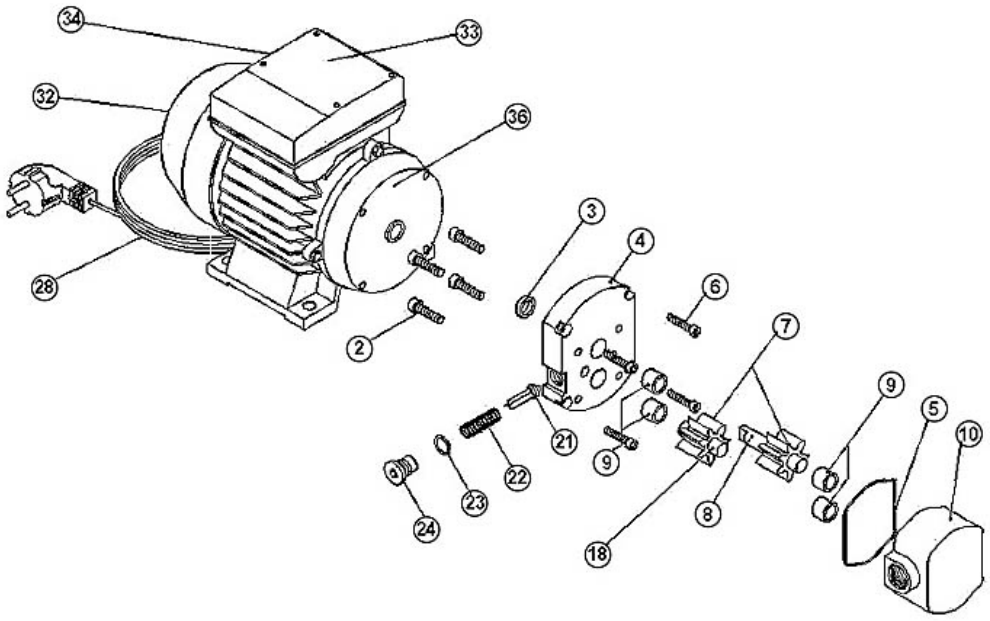
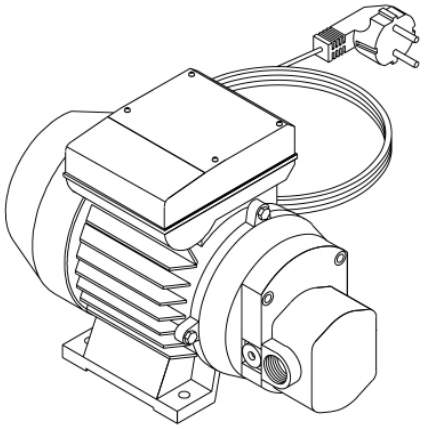
EA-88 PT
0.37 kW 230 VAC

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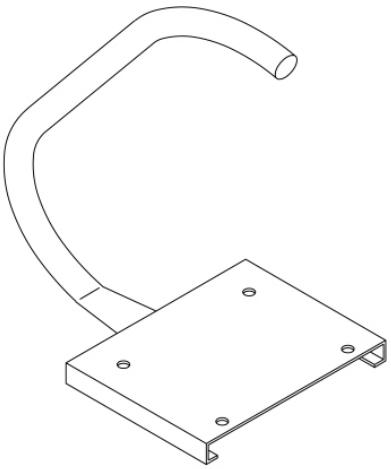
INSTRUCTION MANUAL
WARRANTY AND CONFORMITY DECLARATION





EA-88 0.37 kW · code 03000
Weight: 10 kg (approx.)
Dim.: 260x160x190 mm (approx.)

Nº	DESCRIPTION	CODE
2	SCREW M-6x25 DIN. 912	805400007
3	RETAINER 11.70x16.94x2.62	804600001
4	ALUMINIUM COVER	030001016
5	PUMP BODY JOINT 56x2	803100021
6	SCREW M-5x25 DIN. 912	805400006
7+8	DRIVE SHAFT Ø12x64.5 + GEAR	030002020
9	BUSH Ø12x16x12	030002014
10	BRASS PUMP BODY	030002001
18	LAYSHAFT Ø12x42 + GEAR	030002019
21	12x35 RED BYPASS VALVE	805606105
22	11x12x25 BYPASS SPRING	030002405
23	D. 13x2 BYPASS JOINT	803100132
24	SPECIAL BYPASS BULL PLUG 3/8"	030002108
28	230 VAC (3 m) CONNECTION CABLE WITH INJECTED PLUG	800900010
30	CONDENSER 20 µF/450 VAC	802000006
32	VENTILATOR COVER	030001402
33	CONNECTION BOX	030001403
34	ON/OFF IP-55 SWITCH	030001404
35	VENTILATOR	030001405
36	0.37 kW MOTOR with thermal protection	030002301



