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## INSTRUCTION AND MAINTENANCE MANUAL

## INDUSTRIAL VACUUMS

# SERIE AIRWELD



This manual forms an integral part of the vacuum cleaner Depureco recommends to read carefully this manual and the other attachments supplied. Knowledge of the instructions here contained is indispensable for safe and use amd maintenance of the vacuum cleaner.

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#### 1. GENERAL INFORMATION

#### **1.1. PURPOSE OF THE MANUAL**

The manual has the purpose of providing the machine installer, operator and maintenance technician, the instructions for use, prevention and reduction of risks during man-machine interaction.

OPERATOR	CHAPTERS OF THE MANUAL THAT MUST BE KNOWN
INSTALLER	<ul> <li>General information</li> <li>Safety information</li> <li>Handling, assembly and installation information</li> <li>Technical information</li> <li>Information on replacements</li> </ul>
SECOND	<ul><li>General information</li><li>Safety information</li><li>Information on use</li></ul>
MAINTENANCE TECHNICIAN	<ul> <li>General information</li> <li>Safety information</li> <li>Handling, assembly and installation information</li> <li>Information on use</li> <li>Information on adjustments</li> <li>Maintenance information</li> <li>Information on troubleshooting</li> <li>Information on replacements</li> </ul>

The information was drawn-up by the Manufacturer in its **original language** (Italian) and it can also be made available in other languages, in order to meet the legal and/or business requirements.

The documentation must be kept by the person in charge, in a suitable place, so that it is always available for consultation in the best state of preservation. If lost or worn, request replacement documentation directly from the Manufacturer.

Consult the table of contents to easily locate the specific topics of interest.

Some information may not fully correspond to the effective configuration of the delivered machine.

Any additional information that may be inserted, will not affect legibility and does not jeopardise the safety level.

The Manufacturer reserves the right to change the information without being obliged to notify it in advance, as long as such changes do not alter the safety level.

Any report by the recipients may be an important contribution for the improvement of after-sales services that the Manufacturer intends offering its customers.

Some symbols, the meanings of which are described below, are used to highlight some text or indicate significantly important specifications.

#### 1.2. KEY OF SYMBOLS USED



#### SYMBOL DESCRIPTION

# $\mathbf{M}$

## **Danger - Attention**

The symbol indicates situations of serious danger that, if neglected, may place the health and safety of people seriously at risk.



## **Danger - Attention**

The symbol indicates situations of serious danger that, if neglected, may cause fires and place the health and safety of people seriously at risk.



## **Explosion hazard**

This symbol indicates situations of serious danger that, if neglected, may cause explosions and seriously place the health and safety of people at risk.



## **Caution - Warning**

The symbol indicates the need to adopt adequate behaviour to avoid placing the health and safety of people at risk and not cause economic damages.



## Important

The symbol indicates significantly important technical and operational information that must not be neglected.



Use protective gloves.



Use safety footwear.



Use protective mask.



Use acoustic protection.



## **1.3. DEFINITION OF THE OPERATORS QUALIFICATIONS**

Some terms that are frequently used within the manual are described in order to uniquely determine their meaning.

<b>OPERATOR QUALIFICATION</b>	DESCRIPTION
Qualified personnel	Personnel who have attended specialisation, educational and training courses and have experience concerning the installation, commissioning and maintenance of the plants.
Experienced maintenance technician	Technician chosen and authorised from among those having the qualifications, skills and information, to perform routine and extraordinary maintenance interventions.

## 1.4. GLOSSARY

DEFINITION	DESCRIPTION
Maintenance	Set of operations required to preserve the functionality and efficiency of the machine. These operations are scheduled by the Manufacturer, who defines the necessary skills and methods of intervention.
Circuit breaker switch	Is a safety device able to interrupt the flow of electrical current in an electrical circuit of an electrical system in the event of over-current.
Filter	Is the main filtration element, that can be of sleeve or cartridge type.



DEFINITION	DESCRIPTION
Hood/Dome	A rigid element available in various shapes and sizes with the function of receiving polluting elements.

#### **1.5. ATTACHED DOCUMENTATION**

Below is a list of the documents supplied with the machine and not present inside this manual.

