

MANUALE D'USO OPERATING INSTRUCTION

DS-1000

Dosatore semi automatico per smalti
Semi automatic dispenser for enamels



ENGLISH

Content	Page
1. Introduction	
1.1. Guide to consultation	13
1.2. General warnings	13
1.3. Technical characteristics	14
1.4. Movement, transport and unloading	14
1.5. Conformity to directives and standards	14
2. Instructions for installation and maintenance	
2.1. Place of installation and positioning	14
2.2. Electrical and compressed air connections	14
2.3. Safety devices	14
2.4. Diagnostics of any faults	15
2.5. Replacement of any parts	15
3. Instructions for use	
3.1. Preliminary warnings	15
3.2. Control panel and brief instructions	15-16
3.3. Cleaning and ordinary maintenance	17
3.4. Recommended use	17
4. General diagrams	
4.1. Spare parts and supply sets	18
4.2. Installation diagrams	19
4.3. Wiring diagrams	20
5. CE Declaration	21

Thank you for placing your trust in us by purchasing one of our products. Remember, before operating the device, carefully read the manual. This publication contains all the information necessary to correctly use and maintain the device. The scope of this manual is to allow the user, especially the direct user, to implement all measures and prepare all the equipment, human resources and materials necessary for safe and long-lasting use. This manual must be delivered to the person responsible for use who will keep it in an adequate place, to make it available for consultation and ordinary maintenance. In the event the device is re-sold, the manual should be provided alongside it. This manual is also aimed at installation technicians for start-up operations and extraordinary maintenance. The intended use and configurations planned for the machine are those solely permitted by the manufacturer; do not attempt to use the machine in any other way than instructed. The intended use indicated is only valid for machines in full structural, mechanical and system efficiency. The manufacturer cannot be held in any way liable for improper use or use by unqualified staff, for changes and/or repairs carried out by oneself or by unauthorised staff and for use of non-original spare parts or spare parts not specifically for the device in question.

1.1. Guide to consultation

Pay particular attention to the texts highlighted in bold, with big font or underlining, as they refer to particularly important operations or information. The manual must be kept until the machine is finally disposed of in a suitable location, to ensure it is always available for consultation in the best state of conservation. In the event it gets lost or worn, the replacement documentation should be requested directly to the manufacturer or the dealer.

1.2 General warnings

Carefully read the instructions in this manual to know the precautions to take for installation, maintenance and best use. This device should only be used for the sole purpose for which it was designed, that is:

dispensing of decorative epoxy enamels or glues.

The device is intended for professional use and must be used by qualified staff. This device before leaving the factory underwent testing and calibration by expert, qualified staff, to guarantee the best operational results. Installation and/or any repairs or calibration that is necessary afterwards must be carried out with absolute care and attention by qualified staff. For this reason we recommend you always contact the dealer that sold it to you, specifying the problem, the model and the serial number of the device you own. In the event of repairs and/or replacement of parts, extraordinary maintenance, faults or anomalous functioning, only contact staff authorised by the manufacturer and equipped with the necessary professional requirements. Only use original spare parts (refer to the codes listed on the enclosed list). Before installation check that values of the electrical and air distribution are compatible with the values indicated in the technical characteristics of this manual. Electrical safety of the device is ensured upon connection to an efficient earthing system (remember that this must be periodically serviced) and in compliance with the national and local standards in force. The use and supervision of the device during use must only be entrusted to specifically trained people. Avoid installing the device near heat sources such as open fires, etc. Never, for any reason, block any suction openings. Ask the installation technician for instructions on the correct use of the compressed air system.

The manufacturer cannot be held liable in the event of non-compliance with the standards contained in this manual, both by the user and the technician responsible for installation. Any accidents or damage caused by the aforementioned non-compliance cannot be attributed to the manufacturer.