OPTIONAL: code 030003001

1. TECHNICAL FEATURES

- EA-88 0.37 kW Self-suction Gear Pump
- It is suitable for the oil transfer, average-low density
- Free flow 20-25 l/min (SAE 20/50 W at 25 ºC)
- It has recirculation by-pass valve
- Motor: 0.37 kW Self-ventilated. 230 VAC 50/60 Hz Single-phase
- IP-55 Protection
- Motor with thermal protection
- By-pass pressure: 5-6 bar
- Consumption: 2-4 A
- 1,500 rpm
- Inlet/Outlet tube: 1/2" GAS (BSP)
- ON/OFF Switch
- 3 m 230 VAC connection cable with injected plug

NOTE: When a nozzle is used, the flow will be reduced.

IMPORTANT: Valid flows without outlet nozzles with SAE 20/50 W at 25 ºC. With nozzle, the flow is reduced according to the retention that it makes.

2. WARNINGS

Please read all the instructions carefully before using the product. The people who do not know the instructions must not use it.
This manual describes how to use the machine according to the project hypothesis, the technical features, the types of installation, the use, the maintenance, and the training regarding to 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 in the pump sale, and cannot be considered inadequate for the reason of being updated afterwards according to the new experiences. The manufacturer is keeping the right to update the production and the manuals without being forced to update the production and previous manuals.

3. SECURITY INSTRUCTIONS

To use this pump without suffering any danger it is essential to read and follow every one of the warnings and following cautions:
3.1. PLEASE FOLLOW ALL THE INSTRUCTIONS CAREFULLY. The pump must be connected adequately up the ground and must use cables and suitable pipes.
3.2. The broken-down motors must be repaired in an authorized workshop or in our factory.

3.3. IMPORTANT
It is forbidden to use the pump in environments where there may be the possibility of suffering an explosion or fire light (established by the Law). In particular the pump must not be used to pump liquids that, according to the Law, need explosionproof motors, some examples of usage completely not allowed are: with petrol, acetone, dissolvent etc. (Rule references: international law IEC 79-10). Do not smoke near the pump or use it near a flame. This could cause an explosion and even the death.

3.4. The pumps without and with meter, EA-88 0.37 kW and SEA-88 0.37 kW, are tested in a self-suction of 2.5 m in depth. At major depth, with or without meter, it is advisable to install a retention valve with filter. The retention valve must be suitable for oil.
3.5. The installed hoses in any of our pumps must have the same diameter as or larger than the admission holes and pump outlet, that is the minimum diameter must be 1/2” GAS (BSP) or 15 mm inside.
3.6. In any case and for a suction height higher than 2.5 m, it is necessary a suction tube larger than the admission hole of the pump, i.e. 3/4” GAS (BSP).
3.7. In the event of closing the liquid way by the nozzle, the liquid freely runs through the bypass into the pump.

DO NOT FORGET TO STOP THE PUMP USING THE SWITCH once the refilling operation is finished.

3.8. ATTENTION: If the pump, hose, and nozzle are out in the open, in summer weather and in very hot countries, after the refilling (once the pump is stopped) we will recommend opening the nozzle to allow the discharge of the stored up pressure inside the hose. In the opposite sense, the high temperature of the Sun makes possible that an overpressure is created by the expansion due to the oil dilation contained inside the tubes, which could cause a retainer and mechanic element breaking of the pump and/or the meter.
3.9. If the pump remains without operating in a place exposed to extreme cold temperatures or ice, it will be necessary to empty the hoses and the pump body.
In the same way, it is advisable to make this operation if the pump remains a long time without operating (even though the temperature is being normal).
3.10. RECOMMENDATION: To avoid overpressures on the pump retainer or on the meter it is advisable to put a check valve on the pump or meter outlet.
3.11. On the DELIVERY, we recommend using R1 hoses; they are resistant to the pump working pressure.
3.12. NEVER LET THE PUMP WORK EMPTY. Please avoid spillage of any liquid on the motor top.

