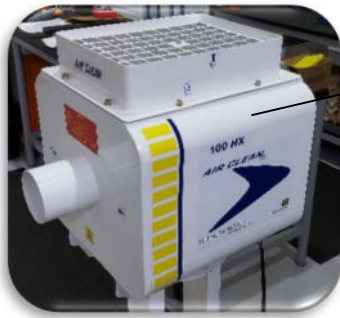


**INDEX:**

<b>Subject.</b>	<b>Page.</b>
1 - MODEL 100HX / 200HX / 400HX	2
2 - GENERAL DESCRIPTIONS	3
3 - TECHNICAL SPECIFICATIONS OF THE PRODUCT	3
4 – MAINTENANCE	5
5 – PROBLEMS AND SOLUTIONS	20
6 - SAFETY	21
7 – ANNEX 1 – TABLE OF PDW SWITCHES AND CONNECTION DIAGRAM.	22

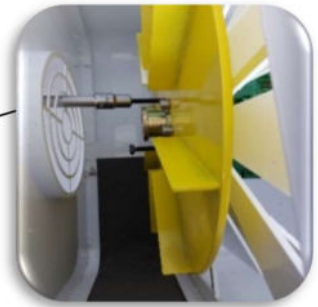
**1 - MODELS:**

MOD 100-HX  
MOD 200-HX  
MOD 400-HX



MOD 100HX

OPEN ROTOR MOD 100HX



MOD 200HX  
MOD 400HX

OPEN ROTOR MOD 200HX



OPEN ROTOR MOD 400HX

BEARING WITH EXTRACTION SYSTEM  
AND KEYING.



## **2 - GENERAL DESCRIPTIONS:**

*AIR CLEAN* is a device developed to reduce oil mist in machine tools that use cutting oil: Soluble or Integral. It was built and tested for the most rigorous situations of Industrial use. Its function is to separate the mist, by centrifugation, and filter the solids: In this centrifugation, the mist is removed, which is thrown to the outside of the machine, reaching 99.95% efficiency when the filtering elements are properly maintained. The centrifuged oil goes back into the machine to be reused. After centrifugation, the air goes through two more stages of static filtration, which ensures the removal of final solids from the air. *AIR CLEAN* has a low level of vibration, high strength and reliability. Its design is focused on low maintenance and ease of preventive maintenance. It creates a negative pressure (vacuum) inside the machine, which ensures the removal of oil mist. It developed its own technology: the inertia mass and the open rotor, these two technologies reduce unbalance when solid residue is inserted along with the oil mist.

*AIR CLEAN* prevents process oil from being released into the factory atmosphere, thereby minimizing health problems due to oil mist inhalation, reducing damage to installations caused by oil deposited on surfaces. It also helps in maintaining cleanliness. In addition to this benefit. *AIR CLEAN* recovers cutting oil for reuse. This equipment has proven to be efficient in companies whose standard of demand is high and that have quality certificates such as QS9000, ISO14000, TS12984 and OHSAS.

## **3 - TECHNICAL SPECIFICATIONS OF THE PRODUCT:**

### **3.1 - 100HX MODEL:**

MOD 100HX is Air Clean's smallest model, suitable for applications in machines that generate small or medium volume of mist. Its flow rate is 925 m<sup>3</sup>/h with a 1 hp engine, which is only possible because it is an Open Rotor device. This rotor does not use a filtering refill to filter the mist, its function is only to suck up the oil mist and throw it into the filter.

The refill that filters the oil from the mist is located on the inner wall of the body, this refill is easy to replace and very durable. To replace it, simply loosen the eight screws on the front cover and you will have access to all the filter refills. This task is quick and there is no need to remove the Mist Filter from the location.

### **Technical Data Table, Flow and Efficiency Table MOD 100 (HX).**

FLOW at -1 atm. (Table)	925	m <sup>3</sup> /h
POWER	1	HP
ROTATION	3,450	rpm
NOISE LEVEL	< 56 - 1 meter radius	db
WEIGHT	29	kg
EFFICIENCY	99.95	% Filtration of solids
WORKING VOLTAGE	220 / 380 / 440 V- 60 Hz	V
NOMINAL CHAIN	2.91 / 1.68 / 1.46 A - 60 Hz	A
FILTERING OF SOLIDS	>= 0.3	μ
COUPLINGS	Ø100 (4")	Ø mm (inches)
ROTOR MODEL	270/4	Ø mm / blades

**3.2 - MODEL 200 HX:**

MOD 200HX, Air Clean intermediate model is the most used, indicated for applications in machines that generate small or medium volume of mist. Its flow rate is 1,450 m<sup>3</sup>/h with a 2 HP engine, which is only possible because it is an Open Rotor device. This rotor does not use a filtering refill to filter the mist, its function is only to suck up the oil mist and throw it into the filter.

The refill that filters the mist oil is located on the inner wall of the body, this refill is easy to replace and has great durability. To replace it, just loosen the eight screws on the front pan and the 6"-mist inlet hose. This task is quick and it is not necessary to remove the Mist Filter from the site.

