

JetStream iSeries
Premium Turbine Dust Collectors
Instruction & Maintenance Manual



These instructions apply specifically to the systems that are included in the AX051 packages for LPKF ProtoMat systems.

Models: JS iSeries (LPKF)

READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING THE SYSTEM
STORE THE MANUAL IN A SAFE PLACE FOR FUTURE REFERENCE
THIS MANUAL CONTAINS CRITICAL OPERATING INFORMATION
WHICH IF NOT FOLLOWED
COULD CAUSE DAMAGE TO THE SYSTEM NOT COVERED BY WARRANTY.

1- INTRODUCTION

You are now the owner of a **QUATRO JetStream System**, an advanced effective indoor dust and fume collection system designed specifically to remove particulate matter contaminants at the source. You can expect a noticeable improvement in air quality as the **JetStream System** begins the process of reducing microscopic airborne particulate.

The **JetStream System** normally features 2 stages of filtration:

- 1) An Bag Filter. This captures large debris.
- 2) A HEPA Filter for smaller particles.

WARNING – To reduce the risk of damage to your system read and follow all instructions. Failure to follow these guidelines may result in undesired operation or damage that will not be covered under warranty.

2- WHAT'S IN THE BOX

Models	Name	Accessories
AX051-16	JetStream 120V c/w "Infinity" Motor	(1) O&M Manual (1) Power Cord (120V) (1) Piece Of The 1.5" Hose (1) Remote Cable (AE468)

3- IMPORTANT SAFETY & INSTALLATION PRECAUTIONS

- Ensure to use proper voltage as indicated on the system.
- To reduce the risk of electric shock, do not expose to excessive moisture, water or rain.
- Use only on a grounded electrical circuit.
- Do not install or operate the system in an enclosed space or against a wall. Unit may overheat & shut down.
- Keep all objects at least 6" away from the casing, especially the discharge grill.
- All filters must be in place whenever this machine is in operation.
- ALWAYS turn system on/off switch to off and disconnect power prior to accessing unit, replacing filters, or servicing motor(s).
- Allow the unit to cool for 45 minutes before performing any service to the motor(s).
- Do not kink hose or restrict airflow in any way.

SAVE THESE INSTRUCTION FOR FUTURE REFERENCE

Failure to follow these guidelines may result in undesired operation or damage, not covered under this warranty.

4- INSTALLATION

- 1) Install the unit in the chosen location.
- 2) Open the filter access door & lid and install the filters in the correct order. See the "Filter Service & Replacement" section for more info.
- 3) Connect the supplied hose (or optional arm) to the Quatro System.
- 4) Connect the power cord to the unit and then to the power source. **VERIFY VOLTAGE BEFORE CONNECTING.**
 - ONLY USE THE POWER CORD SUPPLIED WITH THE EQUIPMENT.
 - Always plug the unit directly into the wall outlet. Do not use extension cords or power bars.
 - Ideally the unit should be plugged into it's own dedicated circuit.
 - The system is designed to be constantly powered (plugged in). The system will not function correctly and may get damaged if power source is used to control the operation. See "Controls" for more info.
- 5) Turn unit on & adjust the desired airflow using the knob (if equipped) or the arrow up and down keys. Set airflow to lowest acceptable level to properly evacuate your equipment.

For information about remote operation see the "Controls" section.

WARNING: DO NOT OPERATE UNIT UNLESS ALL FILTERS ARE IN PLACE.

Important Notes:

NONE of the filters in the system are cleanable. They will all need to be removed and disposed of periodically. See the "Filter Service & Replacement" Section for more info.

5- CONTROLS

iSeries Controls

IMPORTANT NOTES FOR PROPER FUNCTION OF THE CONTROLS:

Do not connect the main power cord to an outlet that is controlled by a switch.

Never use any form of remote control that switches the power source on and off. In doing so, serious damage to the controls and motors may occur. Contact **QUATRO** if power switching is the only way you have to remotely control the unit. We have many power switching adaptors available for SAFE and reliable control.

