

**ANIMAL CREMATORY
AIR GENERAL PERMIT REGISTRATION FORM**

RECEIVED

Part II. Notification to Permitting Office

(Detach and submit to appropriate permitting office; keep copy onsite)

NOV 16 2011

Instructions: To give notice to the Department of an eligible facility's intent to use this air general permit, the owner or operator of the facility must detach and complete this part of the Air General Permit Registration Form and submit it to the appropriate Department of Environmental Protection or local air pollution control program office which has permitting authority. Please type or print clearly all information, and enclose the appropriate air general permit registration processing fee pursuant to Rule 62-4.050, F.A.C. (\$100 as of the effective date of this form)

DIVISION OF AIR
RESOURCE MANAGEMENT

0710207-007

Registration Type

Check one:

INITIAL REGISTRATION - Notification of intent to:

- Construct and operate a proposed new facility.
 Operate an existing facility not currently using an air general permit (e.g., a facility proposing to go from an air operation permit to an air general permit).

RE-REGISTRATION (for facilities currently using an air general permit) - Notification of intent to:

- Continue operating the facility after expiration of the current term of air general permit use.
 Continue operating the facility after a change of ownership.
 Make an equipment change requiring re-registration pursuant to Rule 62-210.310(2)(e), F.A.C., or any other change not considered an administrative correction under Rule 62-210.310(2)(d), F.A.C.

Surrender of Existing Air Operation Permit(s) - For Initial Registrations Only

If the facility currently holds one or more air operation permits, such permit(s) must be surrendered by the owner or operator upon the effective date of this air general permit. In such case, check the first box, and indicate the operation permits being surrendered. If no air operation permits are held by the facility, check the second box.

- All existing air operation permits for this facility are hereby surrendered upon the effective date of this air general permit; specifically permit number(s):

 No air operation permits currently exist for this facility.

General Facility Information

Facility Owner/Company Name (Name of corporation, agency, or individual owner who or which owns, leases, operates, controls, or supervises the facility.)

Pet Angel World Services (Florida) LLC

Site Name (Name, if any, of the facility site; e.g., Plant A, Metropolis Plant, etc. If more than one facility is owned, a registration form must be completed for each.)

Facility Location (Provide the physical location of the facility, not necessarily the mailing address.)

Street Address: 1941 Park Meadows Drive Suite 8

City: Ft. Myers

County: Lee

Zip Code: 33907 - 3703

Facility Start-Up Date (Estimated start-up date of proposed new facility.) (N/A for existing facilities)

Design Calculations

If this is an initial registration for a proposed new animal crematory unit, provide design calculations to confirm a sufficient volume in the secondary chamber combustion zone to provide for at least a 1.0 second gas residence time at 1800 degrees F.

- Manufacturer's' design calculations attached.
- Registration is not for proposed new animal crematory unit(s).

Description of Facility

Below, or as an attachment to this form, provide a description of all crematory operations at the facility in sufficient detail to demonstrate the facility's eligibility for use of this air general permit and to provide a basis for tracking any future equipment or process changes at the facility. Describe all air pollutant-emitting processes and equipment at the facility, and identify any air pollution control measures or equipment used.

* SEE ATTACHED E-MAILS DATED
11/28/11 & 11/22/11 AS AN ADDENDUM
TO THIS REGISTRATION.



**CALCULATIONS FOR PRODUCTS OF COMBUSTION
AND RESIDENCE TIME FOR 75 LB/hr
TYPE IV WASTE. B&L SERIES CREMATORY**

NATURAL GAS

A. BASIS: 1 LB WASTE

1. $\frac{1 \text{ lb waste} \times 1000 \text{ Btu/lb waste} \times 15 \text{ lbs air}}{10,000 \text{ Btu}} = 1.5 \text{ lbs air}$
2. $\frac{1 \text{ lb waste} \times 0.10 \text{ lb combustible}}{1 \text{ lb waste}} = 0.10 \text{ lbs of combustibles}$
3. $\frac{1 \text{ lb waste} \times 0.85 \text{ lb H}_2\text{O} \times 1.6^*}{1 \text{ lb waste}} = 1.36 \text{ lbs of water}$
4. $\frac{6,500 \text{ Btu aux fuel}^{**} \times 10.0 \text{ cu ft air/cu ft fuel}}{1,050 \text{ Btu/cu ft fuel} \times 13.35 \text{ cu ft air/lb air @ 70f}} = 4.64 \text{ lbs of air for aux fuel}$
5. $\frac{6,500 \text{ Btu aux fuel} \times 0.044 \text{ lb fuel/cu ft fuel}}{1,050 \text{ Btu/cu ft fuel}} = 0.27 \text{ lb of aux fuel}$
6. Sum = PRODUCTS OF COMBUSTION (POC) = 7.86 lbs POC per lb waste @ 70f

B. RESIDENCE TIME @ 1600 F

1. $\frac{7.86 \text{ lbs POC/lbs waste} \times 51.89 \text{ cu ft / lb POC @ 1600f} \times 75 \text{ lbs waste / hr}}{3600 \text{ sec/hr}}$
 $= 8.49 \text{ cu ft / sec @ 1600 f} = 9.0 \text{ cu ft for 1 second residence time}$

RESIDENCE TIME @ 1800 F

2. $\frac{7.86 \text{ lbs POC/lbs waste} \times 56.93 \text{ cu ft /lb POC @ 1800f} \times 75 \text{ lbs waste / hr}}{3600 \text{ sec/hr}}$
 $= 9.32 \text{ cu ft / sec @ 1800f} = 10.00 \text{ cu ft for 1 second residence time}$

* Correction multiplier for dry air and water vapor

** Fuel is Natural Gas

Referances: Incinerator institute of America.
 North American Combustion Handbook
 Eclipse Combustion Engineering guide

C. THERMOCOUPLE PLACEMENT.

Secondary chamber operating temperature at > or = to 1600f = 9.00 cu ft from flame tip.
 1800f = 10.00 cu ft from flame tip.