- EC Declaration of conformity
- Overall drawing and exploded assembly drawing

## 1.6. WARRANTY

The warranty is subject to the following general conditions:

- the packaging must be opened and the installation performed by the Manufacturer's authorised and/or enabled technicians;
- the installed machine commissioning and positive test must be done in the presence and under the supervision of the Manufacturer's technicians or of its agent's; the test report must be filled in.
- the machine must be used within the limits stated in the contract and as indicated in the technical and/or business documentation.
- maintenance must be performed within the time and under the conditions provided by this manual, using original spare parts **DEPURECO S.r.l.** and entrusting the work to qualified personnel.

The warranty **becomes void** in the event of:

- failure to comply with the safety standards;
- removal or tampering with the control and safety devices (guards, photocells, sensors, micro switches, etc.);
- changes to the safety conditions established by the Manufacturer;
- improper use of the machine;
- use of the machine by untrained and/or unauthorised personnel, or non-compliance with the operators' skills, as specified in the manual;
- changes or repairs made by the user without the Manufacturer's written authorisation;
- partial or total non-compliance with the instruction manual;
- power supply failures (electric power, compressed air, etc.);
- poor maintenance;
- use of non-original spare parts;
- extraordinary events like floods, fires (if not caused by the machines).

#### The warranty **does not cover**:

- materials such as: oils, cartridges for filters, lubricating grease.
- parts damaged by bad or improper use, by incorrect operator intervention, by unauthorised repair and tampering performed by the customer or by third party, or use of spare parts not supplied by **DEPURECO S.r.l.**

Protect your purchases by joining the exclusive "warranty plus" program Go to www.depureco.com, fill in the form to extend the warranty up to 24 months.



#### 2. SAFETY INFORMATION

Carefully read the instructions in this manual and those applied directly on the machine.

#### 2.1. RESIDUAL RISKS

<b>RESIDUAL RISK</b>	DESCRIPTION
Voltage hazard	Maintenance operations performed on live machine electrical parts entail the risk of electrocution.
Rotating elements hazard	Maintenance operations performed by inserting hands near the fan and with the machine powered, entail the risk of cutting the upper limbs.
Danger of crushing to lower limbs	Maintenance operations that require tipping the machine over, carried out without the use of personal protective devices, poses the risk of crushing lower limbs.
Dust inhalation danger	Maintenance operations performed inside the machine entail the risk of inhaling potentially carcinogenic dust.
Fire risk	Routine operations performed despite the prohibition expressed in paragraph "INTENDED USE/IMPROPER USE".
Risk of explosion	Routine operations performed despite the prohibition expressed in paragraph "INTENDED USE/IMPROPER USE".

#### 2.2. GENERAL SAFETY WARNINGS

Personnel performing any type of intervention throughout the machine life-span, must have precise technical skills, special abilities due to acquired and recognised experience in the specific sector, be trained on how to use the necessary work tools and appropriate personal protective equipment, with reference to the applicable laws and in force in the place of use of the machine.

Lacking these requirements may cause damage to people's health and safety.

Use the personal protective equipment indicated in the manual.

#### 2.3. SAFETY WARNINGS FOR HANDLING, ASSEMBLY AND INSTALLATION

Use adequate lifting equipment for handling and adopt all the safety precautions designed for activities carried out in the work site.

Machines fitted with wheels must be set up in safe conditions by engaging the brakes on the swivel wheels.



#### 2.4. SAFETY WARNINGS FOR INTENDED USE

The machine was designed to work within the limits prescribed and indicated in the manual.

Using the machine to obtain production levels other than those described in this manual, shall be regarded as "IMPROPER USE".

Carefully read the instructions in paragraph "INTENDED USE/IMPROPER USE".

#### 2.5. SAFETY WARNINGS FOR ADJUSTMENT/MAINTENANCE

Perform routine maintenance as provided for in this manual.

Disconnect the machine from the electricity sources before any maintenance intervention.

Use the main switch to interrupt power and padlock it before any maintenance intervention.



## 2.6. SAFETY WARNINGS FOR ENVIRONMENTAL IMPACT

Do not disperse polluting material in the environment. Perform disposal in compliance with the relative laws in force. Incorrect cleaning or not replacing the filters may cause the polluting agent to be dispersed in the external environment.

## 2.7. SAFETY SIGNS PLACED ON THE MACHINE

#### SYMBOL

DESCRIPTION



Rotation direction of the motor.

Turn the fan off and disconnect the power before opening the filter.



Voltage hazard.



#### 3. HANDLING, ASSEMBLY AND INSTALLATION INFORMATION

#### 3.1. DIRECTIONS FOR HANDLING THE PACKAGE



The standard packaging DEPURECO S.r.l. does not guarantee protection against rain, storage areas must be covered and not humid.

