AQC DUST COLLECTING SYSTEMS

Owner's manual for installation, usage and maintenance



MAXAIR™

This manual is property of the owner. Leave with the unit when set-up and start-up are complete. *AQC Dust Collecting Systems inc.* reserves the right to change design and specifications without prior notice.

Introduction

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



Warning!

The usage of the fume arm will require proper installation and handling. Contact *A.Q.C.* Inc. if you have any doubt in regard to the usage of your fume arm.

Warning: Not following directives and procedures could cause injuries or property damages.

Information on the *Maxair* fume arm

Model : _____ _____

Delivery date : _____ Date of installation : _____

Name of customer : _____

Address : _____

_____

_____

Accessories : _____

Other : _____

Index

Introduction....3
Information on the *Maxair* fume arm....3
Index....4
Presentation....5
Model number....6
Normal usage....6
Operation and purpose....7
Components....7
  Hanging version....7
  Bench mount/portable version....8
  Telescopic version....8
Installation....9
  Inspection of goods....9
  Location....9
Arm and wall/post bracket....10
Arm and ceiling bracket....11
Arm and bracket (hanging type with exhaust)....11
Optional equipment....12
Installation types / socket configuration....14
Start up....15
Light kit parts list and installation....15
Electrical connection....16
Maintenance and inspections....18
Troubleshooting....19
Limited Warranty....20

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.

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.

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.

Model numbers

HANGING AND TABLE /BENCH MOUNT

Hanging	Bench mount	Stainless steel hanging	Stainless steel bench mount	Arm diameter [inches] / [mm]	Arm length [feet] / [m]	Standard hood diameter [inches] / [mm]	Optional hood diameter [inches] / [mm]	Weight [lbs] / [kg]
FA-HPG3-03	FA-PPG3-03	FA-HSS3-03	FA-PSS3-03	3 / 75	3 / 1.0	7 / 185	–	14 / 6.3
FA-HPG3-05	FA-PPG3-05	FA-HSS3-05	FA-PSS3-03	3 / 75	5 / 1.5	7 / 185	–	16 / 7.2
FA-HPG4-05	FA-PPG4-05	FA-HSS4-05	FA-PSS4-05	4 / 100	5 / 1.5	8 / 200	–	17 / 7.7
FA-HPG4-07	FA-PPG4-07	FA-HSS4-07	FA-PSS4-07	4 / 100	7 / 2.0	8 / 200	–	19 / 8.6
FA-HPG4-08	FA-PPG4-08	FA-HSS4-08	FA-PSS4-08	4 / 100	8.5 / 2.5	8 / 200	–	22 / 10
FA-HPG5-07	FA-PPG5-07	FA-HSS5-07	FA-PSS5-07	5 / 125	7 / 2.0	10 / 250	15 / 375	38 / 17.2
FA-HPG5-10	FA-PPG5-10	FA-HSS5-10	FA-PSS5-10	5 / 125	10 / 3.0	10 / 250	15 / 375	43 / 19.5
FA-HPG5-14	FA-PPG5-14	FA-HSS5-14	FA-PSS5-14	5 / 125	14 / 4.0	10 / 250	15 / 375	47 / 21.3
FA-HPG6-07	FA-PPG6-07	FA-HSS6-07	FA-PSS6-07	6 / 160	7 / 2.0	13 / 315	20 / 500	44 / 20
FA-HPG6-10	FA-PPG6-10	FA-HSS6-10	FA-PSS6-10	6 / 160	10 / 3.0	13 / 315	20 / 500	52 / 23.5
FA-HPG6-14	FA-PPG6-14	FA-HSS6-14	FA-PSS6-14	6 / 160	14 / 4.0	13 / 315	20 / 500	60 / 27.2
FA-HPG8-07	FA-PPG8-07	FA-HSS8-07	FA-PSS8-07	8 / 200	7 / 2.0	13 / 315	20 / 500	57 / 26
FA-HPG8-10	FA-PPG8-10	FA-HSS8-10	FA-PSS8-10	8 / 200	10 / 3.0	13 / 315	20 / 500	66 / 30
FA-HPG8-14	FA-PPG8-14	FA-HSS8-14	FA-PSS8-14	8 / 200	14 / 4.0	13 / 315	20 / 500	74 / 33.5

Telescopic fume arm

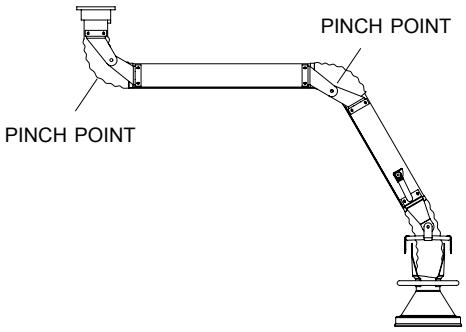
Models	Arm diameter [inches] / [mm]	Arm min. length [in] / [mm]	Arm max. length [in] / [mm]	Standard hood diameter [in] / [mm]	Optional hood diameter [in] / [mm]	Weight [lbs] / [kg]
FA-TPGG4-06	4 / 100	52 / 1300	72 / 1800	8 / 200	-	19 / 8,6
FA-TPGG5-06	5 / 125	52 / 1300	72 / 1800	10 / 250	15″	30 / 13.6
FA-TPGG6-06	6 / 160	52 / 1300	72 / 1800	13 / 325	20″	36 / 16.4

