

# CF-TRIPLE-JOHN CAROUSEL

## INSTRUCTION MANUAL

Distributed by:

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# PURIVOX TRIPLE-JOHN ELECTRON INSTRUCTION MANUAL

When unpacking the PURIVOX TRIPLE-JOHN ELECTRON bird scaring cannon, you will find the following components:

- Main Power Controller (Black plastic electrical case with attached cables and hoses - See Figure 1)
- One megaphone with fastening screw
- One cross-bar (rotating beam)
- One bag containing the chain
- One bag containing the tripod centre piece
- Propane pressure reducer with hose (to be screwed into the propane tank)
- Three tripod legs (each leg consisting of two tubes which slide together)

It is advisable to identify all parts before proceeding with assembly of the cannon.

## THE POWER CONTROL BOX

The main power controller is housed inside a black weather-resistant plastic case. To access the control circuitry remove the protecting lid by lifting the front of the lid as shown in Figure 1.

### Inside you will find the:

- Battery plate & compartment
- Electronic (on/off) timer
- Shot Frequency Switch
- Sound level switch

On the outside of the control box you will see the ON/OFF switch, spark plug & ground wires, as well as the propane gas valve with attached hoses.

All items are shown on Figure 2.

## INSTALLING BATTERIES

Before installing the batteries, ensure that the ON/OFF switch located on the outside of the POWER CONTROLLER case is in the "0" (OFF) position.

To install the batteries, gently pull-up on the "battery plate lock" while lightly pressing the battery plate lock towards the timer. (See Figure 3.1) Insert two 6-volt lantern style batteries into the battery compartment. The orientation of the batteries is not important, just ensure that the spring terminals of each battery are facing up (Figure 3.2). Now insert the battery plate into the slot located on the back wall of the battery compartment (Figure 3.3) and press the opposite side of the battery plate down until it snaps into position (Figure 3.4)

