

VIPAIR 4.0-SMODULE

OPERATION AND MAINTENANCE MANUAL
TRANSLATION OF ORIGINAL INSTRUCTIONS



Manual drafted in compliance with
EC Directive 2006/42 and EU Directive 2014/30

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1. INTRODUCTION

1.1. GENERAL INFORMATION

Please read this manual carefully and keep it in a safe place so that it is always available to operators who wish to consult it.

Through this manual we want to provide you with all the important information for the safety of the people involved in the installation, use, maintenance and disposal of the VIPAir4.0-SModule air/oil lubrication system.

If the component is sold, rented out or loaned for use, the manual must be delivered to the new user together with the EC declaration of conformity.

Please read this manual carefully and keep it in a safe place so that it is always available to operators who wish to consult it.

It is forbidden to carry out any operation on the components before having carefully read and understood all the instructions contained in this manual.

The images contained in this manual are for illustrative purposes and are not binding for the Manufacturer who reserves the right to make changes to components and/or parts for improvement purposes or for other reasons without updating this manual if they do not alter operation and safety of the system.

1.2. MANUFACTURER'S DATA

DropsA S.p.A.

Via Benedetto Croce, 1

20055 – Vimodrone (MI) – ITALY

Ph. +39 02 250 791



Fx. +39 02 250 79 767

E-mail: sales@dropsa.it

Website: www.dropsa.com

1.3. IDENTIFICATION PLATE





On the device support plate there is a label showing the product code and its basic characteristics.














	<div style="background-color: orange; color: black; text-align: center; padding: 5px;">WARNING</div> <div style="text-align: center; padding: 10px;"> <p>Removing the device identification plate is prohibited</p> </div>	
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1.4. HOW TO CONSULT THIS MANUAL

For a better understanding of the information provided in this manual, warnings or instructions considered critical or dangerous are highlighted with the following symbols: It is important to read this manual before performing any operation. It is always recommended that the safety regulations of the country in which the equipment is installed be observed and that specialised personnel be used in the various maintenance, use, installation, etc. operations required during the life of the equipment. Safety instructions and symbols in accordance with ANSI Z535, ISO 3864 and ISO 7010 are used in this manual and are listed below:

WARNING TABLE			
WARNING	DAMAGE TO	DEFINITION	CONSEQUENCES
 DANGER	People	Indicates a dangerous situation which, if not avoided, will certainly result in death or serious injury.	Death or serious injury, paralysing.
 WARNING		Indicates a dangerous situation which, if not avoided, could result in death or serious injury.	Possibly death or serious injury.
 CAUTION		Indicates a dangerous situation which, if not avoided, could result in minor or moderate injury.	Possible slight to moderate injuries
 NOTICE	Things	Indicates practices not related to personal injury. Tips or other information.	Damage to property not to persons

SYMBOL TABLE					
DANGER		PROHIBITION		OBLIGATION	
	General danger		Generic prohibition		Generic obligation
	Laser beam hazard		No smoking or open flames		It is mandatory to read the instructions
	Electricity hazard		Prohibited to enter with watches and metal objects		Hearing protection must be used
	Danger hot surface		Do not touch		Eye protection must be worn
	Danger vessel pressurised		Do not extinguish with water		It is mandatory to ensure the earth connection
	Danger of crushing hands				It is mandatory to disconnect the power supply
	Danger explosive area				Protective gloves must be worn

1.5. PERSONNEL QUALIFICATION

To ensure that all operations performed on the device take place in safe conditions, the operators in charge of operations must have the qualifications and requirements to carry out the related operations.

The operators are classified as follows:

1.5.1. FIRST LEVEL OPERATOR:

Unqualified personnel, i.e. without specific skills, able to perform only simple tasks.

1.5.2. MECHANICAL MAINTENANCE OPERATOR:

Qualified technician able to intervene on the mechanical parts to carry out all necessary adjustments, maintenance and repairs. This operator is not authorised to work on electrical systems in the presence of voltage.

1.5.3. ELECTRICAL MAINTENANCE OPERATOR:

Qualified technician in charge of all electrical interventions. This operator can operate in the presence of voltage inside cabinets and junction boxes.

2. SAFETY

2.1. GENERAL WARNINGS

This manual must be read before carrying out any operation on the device. We recommend that you comply with the safety regulations of the country in which the device is installed and employee specialised personnel in the various maintenance, use, installation, etc. necessary during the life of the equipment.

The main rules of conduct to be observed to work with a good level of safety are as follows:

- The operations of installation, use, maintenance, etc. must always be carried out by qualified and trained personnel.
- Always wear the required personal protective equipment.
- Carry out all the cleaning, adjustment and maintenance operations making sure that all the energy supplies are isolated.
- Install the device away from passageways to prevent it from being hit or damaged.
- Do not install or use the device in classified area other than that indicated on the device's plate.
- Do not direct jets of water against electrical parts, even if they are protected by casings.
- Do not work while carry out work or maintenance operations.
- Check the signs and pictograms applied to the device; if they are damaged inadvertently, immediately replace them with identical ones.
- Check the chemical compatibility of the materials from which the device is made with the fluid to be pumped. In addition to damage to the devices and pipes, incorrect selection of fluid could cause serious risks for people (leakage of irritating and harmful products) and for the environment.
- Do not exceed the maximum operating pressure allowed by the device and the components connected to it. If in doubt, consult the data on the machine's rating plate.
- Only use original replacement parts.
- If it is necessary to replace components with others, make sure they are suitable for operating at the device's maximum working pressure.