The manufacturer cannot be held liable for possible inaccuracies contained in this booklet attributable to transcription or print errors. The manufacturer reserves the right to make changes to the product where such changes are deemed useful or necessary, without impacting on the essential characteristics. If you have further questions after reading the instructions for use, contact:

BERKEM srl

Via della Provvidenza, 63
35030 Rubano (PD)

Italy

Tel. +39 049 8978072

Fax +39 049 635018

www.berkem.it

info@berkem.it

1.3 Technical characteristics

- Timer: Programmable from 0.01 - 1 sec ; 0.1 - 10 sec ; 0.2 - 20 sec ; 0.3 - 30 sec
- Repeatability tolerance: +/- 0.5%
- Dimensions: 235x225x63 mm
- Weight: 2.2 Kg
- Input voltage: 220-240V - 50 Hz AC
- Inner voltage: 24V DC
- Minimum volume supplied: 0.01ml
- Input air pressure: 2.5 - 7 bar (35-100 psi)
- Output air pressure: 0.1 - 5.5 bar (1 - 78 psi)

1.4 Movement, transport and unloading

Carefully unpack the device. Look out for damage and compare the content of the package with the list in point 4.1 of the manual. Damage or differences compared to this list should be immediately made known to the supplier. The packaging of the device is carried out by the company in compliance with the signed agreements, on each occasion, or based on the destination country or the means of transport used. After installation, the packaging can be re-used or sent for disposal in compliance with the standards in force in the client's country. The dispenser must be transported in its packaging near the place of installation. For all lifting and movement operations of the dispenser or separate parts transported autonomously, consult specialist staff.

1.5 Conformity to directives and standards

This dispenser complies with the specifications and safety requirements indicated in the following European Directives and their specific, associated standards:

- **Machinery Directive 2006/42/EC and subsequent amendments**
- **Machinery Directive 2006/95/EC and subsequent amendments**
- **Electro-Magnetic Compatibility Directive 2004/108/EC and subsequent amendments**

Following such conformity, the manufacturer declares its products comply with the European legislation in force and therefore are equipped with regular CE marking that enables their sale in European countries. Furthermore, the functional parts of the device have noise emission **not exceeding 70 dB (A)**.

2.1 Place of installation and positioning

The tool must be located on the work bench equipped with fume suction. It is good practice to avoid dust, humidity, corrosive gas and proximity to heat sources by remembering that the work temperature of the tool can vary in the range of 0-40 degrees.

2.2 Electrical and air connection

The dispenser can be connected in any location with a mains voltage of 230V/ 50-60 Hz. If the mains voltage is different, you should install an appropriate transformer upstream, not supplied by Berkem srl. Ensure an efficient earthing system is installed.

The dispenser, to work, must also have a compressed air system connected to it. Ensure the operating pressure values are not outside the parameters outlined in point **1.3 "Technical characteristics"**

2.3. Safety devices

The dispenser is equipped with an input line fuse and a fuse inside the AC/DC transformer. If the device isn't working due to a short circuit, firstly replace the outer fuse on the back of the dispenser (Fig. 2 -point 11). If having replaced the fuse the tool is still not working, the device should be sent to the Berkem Italy support centre.

2.4 Diagnostics of any faults

Problem	Cause	Solution
The dispenser won't turn on	Burnt fuse No electricity Power cable disconnected	Replace the primary fuse Check the presence of electrical current Ensure you have connected the mains cable well
The varnish/glue isn't coming out of the dispensing syringe	No pressure Blocked syringe	Check the compressor and the relevant manifolds Change the dispensing needle and check the varnish is not too thick

2.5 Replacement of any parts

The replacement of parts and their adjustment are extraordinary maintenance operations which should be carried out by an authorised installation technician. Before starting any maintenance operation you need to switch off the main switch, or take out the plug, to cut electrical power. You also need to disconnect the compressed air tubing.

Replacing the primary fuse

With an adequately sized screwdriver, force the fuse covering away. (Fig.2 - point 11). Replace the fuse with one of equal characteristics as outlined on the fuse itself.

