



SCARIFIERS

CM300 (with gasoline engine)

CM300D (with diesel engine)



INSTRUCTION AND MAINTENANCE HANDBOOK



**SCARIFIER MACHINES
CM300 / CM300D**

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MATRICOLA:		<input type="text"/>
MODELLO:		<input type="text"/>
ANNO DI COSTRUZIONE:		<input type="text"/>
POTENZA:	kW	<input type="text"/>
PESO A VUOTO:	kg	<input type="text"/>
PESO MASSIMO:	kg	<input type="text"/>

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This manual is a guide for the correct and safety use and maintenance of the machine.

The constant observance of the rules here indicated assures a long life of the machine and avoids the most common causes of accidents, which can occur during the work or the maintenance operations.

For what concerns the safety, we recommend you to observe all general safety standards and to read carefully all security warnings in this manual.

The owner has the responsibility to explain the instructions to staff that will use the machine.

IMPORTANT

Before starting the machine, repairing it or doing any maintenance, check the safety labels on the machine and observe them.

Every machine is provided at the delivery with a copy of this manual.

The descriptions and the images contained in this publication are not binding.

The CMC s.r.l. reserves the right to make any changes at any time, without notice.

For further details, please contact CMC S.r.l., which is at your disposal for any kind of information you need.

IMPORTANT

In order to assure a proper usage of the machine, read carefully all SAFETY DIRECTIONS in the manual and instruct the staff in charge.

MANUAL PRESENTATION

The purpose of this handbook is to provide to user the rules for a proper use of the machine and to facilitate the technical assistance. For requesting the original CMC spare parts, look at SPARE PART LIST at the end of this handbook. The original spare parts maintain the machine efficiency for a long time.



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ENCLOSURES

- A. EC Declaration of conformity
- B. warranty certificate
- C. sketch of noise and vibrations
- D. engine handbook
- E. safety data sheet of engine oil



1) *IDENTIFICATION OF THE MACHINE*

You can identify the model of the machine from the CE plate placed on it (see picture on page 2).

Note: The technical data printed on the plate must be always specified whenever you contact CMC S.r.l. for information, spare parts requests or any other question you might need to clear up.

2) *MANUFACTURER*

The machine described in this manual is produced and commercialised by:

CMC srl

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3) *GENERAL DESCRIPTION*

Hand push scarifier to remove road line, equipped with: 6 HP (3600 RPM) GASOLINE ENGINE (for CM300 machine) or 6,2 HP (3600 RPM) DIESEL ENGINE (for CM300D machine), air cooling, oil bath filter, self-winding pull start. Through pulleys and belts, the engine drives a drum with four axles each carrying cutters. The engine gives to cutters a rotary movement and, thanks to clearance between axles and cutter hole, a beating movement. This double movement (rotary-beating) allows to get a perfect scraping also for floors not perfectly flat.

Machine is endowed of a millimeter regulator to adjust the height of cutters from the ground and of a drum lifting device to stop temporarily the scraping activity.

Maximum scraping width is 20 cm. Handlebar height is adjustable.

3 kinds of cutters are available: hardened cutters with tungsten carbide pins (model F300V), suitable for removing cold paints; cutters with tungsten carbide plates (model F300VD) suitable for removing cold plastic and thermo plastic; hardened cutters for “delicate” removal from concrete surfaces (model F300C).

Scraping speed, depending on material to remove, can be ranged from 20 mq/h to 40 mq/h.

Working position of operator is illustrated in PIC.6 N.3.



4) *INTENDED USE OF THE MACHINE AND ABNORMAL USES*

This machine is designed in order to comply the general rules provided by Machinery Directive 2006/42/EC, 1st Annex. According to section 1.1.2 (c) of 1st Annex we specify that:

Machine has been built to be used just within a working-place and it is classified as a working machine. CMC S.r.l. declines all responsibilities for any different use.

Scarifier is thought, designed and built to remove the horizontal marking (paint or plastic) from smooth surfaces (asphalt, cement, etc.).

Scarifier can't run freely on the road, must be within the working yard. It isn't designed for removal of road paving (asphalt or other) or of building floor (concrete surface or other).

Scarifier musn't be used for something different from what described in this manual and its enclosures.

Uses different from the ones indicated in this handbook cause the immediate loss of warranty and decline any responsibility of the manufacturer for damages to the machine, third person and things.

