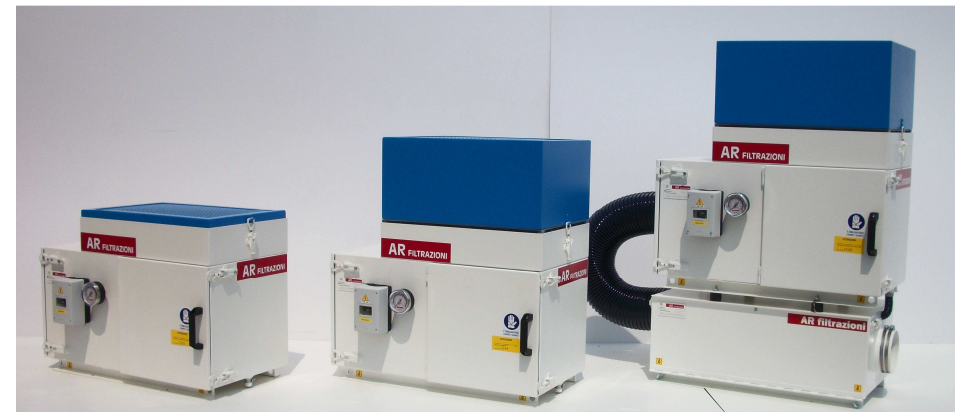


[www.arfiltrazioni.co](http://www.arfiltrazioni.co)

USER AND MAINTENANCE MANUAL  
AIR CLEANER ARNO SERIES

TRANSLATION OF THE ORIGINAL  
INSTRUCTIONS



Machine Tool Solutions Ltd.

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### 6.4. FILTERS DISASSEMBLY AND REASSEMBLY (pic. 7-15, table 5)

- 1) Open the door (H) of the pre-filter PRF to take off filters **e** and **f**, which are placed on slides to permit easy filters extraction.
  - 2) Take off the cover (I) to access to the centrifuge, which contains filter **x** (ARNO C YC/ CF YC/ CPF YC).
  - 3) Open the door (D) to take off filters **a** and **b**, which are placed on slides to permit easy filters extraction.
  - 4) Lift the cover (E) to take off filters **d** and **c**.
- In presence of DS and/or CA optional, before accessing to the cover (E), it is necessary to lift the cover (J) with the filter **y** and/or the activated carbon cell (K).
- 5) Follow the instructions on the other way round to reassembly the filters.

#### ATTENTION:

**During the maintenance operations, you could find some dust which might be accidentally spread in the surrounding area. Pay attention and use the individual protection devices.**

### 6.5. FILTERS CLEANING AND REPLACEMENT

Make a periodic filter replacement as described under section 6 (pic. 15, table 5-6).

Table 7

POS.	FILTER	OPERATION
1	<b>a - e</b>	Filters can be recovered by shaking, blowing with compressed air counter-current or by immersing them into a solution of warm water and detergent. If the filters structural integrity is good it is possible to recover them several times. In case the filters are cleaned by immersion into a solution of warm water and detergent, recover them no more than twice.
2	<b>b - d - y</b>	Disintegrated or obstructed filters cause a drastic fall of the air flow rate of the air cleaner. They cannot be recovered and must be replaced.
3	<b>f - x - ca</b>	The filters cannot be recovered and must be replaced.
4	<b>c</b>	If the filter <b>c</b> is a black panel filter FPN, it will be handled like pos. 1. If the filter <b>c</b> is a undulated filter FOS, it will be handled like pos. 3.

### 6.6. FILTERS DISPOSAL

**ATTENTION: The exhausted filters are special waste. Dispose of filters and washing solution in accordance with the norms in force in the country of the user.**

AR FILTRAZIONI declines any responsibility due to a wrong use or to an irregular disposal of the filters.

### 7. DEMOLITION

It is necessary to destroy/cancel the air cleaner identification plates and its documentation.

If the demolition is done by a third person, address to certified companies for the recovery and/or disposal of the resulting materials.

If the demolition is done on your own, separate the different types of materials and charge certified companies with the disposal of each kind of material.

Separate the metallic parts, the electrical motor, the rubber parts and the parts in synthetic material in order to allow their further use.

The waste disposal must be done in accordance with the norms in force in the country where the air cleaner is. AR FILTRAZIONI declines any responsibility for damages to persons or things due to the reuse of single parts of the air cleaner for functions or assembly different from the original ones.

## 6.2. MAINTENANCE PROGRAM

Table 6

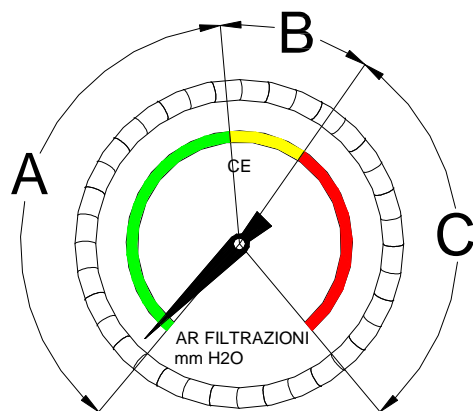
SUITABILITY	Q.	FILTER	DESCRIPTION	MAINTENANCE PROGRAM	
				OPERATION	AVERAGE TIME
PRE-FILTER	1	<b>e</b>	Metallic filter	Washing	6/12 months
	1	<b>f</b>	Synthetic panel filter	Replacement	6/12 months
ARNO	1	<b>x</b>	Centrifugal filter	Replacement	12 months
	1	<b>a</b>	Metallic filter	Washing	12 months
	1	<b>b</b>	Pocket filter	Replacement	12 months
	1	<b>c</b>	Undulated filter	Replacement	12 months
			Black panel filter	Washing	12 months
	1	<b>d - y</b>	Final filter	Replacement	24/36 months
			Epa/Hepa filter	Replacement	24/36 months
			<b>ca</b>	Activated carbon	Replacement

This maintenance program shows average times for maintenance interventions, which are the result of statistics processed on the basis of more than one thousand systems that AR FILTRAZIONI maintains every year at its own customers.

