

TOTAL

One-Stop Tools Station

TOTAL

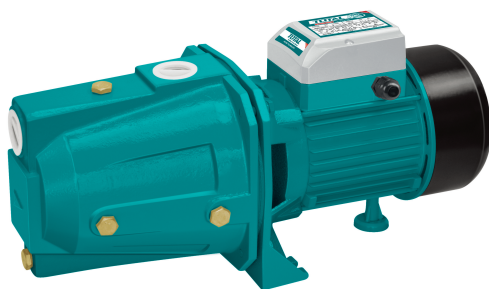
SELF-PRIMING JET PUMP

TWP47501
TWP411001
TWP415001

UTWP47501
UTWP411001
UTWP415001

TWP37501
TWP311001
TWP315001

UTWP37501
UTWP311001
UTWP315001



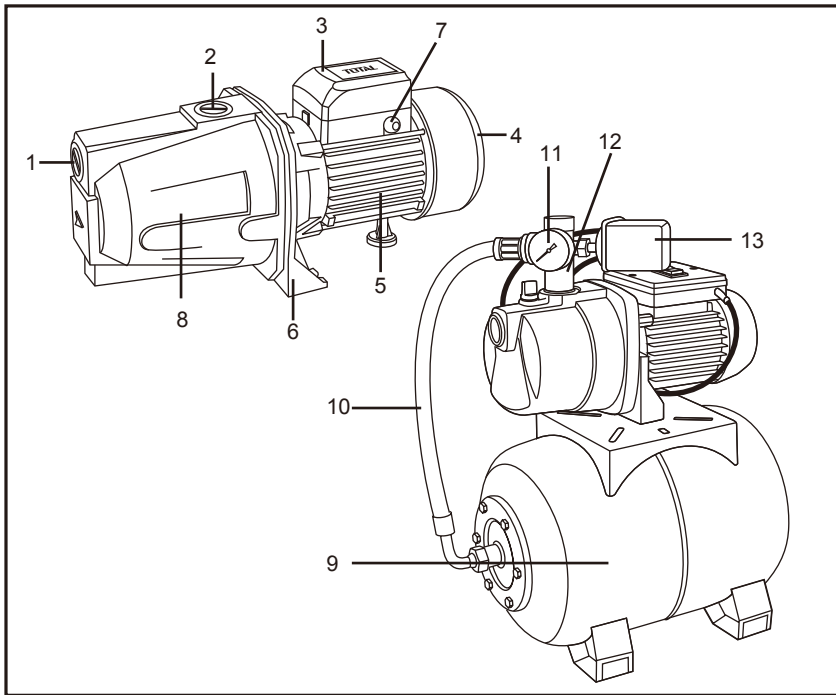
SAFETY INSTRUCTIONS

Please note: Before assembling and putting the pump into operation, in all cases read through the operating manual. For safety reasons, those persons who have not read through the operating manual may not use the pump. The pump is intended for use ONLY by adults who have fully read and understand these instructions. Whenever Water and Electric are in the same place there are risks of electrocution and serious injury or death. The pump is ONLY intended for use with water or water based (aqueous solutions) which have a content of at least 90% water. DO NOT use this pump for flammable, toxic, corrosive or irritant fluids.

- a) The user is responsible towards third parties with regard to the use of the pump (water installations, etc.)
- b) Before putting into operation, a qualified electrician must check that the required electrical safety measures are in place.
- c) The electrical connection is to be made via an electrical socket.
- d) Check the voltage. The specified technical information on the label must correspond to the voltage of the electrical equipment.
- e) During the operation of the pump, persons may not remain in the pumped medium.
- f) The temperature of the fluid to be pumped may not exceed 35°C. In the event that extension cables are used, they must be exclusively made out of rubber, type H07 RN-F, and in compliance with norm DIN 57282 or DIN 57245. Never handle, lift or carry the pump connected to electrical power by the cord. Make sure that the connection power outlet is kept away from water and moisture and that the power plug is protected from moisture.
- g) Before putting the pump into operation, check that the electrical cord and electrical residual current circuit breaker are not damaged.
- h) In the event that the pump is to be installed in a storm drain, one must subsequently close the storm drain with a cover in order to safeguard the safety of pedestrians.
- i) Reinforce the mounting of the discharge pipe with the use of a pipe clip. The user of the pump has the duty to take precautionary measures (installation of an alarm device, back-up pump, etc.) for the avoidance and prevention of potential damages (such as flooded rooms, etc.) due to faulty pump operation (because of breakdowns or defects). On sandy or silty ground it is necessary to let the pump run hanging by a rope or chain or to situate the pump on a suitable base in order to prevent the sinking of the intake section.
- j) In the event that the pump is damaged, the repair should only be made by an authorised service agent. Only original replacement parts must be used.
- k) The failure to correctly use, clean and maintain the pump or to modify the pump or its accessories in any way other than that described in these instructions will prevent use for accepting any responsibility for damages, loss or injury. The following illustrate some of the cases where claims be refused :
 - Inappropriate repairs not made by an authorised agent
 - Use of other than original replacement parts.
- l) The connecting cable of this device may not be replaced. In the event of damage to the cable, the device should be scrapped.
- m) Note this product has internal lubricant which may escape contaminating the water, consequently the pump is not suitable for ponds with fish or other aquatic organisms. In addition the pump can only be used with water that is NOT for drinking at a later date.

