



P Y E
TELEVISION
RECEIVER

INSTRUCTIONS
FOR
OPERATING
MODEL 815
FOR A.C. MAINS OPERATION



PYE LIMITED
RADIO WORKS, CAMBRIDGE, ENGLAND

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INTRODUCTION.

Various statements have been made as to the maximum distance from the transmitter at which satisfactory pictures may be received.

Generally speaking, however, reception of Television pictures almost anywhere within 35 miles radius of that transmitter will be successful.

Reception at distances of 50 miles or sometimes more is possible, with reasonable success in many cases, provided proper tests are taken before the receiver is installed.

As the distance from the transmitter increases, it may be necessary to add what is known as a reflector rod to the aerial. This is inserted behind the aerial dipole with respect to the transmitting station. It has the effect of reflecting the signal back on to the aerial dipole and thus concentrating a greater signal strength on this dipole.

It may also be found necessary to increase the height at which the aerial is mounted with the increase in distance from the transmitter.

The Television aerial consists in the normal way of what is known as a dipole aerial assembly. This takes the form of two metal rods mounted vertically one above the other by means of a clamping bracket. These two rods are connected to the television receiver by a special cable, the top rod being connected to the centre wire and the bottom to the outer screen of this cable.

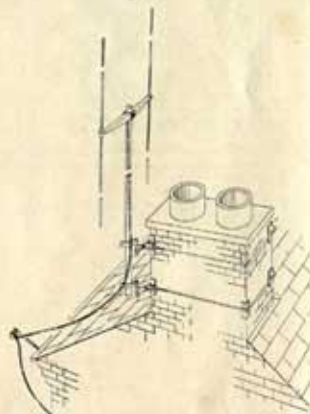
Where the site is about 10 miles or less from the transmitter a simple dipole aerial can be mounted and simply attached to the wall of the house.

TYPES OF PYE AERIALS AVAILABLE



A dipole Television aerial unit complete with reflector, pole and fixing brackets for wall mounting.

Fig. 1



A dipole Television aerial unit complete with reflector, pole and chimney mounting pieces for chimney mounting.

Fig. 2

The above alternate methods of Television aerial erection will cover the majority of aerial requirements. Elaborations may be necessary in difficult localities and simplifications possible where conditions are especially good.

NORMAL OPERATING INSTRUCTIONS FOR THE USER.

- (1) Turn the Brightness Control in a clockwise direction until the switch incorporated with this control operates and switches on the mains to the receiver.
- (2) Wait approximately one minute to allow the valves and Cathode Ray tube to heat up, then turn the Brightness Control in a clockwise direction until the television picture appears. The Brightness Control can be adjusted until the brightness of the picture is as desired. It should be remembered that too much brightness will spoil the contrast and definition of the picture.
- (3) Adjust the Sound Volume Control until the desired volume of sound is obtained.

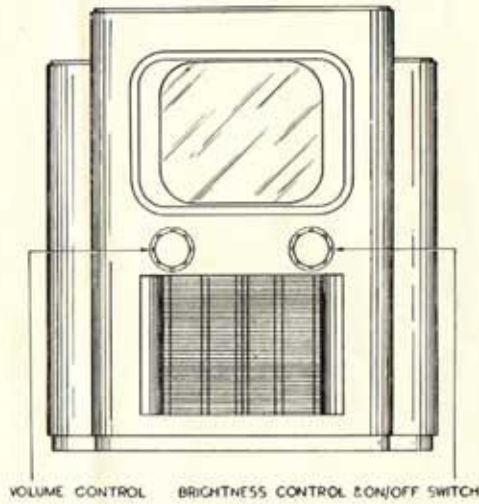


Fig. 3

NOTE.—A brief résumé of the operation and function of the Television Minor Controls, which are located on the back of the receiver, is given on page 11. These controls are adjusted by the installation engineer, and normally it will not be necessary for the user of this instrument to re-adjust them. The brief résumé, however, is given for your guidance, also the installation engineer will be pleased to demonstrate and explain fully the use of these controls.