**Technical Data Table, Flow and Efficiency Table MOD 200 (EX/FX/GX/HX).**

FLOW at -1 atm. (Table)	1,450	m <sup>3</sup> /h
POWER	2	HP
ROTATION	3,450	rpm
NOISE LEVEL	< 71 - 1 meter radius	db
WEIGHT	38	kg
EFFICIENCY	99.95	% Filtration of solids
WORKING VOLTAGE	220 / 380 / 440 V- 60 Hz	V
NOMINAL CHAIN	5.64 / 3.27 / 2.82 A - 60 Hz	A
FILTERING OF SOLIDS	>= 0.3	μ
COUPLINGS	Ø150 (6")	Ø mm (inches)
ROTOR MODEL	270/8	Ø mm / blades

**3.3 - MODEL 400HX:**

The MOD 400HX is Air Clean largest model, suitable for applications in machines that generate a large volume of mist. Its flow of 2,250 m<sup>3</sup>/h with a 4 HP engine is only possible because it is an Open Rotor device. This rotor does not use a filtering refill to filter the mist, its function is only to suck up the oil mist and throw it into the filter.

The refill that filters the mist oil is located on the inner wall of the body, this refill is easy to replace and has great durability. To replace it, simply loosen the eight screws on the front pan and the 8"-mist inlet hose. This task is quick and removing the Mist Filter from the site is not necessary.

**Technical Data Table, Flow and Efficiency Table MOD 400 (EX/FX/GX/HX).**

FLOW at -1 atm. (Table)	2,250	m <sup>3</sup> /h
POWER	4	HP
ROTATION	3,450	rpm
NOISE LEVEL	< 74 - 1 meter radius	db
WEIGHT	65	kg
EFFICIENCY	99.95	% Filtration of solids
WORKING VOLTAGE	220 / 380 / 440 V- 60 Hz	V
WORKING CURRENT	8.39 / 4.86 / 4.20 A - 60 Hz	A
FILTERING OF SOLIDS	>= 0.3	μ
COUPLINGS	Ø 203 (8")	Ø mm (inches)
ROTOR MODEL	400/8	Ø mm / blades

**IMPORTANT:**

We only use SAE 1045 steel, which body has a chemical composition of carbon (0.43% - 0.50%), silicon (0.15% - 0.35%), manganese (0.30% - 0.60%), phosphorus (0.03% max) and sulfur (0.05% max). Aluminum bearings and stainless-steel screws and washers. All painting is in electrostatic epoxy.

**4 - MAINTENANCE:**

Maintenance of AIR CLEAN is simple. It is basically divided into items: seals, changing the motor or electric motor bearings, changing the rotor, changing refills and hoses, and cleaning.

**4.1 - Assembly of seals (Model 200 or 400).**

Mist filters have important points to be sealed to avoid leaks and oil entry in places that are not compatible and will cause problems.

**4.1.1 - Front Cover sealing rubber.**

Cut the sealing rubber according to the sizes below:

- I. Models 200 – 1075 mm
- II. Models 400 – 1500 mm.



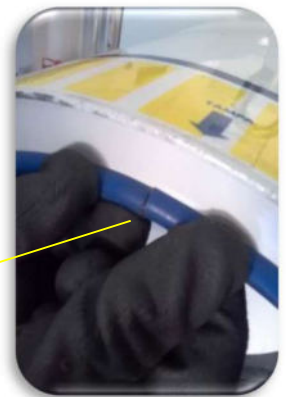
After applying 3M glue on the tear throughout the perimeter of the rubber, start the assembly at the top where the seam will be.



After completing the entire contour, approximately 10 mm will remain. Do not cut this excess.



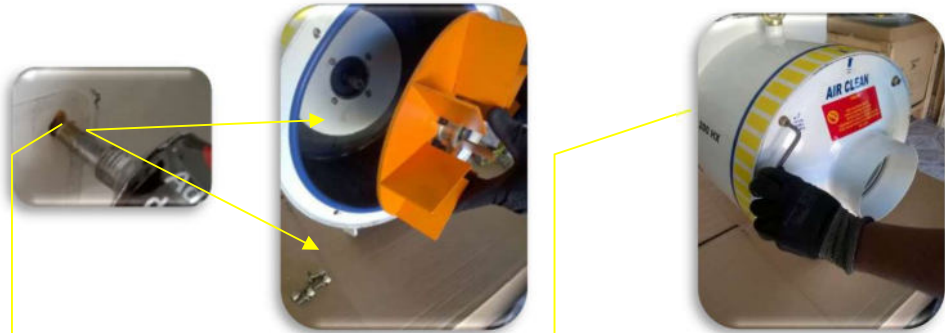
Apply 3M glue on top and place the ends together.



Push the two ends together and press them firmly against each other.

