



Instruction Sheet

LeakBreaker®

102-506

SUPERSEDES: July 27, 2017

EFFECTIVE: March 1, 2018

Plant ID No. 001-4237

Application

The Taco LeakBreaker® is a leak detection and water shutoff device. It is designed to detect a water leak and shutoff the incoming water supply to a water heater. It is suitable for use with many other water appliances that have a 3/4" (or smaller) connection requiring leak protection.

Ease of Installation / Operation

The valve can be installed in either vertical or horizontal piping and in any direction or orientation. LeakBreaker consists of a control panel, full port electrically actuated ball valve, floor sensor and is powered by batteries, AC adaptor or both. The components are connected with easy to use plug in quick connects. A multi-function LED on the control module identifies the current state of the LeakBreaker and aides with troubleshooting.

Valve Installation



Warning: Never place any body parts or objects into the valve opening, doing so may result in severe injury!

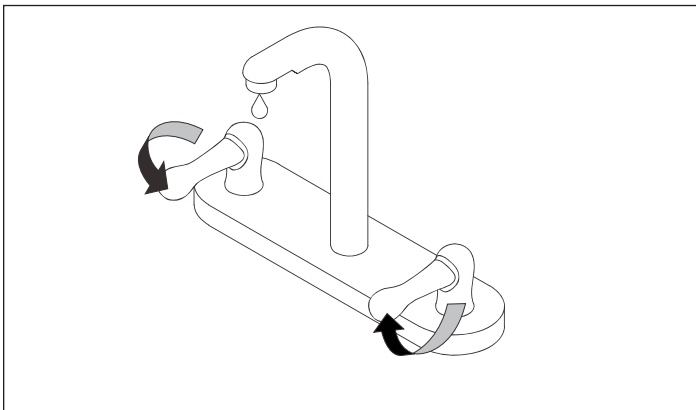


Caution: Installation should only be performed by qualified persons familiar with normal plumbing practices. These instructions should be considered in addition to local codes. Consult your local authority regarding any instructions contradictory to code requirements.

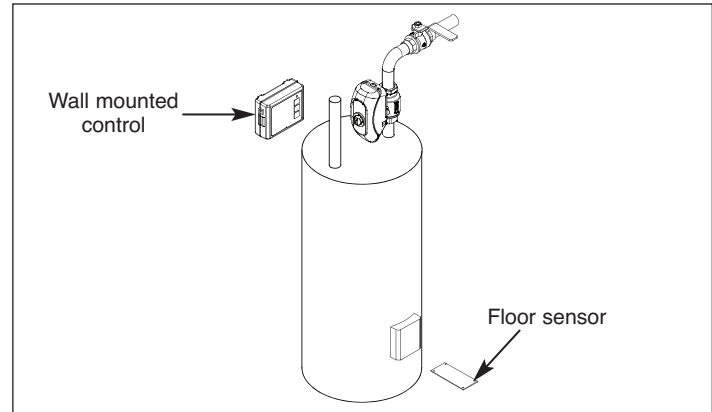
Note: Depending on your piping system, additional fittings not supplied with this product may be required.

Note: A vacuum breaker and/or expansion tank should be installed in the cold water line. Check local plumbing codes for appropriate placement of vacuum breaker and expansion tanks. Under certain conditions water may continue to leak from the tank, however, no additional water will be added.

1. Shut off the main water supply.
2. Open a fixture nearest the water heater to relieve water pressure.



LeakBreaker® is a registered trademark of Taco Comfort Solutions®.



3. Install the LeakBreaker valve into the cold water supply to the water heater.



CAUTION: If using a threaded to sweat adaptor on the valve installation, the actuator must be removed from the valve body before soldering (see instructions for removing actuator). The ball valve must be in the full open position before soldering. The valve is shipped in the closed position. Use of a solder with a melting point below 600°F is recommended. Do not overheat! Make sure the ball valve is in the FULL OPEN position during soldering. Direct flame tip away from the center of the valve. Cool valve quickly with a wet cloth.

