

Five Seasons

OPERATION & MAINTENANCE MANUAL

MODEL SP-2 SOURCER MOBILE ELECTRONIC AIR CLEANER

IMPORTANT: PLEASE READ MANUAL BEFORE OPERATING UNIT



INTRODUCTION

DESCRIPTION

The SP-2 Sourcer is a self-contained Electronic Air Cleaner comprised of a two-part collecting cell, an electrical compartment, a blower and motor assembly, complete cabinet housing, a flex arm (direct capture system), prefilter and an after filter or optional carbon filter.

HOW IT WORKS

The SP-2 Sourcer operates on the principle of "Electrostatic Precipitation". Airborne pollutants are drawn in through the direct capture arm and first pass through to the prefilter, where large particles are caught. Next, smaller particles move to a two-stage electrostatic collecting cell where they are given a powerful positive charge by the ionizing wires. Charged particles then move into the collecting area where they are attracted to a series of grounded plates. Pollutants are held on the plates like a magnet until washed away during cleaning. Clean air is then dispersed from the top of the unit.

MAJOR COMPONENTS

CABINET

The cabinet is built of 16 gauge steel finished in a scratch-resistant electrostatic powder coated finish. There is a single access door (interlocked) on the unit to service the cell and blower motor section.

PREFILTERS

The washable prefilter measuring 16 x 20 in (40.6 x 50.8 cm) is constructed of multi-layers of aluminum mesh for maximum filtration of large particles.

AFTER FILTER

The after filter measuring 16 x 20 in (40.6 x 50.8 cm) is constructed of multi-layers of aluminum mesh for filtration of agglomerated dust, and to maintain back pressure.

COLLECTING CELL

The two part collecting cell includes support bracket, collecting plates, support tubing, insulators, end plates, spring contact, access handles, and separate ionizing section (ionizing wires, ionizing wire support).

MOTOR & BLOWER

The motor is 3/4 HP TEFC, 1725 RPM. The blower is a double inlet, centrifugal, with a forward inclined 10 5/8 in diameter, 7 1/8 in wide wheel (25.4 x 18 cm).

ELECTRICAL COMPARTMENT

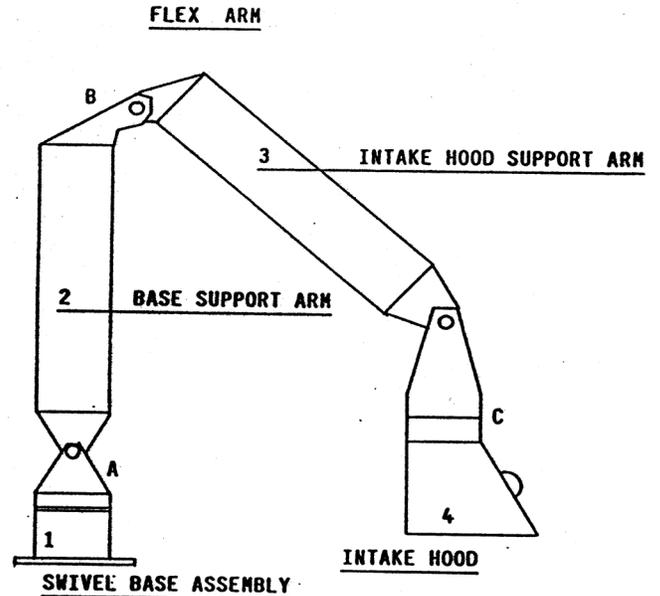
The removable power box contains the motor and power switches, high voltage power board, and performance indicator light.

The power board is an open printed circuit board with an adjustable output. The direct current output is 10,000 volts @ 3.5 mA. The board is fused at 1.5 amps. A large value bleed off resistor allows the high voltage to dissipate from the cell when

the unit has been turned off, to prevent shock.

Quick disconnects on the board allow for easy removal for troubleshooting or repairs. **The Performance Indicator Light should be on during normal operation.** The light will flicker with arcing in the cell or extinguish if the cell, ionizer or power board is shorted.

