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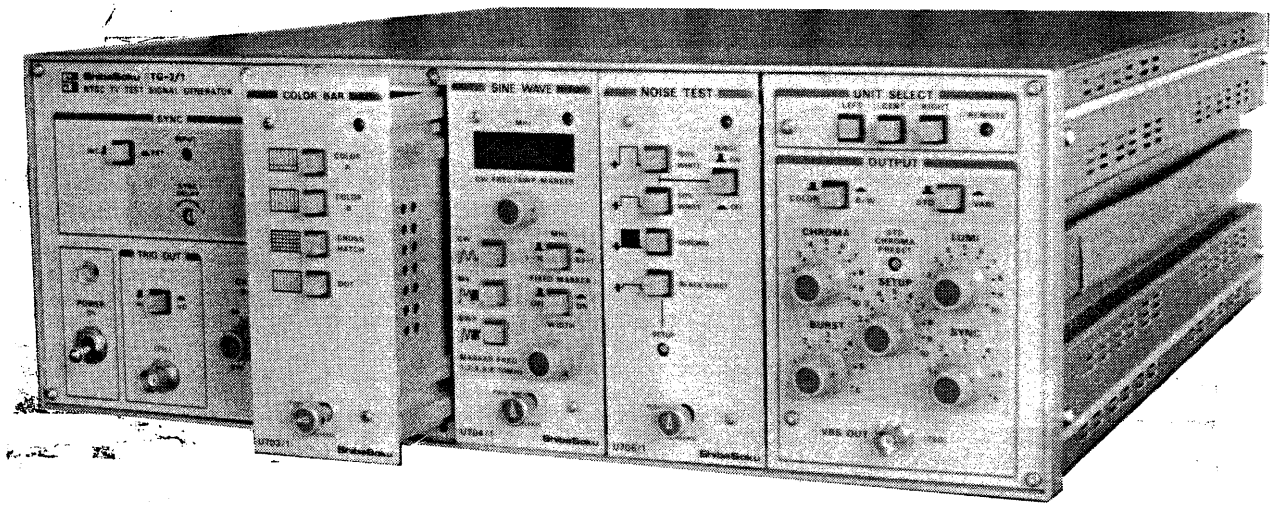
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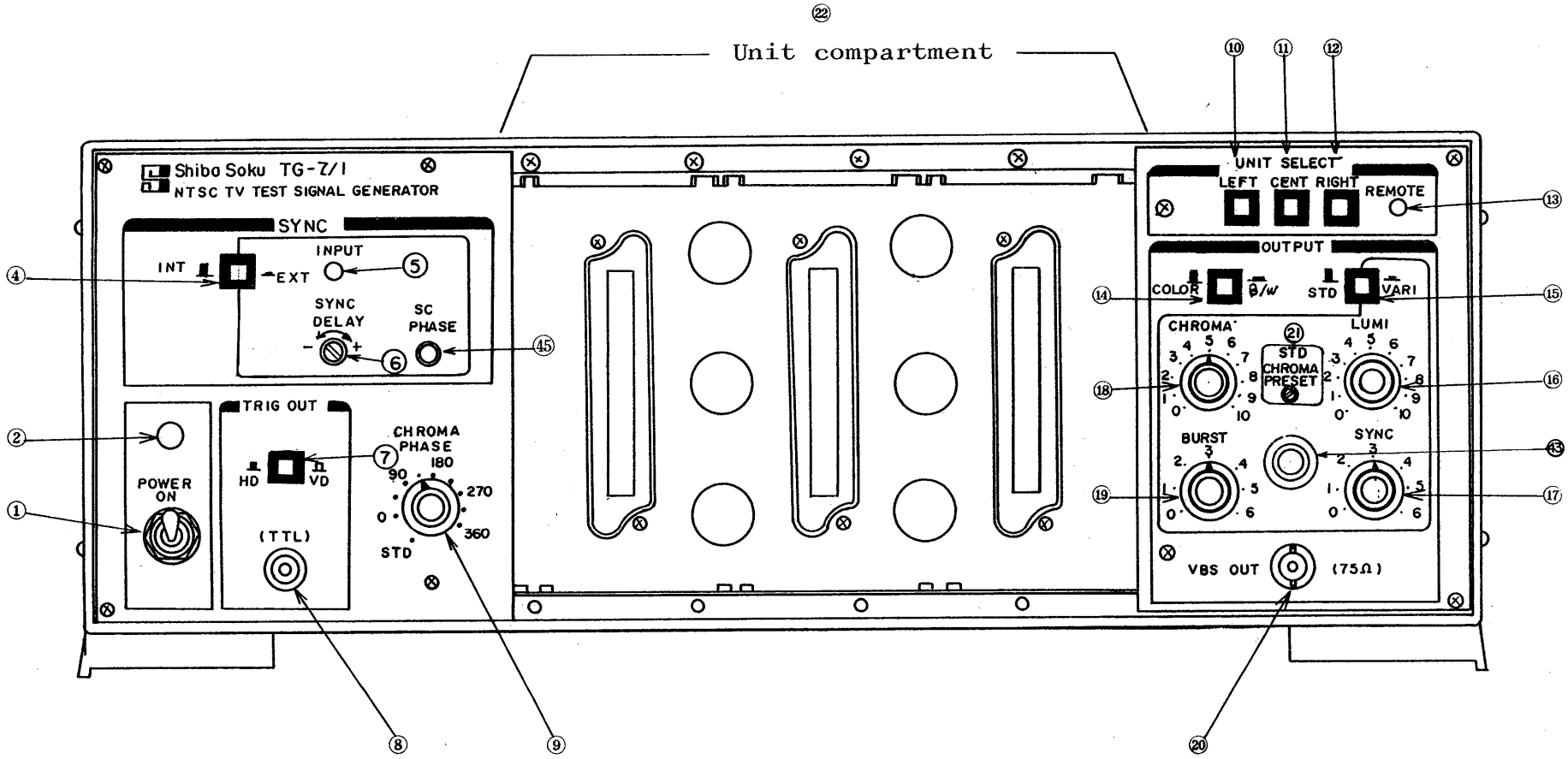
Find the *ShibaSoku TG-7/1* at our website: ***Click HERE***

6. OPERATION AND FUNCTIONS



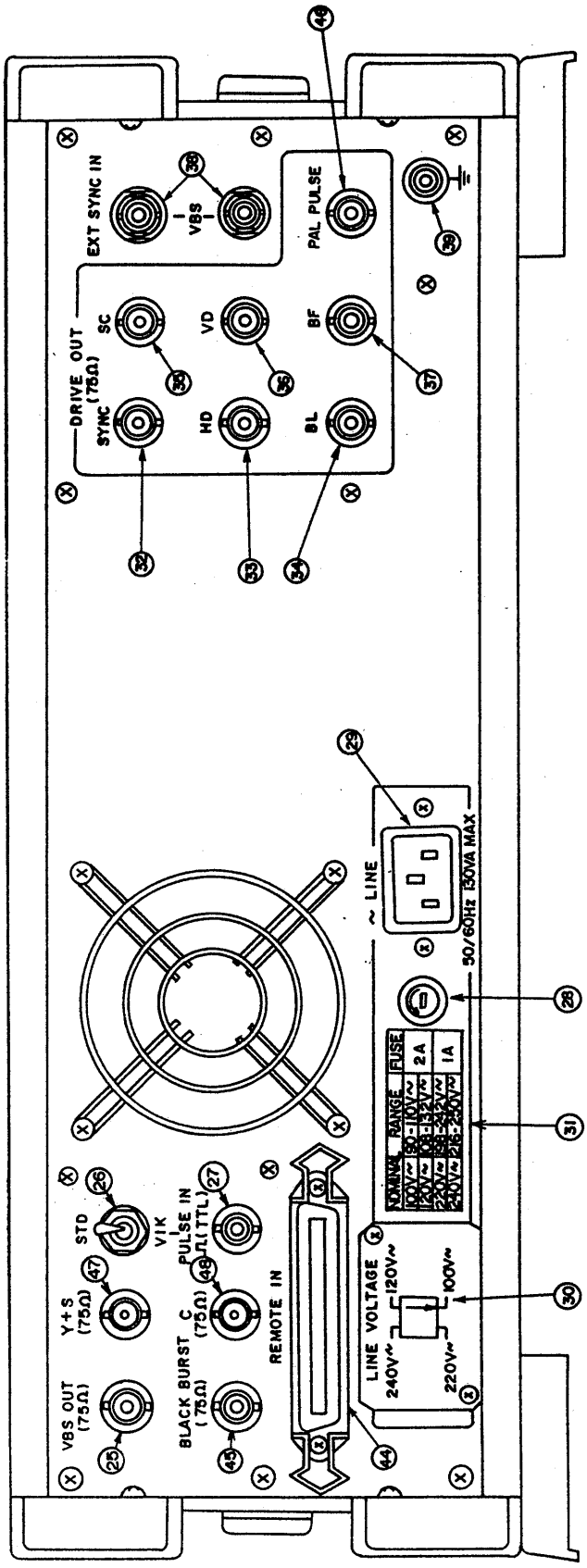
To slide the unit into place or draw them out, proceed by following the instructions on the knob located at the bottom of the front panel of each unit.

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Arrangement of controls on front panel

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Arrangement of parts on rear panel

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(1) POWER ON

When the POWER switch (1) is set to ON, the pilot lamp (2) lights and the unit is made operational.

(2) UNIT SELECT

Depress the (10), (11) or (12) switch to select the required unit.

(3) OUTPUT

The VBS output level can be selected using the switch (15). At the STD position, setting is made to the standard output level while at the VARI position the levels can be varied with the controls (16), (17), (18), (19) and (43). The control (21) is for adjusting the chroma level when the switch (15) has been set to the STD position. Use it when there is an error in the chroma component of the color bar signal generated by the Model U703. The switch (14) is for setting the VBS output to color or black-and-white

(4) SYNC

The unit operates on internal sync when the switch (4) is set to the INT position. When set to EXT, the unit is gen-locked and color locked to the external VBS signal supplied from the EXT SYNC IN connector (38) on the rear panel. When the external sync is functioning properly, the indicator (5) lights up; it goes out when the external sync input is cut off. The control (6) is for adjusting the sync-signal phases of the unit's VBS signal and of the external VBS signal.

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(5) CHROMA PHASE

The ⑨ control serves to vary the phase of the VBS OUT chroma signal. The STD position is leftmost. When rotated clockwise, the phase can be shifted a maximum of 360 degrees.

(6) VIK

When the ㉔ switch is set to VIK and a keyer pulse is supplied to the ㉕ connector, a keyer signal is generated in the VBS OUT connector. For normal operation, keep the ㉔ switch at the STD position.

(7) DRIVE OUT

The drive signals indicated on the panel are fed out from the ㉜ through ㊲ connectors. Each signal output has a 75-ohm rating and during use termination must be made with a 75-ohm resistance.

