Since 1938

PREO

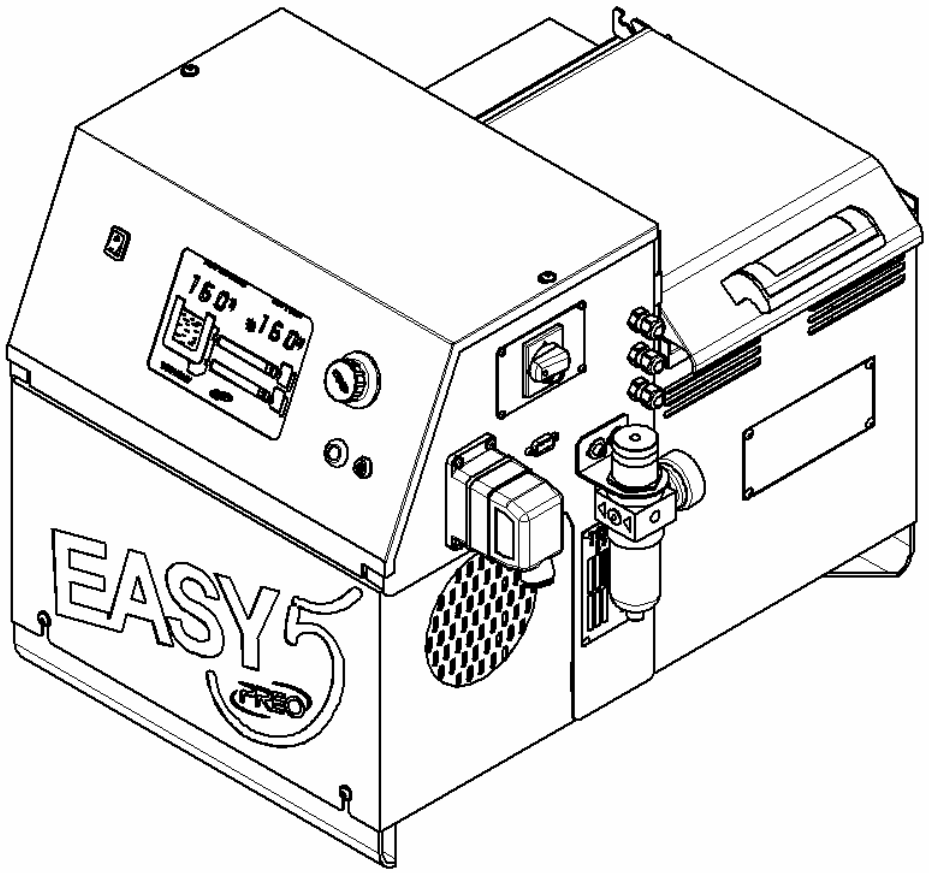
Your quality choice!

GLUE APPLICATION SYSTEMS DESIGN AND DEVELOPMENT

UCIMA ICIM IQNet

ISO 9001 - Cert. N. 3565/0

HOT - MELT APPLICATOR
SERIES EASY 5
MODEL TERMO 2



USE AND MAINTENANCE MANUAL
- EAW530E2MV -
- EDITION 03/2006 -

© Copyright 2006 PREO SRL - All rights reserved - Subject to change without advanced notice - Printed in Italy

PREO SRL
Via Volta, 7 • 20094 Corsico (MI) • Italia
Tel: 02 48601260 • Fax: 02 4503323 • Email: italia@preo.it

www.preo.it

PREO SRL - Export Department
Via Volta, 7 • 20094 Corsico (MI) • Italy
Tel: +39 2 45861343 • Fax: +39 2 4503323 • Email: world@preo.it

Note

Published by PREO SRL. All rights reserved. Copyright © 2005

No part of this publication may be reproduced, translated into another language, transmitted in any form, either mechanically or electronically, without express written authorisation from PREO SRL.

PREO SRL reserves the right to amend the contents of this publication without prior notice.

All due care has been taken in compiling and checking this publication, however, PREO SRL may not be held responsible for use of the same.

© 2005 All rights reserved.

PREO WORLDWIDE

Country	Phone	Fax
Argentina	+54 11 49837171	+54 11 49827219
Australia	+61 2 98387633	+61 2 98388497
Austria	+43 2236 48011	+43 2236 48088
Baltic Republics	+358 9 8777771	+358 9 8777773
Bosnia Herzegovina	+381 35 465494	+381 35 465494
Belgium	+32 87 445763	+32 87 445763
Caribbean Isles	+1 809 3837361	+1 809 5181617
China	+86 21 54904977	+86 21 54904976
Croatia	+381 35 465494	+381 35 465494
Czech Republic	+420 481 324191	+420 481 324191
Denmark	+45 36 778200	+45 36 773255
Dominican Republic	+1 809 3837361	+1 809 5181617
England	+44 1782 823874	+44 1782 837038
Finland	+358 9 8777771	+358 9 8777773
France	+33 1 43579423	+33 1 43575299
Germany	+49 40 79752737	+49 40 79752738
Greece	+30 210 2515020	+30 210 2515197
India	+91 40 27817296	+91 40 27813877
Ireland	+53 1 4900185	+53 1 4900191
Israel	+972 3 6782298	+972 3 5743807
Japan	+81 48 4855225	+81 48 4762655
Korea	+82 02 7863243	+82 02 7861398
Luxembourg	+32 87 445763	+32 87 445763
Malaysia	+60 7 5542899	+60 7 55448297
Macedonia	+381 35 465494	+381 35 465494
Mexico	+52 222 2845997	+52 222 2846397
Netherlands	+32 87 445763	+32 87 445763
New Zealand	+64 9 3764852	+64 9 3786934
Norway	+47 64 873760	+47 64 875570
Pakistan	+92 42 5812315	+92 42 5821804
Poland	+48 22 8580498	+48 22 8429893
Portugal	+351 1 2090619	+351 1 2090619
Russia	+7 8312 121122	+7 8312 163350
Serbia & Montenegro	+381 35 465494	+381 35 465494
Slovak Republic	+420 481 324191	+420 481 324191
South Africa	+27 21 8547232	+27 21 8546615
Spain	+34 94 4544212	+34 94 4544317
Switzerland	+39 2 45861343	+39 2 4503323
Sweden	+46 8 830880	+46 8 823344
Uruguay	+54 11 49837171	+54 11 49827219

© Copyright 2006 PREO SRL
All rights reserved

DECLARATION OF CONFORMITY

Manufacturer: **PREO SRL**

Address: **Via A.Volta, 7 - 20094 CORSICO (MI) - ITALY**

hereby declares that the product

Category: **HOT – MELT APPLICATOR**

Product name: **EASY 5 SERIES W**

Serial number:

Construction date:	01	02	03	04	05	06	07	08	09	10	11	12	2005	2006	2007

Supplementary dates:

conforms to the relative directives

CEE 89/392 (DPR 459/96) "Machinery Directive"
CEE 89/336 and CEI EN 60204-1 "Electromagnetic Compatibility"
CEE 73/23 and CEE 93/68 "Low Voltage"

and the reference technical standards

UNI EN 292-I 292-II "Machine Safety"
UNI EN 294 "Machine Safety"
UNI EN 414 "Machine Safety"
UNI EN 418 "Machine Safety"
UNI EN 563:1994 "Machine Safety"
UNI EN 55011:1991 and following: Limits and methods for measuring radiodisturbance in industrial, scientific and medical (ISM) equipment"
UNI EN 50082-1:1992 and following "Electromagnetic Compatibility"

and consequently bears the following mark

CE

01 - 11 - 2005

Production Manager

© Copyright 2006 PREO SRL
All rights reserved

CONTENTS

© Copyright 2006 PREO SRL
All rights reserved

© Copyright 2006 PREO SRL
All rights reserved

© Copyright 2006 PREO SRL
All rights reserved

Section 1

SAFETY

This section contains all the necessary advice and procedures for the installation, operation and maintenance of the applicator described in the manual.

1.1 KEY TO SYMBOLS

In order to make everything as clear as possible to the user, the following symbols will be used:

	**WARNING**	Indicates a *generic risk* that may cause damage or injury to people and equipment if not observed.
	**TEMPERATURE**	Indicates the presence of *high temperatures* that may cause serious damage or injury, such as burns, if not observed.
	**LIVE COMPONENTS**	Indicates the present of an *electric current* that may cause serious damage or injury, such as powerful electric shocks, if not observed.
	**PRESSURE**	Indicates the presence of *high hydraulic pressure* that may seriously injure the user if not observed.

1.2 USER RESPONSIBILITIES

The owner of the equipment is responsible for safety management and information and has the task of ensuring that people are correctly informed about the regulations relative to using the equipment itself.

Only use qualified personnel during the installation, operation and maintenance of the applicator described in the manual.

Make sure that the equipment is used in keeping with current safety laws and regulations.

1.3 GENERAL WARNINGS AND SAFETY PRECAUTIONS

Before using the equipment, refer to the general warnings and safety precautions enclosed with the applicator.

1.4 COMPLIANCE WITH STANDARDS

PREO Applicators comply throughout with the following standards:

- **CEE 89/392:** machinery directive
- **CEE 91/368:** machinery directive (supplement)
- **CEE 89/336:** electromagnetic compatibility
- **CEE 73/23 - 93/68:** low voltage
- **UNI EN 292-1:** Machine safety – Fundamental concepts, terminology, basic methods
- **UNI EN 292-2:** Machine safety – Fundamental concepts – Specifications and main techniques
- **UNI EN 294:** Machine safety – Clearance distances in order to prevent the upper limbs entering the hazardous zones

© Copyright 2006 PREO SRL
All rights reserved

- **UNI EN 414:** Machine safety – Safety regulation compilation rules
- **UNI EN 418:** Machine safety – Emergency stop devices, practical aspects. Design principles
- **UNI EN 563:1994:** "Machine safety – Contact surface temperatures – Ergonomic data for establishing temperature limits for hot surfaces
- **UNI EN 55011:1991 and following:** Limits and methods for measuring radio disturbance in industrial, scientific and medical (ISM) equipment
- **UNI EN 50082-1:1992 and following:** Electromagnetic compatibility – General immunity regulations – Part 1: Residential, commercial and light industry environments

The machines are not designed for use in environments with a risk of explosion and/or fire.

For further information, please contact the PREO technical assistance service at the company headquarters.

© Copyright 2006 PREO SRL
All rights reserved

Section 2

INTRODUCTION

2.1 USE OF THE MANUAL

This instructions and maintenance manual is an integral part of the machine and must be easily accessible to the personnel responsible for using and maintaining the same.

Please ensure that you read the manual before undertaking any activity involving the machine, including moving and unloading the same from the transport vehicle. The user and the maintenance technician must have read this manual throughout.

The descriptions and illustrations contained in this publication are not binding. While the essential features of the type of machine described remain the same, PREO reserves the right to make changes to parts, details and accessories in order to improve the product or in order to meet construction or commercial requirements. These changes may be made at any time, without PREO being bound to update this publication.

With the exception of the tank capacity, the type of hoses and guns, the PREO applicator operation is the same for all models. In order to simplify the presentation of the information contained in this manual, images corresponding to model EW530E2MV, as represented in figure 1, shall be used throughout this manual.

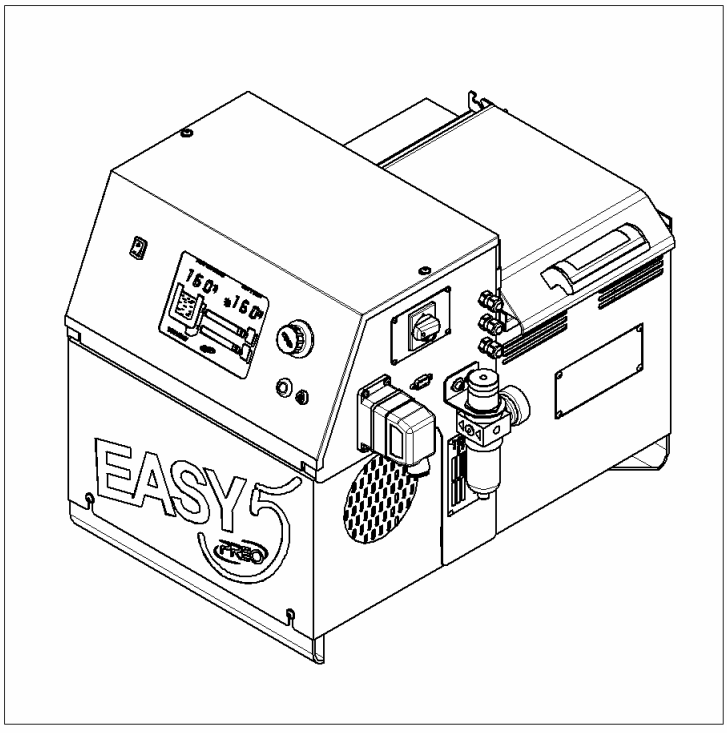


Figure 1

All due care has been taken in compiling and checking the documentation contained in this manual, so as to make it as complete and clear as possible. The drawings and all other documents are the property of PREO. All rights reserved.

© Copyright 2006 PREO SRL
All rights reserved

2.2 PRODUCT DESCRIPTION

The adhesive hot melt units described in this manual are used together with PREO hoses and guns for the composition of a hot-melt application system, as illustrated in figure 2:

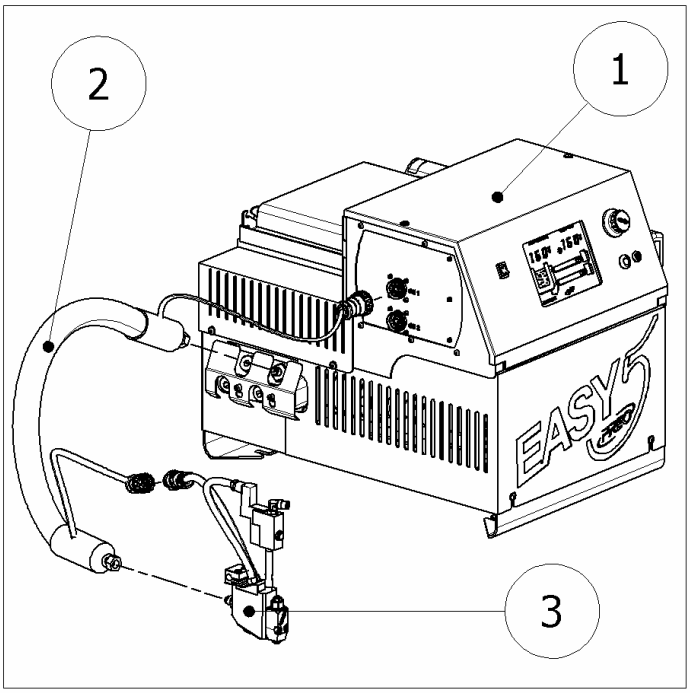


Figure 2

The applicator (1) melts the hot-melt adhesive and keeps it at the desired temperature.

Once the temperature has been reached, the melted adhesive is pumped through the heated hoses (2) and is distributed onto the product by means of automatic and/or manual guns (3).

The temperature control and adhesive distribution programme (if present) are controlled by latest generation microprocessors.

Depending on the configurations installed, optional accessories may also be present, making the entire system fully functional.

2.3 METHODS OF USE

PREO hot-melt adhesive applicators have been specifically designed and manufactured for the following uses:

- melting and application of adhesives and thermoplastic materials with a viscosity of up to 70,000 Cps.
- melting and application of adhesives and thermoplastic materials with working temperature of below 230°C (450°F).
- use in environments not subject to risk of explosion

Only use the PREO hot-melt adhesive applicators for the purposes for which they were designed.

