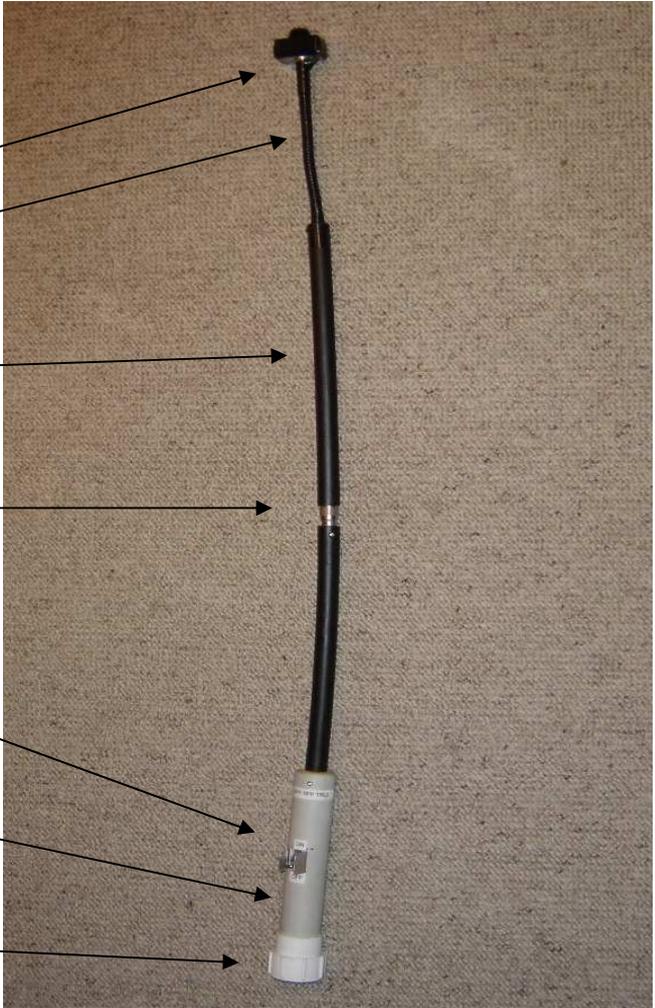
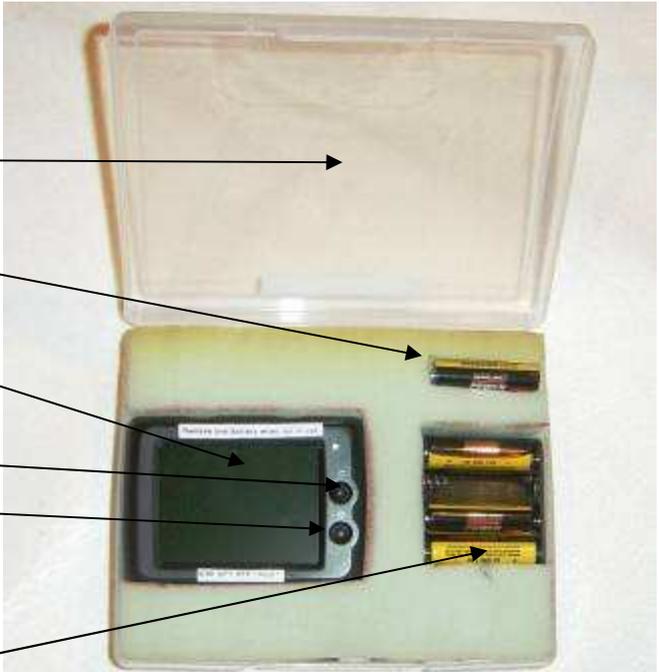


# KIWI Spy (Mark II)

Night vision capable video equipment enabling views inside Kiwi burrows and tunnels.

1	<p><b>The Camera Probe</b></p> <p>Night vision Camera</p> <p>Flexible neck</p> <p>Semi rigid pole</p> <p>Thumb Wheel Joiner</p> <p>On/Off switch</p> <p>Battery Case</p> <p>Screw cap to access the battery pack</p>	
2	<p>The two component pieces comprising the Camera Probe, separated by unscrewing the Knurled Ring on the joiner</p>	

<p>3</p>	<p><b>The Display</b></p> <p>Plastic Carry case with clip down lid</p> <p>Battery stored separate from the battery pack</p> <p>3.5" Colour display</p> <p>Rotate picture button</p> <p>On/Off Button</p> <p>12 V Battery Case</p>	
<p>4</p>	<p><b>Description of the Equipment</b></p> <p>a. General</p> <p>Kiwi Spy is a portable camera/display system designed to inspect the interior of Kiwi burrows to check for the presence of birds and/or eggs. Normally this is undertaken by blind touch or feel but this can be difficult due to the structure of a burrow and unnecessarily disturb any occupants.</p> <p>In some circumstances it may be useful to inspect and assess the interior of the burrow prior to any further intrusion. Kiwi Spy provides a small night camera system on a semi flexible extension arm that can be carefully introduced into the burrow. An associated display unit provides a picture of what the camera sees inside the burrow.</p> <p>b. The Display</p> <p>The display is a small (3.5") colour LCD unit that operates from a 12V battery pack (9 AA alkaline dry cells). When the camera switches to night vision (Infrared mode), the display is black and white only.</p> <p>The controls on the display are (i) On/Off button and (ii) Display rotate button.</p> <p>c. The Camera Extension</p> <p>The night vision camera is mounted on the end of a flexible tube that allows the camera head to be twisted to different angles to view the burrow. The second half of the camera probe also houses the battery Pack. The two halves screw together with a mechanical coupling that also feeds the 12VDC from the battery pack to the Camera Head.</p> <p>The camera lens is very wide angle (approx 90 deg) so will provide a very good viewing angle inside a burrow.</p> <p>The camera is colour capable in day light. In dim or zero light conditions the camera <u>automatically</u> switches into "Night Vision" mode. Six LEDs mounted on the front of the camera</p>	

	<p>switch on to provide illumination. This light is Infrared/Red and should not in itself disturb the birds.</p> <p>The longer arm of the camera extension is a semi rigid plastic pipe. This will allow some <u>limited</u> bending of the pipe to move the camera into a burrow.</p> <p>The base of the Camera extension includes a battery case complete with an On/Off switch. Inside the battery case is a 12Volt battery pack consisting of 9 AA Alkaline dry cells.</p> <p>The connection between the Display and the Camera is a wireless link and requires no cables. The camera and display should operate reliably up to 5-10 metres apart.</p>
4	<p><b>Assembling and Switching on the Camera Probe</b></p> <ol style="list-style-type: none"> <li>a. Place the Battery section of the Camera Probe on a flat surface standing vertically.</li> <li>b. Holding the other section in line vertically with the lower section press the two connectors together firmly.</li> <li>c. While maintaining the vertical downwards pressure, rotate the knurled connector ring CLOCKWISE to screw it on to the lower section. Do the knurled ring up firmly.</li> <li>d. Switch on the camera by turning the switch on the battery case to “On”. (This will cause the display to flicker and then light up and display a picture if the Display is already on).</li> <li>e. The camera system is water resistant and can be used in wet/damp conditions.</li> </ol>
5	<p><b>Switching on the Display</b></p> <ol style="list-style-type: none"> <li>a. Flip open the lid of the Display case.</li> <li>b. Re-install into the battery pack the AA cell that is stored separately to the pack. (Note, one cell is removed from the battery pack when the system is not in use to prevent long term discharging of the AA cells.)</li> <li>c. Press the lower of the two buttons on the display to switch the display on. The red LED should light to indicate the display is on.</li> <li>d. The display may or may not light up to a blue colour depending if the Camera is switched on.</li> <li>e. Leave the flip top lid open for better viewing of the display. Clip the lid down if it is raining and the display is getting wet.</li> <li>f. In reasonable light the picture will be colour. If in low light conditions, the display will be black and white.</li> <li>g. The display rotate button can be used to rotate the picture to the required angle.</li> </ol>
6	<p><b>Viewing a Burrow</b></p> <ol style="list-style-type: none"> <li>a. Where possible the display should be positioned where the camera operator can see the picture. This will aid the introduction of the camera arm into the burrow. A second person may be able to assist by holding the display so the camera operator can also view it.</li> <li>b. The camera operator will need to assess the direction of the burrow tunnel to decide the best angle to set the camera to and the flexible neck so as to be able to view turns in the burrow.</li> <li>c. The camera head can be turned to the required angle by twisting the flexible arm.</li> <li>d. Inspecting and assessing a burrow complex may require several settings of the camera angle to fully check it out.</li> </ol>

7	<p><b>Packing Up the Equipment</b></p> <p>On completion of the viewing:</p> <ol style="list-style-type: none"> <li>Switch off the camera at the On/Off switch on the handle.</li> <li>Place the Camera Probe Battery Case end vertically on a flat surface and twist the knurled ring ANTI-CLOCKWISE to undo the connection and break the unit into the two component halves.</li> <li>Press the On/Off button on the Display.</li> <li>Remove one of the AA cells from the battery pack and place in the foam pocket beside the pack.</li> <li>Clip down the case lid.</li> </ol>
8	<p><b>Maintenance</b></p> <ol style="list-style-type: none"> <li>Ensure that one of the Display batteries has been removed from the pack and stored in the foam pocket.</li> <li>Clean the two halves of the Camera Probe with a clean damp cloth as required and dry off.</li> <li>Clean the Display equipment with a soft dry cloth. Avoid rubbing the LCD screen, only brush gently as required to clean it.</li> <li>Dry the equipment.</li> <li>Replace the batteries as required (carry a spare pack of 10 cells in the field).</li> </ol>
9	<p><b>Problems</b></p> <ol style="list-style-type: none"> <li>The Camera and Display need to be within 10 metres of each other.</li> <li>If the Probe is deep inside a Burrow to its full length the Display will need to be as close as possible to the end of the Probe to be able to pick up a signal.</li> <li>The main problem if the equipment doesn't work will be related to the batteries in the Camera extension or the Display.</li> <li>Check that the red LED comes on when you press the ON button on the Display. Replace the batteries in the display battery pack if no red light. Use AA Alkalines or Super heavy duty cells. Lift the battery case out of the foam compartment to replace the AA cells. Ensure correct polarity is observed.</li> <li>If the display is working but no picture when the camera is switched on replace the batteries in the pack inside the PVC compartment. Unscrew the battery cap and ease the battery pack out of the PVC compartment. Observe correct polarity when replacing the AA cells.</li> <li>Batteries should last 6-8 hours of use but the equipment <u>must</u> be switched off (and a cell removed from the display battery pack) when it is not in use.</li> </ol>

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