(8) EXT SYNC IN

The ㊳ connector is for the external sync signal input. Since this is a high-impedance input, a bridge connection is possible. Terminate with a 75-ohm resistance when not using a bridge connection.

(9) REMOTE IN

The output signals can be selected by remote control using the ㊹ connector. For operation, refer to the figure describing the remote connector on the next page.

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(10) LINE VOLTAGE SELECTOR

Plug in the ㉚ power selector switch properly in line with the ㉛ voltage marking.

(11) SC PHASE

Use this ㊺ control so that the subcarrier phase differences of the input and output signals coincide.

(12) BLACK BURST

The standard black burst signal output (75) is always obtainable from the connector ㊺ regardless of controlling of the front panel control devices.

(13) Y+S

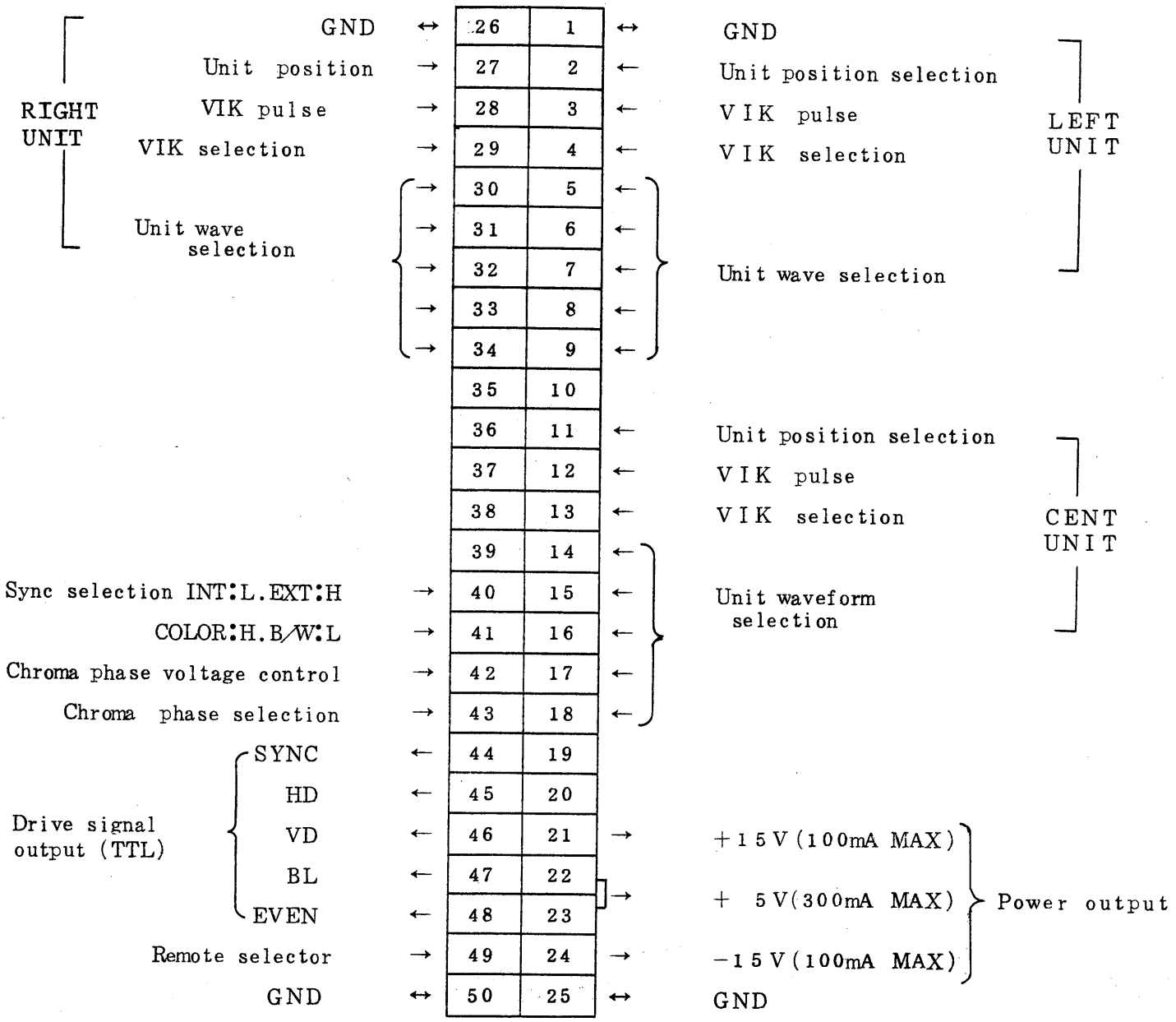
Luminance signal having a sync signal is output from the connector, ㊼ .

(14) CHROMA

Chroma signal having a burst signal is output from the connector. ㊽ .

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Remote connector description figure



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OPERATION

(1) Use the TTL, LS, open collector type for all remote control levels.

(2) Set [49] to the "L" level for remote control.

(3) To switch over from remote control to unit operation, either set all the remote inputs to the "H" level or disconnecto the remote plug.

(4) For unit position selection set either [2] , [11] or [27] to the "L" level.

(5) For unit waveform selection, refer to the Operating Instructions of the individual unit.

(6) When the VIK selection pins are set to "L" and keyer pulse (TTL level, positive) applied to the VIK pulse input, a signal is generated at the pulse position only.

(7) When the chroma phase selection pin is set to the "L" level and the chroma phase voltage control varied from 0 to +4V (DC), it is possible to shift the chroma phase through 0 to 400 degrees.

7. TEST PREPARATIONS

Insert the plug-in unit which are to be used for generating the test signals. When for instance, the U701 linearity signal unit has been plugged in, waveforms such as those in the figure below are generated.

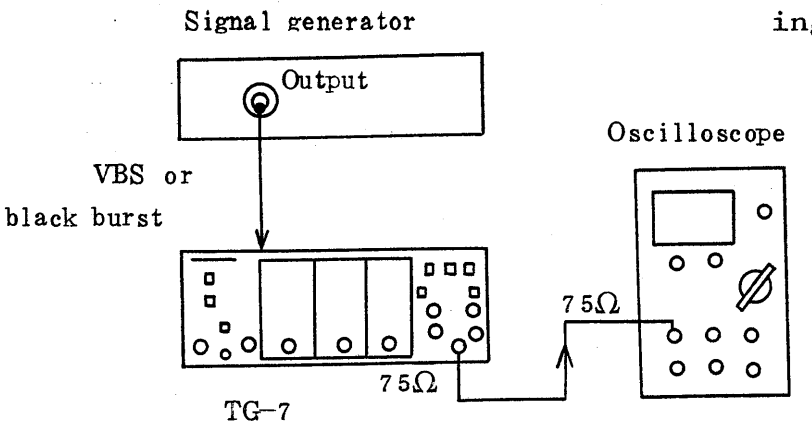


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Normally, circuits are measured and tested using a 0.714Vp-p video component and 0.286Vp-p sync component. These adjustments are preset at the front panel although it is possible to use them at any level.

An oscilloscope is used to adjust the level and the connections are shown in the figure below.

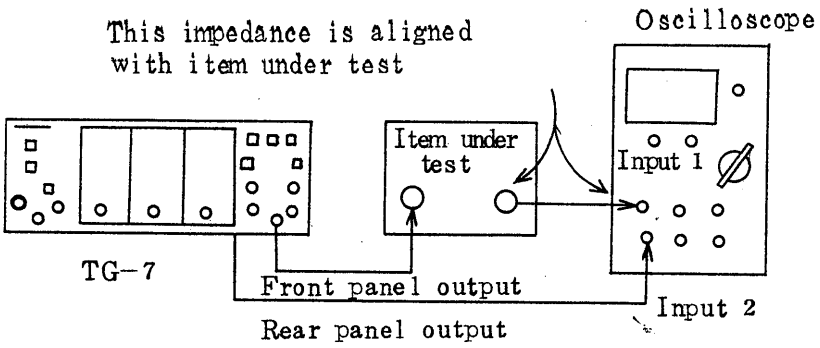
Note: No need for external sync signal supply when the TG-7 is operat - ing on INT sync.



Set oscilloscope input to (DC) and ter - minate with 75-ohm resistance

This oscilloscope must be calibrated to allow quantative measurement; it must have a frequency response of DC 0 to 30 MHz or a band which is wider. The figure below shows the connections when the characteristics of the item under test is being measured with properly adjusted waveforms. The characteristic test method using individual test signals depends on each signal and so reference should be made to the Operating Instructions of the individual plug-in unit.

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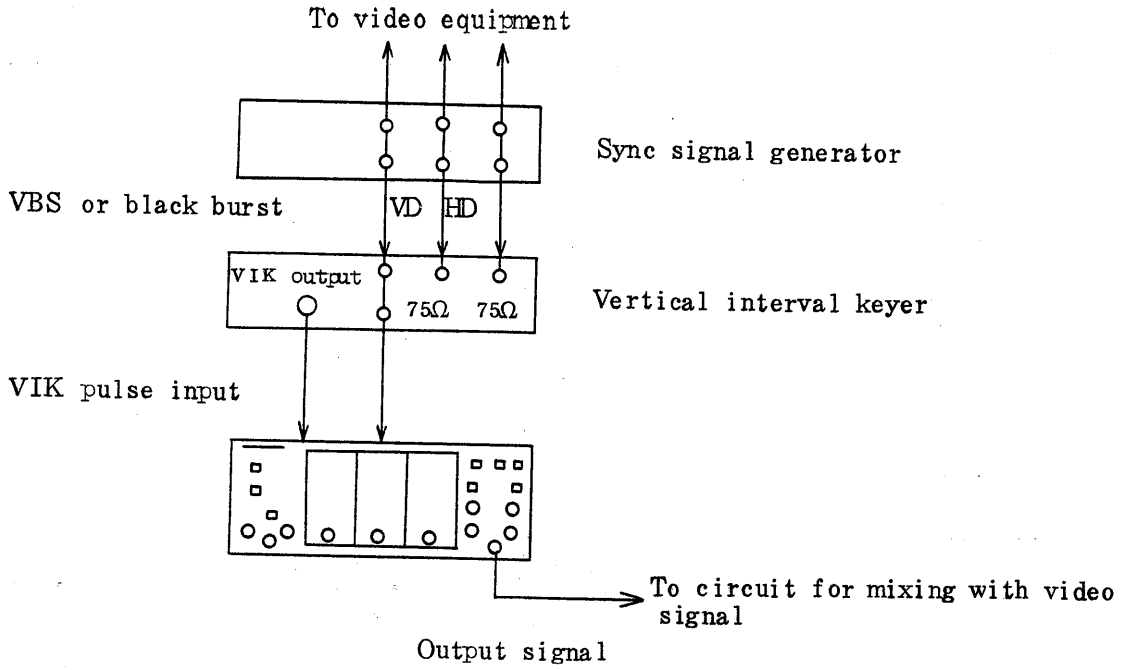
Note: Select between inputs 1 and 2 for comparative measurement

7-1 Connection of vertical interval keyer

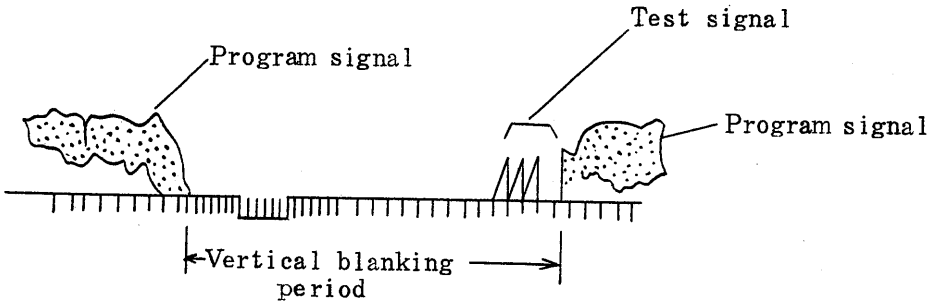
One special method of use pertaining to this unit consists in using it with a vertical interval keyer to generate test signals in the vertical blanking period. The number of lines and line number of the signal generated are determined by the keyer pulse generated by the interval keyer.