The average times for the replacement of filters can vary in defect or in excess, depending on the machined material, on the difficulty of the working process and on the use of high pressure pumps.

## 6.3. GAUGE TO MONITOR FILTER CONDITIONS

Picture 16



**Sector A (Green)**  
Optimum efficiency of air cleaner.

**Sector B (Yellow)**  
Caution sector.  
Get ready for the replacement of filters **b** and/or **d**.

**Sector C (Red)**  
Insufficient efficiency of air cleaner.  
Replace the filters **b** and/or **d** and/or **y**, wash or replace the filter **a** and/or **c**.  
Control and clean the suction inlet.

### NOTE:

- When the gauge hand is out-of zone A, replace the obstructed filters extracting them one by one, checking every time the feedback of the gauge hand.
- When the gauge hand points "0" out, check the suction inlet of the air cleaner and/or the point of connection to the machine tool to see if they are obstructed.

### ENCLOSURES:

- TEST CERTIFICATE
- EUROPEAN COMMUNITY DECLARATION OF CONFORMITY

## 1. GENERAL INFORMATION

### 1.1. GENERAL REMARKS AT DELIVERY

When you receive the air cleaner control that:  
- the delivery corresponds to the order specifications;  
- there is no damage.

In case of damages or missing parts you must immediately inform AR FILTRAZIONI, giving all the possible details.

Catalogues and drawings contained in this manual are to be considered as a general reference and they do not show all the technical details and features.

### 1.2. WARNINGS

**The parts of the manual in bold are danger signals and the non observance of these procedures could cause injuries to the operator.**

This instructions manual is strictly reserved to customers owning the above mentioned air cleaner.

Information contained in this manual are subject to changes without any advance notice.

The documents delivered with the air cleaner, including this manual, are property of AR FILTRAZIONI, which reserves all rights. For no reason this manual, part of it, or the enclosures supplied, can be reproduced in any form or by any means without permission of AR FILTRAZIONI.

### 1.3. MANUFACTURER IDENTIFICATION

**AR FILTRAZIONI S.R.L.** Via Dell'Industria 59/61 - 24126 BERGAMO (BG) - ITALY  
Tel. +39 035 533 822 Fax +39 035 533 824 www.arfiltrazioni.it e-mail: info@arfiltrazioni.it

### 1.4. AIR CLEANER IDENTIFICATION

Model	<b>ARNO</b>
Serial number	
Year of construction	

**Remark** The identification plate is placed on the front part of the air cleaner.  
Write the identification data in the table shown above.  
Indicate these data in case of request for spare parts.

### 1.5. REQUEST FOR ASSISTANCE ACTION

In case of need, please address to:

**OUR CONTACT IN USA - Toll Free: 1-877-MTS-SALE (1.877.687.7253)**

**AR FILTRAZIONI S.R.L.** Via Dell'Industria 59/61 - 24126 BERGAMO (BG) - ITALY  
Tel. +39 035 533 822 Fax +39 035 533 824 www.arfiltrazioni.it e-mail: tecnico@arfiltrazioni.it

### 1.6. WARRANTY

The supplied air cleaner is guaranteed for 24 months from the shipment date. This warranty, concerning defects related to the quality and manufacturing of material, is bound to their notification within fifteen days from their discovery, leaving out of the warranty those defects and lacks due to the fact of not having followed the service and maintenance instructions supplied by the supplier, or to a bad or inappropriate use, to an excessive air cleaner exploitation violating the maintenance guidelines, modifications or repairs made by the buyer and also due to the use of lubricants, detergents or other unsuitable products. The warranty voids with the delivery of spare parts and components free of charge ex works (EWX). It depends on the decision of the supplier if the repairs will be executed on site (transport costs to be charged to customer) or at customer's place or in the factory in charge to fulfil this work (in this case the buyer has to pay the costs

for travelling, food, hotel accommodation). The buyer is not eligible for compensation for damages to persons or components deriving from the consequences of the above mentioned defects. All components which have not been built directly by the supplier are subordinated to the warranty conditions used by the subcontractor. The parts replaced under warranty will not extend for any reason the expiration time of the initial warranty that starts, as indicated above, from the expedition date of the whole equipment.

### 1.7. EUROPEAN COMMUNITY DECLARATION OF CONFORMITY

 <b>DEPURATORI D'ARIA PER MACCHINE UTENSILI</b> <b>AIR CLEANERS FOR MACHINE TOOLS</b>									
<b>EC DECLARATION OF CONFORMITY</b> Annex II A – Directive 2006/42/CE									
<b>The company</b> <b>AR FILTRAZIONI SRL</b> Via dell'Industria 59/61 24126 BERGAMO									
Declares on its own responsibility that the machine <b>AIR CLEANER</b>									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><b>Series</b></td> <td style="width: 50%;"><b>ARNO</b></td> </tr> <tr> <td><b>Model</b></td> <td></td> </tr> <tr> <td><b>Serial number</b></td> <td></td> </tr> <tr> <td><b>Year of construction</b></td> <td></td> </tr> </table>	<b>Series</b>	<b>ARNO</b>	<b>Model</b>		<b>Serial number</b>		<b>Year of construction</b>		
<b>Series</b>	<b>ARNO</b>								
<b>Model</b>									
<b>Serial number</b>									
<b>Year of construction</b>									
- Complies with the following regulations: <ul style="list-style-type: none"> <li>➤ Machinery Directive 2006/42/CE</li> <li>➤ Italian legislative Decree 17/10</li> <li>➤ Directive on electromagnetic compatibility 2014/30/UE</li> <li>➤ Italian legislative Decree 80 dated 18/05/2016</li> </ul>									
- Complies with the following harmonised standards: <ul style="list-style-type: none"> <li>➤ EN ISO 12100 : 2010</li> <li>➤ EN 60204 – 1 : 2006 / AC :2010</li> </ul>									
Authorized person to draw up the Technical file: Mr..... Bergamo, .....									
Legal representative .....									
<b>AR FILTRAZIONI SRL</b> 24126 BERGAMO ITALY VIA DELL'INDUSTRIA 59/61 CCIAA R.E.A. BG 284716									

