FURIO

EN - USE AND MAINTENANCE

*) Valido per Paesi UE
*) Valid for EU member countries
*) Valable dans les Pays UE
*) Gilt für EU-Mitgliedsländer
*) Válido para Países UE

Cod. F07011315  2014-09
## CONTENTS OF THE MANUAL

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE machine identification plate</td>
<td>3</td>
</tr>
<tr>
<td>Description of the machine and technical features</td>
<td>4</td>
</tr>
<tr>
<td>Warranty and terms of the warranty</td>
<td>5</td>
</tr>
<tr>
<td>Safety and injury prevention standards</td>
<td>6</td>
</tr>
<tr>
<td>List of ISO11684 pictograms</td>
<td>8</td>
</tr>
<tr>
<td>Hooking the plough on the tractor</td>
<td>9</td>
</tr>
<tr>
<td>Preliminary operations and alignment with the tractor</td>
<td>10</td>
</tr>
<tr>
<td>Transporting the plough on the road</td>
<td>10</td>
</tr>
<tr>
<td>Plough overturning hydraulic system with memory and repositioning of bodies</td>
<td>12</td>
</tr>
<tr>
<td>Maintenance and lubrication</td>
<td>15</td>
</tr>
<tr>
<td>Spare parts</td>
<td>17</td>
</tr>
</tbody>
</table>
CE MACHINE IDENTIFICATION PLATE

The machine in your possession has a plate bearing the main data, which enables MASCHIO GASPARDO S.p.A. to identify the machine. The plate must not be removed from the machine until the end of its useful life.

Details on the plate:

- Machine model
- Weight (kg)
- Maximum load (kg)
- Serial number (type)
- Year of manufacture

The Purchaser is required to inform MASCHIO GASPARDO S.p.A. of the machine's serial number when requesting specialist maintenance and technical assistance or when ordering spare parts.
DESCRIPTION OF THE PLOUGH AND TECHNICAL FEATURES

This manual, which must be kept intact during the entire life span of the machine, describes the use and maintenance operations to be carried out to ensure safe and efficient use of the machine in your possession. MASCHIO GASPARDO S.p.A. recommends that the user read and follow the instructions below taking care to avoid mechanical problems and physical injury.

The plough in your possession, called a FURIO, is a mounted turnwrest plough that can work both in and out of the furrow.

The plough was designed so that the inclination angle of the bodies adequately overturns the soil together with an ideal work clearance to discharge residual crops: this combination of geometries provides ideal green manuring of the soil thanks to the appropriately shaped mouldboards. Each mouldboard of the plough is joined to the relative beam. Each beam is made of special steel providing a high resistance structure with a high degree of elasticity.

Each working body is equipped with a mechanical shear bolt safety device: if the ploughing device meets any obstacles (large rocks or stumps), calibration of the bolts protects the beam and bearing structure from being damaged.

The machine in your possession is intended solely for conventional agricultural use associated with ploughs; any other use is considered improper. MASCHIO GASPARDO S.p.A. cannot assume any responsibility for the consequences of improper use of the plough.
TERMS OF THE WARRANTY

Upon delivery, check that the plough has not been subject to damage during transport and that the accessories are intact and complete.
Inform the Manufacturer of any damage within 8 days of receipt.
The terms of the warranty apply, with the Purchaser's agreement, in the following cases:

- The warranty is valid for 12 months from the date on the "Purchase Invoice".
- Under the terms of the warranty, MASCHIO GASPARDO S.p.A. repairs or replaces any parts found to have manufacturing or material defects.
- The warranty applies only to those parts manufactured by MASCHIO GASPARDO S.p.A.
- All transport costs, customs duties and VAT are to be borne by the purchaser.
- Repair and replacement of parts under warranty do not extend the latter.
- Returns are not accepted without the written authorisation of the Manufacturer.
- The warranty applies only when the plough has been paid for in full.
- The purchaser can enforce his rights specified in the warranty only if he has complied with its conditions.

WARRANTY DEADLINE

- The warranty is rendered null and void in the following cases:
- Defects due to incorrect installation of the machine.
- Maintenance and/or repairs carried out on the machine without the authorisation of MASCHIO GASPARDO S.p.A.
- Assembly of new parts or replacement of existing machine parts without the authorisation and supply of the parts by MASCHIO GASPARDO S.p.A.
- Negligent use of the machine.
- Failure to inform MASCHIO GASPARDO S.p.A. of any defects, by registered mail, within 8 days of receipt.
- Failure to observe the instructions in this manual.
- Even under the terms of the warranty, the machine must be returned carriage paid.
SAFETY AND INJURY PREVENTION STANDARDS

