DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N324725160

FACILITY: FOGELSONGER VAULT CO		**SRN / ID:** N3247
LOCATION: 1617 LEWIS ST MARQUETTE INDUSTRIAL PARK, BAY CITY		**DISTRICT:** Saginaw Bay
CITY: BAY CITY		**COUNTY:** BAY
CONTACT: Gary Fogelsonger , Owner/Operator		**ACTIVITY DATE:** 05/14/2014
STAFF: Kathy Brewer	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Evaluate compliance with PTI #s 1015-91, 111-94, 111-94A, and 105-121.		
RESOLVED COMPLAINTS: C-14-00463		

I (KLB) conducted a site inspection to determine compliance w/PTI No.s 1015-91, 111-94, 111-94A, and 105-11. The facility operates five cremators. Four are used for the cremation of human remains and associated containers. One cremator is used for animal remains. The facility was in noncompliance with operating and recordkeeping requirements. A Violation Notice (VN) was sent to the facility on May 16, 2014.

Recent complaints have been received by AQD staff regarding dark smoke emitting from different stacks at the facility. A VN was sent to the facility on February 7, 2014, regarding inadequate control of pollutants and opacity greater than fifty percent.

General Description:
Three cremators are I & E Power Pak II installed in the 1990's. All three were permitted for animal and human remains and associated waste (coffins, floral arrangements, solids organic waste from funeral homes, animal pounds, and similar sources). Since the last AQD inspection in 2009, two additional cremators have been installed. One is a B & L Phoenix series used for human remains and the second is a B & L BLP series used for animal remains.

For all units the facility follows some, but not all, of the recommendations for incinerator operation and guidelines attached to each PTI. No posting of guidance on operating the cremators to minimize out of control combustion was apparent. Per Mr. Fogelsonger staff have had some operation training. The facility does not record or evaluate incidences that result in operating alarms or opacity violations. Operator manuals for each unit were available and briefly reviewed.

The facility only cremates the remains and container that the remains are delivered in. They receive the remains with a "Cremation Authorization" form from the funeral home or veterinary clinic. The form includes a list of contents to be cremated. It is against Michigan law for them to check the human remains. They record how many cremations they perform each day. Their records include the cremation authorization forms.

Each incinerator has an instantaneous external temperature read out for the secondary chamber, a pollution control system exhaust clarity monitor, automated burner controls, and control panels with operation status displayed for blower, afterburner, and cremation chamber status. Four incinerators were operating at the time of my site visit. There were no visible emissions from any of the incinerator emission stack.

PTI No PTI No. 111-94– Noncompliance
Power Pak Cremation System (Unit 1). Special Condition 20 states that the unit operates at 1800 F with a 2.3 seconds retention time in secondary chamber. The unit is preheated to 1250 F then operated between 1400 and 1600 F. During the inspection the secondary chamber temperature varied from 1450 -1520 F. The afterburner was ignited as temperatures dropped and extinguished when temperatures rose above set points. Mr. Fogelsonger believes the unit could likely operate at 1600 F. Mr. Fogelsonger and the cremation unit manufacture representative suspect that the PTI is incorrectly written. A PTI modification or request for an administrative amendment is expected from the facility.

The incinerator is preheated for up to an hour prior to material being introduced. The PTI does not require a temperature recording device and none is installed on the unit. The afterburner flame is automatically turned off and on based on secondary chamber temperature.

The pollution control system exhaust clarity monitor unit will shut down the flame to the primary chamber and afterburner if opacity or temperature exceedances occur, usually due to an out of control combustion in the primary chamber. The flame is stopped for 3 ½ minutes. Additional blower air may be introduced. The system resets if temperature and opacity return to acceptable levels and flame is ignited. Otherwise the unit returns to auto control mode (no flame to any source, possible increased blower flow) for another 3 ½ minutes. This auto control sequence continues until the unit is able to operate w/in the temperature and opacity settings.

The current operating and maintenance manual for the IE43 PPII units contains both general and detailed instructions on operating the units for a variety of circumstances. The manual states that large remains should be the first cremation of the day and only put in a cremation unit that has been cooled for a minimum of 12 hours. In practice, if the facility is contacted to cremate a body greater than 300 pounds, the facility may conduct the cremation as soon as possible after receiving the body rather than performing the cremation in a cool cremator.

I relayed to Mr. Fogelsonger that all employees operating the IE43- PPII cremation units should be trained per the information in the manual. I recommended that sections of the manual, for example, page 24, Special Instructions For Large Remains, be posted near the units for employees to reference.

PTI No. 111-94A – Noncompliance
Power Pak Cremation System (Unit 3). Special Condition 20 states that the unit operates at 1800 F with a 2.3 seconds retention time in secondary chamber. The unit is preheated to 1250 F then operated between 1400 and 1600 F.
The operation and recording is the same as Unit 1. A PTI modification or administrative amendment request is expected from the facility.

PTI No. 1015-91 – Noncompliance
Power Pak Cremation System (Unit 2). Special Condition 19 states that the unit operates at 1800 F with a 2.3 seconds retention time in secondary chamber. The unit is preheated to 1250 F then operated between 1400 and 1600 F.
During the inspection the unit was nearing the end of a cremation cycle. The secondary chamber temperature varied from 1610 -1625 F. The operation and recording is the same as Units 1 and 3. A PTI modification or administrative amendment request is expected from the facility.

PTI No. 105-11 – Noncompliance
The PTI was issued for 2 cremation units. The B & L Phoenix II (Unit 4) is used for human remains only. This unit is also the preferred unit to use for any large remains received because it is able to perform the cremation in a more efficient and controlled manner. The B & L BLP 200 (Unit 5) is a three chamber unit used for animal remains only.

Special Conditions IV. 1. & VI. 1. & 3., require the facility to monitor & record secondary chamber temperature in each unit. The B & L units have continuous recording charts for the secondary chambers. The facility does not regularly change either units recording paper charts or download the electronic temperature records. The temperature recording chart on unit 5 had not been changed for an extended time. The information was illegible and unusable for determining operating temperatures.

Mr. Fogelsonger indicated that he is not aware of how to download any temperature readings from the electronic monitoring system but believes he may be able to get the information. I explained that records are required to be maintained per the PTI. I also relayed to Mr. Fogelsonger that all employees operating the B&L cremation units should be trained per the information in the manual. I recommended that sections of the manual be posted near the units for employees to reference.

NAME _____ DATE 5/22/14 SUPERVISOR C. Hare

FOGELSONGER 2014 Unit summary information – DEQ Air Quality

UNIT ID	date installed	PTI#	Model type & operation manual	MAP	Human	Other	main chamber operating temp	auto control	After burner temp	Temp Auto control	Rating MMBTU gas usage
1	1994	111 94	IE43-PPII		✓		Pollution Ctr		(*) 1250	After Burn ...	.8 MM
2	1991	1075-91	IE43 PPII		✓		" "			" " (+)	.8
3	1994	111-94A	IE43 PPII		✓		Pollution Control			Temp.	.8
4	2011	105-11	B&L Phoenix	II	✓					Set Point 1650	2
5	2011	105-11	B&L BLP500-M-3			PE1					2 MMBTU
210 Auger	1983	22-831	IE-43		(✓)	✓					
Building											8.5 MMBTU

Units 1+2 +3

(*) – 1 Probe for entire unit

(+) – Pollution Alarm will indicate through an Alarm to be green

(–) "Temperature Control" = Afterburner Off

No recording device on Unit 1 (Honeywell controller)

Thrustair
#5

I EE

STEVE TALLEY - 1-800-327-2831 - EXT # 123

FAX TO HIS COMPUTER 412-315-3000

Brewer, Kathy (DEQ)

From: Brewer, Kathy (DEQ)
Sent: Tuesday, May 06, 2014 4:09 PM
To: gfogelsonger@aol.com
Subject: Air Inspection & Permit revision
Attachments: Review and recomend 2014.docx; Fogelsonger 2014 Unit summary.xlsx; JERROD PPII Operator Manual R1.doc

Gary,
I will be coming back to perform an official DEQ Air Quality site inspection at both the Lewis Street and the AuSable State Road site the week of May 12. I would like to review & discuss the items in the attached list. I put together the spreadsheet if we need to sort or track the information for each unit.

If you have a preferred date & time please let me know. I anticipate it will take up to 4 hours. We'll also discuss how to apply for a change to your existing Air Permit PTI 111-94 & PTI 1015-91 to establish an appropriate afterburner temperature.

I've also attached an example manual. It may not be exactly for the units you have but there should be similar information in a manual provided or available from the manufacturer for each unit you have that we should review.

Please contact me with any questions. Thank you.