When handling materials, use suitable lifting devices and adopt all of the safety precautions required for the worksite activities, also consult the technical data for the packaging described in the Packing List.

On the platform.



MACHINE MODEL	PACKAGING DIMENSIONS (a) x (b) x (h)	WEIGHT (KG)
AIRWELD CARRIAGE	702 x 756 x 916	80
AIRWELD WALL	702 x 756 x 916	80

Provide a delimited and adequate area, with level floor or surface, for unloading and depositing packs.

It is always advisable to keep the packs horizontal during handling in order to avoid loosing stability and/or them overturning.



#### 3.2. DIRECTIONS FOR MACHINE ASSEMBLY



Before assembly, visually inspect the material to make sure it was not damaged during transportation. If there are signs of damage, inform the seller within 10 days from delivery.

Before proceeding with assembly, read paragraph "MACHINE INSTALLATION METHODS".

During assembly, installation and maintenance, the screws must be tightened according to the values provided in the table.

The tightening torques must be applied slowly and constantly using a torque wrench. Said values must be decreased by 10% when using impact drivers.

The table refers to class 4.8 screws.

DIAMETER PER PITCH	SCREW SECTION mm <sup>2</sup>	SCREW TIGHTENING TORQUES Nm
6 x 1	20	3,5
8 x 1,25	36	8
10 x 1,5	58	17
12 x 1,75	84	28

The table refers to class 8.8 screws.

DIAMETER PER PITCH	SCREW SECTION mm <sup>2</sup>	SCREW TIGHTENING TORQUES Nm
6 x 1	20	10,4
8 x 1,25	36	25
10 x 1,5	58	50
12 x 1,75	84	87



#### 3.3. MACHINE HANDLING MODE

The machine is fitted with wheels for moving.

The machine has a tube frame of ergonomic shape suitable for handling.



#### 3.4. MACHINE INSTALLATION MODE



Before installation, check that the overall dimensions required to perform work and maintenance are without constraint. See paragraph "DESCRIPTION OF PERIMETER AREAS".



Before proceeding with installation, make sure the wall is able to support the overall load of the machine and any optional features. See "Technical data - Weight" and "Description of perimeter areas".



Before starting the machine up, engage the brakes on the wheels.



The machine must be installed in the immediate vicinity of utilities and connected by articulated suction arm.







## 3.5. ELECTRICAL CONNECTION MODE



The machine is fitted with a circuit breaker located in an IP54 casing. Make the connections by referring to the diagrams in paragraph "TECHNICAL DATA/DIAGRAM AND ELECTRICAL VALUES".

The machine is fitted with a power cable with 4-pole plug.

Start and stop the machine for a short time to verify the proper rotation direction of the fan, indicated by the arrow on the motor.

#### 3.6. METHODS FOR INSTALLING OPTIONALS

# Prior to any installation procedure, read the instructions provided in the "RECOMMENDATIONS FOR MAINTENANCE INTERVENTIONS" paragraph carefully.

To replace optional parts, see paragraph "LIST OF REPLACEABLE PARTS".

The following optionals can be mounted on the machine:

- articulated extractor arm;
- polyester cartridge filter;
- aluminium-coated cartridge filter;
- teflon-coated cartridge filter.



## 4. TECHNICAL INFORMATION

#### 4.1. MANUFACTURER AND MACHINE IDENTIFICATION

The manufacturer's identification is stated on the identification plate and on the declaration of conformity. The table states the machine function and the models.

MACHINE	MODEL CLEANGO 1,1
FILTER	kW AIRWELD WALL 1,1
	kW AIRWELD 1,1 kW
	USA



#### 4.1.1. FACSIMILE OF THE DECLARATION OF CONFORMITY

## **DECLARATION OF CONFORMITY**

(for machines not included in Annex IV)

## The Manufacturer

DEPURECO INDUSTRIAL VACUUMS S.r.I.- C.so Europa. 609 10088 Volpiano (TO) - ITALY Tel. +39 011 98 59 117 - Fax +39 011 98 59 326 - e-mail depureco@depureco.com www.depureco.com - C.F. e Partita.lva 02258610357

#### declares

under its own responsibility that the vacuum model described in this manual

Space for the application of the identification data label

To which this declatation refers complies with the essential safety requirements provided by Machines Directive 2006/42/EC and Electromagnetic Compatibility Directive 2014/30/EU

Harmonized Standards used for design, manufacturing and testing of machine, are listed in technical file filed at **DEPURECO S.r.I.** 

This declaration is not valid if changes are made to the vacuum cleaner, without the manufacture's approval.