The same rules apply for the accessories.

COMPONENT LIST:



- | | |
|-----|-----------------|
| 1. | Inlet port |
| 2. | Outlet port |
| 3. | Terminal box |
| 4. | Motor cover |
| 5. | Motor body |
| 6. | Pump bracket |
| 7. | Cable |
| 8. | Pump body |
| 9. | Pressure tank |
| 10. | Flexible hose |
| 11. | Pressure guage |
| 12. | 5-Way connector |
| 13. | Pressure swith |

GENERAL DATA

Applications

TOTAL centrifugal pumps suitable for lifting water for domestic, industrial and agricultural use. Excellent for transfer and mixing operations.

Constructional features of the motor

Induction motor, closed and cooled with external ventilation.

Rotor mounted on oversized greased sealed-for-life ball bearings to ensure silent running and long life.

Built-in thermal and current overload protection and a capacitor permanently in circuit in the single-phase version.

Motor protection: IPX4

Terminal box protection: IP55

Insulation class: F

Standard voltage: single-phase

220-240V~50Hz

(TWP37501,TWP311001,TWP315001,TWP47501,TWP411001,TWP415001)

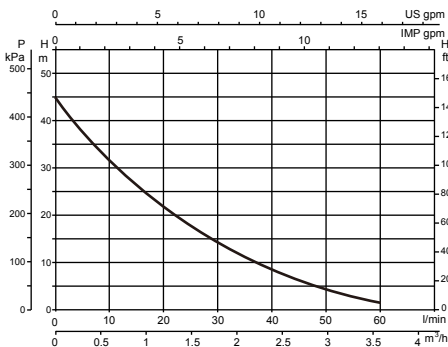
110-120V~60Hz

(UTWP37501,UTWP311001,UTWP311001,UTWP47501,UTWP411001,UTWP415001)

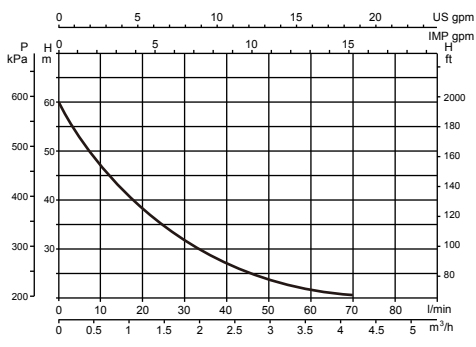
OPERATION CONDITION

- Operating range: from 5 to 60 l/min with head up to 45 metres
- Liquid quality requirements: clean, free from solids or abrasive substances, non viscous, non aggressive, non crystallized, chemically neutral, close to the characteristics of water.
- Liquid temperature range: from 0°C to +35°C for domestic use (EN 60335-2-41)
- Maximum ambient temperature: +40°C
- Maximum operating pressure: 6.5 bar (650 kPa)
- Installation: fixed in a horizontal position
- Special executions on request: other voltages and/or frequencies

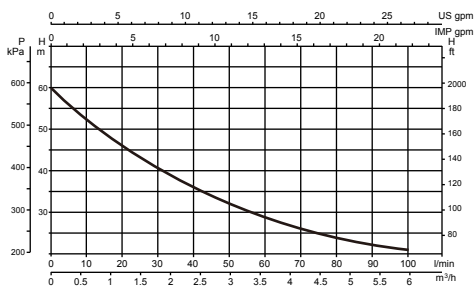
PERFORMANCE CURVES



(TWP37501,UTWP37501,TWP47501,UTWP47501)

