EN

ENGLISH

1 INDEX

EN

2 MACHINE AND MANUFACTURER IDENTIFICATION

The dispensing system comes with an identification plate; this is attached to the pump and contains the following information:
type:
lot number / Production year;
technical data;
use and maintenance handbook code

WARNING	***Before installing, always make sure the type of dispensing system is correct and suitable for the available power supply (Voltage/Frequency.)***

AVAILABLE MODELS — ST 200 DC 24 Vdc

MANUFACTURER — Piusi S.p.A.
Via Pacinotti 16/A, Z.I. Rangavino
46029 Suzzara (Mantova) Italy

3 EC DECLARATION OF CONFORMITY

The undersigned:
PIUSI S.p.A
Via Pacinotti 16/a z.i. Rangavino
46029 Suzzara - Mantova - Italy
HEREBY STATES under its own responsibility, that the equipment described below:
Description: **Machine for diesel oil transfer**
Model: **ST 200 DC 24V**
Serial number: refer to Lot Number shown on CE plate affixed to the product
Year of manufacture: refer to the year of production shown on the CE plate affixed to the product
is in conformity with the legal provisions indicated in the directives:
- Machine Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2014/30/EU
The documentation is at the disposal of the competent authority following motivated request at Piusi S.p.A. or following request sent to the email address: doc_tec@piusi.com
The person authorised to compile the technical file and draw up the declaration is Otto Varini as legal representative

Suzzara, 20/04/2016

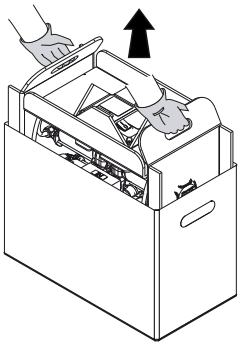
legal representative

4 MACHINE DESCRIPTION

PUMP	Dispensing fuel with Self-Priming, volumetric, rotating vane pump, equipped with by-pass valve..
MOTOR	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.

4.1 MOVING AND TRANSPORT

Due to the rilevant weight and dimensions of the pumps, more attention is required to move them.
The pumps are carefully packed before dispatch. Check the packing when receiving the material and store in a dry place.
Before the use, extract the pump from pack him through the special handles of the inside box.
For any movementation of the pump, recommends not to grab from the cables and from boxes cover clamp.



4.2 PACKAGING

The dispensing system comes packed suitably for shipment. On the packaging a label shows the following product information:

- name
- code
- weight

4.3 PACKAGE CONTENTS/PRE-INSPECTION

To open the packaging, use a pair of scissors or a cutter. Check that the following components provided as part of the equipment are available.

NOTE		In the event that one or more of the components described below are missing from inside the package, please contact Piusi inc technical support.
WARNING		***Check that the data on the plate correspond to the desired specifications. In the event of any anomaly, contact the supplier immediately, indicating the nature of the defects. Do not use equipment which you suspect might not be safe.***

EN

4.4 PLATES POSITION

The dispensing system is equipped with decals and/or plates to provide operators with the necessary important information. Make sure that these do not deteriorate or become detached over time.

NOTE	Should this situation arise, please contact our support department and arrange to have the damaged or missing plates sent back and replaced where necessary.

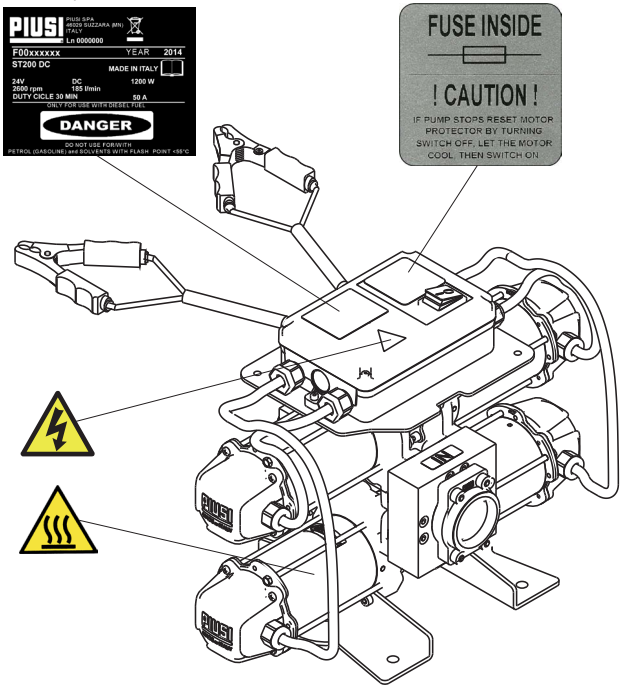
The decals present are as follows:

data plate;

high voltage electrocution danger;

fuse inside plate;

burns danger;



