

## Barber Radius

SERIAL NO. 8313214  
ENGINE MODEL NO. GX160  
ENGINE SERIAL NO. GCBPT1690783

## USE AND MAINTENANCE INSTRUCTION MANUAL

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## **1 INTRODUCTION**

### **1.1 Scope of the operator's manual**

This manual is an integral part of the machine and provides all the information necessary for:

- the correct instruction of the operators on problems of safety;
- the in-depth knowledge of the operation and limits of the machine;
- the correct use in safety conditions;
- performing maintenance in a correct and safe way;
- ordering spare parts.

The machine end users must carefully read the contents of this manual and make sure it is read also by the operators and service technicians in the parts of their competence.

The time spent to read this manual will be rewarded by a proper operation of the machine and by safe operation conditions.

BARBER accepts no responsibility for any damage to persons or animals, property or the environment caused by not-complying with the instructions in this manual.

The instructions, drawings and documentation in the present manual are the property of H. BARBER & SONS, INC. and cannot be reproduced or copied in any way, neither as a whole nor partially.

### **1.2 Care of the manual**

Keep this manual in a safe place and make sure it will be supplied together with the machine in case of transfer of title of the machine itself.

No part of this manual can be removed, ripped off or modified so as not to lose any information which may be essential for a correct use of the machine.



## 1.3 Pictograms used in this manual

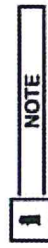
Pictograms are conventional symbols used in the manual to draw the reader's attention to the contents of the notices starting with them.



The notices preceded by this symbol contain information, instructions or procedures which, if not properly complied with, may cause injury, death or long-term hazards to health and to the environment.



The notices preceded by this symbol contain procedures or practices which, if not properly complied with, may result in serious damage to the machine.



The notices preceded by this symbol contain information on subjects of particular importance.

## 2 SAFETY

This chapter has a special importance for the physical safety of the machine operators and the bystanders and contains a number of special measures to reduce the risks of accidents.

### 2.1 Personnel associated with operation and maintenance

The personnel associated with operation and maintenance of the machine can be divided into the following classes depending on their level of responsibility:

- Installer: the person who prepares the machine in view of its use.
- User: the person who uses the machine.
- Service technician: the person who services the machine to keep it safe and efficient.

### 2.2 Qualification of the personnel

The persons given the task of operating or servicing the machine must have the following compulsory requisites:

- Good health conditions, good eyesight, good coordination and prompt reflexes.
- Ability to read and understand the instructions provided in this manual.
- They shall be conscientious and sensible and prevent personal injury and damage to persons, animals, property and the environment.
- They shall never ingest alcoholic drinks, drugs or other substances that may alter or reduce their reaction times.
- They shall read and familiarize with this handbook and all the safety decals and signs applied on the machine or in the sites of maintenance.



Before using the machine, it is compulsory to read and obey the instructions provided in this manual.

The manufacturer did its best to design an **INTRINSICALLY SAFE** machine, equipped with all the necessary guards and safety devices, and to provide any necessary information for a safe and correct use.

To this end, every single chapter provides the following information:

- residual risks;
- required or recommended personal protection equipment;
- prevention of human errors;
- prohibitions/obligations to prevent improper behaviors which may reasonably be expected.

The machine is supplied by BARBER for the conditions of use and operation envisaged and described in this manual. During the use of the machine, operators shall always be prompt and conscientious to improve, with their behavior, the safety level of the machine.

**1** **NOTE**

H. BARBER & SONS, INC. accepts no liability for any damage to persons, animals, property or the environment if the machine operators do not meet the requisites required.

### 2.3 Working clothes

**!** **DANGER**

It is compulsory to wear the clothes and personal protection equipment indicated in this manual before using or servicing the machine.

**!** **ATTENTION**

Make sure clothes and personal protection equipment are in good condition and conform to the safety at work legislation.

- Overalls or any other comfortable garments. Avoid wearing clothes with large sleeves or objects that could get stuck in any moving part of the machine.
- Protective gloves.
- Working shoes.
- Goggles or facial screens.
- Protective helmet.

### 2.4 Safety criteria recommended for use

- Before starting the machine, do a walk-around inspection and make sure there are no persons or other obstacles.
- Thoroughly clean the machine before driving on public roads. Always clean the machine with the engine stopped.
- If oil leaks are noticed, stop the machine immediately, place a suitable container underneath to prevent accidental spillage and contact your nearest BARBER service center.



- Do not use the machine under unsafe conditions or with the safety devices disabled or removed.
- Do not use the machine under bad environmental conditions, near slopes, ditches, slippery or steep grounds.
- Forbid any unauthorized persons to use the machine.
- Plates and warning stickers, which indicate the use of the controls and signal dangerous areas, shall never be removed, hidden or become unreadable. Clean them with some water and replace them if they become unreadable. For ordering spare plates and stickers, address to H. Barber & Sons, Inc.
- Do not service or grease parts of the machine when it is running.
- Do not carry out maintenance operations manually when specific tools are provided for this purpose.
- During work, do not give instructions or hand signals to several people at the same time. Instructions and hand signals must be given by one person only.
- Use the machine only from the envisaged driving place.
- All operations of replacing machine parts, coupling or releasing of safety catches must be done by the machine operator who shall leave the driving place and forbid everybody to operate the machine controls.
- Do not use the machine to lift or carry people.
- Before using the machine, make sure the others are clear of the working range of the machine. If someone enters the working range of the machine, stop the machine and wait until this person leaves the area.



**F. Safety lever:** this lever prevents any accidental starting of the machine when the operator is not correctly seated in the driving place.

## 2.5 Assessment of risks

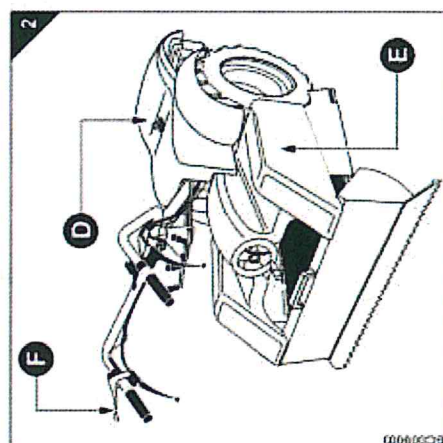
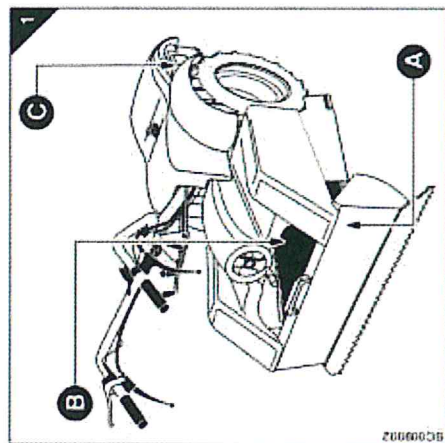
- A. Bucket:** risk of crushing of the upper and lower limbs.
- B. Screen:** risk of crushing of the upper and lower limbs.
- C. Engine:** risk of burns and scalds due to contact with the exhaust pipe (**fig.1**).

## 2.6 Safety devices

To prevent damage to persons, things or animals who/which would be in close proximity to the machine, the machine has been equipped with a number of safety devices (**fig. 2**).

**D. Engine guard:** mechanical device which prevents any contact with the control levers and the engine.

**E. Screen guard:** mechanical device which prevents any contact with the screen gears.





### 3 GENERAL INFORMATION

This chapter contains useful data, a correct identification of the manufacturer and the machine as well as the guarantee clauses.

#### 3.1 Equipment Supplier

H. BARBER & SONS, INC.  
15 Raytkwich Drive  
Naugatuck, CT 06770  
Tel. 203-729-9000  
Fax 203-729-4000

#### 3.2 General description

The Radius beach-cleaner is a machine intended for cleaning sandy beaches and consisting of a screen vibrating at a high intensity which allows to separate debris from sand and to convey them to a special hopper.

#### 2.7 Safety decals

The safety decal warning the operator is installed on the screen guard (**fig.3**). The decal warning of the risk of burns and scalds is placed on the levers' guard, near the engine exhaust pipe (**fig.3**).

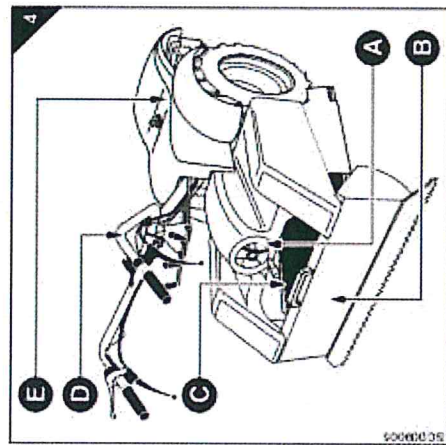


Removing or damaging the safety decals is expressly forbidden.



### 3.3 Functional units (fig.4)

- A. Hand-wheel
- B. Hopper
- C. Screen
- D. Handlebar
- E. Engine



### 3.4 Data plate

The Serial Plate contains the Model, Serial number and year of manufacture and is located on the handle bars of the unit.

### 3.5 Technical data Radius specifications

Working capacity 13,500 to 30,000.00 ft<sup>2</sup>/h

Working depth 0 to 4 inches

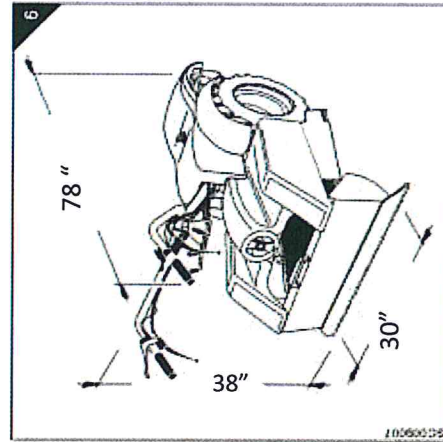
Cleaning Width 30 inches

Dimensions 78" x 30" x 38"

Total mass 473 lbs.

Dimensions with closed handlebar:

67" x 30" x 32"



### 3.6 Intended use

The Radius sand cleaner has been designed and manufactured to clean beaches, sandy water-edges, playgrounds and other sand areas. Any other use is considered contrary to the intended use and therefore improper.

### 3.7 Improper use

Improper use means a utilization of the machine following working criteria which do not comply with the instructions of this manual and which may result in risks for both operators and bystanders.



**Listed below are some of the most frequent and hazardous situations of improper use:**

- Carrying passengers on the machine.
- Using the machine for purposes other than those stated in paragraph 3.6.
- Not strictly complying with the operation and maintenance instructions of this manual.
- Working beyond the working limits of the machine.
- Working on unstable edges of ditches.
- Working on steep slopes.
- Working on steep slopes.