**NOTE: Always use the rubber measurements as defined for each model.**

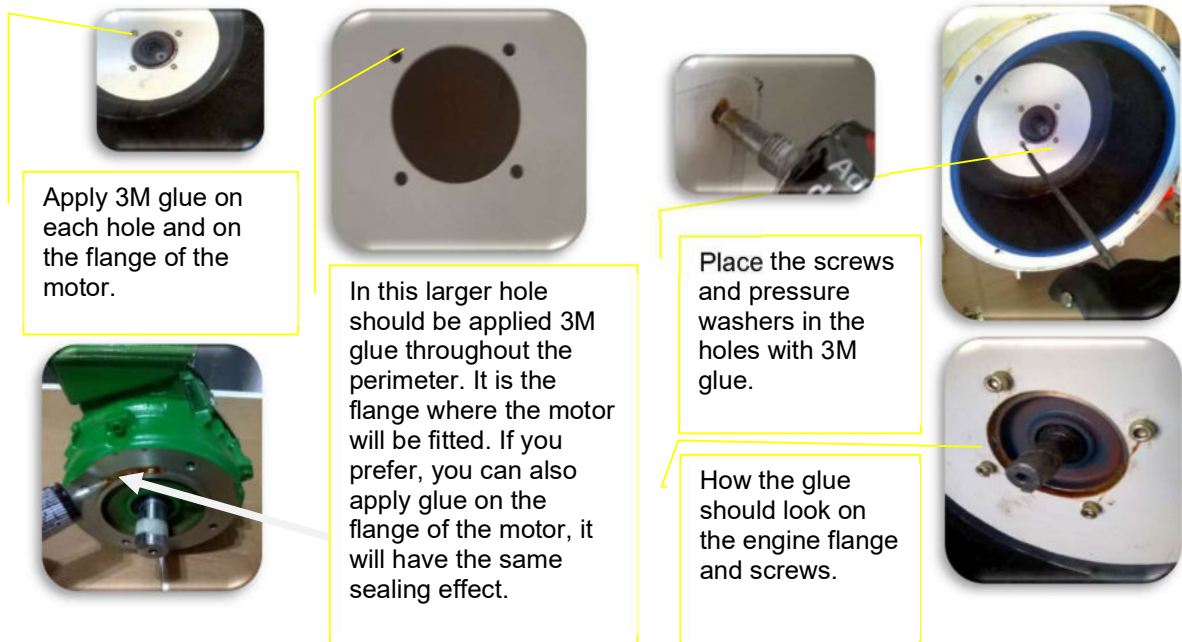
**4.1.2 - Front Cover screw seals.** Follow the directions in the photos below:



Apply 3M glue in each hole where the fixing screw of the front cover will be placed, which are four. Insert glue until the hole is filled.

After applying glue in all the holes, place the front cover and the screws. A light squeeze is enough, otherwise the front cover will bend and may leak.

**4.1.3 - Motor flange and bolt seals.** Follow the directions in the photos below:



Apply 3M glue on each hole and on the flange of the motor.

In this larger hole should be applied 3M glue throughout the perimeter. It is the flange where the motor will be fitted. If you prefer, you can also apply glue on the flange of the motor, it will have the same sealing effect.

Place the screws and pressure washers in the holes with 3M glue.

How the glue should look on the engine flange and screws.

**4.1.4 - Rubber seals and screws at the base of the Motor connection box.**

Follow the instructions in the photos below:  
External preparation of the electrical box:



Use 3M glue for engine gaskets.



Apply glue to the entire perimeter of the slot in the base of the motor connection box.



Place the rubber with the fitting in the slot at the base of the motor connection box.



Rubber fixed to the base of the motor connection box. Give it a little squeeze to make it flat.

Fixing the electrical box to the filter body:



Put glue in the four holes where the fixing screws for the base of the motor connection box will be placed.



Install the screws and secure the base of the engine connection cover.



Apply glue to the entire perimeter of the slot where the rubber seal for the motor connection box cover will be placed.



Place the sealing eraser in place by fitting over the glue.



Flatten the rubber over the tear with glue and the base of the engine gearbox.



Place the screws and attach the cover to the engine junction box. In these screws it is not necessary to put glue.

#### 4.1.5 - Motor cable seals inside the connection box.

Follow the directions in the photos below:



This procedure is **very important**. Where the cables reach the connection box, using an applicator with a long tip, plenty of silicone should be applied, as shown in the figure. After introducing the tip of the applicator approximately two centimeters into the tube, apply until the silicone begins to come out next to the cables. Now make a circular movement with the cables to distribute the silicone well. Once this is done, ensure that there is no space left where oil can enter into the box, where it will certainly cause electrical damage.





At this point where the cables leave the motor and enter the pipe that bequeaths the connection box, it is not necessary to do anything. The tube itself is higher than the plate by around 10 mm, preventing oil from entering the tube. If you enter, you will not reach the engine connection box, because the procedure on the side has been done.

#### **4.2 - Replacement of Rotor, Motor and Motor Bearings.**

Inside the equipment there is only one moving part which is the rotor, it is fixed to the motor by a bearing with 1 M8x35 screws and a machined steel washer and a key, it is by loosening this screw that the rotor is removed.

The type of motor front and rear bearings is specified on the motor plate. These bearings must be replaced on average every three years, that is, for a 24-hour continuous use or follow-up with the vibration analysis technique. If driven by a frequency inverter, the life of these bearings is extended due to the smooth acceleration and deceleration ramp.

To change the rotor, disconnect the equipment from the electrical power.

