CANTELOU ASSOCIATES
ENGINEERING - PLANNING

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September 13, 1990

Mr. Clair Fancy
Chief Bureau of Air Regulation
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: AC05-165271
Sea Ray Boats, Inc.
Product Development & Engineering
Merritt Island, Florida

Dear Mr. Fancy:

We respectfully request and extension on the expiration date while the permit applications are being considered.

Thank you for your consideration. If you have any questions, please call me at (803) 648-9300.

Yours truly,

G. E. Cantelou, Jr. P.E.

GEC/sc
J. Reynolds
C. Collins, C Dist

401 Park Ave. S.W. / P.O. Box 3102 / Aiken, S.C. 29802 / (803) 648-9300

OPERATION PERMIT APPLICATION
FOR THE
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

PREPARED FOR

SEA RAY BOATS, INC.
MERRITT ISLAND FACILITY

PREPARED BY :

CANTELOU ASSOCIATES
CONSULTING ENGINEERS • PLANNERS
401 Park Avenue SW / P.O. Box 3102 / Aiken, S.C. 29801

CANTELOU ASSOCIATES
ENGINEERING - PLANNING

September 13, 1990

Mr. Clair Fancy
Chief Bureau of Air Regulation
Florida Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: AC05-165270
Sea Ray Boats, Inc., Merritt Island Facility
Merritt Island, Florida

Dear Mr. Fancy:

Please accept this letter as a formal request for modifications to the referenced construction permit.

The construction permit application was based on to initial estimates of the materials to produce boats at the referenced facility, due to production variances these estimates need to be modified. For example, the glue originally intended for use had contents of 60% 1,1,1-trichloroethane and 30% Methylene Chloride, the actual glue now in use is a product consisting of 68% 1,1,1-trichloroethane and 8% Toluene.

We request the following modifications:

1) The modifications reflected on the sheets marked "Revised per modification request" reflect the actual usage.

2) That all styrene emissions (contained in resin & gelcoat) be grouped together to determine compliance.

3) Compliane be determined on a ninety day average of utilization.

If you find this request for modification acceptable please substitute page four, Exhibit "A", and Exhibit "D" marked "REVISED" in the permit application.

We also respectfully request and extension on the expiration date while the permit applications are being considered. Thank you for your considerations. If you have any questions, please call me at (803) 648-9300.

Yours truly,

G. E. Canteloo, Jr. P.E.

GEC/sc
cc: John Turner

401 Park Ave. S.W. / P.O. Box 3102 / Aiken, S.C. 29802 / (803) 648-9300

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT
3426 HILLS ROAD
JACKSONVILLE, FLORIDA 32207
(904) 398-6959

BOB GRAHAM
GOVERNOR
VICTORIA J. TSCHINKEL
SECRETARY
THOMAS F. TIEY
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Fiberglass Boat Plant [ ] New[1] [X] Existing[1]

APPLICATION TYPE: [ ] Construction [X] Operation [ ] Modification

COMPANY NAME: Sea Ray Boats, Inc. COUNTY: Brevard

Identify the specific emission point source(s) addressed in this application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lamination & Fabrication Buildings

SOURCE LOCATION: Street 100 Sea Ray Drive City Merritt Island

UTM: East North

Latitude 28 ° 24 ' 32 "N Longitude 80 ° 42 ' 23 "W

APPLICANT NAME AND TITLE: Sea Ray Boats, Inc.

APPLICANT ADDRESS: 2600 Sea Ray Blvd., Knoxville, TN. 37914

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative* of Sea Ray Boats, Inc. Merritt Island Facility

I certify that the statements made in this application for a Boat Manufacturing Plant permit are true, correct and complete to the best of my knowledge and belief. Further I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Attach letter of authorization

Signed: Christopher Speagle

Corporate Secretary
Name and Title (Please Type)

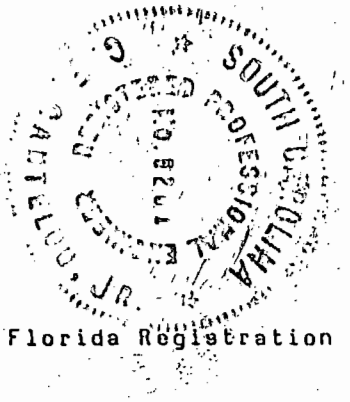
Date: 9/11/90 Telephone No. (615) 522-4181

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

[1] See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.



Signed _____

G. E. Cantelou, Jr. P.E.
Name (Please Type)

Cantelou Associates, Inc.
Company Name (Please Type)

P. O. Box 3102, Aiken, S. C. 29802
Mailing Address (Please Type)

Florida Registration No. 18006 Date: 9/11/90 Telephone No. 803-648-9300

SECTION II: GENERAL PROJECT INFORMATION

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

The existing facility produces fiberglass pleasure boats. The complete process is described in detail under Section V: Supplemental Requirements Article 7.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction _____ Completion of Construction _____

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Pneumafil Dust Collector System $73,807.80 (plus $9,278. electrical upgrade).

. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

Letter dated March 6, 1989, from A. Alexander, P.E.

Construction Permit #AC 05-165270

Letter dated December 12, 1989 from Dale Twachtmann granting extension.

E. Requested permitted equipment operating time: hrs/day 16 ; days/wk 5 ; wks/yr 48 ;

if power plant, hrs/yr_____; if seasonal, describe: Does Not Apply

F. If this is a new source or major modification, answer the following questions. (Yes or No).

1. Is this source in a non-attainment area for a particular pollutant? No

   a. If yes, has "offset" been applied? _____

   b. If yes, has "Lowest Achievable Emission Rate" been applied? _____

   c. If yes, list non-attainment pollutants. _____

2. Does best available control technology (BACT) apply to this source? If yes, see Section VI. No

3. Does the State "Prevention of Significant Deterioration" (PSD) requirement apply to this source? If yes, see Sections VI and VII. No

4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source? No

5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply to this source? No

   a. If yes, for what pollutants?_____

   b. If yes, in addition to the information required in this form, any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Resin	Styrene	40	647.4	Step 2
Gelcoat	Styrene	35-40	134.2	Step 1
Gelcoat	Methyl Methacrylate	5	94.8	Step 1
Glue	1,1,1-tri-chloroethane	68	9.5	Step 4
Glue	Toluene	8	9.5	Step 4

SEE FOLLOWING SHEET FOR CONTINUATION

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Styrene	43.0	58.0	NOT DETER.	27.7	241,987	121.0	Steps 1,2
Methyl Methacrylate	6.7	9.1	NOT DETER.	6.3	55,037	27.5	Step 1
1,1,1-tri-chloroethane	9.0	12.4	NOT DETER.	1.5	13,104	6.6	Step 4
Toluene	1.1	1.5	NOT DETER.	-	-	-	Step 4
SEE FOLLOWING SHEET FOR CONTINUATION							

[1]See Section V, Item 2.

[2]Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3]Calculated from operating rate and applicable standard.

[4]Emission, if source operated without control (See Section V, Item 3).

REVISED PER MODIFICATION REQUEST

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Resin	Styrene	40	647.4	Step 2
Gelcoat	Styrene	35-40	134.2	Step 1
Gelcoat	Methyl Methacrylate	5	94.8	Step 1
Glue	1,1,1-tri-chloroethane	68	9.5	Step 4
Glue	Toluene	8	9.5	Step 4

SEE FOLLOWING SHEET FOR CONTINUATION

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Styrene	31.4 43.0	58.0	NOT DETER.	NOT DETER.	264,089 121.0	132.0	Steps 1,2
Methyl Methacrylate	5.5 6.7	9.1	NOT DETER.	NOT DETER.	41,409 27.5	20.7	Step 1
1,1,1-tri-chloroethane	7.4 9.0	12.4	NOT DETER.	NOT DETER.	56,260 6.6	28.1	Step 4
Toluene	0.9 1.1	1.5	NOT DETER.	NOT DETER.	6,814 —	3.4	Step 4
					155.1	184.2	

SEE FOLLOWING SHEET FOR CONTINUATION

+ 29.1

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard.

[4] Emission, if source operated without control (See Section V, Item 3).

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Acetone	Acetone	100	23.2	Steps 1,2,5
Paints & Additives	MISC	Varies	16.8	Step 5

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Acetone	42.9	44.5	NOT DETER.	24.4	213,158	106.6	Steps 1,2,5
MISC *	10.8	13.2	NOT DETER.	4.8	41,933	21.0	Step 5
Methylene chloride	-	-	NOT DETER.	0.8	6,989	3.5	

[1] See Section V, Item 2. *MISC. Xylene and Aromatic Hydrocarbon

[2] Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard.

[4] Emission, if source operated without control (See Section V, Item 3).

REVISED PER MODIFICATION REQUEST

SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
Acetone	Acetone	100	11.6	Steps 1,2,5
Paints & Additives	MISC	Varies	16.8	Step 5

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): _____

2. Product Weight (lbs/hr): _____

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission[1]		Allowed[2] Emission Rate per Rule 17-2	Allowable[3] Emission lbs/hr	Potential[4] Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
Acetone	42.9 14.5	44.5 22.3	NOT DETER.	NOT DETER.	101,338	106.6 50.7	Steps 1,2,5
MISC	10.8 6.9	13.2 SAME	NOT DETER.	NOT DETER.	59,929	21.0 30.0	Step 5
					MECL	3.5 13.1 80.7	
						- 50.4 + 29.1 - 21.3	

[1] See Section V, Item 2.

[2] Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

[3] Calculated from operating rate and applicable standard.

[4] Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	

*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: _____ Percent Ash: _____

Density: _____ lbs/gal Typical Percent Nitrogen: _____

Heat Capacity: _____ BTU/lb _____ BTU/gal

Other Fuel Contaminants (which may cause air pollution): _____

_____

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average _____ Maximum _____

G. Indicate liquid or solid wastes generated and method of disposal.

Contaminated acetone is recycled by licensed handlers offsite. Solid waste generated is non-toxic and non-hazardous and is disposed of offsite.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: _____ ft. Stack Diameter: _____ ft.

Gas Flow Rate: _____ ACFM _____ DSCFM Gas Exit Temperature: _____ °F.

Water Vapor Content: _____ % Velocity: _____ FPS

SECTION IV: INCINERATOR INFORMATION DOES NOT APPLY

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq.& Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste _____

Total Weight Incinerated (lbs/hr) _____ Design Capacity (lbs/hr) _____

Approximate Number of Hours of Operation per day _____ day/wk _____ wks/yr. _____

Manufacturer _____

Date Constructed _____ Model No. _____

	Volume $(ft)^3$	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: _____ ft. Stack Diamter: _____ Stack Temp. _____

Gas Flow Rate: _____ ACFM _____ DSCFM* Velocity: _____ FPS

*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device: [ ] Cyclone [ ] Wet Scrubber [ ] Afterburner

[ ] Other (specify) _____

Brief description of operating characteristics of control devices: _____

_____

_____

_____

_____

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

_____

_____

_____

_____

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

SECTION V: SUPPLEMENTAL REQUIREMENTS

* SEE ATTACHMENT I SHEET BEFORE EXHIBITS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY DOES NOT APPLY

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

[ ] Yes [ ] No

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [ ] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:
2. Operating Principles:
3. Efficiency:*
4. Capital Costs:

*Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height: ft. b. Diameter: ft.

c. Flow Rate: ACFM d. Temperature: °F.

e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

a. Control Device: b. Operating Principles:

c. Efficiency:[1] d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy:[2] h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device: b. Operating Principles:

c. Efficiency:[1] d. Capital Cost:

e. Useful Life: f. Operating Cost:

g. Energy:[2] h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:[1]

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:[2]

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:[1]

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:[2]

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

[1]Explain method of determining efficiency.
[2]Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

b. (1) Company:

(2) Mailing Address:

(3) City: (4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:[1]

Contaminant	Rate or Concentration

(8) Process Rate:[1]

10. Reason for selection and description of systems:

[1]Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION DOES NOT APPLY

A. Company Monitored Data

1. _____no. sites _____ TSP _____( ) SO^2* _____ Wind spd/dir

Period of Monitoring ____/____/____ to ____/____/____
month day year month day year

Other data recorded _____

Attach all data or statistical summaries to this application.

*Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

a. Was instrumentation EPA referenced or its equivalent? [ ] Yes [ ] No

b. Was instrumentation calibrated in accordance with Department procedures?

[ ] Yes [ ] No [ ] Unknown

B. Meteorological Data Used for Air Quality Modeling

1. _____ Year(s) of data from _____/_____/_____ to _____/_____/_____
month day year month day year

2. Surface data obtained from (location)_____

3. Upper air (mixing height) data obtained from (location)_____

4. Stability wind rose (STAR) data obtained from (location)_____

C. Computer Models Used

1. _____ Modified? If yes, attach description.

2. _____ Modified? If yes, attach description.

3. _____ Modified? If yes, attach description.

4. _____ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate
TSP	_____ grams/sec
SO^2	_____ grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

ATTACHMENT I

SECTION V: SUPPLEMENTAL REQUIREMENTS

1. Not required.

2. See Exhibit "A".

3. Attached see Exhibit "B" - excerpt from Cal-OSHA study indicating the emission factor for styrene from resins is 6%, and Emission Factors indicating the emission factor for gelcoat is approx. 30%,
Exhibit "C" - Product data sheets, and
Exhibit "D" - Potential Emissions Calculations.

4. Not required.

5. Not required.

6. See Exhibit "E".

7. See Exhibit "F".

8. See Exhibit "G".

9. Pending notice from DER.

10. See Exhibit "H".

EXHIBIT "A"

CALCULATIONS

UTILIZATION RATE BASED ON 90 DAY AVERAGE

RESIN:

$$\frac{611{,}167\ \#}{59\ \text{work days/90 day period} \times 16\ \text{hrs/day}} = 647.4\ \#/\text{hr}$$

GELCOAT: (STYRENE)

$$\frac{37{,}203\ \#}{59\ \text{work days/90 day period} \times 16\ \text{hrs/day}} = 39.4\ \#/\text{hr}$$

GELCOAT: (STYRENE & M.M.)

$$\frac{89{,}524\ \#}{59\ \text{work days/90 day period} \times 16\ \text{hrs/day}} = 94.8\ \#/\text{hr}$$

GLUE:

$$\frac{8{,}945\ \#}{59\ \text{work days/90 day period} \times 16\ \text{hrs/day}} = 9.5\ \#/\text{hr}$$

ACETONE:

$$\frac{21{,}854\ \#}{59\ \text{work days/90 day period} \times 16\ \text{hrs/day}} = 23.2\ \#/\text{hr}$$

PAINTS & ADDITIVES:

$$\frac{15{,}892\ \#}{59\ \text{work days/90 day period} \times 16\ \text{hrs/day}} = 16.8\ \#/\text{hr}$$

REVISED PER MODIFICATION REQUEST

EXHIBIT "A"

CALCULATIONS

UTILIZATION RATE BASED ON 90 DAY AVERAGE

RESIN:

$$\frac{611.167\ \#}{59\ \text{work days/90 day period X 16 hrs/day}} = 647.4\ \#/hr$$

GELCOAT: (STYRENE)

$$\frac{37{,}203\ \#}{59\ \text{work days/90 day period X 16 hrs/day}} = 39.4\ \#/hr$$

GELCOAT: (STYRENE & M.M.)

$$\frac{89{,}524\ \#}{59\ \text{work days/90 day period X 16 hrs/day}} = 94.8\ \#/hr$$

GLUE:

$$\frac{8{,}945\ \#}{59\ \text{work days/90 day period X 16 hrs/day}} = 9.5\ \#/hr$$

** ACETONE:

$$\frac{10{,}927\ \#}{59\ \text{work days/90 day period X 16 hrs/day}} = 11.6\ \#/hr$$

PAINTS & ADDITIVES:

$$\frac{15{,}892\ \#}{59\ \text{work days/90 day period X 16 hrs/day}} = 16.8\ \#/hr$$

** THIS USAGE RATE REFLECTS A 50% REDUCTION IN ACETONE USAGE EFFECTIVE OCTOBER 1, 1990

ACTUAL EMISSIONS BASED ON 90 DAY PERIOD

EMISSIONS = (EMISSION RATE)(UTILIZATION RATE)(COMPONENT PERCENTAGE)

STYRENE:

RESIN	(0.06)(647.4 #/hr)(0.40)					
GELCOAT	(0.30)(39.4 #/hr)(0.40)					
GELCOAT	+ (0.30)(94.8 #/hr)(0.35)	=	30.2 #/hr	=	58.0 T/yr

METHYL METHACRYLATE:

GELCOAT	(1.00)(94.8 #/hr)(0.05)	=	4.7 #/hr	=	9.1 T/yr

ACETONE:

ACETONE	(1.00)(23.2 #/hr)(1.00)	=	23.2 #/hr	=	44.5 T/yr

1,1,1-TRICHLOROETHANE:

GLUE	(1.00)(9.5 #/hr)(0.68)	=	6.5 #/hr	=	12.4 T/y

TOLUENE:

GLUE	(1.00)(9.5 #/hr)(0.08)	=	0.76 #/hr	=	1.5 T/yr

PAINTS & ADDITIVES:

MISC	(1.00)(0.53 #/hr)(1.00)				
	(1.00)(12.1 #/hr)(.219)				
	(1.00)(0.46 #/hr)(0.98)				
	(1.00)(0.45 #/hr)(0.34)				
	(1.00)(0.81 #/hr)(1.00)				
	(1.00)(0.60 #/hr)(1.00)				
	(1.00)(1.60 #/hr)(.966)				
	+ (1.00)(0.29 #/hr)(0.30)	=	6.86 #/hr	=	13.2 T/yr

REVISED PER MODIFICATION REQUEST.

ACTUAL EMISSIONS BASED ON 90 DAY PERIOD

EMISSIONS = (EMISSION RATE)(UTILIZATION RATE)(COMPONENT PERCENTAGE)

STYRENE:

RESIN	(0.06)(647.4 #/hr)(0.40)				
GELCOAT	(0.30)(39.4 #/hr)(0.40)				
GELCOAT	+ (0.30)(94.8 #/hr)(0.35)	=	30.2 #/hr	=	58.0 T/yr

METHYL METHACRYLATE:

GELCOAT	(1.00)(94.8 #/hr)(0.05)	=	4.7 #/hr	=	9.1 T/yr

ACETONE:

ACETONE	(1.00)(11.6 #/hr)(1.00)	=	11.6 #/hr	=	22.3 T/yr

1,1,1-TRICHLOROETHANE:

GLUE	(1.00)(9.5 #/hr)(0.68)	=	6.5 #/hr	=	12.4 T/y

TOLUENE:

GLUE	(1.00)(9.5 #/hr)(0.08)	=	0.76 #/hr	=	1.5 T/yr

PAINTS & ADDITIVES:

MISC	(1.00)(0.53 #/hr)(1.00)				
	(1.00)(12.1 #/hr)(.219)				
	(1.00)(0.46 #/hr)(0.98)				
	(1.00)(0.45 #/hr)(0.34)				
	(1.00)(0.81 #/hr)(1.00)				
	(1.00)(0.60 #/hr)(1.00)				
	(1.00)(1.60 #/hr)(.966)				
	+ (1.00)(0.29 #/hr)(0.30)	=	6.86 #/hr	=	13.2 T/yr

COMPLIANCE

	PERMITTED (#/HR)	ACTUAL (#/HR)
STYRENE (RESIN & GELCOAT)	27.7	30.3
METHYL METHACRYLATE	6.3	4.7
ACETONE	24.4	~~23.2~~ 11.6
1,1,1-TRICHLOROETHANE	1.5	6.4
TOLUENE	---	0.8
METHYLENE CHLORIDE	0.8	---
AROMATIC HYDROCARBONS	3.5	---
XYLENE	1.3	---
PAINTS & ADDITIVES	---	6.9
	65.5	72.3

72.3
- 6.9
65.4

72.3
- 11.6
60.7

REVISED PER MODIFICATION REQUEST

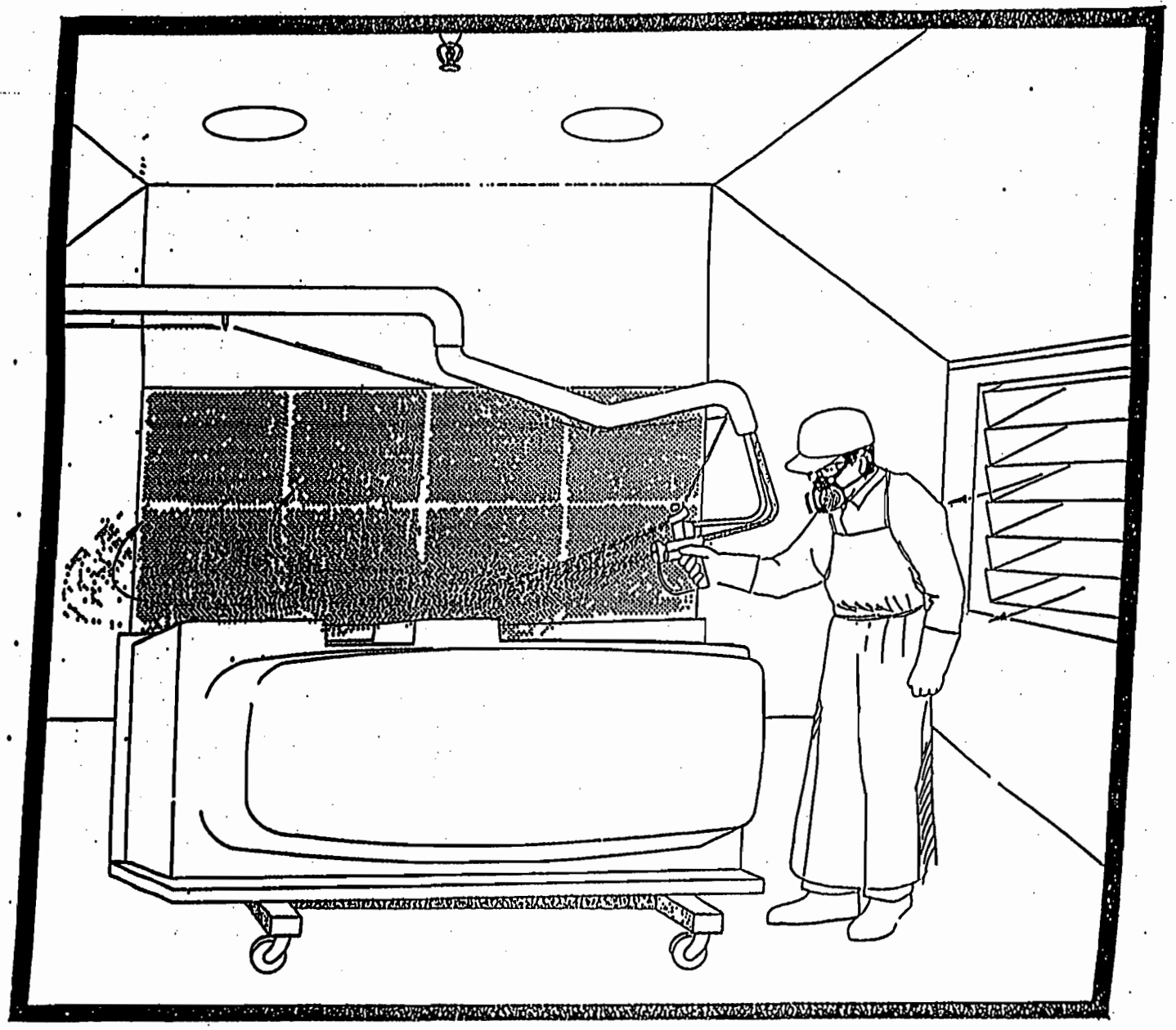
COMPLIANCE

	MODIFICATION (#/HR)	ACTUAL (#/HR)
STYRENE (RESIN & GELCOAT)	30.3	30.3
METHYL METHACRYLATE	4.7	4.7
ACETONE	11.6	11.6
1,1,1-TRICHLOROETHANE	6.4	6.4
TOLUENE	0.8	0.8
PAINTS & ADDITIVES	6.9	6.9

EXHIBIT "B"

Occupational Exposures to Styrene and Other Health Hazards in the Fiberglass Reinforced Plastics Industry

A Special Studies Report by CAL OSHA



Department of Industrial Relations

State of California
George Deukmejian, Governor
Ron Rinaldi, Director of Industrial Relations

worker performed almost continuous spraying while standing on a portable platform that was inserted into the tank that also supported a large duct with high velocity airflow that exhausted vapors very close to the point of generation.

Two facilities, using a unique production process to ensure good secondary bonding between resin layers, also had the side effect of obtaining low ambient exposure levels from the process. After gelcoating and hand laminating the mold, the part was covered with plastic sheeting and a vacuum pulled while the part is curing. Covering the part and pulling a vacuum through the space between the part and the plastic, removes styrene vapor from the work place air and reduces employee exposure.

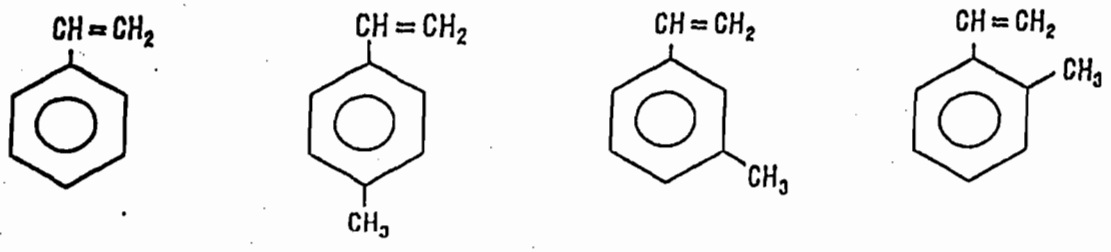
The majority of companies which installed some form of dilution ventilation, for example, filter banks on the walls that pull a large volume of air, were mostly ineffective. They were either too far from the source of the exposure or were defeated by lack of directionality and turbulence.

Substitution

NIOSH estimates that approximately 6% of styrene monomer in a 40/60 polyester resin mixture vaporizes during the curing process. Methyl styrene (also called vinyl toluene) is a close chemical cousin of styrene that has a lower vapor pressure, reducing the amount of vaporization. Methyl styrene has three isomers, para, meta, or the ortho form. Two production facilities were using a resin mixture containing 60% polyester, 14% styrene and 26% para-methyl styrene.

