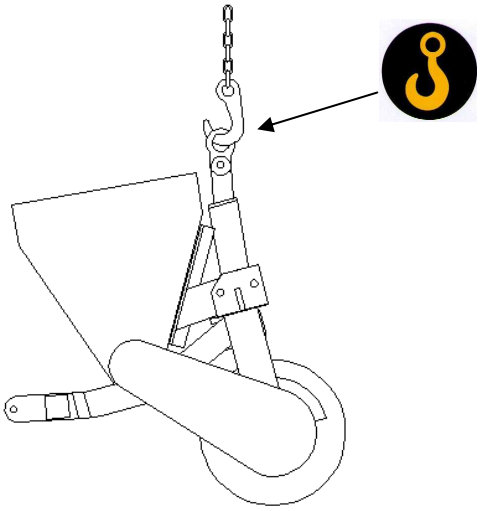


Fig. 7a SM 100 – 120

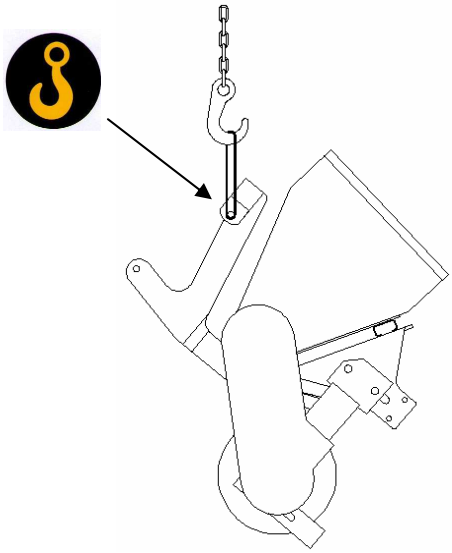
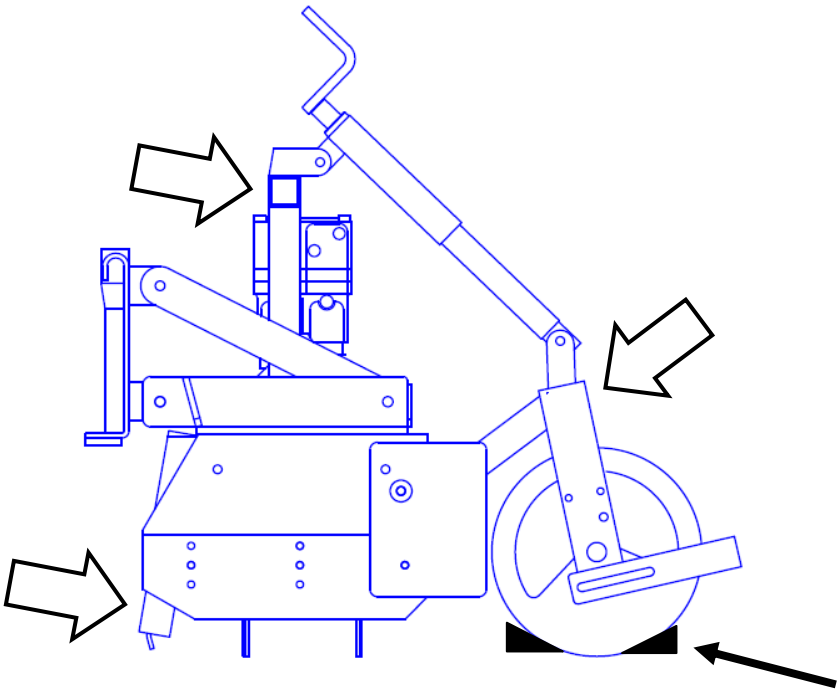


Fig. 8



5 - Accident prevention

Most accidents that occur while handling and moving the implement are due to negligence of the most basic rules of accident prevention.

It is therefore fundamentally important that all persons qualified to use the implement read and carefully respect the rules as indicated below and those indicated on the stickers found on the implement:

1. Before performing any adjustment, maintenance, cleaning or other work on the implement, proceed as following:
   a. stop running of the implement and the loader;
   b. drop the loader arm and place the implement on the ground;
   c. switch off the engine of the loader and put on the parking brake;
   d. release the residual pressure of the hydraulic circuit;
   e. prevent accidental start-up of the loader and the implement by removing the loader ignition key.
2. Check that the safety indicators are on the implement and legible.
3. Thoroughly check the tightness of screws and nuts at every use, especially those of the hoes and the attach plate.
4. During checks, adjustments or repairs, turn off the loader motor and make sure that no one can turn on the loader or the implement accidentally.
5. Always read the operator's manual of the loader before connecting and using the implement. Follow the safety instructions in the loader's and the implement's manuals rigorously. Do not remove or circumvent the loader's safety systems. Before starting to work, always check that these systems are in perfect working order. If you encounter any failure or malfunction of the loader's safety systems, do not use the implement.
6. When mounting the implement to the loader, ensure that the locking pins of the loader's quick attach plate are in the lower position and that they have locked the **mill grader MTZ HI** to the loader. Never lift or transport the implement if it has not been locked.
7. Never get underneath the implement when it is lifted from the loader.
8. Warning: the hydraulic system is pressurized. Before connecting the hydraulic hoses to the hydraulic circuit of the loader, make sure that the circuits of the loader and implement side are not under pressure.
9. Periodically check the hydraulic hoses. Damaged or worn hoses must be replaced immediately. The new hoses must have the features and quality required by the manufacturer of the implement (for information contact, our technical service department). If there is a leak do not use the implement or the loader.
10. Before performing the adjustment of the grader blade, follow the procedure specified in point 1.
11. The MILL GRADER Mod. MTZ HI has been designed to be used by only one person who should be in the driver's seat of the loader. Never leave the driver's seat when the implement is running. Make sure all persons or animals are clear from the work area prior to starting up the implement and during use.
12. Do not allow the implement to be operated without due supervision.
13. Do not get near and do not allow anyone else to get near the moving parts of the implement.
14. Do not interfere with any object on the implement during operation.
15. Do not climb and do not let anyone else to climb on the implement while it is in operation. Do not interfere with the implement during operation.
16. Do not transport persons, animals or objects on the implement.
17. Never operate the implement without the back roller and/or without the front grader blade and/or without the guards provided on the implement at the time of delivery in their proper places. Never remove the guards.

18. Make sure you wear close-fitting clothing that cannot easily get caught in the implement's moving parts.
19. Never put your hands into the hopper of the seeder unit (optional). Always close the cover of the hopper before using the implement and the seeder unit.
20. In case the milling unit is jammed, do not work on it while the loader is on. First of all follow the routine described in point 1.
21. Use particular caution when driving on steep roads, or when using the implement on trails or sloping ground.
22. If you drive on the road, observe the traffic regulations in effect in your country. Install the required signal devices on the implement. Always check the maximum weight allowed on the wheel axis. Use utmost caution: road handling, cornering stability and braking of the loader may be different due to the presence and position of the implement. During the transport, keep the implement in the lowest possible position and the nearest possible to the loader in order to keep low the gravity centre.
23. The **MILL GRADER mod. HI** implement has been built for a precise work. It must always be in perfect working condition and should be repaired using only original **R2 spare parts.**
24. Make sure all persons and animals are clear from the work area prior to powering up your implement or during use.
25. For any intervention on the implement first remove it from the loader. Then, place the implement flat on the floor or on flat supports and in a stable position.
26. All fluids under pressure, especially the hydraulic fluid, can provide serious skin lesions. In this case consult immediately a doctor: risk of infection.

6 – Assembling the components

The standard version implement will be supplied already assembled in all its parts and ready to be hitched to the loader.

Seeder unit assembly (optional)

The components must be assembled with the implement disconnected from the loader and the hydraulic circuit disconnected from the loader's feeding circuit. Perform assembly operations on a stable surface or on a smooth and flat pavement. During the assembly stage, wear leather gloves and safety shoes.

If you use pneumatic screwdrivers, wear hearing and eye protection.

1- Disassemble the roller unit from the mill and the screw register (Fig. 9).
2- Assemble the seeder unit in place of the roller unit using the same attachment points (Fig.10a – Fig. 11). Tighten the bolts so that the seeder bracket and the screw adjuster can slide along the attachment points (tighten the bolts, then loosen them ¼ turn); for this operation, we recommend using manual adjustable wrenches.
   NOTE 1: in the MTZ HI 135, 150 and 170 models, replace the end part of the standard screw register with the part supplied with the seeder unit and apply the screw register in the opposite direction as to the standard application (Fig. 10b – Ref. A).
   NOTE 2: in the MTZ HI 150 model the support must be moved to the decentralized lug (Fig. 10b – Ref. B).
3- Apply the lever for opening/closing the seeder unit on the loader (Fig. 12).

