

Installation, Operation and Maintenance guide



Important

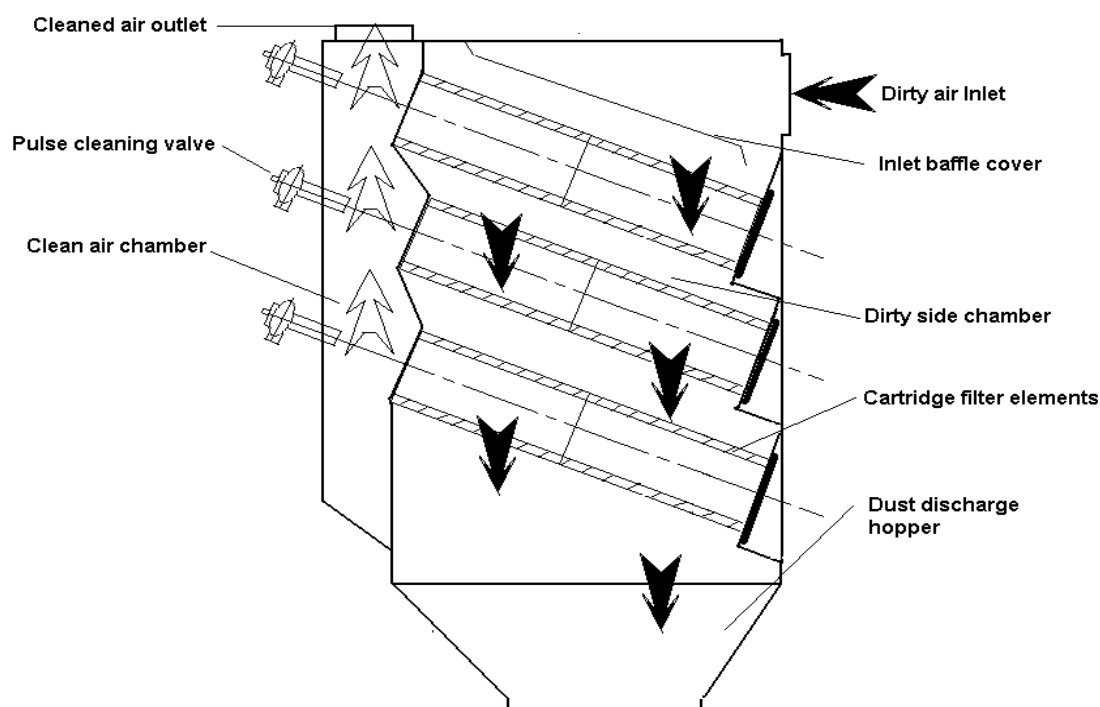
This manual contains important health and safety guidelines for installation, and operation of the equipment. Please read these guidelines carefully and comply as necessary. Ensure that all operators and maintenance personnel are trained to use the equipment safely.

Data Sheet

Model Number	JKF416
Media Area	150m ²
Filter Type	Full PTFE
Fan duty	11200m ³ /hr at 9.6" Wg
Fan Motor	11Kw – Zone 22

Description

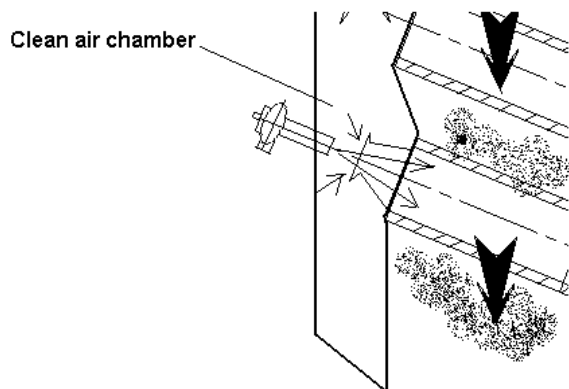
The JKF cartridge dust collector is a heavy duty continuously rated dust filter employing cartridge type filter elements. The unit features downward airflow for enhanced filtration and cleaning efficiency. The filter media is cleaned in service by a purpose designed reverse pulse cleaning system (see schematic diagram).



During the filtration phase, the dirty gasses are drawn into the filter under suction from either a unit mounted or remotely located fan set. The gasses are cleaned as they pass through the cartridge filter elements depositing the dust on the outer surface of the media. The cleaned air enters the cleaned gas chamber and exits the unit via an outlet flange located either at the top or bottom of the cleaned gas chamber.