“iSeries” Controls & Alarms/Status Conditions

The iSeries controls feature soft touch Power (On/Off), Speed Up & Speed Down Buttons. It also features a series of LEDs that indicate the status of the filter(s) and motor(s) and inform you of any alarms. These alarms are accompanied by an audible alert. See the table on the following page to understand the meanings of the LEDs and the alarms.

iSeries Control Panel

This type of panel is intended to be used when the JetStream is connected to a system that requires automated process. Connection instructions on the following pages.



Alarms & Status Conditions For iSeries Panels

Alarm Mute Feature

All alarms can be muted for a period of 8 hours OPERATING TIME. After 8 hours the alarm will return and can be muted again. If the unit is turned off and then on during the 8 hour mute, the balance of the 8 hour mute will continue after the unit is turned on again.

When mute is enabled, L1 Flashes & the muted alarms stay SOLID. The level of the alert will not be displayed until the 8 hour mute period is over.

To mute: Press SPD UP & DN quickly at the same time. When the buttons are released the alarm(s) will mute & L1 will start flashing. Alarm LED will go SOLID.

If there are any additional alarms when MUTED, mute will disable itself until muted again, then BOTH alarms will be muted.

Muted alarms will only be displayed while the unit is in operation.

-----**We Make Clean Air**-----

LED Diagnostics Table R17.0 And Higher

Light (LED)	Status	Audible Alert	Condition	Description/Action
System ON LED 1 (L1)	SOLID		Unit is ON	
	FADING IN-OUT		Temporary ON Mode	POWER Button Had Been Used To Temporarily Turn Unit On While In Remote Mode See "Temporary ON Mode" On Next Page
	Flashing Slowly		AUDIBLE ALERT MUTED	Alarm Condition MUTED, See L2 OR L3 For Specific Alarm Condition
Service Motors LED 2 (L2)	SOLID	Beep Every 4 Hrs	Motor(s) Will Soon Need Service	"Quick Change" Brush Motor(s) WILL SOON Require Brush Replacement Infinity Brush Motor(s) WILL SOON Require Complete Replacement Brushless Motor Is Almost At The End Of The Predicted Service Life RESET ALERT After Service See "Motor Service & Replacement" Section For More Motor Info & Reset Alert Instructions
	SOLID	Beep Every 15 Min	Motor(s) Service Becoming Urgent	"Quick Change" Brush Motors ONLY: Replace Brushes ASAP And RESET ALERT See "Motor Service & Replacement" Section For More Info & Reset Alert Instructions
	SOLID	Beep Every 5 Min	Motor(s) Service Required IMMEDIATELY	"Quick Change" Brush Motors ONLY: Replace Brushes IMMEDIATELY And RESET ALERT See "Motor Service & Replacement" Section For More Info & Reset Alert Instructions
	SOLID		Motor Alarm Muted L1 Flashing Slowly	Replace Brushes OR Motor(s) ASAP And RESET ALERT Alarm Mute Details On Previous Page See "Motor Service & Replacement" Section For More Motor Info & Reset Alert Instructions
Service Filter(s) LED 3 (L3)	Flashing Slowly		Filter Pressure High	Prepare To Service/Replace Filters See "Filter Service & Replacement" Section For More Info On "On Demand" Filter Cleaning & Filter Service/Replacement Instructions
	Flashing Slowly	Beep Every Hour	Filter Pressure Near Critical. Service Becoming Urgent	Replace Filters. Continued Operation May Result In Unit Shutdown From Overheating. High Pressure Causes Excess Motor Heat & Accelerates Brush Wear. See "Filter Service & Replacement" Section For More Info & Filter Service/Replacement Instructions
	Flashing Slowly	Beep Every Second	Critical Pressure	Very High System Pressure Verify Blockage – Remove Blockage Verify All Filters – Clean/Replace Filters Accordingly See "Filter Service & Replacement" Section For More Info
	SOLID	Beep Every Hour	Filter(s) Service Life Expired	Replace Filter(s) ASAP And RESET ALERT See "Filter Service & Replacement" Section For More Info & Reset Alert Instructions
	SOLID		Filter Alarm Muted L1 Flashing Slowly	Replace Filter(s) ASAP And RESET ALERT Alarm Mute Details On Previous Page See "Filter Service & Replacement" Section For More Info & Reset Alert Instructions
Remote	SOLID		Receiving Remote Signal	Remote Switch Closed (On) OR Receiving Remote Signal From Another Piece Of Equipment
Standby LED 5 (L5)	FADING IN-OUT		Shutdown Delay	Quatro System Continues To Run For 30-45 Seconds To Remove All Debris From Work Area
	Flashing Slowly		Unit Is In Standby	Waiting For Remote Switch To Close (Turn On) OR To Receiving Remote Signal From Another Piece Of Equipment
ALL LEDS	Flashing Slowly	Beep Every Second	Low System Pressure	Abnormally Low Pressure, Unit will BEEP & Shutdown In 5 Seconds Unit Will Continue To Shutdown Unit Until The Issue Is Addressed -Motor(s) Not Operating Due To Service Required Or Failure See "Motor Service & Replacement" Section For More Motor Info & Reset Alert Instructions -Motors Not Operating Due To Excess Heat. See "Filter Service & Replacement" Section For More Info & Reset Alert Instructions -Access Door(s) Open. Close All Access Doors -Filters Not Or Improperly Installed. Verify Filters