### **1** NOTE

H BARBER & SONS, INC. accepts no liability for any damage caused while transporting or unloading the machine and for damage resulting from defective components or a failure of the machine.

### 3.8 Warranty

H. BARBER & SONS, INC. warrants that all the products have been manufactured in accordance with quality criteria and are free from defects in material and workmanship. The warranty period is 12 months starting at the date of purchase.

#### 3.8.1 Warranty limitations

The warranty will cease to have effect in the following cases:

- Modifications done without prior approval from H. BARBER & SONS INC.
- Repair done by non-authorized workshops
- Neglected maintenance.
- Abuse and improper use of the machine (see par. 3.6).
- Removal of safety devices.

### 3.8.2 Warranty claims

Any warranty claim shall be sent to:

H. BARBER & SONS, INC  
15 Raytkwich Road  
Naugatuck, CT 06770  
Hbarber@hbarber.com

Claims shall be made within 4 weeks from the date at which the defect has become apparent, and be completed with the following information:

- Name and address of the user,
- Model and serial number of the machine,
- Date of purchase,
- Date at which the defect has become apparent,
- Operating hours of the machine,
- Presumed circumstances or causes.



Transportation freights and labor necessary for replacing the defective parts are at the user's expense.

H. BARBER & SONS, INC. reserves the right to make changes to its product without prior notice and to make these changes to machines already sold.



## 4 INSTALLATION

This chapter provides the sequence of operations to be carried out on the machine before putting it into service.

### 4.1 Transportation

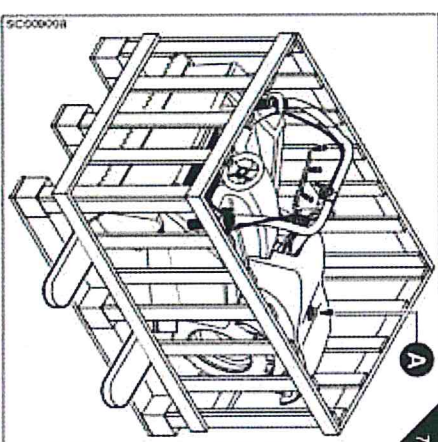
Before hoisting and handling the machine, make sure there are no persons, animals or things within the working range of the hoisting equipment or the machine. Previously make sure that any hoisting and handling equipment and machinery is efficient and has an adequate payload.

#### 4.1.1 Hoisting the machine

To hoist the machine, use a forklift with an adequate capacity with respect to the weight of the machine and the box (fig. 7). To help you hoist the machine, a special lug (A) has been fitted to the machine.



Use lifting equipment in efficient state of repair and make sure that their payload is sufficient for the load being handled.





## 4.2 Unpacking the machine

The machine is delivered within a wooden box with the dimensions (A) indicated in **fig. 8**.

- Before removing the machine from the box, shift the gear lever to the neutral position.

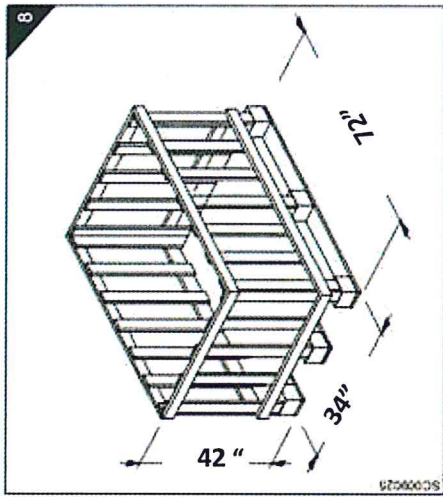
## 4.3 Storage

In case of extended inactivity of the machine, shelter it in a confined area to prevent any damage.

Make sure the storing facility is protected from direct weather agents such as rain, snow, hail, etc.

Make sure the temperature in the storing facility is between 32°F and 100°F without formation of ice.

Also make sure the humidity ranges between 30% and 95% without formation of condensation for the entire storing period of the machine.



## 5 ADJUSTMENTS AND USE

This chapter provides information for a correct adjustment and use of the machine.

### 5.1 General warning

For a safe use of the machine, the reading of this chapter assumes the familiarization with the contents of chapter 2 "Safety".

### 5.2 Adjustments prior to operation



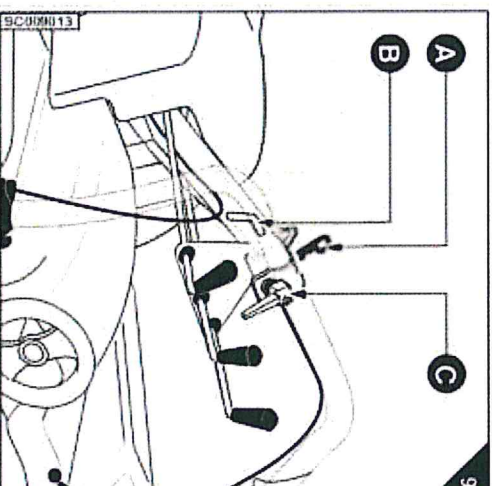
All the adjustments shall be done with the machine stopped and engine off. Before any intervention on the machine, the operator shall read and obey the instructions provided in chapter 2.2 "Qualification of the personnel" and in chapter 2.3 "Working clothes".

#### 5.2.1 Adjusting the handlebar

During transportation the machine handlebar is in the closed position for ease of maneuver. To move the handlebar to the work position, follow the steps below:

- Remove the cotter pin (A) and pull pin (B) outwards (fig. 9).
- Loosen handle (C) and lift the handlebar.

- Refit pin (B) into the hole and lock in place with cotter pin (A).
- Tighten handle (C) (fig. 9).



## 5.2.2 Adjusting the working depth

The working depth can be adjusted with the hand-wheel (A) (fig. 10).

- Turn the hand-wheel clockwise to reduce the depth.
- Turn the hand-wheel counter-clockwise to increase the depth.

## 5.2.3 Changing the screen

The machine is supplied complete with two different types of screen: one with fine meshing and one with large meshing. It's up to the operator to fit the most suitable screen for the sand being screened.

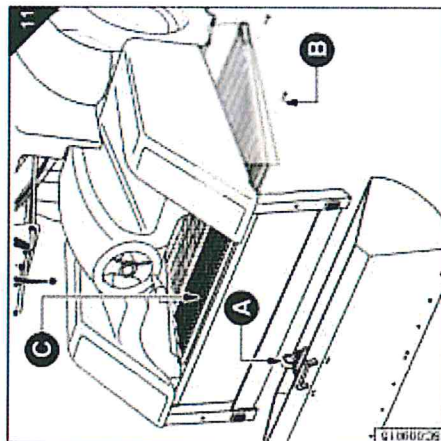
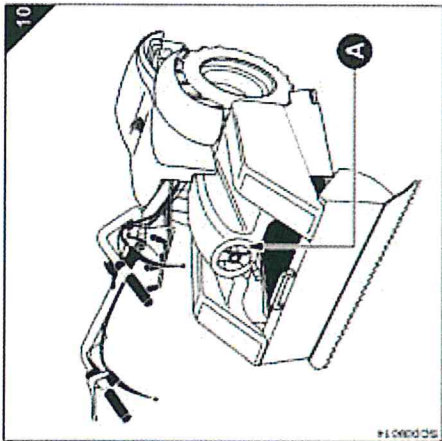


**The screen shall be changed with the machine standing still and the engine stopped.**

To change the screen, proceed as follows:

- Pull out the waste skip by lifting up the catch (A) (fig. 11).
- Loosen the fixing screws (B) on both sides.
- Remove the screen (C).
- Place the new screen so the screw holes match.

- Re-tighten the four screws (B) (fig. 11).



## 5.3 Operation

### 5.3.1 Starting the machine



**DANGER**

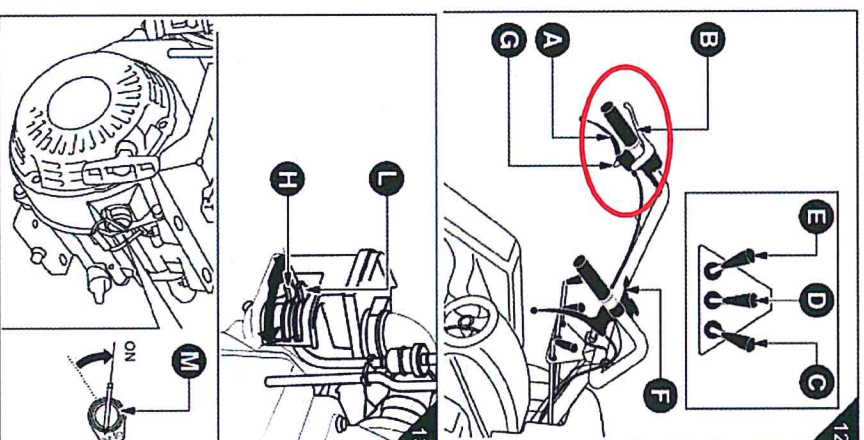
Make sure that no one stands within the working range of the machine.

Do not, at any time, start the machine on uneven or sloping ground.

- Hold both the clutch lever (**A**) and the safety lever (**B**) (fig. 12).
- Shift the gear lever (**C**) to the central (neutral) position.
- If necessary, disengage the screen control (**D**) by pulling the lever outwards.
- Engage the forward gear by shifting lever (**E**) to the corresponding position.
- Adjust the gas control (**F**) to 1/2 of its stroke.
- Lock the clutch control with catch (**G**).
- Open the fuel cock (**H**) located on the engine (fig. 13).

- If the machine shall be started from cold, move the air control lever (**L**) to the closed position.

- Turn the engine switch (**M**) to the ON position.





- From a stable position, slightly pull the starting cord to eliminate any play and then pull the cord with force to start the engine (**fig. 14**).
- Rewind the starting cord and, if necessary, turn the air control lever back to the open position.