Actuator Removal and Installation

1. Actuator Removal: Remove the valve actuator prior to soldering by pushing in and holding the release clip at the front of the actuator and lifting upward approximately 3/4" (see Figure A).
2. To re-assemble the actuator to the valve body: Position actuator such that the "D" shaped valve stem aligns properly with the "D" shaped actuator drive cavity. (Note: The "D" shaped stem design allows for correct insertion every time.) Next, slide the valve stem into the actuator cavity, push in and hold the release clip until the actuator slips over the valve locking posts (see Figure A). Once the actuator is flush to the valve body, let go of the release clip. Using very little force, try to take the actuator off of the valve body without using the release clip. Both locking posts should be firmly attached to the actuator. If the actuator slides up the stem, repeat the assembly process.

Fig. A

Actuator Removal

Step 2:
Move actuator upward
approximately 3/4"

Step 1:
Push in and hold release clip
at the front of the actuator

Locking Post

Control Panel and Wiring

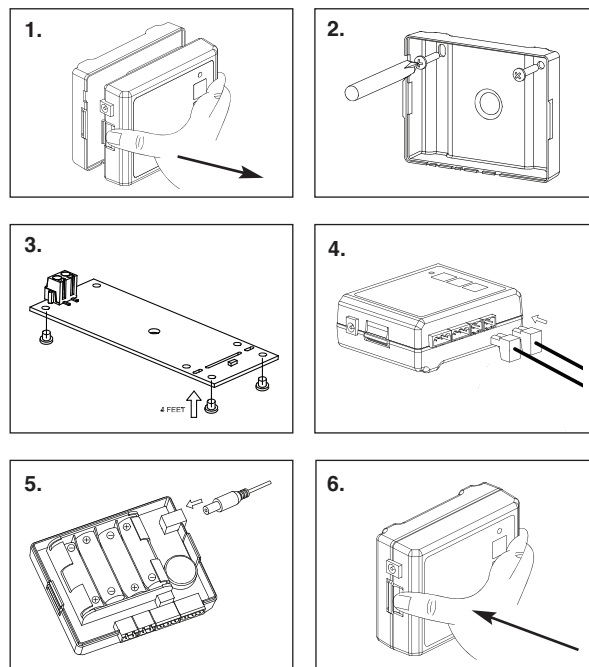
1. Press the tabs on the side of the control panel and pull apart to separate the front panel from the back panel.
2. Using the hardware provided, mount the back of the control panel in a location close enough to the water heater so that both the actuator and sensor wiring can be connected to the control panel.
3. If the sensor is to be installed in a metal pan or on a damp surface, insert the four (4) feet provided into the four (4) holes on the corners of the sensor. (These feet may already be installed.)
4. With screws on the sensor quick connect facing toward the back of the controller, plug the sensor wiring into the control panel port marked sensor. Place the sensor on the floor, at the base of the water heater, making sure it is located where water is likely to flow in the event of a leak. If the water heater is in a pan, place the sensor inside of the pan. If additional sensors were purchased, locate them in different areas around the water heater.

With the screws on the actuator quick connect facing toward the back of the controller, plug the actuator wiring into the control panel port marked valve.

Two (2) sets of dry contacts are provided. Each set includes normally open and normally closed connections. They can be used to send a signal to any device requiring an open or closed signal, such as a security system.

5. If using batteries, install them into the battery holder. Be sure to insert each battery in the correct orientation as indicated in the battery holder. If electrical power is being used the power cord may also be connected. LeakBreaker can be powered by batteries, power supply or both. LeakBreaker with eLink must use AC power supply. This model is equipped with optional battery back up.
6. Assemble the front on the control panel to the back of the panel.
7. If your LeakBreaker features eLink™, continue with the steps below immediately after installation to setup Wi-Fi® and register your device to enable notifications

NOTE: LeakBreakers without eLink, continue to "Testing Your Installation" on page 4.