Turin, \_\_\_\_\_

The Legal Representative (Marco DEVINCENTIS) [briginal signed document]



## 4.1.2. MACHINE IDENTIFICATION PLATE

The plate indicates the Manufacturer's data and the technical references essential for proper and safe use.



#### 4.2. MACHINE DESCRIPTION



The purpose of the machine is to extract and filter welding fumes and metal smoothing dust produced by mechanical industry processing.

The polluting elements are captured and carried towards the filter through rigid or flexible pipes connected to the hood.

#### 4.3. OPERATING CYCLE DESCRIPTION



STAGE	DESCRIPTION
А	The air extracted through the pipe is conveyed by the fan in the body.
В	The dusty air passes through the cartridge filter that captures the dust.
С	The clean air outlet is under the machine.

## 4.4. TECHNICAL DATA

## 4.4.1. PERFORMANCE

	AIRWELD	AIRWELD
Power [HP/kW]	1,5/1,1	1,5/1,1
Power supply voltage 3Ph [V]	400	400
Power supply voltage 1Ph [V]	/	/
Consumption [A]	2,54	2,54
Frequency [Hz]	50/60	50/60
Motor phase [Ph]	3	3
RPM	2846	2867
Type of fan	PR-PRM 300	PR-PRM 300
Max flow rate [m3/h]	1400	1400
Nominal min flow rate [m3/h]	903	903
Sound level [db(A)]	72	72
Weight [kg]	80	80

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## 4.4.2. DIAGRAM AND ELECTRICAL VALUES

MODELLO MACCHINA	SIZE OF MOTOR CIRCUIT BREAKER (A)	SIZE AND TYPE OF FUSE LINE (A)
AIRWELD	1,8/2,5	8
AIRWELD WALL	1,8/2,5	8
AIRWELD USA - 220V - 1Ph	3,5/5	12
AIRWELD WALL USA - 220V - 1Ph	3,5/5	12



## 4.4.3. SIZE OF AIR INLET



## 4.4.4. SIZE OF AIR OUTLET





## 4.4.5. **FILTER**

	AIRWELD
Filter dimension [mm]	Ø 325 x 400
Type of filter	Cartridge
Type of filtering fabric	100% Cellulose 7033
BIA rating	"L"
Filtering surface [m <sup>2</sup> ]	12
Filtering rate [%]	99



## 4.5. SAFETY DEVICE DESCRIPTION

The machine is equipped with a general ON-OFF switch with safety block.



## 4.6. DESCRIPTION OF PERIMETER AREAS



During installation, take into account the dimensions of any optional parts.

0 O







## 5. INFORMATION ON USE

#### 5.1. INTENDED USE/IMPROPER USE

#### TYPE OF TREATED AIR

OPERATION	INTENDED	IMPROPER	WORK ENVIRONMENT
FILTRATION of:	<ul><li>Welding fumes</li><li>Metal powders</li></ul>	<ul> <li>Drawing in liquids</li> <li>Working in environments where an explosion hazard exists</li> <li>Flammable or explosive vapour</li> <li>Potentially explosive metal powder</li> <li>Powder that may be explosive by nature or reaction.</li> </ul>	Produced during mechanical industry processing.



The machine is designed to operate with pressure filtering.

Any other machine use must be authorised by DEPURECO S.r.l. in advance. In the absence of such written authorisation, the Manufacturer shall deny any liability for damage caused to people or property and the warranty on the line and the machines supplied shall cease.



The use of flammable sprays, abrasive grinders or other utensils that can generate sparks or open flames, during welding operations, can cause the filtering fabric to catch fire.

#### 5.2. START-UP AND STOP

- ON = power on
- OFF = power off

## SWITCH OPERATION MAIN WITH BLOCK





#### 6. INFORMATION ON ADJUSTMENTS

#### 6.1. RECOMMENDATIONS FOR ADJUSTMENTS



## 6.2. FLOW RATE REGULATION

To regulate the air flow rate, close the gate to decrease it.



See paragraph "OPTIONAL FEATURES INSTALLATION METHODS".



## 7. MAINTENANCE INFORMATION

#### 7.1. RECOMMENDATIONS FOR MAINTENANCE INTERVENTIONS



Carefully read the instructions in this manual before any maintenance intervention.



