

# WAVELENGTH

Entomologic Microwave Treatment Systems™



◆ **OPERATOR'S MANUAL** ◆  
PROTO II - GE575  
Microwave Generator Unit

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Entomologic Microwave Treatment Systems  
P.O. Box 201, Pirtleville, AZ 85626 USA

**PROTO2 GE575 & PROTO3 GE1150 PEST DEVICE**  
**Heritage Single and Modern Dual Port Thermal Pest Treatment Units**  
**Product usage label, Operations Manual and Microwave Treatment Protocols**

EPA Establishment no. 68965-AZ-001  
EPA Product Registration no. 068965

P.O. Box 201, Pirtleville, AZ 85626 USA

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**WARNING**

This device is capable of causing serious injury or death to living things. This device, outside the limits it was tested to can cause serious damage to electronic equipment that is not protected from its emissions. These devices include HEART PACEMAKERS and other LIFE supporting equipment. This equipment generates uses and can radiate radio frequency energy and if not used properly may cause interference with other RF devices such as television, radio and the like. If interference occurs, re-orient the equipment, place shields between the equipment and the receiver, or terminate operation of the device.

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# Proto2 GE575 Single Port and Proto3 GE1150 Dual Port Pest Device

## Product Label, Directions for Use & Disclaimer

### General Data on the use of this device for the control of wood destroying pests & fungi

This pest device has been designed for the localized treatment of termites, fungi and wood destroying beetle larva living within seasoned hard or soft wood timbers and framing of furniture & structures. It is capable of thermal treatment up to 6” in depth, this includes but is not limited to treatment of accessible infestation and infection concealed within inaccessible wall areas and voids constructed of masonry, wood, wood products, acrylic plastic and glass. Treatment will not penetrate metal or metal byproducts. Do not apply directly to metal, steel wool, rubber or vinyl objects.

### Controllable Pests & Organisms

<b><u>Dampwood Termites</u></b> ( <b>Zootermopsis</b> ) <b>Heterotermes)</b>	<b><u>Drywood Termites</u></b> ( <b>Kalotermes, Incisitermes</b> )	<b><u>Subterranean Termites</u></b> ( <b>Reticulitermes,</b>
<b><u>Formosan Termites</u></b> ( <b>Coptotermes</b> )	<b><u>Powderpost Beetles</u></b> ( <b>Lycidae</b> ) (Pupa & Larvae stages only)	<b><u>“False” Powderpost Beetles</u></b> ( <b>Bostrichidae</b> ) (Pupa & Larvae stages only)
<b><u>Furniture &amp; Deathwatch Beetles</u></b> ( <b>Anobiidae</b> ) (Pupa & Larvae stages only)		<b><u>Wood Destroying Fungi</u></b> ( <b>Brown Rot &amp; White Rot</b> )

### Identify Target Pest & Location to be Treated.

Locate wood destroying pest infestation or fungi infection by performing a complete thorough inspection of structure or item to be treated. Use professional expertise or that of a local professional in conjunction with tools of assistance; such as, moisture meters, sounding devices, inner wall bioscopes, calibrated frequency meters or other practical means to locate the target pest or fungi as needed. Upon location of target infestation or infection, obtain applicable signed permits or disclaimers as needed and schedule treatment.

**Treatment Preparation;** Read the entire label and Operator’s Manual before using this device. Remove from the structure or area to be treated, all persons, domestic animals or pets present within a 30-foot radius of treatment site. This includes spaces, above, below, attached, nonattached or adjacent too, such as multi level apartment units or adjacent dwellings that reside within 30 feet of the treatment site. If unable to obtain 30-foot minimum exclusionary safety distance from area in need of treatment, additional secondary shielding may be placed as needed for added safety and enhanced shielding at areas where non-exclusion distance is not possible or practical. Always test and monitor placement of secondary additional shielding in same directed manner as primary shielding for zero exposure efficiency during its interim or regular safety use.

## Treatment Application

- (1) At treatment startup place a working smoke detector within 15-foot proximity to treatment site.
- (2) With a wall stud finder locate the center of a wall stud or wood member at site to be treated and drill a pilot hole 2 to 3 inches deep with a 11/64 or 5/32 inch diameter drill bit. Drill bit should be at least the diameter size of the temperature probe being used for monitoring. Use caution; do not drill into electrical, plumbing or metal objects. Drilling of the pilot test hole is performed first to allow the drilled area to cool before performing and logging the (Estimated Treat Time Test).
- (3) Beginning with a new blank copy of a Field Safety Treatment Log Form as provided in operator's manual, fill out the following; The microwave leakage detector (Meter # if any), (Date of meter purchase if known), (Date & time meter tested if a non self diagnostic model), (Firm name), (Treatment date), (Applicators name), (Applicators signature), (Date signed), (Treatment address) and (General description of treatment site).
- (4) Read the thermometer probe provided with the Proto2 GE575 or the Proto3 GE1150 Pest Device, and log the room temperature reading attained in the entry box on the Field Safety Treatment Log Form at (Average Room Temperature) > (degrees in Fahrenheit).
- (5) Estimate the area of application desired treatment depth and log it in the entry box on Field Safety Treatment Log Form at (Desired overall depth of treatment) > (inches)
- (6) Enter your target pest name at (Target Pest) ( ) Enter at (Kill Temp) ( ) the lethal dosage temperature amount listed on this label, Under (Lethal Dosage Temperatures to be applied) to control the noted target pest.
- (7) Refer to Treatment Time Reference Chart published in operator's manual. Using the chart find the average room temperature logged at the left column and the desired depth of treatment logged on the top row. Where the two columns meet is the recommended estimated test treat time. Log the estimated test treat time in minutes on the Field Safety Treatment Log Form under (area1), to the right of (Estimated Treat Time Test) and prior to, ( In Minutes).
- (8) Set generator upright and secured upon level ground or stable platform of lift mechanism surface with warning label facing pilot hole drilled on step no. (2)
- (9) Station control panel approximately 30 feet or the available length of cable to the rear of generator and connect the control cable ends as needed for non hard wired units, one to the generator and one to the control panel were stationed.
- (10) Place one safety shield upright to the rear (behind) target to be treated with the warning sign facing outward & visible.
- (11) Place a second safety shield upright behind the rear of generator with the warning sign also facing outward and visible. Never block unit air vents with shielding. Allow 2" to 3" clearance.
- (12) Plug in unit power cord and approach the control panel station with microwave leakage detector in hand. On battery-operated detectors maintain holding down the self-test and read out button during use and listen for any audible warning signals.