5 GENERAL WARNINGS

Important precautions	To ensure operator safety and to protect the pump from potential damage, workers must be fully acquainted with this instruction manual before performing any operation.
Symbols used in the manual	The following symbols will be used throughout the manual to highlight safety information and precautions of particular importance:
WARNING	**WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury**
NOTICE	NOTICE is used to address pratices not related to personal injury
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.
Reproduction rights	All reproduction rights are reserved by Piusi S.p.A. The text cannot be reprinted without the written permission of Piusi S.p.A. © Piusi S.p.A. THIS MANUAL IS THE PROPERTY OF Piusi S.p.A. ANY REPRODUCTION, EVEN PARTIAL, IS FORBIDDEN.
	This manual belongs to Piusi S.p.A., which is the sole proprietor of all rights indicated by applicable laws, including, by way of example, laws on copyrights. All the rights deriving from such laws are reserved to Piusi S.p.A.: the reproduction, including partial, of this manual, its publication, change, transcription and notification to the public, transmission, including using remote communication media, placing at disposal of the public, distri·bution, marketing in any form, translation and/or processing, loan and any other activity reserved by the law to Piusi S.p.A..

6 SAFETY INSTRUCTIONS

Mains - preliminary checks before installation	**ATTENTION** **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 **When flammable fluids are present in the work area, such as gasoline and windshield wiper fluid, be aware that flammable fumes can ignite or explode.**	***To help prevent fire and explosion:***
	Use equipment only in will ventilated area.
	Keep work area free of debris, including rags and spilled or open containers of solvent and gasoline.
	Do not plug or unplug power cords or turn lights on or off when flammable fumes are present.
	Ground all equipment in the work area.
	Stop 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.

EN

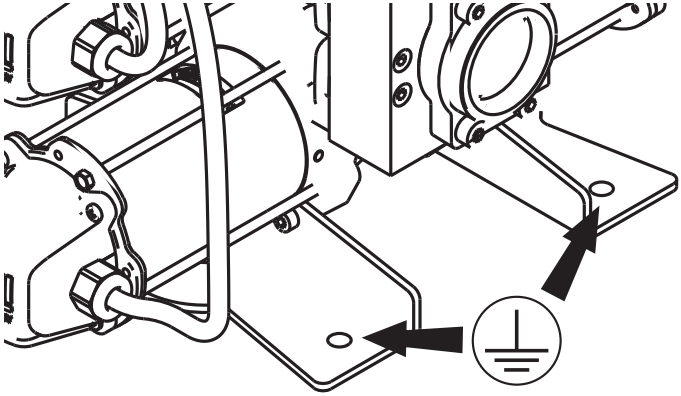
ELECTRIC SHOCK		This equipment must be grounded. Improper grounding, setup or usage of the system can cause electric shock.
		Turn off and disconnect power cord before servicing equipment.
Electrocution or death		Connect only to a grounded electrical outlets.
		Use only 3 wire extension cords in accordance with local electrical codes. Extension cords should have a ground lead.
		Ensure ground prongs are intact on power and extension cords.
		Do not expose to rain. Store indoors.
		Never touch the electric plug of socket with wet hands.
		Do not turn the dispensing system 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. Replace damaged components before operation.
		Before each use check that the power connection cord and power plug are not damaged. If damaged, have power connection cord replaced before use by a qualified electrician.
		The electrical connection between the plug and socket must be kept well away from water.
		Unsuitable extension leads can be hazardous, in accordance with current regulations. only extension cords that are labelled for outdoor use and have a sufficient conduction path should be used outdoors.
		For safety reasons, we recommend that, in principle, the equipment be used only with a earth-leakage circuit breaker (max 30 mA).
		Electrical connections must use ground fault circuit interrupter (GFCI).
		Installation operations are carried out with the box open and accessible electrical contacts. All these operations have to be done with the unit isolated from the power supply to prevent electrical shock!
EQUIPMENT MISUSE		Do not operate the unit when fatigued or under the influence of drugs or alcohol.
Misuse can cause death or serious injury		Do not leave the work area while equipment is energized or under pressure.
		Turn off all equipment when equipment is not in use.
		Do not alter or modify equipment. 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 equipment.
		Keep children and animals away from work area.
		Comply with all applicable safety regulations.
		Do not exceed the maximum operating pressure or the temperature 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 manuals. 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 equipment every day. Immediately repair or replace worn or damaged parts only with original spare parts of the manufacturer.
		Make sure the equipment is classified and approved compliant 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.
		Do not bend or overbend the hoses or use the hose to pull the equipment.
TOXIC FLUID OR FUMES HAZARD		Read MSDS's to know the specific hazards of the fluids you are using.
		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.

