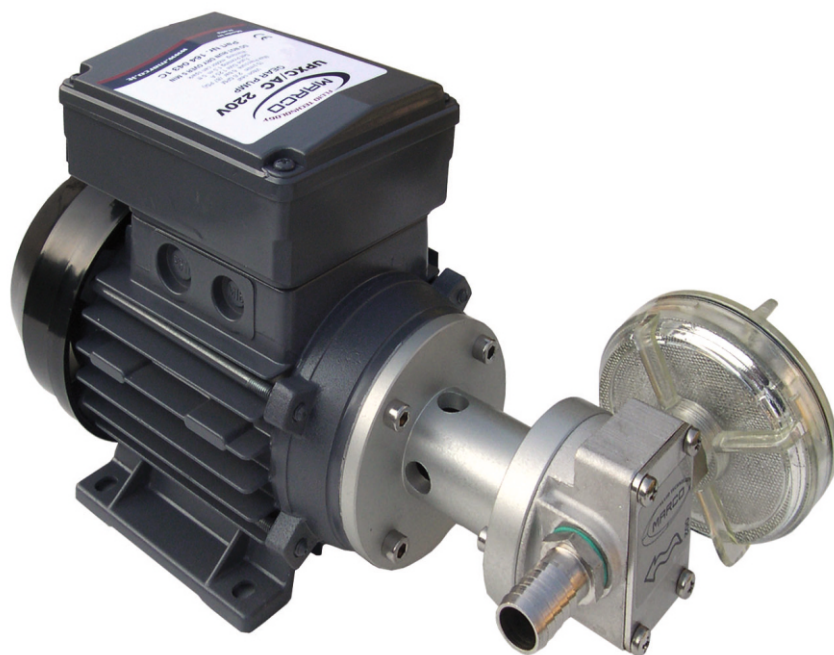




**ELETTROPOMPA AUTOADESCANTE  
PER TRAVASO LIQUIDI  
SELF-PRIMING ELECTRIC PUMP  
FOR TRANSFERRING VARIOUS LIQUIDS**

**AVVERTENZE D'USO  
INSTRUCTIONS FOR USE**

**164 042 1C - UPX/AC 220 V**



**CE**

## PRODUCT DESCRIPTION

A

Self-priming electric pump for the transfer of liquids, particularly suitable for use in the food industry, where it is essential that all parts in contact with the liquid are of non corrosive materials (see chapter of exclusions), for discontinuous use.

The pumping elements are made of PTFE gear drives which can possibly even run dry for brief periods. Completely equipped with in-line filter on the inlet side.

## TECHNICAL DETAILS

B

CODICE	TIPO	VOLT	FUSIBILE	PORTATA	PRESSIONE	PESO	P.ZI x CART.
CODE	TYPE	VOLT	FUSE	FLOW RATE	PRESSURE	WEIGHT	PCS x CART.
164 042 1C	UPX/AC	220	1,5 A	10 l/min	6 bar	4,6 kg	1

## AMBIENT CONDITIONS

C

**Temperature:** min. -10 °C / max. +60 °C **Relative humidity:** max. 90 %

**Warning:** the above indicated temperature ranges are applicable to all components of the pump and these limits must be respected in order to avoid any possible damage or malfunctioning.

## ELECTRICAL CONNECTIONS

D

The electric pump must be connected to a 220VAC/50Hz power. The pump must be protected by a suitable rated fuse.

## OPERATING CYCLE

E

The pump has been designed for discontinuous use. Under conditions of high operating pressures (eg. with closed or blocked outlet, excessive length of the delivery circuit and/or excessive pressure due to accessories), the pump can be subjected to elevated stresses and overheating and therefore should not be used for prolonged periods under such conditions.

## APPLICATIONS

F

There are numerous fields of applications for the pump, however only exclusively with the allowed liquids mentioned:

- transfer of fluid alimentary paste
- transfer of beverages
- transfer of milk
- transfer of alimentary oils
- transfer of alimentary fluids

## **G** FLUIDS ALLOWED / NOT ALLOWED

### **Allowed:**

FRESH WATER, ALIMENTARY FLUIDS: **max 40°C**

### **Not allowed:**

PETROL (GASOLINE)  
FLAMMABLE LIQUIDS with PM < 55°C  
LIQUIDS WITH VISCOSITY > 20 cSt  
SOLVENTS  
CHEMICAL PRODUCTS WHICH ARE  
INCOMPATIBLE WITH SEALS.