© Copyright 2006 PREO SRL
All rights reserved

2.4 PRODUCT IDENTIFICATION

The applicator bears a CE 89/392 conformity plaque on one side, which must not be removed for any reason whatsoever, even if the machine is sold.

When requesting assistance or ordering spare parts and optional equipment, always quote the code and registration number featured on the plaque, as illustrated in figure 3:

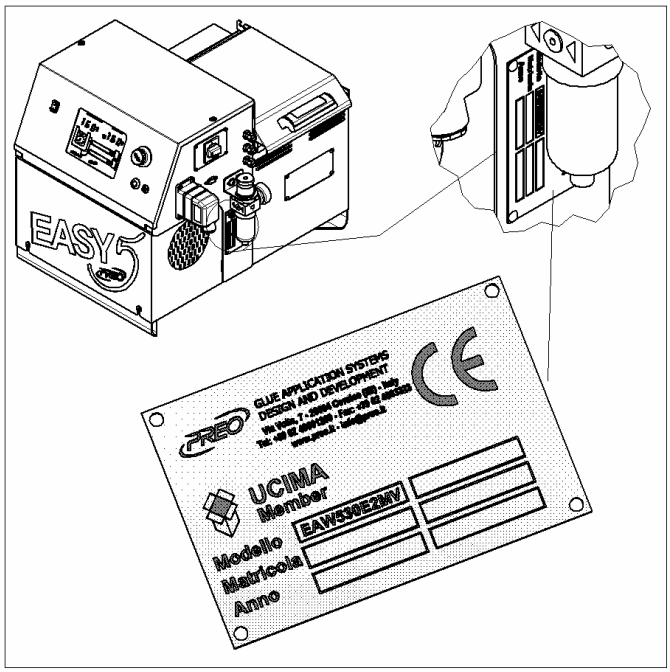


Figure 3

2.5 PRODUCT CODE CONFIGURATION

The following table indicates the code used for the applicators.

Please make sure that you quote the code indicated on the plaque, together with the registration number, whenever you contact us.

E A	**W**	**5**	**3 0**	**E**	**2**	**H M V**
1	2	3	4	5	6	7

1	*applicator model*	**EA**	EASY
2	*pump type*	**W**	GEAR
3	*tank capacity*	**5**	5 KG
4	*pump capacity*	**30**	3.00 CC REV
5	*computer*	**E** **R**	TERMO SERIES TRATTO SERIES
6	*channels*	**2** **4**	2 CONNECTIONS 4 CONNECTIONS
7	*options*	**M** **V** **H**	PRESSURE CONTROL GAUGE QUICK RELEASE VALVE HIGH TEMPERATURE VERSION

© Copyright 2006 PREO SRL
All rights reserved

2.6 SAFETY LABELS

All the PREO gluing systems bear yellow labels indicating the main precautions and safety warnings to be adhered to and respected during ordinary and extraordinary use of the system.

2.7 MAIN APPLICATOR COMPONENTS

Figure 4 identifies the main applicator components:

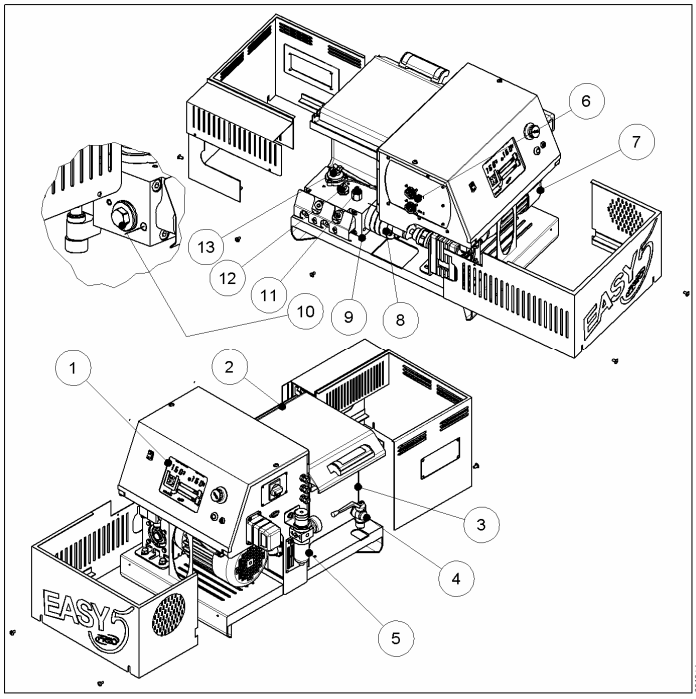


Figure 4

1 - Control panel
2 - Tank cover
3 - Melting tank
4 - Tank drainage valve
5 - Air filter pressure regulator (optional)
6 - Hose connection electrical connectors
7 - Motor
8 - Gear pump
9 - Manifold
10 - Glue filter
11 - By pass
12 - Pressure control pressure switch (optional)
13 - Quick release valve (optional)

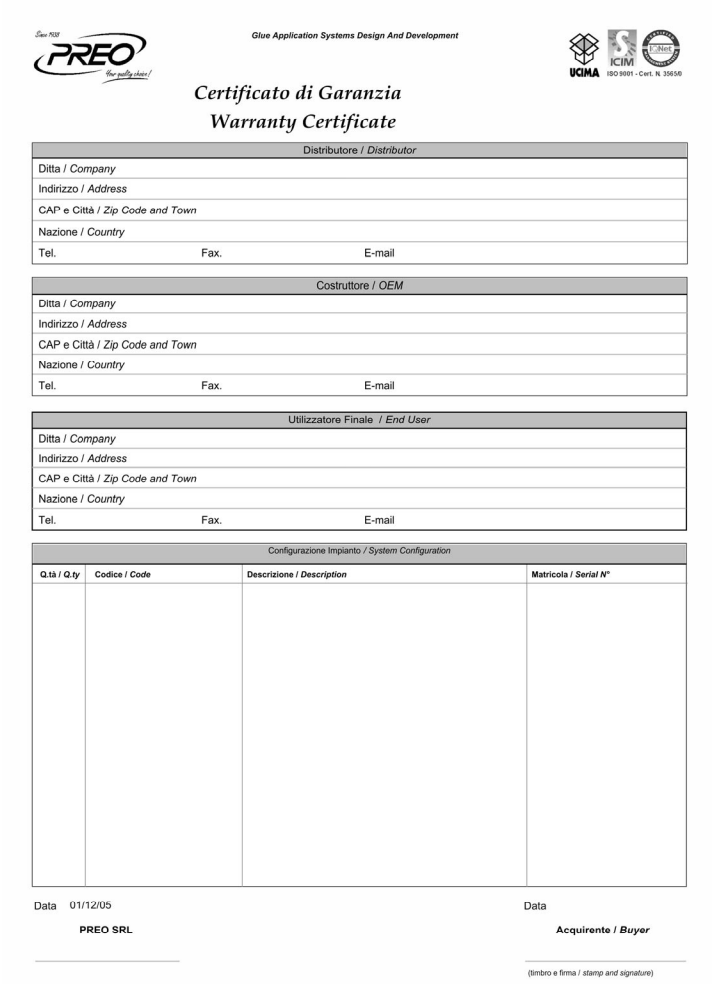
© Copyright 2006 PREO SRL
All rights reserved

Section 3

INSTALLATION

3.1 INTRODUCTION

Before installing the applicator and putting it into use, please fill in the guarantee certificate throughout, as illustrated in figure 5:



Glue Application Systems Design And Development

Certificato di Garanzia
Warranty Certificate

Distributore / *Distributor*		
Ditta / *Company*		
Indirizzo / *Address*		
CAP e Città / *Zip Code and Town*		
Nazione / *Country*		
Tel.	Fax.	E-mail

Costruttore / *OEM*		
Ditta / *Company*		
Indirizzo / *Address*		
CAP e Città / *Zip Code and Town*		
Nazione / *Country*		
Tel.	Fax.	E-mail

Utilizzatore Finale / *End User*		
Ditta / *Company*		
Indirizzo / *Address*		
CAP e Città / *Zip Code and Town*		
Nazione / *Country*		
Tel.	Fax.	E-mail

Configurazione Impianto / *System Configuration*

Q.tà / *Q.ty*	Codice / *Code*	Descrizione / *Description*	Matricola / *Serial N°*

Data 01/12/05 — Data

PREO SRL — Acquirente / *Buyer*

(timbro e firma / *stamp and signature*)

Figure 5

The guarantee conditions are indicated on the back of the certificate itself. The guarantee provides for the free replacement or repair of machine components found to be defective at source due to manufacturing defects. Guarantee assistance is only acknowledged if carried out by the PREO assistance service.

Please contact the following assistance centres should you require any further technical information during the installation procedure:

PREO SRL

ITALY	Via Volta, 7 20094 Corsico (MI) Tel: 02 48601260 Fax: 02 4503323 Web site: www.preo.it E-mail: italia@preo.it	Via Volta, 7 20094 Corsico (MI) - Italy Tel: +39 2 45861343 Fax: +39 2 4503323 Web site: www.preo.it E-mail: world@preo.it	**WORLDWIDE**

© Copyright 2006 PREO SRL
All rights reserved

3.2 INSTALLATION REQUIREMENTS

Before installing the applicator, make sure that the necessary environmental conditions and services are in place.

Figure 6 illustrates the minimum area necessary for correct installation and ideal system operation.

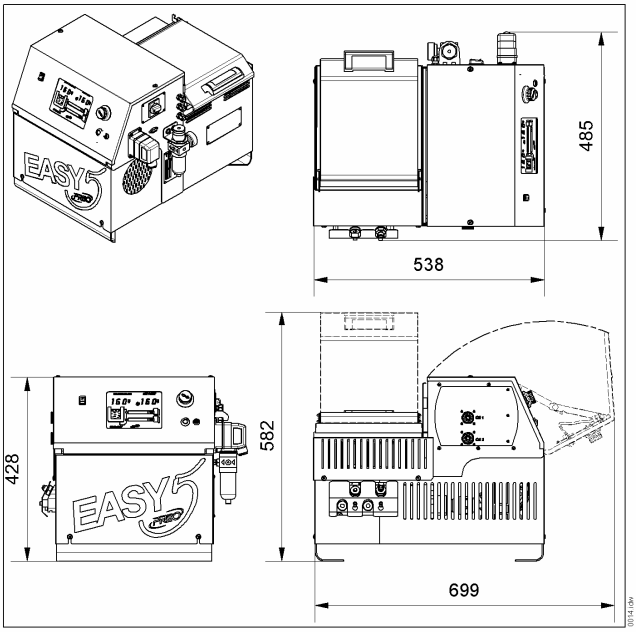


Figure 6

You should also take the following additional factors into consideration before proceeding with installation.

- Install the system in environments with a temperature between –5°C and +50°C.
- Install the system well away from areas subject to strong draughts or repeated changes in temperature.
- Install the system in such a way that the operator is able to access all the controls in complete safety.
- Avoid positioning the system on surfaces subject to strong vibrations.
- Always avoid contact with water, inasmuch as the applicators are not watertight.

3.3 CHECKING YOUR PURCHASE

Before installation, make sure that the machine has not been damaged during transport or by storage conditions.

Also make sure that all the optionals ordered and all the equipment supplied as standard are included in the packaging.

The hot-melt unit is supplied by the factory with an installation kit containing components that the client should install on the applicator.

The client will need additional materials to complete the installation.

3.4 REMOVING THE PACKAGING

Before installation, remove the applicator from the relative packaging.

Hoses, guns and any accessories are supplied loose from the applicator and packaged in bags or boxes inside the packaging.

© Copyright 2006 PREO SRL
All rights reserved

3.5 APPLICATOR ASSEMBLY

Refer to figure 7, which illustrates how to secure the applicator to the assembly surface using 8 mm bolts.

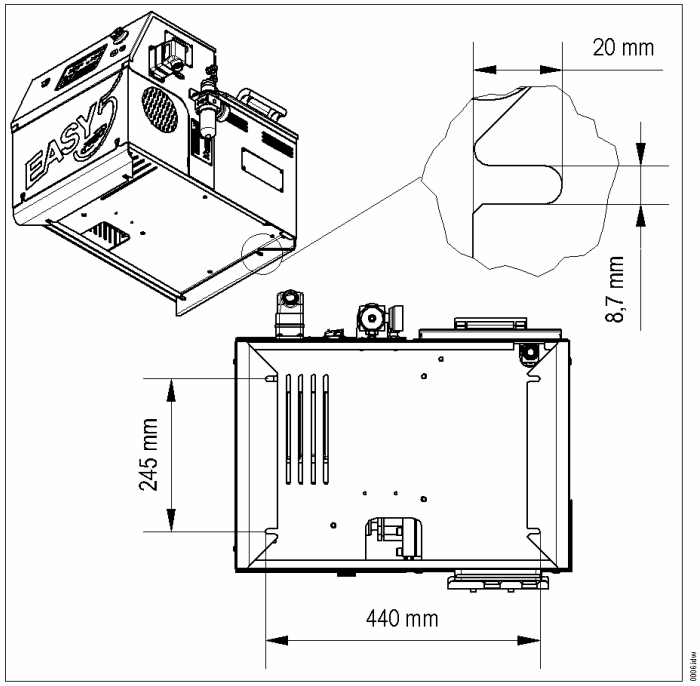


Figure 7

3.6 POWER SUPPLY CONNECTION

Make sure that the lines are able to power the machine correctly, in compliance with safety regulations. Earth the entire machine correctly. In order to make the connection, you will need a suitable power cable (not supplied with the applicator). Refer to figure 8 for correct power supply connection.

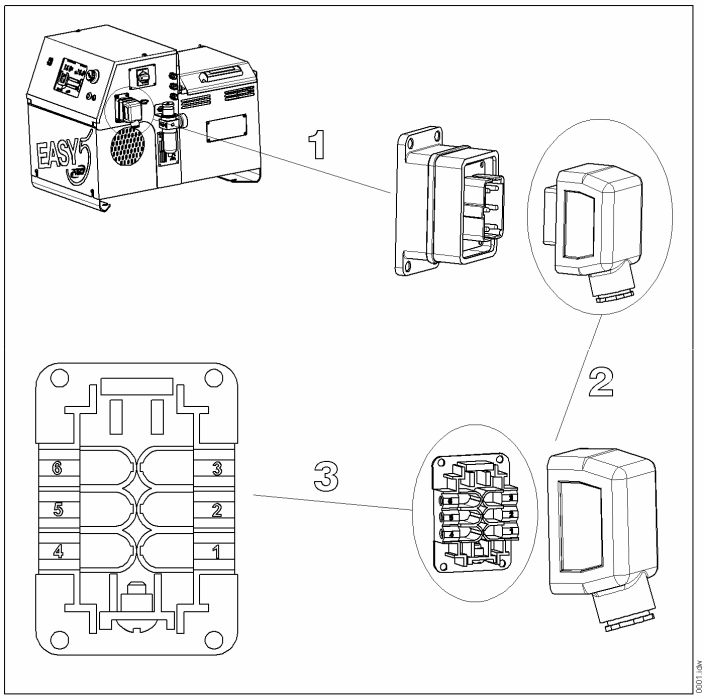
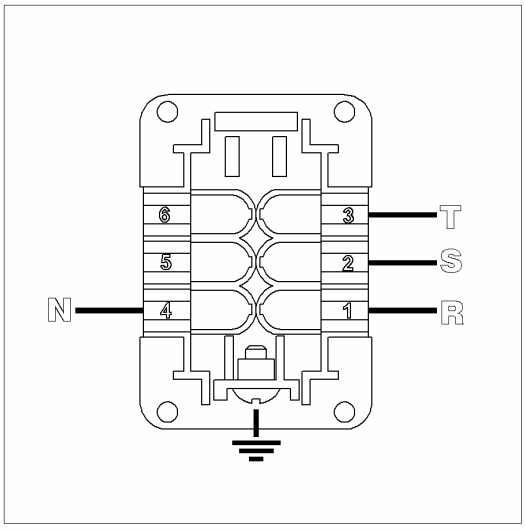


Figure 8

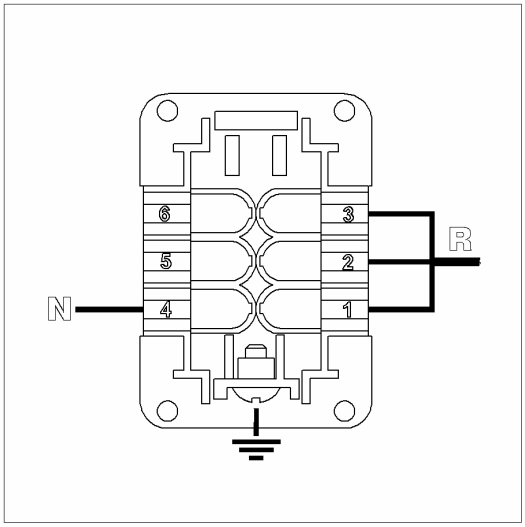
© Copyright 2006 PREO SRL
All rights reserved

The applicators have three different power supply modes. Connect the cable on the basis of the selected voltage, as illustrated in figure 9.