Normal usage

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 *A.Q.C. 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 POSTION**



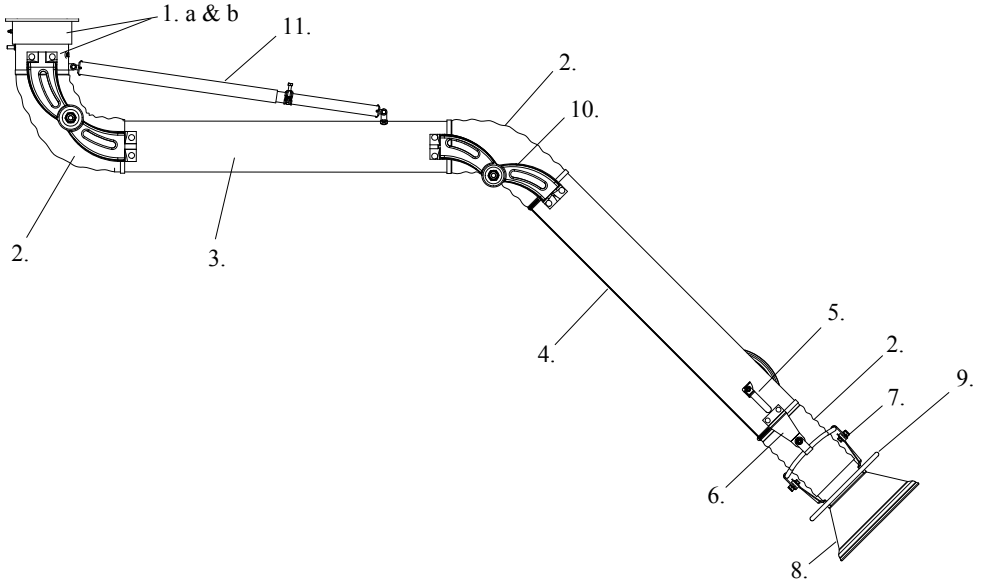
Operation and purpose

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.

Components

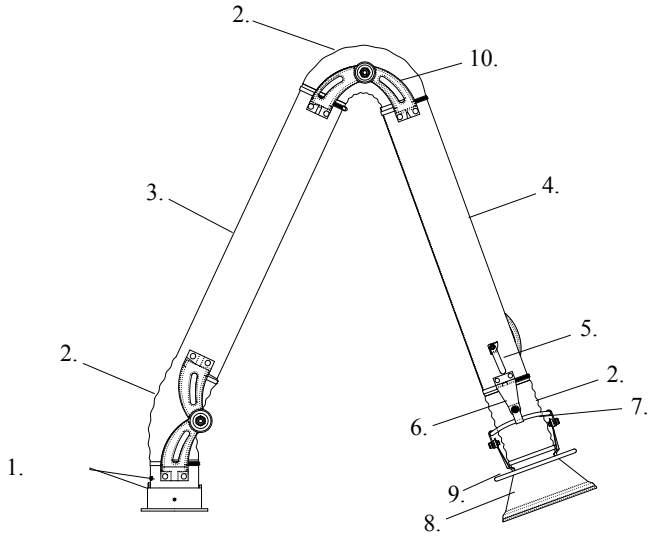
Maxair main components (hanging version)

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)



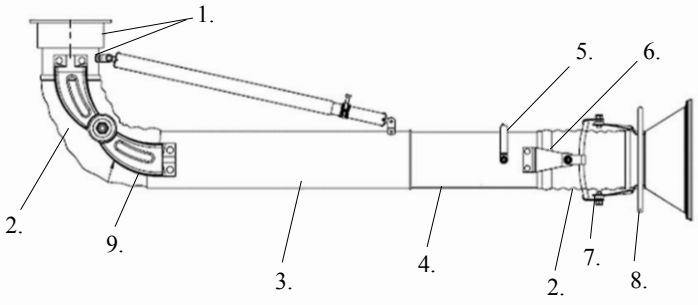
Maxair main components (bench mount/portable version)

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)



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)



Installation

Warning!

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

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.

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.

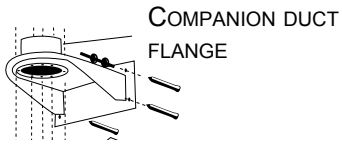
4. For safety measures, a minimum two (2) man crew should be appointed for the installation.

