

**Operations and Maintenance Plan**  
For emission unit control devices.

Emission Unit No. 002 –Truck/Railcar Receiving System

Control equipment is roll-up doors on either end of the unloading shed with one closed to not allow air flow to emit dust.

Max flow rate is 225 TPH VE Tested at 110 TPH

Dept. of Environmental Protection

Efficiency rating N/A

**MAR 31 2009**

Operating schedule is 24/7 up to 2080 hours.

Southwest District

Maintenance on the doors are performed as needed and the operator checks operation of the doors daily as well as monitors dusting with each operation of unloading. No spare parts required.

Emission Unit No. 003 – Grinding System

Control equipment is a VCE Volks model DLM-V30/15F10 filter collector

Flow rate is 30tph

Efficiency rating is 99.9% per manufacture document (Attachment “A”)

Operating schedule is 24/7 up to 2080 hours.

Routinely operators and maintenance personnel look for dusting or air leaks as they pass through the area. Annually the unit is inspected by maintenance personnel and inspect the unit per preventive maintenance work order for equipment number 046 (Attachment “B”). Spare parts are Goyen diaphragms fits for the purge valves number K2500 (M1183) RCA32 quantity 2.

Emission Unit No. 004 – Pellet Mill System #1

Control equipment is Geelen CY1600HE-R hi-efficiency cyclone with a Geelen 37kw GMB22-2 RD-90 fan (Attachment “C”). The cyclone discharges through an airlock to a 9” screw conveyor.

Flow rate 40tph combined with unit 005.

Efficiency rating is 99.794%

Operation schedule is 24/7 up to 8,320 hours combined with unit 005.

Monthly the cooler fan is inspected per work order for equipment number 087 (Attachment "D"). Quarterly the oil levels is checked in the reducer of the fines collecting conveyor per preventive maintenance work order equipment number 088 (Attachment "E"). The cyclone is monitored by Dynatrol CL-10DJ capacitance probe to monitor plugged conditions. If the cyclone plugs the operator receives an alarm on the control panel where the operator shuts the system down and corrects any plug before continuing the production run. Spare parts include Dynatrol CL-10DJ probe and drive belts for both the fan and fines collecting conveyor.

#### Emission Unit No. 005 – Pellet System #2

Control equipment is two MAC 2 HE33 double hi-efficiency cyclones with a New York Blower 60hp size 334 series 30GI fan. The cyclones discharge into a 9" screw conveyor with an airlock on the discharge of the screw.

Flow rate 40tph combined with unit 004.

Efficiency rating is 99.794%

Operation schedule is 24/7 up to 8,320 hours combined with unit 004.

Monthly the cooler fan is inspected per work order for equipment number 102 (Attachment "D"). Quarterly the oil levels is checked in the reducer of the fines collecting conveyor per preventive maintenance work order equipment number 103 (Attachment "F"). Monthly production opens the inspection doors on the sides of each cyclone and cleans them as needed. This is recorded in our task calendar that prompts production to complete the task (Attachment "G"). The cyclones are monitored by two Monitor bindicators number 1-8401-1 one in each cyclone. If the cyclone plugs the operator receives an alarm on his control panel where he shuts the system down and corrects any plug before continuing the production run. Spare parts include Monitor bindicators and drive belts for both the fan and fines collecting conveyor.

#### Emission Unit No. 006 Truck Load Out System

Control equipment is the roll-up doors on the north and south end of the load out area where one is closed to keep the air from carrying dust.

Flow rate is 40tph

Efficiency rating N/A

Operating schedule is 24/7 up to 2080 hours.

Maintenance on the doors are performed as needed and the operator checks operation of the doors daily as well as monitors dusting with each operation of unloading. No spare parts required.

#### Emission Unit No. 007 – Mineral Unloading System

Control equipment is a MAC Model 72AVR14 baghouse.

Flow rate is 12tph

Efficiency rating 99% per (Attachment “H”)

Operating schedule is 24/7 up to 390 hours.

Monthly maintenance is performed on equipment number 330 preventive maintenance work order (Attachment “I”). The top is removed and condition of socks and cages noted. If the socks or cages are damaged the filters are replaced. The Monitor bindicators is also tested to indicate a plugged condition. The operator monitors for dusting per each unloading. If the filter hopper plugs the operator receives and alarm to shut the system down and correct the situation. Spare parts include Monitor bindicators, 14 filter bags, 14 cages and a purge solenoid kit.

#### Emission Unit No. 008 Grain Cleaning System

Control equipment is a Torit/Day Model DF03-12 dust collector.

Flow rate is 27.5tph

Efficiency rating 99.99% per (Attachment “J”)

Operating schedule is 24/7 up to 8760 hours.

Weekly maintenance is to check the discharge of the unit as well as the Dewyer gauge reading per preventive maintenance work order equipment number 054 (Attachment “K”). Spare parts include two spare filter cartridges and 1 purge valve kits.

Revised: 3/5/09

## **Spare Parts List**

### Emission Unit No. 002 –Truck/Railcar Receiving System

No spare parts required.

### Emission Unit No. 003 – Grinding System

Spare parts are Goyen diaphragms fits for the purge valves number K2500 (M1183) RCA32 quantity 2.

### Emission Unit No. 004 – Pellet Mill System #1

Spare parts include Dynatrol CL-10DJ probe and drive belts for both the fan and fines collecting conveyor.

### Emission Unit No. 005 – Pellet System #2

Spare parts include Monitor bindicators and drive belts for both the fan and fines collecting conveyor.

### Emission Unit No. 006 Truck Load Out System

No spare parts required.

### Emission Unit No. 007 – Mineral Unloading System

Spare parts include Monitor bindicators, 14 filter bags, 14 cages and a purge solenoid kit.

### Emission Unit No. 008 Grain Cleaning System

Spare parts include two spare filter cartridges and 1 purge valve kits.

Revised March 16, 2009 by M. Scott of EEC, separate spare parts list created.

**Operations and Maintenance Plan**  
**List of Attachments**

Attachment A - Efficiency Rating and Specifications of VCE Volks model DLM-V30/15F10 filter collector

Attachment B - Preventive Maintenance Work Order for VCE Volks model DLM-V30/15F10 filter collector

Attachment C - Efficiency Rating and Specifications of CY1600HE-R hi-efficiency cyclone with a Geelen 37kw GMB22-2 RD-90 fan

Attachment D - Monthly Cooler Fan Inspections

Attachment E - Preventive Maintenance Work Order for Pellet Mill #1

Attachment F - Preventive Maintenance Work Order for Pellet Mill #2

Attachment G - Task Calendar

Attachment H - Efficiency Rating and Specifications of MAC Model 72AVR14 baghouse

Attachment I - Preventive Maintenance Work Order for MAC Model 72AVR14 baghouse

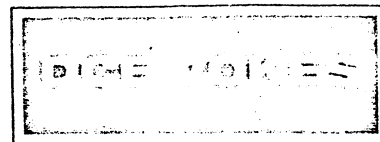
Attachment J - Efficiency Rating and Specifications of Torit/Day Model DF03-12 dust collector

Attachment K - Preventive Maintenance Work Order for Torit/Day Model DF03-12 dust collector

Attachment A - Efficiency Rating and Specifications of VCE Volks model DLM-  
V30/15F10 filter collector

**DCE VOKES Inc.**

11301 Electron Drive Jeffersontown KENTUCKY 40299



(502) 267-0707 Telex 204306

May 2, 1985

"A"

Mr. Carl Eklund  
Ralston Purina Company  
Checker Board Square 2E  
St. Louis, Missouri 63164

Subject: DCE VOKES Job #85-1099

Dear Mr. Eklund:

To confirm our conversation of April 29, an average efficiency guarantee of 99.9+% by weight on a time weighted average (TWA) for particle sizes down to and including one micron in diameter can generally be expected when DCE DLM-V Type F units are installed, operated and maintained in accordance with DCE's published literature.

Again, I must point out that prior to attempting the evaluation of the efficiency of a dust collector, the particle size distribution and the dust loading of any particular application must be determined.

Should you have any questions or have a need for additional information, please feel free to call.

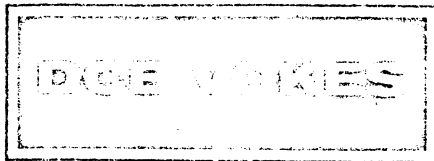
Regards,

*Ron Stewart*

Ron Stewart  
Applications Engineer

RS/clb

cc: Mountain Air Systems Co.  
P.O. Box 1228  
Ballwin, MO 63022-1228  
Phone: 314/227-0484

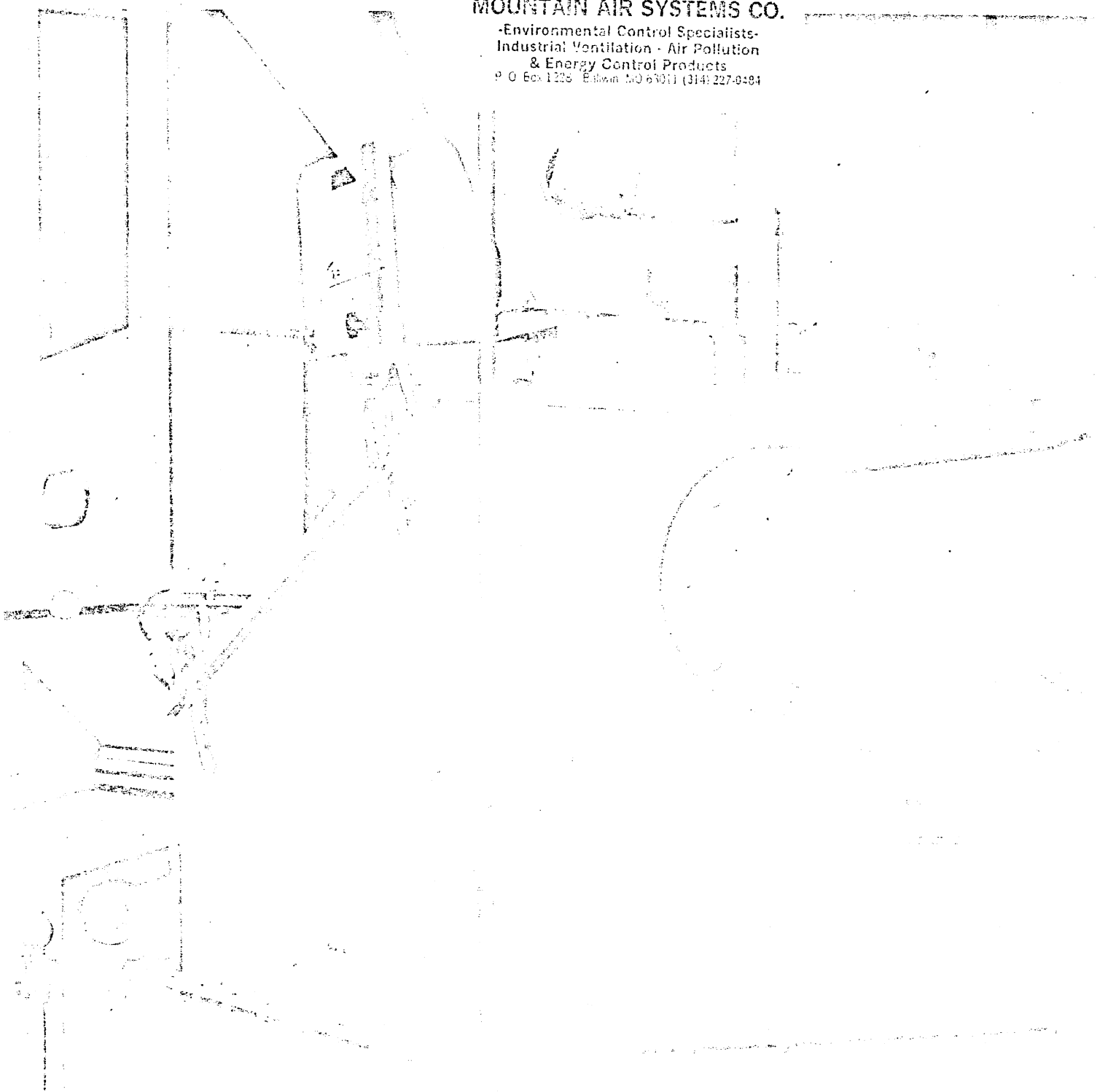


# Dalamatic®

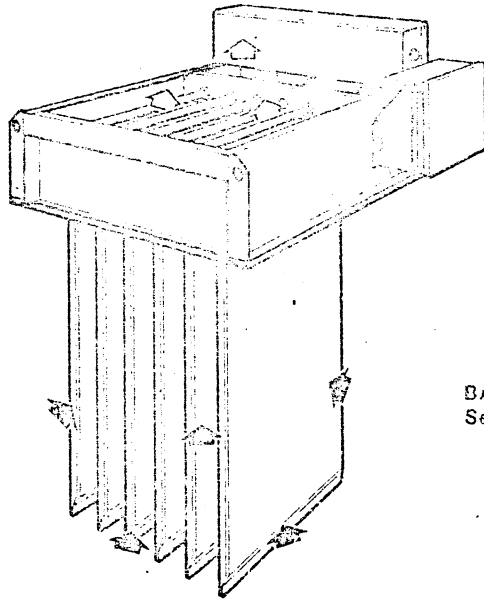
## insertable dust filters series DLM-V

MOUNTAIN AIR SYSTEMS CO.

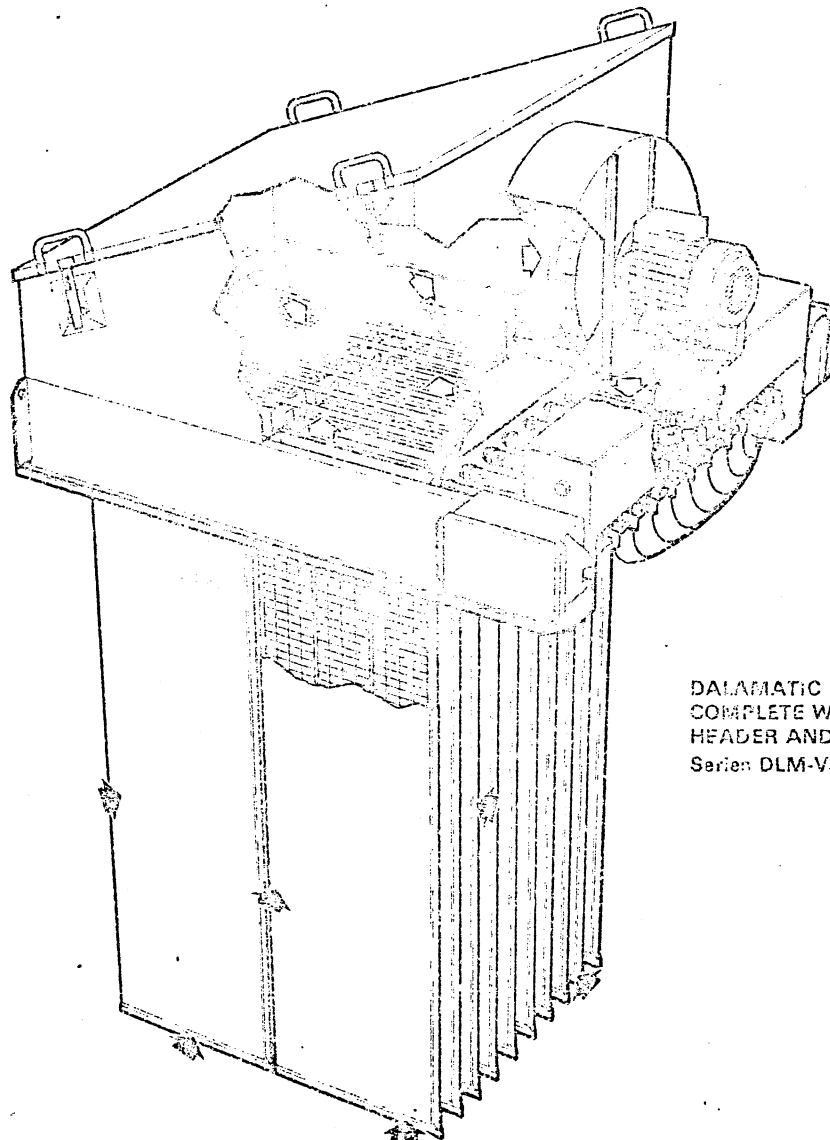
-Environmental Control Specialists-  
Industrial Ventilation - Air Pollution  
& Energy Control Products  
P. O. Box 1225, Edison, NJ 08801 (314) 227-0484







**BASIC DALAMATIC INSERTABLE FILTER**  
Series DLM-V4/7 Type B



**DALAMATIC INSERTABLE FILTER  
COMPLETE WITH WEATHERPROOF  
HEADER AND FAN**  
Series DLM-V30/15 Type F

**FRONT COVER ILLUSTRATION**  
Dalamatic DLM-V20/10H insertable  
dust filter serving feed mill.

## DCE VOKES DALAMATIC INSERTABLE FILTERS

The Dalamatric Insertable Filter — the first of its type — was originally designed to deal with the heavy dust burdens and high filtration velocities encountered in the pneumatic conveying of particulate products. Simply inserted into a silo, it provided continuous filtration of the conveying and displaced air and maintained a high collection efficiency at constant resistance to air flow. The range has been continually developed and now consists of 80 different filters with a wide variety of applications in the handling, processing and storage of bulk materials and powders.

Based on the compact Dalamatric reverse jet filter, the flat pad shaped filter elements are cleaned in turn by short bursts of compressed air, automatically and continuously using an electronic controller of total solid state design. No moving mechanical components are involved and inspection and routine maintenance are from the clean side of the filter. One man can change any size of filter element. Only top quality felt media — vital to proper filter performance — is used. Advanced automated production methods ensure accurate easy to assemble components and inherently strong high quality products.

