



# **milkrite | InterPuls**

*Improving every farm we touch*

## GPV 2200 / 3300



**Precision**

Technician and User Instruction Manual



## Summary

1	GENERAL INFORMATION .....	5
1.1	Manufacturer.....	5
1.2	Copyright.....	5
2	GENERAL WARNINGS.....	6
2.1	General information and safety warnings.....	6
2.1.1	Important warnings .....	6
2.1.2	Symbol used in this manual.....	6
2.1.3	Rules and regulations for the user.....	6
2.1.4	Limitation of liability.....	6
2.2	Prior using the product.....	6
2.2.1	Requirements and rules for personnel and Safety Rules.....	6
2.3	Disposal .....	7
2.3.1	General regulation .....	7
2.4	Fire prevention .....	7
2.4.1	Fire prevention .....	7
2.4.2	Safety regulations .....	7
2.4.3	Characteristic of extinguishers.....	7
2.5	Normative references applied.....	7
2.6	Marking .....	8
2.6.1	Dataplates affixed to the machine .....	8
2.7	Safety decals .....	9
2.8	Staff training and education .....	10
3	DESCRIPTION OF THE MACHINE .....	11
3.1	General features .....	11
4	VACUUM PUMP TYPE .....	13
4.1	PV 3300 Naked.....	13
4.2	PV 2200 Naked.....	14
4.3	GPV 3300 On Tank .....	15
4.4	GPV 2200 On Tank 110 Lt .....	16
5	TECHNICAL FEATURES .....	17
5.1	GPV 3300 .....	17
5.2	GPV 2200 .....	17
6	PREPARATIONS, TRANSPORT AND HANDLING .....	18
6.1	Preparations under the customer's responsibility.....	18
6.1	Transport and handling.....	19
6.1.1	Methods of transport.....	19
7	INSTALLATION .....	21
7.1	Preliminary checks.....	22
7.2	Installation procedure .....	23

7.3	Silencer and separator assembly .....	24
8	PROTECTIONS AND SAFETY DEVICES .....	25
8.1	Dangerous areas - Residual risks.....	27
8.2	Information regarding noise produced by the machine .....	29
8.3	Demolition of the machine and disposal of residues .....	29
9	SAFE USE OF THE MACHINE .....	30
9.1	Getting started .....	30
9.2	Warnings positioning .....	30
9.3	Use of machine .....	31
10	MAINTENANCE.....	32
10.1	Insulation of the machine.....	32
10.2	Particular Precautions.....	32
10.3	Maintenance .....	32
11	LUBRIFICATION SYSTEM.....	33
11.1	Choice of oil .....	33
11.2	Capillary system lubrication .....	33
11.2.1	Oil recharge into oiler.....	33
11.2.2	Components.....	34
11.3	Drop system lubrication .....	35
11.3.1	Flow of lubrication .....	35
11.3.2	Installation.....	36
11.3.3	Components.....	37
11.4	Overhaul .....	38
12	TROUBLESHOOTING.....	39
13	CE DECLARATION OF CONFORMITY .....	40

## 1 GENERAL INFORMATION

### 1.1 Manufacturer

Made for

InterPuls S.p.A.  
Web [www.milkrite-interpuls.com](http://www.milkrite-interpuls.com)

Manufactured By

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Tel. +39 0171 946756  
E-mail [sales@ctamilk.com](mailto:sales@ctamilk.com)  
Web [www.ctamilk.com](http://www.ctamilk.com)

### 1.2 Copyright

milkrite | InterPuls is a trademark owned by milkrite | InterPuls Limited

The information contained in this document is not binding and can be modified without notice. References in this document to manufacturer trademarks are for identification only. Certain company and product names used throughout the document are trademarks of their respective owners.

## 2 GENERAL WARNINGS

### 2.1 General information and safety warnings

#### 2.1.1 Important warnings

To safeguard the operator and prevent any damage to the equipment, before carrying out any kind of operation it is important to have read and fully understood the instruction manual.

#### 2.1.2 Symbol used in this manual

The following symbols are used in this manual to highlight indications and warnings which are of particular importance:



##### **WARNING**

This symbol indicates health and safety regulations designed to protect operators and/or any exposed persons.



##### **CAUTION**

This symbol indicates that there is a risk of causing damage to the equipment and/or its components.



##### **NOTE**

This symbol is used to highlight useful information.

#### 2.1.3 Rules and regulations for the user



##### **WARNING**

Any failure to observe the warnings provided in this manual may lead to equipment malfunctions or damage to the system.

#### 2.1.4 Limitation of liability

InterPuls S.p.A. declines all liability for damage to persons, animals and/or things caused by incorrect use of the equipment.

## 2.2 Prior using the product

### 2.2.1 Requirements and rules for personnel and Safety Rules



##### **WARNING**

This appliance can be used by person aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved



##### **WARNING**

Before using the device, the operator must carefully read the manual.

During the assembly and activation of the device, follow the instructions in the manual and rules and regulations applying to health and safety at the workplace.

**WARNING**

Children shall not play with the appliance.  
Cleaning and user maintenance shall not be made by children without supervision.

## 2.3 Disposal

### 2.3.1 General regulation

The appliances must be disposed of only and exclusively by specially authorized waste disposal companies in accordance with all relative legislation and prescriptions.

The packaging must be consigned to the relative authorized companies to be recycled.

## 2.4 Fire prevention

### 2.4.1 Fire prevention

**NOTE**

The machine is not equipped with fire extinguishers.  
The operator must make sure that the place in which the appliance is installed is equipped with an adequate number of suitable fire extinguishers. The extinguishers must be positioned where they are clearly visible and protected from damage and improper use.

### 2.4.2 Safety regulations

**WARNING**

It is strictly prohibited to extinguish fires involving electrical equipment with water!

### 2.4.3 Characteristic of extinguishers

Use powder, foam or halogen extinguishers which must be positioned next to the device.  
Operating personnel must receive adequate instruction on how to use the extinguishers.

## 2.5 Normative references applied

**Europe:**

- Directive no. 2006/42/EC Machinery Safety
- Directive no. 2014/35/EU Low Voltage (LVD)

## 2.6 Marking

### 2.6.1 Dataplates affixed to the machine

The machine is equipped with a dataplate (see picture below).

The dataplate showing the EC marking and the information necessary for machine's identification:

<b>milkrite   InterPuls</b>	
VACUUM PUMPS	50 kPa
SERIAL N°:	
MODEL:	
DATE:	
<b>CE</b>	Manufactured by CTA Milk srl - ITALY Via Laghi di Avigliana 91 - 12022 BUSCA - CN
	<b>EAC</b>











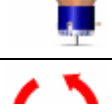


## 2.7 Safety decals

The following safety decals are found on the machine



### WARNING

The removal or damaging of safety decals is strictly prohibited.

	Danger
	Read the manual carefully
	Risk of electrocution
	Risk of high temperature
	Do not hit with water jets
	Read the manual before using the machine
	Before any action on the machine to remove the power supply
	Keep hands away from pulleys and belts when they are in function
	Weekly check the oil level. if the pump should run without oil it would be exposed to risk of damage
	Check that the number speed and direction of rotation of the shaft match the information that there are on the machine
	The maintenance, clearing, or other casual operations should be done when the machine is off. Protections must be temporarily removed and then again correctly reinstalled

## 2.8 Staff training and education

The instructions and warnings regarding safety are developed in the Manual, assuming that each operator knows and applies the provisions of the Directive 2006/42/EC and Italian Legislative Decree 81/08, as well as other relevant Directives regarding safety in the work place.

It is therefore necessary that staff training includes the information relating to the provisions mentioned above. The knowledge and understanding of the Manual and documents attached constitute an essential tool for the reduction of risks for the safety and health of the workers: anyone that comes into contact with the machine for maintenance or normal production must be trained and educated regarding dedicated work procedures and residual risks present on the machine.

It is assumed that the operations and maintenance staff have at least the following requirements:

- \* knowledge of the hygiene, accident-prevention and technological regulations,
- \* overall know-how of the machine and the establishment in which it is being introduced
- \* specific experience in the technology used



In compliance with the provisions of the European Directives previously stated, the employer must:

- \* check that the staff has a sufficient level of knowledge, as mentioned previously, to allow this Manual to be read and understood.
- \* give the staff suitable practical training and, through tests, ascertain that the operators are able to run the machine correctly in normal and emergency situations

The employer must also train and educate the staff regarding devices set-up for the safety of the operator and regarding residual risks.

In particular, attention is called to the obligation, on the basis of which, the employer, manager and the person responsible for safety:

- \* on entrusting the jobs to the operators, must consider their capabilities in order to safeguard their health and safety
- \* must supply the suitable P.P.E.
- \* require compliance, by the individual operators, of the regulations and company provisions regarding safety and use of the collective and individual protection devices made available to them
- \* ensure that the routine and extraordinary maintenance operations, or however those necessary for machine safety, are performed regularly



Consequently, each operator must take care of his own health and safety and that of others present in the work place, who may be affected by his acts or omissions. in compliance with the responsibilities that have been entrusted. personal knowledge, instructions and equipment supplied by the employer

### 3 DESCRIPTION OF THE MACHINE

#### 3.1 General features

The vacuum pump is substantially composed by a stator which is mounted eccentrically inside a rotor supported by two bearings mounted on the pump flanges.

