MACHINE AND MANUFACTURER IDENTIFICATION By-pass 3000 12 - 24 Va

MANUFACTURE

MODELS Carry 3000 Battery kit 3000 PRODUCT MODEL 280 W 50 l/min 22 A TECHNICAL DANGER ᄷᇰᇎᇎᇎ MANUFACTURER

FACSIMILE COPY OF EU DECLARATION OF CONFORMITY

√ia Pacinotti 16/A, Z.I. Ranaav

PIUSI S.p.A. Via Pacinotti 16/A z.i. Rangavin

46O29 Suzzara - Mantova - Italy HEREBY STATES under its own responsibility that the equipment described be-

Description: PUMP INTENDED FOR DIESEL FUEL TRANSFER Model: BY-PASS 3000 12 - 24 VDC / CARRY 3000 / BATTERY KIT 3000 Serial number: refer to Lot Number shown on CE plate affixed to product Year of manufacture: refer to the year of production shown on the CE plate affixed to the product

complies with the following legislation: Machinery Regulations

The technical file is at the disposal of the competent authority following moti vated request at PIUSI S.p.A. or following request sent to the e-mail address: doc_tec@piusi.cor THE ORIGINAL DECLARATION OF CONFORMITY IS PROVIDED SEPARATELY

WITH THE PRODUCT

PUMP Self-Primina, volumetric, rotating vane pump, equipped with by-

MACHINE DESCRIPTION

STORAGE

PACKAGING

Brush motor, DC, low tension with intermittent cycle, closed type in protection class IP55 according to CEI-EN 60034-5, directly flanged to the pump body.

MOVING AND TRANSPORT

Due to the limited weight and dimensions of the pumps, special lifting equipment is not required to handle them. The pumps are carefully packed before dispatch. Check the packing when receiving the material and store in a dry place. Store in a covered and dry place.

Store the unit away from dirt and vibration **ENVIRONMENTAL CONDITIONS:** Max 90%

Storage humidity: Storage temperature: min -10 °C Max +50 °C

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

WEIGHT (Kg) PACKAGING DIMENSION (mm) BY-PASS 3000 **CARRY 3000** 260 x 235 x 164 **BATTERY KIT 3000**

GENERAL WARNINGS 5 o ensure operator safety and to protect the dispensing system

from potential damage, workers must be fully acquainted with this nstruction manual before attempting to operate the dispensing The following symbols will be used throughout the manual to highlight safety information and precautions of particular importance: indicates safe working practices for operators and/

This symbol indicates that there is risk of damage to the equipment and/or its components.

This symbol indicates useful information. 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. .ll reproduction rights are reserved by Piusi S.p.A The text cannot be reprinted without the written permission of

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SAFETY INSTRUCTIONS 6

ATTENTION You must avoid any contact between the electrical power Before any checks or maintenance work are carried out, discon

nect the power source. To help prevent fire and explosion Use equipment only in will ventilated area. Keep work area free of debris, including rags and spilled or

ntainers of solvent and gasoline. Oo not plug or unplug power cords or turn lights on or off when Ground all equipment in the work area.

o operation immediately if static sparking occurs or if you feel a shock. Do not use equipment until you identify and correct the problem.

Keep a working fire extinguisher in the work area. Turn off and disconnect power cord before servicing equip-Ensure ground prongs are intact on power and extension cord

Outdoors, use only extensions suitable for the specific use, in accordance with the regulations in force. The connection between plug and socket must remain away from water.

Never touch the electric plug of socket with wet hands. Do not turn the device on if the power connection cord or other important parts of the apparatus are damaged, such as the inlet outlet plumbing, dispensing nozzle or safety devices. Re place damaged components before operation. As a general rule of electrical safety it is always recommended to power the device by protecting the line with:

magnetothermic switch / disconnector with a current capacity suitable for the electric line Do not operate the device when fatigued or under the influence f drugs or alcohol.

EQUIPMENT MISUSE Misuse can cause death or

serious injury

FIRE AND

EXPLOSION

are present in

the work area,

such as gasoline

fumes can ignite

wiper fluid, be

flammable

ELECTRIC

Electrocution of

SHOCK

flammable fluids

not leave the work area while device is energized or under Turn off all device when is not in use.

Do not alter or modify thr device. Alterations or modifications may void agency approvals and create safety hazards. Route hoses and cables away from traffic areas, sharp edges moving parts, and hot surfaces. Do not kink or over bend hoses or use hoses to pull device.