### CONTENTS

**PAGE 4** Applications  
Types of Filter  
Filter Construction

**PAGE 5** The Full Range of Sizes

**PAGE 6** Filter Designation  
Filter Cleaning  
Filter Fabric  
Specifications:  
(a) Compressed Air Supply  
(b) Electrical Supply

(c) Controller  
(d) Paint Finish

**PAGE 7** Series DLM-V type B

**PAGE 8** Series DLM-V type W

**PAGE 9** Series DLM-V type H

**PAGE 10** Series DLM-V type F

**PAGE 11** Flanges and Fans

## APPLICATIONS

In pneumatic conveying systems, Dalmatic Insertables can be inserted in the top of silos and storage vessels to separate the product from conveying and displaced air and so prevent product loss and dust nuisance. The collected dust returns directly to the bulk content of the silo. DLM-V Type B and W are normally applied in blowing systems, Type F and H are used where a suction fan is needed to relieve pressure from the system.

In mechanical conveying systems the dust cloud at loading, discharge and transfer points can be controlled by a DLM-V Type F in an enclosure. The collected dust is returned directly to the product beneath. This saves space, makes ducting and other ancillary equipment unnecessary and avoids the problem of collected dust disposal.

Dalmatic Insertable Filters can also be integrated within process machinery requiring dust control such as fluid bed reactors, mixers, blenders, mills and crushers, or be used to ventilate powder spray booths, automatic bag slitting machines and a wide variety of similar equipment.

**Important Safety Note** — Whenever the dust involved represents an explosion risk, the silo, or process equipment concerned should be provided with adequate explosion relief.

## TYPES OF FILTER

There are four types of Dalmatic insertable Filters:

- Type B** Basic filter for pressure systems sited inside.
- Type H** Filter with exit Header for connection to a fan or discharge ducting. The filter is weather-proof and suitable for inside and outside applications.
- Type W** Filter with a Weather cowl for pressure systems where the filter is located outside or exposed to adverse conditions.
- Type F** Weather-proof filter fitted with an integral Fan for applications normally operating below atmospheric pressure.

(Mounting positions — All Dalmatic Insertable filters can be mounted either vertically or horizontally whichever is the best position for the particular application (see figs. 1 & 2 for examples).

## FILTER CONSTRUCTION

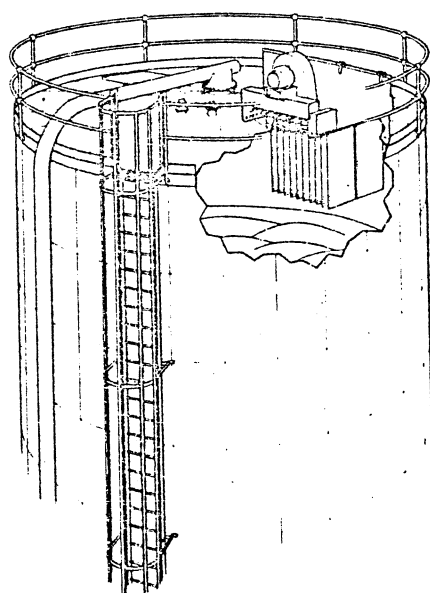
Each type is available in 14 different filtration areas depending on the air volume capacity required. They are based on two sizes of seal frame, containing either six or ten filter elements in one of three lengths: 0.7m, 1.0m or the 1.5m. These are assembled into three module sizes which can be used singly or joined together in twos or threes in the configurations shown in the table opposite.

Each filter module consists of an outer frame surrounding a seal frame through which a number of flat pad shaped filter elements are inserted.

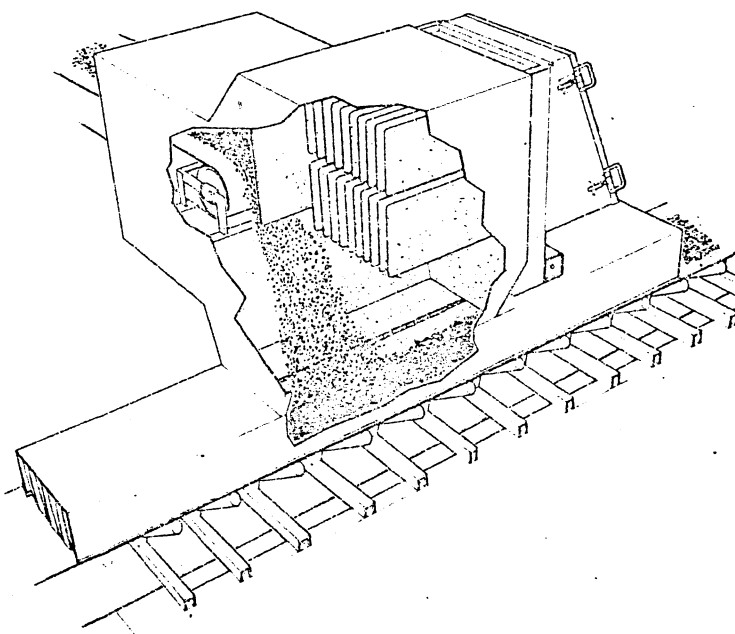
Each filter element consists of a felted fabric pad supported on a rigid mesh frame or 'insert', which has an integral header and sealing flange welded to its mouth. A continuous sealing ring of the same felted fabric is stitched round the open end of the pad. When the filter is assembled clamps compress the sealing ring between the flange and the seal frame slot to give an exceptionally tight and effective seal. The clamps also ensure that the pads are properly aligned.

A jet tube is located along the mouth of each insert header and is connected via a diaphragm valve to a compressed air distribution manifold fitted to the outer frame. This valve is linked to a solenoid-operated pilot valve which is governed by an electronic timer. The controller assembly, consisting of pilot valves and timer, is housed in a weather-proof steel box usually mounted on the outer frame.

In applications involving an explosion risk a pneumatically operated controller which has no electrical components can be used to control filter cleaning.










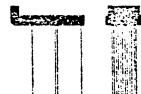




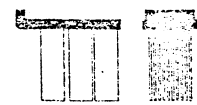


**Fig. 1 DLM-V Type F venting silo fed by pneumatic conveying system**



**Fig. 2 DLM-V Type F mounted above belt transfer point**

# THE FULL RANGE OF SIZES

Filter Size Designation	Total Fabric Area	Filter Elements			Approx. Air Volume* m <sup>3</sup> /hr c.f.m.	
		Number	Length	Configuration		
DLM-V4/7	4m <sup>2</sup> (43ft <sup>2</sup> )	6	0.7m		700	400
DLM-V6/10	6m <sup>2</sup> (64ft <sup>2</sup> )	6	1.0m		1000	600
DLM-V7/7	7m <sup>2</sup> (75ft <sup>2</sup> )	10	0.7m		1250	700
DLM-V8/7	8m <sup>2</sup> (86ft <sup>2</sup> )	12	0.7m		1350	800
DLM-V9/15	9m <sup>2</sup> (97ft <sup>2</sup> )	6	1.5m		1550	900
DLM-V10/10	10m <sup>2</sup> (108ft <sup>2</sup> )	10	1.0m		1750	1000
DLM-V12/10	12m <sup>2</sup> (129ft <sup>2</sup> )	12	1.0m		2000	1200
DLM-V14/7	14m <sup>2</sup> (150ft <sup>2</sup> )	20	0.7m		2400	1400
DLM-V15/15	15m <sup>2</sup> (161ft <sup>2</sup> )	10	1.5m		2550	1500
DLM-V18/15	18m <sup>2</sup> (194ft <sup>2</sup> )	12	1.5m		3050	1800
DLM-V20/10	20m <sup>2</sup> (215ft <sup>2</sup> )	20	1.0m		3500	2000
DLM-V21/7	21m <sup>2</sup> (226ft <sup>2</sup> )	30	0.7m		3600	2100
DLM-V30/10	30m <sup>2</sup> (323ft <sup>2</sup> )	30	1.0m		5100	3000
DLM-V30/15	30m <sup>2</sup> (323ft <sup>2</sup> )	20	1.5m		5100	3000
DLM-V45/15	45m <sup>2</sup> (484ft <sup>2</sup> )	30	1.5m		7650	4500

\*NOTE: The air volumes shown above must be taken as a rough guide only. They can vary considerably according to the nature of the dust involved.

## FILTER DESIGNATION

The designation of Dalamatric Insertable filters begins with the prefix DLM-V and is followed by size and type. Examples are:

- DLM V4/7B** — Dalamatric Insertable with filter area of 4m<sup>2</sup> and 0.7m long pads. Basic type.
- DLM V6/10H** — Dalamatric Insertable with filter area of 6m<sup>2</sup> and 1.0m long pads, fitted with exit header.
- DLM V9/15W** — Dalamatric Insertable with filter area of 9m<sup>2</sup> and 1.5m long pads, fitted with weather cowl.
- DLM V10/10F3** — Dalamatric Insertable with area of 10m<sup>2</sup> and 1.0m long pads fitted with integral size 3 fan.

## FILTER CLEANING

The electronic timer activates each pilot valve in sequence at predetermined intervals in a continuous cycle. The pilot valve in turn opens the diaphragm valve. A short burst of compressed air is released and injected by the jet tube through the insert header into the filter pad. (As shown in Fig. 3). This causes a momentary reversal of the air flow through the filter pad. The effect is a brief controlled inflation of the pad so that the accumulated dust or 'dust cake' is dislodged from its surface. Simultaneously the reversed air flow through the fabric itself assists dust removal. The collected dust falls directly into the silo below or into the process served.

## FILTER FABRIC

The majority of applications are best served by the standard Polyester felt. Other felts include Dralon, epitropic polyester, nylon, cleophobic, Orlon, polypropylene and wool felts. Another — Nomex felt is suitable for use at temperatures up to 392°F.

All fabrics are manufactured to a strict specification and undergo stringent quality control testing. The quality of the fabric and the high standard of pad manufacture are vital to proper filter performance.

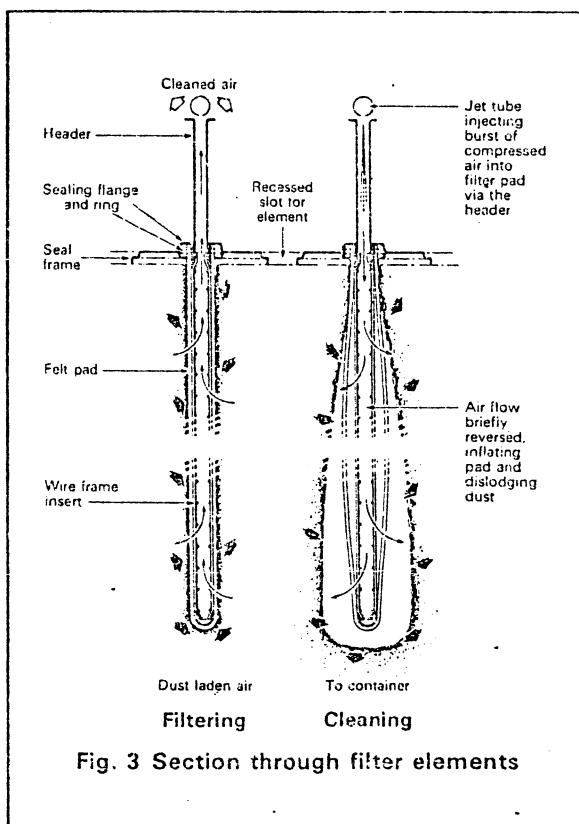


Fig. 3 Section through filter elements

## SPECIFICATIONS

### (a) Compressed Air Supply

A supply of clean and dry compressed air is required for efficient operation. Maximum pressure and volume required are given in the table below.

Filter Size	COMPRESSED AIR REQUIREMENTS			
	Maximum air pressure bar	prig	Air Volume required m <sup>3</sup> /hr at 25 sec. interval cfm	
DLM V4, 6, 9	4.5	65	3.0	2.3
DLM V7, 10, 15	4.5	65	4.7	2.8
DLM V8, 12, 13	6.2	90	7.1	4.2
DLM V14, 20 (3 valve)	6.2	90	8.5	5.0
			at 12 sec. interval	
DLM V20 (10 valve)	4.5	65	6.1	3.6
DLM V21, 30/10	5.2	75	7.8	4.6
DLM V30/15	4.5	65	8.6	5.1
DLM V45	5.2	75	11.2	6.6

### (b) Electrical Supply

For controllers

3 or 5 valves — 2 wire AC — 110V or 240V (±10%) 50 or 60Hz 10 valves — 2 wire AC — 110V to 530V (±10%) 50 or 60Hz.

For Type F fan motors

A 3 phase supply is required. There is a standard range of motors to suit most voltages.

### (c) Controllers

A controller assembly is fitted to Dalamatric Insertable Filters — 3-valve to filter size V4, V6, V8, V9, V12 and V18; 5-valve to filter size V7, V10, V14 and V15; 5 or 10-valve to filter size V20; and 10-valve to filter size V21, V30 and V45.

The valves are controlled by a fully automatic solid state dual timer, which activates the solenoid valves in the required sequence and governs the time interval between the pulses of compressed air. The time interval is adjustable to match the severity of application and has a range of 5 to 35 seconds with a normal initial setting of 25 or 12 seconds depending on filter size.

In the case of the DLM-V Type F model the fan should only operate in conjunction with the controller, but whenever possible, the controller itself should be capable of independent operation so that the filter elements can be cleaned under static air conditions.

3 and 5 valve controller assemblies are housed in a single weather-proof steel box usually mounted on the outer frame of the filter. 10 valve assemblies have two boxes — one for the solenoid valves and the other for the timer.

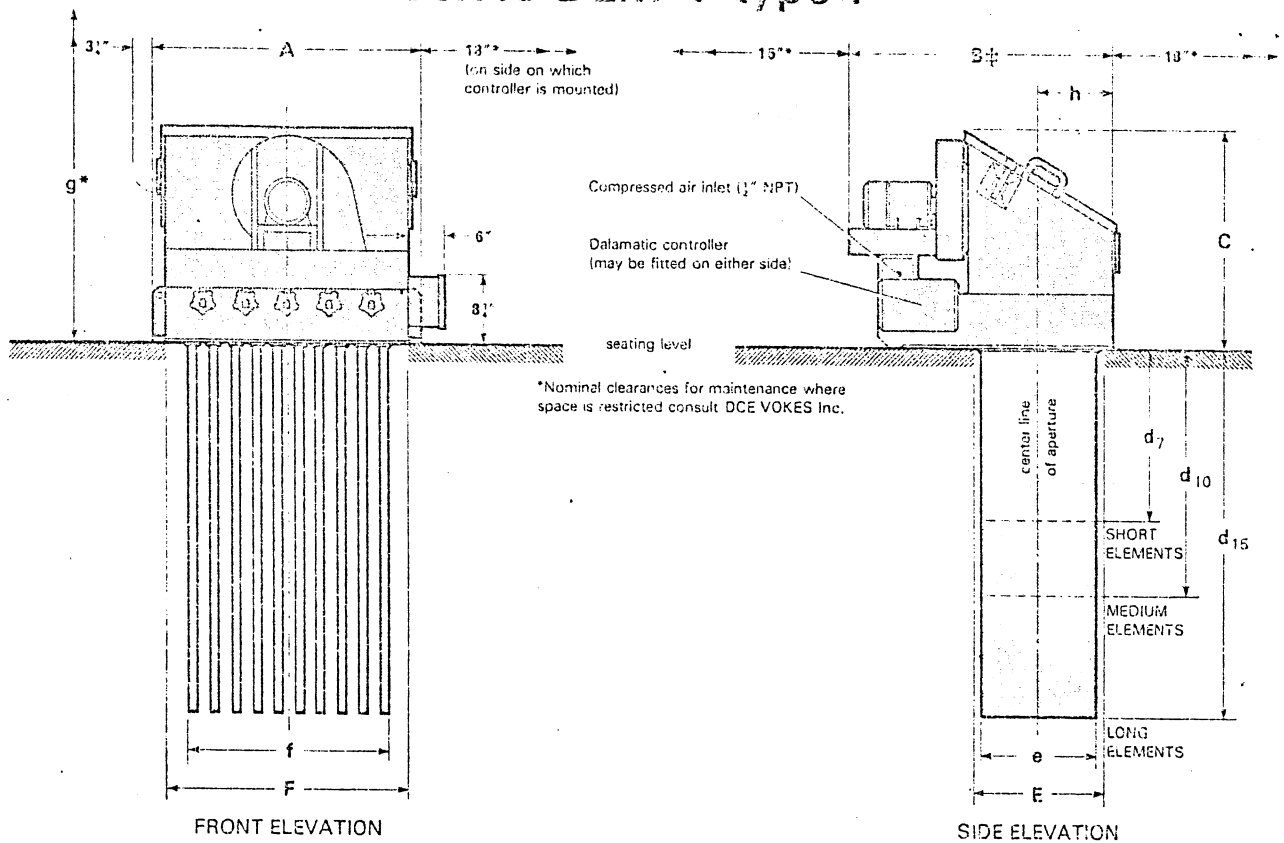
### (d) VP and PT Controllers

To minimize compressed air consumption the cleaning system can be operated intermittently using a Dalamatric VP controller. This is activated by a pressure switch governed by the pressure differential across the filter.

A pneumatically operated controller (PT) which contains no electrical components is available for filters operating in hazardous areas.

Please see separate data sheets.