380 Volt three-phase + neutral



220 Volt single-phase



220 Volt three-phase

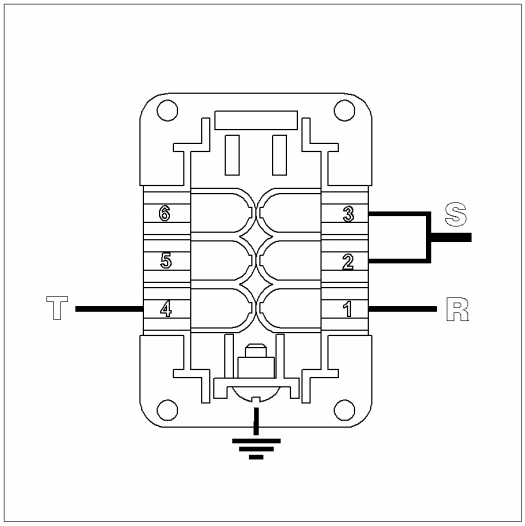


Figure 9

© Copyright 2006 PREO SRL
All rights reserved

3.7 PNEUMATIC SUPPLY CONNECTION

Connect a mains air supply to the air filter opening, as illustrated in figure 10, and set the applicator working air pressure using the pressure regulator, turning it in a clockwise direction.

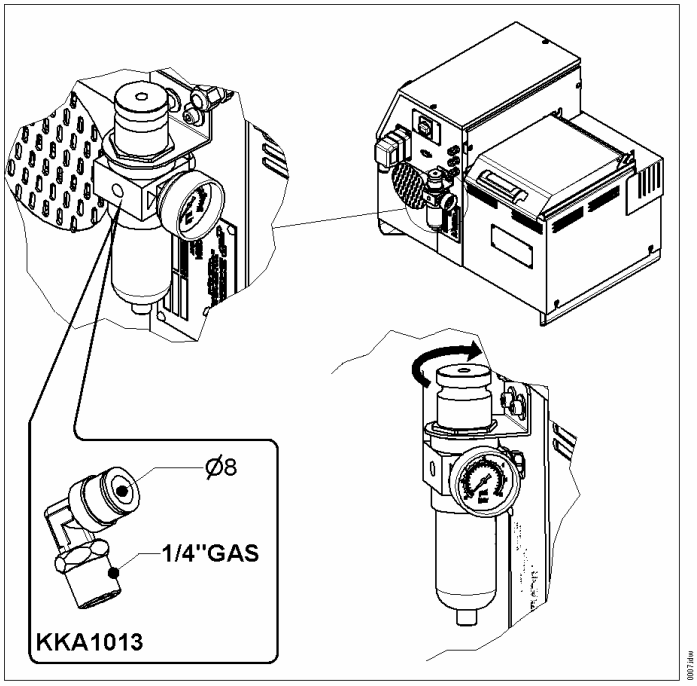


Figure 10

We recommend using dehumidified compressed air.

The recommended pressure is 6 bar.

3.8 HEATED HOSE CONNECTION

Wire and plumb in the hoses to the respective connectors, as illustrated in figure 11, bearing the following aspects in mind:

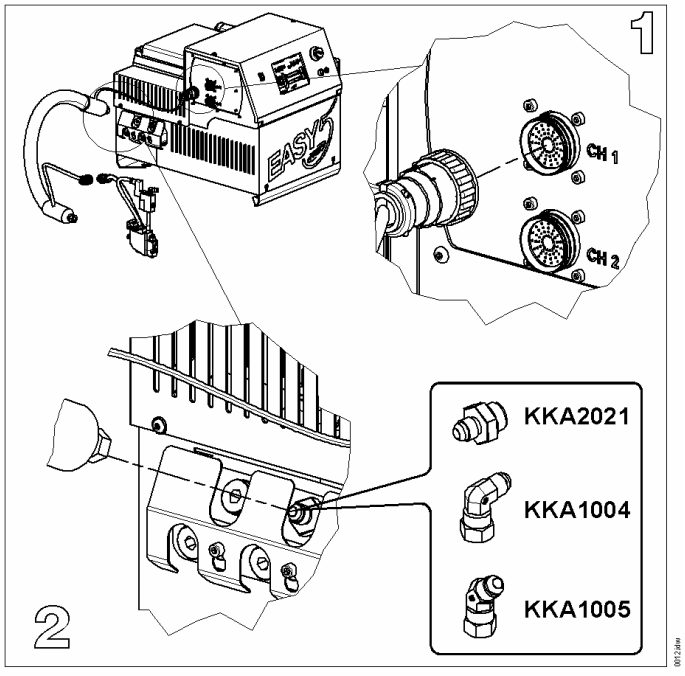


Figure 11

© Copyright 2006 PREO SRL
All rights reserved

- When installing the hoses, avoid abrasions or twisting the could damage the cover and avoid bending them with a radius of under 150 mm.
- Avoid installing the hoses in contact with cold surfaces that could prevent the adhesive from being correctly distributed or prevent it from being dispensed.
- Wire the hose to the applicator, bearing in mind that the number with which the hose is identified by the microprocessor depends on the electrical connection with the connector and not on the manifold position.
- Do not tighten or unscrew the hoses when the system is cold, so as not to damage the fittings and cause glue leaks.
- Begin screwing the manifold onto the fitting manually, without using a spanner, so as to ensure it is in the correct position.
- Then tighten the hose fitting with a 19 mm spanner when the system is heated up, so as not to break the thread.

3.9 GUN CONNECTION

Connect the revolving hose fitting to the gun fitting using two spanners in order to tighten it correctly. Wire the gun connector to the hose connector as illustrated in figure 12.

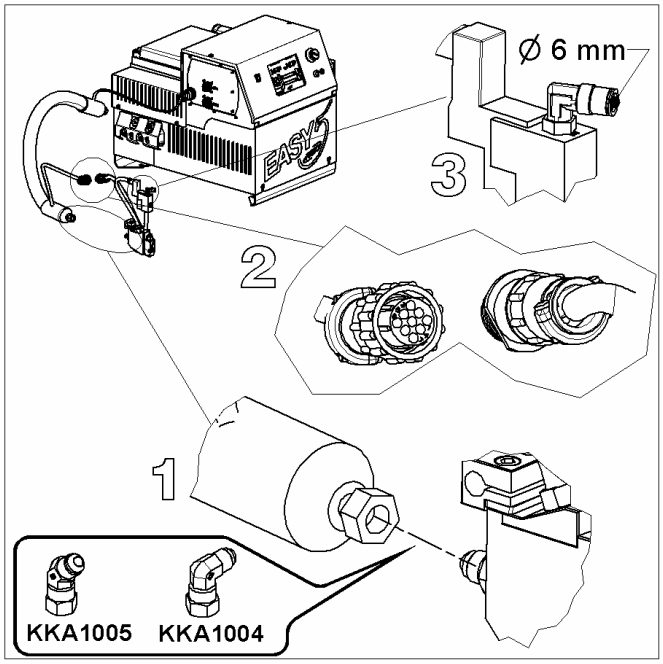


Figure 12

Pay specific attention to the following aspects:

- Thermally isolate the gun from the support using the insulator provided.
- Never use a gun which is missing any of its components. The gun body contains live components.
- Never touch the guns during operation and never point them at anyone. Risk of burns.
- Assemble the gun as near as possible to the substratum (5-50 mm), leaving the necessary space for carrying out maintenance work or replacing its components.

© Copyright 2006 PREO SRL
All rights reserved

- Feed the guns with compressed air at a minimum pressure of 6 bar.
- Protect the guns against vibrations and make sure that they are secured in such a way that they do not change position during use of the system.

3.10 GUN SOLENOID VALVE SIGNAL CONNECTION

In order to carry the electric signal to the guns' solenoid valves, connect to the terminal card situated inside the electrical box, as illustrated in figure 13.

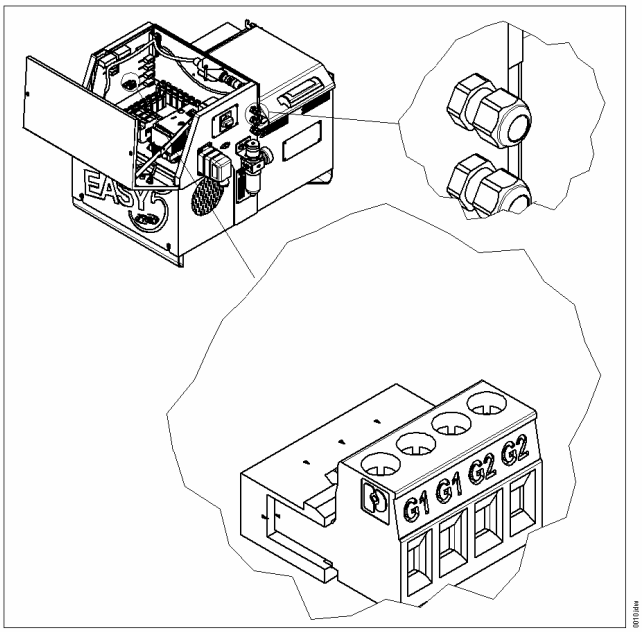


Figure 13

Terminals G1-G2 (guns 1-2) are connected to the terminals of the solenoid valve coils. These signals are interrupted by a really that closes when the machine is ready. Connect the external signals, destined to activate the guns, here. The voltage parameters may be selected on the basis of the gun type. Typically, the voltage is 24 V DC, but AC may also be used if necessary.

3.11 MACHINE READY SIGNAL CONNECTION

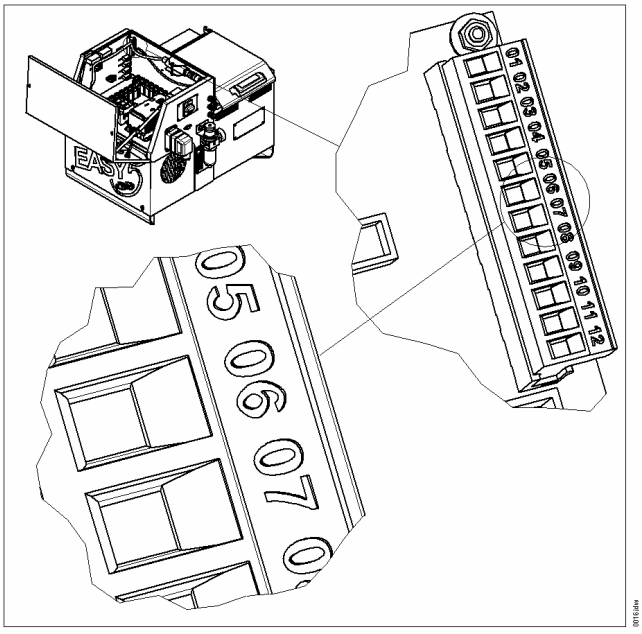


Figure 14

© Copyright 2006 PREO SRL
All rights reserved

Use terminals 07 and 08 indicated in figure 14 in order to make a clean, normally open contact, which can be used as machine ready consensus, with an external PLC for example.

3.12 RS232 CONNECTOR CONNECTION

The RS232 interface, supplied as standard and connected on the right-hand side of the machine, can be used to check and set all the machine parameters through an external PLC, as illustrated in figure 11.

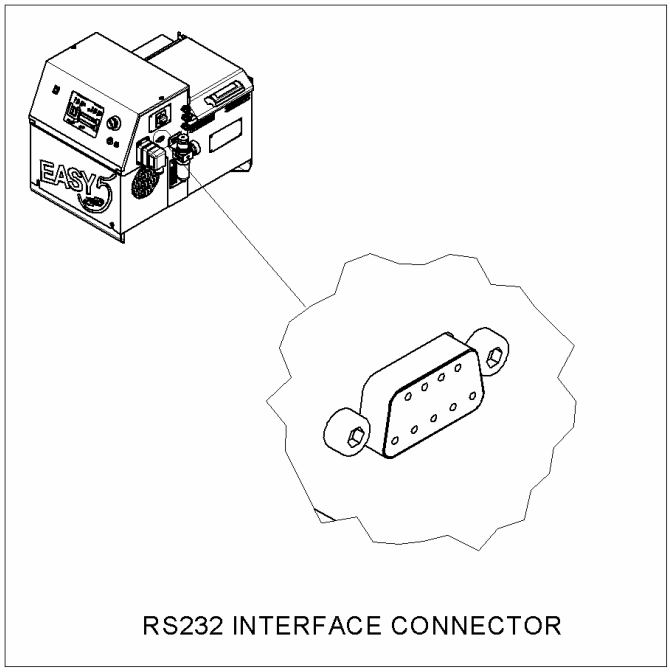


Figure 15

The connector is a 9-pole standard female type connector.

The PC/PLC connection cable must be a direct (uncrossed) type.

The following connections need to be made to create the interface:

EASY side connection	PC/PLC side connection
DB9M	DB9F
#2 (TX)	#2 (RX)
#3 (RX)	#3 (TX)
#5 (GND)	#5 (GND)

The serial parameters are as follows:

9600	n	8	1
baud	no parity	8 data bits	1 start bit

The applicator card is normally in reception mode, ready to receive data from the PC and transmit a response.

The reception transmission protocol works through the transmission of a sequence of 8 consecutive bytes from the PC/PLC, arranged as illustrated in the following table:

© Copyright 2006 PREO SRL
All rights reserved

1st byte	[0]	header (always obligatorily zero)
2nd byte	[TANK]	new tank set-point
3rd byte	[HOSE1]	new hose 1 set-point
4th byte	[GUN1]	new gun 1 set-point
5th byte	[HOSE2]	new hose 2 set-point
6th byte	[GUN2]	new gun 2 set-point
7th byte	[PUMP]	new pump set-point
8th byte	[CHKSUM]	check-sum bytes transmitted

The applicator responds with a further 8 bytes, arranged as follows:

1st byte	[0]	header (always zero)
2nd byte	[tank]	current tank temperature
3rd byte	[hose1]	current hose 1 temperature
4th byte	[gun1]	current gun 1 temperature
5th byte	[hose2]	current hose 2 temperature
6th byte	[gun2]	current gun 2 temperature
7th byte	[pressure]	current glue delivery pressure
8th byte	[chksum]	check-sum bytes received

Note that the set-points and current temperatures are expressed in °C and must be within the field of +2°C to +230°C.

