AQC

DUST COLLECTION
& SOURCE CAPTURE

Owner's manual for installation, use and maintenance

MAXAIR™

INDEX

1 INTRODUCTION

This present manual refers to the MAXAIR source capture fume arm. It includes important information concerning the installation, use and maintenance of your unit. Read this manual thoroughly and apply the directives and procedures. Staff and personnel using the system should be trained on safety measures and maintenance instructions.

WARNING!

The use of the fume arm will require proper installation and handling. Contact AQC Inc. if you have any doubt in regard to the use of your fume arm.
Not following directives and procedures could cause injuries or property damages.

2 INFORMATION ON THE MAXAIR FUME ARM

Model: _____ Serial number: _____

Delivery date: _____ Date of installation: _____

Name of customer: _____

Address: _____

_____

_____

Accessories: _____

Other: _____

3 PRESENTATION

The MAXAIR fume arm is a system designed to be positioned near the area where fume, smoke, dust or any pollutant is being produced. The fume arm (also sometimes called snorkel) is an effective system to remove harmful pollutants from the worker's breathing zone.

MAXAIR capture arms are not a guarantee that all the fumes or smoke will be captured in the section hood. Hood positionning is important to usure collection.

Main applications include welding, buffing, pharmaceutical operations, handling of volatile dusts, harmful vapours, etc.

The MAXAIR fume arm offers multiple configurations for source capture. Optional equipment may include a direct drive fan, extension swing boom for additional reach, sliding rail with trolley, etc.

3.1 Each MAXAIR unit includes:

- External and adjustable joints
- Painted steel or stainless steel tubes for minimal static pressure loss
- Flexible hoses at the joints
- Capture hoods with deflectors for maximum inlet velocity (deflector deleted on 3" arm)
- Shut-off air damper with adjustable handle
- Pivoting socket
- Joint wheel at hood section for full 360 degrees positioning
- Grab handle at hood section for source capture positioning
- Companion flange for duct connection (with hanging model only)
- Fasteners (nuts, washers, bolts)

The MAXAIR fume arm unit is shipped fully assembled with the exception of the recoil spring (not necessary on 3" diameter arms and portable/bench mount versions). The spring assembly requires minimal attachment to the arm socket bracket.

4 MODEL NUMBERS

4.1 Hanging or table / bench mount

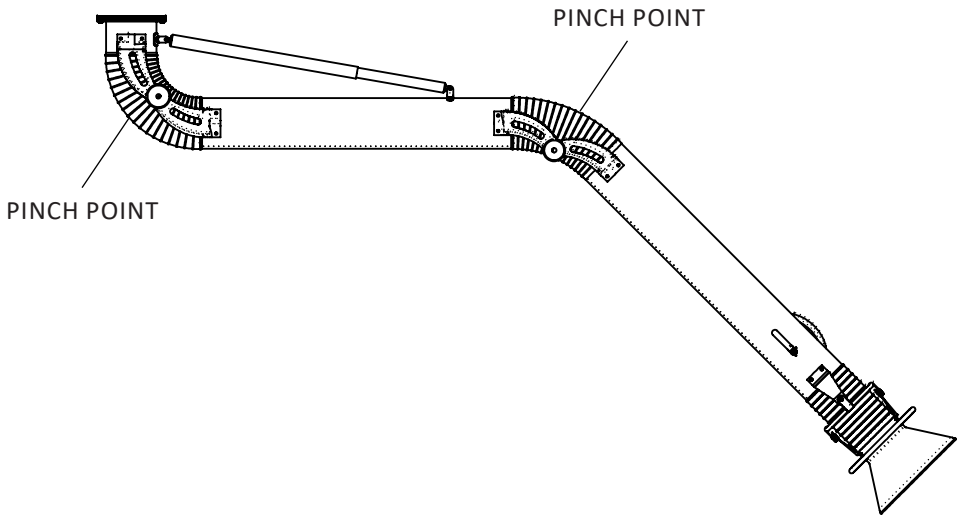
Hanging	Bench mount	Stainless steel hanging	Stainless steel bench mount	Arm diameter in / mm	Arm length ft / m	Standard hood diameter in / mm	Optional hood diameter in / mm	Weight lbs / kg
FA-HPG3-03	FA-PPG3-03	FA-HSS3-03	FA-PSS3-03	3/76	3/1.0	7/178	–	14/6.4
FA-HPG3-05	FA-PPG3-05	FA-HSS3-05	FA-PSS3-03	3/76	5/1.5	7/178	–	16/7.3
FA-HPG4-05	FA-PPG4-05	FA-HSS4-05	FA-PSS4-05	4/102	5/1.5	8/203	–	17/7.7
FA-HPG4-07	FA-PPG4-07	FA-HSS4-07	FA-PSS4-07	4/102	7/2.1	8/203	–	19/8.6
FA-HPG4-08	FA-PPG4-08	FA-HSS4-08	FA-PSS4-08	4/102	8.5/2.4	8/203	–	22/10
FA-HPG5-07	FA-PPG5-07	FA-HSS5-07	FA-PSS5-07	5/127	7/2.1	10/254	15/381	38/17.2
FA-HPG5-10	FA-PPG5-10	FA-HSS5-10	FA-PSS5-10	5/127	10/3.0	10/254	15/381	43/19.5
FA-HPG5-14	FA-PPG5-14	FA-HSS5-14	FA-PSS5-14	5/127	14/4.3	10/254	15/381	47/21.3
FA-HPG6-07	FA-PPG6-07	FA-HSS6-07	FA-PSS6-07	6/152	7/2.1	13/330	20/508	44/20
FA-HPG6-10	FA-PPG6-10	FA-HSS6-10	FA-PSS6-10	6/152	10/3.0	13/330	20/508	52/23.6
FA-HPG6-14	FA-PPG6-14	FA-HSS6-14	FA-PSS6-14	6/152	14/4.3	13/330	20/508	60/27.2
FA-HPG8-07	FA-PPG8-07	FA-HSS8-07	FA-PSS8-07	8/203	7/2.1	13/330	20/508	57/25.9
FA-HPG8-10	FA-PPG8-10	FA-HSS8-10	FA-PSS8-10	8/203	10/3.0	13/330	20/508	66/29.9
FA-HPG8-14	FA-PPG8-14	FA-HSS8-14	FA-PSS8-14	8/203	14/4.3	13/330	20/508	74/33.6

4.2 Telescopic fume arm

Models	Arm diameter in / mm	Arm min. length in / mm	Arm max. length in / mm	Standard hood diameter in / mm	Optional hood diameter in / mm	Weight lbs / kg
FA-TPGG4-06	4/102	52/1321	72/1829	8/203	-	19/8,6
FA-TPGG5-06	5/127	52/1321	72/1829	10/254	15/381	30/13.6
FA-TPGG6-06	6/152	52/1321	72/1829	13/330	20/508	36/16.3

5 NORMAL USE

The MAXAIR fume arm is designed to remove dust and smoke from the air resulting from a manufacturing process. Each MAXAIR fume arm is built as per the criteria and information supplied by the customer for a specific application and should not serve any other application without the approval of AQC inc.



WARNING!