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 [feet] / [m]	B Maximum reach at 45" off floor [feet] / [m]	C Maximum reach at 45" off floor [feet] / [m]	D Maximum reach at 45" off floor [feet] / [m]	E Recommended mounting height [feet] / [m]
3 / 0.9	2.6 / 0.7	3 / 0.9	5.2 / 1.4	6 / 1.5
5 / 1.5	3.5 / 1.1	5 / 1,5	7 / 2.2	6 / 1.5
7 / 2.1	5.5 / 1.7	7 / 2.1	11 / 3.4	6 / 1.5
8.5 / 2.6	7.4 / 2.2	7 / 2.6	14.8 / 4.4	8 / 2.4
10 / 3	8.5 / 2.6	7.8 / 2.4	17 / 5.2	8 / 2.4
14 / 4	11.2 / 3.4	10.2 / 3.2	22.4 / 6.8	8 / 2.4

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.

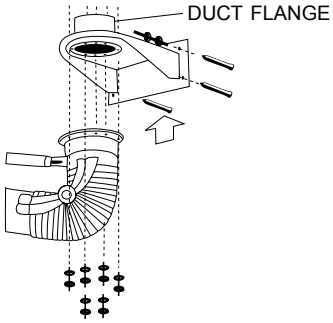
Note on arms equipped with recoil telescopic springs : Do not attach spring assembly from socket tube spring bracket to rotating socket before step # 4 is completed.

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.

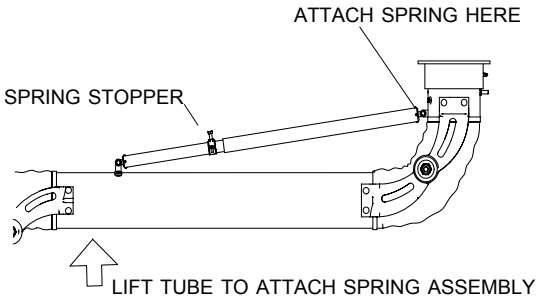
Note before installing 5'' 6'' and 8'' diameter fume arms : The rotating arm socket has a stopper which consists of a socket set screw bolted on the male part of the socket and a "tooth'' on the female part blocking the arm from doing a full 360 degrees rotation. If the arm bracket is installed on a 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.

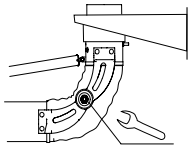
5. To attach the spring telescopic assembly, push the arm UP until the eyelet on the spring assembly meets with the male socket spring bracket. Insert eyelet in spring bracket and attach with fasteners provided.



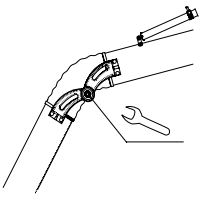
6. Arm joints are partly adjusted at the factory and will need final adjustment prior to usage. Using two (2) adjustable wrenches, tighten all joints starting from the top left and top right. One wrench will hold the nylon insert lock not and the other wrench will hold the head of the bolt. Begin with 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.

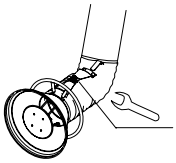
DO NOT OVERTIGHTEN. THIS COULD CAUSE FRICTION DISKS FAILURE.



SOCKET JOINTS ADJUSTMENT



MIDDLE JOINTS ADJUSTMENT



HOOD JOINTS ADJUSTMENT

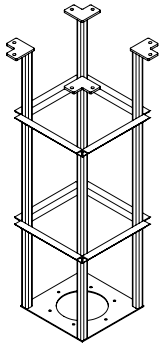
7. Move arm UP/DOWN/LEFT/RIGHT to ensure arm stays in position.

8. Proceed with ducting installation to duct flange or to exhaust fan.

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.

Arm and bracket installation (hanging type with exhaust fan)

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

Warning!

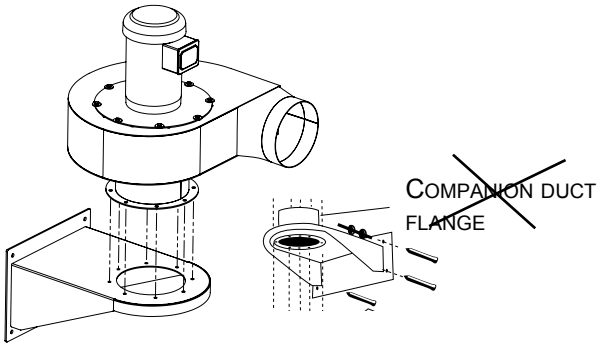
- The electrical connection must be performed by a qualified electrician and with respect to codes and regulations. For safety measures, shut off power supply to the motor prior to perform repairs.

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 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.