The bearings are lubricated by the oil that is sucked into the pump only when it is set in motion by an electric motor and then creates a vacuum internal to the pump.

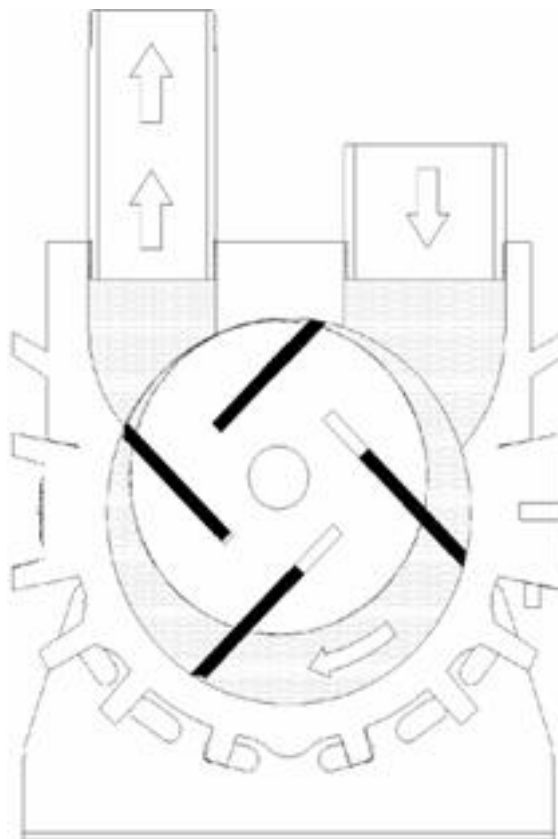
With the rotation of the rotor, these are pushed out and make sure that the air moves from the tank outside the plant forming a vacuum.

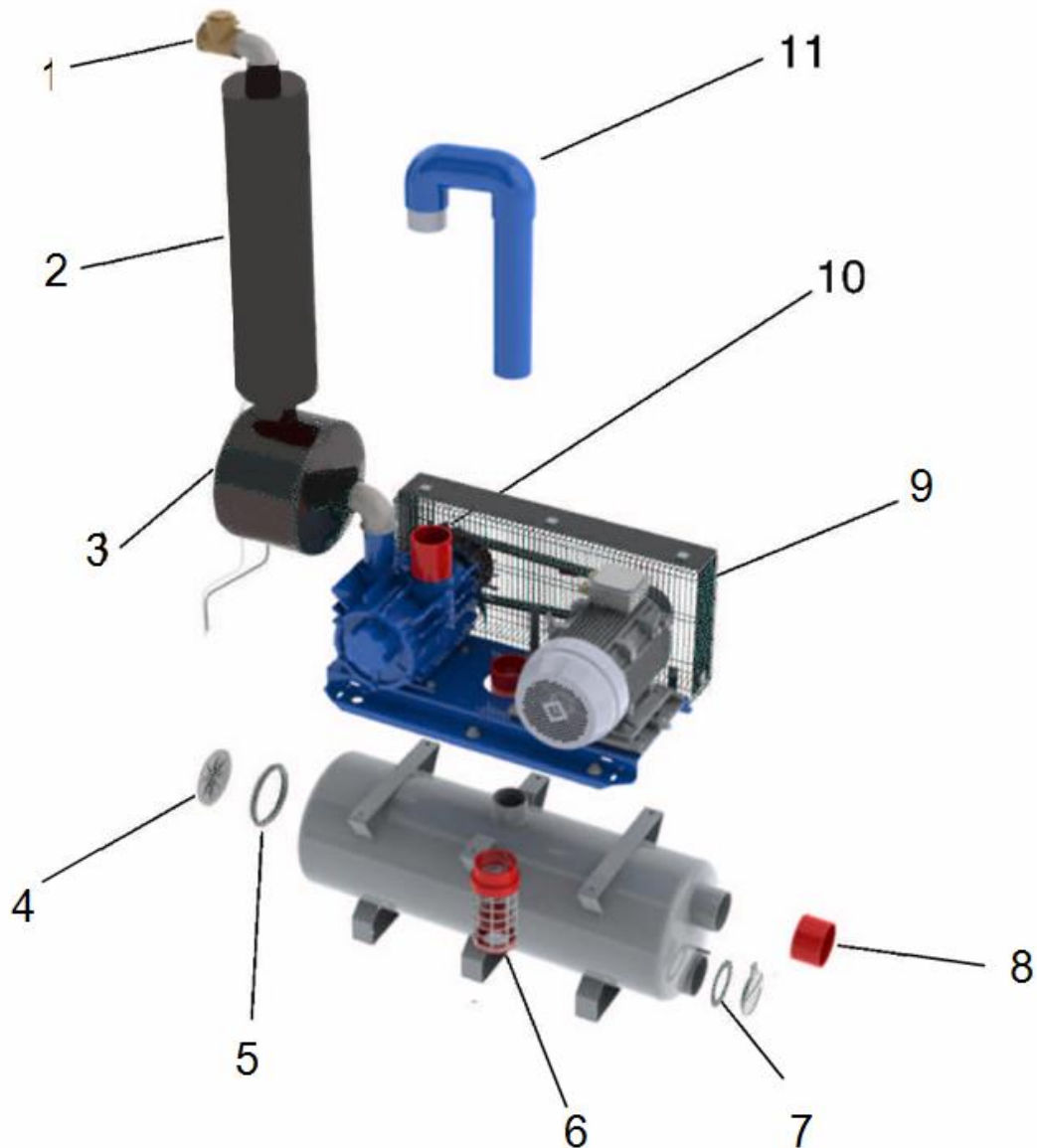
Varying the size of the pump pulley you can get a greater or lesser number pump revolutions, so you have more or less N.L / min.



#### **WARNING**

**Strict adherence to the of-dimensions of the pulleys formed by the company.**

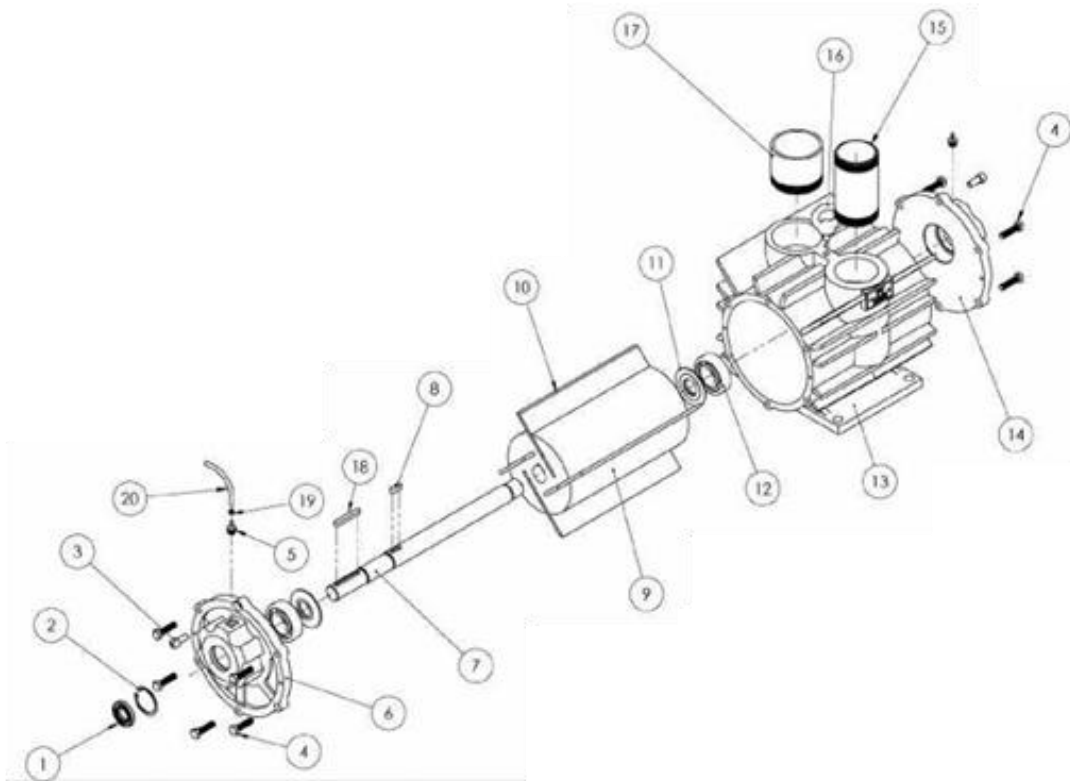




Reference	Description
1	Non -return Valve
2	Silencer
3	Air-Oil Separator
4	Joint for the window's tank
5	Plastic seal gasket
6	Cartridge filter
7	Seal Condensate discharge
8	Sleeve Adp
9	Carter
10	Single oiler
11	Connecting Curve for Tank

