10.0 General

The 2 - 30D should not be used for blast cleaning unless attached to a proper air exhaust hose and dust collector. The special Pulse Jet Dust Collector, Blastrac Model 854 is designed to operate in conjunction with the 2 - 30D Blastrac machine.

The Model 854 Dust Collector is normally attached to the 2 - 30D with 50 feet of 6 inch diameter flexible exhaust hose. The dust collector is mounted on a self contained mobile chassis. The 2 - 30D cleans a radial area around the stationary dust collector, then the entire system is hand towed to an adjacent area and the process is repeated. Consult your Blastrac representative if a longer hose is required. Too much hose can create problems depending on the application.

Filter Chamber

The central portion of the dust collector is the filter chamber. Dust laden air enters this chamber from the exhaust hose , through a plenum and into the filter chamber. This chamber has eight vertically mounted filter cartridges. Dust is captured on the surface of these cartridges allowing only clean air to pass. The filtered air enters a clean air section and into an exhauster which returns the clean air to the atmosphere.

The dust which has been trapped on the external surfaces of the filter cartridges is periodically removed by pulsing the cartridges with an internally supplied burst of compressed air. The momentary reverse pulse of air purges the dust from the external portion of the filter and allows the dust to fall into the dust bin below. The cartridges are aligned into three separate banks of three, three and two filters and are pulsed at regular intervals set up on the external timer board. As one bank of filters is pulsed, the other two banks remain on line allowing the jet pulse action to keep the filters both clean and operational.

The dust that has fallen into the dust bin will build up and needs to be disposed of at least every 30 to 45 minutes depending on the application. Do not allow the dust bin to overfill. This will cause the blast unit to fill with dust and contaminate the abrasive. The life of the filters will also be diminished.

Dust Bin

The Model 854 dust bin is equipped with wheels and a handle to assist the operator(s) in disposing the dust and contaminants.

Blower

The blower (exhaust fan) is mounted on the rear of the dust collector chassis and is powered by a 7 1/2 horsepower direct drive motor.

Magnehelic Gauge

This mounted gauge measures the differential pressure across the filter surfaces of the cartridges. (clean side versus dirty side). The higher this readings gets is an indication that the filters are getting dirty. Any reading above 6 inches of water is not sufficient to clean the abrasive. The filters should be allowed to pulse with no dust coming into the system for at least 15 minutes (NO shot blasting). If this reading will not go below 6 inches of water, replace the filter cartridges.

Pulse Pressure System

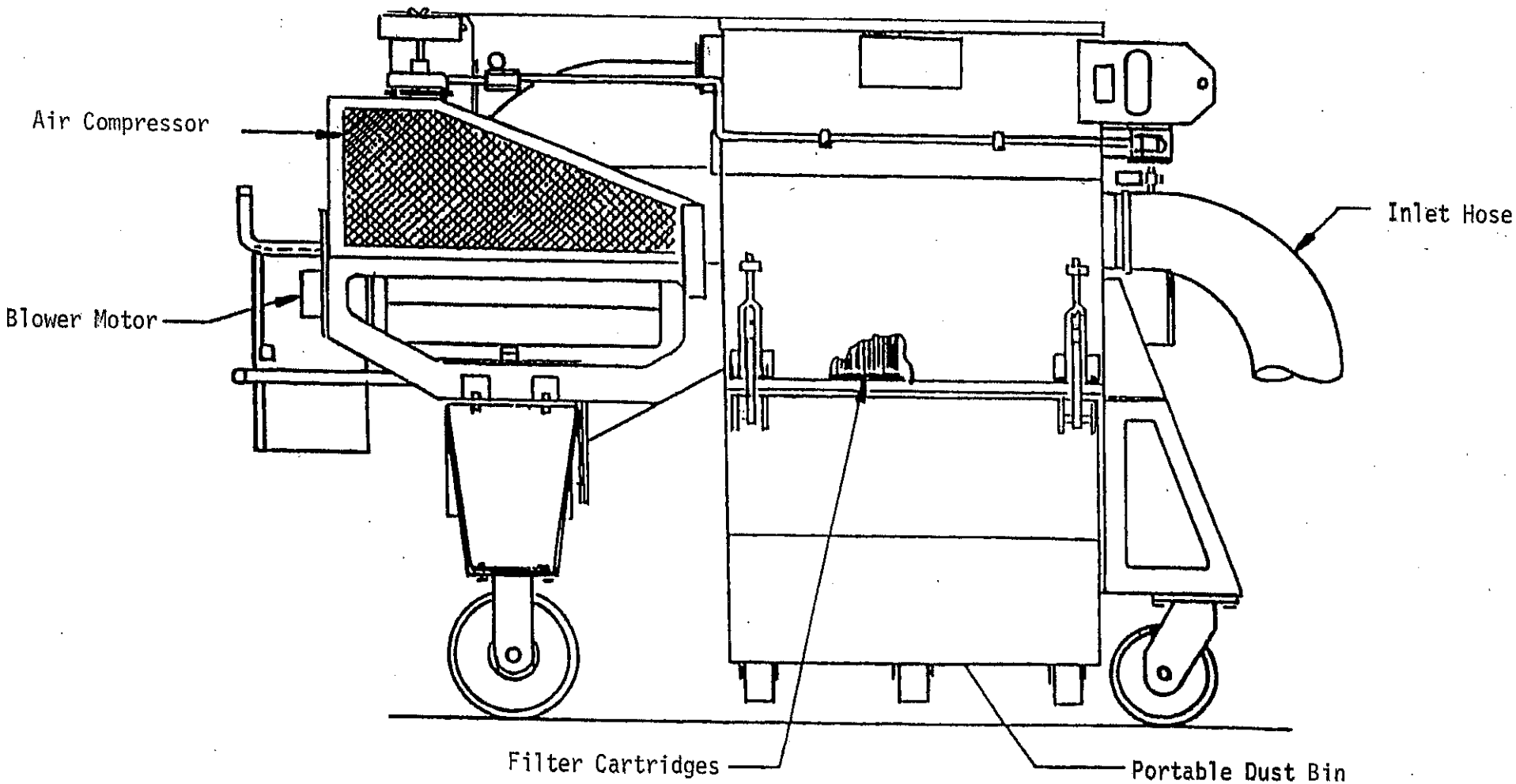
An air compressor with external pressure regulation is mounted on the rear of the dust collector chassis and is belt driven by a 2 horsepower electric motor. Compressed air enters a reservoir to which three diaphragm valves are connected (Goyen valves). These valves are actuated by solenoid pilot valves which are activated by an electronic timer board. When activated by the timer board solenoid, the Goyen valve allows a short burst of air to enter a blowdown pipe with holes directed downward. Beneath these holes are venturi valve openings which allow the pulse of air to be directed into the filter cartridges. This pulse cleans the filters as described previously.