### **Related dangers**

FIRE - EXPLOSION  
FIRE - EXPLOSION  
MOTOR OVERHEATING  
FIRE - EXPLOSION  
DAMAGE TO SEALS

It is users responsibility to make certain that the fluids to be transferred are compatible with the materials used in the pump (stainless steel, PTFE, FKM seal, silicone OR).

## **TRANSPORTATION AND HANDLING**

Due to limited weight and dimensions the pump does not require the use of any special handling or lifting equipment. When handling manually, normal personal protective gear should be worn (safety shoes with toe piece, etc.)

The pump is carefully packed prior to shipment. Upon receiving, the pump packaging should be inspected for damages and the pump stored in a dry area.

## **I** INSTALLATION

It is recommended that the use of the pump be according to normative safety standards and also as per the precautions listed below.

### **I-1** PACKAGING ENVIRONMENTAL DISPOSAL

The packaging material is not in any way polluting or dangerous and does not require any special environmental disposal precautions. Disposal should be carried out according to local regulations in place.

### **I-2** PRELIMINARY CHECKS

Check that there has been no damage to the pump during transportation or storage. Both inlet and outlet ports should be carefully cleaned removing possible dust or residual packaging material. Verify that the available electrical power supply corresponds to the pump specification requirements.

### **I-3** POSITIONING OF THE PUMP

The pump can be mounted in any position. Fix the pump utilizing suitable diameter screws corresponding to the holes of the flange.

**WARNING:** THE PUMP MOTOR IS NOT EXPLOSION PROOF. Do not install the pump where flammable vapours or gases may be present. Install the pump in an accessible place for inspection.

It is good practice to avoid any pump contact with water splashes possibly causing water seepage into the motor with high risk of internal oxidation and/or short circuit.

## TUBING CONNECTIONS

I-4

- Prior to making any tube/hose connections, check that the inlet ports have no end caps;
- Do not position the pump at a excessive height with respect to the minimum level of the fluid to be transferred. Damage may occur if this height is exceeded as the pump may not draw fluid. Make sure that the outlet tube is empty and without chokes
- Avoid choking the inlet or outlet tubes so that efficiency is optimized.
- The use of an inlet filter is recommended especially with fluids containing impurities (ASTM mesh 35). In this case frequent cleaning and maintenance of the filter is advisable. The standard filter withstands a maximum positive pressure of 0.5 bar.
- Utilize tubes and connection pieces that are resistant to the fluid types handled and avoid any possible environmental dispersion.

## PUMP INSTALLATION

I-5

The electrical installation of the pump must include a protection fuse which is suitably rated as indicated on the motor label and sized with reference to the chosen point of application.

## WARRANTY EXPIRES IF NO FUSE IS UTILIZED

Electrical cabling size should depend on the distance between pump and power source.

Over 40 m length: 0,75 mm<sup>2</sup>

The use of undersized cabling can cause overheating of the electrical wiring and subsequent fire hazard. There will also be a voltage drop at the motor terminals with a consequent reduction in efficiency.

The flow rate value indicated on the motor label is obtained with a 13 mm internal tube diameter. Tubes with inferior diameters will cause an increase in current with potential risk of motor overheating.

**WARNING:** it is the responsibility of the installation technician to ensure a correctly designed circuit installation fitted according to regulations. Environmental risks must be taken into account with the installation.

L

## TROUBLESHOOTING

### L-1 CHECK POINTS IF THE PUMP HAS STOPPED OR WILL NOT START

- Check the effectiveness of the battery power supply (voltage activity)
- Check if the fuse has blown
- Check for any foreign matter present in-between the pump gear drives. To do this, disconnect the power supply and unscrew the four fixing screws, remove the pump front cover plate and inspect the pump chamber. Replace the cover plate in the same initial position after inspection.
- Avoid running the pump dry for more than a few minutes. **Pumps found defective that have run dry in the absence of fluid are not covered by warranty.**

L-2

### WHY THE PUMP WILL NOT PRIME ITSELF?

- The pump is fitted at a height greater than 1,5m above the fluid level.
- The pump has run dry for too long a period
- Long periods of inactivity. In this case it is advisable to add liquid directly into the pump chamber before start-up.
- Air leak at the suction pipe due to the following reasons:
  - Possible cuts in the pipe, inadequate hose clamps, malfunctioning of the filter due to defective/worn seals or filter clogged.
- Air leak at the pump front plate cover due to the following reasons:
  - Loose fixing screws, poor effectiveness of the seal.
- Presence of obstructions or restrictions in the suction or delivery pipes.

