GB

Use and maintenance manual

Electric grease pump mod. BIG BOX 380 V for 180 kg drums cod. 83955



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1 GENERALITY

1.1 General considerations and destination of use

This manual of use and maintenance describes the formalities of use and maintenance of the electric pump for grease **mod. BIG BOX 380 cod. 83955.**

The system consists of a 380 V – 0.75 kW single-phase electric motor, a 7.5:1 ratio gearbox, a maximum pressure valve, an electric pressure switch and an intake tube for 180 kg drums.

The output pump is complete with a control valve calibrated to 40-300 bar which stops the pump once the maximum preset value has been reached.

The pump should not be used for other types of uses without the express authorization of **OMPI S.r.l.**

The pump has been designed to ensure the best results, premised that all the operating instructions and recommendations described in this manual must be respected.

☞ The training of the personnel is important for the maintenance and the control of the respect of the procedures of operation and all the suitable safety norms in this manual.

1.2 Consultation of the manual

This manual has been organized so that the user can quickly find the necessary information for the use and maintenance of the machine. The user must carefully read the manual in its entirety and ensure that all the contained information are perfectly assimilated.

The secondary function of the manual is to be a reference and consultation document to be used whenever it is necessary to perform a procedure or operation. This manual must be always kept available to management and maintenance personnel so that it can be consulted at any time.

The consultation of this manual is facilitated by the presence of a general index, that allows to immediately locate the chapter of the concerned subject.

For an increased clarity, some safety symbols have been inserted alongside some paragraphs to underline their importance and facilitate their individualization. Pay particular attention to such notes.

1.3 Legislation reference

- DIRECTIVE 2006/42/EC
  Relative to the approaching of the legislations of the states member concerning the machines.

- DIRECTIVE 2014/35/EU
  Low voltage directive.

- DIRECTIVE 2014/30/EU
  Electromagnetic compatibility.

1.4 Reference norms

- UNI EN ISO 14121-1:2007
  Machine safety - Risk assessment - Part 1
- UNI EN ISO/TR 14121-2:2010
  Machine safety - Risk assessment - Part 2
- UNI EN ISO 12100-1:2009
  Machine safety - Basic concepts, general principles for design - Part 1
- UNI EN ISO 12100-02:2009
  Machine safety - Basic concepts, general principles for design - Part 2

1.5 Symbols

In this manual we will use the following symbols in order to point out the indications and warnings that are particularly important.



PROHIBITION

This symbol indicates the prohibition to carry outs operations that may threaten the safety of the operator and the integrity of the machine. Please carefully read the side note



DANGER

This symbol indicates warning messages that are important for the operator safety. Please carefully read the side note



DANGER OF ELECTRICAL NATURE

This symbol indicates the existence of danger caused by electric energy.

IMPORTANT

This indication points out a note of the manual that is particularly important for the use of the machine.

1.6 Manufacturer identification plate

In the attached declaration of conformity, the machine has been identified with the following information:

1 Manufacturer's date
2 Machine model
3 Serial number
4 Year of manufacture
5 CE marks certifying the conformity of the machine with Directive 2006/42/EC

1.7 Warranty

The period of warranty is, in accordance with the provisions of the general regulations in force, of 12 months from the date of purchase. Warranty only gives right to replacement of defective parts. Warranty is however excluded if the appliances have been used improperly or tampered with by persons we have not authorized, or anyhow using non-conforming components or techniques. Parts turning out to be defective at origin shall be replaced if returned free our warehouse.

