

ROCKET WIRELESS FUEL MONITOR BY BECKETT INSTALLATION INSTRUCTIONS

To synchronize, please read instructions carefully.

FCC ID: S6T-377A

This device complies with Part 15 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. Operating frequency is 915 MHz

NOTICE

Inaccurate fuel level indications could result in fuel run-out, burner lockout, loss of heat, and frozen pipes. This could result in water damage from flooding when pipes thaw.

- The fuel level monitoring system must be installed by a qualified service agency.
- Follow the installation instructions and verify accurate float/gauge performance before leaving the site.
- For frozen pipe/flooding protection, take preventive measures such as having a security system (or device) installed that operates during power outages, senses low temperatures, and initiates an effective alarm action.
- For technical assistance, call **1-800-645-2876**, (Mon.-Fri. from 8:00am to 5:00pm EST)

PARTS INCLUDED IN 17000 KIT:

- (1) 17070 Transmitter "Rocket" with gasket
- (1) 17050 Bar type LCD Receiver display
- (1) 17020 Metal Adapter (2" NPT)
- (2) Mounting Screws

PARTS SOLD SEPARATELY:

- 17012 Metal Adapter 1-1/4" NPT,
- 17015 Metal Adapter 1-1/2" NPT
- 17030 Tank Adapter for Roth Type

Figure 1

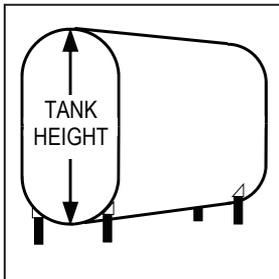


Figure 2

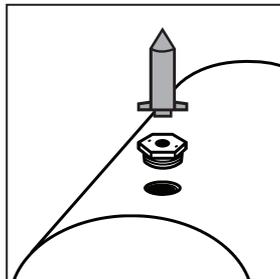


Figure 3

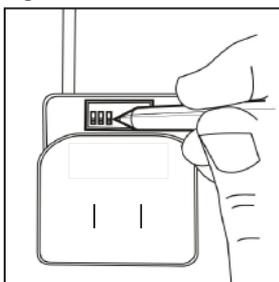


Figure 4

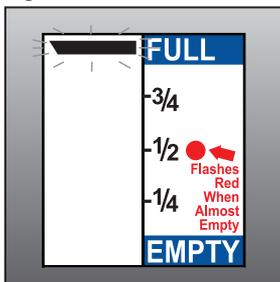


Figure 5



Figure 6



INSTALLATION STEPS:

1. Configuring the Receiver

The Receiver Display comes configured from the factory for the standard oval vertical 138, 275 or 330 gal upright steel tanks. **Important:** To ensure accurate measurement at the oil pickup, where the oil line comes from the top of the tank, subtract 6 inches (0.15m) from the measurement before configuring the Receiver below.

To configure the Receiver Display for other style tanks determine the total tank height either by making a direct measurement or using the Table on page 3. Once the tank height is determined, use the Table on page 3 to locate the correct DIP switch setting for your tank. The row of DIP switches is located on the back of the Receiver Display. Toggling an individual switch up towards the antenna will put it into the "ON" position. Plug the Receiver into a convenient 120 VAC outlet. The top bar on the receiver display will flash rapidly for about 2 minutes and the screen will then show the last measurement received and is now ready for synchronization. See **Figure 4**.

2. Preparing for Mounting onto the Tank

Install the supplied metal adapter into an unused 2" NPT opening in the top of the tank. Apply pipe sealant on the Adapter threads and tighten appropriately. See **Figure 2**. Do not install the transmitter at this time. For basement tanks, temporarily place a cover or rag over the adapter to minimize fuel odors until the Transmitter has been synchronized. For tanks with 1-1/2" and 1-1/4" NPT openings or European style double-wall tanks, adapters are required for proper operation. See "Parts Sold Separately" section. **Do not use an extension pipe when mounting the adapter, this can cause inaccurate measurement and erratic operation.** See **Figure 9** on page 2 for installation help.

3. Receiver / Transmitter Synchronization

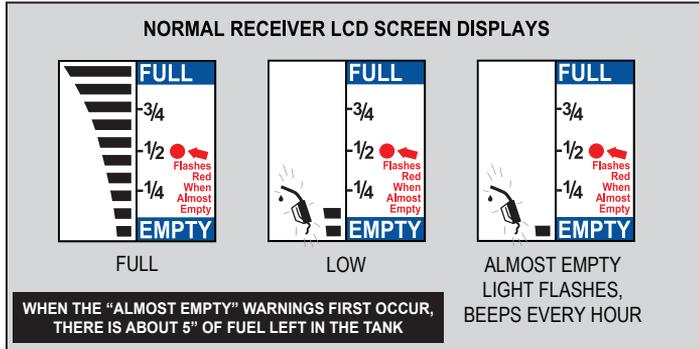
On the Receiver and Transmitter there are black dots located on the side of each device (**Figures 4 & 5**). To synchronize, plug the Receiver Display into a convenient 120 VAC electrical outlet.