DropsA S.p.A. disclaims any liability for damage to persons or property resulting from improper use of the device, from tampering with its safety equipment or from non-compliance with workplace safety regulations.

WARNING




It is necessary to read the equipment's User and Maintenance Manual to know the risks of use.







2.2. RESIDUAL RISKS

Hazards which have not been completely eliminated but are deemed acceptable are indicated below, together with their respective countermeasures:






CAUTION

		
<p>When filling the lubricant, use protective goggles and gloves to avoid direct contact. Before any operation, check the absence of residual pressures in each branch of the lubricant circuit.</p>		







WARNING

	<p>Use only suitable lubricant. The characteristics are shown both on the device and in this User and Maintenance Manual (if in doubt, contact the DropsA S.p.A. Technical Department).</p>	
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DANGER

	<p>Disconnect the power supply before any intervention, making sure that no one can reconnect it. All installed equipment (electrical and electronic), reservoirs and base structures must be connected to the grounding line.</p>	 
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DANGER

	<p>The lubricant used in lubrication circuits is flammable at temperatures >250°C. Avoid contact with hot parts or naked flames.</p>	
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2.3. PICTOGRAMS

Pictograms with warning and safety symbols for operators are applied on the lubrication system. Read carefully and familiarise yourself with the symbols and their messages before using the system.
DropsA S.p.A. declines all liability for damage to persons or property due to failure to comply with the rules indicated by the pictograms or their imperfect conservation.

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3. MACHINE DESCRIPTION

The VIPAir4.0-SModule system consists of independent modules, each of which integrates two pneumatically driven minipumps controlled via I/O Link communication. The minipumps are equipped with a series of spacers that allow the flow rate to be varied to cover every possible requirement. Inside the mixing base there is, for each minipump, an outlet air pressure sensor and an oil flow control, which is used to check the correct operation/delivery of the entire system.

Its modularity makes the system extremely versatile, allowing a variable number of mixing bases to be installed, extendable up to a maximum of 4.

The high technology incorporated allows total control of lubrication, combined with simple assembly that excludes unnecessary floating connectors.

3.1. INTENDED USE AND PROHIBITED USE

3.1.1. INTENDED USE

The VIPAir4.0-SModule has been developed for mandrel and machine tool applications.

WARNING



The device has been designed to operate with oils with a maximum grade of 220 cSt.
Use lubricants compatible with NBR gaskets.
Any residual lubricant used for assembly and testing is 32 cSt.



For further information on the technical specifications and safety measures required, see the Product Safety Data Sheet (Directive 93/112/EEC) for the type of lubricant chosen and supplied by the manufacturer.

3.1.2. PROHIBITED USE

WARNING



Any use other than that for which the device was built represents an abnormal condition and, therefore, can cause damage to the pump and be a serious danger to the operator.



Below are a series of operations, relating to the improper use of the device, which are not permitted under any circumstances.

- Do not operate the device empty, in the absence of oil.
- Do not modify the product or replace its parts without the manufacturer's written authorisation.
- Use the pump only in industrial installations, any other use of the machine is prohibited.
- Do not use the pump in conditions other than those indicated in this user and maintenance manual.
- Do not use the pump in an explosive or aggressive atmosphere or with a high concentration of dust or oily substances suspended in the air.
- Do not carry out modifications, repairs or maintenance work on the pump on your own initiative. Maintenance work may only be carried out in accordance with the provisions of this manual.
- Do not use non-original spare parts or parts that are not provided by the Manufacturer.
- Do not use the device to pump substances other than those indicated. The use of unauthorized materials can damage the pump, degrade its performance or reduce its useful life.
- Do not expose the pump to rain, steam, excessive humidity or direct sunlight.
- Do not install the pump in rooms subject to possible flooding.
- Do not place or store the pump near flammable or combustible materials or substances.

FLUIDS THAT ARE NOT PERMITTED

FLUIDS	HAZARDS
Lubricants with abrasive additives	Wear of internal pump components
Lubricants with silicone additives	Seizing of the pump
Petrol, solvents, flammable liquids	Fire, explosion, damage to the gaskets
Corrosive products	Pump corrosion - personal injury
Water	Pump oxidation
Food substances	Contamination

For more detailed information regarding product compatibility with particular fluids, contact the DropsA S.p.A. Technical Office.

3.2. SOUND EMISSIONS

In normal working conditions, the emission of sound does not exceed 70 dB "A" at a distance of 1 meter (39.3 inches) from the module.