Reproduction of the European Community declaration of conformity

### 1.8. SECURITY REGULATIONS

#### 1.8.1 GENERAL PRESCRIPTION

- Do not allow not authorized and not qualified staff to start, to drive, to repair the air cleaner. Please refer to this manual for the actions to undertake.
- Control that all the security devices for accident prevention (safety nets, security clamps, etc) have not been tampered and check that they work correctly; otherwise set them. Do not remove the security devices.
- Do not tamper for any reason the electrical, pneumatic equipment or any other mechanical parts.
- Do not try to climb on or over the air cleaner.
- In case of bad running of the air cleaner or damages to its components, contact the person in charge of the maintenance, without making any further repairs.
- The user is obliged to keep readable all plates of the air cleaner.

Table 5

SET	ARNO 0		ARNO 1		ARNO 2		ARNO 3		DESCRIPTION
	CODE	ARTICLE	CODE	ARTICLE	CODE	ARTICLE	CODE	ARTICLE	
e	-	-	00067	FMP PRF1	00059	FMP PRF23	00059	FMP PRF23	Metallic filter
f	-	-	00068	PFS PRF1	00060	PFS PRF23	00060	PFS PRF23	Synthetic panel filter
x	-	-	00069	FC1	00070	FC23	00070	FC23	Centrifugal filter
a	1	01879	FMP0	FMP1	00044	FMP23	00044	FMP23	Metallic filter
	2	01883	FTU0	FTU1	00046	FTU23	00047	FTU23	Synthetic pocket filter
b	3	01884	FTR0	FTR1	01308	FTR23	01309	FTR23	Fiber glass pocket filter
	4	01880	FTG0	FTG1	00621	FTG23	00605	FTG23	Fiber glass pocket filter
c	1	-	-	FOS1	00604	FOS2	00119	FOS3	Synthetic undulated filter
	4	01881	FPN0	FPN1	01519	FPN2	01520	FPN3	Black panel filter
s	-	-	-	-	01907	FAE2S F9	01908	FAE3S F9	Final filter
7	-	-	01233	FAE1 F9	01234	FAE2 F9	01235	FAE3 F9	Final filter
8	01885	FAE0 E10	00052	FAE1 E10	00057	FAE2 E10	00064	FAE3 E10	High filtration efficiency filter - Epa
d	9	01886	FAE0 E11	FAE1 E11	00053	FAE2 E11	00058	FAE3 E11	High filtration efficiency filter - Epa
	A	-	-	FAE1 E12	00054	FAE2 E12	00061	FAE3 E12	High filtration efficiency filter - Epa
y	H	01882	FAE0 H13	FAE1 H13	02038	FAE2 H13	02039	FAE3 H13	Most high filtration efficiency filter - Hep H13
	2	-	-	-	01324	FF2 E10	01328	FF3 E10	High filtration efficiency filter - Epa
	1	-	-	-	01325	FF2 E11	01332	FF3 E11	High filtration efficiency filter - Epa
X	-	-	-	-	01326	FF2 H13	01348	FF3 H13	Most high filtration efficiency filter - Hep H13
ca	-	00139	CARB 9kg	CARB 12kg	00139	CARB 18kg	00139	CARB 22kg	Activated carbon (kg)
	-	-	-	-	-	-	-	-	OPTIONAL CA - ACTIVATED CARBON CELL
	-	-	-	-	-	-	-	-	GASKET KIT
	-	-	-	-	-	-	-	-	PRF pre-filter gasket kit
	-	-	-	-	-	-	-	-	ARNO cleaner gasket kit

## 6. MAINTENANCE

### 6.1. FILTERS LAYOUT AND FILTERING SETS DETAILS

To carry out the maintenance:

- **STOP THE AIR CLEANER.**
- Press the button "O" of the overload cut-out switch.
- Set the general network switch on the position "OFF".
- Set the general switch on "OFF".
- Be sure that the moving parts (fan wheel/impeller) are completely stopped.
- Wear all individual protecting devices in accordance with safety norms in force.

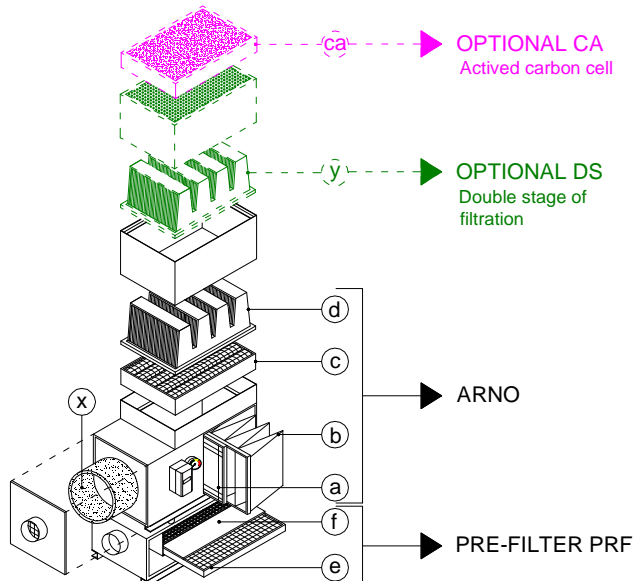


Maintenance must be carried out only by specialized staff with knowledge of the maintenance procedures and of the precautions to be adopted.