Standard version implement

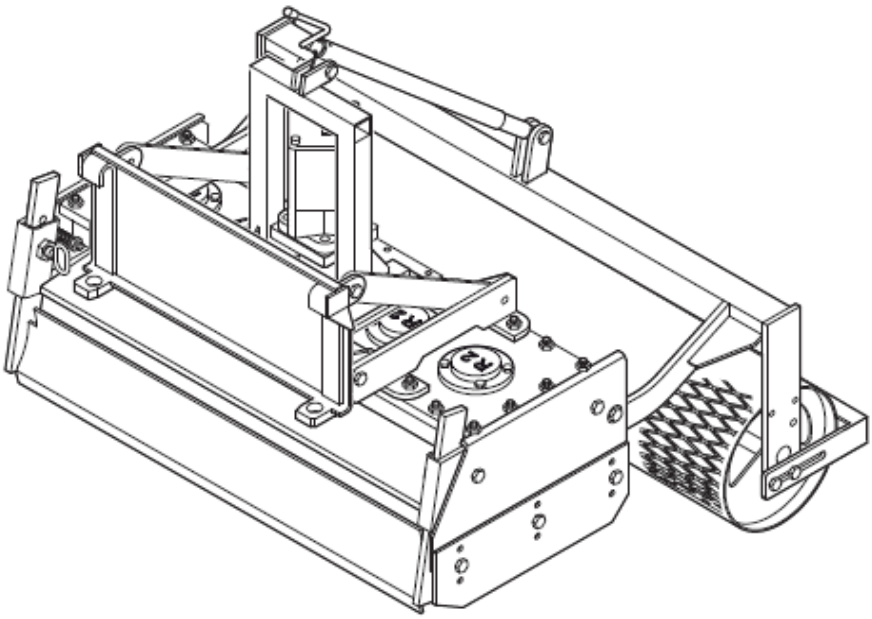


Fig 9

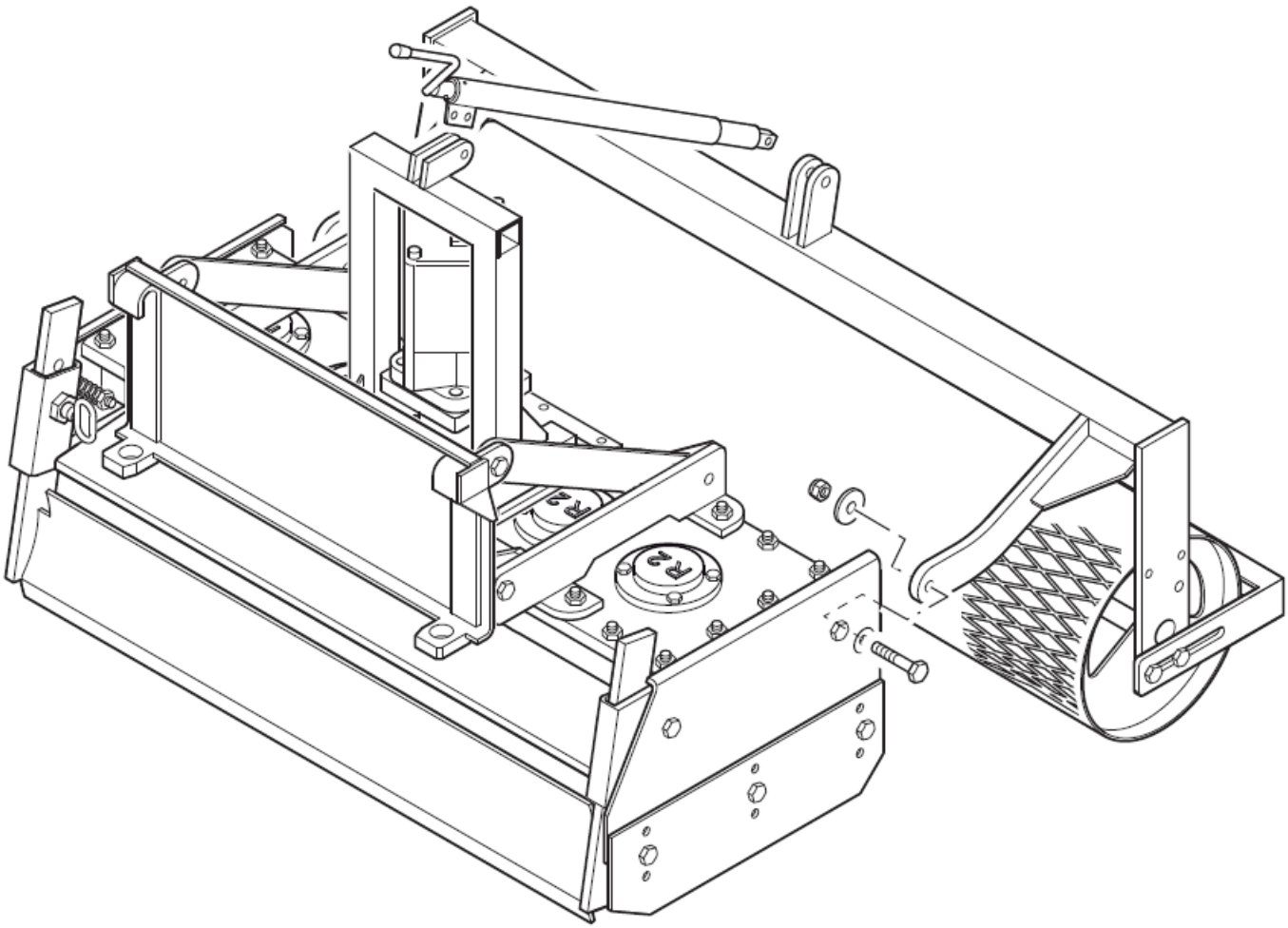
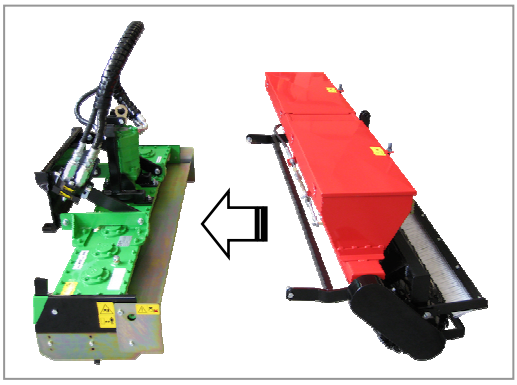