FIGURE V.3

Styrene and the Three Isomers of Methyl Styrene



STYRENE

Para methyl styrene

Meta methyl styrene

Ortho methyl styrene

TABLE 4.12-2. EMISSION FACTORS FOR UNCONTROLLED POLYESTER RESIN PRODUCT FABRICATION PROCESSES[a]
(100 x mass of VOC emitted/mass of monomer input)

Process	Resin		Emission Factor Rating	Gel Coat		Emission Factor Rating
	NVS	VS[b]		NVS	VS[b]	
Hand layup	5 - 10	2 - 7	C	26 - 35	8 - 25	D
Spray layup	9 - 13	3 - 9	B	26 - 35	8 - 25	B
Continuous lamination	4 - 7	1 - 5	B	c	c	---
Pultrusion[d]	4 - 7	1 - 5	D	c	c	---
Filament winding[e]	5 - 10	2 - 7	D	c	c	---
Marble casting	1 - 3	1 - 2	B	f	f	---
Closed molding[g]	1 - 3	1 - 2	D	c	c	---

[a]Reference 9. Ranges represent the variability of processes and sensitivity of emissions to process parameters. Single value factors should be selected with caution. NVS = nonvapor-suppressed resin. VS = vapor-suppressed resin.
[b]Factors are 30-70% of those for nonvapor-suppressed resins.
[c]Gel coat is not normally used in this process.
[d]Resin factors for the continuous lamination process are assumed to apply.
[e]Resin factors for the hand layup process are assumed to apply.
[f]Factors unavailable. However, when cast parts are subsequently sprayed with gel coat, hand and spray layup gel coat factors are assumed to apply.
[g]Resin factors for marble casting, a semiclosed process, are assumed to apply.

TABLE 4.12-3. TYPICAL RESIN STYRENE PERCENTAGES

Resin Application	Resin Styrene Content[a] (wgt. %)
Hand layup	43
Spray layup	43
Continuous lamination	40
Filament winding	40
Marble casting	32
Closed molding	35
Gel coat	35

[a]May vary by at least ±5 percentage points.

Material Safety Data Sheet

Exhibit C

ALPHA RESINS CORPORATION
4620 N. GALLOWAY ROAD
LAKELAND, FL. 33809
(813) 858-4431

Product: ALTEK 80-603
Internal ID: SEA RAY/M.I.

MSDS No: ALPHA / 029
Revision: APRIL 18, 1989
Date: April 19, 1989

National Paint and Coatings Association Hazardous Material Identification System

HEALTH HAZARD	2
FLAMMABILITY HAZARD	3
REACTIVITY HAZARD	2
PERSONAL PROTECTION	I

SECTION I. MATERIAL IDENTIFICATION

Trade/Material Name: ALTEK 80-603

Description: Diacid/Glycol condensate

CAS: mixture **Trade Secret Register:** N/A

Chemical Name: Unsaturated polyester resin

Manufacturer: Alpha Resins Corporation **Phone:** (813)858-4431

SECTION II. INGREDIENTS AND HAZARDS

Ingredient Name:	CAS Number:	Percent:	Exposure Limits:
Styrene	100-42-5	40%*	50 ppm

SARA 313 INFORMATION: This product contains the above substance which is subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

* Weight Percent.

SECTION III. PHYSICAL DATA

Appearance & Odor: Viscous Liquid with a Sweet Pungent Odor.

Boiling point: 293°F
Vapor pressure: <4.5 mmHg
Water solubility (%): very slight
Vapor density (air=1): 3.6
Evaporation rate: 3.1
Specific gravity (H_2O=1): 1.0 - 1.1
Melting point: N/A

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point (method): 88-98°F (cc) **Limits: LEL %:** 1.1 **UEL %:** 6.1

NFPA Flammable/Combustible Liquid Classification: 1C

NFPA Fire Hazard Symbol Codes: Flammability: 3 **Health:** 2 **Reactivity:** 2 **Special:** none

Extinguishing Media: water fog, dry chemical, foam or CO_2

FIRE AND EXPLOSION DATA continues on page 2

ALPHA RESINS CORPORATION
4620 N. GALLOWAY ROAD
LAKELAND, FL. 33809
(813) 858-4431

Product: ALTEK 80-603
Internal ID: SEA RAY/M.I.

MSDS No: ALPHA / 029
Revision: APRIL 18, 1989
Date: April 19, 1989

FIRE AND EXPLOSION DATA continued from page 1

Autoignition Temp:
914°F

Unusual fire or explosion hazards: At elevated temperatues, such as in a fire condition, polymerization may take place resulting in violent rupture of closed containers. Wear positive pressure apparatus, eye protection, and keep vapors away from possible ignition sources.

Special fire-fighting procedures: If electrical equipment is involved, the use of foam should be avoided. Handling equipment should be cooled by water stream if exposed to fire.

SECTION V. REACTIVITY DATA

Material is stable . Hazardous polymerization may occur .

Chemical incompatibilities: Acids, oxidizing agents, free radical initiators such as peroxides, and metallic halides and soaps.

Conditions to avoid: sunlight, open flames, contamination, and prolonged storage above 75°.

Hazardous decomposition Products: carbon monoxide, carbon dioxide, and low molecular weight hydrocarbons.

SECTION VI. HEALTH HAZARD INFORMATION

This product is considered a possible carcinogen by IARC.*

Summary of risks: Causes irritation to throat, eyes, skin and nose. Harmful if inhaled.

Medical conditions which may be aggravated by contact: May aggrevate pre-existing respiratory and skin disorders.

Target organs: CNS, respiratory system, lungs, eyes and skin.

Primary entry route(s): inhalation, ingestion, contact

Acute effects: May irritate eyes, nose, throat, and skin.

Chronic effect(s): May cause victim to feel drugged, sleepy or become unconscious. Repeated skin contact may cause rash. May affect the brain or nervous system, causing dizziness, headache or nausea. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

HEALTH HAZARD INFORMATION continues on page 3

ALPHA RESINS CORPORATION
4620 N. GALLOWAY ROAD
LAKELAND, FL. 33809
(813) 858-4431

Product: ALTEK 80-603
Internal ID: SEA RAY/M.I.

MSDS No: ALPHA / 029
Revision: APRIL 18, 1989
Date: April 19, 1989

HEALTH HAZARD INFORMATION continued from page 2

Signs & symptoms of overexposure:

Eye contact: Causes irritation to the eyes.

Skin contact: May cause irritation to the skin.

Inhalation: May irritate eyes, nose and throat. May feel drugged, sleepy, or unconcious.

Ingestion: May cause victim to become weak and unsteady.

First aid:

Eye contact: Immediately flush with plenty of water for at least 15 minutes. Get prompt medical attention. (Contact lenses should not be worn while working with this material.)

Skin contact: Wash exposed skin with soap and water. Get medical attention if irritation developes. Remove contaminated clothing, shoes, and thoroughly clean before reuse.

Inhalation: Move exposed person(s) to fresh air. Get medical attention.

Ingestion: DO NOT induce vomiting. Call Physician immediately.

*For hazard communication purposes under OSHA Standard 29 CFR Part 1910.1200, styrene is listed as a possible carcinogen by IARC. Neither the data from various long-term animal studies nor from epidemiology of workers exposed to styrene provide an adequate basis to conclude that styrene is carcinogenic.

SECTION VII. SPILL, LEAK AND DISPOSAL PROCEDURES

Spill / Leak procedures: Remove all sources of ignition. Ventilate area. Prevent material from entering drains. Absorbent should be vermicalite, dry sand or earth.

Small Spill - Soak up with absorbent and scoop into drums.

Large Spill - Dike and pump into drums.

Waste management / Disposal: Dispose of according to local, state and federal regulations.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Personal protective equipment:

Goggles: Use chemical goggles.

Gloves: Use gloves of rubber or other resistant material.

 SPECIAL PROTECTION INFORMATION continues on page 4

ALPHA RESINS CORPORATION
4620 N. GALLOWAY ROAD
LAKELAND, FL. 33809
(813) 859-4431

Product: ALTEK 80-603
Internal ID: SEA RAY/M.I.

MSDS No: ALPHA / 029
Revision: APRIL 18, 1989
Date: April 19, 1989

SPECIAL PROTECTION INFORMATION continued from page 3

Respirator: Chemical cartridge respirator with NIOSH/OSHA approved organic vapor cartridge to 400 ppm. At exposures above 400 ppm use an SCBA.

Other: Use chemical resistant aprons or coats to avoid skin contact.

Workplace considerations:

Ventilation: Local exhaust is preferred. Mechanical ventilation is acceptable. Use explosion proof equipment.

Safety stations:
Safety showers and eye wash stations are recommended.

Contaminated equipment:
Clean contaminated equipment with an appropriate solvent prior to storage.

SECTION IX. SPECIAL PRECAUTIONS

Storage segregation: Store in a cool dry place away from incompatable materials.

Special handling / storage: Store in an area below 75°F and out of direct sunlight. Keep from heat, spark, and smoking areas. Empty containers may be hazardous.

Engineering controls: Equipment should be grounded during transfer and non-sparking pumps should be used.

Other precautions: Do not transfer to unlabeled bottles or containers.

DOT Class: Flammable Liquid **UN Register:** UN-1866
Data source code(s): #1

Prepared/revised by: R. C. PETERSON

April 19, 1989

MATERIAL SAFETY DATA SHEET

SECTION I - MANUFACTURERS INFORMATION

PRODUCT CODE IDENTITY: 944W969 300 PRODUCT NAME: SEA RAY WHITE Gcoat
N : COOK PAINT AND VARNISH COMPANY DATE OF MSDS: 02/02/87
AL RESS: P.O. BOX 419389
KANSAS CITY, MO 64141-6389 EMERGENCY TELEPHONE: 816-391-6000
INFORMATION TELEPHONE: 816-391-6003

ATTN: SAFETY AND HEALTH OFFICER
SEA RAY BOAT M.I.
100 SEA RAY DRIVE
MERRIT ISLD FL 32953

CUSTOMER NUMBER: 220094
DATE PRINTED: 02/06/87

SECTION II - HAZARDOUS INGREDIENTS

STYRENE MONOMER

CAS #: 100-42-5 PERCENT: 35.000 VAPOR PRESSURE: 4.5

EXPOSURE LIMIT:
ACGIH TLV/TWA: 50 PPM (SKIN) (215 MG/CU.M.)
ACGIH TLV/STEL: 100 PPM (SKIN) (425 MG/CU.M.)
OSHA PEL: 100 PPM (425 MG/CU.M.)
OSHA PEL/CEILING: 200 PPM (850 MG/CU.M.)
OTHER: OSHA: 600 PPM/5 MIN/3 HR PEAK

TITANIUM DIOXIDE (NUISANCE DUST)

CAS #: 13463-67-7 PERCENT: 15.000 VAPOR PRESSURE: N/A

EXPOSURE LIMIT:
ACGIH TLV/TWA: 10MG/CU.M. AS DUST, 5MG/CU.M. AS FUMES
OSHA PEL: 15MG/CU.M.

SILICA, AMORPHOUS

CAS #: 7631-86-9 PERCENT: LESS THAN 5 VAPOR PRESSURE: N/A

EXPOSURE LIMIT:
ACGIH TLV/TWA: 10MG/CU.M. AS TOTAL DUST
OSHA PEL: 20MPPCF (AS DUST)

TALC (HYDROUS MAGNESIUM SILICATE)

CAS #: 14807-96-6 PERCENT: 10.000 VAPOR PRESSURE: N/A

EXPOSURE LIMIT:
ACGIH TLV/TWA: 2 MG/M3 RESPIRABLE DUST
OSHA PEL: 20 M PPCF

METHYL METHACRYLATE

CAS #: 80-62-6 PERCENT: LESS THAN 5 VAPOR PRESSURE: 29.0

EXPOSURE LIMIT:
ACGIH TLV/TWA: 100 PPM (410 MG/CU.M.)
ACGIH TLV/STEL: 125 PPM (510 MG/CU.M.)
OSHA PEL: 100 PPM (410 MG/CU.M.)

SECTION III - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE TO PRODUCT. PRIMARY ROUTES OF ENTRY ARE:

EYE CONTACT: LIQUID AND VAPOR CAN BE IRRITATING TO EYES. SYMPTOMS ARE TEARING, REDNESS AND DISCOMFORT.

SKIN CONTACT: CAN CAUSE IRRITATION. CAN CAUSE DEFATTING OF SKIN WHICH CAN LEAD TO DERMATITIS.

INHALATION: MAY CAUSE IRRITATION TO NOSE AND THROAT. MAY AFFECT THE BRAIN OR NERVOUS SYSTEM WITH SYMPTOMS SUCH AS DIZZINESS, HEADACHE OR

PRODUCT CODE IDENTITY: 944W969 300 PRODUCT NAME: SEA RAY WHITE

NAUSEA. REPEATED, EXCESSIVE EXPOSURE ABOVE RECOMMENDED LIMITS MAY CAUSE KIDNEY AND LIVER DAMAGE.

REPORTS HAVE ASSOCIATED REPEATED OR PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

INGESTION: SWALLOWING CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING AND DIARRHEA.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE:
PREEXISTING EYE, SKIN AND RESPIRATORY DISORDERS.

EMERGENCY AND FIRST AID PROCEDURES:

IN CASE OF EYE CONTACT, FLUSH IMMEDIATELY WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES AND GET MEDICAL ATTENTION; FOR SKIN, WASH THOROUGHLY WITH SOAP AND WATER. IF AFFECTED BY INHALATION OF VAPORS OR SPRAY MIST, REMOVE TO FRESH AIR. IF SWALLOWED, DO NOT INDUCE VOMITING. GET PROMPT MEDICAL ATTENTION.

SECTION IV - PHYSICAL DATA

BOILING POINT,DEG.F. 212 VAPOR DENSITY IS HEAVIER THAN AIR

WEIGHT PER GALLON: 10.78 EVAPORATION RATE IS SLOWER THAN ETHER

PERCENT VOLATILE BY VOLUME: 53.823

SECTION V - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: OSHA 29 CFR-1910.106 PARTS 11-18

FLASH POINT SETA CLOSED CUP, DEG F: 82 FLAMMABLE LIQUID CLASS IC

DOT HAZARD CLASS: RED-LABEL, FLAMMABLE LIQUID LEL: 1.10

EXTINGUISHING MEDIA: FOAM, CARBON DIOXIDE, DRY CHEMICAL, WATER FOG.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
IF POLYMERIZATION TAKES PLACE IN A CONTAINER, THERE IS POSSIBILITY OF VIOLENT RUPTURE OF THE CONTAINER. STYRENE VAPORS ARE UNINHIBITED AND MAY FORM POLYMERS IN VENTS OR FLAME ARRESTORS OF STORAGE TANKS RESULTING IN STOPPAGE OF VENTS. VAPORS MAY CAUSE FLASH FIRE. KEEP CONTAINERS TIGHTLY CLOSED AND ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND FLAME. NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

SPECIAL FIRE FIGHTING PROCEDURES:
FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED. WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO-IGNITION OR EXPLOSION WHEN EXPOSED TO EXTREME HEAT

SECTION VI - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: MAY OCCUR.

CONDITIONS TO AVOID:
ELEVATED TEMPERATURES. IMPROPER ADDITION OF PROMOTER AND/OR CATALYST. AVOID DIRECT CONTACT OF MEKP CATALYST WITH ACCELERATOR. IF AN ACCELERATOR SUCH AS COBALT DRIER IS TO BE ADDED, MIX THIS ACCELERATOR WITH BASE MATERIAL BEFORE ADDING CATALYST.

INCOMPATIBILITY (MATERIALS TO AVOID):
OXIDIZERS, PEROXIDES, STRONG ACIDS, ALUMINUM CHLORIDE AND VINYL POLYMERS.

PRODUCT CODE IDENTITY: 944W969 300 PRODUCT NAME: SEA RAY WHITE

HAZARDOUS DECOMPOSITION PRODUCTS:
THERMAL DECOMPOSITION OR COMBUSTION CAN PRODUCE FUMES CONTAINING ORGANIC ACIDS, CARBON DIOXIDE AND CARBON MONOXIDE.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
REMOVE ALL SOURCES OF IGNITION (FLAMES, HOT SURFACES, AND ELECTRICAL, STATIC OR FRICTIONAL SPARKS). AVOID BREATHING VAPORS. VENTILATE AREA. CONTAIN AN REMOVE WITH INERT ABSORBENT AND NON-SPARKING TOOLS.

WASTE DISPOSAL METHOD:
DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. DO NOT INCINERATE CLOSED CONTAINERS. INCINERATE IN APPROVED FACILITY.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:
DO NOT BREATHE VAPORS, SPRAY MIST OR DUST WHILE APPLYING, SANDING, GRINDING, OR SAWING CURED PRODUCT. WEAR AN APPROPRIATE, PROPERLY FITTED RESPIRATOR (NIOSH/MSHA APPROVED) DURING APPLICATION AND OTHER USE OF THIS PRODUCT UNTIL ALL VAPORS, MISTS, AND DUSTS ARE EXHAUSTED, UNLESS AIR MONITORING DEMONSTRATES VAPOR AND MIST AND DUST LEVELS ARE BELOW APPLICABLE LIMITS. FOLLOW RESPIRATOR MANUFACTURER'S DIRECTIONS FOR RESPIRATOR USE. OBSERVE OSH STANDARD 29CFR 1910.134.

VENTILATION:
PROVIDE GENERAL CLEAN AIR DILUTION OR LOCAL EXHAUST VENTILATION IN VOLUME AN PATTERN TO KEEP THE AIR CONTAMINANT CONCENTRATION BELOW THE LOWER EXPLOSION LIMIT AND BELOW CURRENT APPLICABLE EXPOSURE LIMITS IN THE MIXING, APPLICATIO AND CURING AREAS; AND TO REMOVE DECOMPOSITION PRODUCT DURING WELDING AND FLAME CUTTING ON SURFACES COATED WITH THIS PRODUCT. IN CONFINED AREAS, USE ONLY WITH FORCED VENTILATION ADEQUATE TO KEEP VAPOR CONCENTRATION BELOW 20% OF LOWER EXPLOSION LIMITS. REFER TO OSHA STANDARDS 29CFR 1910.94, 1910.107, 1910.108.

NOTE HEAVY SOLVENT VAPORS SHOULD BE REMOVED FROM LOWER LEVELS OF THE WORK ARE AND ALL IGNITION SOURCES (NONEXPLOSION-PROOF MOTORS, ETC.) SHOULD BE ELIMINATED

PROTECTIVE GLOVES: USE SOLVENT IMPERMEABLE GLOVES TO AVOID CONTACT WITH PRODUC

EYE PROTECTION:
AVOID CONTACT WITH EYES. USE SAFETY EYEWEAR WITH SPLASH GUARDS OR SIDE SHIELDS, CHEMICAL GOGGLES, FACE SHIELDS.

OTHER PROTECTIVE EQUIPMENT:
AVOID CONTACT WITH SKIN. USE PROTECTIVE CLOTHING. PREVENT CONTACT WITH CONTAMINATED CLOTHING. WASH CONTAMINATED CLOTHING, INCLUDING SHOES, BEFORE REUSE.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
DO NOT STORE ABOVE 120 DEG. F. STORE LARGE QUANTITIES IN BUILDINGS DESIGNED TO COMPLY WITH OSHA 1910.106. KEEP AWAY FROM HEAT, SPARKS AND FLAME. KEEP CONTAINERS CLOSED WHEN NOT IN USE AND UPRIGHT TO PREVENT LEAKAGE.

OTHER PRECAUTIONS:
CONTAINERS SHOULD BE GROUNDED WHEN POURING. DO NOT TAKE INTERNALLY. WASH HANDS AFTER USING AND BEFORE SMOKING OR EATING. EMPTIED CONTAINERS MAY RETAIN HAZARDOUS RESIDUE AND EXPLOSIVE VAPORS. KEEP AWAY FROM HEAT, SPARKS AN FLAMES. DO NOT CUT, PUNCTURE OR WELD ON OR NEAR EMPTIED CONTAINERS. FOLLOW ALL HAZARD PRECAUTIONS GIVEN IN THIS DATA SHEET UNTIL CONTAINER IS THOROUGHL CLEANED OR DESTROYED. IF THIS PRODUCT IS BLENDED WITH OTHER COMPONENTS SUCH AS THINNERS, CONVERTER, COLORANTS AND CATALYSTS PRIOR TO USE, READ ALL WARNING LABELS. ANY MIXTURE OF COMPONENTS WILL HAVE HAZARDS OF ALL COMPONENTS.

PRODUCT CODE IDENTITY: 944W969 300 PRODUCT NAME: SEA RAY WHITE

FOLLOW ALL PRECAUTIONS. IF SPRAYING THIS MATERIAL, KEEP SPRAY BOOTHS CLEAN. AVOID BUILDUP OF SPRAY DUST OR OVERSPRAY IN BOOTHS OR DUCTS.

KEEP OUT OF REACH OF CHILDREN FOR INDUSTRIAL USE ONLY

DISCLAIMER AND LIMITATION OF LIABILITY

TO THE BEST OF OUR KNOWLEDGE, THE INFORMATION CONTAINED HEREIN IS ACCURATE. TO THE EXTENT ALLOWED BY LAW, THIS STATEMENT IS MADE IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND IN LIEU OF ANY OTHER OBLIGATIONS OR LIABILITY ON THE PART OF COOK PAINT AND VARNISH COMPANY.

COOK PAINT AND VARNISH COMPANY WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. FINAL DETERMINATION OF THE SUITABILITY OF THE MATERIAL FOR THE USE CONTEMPLATED, THE MANNER OF USE, AND WHETHER THE SUGGESTED USE INFRINGES ANY PATENT IS THE SOLE RESPONSIBILITY OF THE BUYER.

MATERIAL SAFETY DATA SHEET
For Coatings, Resins and Related Materials

09/26/89

SECTION I - PRODUCT INDENTIFICATION

Manufacturer: POLYGARD, INC.
5010 N. COOLIDGE AVENUE
P.O. BOX 15477
TAMPA FL 33684

Information Phone: 813-877-7591
Emergency Phone: 1-800-424-9300

Product Class: POLYESTER GELCOAT
Trade Name : POLYESTER GELCOAT
Product Code : GELCOAT BILGE GREY GEL
C.A.S. Number: N/A

Hazard Ratings: Health - 2
none -> extreme Fire - 3
0 ---> 4 Reactivity - 2
Personal Protection - G

SECTION II - HAZARDOUS INGREDIENTS

Ingredients	CAS #	Weight %	Exposure Limits ACGIH/TLV	Exposure Limits OSHA/PEL	VP mm HG
STYRENE MONOMER	100-42-5	< 40.	50 PPM ppm STEL= 100	50	5.

CLASSIFIED AS A POSSIBLE CARCINOGEN

SECTION III - PHYSICAL DATA

Boiling Range: 290 F
Evap. Rate: Slower than n-Butyl Acetate
Volatiles volume: <60 %
Appearance: LIQUID, STYRENE ODOR

Vapor Density: Heavier than Air.
Liquid Density: Lighter than Water.
Wgt per gallon: 9-12 Pounds.
V.O.C.: NONE

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flammability Class: 3 Flash Point: 80F(+\-5F)CLOSE LEL : 1.0

-EXTINGUISHING MEDIA:

SMALL FIRES: DRY CHEMICAL, CO2,HALON, WATER SPRAY OR STANDARD FOAM.

LARGE FIRES: WATER SPRAY, FOG OR STANDARD FOAM IS RECOMMENDED.
MOVE CONTAINER FROM FIRE AREA IF YOU CAN DO IT WITHOUT RISK.
COOL CONTAINERS THAT ARE EXPOSED TO FLAMES WITH WATER FROM THE SIDE UNTIL WELL AFTER FIRE IS OUT.
STAY AWAY FROM ENDS OF TANKS, FOR MASSIVE FIRE IN CARGO AREA, USE UNMANNED HOSE HOLDER OR MONITOR NOZZLES: IF THIS IS IMPOSSIBLE, WITHDRAW FROM AREA AND LET FIRE BURN.
WITHDRAW IMMEDIATELY IN CASE OF RISING SOUND FROM VENTING SAFETY DEVICE OR ANY DISCOLORATION OF TANK DUE TO FIRE.

-SPECIAL FIREFIGHTING PROCEDURES:

USE STANDARD GUIDELINES SET BY LOCAL,STATE,FEDERAL,NFPA, CONCERNING THE EXTINGUISHMENT OF HAZARDOUS MATERIALS.

POLYGARD, INC.
Material Safety Data Sheet for: GELCOAT

SECTION VI - REACTIVITY DATA

STABLITY: [ ] Unstable [x] Stable
HAZARDOUS POLYMERIZATION: [x] May occur [ ] Will not occur
-INCOMPATIBILITY

-CONDITIONS TO AVOID:
STRONG ACIDS, PEROXIDES AND OTHER OXIDIZING AGENTS.
-HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE AND DIOXIDE, LOW MOLECULAR WEIGHT HYDROCARBONS AND ORGANIC ACID.

SECTION VII - SPILL OR LEAK PROCEEDURES

-STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
REMOVE SATURATED CLOTHING PROMPTLY AND WASH AFFECTED AREAS WITH SOAP AND WATER. REMOVE ALL SOURCES OF IGNITION,VENTILATE AREA, USE PROTECTIVE MEASURES IN SECTION 8.
-WASTE DISPOSAL METHOD:
ABSORB WITH INERT MATERIALS SUCH AS VERMICULITE OR SAND IN A CLOSED CONTAINER FOR DISPOSAL AS A SOLID WASTE. WASH AREA WELL WITH TRISODIUM PHOSPHATE AND WATER. DISPOSAL MUST CONFORM TO LOCAL,STATE, AND FEDERAL REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION:

-RESPIRATORY PROTECTION:
UP TO 100 PPM NONE: ABOVE 100 PPM: WEAR NIOSH AND MSHA APPROVED RESPIRATORS WHEN HANDLING AND APPLYING THE PRODUCT, THE USE OF A SELF CONTAINED BREATHING APPARATUS (SCBA) MAY ALSO BE USED.
-VENTILATION:
LOCAL AND MECHANICAL EXHAUST. USE OF EXPLOSION PROOF MOTORS,IS HIGHLY RECOMMENDED.
-PROTECTIVE GLOVES:
NEOPRENE OR NON-SOLUBLE PLASTIC.
-EYE PROTECTION:
USE SAFETY WEAR DESIGNED TO PROTECT AGAINST CHEMICAL SPLASH.
-OTHER PROTECTIVE EQUIPMENT:
SAFETY SHOWERS AND EYE WASH STATIONS SHOULD BE AVAILABLE.