#### FILTERING SET (pic. 15, table 5)

- **ARNO** The filtering set is specified on the enclosed documentation and on the plate, which is fixed on the air cleaner door. The filtering set is composed by four numbers, which correspond to the letters "a-b-c-d".
  - **ARNO C YC-CF YC-CPF YC** In addition to the four above mentioned filters, they are equipped also with a centrifugal filter "x" (not specified on the filtering set).
  - **PRF** The air cleaner is equipped with pre-filter that includes the filters " e - f" (not specified on the filtering set).
  - **OPTIONAL DS** The air cleaner is equipped with double stage of filtration that includes the filter "y".
- The filtering set is composed by five numbers, which correspond to the letters "a - b - c - d - y".
- **OPTIONAL CA** The air cleaner is equipped with activated carbon cell (not specified on the filtering set).

Picture 15



- Furthermore the user is obliged to replace all plates which for any reasons are deteriorated or not very clear to read. He has to ask the spare part department of AR FILTRAZIONI for new ones.
- If it is not explicitly written in this manual, avoid repairing or setting the air cleaner, or part of it, while it is running in order to avoid items being hooked by some moving parts.

**ATTENTION:** Use only spare parts of AR FILTRAZIONI.

AR FILTRAZIONI declines all responsibility for any accident or damage to persons or things due to the lack of observance either of the security regulations or of the rules mentioned before.

The user is obliged not only to comply very carefully with the above security rules but also with the rules in force in the country where the air cleaner has been installed.

**IN CASE OF DOUBT, ALWAYS ASK FOR SPECIALIZED STAFF'S HELP. ANY TAMPERING MADE BY THE USER REMOVES ALL RESPONSABILITY FROM THE MANUFACTURING COMPANY AND MAKES THE USER THE ONLY RESPONSIBLE PERSON TO THE ACCIDENT PREVENTION AUTHORITY.**

#### 1.8.2 PRESCRIPTION FOR INSTALLATION AND RUNNING OF AIR CLEANER

- Before setting up the air cleaner, check that the established area is compatible with the overall dimension of the air cleaner.
- The power supply must have an automatic release system installed before the general switch of the air cleaner and must have a suitable earthing which complies with the industrial regulations for the prevention of accidents.
- Before turning on the air cleaner, the operator will have to read carefully the manual in order to acquire a deep knowledge of the technical specifications and of the air cleaner controls.
- Do not wear rings, watches, jewels and clothing which are dangling such as ties, scarves, unbuttoned jackets or any other clothing which can get entangled in the moving parts. You should wear instead clothing which is approved for the prevention of accidents such as helmets, suitable shoes against skidding, gloves, domes, security glasses if necessary.
- It is absolutely forbidden to use the air cleaner for different purposes as those stated before in the manual. The air cleaner must be used according to the norms of a correct technique and following the laws in force in each country even if in the specific country do not exist special rules which regulate this specific sector.

#### 1.8.3 PRESCRIPTION FOR MAINTENANCE

- Before cleaning and starting the maintenance procedure and before moving any protection, make sure that the overload cut-out switch is on position "O" to enable to turn off the power of the air cleaner and wait that all moving parts of the air cleaner are completely stopped.
- In case you must act on the overload cut-out switch or close to it, please switch off the power supply from the line where the overload cut-out switch is connected to.
- In case of repairs, be sure that there are no moving parts which could start to run. Make sure that there are not unstable items placed on the air cleaner or close to it. In any case block them by using adequate instruments.
- The moving parts (fan wheel/impeller) of the air cleaner **DO NOT** stop immediately after having switched off the air cleaner. Therefore it is recommended to make sure that all moving parts are stopped, before starting the maintenance.
- Never use your hands or instruments as screwdrivers and bars for stopping the moving parts.
- All controls and maintenance activities, for which the removal of the security protection is necessary, have to be carried out under the complete responsibility of the user. Therefore it is recommended to make those operations only by specialized and authorized staff.
- Do not wear clothing with wide sleeves while working or doing the maintenance.
- Do not use your hands for air cleaner operations instead of suitable tools.
- Pay attention to plates placed on the air cleaner whenever you are working on it or close to it, following carefully the written information.

**NEVER** make quick or makeshift repairs which could compromise the correct running of the air cleaner.

## 2. TECHNICAL DESCRIPTION ARNO SERIES

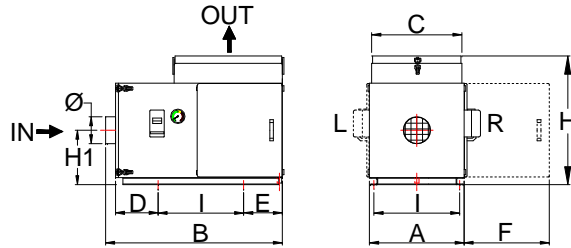
### 2.1. GENERAL DESCRIPTION

Air cleaners of ARNO series are suitable for suction and purification of oil mist and dust produced during wet and dry machining processes. Due to the way they are manufactured, they are appropriate for purifying particles of different sizes, simply using interchangeable filters with different degrees of filtration efficiency. The air cleaner is equipped with a drainage for the recovery of re-condensed coolant liquid.

#### 2.1.1 ARNO C YC/ V YC/ VA YC SERIES



Inspection door "R" on the RIGHT side



#### TECHNICAL DATA

Picture 1 / Table 1

Model	Suction inlet Ø mm	Max airflow rate MC/H	Power HP/KW	Voltage Frequency V - HZ	Noise level dBA	Weight Kg	
ARNO 0	VA YC	100/120/150	850/1000/1250	0,75/0,55	230/400-50	67	47
ARNO 1	C YC	150	1500	1/0,75	230/400-50	67	65
	V YC/ VA YC	150	1700	1/0,75	230/400-50	68	65
ARNO 2	C YC	150	2600	2/1,5	230/400-50	70	85
	V YC/ VA YC	150/200	2700/3300	2/1,5	230/400-50	72	85
ARNO 3	C YC	200	3100	3/2,2	230/400-50	72	90
	V YC/ VA YC	200	4000	3/2,2	230/400-50	72	90

Model	Overall dimensions (mm)								Fixing wheelbase I
	A	B	C	D	E	F	H	H1	
ARNO 0	360	750	360	185	205	380	507	230	310 - Ø9
ARNO 1	400	860	400	230	220	420	570	245	360 - Ø9
ARNO 2	525	990	500	245	220	500	690	305	475 - Ø9
ARNO 3	525	990	600	245	220	500	690	305	475 - Ø9

#### PRE-ARRANGEMENTS:

The air cleaner can be equipped (on demand) with overload cut-out switch and gauge to monitor filter conditions (which are standard on ARNO OVA YC).

