

# **SOURCETEC INDUSTRIES INC.**

DUST COLLECTOR  
SERIES " DRSE "



*The future is clean air ... the future is **Sourcetec**<sup>®</sup>*

## **INSTRUCTION AND MAINTENANCE MANUAL**

***WARNING!***

CARELESS OR IMPROPER USE MAY RESULT IN PERSONAL INJURY.  
READ SAFETY PRECAUTIONS AND INSTRUCTIONS PRIOR TO  
OPERATING THIS PRODUCT.

SOURCETEC INDUSTRIES INC.

[www.sourcetecindustries.com](http://www.sourcetecindustries.com)

**TOLL FREE: 1-800-784-2383**

## DRSE Series Control Panel Instructions

1. Each control panel comes with an electrical schematic inside for wiring
2. Control panel should be mounted in a convenient accessible location free of vibrations and extreme temperatures
3. Control panel and wiring to collection should be done by a professional electrician according to all local electrical codes and standards

**K1:** Selector Switch

**K2:** Selector Switch

**M1:** Shaker Motor

**M2:** Dust Collector Motor

**TD:** Time Delay for Shaker Motor up to a maximum of 10 minutes. Recommended setting- 3 minutes.

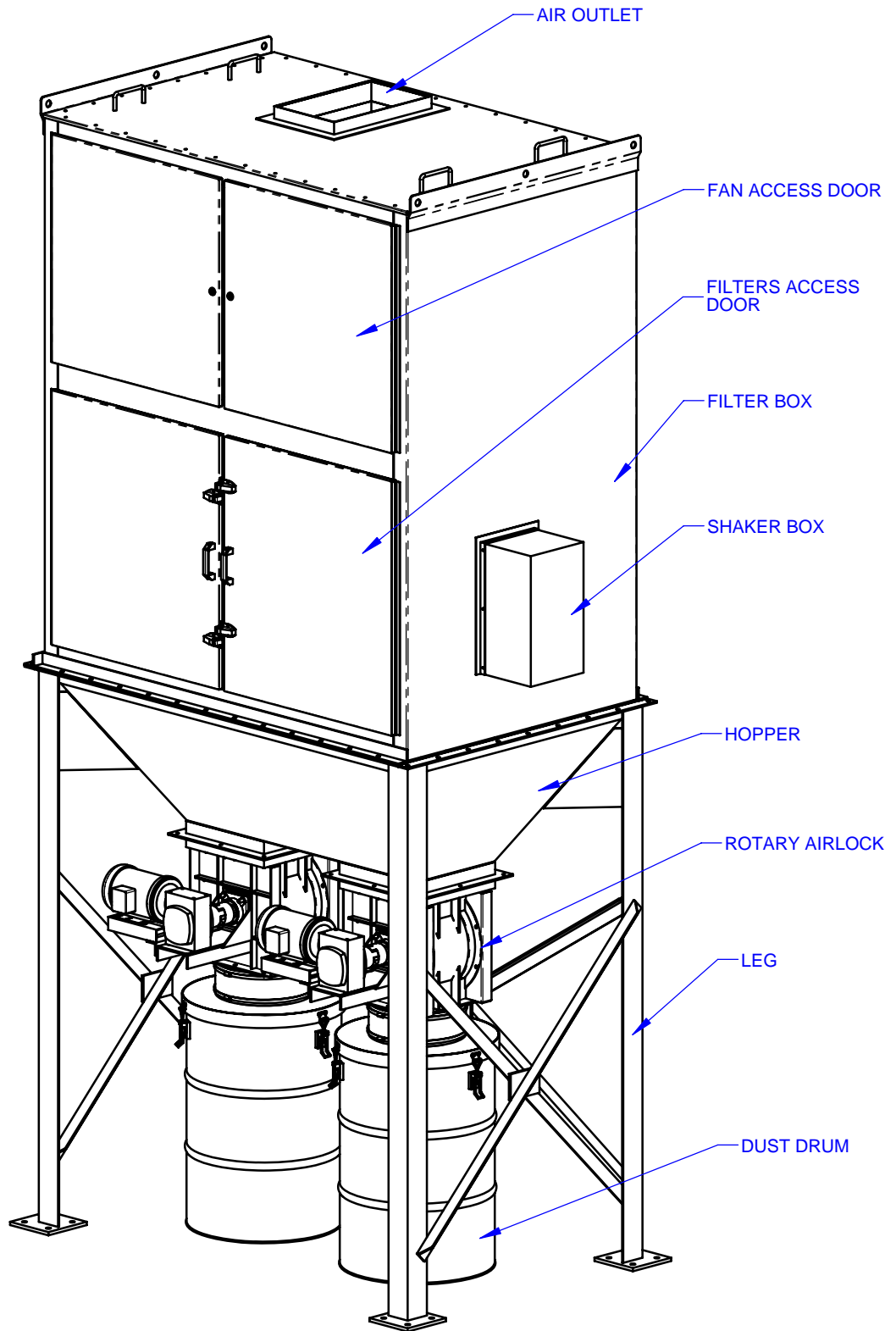
**T2:** Time Delay to shut down complete system – up to maximum of 3 minutes.  
Recommended setting – 2 minutes.

*Terminals 1,2, & 3 should be connected together with a jump wire if contactors are not utilized.*

### Notes:

Once the whole unit is assembled, the amps should not exceed the amps on the motor plate. If the amps are too high, (this is known as motor overload) the speed will have to be reduced or more restrictions placed on the duct system until the amps are at or below that shown on the motor plate.

Greasing nipples on the main blower should be greased at regular intervals. Do not over grease.



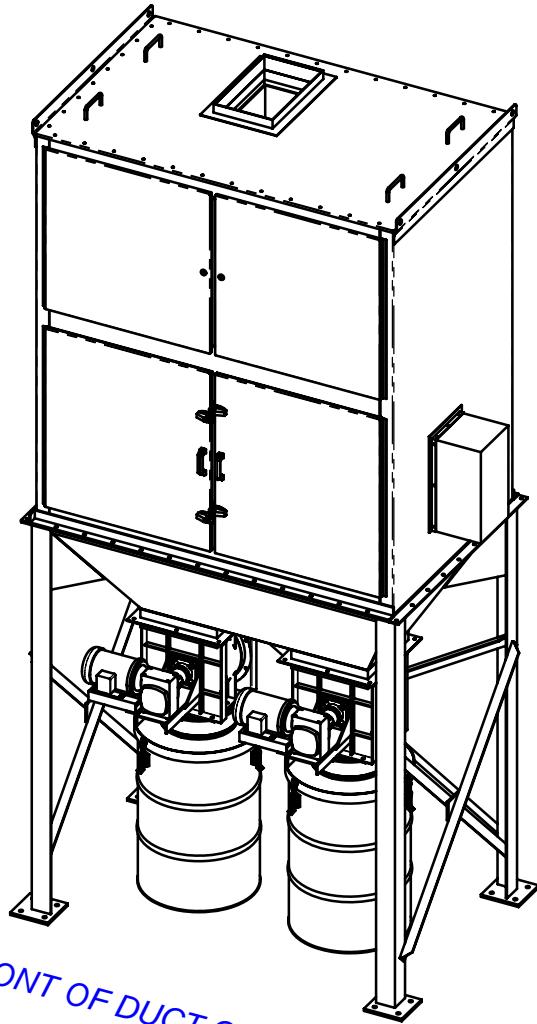
THIS DOCUMENT IS A PROPERTY OF SOURCETEC INDUSTRIES INC.  
 IT IS NOT TO BE COPIED IN WHOLE OR IN PART FOR ANY PURPOSE OR DISTRIBUTION  
 PUBLICLY TO THIRD PARTIES, OR USED FOR CONSTRUCTION PURPOSES WITHOUT THE  
 WRITTEN CONSENT OF SOURCETEC INDUSTRIES INC.