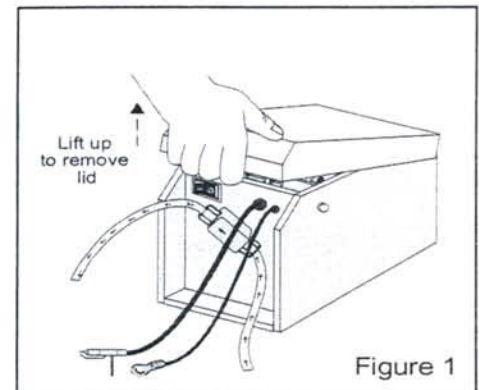


Figure 1

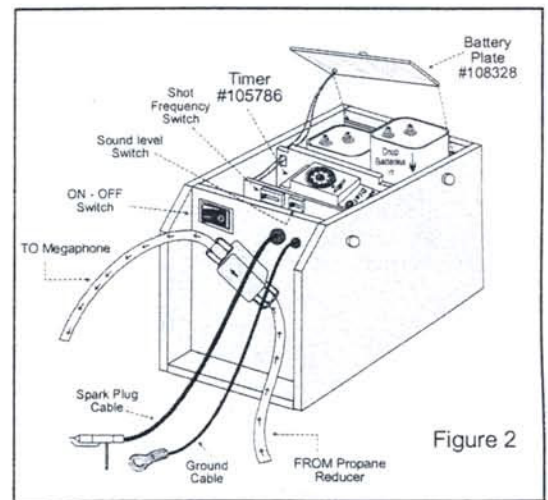


Figure 2

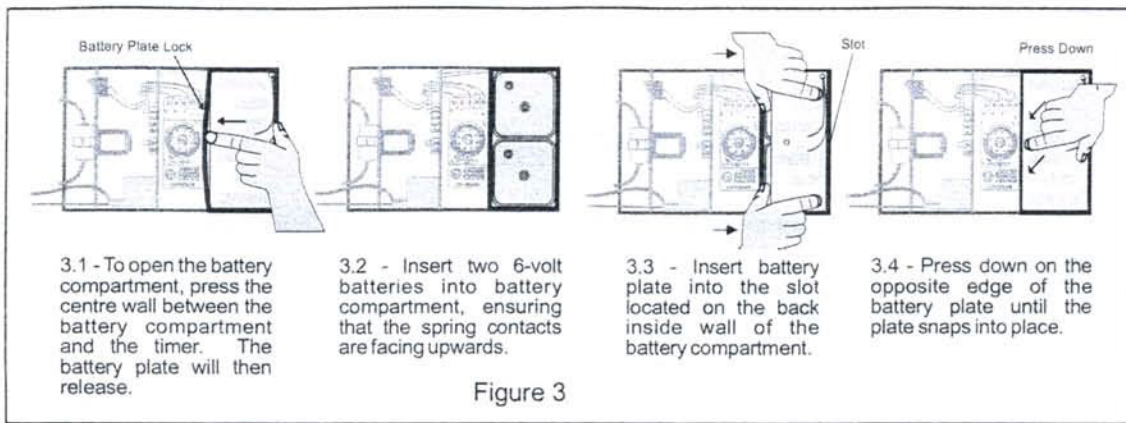


Figure 3

**IMPORTANT:** The batteries **MUST** be removed when the cannon is stored for the winter. One set of batteries should last for the entire “bird season”.

## SETTING THE SHOT FREQUENCY

The SHOT FREQUENCY slide switch located on the circuit board INSIDE the POWER CONTROLLER CASE sets the time interval between each 3-shot sequence. In order to make the TRIPLE-JOHN Carousel’s firing sequences as unpredictable as possible, the timing intervals are randomized by the computer circuitry. The user, however, can select maximum and minimum time values between which the computer chooses random firing intervals. These settings are as follows: (See Figure 4)

Switch Position	Timing Cycles
“1”	shots occur between 2 - 4 minutes
“2”	shots occur between 4 - 8 minutes
“3”	shots occur between 8 - 16 minutes
“4”	shots occur between 16-32 minutes

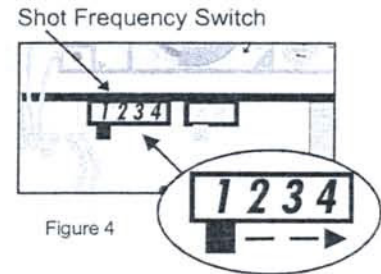


Figure 4

## SETTING THE SOUND LEVEL

The PURIVOX TRIPLE JOHN ELECTRON can be operated at two sound-intensity levels. In order to operate the cannon at full sound output, set the SOUND LEVEL SWITCH (located on the circuit board inside the power control box) to the “B” position. To operate the cannon at a reduced sound level, the SOUND LEVEL SWITCH should be set to the “A” position. (See Figure 5)

- “A” = REDUCED sound output
- “B” = FULL sound output

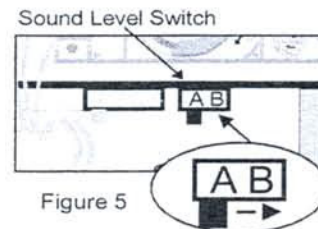


Figure 5

## SETTING THE TIMER

The programmable ON/OFF timer is located inside the POWER CONTROLLER CASE. (See Figure 6.)

Once the batteries have been installed, the quartz timer will start to "tick". To set the timer, lift the clear plastic cover which protects the time scale.

The timer is calibrated based on the 24-hour clock - i.e.:

6:00 a.m.	=	6
9:00 a.m.	=	9
12 noon	=	12
6:00 p.m.	=	18
9:00 p.m.	=	21
12 midnight	=	0

**IMPORTANT**

Only use the small screwdriver (enclosed in the power controller) to rotate the time dial. The DIAL can only be rotated by turning the WHITE DISC located in the centre of the time dial. See Fig. 6 Do not attempt to turn the outer dial itself.