- Remove the front cover.
- Remove the M8x 35 screw that secures the rotor to the motor shaft. (Never remove the six M8x 25 screws that secure the Rotor to the bearing, this will unbalance the Rotor).
- Using an appropriate extractor or if using new bearings, with two M5 holes suitable for extraction and using two M5 x 50 screws, remove the complete rotor from the motor shaft.
- Remove the old rotor.
- Place the key in the upside-down position to prevent it from falling into the placement of the rotor.
- Grab the rotor with both hands and fit it looking at the position of the key and push it to fit. (The rotors enter without the need for knocks, if they lock, check that the motor shaft is free of burrs).
- After placing the rotor, replace the M8 x 35 screw with pressure washers and machined, with a minimum torque of 20 kgfm, maximum for a professional screwdriver, no need to use an extender for the wrench.
- Take advantage of the filter being open and change the preventative refills.
- Replace the front cover.
- Turn on the filter and measure the vibration so that it is below 1.8 mms /LO, if you don't have a vibration analyzer use your sense to see if it is within a tolerable vibration.
- Reinstall the filter for operation.

Engine removal and assembly sequence by photos:

Removal of front panel.



Use Oleal  
for lifting.

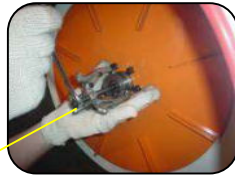


Remove the 8  
M8x25 Screws  
from the lid.

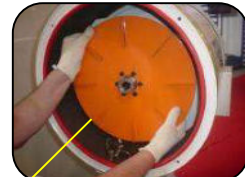
Removal of rotor.



Remove the M8 x 35  
screw that attaches  
rotor to the motor  
shaft. Be careful not  
to lose the key and  
washer.



Using extractor  
remove the rotor.  
Do not remove the  
6 screws from the  
rotor, they are part  
of the balancing.



Remove the rotor  
as shown in the  
photo.

Engine Removal



Remove the 4 screws that secure the Motor to the body. These screws are glued, so take care to not break any.



Flange without the motor.



In the photo are the two types of engines, blue "Plus" and Green "Premium". See that the wires are long (45 cm), this is the difference between a normal engine and an Air Clean.



All the parts that will be used in the assembly of the engine. See the longest cable already prepared to be threaded into the tube that carries the cables to the motor the connection box.



More details of the engine and its preparation.



The cable being positioned at the inlet of the pipe before placing the motor. Use a pre-threaded wire to pull the cables while placing the motor on the flange.



Motor being installed in its place and the cable being pulled up to the junction box.



Motor being installed in its place and the cable being pulled up to the junction box.



Fixing the motor to the flange. Previously, 3M glue for joints has been applied on the flange and on the four screws that secure the engine to the housing.

Engine Installation.

To change the motor bearings, follow the motor manufacturer's guidelines and always place original bearings that are defined on the motor plate.

Motor connections and tests.



The 4 screws that fix the connection box to the frame must have 3M glue in the threads. This will prevent oil leaks into the electrical box.

**VERY IMPORTANT:** With the cables already placed in the tube, at this point should be applied enough transparent silicone to prevent the oil that accumulates in the outer box of the engine to come back into the electrical box and cause a short circuit.



After the Filter is reassembled with the rotor, key, refill, screws and the pan closed, do the current test. The value should be within the nominal of the engine, if it gets higher it will burn. The direction of rotation does not matter, it has a key for protection. The filter has the same performance no matter in which direction it turns. Do not forget to turn on the grounding in the connection box.



Engine installed, connection box closed. On the lid of the electrical box (internally) is the data plate, serial number and electrical connection of the engine.

**4.3 - Motor Electrical Connections.**

**Engine 1 and 2 HP (Models 200 - EX / GX / HX)**

**a) 220v Double Triangle – Three Phase.**

- L1 → V1+V3+U2+U4
  - L2 → V2+V4+W1+W3
  - L3 → U1+U3+W2+W4
- Don't forget the land.

**b) 380v Double star – Three phase.**

- L1 → V1+V3
  - L2 → W1+W3
  - L3 → U1+U3
- Bridge → V4+W4+U4  
Bridge → V2+W2+U2
- Don't forget the land.

**b) 440v Triangle – Three-phase.**

- L1 → V1+U4
- L2 → W1+V4
- L3 → U1+W4

Do not forget the ground wire.



**Engine 3 HP (Models 200 - EX / GX)**

**a) 220v Double Triangle – Three Phase.**

- L1 → V1+V3+U2+U4
  - L2 → V2+V4+W1+W3
  - L3 → U1+U3+W2+W4
- Don't forget the land.

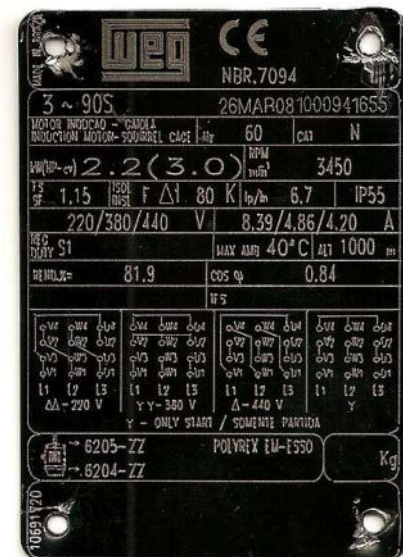
**b) 380v Double star – Three phase.**

- L1 → V1+V3
  - L2 → W1+W3
  - L3 → U1+U3
- Bridge → V4+W4+U4  
Bridge → V2+W2+U2
- Don't forget the land.