ARM ASSEMBLY PROCEDURE



1. The base assembly and base support arm (items 1 & 2) and the hood support arm and intake hood (items 3 & 4) come assembled ready to attach at the joint (B).
2. The hose should be slid on to the base support arm before joining the two support arms at joint B (see diagram).
3. Mount swivel base assembly to top of air cleaner, placing the plastic gasket between the base and cabinet. Tighten.
4. Tighten the 3 joints A, B and C, as well as the side screw on the intake hood. Test arm to make sure it will stay in place when extended.
5. Slide the hose into place and clamp at base and hood.

The tension on the arm joints may have to be adjusted periodically to maintain the pressure on the friction washers and allow the arm to be extended properly.

MAINTENANCE SCHEDULE

The collecting cell, ionizer, prefilter and after filter must be cleaned on a regular basis for the unit to function at its peak efficiency. The frequency of cleaning will vary from one environment to another. The following is an average wash cycle:

- Welding Shops **1-2 Weeks**

If your unit is equipped with an **activated carbon filter**, it will need to be refilled, depending on the environment, every 3 - 6 months. Do not wash the carbon filter as this will render it useless.

WASHING INSTRUCTIONS

1. Turn off power switch for blower motor and high voltage, and wait 15 seconds for high voltage to dissipate.
2. Open the cell access door and remove the collecting cell, ionizer, prefilter and after filter. **Cell plates are sharp. Handle with care.**
3. Place cell and ionizer in a tub and spray completely with **DAX Detergent**, allowing detergent to run down both sides of plates and ionizing wires. Let sit for 5 minutes.
4. Rinse cell well with hot water (140°F / 60°C maximum).
5. If dirt remains on plates, let the cell soak in hot soapy water for 30 minutes, then repeat the washing instructions listed above. **Never use any instrument to clean the cell, as this may damage the ionizing wires or bend cell plates.**
6. Spray prefilter and after filter with **DAX Detergent** and rinse well.
7. To dry cell, tilt on 45° angle against wall with arrows pointing sideways. Allow to dry completely for at least 8 - 10 hours.
8. When the cell, ionizer, prefilter and after filter are dry, install them back into the cabinet. **The arrow on the cell and ionizing section should point up toward the blower. The spring contact should line up with the fibreboard on the back wall of the cabinet.** Close the door. If the cell arcs when the power switch is turned on or if the performance indicator light does not come on, then the cells may still be wet. Allow more time for drying.

A cell or ionizer placed in the air cleaner incorrectly can burn out the power board.

CLEANING AND SERVICE

The use of **DAX Detergent** is recommended for cleaning as it is a heavy duty solution used expressly for removal of accumulated pollutants on cell plates. If used as directed, **DAX** will not harm aluminum or steel. Any problem arising out of the use of another cleaning agent will void the warranty.

Avoid washing cells with a high pressure steam cleaner as this may cause damage to the cell plates.

DAX Detergent is available in 1 gallon (4.6L) and 4.4 gallon (20L) containers, as well as 45 gallon drums (204L).

