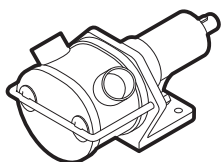


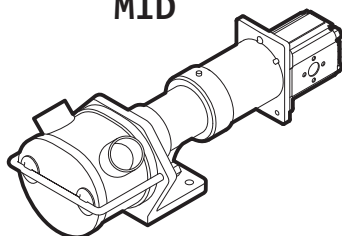
LIVERANI

FLUID TRANSFER TECHNOLOGY

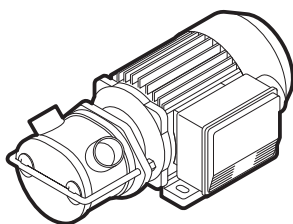
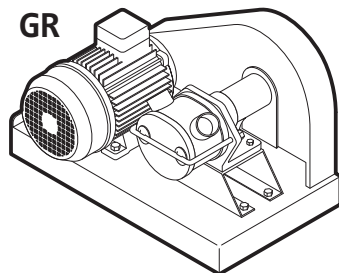
S/P



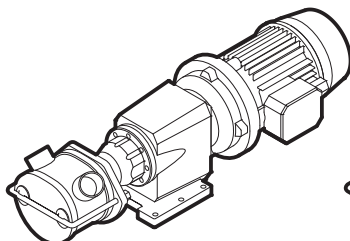
MID



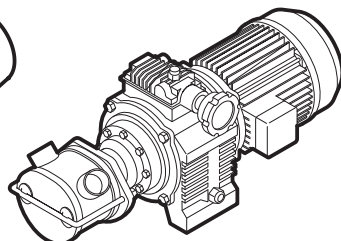
GR



EP



INV-RID



VA

ИМПЕЛЛЕРНЫЕ НАСОСЫ

ИЗ НЕРЖАВЕЮЩЕЙ СТАЛИ

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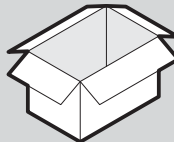
ПЕРЕД НАЧАЛОМ ЭКСПЛУАТАЦИИ

ВНИМАНИЕ! - Ознакомьтесь с данной инструкцией перед установкой насоса. Держите данное руководство в доступном персоналу месте.

ВНИМАНИЕ! - Перед использованием насоса убедитесь, что он не был повреждён во время транспортировки. Падение или удар могут нарушить нормальный режим работы насоса.

ВНИМАНИЕ! - Для обеспечения удобства упаковки и транспортировки насос может поставляться в разобранном виде. Поэтому перед запуском убедитесь, что все части насоса установлены верно.

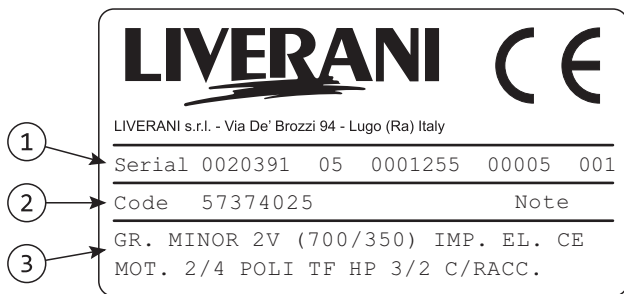
ВНИМАНИЕ! - Несмотря на то, что насос представляет собою простой агрегат, ограничьте доступ детей и неквалифицированного персонала к насосу.



1 ТЕХНИЧЕСКИЕ ОСОБЕННОСТИ

1.1 ИДЕНТИФИКАЦИЯ

На каждом насосе есть шильдик с указанием всех идентификационных данных завода-изготовителя, а также код продукта и основные особенности насоса (1 = серийный номер, 2 = код насоса, 3 = описание насоса). Материал импеллера насоса указывается на круглой наклейке на каждом насосе (4).



1.2 ОПИСАНИЕ И ОБЛАСТЬ ПРИМЕНЕНИЯ

Самовсасывающие импеллерные насосы с гибкой крыльчаткой с проточной частью из нержавеющей стали имеют низкую скорость вращения и пригодны для перекачивания деликатных и вязких жидкости, в том числе с содержанием твёрдых частиц. Насосы широко используются в винной промышленности (вино, мезга, жмых), в пищевой промышленности (пиво, фруктовое пюре и соки, мёд, патока, сиропы, молоко, масло, йогурты, томатная паста, а также кислотные и щелочные растворы и др.), в химической промышленности (крахмал, клеи на водяной основе, эмульсии, глицерин, парафин, моющие средства, каучуковый латекс, жидкости для фотопроцессов, краски, чернил, промышленных стоков и т.д.), в косметических и лекарственных средств (жидкое мыло, чистящие средства, кремы, шампуни и т.д.). Производительность насоса уменьшается, когда вязкость продукта увеличивается (макс. 50,000 сП). Для квалифицированного подбора подходящего под вашу задачу насоса обращайтесь непосредственно к поставщику - <http://promnasos.com>, тел. +7 (495) 580-10-53.



ВНИМАНИЕ! - Не погружайте насос в жидкость, насос не является погружным. Не используйте насос в целях, отличных от указанных заводом-изготовителем.



ВНИМАНИЕ! - Не используйте насос для перекачивания легковоспламеняющихся жидкостей и во взрывоопасных помещениях.

Особенности импеллеров

- **НЕОПРЕН (CR)** - отличный баланс между химической и механической стойкостью.
- **НИТРИЛ-БУТИЛОВЫЙ КАУЧУК (NBR)** - отличная стойкость к маслам.
- **ЭТИЛЕНПРОПИЛЕНДИЕНОВЫЙ КАУЧУК (EPDM)** - идеален для жидкостей с повышенной температурой и СІР-мойкой, подходит для кислот и щелочей.
- **СИЛИКОН (VMQ)** - для работы с горячими жидкостями, но механически менее стоек.
- **НАТУРАЛЬНАЯ РЕЗИНА (NR)** - прекрасно подходит для жидкостей на водной основе с комнатной температурой; обладает прекрасной механической стойкостью

1.3 ПРОИЗВОДИТЕЛЬНОСТЬ

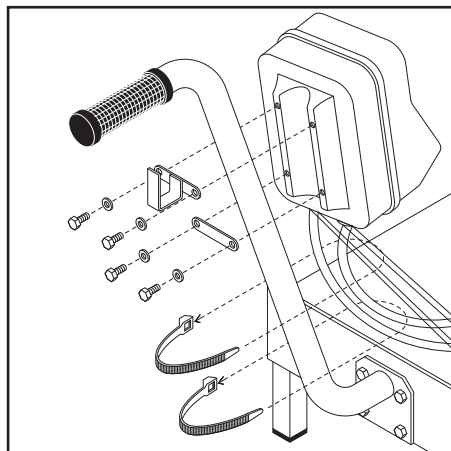
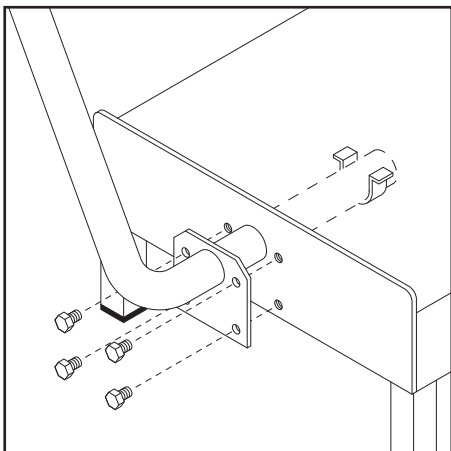
The values stated in the table (see page 80) are approximate and refer to laboratory tests performed with water at 20 °C temperature. The head and the capacity decrease when the viscosity of the product increases, in this case we suggest to reduce the rotation speed (Rpm). The bare shaft pumps (S/P), those with hydraulic motor (MID), with mechanical variator or with frequency converter can work at every speed among the lowest (min) and the highest one (max). The coaxial pumps (EP), the pumps with pulley (GR) and those with gearmotor (RID) can run at 1 or 2 speed according to the motor type.

ATTENTION! - Operating the pump at higher than recommended speeds can cause the failure of mechanical or electrical components of the pump.

2 УСТАНОВКА

2.1 НАСОСЫ НА РАМЕ И ТЕЛЕЖКЕ

Due to packing or transport reasons, the handle of the trolley and the control panel can in some cases be delivered separately. Before using the pump it is therefore necessary to assemble them according to the following pictures.



2.2 POSITIONING OF THE PUMP

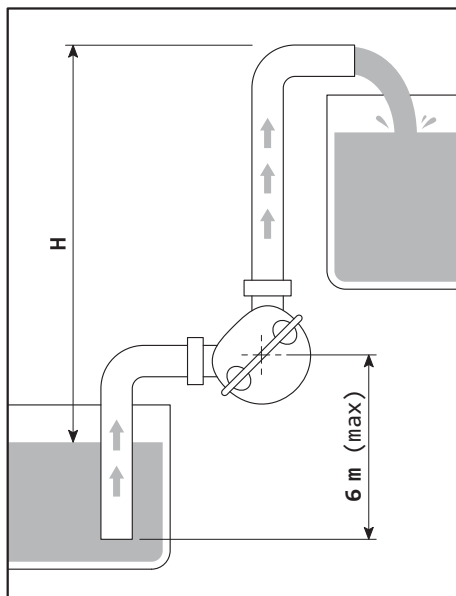
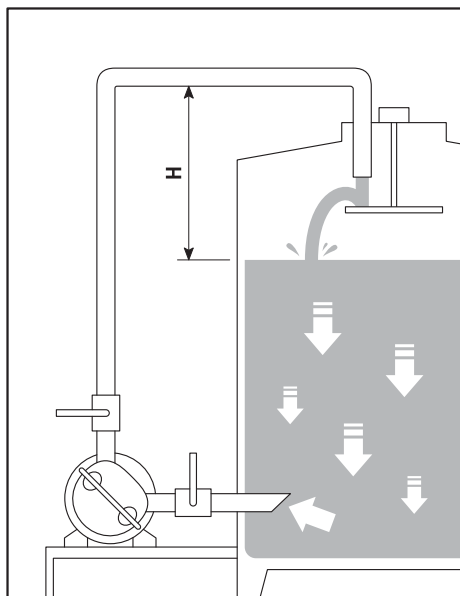
The pump can run in all mounting positions. Put the pump steadily in the work position, mainly when it must work on an inclined or raised plane. The bare shaft pumps (S/P) and the coaxial pumps (E/P) can be fixed using the holes on the support or on the electric motor. The level of the product to be transferred must be at a maximum depth of 6 m from the pump axis (see examples). The head (H) determines the capacity and it depends on the pump type; the higher is the head the lower the capacity will be (see features table). To connect the pump fitting holes please use rigid or reinforced pipes with right correspondent fittings. We suggest to use short inlet pipes for an easy self priming intake (automatic suction).