**b) 440v Triangle – Three-phase.**

- L1 → V1+U4
- L2 → W1+V4
- L3 → U1+W4

Do not forget the ground wire.



**Engine 4 HP (Models 400 – EX / GX / HX)**

**a)220v Double Triangle – Three Phase.**

- L1 →V1+V3+U2+U4
  - L2 →V2+V4+W1+W3
  - L3 →U1+U3+W2+W4
- Don't forget the land.

**b)380v Double star – Three phase.**

- L1 →V1+V3
  - L2 →W1+W3
  - L3 →U1+U3
- Bridge →V4+W4+U4  
Bridge →V2+W2+U2
- Don't forget the land.

**b) 440v Triangle – Three-phase.**

- L1 →V1+U4
- L2 →W1+V4
- L3 →U1+W4



**Do not forget the ground wire.**

**In item 7** – has a table of direct starters for the engines we use.

If your equipment has a frequency inverter, please download the file from the Air Clean website ([www.airclean.com.br](http://www.airclean.com.br)):

Air Clean - IT-002 - INVERTER CONNECTIONS AND PROGRAMMING.pdf

**4.4 - Rotor Balancing.**

After analyzing and verifying that the imbalance is in the Rotor and not in the motor, follow the procedure below:

- With the filter on the workbench, remove the filter cover.
- Visually inspect for bending, loose blades or any material wrapped around the rotor. Unbalance will only occur if it suffers any mechanical damage, for example, if something heavy has hit or wrapped around the rotor, causing blades deformation.

If you notice damage to the rotor, proceed as follows:

The rotor is already balanced at the factory, and is rarely unbalanced. Do not remove the impeller by the six M8x25 screws that have the balance washers. But remove using only the M8x35 screw that fixes the washer in the center of the shaft and an appropriate extractor.

Remove the rotor mounting bolt from the motor shaft using a small puller. Afterwards, send the set for balancing and request a balancing at 3750 rpm and with a result of < 5 grams.

---

**Air Clean Mist Filter Maintenance Manual.**

Balancing is simple and easy to do by a company that specializes in balancing. If you wish, the rotor can be sent to the AIR CLEAN factory for repairs or to purchase a new rotor.

If you opt for balancing, it must be done together with the bearing. Balancing can be done with the rotor in place, as explained in the text box on the next photo.

Put the rotor back in the AIR CLEAN mist filter and start it up. Balancing is done by mass adhesion, which are the flat washers that are placed in the number necessary for this balancing. These extra washers are not an assembly error, but the washers that balance the rotor.

**IMPORTANT:** Many times, due to lack of appropriate resources and equipment, more experience in balancing this procedure becomes difficult. For this reason, we suggest replacing the rotor with a new one.



It may occur that some screws are without washers and others with washers (1, 2 ... this is the way to balance currently). It can be done on the workbench using vibration analysis equipment. This type of balancing is ideal for balancing the rotor at the site of use.



#### **4.5 – Exchange of Preventive refills:**

Air Clean Mist Filters work like a centrifugal pump. When the rotor collects air with mist from inside the machine, the rotor, which has a high rotation, in the range of 3450 rpm, transfers kinetic energy to the oil molecules. Kinetic energy makes oil molecules heavier than air. This difference in density is what makes the separation and filtering.

Inside the filters there are some filtering stages, some for solids, some for anti-splash and others for separation by density.

The preventive exchange of these refills is very important for the filter to work properly. If these changes are not made, the filter will saturate and mist and oil will start to leak.

The changeover time depends on the process, fog density, pump pressure, pressure and mainly the collection point. Oil cannot enter directly into the filter, it is not an oil pump, but a mist pump. To avoid these problems, a good installation must be carried out using some of the options we provide. (See the Installation Manual that can be downloaded from our website).

We provide specific Kits for each Filter, where the items are already cut in the right size and formats, glue and replacement manual.

We use commercially available 3M blankets. This Air Clean option is not to leave the Customer trapped in maintenance items built by Air Clean, we sell filters, not optional. The Customer can buy 3M blankets and cut and paste, thus trying to reduce maintenance costs and speed. But even so, we maintain a line of Kits for all items if the Customer so desires, as the Kits greatly reduce maintenance time and avoid filtering problems.

---

**Air Clean Mist Filter Maintenance Manual.**

To exchange Preventive Refills. Proceed according to the following guidelines:



Kit with Preventive Refills, glue and exchange manual.

Disconnect the equipment from electrical power.

- This change can be done with the Filter in place, only using a ladder (N13) and all safety items met.
- Remove the hose from the mist inlet cover or if there is slack in the hose, just loosen the front cover (8xM8x25).
- Check that nothing is obstructing the hose inlet, it has a protective screen that often collects something and obstructs it. (Usually, it is cloths or plastics that go into the machine fairing).
- With the lid open, you can change the two Refills (the one behind the rotor) and the static one that is in the inner body of the filter. This is the most important, in addition to holding all the solids, it will prevent the oil molecules from returning to the center of the filter and leaving with the air.

It must be well glued and fixed at the pressure points so that it does not come loose. If they come loose, they will certainly damage the filter.

**4.6 - Replacement and maintenance of hoses:**





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**Air Clean Mist Filter Maintenance Manual.**



Be careful with the quality of the hoses, if they are not very rigid, they can deform when the system makes a vacuum to remove the fog.

