AGRICULTURAL MACHINERY

RF50 - RF65 - RF80 - RF100
RF65 PRO - RF80 PRO

USER AND MAINTENANCE MANUAL

dal 1950
BRUNI
macchine agricole

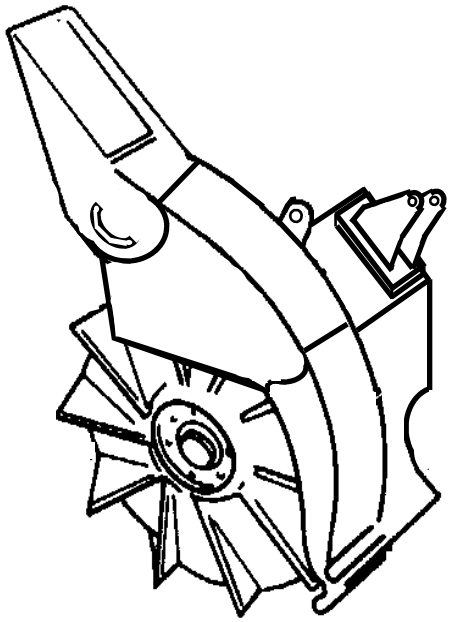
www.bruniagri.it

RF Series

WHEEL FOR CLEANING DITCHES AND CANALS

ATTENTION

Read this manual carefully before using the equipment.



di BRUNI Enrica
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Dear customer,

First of all**, BRUNI** wants to thank you for your preference in selecting a machine from its production and wants to inform you that **Bruni** products are the result of many years experience along side those who use its products as well as a constant commitment to research and innovation.

This manual is supplied with every machine, **it must be read carefully before its use, all of the instructions contained herein must be followed scrupulously and a copy of the manual must always accompany the machine.**

Comply with the standards contained in this manual, not only will it permit you to understand the concepts of a technical and informative nature for correct use in the safest manner possible for the prevention of accidents, but will also permit you to fully understand the machine and thereby use it in the correct manner, maximising your invested capital.

We finally recommend you to always contact authorised **BRUNI** centres for maintenance and repairs and to always use original spare parts.

BRUNI declines all liability for any damage to persons or property that is caused by the failure to observe the standards contained in this manual.

To better contact us, useful telephone numbers and our addresses are listed below:

BRUNI di BRUNI E.

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1 - GENERAL DESCRIPTION

1.1 PRELIMINARY INFORMATION

This is the user and maintenance instruction manual pursuant to attachment V of Machine Directive 89/392/EEC and amendments.

Do not destroy or modify, supplement only with additional booklets.

Manual Code: MLM RF

Revision no.: 00 Edition : 2006

Model: RF

Serial number:

Year of construction:

Manufacturer information: **BRUNI MACCHINE AGRICOLE**
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1.2 REQUIRED OPERATOR TRAINING

Careful reading of this manual:

- each operator and all personnel responsible for machine maintenance must read the entire manual with maximum attention and respect its contents.

- the employer is required to ensure that the operator possesses the skills necessary for operating the machine and has carefully read the manual.

1.3 WARNINGS

The instruction manual must be read and used as follows:

- carefully read the instruction manual and consider it an integral part of the machine;

- the instruction manual must be readily available to personnel responsible for its operation and maintenance;

- maintain the manual for the entire period the machine is kept;

- ensure that all received updates are incorporated into the text;

- give the manual to any other user or successive owner of the machine;

- use the manual in a manner that its contents are not entirely or partially damaged;

- do not remove, rip out or rewrite any part of the manual for any reason;

- store the manual in an area protected from moisture and heat;

- if the manual is lost or partially ruined and therefore its contents may no longer be completely read you should request a new manual from the manufacturer.

Pay maximum attention to the following symbols and their meaning. Their purpose is to emphasize particular information such as:

WARNING

In reference to integrations or suggestions for correct machine use.

DANGER

In reference to dangerous situations that could occur when using the machine to guarantee personal safety.

ATTENTION

In reference to dangerous situations that could occur when using the machine to avoid damage to property and to the machine itself.

1.4 INTRODUCTION

The service standards described in this manual are an integral part of the machine supply.