(12a) For units equipped with spring wound timer controls, unlock the control panel and turn mechanical timer knob clockwise to the (Estimated Treat Time Test) as entered at area 1 and logged in minutes on the Field Safety Treatment Log Form. The red LED power light will come on and timer will make ticking sound immediately. At this point the generator is operating on the auto shut-off timer and emitting generated microwaves for treatment application.

(12b) For Units equipped with rotary digital or mechanical control knobs, unlock the control panel and turn control knob on to desired treat time displayed digital or in text. Set dial treat time to the (Estimated Treat Time Test) entered at area 1 as logged in minutes on the Field Safety Treatment Log Form. Unit will power up and begin generation seconds upon setting entry.

(13) Monitor area at and around control panel continuously with the microwave leakage detector during generator Treat Time Test operation. Perform this by slowly moving the detector at arm length in front of you from your head to your feet while viewing the meter read out for changes or audible warnings. If an unwanted reading or warning is attained during monitoring, turn the unit off and readjust the position of the control panel site and/or shielding depending on area where fugitive unwanted microwaves are detected. Repeat this procedure as needed until zero reading is attained during the microwave monitoring.. Log reading obtained at (Personal Zero Exposure Test Reading) under (area1) of Field Safety Treatment Form. This logging is to document safe applicator exposure levels.

(14) Upon completion of the control panel timer cycle, turn security key off and remove key from key switch. Where a mechanical key lock is present, Lock the control box and remove the key. This is referred to as Lockout Block out in industrial safety terms and is to prevent unauthorized access to the control panel while unattended.

(15) Insert the temperature probe in the pilot test hole drilled in step (2) and log the final reading at (Probe Test Treat Temperature Attained) under (area1) of the Field Safety Treatment Log Form.

(16) Obtain lethal dosage temperature listed below for the control of the target pest or organism you are treating and have already entered in step (6) at Kill Temp to the left of area1 on Field Safety Treatment Log Form.

### **Lethal Dosage Temperatures to be applied**

#### **Drywood Termites, Dampwood Termites, Subterranean Termites and Formosan Termites**

Obtain temperatures between 130 and 180 Degrees Fahrenheit at treatment target site to achieve constant minimum temperature of 124 degrees Fahrenheit for ten minute minimum duration time.

#### **All Wood destroying beetles as labeled**

Obtain temperatures between 160 and 180 Degrees Fahrenheit at treatment target site to maintain constant minimum temperature of 130 degrees Fahrenheit for ten minute minimum duration time.

#### **Wood destroying Fungi (brown & white rot)**

Obtain temperatures between 180 and 200 degrees Fahrenheit at treatment target site to achieve constant minimum temperature of 160 degrees Fahrenheit for ten minute minimum duration time.

**NOTE:** Do not exceed temperatures at or above 220 degrees Fahrenheit. Do not apply to highly flammable substances. Prior to applying chemicals or agents in conjunction with microwave application, always check the material safety data sheet for fire hazard data, flammable properties and flash point in Fahrenheit of the chemical or agent intended for use. Do not use in conjunction if flash point is close to lethal dosage temperature to be applied.

(17) If probe test treat temperature reading attained and logged is within the recommended dosage rate as entered under Kill Temp, Then continue to application (18) procedures.

If probe test temperature attained is below or above recommended dosage rate, refer back to step (2), drill a new pilot hole at another site and increase treatment by one-minute intervals to increase dosage heat. To decrease heat dosage, decrease the treatment by one-minute intervals. Repeat this procedure until proper recommended dosage rate is attained before continuing with further application procedures.

**NOTE:** Upon treatment commencement always start application at highest target point and move generator downwards in distance proportional to the units face treatment area at intervals between time dosage applications. If a unit's height treatment area is 18" then it is to be lowered 18" in height between each application dose. This aides in maintaining prior heat dosage applied.

(18) On Field Safety Treatment Log Form, enter the adequate treatment dosage time attained in minutes at (Sufficient Treat Time Achieved for Effective Treatment).

(19) On Field Safety Treatment Log Form, at ledger, log the application number being applied below (No. #) and the treat time dosage for this number application at (Treat Time) to the right of application number logged. Log a new numbered line of entry for each timed dosage applied. Use as many forms as needed. On the graph diagram make an area treatment drawing and indicate where each logged no.# shot is applied.

(20) Set generator up at next determined adjacent treatment target point with Warning Label, (at Emitter Face) flush to within 1 to 2 inches of target treatment site surface.

(21) Set shields in place as noted in step (9) & (10) and approach Control Panel Station with Microwave Leakage detector.

(22a) For units equipped with touch digital controls, Turn on the control panel security key and enter the following touch controls, (Time Cook) activates key pad timer, Next, enter on the touch control numeric key pad the (Sufficient Treat Time Achieved For Effective Treatment) as logged in minutes on the Field Safety Treatment Log Form and press the (Start) key.