Kathy L. Brewer (989) 894-6214
Environmental Quality Analyst
Saginaw Bay District Office, Air Quality Division, Michigan DEQ

DEQ –AQD Review during site visit

Each unit ID, model, installation date, operating manual

Dampening system controls, overrides for each model

Main chamber operating temperature

Recording device for tempertures

Afterburner temperature readings

Days of complaints

Past year review for all units

Gas flow for each unit

Gas flow to entire building

Which units operate for people

Which units for animals

Need to develop, have on site

Operation manual

Employee training/ instructions

Sequence of introduction & main trouble shooting posted

Incident recording & review

Establish time frame for more detailed MAP

Discuss Recommendations for reducing excess emmissions

RE: large body cremation

The primary means of running it properly requires chilling (preferably freezing) the body before incineration, making the heavy body the first burn of the day, making sure the secondary combustion chamber is up to specified temperature, using the primary chamber ignition burner to just start the burn (analogous to lighting a candle) and then turn of any primary combustion chamber sources of heat. With a fully chilled/frozen heavy person, the process will run by itself and stay in control without the addition of energy. This actually saves the permittee money on fuel costs. Only after most of the heavy person is combusted does any flame need to be turned on to complete the cremation.

From manual

Cool Down Between Successive Cremations

After removing all remains from the hearth, make sure that the CYCLE timer has sufficient time remaining and that all burners are off. Activate the HEARTH AIR by placing the switch in the ON position and allow the lining to cool for 15 minutes. With each successive cremation performed the same day, increase the cool down times.

Minimum cool down time between:

1st and 2nd cremations:	15 minutes
2nd and 3rd cremations:	20-25 minutes
3rd and 4th cremations:	25-30 minutes
4th and 5th cremations:	30+ minutes

See pgs 18, 22, 23 & 24 for operating discussion

PERMIT APPLICATION FOR MODIFICATION OF OAFTERBURNING TEMPERATURE

FOGELSONGER 2014 Unit summary information -- DEQ Air Quality

UNIT ID	date installed	PTI#	Model type & operation manual	MAP	Human	Other	main chamber operating temp	auto control	After burner temp	Auto control	gas usage

INCINERATOR REGULATIONS

FEDERAL REGULATIONS

Part 60 - NSPS

Title 40: Protection of Environment
PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart Ce—Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators

Title 40: Protection of Environment
PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart E—Standards of Performance for Incinerators

§ 60.51 Definitions.

Title 40: Protection of Environment
PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart Ec—Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996

Title 40: Protection of Environment
PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart CCCC—Standards of Performance for Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001

Title 40: Protection of Environment
PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart DDDD—Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units that Commenced Construction On or Before November 30, 1999

Title 40: Protection of Environment
PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart EEEE—Standards of Performance for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

Subpart FFFF—Emission Guidelines and Compliance Times for Other Solid Waste Incineration Units That Commenced Construction On or Before December 9, 2004

Title 40: Protection of Environment
PART 62—APPROVAL AND PROMULGATION OF STATE PLANS FOR DESIGNATED FACILITIES AND POLLUTANTS

Subpart HHH—Federal Plan Requirements for Hospital/Medical/Infectious Waste Incinerators Constructed on or Before June 20, 1996

Title 40: Protection of Environment
PART 62—APPROVAL AND PROMULGATION OF STATE PLANS FOR DESIGNATED FACILITIES AND POLLUTANTS

Subpart III—Federal Plan Requirements for Commercial and Industrial Solid Waste Incineration Units That Commenced Construction On or Before November 30, 1999

Google Maps

Address **1617 Lewis St**
Bay City, MI 48706

Get Google Maps on your phone
Text the word "GMAPS" to 466453

Matthews INTERNATIONAL

Cremation Division

The Standard of Excellence in Cremation Solutions

Units # 1, 2, + 3
(PI's 111-94, 1015-91, + 111-94A)

OPERATING & MAINTENANCE MANUAL

MODEL IE43-PPII
POWER-PAK II
With
SmokeBuster ™

2045 Sprint Boulevard • Apopka, Florida 32703 • 800-327-2831 • 407-886-5533 • Fax: 407-886-5990

TABLE OF CONTENTS

WARRANTY

Cremators and collateral equipment sold are warranted free from defects in workmanship and/or materials, under normal use and service, for one (1) year from date of shipment.

Matthews Cremation Division's obligation under this warranty is limited to the repair or replacement of any parts or part, f.o.b. Orlando, Florida, which may prove defective under normal use and service, within one (1) year from date of shipment, and which is found by our inspection to be thus defective.

This warranty shall not apply to any cremator and collateral equipment which has been repaired or altered outside our factory in any way so as, in our judgment, to affect its performance, safety, stability, and reliability. *No other express warranty is given.*

EXTERNAL CARE AND CLEANING

All cleaning should be done with the cremator off and completely cooled!

General Cleaning

The top of the cremator should be kept clean at all times. Accumulations of dust can adversely affect electrical components, which are sensitive to dust.

To clean the exterior of the cremator, use a vacuum cleaner, yard leaf blower and a whisk broom. Be careful not to step on any of the piping or electrical components when cleaning the top of the equipment.

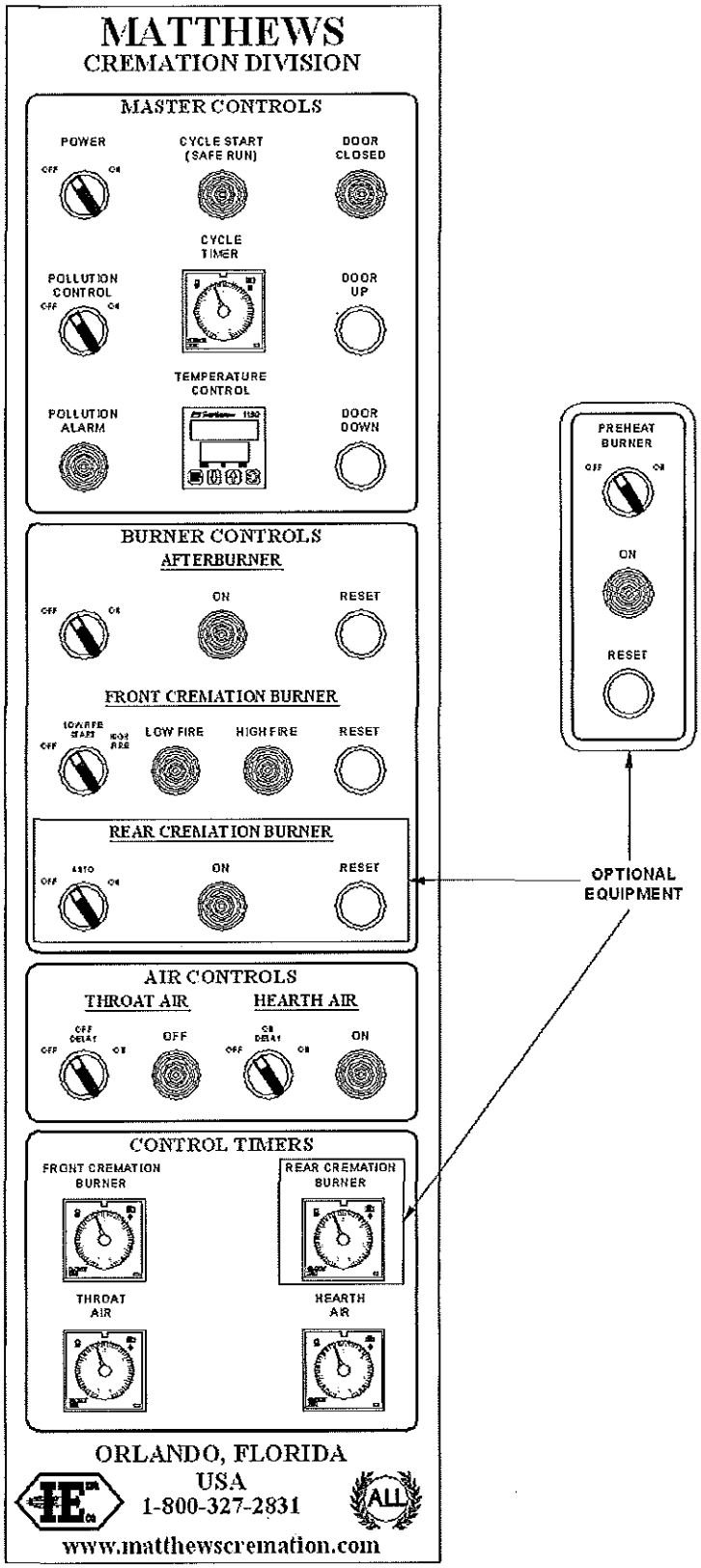
Painted Surfaces

The cremator is finished with a textured paint. If it is necessary to clean any painted surface use only warm water and a soft cloth or sponge. Do not use solvents.

Aluminum Diamond Plate Panels

Parts of the cremator may be covered with aluminum diamond plate. If it is necessary to clean the diamond plate, use soapy water and a soft cloth. Rinse with clean water and dab dry.

OPERATING PANEL



OPERATING PANEL DESCRIPTION

The operating panel may be mounted on the cremator or on the wall nearby. Below is a brief description of each item on the panel, starting at the top.

MASTER CONTROLS

POWER OFF/ON Switch
The POWER OFF/ON switch energizes the control circuits.