7 FIRST AND RULES

Persons who have suffered electric shock	Disconnect the power source, or use a dry insulator to protect yourself while you move the injured person away from any electrical conductor. Avoid touching the injured person with your bare hands until he is far away from any conductor. Immediately call for help from qualified and trained personnel. Do not operate switches with wet hands.
SMOKING PROHIBITED 	When operating the dispensing system and in particular during refuelling, do not smoke and do not use open flame.

8 GENERAL SAFETY RULES

Essential protective equipment characteristics		Wear protective equipment that is: suited to the operations that need to be performed; resistant to cleaning products.
Personal protective equipment that must be worn		Wear the following personal protective equipment during handling and installation: safety shoes;
		close-fitting clothing;
		protective gloves;
		safety goggles;
Protective equipment		instruction manual
Protective gloves		Prolonged contact with the treated product may cause skin irritation; always wear protective gloves during dispensing.
ATTENTION		**To put in safety the system to possible accumulations of electrostatics discharge, using the metallic structure of base precisely in the holes as point of connection for earth dispersions (grounding earthing).**



9 INTENDED USE

Intended use	The dispensing system "ST200" was designed and built to dispense diesel fuel.
Conditions of use	The dispensing system "ST200" should be used by observing the following conditions: Max. temperature of dispensed product: +35 °C. Min temperature of dispensed product: -11 °C. Max. temperature of dispensed product permitted by materials: +40°C. Equivalent continuous sound pressure level at the workstation: ·75 dB(A) Make sure that the pump operates within its nominal operating parameters.
Fluid Permitted	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 Rif: EN590-2010 del 25/03/2010 - DIESEL B20 (DIESEL with Max 20% of BIODIESEL) with other features complying with the directive: Ref: EN590-2010 dtd. 25/03/2010.
WARNING Flammable liquids and explosive atmosphere	The system "ST200" was not designed for dispensing of diesel, petrol, flammable liquids with flash point <55°C/131°F, or for operation in environments with potentially explosive atmosphere. The use in the above mentioned conditions is forbidden.
ATTENTION Environmental conditions	**TEMPERATURE: min. -20° C / max +60° C** **RELATIVE HUMIDITY: max. 90%** **The temperature limits shown apply to the pump components and must be respected to avoid possible damage or malfunction.**
Electrical power supply	**The dispensing system 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 "g – electrical specifications".** **The maximum acceptable variations from the electrical parameters are:** **Voltage: +/- 10% of the nominal value**
ATTENTION	**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.**

	NOT PERMITTED	RELATED DANGERS:
Products not permitted	- Gasoline	- fire explosion
	- Inflammable liquids with pm < 55° c	- fire explosion
	- Water	- pump oxidation
	- Food liquids	- contamination of the same
	- Corrosive chemical products	- pump corrosion Injury to persons
	- Solvents	- fire – explosion Damage to gasket seals
	- Liquids with viscosity>20cst	- motor overload

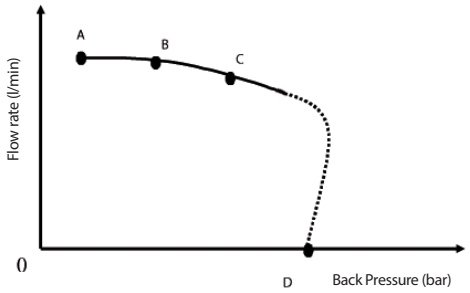
WARNING		***It is absolutely forbidden to use the system for purposes different from those specified in section "Intended use"***
		All products not listed in the "Intended Use" and "Treated Product Characteristics" paragraphs are to be considered not permitted, improper and therefore prohibited. Piusi s.S.p.A. accepts no responsibility for damage to persons or property caused by failure to comply with this requirement.

10 TECNICAL DATA

10.1 PERFORMANCE SPECIFICATIONS

The performance diagram shows flow rate as a function of back pressure.

