

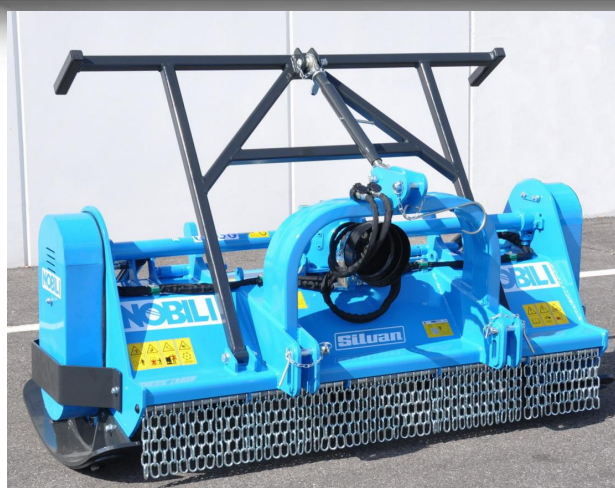
JN001AGB L

NOBILI COSTRUZIONI
MECCANICHE
PER L'AGRICOLTURA

®

Shredders

NF 2000



OPERATOR'S MANUAL



Original instructions

JN001AGB L

• English • 06-2012

INTRODUCTION

This manual brings the information and how necessary for the knowledge, the good use and the normal maintenance of the forestry shredder produced by the NOBILI S.p.A.

How wrote it doesn't constitute a complete description of the various organs neither an exposure detailed of their operation, however the user will find how useful to know for the good use in safety and for a good maintenance of the machine.

From the observance and from the fulfilment of what prescribed, it depends the regular use, the duration and the economy of exercise of the machine.

The missed observance of what described in this manual, the negligence and a bad and inadequate use of the machine can be cause of annulment, from the Builder Company, of the guarantee which it gives to the machine.

We warmly recommend You the carefully reading of the present book to preserve the safety and the prevention of accidents. The Forest Shredder NF 2000 and the present book are conform to the European Machines Directive EEC 392/89 and following changes.

Before undertaking any job it is necessary to be sure to have read and to have understood how wrote in the present manual. Please also read attentively the instructions of the other machines or equipment used, for example of the tractor and of the cardan shaft.

The present book is integral part of the machine and it musts be preserved in a place knew and of easy availability until the machine it is in service.

For possible incomprehension on how from You read or for possible problems not wrote on this book ask to our representative of zone, who will furnish You all the information which You need.

The Builder Company, is however at disposition to assure a quick and accurate technical support and all which how can be good for a better use and to get the maximum from the machine.

Please verify, during the purchase, that the machine is integral and complete. Possible claims must be introduced in writing within eight days from the reception of the machine.

CONTENTS

<i>INTRODUCTION</i>	3
<i>CONTENTS</i>	4
<i>1st chapter - Identification</i>	5
<i>2nd chapter – Warranty and modifications</i>	5
Warranty	5
Modifications	6
<i>3rd chapter – Machine description</i>	7
Description	7
Rear landscape	8
Frontal landscape	8
Rotor	9
<i>4th chapter – Safety signals</i>	9
<i>5th chapter - Start</i>	11
Machine preparation	11
Attachment to the tractor	11
Start and movements validation... ..	13
<i>6th chapter – How to use</i>	14
Use	14
Technical data	17
Adjustment to work	17
Use limits	18
<i>7th chapter – Stop arrangements</i>	18
Final operations	18
Machine detachment from the tractor	19
Cleaning operation	19
Seasonal repose	20
<i>8th chapter - Transport</i>	20
How to transport	20
<i>9th chapter - Maintenance</i>	22
Periodical maintenance	22
Extraordinary maintenance	23
<i>10th chapter – Problems and their solutions</i>	27
<i>11th chapter – Safety norms</i>	28
<i>12th chapter – Spare parts</i>	30

Chapter 1 Identification

The type, model and serial number of the machine are engraved on the special nameplate of identification (fig. 1).

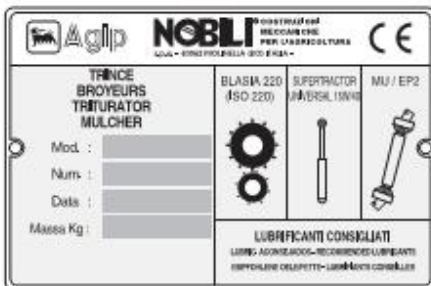


fig. 1

These data must be always wrote for possible needs of spare parts and for interventions of assistance.

Chapter 2 Warranty and modifications

Warranty

The Builder guarantees his products for a twelve month period from the date of purchase. Such guarantee is expounded in the repairation or free substitution of those parts that, after a careful examination performed by the Technical Service of the Builder, its resulted defective and it will come therefore granted if is verified that the break-up is verified for defects of material or construction (excluded the parts of normal usury, for example utensils and belts). The guarantee, with exclusion of every responsibility for direct or indirect damages, it is limited just to the material defects and it stops if the parts returned result however disassembled, tampered with or mended from personal not authorised to the purpose.

The substitutions or the reparations of the parts in guarantee won't prolong in every case the terms of the same one.

The buyer can make to be worth his rights on the guarantee just if he have respected the conditions pertaining to the performance of the guarantee, wrote in the contract of supply.

In any case the responsibility of the producer can exceed the price of purchase of the same product.

Its remain therefore excluded by the guarantee:

- the damages consequential from negligence, carelessness, bad use, improper use of the machine and because of wrong manoeuvres of the operator.

- production loss
- profit or sells loss
- the machine stop
- any other indirect damage

Moreover the guarantee loses validity in the following cases:

- in the case of used machines even if the transaction between the first and the following users happens during the period of beginning of the same one
- carelessness from the consumer (lubrication or maintenance missed)
- employment of the machine not appropriate or irrational changes brought from the client or from third
- going beyond the limit of power pointed out in the technical data
- other cases foreseen from the law in vigour in the country of use
- removal of the safety devices of which the machine is gifted
- use of **non original parts** of usury
- if is not is not concerned to the indications of use, maintenance and safety of the present book

- The cardan shaft which connects the tractor to the machine is to hold been excluded by the guarantee, because the extreme facility of disattachment (and possible use on other machines) doesn't allow any certainty around the origin of the breakdown.

The cardan shaft sold are however tested to the source and of good construction, provided that used in the suitable limits.

- The NOBILI S.p.A. declines every responsibility for damages or possible accidents which can be caused by the operator for wrong use of the machine or for improper use and for the damages which can be produced by a possible break-up of the machine, if these happen for non-observance to what wrote in the present book.

- They are also excluded by the Nobili S.p.A.. guarantee, possible damages due to the transport for the delivery of the machine performed by third.

IMPORTANT: In reference to the Machine Directive 392/89 the missed use of original exchanges NOBILI S.p.A., further to invalidate the guarantee, makes void the responsibility of the constructor relatively to the safety.