Many customers choose to use rigid PVC pipes, but a piece of hose of at least 1 meter must be placed between the filter and these pipes to avoid damaging the pan and propagating any vibration between the machine and filters.

The two types of hoses used in AIR CLEAN are fixed with clamps. These clamps are wide so they don't cut the hoses. They must be re-tightened to ensure that false air does not enter the system and prevent oil leakage, which could reduce the performance of the equipment.

The hoses must be cleaned and washed at certain times, preventing them from becoming worn out and ugly.

#### 4.7 - Replacement of seals:



Seals are made from highly durable silicone rubber. Care is taken not to tear it. They must be well glued and for this purpose 3M Joint glue is used. But, before applying glue, the surfaces must be cleaned and degreased.

The Preventive Refill Kit contains all the necessary rubbers and instructions for their replacement.

If these rubbers are damaged, we advise a thorough analysis, as it is a highly durable item.

The silicone rubbers that seal the lids must be checked to avoid leaks; if they break, they must be replaced – see Kits supplied by Air Clean.

#### 4.8 – Maintenance of logos and signage:

The paint is electrostatic epoxy based and is very resistant to industrial oils. It just needs a little cleaning with some degreaser to get it back to its normal appearance.

Adhesives can wear out over time, the action of heat and oils. They can be purchased from the AIR CLEAN factory.

Do not use thinner for cleaning, only degreaser. The logos have a protective varnish, but they do not resist cleaning with thinner or solvents.

Outside the equipment there are safety stickers, keep them clearly visible and clean, to avoid accidents with unaware people.

**4.9 – Preventive Maintenance or Maintenance Routes:**

Air Clean developed a simple checklist that can be used for any model of our Filters.

Only a monthly inspection of the items is required and any that are out, if not urgent, be scheduled for the next preventive shutdown. When there are several filters, a complete route must be made to check all of them in the same procedure. The form can be downloaded from our website or requested by email.

It is simple and efficient in anomaly detection.

Items can be posted to your maintenance systems or just using a simple sheet.

**Below is the spreadsheet used for preventive maintenance (Front)**

**CHECK LIST DE PLANO PREVENTIVO - FILTROS DE NÉVOA AIR CLEAN**

Operador: JONATHAN | Supervisor: JOSE ROBERTO | Máquina Instalada: TORNO ROMI MM 2341

Modelo do Filtro: MOD 200HX | Nº. de Série do Filtro: 447

ABRIL 2015 | PAGINA 1

FREQÜENCIA	VERBO DA ATIVIDADE	DESCRIÇÃO DA ATIVIDADE	LEGENDA - ITENS INSPECIONADOS (MÊSES)													
			1	2	3	4	5	6	7	8	9	10	11	12		
1 MENSAL	7 VERIFICAR	SE O GRAMPO DE SEGURANÇA ESTÁ POSICIONADA E FIXO NO PARAFUSO (DEVE TER NOS DOIS LADOS)	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2 MENSAL	4 VERIFICAR	AS QUATRO BORRACHAS NITRILICAS PRETAS SE ESTÃO EM CONDIÇÕES (NÃO PODEM ESTAR AMASSADAS)	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3 MENSAL	8 VERIFICAR	SE A BRAÇADERA ESTÁ BEM APERTADA E NÃO ESTÁ VAZANDO ÓLEO PELAS BORRADAS	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4 MENSAL	3 VERIFICAR	SE A MANGUEIRA DE SOÇÃO ESTÁ ÍNTEGRA (SEM FURROS) E SE NÃO ESTÁ COM BARRIGA ONDE O ÓLEO FICA RETIDO.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5 MENSAL	5 VERIFICAR	SE OS LOGOTIPOS E IDENTIFICAÇÃO ESTÃO ÍNTEGROS (APAGADOS, RISCADOS OU AUSENTES).	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6 MENSAL	1 VERIFICAR	SE O FILTRO ESTÁ LIMPO E SEM AMASSAMENTOS OU FERRUGENS.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7 MENSAL	2 VERIFICAR	SE OS QUATRO PARAFUSOS DE FIXAÇÃO DA TAMPÃO ESTÃO COM ARRUELA, APERTADOS E NÃO DEFORMANDO A TAMPÃO.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8 MENSAL	9 VERIFICAR	SE O FILTRO VERDE ESTÁ COM ASPECTO DE LIMPO.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9 MENSAL	8 VERIFICAR	SE O PARAFUSO DE FIXAÇÃO DA GRADE QUE PRENDE O FILTRO VERDE ESTÁ APERTADO.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10 MENSAL	10 VERIFICAR	SE O ÓLEO DE ELEVAÇÃO ESTÁ BEM APERTADO E ÍNTEGRO. (ITEM DE SEGURANÇA)	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11 MENSAL	11 VERIFICAR	SE MOTOR ESTÁ LIMPO	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12 MENSAL	12 VERIFICAR	SE PLACA DE IDENTIFICAÇÃO E NÚMERO DE SÉRIE ESTÁ LEGÍVEL E FIXADA.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13 MENSAL	13 VERIFICAR	SE CAIXA ELÉTRICA ESTÁ FIXADA CORRETAMENTE E BEM FECHADA.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14 MENSAL	14 VERIFICAR	SE PREENSA CABO ESTÁ FIXADO E FIO BEM PRESO NO PREENSABO (EVITAR QUE ENTRE SUJEIRAS E ÓLEO).	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15 MENSAL	18 VERIFICAR	SE MANGUEIRA DE PVC 3/4" ESTÁ FIXADA COM A BRAÇADERA, NÃO TEM DOBRAS E ESTÁ SENDO ÓLEO.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16 MENSAL	20 TROCAR	O REFIL DO PRÉ FILTRO SE HOUVER	X	X	X	X	X	X	X	X	X	X	X	X	X	X
17 ANUAL	15 VERIFICAR	CONDIÇÕES DA BORRACHA DE SILICONE DE VEDAÇÃO DA PAINELA FRONTAL.							X							
18 ANUAL	18 TROCAR	FILTRO INTERMEDIÁRIO														
19 ANUAL	20 TROCAR	FILTRO DO CORPO														
20 ANUAL	19 REAPERTAR	OS SEIS PARAFUSOS QUE FIXAM O ROTOR NO MANCAL.							X							
21 ANUAL	16 REAPERTAR	PARAFUSO QUE FIXA MANCAL NO MOTOR												X		
22 ANUAL	17 REVISAR	CONDIÇÕES DAS SOLDAS DAS ALETAS DO ROTOR (FIXAÇÃO)							X							
23 ANUAL	20 REAPERTAR	OS QUATRO PARAFUSOS QUE FIXAM O MOTOR NO CORPO DO FILTRO, É NECESSÁRIO RETIRAR O ROTOR.							X							
24 ANUAL	13 REAPERTAR	ABRIR CAIXA DE LIGAÇÕES ELÉTRICAS E REAPERTAR OU REVISAR LIGAÇÕES ELÉTRICAS E ATERRAMENTO.													X	
25 ANUAL	11 MEDIR	OS ROLAMENTOS DANTEIROS E TRASEIROS DO MOTOR. (USAR PREDITIVA - ANÁLISE DE VIBRAÇÃO)							X							