- A. The LCD display on the Receiver will show a flashing top bar (for about 2 minutes) as shown in the **Figure 4**.
- B. During this 2 minute "Learn" period, slide the Transmitter, starting at the bottom of the right side of the Receiver (**Figure 5**) until the black dots touch each other (**Figure 6**) or until the Receiver Display bars begin to increase in size similar to **Figure 7** on following page. **Keep the devices in that position for about 20 seconds or until all ten bars flash and a short "beep" occurs to indicate that synchronization is complete.**
- C. The Transmitter stays in "Fast" transmit mode for 10 minutes following synchronization. Moving the Transmitter up and down above a solid surface should decrease or increase the number of bars respectively on the Receiver Display. If you wish to deactivate "Fast" transmit mode, again slide the Transmitter dot towards or past the Receiver dot.
- D. Now fasten the Transmitter to the Adapter using the gasket and screws provided. **Do not over tighten.**

NORMAL OPERATION

The Rocket 17000 system uses ultrasonic radio wave technology to measure the fuel level in the tank. It then uses wireless transmission to send the measured fuel level to the Receiver. To preserve battery life, the measurements and transmissions are done 8 times every hour.

Figure 7



NOTE: DIP switch No. 1 is used for enabling (ON)(factory setting) or disabling (OFF) the audible low fuel level warning. See **Figure 3** on previous page.

In the event of a power failure or if the Receiver is unplugged, it is **not necessary to re-synchronize the Receiver with the Transmitter**. When the Receiver is back under power, the top bar on the LCD display will flash for 2 minutes and the display will then show the last measurement received prior to losing power. It may take up to one hour until a new measurement signal is received from the Transmitter.

TROUBLESHOOTING

DISPLAY CONTAINS FLASHING TRIANGLE—NO BARS DISPLAYED

Indicates that the receiver has not received a signal for two hours. Possible causes are:

- Receiver not matched to transmitter—Resynchronize
- Receiver location not suitable—Relocate receiver
- Failed Battery—Replace Battery (use 3 Volt CR2430)
- Moisture inside Transmitter (broken seal)—Replace Rocket sensor.

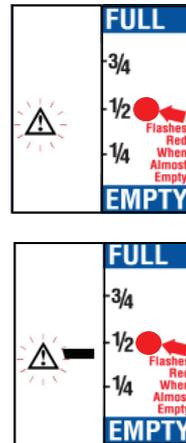
DISPLAY CONTAINS FLASHING TRIANGLE—MIDDLE BAR DISPLAYED

Indicates that the Transmitter is not receiving an echo from its ultrasonic signal inside the tank. Likely cause:

- Condensation on the sensing surface at the bottom of the Transmitter. Allow time to dry. If condition persists, remove Transmitter from the tank and clean sensor surface and verify that the seal is undamaged.

See FAQ on Page 4 for additional guidance.

Figure 8



Battery Replacement

Though the lithium battery will have a very long service life, approximately 10 years, it will eventually require changing. The battery required is a 3 Volt Lithium # CR2430.

1. Remove transmitter from tank
2. Take transmitter indoors, into a clean, dry environment
3. Using a Phillips screwdriver, remove two self tapping screws located under the foam seal.
4. Remove the top cover – note O-ring seal and removed old battery
5. Install the new battery, with the positive terminal facing outward as shown in **Figure 10**.
6. Install the top cover locating the key near the cover screw hole, and fit into the hole, ensuring the O-ring is seated correctly, re-fit cover and evenly tighten the two screws - do not over tighten
7. Replace transmitter on tank
8. Please dispose of battery properly