L-3

### GOOD PRACTICES ENSURING A WELL FUNCTIONING PUMP

No particular maintenance is required if the pump is utilized for the transfer of diesel fluids. If it is expected that the pump will not be used for a period of at least 30 days, especially in the case of usage with fresh or salty water, it is advisable to run fresh water through the pump and to then loosen the pump front plate screws.

Upon re-use, run the pump briefly (a few seconds) and then tighten the screws again. Check under conditions of maximum operating pressure that the motor current value is within the motor label specifications.

## NORMAL MAINTENANCE

L-4

- Check frequently and keep the inlet filter clean.
- Check every month the pump chamber and keep clean from any foreign matter.
- Check every month that electrical wiring is in good condition.

## INDICATORS THAT THE PUMP IS FUNCTIONING CORRECTLY

L-5

- Regular flow and constant pump noise levels
- Amp-draw within the limits indicated in the technical details.

## TO OPEN THE PUMP

L-6

It is recommended that a specialized service technician be consulted for any pump repair work or the replacement of worn out internal components, exclusively with original spare parts.

During the warranty period, only by authorized Marco S.p.A. personnel, failing which the warranty will expire.

## ENVIRONMENTAL DISPOSAL

M

Should the pump be discarded, do not pollute the environment. Please refer to the local environmental regulations.

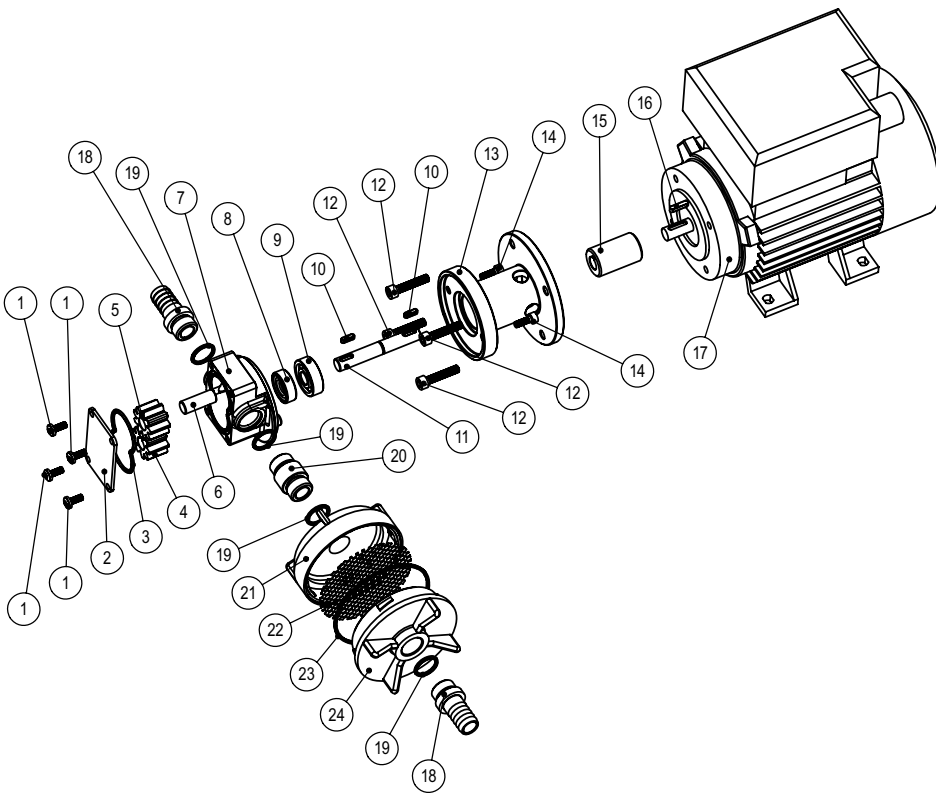
## WARRANTY

N

- 1) The Warranty period is 2 years from date of purchase on production of the appropriate sales invoice.
- 2) Should the original sales invoice not be available, then the 2 year warranty period will be valid from date of production.
- 3) The Warranty becomes null and void in the case of incorrect utilization or disregard of the instructions contained herein.
- 4) The Warranty only covers original production defects.
- 5) The Warranty does not cover any related installation costs involved.
- 6) Transport costs are refundable only in the case where warranty has been duly recognized and accepted by Marco Spa. These costs will be limited to the actual shipment costs between Marco Spa warehouse and the client's delivery address.
- 7) No credit notes or replacement items will be issued prior to the receipt and proper testing of any Marco goods that are deemed faulty.

