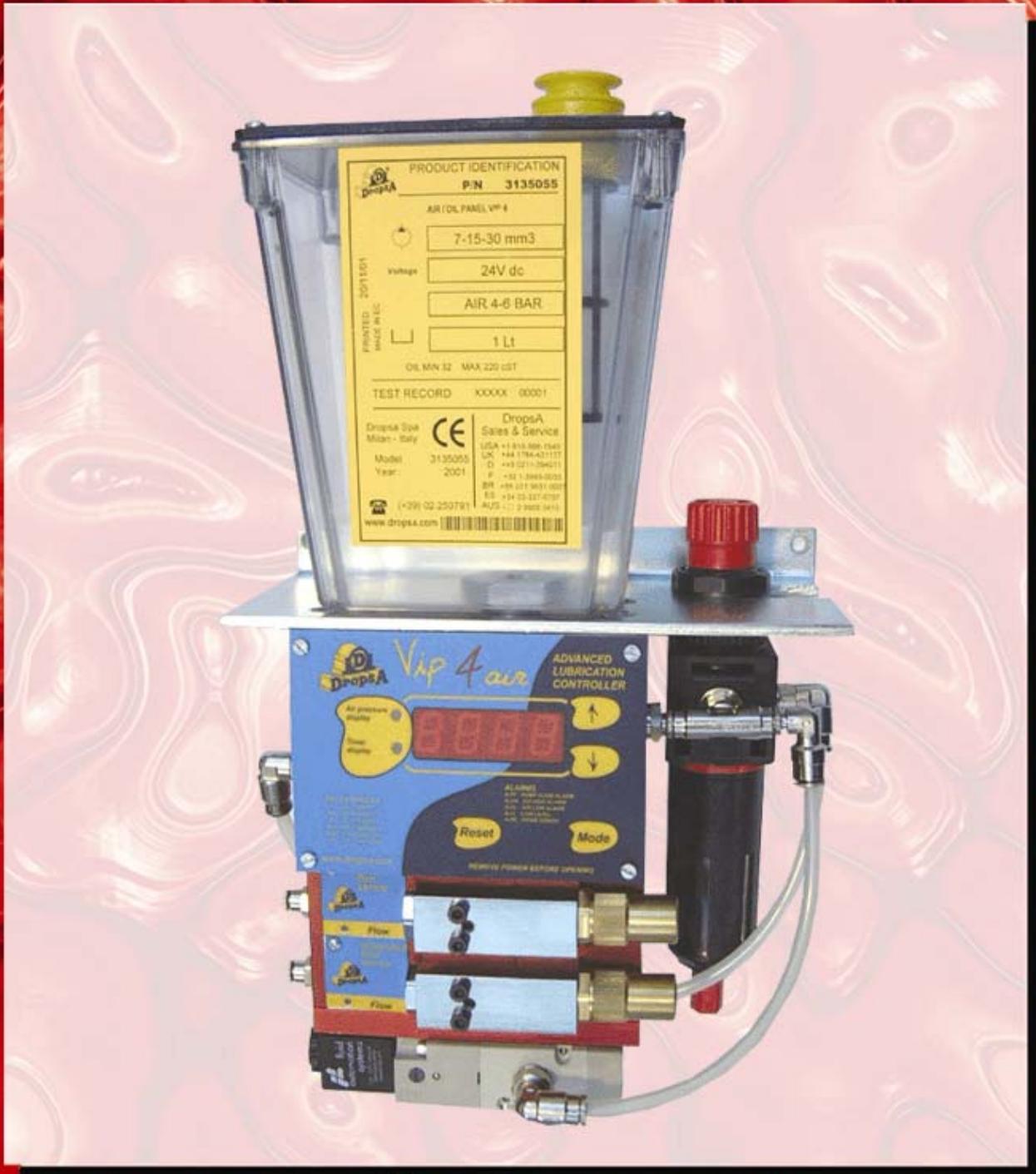


VIP4Air

**Minimal Air/Oil
Lubrication System**



Automatic Lubrication Systems

GB VIP4AIR



The VIP4Air is the most complete and compact Minimal Air/Oil Lubrication System available today.

Air/Oil Minimal lubrication is a relatively new technology that has been used successfully to substitute costly Oil Re-circulation and non environmentally-sound Mist Systems.

It has provided excellent results both in terms of performance and total system cost.

It is ideal for use on Bearings, High Speed Bearings, Gears and also in certain circumstances on Guides. It is particularly suited to Spindle Lubrication.

In the past, excessive oil has been used often only to ensure that the 'system is working'. This oil generates heat and has to be collected away from the lubrication point.