HYGENIC PRACTICES: STANDARD GOOD HOUSEKEEPING AND HEALTH PRACTICES.

SECTION IX - SPECIAL PRECAUTIONS

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
AVOID IMPROPER ADDITION OF PROMOTER AND/OR CATALYST. AVOID DIRECT SUNLIGHT, OPEN FLAMES, CONTAMINATION AND PROLONGED STORAGE ABOVE 100 DEG. (F).

CONSULT PRODUCT TECHNICAL BULLETIN AND READ PRODUCT PACKAGE LABEL. A PROMOTER (METAL ORGANIC SUCH AS COBALT OR ANILINE TYPE) AND CATALYST (ORGANIC PEROXIDE TYPE) USED WITH THIS PRODUCT SHOULD ALWAYS BE MIXED SEPERATELY WITH THE PRODUCT AND SHOULD NEVER BE MIXED TOGETHER.
(cont.)

POLYGARD, INC.
Material Safety Data Sheet for: GELCOAT

SECTION IX - SPECIAL PRECAUTIONS (cont.)

-PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: (cont.)

-OTHER PRECAUTIONS:

*** THIS MATERIAL SAFETY DATA SHEET AND THE INFORMATION IT CONTAINS IS OFFERED TO YOU IN GOOD FAITH AS ACCURATE. WE HAVE REVIEWED ANY INFORMATION CONTAINED IN THIS MATERIAL SAFETY DATA SHEET (S) WHICH WE RECEIVED FROM SOURCES OUTSIDE OUR COMPANY.

WE BELIEVE THAT INFORMATION TO BE CORRECT BUT CANNOT GUARANTEE ITS ACCURACY OR COMPLETENESS. HEALTH AND SAFETY PRECAUTIONS IN THIS MATERIAL SAFETY DATA SHEET MAY NOT BE ADEQUATE FOR ALL INDIVIDUALS AND OR SITUATIONS.

IT IS THE USER'S OBLIGATION TO EVALUATE AND USE THIS PRODUCT SAFELY AND TO COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS. NO STATEMENT MADE IN THIS MATERIAL SAFETY DATA SHEET (S) SHALL BE CONSTRUDED AS A PERMISSION OR RECOMMENDATION FOR THE USE OF ANY PRODUCT IN A MANNER THAT MIGHT INFRINGE EXISTING PATENTS. NO WARRANTY IS MADE, EITHER EXPRESS OR IMPLIED.

IT IS THE SOLE INTEREST OF POLYGARD INC. TO MEET AND COMPLY WITH ALL OSHA & EPA REGULATIONS. PLEASE REVIEW THE ENCLOSED MATERIAL SAFETY DATA SHEET (S), IF YOU HAVE ANY QUESTIONS PLEASE CONTACT US IMMEDIATELY. ***

OCCUPATIONAL HEALTH & SAFETY DEPARTMENT
POLYGARD INC.

MATERIAL SAFETY DATA SHEET

DIVISION OF ASHLAND OIL, INC.
P. O. BOX 2219, COLUMBUS, OHIO 43216 • (614) 889-3333
24-HOUR EMERGENCY TELEPHONE (606) 324-1133

Ashland

038703151

ACETONE

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

****

Product Name: ACETONE
CAS NUMBER: 67-64-1

Data Sheet No: 0004335-005
Prepared: 05/31/89
Supersedes: 12/22/88

SEA-RAY BOATS INC
100 SEA RAY DR
MERRITT ISLAND FL 32952

05 50 093 7988090-

PRODUCT: 3010000
INVOICE: 161411
INVOICE DATE: 03/10/89
TO: SEA-RAY BOATS INC
100 SEA RAY DR
MERRITT ISLAND FL 32952

ATTN: PLANT MGR./SAFETY DIR.

SECTION I - PRODUCT IDENTIFICATION

General or Generic ID: KETONE

DOT Hazard Classification: FLAMMABLE LIQUID (173.115)

SECTION II - COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION.
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
ACETONE CAS #: 67-64-1	100	750 PPM	750 PPM	(1)

Notes:

(1) ACGIH - SHORT TERM EXPOSURE LIMIT (STEL) FOR ACETONE IS 1000 PPM. NIOSH RECOMMENDS A LIMIT OF 250 PPM, 8-HOUR TWA.

THIS CHEMICAL IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SARA TITLE III.

SECTION III - PHYSICAL DATA

Boiling Point	for PRODUCT	133.00 Deg F (56.11 Deg C) @ 760.00 mm Hg
Vapor Pressure	for PRODUCT	181.70 mm Hg @ 68.00 Deg F (20.00 Deg C)
Specific Vapor Density	AIR = 1	2.0
Specific Gravity		.785 - .788 @ 77.00 Deg F (25.00 Deg C)
Percent Volatiles		100.00%
Evaporation Rate	(N-BUTYL ACETATE = 1)	6.00

SECTION IV - FIRE AND EXPLOSION INFORMATION

FLASH POINT(TCC) 0.0 Deg F (-17.8 Deg C)

EXPLOSIVE LIMIT (PRODUCT) LOWER - 2.6% UPPER - 12.8%

EXTINGUISHING MEDIA: ALCOHOL FOAM OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS: MATERIAL IS HIGHLY VOLATILE AND READILY GIVES OFF VAPORS WHICH MAY TRAVEL ALONG THE GROUND OR BE MOVED BY VENTILATION AND IGNITED BY PILOT LIGHTS, OTHER FLAMES, SPARKS, HEATERS, SMOKING, ELECTRIC MOTORS, STATIC DISCHARGE, OR OTHER IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

ALL FIVE GALLON PAILS AND LARGER METAL CONTAINERS INCLUDING TANK CARS AND TANK TRUCKS SHOULD BE GROUNDED AND/OR BONDED WHEN MATERIAL IS TRANSFERRED.

NFPA CODES: HEALTH- 1 FLAMMABILITY- 3 REACTIVITY- 0

SECTION V - HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL	750	PPM
THRESHOLD LIMIT VALUE	750	PPM

SEE SECTION II

CONTINUED ON PAGE: 2

SECTION V - HEALTH HAZARD DATA (Continued)

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

EYES - CAUSES IRRITATION, REDNESS, TEARING.
SKIN - CAN CAUSE SLIGHT IRRITATION.
BREATHING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, CENTRAL NERVOUS SYSTEM EFFECTS INCLUDING DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE AND POSSIBLE UNCONSCIOUSNESS, AND EVEN DEATH.
SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA.

FIRST AID:

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE RE-USE.

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY, GET MEDICAL ATTENTION.

IF SWALLOWED: IMMEDIATELY DRINK TWO GLASSES OF WATER AND INDUCE VOMITING BY EITHER GIVING IPECAC SYRUP OR BY PLACING FINGER AT BACK OF THROAT. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL ATTENTION IMMEDIATELY.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

INHALATION, SKIN CONTACT

EFFECTS OF CHRONIC OVEREXPOSURE: FOR PRODUCT

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS APPARENTLY BEEN FOUND TO CAUSE THE FOLLOWING EFFECTS IN LABORATORY ANIMALS:, KIDNEY DAMAGE, EYE DAMAGE

SECTION VI - REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH:, STRONG OXIDIZING AGENTS., STRONG ALKALIES., STRONG MINERAL ACIDS.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

LARGE SPILL: ELIMINATE ALL IGNITION SOURCES (FLARES, FLAMES INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

SMALL SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF WORKPLACE EXPOSURE LIMIT(S) OF PRODUCT OR ANY COMPONENT IS EXCEEDED (SEE SECTION II), A NIOSH/MSHA APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS (NEGATIVE PRESSURE TYPE) UNDER SPECIFIED CONDITIONS (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS:, NATURAL RUBBER, NEOPRENE, NITRILE RUBBER

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

SECTION IX - SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THE DATA SHEET MUST BE OBSERVED.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

 LAST PAGE--SEE ATTACHMENT PAGE ENCLOSED--LAST PAGE

MATERIAL SAFETY
DATA SHEET

DIVISION OF ASHLAND OIL, INC.
P. O. BOX 2219, COLUMBUS, OHIO 43216 • (614) 889-3333
24-HOUR EMERGENCY TELEPHONE (606) 324-1133

Ashland

DEFINITIONS

This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

SECTION I
PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

SECTION II
COMPONENTS

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional health information may be found in Section V. Components subject to the reporting requirements of Section 313 of SARA Title III are identified in the footnotes in this section, along with typical percentages. Other components may be listed if deemed appropriate.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

SECTION III
PHYSICAL DATA

BOILING POINT: Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1. If Specific Vapor Density of product is not known, the value is expressed as lighter or heavier than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit and vapor pressure above 0.1mm Hg at 68 F.

EVAPORATION RATE: Indicated as faster or slower than ETHYL ETHER, unless otherwise stated.

SECTION IV
FIRE AND EXPLOSION DATA

FLASH POINT: Method identified.

EXPLOSION LIMITS: For product if known. The lowest value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Known or expected hazardous products resulting from heating, burning or other reactions.

SECTION IV (cont.)

EXTINGUISHING MEDIA: Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

SECTION V
HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product.

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

SECTION VI
REACTIVITY DATA

HAZARDOUS POLYMERIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

STABILITY: Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

SECTION VII
SPILL OR LEAK PROCEDURES

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

SECTION VIII
PROTECTIVE EQUIPMENT TO BE USED

Protective equipment which may be needed when handling the product.

SECTION IX
SPECIAL PRECAUTIONS OR OTHER COMMENTS

Covers any relevant points not previously mentioned.

ADDITIONAL COMMENTS

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums, pails, etc.). Refer to Sections IV and IX.

MIDWEST GENERAL CORPORATION

20630 HARPER
SUITE 103
HARPER WOODS, MICHIGAN 48225

AREA CODE 313-881-2340

PRODUCT INFORMATION - SEABOND 1010 ADHESIVE

(Non-Flammable)

This is a non-flammable (wet state) contact cement with good resistance to oil, moisture and heat. Used extensively by boat builders for bonding marine carpeting to FRP.

PHYSICAL PROPERTIES

Base:	Synthetic rubber, resin
Vehicle:	1,1,1-Trichloroethane, toluol
Viscosity, Brookfield RVF Viscometer, #3 Spindle at 20 RPM:	Approx. 425 Cps. at 23 ± 1°C.
Solids, by Weight	10.0% - 14.0%, 1hour at 140°C.
Weight per Gallon:	10.0 - 10.5 Lbs. at 23 ± 1°C.
Color:	Tan
Flash Point, Tag Open Cup:	None
Storage Stability:	Approximately 1 year at 23 ± 1°C.
Storage Requirements:	Bring to room temperature before using.

PERFORMANCE PROPERTIES

Values dependent on porosity of substrates, coverage, temperature and humidity conditions.

Bonding Range:	3 minutes to 30 minutes.
Set-Up Time:	Achieves 90% of total strength in 24 hours.
Coverage:	Up to 250 sq. ft./gallon - Brush Up tp 300 sq. ft./gallon - Spray
Resistance Properties:	Good resistance to oil, moisture and heat.

Temperature Limitations:	325°F., 1 lb. per sq. inch in shear.
Clean-Up:	Toluol, 1,1,1-Trichloroethane

TYPICAL USES:

1. Rubber to metal
2. Fabric to wood
3. Rubber backed carpeting to FRP
4. Urethane foam to FRP
5. Delrin plastic to neoprene & Hyplon sheeting
6. Natural rubber to chipboard
7. Vinyl fabric to urethane foam

APPLICATION INFORMATION

Surfaces to be bonded must be free from moisture, dirt, grease, oil, rust or other contaminants. Can be applied by hand using a brush, paint roller or 1/16" notched trowel.

Spray Application:	DeVilbiss MBC gun, E fluid tip, 24 air cap. Binks #18 gun, #66 fluid nozzle, #67 air nozzle

CAUTION: DANGER! HARMFUL VAPORS. HARMFUL OR FATAL IF SWALLOWED. AVOID PROLONGED CONTACT WITH SKIN OR BREATHING OF VAPORS. USE WITH ADEQUATE VENTILATION. CLOSE CONTAINER AFTER EACH USE. CONTAINS 1,1,1-TRICHLOROETHANE AND TOLUOL. IF SWALLOWED, DO NOT INDUCE VOMITING--CALL PHYSICIAN IMMEDIATELY. KEEP OUT OF REACH OF CHILDREN.

CAUTION: CONTACT WITH ALUMINUM PART IN A PRESSURIZABLE FLUID APPLICATION SYSTEM MAY CAUSE VIOLENT REACTION. CONSULT EQUIPMENT SUPPLIER FOR FURTHER INFORMATION.

MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS AND RELATED MATERIALS

NAUTICAL COATINGS INC.
P.O. BOX 310305
TAMPA, FLORIDA 33680.

DATE OF PREPARATION: 5/25/89 EMERGENCY TELEPHONE NO.: 813-536-3789

SIGNATURE OF PREPARER: L. A. [illegible] INFORMATION TELEPHONE NO.: 813-536-378

SECTION I – PRODUCT IDENTIFICATION

PRODUCT NUMBER: 3400 SERIES PRODUCT NAME: SEA HAWK CUKOTE ANTI-FOUL COATING

PRODUCT CLASS: CUPROUS OXIDE PAINT

SECTION II – HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO.	PERCENT	OCCUPATIONAL EXPOSURE LIMITS TLV	PEL	VAPO PRESS
AROMATIC HYDROCARBON		16.2	100		.3mm@2
XYLENE	1330-20-7	5.7	100		10mm@2
Propylene Oxide	115-07-1	0.06			
Zinc Oxide		2.8			
Zinc	7440-66-6	2.24			

SECTION III – PHYSICAL DATA

BOILING RANGE VAPOR DENSITY ☒ HEAVIER ☐ LIGHTER THAN AIR

EVAPORATION RATE ☐ FASTER ☒ SLOWER THAN ETHER % VOLATILE WT. 22. #VT/GAL

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION OSHA 1C FLASH POINT 100.°F LEL (

DOT FLAMMABLE LIQUID

EXTINGUISHING MEDIA:

☐ FOAM ☐ ALCOHOL ☒ CO2 ☒ WATER FOG ☐ OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STAT ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXT HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APP OBTAIN MEDICAL ATTENTION.

SPECIAL FIRE FIGHTING PROCEDURES: FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED. – WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES AR WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PRE[illegible]

MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS AND RELATED MATERIALS

NAUTICAL COATINGS INC.
P.O. BOX 310305
TAMPA, FLORIDA 33680

DATE OF PREPARATION: 5/25/89 - EMERGENCY TELEPHONE NO.: 813-536-3789

SIGNATURE OF PREPARER: L A Owen INFORMATION TELEPHONE NO.: 813-536-3789

SECTION I – PRODUCT IDENTIFICATION

PRODUCT NUMBER: 2033 PRODUCT NAME: SEA HAWK ANTIFOULANT REDUCER

PRODUCT CLASS: ENAMEL REDUCER

SECTION II – HAZARDOUS INGREDIENTS

INGREDIENT	CASE NUMBER	PERCENT	OCCUPATIONAL EXPOSURE LIMITS TLV	PEL	VAPOR PRESSURE
XYLENE	1330-20-7	100	100		10mm@28°C

SECTION III – PHYSICAL DATA

BOILING RANGE 135-143°C VAPOR DENSITY ☒ HEAVIER ☐ LIGHTER THAN AIR

EVAPORATION RATE ☐ FASTER ☒ SLOWER THAN ETHER 100 % VOLATILE WT. WT/GAL 7.18

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION OSHA 1C FLASH POINT 80°F LEL 1.1/

DOT ~~Flammable~~ Liquid

EXTINGUISHING MEDIA:

☒ FOAM ☐ ALCOHOL ☒ CO2 ☒ WATER FOG ☐ OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

SPECIAL FIRE FIGHTING PROCEDURES: FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING

MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS AND RELATED MATERIALS

NAUTICAL COATINGS, INC."
P.O. BOX 310305
TAMPA, FLORIDA 33680

DATE OF PREPARATION: 8/12/88 EMERGENCY TELEPHONE NO.: 813-536-3789

SIGNATURE OF PREPARER: INFORMATION TELEPHONE NO.: 813-536-3789

SECTION I – PRODUCT IDENTIFICATION

PRODUCT NUMBER: S-80 PRODUCT NAME: WAX -AND GREASE KILLER

PRODUCT CLASS: DEGREASER

SECTION II – HAZARDOUS INGREDIENTS

INGREDIENT	CAS NUMBER	PERCENT (less than)	OCCUPATIONAL EXPOSURE LIMITS TLV	PEL ppm	PEL mg/m³	VAPOR PRESSURE
MINERAL SPIRITS	64742-88-7	<37.60	100	500	UNK	.3mm@100°F
XYLOL	1330-20-7	<41.60	100	100	435	10mm@28°C
AROMATIC HYDROCARBON 100	64742-95-6	<20.85	10A	UNK	UNK	3mm@20°C

SECTION III – PHYSICAL DATA

BOILING RANGE 135-173 °C VAPOR DENSITY ☒ HEAVIER ☐ LIGHTER THAN AIR

EVAPORATION RATE ☐ FASTER ☒ SLOWER THAN ETHER 100 % VOLATILE WT. WT/GAL 6.65

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION 1B OSHA _____ DOT _____ FLASH POINT 84°F T.C.C. LEL 0.7%

EXTINGUISHING MEDIA:

☒ FOAM ☐ ALCOHOL ☒ CO2 ☒ WATER FOG ☐ OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

SPECIAL FIRE FIGHTING PROCEDURES: FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED. – WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO IGNITION WHEN EXPOSED TO EXTREME HEAT.

BEST AVAILABLE COPY

MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS AND RELATED MATERIALS

NAUTICAL COATINGS, INC.
P. O. Box 3[illegible]0305
Tampa, Florida 33680

DATE OF PREPARATION: 5/25/89

EMERGENCY TELEPHONE NO.: 813-536-3789

SIGNATURE OF PREPARER: T. A Owen

INFORMATION TELEPHONE NO.: 813-536-3789

SECTION I – PRODUCT IDENTIFICATION

PRODUCT NUMBER: 1288

PRODUCT NAME: ANTI-CORROSIVE PRIMER
Medium Build

PRODUCT CLASS: Chlorunated rubber based primer

SECTION II – HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO.	PERCENT	OCCUPATIONAL EXPOSURE LIMITS TLV	PEL	VAPOR PRESSU
XYLENE	1330-20-7	34.0	100 ppm		10 mm
Zinc Chromate		5.9			
Chromium	7440-47-3	1.47			
Zinc	7440-66-6	1.47			
Barium	7440-39	0.23			
Zinc Oxide		5.9			
Zinc	7440-66-6	4.72			

SECTION III – PHYSICAL DATA

BOILING RANGE VAPOR DENSITY ☒ HEAVIER ☐ LIGHTER THAN AIR

EVAPORATION RATE ☐ FASTER ☒ SLOWER THAN ETHER % VOLATILE WT. 34 WT/GAL 1

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION OSHA 1C FLASH POINT 79° F LEL 1:

DOT Flammable liquid

EXTINGUISHING MEDIA:

☒ FOAM ☐ ALCOHOL ☒ CO2 ☒ WATER FOG ☐ OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTRE HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPAR OBTAIN MEDICAL ATTENTION.

SPECIAL FIRE FIGHTING PROCEDURES: FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED. – WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES ARE PREF WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO IGNITIO EXPOSED TO EXTREME HE[illegible]

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MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

(Approved by U.S. Department of Labor 'Essentially Similar' to form OSHA-20)

MANUFACTURER'S NAME
MARTIN-SENOUR AUTOMOTIVE SALES
5422 Dansher Road
Countryside, Illinois 60525

EMERGENCY TELEPHONE NO.
(216) 566-2917

DATE OF PREPARATION
30-Nov-84

INFORMATION TELEPHONE NO.
(216) 566-2902

Section I -- PRODUCT IDENTIFICATION

PRODUCT NUMBER
3096

* - Trade Mark

PRODUCT NAME
Combination Acrylic Lacquer Thinner

PRODUCT CLASS
Reducer

Section II -- HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	TLV-PPM	TLV MG/M3	LEL	V.P.
Lt. Aliphatic Hydrocarbon Solvent.	20	100.	364.	1.0	53.0
Toluene.	35	100.	375.	1.0	22.0
Xylene.	<5	100.	435.	1.0	5.9
Light Aromatic Naphtha	<5	100.	462.	0.7	3.8
Acetone.	<5	750.	1780.	2.2	180.0
Methyl Ethyl Ketone.	10	200.	590.	1.8	70.0
Methyl Isobutyl Ketone.	25	50.	205.	1.4	16.0
2-Ethoxyethyl Acetate.	<5	5.	27.	1.8	2.0

Section III -- PHYSICAL DATA

EVAPORATION RATE -- Slower than Ether

VAPOR DENSITY -- Heavier than Air

BOILING RANGE (F)	% VOLATILE VOLUME	WT/GAL
132 - 360	100.0	6.72

Section IV -- FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION FLASH POINT 30 F TCC LEL 0.7

RED LABEL -- Flammable, Flash below 100 F

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Keep containers tightly closed. Isolate from heat, electrical equipment, sparks, and open flame. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

Continued on page 2

MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS, AND RELATED MATERIALS

Produc

DATE OF PREP. 12-20-84

Section I

MANUFACTURER'S NAME Inmont Corporation

STREET ADDRESS 6125 Industrial Parkway, P.O. Box 2757 CITY, STATE, AND ZIP CODE Whitehouse, Ohio 43571

EMERGENCY TELEPHONE NO. (419) 877-5308 or (201) 365-3512

PRODUCT CLASS Paint Related Material NA1263

MANUFACTURERS CODE IDENTIFICATION Q17CD010.840229

TRADE NAME PNT90 Lacquer Thinner

Section II — HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT By Weight	TLV PPM	TLV mg/M³	LEL	VAPOR PRESSURE mm Hg
Toluene (108-88-3)	20	100	375	1.2	22
Isopropanol (67-63-0)	20	400	980	2.0	33
Propylene Glycol Methyl Ether Acetate (108-65-6)	20	--	--	1.3	3.7
Long Range VM&P Naphtha (8032-32-4)	20	150	N/A	1.0	13
Xylene (1330-20-7)	10	100	435	1.0	5.1
Acetone (67-64-1)	5	750	1780	2.6	187
Isobutyl Acetate (110-19-0)	5	150	700	1.4	12.8
Ethylene Glycol Butyl Ether Acetate (112-07-2)	< 5	--	--	0.5	0.26

Section III — PHYSICAL DATA

BOILING RANGE (Estimated) 134°-370°F. VAPOR DENSITY ☒ HEAVIER ☐ LIGHTER, THAN AIR

EVAPORATION RATE ☐ FASTER ☒ SLOWER, THAN ETHER PERCENT VOLATILE BY VOLUME 100 WEIGHT PER GALLON 7.01 lbs

Section IV — FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION Flammable 1B FLASH POINT 15°±5°F. S.C.C. LEL See Section II

EXTINGUISHING MEDIA Foam — Carbon Dioxide — Chemical Powder

UNUSUAL FIRE AND EXPLOSION HAZARDS Keep container tightly closed. Avoid heat, open flames, static electricity, electrical equipment and sparks. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency situation, over-exposure to decomposition products may cause a health hazard with no symptoms immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible auto ignition or explosion when exposed to extreme heat.

UNITED TECHNOLOGIES

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MATERIAL SAFETY DATA SHEET

FOR COATINGS, RESINS AND RELATED MATERIALS

(Approved by U.S. Department of Labor 'Essentially Similar' to form OSHA-20)

MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, Ohio 44115

EMERGENCY TELEPHONE NO.
(216) 566-2917

DATE OF PREPARATION
11-Apr-86

INFORMATION TELEPHONE NO.
(216) 566-2902

Section I -- PRODUCT IDENTIFICATION

PRODUCT NUMBER
T67 F 2

* - Trade Mark

PRODUCT NAME
SHER-WOOD* Vinyl Sanding Sealer

PRODUCT CLASS
Vinyl Alkyd Urea Coating

Section II -- HAZARDOUS INGREDIENTS

CAS No.	INGREDIENT	PERCENT	TLV-PPM	TLV-MG/M3	LEL	V.P.
64742-89-8	Lt. Aliphatic Hydrocarbon Solvent.	10	100.	364.	1.0	53.0
64742-48-9	V. M. & P. Naphtha.	10	300.	1350.	0.9	12.0
108-88-3	Toluene.	15	100.	375.	1.0	22.0
1330-20-7	Xylene.	<5	100.	435.	1.0	3.9
67-56-1	Methanol	<5	200.	260.	6.0	92.0
64-17-5	Ethanol	10	1000.	1900.	3.3	44.0
67-63-0	2-Propanol	<5	400.	980.	2.0	33.0
78-83-1	2-Methyl-1-propanol	5	50.	150.	1.2	8.7
78-93-3	Methyl Ethyl Ketone.	15	200.	590.	1.8	70.0
110-19-0	Isobutyl Acetate.	<5	150.	700.	1.3	12.5

Section III -- PHYSICAL DATA

EVAPORATION RATE -- Slower than Ether

VAPOR DENSITY -- Heavier than Air

BOILING RANGE (F)	% VOLATILE VOLUME	WT/GAL
140 - 325	86.6	7.10

Section IV -- FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION FLASH POINT 25 F PMCC LEL 0.9

RED LABEL -- Flammable, Flash below 100 F

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Keep containers tightly closed. Isolate from heat, electrical equipment, sparks, and open flame. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

Section V -- HEALTH HAZARD DATA

RESHOLD LIMIT VALUE -- See Section II

ECTS OF OVEREXPOSURE

ACUTE: In a confined area vapors in high concentration are anesthetic. Overexposure result in lightheadedness and staggering gait.
Irritant to skin and upper respiratory system.

CHRONIC: Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

EMERGENCY AND FIRST AID PROCEDURES

If INHALED: If affected, remove from exposure. Restore breathing. Keep warm and qui

If on SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.

If in EYES: Flush eyes with large amounts of water for 15 minutes.
Get medical attention.

If SWALLOWED: Never give anything by mouth to an unconscious person. DO NOT INDUCE VOMITING. Give several glasses of water. Seek medical attention.

Section VI -- REACTIVITY DATA

STABILITY -- Stable

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide, Hydrogen Chloride

HAZARDOUS POLYMERIZATION -- Will Not Occur

Section VII -- SPILL OR LEAK PROCEDURES

TEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate and remove with inert absorbent.