To use the service of guarantee, the consumer is invited to respect the following formalities:

- a) The machinery must be delivers to the closer centre of assistance authorised, where the entity of the damage will be found. The service of guarantee doesn't foresee the reimbursement of the labour cost and the expenses of transport which are to be paid from the consumer.
- b) The machinery gave back from the reparation must be equipped with a document which certifies the validity of the period of guarantee (original Guarantee NOBILI S.p.A. invoice or fiscal bill). Such document must bring the date of purchase and the n° of register.
- c) In the case of not perfect operation, the consumer must attach description detailed of the found defect.

Modifications

The firm NOBILI S.p.A., in the constant appointment to improve his own production, it reserves him to bring in any moment the changes which it will hold more opportune without giving forewarn of it. This doesn't involve the obligation to handle the transformation of the machines produced in precedence.

Chapter 3 Machine description

Description

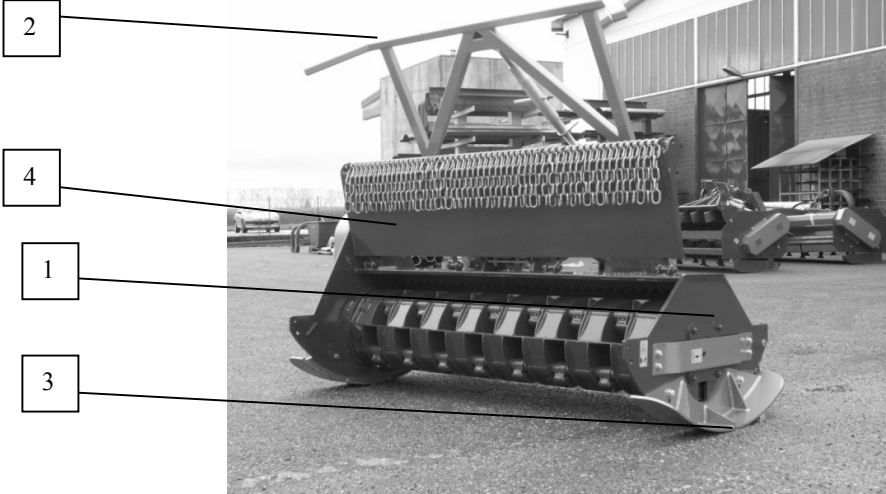
The machine described is certified "CE" as dictated by the European Community, on the EEC Directive 89/392 and its subsequent amendments, as stated in the certificate "EC" compliance attached to each machine.

The Forestry shredder is a chopper machine, designed and built exclusively for shredding of woods/vegetables pruning to the soil on forest and for the reclamation of wasteland.

For example the machine is useful for chopping in the forest sector of plants or branches that have a diameter not exceeding what mentioned in the technical data table; for cleaning the forest below; to contribute to the maintenance of power lines and systems rope. Other uses may be shredding the pruning remaining after skidding, the formation of bands flame breaker; the shredding of pruning; preparing fallow land for the first cultivation of new agricultural areas and the grinding of organic waste for use as biomass .

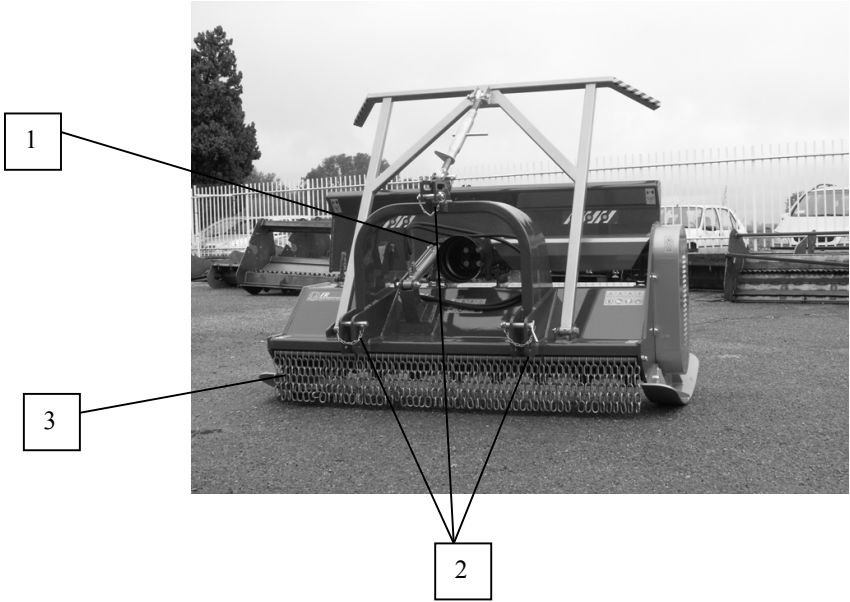
Its use is foreseen only in the open countryside, woodlands and open spaces in general such as gardens, etc.. In any case very far from people, open roads, buildings, artefacts, etc.. Using the same for different works from those provided, and not conforming to what is described in this manual, free the Manufacturer from any liability direct or indirect.

Rear landscape



- 1. frame
- 2. branches abatment (upon request)
- 3. skids
- 4. rear door

Frontal landscape



- 1. gear box
- 2. three point attachment
- 3. safety chains

Rotor

HAMMERS WITH SINGLE CUTTING EDGE (SWINGING HAMMERS) :



Chapter 4 Safety signals

The signals below described, are printed on the machine and report situations of insecurity and danger. Keep them clean and replace them immediately when they are loose or damaged. Please read what follows and memorise their meanings.



1. ATTENTION – The operations of regulation and maintenance must be performed after read the manual of use and maintenance with the machine stopped and key disconnected.



2. ATTENTION - Verify the sense of rotation and the number of turns (540 turns / min) of the PTO of the tractor before attaching the cardan shaft.



3. ATTENTION – Drive cardan shaft, keep distant. Don't make any operation of maintenance and/or control with the PTO attached.



4. ATTENTION - Danger throwing of materials. Go at least 50 meters away from the machine.



5. ATTENTION Forbidden to climb or to be transported by the machine



6. ATTENTION – Danger of crushing of the inferior limbs - Keep the safety distances



ATTENTION – Pay attention during works in proximity of aerial electric lines.



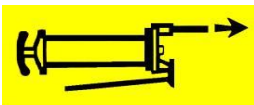
8. ATTENTION – In case of twisting to the rotor of extraneous material (wire, ropes etc.), immediately stop the machine. - Danger of arts injury, DON'T approach to the car in action.



9. ATTENTION - Verify that the rotor and all other parts of the machine are completely stopped before approaching to them.



10. ATTENTION - Use the Devices of Individual Protection requested.



11. Greasing points.

Chapter 5 Start

Machine preparation

WARNING: The operations preparatory work must be performed with power take-off, machine on the ground and tractor off and locked.

Tractor attachment

WARNING: Any operation (connection and start-up and verification movements) should only be performed by qualified personnel.

It is task of the company, where the machine is operating, properly educate their staff and make available to the employees themselves this book and any other information on the machine and its operation.

Not liable for accidents due to lack of staff training.

Before starting work, verify that the machine is in order, that lubricating oils are at the correct level, that the guards are installed and all parts subject to wear and tear are fully efficient.