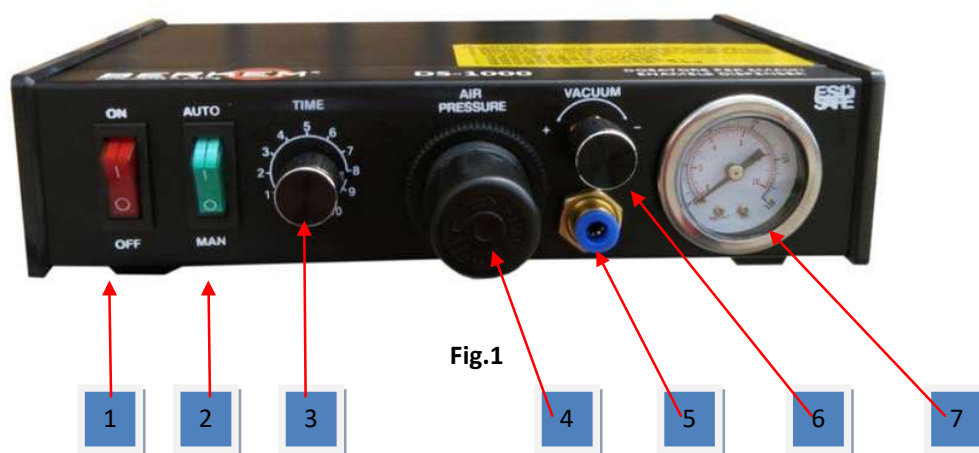
3.1 Preliminary warnings

The device is intended for professional use and must be used by trained staff. Use of the device is only permitted for the purpose of its design, i.e. dispensing of epoxy enamels or glues. Installation and all maintenance operations must be carried out by authorised staff and equipped with the professional requirements. For repairs, contact Berkem Italy only. Non-compliance with these obligations causes any liability of the manufacturer to become void.

Carefully read this manual as it contains information and instructions on safe use, installation and maintenance.

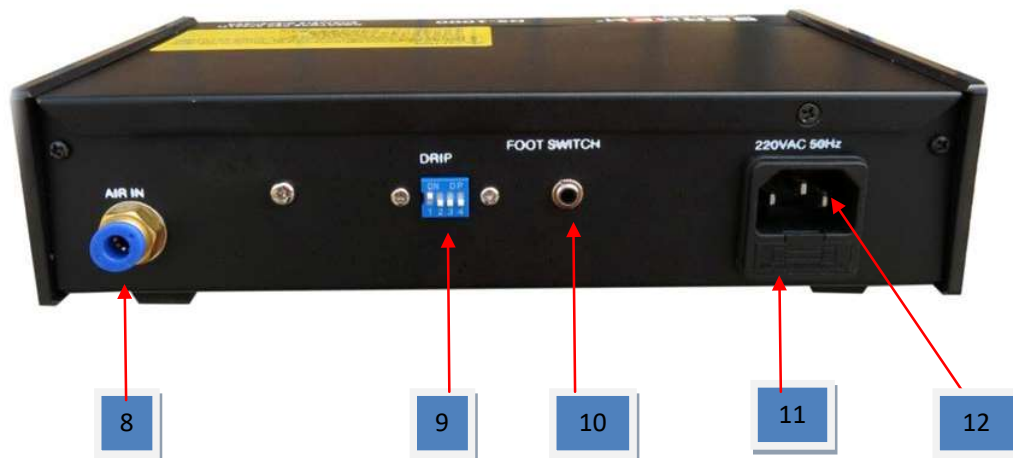
3.2 Control panel and brief instructions

Figure 1 – Description of commands



1. Main ON/OFF switch
 - a. Following connection to the mains and the compressed air, press to switch the machine ON
2. AUTOMATIC/MANUAL switch
 - a. If positioned on AUTOMATIC, the dispenser supplies the varnish based on the time set via selector 3.
 - b. If positioned on MANUAL, the dispenser only supplies the varnish by activating the foot switch (Fig. 3-21) or the manual switch (Fig. 3.20).
3. Dispensing time regulator
 - a. Function only if point 2 is set on AUTOMATIC. The dispensing time varies based on the setting of the selector placed on the back of the dispenser (Fig. 2 point 9 – DRIP)
4. Pressure regulator
 - a. To regulate output pressure in the syringe, turn the knob in a clockwise direction to increase it, or in an anti-clockwise direction to decrease it. NOTE: to activate/release the adjustment knob, you need to “lightly pull it” outwards. Adjustment of the output pressure is displayed on gauge 7.
5. Connection to the air output tube
 - a. Connect a flexible tube for compressed air D.6mm to connect in turn to the dispensing syringe
6. “Drip-proof” regulator
 - a. It is possible that after dispensing the varnish a drop of glue forms on the tip of the syringe. By activating knob 6 you create a light vacuum inside the syringe to prevent any drops of varnish falling.
7. Gauge
 - a. Indicates the output pressure, i.e. the pressure at which the varnish is dispensed. NEVER exceed a 7 bar pressure as indicated in the technical characteristics.