STE DISPOSAL METHOD

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State, and Local regulations regarding pollution.

Section VIII -- PROTECTION INFORMATION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation. Avoid breathing vapor and spray mist. Avoid contact with skin and eyes. Wash hands after using.

Protect against dust which may be generated by sanding or abrading the dried film.

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section II is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear respiratory device approved by NIOSH/MSHA for protection against materials in Section II.

PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section II.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

Continued on page 3

Section IX -- PRECAUTIONS

STORAGE CATEGORY -- 1B

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.

During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with compl and appropriate labeling. Do not take internally. Keep out of the reach of children.

OTHER PRECAUTIONS

This coating contains materials classified as nuisance particulates, for example titanium dioxide, calcium carbonate, etc. (see ACGIH TLV List, Preface and Appendix D), which may be present at hazardous levels only during sanding or abrading of the dried film

Intentional misuse by deliberately concentrating and inhaling the contents can be harmf or fatal.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since condition of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

(B)

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MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS AND RELATED MATERIALS

NAUTICAL COATINGS, INC.
12490 BELCHER RD. S.
LARGO, FLORIDA 34643

DATE OF PREPARATION: Nov. 30, 1989

EMERGENCY TELEPHONE NO.: 813-536-3789

SIGNATURE OF PREPARER: Lloyd A Owen

INFORMATION TELEPHONE NO.: 813-536-3789

SECTION I – PRODUCT IDENTIFICATION

PRODUCT NUMBER: 1266

PRODUCT NAME: FIBERGLASS TREATMENT NON SANDING PRIMER

PRODUCT CLASS:

SECTION II – HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO.	PERCENT	OCCUPATIONAL EXPOSURE LIMITS TLV	PEL	VAPOR PRESSURE
Xylene	1330-20-7	30	100		10 mm./28°C
ETHYL ACETATE	110-12-3	20	400		90mm
METHYL ISOAMYL KETONE		50	50		4.5 mm/20°C

SECTION III – PHYSICAL DATA

BOILING RANGE: 160-288° F VAPOR DENSITY ☒ HEAVIER ☐ LIGHTER THAN AIR

EVAPORATION RATE ☐ FASTER ☒ SLOWER THAN ETHER 95% VOLATILE WT. WT/GAL 7.5 lbs.

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION OSHA 1C DOT Flammable liquid FLASH POINT 80° F LEL

EXTINGUISHING MEDIA:

☒ FOAM ☐ ALCOHOL ☒ CO2 ☒ WATER FOG ☐ OTHER

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINER TIGHTLY CLOSED. AVOID HEAT, OPEN FLAMES, STATIC ELECTRICITY, ELECTRICAL EQUIPMENT AND SPARKS. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. APPLICATION TO HOT SURFACES REQUIRES SPECIAL PRECAUTIONS. DURING EMERGENCY SITUATION, OVER-EXPOSURE TO DECOMPOSITION PRODUCTS MAY CAUSE A HEALTH HAZARD WITH NO SYMPTOMS IMMEDIATELY APPARENT. OBTAIN MEDICAL ATTENTION.

SPECIAL FIRE FIGHTING PROCEDURES: FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS SHOULD BE USED. – WATER SPRAY MAY BE INEFFECTIVE. IF WATER IS USED, FOG NOZZLES ARE PREFERABLE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE AUTO IGNITION WHEN EXPOSED TO EXTREME HEAT.

SECTION V – HEALTH HAZARD DATA

PRIMARY ROUTE (S) OF ENTRY: ☒ DERMAL ☒ INHALATION ☒ INGESTION

EMERGENCY AND FIRST AID PROCEDURE

EYE CONTACT	If this product comes in contact with the eyes, flush with large quantities of water for at least 15 minutes and seek immediate medical attention.
SKIN CONTACT	If this product comes in contact with the skin, wash with soap and large quantities of water and seek medical attention if irritation from contact persists.
INHALATION	If breathing difficulties, headaches, dizziness, or lightheadedness occur when working in areas with high vapor concentrations, victim should seek air free of vapors. If victim experiences continued breathing difficulties, administer oxygen until medical assistance can be rendered. If breathing stops, begin artificial respiration and seek medical attention.
INGESTION	If this product is swallowed, DO NOT INDUCE VOMITING. Seek immediate medical advice and/or attention.

PHYSIOLOGICAL EFFECTS AND HEALTH INFORMATION

EYE EFFECTS	This product may be an eye irritant. Tearing and redness may occur.
SKIN EFFECTS	This product may cause skin irritation.
SYSTEMIC EFFECTS	VARIOUS STUDIES HAVE SHOWN A POSSIBLE ASSOCIATION WITH EXPOSURE TO THIS PRODUCT AND THE FOLLOWING: Respiratory tract irritation. Central nervous system depression in high concentrations. Nausea and vomiting. **NOTE: REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OVER-EXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATION AND INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.**

SECTION VI -- REACTIVITY DATA

A. ITY ☐ UNSTABLE ☒ STABLE

ZARDOUS POLYMERIZATION ☐ MAY OCCUR ☒ WILL NOT OCCUR

ZARDOUS DECOMPOSITION PRODUCTS: Unknown other than CO2 and possibly CO and Smoke.

NDITIONS TO AVOID: Heat, open flames, electrical and static discharges.

OMPATIBILITY (MATERIALS TO AVOID): Strong Acids, Alkalies and Oxidizers.

SECTION VII -- SPILL OR LEAK PROCEDURES

PS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

VENTILATE AREA. REMOVE ALL POSSIBLE SOURCES OF IGNITION. AVOID PROLONGED BREATHING OF VAPORS, CONFINE SPILL WITH INERT ABSORBENT AND CLEAN UP WITH SPARK-PROOF TOOLS. WEAR PROTECTIVE EQUIPMENT DURING CLEAN-UP.

WASTE DISPOSAL: Incinerate in an approved incinerator or dispose of in an approved chemical dumpsite in accordance with Local, State and Federal Regulations by approved contractors.

SECTION VIII -- SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION: Use NIOSH/MSHA approved Chemical/Mechanical type filter system to remove a combination or particles, gas & vapor. Use air line if necessary.

VENTILATION: Use adequate ventilation in volume and pattern to keep LEL and TLV's in Section II below recommended level to produce explosion or fire. General mechanical ventilation should comply with OSHA 1910.94.

PROTECTIVE GLOVES: Use rubber gloves.

EYE PROTECTION: Safety glasses or goggles with splash guards or side shields.

OTHER PROTECTIVE EQUIPMENT: Prevent prolonged skin contact to contaminated clothing.

SECTION IX -- SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in a cool dry area away from sources of ignition. When storing large quantities, store in building designed and protected against flammable liquids. Use static lines when mixing and transferring material. Do no allow material to free fall more than five (5) inches.

OTHER PRECAUTIONS: "FOR INDUSTRIAL USE ONLY" Do not take internally. If ingested, DO NOT INDUCE VOMITING. Consult a physician. Do not flame cut, weld, or braze on coated metal without a NIOSH/MSHA approved respirator.

e information contained herein is based on technical data which we believe to be reliable, however, since e conditions under which this information may be applied are beyond our control, we can assume no liability for results of its application. This information should be used only by presons having sufficient technical skill to make informed judgements regarding its application.

EXHIBIT "D"

POTENTIAL EMISSIONS

	PERMITTED AMOUNT (#/hr)		52 weeks 24 hr/day 7 days/week = 8,736 hrs/yr (hrs/yr)		POTENTIAL EMISSIONS			
STYRENE	27.7	X	8,736	=	241,987	#/yr	= 121.0	tons/yr
METHYL METHACRALATE	6.3	X	8,736	=	55,037	#/yr	= 27.5	tons/yr
ACETONE	24.4	X	8,736	=	213,158	#/yr	= 106.6	tons/yr
AROMATIC HYDROCARBONS	3.5	X	8,736	=	30,576	#/yr	= 15.3	tons/yr
XYLENE	1.30	X	8,736	=	11,357	#/yr	= 5.68	tons/yr
1,1,1-TRI CHLOROETHANE	1.5	X	8,736	=	13,104	#/yr	= 6.6	tons/yr
METHYLENE CHLORIDE	0.8	X	8,736	=	6,989	#/yr	= 3.5	tons/yr

REVISED PER MODIFICATION REQUEST

EXHIBIT "D"

POTENTIAL EMISSIONS

	AVERAGE AMOUNT (#/hr)		52 weeks 24 hr/day 7 days/week = 8,736 hrs/yr (hrs/yr)		POTENTIAL EMISSIONS			
STYRENE	30.2	X	8,736	=	264,089	#/yr	=	132.0 tons/yr
METHYL METHACRALATE	4.7	X	8,736	=	41,409	#/yr	=	20.7 tons/yr
ACETONE	11.6	X	8,736	=	101,338	#/yr	=	50.7 tons/yr
PAINTS & ADDITIVES	6.9	X	8,736	=	59,929	#/yr	=	30.0 tons/yr
1,1,1-TRI CHLOROETHANE	6.4	X	8,736	=	56,260	#/yr	=	28.1 tons/yr
TOLUENE	0.8	X	8,736	=	6,814	#/yr	=	3.4 tons/yr

EXHIBIT "E"

Sea Ray Boats at the Merritt Island Facility is in the business of manufacturing fiberglass pleasure boats.

The process is generally described as follows:

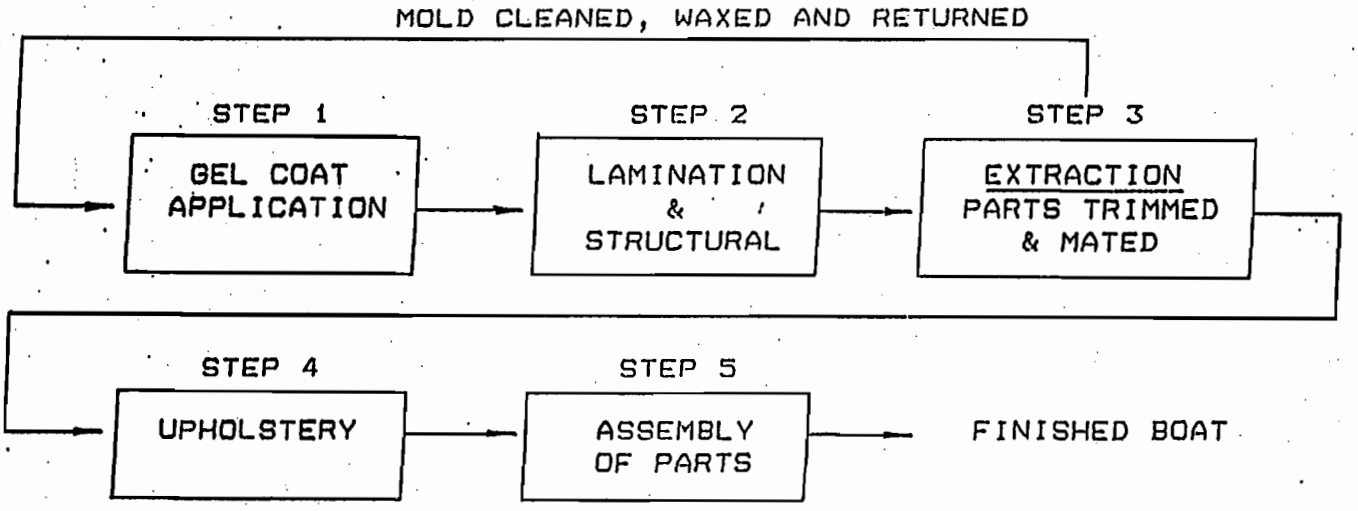
Step 1. Gel coat (the exterior colors) are sprayed into a mold by an airless method. Gel Coat is described in the attached Material Safety Data Sheets titled Exhibit A.

Step 2. Structural resin and fiberglass is again sprayed by an airless method into the mold over the Gel Coat and wooden and foam parts are added for rigidity. Resin is described in the attached Material Safety Data Sheets titled Exhibit A.

Step 3. After the lamination (resin applications) process the hull and deck parts plus any miscellaneous small parts are extracted from their molds and are trimmed of excess or overspray. (Molds are cleaned, waxed and returned to Step 1).

Step 4. Glue is utilized in the preparation of upholstered parts, which are also used in the final assembly process.

Step 5. The boat assembly process utilizes the fiberglass parts, the exposed wooden parts and other materials and parts which come to the site in a ready to use condition (i.e. they are not manufactured on site).



CHEMISTRY

Polyester resin is a chemical chain containing organic acids and alcohols with an ester linkage (hence the name, polyester).

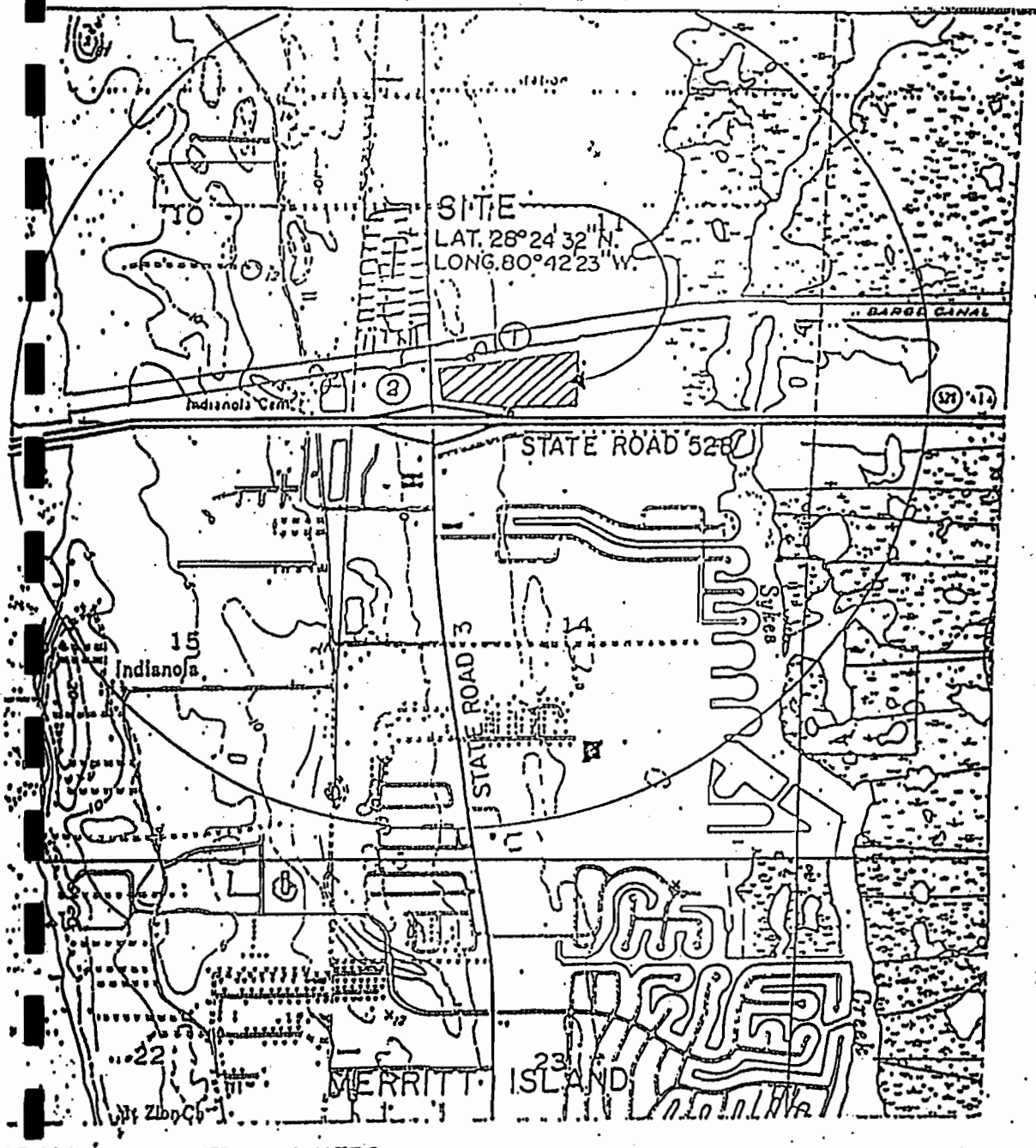
Styrene is the most commonly used crosslinking agent that connects the polyester chains and creates a polyester resin which is liquid and flexible for the fabrication of parts.

Styrene, as a crosslinking agent, reacts with the available bond sites on the polyester chain, usually the unsaturated organic acid.

When the resin arrives at the plant it is in a liquid form: a polyester thinned with about 50% styrene monomer and mixed with inhibitors to prevent a spontaneous cross-linking reaction.

Acetone is used sparingly as a solvent to clean equipment after application of the resin.

EXHIBIT "F"



0 1000 20
SCALE 1" = 200

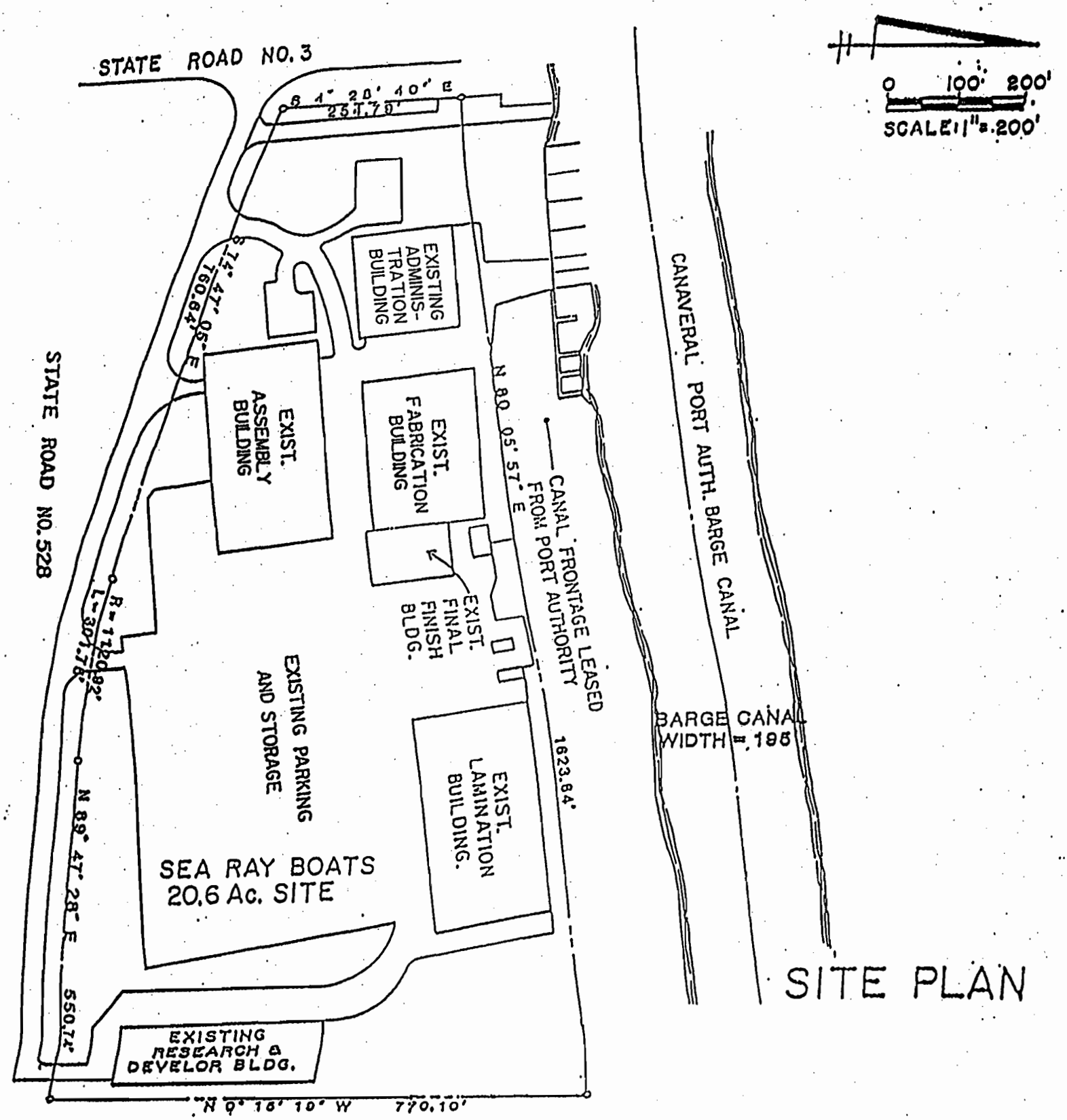
ADJACENT PROPERTY OWNERS

1) CANAVERAL PORT AUTHORITY (1)
P.O. BOX 267
CAPE CANAVERAL, FLA.
32920

2) INGLY'S FISH CAMP (2)
STATE ROAD 3
MERRITT ISLAND, FLA.
32952

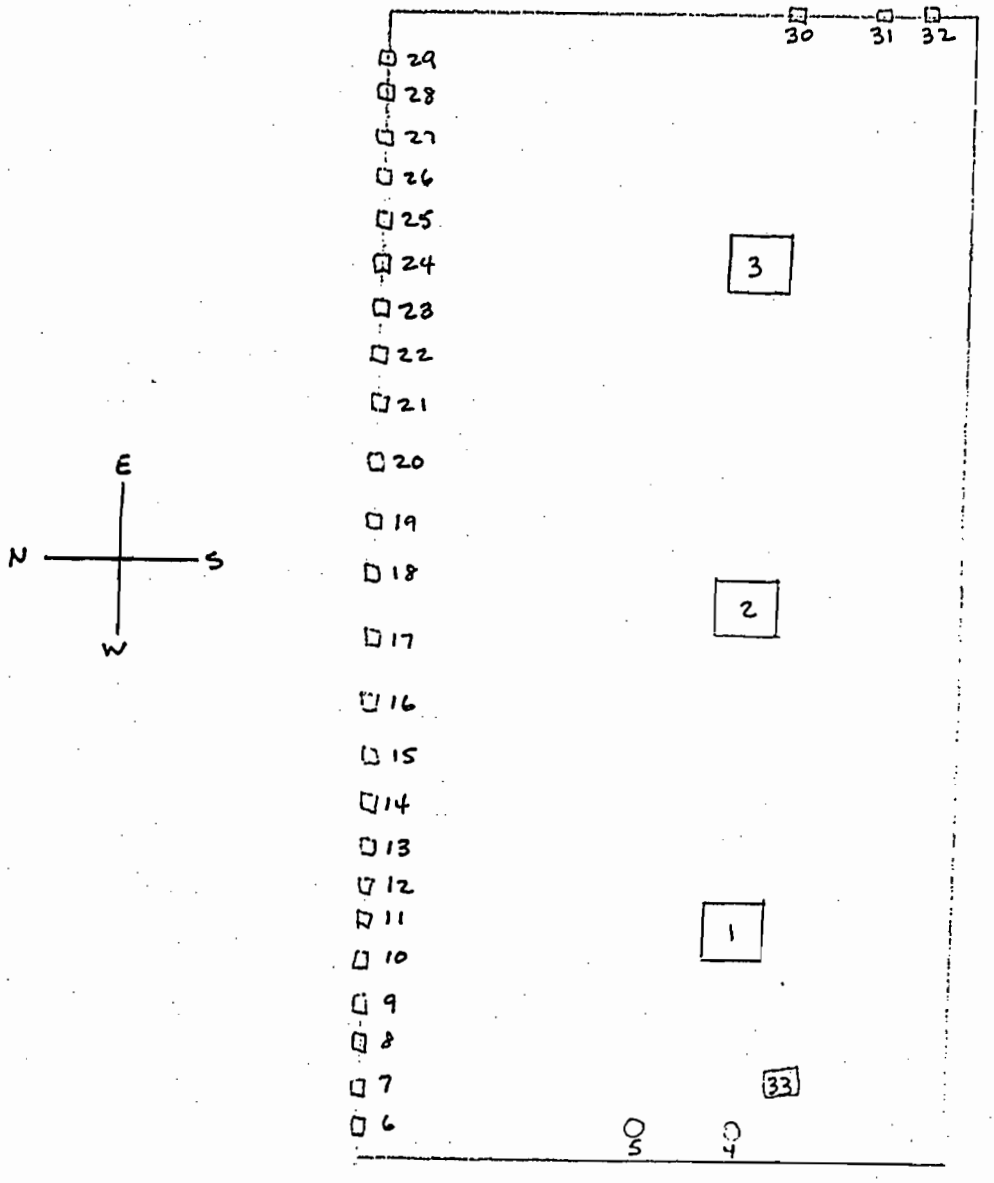
VICINITY MAP

EXHIBIT "G"



SITE PLAN

LAMINATION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LAMINATION

	DESCRIPTION	H.P.	FAN	MANUFACTURE
1.	AIR HANDLERS DFT2250AJC221A4G4GA41130101	25		TRANE
2.	AIR HANDLERS DFT2250ADA221A4G4GA11130101	25		TRANE
3.	AIR HANDLERS DFT2250AFC221A4G4GA11130101	25		
4.	VENTILATION		30"	DOMEX PENN
5.	VENTILATION		30"	DOMEX PENN
6.	FAN	3	40"	
7.	FAN	3	40"	
8.	FAN	2	40"	
9.	FAN	2	40"	
10.	FAN	2	40"	
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13.	FAN	2	40"	
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24.	FAN	2	40"	
25.	FAN	2	32"	
26.	FAN	2	32"	
27.	FAN	2	32"	
28.	FAN	2	32"	
29.	FAN	2	40"	
30.	FAN	2	32"	
31.	FAN	2	32"	
32.	FAN	2	32"	
33.	SMOKE EATER MODEL F70			HONEYWELL

THE TRANE COMPANY
LA CROSSE, WISCONSIN
PRINTED IN U.S.A.

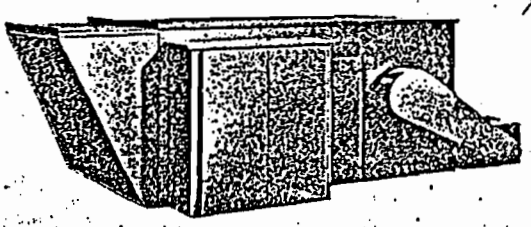
FILE;
TRANE HEATING PRODUCTS
CABINET HEATERS
Direct Fired Torrivents
Operation - Maintenance

LITERATURE
DFT-M
OPER.-MAIN.

JANUARY, 1972

Since The Trane Company has a policy of continuous product improvement, it reserves the right to change specifications and design without notice.