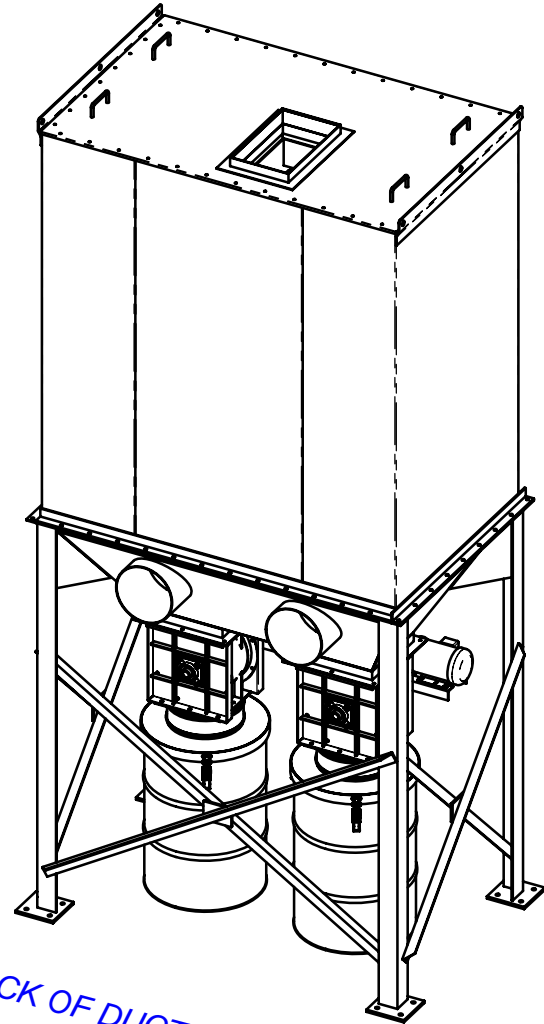
**SOURCETEC INDUSTRIES**

TEL: (905) 678-9333  
 FAX: (905) 678-7133

DRAWN BY: <b>L.B.M</b>		DESCRIPTION:	
DATE: <b>JAN 6, 2012</b>		<b>DUST COLLECTOR</b>	
MATL: <b>MILD STEEL</b>	PRODUCT No: <b>DRSE-750</b>	REV. <b>0</b>	
SCALE: <b>N/A</b> WGT: <b>3000 lbs.</b>	DRAWING No: <b>F1411-A1</b>	SHEET 1 OF 1	



FRONT OF DUCT COLLECTOR



BACK OF DUCT COLLECTOR

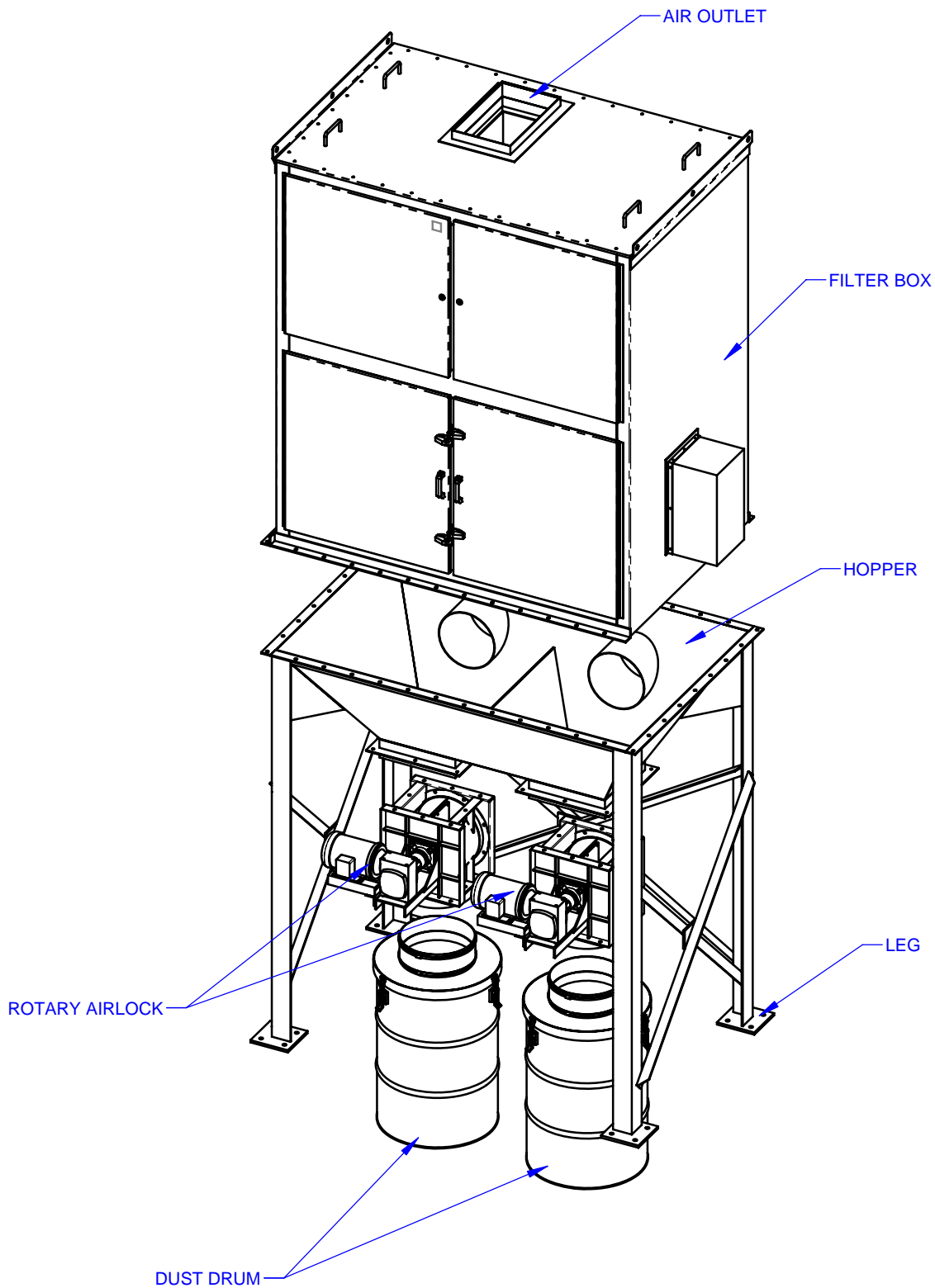
THIS DOCUMENT IS A PROPERTY OF SOURCETEC INDUSTRIES INC.  
 IT IS NOT TO BE COPIED IN WHOLE OR IN PART FOR ANY PURPOSE OR DISTRIBUTION  
 PUBLICLY TO THIRD PARTIES, OR USED FOR CONSTRUCTION PURPOSES WITHOUT THE  
 WRITTEN CONSENT OF SOURCETEC INDUSTRIES INC.