In addition, these standards are intended for an operator who is specifically trained to operate this type of machine and contain all the necessary and essential information for safe operations and the optimal, and not incorrect, use of the machine.
Hurried and incomplete preparations force improvisation and this is the cause of many accidents;
Before starting work, carefully read and scrupulously respect the following suggestions:

1. before starting to manoeuvre the machine, learn about all operations and allowable operating positions;
2. the operator must always have the instruction manual available;
3. carefully schedule all interventions;
4. be sure to always have the necessary equipment available: certified cables in an optimal condition;
5. before starting work, ensure that the safety devices function correctly and there is no doubt about their operation; otherwise, do not use the machine in any case;
6. carefully observe the warnings related to special dangers that are contained in this manual;
7. constant and accurate preventive maintenance always guarantees the elevated operating safety of the machine. Never postpone necessary repairs and have them carried out only and exclusively by specialised personnel, and only use original spare parts.
8. the removable protections must always been maintained in optimal working order to guarantee maximum safety.
9. always regularly control that machine screws and nuts are correctly tightened to avoid accidents.

1.5 WARRANTIES

WARNING:

BRUNI guarantees the machines it manufactures, supplied new, for 12 (twelve) months starting from the delivery date. This warranty does not cover defects due to the normal wear of those parts that due to their nature are subject to rapid and constant wear, for example: cutting tools, bushings, bearings, belts, transmissions, flexible cables, safety protections etc.
During the 12 month warranty period, BRUNI is committed to supplying free of charge the part identified as defective by its own Post Sales Service, with the Client being responsible for all shipping, packing and labour expenses. Changes made to the machine by the User, its irrational use as well as negligence by the User and the use of non-original spare parts ANNUL the warranty.
BRUNI declines all liability for damage of any nature caused by breakage of the machine or its parts, by delayed delivery, or damages that derive from the use of the machine itself, without prejudice to what is expressly provided by law.
For administrative reasons, all spare parts will be will be invoiced upon shipping, the acknowledgement of a possible warranty and the right to be credited will occur after receipt and verification of the defective part.

1.6 DISPUTES

For all disputes, the court of Milan shall have jurisdiction.

ATTENTION

For maintenance repairs or repairs only use original spare parts.
BRUNI declines all liability for damage that could occur due to the non-compliance with what is stated above.
The machine is under warranty in accordance with the contractual agreements that were stipulated at the time of sale.
The warranty shall lapse whenever the standards and instructions for use foreseen by this manual are not observed.

1.7 FORESEEN USES

"RF" series machines were designed to be connected to more types of **BRUNI** machinery and other brand. Excellent for the cleaning of little and medium dry ditches or with water, **"RF"** series allow to do a new little ditch also.
The appropriate use of the machine foresees to **not** run the machine when lifted off the ground and/or when not provided with protective devices. Any other use is to be considered inappropriate and the manufacturer declines all liability for any resulting damage to people, property or the machine itself.

1.8 IMPROPER AND UNPERMITTED USES

ATTENTION

This paragraph indicates some of the improper and unpermitted uses; as it is impossible to foresee all of the possible improper uses, if you are faced with unusual occasions for using the machine, contact BRUNI before carrying out the work.

The following uses must be categorically avoided:

- Use of the machine by minors, inexperienced or unlicensed people.
- Use of the machine to hoist or transport people or property.
- Use of the machine as a pile driver.
- Use of the machine to crush waste wood and shrubs with a diameter greater than 4 cm.

1.9 FOR YOUR SAFETY

ATTENTION

The failure to observe safety and accident prevention standards that are described below may cause injury and/or damage to people or property, BRUNI declines all liability due to the inobservance of these instructions.

1. Carefully read this user and maintenance manual, the manual for the tractor to which the machine is connected as well as the cardan shaft manual prior to use.
2. Keep the warning and signal plates that are present on the machine clean and replace them in the case of deterioration.
3. Entrust the machine only to professionally prepared and skilled persons, avoid absolutely that the machine is used by non-trained persons.
4. Use the machine only in good psycho-physical conditions and without any after effects of illnesses that could compromise perfect operations.
5. It is prohibited to transport people, animals or property on the machine.

6. Do not approach the machine for any reason before having disengaged the power take-off, activated the parking brake, turned off the engine, removed the keys and waited for the blades to stop completely.

7. Before starting work, check that all operations of the machine's transmission shaft and the power take-off are present and working correctly. Any damaged components must be replaced and correctly installed. Fasten the cardan shaft's safety chain in a manner that permits articulation in all working and transport conditions.

8. Before using the machine, do not ingest food, drinks or substances that could alter the perfect functioning of the body and limit the reaction times of the individual when faced with unexpected circumstances.

9. It is absolutely prohibited to drive or have the tractor driven with the machine attached by people without a suitable driving license.

10. Always start the tractor engine in the neutral gear, with the parking brake engaged and the power take-off disengaged.