Functioning Point	Flow Rate	Voltage (V)	Absorption (A)	**Suction: 10meters of tube 1"1/2" without foot valve**	**Delivery with 20meters of tube 1"1/2"**	**K700 Meter**	**PA280 Nozzle**
A (Maximum Flow Rate)	175 l/min	24	42	•	•	•	
C (Rated Conditions)	155 l/min	24	50	•	•	•	•
D (By pass)	0 l/min	24	64	•	Delivery Closed		



EN

WARNING		**The curve refers to the following operating conditions:** **Fluid** **Diesel Fuel** **Temperature** **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:** **• Shorten the suction tube as much as possible** **• Avoid useless elbows or throttling in the tubes** **• Keep the suction filter clean** **• Use a tube with a diameter equal to, or greater than, indicated (see Installation)**

11 ELECTRICAL SPECIFICATIONS

PUMP MODEL	FUSES	ELECTRICAL POWER		CURRENT
		Current	Voltage (V)	Maximum(*) (A)
VERSION 24V	4 x 25A	DC	24	64

(*) referred to operations in by-pass mode

12 OPERATING CONDITIONS

12.1 ENVIRONMENTAL CONDITIONS

TEMPERATURE	min. +23 °F / max +104 °F min. -5 °C / max +40 °C
RELATIVE HUMIDITY	max. 90%

WARNING		**The temperature limits shown apply to the pump components and must be respected to avoid possible damage or malfunction.**

12.2 ELECTRICAL POWER SUPPLY

NOTE		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 "I - ELECTRICAL SPECIFICATIONS". The maximum acceptable variations from the electrical parameters are: Voltage: +/- 10% of the nominal value
WARNING		**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.**

12.3 DUTY CYCLE

NOTE		The pumps have been designed for intermittent use and a 30-minute duty cycle under conditions of maximum back pressure.
WARNING		**Functioning under by-pass conditions is only allowed for short periods of time (max. 3 minutes).**

12.4 FLUIDS PERMITTED / FLUIDS NOT PERMITTED

The decals present are as follows:

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
Rif: EN590-2010 del 25/03/2010
- DIESEL FUEL up to B20 (DIESEL with Max 20% of BIODIESEL) meets ASTM D7467 US - EN14214 (EN).

Products not permitted and related dangers

NOT PERMITTED	RELATED DANGERS
- GASOLINE	- FIRE EXPLOSION
GASOLINE•INFLAMMABLE LIQUIDS with PM < 55°C	- FIRE EXPLOSION
• LIQUIDS WITH VISCOSITY > 20 cSt	
• WATER	- PUMP OXIDATION
•FOOD LIQUIDS	- CONTAMINATION OF THE SAME
• CORROSIVE CHEMICAL PRODUCTS	- PUMP CORROSION INJURY TO PERSONS - FIRE – EXPLOSION
• SOLVENTS	DAMAGE TO GASKET SEALS - MOTOR OVERLOAD

Suitable to pump DIESEL compatible with motor TIER IV - Ultra Low Sulfur Diesel (ULSD).

13 INSTALLATION

Foreword

The "ST200" dispensing system is supplied already assembled.

Authorised installation personnel

All installations must be carried out by authorised and competent personnel only.
Authorised persons must:
install the system in dry and well-ventilated place;
ensure the correct installation of equipment required for the correct functioning of the pump;
only use accessories that have been supplied with the system.

WARNING Accessories not permitted

The use of accessories that are unsuitable and were not provided with the system is strictly prohibited. Piusi Inc. accepts no responsibility for damage to persons, property or the environment caused by failure to comply with this requirement.

13.1 PRELIMINARY INSPECTION

1. Verify that all components are present. Request any missing parts from the manufacturer
2. Check that the pump has not suffered any damage during transport or storage.
3. Carefully clean the suction and delivery inlets and outlets, removing any dust or other packaging material that may be present
4. Make sure that the motor shaft turns freely.
5. Check that the electrical data corresponds to those indicated on the data plate

13.2 POSITIONING THE PUMP

The pump must be positioned on a stable support and fixed with brackets in endowment and fixing screws.

WARNING

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 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.

EN

13.3 NOTES ON SUCTION AND DELIVERY LINES

DELIVERY

The selection of the pump model must be made taking into account the characteristics of the system.
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 than the maximum predicted pressure, thereby causing the pump's electronic controls to intervene and reducing the dispensed flow considerably.
In these cases, to guarantee correct operation of the pump, it is necessary to reduce the resistance of the system using pipes that are shorter or that have a greater diameter, as well as line accessories with smaller resistances (e.g. an automatic dispensing nozzle with greater flow rate capacity).