INSTRUCTIONS FOR INSTALLING THE MODEL 815 TELEVISION RECEIVER.

(Mainly for the guidance of installation Engineers.)

The Television Receiver Model 815 is an A.C. mains operated instrument intended for reception of high definition television transmissions as radiated from Alexandra Palace, London. The wave-length of the vision transmitter is 6.67 metres and the accompanying sound 7.23 metres.

The Cathode Ray tube has been arranged to permit direct viewing of the television image at as great a viewing angle as possible.

The 815 Model Television Receiver has two major controls and five minor controls. They are as follows:—

- | | | |
|--|--------------|--------------------------------------|
| (1) BRIGHTNESS CONTROL AND ON-OFF SWITCH | (see Fig. 3) | } Major controls for regular use. |
| (2) VOLUME CONTROL | (see Fig. 3) | |
| (3) LINE HOLD CONTROL | (see Fig. 4) | } Minor controls for occasional use. |
| (4) FRAME HOLD " | (see Fig. 4) | |
| (5) VISION SENSITIVITY CONTROL | (see Fig. 4) | |
| (6) FOCUS CONTROL | (see Fig. 4) | |
| (7) SOUND SENSITIVITY CONTROL | (see Fig. 4) | |

There are also incorporated in the receiver six Pre-set Controls, which should not normally require any re-adjustment once they are set. These controls and their positions are as follows:—

- | | |
|---|--|
| (1) LINE SYNCH SEPARATOR BIAS CONTROL | } On bakelite platform mounted at rear of time base. |
| (2) FRAME SYNCH SEPARATOR BIAS CONTROL | |
| (3) LINE AMPLITUDE CONTROL | |
| (4) FRAME AMPLITUDE " | |
| (5) LINE LINEARITY CONTROL—on the deflector coil assembly. | |
| (6) FRAME LINEARITY CONTROL—underside of the time base, near the rear left-hand corner. | |

- (1) Remove the back of the Television Receiver and carefully inspect it, making sure as far as possible that the valves are bedding correctly in their respective sockets (see Fig. 5) and that the appropriate flexible leads are connected to their top terminals.

