

# Operations & Maintenance Manual



## Velocity X<sub>1</sub>, Velocity X<sub>2</sub> & Velocity X<sub>4</sub> Premium Brushless Dust Collector Series

### 1.0 IMPORTANT:

Save shipping box and internal packaging for future service. Shipping without proper packaging will cause damage to unit.  
**"Read and Save these instructions"**

**NEVER USE HOSE OR ADAPTER SMALLER THAN 2.5" IN DIAMETER.  
THIS SYSTEM IS DESIGNED FOR LARGER DIAMETER HOSES.**

### 2.0 SAFETY PRECAUTIONS

Carefully read instructions in this manual before operation (keep manual as it contains information for proper operation and maintenance). Keep all fastening hardware tight to ensure that the unit is in safe working condition. Familiarise yourself with the way in which the special filter is removed, installed, and serviced. Filter must be in place whenever this machine is in operation. Use only on grounded electrical circuit; do not use two-wire electrical prong adapters to defeat the three-pronged plug on the end of the cord. When servicing motor, be careful when touching exterior of motor when it is turned off; it may be hot enough to be painful or cause injury. **Do not substitute any other filter for the one supplied, as it will alter the design characteristics. UNPLUG UNIT FROM ITS POWER SUPPLY PRIOR TO SERVICING UNIT!**

#### Ensuring Proper Grounding of ABS/PVC Fittings and Tubing for a Dust Collection System.

For dust collection systems, galvanized metal pipe and fittings are best, but for most typical applications, fittings and dust collection tubing made of plastic (ABS or PVC) are sufficient, provided they are **properly grounded** to dissipate static electrical charges. Dust and air in the right proportions can be an explosive mixture, and a build up of static electricity can provide the spark to ignite it.

To safely collect and bleed off the static charge, bare copper wire (not insulated) should be run along the inside of the duct-work and be attached to grounding screws or a bare metal surface on both the dust collector and the unit that it is connected to (if it is connected to a unit). The power cords of both machines must be terminated in a grounded three-prong plug to complete the connection to the ground. Wires over the irregularities of fittings, especially at "Y"s or "T"s could form traps for particles. Therefore, bypass the fittings by running the wires to the outside through small holes. Seal the holes with silicone caulking compound and join the wires by twisting them together and securing them with a wire nut.

As charges can also collect on the outside surface, we recommend wrapping bare copper wire in a spiral around the outside of the ductwork, securing it with electrical tape and connecting it to the ground system by means of wire nuts. If you have any difficulty securing the hose clamp to the hose and fittings, try wrapping the joints with duct tape first to provide a good gripping surface. If you are still having difficulty in obtaining a safe electrical ground, we recommend the services of a good electrician.

### 3.0 PRINCIPLE OF OPERATION

The **VELOCITY** features a threefold method of operation:

- knockout plate forces heavier particles to tray;
- filter captures & holds debris;
- heavy duty blower overcomes pressure across the hose and filter.

### 4.0 SYSTEM COMPONENTS

Description	Velocity X4	Velocity X2	Velocity X1
Nominal Airflow	500	250	125
HICAP Filter Part No.:	<b>F084</b>	<b>F082</b>	<b>F081</b>
OPTIONAL HEPA Filter Part No.:	<b>N/A</b>	<b>F189</b>	<b>N/A</b>
Dimensions, Height:	23" (584mm)	17" (432mm)	17" (432mm)
Dimensions, Width:	18" (457mm)	14" (356mm)	14" (356mm)
Dimensions Length:	25.5" (648mm)	25" (635mm)	19.5" (496mm)
Voltage / Current:	120/1/60, 9.2amps	120/1/60, 6.2amps	120/1/60, 5.8amps
Max. Power Consumption, Approx. Weight:	740watts, 120lbs (55kgs)	690watts, 73lbs (34kgs)	635watts, 65lbs (30kgs)

### 5.0 UNIT INSPECTION

Upon receipt, inspect unit for either visible or concealed damage. Damage should be immediately reported to the transport company.