O

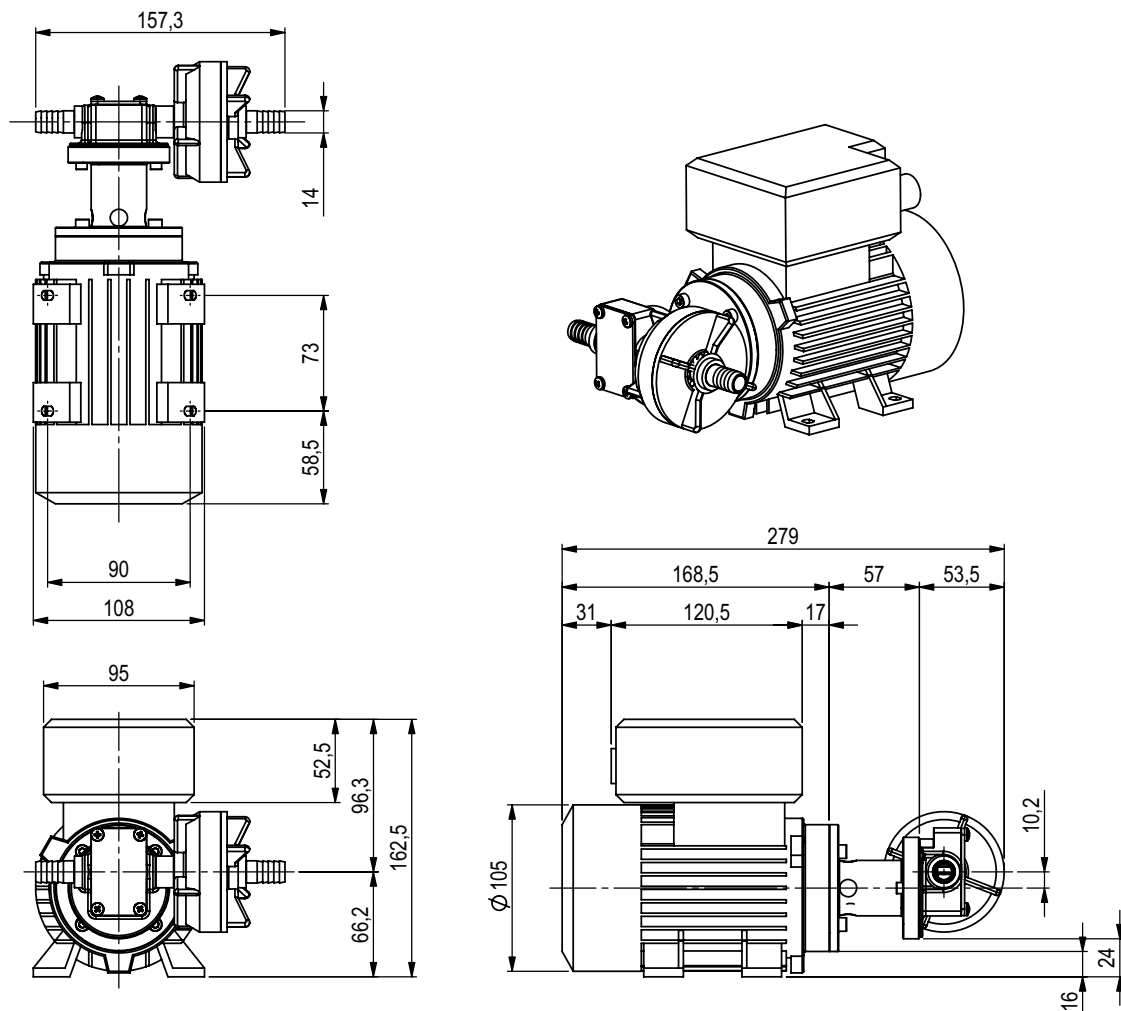
# EXPLODED VIEW



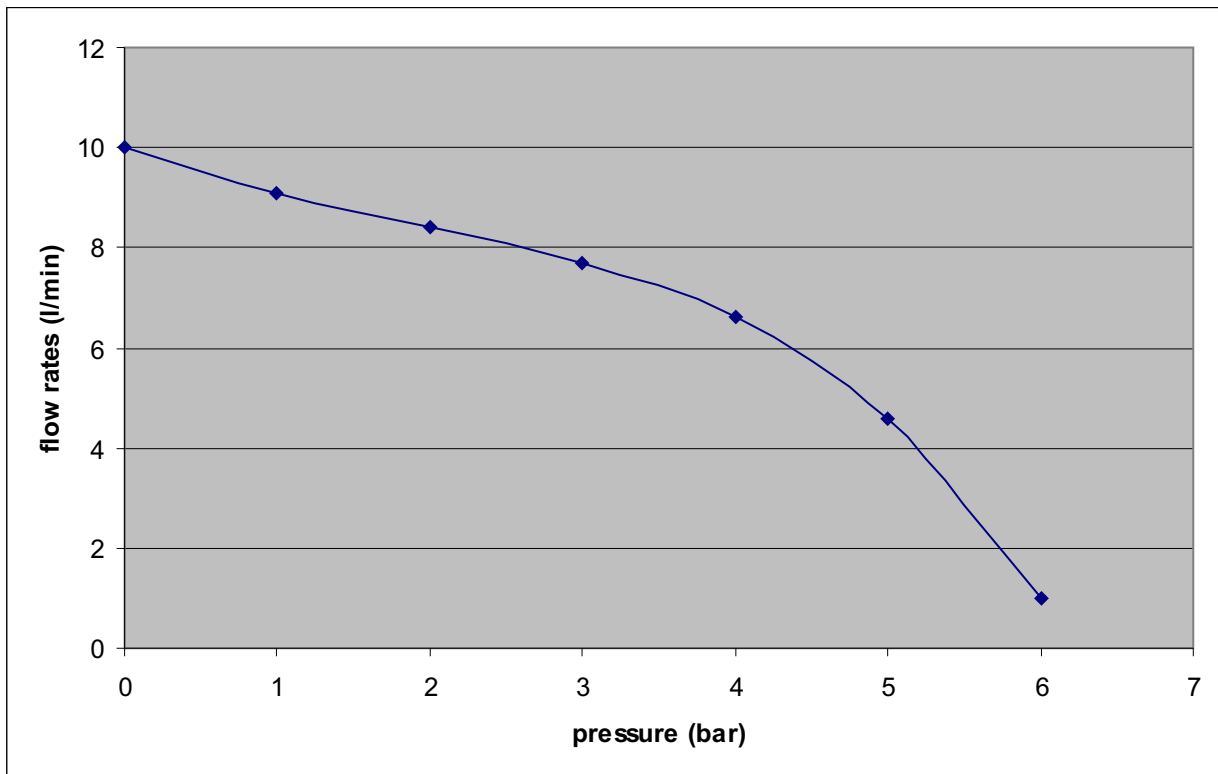
ART.	Q.TY	DESCRIPTION
1	4	TOP PLATE SCREW M 4 X 10
2	1	TOP PLATE
3	1	TOP PLATE O-RING
4	1	DRIVING GEAR
5	1	IDLE GEAR
6	1	IDLE SHAFT
7	1	PUMP BODY
8	1	SILICONE LIP SEAL
9	1	BALL BEARING
10	2	KEY
11	1	SHAFT CONNECTION
12	4	SCREW M 5 X 25
13	1	COUPLING FLANGE
14	2	SCREW M 4 X 12
15	1	JOINT
16	1	MOTOR KEY
17	1	TWO-POLE MOTOR SINGLE PHASE 220 V 0,12 KW 50 HZ
18	2	TUBE OUTLET
19	4	O-RING
20	1	NIPPLE 3/8 "
21	1	FILTER HOUSING ( FEMALE )
22	1	FILTER NET
23	1	FILTER O-RING
24	1	FILTER HOUSING ( MALE )