(22b) For Units equipped with rotary digital or mechanical control knobs, unlock the control panel and turn control knob on to desired treat time displayed digital or in text. Set dial treat time to the (Sufficient Treat Time Achieved For Effective Treatment) entered at Data box as logged in minutes on the Field Safety Treatment Log Form. Unit will power up and begin generation within seconds upon setting entry.

(23) Monitor area continuously with the microwave leakage detector during generator operation. Perform this by slowly moving the detector at arm length in front of you from your head to your feet while viewing the meter read out for changes or audible warnings. If an unwanted reading or warning is attained during monitoring, turn the unit off and readjust the position of the control panel site and/or shielding depending on area where fugitive unwanted microwaves are detected. Repeat this procedure as needed until zero reading is attained during the microwave monitoring. Log microwave leakage meter reading obtained under (Exposure Reading) at ledger to the right of application number & Treat Time applied of the Microwave Pest Device Field Safety Treatment Log Form in use. Monitor area during each timed dosage applied & log Exposure Reading finding with each corresponding numbered application.

(24) Upon completion of the control panel timer cycle, turn unit off and remove key from key switch. Where a mechanical key lock is present, Lock the control box and remove the key.

(25) Move unit the measurable directional distance of the generators surface treatment area to next adjacent treatment target site, reposition shields and repeat steps (22), (23), (24) & (25) until entire area has been treated and recorded on Field Safety Treatment Log Form.

During treatment periodically perform additional probe tests at random to monitor applied heat dosage as performed in step (2), (15) & (17) and make adjustments as needed. If entire site of infestation or infection is not thoroughly treated and labeled dosage temperatures maintained, follow up treatment may be necessary.

(26) Upon completion of treatment, remain at treatment site and monitor the working smoke detector placed in step (1) for a period of not less than 1 hour before allowing occupant to re-enter.

### **Applicability in lieu of fumigation for Drywood, Dampwood & Formosan Termites**

Use of the Proto2 GE575 single port or Proto3 1150 dual port Pest Device is not a replacement for whole structure fumigation. Some infestations are too numerous to treat in a feasible time frame. Infestations are not always accessible to treat, such as damp sub areas and dusty confined attics. It is recommended to treat these areas locally with chemical and/or non-chemical agent application in conjunction with accessible noted Pest Device treatable areas. When infestation is deemed impractical or not feasible for noted Pest Device treatment and/or non-chemical agent or localized chemical treatment, It may be necessary to perform a whole structure fumigation. As with whole structure fumigation, follow up treatment may also be necessary.

**Made In USA: Power Rating = Vac / Hz: 120 / 60 @ 7amps:**

**EPA Establishment no. 68965-AZ-001 - EPA Product Registration no. 068965**

**Precaution to applicator industrial standard microwave exposure limits.**

This unit operates at 2450 mega hertz and generates up to 700 Watts of radio frequency electromagnetic radiation referred to as (RF)(EMR). Industrial standards for safe levels of human exposure are 5 milliwatts per square centimeter of surface area per six-minute duration.

**Product is in compliance with FCC Rules & Regulations CFR 47, part 18 and also complies to UL 508/NEC1993**

This device complies with part 15 Class A of the FCC rules. Operation is subject to the following two conditions;

- (1) This device may not cause harmful interference and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**Fire Hazard**

This device is capable of generating excessive temperatures resulting in combustion to site treated. Close temperature monitoring during treatment greatly reduces this risk. If combustion accidentally occurs, stop treatment, use A,B,C rated extinguisher on affected site and contact local fire department to control further as needed.

**Fire Safety Monitoring Procedures**

Prior to treatment commencement, position an operational smoke detector within 15-foot proximity to treatment site. Upon treatment completion, monitor positioned smoke detector for no less than one hour before leaving treatment site.

**USE ONLY AS DIRECTED BY LABEL & OPERATORS MANUAL  
&  
KEEP OUT OF REACH OF CHILDREN**

**Health Hazard Information**

Direct over exposure to the radio frequency microwave energy emitted by this device can damage living tissue at the body site or extremity exposed to a depth of approximately 1.18", (30mm).

**First Aid Measures**

If overexposure occurs, move afflicted to a cool environment and seek immediate medical attention. Symptoms are Hypothermia (medical term for abnormally high body temperature), moderate to severe burning or tingling sensation and /or red itchy irritation at area exposed.



## **Limitation of Liability & Warranty Disclaimer**

Wavelength warrants that this product conforms to the device description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions subject to the inherent risks set forth below.

Use only as directed by label & operators manual. Buyer assumes all risks in using or handling this product in any way. WAVELENGTH EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY. IN NO CASE SHALL WAVELENGTH BE LIABLE FOR CONSEQUENTIAL, SPECIAL, INCIDENTAL OR INDIRECT DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS DEVICE.

## **Inherent Risks of Use**

It is impossible to eliminate all risks associated with use of this device. Accidental scorching, damage to painted surfaces due to poor primer sealer, lack of performance, or other unintended consequences may result because of such factors as use of the device contrary to label instructions (including conditions noted on the label, such as accidental fire, etc.) presence of other materials, the manner of application, or other factors, all of which are beyond the control of Wavelength or it's sales distributors. Purchaser shall assume all such risks.

## **Limitation of Remedies**

The exclusive remedy for losses or damages resulting from use of this device (including claims based on contract, negligence, strict liability, or other legal theories) shall be limited to refund of product's used wholesale appraised value upon product return to Wavelength only. Wavelength shall not be liable for any losses or damages resulting from handling or use of this device. Purchaser agrees, for future, safety and product usage updates, to notify Wavelength in writing, promptly within 10 days of any loss or damage incurred from product use. Notification to include detailed documentation of treatment procedure leading to such loss or damage. In no case shall Wavelength be liable for any consequential or incidental damages or losses. Upon the event of loss or damage incurring from product use, purchaser to satisfy said damages or losses by self or covered liability carrier.