8. Connect exhaust ductwork (and silencer if supplied) to fan outlet.

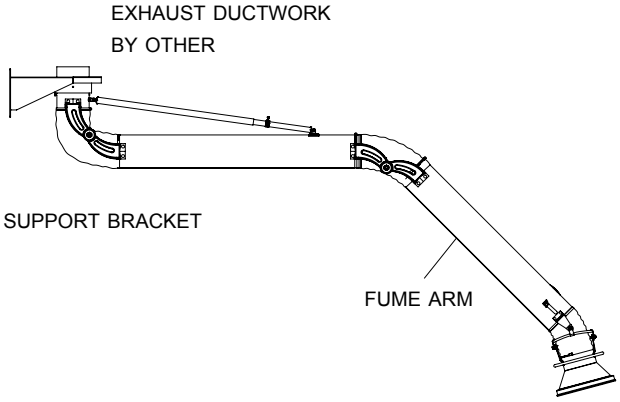
Optional equipment

The *Maxair* fume arm is offered with options as follows:

1. direct mount exhaust fan
2. LED 12V light kit with switch
3. Hood mounted fan switch
4. Transformer for light or fan switch
5. oversized hoods (shipped unassembled to fume arm)
6. hood screen mesh
7. 304 stainless steel tubes and hoods
8. aluminum arm tubes
9. PVC tubes (not available in all diameters)

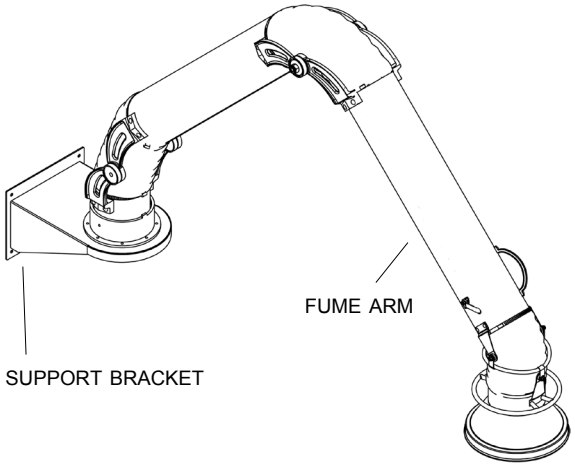
***Maxair* typical installations. Other installations are possible. Contact *A.Q.C.* or your representative for details.**

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

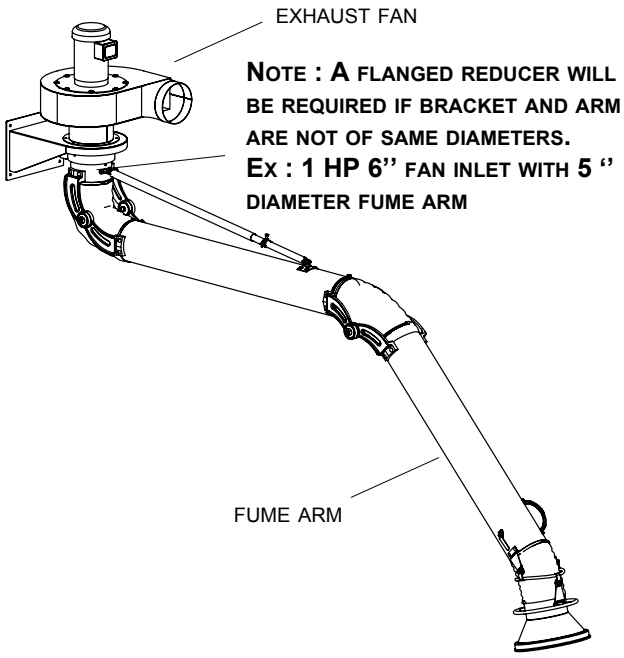


Maxair (portable or table/bench mount) with bracket.

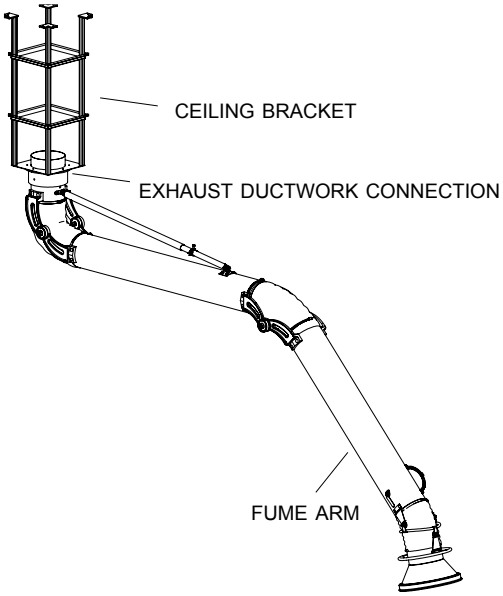
NOTE ON BENCH MOUNT MODELS : Do not force arm down at socket past the maximum bend. This may cause damages in the spring and cable assembly in socket.