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3.3. TECHNICAL CHARACTERISTICS

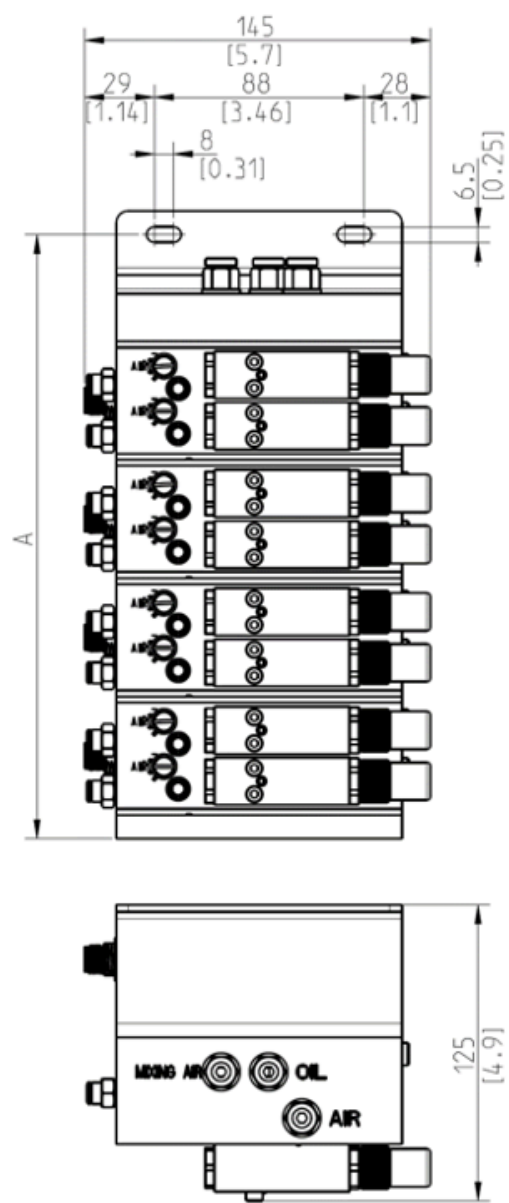
TECHNICAL SPECIFICATIONS		
Operating air pressure	bar	5 - 8
Maximum oil supply pressure	bar	1
Minipump flow rate (2)	mm ³ /cycle	7 - 15 - 30
Operating temperature	°C [°F]	-5 - +50 [23 - +122]
Operating voltages	VDC	24 ±10%
Operating humidity	%	90 max
Degree of protection	IP	65
Lubricants (1)		Oil
Oil viscosity at working temperature	cSt	32 - 220
Storage temperature	°C [°F]	-20 - 65 [-4 - +149]
TECHNICAL SPECIFICATIONS IO-LINK SIGNALS		
Hardware features		Reverse polarity protection on power supply Protection against power supply disturbances (Spike)
INPUT - Signals		Independent command for each air outlet Independent oil supply command Deactivation of the solenoid valves in the absence of communication with the PLC
OUTPUT - Air outlet pressure	Bar	0 - 10 (±1% FS)
OUTPUT - Signals		Keep alive signal Signal of oil supply completed

Note: Specifications refer to an operating temperature of +20°C (+68°F)

(1) If a different product is to be used, the suitability for use must be requested from DropsA S.p.A.