Setting one of the set-points to one (1) causes the corresponding channel to be switched off. For example, by transmitting 1 as the 3rd byte, the PC switches off hose 1 completely. This is useful when you want to obtain machine consensus, despite hose 1 being disconnected.

The parameters must NOT be set at zero, so as not to confuse them with the header.

The check-sum (both in TX and RX) is calculated as follows: (2nd byte + 3rd byte + 4th byte + 5th byte + 6th byte + 7th byte) MOD 256. If the result amounts to zero (header!), it is transformed to one.

© Copyright 2006 PREO SRL
All rights reserved

© Copyright 2006 PREO SRL
All rights reserved

Section 4

OPERATION

4.1 FILLING THE MELTING TANK

Before filling the melting tank, we recommend making sure that the hot-melt adhesive to be used is compatible with the applicator specifications.

Always refer to the adhesive specifications indicated in the manufacturers' technical outlines.

PREO may not be held responsible for damage caused by incorrect use of the recommended parameters.

Fill the tank as described and illustrated in figure 16.

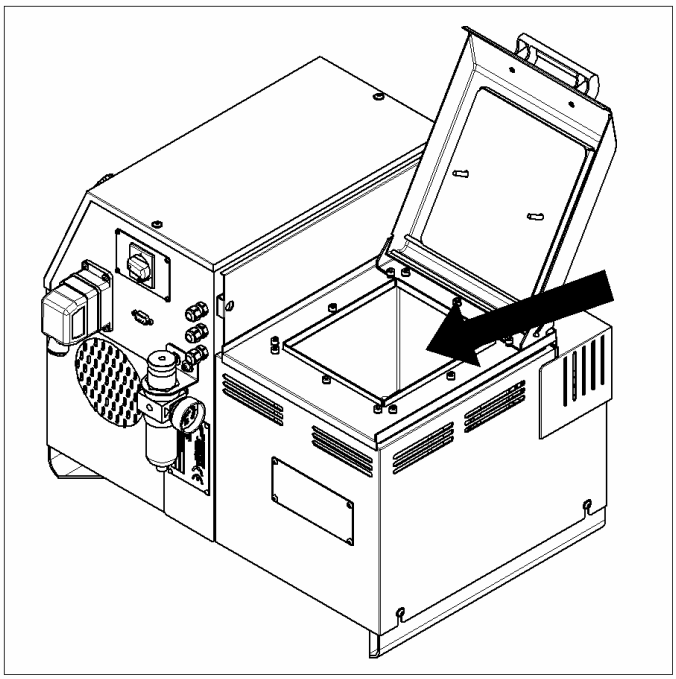


Figure 16

- Open the tank cover.
- Fill the tank with the product, not exceeding the capacity of the tank itself.
- Close the cover.

Use of the applicator for processes other than that for which it was designed and the use of adhesives or products that do not comply with the specifications will irreparably damage the equipment and pose a hazard to the operator and surrounding environment.

4.2 STARTING UP THE SYSTEM

Before starting the applicator, make sure that:

- The system is completely installed, including the electrical and pneumatic connections (if necessary).
- The hoses and guns are correctly connected.

© Copyright 2006 PREO SRL
All rights reserved

- The optional devices, if present, are correctly connected to the main system.

In order to start up the applicator, proceed by turning the main switch to position 1, as illustrated in figure 17.

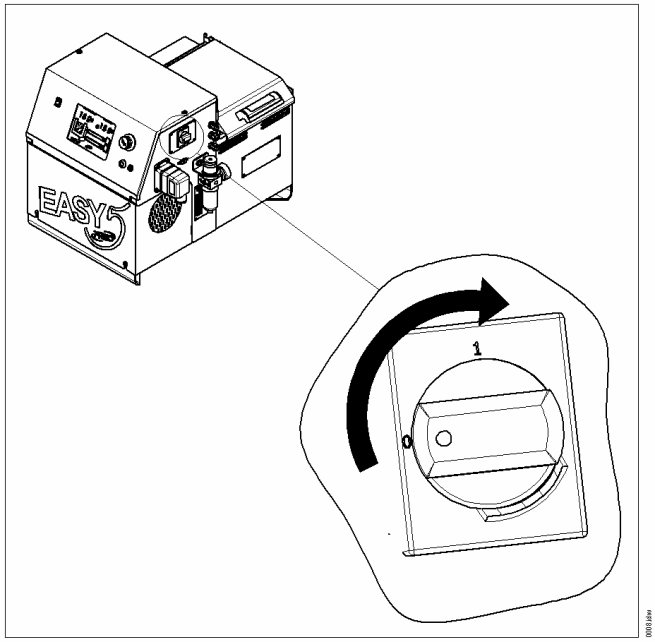


Figure 17

4.3 GENERAL OPERATING INFORMATION

A brand new, powerful, latest generation microprocessor has complete control over all the operations necessary for the correct operation of the machine, both as regards the regulation of the temperature in the various sections and as regards adhesive distribution.

The microprocessor features simplified programming, which is easy to use thanks to a new revolutionary LCD display, as illustrated in figure 18.

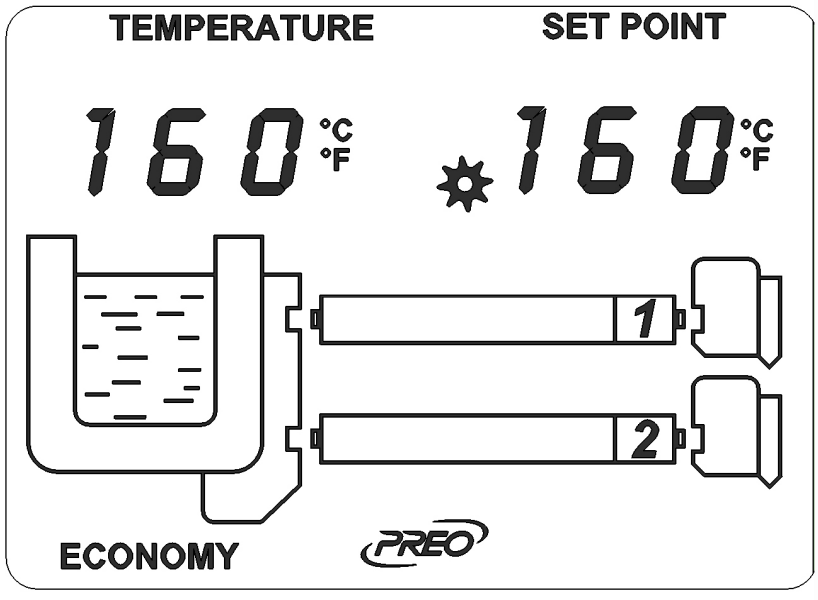


Figure 18

© Copyright 2006 PREO SRL
All rights reserved

4.4 DESCRIPTION OF COMPONENTS

The system's main components are those illustrated in figure 19.

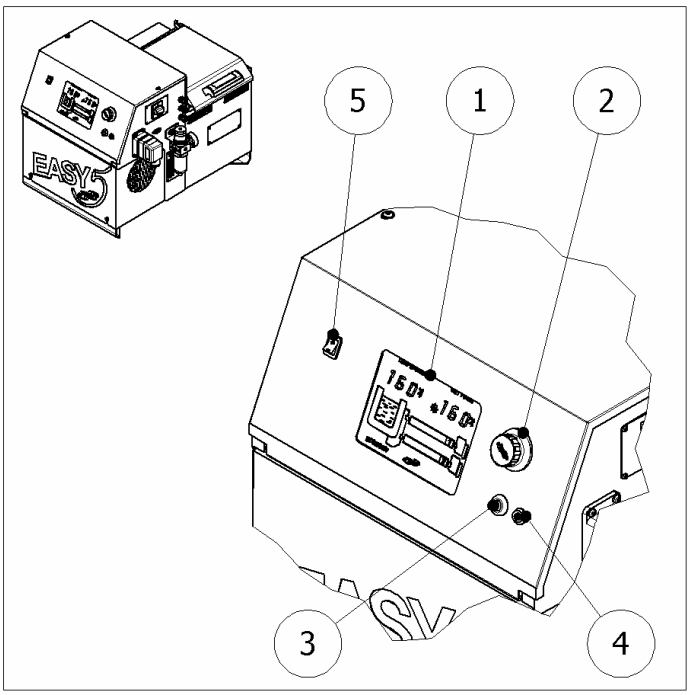


Figure 19

1 LCD Display: displays graphics of all sections of the machine (tank, manifold, hoses and guns), allowing for immediate viewing of all the various parameters. The use of a specifically developed LCD allows for maximum construction economy and optimal machine status representation, as a single panel features fixed serigraph images depicting the gluing machine sections and electronically controllable graphic elements (figures and variable graphic parts). The graphic icons are easy to interpret, even by non-specialist personnel, eliminating problems generated by codes and foreign languages and meaning that the displays are all the same, independently of the country of use. The TEMPERATURES field represents the actual temperature as measured by the probe, while the SET POINT represents the desired value to be set.

2 Parameter setting selector: every time the knob is pressed, another parameter appears, which is increased or decreased by turning the knob in a clockwise or anti-clockwise direction and is confirmed by pressing the selector itself again

3 Multicoloured LED: indicates the machine status. OFF (machine off); YELLOW (machine warming up); GREEN (machine on); RED (anomaly).

4 Selector lock key switch: makes it impossible to press the selector, so that unauthorised operators can read all the temperatures (by simply turning the selector) but preventing them from changing the set-points.

5 Motor ON/OFF switch: switches the motor controlling the gear pump on and off.

© Copyright 2006 PREO SRL
All rights reserved

4.5 INTEGRATED FUNCTIONS

Other important microprocessor features are:

- **Sequential heating of the various channels:** when the system is switched on, the tank, which constitutes the greatest volume of glue to be melted, is the first component to be heated. When the tank temperature reaches half the set-point value, the hoses and guns also being to be heated up. The advantage of this is that the system components all reach the desired temperature at the same time, saving energy and obtaining better hot-melt conservation.
- **Pump start:** in order to avoid subjecting the pump to the working pressure before the glue has completely melted, there is an internal safety device that only enables the pump when the set temperature reaches the set-point, enabling the machine ready green light. When the tank or other component temperatures fall outside the set alarm range (-10°C +10°C) with respect to the set-point, the glue dispensing is automatically disabled and the red alarm light or yellow machine warming up light comes on.
- **Signalling anomalies:** in the event of interruption of the temperature probe for any component, or in the event of a short-circuited probe, relative anomaly signalling messages appear on the display in order to facilitate troubleshooting operations.
- **Economy function:** lowers the temperature to a set value so as to keep the glue liquid, but not at working temperature.
- **Safety thermostat:** the maximum temperature safety thermostat provides additional protection, stopping the machine when the tank temperature exceeds 230°C.
- **Automatic scanning:** when the machine is ready, the microprocessor (with a time of 30 seconds per section) automatically scans the temperatures measured and the relative set-points for the enabled channels only (with set-point >0).

4.6 SETTING THE TANK TEMPERATURE

Turn the selector until reaching the position of the melting tank, which will begin to flash.

Press the selector briefly until SET appears on the display then, turning the selector itself, modify the set-point temperature within a range of settable values between +2°C and +230°C.

The selector also has a virtual block that prevents you from exceeding 230°C.

Press the selector again to confirm the desired value and exit the programming mode.

To deactivate the element, set a temperature of under 2°C. OFF will appear on the display.

4.7 SETTING THE HOSE TEMPERATURES

Turn the selector until reaching the position of hose 1, which will begin to flash.

Press the selector briefly until SET appears on the screen then, turning the selector itself, modify the set-point temperature within a range of settable values between +2°C and +230°C.

The selector also has a virtual block that prevents you from exceeding 230°C.

© Copyright 2006 PREO SRL
All rights reserved

Press the selector again to confirm the desired value and exit the programming mode.

To deactivate the element, set a temperature of under 2°C. OFF will appear on the display.

Repeat the same procedure to set the temperature for hose 2.

4.8 SETTING THE GUN TEMPERATURES

Turn the selector until reaching the position of gun 1, which will begin to flash.

Press the selector briefly until SET appears on the screen then, turning the selector itself, modify the set-point temperature within a range of settable values between +2°C and +230°C.

The selector also has a virtual block that prevents you from exceeding 230°C.

Press the selector again to confirm the desired value and exit the programming mode.

To deactivate the element, set a temperature of under 2°C. OFF will appear on the display.

Repeat the same procedure to set the temperature for gun 2.

4.9 STARTING UP THE PUMP

Press the switch to position 1 in order to start up the gear pump motor, as illustrated in figure 20.

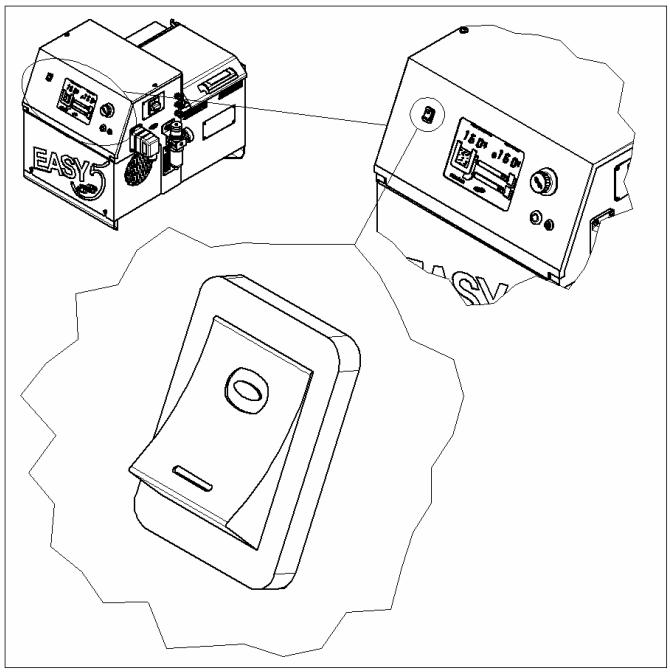


Figure 20

© Copyright 2006 PREO SRL
All rights reserved

4.10 SETTING THE PUMP REVOLUTIONS

Turn the selector until reaching the gear pump symbol on position, which will begin to flash. SPD will appear on the display.

Press the selector briefly until SET appears on the display then, turning the selector itself, modify the number of pump revolutions within a range of settable values between 2 and 99.

This value indicates a hypothetical scale of 1 to 100 (expressed as a percentage), comparable to a traditional potentiometer that regulates pump revolutions.

Press the selector again to confirm the desired value and exit the programming mode.

By setting the value at 0, the pump motor will automatically be switched off. OFF will appear on the display.

4.11 DISPLAYING THE PRESSURE (OPTIONAL)

By turning the selector until BAR appears on the display, the pressure of the adhesive will be shown on the display, expressed in bar. This display is comparable to a traditional digital pressure gauge, indicating the adhesive pressure in bar.

4.12 QUICK RELEASE AND PRESSURE REGULATION VALVE (OPTIONAL)

This particular device serves a dual purpose within the system.

A safety purpose and an operational purpose.

Its safety purpose consists of automatically discharging any pressure still present in the system when it is switched off.

Its operational purpose, on the other hand, lies in the possibility to regulate (as illustrated in figure 21) the pressure of the air feeding the valve, thus preventing the adhesive pressure from exceeding a set value, keeping it constant.