Selection between this test signal and the ordinary test signal is made with the VIK switch on the rear panel of the unit. This switch is set to the STD position, where an ordinary test signal is generated, when the unit is shipped from the manufacturing plant. The operation of this switch is semi-fixed. The figure below shows the connections when the unit is operated together with the keyer.

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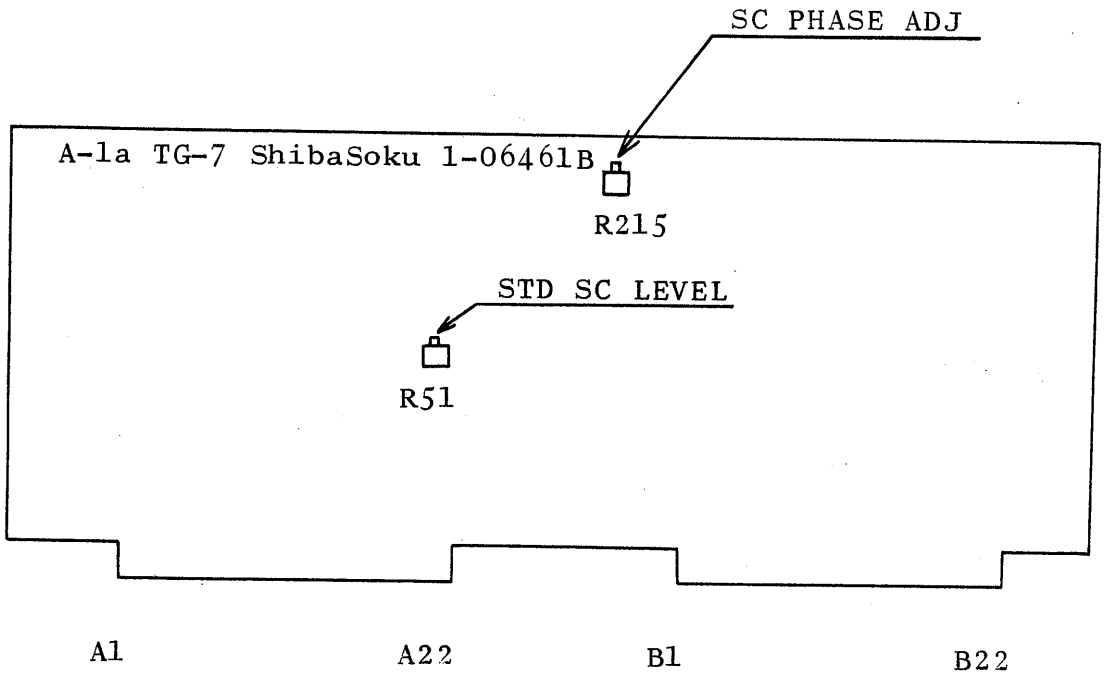
The figure below gives a rough idea of the signal with VIT.



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8. MAINTENANCE

A-1a circuit board (SYNC SEPA & COLOR LOCK)



(1) R51 (STD SC LEVEL): Cancels out difference in chroma signal level at phase control's VARI and STD positions.

(2) R215 (SC PHASE ADJ): Aligns QA5 (pin 7) pulse rise phase.

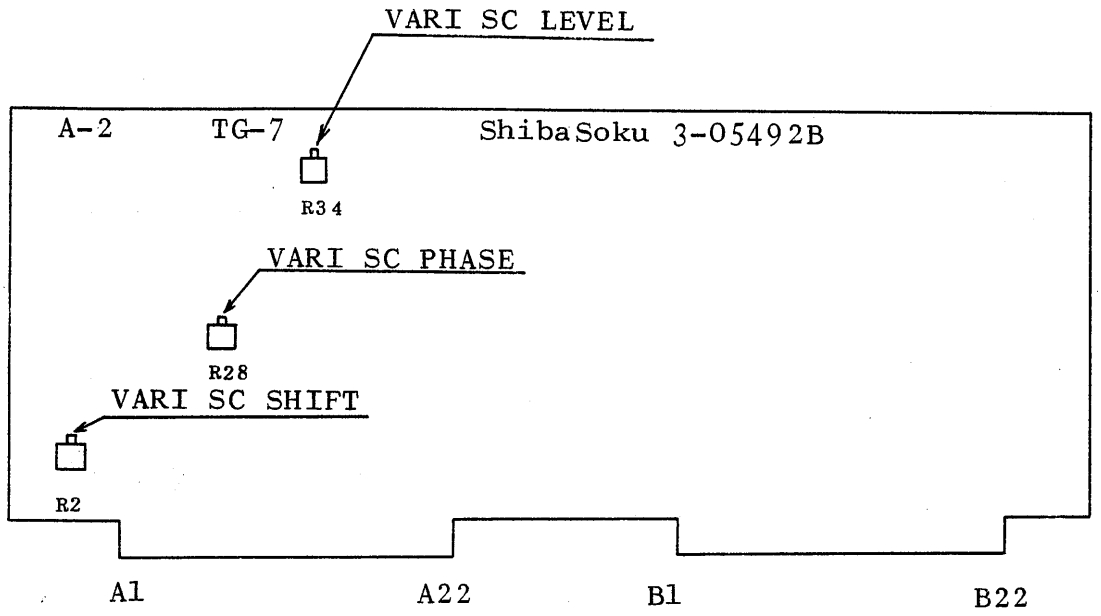
(3) Q18: Selects 3SK22 for QA3B (pin 7) to have +2V (DC) or more with external color burst input at under 0.12Vp-p.

(4) R108: Detects lock error signal.

(5) T1: Adjusts QA3A (pin 1) voltage to minimum.

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A-2 circuit board (CHROMA PHASE & H.SAWTOOTH)



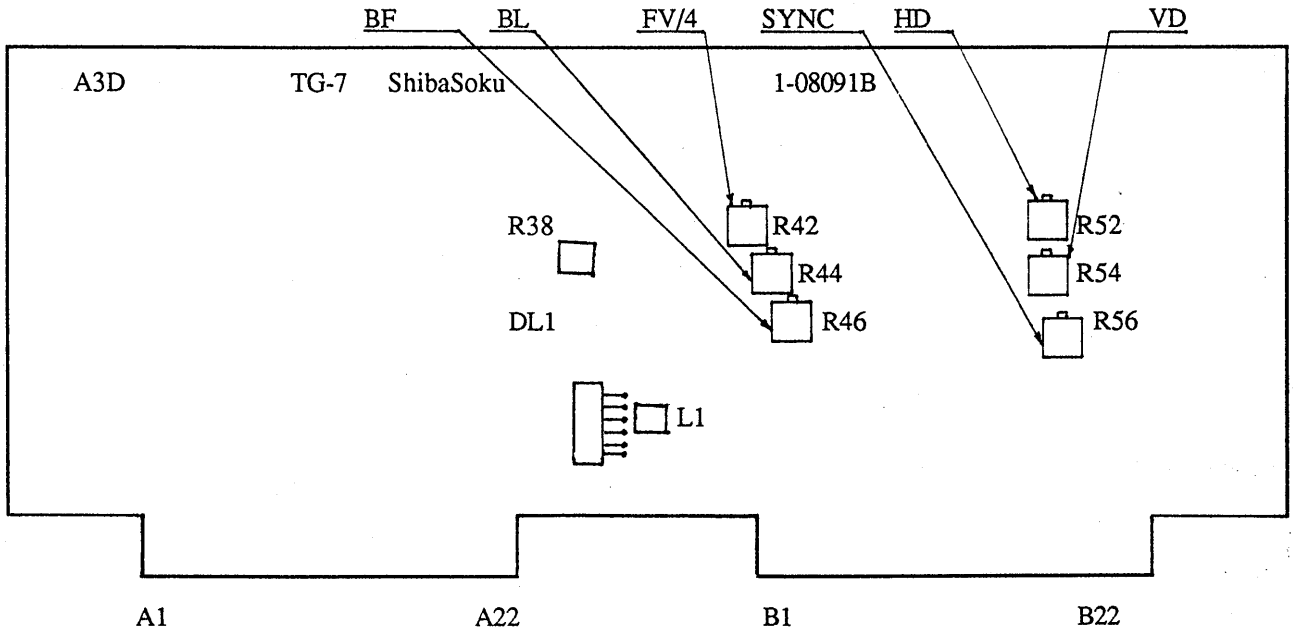
(1) R2 (VARI SC SHIFT): Adjusts so that phase is rotated centering on STD phase at phase VARI position.

(2) R28 (VARI SC PHASE): Adjusts so that connector (A11) voltage is shifted between 0 and +4V (DC) $\pm$0.001V and so that chroma phase can be caried from -20^{o} to 380^{o} $\pm 1^{o}$.

(3) R34 (VARI SC LEVEL): Adjusts VARI SC PHASE SC level to maximum.

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A3D PC board (SYNC GEN, GEN LOCK 7 DRIVE)



(1) L1 ..... It reduces subcarrier waveform distortion at the connector B3.

(2) DL1 ..... It switches the strap to connect SC-H to the tap which is closer to 0°.

(3) R38 ..... For fine controlling the SC-H is 0°.

(4) R42 (FV/4) ..... When the DRIVE OUT connector for FV/4 is newly added on the rear panel through modification, equalize the rise and falling time of a pulse to each other by using this output connector (approx. 150 ns).

(5) R44 (BL) ..... A DRIVE OUT on the rear panel. It equalizes the rise and falling time of a BL pulse to each other (approx. 150 ns).

(6) R46 (BF) ..... A DRIVE OUT on the rear panel. It equalizes the rise and falling time of a BF pulse to each other (approx. 150 ns).

(7) R52 (HD) ..... A DRIVE OUT on the rear panel. It equalizes the rise and falling time of a HD pulse to each other (approx. 150 ns).