## 5.3.2 Operating the machine

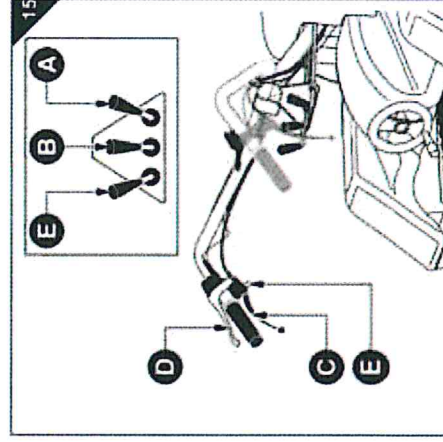
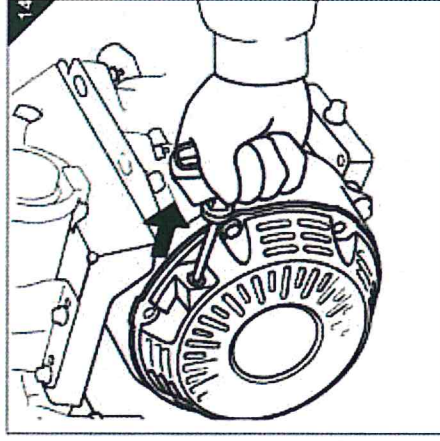
Once the machine has been started (**par. 5.3.1**):

- Engage the first gear by shifting lever (**A**) (**fig. 15**) forward.
- Activate the screen control by shifting lever (**B**) forward.
- Hold the clutch lever (**C**) and the safety lever (**D**) and remove the safety catch (**E**).
- Gradually release the clutch lever (**C**) and always stand behind the machine during its travel. The Safety lever (**D**) must be kept closed.

Let the machine travel some distance and check the consistency and humidity of the sand. Adjust the working depth if necessary (**par. 5.2.2**).

### NOTE

If the screen cannot sift the sand effectively and sand collects inside the hopper, reduce the working depth (**par. 5.2.2**).





## 1 NOTE

To get the most out of your machine, we recommend adjusting the gas lever to 3/4 of its stroke max.

Choose the most suitable gear in relation to the type of sand being cleaned:

Gear	Humidity	Depth
1	Wet sand	High
2	Dry sand	Low

### 5.3.3 Differential lock

By pulling lever (A), you can lock the differential and have the same traction on both wheels if one of them tends to slip (fig. 16).

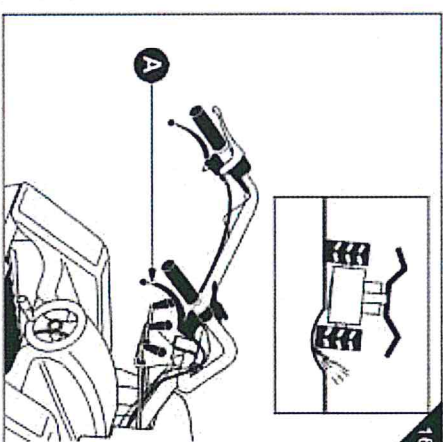


Lock the differential only in cases of low-traction.

### 5.3.4 Stopping the machine

After operation, stop the machine as follows (fig. 17):

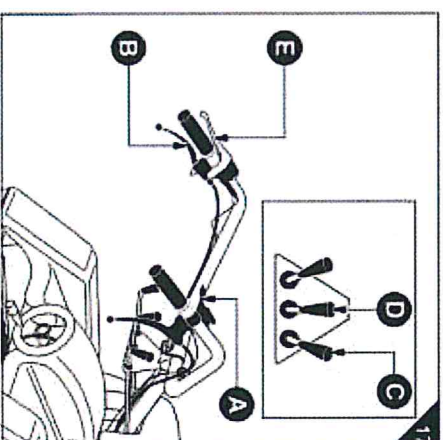
- turn the gas lever to the idle position (A);
- pull the clutch lever (B);
- move the gear lever to neutral (C);



- disengage the screen (D);
- release the clutch control (B);
- release the safety lever (E);
- turn the engine switch to OFF (fig.13).

### 5.3.5 Emergency stop

By releasing the safety lever (E), the engine stops immediately and power is cut to the machine (fig. 17).



## 6 MAINTENANCE

This chapter illustrates all the operations to be carried out for keeping the machine safe and efficient.



H BARBER & SONS, INC. accepts no liability for damage caused by not replacing worn parts of the equipment or by replacing such parts with non-original spare parts. The warranty shall cease to have effect if other than genuine parts manufactured by the manufacturer are used.

### 6.1 General warning

For a safe use of the machine, the reading of this chapter assumes the familiarization with the contents of chapter 2 "Safety".

### 6.2 Lubricants - Health and safety

#### Hygiene

Excessive or prolonged skin contact with oil can cause irritation. Use rubber gloves and protective goggles. After handling oil, carefully wash your hands with soap and water.

#### Storage

Always keep lubricants out of the reach of children.  
Never store lubricants in open or unlabeled containers.

#### Disposal

New or exhausted lubricants contain harmful contaminants. Do not pour them on the ground!  
Collect exhausted oil into cans and deliver them to specialized firms for disposal.

#### Spillage

In case of accidental spillage, absorb with locally approved absorbent granules. Then scrape up and remove to a chemical disposal area.

#### First aid

**Eyes:** In the case of eye contact, flush with water for 15 minutes. If irritation persists, get medical attention.

**Swallowing:** If oil is swallowed, do not induce vomiting. Get medical advice.

**Skin:** In the case of excessive skin contact, wash with soap and water.

**Fires:** Extinguish with carbon dioxide, dry chemical or foam extinguishers. Do not use water.

### 6.3 Routine maintenance

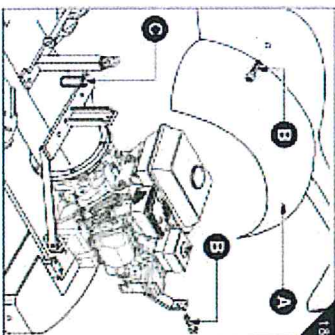
Improper or neglected maintenance can result in hazards to the operator and bystanders. Make sure the machine is maintained and lubricated in accordance with recommended service schedule to be sure the machine keeps working safely and to maximum efficiency. The schedules are based on the machine running hours. Keep a regular check on machine hours to correctly gauge service intervals. Make sure any defects found during the regular maintenance checks are immediately addressed.



Use only genuine spare parts (see parts catalogue). The use of non-genuine spare parts relieves Barber of any responsibility in case of damage.



Before any maintenance operation, make sure the machine stands still and the engine is stopped.



#### 6.3.1 Engine



For any further information on the maintenance intervals and the operations to be carried out, please refer to the engine manual enclosed hereto.

#### 6.3.2 Gearbox unit



This operation shall be done with the engine stopped. Before starting the machine, check for oil leaks from the gearbox unit.



In the case of leaks, do not operate the machine and contact your nearest service center.

Regularly check the oil level in the gearbox as follows:

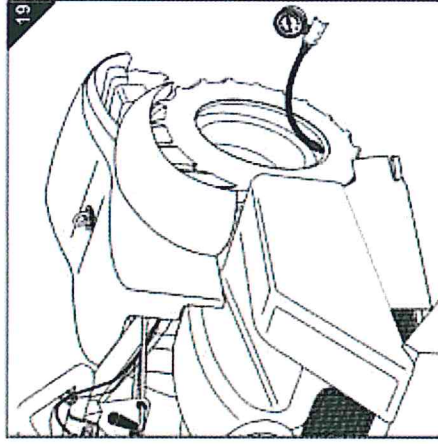
- remove cover (A) by loosening screws (B);
- unscrew cap (C);
- using the special dipstick, check that the oil level is not below the minimum mark;
- if necessary, top off using oil for gearboxes and differential units.

### 6.3.3 Tires

Regularly check that the tire pressure is 2 PSI (fig. 19).

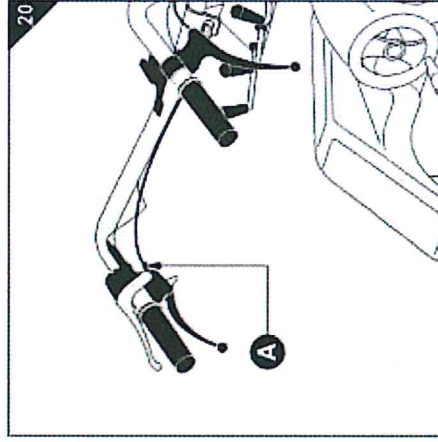


High Tire Pressures may cause damage to the drive system.



### 6.3.4 Clutch

If the clutch is loose, adjust the cable barrel adjuster by loosening the cable nut- this tightens the cable and clutch adjustment (A).



### 6.3.5 Cleaning

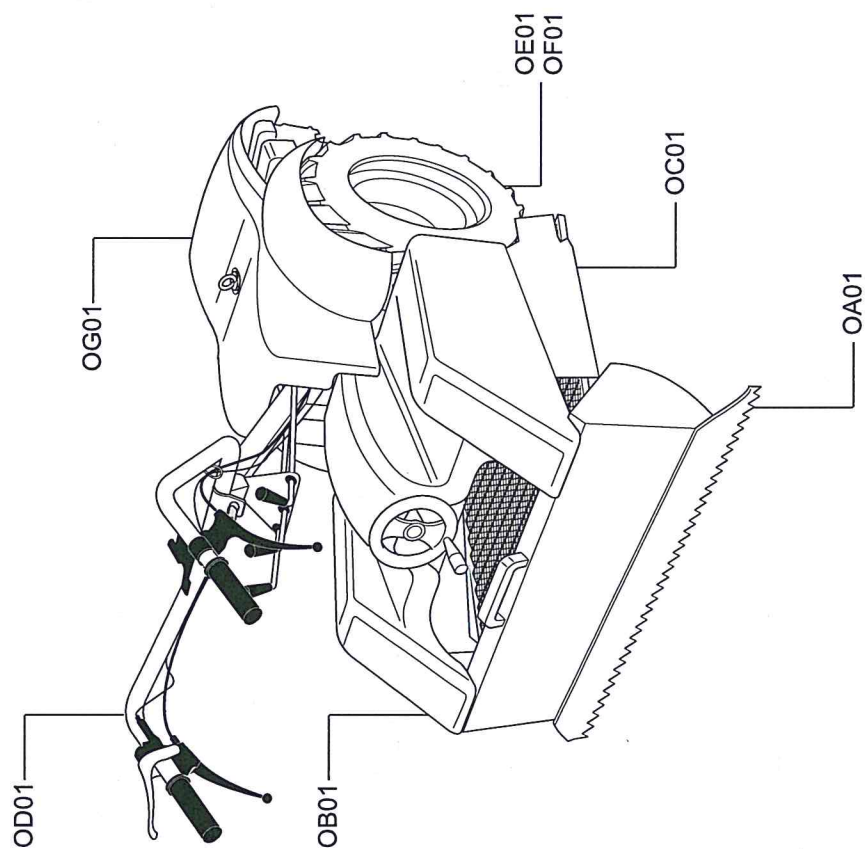
Regularly clean machine surfaces with fresh water to avoid corrosion due to sand and salt.