(2) To change the flow rate of the mini-pump, please refer to section 5.1.2

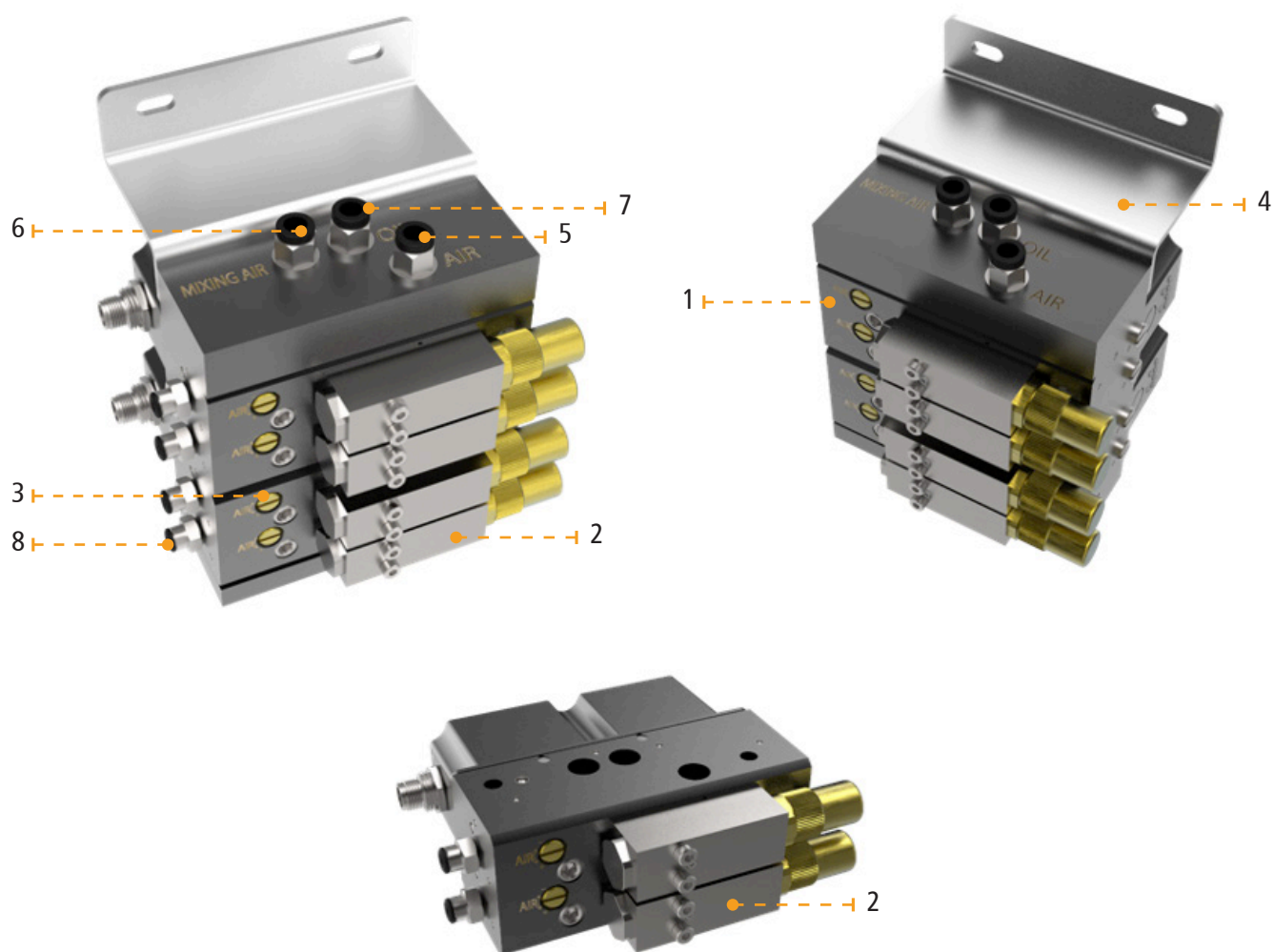
3.4. DIMENSIONS



N° SUB-BASES	A
1	105 [4.1]
2	155 [6.1]
3	205 [8]
4	255 [10]

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3.5. STANDARD SYSTEM PARTS



STANDARD PARTS

1	Sub-base	5	Minipump air inlet - Ø8 hose
2	Minipump	6	Additional air inlet - Ø8 hose
3	Air flow adjustment	7	Oil inlet - Ø8 hose
4	Support bracket	8	Air/oil OUTLET - Ø4 hose

4. INSTALLATION

4.1. RECEIPT AND CHECKING OF THE CONTENTS

On receipt of the VIPAir4.0-SModule system, check that the packaging is intact or for obvious signs of damage due to transport or storage conditions. If everything is intact, unpack and check the pump.

Otherwise, in the case of damage to the packaging, immediately inform the transport agent and manufacturer.

Always check that the material received corresponds to that indicated on the consignment note.

The packaging must be opened using all precautions to avoid damage to people or the contents of the same.

4.2. PACKAGING

Before shipping, the VIPAir4.0-SModule system is carefully packed in a cardboard box.

When transporting and storing the equipment, pay attention to the orientation indicated on the box itself.

Do not burn or disperse the packaging components into the environment.

4.3. TRANSPORT AND HANDLING

Upon receipt, check the packaging for damage and store the equipment in a dry place.



CAUTION

Lift the equipment in the direction indicated on the packaging.

During storage, ensure that the ambient temperature is between -40 and + 65 °C (-40-149F).

Before starting, wait until the pump has reached a temperature of -10°C (+ 14F).

Given the light weight of the equipment, its handling does not require the use of lifting equipment. The box is equipped with special gripping devices.

4.4. STORAGE

Empty the oil from the VIPAir4.0-SModule system and close the inlet and outlet with the appropriate protections. The VIPAir4.0-SModule system must be stored in its packaging and stored in covered, dry, protected places not exposed to direct sunlight and at temperatures within the range indicated in the technical features table.

4.5. ENVIRONMENTAL CONDITIONS

The VIPAir4.0-SModule 4.0 system must be installed and used in a covered and sufficiently lit room.

The installation area must meet all the requirements regarding heights, air changes and comply with the requirements imposed by current legislation.

4.5.1. TEMPERATURE

The required ambient working temperature values are shown in the technical features table.

4.5.2. LIGHTING

All areas must be lit with uniform lighting and sufficiently to ensure all the operations provided for in the manual, avoiding shadow areas, glares and eye strain.

4.6. INSTALLATION

There are no foreseen module assembly operations. The modules are equipped with a wall mounting plate. Provide adequate spaces (as per installation diagram) to avoid abnormal postures or the possibility of collisions. Install the modules away from passageways to prevent them from being hit or damaged. Subsequently it is necessary, as previously described, to make the hydraulic and pneumatic connection of the modules and then to carry out the connection to the control panel. Once all connections have been made, turn on the air solenoid valves and adjust the air flow rate using the screw provided.