Dropsa has taken the 'minimal lubrication' concept one step further with the VIP4Air that can achieve ultra-low volume oil discharge and at the same time provide electronic monitoring (using a custom designed differential flow sensor integrated into the unit). This allows true minimal lubrication by applying micro-amounts of lubricants at more frequent intervals whilst giving positive feedback that oil is correctly being injected and mixed into the air stream.

The **VIP4Air** System contains all components necessary to achieve and monitor optimum minimal Air/Oil Lubrication.

PRODUCT FEATURES :

- **1 – 8 Lubrication Points** each with independent monitoring
- **0.005 – 0.030 cm³** (0.0003 – 0.0018 cu.in) of oil per discharge (standard settings 7-15-30 mm³)(0.0004 – 0.0009 – 0.018 cu.in).
- **Tamperproof** adjustment 'rings' avoids end-user modifications.
- Integrated Differential Flow sensor gives **positive feedback** of Air/Oil lubrication.
- Fully Electronic Controls = quick Set-up and interfacing to host.
- **Integrated Mixing Air Pressure Transducer** provides accurate and quick setting of Air Pressure on the electronic display, as well as providing alarms for blocked or broken lubrication lines via high/low air pressure monitoring.
- **Automated Priming Sequence** for quick and easy installation.
- **Integrated & Compact** – Connections are internal to the unit

Air/Oil Minimal Lubrication :

Continuous Air Flow:	Cyclic micro-oil Injection:
Provides Cooling	Reduces friction
Provides Transport Medium	Minimal quantities avoid 'churning' and heat generation.
Prevents Contamination and ingress of water or dirt.	No Excess Oil
	Frequent lubrication intervals help thermal stability of system.

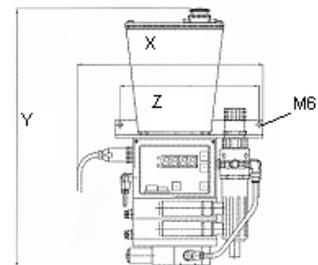
Dropsa is a leading international manufacturer of Automatic Lubrication Systems and can assist with a wide range of technical and application advice, systems and components. Contact one of our offices or distributors for more information.

N° Pumps	VIP4Air 24 V DC	VIP4Air 110 V AC
1	3135064	3135065
2	3135055	3135056
3	3135067	3135068
4	3135070	3135071
5	3135073	3135074
6	3135076	3135077
7	3135079	3135080
8	3135082	3135083

Attention: connector not included, to be ordered separately; connector, p/n 1639115 + cable 2 mt

Technical Characteristics VIP4Air Lubrication System	
Voltage	24 V DC 110 V AC
Power	10 W
Air Pressure Inlet	5 ÷ 8 bar (73.5 ÷ 117.6 psi)
Output Signal	Remote Alarm relay: max 250 V 1 A NO / NC
Operating Temperature	-5 ÷ +55 °C (23 ÷ 131°F)
Humidity	90% max
Protection	IP-44
Lubricants	Mineral Oils
Oil Viscosity	32 ÷ 220 cSt (150 ÷ 1018 SUS)
Reservoir capacity	1 lt

Elements	Y	X	Z	Depth
1	331	270	200	125
2	359			
3	387			
4	415			
5	443			
6	471			
7	499			
8	527			



LUBE Control

Lube Control Pty Ltd
Providing lubrication solutions!

Unit 5/53 Norfolk Rd,
Marion, SA 5043
t: (08) 8298 5563
f: (08) 8298 6253
e: info@lubecontrol.com.au
www.lubecontrol.com.au

U.S.A.
Dropsa Corporation
t.(+1) 586-566-1540f.(+1) 586-566-1541

U.K.
Dropsa (UK) Ltd
t.(+44) 01784-431177
f.(+44) 01784-438598

BRAZIL
Dropsa
t.(+55) 011-563-10007
f.(+55) 011-563-19408

GERMANY
Dropsa GmbH
t.(+49) 0211-394-011
f.(+49) 0211-394-013

AUSTRALIA
Dropsa Australia Ltd.
t.(+61) 02-9938-6644
f.(+61) 02-9938-6611

FRANCE
Dropsa Ame
t.(+33) 01-3993-0033
f.(+33) 01-3986-2636

Web site:
<http://www.dropsa.com>

E-mail:
sales@dropsa.com

WK 32/03
C2033PE

VIP4Tools

LUBRICATION SYSTEM

User and Maintenance Manual

Warranty Information

TABLE OF CONTENTS

1. INTRODUCTION
2. IDENTIFICATION
3. GENERAL DESCRIPTION
4. DESCRIPTION OF COMPONENTS
5. TECHNICAL SPECIFICATION
6. HANDLING AND TRANSPORT
7. PRECAUTION IN USE
8. CONTRAINDICATIONS
9. INSTALLATION
10. INSTRUCTIONS FOR USE
11. MAINTENANCE
12. DISPOSAL
13. REPLACEMENT PART LIST
14. DIMENSIONS VIP 1 LITER
15. DIMENSIONS VIP 3 LITER
16. GARANTEE
17. DECLARATION OF CONFORMITY
18. DISTRIBUTORS

Manufacturer	DropsA SpA
Product	VIP4Tools
Year	2001
Certification	

1. INTRODUCTION

This user's and maintenance manual refers to VIP4Tools air/oil lubrication system.