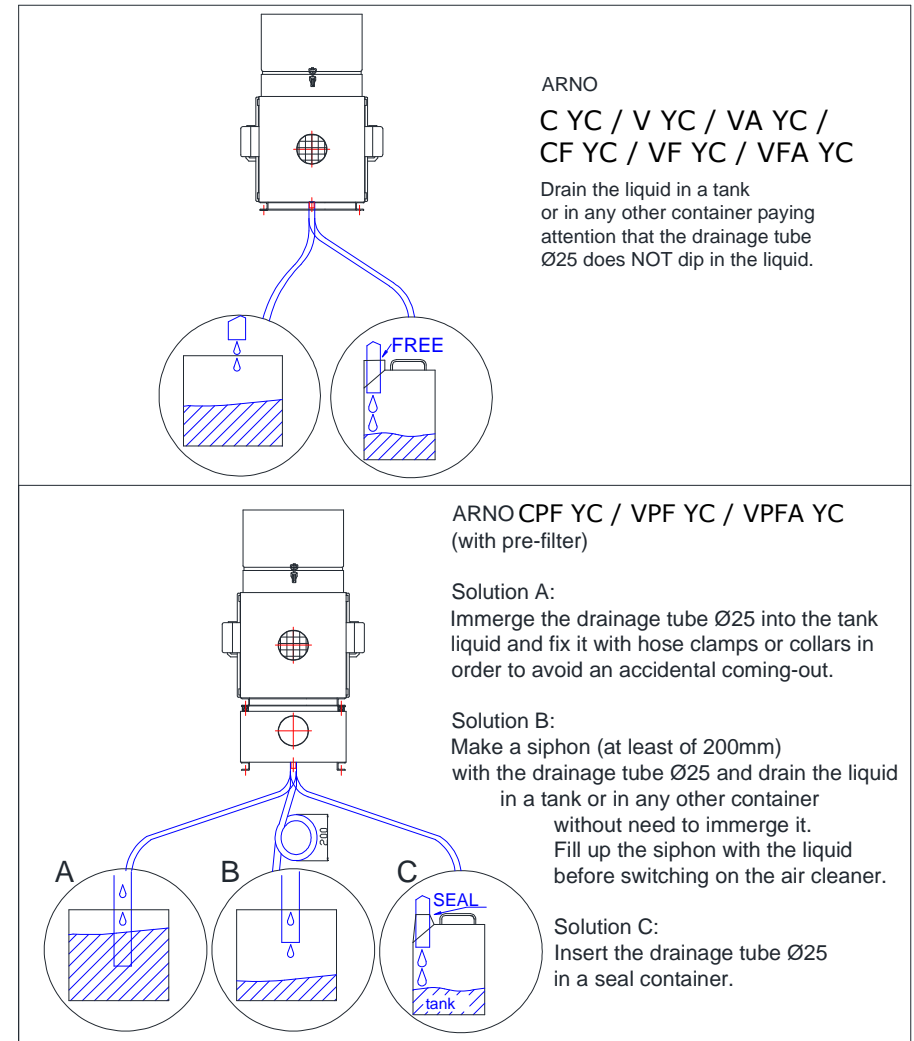
Furthermore, it is possible to add a final filtration stage with high (Epa) or most high (Hepa) filtration efficiency tested in accordance with European norm EN 1822, suitable for holding micro-dust, micro-mist and smoke. In this case it changes into ARNO CF YC/ VF YC/ VFA YC.

## 5.8. AIR CLEANER DRAINAGE

### IMPORTANT

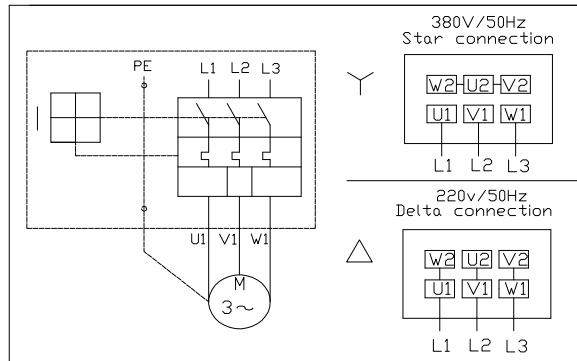
Do not reduce the drainage outlet diameter in order to have a correct running of the air cleaner.