# Series DLM-V type F



Size DLM-V15/15F3 illustrated, broken lines representing DLM-V7/7F3 & DLM-V10/10F3

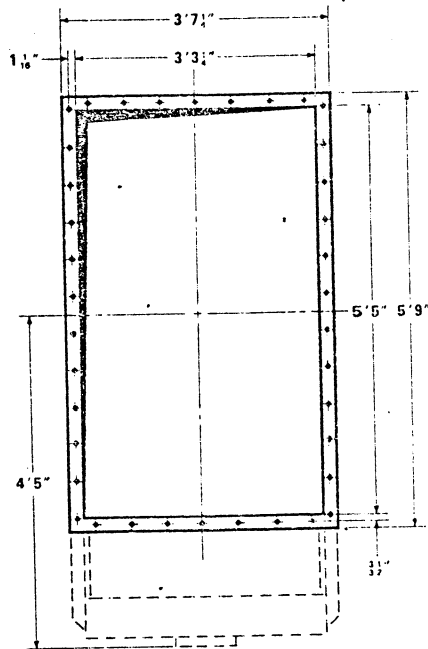
Note: Clearance of at least 6" to be left on all sides of the filter elements

† This dimension is approximate and is dependent upon make of motor

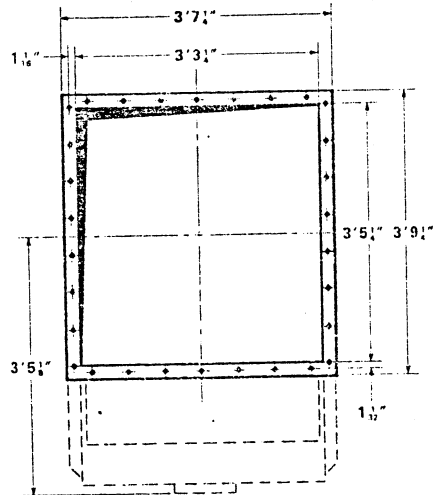
MODEL	DIMENSIONS												Fan	Fan Motor h.p.	Approx. net weight
	A	C	d <sub>7</sub>	d <sub>10</sub>	d <sub>15</sub>	E	e	F	f	g*	h	B†			
DLM-V4/7F	2'3½"	2'8½"	2'3½"	—	—	20½"	19"	23½"	18½"	3'9½"	12¼"	3'7½"	F1	1	350lb
DLM-V8/10F	2'3½"	2'3½"	—	3'3½"	—	20½"	19"	23½"	18½"	4'9½"	12¼"	3'7½"	F1	1	375lb
DLM-V8/15F	2'3½"	2'9½"	—	—	4'11"	20½"	19"	23½"	18½"	6'5"	12¼"	3'7½"	F1	1	395lb
												3'7½"	F3	3	420lb
DLM-V7/7F	3'7½"	2'10"	2'3½"	—	—	20½"	19"	3'3½"	2'8½"	3'9½"	12¼"	3'7½"	F1	1	490lb
												3'7½"	F3	3	530lb
DLM-V10/10F	3'7½"	2'10"	—	3'3½"	—	20½"	19"	3'3½"	2'8½"	4'9½"	12¼"	3'7½"	F1	1	540lb
												3'7½"	F3	3	570lb
DLM-V15/15F	3'7½"	2'10"	—	—	4'11"	20½"	19"	3'3½"	2'8½"	6'5"	12¼"	3'7½"	F3	3	615lb
												3'7½"	F5	4	630lb
DLM-V8/7F	2'3½"	2'10"	2'3½"	—	—	3'5½"	3'3½"	23½"	18½"	3'9½"	22¾"	5'3½"	F1	1	530lb
												5'3½"	F3	3	590lb
DLM-V12/10F	2'3½"	2'10"	—	3'3½"	—	3'5½"	3'3½"	23½"	18½"	4'9½"	22¾"	5'3½"	F3	3	605lb
												5'3½"	F5	4	620lb
DLM-V18/15F	2'3½"	3'0½"	—	—	4'11"	3'5½"	3'3½"	23½"	18½"	6'5"	22¾"	5'3½"	F3	3	650lb
												5'3½"	F5	4	671lb
												5'4½"	F6	5½	740lb
DLM-V14/7F	3'7½"	2'11½"	2'3½"	—	—	3'5½"	3'3½"	3'3½"	2'8½"	3'9½"	22¾"	5'3½"	F3	3	825lb
												5'3½"	F5	4	840lb
DLM-V20/10F	3'7½"	3'0½"	—	3'3½"	—	3'5½"	3'3½"	3'3½"	2'8½"	4'9½"	22¾"	5'3½"	F3	3	905lb
												5'3½"	F5	4	915lb
												5'4½"	F6	5½	950lb
												5'3½"	F5	4	1025lb
† DLM-V30/15F	3'7½"	3'1½"	—	—	4'11"	3'5½"	3'3½"	3'3½"	2'8½"	6'5"	22¾"	5'4½"	F6	5½	1060lb
												5'8½"	F10	7½	1110lb
† DLM-V21/7F	3'7½"	3'6"	2'3½"	—	—	5'5"	5'3½"	3'3½"	2'8½"	3'9½"	2'10½"	7'3½"	F3	3	1100lb
												7'3½"	F5	4	1110lb
												7'4"	F6	5½	1145lb
† DLM-V30/10F	3'7½"	3'6"	—	3'3½"	—	5'5"	5'3½"	3'3½"	2'8½"	4'9½"	2'10½"	7'3½"	F5	4	1210lb
												7'4"	F6	5½	1245lb
												7'7½"	F10	7½	1300lb
												7'4"	F6	5½	1375lb
† DLM-V45/15F	3'7½"	3'6"	—	—	4'11"	5'5"	5'3½"	3'3½"	2'8½"	6'5"	2'10½"	7'7½"	F10	7½	1430lb
												7'7½"	F11	10	1475lb

† A separate solenoid terminal box is used on these units, and should be fitted to the side opposite the controller. Therefore a nominal clearance of 18" should be allowed for maintenance.

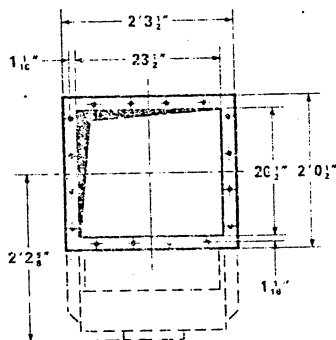
# Flanges and Fans



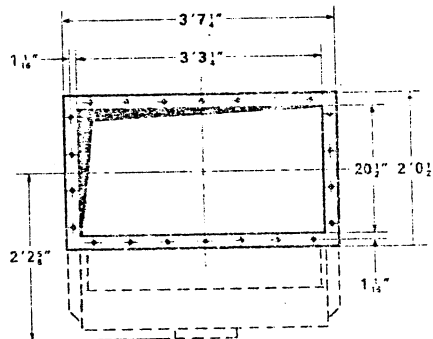
DLM-V21/7, V30/10 & V45/15



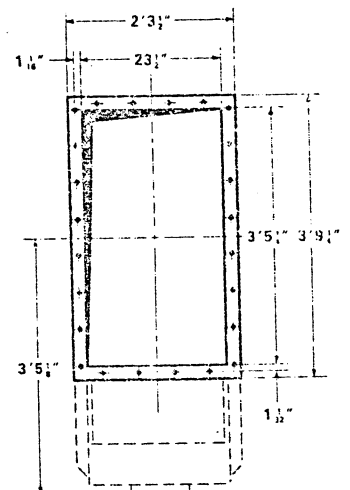
DLM-V14/7, V20/10 & V30/15



DLM-V4/7, V6/10 & V9/15



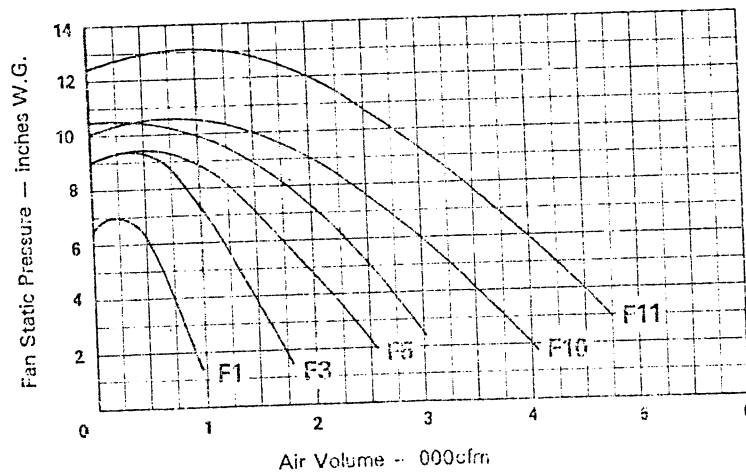
DLM-V7/7, V10/10 & V15/15



DLM-V8/7, V12/10 & V15/15

## Aperture and mounting details

All bolt holes are 11mm dia. ( $\frac{7}{16}$ ") for 10mm ( $\frac{3}{8}$ ") bolts with hole centers at 150mm (5 7/8") pitch, and are symmetrical about center lines as shown



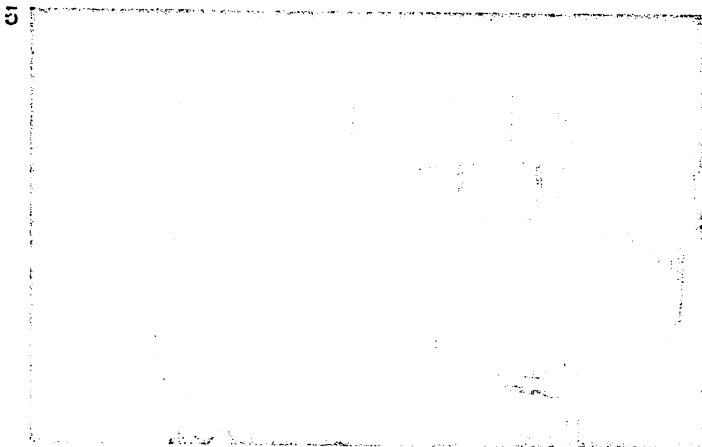
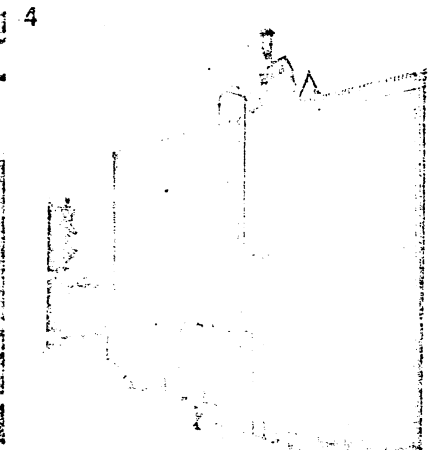
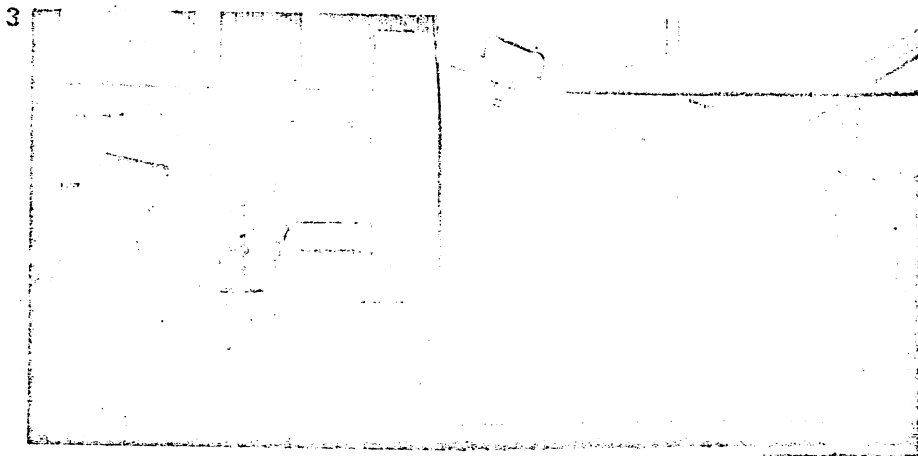
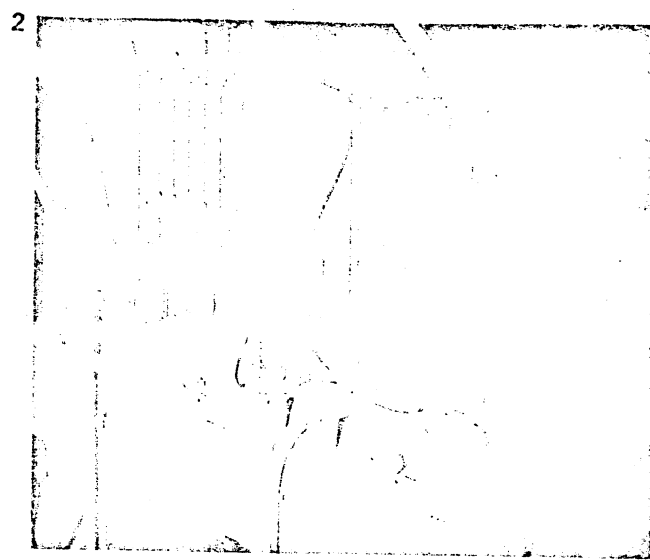
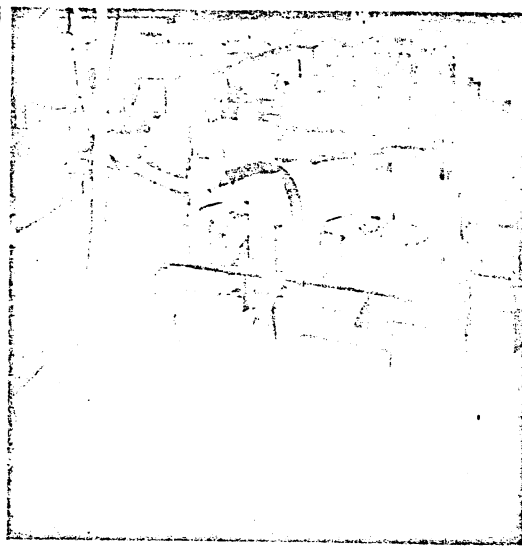
Fan Performance Curves

## OPERATING DESIGN LIMITS

Temperature range --15°F to +140°F

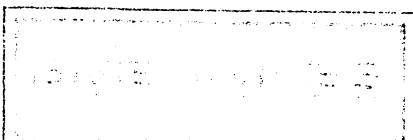
Pressure limits:

Type F as fan performance curves to nil  
Type B + or - 16" W/G  
Type H - 16" to +2" W/G



- 1 Bulk cargo handling of potato starch served by two Dalamatric DLM-V14/7B dust filters.
- 2 Two Dalamatric DLM-V6/10B's installed in a plastic bottle factory.
- 3 Dalamatric DLM-V20/10F insertable ventilating aluminium powder storage silo.
- 4 Tanker discharging metallic powder into silo served by a Dalamatric DLM-V20/10F insertable filter.
- 5 Horizontally mounted Dalamatric insertables in a silo collecting asbestos dust.

SAE D5  
1000000



**DCE VOKES Inc.**  
11301 Electron Drive  
Jeffersontown  
KENTUCKY 40299  
Tel: (502) 267-0707



Attachment B - Preventive Maintenance Work Order for VCE Volks model DLM-  
V30/15F10 filter collector

Land O' Lakes Purina Feed, LLC  
PREVENTIVE MAINTENANCE WORK ORDER

02/09/08

\*\*\*\*\*

Work Order No: \_\_\_\_\_  
WO Description: Gringing Dust Collector  
Repair Code: Preventive Maintenance  
EntryDate: \_\_\_\_\_  
Recurrence: Annual Offset Month: 5

"B"

\*\*\*\*\*

Equipment No: 046 Manufacturer: DCE VOLKS  
Description: DCE VOLKS DUST COLLE Model: DLM-V30/15F10  
Unit No: 9 Serial No: JOB#85-1361  
Location: GRINDING SYSTEM

\*\*\*\*\*

Priority: 3  
Est Labor Hours: 1.00  
Est Completion: \_\_\_\_\_

Remarks: With unit running check to make sure there is no dust  
discharging from the fan. Open the lid, check gasket for  
damage and conditon of filter bags. Check jet tubes and  
purge system for correct operation.