This manual should be conserved in such a way that it remains undamaged over time and is readily available to personnel needing to consult it.

Further copies of this manual, updates or clarifications can be obtained by directly contacting the Technical Sales Office at Dropsa.

The manufacturer reserves the right to update the product and/or the user's and maintenance manual without the obligation to revise previous versions. It is however, possible to contact the Technical Sales Office for the latest revision in use, or to consult our web site at <http://www.dropsa.com>.

The use of the equipment referred to in this manual must be entrusted to qualified personnel with a basic knowledge of mechanics, hydraulics and electrical systems.

It is the responsibility of the installer to use tubing suitable for the system; the use of inadequate tubing can cause problems with the pump, injury to persons and create pollution.

Loosening of connections can cause serious safety problems; carry out a check before and after installation and, if necessary retighten them.

Never exceed the maximum working pressure values permitted for the panel and the components connected to it.

Before any maintenance or cleaning operation disconnect the power supply, close off the air supply and discharge the pressure from inside the equipment and the tubing connected to it.

Do not subject the panel, the connections, the tubing or parts under pressure to violent impacts; damaged tubing or connections are dangerous and should be immediately replaced.

After long periods of inactivity check air tightness of all parts subjected to pressure.

Personnel must use personal protection equipment, clothing and tools adequate for the location and the use of the panel both during its operation and during maintenance operations.

The panel, and any accessories mounted on it, should be carefully checked immediately on receipt and in the event of any discrepancy or complaint the Dropsa SpA Sales department should be contacted without delay.

Dropsa SpA declines to accept any responsibility for injuries to persons or damage to property in the event of the non-observance of the information presented in this manual.

Any modification to component parts of the system or the different destination of use of this system or its parts without prior written authorization from Dropsa SpA will absolve the latter from any responsibility for injury to persons and/or damage to property and will release them from all obligations arising from the guarantee

2. IDENTIFICATION OF THE MACHINE

A yellow plate showing the product code and the basic characteristics is mounted on the front of the oil tank.

3. GENERAL DESCRIPTION

The **VIP4Tools** panel is to be utilized for 'on mandrel' applications, without controls on the machine, for the lubrication of tooling and chains.

Designed for high performance at a low cost, it is distinguished by its compactness.

The system comprises a pneumatically controlled mini-pump and the mixer base. The mini-pump can be manually regulated to cover a wide range of needs (0-30 mm³). The modular design of the system makes it extremely versatile; up to a maximum of **8** mixer bases can be installed. The system can be timed by adding the pneumatic impulse generator kit P/N 3132572 or by controlling it from the machine PLC.

4. DESCRIPTION OF COMPONENTS

Central VIP4Tools Unit

The central unit of the lubrication system is composed of the following items:

- a *Tank*, made of transparent plastic material, compatible with lubricants on the market.
- a *System* for the regulation of the mixer air
- a modular *Subframe*
- a Samba type *Minimum level indicator*,
- an adjustable *Mini-pump*

1 Liter tank



3 Liter tank



ES:(version complete with timer kit)

5. TECHNICAL SPECIFICATIONS

CHARACTERISTIC	VIP4Tools lubrication panel
Air supply pressure	5 - 8 bar
Working temperature	-5 - +55 °C
Working humidity	90% max
Permitted lubricants	Mineral - synthetic
Oil viscosity at working temperature	32 - 320 cSt
Conservation temperature	-20 - +65 °C

SAMBA LEVEL	
Temperature:	-10°C - +80°C
Maximum switching power:	50W 5V
Maximum current:	1 A
Maximum voltage:	220 V ac

WARNING: DO NOT supply the machine with voltages or pressures other than those indicated on the specification plate.

6. HANDLING AND TRANSPORT

Prior to dispatch VIP4Tools lubrication panels are carefully packed in a cardboard carton. During transportation and storage maintain the equipment the right way up as indicated on the carton. On receipt, check that the packaging is not damaged and store the equipment in a dry place.

7. PRECAUTIONS IN USE

It is necessary to carefully read the warnings and the risks involved in using the lubrication panel. The operator must understand the functioning of the unit by studying the user's manual.

Electric currents

No intervention must be attempted on the equipment without first having disconnected the electrical power supply (electric level) and ensuring that it cannot be reconnected during the intervention. All installed equipment, electrical, electronic, tank and base structure, must be connected to the ground line. **(see paragraph 10.7).**

Flammability

The oil employed in the lubrication circuit is not normally flammable. It is nonetheless indispensable to take every precaution against the oil coming into contact with very hot parts or open flames.