Figure 2 – Description of commands



8. Air supply input
 - a. Connect the compressor to the compressed air tube d. 6mm
9. Dispensing time regulator
 - b. If set as in the figure, the automatic dispensing time you can set via the regulator 3 in figure 1 has a range from 0.01 - 1 sec.
 - c. If set by raising the white tabs 1 and 2, the automatic dispensing time you can set via the regulator 3 in figure 1 has a range from 0.02 - 10 sec.
 - d. If set by raising the white tabs 1, 2 and 3, the automatic dispensing time you can set via the regulator 3 in figure 1 has a range from 0.02 - 20 sec.
 - e. If set by raising the white tabs 1, 2, 3 and 4, the automatic dispensing time you can set via the regulator 3 in figure 1 has a range from 0.03 - 30 sec.
10. Input by connecting the control foot switch or the manual control switch
 - f. Connect the activation foot switch (Fig.3 - 21)
 - g. Connect the activation switch (Fig.3 - 20)
11. Primary fuse
12. Power supply cable input

3.3 Cleaning and ordinary maintenance

The dispenser must be well cleaned following any use to avoid a build up of varnish or glue scale. The syringes are generally disposable since perfect cleaning is very difficult. The same can be said for the needles: once used, they should be thrown away and replaced with new needles.

Disposal

The dispenser must be disposed of separately from domestic waste. Differentiated waste systems are in place for the various countries to dispose of electrical and electronic waste. For further information contact your local authority. Non-compliance with the standards in force foresees sanctions disciplined by the country of origin.

Information ownership

This manual contains confidential information. All rights reserved. This manual cannot be reproduced or photocopied, totally or partially, without the prior written consent of Berkem srl. Use of this documented material is only permitted to the client to which the manual was provided along with the device and only for the purposes of installation, use and maintenance of the device to which the manual refers. Berkem srl declares that the information contained in this manual is consistent with the technical and safety specifications and for the device to which the manual refers. The manufacturer cannot assume any liability for direct or indirect damage to people, property or animals as a result of improper use of this manual or the device. Berkem srl reserves the right to make changes or improvements without prior warning to this manual and its devices.

Residual risks

The dispenser was designed and manufactured exclusively to dispense epoxy enamels and glues. Any other use is forbidden. It is always advisable to use the dispenser with suction since the epoxy products used are often toxic. It is also forbidden to eat or smoke when using the dispenser. It is important to always use latex gloves when handling chemical substances such as enamels and glues.

It is important never to activate the dispenser if the syringe is obstructed since it could create an excessive build-up of pressure inside the syringe!! (replace the needles and syringe after each use) Remember that excessive line pressure could cause the syringe or the manifolds to explode. We also recommend use of protective goggles.

3.4 Recommended use

Having prepared all the manifolds as previously described, mix the varnish with the catalyser (in relation to this refer to the technical data sheets of the products). Pour the mix in the syringe, connect the syringe to the specific container and start working using the foot switch or the manual switch.

It is important to remember that once the catalyser has been added to the varnish, the varnish will start to harden, the level of pressure therefore must be adjusted based on the viscosity/density of the varnish and the desired dispensing speed. These values are therefore subjective based on the user's habits. In general, we recommend an initial adjustment of 2.5-3.0 bar.

4.1 Spare parts and sets supplied

Figure 3 – Sets supplied and spare parts



- 13. dispenser DS-1000
- 14. input air manifold (connect to compressor)
- 15. syringe support
- 16. power supply cable
- 17. syringe air manifold with closure device
- 18. 30 ml syringe
- 19. tips
- 20. manual activation device
- 21. activation foot switch

