AQC DUST COLLECTING SYSTEMS

Owner's manual for installation, usage and maintenance



MAXIDRIVE™

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 *Maxidrive* backward inclined blade and direct drive exhaust fans. It includes important information concerning the installation, usage and startup 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 exhaust fan will require proper installation and handling. Contact *A.Q.C.* Inc. if you have any doubt in regard to the usage of your exhaust fan.

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

Information on the *Maxidrive* backward inclined direct drive fans

Model : _____ _____

Delivery date : _____ Date of installation : _____

Name of customer : _____

Address : _____

_____

_____

Accessories : _____

Other : _____

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Presentation

The *Maxidrive* backward inclined blade and direct drive fan is a system designed to exhaust and capture fume, smoke, dust or any pollutant being produced.

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

Optional equipment may include *Maxair* fume arms, *Maxireel* exhaust hose reels, *Maxidrop* hose drop systems, etc.

Each *Maxidrive* fan includes:

- 11 and 14 gauge powder coat painted steel housing
- Spark proof aluminum backward inclined impeller (optional steel impeller)
- Inlet screen
- Direct drive motor
- Duct companion flange or support bracket flange
- Inlet cone

Model numbers

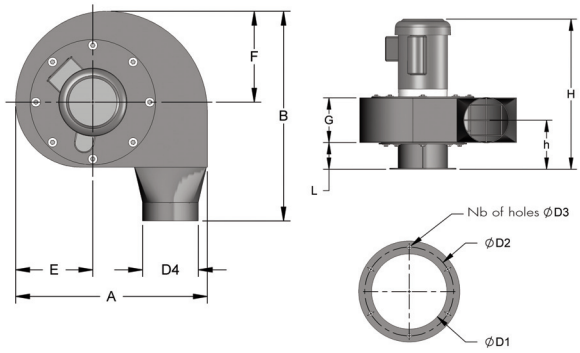
Voltage / HP	1 HP (6")	2 HP (8")	3 HP (10")	5 HP (12")
1 phase 115/208-230	MS-DF-01A-112	MS-DF-02A-112	MS-DF-03A-112	N/A
1 phase 115/208-230	MS-DF-01A-324	MS-DF-02A-324	MS-DF-03A-324	MS-DF-05A-324
1 phase 115/208-230	MS-DF-01A-35	MS-DF-02A-35	MS-DF-03A-35	MS-DF-05A-35

Amperage draw

Model	Voltage	Amperage	Model	Voltage	Amperage
DF-01	115-1-60	12	DF-03	115-1-60	N/A
	230-1-60	6.5		230-1-60	17
	208-3-60	3.1		208-3-60	9.6
	460-3-60	1.6		460-3-60	4.8
	575-3-60	1.4		575-3-60	3.9
DF-02	115-1-60	24	DF-05	115-1-60	N/A
	230-1-60	12		230-1-60	28
	208-3-60	6.8		208-3-60	15.2
	460-3-60	3.4		460-3-60	7.6
	575-3-60	2.7		575-3-60	6.1

Fan dimensions

Model	Power [HP] / [Kw]	Dimensions [inches] / [mm]													Weigh [lbs] / [Kg]
		A	B	E	F	H	L	G	h	d1	d2	d3	d4	Nb	
DF-01	1 / 0.75	20.2 / 513	22.6 / 574	8.3 / 211	9.8 / 249	21.1 / 536	3.9 / 99	5.9 / 150	6.9 / 175	6.25 / 160	7.69 / 195	0.4 / 9	6 / 198	6	70 / 31.8
DF-02	2 / 1.50	22.7 / 577	24.8 / 630	9.2 / 234	11 / 279	24.8 / 630	4.9 / 124	6.3 / 160	7.4 / 188	8 / 200	9.69 / 246	0.4 / 9	8 / 249	8	82 / 37.3
DF-03	3 / 2.25	25.6 / 650	27.3 / 693	10.4 / 264	12.5 / 318	25.4 / 645	4.9 / 124	6.9 / 175	8.4 / 213	10 / 254	11.38 / 289	0.4 / 9	10 / 302	8	96 / 43.6
DF-05	5 / 3.55	25.6 / 650	27.3 / 693	10.4 / 264	12.5 / 318	27.3 / 693	4.9 / 124	7.8 / 198	8.8 / 224	12 / 305	13.5 / 343	0.4 / 9	12 / 302	8	166 / 75.5