SUCTION

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, the correct priming of the pump.

WARNING		**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.

WARNING		**It is very important to keep the suction filters clean because, when they become clogged, they increase the resistance of the system.**

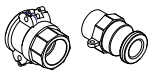
The vertical distance between the pump and the fluid must be kept as short as possible, and it must fall within the 2m maximum required for priming. If the distance is greater, a foot valve must be installed to allow the suction pipes to fill up and the diameter pipes must be larger. It is however recommended that pump not be installed if the vertical distance is greater than 3m.

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

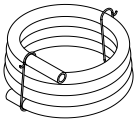
13.4 CONFIGURATION AND ACCESSORIES

LIST OF ACCESSORIES

1	CAM LOCK KIT 1" - 1/2
2	ROMAIN CONDUCTIVE PIPE KIT 1" - 1/2
3	A 280 NOZZLE



1



2

3

13.5 LINE ACCESSORIES

WARNING

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

IT IS THE INSTALLER'S RESPONSIBILITY TO APPLY THE FOLLOWING SIGNALS ON THE MACHINE ANYWHERE PUMP WILL BE USED.

14 CONNECTIONS

NOTE

The system St 200 DC can be connect to 24V current.

14.1 ELECTRICAL CONNECTIONS

GENERAL WARNING

Comply with the following (not exhaustive) instructions to ensure a proper electrical connection:

1. Before installation and maintenance make sure that power supply to the electric lines has been turned off
2. Use cables with minimum cross-sections, rated voltages and installation type that are suitable for the characteristics indicated in paragraph I ELECTRICAL SPECIFICATIONS.
3. Always close the cover (if any) of the terminal strip box before switching on the power supply, after having checked the integrity of the seal ensuring the IP55 protection grade.

WARNING

The pump is equipped with a thermal protection.
If not present, install a monostable beep switch on the supply device in order to avoid any accidental restart of the device.

For connection the installer shall have to use a cable of adequate diamater for the cable gland to ensure protection grade IP55.

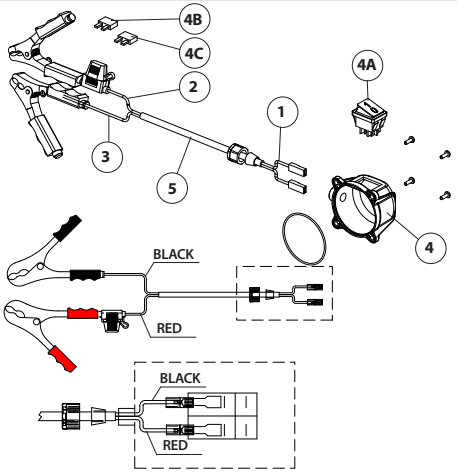
SPECIFICATIONS

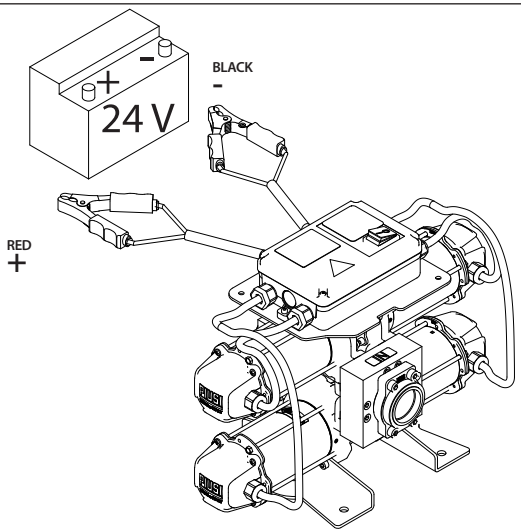
1 Cables with faston connector coupling for connection to the power supply line
2 RED cable: positive pole (+)
3 BLACK cable: negative pole (-)
4 Terminal strip box (protection class IP55 in conformance with the directive EN 60034-5-97) complete of:
4A ON/OFF switch;