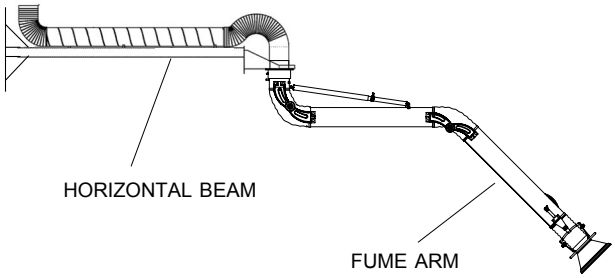
Maxair (hanging model, wall or post) with exhaust fan and support bracket.



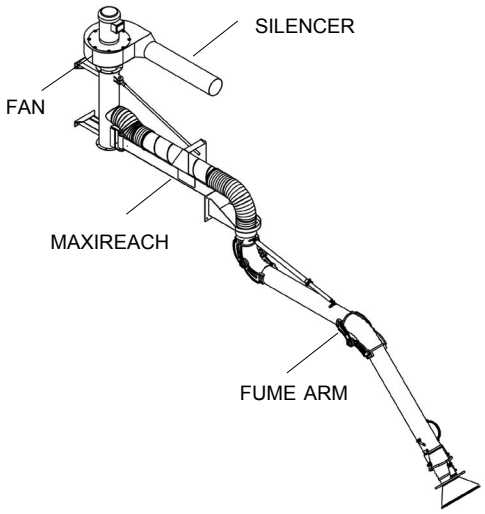
Maxair (hanging model) with ceiling bracket.



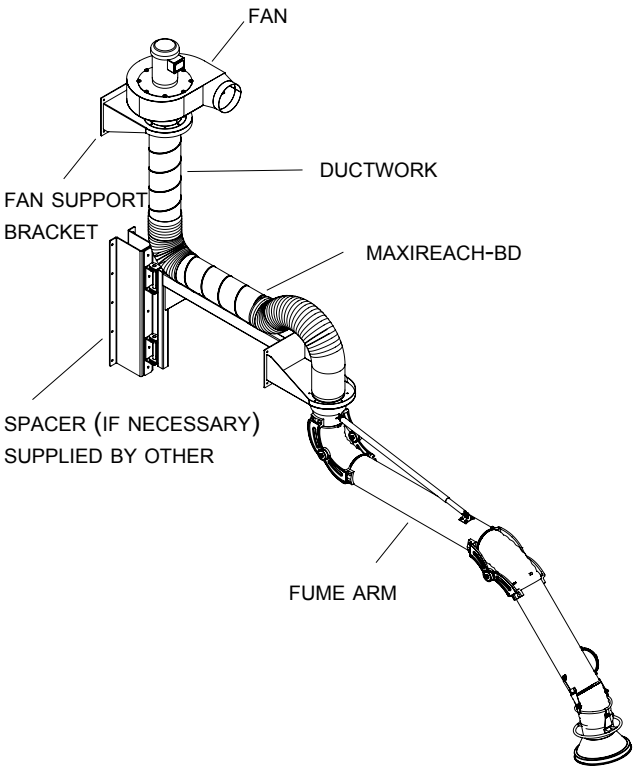
Maxair (hanging model) with horizontal fixed extension bracket.

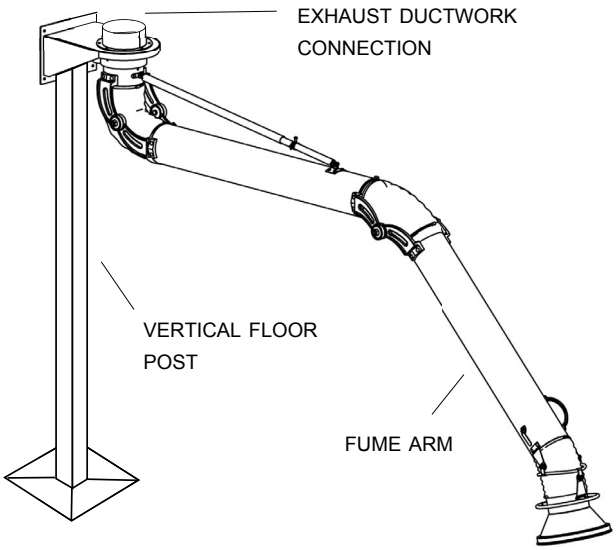


Maxair (hanging model) with *Maxireach* extension swing boom, *Maxidrive* exhaust fan and silencer