MAXAIR 3" and 4" fume arms have pinch points at top and middle joints. **DO NOT PLACE FINGERS OR HANDS AT PINCH POINTS WHEN MOVING THE ARM INTO DESIRED POSITION.**

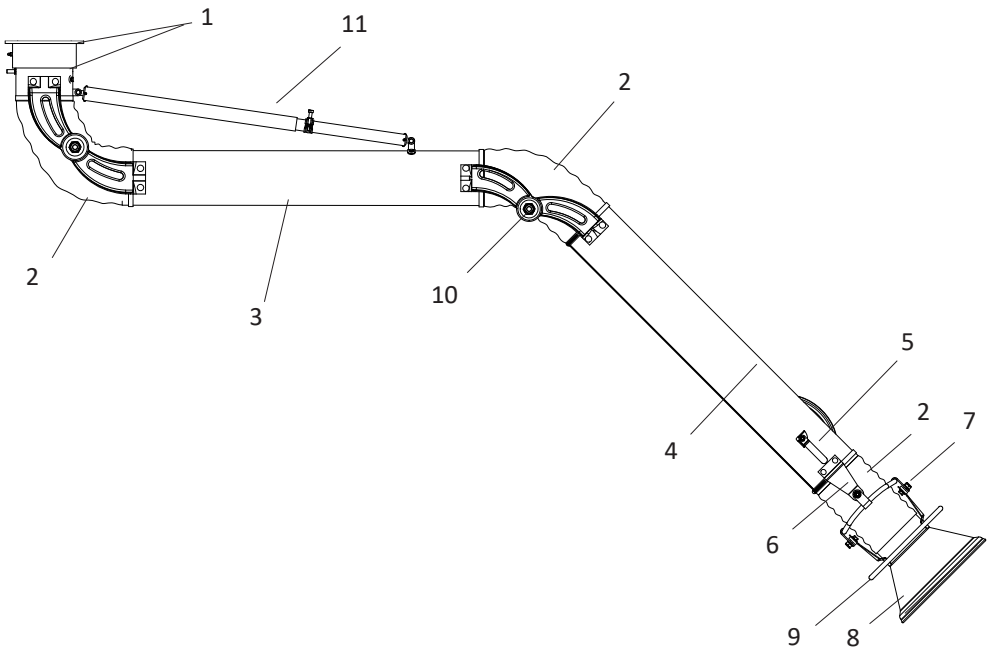
6 OPERATION AND PURPOSE

During normal operation, the MAXAIR fume arm is pulled or pushed into position near the source of pollutants (8" to 16" from the source). The hood tube grab handle (on 5", 6" and 8" arms only) may be used for lateral or vertical positioning and the hood circular grab handle allows full 360 degrees rotation. The vacuum fan (option) draws pollutants within the arm and are exhausted outside (when permitted) or filtered by means of an optional dust collector (refer to OSHA regulations concerning air filtration and recirculation). In order to maximize vacuum of harmful pollutants, the integrated damper should be shut off when the arm is not in use with multiple arm installation on a single exhaust fan.

7 COMPONENTS

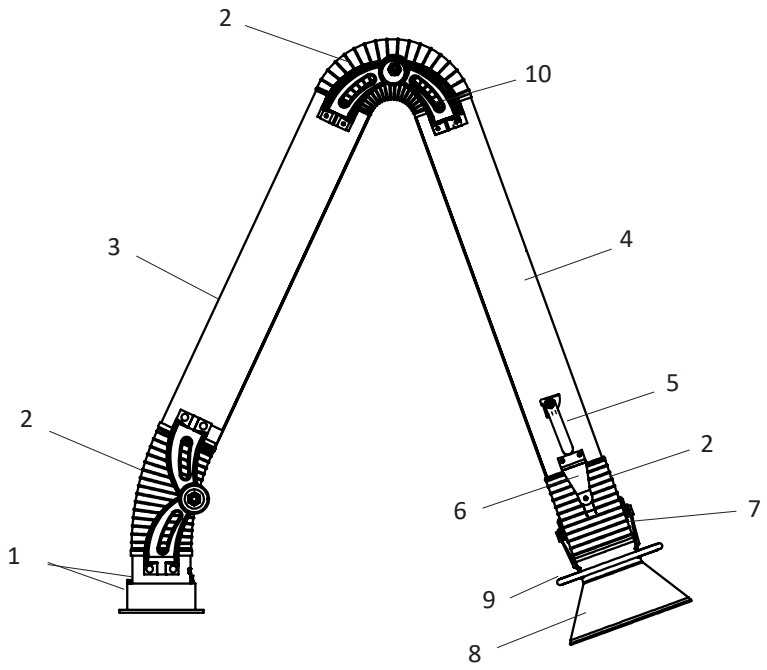
7.1 MAXAIR main components (hanging version)

1. Socket set assembly
2. Flexible hose (typ. of 3)
3. Socket tube
4. Hood tube
5. Damper handle
6. Connectors for hood movement (typ. of 4)
7. Joint wheel
8. Capture hood
9. Hood grab handle
10. Articulating joints (typ. of 8)
11. Telescopic recoil spring assembly with spring stopper (except on 3" arms)



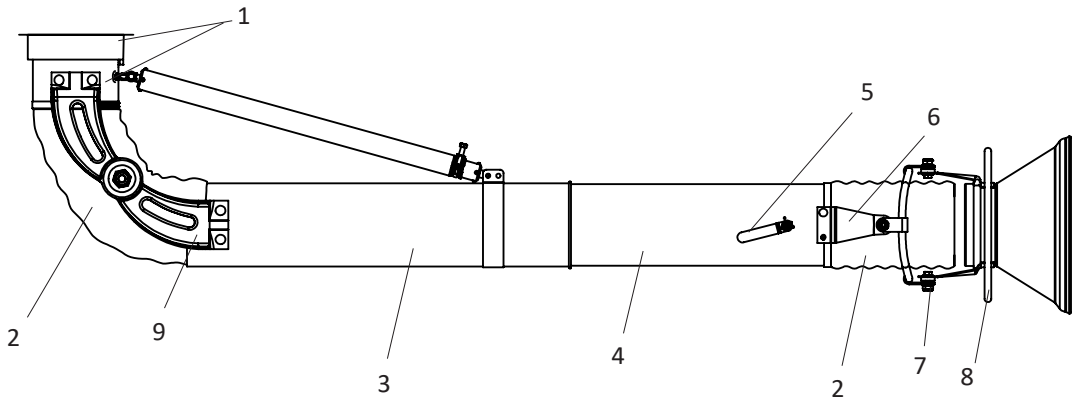
7.2 MAXAIR main components (bench mount / portable version)

1. Socket set assembly
2. Flexible hose (typ. of 3)
3. Socket tube
4. Hood tube
5. Damper handle
6. Connectors for hood movement (typ. of 4)
7. Joint wheel
8. Capture hood
9. Hood grab handle
10. Articulating joints (typ. of 8)



7.3 MAXAIR main components (telescopic version)

1. Socket set assembly
2. Flexible hose (typ. of 2)
3. Socket tube (fixed)
4. Hood tube (sliding, twist and lock)
5. Damper handle
6. Connectors for hood movement (typ. of 4)
7. Joint wheel
8. Hood grab handle
9. Articulating joints (typ. of 4)
10. Telescopic recoil spring assembly with spring stopper (exception 4" arms)



8 INSTALLATION

The MAXAIR fume arm is designed to remove dust and smoke from the air resulting from a manufacturing process. Each MAXAIR fume arm is built as per the criteria and information supplied by the customer for a specific application and should not serve any other application without the approval of AQC inc.