Attention

At the end of its working life, the machine and its components must be disposed in compliance with the regulations in force in the Country of installation

5) *RESIDUAL RISKS*

Remain risks of airborne noise emissions and inhalation of fumes.

Operator is informed about risks of noise and of inhalations of smokes by proper safety symbols.

Symbols are stuck on belt carter, to be well visible from working position.



Enclosed to this handbook there is a sketch of noise and vibrations in order to evaluate which protection devices to adopt.



6) *SET UP*

If machine arrives to user by a forwarder, it is packed in carton pallets. Once at user's, the parcels must be handled with care and must be moved by proper lifting equipment depending on their weight and size.

Attention

The manufacturer declines all responsibilities for damages to things or people caused by every sort of careless behaviour or non-observance of the safety rules in force, concerning the lifting and the handling of items within the user's seat

Here following we suggest the different solutions of lifting equipment, which are normally used, underlining that they will have to be chosen on the base of the parcel weight and size:

Overhead travelling crane; Self-propelled forklift; Manual forklift.

Machine weight is written in CE plate fac-simile on page 2.

Attention

Handling and lifting operations must be carried out only by specialized and authorized staff

To bring down the machine from the pallet, use a wedge of appropriate size for the axle base of machine wheels. Then push machine to the ground.

Alternatively lift machine by hand: see instructions in chapter *14) TRANSPORTING OF THE MACHINE BY TRUCK*.

7) *INTERVENTION REQUEST AND TECHNICAL ASSISTANCE*

➤ Whenever your machine presents any breakdown, it is essential following what indicated below:

- Read this handbook and take note of the safety recommendations evidenced along the paragraphs
- Not attempt any further operation but please contact:

CMC srl

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tel. +39 031 619 650 – fax +39 031 619 780
e-mail: cmcmt@cmcmt.it - www.cmcmt.it.



By contacting the service point, please inform about all details necessary for machine identification and for immediate understanding of the problem. Please keep within your reach this manual.

Please provide to technical assistance staff all the data printed on the identification plate affixed on the machine

- ENGINE, it is guaranteed directly by its own manufacturer. In case of malfunctioning, anomalies or other problems, contact directly the engine technical assistance (see list of service points on the engine handbook enclosed or on the web).

8) *SAFETY MEASURES*

- Read carefully this manual and the engine handbook, before performing any operation
- Respect all safety and functioning instructions of machine before starting the machine
- During the working of the machine, do not allow to any person to get closer
- Do not use the machine after having drunk alcohol or taken any sort of medicine or drug, which could alter your perception or reflexes. Even tiredness could be a factor of risk
- During work with machine, wear clothes not too large or ripped. Wear proper safety clothes in accordance to laws and regulations
- Never permit anyone to operate the machine without training them to correct use of machine and without delivering them this manual
- CMC declines all responsibility for damage to the machine or third parties due to negligence, tampering or improper use of any kind
- Before any intervention that could modify parts or components of machine, contact the manufacturer in order to avoid the immediate warranty decay
- Do not tamper the safety device and the protections on the machine

Danger. Pay attention!

- Every operation must be carried out only when the engine is switched off
- Never touch the cutters while the drum is rotating
- Start the engine only when scraping unit is up



9) *INSPECTION AT THE FIRST STARTING*

- Verify that the machine has not been damaged during the transport, check that the screws, the nuts, the bolts etc. are all properly tight
- Check the level of the engine oil through the proper cap (see engine manual)

10) *REFUELLING*

Danger. Pay Attention!

Gasoline is extremely flammable and is explosive under certain conditions

To prevent fire and explosion hazard adopt the following precautions:

- Always turn off the engine before refueling
- Refuel in a well-ventilated area
- Do not smoke and do not use flames or sparks in the refueling area or where gasoline is stored
- Do not overfill the fuel tank
- After refueling, make sure the tank cap is closed properly and securely
- Gasoline vapour or spilled gasoline may ignite. If any fuel is spilled out, make sure the area is dry before starting the engine