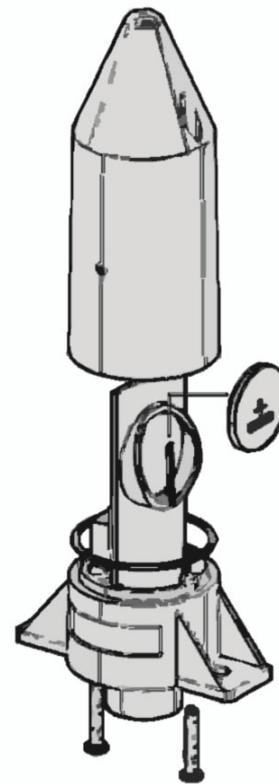
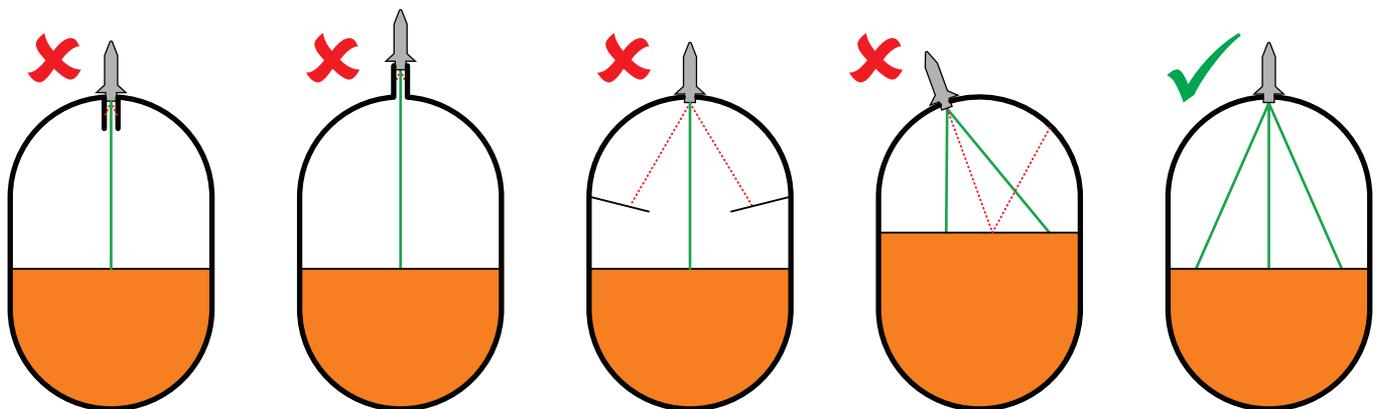


Figure 10

Figure 9 - Installation Help



Do not insert a tube, or any other sharp or rough edge inside, or on top of tank.

Obstacles can block ultrasonic signal.

Mount Sensor as vertical as possible.

CORRECT!

DIP Switch Settings for the Beckett Rocket 17000 LCD Receiver

Measured Tank Height		Set Switches ON	Settings for Commonly Available Tanks
English (Inches)	Metric (Meters)		
From - To	From - To		
20 - 22	0.50 - 0.55	2 thru 8 OFF	
22 - 24	0.55 - 0.60	7	
24 - 26	0.60 - 0.65	6,8	23" High Oval Horizontal Steel Tanks (240 Gal)
26 - 28	0.65 - 0.70	6,7,8	
28 - 30	0.70 - 0.75	5,7	Standard 27" High Oval Horizontal Steel Tank (137, 275, 330, Gal) Highland Horizontal Cylinder Tank (160, 240, 320 Gal)
30 - 31	0.75 - 0.80	5,6	
31 - 33	0.80 - 0.85	5,6,7,8	
33 - 35	0.85 - 0.90	4,8	
35 - 37	0.90 - 0.95	4,6	
37 - 39	0.95 - 1.00	4,6,7	Highland UL-142 38" Dia. 185-300 Gal
39 - 41	1.00 - 1.05	4,5,8	
41 - 43	1.05 - 1.10	4,5,7,8	
43 - 45	1.10 - 1.15	4,5,6,7 (Factory Setting)	Standard Oval Vertical Steel Tank (138, 275, 330 Gal), Roth DWT-400L (110 Gal)
45 - 47	1.15 - 1.20	3	Schütz No. 825026 (165 Gal)
47 - 49	1.20 - 1.25	3,7,8	Highland Vertical Cylinder Tank (128 Gal), Highland UL-142 48" Dia. 500 - 1000 Gal and Granby/Dehoust No. 961225 (160 Gal)
49 - 51	1.25 - 1.30	3,6,8	
51 - 53	1.30 - 1.35	3,5	
53 - 55	1.35 - 1.40	3,5,7	
55 - 57	1.40 - 1.45	3,5,6,8	
57 - 59	1.45 - 1.50	3,5,6,7,8	
59 - 61	1.50 - 1.55	3,4,7	Highland Vertical Cylinder Tank (160 Gal), Roth DWT-620L (165 Gal) and Roth DWT-1000L (275 Gal)
61 - 63	1.55 - 1.60	3,4,6	
63 - 65	1.60 - 1.65	3,4,6,7,8	Schütz No. 825034 (265 Gal), Grandby/Dehoust No. 961226 (275 Gal) and Highland UL-142 64" Dia. 1,000 - 4,000 Gal
65 - 67	1.65 - 1.70	3,4,5,8	Roth DWT-1500L (400 Gal)
67 - 69	1.70 - 1.75	3,4,5,6	
69 - 71	1.75 - 1.80	3,4,5,6,7	
71 - 73	1.80 - 1.85	2,8	Highland Vertical Cylinder Tank (192 Gal) and Highland UL-142 6 ft. Dia. 4,000 - 6,000 Gal
73 - 75	1.85 - 1.90	2,7,8	
75 - 77	1.90 - 1.95	2,6,7	
77 - 79	1.95 - 2.00	2,5	
79 - 81	2.00 - 2.05	2,5,7,8	
81 - 83	2.05 - 2.10	2,5,6,8	
83 - 85	2.10 - 2.15	2,4	
85 - 87	2.15 - 2.20	2,4,7	
87 - 89	2.20 - 2.25	2,4,6,8	
89 - 91	2.25 - 2.30	2,4,6,7,8	
91 - 93	2.30 - 2.35	2,4,5,7	
93 - 94	2.35 - 2.40	2,4,5,6	
94 - 96	2.40 - 2.45	2,4,5,6,7,8	Highland UL-142 8 ft. Dia. 4,000 - 15,000 Gal
96 - 98	2.45 - 2.50	2,3,8	
98 - 100	2.50 - 2.55	2,3,6	
100 - 102	2.55 - 2.60	2,3,6,7	
102 - 104	2.60 - 2.65	2,3,5,8	
104 - 106	2.65 - 2.70	2,3,5,7,8	
106 - 108	2.70 - 2.75	2,3,5,6,7	
108 - 110	2.75 - 2.80	2,3,4	
110 - 112	2.80 - 2.85	2,3,4,7,8	
112 - 114	2.85 - 2.90	2,3,4,6,8	
114 - 116	2.90 - 3.00	2,3,4,5	
116 - 120	3.00 - 3.10	2,3,4,5,6,8	Highland UL-142 10ft. Dia. 8,000 - 20,000 Gal