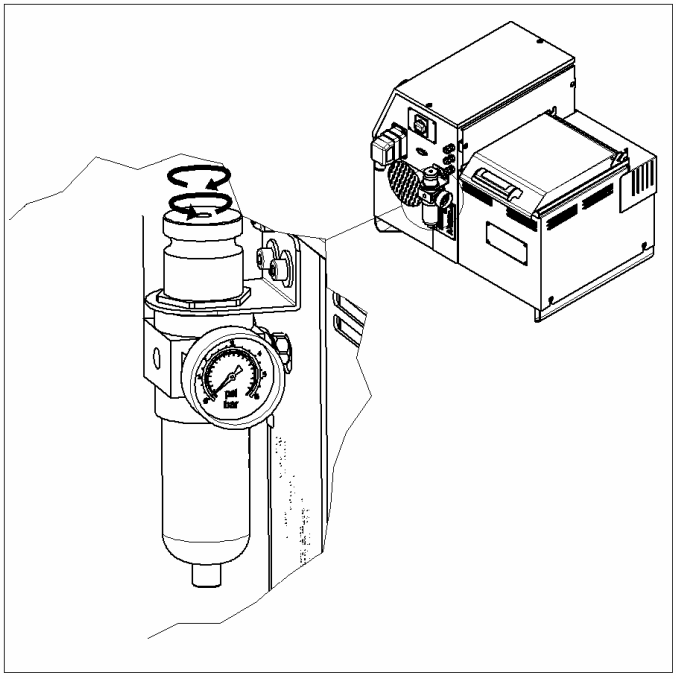


Figure 21

Precise valve calibration, together with the regulation of the number of pump revolutions, allows the system to dispense the adhesive in a precise, constant and

© Copyright 2006 PREO SRL
All rights reserved

safe fashion. The valve also offers another advantage. It keeps the adhesive pressure inside the manifold constant, so as to discharge that excess pressure that could accumulate in the system when, for example, the motor continues to revolve without extruding the adhesive.

Without the valve, the first drop of glue would be dispensed at a higher pressure than the others when the cycle resumed.

However, with the valve, the excess pressure is automatically discharged into the system, thus keeping the pressure of the adhesive to be applied constant.

4.13 SETTING THE ECONOMY FUNCTION

The economy function consists of lowering the system temperature to a set value so as to keep the glue liquid, but not at working temperature. This function is useful if the line is to be stationary for any length of time (change of format or break). Resuming work is speeded up and the adhesive does not stay at working temperature for any length of time without being stirred.

Press the selector for several seconds, until ECONOMY appears on the display accompanied by ECO, then release it immediately in order to activate the economy function. The machine will lower all the temperatures by 40°C and the temperature regulation process will be based on the new value, displaying the set-point temperature less the 40°C of the economy function on the display.

Press the selector for a few seconds in order to restore normal operation.

4.14 SWITCHING THE SYSTEM OFF

Turn the main switch to position 0, as illustrated in figure 22, in order to turn the system off completely.

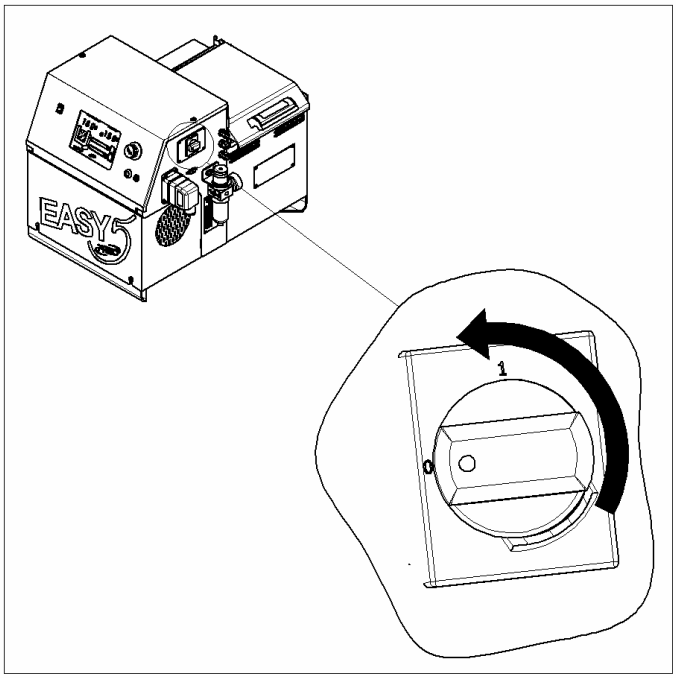


Figure 22

© Copyright 2006 PREO SRL
All rights reserved

© Copyright 2006 PREO SRL
All rights reserved

Section 5

MAINTENANCE

5.1 MAINTENANCE INFORMATION

Adequate maintenance is a decisive factor when it comes to keeping your machine in good working order for as long as possible, whilst also guaranteeing safety from a practical point of view.

Make sure that maintenance operations are performed by trained personnel equipped with personal protection devices, following the safety procedures prescribed in the following paragraphs.

Only use original PREO spare parts, which can be purchased from the company sales office.

Refer to the last section in this manual for a LIST OF RECOMMENDED SPARE PARTS.

5.2 SYSTEM DEPRESSURISATION

Before disconnecting any plumbing fittings or opening any pressurised parts, make sure you follow these procedures in order to discharge the hydraulic pressure that could still be present inside the system.

- Switch off the motor by turning the switch to position 0 as illustrated in figure 23.

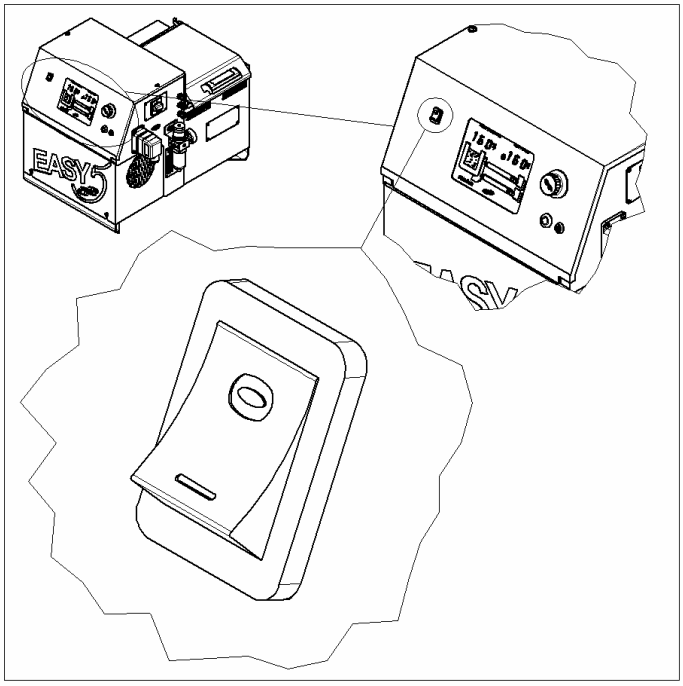


Figure 23

- Activate the guns until no more adhesive comes out of them.

5.3 ROUTINE SYSTEM CLEANING

The machine should be routinely cleaned on a daily basis and at the end of every work phase in order to keep the machine in good condition.

Disconnect the power supply before working on the system, turning the main switch to position 0 as illustrated in figure 24.

© Copyright 2006 PREO SRL
All rights reserved

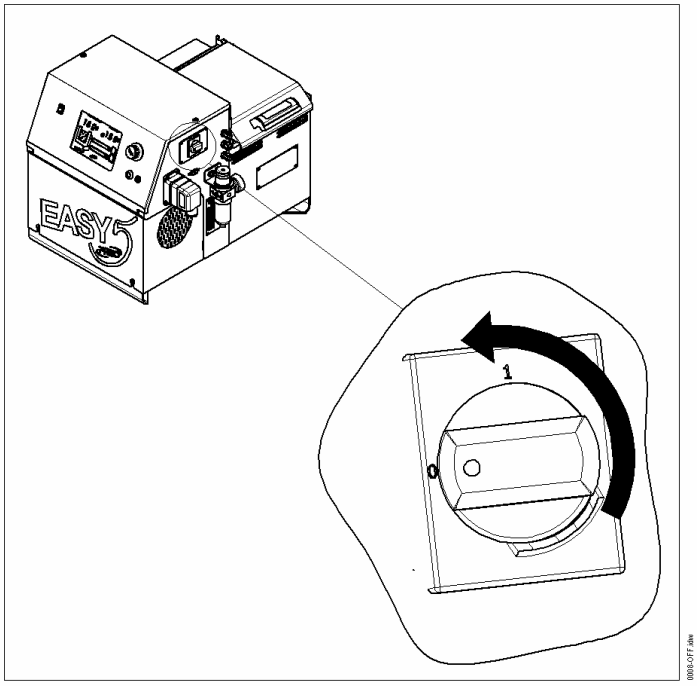


Figure 24

Clean the control panel and the external parts of the machine using a damp cloth. Do not use alcohol to clean the system.

5.4 GLUE FILTER REPLACEMENT

PREO applicators have a disposable glue filter for hot-melt adhesives, designed to prevent adhesive slag and carbonisation while it is being pumped from the tank.

The filter (positioned inside the manifold) must be replaced on the basis of the use and technical characteristics of the adhesive used. When replacing it, following these instructions carefully and refer to figure 25 below.

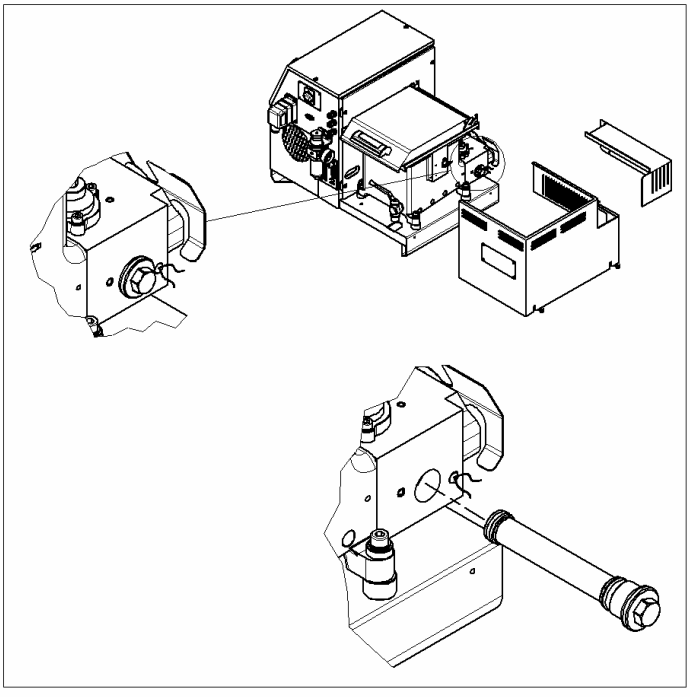


Figure 25

- Depressurise the system as described in paragraph 5.2
- Remove the manifold cover and the box on the tank side

© Copyright 2006 PREO SRL
All rights reserved

- Unscrew the filter with a 19 mm spanner
- Dispose of the filter in compliance with current waste disposal regulations
- Insert the new filter and screw it correctly into the manifold.
- Replace the manifold cover and the box on the tank side, then resume work.

Different types of filters are available, as illustrated in the following table:

Code	Description	Q.ty
DDR1130	Complete Filter Unit mesh 0.85	1
DDR1130W	Complete Filter Unit mesh 1.00	1
DDR1131W	Complete Filter Unit mesh 2.00	1

5.5 CLEANING THE MELTING TANK

In order to avoid problems using the system when switching to a different type of adhesive or in the event of excessive carbonisation accumulation, it is necessary to clean the melting tank.

We recommend that the following procedures are carried out by specialist personnel only.

- Place a heat-resistant recipient beneath the tap.
- Remove the protective carter in order to access the tap.
- When the glue is completely melted in the tank, open the valve as illustrated in figure 26.

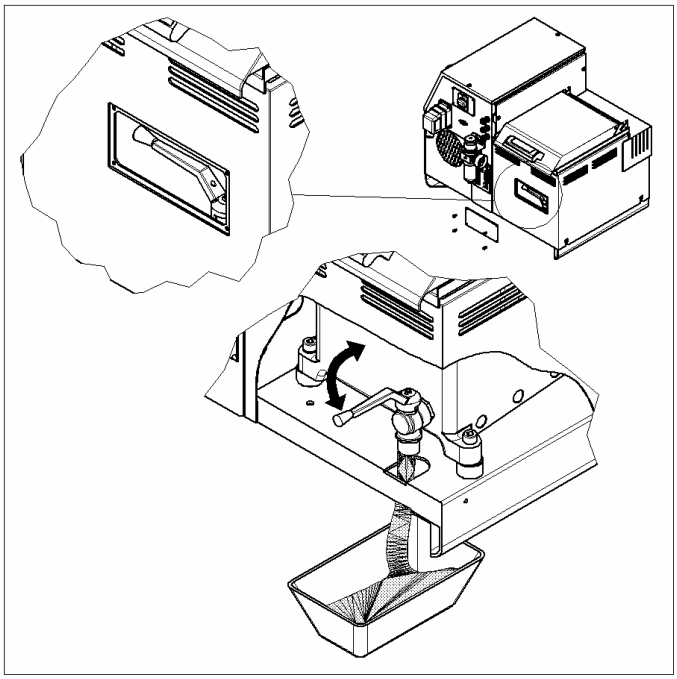


Figure 26

- The opening valve must be opened fully in order to prevent damaging the seals.
- Let all the glue flow out and then close the valve again.

All PREO applicators are made using advanced technology and avant-garde coatings. Despite this, in order to ensure a long working life, we recommend

© Copyright 2006 PREO SRL
All rights reserved

combining the tank emptying procedure with more thorough cleaning, using Ecological Ecocleaner 96 oil.

We recommend carrying out the following procedure in keeping with the following instructions:

- Heat the tank to a temperature of 170/180°C (340/360°F)
- Pour in a sufficient amount of Ecocleaner 96 to cover the tank fins.
- Remove any glue carbonisation from the walls, especially in proximity to the pump, using a scrubbing brush.
- Drain the Ecocleaner 96 oil from the tank.
- Clean the internal walls and the edges of the tank thoroughly.
- Change the tank/manifold filter and the gun filter.
- Fill the tank with new glue, keeping meticulously to the working temperatures indicated in the adhesive outline.
- Bleed the guns until all the old glue has been completely removed.
- The system is now ready for use.

Only use Ecocleaner 96 to clean the system, since the use of other products could irreparably damage the seals.

PREO recommends this product because it is completely biodegradable, chemically inert, non-toxic and does not stick to the walls of the tank, allowing for perfectly safe use of the system.

Never use Ecocleaner 96 oil to clean the heated hoses.

Do not use unsuitable tools that could scratch the internal coat of the tank, damaging it.

5.6 FUSE REPLACEMENT

Disconnect the system power supply before replacing the fuses.

Refer to figure 27 for the replacement of the fuses present in the system.

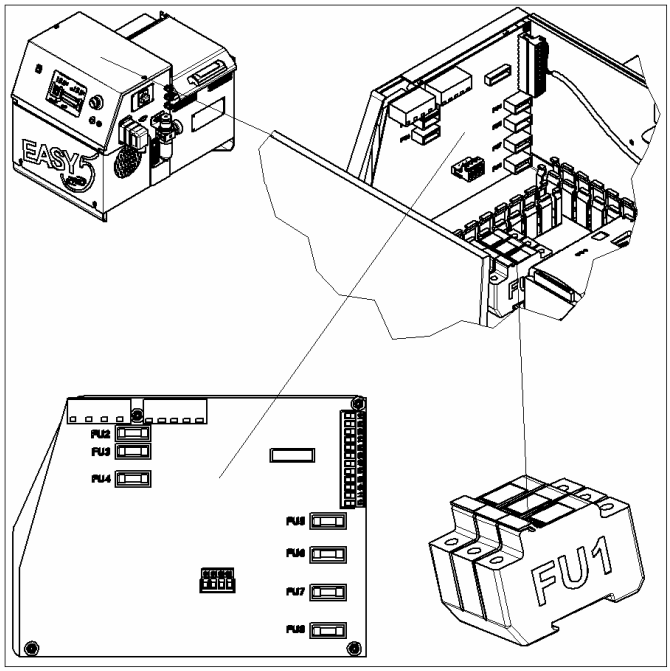


Figure 27

© Copyright 2006 PREO SRL
All rights reserved

Only use fuses of the indicated amperage, identical to the original and of the semi-rapid/delayed type, referring to the following table.