All terms & conditions listed within this label & disclaimer or the complete Operator manual cannot be varied by any verbal or written statements or agreements. No employee or sales agent of Wavelength or distributor is authorized to vary or exceed the Warranty or product label & disclaimer in any manner. Purchase or use of this device constitutes full acceptance and agreement to all written terms and conditions of entire label and operator's manual. Purchaser agrees to follow revised labeling and operator's manual guidelines upon notification of any revisions in writing from Wavelength only.



Entomologic Microwave Treatment Systems

P.O. Box 201, Pirtleville, AZ 85626 USA

## **PROTO2 GE575 & PROTO3 GE1150 PEST DEVICE**

### **Operations Manual and Microwave Treatment Protocols**

Heritage Single and Modern Dual Port Thermal Pest Treatment Units

EPA Establishment no. 68965-AZ-001

EPA Product Registration no. 068965

Sales & Service Center Phone- 520-265-9692

Online At: [www.wavelengthmts.com](http://www.wavelengthmts.com) -E-Mail - [info@wavelengthmts.com](mailto:info@wavelengthmts.com)

#### **WARNING**

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#### **Fire Hazard**

This device is capable of generating excessive temperatures resulting in combustion to site treated. Close temperature monitoring during treatment greatly reduces this risk. If combustion accidentally occurs, stop treatment, use A,B,C rated extinguisher on affected site and contact local fire department to control further as needed.

#### **Fire Safety Monitoring Procedures**

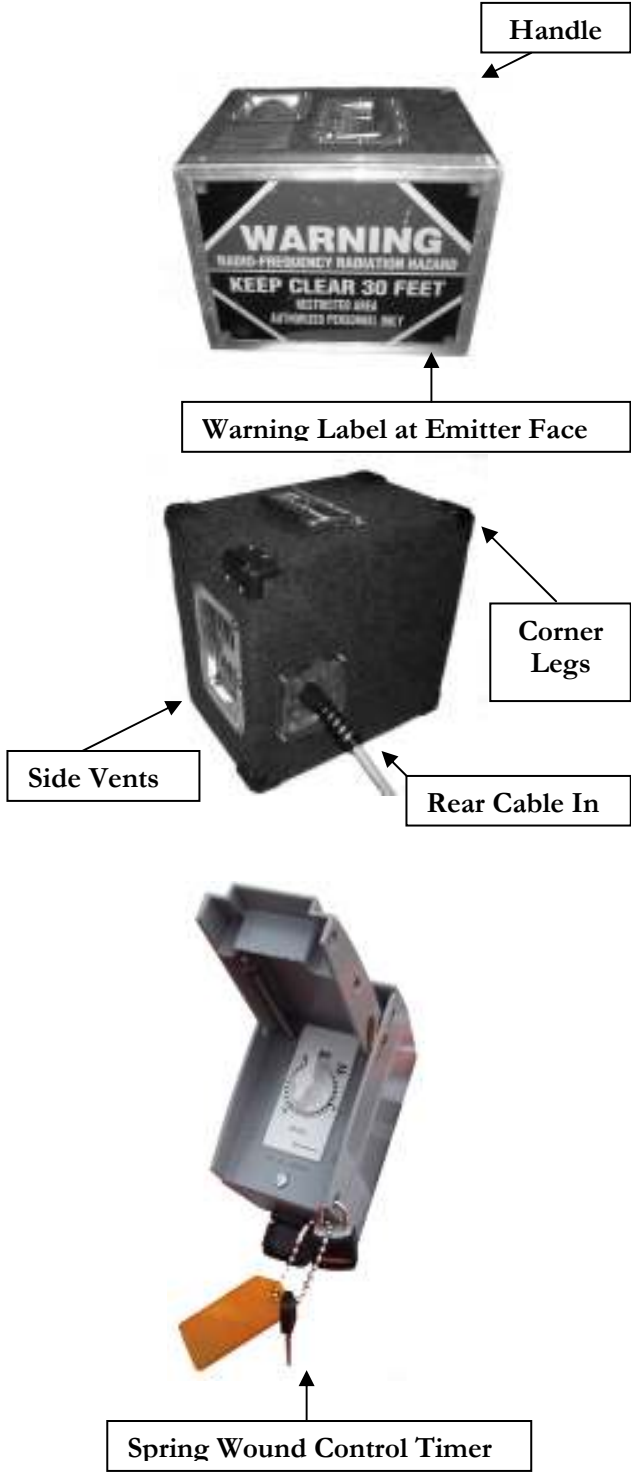
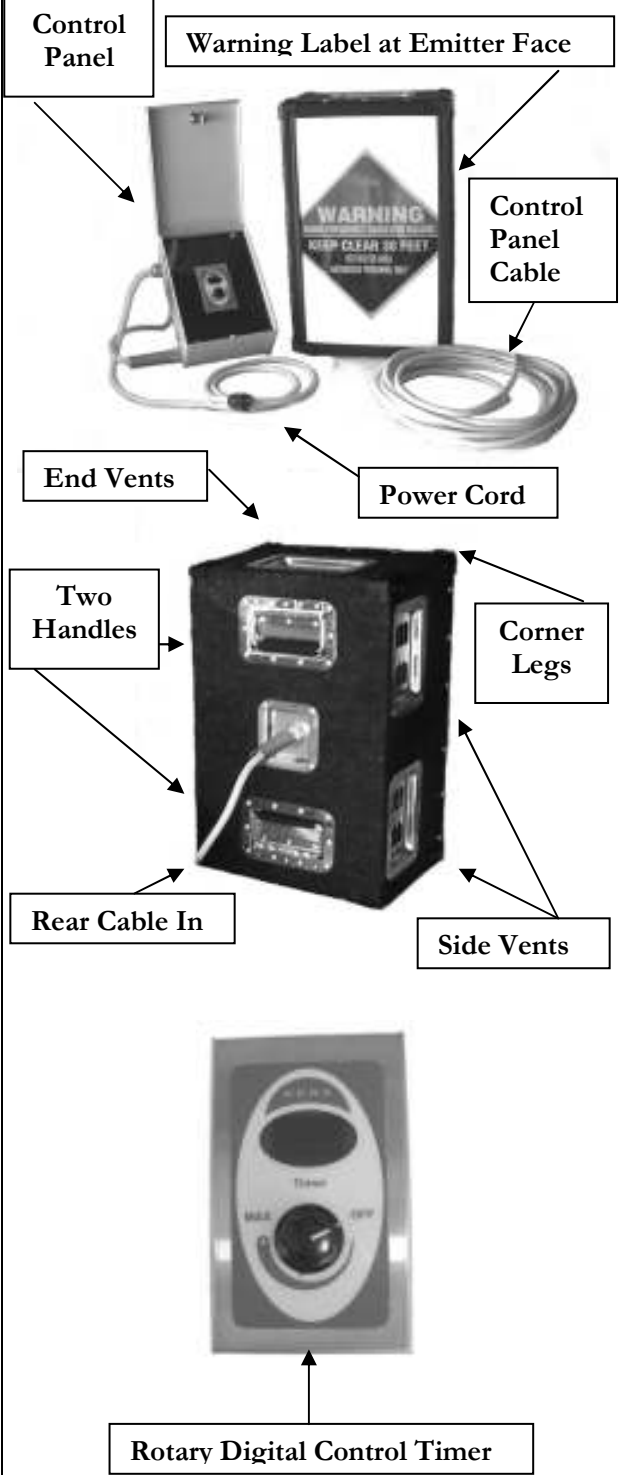
Prior to treatment commencement, station a portable operational smoke detector within 15-foot proximity to treatment site. Upon treatment completion, monitor smoke detector for no less than one hour before leaving treatment site.

