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Instructions for Operation and Maintenance

**MECHANICAL SHAKER DUST COLLECTOR
(16 ECS)**

Revision History		
Date:	Rev No.	Description
22/02/2022	A	Initial Release

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1 Model 16 ECS Economy:

This dust collector is equipped with 16, envelope shaped, filter bags, which provide an effective filtering area of 32.6 m².

1.1 CLEANING:

The fabric filter bags of the 16 ECS Economy Shaker filter are cleaned, after the filtering operation by means of a mechanical shaking device.

1.2 CONSTRUCTION:

The standard ECS Economy is of modular bolted construction, fabricated from 2mm galvanised steel panels. The casing is strengthened by a 30x30x6 angle dust wall frame.

The bagging assembly is sealed by an arrangement of:

- front mullions,
- cloth strips,
- dust wall clips.

The bagging assembly is tensioned by an arrangement of:

- back mullions (complete with hook),
- eyebolts,
- springs,
- spring support angle.

The filter units come complete with hinged inspection doors allowing access to the dirty air chamber and a removable clip-locked lid for access to the clean air chamber.

1.3 INSTALLATION:

- A general arrangement drawing is supplied with each filter.
- Provide a firm, level foundation, with capacity for loads specified.
- Self-adhesive foam tape is supplied for airtight joints, be sure to use this for the upstands, hoppers, transitions, lids, etc.
- For reference, the side of the filter case with the inspection door is generally called the front. Left hand and right-hand sides are determined as you face the front of the filter from the outside.
- The filter unit will be supplied fully assembled from the base frame upwards.

- Hoppers, supports, fans, discharge valves and accessories are generally transported separately.
- For unassembled sub-components and accessory items, all new fasteners, bolts, nuts and washers will be supplied.
- The filter bags will be supplied fully assembled and tensioned.

1.4 OPERATION:

- Do not run the de-dusting system with all slide gates and dampers on the fans and hoods completely open; (otherwise it may overload the fan and burn out the fan motor.)
- Do not open the inspection door or roof lid while the system is operational.
- Empty the collection hoppers on a regular basis. Do not allow the collected product to build up between the filter bags, otherwise the warranty will be invalidated.
- Avoid operating the dust filter if the differential pressure reading is greater than the specified designed value, (generally 5 " wg.).
- Avoid operating the dust filter on dust products with high moisture contents or dust products the system has not been designed to accommodate, otherwise the warranty will be invalidated.
- It is recommended not to wash the filter bags if they become blinded.
- Avoid operating the dust filter if there are any dust emissions or leaks.
- Make sure the dust filter operates in accordance with the design parameters and maintenance instructions as detailed within, otherwise the warranty will be invalidated.

2 FAULT LOCATION

PART LOSS OF SUCTION (excessive pressure differential).

2.1 *Incorrect differential pressure gauge reading:*

- Disconnect tubing connecting filter and pressure switch and blow out any accumulated dust.
- Disconnect tubing connecting filter and manometer and blow out any accumulated dust.

2.2 Hopper full:

- Empty hoppers on a regular basis. Completely full hoppers will allow re-entrainment of dust into the air stream, thus increasing the dust load drastically and overloading the filter.
- Run filter with no dust loading to clean down filtration media. Do this for a short period only, to remove dust cakes and excessive build-up of product.
- If dust product has built up between the filter bags, use a blunt object to dislodge the dust cakes.

2.3 Ducting partially blocked:

- Check for pluggage in ductwork and clear.
- Check for leakage by wear at elbows, blast gates and fittings; replace where needed.
- Check that all blast gates are locked in place; maladjustment of any blast gates can reduce the effectiveness of the entire dust control system.
- Check to make sure all hoods, screen covers, etc are in place to ensure proper ventilation.

3 FAULT LOCATION

TOTAL LOSS OF SUCTION:

3.1 Ducting blocked:

- Check throughout and clear.

4 VISIBLE EFFLUENT IN CLEAN AIR OUTLET:

4.1 Filter elements not properly sealed:

- Check sealing gasket and bag tension; dust may be leaking through front mullion seals. Springs should be compressed to 89mm long.
- Identify and replace defective sealing gaskets and components.

4.2 Damaged filter element:

- Identify damaged or worn filter bags and replace.