1.8 Spare parts

Each request of spare parts must be carried out to the following phone number:

OMPI Srl – Customer Technical Support Service tel. 0522 347247

Specifying the following:

- Machine model
- Serial number
- Part code to order
- Required quantity
- Shipping mean
- Reference person

Using the following suitable table:

Company			Street	
C.A.P.			City	
Tel.			Fax.	
Responsible person:				
Article model:				
Table number	Pos.	Code	Nr.	Description

1.9 Statement of conformity

STATEMENT OF CONFORMITY "CE"

In conformity with Enclosed II B of the Directive 2006/42/EC,
as from D.P.R. n. 459 of 1996-07-24 of which G.U. n. 146 of 1996-09-06

OMPI s.r.l. - Via Giovanni Falcone, 10/A -
42020 BORZANO DI ALBINEA (REGGIO EMILIA) - ITALY -

CODE: **83955**

SERIAL NUMBER: **XXXX**

The undersigned **Ruozi Franco**
As legal representative of the company OMPI SRL

States
Under its own civil and penal responsibility that the product:

ELECTRIC GREASE PUMP MOD. BIG BOX 380 FOR 180 KG DRUMS cod. 83955

Is in conformity with all the main safety requirements that concern these items; as also for the application points of the following particular provisions:

- Directive 2006/42/EC (ex Dir. 98/37/EC) received in Italy with D.Lgs n.17 of 27/01/2010 concerning the machine safety.

Ompi S.r.l.
Legal representative



(RUOZI FRANCO)

Date

___01/02/21___

2 RULES FOR OPERATORS' SAFETY

2.1 Prescription for Operators' safety

The following rules must be read carefully and must become a fundamental part of the daily work and maintenance of the machine, in order to avoid any accident to people and/or damage to things.



Please don't try to put in function the machine until the functioning is not clearly understood.



Ensure that all the prescriptions concerning the safety are known by the personnel involved in the use, cleaning and maintenance of the machine.



Before starting the machine, the operator must test the presence of defects in the safety devices of the machine. In this case the operator has to inform immediately the chief warehouser concerning the defect of the machine.



The protection devices must not be removed or become ineffective when the machine is working.



It's compulsory to keep all the plates with warning and safety signals in perfect conditions. In case of damages or deteriorations it's important to replace them immediately.



Replace the damaged parts with new ones indicated by OMPI SRL.
Please NEVER try hazardous solutions.



All the works executed on parts under tension must be carried out by authorized personnel only. Before starting the works the machine will have to be disconnected from the electric network.



It is forbidden to install the system in areas where potentially explosive or high fire-risk atmospheres can form.



In case of fire, only use dust or CO2 fire extinguisher

Extinction with water is prohibited.



Do not use the machine for uses other than those indicated by the manual.

2.2 Individual Protection Devices

The operator, before starting the work, must know the disposition and the functioning of the commands and the machine features and must have read completely the present manual and also the eventual enclosed manuals.

IMPORTANT! **It's a compulsion of the company's owner to supply the Individual Protection Devices and inform the personnel concerning the correct use and maintenance.**

IMPORTANT! **The operator must always follow the prescriptions indicated on the signal reported on the machine.**

The Individual Protection Devices that the operator must use **during the operations of Loading, Maintenance and Cleaning** are:

Working Clothing, Shoes with Anti slip Sole and Gloves





2.3 Noise and air vibration

The measurements of acoustic intensity have pointed out an acoustic energy of less than 70 dB(A).

The vibrations measurement has not been effected because it has been estimated to be under the risk level.

3 FEATURES

3.1 Premise

The target of this chapter is to have a general framework of the machine features. The reading of this chapter is recommended to all the people working on that machine: **OPERATORS** and **QUALIFIED TECHNICIANS**.

3.2 Machine description

The model is suitable for dispensing of grease with direct installation on the drum.

3.3 Not allowed uses

Always consult the safety documents of the materials used and follow the included instructions (contact the competent technical staff to correctly choose the liquid). Never dispose of residues in the surrounding environment, keep the provisions of the legislation in force.

3.4 Technical features:

Code	Volts	Ø Suction tube	Ratio	Power	Round per minute	MAXIMUM PRESSURE	Flow rate	Weight
83955	380 V	50x22 mm	7.5:1	0.75 kW	1400	10 bar	8000 gr/min	26Kg



4 STORAGE,LIFTING AND TRANSPORT

4.1 Introduction

The target of the following chapter is to give all the necessary information for the lifting and transport of the machine.

The information of this chapter are addressed to **QUALIFIED TECHNICAL** personnel with adequate knowledges to operate in a suitable way and in safety conditions using crane trucks, traveling cranes or whatever is necessary.