Section	Amps	Dimension	Q.ty	Code
FU1 - General	8.00 A	10 x 38 mm	3	KKE1253
FU2 – Tank	8.00 A	5 x 20 mm	1	KKE1238
FU3 – Tank - Manifold	8.00 A	5 x 20 mm	1	KKE1238
FU4 - Transformer	3.15 A	5 x 20 mm	1	KKE1268
FU5 – Hose 1	3.15 A	5 x 20 mm	1	KKE1268
FU6 – Gun 1	3.15 A	5 x 20 mm	1	KKE1268
FU7 – Hose 2	3.15 A	5 x 20 mm	1	KKE1268
FU8 – Gun 2	3.15 A	5 x 20 mm	1	KKE1268

5.7 SAFETY THERMOSTAT REPLACEMENT

Refer to figure 28 for the replacement of the safety thermostat.

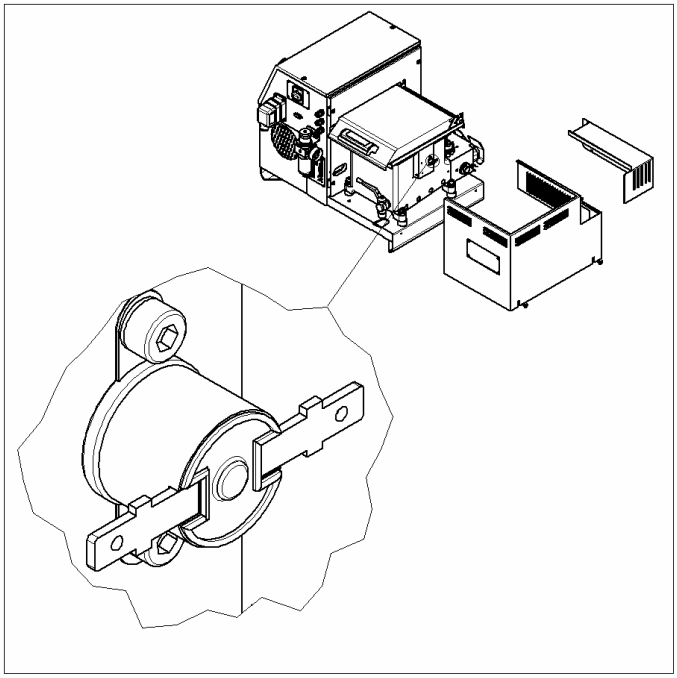


Figure 28

Keep meticulously to the following table for the correct identification of the thermostat, on the basis of the system used.

Code	Description	Q.ty
KKE1720	Low temperature version safety thermostat	1
KKE1760	Standard version safety thermostat	1
KKE1765	High temperature version safety thermostat	1

© Copyright 2006 PREO SRL
All rights reserved

5.8 MACHINE STORAGE

When the machine is to be out of use for a certain period of time, we recommend:

- Switching the machine off.
- Disconnecting the power supply.
- Cleaning all the visible parts with a jet of air.
- Emptying and cleaning the tank using the method indicated in paragraph 5.5
- Covering the entire machine with a waterproof canvas
- To protect the electrical parts, store the machine at an environment temperature of between 35°C and 40°C.

5.9 DISPOSAL

If you intend to dispose of the machine, for whatever reason, you need to observe some fundamental rules in order to safeguard people's health and the environment.

Sheaths, flexible hoses, plastic and non-metal components should be dismantled and disposed of separately.

Plumbing and electric components, such as valves, solenoid valves, etc. should be dismantled and then reused if still in good condition, or reviewed and recycled if possible.

The machine does not contain pollutant oils.

© Copyright 2006 PREO SRL
All rights reserved

Section 6

TROUBLESHOOTING

6.1 INTRODUCTION

This section helps to identify possible anomalies that may occur during use of the system.

If a malfunction occurs, the red light comes on and automatically generates the following conditions:

- consensus is removed
- the motor switches off
- the signal +24r is taken away
- all the heating elements are switched off

At the same time as the aforementioned conditions come into play, error messages will appear on the display, described in greater detail in the next paragraph.

6.2 ERROR MESSAGES

ERR message: indicates a generic ERROR situation. The message appears on the display when one of the components is not operating correctly. The malfunction could be caused by certain factors, such as: incorrect or missing electrical connections, burnt out fuses, faulty probes, short-circuited heating elements, burnt electrical cards.

O_T message: indicates an OVER TEMPERATURE situation. The message appears when the safety thermostat intervenes, stopping heating completely.

© Copyright 2006 PREO SRL
All rights reserved

© Copyright 2006 PREO SRL
All rights reserved

Section 7

TECHNICAL OUTLINES AND SPARE PARTS

7.1 SYSTEM IDENTIFICATION AND CONFIGURATION

Always refer to the system code in order to identify the product and any installed options before ordering any spare parts. Refer to figure 29 for the position of the plaque indicating the code.

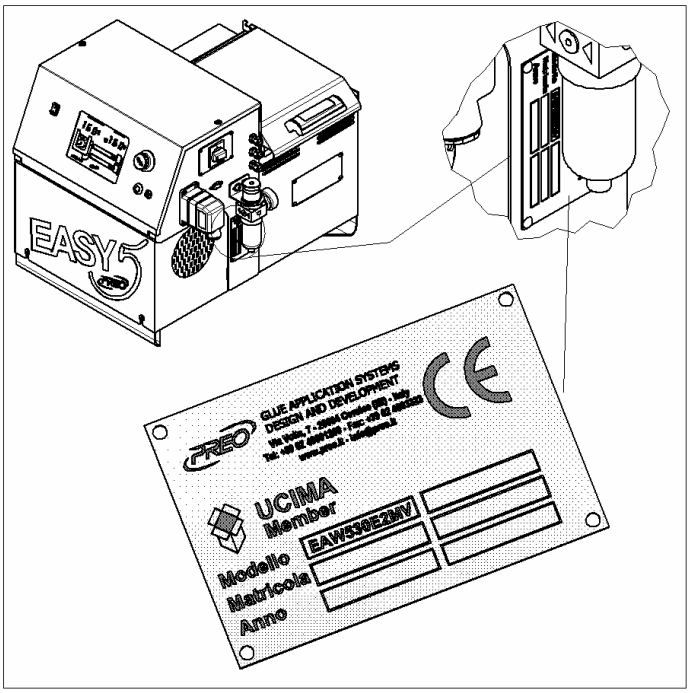


Figure 29

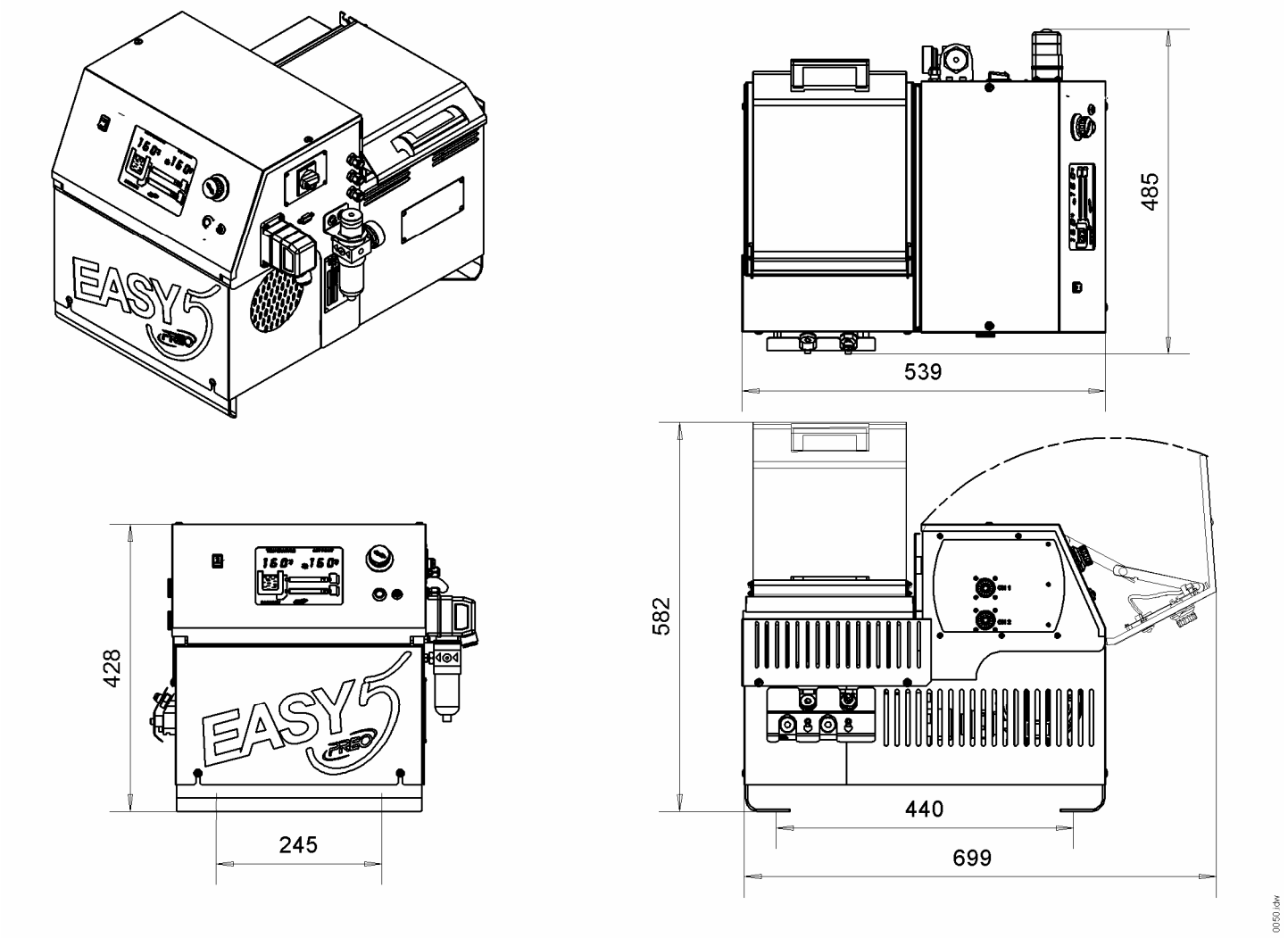
The following table indicates the code used for the applicators.

E A	W	5	3 0	E	2	H M V
1	2	3	4	5	6	7

1	*applicator model*	**EA**	EASY
2	*pump type*	**W**	GEAR
3	*tank capacity*	**5**	5 KG
4	*pump capacity*	**30**	3.00 CC REV
5	*computer*	**E** **R**	TERMO SERIES TRATTO SERIES
6	*channels*	**2** **4**	2 ELECTRIC CONNECTIONS 4 ELECTRIC CONNECTIONS
7	*options*	**M** **V** **H**	PRESSURE CONTROL GAUGE QUICK RELEASE VALVE HIGH TEMPERATURE VERSION

As far as regards the system characteristics and technical specifications, refer to the following technical outlines:

© Copyright 2006 PREO SRL
All rights reserved



GENERAL CHARACTERISTICS	
WEIGHT	35 kg
FIXTURE	eyelets for M8 screws
TANK OPENING DIMENSIONS	180 x 155 mm
NO. INSTALLABLE HOSES AND CONNECTIONS	1 + 4 (with or without integrated glue treatment programmer)
USABLE ADHESIVE VISCOSITY	hot-melt up to 70,000 mPas
SAFETY BY-PASS	calibrated to 55 bar
MAXIMUM WORKING PRESSURE	55 bar
HOT-MELT UNIT	
TANK CAPACITY	5 kg
MELTING CAPACITY	9 Kg/h (varies depending on type of adhesive used)
WORKING TEMPERATURE	50°C ÷ 210°C
THERMAL PRECISION	± 1°C
SET-POINT OBTAINMENT TIME	35' + 40' starting from room temperature
TEMPERATURE REGULATION	via microprocessor
INTERNAL TANK COATING	PTFE scratch-resistant, non-stick treatment
ELECTRICAL DATA	
POWER SUPPLY	380 VAC 50 Hz three-phase + neutral
INSTALLED POWER AND AMPERAGE	3000 Watt – 14.0 A (without hoses and guns)
PLUMBING CIRCUIT DATA	
PUMP TYPE AND MAXIMUM SPEED	simple flow gear pump, 3.0 cc/rev x 80 rpm
MAXIMUM PUMP CAPACITY	14 Kg/h (varies depending on type of adhesive used)
MOTOR SPECIFICATIONS	0.25 with reducer ratio 1:20 and variable speed controlled by vectorial inverter
PUMP ENABLEMENT	- 5°C from set - point

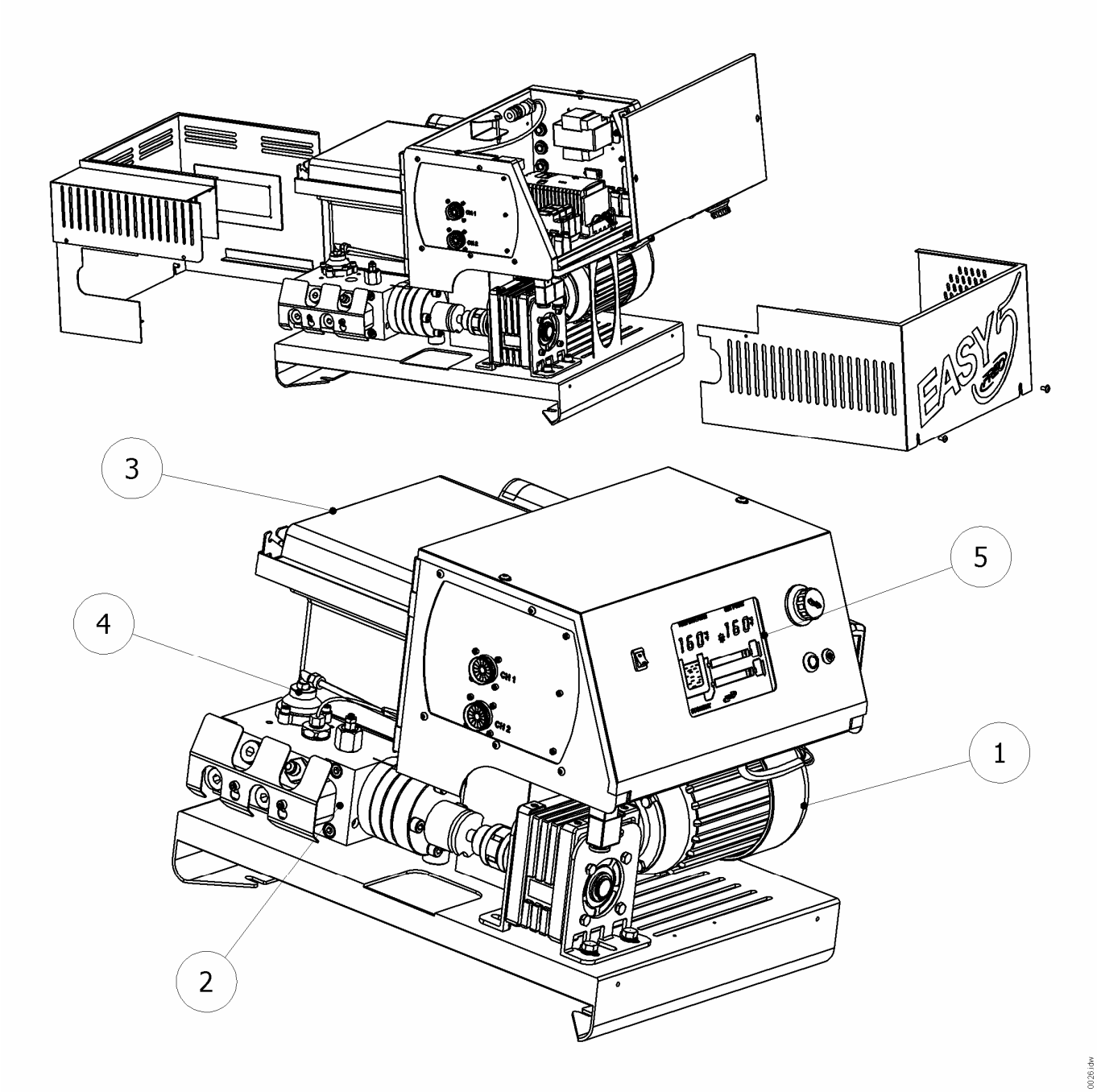
© Copyright 2006 PREO SRL
All rights reserved

7.2 USING THE EXPLODED DIAGRAMS AND PARTS TABLES

The following pages feature illustrations relative to the various groups comprising the applicator.