NOTE: When attaching the wires to the actuator quick connect, the black wire must match up to the "B" on the control and the red wire must match up to the "R" on the control. **The LeakBreaker will not function correctly if it is not wired correctly.**

Continue below to setup eLink functionality (For model: LBW-XXX-X-XXX)

Connecting the LeakBreaker To Your Wireless Network

1. Before beginning, have the following information available:
 - a. LeakBreaker Serial Number (located on the inside of the control panel on the connectors) See Figure B.
 - b. Network Name (SSID): this is your home's wireless network
 - c. Network password (key)
2. After connecting the power, the unit should show the LED GREEN, but flash ORANGE every 3 seconds indicating Wi-Fi setup mode is enabled.
 - a. The LeakBreaker will remain in this mode for 5 minutes.
 - b. If 5 minutes passes without connecting to Wi-Fi, your LeakBreaker will exit the Wi-Fi Setup Mode and no longer be visible to wireless devices. *Press MUTE and OPEN button at same time until you hear first beep to enter Wi-Fi Setup Mode.*

ATTENTION: eLink setup instructions continue on page 3. You must complete all of the required steps in order to connect your device and start receiving status change alerts!

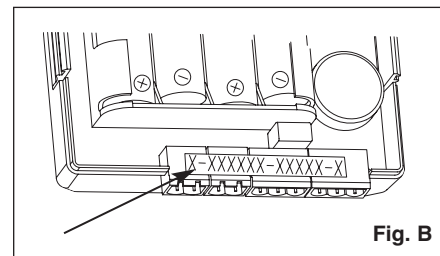


Fig. B

NOTE: Make sure valve and sensor are plugged in first. If not, follow instructions for control panel and wiring. Double check that your device is connected to power before proceeding with eLink setup.

ATTENTION: When using the LeakBreaker with eLink, AC power must be used. Battery back up is an available option. Wireless functionality shortens battery life significantly if AC power is not used!

3. Setup Wi-Fi Network Connection

- a. Using a phone, tablet, or computer with Wi-Fi capabilities, search for available Wi-Fi networks.
- b. Select the network **Leakbreaker_XXXX**
Note: 'XXXX' represents the last 4 digits of the device serial number.
- i. On many devices, once Leakbreaker_XXXX is selected, the web page will automatically open or alert that additional log in information is required. Usually clicking on the alert will bring you to the web page automatically. If a web page does not automatically open, enter the following web address in your web browser:

<http://elinksetup.tacomcomfort.com>

- c. Select "Search" (Figure C.) and choose the appropriate Wi-Fi network (Figure D.). This will automatically fill in the "Selected Network" field.
- d. In the "Password" field, enter your Wi-Fi network's password or key.
- e. Click "Connect." If the network connection is established successfully, the LeakBreaker will sound a short beep and the LED will switch to green.

NOTE: If the connection is unsuccessful (Invalid Network or Password), the LeakBreaker will sound a long beep and re-enter Wi-Fi search mode.

4. At this point, the LeakBreaker will disconnect from your device and connect to the eLink server through your wireless network. It will no longer be visible in your available Wi-Fi networks.

5. Setting Up eLink Notifications (email & text)

Registering your device will set up the email and/or cell phone number that will be alerted when the LeakBreaker operates, or for status updates.