**ONLY TURN DIAL IN THE DIRECTION OF ARROW**

Turning the time dial backwards will void the warranty.

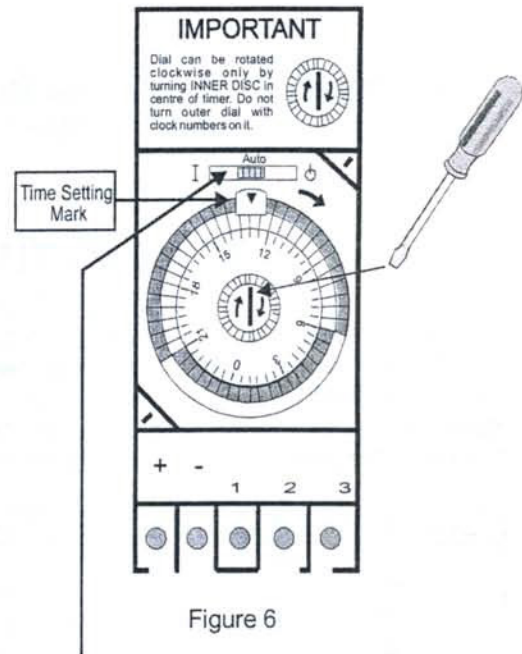


Figure 6

Ensure that the **MODE SWITCH** is in the **AUTO** position.

The time-setting keys are positioned around the entire dial. Each key represents a 30-minute time interval. These keys are used to set the daily START-UP and SHUT-DOWN times of the cannon. During the time period when the time-setting keys are pushed outward (away from the centre of the dial), the cannon is ON. When the time-setting keys are pushed inward (towards the centre of the dial), the cannon is OFF.

Time-setting keys OUTWARD = Cannon ON  
 Time-setting keys INWARD = Cannon OFF

Once the desired timing program has been set, the timer must be set to the present time of day. Using the screwdriver, turn the dial (using the white disc located in the centre of the time dial) in a clockwise direction until the present time of day lines up with the TIME-SETTING MARK (see Fig. 6).

## Timer Set-up Example

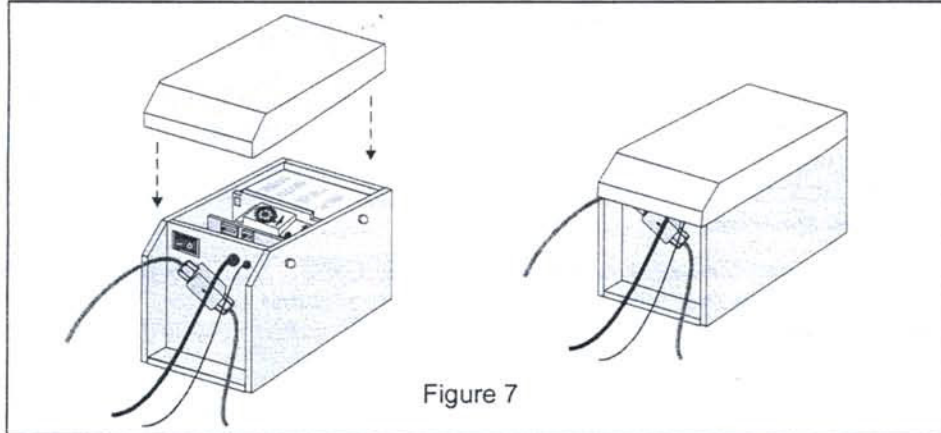
You want the cannon to:

- Come on at 6:00 a.m.
- Run all day
- Shut off at 9:00 p.m.
- The "Present time of day" is 3:00 p.m.