4.2 General warnings



In order to avoid that, in case the machine falls, some parts can hit the people, please ensure that during lifting operations, there are no persons near the lifting machines.

IMPORTANT! **The lifting operation, transport, placing, must be carried out by qualified and trained technical personnel.**

4.3 Machine lifting



THE MAXIMUM WEIGHT OF THE PUMP IS 26 KG.

For lifting and handling of the machine it is recommended to use a forklift lifter, otherwise employ at least two technicians .

4.4 Storage

In case of long period storage, please leave the machine repaired from rain and wind and possibly in a dry place.

Protect carefully from dust and external agents.

The pump can suffer big damages if, waiting for the installation, is kept in an environment at critical temperatures. Do not expose the machine to temperatures lower than – 10°C and more than +60°C.



It is forbidden to place the machine on inadequate structures.



It is forbidden to leave on the machine other materials or equipment.

4.5 Transport

The transport must be carried out by hand complying peremptorily to the following rules:

• apply the rule in force as concerns the work hygiene and safety (in particular as concerns the total weight);

• take off the accessory devices or whatever else can hamper the operations;

• take out the pump from the drum, discharge the residual fluid and catch the pump on the pump body;

• keep the people not involved in the operation to an adequate distance.

5 INSTALLATION, CONNECTION AND POWER SUPPLY

5.1 Introduction

The target of the following chapter is to give information for the installation and use of the pump in safety conditions.

5.2 Installation notes



Before starting the installation operations please check the following conditions:

Always make sure that all components and devices are not damaged. If necessary, contact our authorized dealer in the area.

5.3 Connection hoses

5.3.1 Hoses for grease transfer

SAE 100 R2T characteristics:

- **Tube:** black, oil, hydraulic fluids resistant synthetic rubber.
- **Reinforcement:** 2 wire braid.
- **Cover:** black, oil resistant synthetic rubber.
- **Operating Temperature range**: from - 10 C° to + 130 C°.

For grease we recommend hose with Ø min. 1/4 R2T.

Ø Nom. inch.	Ø Int. mm.	Ø Ext. mm.	Pressure Bar	Working Psi	Test pressure Bar	Burst pressure Bar	Bend radius Min. mm.	Weight Kg./mt.
1/4	6,4	15,5	351	5011	703	1404	101	0,493
5/16	7,9	16,5	298	4254	597	1404	115	0,539
3/8	9,5	19,5	281	4012	562	1124	127	0,673
1/2	12,7	22,5	245	3498	490	980	178	0,791
5/8	15,9	25,5	193	2755	386	772	203	0,936
3/4	19,0	29,5	158	2255	316	633	241	1,144
1	25,4	38	140	1998	281	562	305	1,575

5.4 Installation

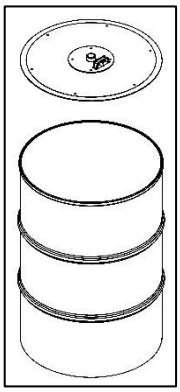
The pump is installed on the drum/tank for the distribution of grease. Below we show the steps for installation.

During the phases of work the equipment is displaced in the different places; we recommend to comply with the following rules:
- do not place the equipment near heat sources or other (e.g. radiators);
- do not place the equipment in such a way as to hold up other operators in the site.

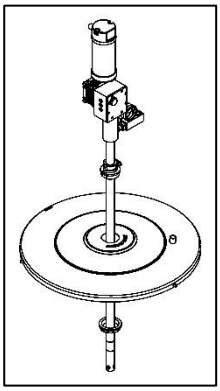
It is possible to request, if necessary, a 4-wheeled trolley to use the equipment correctly.

In case of need, call our authorized area retailer or our technical assistance.

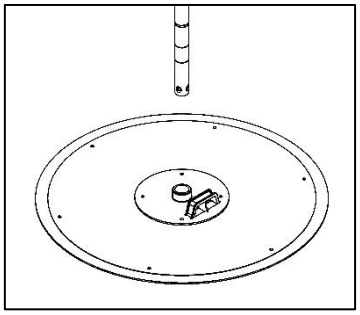
1. Place the follower plate inside the drum.
2. Insert the drum cover, the ring nut and counter-ring nut through the pump.
3. Insert the pump into the drum by centering the hole in the follower plate.
4. Tighten the drum cover using the flap screws.
5. Assemble the rubber hose and grease gun to the pump outlet.