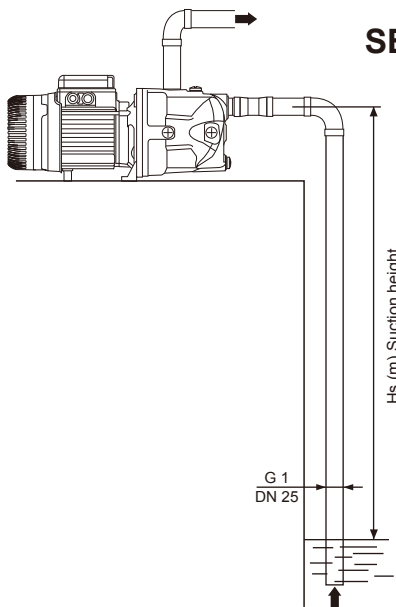


(TWP311001,UTWP311001,TWP411001,UTWP411001)

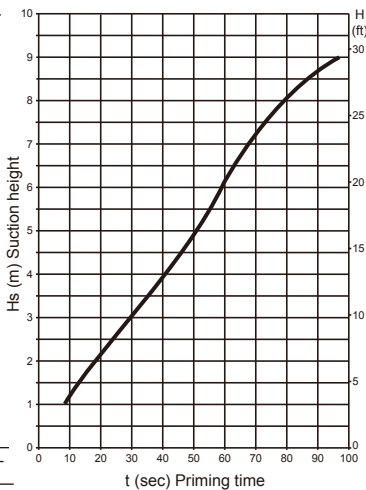


(TWP315001,UTWP315001,TWP415001,UTWP415001)

The performance curves are based on the kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³.
Curve tolerance according to ISO 9906.