Spare parts

Code	Description
VA016201	SPARE DS-1005ML - 5 ml syringe
VA016301	SPARE DS-2005ML – connector for 5 ml syringes
VA016001	SPARE DS-1010ML - 10 ml syringe
VA016101	SPARE DS-2010ML – connector for 10 ml syringes
VA016501	SPARE DS-1030ML - 30 ml syringe
VA016401	SPARE DS-2030ML -connector for 30 ml syringes
VA016801	SPARE DS-G14 – tip measurement GAUGE 14 - D.ext/D.int 1.80/1.63mm
VA016901	SPARE DS-G15 – tip measurement GAUGE 15 - D.ext/D.int 1.80/1.45mm
VA017901	SPARE DS-G16 – tip measurement GAUGE 16 - D.ext/D.int 1.60/1.29mm
VA017001	SPARE DS-G18 – tip measurement GAUGE 18 - D.ext/D.int 1.25/1.024mm
VA017101	SPARE DS-G19 – tip measurement GAUGE 19 - D.ext/D.int 1.00/0.912mm
VA017201	SPARE DS-G20 – tip measurement GAUGE 20 - D.ext/D.int 0.90/0.812mm
VA017301	SPARE DS-G21 – tip measurement GAUGE 21 - D.ext/D.int 0.80/0.723mm
VA017401	SPARE DS-G22 – tip measurement GAUGE 22 - D.ext/D.int 0.68/0.664mm
VA017501	SPARE DS-G23 – tip measurement GAUGE 23 - D.ext/D.int 0.63/0.573mm
VA017601	SPARE DS-G25 – tip measurement GAUGE 25 - D.ext/D.int 0.50/0.445mm
VA017701	SPARE DS-G26 – tip measurement GAUGE 26 - D.ext/D.int 0.44/0.405mm
VA017801	SPARE DS-G27 – tip measurement GAUGE 27 - D.ext/D.int 0.40/0.361mm
VA018001	SPARE DS-G30 – tip measurement GAUGE 30 - D.ext/D.int 0.30/0.255mm
VA018101	SPARE DS-G32 – tip measurement GAUGE 32 - D.ext/D.int 0.23/0.205mm

4.2 Installation diagrams

Figure 4 – Front manifolds



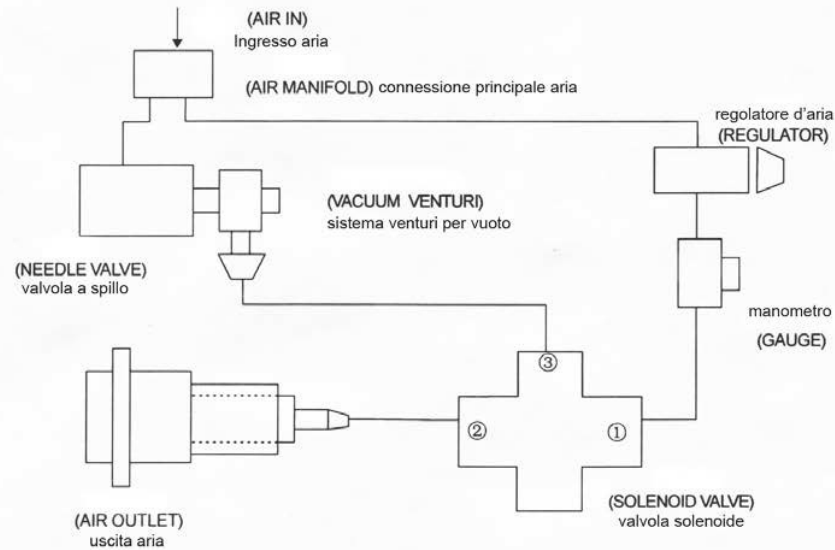
Figure 5 – Rear manifolds



4.3 Wiring diagrams

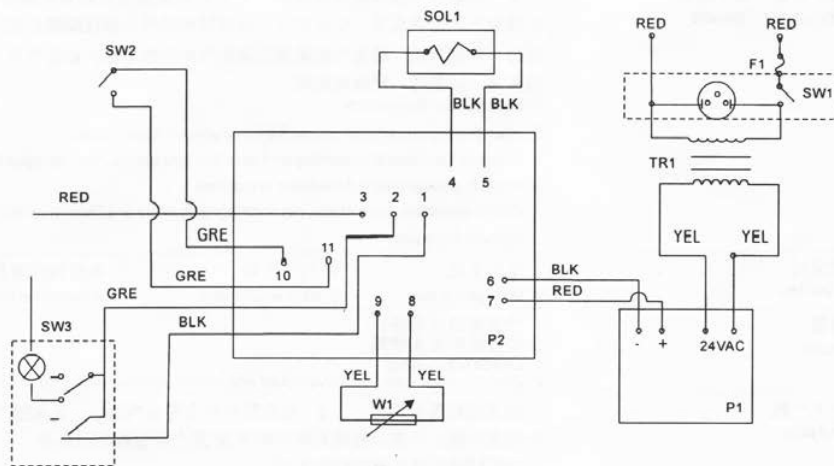
CONTROLLO DEL SISTEMA PNEUMATICO

SEMI DISPENSING CONTROLLER PNEUMATIC SYSTEM



SCHEMA ELETTRICO DEL DOSATORE SEMI-AUTOMATICO

SEMI DISPENSING CONTROLLER ELECTRICAL SCHEMATIC



F1 : Fusibile 0.5A Fuse 0.5am.
W1 : Temporizzatore Time-set potentionmeter
P1 : Alimentazione Power board
P2 : scheda temporizz. Time set board
SOL1: Valvola solenoide Solenoid valve