- MASCHIO GASPARDO S.p.A. recommends that the user do the following in the interest of safety:
- Observe the danger warnings in this manual and on the labels and/or pictograms on the machine.
- Read this use and maintenance manual with care before operating the machine in your possession.
- Avoid touching the moving mechanical parts of the tractor and plough.
- Keep children away from the machine when this is in use and when making adjustments, overturning the bodies or preparing the plough for road transport.
- Adjustments and maintenance must always be carried out with the plough at a standstill and with the tractor engine turned off.
- The tractor must not be driven, either with or without the plough attached, by anyone who does not have an appropriate driving licence or who is below the legal age and has insufficient experience, or under the influence of alcohol, narcotics or psychotropic drugs.
- Check that the danger signs (pictograms) affixed on the machine are always clearly visible and undamaged, contact MASCHIO GASPARDO S.p.A. if any signs need to be replaced.
- Wear suitable clothing and do not wear loose-fitting clothing that could become caught when overturning the plough.
- Before putting the machine to use, make sure that all the safety devices work correctly. Please contact MASCHIO GASPARDO S.p.A. immediately if you are in any doubt.
- It is strongly advisable to familiarise yourself with the various control devices and functions before using the machine in your possession.
- The plough in your possession must be mounted on a tractor of sufficient power. You are advised to contact the manufacturer of the tractor to check the minimum power for towing the plough without difficulty.
- The tractor in your possession must be compatible with the type of tow, plough lifting pin and three-point hitch intended by the manufacturer.
- The plough must be attached to the tractor strictly in accordance with technical procedures, in order to avoid hand injuries.
- Before hooking and unhooking the plough from the three-point hitch, set the hydraulic lift control lever of the tractor in the locked position.
- Since the tractor and plough are very heavy, it is advisable to take absolute care when hooking and unhooking the tractor in order to avoid injury.
- Never leave the tractor with the engine running.
- Do not stand or work in range of the plough when the parts of these are or could be moving.
- Do not stand between the tractor and the front suspension of the plough during hooking operations, in order to avoid the risk of crushing.
- After work and before leaving the tractor, it is advisable to lower the plough hooked on the tractor down to the ground, turn off the engine, engage the parking brake and remove the key from the ignition.
- Do not touch the moving parts of the plough during the overturning process.
- Do not touch the moving parts of the plough when this is being prepared for road transport.
LIST OF ISO 11684 PICTOGRAMS

MASCHIO GASPARDO S.p.A. recommends that the user observe the following pictograms required as per the standard ISO 11684.

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🚨 📖</td>
<td>Read the instruction manual before performing any operation on the machine.</td>
</tr>
<tr>
<td>⛓️</td>
<td>Lifting point.</td>
</tr>
<tr>
<td>🚨 🔒</td>
<td>Before carrying out maintenance and adjustments on the plough turn off the tractor engine and remove the key from the ignition.</td>
</tr>
<tr>
<td>🚨 🛑</td>
<td>Danger of falling loads, do not stand under lifted parts of the plough.</td>
</tr>
<tr>
<td>🚨 👮‍♂️</td>
<td>Danger of falling, do not climb onto or be carried on the plough.</td>
</tr>
<tr>
<td>🚨 ⚰️</td>
<td>Danger of crushing when the plough is moving.</td>
</tr>
<tr>
<td>🚨 🚨</td>
<td>Danger of injury caused by the expulsion of liquids under pressure, keep at a safe distance</td>
</tr>
</tbody>
</table>
Danger of crushing, do not touch.

Do not stand between the plough and the tractor.

Danger of entanglement, keep hands and arms away from moving parts during use.

HOOKING THE PLOUGH ON THE TRACTOR

1) Hook the equipment as intended to the tractor with suitable power and configuration by means of the specific device (hydraulic lift) compliant to standards.
2) The category of the equipment's hitch pins must match those of the hydraulic lift hitch.
3) Pay attention when working in the area of the lifting arms as it is very dangerous.
4) Pay the utmost attention when hooking and unhooking the equipment.
5) It is strictly forbidden to go between the tractor and the hitch to manoeuvre the lifting control from the outside (see figure to the side).
6) It is strictly forbidden to go between the tractor and the equipment (see figure to the side). You can only go in between after having engaged the parking brake and placed a suitably sized log or stone underneath the wheels.
7) Applying additional equipment to the tractor entails a different weight distribution on the axles. Therefore it is recommended to add specific ballasts at front of the tractor to balance the weight on the axles.
Check that tractor performance is compatible with the weight which the equipment transfers to the three-point hitch. In case of doubt, contact the Manufacturer of the tractor.
8) Respect the maximum intended weight on the axle, the total movable weight, transport regulations and the highway code.
PRELIMINARY OPERATIONS AND ALIGNMENT WITH THE TRACTOR

Before using the plough to work the soil, it is advisable to implement the recommendations below.