The preparation and processing of attachment to the tractor must always be performed with power take off, machine on the ground and tractor off and keys removed from the control panel.

The attachment to the tractor is a dangerous phase. Be very careful to make the whole operation following the instructions.

The Forestry shredder Nobili S.p.A. can be applied to any tractor equipped with a three-point hitch, PTO and at least one distributor double effect.

it is necessary to equip the cab and tractor suitable protective forest use (for example network protection and shatterproof glass back to the cabin, shielding of the lower tractor with removable steel plates).

You must also verify that the tractor used is suitable and adequate to the task before moving to the operational phase. Make especially the power of the tractor PTO, which can not be less than that reported in this booklet under "Technical data".

- It is still essential to try and verify that the tractor used is suitable and adequate to the task before moving to the operational phase.

TIP: check and compare the charts of the tractor and your machine NOBILI S.p.A.

Regarding the use of the tractor, refer to the instructions of that tractor.

Before the attack, always check that the machine is at rest resulting in stable and well on the ground, for this see chapter "Provisions of the end of work".

The machine comes with a card with the appropriate safety devices.

Before connecting you must still check the length of the shaft. With the drive shaft in the working position the minimal overlap of the tubes must be at least 1 / 3 the length of the tubes themselves and must remain a minimum clearance of 5 cm. The angle at which it works the drive shaft should be as short as possible and

preferably not exceed 10-15 degrees, this favours the duration of the cardan shaft and of the transmission. Always use the original drive shaft full of safety devices.

It is recommended not to make changes and adjustments to various PTO shaft which could endanger the safety of work.

As the drive shaft body rotating at high speed, any action can cause imbalances which could affect the functionality of the machine as well as the integrity of the cardan shaft itself.

WARNING!

Make sure there are people involved in the vicinity of the assembly and disassembly of the machine to the tractor. To perform these operations, the operator must remain at the side of the machine and is the only person allowed to stay close to it.

Do not stay and never go in the space which remains between your machine and the tractor; that in no case for any reason.

- First, raise or lower the two arms of the tractor lift until the coupling eyes are not the same height of the pins below the crusher.
- Leaving the machine on the ground (resting state) bring the two eyes lower coupling of the tractor, then insert the 2 pins which connect the machine to the two trailing arms of the tractor and secure through the proper safety locks to prevent any unwanted movement of the machine.
- Continue attacking the third point using our adjustable tie rod drive. Then adjust the length of the arm third point and lock it with the appropriate plugs and pins making sure the shelf equipment is parallel to the ground.
Block then the third point with the pin supplied with the machine using the appropriate safety catch.
- Connect the hydraulic hose couplings fitted to the distributor of your tractor. If the diameter of the couplings do not correspond, you will use the reductions of the adapters. Consult an expert in hydraulic articles.
- Insert the drive shaft and check that is securely fastened on the PTO of the tractor and the equipment. Check that the protection is in place, is intercepted by the chain. (Possibly hook the chain to the machine)
- Also check the position of the cardan shaft. This must be horizontal or with the attack on the machine slightly lower than the tractor. (The ideal is working with the joint shaft horizontal, Fig. (A))

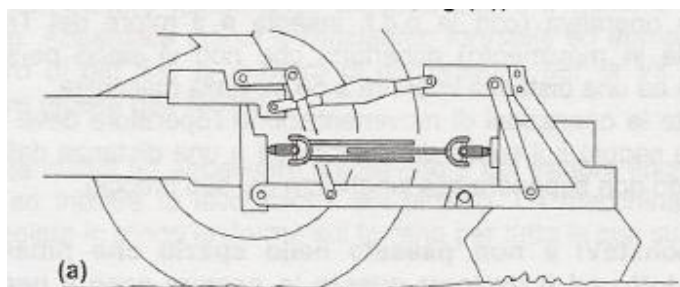


Fig.(a)

Use a cardan shaft suitable for your tractor, as indicated at the beginning of the paragraph.

- If the machine after attached will be in an incorrect position, adjust again the rod of the third point to bring the frame in the correct position (vertical) and with the skids parallel to the ground.
Is usually enough to attack the forestry shredder by adjusting the length of the rod so that it fits the initial position of rest of the forestry shredder itself.

WARNING: During the attack do not tilt the chassis by undermining the proper conditions for stability and security.

NOTE: Each time you operate, insert the machine screws pins or safety pins and make sure that it can no longer slip out of their seats. Not reversed and never change the mounting points.
Before engaging the PTO, make sure that the speed of rotation is the one provided by the machine and it is also marked with a special sticker placed near the gear.

Start and movements validation

In the operational phase (with pdf inserted and the rotor of the forestry shredder in movement) make sure there are no people involved at a distance of less than 50 m. from the machine.

For all handling operations, the operator must remain seated on the seat of the tractor and at a distance from the levers of command does not exceed the length of his arm.

Do not stay and do not go into the space which remains between the shredder and the tractor under any circumstances and for any reason.

With the machine connected to the tractor Never approach your hands or feet to the machine itself, in no case for any reason.

The only exception is a possible failure or block. For this event see "Possible problems and their solution" before you act!

The operator must control the forestry shredder with pure control levers located in the tractor cab. Initially the movements of the shredder can be verified even without inserting the pdf ..

- Run the cardan then try to move the control levers.
- The company NOBILI S.p.A. recommend that you familiarise yourself with the movements of the machine acting with prudence and levers gradually. This is to avoid abrupt and unpleasant surprises.

TIP: before you start the process of grinding forward with the tractor must start the rotation of the rotor. Raised slightly the forestry shredder from the ground and enter the PTO of the tractor slowly, taking down the speed of the engine. Then lower the forestry shredder and then increase the speed until the speed set for your machine (see technical data table).

Then, try to lower the lift of the tractor until the rotor going to start working on the ground. The machine must now support a uniform field throughout its surface.

WARNING! Any movement of the machine must have a very slow start. Run then the control levers with caution.

WARNING! It 'absolutely forbidden to leave the tractor unattended in motion when the machine is attached. Also remember to unplug the PTO just finished work.

NOTE: You should avoid excessive stress on the protective hood plumbing which does not originate from its own weight. This is to ensure the necessary working conditions and its duration.

Chapter 6 How to use

Use

WARNING: All operations listed below must be performed only by personnel who have read and understood what was written in this book.

CAUTION: When working with the machine connected to the tractor Never approach your hands or feet to the machine itself, in no case and for any reason. Remain seated at driving the tractor up to a complete stop of the rotor, then act as described in Chapter "Provisions of the end of work".

The Forestry shredder is a chopper machine, designed and built exclusively for shredding of woods/vegetables pruning to the soil on forest and for the reclamation of wasteland.

The maximum diameter of each branch or tree trunk shall not be greater than that reported in the table "Technical data" of the machine.

To do it job, the shredder must be mounted properly on the tractor.

- As the particular work to be done, the operator must wear protective clothing and safety device, for example ear muffs, goggles, gloves, etc.. The protective clothing is required as the regulations in force in the country where the unit is used.
- During any use, the operator must comply with all safety conditions described in chapter "Operation" under "Startup and movements verification" and those of the chapter "Safety".