Fig. 10a

Mod. MTZ HI 135 – 150 – 170



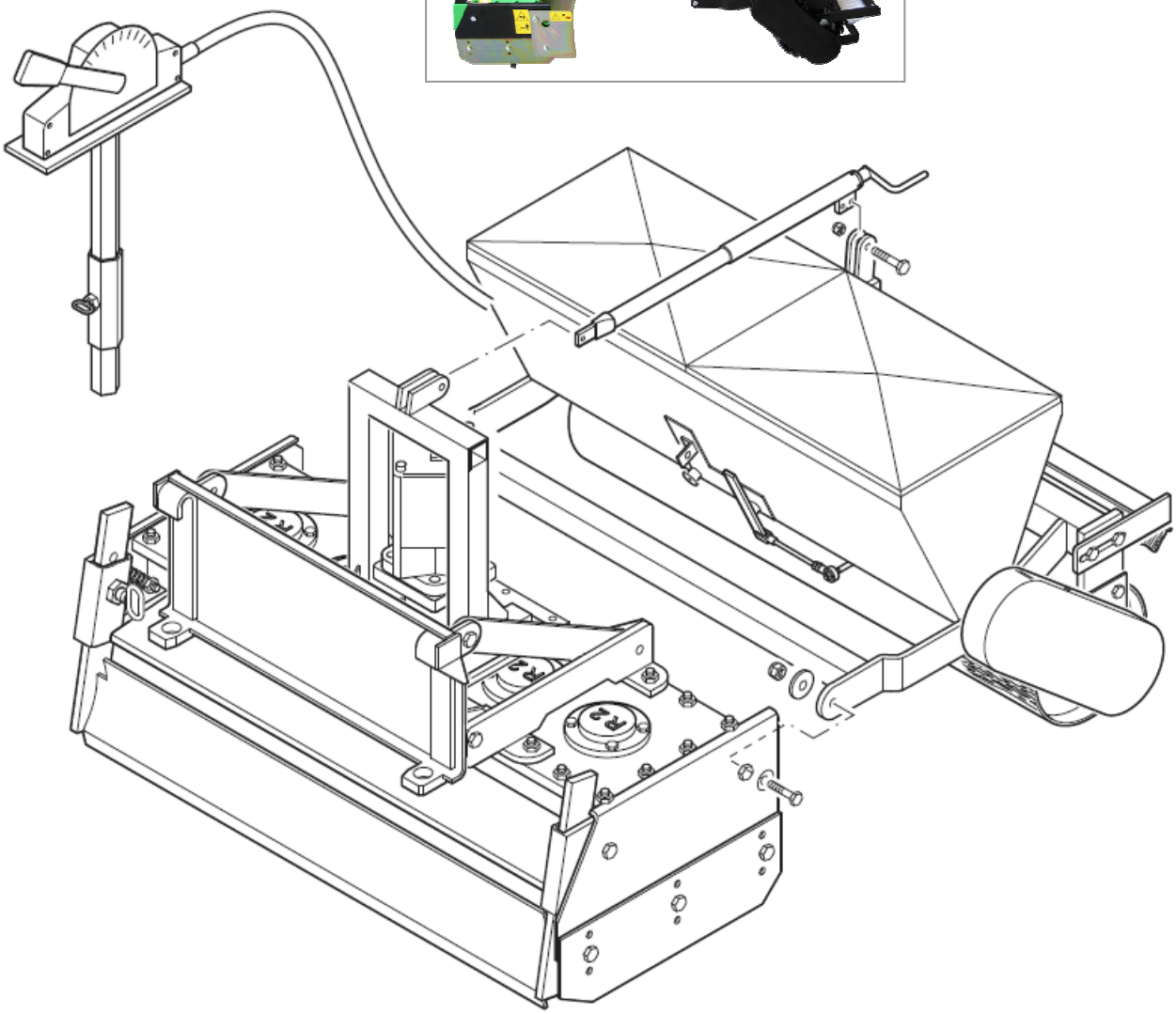


Fig. 10b

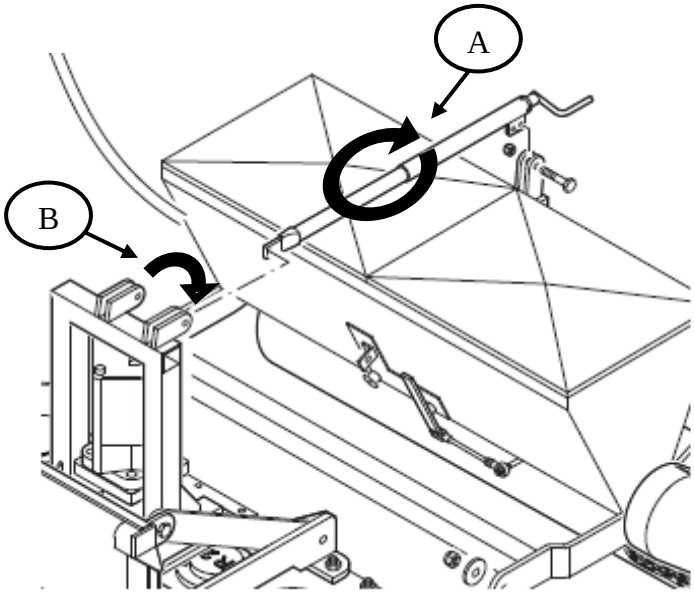
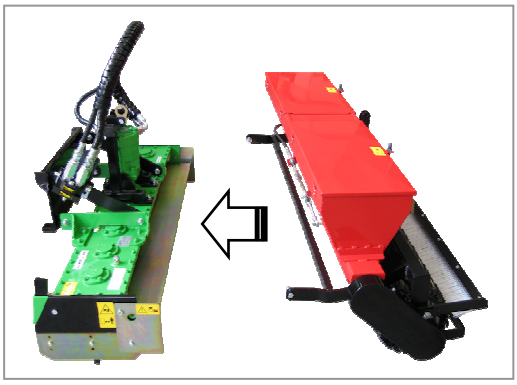


Fig. 11

Mod. MTZ HI 100 - 120



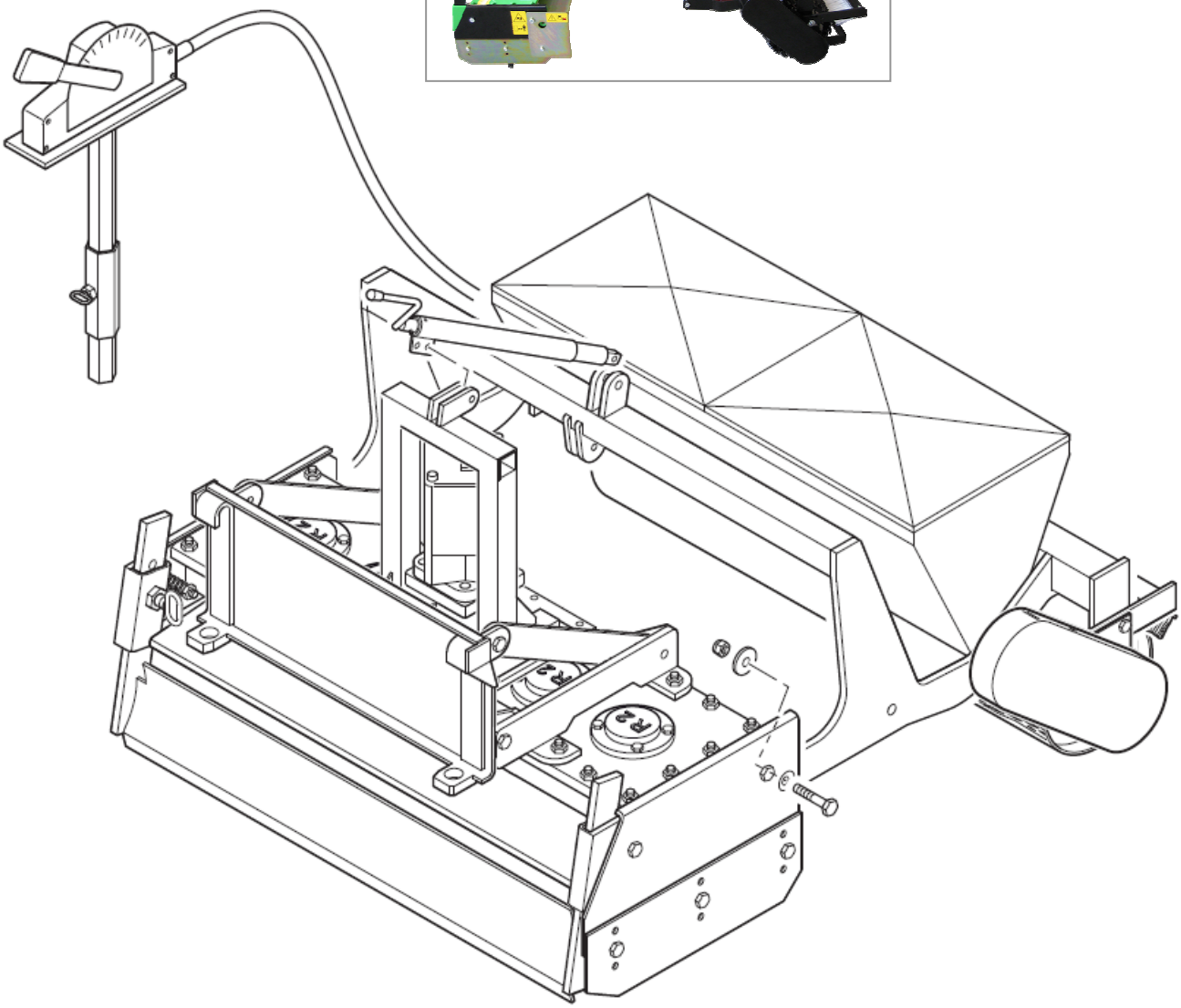
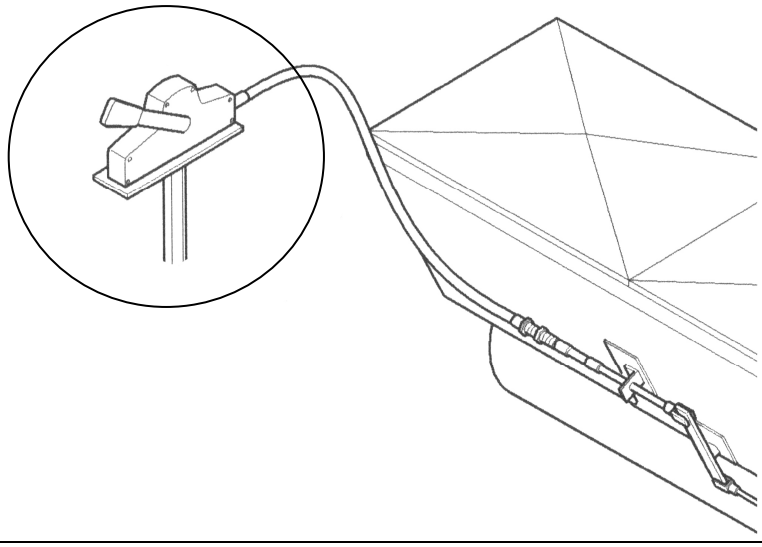


Fig. 12



7 – Attaching the implement to the loader *(original instructions)*

Attaching the implement to the loader is quick and easy, but it must be done carefully. The implement is mounted to the loader boom by using the quick attach plate and the counterpart on the implement. If the implement is not locked to the loader, it may detach from the loader and cause a hazardous situation. In the worst case, the implement may slide onto the driver along the raised loader boom. For this reason, the loader boom must under no circumstances be raised over one metre when the implement has not been locked. To prevent hazardous situations, always follow the implement mounting instructions provided in the following pages. Also remember the safety instructions shown in Chapter 5. The implement is mounted to the loader as follows:

Make sure that the implement will stay still and will not tip over. Attach or remove the implement only on level ground.

Keep all couplings as clean as possible; use the protective caps on both the implement and the loader. Dirt, ice, etc. may make using the fittings significantly more difficult. Never leave the hoses hanging on the ground; place the multiconnector onto its holder.

STEP 1 (Fig. 13)

- Lift the quick attach plate locking pin / locking pins up and turn them backwards into the slot so that they are locked in the upper position.
- Concerning the hydraulic hose connections see paragraph 8 on page 20.
- Ensure that the hydraulic hoses are not in the way during installation.

