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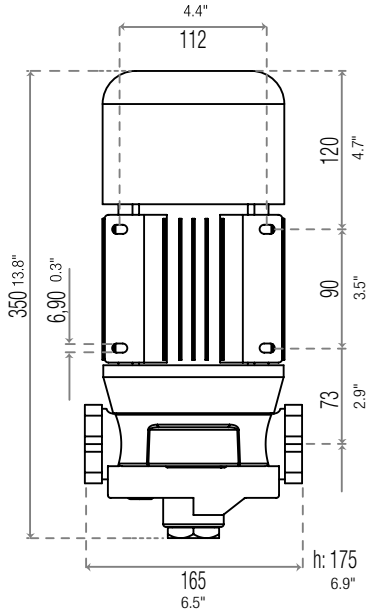
TECPUMP 900 12 VDC

Item-No.: 109 900 000

INSTRUCTION MANUAL



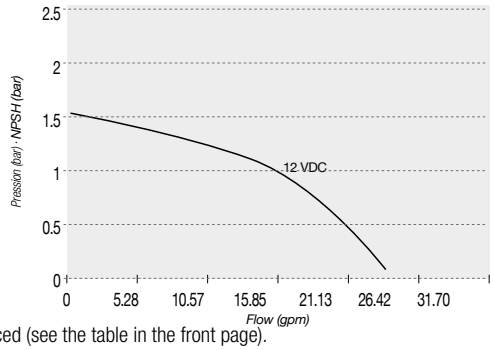
No.	DESCRIPTION
1	12 VDC MOTOR
2	MECHANICAL SEAL
4	6-BLADE SET
5	PUMP BODY
6	M-6x55 mm DIN.912 ZINC-PLATED SCREW
7	BYPASS PLUG
8	30x3 mm NBR BYPASS JOINT
9	BYPASS SPRING
10	BYPASS VALVE
11	85x4 mm JOINT
12	D.16 mm ROLLER
13	5x5x20 mm COTTER PIN
14	BIG RED CLAMP CASE
15	BIG BLACK CLAMP CASE
16	BIG METAL CLAMPS

1. TECHNICAL SPECIFICATIONS

- TECPUMP 12 VDC self-suction pump of grey foundry
- Eccentric of self-adjusting blades
- With recirculation bypass system
- *Flow with free outlet: 18.5-21.1 gpm
- Motor: 0.37 kW 12VDC · self-ventilated · dust protected · tropicalised
- Noise level: L_{EQA} < 85 dBA (1 m)
- Continuous duty · IP-55 protection
- Consumption: 35-53 A (12 VDC)
- 1,500 rpm
- Bypass pressure: 1.4-1.6 bar (20-24 psi)
- Connection through F1" (BSP) threads and flanges
- With clamps for the connection to the battery 12 VDC and ON/OFF switch
- It has built in an steel filter in the suction of 350 µm (micron).

Dim. (approx.): 350x165x175 mm (length x width x height) 13.7 x 6.5 x 6.9 inch
Weight (approx.): 15.50 kg (34 lb)

> FLOW CURVES



*NOTE: When using an automatic nozzle or any other accessory (like meter, filter...), the flow will be reduced (see the table in the front page).
FLUID COMPATIBILITY
The TECPUMP 12 VDC pumps are especially for the diesel transfer. They must not be used to transfer other liquids.
They are suitable for the agriculture, building, public works and industry use.

It is not suitable for the transfer of liquids of Class A and B with a flash point lower than 55 ºC (122 ºF)

2. WARNINGS

Please read these instructions carefully before using this product. The people who do not know the instructions must not use it.
This manual describes how to use the pump according to the project hypothesis, the technical specifications, the installation type, the use, the maintenance and the training relating to the possible dangers.
The instruction manual must be considered as a part of the pump and keep it for future inquiries during all its working life. We suggest keeping it in a dry and protected place.
The manual reflects the technical situation when selling the pump and cannot be considered inadequate for the reason of being updated according to the new experiences. The manufacturer reserves the right to update the production and the manuals without being forced to update the old ones.