Chassis

The entire dust collector is mounted on a mobile chassis, resting on three casters. A swivel caster is mounted under the air inlet and the two rigid casters are mounted under the blower. **The dust collector is not designed for vehicle towing or road transportation.**

Electrical Control Panel

A panel illustration and control description is located in Chapter 3.72 on page 9. The electrical schematic, Drawing # 94D360 can be found later in this chapter.



MODEL 854 DUST COLLECTOR

11.0 Start-Up / Operation 8-54

Read Chapter 5.1, Prior to Initial Start-Up. Follow steps 1 and 2 in Chapter 5.2 and continue with the following steps:

1. Check the pressure gauge. The reading should be between 80 and 100 psi for normal operation. If the pressure gauge is not between these readings, adjust the unloader valve located on the output side of the compressor by loosening the lock nut and adjusting the pressure adjusting screw clockwise to increase the pressure or counterclockwise to decrease the pressure.
2. The jet pulses used to clean the eight internal filters should be spaced at ten second time intervals (approx.) for normal operation. When a pulse occurs, the pressure gauge should drop about 30 psi and build back up to the pressure setting. The timing adjustments can be made on the timer board located in an enclosure at the rear of the dust collector. Two potentiometers are located on this board. One sets the time duration between pulses; the other sets the time duration of the pulse itself. The time between pulses can be altered for special applications. Contact your Blastrac representative for advice on changing this setting.
3. Check the reading of the magnehelic gauge. The reading should be between 1 and 3 inches of water. This reading is the pressure difference between the clean and dirty side of the cartridge filters. As the filters age and become saturated with dust and contaminants, the magnehelic reading will increase. Once the reading exceeds 6 inches of water, the filters should be changed. **(If the reading goes above 6 inches of water while on the job and the filters cannot be changed, run the dust collector alone to pulse the filters. Do so for about 15 minutes to purge the dust from the filters. This will allow the operator to continue working a while longer until the filters can be replaced.)**
4. Be sure that all seals are secure. Vacuum leaks anywhere in the system will cause premature wear to the internal components of the blast unit. This includes the dust hopper seal, all vacuum hose connections and the vacuum hose itself.
5. At the end of every work day, the pressure reservoir should be drained of all condensation. This valve is located below the pressure reservoir. Be sure the pressure is minimized before draining water from the system. Failure to drain the moisture from the system may allow moisture to get into the filters which will decrease their operating life dramatically.
6. Check the dust hopper every 1/2 hour once blast cleaning has begun. This will give the operator some idea of the time it takes to fill the dust hopper. Do not allow the dust hopper to overfill. This can damage the filters and cause premature wear on the 2 - 30D wear parts. The actual time it takes to fill the dust hopper will depend on the job application.

11.1 Compressor Lubrication 8-54

Compressor Lubrication Information

The lubrication oil used in new compressor units shipped from the factory is a **premium quality non-detergent industrial lubricating oil containing rust and oxidation inhibitors**. This type of oil is generally recommended for air compressor service by the oil companies, has good water separating ability and is resistant to sludge.