STEP 2 (Fig. 14)

- Turn the quick attach plate hydraulically to an obliquely forward position.
- Drive the loader onto the implement. If your loader is equipped with a telescopic boom, you can utilise this. Align the upper pins of the loader's quick coupling plate so that they are under the corresponding brackets of the implement.

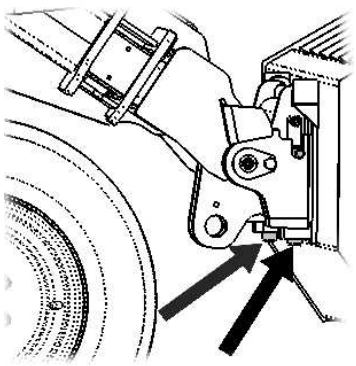
STEP 3 (Fig. 15)

- Lift the boom slightly – pull the boom control lever backward to raise the implement off the ground.
- Turn the boom control lever left to turn the bottom section of the quick attach plate onto the implement.
- Lock the locking pins manually or lock the hydraulic locking.
- Always check the locking of pin / pins.

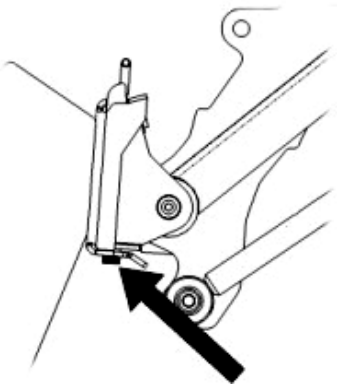
***

An implement that has not been completely locked to the loader may fall on the boom or operator, or under the loader during driving, causing loss of control of the loader. Before moving or lifting the implement, make sure that the locking pins are in the lower position and come through the fasteners on the implement on both sides. Never move or lift an implement that has not been locked.

300 – 700 series loaders



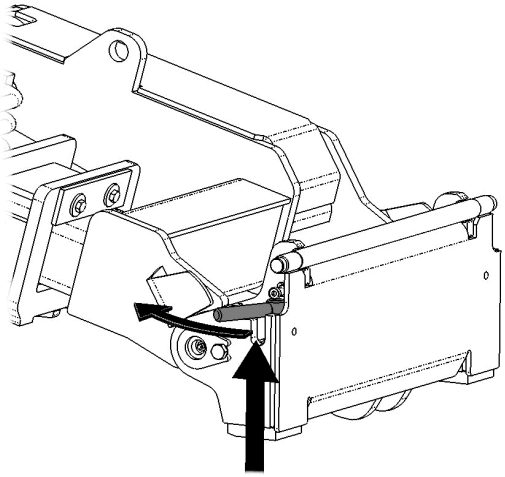
200 series loaders



Excessive tilting or lifting of an unlocked implement increases the risk of tipping the implement over. Do not use the automatic locking of the locking pins when the implement is lifted more than one metre from the ground. If the locking pins do not return to the normal position when tilting, do not tilt or raise the implement any more. Lower the implement on the ground and secure the locking manually.

Fig. 13
STEP 1

300 – 700 series loaders



200 series loaders

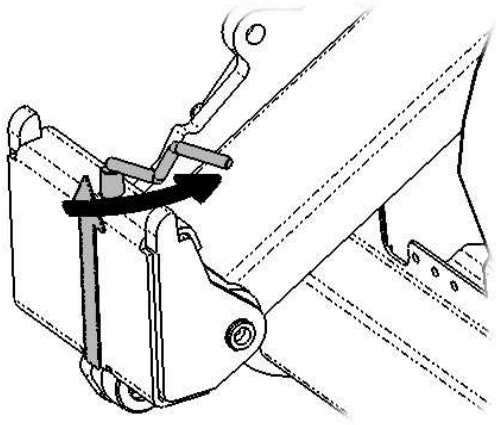
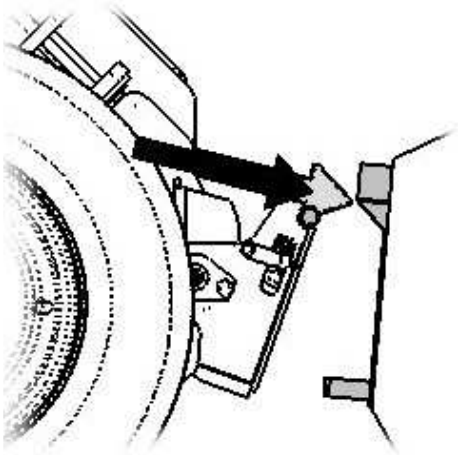


Fig 14
STEP 2

300 – 700 series loaders



200 series loaders

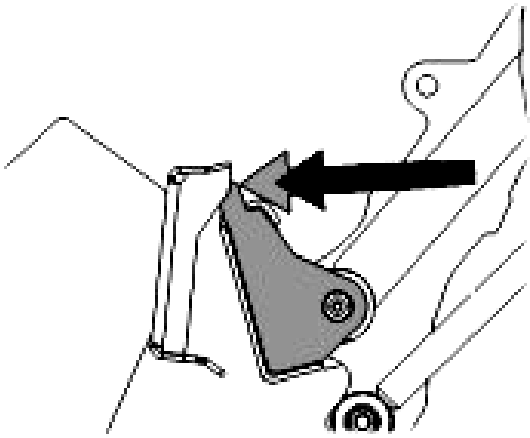
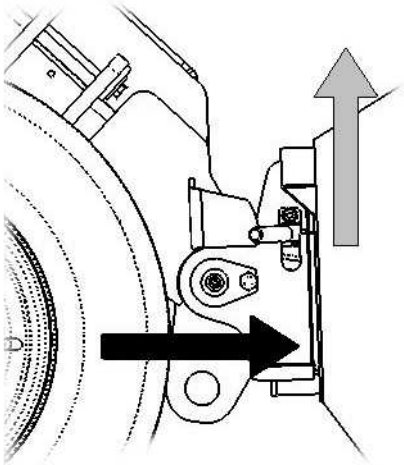
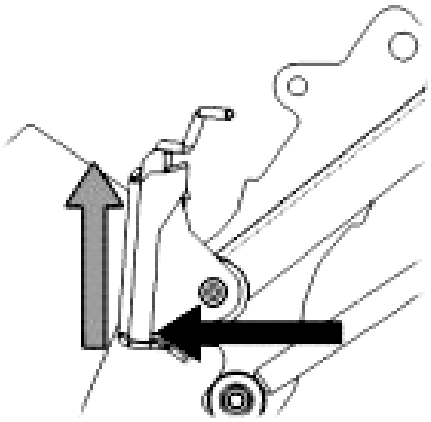


Fig 15
STEP 3

300 – 700 series loaders



200 series loaders



8 – Connecting and disconnecting the hydraulic hoses

On 400-700 series loaders hydraulic hoses are connected using the multiconnector system. If you have an Avant 300-700 series loader with the conventional quick couplers and wish to change to the multiconnector system, contact your Avant dealer or service point for instructions or installation services. On 200-series loaders the hoses are always connected with quick couplings.

Never connect or disconnect quick couplings or other hydraulic components while the control lever of the auxiliary hydraulics control lever is locked on or if the system is pressurized. Connecting or disconnecting the hydraulic couplings while the system is pressurized may lead to unintended movements of the attachment, or ejection of high-pressure fluid, which can cause serious injuries or burns. Follow safe stopping procedure before disconnecting hydraulics (see point 1 of paragraph 5 on page 12).
Use safety gloves and glasses.

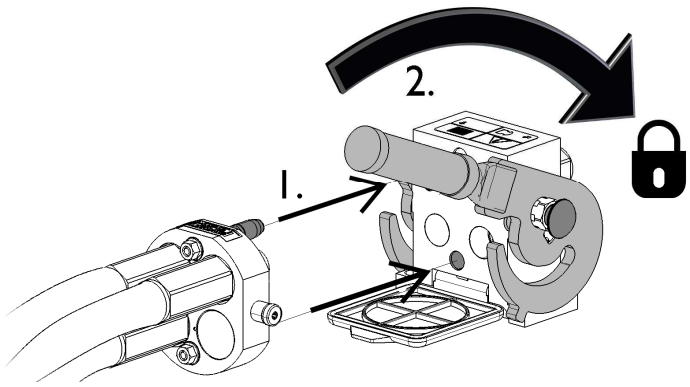
NOTICE: keep all couplings as clean as possible; use the protective caps on both the attachment and the loader. Dirt, ice, etc. may make using the fittings significantly more difficult. Never leave the hoses hanging on the ground; place the multiconnector onto its holder.

8.1 Connecting the multiconnector system (Fig. 16)

1. Align the pins of the attachment connector with corresponding holes of the loader connector. The multiconnector will not connect if the attachment connector is upside down.
2. Connect and lock the multiconnector by turning the lever towards the loader.

The lever should move easily all the way to its locking position. If the lever does not slide smoothly, check the alignment and position of the connector and clean the connectors. Also shut down the loader and release the residual hydraulic pressure.