Picture 14



**5.6. ELECTRIC CIRCUIT ARRANGEMENT**

Picture 12

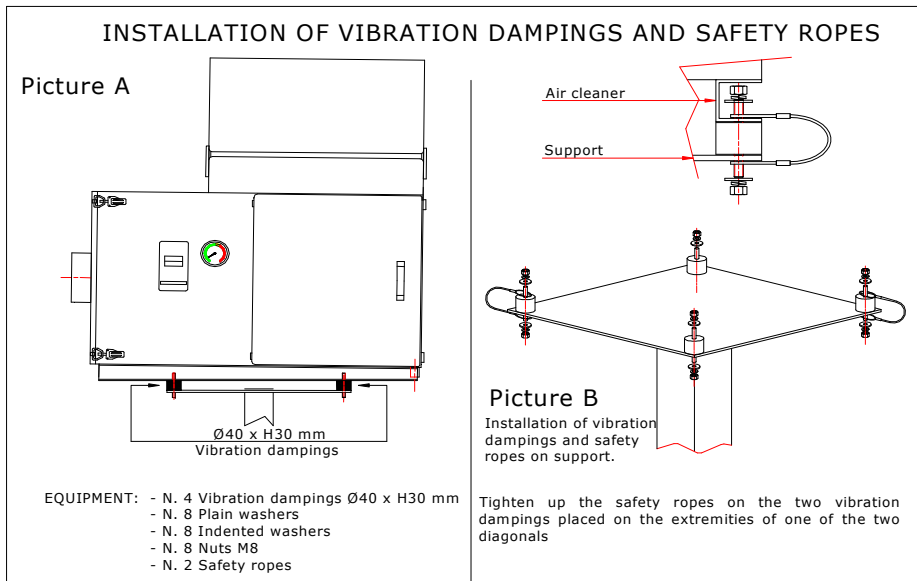


**5.7. INSTRUCTION FOR VIBRATION DAMPINGS AND SAFETY ROPES**

**INSTALLATION**

Except for air cleaners supplied with already installed vibration dampings: ARNO CPF YC/VPF YC/VPFA YC/VPFA GM YC.

Picture 13



**2.1.2 ARNO CF YC/ VF YC/ VFA YC/ VFA GM YC SERIES**

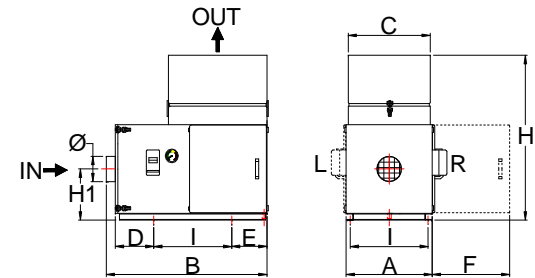
The air cleaner is equipped with overload cut-out switch, gauge to monitor filter conditions and with a final filtration stage with **high (Epa)** or **most high (Hepa) filtration efficiency** tested in accordance with European norm **EN 1822**, suitable for holding micro-dust, micro-mist and smoke.

The filter is available with different efficiency degrees:

- **EPA E10 – E11 – E12** in accordance with European norm **EN 1822**;
- **HEPA H13** in accordance with European norm **EN 1822**.



Inspection door "R" on the RIGHT side



**TECHNICAL DATA**

Picture 2 / Table 2

Model	Suction inlet Ø mm	Max airflow rate MC/H	Power HP/KW	Voltage Frequency V - HZ	Noise level dBA	Weight Kg	
ARNO 0	VFA YC	100/120/150	850/1000/1250	0,75/0,55	230/400-50	67	57
ARNO 1	CF YC	150	1500	1/0,75	230/400-50	67	75
	VF YC/ VFA YC	150	1700	1/0,75	230/400-50	68	75
ARNO 2	CF YC	150	2600	2/1,5	230/400-50	70	95
	VF YC/ VFA YC	150/200	2700/3300	2/1,5	230/400-50	72	95
	VFA GM YC	150	2700	2/1,5	230/400-50	72	95
ARNO 3	CF YC	200	3100	3/2,2	230/400-50	72	105
	VF YC/ VFA YC	200	4000	3/2,2	230/400-50	72	105
	VF GM YC / VFA GM YC	200	4000	3/2,2	230/400-50	72	105

Model	Overall dimensions (mm)								Fixing wheelbase I
	A	B	C	D	E	F	H	H1	
ARNO 0	360	750	360	185	205	380	507	230	310 – Ø9
ARNO 1	400	860	400	230	220	420	860	245	360 – Ø9
ARNO 2	525	990	500	245	220	500	980	305	475 – Ø9
ARNO 3	525	990	600	245	220	500	980	305	475 – Ø9

**PRE-ARRANGEMENTS:**

In case of especially heavy machining processes, machining of cast iron and in presence of solid dust, it is appropriate to complete the unit with a pre-filtration system PRF.

In this case it changes into ARNO CPF YC/ VPF YC/ VPFA YC/ VPFA GM YC.

### 2.1.3 ARNO CPF YC/ VPF YC/ VPFA YC/ VPFA GM YC SERIES (ARNO CF YC/ VF YC/ VFA YC/ VFA GM YC + PRF PRE-FILTRATION SYSTEM)

The air cleaner, equipped with a suitable pre-filtration system PRF, is suitable for heavy machining processes, cast iron and aluminium machining and in presence of solid dust.

The pre-filtration system PRF, suitable for excessive liquid and solid pollutants, is equipped with a hinged door for easy inspection and replacement of spare parts.

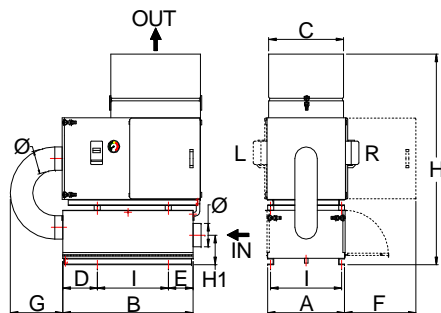
The filter set is composed by:

- Metallic filter FMP;
- Synthetic panel filter PFS.

The pre-filtration system, situated beneath the air cleaner, reduces considerably the air cleaner maintenance. It keeps constant its airflow rate and it avoids a possible unbalance of the fan wheel/impeller in case of excessive suction of solid and greasy particles.



Inspection door "R" on the RIGHT side



Picture 3 / Table 3

#### TECHNICAL DATA

Model	Overall dimensions (mm)									Weight Kg	Fixing wheelbase I
	A	B	C	D	E	F	G	H	H1		
ARNO 1	400	770	400	230	180	420	320	1200	165	100	360 - Ø9
ARNO 2	525	870	500	220	175	500	320	1360	190	125	475 - Ø9
ARNO 3	525	870	600	220	175	500	320	1360	190	135	475 - Ø9

### 2.1.4 OPTIONAL DOUBLE STAGE (DS)

In case of a large quantity of micro-dust, micro-mist and smoke, the air cleaner ARNO can be equipped with a DOUBLE STAGE of filtration available in different degrees of filtration efficiency:

- **Intermediate Filtration F9** tested in accordance with European norm **EN 779**;
- **High (filter EPA – E10, E11, E12) or most high (filter HEPA – H13) filtration efficiency** tested in accordance with European norm **EN 1822**.