**SOURCETEC INDUSTRIES**

TEL: (905) 678-9333  
 FAX: (905) 678-7133

DRAWN BY: L.B.M		DESCRIPTION:	
DATE: FEB 6, 2012		DUST COLLECTOR	
MATL: MILD STEEL	PRODUCT No: DRSE-750	REV. 0	
SCALE: 1:36	WGT: XX	DRAWING No: F1411-A2	SHEET 1 OF 1



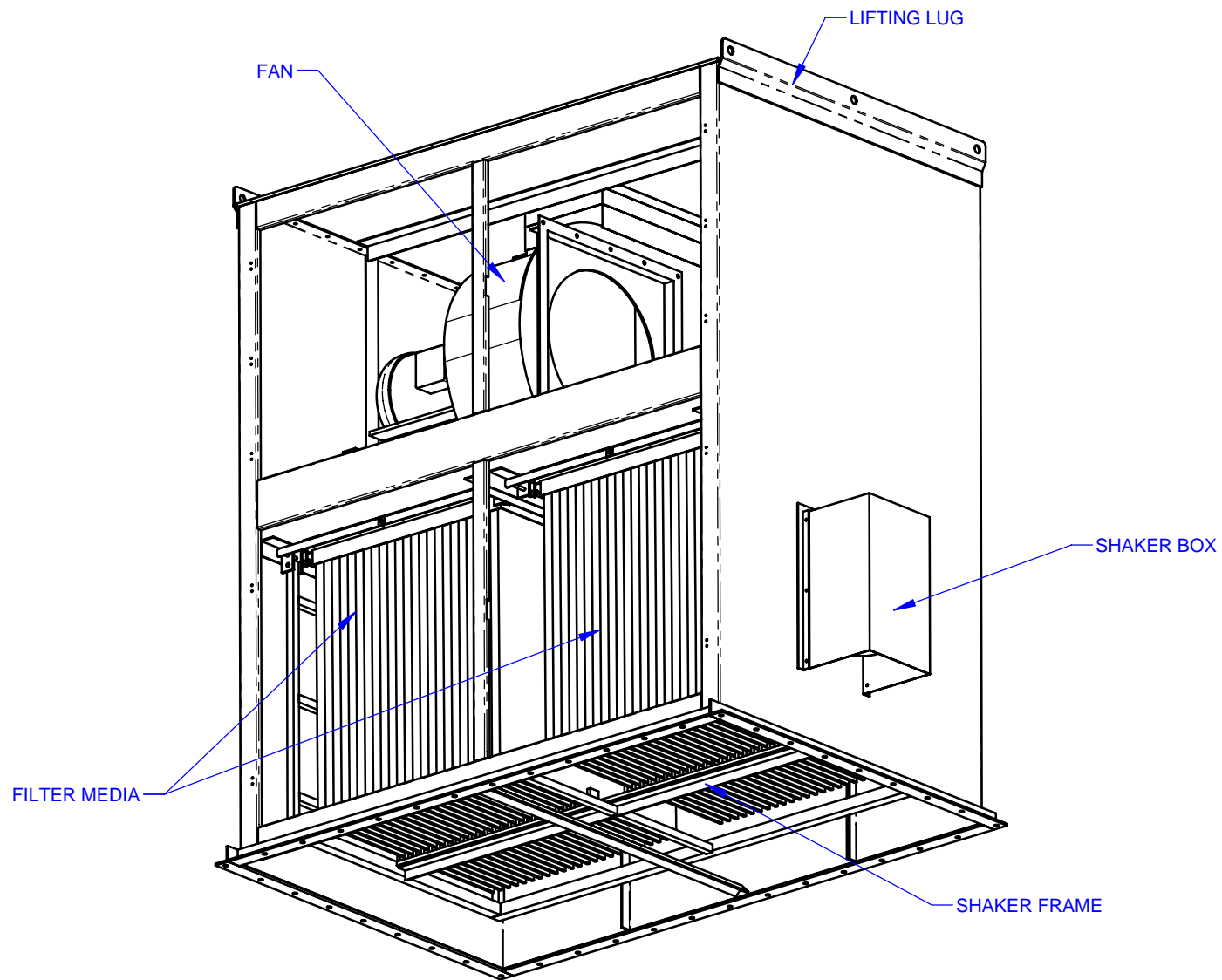
THIS DOCUMENT IS A PROPERTY OF SOURCETEC INDUSTRIES INC.  
 IT IS NOT TO BE COPIED IN WHOLE OR IN PART FOR ANY PURPOSE OR DISTRIBUTION  
 PUBLICLY TO THIRD PARTIES, OR USED FOR CONSTRUCTION PURPOSES WITHOUT THE  
 WRITTEN CONSENT OF SOURCETEC INDUSTRIES INC.



**SOURCETEC INDUSTRIES**

TEL: (905) 678-9333  
 FAX: (905) 678-7133

DRAWN BY: <b>L.B.M</b>		DESCRIPTION: <b>DUST COLLECTOR</b>	
DATE: <b>JUN 4, 2012</b>		ASSEMBLY DRAWING	
MATL: <b>MILD STEEL</b>	PRODUCT No: <b>DRSE-750</b>	REV. <b>0</b>	
SCALE: <b>N/A</b>	WGT: <b>3000 lbs.</b>	DRAWING No: <b>F1411-A6</b>	SHEET 1 OF 1