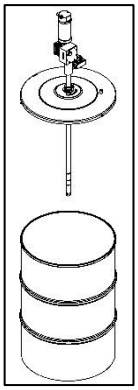
Phase 1



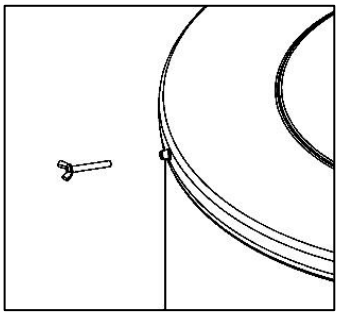
Phase 2



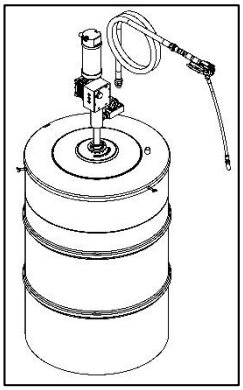
Phase 3



Phase 3



Phase 4



Phase 5

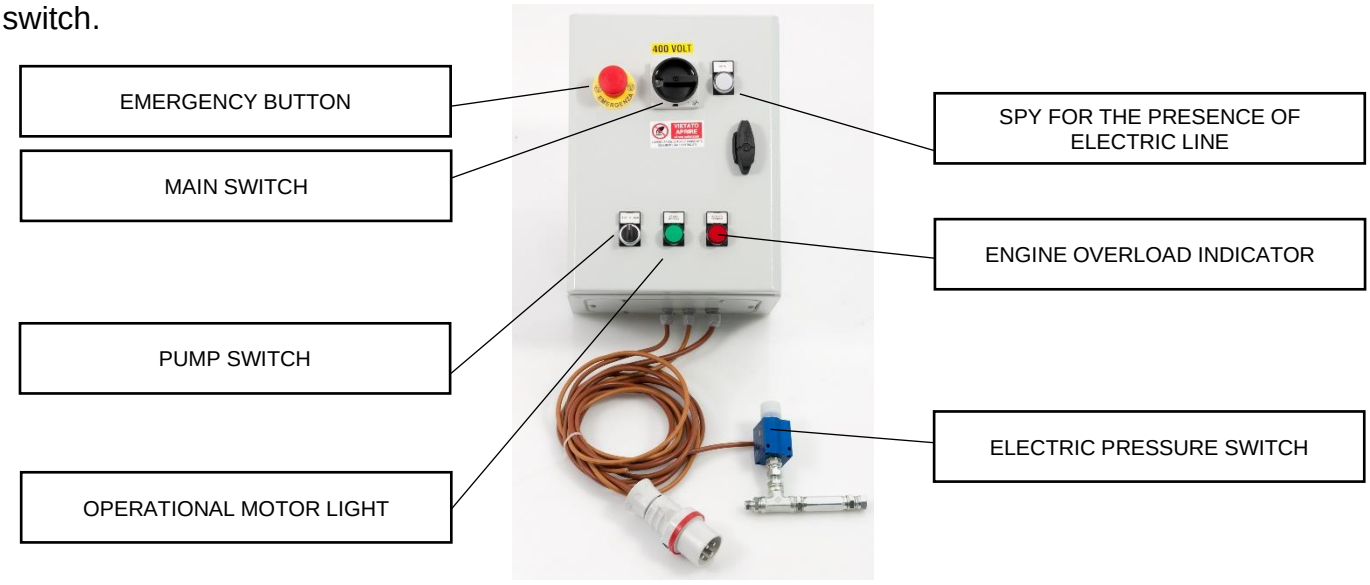
5.5 Power supply

Before carrying out any work on the pump, disconnect the power supply.