4.7. HYDRAULIC CONNECTIONS

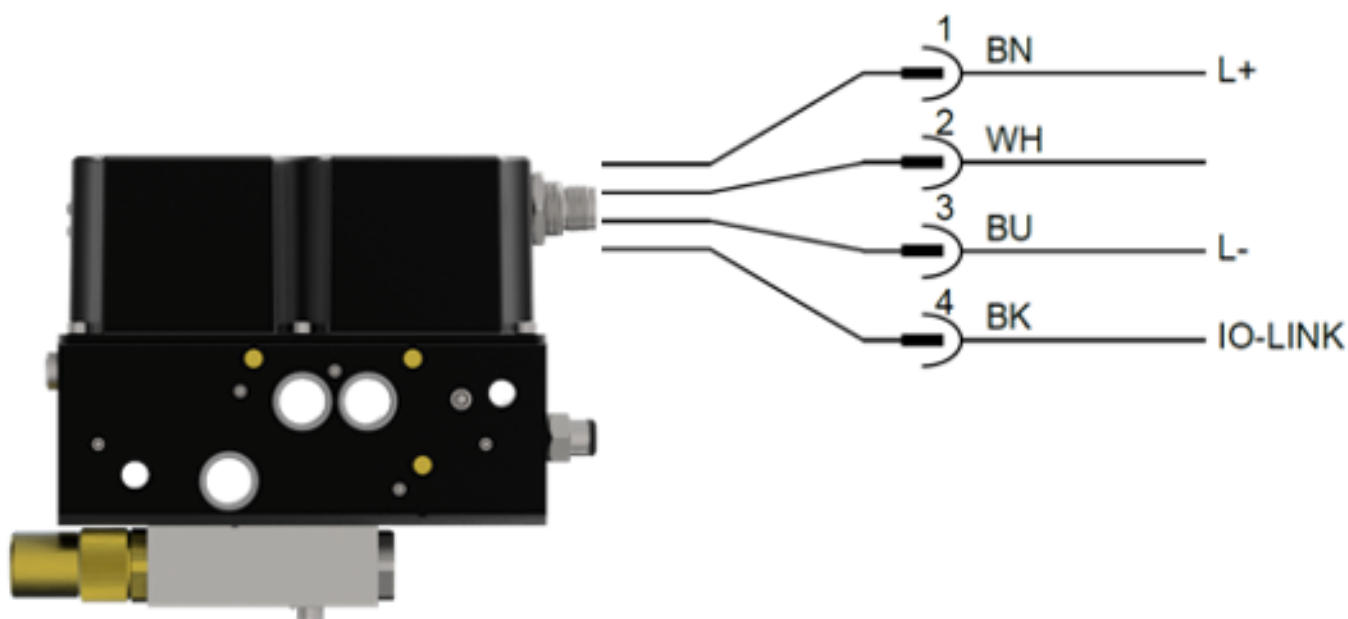
Connect the oil supply line to the push-in fitting at the top of the bracket using a Ø8 hose.

Connect the air/oil outlets of the individual modules, located on the side, using a Ø4 hose to the point to be lubricated.

4.8. PNEUMATIC CONNECTIONS

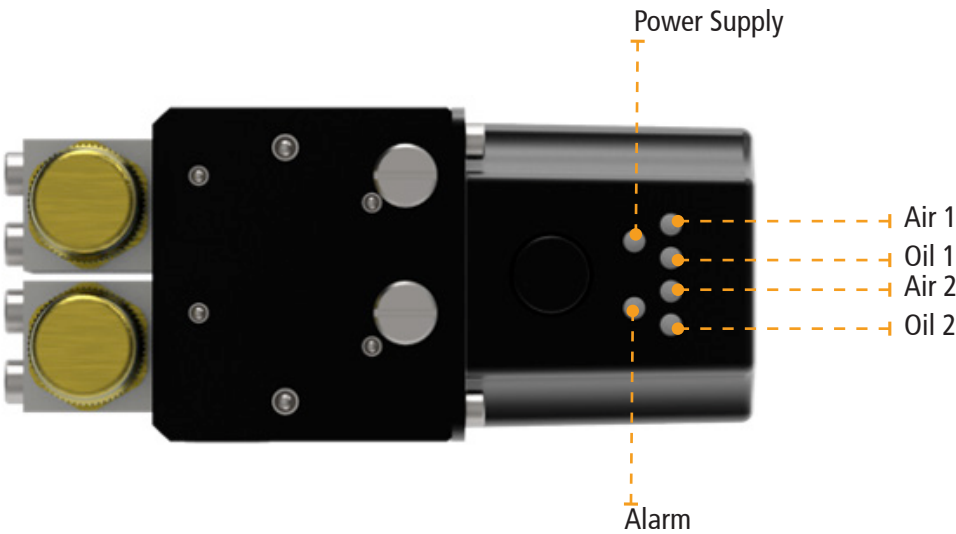
Connect the air supply piping to the push-in fitting at the top of using a Ø8 hose.

4.9. ELECTRICAL CONNECTIONS



Only connect the device to an IO-Link master via a cable with an M12 connector.
Any other type of connection may damage the device.

4.10. SIGNALS



NAME	DESCRIPTION
Pwr.	Always on in the presence of voltage and without alarms
Alarm	On in the presence of an alarm
Air 1	On when the air solenoid valve of outlet 1 is active
Oil 1	On when the oil solenoid valve of outlet 1 is active
Air 2	On when the air solenoid valve of outlet 2 is active
Oil 2	On when the oil solenoid valve of outlet 2 is active

4.11. PROCESS DATA

Using the process data it is possible to know the status of the module and control the corresponding solenoid valves. There are two types of process data, one concerning the current status of the minipump (Input) and the other concerning the commands (Output).

An IODD file can be downloaded from our website for quick and easy configuration of the variables.

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4.11.1. INPUT

The input bytes contain all the states of the pressure and cycle sensors and the operating state of the minipumps.