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**OA 01**

CESTO E SETACCIO  
SKIP AND SCREEN  
BAC RECOLTE ET TAMIS  
TOLVA Y CRIBA  
BEHALTER UND SIEB

**OE 01**

GRUPPO TRASMISSIONE  
DRIVE UNIT  
GROUPE TRANSMISSION  
GRUPO TRANSMISION  
ANTRIEBSGRUPPE

**OB 01**

TELAIO BASCULANTE  
SWINGING FRAME  
Chassis OSCILLANT  
CHASSIS OSCILANTE  
SCHWINGGRAHMEN

**OF 01**

GRUPPO TRASMISSIONE  
DRIVE UNIT  
GROUPE TRANSMISSION  
GRUPO TRANSMISION  
ANTRIEBSGRUPPE

**OC 01**

RINVIO E BIELLE  
TRANSFER BOX & RODS  
RENNVOI ET BIELLES  
REENVIO Y LEVAS  
GETRIEBE U. PLEUELSTANGEN

**OG 01**

TEALIO ANTERIORE  
FRONT FRAME  
Chassis AVANT  
CHASSIS ANTERIOR  
VORDERRAHMEN

**OD 01**

MANUBRIO  
HANDLEBAR  
CINTRE  
MANILLAR  
LENKER

Modello  
Model  
Modèle  
Modelo  
Model

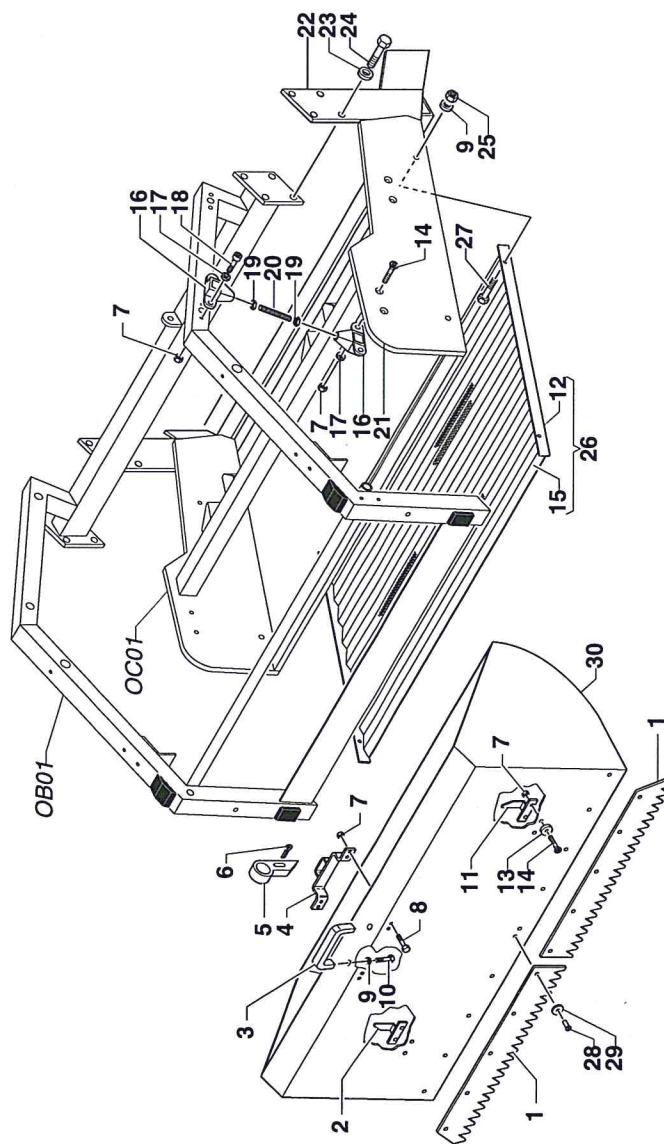
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CESTO E SETACCIO - SKIP AND SCREEN - BAC ET  
ET TAMIS - TOLVA Y CRIBA - BEHÄLTER UND SIEB

Tav.  
Tab.  
**OA 01<sup>1</sup>**





CESTO E SETACCIO - SKIP AND SCREEN - BAC ET  
ET TAMIS - TOLVA Y CRIBA - BEHALTER UND SIEB

Tav. **OA 01**  
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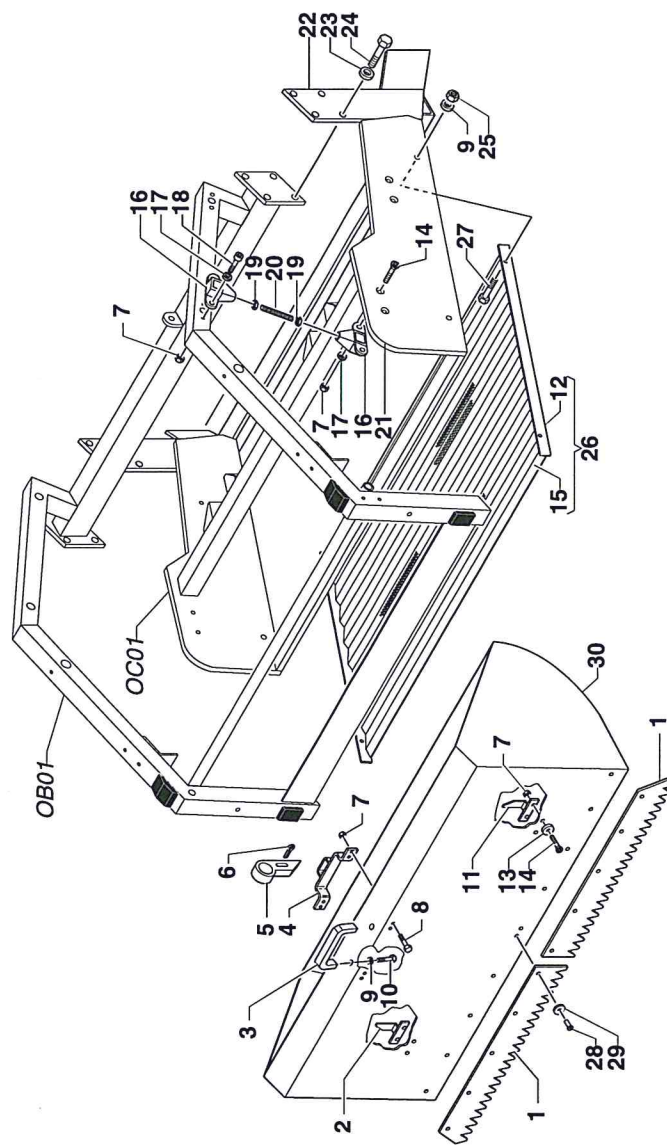
Pos.	Cod.	Denominazione	Denomination	Dénomination	Denominación	Bezeichnung
1	60001	Spatola	Scraper	Raclette	Rasqueta	Abstreicher
2	60002	Supporto	Support	Support	Soporte	Halterung
3	10064	Maniglia cesto	Skip handle	Poignée bac	Manija tolvá	Handgriff Behälter
4	60003	Supporto	Support	Support	Soporte	Halterung
5	60004	Gancio	Hook	Crochet	Gancho	Haken
6	50142	Copiglia	Cotter pin	Goupille	Clavija	Splint
7	50131	Dado	Nut	Ecrou	Tuerca	Mutter
8	50187	Vite	Screw	Vis	Tornillo	Schraube
9	50013	Rondella	Washer	Rondelle	Arandela	Scheibe
10	50011	Vite	Screw	Vis	Tornillo	Schraube
11	60005	Supporto	Support	Support	Soporte	Halterung
12	60006	Telaio	Frame	Châssis	Chasis	Rahmen
13	50090	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
14	50188	Vite	Screw	Vis	Tornillo	Schraube
15	10102-3	Rete	Screen meshing	Maille de tamisage	Malla cribadora	Siebmaschine
15	10102-5	Rete	Screen meshing	Maille de tamisage	Malla cribadora	Siebmaschine
15	10102-8	Rete	Screen meshing	Maille de tamisage	Malla cribadora	Siebmaschine
15	10102-12	Rete	Screen meshing	Maille de tamisage	Malla cribadora	Siebmaschine
15	10102-20	Rete	Screen meshing	Maille de tamisage	Malla cribadora	Siebmaschine
16	60007	Elemento oscillante	Swinging element	Element oscillant	Elemento oscilante	Schwingelement
17	50103	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
18	50189	Vite	Screw	Vis	Tornillo	Schraube
19	50108	Dado	Nut	Ecrou	Tuerca	Mutter
20	50190	Vite	Screw	Vis	Tornillo	Schraube
21	60008	Telaio	Frame	Châssis	Chasis	Rahmen
22	60009	Lama	Blade	Lame	Hoja	Schild
23	50012	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
24	50011	Vite	Screw	Vis	Tornillo	Schraube
25	50009	Dado	Nut	Ecrou	Tuerca	Mutter
26	60010-3	Setaccio	Screen	Tamis	Criba	Sieb
26	60010-5	Setaccio	Screen	Tamis	Criba	Sieb
26	60010-8	Setaccio	Screen	Tamis	Criba	Sieb
26	60010-12	Setaccio	Screen	Tamis	Criba	Sieb