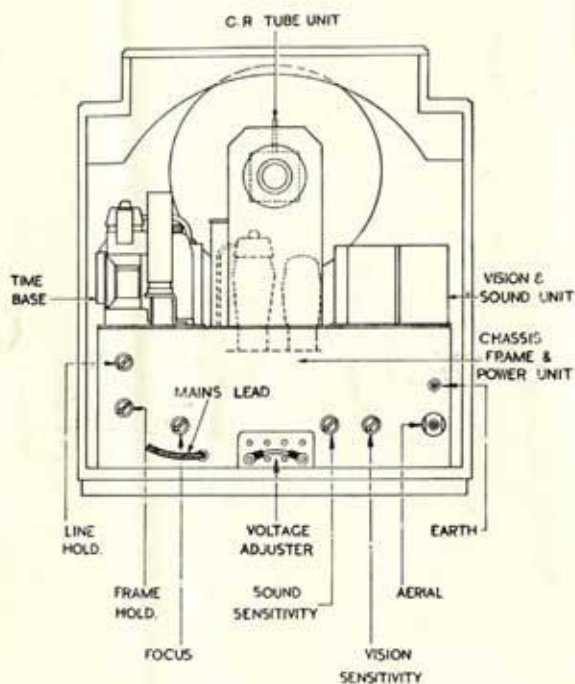


Fig. 4

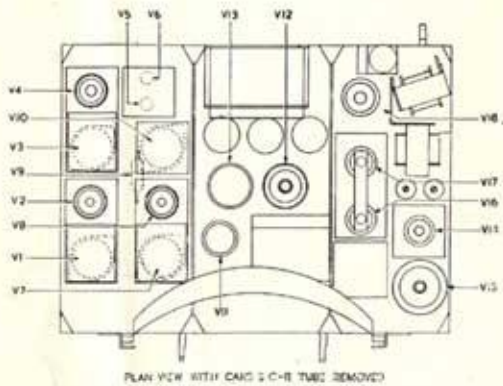


Fig. 5

- (2) This Pye S15 Television Receiver is intended for use on Alternating Current of the voltage and frequency engraved on the voltage adjustor plate (see Fig. 4).
- (3) The mains input adjustor tag will be found on the mains transformer (see Fig. 4). It will be noted that a brass screw on a flexible lead is provided which can be connected to the socket corresponding to the supply voltage. If this screw is not already in the correct socket, remove it and reinsert it in the correct one. Be sure to tighten the screw firmly.
- (4) A mains lead complete with a wall socket plug is provided and this plug should be connected to a suitable power point or lighting point. If the power point or lighting point concerned is fitted with a switch, see that this is in the off position until the installation is finally completed.
- (5) Connect a good earth to the Receiver and plug in the aerial connector. Then replace the back cover.

IMPORTANT.—The Television Receiver must be operated with the back cover removed only when adjustments are being made and in no circumstances should the installation be considered complete until the back cover is replaced.

- (6) Switch on the mains to the instrument by turning the Brightness Control (see Fig. 3) in a clockwise direction. This control need not at first be turned to the fully clockwise position, but need simply be rotated to that position where the switch spring operates and switches on the mains to the receiver. Wait approximately one minute to allow the valves and Cathode Ray tube to heat up, then turn the Brightness Control in a clockwise direction until a faint illumination appears on the screen. Re-adjust the control until the illumination just disappears.
- (7) Adjust the Vision Sensitivity Control until a picture contrast is obtained with good gradations of light and shade. Slight re-adjustment of the Brightness Control may be necessary.
- (8) Adjust the Sound Sensitivity Control to a point at which the sound output just becomes distorted. The sound output can now be set to the required level by means of the Volume Control.

N.B.—The adjustment of the Vision and Sound Sensitivity Controls must be carried out very carefully when the receiver is installed. The setting of the Vision Sensitivity Control will determine the quality of the light and shade gradations of the picture and to a large extent the good synchronisation of the picture.

The setting of the Sound Sensitivity Control will determine the quality of the reproduction and the **noise-suppression** characteristics of the Sound Channel section of the Vision and Sound Unit on the television chassis.

IF THE SIGNAL INPUT IS OF SUCH A STRENGTH THAT THE CONTROLS CANNOT BE SET UP AS ABOVE, THE RESISTANCE (R44—10,000 OHMS 1/10 WATT IN THE POWER UNIT) SHOULD BE REMOVED AND THE CONNECTING WIRES JOINED. FOR THE POSITION OF THIS RESISTANCE SEE 815 TELEVISION SERVICE NOTES. WHEN SETS ARE INSTALLED WITHIN FIVE MILES OF THE TRANSMITTER A SIGNAL ATTENUATOR WILL BE REQUIRED. THIS ATTENUATOR WILL BE SUPPLIED FREE OF CHARGE UPON APPLICATION BEING MADE TO THE UNITED TELEVISION MANUFACTURERS, 79a, PARKHURST ROAD, HOLLOWAY, N.7.

- (9) No further adjustments will normally be necessary, but slight variations of the Line and Frame Hold Controls and/or the Pre-set Controls may have occurred in transit, or local conditions demand special adjustment. Therefore the operation of each control is given in a later part of this booklet.
- (10) The 815 Television Receiver is supplied with 13 valves, 3 diodes, 2 rectifiers and 1 Cathode Ray tube. The valve, diode and rectifier positions are as follows:—

V ₁	V ₂	V ₃	V ₄	V ₅	V ₆
Mullard	Mullard	Mullard	Mullard	Mullard	Mullard
EF6	EF6	EF6	EF6	T6D	T6D
clear	clear	clear	clear	clear	clear
V ₇	V ₈	V ₉	V ₁₀	V ₁₁	V ₁₂
Mullard	Mullard	Mullard	Mullard	Mullard	Mullard
EF6	EF6	T6D	EF6	EL3	HVR2
clear	clear	clear	clear	clear	clear
V ₁₃	V ₁₄	V ₁₅	V ₁₆	V ₁₇	V ₁₈
Mazda	Mullard	Mazda	Mullard	Mullard	Mullard
UU4	EF6	AC6/Pen	EF6	EF6	6153/T
clear	clear	clear	clear	clear	met

Cathode Ray Tube—Mullard MW22-1.