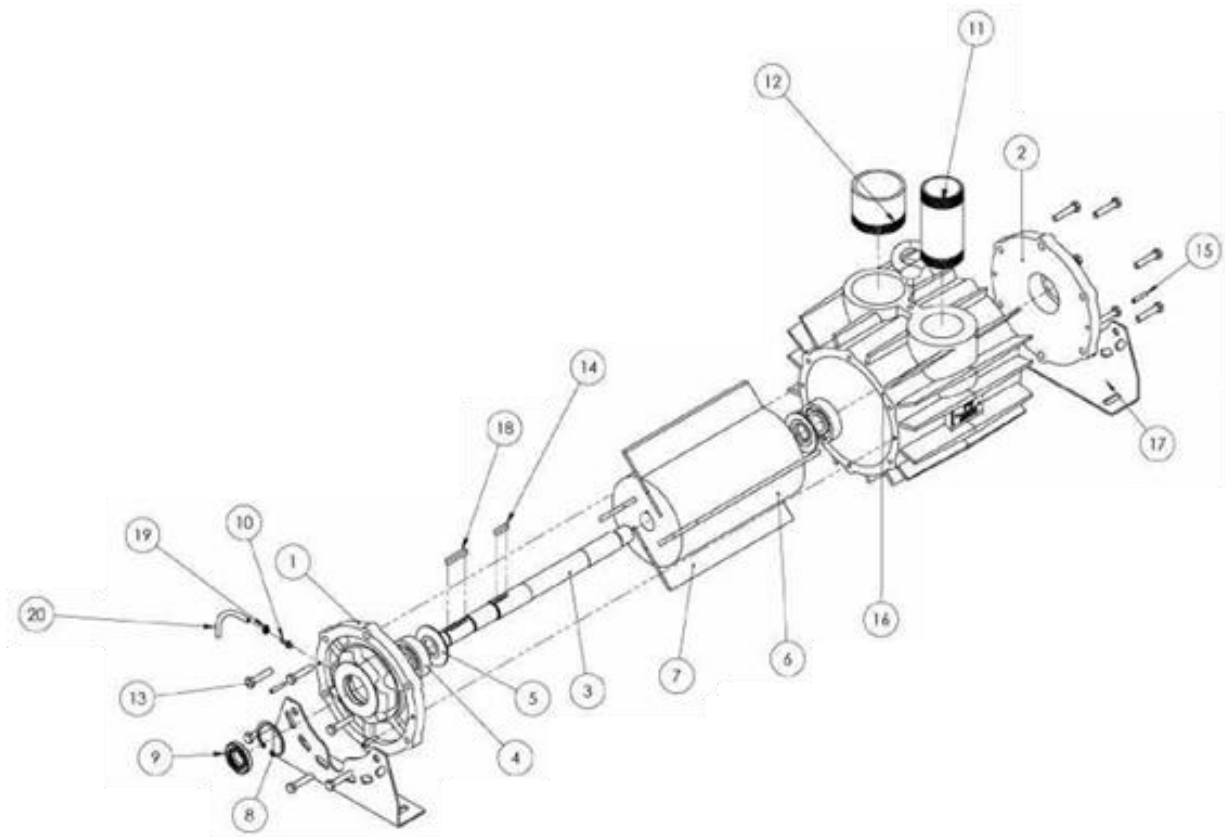
## 4 VACUUM PUMP TYPE

### 4.1 PV 3300 Naked



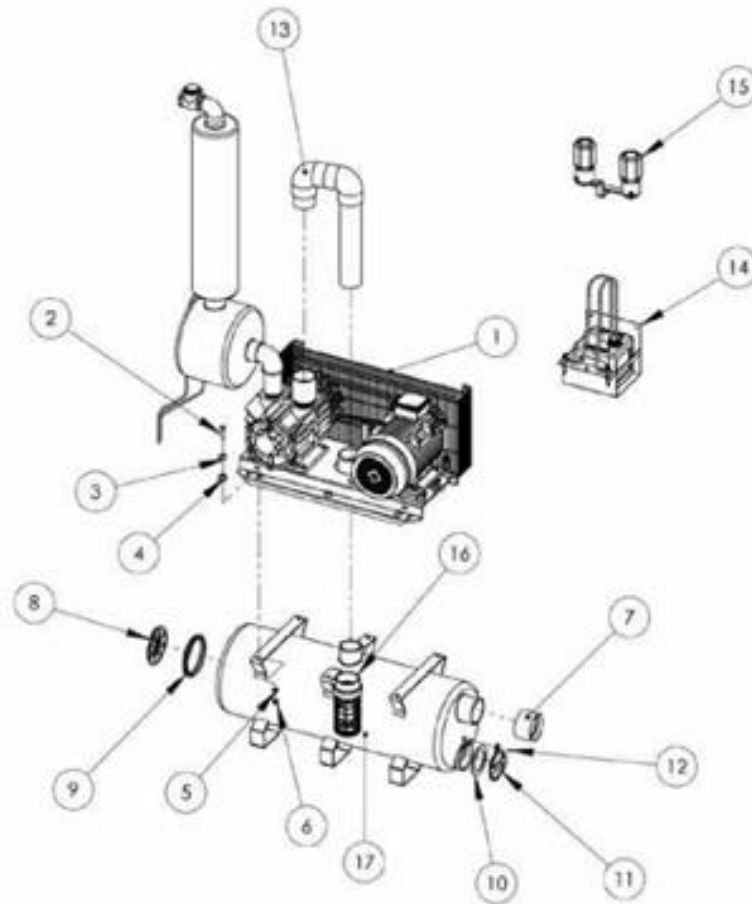
Reference	Description
1	Oil seal 30-47-7
2	Seeger d. 47
3	Screw TCE 8.8 10x25 GG
4	Screw TE R.80 10x35 TF GG
5	Hose connector for feed oiler 14x27 inn. Ø 5 - Ø 8
6	Hole flange 3300
7	Shaft PV 3300
8	Key 8x7x25
9	Rotor 3300
10	Vanes for GPV 3300
11	Alluminum spacer 3300
12	Open bearing 6306 SKF
13	Cylinder 3300
14	Blind flange 3300
15	Galvanized barrel 2" ½ x 150 mm
16	Eyebolt M12
17	Galvanized Socket 3" x 75 mm
18	Key 8x7x60
19	Hose clamp d. 4x7
20	PVC Trasparent Tube 4x7

## 4.2 PV 2200 Naked



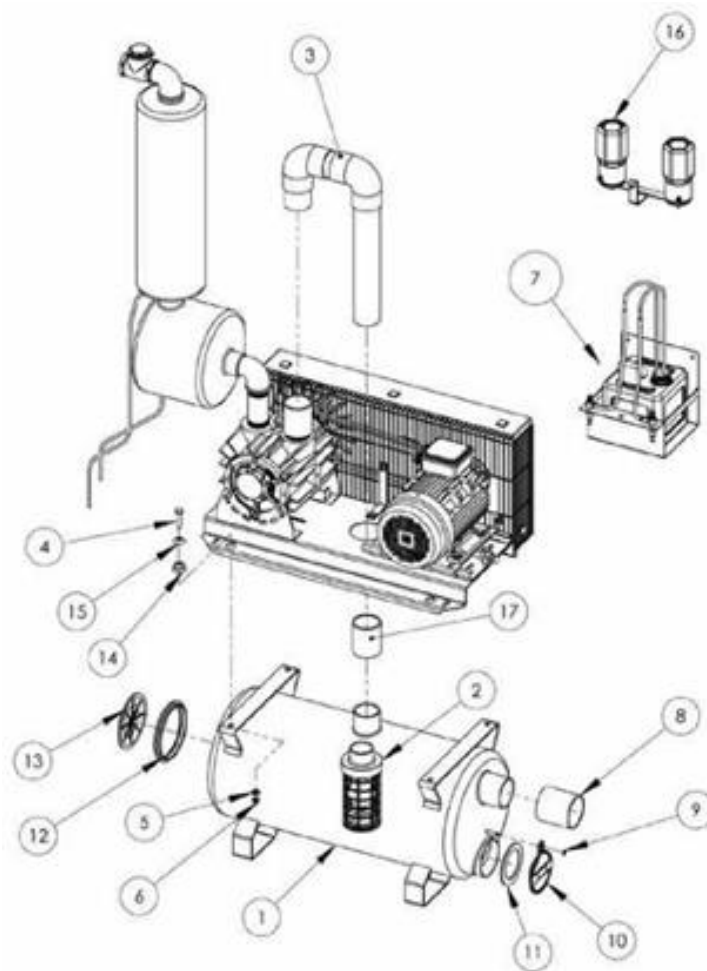
Reference	Description
1	Hole Flange 2200/1500/750
2	Blind Flange 2200/1500/750
3	Shaft 2200
4	Open Bearing SKF 6305
5	Aluminum Spacer 2200
6	Rotor 2200
7	Vanes for GPV 2200
8	Seeger d.47
9	Oil Seal 25-47-7
10	Hose connector for feed oiler 14x27 inn. Ø5 - Ø8
11	Galvanized barrel 2"x150 mm
12	Galvanized Socket 3"x75 mm
13	Screw TE R.80 10x35 TF GG
14	Key 6x6x25
15	Elastic Pin 5x26
16	Cylinder 2200
17	Feet Pump PV 2200
18	Key 6x6x40
19	Hose Clamp d. 4x7 – d. 7x10
20	PVC Trasparent Tubing 4x7 – 7x10