(8) R54 (VD) ..... A DRIVE OUT on the rear panel. It equalizes the rise and falling time of a VD pulse to each other (approx. 150 ns).

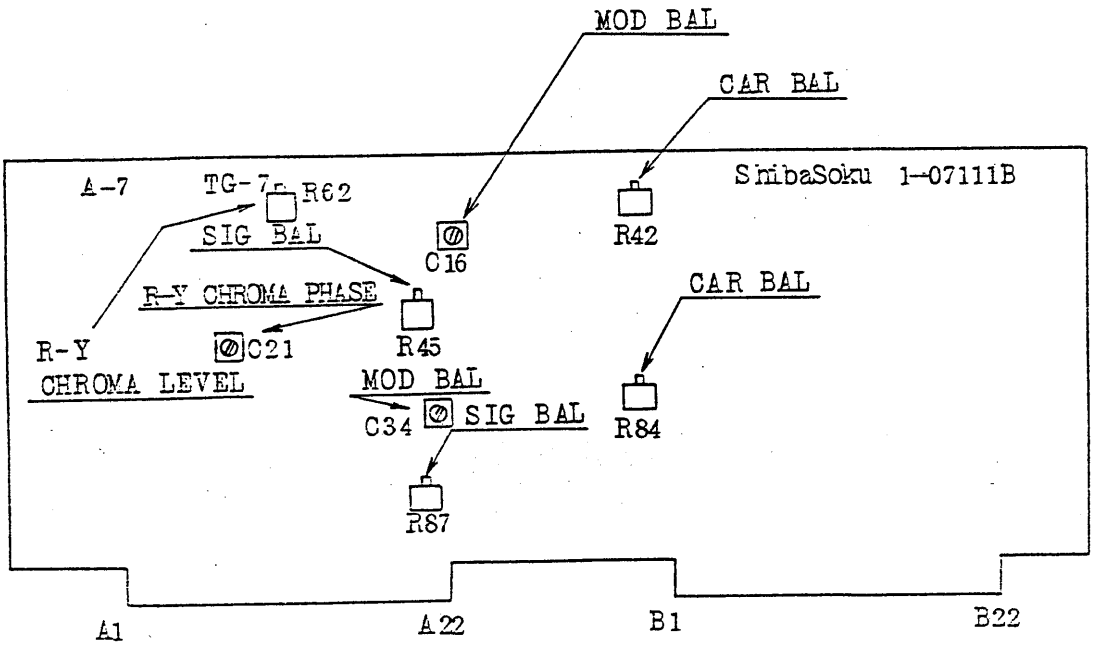
(9) R56 (SYNC) ..... A DRIVE OUT on the rear panel. It equalizes the rise and falling time of a SYNC pulse to each other (approx. 150 ns).

A-6 Refer to block diagram.

(1) R21 (CHROMA PRE LEVEL) ...Adjusts chroma signal to standard value with color bar unit plugged in.

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A-7 circuit board (B-Y/R-Y MODULATOR)



(1) C21 (MOD BAL): Adjust B-Y, R-Y signal quadrature to 90° ±0.5°.

(2) R62 (R-Y CHROMA LEVEL): Adjusts level deviation of B-Y and R-Y signals to less than ±1%.

(3) R45 (SIG BAL): Adjusts B-Y signal balance (incl. R46).

(4) R42 (CAR BAL): Adjusts B-Y signal carrier balance (incl. R41, 43).

(5) C16 (MOD BAL): Adjusts modulation balance of B-Y signal.

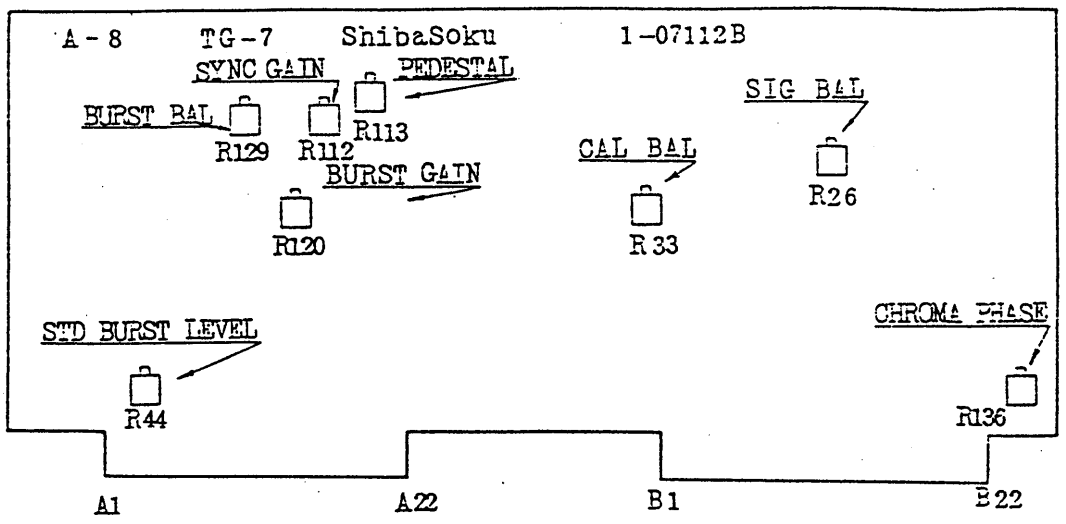
(6) R87 (SIG BAL): Adjusts R-Y signal balance (incl. R88).

(7) R84 (CAR BAL): Adjusts R-Y signal carrier balance (incl. R83, R85).

(8) C34 (MOD BAL): Adjusts modulation balance of R-Y signal.

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A-8 circuit board (COLOR BURST MODULATOR)



(1) R26 (SIG BAL): Adjusts color burst signal balance.

(2) R33 (CAR BAL): Adjusts carrier balance of color burst signal.

(3) C8 (MOD BAL): Adjusts modulation balance of color burst signal.

(4) R44 (STD BURST LEVEL): Sets color burst signal level to 0.286Vp-p.

(5) R49: Adjusts maximum level of VAR1 color burst signal to between 0.6 and 0.65Vp-p.

(6) L1, L2: Eliminate transient from color burst signal.

(7) L3: Second harmonics trap.

Option

(8) R93 (BURST LEVEL): Adjusts color burst signal level to 0.3Vp-p

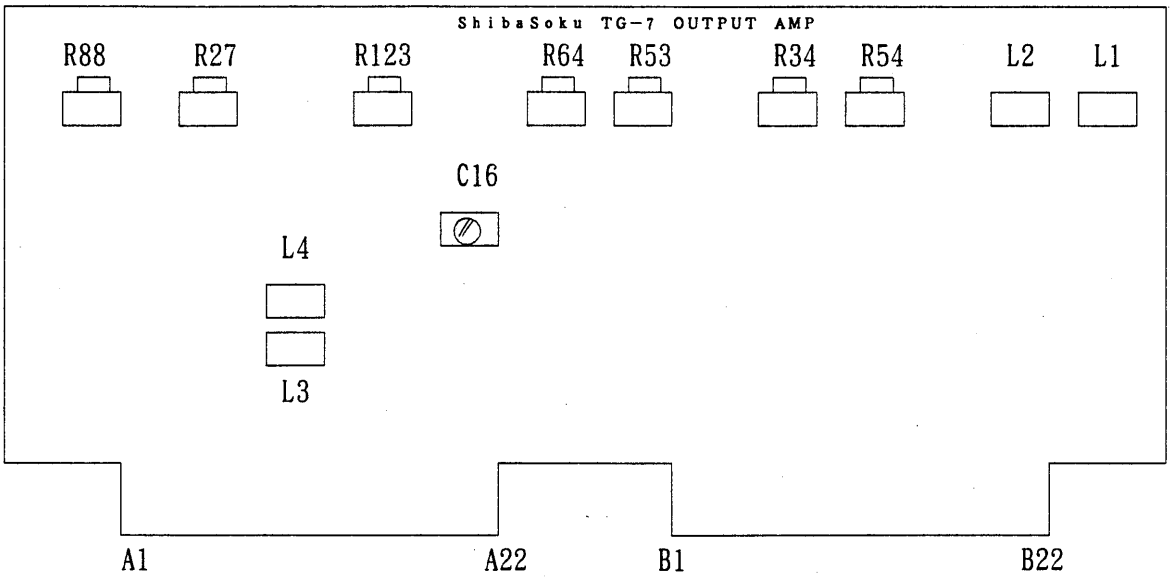
(9) C35: Matches color burst phase with video output chroma phase.

(10) R98 (DC BAL): Adjusts so that DC level of color burst signal does not change even when QA4 switches.

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A-9 PC board (OUTPUT AMP)

TG-7/1 M-55537 ～
TG-7/2 M-55516 ～



(1) R27 ····· It adjusts amplitude when sync signal's level is selected at the standard position.

(2) R64 ····· It adjusts amplitude when luminance signal's level in VBS output is selected at the standard position.

(3) R54 ····· It adjusts amplitude when luminance signal's level in Y+S output is selected at the standard position.

(4) R88 ····· It adjusts waveform level when set up signal is selected to the variable position.

(5) R53 ····· It adjusts offset of VBS output to DC 0V.

(6) R54 ····· It adjusts offset of Y+S output to DC 0V.

(7) C16 ····· It adjusts frequency response of luminance signal.

(8) L1, L2 ····· It adjusts waveform of sync signal.

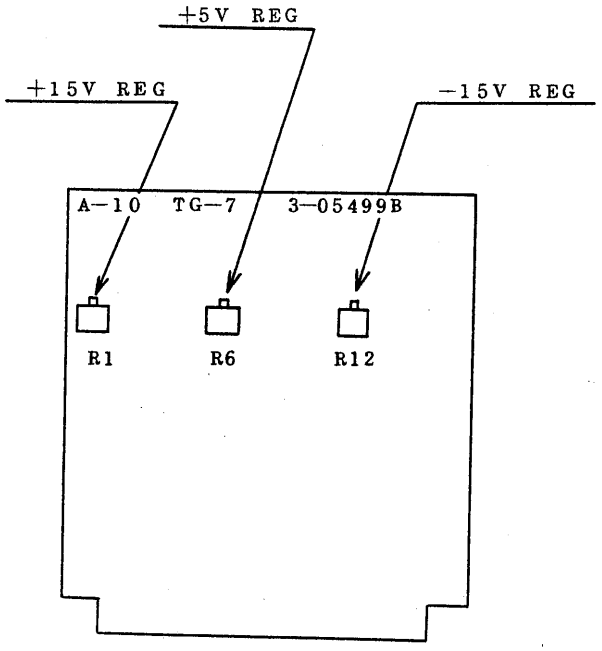
(9) L3 ····· It adjusts so that chroma and burst signal level are maximized.

(10) L4 ····· It adjusts so that subcarrier leakage is minimized.

(11) R123 ····· It adjusts amplitude when chroma level at the standard position.