3. SECURITY INSTRUCTIONS

3.1. Make the electric connection only with the qualified personnel following the applicable electric regulations.
3.2. Connect adequately to the earth. Use approved cables and electric equipment.
3.3. The broken down motors must be fixed in an authorized workshop or in our factory.
3.4. Check the packaging in the receipt of the goods and store it in a dry place.
3.5. Check the kit does not have any damage during their transportation or storage.

3.6. ATTENTION
The electric connections must be done according to the EN 60204-1:2007 CORR:2010 Regulation. In their series version the electric motor is not equipped with the protection against electric overloads. The user will take charge of Its assembly.
Connect the cable to the supply system after checking it has the same values as those written in the motor plate (it admits a tension tolerance of 10 %). The box-switch of the motor has electric parts whose assembly must be done by specialized personnel complying with the security rules.

3.7. IMPORTANT
It is forbidden to use the pump in environments where there is the risk of suffering an explosion or a fire (defined according to law). In particular the pump must not be used to pump liquids that, according to law, need explosionproof motors, i.e. not allowed uses with petrol, acetone, solvent... (Regulation references: IEC 79-10 International Regulation). Do not smoke near the pump or use it near a flame. This could cause an explosion and even the death.

3.8. ATTENTION: If the pump, the hose and the nozzle are outdoors in summer weather or hot countries, after the refuelling (once the pump is stopped), it is advisable to open the nozzle in order to discharge the accumulated pressure of the hose.
Otherwise, the high sun temperature makes possible to create an overpressure because of the expansion due to the diesel dilation the pipes have, being able to cause a retainer or mechanical element breaking of the pump and/or the meter.
If the pump was without operating in a place exposed to bitterly cold weather or ice, it would be necessary to empty the hoses and the pump body.
It would be also advisable to make this operation if the pump or the supply kit was without operating during a long time even though the temperature was normal.
3.9. If the hose connections are made with clamps, ensure they are well-tightened in order to avoid any air intake.
3.10. Please avoid spilling any type of liquid on the motor.

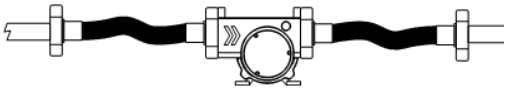
3.11. ATTENTION
The installer will be responsible of using the pipes with the adequate features. The inadequate use of the pipes could cause the contamination and damages to the pump or people.
Check all the connections after the first installation and daily control they are not loosened. If necessary, tighten them. The connection loosening could cause serious ecological and security problems.

3.12. ATTENTION
The pump must not be switched on before finishing its installation. It is completely forbidden to put the fingers or other parts of the body into the holes: the pump has parts in motion. Before starting the pump disassemble or assembly, always switch it off and disconnect it from the power supply in order to avoid accidental ignitions with the unprotected parts in motion.

3.13. IT IS OBLIGATORY THE INSTALLATION OF A FUSE SUITABLE FOR THE PUMP CONSUMPTION FOR THE KIT WARRANTY.

4. INSTALLATION

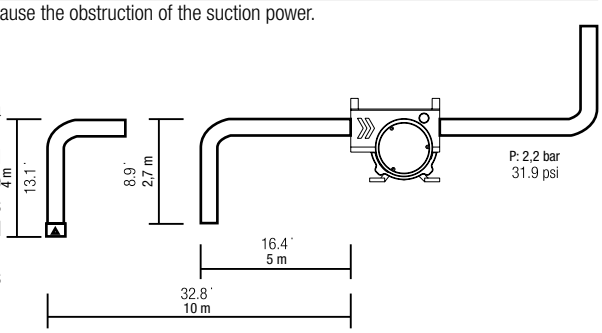
Read this manual before installing or handling this kit.
INSTALLATION WITH OWN EQUIPMENT
- Before connecting the pump to the battery, check the supply is the same as that is described in the technical plate of the pump motor.
- If possible, connect the pipe to the pump through flanges. This system is better than those connected through threads as the pump does not suffer any tension.
- If the installation has a rigid pipe, install a section of, at least, 20 cm (7.9") of flexible pipe before and after the pump.
- If the pump is connected through threads, avoid to force the pump body. Any little displacement between the body and the motor can cause damages.