Pressure

Prior to any intervention on the equipment ensure that pressure is released from all branches of the lubrication circuit. Failure to do this could result in oil being discharged under pressure where connections or components are disassembled **(see paragraph 10.6).**

Noise

The VIP4Tools lubrication panel does not emit excessive noise, remaining below 70dB(A).

WARNING: before carrying out the replacement of the mini-pumps, empty the tank of lubricant.

AIR CHARACTERISTICS

Characteristic	Requirement
Pressure at point of connection	Min. 6 Bar
Max. quantity of particles in suspension	15 mg/Nmc
Max. diameter of particles	0.05
Dew point	2° C
Max. quantity of oil in suspension	5 mg/Nmc

Whenever not utilizing natural base oils compatible with existing health regulations, it is necessary to adjust the mixer pressure so as to avoid the formation and dispersion of oil mist into the environment. The mixing pressure is indicatively between 1 and 2.5 Bar.

8. CONTRAINDICATIONS

The VIP4Tools panel does not have any particular contraindications except for the following points:

- The operator coming into contact with fluid due to breakage/opening of supply tubing.
- The operator must be furnished with suitable personal protection clothing/equipment (part VIII – 626 [Safety at Work legislation]).
- Abnormal posture.
- Take note of the indications shown in **paragraph 10.2**.
- Contact with oil during filling/maintenance.
- The operator must be furnished with suitable personal protection clothing/equipment (part VIII – 626 [Safety at Work legislation]).
- Use of unsuitable lubricants.

Main inadmissible fluids.

Fluid	Danger
Lubricants with abrasive additives	High wear rate of contacted parts
Lubricants with silicon based additives	Seizure of the pump
Petrol – solvents – flammable liquids	Fire – explosion – damage to seals
Corrosive products	Corrosion of the pump– injury to persons
Water	Oxidation of the pump
Food substances	Contamination of the substances themselves

9. INSTALLATION

9.1 UNPACKING

Once a suitable location has been identified for the installation, open the package and remove the equipment. Check that the VIP4Tools has not sustained damage during transport and storage.

The packaging material does not require any special disposal precautions, not being in any way dangerous or polluting.

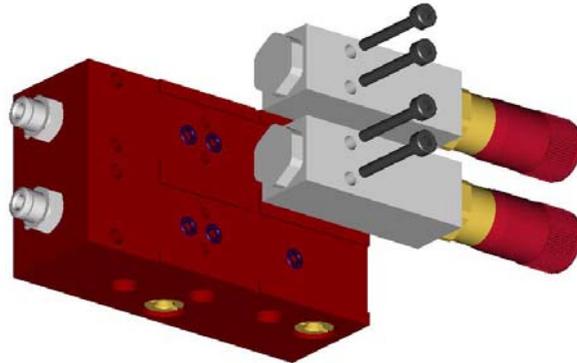
9.2 MOUNTING THE VIP4Tools PANEL

Provide adequate space for the installation, leaving a minimum room of 100 mm around the panel. Mount the VIP4Tools panel at shoulder height to avoid unnatural posture or the possibility of sustaining impacts. Do not install the VIP4Tools in particularly aggressive or explosive/flammable environments or on components subject to vibration.

Only use the supplied mounting bracket with N° 2 holes for Ø6 mm bolts.

9.3 MOUNTING THE MINI-PUMPS ON THE MIXER BASES (for replacement or augmenting)

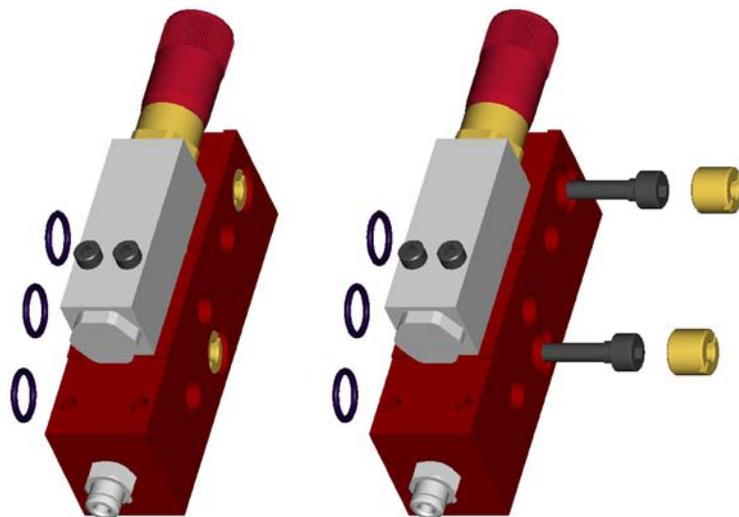
The mini-pumps are mounted on the mixer bases utilizing two securing screws. Particular attention should be paid to the correct positioning of the o-rings between the mini-pump and the mixer base (see diagram below).