If the controls are completely unresponsive:

First try unplugging the unit and waiting a few minutes. If the unit is still unresponsive after plugging it back in then try the "Hard Reset" procedure below.

- 1- Unplug power and remote connections.
- 2- Hold the SPEED DOWN arrow and plug the power cord it and wait till you hear a continuous beep. Let go of SPEED DOWN arrow. Remote/Standby light will be FLASHING.
- 3- Press up arrow ONCE. LED with no label will be ON.
- 4- Press and hold POWER button till you hear a beep and then let go. Unit will beep 4 more times to confirm that the Reset has been completed.
- 5- Press power, the unit should turn on.

Further troubleshooting procedures in section 8.

----- **We Make Clean Air** -----

Normal (Manual) Operation

Manual operation of the unit is accomplished by using the (Red) ON/OFF POWER button.

Variable Digital Speed Control & "AUTOFLOW"

Speed control is available in all modes of operation (manual & automatic) and is adjusted with the UP & DOWN arrows located just under the POWER button.

"AUTOFLOW" is an automatic system pressure compensation system. After setting the minimum speed required to properly evacuate your equipment, the controls will automatically increase the motor speed to compensate for the increased pressure as a result of filters getting dirty or a system blockage until maximum speed is reached. After a filter change, system will automatically decrease the speed to the original set point. Please verify that you are achieving adequate ventilation after a filter change. If not adjust blower speed.

Remote (Automatic) Operation & Remote Status

The Quatro System is designed to be used with other pieces of equipment that can support remote operation and/or remote status monitoring. The connection is made using the AE427 QUATRO Universal Remote Cable. QUATRO has some custom remote cables for specific applications. Contact us for more info on available applications and part numbers. The Quatro System supports "Closed Contact" & "1-30V AC or DC" remote operation as well as "Remote Status" signals.

Switching power to control the QUATRO System system remotely WILL NOT WORK and can damage the unit.