**LEGENDA DE PREENCHIMENTO**

- F: Faltou - Preenchimento do Coordenador
- X: Faltou não realizado - Máquina Parada
- O: Faltou em 10 dias - Solicitar abertura de O.S.
- X: Faltou não realizado - Máquina Parada

**ECO** Ações: Sempre que for encontrado uma Leg. "O" deve ser aberto um Ordem de serviço para a Correção do problema ou planejar em ações Preventivas.

OS ESPAÇOS EM BRANCO DETERMINAM QUANDO DEVEM SER FEITAS AS MANUTENÇÕES. UTILIZAR AS LEGENDAS.

FOTOS COM ITENS DE REFERENCIA



**5 – PROBLEMS AND SOLUTIONS:**

PROBLEM	POSSIBLE CAUSE	SOLUTION
It can't be turned on	<ul style="list-style-type: none"> <li>a) No input voltage</li> <li>b) Thermal relay tripped</li> <li>c) Interrupted wires</li> <li>d) Burned engine.</li> </ul>	<ul style="list-style-type: none"> <li>a) Check cause of lack of voltage</li> <li>b) Reset the thermal relay</li> <li>c) Replace or repair wire.</li> <li>d) This problem is rare, but the causes should be carefully investigated. Particularly the protections (circuit breaker and thermal relay)</li> </ul>
Low performance	<ul style="list-style-type: none"> <li>a) Saturated refill.</li> <li>b) Obstruction in hose or pan inlet.</li> <li>c) Machine with many openings and air intakes.</li> <li>d) Motor with wrong connection.</li> </ul>	<ul style="list-style-type: none"> <li>a) Replace the refills</li> <li>b) In many cases, pieces of cloth or plastic are deposited on the pan grids or on the intermediate filter. must be withdrawn</li> <li>c) Ensure that the machine does not have an air intake.</li> <li>d) Check the motor connection, according to the manufacturer's plate.</li> </ul>
Oil leaking from the cap	<ul style="list-style-type: none"> <li>a) Refills are saturated</li> <li>b) Return hose 3/4" clogged.</li> <li>c) Drain holes in hood leg clogged.</li> </ul>	<ul style="list-style-type: none"> <li>a) Replacement of refills</li> <li>b) Unclog with compressed air.</li> <li>c) Clear with compressed air</li> </ul>
Oil coming out of the mist inlet pan	<ul style="list-style-type: none"> <li>a) Loose or damaged silicone gaskets.</li> <li>b) Cover too tight, deforming the contact with the gaskets. (do not use PU or silicone).</li> <li>c) Loose or poorly tightened screws on the cover.</li> </ul>	<ul style="list-style-type: none"> <li>a) Replacement of damaged gaskets.</li> <li>b) Check that the cover is not bent or the screws are too tight. Check where it leaks and analyze it.</li> <li>c) Tighten the screws, taking care not to deform the cover. You don't need to tighten it too much, the gaskets seal well.</li> </ul>
Low rotation	<ul style="list-style-type: none"> <li>a) Motor connections not according to the</li> </ul>	<ul style="list-style-type: none"> <li>a) Check connections with motor plate.</li> </ul>

**Air Clean Mist Filter Maintenance Manual.**

	manufacturer's instructions.	
Vibration	a) Misplaced refill b) Damaged rotor c) Lack of phase	a) Place the refills evenly distributed inside the rotor b) Replace the rotor c) Fix electrical system

**6 – SAFETY:**

THIS ITEM IS VERY IMPORTANT AND ALL TECHNICIANS WHO INSTALL OR MAINTAIN THE AIR CLEAN EQUIPMENT MUST BE INFORMED.