11. Never start the tractor engine from the ground, it must only be started when sitting in the driver's seat.

12. Avoid working when temperatures are excessively high or excessively low.

13. Wear personal protective equipment.

14. Wear suitable garments and in particular avoid wide and flapping clothes that could be caught in moving parts.

15. In the case of long hair, bind it together before using the machine.

16. Never work under the machine when it is lifted off the ground.

17. The engagement or disengagement of and/or the maintenance operations on the cardan shaft must be done only after having turned off the tractor engine, removed the ignition keys and engaged the parking brake.

18. When the machine is operating, maintain a safety distance of 30 m.

19. Ensure that the area involved with operations cannot be freely accessed by people and/or animals, if necessary use auxiliary personnel who carry red flags in order to timely warn anyone who enters the area or to signal the operator to immediately stop work.

20. Warn all others carrying out other activities in the same area about the dangerousness of the machine, the distance that must be respected and the duration of operations.

21. If there is reduced visibility, fog, haze and during sunset use a rotating flashing yellow light.

22. Do not remove for any reason the fixed protections, adjustable operations or rubber protections except for maintenance purposes in compliance with the express instructions, and do not operate for any reason if the protections are worn or damaged.

23. Before starting to work, make sure that the protections have not been removed and/or are intact.

24. Comply scrupulously with the safety standards of the country of operation also if they are not contained in this manual.

25. When working, the blades must never touch the ground.

26. When the blades are moving, do not attempt to insert or extract material with any tool, particularly with hands or feet.

27. Do not lift the machine when the blades are moving.

28. Be very careful when near electric lines, maintain a safety distance of approx.10 m.

29. In order to avoid accidents, periodically check the correct tightening of the fastening screws, nuts and all elements that make up the machine that have threaded parts and that are therefore subject to becoming loose.
    If quick connect screws are used, periodically check they are correctly tightened in order to avoid that the oil seal bursts or the hydraulic engine breaks.
    BRUNI declines all liability for any damage to persons or property that is caused by the failure to observe the standards contained in this manual.

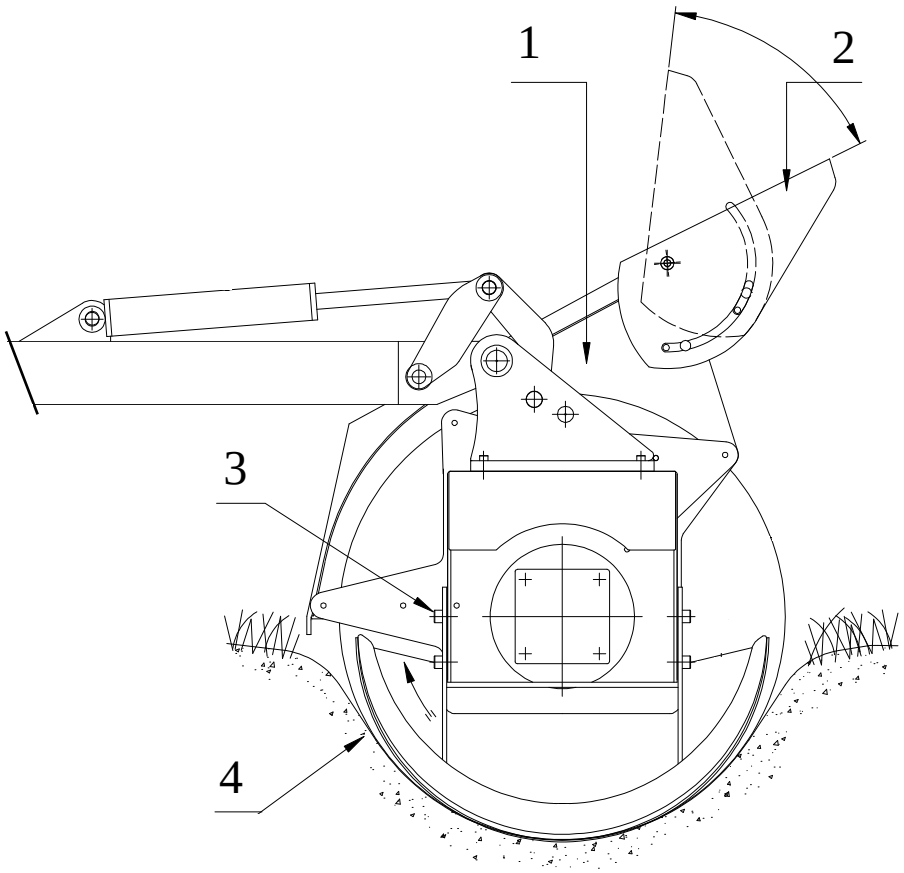
ATTENTION

30. **Check regularly the right tightening** of fixing screw of the machine parts, nut and all the elements with threaded parts subject release, so to avoid accidents.
    In case of utilization of rapid screw connection, check **regularly the right tightening** so to avoid the explosion of oil seal or the break of hydraulic motor.
    Bruni decline responsibility for damages, people or things, caused inobservance of the norm inside this manual.