CESTO E SETACCIO - SKIP AND SCREEN - BAC ET  
ET TAMIS - TOLVA Y CRIBA - BEHÄLTER UND SIEB

Tav.  
Tab.  
**OA 01**<sup>1</sup>





CESTO E SETACCIO - SKIP AND SCREEN - BAC ET  
ET TAMIS - TOLVA Y CRIBA - BEHÄLTER UND SIEB

Tab.  
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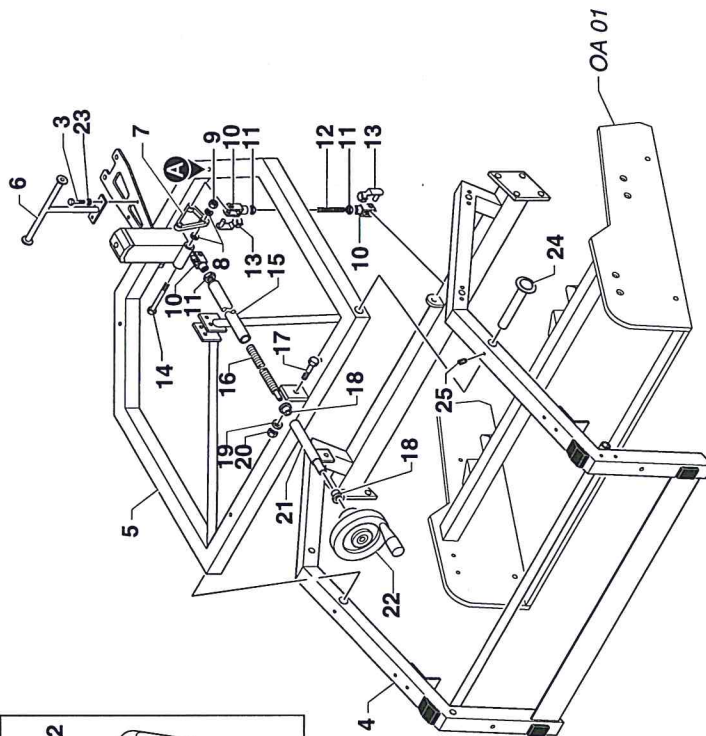
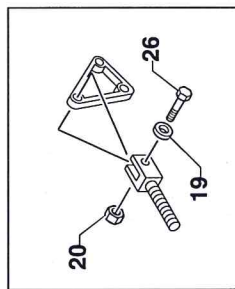
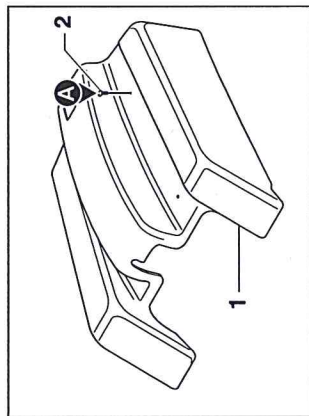
**OA 01**<sup>1</sup>

Pos.	Cod.	Denominazione	Denomination	Dénomination	Denominación	Bezeichnung
26	60010-20	Setaccio	Screen	Tamis	Criba	Sieb
27	50024	Vite	Screw	Vs	Tomlillo	Schraube
28	50191	Rivetto	Rivet	Rivet	Remache	Niet
29	50057	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
30	60011	Cesto	Skip	Bac de récolte	Tolva de recogida	Sammelbehälter



TELAIO BASCULANTE - SWINGING FRAME - CHASSIS  
OSCILLANT- CHASSIS OSCILANTE- SCHWINGRAHMEN

Tav. **OB 01**  
Tab.





TELAIO BASCULANTE - SWINGING FRAME - CHASSIS  
OSCILLANT - CHASSIS OSCILLANTE - SCHWINGGRAHMEN

Tav. **OB 01**  
Tab. 1

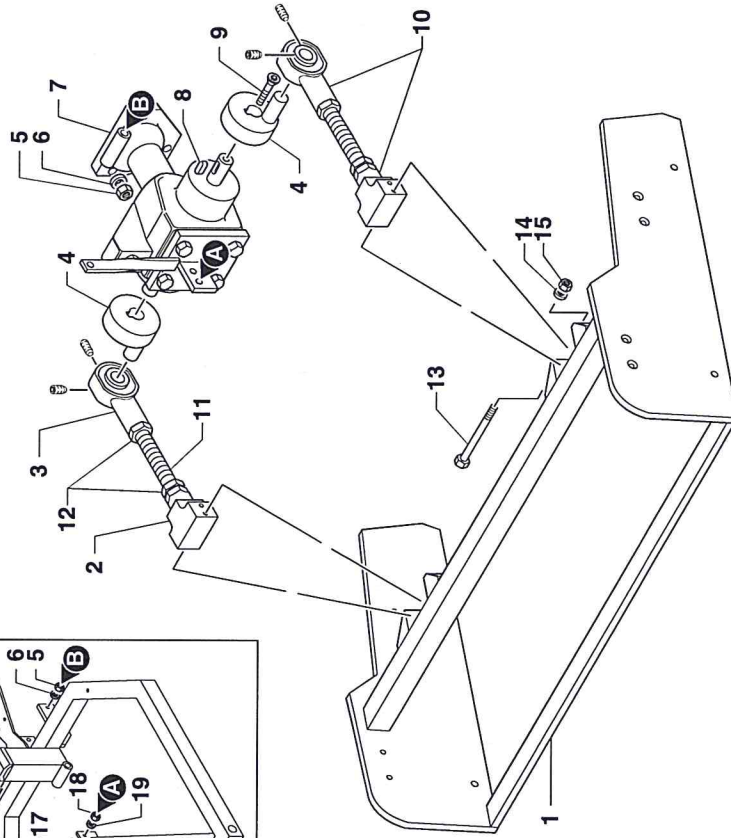
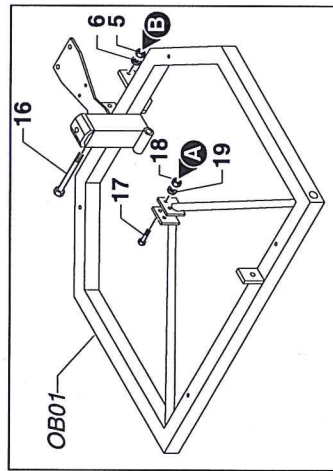
Pos.	Cod.	Denominazione	Denomination	Dénomination	Denominación	Bezeichnung
1	60012	Cofano	Bonnet	Capot	Capó	Haube
2	50092	Vite	Screw	Vis	Tomillo	Schraube
3	50107	Vite	Screw	Vis	Tomillo	Schraube
4	60013	Telaio	Frame	Châssis	Chassis	Rahmen
5	60014	Telaio	Frame	Châssis	Chassis	Rahmen
6	60015	Supporto	Support	Support	Soporte	Halterung
7	60016	Supporto	Support	Support	Soporte	Halterung
8	50060	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
9	50021	Dado	Nut	Ecrou	Tuerca	Mutter
10	10086	Forcella	Fork	Fourche	Horquilla	Gabel
11	50108	Dado	Nut	Ecrou	Tuerca	Mutter
12	50192	Vite	Screw	Vis	Tomillo	Schraube
13	10085	Perno a molla	Spring pin	Goujon à ressort	Perno elástico	Federzapfen
14	50193	Vite	Screw	Vis	Tomillo	Schraube
15	60017	Asta	Rod	Tige	Varilla	Stange
16	60018	Vite senza fine	Worm screw	Vis sans-fin	Tomillo sin fin	Gewindestange
17	50072	Vite	Screw	Vis	Tomillo	Schraube
18	10092	Bussola	Bushing	Douille	Casquillo	Buchse
19	50068	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
20	50019	Dado	Nut	Ecrou	Tuerca	Mutter
21	60019	Guida asta volantino	Hand-wheel guide	Guidevolant	Guía volante	Führung Lenkrad
22	10088	Volantino	Handwheel	Volant	Volante	Lenkrad
23	50103	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
24	60020	Perno	Pin	Pivot	Perno	Zapfen
25	50194	Grano	Dowel	Cheville	Clavija	Dübel
26	50201	Vite	Screw	Vis	Tomillo	Schraube





RINVIO E BIELLE - TRANSFER BOX & RODS - RENVOI ET  
BIELLES - REENVIO Y LEVAS - GETRIEBE U. PLEUELSTANGEN

Tav. **OC 01**  
Tab.





RINVIO E BIELLE - TRANSFER BOX & RODS - RENVOI ET  
BIELLES - REENVÍO Y LEVAS - GETRIEBE U. PLEUELSTANGEN Tab.

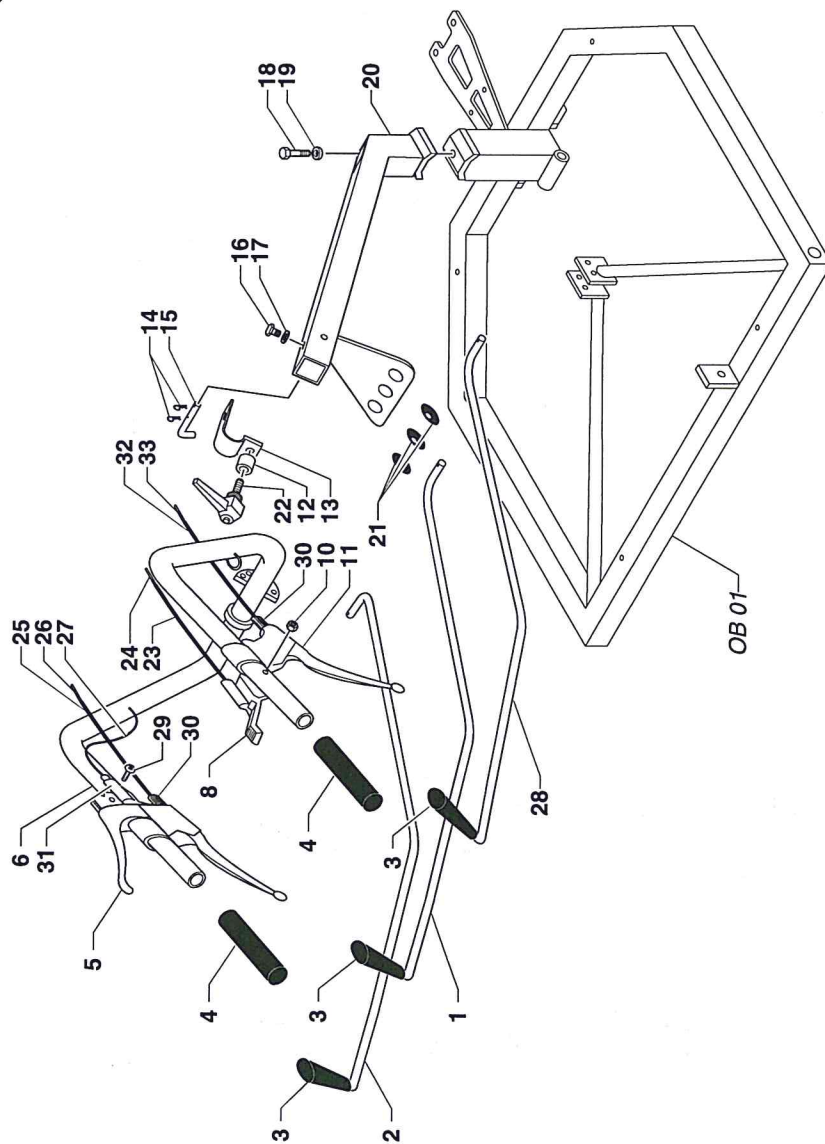
Tav. **OC 01**

Pos.	Cod.	Denominazione	Denomination	Dénomination	Denominación	Bezeichnung
1	60021	Telaio	Frame	Châssis	Chasis	Rahmen
2	10906	Testa di biella	Rod head	Tête de bielle	Cabeza de biela	Pleuelkopf
3	10907	Supporto	Support	Support	Soporte	Halterung
4	60022	Supporto	Support	Support	Soporte	Halterung
5	50021	Dado	Nut	Eccrou	Tuerca	Mutter
6	50060	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
7	900544	Rinvio	Transfer box	Renvoi	Reenvío	Getriebe
8	905328	Chiavetta	Key	Clavette	Chaveta	Paßfeder
9	50195	Vite	Screw	Vis	Tornillo	Schraube
10	60023	Bielle	Connecting rod	Bielle	Biela	Pleuelstange
11	50196	Vite	Screw	Vis	Tornillo	Schraube
12	50197	Dado	Nut	Eccrou	Tuerca	Mutter
13	50132	Vite	Screw	Vis	Tornillo	Schraube
14	50103	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
15	50131	Dado	Nut	Eccrou	Tuerca	Mutter
16	50193	Vite	Screw	Vis	Tornillo	Schraube
17	50198	Vite	Screw	Vis	Tornillo	Schraube
18	50009	Dado	Nut	Eccrou	Tuerca	Mutter
19	50008	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe



MANUBRIO - HANDLEBAR - CINTRE  
MANILLAR - LENKER

Tav. **OD 01**  
Tab.