WARNING!

Installation of equipment must be performed as per local building laws and regulations. Structure must meet proper weight support of arm and equipment.

Wall support must be securely bolted to the wall, see page 15.

8.1 Inspection of goods

The MAXAIR fume arm is shipped assembled except for the spring assembly (when needed). Proceed with a visual inspection upon receiving the material and check for any apparent damage that may have happened during freight. Generally, shipment includes the fume arm and support bracket (in arm box and if ordered). Other optional components such exhaust fans and extension booms may be included with shipment.

Inspect box or crate appearance when receiving the goods. Report damages to carrier immediately. Failure to do so will void future claims.

Note : Because of sizes and dimensions, optional oversized hoods may be shipped not attached to hood joint assembly. Minimal field assembly will be required.

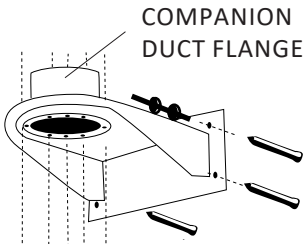
8.2 Location

1. The area where the fume arm will be installed should be able to sustain the weight of such along with the accessories, ducting, fan or any optional equipment.
2. Installer should ensure area around the fume arm will be free of obstacles such as beams, lighting fixtures, overhead cranes, etc.
3. Height of installation for fume arm bracket (hanging version) should be as shown in chart below.
4. For safety measures, a minimum two (2) man crew should be appointed for the installation.
5. Fume arm may also be duct mounted. If so, ducting must be able to support weight of arm combined with push and pull effects of moving the arm for source capture postion.
6. The MAXAIR fume arm may also be used with optional AQC equipment such as extension swing booms, sliding rail with trolley, portable filtration units, etc. Refer to appropriate manual for installation.

A Arm length ft / m	B Maximum reach at 45”(1143 mm) off floor ft / m	C Maximum reach at 45”(1143 mm) off floor ft / m	D Maximum reach at 45”(1143 mm) off floor ft / m	E Recommended mounting height ft / m
3/0.9	2.6/0.8	3/0.9	5.2/1.6	6/1.8
5/1.5	3.5/1.1	5/1,5	7/2.1	6/1.8
7/2.1	5.5/1.7	7/2.1	11/3.4	6/1.8
8.5/2.4	7.4/2.3	7/2.1	14.8/4.5	7/2.1
10/3	8.5/2.6	7.8/2.4	17/5.2	8/2.4
14/4.3	11.2/3.4	10.2/3.1	22.4/6.8	8/2.4

8.3 Arm and wall/post bracket installation (hanging type, no exhaust fan)

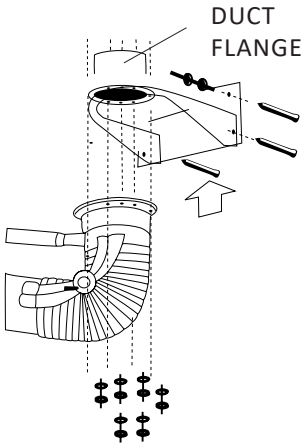
The installation crew must ensure the arm/bracket assembly is installed within the arm reach of the area where source capture has to be performed. The arm bracket must be installed on a wall, post or any other structure capable of supporting weight of the arm and optional equipment.



Note on arms equipped with recoil telescopic springs : Do not attach spring assembly from socket tube spring bracket to rotating socket before step # 4 is completed.

1. Install bracket on support structure at proper height for arm length. Fasteners to support structure are not supplied. Arm bracket can also be welded to structure if allowed or permitted.
2. The duct flange is inserted from underneath the arm support bracket into the bracket outlet. The fume arm socket will hold the duct flange into position.

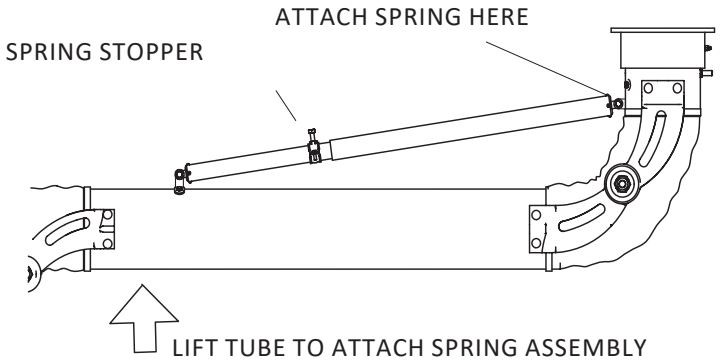
   Note before installing 5" 6" and 8" diameter fume arms : The rotating arm socket has a stopper which consists of a socket set screw bolted on the male part of the socket and a "tooth" on the female part blocking the arm from doing a full 360 degrees rotation. If the arm bracket is installed on a wall or a column, ensure the "tooth" is facing the wall or the column. 3" and 4" arms are able to rotate 360 degrees and do not have a stopper.



3. Lift MAXAIR fume arm into position and align both arm and bracket bolt patterns.
4. Using the fasteners provided, attach the arm onto the support bracket. Ensure the duct flange is centered with the bracket oultet. Before proceeding to the next step, push the arm left and then right to ensure the socket rotates freely.

Do not remove spring tube stopper.

5. To attach the spring telescopic assembly, push the arm UP until the eyelet on the spring assembly meets with the male socket spring bracket. Insert eyelet in spring bracket and attach with fasteners provided.



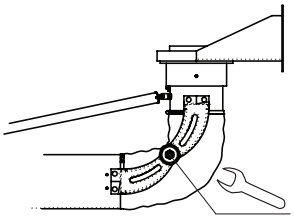
6. Arm joints are partly adjusted at the factory and will need final adjustment prior to usage. Using two (2) adjustable wrenches, tighten all joints starting from the top left and top right. One wrench will hold the nylon insert lock not and the other wrench will hold the head of the bolt. Begin with only half turns alternating left and right until arm holds it's position and does not sag.

   Proceed with left and right middle joints. End with all four (4) adjustable joints at hood section.

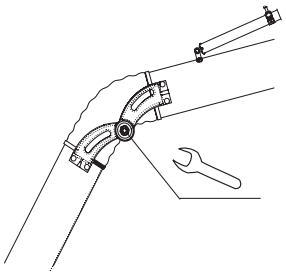
7. Move arm **UP/DOWN/LEFT/RIGHT** to ensure arm stays in position.
8. Proceed with ducting installation to duct flange or to exhaust fan.

WARNING!

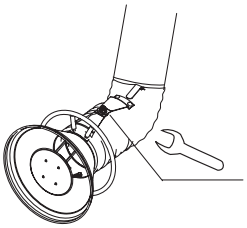
DO NOT OVERTIGHTEN.
THIS COULD CAUSE FRICTION DISK FAILURE.