SELF PRIMING CAPACITY



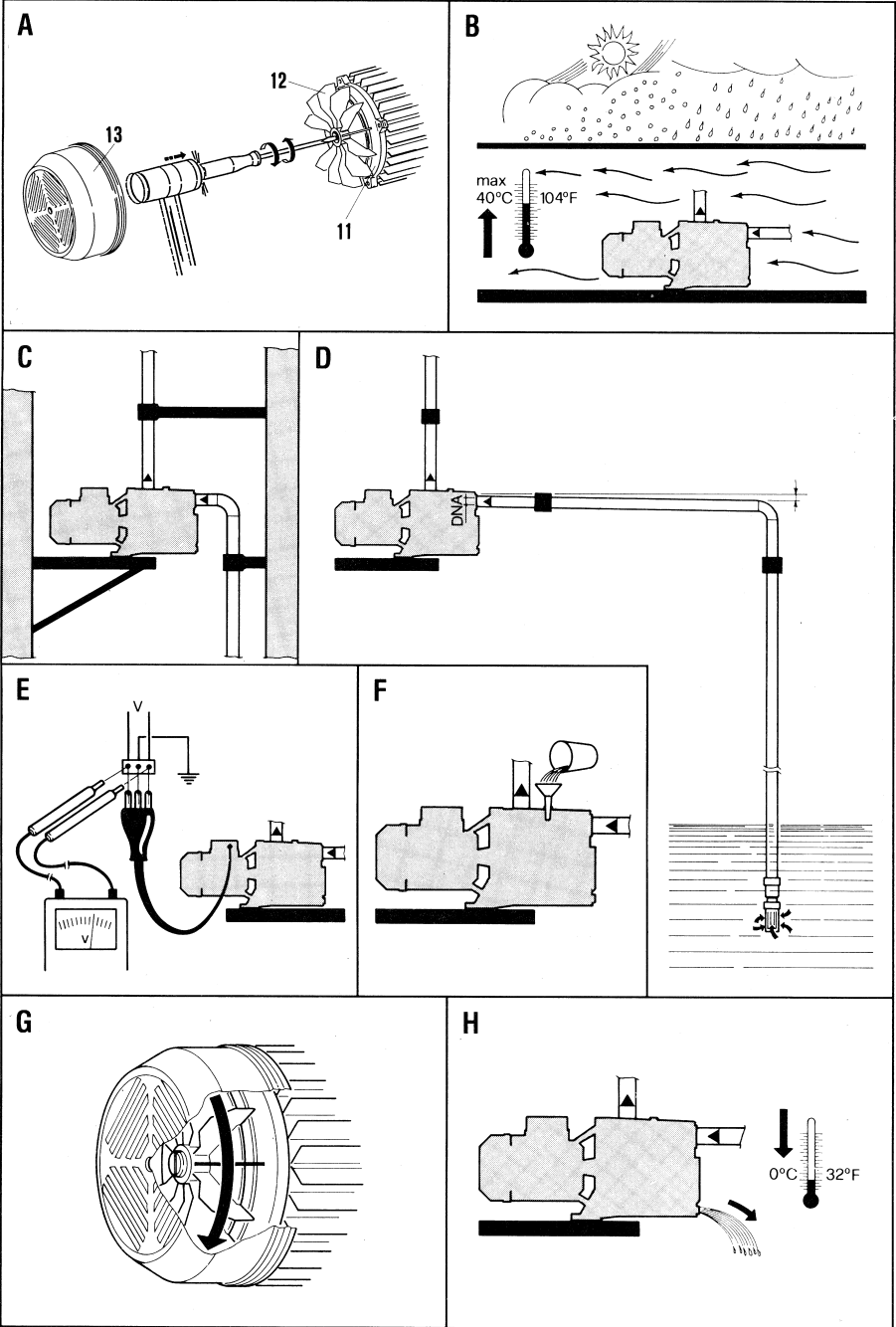
SPECIFICATION

Model No.	TWP37501	UTWP37501	TWP311001	UTWP311001
Rated voltage(V)	220-240~	110-120~	220-240~	110-120~
Frequency(Hz)	50	60	50	60
Phase	Single	Single	Single	Single
Rated output(kW/Hp)	0.75/1.0	0.75/1.0	1.1/1.5	1.1/1.5
No-load speed(/min)	2850	3450	2850	3450
Capacitor(uf)	20	35	20	60
Max. head(m)	45	45	60	60
Max.suction(m)	9	9	9	9
Max. flow(L/min)	60	60	70	70
Inlet/Outlet(inch)	1"x1"	1"x1"	1"x1"	1"x1"
Net weight (kgs)	12.8	13	18	19.5

Model No.	TWP315001	UTWP315001	TWP47501	UTWP47501
Rated voltage(V)	220-240~	110-120~	220-240~	110-120~
Frequency(Hz)	50	60	50	60
Phase	Single	Single	Single	Single
Rated output(kW/Hp)	1.5/2.0	1.5/2.0	0.75/1.0	0.75/1.0
No-load speed(/min)	2850	3450	2850	3450
Capacitor(uf)	40	120	20	35
Max. head(m)	60	60	45	45
Max.suction(m)	9	9	9	9
Max. flow(L/min)	100	100	60	60
Tank capacity(L)	--	--	24	24
Inlet/Outlet(inch)	1-1/4"x1"	1-1/4"x1"	1"x1"	1"x1"
Net weight (kgs)	20	22	18.5	20

Model No.	TWP411001	UTWP411001	TWP415001	UTWP415001
Rated voltage(V)	220-240~	110-120~	220-240~	110-120~
Frequency(Hz)	50	60	50	60
Phase	Single	Single	Single	Single
Rated output(kW/Hp)	1.1/1.5	1.1/1.5	1.5/2.0	1.5/2.0
No-load speed(/min)	2850	3450	2850	3450
Capacitor(uf)	20	60	40	120
Max. head(m)	60	60	60	60
Max.suction(m)	9	9	9	9
Max. flow(L/min)	70	70	100	100
Tank capacity(L)	24	24	24	24
Inlet/Outlet(inch)	1"x1"	1"x1"	1 1/4"x1"	1 1/4"x1"
Net weight (kgs)	22	23.5	24	26

OPERATION INSTRUCTION



1. INSTALLATION



The Manufacturer does not vouch for correct operation of the pumps if they are tampered with or modified, run outside the recommended work range or in contrast with the other instructions given in this manual.

The Manufacturer declines all responsibility for possible errors in this instructions manual, if due to misprints or errors in copying. The company reserves the right to make any modifications to products that it may consider necessary or useful, without affecting the essential characteristics.