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Cleaning of the filter media is facilitated by a short sequenced high-pressure pulse of compressed air into the inside of the cartridge element resulting in a brief reversal of normal airflow through the media. This reversal breaks any dust cake on the surface of the media, causes the dust to be dislodged and fall into the filter discharge hopper.

Model	Weight	Cartridges	Media Area	Length	Width	Height
JKF 312	1720	12	113	1021	2275	3513
JKF 324	2600	24	226	2042	2275	3513
JKF 336	3640	36	338	3063	2275	3513
JKF 348	4840	48	451	4048	2275	3513
JKF 360	6100	60	564	5105	2275	3513
JKF 372	6860	72	677	6126	2275	3513
JKF 28	1220	8	75	1020	2275	3280
JKF 416	2130	16	150	1021	2275	4996
JKF 432	3100	32	301	2042	2275	4996
JKF 448	4270	48	451	3063	2275	4996
JKF 464	5580	64	602	4048	2275	4996
JKF480	7000	80	752	5105	2275	4996

Purpose and Use

The JKF range of cartridge style dust collectors are widely used for nuisance dust extraction and collection applications where the dust loading is less than 3g/m³. Typical applications are powder paint spraying, abrasive shot blasting operations, welding fume exhaust, grinding and fettling, pharmaceuticals applications and foundry sand process de-dusting. A range of element media types are available to suit implicative requirements.

Combustible material represents a serious potential fire hazard within dust collection equipment and special care should be taken to avoid the entrainment of sparks or burning material into the filter plant.

Operators should be made aware of procedures to deal with dust collector fires and the necessary precautions to avoid them.

When combustible material is present in the dust collector, consult with specialist fire safety experts for advice.

Under no circumstances should smoking be permitted within or around the dust collector when maintenance work is being carried out.

Delivery Inspection

1. Inspect the filter unit on delivery
2. Report any damage to JK Filters
3. Compare the unit delivered with the product description in the quotation
4. Report any missing items to the delivery driver
5. Remove any packing or loose material before off loading.

Installation

Location of the filter unit

The unit may be located on any level base or foundation, or steel structure at ground or high level.

In case of locating the unit on steelwork at high level, silo top or exposed roof, please take into account wind loading factors and consider the weight of the unit when filled with dust.

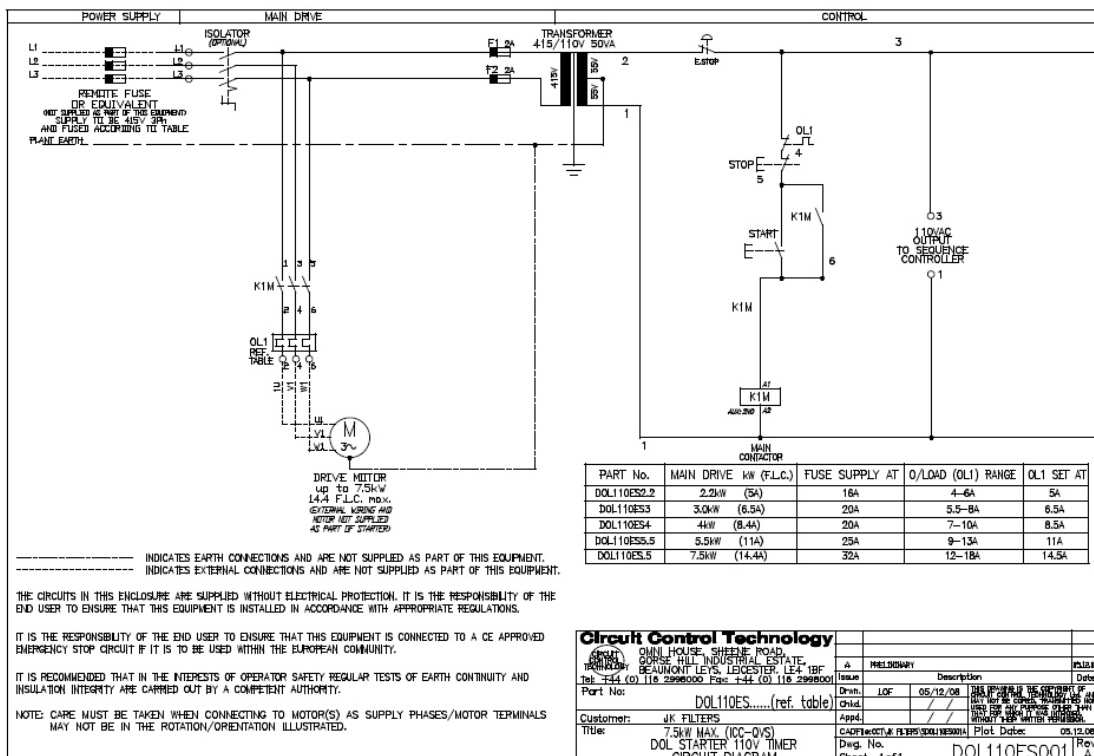
Electrical Wiring

Caution! Electrical installation of the equipment must only be carried out by a qualified electrical engineer and must comply with all IEE regulations and codes.