#s 1, 2, 3



DIRECT FIRED TORRIVENTS

MODELS 1150 THROUGH 2300

OPERATING THE UNIT

Three adjustable temperature controls (1THS, 2THS, 3THS) are provided on the unit along with "Start-Stop" operating switch (1RS) and three pilot lights (1LT, 3LT, 5LT) on the unit control box. The power box, which may be in "Location 1" or "Location 2" on the unit, contains an "On-Off" disconnect switch (DS). See Figure 1.

NOTE: The component designation given in parenthesis are as listed on the unit wiring diagrams.

A remote control box installed in the occupied space, includes a "Start-Stop" operating switch (2RS), temperature control (TC) and operating pilot lights (2LT, 4LT, 6LT).

Pilot lights on the unit control box and/or remote control box indicate conditions of unit operation. White pilot light "Motor On" indicates that the unit motor and fan are operating, and the outlet damper, if used, has opened. Amber pilot light "Burner On" will light with firing of the burner. In the event of a flame failure when burner operation is required, the red pilot light "Alarm" will glow.

With the disconnect switch closed and the unit temperature controls properly set, unit operation is automatic after pushing the "Start-Stop" operating switch to the "Start" position.

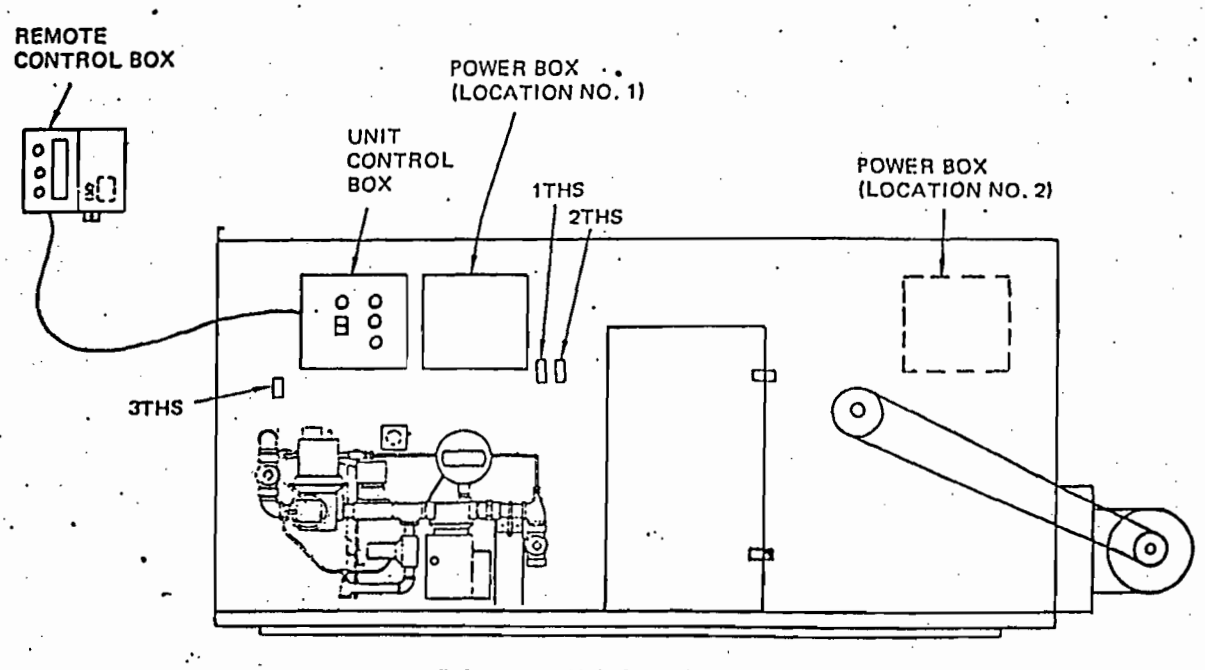


FIGURE 1 – Unit Control Boxes

BEST AVAILABLE COPY

Donald Woods

DIRECT FIRED TORRIVENT

DATE SHIPPED	BILL OF LADING NO	INVOICE DATE	ORDER / INVOICE
			BH3-C54

TERMS	30 DAYS NET	F.O.B.	NRS INVOICE CODE
	NET 30	CLARKSVILLE IT FA	

VISLAY & CANTELOU

DOUG STONE

SEA RAY BOATS

ORDER DATE	CUSTOMER ORDER NUMBER	LOAD NUMBER / SEQUENCE NO.
6/22/76	76622C	BH3-16-1488-2

SOLD TO:
MERRITT ISLAND AIR COND. INC.
625 CYPRESS ST.
MERRITT ISLAND FLORIDA
(INCLUDE ZIP CODE)

MARK PACKAGES:
NOTIFY M.I. AIR COND AT 305-452-871
24HRS. BEFORE DELIVERY

SHIP VIA: TRUCK

SHIP TO:
MERRITT ISLAND AIR COND. INC.
% SEA RAY BOATS
2700 N. COURTENAY PKWY
MERRITT ISLAND FLORIDA
(INCLUDE ZIP C

SHIP WITH

TAG MU-1 | QTY 1 | OPT 039 | SERIAL NO. B76F023920 | SUB. DRWG.

ITEM A | TYPE NO. 3900 — ☐1150 ☐1180 ☐1200 ☐1250 ☐1300 ☐8250 ☐2300

MODEL NUMBER OPT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
2250	A	2	2	1	A	4	G	4	G	A	1	1	1	3	0	1	0	1

PRICING

BASIC UNIT
- SINGLE GAS SUPPLY SERIES 12 MODULATING SYSTEM
- VERTICAL FAN DISCHARGE ARRANGEMENT
- WITH OUTLET DAMPER
- STANDARD VALVE TRAIN 1 1/4"

INSURANCE AGENCY APPROVAL REQUIRED: FM ☐ FIA ☐ NONE

PERFORMANCE
- 3,300,000 MAX. BTUH INPUT BURNER
- L.P. GAS AT 2# AVAILABLE GAS PRESSURE ____ GAS AT ____ AVAILABLE GAS PRESSURE
- 39,500 SCFM AT 1.00 INCHES TOTAL STATIC PRESSURE
- 20 BHP AND 565 FAN RPM
- 3,300,000 BTUH INPUT 71° F. AIR TEMPERATURE RISE (120 F MAX.)

MOTOR & DRIVE
- 20 H.P. MOTOR 70070004 ☐MOTOR BY OTHERS ☐DRIVE BY OTHERS
- WITH MOTOR 460/60/3 ELEC. CHAR. TYPE odp
- WITH POWER BOX ORDER NO 2233-8
- WITH DRIVE, RATED AT 1.2 MHP
- 565 RPM

ACCESSORIES
- WITH FILTER BOX, WITH THROWAWAY FILTERS
- WITH VALVE TRAIN ENCLOSURE
- WITH MOTOR COVER
- WITH INLET HOOD, WITH BIRD SCREEN
- ORDERED ON ROOF CURB BH3-C547B
- WITH LIFTING BRACKETS
- WITHOUT ROOM THERMOSTAT

SHIP ACCESSORIES ASSEMBLED (1150-1300 ONLY) ☐YES ☒NO

SPECIAL INSTRUCTIONS

ENTERED	SHIPMENT WANTED			SPECS OK	PPD TRANSPORTATION	SPA NO.	MUL
7/6/76 sj	8/20/76 ☒ OR SOONER ☐ SPECIFIED DATE	☐ HOLD FOR APPROVAL	6 NO OF PRINTS				
	☐ HOLD UNTIL DATE CONFIRMED	☒ APPROVAL NOT REQUIRED					

ORDER CLASS	JOB NO	CREDIT AUTHOR	TAX STATUS	TAX CODE	TAX AMOUNT	SALES ORDER NO
A 2D 1 C						BH3-C54

OFFICE SALES MEN & RATE: ORLANDO MATTHEWS BH3-E08 100%

BROKER: NO ____ P ____ $ ____ %

SHEET 1 OF

BEST AVAILABLE COPY

DIRECT FIRED MAKE-UP AIR UNIT

TAG: _____ S.O. No. 1637

CUSTOMER P.O. NO.	REPRESENTATIVE	JOB ORDER NO.
Appliance	To Follow	Michigan Air Products	3/11
CITY / STATE	APPROVING AUTHORITY	REP. CODE NO.
oats Merrit Island Fla.	MAT-267	D401

NO.	GENERAL SPECIFICATIONS	LIST
50323	ITEM 1 QTY 1 MODEL NO. CT2740 F4	
050423	☒ End ☐ Down Discharge ☐ Indoor ☒ Outdoor Application	
050523		
	OPERATING DATA (See Reverse Side for Symbols)	
51023	POWER (3-wire) ☒ 208/3/60 ☐ 230/3/60 ☐ 460/3/60 ☐ 575/3/60 ☐ Other	
51223	BLOWER SECTION — Fan 40,000 CFM .50 ESP TSP .35 Elev.* RPM	
93041501	Qty 2 - 27" Diameter DWDI ☒ Forward Curved ☐ Backward Inclined Wheels.	
	Motor 20 HP ☒ Open (Standard) ☐ TEFC ☐ Two Speed 1800/900 RPM.	
	* Above Capacities are at Elevation Shown.	
	BURNER — Gas ☐ Nat. ☒ LP 2500 BTU/ft³ 11 in. H_2O or _____ lbs. Supply Pressure (27.7" = 1 Lb.) 17 x 128 T	
	1800 MBH Input 44 °F Temperature Rise 44°	
	OPTIONAL ACCESSORIES	
	GAS/BURNER — ☐ FIA and/or ☐ FM Controls ☐ With Approval.	
	☐ One Step (1 to 5 Lbs.) ☐ Two Step (1 to 15 Lbs.) Remote High Pressure Regulator.	
	☐ High Gas Pressure Safety Switch. (Std. on FIA - FM with Input Over 400 MBH)	
	☐ Low Gas Pressure Safety Switch. (Std. on FIA - FM with Input Over 400 MBH).	
	☐ Prepurge Cycle.	
	☐ Eclipse Forced Draft Burner.	
	☐ Maxon "Pre-Mix" Burner.	
	☐ Second Gas Valve - Motored.	
	☐ Second Gas Valve - Solenoid.	
	ELECTRICAL — ☐ I. C. Controls.	
	☒ Control Transformer 220 - 440/115 Volt	
	☐ Overriding Modulating Room Thermostat with Discharge High Limit Controller.	
	☐ Remote Automatic Start-Stop Push Button Station	
	☐ Audible Horn Alarm.	
	☐ Low Limit (System Shutdown) Room Thermostat.	
	FA/FILTER SECTION — ☐ FA Hood.	
	☒ FA Hood with 2" Permanent Cleanable Filters.	
930401	☐ Walk-in FA/Filter Service Compartment with	
	☐ Manual ☐ Pressuremeter ☐ Time Controlled Auto. Roll: ☐ Basket ☐ Bag ☐ 2" Perm. Filters.	
	Qty. _____ Size _____ Qty. _____ Size _____ _____ Sq. Ft. F.A.	
	MISC. — Automatic ☒ Inlet ☐ Discharge Two Position Damper with Motor and End Switch.	
930101	☐ Insulated Cabinet.	
QTY	☐ Factory Prefabricated Curb	
	☐ Side and Rear Service Platform with Guard Rail.	
	☐ Discharge Air Diffuser.	
	☐ Blower and Drive Vibration Isolators	
	☐ Foot Mounted or ☐ Hanger Type Unit Vibration Isolator	
	☐	
	☐ KEY PUNCHED	
	☐ DEC 18 1970	
	☐	

Total Shipping Weight 6000 Lbs./Unit TOTAL LIST PRICE

BINKS - shafts - Jamie M

JJ, JK and JL Fans

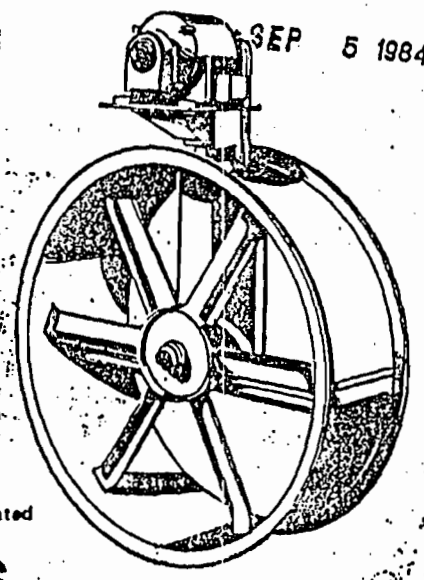
SERVICE BULLETIN
SB-42-110

REPLACES 42:110-A

30-4415

SEP 5 1984

Please Read These Instructions Before Using This Equipment



JL Fan Illustrated

INSTRUCTIONS

DESCRIPTION

These exhaust fans are specially designed to exhaust fumes, vapors and overspray from a working area, such as a spraybooth.

INSTALLATION

Fans may be installed either vertically or horizontally.

MOUNTING PROCEDURE

1. Mount fan in desired location using overhead beams, wall or like for support. DO NOT permit fan to rest on booth WITHOUT additional support (angle frame bracing or other support). Fan connector rings are necessary for both suction and exhaust sides of fan. These connector rings provide the union between the fan housing assembly and the exhaust stack.

   It is advisable to install a length of exhaust pipe with an automatic damper and access door between fan and booth outlet. When fan is mounted directly on booth (with proper support) the exhaust section directly behind the fan should have an automatic damper and access door. The damper prevents a back draft when fan is not in use.

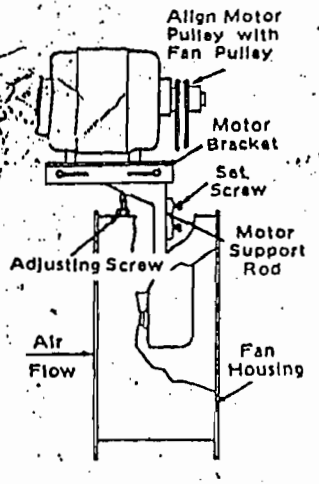


FIGURE 1

To mount fan in window or wall, fit housing into window or wall opening. Seal space between housing and window with sheet metal. Seal space between housing and wall with cement.

Fan should be protected with a wire screen to prevent contact with fan blades.

2. Slide motor bracket (5 or 10) into sleeve in belt guard.

3. Install belts (30). Align motor and fan pulley (2 and 17) so that belts are not twisted. Belts may be tightened by turning adjusting screw (11) up with a wrench placed at squared head of screw. Belt play should be approximately 1 inch.

4. Tighten set screws (29) and insert stop pin (13) at bottom of motor bracket post. Hold stop pin (13) in place with cotter pins (12).

5. Wire motor to main electrical source see chart 4 for correct wire size, electrical current should correspond with data on motor nameplate.

   Use manual or magnetic motor starter with thermal overload protection. Refer to motor nameplate data for full load current of motor in order to select proper size starter and proper rated thermal overload heaters for starter.

   It is advisable to locate an adequately fused safety switch near the motor so that when it becomes necessary to investigate trouble with motor, the switch can be turned off.

   All wires must be encased in conduit, however, a short flexible explosion proof coupling must be provided at motor in order to facilitate movement of motor on adjustable bracket when installing fan belts.

   All conduits where wire is spliced and when located in hazardous area, must be sealed with a sealing compound.

   Wiring, fusing and overload protection must be in accordance with local code requirements.

   IT IS RECOMMENDED THAT INSTALLATION OF ANY ELECTRICAL EQUIPMENT, OR RELATED DEVICES BE DONE BY A COMPETENT LICENSED ELECTRICIAN.

			Ref. No. 1		Ref. No. 2	Ref. No. 30	
Ass'y motor	Motor H.P.	Motor Characteristics	Motor	Shaft and Bore Size	Motor Pulley	"V" Belt	Qty.
JK-4831	2	200/60/3 Open 230/460/60/3 Open	MO-6210 MO-6211	7/8	PU-2540	UAG-4	2
JK-4836		200/60/3 Expl. Prf. 200/60/3 Tot. Enc. 230/460/60/3 Expl. Prf. 230/460/60/3 Tot. Enc.	MO-6278 MO-6253 MO-6279 MO-6254		PU-2536		
JK-4832	3	200/60/3 Expl. Prf. 200/60/3 Tot. Enc. 230/460/60/3 Expl. Prf. 230/460/60/3 Tot. Enc.	MO-6377 MO-6351 MO-6378 MO-6352	1-1/8	PU-2542	BT-48	
JK-4833		200/60/3 Open 230/460/60/3 Open	MO-6309 MO-6310		PU-2543		
JK-4834	5	200/60/3 Expl. Prf. 200/60/3 Tot. Enc. 230/460/60/3 Expl. Prf. 230/460/60/3 Tot. Enc.	MO-6477 MO-6451 MO-6478 MO-6452		PU-1562		3
JK-4835		200/60/3 Open 230/460/60/3 Open	MO-6407 MO-6408		PU-1597		
JK-4838	7-1/2	200/60/3 Expl. Prf. 200/60/3 Tot. Enc. 230/460/60/3 Expl. Prf. 230/460/60/3 Tot. Enc.	MO-6577 MO-6551 MO-6578 MO-6552	1-3/8	PU-2631		
JL-4846	2	115/230/60/1 Expl. Prf. 115/230/60/1 Tot. Enc.	MO-6276 MO-6252	1-1/8	PU-2529	BT-48	2
JL-4847		200/60/3 Open 230/460/60/3 Open	MO-6210 MO-6211	7/8	PU-2530		
JL-4854		200/60/3 Expl. Prf. 200/60/3 Tot. Enc. 230/460/60/3 Expl. Prf. 230/460/60/3 Tot. Enc.	MO-6278 MO-6253 MO-6279 MO-6254		PU-2528		
JL-4848	3	200/60/3 Expl. Prf. 200/60/3 Tot. Enc.	MO-6377 MO-6351	1-1/8	PU-2531		
JL-4849		200/60/3 Open 230/460/60/3 Open	MO-6309 MO-6310		PU-2533		
JL-4850	5	200/60/3 Expl. Prf. 200/60/3 Tot. Enc. 230/460/60/3 Expl. Prf. 230/460/60/3 Tot. Enc.	MO-6477 MO-6451 MO-6478 MO-6452		PU-1567	BT-128	3
JL-4851		200/60/3 Open 230/460/60/3 Open	MO-6407 MO-6408		PU-1568		
JL-4852	7-1/2	200/60/3 Expl. Prf. 200/60/3 Tot. Enc. 230/460/60/3 Expl. Prf. 230/460/60/3 Tot. Enc.	MO-6577 MO-6551 MO-6578 MO-6552	1-3/8	PU-2611		
		200/60/3 Open 230/460/60/3 Open	MO-6507 MO-6508				
JL-4853	10	200/60/3 Expl. Prf. 200/60/3 Tot. Enc. 230/460/60/3 Expl. Prf. 230/460/60/3 Tot. Enc.	MO-6677 MO-6651 MO-6678 MO-6652		PU-2615		

CHART 3 CONCLUDED

Ref. No.	Part Nos. for All JJ Fans	Part Nos. for All JK Fans	Part Nos. for All JL Fans	Description	Qty.
1	See Chart 3	See Chart 3	See Chart 3	Motor	1
2	See Chart 3	See Chart 3	See Chart 3	Motor Pulley	1
3	(See Note 1)	SS-1025	SS-1031	Machine Bolt	4
4	SS-1503	SS-1503	SS-3607	Lock Washer Medium	4
5	42251-027	42251-027	42251-027	Motor Bracket (See Note 2)	1
6	36214-148	36214-148	36214-148	Motor Bracket Clip	4
7	SS-24	SS-24	SS-24	Hex Head Cap Screw 3/8-16x7/8"	4
8	SS-657	SS-657	SS-657	Hex Nut 5/16-18	4
9	SS-3607	SS-3607	SS-3607	Lock Washer Medium 3/8"	10
10	—	—	42331-010	Motor Bracket (See Note 2)	1
11	JJ-160	JJ-160	JJ-160	Adjusting Screw	1
12	SS-622	SS-622	SS-622	Cotter Pin 5/32x1"	2
13	JJ-109	JJ-109	JJ-109	Stop Pin	1
14	SS-615	SS-638	SS-638	Cotter Pin	2
15	SS-3171	SS-3172	SS-3172	Castle Nut	2
16	SS-1532	SS-1534	SS-1534	Wrought Washer	2
17	JJ-150	JK-254	JK-254	Fan Pulley	1
18	SS-12010	SS-12011	SS-12011	Snap Ring	1
19	SS-12004	SS-12005	SS-12005	Bearing	1
20	JJ-158	JK-263	JK-263	Fan Shaft	1
21	SS-1578	SS-10468	SS-10468	Key	1
22	SS-1578	SS-10472	SS-10472	Key	1
23	SS-12003	SS-12004	SS-12004	Bearing	1
24	—	JK-265	—	Sleeve	1
25	SS-25	SS-25	SS-25	Hex Head Cap Screw 3/8-16x1"	6
26	JJ-157	JK-264	JK-264	Bearing Housing	1
27	JJ-68	JK-165	JL-13	Fan Blade	1
28	JJ-4211	JK-4211	JL-414	Fan Housing Assembly	1
29	SS-438	SS-438	SS-438	Cup Pointed Set Screw 1/2x3/4"	2
30	See Chart 3	See Chart 3	See Chart 3	Belt	See Chart 3 for Qty.

CHART 2

Note 1: Order SS-3353 for JJ-4834 and JJ-4835. Order SS-1025 for all other JJ fans.
Note 2: (Ref. No. 10) 42331-010 used on JL-4852 and JL-4853.

JK-4217 Complete Hub Assem. 324.00

INSTALLATION CONTINUED

6. Connect conduit box to motor housing. All fan motors of a multi-fan exhaust booth must be connected to a single switch. This will insure efficient booth operation at all times.

NOTE: To select the correct wire size see Chart 4. and study the following example.

An exhaust fan with 230 volt motor is to be located 200 feet from main current line. Let us assume the motor nameplate is stamped 7 Amperes. Reference to table shows that columns 1, 2, 3, and 4 from the left indicate amperes for given voltages. Follow down column under 230 volts to figure 7; then cross to column under 200 feet. A No. 11 wire size should be used. If several motors are to be connected to the same line use the ampere figures and the distance of the farthest motor from main current line to determine correct wire size. If the exact ampere rating is not shown on table use the next larger.

When fan is installed outside building, a fan motor house must be provided to protect motor from weather.

Exhaust stack should be smooth sheet metal strongly erected and supported. Stack sections should be smoothly joined so as to present a minimum of air passage obstruction. Seams should be leak-proof. Stack diameter must not be reduced below the recommended 34" for JJ fans, 42" for JK fans and 48" for JL fans. Elbows should be kept to a minimum. They must have a throat radius not less than the diameter of the exhaust stack.

Cleanout doors should be provided about every 10 feet of stack. Cleaning of exhaust stack will be easier if sprayed before erection with a material that aids in cleaning.

Whenever stack passes through a nonfireproof roof a suitable collar or roof flashing should be installed and must provide sufficient clearance to protect combustible material against ignition by radiated heat.

PREVENTIVE MAINTENANCE

Fan blades (27) should be kept clean. Dirty blades are not only a fire hazard but also tend to throw the fan out of balance resulting in wear and breakage.

A strippable coating may be sprayed on the blades (27) and all exposed parts to aid in cleaning.

Follow motor manufacturer's recommendations for motor lubrication. If motor repairs are required, contact the nearest authorized distributor or agent for the motor.

ALWAYS REFER TO CURRENT DeVILBISS SERVICE PARTS PRICE LIST FOR AVAILABILITY BEFORE ORDERING PARTS.

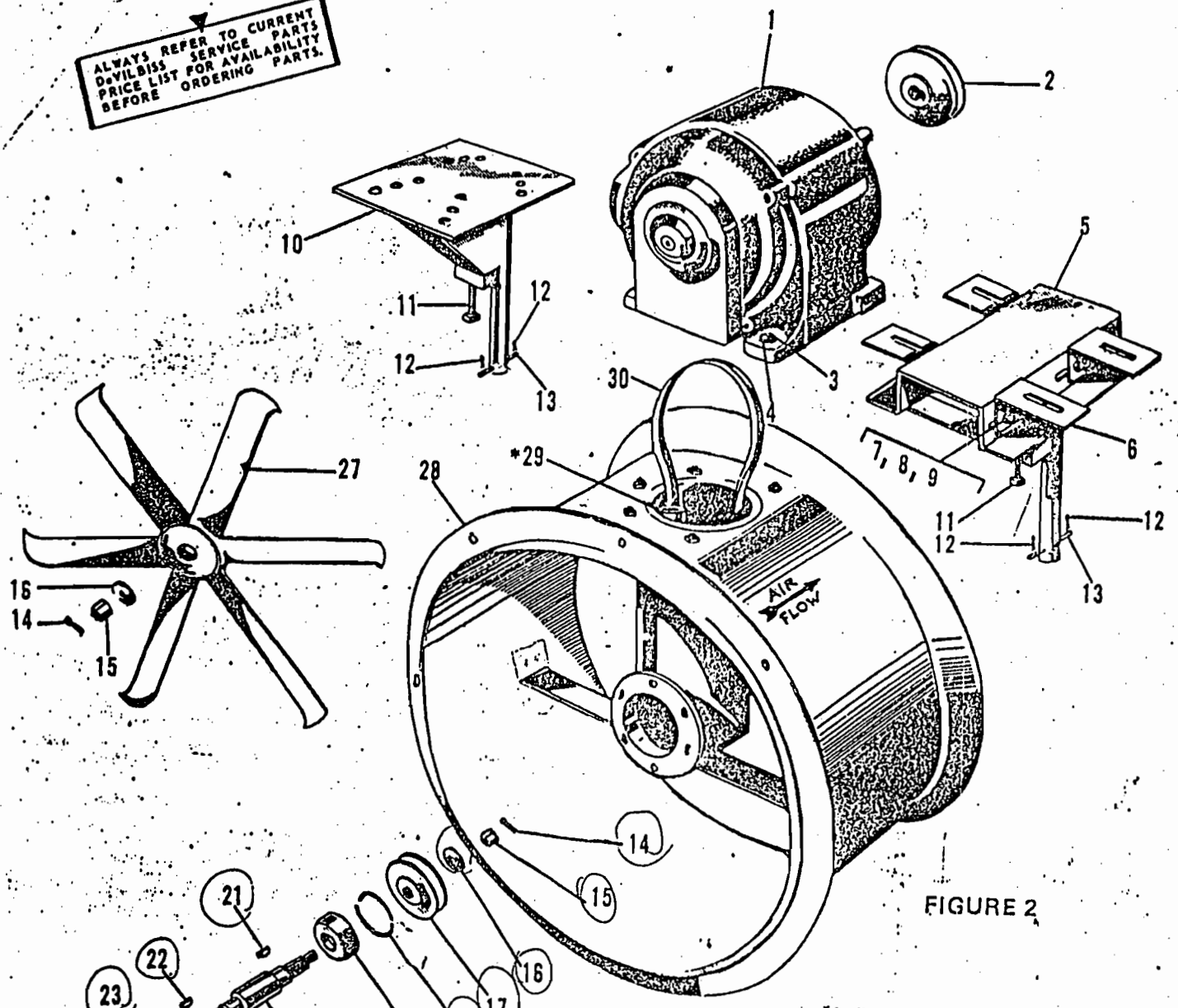
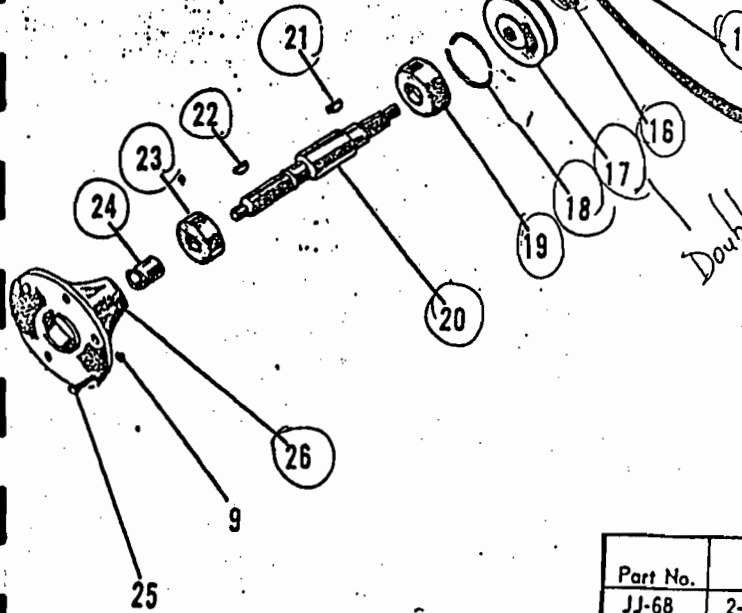


FIGURE 2

*Indicates parts not visible on drawing.