1.1 Checking motor shaft rotation

Before installing the pump you must check that the rotating parts turn freely. For this purpose remove the fan cover from its seat in the motor end cover. Insert a screwdriver in the notch on the motor shaft from the ventilation side. If there is a blockage, turn the screwdriver, tapping it gently with a hammer. **FIG. A**

- 1.2 The electropump must be fitted in a well ventilated place, protected from unfavourable weather conditions and with an environment temperature not exceeding 40°C. **Fig.B**
- 1.3 A firm anchoring of the pump to the bearing surface favours the absorption of any vibrations caused by pump operation. **Fig. C**
- 1.4 Ensure that the metal pipes do not exert undue strain on the apertures, thus preventing deformations or breakages. **Fig. C**
- 1.5 **It is always good practice to place the pump as close as possible to the liquid to be pumped.** The pump must be installed only in horizontal position. The internal diameters of the pipes must never be smaller than that of the mouth of the electropump. It is advisable to fit a foot valve on suction. **Fig. D** For suction depths of over four metres or with long horizontal stretches it is advisable to use an intake hose with a diameter larger than that of the intake aperture of the pump. To prevent the formation of air pockets, the intake hose must slope slightly upwards towards the pump. **Fig. D**
- 1.6 If the intake pipe is made of rubber or flexible material, always check that it is of the reinforced type to avoid throttling due to suction.
- 1.7 The lifting and carrying handle must always be present and well fixed to the support on all pumps produced in the portable version.
- 1.8 Pumps that are to be used in fountains for outdoor use, in garden ponds and similar places, must be fed by means of a circuit equipped with a differential current device, the rated operating differential current of which is not higher than 30 mA.

2. ELECTRICAL CONNECTION

Caution! always follow the safety regulations.



Scrupulously follow the wiring diagrams inside the terminal board box.

- 2.1 Electric installation must be carried out by skilled and authorized electrician who accepts all the responsibility for the job.

- 2.2 Ensure that the mains voltage is the same as the value shown on the motor plate and that there is the possibility of **MAKING A GOOD EARTH CONNECTION (Fig. E)**, in particular the earth terminal must be connected to the yellow/green lead of the power cable. The earth lead used must be longer than the phase leads so that it does not disconnect first when subject to traction.
- 2.3 In fixed installations, International Safety Standards require the use of isolating switches with a fuse-carrier base.
- 2.4 Single-phase motors are provided with built-in thermal overload protection and may be connected directly to the mains. Three-phase motors must be protected with an automatic switch (e.g. overload protection) set at the values on the electropump data plate, or with fuses of the size indicated in chapter 4.

3. STARTING UP

Switch on the power and check, on the three-phase version, that the motor is turning in the correct direction; this should be in a clockwise direction, looking at the motor from the impeller side. **Fig. G** If it is turning in the wrong direction, invert the connections of any two wires on the terminal board, after having disconnected the pump from the power mains.

4. PRECAUTIONS

- 4.1 The electropump should not be started more than 20 times in one hour so as not to subject the motor to excessive thermal shock.
- 4.2 **DANGER OF FROST:** When the pump remains inactive for a long time at temperatures of less than 0°C, the pump body must be completely emptied through the drain cap Fig. H, to prevent possible cracking of the hydraulic components. This operation is advisable even in the event of prolonged inactivity at normal temperature.
- 4.3 When starting after long periods of inactivity, the starting-up operations listed above must be repeated.

5. MAINTENANCE AND CLEANING



In normal operation, the pump does not require any specific maintenance. However, it may be necessary to clean the hydraulic parts when a fall in yield is observed. The electropump must not be dismantled unless by skilled personnel in possession of the qualifications required by the regulations in force. In any case, all repairs and maintenance jobs must be carried out only after having disconnected the pump from the power mains.

6. MODIFICATIONS AND SPARE PARTS



Any modification not authorized beforehand relieves the manufacturer of all responsibility. All the spare parts used in repairs must be original ones and the accessories must be approved by the manufacturer so as to be able to guarantee maximum safety of the machines and systems in which they may be fitted.



In the event of damage to the power cable of this appliance, the repair must be carried out by skilled personnel, in order to prevent all risks.

6.1 Removal and replacement of the supply cable

Before starting, ensure that the electropump is not connected to the power network.