Once in the work area, lower the machine through the lift of the tractor and engage the PTO before the same equipment touches the ground, then take it to the system and begin to move the tractor, taking care to decrease gradually throughout the lift.

Take a short section and check the quality of work and the crumbling of the material to be shredded is the desired one. During normal use (for example during felling of three and/or bushes, first step) You proceed with the tractor in reverse and with the hood open hydraulic protection in order to highlight the shredding rotor, so it has higher input material.

Do not press the accelerator pedal so reckless with PTO engaged. This can be very damaging to the machine as well as for the tractor.

To choose the most suitable soil shredding, you must consider several factors, namely:

- Soil
- Consistency of the material to be shredded
- Overall height of machine
- Feed rate
- Adjusting the machine in general

A good residue chopping is obtained with a low speed and high rotation speed. (The speed of rotation shall be no greater than that reported in the table "Technical data" of the shredder).

- Constantly check that there are no people, children or animals around and within range of the machine at work because it is possible that stones or other blunt instruments are raised up from spinning tools.
- You should not exceed, with the rotor working, a speed of 4-5 km / h to avoid breakage or damages.
- Do not turn the rotor blank if not needed for other operations (always avoiding any dangerous manoeuvres).
- During transport, or when it becomes necessary to lift the machine, it is better to lift the forestry shredder around 40-50 centimetres from the ground.

- The temperatures, the weather conditions and all other conditions of employment must be within the normal and never create any possibility of injury.

To adjust the height of the machine You should act on the control slides (see as described under "Adjustments for working").

NOTE: An optimal adjustment of speed and cutting height means less power used, extending the life of the hammers and the whole machine and a decrease in consumption.

It 'can also obtain a greater commination, and then smaller and uniform, taking the tractor forward and with the protection rotor hood closed (the rotor turns in the same way). This is possible with the material lying on the ground or very high, or during the second pass.

In this case the material to be shredded remains longer within the frame-rotor and leaves finely chopped.

The power requirement with this type of work will be greater than working in reverse gear with protective hood open.

The machine can also be equipped with the appropriate frame for branches abatement for high vegetation which serves to channel branches to the rotor and to protect the cab and the operator tractor. Such equipment should not be used to uproot trees, but just to keep branches and / or bushes in position until its are captured by the processing of the hammers of the rotor.

The most comprehensive work is usually achieved by running two steps, first in reverse gear with protective hood open while the second will be to march forward with the protective hood closed.

The tools is equipped the machine are suitable for working on soils of normal conformation. Check daily for their integrity and wear. If at work were to break or crack accidentally, its must be replaced immediately taking care to refit the new tools in the same position as those to be replaced.

Read carefully the chapter "Special maintenance".

- If the terrain has the minimum slope changes the machine will adapt itself to the new location. If the changes were significant need to perform the work through the field from a different direction which does not present large local gradients.

WARNING: The slope of the land on which to pass the tractor must not exceed 10% in any direction. Be always careful when you change direction in terms of slope and / or slippery.

Hilly terrain is advisable to use a tractor-wheel-drive, however, the tractor tires must always be able to provide the necessary grip.

WARNING: make sure that this path avoiding large rocks or holes which could compromise the stability of the tractor causing the overthrow.

The Forestry shredder NOBILI S.p.A. can support very heavy work. In any case it is good to find a compromise between power consumption, speed and quality of work. The advancement speed also depends on the initial size of the mulch material and the desired degree of commination.

The advancement speed must always be limited and still should never pose a threat to anyone and for the integrity of the machine. Be especially careful to ground conditions and further reduce the speed in this case is rocky, muddy, etc..

It is left to each operator free to comprehensively assess these factors and determine from time to time the correct speed.

CAUTION: Never set and by no means any kind of load on your machine. Never transport a person or animal on the machine. This also with the machine stopped.

WARNING The maximum machine force should not never exceed the machine working capacity (see "limitations" of this chapter)

Generally do not exceed the maximum speed ever shown in the table of technical data.

To avoid excessive stress and dangerous manoeuvres is necessary to lift the machine from the ground prior to steer. Then proceed as follows:

- slightly raised the forestry shredder from the ground
- Please, bring to the point of operating
- Run the change of direction with the steering tractor
- Lower the machine following the instructions in this manual and return to work.

CAUTION: The rotor must always be equipped with all utensils provided. The absence of one or more of these could compromise the strength of the machine due to vibration.

NOTE: If you traveled on the road you have to remove the sign prior indication loads projecting signs which it is mandatory whenever you are traveling on roads in urban or suburban. In any case, always stick to the rules laid down in the country to use the machine.

NOTE: Before starting work, always check that the rotor is filled with all the tools of shredding!
This control must be done carefully and regularly, whenever the machine is used.

- The use of the shredder is prohibited on abrupt land or in the presence of highly uneven rocky ledges, and anywhere where there is incompatibility between the use of the machine, as designed and constructed, and the site itself.
- In case of stony ground you should carefully consider the conditions of the land and proceed to minimise the projection of stones outside. If you frequently work in these conditions should be checked more frequently and tools as provided in chapter "Maintenance". The Company does not recommend the use of NOBILI S.p.A. machines having tools with carbide inserts as the heaviness of the work could remove the plates cancelling functionality of the hammer and making unbalanced rotor. In case of very stony soils we recommend you to not use the machine.
- When using the machine you always very careful not to hit the rotor against objects such as cables, boundary walls, fences, concrete blocks, culverts or other obstruction which could damage the rotor or be damaged by the rotor.
- The temperatures and weather conditions all other conditions of employment must be within the normal and never create any possibility of injury.

Technical data

MODEL	WORKING WIDTH (cm)	WEIGHT (kg)	POWER REQUIRED (HP) min – max	HAMMER NUMBER	BELTS NUMBER	GRINDING DIAMETER MAX Ø (mm)
NF 2000	200	1250	100-150	36	10	200

The gear box at 1000 rpm is only optional and it is available on all models NF 2000.

Adjustment to work

During work You have to check that the rotor rests on the ground throughout its length. Check also that the skids follow the trend of the land.

For this check is sufficient to note the trace left by the passage of the machine on the ground to be as wide as the machine itself and the most uniform as possible.

WARNING: Any adjustment should only be performed by qualified personnel.
We not liable for accidents due to lack of staff training.

CAUTION: The adjustment operations should always be performed with power take off, machine on the ground and tractor off and the keys must be removed from the control panel.

Cutting height

The cutting height adjustment is done by means of shredder skids. Unscrewing the screws which secure the skids to the sides and having holes in the highest position, the cutting height is maximum.

The cutting height is rather less and less as You use holes in the lower positions, bringing the rotor to the ground.

In normal use the machine should set the cutting height to optimal values. Then adjust the machine so that the cutting tools are separated from the soil around 4-5 cm ..

CAUTION: Always make sure you have tightened all screws previously loosened.

Rear safety door

Adjustments of the rear door is possible due to the rear cylinder which commands it. The position of the casing can be varied at work by operating the levers which drive the tractor on the distributor.