### 4.3 GPV 3300 On Tank



Reference	Description
1	GPV 3300 on bracket
2	Screw TE R.80 12x50 TF ZN
3	Washer Ø 12x36
4	Rubber Vibration Dampper Open for Bracket
5	Flat Washer ZN M12
6	Locknut M12
7	Sleeve 4"x4" (110-110mm)
8	Sheet for tanks window's tank
9	Joint for the window's tank
10	Seal Gasket condensate discharge
11	Seal condensate discharge in pls
12	Seeger d.8
13	Plastic Bend 90° for 3300
14	Complete drip oiler Lt. 5 with 2 regulators – 3 regulators
15	Double Oiler for 2200/3300
16	Cartridge Filter 3"
17	Tank Lt. 110/exit 4" for GPV 3300

#### 4.4 GPV 2200 On Tank 110 Lt



Reference	Description
1	Tank Lt. 110/exit 4"
2	Cartridge Filter 22 ½ + ball adapted 4"
3	Plastic Bend 90° for 2200
4	Screw TE R.80 12x50 TF ZN
5	Washer Ø12x36 ZN
6	Locknut M12
7	Complete drip oiler Lt. 5 with 2 regulators – 3 regulators
8	Adp Sleeve 3"x3"
9	Seeger d.8
10	Seal condensate discharge in pls
11	Seal Gasket condensate discharge
12	Joint for the window's tank
13	Sheet for tanks window in pls
14	Rubber Vibration Damper Open for Bracket
15	Washer Ø12x36 ZN
16	Double Oiler for 2200/3300
17	Adp Sleeve 2"½x2"½



## 5 TECHNICAL FEATURES

### 5.1 GPV 3300

Power Motor	KPa	RPM Pump	N.L./min.	Pulley Pump	Motor Pulley	Assorb. (A)	Pressure Exit	RPM Motor
7,5 Kw/10 Hp	50	1050	3300	180 2B	130 2B	12,7 A	0,11 bar	1400
5,5 Kw/7,5 Hp	50	970	2950	180 2B	120 2B	10,8 A	0,10 bar	1400
5,5 Kw/7,5 Hp	50	900	2700	180 2B	112 2B	8,9 A	0,08 bar	1400

Model	Weight kg	Length cm	Width cm	High cm	Tank	Lubrication	Separator oil / air	Transmission
G.P.V. 3300	200	80	50	130	110 Lt	Yes	Yes	Belt

### 5.2 GPV 2200

Power Motor	KPa	RPM Pump	N.L./min.	Pulley Pump	Motor Pulley	Assorb. (A)	Pressure Exit	RPM Motor
5,5 Kw/7,5 Hp	50	1325	2300	150 2B	140 2B	10,9 A	0,11 bar	1400
4 Kw/5,5 Hp	50	1225	2000	150 2B	125 2B	8,9 A	0,10 bar	1400
4 Kw/5,5 Hp	50	1150	1800	150 2B	112 2B	8,9 A	0,08 bar	1400

Model	Weight kg	Length cm	Width cm	High cm	Tank	Lubrication	Separator oil / air	Transmission
G.P.V. 2200	200	80	50	130	85/110 Lt	Yes	Yes	Belt

## 6 PREPARATIONS, TRANSPORT AND HANDLING

### 6.1 Preparations under the customer's responsibility

In order to perform consistent and suitable installation, the Customer is responsible for preparing the environments destined to house the machine in question, with features suitable for machine requirements and in compliance with the Legislation in Force regarding:

- work places in compliance with Italian Legislative Decree 81/08 "Implementation of European Directives regarding hygiene and safety in the workplace"

The machine, which has been designed and manufactured such as the vacuum pump for milking plants , is suitable to be installed in adequate technical room (machine room)

Suitable piping must be installed for air intake and outlet:

- DN XX non-toxic plastic piping that performs extraction from the milking room
- Dn XX piping that "removes" the extracted air to the outside

- electric plant power supply:

the machine is supplied without electric protection and command plant

Suitable connection must be installed by specialised companies, which must include:

- automatic residual current device for line protection
- FG7OR-type power supply cable with min section of 5x2.5 mm<sup>2</sup> with double insulation, appropriately laid in suitable cable trough
- on-board instrumentation box with suitable protection rating, to be clamped to the wall in proximity of the machine, complete with
  - o motor-protection and contactor
  - o fuse and 400/24 V transformer for low voltage commands
  - o emergency device such as emergency button
  - o running indication LED and thermal cut-out
  - o any reference connections of start -stop at the work place
  - o suitable connections of the machine to the earth plant
  - o suitable signs indicating operating voltages

The machine must be powered in compliance with the legal provisions in force in the place of installation (e.g. IEC 64 - 8 Regulation).

The manufacturer is not liable for any failure to comply with that indicated in this user manual.

## 6.1 Transport and handling

In relation to the type of transport, the individual parts must be protected from all possible collisions and stress.

***Damage to the machine caused during Transport and Handling are not covered by the Warranty.***

***Repairs or replacements of damaged parts are under the Customer's responsibility.***

***Before performing any handling operation, the weight must be detected via the plate on the machine. Consequently, the most suitable lifting device available can be selected.***

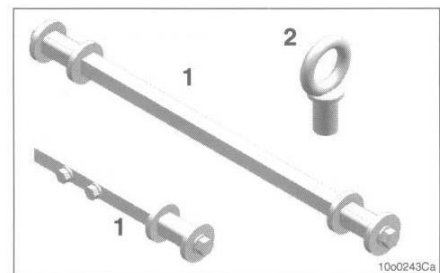
The machine is made up from DELICATE parts that cannot support great stress. MAXIMUM CAUTION is therefore recommended during handling in order to prevent misalignment and faults of the components.

The machine (or part of it) must be handled using lifting devices used for this purpose and supplied with relative Certificates of suitability, such as suitable lifting equipment with harnessing slings (check that status of wear and that the capacity of each sling is higher than 1.5 times the load). The slings must be made to pass in the lower part of the base, checking they are anchored tightly.

### 6.1.1 Methods of transport

#### Loading and transport devices/eye bolts

Fix the loading and transport devices (1) or the eye bolts (2) in correspondence with the points envisioned. Check correct fixing, in order to guarantee stability.

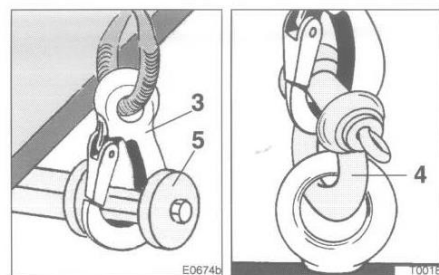


#### Attaching the rope

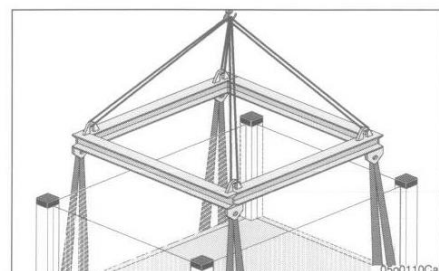
Attach the rope hooks (3) into the loading and transport devices and/or into the eye bolts (or apply suitable handles (4))

Ropes, hooks and handles must be suitable to support the load in all cases!

Furthermore, they must not slide beyond the retaining rings (5).



At the end of the transport operations, remove the loading and transport devices and all other auxiliary devices.



Other machine parts that are packaged and positioned on relevant pallets or equivalent, must be handled using a lifting truck suitable for transport and with sufficient lifting capacity.



**The transport system used must be suitable to support the load.**

**For handling, use staff trained for working in safe conditions and the best strategy for balancing loads.**

If the manoeuvre staff does not have sufficient visibility due to the clearance of the load or any architectonic barriers, it is good practice to have assistance from the ground by a person giving signals, as required by the Regulation in force.



