

1. INTRODUCTION

This instruction manual is split into two booklets: PART 1, containing general information regarding our whole product range; and PART 2, containing information specific to the motor-driven pump you have purchased. The two publications are complementary to each other, so make sure you have both. Comply with the instructions contained in them to get the most out of your motor-driven pump and assure its proper operation. If you need further information, get in touch with your nearest authorized dealer. If information in the two parts contradict each other, take PART 2 containing the product's specific information as valid.

NO PART OF THESE ILLUSTRATIONS AND/OR TEXT MAY BE REPRODUCED FOR ANY REASON.

The following symbols have been used in the compilation of this instruction booklet.

WARNING! Risk of damaging the pump or system



Risk of causing injury or damaging property



Electrical hazard

2. CONTENTS

1. INTRODUCTION	page 6
2. CONTENTS	page 6
3. DESCRIPTION AND USE OF MOTOR-DRIVEN PUMP	page 6
4. SPECIFICATIONS	page 6
5. PREPARING FOR USE	page 6
6. STARTING	page 7
7. MAINTENANCE	page 7
8. INSTALLATION AND DISASSEMBLY DIAGRAMS	page 60

3. DESCRIPTION AND USE OF MOTOR-DRIVEN PUMP

3.1. DESCRIPTION

Description: **SUBMERSIBLE MOTOR-DRIVEN PUMPS**
Model: **OPTIMA/BEST
RIGHT
DW - DW VOX**

3.2. USE FOR WHICH PUMPS ARE DESIGNED

The motor-driven pumps can be used for:

- handling clear water (OPTIMA/BEST) as well as dirty or sewage water (RIGHT-DW) with solids in suspension up to the diameter indicated in chap. 4;
- pumping water out of garages, cellars, basements, tanks, reservoirs, fountains, rainwater drains;
- flood irrigation of vegetable patches and gardens and oxygenating water. The DW series can also be used to drain rainwater drains, cesspits and septic tanks, and trenches etc..

WARNING! ONLY USE RIGHT- AND DW-SERIES MOTOR-DRIVEN PUMPS FOR CONTINUOUS DUTY IF THEY ARE FULLY SUBMERSED.
DO NOT USE RIGHT - DW MOTOR-DRIVEN PUMPS WITH THE MOTOR OUT OF WATER FOR MORE THAN 15 MINUTES.

Use the motor-driven pumps based on their technical specifications.

3.3. USE FOR WHICH PUMPS ARE NOT DESIGNED

The pumps cannot be used to handle:

- water containing acids or bases, and corrosive liquids in general;
- water with a temperature over the temperature limit given in chap. 4.
- seawater;
- flammable liquids and hazardous liquids in general;
- cannot be used in swimming pools (according to EN 60335-2-41);
- pumps with a cable less than 10m long cannot be used outdoors. (OPTIMA MS with 5 m cable is excluded from outdoor usage)

The motor-driven pumps must never be made to work without liquid.

4. SPECIFICATIONS

4.1. OPTIMA/BEST PUMP SPECIFICATIONS

	U.M.	OPTIMA	BEST ONE	BEST ONE VOX	BEST 2-5
Max. temperature of liquid pumped	°C	50			35
Max. size of solids in suspension	mm	10	20	10	
Max. immersion depth	m	See motor-driven pump rating plate			
Delivery diameter	*	G 1" ¼			G 1" ½

* = threading according to ISO 228

4.2. RIGHT - DW PUMP SPECIFICATIONS

	U.M.	RIGHT	DW	DW VOX
Max. temperature of liquid pumped	°C	50	40	
Max. size of solids in suspension	mm	35	50	
Max. immersion depth	m	See motor-driven pump rating plate		
Delivery diameter	*	G 1" ½	G 2" or DN 50 flange	

* = threading according to ISO 228

4.3. OPTIMA/BEST - RIGHT - DW MOTOR SPECIFICATIONS

	OPTIMA BEST ONE	BEST 2-5	RIGHT	DW
TYPE	Submersible			
MAX. STARTS PER HOUR	30	20		
RATINGS	See motor-driven pump rating plate			
OVERLOAD PROTECTION	SINGLE PHASE: thermal cutout w/automatic reset THREE PHASE: by installer			

4.4. RATING PLATES

The manufacturer reserves the right to make changes.

4.5. INFORMATION ON AIRBORNE NOISE

Given the type of use, the motor-driven pumps do not exceed an A-weighted sound pressure emission level of 70 dB (A).

5. PREPARING FOR USE

WARNING! USE A ROPE FASTENED AROUND THE HANDLE TO LIFT OR LOWER THE MOTOR-DRIVEN PUMP: NEVER PULL THE POWER CABLE AND/OR FLOAT CABLE AND SWITCH (FIG. 12).