- Remove the paint from the mouldboards, ploughshares and deflectors to avoid polluting the soil, using a scraper or paint stripper.
- Remove the safety locks from the plough.
- Check that the quick couplings of the plough hydraulic pipes are compatible with the fittings of the tractor's hydraulic control unit.
- Check that all the points with greasers are properly lubricated and apply lubricant where necessary.
- Check that the bolts on the parts supporting the mouldboards are securely tightened and tighten them if necessary using an appropriate spanner.

TRANSPORTING THE PLOUGH ON THE ROAD

The operator must pay special attention when transporting the plough on the road in order to safeguard himself and others.

Before entering the road, always make sure there are no people or other objects around the vehicle.

Check the manoeuvrability of the tractor-plough complex (considering the length formed by the two machines during transport).

Verify the stability of the plough while driving through fields and on roads.

- Before transporting the plough on the road, it must be brought to the suitable transport position.
- Application of the plough to the tractor entails a different distribution of the weight on its axles: ballasts should therefore be applied to the front of the tractor to appropriately distribute the weight on the axles.
- It is essential to take into account that road holding, steering capacity and braking of the tractor are considerably affected by the inertia caused by the hooking of a mounted or semi-mounted plough.
• Pay special attention when driving on curves as the centrifugal force caused by the hooked plough decreases road holding of the tractor.

• When driving on the road with the plough, keep at a moderate and preferably constant speed and accelerate and brake gently and gradually to avoid dangers associated with the inertial force of the plough.

• To drive on the road, you must comply with the Highway Code standards in force in the Country where the plough is used.

• In Italy in particular, make sure that the rear overhang of the plough in relation to the tractor is not equivalent to more than 90% of the length of the tractor alone without ballast. The rear overhang is the linear distance between the axle of the rear wheels and the protruding end of the plough mounted at the back.

• If the rear overhang does not meet these requirements, the plough must be semi-mounted, i.e. fitted with a wheel that allows the tractor-equipment to turn correctly around bends.

• Suitable approved signs must be affixed on the lengthwise sides of the equipment hooked onto the tractor.

• Suitable signs must also be affixed on the lateral sides of the equipment.

• The retro-reflective and fluorescent signs to be affixed on the machine are the responsibility of the Purchaser.

• Implement the safety measures recommended by the Manufacturer for road transport.

• If the plough is used in a country other than Italy, comply with the domestic rules of the road that apply to farm machinery.

• MASCHIO GASPARDO S.p.A. cannot assume any responsibility for road accidents, injury or damage caused by a failure to observe the domestic rules of the road.
The hydraulic system was designed to reduce inertia during rotation of the plough: the jack for setting the working width has an automatic memory for repositioning the plough at the desired width after overturning.

Overturning of the plough with body alignment memory:
The cylinder [C0] starts the rotation of the plough. At the same time, the pressure of the oil and a

C0 Cylinder for overturning plough, with memory
C1 Cylinder for opening/closing bodies, with memory
C4 Cylinder for half opening/closing arm
C5 Cylinder for half opening/closing arm (memory)
R Ball valve for disabling the automated system (only for ploughs with re-closable frame, available on request)
V Overturning cylinder inversion valve
D Oil flow inverter
restrictor valve cause the cylinder [C1] to extend, reducing the working width of the bodies and moving the frame into its straight position.
- The cylinder [C0] retracts at the end stop, carrying out the first stage of the overturning process;
- The inversion valve [V] is triggered and inverts the flow of oil.
- The cylinder [C0] extends at the end stop, completing the overturning process. Immediately afterwards, the pressure of the oil and a restrictor valve cause the cylinder [C1] to retract and restore the working width of the bodies before the overturning process.

**ATTENTION**

ALWAYS check the correct result of the manoeuvre.

<table>
<thead>
<tr>
<th>PROBLEMS</th>
<th>SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>The cylinder [C0] does not complete the overturning process</td>
<td>![Image of oil pressure regulator for inversion]</td>
</tr>
</tbody>
</table>

Check that the valve [R] is open
Check the response of the valve [V] at the end stop: if necessary, adjust the speed of the flow of oil;
If the manoeuvre still cannot be performed, try closing/opening the cylinder [C5] by 40-50 mm and see if this helps

**CAUTION: DO NOT TOUCH THE OIL PRESSURE REGULATOR**

Cod. F07011315
The cylinder [C1] does not return to
the position
set in the memory
Check the correct flow of oil

The cylinder [C1] cannot be adjusted
in the opening of the bodies
Check that the valve [R] is open
Check the correct flow of oil

The cylinder [C4] does not return to
the saved position
Check the correct flow of oil

ATTENTION
Carefully read all the instructions before using the plough; if doubts arise, refer to the
Manufacturer's Dealer technicians.
The Manufacturer declines any responsibility for failure to comply with the safety and injury
prevention standards.