The following list of specific brand name oils represents the lubrication recommendations for this reciprocating compressor. These have the viscosity equivalent of **SAE Grade 20W motor oil.**

1. American Oil Company
   Amoco Industrial Oil # 31
   Amokon # 35

2. Clark Oil and Chemical Co.
   Co Chem #228

3. Continental Oil Co.
   Conoco Dectol Medium

4. Exxon
   Teresstic 52
   Esstic 50
   Nuto 53

5. Gulf Oil Corp.
   Gulf Harmony Oil 61

6. Phillips Oil Co.
   Baltic Grade 315

7. Texaco
   Texas Regal C - R & O

The oils listed above will operate satisfactorily for ambient temperature ranges between 20 and 90 degrees Far. This range should be appropriate for most installations. Applications where the ambient temperature is consistently above 90 degrees should use the next higher viscosity oil in the same lubrication oil families.

12.0 Troubleshooting (854 Dust Collector)

Trouble	Possible Reason	Solution
Contaminated Abrasive; Fines and contaminants not properly removed from abrasive	Insufficient flow of air is being delivered by the dust collector exhaust fan. Surface being cleaned generates too must dust. (Soft concrete)	Check exhaust fan rotation. Check for leaks in the fan housing or wear on the fan blades Contact Blastrac representative.
Visible discharge	Torn or punctured filter cartridges Improper cartridge installation	Replace all damaged or faulty filter cartridges Reinstall filter cartridges correctly (no gaps, tight fit)
High differential pressure	Clogged filters	Increase timer pulse frequency, set pressure to 100 psi max. Replace faulty filters. Allow dust collector to run independently to pulse filters and reduce differential pressure, replace filters if differential builds up quickly.
Loss of compressed air	Line leakage from compressor Diaphragm valve stuck open. Unloader not holding correct pressure Loss of compressed air Improper solenoid operation Timer board failure	Check all high pressure air lines. Be sure all fittings are tight. Do not over torque fittings. Check solenoid pilot valve. Clean plunger. Check Goyen diaphragm for foreign particles. Replace diaphragm valve or pilot valve. Reset to 80 psi or replace unloader valve Check compressed air system. Look for air leaks Check timer lights to observe solenoid operation. Check timer discharge port to ensure operation. Observe timer operation. Replace if defective.

Electrical malfunctions	See electrical diagram. 94D360	Consult electrician or contact Blastrac representative.

510-0002 8-54D/C99
DUST COLLECTOR

ITEM NO.	QTY	USF PN	DESCRIPTION
1	6	717053	TERMINAL BLOCK, BLACK
2	7	717051	TERMINAL BLOCK, RED
3	2	717052	TERMINAL BLOCK, WHITE
4	1	717048	TERMINAL BLOCK, END BARRIER, KBL6-10 TERMINAL BLOCK
5	1	717049	TERMINAL BLOCK, ISOLATION PARTITION
6	2	717045	TERMINAL BLOCK, END ANCHOR, TERMINAL BLOCK, 35 MM
7	1		NUT FOR CD36NA-BK 1-1/2"
8	1	P000190	VOLTMETER, DIGITAL, 600V, 48VDC PS, DUAL RELAY
9	3		ELBOW 90°
10	1	P000144	HOUR METER, 120V, 50/60 HZ (HM)
11	1	716842	RECEPTACLE, 60 AMP, 480 V, 4 WIRE, 3 POLE, PANEL MOUNT
12	2	P000394	LAMP, T3 1/4, 28V (PL1 & PL2)
13	3	P000393	LAMP, T3 1/4, 120V (PL3, PL4 & PL5)
14	1	P000150	PILOT LIGHT, GREEN, LESS LAMP (CONTROL POWER) (PL3)
15	1	P000323	SHACKLE/ SCREW PIN, 3/8"
16	3	493410	VALVE, SOLENOID, 120 VAC, 50/60 HZ (SV1, SV2 & SV3)
17			NOT USED
18	2	P000147	XFMR, TERMINAL COVER
19	1	P000407	TRANSFORMER, 200VA, 480/240X120 (CP1)
20			NOT USED
21			NOT USED
22			NOT USED
23			NOT USED
24	1	P000197	POWER SUPPLY, 24 VDC, 15 W (PS)
25	2	P000198	AUX CONTACT, 2NO, TOP MOUNTED (1M & 2M)
26	1	716820	SWITCH, DISCONNECT EXTENSION (MAIN)
27	1	P000158	BUS FEEDER CONNECTOR, 3 PHASE
28	1	P000199	CONTACTOR (COMPRESSOR) 120 VOLT, 50/60 HZ (1M)
29	1	P000200	CONTACTOR (FAN) 120 VOLT, 50/60 HZ (2M)
30	1	P000201	RELAY/ FOR "VOLTAGE ACCEPTABLE", 4PNO (CRA)
31	1	P000202	CIRCUIT BREAKER/ POWER SUPPLY SECONDARY, 0.5 AMP (CB2)
32			NOT USED
33	1	P000416	CIRCUIT BREAKER (CB1)
34	1	716819	SWITCH/ DISCONNECT, HANDLE (MAIN)
35			NOT USED
36	1	716818	SWITCH/DISCONNECT, 160AMP (MAIN)
37	2	716826	AUX CONTACT , (1 NO/1 NC) FOR EACH MCP (FOR 1MOL & 2MOL)
38	1	716821	MCP/ CIRCUIT PROTECTOR FOR FAN (2MOL) , 6.3 - 10 AMP
39	1	716824	MCP/ CIRCUIT PROTECTOR FOR COMPRESSOR (1MOL), 2.4 - 4 AMP
40	1	P000207	MCP/ CIRCUIT PROTECTOR FOR PHASE MONITOR (PMOL) , 0.25 - 0.4 AMP
41	1	716825	MCP/ CIRCUIT PROTECTOR FOR CPT (CPOL) , 0.63 - 1.0 AMP
42			NOT USED
43	2	P000155	SWITCH, PUSH BUTTON, DUAL, FOR START/STOP (PB2A&B, PB3A&B)
44	2	P000341	PILOT LIGHT, AMBER, LESS LAMP (COMPRESSOR RUNNING) (PL4 & PL5)
45	1	P000210	PILOT LIGHT, GREEN, LESS LAMP (PROPER ROTATION) (PL2)
46	1	P000211	PILOT LIGHT, RED, LESS LAMP (IMPROPER ROTATION) (PL1)
47	1	P000212	SWITCH, E STOP, LATCHING, PULL TO RELEASE, 2 NC (PB1 E-STOP)
48			NOT USED
49	1	487270	TIMER, DC PULSE, 120V, 50/60 HZ, ON - 50-500 MS, OFF - 1.5 - 30 SEC (PTB)