3.13. ATTENTION
The electric connections must be done according to the EN 60204-1-2-Ed Regulation. In the series version, the electric motor is not equipped with the protection against electric overcharges; the assembly of this protection is in the charge of the user.
Connect the cable to the power supply after assuring that this is equal to the written values on the motor plate (it admits a tension tolerance of 10 %). The switch box of the motor contains electric parts, which assembly must be done by specialized personnel, complying with the security rules.

3.14. ATTENTION
The pump must not be turned on before completing its installation. It is absolutely forbidden to put fingers or other parts of the body inside the holes: the pump has moving parts. Before starting the disassemble or assembly of the pump, always place the switch on position "0" and disconnect it from the power current to avoid accidental ignitions of the non protected moving parts.

3.15. The EA-88 0.37 kW pumps are suitable to make intermittent and short duration supplies. It is not advisable its use for high oil amount transfer from a large distance, or on installations with hose rollers. We have more suitable oil pump models.

3.16. IT IS OBLIGATORY THE INSTALLATION OF THE MOTOR PROTECTION DEVICE WITH 0.37 kW POWER AND ADJUSTABLE CONSUMPTION AMONG 4 – 6.5 A, FOR THE KIT WARRANTY.

4. INSTALLATION

We have customized accessories for each type of pump, which permits rapidity and neatness in the installation, both in suction and in delivery.

Nevertheless, if you want to install your own equipment, you must read and follow closely the following recommendations:
- Before connecting the pump to the supply system, you must be sure that the current is 230 VAC 50/60 Hz.
- The systems must be designed to operate with a minimum suction height. The equivalent maximum suction height is of 2.5 m. (This equivalence is the vertical distance from the bottom of the suction tube to the inlet tube of the pump plus the wastages by friction in the vertical and horizontal route of the tube, the elbows etc.). The top drop levels will affect the flow and cause the pump accelerated fatigue, and the possibility of «cavitation» will drastically increase.
- Place an oil filter on the suction hose. For suctions of more than 2.5 m of depth with/without meter, it is necessary a retention valve.
ATTENTION: When the retention valve is installed, make sure that the installation has been correct.
- The pumps must be adjusted by adaptors and elbows of 1/2” GAS (BSP) and with an inner diameter of 15 mm. If reductions are done on connections, the pump will not work correctly, decreasing the flow and increasing the motor consumption.

- Please take care that the fixing of all connections, both in hoses and in pumps, is being firmly sealed with Teflon or something similar, to avoid loss of oil or air inlets.
- Adjust the suction hose on the pump inlet.

ATTENTION:
Make sure that neither sealing liquids nor Teflon tapes go into the pump inner. If so, the pump or bypass can be blocked.

- Adjust the delivery hose to the pump outlet.
- Adjust the nozzle to the delivery hose end.
THE USE OF AUTOMATIC NOZZLES CAUSES A FLOW REDUCTION.
- Verify if the pump connection is correct, the installation voltage is in harmony with the pump, and the installation has an earth wire.

5. LUBRICANT SUPPLY

5.1. When the switch is driven, the pump motor works self-suctioning liquid; and when the nozzle is opened, the oil transfer will start.
5.2. When the refuelling is finished, the switch must be turned to the stop position.

5.3. IMPORTANT
As the pump has worked with the nozzle closed, an over pressure has been created in the hose.
IT IS ADVISABLE TO OPEN THE NOZZLE ONCE THE MOTOR STOPPED to allow the discharge of the stored pressure in the hose.

6. MAINTENANCE

Please follow these steps regularly so as the pump remains in the best state:
6.1. Make sure of the state of the filter and observe if there are any stored residues.

6.2. Check the hose and the nozzle to see whether these are worn or broken. The hoses or nozzles in bad state may suppose a potential risk of insecurity and/or attempt against the environment.

7. REPAIR

The authorized repair workshops are the only ones which can repair the motor in bad state. The pumps have to be cleaned and drained before its delivery.
If a pump is used by mistake with fluids not derived from oil, it has to be rinsed as many times as it is necessary and enclosed a note indicating the chemical substances, which have been pumped with this unit. The pumps, which do not contain these specifications, will be admitted neither in the workshop nor in the factory.
When ordering spare parts, make sure that you give the number of the spare part, its description and the pump serial number. This will guarantee the correct supply of the requested spare part.