A) For versions without a pressure switch

Remove the condenser cover, unscrewing the four screws on it. Unscrew the three terminals L - N - and disconnect the brown lead, the blue lead and the yellow-green lead, coming from the supply cable, after having slackened the grommet.

B) For versions with a pressure switch

Section of cable with plug from the pressure switch: unscrew the screw from the cover of the pressure switch using a screwdriver and remove the cover. Remove the yellow-green lead, slackening the earth screw, the blue lead and the brown lead from the respective terminals at the side, slackening the screws on the terminals. Remove the cable blocking terminal, slackening the respective screws, and slip off the cable which is now disconnected.

Section of cable from the pressure switch to the terminal board: unscrew the nut from the cover of the pressure switch using a screwdriver and remove the cover. Remove the yellow-green lead, slackening the earth screw, the blue lead and the brown lead from the respective central terminals, slackening the screws on the terminals. Remove the cable blocking terminal, slackening the respective screws, and slip off the cable which is now disconnected. Remove the condenser cover, unscrewing the four screws on it. Unscrew the three terminals L - N - and disconnect the brown lead, the blue lead and the yellow-green lead, coming from the pressure switch, after having slackened the grommet.

When replacing the power cable, a cable of the same type must be used (e.g. H05 RN-F or H07 RN-F depending on the installation) and with the same terminals, proceeding as for disassembly in inverse order.

ATTENTION: depending on the installation and if the pumps have no cable, fit supply cables type H05 RN-F for indoor use and type H07 RN-F for outdoor use, complete with plug (standards 61-69). For power cables without a plug, provide a device for cutting off the mains (e.g. magnetothermal device) with separating contacts of at least 3 mm for each pole.

7. TROUBLESHOOTING

FAUL	CHECKS (possible cause)	REMEDY
1. The motor does not start and makes no noise.	A. Check the electric connections. B. Check that the motor is live. C. Check the protection fuses.	C.If they are burnt-out, change them. N.B.If the fault is repeated immediately this means that the motor is short circuiting.
2. The motor does not start but makes noise.	A. Ensure that the mains voltage is the same as the value on the plate. B. Ensure that the connections have been made correctly. C. Check that all the phases are present on the terminal board. (3~) D. Look for possible blockages in the pump or motor. E. Check the condition of the capacitor.	B. Correct any errors. C. If not, restore the missing phase. D. Remove the blockage. E. Replace the capacitor.
3. The motor turns with difficulty.	A. Check the voltage which may be insufficient. B. Check whether any moving parts are scraping against fixed parts.	B. Eliminate the cause of the scraping.
4. The pump does not deliver.	A. The pump has not been primed correctly. B. On three-phase motors, check that the direction of rotation is correct. C. The diameter of the intake pipe is insufficient. D. Blocked foot valve.	B. If necessary, invert the connection of two supply wires C. Replace the pipe with one with a larger diameter. D. Clean the foot valve.
5. The pump does not prime.	A. The intake pipe or the foot valve is taking in air. B. The downward slope of the intake pipe favours the formation of air pockets.	A. Eliminate the phenomenon and prime again. B. Correct the inclination of the intake pipe.
6. The pump supplies insufficient flow.	A. Blocked foot valve. B. The impeller is worn or blocked. C. The diameter of the intake pipe is insufficient. D. On three-phase motors, check that the direction of rotation is correct.	A. Clean the foot valve. B. Remove the obstructions or replace the worn parts. C. Replace the pipe with one with a larger diameter. D. If necessary, invert the connection of two supply wires.
7. The pump vibrates and operates noisily.	A. Check that the pump and the pipes are firmly anchored. B. There is cavitation in the pump, that is the demand for water is higher than it is able to pump. C. The pump is running above its plate characteristics.	A. Fix the loose parts more carefully. B. Reduce the intake height or check for load losses. C. It may be useful to limit the flow at delivery.