Number of input Bytes: 8

BYTE 0								BYTE 1							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Air pressure 1 (bar)															
Whole Part								Decimal Part							
BYTE 2								BYTE 3							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Air pressure 2 (bar)															
Whole Part								Decimal Part							
BYTE 4								BYTE 5							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
System status								Not used							
Keep Alive	Err. Keep Alive	-	-	-	-	Cycle sens. 2	Cycle sens. 1	-	-	-	-	-	-	-	-
BYTE 6								BYTE 7							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
System status (data sent to the module)								Not used							
Set Keep Alive	Keep Alive	-	-	Air SV 2	Air SV 1	Oil SV 2	Oil SV 1	-	-	-	-	-	-	-	-

Bytes 0 to 3 are inherent to the air pressure at the module's output and, as there are two independent outputs, one to the other, different pressures can occur for each output.

The pressure value present in Bytes 0 and 1 relate to output 1.

The pressure value present in Bytes 2 and 3 relate to output 2.

NOTICE

Perform this calculation to find out the air pressure: $\text{Air Pressure} = \text{Whole Part} + (\text{Decimal Part} / 100)$

There are several signals in Byte 4; below is an explanation of the individual bits.

"Cycle sensor 1" activates when oil is dispensed from output 1.

"Cycle sensor 2" activates when oil is dispensed from output 2.

"Keep Alive" is used to check the correct connection and operation of the module.

"Error Keep Alive" is activated when bit 7 of Byte 0 has been set (see Par. 4.9.2) and there has been a communication problem with the PLC.

Bytes 6 and 7 report the same values present in Byte 0 and 1 of the input Bytes (see Par. 4.9.2)

4.11.2. OUTPUT

The output bytes contain the commands for the air and oil solenoid valves and enabling of the keep alive with the corresponding pulse signal from the PLC.

Number of output Bytes: 2

BYTE 0								BYTE 1							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Commands								Not used							
Set Keep Alive	Keep Alive	-	-	Air SV 2	Air SV 1	Oil SV 2	Oil SV 1	-	-	-	-	-	-	-	-

There are several commands in Byte 0; below is an explanation of the individual bits.

"Set Keep Alive" is used to enable control of communication with the PLC (if enabled, the "Keep Alive" bit must change status at least once per second)

"Keep Alive", used to check the correct connection with the PLC

"Air SV 1" controls air outlet 1

"Air SV 2" controls air outlet 2

"Oil SV 1" controls the oil supply from outlet 1

"Oil SV 2" controls the oil supply from outlet 2

NOTICE

If bit 7 ("Set Keep Alive") is enabled and bit 6 ("Keep Alive") is not changed within one second, all solenoid valves in the module are deactivated and bit 6 of Byte 4 "Error Keep Alive" will be set (Par. 4.9.1). To reset the alarm, it is necessary to reset bit 7 of Byte 0 and then reactivate it.

4.11.3. OPERATING CYCLE

The operating cycle of the two minipumps can be managed independently of each other. The only function in common is the communication control which, if it is enabled (bit 7 Byte 0 enabled) and there is no communication with the PLC (no change in bit 6 Byte 0), simultaneously disables all the solenoid valves.

The steps for a possible operating cycle are described below.

- Activate the air and oil solenoid valves.
- Check the air pressure.
- Check that the cycle sensor has set within 2 seconds. If it has not changed status, see paragraph 8.1.
- Disable the oil solenoid valve.
- If the system does not require continuous air activation, wait a few seconds for the oil to drain and then switch off the air solenoid valve.
- Wait X seconds (calculated according to the type of use/system) and then resume the cycle from the beginning.

5. OPERATING INSTRUCTIONS

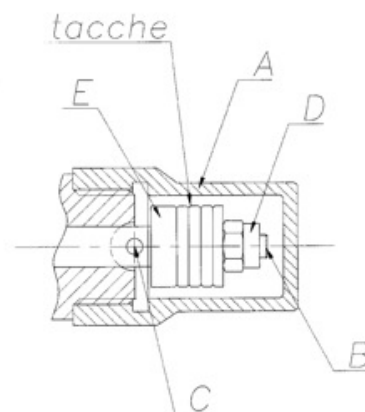
5.1. PRELIMINARY OPERATIONS

5.1.1. CHANGING MINIPUMP FLOW RATE

The minipumps used are extremely small and are installed on the mixing bases. They are equipped with spacers that allow the flow rate to be changed; a table for identification and the relevant codes is shown below. Proceed as follows to change the spacers:

1. Unscrew the brass cap (A).
2. Rotate the shaft (B) until the hole (C) coincides with the slot.
3. Insert a Ø2 mm pin punch into hole (C).
4. Unscrew the nut (D) with a 5.5 mm hex spanner.
5. Remove the spacer (E) and replace it with the one of your choice.
6. Screw the nut (D) back on completely and replace the cap (A).

# NOTCHES	FLOW RATE (MM ³ /CYCLE)	CODE SPACER
1	30	3233188
3	15	3233191
4	7	3233193



6. MAINTENANCE

6.1. GENERAL WARNINGS



DANGER



Make sure that the electrical, hydraulic and pneumatic power supply of the system in which the pump is installed is disconnected before carrying out any maintenance operations.

Do not carry out operations, modification and/or repair of any kind, other than those indicated in this manual.

Only trained or authorised technical personnel have the necessary experience to perform any operation with the appropriate technique.