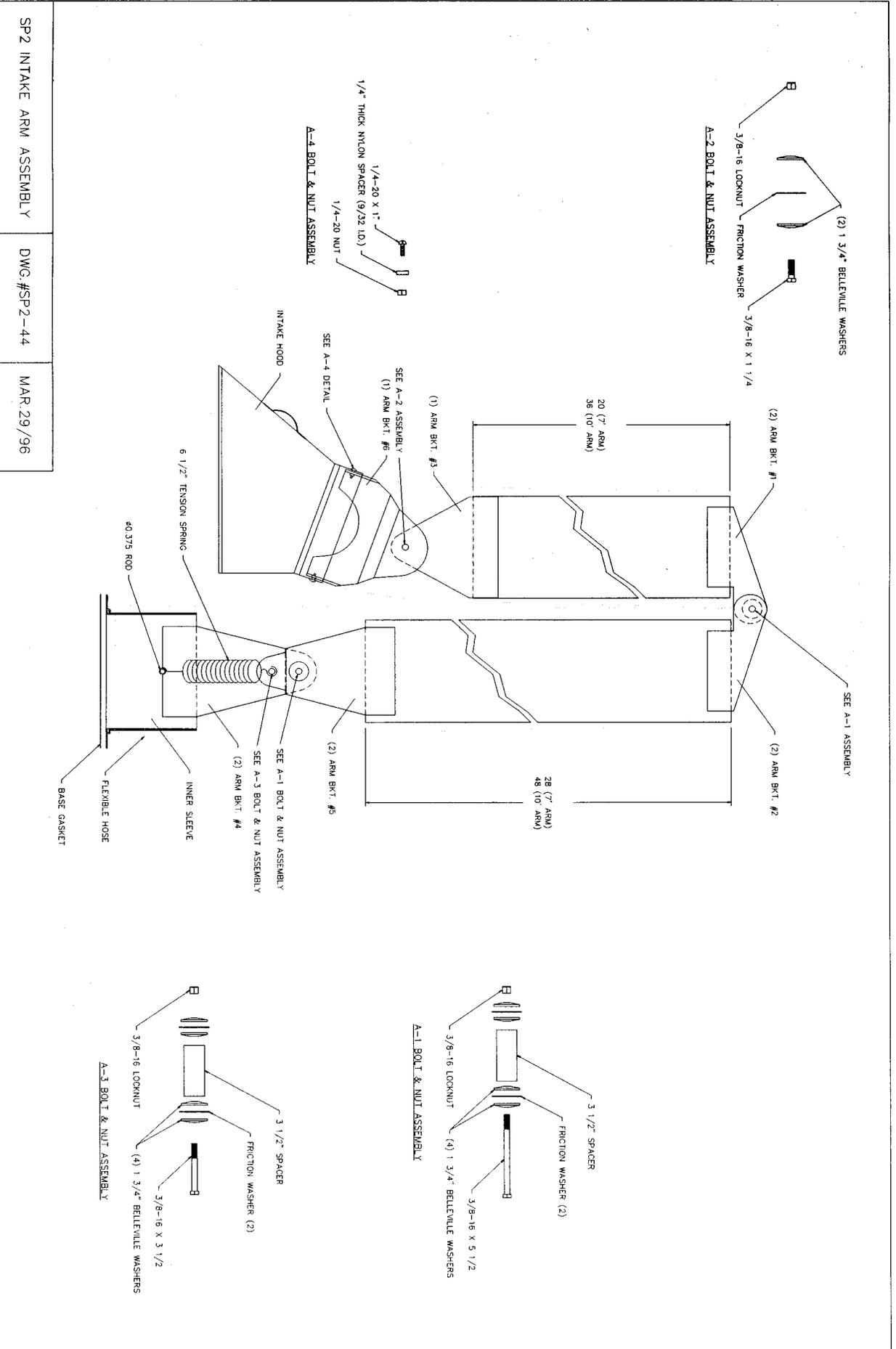
SERVICE MAINTENANCE

1. Determine if the air cleaner is performing properly by seeing that:
 - Power switch is **ON**
 - Fan control switch is **ON**
 - Performance indicator light is **ON**
2. The performance indicator light when lit shows that the power board is functioning properly and should be lit during normal operation. The light will flicker with arcing in the cell or extinguish if the cell, ionizer or power board is shorted.
3. If performance indicator light fails to light, check the cell to ensure it has been installed properly.

A simple test to ensure that the cell is in correctly, is to take a long plastic handle screwdriver and short the cell between the frame of air cleaner and bolt head on the porcelain insulators. Check plates and ionizer for a spark. The switch for the fan should be left off. The power supply switch should be on. Be sure to activate the safety interlock switch before checking voltage. **CAUTION: You are dealing with high voltage.**
4. If in doubt and if cell is not collecting any carbon, tars or body shop dust, then consult your dealer or factory service center. The installing dealer should have sufficient knowledge to determine any problems.