**WARNING**

**the operations using a lifting truck must be performed by trained staff in compliance with Italian Legislative Decree 81/08 .**



**WARNING**

**Handling operations must be entrusted to suitably qualified staff that can select the means of slinging and lifting required for the different work conditions.**

**FINAL ASSEMBLY OF THE VARIOUS PARTS MUST BE PERFORMED EXCLUSIVELY BY OUR COMPANY**

## 7 INSTALLATION

**The following provisions must be complied with for positioning:**

- The premises must be suitable for the declared use, as required by the legislation in force (Italian Legislative Decree 81/08 regarding Hygiene and Safety in the Work Place)
- have a manoeuvre area and suitable spaces for the job to be performed
- have a solid foundation in reinforced concrete
- have sufficient lighting on all parts making up the machine, which allows safe access in normal operating conditions and during maintenance (minimum lighting recommended 200 lux)

On the basis of the indications given above, the user must set-up premises suitable to house the entire machine, also taking into account that the same must meet the requirements envisioned in the European Directives and national laws, which govern safety in the work place; therefore it must be:

1. easy to clean to ensure suitable hygienic conditions
2. with escape routes and safety doors
3. ventilated (good natural circulation of air) and fitted with extractor plants in areas emitting fumes/vapours
4. supplied with natural and artificial light, suitable to safeguard the safety, health and well-being of the workers
5. free from obstacles and have suitable space for the job to be performed

For installation operations, an area must be prepared for manoeuvres that is suitable for the dimensions of the machine and the re-selected lifting devices; paying attention to any obstacles present along the route that the handling devices must take.

The free area around the machine must be sufficient also to perform the necessary maintenance interventions.



### **WARNING**

**With respect to machine clearance, a free corridor of at least 1.0 m must be envisioned to allow easy passage around the perimeter of the machine (for inspection and maintenance).**

**For the installation area, workshop flooring is sufficient, preferably in smoothed reinforced concrete with suitable capacity.**

The machine must be accurately levelled with respect to the floor so as not to create misalignment of the moving parts.

**When positioning has been performed, check that all guards and safety devices have been mounted.**

*In the first installation phase at the user's establishment, the machine manufacturer will make sure of:  
correct positioning of the machine and all its annexes;  
fine tuning of all units and mechanical joints.*

**Considering that:**

- incorrect assembly of the machine can cause damage to the same and can give rise to risks for persons,
- the machine cannot be divided into macro sections,

***FINAL ASSEMBLY OF THE VARIOUS PARTS MUST BE PERFORMED EXCLUSIVELY BY OUR COMPANY***

***Also if the machine must be disassembled completely, this operation must not be performed by the end user but exclusively by our company.***

In all cases, the cables, piping and relative connection points are always marked to prevent assembly errors.

## 7.1 Preliminary checks

Before commissioning of the machine, it is necessary to perform a series of checks and controls in order to prevent errors or accidents during Commissioning.

**Check carefully that:**

- All covers of the machine, main control board and electric devices are mounted and fixed correctly using the relevant clamping screws.
- Check that the machine has not undergone damage during the assembly phase.
- Check the integrity of the electric control board, electric cables and piping with great care.
- Assembly and levelling of the machine has been performed correctly.
- All provisions regarding the machine power supply have been complied with.
- Check the free movement and any free rotation of all mobile parts.

**When positioning has been performed, we recommend checks are carried out on:**

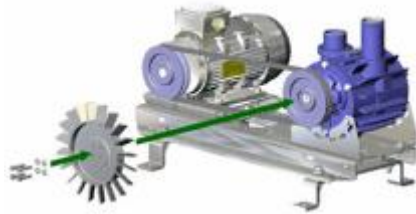
- continuity of the protection wire and effective earthing of the machine
- intervention test of the protection residual current device upstream from the power supply line

**WARNING**

**The inspection and controls must be performed by skilled staff with technical - professional requisites.**

## 7.2 Installation procedure

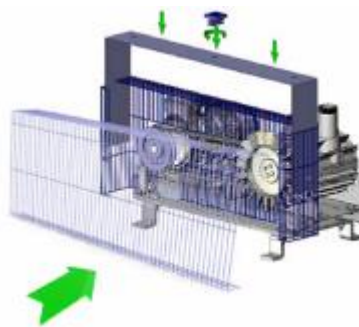
1. Installing the fan cooling kit screws "A".



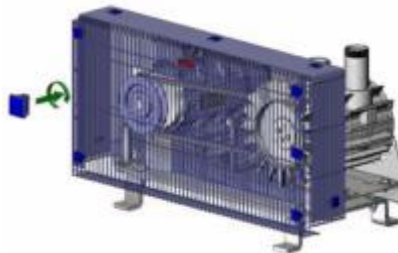
2. Installation kit center bracket "B" Surfaces "T" and "S" must be aligned.
3. Install rear grille.



4. Horizontal and vertical adjustment of the rear grille; the grid must be aligned approximately with the bracket, keeping a distance 20mm between the fan and the same grid.
5. Install side brackets kit "C".
6. Installation of the cover to internal rear grille and subsequent installation the front grille.



7. Attaching the front grille with locking plugs.



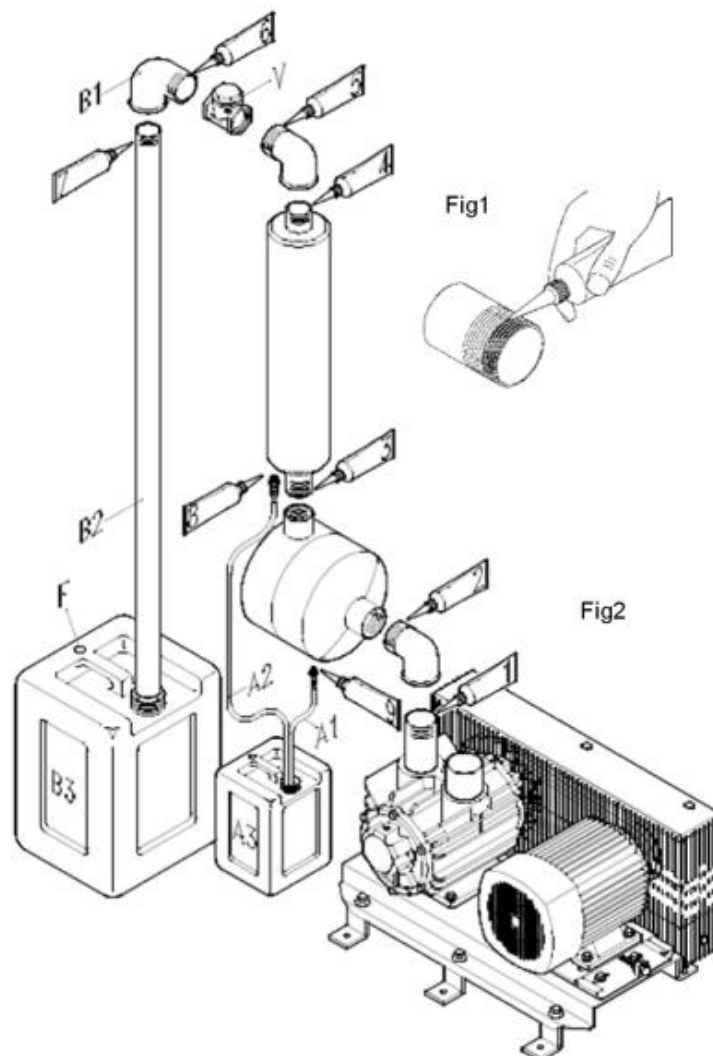
### 7.3 Silencer and separator assembly

- To avoid dispersion of lubricating oil residues of the vacuum pump ( image 2 ). You have to:
  - Install a tube B2 joined to the valve of exit V by a union elbow B1;
  - Put a drain tank B3 under the tube B2;
  - Insert the flexible tubes A1 and A2 in a drain tank A3;
  - Make a hole of bleed F on both the tanks.
- The defective tightness of the threaded junctions of the group separator-silencer is source of drippings of lubricating oil with consequent formation of anesthetic and ant hygienic sludges. To avoid losses we ask to the installer to apply a motor silicone gasket - fig. 1:
  - On the threaded junctions of the group separator silencer - Image 2, pos. from 1 to 7;
  - On the threads of the nipples of recovery oil - Image 2, pos. 8 and 9.



#### NOTE

Use exclusively plastic gaskets based on silicone. We suggest the following makers: Loctite 209079 Art.26807, Arexons Art.motorsil D, Wurth Art.0893 260 100 – S, Angst+Pfister.





## 8 PROTECTIONS AND SAFETY DEVICES

In compliance with the Machinery Directive 2006/42/EC and the various UNI Regulations regarding safety, this machine is made up for excellent protection of the workers in the work place.

**In order to limit the RISKS FOR THE OPERATORS/THIRD PARTIES, the following safety systems are present on the machine:**

- **Guards and safety systems**

Accident-prevention "belt guard" grids are present; they are appropriately fixed using screws. This grids protect the operator from the risk of entanglement - dragging due to the drive belt.



- **Emergency devices**

The user is responsible for installing the electric plant with the features indicated in the previous paragraph. The intervention of the emergency button removes the voltage from all command circuits, causing the immediate shutdown of all moving parts.

- **Commands Safety**

The commands are devices through which the operator can start the line.

The electric plant with the features indicated in the previous paragraph must be installed by the user.




All command devices on the machine for interfacing with the operator and the relative circuits must be powered with low voltage (24 V).