**CARE**

AIR CLEAN WORKS AT HIGH ROTATION ON THE ROTOR, THEREFORE IT IS EXPRESSLY PROHIBITED TO MAINTENANCE THE EQUIPMENT WITHOUT THE COVER PANEL IN ITS POSITION AND THE FOUR HANDLES IN PLACE. THE CLEARANCE BETWEEN THE PAN AND THE ROTOR IS ALREADY MADE WITH A CRITICAL TOLERANCE TO PREVENT THE EQUIPMENT FROM OPERATING WITHOUT THE PAN. IN THE MOUTH OF THE POT, THERE IS A REINFORCED SCREEN TO PREVENT CLOTHES, PLASTICS OR THE HAND FROM BEING DRAWN INTO THE ROTOR. IF THIS HAPPENS, THE LOSS OF THE MEMBER COULD BE COMPLETE.

On the body of the AIR CLEAN are safety identification labels (like the two below).

**DANGER!**  
DO NOT PERFORM MAINTENANCE WITH THE COVER OPEN.  
HIGH ROTATION ROTOR.  
EQUIPMENT WITH HIGH SUCTION POWER. CAN PULL CLOTHES,  
PLASTICS OR YOUR HAND

**CAREFUL!**  
DISCONNECT THE EQUIPMENT FROM POWER TO  
PERFORM MAINTENANCE.  
READ THE MAINTENANCE AND INSTALLATION MANUAL  
FIRST.

On the body of the AIR CLEAN are safety identification labels (like the two below).

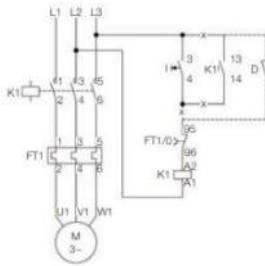
**PERIGO!**  
NÃO FAÇA MANUTENÇÃO COM A TAMPA ABERTA.  
ROTOR COM ALTA ROTAÇÃO.  
EQUIPAMENTO COM ALTO PODER DE SUÇÃO. PODE PUXAR  
PANOS, PLÁSTICOS OU SUA MÃO

**CUIDADO!**  
DESLIGAR O EQUIPAMENTO DA  
ENERGIA PARA FAZER MANUTENÇÃO.  
LEIA ANTES O MANUAL DE MANUTENÇÃO E  
INSTALAÇÃO.

**7 - WEG STARTING SWITCH TABLE.**

**Esquemas de Ligação**

**PDW**



Chaves de Partida em Caixa Termoplástica

**Partida Direta Trifásica- PDW**

Composição: Contator + Relé de Sobrecarga



Motores trifásicos WEG W22 - 4 polos - 60 Hz <sup>1)</sup>			Referência básica para completar com potência, tensão e acionamento <sup>2)</sup>	Faixa de ajuste do relé de sobrecarga (A)	Máxima corrente nominal I <sub>n</sub> (A)	Fusível recomendado (A)
220 V ca cv	380 V ca cv	440 V ca cv				
-	0,16	-	PDW02 -	(0,4 - 0,63)	0,63	2
-	0,25	-		(0,56 - 0,8)	0,8	2
0,16	0,33	-		(0,8 - 1,2)	1,2	2
0,25	-	-		(1,2 - 1,8)	1,8	2
0,33	0,5 - 0,75	-		(1,2 - 1,8)	1,8	4
0,5	-	-		(1,8 - 2,8)	2,8	4
-	1	-		(1,8 - 2,8)	2,8	6
-	1,5	-		(1,8 - 2,8)	2,8	10
0,75 - 1	2	-		(2,8 - 4)	4	10
1,5	3	-		(4 - 6,3)	6,3	10
2	-	-	(5,6 - 8)	7	16	
-	4	-	(5,6 - 8)	7	20	
-	-	0,16 - 0,25	PDW04 -	(0,4 - 0,63)	0,63	2
-	-	0,33		(0,56 - 0,8)	0,8	2
-	-	0,5		(0,8 - 1,2)	1,2	2
-	-	0,75 - 1		(1,2 - 1,8)	1,8	4
-	-	1,5		(1,8 - 2,8)	2,8	10
-	-	2		(2,8 - 4)	4	10
-	-	3		(4 - 6,3)	6,3	10
-	-	4		(5,6 - 8)	8	16
-	-	5		(5,6 - 8)	8	20
3	5	-		(7 - 10)	9	20
-	-	6	(7 - 10)	9	25	
-	6	7,5	(8 - 12,5)	12	25	
4	7,5	-	(10 - 15)	12	25	
-	-	10	(10 - 15)	15	35	
5	10	-	(11 - 17)	17	35	
6	-	-	(15 - 23)	18	35	
-	-	12,5	(15 - 23)	23	50	
7,5	12,5	15	(15 - 23)	23	50	
-	15	-	(22 - 32)	25	50	