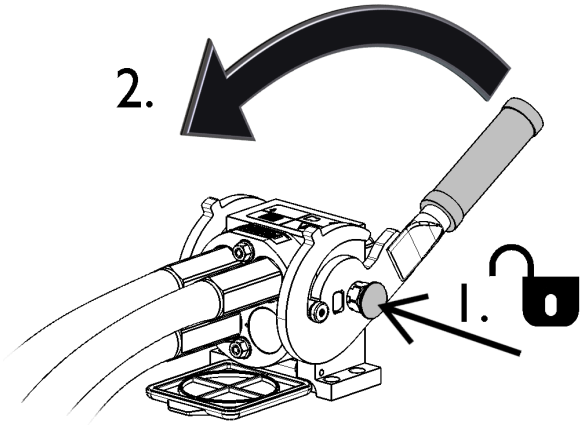
Fig. 16



8.2 Disconnecting and the multiconnector system (Fig. 17)

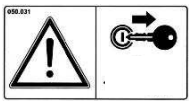
To disconnect the multiconnector system, turn off the auxiliary hydraulics of the loader, and:
1. Push the knob on the side of the connector to unlock.
2. Turn the lever to disconnect.

Fig. 17



9 – Preparing for use

Before using the implement, always perform the following checks with the tractor turned off and the key removed.

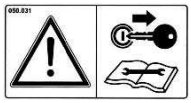


1. Perform a general visual inspection of the implement. Verify the correct mounting of the components (mechanical parts and guards). Do not use the implement if you experience an oil leak and/or if you see that parts of the implement are damaged, missing or not properly secured.
2. Check the correct coupling of the milling machine to the loader (see paragraph 7 on page 18);
3. Check that the hoes are intact.
4. Check that the safety signs are in place and legible.

10 – Adjusting the working depth

The provided roller adjuster screw sets the working depth.
In reference to the driving position of the operator:
- turning the roller adjuster clockwise, the roller rises and the hoes penetrate further into the soil (major working depth) (Fig. 18).
- turning the adjuster counter-clockwise, the roller sinks and the hoes rise referring to the ground (minor working depth) (Fig. 19).
To increase working depth, or in case the length of the hoes is reduced due to wear, you can modify the height of the side panel extensions in three different positions (Fig. 20).

To avoid hoes protruding from the soil and therefore creating dangerous situations during the milling, the side panels and the grader blade, during the setting of the various working depths, must constantly stay in contact with the soil (Fig. 22).



11 – Adjusting levelling

First follow the safety routine as indicated in point 1 of paragraph 5 page 12, then proceed with the grader blade adjustment.
Make sure that during the operation nobody can start the loader.
Wear protective gloves.

Levelling the soil is carried out by the front grader blade. The blade can be adjusted on the basis of the selected working depth by manually using the two dowels provided (Fig.21). Unscrew the dowels, select the height of the blade and then retighten the dowels so that they engage in the correct recesses on the blade supports.
For good levelling, make sure that while working there is always soil in front of the grader blade.

To avoid hoes protruding from the ground and therefore creating dangerous situations during the milling, the side panel extensions and the grader blade, in the different working depths, must be adjusted so that they constantly stay in contact with the soil (Fig. 22).

For adjustments and use of the seeder unit (optional) see paragraph 12 on page 23.

Fig. 18

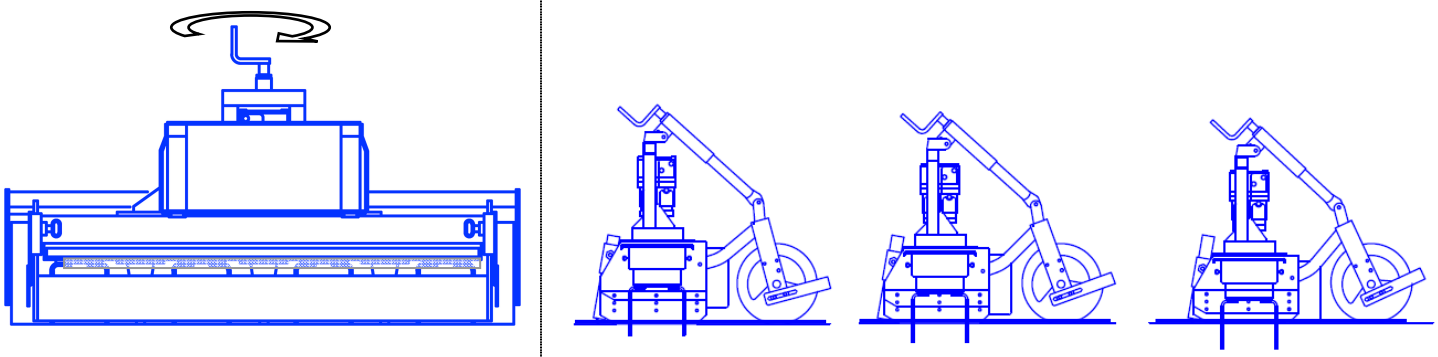


Fig. 19

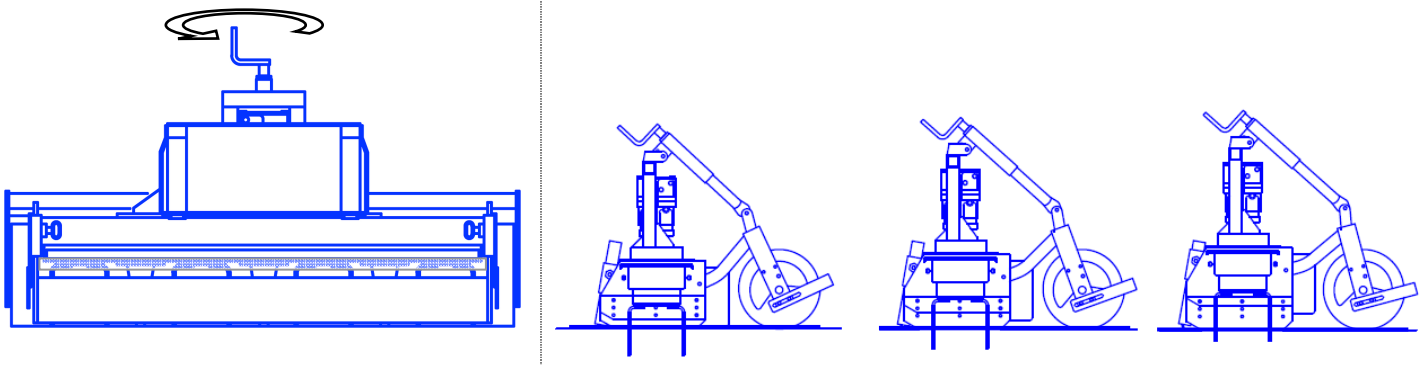


Fig. 20

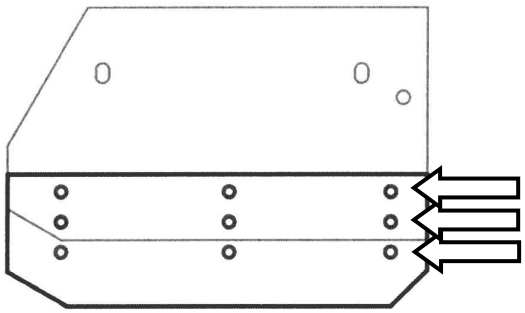


Fig. 21

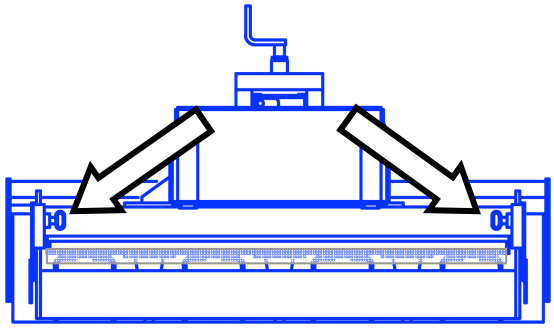
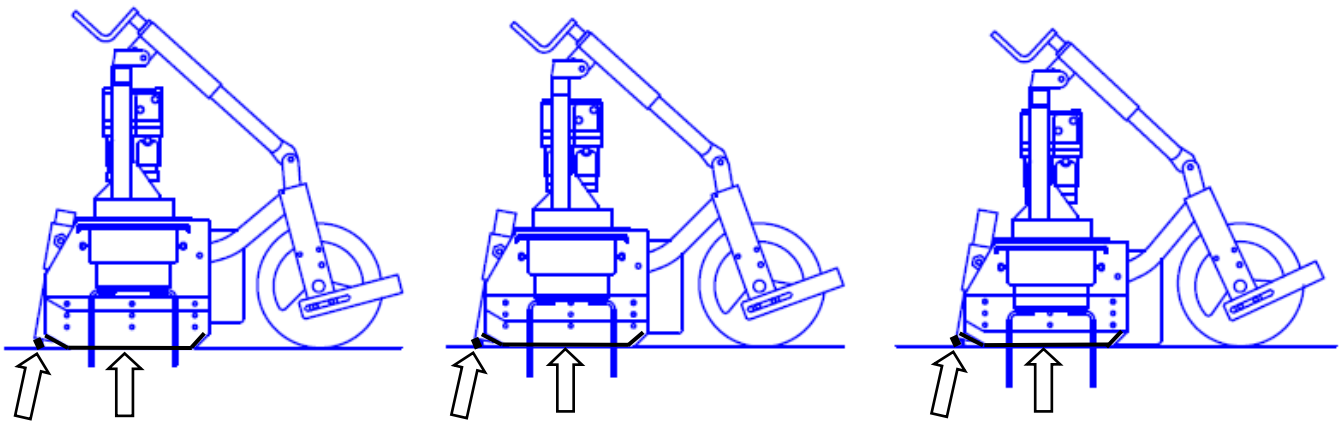