The overall dimensions of the air cleaner remain the same, only the height increases of 350 mm.

Picture 4



### 5.3. SECURITY DEVICES

On the air cleaner, there are the following security devices:

- Overload cut-out switch with IP55 protection degree (optional on series ARNO C YC/V YC/VA YC).
- Protecting wirenet on the suction inlet of the fan wheel (impeller).
- Security screws on cover and door.

**Attention!**

**Check periodically the working conditions of the security devices.**

### 5.4. DANGER AND WARNING PLATES

On the air cleaner, there are some danger and warning plates to complete the indications contained in this manual. In case the plates wear out, you should replace them with new ones.

Picture 9

**ATTENTION**

**BEFORE REMOVING THIS PROTECTION:**

- 1) CLEAR (SWITCH THE POWER OFF)
- 2) WAIT FOR THE FAN WHEEL (IMPELLER) TO STOP
- 3) UNSCREW THE SAFETY SCREWS
- 4) WHEN INTERVENTION IS COMPLETED, RETIGHTEN THE SAFETY SCREWS

Picture 10

**ATTENTION**

**CLEAR BEFORE OPERATING INTO THE MACHINE**

**FILTERING SET**

### 5.5. CONNECTION TO THE POWER SOURCE AND RELATIVE CHECKS

**The electrical connection of the air cleaner has to be done only by qualified electricians, in accordance with safety norms. The air cleaner has to be without electrical tension.**

- Check that the motor voltage specified on the Test Certificate is the same as the network one.
- Use delayed fuses.
- When you choose the connection material (cable section etc.), consider the motor data indicated on the Test Certificate.
- Connect the power cable to the special plug placed on the air cleaner.
- Check that the calibration of the overload cut-out switch is in accordance with the value specified on the Test Certificate.
- Give power to the air cleaner.

**ATTENTION: Check that the fan wheel (impeller) direction of rotation is correct.**

Look at the suction inlet in order to check the correct direction of rotation: the fan wheel (impeller) must turn in ANTICLOCKWISE direction.

Picture 11



**AR FILTRAZIONI declines any responsibility caused by an electrical connection which is not in conformity with the regulations for accident prevention.**

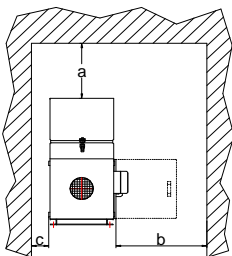


## 5. INSTALLATION

### 5.1. POSITIONING AND INSTALLATION

- **The installation of the cleaner has to be carried out by specialized staff.**
- Find an adequate position where to install the air cleaner.
- Check that in the chosen position there is enough space to allow the use/maintenance of the air cleaner in accordance with safety prescriptions.
- Keep the distances as mentioned below in order to do an easy maintenance.

Picture 8



<b>a</b>	ARNO 0 / 1	400 mm
	ARNO 2 / 3	500 mm
<b>b</b>	ARNO 0 / 1	600 mm
	ARNO 2 / 3	700 mm
<b>c</b>	ARNO 0/1/2/3	200 mm

- Prepare materials and accessories necessary for the installation of the air cleaner (suction pipe, hose clamps, pipe fitting plate BRT, etc).
- The air cleaner can be installed:
  - Directly on the machine tool → make 4 holes (9 mm or M8) with fixing wheelbase as in table 1/2/3.
  - On the machine tool with a designed support → make necessary holes on the machine tool for the fixing of the support.
  - On a support to be fixed on the floor → make 4 holes on the floor with support fixing wheelbase and fasten the support with screw anchors included in the outfit.
- Clamp the vibration-dampings and safety ropes (included in the outfit) on the machine tool/designed support/support to be fixed on the floor.
- If the machine tool is closed, make on its cover a hole with a diameter suitable for the application of the pipe fitting plate.
- If the machine tool is open, prearrange a suction hood as near as possible to the pollutant source.
- Lift the air cleaner by hooking it to the suitable eyebolts or lifting slots. Place it on the vibration-dampings and fix strongly.
- Insert suction pipe on the suction inlet of the air cleaner and fix it with a hose clamp.
- Connect the other end of the suction pipe to the pipe fitting plate or to the suction hood which has been previously prepared.

### 5.2. START AND STOP

TO START THE AIR CLEANER

- 1) Set the general switch on "ON".
- 2) Press the starting button "I" of the overload cut-out switch.

TO STOP THE AIR CLEANER

- 1) Press the button "O" of the overload cut-out switch.

TO DISCONNECT COMPLETELY THE AIR CLEANER

- 1) Stop the air cleaner.
- 2) Set the general switch on "OFF".

- In order to guarantee a longer lifespan of the air cleaner avoid switching it on and off repeatedly.
- Avoid the overheating of the air cleaner using it without filters or with tampered filters.

### 2.1.5 OPTIONAL ACTIVATED CARBON (CA)

In presence of gases, exhalations and odours, the air cleaner ARNO can be equipped with an activated carbon cell. The overall dimensions of the air cleaner remain the same, only the height increases of 160 mm.

Picture 5 / Table 4

TECHNICAL DATA		
Major diameter		4 mm
Humidity at packaging (ASTM D 2867)		<3%
Ashes (ASTM D 3467)		<12%
Density (ASTM D 2854)		450±30 g/l
Index CCl <sub>4</sub> (ASTM D 3467)		>70%
Hardness (ASTM D 3802)		>90%
Specific surface (B.E.T.)		>1150 m <sup>2</sup> /g

DESCRIPTION:

Cylinder-shaped virgin activated carbon produced by physical activation.