ATTENTION! - Fasten the pump steadily when using the pump on an inclined or raised plane. Be sure that the base on which the pump must operate can support the weight of the pump.



ATTENTION! - Do not use the pump with installations not in accordance with the CE standards or for uses not allowed by the producers. Do not disassemble or replace the security parts set by the producer.

ATTENTION! - In case of transferring toxic or polluting fluids prepare the work site with proper security devices, in order to protect the environment.

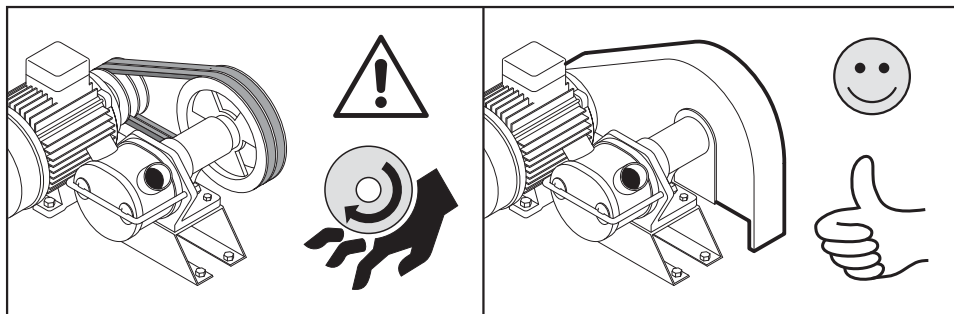


2.3 BARE SHAFT PUMPS AND HYDRAULIC ORBITAL MOTOR PUMPS

Bare shaft pumps (S/P series) and for hydraulic orbital motor (MID series), to work properly must be connected to an appropriate power source via a pulley or a joint. For the coupling please refer to the technical drawing present in this manual. The feeding system must allow the pump to operate at a speed of rotation within the limits declared (see performance tables).



ATTENTION ! - Connecting the pump to the power source must be performed in compliance with the EC safety regulations; protect the moving parts with appropriate security guards so that they are not a danger for the operator and any other user of the machine.



2.4 ELECTRICAL CONNECTIONS

Pumps fitted with electric motors and a control panel must be connected to the supply source using the exit cables or the terminal board connections. The technical data for the electric connections are stated on the name plate on each electric motor. Further information (special connections, etc.) are stated near the terminal board or the control panel.



ATTENTION! - The electric connection and any other intervention on the control panel of the pump must be performed by qualified and specialized staff only according to the CE standards.



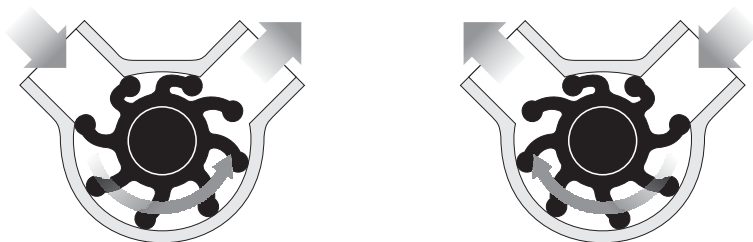
ATTENTION! - The control panel that feeds the pump must be equipped with an overload protector and an undervoltage coil or a contactor to avoid the passage of the current after every voltage drop, further more it must be grounded. All electric features of the pump must be the proper ones and in accordance to those of the panel to which it will be connected.



3 PUMP OPERATION

3.1 PUMP OPERATION

The running direction of the pump determines the inlet and the outlet hole. The pump can work in both directions and therefore a direction change and the reversing of it is always possible, even during the working operation (for example in case of exceeded liquid or emptying a piping circuit). After starting the pump it takes a few seconds for the self priming suction to occur. In case the liquid is not sucked try to reverse the running direction or check for the presence of air into the piping circuit caused by holes or by a faulty connection of the inlet/outlet fittings of the pump.



ATTENTION! - Please check that the piping circuit and the inlet/outlet connections are steadily connected to the pump before starting up the pump. Do not carry out any connection or disconnection of the piping or of the pump fittings when the pump is working.

ATTENTION! - The pump must not run dry for the necessary selfpriming time or for the emptying time at the end of operation in order to avoid any burning or severe damages to the rubber impeller.

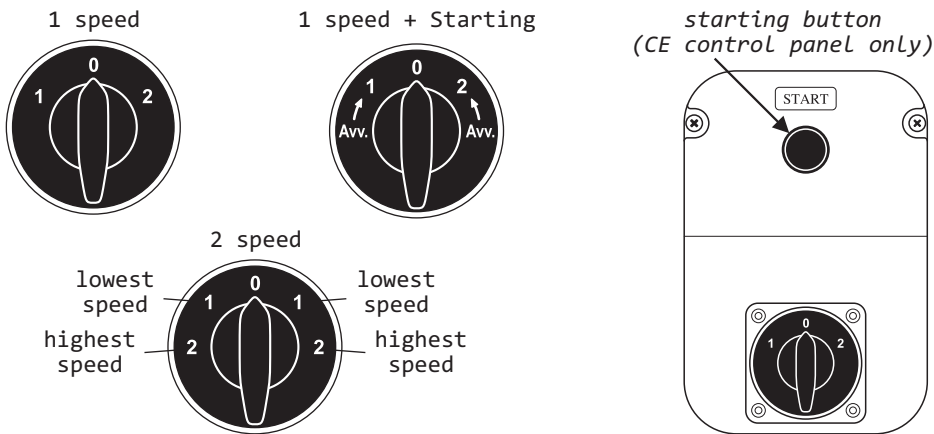
3.2 CONTROL DEVICES

REVERSE SWITCH - The reverse switch can be available in one or two speed version. The single speed version presents pos. 0 for standstill phase, while the 1 and 2 positions represents the two working directions. Instead, the two speed version presents two speed positions for each running directions: pos. 1 represents the lowest speed and pos. 2 the highest one. Some pump executions with single phase drive have a starting reverse switch; in this case the switch must be put on pos. AVV. and kept in this position till the pump begins to work, then release the switch which will automatically stop in pos. 1 or 2. This operation must be repeated every time when starting up the pump and also when reversing the working direction. Pumps with this starting position should not be used for automatic working (for example with level sensor).

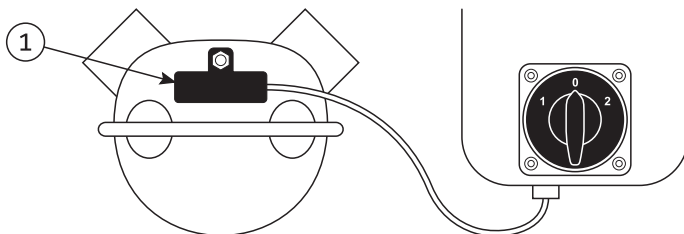
STANDARD CONTROL PANEL - This control panel is made of an IP55 box with a reverse switch.

CE CONTROL PANEL - In the IP55 control panel, there is a rotating switch and a black start button (START), that has to be pressed before you want to start the pump, each time you connect the control panel to the feeding source and in case of voltage drop.

CE CONTROL PANEL WITH ADDITIONAL SHUNT - In this IP 55 control panel there is a reverse switch and a starting black button (START), which must always be pressed before starting the pump every time the panel is connected to the feeding source and after every possible current drop. The panel also has an additional 24V shunt (normally closed contact) which connects a temperature sensor (standard mounting) and allows the connection of other devices by request (pressure switch, level sensor, remote control, etc.).

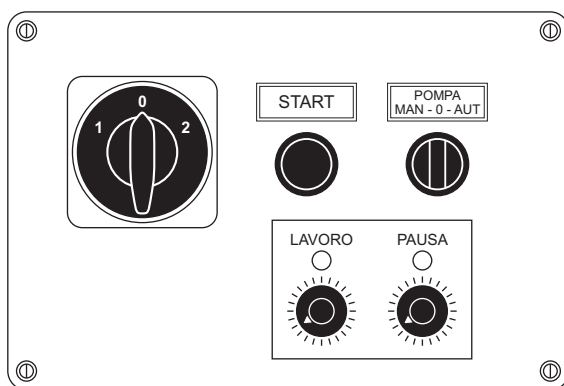


TEMPERATURE SENSOR (DRY RUNNING PROTECTION) - The dry running protection, connected directly to the pump body by a sensor (1), stops the impeller running when the internal temperature is higher than 50 °C, in order to avoid burning or deformation. This protection is not suitable for the transfer of liquids at a temperature higher than 45 °C.



ATTENTION! - The dry running protection device does not interrupt the passage of electric current; when the temperature is lower than 50 °C the pump automatically starts working again.

CE CONTROL PANEL WITH TIMER - In this IP55 control panel there is a reverse switch, an automatic control device (timer) and a black starting button which must be pressed before starting the pump every time the pump is connected to the supply source and after every possible current drop. To choose the control device, use the MAN/AUT switch. The mode MAN (manual) excludes the timer; the pump will be directly controlled by the reverse switch. The AUT(automatic) mode uses the timer and allows the pump to run without user intervention. The selection is done by using the graduated knob WORK (LAVORO) and PAUSE (PAUSA). Using the WORK knob it's possible to set the run time (12 positions; LIV1 and LIV2 types from 2 to 24 min), while with the PAUSE knob it's possible to set the pause time (12 positions; LIV1 type from 10 to 120 min, LIV2 type from 1 to 12 hours). The work/pause phases are shown by the corresponding pilot light. After fixing the work/pause cycles (which can be modified even during the working phase), action the pump using the reverse switch.



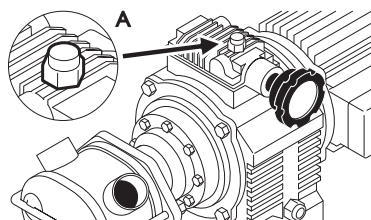
3.3 PUMPS WITH VARIATOR

The rotation speed is regulated according to the needs by the control wheel placed on the variator. The clock arrows inside the control wheel show the reference speed (see table).