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A-10 circuit board (POWER SUPPLY)



(1) R1 (+15V REG): Adjusts voltage to +15V ±0.01V.

(2) R6 (+5V REG): Adjusts voltage to +5V ±0.01V.

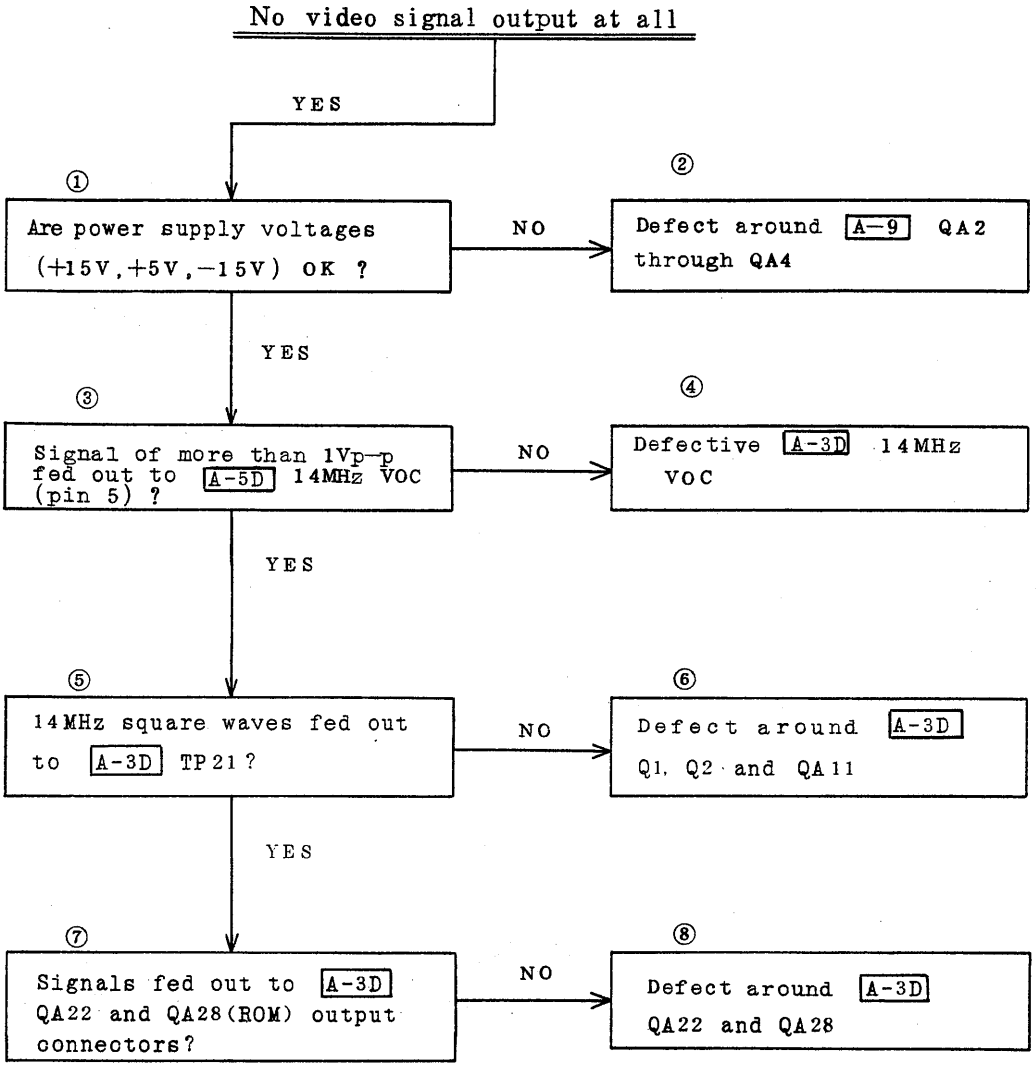
(3) R12 (-15V REG): Adjusts voltage to -15V ±0.01V.

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8-1 Basic check methods

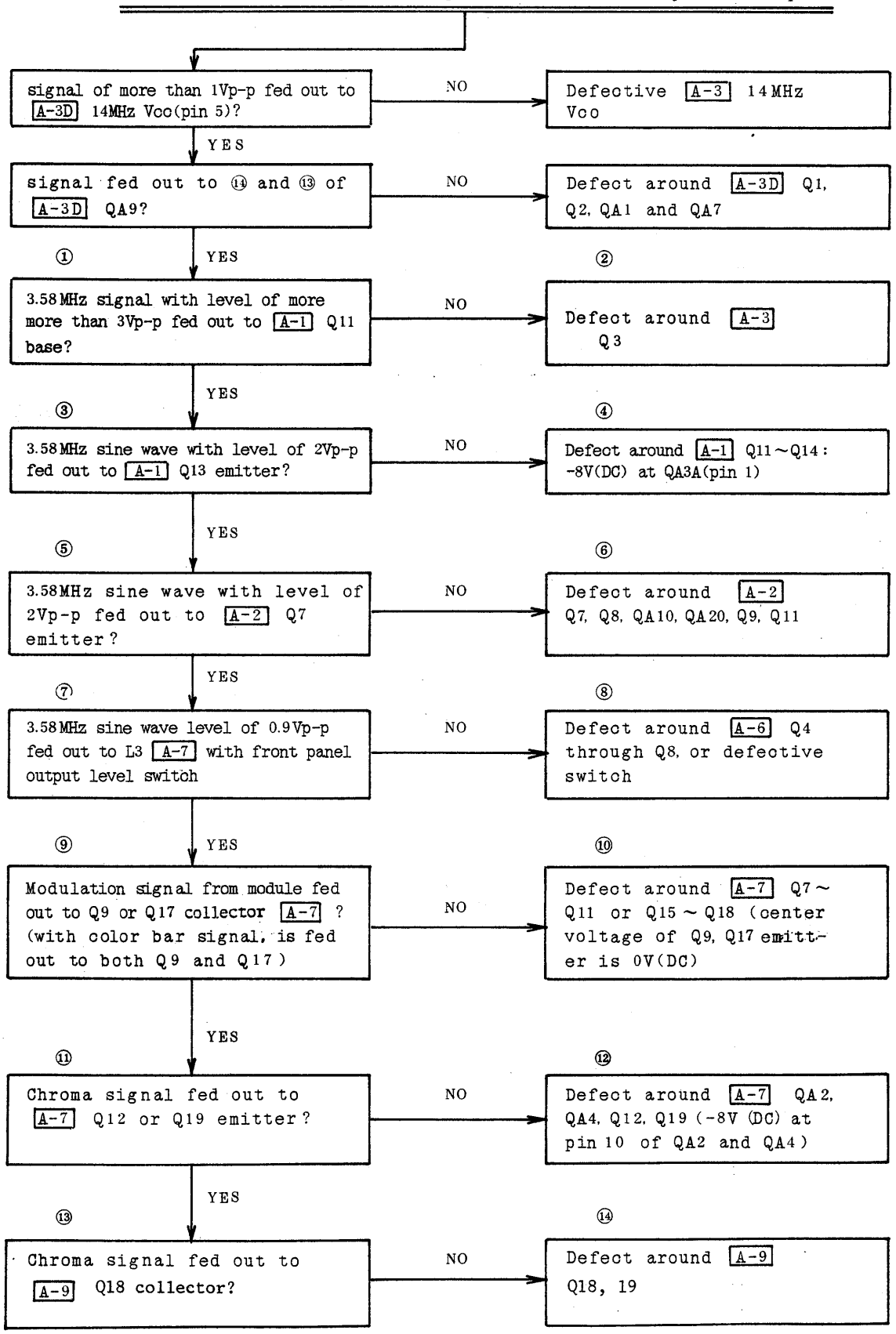
In the event of a malfunction or failure, refer to the following basic check methods.

(1)



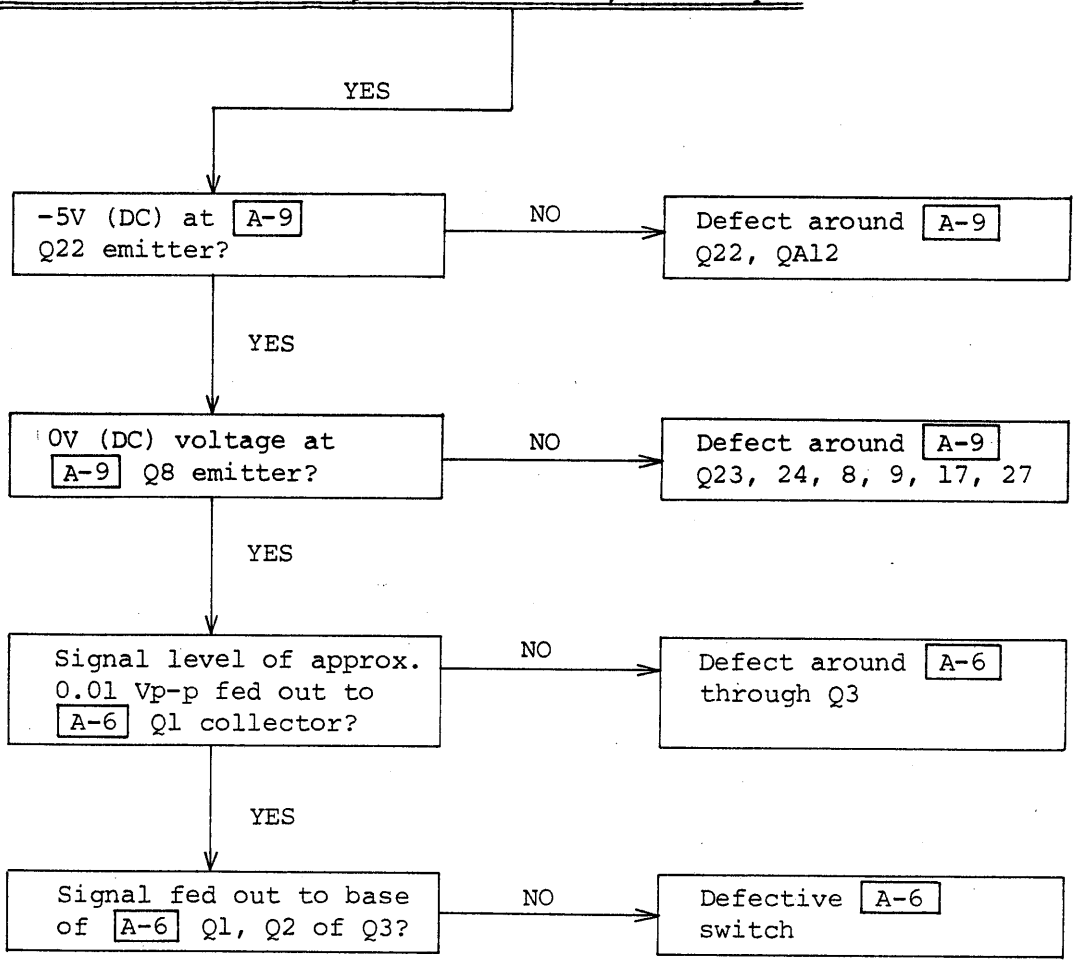
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(2) No chroma signal output or abnormally lom output