* ADDENDUM TO #0710207-007
PAGE 9, DESCRIPTION OF FACILITY

Dibble, Dickson

From: Heather Dinkel [heather.dinkel@petangelworldservices.com]
Sent: Monday, November 28, 2011 12:13 PM
To: Dibble, Dickson
Subject: Page 9
Attachments: 11-28-11 Permit info Retort page 9.TIF

Mr. Dibble,

I have attached page 9. I hope it gives you the info you need to move forward.

Thanks,

Heather

Design Calculations

If this is an initial registration for a proposed new animal crematory unit, provide design calculations to confirm a sufficient volume in the secondary chamber combustion zone to provide for at least a 1.0 second gas residence time at 1800 degrees F.

- Manufacturer's' design calculations attached.
- Registration is not for proposed new animal crematory unit(s).

Description of Facility

Below, or as an attachment to this form, provide a description of all crematory operations at the facility in sufficient detail to demonstrate the facility's eligibility for use of this air general permit and to provide a basis for tracking any future equipment or process changes at the facility. Describe all air pollutant-emitting processes and equipment at the facility, and identify any air pollution control measures or equipment used.

Crawford C-1000S (SIN 1C5921809920LS)

This unit has two after burners to help with controlling pollution. There is no other measurements on the unit. All other air pollution control is maintained by retort personnel. They maintain heat so there is no smoking out of stack.

* ADDENDUM TO #0710207-007

Dibble, Dickson

PAGE 9, DESCRIPTION OF FACILITY

From: Heather Dinkel [heather.dinkel@petangelworldservices.com]
Sent: Tuesday, November 22, 2011 12:00 PM
To: Dibble, Dickson
Subject: Re: Pet Angel South Florida

Mr. Dibble,

I will absolutely get page 9 filled out and sent to you. The Crawford C500P (S/N 1CP86231286-S) was never installed in our facility. Due to purchasing the B&L Cremation Systems, Model BLI-400/75 that we are requesting permit, we decided not to move the C500p from our other location. The Crawford C-1000S (S/N ICS92180992ULS) is the only unit we currently have in our facility.

Sorry for the confusion.

Heather

On Tue, Nov 22, 2011 at 10:50 AM, Dibble, Dickson <Dickson.Dibble@dep.state.fl.us> wrote:

Good morning Heather!

Thank you so much for your very prompt reply to my request.

I am in need of some clarification and additional information.

1) Our records (**Emission Unit ID# EU003**) indicate there is a Crawford C-1000S (**S/N ICS92180992ULS**) unit at your facility, yet there is no reference to it in the registration submitted or in your e-mail below. Please help me clarify this difference. See Below:

EU003

Florida Department of Environmental Protection - Enterprise Applications

ORACLE

Air Resource Management System - Emissions Unit

ARMINV51

POINT: AIRS ID: 0710207 STATUS: A OFFICE: SD Site: FT MYERS

SITE NAME: PET ANGEL WORLD SERVICES COUNTY: LEE

OWNER/COMP: PET ANGEL WORLD SERVICES LLC

Description & Status

Emission Unit ID: 003 Status: Active Oz SIP Base Yr Unit: N

Description: Animal Crematory primary chamber, RG fired, 400lbs/hr

EU Class: Regulated Emissions Unit

Type: 9.07 Incinerator - Animal Crem AIRS Desc: ANIMAL CREMATORY-PRIMARY

Maj Group SIC: 72 Personal Services Commence Construction Dt:

Gen Rating: MYV CEMS - Method of Compliance: Startup Dt:

Manufacturer: CRAWFORD EQUIPMENT & ENGINEERING CO. Permanent Shutdown Dt:

Model No: C-1000S Long Term Reserve Shutdown Dt:

of Segment: 0 A 0 I # of Pollutant: 0 A 0 J # of VE Subtype: 1

Comment: S/N ICS92180992ULS. Includes secondary burner and combustion chamber s

Incinerator

Dwell Time: 1.00 Sec Dwell Temp: 1200 F Afterburner Temp: 1100 F

Report

2) Our records indicate the second unit (**Emission Unit ID# EU004**), a Crawford C500P (**S/N 1CP86231286-S**) was added, or submitted as an Air General permit equipment change registration on 7/27/2011 by Sharon Martinache and issued on 08/27/11 and is most likely the one to which you are referring in your e-mail below. See EU 004 screen capture below:

EU004

Florida Department of Environmental Protection - Enterprise Applications

Enterprise Emission Unit Editment, YE AORREP, Generating Report, Report Help, Edit Window, ORACLE