SOCKET JOINTS ADJUSTMENT



MIDDLE JOINTS ADJUSTMENT



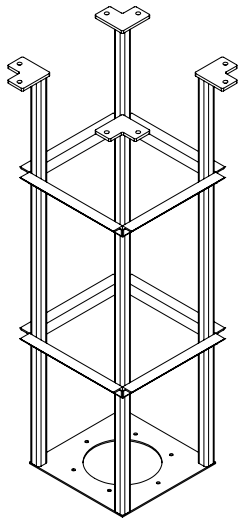
HOOD JOINTS ADJUSTMENT

8.4 Arm and ceiling bracket installation (hanging type)

The installation crew must ensure the arm/bracket assembly is installed within the arm reach for the area where source capture has to be performed. The arm bracket must be installed to ceiling trusses or joists or any other structure capable of supporting weight of the arm and optional equipment.

1. Install bracket on support structure according to arm length. Fasteners to support structure are not supplied. Arm bracket can also be welded to structure if allowed or permitted.

   Proceed with steps 3 to 7 in arm hanging type installation procedures.



8.5 Arm and bracket installation (hanging type with exhaust fan)

Note : This type of installation will not require the duct flange.

The installation crew must ensure the arm/bracket assembly is installed within the arm reach of the area where source capture has to be performed. The arm bracket must be installed on a wall, post or any other structure capable of supporting weight of the arm and optional equipment.

Note on arms equipped with recoil telescopic springs : Do not attach spring assembly from socket tube spring bracket to rotating socket.

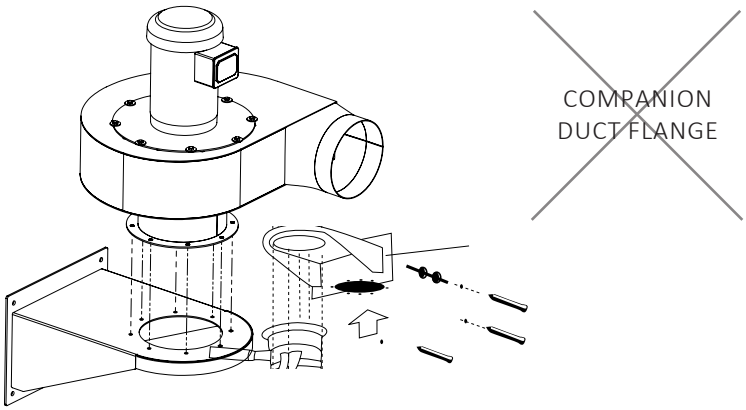
WARNING!

The electrical connection must be performed by a qualified electrician and with respect to codes and regulations.
For safety measures, shut off power supply to the motor prior to perform repairs.

Note on arms equipped with recoil telescopic springs : Do not attach spring assembly from socket tube spring bracket to rotating socket before step # 4 is completed.

1. Install bracket on support structure according to arm length. Fasteners to support structure are not supplied. Arm bracket can also be welded to structure if allowed or permitted.
2. The MAXIDRIVE exhaust fan should be facing right, left or front. Refer to building owner or engineer for direction of exhaust air. Place fan onto arm support bracket. Align fan inlet flange bolt holes to bolt pattern on arm bracket. Secure fan temporarily to support bracket using C clamps.

   Proceed with steps 3 to 7 in arm hanging type installation procedures.
3. Connect exhaust ductwork (and silencer if supplied) to fan outlet.



9 OPTIONAL EQUIPMENT

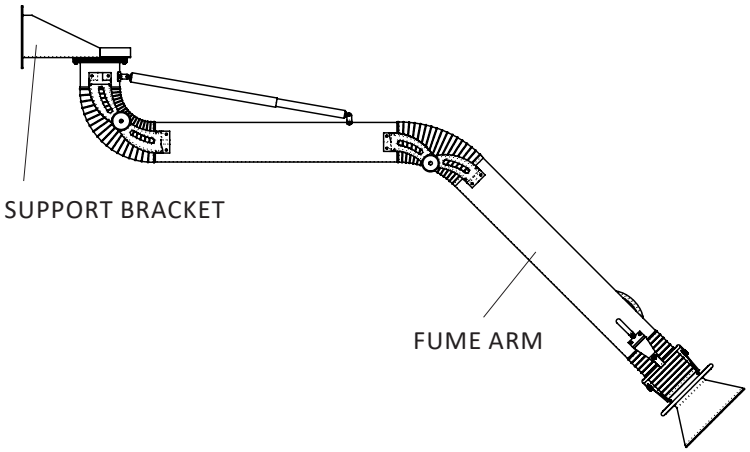
The MAXAIR fume arm is offered with options as follows:

1. Direct mount exhaust fan
2. LED 24V light kit with switch
3. 24V hood mounted fan switch
4. 24 V transformer for light or fan switch
5. Oversized hoods (shipped unassembled to fume arm)
6. Hood screen mesh
7. 304 or 316 stainless steel tubes and hoods
8. Aluminum arm tubes
9. PVC tubes (not available in all diameters)

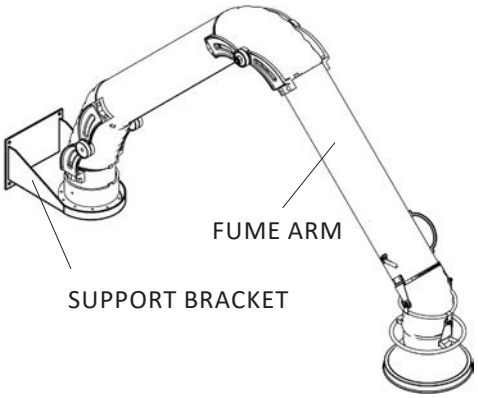
9.1 MAXAIR typical installations.

Other installations are possible. Contact AQC or your representative for details.

MAXAIR (hanging model, wall or post) with bracket only.



MAXAIR (portable or table/bench mount) with bracket.

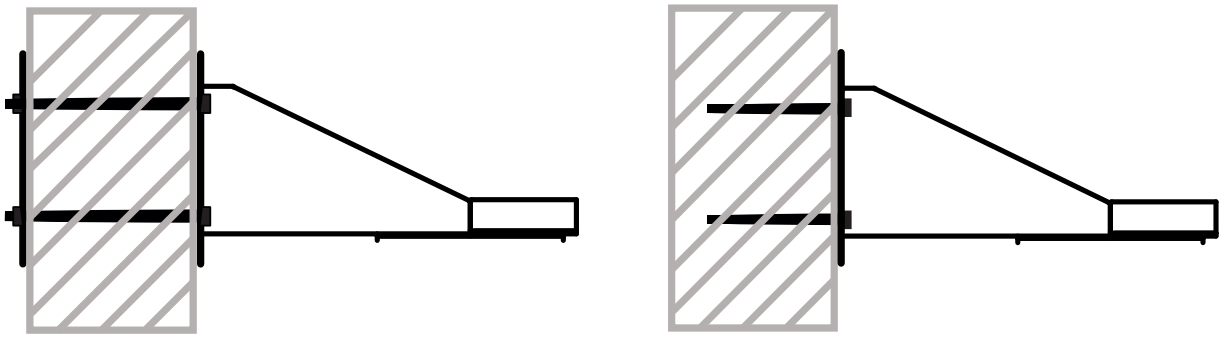


Note on bench mount models : Do not force arm down at socket past the maximum bend. This may cause damages in the spring and cable assembly in socket.