\*\*\*\*\*

LeadWorker: \_\_\_\_\_ Skill 1: CLASS C MAINTENANCE  
Worker 1: \_\_\_\_\_ Skill 2: \_\_\_\_\_  
Worker 2: \_\_\_\_\_ Skill 3: \_\_\_\_\_  
Worker 3: \_\_\_\_\_ Skill 4: \_\_\_\_\_  
Worker 4: \_\_\_\_\_ Skill 5: \_\_\_\_\_

\*\*\*\*\*

Completion Date: \_\_\_\_\_ Approved By: \_\_\_\_\_

Repair Description: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Skill 1: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 2: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 3: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 4: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Inventory Items Used: \_\_\_\_\_

\_\_\_\_\_

Parts Cost: \_\_\_\_\_ Contract Cost: \_\_\_\_\_

Labor Cost: \_\_\_\_\_ Other Cost: \_\_\_\_\_

Hour meter/(Odometer): \_\_\_\_\_

\*\*\*\*\*

Attachment C - Efficiency Rating and Specifications of CY1600HE-R hi-efficiency cyclone with a Geelen 37kw GMB22-2 RD-90 fan



CALIFORNIA PELLET MILL  
ROSKAMP CHAMPION  
BETA RAVEN  
Your Partner in Productivity

# **QUOTATION**

CPM  
1114 East Wabash Ave  
Crawfordsville, IN 47933  
Tele: (800) 428-0846  
www.cpmroskamp.com

BILL TO: PURINA MILLS  
MR CHAN MELTON - 651-765-5746  
1080 CR W MS 5600  
MULBERRY, FL 33860  
USA

SHIP TO: PU  
891

ML  
US

QUOTE DT	CUST NO	SALES REP	TERMS	LOC	PPD
	000000153255	Paul Tucker	20%DWN, N30 WAC	01	

QTY QUOTED	ITEM NO DESCRIPTION
---------------	------------------------

PELLET MILL, CONDITIONER, FEEDER FOR  
MERRIMACK, NH  
DIE FOB CRAWFORDSVILLE, IN  
CRUMBLER FOB WATERLOO, IA  
ELECTRICAL FOB POINT OF SHIPMENT

## **1 PM7726-7 Pellet Mill**

NOTE: THE USE OF A 300HP/1200RPM MOTOR FOR THIS PELLET MILL IS 50HP OVER OUR STANDARD 250HP, AND WILL LOWER THE SERVICE FACTOR OF THE GEAR SET. HOWEVER IN CONSIDERATION OF YOUR OPERATION IN LUBBOCK, TX WHERE (3) PELLET MILLS OF THE SAME MODEL HAVE BEEN RUNNING SUCCESSFULLY WITH 300HP/1200RPM, MOTOR FOR YEARS CPM IS SUBMITTING THIS QUOTE WITH A LIMITED WARRANTY BASED ON THE UNDERSTANDING THAT THE NEW PELLET MILL WILL BE OPERATED UNDER THE SAME CONDITIONS AS THE ABOVE MENTIONED PRE-EXISTING PELLET MILLS

INCLUDES THE ADDER FOR A SS MAINSHAFT, FRONT ROLLER SUPPORT, QUILL FLANGE AND FEED CONE

NOTE: TOP & BOTTOM KNIVES ARE TO BE AT 10 O'CLOCK & 4 O'CLOCK POSITIONS AND THE KNIFE HOLE IS TO BE AT 2 O'CLOCK POSITION

INCLUDES PNEUMATIC DISCHARGE CHUTE

### **Each Item Consisting of**

- 1 Electrical: 3/60/460 TEFC Control: 1/60/110 NEMA 12
- 1 Medium-Speed Gearing
- 1 Forced Lubrication
- 1 Bear Claw Die Clamp
- 1 CPM Die

"C"



CALIFORNIA PELLET MILL  
ROSKAMP CHAMPION  
BETA RAVEN  
*Your Partner in Productivity*

# **QUOTATION**

CPM  
1114 East Wabash Ave  
Crawfordsville, IN 47933  
Tele: (800) 428-0846  
www.cpmroskamp.com

BILL TO: PURINA MILLS  
MR CHAN MELTON - 651-765-5746  
1080 CR W MS 5600  
MULBERRY, FL 33860  
USA

SHIP TO: PU  
891

ML  
US

QUOTE DT	CUST NO	SALES REP	TERMS	LOC	PPD
	000000153255	Paul Tucker	20%DWN, N30 WAC	01	

QTY QUOTED	ITEM NO DESCRIPTION
---------------	------------------------

- |                   |  |
|-------------------|--|
| 1                 | Right Hand Pellet Chamber                        |
| 1                 | Top Knife Assembly                               |
| 1                 | Bottom Knife Assembly                            |
| 1                 | Knife Mounting Hole Covers                       |
| 2                 | Roller, Closed End Corrugation Lineator          |
| 1                 | Air Powered Die/Roller Hoist                     |
| 1                 | Die Lifting Plate                                |
| 1                 | Roller Lifting Bracket                           |
| 1                 | Two-Way Discharge Gate                           |
| 1                 | Tool Kit   |
| 1                 | Vibration Damper Pad                             |
| 1                 | Customer Supplied, See Note                      |
| 1                 | Auto-Air Acutated Feed Chute Pellet Chamber Dump |
| Optional Features |  |
| 1                 | Lineator Roll Adjust.                            |
| 1                 | CPM Lineator Control Panel                       |
| 1                 | 16" Enforcer Feeder Pellet Chamber Discharge     |

## **1 300HP/1200RPM**

MAIN DRIVE MOTOR

1

## **1 LINE REACTOR**

## **1 C24LTB8 Conditioner**

CUSTOMER TO PROVIDE 3HP VF DRIVE FOR  
FEEDER

Each Item Consisting of

- |   |   |
|---|---|
| 1 | Electrical: 3/60/460 TEFC Control: 1/60/110 NEMA 12 |
| 1 | C24LTB8 Right Hand Doors                            |
| 1 | 300 RPM Inlet End Timing Belt Drive @ 2 O' Clock    |
| 1 | Fluidized Shaft Drv @ 2:00 Inl                      |
| 1 | Base Frame 7726-7730 Mill                           |
| 1 | Model 12LT Feeder                                   |



CALIFORNIA PELLET MILL  
ROSKAMP CHAMPION  
BETA RAVEN  
*Your Partner in Productivity*

# **QUOTATION**

CPM  
1114 East Wabash Ave  
Crawfordsville, IN 47933  
Tele: (800) 428-0848  
www.cpmroskamp.com

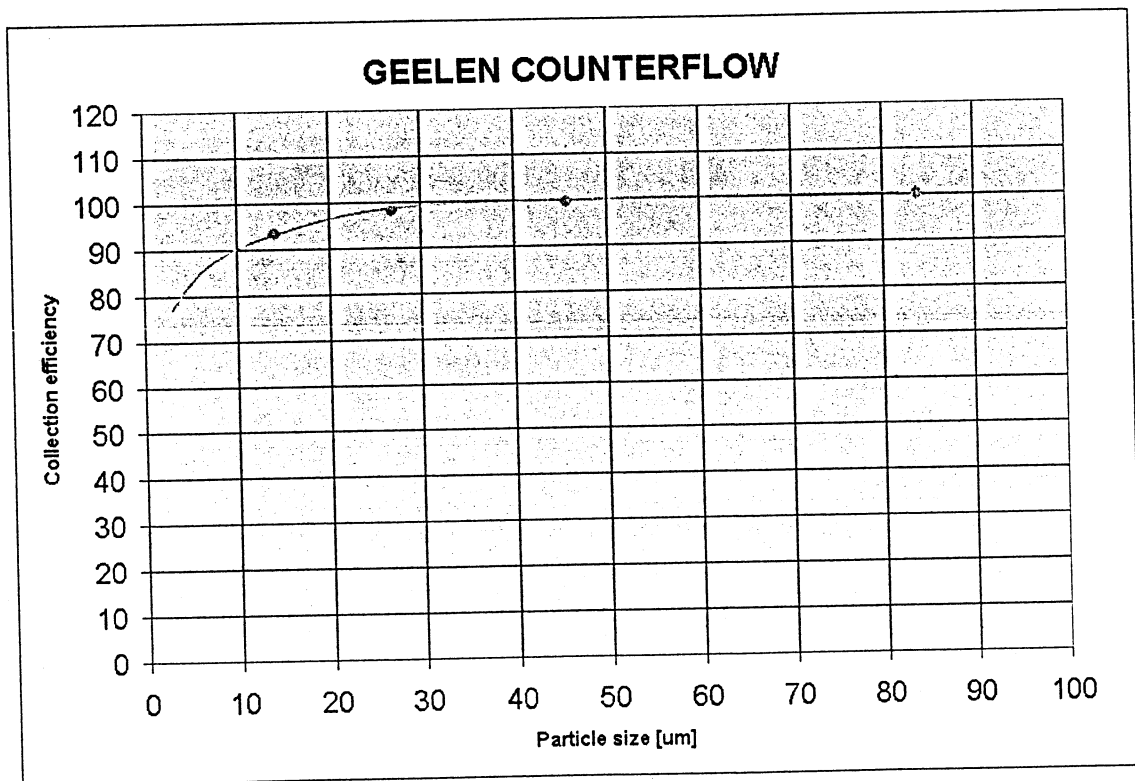
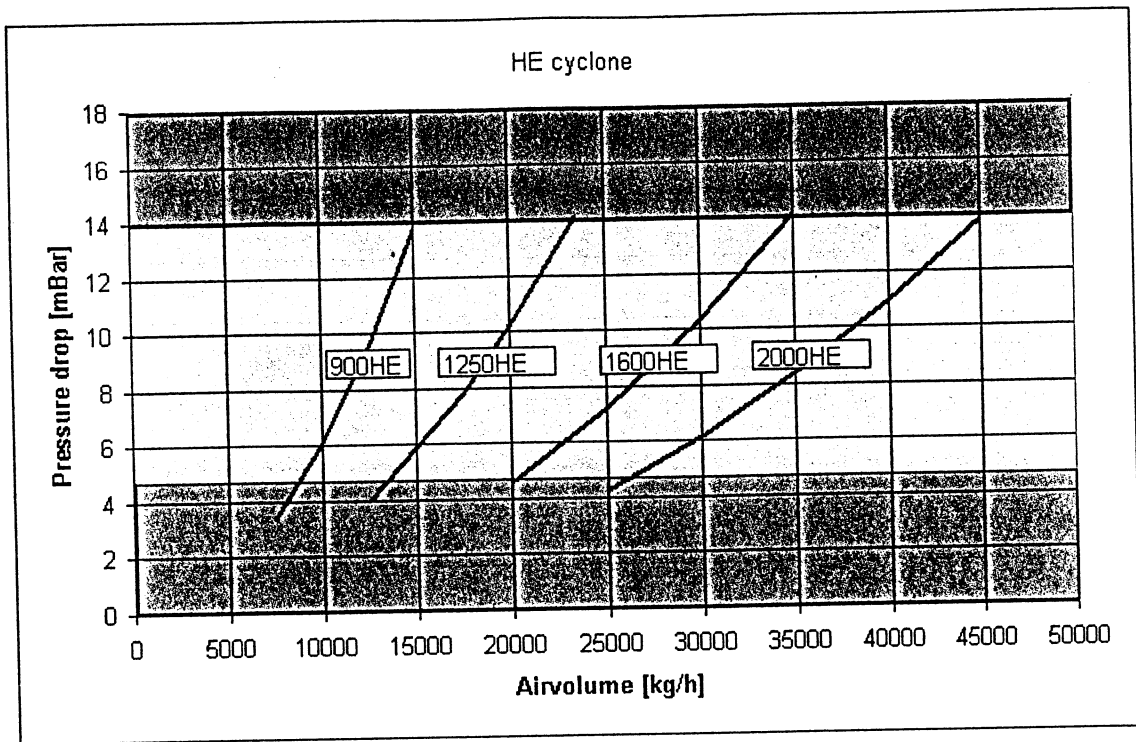
BILL TO: PURINA MILLS  
MR CHAN MELTON - 651-765-5746  
1080 CR W MS 5600  
MULBERRY, FL 33860  
USA

SHIP TO: PU  
89

ML  
US

QUOTE DT	CUST NO	SALES REP	TERMS	LOC	PPD
	000000153255	Paul Tucker	20%DWN, N30 WAC	01	

QTY QUOTED	ITEM NO	DESCRIPTION
	1	3HP Shaft Mounted Gear Reducer Located at Feeder Discharge
	1	Motor,WEG,3HP,1800 3/60/208/230/460,182TC,TEFC
	1	Inlet Housing With Magnet and Feeder
	1	Motor,WEG,30HP,1200 3/60/208/230/460,326T,TEFC
		CONDITIONER MOTOR
	1	CMX120036SS Crumbler
		Each Item Consisting of
	1	Electrical: 3/60/460 TEFC Control: 1/60/110 NEMA 12
	1	8/IN & 6/IN RBV ROLL CORRUGATI ON
	1	AIR-ACTUATED ROLL ADJUST SYSTE M
	1	LEFT-HAND MAIN DRIVE POSITION
	1	Z-FLOW DRIVE CONFIGURATION
	1	AIR ACTUATED TWO- POSITION ADJUSTABLE SURGE PANEL
	1	Air Filter, Regulator And Lubricator
	1	Motor,WEG,15HP,1800 3/60/208/230/460,254T,TEFC
		CRUMBLER MOTOR



**Geelen Techniek BV**

P.Schreursweg 38

HAELEN, 6081 NX

The Netherlands

Phone No. +31 475-592315

Fax No. +31 475-592767

E-Mail info@geelencounterflow.com

Home Page www.geelencounterflow.com

Bank Name ABN-AMRO ROERMOND

Bank account no. NL53ABNA0578875721

BIC ABNANL2A

VAT Reg. No. 007760735B01

CoC-No. 13024796

**Land O'Lakes Purina Feeds LLC**

Chan Melton

890 N. Prairie Ind. Pkwy

MULBERRY, Florida 33860

the United States

Your reference ENG-2414-0408

Date 21-04-08

Area manager Tom Strong

Order handled by Raymond Blom

***-DRAFT-***

I declare that the process specifications as mentioned on page 2 of this draft order are correct and that the equipment should be built according to the following dimensional drawings and diagrams:

Name: . . . . . Signature: . . . . . Date: . . . . .

Dear Sirs,

Please find attached our draft order confirmation for the 2nd Mulberry cooler. Please note the following items.

- Order confirmation is in Euros.
- Please check all details stated in the order confirmation, if OK, please sign first page and ALL drawings ASAP but before: 2nd of May 2008
- Please confirm Hopper and support details
- Please confirm cyclone orientation
- Please confirm air fan orientation

With kind regards,

Raymond Blom  
Geelen Counterflow

## Attachments:

K080615 VK24x24KL Cooler

M223202B Cyclone CY-1600HE

M260101B Fines valve GS-250

M230601D Air flow control valve AFC600

M241901B Air fan GMB-22

M507110D Angle encoder Wiring diagram (example)

M507010F Air flow control valve wiring diagram (example)

M503080B Cooler wiring diagram (example)



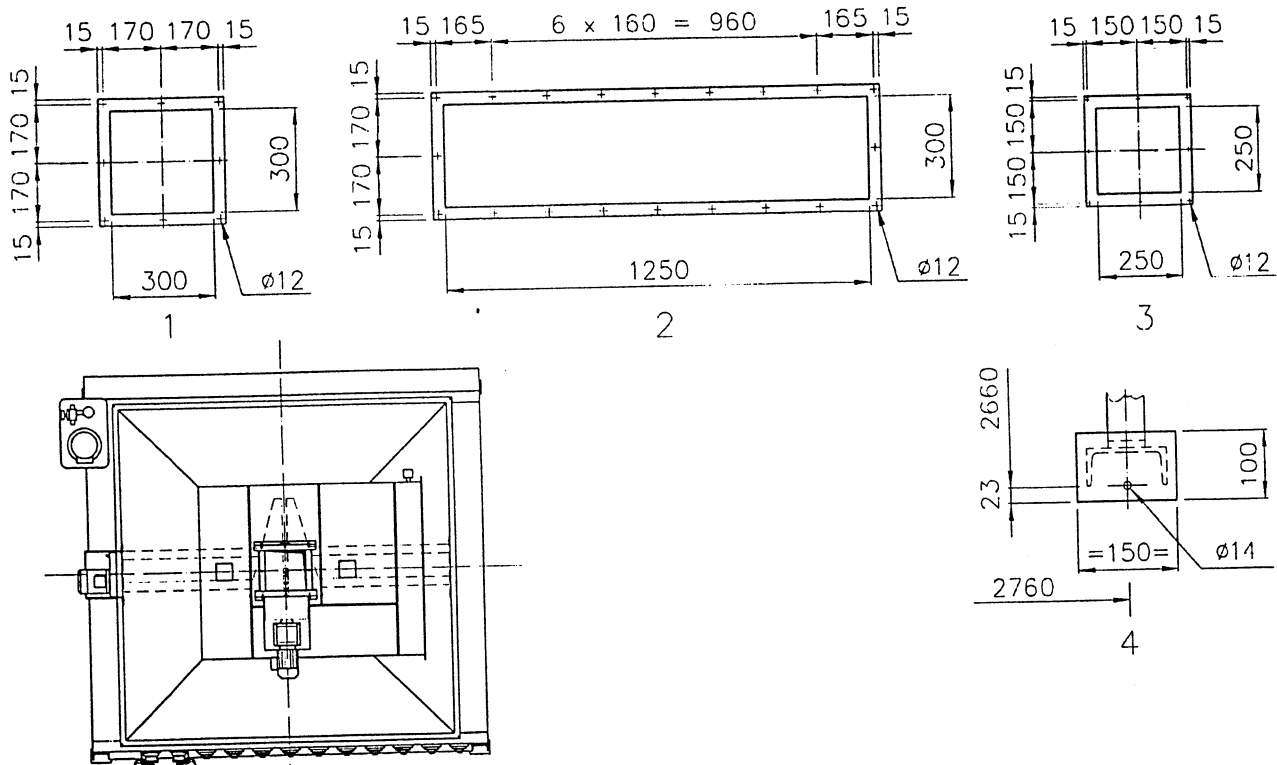
E080288P1 E&I diagram

## PROCESS SPECIFICATIONS - US

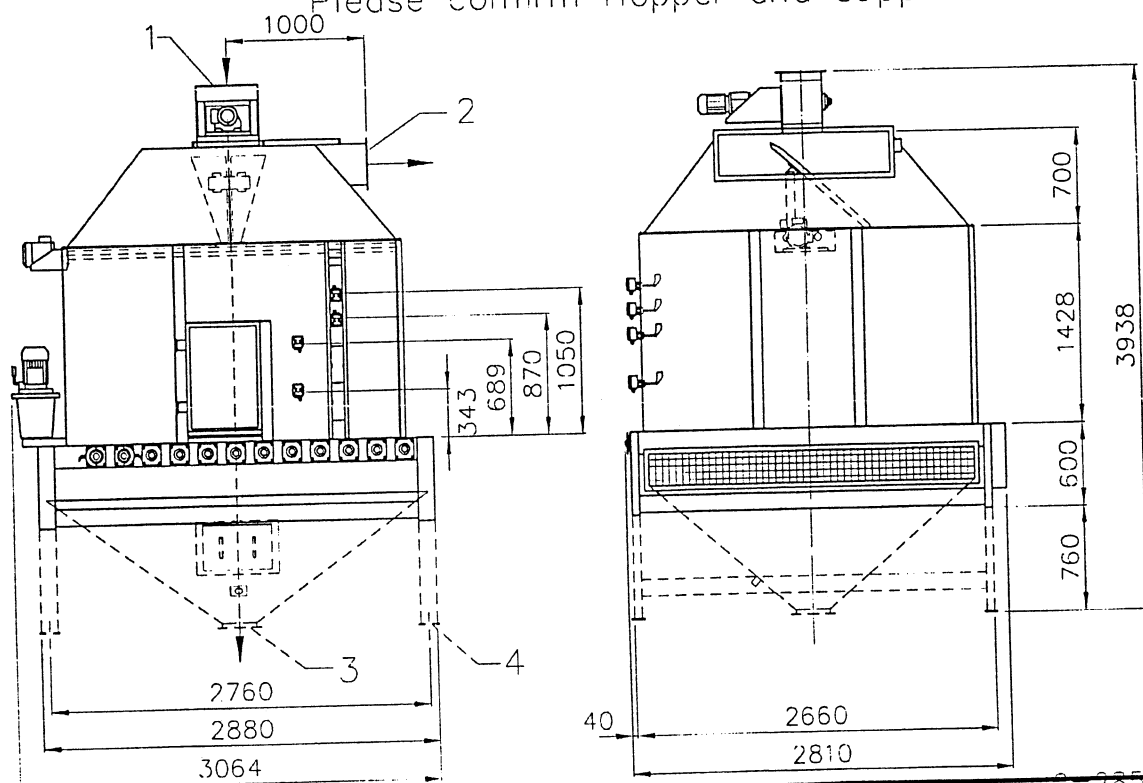
Specification			Units
Product	Animal feed	Animal feed	
Process description	mill>cooler	mill>cooler	
Product size	5/32	3/4	inches
Product density	650	650	kgs/m3
Product capacity incoming	20	12	stph
Product specific heat	1.7	1.7	kJoules/kg/C
Product temp. incoming	85	85	°C
Product moisture incoming	15	15	%
Product moisture outgoing	12-13	12-13	%
Coating before cooler	na		%
Specification of coating	na		
Plant altitude above sea level	<250		m
Pneumatic pressure	>= 115		psig
Power supply	460V-3ph-60hz		V
Control voltage	110VAC		V
Please note, for solenoids of hydraulics we will deliver 24VDC, irrespective of the chosen voltage. Other solenoids are too vulnerable.			
PLC input			
PLC output			
Components suitable for use in explosion risk zone	Not applicable		

Using the above data and assumptions we find the following results by calculation. Please note that data are valid only if the entire system has been designed and built according to our instructions.