CYCLE START Illuminated Push Button [and SAFE RUN Light]
The green CYCLE START illuminated push button will start the blower(s) and initiate the cycle. Pushing this button during operation will reset the CYCLE TIMER. The SAFE RUN light will illuminate when the CYCLE timer is activated and safe operating conditions exist.

DOOR CLOSED Light
The green DOOR CLOSED light will illuminate when the front door is fully closed.

CYCLE Timer
The CYCLE timer controls the total cycle time before the automatic cool-down process starts.

TEMPERATURE CONTROLLER
The temperature controller detects the chamber temperature and adjusts the fuel flow rate to the burners to maintain proper temperature inside the cremator.

POLLUTION CONTROL OFF/ON Switch
The POLLUTION CONTROL OFF/ON switch activates the pollution control system (see Pollution Control Timer, page 9).

POLLUTION ALARM Light
The red POLLUTION ALARM light will illuminate when the pollution alarm has been activated (see Pollution Control Timer, page 9).

DOOR UP Push Button
The green DOOR UP push button will raise the front loading door.

DOOR DOWN Push Button
The red DOOR DOWN push button will lower the front loading door.

OPERATING PANEL DESCRIPTION (CON'T)

BURNER CONTROLS

AFTERBURNER OFF/ON Switch
The Afterburner OFF/ON switch is used to activate the afterburner.

AFTERBURNER ON Light
The amber AFTERBURNER ON light will illuminate when there is an established afterburner flame.

AFTERBURNER RESET Light (illuminated push button)
The red AFTERBURNER RESET light illuminates only if there is a problem with the burner lighting, or if the burner fails during the normal cycle. If the AFTERBURNER RESET light comes on, push the illuminated push button to reset the afterburner combustion control. If necessary, follow the troubleshooting procedures on page 29.

CREMATION BURNER 3-Position Switch
The CREMATION BURNER 3-position switch is used to activate the cremation burner in the low fire start mode or in the high fire mode. (See operating instructions, pages 19).

CREMATION BURNER LOW FIRE Light
The blue cremation burner LOW FIRE light will illuminate when the low fire mode of the cremation burner is established.

CREMATION BURNER HIGH FIRE Light
The white CREMATION BURNER HIGH FIRE light will illuminate when the cremation burner is in the high fire mode.

CREMATION BURNER RESET Light (illuminated push button)
The red CREMATION BURNER RESET light illuminates only if there is a problem with the burner lighting or if the burner fails during the normal cycle. If the CREMATION BURNER RESET light comes on, push the illuminated push button to reset the cremation burner combustion control. If necessary, follow the troubleshooting procedures on page 29.

OPERATING PANEL DESCRIPTION (CON'T)

AIR CONTROLS

THROAT AIR 3-Position Switch
The THROAT AIR 3-position switch activates the throat air in timer control mode or manual mode.

THROAT AIR OFF Light
The red THROAT AIR OFF light will illuminate when the THROAT AIR timer has timed to zero or the THROAT AIR switch is in the OFF position

HEARTH AIR 3-Position Switch
The HEARTH AIR 3-position switch activates the hearth air in timer control mode or manual mode.

HEARTH AIR LIGHT
The red HEARTH AIR LIGHT will illuminate when the HEARTH AIR TIMER has timed to zero or the HEARTH AIR SWITCH is in the ON position.

CONTROL TIMERS

CREMATION BURNER Timer
The CREMATION BURNER timer controls the amount of time you wish to delay increasing the firing rate after burner has started. (See operating instructions, pages 19, 20).

THROAT AIR Timer
The THROAT AIR timer controls the amount of time the throat air is open after the THROAT AIR switch is turned to the OFF DELAY position. (See the operating instructions, pages 19, 20).

HEARTH AIR Timer
The HEARTH AIR timer controls the amount of time from when the HEARTH AIR switch is turned to the ON DELAY position and the hearth air actually opens. (See operating instructions, pages 19, 20).

OPERATING PANEL DESCRIPTION (CON'T)

OPTIONAL EQUIPMENT

REAR CREMATION BURNER 3-Position Switch
The REAR CREMATION BURNER 3-position switch is used to activate the rear cremation burner in either the timer control mode or in the manual mode. (See operating instructions, pages 19, 20).

REAR CREMATION BURNER ON Light
The white REAR CREMATION BURNER ON light will illuminate when there is an established burner flame.

REAR CREMATION BURNER RESET Light (illuminated push button)
The red RESET light illuminates only if there is a problem with the burner lighting or if the burner fails during the normal cycle. If the RESET light comes on, push the illuminated push button to reset the combustion control. If necessary, follow the troubleshooting procedures on page 29.

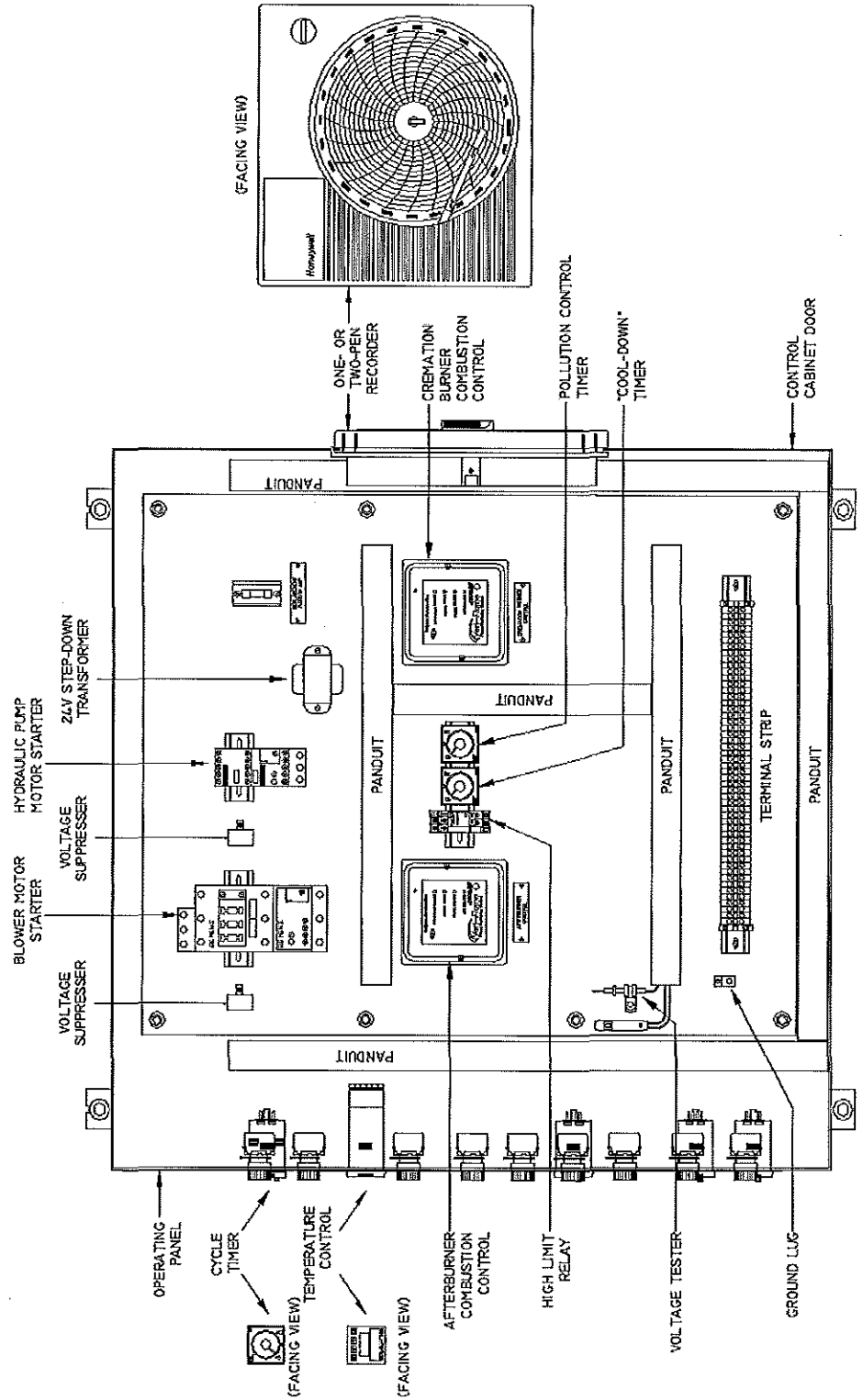
REAR CREMATION BURNER Timer
The REAR CREMATION BURNER timer controls the amount of time you wish to delay activation of the burner. (See operating instructions, pages 19, 20).

PREHEAT BURNER OFF/ON Switch
The PREHEAT BURNER OFF/ON switch is used to activate the preheat burner.

PREHEAT BURNER ON Light
The red PREHEAT BURNER ON light will illuminate when there is an established burner flame.