Steps:

1. Lift the timer cover cap.
2. Slide the time-setting key next to the "6" outward (away from centre of dial).
3. Carefully slide the time-setting keys between 6 and 20 outward. Stop when you have reached the number "21" (Remember that "21" means 9:00 p.m.)
4. Slide the time-setting key next to the number 21 inward (towards the centre of the dial).
5. Now continue sliding the time-setting keys inward until you reach the number "6". (All keys between the numbers "6" and "21" should be positioned OUTWARD [CANNON IS ON] while the keys between "21" and "6" should be positioned INWARD [CANNON IS OFF].)
6. Set the time by aligning the present time of day with the TIME-SETTING MARK. For our example, align the "15" (3:00 p.m.) with the time-setting mark.
7. Ensure that the time mode selector switch is in the AUTO position.
8. Close the timer cover.

Once the timer has been set and the shot timing cycles have been selected, and the sound power level has been set, replace the power controller cover as shown in Figure 7.



### NIGHT-GUARD FEATURE (optional)

The NIGHT-GUARD feature is a secondary back-up system and provides peace of mind to the user to ensure that ones neighbours are not subjected to accidental night-time operation.

Most Triple-John cannons are now fitted with the optional "NIGHT-GUARD" feature. This is an over-ride which automatically turns the cannon OFF at NIGHT.

Although the operation of the cannon is normally controlled by the built-in programmable clock timer, the NIGHT-GUARD inhibits night-time operation due to incorrect setting of the clock timer, failure to adjust the clock timer to compensate for changes in daylight hours or any other user error.

## ASSEMBLING THE CANNON

1. TURN THE ON/OFF SWITCH ON THE OUTSIDE OF THE MAIN POWER CONTROL UNIT TO THE "O" (OFF) POSITION.
2. Securely fasten the main power controller to the cross bar using the wingscrew, washer and lockwasher (#101131) -- use the outer-most hole on the crossbar such that the controller is positioned at the end of the crossbar (with the cables and hoses facing inward)
3. Attach the megaphone to the crossbar (screw #102280) at a 90° angle (perpendicular), as shown on the back page of the manual. Be sure that the hole for the spark plug faces inward. (towards the power controller)
4. Screw the spark plug (#101440) and the ground cable (#108208) into the megaphone in the following manner:

- a) pick up plastic screw #100920
- b) slide ground cable lug over screw
- c) slide spark plug lug over screw
- d) screw into megaphone

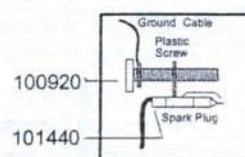


Figure 8

**IMPORTANT:** If the order of the components is not correct, the cannon will not operate properly.

5. Remove the propane jet (#100412) from the orange jet hose. Screw the propane jet into the megaphone (back, underside) and slide the jet hose over the installed propane jet.
6. Screw the tripod centre piece (#102072) into the centre of the crossbar (#102090).
7. Feed the other jet hose down through the centre of the tripod centre piece (See Assembly Diagram).
8. Assemble the tripod legs by inserting the upper sections (straight tubes) into the lower sections (tubes with attached stabilizing plates). Push the assembled tripod legs over the stubs on the tripod centre piece (#102072). The spring clips on the tripod centre piece will hold the legs in place. The cannon should be leveled using the adjustable leg and should spin freely.
9. Thoroughly clean the valve cup on the propane bottle. Seat the propane regulator by repeatedly twisting the cone into the cup on the propane bottle. Then tighten the nut (left-hand thread!). If the regulator is not properly seated, or the cup is not clean, the connection may leak.
10. Using the attached hose splicer, connect the jet hose from the regulator to the jet hose coming down through the tripod centre piece.
11. Connect one end of the chain (#102080) into the hole on the bearing tube (#106140). The other end should be fed through the handle on the propane tank and linked back into the chain so that the bottle hangs a few inches off the ground.

## STARTING THE CANNON

The cannon should always be started in a controlled manner so that the operator is not subjected to the cannon shot at close range. Always start the cannon by following these steps:

1. Turn the ON/OFF switch (located on the outside of the POWER CONTROLLER BOX) to the "O" (OFF) position.
2. Open the valve on the propane gas tank.
3. Turn the ON/OFF switch to the "I" (ON) position.

**The first series of shots will occur after approximately 5 seconds.** Protect your ears and move away from the unit.

**WARNING:** If these steps are not followed the cannon may fire IMMEDIATELY after the propane tank valve has been turned on or the power switch has been turned on.

## STORING THE TRIPLE JOHN

1. Remove the main power control unit from the crossbar.
2. Remove the batteries from the battery case so as to avoid possible leakage.
3. **STORE THE MAIN POWER CONTROL UNIT IN A DRY LOCATION (NOT ON A BARN FLOOR).**

## TROUBLESHOOTING

If the cannon fails to operate, please check the following:

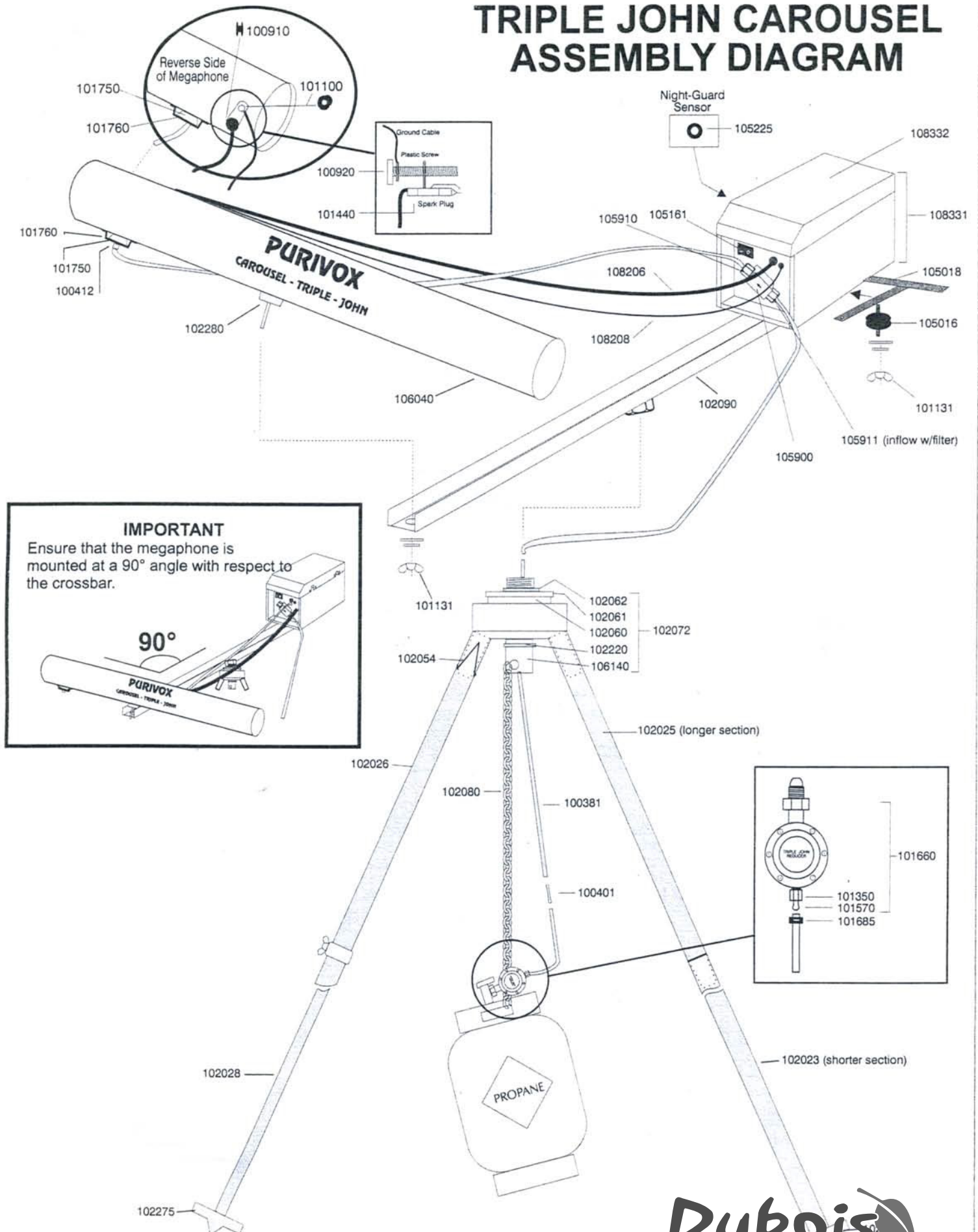
1. Ensure that the cannon is turned on. The switch must be in the "I" (ON) position.
2. Ensure that there is propane in the tank and that the tank valve is open.
3. Ensure that the batteries are OK. Each battery must be providing at least 5.5 volts.
4. Ensure that the ON/OFF clock-timer is properly set and that the present time of day is correctly set.

If the unit still does not function properly, please contact your dealer.

## PARTS LIST

PART #	DESCRIPTION	PART #	DESCRIPTION
100381	Jet Hose	102072	Tripod centre piece complete
100401	Hose connector	102080	Chain
100412	Propane Jet	102090	Crossbar
100910	Rubber bushing for Sparkplug	102220	Circlip
100920	Plastic Insulating Screw	102273	Tripod stabilizing plate (fixed leg)
101100	Rubber grommet for p. screw	102275	Tripod stabilizing plate (adj. leg)
101131	Wing nut M6	102280	Megaphone mounting bracket
101350	Nut only for regulator hose	105016	Rubber Control Box mount/screw
101440	Spark Plug	105018	Control Box metal mounting frame
101570	Hose connector (nib only)	105161	ON/OFF Switch
101660	Propane regulator complete	105225	"Night Guard" sensor
101685	Hose clamp for regulator	105786	Timer (12V)
101750	Injector funnel	105900	Valve
101760	Injector bracket	105910	Hose connector (to valve) - outflow
102023	Tripod Leg (1/2) - shorter end	105911	Hose connector (to valve) - inflow w/filter
102025	Tripod Leg (1/2) - longer end	106040	Megaphone
102026	Tripod leg (adjustable - upper)	106140	Steel bearing tube
102028	Tripod leg (adjustable - lower)	108206	High Voltage spark plug cable
102054	Spring insert for legs	108208	Ground Cable
102060	Bearing	108328	Battery plate - with white connector
102061	Cover cap for bearing	108329	Lid for Control Box (fork closure)
102062	O-ring seal	108331	Control Box with lid
		108332	Lid for Control Box (ball closure)

# TRIPLE JOHN CAROUSEL ASSEMBLY DIAGRAM



## IMPORTANT

Ensure that the megaphone is mounted at a 90° angle with respect to the crossbar.

90°



# “Best Management Practices” for Propane Bird Scaring Cannons

Bird Damage is a huge problem to farmers in field crops around the world. Birds can destroy a crop and farm profits within hours. Most agree the problem is worsening, as more hectares of crops are grown.

There are many bird control strategies, including visual, physical and acoustical. Propane-fired bird scaring cannons, informally known as bird bangers, are used in over 80 countries on six continents to control crop bird damage. Comprehensive research has concluded that bird bangers are very effective for scaring birds from field crops. Today most bird bangers are electronically controlled “Triple-Firing” rotating ones, which are far more effective than the old style & high maintenance single-shot stationary units.

Some neighbours do not like the sound from Bird Bangers. Neighbours must be tolerant to growers for the need for bird bangers to protect crops, but likewise growers need be tolerant to neighbours for the need for quiet times.