Product temperature outgoing	10	10	°F max. above cooling air
Cooling air volume	11000	10500	CFM (approx.)
Pressure loss over cooler	10-11	10-11	WCI (approx.)
Diameter ducting	600	600	mm, min.thickness 2mm



Please confirm Hopper and support details ASAP



Rev.	Date	Description of revision	Sign	Rev.	Date	Description of revision	Sign

Description:

COOLER Type: VK24X24KL  
ENG-2414-0408 / VOR080288

Name : R. Blom

Checked:

Date : 21-04-2008

Scale : 1:50

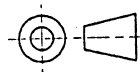
Size : A4

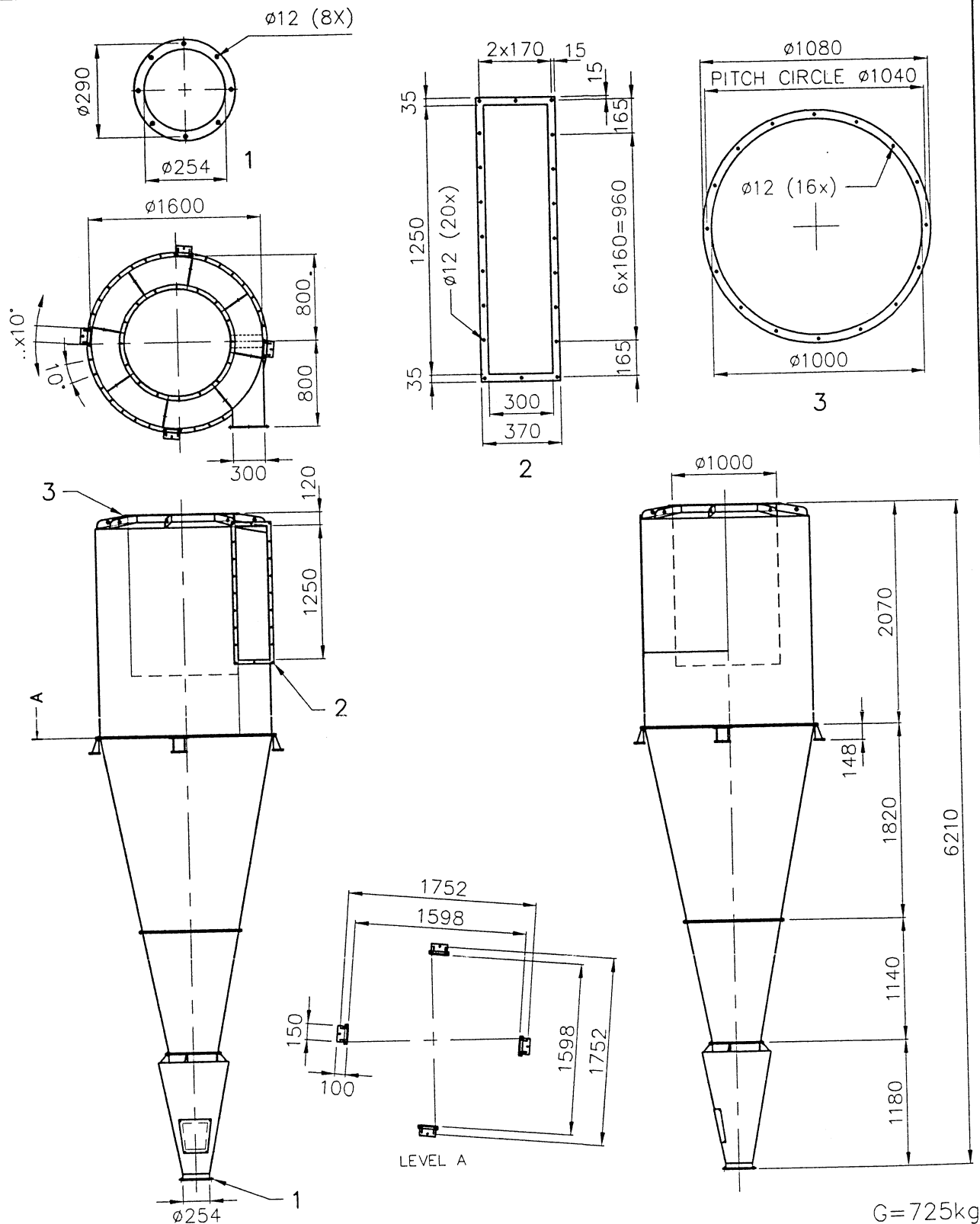
Drq.nr.

K080615

**Geelen Counterflow®**

www.geelencounterflow.com





G=725kg

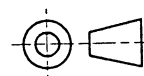
Rev.	Date	Description of revision	Sign	Rev.	Date	Description of revision	Sign
A	16-04-07	Maten cycloontop gewijzigd	MM				
B	17-04-07	Cycloontop gewijzigd	MM				

Description:

**CYCLONE Type: CY1600HE-R**  
CYCLOON / ZYKLON / CÍCLÓN

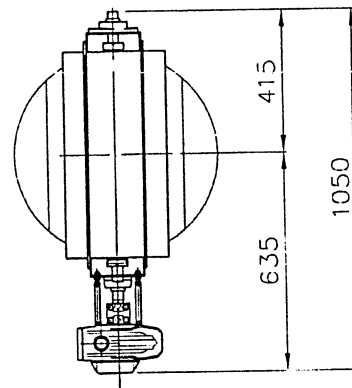
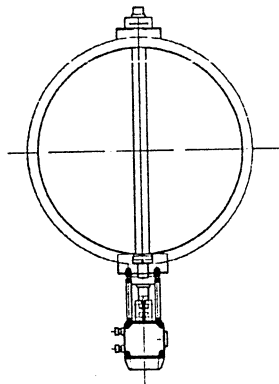
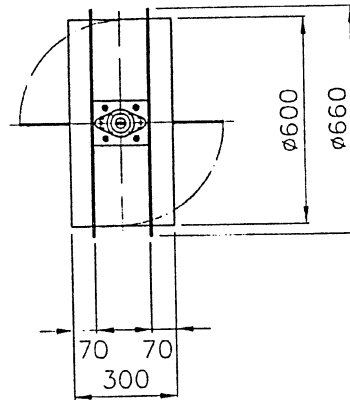
**Geelen Counterflow®**

www.geelencounterflow.com



Name : G.Stijkel  
Checked:  
Date : 07-02-2007  
Scale : 1:50  
Size : A4  
Drg.nr.  
**M223201B**





WEIGHT 46 kg

ALL DIMENSIONS IN mm

Rev.	Date	Description of revision	Sign	Rev.	Date	Description of revision	Sign
A	06-03-96	MOTORAANDRIJVING	P.S.	C	26-03-2001	Handwiel vervallen	JGe
B	17-04-2000	Unic 20 andrijving	JGe	D	19-11-2001	Aanvullende maten	JGe

Description:

**AIR FLOW CONTROL VALVE AFC600**

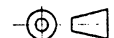
**LUCHTREGELKLEP/LUFTREGELKLAPPE/CLAPET DE MAITRISE D'AIR**

**Geelen Counterflow®**

THE NETHERLANDS

TEL 31-475-592315

FAX 31-475-592767



Name : J. Rongen

Checked:

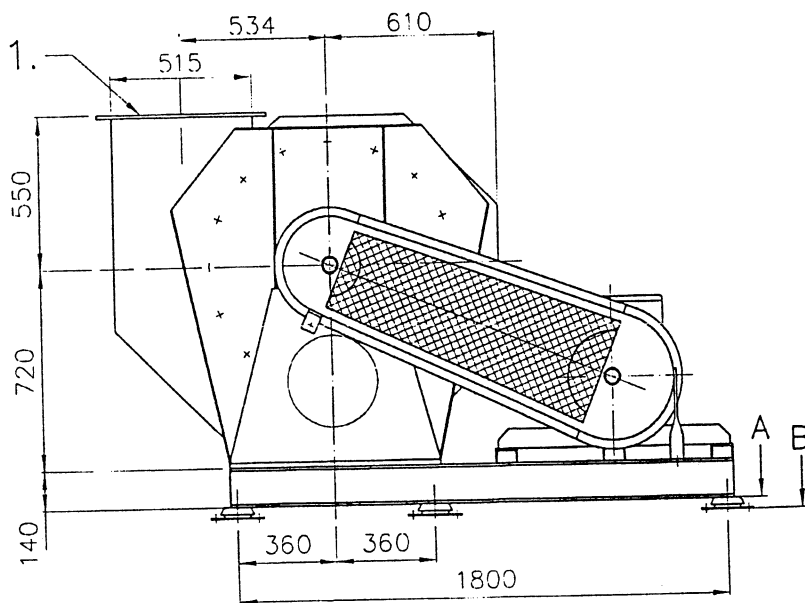
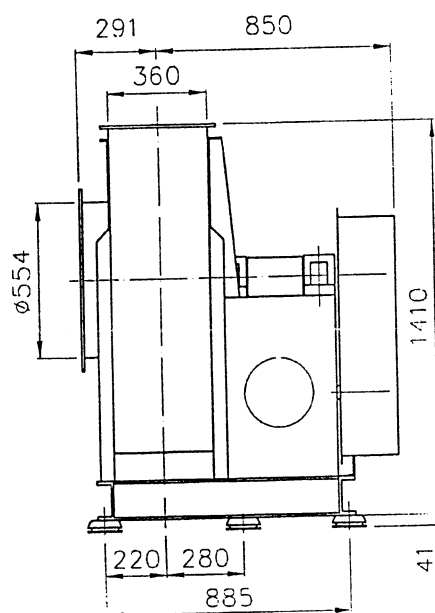
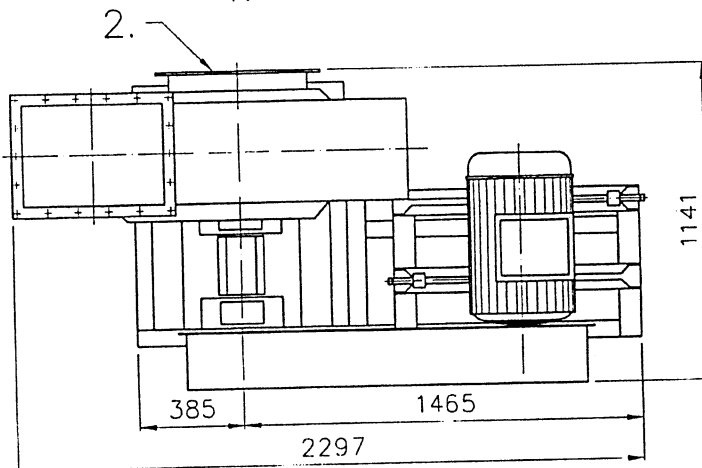
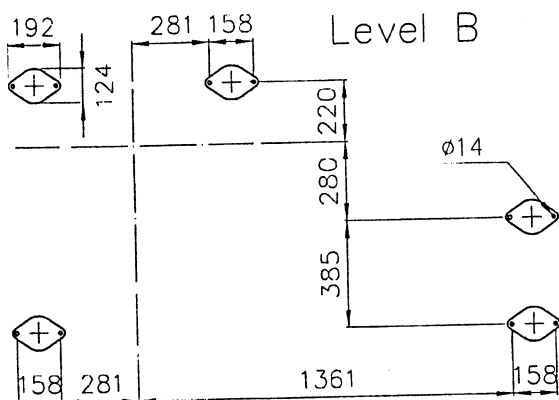
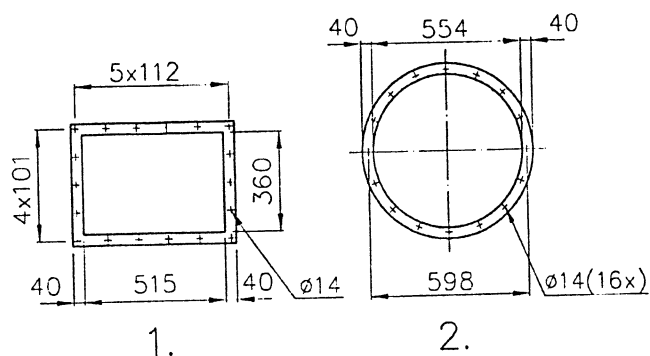
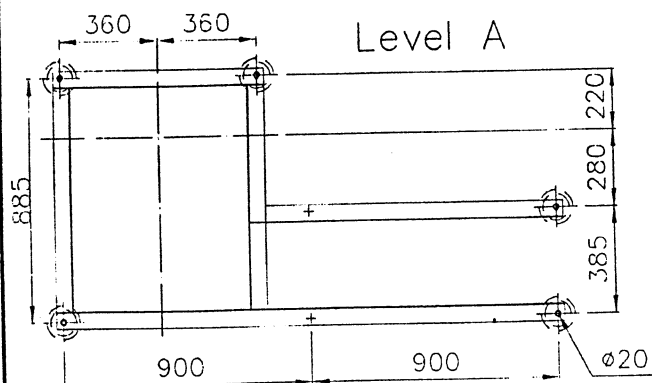
Date : 30-11-1994

Scale : 1:20

Part Nr.:

Drg.nr.

**M230601D**



G=900 kg

Rev	Date	Description of revision	Sign	Rev	Date	Description of revision	Sign
A	21-01-2000	Motorvermogen vervallen + gewicht	JGe				
B	26-06-06	With Dampers block	A.B.				

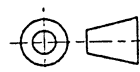
Description:

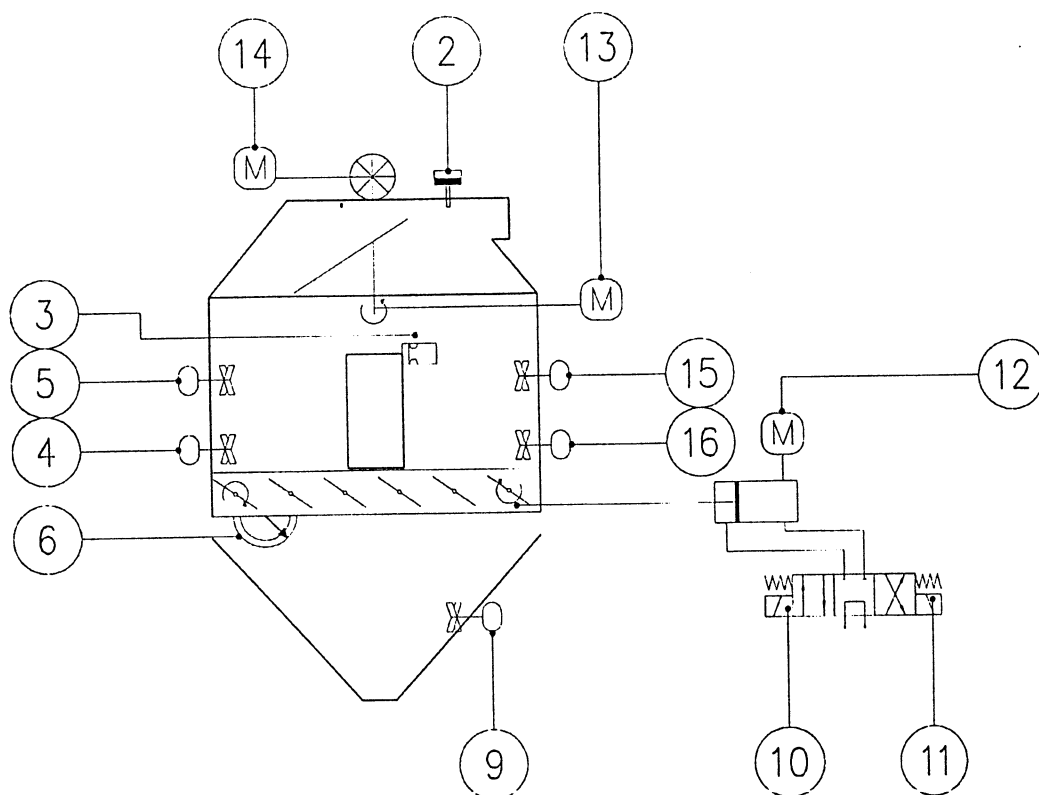
FAN Type: GMB22-2  
EXECUTION: RD-0

Name : J. Rongen  
Checked:  
Date : 08-11-1990  
Scale : 1:25  
Size :  
Drg.nr.  
M241901B

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For electric wiring diagram example  
See drawing:  
M503080B