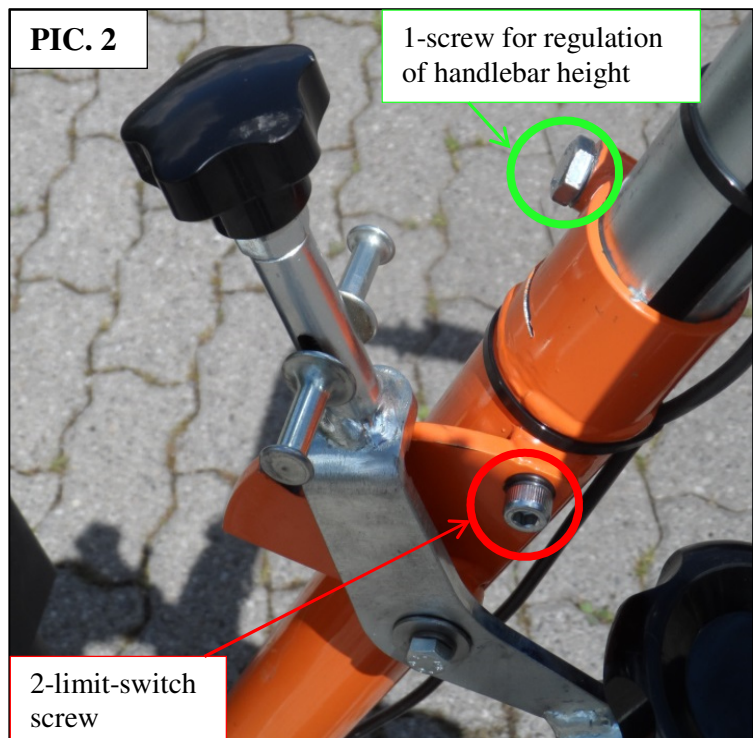
11) *SET AT WORK*

Adjustment of handlebars height:

- Cut the straps that hold the wire of safety device (PIC.1)
- Unscrew the screw for regulation of handlebar height through spanner 17 (PIC.2 N.1)
- Adjust the height of handlebars
- Tighten strongly the screw of regulation of handlebar height through spanner 17 (PIC.2 N.1)
- Reposition the safety device wire as in picture (PIC.1) and fix it through straps



wire of safety device



PIC. 2

1-screw for regulation of handlebar height

2-limit-switch screw

Pay Attention!

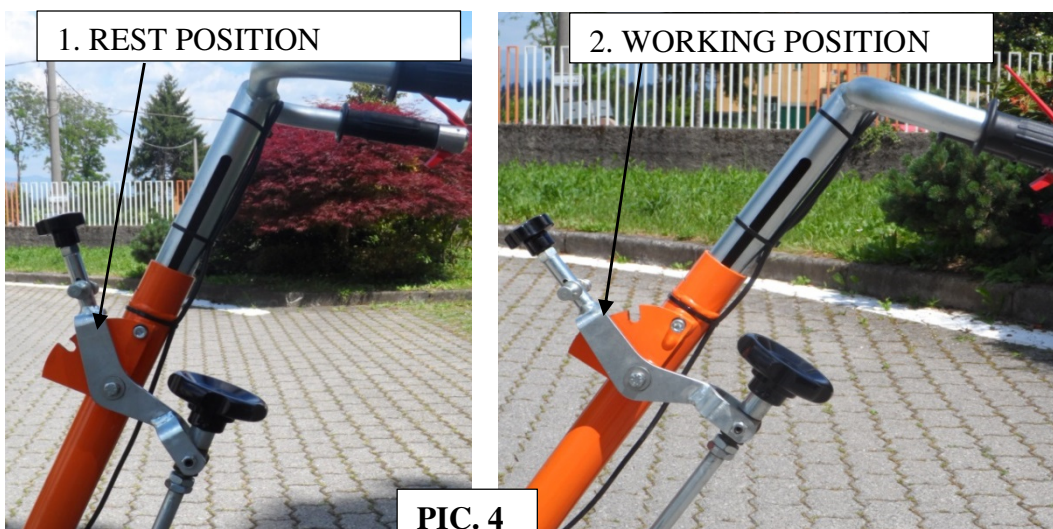
The handlebar has a limit-switch screw to avoid that the handlebar can accidentally slip off. This screw (PIC.2 N.2) must never be unscrewed. Before starting work always check that screw is well tightened.