If pump maintenance is performed in a manner inconsistent with the instructions, using non-original spare parts or without the manufacturer's written permission, or otherwise in a manner that undermines the integrity or modify its features, DropsA S.p.A. cannot be held liable for the safety of persons and the faulty operation of the pump.

Do not remove or tamper with the warranty seal for any reason.

The pump has been designed and built to require minimal maintenance. To simplify maintenance, it is recommended that it be mounted in an easily accessible position. The machine does not require special equipment for inspection and/or maintenance.



CAUTION



Use tools and personal protections suitable for use (gloves and glasses) and in good condition according to current legislation to avoid damage to people or parts of the machine.

For proper maintenance it is essential to:

- immediately check the causes of any anomalies (excessive noise, overheating, etc.),
- pay particular attention to safety devices,
- use all the documentation provided by the manufacturer (user manuals, wiring diagrams, etc.),
- use only tools suitable for the job and original spare parts.



CAUTION

Lift the equipment in the direction indicated on the packaging.

During storage, ensure that the ambient temperature is between -40 and + 65 °C (-40-149F).










Before starting, wait until the pump has reached a temperature of -10°C (+ 14F).

In case of doubts and/or problems that cannot be solved, do not try to disassemble parts of the machine; contact the DropsA S.p.A. Technical Office.

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6.2. TABLE OF OPERATIONS

The following table shows all periodic operations needed to keep the pump in perfect working conditions.

TYPE OF OPERATION	FREQUENCY	OPERATOR QUALIFICATION
Check piping joints	Periodically	
General cleaning of the pump	Periodically	
Cleaning of the loading filter	At 2000 hours	
Replacement of pumping elements	As needed	
Periodically check that the parts do not make abnormal noise	Every three months	
Periodically check that the parts move freely without abnormal friction	Every three months	
Periodically check the absence of oxidation / encrustation / deformation	Every three months	
Remove any accumulation of dust on all parts of the equipment	Every three months increase according to the environmental conditions of the place of installation	
Check the earthing of all parts	Every three months	

6.3. CHECK PIPING JOINTS

Check pipe joints periodically for leaks.

6.4. GENERAL CLEANING OF THE PUMP

Always keep the pump clean to promptly detect any leaks or defects.

Cleaning the pump is necessary to remove dirt deposits.

Use a dry cloth.

7. TROUBLESHOOTING

7.1. FAULTS, CAUSES AND REMEDIES

WARNING



The machine can be opened and repaired only by authorised DropsA personnel.
Wear adequate personal protection equipment to carry out all operations indicated.

A diagnostic table is provided below, highlighting the main anomalies, probable causes and possible solutions. If, even after consulting the diagnostic table, you have not been able to solve the problem, do not proceed to search for the fault by disassembling parts of the machine, but contact the DropsA Technical Office and report the anomalies that have been found, with a detailed description.

ANOMALY	CAUSE	REMEDY
"Alarm" and "Pwr." LEDs flashing	Communication with the PLC has been lost	Verify correct connection with the PLC
"Alarm" LED flashing (1S On - 1S Off)	No IO-link communication	Check the cable or device connected to the module
"Alarm" LED flashing (0.1S On - 1S Off)	Pressure sensor faulty	Replace the module
No lubricant is dispensed / Absence of cycle signal	The tank is empty.	Fill the tank.
	The minipump does not start (possible presence of air bubbles in the circuit).	Purge the air from the minipump using the appropriate purge screws

8. ORDER INFORMATION

8.1. STANDARD VERSION

# MODULES	CODE
1	3135901
2	3135902
3	3135903
4	3135904

DESCRIPTION	CODE
1 metre IO-Link PUR cable	UE-CVPR054
2 metre IO-Link PUR cable	UE-CVPR055

8.2. SPARE PARTS

Use Original Spare parts when replacing the pump parts.

When purchasing spare parts always mentioned the pump model and serial number (this information is found on the identification plate) as well as the spare part code.

SPARE PART DESCRIPTION	CODE
Minipump	3103015
Cover	6770209

DropsA S.p.A. cannot be held liable for any deterioration in pump performance or damage caused to it due to the use of non-original spare parts.

9. ADDITIONAL INFORMATION

During machine maintenance, or in the event of its demolition, do not dispose of polluting parts in the environment. Refer to local regulations for proper disposal. When disposing of the machine, the identification nameplate and any other documents must be destroyed.

10.1 Waste disposal

It should be remembered that residues deriving from industrial processes which, in terms of quality or quantity, are not declared to be similar to urban waste are considered special waste.

Deteriorated or obsolete machines are also considered special waste.

According to local legal regulations, the user must take particular precautions regarding the disposal of materials, such as:

- Protection device material (PVC and methacrylate)
- Pneumatic piping plastic
- Coated electrical cables
- Rubber belts
- Used oils



CAUTION

Comply with the environmental protection laws implemented in the user's country.

9.1. TOXIC-HARMFUL WASTE

Toxic-harmful waste is all waste that contains or are contaminated by the substances indicated in Presidential Decree 915/52, which implements EC directives 75/442 and 76/403.

Below are the main pictograms affixed to containers of hazardous or harmful material:



9.1.1. TEMPORARY STORAGE

The temporary storage of toxic-harmful waste is allowed according to the planned disposal of the same through final storage and/or treatment.