Depending on the opening we allow the entry of different amounts of material and have varying degrees of commination. The opening of the door at work does not present any particular risk, but should carefully avoid using the movement of the hood to cut trees, which function is performed by frame branches abatement (optional).

Limits of use

For this machine the only use limit (for permitted uses) is the transmitted power from the PTO of the tractor. These values and the elements of the machine should never be changed.

WARNING: The maximum speed into the gearbox must never exceed the value indicated on the sticker on the side thereof.

Excessive speed would increase the speed thus jeopardising the life of the machine and operator safety.

The Forestry shredder NOBILI S.p.A. can only be used with tractors or equivalent machines having sufficient stability characteristics and power. (See and compare the charts of the tractor and your machine NF 2000)

Not use the machine when the environmental conditions (slope of the terrain, presence of ice on land, etc..) It may affect the stability and could lead to rollover.

Do not use the shredder also if the land upon which the tractor is tilted more than 10% (in any direction to the tractor), see also in this regard the instructions in the booklet of that tractor.

Do not use the machine for killing branches larger than that specified in the specifications of the machine. The only permitted uses are those listed in this booklet describes the ways and forms.

Any use other than as permitted expressly prohibited.

Any use other than those accepted will be considered improper and outside the limits provided by the manufacturer, who will not be liable for any damages caused by improper use of the machine.

We repeat that it is also expressly forbidden in the raising and the transfer of things, people or animals in any way or form.

Chapter 7 Stop arrangements

Final operations

At the end of the work is necessary to put the equipment on appropriate and flat ground.

- Ended the work it is necessary to turn off the machine by stopping the rotation of the PTO and wait until the rotor is stopped.

CAUTION: When the PTO is off the rotor, due to inertia, runs much longer (up to a minute). Must therefore wait for the machine to a complete stop before proceeding with any transaction.

- Now you can lift the machine off the ground to be transported to where to be parked.
Arrived at halting the progress of the tractor set and lower the machine until it is resting on the floor.
Alternatively you can place the machine with the rails on wooden bases and with the skids under the hood-rotor, ensuring that the hammers can plant in soil.
This precaution is not necessary if you leave the machine on forest land or country, but becomes essential if you intend to place the machine on hard surfaces such as asphalt or concrete.
- Now turn off the tractor pulling out the keys, leaving everything in the position where it is.

- After work or end of the day you must also clean the forestry shredder from any working residue material (see section clean of this chapter).

Machine detachment from the tractor

To remove your shredder from the tractor You must first proceed as described in paragraph "Final operations".

After performing the instructions above You can do as follows:

- Disconnect the cardan shaft, making sure it stays open thanks to the support.
- Disconnect the hydraulic hoses making sure to keep them in the right place.
- Now check that the soil support is correct and that the pins have a small game before taking them off. For the third point eventually adjust the rod.
- Now remove the safety catch from the third pivot point and remove the pin from his place. Put the rod and insert the pin back into place with the firm.
- If there is no movement or inclination of the shredder, you can remove the two lower pins from the lifting arms of the tractor.
- Move away with the tractor, then re-insert two pins in the holes below of the forestry shredder three-point attachment.

Cleaning operation

After work is necessary to clean the machine from deposits and any encrustation, so to maintain free and smooth all movement points of the shredder and to not obstruct the greasing points. Any residue remaining on these points may affect the efficiency and life of your machine.

Items to be cleaned more carefully are:

- Grease and areas adjacent to them
- The pivot points of the cardan shaft
- The shredding rotor, at both ends
- Eventually inside the protection guard where are the pulleys and belts.

As long as possible, we recommend you to clean the residue with dry cloth or brush (not metal). Otherwise wash with water your shredder trying to dry it afterwards.

If you used water to clean, it is necessary to lubricate all the pivot points fitted with special grease. The pivot points should be lubricated even when your machine has been used in very humid environments or with special features (eg mud).

Thorough cleaning of the entire machine may be necessary if the forestry shredder was used in presence of various liquids with corrosive characteristics.

Also note that any cleaning or maintenance of the machine must be done with the machine off and disconnected from the tractor (run before the final operations and detachment from the tractor as described above).

Seasonal repose

During periods of equipment rest clean it thoroughly (see section clean of this chapter) and check the parts replacing those worn or damaged (follow the instructions chapter 5 "Maintenance".) Grease all parts and put the equipment in a unexposed and dry place in order to have it in perfect condition at return to work. It is advisable to keep the machine under cover or at least cover it with waterproof canvas.

Chapter 8 Transport

How to transport

Transport by tractor:

To carry the shredder NOBILI S.p.A. proceed as indicated below, leaving your machine mounted on the tractor.

- Turn off the machine by stopping the rotation of the PTO and wait until the rotor is stopped.

CAUTION: When the PTO is off the shredding rotor still turns up to a minute due to inertia. Must therefore wait until the machine is completely stopped before proceeding with any transaction.

- Raise completely the forestry shredder to the ground.

If you travel on highways, remember that you must affix the signs on projecting loads (as defined in Chapter "Terms of Use").

During transportation Never operate the control levers and even the one of the tractor lifting.

The drive shaft and the rotor must always be stopped during transits.

Limit the speed of the tractor. In the case of holes or depressions in the ground the backlash could drive up the shredder over the desired extent with the risk to damage the tractor.

Please note, that the upward movement of the wheeled landing is not restrained in any way.

The speed must always be adapted to soil conditions.

Although not listed in this booklet refers to the laws and regulations in force in the country of use of your machine NOBILI S.p.A.

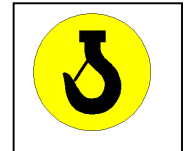
Transport by other means:

- For the transport of your machine by other means you must first perform the steps described in "Provisions of the end of work" to "Final operations".

Use lifting equipment and adequate transport. Also read carefully the instructions of the means or the equipment used, for example, the forklift or the means of transport used.

TIP: check and compare the technical data of the means used and your machine NOBILI S.p.A.

- If it is necessary to lift the machine using hoists or similar means, remember that the shredder has four lifting points marked by the figure shown alongside



- Not use to lift tools which can affect the stability of the machine or damage the machine itself.
- You can then transport the shredder by other means (trucks, vans, trailers, etc..) providing you comply with the limits of loading and transportation laws in the country of your use of the shredder.
- Is also necessary to ensure the shredder from any fluctuation or impact which can occur when loading and transport.
- Referring to what is written above, remember to respect the right safety rules and exercise extreme caution when raising and positioning of your machine (always use appropriate means, not made of machine or hand methods precarious).
Always Attach your shredder into provided points and with means to ensure the seal.

WARNING: Any transport form or mode of your forestry shredder other than those described is expressly prohibited. We expressly prohibit the lifting if there are any person in the loading area.

Chapter 9 Maintenance

Periodical maintenance

Are detailed below the various maintenance operations. Keep in mind that the lower operating cost and a long machine life depend, inter alia, from the methodical and consistent compliance with these standards.