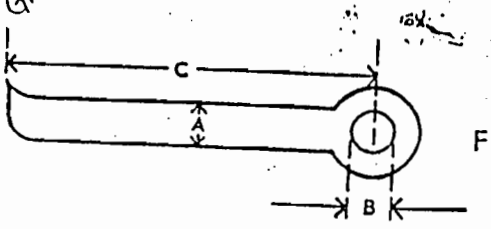
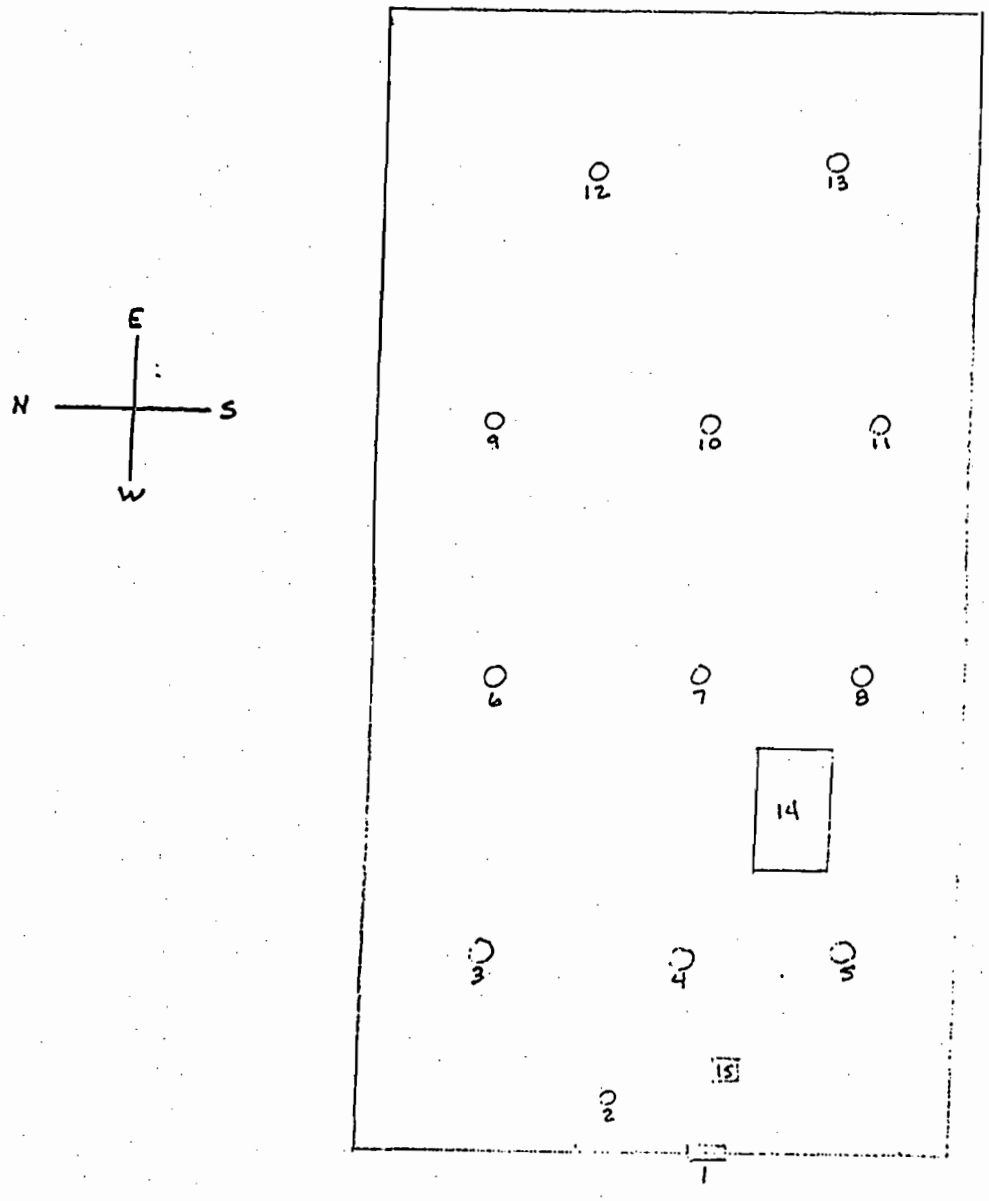


FIGURE 3

Part No.	A	B	C	No. of Blades	Material	Stack Size
JJ-68	2-3/4"	1-1/16"	16-1/2"	6	Aluminum	34"
JK-165	3-1/2"	1-3/8"	20-3/8"			42"
JL-13	3-13/16"		23-3/8"			48"

CHART 1

ASSEMBLY



ASSEMBLY

	DESCRIPTION	H.P.	FAN	MANUFACTURE
1.	FAN MODEL SBW30-5, 11,260 CFM	1 1/2		BREEZEMAKEI
2.	VENTILATOR		30"	DOMEX PENN
3.	FAN 480V	1 1/2	32"	
4.	FAN 480V	1 1/2	32"	
5.	FAN 480V	1 1/2	32"	
6.	FAN 480V	1 1/2	32"	
7.	FAN 480V	1 1/2	32"	
8.	FAN 480V	1 1/2	32"	
9.	FAN 480V	1 1/2	32"	
10.	FAN 480V	1 1/2	32"	
11.	FAN 480V	1 1/2	32"	
12.	VENTILATOR		46"	DOMEX PENN
13.	VENTILATOR		46"	DOMEX PENN
14.	AIR HANDLERS DFT2250AJA221A4G4GA41130101	25		TRANE
15.	SMOKE EATER MODEL F70			HONEYWELL

KENT WILLIAMS & ASSOCIATES, INC.

Job # 892022

2701 Atlantic Boulevard
Jacksonville, Florida 32207
(904) 396-3424
Fax: 904-396-7299

#1

B R E E Z E M A K E R F A N C O M P A N Y

C A R E AND M A I N T E N A N C E

S P E C I F I C A T I O N S H E E T

W A R R A N T Y

for

SEA RAY BOATS, INC.
Merrit Island, FL 32953

Purchase Order # MI104-7450

CARE AND MAINTENANCE

Good fan maintenance requires regular and systematic inspection of all fan parts. Severity of the application should determine frequency of inspection.

Regular fan maintenance should include the following:

1. PROPELLER- The fiberglass propeller in a power roof ventilator fan must be kept reasonably clean if it is to preform properly. Fans handling fresh air for ventilating purposes will seldom need cleaning. Fans exhausting process air should be cleaned as required. Dirt or chemical deposits will usually build up on a propeller evenly, and they present no problem to performance or operation until they become thick enough to break away in crustlike pieces. When this happens, the resulting vibration could be serious. Crustaceous accumulations should be removed by detergent soap or scraping. If the propeller shows excessive wear it should be replaced immediately. Refer to General Installation and Maintenance instructions for proper procedure in removing and replacing the propeller.

2. V-BELT DRIVE- Check V-belt drive for proper alignment and tension.

3. FAN BEARINGS- Lubricate the bearings (if belt driven). Ball bearing lubrication instructions are detailed on page 1 of General Installation and Maintenance.

4. Check Tightness of all screws and bolts thoughout fan assembly.

LUBRICATION SCHEDULE

SHAFT SIZE INCHES	OPERATING SPEED (RPM)							
	500	1000	1500	2000	2500	3000	3500	4000
	RELUBRICATION CYCLE (MONTHS)							
1/2 thru 1	6	6	6	6	6	6	4	4
1-1/16 thru 1-7/16	6	6	6	6	6	6	4	4
1-1/2 thru 1-3/4	6	6	6	4	4	2	2	2
1-7/8 thru 2-3/16	6	6	4	4	2	2	1	1
2-1/4 thru 2-7/16	6	4	4	2	2	1	1	1
2-1/2 thru 3	6	4	4	2	1	1	1	
3-7/16 thru 3-1/2	6	4	2	1	1	1		
3-15/16 thru 4	6	4	2	1	1			

SPECIAL LUBRICATION
High Temperature and High Moisture

AIRSTREAM TEMPERATURE	HOURS
To 250°F.	4500
To 350°F.	1500
To 500°F.	1000
Wet Atmosphere at Room Temperature	1000 to 1500

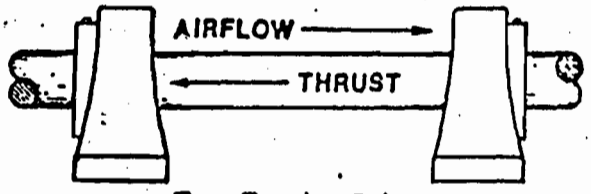
BEARING MOUNTING PROCEDURE

It is important to follow the assembly and alignment procedure when making an installation of replacement bearings. Inspect the shaft for wear at the bearing mounting positions. Shaft diameter should not be undersized more than commercial ground and polished tolerances. Excessive undersizing will result in rapid wear.

1. Place new bearings on shaft loose with locking collars toward the ends of shaft shown in illustration. Drop mounting bolts in place, snug them and adjust position of shaft with proper spacing at either end.

2. Center both shaft ends in housing, using the clearance in the mounting holes for horizontal adjustment and shims if necessary for vertical adjustment.

3. Tighten the bearings to the base plate and check the position of the shaft again. Before tightening the locking collars be sure the shaft and bearings are in proper alignment. The shaft should slide freely end to end.



Two Bearing Drive

4. Tighten the eccentric cam locking collar of the bearing at the propeller end. (The locking collar design provides a positive lock of the wide inner ring bearing to the shaft. To tighten, turn the locking collar in direction of shaft rotation to the lock position; then tighten the collar set screw.)

5. Grasp the sheave end of the shaft and pull it out; at the same time tap the locking collar of the sheave end bearing with a soft mallet in the opposite direction, toward the propeller.

6. The final step is to tighten the sheave and bearing eccentric cam locking collar.

For special heavy-duty bearings a spring locking collar is used. The two knurled cup-point set screws extend though the inner ring of the bearing and lock firmly onto the shaft. Tighten the propeller end collar first then take hold of the sheave end of the shaft, pull and tighten the locking collar. The locking collar is tightened by using the two set screws mentioned above.

BELT TENSION

Belt tension is very important to the proper operation of a fan and to the service life of a V-belt drive. A new fan will be received with its belts properly adjusted; however, all V-belts stretch in the first few hours of operation. It will be necessary to readjust the belt tension after eight hours of running. After 100 hours the belts should again be adjusted. Thereafter, periodic inspection is recommended so belts may be adjusted or replaced when necessary.

1. To adjust the belts, loosen the motor hold-down bolts. Tighten the belt, using the motor base adjusting screw until the belt appears to be taut. You should be able to deflect the belt slightly by squeezing the two sides between thumb and fore finger, and the belt should snap back into position when released.

2. Retighten the motor hold-down bolts and start the fan. If the belt screeches on start-up, it is too loose and should be tightened further.

3. Allow the fan to run for awhile, stop the fan, and check the temperature of the sheave with your hand. If the sheave gets too hot to touch, the belt is probably too tight.

V-belt drives on BREEZEMAKER fans are purposely sized to handle considerably more load than would be necessary for normal drive design. This is done to prolong the life of the drive and provide for minimum maintenance. Belts should be replaced when they have obviously become worn, even though they are still operating. A badly worn belt will also cause undue wear on the sheave. Replace belts when they show definite signs of wear; or the sheaves will become worn to where they also must be

replaced. Never put new belts on a badly worn sheave. This will reduce the capacity of the drive and cause excessive belt wear.

Most BREEZEMAKER fans are provided with an adjusting screw as part of the motor base for easy setting of belt tension. However, small fans or fans using small horsepower motors may have only a slotted base plate. When you adjust the belt tension by moving a motor on a slotted base, be sure that you block the motor tightly and squarely before tightening the hold down bolts, keeping the motor sheave in line with the belt. The motor sheave must be parallel to and in line with the fan sheave.

When you make replacement of belts on a multi-groove drive, be sure they are used in a matched set. If you aren't sure the belts are matched, observe them in operation. The tight side should be perfectly straight, and the belts should run smoothly and in line. The slack side should bow out considerably farther than another, it is an indication that the belts are not matched and should be changed. If there is only a slight differance the normal stretching in the first hours of operation will equalize the belt lengths and the belts will be well matched.

REPLACING BELTS AND BEARINGS

Worn belts may be easily replaced without removing the fan from the system.

1. Loosen the motor hold-down bolts and move the motor toward the fan. (This is done by turning a jackscrew which is part of the motor base on models having larger motors.) The belts may be slipped off the motor sheave and then easily removed from the sheave on the propeller shaft.

2. Check the numbers on the belt and make the replacement with a belt having the same length and section.

3. Adjust motor outward to tighten the belt (see instructions on belt tension) and tighten the motor hold-down bolts. Be sure that the motor is not cocked at an angle and that the end face of the motor sheave is parallel to the end face of the driven sheave.

Since the new belts have a tendency to stretch, it will be necessary to re-adjust the belt tension after a few hours of run-on.

1. Fan bearings may be lubricated by refilling the automatic "Lube Site" system installed as standard on BREEZEMAKER fans. Removal of the "Lube Site" is not necessary and can be recharged using a common hand operated grease gun. Should any dirt or contaminates clog the "Lube Site" it can be removed and cleaned using a suitable solvent.

2. Bearings are held in place with ordinary class 5 capscrews and locknuts. Use new capscrews and locknuts to make the replacement, particularly if these show signs of corrosion.

The belts, sheaves, bearings, and shaftings used in all BREEZEMAKER fans are of standard dimension and manufacture. New parts are available from the local distributor.

ADJUSTING VARIABLE PITCH SHEAVES

Many BREEZEMAKER belt driven fans are furnished with variable-pitch motor sheaves. Sheaves may be adjusted for lower fan speeds without concern of

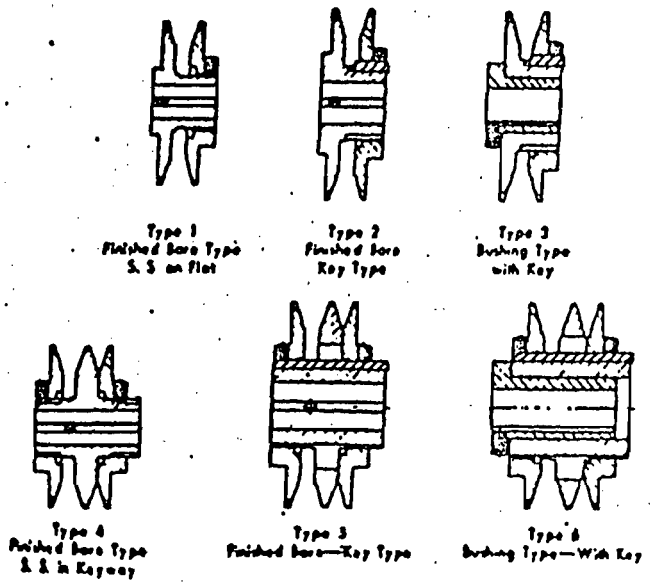
over-load motors. When adjusting sheaves to increase fan speed, check motor current to be sure motor is not overloaded. Keep motor current within nameplate and service factor ratings

The sheaves used are the VP type and are easily adjusted. They come in various styles, depending upon the size drive and motor shaft, all fitted with hollow head knurled point safety set-screws.

The following steps should be taken to adjust the pitch diameter:

1. Release belt tension and remove belt or belts from sheave.

2. Loosen setscrew and remove key holding adjustable half of the groove (keys used on styles 2,3,5, and 6 only). With styles 3 and 6 it may be necessary to remove the sheave from the shaft to remove the key.



3. Screw adjustable half of sheave out for a smaller pitch diameter (decreased speed), or in for a larger pitch diameter (increased speed). Each one-half turn will change the pitch diameter one-tenth of an inch. Adjust two-groove sheaves the same amount on each groove. 4L or A belts will operate satisfactorily with the sheave fully closed to a maximum of five full turns open. 5L or B belts will operate satisfactorily with the sheave one full turn open to a maximum of six full turns open. (This will insure full contact of the sheave in the groove.)

4. Replace the key and tighten set-screw to lock sheave half in position.

5. Replace the belts and tighten to proper tension. If extreme amount of adjustment has been made, it may be necessary to replace belts with another length.

NOTE: Heavy-duty drives requiring three-groove sheaves, motor sheaves larger than 7" pitch diameter, or belt larger than B section require MVP sheaves and are available only on special order.

TYPICAL MOTOR CURRENT AND STARTER SIZE

Amperes shown are nominal and were used for sizing of the starters only. These values are not to be used for sizing heaters or other overload protection. Consult the motor name-plate for the correct motor current and refer this to the heater size chart for the particular starters used.

NOTE: When sizing overload heaters, conditions under which the starters will operate must be considered. Enclosed starters should have heaters on size enclosures are subjected to external heat, such as radiant heat from the sun or heat accumulation under a roof size even more. Experience with the operating conditions and measurement on the actual line current will aid in proper sizing on heaters.

HP	Three Phase 230 V Amps	230 V Starter	460 V Amps	460 V Starter	575 V Amps	575 V Starter	Single Phase 115 V Amps	115 V Starter	230 V Amps	230 V Starter
1/4		1M		1M		1M	5.8	1M	2.9	1M
1/3	1.7	00	.9	00		1M	7.2	1M	3.6	00
1/2	2.0	00	1.0	00	.8	00	9.8	0	4.9	00
3/4	2.8	00	1.4	00	1.1	00	13.6	0	6.9	00
1	3.5	00	1.8	00	1.4	00	16.0	0	8.0	00
1 1/2	5.0	00	2.5	00	2.0	00	20.0	1	10.0	0
2	6.5	0	3.3	00	2.6	00	24.0	1	12.0	0
3	9.0	0	4.5	0	4.0	0	34.0	1	17.0	1
5	15.0	1	7.5	0	6.0	0			28.0	1
7 1/2	22.0	1	11.0	1	9.0	1			40.0	2
10	27.0	2	14.0	1	11.0	1			50.0	3
15	40.0	2	20.0	2	16.0	2				
20	52.0	3	26.0	2	21.0	2				
25	64.0	3	32.0	2	26.0	2				

INSTALLATION INSTRUCTIONS FOR PROPELLERS EQUIPPED WITH BROWNING MALLEABLE IRON SPLIT TAPER BUSHINGS

BREEZEMAKER propellers are furnished with split taper bushings for mounting the propeller to the shaft. When properly assembled, the bushings grip the hub with a positive clamping action.

A. Bushing barrel and bore of propeller are tapered this assures concentric mounting and a true running propeller.

B. Capscrews, when tightened, lock bushing in propeller. Use plated capscrews threaded full length.

BUSHING NO.	DIAMETER	LENGTH	TORQUE FT. LBS.
H	¼-20	1¼"	7½
P-1	5/16 - 18	1½"	13
P-2	5/16 - 18	1¾"	13
Q-2	⅜-16	2½"	24
R-2	⅜-16	3"	24

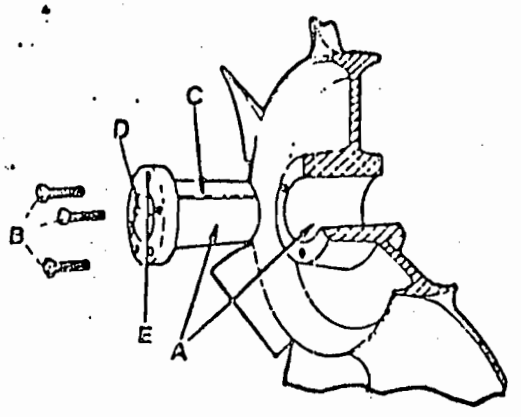
C. Bushing is split so that when the locking capscrews force bushing into tapered bore, the bushing grips the shaft with a positive clamping fit, this will withstand vibration and punishing loads without being loosened.

D. Propeller and bushing assembly is keyed to shaft and held in place by compression this gives added driving strength.

E. Propeller is easily removed from shaft by inserting and tightening two of the capscrews into the tapped holes in the bushing flange this forces the bushing loose from the propeller and releases the compression so that the entire assembly will slide from the shaft.

Put bushing loosely into propeller. Do not press or drive. Start capscrews by hand, turning them just enough to engage threads in tapped holes on propeller. Do not use a wrench at this time. The bushing should be loose enough in the propeller to move slightly.

Be sure shaft and keyway are smooth and clean. Check key size with both shaft and bushing keyways. Slide propeller and bushing assembly onto shaft, making allowance for end play of shaft to prevent rubbing. Do not force propeller and bushing onto shaft. If it does not go on easliy check shaft, bushing and key sizes.



Tighten capscrews progressively with wrench. Do this evenly as in mounting an automobile wheel. Take a part turn on each capscrew successively until all are tight. These capscrews force the taper bushing into the hub which in turn compresses the bushing into the shaft. This makes

a positive clamping fit. The torque must not exceed that shown in table.

WARNING: Do not attempt to pull bushings flange flush with hub end-there should be 1/8" to 1/4" clearance when tightened.

REMOVING PROPELLER ASSEMBLY FROM SHAFT

1. Remove all three capscrews from propeller and hub assembly.

2. Start capscrews into the threaded holes in the bushing flange.

3. Tighten each bolt part of a turn successively to force the propeller off the bushing.

4. Pull the bushing off the shaft. If the assembly has been in place some time it may by necessary to use a wheel puller to remove the bushing. Never use a wheel puller on the propeller.

LUBRICATION INSTRUCTIONS FOR BALL BEARING MOTORS

Grease-lubricated bearings, as furnished, are adequate for a long period of operation without relubrication. A good maintenance schedule for regreasing will vary widely depending on motor size, speed and environment.

The table listed below suggests relubrication intervals for motors on normal, steady running, light duty indoor loads in relatively clean atmosphere at 40°C. (105°F) ambient temperature or less. Fractional horsepower motors follow a similar schedule to that shown under frames 143 to 215T.

Motors with no provision for lubrication are equipped with sealed bearings and require no maintenance. Motors mounted in inaccessible locations are provided with extended grease lines to facilitate lubrication. They are equipped with relief fittings to prevent over-lubrication. The grease lines are filled with lubricant at the factory.

Type of Enclosure	Insulation	FRAME SIZE		
		143 to 215T	254 to 326T	364 to 449T
Open - DP	B	2 years	18 months	1 year
Enclosed - FC Open - DP	B F	18 months	1 year	9 months
Enclosed - NV Enclosed - FC Open - DP Enclosed - Lint Free - FC	B F H B	1 year	9 months	6 months
Enclosed - NV Enclosed - FC Enclosed - Lint Free - FC	F H F	9 months	6 months	3 months

PROCEDURE FOR RELUBRICATION

1. Stop motor.
2. Remove grease relief plugs in bearing housings.
3. Grease with hand gun until new grease appears at relief hole.
4. Run motor for ten minutes before replacing relief plugs.

CAUTION: Do not overlubricate. This is a major cause of bearing and motor failure. Make sure dirt and contaminants are not introduced when adding grease.

Because BREEZEMAKER fans are furnished with "LubeSite" grease feeders as standard refer to the LubeSite mannual for proper procedures in refilling the grease reserve unit.

TYPE OF GREASE
Lubricate with or equivalent to the following greases:
Chevron BRB-2 - Standard Oil of Calif.
SRI-2 - Standard Oil Company.
Alvania #2 - Shell Oil Company.
For motors lubricated with special grease check lubrication tag on motor.

NOTE: FOR MOTORS OVER 1800 RPM
Use ½ of tabled period.

FOR HEAVY DUTY-DUSTY LOCATIONS
Use ½ of tabled period.

FOR SEVERE DUTY HIGH VIBRATION SHOCK
Use 1/3 of tabled period.

VOLUME REFERENCE TABLE

Shaft Diameter	Amount of grease to add.
3/4" to 1¼"	1/8 cu. in. or 0.1 oz.
1¼" to 1 7/8"	¼ cu. in. or 0.2 oz.

BREEZEMAKER
FAN COMPANY

SPECIFICATION SHEET

DATE 2/23/89

TO
Kent Williams

FROM
Sea Ray Boats
100 Sea Ray Dr.
Merrit Island, Fl. 32953

ORDER TAKEN BY:	DATE PROMISED:	CUSTOMER P.O.	CONTACT:	TELEPHONE	S.O.#
Ed	Feb 10, 1989				

QTY. 1.