9.4 MOUNTING OF THE MIXER ASSEMBLY ON THE VIP4TOOLS (for replacement or augmenting)

To install a new unit proceed as follows:

1. Empty the tank of oil.
2. Disconnect the air supply and unscrew the connections on the base.
3. Connect the new base tightening the two securing screws supplied, paying particular attention to the alignment and positioning of the seals.
4. Reattach the connections to the new base.



9.5 HYDRAULIC CONNECTIONS

The only connection to be undertaken is that of the individual pumps, provided with push-in connections, to the lubrication point. The tubing must be in $\varnothing 4$ mm nylon (obtainable from Dropsa).

9.6 PNEUMATIC CONNECTIONS

Connect the air input to the push-in connector utilizing Ø6 mm nylon tubing both for the pump and the mixer, and provide a stop valve to permit shutting off the supply.

9.7 ELECTRICAL CONNECTIONS

The only electrical connection required is that of the Samba level. (see paragraph 6 Technical Specifications)

N.B.: After all connecting up has been completed ensure the tubing and cables are protected from impacts and are suitably secured.

10. INSTRUCTIONS FOR USE

10.1 STARTING THE VIP4Tools PANEL

Before using the VIP4Tools panel, it is necessary to carry out some preliminary checks:

- check the integrity of the equipment
- check that the electrical and pneumatic connections have been effected correctly
- vent the residual air from the pump using the vent screw, located at the center of the securing screws, until lubricant exits (retighten the vent screw without using excessive force).
- to facilitate the venting, regulate the pumps to maximum flow and operate for some cycles.

10.2 EXCLUDING LUBRICANT DELIVERY FROM AN INDIVIDUAL PUMP:

-Unscrew (anticlockwise) the red cap at the end of the pump to its stop, so completely blocking off the delivery.

10.3 REGULATING LUBRICANT DELIVERY FLOW:

Use the red cap to determine the nominal flow of the individual pump.

- Completely unscrew the pump red regulating cap (0 mm³ flow) turn clockwise for 1.5 turns (min. flow 5 mm³) after which every turn corresponds to an increase in flow of 5 mm³ until reaching 30 mm³ at the 7th turn. **(see table)**

FLOW (mm ³ / stroke)	TURNS
30	6.5
25	5.5
20	4.5
15	3.5
10	2.5
5	1.5
0 = no pump delivery	Completely unscrewed

11. MAINTENANCE

The pump has been designed and constructed so as to reduce maintenance to a minimum. To simplify maintenance it is recommended that the equipment be mounted in an easily reached location (**see paragraph 10.2**).

Periodically check the tubing connections for leaks. Always maintain the equipment in a clean condition in order that any leaks will be immediately evident.

When necessary replace the oil filling filter P/N 3130139.

Periodically empty the pressure regulator condensate trap by rotating the small red valve located at its base.

The machine does not require any special tools for carrying out checks and/or maintenance tasks. It is recommended that suitable tools and personal protection clothing (gloves) are used in accordance with Legislative Decree 626/94 (Safety at Work legislation), and that they are in good condition (DPR 547/55) in order to avoid injury to persons and damage to the machine.

Ensure that electrical, pneumatic and hydraulic supplies are disconnected before undertaking any maintenance tasks.

12. DISPOSAL

During the maintenance of the machine, or in the event of its being scrapped, do not discard polluting components in the environment. Refer to local regulations for their correct disposal. At the time of final disposal of the machine it is necessary to destroy the identification plate and all other documentation.

13. REPLACEMENT PARTS LIST

VERSIONS

N° Dosers	1 Liter tank	3 Liter tank
1	3135091	3135111
2	3135092	3135112
3	3135093	3135113
4	3135094	3135114
5	3135095	3135115
6	3135096	3135116
7	3135097	3135117
8	3135098	3135118

COMPONENTS

PART NUMBER	DESCRIPTION
3130139	Filter, oil filling
1524445	Mixer Base
3103116C	Mini-pump, pneumatic adjustable
5717300	Tube, flexible Ø4
3044338	Tank, 1 Liter
6770072	Tank, 3 Liter
20685	Filter, reducer
1655583	Level, Samba