The simple cleaning of the machine by cutting waste, soil and other, after work, you will ensure a good efficiency of the machine and avoid possible causes of future failures.

WARNING: The maintenance must be performed with power take off, machine on the ground and tractor off and locked.

The time of intervention in this manual are for information only and are for normal use, may therefore vary in relation to the kind of service, more or less aggressive environment, seasonal factors, etc.. In the most severe service conditions, maintenance should obviously be more.

The individual operator can intervene by increasing or decreasing the frequency of maintenance shown in this booklet.

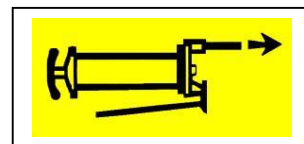
The machine comes oiled and lubricated, however, recommend a check of oil level of gear immediately after purchase, for greater safety, through the cap.

- After the first working day we suggest you to check the tightness of all screws and check the proper belts tension.
- After that, you should check the tightness of bolts periodically, with greater frequency if more intensively used your machine. (Minimum 1 in every 16-20 hours).
- At the end of each working day of your NF 2000 is useful to thoroughly clean and lubricate the machine at each point.

Greasing :

- The lubrication should be performed for each existing greasing point, preferably after each use with graphite grease or water repellent. If done after each use will facilitate the release of dirt and old grease. To do this you must perform the steps described in "Provisions of the end of work" to "Final operations" and "Posting of the machine from the tractor", leaving the shredder well supported on a flat ground as possible. Only under these conditions you can proceed to lubrication of the various parts of the shredder.
- Before injecting grease in the greasing point it is necessary to carefully clean the lubricators to prevent mud, dirt or debris from mixing with the lubricant, thus reducing or even cancel the effect of lubrication.

- All greasing points, on the machine, are shown with the adhesive reproduced in figure.



- The company NOBILI S.p.A. advise against all grease which do not tolerate environmental conditions and tend to dry quickly.
- To have better access to all greasing points we suggest you to use a bearing grease fitting (tube) flexible.

Important:

- Check every 20 working hours the condition of the outer flanks of the tools.
If worn, reverse the right and left and vice versa. When the wear is on both sides, replace the tool.
Not doing those operations is likely to endanger the life of the tool and of the rotor.

Extraordinary maintenance

TIP: *If you feel not able to perform a professional maintenance, or You don't have the necessary tools and don't have a specialist workshop, please contact one that is able to perform routine maintenance with good professional or contact directly to the company NOBILI S.p.A.*

- Always keep in mind that the frequency of maintenance is subject to certain factors such as environmental conditions under which it is used, seasonal factors, methods of use, length of service of the machine, etc. ..
The individual operator can intervene by increasing the frequency of maintenance identified in this book, while it is strongly recommended to make at least the maintenance with the timings shown in this booklet.
- Every 6 months (although unused) your shredder must be fully greased at every point in order to renew the grease and prevent the drying out at the locations of pins. If it will happen the desiccation of the fat, You should rebuild the machine providing disassembly, cleaning and replacement of all components involved. In this case, apply to your local agent or directly to the factory.
- Simultaneously to the greasing check whether pins or joints are damaged and if the structure has areas which undermine the proper functioning. (Visual inspection outside).
- Check the integrity of the protections of the machine and, if necessary, replace them.
At the biannual maintenance it is useful to check the tightness of all shredder screws.
This is due to vibration when the machine is subjected at work.
If the machine is totally unused, however it is recommended a control of screws and a general check at least once a year.
- Every 6 months will also check the oil pipes, check for cracks, leaks or crushing. Any pipe which contains anomalies must be immediately replaced.
- If you replace tubes or straps, always use original spare parts. Even small details, if incorrect, can cause failure.

Use only spare parts NOBILI S.p.A. Aftermarket parts may affect the proper functioning of the machine and do not qualify for any warranty.

- If you experience unusual vibration (very strong) it is probable that the rotor is unbalanced. The balancing operation should only be done by workshops with the necessary equipment or directly by the company NOBILI S.p.A.
The company NOBILI S.p.A. expressly prohibits making or enforce balancing by inexperienced people. Doing wrong balancing, you risk to cause dangerous vibrations which can severely damage the machine frame and / or the rotor and / or break the bearings of the rotor ruining the whole machine and creating serious risks to safety.

Gearbox oil :

- Also check the gearbox oil level and if necessary, restore it. To restore the oil level is necessary to unscrew the top nut with a wrench and get with a L key or with a wire bent 90° into the hole. The folded portion which enters the gearbox has to have a length which arrives from top to bottom hole and you will have an oil bath for half length.

Eventually recover the oil until it is achieved by adding the size indicated.
During the filling be very carefully to not spill oil on the ground, so use proper tools.

If the gearbox frequently presents a drop of oil should be checked and if necessary replace the seals of the gearbox.

Rotor tools:

- The tools of the rotor must be replaced when its lose their ability to work, this phenomenon usually occurs when the wear has rounded up these tools completely depriving them of their characteristic forms and their ability to cut.

The shape and the way its work with the tools allow them to always stay sharp until you reach the limit of wear.

The company NOBILI S.p.A. strongly advised to not bring tools with wire or with electrode as this could lead to differences in weight with the original and then the rotor imbalance.

Remember also that the warranty decay if would not be used original NOBILI S.p.A. spare parts.

Changing tools:

- The machine must first be in sleep mode (connected to the tractor, machine ground and PTO take off).
- Now you must raise the hood to protect the rotor by hydraulic piston-driven tractor
- Turn off the tractor and then remove the keys from the control panel. Detach the tractor from the machine as described in "Provisions of the end of work" in the "Posting of the machine from the tractor."
- Now the machine is stopped and disconnected and the cover up.

NOTE: In case of replacement of tools it is required to replace all hammers in order to avoid imbalance on rotating hammers and dangerous vibrations of the rotor. If the rotor will vibrate despite the perfect replacement for all the hammers, it will be required to perform the balancing of the rotor itself. This should be done only by an authorised workshop.

NOTE: The hammers replaced should all belong to the same number and type. The company NOBILI S.p.A. absolutely prohibited to mount on the same rotor different hammers or mix regular hammers and hammers with Carbide.

WARNING: With the machine in this condition You must be very carefully when the machine is reconnected to the tractor. After the attaching operation it is obligatory to close at first the protective hood before turning on the rotor and before performing any further operation.

Machines with oscillating tool:

- Use the appropriate screws to open the door located on the side next to the rotor and unscrew the screw which holds the rod holder tools. **Attention to the washer to be reassembled with the screw on its completion.**
- Unscrew the screws of the door on the other side of the rotor and open, now slowly pull the rod supporting the hammers.
- To unlock the bar, you should use an extractor to enable the best movement of the first millimetres of extraction.
Alternatively you can apply a force on the opposite side (where it was removed the screw shaft), this system is not recommended as the NOBILI S.p.A. Company presents a risk of damaging the stem.
- Remove the auction hammer will fall to the ground
- Place the new tools in their position while inserting the shaft which supports them.
- After replacing fix the rods with screws and close correctly the doors on the side of the rotor.