The electrical connection must always be made in compliance with current local regulations and it is the user's responsibility to verify that this happens.
Check that the voltage of the power supply corresponds to that indicated on the machine plate.
Failure to comply with the correct supply voltage can damage the pump.

Protect the power cables from grease, excessive heat and sharp edges.
Periodically check the cables and make sure they are not damaged; in case of damage, immediately replace the cable with one equal to the original.
Prevent the pump and cables to come into contact with water and/or environments with a high level of humidity.

1. Place the electrical panel in an appropriate position that does not hinder proper operation and check the connections between the control panel and the electric motor/pressure-switch.



2. Connect the 220V industrial plug to the power supply.



6 CONTROLS AND FUNCTIONING

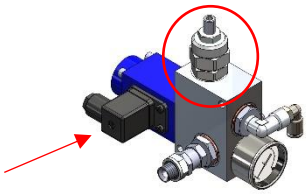
6.1 Preliminary checks

Always carry out the following checks:

- Check the correct connection of the pipes
- Check for grease and air leaks

6.2 How to use it

After the pump has been mounted on the grease drum and connected to the grease outlet hose (equipped with a grease gun), operate according to the following instructions:

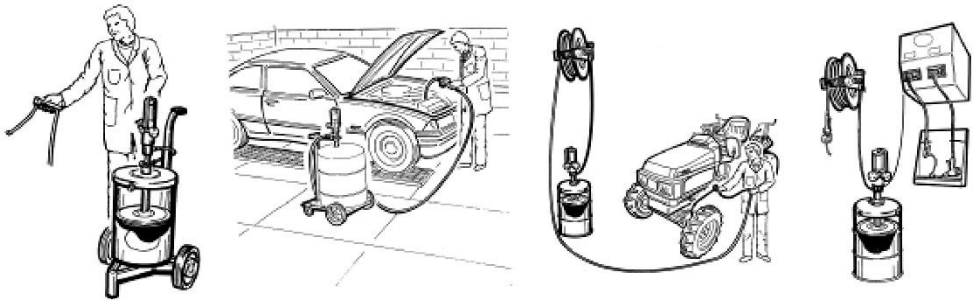


- Act on the maximum valve by setting a maximum of pressure (from 40 to 300 bar) and adjust the electric pressure switch accordingly.
- Open the general switch on the electrical panel and operate the pump via the START button.





- The pump will start working; when the maximum preset pressure value is reached, the pump will stop thanks to the action of the electric pressure switch.
- Handle the gun and start delivering grease.
  After the pressure in the circuit begins to decrease, the pump will start operating until the maximum pressure is reset (depending on the maximum pressure setting).



6.3 Stopping work

Turn the START pump switch on the electrical panel to 0 (zero) to stop the pump. To discharge the pressure of the equipment you need to operate the grease gun.

7 MAINTENANCE AND LUBRICATION

7.1 Premise

This chapter is applied to both the **OPERATOR** and the **QUALIFIED TECHNICIAN (MAINTENANCE TECHNICIAN).**

7.2 General notes

The cleaning of the machine can be carried out by personnel without any specific technical knowledge, but this people must be well trained on the main commands for energy exclusion and must know the main features of the machine so that danger situations won't happen.

The pump maintenance must be carried out by specialized personnel with good knowledge of the machine.



The maintenance work must be carried out only when the system is without power supply. Please ensure against any possibility of restart of the machine.

7.3 Cleaning



Carry out cleaning operations always when the device is switched off. Wear the suitable Individual Protection Devices (Gloves, Overall, Anti slip Shoes).

General cleaning of the machine

Clean the shells of the pump, sleeve and pumping shaft with fluffy cloth soaked with detergent liquids.



Do not use water jets or steam.

- Remove traces of dust from machine surfaces.
- Accurate daily cleaning from dust is the first condition to keep the machine efficient.
- Keep the surrounding areas clean; especially from the grease that can make the floor slippery.