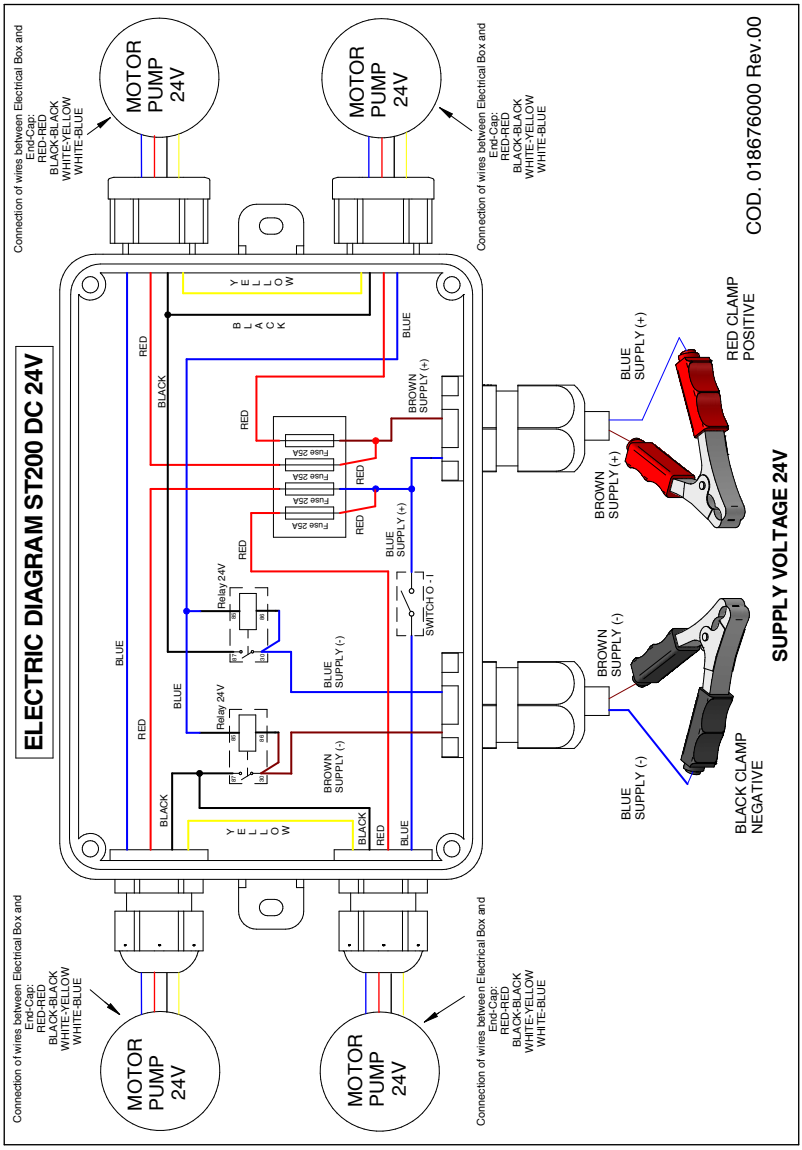
EN

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
5 power cable complete of pincers for connection to the battery

WARNING	Carr out the electrical connection in compliance with the applicable regulations. DO NOT INVERT FUSES TO AVOID ANY MOTOR DAMAGE OR MALFUNCTION. 25A FUSE CAN BE FITTED ONLY ON 12V PUMP 15A FUSE CAN BE FITTED ONLY ON 24V PUMP






ELECTRIC DIAGRAM ST200 DC 24V
MOTOR PUMP 24V
MOTOR PUMP 24V
MOTOR PUMP 24V
MOTOR PUMP 24V
Connection of wires between Electrical Box and End-Cap:
RED-RED
BLACK-BLACK
WHITE-YELLOW
WHITE-BLUE
Fuse 25A
Relay 24V
SWITCH 0 -1
BLUE
RED
BLACK
YELLOW
BROWN
SUPPLY (+)
SUPPLY (-)
BLUE SUPPLY (+)
BROWN SUPPLY (+)
BROWN SUPPLY (-)
BLUE SUPPLY (-)
RED CLAMP POSITIVE
BLACK CLAMP NEGATIVE
SUPPLY VOLTAGE 24V
COD. 018676000 Rev.00

