

9213 Fox  
545 Wegman Rd



# INSTALLATION INSTRUCTIONS

## MODEL PA-2A

FOR USE WITH GRID MODULATED T.V. RECEIVERS

**NORTH AMERICAN PHILIPS COMPANY, INC.**

100 EAST 42nd STREET, NEW YORK 17, N.Y.

INSTRUCTIONS FOR ATTACHING A DIRECT-VIEW TABLE MODEL TELEVISION  
RECEIVER TO THE NORELCO DUO-VUE

T.V. RECEIVER REQUIREMENTS:

A TELEVISION RECEIVER TO BE USED WITH THE NORELCO DUO-VUE MUST HAVE:

1. Magnetic deflection
2. Parallel tube filaments
3. Free-running sweeps (i.e. not those which are triggered into operation by the incoming signal).
4. A 10"-12" or 16" tube (16" short 70° tube not useable)

The standard model Duo-Vue contains a type PA-2A chassis designed for receivers with grid-modulated picture tubes. See your distributor for details of a chassis specially wired for receivers with Cathode-modulated picture tubes.

LIST OF MATERIALS PACKED WITH THE DUO-VUE:

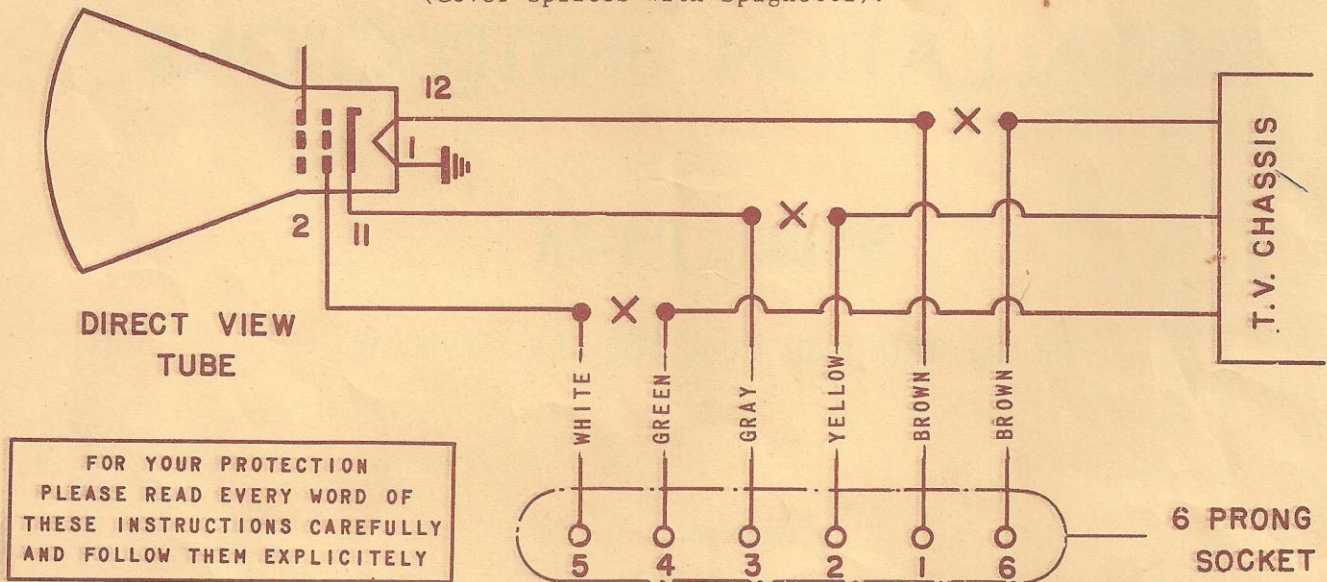
- a) One 36" Cable with 11 Prong Socket
- b) One 12" Cable with 6 Prong Socket
- c) Spaghetti insulating sleeve for covering Splices.

INSTALLATION PROCEDURE:

- Step 1) Remove the television receiver from its cabinet.  
2) Remove the Cable with the 6 Prong Socket from the Duo-Vue packing.  
3) Cut the Grid, Cathode and Ungrounded Filament Lead of the Direct View Tube Cable at points marked "X" on Diagram 1 and connect the Six Prong Socket Cable as follows:

- Brown - to filament (pin 12) of cathode-ray tube
- Brown - to 6 volt filament winding
- Gray - to cathode (pin 11) of cathode-ray tube
- Yellow - to cathode connection in TV chassis
- White - to grid (pin 2) of cathode-ray tube
- Green - to grid connection in TV chassis

(Cover splices with spaghetti).



FOR YOUR PROTECTION  
PLEASE READ EVERY WORD OF  
THESE INSTRUCTIONS CAREFULLY  
AND FOLLOW THEM EXPLICITELY

DIAGRAM 1

- 4) Remove the cable with the 11 prong socket from the Duo-Vue packing.
- 5) Thread the following 4 wires of the 11 prong socket cable through hole from the top to the underside of the TV chassis:
  - Brown
  - Brown-Green
  - Blue-White (with 47K resistor attached)
  - Black

6) Connect and solder these 4 wires as follows:

- see note below\*
- Brown - to primary of power transformer (Side connected to "ON-OFF" switch)
  - Brown-Green - to primary of power transformer (Side connected to line cord)
  - Blue-White - to plate of vertical output tube (through 47K Resistor)
  - Black - TV chassis ground

\*Note: Damage will result if this wire is improperly connected, since the Duo-Vue will remain on when the receiver is turned off.

7) Open the lead which connects the high side of the vertical output transformer secondary to the deflection yoke and connect the following wires:

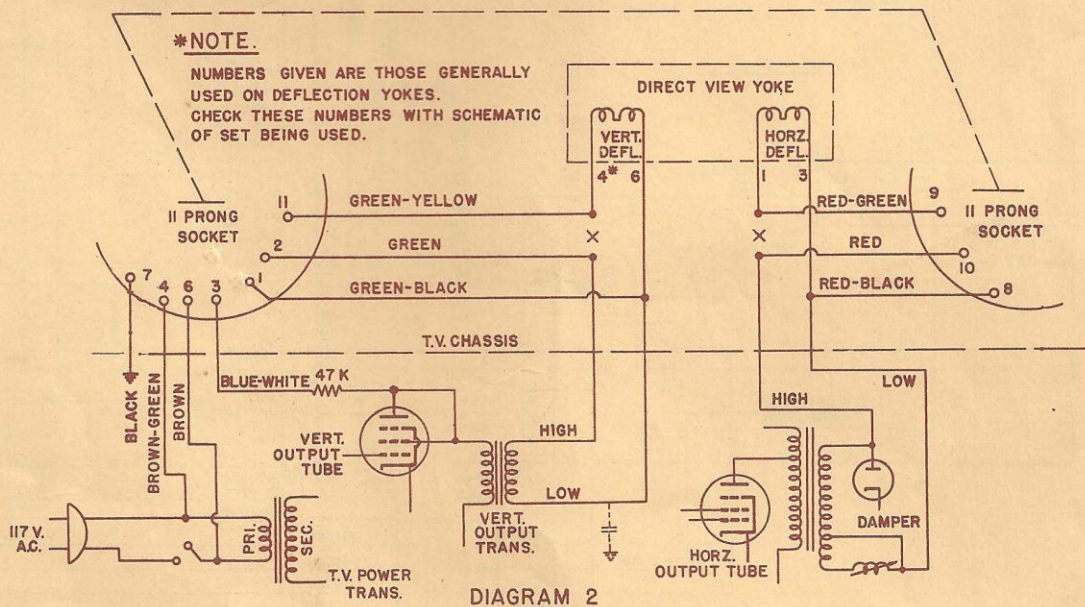
- Green - to high side of vertical output transformer secondary
- Green-Yellow - to high side of vertical deflection yoke.

8) Connect Green-Black - to low side of vertical deflection yoke

9) Open the lead which connects the high side of the horizontal output transformer secondary to the deflection yoke and connect the following wires:

- Red - to high side of horizontal output transformer secondary
- Red-Green - to high side of horizontal deflection yoke

10) Connect Red-Black - to low side of horizontal deflection yoke

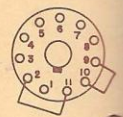
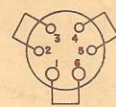


11) RECHECK EVERY CONNECTION MADE IN STEPS 6, 7, 8, 9, AND 10.

A SCHEMATIC OF THE CONNECTIONS IS SHOWN ON DIAGRAM 2.

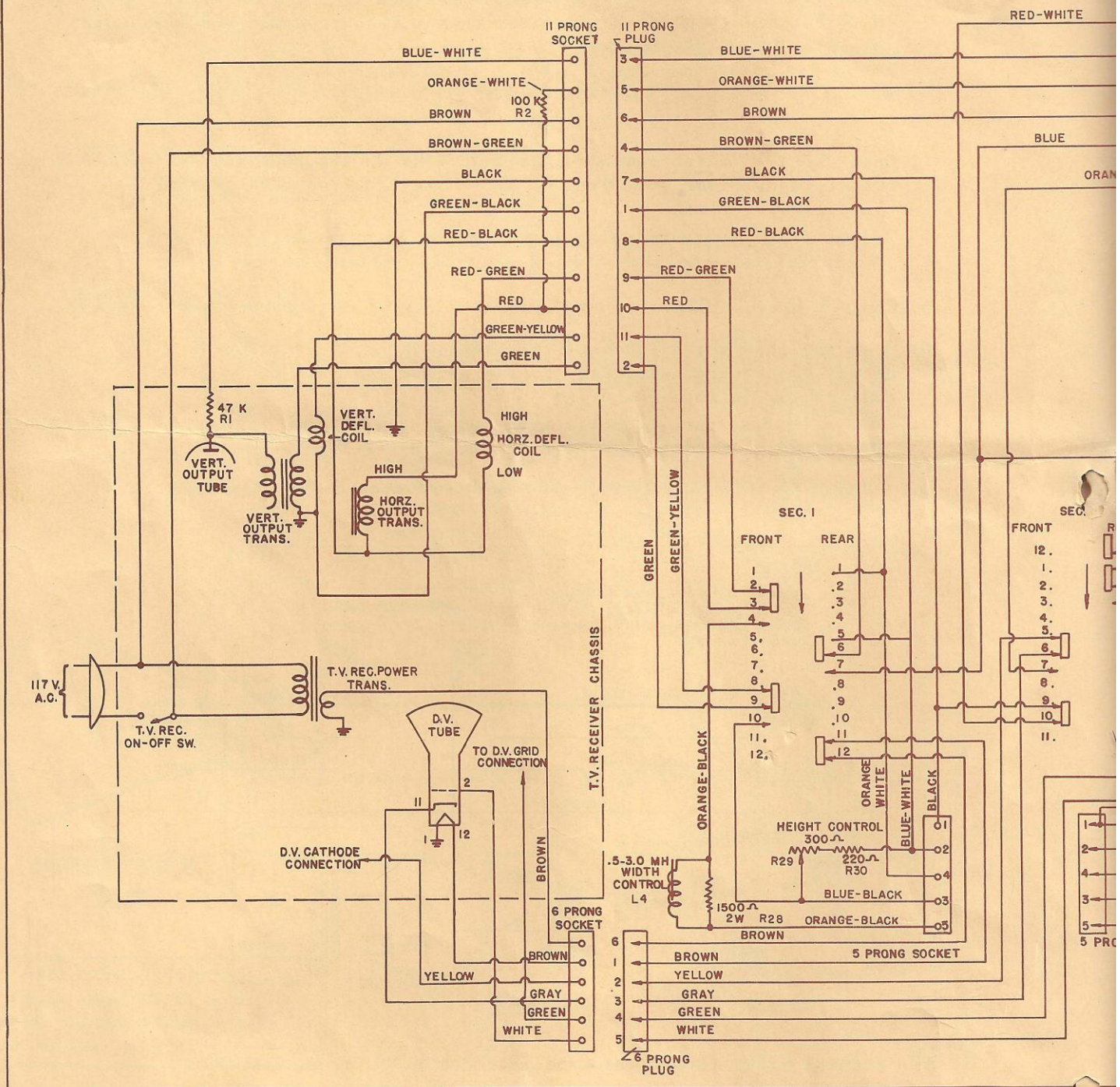
READ PAGES 5 & 6 BEFORE PLACING THE DUO-VUE IN OPERATION.

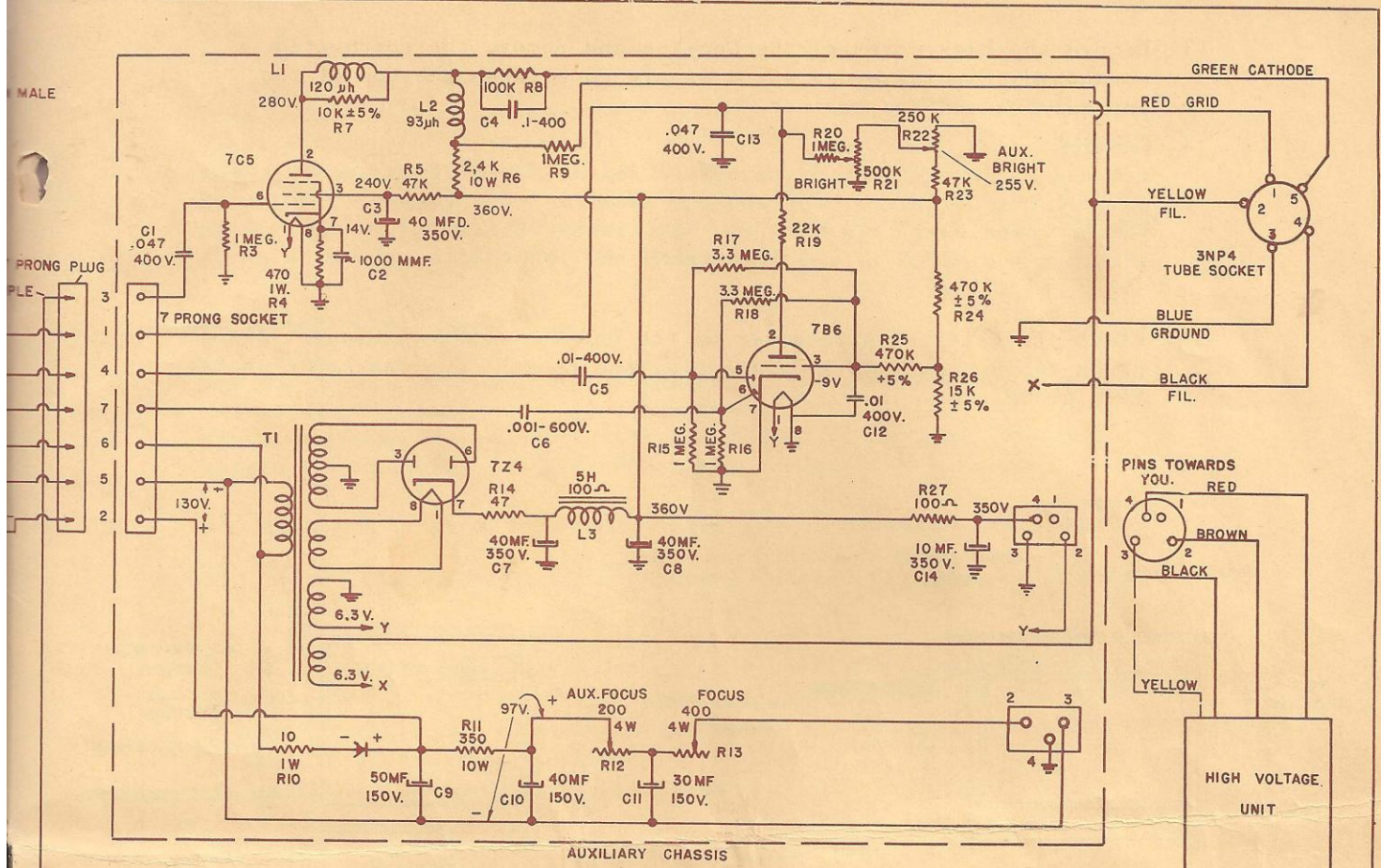
6 PIN MALE



SHORTING PLUGS.

TO OPERATE RECEIVER WITHOUT THE DUO-VUE SWITCH, MAKE SHORTING PLUGS AS SHOWN AND INSERT IN 6 AND 11 PIN SOCKETS.

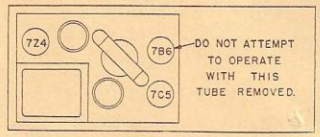




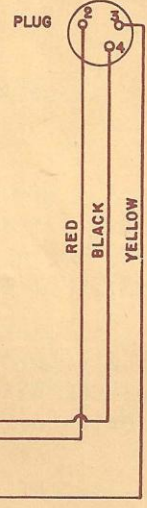
VOLTAGES INDICATED  
ARE TAKEN WITH VTVM

**NORELCO. DUO-VUE**  
MODEL # PA-2A

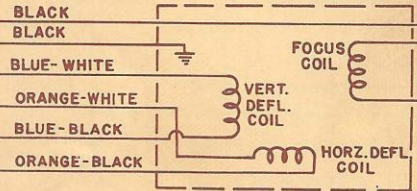
SWITCH SHOWN IN  
DIRECT VIEW POSITION  
(COUNTER  
CLOCKWISE)



TUBE LOCATION



TYPE 160-B  
OR 160B-1



TAIL-PIECE  
TYPE 160 AT-61

DIAGRAM 2

- 12) Replace television chassis in its cabinet
- 13) Remove the back cover of the Duo-Vue and remove the corrugated cardboard shipping wedge which is placed between the top of the optical box and the cabinet.
- 14) CAUTION:  
Be sure to remove 2 shipping clamps (painted red) from the optical box tailpiece. Replace the mounting nuts when these clamps have been removed. Next remove the felt shipping pad which is wedged between the focus coil and the tailpiece frame.
- 15) Place the television receiver on the Duo-Vue cabinet. Connect the 11 prong cable socket to 11 prong plug and connect 6 prong cable socket to 6 prong plug.

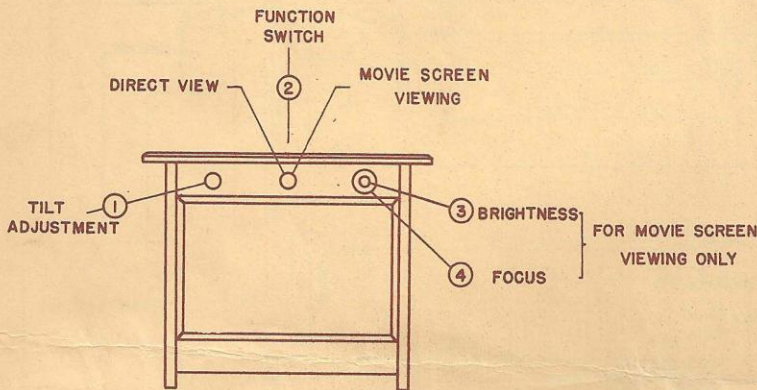


DIAGRAM 3

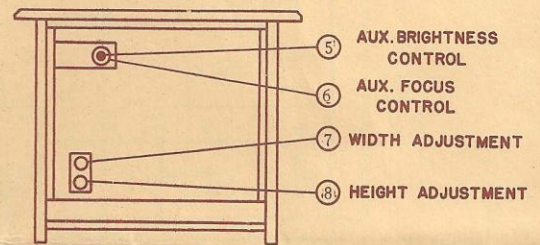


DIAGRAM 4

#### ADJUSTMENT OF DUO-VUE HEIGHT & WIDTH CONTROLS

- 16) Place the Duo-Vue Function Switch (2) in "Direct View" position (to the left) and tune in a satisfactory picture on the Direct View tube. Adjust receiver service controls for satisfactory Direct View picture.
- 17) Turn the Function Switch to the "Projection" position (to the right). Look into the corrector lens. Observe the reflection of the raster from the 3NP4 tube and adjust the "Brightness" and "Focus" controls (3) and (4) Diagram 3.
- 18) Still looking at the reflection of the picture through the corrector lens, adjust the "Height" and "Width" controls (8) and (7) diagram 4 until each corner of the raster just touches the edge of the tube face. It will be necessary to move your head slightly to see each corner separately - See diagram 5
- 19) CENTERING OF RASTER  
If it is obvious, while making the Height and Width adjustments, that the raster requires centering, mechanical centering is accomplished by adjusting the two screws on the flange of the Focus Coil Housing as shown in Diagram 6.

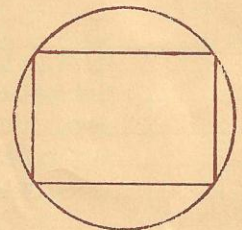


DIAGRAM 5

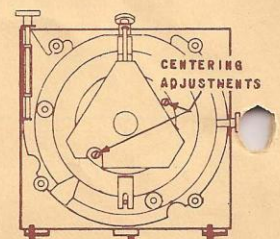


DIAGRAM 6

## 20) OPERATING THE DUO-VUE

Place Duo-Vue function switch (2) in "Direct-View" position (to the left). After a satisfactory DV picture has been obtained, move the Duo-Vue cabinet to a distance of 8 feet from a 3' x 4' movie screen in a darkened room. Turn function switch (2) to "Movie Screen Viewing Position" (to the right). After about 30 seconds heating time, the picture should appear on the movie screen. Regulate Brightness control (3) and Focus control (4). Adjust vertical position of picture by turning Tilt Adjustment (1). Move the Duo-Vue back and forth slightly for best visual focus.

## 21) BRIGHTNESS LEVEL SETTING

The Duo-Vue is equipped with a coarse brightness control (5) and a coarse focus control (6). (See Diagram 4)  
These are properly adjusted before the unit is shipped. However, should they require further adjustment, proceed as follows:

- 1) Adjust T.V. receiver contrast control to maximum useable level
- 2) Set Duo-Vue front panel Brightness control (3) (Diagram 3) to maximum.
- 3) Adjust coarse Brightness control (5) until the picture on the movie screen is just below the blooming point on a pattern with a white background. If this control is set too high it may cause defocusing on scene changes.
- 4) Set the Duo-Vue front panel Focus control (4) (Diagram 3) half-way
- 5) Adjust the coarse Focus control (6) for best focus

## 18) KEYSTONING

You will notice that the Duo-Vue picture on the movie screen is slightly wider at the top than the bottom. The movies call this "Keystoning" and it is a normal condition when a picture is projected from a source which is not perpendicular to the viewing surface. If the sides of the picture overlap the white part of the screen, as in the movies, they fall into the black mask on the border and are therefore not seen. The Duo-Vue should be placed about 8 feet from a 3' x 4' screen where it will completely fill the white part of the screen. An outline of the approximate position of the picture on the screen is shown in diagram 7

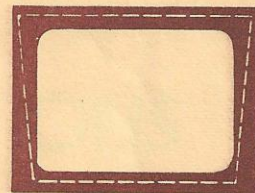


DIAGRAM 7

### IF THE PICTURE ON THE MOVIE SCREEN APPEARS UPSIDE-DOWN,

Reverse the Blue-Black and Blue-White wires in the 5 prong plug attached to the Protelgram Tailpiece

### IF THE PICTURE IS REVERSED HORIZONTALLY,

Reverse the Orange-White and Orange-Black wires in the 5 prong plug.

### IF THE PICTURE IS TILTED ON THE MOVIE SCREEN,

Loosen the 4 knurled nuts " M " which hold the Tailpiece to the Optical Box ( See " PROTELGRAM TUBE INSTALLATION AND ADJUSTMENTS " section E - on the inside of the back cover of the Duo-Vue cabinet ). Rotate the tailpiece until the picture is upright. Hand tighten the 4 knurled nuts.



RADIO SERVICEMEN

COMPLETE SERVICE NOTES FOR THE NORELCO DUO-VUE ARE AVAILABLE  
BY WRITING TO

SERVICE DEPT.

NORTH AMERICAN PHILIPS CO. INC.

750 S. FULTON AVE., MOUNT VERNON, N. Y.

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