Fig. 22

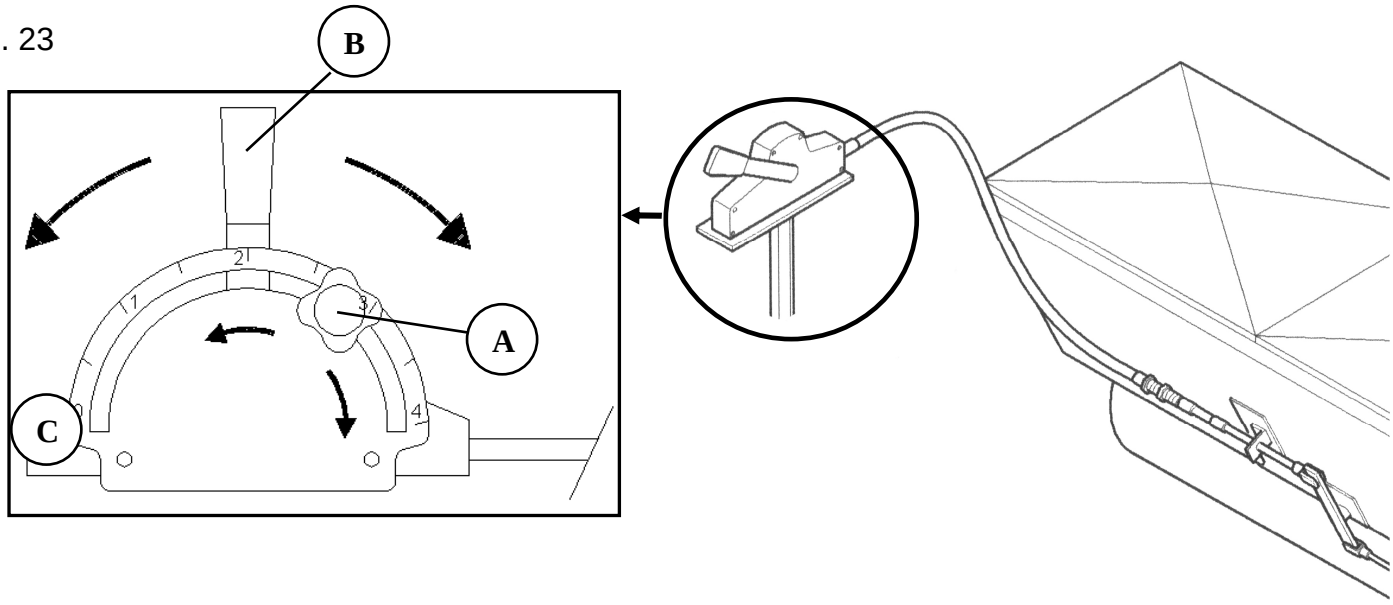


12 – Adjustment and use of the seeder SM

Fill the hopper with seed and close the door.
To adjust the quantity of seed that should fall, use the knob on the hopper opening lever (Fig. 23 – Ref A) and set it to the desired position on the graduated scale. Using the open/close lever (Fig. 23 – Ref. B) which supports the knob the quantity of seed that falls can be adjusted. To increase or decrease the amount, change the position of the knob on the graduated scale.
The quantity of seed to fall can vary depending on the mixture of seed used and the speed of the tractor. In order to identify the optimal setting based on the type/mix of seed used, you should run tests on a smooth and even flat surface before starting work.
To terminate the seeding operation, move the seeder lever to the off position (Fig. 23 – Ref. C).

Keep hands away from the hopper brush; always close the covers of the hopper before using the implement. If working or filling the hopper generates a lot of dust, protect yourself with a dust mask.

Fig. 23



13 – Use of the implement

13.1 – Tilling the soil

When adjustments has been made, start the loader and make the hoes of the miller rotate. When the implement is running, the operator must be on the driver's seat of the loader.
It is important to remember that during operation you must not move the steering wheel (as long as the hoes are inserted in the soil), only make small corrections to the travel direction, if necessary.
To change the direction, proceed as follows:

1. stop the loader's forward motion;
2. stop the motion of the hoes;
3. lift the implement, in order to detach it from the soil.
4. change direction by positioning yourself in the trajectory that you want to follow;
5. lower the implement;
6. restart the motion of the hoes;
7. restart working.

Always remember the rules of accident prevention given in section 5.
Verify the perfect efficiency of the loader's safety systems before using the implement. **WARNING:** The loader's stability and steering can be affected by the presence of the implement, especially when it is in a lifted position.
Strictly follow the indications of the loader's operation and maintenance handbook in order to work safely.
When using the implement:

- Keep persons and animals away from the working area. Do not allow anyone to approach the implement during operation.
- Stay clear of moving mechanical parts.
- Never leave your working place when the loader is on.
- If during operation a lot of dust is stirred up (which depends on the soil type), wear a dust mask.

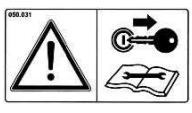
- Do not use the implement pushing it when the loader has engaged the forward gear: the implement must always be used with the loader in reverse gear.
- Do not use the implement on steep slopes (verify the aspects related to the stability in the operator's manual of the tractor).

13.2 - Locking the milling assembly

The **MILL GRADER Mod. MTZ HI** has been designed and constructed to minimize the risk that the milling assembly could lock up while tilling the soil. Anyway, you cannot exclude that this occur when there are big stones in the soil, wire or other elements that can get into or wind around the hoes.
To minimize the possibility of locking up the harrow, we recommend the following:

- Remove large stones, wire, etc. from the soil surface prior to tillage;
- Adjust to the required working depth;
- Replace the worn hoes (see section 15 - p. 27).

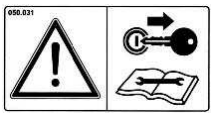
In case the harrow is jammed, TURN OFF THE LOADER and REMOVE THE KEY; before any intervention on the milling unit, follow the routine indicated in point 1 of paragraph 5 in page 12.



To unlock, remove the material with a long shaped tool; do not use your hands.
ATTENTION. Often,unblocking will succeed by pressure release of the hydraulic circuit, as there will be a lack of pressure between the hoes which holds the blocking material.

14 – Maintenance

ATTENTION: before doing any maintenance follow the routine as indicated in point 1 of paragraph 5 on page 12.
Place the implement on a horizontal and stable surface.
Never place your body or parts of it underneath the implement when it is lifted by the loader's arm.



Steps to be taken to keep the implement in working condition:

- Before each use of the implement:

1. Proceed with a visual inspect of the implement.. Verify the integrity and the correct attachment of the components (mechanical parts and guards). Do not use the implement if you notice an oil leak from the gear body of the miller or from the hydraulic circuit and/or if you note that parts of the implement are broken or worn, missing or not properly fastened.
2. Check that the hoes are intact and well fixed. If during work the hoes should accidentally break, stop work immediately and replace them.

- Periodically / early in the season of the implement's use:

- Milling unit:
  1. Grease the roll adjuster* using the appropriate grease gun (Fig. 24).
  2. Check the level of the lubricant in the gear tank* (main body of the implement) using the appropriate cap located on the tank (Fig. 25). The level of the lubricant must cover the gears.
  3. Checking and replacing the hoes: see section 15, p. 27.

- Optional seeder unit :
  1. Lubricate the gearing chain of the roller-brush motion of the hopper and finally reassemble the protective casing. Control the chain tension: the chain must fluctuate approximately 1 cm; if necessary, adjust the tension by means of the special tensioner (Fig. 26).
  2. If necessary, adjust the brush-roller distance by means of the special screws: (Fig. 27); the brush must be adjusted so that it works on the roller without blocking it.
  3. Check that the brush inside the hopper is intact and provided with all its bristles; check that the brush rotates freely by rotating manually the seeder roller.
  4. Check that the opening/ adjustment lever operates properly
  5. Check that the seed comes out correctly, checking that the holes of the box are free and unobstructed.

  For cleaning the implement and the seeder unit read paragraph 16 on page 29.

Any intervention for breakage and damage must be performed by personnel skilled in maintenance of mechanical agricultural equipment. In this case, contact your dealer or R2 technicians directly.
For maintenance on the seeder assembly (optional), read the relevant operation and maintenance manual.

During maintenance operations, wear safety shoes and protective gloves. For lubrication/greasing operations and when checking the level of the lubricants, always where nitrile gloves and safety glasses.

Upon completion of the lubrication/greasing operations, clean up any lubricant residues from the floor to prevent slipping risks.