- **Safety devices relative to the electric plant:**

the live electric parts must be supplied with protective casings with appropriate IP protection rating or visible components with double insulation.

All machine parts must be connected to the establishment earth plant through suitable protection wire.

Moreover, suitable hazard signs that highlight the residual risks are affixed:

Plates relative to the machine	WORDING
	do not remove the Protections and Safety devices
	wear P.P.E."
Plate relative to the Electric Control Board	WORDING
	"Only electricians can open the doors and perform manoeuvres or repairs"

## 8.1 Dangerous areas - Residual risks



### CAUTION READ THE FOLLOWING INSTRUCTIONS CAREFULLY

The knowledge and understanding of the Manual and attached documents constitutes an essential tool for the reduction of risks for the safety and health of the workers.

The “hazardous area” of the **GPV 2200 / 3300** include the areas affected by the moving parts and their immediate vicinity which, due to the nature of the operations, cannot be totally eliminated.

The machine is designed and realised with the intent to eliminate all risks connected with its use.

During the normal work cycle, but especially on occasion of maintenance, the operators are exposed to several acceptable residual risks, which, due to the nature of the operations, cannot be totally eliminated.

- **Risk of injury to upper limbs;**
- **Electric Risk;**
- **Noise Risk.**

Below find the conditions and circumstances in which the afore-mentioned conditions may exist along with several relative warnings.

- The omission of safety devices, maintenance interventions with machine running, operator not paying attention, presence of other persons in the work area are conditions that increase the **residual risk (entanglement/dragging)** in the areas with moving parts.

In order to reduce the residual risk to minimum, the operators must respect that envisioned in this user manual and not perform operations without safety guards (e.g. to reduce residual risks to minimum, the operators must not wear bracelets and/or chains, furthermore, the cuffs and ends of overalls must be the closed type).

Furthermore, the staff must be trained – informed regarding the dedicated risks/procedures envisioned on the machine.

- The casings containing the equipment of the command and control electric circuit must be opened exclusively by authorised staff and the interventions on said parts must be performed only by authorised staff. The existence of **hazards connected to the presence of live parts** is reminded by the application of a plate accompanied by the indication of voltage levels present.
- In normal conditions and no-load operation, the machine in question has sound pressure level lower than 85 dB(A) in the operator station.

The employer is responsible for assessing the overall level of exposure to noise by the staff, if necessary prescribing the mandatory use of P.P.E. (hearing protection devices or plugs).

**In order to reduce the consequences of the afore-mentioned hazards to minimum, the instructions set out in this User Manual must be scrupulously followed and any envisioned P.P.E. must be used.**

**If the operator must abandon the machine temporarily, he MUST make the machine safe by pressing the emergency button.**

IT IS PROHIBITED TO REMOVE SAFETY DEVICES AND WARNING PLATES  
FAILURE TO COMPLY WITH THIS REGULATION CAUSES THE WARRANTIES  
SUPPLIED BY THE MANUFACTURER TO BECOME NULL AND VOID AND THE  
TOTAL LIABILITY OF THE USER.

**WARNING**

THE OPERATORS MUST BE SPECIFICALLY AND EXPLICITLY ENTRUSTED WITH THE  
RESPONSIBILITY OF MONITORING THE AREA/S WHERE THEY PERFORM THEIR ACTIVITY IN  
ORDER TO PREVENT ACCESS TO HAZARDOUS AREAS BY UNAUTHORISED STAFF AND/OR  
STAFF THAT IS NOT DULY TRAINED.

IT IS ESSENTIAL TO ISSUE COMPANY SAFETY PROCEDURES PARTICULARLY WITH REGARD  
TO THE ACTIVITIES TO BE PERFORMED WITHIN THE AREA AROUND THE MACHINE.

## 8.2 Information regarding noise produced by the machine

In compliance with European Union Regulations in force, each machine must be designed for the minimum A weighted sound pressure value dB, emitted in normal operation.

In normal conditions and normal operation, the machine in question **has sound pressure level lower than 85 dB(A)** . Remember that the noise level is affected by the work environment conditions.

**Any increase in noise may be a synonym of machine malfunctioning.**

The employer is responsible for assessing the level of exposure to noise by the staff, if necessary prescribing the mandatory use of P.P.E. (hearing protection devices or plugs).

## 8.3 Demolition of the machine and disposal of residues

The machine must be disassembled/scrapped in compliance with the regulations in force regarding environmental protection, in order to prevent possible pollution.

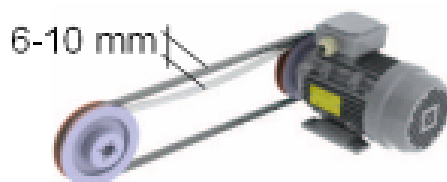
The machine is made up mostly of steel, which is a raw material that can be recycled.

The remaining part of the machine (plastic materials, electric components, video, circuit boards, etc.) must be taken to appropriate companies that scrap and separate the waste on the basis of the possibility to re-cycle.

## 9 SAFE USE OF THE MACHINE

### 9.1 Getting started

Verify that the transmission belt tightening is between 6-10 mm otherwise provide decreasing or increasing of the tightening through the slide.



### 9.2 Warnings positioning

The pump should be installed in a suitable place, protected from weather extremes.

When the machine is installed in an enclosed area, the discharge of waste must be carried out with suitable piping.

Before using the machine check that guards are securely fixed and correctly.

For GPV 3300 / 2200 without engine use the following guide for the installation kit of protective casing with cooling fan:

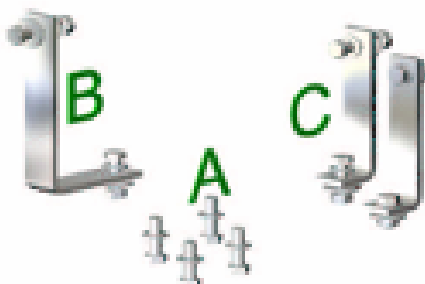
#### 1.

- Front and rear grille
- Locking plugs
- Directional arrow
- Protective casing



#### 2.

- Kit A = screw fan kit
- Kit B = kit center
- Kit C = kit side bracket



### 9.3 Use of machine

**WARNING**

Before performing any work on the machine, disconnect the electric current of the motor which drives pump.

For milking, the vacuum pump reaches the required vacuum. The maximum level when the vacuum pump can work is 50 kPa. The operating temperature is about 70/80°C.

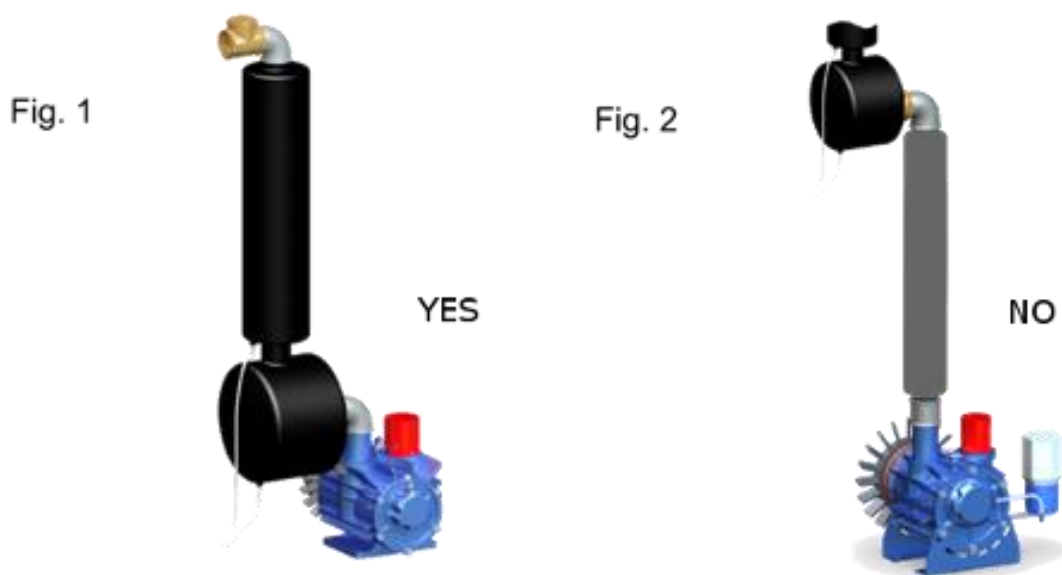
The machine is moved by an electric motor. The contactor (TERMLD) must be installed to save the engine from possible anomalies in the lines of electric current.

The pump must be fitted correctly to prevent excessive vibration.

Connect the suction and discharge through the rubber joint. Make sure that the pipes are adequately supported and not a burden on the body of the pump.

To work properly the air/oil separator must be screwed over the output of the vacuum pump. (Fig.1)

Fig.2 shows the WRONG positioning! The oil, when the pump stops, returning would flow into the pump compromising the operation.



## 10 MAINTENANCE

### 10.1 Insulation of the machine

The operations stated below guarantee safe maintenance regarding unexpected machine start-up.