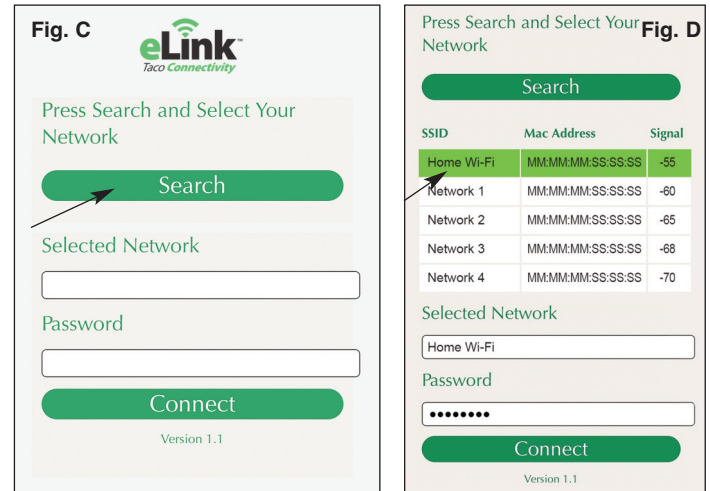
- a. Using an internet connected device, go to the following web page in your device's browser:

<http://elink.tacomcomfort.com/signup>

- b. Complete registration by following the instructions on the web page.

NOTE: The following types of Wi-Fi Security Modes are supported by the radio in the LeakBreaker:

1. Open
2. WEP
3. WPA/WPA2-Personal (PSK / Passphrase)



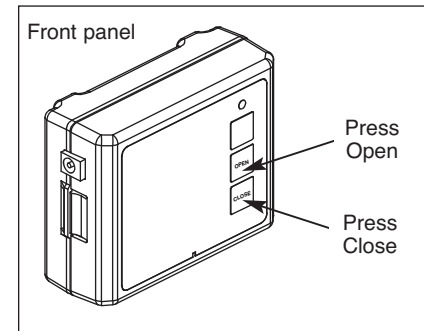
NOTE: If problem has occurred with your LeakBreaker, the Multi-Colored LED will blink to notify you. See troubleshooting guide.

Wi-Fi SIGNAL STRENGTH	
Range	Quality
-70 to -60	Acceptable
-60 to -50	Good
-50 to -40	Better
-40 to -30	Best

eLink notifications will work as long as the acceptable strength is achieved. Having a stronger signal does not affect the performance of your device.

Testing Your Installation

1. Press the open button on the front panel to open the valve, watch the indicator on the top of the valve to make sure the valve rotates to the open position, press the close button to close the valve and watch the indicator on the top of the valve to make sure the valve rotates to the closed position.
2. Close any open fixtures and open any shut-off valves that were closed during the installation of the valve. Make sure there are no leaks.
3. With the valve in the open position place the sensor in water. The valve should close, the LED should flash red and the audible alarm should sound. Once the valve closes, press the mute button to silence the alarm.
 - a. If using the LeakBreaker with eLink, when the valve is triggered, a text notification should be sent to your phone and/or email with the following message, "TACO LEAKBREAKER ALERT: Sensor has detected water. Alarm has triggered. Valve has been closed."
4. To reset the LeakBreaker, completely dry off the sensor and then press the open button.



Congratulations on the successful installation of your LeakBreaker!

Installing Additional Sensors

Up to ten (10) sensors may be daisy chained to the sensor input with a total wire length of no more than 200 feet.

Tab Configuration for Multiple Sensors

The last sensor in any chain must be the only one with the "tab" still attached. Reference Figure E to break off tab. Reminder: remove and replace feet from broken tab to the sensor. Broken tab can be discarded; it cannot be reattached in the future.

Wiring of Multiple Sensors (Example description is for a three (3) sensor chain.)