- Seal the hose connections of the hoses or pipes with Teflon or compatible seal liquid. Any air inlet through the suction tube will cause the pump does not suction. Make sure the leak absence.

ATTENTION
Clean carefully the suction and discharge holes, removing the dust or original packaging material.
Check the sealing liquids or Teflon go into the pumps. Otherwise the pump or the bypass can be blocked.

- Use compatible hoses. Respect the diameters described in this manual. Using a too soft hose can cause the obstruction of the suction power.
- Suction: minimum diameter 1" · best diameter 1 1/2"
- Delivery: minimum diameter 1" · best diameter 1 1/4"
- Fit a diesel filter in the suction hose.
- CHECK VALVE: For suctions of more than 2.7 m (8.9') in depth, with or without meter, it is required a check valve. It is always advisable to install a check valve according to the pipe diameter.
Equivalent height of the maximum suction: 4 m (13.1') for diesel. (This equivalence is the vertical distance from the bottom of the suction tube to the pump inlet tube plus the wastages due to the friction in the vertical and horizontal route of the tube, the elbows etc.). The top depression levels will affect the flow, cause the accelerated fatigue of the pump and the possibility of cavitation will drastically increase.
- For a suction height higher than 2.7 m (8.9') or for a horizontal suction length of 10 m (32.8'), it is necessary a suction tube higher than the pump admission hole, i.e. 1 1/2".
- RECOMMENDATION: If the delivery hose has a length higher than 5 m (16.4') in a supply kit, it is advisable to install a non-return valve in the pump outlet or the meter in order to avoid any overpressure in the pump retainer or the meter. Make sure the valve is installed in the correct way.



ATTENTION
Never use hydraulic pressure adapters for the connections. These adapters are too narrow, decreasing the flow and the pump life.

- When lengthening the electricity cable, its cross-sectional area must be increased. Otherwise, the motor can be damaged. Do not make "connections" in the electricity cable.
- The elbows can cause a flow leak. Install the minimum ones the installation requires in order to avoid a charge loss.
- The elbows, unions and connections must have an inner diameter equal or higher to the diameter of the installed pipe. Reducing the diameter diminishes the flow and can cause a breakdown in the motor.
- Fitting a microfilter in the pump suction will avoid many breakdowns because of the impurities and the long-term of your pump. You will also avoid problems in your vehicle or machinery injectors when installing an FG-100 microfilter.
  Refer to:
  Check valve + York Base filter
  FUP-1 filter · code 66030
  FG-100 microfilter · code 39023
- Using the «silent blocks» pump installation, the vibration noise will be reduced.
- The TECPUMP 12 VDC pump can use manual and automatic nozzles. WHEN USING NOZZLES, THE FLOW WILL BE REDUCED BETWEEN 7 and 14 %.
- In case that the pump does not suction during its installation:
  Immediately stop the pump.
  Check the suction tube is well-sealed (there is not any air inlet).
  Check the recommended height or length of the suction tube are not exceeded.
  If you are using an automatic nozzle, it is possible there is an air chamber in the delivery line. The air evacuation can be difficult because of the automatic stop device that holds close the valve when the pressure is too low. If so, disassemble the nozzle, start the pump until the liquid flows. Then, assemble again the nozzle.

Refer to the next section "PROBLEM GUIDE".
We have got customized ACCESSORIES for each type of pump allowing the rapidity and neatness of the installation both in the suction and in the delivery.
- The suction reels have special injected self-screwing sealing joints, assuring a total sealing.
- The delivery hoses clamped with brass adapters have injected self-screwing joints of its total sealing, not being necessary sealing liquids or other elements.
- The PP telescopic tubes with built-in filter do not have impurities in their inner, allowing getting the recipient bottom. (To specify sizes).

The installer is the responsible of using the required accessories for the good operation of the kit. The inadequate use of accessories can contaminate or damage the pump or people.

5. CORRECT PUMP USE

5.1. When switching on the pump, the pump motor starts working, self-suctioning the liquid and when opening the nozzle, the diesel transfer will start.
5.2. When the refuelling is finished, turn off the pump switch.