ATTENTION! - The control drive of the variator must **NOT** be moved when the electric motor is not running.

ATTENTION! - Before the first use, replace the red plug with the air valve (A).



| Position control wheel | Rotation speed pump (RPM) | | |
|------------------------|--------------------------------|------------|-------------|
| | VA MINOR (*) VA MAJOR-B (*) | VA MAJOR-M | VA MAXI (*) |
| 0 | 900 | 210 | 600 |
| 2 | 855 | 250 | 520 |
| 3 | 830 | 275 | 480 |
| 6 | 750 | 360 | 380 |
| 9 | 670 | 460 | 275 |
| 12 | 600 | 565 | 190 |
| 14 | 555 | 645 | - |
| 16 | 510 | 725 | - |
| 18 | 465 | 810 | - |
| 20 | 425 | 900 | - |
| 24 | 345 | - | - |
| 30 | 235 | - | - |
| 33 | 190 | - | - |

(*) Refer to the black arrow position and the graduated scale

3.4 PUMPS WITH FREQUENCY CONVERTER

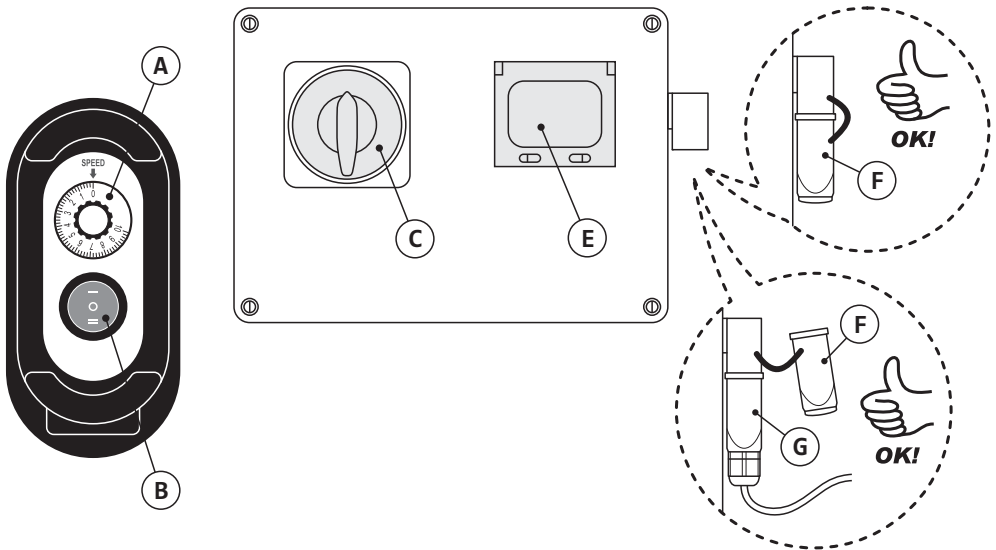
The pump is directly operated through the equipped remote control (with a 10/15 mt long cable), equipped of a reverse switch (B) and a speed controller (A). The pump speed can be modified at will, even during the operation phase, according to the required capacity. Before using the remote control the main control panel must be switched on turning the main switch (C) from the position 0 to the position 1. The panel has also an additional dry running protection (see page 20) and 24V shunt (normally closed contact) which allows the connection of other devices on request (pressure switch, level sensor, remote control, etc.).



ATTENTION! - The pump works only if the 24V shunt is connected to the plug (F) or if connected to an external device that close the circuit through the connector (G) supplied.



ATTENTION! - The operating parameters of the frequency converter are already regulated by the producer and no other modifications are required. The use of the small panel (E) on the frequency converter is not recommended and the modification of the parameters can alter the proper operation of the pump.



3.5 PUMP WITH RADIO CONTROL

Description: control panel with frequency converter and radio control for the local or remote controlling of the pump. After the pump has been switched on through the main switch, it is possible to control the pump directly from the main control panel or through the radio remote control (except the minimum speed restart function). The use of the remote control is reported in the main control panel by the lighting of the corresponding buttons; for example, pushing the stop red button on the radio control, will turn on the red light button on the panel. The controller can be used effectively in a 100m radius of the apparatus.

Command description and optical signals:

MAIN SWITCH [A] - The main switch turn on/off the control panel. When the control panel is turned on, the frequency converter display [H] turn on as well and the pump is in the STOP position, indicated by the lighting red button [B].

STOP BUTTON (RED) [B] - By pressing the STOP button the pump is stopped in any case. On the control panel, the STOP lighting signal has different funcion: constant light if the stop command was given by the operator (stop untill other command), flashing is the stop signal was given by external signal (temporary stop related to the external signal).

LEFT ROTATION BUTTON [C] OR RIGHT ROTATION BUTTON [D] - These buttons control the left and right rotation of the pump (on the control panel the corresponding button will light). On the control panel the right and left lighting button has different meaning: a constant light shows the pump is running in the set direction, a flashing if the pump has been stopped by the operator, this illumination is intended to indicate the rotation before the STOP.

It is possible to reverse the direction of rotation of the pump even while the motor is running; the changeover will be made according acceleration/deceleration setted in the frequency converter (these values vary depending on the model of the pump).

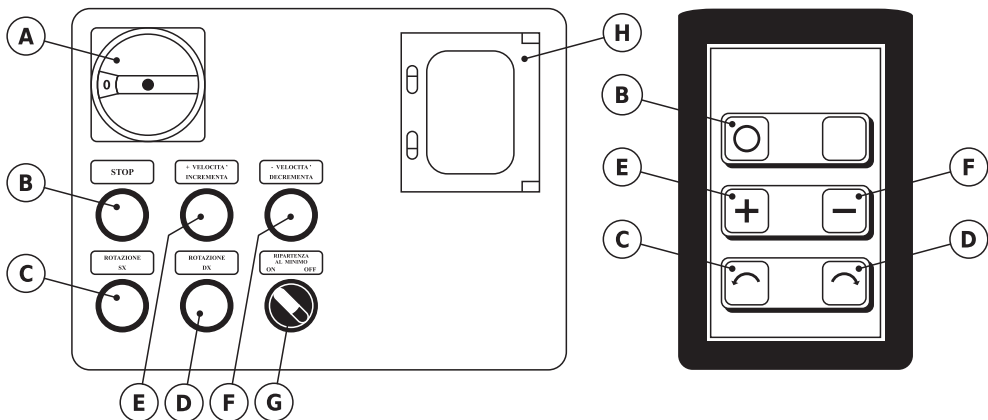
INCREASE [E] OR DECREASE [F] BUTTONS - These buttons increase or decrease the rotating speed while the pump is running (on the control panel the corresponding button will light). The speed will vary proportionally; with a short press you will have little variation, with a long press will have a linear variation up to the minimum/maximum value setted (the minimum/maximum values vary in relationship to the model of pump).

MINIMUM SPEED RE-START SELECTOR [G]

Set to ON: the Minimum restart function is activated, after the pump has been STOPPED by the user, it restarts at the minimum speed.

Set to OFF: the Minimum restart function is disabled, after the pump has been STOPPED by the user, it restarts at the speed achieved before the STOP.

Attention: This setting only works when the user stops the pump. If an external source stops the pump (ex. thermal sensor or other) it will restart at the speed before the stop.

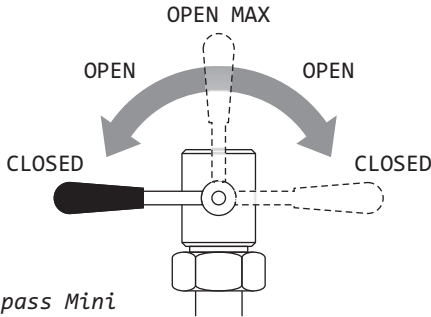


3.6 PUMPS WITH BY-PASS

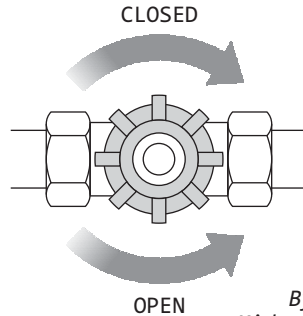
The bypass valve connects the inlet and outlet pipe of the pump. When necessary it is possible to open the valve to decrease the capacity and the head of the pump according to requirements. There is a ball valve in all pump types except for the Midex pump where a spring bypass valve is used.



ATTENTION! - In order to have the self priming action at the beginning of the working, the bypass valve must be completely closed.



*By-pass Mini
Major and Maxi*



*By-pass
Midex and Minor*

4 MAINTENANCE

4.1 GENERAL MAINTENANCE

Each pump is adjusted and tested inside the factory during and after the assembling of it. Very few maintenance interventions are required depending on the wear and tear of the pump caused mainly by the pressure and by the kind of fluid to be transferred. Leaks from the body of the pump suggest that the o-rings and/or the mechanical seal are worn out and must be replaced. Important losses of capacity (if not due to electric failure), can suggest problems with the impeller and with the front cover of the pump. In these cases a simple check is possible by dismounting the front cover. The replacement of the impeller and the front cover will be necessary in case of severe deformation or breakages of the impeller wings and when scoring/indentation on the cover are found.



ATTENTION! - Before doing any maintenance or repair, disconnect the electrical supply.

ATTENTION! - Any maintenance or repair must be performed by specialized and authorized staff and all spare parts must be original. Do not try any emergency repairs which could compromise the proper operation of the pump.

4.2 PUMP WITH MECHANICAL SPEED VARIATOR

After the first 3000 working hours we suggest replacing the lubricating oil using the proper discharge and charge holes located on the variator sump. Check the oil level periodically using the indicator positioned on one side. We suggest the use of lubricating oil **SHELL DONAX TA** type or similar (**AGIP GM DEXRON III D ALLISON, IP TRANSMISSION FLUID**).

| Type | Quantity of oil |
|---------------------|-----------------|
| VA MINOR / VA MAJOR | 0,5 kg |
| VA MAXI | 1,2 kg |

4.3 CLEANING

The pump must be cleaned after use in order to preserve the mechanical and sanitary features, mainly in case of transferring foodstuffs or pharmaceutical products. In case of a short stop make the pump working for 1-2 minutes with clean water and then empty the piping and the pump body. In case of long period of rest, after emptying the pump, make the pump working for 5/10 seconds after pouring some drops of **GLYCERINE OIL** on the impeller.