Air Resource Management System - Emissions Unit

ARMINV51

POINT: AIRS ID: 0710207 STATUS: A OFFICE: SD Site: FT. MYERS

SITE NAME: PET ANGEL WORLD SERVICES COUNTY: LEE

OWNER/COMP: PET ANGEL WORLD SERVICES LLC

Description & Status

Emission Unit ID: 004 Status: Active Oz SIP Base Yr Unit: 11

Description: Animal Crematory-prim/2ndarychmbire,11G,75lbsh/OpacM/compM&R

EU Class: Regulated Emissions Unit

Type: 9.07 Incinerator - Animal Crem AIRS Desc: ANIMAL CREMATORY-PRIM/2ND

Kal Group SIC: 72 Personal Services Commence Construction DI

Gen Rating: MWV CEMS - Method of Compliance Startup DI

Manufacturer: CRAWFORD Permanent Shutdown DI

Model No: C500P Long Term Reserve Shutdown DI

of Segment: 0, 1 # of Pollutant: 0, 1 # of VE Subtype: 0

Comment: SN 1CP16231285-S

Incinerator

Dwell Time: 1.00 Sec Dwell Temp: 1800 F Afterburner Temp: 1100 F

Enterprise Emission Unit STATUS

Record ID: 11

3) The current registration, received on 11/14/11, indicates the addition of another unit (**B&L Cremation Systems, Model BLI-400/75, no S/N; see EU screen capture below**), which will bring the total units at your facility to three rather than the one as listed in the registration.

Proposed Emission Unit ID# EU005

Florida Department of Environmental Protection - Enterprise Applications

Oracle Subst... Pollut... VE (ORSEP) Control Equipment Log Entry - Air View ORACLE

Air Resource Management System - Emissions Unit

ARMINV51

POINT: AIRS ID 0710207 STATUS A OFFICE SD Site: FT MYERS

SITE NAME: PET ANGEL WORLD SERVICES COUNTY: LEE

OWNER/COMP: PET ANGEL WORLD SERVICES LLC

Description & Status

Emiss Unit ID: 005 Status: A Active Oz SIP Base Yr Unit: N

Description: Animal Crematory-prim/2ndarychmbre,11G,1temp M&R,opack1,75lb/hr

EU Class: R Regulated Emissions Unit

Type: 9.07 Incinerator - Animal Crem AIRS Desc: ANIMAL CREMATORY-PRIM2ND

Maj Group SIC: 72 Personal Services Commence Construction DI:

Gen Rating: MW CEMS - Method of Compliance: II Startup Dt: 12/15/2011

Manufacturer: B&L CREMATION SYSTEMS Permanent Shutdown DI:

Model No: BLI-40075 Long Term Reserve Shutdown DI:

of Segment: 0 A 0 I # of Pollutant: 0 A 0 I # of VE Subtype: 0

Comment: S/N NOT AVAILABLE-unit not constructed as of 11/14/11

Incinerator

Dwell Time: Sec Dwell Temp: F Afterburner Temp: F

Enter the Emission Unit STATUS

Record View

The clarifying question: Does this mean you will actually have three (3) animal crematory units at this location, or was the C-1000S removed?

Please let me advise that in the future, when registering, renewing, changing ownership or wishing to make changes in equipment at registered facilities, registrants are required to provide equipment details of each and all emission units at a facility, not just the new one being added or removed. In these cases the typical information required for crematory units would be as follows:

EXISTING & already registered unit(s):

- a. Manufacturer/Make
- b. Model
- c. S/N
- d. Rated Capacity expressed in Lbs/hr (burn rate)
- e. Type of fuel – Natural Gas (NG), Liquid Propane (LP), diesel/fuel oil, etc.

For proposed NEW facilities/units, design calculations are required, as well as the above information.

I have attached a pdf copy of the current registration submittal by Ms. Martinache for your reference. The Description of Facility block on Page 9 was left blank and the information requested is required. In order for me to continue with the review and processing of your registration, I will only need an updated Page 9, Description of Facility. Ms. Martinache did include the design calculations for the new unit, so there is no need to submit those all over again.

To make this as simple as possible, if you would be so kind to download the form and print Page 9, fill it out, scan it and send it back to me as an electronic copy via e-mail and I will attach it as an addendum to the original registration.

If you have any questions, comments or concerns please e-mail or call.

Thank you and have a very Happy Thanksgiving Day Holiday.

Sincerely yours,

Dickson E. Dibble

Dickson E. Dibble, ES III

Air General Permit Program

FDEP Division of Air Resource Management
Office of Permitting & Compliance
Minerals & Metals Section

Tel. (850) 717-9071

FAX (850) 717-9001

GIC - #59571

Dickson.Dibble@dep.state.fl.us



Please note: Florida has a very broad public records law. Most written communications to or from state officials regarding state business are public records available to the public and media upon request. Your e-mail communications may therefore be subject to public disclosure

Please take a few minutes to share your comments on the service you received from the department by clicking on this link. [DEP Customer Survey](#).

From: Heather Dinkel [<mailto:heather.dinkel@petangelworldservices.com>]
Sent: Tuesday, November 22, 2011 8:39 AM
To: Dibble, Dickson
Subject: Pet Angel South Florida

Hello Mr. Dibble,

Kristal Essenmacher said you called and requested we email you with the current equipment we have in the location we are requesting a permit for our new incinerator. Our current equipment is the Crawford model C-500P.

Please let me know if there is anything else that would fall under equipment.