8 INCONVENIENT AND REMEDIES

8.1 Extraordinary maintenance

This chapter introduces a guide for the solution of the problems that may happen during the machine functioning; this chapter is orientated to the **QUALIFIED TECHNICIAN.**

The main inconvenient that the machine can suffer are:

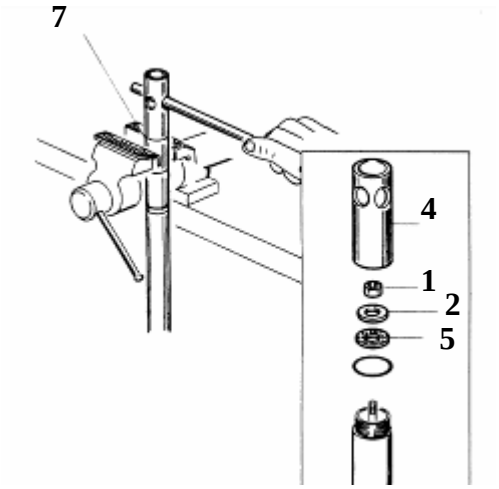
1. **the break or extreme worn-down of its parts:**

In this case it is necessary to check the list of spare parts list and order the parts for replacement.

8.2 Inconvenient, causes and remedies.

Problems	Causes	Solutions	Intervention
Air leakage through the pump	1) Faulty sealing ring	1) Replace the sealing ring.	1) Technician
The pump does not stop	1) Dry pumping; 2) By-pass sphere that does not close due to impurities in the circuit; 3) Valve blocked or ruined.	1) Check that there is no vacuum near the suction pipe. Eventually use a follower plate 2) The ball is dirty.. Pump the grease to purge for 10 minutes; 3) Unscrew the valve body and check that the valve moves freely around the pin and that it is turned towards the motor.	1) 3) Technical; 2) Operator.
The pump is not working	1) Lack of voltage	1) Check the power supply voltage 2) Check that the cables are connected	1) 2) Technical
The pump has a low flow rate and/or the motor runs slowly	1) Voltage less than the prescribed value	1) Correct the voltage	1) Technician
The pump works but there is no flow	1) Low level grease tank 2) Clogged hoses 3) Air leak	1) Fill the tank with grease 2) Remove the parts that clog the hoses 3) Check gaskets and pipes	1) 2) 3) Technical

8.3 Pump and grease - Disassembly of the suction pipe.

We recommend that you follow these steps: - grab the valve body (part.7) and lock the pumping tube by jaws of soft metal; - unscrew the inlet part (part.4) with a pin of 10 mm.;∅ - clamp by pliers the grease pressing washer (part.2) and unscrew the nut (part.1); - remove the filter washer (part.5). Clean the equipment with detergent (do not use corrosive detergent) and eliminate impurities (with compressed air gun). Assemble the removed parts carefully following the same instructions (in the reverse sequence).	

8.4 Revision of the pumping unit - pump for grease.

It is advisable to follow the following steps:

- unscrew the extension (part.13) and the valve body (part.7).

- release the dragging shaft (part.14);

- remove the elastic pin (part.5) using a vice with jaws of soft metal and using a draft ∅3 mm.

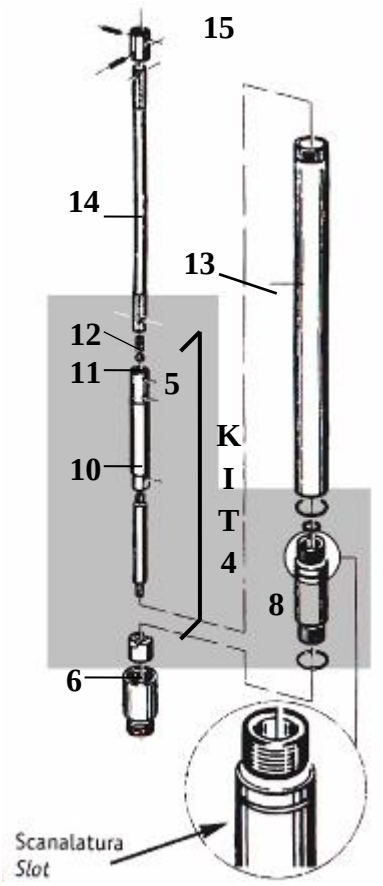
- unscrew the shaft (part.14) out of the pumping piston (part.10);

- check the wear of the by-pass spring (part.12) and the by-pass ball (part.11) and, if necessary, replace them.