To avoid to start scraping with wrong cutter height, before starting the engine make sure that cutters don't touch the ground. Follow below instructions:

1. Lift lever (PIC.3 N.3) for unlocking the lifting device and push down the knob (PIC.3 N.2) for lowering the cutters unit in working position (PIC.4 N.2)
2. Check that cutters do not touch the ground. If necessary, push forward the scarifier to make sure
3. If cutters touch the ground, turn anticlockwise the grip (PIC.3 N.1) till they are up from the ground



4. Lift lever (PIC.3 N.3) for unlocking the lifting device and pull up the knob (PIC.3 N.2) for moving the cutter units in rest position (PIC.4 N.1).





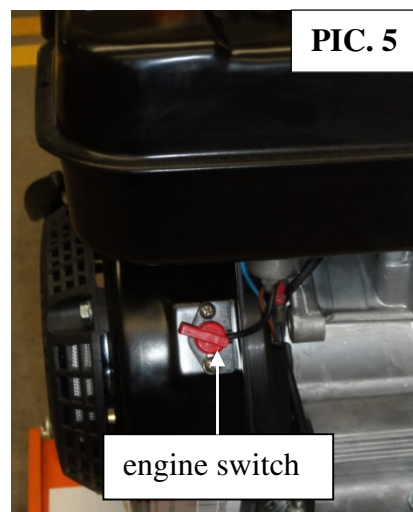
Once cutter unit is up, start the engine (see engine handbook).

Attention: machine is endowed of safety device (PIC.3 N.4): if operator leaves unawares the handlebars and lever of safety device, the engine shuts down.

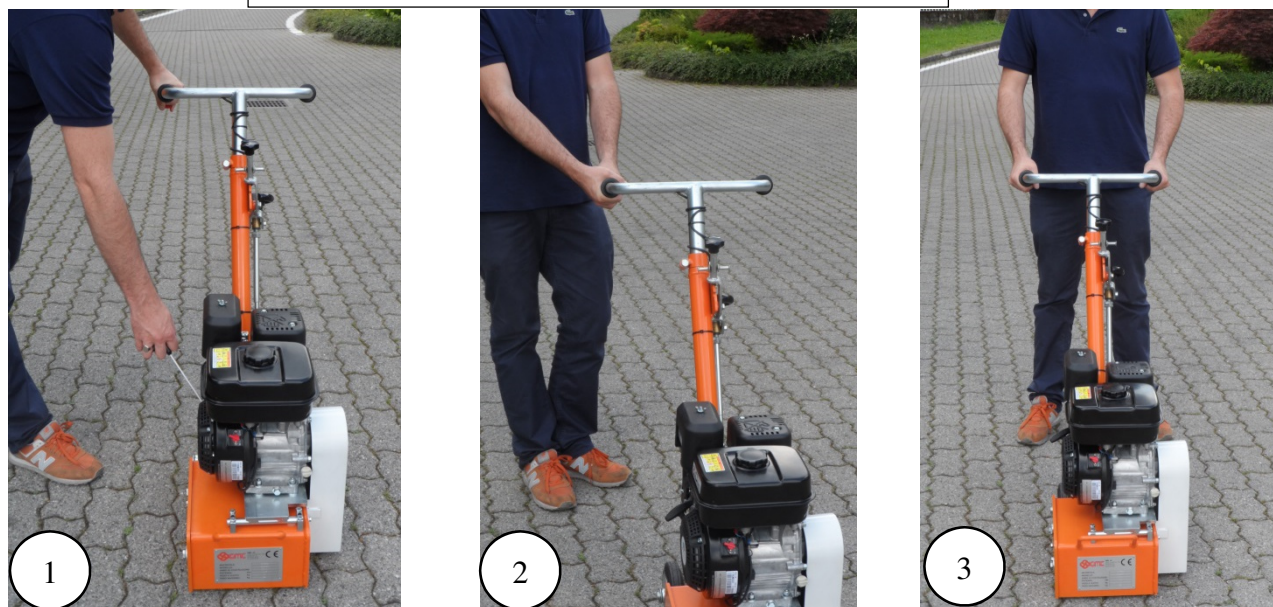
To be able to start the engine without leaving the safety lever, follow below steps:

1. Turn on the engine switch (PIC.5)
2. Press lever with the left hand and pull the self-winding with the right hand (PIC.6 N.1)
3. Replace the left hand with your right hand without leaving the lever (PIC.6 N.2), then get the working position (PIC.6 N.3).

Once the engine running, warm up it briefly.