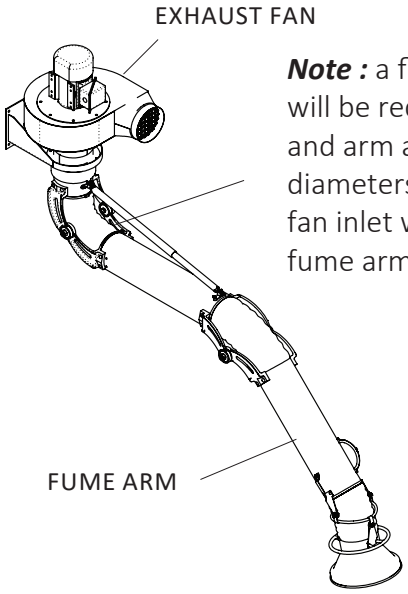
9.1.1 Mounting

The capture arm can be mounted on a wall. Ensure the wall is level, and use the holes of the mounting bracket to mark the holes.

Use locking fixing bolts and nuts suitable for the wall material and if the wall is not solid, a plate should be installed on the opposite side to sandwich the wall and provide a solid support.

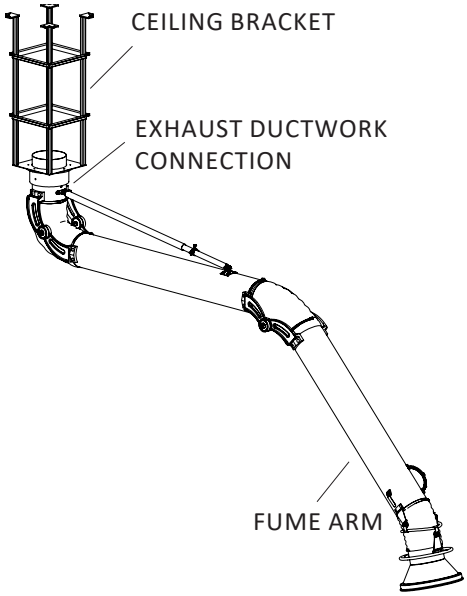


MAXAIR (hanging model, wall or post) with exhaust fan and support bracket.

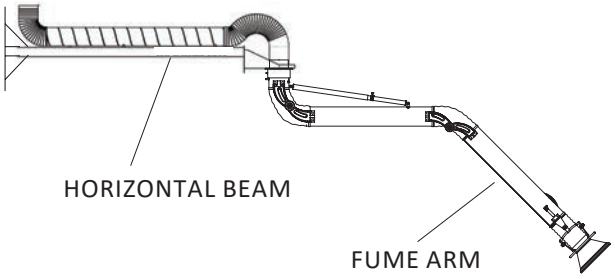


Note : a flanged reducer will be required if bracket and arm are not of same diameters. ex : 1 hp 6" fan inlet with 5" diameter fume arm

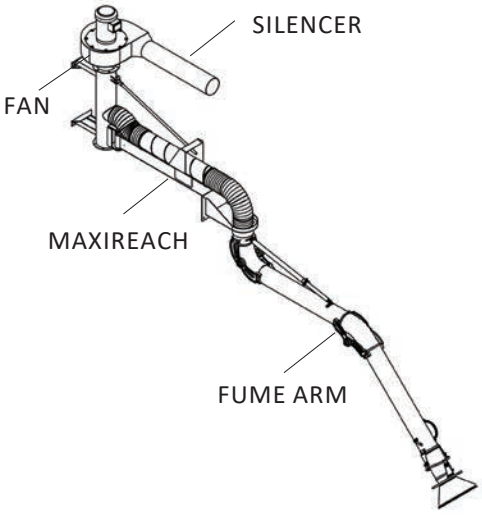
MAXAIR (hanging model) with ceiling bracket.



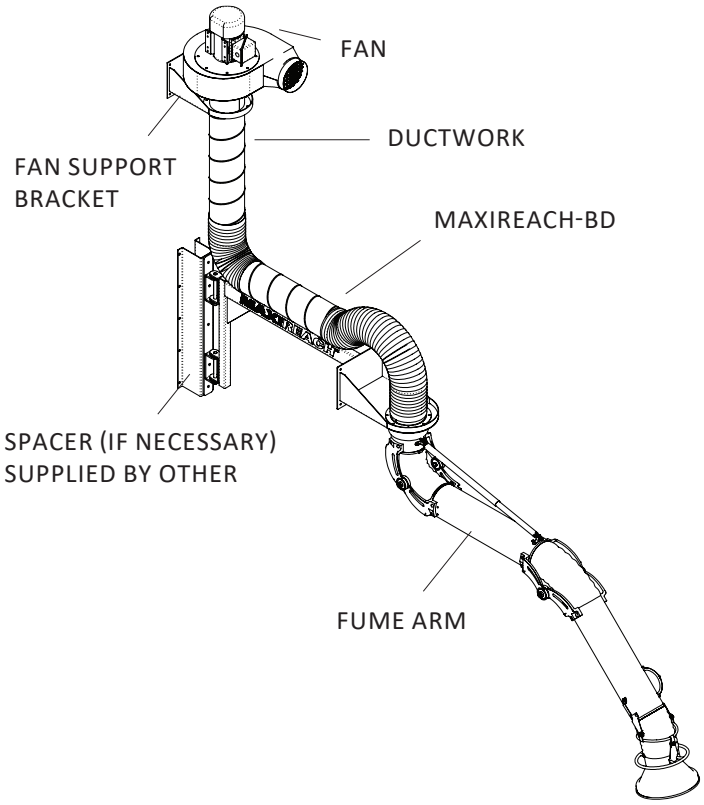
MAXAIR (hanging model) with horizontal fixed extension bracket.



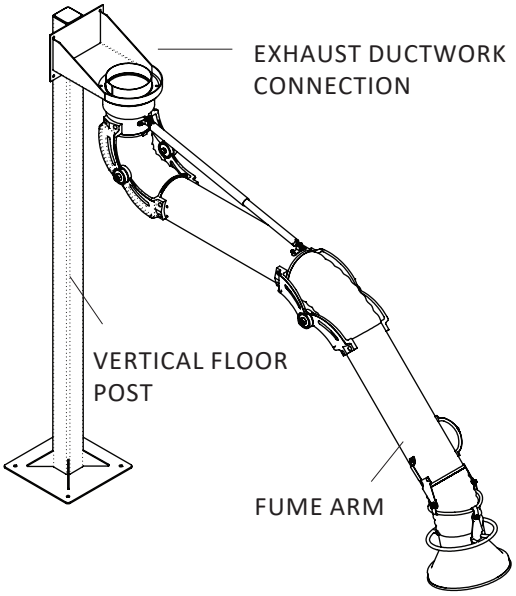
MAXAIR (hanging model) with MAXIREACH extension swing boom, MAXIDRIVE exhaust fan and silencer



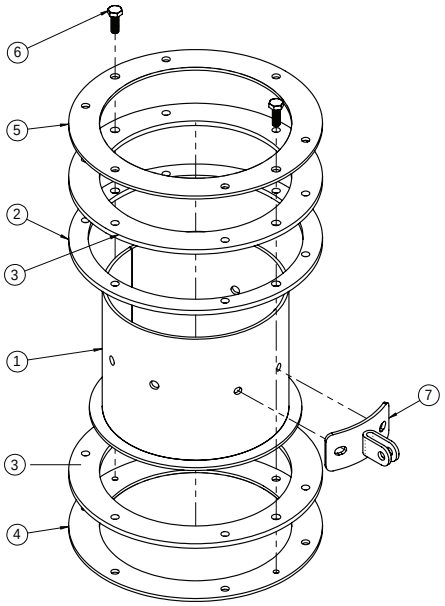
MAXAIR (hanging model, wall or post) with exhaust fan and support bracket.