2– MACHINE SPECIFICATIONS

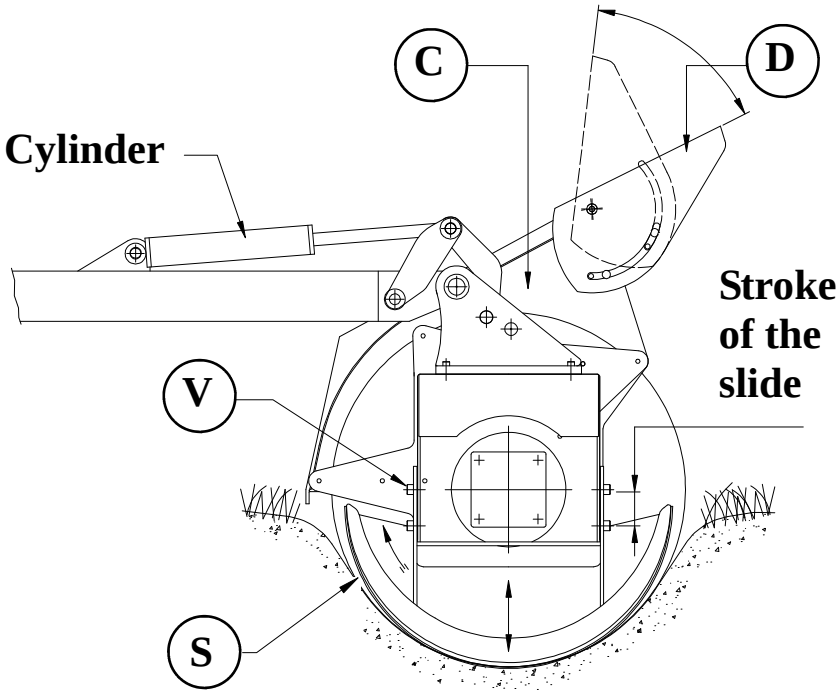
2.1 MACHINE DESCRIPTION

1. Adjustable **CONVEYOR**
2. Adjustable **DEFLECTOR**
3. Slide regulation **SCREW**
4. Adjustable support **SLIDE**



“ RF “ series machines were designed to be connected to more type of **BRUNI** machinery and other brand.
The positioning system during the transport phase guarantees reduced dimensions and optimal visibility for the operator.
Excellent for the cleaning of little and medium dry ditches or with water, **“RF”** series allow to do a new little ditch also.
“RF” series machines remove from the ditch and from the sides of the ditch the vegetation and the part of earth in excess.
The special form of the shovels, united to the great openable deflector, it allows the separation and the throwing of the removed materials, also in presence of a lot of vegetation.

WHEELS Ø 1,00 mt.
WHEELS Ø 0,80 mt.
WHEELS Ø 0,65 mt.
WHEELS Ø 0,50 mt.



ATTENTION

***TIGHTEN FIRMLY THE RING NUTS ON THE RAPID JOINTS**
when the Rotofoss is attached in place of the cutter and vice versa.

*For machines with an inverter
DO NOT INVERT
the direction of wheel rotation

SLIDE ADJUSTMENT

- The wheel is provided with a slide “S” that rests on the bottom and its height can be adjusted. Carefully adjust the wheel’s support slide according to the nature of the ditch bottom and how much material is to be removed, by means of the adjustment screws “V”.

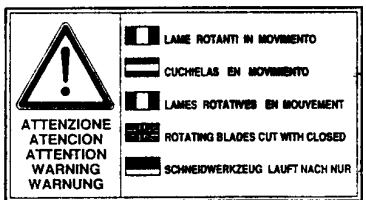
CONVEYOR AND DEFLECTOR

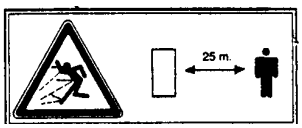
- Through the **CONVEYOR “C**” that can be orientated by means of cylinder, and the **DEFLECTOR “D”** adjustable too, the material removed can be ejected.