MODEL # SBW30-5

____ ROOF VENTILATORS
____ WALL EXHAUST
____ AXIAL FANS
____ CIRCULATOR
____ DIRECT DRIVE
____ SPECIAL

C.F.M. 11,260 @ 1/8" S.P.
RPM ____

____ GUARD:
SIZE: ____

____ BIRD SCREEN

____ CURB: GAUGE ____
SIZE: ____

____ SHUTTER
SIZE ____
TYPE ____

1 BLADE
DIA. 30 PITCH wide
X FIBERGLASS
____ STEEL

MOTOR:
MFG. Baldor MODEL M3154T
H.P. 1½ RPM 1725 FR 145
BASE ☒ RIGID ☐ RESILIENT
ENCLOSURE ☒ OPEN ☐ TEFC ☐ XPL
VOLTAGE ☐ 10-115/230 ☐ 30-230-460
☐ SPECIAL ____

DRIVE:
BEARINGS MFG. Fafnir SIZE 1"
SHAFT DIA. 1" LENGTH 17"
SHEAVES MOTOR BK 5.0
FAN SHAFT BK 120 1-1
BELT MFG MBL SIZE B-75

SPECIAL INSTRUCTIONS
Weather guard louver

WARRANTY

Breezemaker Fan Company warrants this equipment to be free of defects in materials workmanship for one year from date of shipment. Any units or parts which prove to be defective and are reported during the warranty period will be replaced at our option when returned to the factory. Transportation charges prepaid. Motor is warranted by the motor manufacturer for one year, if the motor becomes defective in the warranty period, it should be taken to the nearest authorized motor service station. If this is not done, the motor maufacturer will not warrant the motor. Call factory for instructions if authorized service station is not known. Breezemaker Fan Company will not be responsible for any installation, removal or re-installation costs or any consequential damage resulting in failure to meet conditions of any warranty.

FACTORY REP: Kent Williams

Purchaser: Sea Ray Boats

100 Sea Ray Drive

Merrit Island, Fl. 32953

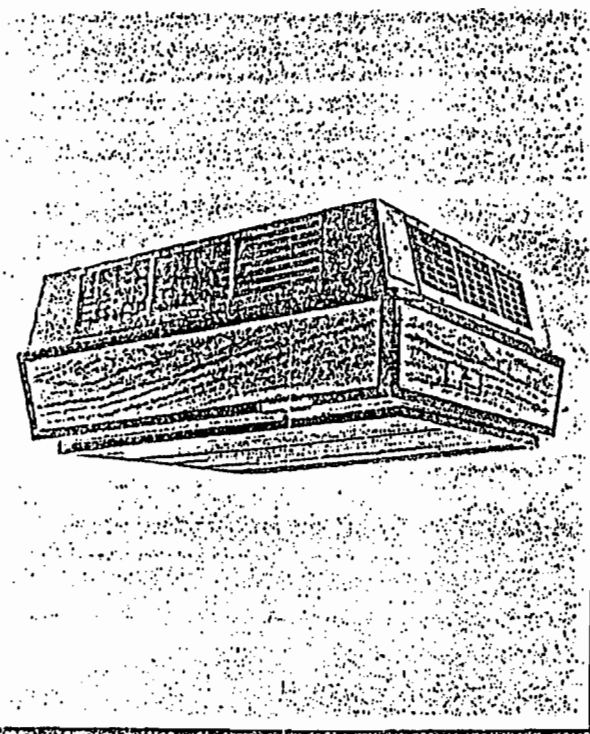
Effective Date: Feb. 6, 1989

Model #: 1) SBW30-5 with weather guard louver

BREEZEMAKER FAN COMPANY, INC.
TAMPA, FLORIDA 33605

Honeywell

SELF-CONTAINED ELECTRONIC AIR CLEANER



F70C

THE F70 IS A SELF-CONTAINED ELECTRONIC AIR CLEANER FOR USE IN BARS, LOUNGES AND COMMERCIAL APPLICATIONS. THE AIR CLEANER IS MOUNTED IN THE ROOM OR AREA WHERE THE AIR IS TO BE CLEANED. A THREE-SPEED FAN CIRCULATES AIR THROUGH PREFILTER SCREENS AND TWO ELECTRONIC CELLS. AIRBORNE PARTICLES SUCH AS DUST, SOOT, POLLEN, TOBACCO AND COOKING SMOKE ARE REMOVED FROM THE AIR CIRCULATED THROUGH THE ELECTRONIC AIR CLEANER.

- ☐ Three-speed permanently lubricated ball bearing permanent split capacitor motor driven fan circulates up to 1200 cubic feet per minute [2040 m³/h.].
- ☐ Up to 93 percent efficiency is delivered as measured according to the National Bureau of Standards Dust Spot Method using atmospheric dust, and American Society of Heating, Refrigerating, and Air-Conditioning Engineers Standard 52-76.
- ☐ Self-regulating power supply output is not affected by moderate fluctuations in line voltage.
- ☐ Three position adjustable discharge louvers.
- ☐ Safety interlock switch breaks both sides of the line and prevents operation when dress cover is opened.
- ☐ Coanda air flow.
- ☐ Powered from a standard grounded electrical outlet.
- ☐ May be conduit connected.
- ☐ Electronic cells, prefilters and intake grille are easily removed for cleaning.
- ☐ Easily removable power pack for servicing.
- ☐ Heavy duty commercial cells.

L.R.
5-84
PRINTED IN CANADA

95C-10320

SPECIFICATIONS

IMPORTANT

SPECIFICATIONS GIVEN IN THIS PUBLICATION DO NOT INCLUDE NORMAL MANUFACTURING TOLERANCES. THEREFORE, A UNIT MAY NOT MATCH THE LISTED SPECIFICATIONS EXACTLY. ALSO, THIS PRODUCT IS TESTED UNDER CLOSELY CONTROLLED CONDITIONS, AND SOME MINOR DIFFERENCES IN PERFORMANCE CAN BE EXPECTED IF THOSE CONDITIONS ARE CHANGED.

MODEL. The F70C includes 2 electronic cells, 2 prefilters and a 3-speed fan which discharges air in four directions parallel to the ceiling upon which it is mounted.

POWER CORD: 10 ft [3 m] long, 3-wires — 3 prong plug included with 120 V, 60 Hz models.

AMBIENT TEMPERATURE RATING:

Shipping and Storage — minus 30° F to plus 150° F [minus 34°C to plus 66°C].

Operating — This equipment is intended for use at ambient temperatures normally prevailing in occupiable spaces, which usually are not higher than 25°C [77°F] but may be as high as 40°C [104°F] occasionally for brief periods.

EFFICIENCY: Efficiency ratings are based on National Bureau of Standards Dust Spot Method using atmospheric dust and American Society of Heating, Refrigerating, and Air-Conditioning Engineers Standard 52-76.

CAPACITY:

FAN SPEED	60 Hz		
	cfm	m³/h	EFF %
High	1200	2040	81
Medium	1020	1730	85
Low	800	1360	93

ELECTRICAL RATINGS:

Voltage and Frequency — 120 V ac, 60 Hz.

Current and Power Consumption —

FAN SPEED	60 Hz	
	A	W
High	2.6	270
Medium	2.0	215
Low	1.8	185

WEIGHT: 80 lb. [36 kg] shipping, 72 lb. [33 kg] installed, including electronic cells, Each cell weighs 9-½ lb. [4.3 kg].

DIMENSIONS: 27 x 27 x 13 in. [690 x 690 x 330 mm].

ACCESSORIES AVAILABLE (Order Separately)

118636B Wall Mounting Kit — includes 2 wall mounting brackets, air cleaner mounting bolts, one blank plate to cover louvers on wall side of air cleaner and mounting hardware.

272575A Blank Plate for Discharge Grille

272574A Ceiling Mounting Kit — includes 4 lag screws and 4 flat washers

272577A Transition Plate, includes mounting hardware.

272596 Charcoal Filter, ½ × 19¼ × 24¼ in. [13 × 502 × 629 mm].

272611 Foam pad to conceal prefilters.

C.S.A. Listed: File No. LR20633.

Underwriters Laboratories Inc. Listed: File E84823.

ORDERING INFORMATION

WHEN PURCHASING REPLACEMENT AND MODERNIZATION PRODUCTS FROM YOUR TRADELINE WHOLESALER OR YOUR DISTRIBUTOR, REFER TO THE TRADELINE CATALOG OR PRICE SHEETS FOR COMPLETE ORDERING NUMBER, OR SPECIFY —

1. Order Number
2. Accessories, if required.

IF YOU HAVE ADDITIONAL QUESTIONS, NEED FURTHER INFORMATION, OR WOULD LIKE TO COMMENT ON OUR PRODUCTS OR SERVICES, PLEASE WRITE OR PHONE:

1. YOUR LOCAL HONEYWELL RESIDENTIAL DIVISION SALES OFFICE (CHECK WHITE PAGES OF PHONE DIRECTORY).
2. IN CANADA — RESIDENTIAL DIVISION CUSTOMER SERVICE
   HONEYWELL LIMITED, 740 ELLESMERE ROAD
   SCARBOROUGH, ONTARIO M1P 2V9 (416) 293-8111
3. IN U.S.A. — RESIDENTIAL DIVISION CUSTOMER SERVICE
   HONEYWELL INC., 1885 DOUGLAS DRIVE NORTH
   MINNEAPOLIS, MINNESOTA 55422 (612) 542-7500

INTERNATIONAL SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD

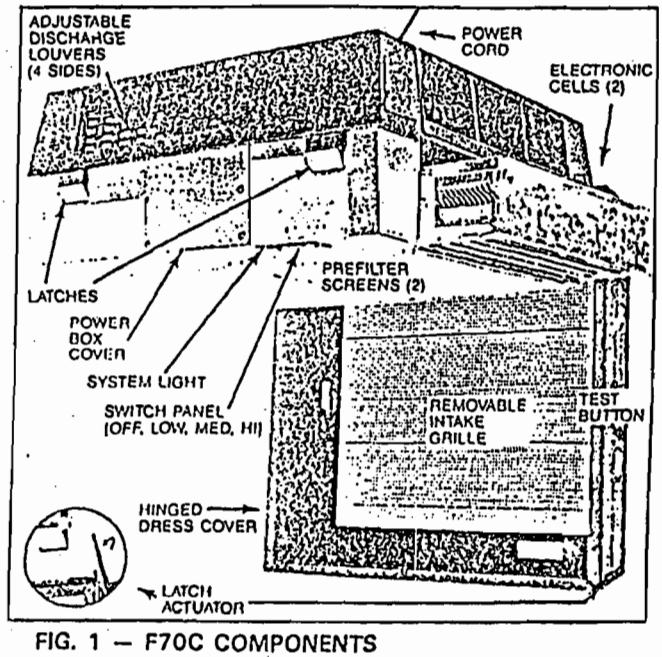
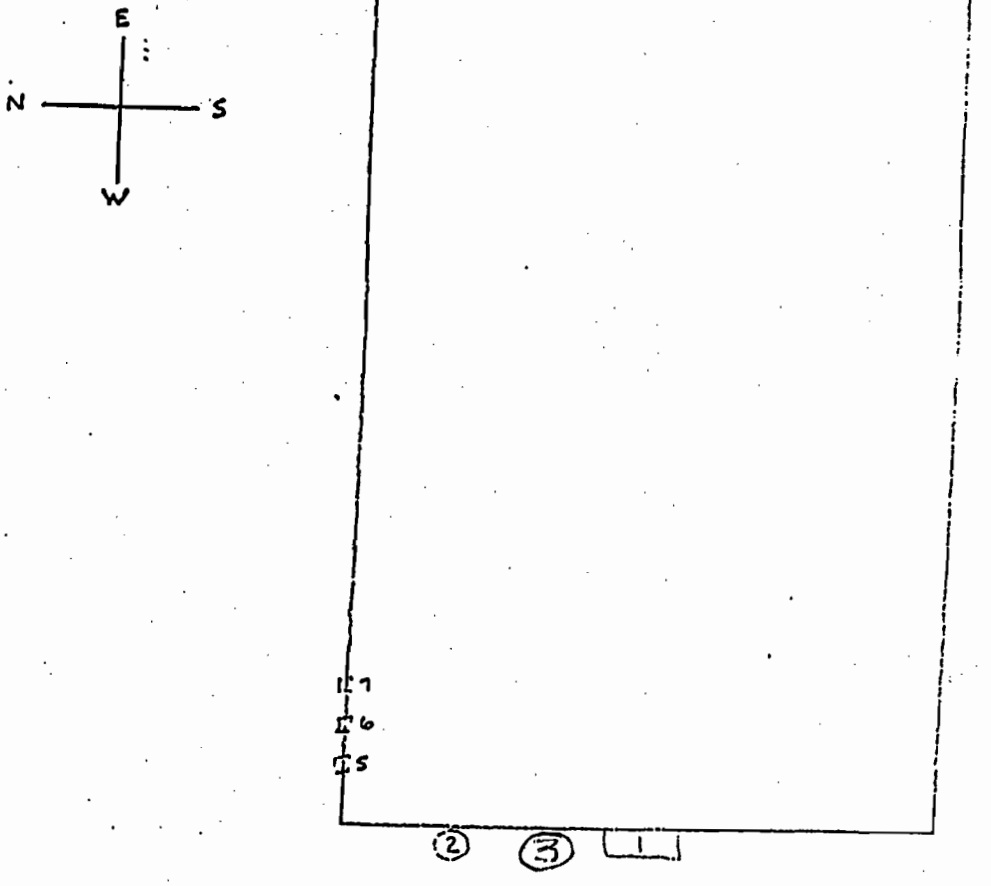


FIG. 1 — F70C COMPONENTS

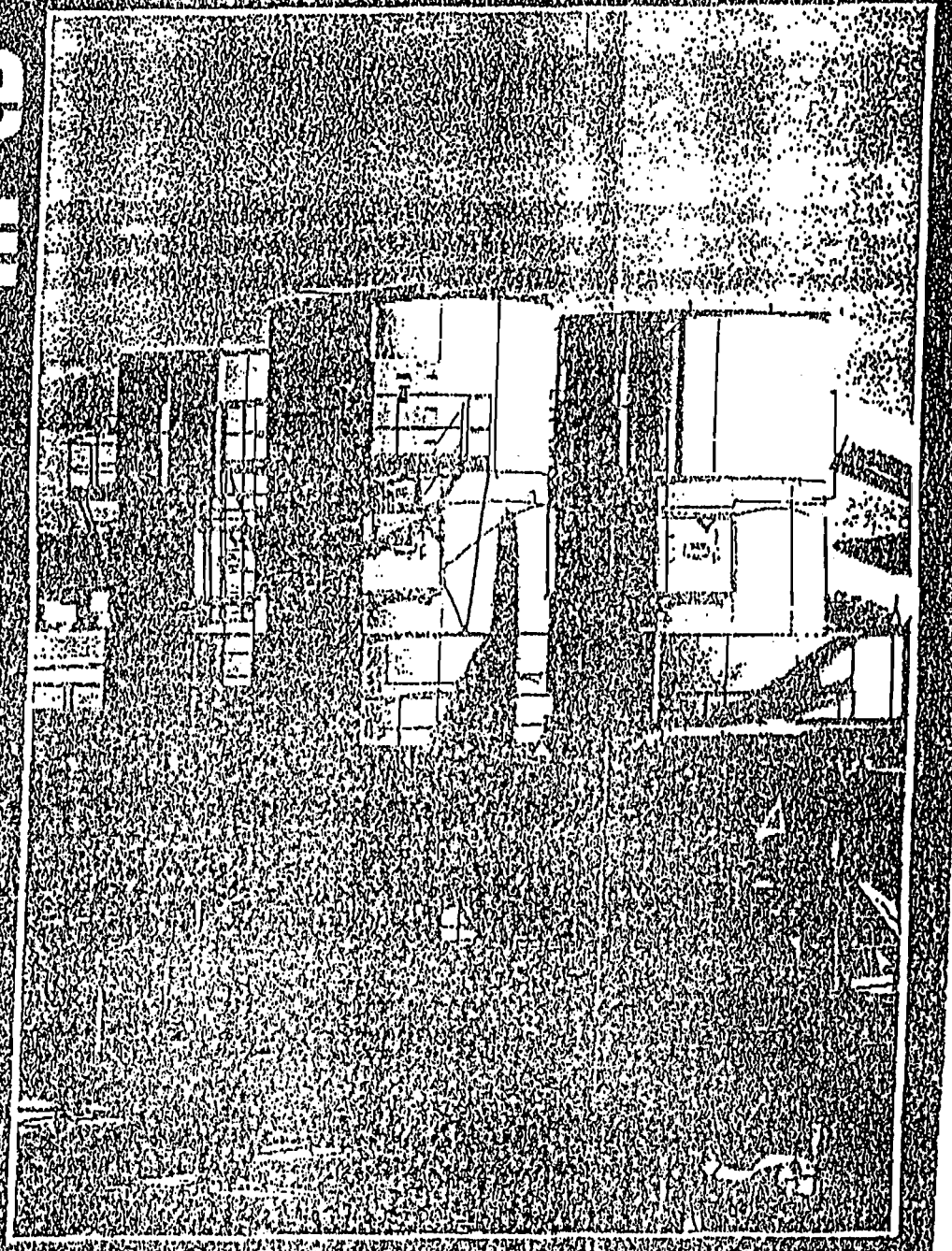
FABRICATION

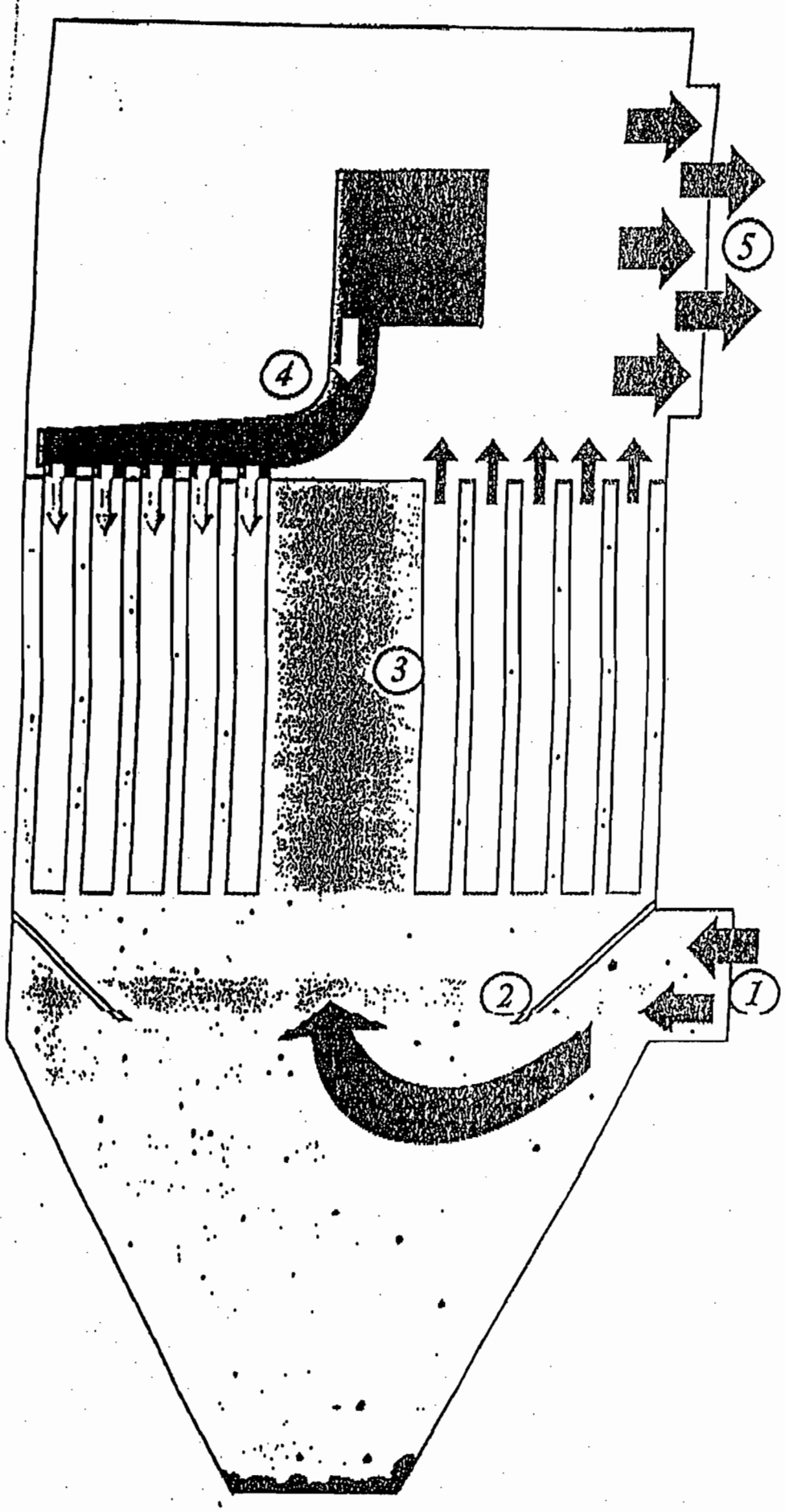


FABRICATION

	DESCRIPTION	H.P.	RPM	FRAME	FAN	MANUFACTURE
1.	HEATER	25				
2.	VACUUM WEST	15				TORIT
3.	PNEUMAFIL BAG FILTRATION SYSTEM	75		19,500 CFM		PNEUMAFIL
4.						
5.	EXHAUST VACUUM MOLD	3/4	1725	56	42"	DAYTON
6.	SKID SPRAY BOOTH	1	1725	L56H	42"	DAYTON
7.	SKID SPRAY BOOTH	1	1725	L56H	42"	DAYTON
8.	FRAME SHOP EXHAUST	1	1725	L56H	42"	DAYTON
9.	GLUE BOOTH ROOF	5	1740	184T		TOSHIBA
10.	GLUE BOOTH ROOF	5	1740	184T		TOSHIBA
11.	FORMICA AREA EXHAUST	1	1725	L56H	42"	DAYTON
12.	LACQUER SPRAY BOOTH	5	1740	184T		WESTINGHOUSE

The Pneumafil Reverse Air Filter





How the filter works

1. Contaminated air enters the Reverse Air Filter through a tangential air inlet. Its large size minimizes entrance pressure loss and reduces power requirements.

2. The combination of the tangential inlet and deep particle deflector results in the cyclonic downward deflection of larger particles to the hopper. This allows heavier loadings, less abrasion to the filter bags, higher collection efficiencies and less energy to remove the remaining particles from the air stream.

3. The filter bags remove dust particles from the air stream. Clean air passes upward through the filter bags and into the walk-in clean air plenum.

4. The reverse-air cleaning fan returns part of the clean air in the walk-in plenum to the rotating air manifold. As the manifold rotates once every minute, [illegible] clean air. Dislodged dust is collected in the conical hopper. Reverse air cleaning of the filter bags maintains constant porosity and low pressure drop across the filter, resulting in an extremely high dust collection efficiency.

5. The clean, dust free air is exhausted through the large air outlet to be either vented to the atmosphere or recycled to the plant. Because of the short contact time required for the air to pass through the Reverse Air Filter, no additional energy is required to either heat or cool the air stream.

The Pneumafil Reverse Air Filter

How it compares . . .

. . . in energy savings

A true evaluation of a dust control system should consider energy consumption as it applies to the complete filter system — and not merely to any one component. This is why all Pneumafil dust filters are designed to function as an integral part of the total system in combination with its other exceptional capabilities for reducing overall operating costs.

For example, our reverse air filters are cleaned by either an economical 7½, 10, or 15 hp motor and costs very little to operate. But more important, each bag is cleaned once every 60 seconds by utilizing the efficient reversed flow of "processed" air. This complete and systematic cleaning dramatically reduces the pressure drop across the media as well as the load demands on the complete fan system. The result is energy savings! Conversely, a system that employs a random air pump cleaning sequence may only require the same amount of horsepower in driving the air pump —however, this type of system *does not* clean the bags every 60 seconds. The air discharge is regulated by whenever and wherever the pressure build up activates the air jets. Because of this random firing, some bags could remain uncleaned indefinitely. This means higher pressure drops across the media, increased demands on the total fan system and ultimately higher energy costs.

Our low tangential air entry utilizes less overall energy than filters with a high air inlet. The low tangential entry allows heavy dust particles to "drop out" into the filter hopper. This initial sorting out of larger dust particles results in greater energy savings and less wear and tear on filter bags. Each contributing to lower operating costs.

Additional energy savings are obtained by recycling plant air previously heated or cooled. With the short contact time of air passing through the filter, the cleaned air is not affected by outside temperatures — and no additional energy is expended to heat or cool make-up air.

. . . with filter maintenance

All bag inspection and removal operations were desi to simplify maintenance procedures and keep ma nance costs down.

With a Pneumafil dust filter, bag inspection can be acc plished without entering the walk-in, clean air plenum viewing port and lighted plenum allows the operator to ually inspect the bag cleaning system from outside filter.

Our walk-in plenum permits top bag removal from clean air side. This operation simply requires extract two screws before removing and inserting a new bag. C tive clips on the bag cage eliminates misplacing or d dropping into the hopper section.

Pneumafil bags are designed and constructed to deli maximum efficiency and a consistent high level of p formance. Bags are made of 16 oz. polyester felt with a s cial nylon scrim reinforcement and a 2" canvas wear st at the bottom to protect against abrasion. All bags can washed or dry cleaned.

. . . in special features

Tube Sheet

Our filter tube sheet is sectionalized, bolted in place — a in case of damage can be easily removed through t plenum door. Filters that employ welded-in tube sheets quire a major dismantling operation. Cutting and weldi are required to remove damaged plates, in addition to placing the entire mechanical section. This can result considerable downtime and expense.

Wear against the tube sheet is virtually non-existent. Th cleaning arm is equipped with a nylon base to elimina friction of metal to metal contact. A flexible conne tion permits the arm to ride over obstructions on the tu sheet.

The Pneumafil reverse air bag cleaning operation is a complished by effectively using a simple reverse flow fa There are no valves, dampers or compressors to maintai And with the absence of compressed air, there is less ri of explosion because no additional oxygen is bei introduced.

Hopper Design

Our hopper design eliminates the need for any addition and expensive auger discharge. Any bridging of collect dust is prevented by the use of a conical hopper with a 6 slope. Each hopper is equipped with a large, bolted acce door and flanged outlets.