Thank you,

Heather Dinkel
South Florida Operation Manager
[239.940.1087](tel:239.940.1087)

BLI-400/75 - *Small Batch Incinerator* SPECIFICATIONS

Dimensions:	Height: 60" (70" with afterburner) Width: 40" (52" with control panel) Length: 84" (98" with cremation burner) Weight: 14,000 lbs. approximate
Load Capacity Maximum:	400 lbs
Cremation Rate:	75 lbs per hour
Chamber Dimensions:	30" Wide, 42" Long, 28" High 21 Cubic Feet
Stack Height:	15 feet refractory-lined stack – 18" O.D.
Refractory/Insulation:	4 1/2" Firebrick - Walls Castable Refractory Lining - (Hearth & Ceiling) 1" 1900 Degree - Board Insulation
Power Requirements:	110 volts, 1-Phase, 30 AMPS
Gas Pressure:	Natural Gas: 7" W.C. Propane: 11" W.C. Fuel Oil:
Burner Output:	
Maximum Input Rating:	850,000 BTU's per hour
Afterburner Maximum:	500,000 BTU's per hour
Modulation Minimum:	100,000 BTU's per hour
Cremation Burner:	350,000 BTU's per hour
Air Requirements:	Outside air Inlet louvers in the room located at or below burner height, capable of passing 2,500 CFM of free air



Cremation Systems, Inc.

7205 - 114th Avenue North Largo, Florida 33773 USA
1-800-622-5411 727-541-4666 Facsimile 727-547-0669
e-mail: sales@blcremationsystems.com www.blcremationsystems.com

PROCESS DESCRIPTION

This project consists of the construction & operation of one new cremation incinerator. This facility will consist of one B & L Systems Model BLI 400/75 Animal cremator. The cremation unit will be fired on natural gas.

Deceased animal remains are manually placed into the primary chamber of the cremator. The door of the cremator is then closed. After a preheat of the afterburning chambers by the auxiliary burner, initial and supplementary combustion is provided by natural gas fired burner located in the primary chamber of the cremator. Once material combustion is initiated, the rate of the combustion is controlled by limiting both the combustion air and fuel supplied to the primary chamber through the primary burner. This process generates a highly combustible gas mixture that flows into a secondary chamber where more air is admitted to insure further oxidation of the gases. The auxiliary burner is installed in the secondary chamber of the cremator to facilitate complete combustion of all gaseous materials entering this chamber.

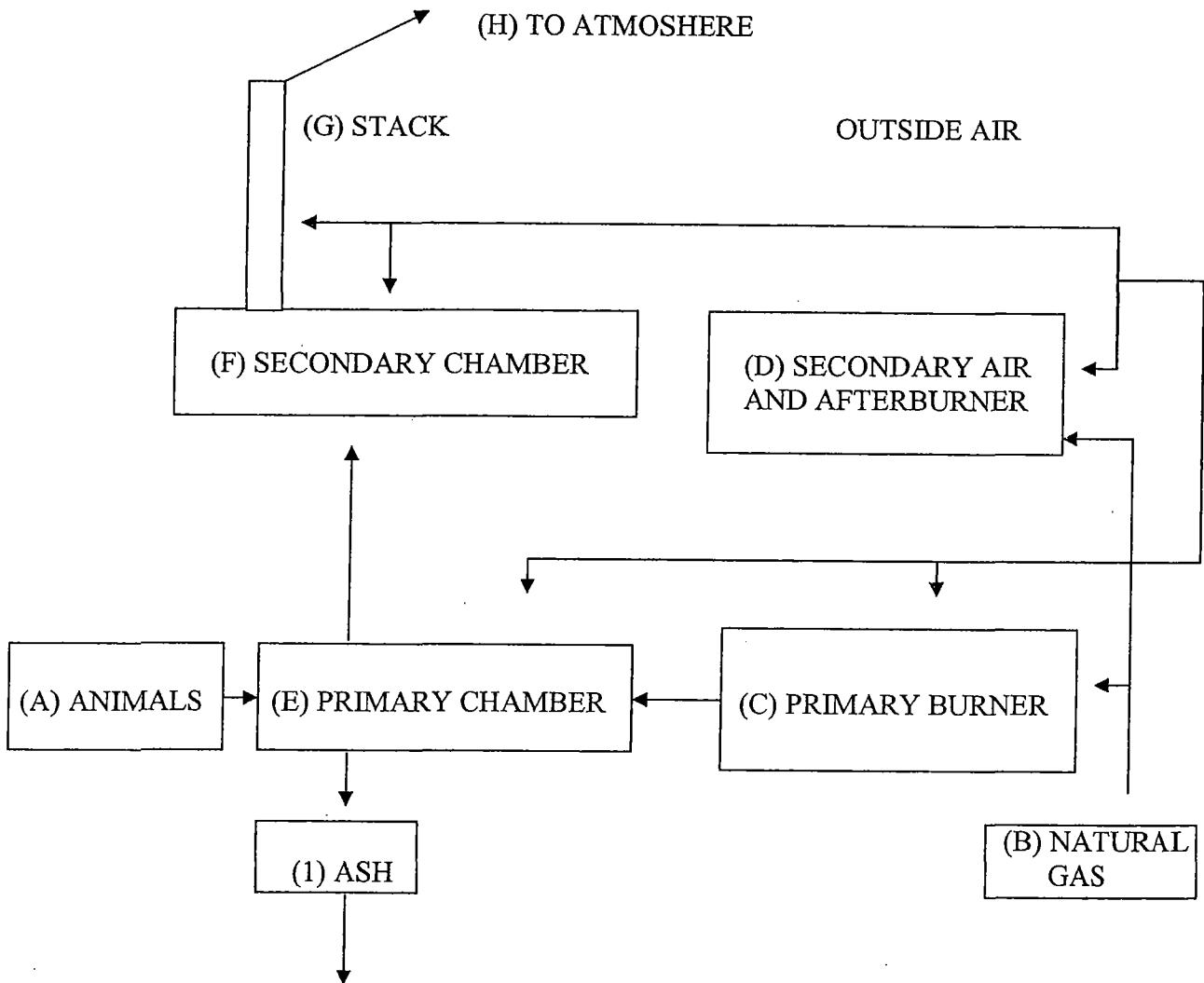
Once the cremation process is complete, the remains are removed from the primary chamber of the cremator.