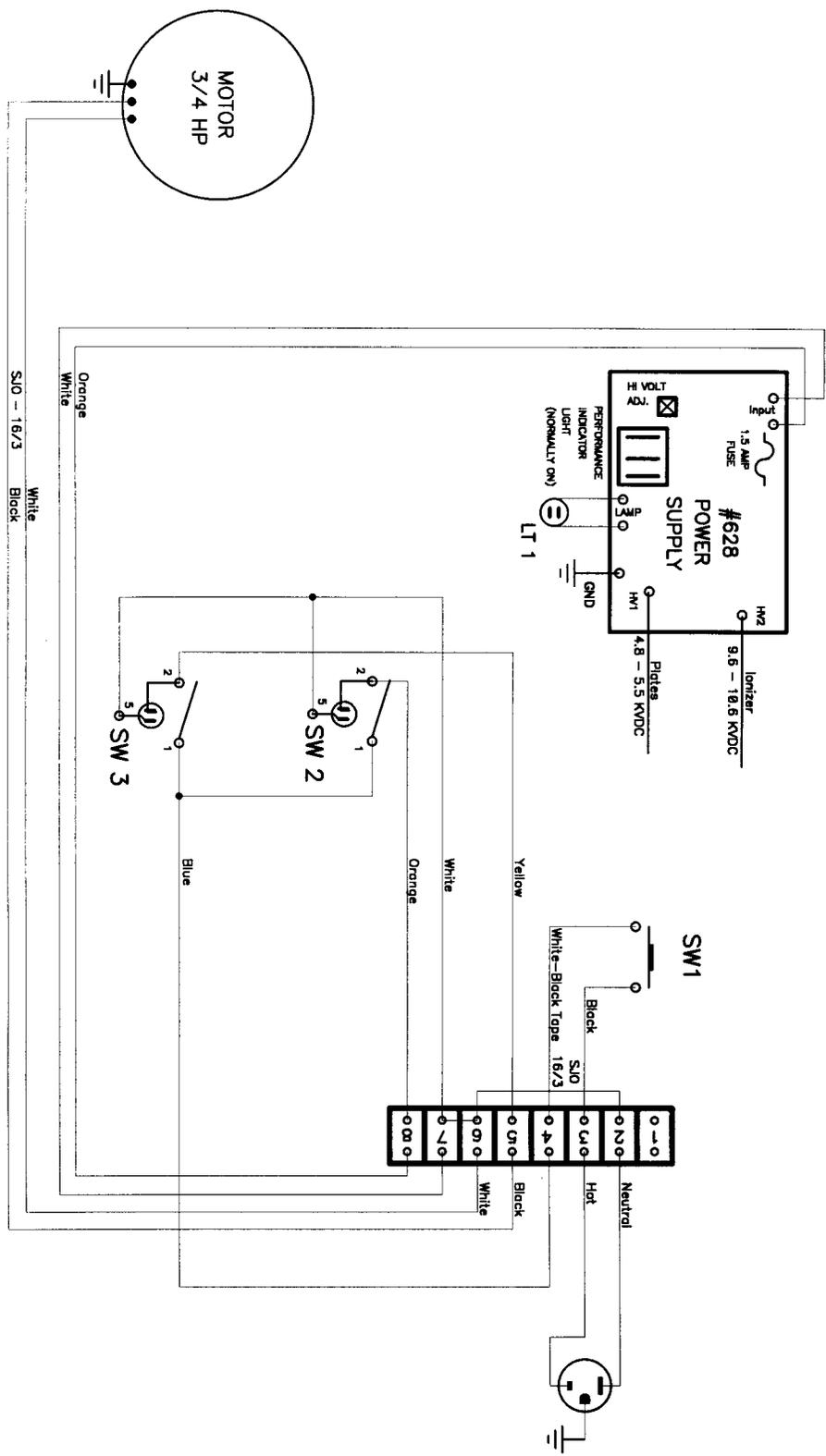
SELF SUPPORTING ARM PARTS LIST

| DRAWING | DESCRIPTION | QUANTITY | SECTION |
|---------|-----------------------------------|----------|---------|
| 1 | Swivel Base Assembly | 1 | A |
| 2 | Base Support | 1 | A |
| 3 | Intake Hood Support | 1 | A |
| 4 | Intake Hood | 1 | C |
| 5 | Type 100 Hose | 1 | C |
| 6 | Hose Clamps | 2 | A-C |
| 7 | Base Gasket | 1 | A |
| 8 | 3/8-16 x 1 in Bolt & Nut Assembly | 6 | A |