Keep children and animals away from work area. Comply with all applicable safety regulations. Do not exceed the maximum operating pressure or the tempe ature of the part with lower nominal value of the system. See

Technical Data in all equipment manuals. Use fluids and solvents that are compatible with the wetted part of the system. See Technical Data in all equipment manu als. Read the manufacturer's instructions of the fluids and solvents. For more information on the material, request the safety data sheet (MSDS) from the distributor or dealer. Check the device every day. Immediately repair or replace worn or damaged parts only with original spare parts of the

Make sure the equipment is classified and approved compli-ant with the standards of the environment where it is used. Use the equipment only for the intended use. Contact your distributor for more information.

Keep hoses and cables far from traffic areas, sharp edges, moving parts and hot surfaces. o not bend or overbend the hoses or use the hose to pull the device. Read MSDS's to know the specific hazards of the fluids you are us-

nazardous fluid in approved containers, and dispose of it according to applicable guidelines. Prolonged contact with the treated product may cause skin ir-

ritation: always wear protective gloves during dispensing.

TOXIC FLUID

OR FUMES

HAZARD

Wear the

protective

FIRST AID RULES hen operating the dispensing system and in particular during refuelling, do not smoke and do not use open flame.

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

afety shoes; ose-fitting clothing

rotective gloves

equipment safety goggles;

olonged contact with the treated product may cause skin tion; always wear protective gloves during dispensing

9.1 PERFORMANCE SPECIFICATIONS

TECHNICAL DATA

Rate) 24 9 D (By pass) **Delivery Close**

Back Pressure (bar)

ATTENTION

The curve refers to the following operating conditions
Fluid Diesel Fuel 20° C Suction Conditions The tube and the pump position relative to the fluid level is such that a pressure of O.3 bar is

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

 Shorten the suction tube as much as possib Avoid useless elbows or throttling in the tube Keep the suction filter clean

·Use a tube with a diameter equal to, or greater than, indicated

ELECTRICAL SPECIFICATIONS

PUMP MODEL	FUSES	ELECTRICAL POWER		CURRENT
		Current	Voltage (V)	Maximum(*) (A)
/ERSION 12V	25	DC	12	22
/ERSION 24V	15	DC	24	12
) referred to operations in by-pass mode				

OPERATING CONDITIONS 11.1 **ENVIRONMENTAL CONDITIONS**

TEMPERA-TURE HUMIDITY

NOTE

min. +23 °F / max +104 °F min. -5 °C / max +40 °C

ATTENTION

The temperature limits shown apply to the pump component and must be respected to avoid possible damage or malfunction OF THE PUMP MAY PRESENT ANY SIGNS OF OXIDATION WHICH DO NOT AFFECT THE CORRECT FUNCTIONING OF

ELECTRICAL POWER SUPPLY 11.2



N.B.: THE PUMP SHOULD BE POWERED BY A SAFE SOURCE: BATTERY OR POWER SUPPLY 12/24V WITH SAFETY TRANSFORMER. In accordance with the model, the pump must be powered by a direct current line, the nominal values of which are indicated on the

table in the paragraph "ELECTRICAL SPECIFICATIONS". The maximum acceptable variations from the electrical parameters are: Voltage: +/- 10% of the nominal value Power supply from lines with values that do not fall within the indicate limits could cause damage to the electrical components and reduction of working performance.

ATTENTION

11.3 **DUTY CYCLE** NOTE

The pumps have been designed for intermittent use and a **ATTENTION** Functioning under by-pass conditions is only allowed for short periods of time (max. 3 minutes).

11.4 FLUIDS PERMITTED / FLUIDS NOT PERMITTED DIESEL FUEL at a viscosity of from 2 to 5.35 cSt (at a **FLUIDS**

temperature of 37.8°C), Minimum Flash Point (PM): 55°C, according to UNI EN 590 Paraffinic HVO/XTL: EN 15940 ONLY FOR BIO DIESEL VERSIONS FOO342BXX (B100):

BIO DIESEL BIOO (FAME) according to UNI EN 14214 BIO DIESEL B2O/B3O according to EN 16709 - GASOLINE - FIRE - EXPLOSION PERMITTED - INFLAMMABLE LIQUIDS with - FIRE - EXPLOSION PM < 55°C

- LIQUIDS WITH VISCOSITY > 20 cSt - MOTOR OVERLOAD - WATER - PUMP OXIDATION - CONTAMINATION OF THE SAME - FOOD LIQUIDS - DLIMP COPPOSION - IN ILIPY - CORROSIVE CHEMICAL - FIRE - EXPLOSION - DAMAGE - SOLVENTS TO GASKET SEALS