PREHEAT BURNER RESET Light (illuminated push button)
The red RESET light illuminates only if there is a problem with the burner lighting, or if the burner fails during the normal cycle. If the RESET light comes on, push the illuminated push button to reset the combustion control. If necessary, follow the troubleshooting procedures on page 29.

CONTROL CABINET



CONTROL CABINET DESCRIPTION

The electrical control cabinet is normally located on the front left or right side of the cremator or on the wall nearby.

Blower & Hydraulic Pump Motor Starters
The blower and hydraulic pump motor starters start the motors and ensure proper electrical consumption. Built-in thermal overload protection shuts off the motors if there are electrical supply problems or possible motor malfunctions. (See troubleshooting procedures on pages 29, 30.)

Burner Combustion Controls
The burner combustion controls use fuel valves, ignition transformers and flame detectors to ensure safe operation of the burners. The combustion controls are activated by switches and timers on the operating panel. If any component involved in the burner operation should fail, the combustion control will not allow the burner to fire. It will stop the program on a safety lockout shutdown and illuminate the appropriate red reset light on the operating panel. Each burner has a dedicated combustion control.

Cool-Down Timer
The Cool-Down Timer initiates the cool-down period when the Cycle Timer (page 4) has timed to zero. This timer is normally set for a 1 hour cooling cycle.

Pollution Control Timer
The Pollution Control Timer responds to a signal from the pollution control system. It shuts off the cremation burner(s) and hearth air and activates the throat air for 3½ minutes.

High Limit Relay
If the unit becomes too hot this relay will interrupt the safe run light and stop all burners.

Voltage Tester
The voltage tester is used to check the power running to any of the electrical terminals or components in the control cabinet. Excess wire is stored in the panduit beside the tester.

Ground Lug
The ground lug is the earth ground connection point for the control components.

CONTROL CABINET DESCRIPTION (CON'T)

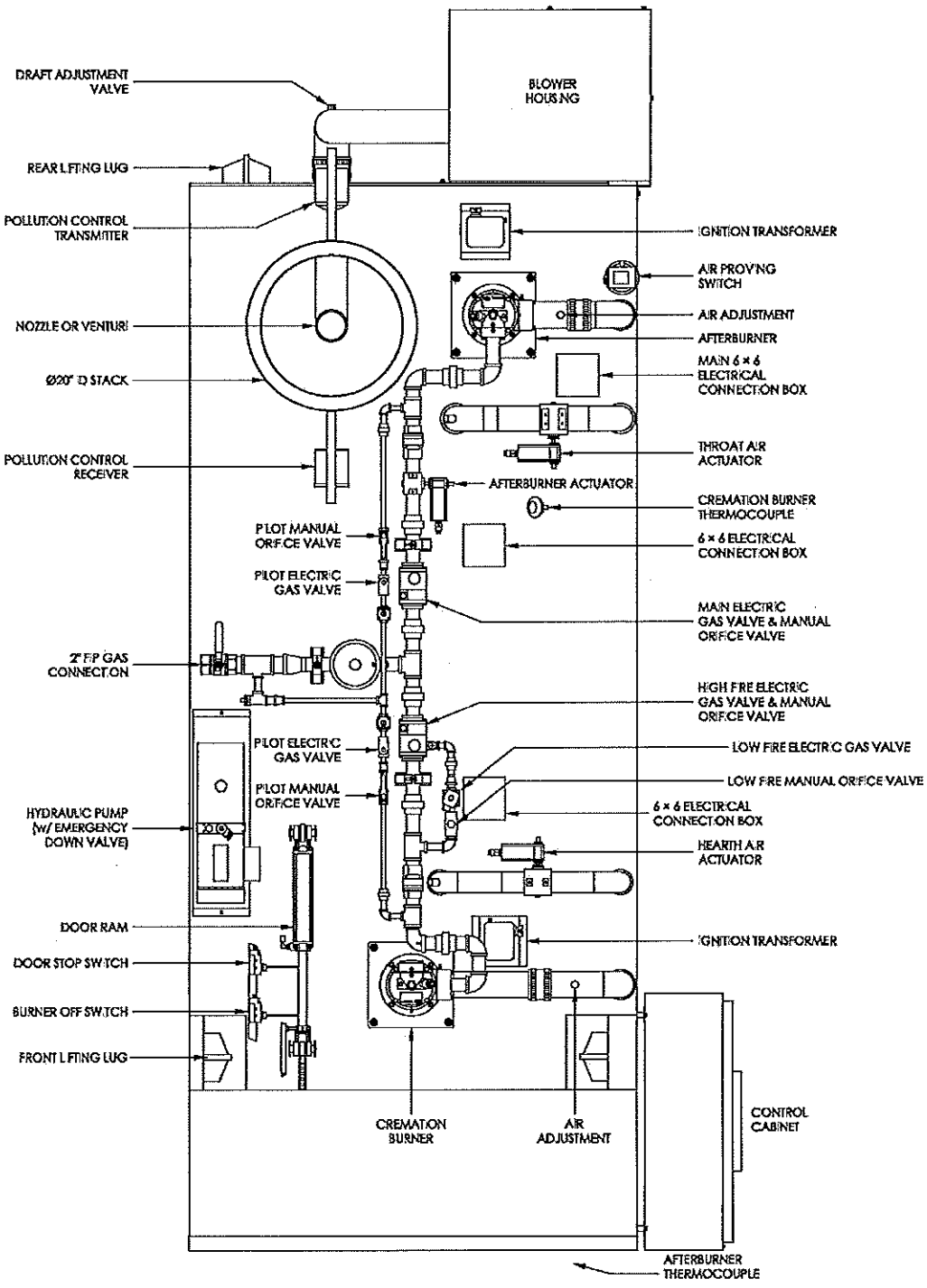
Terminal Strip
The terminal strip is a common junction point for the wiring used in the cremator's control system.

Panduit
Panduit is semi-flexible plastic conduit casing which keeps all the wiring in order.

Warning! Never touch or allow anything to touch the terminal strip. The terminals may be energized and injury could result.

One- or Two-Pen Recorder (optional, door of control cabinet)
The one- or two-pen circular recorder makes a permanent record of chamber temperatures during the cremation cycle. A one-pen recorder normally charts afterchamber temperature. A two-pen recorder charts afterchamber and cremation chamber temperatures.

TOP OF CREMATOR



TOP OF CREMATOR DESCRIPTION

BURNERS

All the burners are the same brand. They have connections for gas and air, spark plug and flame detector attachment. The gas/air mixture is ignited by the spark plug and watched by the flame detector, which uses ultraviolet sensing to ensure a safe and stable flame. The spark plug and flame detector require occasional cleaning (see page 27).

The cremation burner is on top in the middle front of the unit. It is fired in two stages: low fire and high fire. The firing rate is controlled by the CREMATION BURNER 3-position switch (page 5) and CREMATION BURNER TIMER (page 6) and the low fire and high fire gas valves. The low fire flame ignites the materials in the containers. Then for the remainder of the cremation the larger high fire flame is used.

The afterburner, beside the stack at the rear of the unit, is used to heat the afterchamber and minimize emissions. The afterburner is activated by the AFTERBURNER OFF/ON switch (page 5). The afterburner gas input is adjusted automatically by the temperature controller.

The rear cremation burner (if applicable) is behind the cremation burner. It is controlled by the REAR CREMATION BURNER 3-position switch (page 7) and the REAR CREMATION BURNER TIMER (page 7) and the main gas valve. The rear cremation burner is used for animal cremation to increase the burn rate of remains in the rear of the chamber.

The preheat burner (if applicable) is with the afterburner. The afterburner/preheat is a special oversized burner wit acts as both an afterburner and a preheat burner. It is controlled by the PREHEAT BURNER OFF/ON switch (page 7) and the main gas valve. The preheat burner is used to shorten the preheat time in locations with high preheat temperature requirements.