| 9 | Tension Springs 6-1/2 in | 2 | A |
| 10 | Rod 3/8 in | 1 | A |
| 11 | 1/4-20 x 2 in Bolt | 1 | A |
| 12 | 1/4-20 Nut | 1 | A |
| 13 | Spacer 3-1/2 in | 2 | A-B |
| 14 | Bolt 3/8-16 x 5-1/2 in | 2 | A-B |
| 15 | 3/8-16 Lock Nuts | 3 | A-B-C |
| 16 | 3/8-16 x 1-1/4 Bolt | 1 | C |
| 17 | 2 in dia. Friction Washer | 6 | A-B-C |
| 18 | 1-3/4 in dia. Belleville Washers | 10 | A-B-C |



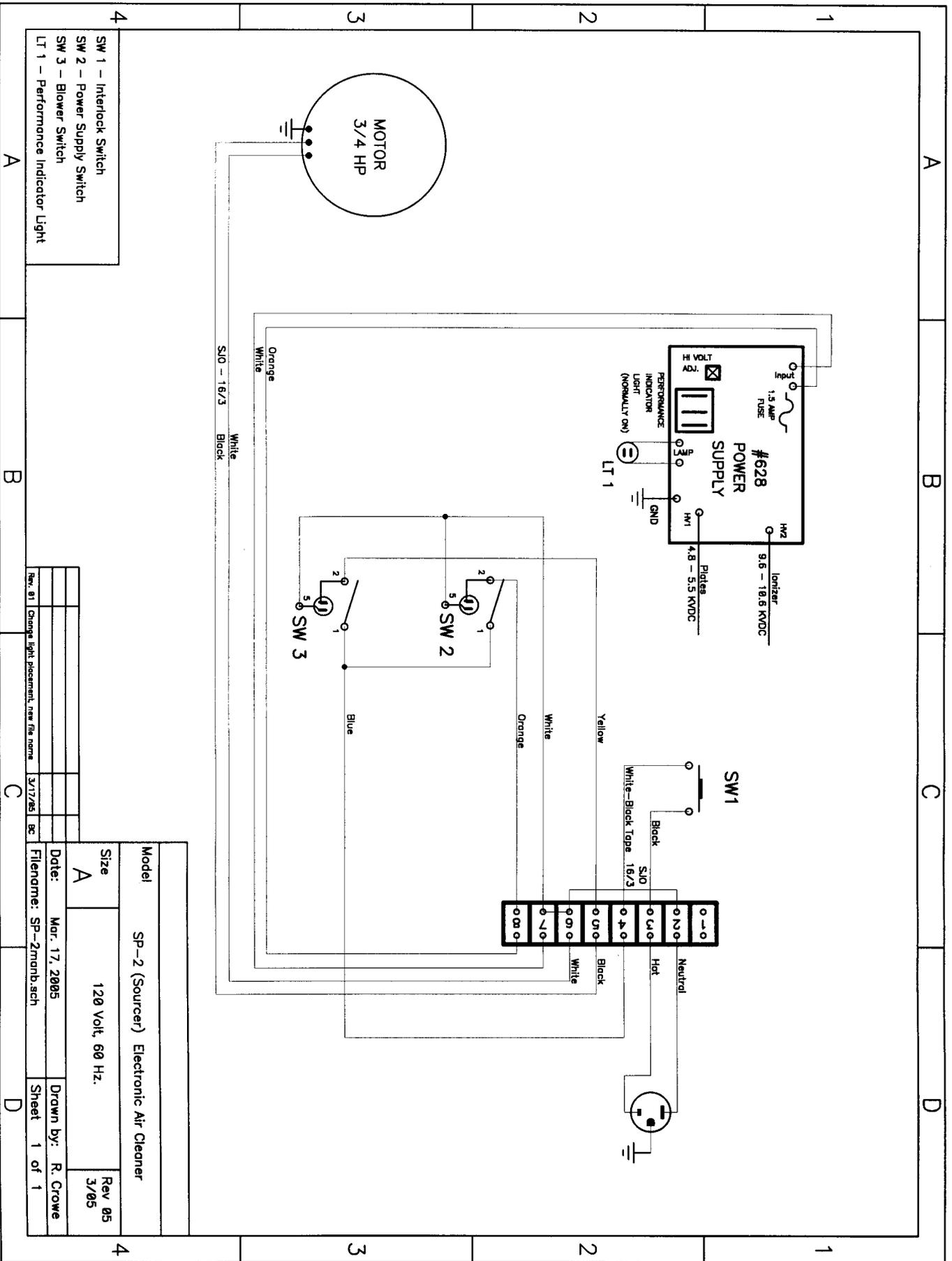
SP2 INTAKE ARM ASSEMBLY
 DWG.#SP2-44
 MAR.29/96