- check the wear of the valve (part.6) and the play existing with the slide shaft; if the stroke is wider than 0.02-0.03 mm contact the assistance to replace all kit 4. Carefully locate the valve; its slot must be turned towards the motor side;

- be sure during the assembling of the cylinder (part.8) that the external channel must be turned towards the motor side;

- re-assemble the pumping shank following carefully the reverse instructions



9 CHARACTERISTIC GREASE

Below we relate the features essentials of the greases to appraise the way to use of the equipment.

9.1 Grease

The classification N.L.G.I. is used very often to define the consistence of the grease, in particular the resistance of the deformation under stress. In the table the conversion between NLGI and ASTM 0217 is indicated (penetration strength (tenth part of mm.), in the grease in conditions defined, with a body (ball) with dimensions and weight .

Gradations NLGI	Deformation ASTM tenth part of mm. at 25°C
000	445-475
00	400-430
0	355-385
1	310-340
2	265-295
3	220-250
4	175-205
5	130-160
6	85-115

10 ACCESSORIES

We can fit up the accessories below indicated; in case of need, immediately call our authorized area dealer or our technical assistance. For the correct use of the equipment we recommend to use only the accessories fitted from our firm; our firm is not responsible for the damages or anomaly for the use of the accessories made from other firm.

10.1 Drums covers with pump fastening.

To fasten the pump at the grease drum it's necessary to predispose cover for the drum fastening with specific connection; it's necessary that the hose diameter is conforming to the dimensions of the drums presents in the trade.

Available internal diameter (mm): 283 – 330 – 400 – 600



10.2 Follower plates

It's necessary to arrange a follower plates into the drum to obtain an homogeneous grease distribution. For the plates with membrane the diameter of the metallic part and of the membrane is indicated. Available dimensions (external diameter mm - inner diameter mm): 275 – 230; 310 – 260 ; 390 – 325 ; 590 – 540



10.3 Digital meter

The grease delivery can be carried out with a simple grease gun, or in case equipped with a meter (electronic or mechanical) that allows to measure the delivered grease quantity. For the correct use of the device please refer to what described in the use and maintenance manual. For the installation it's enough to connect the outlet pipeline of the pump to the connection and then lock-up with strength.

- the grease is pumped into the pump outlet tube and reaches in the meter;
- activating the gun lever the grease enters the meter.

10.4 Drums holder trolley

On request can be supplied a trolley that allows a better use of the pumps (with installation of its relative drum). For technical information please contact our area authorized dealer.

11 STORAGE,DEMOLITION AND DISMANTLING

11.1 Machine dismantling

The dismantling of the rubbish coming from the demolition of the machine will have to be carried out according to the environmental respect, avoiding to pollute ground, air and water.

However we must operate according to the local legislation in force.

Please remind that for rubbish we intend every substance or object, included in the category of enclosed A to the point IV of Law 152/2006, that the holder wish to throw away or has decided or has the obligation to do that.

The rubbish coming from the machine demolition are to be classifiable as special rubbish.

11.2 Demolition materials

The following are special not dangerous rubbish that can be recovered according to the Law of 5 February 1998:

- Iron materials, stainless steel, copper
- Plastics
- Electronic card
- Grease
- Electric wiring

11.3 Indication for a suitable handling of the Rubbish

The correct handling of the special rubbish schedules:

Storage in suitable places avoiding the mixing of dangerous rubbish with not dangerous ones.

Ensure that the transport and the dismantling/recovery of the same rubbish is carried out by authorized transporters and recipients.

The transport of his own rubbish to authorized collection centers is allowed exclusively if you have the registration to the Environmental Administration Register.

11.4 Rubbish coming from Electric and Electronic devices

With the Law no. 151 of July 25th 2005, the Italian government has taken in the directives of the European Parliament as concerns the rubbish dismantling of electric and electronic devices (RAEE) (Directive 2002/95/CE and 2003/108/CE).

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