MANUBRIO - HANDLEBAR - CINTRE  
MANILLAR - LENKER

Tav.  
Tab. **OD 01**

Pos.	Cod.	Denominazione	Denomination	Dénomination	Denominación	Bezeichnung
1	911279A	Tirante	Tie-rod	Tirant	Tirante	Zugstange
2	911280A	Pomello	Knob	Pommeau	Pomo	Zugstange Griffknopf
3	908101	Manopola	Handle	Poignée	Asa	Handgriff
4	903108	Leva	Lever	Levier	Palanca	Hebel
5	909343	Manubrio	Handlebar	Cintre	Manillar	Lenker
6	913036	Comando acceleratore	Throttle control	Commande accélérateur	Mando acelerador	Gashebel
8	903065	Dado	Nut	Ecroû	Tuerca	Mutter
10	903162	Leva	Lever	Levier	Palanca	Hebel
11	913047	Distanziale	Spacer	Entretroise	Espaciador	Abstandstück
12	904016	Staffa	Support	Support	Soporte	Halterung
13	913037	Copiglia	Cotter pin	Goupille	Pasador	Splint
14	911062	Perno	Pin	Pivot	Perno	Zapfen
15	913062	Vite	Screw	Vis	Tornillo	Schraube
16	907102	Rondella	Washer	Rondelle	Arandela	Unterteilscheibe
17	902688	Vite	Screw	Vis	Tornillo	Schraube
18	50199	Rondella	Washer	Rondelle	Arandela	Unterteilscheibe
19	50082	Supporto	Support	Support	Soporte	Halterung
20	60024	Anello di gomma	Rubber ring	Anneau caoutchouc	Anillo de goma	Gumming
21	911087	Leva	Lever	Levier	Palanca	Hebel
22	913098	Gualina	Cable outer	Gaine	Vaina	Kabelmantel
23	905093	Cavo	Cable	Gaine	Cable	Kabel
24	905094	Gualina	Cable outer	Gaine	Vaina	Kabelmantel
25	911323	Cavo	Cable	Gaine	Cable	Kabel
26	915086	Cavo	Cable	Gaine	Cable	Kabel
27	903168A	Cavo	Cable	Gaine	Cable	Kabel
28	911281A	Tirante	Tie-rod	Tirant	Tirante	Zugstange
29	907187	Vite	Screw	Vis	Tornillo	Schraube
30	907025	Regolatore	Adjustment device	Régulateur	Regulador	Stellelement
31	909349	Commutatore	Switch	Commutateur	Comutador	Schalter
32	907061	Gualina	Cable outer	Gaine	Vaina	Kabelmantel
33	907060	Cavo	Cable	Gaine	Cable	Kabel



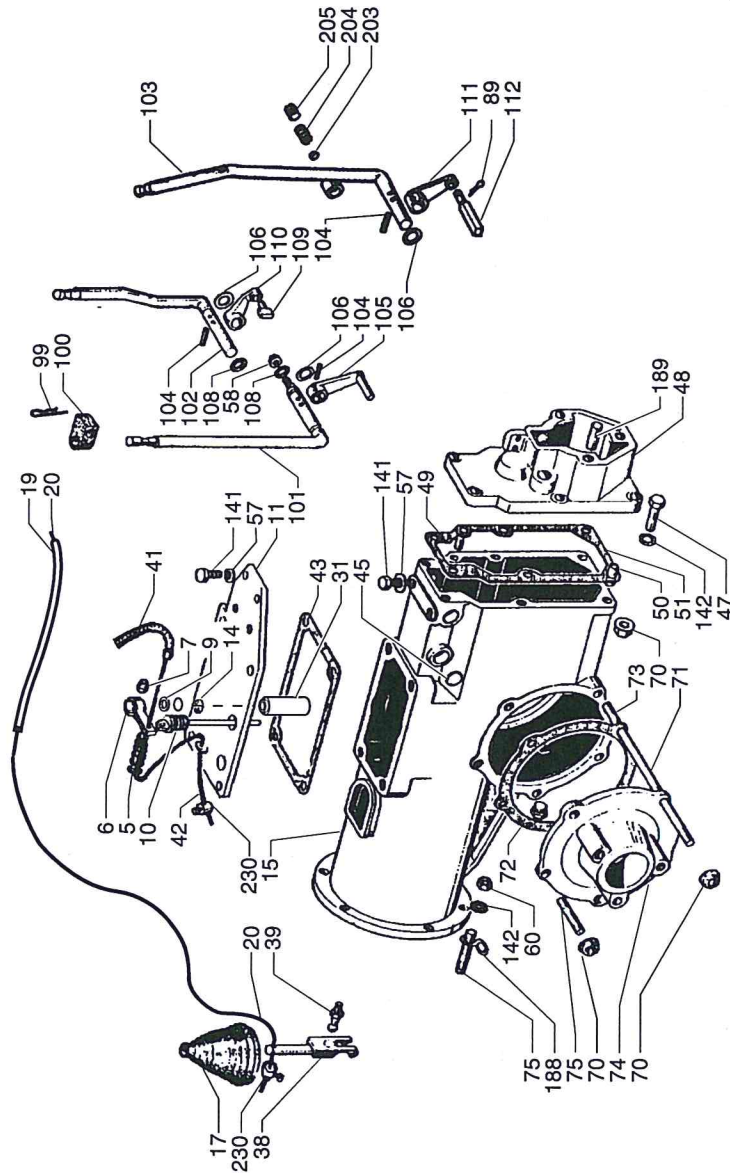
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GRUPPO TRASMISSIONE - DRIVE UNIT - GROUPE

TRANSMISSION - GRUPO TRANSMISION - ANTRIEBSGRUPPE

**OE 01**

Tav.  
Tab.