ACCESSORIES

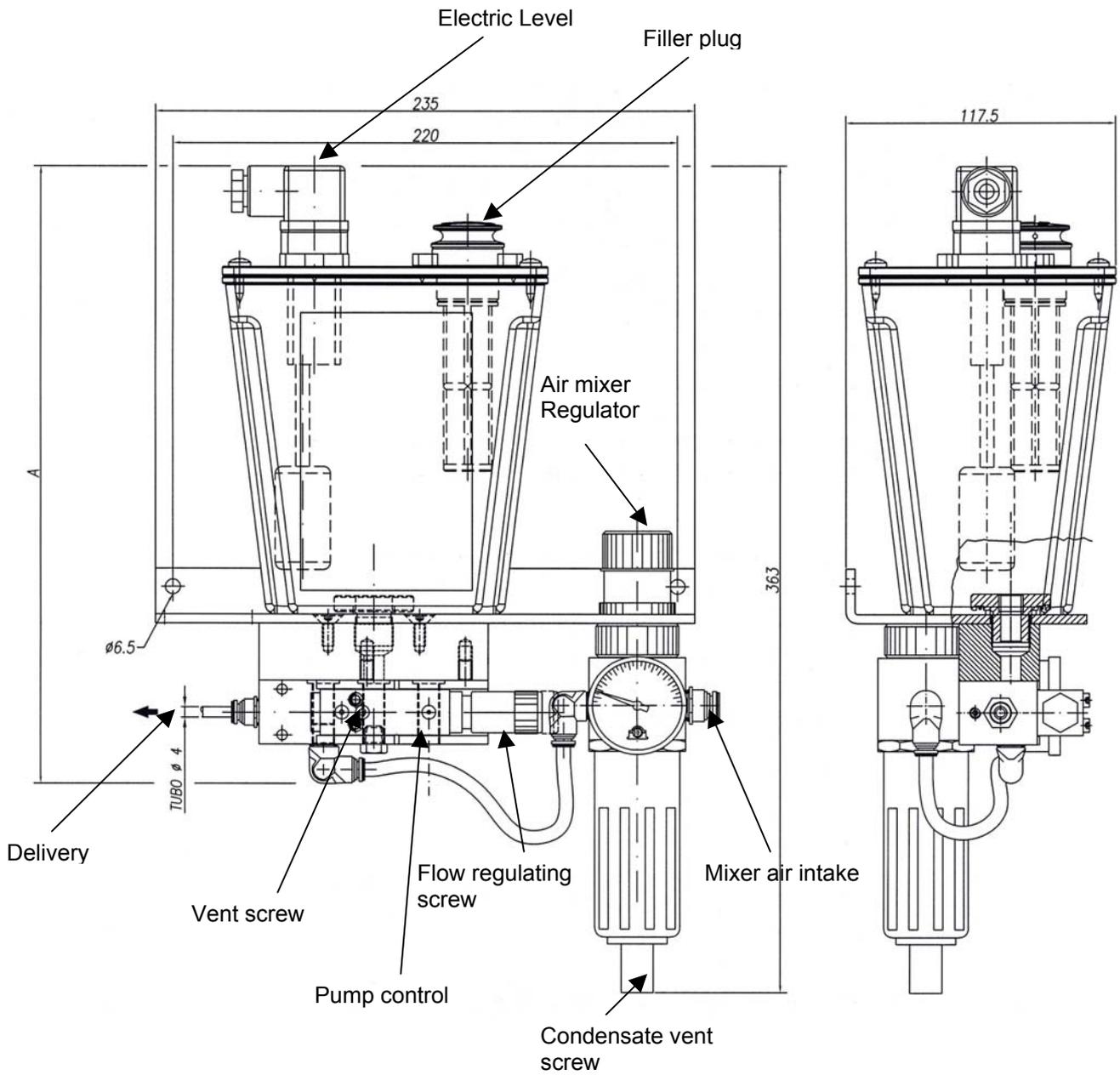
PART NUMBER	DESCRIPTION
5717300	Tube, flexible Ø4
5717301	Tube, flexible Ø6
3132572	Kit, timer
3132574	EV – 24V cc + 39979 + N° 3 53923 + N° 3 16077
3132575	EV – 110V ac + 39979 + N° 3 53923 + N° 3 16077
1524486	Lubrication nozze 32 mm.
1524487	Lubrication nozze 48 mm.
3226661	LRT 30 - Oil for steel - 1 L pack
3226662	LRT 50 - Oil for aluminium - 1 L pack

APPROXIMATE CONSUMPTION FOR LRT OILS (3226661 – 3226662) USAGE

Grams per lubrication nozzle in 8 hours operating time

	ALUMINIUM LEADED BRASS	LEADED STEEL SOFT STEEL	ALLOY STEEL STAINLESS STEEL	REFRACTORY AND TITANIUM ALLOYS
Saw cutting Turning Shearing Cutting off	35-40	50	50	50-60
Boring Drilling Milling Slotting	40-50	50	60	70
Threading Tapping Planing Shaving	60	70	80	90
Threading blind tapping	60	70	80	90-100
Moulding and standard drawing	60	70	80-90	90-100
Broaching Toothing Bending	70	80	90	100/110