5 PARTS LIST:

Part Name:	Part Number:	Quantity:
Filter Bag	BSPMF	16
Spacer	SPACER	96
Single Cloth Strip	CSS	2
Eyebolt	FEYEBOLT	16
Spring	FSPRING	16
Dust Wall Clip	FDWCLIP	2
Front Mullion	MULF	15
Back Mullion	MULB	16
Door Rubber	DORRUB	4m
Foam Seal Tape 40mm	FT40	30m
Foam Seal Tape 25mm	FT25	30m
Speed Nuts	FSN5/16	4
Magnehelic Gauge	MG-1	1
Spacer Bar	EPSB10	1
Roof Clip	ECRLCLIP	4
Roof Clip Catch	ECRLCAT	4

6 TECHNICAL DATA SHEET:

FILTER NUMBER	:	16
FILTERED PRODUCT	:	Cement
TOTAL FILTRATION AREA	:	32.7 m2
NUMBER OF BAGS	:	16
GUARANTEED BAG LIFE	:	12 months
EXPECTED BAG LIFE	:	6-10 years
COLLECTION EFFICIENCY	:	99.9% down to 0.5 microns.
MATERIAL OF CONSTRUCTION:		2 mm. Gal. Plate
SURFACE TREATMENT	:	Refer Specification

7 BAG REMOVAL OPERATION:

Safety Warning: Wear All Personal Protective Equipment (PPE) Before Operation

- Remove front door and top lid for easy access to the dirty and clean air chamber.
- Unscrew and remove cable cap from solenoid valve.
- Remove bolts from manifold mounting feet and pulse pipe mounting plate.
- Remove nut, washer and spring from eyebolt and unlock eyebolt from bag hook at the bottom of the filter bag.
- Remove speed nuts from back mullion pins and then remove separator bar.
- Unbolt and remove dust wall clips from the clean air chamber.
- Remove the length of wire through the tops of the top row of spacers.
- Remove all six spacers from each of the filter bags.
- Remove collapsible filter bag and adjacent front mullion through the top opening of the filter case.
- Remove cloth strips and rubber seal.
- Remove back mullions from filter bag.
- Inspect back mullion hooks and replace if faulty.

8 BAG REPLACEMENT OPERATION:

Safety Warning: Wear All Personal Protective Equipment (PPE) Before Operation

- Assemble filter bags outside, inserting back mullion with pins and hook protruding.
- Place a 25mm foam rubber seal tape over each row of threaded studs on the dust wall angle in the clean air chamber.
- Place the single wire cloth strips horizontally over each row of the pins on the dust wall angle in the clean air chamber. Make sure that the cloth strip is positioned so that the side fitted with wire is facing towards the centre of the dust collector. Seal with mastic or some other equivalent sealant/glue.
- Start bagging at one end, slipping bags in from the top opening. Make sure that the back mullion pins are positioned closest to the inspection door.
- Position front mullion next to the filter bag.
- Hook adjacent ears of filter bag to dust wall studs then hook the holes of the bag to the pins in the dust wall and the pins in the front mullion.
- Attach the eyebolt to hook extending from bottom of bag. Pass eyebolt through separator bar and fit loosely the spring, washer and nut.
- Continue this procedure (8.4 to 8.7) until all bags are fitted.
- Insert spacers into all the bags (6 into each bag), being careful not to overlap the spacers. Thread the length of wire through the tops of the top row of spacers to prevent them from slipping downwards and overlapping.
- Position dust wall clips around dust wall studs and securely bolt into place.
- Adjust spring to a compressed length of 89mm (3 1/2").
- Replace separator bar and speed nuts to the back mullion pins.
- Re-install door and fasten lid to the top of filter and resume operation.

9 TOOLS:

- socket & socket wrench.
- spanner.
- Bolt cutters.
- Prodger.
- Impact driver.
- Speed nut driver.
- Spacer push rod, (be careful that there are no sharp edges).

10 GENERAL PLANT MAINTENANCE:

There should be a regular maintenance procedure set; one level of maintenance to be performed by the plant operator (ie. visual detailed inspections) and a second level of maintenance to be performed by mechanical personnel.

The plant operator must make a routine, (preferably weekly) inspection of all areas of the plant during normal operation and observe general functions such as compressed air water traps, air pressure and air/oil/dust leaks.

We recommend that the follow scheduled service inspections and maintenance checks be implemented on a timely basis.

11 DUST COLLECTOR MAINTENANCE:

11.1 Daily Inspection:

- Check that the bins and hoppers are empty.

11.2 Fortnightly Inspection:

- Check the solenoid and diaphragm valves for operation.
- Check for any visible dust leaks from the filter casing, door or lid.
- Check differential pressure gauge readings.

11.3 Three Monthly Inspections:

- The dust filter internal equipment should be inspected.
- Check the filter bags, plastic spacer inserts, bag tension, and bag sealing arrangement.
- Check for any dust leakages in the clean air plenum, and the filter bag openings.
- Check rubber seals on door and lid.
- Check differential pressure fittings and tubes to make sure they are not blocked.

12 Manufacture / Service Address

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