WARNING: The above operations cause the fall of the tools, then do not place yourself under any circumstances to the rotor or in front of it, always stay outside the two sides.

Also check auction tool-holders and check for wear. If you run into one or more auctions damaged should be replaced. .

Belt tension:

- Also remember to check the belt tension and wear.
The belts should always have the correct tension to prevent slippage or malfunctions.

To adjust belts, follow the instructions below:

Single transmission (drive):

The adjustment is done by moving the entire group (formed by the gear box, transmission shaft-extension, the side plate and pulley above) forward or backward.

- Loosen the 2 screws which allow the movement of the plate
- Loosen the 4 screws of the gear unit housing
- Tighten the two threaded registers which are on the same plate and tighten all loose screws.
- Now check the belt tension

Control belt tension:

To verify that the tension is correct, please proceed as described below

- Open the cover by unscrewing the screws which hold the side protection
- Check the belt tension by applying a force on the belts themselves (the ideal tension corresponds to an arrow of 5-6 mm applying a force of 40 N approx.)
- If necessary, make the same procedure of belts tensioning previously described
- Once you reach the right level of tension then refit the side protection belts.

Replacement belt:

If it should be noted wear belts, replace them as indicated below:

- Perform all steps under "Belts Tensioning" loosening up at maximum the tension register.
- Open the side protection
- When all the transmission is free, remove the belts worn and replace them with new one. Use appropriate tools if necessary.
- During installation of the belts, be very careful that the belts themselves can not cause injury or abrasion.
- After mounting belts You need to restore the belts tension listed above.
- Tighten all nuts previously loosened, then refit the protection and tighten all screws

Rotor Bearings:

The rotor bearings have to be greased every 8-10 hours. In the case of particularly hard work is recommended to grease twice a day. In case of failure of one or both of the bearings you should consult, for their replacement at a specialised workshop or directly to NOBILI S.p.A.

Directions to the decommissioning of the machine

If the machine should be scrapped, it will dispose of its shares in a differentiated way, taking into account the different nature of these pieces (e.g. metals, rubber, electric cables, oil, etc..) possibly entrusting companies specialised for that purpose and in any case in compliance with what is described by the laws regarding disposal of industrial waste.

Chapter 10
Problems and their solution

PROBLEMS	CAUSE	SOLUTION
The machine vibrates excessively during work	Breakage or loss of one or more hammers	Replace these hammers
	Unbalanced rotor	Bring back the number of turns of the cardan shaft to the correct speed
	Very abnormal hammers worn	Replace all the hammers and investigate the cause of abnormal consumption
The rotor does not rotate to the right rpm	Belts not right adjusted, loose or worn	Provide for regulation or, if necessary, replace belts
	Rotor locked from pieces of wood or other	Rotate the rotor for a few laps liberating itself. If this action is not enough, detach the machine and make the maintenance.
The machine stops working or "strokes"	Too much material to be shredded	Adjust the cutting height, adjust the cutting speed to present conditions.
	Steel Material caught, branches, logs, cables and / or other material ropes, wire, etc..	Rotate for several turns in the opposite direction the rotor cleaning of any foreign bodies. If this action is not enough, detach the machine and make the maintenance.
	The cardan shaft rotates abnormally	Raise or lower the lift arms of the tractor until the cardan shaft is horizontal as possible.
Excessive effort of the tractor	There is a lot of material to be shredded	Reduce the speed of the tractor and raise the protection hood, if it is necessary work at stop and advance slowly
	The size of the material to shred is excessive	Suspend the work and use a machine / model more suitable.
	Excessive quantity / height of the material to be shredded	Adjust the cutting height, adjust the speed to the present conditions
The machine does not shred evenly	Incorrect adjustment	Adjust the machine to the ground in order to lean it to the ground as evenly as possible
	Tools unusually worn	Replace all tools and look for the cause of abnormal consumption
	The rotor does not reach the right number of turns	Provide for regulation or, if necessary, replace belts
	Low rpm PTO	Check on the tractor instrumentation the correspondence between the engine rpm and PTO rpm
	Adjust the machine is not adequate to the task	Adjust the machine according to the options set out in this booklet
	Speed too high	Reduce the tractor speed checking the quality of the product worked from the machine until you get the desired result
	Worn tools	Replace worn tools

The machine ruin over the land	Too low adjustment of the cutting height	Check the depth of the signs on the ground and consequently raise the cutting height
The machine movements hydraulically controlled don't work	Tubes attached to the tractor broken	Replace the pipes with others with the same characteristics
	Low oil level in hydraulic unit of the tractor	See the instructions of the tractor and restore the oil level
	Couplings bad fitted	Unhook the couplings, possibly clean them and place them correctly

If you have carefully followed all the steps above, you should not experience any anomalies or malfunctions. Our advice is to reread again all stages of the previous chapters, paying special attention with regard to your particular case.

Apart from the pieces submitted to wear and tear (which must be replaced or adjusted according to the instructions of the book), the machine has no other points which may cause undesired long as used properly.

For additional problems not wrote in this booklet please contact our local representative or directly to the Company NOBILI S.p.A.for further advice.

Chapter 11 Security norms

- Make sure that during work well away from people not involved in any way!
It is not permitted to stay at a distance of no less than 50 meters from the machine in operation!
- Do not ever make any adjustments or maintenance with the machine in motion.
For maintenance, always make sure that your machine is very stable on the ground and disconnected from the tractor!
- With parked car does not remove the caps provided, these can be removed only to allow the normal work of the shredder and must be always fitted again after work.
- Never use the machine outside of his work capacity or other than as described in this booklet. (Misuse also causes termination of the guarantee).
- Never leave the seat of the tractor until the rotor is rotating.
- Never work with the machine hangs.
- Possibly use tractors reversible, cabin and equipped with a rear window shatter and / or protections of forest type.
- Do not let anyone on board the tractor during use of the machine.

- Do not let the tractor PTO engaged during transport.
- Do not work with machine guards removed or damaged.
- The speed of the PTO should not be different from that in the technical data table.
- During work do not exceed the limit of cardan shaft angles provided by the manufacturer of the same
- Before using the machine make sure that the cardan shaft coupling is correct, with well-placed safety pin in place.
- Never work without wearing gloves, goggles, overalls and soundproof headphones
- Check all nuts frequently
- Restore damaged tools immediately to avoid damaging vibrations to the machine
- Before performing any adjustment on the machine, disengage the PTO and stop the tractor engine by removing the key from the dashboard
- When needed, use more mechanical and / or intermittent optical signal allowed by law
- If You have to work on public roads position warning signs correctly and in sufficient distance from the machine
- Reduce always the speed when working on slopes and in all cases where there is no guarantee of a good adhesion of the tractor to the ground. Pay attention when changing direction on slippery surfaces.
- Do not try the machine indoors, the rotor or tools could cause harm to persons and property. (There is also a risk of inhaling the exhaust of the tractor).
- At the end use, the posting of the machine, place the hydraulic hoses into place marked in order to avoid future anomalies.
- Limited always the speed of the tractor for any kind of movement or transportation. The speed must always be adapted to soil conditions and never higher than that recommended in the booklet.
- Do not use your machine in poor visibility conditions or in conditions of glare. (Recommended minimum visibility 50 meters)
- Prior to always inspect the work area and remove stones, steel cables and other hazardous materials.
- Do not keep working in case of wire or other material had been rolled on the rotor tool holder
- For safety all the information listed directly on the machine must be carefully observed and complied
- The signs and safety instructions should always be clean and clearly visible, so its have to not be covered or removed from the machine.
When its are damaged or illegible shall be replaced with new and applied at the points of origin.
- Although not listed in this booklet refers to the laws and regulations in force in the country of your use of NOBILI S.p.A. forestry shredder.
- Always use original spare parts NOBILI S.p.A. which will ensure the necessary security. (The use of aftermarket parts is cause for termination of the guarantee).