Here are the best management practices (BMP) as recommended by the Ontario Ministry of Agriculture & Food (OMAFRA) for bird bangers used to scare birds from crops. These BMP's take into account the needs of both growers and neighbours.

Best Management Practices	Setbacks from Neighbours
<ul style="list-style-type: none"> <li>• Tell all neighbours living within 175 m (575 ft) of the bird bangers about when and how you plan to operate them, and who to call if there is a problem.</li> <li>• Start using the bird banger no earlier than three to four weeks prior to veraison and stop use immediately after harvest.</li> <li>• Operate bird banger during daylight hours, between 30 minutes before local sunrise and 30 minutes after local sunset.</li> <li>• Use light sensor over-ride devices to make sure the bird banger cannot operate at night, even if timers are adjusted improperly, especially on properties where the farm manager lives off-site</li> <li>• Do not place adjacent bird bangers any closer to each other than 75 m (250 ft).</li> <li>• Adjust timers often enough to account for later (or earlier) sunrise and sunset times throughout the season especially at Daylight Savings Time if bird bangers are still necessary beyond this date.</li> <li>• Where practical on large properties, move bird bangers weekly so birds don't get used to their location.</li> <li>• Do not place bird bangers within a crop row directly in line with a neighbour's house, as the row canopy can channel the sound towards the house.</li> <li>• Adjust tripods so bird bangers are level, firing in all directions and not more often at neighbours.</li> <li>• Monitor bird bangers so they operate properly, especially those not on, or near, your home farm.</li> <li>• Take into account echoing when using bird bangers adjacent and below an escarpment or hilly/mountainous terrain, as it can cause echoing.</li> </ul>	<p>The current BMP setback from neighbours for normal operation of a bird banger is set to 125 m (410 ft) when the bird banger is operated:</p> <ul style="list-style-type: none"> <li>• during the <i>regular</i> growing season, ceasing about the end of October.</li> <li>• with proper leveling of the bird banger so it spins uniformly in all directions.</li> <li>• on <i>Frequency 2</i> setting (four to eight minutes sequence interval).</li> </ul> <p>The 125 m (410 ft) setback has evolved and worked well for growers and neighbours, but other setbacks also make sense if practices are used that increase sound levels (with greater setbacks), or decrease sound levels (with lesser setbacks).</p> <p>Field tests explored more flexible setbacks with 125 m setback used as a benchmark. It was determined sound levels, and resulting annoyance for neighbours are:</p> <ul style="list-style-type: none"> <li>• <i>increased</i> over ice wine season, as no vegetation is present to muffle sounds, and the long season extends annoyance period. This effectively <i>adds</i> 5 dBA compared to regular season use.</li> <li>• <i>reduced</i> if the bird banger doesn't fire directly at a home. This effectively <i>drops</i> sound levels 5 dBA compared to bird bangers that fire at homes.</li> <li>• <i>reduced</i> if the bird bangers are set on the 'A, quiet volume' setting, which effectively <i>drops</i> sound levels 5 dBA compared to 'B, loud volume' setting (Figure 1).</li> </ul> <p>In order to easily calculate the appropriate “neighbour setback” for your particular farm please refer to the “RING-GRAPH” (Fig.2 ) on the reverse side of this sheet.</p>

# Calculating acceptable "Bird Banger" to Neighbour setbacks....

Factors, which determine setback distances, are:

1. **DURATION OF USE**

**Regular Harvest:** Bird Banger use commences a few weeks prior to the crop becoming desirable to birds and ceases immediately after harvest.

**Ice-Wine Harvest:** For Grape Crops where bird bangers are used to protect crop until harvest in late-fall to early winter.