5.1. INSTALLATION (FIG.1-5)

To install the pumps, proceed as directed in PART 1, chapter 7.2 and in the following point:

- a) It is best to use rigid pipes (metal pipes on DW series) for permanent installations and flexible pipes for temporary installations, with sizes as given in chap. 4, observing the distances illustrated.

5.2. INSTALLING DW PUMP WITH DN 50 FLANGE (FIG. 6-7)

- a) Using the relevant screws, fasten the mount on the surfaces due to support the pump;
- b) screw the delivery pipe onto the mount;
- c) the mount features a rod with a guide along which you slide the hook required to lower the pump;
- d) lower the motor-driven pump, holding it by the rope fastened around the handle, until the flange slots into place on the mount;
- e) the motor-driven pump couples with the mount under its own weight.

6. STARTING

New pumps may feature a small amount of oil (the food kind), which does not present a source of health risk.

6.1. VERSION WITH FLOAT (MA-MS) (SEE FIGURE)

Plug into the power mains and/or turn on with the switch: the motor-driven pump starts working. Once the pump has sucked in enough water to reach the minimum level ("OFF" level), regulated by the float, it will turn off automatically.

The float's working position is factory set so as to assure a minimum immersion level in the "OFF" position.

NB: If the liquid is overly contaminated, the operation of the magnetic-type float (MS versions) may be compromised, meaning it needs to be cleaned on a regular basis.

Moreover, do not use in liquids polluted with iron dust or magnetic material as this would compromise the operation of the float.

6.2. VERSION WITHOUT FLOAT

Plug into the power mains and/or turn on with the switch: the motor-driven pump starts working. Once the pump has sucked in enough water to reach the minimum level, unplug from the power mains and/or turn off with the switch.

6.3. RIGHT - DW PUMPS

- a) There is a vent hole on the side of the pump casing of RIGHT and DW versions for priming. During operation, there will be a small recycling jet from it.
- b) The three-phase version of the DW pumps features a 3-wire + earth power cord with the addition of two white and grey wires with a smaller cross-section connected to the thermal overload protector inside the motor (FIG. 13).
 - Connect the power cord's yellow/green wire to an efficient earthing system, which must be in compliance with the regulations in force in the user's country;
 - overload protection and use of the signal provided by the thermal overload protector are the user's responsibility;
 - overload trip units must have suitable thermal-magnetic devices set appropriately for the motor-driven pump installed;
 - for the heat sensor, the two white and grey wires must be connected to an electrical circuit that can cut power to the motor-driven pump.

7. MAINTENANCE

To maintain the motor-driven pumps properly and ensure their long service life, the filter and/or suction port must not be clogged and the impeller must be clean.

During maintenance work on the motor-driven pumps, disconnect the power supply.

7.1. OPTIMA - BEST ONE - ONE VOX MOTOR-DRIVEN PUMP (FIG. 8)

To reach the impeller, proceed as follows:

- wear work gloves to avoid cutting your hands;
 - unscrew the two screws (1) securing the filter;
 - remove the filter (2);
 - unscrew the two spacers (3) and remove the volute (5);
 - using a small straight screwdriver, remove the nylon washers (4) and replace with new ones;
 - take care not to damage the O-ring (6).
- At this point, the impeller is exposed: make sure it is clean.

7.2. BEST 2-5 MOTOR-DRIVEN PUMPS (FIG. 9)

To reach the impeller, proceed as follows:

- wear work gloves to avoid cutting your hands;
- unscrew the three screws (1) securing the filter;
- remove the filter (2);
- unscrew the three spacers (4) and three nuts (5) and remove the distancing plate (3);
- using a small straight screwdriver, remove the nylon washers (6) and replace them before reassembling the unit as they break when the volute is removed;
- take care not to damage the O-ring (7).

7.3. RIGHT MOTOR-DRIVEN PUMP (FIG. 10)

- a) If the suction port is clogged, you must clean it, remembering to wear work gloves at all times to avoid cutting your hands;
- b) If the impeller is dirty, proceed as follows:
 - wear work gloves to avoid cutting your hands;
 - unscrew the three screws (1) securing the feet and suction cover side (2)
 - remove the O-ring (3);
 - take care not to damage the O-ring (3);
 - make sure the space between the impeller and casing is also clean.
- c) There is a small opening in the pump casing for air venting: keep it unclogged and clean. It is normal for fluid to come out during priming.

7.4. DW MOTOR-DRIVEN PUMP (FIG. 11)

- a) If the suction port is clogged, you must clean it, remembering to wear work gloves at all times to avoid cutting your hands;
- b) If the impeller is dirty, proceed as follows:
 - wear work gloves to avoid cutting your hands;
 - unscrew the six screws (1) keeping the pump casing closed (not the nut as it is welded to the pump casing);
 - remove the pump casing, pulling it off (2);
 - remove the O-ring (3);
 - take care not to damage the O-ring (3);
 - make sure the space between the impeller and casing is also clean.

7.5. REASSEMBLY

To reassemble, repeat the procedure given in reverse order.