**USE ONLY AS DIRECTED BY LABEL & OPERATORS MANUAL**

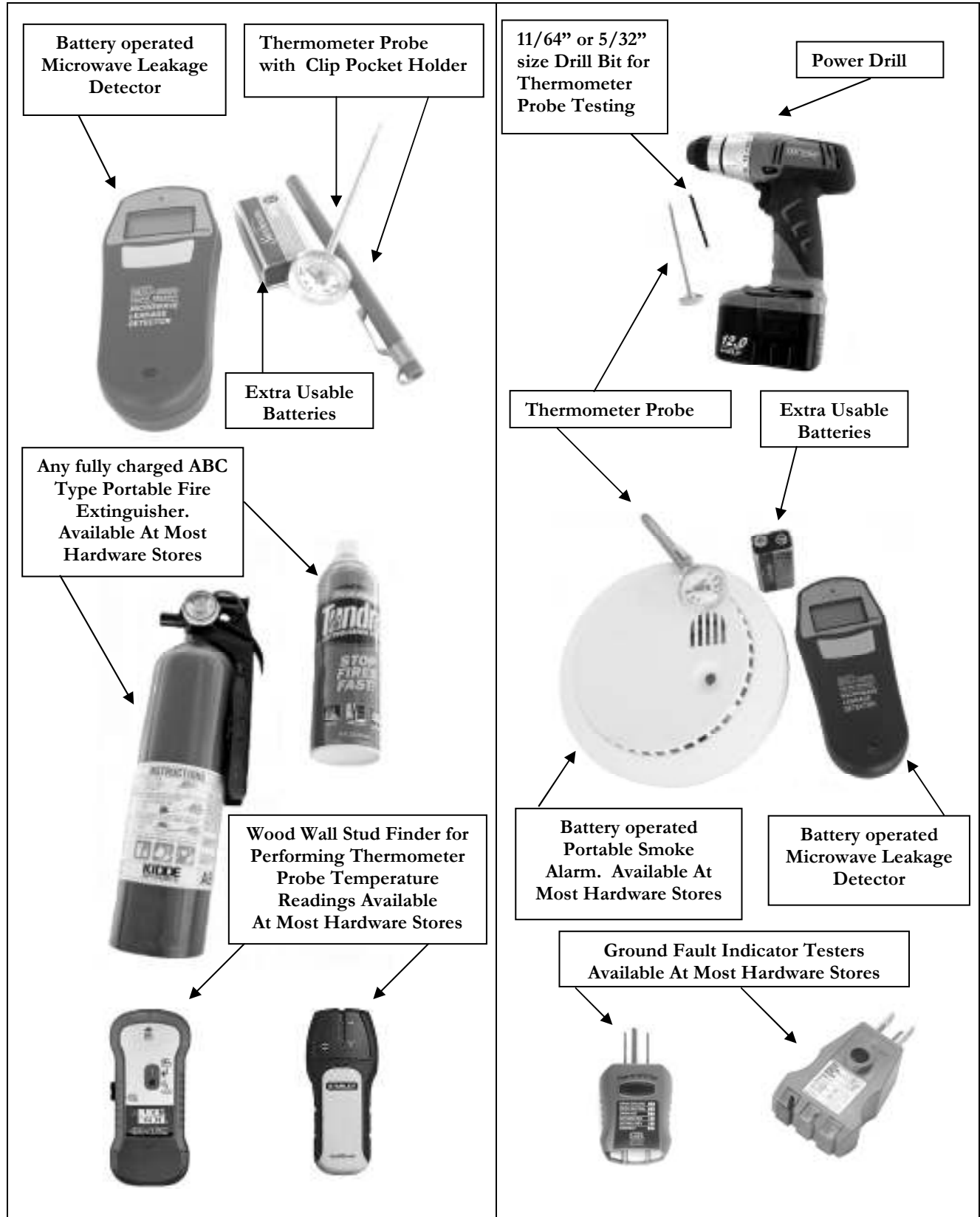
**&**

**KEEP OUT OF REACH OF CHILDREN**

# Single and Dual Port Pest Device Unit Identification

PROTO2 GE575 PEST DEVICE Single Port	PROTO3 GE1150 PEST DEVICE Dual Port
 <p>Handle</p> <p>Warning Label at Emitter Face</p> <p>Side Vents</p> <p>Corner Legs</p> <p>Rear Cable In</p> <p>Spring Wound Control Timer</p>	 <p>Control Panel</p> <p>Warning Label at Emitter Face</p> <p>Control Panel Cable</p> <p>End Vents</p> <p>Power Cord</p> <p>Two Handles</p> <p>Corner Legs</p> <p>Rear Cable In</p> <p>Side Vents</p> <p>Rotary Digital Control Timer</p>

# Treatment Monitoring Tools & Fire Safety Devices



## Spring Wound Mechanical Set Auto Shut-Off Control Timer

Systems equipped with the Spring Wound Mechanical Control Timer allow setting of the Pest Device treatment time by simply turning a knob.

Operate with Unit and safety shields properly in place.

1. Timer knob reads up to 15 Minutes Maximum
2. To set timer turn knob clockwise to desired treat time.
3. Unit will immediately receive power and red LED will light up while timer unwinds making a ticking sound. Timer will auto shut-off at end of set time cycle (ticking will stop) and the red LED power light will go off.
4. To shut timer off anytime mid cycle, simply turn the knob counter clockwise to the off position at which point the ticking will stop and the red LED power light will go off.
5. The generator 15 amp breaker reset button is mounted on timer case next to the LED power light.
6. Always lockout and block out the timer cover with provided padlock when not attended or in use.



Spring Wound control timer layouts may differ slightly from the one diagramed depending on date and type of unit manufactured. Basic functionality remains the same with set time maximum of 15 Minutes.

## Rotary Digital Timer Control Panel Operation

Systems equipped with a Rotary Digital Timer allow setting of the Pest Device treatment time electronically via turning a knob to a desired displayed treat time.

Operate when Unit and safety shields are properly in place.

1. Turn "Timer" knob to "Off" then rotate until display reads desired time.
2. Within seconds the preset time will be locked-in automatically and controller will start.
3. At end of set cycle timer will automatically switch off.

### Manual Stop:

Turn "Time" knob to "Off". Count down timer will automatically stop and reset to "0". The load will be switched OFF.



# Grounding Instructions & Device Care

## Grounding Instructions

The Proto2 GE575 single port and Proto3 GE1150 dual port pest devices must be properly grounded during operation use.