GRUPPO TRASMISSIONE - DRIVE UNIT - GROUPE  
TRANSMISSION - GRUPO TRANSMISIÓN - ANTRIEBSGRUPPE

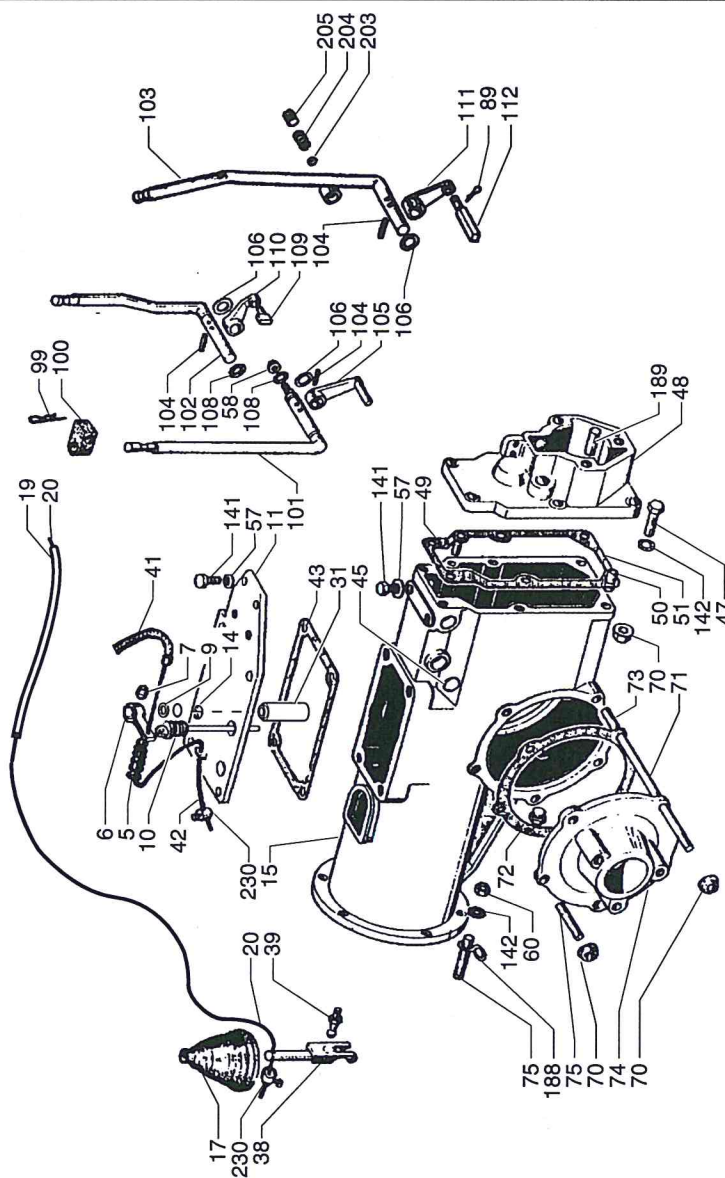
Tav. **OE 01**

Pos.	Cod.	Denominazione	Denomination	Dénomination	Denominación	Bezeichnung
5	902593	Molla	Spring	Ressort	Muelle	Feder
6	911257	Leva	Lever	Lever	Palanca	Hebel
7	903116	Dado	Nut	Eccrou	Tuerca	Mutter
9	911285	Spessore	Shim	Cale	Pieza intermedia	Beilagcheibe
10	911089	Tappo	Plug	Bouchon	Tapón	Stopfen
11	911275	Coperchio	Cover	Couvercle	Tapa	Deckel
14	908058	Anello	Ring	Bague	Anillo	Ring
15	911003	Carter	Crankcase	Carter	Carter	Gehäuse
17	911037	Cuffia	Cap	Coiffe	Casquette	Haube
19	911323	Gualina	Cable outer	Gaine	Valna	Kabelmantel
20	915086	Cavo	Cable	Câble	Cable	Kabel
31	911144	Supporto	Support	Support	Soporte	Halterung
38	911159	Leva	Lever	Lever	Palanca	Hebel
39	905060	Vite	Screw	Vis	Tomillo	Schraube
41	907061	Gualina	Cable outer	Gaine	Valna	Kabelmantel
42	907060	Cavo	Cable	Câble	Cable	Kabel
43	911040	Guarnizione di tenuta	Seal	Joint	Retén	Dichtung
45	911095	Tappo	Plug	Bouchon	Tapón	Stopfen
47	907133	Vite	Screw	Vis	Tomillo	Schraube
48	911005	Coperchio	Cover	Couvercle	Tapa	Deckel
49	911262	Colonnella	Stud bolt	Ergot	Perno	Haltezapfen
50	902668	Spina	Peg	Cheville	Clavija	Stift
51	911042	Guarnizione di tenuta	Seal	Joint	Retén	Dichtung
57	907146	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
58	903061	Dado	Nut	Eccrou	Tuerca	Mutter
60	907053	Dado	Nut	Eccrou	Tuerca	Mutter
70	909080	Dado	Nut	Eccrou	Tuerca	Mutter
71	911076	Prigioniero	Stud bolt	Prisionnier	Espárrago	Stenbolzen
72	908088	Tappo	Plug	Bouchon	Tapón	Stopfen
73	911041	Guarnizione di tenuta	Seal	Joint	Retén	Dichtung
74	911242	Supporto	Support	Support	Soporte	Halterung
75	908086	Prigioniero	Stud bolt	Prisionnier	Espárrago	Stenbolzen



GRUPPO TRASMISSIONE - DRIVE UNIT - GROUPE  
TRANSMISSION - GRUPO TRANSMISION - ANTRIEBSGRUPPE

Tav. **OE 01**  
Tab.





GRUPPO TRASMISSIONE - DRIVE UNIT - GROUPE  
TRANSMISSION - GRUPO TRANSMISIÓN - ANTRIEBSGRUPPE

Tav. **OE 01**  
Tab.

Pos.	Cod.	Denominazione	Dénomination	Dénomination	Denominación	Bezeichnung
89	93118	Copiglia	Cotter pin	Goupille	Pasador	Splint
99	911062	Copiglia	Cotter pin	Goupille	Pasador	Splint
100	911045	Snodo	Joint	Articulation	Articulación	Gelenk
101	911134	Leva	Lever	Lever	Palanca	Hebel
102	911135	Leva	Lever	Lever	Palanca	Hebel
103	911052	Leva	Lever	Lever	Palanca	Hebel
104	911083	Spina	Peg	Chevillle	Clavija	Stift
105	911025	Leva	Lever	Lever	Palanca	Hebel
106	902066	Spessore	Shim	Cale	Pieza intermedia	Beilagscheibe
108	903010	Anello	Ring	Bague	Anillo	Ring
109	904024	Pattino	Pad	Patin	Patin	Gleitschuh
110	911024	Leva	Lever	Lever	Palanca	Hebel
111	911023	Leva	Lever	Lever	Palanca	Hebel
112	911026	Pattino	Pad	Patin	Tornillo	Gleitschuh
141	907191	Vite	Screw	Vis	Tornillo	Schraube
142	911026	Pattino	Pad	Patin	Patin	Gleitschuh
188	908626	Occhiello	Eyelet	Oeillet	Argolla	Ose
189	911248	Prigioniero	Stud bolt	Prisionnier	Espárrago	Stehbolzen
203	97044	Sfera	Ball	Bille	Bola	Kugel
204	94116	Molla	Spring	Ressort	Resorte	Feder
205	97007	Grano	Dowel	Chevillle	Clavija	Dübel
207	97104	Vite	Screw	Vis	Tornillo	Schraube
230	907094	Morsetto	Clamp	Serre-joint	Abrazadera	Klemmvorrichtung



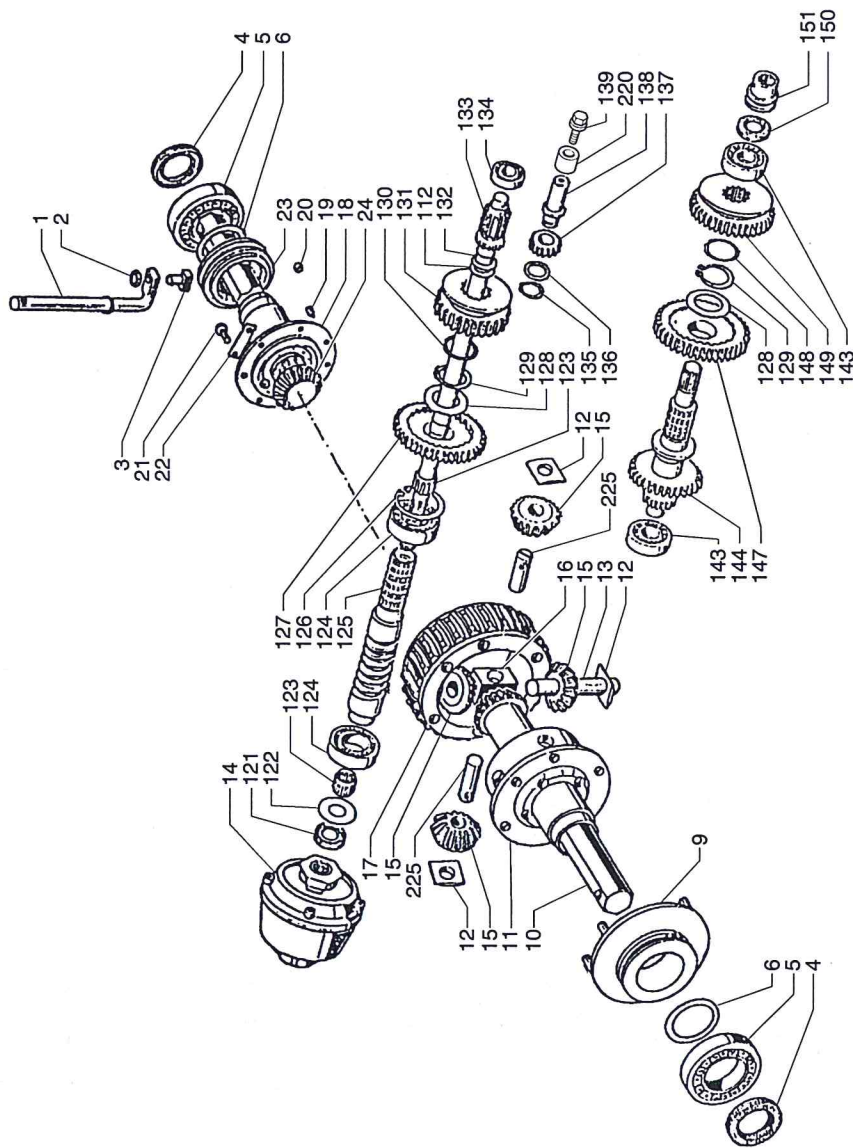


GRUPPO TRASMISSIONE - DRIVE UNIT - GROUPE

TRANSMISSION - GRUPO TRANSMISION - ANTRIEBSGRUPPE

Tav.  
Tab.

**OF 01**





GRUPPO TRASMISSIONE - DRIVE UNIT - GROUPE  
TRANSMISSION - GRUPO TRANSMISIÓN - ANTRIEBSGRUPPE

Tav. **OF 01**

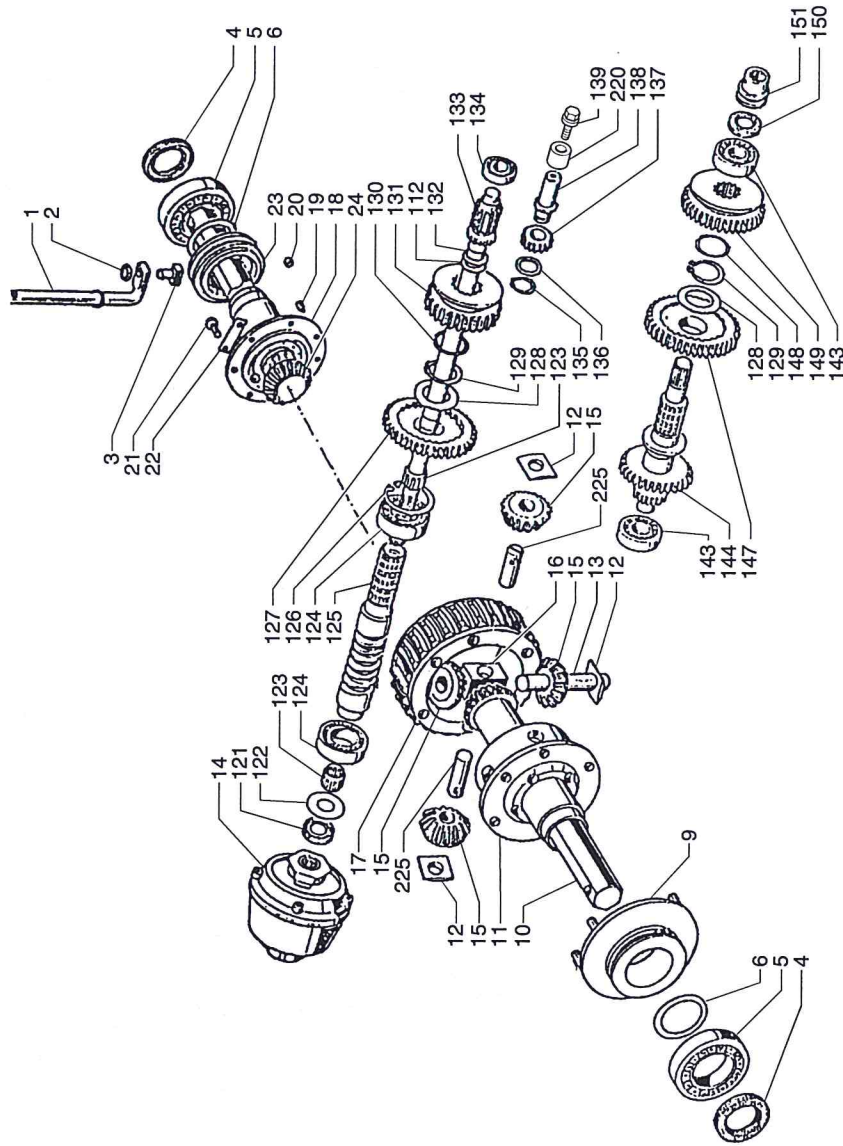
Pos.	Cod.	Denominazione	Denomination	Dénomination	Denominación	Bezeichnung
1	911259	Leva	Lever	Levier	Palanca	Hebel
2	911263	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
3	906113	Pattino	Sliding pad	Patin	Pieza deslizando	Gleisstück
4	903024	Paraolio	Oil retainer	Joint à huile	Retén de aceite	Ölabdichtung
5	911267	Cuscinetto	Bearing	Roulement	Cojinete	Lager
6	903030	Spessore	Shim	Cale	Pieza intermedia	Beilagcheibe
9	911258	Cursore	Slider	Curseur	Cursor	Schieber
10	911255	Planetare	Side gear	Planétaire	Planetario	Planetenrad
11	911251	Scatola differenziale	Differential box	Boite différentiel	Caja diferencial	Differentialkasten
12	908575	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
13	908028	Perno	Pin	Pivot	Perno	Zapfen
14	911035	Frizione	Clutch	Embrayage	Embrague	Kupplung
15	908652	Satellite	Rocker gear	Satellite	Rueda satélite	Schwenkträd
16	908650	Settore	Sector	Secteur	Sector	Wellenlager
17	911250	Ruota	Rim	Couronne	Corona	Kranzrad
18	911252	Coperchio	Cover	Couvercle	Tapadera	Abdeckung
19	908120	Grano	Dowel	Cheville	Clavija	Dübel
20	911270	Sfera	Ball	Bille	Bola	Kugel
21	903037	Vite	Screw	Vis	Tornillo	Schraube
22	908100	Plastina	Plate	Plaque	Chapita	Platte
23	908026	Manicotto	Sleeve	Manchon	Manguito	Muffe
24	911254	Planetare	Side gear	Planétaire	Planetario	Planetenrad
109	909189	Molla	Spring	Ressort	Resorte	Feder
110	906146	Stera	Bail	Bille	Bola	Kugel
112	911072	Spessore	Shim	Cale	Pieza intermedia	Beilagcheibe
121	911067	Paraolio	Oil retainer	Joint à huile	Retén de aceite	Ölabdichtung
122	911063	Spessore	Shim	Cale	Pieza intermedia	Beilagcheibe
123	911073	Cuscinetto	Bearing	Roulement	Cojinete	Lager
124	904033	Cuscinetto	Bearing	Roulement	Cojinete	Lager
125	911007	Vite	Screw	Vis	Tornillo	Schraube
126	904413	Anello di arresto	Stop ring	Bague de butée	Anillo de seguridad	Sicherungsring
127	911008A	Ingranaggio	Gear	Engrenage	Engranaje	Zahnrad