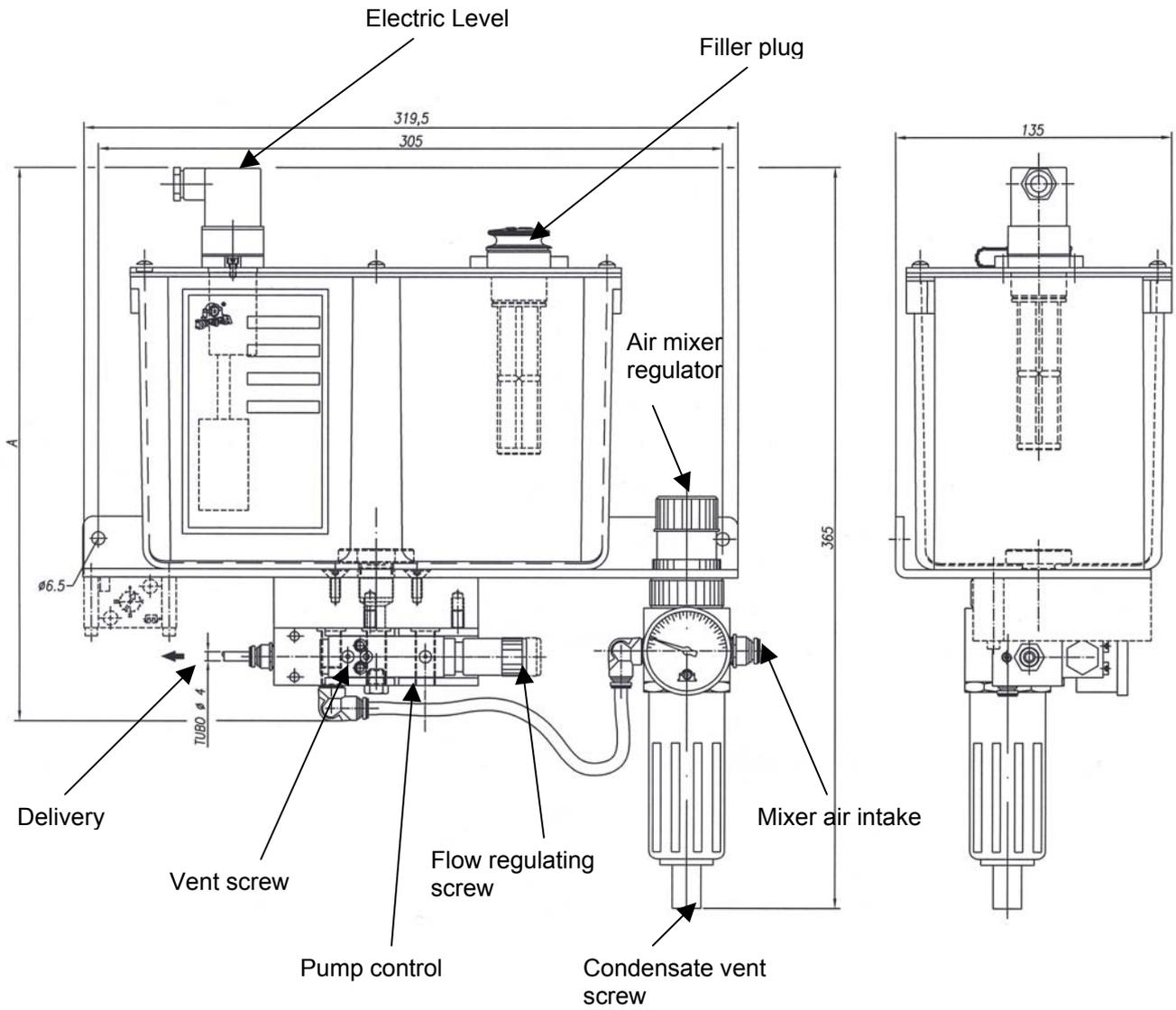
14. DIMENSIONS VIP 1 LITER



The panel is designed to accept the mounting of a timer kit (optional) P/N 3132572

Number of elements	Height A (mm)	Weight (Kg.)
1	363	2.7
2	391	3.2
3	419	3.7
4	447	4.2
5	475	4.7
6	503	5.2
7	531	5.7
8	559	6.2

15. DIMENSIONS VIP 3 LITER



The panel is designed to accept the mounting of a timer kit (optional) P/N 3132572

Number of elements	Height A (mm)	Weight (Kg.)
1	365	3.6
2	393	4.1
3	421	4.6
4	449	5.1
5	477	5.6
6	505	6.1
7	533	6.6
8	561	7.1

16. GUARANTEE

All products manufactured and marketed by Dropsa are warranted to be free of defects in material or workmanship for a period of at least 12 months from date of delivery. Extended warranty coverage applies as follows:

Complete system installation by Dropsa: 24 Months

All other components: 12 months from date of installation; if installed 6 months or more after ship date, warranty shall be maximum of 18 months from ship date.