^{Cremation}
Systems, Inc.

7205 - 114th Avenue North • Largo, Florida 33773
1-800-622-5411 • 727-541-4666 • Facsimile 727-547-0669
e-mail: blcremsys@aol.com • www.blcremationsystems.com

PROCESS FLOW DIAGRAM



World's Largest Independent Cremation Equipment Manufacturer



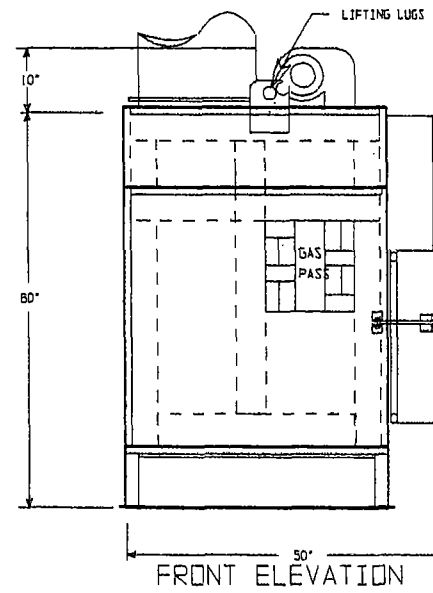
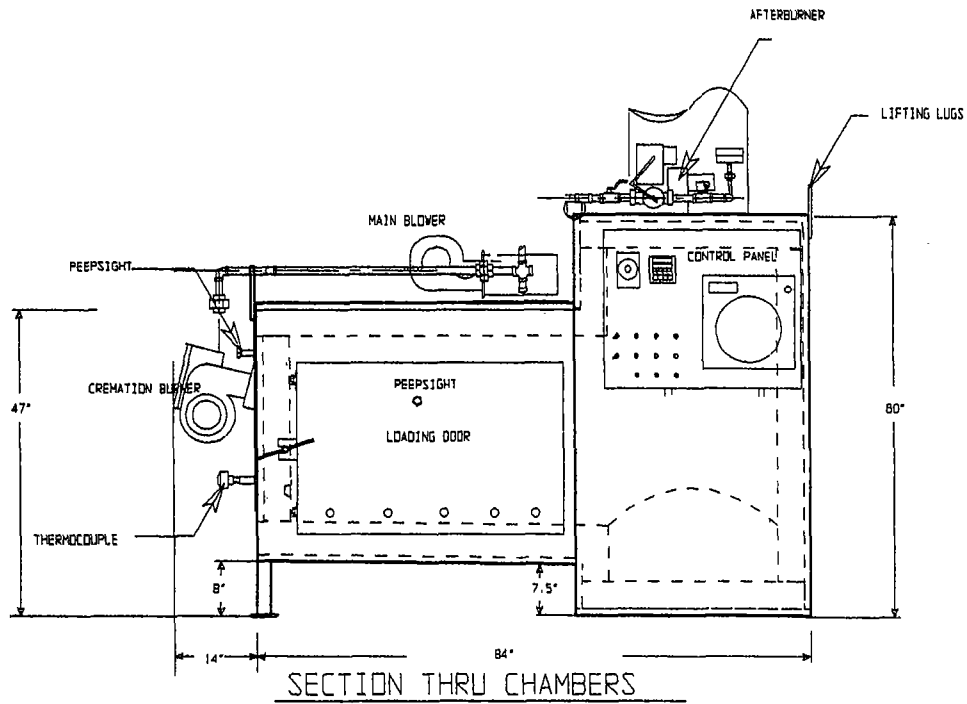
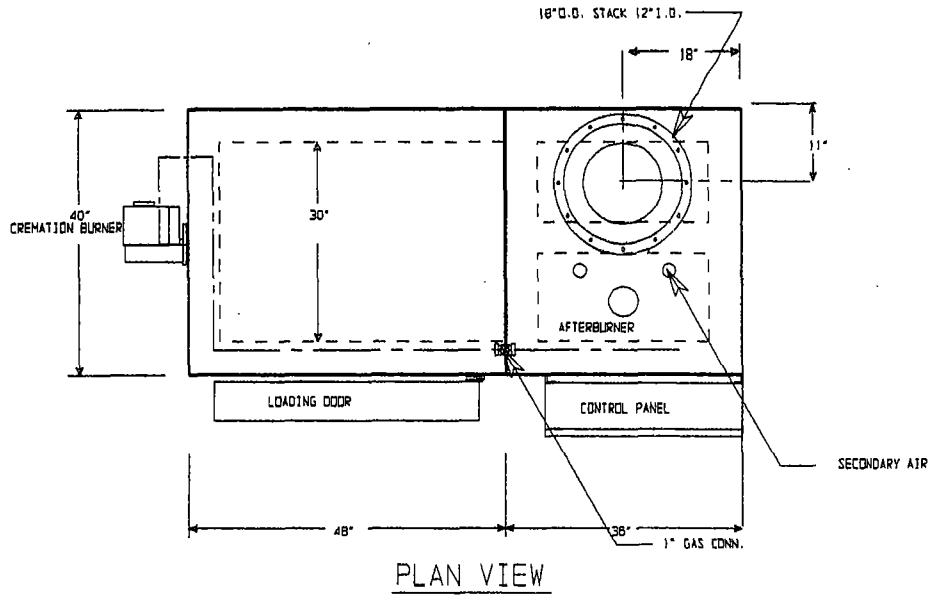
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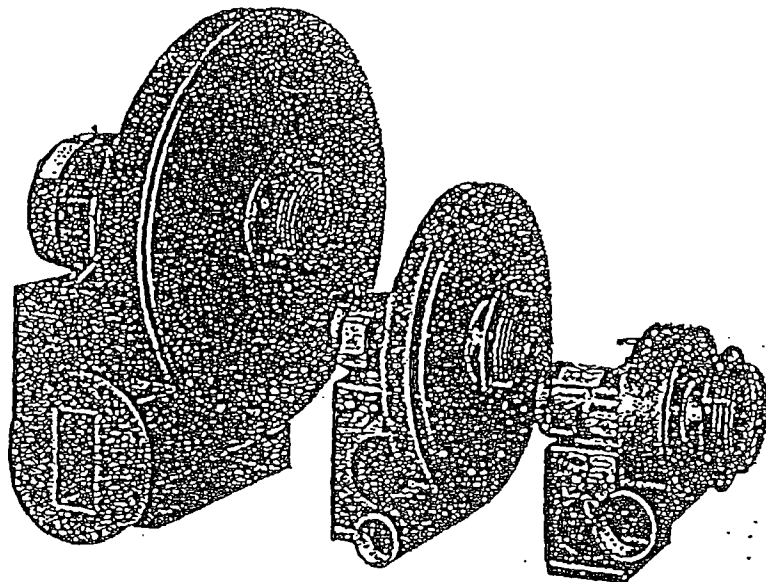
TEMPERATURE CONTROL SEQUENCE