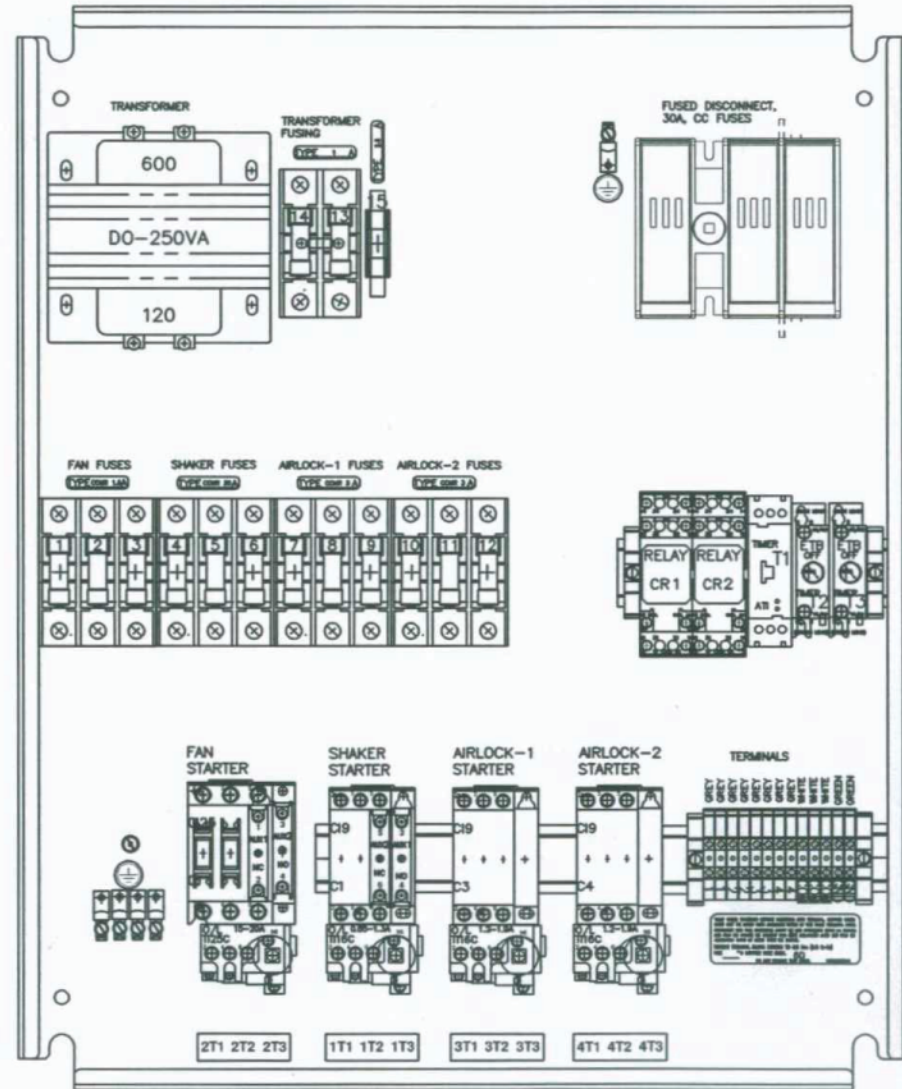
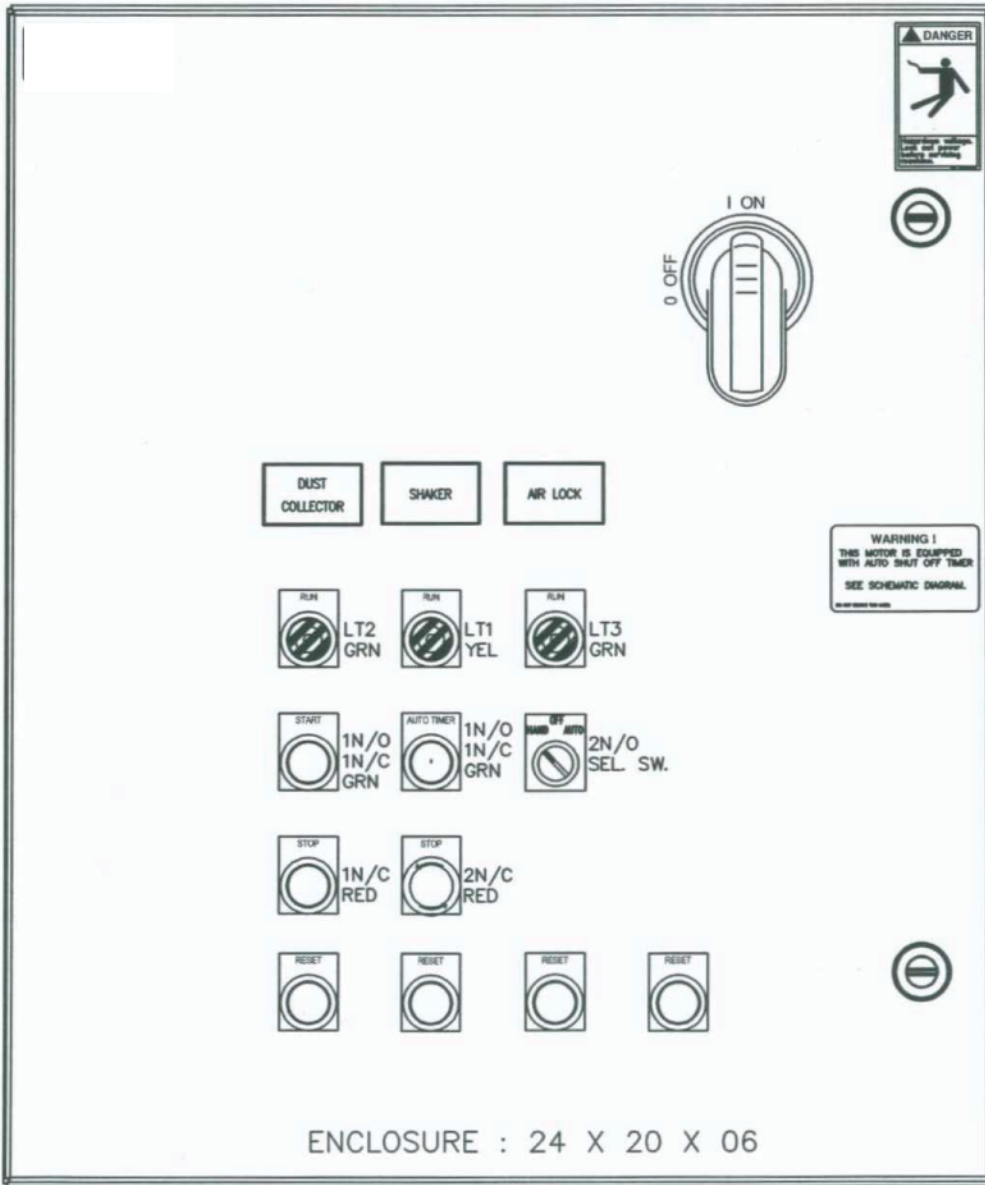
THIS DOCUMENT IS A PROPERTY OF SOURCETEC INDUSTRIES INC.  
 IT IS NOT TO BE COPIED IN WHOLE OR IN PART FOR ANY PURPOSE OR DISTRIBUTION  
 PUBLICLY TO THIRD PARTIES, OR USED FOR CONSTRUCTION PURPOSES WITHOUT THE  
 WRITTEN CONSENT OF SOURCETEC INDUSTRIES INC.