A table containing a list of components, subdivided into columns indicating the Code, Description and Quantity of pieces required, is included for every illustration.

7.3 GENERAL ENSEMBLE



1 – GEAR PUMP MOTOR GROUP, 3.0 CC EASY SERIES

2 – EASY SERIES MANIFOLD GROUP + VALVE + PRESSURE GAUGE

3 – EASY SERIES TANK GROUP 5 KG GEARS

4 – EASY SERIES QUICK RELEASE VALVE

5 – EASY SERIES COMPUTER BOX GROUP

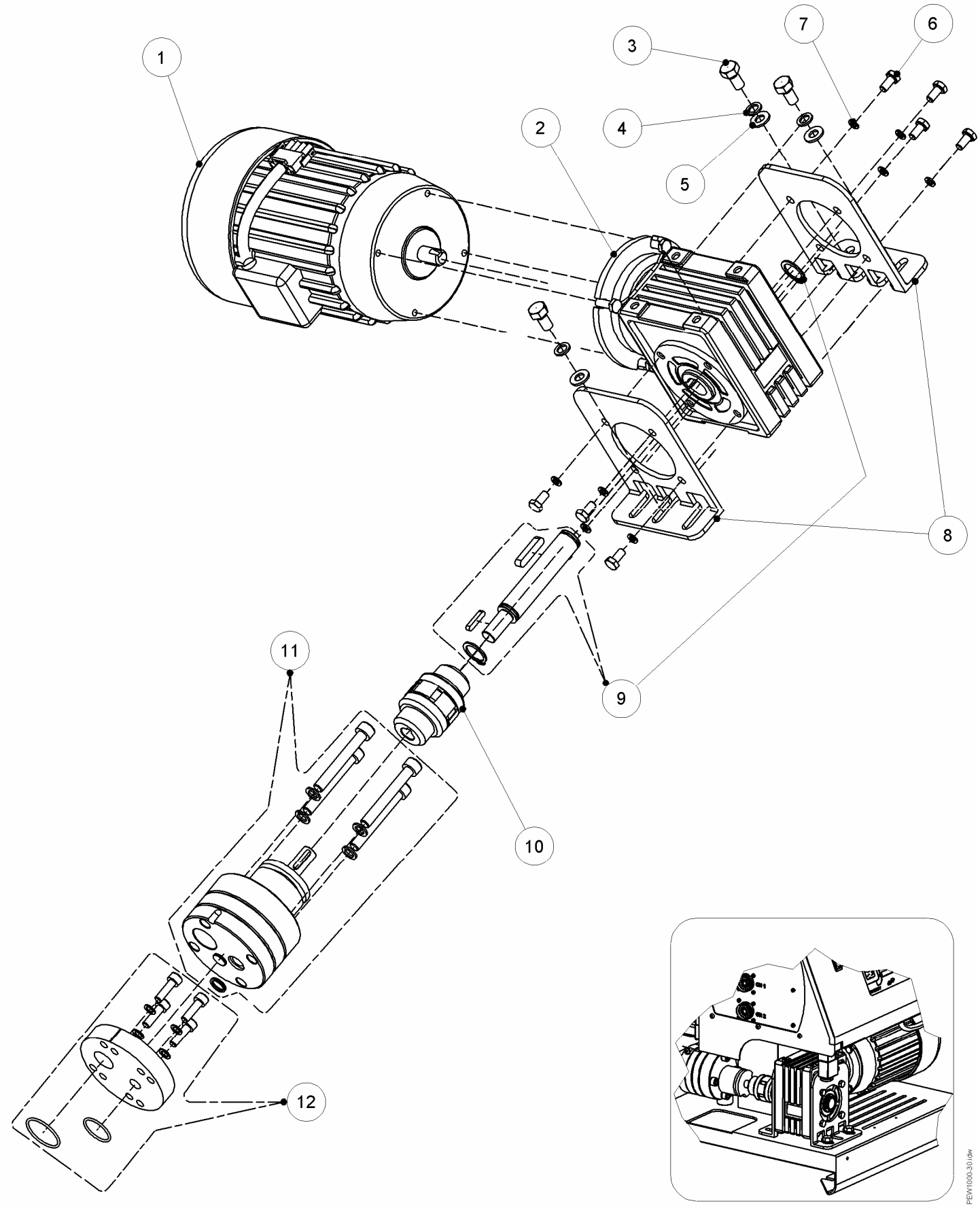
© Copyright 2006 PREO SRL
All rights reserved

PEW1000-30 GEAR PUMP MOTOR GROUP, 3.0 CC EASY SERIES

POS	CODE	DESCRIPTION	UM	Q.TY	NOTES
1	PPR3431W	Easy gear pump motor, 0.25 kw 4 poles b 14	NR	1	
2	PPR3330W	Reducer r 1/20 x easy gear pump	NR	1	
3	KKF1253	Hexagonal head screw m8 x 16	NR	3	
4	KKK1035	Zinc-plated schnorr type vs washer 8	NR	3	
5	KKH1023	Zinc-plated flat washer 8.00 x 16.00 x 01.50 m8	NR	3	
6	KKF1027	Hexagonal head screw m6 x 12 stainless steel	NR	8	
7	KKK1026	Schnorr type vs washer 6	NR	8	
8	CE0090	Square bracket for gear motor nmrv 40	NR	2	
9	PEW1510	Gear motor shaft kit nmrv40 easy series	NR	1	
10	PPR3145W	Joint for gear pump 3.0 cc easy series	NR	1	
11	PEW1520	Gear pump group kit, easy 3.0 cc	NR	1	
12	PEW1530	Gear pump plate group kit, easy 3.0 cc	NR	1	
---	PEW1500	Gear pump seal kit, 3.0 cc easy series	NR	1	

© Copyright 2006 PREO SRL
All rights reserved

PEW1000-30 GEAR PUMP MOTOR GROUP, 3.0 CC EASY SERIES



© Copyright 2006 PREO SRL
All rights reserved

DE1000-MV EASY SERIES MANIFOLD GROUP + VALVE + PRESSURE GAUGE

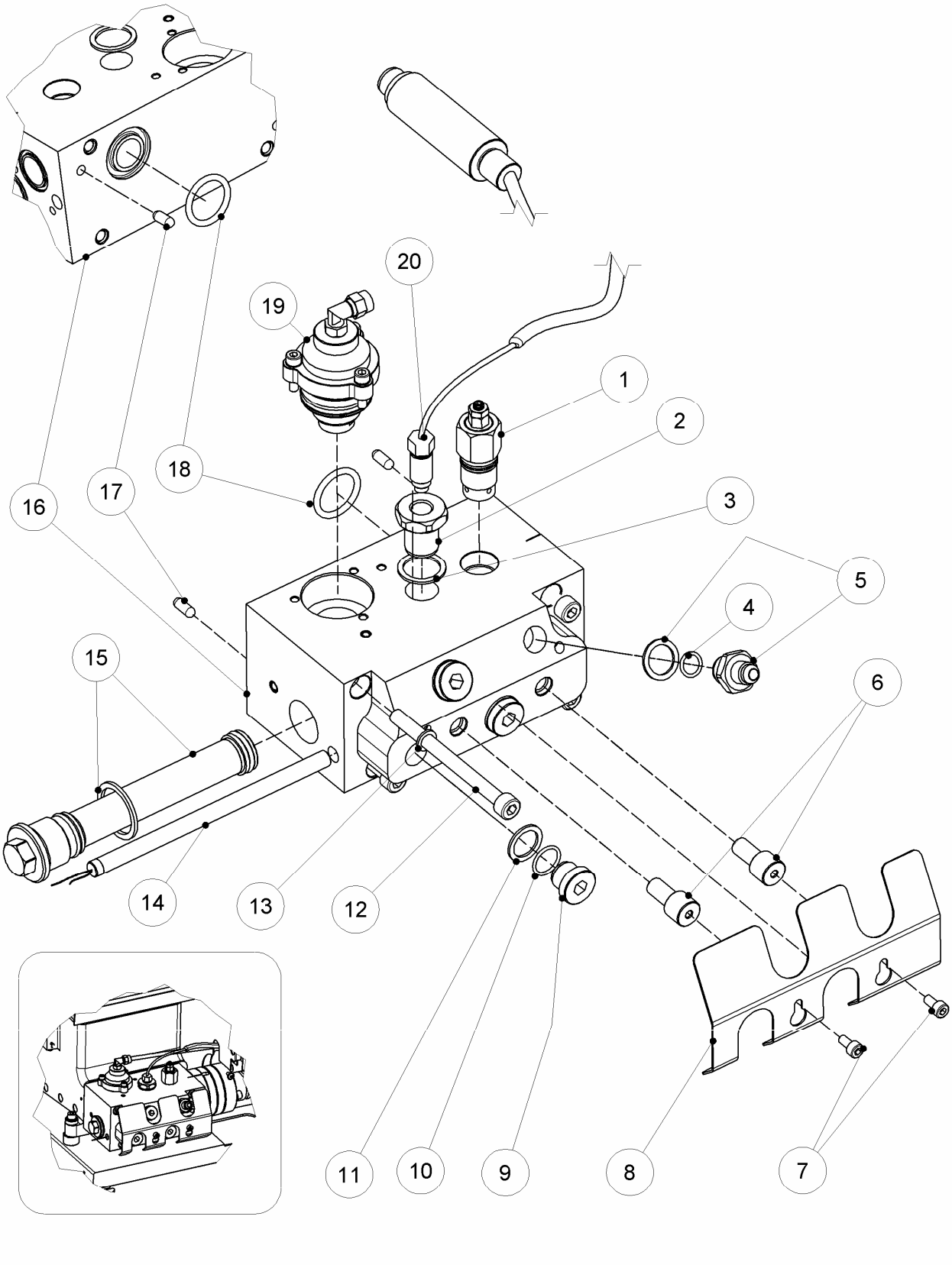
POS	CODE	DESCRIPTION	UM	Q.TY	NOTES
1	BC1000	Complete by-pass group for bulkmeter	NR	1	
2	DER0020	Pressure transmitter reduction mn series	NR	1	
3	KKH2005	Copper washer 27.00 x 21.00 x 02.00	NR	1	
4	KKB1024	O-ring seal	NR	1	
5	KKA2021	Straight fitting 3/8 g – ½" unf parker series	NR	1	
6	KKC1009	Manifold screen isolation spacer easy series	NR	2	
7	KKF1005	Socket head screw m5 x 10 stainless steel	NR	2	
8	CE0170	Manifold stainless steel screen easy series	NR	1	
9	KKA2014	Cap g 3/8 parker series	NR	3	
10	KKB1046	O-ring seal	NR	3	
11	KKH2017	Copper washer 22.00 x 17.00 x 01.50	NR	3	
12	KKF1175	Socket head screw m8 x 100	NR	4	
13	KKK1035	Zinc-plated schnorr type vs washer 8	NR	4	
14	KKE1520	Heating element diam. 09.50 x 165.00 mm 300w 240v	NR	1	
15	SEE TABLE 1	Filter group	NR	1	
16	DER0010	Manifold body for easy series	NR	1	
17	GGR3373	Cylindrical pin 6 x 16	NR	2	
18	KKB1088	O-ring seal diam. 24.99 x 3.53	NR	1	
19	FF3000	Quick release valve easy	NR	1	
20	TGR1194	Pressure transmitter mn series	NR	1	

TABLE 1 MANIFOLD FILTER REFERENCE TABLE

CODE	DESCRIPTION	Q.TY	NOTES
DDR1130W	Complete 1.00 filter group for easy applicator	1	
DDR1131W	Complete 2.00 filter group for easy applicator	1	