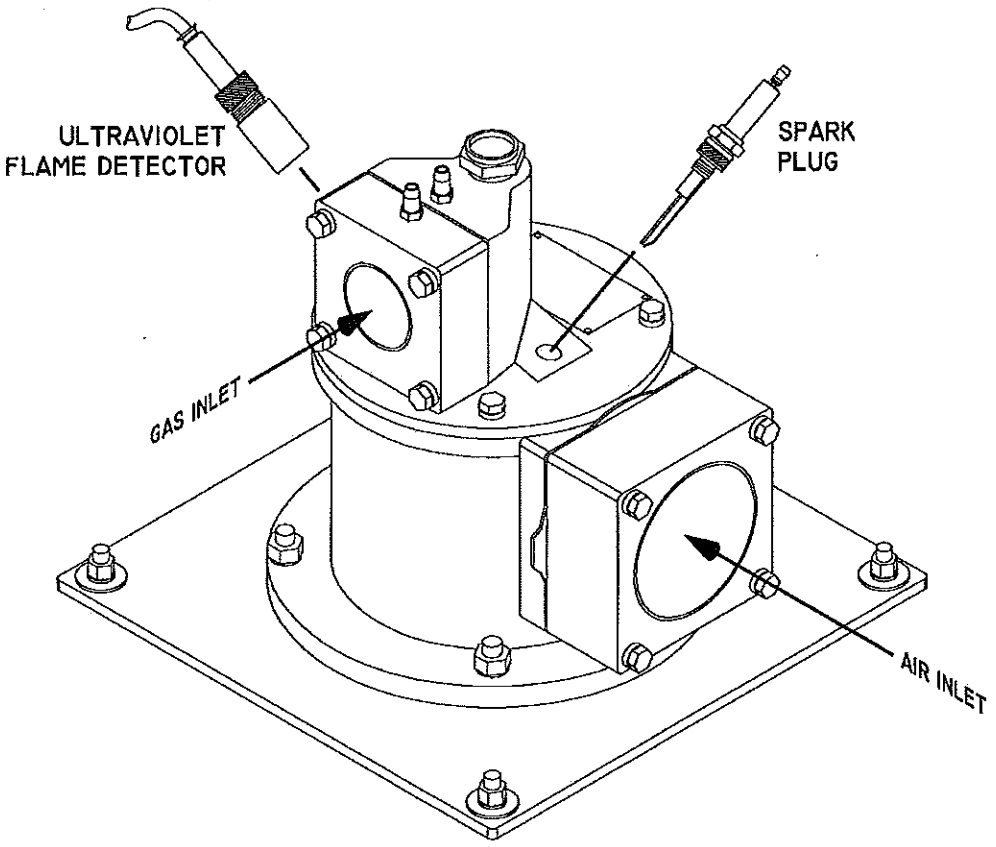
Electric Gas Valves
The electric gas valves allow gas to flow to the burners.

Afterburner Actuator
The afterburner actuator opens and closes the gas valve to adjust the flow of gas to the burner.

Manual Orifice Valves
The manual orifice valves are used to regulate the gas flow to the burners.

2" FIP Gas Connection
The gas connection is where the facility's gas line is connected to the machine.

BURNER DRAWING



TOP OF CREMATOR DESCRIPTION (CON'T)

AIR SYSTEM

Blower
The blower provides air for combustion, maintains a negative draft through the interior chambers, and cools the exhaust gases before they exit the vent stack.

Throat Air Actuator & Valve
The throat air actuator opens and closes the throat air valve. It is controlled by the THROAT AIR 3-position switch and the THROAT AIR timer (page 6). The throat air is generally used during the first half of the cremation cycle to provide additional combustion air in the afterchamber.

Hearth Air Actuator & Valve
The hearth air actuator opens and closes the hearth air valve. It is controlled by the HEARTH AIR 3-position switch and the HEARTH AIR timer (page 6). The hearth air is injected along the sides of the cremation chamber to speed the cremation rate and cooldown the cremated remains at the end of the cycle. Hearth air is generally used during the second half of the cremation cycle.

Air Proving Switch
The air proving switch checks for sufficient air pressure for combustion, cooling and draft. If there is an air supply problem, this switch will discontinue the green SAFE RUN (CYCLE START) light (page 4) and shut off the burners.

ELECTRICAL SYSTEM

WARNING! Be certain the power supply is off before servicing any of the electrical components.

6 × 6 Electrical Boxes and Incoming Power Wires
The three 6 × 6 electrical boxes contain the incoming wiring connections for all the cremator's electrical components. In the rear box are two black wires (single phase) or three black wires (three-phase) for the incoming power and a grounding lug for the equipment ground connection. Control circuit incoming power connections are also supplied.

Ignition Transformers
The ignition transformers generate high voltage for the burner spark plugs.

Thermocouples
Thermocouples provide the temperature controller(s) and (optional) pen recorder with temperature input signals. On a standard unit, they are located in

TOP OF CREMATOR DESCRIPTION (CON'T)

the front of the unit under the diamond plate (accessable throught removeable plate) for afterburner thermocouple and on the top of the unit near the afterburner for the cremation chamber thermocouple. This unit uses a **type-K** thermocouple.

Pollution Control System (PCS)
The pollution control system SmokeBuster ™ monitors the clarity of exhaust gases as they enter the vent stack. The PCS consists of a transmitter and a receiver mounted on opposite sides of the stack. The transmitter shines a light through the stack to the receiver. If a pollution condition should arise, the PCS detects it and immediately takes measures to correct it. Both the transmitter and receiver have lenses which must occasionally be cleaned (see page 27).

Hydraulic Motor
The hydraulic motor powers the door system of the cremator. It is equipped with valves that adjust the speed of the door travel, a door down solenoid valve and an emergency door down bypass valve.

Burner Off Limit Switch
The burner off switch shuts off the cremation burner(s) when the door is raised higher than 6".

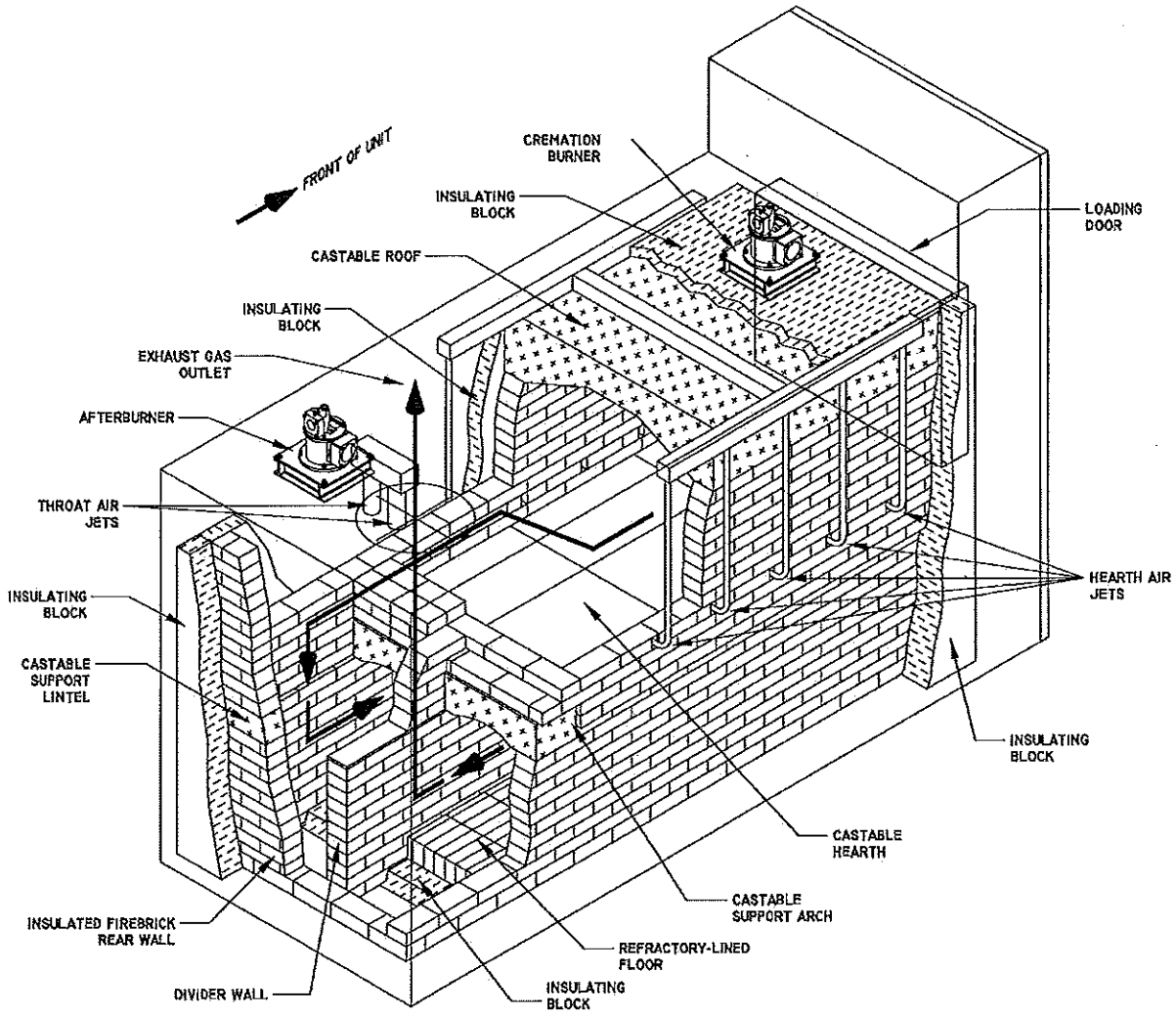
Door Stop Switch
The door stop switch stops the hydraulic pump when the door reaches its fully raised position.

REFRACTORY (BRICK AND CASTABLES)

Several types of high-temperature refractory are used in our cremation equipment to give it the greatest efficiency and durability available today. Refractory wears according to the use and care it is given. Normal wear in refractory will produce expansion cracks in the bricks and cast sections. Spalling, another normal wear condition, has the appearance of peeling. These "peelings" eventually fall away, exposing new refractory. When wear or spalling decays the surface of the refractory to a depth of 1½ to 2", it is time to consider repairs.