TWP37501,TWP311001,TWP315001
TWP47501,TWP411001,TWP415001
UTWP37501,UTWP311001,UTWP315001
UTWP407501,UTWP411001,UTWP415001

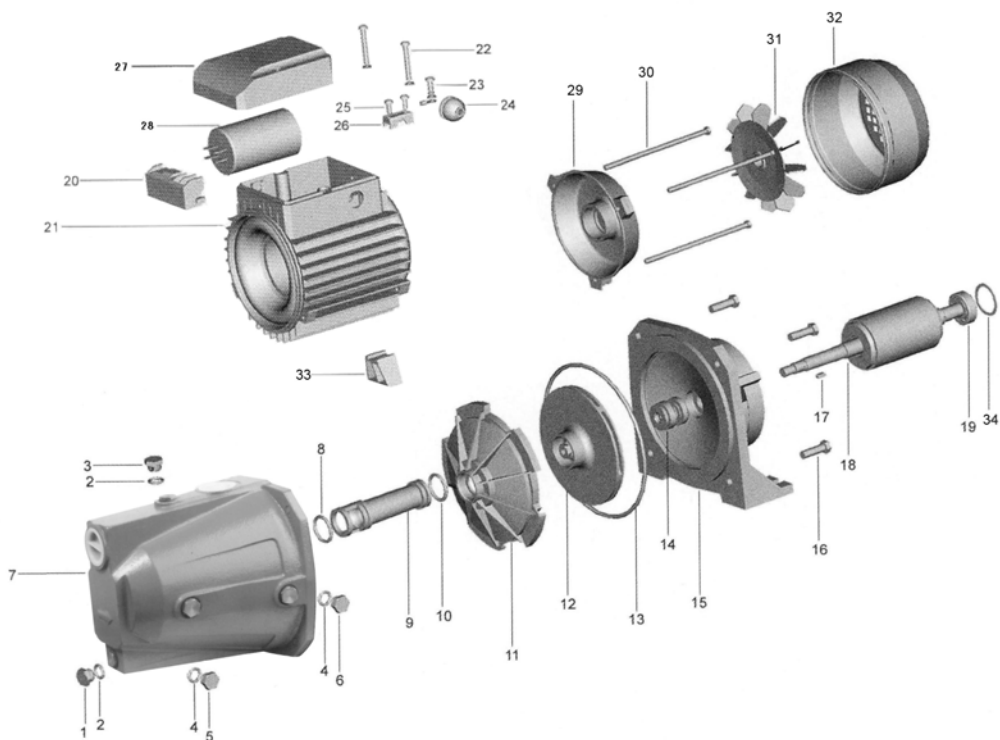
Spare part list

No.	Part Description	Qty
1	Discharge plug	1
2	Seal	2
3	Charge plug	1
4	Seal	2
5	Gauge plug	1
6	Switch plug	1
7	Pump casing	1
8	“O” ring	1
9	Venturi tube	1
10	“O” ring	1
11	Diffuser	1
12	Impeller	1
13	“O” ring	1
14	Mechanical seal	1
15	Pump cover	1
16	Bolt	4
17	Key	1

No.	Part Description	Qty
18	Rotor shaft	1
19	Bearing	1
20	Terminal block	1
21	Gasting with wound stator	1
22	Bolt	2
23	Screw	1
24	Fairlead	1
25	Screw	2
26	Cable presser	1
27	Terminal cover	1
28	Capacitor	1
29	Driving cap	1
30	Tie-rod	3
31	Fan	1
32	Fan cover	1
33	Motor foot	1
34	“O” ring	1

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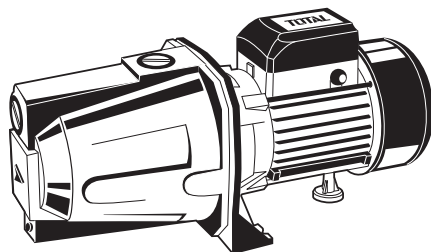
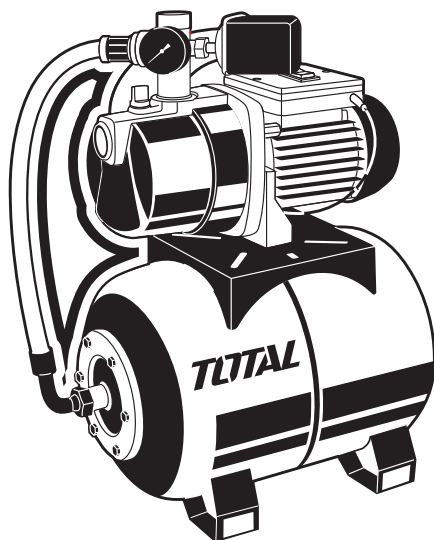
Exploding view



TOTAL

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