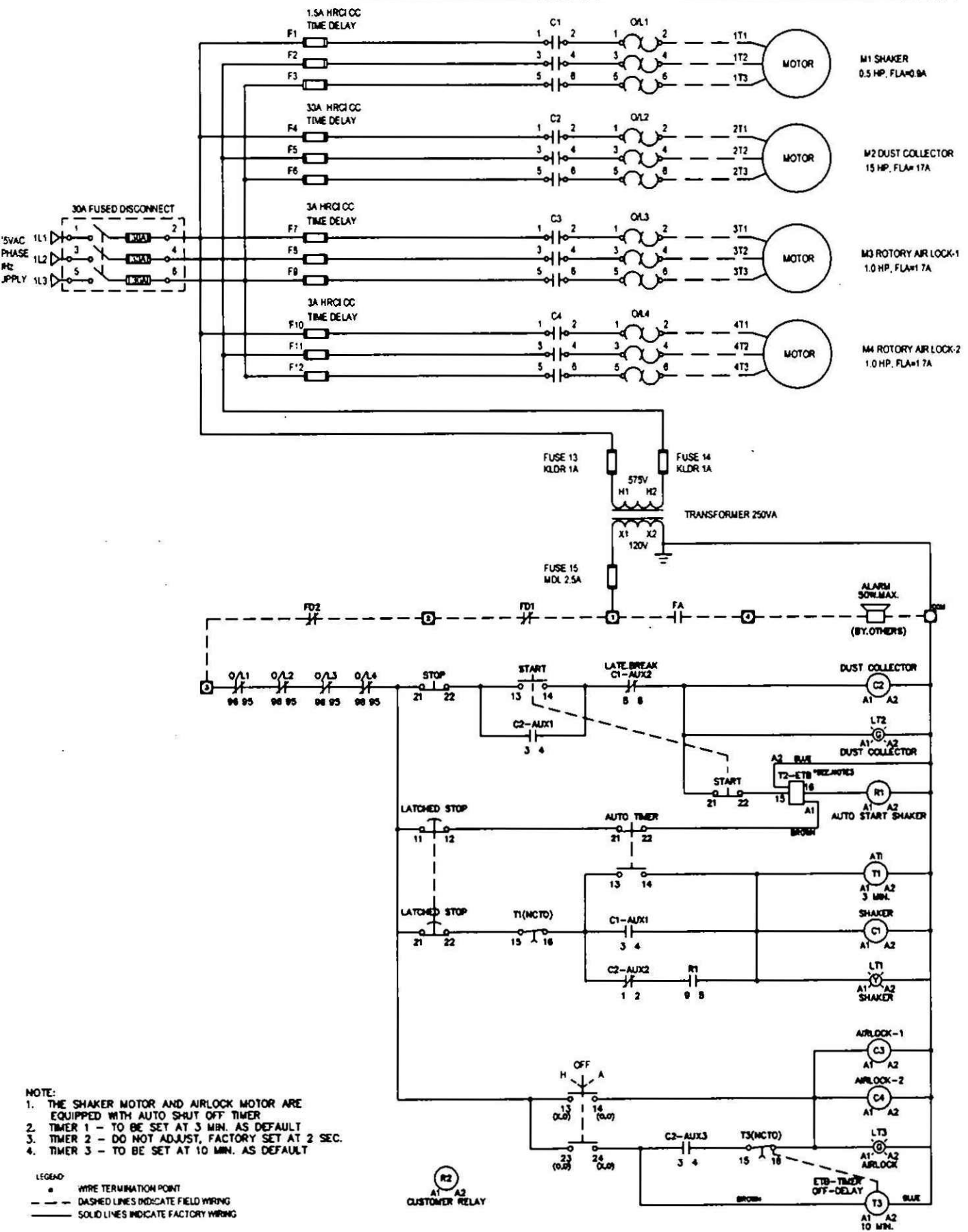


**SOURCETEC INDUSTRIES**

TEL: (905) 678-9333  
 FAX: (905) 678-7133

DRAWN BY: <b>L.B.M</b>		DESCRIPTION:	
DATE: <b>JUN 4, 2012</b>		<b>FILTER BOX</b>	
MATL: <b>MILD STEEL</b>	PRODUCT No: <b>DRSE-750</b>	<b>REV. 0</b>	
SCALE: <b>1:30</b>	WGT: <b>1500 lbs.</b>	DRAWING No: <b>F1411-A7</b>	<b>SHEET 1 OF 1</b>