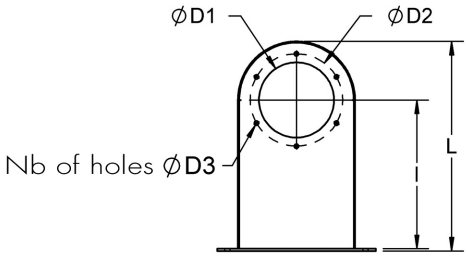


Drawing #2

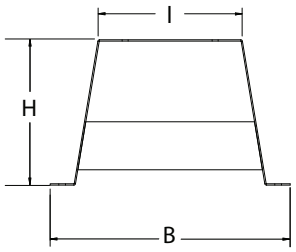
Bracket dimensions

Model	[HP] / [Kw]	Dimensions [inches] / [mm]													Weight [lbs] / [kg]
		D1	D2	Nb	D3	D4	L	l	H	h	B	b	b1	i	
WBF-006	1 /0.75	6.25/160	7.69 / 195	6	0.28 / 7	0.43 / 11	17.44 / 443	12.38 / 314	10 / 254	8.31 / 211	13.19 / 335	11.5 / 292	5.75 / 144	N/A	11 / 5
WBF-008	2 /1.50	8 / 200	9.69 / 246	8	0.35 / 9	0.43 / 11	22.44 / 570	15.25 / 387	11.88 / 297	9.75 / 248	15.5 / 394	13.63 / 346	6.75 / 170	N/A	13 / 5.9
WBF-010	3 /2.25	10 / 254	11.38 / 289	8	0.35 / 9	0.43 / 11	22.44 / 570	15.25 / 387	11.88 / 297	9.75 / 248	15.5 / 394	13.63 / 346	6.75 / 170	N/A	15 / 6.8
WBF-012	5/3.55	12 / 305	13.5 / 343	8	0.35 / 9	0.43 / 11	26.31 / 668	18.38 / 467	11.88 / 297	9.75 / 248	18.13 / 460	16.13 / 410	8.00 / 200	N/A	21 / 9.5
DF-03-SUPP	3/2.25	N/A	N/A	4	N/A	0.56 / 14	16 / 400	7.77 / 194	10.10 / 252	6.50 / 162	8.00 / 200	N/A	14.00 / 350	8.00 / 200	12 / 5.4
DF-05-SUPP	5/3.55	N/A	N/A	4	N/A	0.56 / 14	20 / 500	11.77 / 294	12.10 / 302	8.00 / 200	10,00 / 250	N/A	18.00 / 450	10,00 / 250	16 / 7.2

Available fan support brackets



Wall mount bracket (vertical or horizontal installation)



Roof top mount bracket (horizontal installation only)

Drawing #1

Normal usage

The *Maxidrive* backward inclined blade fans is designed to remove dust and smoke from the air resulting from a fabrication process. Each *Maxidrive* backward inclined blade fans 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.

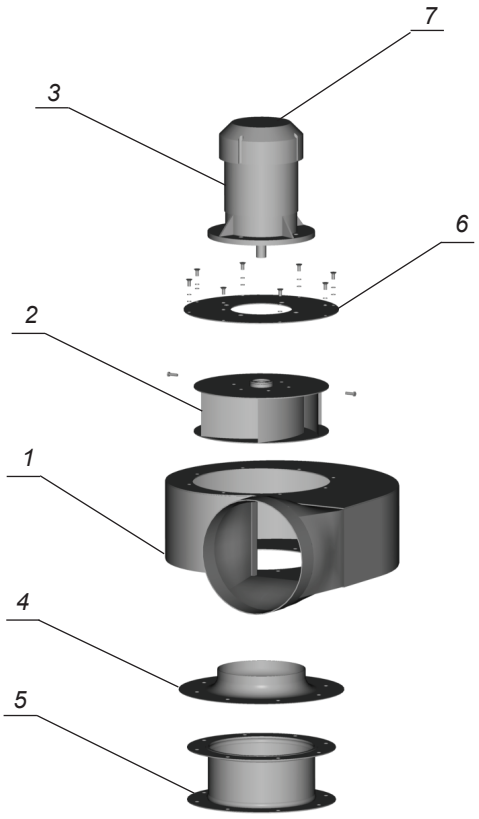
Operation and purpose

Maxidrive backward inclined blade fans include impellers which are used to exhaust contaminated air to the outside or through a filtering device.

Operating temperatures for aluminum impellers are 200°F (93°C) and 400°F (205°C) for steel impellers. Optional high temperature resistant paint on impellers is available. Explosion proof motors are recommended when fan is installed in reactive gases environments.

Components

1. Housing
2. Impeller
3. Motor
4. Inlet cone
5. Companion flange (straight pipe or bolted)
6. Motor support plate
7. Motor cooling impeller



Drawing #3

Installation

Warning!

Installation of equipment must be performed as per local building laws and regulations. Structure must meet proper weight support of equipment. Electrical connection must be performed by a certified electrician only.

Maxidrive backward inclined blade fans may be used in conjunction with fume arms, hose reels and extension swing booms. Refer to appropriate use and installation manuals.

Inspection of goods

The *Maxidrive* backward inclined blade fan may be shipped fully assembled or separate from the support bracket. 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 fan and motor assembly, support bracket and motor cover (if ordered). Other optional components such as exhaust silencers, starters and vibration isolators 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.

Location

1. The area where the fan 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 fan will be free of obstacles such as beams, lighting fixtures, overhead cranes, etc.