Refractory maintenance and inspection procedures are described on page 28. If there are questionable sections of refractory in the cremation equipment, please take photographs and send the photos to our service department. We will evaluate the condition and advise you of our recommendation in writing or by telephone.

REFRACTORY DRAWING



OPERATION OF THE EQUIPMENT

LOADING PROCEDURES FOR HUMAN REMAINS

WARNING! DO NOT EXTEND ANY PART OF YOUR BODY BENEATH THE OVERHEAD DOOR! THIS COULD CAUSE SERIOUS INJURY!

1. Open the cremation chamber loading door until the spring-loaded door lock engages.

2. Push in the manual door lock on the opposite side of the loading door (see the drawing on the next page).

3. Place a cardboard roller into the cremation chamber using a roller/disk placement tool. Place an identification disc into the cremation chamber (front right side) using the roller/disc placement tool.

4. Roll the cremation container off the loading table or cart onto the roller and into the chamber (feet first).

5. If the cremation container needs to go farther into the chamber, use the clean- out tool, stoking tool or the roller/disk placement tool to push it in. Do not lean under the loading door!

6. Close the cremation chamber loading door by pulling out the manual door lock. Then, while pulling out the handle of the spring-loaded door lock, press the DOOR DOWN button on the operating panel. Once the pin on the door lock makes contact with the 1½" stainless steel strip on the loading door, release the handle (see the drawing on the next page).

LOADING PROCEDURES FOR ANIMAL REMAINS

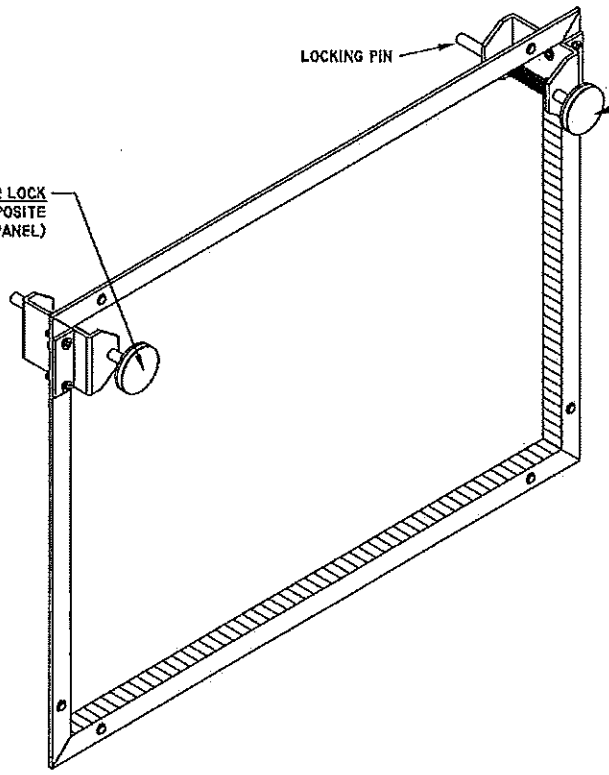
Follow steps 1 and 2 above.

3. Place an identification disc into the cremation chamber (front right side) using the roller/disc placement tool. (If applicable).

4. Push the animal remains off the loading cart or tray and into the chamber using the clean-out tool, stoking tool or the roller/disk placement tool.

5. Close the cremation chamber loading door by pulling out the manual door lock. Then, while pulling out the handle of the spring-loaded door lock, press the DOOR DOWN button on the operating panel. Once the pin on the door lock makes contact with the 1½" stainless steel strip on the loading door, release the handle (see the drawing on the next page).

DOOR LOCKS


LOCKING PIN
SPRING-LOADED DOOR LOCK
(ON SIDE OF UNIT WITH
ELECTRICAL PANEL)
ENGAGES AUTOMATICALLY WHEN
LOADING DOOR FULLY OPENS.
TO CLOSE LOADING DOOR:
1) PULL OUT MANUAL DOOR LOCK
HANDLE.
2) PULL OUT AND HOLD SPRING-
LOADED DOOR LOCK HANDLE.
3) PRESS DOOR DOWN BUTTON.
4) ONCE METAL STRIP ON DOOR
PASSES LOCKING PIN ON
SPRING-LOADED LOCK, RELEASE
HANDLE.
MANUAL DOOR LOCK
(ON SIDE OF UNIT OPPOSITE
ELECTRICAL PANEL)
OPERATOR MUST PUSH IN TO
ENGAGE ONCE LOADING DOOR
IS FULLY OPEN.
PULL OUT HANDLE PRIOR TO
CLOSING LOADING DOOR.

OPERATION OF THE EQUIPMENT (CON'T)

It's important to prioritize the cremation workload by weight and container type. Heavier bodies should be cremated first. Always exercise caution when loading flammable containers and remains into a hot cremation chamber. The size of the body, the type of casket or enclosure, and the starting temperature of the cremator may make cycle changes necessary.

WARNING! DO NOT EXTEND ANY PART OF YOUR BODY BENEATH THE OVERHEAD DOOR! THIS COULD CAUSE SERIOUS INJURY!

1. Adjust the timers to the following settings (for a typical cremation cycle):

CYCLE TIMER	180 minutes (3 hours)
(FRONT) CREMATION BURNER	30 minutes (1/2 hour) delay
HEARTH AIR	60 minutes (1 hour) delay
REAR CREMATION BURNER (if applicable)	60 minutes (1 hour) delay
THROAT AIR	90 minutes (1-1/2 hours)

2. Turn the POWER OFF/ON switch to the ON position.

3. Push the DOOR UP push button. Load the chamber. Close the door with the DOOR DOWN push button. In some locations, this step must be performed after the preheat period.

4. Set the AFTERBURNER switch to ON. If your cremator has a PREHEAT BURNER, turn the PREHEAT BURNER switch to ON.

5. Turn the POLLUTION CONTROL OFF/ON switch to ON. This activates the pollution control system.

6. Press the CYCLE START Illuminated push button.

   a. The blower will start and the SAFE RUN and DOOR CLOSED lights should illuminate, indicating that all safety limits have been met (i.e., proper temperature and air pressure). The burners will not fire unless these circuits are made.

   b. The pollution control system, including the pollution control timer, will test itself, and keep the POLLUTION ALARM light on for 3½ minutes.

   c. The afterburner will ignite within 30 to 90 seconds and will run for the time set on the CYCLE TIMER.

OPERATION OF THE EQUIPMENT (CON'T)

7. This part of the cycle is the preheat period. When the afterburner has run for 30 minutes the chamber will be hot enough to begin the cremation. More time may be necessary to reach the required minimum temperature in some locations.

   The preheat time can be varied as necessary. However, it should never be less than 15 minutes.

8. After the preheat period is over it is time to start the cremation. Turn the CREMATION BURNER switch to LOW FIRE START, the THROAT AIR switch to OFF DELAY, the HEARTH AIR switch to ON DELAY. Also, if applicable, turn the REAR CREMATION BURNER switch to AUTO.

   a. The cremation burner will ignite in LOW FIRE MODE to ignite the highly flammable materials in the chamber. Also, the throat air valve will open.

   b. Thirty minutes after the cremation burner LOW FIRE MODE starts, the high fire mode will activate, increasing the firing rate to speed up the cremation. The time differential between low fire and high fire can be varied by changing the CREMATION BURNER timer setting or by turning the CREMATION BURNER switch to the HIGH FIRE position when desired.

   c. Sixty minutes after the cremation starts, the HEARTH AIR DELAY timer will open the hearth air valve, allowing air to blow across the cremation hearth to speed up the cremation. Hearth air also helps cool the cremated remains so that they may be safely removed at the end of the cremation cycle.

   Also, the REAR CREMATION BURNER timer will activate the rear cremation burner to help speed up the cremation (if applicable).

   d. Ninety minutes after the cremation starts, the THROAT AIR timer will close the throat air valve. The throat air is only needed during the first half of the cycle to help burn the gases from the cremation.

   e. Three hours after start-up, the burners will shut off. This cycle time is determined by the CYCLE timer and can be extended or shortened as necessary to complete the cremation.

   f. The blower will continue to run for cooling purposes until the automatic cooling cycle is over, or until the POWER ON switch is turned to the OFF position.

OPERATION OF THE EQUIPMENT (CON'T)

Visual Inspections
We recommend periodic visual inspections of the progress of the cremation to ensure that the burners stay activated long enough to complete the cremation.

CAUTION: DO NOT OPEN DOOR DURING THE FIRST 30 MINUTES OF THE CREMATION PROCESS.

Repositioning During the Cremation Cycle
Repositioning the remains and container remnants during the cremation cycle is not required, but it will shorten the cremation process. Reposition when the cremation is approximately 75% complete. Ensure the throat air is on during the repositioning procedure. This will help minimize any emissions created by repositioning.

Cool Down Before Removal
As soon as the first cremation of the day has been completed, shut all the burners off. Cool the remains before removal by resetting the CYCLE timer and activating the hearth air by placing the HEARTH AIR switch on the ON position. Cool the remains for approximately 15-20 minutes before removing them from the cremation chamber.