FREQUENTLY ASKED QUESTIONS:

FAQ	Question/Problem	Answer/Solution
1	I put the Rocket on the tank and plugged in the receiver, but it doesn't work.	Customer does not wait long enough for the signal to be sent. After plugging the receiver into a wall outlet and waiting for the 2 minute learn time to expire, you may need to wait another 8 minutes before the Rocket transmits to send a measurement to the Receiver. If the Receiver does not show a level (some number of bars) shortly after the 10 min period, the go through a re-synchronization process.
2	The number of bars on the receiver is not correct when compared with a mechanical gauge on the tank.	Receiver DIP switch settings are inconsistent with Actual Tank Height. Customer should measure tank height and use the DIP switch table in the instruction sheet to set the Receiver DIP switches.
3	I cannot synchronize the Rocket to the receiver.	(A) Receiver is not in Learn Mode - Unplug receiver and plug back in and verify that the top bar is blinking. Now proceed with the Sync Process. (B) Rocket is in Fast Mode - Bring the Rocket to your ear and listen for rapid "clicking". If you hear that clicking, pass a magnet across the black dot on the rocket to turn the rocket Fast Mode off. Listen again to verify that the clicking has stopped. (C) Rocket Battery is dead - Rocket has an approximate 10-year battery life, so this is usually not the problem. Install new battery per instructions on Page 2. Make sure that the Warranty label (torn when rocket is taken apart) is matched up after assembly. The top and bottom plastic housings are "keyed" and must be reassembled properly. (D) Rocket was disassembled and improperly reassembled - Is the battery installed upside down? Were the two housing sections assembled incorrectly (180° off) - which locates the black dot on the other side of the circuit board from where the activation (Reed) switch is located?
4	I ran out of fuel and the Receiver still said I had oil.	Incorrect DIP Switch Settings on the Receiver - See answer to FAQ #2
5	The receiver is still showing that the tank is full, but it is not. Reading hasn't changed since I installed the Rocket on a full tank.	Was a bushing or nipple used to install the Rocket when a 2" NPT tank opening was not available? The Rocket can only be installed using the supplied 2" NPT Adapter 1-1/2" NPT, 1-1/4" NPT and adapters for Roth style tanks are available, see " <i>Parts Sold Separately</i> " on front page. Using nipples or risers to convert a smaller opening to a 2" NPT opening for the supplied 2" adapter will not work. [NOTE: The Distributor may have the alternate bushings in stock].
6	How do I use two or more Receivers to show the measurements from one Rocket?	All Receivers must be in Learn Mode at the same time Use a power strip and plug both (or all) Receivers in at roughly the same time. All of the receivers should show the top bar blinking (Learn Mode). Now Sync the Rocket to one of the Receivers and they will all sync at the same time.
7	I'm installing two Rocket Kits on two separate tanks in the same location and they are "interfering with each other".	Install one system at a time. Leave one receiver unplugged. Get the other set up first and verify its operation. Make sure that the first Receiver set up is NOT in Learn Mode and that the first Rocket is NOT in Fast Mode. Now install the second Rocket/Receiver set on the second tank.

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