Isolate the unit from the power supply before carrying out any maintenance work.

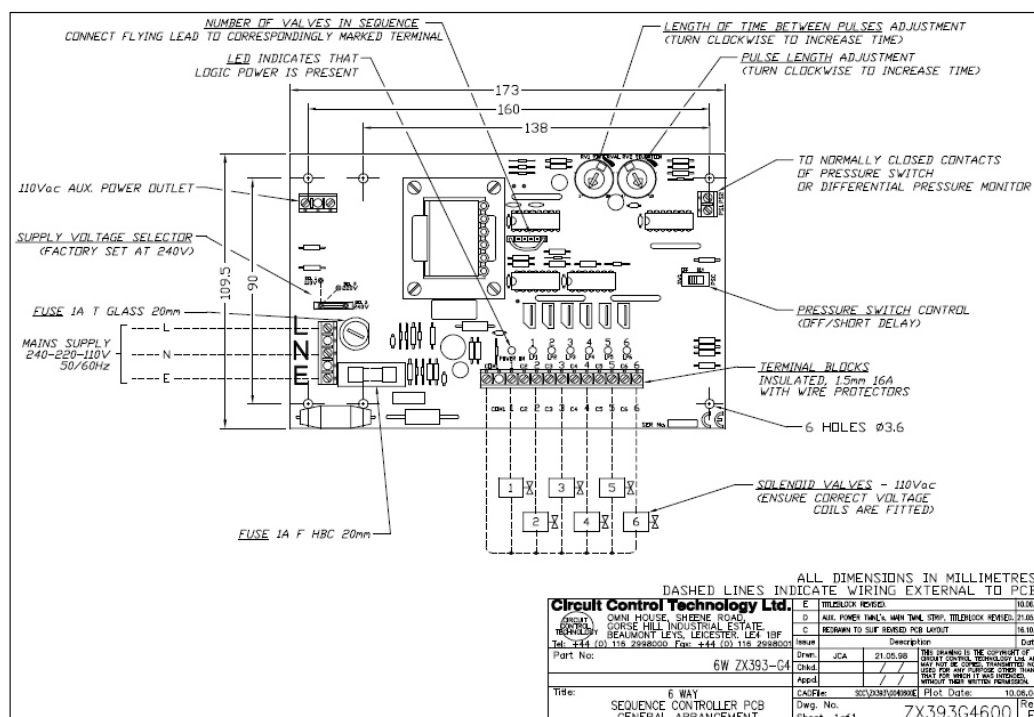
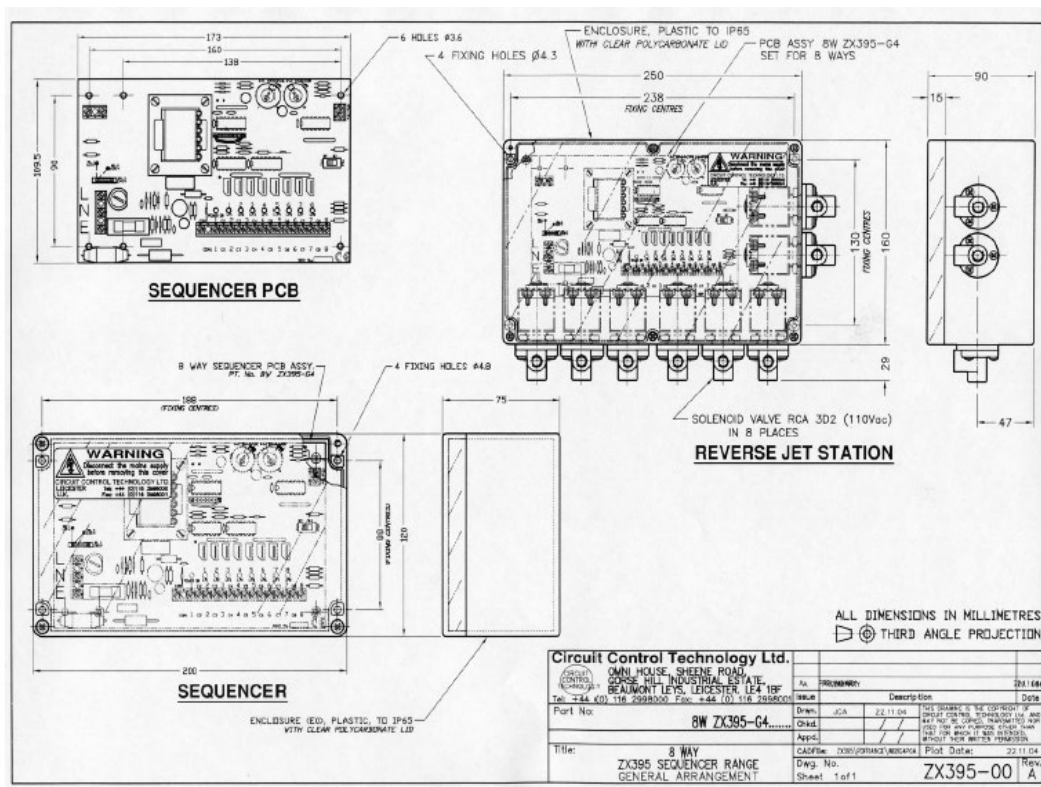
Do not install the equipment in a hazardous atmosphere zone unless the enclosures are certified as suitable for that zone.