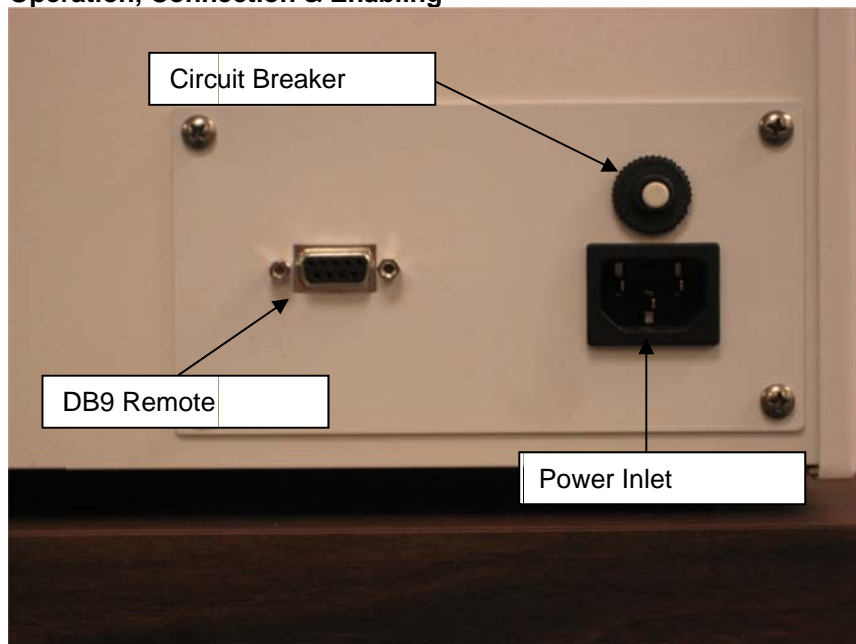
Temporary ON Mode

Allows you to temporarily override your automatic remote control of the system to perform a "quick cleaning" of work surface. Temporary ON Mode is only available when the Remote/Standby (L5) light is flashing slowly. Use of this mode will temporarily BLOCK OR DISENGAGE all other functions.

To initiate:

- Press POWER (On/Off) button to start unit, "System ON" LED will FADE In-Out, unit will start.
- When you finish using this feature, press POWER (On/Off) again. All other functions will be un-blocked.

Operation, Connection & Enabling



**JetStream Series
Remote & Power Connectors**

Remote Operation

To enable the remote system startup for either remote option, first plug the system into power and then connect remote cable. Then simply have the other piece of equipment close supply a remote control voltage. When the unit is stopped the Quatro System will shut down after a short delay.

After Remote Sensing Has Been Activated

If the unit is RECEIVING a remote signal: "System ON" & "Remote ON" Lights will be FULLY Illuminated

If the unit is WAITING FOR a remote signal: "System ON" will be OFF & "Remote ON" Lights will be FLASHING

Unplugging the power cord will automatically deactivate Remote Sensing Feature.

Remote Status

The System can output status signals to you equipment.

The Run Signal contact is CLOSED whenever the system is turned on (motor(s) are functioning).

The contact is OPEN when the unit is turned off (motor(s) are not functioning). This includes when the unit goes into Remote/Standby & if the unit shuts down due to a problem.

Critical Filter Pressure Alarms (high & low pressure) will OPEN the Run Signal and shut the motor(s) off.

The Fault Signal is configured to be Normally Closed (NC) on this system.

When there ARE NO alarm conditions present the NC contact will remain closed.

When there ARE alarm conditions the NC contact will OPEN.

ALL LEVELS of Filter & Motor(s) service alarms will trip the Fault Signal.

The Quatro Run Signal can only shut down the piece of equipment controlling it remotely if the piece of equipment supports that function. The piece of equipment must be set or programmed to shut itself off when the Quatro Run signal is OPENED. Contact your equipment manufacturer to verify if your equipment supports that function.

Your "signals" will be managed as indicated on the table below. The combination of the Run & Fault Signals can tell you if the unit is still running but has an alarm condition or if there is an alarm condition and the unit has shut down completely.