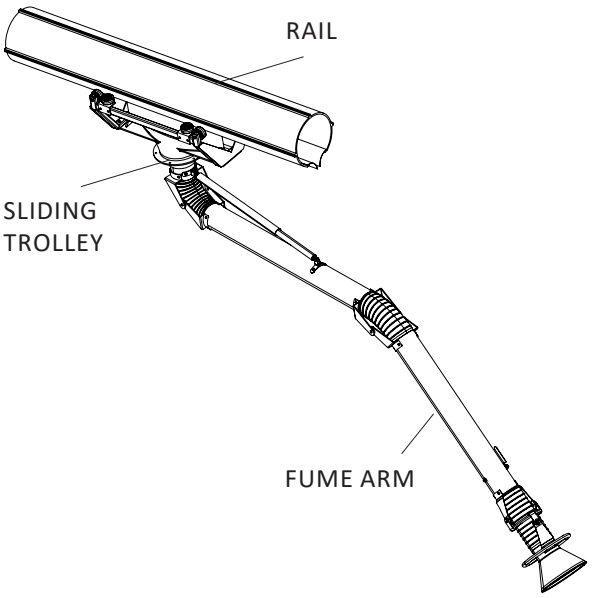
MAXAIR (hanging model) with vertical floor post



MAXAIR pivoting socket configuration for 4", 5", 6" and 8" diameters with Teflon type O rings for 360° rotation.



MAXAIR (hanging model, wall or post) with exhaust fan and support bracket.



No	QTY	Description
1	1	Socket □ange
2	1	Middle ring UHMW black
3	2	Exterior ring UHMW black
4	1	Lower ring (threaded)
5	1	Upper ring (unthreaded)
6	2	Bolt 0.25 x 0.75"
7	1	Socket spring bracket (2 holes)

10 START UP

10.1 Check list

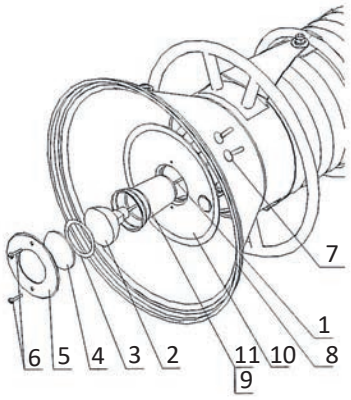
Prior to using the fume arm for the first time, the check list must be followed to ensure a proper continuous operation.

1. Ensure arm moves freely and stays in esired position.
2. Ensure arm is bolted correctly to support bracket
3. Open and close arm damper to make sure it operates properly
4. Move arm left and right to ensure it does not hit posts or walls
5. Move arm up to make sure it does not hit lights or ceiling.
6. Ensure all ductwork is sealed and installed properly.
7. If arm is supplied with MAXIDRIVE exhaust fan, start fan for only 5 seconds and listen for grinding or unusual noise. If fan runs smoothly, you may start using the system. Refer to MAXIDRIVE instruction manual if you need instructions.

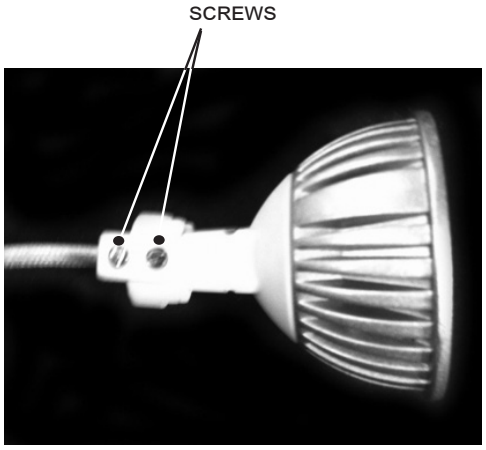
11 LIGHT KIT PARTS LIST AND INSTALLATION

Note : Light kit and fan switch operate on 24 A.C. 25' (7.7 meters) of low voltage cable is supplied.

Light kits and fan switches are factory installed on the fume arm hoods when ordered with such. Field installation is also possible. AQC will supply instruction procedure if light kit or fan switch is ordered once the fume arm is installed.



1. Wire set
2. LED light 24VAC/35W
3. O-ring seal
4. Protective glass
5. Mounting plate
6. Bolts
7. Control switches (fan and light)
8. Hood
9. Wire seal
10. Shield
11. Light kit dome

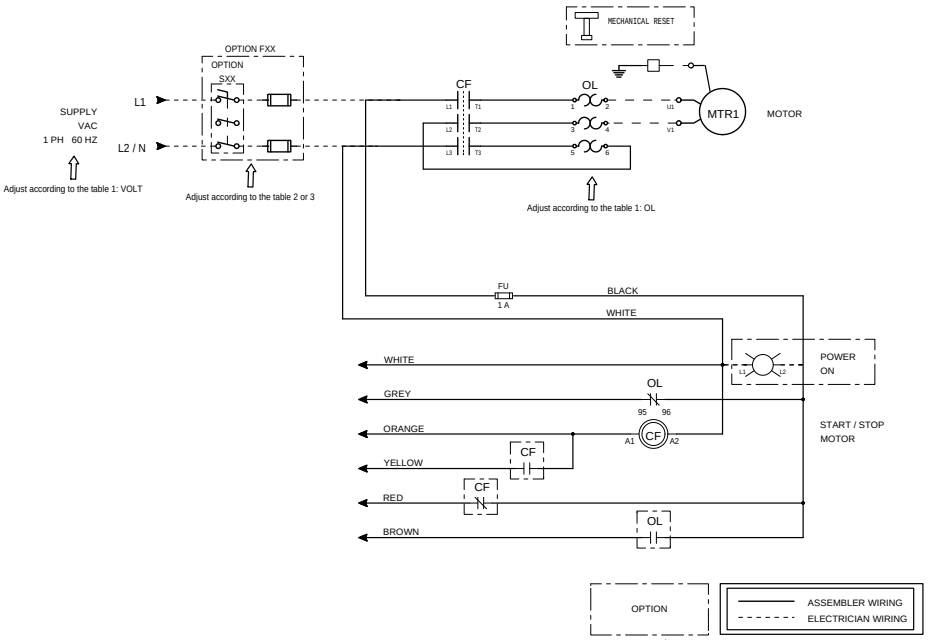


Note : If light blinks, ensure wiring and bulb screws are tightened.