PIC. 6 ENGINE STARTING





12) *INSTRUCTIONS FOR SCARIFYING*

Unlock the lifting device (as before described) and lower the cutter unit in working position.

Turn clockwise the grip (PIC.3 N.1) till when the cutters touch the ground. Adjust working cutter height turning the grip (PIC.3 N.1). Start to scrape.

Pay attention to not lower too much the cutters: cutters and all other components could be damaged.

Attention!

Instead of regular the cutters at a very low height for removing the paint with only one-pass, we advise to regular the cutters at higher height and remove in more passes. Too low cutters expose the machine to big effort and cause a bigger friction that could trigger an advancement of machine independent from operator push: therefore is indispensable that operator holds firmly the handlebars.

In case of short stops or uneven pavement (porphyry pavements, etc.), use the knob (PIC.3 N.2) to lift the cutter unit temporarily.

13) *END OF WORK*

1. Move the lifting device in rest position (PIC.4 N.1)
2. Lower the engine speed to a minimum and turn off. (If you have turn off the engine because you left the safety lever (PIC.3 N.4), remember to turn off the engine switch (PIC.5))
3. Make sure the machine is on flat surface and can not move by itself
4. If machine moves, lower the cutter unit in working position (PIC.4 N.2). The friction between the drum cutters and the ground functions as a brake

14) *TRANSPORTING OF THE MACHINE BY TRUCK*

Load the machine on truck by lifting it by hand. The machine must be taken by the handlebars and the handle on the front. Be very careful to keep the machine in upright position, as in the working position. The number of people for lifting the machine must be consistent with the weight of the machine (see machine weight on CE plate of machine and on its fac-simile on page 2).

Block the wheels with chocks. Tie the machine with ropes, using truck hooks and the handle on the front of scarifier.

After transport, to unload the machine, follow the above instructions in opposite way.



15) *PRECAUTIONARY MEASURES FOR MAINTENANCE*

- Before executing any maintenance or cleaning operation, turn off the engine, place the scarifier on a flat surface and position wheel chocks to prevent accidental movement
- Before acting on the engine and silencer, wait that the machine is cool
- Keep within your reach a first aid kit
- Wear work gloves, safety glasses, safety shoes and work clothes without torn or loose parts

16) *GENERAL MAINTENANCE*

Attention

Used oil and everything to dispose must be disposed in compliance with the regulations in force in the Country of installation

ENGINE:

As to the engine maintenance, see the proper user handbook herewith enclosed.

PAY ATTENTION!

Both engines (gasoline and diesel) are endowed of oil bath filter, so that require daily maintenance: change the oil and clean the cartridge

CUTTERS:

Periodically check the shaft and the cutter wear

GRIP FOR MILLIMETRIC REGULATION:

After every 36 hours of work, oil with good lubricant all moving parts, check and tighten all bolts.

TRANSMISSION BELTS:

Check tension of transmission belt every 30 hours of work and, if necessary, stretch the belts through the proper register placed on the plate of engine support.

Engine placement on swing plate facilitates the operation.

17) *SET AT REST*

When the machine has to be at rest for a long period, lubricate with oil and grease all moving parts and parts subject to oxidation.



18) *GENERAL NOTES - WARRANTY*

The machine is delivered with a EC Declaration of Conformity, referring to Machinery Directive 2006/42/EC. The EC Declaration must be always enclosed to this manual.

If you lose this declaration, you'll have to submit report to the competent authorities.