- With tractors provided with 1000 rpm, **DO NOT EXCEED** engine capacity of **1100 rpm** and use the lowest gear available.

- To obtain the best results there should be 15/20 cm. of water in the ditch.

- **N.B. THE ROTOFOSS MUST BE STARTED ONLY AFTER BEING POSITIONED IN THE DITCH**





LOST OR WORN WARNING SIGNS AND LABELS MUST BE REPLACED IMMEDIATELY.
NEVER UNDERESTIMATE OR IGNORE THE SAFETY RULES.

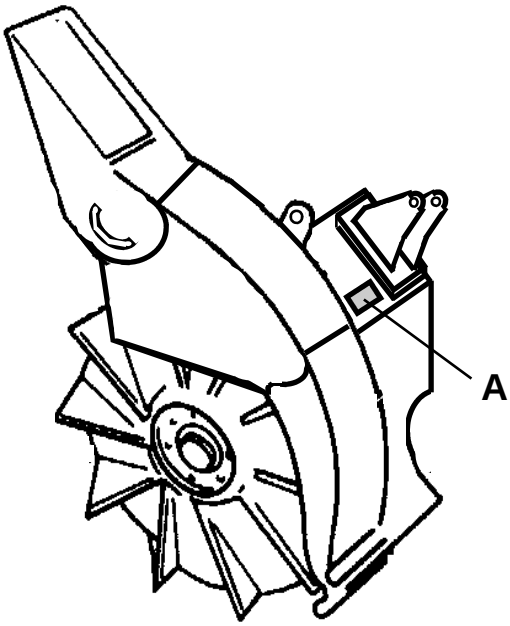
2.2 APPLIED STANDARDS

The machine has been designed and built in compliance with EEC safety directives and the approximation of the laws of Member States of the Union; in the specific case of directives 89/392/EEC - 91/368/EEC 93/44/CEE - 93/68/EEC, as applicable.
The design phase also took the following standards into consideration:

- UNI EN 292 part 1 “machinery safety “ (terminology)
- UNI EN 292 part 2” machinery safety “ (specifications and technical principles)
- EN 294 “machinery safety“ (safety distance)
- UNI EN 745 “rotary mowers and cutters“
- UNI EN 414 “machinery safety“ (drafting and drawing up safety standards)

2.3 MACHINE IDENTIFICATION

The machine’s identification plate is located on the frame (**A**).