# INDEX



DOOR SWITCH

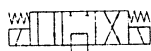


SOLENOID (PNEUMATIC VALVE)



LEVEL SENSOR CAPACITIVE

ANGLE ENCODER



SOLENOID (HYDRAULIC VALVE)



MOTOR



THERMOSTAT



CYLINDER



PT100



LIMIT SWITCH INDUCTIVE



CURRENT TRANSFORMER



ROTARY VALVE



LEVEL SENSOR ROTATING



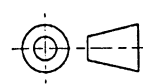
LIMIT SWITCH

Rev	Date	Description of revision	Sign	Rev	Date	Description of revision	Sign

Description:

**ELECTRICAL & INSTRUMENTATION DIAGRAM**  
ENG-2414-0408 / VOR080288

**Geelen Counterflow**  
www.geelencounterflow.com



Name : R. Blom

Checked:

Date : 21-04-2008

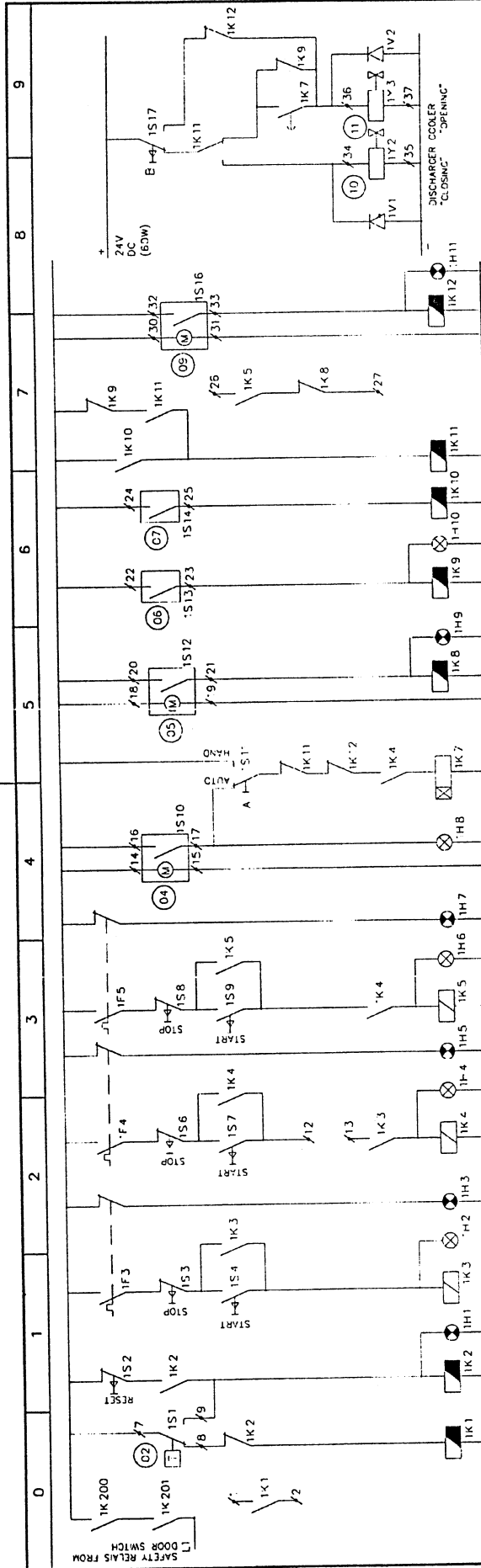
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Size :

Drg.nr.

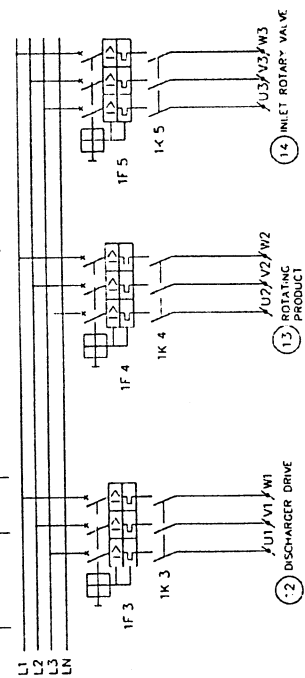
**E080288P1**



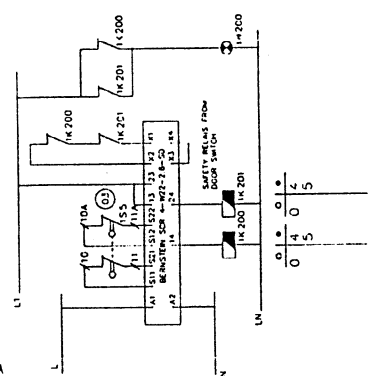


OVERFLOW SENSOR IN HOPPER  
POSITION DISCHARGER "CLOSED" OPEN  
TIME BETWEEN DISCHARGE STROKES  
INLET ROTARY VALVE LEVEL SENSOR  
ROTATING PRODUCT DISTRIBUTOR  
DISCHARGER DRIVE  
FIRE ALARM  
DISCHARGE DRIVE

A: Discharger cooler: AUTOMATIC/MANUAL (Switch)  
B: Discharger cooler: CLEAN OUT (Push button)



EXAMPLE ONLY



For electrical and instrumentation diagram see drawing: M503081B

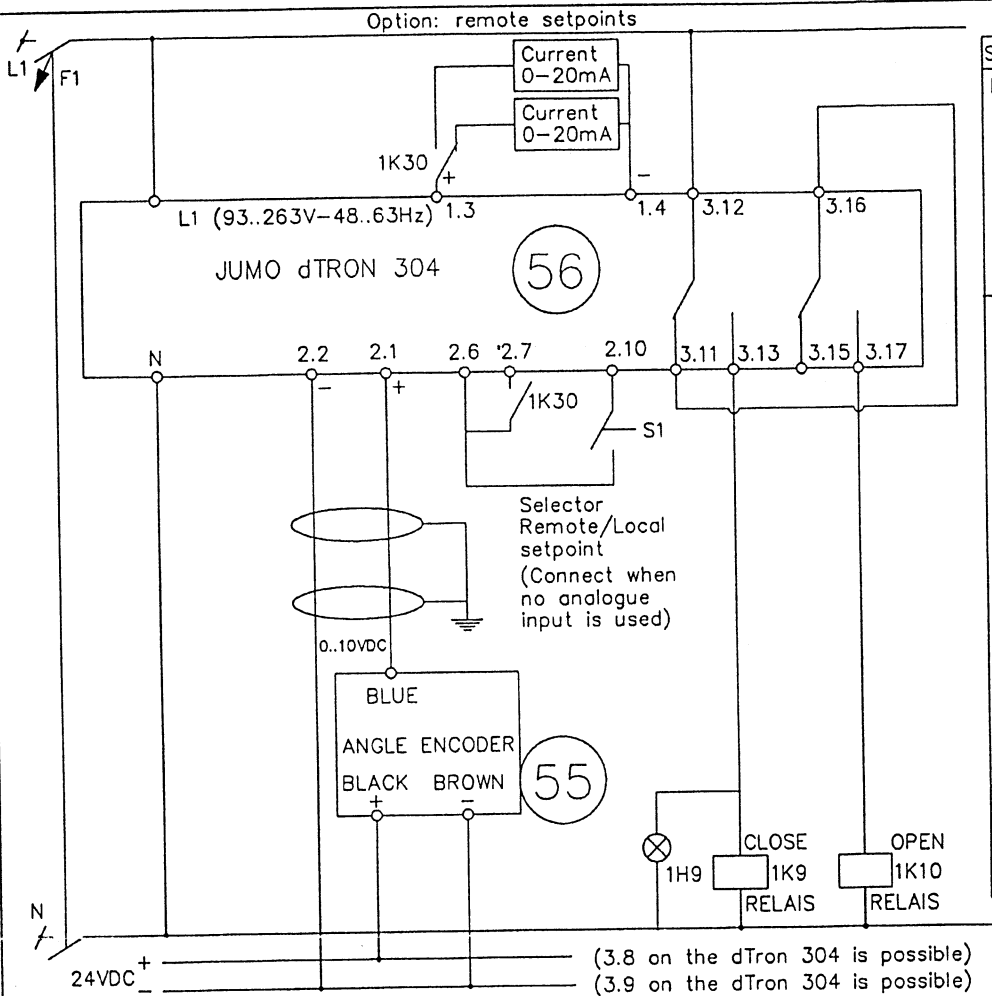
Rev.	Date	Description of revision	Sign.	Rev.	Date	Description of revision	Sign.
A	18-04-96	Signal lamps	P.S.				
B	18-04-96	Ada safety relays door switch	C.B.				

Name: E. W. GUANS	
Checked:	Date: 13-10-1997
Scale:	Fig. nr.
M503080B	

# ELECTRIC WIRING DIAGRAM - EXAMPLE - COUNTERFLOW COOLER VK.X.K.

**Geelen Counterflow**  
Hasselt Holland Tel: 31-475-592315 Fax: 31-475-592787



SETTINGS dTRON 304		
PARAM	Parameters1 Pb1	= 250
	dt	= 0
	rt	= 10
	Cyl	= 20
	Hys.1	= 0
	tt	= 60
	y.0	= 0
	y.1	= 100
	y.2	= -100

CONF		
Inp	INP1 Sens	= 9
	Lin	= 0
	OFFs	= 0
	SCL	= *
	SCH	= **
	df	= 0
	FTS	= 0
	FTE	= 1
	HEAT	= 1
Inp	LN12 Cycl	= 0
LC	LC1 FNCT	= 4
LC	LC2 FNCT	= 3
OUTP	OutL OUT1	= 13
	OUT2	= 14
Bin	f bin1	= 8
	bin2	= 8
Disp	disU	= 8
	disL	= 8

A = 100/(Act.max-Act.min)  
 \* = -Act.min\*A  
 \*\* = A\*(100-Act.min)

EXAMPLE

ONLY

## INSTRUCTIONS

Use example electrical diagram as supplied with the order.  
 Replace limit switches pos6 and pos7 and relais 1K9 and 1K10 with angle encoder.  
 Add 1K30 (24VDC) relais according to schedule.

In Local mode, setpoints 2 and 4 are used  
 Setpoint 2 for close position, setpoint 4 for open position

Rev	Date	Description of revision	Sign	Rev	Date	Description of revision	Sign
B	4.11.06	Changing pos nr. 51 into 56	EW	B	25.01.08	Changing some text	EW
C	3.12.06	Changing Close and Open relais	RR				

Description:

WIRING DIAGRAM – Example –  
 Angle encoder

Geelen Counterflow®

Haalen Holland

Tel : 31-475-592315

Fax: 31-475-592767

Name : E. Wismons

Checked:

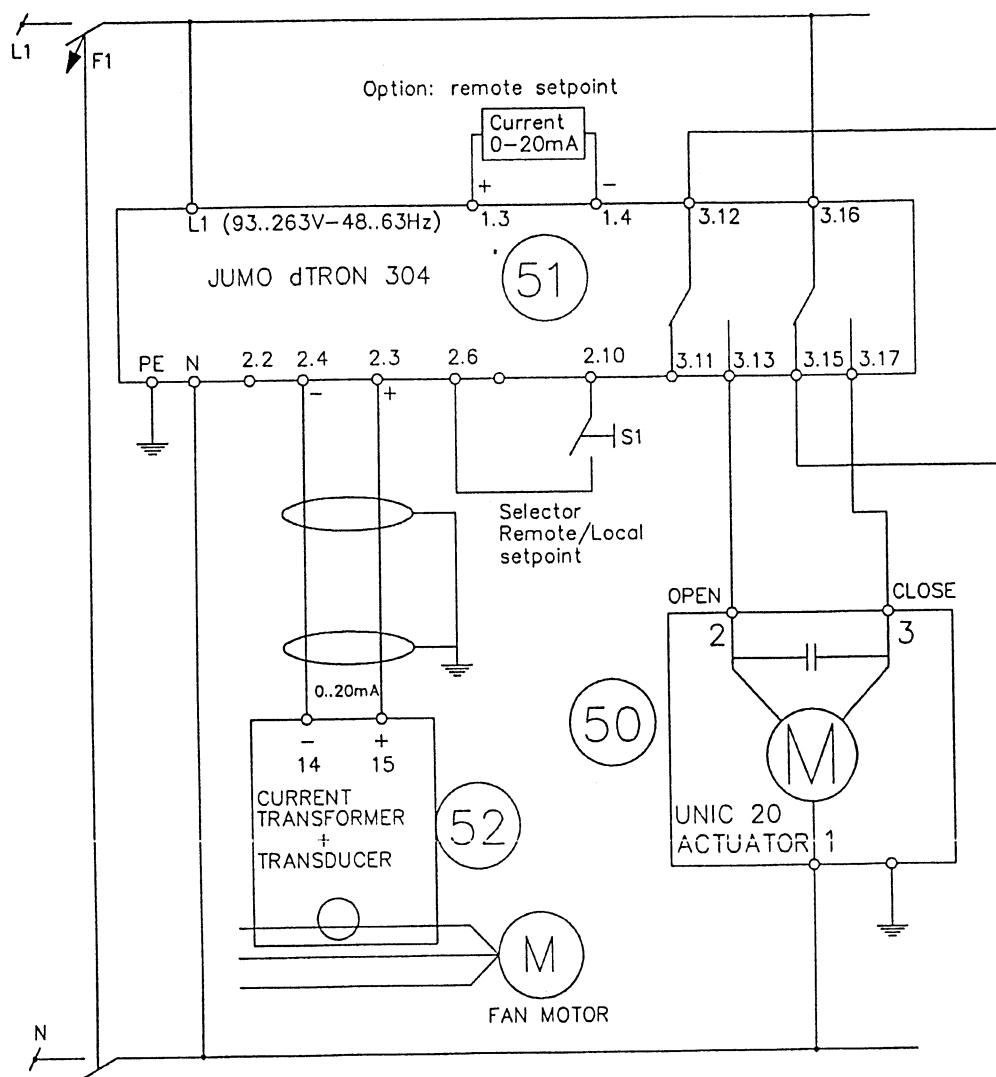
Date : 15-08-06

Scale : -

Part Nr.:

Drg.nr.

M507110D



- |    |                                  |
|----|----------------------------------|
| L1 | POWER SUPPLY                     |
| N  |                                  |
| 1  | CURRENT TRANSFORMER + TRANSDUCER |
| 2  |                                  |
| 3  |                                  |
| 4  | MOTOR AIR FLOW CONTROL VALVE     |
| 5  |                                  |

SETTINGS dTRON 304			
PARA	Pb1	=	250
	dt	=	0
	rt	=	10
	Cyl	=	20
	Hys.1	=	1
	tt	=	60
	y.0	=	0
	y.1	=	100
	y.2	=	-100
CONF	Sens	=	8
	Lin	=	0
	OFFs	=	0
	SCL	=	0
	SCH	=	100
	df	=	0.6
	FTS	=	0
	FTE	=	1
	HEAT	=	1

Rev.	Date	Description of revision	Sign	Rev.	Date	Description of revision	Sign
E	08-08-06	Parameters adjusted	EW	C	13-12-2005	Changed to Dtron 304	EW
F	17-10-2006	Adding remote setpoint	EW	D	10-07-2006	Changed for Dtron 304	PK

Description:

WIRING DIAGRAM – Example –  
AIR FLOW CONTROL VALVE AFC...

Name : P. Sillen

Checked:

Date : 09-12-1998

Scale : -

Part Nr.:

Org.nr.

M507010F

**Geelen Counterflow®**

THE NETHERLANDS

TEL 31-475-592315

FAX 31-475-592767

## Attachment D - Monthly Cooler Fan Inspections

**Land O Lakes Purina Feed, LLC**  
 890 N. Prairie Industrial Pkwy  
 Mulberry, Florida 33860  
 Phone(863) 425-5544  
 Fax: (863) 425-3484

# Work Order

3406

Unit Name: Pellet #1 - Cooler Fan  
 Number: 087  
 Make: Geelen  
 Model: GMB22-2 RD-90  
 Employee: Travis Bagley  
 Work Group:  
 Hub / Count: \_\_\_\_\_

Site: Mulberry  
 Location: Mill  
 Scheduled: 03/17/2009  
 Completed: \_\_\_\_\_

Labor:
Parts:
Other:
Taxes:
Total:

Services	Complete	Service	Labor Time	Cost Each	Extended Cost
	<input checked="" type="checkbox"/>	Cooler Fan	_____	_____	_____

## MONTHLY

Pass - Fail

- ( ) ( ) Grease both of the bearings on the drive shaft.  
 Six to eight pumps of grease from the grease gun.  
 If grease emits from the bearing seals stop greasing the bearing.
- ( ) ( ) Check fan for vibration.  
 Notable vibration is when body parts are uncomfortable when standing next to the fan or when you place your hand on the fan frame vibration is obviously noticeable.
- ( ) ( ) Check drive belt for wear or cracks.  
 Excessive wear is where the belt is bottoming out in the pulley.
- ( ) ( ) Check condition of the guards.  
 Note if there are any signs of metal fatigue, cracks, missing or lose bolts and attachment points.
- ( ) ( ) Check any visual emissions emitting from the fan discharge..... i.e. dust.  
 If there is contact production to shut the system down until the problem is found and it's corrected.
- ( ) ( ) Check the conduits and sealtights for any breaks or cracking.  
 Due to exposure to the elements there could be cracks in the sealtight.

If any of the items list above is checked in the "Failed" section note in detail your observations to be addressed by your supervisor for corrective action.

Comments or other observations:

Parts Used	Number	Part Description	Quantity	Cost Each	Extended Cost

Complete - No Issues

Note: Please write in additional work performed. List all parts used. Please note an explanation of any work not performed. Sign and date.