## **SEQUENECE OF OPERATIONS**

### **START UP**

**START BUTTON**

**EXHAUST FAN START**

**ROTARY AIR LOCK STARTS IF SELECTOR SWITCH IS ON  
AUTOMATIC**

### **SHUT DOWN**

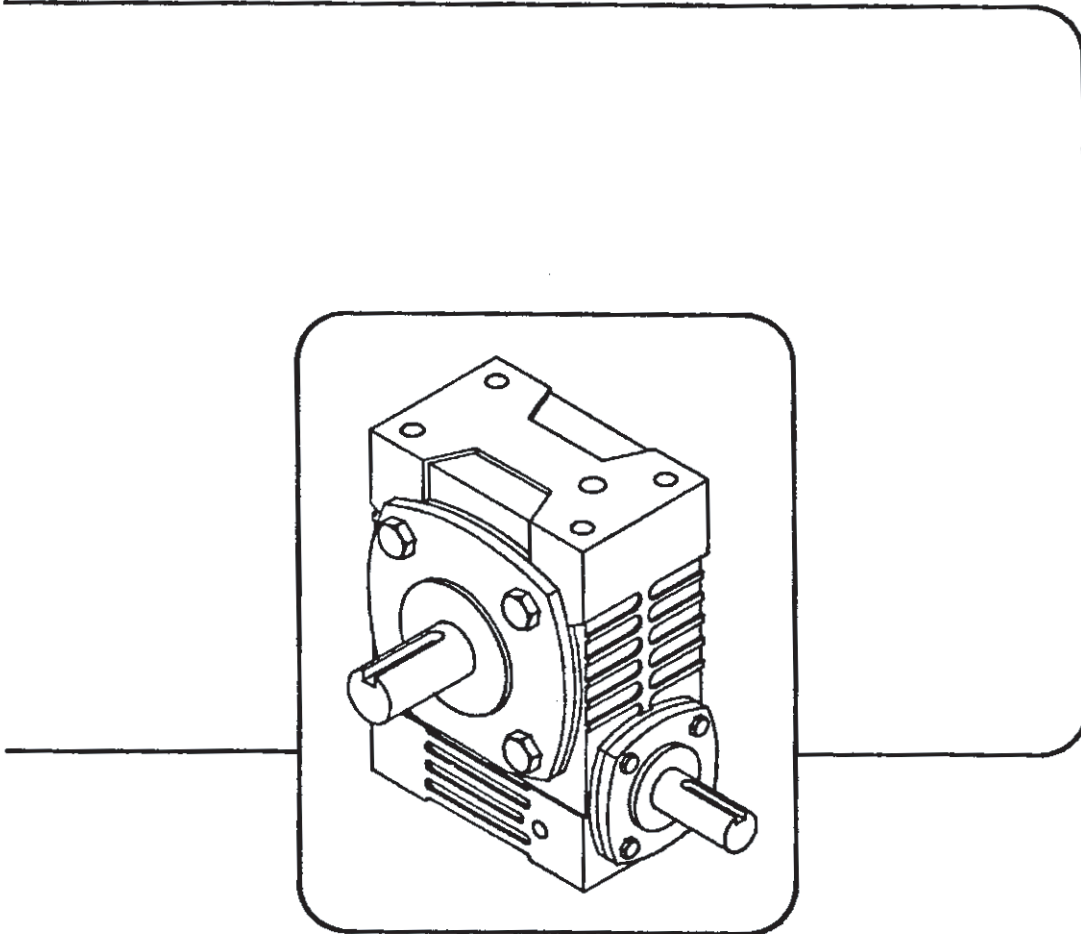
**STOP BUTTON**

**EXHAUST FAN STOPS**

**SHAKER START AND STOPS AUTOMATICALLY UP TO 3  
MINSUTES  
(RECOMMEND FACTORY SET IS 2 MINS)**

**ROTARY AIR LOCK CONTINUES TO RUN UP TO 10 MINUTES  
(RECOMMENDED FACTORY SET IS 2 MINUTES)**

## WORM GEAR SPEED REDUCERS





The future is clean air ... the future is **Sourcetec**®

8-7475 Kimbel Street, Mississauga, ON L5S 1E7

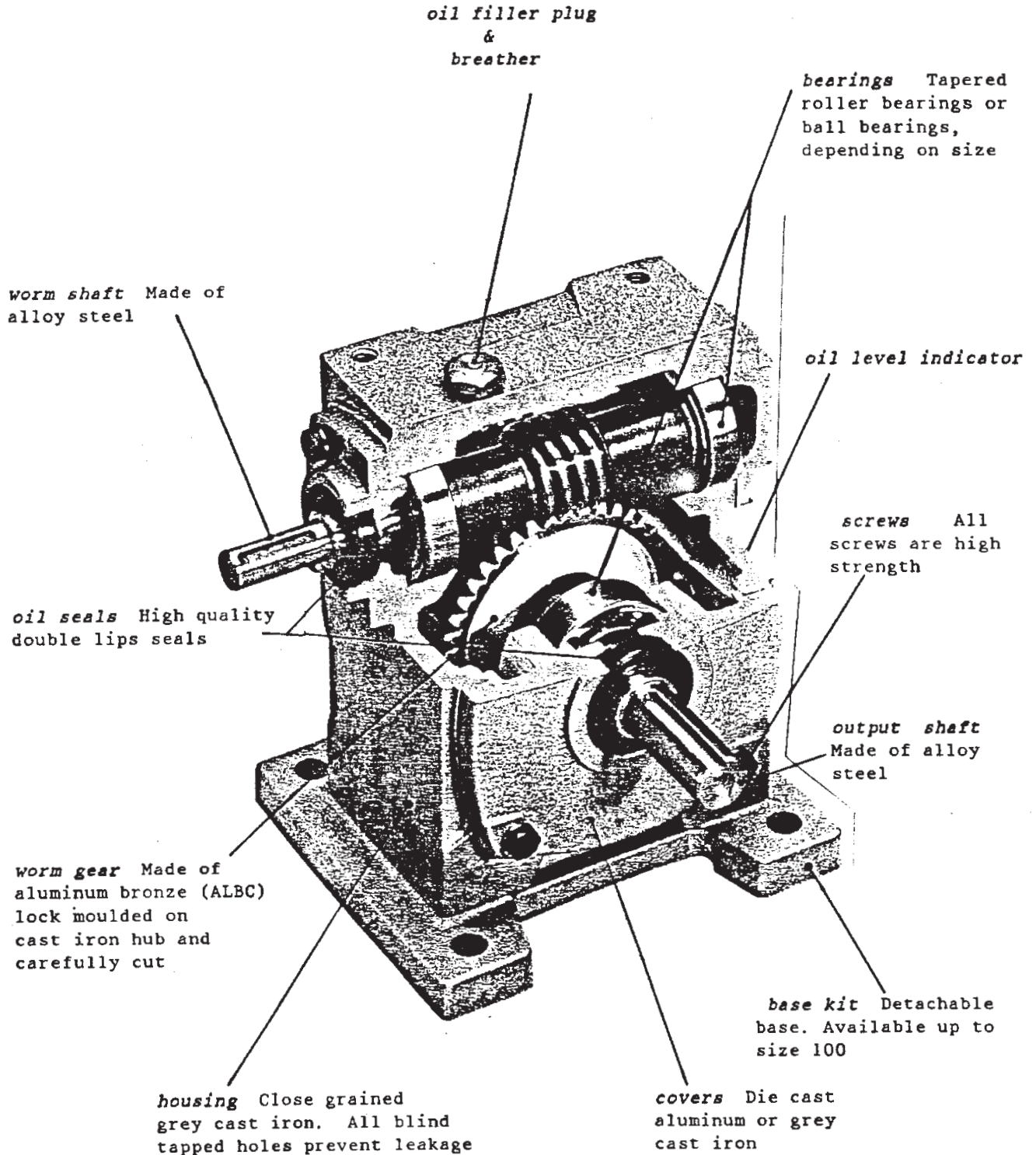
Tel: (905) 678-9333 Fax: (905) 678-7133

4758 Angola Road, Toledo, OH 43615

Toll Free: 1-800-784-2383

www.sourcetecindustries.com

## GENERAL DESIGN



\* Each reducer has drain plugs appropriately located.

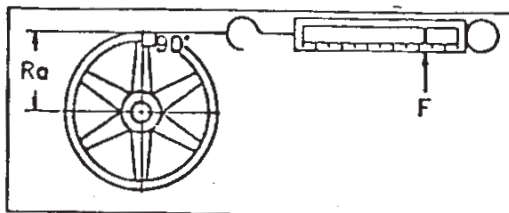
## ENGINEERING DATA

### TORQUE (T)

Designates a turning moment or twisting force tending to cause rotation. It is generally expressed in pound-inches.

$$T = F \times Ra$$

where T = Torque (lb-in)  
F = Force (lb)  
Ra = Radius (in)



### HORSEPOWER (HP)

Horsepower is the common unit of mechanical power. One hp is the amount of work required to lift 33 000 pounds one foot in one minute.

$$HP_{\text{theoretical}} = \frac{L \times \text{FPM}}{33\,000} = \frac{T \times \text{RPM}}{63\,025}$$

where L = Load (lb)  
FPM = velocity (ft/min)  
T = output Torque  
RPM = Revolutions Per Minute

### THERMAL HORSEPOWER

Determined by tests, it measures the ability of a drive unit to dissipate heat while limiting the maximum temperature rise of this unit to 100°F above ambient.

### RATIO (R)

The relationship between the input and the output speed of the reducer.

$$R = \frac{\text{RPM}_{\text{input}}}{\text{RPM}_{\text{output}}}$$

Use nearest ratio listed whenever possible. Otherwise locate a drive reduction between speed reducer and driven machine.

### OVERHUNG LOAD (OHL)

The overhung load is the radial load imposed on a shaft by a sprocket, pinion, pulley or sheave which tends to bend the shaft.

A good practice to follow is to locate the sprocket as close to the gear housing as possible.

The minimum pitch diameter (PD<sub>min</sub>) allowable for a given drive may be determined by:

$$PD_{\text{min}} = \frac{2 \times T_{\text{design}} \times LF}{OHL \times PF}$$

where

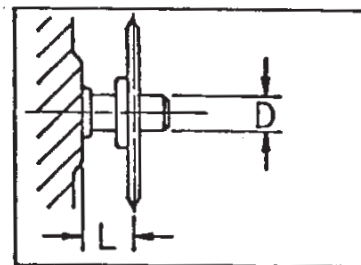
T<sub>design</sub> = design output Torque (lb-in)  
OHL = OHL from table ratings (lb)  
LF = Load Factor from Table 1  
PF = Position Factor from Table 2

TABLE 1  
Load factor

Drive	LF
Chain	1,00
Gear	1,25
V-Belt	1,50
Flat belt	2,50

TABLE 2  
Position factor

L	PF
0,75xD	1,05
1,00xD	1,00
1,25xD	0,87
1,50xD	0,77



### THRUST LOAD

The thrust is a force acting along the axis of a shaft and often occurs on applications where output shaft is vertical. Contact our engineering department for an application involving thrust loads.



The future is clean air ... the future is **Sourcetec**®

8-7475 Kimbel Street, Mississauga, ON L5S 1E7

Tel: (905) 678-9333 Fax: (905) 678-7133

4758 Angola Road, Toledo, OH 43615

Toll Free: 1-800-784-2383

www.sourcetecindustries.com

## OPERATING CHARACTERISTICS

### SERVICE FACTOR (SF)

The ratings shown on the tables are based on a 1,00 service factor (even load, 8-10 hours a day, continuous operation). For other conditions of operation, select the proper service factor from Table 3.