Clean-Out
Make sure the cremated remains collection pan is in place beneath the clean-out hopper. Open the loading door and carefully transfer all the remains to the front of the cremation chamber using the provided clean-out tools. Remove the remains by transferring them into the clean-out hopper in front of the cremation chamber.

Cool Down Between Successive Cremations
After removing all remains from the hearth, make sure that the CYCLE timer has sufficient time remaining and that all burners are off. Activate the HEARTH AIR by placing the switch in the ON position and allow the lining to cool for 15 minutes. With each successive cremation performed the same day, increase the cool down times.

Minimum cool down time between:

1st and 2nd cremations:	15 minutes
2nd and 3rd cremations:	20-25 minutes
3rd and 4th cremations:	25-30 minutes
4th and 5th cremations:	30+ minutes

OPERATION OF THE EQUIPMENT (CON'T)

Preheat For Successive Cremations
Reset the CYCLE timer and follow general operating instructions with one exception: Do not load the case into the cremation chamber until the afterburner has preheated the afterchamber for 20 minutes (or as needed to reach the minimum temperature requirement). With each successive cremation performed the same day, preheat times before loading may be decreased. If you cremator is equipped with a supplemental preheat burner, it may not be necessary to turn it on.

Minimum Preheat time before loading:

2nd cremation:	20 minutes
3rd cremation:	15 minutes
4th cremation:	10 minutes
5th cremation:	< 10 minutes

Ensure all the air controls are in the OFF position when preheating.

Pacemakers
Pacemakers may burst during the cremation cycle and damage the equipment. Pacemakers should be removed by the funeral director prior to cremation. To prevent injury in the event that a pacemaker is still in the body, do not open the door during the first 30 minutes of the cremation.

DETAILED OPERATING INSTUCTIONS

Different body sizes and container types may require changes to the standard timer settings described in the general operating instructions. Below are guidelines for how different container types and body sizes should be cremated. If there are questions or special cases not discussed in this manual, call our service department for help at 1-800-327-2831.

DIFFERENT CASKET TYPES

Highly Polished Wood Caskets: Highly polished wood caskets should be treated carefully because of the flammable coatings used on them. These containers should be the first cremation of the day. Extend the CREMATION BURNER delay timer setting from a 30-minute delay to a 45-minute delay. This should prevent combustion of the container from occurring too rapidly, which might overheat the cremation equipment.

Plain-Finished Wood Caskets: When the cremator is already hot, plain-finished wood caskets should be treated in much the same way as highly polished wood caskets. Increase the delay setting of the CREMATION BURNER delay timer from 30 minutes to 45 minutes. This will help to keep the cremator from becoming too hot.

Particle Board Containers: Particle board containers are commonly used for cremation. These containers may be cremated in any sequence, using the standard cycle settings on the timers.

Cardboard Containers: Cardboard containers are also very popular and may be cremated in any sequence. Because the cardboard container burns away very quickly, set the CREMATION BURNER timer for 10 minutes delay. This will bring the cremation burner high fire on sooner and will speed up the cremation process.

Metal Containers: Metal containers should be prioritized as the last cremation of the day. Remove the lid prior to placing it into the cremation chamber. The metal shell will not be consumed and must be retrieved from the cremation chamber after the cycle is complete. A minimum of 2 hours cooling should be allowed before the metal shell is retrieved. Heat protective gloves should be worn when retrieving the shell.

Fiberglass Containers: Fiberglass containers must be refused for cremation. Such containers are extremely flammable, and will damage the cremation equipment.

DETAILED OPERATING INSTUCTIONS (CON'T.)

Pouches: Pouches 2 to 4 mils thick (the thicknesses of a balloon) do not usually require special precautions and may be cremated using the same procedures as cardboard containers. Thicker pouches, such as those used by the military, are an exception. Heavy pouches often cremate at an unusually rapid rate due to the high BTU content of the material. Therefore it is necessary to cremate a heavy pouch the same way you would a large body.

SPECIAL INSTRUCTIONS FOR LARGE REMAINS

Please consult with our service department 1-800-327-2831 before cremating bodies or animal remains larger than 300 pounds.

The cremator should be cool, and this cremation should be the first of the day, or the first one within 12 hours. Please note that a large remains cremation contains a large amount of fuel. Therefore these guidelines should be followed.

1. Make the following adjustments on these timers:

    a. Set the CYCLE timer to 5 hours.
    b. Set the AFTERBURNER switch to ON.
    c. Set the CREMATION BURNER switch to OFF
    d. Set the THROAT AIR switch and the HEARTH AIR to the off position for preheat.

2. The afterburner will ignite shortly after the POWER ON switch is turned ON and the CYCLE START button is pushed. The green SAFE RUN light must come on or the afterburner will not light.

3. One half hour later, set the CREMATION BURNER switch to LOW FIRE START.

4. Set the THROAT AIR 3-position to ON.

5. After the case has ignited, turn the CREMATION BURNER switch to OFF and allow the remains to burn on their own until the cremation has been reduced to approximately a normal size case.

6. After the cremation has been reduced to a normal size case, restart the cremation burner by turning the CREMATION BURNER switch to the ON position.

7. When cremating large remains visual inspections of the progress of the cremation should be made occasionally to insure that a gradual combustion rate has been established.

AFTER THE CREMATION

The following information is provided following the recommendations for human cremation set forth by the Cremation Association of North America (CANA). If you would like to receive CANA's Complete Guide to Correct Crematory Procedures or are interested in becoming a member of CANA, please contact the CANA Administrative Office at 401 N. Michigan Ave.; Chicago, IL 60611; phone no. (312) 644-6610; fax no. (312) 321-4098; e-mail CANA@sba.com.

Removal of Cremated Remains
When the cremation cycle is complete and the unit has cooled down sufficiently (20-30 minutes) the cremated remains can be removed from the cremation chamber. Leave the blower on during the removal process to ensure that dust and heat are drawn away from the operator and into the machine. Using the long removal broom, gently brush the cremated remains into the hopper and ashpan. Be sure to remove all cremated remains and ID tag from the cremation chamber. Lower the front door immediately, to avoid cooling the cremation chamber too quickly. Carefully transfer the remains from the ashpan to the upper tray of the processor or to a flat tray for cooling.

Processing the Cremated Remains
Keep the ID tag with the remains at all times. Prior to processing, most metallic particles can be removed from the cremated remains with the hand magnet. The magnet should be moved slowly throughout the remains to pick up ferrous particles. Squeeze the trigger to release the particles from the magnet. Metal trash cans are recommended; the particles are often too hot to place in plastic trash cans.

Processing (size reduction of the bone fragments) is often required by law and is recommended, especially when the remains are to be scattered. Processing should be performed with an electric cremains processor. Processing is recommended for two reasons: (1) for ease in filling the urn, and (2) for a more acceptable appearance of the cremated remains. Be sure all remains are removed from the processor after each cycle. If you would like information on processing equipment, contact the factory sales department.

Packaging Remains and Shipping
Packaging: Keep proper identification with the remains at all times, so no mistake can be made as to the identity of the remains. If a permanent urn is to be used, fill the provided plastic liner and seal the top of the bag after filling, using the provided twist tie, and then close the urn. If a temporary container is to be used, use one with a capacity of at least 190 cubic inches. Plastic, metal or cardboard may be used for temporary containers; however, plastic is best for shipping and handling, because it will not tear or dent. Fill the temporary container in the same manner described above for filling an urn. If the remains do not completely fill the space provided in the urn or temporary container, use

AFTER THE CREMATION (CON'T)

a suitable packing material to take up the excess space and prevent shifting of the remains inside the container. Packing should be placed outside of the plastic liner, not inside.

Place the urn or temporary container in a suitable mailer if it is to be mailed. Place an identification label on both the outside of the temporary container and the outside of the mailer, in case the two are separated during mailing.

Shipping: If the remains are to be shipped back to the family, funeral home, or cemetery for final disposition be sure to send the remains using registered mail with a "Return Receipt Requested." Keep the post office receipt in the deceased's file.

MAINTENANCE

Quarterly Maintenance

WARNING! TURN OFF THE POWER SUPPLY AND SHUT OFF THE GAS SUPPLY TO THE CREMATION EQUIPMENT BEFORE PERFORMING ANY MAINTENANCE.

WARNING! IF FOR ANY REASON ACCESS IS REQUIRED BENEATH THE CREMATION CHAMBER DOOR OR INSIDE THE CREMATION CHAMBER, MAKE SURE THE DOOR LOCKS ARE ENGAGED (REFER TO DRAWING ON PAGE 18).

1. Clean Spark Plugs: Unscrew each spark plug from its burner. Clean the end of the spark plug electrode and ground rod with fine steel wool or fine sandpaper. Remove any soot or carbon buildup. After cleaning, reset the spark plug gap (the distance between the electrode and ground rod) to 1/8" or 3/16".