9.1.2. CHARACTERISTICS OF THE CONTAINERS

Fixed and mobile containers, intended to contain toxic-noxious waste, must have adequate resistance requirements in relation to the chemical-physical properties and the hazardous characteristics of the waste contained.

To make the nature of their contents known, the containers in which dangerous or noxious products or materials are stored must bear indications and markings.

9.1.3. REGISTRATION OBLIGATIONS

According to the provisions of Presidential Decree 23 August 1982 regarding the implementation of EC Directive 75/439 concerning the disposal of waste oils, the loading/unloading records must be kept by all companies that produce special or toxic-noxious waste deriving from industrial and artisanal processes.



WARNING

This regulation is valid in Italy; for other CEE countries, please refer to the national legislation. During disposal operations there are risks of cuts, projection of splinters, entanglement, contact with moving parts, contact with chemical products. Operators must use the appropriate personal protective equipment.

9.2. DISMANTLING OF THE MACHINE

Dispose of the machine after disassembling its various parts.

For disassembly operations, in addition to wearing the Personal Protective Equipment mentioned in the MANUAL, refer to the instructions and diagrams in this manual, or if necessary as the Manufacturer for specific information.

Once the various parts have been disassembled, divide the various parts and separate the metal, plastic, copper, etc. according to the type of differentiated disposal in force in the country where the machine is dismantled.

Waste resulting from demolition of the machine must be classified as special waste.

If the various parts have to be stored pending their admission to the landfill, keep them in a safe place protected from atmospheric agents, to avoid contamination of the ground and groundwater.



CAUTION

Dismantling and demolition operations must be carried out by qualified personnel.

9.3. DISPOSAL OF ELECTRONIC PARTS (WEEE DIRECTIVE)



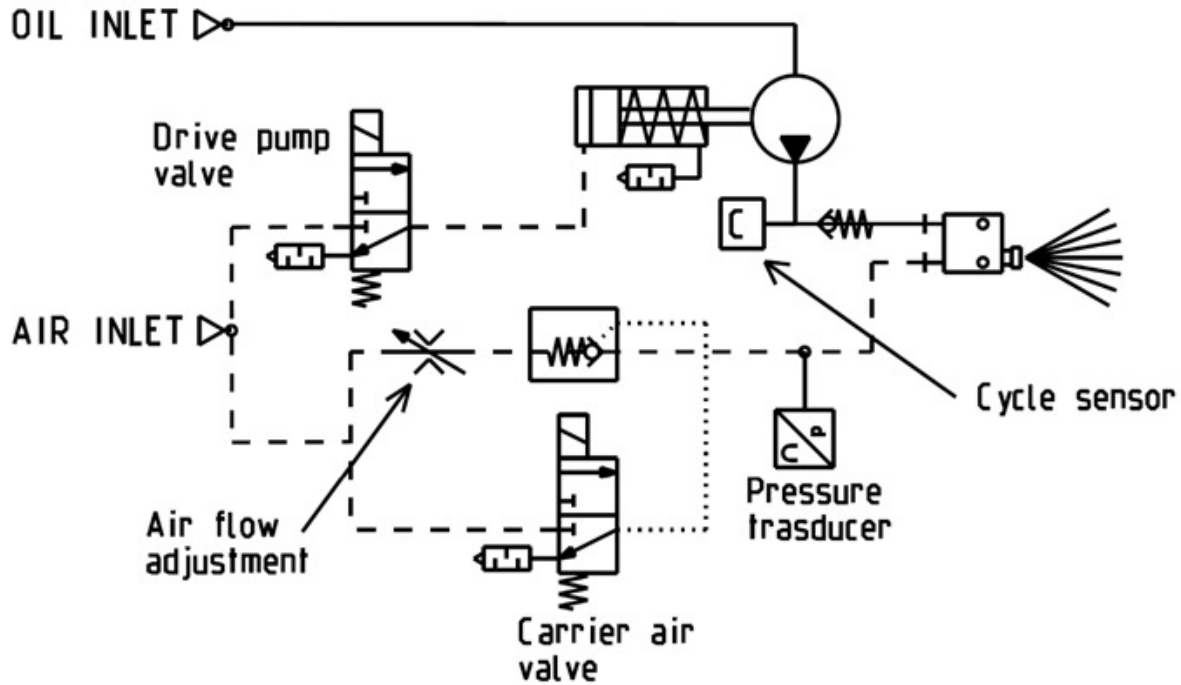
EC directive 2012/19 (WEEE) requires manufacturers and users of electric and electronic equipment to comply with a series of obligations regarding the collection, treatment, recycling and dispose of this type of waste. We recommend that you strictly follow these rules for the disposal of such waste. Remember that the illegal disposal of such waste implies the application of administrative penalties provided for by current legislation.



10. ANNEXES

10.1. HYDRAULIC DIAGRAM

Below is the hydraulic diagram for the individual module.



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We reserve the right to make technical changes to the machine at any time in order to improve safety, reliability, functionality and design.

All descriptions and information in this product catalogue apply to the current state at the time of creation.

We reserve the right to change the content of this document without prior notice.

We would like to point out that the software and hardware designations used in this document and the trade names of individual companies are subject to general protection under trademark or patent law.

The text and design representation may not necessarily conform to the product delivered.

Technical drawings cannot necessarily be drawn to scale.