**If you suspect concealed damages inside the box indicate so on the transport companies' shipping documents.**

Unit is in a single box, c/w all components; 6-foot long, 2.5" dia. or 3" dia. hose (per station) inside the box; (2) hose clamps per port, power cord.

### 6.0 PRE START-UP CHECKLIST

- Check that all internal components are present and are adequately supported;
- Check that labels and serial numbers are present for future identification;
- Verify power supply is compatible with equipment (120-volt/1 phase/60hz). Check that the unit is plugged into a grounded receptacle;
- Ensure that rubber grommets are tight and secure prior to placing unit on the floor.

## 7.0 START-UP

- Ensure filter is installed properly (**ensure filter door closes tightly onto filter pushing filter against end plate**);
- Ensure that unit discharge grille is not blocked by desk or wall upon start-up and/or operation (this will decrease suction capacity);
- Insert male end of cord into wall outlet. Unit should be connected to an independent circuit;
- Switch power toggle to "HIGH AIRFLOW" position to ensure system operation.

### **WARNING: DO NOT OPERATE UNIT UNLESS FILTER IS IN PLACE. AS MOTOR MAY BURN-OUT.**

**Shipped loose with unit:** - Hose clamps, located in filter compartment; - Flexible hose in the box;

### **Inlet collars are factory installed either on the side or on top of unit.**

Inlet collars can be modified AT THE JOB SITE to be installed on the top, or on the side of the unit (Ensure that you leave the interior deflection plate installed (do not remove), this will deflect particles away from filter and increase filter longevity.

## 8.0 EQUIPMENT MAINTENANCE PROCEDURES

Proper maintenance is critical in extending life of unit. The information presented below outlines basic maintenance procedures ensuring the **VELOCITY** unit will provide trouble-free operation in future. The **VELOCITY** is designed to allow quick access to HICAP-filter, blower/motor and control assemblies.

### 8.1 GENERAL FILTER MAINTENANCE

It is very difficult to predetermine a specific maintenance schedule as the rate of dust loading will vary for each application. Periodic inspection of the filter (and pressure indicator if that option is selected) during the first few months of operation should help establish an appropriate maintenance schedule. Also, if you feel that you are losing suction capacity, filter may be clogged;

To maintain filter:

- Open filter door (on suction side) turning thumbscrew in a counter-clockwise direction;
- Turn the HICAP filter in a clockwise or counter-clockwise rotation and slowly bump against the filter tray supports, such that excess dust within the filter cartridge pleats falls down towards the particle capture tray;
- Additionally, filter can be removed and cleaned outside the unit by tapping it into an open garbage bag;
- If further cleaning is required see HICAP-filter cleaning instructions in section 8.5;
- Verify that the filter gasket on open end of filter is installed properly, when placing filter back into unit.

### 8.2 FILTER REPLACEMENT

Filter may require replacement if:

- If you feel that you are losing suction capacity, even after you have shaken, spun maintained, and cleaned filter;
- If you see that you are getting dust coming through the blower discharge grille (filter may have been punctured through maintenance)
- When replacing filter, ensure that you adjust the Filter Adjustment Screw as shown below so that filter is tightly secure in track..



Filter Adjustment  
Screw



Turn Screw COUNTER-Clockwise to tighten or Clockwise to loosen pressure against filter.

Ensure when trying to close door that you encounter resistance (ie: door is pressing filter against back-plate) ensuring no debris bypass around filter.

### 8.3 BLOWER MAINTENANCE

#### **WARNING: Switch unit off and unplug power cord from wall before servicing the blower.**

Motor is equipped with special ball bearings and lubricant, assuring long life and quiet operation. Additional maintenance is NOT required.

### 8.4 ANNUAL GENERAL INSPECTION

The sealing integrity of the **VELOCITY** is essential. Every 12 months, verify that all gaskets are in proper condition. Should the door gaskets adhere slightly to the unit when opening a door, lubricate its surface with a transparent grease or petroleum jelly. Should unit be moved on occasion, ensure that rubber grommets are tightly fastened. The acoustical integrity of the **VELOCITY** is important. **Disconnect the unit by unplugging the power cord from the wall**, and access the fan section. Verify the acoustical insulation is well fastened to walls of the unit. In the event of a problem, call your authorised distributor for spare parts and replace immediately.

### 8.5 CLEANING YOUR HICAP-FILTER

The presence of moisture may cause a build-up of material on surface of filter and in between the pleats requiring external cleaning. Remove as much loose material as possible by dry brushing. Be careful to avoid damage to the HICAP filter media. If plugging has occurred on surface of media and in between pleats, a hosing off of surface, or use of low pressure (car wash) type sprayer may be adequate. For cleaning of fine particulate which may be embedded in the depth of media itself, soak cartridge for 30 minutes in a solution of non-ionic detergent in 130°F water. After soaking, rinse off with hose or low pressure sprayer as above, to remove all traces of detergent. **HICAP-Filter must be completely dry after washing, before being used again. Blow out excess moisture using compressed air from inside out.**

## 9.0 OPERATION

The air is drawn into the unit through the special HIGH CAPACITY HOSES supplied with the unit. The air then passes through the HICAP-Filter. Larger particles are deflected down towards the particulate capture tray.

Powered by a High Capacity motor/blower assembly, the clean air is then released through the discharge grille into the controlled space.

### 9.1 POSITIONING OF UNIT

To optimise your **VELOCITY's** performance:

- Install unit as close as possible to its capture source. The longer the hose length the lower the suction capacity;
- It is preferable to install rigid (plastic) suction hose if possible. This will augment suction capacity. You can use the flexible hose for final connections to the unit. Rigid hose or smooth pipe offers much less resistance (pressure loss) than flexible hose, therefore higher suction;

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- 3) Minimise number of bends in your hose length (both rigid or flexible). Straight runs offer less pressure losses than long or short radius turns;
- 4) If suction varies from station to station, system must be balanced (adjust damper or blast gate at each station to equalise suction);
- 5) Do not make 90 degree connections. If two hoses are running to one common hose, connect on a 45-degree angle towards the unit.

## 9.2 TROUBLESHOOTING GUIDE

Symptoms	Possible Cause	Suggested Solution
Unit will not start	- Faulty Power supply - Blown fuse - Unit not plugged into receptacle	- Check breaker box - Replace fuse - Plug unit in
Motor Hums, But DOES NOT START	- Dust accumulation inside motor	- Blow out motor using compressed air - Ensure filter is seated properly, adjust filter compression screw on door
Excessive noise	- Blower wheel contacting blower, housing or cone - Motor bearings are worn	- Realign/replace wheel - replace motor
Insufficient airflow	- Obstruction in system - Clogged filter - Unit discharge too close to wall	- Remove obstruction - Replace filters - Move unit
Unit stopped working	- Dirt made its way into motor - faulty ON-OFF switch  - faulty motor	- Blow out back end of motor - bypass switch (pull off 2 wires from switch & connect together) (if motor operates, replace switch)  - replace motor
Motor Shuts off, then back on after 30 minutes	- input amperage too high	- ensure filter is in place
Excessive airflow	- Filter not in place	- Install filter
Suction varies from station to station	Hose lengths between stations vary significantly;	Adjust damper or blast gate at each station to equalise suction

## 10.0 WARRANTY

QUATRO Air Technologies warrants its equipment to be free from defect in material and workmanship under normal use and service for a period of one year from date of shipment. QUATRO's obligation under this warranty shall be limited to replacing any parts, thereof, which shall be demonstrated to have been defective. This is expressly in lieu of all other warranties, express or implied, including the warranties of merchantability and fitness. QUATRO claims no warranty as to merchantability or as to the fitness of the merchandise for any particular use and shall not be liable for any loss or damage. No person, firm or corporation is authorised to assume for QUATRO any other liability in connection with the sale of these goods. Equipment, parts and material manufactured by others and incorporated in QUATRO's equipment are warranted by QUATRO only to the extent of the original manufacturer's liability to QUATRO Air Technologies Inc.