A type "K" thermocouple is placed 10 ft. down stream of the flame tip to measure temperature, the signal is sent to the *main control panel* where it is received by a FUJI PYZ series temperature controller with digital readout and a DR4200 *temperature recorder*. The FUJI PYZ series temperature controller controls the temperature via a *motorized butterfly valve* located on the *afterburner inlet gas assembly*. Gas demand is controlled by temperature to maintain a steady temperature. The *ignition/cremation burner* is interlocked to the *afterburning temperature* by the FUJI PYZ series temperature controller set point. Combustion cannot start until *temperature set point* is reached. Alarm contacts in the FUJI PYZ series temperature controller are utilized for over (high) temperature conditions. 100° F over set point the *afterburner* will be in maximum low fire and the *ignition/cremation burner* will shut off. The *butterfly valve* located on the *secondary air inlet* is controlled by a separate temperature out put to add air to cool the system. At *set point* the unit will return to normal operation. An optimonitor smoke detector is placed on the stack and set at 10% opacity if emissions occur the alarm will sound; a visual *red warning lamp* located on the *control panel* will illuminate and the *primary burners* will shut off. The *excess air butterfly valve* will open to add air to the *secondary chamber* to oxidize the emissions. After a five (5) minute period the unit will revert to normal operation.

BLI 75 SMALL PET INCINERATOR



ECLIPSE TURBO BLOWERS SERIES "SMJ"



- High efficiency
- Heavy gauge steel base and housing
- Aluminum impellers balanced statically and dynamically
- Matching air filters available
- Changeable outlet positions

Eclipse "SMJ" Blowers are centrifugal blowers that provide low pressure air for industrial combustion systems. They are also used for cooling, conveying, drying, liquid agitation, smoke abatement, vacuum cleaning, fume and dust exhausting, and other applications where air temperatures are under 220°F.

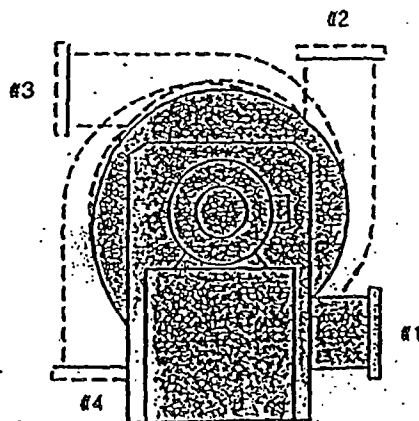
All "SMJ" Blowers are constructed of continuous welded, heavy gauge steel. The impellers are made of lightweight, high strength, riveted aluminum. Outlets on 3" and 4" models are threaded, while all others are flanged for a standard 125# ANSI companion flange. Discharge ports are sized to keep pressure losses within reasonable limits.

Blower inlet flanges are equipped with a grill that complies with OSHA regulations. If desired, the grill may be removed and the inlet bolted to a standard ANSI companion flange. Eclipse-supplied motors are standard shaft and starting torque, ball bearing, 3600 rpm units. On any blower requiring 3/4 HP or more, Eclipse recommends that polyphase motors be used.

There are four possible outlet positions. Any existing position is easily changed by removing the housing from the

blower base and remounting it in the desired position. Positions 1 through 3 can be specified for any blower. Position 4, however, requires factory approval before ordering. Position 1 is the standard assembly (bottom, horizontal) unless otherwise specified.

"SMJ" Blowers can be supplied with counterclockwise (CCW) or clockwise (CW) rotation as viewed from the motor side. CCW rotation is furnished standard unless otherwise specified.