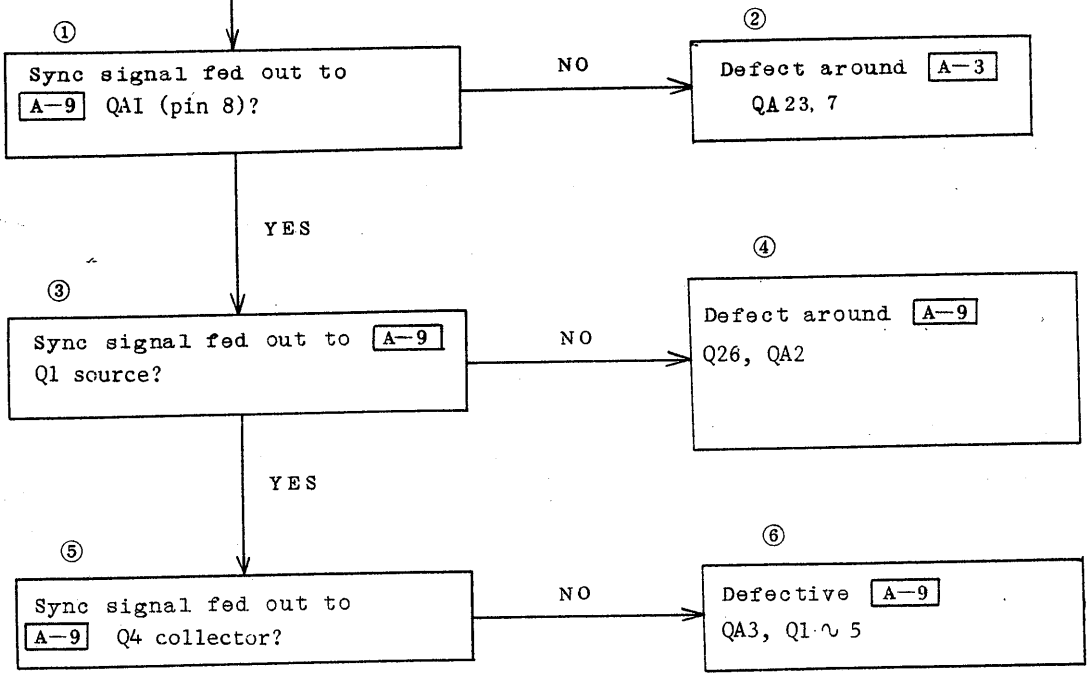
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(3) No luminance signal output or abnormally low output

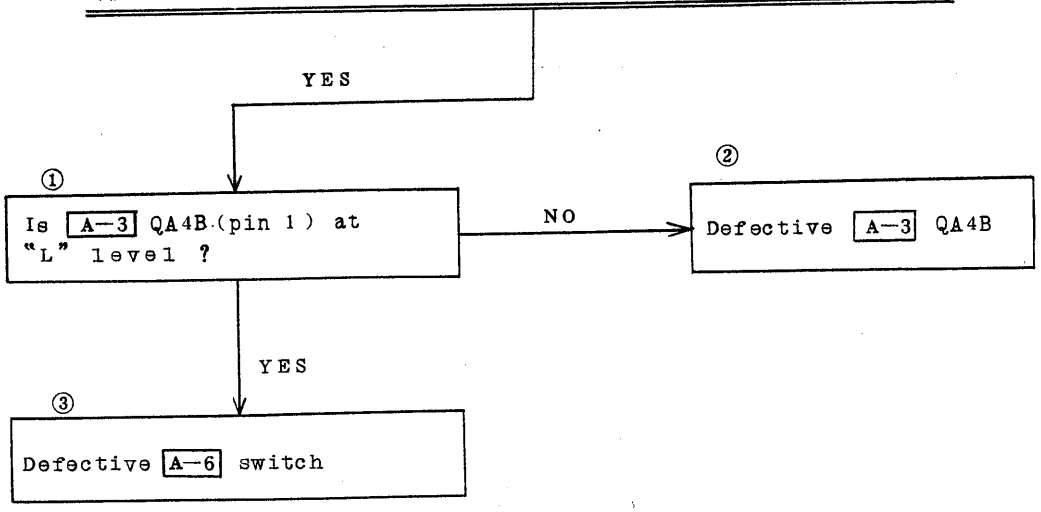


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(4) No sync signal in video signal or abnormally low level

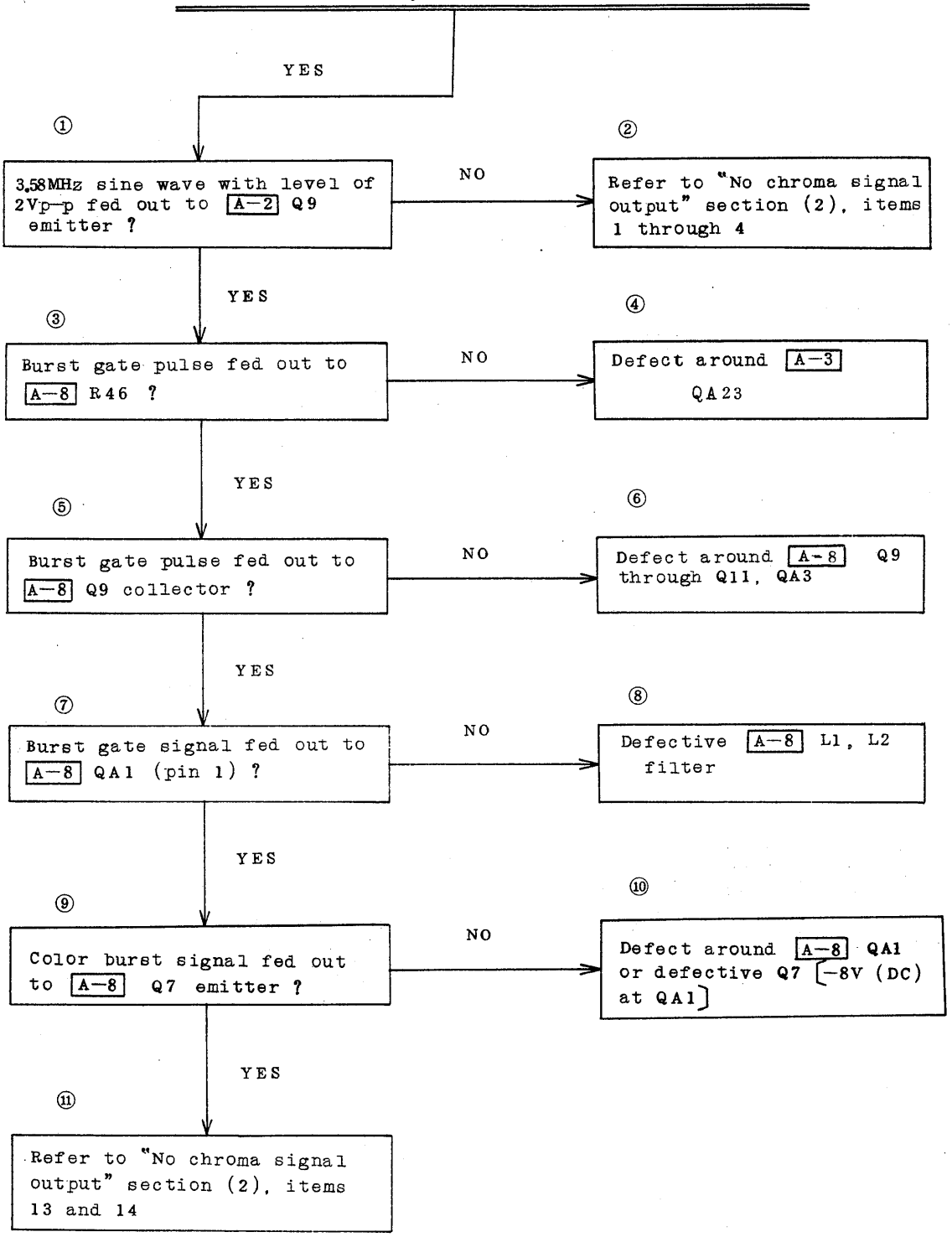


(5) Module selector switches are non—operational



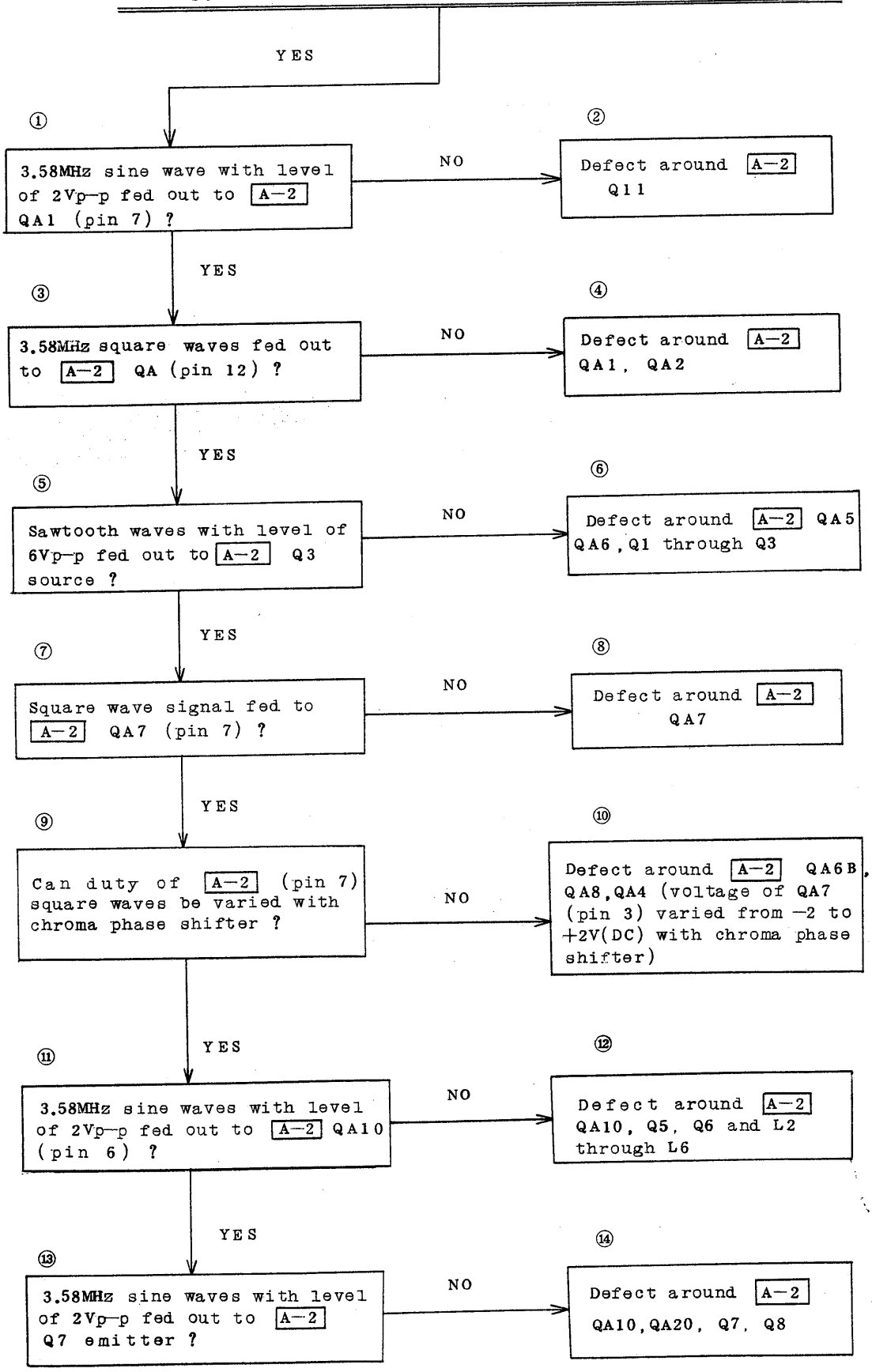
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(6) No color burst signal in video signal or abnormally low level