If a fault develops, notify us giving a complete description of the alleged malfunction. Include the part number(s), test record number where available (format xxxxxx-xxxxxx), date of delivery and installation and operating conditions of subject product(s). We will subsequently review this information and, at our option, supply you with either servicing data or shipping instruction and returned materials authorization (RMA) which will have instructions on how to prepare the product for return. Upon prepaid receipt of subject product to an authorized Dropsa Sales & Service location, we will then either repair or replace such product(s), at our option, and if determined to be a warranted defect, we will perform such necessary product repairs or replace such product(s) at our expense.

Dropsa reserves the right to charge an administration fee if the product(s) returned are found to be not defective.

This limited warranty does not cover any products, damages or injuries resulting from misuse, neglect, normal expected wear, chemically caused corrosion, improper installation or operation contrary to factory recommendation. Nor does it cover equipment that has been modified, tampered with or altered without authorization.

Consumables and perishable products are excluded from this or any other warranty.

No other extended liabilities are stated or implied and this warranty in no event covers incidental or consequential damages, injuries or costs resulting from any such defective product(s).

The use of Dropsa product(s) implies the acceptance of our warranty conditions. Modifications to our standard warranty must be in writing and approved by Dropsa.

17. DECLARATION OF CONFORMITY

Manufacturer:

DROPSA SpA

Company

Via B. Croce, 1 - 20090 Vimodrone (MI), Italy

Address

+39 02 250791

Telephone

It is certified that:

The machine: VIP4Tools lubrication panel

- * is manufactured in conformity with the DIRECTIVE OF THE COUNCIL OF THE EUROPEAN COMMUNITY concerning: the machines (98/37/CE), low voltage (BT 73/23/CEE).
- * is manufactured in accordance with the following standards and harmonised technical specifications:

EN 292-1/2, EN 1050, EN 982, EN 11200, EN 60947, EN 894-1/2.

TECHNICAL DIRECTOR

W. Divisi

Product manager

Name

DROPSA SpA

Company



November 2001

Signature

Date

18. DISTRIBUTORS

Dropsa

 **Dropsa Corporation**
50679 Wing Drive
Utica, Michigan 48315, USA
Tel: (+1) 810-566-1540
Fax: (+1) 810-566-1541
E-mail: salesusa@dropsa.com

 **Dropsa (UK) Ltd**
Unit 6, Egham Business Village,
Egham, Surrey, TW20 8RB
Tel: (+44) 01784 - 431177
Fax: (+44) 01784 - 438598
E-mail: salesuk@dropsa.com

 **Dropsa S.p.A.**
Via B. Croce, 1
20090 Vimodrone (MI) Italy.
Tel: (+39) 02 - 250.79.1
Fax: (+39) 02 - 250.79.767
E-mail: sales@dropsa.it (Export)
E-mail: vendite@dropsa.it (National)

 **Dropsa GmbH**
Volmerswerther Strasse 80
40221 Dusseldorf 1, Deutschland
Tel: (+49) 0211-394-011
Fax: (+49) 0211-394-013
E-mail: sales@dropsa.de

 **Dropsa Ame (Industrie)**
23, Av.des.Morillons
Z.IND. des Doucettes
95140 - Garges Les Gonesse
Tel: (+33) 1-3993-003
Fax: (+33) 1-3986-2636
E-mail: sales@dropsa.com

 **Dropsa do Brazil**
Rua Sobralia 175 Santo Amaro,
Sao Paulo, Brazil
Tel: (+55) 11 56310007
Fax: (+55) 11 56319408
E-mail: salesbr@dropsa.com

 **Poly Dropsa S.A.**
Av. Fabregada 26 - Pje Est.2
08907 L'Hospitalet de Llobregat
Barcelona
Tel: (+34) 9326-022-50
Fax: (+34) 9326-022-51
E-mail: sales@dropsa.it

 **Dropsa Australia Pty.**
C20/148 Old Pittwater Road
Brookvale
NSW 2100
Tel: (+61) 2 9938-66-44
Fax: (+61) 2 9938-66-11
E-mail: sales@dropsa.com



**LUBE
Control**

Lube Control Pty Ltd

Providing lubrication solutions!

Unit 5/53 Norfolk Rd,
Marion, SA 5043
www.lubecontrol.com.au

t: (08) 8298 5563
f: (08) 8298 6253
e: info@lubecontrol.com.au



Web site: <http://www.dropsa.com> - E-mail: sales@dropsa.com

N.B.: From this manual the only copy valid is the one with the later WK (number of week/year) shown on the front page