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2 MACHINE AND MANUFACTURER IDENTIFICATION



AVAILABLE MODELS: E140
MANUFACTURER: Piusi S.p.A. Via Pacinotti 1, Rangovino 46029 Suzzara (MN) Italy

3 DECLARATION OF CONFORMITY

The undersigned: Piusi S.p.A. Via Pacinotti c.m. z. Rangovino 46029 Suzzara - (MN) - Italy

Hereby states under its own responsibility, that the equipment described below: Description - Pump for the transfer of diesel fuel Model: E140 Serial number: refer to Lot Number shown on CE plate affixed to product

Suzzara, 01/02/2019 Otto Varini legal representative

4 MACHINE DESCRIPTION

PUMP Self-Priming, volumetric, rotating electric vane pump, equipped with by-pass valve.
MOTOR Asynchronous motor, single-phase and three-phase, 2 pole, closed type (protection class IP55 in conformance with EN 60034-5-86 regulations) self-ventilated, directly flanged to the pump body.

4.1 HANDLING AND TRANSPORT

Foreword Due to the limited weight and dimensions of the pumps, special lifting equipment is not required to handle them.

PACKAGING The pump is equipped comes packed suitably for shipment. On the packaging a label shows the following product information:

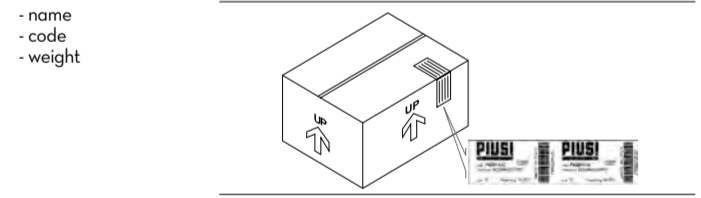


Table with 3 columns: MODEL, WEIGHT (Kg), PACKAGING DIMENSION(mm). Row 1: E140, 19,2, 350 x 250 x 300

5 GENERAL WARNINGS

Warnings To ensure operator safety and to protect the dispensing system from potential damage, workers must be fully acquainted with this instruction manual before attempting to operate the dispensing system.

Manual preservation This manual should be complete and legible throughout. It should remain available to end users and specialist installation and maintenance technicians for consultation at any time.

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6 SAFETY INSTRUCTIONS

Mains - preliminary checks before installation You must avoid any contact between the electrical power supply and the fluid that needs to be FILTERED.

Maintenance control Before any checks or maintenance work are carried out, disconnect the power source.
FIRE AND EXPLOSION To help prevent fire and explosion: Use equipment only in well ventilated areas.

ELECTRIC SHOCK This equipment must be grounded. Improper grounding, setup or usage of the system can cause electric shock.

Electrocutation or death Connect only to a grounded electrical outlets. Use only 3 wire extension cords in accordance with local electrical codes.

EQUIPMENT MISUSE Do not leave the work area while equipment is energized or under pressure. Turn off all equipment when equipment is not in use.

TOXIC FLUID OR FUMES HAZARD Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines. Prolonged contact with the treated product may cause skin irritation; always wear protective gloves during dispensing.

SMOKING PROHIBITED When operating the pump and in particular during refuelling, do not smoke and do not use open flame.

FIRST AID RULES disconnect the unit from the mains, or use a dry insulator as protection while moving the electrocuted person far from any conductor. Do not touch the electrocuted person with bare hands until he/she is far from any conductor.

GENERAL SAFETY RULES Wear protective equipment that is: - suited to the operations that need to be performed, - resistant to cleaning products.

Essential protective equipment characteristics Personal protective equipment that must be worn: - safety shoes, - close-fitting clothing, - protective gloves, - safety goggles, - instruction manual

Other equipment Prolonged contact with the treated product may cause skin irritation; always wear protective gloves during dispensing.

7 FIRST AID RULES

Electrocutation disconnect the unit from the mains, or use a dry insulator as protection while moving the electrocuted person far from any conductor. Do not touch the electrocuted person with bare hands until he/she is far from any conductor.

Essential protective equipment characteristics Personal protective equipment that must be worn: - safety shoes, - close-fitting clothing, - protective gloves, - safety goggles, - instruction manual

Other equipment Prolonged contact with the treated product may cause skin irritation; always wear protective gloves during dispensing.

Protective gloves Prolonged contact with the treated product may cause skin irritation; always wear protective gloves during dispensing.

9 TECHNICAL DATA

Table with 10 columns: Model, Voltage (V), Frequency (Hz), Absorption (A), Power (W), RPM, Nominal Flow Rate (l/min), Operating pressure (bar), Type of Service (S1-S2-S3), Motor Protection (IP55)

ATTENTION Operating conditions of the declared data: Temperature: Diesel Fuel 20°C. Suction Conditions: The tube and the pump position relative to the fluid level is such that a pressure of 0.3 bar is generated at the nominal flow rate.

Under different suction conditions higher pressure values can be created that reduce the flow rate compared to the same back pressure values. To obtain the best performance, it is very important to reduce loss of suction pressure as much as possible by following these instructions:

OPERATING CONDITIONS ENVIRONMENTAL CONDITIONS Temperature: min. -4 °F / max. +140 °F min. -20 °C / max. +60 °C max. 90%.

RELATIVE HUMIDITY ATTENTION The temperature limits shown apply to the pump components and must be respected to avoid possible damage or malfunction.

ELECTRICAL POWER SUPPLY Depending on the model, the pump must be supplied by a single-phase alternating current line whose nominal values are shown in the table in Paragraph "TECHNICAL DATA".

ATTENTION Power from lines with values outside the indicated limits can damage the electrical components.

DUTY CYCLE The electrical pump E140 is designed for continuous use under conditions of maximum back pressure.

FUNCTIONING UNDER BY-PASS CONDITIONS is only allowed for short periods of time (max. 3 minutes).

PERMITTED AND NON-PERMITTED FLUIDS DIESEL FUEL at a viscosity of from 2 to 5.35 cSt (at a temperature of 37.8°C). Minimum Flash Point (PM): 55°C, according to UNI EN 590.

FLUIDS NON PERMITTED AND RELATED DANGERS - GASOLINE - FIRE - EXPLOSION - INFLAMMABLE LIQUIDS WITH PM < 55°C - FIRE - EXPLOSION - LIQUIDS WITH VISCOSITY > 20 cSt - MOTOR OVERLOAD - WATER - PUMP OXIDATION - FOOD LIQUIDS - CONTAMINATION OF THE SAME - CORROSIVE CHEMICAL PRODUCTS - PUMP CORROSION - INJURY TO PERSONS - SOLVENTS - FIRE - EXPLOSION - DAMAGE TO GASKET SEALS

11 INSTALLATION

ATTENTION The pump must never be operated before the delivery and suction lines have been connected.

PRELIMINARY INSPECTION - Verify that all components are present. Request any missing parts from the manufacturer. - Check that the pump has not suffered any damage during transport or storage.

POSITIONING, CONFIGURATIONS AND ACCESSORIES In the case of installation in the open air, proceed to protect the pump by providing a protection roof.

THE MOTORS ARE NOT OF THE ANTI-EXPLO-SIVE TYPE. Do not install them where inflammable vapours could be present.

DELIVERY SUCTION - Automatic dispensing - Foot valve with filter nozzle - Manual dispensing nozzle - Rigid and flexible tubing - Metered flexible tubing - Pump suction filter

It is the responsibility of the installer to provide the necessary line accessories to ensure the correct and safe operation of the pump. The accessories that are not suitable to be used with the previously indicated material could damage the pump and/or cause injury to persons, as well as causing pollution.

To maximise performance and prevent damage that could affect pump operation, always demand original accessories.

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11.2 NOTES ON SUCTION AND DELIVERY LINES

DELIVERY Foreword The choice of pump model must be made keeping the characteristics of the system in mind.

EFFECTS ON FLOW RATE Length and diameter of pipe, flow rate of dispensed liquid, accessories fitted, can create back pressures above those allowed. In this case, the pump mechanical control (bypass) will trip to reduce the flow rate.

HOW TO REDUCE EFFECTS ON FLOW RATE To avoid these problems, system flow resistances must be reduced using shorter and/or larger diameter pipes, as well as line accessories with low resistances (e.g., automatic nozzle for higher flow rates).

SUCTION Foreword The pumps are self-priming and characterized by good suction capacity. During the start-up phase, with an empty suction tube and the pump wetted with fluid, the electric pump unit is capable of suctioning the liquid with a maximum difference in height of 2 meters.

NOTE It is important to point out that the priming time can be as long as one minute and the presence of an automatic dispensing nozzle on the delivery line prevents the evacuation of air from the installation and, therefore, prevents proper priming.

WARNING The installation of a foot valve is recommended to prevent the emptying of the suction tube and keep the pump wet. In this way, the pump will subsequently always start up immediately.

CAVITATION When the system is functioning, the pump can work with pressure at the inlet as high as 0.5 bar, beyond which cavitation phenomena can begin, with a consequent loss of flow rate and increase of system noise and pump damage.

HOW TO PREVENT CAVITATION It is important to ensure low vacuums at suction mouth by using: - short pipes with larger or identical diameter to that recommended - reduce bends to the utmost

WARNING The difference in height between the pump and the fluid level must be kept as small as possible and, at any rate, within the 2 meters anticipated for the priming phase.

ATTENTION In the case that the suction tank is higher than the pump, it is advisable to install an anti-siphon valve to prevent accidental diesel fuel leaks.

12 CONNECTIONS

12.1 ELECTRICAL CONNECTIONS IT IS THE INSTALLER'S RESPONSIBILITY TO CARRY OUT THE ELECTRICAL CONNECTIONS IN COMPLIANCE WITH THE RELEVANT STANDARDS.

WARNING Comply with the following (not exhaustive) instructions to ensure a proper electrical connection: - During installation and maintenance make sure that power supply to the electric lines has been turned off.

ATTENTION During installation and maintenance make sure that power supply to the electric lines has been turned off. Use cables with minimum sections, rated voltages and installation type that are suitable for the characteristics indicated in paragraph "TECHNICAL DATA".