- If your machine has deformed areas on the structure (for example due to possible collisions) is not allowed to use it for any job. Parts damaged must be replaced (small dents to the plate is tolerated).

For any clarification call our dealer.

Chapter 12 **Spare parts**

The orders of spare parts must be made to the Company NOBILI S.p.A. and shall contain the following information:

- Machine name
- Model
- Serial number
- Building year
- Code for the spare part
- Description of the piece
- Date of purchase
- Dealer

- The first four data can be entered simply by reading the identification plate affixed to the machine. The code number of the requested part is detected from the parts catalogue.

- Description of the part and quantity required.

- Means of transport. If this item is not specified, the company NOBILI S.p.A., while devoting particular attention to this service, is not responsible for any shipping delays due to force major.

Transport costs are always borne by the recipient. The goods travel at buyer's risk even if sold carriage.

Limited warranty

The **NOBILI S.p.A.** Via Circonvallazione Sud 46, 40062 Molinella (Bologna) Italia, according to the below-mentioned exceptions, certifies that its production is guaranteed against all defects of manufacture and material, on condition that it is used and treated complying with the instructions indicated in the use and maintenance handbook.

This guarantee lasts **12 (twelve)** months starting from the date of delivery to the user. This date will be verified through the postmark of the guarantee card filled in every part and sent to **NOBILI** company.

The guarantee is limited to the free supply ex works of the items found faulty by our technical services.

Elements excluded from the guarantee conditions:

- Parts of the machine, not manufactured by **NOBILI** (such as: tyres, transmission belts, cardan transmissions, gear cases, etc.). They have only their manufacturers' guarantee.
- Parts whose deterioration is due to wear.

Exceptions invalidating the guarantee:

- Changes carried out on the machine without **NOBILI** written permission.
- Repairs carried out in unauthorized workshops.
- Use of not original spare parts.
- Carelessness in maintenance.
- Use of the machine not according to what is indicated in the **use destination**.
- Removal of the guards placed on the machine: the guards should never be removed. They should be periodically checked and, if damaged, restored in their original conditions.
- Non-performance of safety instructions about the machine indicated in the use handbook.

The NOBILI will disclaim all responsibility:

- For damages suffered or caused during the machine transport and unloading.
- For direct or indirect damages caused by the break of parts forming the machine or caused by the non-working of the machine itself.

The user is in charge of:

- Normal maintenance of the machine, lubrication, keeping of oil levels, adjustments for use.
- Costs of transport and labour necessary for disassembling, re-assembling and adjusting parts which should be substituted under guarantee.

Warranty demand:

The demand for guarantee should be written and sent to **NOBILI** by the seller, within 4 weeks since the damage occurred, indicating: user's name and address, type, model, serial number, date of sale, date of the failure, hours worked, supposed circumstances and causes.

The parts should be sent to **NOBILI** for being examined for granting the guarantee authorizing the replacement of the part.

Changes:

The **NOBILI S.p.A.** reserves the right to carry out the changes it considers necessary on its production, without prior notice to the customers. It is not forced to change the machines already in use or on sale.

Specimen of the " Declaration of conformity "

NOBILI

Dichiarazione di conformità CE alla direttiva 2006/42/CE
Déclaration CE de conformité à la directive 2006/42/CE
EC declaration of conformity to directive 2006/42/EC
EG-Konformitätserklärung der Richtlinie 2006/42/EG

NOBILI S.p.A. Via Circonvallazione Sud, 46 - 40062 Molinella (BO) - ITALY
Tel. +39 051.88.14.44 - FAX +39 051.88.27.03 - - <http://www.nobili.com> - info@nobili.com

Depositario della documentazione:
Dépositaire documentation:
Documentation Depository:
Verwahrer Dokumentation:

Andrea Barilani - Nobili S.p.A.
Via Circonvallazione Sud, 46 - 40062 Molinella (BO) - ITALY

Dichiara che la macchina:
Déclare que la machine:
Declares that the machine:
Erklärt, dass die Maschine:

NOME MACCHINA

S/N: **NR SERIE**

Year: **ANNO**

è conforme alla Direttiva Europea 2006/42/CE.

Per l'adeguamento della macchina sono state consultate le seguenti Norme Armonizzate:

UNI EN 745:2010 - EN 13524:2009 - EN ISO 4254-6:2009 - EN ISO 4254-1:2009.

Nonché le specifiche tecniche: ISO 11684:1995.

In caso di vendita della macchina, la presente dichiarazione deve essere consegnata all'acquirente.

est conforme aux dispositions de la Directive Européenne 2006/42/CE.

Est conforme aux exigences des normes européennes harmonisées suivantes:

UNI EN 745:2010 - EN 13524:2009 - EN ISO 4254-6:2009 - EN ISO 4254-1:2009.

Est conforme aux exigences des normes ou des spécifications techniques suivantes: ISO 11684:1995.

En cas de revente de la machine, la présente déclaration de conformité doit être remise à l'acheteur.

conforms to the requirements of the European Directive 2006/42/EC.

Conforms to the requirements of following European harmonized standards:

UNI EN 745:2010 - EN 13524:2009 - EN ISO 4254-6:2009 - EN ISO 4254-1:2009.

Conforms to the requirements of following standards or technical specifications: ISO 11684:1995.

In case of resale of the machine, this declaration of conformity must be given to the buyer.

Den Bestimmungen der Europäischen Richtlinie 2006/42/EG entspricht.

Den Anforderungen folgender harmonisierter Normenweise entspricht:

UNI EN 745:2010 - EN 13524:2009 - EN ISO 4254-6:2009 - EN ISO 4254-1:2009.

Den Anforderungen folgender Normenweise oder technischer Spezifikationen entspricht: ISO 11684:1995.

Bei Weiterverkauf der Maschine muss die Konformitätserklärung dem Käufer übergeben werden.

Responsabile della Sicurezza:

Responsable Sécurité:

Head of Safety:

Sicherheitsleiter:


Andrea Barilani

Molinella (BO):
GG/MM/AAAA

NOBILI

Il nome che conta

For your safety and the good working
of your machines,
use original NOBILI spare parts only

RAPPRESENTATO DA:
REPRESENTED BY:
REPRESENTANTE PAR:
VERTRETEN DURCH:



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