. . . in general construction and painting

The filter is constructed of hot rolled, pickled and oiled mild steel. Our unique standing seam design provides considerable reinforcement and rigidity to the overall structural integrity, making the filter ideally suited for any environment. All filters are constructed to withstand ± 20 in. water gauge.

Each filter is equipped with relief panels in accordance with NFPA standards. The doors are secured with safety chains of uneven lengths to reduce the possibility of the door becoming a projectile. Another example of how Pneumafil pays attention to details.

Every unit is epoxy primed (2.0-2.5 mils) inside and outside and finished outside with polyester epoxy paint (2.0-3.5 mils). Pneumafil offers many standard colors to choose from. Special colors are available to meet customer specifications. Unlike units that have only a single coat of paint, Pneumafil's painting method means additional savings in maintenance costs over the life of the filter. Our paint surface preparation meets the SSPC-SP6 standard and passed a 500 hour salt spray test.

. . . with options

1. Support structure
2. Three types of maintenance platforms with OSHA approved access ladder
3. Customer color preference
4. Non-sparking air entry wear plates
5. 70° hopper
6. Sprinkler heads
7. Explosion proof motor for Class II-G and F applications
8. Additional bracing for higher pressures
9. Factory insulation
0. High level and high temperature sensors
1. Rotary air locks
2. Modified to customer specifications
3. Special media available

Specificatior

Notes

1. Standard height from hopper to grade is 4'6". Optional heights are available upon request. Dimensions B, C, D and H change accordingly.

2. Entry section may be rotated 360° except where it would interfere with ladder.

3. Discharge section and ladder may be rotated together 360° in approximately 6" increments except where they would interfere with the entry elbow.

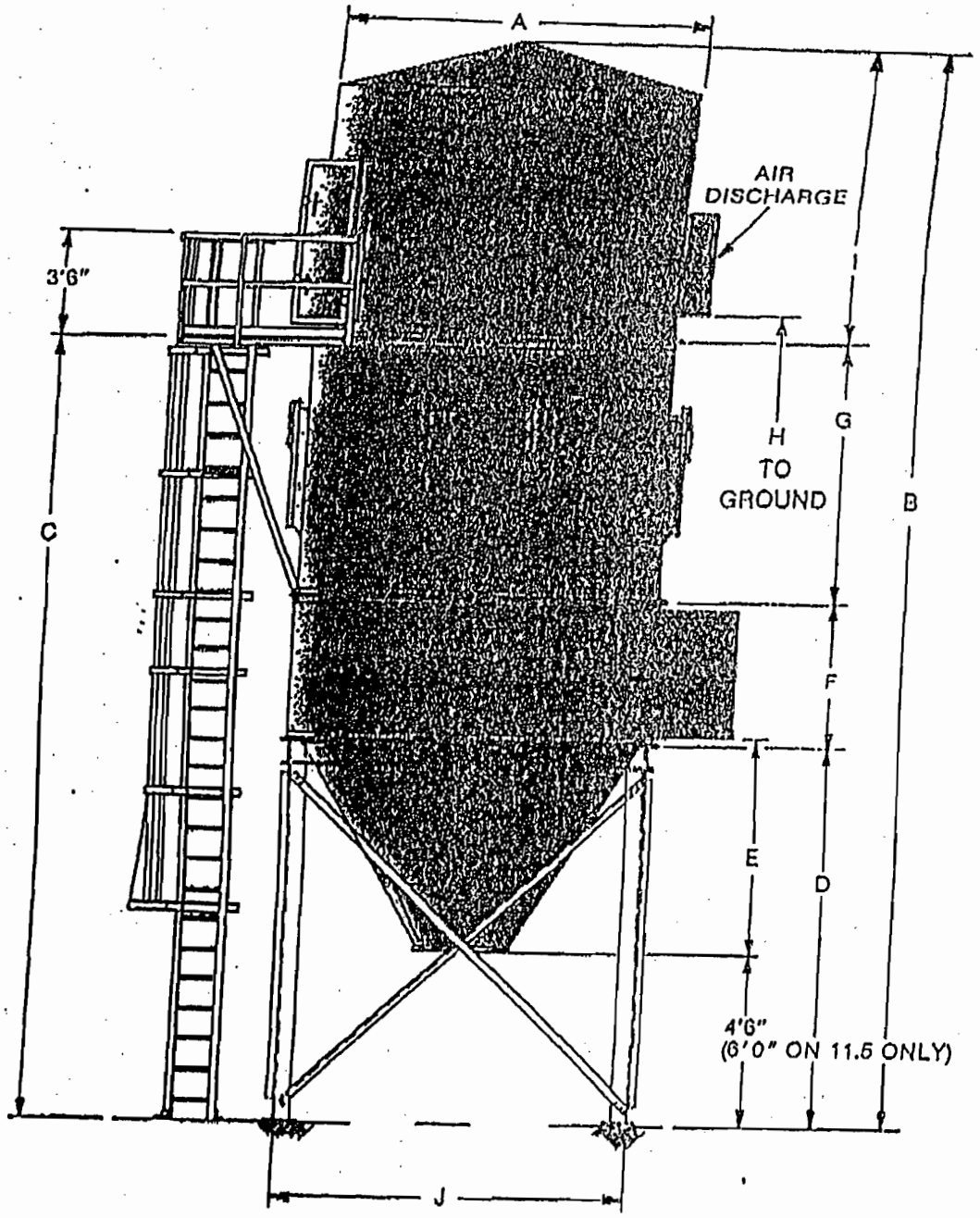
4. Counterclockwise shown, clockwise opposite.

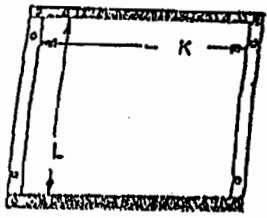
5. Structural supports are designed for 25 P.S.I. when loading and 50 P.C.F. dust loading unless otherwise specified.

6. Filters are available as bin vents.

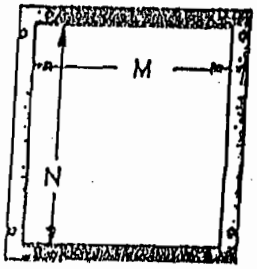
7. All units have a 360° mounting ring.

8. 4.5' and 5.5' units are not walk-in filters.

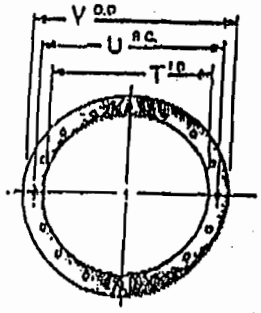




AIR DISCHARGE

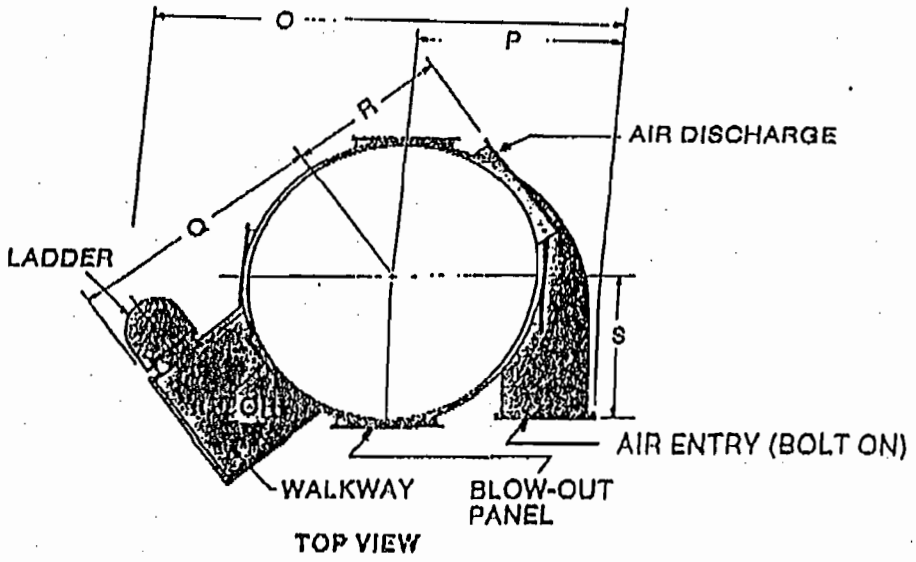


AIR ENTRY

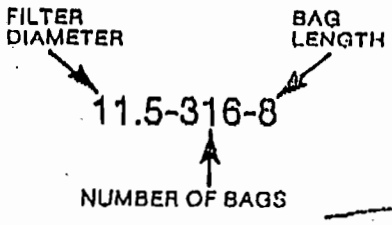


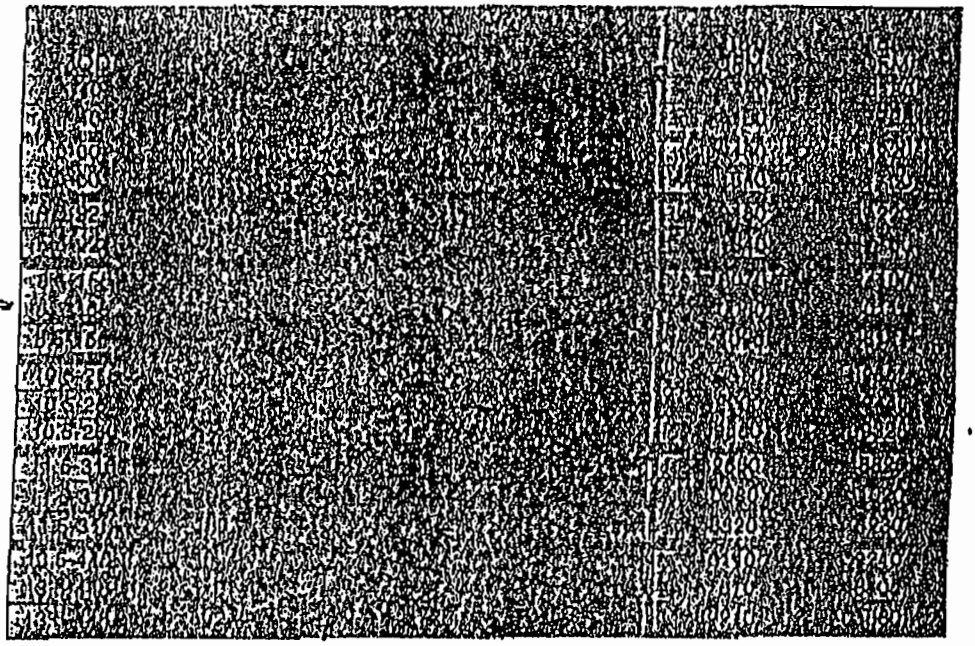
HOPPER OUTLET

MODEL	A	B	C	D	E	F	G	H	I	J	K
4.5-40-8	4'0"	20'5 1/16"	16'3 1/16"	8'3 1/16"	2'1 1/16"	2'1"	7'11"	17'3 1/4"	4'2 1/2"	4'1 1/4"	1'8"
4.5-40-10	4'6"	22'5 1/16"	18'3 1/16"	9'3 1/16"	2'1 1/16"	2'1"	9'11"	19'3 1/4"	4'2 1/2"	4'1 1/4"	1'8"
5.5-60-8	5'0"	20'1"	16'0"	8'0"	3'1 1/4"	3'0"	10'0"	20'5"	10'6"	5'6"	2'8"
5.5-60-10	5'6"	22'0"	18'0"	9'0"	3'1 1/4"	3'0"	12'0"	22'5"	10'7"	5'6"	2'8"
6.5-92-8	5'8"	30'0"	19'0"	8'0"	3'0"	3'8"	10'0"	20'5"	10'6"	6'4"	3'6"
6.5-92-10	6'8"	32'0"	21'0"	8'0"	3'0"	3'8"	12'0"	22'5"	10'6"	6'4"	3'6"
8.5-156-8	6'8"	31'0"	21'3"	8'6"	5'6"	3'6"	8'0"	23'1"	10'6"	8'3"	3'6"
8.5-156-10	8'6"	33'0"	23'3"	9'6"	5'6"	3'6"	10'0"	24'1"	10'6"	8'3"	3'6"
8.5-156-12	8'6"	37'8"	25'3"	10'6"	5'6"	3'6"	12'0"	26'1"	12'6"	8'3"	3'6"
10.5-256-8	10'0"	37'0"	26'0"	11'0"	7'3"	5'0"	10'0"	28'11"	10'6"	10'3"	4'0"
10.5-256-10	10'6"	37'0"	26'0"	11'0"	7'3"	5'0"	10'0"	28'11"	10'6"	10'3"	4'0"
10.5-256-12	10'6"	41'0"	28'0"	11'0"	7'3"	5'0"	12'0"	28'11"	12'6"	10'3"	4'0"
11.5-316-8	11'6"	39'0"	28'0"	13'0"	7'3"	6'0"	10'0"	28'11"	10'6"	11'3"	4'0"
11.5-316-10	11'6"	39'0"	28'0"	13'0"	7'3"	6'0"	10'0"	28'11"	10'6"	11'3"	4'0"
11.5-316-12	11'6"	43'0"	30'0"	13'0"	7'3"	6'0"	12'0"	30'5"	12'6"	11'3"	4'0"
13.6-446-8	13'6"	40'11"	30'6"	14'6"	10'0"	6'0"	10'0"	30'01"	10'6"	13'2"	4'0"
13.6-446-10	13'6"	40'11"	30'6"	14'6"	10'0"	6'0"	10'0"	30'01"	10'6"	13'2"	4'0"



Filter Nomenclature

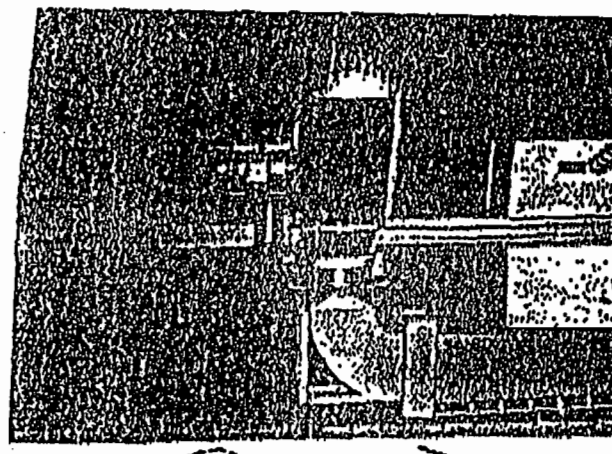




Note:
Initial specifications can call for less than the maximum number of bags; however, filter dimensions remain unchanged. Additional bags may be added as filtering demands increase.

M	N	O	P	Q	R	S	T	U	V	TOTAL WEIGHT FILTER UNIT	TOTAL WEIGHT COMPLETE STRUCTURE
1'4"	1'4"	10'0½"	3'6½"	6'5"	2'6"	2'3"	2'0½"	2'1½"	2'3½"	2842	3937
1'4"	1'4"	10'0½"	3'8½"	6'5"	2'0"	2'3"	2'0½"	2'1½"	2'3½"	3120	4220
2'6"	2'6"	13'4½"	5'8½"	7'8"	3'8½"	3'3"	2'0½"	2'1½"	2'3½"	5850	7594
2'6"	2'6"	13'4½"	5'8½"	7'8"	3'8½"	3'3"	2'0½"	2'1½"	2'3½"	6736	8733
2'6"	2'6"	16'4½"	5'8½"	7'8"	3'5½"	3'3"	2'0½"	2'1½"	2'3½"	6850	7594
2'6"	2'6"	13'4½"	6'0½"	7'8"	3'5½"	3'3"	2'0½"	2'1½"	2'3½"	0730	8733
3'0"	2'6"	16'4½"	5'8½"	8'8"	4'6½"	4'3"	2'0½"	2'1½"	2'3½"	7092	10217
3'0"	2'6"	16'4½"	6'8½"	8'8"	4'0½"	4'3"	2'0½"	2'1½"	2'3½"	9190	11760
3'0"	2'6"	16'4½"	6'8½"	8'8"	4'6½"	4'3"	2'0½"	2'1½"	2'3½"	10388	13263
3'0"	4'0"	17'4½"	7'8½"	9'8"	5'5½"	6'3"	2'0"	2'2"	2'4"	11260	15150
3'6"	4'0"	17'4½"	7'8½"	10'0"	5'5½"	6'3"	2'0"	2'2"	2'4"	13100	17685
3'6"	4'0"	17'4½"	7'8½"	10'0"	5'5½"	6'3"	2'0"	2'2"	2'4"	14026	19805
3'6"	4'0"	16'4½"	8'2½"	10'2"	6'11½"	6'9"	3'0½"	3'2½"	3'4½"	12521	16421
3'6"	4'0"	16'4½"	8'2½"	10'2"	6'11½"	6'0"	3'0½"	3'2½"	3'4½"	14399	19064
3'6"	4'0"	16'4½"	8'2½"	10'2"	6'11½"	5'9"	3'0½"	3'2½"	3'4½"	15277	21947
5'0"	5'0"	21'4½"	10'2½"	11'2"	6'11½"	6'9"	2'0"	2'2"	2'4"	16811	20060
5'0"	5'0"	21'4½"	10'2½"	11'2"	6'11½"	6'0"	2'0"	2'2"	2'4"	19339	23709
5'0"	5'0"	21'4½"	10'2½"	11'2"	6'11½"	5'0"	2'0"	2'2"	2'4"	20072	26760

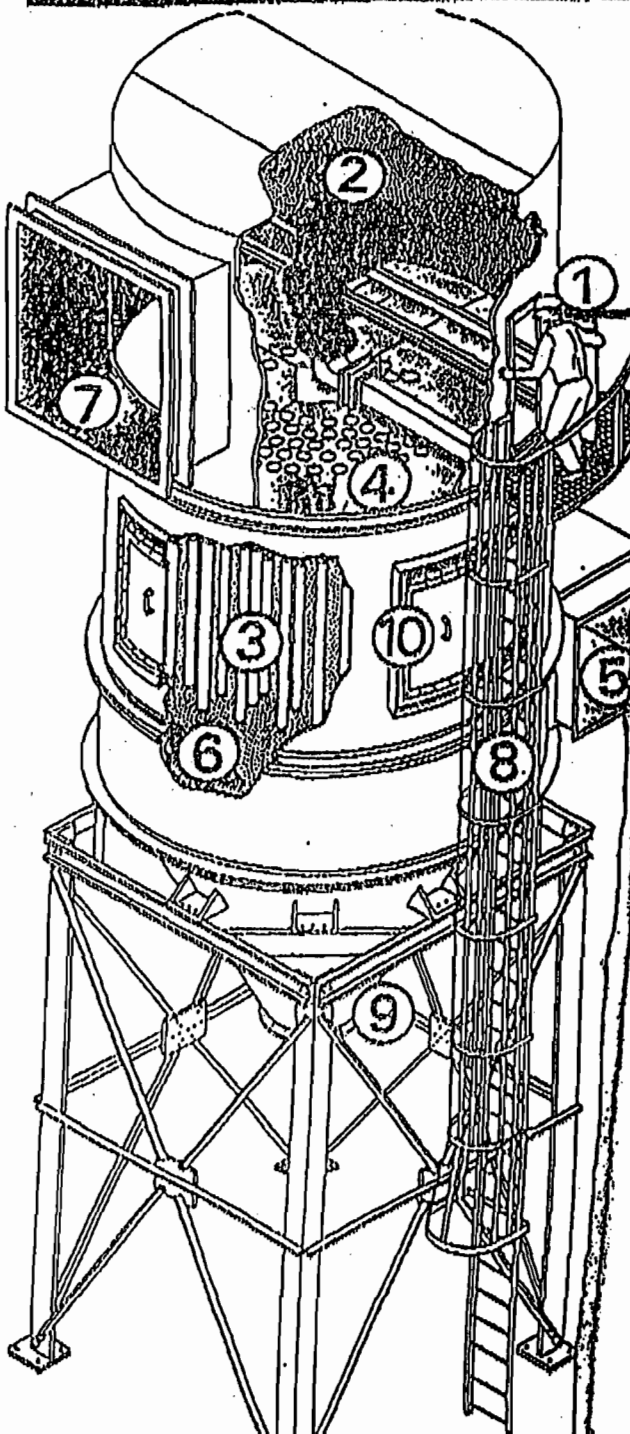
Pneumafil's unique construction features

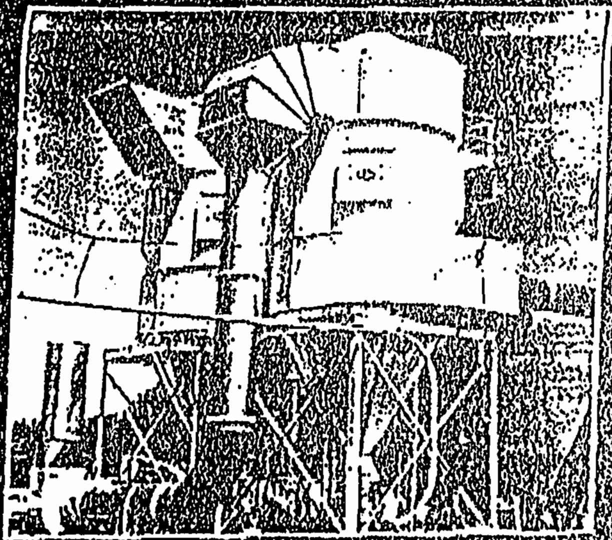


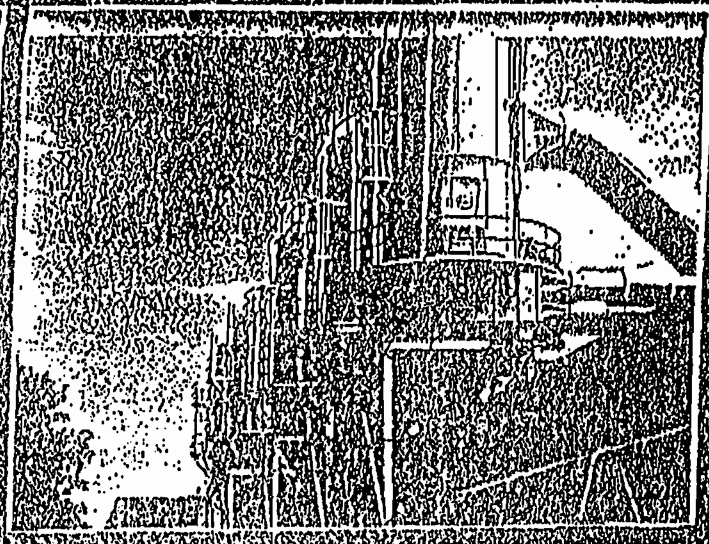
There are distinctive design features about a Pneumafil Reverse Air Filter that sets it apart from other filters. These features translate to direct benefits making a strong case for selecting Pneumafil.

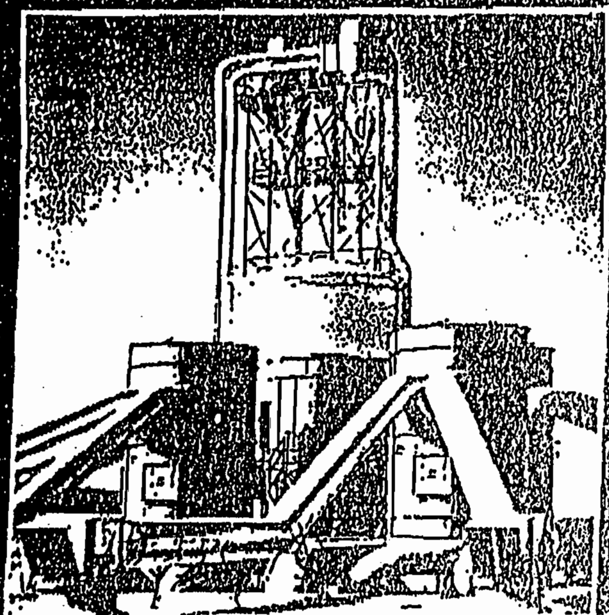
Pneumafil is dedicated to manufacturing a superior product for their customers by using the very best materials, exercising the highest standards in workmanship and employing the latest in applied technology. This dedication is reflected in our attention to details, simplicity of construction and economical cost of operation.

1. Walk-in clean air compartment for inspection maintenance and filter bag changing.
2. Reverse air bag cleaning mechanism with rotating air manifold arm; simple design for trouble-free operation.
3. Fabric filter bags — 16 oz. polyester felt, nylon scrim reinforcement with 2" canvas wear strips on bottom for long life and abrasion resistance.
4. Bolt-in sectional tube sheet for easy replacement.
5. Large, low tangential air inlet for lower pressure drop and cyclonic cleaning action.
6. Built-in particle deflector for abrasion protection of filter bags; thus longer bag life and lower maintenance.
7. Large clean air outlet for lower pressure drop resulting in energy savings.
8. Support steel, ladder and access platform conforms to all applicable building codes.
9. 60° conical hopper for dust collection.
10. Relief panels for safety.
11. Hot rolled, pickled and oiled mild steel with a unique surface preparation for superior corrosive resistant finish, insuring longer filter life and substantial maintenance savings. (Meets SSPC-SP6 standard)
12. Epoxy primed interior and exterior (2.0-2.5 mils), polyester epoxy painted exterior (2.0-3.5 mils). Total paint finish of 4.0-5.5 mils passed 500 hour salt spray test.
13. Components factory assembled and tested.
14. All filters meet EPA and OSHA regulations.
15. Filters constructed to withstand ± 20" W.G.
16. Standing seams for increased strength.
17. Highest quality control standards in the industry.









AMAX Coal Co.
Archer Daniels Midland
Broyhill Industries
Burlington Furniture
Carolina Power & Light
Cargill
Continental Grain
General Electric
General Mills
Georgia Pacific
International Paper
Kingsford Charcoal
Northern States Power
Pillsbury Company
St. Regis Paper

PNEUMAFIL

PNEUMAFIL CORPORATION
[illegible] Division
P.O. BOX 16348
[illegible] NC 28297-6348
[illegible]
[illegible]

Exhibit H

CANTELOU ASSOCIATES
ENGINEERING - PLANNING

March 7, 1990

CERTIFICATE OF COMPLETION OF CONSTRUCTION

I hereby certify to the best of my knowledge and belief that construction of this facility is complete and substantially in accordance with the plans, specifications and construction permit number AC05-165270.

G. E. CANTELOU, Jr. P.E.

401 Park Ave. S.W. / P.O. Box 3102 / Aiken, S.C. 29802 / (803) 648-9300