2. **ROTATION ANGLE**

**360° Rotation** = Banger disperses sound in ALL DIRECTIONS,

**180° Rotation** = Banger does not fire toward neighbours,

3. **SOUND VOLUME**

**A-Quiet** (Low Volume setting A) **B-Loud** (Full Output setting B) see Fig 1

4. **SHOT FREQUENCY** (See Fig 1)

**F1:** Shot Frequency (2-4 minute repeat setting)

**F2:** Shot Frequency (4-8 minute repeat setting)

**F3:** Shot Frequency (8-16 minute repeat setting)

**F4:** Shot Frequency (16-32 minute repeat setting)

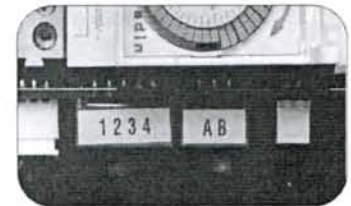


Figure 1

The Ring-Graph (Fig 2) easily allows a grower to calculate the acceptable setbacks to neighbours for operation of a bird banger in agricultural crops. Start in the centre of the graph and move outward through the layers selecting the conditions and bird banger settings which apply to you. The measurement you arrive at along the outside ring of the chart is the acceptable neighbour setback distance (measured in metres).

The example on the Ring-Graph assumes: **ICE-WINE HARVEST**, Rotating **360°**, running on the **LOUD** setting, set at shot frequency **F2**. This yields a setback distance of **175 metres**.

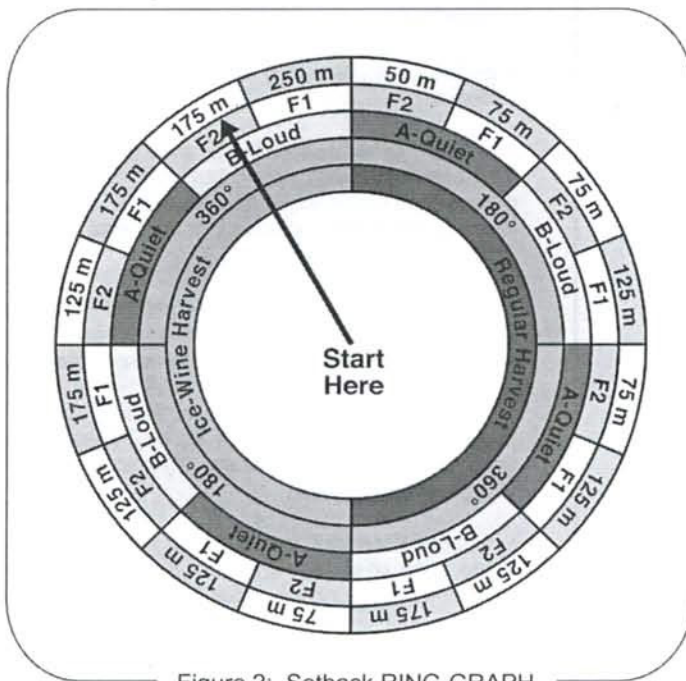


Figure 2: Setback RING-GRAPH

Always ensure that the built-in timer is properly set. See Figure 3.

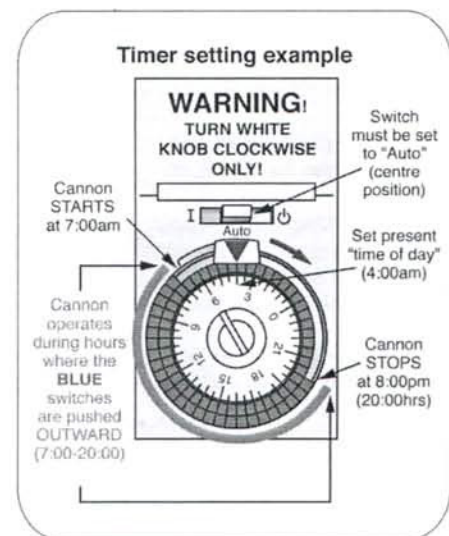


Figure 3: Timer Setting Instructions

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