Conditions and Limitations: **This warranty does not cover** abuse, misuse, maintenance negligence, improper assembly, acts of vandalism, acts of God, fear wear, modifications of the equipment or installation of a part not recommended by QUATRO Air Technologies, as well as operation of the equipment at voltages other than those specified by QUATRO Air Technologies Inc.

## 11.0 COMMON SPARE PARTS, To ALL Velocity MODELS

Qty	Description	Part	Qty	Description	Part	Qty	Description	Part
1	Toggle Switch	E035	2	Blower Door Screws	H040	1	Black Filter Door Knob	H352
1	Single Remote ON/OFF	AA011	1	Dual Remote ON/OFF	AA012			
1	Fuse	E084	4	Rubber Feet	H615	Ea/	Plastic Insulation Clips/Base	H196
1	Door Gasket Roll	H156	1	2.5" Hose Clamps	H253	1	3" hose clamps	H117
1	1/16" Gasket Roll	H007	1	Plastic hose Caps, 2.5"	H113	1	Plastic hose Caps, 2.5"	H148
1	6' Hi-Capacity Hose, 2.5"dia	H105-6	1	12' Hi-Capacity Hose, 2.5"dia	H105-12	1	25' Hi-Capacity Hose, 2.5" dia	H105-25
1	6' Hi-Capacity Hose, 3"dia	H142-6	1	12' Hi-Capacity Hose, 3"dia	H142-12	1	25' Hi-Capacity Hose, 3" dia	H142-25

## 12.0 COMMON SPARE PARTS, To ALL Velocity MODELS

Velocity X4			Velocity X2			Velocity X1		
Qty	Description	Part	Qty	Description	Part	Qty	Description	Part
1	PreFilter (20/pak)	F069-84	1	PreFilter (20/pak)	F069-82	1	PreFilter (20/pak)	F069-81
1	HICAP-Filter	F084	1	HICAP-Filter	F082	1	HICAP-Filter	F081
1	Wheel/Motor Assy	A003	1	Wheel/Motor Assy	A005	1	Wheel/Motor Assy	A007
1	Pre-wired Motor only	A004	1	Pre-wired Motor only	A006	1	Pre-wired Motor only	A004
1	Control Panel, no gauge	A032	1	Control Panel, no gauge	A032	1	Insulation Kit	H194
1	Insulation Kit	H193	1	Insulation Kit	H194	1	2 x 3" inlet collar plate	H127
1	4 x 2.5" inlet collar Assembly	AS040	1	2 x 2.5" inlet collar Assembly	AS037	1	1 x 2.5" inlet collar Assembly	AS033
1	4 x 3" inlet collar Assembly	AS041	1	2 x 3" inlet collar Assembly	AS038	1	1 x 3" inlet collar Assembly	AS034
1	4 x 2.5" inlet collar plate	H130	1	2 x 2.5" inlet collar plate	H128	1	1 x 2.5" inlet collar plate	H161
1	4 x 3" inlet collar plate	H129	1	2 x 3" inlet collar plate	H127	1	1 x 3" inlet collar plate	H162
1	Blank Off Plate	H126	1	Blank Off Plate	H125	1	Blank Off Plate	H125

**SPECIAL PRE-FILTER PADS will EXTEND the Life of your MAIN FILTER**

Using this filter will:

- a) drastically increase your filter efficiency
- b) decrease overall filter change-out.

To order more Pre-Filters, call your dealer with reference to Part Numbers from chart below:

Equipment Model	<b><i>Standard Pre-Filter Kit</i></b>	<u>Bulk-Pak</u> Pre-Filter Kit *
Velocity X1	PN: F069-81 (20 per pak)	PN: AG061 * (315 per pak)
Velocity X2	<b><i>PN: F069-82</i></b> (20 per pak)	PN: AG062 * (210 per pak)
Velocity X4 Velocity X4+4	PN: F069-84 (20 per pak)	PN: AG064 * (170 per pak)
SPU-JR	PN: AG044 (20 per pak)	PN: AG055 * (500 per pak)

\* Since this filter will drastically increase filter life, we recommend purchasing the Bulk-Pak for greater savings.