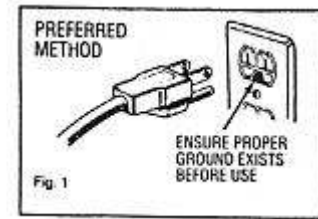
In the event of electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. These devices are equipped with a power cord having a grounding wire with a grounding plug.

**DO NOT** under any circumstances cut or remove the third (ground) prong from the power cord.

A reliable method of checking a power outlet for proper grounding and wiring connection is by testing it with a common **GROUND FAULT INDICATOR TESTER**.

### USE OF EXTENTION CORDS

Use a minimum 15 amp rated, three blade grounded exterior extension cord, no longer than 50 feet in length.



**WARNING**  
INPROPER USE OF THE  
GROUNDING PLUG CAN  
RESULT IN A RISK OF  
ELECTRICAL SHOCK.



Ground Fault Indicator Tester  
sold at most hardware stores

## Device Care

1. Keep device dry at all times
2. Care of device plastic parts; (such as control panel, Unit face, Warning Labels, corner legs and fabric coverings) Clean as needed with a mild soap and water solution and dry with an absorbent cloth.
3. Care of device metal parts; (such as recessed metal vents, plates and aluminum trim) Clean or polish with a mild non-corrosive metal protecting cleaner.
4. **DO NOT** under any circumstances perform any device cleaning while it is plugged into an electrical power source.
5. Acquiring of a storage and transport case sufficient in size to completely house a device is recommended.

**NOTE: DEVICES HAVE NO USER SERVICABLE PARTS**  
Contact noted Wavelength service center for all needed support

## Lift System Types & Availability

The Proto2 GE575 and the Proto3 GE1150 pest devices fit well on either of these lifts shown. Both are also capable of easily handling multiple stacked units for rapid treat applications. Simply secure generator units to platform with adjustable tension straps. The raised overall height application of each lift system varies. Choose a lift System type that will best suit your treatment height needs. Lift systems shown are available examples. Many other types and brands of similar lift systems are available on the open market. These types of lift systems shown are not only efficient and professional looking, they also double as a device and equipment transport dolly.

### Vestil Lite Load Lift with Hand Winch Operation, Model# LLW-202058-FW

Easily lift and transport loads from delivery trucks to docks or use to inventory items on storage systems. Durable steel unit has a 500-lb. load capacity and rolls on 6in. x 2in. mold-on-rubber rear wheels with 2in. semi-steel front wheels. Two rollers on the handle ease loading into delivery trucks. Platform lifts approx. 1in. per winch rotation. Horizontal load center is 10in. U.S.A.