**For the types of lubricants used, see the table in section 3, p. 8).*

Fig. 24

Fig. 25

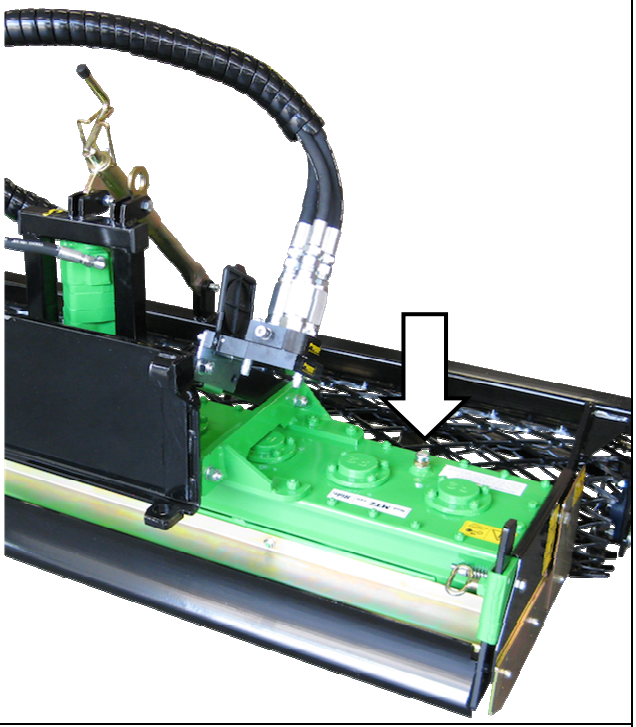


Fig. 26

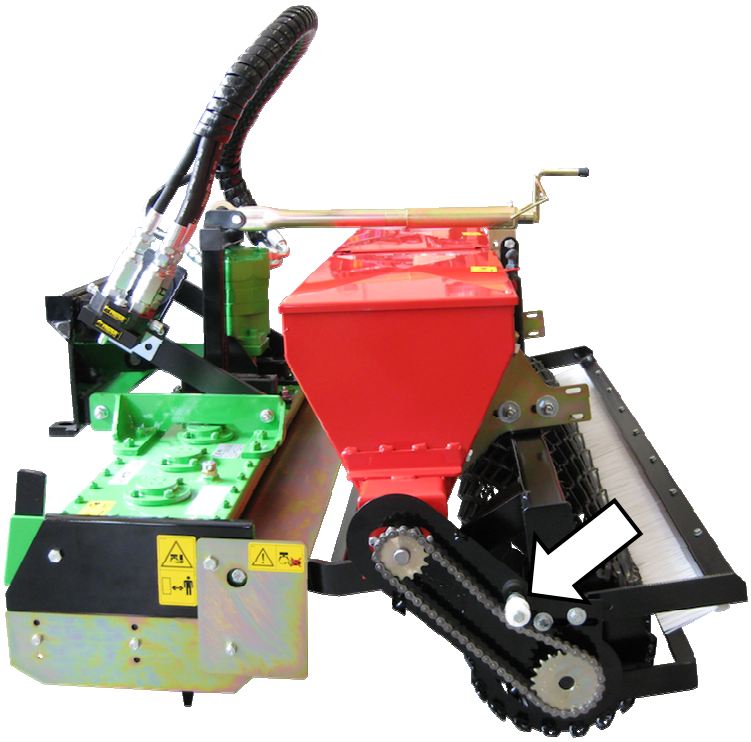


Fig. 27

15 – Replacing the hoes

Working the soil determines a gradual consumption of the hoes.
When the hoes have become a length of 8 cm, they must be replaced. Using the implement with tools of a length less than 8 cm may cause a reduction of the tillage quality and increase the risk of clamping and damages to the milling group.

When replacing the hoes, the implement must be disconnected from the loader.
Never let yourself or any part of your body get underneath the implement while it is raised by the loader.
Lay the implement flat, on a smooth and stable surface with a suitable capacity.

15.1 Positioning the implement

1) Disassemble the implement from the loader (see procedure in point 1 of paragrapf 5 on pag. 12) and detach the implement from the loader by following the inverse sense of the assembly procedure found under paragraph 7 on page 16.
2) Disassemble the roller group (or the optional seeder unit) and the roller adjuster.
3) Disassemble the side protections (Fig. 28 – Ref. A).
4) Lay down the implement and lean it on the rear part of its sides (fig. 29).

WARNING: The hoe area is dangerous (Fig. 29). During these operations, position yourself firmly and securely and make sure that your face and your body will not be pressed against the hoes.
Do not allow people or animals to approach the area of the knives. If it should be necessary to leave the implement unattended in this position, protect the hoe area with a rigid panel in order to avoid dangerous accidental contact with the hoes by third parties.

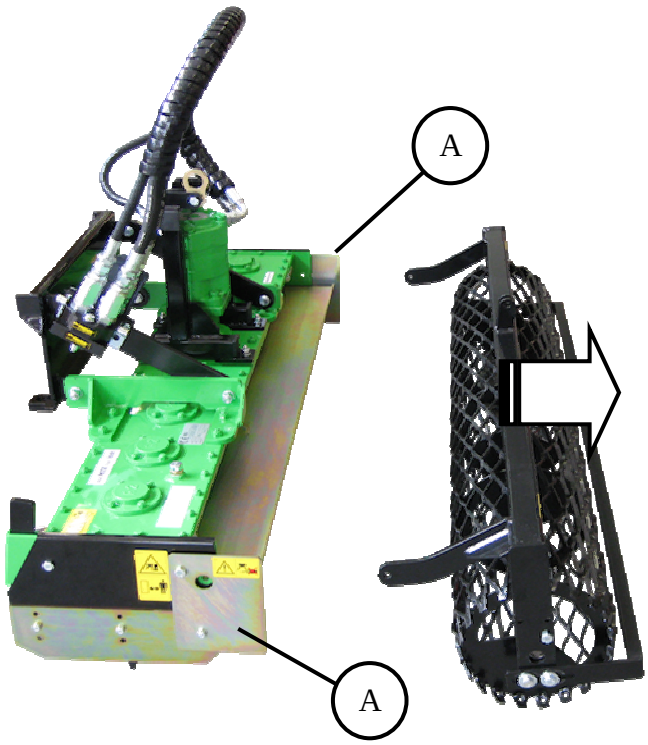
15.2 Replacement of the hoes

Using a 17 mm (11/16”) pneumatic screwdriver and a wrench, unscrew the fastening bolts of the old hoes and screw in the new hoes, ensure that the hexagonal head of the screw is inserted into the hexagonal seat of the hoe support bracket (Fig. 30). Whenever replacing the hoes, always use new screws, bolts and split washers.
After the replacement of the hoes, reassemble the roller unit or the seeder unit (note: the tightness of the fastening screws of the roller assembly and the roller adjuster should allow the components to turn round/slide respectively one against another) and the side protections.

While replacing the hoes, wear protective gloves, safety shoes, ear protection and safety glasses. While using the pneumatic screwdriver wear ear protections.

When working with the implement in a raised position wear safety shoes.