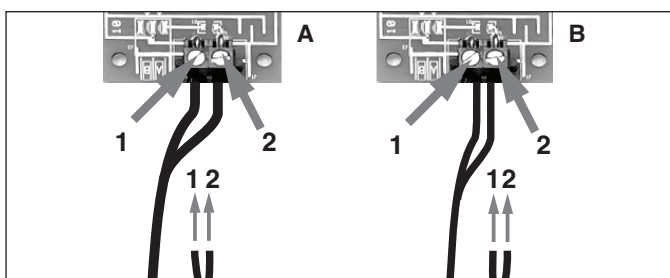
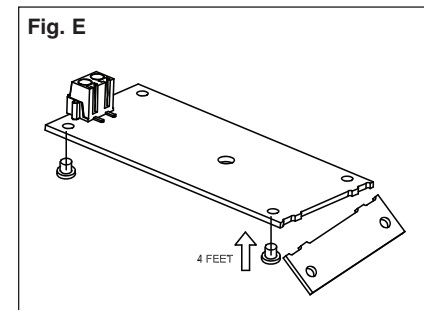
The first sensor (A) will have its wire leads go directly from the sensor board A's terminal block to the sensor input on the control panel.

The next sensor (B) will have its wire leads go from the sensor board B's terminal block to the terminal block on the first sensor board (A).

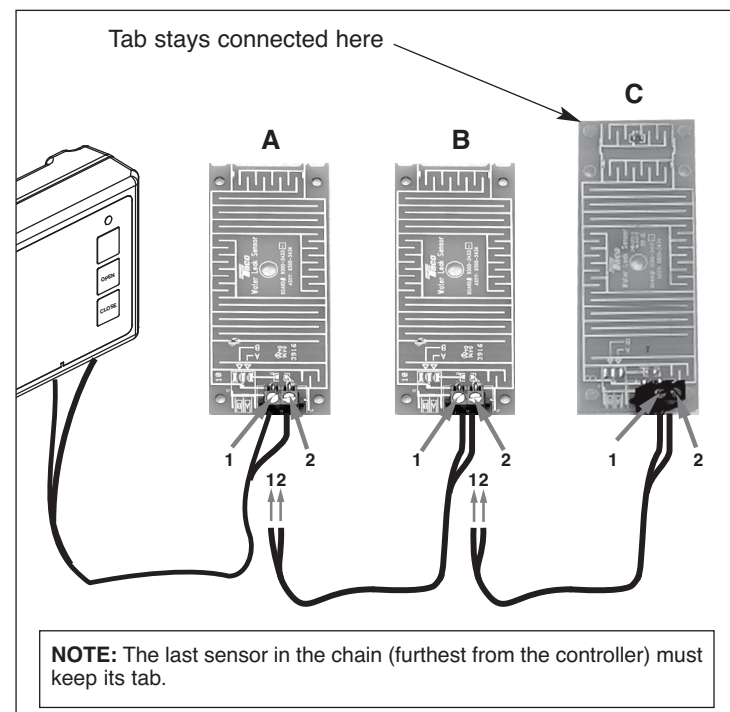
The next sensor (C) will have its wire leads go from the sensor board's (C) terminal block to the terminal block on the second sensor board (B).

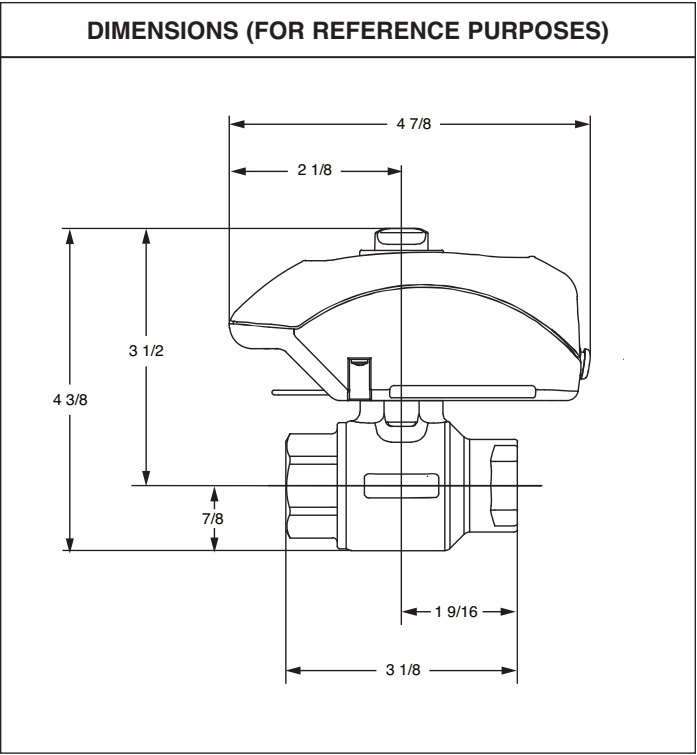
The first (A) and second (B) sensors will have their end tab removed.

The last sensor (C) in the chain will still have its end tab attached.



NOTE: Terminal A1 wires to Terminal B1. Terminal B1 wires to Terminal C1.





MATERIALS OF CONSTRUCTION	
Control Panel	
Body	High Performance Engineered Polymer
Actuator	
Body	High Performance Engineered Polymer
Gears	High Performance Internally Lubricated Engineered Polymer
Valve	
Body	Forged Brass
Stem	Brass
Press Ring	Brass
Ball	Brass (Chrome Plated)
Seat	Modified Teflon®
O-rings	Viton®

ADDITIONAL & REPAIR PARTS	
Product #	Description
7240-LB1	LeakBreaker Sensor Includes 3' of Additional Wire
7240-004RP	Actuator
7240-005RP	Control Box
7240-006RP	Power Supply
7240-008RP	Control Box with eLink (Wi-Fi)

PRODUCT SPECIFICATIONS	
Maximum Static Pressure	300 PSI (2,100 kPa)
Maximum Shutoff Pressure	125 PSI (875 kPa)
Maximum Ambient Temperature	135°F
Fluid Temperature Range	33° to 220°F, (1° to 105°C)
Service	Potable water
Seat Leakage	Drop-Tight Close-Off
Electrical	Input: 120VAC 60 HZ, Output: 6VDC 600mA Power Supply or 4 AA Batteries
Auxiliary Switch Rating	Class 2. 1Amp 24Volts

Multi-Function LED and Troubleshooting (Red Status Lights):

This troubleshooting table is intended as a helpful guide and is not all inclusive. There could be other causes and solutions for a non-functioning product. Only the most prominent error displays. Once addressed, the next error code will show.

LED STATUS POWER	LED STATUS BATTERY ONLY	INDICATES	POSSIBLE CAUSE	POSSIBLE SOLUTION	AUDIBLE ALARM
Solid Green	-----	Normal			
-----	1 Green Blink every 15 Seconds (Approximately)	Normal	-----	-----	-----
Solid Green with one red blink	-----	Low Batteries	Low Batteries	Replace batteries	Chirp every 60 seconds
			Batteries installed incorrectly	Install batteries correctly	Chirp every 60 seconds
Not illuminated	-----	Power off	Power supply not plugged in	Plug in power supply	-----
-----	Not illuminated	Power off	Batteries installed incorrectly or not at all	Install batteries correctly/ install batteries	-----
		In between cycles	Normal	Wait 15 seconds for indication blinks	
Solid Red with 2 red blinks	Solid dim Red with 2 red blinks	Sensor error	Bad wire connection	Make sure wiring connections are solid and tight and the quick connect is all the way in	Chirp every 60 seconds
				Make sure sensors wired per instructions	Chirp every 60 seconds
Solid Red with 3 red blinks	Solid Dim Red with 3 red blinks	Valve error	Valve is not connected to the control	Connect the valve to the control	Chirp every 60 seconds
			Bad wire connection	Make sure wiring connections are solid and tight and the quick connect is all the way in	Chirp every 60 seconds
Solid Red with 4 red blinks	-----	AC power error	Wrong power supply	Use power supply provided	Chirp every 60 seconds
Continuous Red blinks	Continuous Red blinks	LeakBreaker has Triggered	Sensor has detected water	Determine the water source and correct. Dry the sensor and reset the LeakBreaker. Press the open button to reset.	Constant alarm. Press the mute button to silence the alarm.
Solid Red	Solid Red	LeakBreaker has triggered and the water on the sensor has dried up	Sensor has detected water	Determine the water source and correct. Press the open to reset.	Constant alarm. Press the mute button to silence the alarm.