8. PROBLEM GUIDE

BREAKDOWN	POSSIBLE CAUSE	SOLUTION
The pump works, but no fluid comes out.	- Problem in suction line - Opened bypass valve - Gear friction - Loss retainer - Blocked outlet tube or nozzle - Motor breakdown	- Verify loss in suction line. - Remove and check the valve. - Verify gears to see if these are worn out, and replace them. - Press the plug or change the retainer. - Check if pump outlet tube, hose, nozzle and filter are blocked. - The rotor must turn clockwise; if not, return it for repairing.
The pump makes noise, but it does not work.	- Dirt inside the pump - Motor breakdown	- Clean the pump interior. - Return for repairing to the factory.
Low flow rate	- Excess of dirt in filter - Problem in suction line -The by-pass is blocked. - Gear friction - Gear wear	- Disassemble and clean the filter. - Verify suction line to see whether there are losses or restrictions; it may be too narrow, too long or no hermetic. - Remove and check bypass valve. Clean it. - Verify gears to see if these are worn out. - Verify gears.
Pump works slowly making strange noise.	- Wrong voltage current - Motor breakdown	- Verify inlet voltage. - Return for repairing to the factory.
Motor stops.	- Low voltage current - Solid impurities inside the pump	- Verify inlet voltage. - Disassemble and clean the pump.
Motor heats up excessively.	- Pumping high viscosity fluids - Blocked filter - Narrow suction/delivery tube - Motor breakdown	- These fluids can be pumped for a short period. - Remove and clean filter. - Replace with an adequate tube. - Return for repairing to the factory.
Motor does not start.	-There is no electricity. - Motor breakdown - Switch connection not lined up/connected	- Verify inlet current. - Return for repairing to the factory. - Adjust connection switch/connect.
Loss of liquid	- Connection joint in bad state - Retainer in bad state	- Verify all connection joints. - Replace retainer.

9. WARRANTY

1. All the products manufactured by TOT COMERCIAL SA have a WARRANTY of 12 (twelve) months from their purchase, against any manufacturing defect.
2. TOT COMERCIAL SA guarantees, in the warranty period, the change/the devolution of the defective part or product. This material must be sent with prepaid freight to our factory, or any appointed technical service. After our technical inspection, it will be determined whether the responsibility is from the manufacturer, the user, the installer, or the delivery transport.
3. The warranty does not cover: the inadequate use, the negligence, the corrosion, the abuse, the manipulation, or the wrong installation of the products, the use of non-original spare parts or not concerning to the specific model. All the manufactured and/or commercialized equipment must be installed according to the manufacturer's instructions.
4. The accessories and the products not manufactured by TOT COMERCIAL SA are liable for their original manufacturer's warranty.
5. Because of the constant innovations and development, TOT COMERCIAL SA keeps the right to modify the specifications of its products and publicity, without prior notice.

tot comercial, s.a.

10. CONFORMITY DECLARATION

Manufacturer:

TOT COMERCIAL sa Partida Horta d'Amunt s/n Apartado Correos nº 149
25600 BALAGUER (Lleida) SPAIN

STATES:

Under its own responsibility that the following:

SELF-SUCTION GEAR LUBRICANT PUMP

Make: GESPASA

Model: EA-88 0.37 kW 230 VAC

serial no.

It is in accordance with the following Directives of the European Parliament and the Council: "2006/42/EC of 17 May 2006 June 1998 on machinery", "2006/95/EC of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits", and "2004/108/EC of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EC", and it has been manufactured according to the following harmonized regulations:

UNE-EN ISO 12100-1:2004	Safety machinery. Basic concepts, general principles for design Part 1: Basic terminology, methodology (ISO 12100-1:2003)
UNE-EN 60204-1:2007	Safety of machinery. Electrical equipment of machines Part 1: General requirements (IEC 60204-1:2005, modified)
UNE-EN 55014-1:2008	Electromagnetic compatibility. Requirements for household appliances, electric tools and similar apparatus Part 1: Emission
UNE-EN 55014-2/A1:2002	Electromagnetic compatibility. Requirements for household appliances, electric tools and similar apparatus Part 2: Immunity. Product family standard
UNE-EN 60745-1:2010	Hand-held motor-operated electric tools. Safety Part 1: General requirements

- IP-55 protection
- The pumps, meters and nozzles as nearly machines must not be on service while the machine, where these are placed, has not been declared of conformity with the 2006/42/EC (Machines) Directive requirements.

BALAGUER (Lleida), May 2014

Andrés Pané