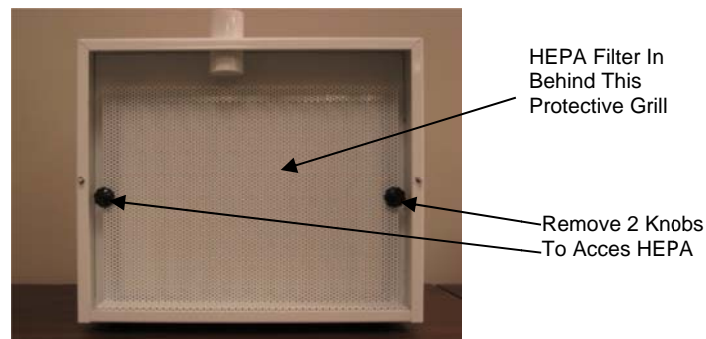
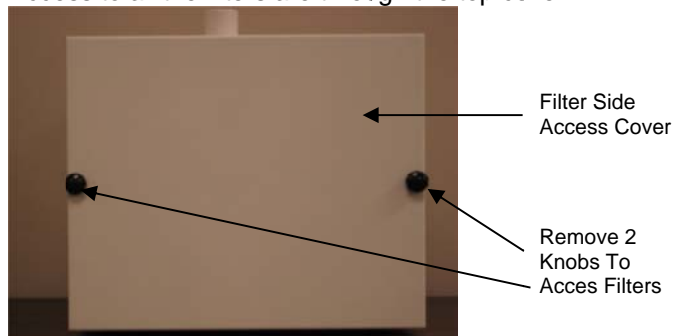
Run Signal Contact	Fault Signal Contact	Condition
Closed	NC: Closed	Unit Is Operating Normally
Closed	NC: Open	Unit Is Operating Normally Motors or Filters Will Require Service Soon See QUATRO System Control Panel & LED Diagnostic Table For More Info
Open	NC: Open	Unit Has Reached Critical Service Point Motors or Filters Require Service Immediately See QUATRO System Control Panel & LED Diagnostic Table For More Info

6- FILTER SERVICE & REPLACEMENT

LED Diagnostic Table - "Service Filter(s)" Alerts (iSeries Controls)

Filter Access

Access to all the filters are through the top cover.



PN: AG143-5 Standard Bag Filter



PN: F191S HEPA Filter

Filter Installation & Replacement

Bag Filters

The Bag Filter slips over the collar on the inside of the cover.

HEPA Filters

Accessing the HEPA filter first requires removing the bag filter and then the 2 knobs securing the protective grill as pictured above.

Disposal of both odor and particulate filters is the responsibility of the end user. Please contact local authorities for proper and legal disposal of spent filters.

Resetting "Service Filter(s)" Alert

If the "Service Filters" LED does not go out on its own after changing the filters follow the reset procedure below.

- 1- Ensure filter access door is closed
- 2- Plug power back to the unit
- 3- Press & hold SPEED UP & DN simultaneously until unit BEEPS
- 4- Hold for 10+ seconds, when panel is beeping continuously, release buttons
- 5- You are now in RESET MENU, in this condition, "System ON" Led is FLASHING QUICKLY
- 6- Press SPEED DN (2 Times) until "Service Filter(s)" LED is FLASHING
- 7- Press & HOLD POWER button while "Service Filter(s)" LED is FLASHING & unit is BEEPING continuously
- 8- Release, when LED stops FLASHING & stops BEEPING

Replacement Filter Part Numbers

Qty	Description	Part No.	Filter Stage
1	Bag Filter (5 Pack)	AG143-5	Stage 1
1	HEPA	F191S	Stage 2

General Filter Maintenance Guide:

Stage	Filter	Recommened Filter Change Interval	iSeries Control Panel
1	Bag Filter	Every 3 Months	None
2	HEPA	Every 6-18 Months	"Service Filters" Flashing Or ON

We Make Clean Air

7- MOTOR REPLACEMENT

LED Diagnostic Table - "Service Motor(s)" Alerts

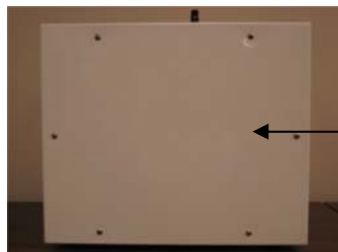
If "Service Filter(s)" alert is ON SOLID the motor needs to be replaced.

MOTOR ACCESS

WARNING: Switch unit off and unplug power cord from wall before servicing the motor(s).

The motor(s) are accessed through the bottom access pane.

REMOVE ALL FILTERS BEFORE TURNING THE UNIT OVER TO ACCESS THE MOTORS.



Motor Access Door



"Infinity" Brush Motor

IMPORTANT NOTE: In cases of heavy production (continuous hours of daily operation), the brushes on the INFINITY motors may wear before the warranty is over.

Please note this is NOT considered a warranty issue. Motor life is a function of hours used and filter maintenance.

They are designed to operate 2000-3000 hours and then replaced.