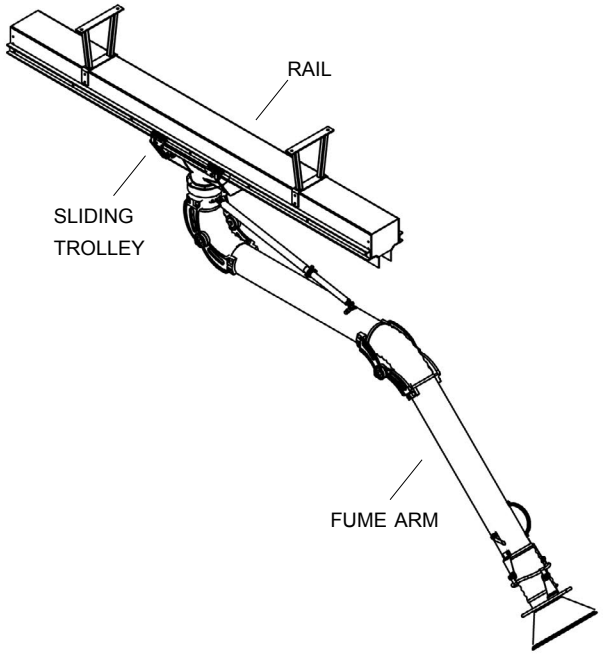


Maxair (hanging model) *Maxireach-BD* extension swing boom and *Maxidrive* exhaust fan.

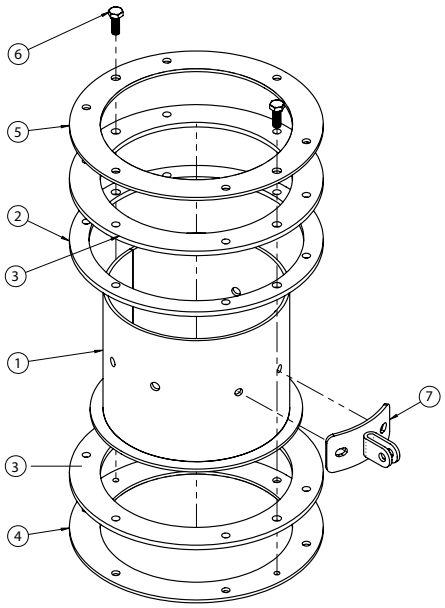




Maxair (hanging model) with vertical floor post *Maxair* (hanging model) with *Maxirail* and trolley.



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



No	QTY	Description
1	1	Socket flange
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)

Start up

Check list

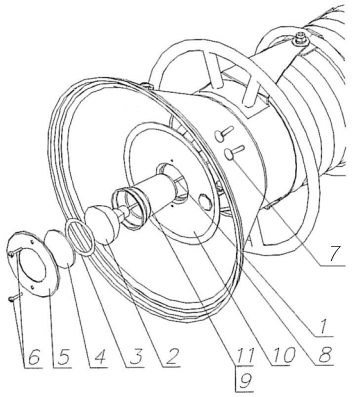
Prior to using the fume arm for the first time, the check list must be followed to ensure a proper continuous operation.

1. Ensure arm moves freely and stays in desired 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.

Light kit parts list and installation

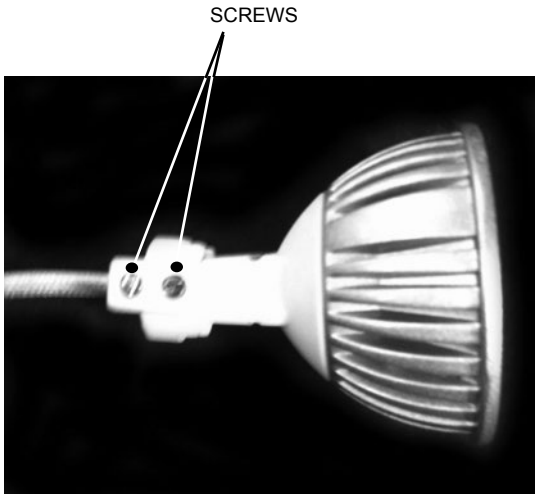
Note : Light kit and fan switch operate on 12 A.C. 25' (7.7 meters) of low voltage cable is supplied.