5.3. IMPORTANT
DO NOT FORGET TO STOP THE PUMP THROUGH THE SWITCH OR DISCONNECTING THE CLAMPS, once the refilling is completed. In the event of closing the liquid way through the nozzle, the liquid freely runs through the bypass of the pump inner. The kit can be damaged.
The pump cannot work in bypass (closed nozzle) during a period higher than 3 minutes because, otherwise, the pump will be seriously damaged. Do not start the pump without liquid in its inner.

5.4. IMPORTANT
As the pump has worked with the nozzle closed, there is an overpressure in the hose. WHEN STOPPED THE MOTOR, IT IS ADVISABLE TO OPEN THE NOZZLE in order to allow the discharge of the pressure accumulated in the hose

5.5. The pump use under extreme conditions can cause an increase of the motor temperature, causing its stop because of the thermal motor protection.
Turn the pump off and wait until it gets cold. Then, the thermal protection will be deactivated.

6. MAINTENANCE

Periodically follow the below steps so that the pump remains in its best state:
6.1. The TECPUMP 12 VDC pumps have an extractable filter on the suction in order to avoid the solid impurities input into the pump and/or the meter. The absence of these impurities means the long life of the pump.
6.2. Check the filter in order to see whether there are any stored waste.

6.3. Check the hose and the nozzle in order to see whether these are worn or broken. The damaged hoses or nozzles can be a potential risk and/or attempt against the environment.

7. REPAIR

The authorized repair workshops are the only ones that can repair the damaged motors. Clean and drain the pumps before sending them.
If a pump is used, by mistake, with fluids not derived from diesel, this must be rinsed as many times as necessary, enclosing a note where it is stated which fluids have been pumped.
The pumps, which do not have this specifications, will be admitted neither in the workshop nor in the factory.
When ordering spare parts, make sure of giving the spare part code, its description and its serial number. This will guarantee the correct supply of the required part.

8. PROBLEM GUIDE

BREAKDOWN	POSSIBLE CAUSE	SOLUTION
The tank is full. The pump is working, but the liquid does not go out through the automatic nozzle.	- There is an air chamber in the delivery line, and the automatic nozzle cannot be opened.	- Remove the automatic nozzle. Start the pump until it is primed, and the liquid is automatically going out. Then install again the automatic nozzle.
The pump is working, but no fluid comes out.	- problem in the suction line - The bypass valve is opened - retainer leak - blocked outlet tube, nozzle or filter - motor breakdown. The rotor must turn clockwise, looking at the pump from its heading; if not, return it for repairing. - blade friction	- Check whether there are leaks in the suction line. - Remove and check the valve. - Tighten the cover or change the retainer. - Check whether the outlet tube of the pump, the hose, the nozzle and the filter are blocked. - Check the connection polarity. - Check whether the blades and the grooves are worn out.
The pump makes noise, but it does not work.	- dirt inside the pump, blade friction - motor breakdown	- Clean the pump interior. - Return it for repairing.
Low flow	- filthy filter - problem in the suction or delivery line - The bypass is blocked. - blade friction - roller or blade wear - dirt in the red adapter	- Disassemble and clean the filter. - Check the suction line in order to see whether there is any leak or restriction; it can be too narrow, too long or no hermetic - Remove and check the bypass valve. Clean it. - Check the blades and the slots in order to see whether these are worn out or not. - Check whether the roller and the blades are worn out or not; replace them. - Clean the inner sieve.
The pump runs slowly making strange noise.	- wrong voltage - motor breakdown	- Check the inlet voltage. - Return it for repairing.
The motor is stopped or burns.	- low voltage - solid impurities in the pump inner	- Check the inlet voltage. - Disassemble and clean the pump.
The motor heats up excessively.	- high viscosity fluid pumping - blocked filter - narrow suction or delivery tube - motor breakdown	- These fluids only can be pumped during a short period. - Remove and clean the filter - Replace it with an adequate tube - Return it for repairing.
The motor does not start.	- There is no supply system. - motor breakdown - not lined up / connected switch connection	- Check the battery state. - Return it for repairing. - Fit the switch connection / Connect it.
Liquid leak	- connection joint in bad state - mechanical seal in bad state	- Check all the connection joints. - Replace the mechanical seal.

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