Perform maintenance activities using the personal protective equipment described in the manual.

#### 7.2. TABLE OF SCHEDULED MAINTENANCE INTERVALS

Routine maintenance operations are to performed at the date shown in the table.

OPERATION	24 hours	250 hours	500 hours	1000 hours	1500 hours
Check that the filtering efficiency is good.	-				
Check and possibly replace torn or scratched filters.			•		
Make sure there are no anomalous vibrations affecting the fan. If so, check the fan and clean it.				•	
Check the status of the electric power supply cables.					•
Check the fill level of the dust containers.	•				
Check how clean the area around the machine is.		•			

#### 7.3. CLEANING



The information provided below serves the purpose of helping perform cleaning activities inside the machine to restore operation and efficiency.

To access the inside of the machine, remove the filtering elements.

#### See paragraph "LIST OF REPLACEABLE PARTS".

The machine does not have a dust collection container. If there is any dust build-up on the inside walls, use an extraction-filtering unit, which must be purchased separately.



## 8. INFORMATION ON TROUBLESHOOTING

The following information has the purpose of helping to identify the anomalies and restore the machine operation and efficiency.

DEFECT	CAUSE	POSSIBLE SOLUTIONS
The emitted air is not sufficiently clean.	Amount and kind of powder do not match the ones in the project.	Redefine the project and replace the filtering equipment.
Decrease of the vacuumed air flow rate.	Filters not clean.	Take down the filtering elements and clean them with machines specifically-designed not to release any polluting dust. Replace the filtering parts if necessary.
	Pipe connected to obstructed collection systems.	Remove the obstacles
Dust escaping after a period of good operation	Break or tear of the filtering elements.	Proceed with its removal and replacement.
The fan vibrates	Fixing the filtering elements.	Proceed with tightening.
	The impeller is dirty	Disassemble and clean the impeller.
	The impeller has suffered an impact.	Re-balance or replace the impeller.
	The rotation direction is not correct.	Reverse the two motor connection phases.Act on the phase inversion of the plug.
The fan turns but vacuuming is	Obstructed air ducts.	Remove the obstacles.
	Any shutters on the collection elements closed or partially closed.	Open the shutters.
No start-up	Incorrect connection.	Check connections to the mains.
		Check proper connection to the motor terminal board.
	Incorrect direction of rotation of the motor.	Switch around one of the phases on the power supply. (Motor terminal block, Main switch, power plug)
The breaker for the electrical motor trips and stops the machine.	The breaker has an incorrect setting value.	Set the tripping value to the absorption value provided on the electrical motor plate.
	Short circuit on electrical motor.	Replace the motor.
	30	

#### 9.1. RECOMMENDATIONS FOR REPLACEMENT INTERVENTIONS



The machine replacement or repair operations are reserved to qualified, trained and authorised personnel, employed by the Manufacturer or by the Authorised Assistance Centre.

Change the filters using the protective equipment described in the manual.

Prior to changing the filter, the motor or the fan, remove the optional part assembled on the extraction intake.

#### 9.2. LIST OF REPLACEABLE COMPONENTS

#### 9.2.1. STANDARD





POS.	ELEMENT
1	Cartridge filters code 7041061172
2	Rotary wheel
3	Fan
4	Motor
5	Circuit breaker switch
6	Switch box
7	Hour-meter
8	Plug
9	Electrical cable
10	Instrument box

POS.	ELEMENT
11	Feed-through nut
12	Feed-through

## TAKING DOWN AND PUTTING IN CARTRIDGE FILTERS

STEP	ACTION	PICTURE
1	Take the articulated arm or any other pipe down from the machine unit.	
2	Engage the brakes on the wheels.	

Place the machine on its side, the one with the electric controls.

4

3

Take out the screws that secure the cartridge to the surface.



## STEP ACTION

## PICTURE

5 Take the filter out and place it in sealed bags.



## 9.2.2. OPTIONAL

- 1 Articulated extractor arm
- 2 Polyester filtering cartridge
- 3 Aluminium-coated filtering cartridge
- 4 Teflon-coated filtering cartridge





#### 9.3. SCRAPPING AND DECOMMISSIONING

The machine does not have any particular problems as regards to decommissioning. Proper care shall be taken to prevent unauthorised personnel from starting the machine. Comply with the laws in force in the country of use, for any legal and tax aspects (any reports, complaints, etc...).