GRUPPO TRASMISSIONE - DRIVE UNIT - GROUPE

Tav. **OF 01**

TRANSMISSION - GRUPO TRANSMISION - ANTRIEBSGRUPPE





GRUPPO TRASMISSIONE - DRIVE UNIT - GROUPE  
TRANSMISSION - GRUPO TRANSMISIÓN - ANTRIEBSGRUPPE

Tav. **OF 01**

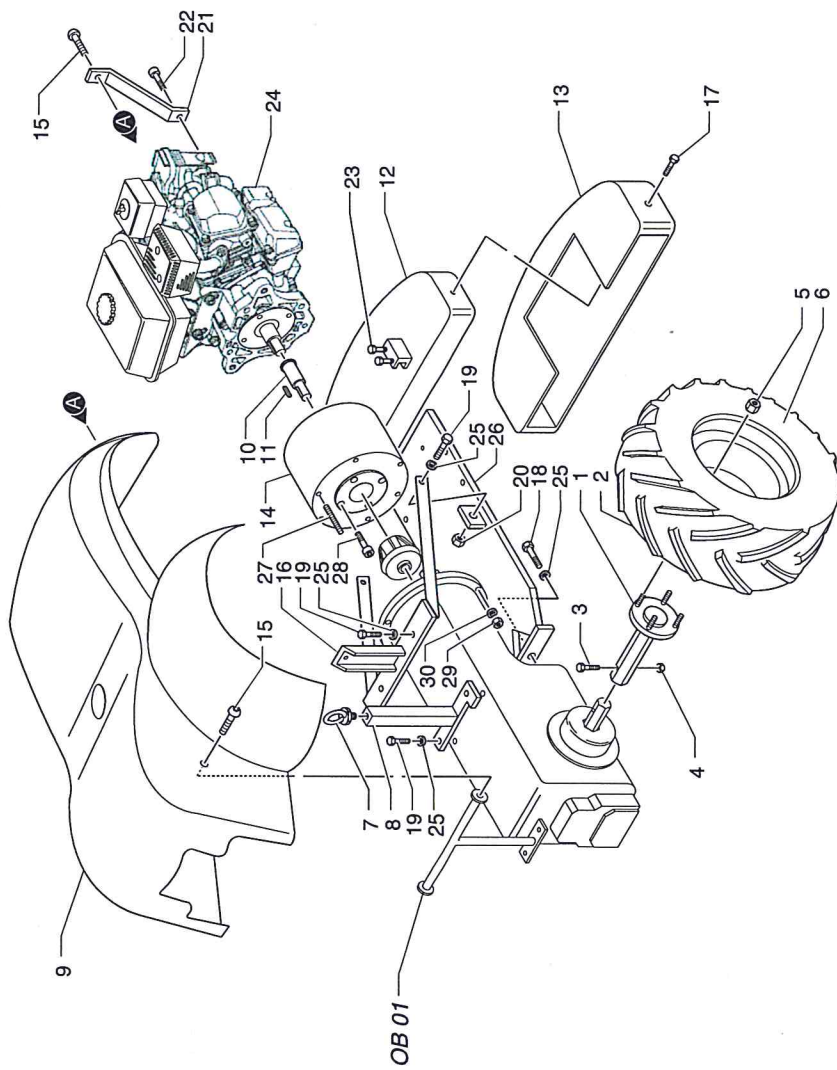
Pos.	Cod.	Denominazione	Denomination	Dénomination	Denominación	Bezeichnung
128	908124	Spessore	Shim	Cale	Pieza intermedia	Beilagcheibe
129	904217	Anello di arresto	Stop ring	Bague de butée	Anillo de seguridad	Sicherungsring
130	911071	Anello	Ring	Bague	Anillo	Ring
131	911009	Ingranaggio	Gear	Engrenage	Engranaje	Zahnrad
132	911032	Spessore	Shim	Cale	Pieza intermedia	Beilagcheibe
133	911006	Albero	Shaft	Arbre	Eje	Welle
134	907092	Cuscinetto	Bearing	Roulement	Cojinete	Lager
135	902653	Anello di arresto	Stop ring	Bague de butée	Anillo de seguridad	Sicherungsring
136	906062	Spessore	Shim	Cale	Pieza intermedia	Beilagcheibe
137	911015	Ingranaggio	Gear	Engrenage	Engranaje	Zahnrad
138	911014	Perno	Pin	Pivot	Perno	Zapfen
139	902686	Vite	Screw	Vis	Tornillo	Schraube
143	907114	Cuscinetto	Bearing	Roulement	Cojinete	Lager
144	911010A	Albero	Shaft	Arbre	Eje	Welle
147	911011	Ingranaggio	Gear	Engrenage	Engranaje	Zahnrad
148	911094	Anello	Ring	Bague	Anillo	Ring
149	911012	Ingranaggio	Gear	Engrenage	Engranaje	Zahnrad
150	911068	Paracolio	Oil retainer	Joint à huile	Retén de aceite	Ölabdichtung
151	911013	Manicotto	Hose	Manchon	Manguito	Muffe
220	911112	Rondella	Washer	Rondelle	Arandela	Unterlegscheibe
225	908651	Perno	Pin	Pivot	Perno	Zapfen





TELAIO ANTERIORE - FRONT FRAME - CHÂSSIS ANTERIEUR -  
CHASSIS ANTERIOR - VORDERRAHMEN

Tav. **OG 01**  
Tab.







TELAIO ANTERIORE - FRONT FRAME - CHÂSSIS ANTERIEUR - Tav.  
CHASIS ANTERIOR - VORDERRAHMEN

Tab. **OG 01**<sup>1</sup>

Pos.	Cod.	Denominazione	Denomination	Dénomination	Denominación	Bezeichnung
1	901341A	Mozzo portaruota	Wheel hub	Moyeu roue	Cubo rueda	Radnabe
2	10002	Ruota	Wheel	Roue	Rueda	Rad
3	50030	Vite	Screw	Vis	Tornillo	Schraube
4	50009	Dado	Nut	Ecrou	Tuerca	Mutter
5	50001	Dado	Nut	Ecrou	Tuerca	Mutter
6	50004	Pneumatico	Tyre	Pneu	Neumático	Reifen
7	50136	Golfare	Eyebolt	Oeillet	Ojal	Augenschraube
8	60025	Supporto	Support	Support	Soporte	Halterung
9	60026	Cofano	Bonnet	Capot	Capó	Haube
10	913032B	Giunto	Joint	Joint	Junta	Kupplung
11	906115A	Chiavetta	Feather key	Clavette	Chaveta	Paßfeder
12	60027	Contrappeso	Counterweight	Contrepoids	Contrapeso	Gegengewicht
13	60028	Cofano	Bonnet	Capot	Capó	Haube
14	911602A	Distanziale	Spacer	Entretroise	Espaciador	Abstandstück
15	50092	Vite	Screw	Vis	Tornillo	Schraube
16	60029	Supporto	Support	Support	Soporte	Halterung
17	50200	Vite	Screw	Vis	Tornillo	Schraube
18	50072	Vite	Screw	Vis	Tornillo	Schraube
19	50201	Vite	Screw	Vis	Tornillo	Schraube
20	50019	Dado	Nut	Ecrou	Tuerca	Mutter
21	60030	Supporto	Support	Support	Soporte	Halterung
22	50202	Vite	Screw	Vis	Tornillo	Schraube
23	50203	Vite	Screw	Vis	Tornillo	Schraube
24	10910	Motore	Engine	Moteur	Motor	Motor
25	50068	Rondella	Washer	Rondelle	Arandela	Scheibe
26	60031	Supporto	Support	Support	Soporte	Halterung
27	908086	Prigioniero	Stud bolt	Goujon	Espárrago	Stehbolzen
28	902991	Vite	Screw	Vis	Tornillo	Schraube
29	50064	Dado	Nut	Ecrou	Tuerca	Mutter
30	50016	Rondella	Washer	Rondelle	Arandela	Scheibe

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