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



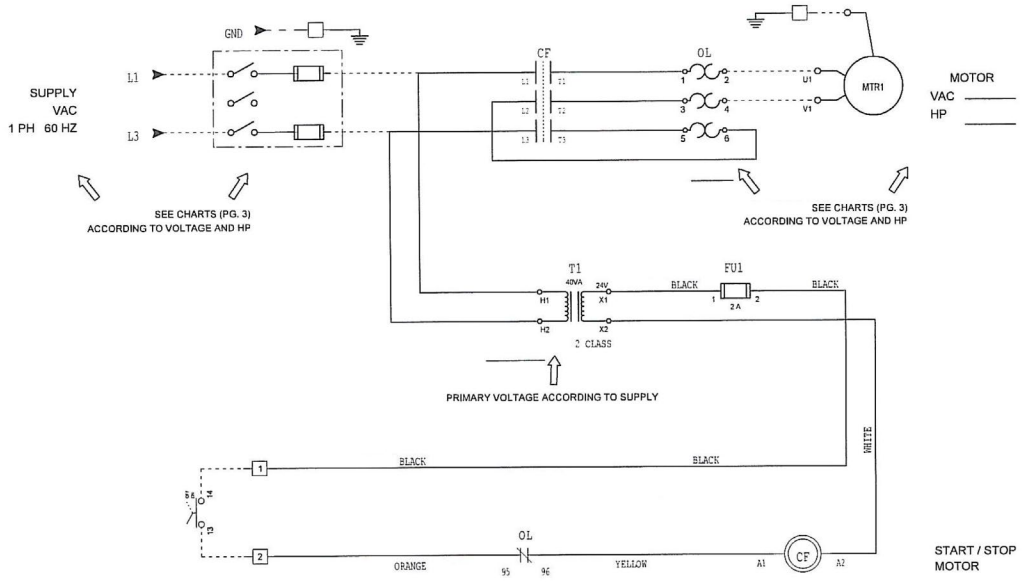
1. wire set
2. LED light 12VAC/35W
3. o-ring seal
4. protective glass
5. mounting plate
6. bolts
7. control switches (fan and light)
8. hood
9. wire seal
10. shield
11. light kit dome

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

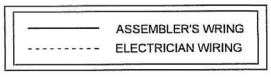


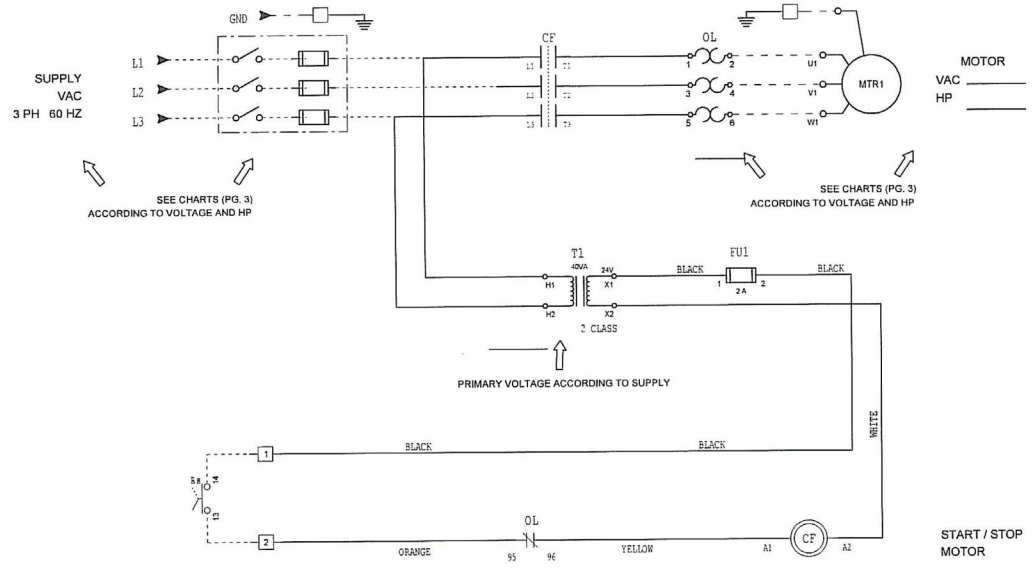
Electrical connections

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

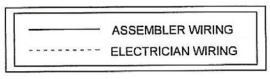


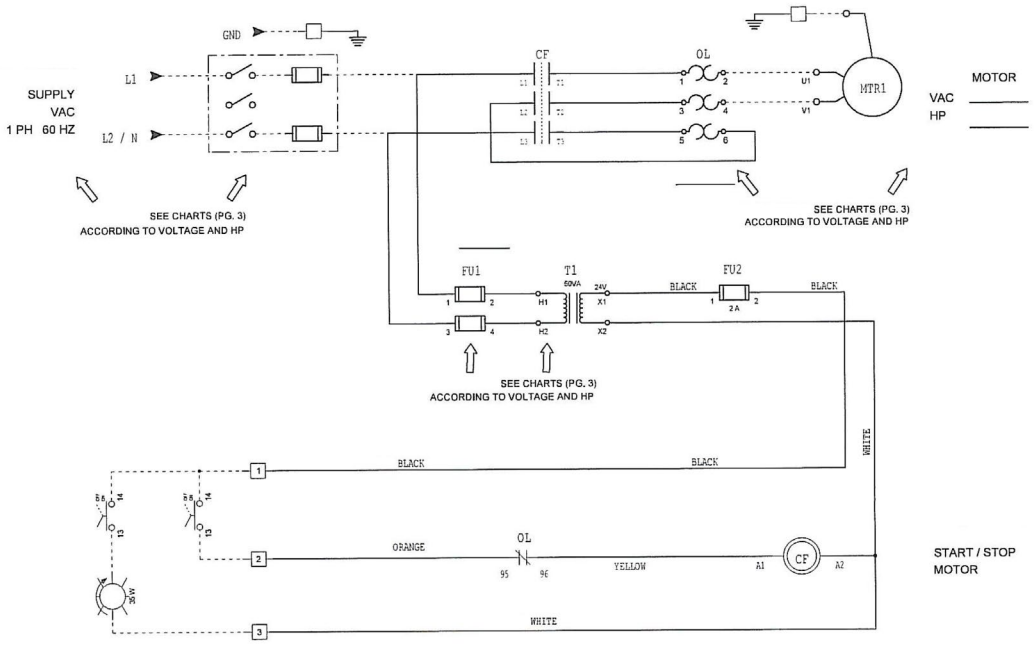
MAXAIR single phase fan starter (without light kit)