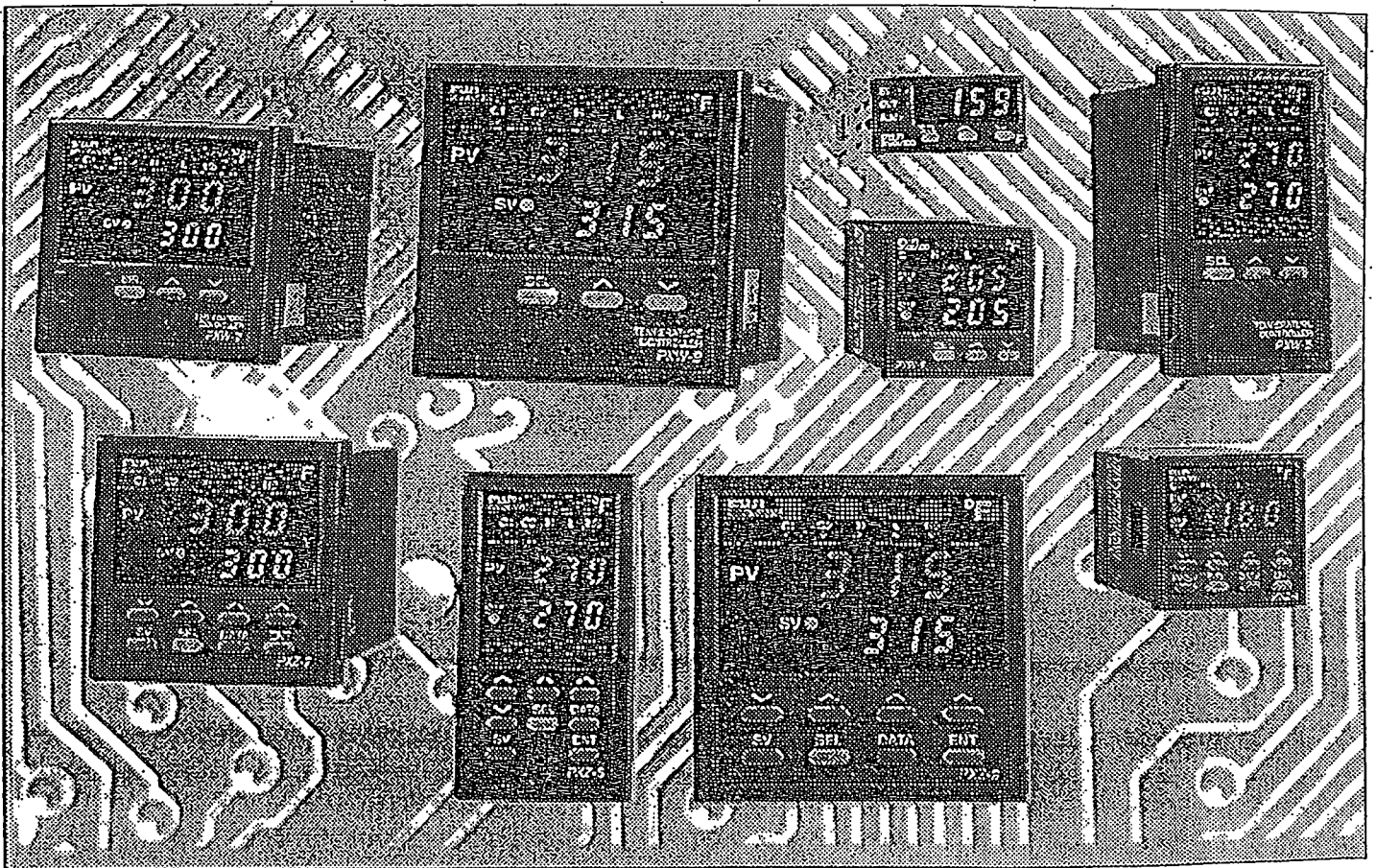


Outlet Positions

FUJI
ELECTRIC

PX SERIES

PID Autotune
Controllers
Featuring Fuzzy Logic



Operation Manual

MODEL CONFIGURATION

1 2 3 4 5 6 7 8 9 10 11
 P X - 1 - V -

W 4
 Z 5
 7
 9

Front panel size	Code
48 x 48 (1/16 DIN)	4
48 x 96 (1/8 DIN)	5
72 x 72 (72mm)	7
96 x 96 (1/4 DIN)	9

Kinds of input	Code
Thermocouple (°C)	T
Thermocouple (°F)	R
RTD/Pt100 (°C)	N
RTD/Pt100 (°F)	S
4-20mA DC, 1-5V DC	B
0-20mA DC, 0-5V DC	A

Control output 1	Code
Relay contact (reverse action)	A
Relay contact (direct action)	B
SSR driver (reverse action)	C
SSR driver (direct action)	D
4 to 20mA DC (reverse action)	E
4 to 20mA DC (direct action)	F

Control output 2*	Code
None	Y
Relay contact (reverse action)	A
Relay contact (direct action)	B
SSR driver (reverse action)	C
SSR driver (direct action)	D
4 to 20mA DC (reverse action)	E
4 to 20mA DC (direct action)	F

*not available on 48 x 48mm type

Additional function	Code
Heater break alarm*	2
Process alarm & Heater break alarm*	3
None	4
Process alarm	5

