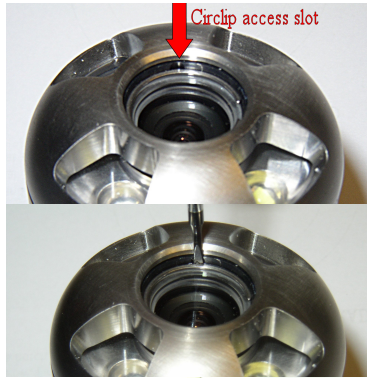


## WINDOW REPLACEMENT

The sapphire window is held in place with a snap-ring. This is similar to a circlip but has no holes at the ends. The camera front has a small cut-out (shown here), this allows a thin-bladed screwdriver (1.5mm) to push the snap-ring upwards and inwards. The snap-ring may "ping" out so eye protection should be used. A spare is supplied with new windows in case the original is lost.



Use a cotton-bud with some Blu-Tak on the end to get a grip on the face of the window and pull straight upwards. The window will have some resistance to pulling due to the 'O' ring pressure but should lift using this method.



Remove the old 'O' ring using a pair of tweezers. The new 'O' ring should be fitted into the camera front and the window inserted into it. Fitting to the window first may result in damage to the 'O' ring when fitting into the camera front. Ensure that the new sapphire window inner surface (the smaller end) is free from all grease and dust and then push this into the camera front using a lint-free cloth.



Due to the air pressure within the camera and the 'O' ring the sapphire window may show some resistance. Leave the window a little proud and then push the new snap-ring into the camera front.

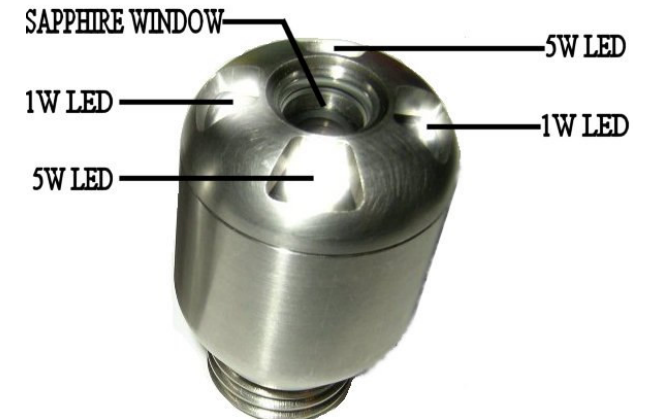


Using a pair of small screwdrivers work the snap-ring into the groove as shown here. The best technique is to get one end of the snap-ring into the groove while pushing down on the window and then use the other screwdriver to work the other end into the groove.

Clean the outer face of the window with a soft lint-free cloth.

## OPERATING INSTRUCTIONS – T801

### CAMERA T801



#### Your new T801 camera

The T801 camera is designed to operate on a Gatorcam push-rod system that has a termination suitable for their range of "Gatorcam" colour cameras. Although the internal electronics are completely different to the Gatorcam colour camera, the T801 is designed to operate at the same voltage and current. However, the T801 produces more light output by utilizing 4<sup>th</sup> generation LED's and saves energy by using a passive uprighting system.

The camera is designed to work in 3" pipes and above. The maximum pipe size is dependant on the material the pipe is constructed from but 9" – 12" pipes are successfully illuminated as long as the material has good reflectance.

A 3" – 6" skid set is also available.

## LIGHTING

The lighting on the T801 camera has at least twice the output of the Gatorcam camera and you may find that good results can be obtained with lower settings. The T801 utilises the latest auto-exposure system for excellent pictures in most pipe sizes and construction.

The lighting is designed to illuminate only the area that the video camera is viewing, concentrating the lighting to the side of the pipe with a little light directed further down the pipe. This is achieved by using four LED's, two of which are high-power types (5W) and two of low power (1W). Using this combination the lighting produces the perfect pattern for use in pipework.

## CAMERA PROTECTION

The front of the camera is protected from knocks by the use of a heavy guard, below the guard is the LED window that protects the LED's from moisture, and this section is sealed from the rest of the camera to prevent moisture ingress.

A thick-sectioned sapphire window protects the video camera; this is optically flat for best results and has a high surface-hardness to protect from damage. The sapphire window is a replaceable item and can be purchased separately as a window kit complete with 'O' rings.

The camera utilizes shock-mounting of the internal camera chassis to protect against damage, this is operational in all three axis.

## AUTO – UPRIGHTING

The auto-uprighting is achieved by the use of precision bearings and a weighted internal chassis. The bearings are loaded with a fixed-viscosity fluid that varies the damping only by small amounts over the camera's operating temperature. The damping has been tested for compatibility in all pipe sizes and provides the most reliable method of auto-uprighting in all situations.

## OPERATING REQUIREMENTS AND PERFORMANCE

CAMERA VOLTAGE	10-15V DC (0.6W)
LIGHTING VOLTAGE	10-15V DC (4W)
VIDEO OUTPUT	Buffered, 1V into 75 Ohms
CAMERA PERFORMANCE	1 lux, 512 x 582 pixels CCD
SHUTTER SPEEDS	1/50 to 1/96000 sec
CAMERA WEIGHT	0.9 KG

## OPERATION

The camera is designed to be a direct replacement for the Radiodetection "Gatorcam" camera and is fitted in the same manner.



Prior to fitting, the rear of the camera and rod end connector should be checked for dirt and moisture and cleaned if necessary.



The camera is then screwed onto the rod end connector until fully hand tight. The termination's spring is then screwed onto the rear of the camera, completion the connection. For further information on fitting the camera please see your system operating instructions



Once the camera is fitted to the system, it may be powered up in the normal manner.

A small delay in the camera starting is normal as a result of "soft start" technology within the camera that allows the system power supply to stabilise prior to the camera starting.

It will also be apparent that the four illumination LED's are of different intensity. This is perfectly normal and is a result of the different LED's power as described earlier.

No adjustment of the camera is available or necessary, all functions being fully automatic. Focus is preset to give optimum results within the pipe size range covered by the camera.

The camera contains no built in sonde due to its heavy stainless steel construction. Troglotech offer an optional, plug-in, inline sonde if location is required.

## SKIDS

The camera should, wherever possible be used with skids for centring and protection. Skids will vary according to application and whether existing skids are being used.

Troglotech offer an optional skid set covering pipe diameters 75mm (3"), 100mm (4") and 150mm (6") details of which are supplied with that product.

A typical 100mm skid set will comprise front and rear brush holders, one for the camera and one for the rod end termination which should be used to centre the termination in the pipe, ensuring that the camera sits level.



If, under exceptional circumstances it is necessary to operate the camera with no skids fitted then it is recommended that the camera body be protected by wrapping with "Duck" tape or similar.

## MAINTAINANCE

The camera requires no maintenance except for the cleaning of the LED and camera windows. The rear connector should also be checked cleaned and dried if necessary when the camera is fitted to the system.

The sapphire window can be cleaned with water with a little detergent to removed deposits, a final clean with a soft lint-free cloth is recommended to achieve the best optical performance.

The LED window can be cleaned using the same methods although a soft brush is useful for removing dirt that is trapped in the guard cavities.

The rear connector may be cleaned with absorbent paper towel and/or a clean, soft brush. On no account should hard tools be used to clean the contact area as damage could result. Mating rod end termination should be inspected and cleaned in a similar manner. Connector threads should be kept free of grit.

Do not use any solvents or high-pressure water jets as these may damage the camera.

DO NOT DISSASSEMBLE THE CAMERA, the camera is produced in a low-humidity environment.

## REPAIRS

The only user-replaceable part is the sapphire window. This can be ordered from your distributor or Troglotech and is supplied with a pre-greased 'O' ring and a replacement snap-ring.

The sapphire window has an extremely hard surface but can be scratched by solid objects that are abrasive. It is worth checking the condition of the window at regular intervals, as the quality of the video picture will slowly become more blurred as the window surface is damaged.

The window is 5mm in depth so it is unlikely that it will ever crack and allow moisture within the camera. However, if this does occur then return the camera to your distributor for repair.

Replacement of the sapphire window must be performed in a clean environment. Make absolutely sure that the camera front is clean a free from silt before a replacement is carried out.

Make sure that the window is not removed for any period of time as the camera is assembled in low-humidity conditions and the ingress of moist air may cause misting of the inside of the window.