In some extreme cases motor life can even be less than 2000 hours and this is usually due to the system being run at a high pressure (dirty filters) for extended periods of time.

"Infinity" Motors Are Considered Consumables And Will Not Be Changed Under Warranty Unless Found To Be DEFECTIVE Within The Warranty Period.

Replacement Instructions

ALLOW MOTOR(S) TO COOL FOR 45 MINS BEFORE SERVICING

- 1- Unplug power cord and open motor access panel.
- 2- Disconnect wires, cut zip ties.
- 3- Remove the retaining nuts & lock washer holding the motor assemblies.
- 4- Remove the motor retaining bracket from the old motor. Note the orientation on the bracket.
- 5- Install the bracket on the new motor. See the installations picture above.

THIS IS PARTICULARLY IMPORTANT FOR "INFINITY" MOTORS. If the bracket is installed incorrectly it may result in a short to ground for the brush contacting the bracket.

THE CURVED BRUSH MUST BE VISIBLE IN THE LARGE CUTOUT.

- 6- Install the assembly back into the unit & connect the wires. Install new zip ties.
- 7- Plug in power cord and **Reset "Service Motor(s) Alert.** This MUST be done EVEN IF L2 IS NOT ILLUMINATED or the motor(s) replacement alert will not function correctly. Follow the instructions below.
 - 1- Ensure filter access door is closed
 - 2- Plug power back to the unit
 - 3- Press & hold SPEED UP & DN simultaneously until unit BEEPS
 - 4- Hold for 10+ seconds, when panel is beeping continuously, release buttons
 - 5- You are now in RESET MENU, in this condition, "System ON" Led is FLASHING QUICKLY
 - 6- Press SPEED DN (1 Time) until "Service Motor(s)" LED is FLASHING
 - 7- Press & HOLD POWER button while "Service Motor(s)" LED is FLASHING & unit is BEEPING continuously
 - 8- Release, when LED stops FLASHING & stops BEEPING

Replacement Motors	Part #
120V "Infinity"	AR175

8- TROUBLESHOOTING GUIDE

Symptoms	Possible Cause	Suggested Solution
Unit will not start	<ul style="list-style-type: none"> Faulty power supply Circuit breaker tripped Motor/motor brushes past service life 	<ul style="list-style-type: none"> Check breaker box/power connection RESET circuit breaker on unit panel Replace motor/motor brushes
Motor shuts off	<ul style="list-style-type: none"> Motor overheated, tripped on thermal cutout Motor/motor brushes past service life 	<ul style="list-style-type: none"> Switch power off, unplug, wait till motor cools, replace filters/verify blockage. Replace motor/motor brushes
Insufficient airflow	<ul style="list-style-type: none"> Obstruction in system Clogged filter (s) 	<ul style="list-style-type: none"> Remove obstruction Replace filter (s)
Excessive airflow	<ul style="list-style-type: none"> Filter(s) not in place 	<ul style="list-style-type: none"> Install filter(s)
Excessive noise	<ul style="list-style-type: none"> Motor impeller contacting housing Motor bearing failure 	<ul style="list-style-type: none"> Replace motor Replace motor

For units equipped with iSeries Controls see the 'Light Diagnostics Table' for additional troubleshooting.

9- SPECIFICATIONS

Nominal Airflow	110 CFM
Approximate Dimensions:	13" (330mm) High x 11" (280mm) Wide x 15" (381mm) Deep
Voltage/Phase/Frequency, Current, Power	115/1/60, 7 Amps, 825 Watts 230/1/50, 4 amps, 750 Watts
Approx. Weight:	28lbs (13kg)

10- GENERAL REPLACEMENT PARTS

Qty	Description	Part
1	Power Cord 120v	E220
1	Power Cord (Euro 230V)	E130
1	Remote Cable	AE468

11- 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.

Warning:

This is a class A product. In domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

For Technical Assistance, call QUATRO Air Technologies inc. at
(514) 630-4444 (in Montreal, Canada).

Please ensure that you have your **equipment serial number** available when calling.

-----**We Make Clean Air**-----