ATTENTION! - To clean the pump, the piping and the plant (cistern, tank, etc.) when transferring foodstuffs or pharmaceutical products please refer to the defined standards of the relative field. Pay attention also in case of handling toxic and corrosive products.



ATTENTION! - When cleaning the pump, do not use products that are not compatible with stainless steel AISI 304/316, or with the impeller materials. Do not get the electrical components wet. Only use glycerin oil as an impeller lubricant.

4.4 SPECIFICATIONS FOR DISMANTLING

The pump is made of the following materials: rubber, plastics, steel, stainless steel, aluminium and electric material. The disposal of the above mentioned materials must be in accordance with the specifications in force (2002/96/CE).



PERFORMANCES H = HEAD (meters)

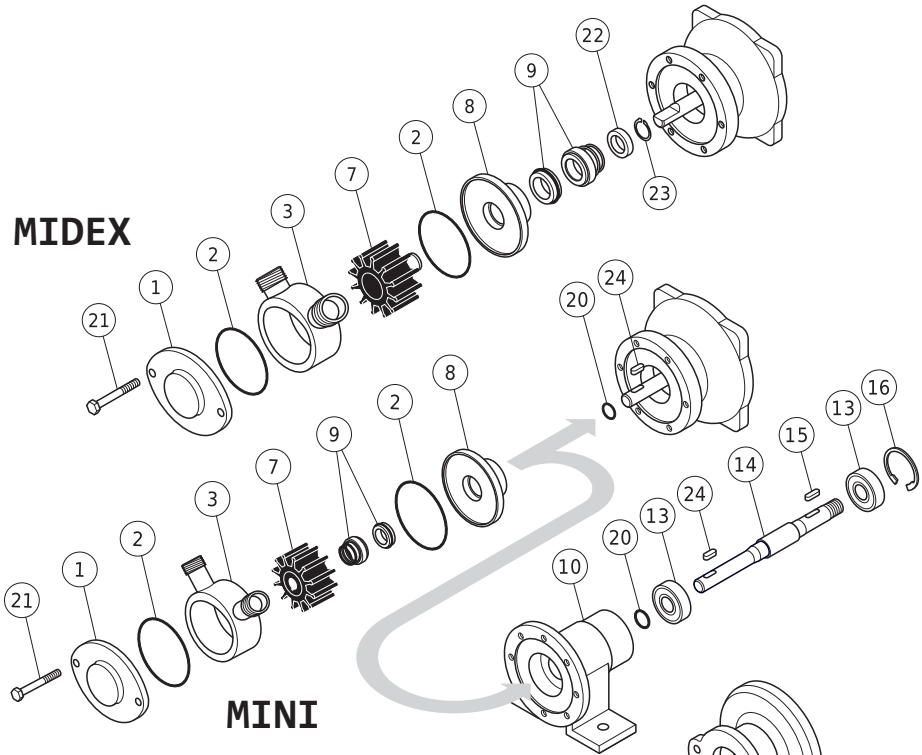
Q = CAPACITY (liters/hour)

| Tipo Type Type Typ Tipo Tipo | Giri/min. Rpm Tours/min. U/min. Rpm Rpm | H | | | | | | | | | | |
|---|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| | | 0 | 4 | 8 | 12 | 16 | 18 | 20 | 24 | 27 | 32 | 40 |
| MINI | min 180 | 150 | 0 | | | | | | | | | |
| | 600 | 700 | 560 | 390 | 150 | 0 | | | | | | |
| | 900 | 1000 | 900 | 840 | 720 | 540 | 450 | 350 | 0 | | | |
| | max 1400 | 1620 | 1440 | 1320 | 1140 | 1020 | 900 | 800 | 600 | 400 | 0 | |
| MIDEX | min 180 | 600 | 480 | 0 | | | | | | | | |
| | 600 | 2600 | 2300 | 2000 | 1400 | 800 | 400 | 0 | | | | |
| | 900 | 3840 | 3480 | 3180 | 2760 | 2160 | 1800 | 1600 | 720 | 0 | | |
| | max 1400 | 5760 | 5160 | 4800 | 4320 | 3600 | 3180 | 2800 | 1920 | 1200 | 0 | |
| MINOR | min 175 | 1320 | 0 | | | | | | | | | |
| | 235 | 1800 | 1600 | 1300 | 750 | 0 | | | | | | |
| | 300 | 2400 | 2150 | 1800 | 1400 | 700 | 0 | | | | | |
| | 350 | 2750 | 2500 | 2100 | 1600 | 800 | 0 | | | | | |
| | 470 | 3600 | 3300 | 2900 | 2400 | 1600 | 1000 | 0 | | | | |
| | 700 | 5000 | 4700 | 4300 | 3700 | 3000 | 2520 | 1800 | 0 | | | |
| | 900 | 6900 | 6200 | 5760 | 5040 | 4200 | 3660 | 3200 | 1800 | 0 | | |
| | max 1400 | 10000 | 9000 | 8000 | 6900 | 5500 | 4900 | 4200 | 2600 | 1700 | 0 | |
| MAJOR | min 175 | 4320 | 3840 | 3000 | 0 | | | | | | | |
| | 235 | 6300 | 5100 | 2700 | 0 | | | | | | | |
| | 350 | 9000 | 7800 | 6000 | 3700 | 0 | | | | | | |
| | 470 | 12000 | 10500 | 8700 | 5100 | 0 | | | | | | |
| | 700 | 18000 | 15000 | 12000 | 8400 | 2500 | 0 | | | | | |
| | max 900 | 22500 | 19560 | 15000 | 11220 | 3000 | 0 | | | | | |
| MAXI | min 150 | 15000 | 12000 | 8700 | 0 | | | | | | | |
| | 235 | 19200 | 18000 | 15000 | 9600 | 0 | | | | | | |
| | 300 | 24600 | 22200 | 18900 | 12000 | 0 | | | | | | |
| | 470 | 36000 | 34200 | 30000 | 24000 | 12000 | 0 | | | | | |
| | max 600 | 43800 | 41400 | 36000 | 30000 | 16000 | 0 | | | | | |
| MAXI Double 2Q | min 175 | 27000 | 24000 | 20000 | 13000 | 0 | | | | | | |
| | 235 | 36000 | 33000 | 27500 | 20500 | 10000 | 0 | | | | | |
| | 350 | 54000 | 48500 | 41500 | 33000 | 22000 | 14000 | 0 | | | | |
| | max 470 | 72000 | 65000 | 56000 | 45000 | 30000 | 20000 | 0 | | | | |
| MAXI Double 2H | min 175 | 14100 | 13500 | 12600 | 11400 | 9700 | 8600 | 7400 | 4500 | 0 | | |
| | 235 | 19200 | 18500 | 17500 | 16200 | 14300 | 13200 | 12000 | 9000 | 5900 | 0 | |
| | 350 | 27600 | 26700 | 25500 | 24000 | 22200 | 21000 | 20000 | 17200 | 14800 | 9700 | 0 |
| | max 470 | 36000 | 35000 | 33600 | 32000 | 29700 | 28400 | 27000 | 23600 | 20600 | 14300 | 0 |

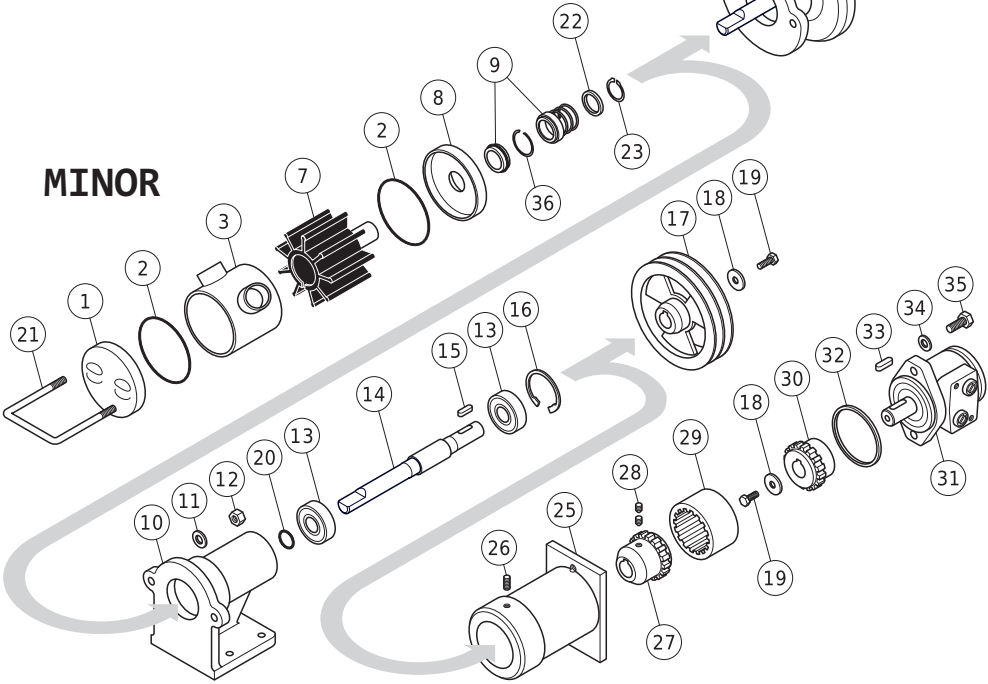
Q

COMPONENTS: 1.Front cover / 2.O ring cover / 3.Casing / 7.Impeller / 8.Rear cover / 9.Mechanical gasket / 10.Support type S/P or MID / 11.Washer / 12.Nut / 13.Ball bearing / 14.Shaft / 15.Flat key / 16.Seeger ring / 17.Pulley / 18.Washer / 19.Bolt / 20.Guard ring / 21.U-Bolt or Bolt / 22.U-Bolt (MAXI) or Sapcing ring (MIDEX, MINOR, MAJOR) / 23.Seeger ring (MIDEX, MINOR, MAJOR) or Ball bearing (MAXI) / 24.Flat key / 25.MID flange / 26.Bolt / 27.Pump coupling / 28.Bolt / 29.Box coupling / 30.Motor coupling / 31.Orbital motor / 32.Center ring / 33.Flat key / 34.Washer / 35.Bolt.