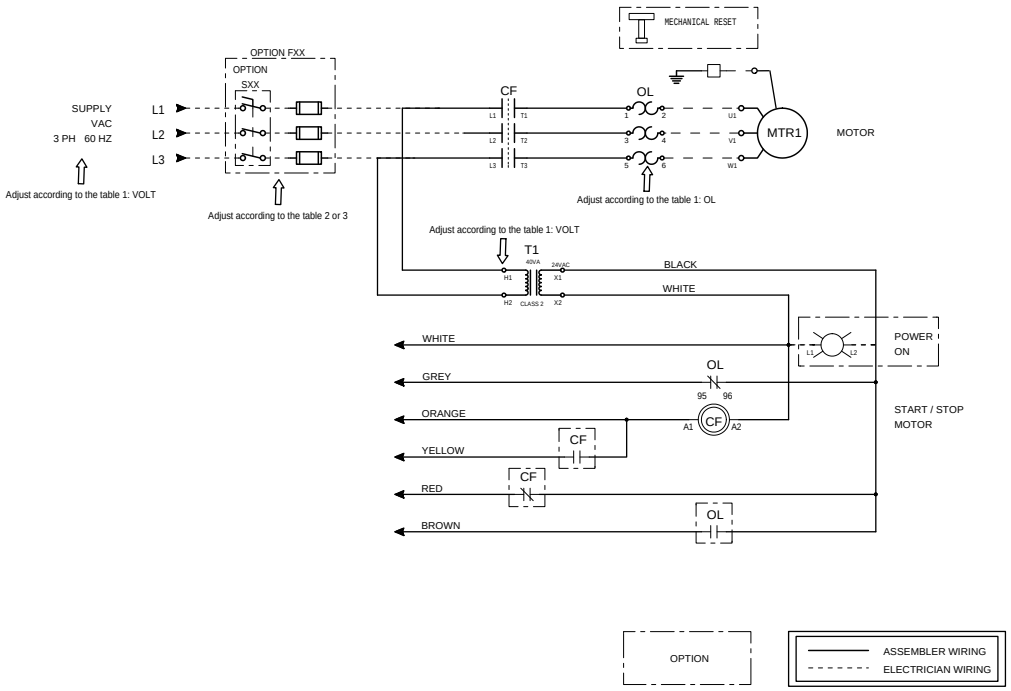
12 ELECTRICAL CONNECTIONS

The electrical connection diagrams shown below are the most common supplied by AQC Special or customized panels are available. Contact your representitive for details.

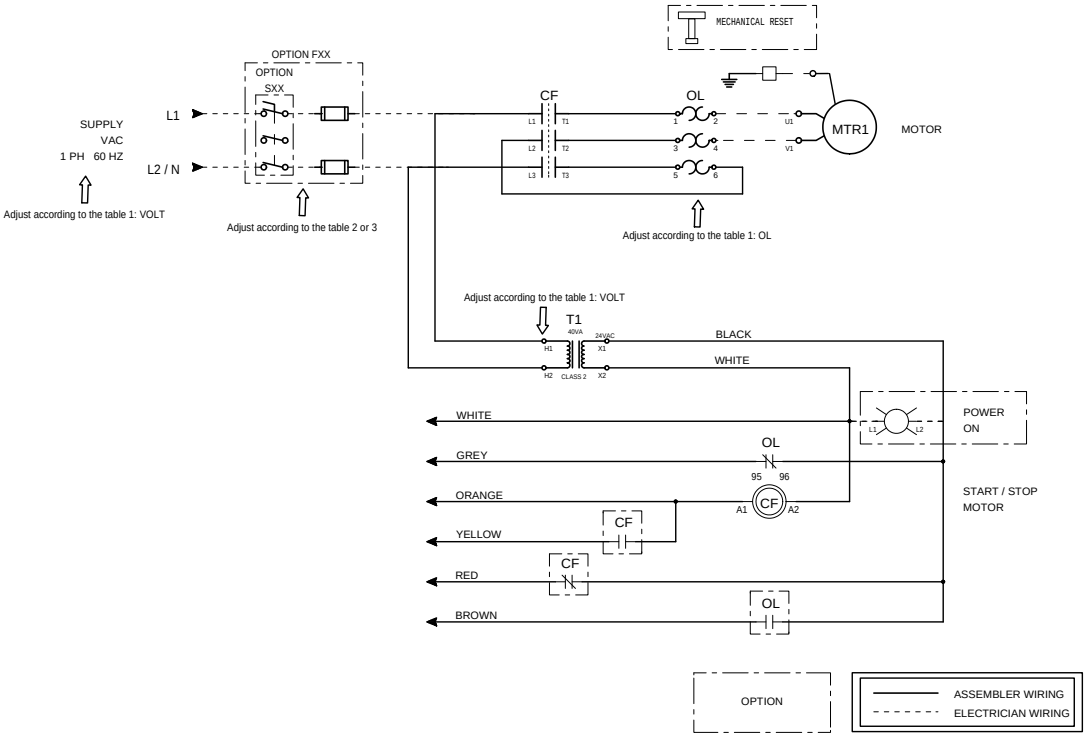
12.1 MAXAIR single phase fan starter (without light kit)



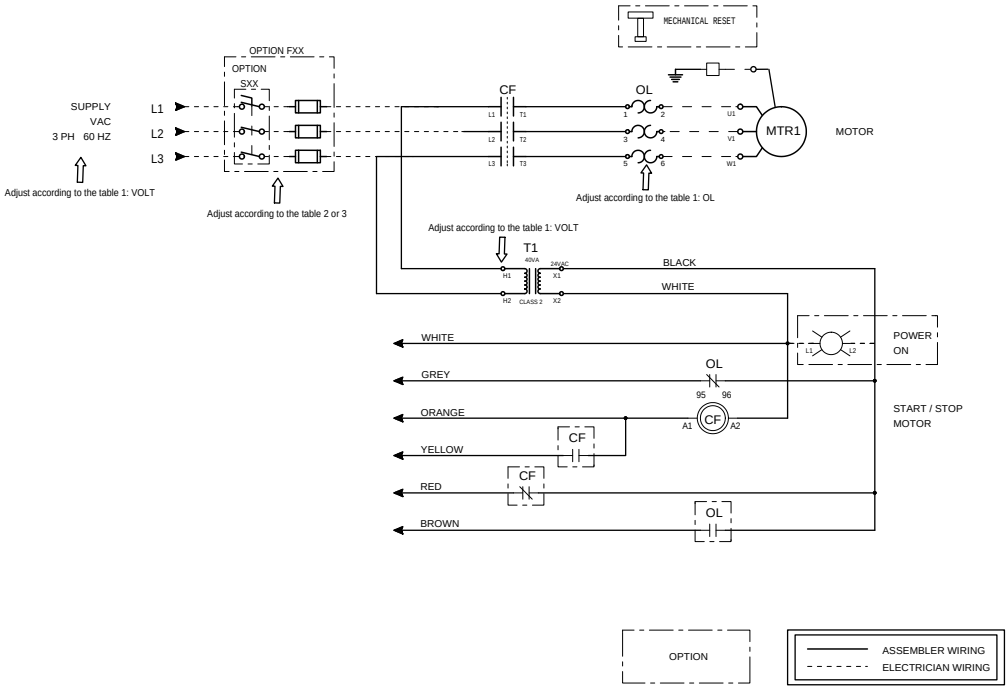
12.2 MAXAIR three phase fan starter (without light kit)



12.3 MAXAIR single phase fan starter (with light kit)



12.4 MAXAIR three phase fan starter (with light kit)



13 MAINTENANCE AND INSPECTION

The chart indicated below shows different inspections and the frequency at which they should be performed.