12 INSTALLATION

RELATED

DANGERS

12.1

PRELIMINARY INSPECTION

We recommend that a suction filter be used

Verify that all components are present. Request any missing parts from the Check that the machine has not suffered any damage during transport or Carefully clean the suction and delivery inlets and outlets, removing any dust

or other packaging material that may be present Make sure that the motor shaft turns freely. Check that the electrical data corresponds to those indicated on the data Always install in an illuminated area

Install the pump in ventilated place to avoid any vapours accumulation

12.3 NOTES ON SUCTION AND DELIVERY LINES

12.2 POSITIONING THE PUMP

The pumps can be installed in any position (with pump axis in vertical or horizontal position). he pump must be securely attached by means of the provided

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

The selection of the pump model must be made taking into

The combination of the length of the pipe, the diameter of the pipe,

the flow rate of the diesel or other liquid, as well as the accessories

installed on the line, could create back pressure that are greater

han the maximum predicted pressure, thereby causing the pump's

electronic controls to intervene and reducing the dispensed flow

In these cases, to guarantee correct operation of the pump, it is

nozzle with greater flow rate capacity).

ecessary to reduce the resistance of the system using pipes

ATTENTION

DELIVERY

SUCTION

ATTENTION

ATTENTION

ATTENTION

THE MOTORS ARE NOT OF THE ANTI-EXPLOSIVE-TYPE. DO

NOT install them where inflammable vapours could be present It is the responsibility of the installer to provide the necessary 12.5 LINE ACCESSORIES ine accessories to ensure the correct and safe operation of t The accessories that are not suitable to be used with th proviously indicated material could damage the pump and/or cause injury to persons, as well as causing pollution.

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 indicated material could damage the pump or cause injury to persons, as well as causing pollution

T IS THE INSTALLER'S RESPONSIBILITY TO APPLY THE FOLLOWING SIGNALS ON THE MACHINE ANYWHERE PUMP WILL BE USED.

Comply with the following (not exhaustive) instructions to ensure a

Before installation and maintenance make sure that power supply

Use cables with minimum cross-sections, rated voltages and installation type that are suitable for the characteristics indicated in paragraph "ELECTRICAL SPECIFICATIONS".

Always close the cover of the terminal strip box before switching

on the power supply, after having checked the integrity of the sea gaskets that ensure the IP55 protection grade

or connection the installer shall have to use a cable of adequate

nater for the cable gland to ensure protection grade IP55.

CONNECTIONS

RED cable: positive pole (+)

60034-5-97) complete of:

4A ON/OFF switch;

ATTENTION

BLACK cable: negative pole (-)

13.1 **ELECTRICAL CONNECTIONS**

roper electrical connection:

to the electric lines has been turned off

Cables with faston connector coupling for connection to the power supply line

4B Safety fuse against short circuits and overcurrent,25a fuse for 12v models

4C Safety fuse against short circuits and overcurrent, 15a fuse for 24v models

DAMAGE OR MALFUNCTION

Tomo

power cable complete of pincers for connection to the batt

BLACE

ınd accessories

and accessories.

f not already fitted, fit a suction filter

nominal recommended pressure: 10 bar

nominal recommended pressure: 10 bar

necessary, tighten all the connections.

greater than the amount you wish to transfer

greater than the quantity you wish to transfer

Do not operate switches with wet hands.

Recommended minimum nominal diameter: 3/4"

Recommended minimum nominal diameter: 3/4'

13.2 CONNECTING THE PIPING

FOREWORD

SUCTION

DELIVERY

ATTENTION

GETTING STARTED

ATTENTION

14 INITIAL START-UP

Terminal strip box (protection class IP55 in conformance with the directive EN

IT IS THE RESPONSIBILITY OF THE INSTALLER TO

CARRY OUT THE ELECTRICAL CONNECTIONS IN

25A FUSE CAN BE FITTED ONLY ON 12V PUMP

15A FUSE CAN BE FITTED ONLY ON 24V PUMP

Before any connections, please refer to the indications (sticker on

are free of dirt and thread residue, which could damage the pump

are free of dirt and thread residue, which could damage the pump

Do not use conical threaded fittings, which could damage the

threaded inlet or outlet openings of the pumps if excessively

use pipes that are suitable for operation with back pressure

The use of tubes that are not suitable could cause damage to the pump or to persons, as well as pollution. Loosening of the connections (threaded connections, flanges, gasket seals) could cause serious ecological and safety problems. Check all

the connections after the first installation on a daily basis. If

Check that the quantity of diesel fuel in the suction tank is

Make sure that the residual capacity of the delivery tank is

Do not run the pump dry. This can cause serious damage to its

Make sure that the tubing and line accessories are in good

Extreme operating conditions with working cycles longer than 30 minutes can cause the motor temperature to rise, thus damaging the motor itself. Each 30-minute working cycle should always be followed by a 30-minute power-off cooling phase.