MIDEX

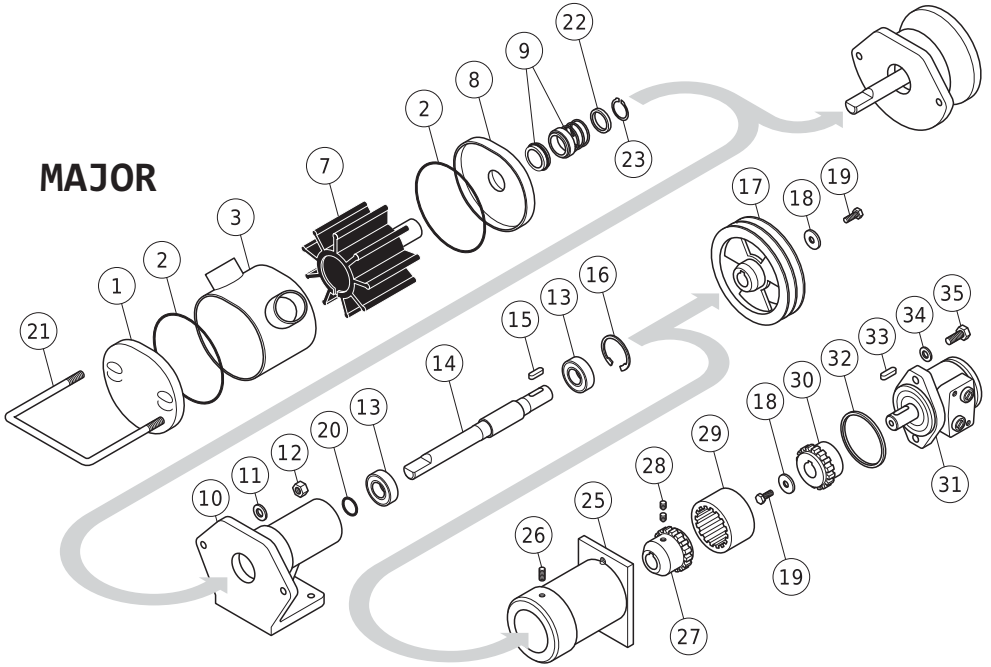


MINI

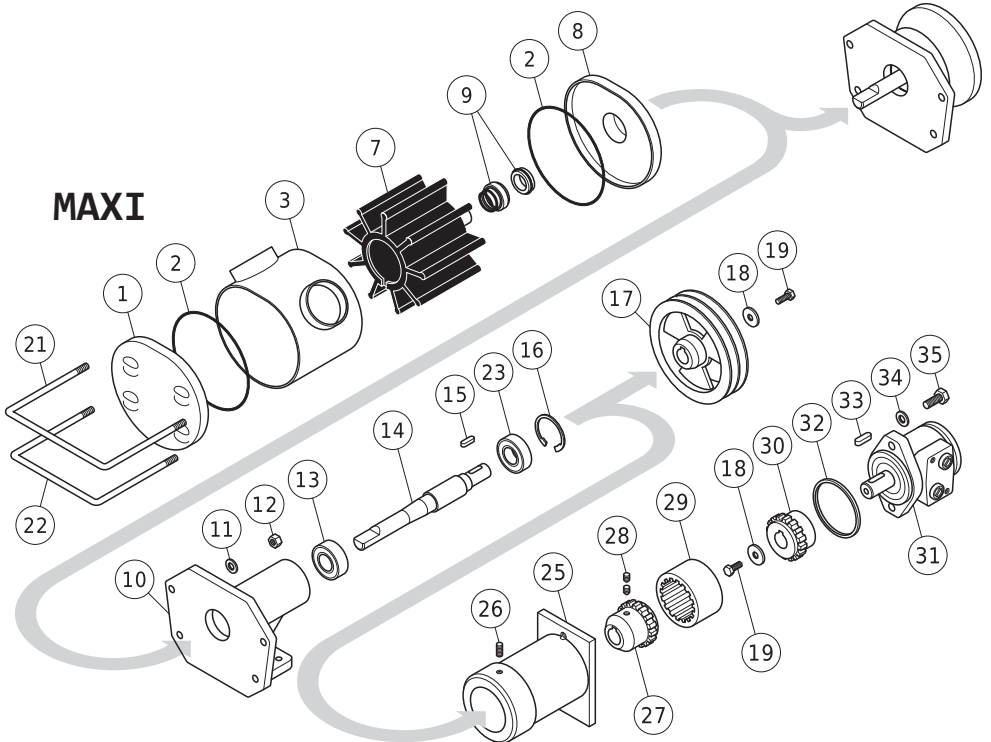


MINOR

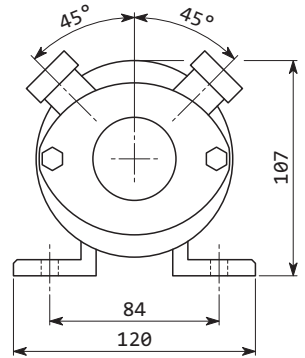
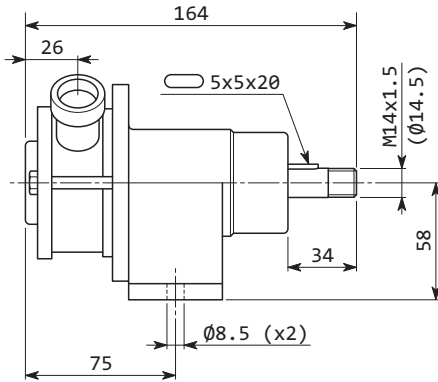
MAJOR



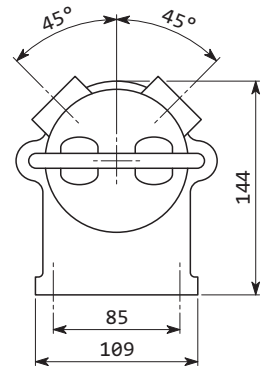
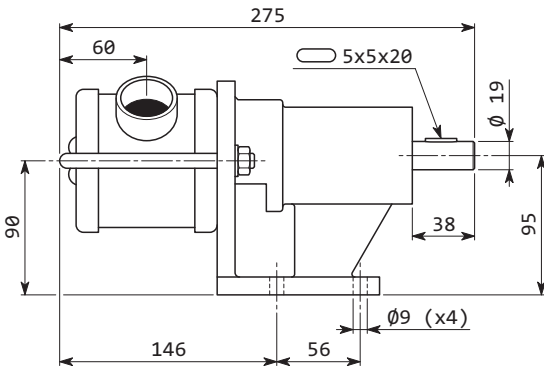
MAXI



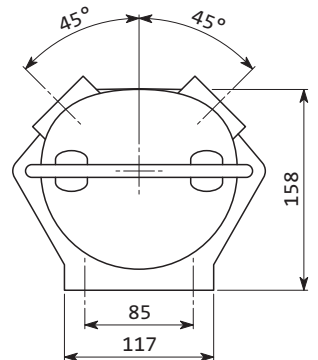
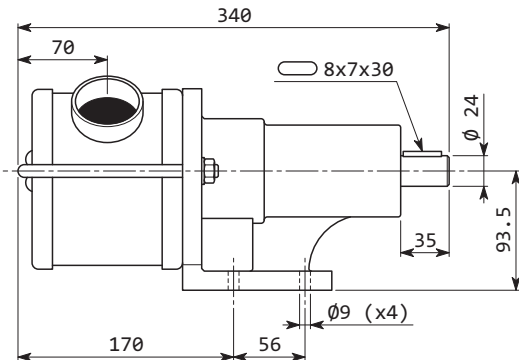
MINI 3/4" S/P (Peso/weight 5.4 kg)



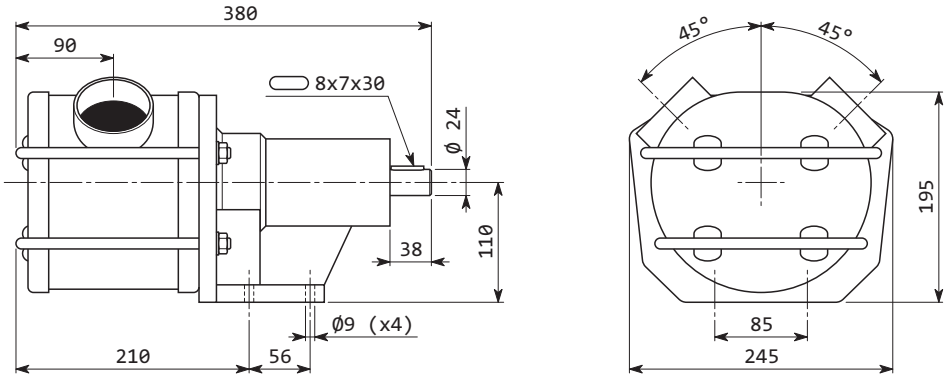
MINOR 40 S/P (Peso/weight 5.4 kg)



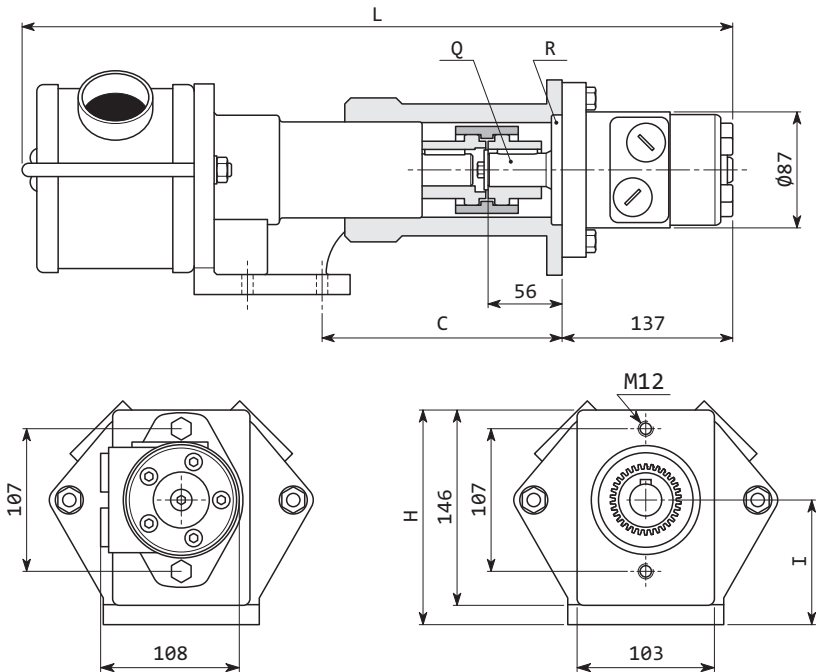
MAJOR 60 S/P (Peso/weight 9.7 kg)