- take the residual current device, present upstream from the power supply, line to zero
- press the emergency button

### 10.2 Particular Precautions

When performing maintenance or repairs, it is good practice to apply that recommended below:

- before starting any job, affix a sign stating "MACHINE UNDERGOING MAINTENANCE" in a clearly visible position
- do not use solvents and inflammable materials
- pay attention not to disperse any lubricant liquids in the environment
- to access high machine parts, use suitable devices for the operations to be performed
- do not climb onto machine parts; they have not been designed to support people
- at the end of the jobs, restore and correctly fix all protections and guards removed or opened

The maintenance technician must be trained and educated regarding the exact function and movement of every machine part.

### 10.3 Maintenance

Since the machine is not complicated, it just needs a few tips:

- Keep clean rotating parts prepared for processing.

When the wash water or milk intake proceed as follows:

- Remove the exhaust;
- Fill the pump with 0.25 lt. of diesel fuel;
- Rotate the hand pump for about 3 minutes;
- Allow the liquid in the pump for about 4 minutes;
- Disconnect the pump tubes of lubricant and to work the pump for about 5 minutes;
- Repeat the operation in case of loss;
- Replace the caps worn;
- Adjust the tension of drive belts loosening screws securing the support of the sled motor turning the screw adjustment at the side of the substrate;
- Pressing with the thumb drive belt, the intermediate zone of the two pulleys, its decline should not exceed 1.5 cm when a replacing the belt is worn throughout the series.



## 11 LUBRIFICATION SYSTEM

### 11.1 Choice of oil

- Use only oil for vacuum pumps for milking;
- Do not use oils containing dyes, paraffin or other solvents;
- Do not reuse oil already used or exhausted;

The viscosity of oil varies according to climate:

- Hot 68 MIN 68/ISO
- Temperate 46 MIN 46/ISO
- Cold 32 MIN 32/ISO

### 11.2 Capillary system lubrication

Optimal use of oil MI / hour (ml / h) under the conditions tested:

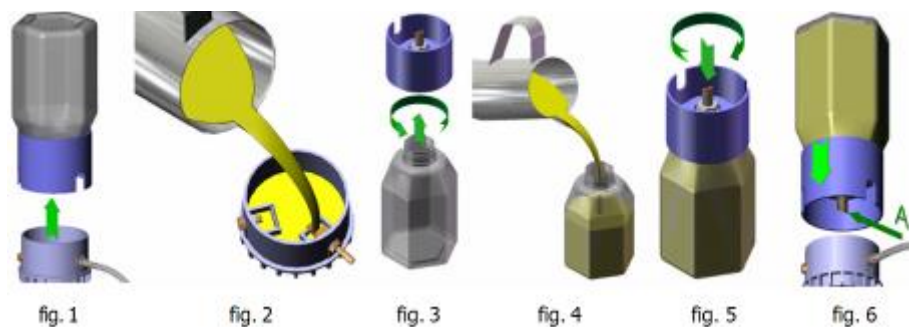
- Oil used MIN = 46;
- Suction pressure = 50 kPa;
- Ambient temperature = 18 C°;
- Altitude above sea level = 500 m;
- GPV 3300, two oilers => 11 + 11 = 22 ml / h
- GPV 3300, three oilers => 11 + 11 + 3 = 25 ml / h
- GPV 2200, two oilers => 9 + 9 = 18 ml / h



#### WARNING

The consumption of oil is influenced by seasonal temperature variations.

#### 11.2.1 Oil recharge into oiler



- (Fig. 1) Remove the empty container with the lid up
- (Fig. 2) Fill the tank with oil and support the two vacuum chambers. The level should reach the slats placed in the slot inlet.

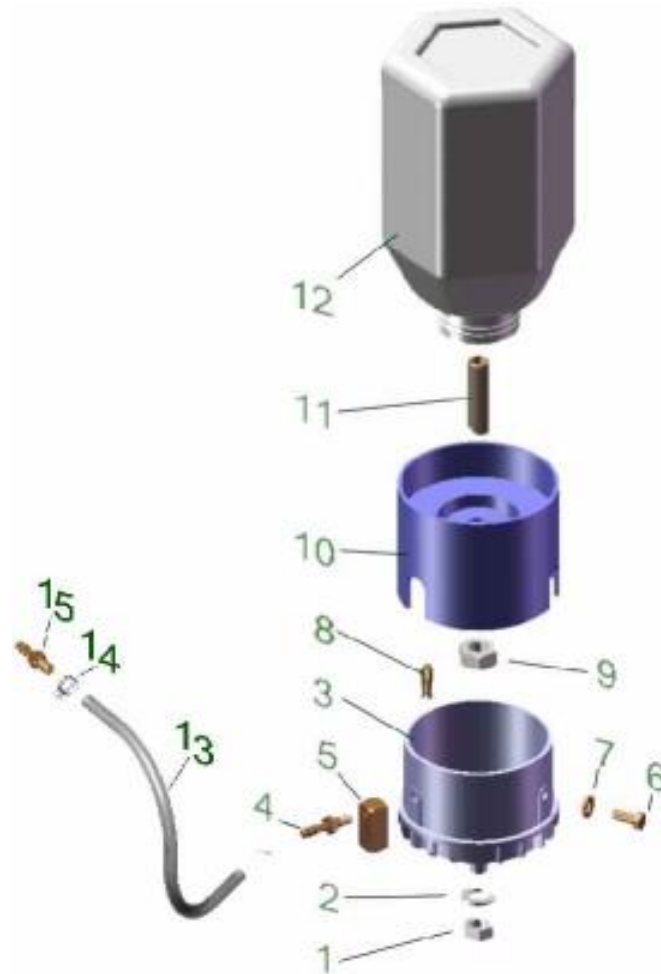


#### NOTE

This operation must be done only for the first time.

- (Fig. 3) Unscrew the lid of the container
- (Fig. 4) Fill the container with oil
- (Fig. 5) Replace the lid of the container
- (Fig. 6) Place the container in his tank into the tube closed with a finger to discharge

### 11.2.2 Components



Reference	Description
1	Fixing nut for oil feeder
2	Washer D.8
3	Lower plastic body
4	Brass nipples
5	Brass support board 10x24
6	Screw normal oiler
7	Bolt normal oiler
8	Suction tongue: 4mm – 6mm
9	Fixing nut for set screw
10	Upper plastic body
11	Set screw
12	Plastic transparent container
13	PVC transparent tubing d.7x4
14	Clips
15	Brass nipples

### 11.3 Drop system lubrication

Optimal use of oil MI / hour (ml / h) under the conditions tested:

- Oil used MIN = 46;
- Suction pressure = 50 kPa;
- Ambient temperature = 18 C°;
- Altitude above sea level = 500 m;
- GPV three oilers 3300: 1 ° and 2 ° oiler = 14 drops / minute = 4 drops / minute; 3 ° Oiler
- GPV 3300 two oilers = 15 drops / minute
- GPV 2200 two oilers = 12 drops / minute



#### WARNING

The consumption of oil is influenced by Seasonal temperature variations.

#### 11.3.1 Flow of lubrication

Adjusting the flow of lubrication:

- Loosen the nut (bolt);
- Turn the adjusting screw (set screw);
- Clockwise to increase the flow;
- Clockwise to decrease the flow;
- Tighten the nut;

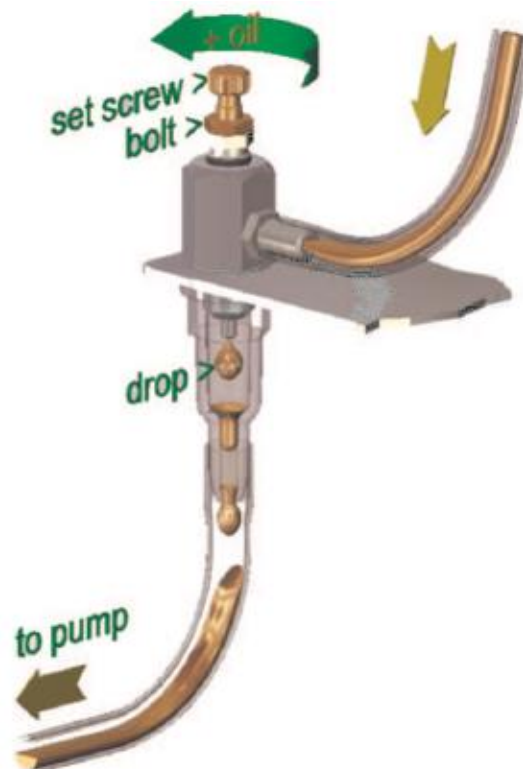
The flow of oil are visible in the tubes of the 'oil can indicate the pumps operating properly.

If not check them for oyster the passage of the car oil and that all components are in good condition.