Employee Signature \_\_\_\_\_

Date Completed \_\_\_\_\_

**Land O Lakes Purina Feed, LLC**  
 890 N. Prairie Industrial Pkwy  
 Mulberry, Florida 33860  
 Phone(863) 425-5544  
 Fax: (863) 425-3484

# Work Order

3411

Unit Name: Pellet #2 - Cooler Fan

Number: 102

Make: MAC

Model:

Employee: Travis Bagley

Work Group:

Hub / Count: \_\_\_\_\_

Site: Mulberry

Location: Mill

Scheduled: 03/24/2009

Completed: \_\_\_\_\_

Labor:

Parts:

Other:

Taxes:

Total:

Services	Complete	Service	Labor Time	Cost Each	Extended Cost
	<input checked="" type="checkbox"/>	Cooler Fan	_____	_____	_____

## MONTHLY

Pass Fail

- ( ) ( ) Grease both of the bearings on the drive shaft.  
 Six to eight pumps of grease from the grease gun.  
 If grease emits from the bearing seals stop greasing the bearing.
- ( ) ( ) Check fan for vibration.  
 Notable vibration is when body parts are uncomfortable when standing next to the fan or when you place  
 your hand on the fan frame vibration is obviously noticeable.
- ( ) ( ) Check drive belt for wear or cracks.  
 Excessive wear is where the belt is bottoming out in the pulley.
- ( ) ( ) Check condition of the guards.  
 Note if there are any signs of metal fatigue, cracks, missing or lose bolts and attachment points.
- ( ) ( ) Check any visual emissions emitting from the fan discharge..... i.e. dust.  
 If there is contact production to shut the system down until the problem is found and it's corrected.
- ( ) ( ) Check the conduits and sealtights for any breaks or cracking.  
 Due to exposure to the elements there could be cracks in the sealtight.

If any of the items list above is checked in the "Failed" section note in detail your observations to be addressed by your supervisor for corrective action.

Comments or other observations:

Parts Used	Number	Part Description	Quantity	Cost Each	Extended Cost
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Complete - No Issues

Note: Please write in additional work performed. List all parts used. Please note an explanation of any work not performed. Sign and date.

Employee Signature \_\_\_\_\_

Date Completed \_\_\_\_\_

Attachment E - Preventive Maintenance Work Order for Pellet Mill #1

**Land O Lakes Purina Feed, LLC**  
 890 N. Prairie Industrial Pkwy  
 Mulberry, Florida 33860  
 Phone(863) 425-5544  
 Fax: (863) 425-3484

# Work Order

3365

Unit Name: Pellet #1 - Fines Conveyor  
 Number: 088  
 Make:  
 Model: 9" RH  
 Employee: Travis Bagley  
 Work Group:  
 Hub / Count: \_\_\_\_\_

Site: Mulberry  
 Location: Mill  
 Scheduled: 03/20/2009  
 Completed: \_\_\_\_\_

Labor:
Parts:
Other:
Taxes:
Total:

Services	Complete	Service	Labor Time	Cost Each	Extended Cost
	<input checked="" type="checkbox"/>	Screw Conveyor	_____	_____	_____

Pass Fail

- ( ) ( ) Lockout drive.
- ( ) ( ) Check drive belt condition.
- ( ) ( ) Check and grease all bearings.
- ( ) ( ) Check the oil in the drive and condition of the drive mounts.
- ( ) ( ) Check condition of guards.
- ( ) ( ) Check hanger bearing for wear.
- ( ) ( ) Check for dust leaks or worn trough.
- ( ) ( ) Check and record any damages.
- ( ) ( ) Check for any broken conduits or sealtight.

Comments or other observations:

Parts Used	Number	Part Description	Quantity	Cost Each	Extended Cost

Complete - No Issues

Note: Please write in additional work performed. List all parts used. Please note an explanation of any work not performed. Sign and date.

Employee Signature \_\_\_\_\_

Date Completed \_\_\_\_\_



Land O' Lakes Purina Feed, LLC  
PREVENTIVE MAINTENANCE WORK ORDER

02/07/08

\*\*\*\*\*

Work Order No: \_\_\_\_\_  
WO Description: PM FINES CONVEYOR  
Repair Code: Preventive Maintenance  
EntryDate: \_\_\_\_\_  
Recurrence: Annual Offset Month: 1

"E"

\*\*\*\*\*

Equipment No: 088 Manufacturer:  
Description: PEL 1 FINES CONVEYOR Model:  
Unit No: 3 Serial No:  
Location: CHOW WAREHOUSE

\*\*\*\*\*

Priority: 3  
Est Labor Hours: 0.50  
Est Completion: \_\_\_\_\_  
Remarks: CHECK GEARBOX OIL LEVEL.

\*\*\*\*\*

LeadWorker: _____	Skill 1: CLASS C MAINTENANCE
Worker 1: _____	Skill 2: _____
Worker 2: _____	Skill 3: _____
Worker 3: _____	Skill 4: _____
Worker 4: _____	Skill 5: _____

\*\*\*\*\*

Completion Date: \_\_\_\_\_ Approved By: \_\_\_\_\_

Repair Description: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Skill 1: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 2: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 3: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 4: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Inventory Items Used: \_\_\_\_\_

\_\_\_\_\_

Parts Cost: \_\_\_\_\_ Contract Cost: \_\_\_\_\_

Labor Cost: \_\_\_\_\_ Other Cost: \_\_\_\_\_

Hour meter/(Odometer): \_\_\_\_\_

\*\*\*\*\*

**Attachment F - Preventive Maintenance Work Order for Pellet Mill #2**

**Land O Lakes Purina Feed, LLC**  
 890 N. Prairie Industrial Pkwy  
 Mulberry, Florida 33860  
 Phone(863) 425-5544  
 Fax: (863) 425-3484

# Work Order

3309

Unit Name: Pellet #2 - Fines Conveyor  
 Number: 103  
 Make:  
 Model: 9" RH  
 Employee: Pete Perison  
 Work Group:  
 Hub / Count: \_\_\_\_\_

Site: Mulberry  
 Location: Mill  
 Scheduled: 03/11/2009  
 Completed: \_\_\_\_\_

Labor:
Parts:
Other:
Taxes:
Total:

Services	Complete	Service	Labor Time	Cost Each	Extended Cost
	<input checked="" type="checkbox"/>	Screw Conveyor	_____	_____	_____

Pass Fail

- ( ) ( ) Lockout drive.
- ( ) ( ) Check drive belt condition.
- ( ) ( ) Check and grease all bearings.
- ( ) ( ) Check the oil in the drive and condition of the drive mounts.
- ( ) ( ) Check condition of guards.
- ( ) ( ) Check hanger bearing for wear.
- ( ) ( ) Check for dust leaks or worn trough.
- ( ) ( ) Check and record any damages.
- ( ) ( ) Check for any broken conduits or sealtight.

Comments or other observations:

Parts Used	Number	Part Description	Quantity	Cost Each	Extended Cost

Complete - No Issues

Note: Please write in additional work performed. List all parts used. Please note an explanation of any work not performed. Sign and date.

\_\_\_\_\_  
 Employee Signature

\_\_\_\_\_  
 Date Completed

Land O' Lakes Purina Feed, LLC  
PREVENTIVE MAINTENANCE WORK ORDER

02/07/08

\*\*\*\*\*

Work Order No: \_\_\_\_\_  
WO Description: PM FINES CONVEYOR  
Repair Code: Preventive Maintenance  
EntryDate: \_\_\_\_\_  
Recurrence: Annual                      Offset Month: 1

" F "

\*\*\*\*\*

Equipment No: 103                      Manufacturer:  
Description: PEL 2 FINES CONVEYOR                      Model:  
Unit No: 8                      Serial No:  
Location: CHOW WAREHOUSE

\*\*\*\*\*

Priority: 3  
Est Labor Hours: 0.50  
Est Completion: \_\_\_\_\_  
Remarks: CHECK GEARBOX OIL LEVEL.

\*\*\*\*\*

LeadWorker: _____	Skill 1: CLASS C MAINTENANCE
Worker 1: _____	Skill 2: _____
Worker 2: _____	Skill 3: _____
Worker 3: _____	Skill 4: _____
Worker 4: _____	Skill 5: _____

\*\*\*\*\*

Completion Date: \_\_\_\_\_ Approved By: \_\_\_\_\_

Repair Description: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Skill 1: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 2: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 3: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 4: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Inventory Items Used: \_\_\_\_\_

\_\_\_\_\_

Parts Cost: \_\_\_\_\_ Contract Cost: \_\_\_\_\_

Labor Cost: \_\_\_\_\_ Other Cost: \_\_\_\_\_

Hour meter/(Odometer): \_\_\_\_\_

\*\*\*\*\*

## Attachment G - Task Calendar

Steve Furst (Feed) Change PW LOG OUT

" 6 "

HOME POLICIES &amp; PROCEDURES HEALTH &amp; SAFETY ENVIRONMENTAL TRAIN THE TRAINER FACILITIES

Mulberry | Greg Middleton | Eastern - Greg Middleton | Feed | Land O'Lakes Purina Feed LLC - Mulberry

Land O'Lakes Purina Feed LLC - Mulberry Mulberry FL

Select	Info	Contacts	Codes	Calendar	Audits	Surveys	Permits	Metrics	Scorecard
--------	------	----------	-------	----------	--------	---------	---------	---------	-----------

## Update a Calendar Task

Back

Created By Steve Furst on 2/12/2007

Task Due Date 4/9/2007 (If this is a recurring event, then enter the initial due date)

Task Type Facility

Task Name Inspect and Clean #2 PM Cyclones

Display Name #2 PM Cyclone (15 characters max)

Required By M. Couture

Description Due to high levels of soy oil on products and the design on the new cyclones inspection is required and cleaning may be required to keep the units efficient and to prevent any discharges.

Email 3 days notice (Leave blank for none; A value of zero will send email on due date)

The email reminder will be sent to the facility EHS contact(s)

Don Anders (DAAnders@landolakes.com)

Mike Couture (MCouture@landolakes.com)

Steve Furst (SAFurst@landolakes.com)

Jim Jarboe (JEarboe@landolakes.com)

Laura Krimmel (lkrimmel@landolakes.com)

Jeffery Young (jyoung@landolakes.com)

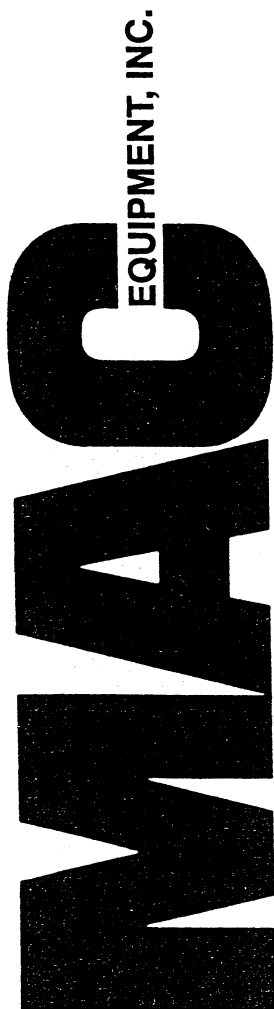
Frequency ☐ One time only☐ Weekly☒ Monthly Repeat every month End Date (optional) 4/9/2017☐ Yearly

Assigned To Land O'Lakes Purina Feed LLC - Mulberry

Cancel

Save Changes

Attachment H - Efficiency Rating and Specifications of MAC Model 72AVR14  
baghouse



POST OFFICE BOX 205  
HIGHWAY 75 SOUTH  
SABETHA, KANSAS 66534  
800-223-2191  
or in Ks. Call Collect  
913-284-2191  
FAX 913-284-3565



"H"

March 16, 1992

Mr. Paul Luther  
Purina Mills, Inc.  
P.O. 66812  
St. Louis, MO 63166-6812

Dear Mr. Luther:

This letter is to confirm to you that as a general statement, emissions from the baghouses which we have supplied to you will not exceed .02 grains of dry solid particulate matter per dry standard cu. ft. of air (45 mil. per meter cu.). If a firm guarantee or information on improved efficiencies is necessary, we would require material for testing at our Sabetha test lab.

Paul, if there are any other pieces of information that you need, please contact either me or Dave O'Brien of T.L. Maddox.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Matt".

Matt Birzer, P.E.  
Sales Engineer

MB/eh/Purina.ltr

cc: Dave O'Brien, T.L. Maddox Company



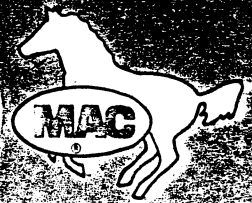
# 2

## SECTION

**DATA SHEET**  
**AVR RECEIVER**  
 Effective 12-1-87  
 Supersedes 3-30-87

# MAC

P.O. Box 205 • Sabetha, Kansas 66534 • Toll Free 1-800-223-2191  
 or in Kansas Call Collect 913-284-2191  
 FAX 913-284-3565



## AVR PNEUMATIC RECEIVER

### MAC MODEL AVR PNEUMATIC RECEIVERS STANDARD SPECIFICATIONS

#### Materials of Construction

Top (17" Hg.): AVR7 - 10 ga.; AVR14 - 7 ga.; AVR21 thru AVR39 - 1/4" P1.  
 Cylinder (17" Hg.): AVR7 & AVR14 - 10 ga.; AVR21 thru AVR39 - 7 ga.  
 Hopper (17' Hg.): 10 ga.  
 Full welded exterior & skip welded interior  
 Housing flanges bar 2 x 1/4  
 Hoppers interior weld ground smooth

#### Arrangement

Service door & header at 3:00  
 Exhaust at 9:00  
 Tangential inlet tangent at 6:00  
 Receivers 32 bag and larger  
 —Mount pads at 1:30, 4:30, 7:30 & 10:30  
 Receivers smaller than 32 bag  
 —Mount pads at 12:00, 3:00, 6:00 & 9:00  
 Hopper can be rotated

#### Major Components

Timing board enclosure: NEMA 12  
 Venturi nozzle and bag cups: Mineral reinforced nylon  
 Bag Cages: Galvanized carbon steel  
 Bags: 12 oz. singed, polyester dacron  
 Bag Cup Caulk: G.E. #1200 silicone  
 Lifting Lugs: Two on top plenum

#### Service door:

—18" long bags: 18" x 17" tall, bolted manhole  
 —Bags longer than 18": 18" wide, hinged (to left side) service door

Inlet: Note flange and size must be specified

Exhaust: Flanged and sized per drawing D00087.

Discharge: Flanged and sized per drawing D00087.

Pressure differential gauge kit

60 degree hopper flanged to housing

#### Painting

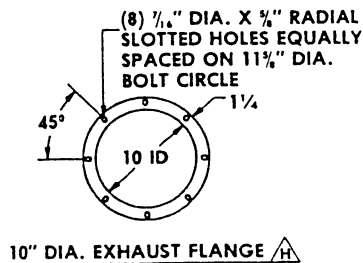
Standard cleaning and metal preparation

Interior and exterior primed with one coat 32x29 gray primer

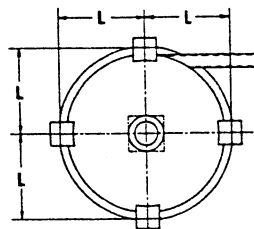
Exterior to have one finish coat

Color to be specified

Standard colors are MAC green, blue and white

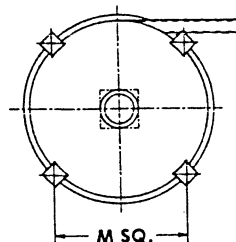


10" DIA. EXHAUST FLANGE  $\Delta$



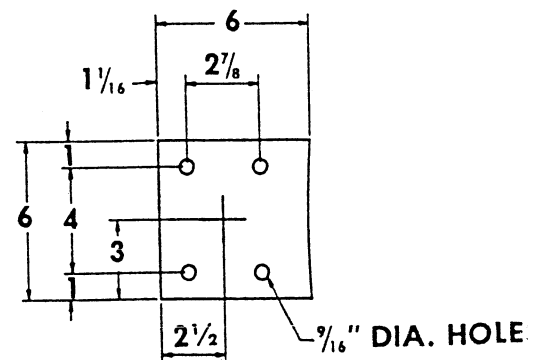
VIEW A-A  
 AVR21 AND SMALLER

AVR	7	14	21
L	15 1/4	22	25 1/4

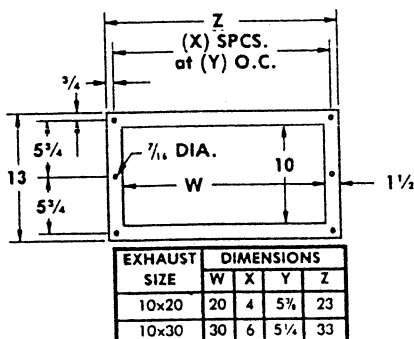


VIEW A-A  
 AVR32 AND LARGER

AVR	32	39	52
M	45%	49%	53%



MOUNT PAD DETAIL



EXHAUST SIZE	W	X	Y	Z
10x20	20	4	5 1/4	23
10x30	30	6	5 1/4	33

RECTANGULAR EXHAUST FLANGE DETAIL



# IAC

## PNEUMATIC

### MAC EQUIPMENT AIR QUALITY ASSURANCE

Based on 2 micron and larger dust particles, MAC Equipment guarantees their baghouse (fabric filters) when properly applied and maintained, to have a 99.9% or better mass efficiency rating on the dust laden incoming gas stream. As a general statement, emissions will not exceed .02 grains of dry solid particulate matter per dry standard cubic foot of air (45 mg/m<sup>3</sup>).

Jack Clements  
Chief Engineer

Attachment I - Preventive Maintenance Work Order for MAC Model 72AVR14  
baghouse

Land O' Lakes Purina Feed, LLC  
PREVENTIVE MAINTENANCE WORK ORDER

02/07/08

\*\*\*\*\*

Work Order No: \_\_\_\_\_  
WO Description: PM MIN UNLOAD SOCKS  
Repair Code: Preventive Maintenance  
EntryDate: \_\_\_\_\_  
Recurrence: Monthly

" I "

\*\*\*\*\*

Equipment No: 330 Manufacturer: MAC  
Description: MIN UNLOAD BAGHOUSE Model: 72RT14 III  
Unit No: 0 Serial No: 91-AVRT-08-005  
Location: MILL BUILDING

\*\*\*\*\*

Priority: 3  
Est Labor Hours: 1.00  
Est Completion: \_\_\_\_\_  
Remarks: OPEN TOP AND CHECK FOR PROPER SOCK SEATING.  
CLEAN AROUND SOCK TOP LEVEL IF NEEDED.  
TEST BINDICATOR IN CYCLONE.