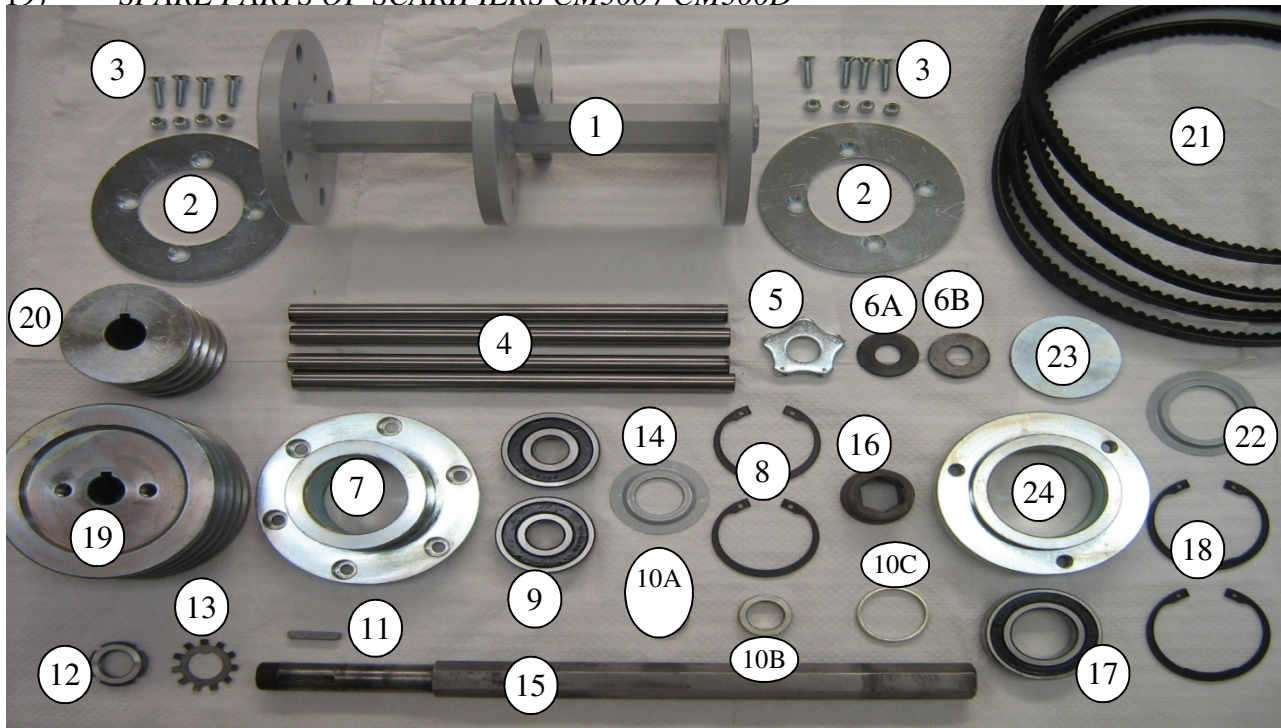
About the warranty duration and full text, please refer to Warranty enclosed to this handbook.

Important reminder:

- **engine is guaranteed directly by its own Manufacturer**
- parts not covered by warranty:
 - all engine filters
 - tyers
 - **all the parts on which no manufacturing fault is recognized**



19) SPARE PARTS OF SCARIFIERS CM300 / CM300D



N°	Description	Code	N°	Description	Code
1	DRUM EMPTY	GBB300	15	HEXAGON SHAFT	15CM300
2	RETAINING COVER (n°2 per drum)	2CM300	16	HEXAGON BUSHING	16CM300
3	RETAINING BOLTS(n°8 x drum)		17	BALL BEARING	17CM300
4	SHAFT (n°4 x drum)	4CM300	18	RETAINING RING (n°2 X)	18CM300
5	PENTAGONAL CUTTER (n°70 x)	F300V	19	PULLEY OF THE DRUM	19CM300
6A	WASHER 2 mm (n° 6 x)	6CM3002	20	PULLEY OF THE ENGINE	20CM300
6B	WASHER 4 mm (n° 72 x)	6CM3004	21	BELTS GASOLINE ENGINE (n°4 x)	21CM300
7	BEARING HOUSING	7CM300		BELTS DIESEL ENGINE (n°4 x)	21CM300D
8	RETAINING RING (n°2 x)	8CM300	22	RING	6006 Z JV
9	BALL BEARING (n°2 x)	9CM300	23	COVER	23CM300
10A	SPACER FOR BEARING	10CM300A	24	BEARING HOUSING	24CM300
10B	SPACER FOR HEXAGON SHAFT	10CM300B		MILLING FLAIL FOR PLASTIC	F300VP
10C	SPACER FOR HEXAGON BUSHING	10CM300C		BEAM FLAIL	F300C
11	KEY	11CM300			
12	NUT	12CM300			
13	RETAINING RING	13CM300			
14	RING	6303 Z JV			

DRUM COMPLETE WITH PENTAGONAL CUTTERS (N°70 x)	GBB300CWIDIA
DRUM COMPLETE WITH MILLING FLAIL FOR PLASTIC (N°22 x)	GBB300PL
DRUM COMPLETE WITH BEAM FLAIL (N°344 x)	GBB300CC