*not available on 48 x 48mm type

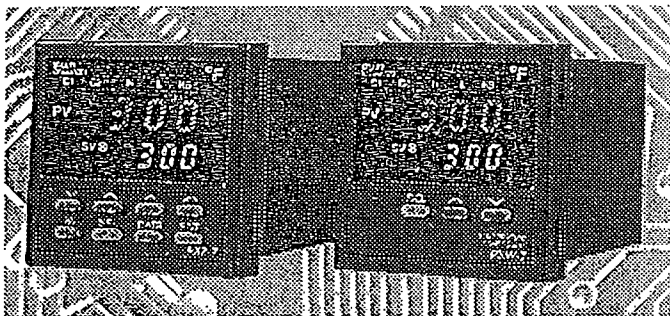
Power Supply Option	Code
24V AC/DC Supply	D

FEATURES:

- 1/4 DIN, 1/8 DIN, 72mm, 1/16 DIN and 1/32 DIN sizes available
- Choose between 3-button or 8-button operation
- Fuzzy logic control with PID Autotune
- Universal input-T/C, RTD, current, and voltage
- 24V DC/AC supply option available
- 8 segment ramp/soak programming
- Advanced security options to prevent unauthorized changes in parameters
- NEMA 4X faceplate

GENERAL SPECIFICATIONS

Rated voltage	85-264V AC or 24 AC/DC
Power consumption	10VA or less (100V AC, without option) 15VA or less (220V AC, without option)
Insulation resistance	50M Ω or more (500V DC)
Withstand voltage	Power source-Earth: 1500V AC, 1 min Power source-Other: 1500V AC, 1 min Earth-relay output: 1500V AC, 1 min Earth-Alarm output: 1500V AC, 1 min Other: 500V AC, 1 min
Input impedance	Thermocouple: 1M Ω or more Voltage: 450K Ω or more Current: 250 Ω (external resistor)
Allowable signal source resistance	Thermocouple: 100 Ω or more Voltage: 1K Ω or more
Allowable wiring resistance	RTD: 10 Ω or less per wire
Reference junction compensation accuracy	± 1 $^{\circ}\text{C}$ (at 23 $^{\circ}\text{C}$)
Process variable offset	(PV shift) $\pm 10\%$ FS
Set variable offset	$\pm 50\%$ FS
Input filter	0-120.0 sec, setting in 0.1 sec steps (primary lagging filter)
Noise reduction ratio	Normal mode noise (50/60Hz): 50dB or more Common mode noise (50/60Hz): 140dB or more



PXZ and PXW 7

POWER FAILURE PROCESSING

Memory protection:	Non-volatile memory hold After the recovery of power, control is started at the value before power failure
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SELF-CHECK

Method:	Watchdog timer monitors program error.
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OPERATION AND STORAGE CONDITIONS

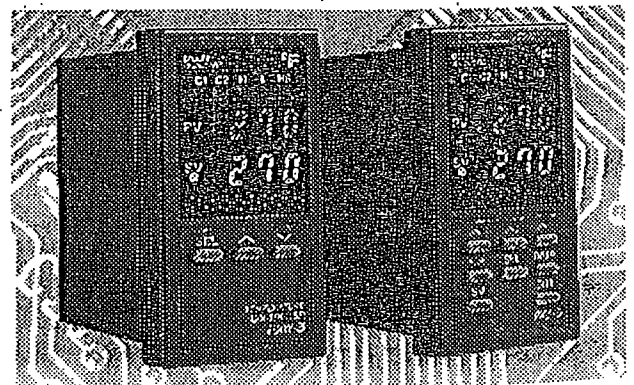
Operating temperature	-10 to 50 $^{\circ}\text{C}$
Operating humidity	90% RH or less (non-condensing)
Storage temperature	-20 to 60 $^{\circ}\text{C}$

CONTROL FUNCTION (STANDARD TYPE)

Control action	PID control with auto-tuning Fuzzy control with auto-tuning
Proportional band (P)	0-999.9%, setting in 0.1% steps
Integral time (I)	0-3200 sec, setting in 1 sec steps
Differential time (D)	0-999.9 sec, setting in 1 sec steps
P,I,D= 2-Pt. Position action when P,I,D=0	
Proportional action when I,D=0	
Proportional cycle	1-150 sec, setting in 1 sec steps, relay contact output, SSR/SSC drive output only
Hysteresis width	0-50%, setting in 1% steps, 2-position action only
Anti-reset wind up	0-100% FS, setting in 1% steps; auto-setting with auto-tuning
Input sampling cycle	0.5 sec
Control cycle	0.5 sec

CONTROL FUNCTION (DUAL OUTPUT TYPE) (HEATING/COOLING TYPE)

Heating Proportional band	$P \times 1/2$ (P=0:999.9%)
Cooling Proportional band	Heating proportional band \times cooling proportional band coefficient Cooling proportional band coefficient=0-99.9 0.2-position action
Integral time	0-3200 sec for heating and cooling
Differential time	0-999.9 sec for heating and cooling
P,I,D= 0.2-position action (without dead band) for heating and cooling I,D= 0:Proportional action	
Proportional cycle	1-150 sec, relay contact output, SSR/SSC drive output only
Hysteresis width	2-position action for heating and cooling: 0.5% FS 2-position action for cooling: 0.5% FS
Anti-reset wind-up	0-100% FS, setting in 1% steps; auto setting with auto-tuning
Overlap/dead band	$\pm 50\%$ of heating proportional band
Input sampling cycle	0.5 sec
Control cycle	0.5 sec

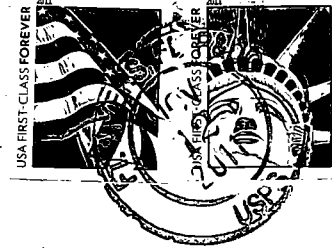


PXW and PXZ 5

**Pet
Ängel**

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