\*\*\*\*\*

LeadWorker: _____	Skill 1: _____
Worker 1: _____	Skill 2: _____
Worker 2: _____	Skill 3: _____
Worker 3: _____	Skill 4: _____
Worker 4: _____	Skill 5: _____

\*\*\*\*\*

Completion Date: \_\_\_\_\_ Approved By: \_\_\_\_\_

Repair Description: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Skill 1: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 2: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 3: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Skill 4: \_\_\_\_\_ Hours Worked: \_\_\_\_\_

Inventory Items Used: \_\_\_\_\_

\_\_\_\_\_

Parts Cost: \_\_\_\_\_ Contract Cost: \_\_\_\_\_

Labor Cost: \_\_\_\_\_ Other Cost: \_\_\_\_\_

Hour meter/(Odometer): \_\_\_\_\_

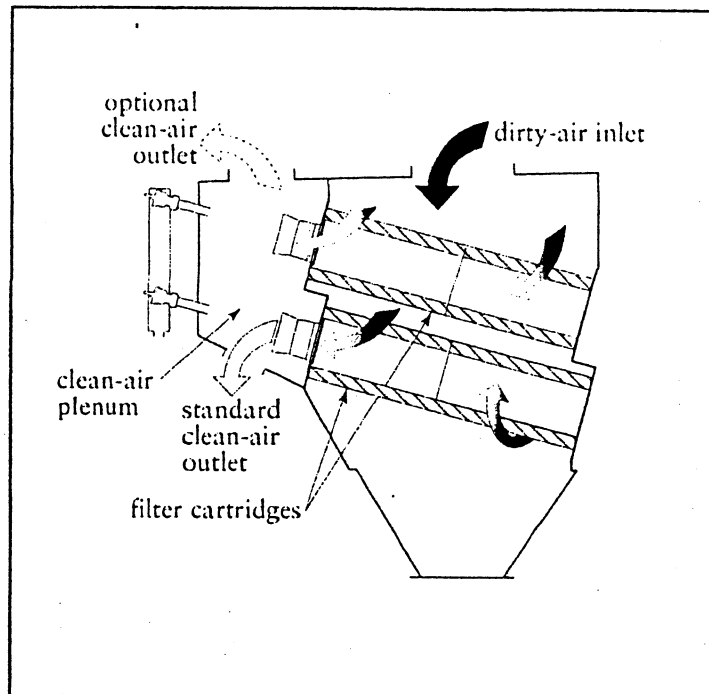
\*\*\*\*\*

Attachment J - Efficiency Rating and Specifications of Torit/Day Model DF03-12 dust collector

# Downflo® Oval 1™

## Sizes & Operations

Normal Operations For Models 2-4 Through 4-128



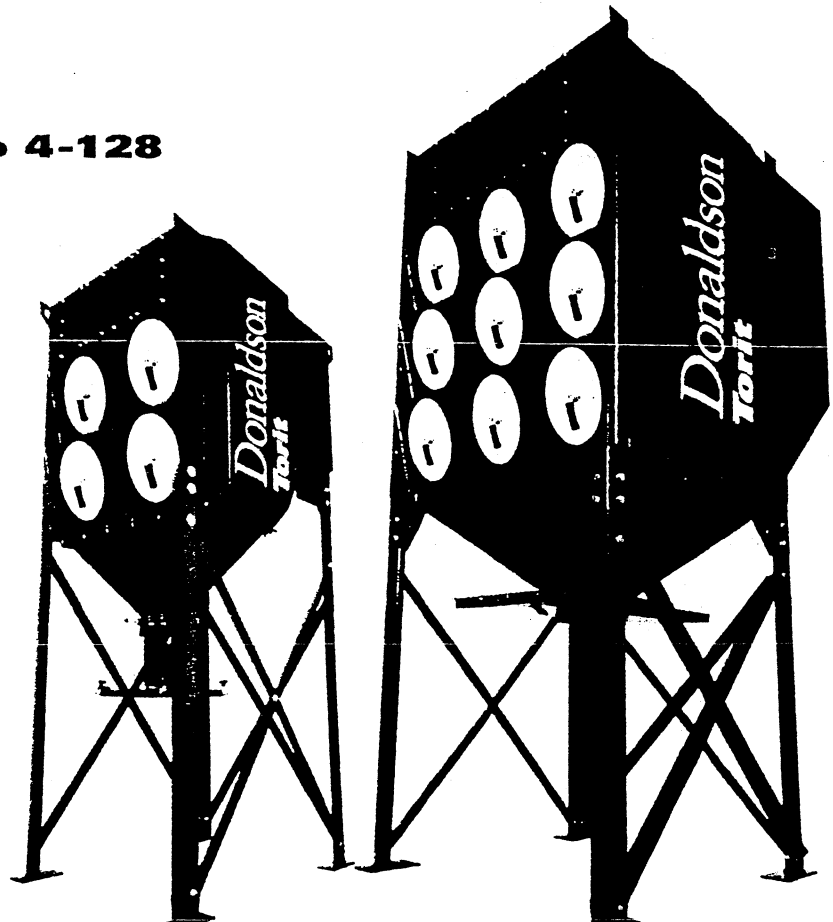
### DFO Models 2-4 to 4-128

23 standard model sizes

Customized sizes available

Many options and accessories

Exceptionally compact design



*Dust Collectors  
Available*

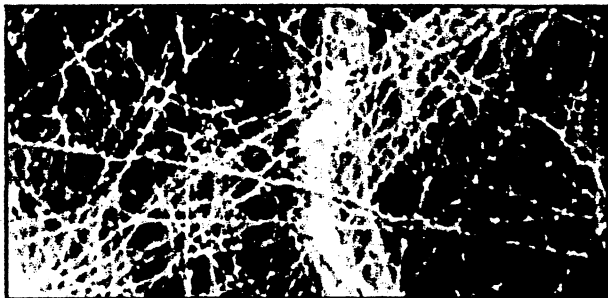
# Downflo® Oval 1™

## DFO Technology Unfolds

*The Remarkable Story of DFO  
Began with the Oval Cartridge Filter Itself*

**Ultra-Web® Nanofiber Media** A dramatic departure from traditional circular-shaped cartridge filters, DFO's oval-shaped filters, in conjunction with our patented nanofiber filter media, trap more dust on the surface of the filter than conventional commodity types of filter media such as depth-loading cellulose, polyester or cellulose/polyester blend.

ULTRA-WEB FILTER MEDIA (600X)



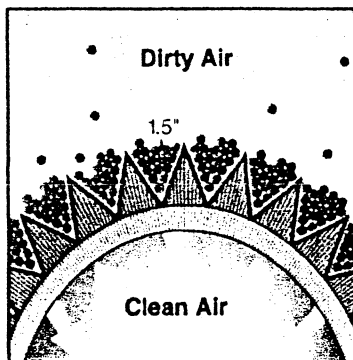
COMMODITY FILTER MEDIA (600X)



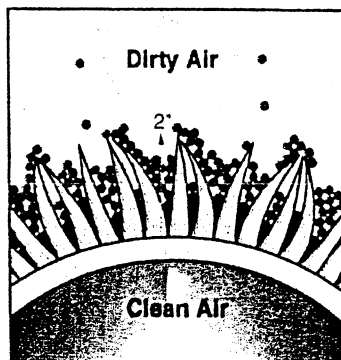
*The Innovation Continued with  
DFO's Shorter, Stiffer Filter Pleats*

**DFO Filter Media Pleats** Shorter and stiffer filter pleats help minimize dust entrapment and simplify filter cleaning. By reducing the height of the filter pleats from the standard 2 inches to 1.5 inches, the pleat wall is less likely to collapse or bend, which can encapsulate dust and prevent its expulsion.

DOWNFLO OVAL 1 FILTER



STANDARD FILTER





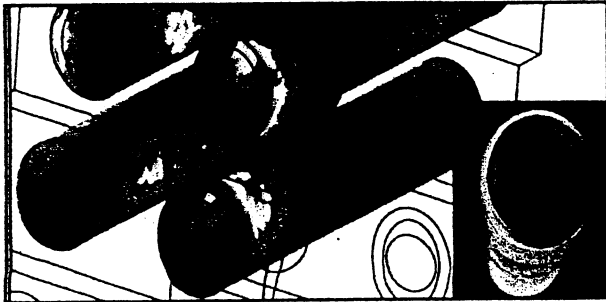
# Downflo® Oval 1™

**More Airflow, Less Filter Media**

*New Oval Shape  
Contributed to Higher Airflow Capacity*

**High Performance Filters** The Downflo Oval filter design is a reflection of Donaldson Torit's commitment to technical research and development. Oval-shaped filters handle up to 25 percent more airflow without increasing velocities, which can cause filter abrasion. Sophisticated Fluent® airflow modeling software revealed that oval-shaped cartridge filters have fewer areas of high velocity, resulting in a lower potential for media abrasion and increased filter life.

**DOWNFLO OVAL 1 COLLECTOR: 9145 cfm**



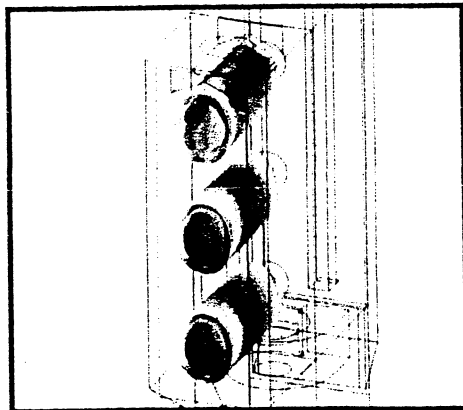
**STANDARD COLLECTOR: 7315 cfm**



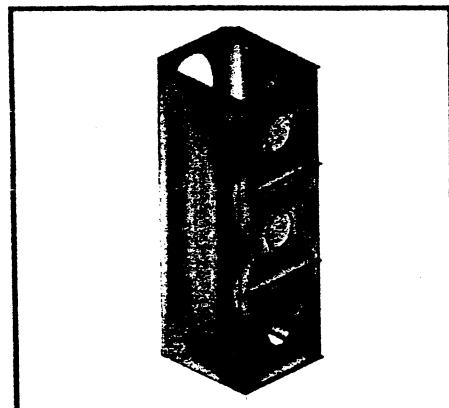
*Airflow Breakthroughs Lead To  
A New Chapter In Filtration Performance*

**Sophisticated Modeling** Computer modeling for fluid dynamics, structural mechanics and acoustics puts DFO models 1-1, 2-2, and 3-3 in a technical class all their own. The illustration below (left) shows how Fluent Flow Modeling Software enhanced the uniform air velocity distribution through model DFO 3-3. ANSYS® Structure Analysis Software shown below (right) demonstrates lowest stress levels and deflections for model DFO 3-3 under typical operating pressures.

**DFO 3-3 AIR VELOCITY DISTRIBUTION**



**DFO 3-3 STRESS & DEFLECTIONS MODEL**



# Downflo® Oval 1™

## DFO Cartridge Filters

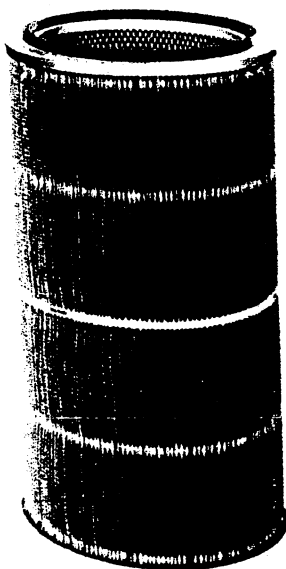
DFO dust collectors' patented downward airflow design delivers highest filtration efficiency while using less energy. The DFO collector, patented ExtraLife filter cleaning and Donaldson Torit's unique oval-shaped filter cartridges are an unbeatable system. Choose from our superior line of filters to complete the most powerful dust collection solution available.

**Ultra-Web®** Featuring patented nanofiber technology, Ultra-Web cartridges provide unequaled filtration efficiency of 99.999% on 0.5 micron particles. This advanced surface filtration technology ensures longest filter life and lowest operating pressure drop in a full range of cartridges:

- Ultra-Web

- Ultra-Web FR (flame retardant)

- Ultra-Web NL (a "no-liner," banded construction for enhanced dust release on statically charged dust)



**Fibra-Web®** Featuring patented nanofiber technology, the Fibra-Web filter features an open washable design for easy cleaning in both fibrous and non-fibrous (agglomerative) applications. A proprietary blend of synthetic fibers in the base media and even wider pleat spacing provide filtration efficiency of 99.999% on 0.5 micron particles in two cartridge choices:

- Fibra-Web

- Fibra-Web FR (flame retardant)

# Downflo® Oval

11

## Dimensions & Specifications

Model*	Nominal Airflow Range**	No. of Filters	Ultra-Web Filter Area (ft²)	No. of Valves	Shipping Weight (lbs)	Dimensions (Inches)		
						A	B	C
DFO 1 - 1	100-800	1	190	1	774	25.0	52.0	65.0
2 - 2	200-1,600	2	380	2	974	25.0	74.0	65.0
3 - 3	300-2,400	3	570	3	1,274	25.0	96.0	65.0
DFO 2 - 4	380-3,190	4	760	4	1,125	45.0	110.8	62.0
2 - 8	760-6,380	8	1,520	4	1,570	45.0	127.8	84.0
2 - 12	1,140-9,580	12	2,280	6	2,110	65.0	127.8	84.0
2 - 16	1,520-12,770	16	3,040	8	3,140	85.0	127.8	84.0
2 - 24	2,280-19,150	24	4,560	12	4,220	125.0	127.8	84.0
2 - 36	3,420-28,730	36	6,840	18	6,330	185.0	127.8	84.0
DFO 3 - 6	570-4,790	6	1,140	6	1,395	45.0	129.5	62.0
3 - 10	950-7,980	10	1,900	5	1,930	45.0	146.5	84.0
3 - 12	1,140-9,580	12	2,280	6	2,020	45.0	146.5	84.0
3 - 18	1,710-14,370	18	3,420	9	2,830	65.0	146.5	84.0
3 - 24	2,280-19,150	24	4,560	12	3,285	85.0	146.5	84.0
3 - 36	3,420-28,730	36	6,840	18	6,060	125.0	146.5	84.0
3 - 48	4,560-38,300	48	9,120	24	8,080	165.0	146.5	84.0
3 - 60	5,700-47,880	60	11,400	30	10,100	205.0	146.5	84.0
3 - 72	6,840-57,460	72	13,680	36	12,120	245.0	146.5	84.0
DFO 4 - 16	1,520-12,770	16	3,040	8	2,410	45.0	165.1	84.0
4 - 32	3,040-25,540	32	6,080	16	4,165	85.0	165.1	84.0
4 - 48	4,560-38,300	48	9,120	24	7,436	125.0	165.1	84.0
4 - 64	6,080-51,070	64	12,160	32	9,090	165.0	165.1	84.0
4 - 80	7,600-63,840	80	15,200	40	10,960	205.0	165.1	84.0
4 - 96	9,120-76,600	96	18,240	48	12,614	245.0	165.1	84.0
4 - 112	10,640-89,380	112	21,280	56	14,455	285.0	165.1	84.0
4 - 128	12,160-102,150	128	24,320	64	16,109	325.0	165.1	84.0

- \* The first number indicates number of filter rows, and the second number indicates number of cartridges.
- \*\* Based on clean filters.

Attachment K - Preventive Maintenance Work Order for Torit/Day Model DF03-12 dust  
collector

Land O' Lakes Purina Feed, LLC  
PREVENTIVE MAINTENANCE WORK ORDER

02/07/08

\*\*\*\*\*

Work Order No: \_\_\_\_\_

WO Description: PM GRAIN CLEANER

Repair Code: Preventive Maintenance

EntryDate: \_\_\_\_\_

Recurrence: Weekly

" K "

\*\*\*\*\*

Equipment No: 054

Manufacturer: CIMBRIA CLEANER

Description: GRAIN CLEANER

Model: \_\_\_\_\_

Unit No: 9

Serial No: \_\_\_\_\_

Location: GRINDING SYSTEM

\*\*\*\*\*

Priority: 3

Est Labor Hours: 0.25

Est Completion: \_\_\_\_\_

Remarks: With the unit running check to make sure the air discharge has no dusting. Record the reading on the Dewyer gauge on the west wall. (should be below 5) Check the red belt on the east side of the grain cleaner and the lights.

\*\*\*\*\*

LeadWorker: \_\_\_\_\_

Skill 1: CLASS C MAINTENANCE

Worker 1: \_\_\_\_\_

Skill 2: \_\_\_\_\_

Worker 2: \_\_\_\_\_

Skill 3: \_\_\_\_\_

Worker 3: \_\_\_\_\_

Skill 4: \_\_\_\_\_

Worker 4: \_\_\_\_\_

Skill 5: \_\_\_\_\_

\*\*\*\*\*

Completion Date: \_\_\_\_\_

Approved By: \_\_\_\_\_

Repair Description: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Skill 1: \_\_\_\_\_

Hours Worked: \_\_\_\_\_

Skill 2: \_\_\_\_\_

Hours Worked: \_\_\_\_\_

Skill 3: \_\_\_\_\_

Hours Worked: \_\_\_\_\_

Skill 4: \_\_\_\_\_

Hours Worked: \_\_\_\_\_

Inventory Items Used: \_\_\_\_\_

\_\_\_\_\_

Parts Cost: \_\_\_\_\_

Contract Cost: \_\_\_\_\_

Labor Cost: \_\_\_\_\_

Other Cost: \_\_\_\_\_

Hour meter/(Odometer): \_\_\_\_\_

\*\*\*\*\*