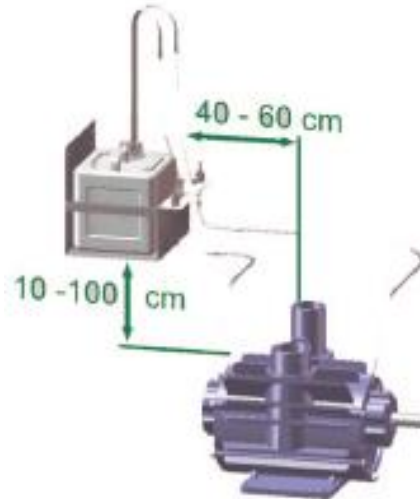
#### WARNING

Do not disrupting the adjustment screw

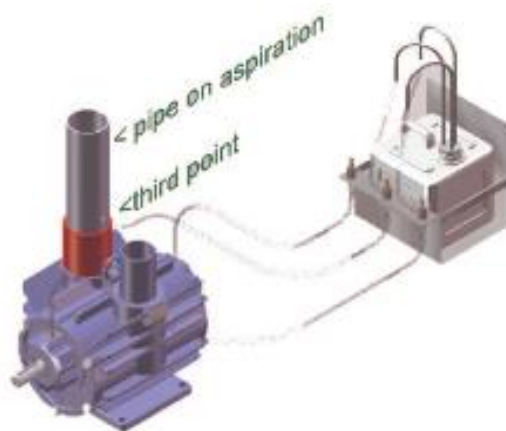


### 11.3.2 Installation

- Do not install the wall mount directly on the pump;
- The ideal measurements are shown the figure.



- Only in case of application of three oilers:
  1. Drill and threading (8 x 1M) the suction
  2. Apply the sealant and screw the fitting
  3. Make connections



- In the case of two oilers make sure that the third hole on the rubber stopper is clear (Fig. 7)
- In the case of three oilers make sure that the central hole (venting) is free (Fig. 8)



fig. 7

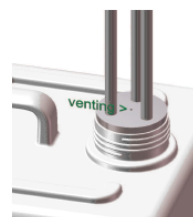
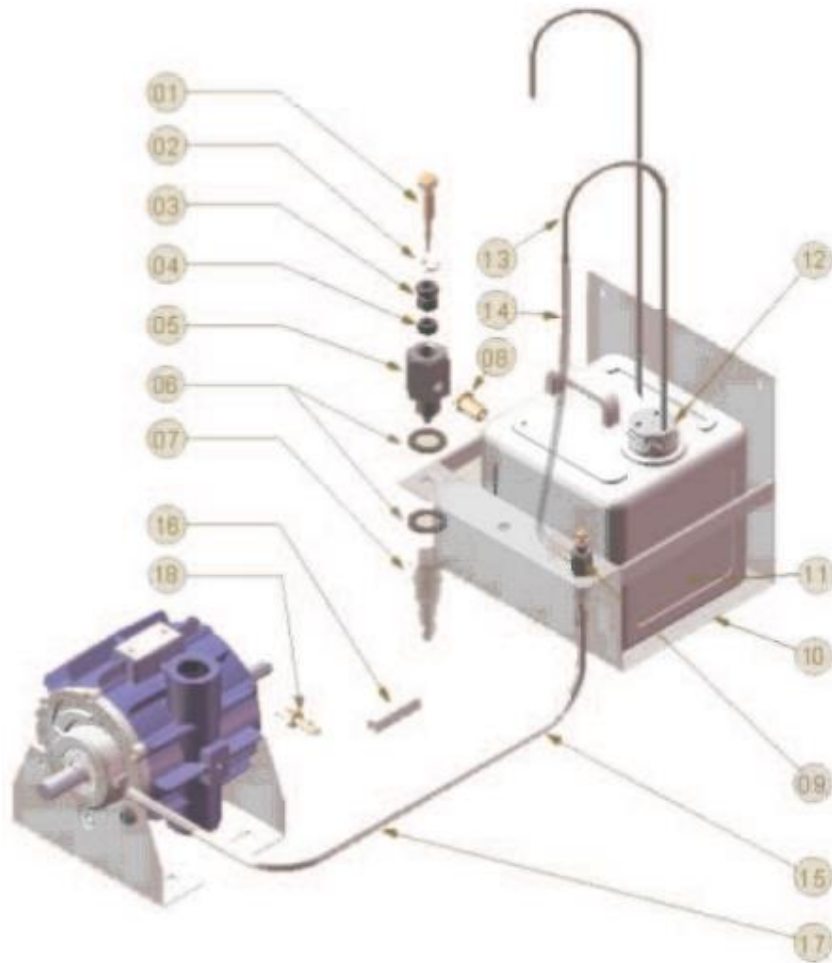


fig. 8

### 11.3.3 Components



Reference	Description
1	Set screw
2	Locknut
3	Ring nut 8x7mm
4	OR
5	Body oiler
6	Flat gasket
7	Pls body trasparente
8	Nipples
9	Drip feed lubricator
10	Wall bracket
11	Oil jerry can 10 Lt
12	Plug for jerry can Ø42 – 48mm
13	S/S suction-pipes "U" bend 62cm
14	PVC trasparente tubing (0.70mt)
15	S/S suction pipes 30mm
16	PVC trasparente tubing (2.70 mt)
17	Pump nipples 14x27 mm Ø8

## 11.4 Overhaul

Overhaul for capillary oiler and for drop oiler:

- Check the oil level every start-up;
- Check the weekly oil consumption;
- Every six months completely disassemble the oiler in all its parts:
  1. Clean with a diesel;
  2. Blowing with compressed air.
- Replace every 2 years:
  1. The transparent container;
  2. All transparent pipes.



### **NOTE**

**Empty the oil recovery and collect the used oil into a container (not re-use and release to the environment)**

## 12 TROUBLESHOOTING

PROBLEM DETECTED	POSSIBLE CAUSE	SOLUTION
Abnormal absorption power	<ul style="list-style-type: none"> <li>- Bad connection</li> <li>- Loose straps</li> <li>- The motor shaft is deformed or deteriorated</li> <li>- Obstruction of the pump body</li> <li>- Obstruction in piping</li> </ul>	<ul style="list-style-type: none"> <li>- Connect the electric motor adequately</li> <li>- Adjust the straps</li> <li>- Replace the 'tree'</li> <li>- Clean the pump house</li> <li>- Clean the 'entry of' in the air system</li> </ul>
The machine hangs, tries or not pump uniformly	<ul style="list-style-type: none"> <li>- Loose straps</li> <li>- Impediments in the rotor</li> <li>- Rotation in the opposite direction</li> </ul>	<ul style="list-style-type: none"> <li>- Adjust the straps</li> <li>- Clean the rotor</li> <li>- Reverse the direction of rotation engine</li> </ul>
Squeak of the rotor	<ul style="list-style-type: none"> <li>- Insufficiently lubricated</li> </ul>	<ul style="list-style-type: none"> <li>- Lubricate</li> </ul>
Audible vibrations	<ul style="list-style-type: none"> <li>- Bearing failures, rotor unbalanced</li> <li>- Clamped no silencer</li> </ul>	<ul style="list-style-type: none"> <li>- Replace bearings, replace rotor</li> <li>- Put a silencer bracket</li> </ul>
Pump overheating	<ul style="list-style-type: none"> <li>- High oil consumption</li> <li>- Control valve does not works well</li> </ul>	<ul style="list-style-type: none"> <li>- Clean the lubricator/oiler adjusting</li> <li>- Check valve adjustment</li> </ul>



### WARNING

**When you turn off the system, make sure the valve is working properly!**

**If the pump should rotate in the opposite direction would cause the breaking of the vanes!**

## 13 CE DECLARATION OF CONFORMITY

# CTA milk<sup>®</sup>s.r.l.

Via Laghi di Avigliana, 91  
12022 BUSCA (CN) ITALY  
Tel. +39 0171.946756  
Fax. +39 0171.946714  
Vat No. IT02462390044

### EU DECLARATION OF CONFORMITY Original Statement

Product model/product **PV 1000-1500-2200-3300  
GPV 1000-1500-2200-3300**

Serial Number \_\_\_\_\_

Name and address of the manufacturer  
or his authorised representative:

**CTA Milk SRL**  
Via : VIA LAGHI DI AVIGLIANA, 91  
12022 BUSCA (CN)  
Italy

**This declaration of conformity is issued under the sole responsibility of the manufacturer**

**Object of the declaration:**

The PV / GPV is a vacuum pump for milking machine

**Machine Designation:**

*Vacuum pump 1000-1500-2200-3300  
Vacuum pump Group 1000-1500-2200-3300*

**Function:** *Vacuum pump for milking machines.*

**The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:**

- Directives 2006/42/EC – Machinery
- Directives 2014/35/UE - Low Voltage Directive (LVD)

**References to the relevant harmonised standards used or references to the other technical specifications in relation to which conformity is declared:**

- UNI EN ISO 12100:2010
- UNI EN 1012-2:2009
- CEI EN 60335-2-70:2003 + A1:2008
- CEI EN 60335-1:2013 + A11:2015

Person authorised to compile the technical file of the machine: CTA Milk SRL

Busca; 01/01/2019

**CTA milk<sup>®</sup> SRL**  
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