Fig. 28



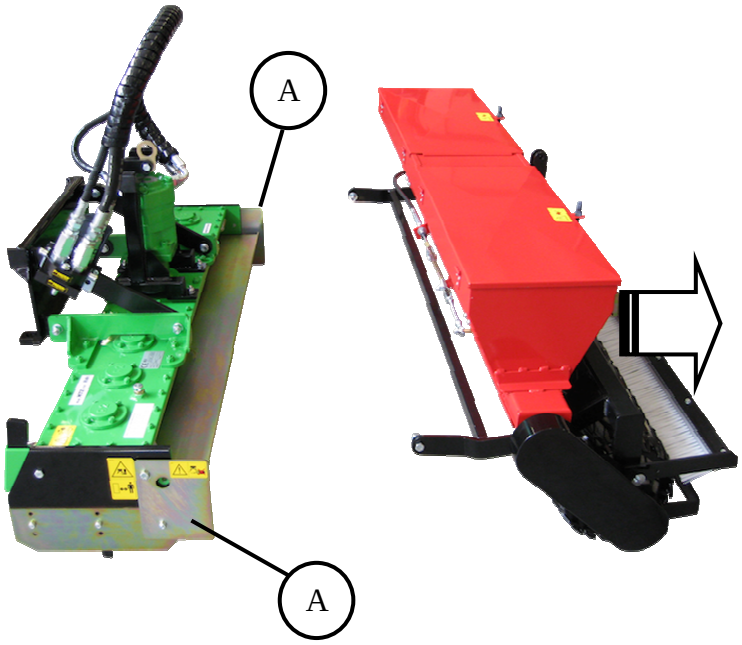


Fig. 29

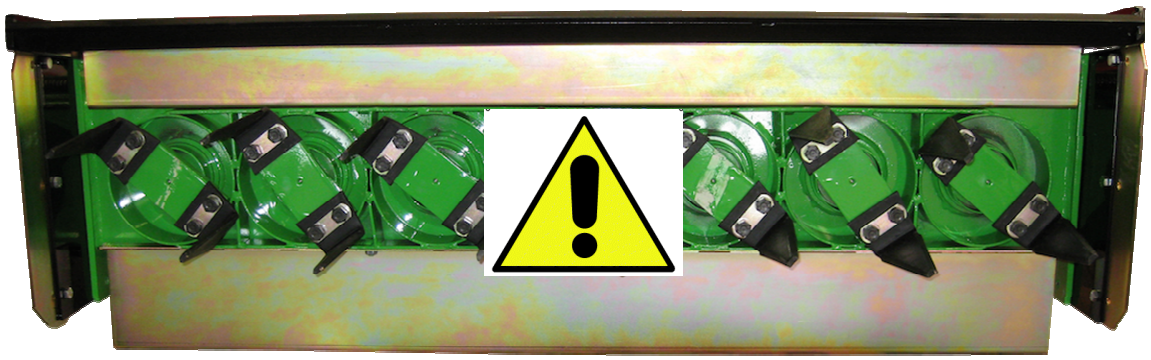
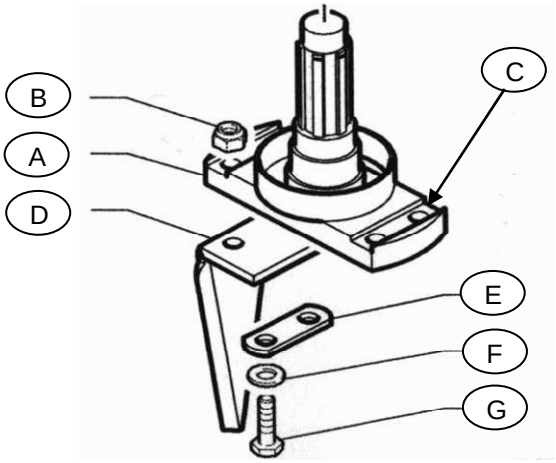
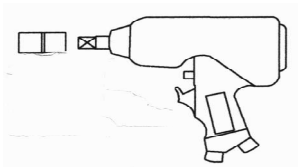


Fig. 30

A. Hoe support bracket
B. Self-locking steel nut M10 fine pitch – DIN 982
C. Nut seat
D. Hoe
E. Drilled plate
F. Reinforced Grower washer DIN 127/B
G. Steel screw M 10 x 1,25 x 45 fine pitch partial thread DIN 960 – 8.8



Tightening of the hoes screws: 85 Nm



6-7 bar

16 – End of work and storage of the implement

If the **Mill Grader MTZ HI** should stay inactive for a long period of time, the following operations must be done:

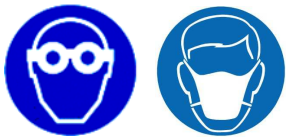
1. Wash the implement carefully and wipe it dry. WARNING (for implements with optional seeder): to avoid solidification and/or germination of seed residues inside the seeder, do not use water to clean the inside of the hopper;
2. Carefully check the functionality of all moving parts and replace the damaged, deteriorated or worn parts.
3. Check the tightness of all the bolts.
4. Check the level of the lubricating grease (see the maintenance section on p. 23).
5. Protect and lubricate all unpainted metal parts, then cover the equipment and place it in a dry place. In this way, it will be ready for use when needed.
6. Before starting the implement after the period of storage, follow the instructions in the section Preparation for use – page 19.

Warning: Before reusing the implement, refer to the **"Maintenance"** chapter.

Store the implement on the floor and in a way that it does not pose a danger to people and animals (stumbling, the implement falling from a high place, etc.) and protect the protruding parts so that they do not cause injury.

To avoid hazards, store the implement in a way that it does not block escape routes, emergency exits, firefighting equipment (extinguishers, hydrants, etc.) or first aid equipment (first aid kits, etc.) in the storage place.

If the implement is washed and/or cleaned by compressed air or water jet, make sure that there are no persons or animals in the working area and wear safety glasses and dust masks if necessary. Never point the compressed air or water jet at persons or animals.



17 – Scrapping and disposal of components and packaging

In case of scrapping, the implement has to be made unusable in order to keep third parties from recovering and reusing it. If third parties reuse the implement, it can be very dangerous and cause serious accidents.

In order to make the implement unusable, you should disassemble the hydraulic engine and dispose of it separately.

The implement is composed of metal parts and lubricating substances. These parts must be disposed of at special waste disposal centres.

Dispose of the packaging materials at waste collection centres.

Polyethylene stretch film is not a toy and should be kept away from children to prevent suffocation.

To respect the environment, dispose of materials at designated waste collection centres.

18 - Warranty

The implements of our production are covered by a warranty for manufacturing and/or installation defects valid for 2 years from the date of their delivery to the user.
It is limited to the replacement of the specific parts which are recognized as faulty and does not provide the refunding of the relevant manufacturing and transport expenses.

The right of the warranty application is null and void if

- the buyer has made arbitrary changes to the original structure of the supplied equipment;
- it is used beyond the permitted power capacities;
- original **R2** spare parts are not used;
- our implements are not used in accordance with the instructions in the manual;
- the operator uses the equipment improperly.

R2 reserves the right to modify at its own discretion the data contained in this manual whenever the company deems it necessary for a technical or commercial improvement of the product.

The original text of the operation and maintenance manual has been written in Italian (original instructions).

R2 reserves the right to make technical modifications in order to perfect the implement described in this operator's manual. Claims based on the indications, illustrations and descriptions mentioned herein will not be accepted

The R2 S.a.s. company will not be responsible for damages or malfunctions caused by errors of use, not following instructions for use and/or inappropriate repairs.

Certification

The CE certification provided with the implement certifies the implement's conformity to legal provisions in effect.

INFORMATION

The CE certificate is included in the machine documentation and reports the manufacturer's data, the data of the machine and the Declaration of Conformity of the implement with the EC Directive(s) as in the sample copy shown on the following page.

I - Dichiarazione CE di conformità
GB - EC Declaration of Conformity *(translation)*
D - EG- Konformitätserklärung *(translation)*
F - Déclaration CE de conformité *(translation)*
E - Declaración CE de Conformidad *(translation)*
NL - Conformiteitsverklaring CE *(translation)*
DK - EF-overenstemmelseserklæring *(transalation)*
FIN - EY-vaatimustenmukaisuusvakuutus *(translation)*

CE

Ai sensi della direttiva 2006/42/CE - According to the EC Directive 2006/42/EC - Im Sinne der EG-Richtlinie 2006/42/EG - Aux termes de la directive 2006/42/CE - Según lo establecido por la Directiva 2006/42/CE – In overeenstemming met de richtlijn 2006/42/CE - I henhold til Direktiv 2006/42/EF - Direktiivin 2006/42/EY mukaisesti

La ditta sottoscritta - The undersigned Firm - Die Unterzeichnerfirma - La Maison soussignée – La empresa abajo firmante - De hieronder genoemde onderneming - Det undertegnede firma - Allekirjoittanut yritys

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Dichiara sotto la propria responsabilità, che la macchina
Shall accept full responsability in stating that the machine
Erklärt auf eigene Verantwortung, daß die Maschine
Dèclare sous sa propre responsabilité que la machine
Declara bajo su propia responsabilidad que la máquina
Verklaart onder de eigen verantwoordelijkheid dat de machine
Erklærer, under eget ansvar, at maskinen
vakuuttaa omalla vastuullaan, että kone

Fresa Livellatrice - Mill Grader – Planierfräse - Fraise Niveleuse – Fresa Niveladora Nivelleerfrees – Jordfæser - Tasoittava jyrsin

MODELLO – MODEL – MODELL – MODÈLE - MODELO – MALLI: .....

CODICE – CODE – CÓDIGO – KODE - KOODI: .....

E' conforme ai requisiti essenziali di sicurezza e di tutela della salute di cui alla direttiva 2006/42/CE
Conforms to the basic safety and health requisites contained in directive 2006/42/EC
Den wesentlichen Anforderungen an Sicherheit und Gesundheitsschutz der EG-Richtlinie 2006/42/EG entspricht
Est conforme aux conditions essentielles requises en matière de sécurité et pour la tutelle de la santé en accord avec la directive 2006/42/CE
Es conforme a cuanto dispuesto en los Requisitos esenciales de seguridad y protección de la salud previstos en la directiva 2006/42/CE
Conform is aan de essentiele eisen voor de veiligheid en de bescherming van de gezondheid, volgens de richtlijn 2006/42/CE
Stemmer overens med de væsentlige sikkerheds- og sundhedskrav indeholdt i Direktivet 2006/42/EF
On yhdenmukainen neuvoston direktiivissä 2006/42/EY säädettyjen olennaisten terveys- ja turvallisuusvaatimusten kanssa

Norme Armonizzate applicate - Harmonised standards applied:
EN ISO 14121-1:2007 EN ISO 12100-1:2005 EN ISO 12100-2:2005
La persona autorizzata a costituire il fascicolo tecnico è il Sig. Roberto Rinaldi presso R2 S.a.s.
The person authorized to compile the Technical File is Mr. Roberto Rinaldi at R2 S.a.s.

TOSCANELLA DI DOZZA – DOZZA BOLOGNA

R 2 S.a.s.

Roberto Rinaldi

Legale rappresentante – Managing Director – Gesetzlicher Vertreter
Représentant Légal – Rapresentante legal
Wettelijke vertegenwoordiger – Befuldmægtigede - Laillinen edustaja

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