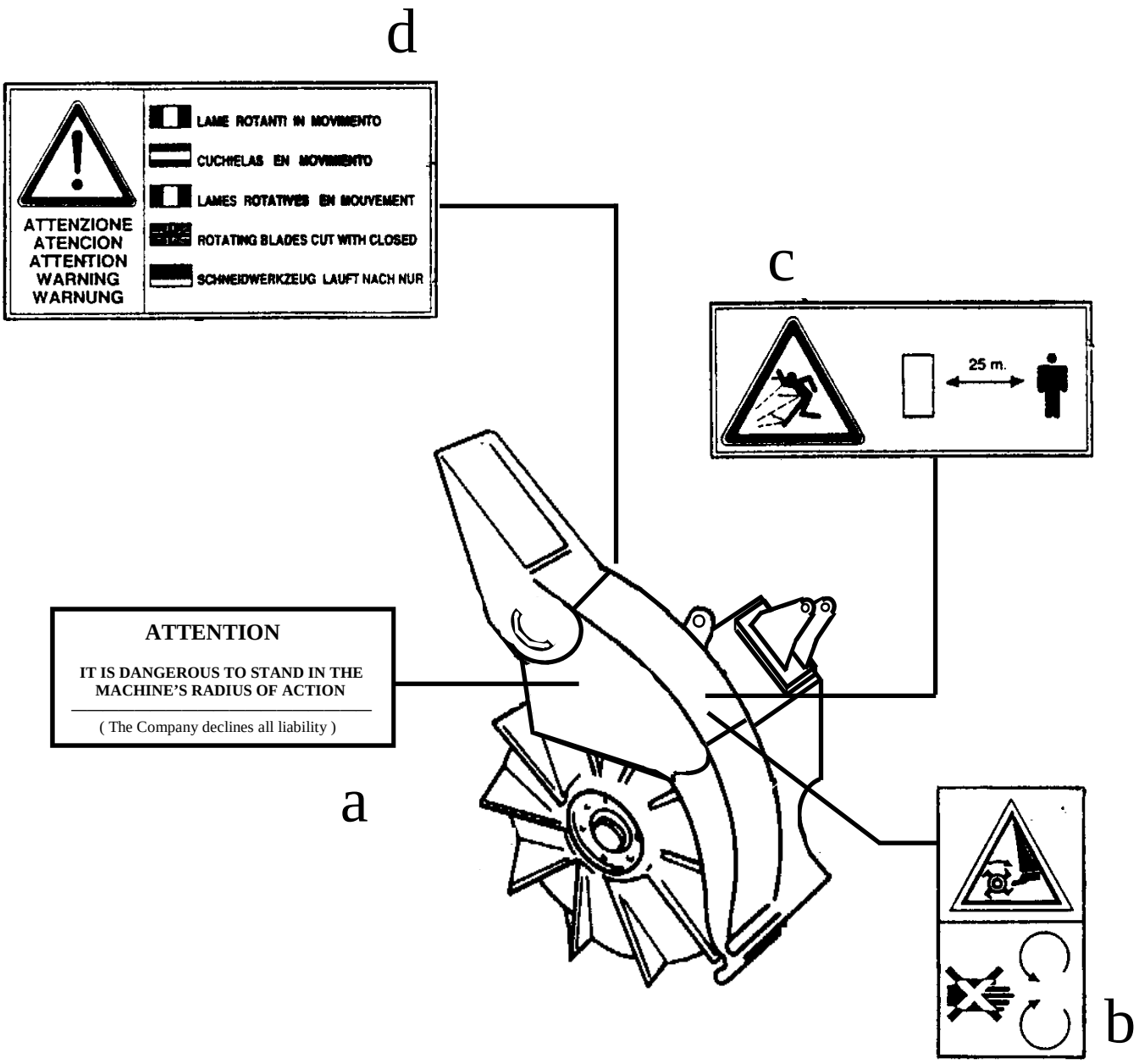
2.4 GENERAL INSTRUCTIONS

ATTENTION

1. **Adhesive plates are applied on the machine that have the purpose of making it safer to use. Therefore it is very important to replace them if they are no longer legible.**
2. **Check every month the intactness and functionality of the parts subject to wear from use: (jacks, fastening screw, pipes, tools, etc.) if necessary, replace them with original parts.**

3 - SAFETY PROVISIONS

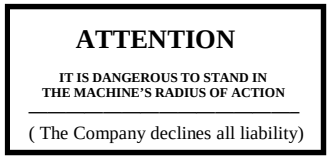
3.1 LOCATION OF THE SAFETY PLATES



3.1.1 MEANING OF THE SAFETY PLATES

a. Warning

Indicates that it is dangerous to stand in the machine's radius of action.

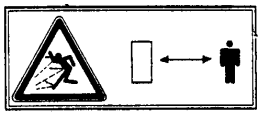


b. Rotating tools danger warning signal

Do not place hands or feet in the radius of action of the rotating tools.

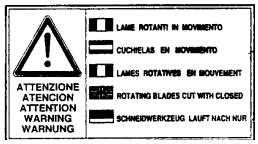
c. Moving components danger warning signal

Indicates the possibility that rocks or other items may exit or be thrown and the need to stay out of the machine's radius of action



d. Roating tools danger warning signal

Indicates that there are roating tools or blades.



4 - TECHNICAL DATA

4.1 TECHNICAL FEATURES

ROTOFOSS

Clean-ditch wheels for dry canals or with water

RF 50 - ø 0,50 mt. - 6 paddle
RF 65 - ø 0,65 mt. - 6 paddle
RF 80 - ø 0,80 mt. - 10 paddle
RF 100 - ø 1,00 mt. - 12 paddle