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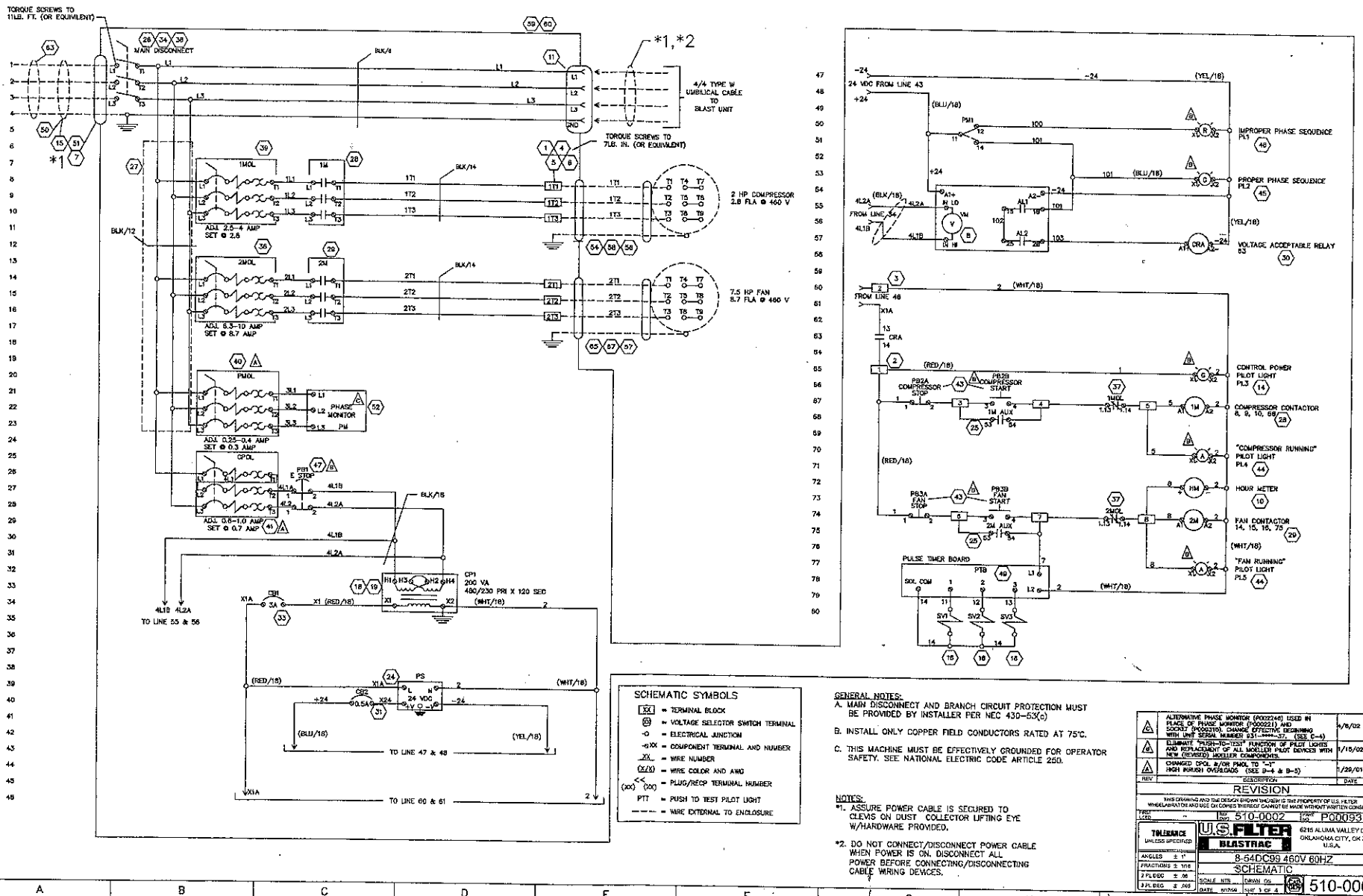
DUST COLLECTOR