MAXI 80 S/P (Peso/weight 15.7 kg)

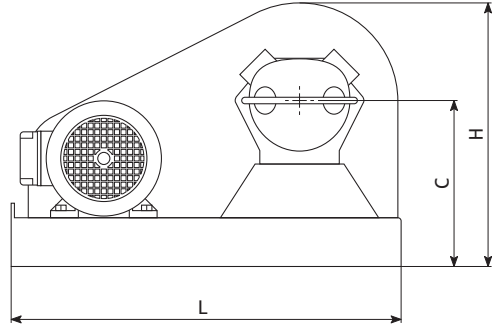
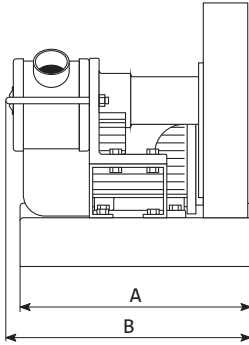


MID MINOR 40 - MID MAJOR 60 - MID MAXI 80



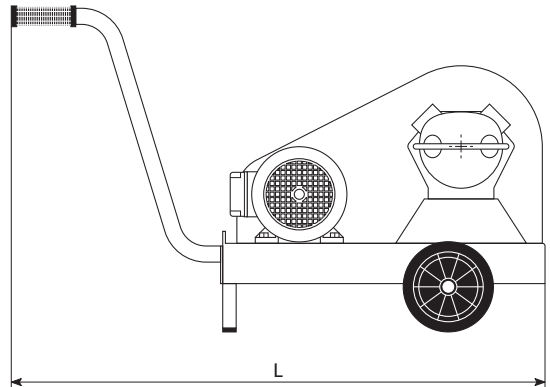
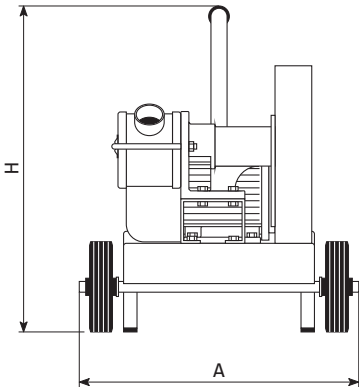
| Peso Type | Peso Weight | C | H | I | L | Q | R |
|--------------|-------------|-----|-----|------|-----|--|--|
| MID MINOR 40 | 11.7 kg | 142 | 160 | 95 | 478 |  8x7x30 |  82.5 x 8 |
| MID MAJOR 60 | 16 kg | 180 | 160 | 93.5 | 542 | | |
| MID MAXI 80 | 22 kg | 185 | 177 | 110 | 575 | | |

GR (Gruppi su base/Group on base)

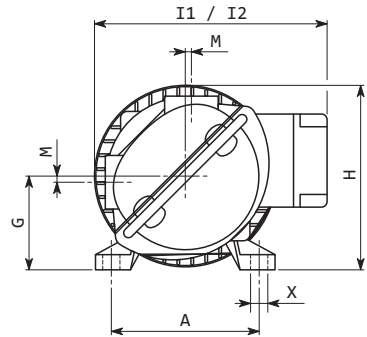
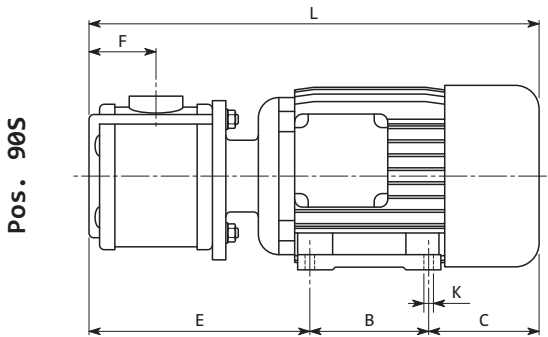
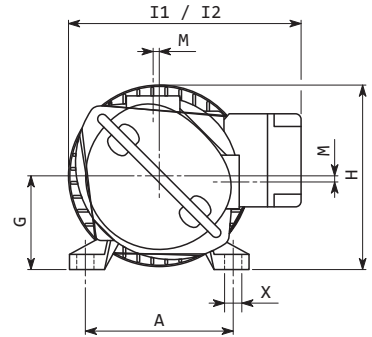
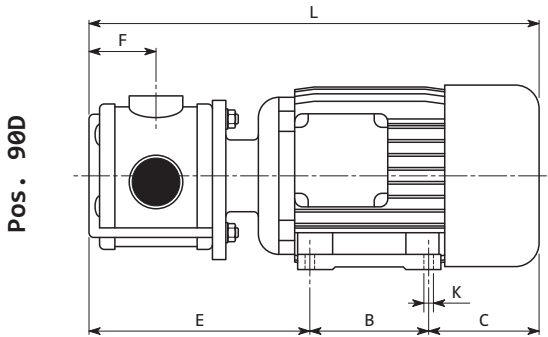
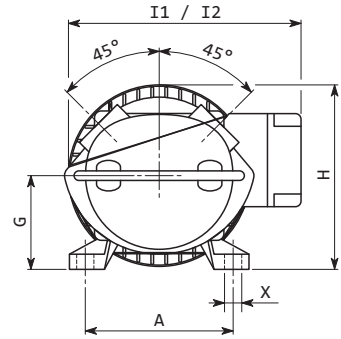
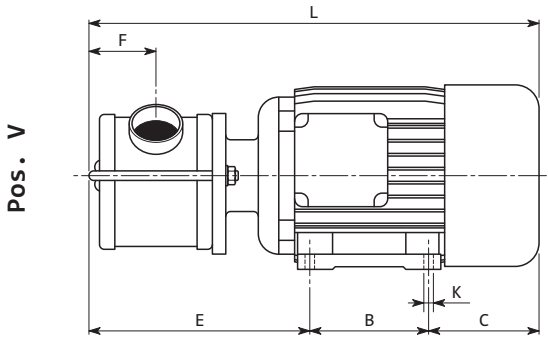


| Peso Type | Peso Weight | A | B | C | H | L |
|--------------------|-------------|-----|-----|-----|-----|-----|
| GR MINOR 40 | 36-35 kg | 350 | - | 245 | 400 | 600 |
| GR MAJOR 60 | 42-51 kg | 350 | 375 | 250 | 400 | 600 |
| GR MAXI 80 | 65 kg | 350 | 420 | 265 | 400 | 600 |

GR (Gruppi su carrello/Group on trolley)



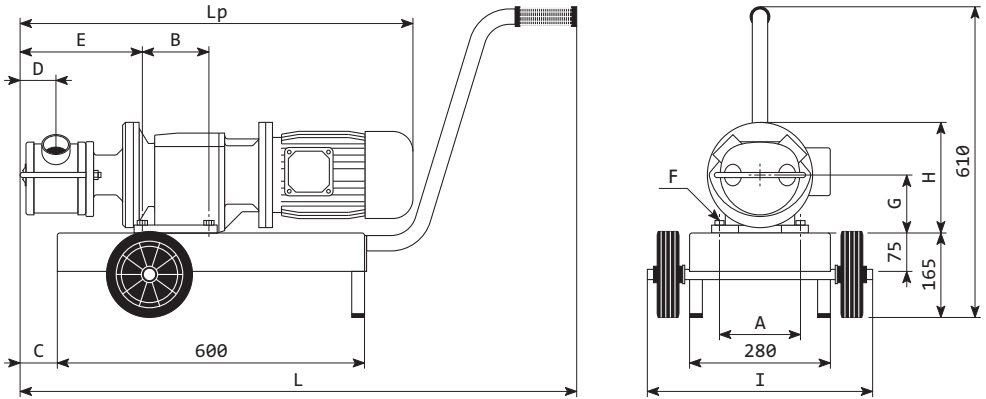
| Peso Type | Peso Weight | A | H | L |
|--------------------|-------------|-----|-----|------|
| GR MINOR 40 | 38-46 kg | 500 | 665 | 1000 |
| GR MAJOR 60 | 44-53 kg | 500 | 665 | 1000 |
| GR MAXI 80 | 67 kg | 500 | 665 | 1000 |



| Tipo Type | Motore Motor | Vel. Speed | A | B | E | F | G | H | I1* | I2* | L | M | K | X |
|--------------|--------------|------------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|----|----|
| EP MINI 3/4" | M71 | 1 | 112 | 90 | 106 | 26 | 71 | 140 | 192 | 210 | 276 | 0 | 7 | 12 |
| EP | M80 | 1 | 125 | 100 | 148 | 38 | 80 | 159 | 200 | 227 | 338 | 7 | 8 | 16 |
| MIDEX 1"1/4 | M80 | 2 | 125 | 100 | 148 | 38 | 80 | 159 | - | 227 | 338 | 7 | 8 | 16 |
| EP | M90 | 1 | 140 | 125 | 198 | 60 | 90 | 180 | 210 | 240 | 420 | 4.5 | 10 | 16 |
| MINOR 40 | M100 | 2 | 160 | 140 | 210 | 60 | 100 | 198 | - | 260 | 455 | 4.5 | 12 | 21 |
| EP | M100 | 1 | 160 | 140 | 253 | 70 | 100 | 198 | 245 | 263 | 490 | 6.5 | 12 | 21 |
| MAJOR 60 | M112 | 1 | 190 | 140 | 259 | 70 | 112 | 225 | 275 | - | 514 | 6.5 | 12 | 22 |
| EP MAXI 80 | M132 | 1 | 216 | 178 | 312 | 90 | 132 | 261 | 320 | - | 630 | 13 | 12 | 22 |

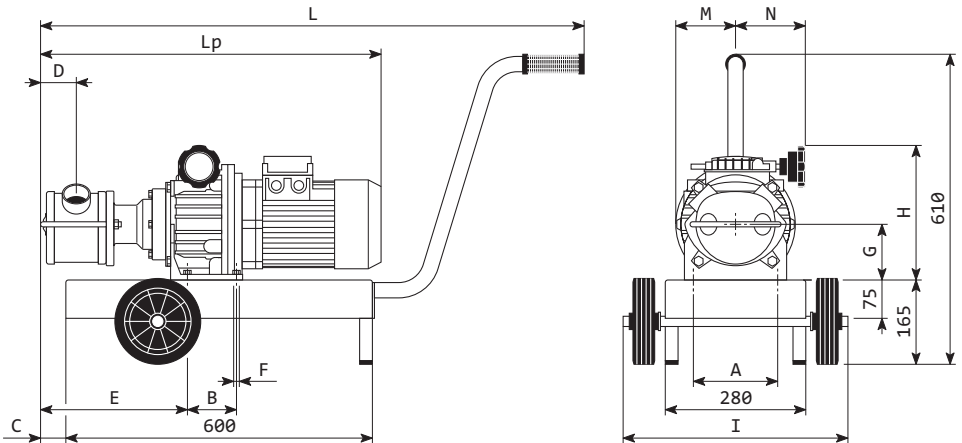
I1* = motore con morsetti / motor with terminal board connection
 I2* = motore con interruttore/invertitore / motor with on-off/rotative reverse switch