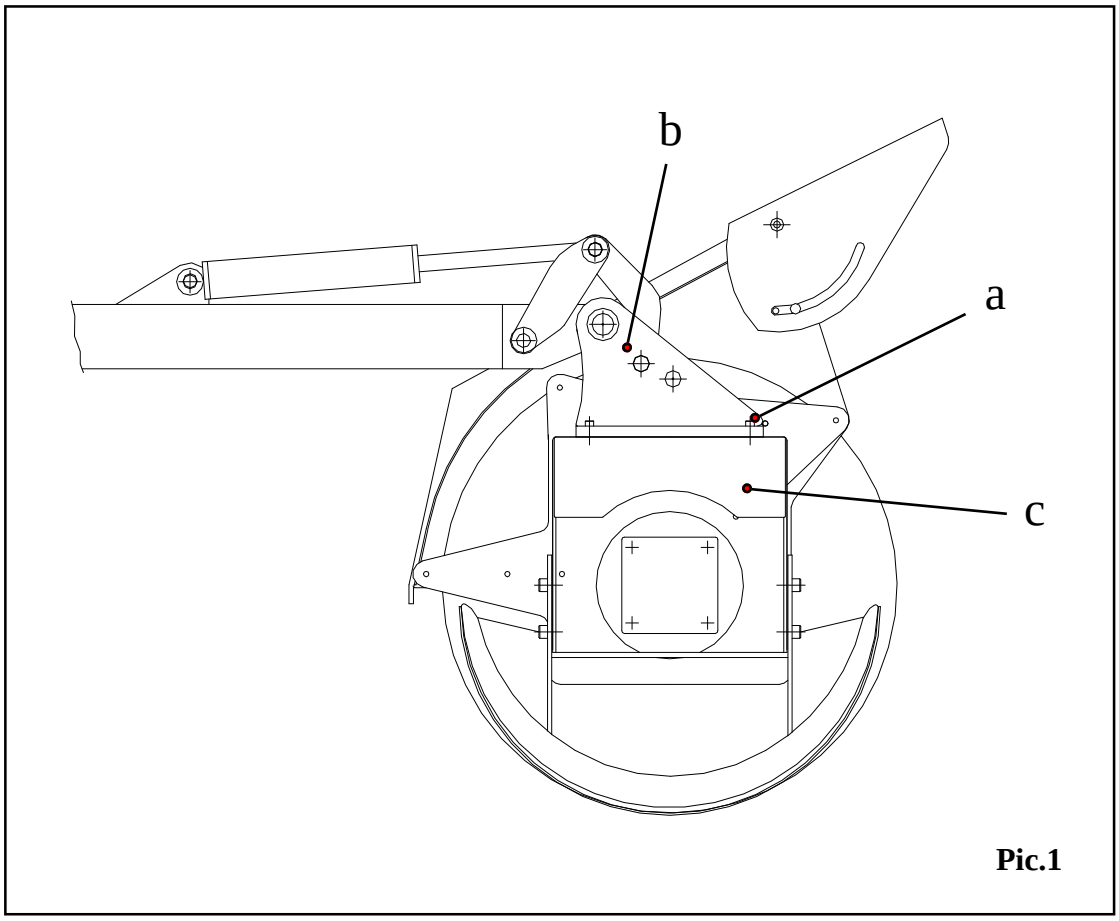
RF 65 PRO - ø 0,65 mt. - 6 paddle
RF 80 PRO - ø 0,80 mt. - 10 paddle

FEATURES		**RF 65 PRO - RF 80 PRO**
OIL-PRESSURE OPERATION		
Minimum power required	26 Kw (35cv)	30 Kw (40cv)
Hydraulics system pressure	200 Bar	230 Bar
Danfoss motor	type OMS per RF 50 type OMT per RF 65-80-100	type TMT
Pump capacity	70 litres/minute	
Peripheric speed of shear	12 m/sec.	
Advancing speed	2 Km/hour (about)	
Weight	RF 50 Kg. 80 RF 65-RF 65 PRO Kg. 105 RF 80-RF 80 PRO Kg. 180 RF 100 Kg. 250	

TO USE OIL ISO VG 68 HV

5.1 TRACTOR ATTACHMENT AND DETACHMENT

To attach ROTOFOSS at the arm of the flail-hedger mower, to fix through the four screws (**a**) the arm attack (**b**) (furnished on application), at the body box (**c**) of the same utensil. (Pic.1)
To connect the pipes and to screw the well narrow rapid graft.(see pag.12 point 30).
To detach the implement from the flail-hedger mower to execute the aforesaid operations in inverse way.