Product Specs

Key Specs

Load Capacity (lbs.)	500
Platform Size L x W (in.)	20 x 20
Raised Height (in.)	58
Lowered Height (in.)	3 3/4
Rear Wheel Size (in.)	6 x 2
Front Wheel Size (in.)	2

Cost Around \$499.99 At Northern Tool & Equipment 1-800-221-0516  
Use Keycode: 124355 visit their website at [www.northerntool.com](http://www.northerntool.com)

### Genie Lift — 400-Lb. Capacity

The Genie® is the manually operated portable lift that rolls easily into any size pickup. Compact design makes load handling fast and easy. Lifts up to 400 lbs. from 3 1/2in. to 8ft. 3in. high. Overall height at maximum lift is 10ft. 5in. Forks are 22 1/2in.L x 20 1/2in.W. Steel construction. 8in. non-marking rear wheels and 2in. dual wheel front casters. Note: Optional ladder, fork plate, 10in. pneumatic tires and larger casters shown are available at extra cost. U.S.A.



Product Specs

Key Specs

Load Capacity (lbs.)	400
Raised Height (in.)	8ft. 3in.
Lowered Height (in.)	3 1/2
Rear Wheel Size (in.)	8
Front Wheel Size (in.)	2

Cost Around \$1099.99 At Northern Tool & Equipment 1-800-221-0516  
Item# 144311 visit their website at [www.northerntool.com](http://www.northerntool.com)

## Safety Flex Shielding



Alumiflex safety shielding by Wavelength is constructed of lightweight aluminum scrim faced foil-coated polyethylene reinforced with aluminum screening. It is capable of deflecting up to 97% of all fugitive microwaves captured and up to 100% when doubled up in use as an additional secondary shielding safety alternative.

They are designed to roll up for convenient transportation & storage. When unrolled they are ridged enough to stand upright on a flat surface. If needed, they may be stapled or taped into position at hard to reach treatment sites.

### Use Instructions

One shield is to be wrapped upright around lift system behind generator with warning label visible. Use caution not to block or obstruct the side air vents of generator during shield placement.

A second shield is to be placed upright in line directly behind the treatment target site with the warning sign also visible. This shield may be placed flat against surface area behind target site or set upright & free standing. The treatment target will be in the middle of two surrounding shields. The use of handspring clamps is helpful in hanging or retaining the shielding at odd sites, such as eaves, overhangs, awnings etc.



**Caution:** Never handle shielding during generator operation.

### Maintenance & Upkeep

For transport or storage, roll shielding up in direction of its natural grain and retain with rope or nylon strap.

Avoid sharp objects that rip or tear the shielding aluminum or polyethylene core.

When damage occurs, applying aluminum adhesive tape to damage areas can make repairs. Aluminum adhesive tape is available at most hardware stores.

When shields lose their ridged-ness or become too damaged for repair, discard and replace with new ones.



# Microwave Leakage Detector Use Instructions

## Microwave Leakage Detector

The Microwave Leakage Detector supplied with this system is an LCD digital readout microwave leakage meter manufactured for checking microwave ovens for fugitive microwave leakage. The Proto2 GE575 and The Proto3 GE1150 pest devices operate at the same frequency as microwave ovens. (2450 mega hertz)

The provided Microwave Leakage Detector is simple to operate:

1. First install a new 9volt alkaline or carbon zinc battery.
2. To activate the meter, just press AND HOLD DOWN the button. You must continue holding down the button during all meter reading operations.

When meter is first activated it cycles through its self diagnostic testing (0-9.99 with beep at 5.0 then returns to zero). During the self-diagnostic the battery power will be checked And if found to be low the battery low indicator sign " BAT " will be visible in the display read out field. Meter will not operate with out a battery.

3. Then while still holding down the activation button you may begin to take your readings. Every time you release the activation button, the unit will perform it's self diagnostic when you press down the activation button again.

The meter's highly sensitive advanced sensor can detect fugitive microwaves accurately even at low volumes. Readings over  $5\text{mW}/\text{cm}^2$  are zoned (danger) when this level is reached the meter will beep and a red warning lamp will flash.

Meter is calibrated to 2450 mega hertz range and never needs re-calibration. It is accurate to plus or minus 1db with a range of  $0-9.99\text{mW}/\text{cm}^2$ .

It is recommended that user label the Microwave Leakage Detector with the date of its purchase and an assigned inventory number. Keep Microwave Leakage Detector dry and avoid impact that may damage it. Follow the directions for use as provided with the Microwave Leakage Detector.

If using an alternative standard non-battery operated, non-diagnostic calibrating, meter gage type Microwave Leakage Detector, then it is recommended it be replaced annually in addition to it also being tested on a common microwave oven for it's operational status prior to any treatment application and that indicated time and date of the recent testing be entered on the Field Safety Treatment Log Form at area provided to do so.

## Treatment Time Reference Chart

Average Room Temperature	DESIRED DEPTH OF TREATMENT IN <i>INCHES</i>								
	1"	2"	3"	4"	5"	6"	7"	8"	9"
Fahrenheit									
<b>110-119</b>	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5
<b>100-109</b>	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
<b>90-99</b>	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5
<b>80-89</b>	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
<b>70-79</b>	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
<b>60-69</b>	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0
<b>50-59</b>	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5
<b>40-49</b>	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
<b>30-39</b>	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5

### How To:

Use this chart by finding the average room temperature at the left column under Fahrenheit, then locate the desired depth of treatment in inches on the top row.

Follow column left to right and top row downward. Where the two columns meet is the recommended test treatment dosage time listed in minutes & minutes and a half by decimal point.

### Example

If the area treatment site average room temperature is 75 degrees Fahrenheit and the center of the target to be treated is 3 inches in depth from the surface point to be treated, then the recommended test treatment dosage time is 5.5 or 5 1/2 minutes.

### Obtain A Effective Treat Time

This chart is only a guide based on averages. Due to changes in altitude & climate from region to region, density, moisture and different heating effects on numerous varieties of wood species, it is necessary to adjust test treatment times as directed on the product label to achieve the recommended target pest thermal dosage rate. This can best be accomplished by performing an estimated treat time test with this chart and in conjunction with the Microwave Pest Device Field Safety Treatment Log Form as outlined on the product label under Treatment Application.