RID MINOR - MAJOR - MAXI



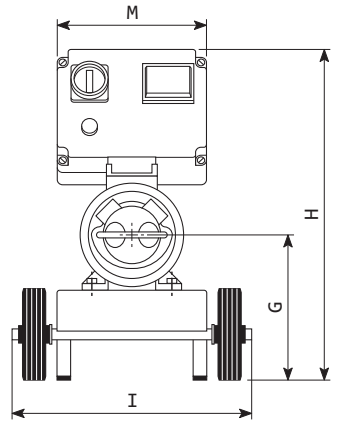
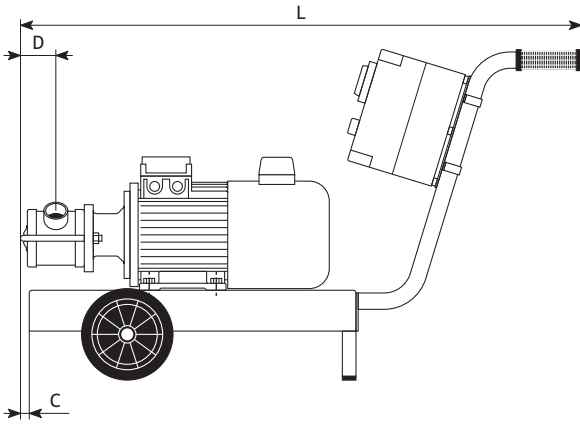
| Tipo Type | Peso Weight | A | B | C | D | E | F | G | H | I | L | Lp |
|--------------|----------------|-----|-------|-----|----|-----|-----|-----|-----|-----|------|-----|
| RID MINOR 40 | 38 kg | 130 | 107.5 | 70 | 60 | 183 | Ø11 | 103 | 202 | 440 | 1050 | 688 |
| RID MAJOR 60 | 48 kg | 160 | 130 | 135 | 70 | 245 | Ø11 | 110 | 210 | 440 | 1145 | 770 |
| RID MAXI 80 | 79 kg | 180 | 149.5 | 160 | 90 | 255 | Ø14 | 130 | 255 | 440 | 1200 | 850 |

VA MINOR - MAJOR - MAXI

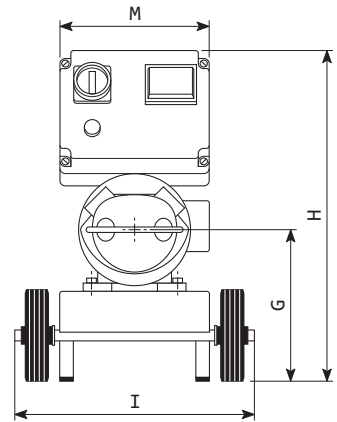
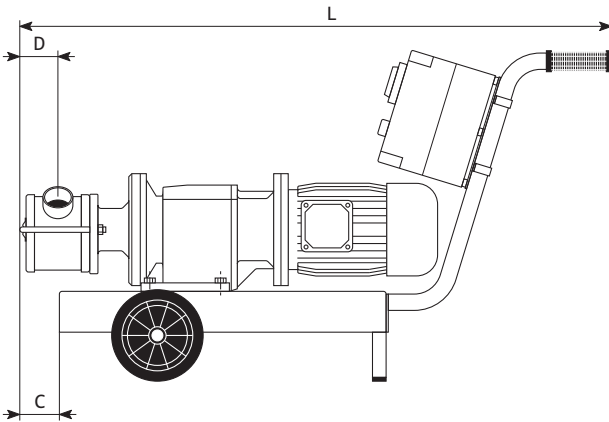


| Tipo Type | Peso Weight | A | B | C | D | E | F | G | H | I | L | Lp | M | N |
|--------------|----------------|-----|-----|-----|----|-----|-----|-----|-----|-----|------|-----|-----|-------|
| VA MINOR 40 | 63 kg | 164 | 96 | 20 | 60 | 260 | Ø11 | 109 | 264 | 440 | 1030 | 640 | 117 | 137 |
| VA MAJOR 60 | 67 kg | 164 | 96 | 55 | 70 | 295 | Ø11 | 109 | 264 | 440 | 1065 | 675 | 117 | 137 |
| VA MAXI 80 | 109 kg | 200 | 120 | 115 | 90 | 305 | M12 | 132 | 337 | 440 | 1125 | 770 | 136 | 172.5 |

INV MINI - MIDEX - MINOR

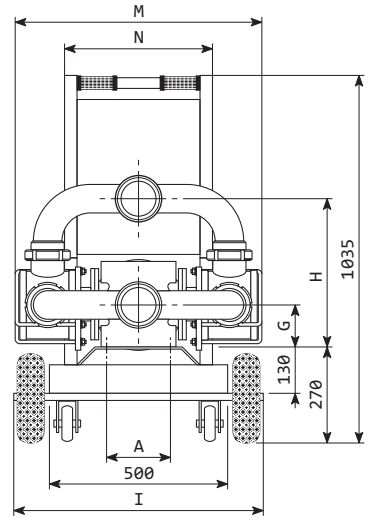
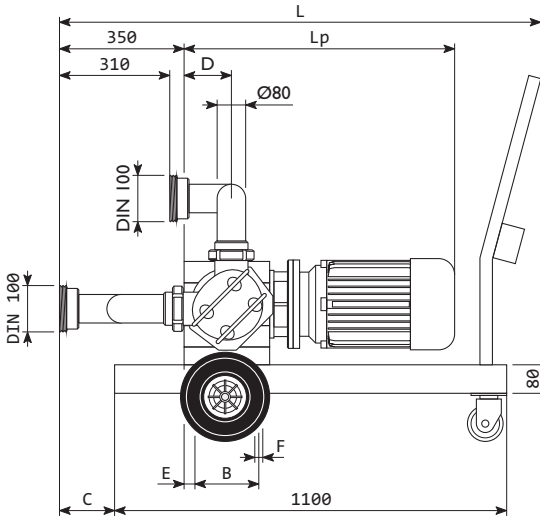


INV MAJOR - MAXI

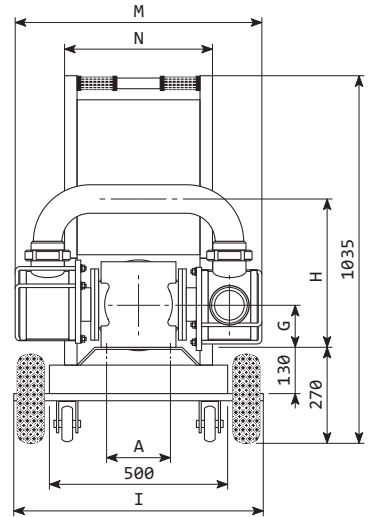
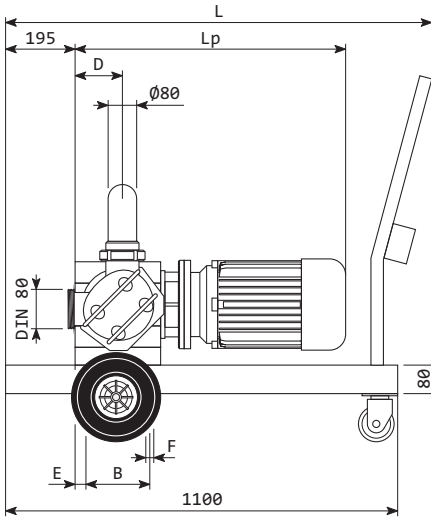


| Peso Type | Peso Weight | C | D | G | H | I | L | M |
|-----------------|-------------|-----|----|-----|-----|-----|------|-----|
| INV MINI 3/4" | 17 kg | - | 26 | 175 | 550 | 340 | 790 | 285 |
| INV MIDEX 1"1/4 | 23 kg | 15 | 38 | 175 | 550 | 340 | 805 | 285 |
| INV MINOR 40 | 40 kg | - | 60 | 265 | 610 | 440 | 1010 | 285 |
| INV MAJOR 60 | 55 kg | 135 | 70 | 275 | 610 | 440 | 1145 | 285 |
| INV MAXI 80 | 95 kg | 160 | 90 | 295 | 610 | 440 | 1200 | 285 |

MAXI Double 2Q



MAXI Double 2H



| Peso Type | Peso Weight | A | B | C | D | E | F | G | H | I | L | Lp | M | N |
|---------------|-------------|-----|-----|-----|-----|----|-----|-----|-----|-----|------|-----|-----|-----|
| RID MAXI D.2Q | 185 kg | 175 | 170 | 155 | 135 | 35 | Ø14 | 120 | 416 | 700 | 1350 | 730 | 695 | 415 |
| RID MAXI D.2H | 200 kg | 175 | 170 | - | 135 | 35 | Ø14 | 120 | 416 | 700 | 1195 | 730 | 695 | 415 |
| INV MAXI D.2Q | 185 kg | 175 | 170 | 155 | 135 | 35 | Ø14 | 120 | 416 | 700 | 1350 | 730 | 695 | 415 |
| INV MAXI D.2H | 200 kg | 175 | 170 | - | 135 | 35 | Ø14 | 120 | 416 | 700 | 1195 | 730 | 695 | 415 |

| Tipo Type Type Typ Tipo Tipo | Giri/min. Rpm Tours/min. U/min. Rpm Rpm | RUMOROSITÀ (dB)* NOISE (dB)* NIVEAU DE BRUIT (dB)* GERAUSCHPEGEL (dB)* RUIDO (dB)* RUÍDO (dB)* |
|---|--|---|
| MINI | 180 ÷ 700 | <70 |
| | 700 ÷ 1400 | 70 ÷ 80 |
| MIDEX | 180 | <70 |
| | 180 ÷ 750 | 70 ÷ 80 |
| | 750 ÷ 1400 | 80 ÷ 85 |
| MINOR | 175 ÷ 230 | <70 |
| | 235 ÷ 300 | 70 ÷ 80 |
| | 300 ÷ 600 | 80 ÷ 85 |
| | 600 ÷ 700 | 85 ÷ 90 |
| | 700 ÷ 1400 | 90 ÷ 95 |
| MAJOR | 175 | <70 |
| | 175 ÷ 470 | 70 ÷ 75 |
| | 470 ÷ 900 | 75 ÷ 80 |
| MAXI | 235 | <70 |
| | 235 ÷ 470 | 70 ÷ 75 |
| | 470 ÷ 600 | 75 ÷ 80 |
| MAXI Double 2H/2Q | 175 | <70 |
| | 175 ÷ 350 | 70 ÷ 80 |
| | 350 ÷ 470 | 80 ÷ 85 |

* Noise level recorder from distance of 20 cm. However, the Noise level decrease to 10dB at a distance of 1 meter.