USE:

Suitable to purify air and gases and to remove odours.

HANDLING:

Use gloves and eye protection devices. In case of contact with skin or with eyes, rinse immediately with plenty of water. Ask doctor if irritation develops and lasts.

STORAGE:

Keep the packaging perfectly closed in a ventilated place and away from fire sources or combustible materials.

Stability: 12 months, with original packaging as above mentioned.

PACKAGING:

The carbon is available in 20 kg sacks.

### 2.2. FORESEEN USES

Suction and purification of dust and smoke generated in dry and wet machining processes.

### 2.3. NOT FORESEEN USES

**DANGER!**

- Suction and purification of corrosive steams.
- Suction and purification of inflammable substances.
- Air suction and purification in explosive atmosphere.
- Suction and purification of toxic-noxious dust and smoke (e.g. lead, asbestos, beryllium, cadmium, etc.).

**NEVER USE THE AIR CLEANER WITHOUT FILTERS.**

### 3. TRANSPORT AND HANDLING

#### 3.1. PACKAGING

The air cleaner is packed with plastic water-proof film (barrier sack) and protected by cardboard, which are both leaned and fastened on pallets.

#### 3.2. HANDLING

##### Attention!

**Equipment handling and transport have to be done only by truck operators or specialized staff.**

In case of packed air cleaner, move it with fork lift truck paying attention to the barycenter of the air cleaner to avoid a turnover.

In case of unpacked air cleaner:

- Close and block all the hinged doors and covers.
- Fasten all the parts which could detach or drop from the air cleaner.
- Check the availability of enough space to move and place the air cleaner.
- Place the air cleaner in a sling using the pick up points.
- Lift the air cleaner carefully.

Picture 6



#### 3.3. STORAGE

The packed air cleaner, waiting to be set up, must be stored in a dry place, protected from direct atmospheric agents and dusts.

##### Attention!

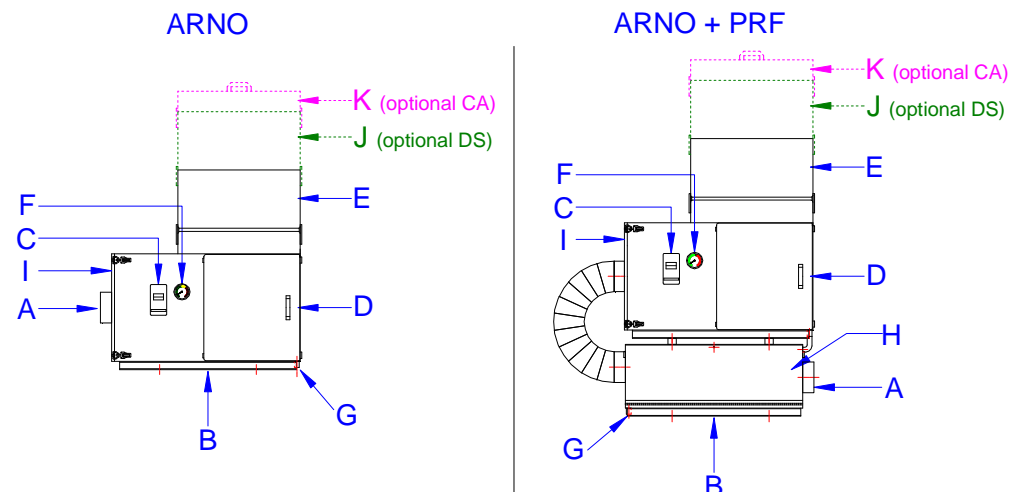
**Do not overlap pallets .**

### 4. AIR CLEANER DESCRIPTION

On the air cleaner, you can see the following elements (see pic. 7):

- A)** Suction inlet;
- B)** Supporting and fastening feet - hole Ø 9 mm (see fixing wheelbase table 1/2/3);
- C)** Overload cut-out switch;
- D)** Door for **a** and **b** filters extraction (see pic. 15/table 5);
- E)** Removable cover for **c** and **d** filters extraction (see pic. 15/table 5);
- F)** Gauge to monitor filter conditions;
- G)** Drainage for the recovery of re-condensed coolant liquid;
- H)** Door for **e** and **f** filters extraction (see pic. 15/table 5), only for series with PRF;
- I)** Removable cover for **x** filter extraction, only for series ARNO C YC/ CF YC/ CPF YC (see pic. 15/table 5);
- J)** Removable cover for **y** filter extraction, only with optional DS, double stage of filtration (see pic.15/t.5);
- K)** Cell containing activated carbon **ca**, only with optional CA, with activated carbon cell.

Picture 7



# AIR CLEANERS OF OIL MIST FUME AND DUST FOR MACHINE TOOLS

## THE COMPANY



[www.arfiltrazioni.co](http://www.arfiltrazioni.co)

Founded in 1995, AR FILTRAZIONI SRL designs and produces a new generation of air cleaners for the extraction and purification of air pollutants in the workshop, paying special attention to the machine tool sector. Our twenty-six members factory and office staff work in Bergamo (40 km northeast of Milan), in a purpose-built 5500 sq. meter building.

- ✓ Converting machine tools into ecological and non-polluting ones has always been the main aim and the basis of AR FILTRAZIONI's mission and work.
- ✓ We pride ourselves in the design of technologically innovative devices which seek to create a "Green" industrial environment.
- ✓ Continuous development is the primary objective.

Our company has an extensive distribution network, through which we are able to service and support all customers in an efficient and effective way.

## THE PRODUCT



- + Mechanic filtration with a very high filtration efficiency up to 99,995%
- + Respect for the ecosystem: decrease of CO<sub>2</sub> emissions
- + Respect for workers: a healthy and clear working environment
- + In complete accordance with the strictest rules and safety regulations
- + Protection of especially vulnerable machine components, guaranteeing precision and extending operating life
- + Recovering approximately 80% of re-condensed oil
- + High energy saving on heating and air-conditioning costs