EN

14.2 CONNECTING THE PIPING

FOREWORD	1	Before any connections, please refer to the indications (sticker on the pump) to detect suction and delivery univocally
	2	Before connecting, make sure that the pipes and the suction tank are free of dirt and thread residue, which could damage the pump and accessories
	3	Before connecting, make sure that the pipes and the suction tank are free of dirt and thread residue, which could damage the pump and accessories.
	4	Do not use conical threaded fittings, which could damage the threaded inlet or outlet openings of the pumps if excessively tightened
	5	If not already fitted, fit a suction filter
SUCTION PIPES		recommended minimum nominal diameter: 3/4" nominal recommended pressure: 10 bar use pipes that are suitable for operation with back pressure. Use tubing suitable for functioning under suction pressure
DELIVERY PIPES:		recommended minimum nominal diameter: 3/4" nominal recommended pressure: 10 bar
WARNING		**The provided tubes have a resistivity of <1 MOhm, as specified by the EN 13617-1 standard. All the installed tubes that are different from those supplied, must have the above mentioned characteristics. When the connections are completed, the installer should check that the resistivity of the assembly complies with the EN 13617 and EN 13612 standards.**
		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 necessary, tighten all the connections.

15 OPERATION AND USE

Foreword Directions on how to start and stop operation of the system are given below:

WARNING		**During operation the motor may be hot: be careful.**
WARNING		**Do not run the pump dry. This can cause serious damage to its components.**
WARNING		**Operation of the pump without dispensing is only admitted for periods of no longer than 3 minutes.**
WARNING		**We recommend that the pump remains switched off whenever the system is not in use.**

16 INITIAL START-UP

GETTING STARTED

1. Check that the quantity of diesel fuel in the suction tank is greater than the amount you wish to transfer
2. Make sure that the residual capacity of the delivery tank is greater than the quantity you wish to transfer
3. Do not run the pump dry. This can cause serious damage to its components
4. Make sure that the tubing and line accessories are in good condition. Diesel fuel leaks can damage objects and injure persons
5. Do not operate switches with wet hands.

WARNING 

The thermal protection inside the pump prevents its overheating by causing its shut-off. Should the protection trip, turn off the pump by cutting the power and wait for the cooling. Once cooled, re-enable the device. Comply with the applicable work conditions (chap. 15.3) to prevent overheating.

WARNING 

If after the tripping of the thermal protection, the pump is not turned off, the device might turn on automatically causing dangerous situations.

NOTE 

The cooling of the pump can occur at different times depending on the climatic conditions and 30 minutes may be necessary for the restart of the device.

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 because of the automatic stopping device that keeps the valve closed when the line pressure is too low. It is recommended that the automatic dispensing nozzle be temporarily disconnected during the initial start-up phase.

PRIMING

The priming phase can last from several seconds to a few minutes, as a function of the characteristics of the system. If this phase is prolonged, stop the pump and verify

- That the pump is not running completely dry
- That the suction tubing is not allowing air to seep in
- That the suction filter is not clogged
- That 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 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.

EN

17 DAILY USE

FOREWORD		This pump is for professional use only.
USE PROCEDURE	1	If using 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
	2	Before starting the pump make sure that the delivery valve is closed (dispensing nozzle or line valve)
	3	Turn the ON/OFF switch on The by-pass valve allows the operation with closed delivery only for short periods, (2-3 minutes maximum) after which the thermal protection will trip to prevent the motor from overheating. In this case turn off the pump by cutting the power, wait for the cooling and then reactivate the device.
	4	Open the delivery valve, solidly grasping the end of the tubing
	5	While dispensing, do not inhale the pumped product
	6	Should you spill any fluid while dispensing, bank it with earth or sand to absorb it and limit its spreading
	7	When dispensing is finished, turn off the pump. Otherwise, to prevent any overheating, the thermal protection will trip, so proceed as per item 3.

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

18 MAINTENANCE

Safety instructions	The dispensing system was designed and built to require a minimal amount of maintenance. Before carrying out any maintenance work, disconnect the dispensing system from any electrical and hydraulic power source. During maintenance, the use of personal protective equipment (PPE) is compulsory. In any case always bear in mind the following basic recommendations for a good functioning of the dispensing system
Measures to be taken	Whenever there is risk of frost, empty the circuit and the pump, taking care to place the pump in an environment where the temperature is no lower than 0°C/32°F. Check that the labels and plates found on the dispensing system do not deteriorate or become detached over time.
	ONCE A WEEK: - Check that the pipe connections are not loose to prevent any leaks;
	ONCE A MONTH: - Check that the electrical supply cables are in good condition.

ATTENTION		***For a correct pump maintenance , see the special use and maintenance documentation***

19 NOISE LEVEL

NOTE		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.