In the priming phase the pump must blow the air initially present in the entire installation out of the delivery line. Therefore it is

necessary to keep the outlet open to permit the evacuation of the air

If an automatic type dispensing nozzle is installed at the end of the delivery line, the evacuation of the air will be difficult

ecause of the automatic stopping device that keeps the valve

ondition. Diesel fuel leaks can damage objects and injure persons

pre connecting, make sure that the pipes and the suction tank

connecting, make sure that the pipes and the suction tank

the pump) to detect suction and delivery univocally

COMPLIANCE WITH THE APPLICABLE REGULATIONS.

DO NOT INVERT FUSES TO AVOID ANY MOTOR

that are shorter or that have a greater diameter, as well as line The self-priming pumps have a good suction capability During the start-up phase, when the suction pipe is empty and the pump is wet with the fluid, the electric pump unit is able to suck liquid from a maximum vertical distance of 2m. It is important to note that it could take up to 1 minute for the pump to prime and that the presence

of an automatic dispensing nozzle on the delivery side will prevent the air trapped during the installation from being released and, therefore, he correct priming of the pump. **SPECIFICATIONS** It is always advisable to prime the pump without an automatic delivery nozzle, verifying the proper wetting of the pump.

Always install a foot valve to prevent the suction pipe from being

emptied and to keep the pump wet at all times. In this way, the pump will always start up immediately the next times it is used When the system is in operation, the pump can operate with back pressures of up to 0.5 bars on the suction inlet; beyond this point, the pump may begin to cavitate resulting in a drop of the flow rate and an increase in the noise levels of the system. In light of this it is important to guarantee small back pressures on the suction side, by using short pipes with diameters that are equal to or larger than those recommended, reducing bends to a minimum, and using filters with a large cross-section and foot valves with minimum possible resistance on the suction side. It is very important to keep the suction filters clean because, when they become clogged, they increase the resistance of the

system. The vertical distance between the pump and the fluid must be kept as short as possible, and it must fall within the 2m maximum required for priming. If the distance is greater, a foot valve must be installed to allow the suction pipes to fill up and the diameter pipes must be larger. It is however recommended that pump not be

istalled if the vertical distance is greater than 3m. If the suction tank is higher than the pump, an anti-siphon valve should be installed to prevent accidental product leaks. Size the installation to contain the back pressures caused by water It is a good system practice to immediately install vacuum and air

pressure gauges at the inlets and outlets of the pump which allow verification that operating conditions are within anticipated limits. To prevent the suction pipes from being emptied when the pump stops, a foot valve should be installed.

different posititions allow the pump to be used for different

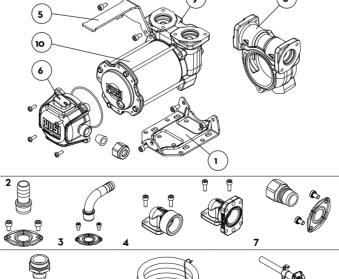
It is the installer's responsibility to perform the electrical connections with respect for the applicable regulations.

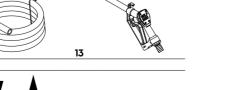
12.4 CONFIGURATION AND ACCESSORIES The wide range of accessories and the possibility to fit the base

By-Pass 3000

NOTE

installations. The installation is stationary if the provided fixing bracket is used while it is mobile if the handle is used (if required) Fixing bracket <u>traight hosetails</u> 4 Coupling 90° with flange 1" **5** Handle 6 Kit terminal box (with or w/out switch). If the terminal board kit is present and the switch is in position "O", the pump is switched OFF while if the switch in position "I", the pump is working. Straight hose connector 3/4" G for horizontal openings 8 BP3000 body with horizontal openings **9** BP3000 body with vertical openings 10 Pump motor 11 Straight flanged coupling 12 Rubber hose





closed when the line pressure is too low. It is recomi the automatic dispensing nozzle be temporarily disconnected during the initial start-up phase. he priming phase can last from several seconds to a few minutes, as a the pump and verify

omponents

unction of the characteristics of the system. If this phase is prolonged, stop That the pump is not running completely dry hat the suction tubing is not allowing air to seep in

hat the suction filter is not clogged hat the suction height does not exceed 2 m. (if the height exceeds 2 m. fill the suction hose with fluid) That the delivery tube is allowing the evacuation of the air.