© Copyright 2006 PREO SRL
All rights reserved

DE1000-MV EASY SERIES MANIFOLD GROUP + VALVE + PRESSURE GAUGE



© Copyright 2006 PREO SRL
All rights reserved

VE0010 EASY SERIES TANK GROUP 5 KG GEARS

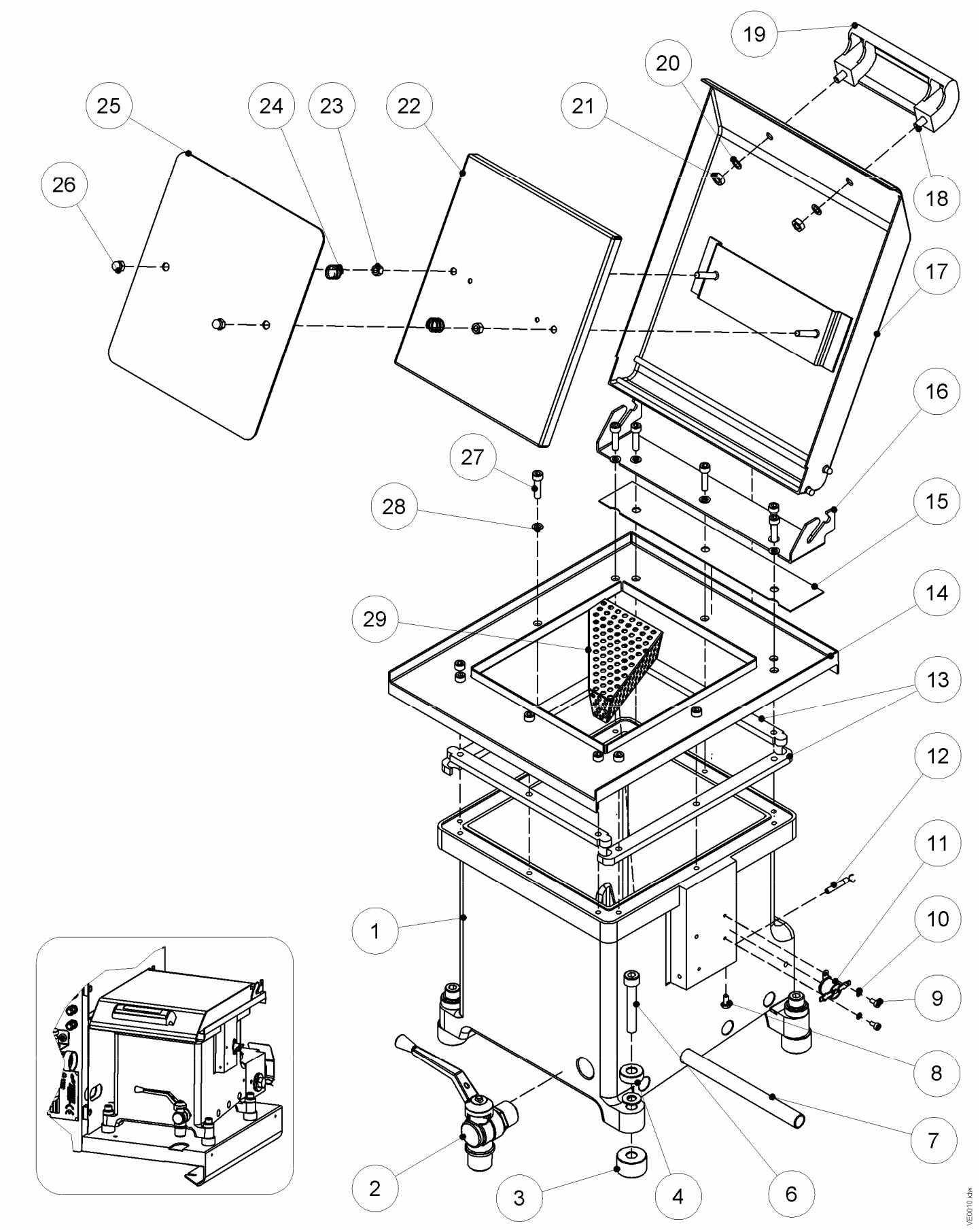
POS	CODE	DESCRIPTION	UM	Q.TY	NOTES
1	VER0010	Tank easy series 5 kg	NR	1	
2	VER0050	Spherical valve easy m/m ½ gas	NR	1	
3	KKC1007	Insulating spacer lower tank foot easy	NR	4	
4	KKC1022	Insulating spacer upper tank foot easy	NR	4	
5	KKH1023	Zinc-plated flat washer 8.00 x 16.00 x 01.50 m8	NR	4	
6	KKF1242	Socket head screw m8 x 50	NR	4	
7	KKE1525	Heating element diam. 12.50 x 170.00 mm 450w 240v	NR	4	
8	KKF1154	Socket head screw m4 x 8 stainless steel	NR	1	
9	KKF1067	Socket head screw m3 x 6	NR	2	
10	KKK1009	Zinc-plated schnorr type s washer 3	NR	2	
11	See table 2	Safety thermostat	NR	1	
12	KKE1601	4 x 25 probe cable mm 1200 for tank - manifold	NR	1	
13	VER0035	Moulded seal kit easy series	NR	1	
14	CE0110	Tank cover frame easy series	NR	1	
15	VER0040	Cover support seal easy series	NR	1	
16	CE0100	Tank cover hinge bracket easy series	NR	1	
17	CE0120	Easy tank cover	NR	1	
18	KKF1016	Socket head screw m6 x 16 unbrako	NR	2	
19	KKC2001	Tank cover handle easy series	NR	1	
20	KKK1026	Schnorr type vs washer 6	NR	2	
21	KKG1004	Nut m6	NR	2	
22	CE0130	Moulded counter-cover easy	NR	1	
23	KKG1015	Nut m5	NR	2	
24	KKF6102	Compression spring diam. 1.1 x 12 x 9.6	NR	2	
25	CE0140	Counter-cover easy	NR	1	
26	KKG1023	Hexagonal nut with spherical crown m5 stainless steel	NR	2	
27	KKF1092	Socket head screw m5 x 20 unbrako	NR	12	
28	KKK1020	Zinc-plated schnorr type vs washer 5	NR	12	
29	CE0160	Tank protection network easy series	NR	1	

TABLE 2 SAFETY THERMOSTAT REFERENCE TABLE

CODE	DESCRIPTION	Q.TY	NOTES
KKE1720	Low temperature version safety thermostat	1	
KKE1760	Standard version safety thermostat	1	
KKE1765	High temperature version safety thermostat	1	

© Copyright 2006 PREO SRL
All rights reserved

VE0010 EASY SERIES TANK GROUP 5 KG GEARS



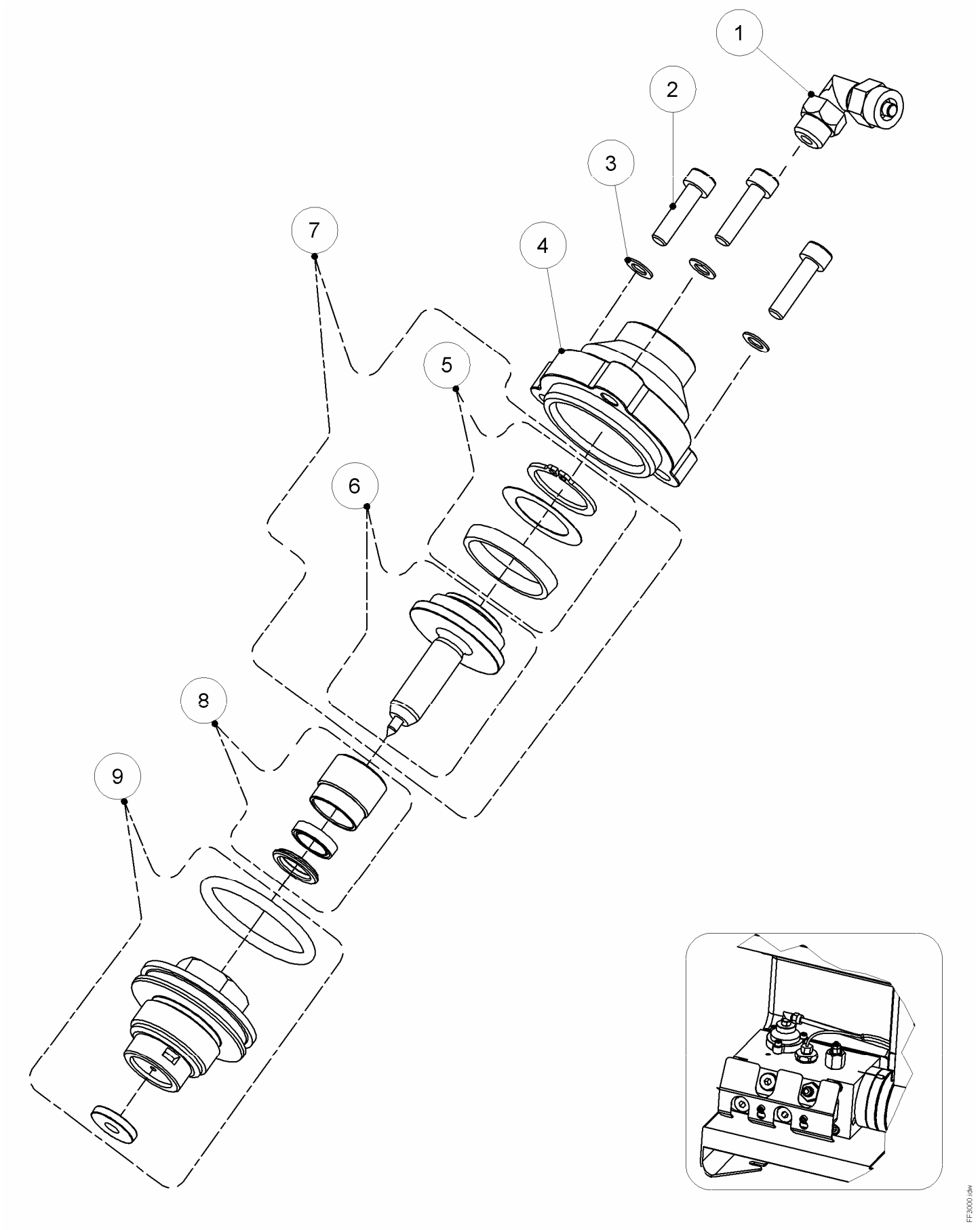
© Copyright 2006 PREO SRL
All rights reserved

FF3000 EASY SERIES QUICK RELEASE VALVE

POS	CODE	DESCRIPTION	UM	Q.TY	NOTES
1	KKA1100	Elbow 90° 6 - 1/8 mas - mas	NR	1	
2	KKF1092	Socket head screw m5 x 20 unbrako	NR	3	
3	KKK1020	Zinc-plated schnorr type vs washer 5	NR	3	
4	FFR1010	Quick release valve cover	NR	1	
5	FFR1015	Quick release valve gate seal kit	NR	1	
6	ffr1021	Quick release valve gate	NR	1	
7	FFR1020	Quick release valve complete gate	NR	1	
8	FFR1030	Quick release valve pin kit	NR	1	
9	FFR1040	Quick release valve body kit	NR	1	

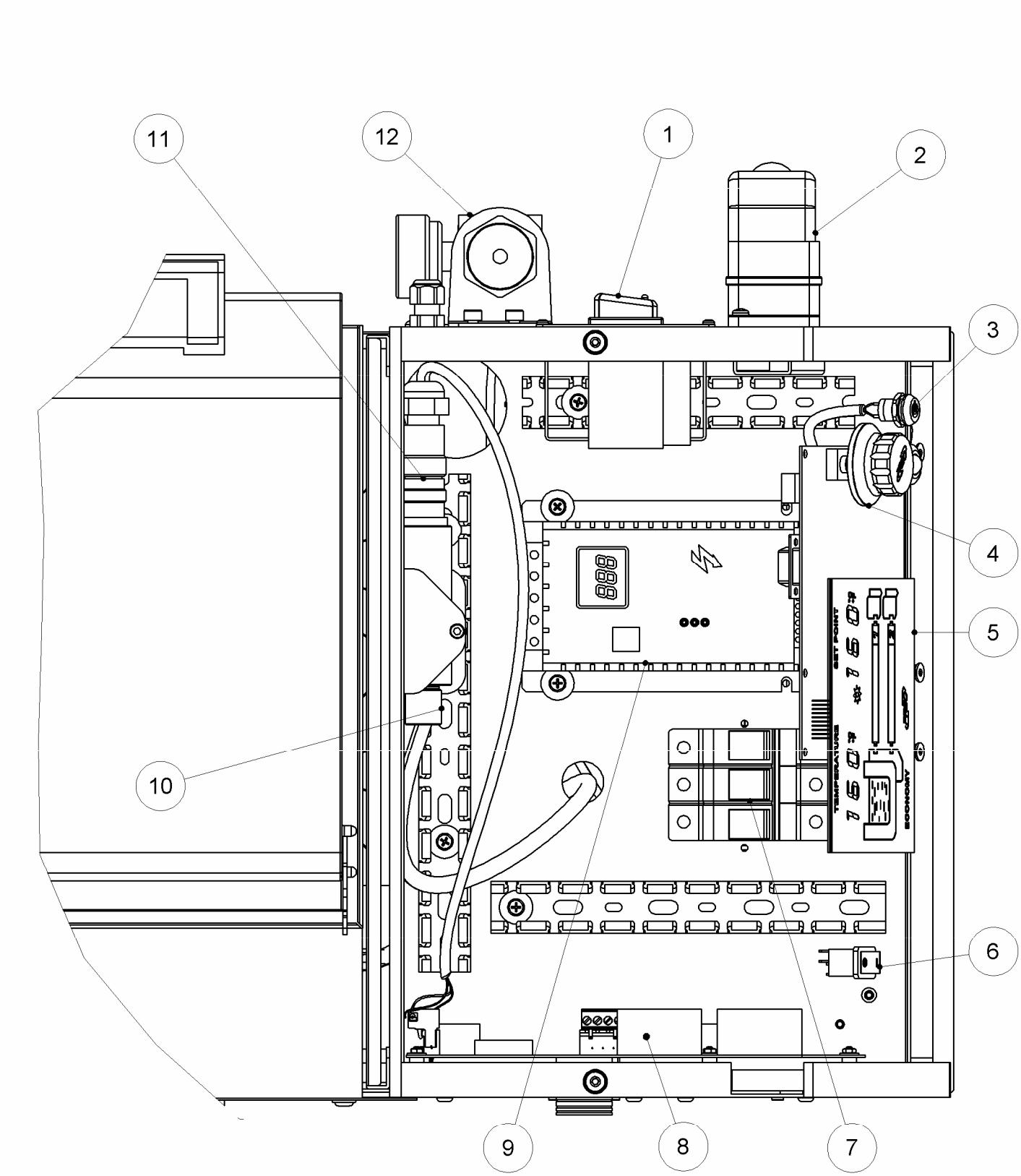
© Copyright 2006 PREO SRL
All rights reserved

FF3000 EASY SERIES QUICK RELEASE VALVE



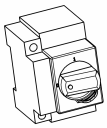
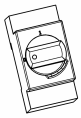
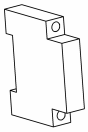
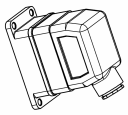
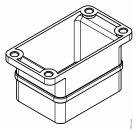
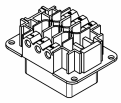
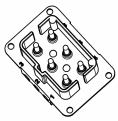
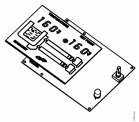
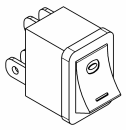
© Copyright 2006 PREO SRL
All rights reserved

WDEAW530E2MV COMPUTER BOX GROUP EASY SERIES

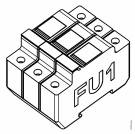
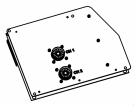
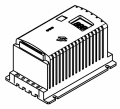


© Copyright 2006 PREO SRL
All rights reserved

WDEAW530E2MV COMPUTER BOX GROUP EASY SERIES

POS	CODE	IMAGE	DESCRIPTION	UM	Q.TY	NOTES
1	KKE1117		Main switch group easy	NR	1	
	----		Selector 0 – 1 3x16A easy series	NR	1	
	----		Neutral module for selector 0 – 1 3x16A easy series	NR	1	
2	KKE1136		Power supply connector group easy series	NR	1	
	----		6-pole mobile case easy series	NR	1	
	----		6-pole fixed case easy series	NR	1	
	----		6-pole pin insert easy series	NR	1	
	----		6-pole socket insert easy series	NR	1	
3	KKE1175		Computer keyboard lock key complete group	NR	1	
4	KKD1026		Easy computer control knob	NR	1	
5	MA1000		LCD control card easy series	NR	1	
6	KKE1160		Luminous green switch 10° 0/1	NR	1	

© Copyright 2006 PREO SRL
All rights reserved

7	KKE1200		Fuse holder 10 x 38 mm 3 poles 32A	NR	1	
8	MA1102		2-channel power card easy series	NR	1	
9	PPR3454W		0.37 kw inverter for gear pump	NR	1	
	MP5050		Transformer Easy	NR	1	
10	TGR1195		Connector for pressure transmitter MN series	NR	1	
11	TGR1194		Pressure transmitter MN series	NR	1	
12	TGR1162		Filter regulator group ¼ bit easy	NR	1	
	----		Filter regulator ¼ bit easy	NR	1	
	----		Pressure gauge 0-6 bar 1/8” diam. 40 mm	NR	1	
	----		Filter regulator ¼ bit fixture bracket	NR	1	

© Copyright 2006 PREO SRL
All rights reserved

Since 1938

PREO

Your quality choice !

GLUE APPLICATION SYSTEMS DESIGN AND DEVELOPMENT

UCIMA ICIM IQNet

ISO 9001 - Cert. N. 3565/0

USE AND MAINTENANCE MANUAL

- EAW530E2MV -

- EDITION 03/2006 -

© Copyright 2006 PREO SRL - All rights reserved - Subject to change without advanced notice - Printed in Italy

PREO SRL
Via Volta, 7 • 20094 Corsico (MI) • Italia
Tel: 02 48601260 • Fax: 02 4503323 • Email: italia@preo.it

www.preo.it

PREO SRL - Export Department
Via Volta, 7 • 20094 Corsico (MI) • Italy
Tel: +39 2 45861343 • Fax: +39 2 4503323 • Email: world@preo.it