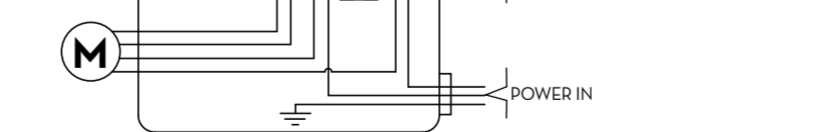
ATTENTION Verify that the terminal strip blades are positioned according to the diagram provided for the available power supply voltage.

ATTENTION Verify the correct direction of rotation of the motor (see the paragraph overall dimensions), and, if not correct, invert the connection of the two cables in the power supply plug or on the terminal strip.

NOTE The characteristics of the capacitor are shown on the identification plate for each pump model. he switch has the sole function of starting/stopping the pump and cannot in any way substitute for the main circuit breaker provided for in the applicable regulations.

ATTENTION Verify that the terminal strip blades are positioned according to the diagram provided for the available power supply voltage.

SINGLE-PHASE MOTORS Single-phase motors are supplied with a pre-existing 2-meter cable with electric plug. To change the cable, open the terminal strip cover and connect the line according to the following diagram.



ATTENTION It is the responsibility of the installer to provide the necessary line accessories to ensure the correct and safe operation of the pump. The accessories that are not suitable to be used with the previously indicated material could damage the pump and/or cause injury to persons, as well as causing pollution.

ATTENTION To maximise performance and prevent damage that could affect pump operation, always demand original accessories.

12.2 PIPING CONNECTIONS

FOREWORD Before carrying out any connection, refer to the visual indications (i.e. arrows) on the pump head, to identify suction and delivery.

ATTENTION Wrong connection can cause serious pump damage. Check that the machine has not suffered any damage during transport or storage.

PRELIMINARY INSPECTION Clean the inlet and outlet openings, removing any dust or residual packing material. Make sure that the motor shaft turns freely.

CONNECTING Before connection, make sure that the tubing and the suction tank are free of dirt and thread residue that could damage the pump and its accessories.

SUCTION TUBING Minimum recommended nominal diameter: 1 1/2 inch. Nominal recommended pressure: 10 BAR. Use tubing suitable for functioning under suction pressure.

DELIVERY TUBING ATTENTION The use of tubing unsuitable for use with Diesel fuel can damage the pump, injure persons and cause pollution.

NOTE To connect the Piusi stem connection flanges, use M8 screws with a torque of 25 Nm.

13 INITIAL START-UP

FOREWORD Check that the quantity of fluid in the suction tank is greater than the amount you wish to transfer.

ATTENTION Extreme operating conditions can raise the motor temperature and, consequently, cause the thermal protection switch to stop it.

NOTE If an automatic type dispensing nozzle is installed on the end of the delivery line, the evacuation of the air will be difficult because of the automatic stopping device that keeps the valve closed.

ATTENTION If the pump does not prime, depending on the system characteristics, the priming phase can last from several seconds to a few minutes.

WARNING If the pump does not prime, that the suction pipe guarantees against air infiltration; that the suction filter is not clogged.

ATTENTION When priming has occurred, verify that the pump is operating within the anticipated range, in particular: that under conditions of maximum back pressure, the power absorption of the motor stays within the values shown on the identification plate.

ATTENTION If the pump does not prime, that the suction pressure is not greater than 0.5 bar; that the delivery back pressure does not exceed the maximum back pressure for the pump.

14 EVERY DAY USE

USE PROCEDURE 1 Use flexible tubing, attach the ends of the tubing to the tanks. In the absence of an appropriate slot, solidly grasp the delivery tube before beginning dispensing.

ATTENTION In case of a power break, switch the pump off straight away. Functioning with the delivery closed is only allowed for brief periods (2-3 minutes maximum).

LACK OF ELECTRIC POWER - A safety device tripping - A drop in line voltage - In either case, act as follows: 1 Close the delivery valve

2 Attach the end of the delivery to the slot provided on the tank

3 Turn the ON/OFF switch to the OFF position. Resume operations as described in Paragraph DAILY USE, after determining the cause of the stoppage.

15 MAINTENANCE

Safety instructions E140 pump is designed and constructed to require a minimum of maintenance. Before carrying out any maintenance work, disconnect the dispensing system from any electrical and hydraulic power source.

Authorised maintenance personnel ONCE A WEEK: ONCE A MONTH: All maintenance must be performed by qualified personnel. Tampering can lead to performance degradation, danger to persons and/or property and may result in the warranty being voided.

16 NOISE LEVEL In normal operating conditions, noise emissions of all models do not exceed 74 dB at a distance of 1 metre from the electric pump.

17 PROBLEMS AND SOLUTIONS

Table with 3 columns: PROBLEM, POSSIBLE CAUSE, CORRECTIVE ACTION. Rows include: THE MOTOR IS NOT TURNING, THE MOTOR TURNS SLOWLY WHEN STARTING, LOW OR NO FLOW RATE, INCREASED PUMP NOISE, LEAKAGE FROM THE PUMP BODY, THE PUMP DOES NOT PRIME THE LIQUID.



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