OPERATION AND FUNCTION OF THE MINOR AND PRE-SET CONTROLS.

VISION SENSITIVITY CONTROL (Minor).

Insufficient sensitivity will give a weak and thin picture with no contrast depth. Too much sensitivity will give a picture with greatly contrasted black and white and no intermediate shades.

N.B.—Either of the above conditions will also affect the synchronisation of the picture. It will be found that in an intermediate position with a reasonably contrasting light and shade effect, the synchronisation of the picture will be perfect.

SOUND SENSITIVITY CONTROL (Minor).

This is for adjustment of signal to noise ratio on the sound channel. This control should be set with the Volume Control in the maximum position, to the point at which distortion of the sound output occurs. The output can then be adjusted to the desired level and good quality obtained by means of the Volume Control.

LINE HOLD CONTROL (Minor).

The 405 horizontal lines which go to make up the picture must be in exact synchronisation with the line scanning at the transmitter. If they are not, one or more of the following effects will be noted:—

- Top of picture distorted in shape.
- Whitish "ghost" picture on the left-hand side of the picture.
- Screen composed of numerous black dashes.

A slight adjustment of the Line Hold Control in one or other direction will eliminate either of these effects.

FRAME HOLD CONTROL (Minor).

The picture frame is completely scanned 50 times per second. If this scanning is not exactly in synchronisation with the frame scanning at the transmitter, frame slipping will occur and will take the effect of the picture slipping in a vertical direction either upwards or downwards. The speed of this slip may be very slow or extremely fast. By adjustment of the Frame Hold Control in one or other direction the picture will be made to hold steady in the correct position.

LINE AND FRAME SYNCH : SEPARATOR BIAS CONTROLS (Pre-set).

If the picture is affected by noise or picture signal interference in the horizontal direction, making the picture unsteady and distorted, or a whitish "ghost" picture appears on the left-hand side of the picture, the Line Synch Separator Bias Control requires adjustment. The control should be adjusted in conjunction with the Line Hold Control.



Good picture—Major and minor controls all set correctly.



Top of picture distorted—Line hold control needs slight re-adjustment.



Screen composed of black dashes—Line hold control needs adjusting.



Picture slipping in vertical direction—Frame hold control needs adjusting.



Weak and thin picture—Vision sensitivity control needs adjusting.



Strongly contrasted picture, no intermediate shades—Vision sensitivity control needs adjusting.



Picture out of focus—Focus control needs adjusting.

If the picture is affected by noise or picture signal interference in the vertical direction, making the picture unsteady in a vertical direction, the Frame Synch : Separator Bias Control requires adjustment. This control will also require adjustment if the picture is not interlacing correctly, that is to say, if the number of horizontal lines composing the picture is only half the correct number and hence the distance between these lines is greater than it should be. Adjustment of the Frame Synch : Separator Bias Control will rectify this defect, the number of lines being then doubled and the space between them decreased. The control should be adjusted in conjunction with the Frame Hold Control.

N.B.—The Line and Frame Synch : Separator Bias Controls should only be adjusted if perfect synchronism cannot be obtained by adjustment of the Line and Frame Hold Controls alone.

LINE AMPLITUDE CONTROL (Pre-set).

The purpose of this control is to adjust the picture breadth to suit the tube mask. If the picture breadth is too great or too small, this control should be adjusted.

FRAME AMPLITUDE CONTROL (Pre-set).

The purpose of this control is to adjust the height of the picture to suit the tube mask. If the picture height is too great or too small, this control should be adjusted.

LINE LINEARITY CONTROL (Pre-set).

If the picture appears to be cramped or elongated on the left-hand side or a whitish "ghost" picture appears on the left-hand side of the picture, the Line Linearity Control requires adjustment.

FRAME LINEARITY CONTROL (Pre-set).

If the picture appears to be cramped or elongated at the top, the Frame Linearity Control requires adjustment.

N.B.—It should be noted that the Amplitude and Linearity Controls are, to a certain extent, interacting and if adjustment is made to one of the amplitude controls the linearity of the respective scan should be checked and vice versa.

The six Pre-set Controls are of the semi-variable resistor type. To adjust these controls remove the fixing and composition retaining the phosphor-bronze wire slider in position and press the two prongs at the end of the slider. The control can then be re-adjusted. Please note the sliders on these controls are not "live."

FOCUS CONTROL (Minor).

The purpose of this control is to bring the television image into sharp perspective. It should be adjusted so that the lines, of which the picture is composed, are sharply defined. If they are not, the outlines of the picture will appear blurred. A few degrees adjustment of the Focus Control in one or other direction will correct this.

CONDITIONS OF GUARANTEE

THIS IS TO CERTIFY THAT THE PYE TELEVISION RECEIVER TYPE 815 SERIAL NO.....PURCHASED ON.....ISSUED TO.....IS GUARANTEED BY PYE LIMITED CALLED HEREAFTER "THE COMPANY" IN THAT SHOULD ANY DEFECT IN WORKMANSHIP OR MATERIAL OCCUR WITHIN TWELVE MONTHS FROM THE DATE OF PURCHASE, THE DEFECTIVE PART OR PARTS WILL BE REPLACED FREE OF CHARGE, OR AT THE OPTION OF THE COMPANY PUT INTO PROPER WORKING ORDER AND RETURNED TO THE PURCHASER CARRIAGE PAID.

A CHARGE WILL BE MADE FOR ANY EXPENSE INCURRED IN REMOVING OR HAVING REMOVED THE DEFECTIVE PART OR PARTS AND OR IN FITTING OR HAVING FITTED ANY NEW PARTS.

THIS GUARANTEE IS SUBJECT TO THE FOLLOWING CONDITIONS:—

1. The Television Receiver must have been purchased from a bona fide Retailer at the price authorised by The Company at the date of the transaction. Second-hand Sets and Sets purchased below such price are expressly excluded.
2. The Television Receiver must have been worked under the conditions specified in the Television Receiver instruction book, particularly with regard to the replacement of Valves and Cathode Ray Tubes.
3. The Guarantee does not apply to defects caused by accident, neglect, alteration, misuse, and wear and tear.
4. No responsibility is accepted by The Company for any charges made by its Service Agents or Retailers for fitting replacement parts supplied free of charge under the Guarantee by The Company or for any other work. Such charges must be paid by the owner (or Hirer in the case of Hire Purchase) of the Television Receiver.
5. The Company will not be liable for any loss, damage or expense caused directly or indirectly by any fault developing in the Television Receiver or its accessories.
6. A purchaser of a Pye Television Receiver shall be deemed to have purchased it with full knowledge and approval of the Conditions of Guarantee as printed in the instruction book enclosed with the Television Receiver. No other warranty is to apply whether expressed or implied.
7. The service instructions opposite must have been carefully and completely carried out.

HIRE PURCHASE

8. In the case of the Television Receiver having been hired from The Company or a bona fide Retailer upon the terms and conditions of a "Hire Purchase Agreement" the foregoing guarantee shall apply, subject to the following conditions:
 - (a) The period of this Guarantee shall be deemed to commence on the date of the signing of the agreement by the Hirer and shall continue for twelve months from such date.
 - (b) This Guarantee shall cease to apply to the Television Receiver if the said Hire Purchase Agreement shall be determined by either the Hirer or The Company, or such bona fide Retailer within the said period of twelve months.
 - (c) The necessary variations by reason of such hiring shall be deemed to apply to the foregoing Guarantee (and the service instructions) where the context so admits or requires.

SERVICE INSTRUCTIONS

In the event of the Television Receiver not working satisfactorily you should report to the Service Agent from whom you purchased the Television Receiver, giving him indication of the difficulties you are experiencing.

If you are unable to obtain satisfactory service through the Service Agent you should communicate, by letter, with the Service Manager,

United Television Manufacturers,
79a, Parkhurst Road,
London, N.7.