Frequency of inspections	Components	Procedures
Daily	Arm joints, socket and damper	Ensure arm stays in desired position for source capture.
		Open and close air damper to ensure proper operation.
		Move arm left and right. Ensure no grinding or squeeking is heard or felt.
Weekly	Flexible hoses	Check for possible leaks or tears. Repair or replace if necessary.
		Ensure hose clamps are fastened correctly.
Yearly	Arm assembly	Perform a complete inspection of the fume arm and components.
		Check status of recoil spring assembly. Replace if necessary.
		Check status of joints friction disks. Replace if worn out.

14 TROUBLESHOOTING

Problem	Probable cause	Solution
Fume arm sags (will not stay in place)	Joints are loose	Adjust the joints (tighten).
	Friction disks are worn out	Replace friction disks.
	Spring assembly is broken or too loose	Replace spring assembly.
Insufficient suction of smoke, vapor or dust	Fan rotates the wrong way	If supplied (reverse phases).
	Vacuum damper is closed	Open damper.
	Fan has obstructions	Check for obstructions at the fan outlet. Remove any debris. Adjust the air damper.
	Debris in fume arm tubes or ductwork	Remove flexible hoses and check interior of arm tubes for debris. Open ductwork and check for debris.
Socket grinds/ squeaks / jams	Foreign object in socket	Inspect complete socket assembly.
24V LED light blinks	Screws holding the bulb or bulb wiring in place are loose	Remove glass lens cover O ring and glass lens. Pull bulb and bulb wiring out. Tighten screws on socket for bulb pins and wiring screws on socket.
LED light does not come ON	24V transformer is defective or not connected to low voltage light cable cable	Make sure power is fed to the transformer. Check wiring on light kit hood mounted switch.
	Screws holding the bulb or bulb wiring in place are loose	Remove glass lens cover O ring and glass lens. Pull bulb and buld wiring out. Tighten screws on socket for bulb pins and wiring screws.

15 WARRANTY

15.1 ***Coverage:*** Aireau Quality Control Inc. or its designated affiliate (the "Seller") selling the product (the "Product"), warrants that the Product sold by Seller will be free from defects in material and workmanship for a period of 12 months from the date of its installation or 14 months from the date of shipment by Seller, whichever date is earlier (the "Warranty Period").

15.2 ***Exceptions:*** This warranty does not apply to any Product or portion thereof that: (i) has been used in a manner not in compliance with Seller's or manufacturer's documentation and instructions, (ii) has had changes, alterations or repairs made by a person other than a person authorized by Seller, (iii) has been improperly installed or used or has been installed or used contrary to applicable codes, standards, laws and regulations, (iv) has been subjected to improper storage, accident, neglect, misuse or abuse, (v) has been damaged during shipping, (vi) has been subject to damages resulting from normal wear and tear, (vii) has not been used with appropriate fire protection systems or explosion venting when required or (viii) has not been installed by a licensed contractor with experience in fire and explosion hazards and applicable codes, laws and regulations . For greater certainty, this warranty does not apply to filters sold as part of, or for use with, the Product. Unless specifically accepted otherwise in writing by Seller, Seller does not warrant that electrical equipment will comply with any laws or regulations of the customer's jurisdiction.

15.3 ***Claims:*** To benefit from this warranty, customer must notify Seller in writing of the Product defect, which notice shall include a reasonable description of the defect, within 10 days from the date such defect is discovered or ought to have been discovered.

15.4 ***Remedy:*** During the Warranty Period and subject to the terms herein, Seller will, at its option, either: (i) repair or replace the Product or any defective parts or components (except for filters) with Product, parts or components (except filters) free from defect or (ii) credit or refund the purchase price of the Product. If Seller so requests, customer must return the defective Product to Seller's place of business determined by Seller. Shipping, installation, removal and re-installation costs will be solely borne by the customer. **The foregoing shall be customer's sole and exclusive remedy for any defect in the product, its parts and components and for any breach of the warranty herein.**

15.5 ***Disclaimer:*** **Except as set forth in this section 1, each of seller, its affiliates and their directors, officers, subcontractors and representatives (the "seller parties") disclaims all representations and warranties, whether written, oral, express, implied, statutory, or otherwise, including all implied warranties of merchantability, quality, fitness for a particular purpose, non-infringement, and warranties arising from a course of dealing, course of performance, usage, or trade practice and customer hereby expressly waives any right related thereto. Without limitation to the foregoing and except as expressly set out herein, the seller parties do not represent or warrant that: (a) the use of the product will be timely, uninterrupted or operate in combination with any other hardware, software, system or data or (b) the product will meet customer's intended use, requirements or expectations.**

16 LIMITATION OF LIABILITY

16.1 ***Limitation of Liability:*** **Notwithstanding anything to the contrary, in no event will the seller parties' liability arising out of, or related to, the product or its parts and components, whether pursuant to contractual or extracontractual liability, tort or under any other theory of liability, exceed the price paid to seller for the product giving rise to such liability.**

16.2 ***Exclusion of Consequential and Similar Damages:*** **Notwithstanding anything to the contrary, in no event will the seller part ies be liable for any indirect, punitive, special, exemplary, incidental, consequential or other similar damages of any type or kind (including loss of revenue, profits, use or other economic advantage, damages due to product failure, work stoppage or delays in delivery) arising out of, or in any way connected to, the product or its use, breach of contract, tort (including negligence), strict liability, product liability, or otherwise, regardless of cause, even if the seller parties had previously been advised of the possibility of such damages or could have reasonably foreseen them.**

16.3 ***Fire and Explosion and Acceptance of Risk:*** Customer acknowledges that improper installation or use of the Product may result in fire or explosion. To minimize such risks, proper installation, operation, and maintenance of the Product in accordance with all applicable codes, standards, laws and regulations is critical. Prior to installation and use, customer shall ensure that the Product meets the applicable codes, laws and regulations, including those related to the addition of appropriate fire protection systems or explosion venting. Installation shall be performed by a licensed contractor with experience in fire and explosion and applicable codes, laws and regulations.

17 APPLICABILITY

17.1 The terms herein constitute the only warranty given by Seller with respect to the Product. No other terms and conditions, whether included on a purchase order or in any other document, shall apply or bind the Seller with respect to the Product warranty and all such terms and conditions and documents are expressly disclaimed.

18 GOVERNING LAW

18.1 These warranty terms will be governed by and construed under the laws in force in the Province of Ontario, Canada, excluding its conflict of law rules.