P

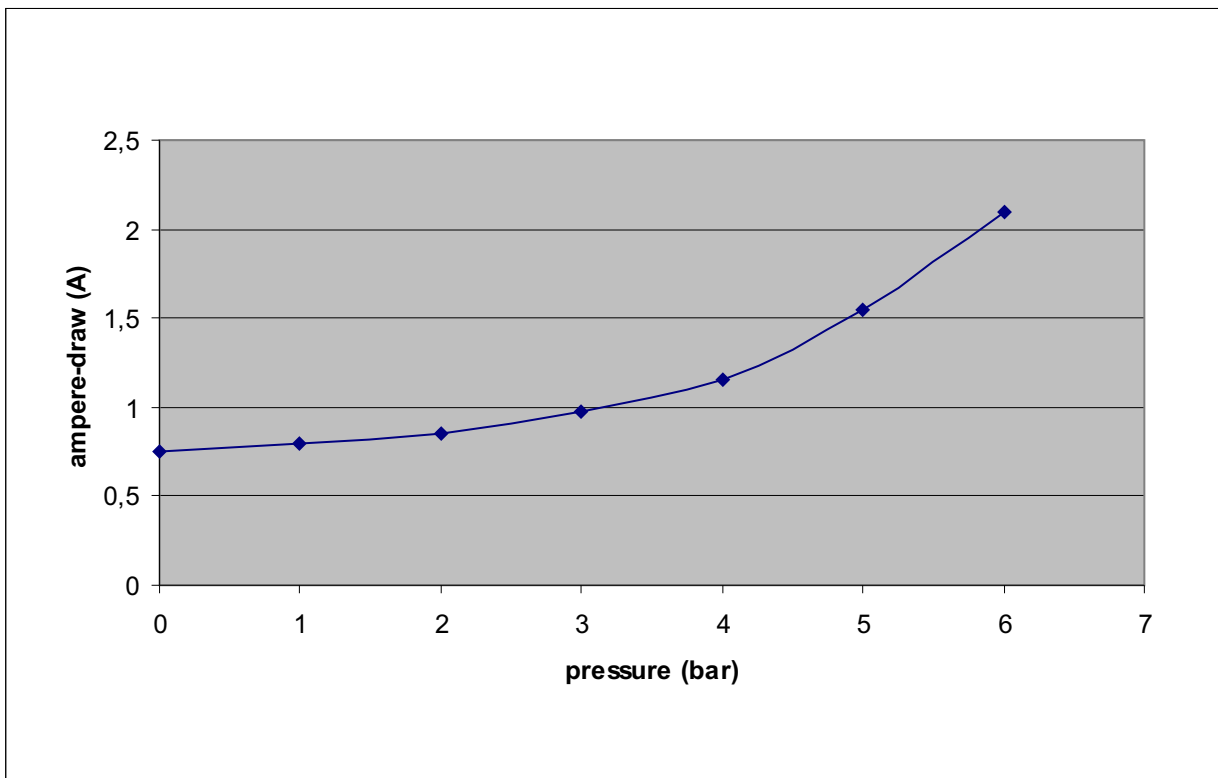
# DIMENSIONS



# FLOW RATES DIAGRAM



# AMPERE-DRAW DIAGRAM





# MARCO PUMPS & ACCESSORIES LIST

ITEM	DESCRIPTION	TYPE	VOLT
1620011C	UP1 220V.a.c. rubber impeller pump 30 l	UP1	220
16200012	UP1 12V. rubber impeller pump 35 l		12
16200013	UP1 24V. rubber impeller pump 35 l		24
16200212	UP1-N 12V. rubber impeller pump 35l	UP1-N	12
16200213	UP1-N 24V. rubber impeller pump 35l		24
1640011C	UP3 220V.a.c. gear pump 10 l	UP3	220
16400012	UP3 12V. gear pump 14 l		12
16400013	UP4 24V. gear pump 14 l		24
16400212	UP3/P 12V. PTFE gear pump 14 l	UP3/P	12
16400213	UP4/P 24V. PTFE gear pump 14 l		24
1640611C	UP6 220V.a.c. gear pump 28 l	UP6	220
16406012	UP6 12V. gear pump 26 l		12
16406013	UP6 24V. gear pump 26 l		24
16402012	UP3/OIL 12V. gear pump for oil	UP3 OIL	12
16402013	UP4/OIL 24V. gear pump for oil		24
16408012	UP6/OIL 12V. gear pump for oil	UP6 OIL	12
16408013	UP6/OIL 24V. gear pump for oil		24
16410012	UP9 12V. heavy duty gear pump	UP9	12
16410013	UP9 24V. heavy duty gear pump		24
1640421C	UPX 220V.a.c. gear pump 10 l stainless-steel version	UPX	220
16404012	UPX 12V. gear pump 14 l stainless-steel AISI 316		12
16404013	UPX 24V. gear pump 14 l stainless-steel AISI 316		24
1640431C	UPX-C 220V.a.c. stainless-steel gear pump for chemicals 10 l	UPX-C	220
16404112	UPX-C 12V. stainless-steel gear pump for chemicals 14 l		12
16404113	UPX-C 24V. stainless-steel gear pump for chemicals 14 l		24
16460012	UP3/A 12V. automatic pump group with accumulator	UP3/A	12
16460013	UP4/A 24V. automatic pump group with accumulator		24
16462012	UP6/A 12V. automatic pump group with accumulator	UP6/A	12
16462013	UP6/A 24V. automatic pump group with accumulator		24
16464012	UP9/A 12V. heavy duty automatic pump group with accumulator	UP9/A	12
16464013	UP9/A 24V. heavy duty automatic pump group with accumulator		24
16480012	DP3 12V. washing services pump	DP3	12
16480013	DP3 24V. washing services pump		24
16482012	DP9 12V. washing services pump	DP9	12
16482013	DP9 24V. washing services pump		24
16010012	UP500 12V bilge pump	UP500	12
16012012	UP1000 12V bilge pump	UP1000	12
16012013	UP1000 24V bilge pump		24
16014012	UP1500 12V bilge pump	UP1500	12
16014013	UP1500 24V bilge pump		24
16016012	UP2000 12V bilge pump	UP2000	12
16016013	UP2000 24V bilge pump		24
<b>ACCESSORIES</b>			
16510200	BQC built-in boat quick connection for watering service from quay		
16510000	DQC built-in quick connection for washing pump		
16502000	OK1 tube kit for oil pump		
16508210	AT1 white painted metal accumulator tank 2 liters		
16508310	AT2 white painted metal accumulator tank 5 liters		
16508010	AT1X stainless steel accumulator tank 0,5 liters		