IT

DICHIARAZIONE DI CONFORMITÀ

Descrizione: pompa per travaso di liquidi non infiammabili o esplosivi, idonea per uso alimentare.

Modello: MINI S/P, MIDEX S/P, MINOR S/P, MAJOR S/P, MAXI S/P, MID MINOR, MID MAJOR, MID MAXI, EP MINI, EP MIDEX, EP MINOR, EP MAJOR, EP MAXI, GR MINOR, GR MAJOR, GR MAXI, RID MINOR, RID MAJOR, RID MAXI, RID MAXI Double, VA MINOR, VA MAJOR, VA MAXI, INV MINI, INV MIDEX, INV MINOR, INV MAJOR, INV MAXI, INV MAXI Double.

LIVERANI s.r.l. con sede in Via De'Brozzi 94 - 48022 LUGO (RA) - ITALIA, dichiara che il prodotto è conforme alle Direttive:

2006/42/CE - Direttiva Macchine.

2004/108/ce - Compatibilità elettromagnetica (esclusi modelli S/P e MID).

2006/95/CE - Materiale elettrico destinato ad essere adoperato entro taluni limiti di tensione (esclusi modelli S/P e MID).

REGOLAMENTO (CE) N.1935/2004 - Materiali e oggetti destinati a venire a contatto con i prodotti alimentari.

È fatto divieto di mettere in servizio il componente in oggetto prima che la macchina in cui sarà incorporato sia stata dichiarata conforme alle Direttive sopra indicate.

Lugo, 01.01.2013 / L'amministratore (Bertozzi Francesco)

**EN**

DECLARATION OF COMPLIANCE

Description: pump for transferring liquids not inflammable or explosive, suitable for alimentary uses.

Type: MINI S/P, MIDEX S/P, MINOR S/P, MAJOR S/P, MAXI S/P, MID MINOR, MID MAJOR, MID MAXI, EP MINI, EP MIDEX, EP MINOR, EP MAJOR, EP MAXI, GR MINOR, GR MAJOR, GR MAXI, RID MINOR, RID MAJOR, RID MAXI, RID MAXI Double, VA MINOR, VA MAJOR, VA MAXI, INV MINI, INV MIDEX, INV MINOR, INV MAJOR, INV MAXI, INV MAXI Double.

LIVERANI s.r.l. with headquarters in Via De'Brozzi 94 - 48022 LUGO (RA) - ITALY, hereby declares that the product is in compliance with the Directives:

2006/42/CE - Machinery Directive.

2004/108/CE - Electromagnetic compatibility EMC (excluded model S/P and MID).

2006/95/CE electrical equipment designed for use within certain voltage limits (excluded model S/P and MID).

REGULATION (CE) N.1935/2004 - Materials and articles intended to come into contact with food.

It is highly forbidden to operate the above mentioned component before the machine in which it has to be assembled has been declared "in compliance with the standards" laid down by the directives above indicated.

Lugo, 01.01.2013 / Managing Director (Bertozzi Francesco)



FR

DÉCLARATION DE CONFORMITÉ

Description: pompe pour transvaser des liquides non inflammables ou explosifs, adaptés à un usage alimentaire.

Modele: MINI S/P, MIDEX S/P, MINOR S/P, MAJOR S/P, MAXI S/P, MID MINOR, MID MAJOR, MID MAXI, EP MINI, EP MIDEX, EP MINOR, EP MAJOR, EP MAXI, GR MINOR, GR MAJOR, GR MAXI, RID MINOR, RID MAJOR, RID MAXI, RID MAXI Double, VA MINOR, VA MAJOR, VA MAXI, INV MINI, INV MIDEX, INV MINOR, INV MAJOR, INV MAXI, INV MAXI Double.

LIVERANI s.r.l., dont le siège est situé 94 Via De'Brozzi - 48022 LUGO (RA) - ITALY, déclare que le produit est conforme aux Directives:

Directive des Machines 2006/42/CE.

2004/108/CE - Compatibilité électromagnétique EMC (modèles exclus S/P et MID).

L'appareillage électrique 2006/95/CE et électronique sont conçu pour un usage dans certaines limites de tension (modèles exclus S/P et MID).

Le RÈGLEMENT (CE) N.1935/2004 - Matériaux et objets destinés à entrer en contact avec des denrées alimentaires.

Il est interdit de mettre en service le composant en objet avant que la machine dans laquelle il sera incorporé ait été déclarée conforme aux dispositions contenues dans les Directives ci-dessus.

Lugo, 01.01.2013 / L'administrateur (Bertozzi Francesco)



DE

KONFORMITÄTSEKTLÄRUNG

Beschreibung: Pumpe zum Umfüllen von nicht entzündbaren oder explosiven Flüssigkeiten. Auf für den Einsatz im Lebensmittelbereich geeignet.

Modelle: MINI S/P, MIDEX S/P, MINOR S/P, MAJOR S/P, MAXI S/P, MID MINOR, MID MAJOR, MID MAXI, EP MINI, EP MIDEX, EP MINOR, EP MAJOR, EP MAXI, GR MINOR, GR MAJOR, GR MAXI, RID MINOR, RID MAJOR, RID MAXI, RID MAXI Double, VA MINOR, VA MAJOR, VA MAXI, INV MINI, INV MIDEX, INV MINOR, INV MAJOR, INV MAXI, INV MAXI Double.

LIVERANI s.r.l. mit Sitz in Via De'Brozzi 94 - 48022 LUGO (RA) - ITALIEN, Erklärt, dass die nachfolgend beschriebenen Produkte den Vorschriften der Richtlinien:

2006/42/CE - Maschinenrichtlinie.

2004/108/CE - Elektromagnetische Kompatibilität EMC (Modus S/P und MID ausgeschlossen).

2006/95/CE Elektrisches Gerät - nur für den Gebrauch innerhalb der vorgeschriebenen Spannungsgrenzen (Modus S/P und MID ausgeschlossen).

NORM (EC) No 1935/2004 - Materialien und Gegenstände, die dazu bestimmt sind, mit Lebensmitteln in Berührung zu kommen.

Es ist strengstens verboten, die genannte Komponente in Betrieb zu nehmen bevor die Maschine, in der sie eingebaut wurde bzw. wird, nicht als entsprechend den Richtlinien oben.

Lugo, 01.01.2013 / Der Geschäftsführer (Bertozzi Francesco)



ES

DECLARACIÓN DE CONFORMIDAD

Descripción: Bomba para trasiego de líquidos no inflamables o explosivos, apto para uso alimentario.

Modelo: MINI S/P, MIDEX S/P, MINOR S/P, MAJOR S/P, MAXI S/P, MID MINOR, MID MAJOR, MID MAXI, EP MINI, EP MIDEX, EP MINOR, EP MAJOR, EP MAXI, GR MINOR, GR MAJOR, GR MAXI, RID MINOR, RID MAJOR, RID MAXI, RID MAXI Double, VA MINOR, VA MAJOR, VA MAXI, INV MINI, INV MIDEX, INV MINOR, INV MAJOR, INV MAXI, INV MAXI Double.

LIVERANI s.r.l. con sede en Via De'Brozzi 94 - 48022 LUGO (RA) - ITALIA, declara que el producto es conforme a la Directivas:

2006/42/CE - Directiva de Máquinas.

2004/108/CE - Compatibilidad electromagnético (excepto los modelos S/P y MID).

2006/95/CE - Material eléctrico destinado a ser utilizado entre ciertos límites de tensión (excepto los modelos S/P y MID).

REGLAMENTO (CE) N.1935/2004 - Materiales y objetos destinados a entrar en contacto con alimentos.

È proibido colocar em funcionamento o componente em causa antes que a máquina na qual será incorporado tenha sido declarada em conformidade com as disposições contidas na Directiva anterior indicado.

Lugo, 01.01.2013 / El Administrador (Bertozzi Francesco)



PT

DECLARAÇÃO DE CONFORMIDADE

Descrizione: pompa per travaso di liquidi non infiammabili o esplosivi, utilizzabile per uso alimentare.

Modelo: MINI S/P, MIDEX S/P, MINOR S/P, MAJOR S/P, MAXI S/P, MID MINOR, MID MAJOR, MID MAXI, EP MINI, EP MIDEX, EP MINOR, EP MAJOR, EP MAXI, GR MINOR, GR MAJOR, GR MAXI, RID MINOR, RID MAJOR, RID MAXI, RID MAXI Double, VA MINOR, VA MAJOR, VA MAXI, INV MINI, INV MIDEX, INV MINOR, INV MAJOR, INV MAXI, INV MAXI Double.

LIVERANI s.r.l. com sede em Via De'Brozzi 94 - 48022 LUGO (RA) - ITALIA, declara que o producto está em conformidade as Directivas:

2006/42/CE - Diretiva Maquinas.

2004/108/CE - Compatibilidade eletromagnetica (exceto modelos S/P e MID).

2006/95/CE - Material eletrico destinado a ser utilizado entre limites de tensao definidos (exceto modelos S/P e MID).

Regulamento (CE) N.1935/2004 - Materiais e objectos destinados a entrar em contacto com os alimentos.

Esta prohibido poner en servicio el componente en objeto antes de que la máquina en que será incorporado haya sido declarada conforme a las disposiciones contenidas en las normas acima mencionado.

Lugo, 01.01.2013 / O Administrador (Bertozzi Francesco)



LIVERANI

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