3. Confirm fan location (and optional equipment) with the engineer or user.

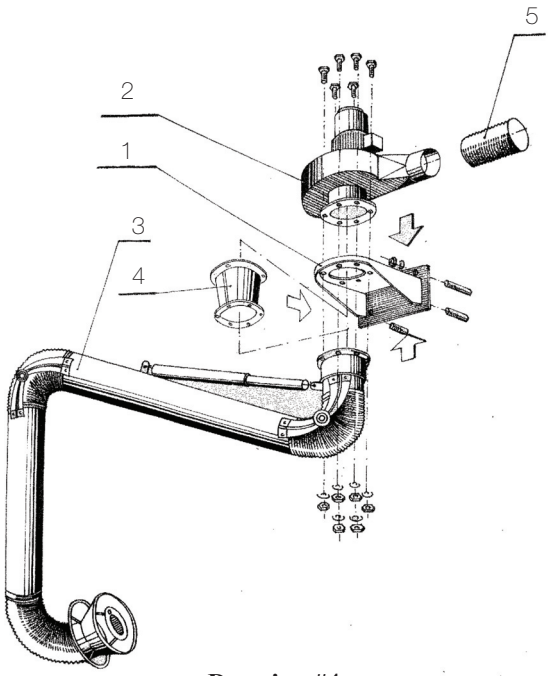
4. For safety purpose, a team of two (2) employees should be assigned to the installation.

Installation of *Maxidrive* fan with *Maxair* fume arm:

1. Bolt or weld support bracket (1) to support structure.

2. Position fan on support bracket. **DO NOT FASTEN TO BRACKET YET.** Ensure fan orientation is appropriate for exhaust direction.

   Note: Optional fan/arm reducer (4) will be required if arm outlet size does not match fan inlet size.



Drawing #4

3. Attach fume arm to support bracket and *Maxidrive* fan. Ensure arm socket stopper is facing bracket support structure.

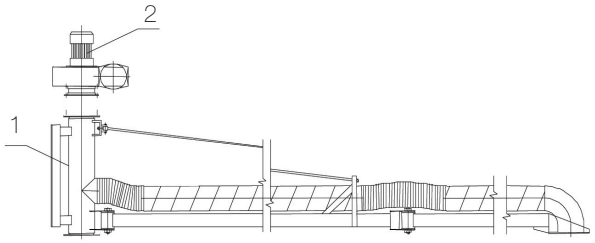
   Note: Optional fan outlet silencer (5) will be installed if required.

Installation of *Maxidrive* fan with *Maxireach* extension boom:

1. Bolt or weld *Maxireach* boom base (1) to support structure.

2. Position fan on boom base. Ensure fan orientation is appropriate for exhaust direction.

   Note: Optional fan/boom base reducer will be required if boom outlet size does not match fan inlet size.

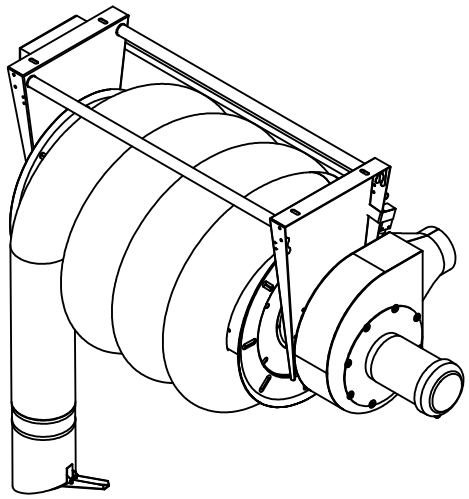


Drawing #5

Note: Optional fan outlet silencer will be installed if required.

Installation of *Maxidrive* fan with *Maxireel* exhaust hose reel:

Note: *AQC* usually supplies fan and reel factory assembled. If fan is shipped separate, bolt fan flanged inlet to hose reel flanged outlet. Ensure fan orientation is appropriate for exhaust direction.



Drawing #6

Electrical connection

Note: Due to different voltages, amperages, HP and fan optional equipment available, wiring diagrams and electrical connections are available on request.

Maintenance and inspections

The chart indicated below shows different inspection and the frequency ar which they should be permormed.

Frequency of inspections	Components	Procedures
Daily	Fan impeller	• Ensure fan does not make any grinding or unusual noises. Check for vibration.
Monthly	Cooling impeller	• Ensure cooling impeller is not jammed.
Yearly	All components	• Perform amperage draw reading. • Remove air inlet connection and check status of impeller / wheel. • Check all fasteners.

Troubleshooting

Problem	Probable cause	Solution
Low fan air volume	Fan rotation is incorrect	• Reverse motor polarity. • Check if hose or inlet is plugged.
	Obstacle / debris in ductwork or fan impeller	• Remove debris or obstacle.
The fan is vibrating	Unbalanced fan impeller. Worn or damaged bearings.	• Balance the fan to Amca class G 6.3 or re place with a new one. Replace the bearings.
	Loose bolts on motor plate or of whole fan attachment.	• Tighten the bolts.
The fan makes noise	Loose or damaged motor bearings.	• Replace the bearings.
	Debris jammed in impeller.	• Remove debris, clean up and inspect for damage, balance or replace if needed.

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

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