16508110	AT2X stainless steel accumulator tank 2 liters		



Associato AIB  
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industriale  
bresciana

## DICHIARAZIONE DI CONFORMITA' C.E. E.C. DECLARATION OF CONFORMITY

Confermiamo che il prodotto:  
*We confirm that the product:*

**164 042 1C - UPX/AC 220V Pompa ad ingranaggi 10 l / gear pump**

E' conforme alle direttive 73/23/C.E.E. (relativa al basso voltaggio) e 89/336/C.E.E. (relativa alla compatibilità elettromagnetica) entrambe recentemente modificate con la direttiva 93/68/C.E.E. per l'uniformità legislativa degli stati membri della C.E.E.

*Is in conformity with the E.C. directive 73/23/E.E.C. (Directive relating to low-voltage) and 89/336/E.E.C. (relating to the Electromagnetic Compatibility) both recently modified with the E.C. directive 93/68/E.E.C. for the laws uniformity of the E.E.C. states.*

Questa dichiarazione è valida per tutti gli articoli prodotti secondo la documentazione tecnica che è parte di questa dichiarazione. In caso di eventuali verifiche pertinenti alla Sicurezza delle macchine elettriche e alla Compatibilità Elettromagnetica sono state applicate le seguenti normative:

*This declaration is valid for all products which are produced in accordance with the technical documentation which is a part of this declaration. For verification of conformity with regard to the security of electric machines and to the Electromagnetic Compatibility the following standards are applied:*

- |   |   |   |
|---|---|---|
| ④ | EB60335-2-41:1990<br>+A51:1991                | Sicurezza delle macchine elettriche per uso domestico ed usi affini. Particolari applicazioni delle pompe elettriche con liquidi che non superano la temperatura di 35 °C.<br><i>Security of electric machines for the domestic use and similar uses.<br/>Particular applications of electric pumps with liquids that do not exceed 35°C.</i> |
| ④ | EN50081 - 1 / 03.93                           | Normativa generica sull'emissione di disturbi radio (abitazioni, ambienti commerciali e piccole industrie).<br><i>Generic emission standard, residential, commercial and light industry.</i>  |
| ④ | EN50082 - 2 / 03.95<br>(ambienti industriali) | Normativa generica sulla resistenza ai disturbi radio<br><i>Generic waves immunity standard, industrial environment.</i>  |

Contrassegnazione con marchio CE da: Settembre '96  
*EC product marking from: September'96.*

Questa dichiarazione è rilasciata sotto la responsabilità esclusiva di:  
*This declaration is given under the sole responsibility of:*

**MARCO S.P.A.**  
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**Tel. 030/2134.1 Fax 030/2134.300**

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