eLink Multi-Function LED and Troubleshooting (Orange Status Lights):

LED STATUS POWER	LED STATUS BATTERY ONLY	INDICATES	POSSIBLE CAUSE	POSSIBLE SOLUTION	AUDIBLE ALARM
Solid Green w/ 1 Orange Flash every 3 seconds	1 Orange Flash every 3 seconds	eLink Wi-Fi Setup Waiting	-----	Refer to Wi-Fi set up section.	-----
Solid Green w/ 1 Orange Blink every 10 seconds	1 Orange Blink every 30 seconds	Unconfigured		Refer to Wi-Fi set up section.	-----
Solid Green w/ 2 Orange Blinks every 10 seconds	2 Orange Blinks every 15 seconds	Router Error	1. Can't find router. 2. Incorrect Password 3. Incorrect SSID	Check Router. Verify Networks Available. Repeat Setup.	-----
Solid Green w/ 3 Orange Blinks every 10 seconds	3 Orange Blinks every 15 seconds	Internet/Cloud Error	1. Router not connected to Internet 2. No Gateway 3. Server Unavailable	Verify Internet Access is Available. Unplug router, plug back in.	-----

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CAUTION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

This device complies with Industry Canada license exempt RSS standard(s). Operation is subject to the following two conditions:

(1) This device may not cause interference, and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

To comply with FCC and Industry Canada RF radiation exposure limits for general population, the antenna(s) used for this transmitter must be installed such that a minimum separation distance of 20cm is maintained between the radiator (antenna) and all persons at all times and must not be co-located or operating in conjunction with any other antenna or transmitter.

LIMITED WARRANTY STATEMENT

Taco, Inc. will repair or replace without charge (at the company's option) any product or part which is proven defective under normal use within one (1) year from the date manufacture.

In order to obtain service under this warranty, it is the responsibility of the purchaser to promptly notify the local Taco stocking distributor or Taco in writing and promptly deliver the subject product or part, delivery prepaid, to the stocking distributor. For assistance on warranty returns, the purchaser may either contact the local Taco stocking distributor or Taco. If the subject product or part contains no defect as covered in this warranty, the purchaser will be billed for parts and labor charges in effect at time of factory examination and repair.

Any Taco product or part not installed or operated in conformity with Taco instructions or which has been subject to misuse, misapplication, the addition of petroleum-based fluids or certain chemical additives to the systems, or other abuse, will not be covered by this warranty.

If in doubt as to whether a particular substance is suitable for use with a Taco product or part, or for any application restrictions, consult the applicable Taco instruction sheets or contact Taco at [401-942-8000].

Taco reserves the right to provide replacement products and parts which are substantially similar in design and functionally equivalent to the defective

product or part. Taco reserves the right to make changes in details of design, construction, or arrangement of materials of its products without notification.

TACO OFFERS THIS WARRANTY IN LIEU OF ALL OTHER EXPRESS WARRANTIES. ANY WARRANTY IMPLIED BY LAW INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS IS IN EFFECT ONLY FOR THE DURATION OF THE EXPRESS WARRANTY SET FORTH IN THE FIRST PARAGRAPH ABOVE.

THE ABOVE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR STATUTORY, OR ANY OTHER WARRANTY OBLIGATION ON THE PART OF TACO.

TACO WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF ITS PRODUCTS OR ANY INCIDENTAL COSTS OF REMOVING OR REPLACING DEFECTIVE PRODUCTS.

This warranty gives the purchaser specific rights, and the purchaser may have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts or on the exclusion of incidental or consequential damages, so these limitations or exclusions may not apply to you.



A Taco Family Company

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