50	1	691949	STRAIN RELIEF, DOUBLE EYELET, 1-1.25" (DC END POWER CORD)
51	1	P000156	CORD GRIP, 0.86"-1.26",11/2" NPT, (INPUT POWER)
52	1	P000221	RELAY/PHASE SEQUENCE/LOSS SELF POWERED, 200/480 V, 50/60 HZ (PM)
53	1	P000315	SOCKET, RELAY FOR PHASE SEQUENCE MONITOR
54	1	P001044	FITTING -STRAIGHT 1/2"
55	1	HDW	NUT FOR 1/2"
56	1	P001055	ELBOW FOR PG16 (COMPRESSOR)
57	1	P001047	ELBOW CONNECTOR, 3/4" (FAN)
58	1	P001040	1/2" X 33" CONDUIT FOR PG16
59	1	P001063	8-54 ENCLOSURE W/BACKPANEL
60	1	P001064	ENCLOSURE DOOR
61	40	P000330	WIRE, 600V, 14 AWG
62	30	P000331	WIRE, 600V, 16 AWG
63	75	P000332	WIRE, CABLE, 4 AWG, 4 CONDUCTOR, TYPE W
64	1	676556	GAUGE, WATER GAGE, DIFFERENTIAL PRESURE GAGE 1-10 INCHES W.C.
65	1	P001046	FITTING-STRAIGHT 3/4"
66	1	HDW	NUT FOR 3/4"
67	1	P001041	3/4" X 33" CONDUIT FOR PG21
68	2	710015	VIBRATION MOUNT, 1 1/4" CONICAL W/ 5/16 - 18 STUDS
69	2	45655	VIBRATION MOUNT, 1" ROUND W/ 5/16 - 18 STUDS

BLASTRAC 8-54DC99 DUST COLLECTOR CONTROL PANEL FOR 460/480V - 60 HZ WITH VOLTAGE/PHASE ROTATION VERIFICATION

TOTAL FLA	LARGEST MOTOR FLA @ SUPPLY VOLTAGE
12.8 AMPS	8.7 AMPS @ 460 V
PHASE – 3	ENCLOSURE – TYPE 1
HERTZ – 60	MODEL – 8-54DC99
MAX. BRANCH CIRCUIT PROTECTION	100 AMPS



SCHEMATIC SYMBOLS

- XX = TERMINAL BLOCK
- 69 = VOLTAGE SELECTOR SWITCH TERMINAL
- -o- = ELECTRICAL JUNCTION
- -o XX = COMPONENT TERMINAL AND NUMBER
- XX = WIRE NUMBER
- GY(X) = WIRE COLOR AND AWG
- (XX) (XX) = PLUG/RECP TERMINAL NUMBER
- PTT = PUSH TO TEST PILOT LIGHT
- ---- = WIRE EXTERNAL TO ENCLOSURE

GENERAL NOTES:

A. MAIN DISCONNECT AND BRANCH CIRCUIT PROTECTION MUST BE PROVIDED BY INSTALLER PER NEC 430-53(c)

B. INSTALL ONLY COPPER FIELD CONDUCTORS RATED AT 75°C.

C. THIS MACHINE MUST BE EFFECTIVELY GROUNDED FOR OPERATOR SAFETY. SEE NATIONAL ELECTRIC CODE ARTICLE 250.

NOTES:

*1. ASSURE POWER CABLE IS SECURED TO CLEVIS ON DUST COLLECTOR LIFTING EYE W/HARDWARE PROVIDED.

*2. DO NOT CONNECT/DISCONNECT POWER CABLE WHEN POWER IS ON. DISCONNECT ALL POWER BEFORE CONNECTING/DISCONNECTING CABLE WIRING DEVICES.

REV	DESCRIPTION	DATE	BY
C	ALTERNATIVE PHASE MONITOR (P0002246) USED IN PLACE OF PHASE MONITOR (P0002021) AND SOCKET (P0003310). CHANGE EFFECTIVE BEGINNING WITH UNIT SERIAL NUMBER 031-****-37. (SEE C-4)	4/8/02	ML
B	ELIMINATE "PUSH-TO-TEST" FUNCTION OF PILOT LIGHTS AND REPLACEMENT OF ALL MOELLER PILOT DEVICES WITH NEW (REVISED) MOELLER COMPONENTS.	2/15/02	GS
A	CHANGED CPOL & OR PMOL TO "-1" HIGH INRUSH OVERLOADS (SEE B-4 & B-5)	1/29/01	GS

REVISION

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PROJ. NO. 510-0002 PART NO. P000931

TOLERANCE UNLESS SPECIFIED: ANGLES ± 1° | FRACTIONS ± 1/16 | 2 PL DEC ± .06 | 3 PL DEC ± .005

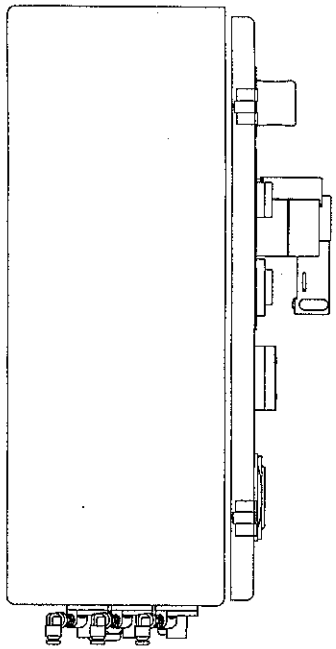
U.S. FILTER BLASTRAC

6216 ALUMA VALLEY DRIVE OKLAHOMA CITY, OK 73121 U.S.A.

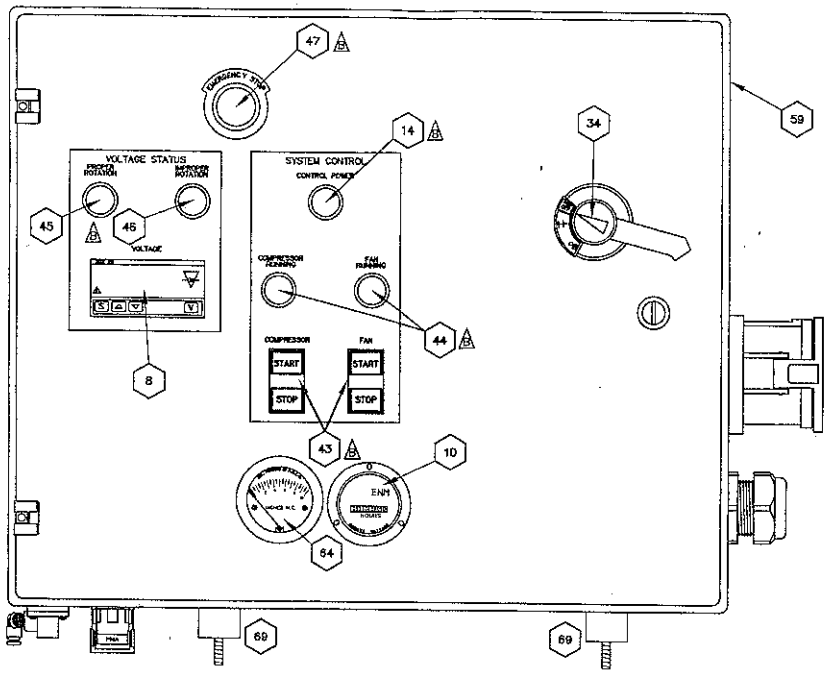
8-54DC99 460V 60HZ SCHEMATIC

SCALE NTS | DRAWN GS | DATE 8/17/04 | SHT 1 OF 4

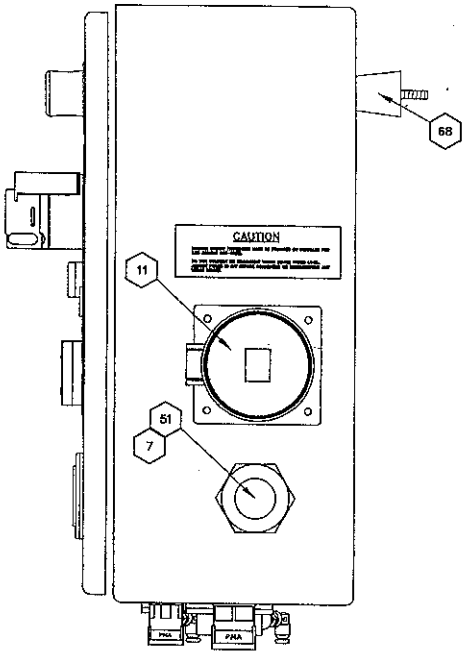
510-0002



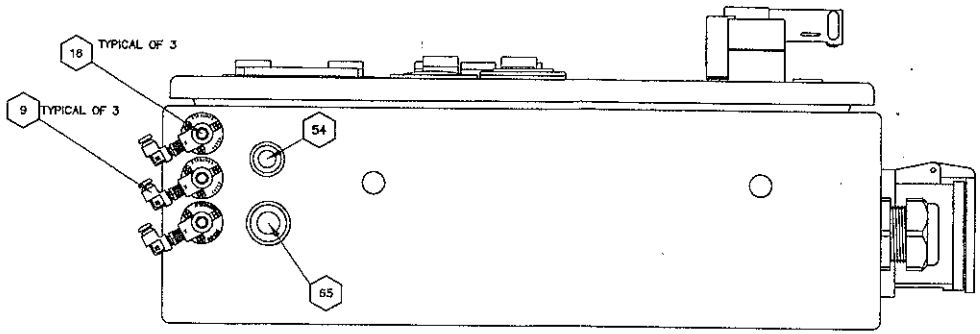
LEFT VIEW



FRONT COVER



RIGHT VIEW

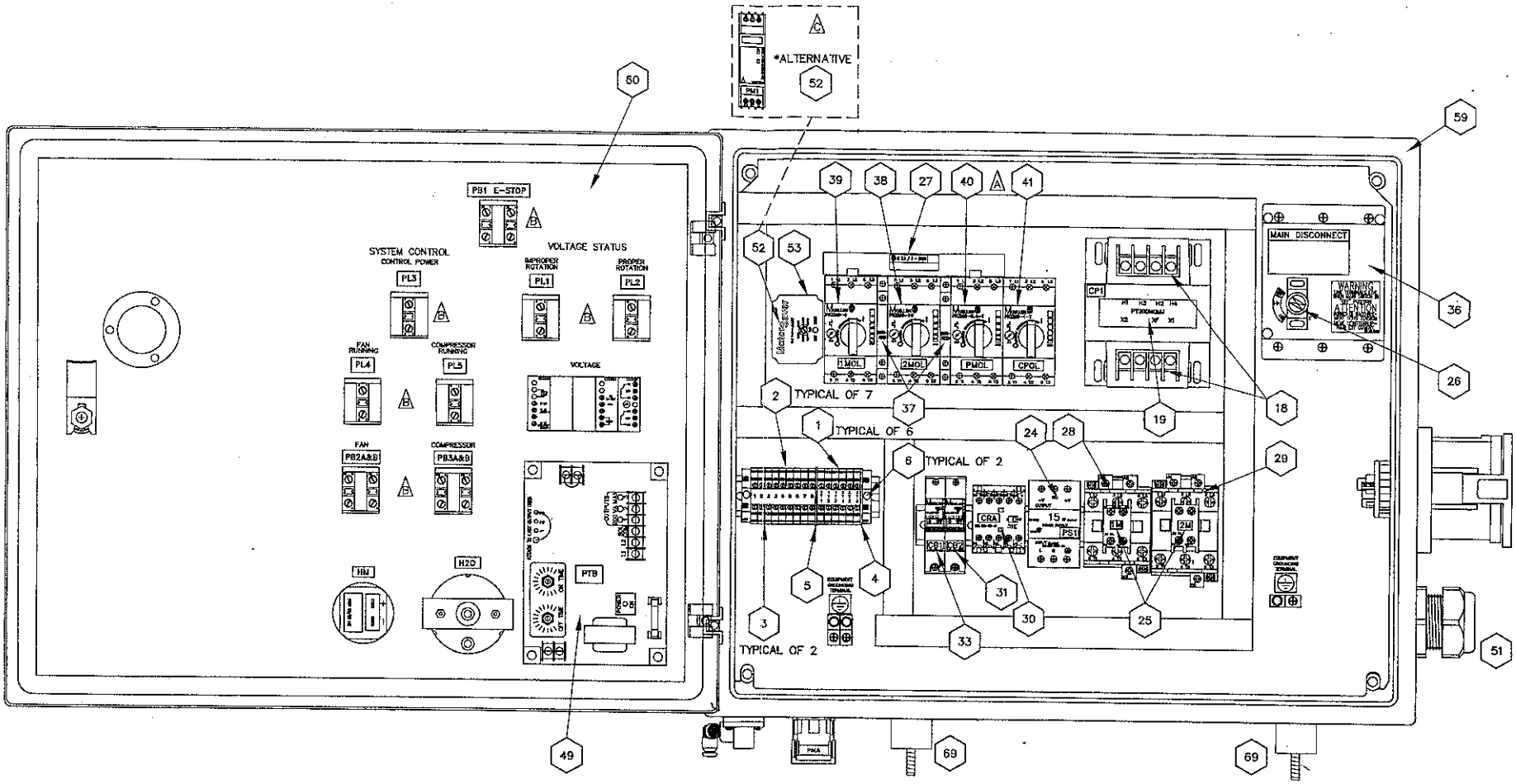


BOTTOM VIEW

REV	DESCRIPTION	DATE	BY
A	ELIMINATE "PUSH-TO-TEST" FUNCTION OF PILOT LIGHTS AND REPLACEMENT OF ALL MOELLER PILOT DEVICES WITH NEW (REVISED) MOELLER COMPONENTS.	1/15/02	GB

REVISION

PART NO'S	REF DWG 510-0002 / PART NO. P000931
TOLERANCES UNLESS SPECIFIED	U.S. FILTER / BLASTRAC, 6215 ALUMA VALLEY DRIVE, OKLAHOMA CITY, OK 73121 U.S.A.
ANGLES ± 1°	8-54DC99 460V 60HZ
FRACTIONS ± 1/16	ENCLOSURE LAYOUT
2 PL DEC ± .05	SCALE NTS / DRWN GB / 510-0002
3 PL DEC ± .005	DATE 8/13/00 / SHT 1 OF 4



REV	DESCRIPTION	DATE	BY
A	ALTERNATIVE PHASE MONITOR (P0022248) USED IN PLACE OF PHASE MONITOR (P0002221) AND SOCKET (P0003180). CHANGE EFFECTIVE BEGINNING WITH UNIT SERIAL NUMBER 931-[illegible]-37.	4/15/02	ML
B	ELIMINATE "PUSH-TO-TEST" FUNCTION OF PILOT LIGHTS AND REPLACEMENT OF ALL MOELLER PILOT DEVICES WITH NEW (REVISED) MOELLER COMPONENTS.	1/15/02	GB
A	CHANGED CPOL #/OR PMOL TO "-F" HIGH INRUSH OVERLOADS (SEE 62)	1/29/01	GB

REVISION

FST LOT#	--
DWG. NO.	510-0002
PART NO.	P000931

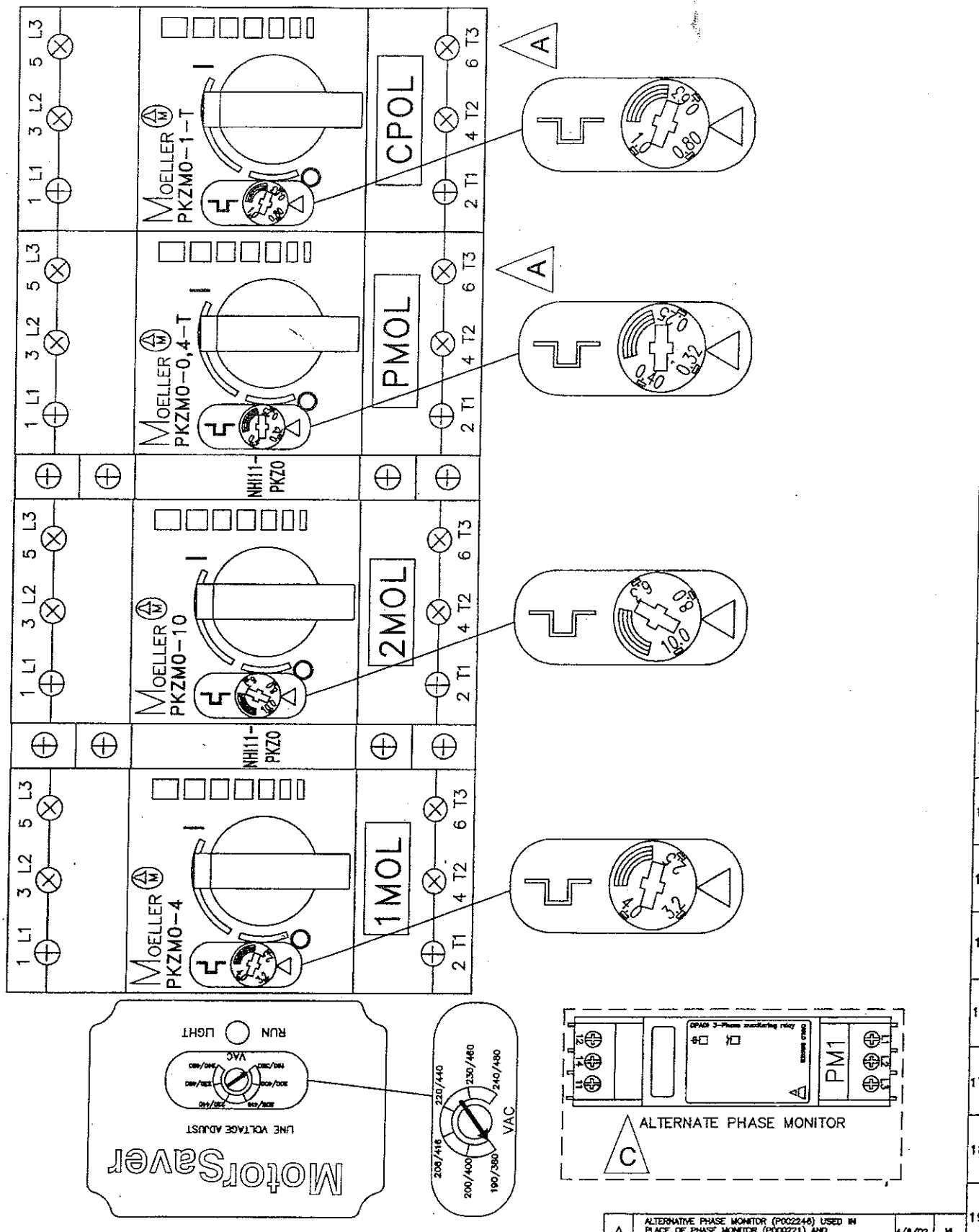
TOLERANCE UNLESS SPECIFIED
ANGLES ± 1°
FRACTIONS ± 1/16
2 PL DEC ± .06
3 PL DEC ± .005

U.S. FILTER BLASTRAC
9215 ALUMA VALLEY DRIVE
OKLAHOMA CITY, OK 73121
U.S.A.

8-54DC99 460V 60HZ
PANEL LAYOUT

SCALE NTS | DRAWN DS | DATE 4/12/96 | SHT 1 OF 4

510-0002



REV	DESCRIPTION	DATE	BY
C	ALTERNATIVE PHASE MONITOR (P002246) USED IN PLACE OF PHASE MONITOR (P000221) AND SOCKET (P000315). CHANGE EFFECTIVE BEGINNING WITH UNIT SERIAL NUMBER 931-****-37.	4/8/02	ML
A	CHANGED CPOL &/OR PMOL TO "-T" HIGH INRUSH OVERLOADS	1/29/01	OS

REVISION

U.S. FILTER BLASTRAC
OKLAHOMA CITY, OK 73121 U.S.A.

DATE 8/12/99	DWG. 510-0002	NO. P000931	SCALE NTS	DRWN OS
8-54DC99 460V 60Hz			SHEET 4	
OVERLOAD DEVICE SETTINGS			OF 4	510-0002