MAINTENANCE AND LUBRICATION

Observe these requirements in order to keep the running costs down and ensure the long life span
of the plough.

ATTENTION

Before carrying out any operation, always make sure that the plough is on a flat, level surface, that
the tractor has been turned off and that the key has been removed from the ignition.
The frequency of operations specified in this manual is purely indicative and depends on normal conditions
of use; it can also vary according to type of use, the environment, the consistency of the soil, etc.
Keep the lubricants out of the reach of children.
Read the warnings and precautions on the lubricant containers with care.
Wash your hands thoroughly after using lubricants.
Dispose of used oils and lubricants according to anti-pollution laws.
CAUTION

Before injecting lubricant into the greasers, clean the fittings to prevent grime, dust or foreign bodies from mixing with the grease and compromising the effect of lubrication.

Injecting a large amount of grease at high pressure can damage the parts with which it comes into contact, which is why it is advisable to carry out this operation with all due care.

LUBRICATION

The greasing points are indicatively defined in the figure on page 25.
The intervention frequency must be reduced when using the plough in severe weather conditions,

Recommended lubricants:
For all greasing points, we recommend: GR MU EP 2 or equivalent.

AFTER THE FIRST 12 HOURS OF WORK

Each new plough must be checked after the first 12 hours of work, verifying:

- The general condition of the equipment.
- After having checked the tools working in the ground for wear (ploughshares, mouldboards, share points, etc.) tighten the screws fastening them all the way.
- Carry out a general inspection checking that all the screws of the plough are securely tightened.

EVERY 24 HOURS OF WORK

- Check the tightening of the fixing screws of the tools tilling the soil.
- Grease the pins and relative bushes subject to continuous movement.

EVERY 100 HOURS OF WORK

1) Check tightening of the tool's fixing screws.
2) Grease the pins and relative bushes subject to continuous movement.
3) Grease the bearing supports.
SEASONAL STORAGE

At the end of the season, or when the plough is expected to remain idle for a long time, it is necessary to:

- Clean the plough, removing all traces of soil.
- Check it carefully and, if necessary, replace damaged or worn parts.
- Tighten all screws and bolts all the way, especially those fixing the beams and working bodies in contact with the ground.
- Grease the various parts with care and replace any broken greasers if the plough is to be left outside.

By closely adhering to the above, the user can be sure that the plough will be in perfect condition when it is next required.

When decommissioning the plough, comply with anti-pollution laws, and in particular dispose of waste lubricants and the various elements according to type of material.

SPARE PARTS

To order spare parts for the plough, contact the Manufacturer specifying:

- Model of the plough.
- Serial number of the plough.
- Year of manufacture.
- Description of the part required.
USE E MAINTENANCE

ENGLISH

USATE SEMPRE RICAMBI ORIGINALI
ALWAYS USE ORIGINAL SPARE PARTS
IMMER DIE ORIGINAL-ERSATZTEILE VERWENDEN
EMPLOYEZ TOUJOURS LES PIECES DE RECHANGE ORIGINALES
UTILIZAR SIEMPRE REPUESTOS ORIGINALES

www.maschionet.com

DEALER:

MASCHIO GASPARDO SpA
Registered office & Production plant
Via Marcello, 73 - 35011
Campodarsego (Padova) - Italy
Tel. +39 049 9298910
Fax +39 049 9298900
E-mail: info@maschio.com
www.maschionet.com

MASCHIO GASPARDO SpA
Production plant
Via Mussons, 7 - 33075
Morsano al Tagliamento (PN) - Italy
Tel. +39 0434 695410
Fax +39 0434 695425
E-mail: info@gaspardo.it

MASCHIO DEUTSCHLAND GMBH
Außere Nürnberger Straße 5
D - 91177 Thalmässing
Deutschland
Tel. +49 (0) 9173 79000
Fax +49 (0) 9173 790079
www.maschio.de

MASCHIO FRANCE Sarl
1 rue Denis Papin ZA
F - 45240 La Ferte St. Aubin France
Tel. +33 (0) 2.38.64.12.12
Fax +33 (0) 2.38.64.66.79

MASCHIO IBERICA
MASCHIO-GASPARDO POLAND
MASCHIO-GASPARDO UCRAINA
GASPARDO-MASCHIO TURCHIA
MASCHIO-GASPARDO CINA

MASCHIO GASPARDO NORTH AMERICA
120 North Scott Park Road
Eldridge, IA 52748 - USA
Ph. +1 563 2859937
Fax +1 563 2859938
E-mail: info@maschio.us

Cod. F07011315