2. Clean Flame Detectors: Loosen the aluminum nut attaching the flame detector to the burner base. Locate the lens inside, at the end with the attachment nut. Clean the lens with a dry cotton cloth or tissue, removing any soot or carbon buildup. After cleaning, reattach to the burner by tightening the aluminum nut "hand tight, only."

3. Clean and Adjust Pollution Control System: Use a soft cloth and wipe off both the transmitter bulb and the receiving lens. If the lenses do not come completely clean, a window cleaning fluid may be required. To adjust the PCS:

a. Turn the POWER ON/OFF and POLLUTION CONTROL ON/OFF switches ON.
b. Place the shaded plastic opacity plate, hanging on a chain from the PCS transmitter, over the center of the transmitter bulb.
c. Turn the round adjustment knob (on the transmitter back plate) counterclockwise, dimming the light until the receiver starts its "buzzing" alarm. Then very slowly turn the knob back clockwise, brightening the light just until the receiver stops buzzing.

4. Inspect Door System: The loading door is lifted by a chain attached to sprockets. The sprockets are rotated by another chain attached to a hydraulic piston. The door system should be inspected every 400 cremation cycles.

a. Inspect the chains for wear, dryness, nicks, bowing and stretching.
b. Inspect the master links (connection links at both ends of a chain) for wear, dryness, nicks, bowing and stretching.
c. Check all chains' points of connection on the piston, sprockets and door for wear and abnormalities.
d. Inspect the main drive shaft for wear, rust, bowing and abnormalities.

MAINTENANCE (CON'T)

e. Inspect all sprockets for wear, dryness, missing teeth, chain connections and shaft key placement.
f. Check the shafts bearings for wear, dryness and stretching.
g. Inspect the piston for leaks, connections to chain and abnormalities.
h. Inspect hydraulic lines for leaks, bends and crimps.

Replace any worn or questionable part as needed, chains every 2,000 cycles or sooner.

Annual Maintenance

WARNING! TURN OFF THE POWER SUPPLY AND SHUT OFF THE GAS SUPPLY TO THE CREMATION EQUIPMENT BEFORE PERFORMING ANY MAINTENANCE. IF FOR ANY REASON ACCESS IS REQUIRED BENEATH THE CREMATION CHAMBER DOOR OR INSIDE THE CREMATION CHAMBER, MAKE SURE THE DOOR LOCKS ARE ENGAGED (REFER TO DRAWING ON PAGE 18).

1. **Lubricate Blower Motor:** Locate the grease fittings on the motor and lubricate them with an all-purpose grease.

2. **Inspect Refractory:** Refractory should be inspected and evaluated annually. Check to be sure no areas of refractory have fallen away to expose the steel structure. Refractory in the interior chambers is a minimum of 4½" thick. General wear or spalling as deep as 2" can be tolerated, but should be noted for future repairs. Wear or spalling more than 2" deep should be repaired as soon as possible. Consult the factory for further instructions.

   a. Inspect Refractory in the Cremation Chamber: Enter the cremation chamber with a flashlight and inspect the refractory throughout the chamber.
   b. Inspect Refractory in the Main Loading Door: To inspect the refractory on the inside of the main loading door, one person should be inside the cremation chamber with a flashlight, while a second person stands outside the equipment and partially closes the loading door behind the first person. This allows the person inside the chamber to have a good look at the condition of the firebrick in the loading door.
   c. Inspect Refractory in the Afterchamber: To gain access to the afterchamber remove both plates at the rear of the unit. After removing all 3/8" nuts and pulling off the plates there will be insulation to remove, then a dry fitted refractory wall which must also be removed to gain access. Particular attention should be paid to the center divider wall, baffles and supporting arches.

TROUBLESHOOTING

WARNING! TURN OFF THE POWER SUPPLY BEFORE PERFORMING ANY SERVICE ON THIS EQUIPMENT.

Blower

1. If the Blower Does Not Start:

a. Check that the power source or supply breaker has not tripped off.

b. Reset the motor starter in the control panel by pressing the reset bar.

c. Check the 5-amp fuse located in the electrical control cabinet on the side of the cremation equipment.

d. Consult with the manufacturer for technical advice.

2. If the Blower Does Not Stop Automatically:

a. With the CYCLE timer zeroed out, ensure that the internal cool-down timer (page 9) is timing down. If not, the timer is malfunctioning and should be replaced at the earliest convenience.

Burners

1. If Burners Will Not Fire:

a. Check to be sure the green BLOWER ON light is on.

b. If not, check the air proving switch on top of the cremation equipment to be sure it is proving that the blower is providing sufficient air.

c. Check that the transmitter bulb and the receiving lenses on the pollution control system are clean (see page 27). Note: This procedure applies to the cremation burner only.

d. With the POWER ON/OFF switch OFF, turn the pollution control timer (page 9) all the way counterclockwise to the zero position. If this corrects the burner failure, leave this timer at zero and order a replacement timer (see parts list, page 33). If this does not correct the burner failure, reset the timer to 3½ minutes.

TROUBLESHOOTING (CON'T)

Burners (Con't.)

2. If Either Burner Reset Light Should Illuminate:

a. Press the Illuminated RED RESET button on the applicable burner control.

b. Clean the burner spark plug on the burner that has failed, as explained in the quarterly maintenance procedures (page 27).

c. Clean the ultraviolet flame detector on the burner that has failed, as explained in the quarterly maintenance procedures (page 27).

d. If the above steps fail, consult with the manufacturer for technical support.

Thermocouple(s)

1. If the Temperature Controller Shows OPEN in the Display:

a. Check the wiring from the thermocouple to the temperature controller to ensure no wires are touching and that all wiring connections are tight.

Note: you do not have to shut off the power to the cremator to check thermocouple wires.

b. Remove the cap and verify that the yellow wire is firmly connected to the positive terminal and the red wire is firmly connected to the negative terminal.

c. Remove the entire thermocouple assembly and inspect the casing. If the casing is cracked or ruptured, replace it (see parts list, page 33).

d. Remove and inspect the thermocouple insert for cracks or separation points in the entwined metal at its tip. If the insert is damaged, replace it (see parts list, page 33).

CREMATORY RECORDS, FORMS, AND FILES

Crematory Records for Human Cremation

A permanent ledger should be kept in the crematory area, in addition to the files kept in your office. The ledger kept in the crematory should contain such information as:

1. Name of deceased.
2. Arrival date of deceased.
3. Funeral home handling the service and the name of the person who delivered the remains to the crematory.
4. Date that authorization is given to cremate, whether by the family or the medical examiner's office.
5. The number you assign to this cremation.
6. The family's wish for final disposition of the remains: return, scattering or mailing to a cemetery.
7. Any personal property received with the deceased, or any personal property to be returned to the family with the remains.
8. The type of urn or container to be used.
9. Date and time of the cremation and the name of the person performing the cremation.
10. The method of return: whether it is to be by US Postal Service or by hand.

Cremation Forms

Various forms are used in crematories and are often required by state agencies or recommended by CANA. Listed below are some of these forms. Consult your state and local agencies or CANA for specific requirements.

Cremation Notification: This form is used to document the initial call for cremation and often gives vital information such as name of deceased, family's name, family contact, place of death, and time of death.

Authorization for Removal: This form is used to give the crematory authorization to pick up the deceased and return the body to the crematory.

Cremation Authorization: This is a form filled out by a family member or next of kin giving the crematory legal authorization to cremate the deceased. Another authorization may be required by the state or medical examiner's office before the cremation can actually take place.

CREMATORY RECORDS, FORMS, AND FILES (CON'T)

Disposition Form: This form is often used to document the family's request for the method of disposition: whether it is to be scattering, return to the family, or mailing to a cemetery.

Release of Remains: This form gives the crematory proper authorization to release the remains back to the family, or as otherwise stipulated.

Certificate of Cremation: This is a document usually given to the family certifying that the cremation of the deceased took place at a specific date and time.

Various Files to Be Kept: A permanent file should be kept in your office for each cremation performed. A copy of the information recorded in your crematory ledger should be placed in a permanent file for future reference. Copies of the various forms used in handling the cremation should also be kept in the permanent file for future reference.

REPLACEMENT PARTS LIST

	Description	Part Number
*	Combustion Control, Afterburner or Cremation Burner	17-0658
*	Flame Detector, Ultraviolet	12-1252
*	Light Bulbs, Operating Panel (MB155)	17-04011
*	Spark Plug, Therm-Jet	17-3703
	Switch, Air Proving	15-2227
	Switch, Limit (Door Stop or Burner Off)	17-4055
*	Thermocouple, K-Type, 24"	17-44405
	Thermocouple, K-Type, 18" (Optional)	17-44404
*	OMRON Timer (Universal)	17-45691
	Pollution Control Timer, (Eagle)	17-4650
	Bulb, Pollution Control Transmitter	17-0350
	Receiver, Pollution Control	17-2752
	Wire, Ignition GT015	29-0700
	Terminal, Ignition, 90 Deg.	29-0855
	Terminal, Ignition, Ring Type	29-0400

* Spares of these parts should be kept at your facility.