TABLE 3  
Service factor -

Prime mover <sup>1</sup>	Load class of driven machinery	Duration of service <sup>2</sup>			
		occasional 1/2-hour	intermittent 2 hours	daily 8-10 hours	continuous 24 hours
electric motor	uniform	0,80	0,90	1,00	1,25
	medium shock	0,90	1,00	1,25	1,50
	heavy shock	1,00	1,25	1,50	1,75

- 1 If the prime mover is a multi-cylinder combustion engine, multiply service factor by 1,125  
If the prime mover is a single-cylinder combustion engine, multiply service factor by 1,250
- 2 For applications involving more than 10 starts per hour, multiply service factor by 1,125

### OVERLOAD

All CANIMEX reducers will withstand the following overloads (over the normal capacity ratings given in the tables):

- a) 100% up to 15 seconds
- b) 50% up to 60 seconds
- c) Any overload from a standard AC motor

### INPUT ROTATION

Input rotation of CANIMEX reducers can be either clockwise or counterclockwise.

### HOIST APPLICATION

When a reducer is used to hold a load when upward or downward movement is stopped, it is recommended to use a brake for locking assurance. Even though certain sizes and ratios can be self-locking, it cannot be guaranteed.

## HOW TO SELECT A REDUCER

1. Determine the required output torque ( $T_{output}$ ) and the theoretical HP ( $HP_{theoretical}$ ).
2. Select the proper service factor SF.
3. Determine the reducer's ratio R.
4. Calculate the design output torque ( $T_{design}$ ) and design output HP ( $HP_{design}$ ).  
  

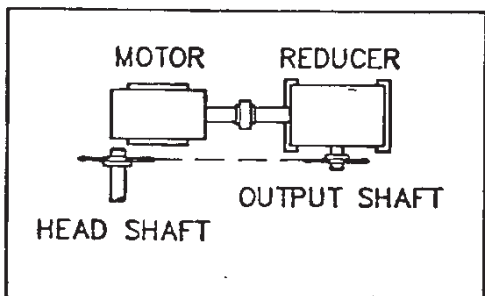
$$T_{design} = T_{output} \times SF$$

$$HP_{design} = HP_{theoretical} \times SF$$
5. Select the proper reducer size from capacity tables based on ratio, input RPM, design output HP and design output torque. If input speed falls between two tabulated input speeds of a unit, determine the units ratings by linear interpolation. Take also note of the OHL rating.
6. Make sure that OHL does not exceed capacities of the selected reducer. Determine the minimum pitch diameter of the wheel on output shaft. If it is impossible to select within the minimum pitch diameter, choose one of the following alternatives:
  - a) move the wheel closer to the housing
  - b) use an outboard bearing on shaft
  - c) use a larger size of reducer.
7. Select the proper mounting and shaft arrangement from dimensions tables.
8. Determine the minimum motor HP (MHP), without exceeding input HP rating.  
  

$$MHP = \frac{HP_{design} \times \text{rating } HP_{input}}{\text{rating } HP_{output}}$$

## SELECTION EXAMPLE

Select the correct reducer for a heavy shock loaded screw conveyor driven by an 1 800 rpm electric motor operating 8 hours a day and requiring 3 200 lb-in torque at 20 rpm on the head shaft. A 3:1 chain ratio drive is used between reducer and conveyor. Load and position factors will be 1,00.



1.  $T = \frac{\text{head shaft torque}}{\text{chain ratio}}$

$$= \frac{3\,200}{3} = 1\,067 \text{ lb-in}$$

$$HP_{\text{theoretical}} = \frac{3\,200 \times 20}{63\,025} = 1,02 \text{ hp}$$

2.  $SF = 1,50$

3.  $RPM_{\text{output}} = 20 \times 3 = 60 \text{ rpm}$

$$R = \frac{1800}{60} = 30$$

4.  $T_{\text{design}} = 1\,067 \times 1,5 = 1\,601 \text{ lb-in}$

$$HP_{\text{design}} = 1,02 \times 1,5 = 1,53 \text{ hp}$$

5. Ratio = 30:1

Input speed = 1 800 rpm

$T_{\text{design}} = 1\,601 \text{ lb-in}$

$HP_{\text{design}} \text{ (output)} = 1,53 \text{ hp}$

From capacity tables, select size 80.

OHL rating = 1 130 lb

6.  $PD_{\text{min}} = \frac{2 \times 1\,601 \times 1}{1\,130 \times 1}$

$$= 2,83''$$

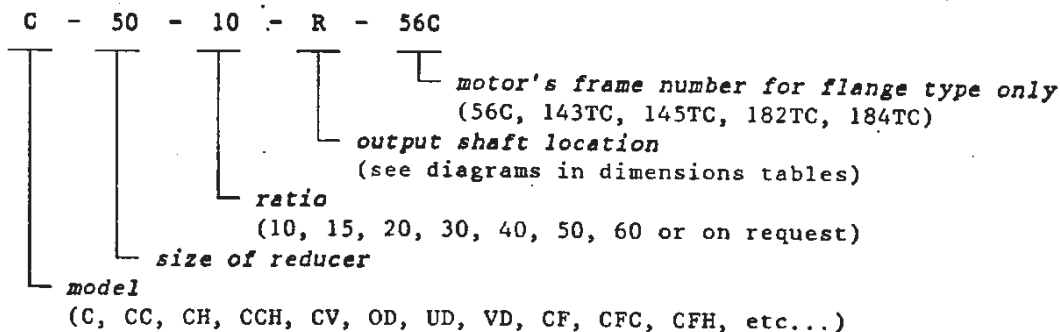
7. Select a CH-80-30-R reducer

8.  $MHP = \frac{1,53 \times 2,36}{1,85} = 1,95 \text{ hp}$

So, use 2 hp electric motor.

## HOW TO ORDER

When ordering a CANIMEX speed reducer, use the following nomenclature:



For spare parts, also specify parts number and name described on page 15.



The future is clean air ... the future is **Sourcetec**®

8-7475 Kimbel Street, Mississauga, ON L5S 1E7  
Tel: (905) 678-9333 Fax: (905) 678-7133

4758 Angola Road, Toledo, OH 43615  
Toll Free: 1-800-784-2383

www.sourcetecindustries.com

## INSTALLATION, MAINTENANCE, AND LUBRICATION

### INSTALLATION

When installing CANIMEX reducers, make sure to have a rigid mounting to maintain alignment.

Flexible couplings are recommended because they minimize bearings and gears wear caused by misalignment.

Mounting of reducers on bases, subject to vibration, should be avoided.

### STARTING UP

Check oil level. Some speed reducers are shipped dry. Oil must be added prior to operation.

It may take many hours of running, under full load, for the gears to reach their highest efficiency. The gear may, if necessary, be put to work under full load immediately. However, it is better for the ultimate life of the gear to be run under gradually increasing loads (reaching the full load after about 20 to 40 hours).

Reasonable precautions should be taken to avoid overloads in the early stage of running.

Temperature rise on the initial run will be higher than the temperature eventually reached after the gear is fully run-in.

### MAINTENANCE

Shut off power before inspection. The oil level, in the worm gear unit, should be checked at least once a month. Never mix two different types of oil. If uncertain, change lubricant. False reading will be avoided by examining the oil level on stationary gears.

To maintain free ventilation of the unit, the breather hole in the filler plug (air-vent) should be kept clear at all times.

Inspect regularly set screw and reducer mounting bolts for tightness because loose fasteners can cause misalignment and excessive wear.

### CHANGING LUBRICANT

After first 100 hours of running, a new worm gear unit should be drained, flushed and refilled with proper oil.

Thereafter, oil should be changed at least every 2 500 operating hours or every 6 months, whichever occurs first.