If the unit is provided with a filter mounted fan set, the control panel wiring will be as follows:

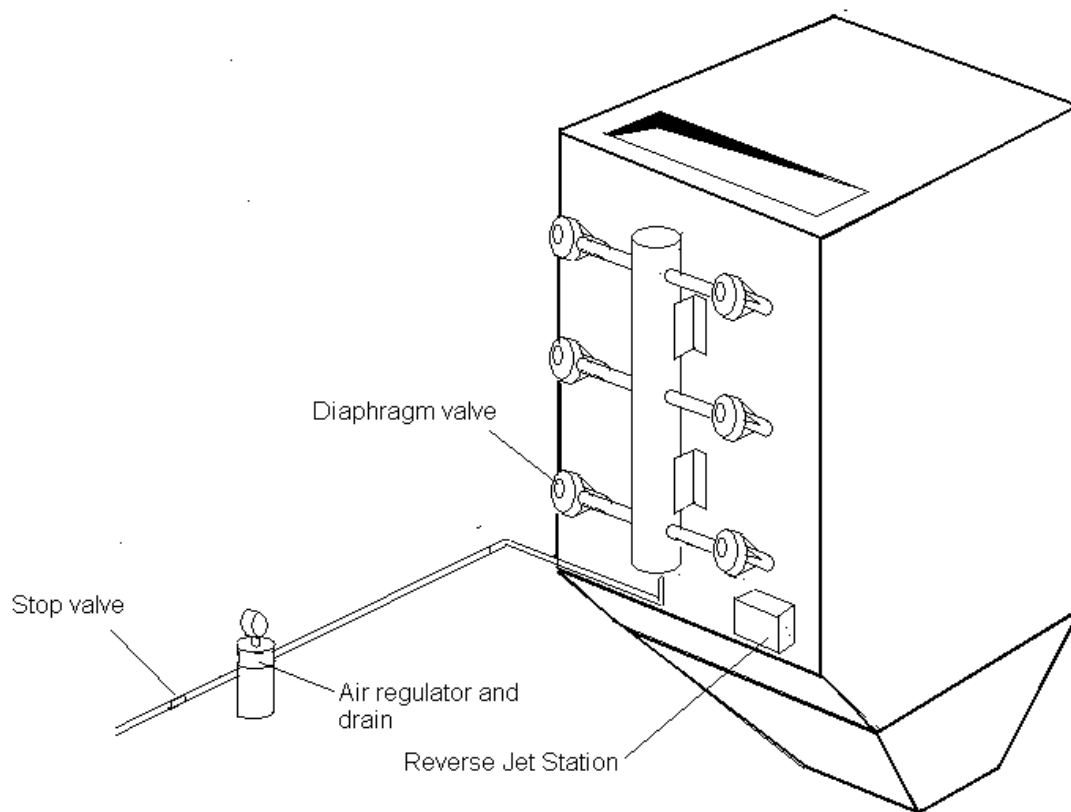


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The filter is supplied with a pre-mounted reverse jet station for sequencing and operation of the dust collector pulse valves:



Electrical and pneumatic connections:



Initial start up procedure:

- 1 Check that all electrical connections are tight and secure.
- 2 Check and remove any loose items in the inlet dusting or within the filter
- 3 Check that the dust container (if fitted) is in place and sealed properly.
- 4 Turn on the power supply at source.
- 5 Turn on the compressed air supply and set the air set regulator to 6-7 bar (g).
- 6 Turn the fan motor on and off again and check for correct direction of rotation.
- 7 Energise the pulse timer unit and set correct duration and pulse frequency.
- 8 Check that the compressed air pressure returns to 6.0 Bar(g) between pulses.
- 9 Adjust the volume flow control damper for correct airflow. Excessive airflow may cause reduced cartridge element life.

Explosion relief:

Explosion relief rupture panels are fitted to the unit in cases where entrained dust characteristics are such that a risk of a dust explosion exists. The venting of explosions within dust collectors involves the violent expulsion of flame and material from the collector at very high pressure and represents a risk of death or serious injury and damage to property.

Where explosion venting is fitted, the following precautions should be taken.

- The collector should be located outside in a safe area which should be guarded against entry.
- Never block or obstruct the area in front of the vent panel.
- If the collector is mounted on a structure, ensure that the structures is suitable for reaction forces in the event of an explosion.

Filter cartridge installation and replacement:

Filter removal:

- 1 Operators should wear proper protective and safety gear when handling contaminated filter cartridges**
- 2 Contaminated filter cartridges may be heavier than expected.**
- 3 Use care when handling cartridges**

Turn off electrical supply

Start removal of the cartridges from the top row first

Remove the access cover plate

Break the seal between the cover plate and the cartridge

Rotate the cartridge 180 degrees to deposit dust deposits from the top of the cartridge.

Slide the cartridge out of the filter along the support guide cage.

Dispose of the cartridge in sealed bags.

Thoroughly clean the access cover plate.

When all cartridges have been removed, empty dust from the discharge hopper.

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Filter replacement:



Thoroughly clean all sealing surfaces

Take care to avoid damage to the replacement cartridges.

Slide the replacement cartridges seal end first along the support guide cage.

Wipe the cover gasket clean to ensure a good seal before fixing of the access cover plate.
Turn the compressed air on before starting the unit.

Troubleshooting:

Problem	Possible cause	Remedy
Fan does not start	Not wired correctly	Check and correct the wiring according to the motor manufacturers wiring diagram.
	Unit not wired for the correct voltage	Correct wiring for proper supply voltage
	Input circuit down	Check power supply to motor circuit on all leads
	Electrical Supply circuits down	Check power supply for correct voltage. Check circuit for fuse or breaker fault. Replace as necessary.
Fan motor trip out	Incorrect motor starter fitted	Fit proper motor starter as required.
	Hopper discharge open	Ensure that hopper discharge gear is sealed and

		correctly in place.
	Fan damper (if fitted) not adjusted correctly.	Check airflow in ducting and set the damper for the correct airflow so that the drawn amps are within the motor manufacturers rated amps.
	Electrical circuit overload	Check that the power supply circuit has sufficient power to run all equipment.
Dust in the cleaned air outlet	Filter cartridges not installed correctly	See filter installation instructions.
	Damage to the filter cartridge or holes in the media	Replace damaged cartridges as required.
Low air flow	Fan contra rotation	Check for proper fan rotation
	Hopper discharge open	Ensure that hopper discharge gear is sealed and correctly in place
	Fan discharge restricted	Check the fan discharge area for obstructions and remove debris. Set damper if fitted
	Filter cartridges need replacement	Remove and replace cartridges as required.
	Compressed air failure	Check that a compressed air supply of 6.0 bar(g) is available and that the pressure recovers between pulses.
	Pulse control timer not energised	Ensure that the timer is set correctly for the voltage rating. Check and replace the fuse as necessary
	Dust discharge hopper full	Check that dust levels within the filter are not building up in the cartridge chamber.
	Pulse valves leaking compressed air	Isolate electrical power Bleed vent all compressed air from the system. Check diaphragm valve for

		damage to the diaphragm or spring debris inside the valve casing. Check solenoid valve leaks or damage to the pilot pipes and replace as necessary.
	Pulse control timer failure	Check fuse on the timer board. If the fuse is good and power supply to the board is available, replace the timer board.
	Pulse control timer adjustment	See wiring diagram