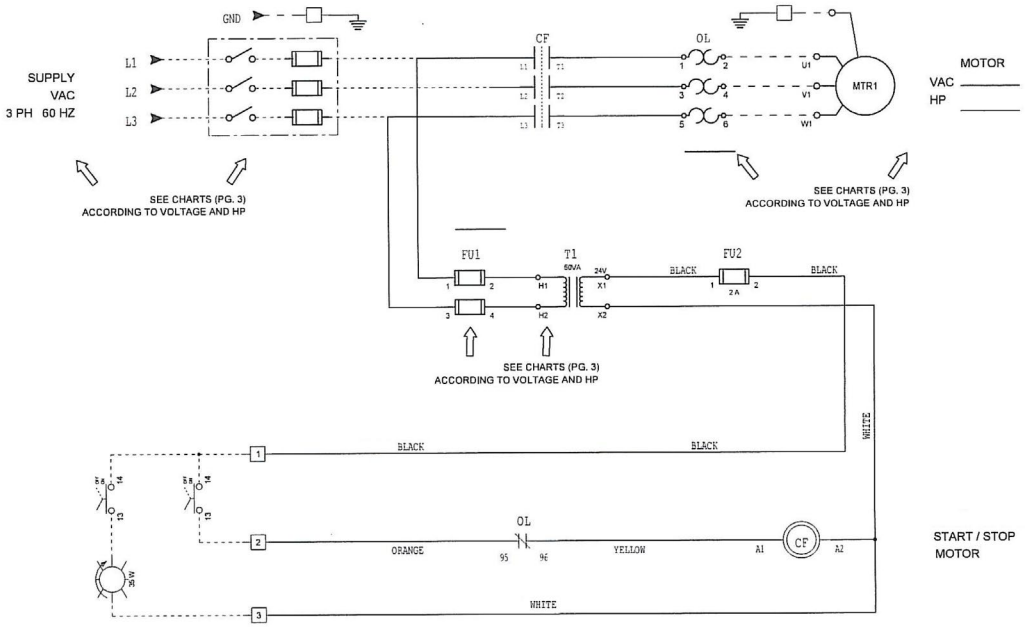
MAXAIR three phase fan starter (without light kit)





***MAXAIR* single phase fan starter**
(with light kit)

ASSEMBLER WIRING
ELECTRICIAN WIRING



***MAXAIR* three phase fan starter**
(with light kit)

ASSEMBLER WIRING
ELECTRICIAN WIRING

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.

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
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	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

Limited Warranty

AQC warrants to the original purchaser that all equipment will be free from defects in materials and workmanship for one year from the date of shipment from *AQC*. This warranty applies only if equipment is properly installed, maintained, and operated under normal conditions and does not apply to damage caused by corrosion, abrasion, abnormal use or misuse, misapplication, or normal wear and tear. This Warranty will be void with respect to equipment that is subject to unauthorized repairs or modifications. *AQC* makes no warranty as to goods manufactured or supplied by others. This warranty is subject to any limitations in *AQC* quotation and may not be modified except by a written instrument signed by the President or Vice President of Sales of *AQC*.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED, INCLUDING ANY IMPLED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT.

As purchaser's exclusive remedy for any defects in the equipment, *AQC* will exchange of repair any defective parts during the warranty period, provided such parts are returned, prepaid, to *AQC* factory. The obligation of *AQC* is limited to furnishing replacement parts F.O.B. *AQC* factory or making repairs at *AQC* factory of any parts that are determined, upon inspection by *AQC* to be defective. In no event will *AQC* be responsible for labor or transportation charges for the removal, reshipment of reinstallation of the parts.

IN NO EVENT WILL AQC BE RESPONSIBLE FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES.

AQC DUST COLLECTING SYSTEMS

AQC Dust Collecting Systems inc.
660, De La Sabliere
Bois-des-Filion, Qc, Canada
J6Z 4T7

Tel: (450) 621-6661
Free: 1-866-629-4356
Fax: (450) 621-6677
Email: Info@AQCdust.com