Pic.1

5.7 HOISTING AND UNLOADING

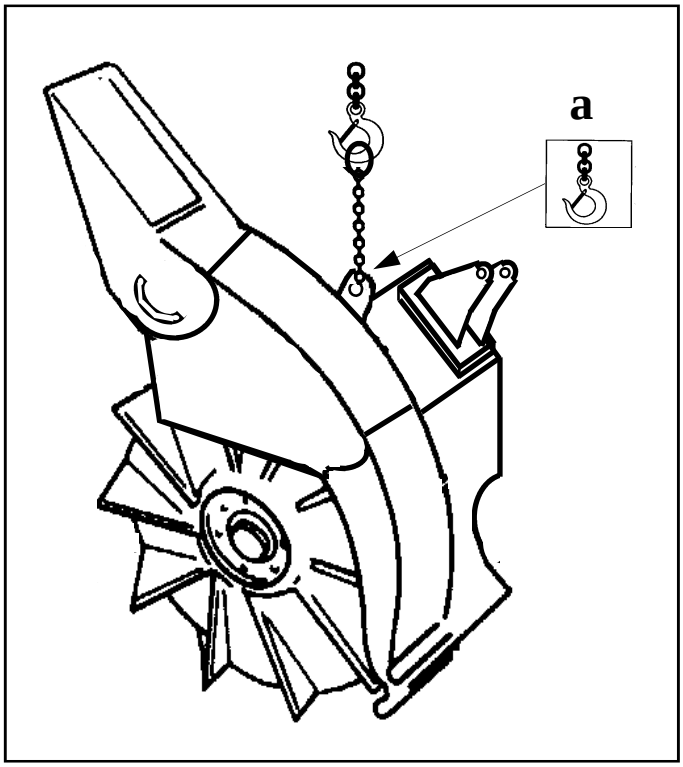
To move the machine using hoisting devices (crane, hoists, chains, hooks, etc.), in addition to respecting the specific standard for movement and hoisting operations, operate as follows :

- Check that the device suitable for hoisting and all of the hoisting accessories are suitable for the machine weight (see technical specifications), it is recommended to only use hoisting devices that comply with current regulations.

- Preliminarily inspect the entire area involved with the transport, including the parking area of the haulage device and the deposit area in order to identify the presence of dangerous areas particularly electric lines and/or gas or fluid pipes. If any found, it is obbligatory to block and isolate them.

- Check that all operators are at the correct safety distance to avoid contact with projecting parts in the case the machine should accidentally drop.

- Hook the machine in the points (**a**) shown on the machine.



- Consider in the lifting force the angle of inclination to which the hoisting accessories are subjected.

- Place the machine on flat and solid ground.

6 - MAINTENANCE

ATTENTION

All maintenance, cleaning and repair operations must be carried out with the motor stopped and the ignition key removed.

6.1 FLUID AND GREASE SPECIFICATIONS

COMPONENT	RECOMMENDED LUBRICANT
HYDRAULIC SYSTEM	LI/68 - HIV
REDUCERS	VARIAX /90-AZ
PINS AND BUSHINGS	STAUFFER / 2
BEARINGS	LITEX - EP/0

6.2 CHECKS BEFORE EACH WORK DAY

At the beginning of each work day, systematically carry out the following operations:

- Check that the screws and nuts are tight.
- Check the working order of the safety protections and replace them if damaged or worn.
- Clean the warning and signal plates and check that they are in a good condition, if not, replace them.
- Grease all points marked on the machine.

6.3 TROUBLE SHOOTING

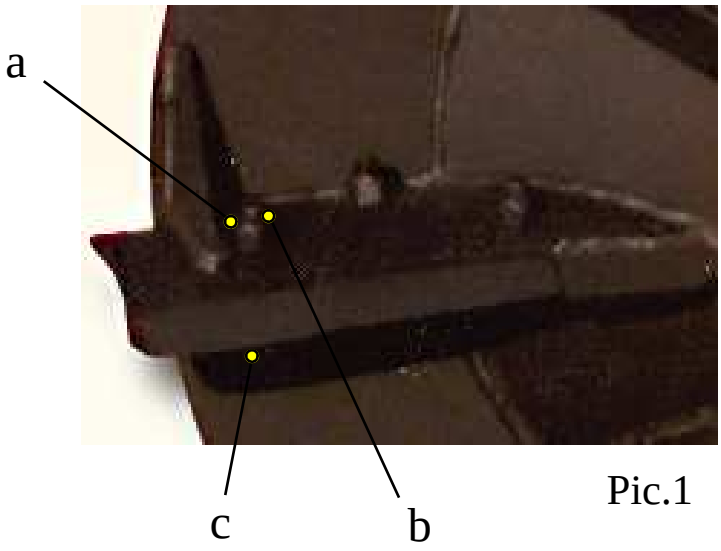
Problem	Cause	Solution
The machine does not move	The tubes are broken Lack of pressure in the system No electrical power	Replace the tubes Check the status of the tubes Check the fuses

DANGER

When these operations are carried out, place the equipment on the ground and turn off the motor
Use protective garments.

6.4 BLADE REPLACEMENT

To replace the cutting blades, loosen the nut (**a**), remove the screw (**b**) and remove the worn blade (**c**), replacing it with a new one (Pic.1).
Periodically check that the screw and nuts are correctly tightened.
In case of excessive usury of the blades, to replace her only with original exchanges contacting the center assistance.



Pic.1

7 - MAINTENANCE REGISTER

Date	Component	Operations and notes	Signat.

8 - NOTES