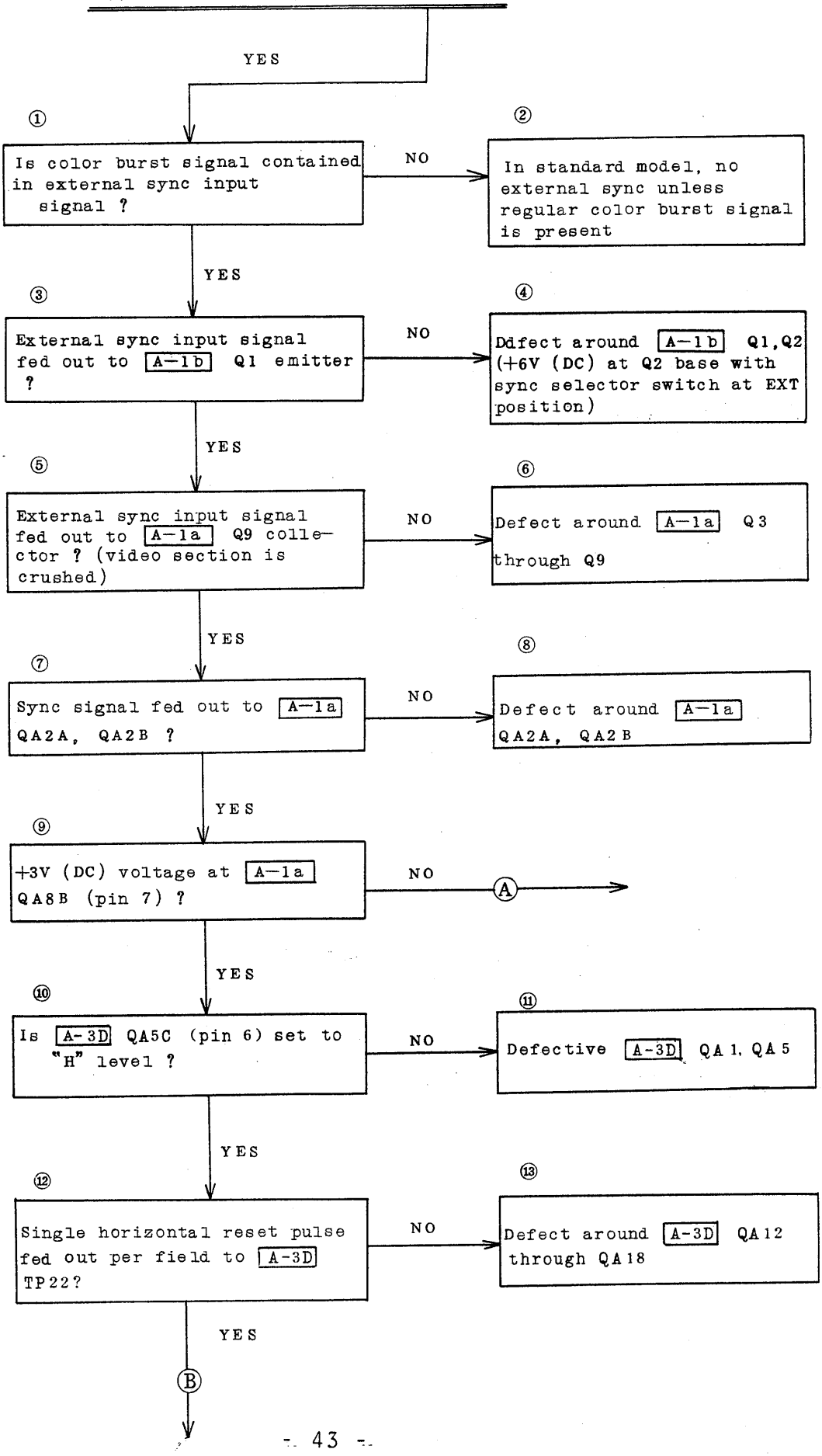
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(7) No change in chroma phase of level abmomally low

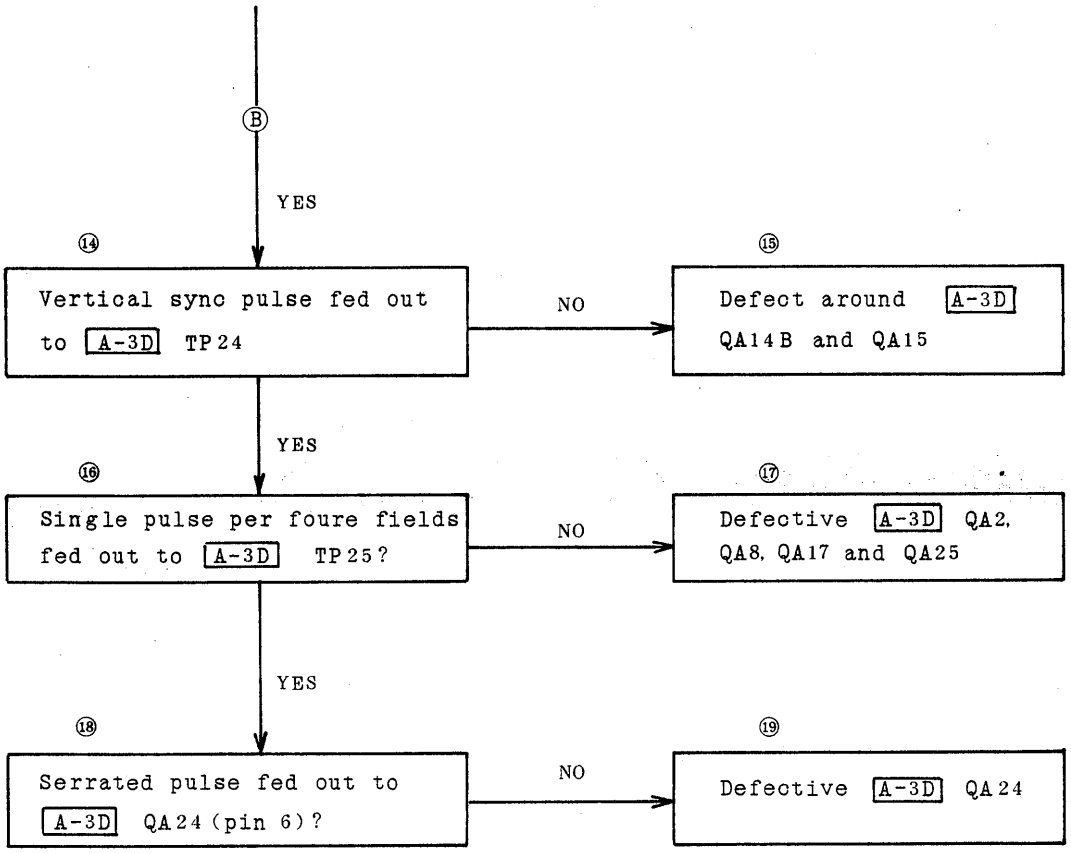


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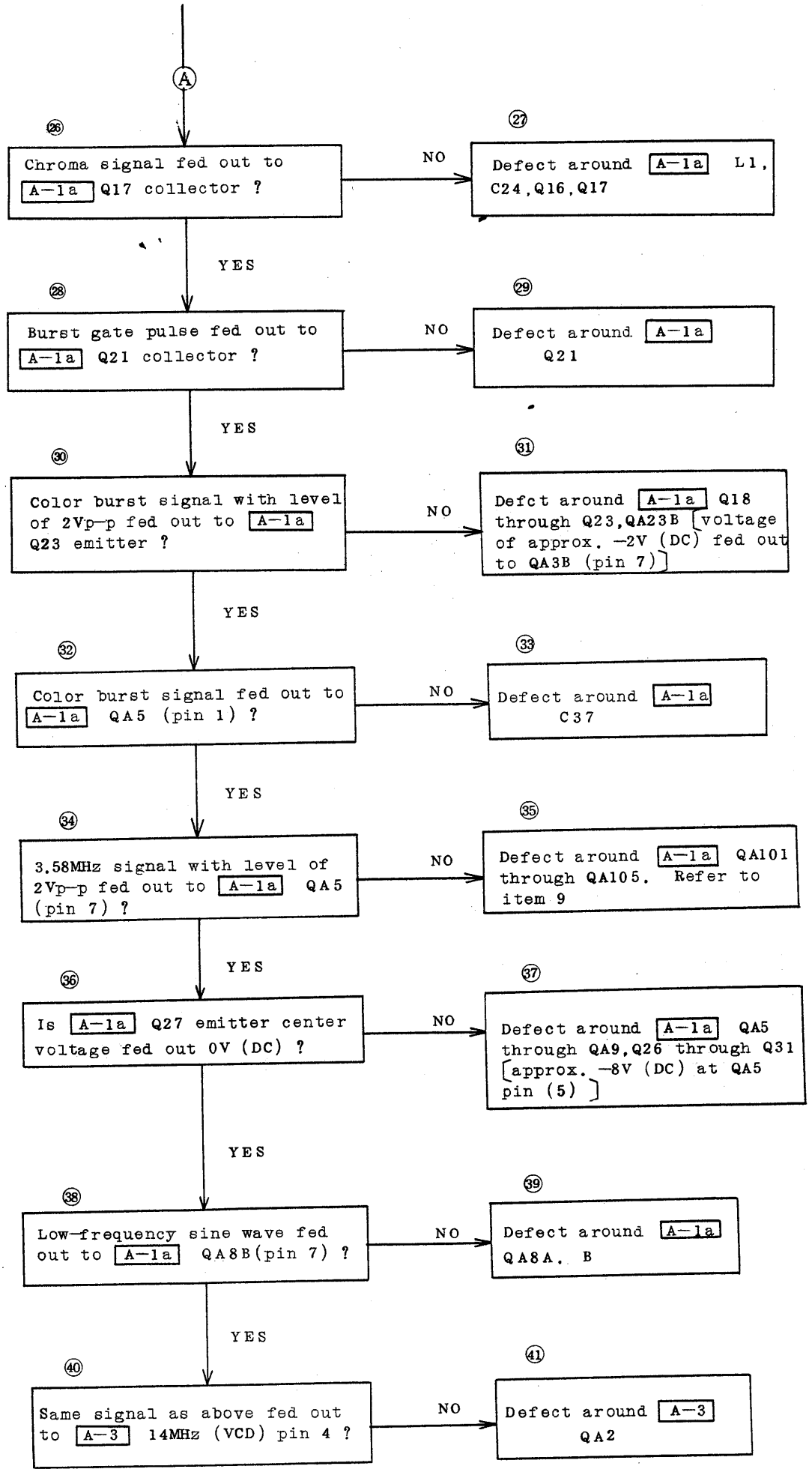
(8) External sync ineffective



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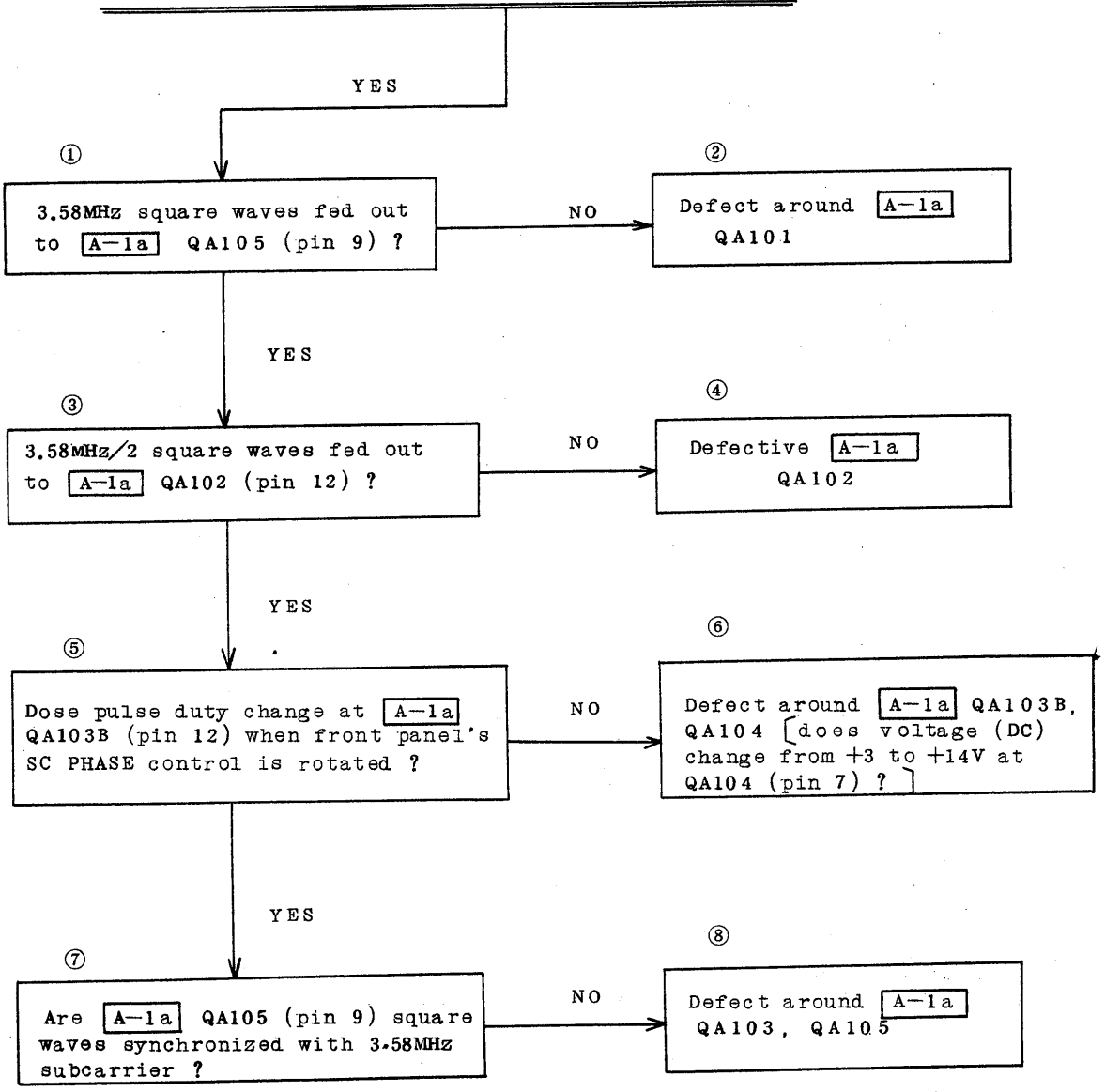


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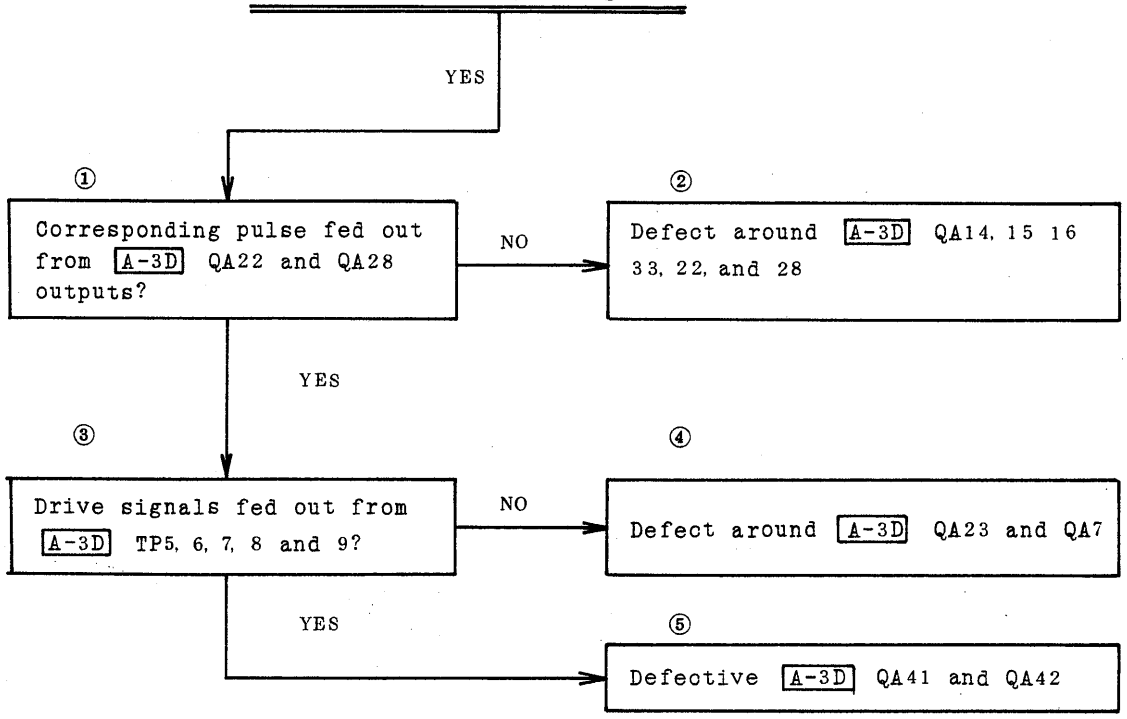
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(9) SC PHASE control is non-operational

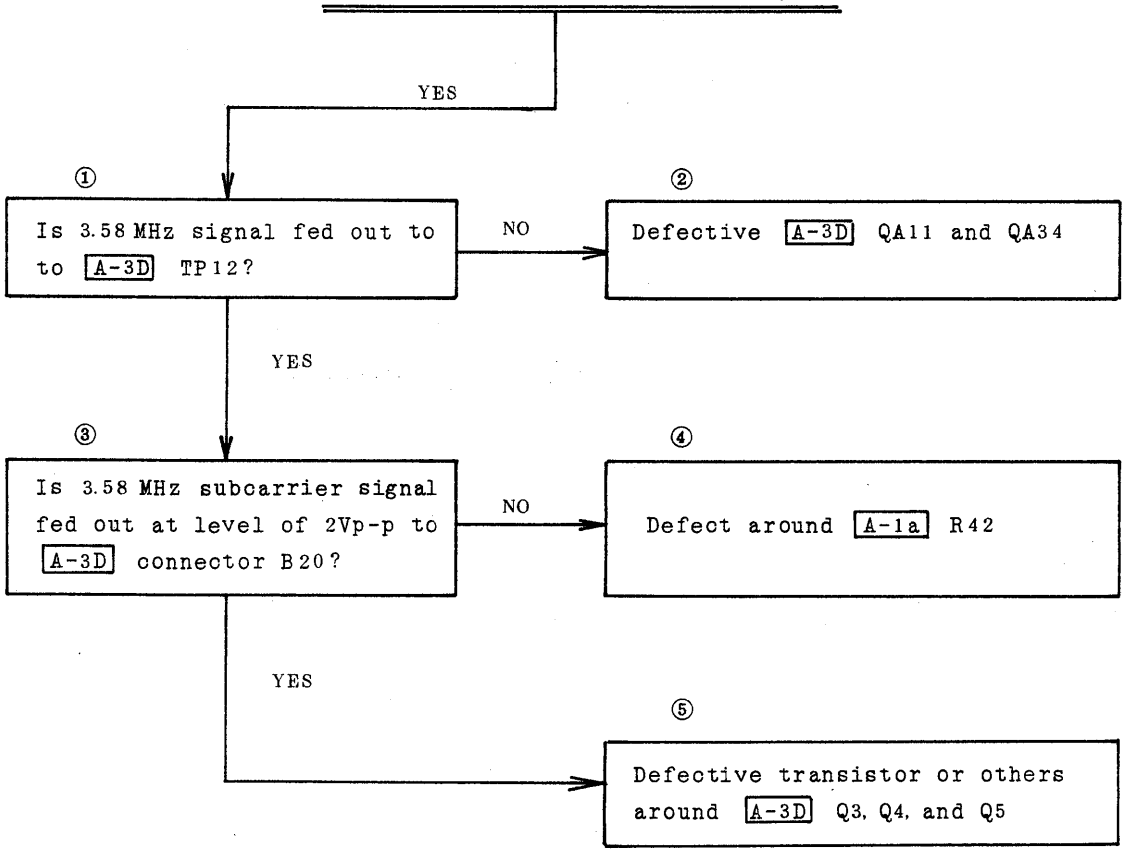


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(10) No drive output signals



No subcarrier drive output signal



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