Never mix two different types of oil. Be sure to drain and wash before using another type of oil.

### SELECTION OF LUBRICANT

Lubricating oil must have a viscosity sufficient to reduce friction and allow the speed reducer to operate smoothly under high load and impact. Consult Table 4 for the choice of lubricant.

Where a wide temperature range is expected, the synthetic oil EXXON SHC 629 is recommended.

Please keep in touch with our engineering department, especially when operating the CANIMEX reducers under special conditions such as high or low speed, high temperature, or heavy loads.

TABLE 4  
Lubrication

Room temperature (C)	Operating temperature (C)	OIL GRADE	TEXACO	SHELL	EXXON
-30 to 0	under 70	80W90	Hepora 150	Omala 150	Spartan EP150
	70 to 100	80W110	Hepora 320	Omala 320	Spartan 320
0 to 25	under 70	80W110	Hepora 320	Omala 320	Spartan 320
	70 to 100	80W110	Hepora 320	Omala 320	Spartan 320
over 25	under 70	80W140	Hepora 460	Omala 460	Spartan 460
	70 to 100	80W140	Hepora 460	Omala 460	Spartan 460

SHC  
629



The future is clean air ... the future is Sourcetec®

8-7475 Kimbel Street, Mississauga, ON L5S 1E7

Tel: (905) 678-9333 Fax: (905) 678-7133

4758 Angola Road, Toledo, OH 43615

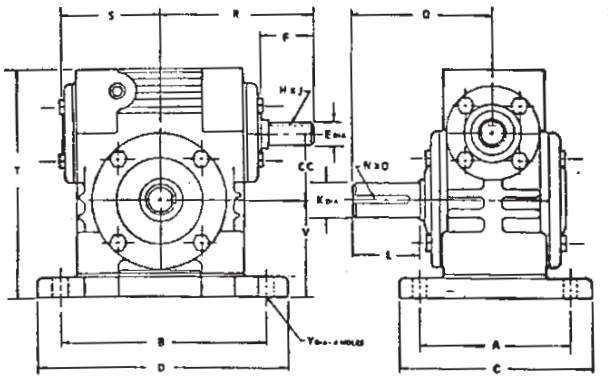
Toll Free: 1-800-784-2383

www.sourcetecindustries.com

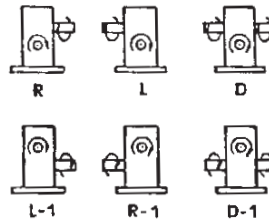
DIMENSIONS

NO STOCK - PRICE ON APPLICATION

MODEL CFH



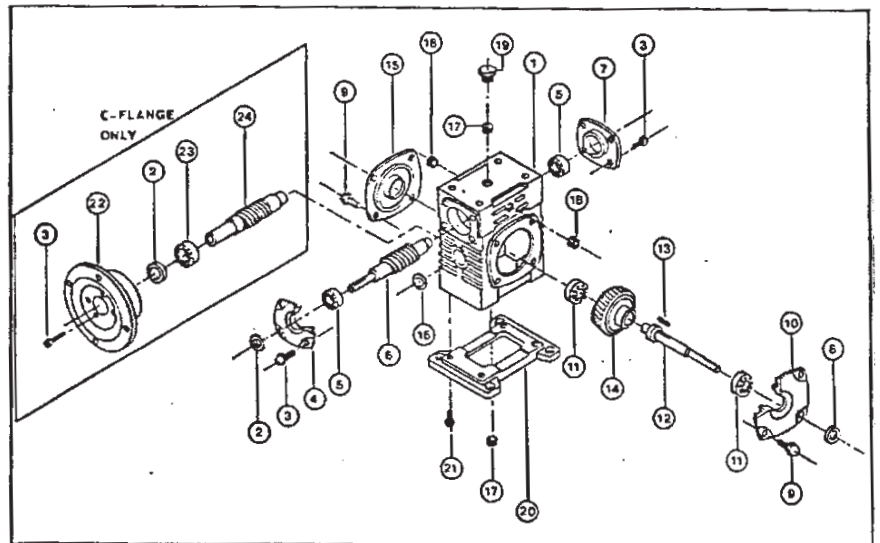
SHAFT ASSEMBLY



	A	B	C	CC	D	INPUT SHAFT			OUTPUT SHAFT			Q	R	S	T	V	Y DIA	Z	WEIGHT lbs
						E DIA	F	H x J	K DIA	L	N x O								
133	4 3/8	4 3/8	5 5/8	1 1/2	5 5/8	1/2	1 13/16	1 1/8 x 1/16	5/8	1 3/4	3/16 x 3/32	4 3/8	4 7/16	2 27/32	5 7/16	2 1/4	11/32	1/2	17
175	4 1/2	5 3/4	5 9/16	1 3/4	7	5/8	1 13/16	3/16 x 3/32	7/8	1 7/8	3/16 x 3/32	4 5/16	4 11/16	3 13/32	6 7/16	2 3/4	13/32	11/16	25
206	4 11/16	6 3/8	6	2 1/16	7 11/16	5/8	1 13/16	3/16 x 3/32	1	2	1/4 x 1/8	4 11/16	5 1/16	3 21/32	7 3/32	3	15/32	23/32	32
262	5 1/4	8	6 1/2	2 5/8	9 1/4	3/4	2 5/16	3/16 x 3/32	1 1/4	2 1/2	1/4 x 1/8	5 5/8	6 3/16	4 3/16	8 3/4	3 11/16	17/32	3/4	55

PARTS LIST

NO.	PARTS
1	Housing
2	Oil Seal (Input)
3	Input cover bolts
4	Input cover with hole
5	Bearing (Input)
6	Worm Shaft
7	Input cover w/o hole
8	Oil Seal (Output)
9	Output cover bolts
10	Output cover with hole
11	Bearing (Output)
12	Output Shaft
13	Key For Worm Wheel
14	Worm Wheel
15	Output cover w/o hole
16	Oil Sight Glass
17	Oil Plug
18	Oil Plug
19	Air Vent
20	Detachable Base
21	Bolts For Base
22	C-Flange
23	Bearing (Input)
24	Worm (C-Flange)







## **Warranty and Service Policy**

### **One Year Limited Warranty**

Air cleaning products and systems manufactured by Sourcetec Industries Inc. are warranted for a period of one year from date of original purchase. Sourcetec's liability shall be limited to repair or replacement of defective material within the warranty period when returned freight prepaid to its plant or to a service depot designated by Sourcetec. This warranty does not apply to products subjected to any accidents, alteration, abuse, or misuse. Warranties on equipment not of seller's manufacture are limited to terms of warranty furnished by seller's suppliers.

Our responsibility ceases upon delivery to any common carrier and we do not, unless previously instructed, insure shipments beyond point of delivery to such a carrier.

No material will be accepted for credit when returned without permission. All materials accepted for credit is subject to at least a 25% handling charge, and permission must be obtained before equipment is returned.

Equipment specially built to customer specifications and requirements is not subjected to cancellation or returnable for credit under any conditions.

We reserve the right to modify or alter materials, dimensions, design and construction when necessary, to improve the performance of our product and/or accessories, or to meet delivery requirements.

TOLL FREE: 1 (800) 784-2383  
E-mail: [customerservice@sourcetecindustries.com](mailto:customerservice@sourcetecindustries.com)