SW1 : Tasto accensione Power switch
SW2 : Interr. Pedale Foot switch
SW3 : interr. modalità Mode switch
TR1 : Trasformatore Transformer AC/DC



Declaration of conformity

BERKEM srl

Via della Provvidenza, 63
35030 Rubano (PD)
Italy

Tel. +39 049 8978072

Fax +39 049 635018

www.berkem.it

info@berkem.it

DECLARES THAT

Dispensing device model **DS-1000**

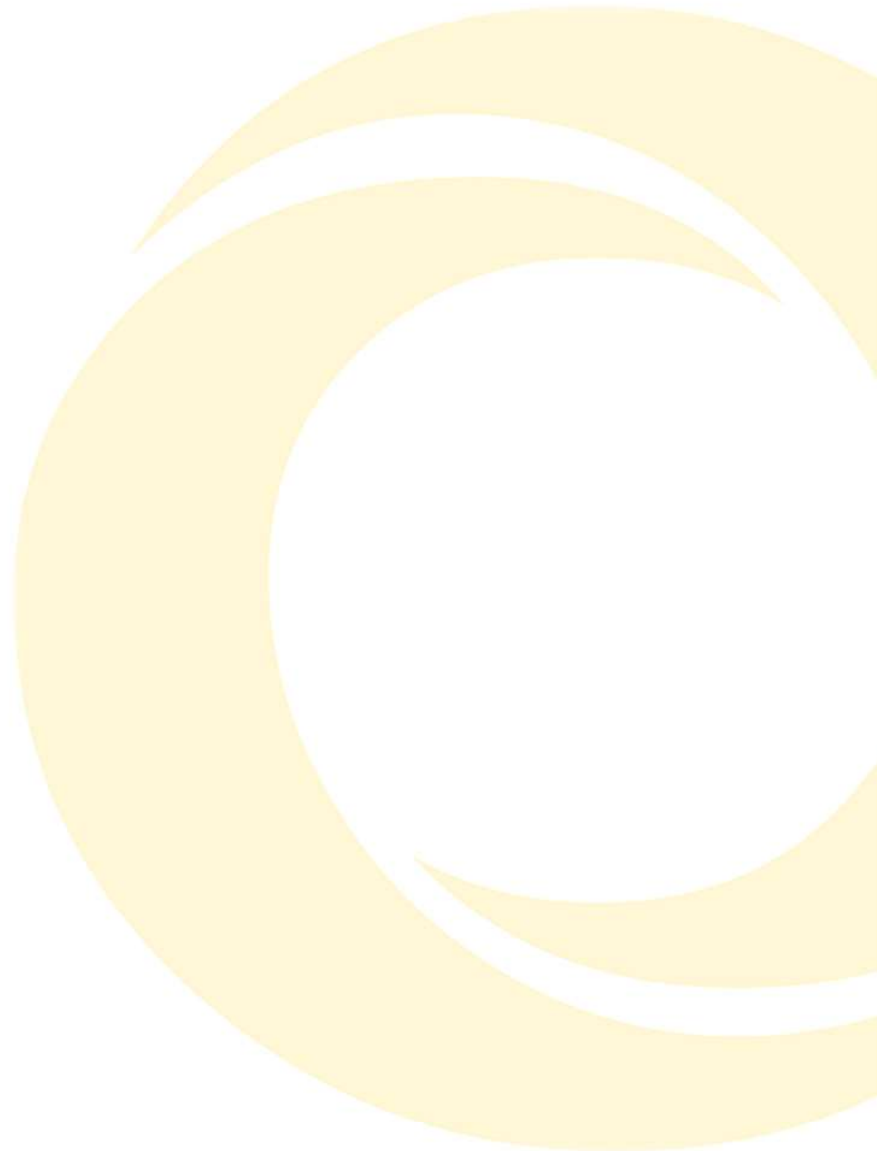
Complies with the following directives:

Machinery Directive 2006/42/EC and subsequent amendments

Machinery Directive 2006/95/EC and subsequent amendments

Electro-Magnetic Compatibility Directive 2004/108/EC and subsequent amendments

Legal Representative
Paolo Bersaglio



Rev.1_2013