20 PROBLEMS AND SOLUTIONS

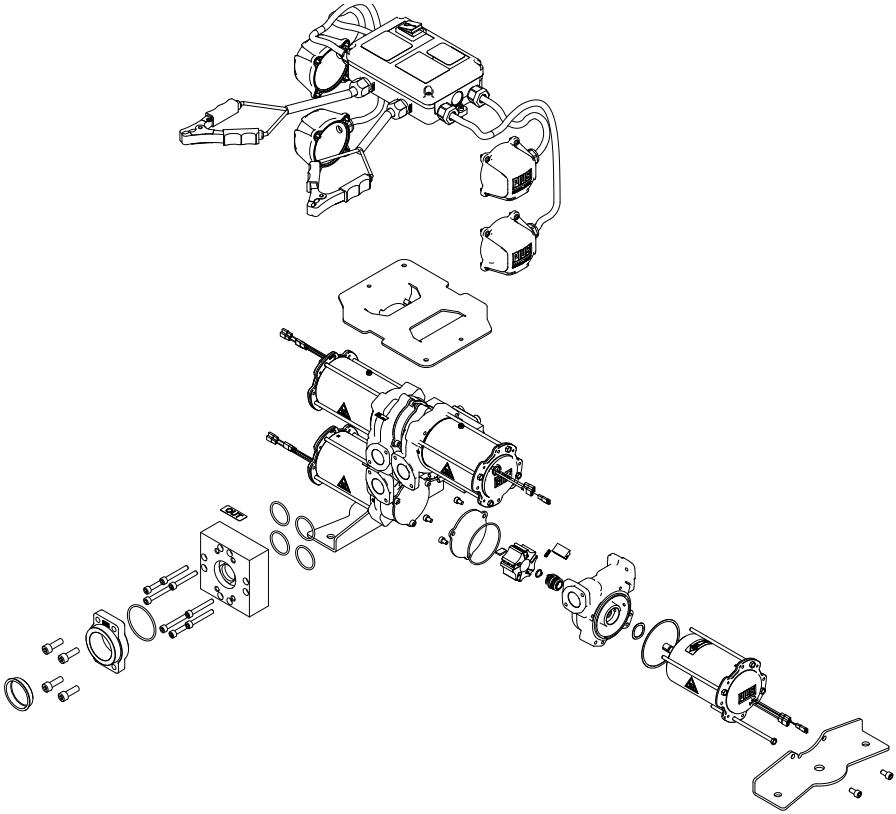
For any problems contact the authorised dealer nearest to you.

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
THE MOTOR IS NOT TURNING	Lack of electric power	Check the electrical connections and the safety systems.
	Rotor jammed	Check for possible damage or obstruction of the rotating components.
	Motor problems	Contact the Service Department
	Overheating	Set the main switch on O, disconnect the power and wait for the cooling. Once cooled, reactivate the device.
	Power surge	Replace the fuse with a similar one having the same characteristics.
THE MOTOR TURNS SLOWLY WHEN STARTING	Low voltage in the electric power line	Bring the voltage back within 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 valve
	Filter clogged	Clean the filter
	Excessive suction pressure	Lower the pump with respect to the level of the tank or increase the cross-section of the tubing
	High loss of head in the delivery circuit (working with the by-pass open)	Use shorter tubing or of greater diameter
	By-pass valve blocked	Dismantle the valve, clean 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 for working under suction pressure
	Low rotation speed	Check the voltage at the 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 air is purged from the by-pass system
	Air present in the diesel fuel	Verify the suction connections
LEAKAGE FROM THE PUMP BODY	Seal damaged	Check and replace the seal

21 DEMOLITION AND DISPOSAL

Foreword	If the system needs to be disposed, the parts which make it up must be delivered to companies that specialize in the recycling and disposal of industrial waste and, in particular:
Disposing of packing materials	The packaging consists of biodegradable cardboard which can be delivered to companies for normal recycling of cellulose.
Metal Parts Disposal	Metal parts, whether paint-finished or in stainless steel, can be consigned to scrap metal collectors.
Disposal of electric and electronic components	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).
 ***Information regarding the environment for clients residing within the European Union***	European Directive 2012/19/EU requires that all equipment marked with this symbol on the product and/or packaging not be disposed of together with non-differentiated urban waste. The symbol indicates that this product must not be disposed of together with normal household waste. It is the responsibility of the owner to dispose of these products 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 as defined by the laws in force.
Miscellaneous parts disposal	Other components, such as pipes, rubber gaskets, plastic parts and wires, must be disposed of by companies specialising in the disposal of industrial waste.

22 EXPLODED VIEW



EN

23 OVERALL DIMENSIONS