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

ENGLISH (Translated from Italian)

absorption of the motor stays within the values shown on the

identification plate That the suction pressure is not greater than 0.5 bar

That the back pressure in the delivery line is not greater than the maximum back pressure foreseen for the pump.

DAILY USE

FOREWORD This pump is for professional use only. If using flexible tubing, attach the ends of the tubing to the tanks. In **PROCEDURE** the absence of an appropriate slot, solidly grasp the delivery tube pefore beginning dispensing

Before starting the pump make sure that the delivery valve is losed (dispensing nozzle or line valve) Turn the ON/OFF switch on. The by-pass valve allows functioning

vith delivery closed only for brief periods. Open the delivery valve, solidly grasping the end of the tubing While dispensing, do not inhale the pumped product

Should you spill any fluid while dispensing, bank it with earth or sand to absorb it and limit its spreading Close the delivery valve to stop dispensing. When dispensing is

nished, turn off the pump After use, make sure the pump is turned off In case of a power break, switch the pump off straight away.

MAINTENANCE

Maintenance must be performed only by authorized and properly trained personne

ONCE A

WEEK:ì

ONCE A

ATTENTION

15

maintenance, the use of personal protective equipment (PPE) is compulsory. In any case always bear in mind the following basic ecommendations for a good functioning of the pump Check that the pipe connections are not loose to prevent any leaks Check and keep the filter installed on the suction line clean Check the pump body and keep it clean and free of any impurities Check that the electrical supply cables are in good condition Do not put your fingers into the pump openings while the pump

Thanks to the design, the pump requires simple maintenance

Before carrying out any maintenance work, disconnect the pump from any electrical and hydraulic power source. During

17 NOISE LEVEL

Under normal working conditions the noise emission from all models does not exceed the value of 70 db at a distance of 1 meter from the electric pump.

PROBLEMS AND SOLUTIONS

is working

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION	
THE MOTOR IS NOT TURNING	Lack of electric power	Check the electrical connections and the safet systems.	
	Rotor jammed	Check for possible damager or obstruction of the rotating components.	
	Motor problems	Contact the Service Department	
THE MOTOR TURNS SLOWLY WHEN STARTING	Low voltage in the electric power line	Bring the voltage back withit the anticipated limits	
LOW OR NO FLOW RATE	Low level in the suction tank	Refill the tank	
	Foot valve blocked	Clean and/or replace the	
	Filter clogged	Clean the filter	
	Excessive suction pressure	Lower the pump with respect to the level of the tank of increase the cross-section of the tubing	
	High loss of head in the delivery circuit (working with the by-pass open)		
	By-pass valve blocked	Dismantle the valve, clea and/or replace it	
	Air entering the pump or the suction tubing	Check the seals of the connections	
	A narrowing in the suction tubing	Use tubing suitable fo working under suctio pressure	
	Low rotation speed	Check the voltage at th pump Adjust the voltage and or use cables of greater cross section	
	The suction tubing is resting on the bottom of the tank	Raise the tubing	
INCREASED PUMP NOISE	Cavitation occurring	Reduce suction pressure	
	Irregular functioning of the by-pass	Dispense fuel until the a is purged from the by-pas system	
	A: 1: 11 1: 1C 1	V/ :C 11 1: 1:	

19 DEMOLITION AND DISPOSAL

delivered to companies that specialize in the recycling and disposal of industrial waste and, in particular: The packaging consists of biodegradable cardboard which can be depacking materials livered to companies for normal recycling of cellulose.

> signed to scrap metal collectors. These must be disposed of by companies that specialize in the disposal of electronic components, in accordance with the indications of directive 2012/19/EU (see text of directive below).



LEAKAGE FROM THE

ucts as well as other electric or electronic equipment by means of the specific refuse collection structures indicated by the government or the local governing authorities.

Disposing of RAEE equipment as household wastes is strictly forbidden. Such wastes must be disposed of separately.

Any hazardous substances in the electrical and electronic appliances and/or the misuse of such appliances can have potentially serious consequences for the environment and human health.

In case of the unlawful disposal of said wastes, fines will be applicable s defined by the laws in force Other components, such as pipes, rubber gaskets, plastic parts and wires, must be disposed of by companies specialising in the disposal

Air present in the diesel fuel Verify the suction connection

If the system needs to be disposed, the parts which make it up must be

uropean Directive 2012/19/EU requires that all equipment marked

gether with non-differentiated urban waste. The symbol indicates









Manuale di Installazione uso Installaltion, use and EN

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