- SW 1 – Interlock Switch
- SW 2 – Power Supply Switch
- SW 3 – Blower Switch
- LT 1 – Performance Indicator Light



| | | | |
|---------|---------------------------------------|---------|----|
| Rev. 01 | Change Light Placement, use file name | 3/17/05 | BC |
|---------|---------------------------------------|---------|----|

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|--|------------------|
| Model: SP-2 (Sourcer) Electronic Air Cleaner | |
| Size: A | 120 Volt, 60 Hz. |
| Date: Mar. 17, 2005 | Rev 05 |
| Filename: SP-2monb.sch | 3/05 |
| Drawn by: R. Crowe | |



LIMITED ONE YEAR WARRANTY

Your Electronic Air Cleaner is guaranteed for one (1) year from the date of original purchase, against electrical and mechanical defects in material and workmanship, under normal use and maintenance, which will be repaired or replaced without charge, upon inspection by an authorized service center. The warranty does not include the prefilter, after filter, carbon filter or ionizing wires.

This guarantee is in lieu of any other warranty, either expressed or implied.

FIVE SEASONS COMFORT LIMITED will not be responsible for:

1. Normal maintenance as outlined in the Operation & Maintenance Manual including cleaning of electronic collecting cells and/or replacement of carbon filters.
2. Damage or repairs required as a consequence of faulty application by others.
3. Damage or repairs needed as a consequence of any misapplication, negligent handling, improper servicing, unauthorized alteration, or improper operations.
4. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
5. Damage as a result of floods, winds, fires, lightning, accidents, corrosive atmosphere, or other conditions beyond the control of FIVE SEASONS COMFORT LIMITED.
6. Parts not supplied or designated by FIVE SEASONS COMFORT LIMITED.
7. FIVE SEASONS COMFORT LIMITED products installed outside the continental Canada, U.S.A., Alaska, and Hawaii.
8. Any personal injury, special indirect or consequential property or commercial damage of any nature whatsoever.

If warranty service is required, send the part(s) prepaid to your dealer or nearest authorized service center, with a **proof of purchase**. Ensure that sufficient packing material is used. If part(s) arrive damaged due to improper packaging, warranty will be void. Please enclose a note explaining the nature of your difficulty.

| | |
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| Model No. | Serial No. |
| Date of Purchase | Dealer Name |
| Owner's Company Name & Address | |
| | |
| RETAIN THIS CERTIFICATE WITH YOUR VALUABLE DOCUMENTS | |

Five Seasons Comfort Limited
351 North Rivermede Road
Concord, Ontario, Canada L4K 3N2

Phone: (416) 213-5636 Fax: (416) 213-5593
Email: info@fiveseasonsaircleaners.com
Web Site: www.fiveseasonsaircleaners.com