## References to Applied Thermal Pest Treatment Efficacy Data

### Lethal Thermal Heating Effects of Insects

Forbes C. A. and W. Ebeling (1987) Found that “Nymphs of *I. Minor* died if exposed to 51 degrees Celsius for more than 10 minutes.” *The IPM Practitioner* 9(8):1-5. These research results form the basis for recommendations for heat fumigation of structures. 51 degrees Celsius = 123.8 Degrees Fahrenheit.

Bowler K. J. (1981) *Thermal biology* 6:171-178 and W. Ebeling (1994) *IPM Practitioner* 16(2):1-7. “Death from exposure to excessive heat no doubt has a complex mechanism. Hyperthermia affects insects at a cellular level, disrupting the function of cell membranes and stability of enzymes. “

Locatelli D. P. and Traversa (1989) “Microwaves can be used to heat the substrate and then subsequently kill the infesting insects by extreme temperature.” *Ital J. Food Sci.* No. 2:53-62.

Hall D. W. (1981) “Microwaves can also act directly on insects within relatively dry substrates by agitating water and/or fat molecules. Friction caused by this agitation creates heat which likely causes death by protein denaturation and membrane disruption.” *Taxon* 30(4):818-819.

Venard R. Lewis (1996) “Without a doubt, sufficient microwave energy applied to infested wood will kill termites.” UC Berkeley Report project #84IA8011-00 Paragraph 3 page 46.

#### Product manufacturer note:

During treatment application with the Proto2 GE575 and Proto3 GE1150 Pest Device, temperatures are monitored with the use of a temperature probe for assurance of adequate temperature dosage application. To insure lethal heat exposure and duration time, minimal lethal dosages listed for target labeled pests are approximately 6 degrees or higher than the referenced scientific research studies established standard lethal levels of exposure, being 123.8 degrees Fahrenheit maintained for 10 minute duration by heating of the insects substrate.

### Lethal Thermal Heating Effects on Wood Destroying Fungi

USDA Forest service Research paper FPL 190 (1973) Revised (1979) “Naturally occurring sub zero temperatures merely inactivate Fungi, but high temperatures kill them. The lethal effect of a high temperature depends on the specific temperature and the length of time it is applied. A temperature below about 150 degrees Fahrenheit probably would be impractical as an eradication measure because it would have to be applied for an excessive length of time. “ Page 11 Moderate temperatures.



OCCUPANTS MICROWAVE TREATMENT NOTICE AND DISCLAIMER FORM

Property Owner:

Name \_\_\_\_\_ Work phone \_\_\_\_\_
Address \_\_\_\_\_ Home phone \_\_\_\_\_
City \_\_\_\_\_ Zip \_\_\_\_\_ Emergency # \_\_\_\_\_

Occupants name and address of structure to be treated is:

Name \_\_\_\_\_ Work phone \_\_\_\_\_
Address \_\_\_\_\_ Home phone \_\_\_\_\_
City \_\_\_\_\_ Zip \_\_\_\_\_ Emergency # \_\_\_\_\_

Company name and address performing treatment:

Name \_\_\_\_\_ Work phone \_\_\_\_\_
Address \_\_\_\_\_ Home phone \_\_\_\_\_
City \_\_\_\_\_ Zip \_\_\_\_\_ Emergency # \_\_\_\_\_

Day of week and date of scheduled treatment is:

On \_\_\_\_\_
(Day of week) (Month) (Day) (Year) (Crew est. arrival time)

We do not wish to inconvenience you by having you wait for our arrival on the day of the treatment, when you decide on a date, talk it over with your pest control representative, make arrangements with regard to keys and leave with the assurance that your building will be properly treated. In case of rain or strong winds, the treatment may have to be postponed to a later date. Be sure to leave an emergency phone number where we can reach you.

- (A) Means of treatment consists of administering microwaves at the areas of infestation. During this procedure thermal cooking occurs at infestation within infested timbers. Upon treatment completion, microwaves are no longer present. However areas treated will be above current room temperature, therefore as a safety precaution, crew member(s) will remain at treatment site for no less than one hour upon treatment completion for smoke detection monitoring. You are requested to read carefully and abide by the following closely.
(B) All people, dogs, cats, birds, etc., must be removed a minimum of 30 foot from treatment site. It is preferred these items be removed from residence during treatment to allow crew complete control of the environment during treatment procedures, whereas to maintain the safest treatment standards possible.
(C) On original treatments and re-do's we are not responsible for any lodging, meals or security expenses.
(D) Treatments where roof coverings must be walked on for access, utmost care will be taken to avoid damage, but we can assume no liability for damage which may occur from doing so.
(E) We must have access to all areas within the structure, including rooms and garages keep locked, so please make key arrangements before the day of treatment. Please indicate where the keys are to be obtained from and returned to, after treatment completion.

Keys to be left and returned to, (Please indicate location) \_\_\_\_\_

- (F) If treatment of structure requires entrance into a neighbors yard and/or area of treatment is closer than 30 foot to neighboring domain, neighbors pets must be removed or tied up in the yard a safe distance, (no less than 30 foot), from treatment site to allow crew access and neighbor is also to sign this notice copy below and be given a copy of this notice for their review.

Neighbor's signature \_\_\_\_\_ Date \_\_\_\_\_
Name: \_\_\_\_\_ Address \_\_\_\_\_

- (G) Occupant/owner/agent: After reading this notice, please leave one signed copy on the kitchen counter/table or present it to the treatment crew when they first arrive. Keep a copy for your records. A signed copy must be in the crew's possession for the treatment to be performed.

Signature \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

Special Notes and/or instructions:

