SUPPLEMENT TO

SERVICE MANUAL FOR

MODEL 560 KNITTER

NOTE

This supplement has been prepared to help those who are not familiar with use of an oscilloscope, by giving instructions on setting each button and switch of the specific model of the oscilloscope, but if you are experienced in use of the oscilloscope, you can disregard this suuplement.

TABLE OF CONTENTS

1 SETTING THE OSCILLOSCOPE

1-1 SEQUENCE OF INITIAL SETTING - 1

(1) POWER SWITCH: ON

(2) Set teh controls of the oscilloscope as instructed on the [INITIAL SETTING - 1].

The CRT screen will display the traces of CH1 and CH2 about 30 seconds after it is turned on.
(Depending on the setting of POSITION (PULL X10 GAIN), those two traces will be overlapped.)

(3) Adjust the brightness of the traces to the level comfortable to your eyes.

(4) Adjust the FOCUS control to have sharp image on the CRT screen.

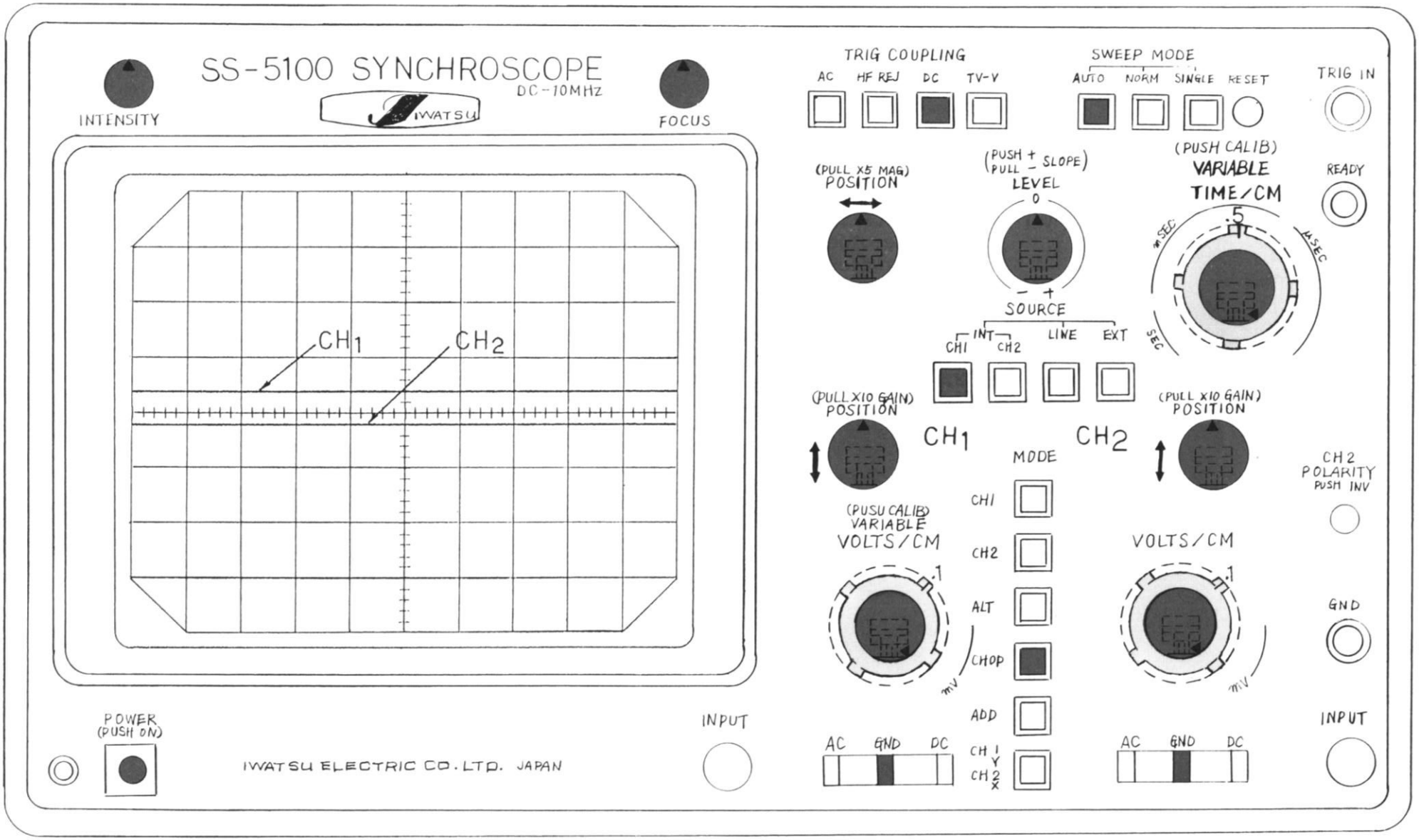
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

(INITIAL SETTING - 1)



1-2: SEQUENCE OF INITIAL SETTING - 2

(1) Thrn the POSITION knob (PULL X10 GAIN) on CH1 in the counterclockwise direction and set the trace to the position on the CRT screen as instructed.

(2) Turn the POSITION knob (PULL X10 GAIN) on CH2 in the counterclockwise direction and set the trace to the position on the CRT screen as instructed.

By performing the above operations, two traces are overlapped and visible as one trace. This operation is very important in setting the GND level (Reference level) for measuring the voltage.

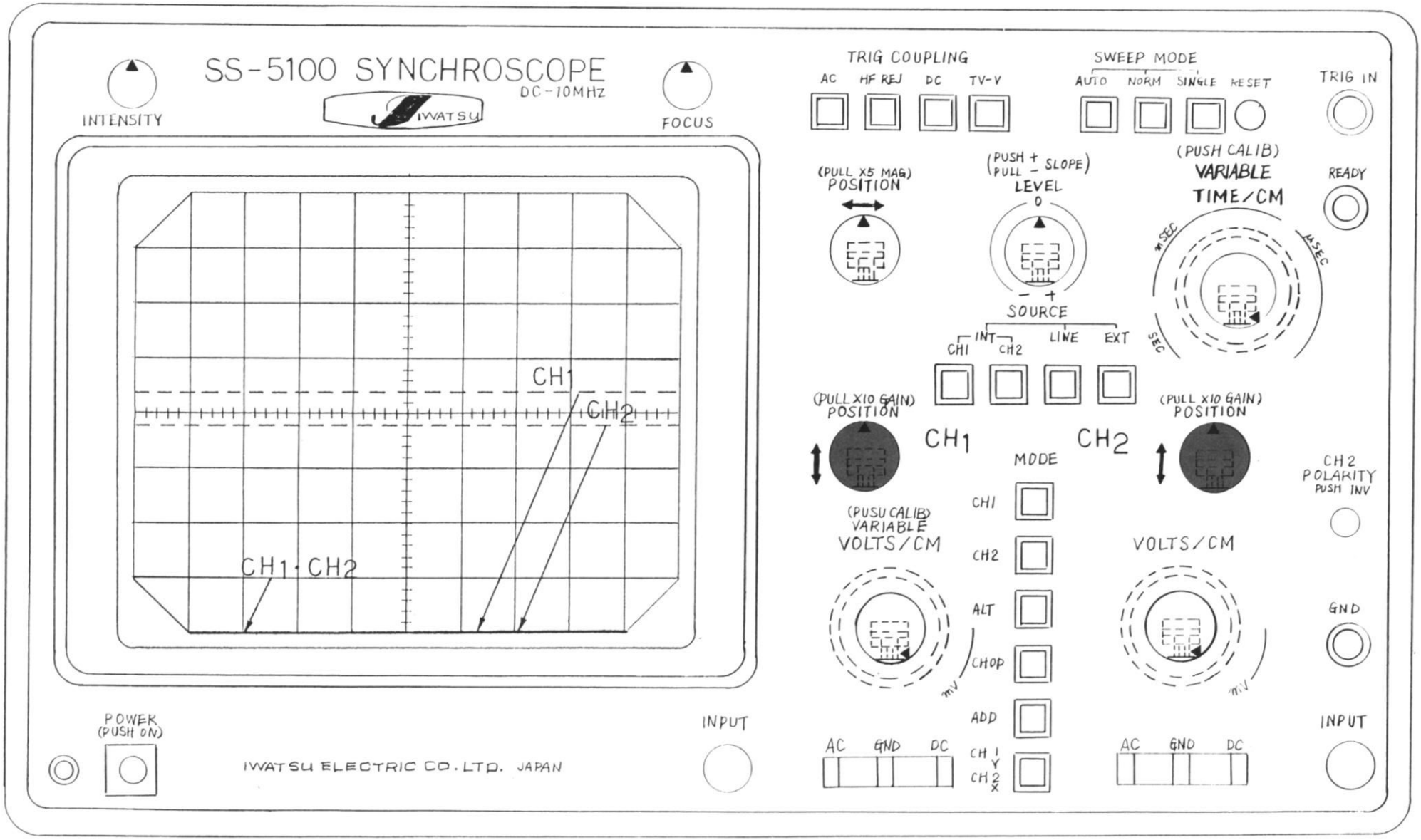
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

(INITIAL SETTING-2)



2. SETTINGS FOR CHECKING THE PCP SIGNAL

2-1 SETTING THE CONTROLS FOR PCP-1

(1) Confirm that [INITIAL SETTING - 1 & 2] have been completed.

(2) Set the TIME/CM knob to "5mSEC".

(3) Set the AC-GND-DC switch to "DC".

Note 1: If the PCP signal is normal, the traces will be displayed almost at the same position as illustrated.

Note 2: As the VOLTS/CM is set to .1, one graticule scale (1 cm.) represents 1 V.

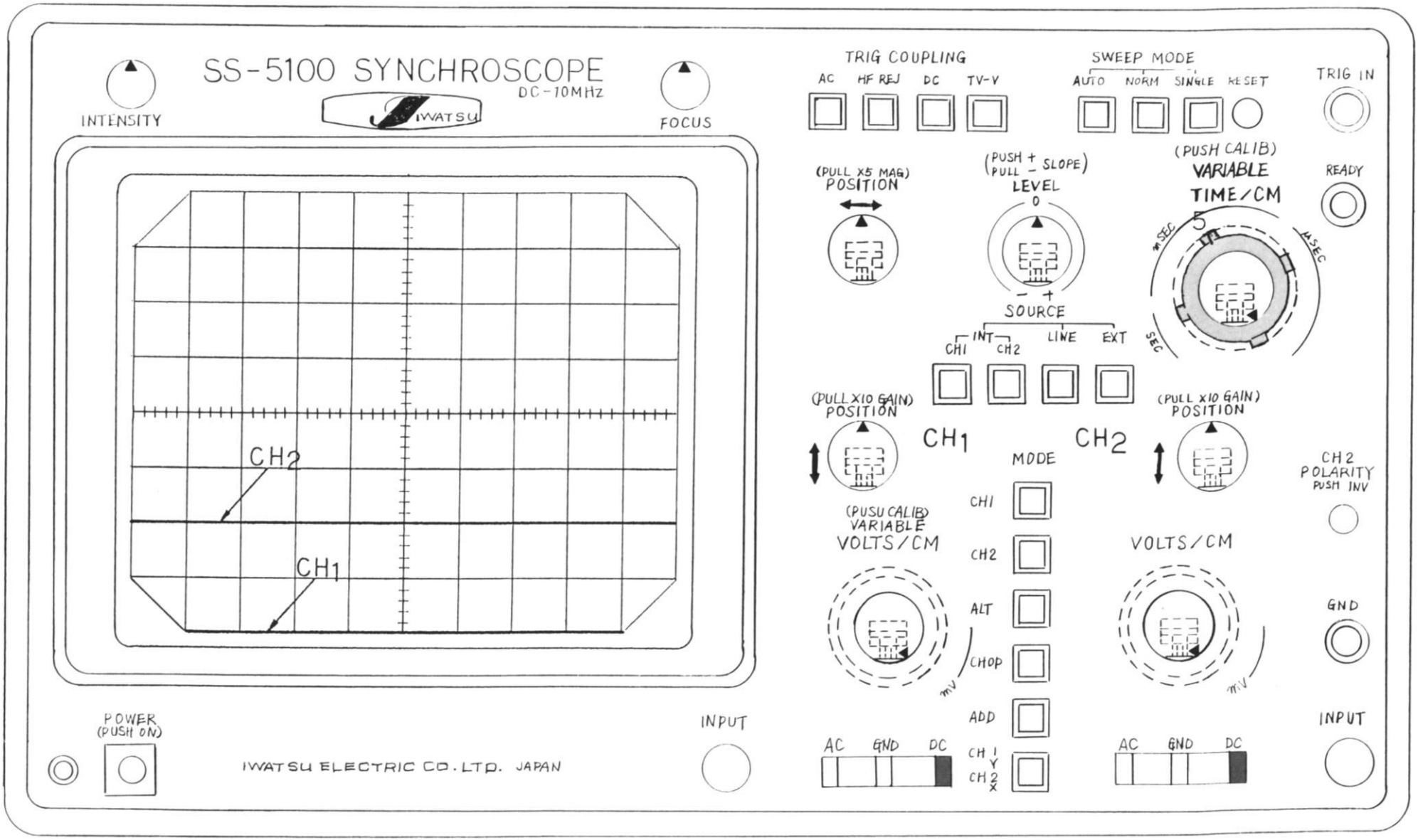
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

PCP-1
PCP-OUTPUT



3. SETTINGS FOR CHECKING THE DIN SIGNALS

3-1 SETTING THE CONTROLS FOR DIN - 1

(1) Confirm that [INITIAL SETTING - 1 & 2] have been completed.

(2) Pull the POSITION knob (PULL X10 GAIN) on CH1, and turn it to bring the trace to the position as indicated by Y1 on the illustration.

(3) Pull the POSITION knob (PULL X10 GAIN) on CH2, and turn it to bring the trace to the position as indicated by Y1 on the illustration.

(4) Turn the POSITION knob (PULL X5 MAG) to have the left end of the trace at the position as indicated by X1 on the illustration.

(5) Pull the TIME/CM knob.

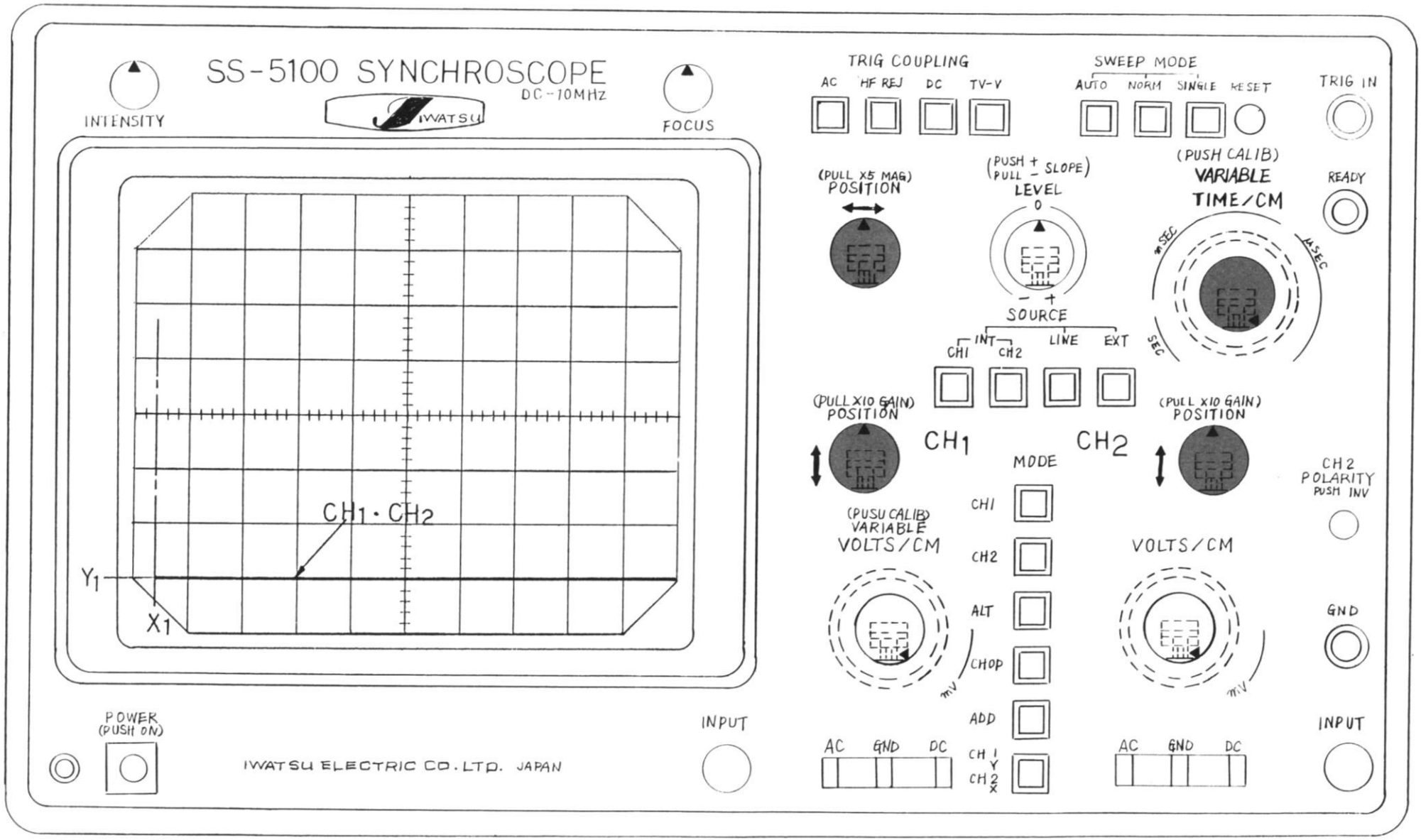
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

(DIN-1 DIN-OUTPUT)



3-2 SETTING THE CONTROLS FOR DIN - 2

(1) Set the AC-GND-DC switch on both the CH1 and CH2 to "DC".

Note 1: In the normal condition, DIN output voltage (CH1) and the reference voltage for the DIN output voltage (CH2) are displayed on the CRT screen, almost at the same position as illustrated.

Note 2: Since the VOLTS/CM: .1 and the POSITION (PULL X10 GAIN) is in pulled state, one graticule scale (1 cm.) represents 1V (100mV).

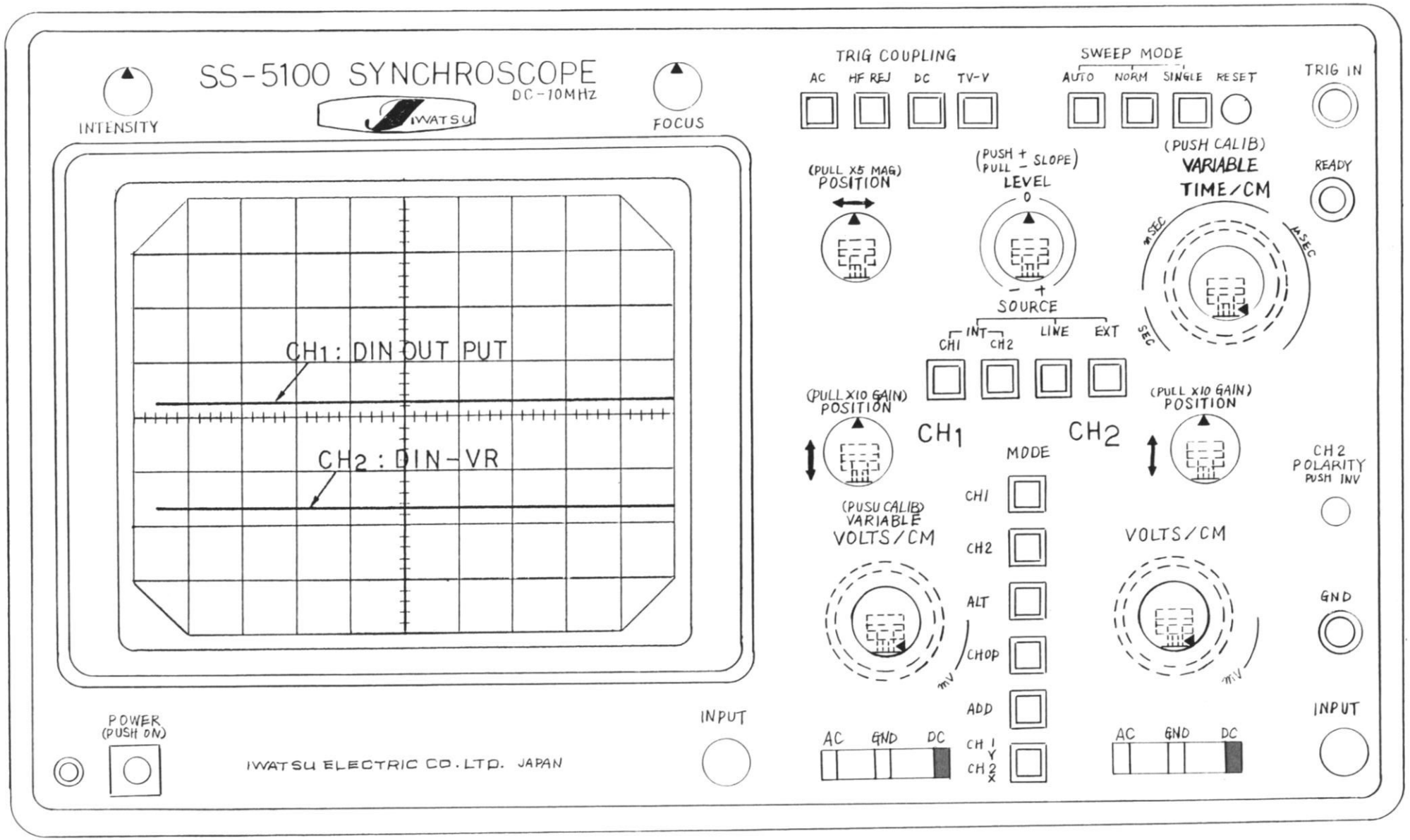
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

(DIN – 2
DIN-OUTPUT)



3-3: SETTING THE CONTROLS FOR DIN - 3

(1) Turn the POSITION knob (PULL X10 GAIN) on CH1, and set the trace of DIN output voltage to the position as indicated by Y1 on the illustration.
(By this operation, the trace of the DIN output voltage is set at graticule Y1 as indicated on the illustration)

(2) Turn the POSITION knob (PULL X10 GAIN) on CH2, and set the trace of the reference voltage (VR-L) at the position as indicated on the illustration.

(3) TIME/CM: 20mSEC

(4) SWEEP MODE: Press NORM switch

(5) While pushing on and off the Inspection Button, turn the LEVEL knob in the clockwise direction till the waveform as shown in the illustration is displayed on the CRT screen.

Note: If the waveform is not displayed, turn the LEVEL knob to zero (0) position, and repeat the step (5).

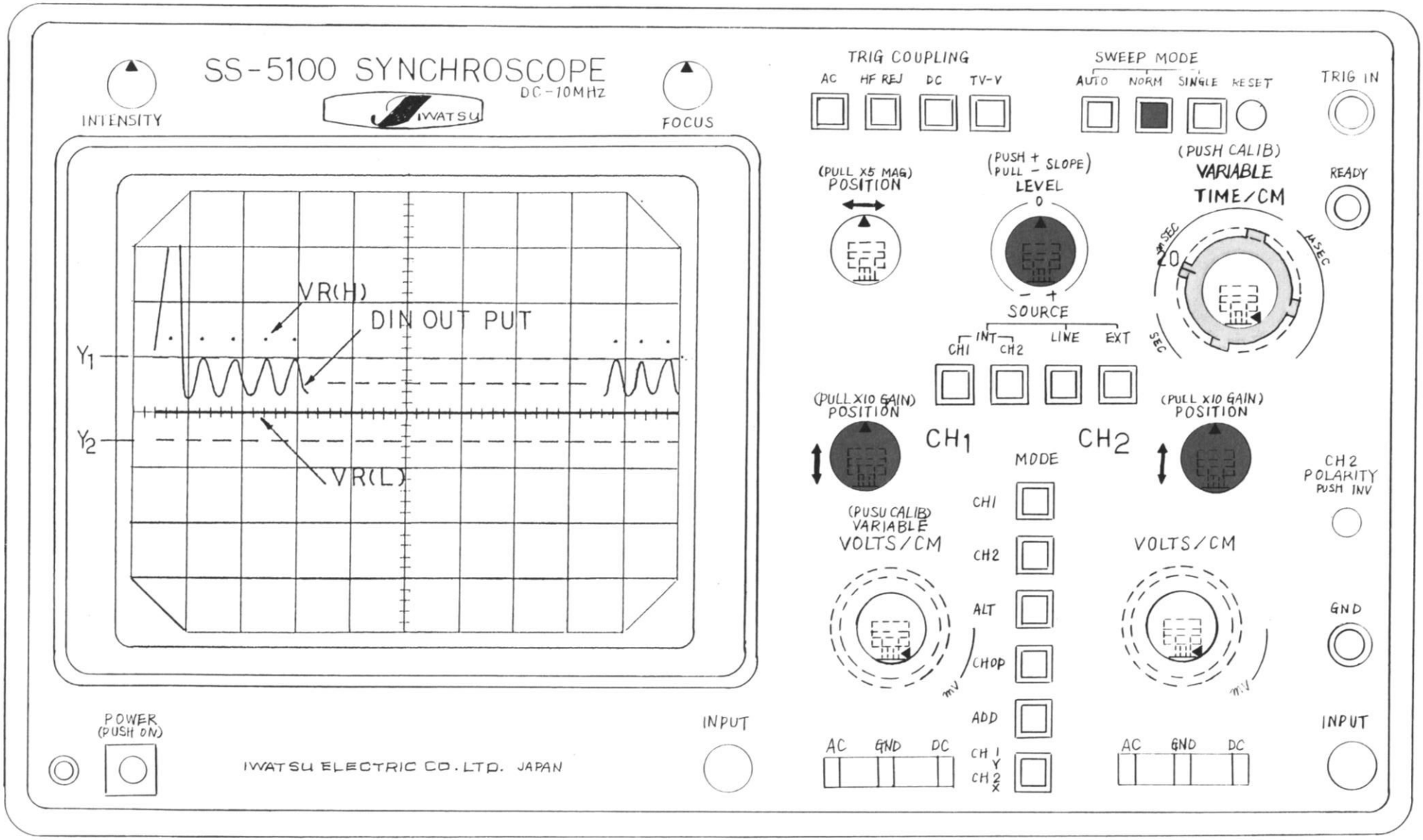
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

(DIN-3 DIN OUTPUT DEVIATION)



3-4: SETTING THE CONTROLS FOR DIN - 4

(1) While pushing on and off the Inspection Button, turn the VARIABLE knob in the counterclockwise direction till all the pulses of DIN reference level are displayed on the CRT screen.

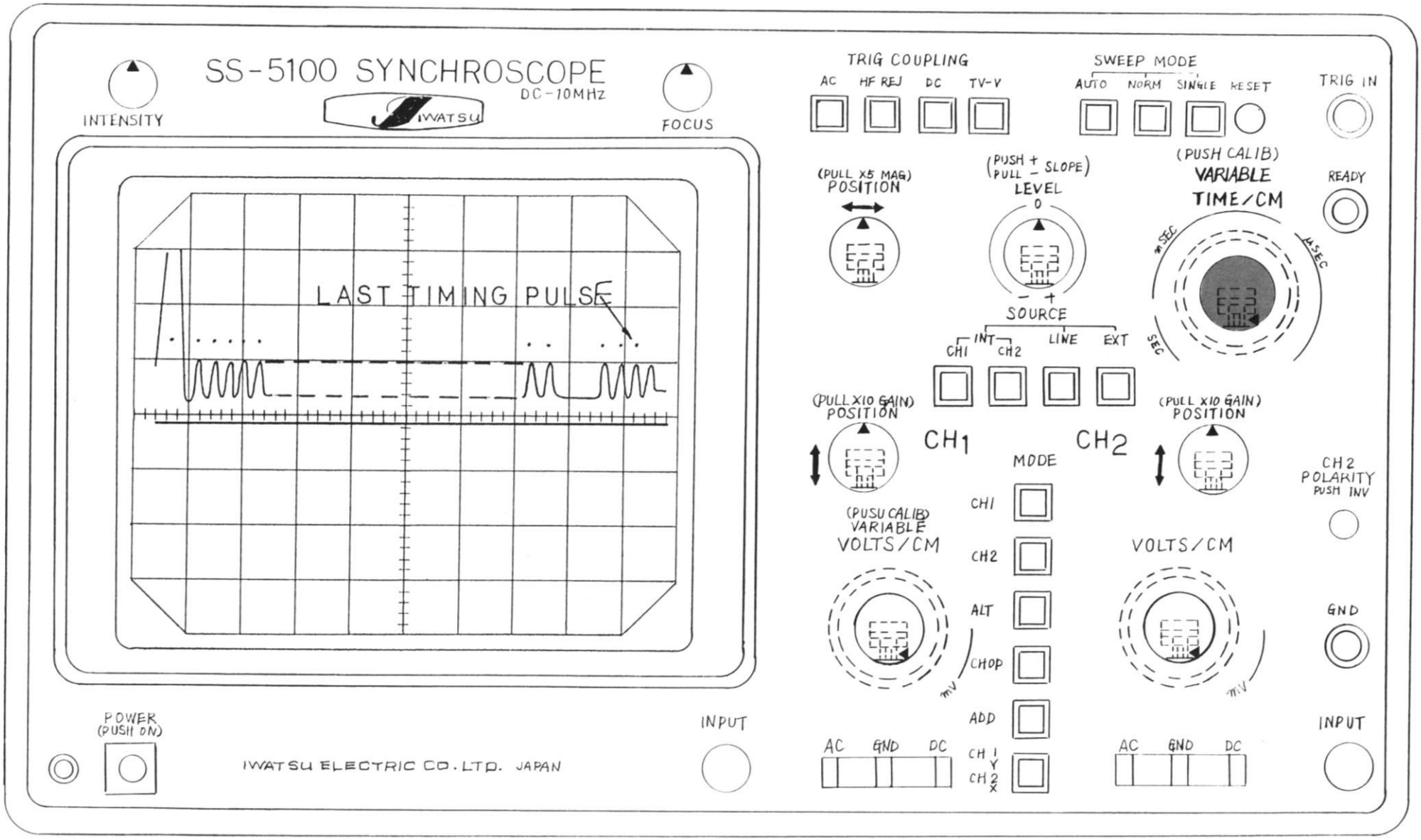
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

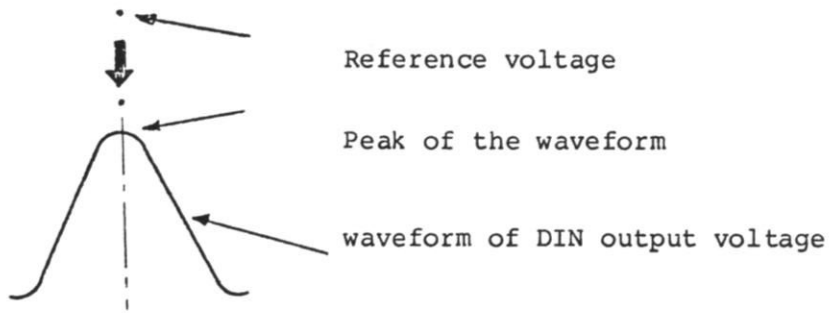
[DIN — 4
DIN OUTPUT
DEVIATION]



3-5 SETTING THE CONTROLS FOR DIN - 5

(1) TIME/CM : 2mSEC

(2) When the Inspection Button is pushed on and off, the waveform as shown in the illustration will be displayed on the CRT screen. Turn the POSITION knob (PULL X10 GAIN) in the counterclockwise direction and bring down the dot for the reference voltage near to the peak of the DIN output voltage waveform.



(3) SWEEP MODE: set to SINGLE and push RESET switch. (READY lamp is turned on.)

(4) Repeat the sequence: PUSH INSPECTION BUTTON ON - OFF, WAVEFORM IS DISPLAYED ON THE CRT SCREEN, PUSH THE RESET SWITCH.

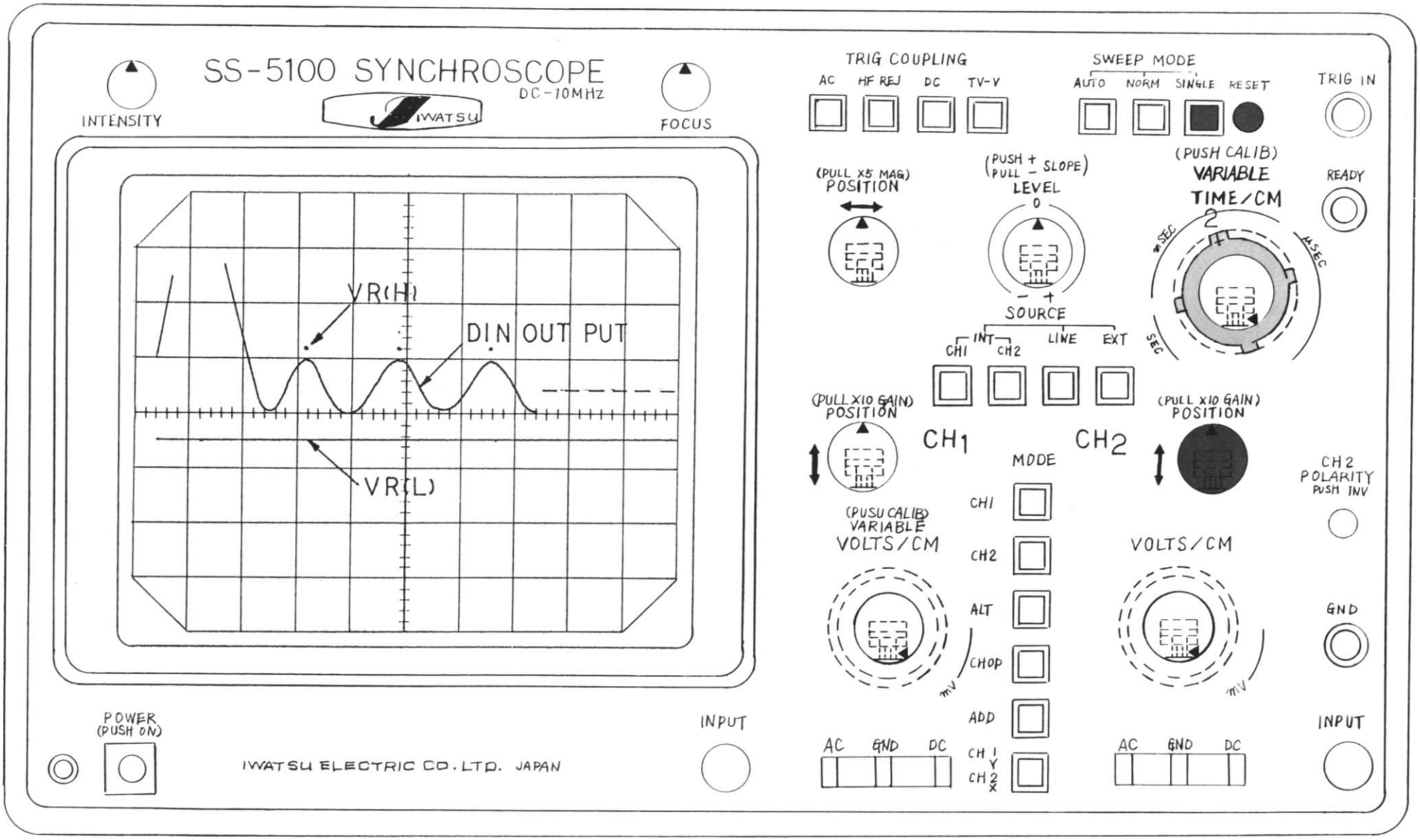
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

DIN — 5
PCP-DIN TIMING



4. SETTINGS FOR CHECKING THE PSD SIGNAL

4-1: SETTING THE CONTROLS FOR PSD - 1

(1) Confirm that the [INITIAL SETTING - 1 & 2] have been completed.

(2) Turn the POSITION knob (PULL X10 GAIN) on CH1, and set the trace of CH1 at the position on the CRT screen as indicated by the Y1 on the illustration.

(3) Turn the POSITION knob (PULL X10 GAIN) on CH2, and set the trace of CH2 at the position on the CRT screen as indicated by the Y1 on the illustration.

(4) Turn the POSITION knob (PULL X5 MAG) and set the left end of the trace to the position on the CRT screen as indicated by X1 on the illustration.

(5) TIME/CM: set to 5mSEC

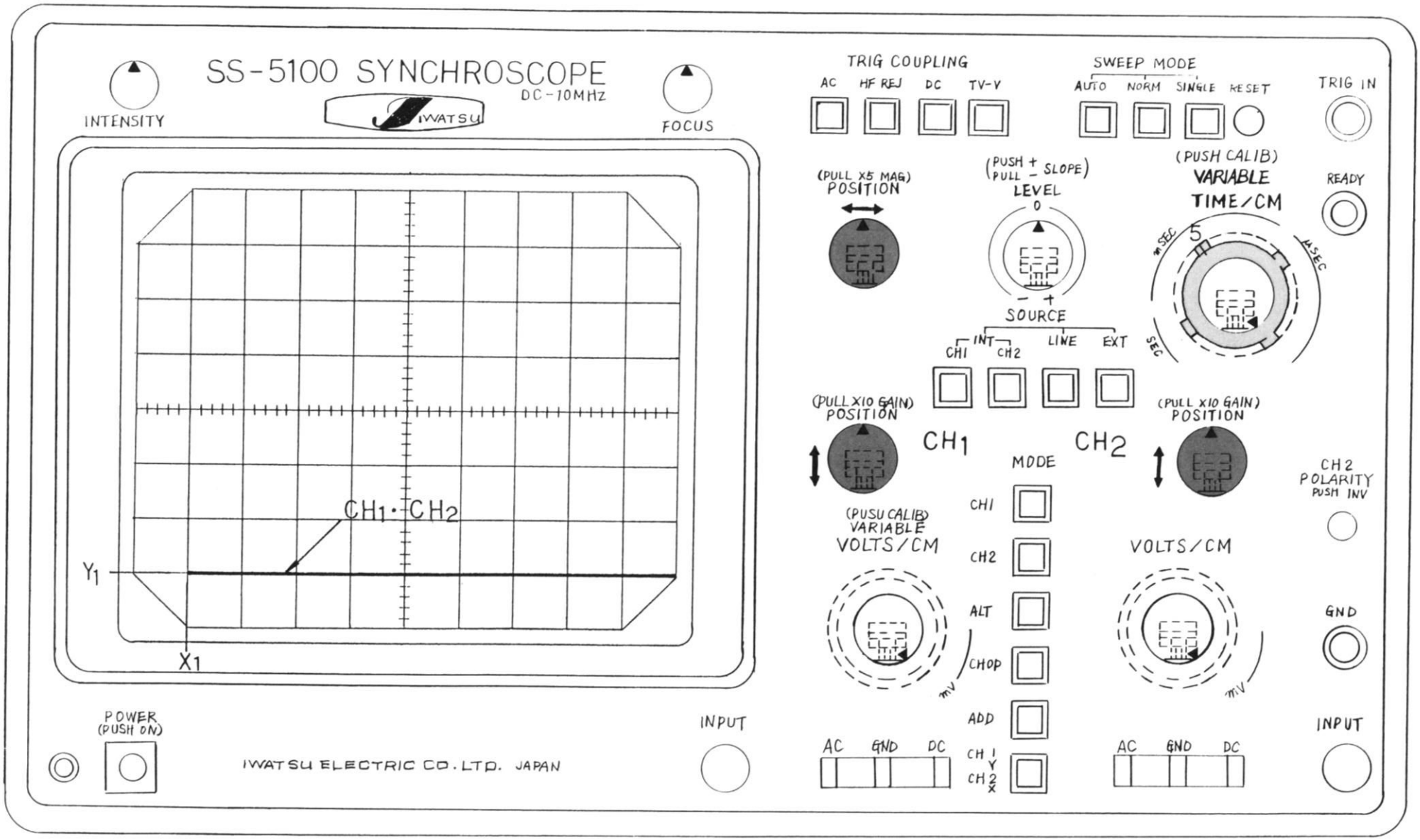
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

PSD—1
PSD-OUTPUT



4-2 SETTING THE CONTROLS FOR PSD - 2

(1) Set the AC-GND-DC switch to "DC" on both the CH1 and CH2.

(2) SWEEP MODE: set to NORM.

(3) While pushing on and off, turn the LEVEL knob gradually in the clockwise direction till the waveform as illustrated is displayed on the CRT screen.

(4) Set SWEEP MODE to SINGLE, then push RESET switch. (READY lamp is turned on.)

(5) Repeat the sequence: PUSH INSPECTION BUTTON ON - OFF, WAVEFORM IS DISPLAYED ON THE CRT SCREEN, PUSH THE RESET SWITCH.

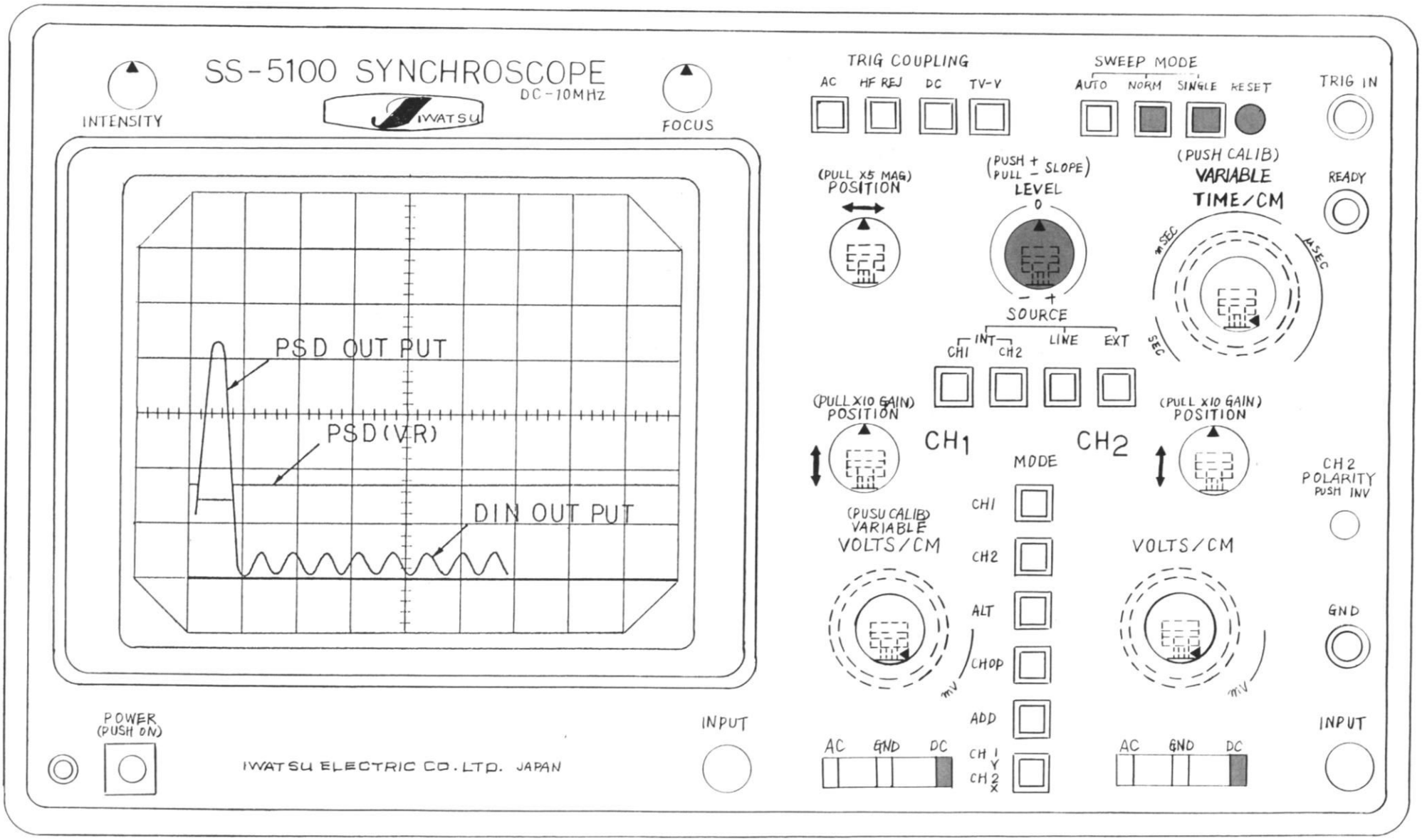
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

(PSD-2 PSD-OUTPUT)



5. SETTINGS FOR CHECKING THE PSD TIMING

5-1 SETTING THE CONTROLS FOR PSD - 3

(1) Confirm that [INITIAL SETTINGS - 1 & 2] have been completed.

(2) Pull the POSITION knob (PULL X10 GAIN) on CH2, then turn the knob to set the trace at the position on the CRT screen as indicated by Y1 on the illustration.

(3) Turn the POSITION knob (PULL X10 GAIN) on CH1, and set the trace at the position on the CRT screen as indicated by Y1 on the illustration.

(4) Turn the POSITION knob (PULL x5 MAG) gradually, and set the left end of the traces at the position on the CRT screeen as indicated by X1 on the illustration.

(5) Pull the LEVEL knob.

(6) TIME/CM: set to 1 mSEC.

(7) VOLTS/CM on CH1: set to 50mV.

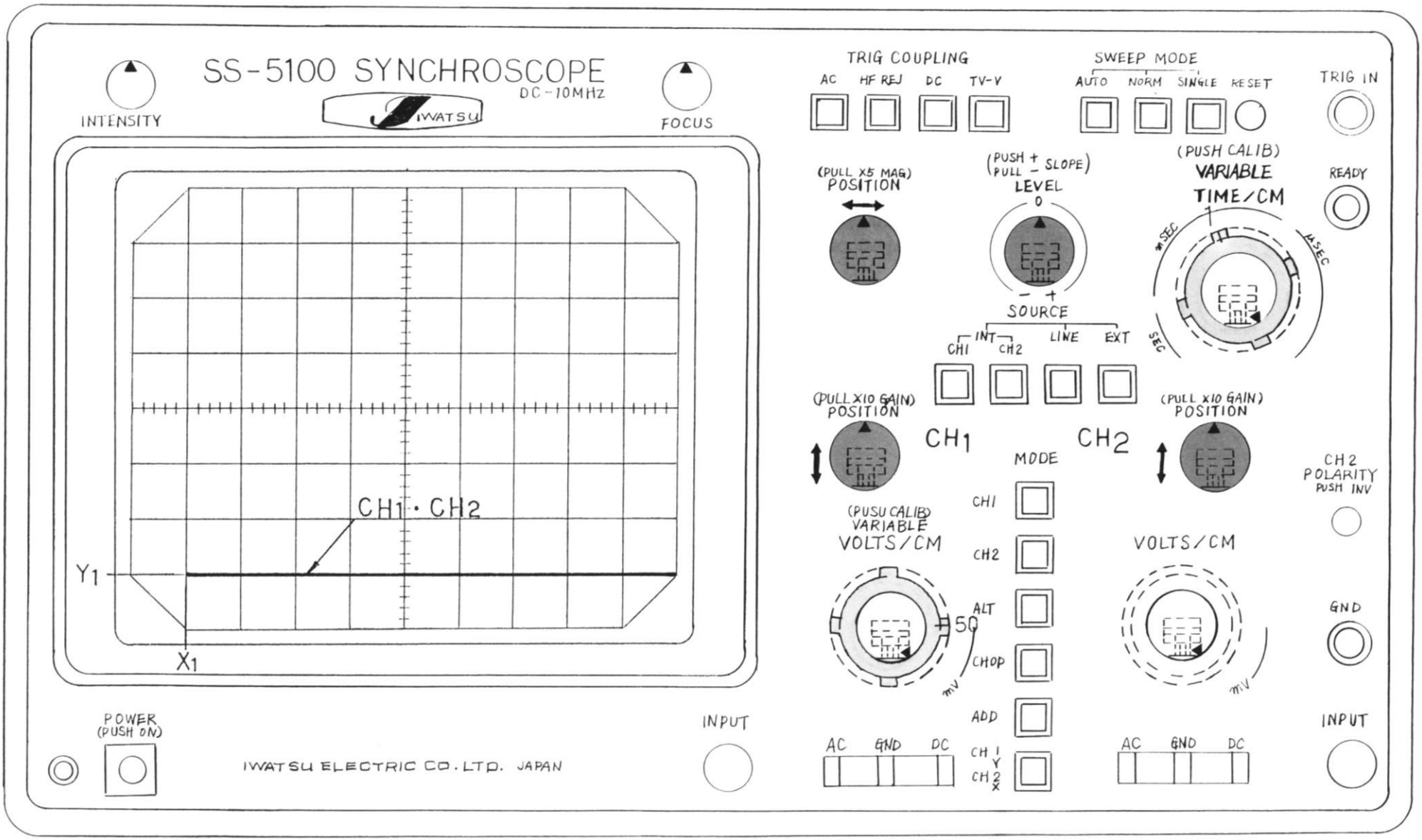
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

(PSD－3
PSD-TIMING)



5-2: SETTING THE CONTROLS FOR PSD - 4

(1) Set teh AC-GND-DC switch to "DC" on both the CH1 and CH2.

(2) SWEEP MODE: set to NORM.

(3) While pushing on and off, turn the LEVEL knob gradually in the clockwise direction till the waveform as illustrated is displayed on the CRT screen.

Note: If no waveform is displayed on the CRT screen, set the LEVEL knob to zero(0) position, and repeat the step (3).

(4) Set SWEEP MODE to SINGLE, then push RESET switch. (READY lamp is turned on.)

(5) Repeat the sequence: PUSH INSPECTION BUTTON ON - OFF, WAVEFORM IS DISPLAYED ON THE CRT SCREEN, PUSH THE RESET SWITCH.

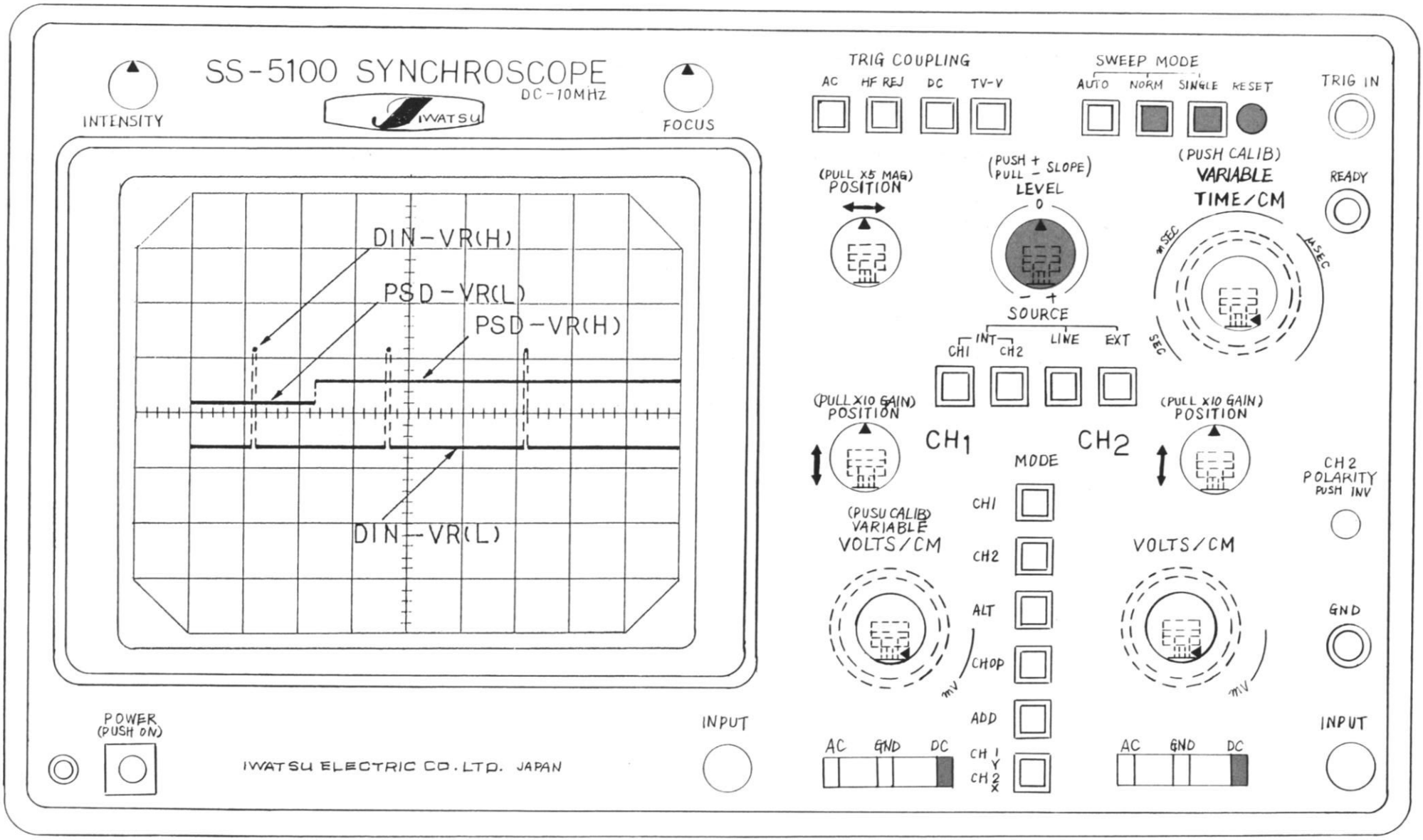
PUSH/PULL SWITCHES

■---- denotes the button is pushed

▭ --- pushed state

▭ --- pulled state

(PSD-4 PSD-TIMING)



6. SETTINGS FOR CHECKING THE CARRIAGE UNIT

6-1 SETTING THE CONTROLS FOR CARRIAGE - 1

(1) Confirm that [INITIAL SETTINGS - 1 & 2] have been completed.

(2) Turn the POSITION knob (PULL x10 GAIN) on CH1 and CH1 to display two traces on the CRT screen as illustrated.

(3) TIME/CM: set to 5mSEC.

(4) MODE: push CH1 switch.

(5) Set the AC-GND-DC switch on CH1 to "DC".

Note: As the VOLTS/CM is set to .1, one graticule scale (1cm.) represents 1V.

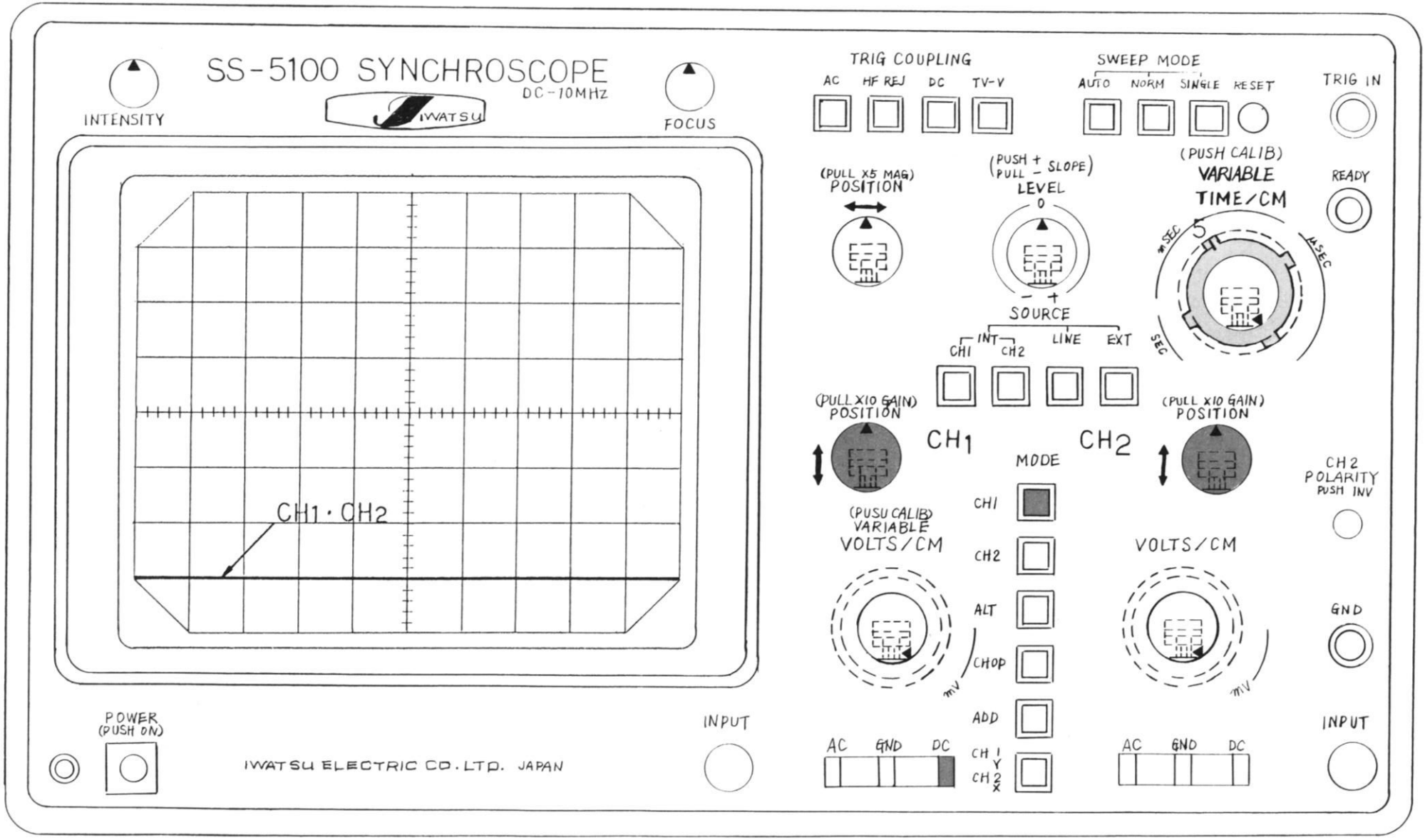
PUSH/PULL SWITCHES

■---- denotes the button is pushed

▭ --- pushed state

▭ --- pulled state

CARRIAGE – 1



6-2 SETTING THE CONTROLS FOR CARRIAGE - 2

(1) Confirm that [INITIAL SETTINGS - 1 & 2] have been completed.

(2) TIME/CM: set to 10mSEC.

(3) Set the AC-GND-DC switch on CH2 to "DC".

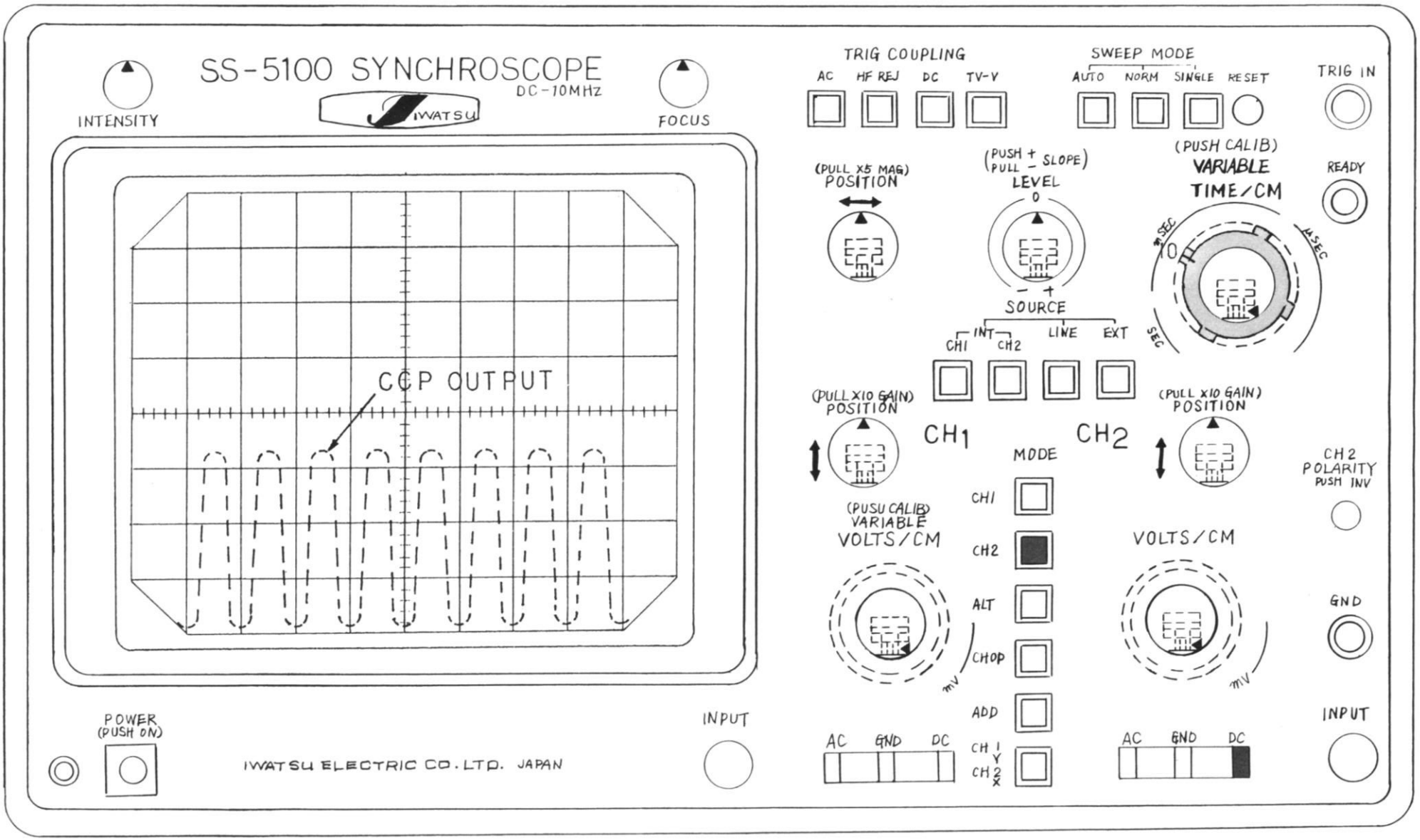
PUSH/PULL SWITCHES

■---- denotes the button is pushed

--- pushed state

--- pulled state

(CARRIAGE – 2)
CCP-OUTPUT



6-3 SETTING THE CONTROLS FOR CARRIAGE - 3

(1) Set the AC-GND-CD switch on CH2 to "GND".

(2) Turn the POSITION knob (PULL X10 GAIN) on CH1 and CH2 to set the traces at the position on the CRT screen as illustrated.

(3) Turn the POSIION knob (PULL X5MAG) to set the left end of the traces at the position on the CRT screen as illustrated, indicated by X2.

(4) TIME/CM: set to 2mSEC.

(5) Set the AC-GND-DC switch on CH1 and CH2 to "DC".

(6) SOURCE: push CH2 switch.

(7) MODE: push CH2 switch.

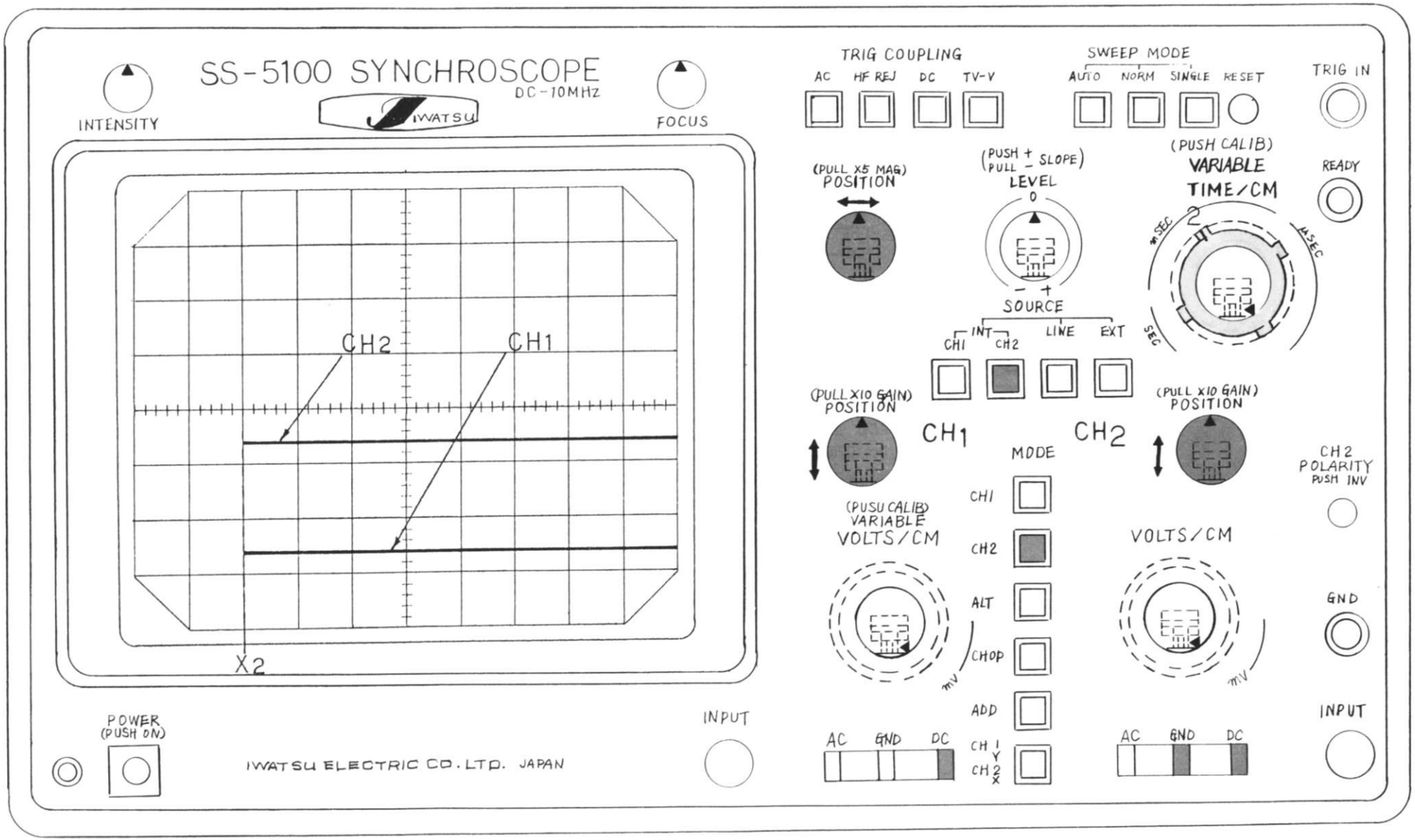
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

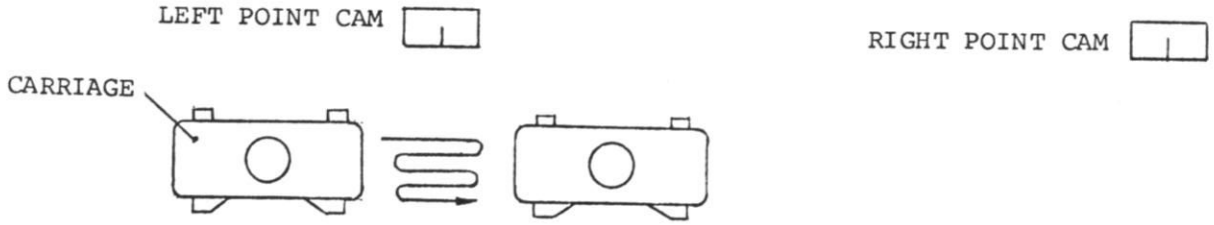
---- pulled state

(CARRIAGE-3
KSL-TIMING)



6-4 SETTING THE CONTROLS FOR CHARRIAGE - 4

(1) Centering the left Point Cam, move the Carriage to and fro across the Point Cam while turning the LEVEL knob gradually in the clockwise direction till the KSL signal is displayed on the CRT screen as illustrated.



(2) When the KSL signal is displayed on the CRT screen, change the MODE to CHOP from CH2.
(KSL signal and CCP signal are displayed on the CRT screen.)

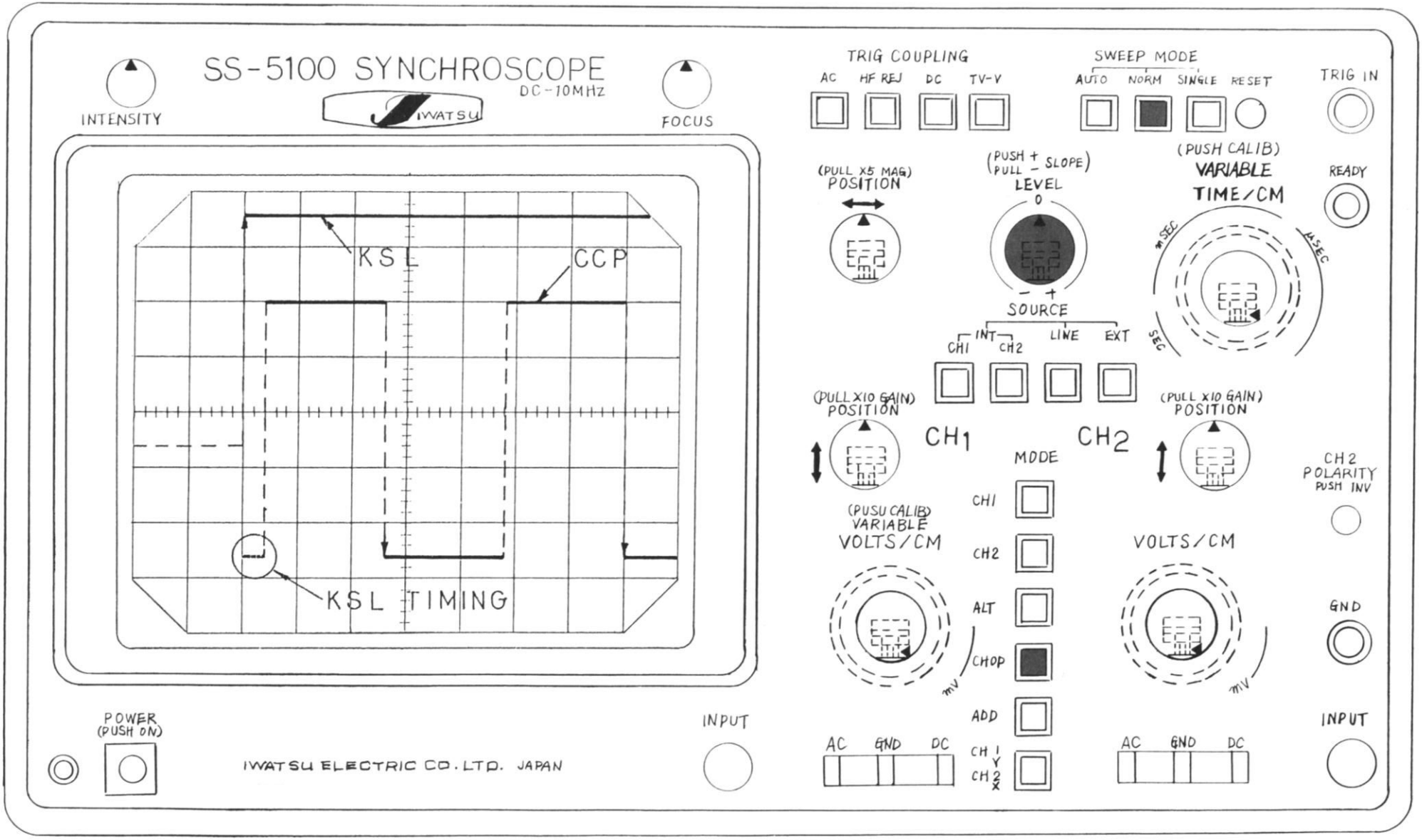
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

CARRIAGE — 4
KSL-TIMING



6-5 SETTING THE CONTROLS FOR CHARRIAGE - 5

(1) SWEEP MODE: changed to AUTO from NORM.

(2) Set the AC-GND-DC switches on CH1 and CH2 to "GND".

(3) Turn the POSITION knob (PULL X10 GAIN) on CH1 and CH2 and set the traces on the CRT screen as illustrated.

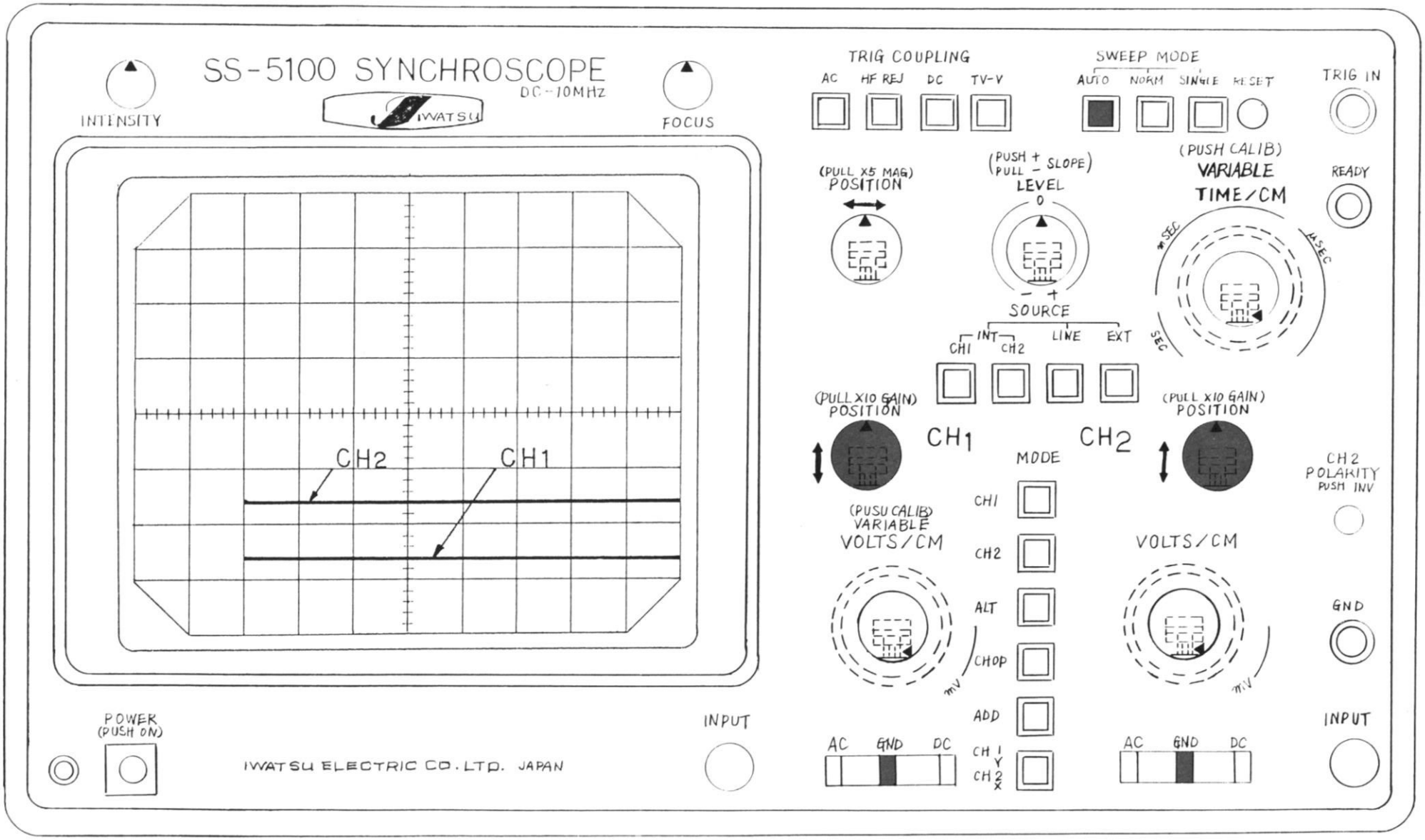
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

(CARRIAGE – 5
ND 1-TIMING)



6-6 SETTING THE CONTROLS FOR CHARRIAGE - 6

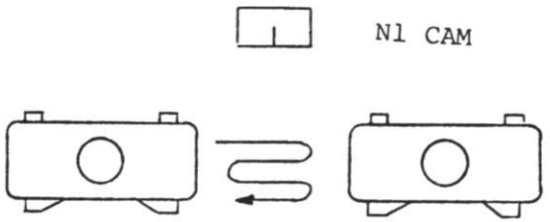
(1) Pull the LEVEL switch. (-SLOPE).

(2) MODE: changed to CH2 from CHOP.

(3) Set the AC-GND-DC switch on CH1 and CH2 to "DC".

(4) SWEEP MODE: changed to NORM from AUTO.

(5) While moving the Carriage to and fro, turn the LEVEL knob gradually in the clockwise direction till the waveform as illustrated is displayed on the CRT screen.
(If no waveform is displayed on the CRT screen, reset the LEVEL knob to zero(0) position, and repeat the step (5).)



(6) Stop the Carriage at the left side of the Needle-1 Cam.

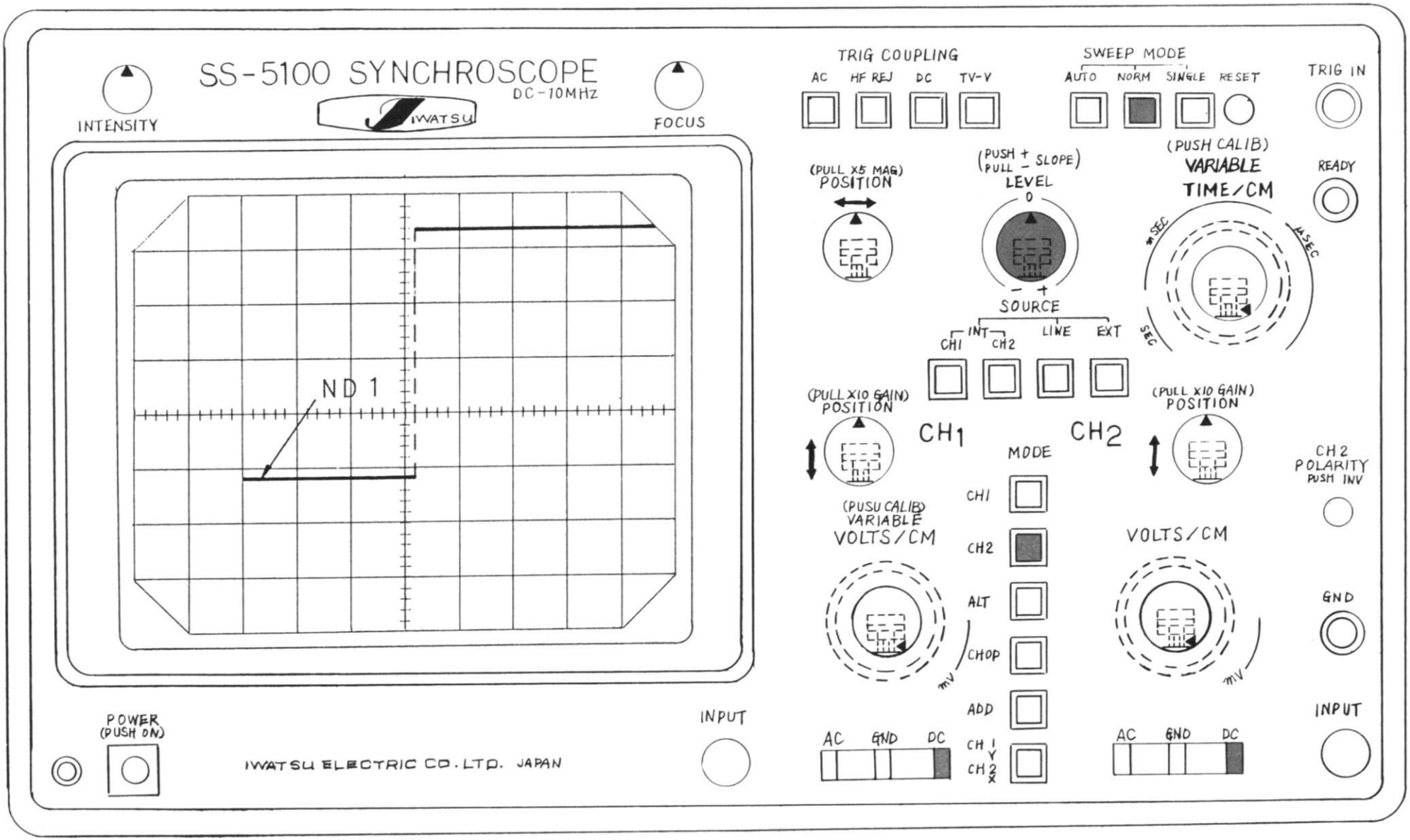
PUSH/PULL SWITCHES

■---- denotes the button is pushed

--- pushed state

--- pulled state

(CARRIAGE — 6
ND1-TIMING



6-7 SETTING THE CONTROLS FOR CARRIAGE - 7

(1) MODE: changed to CHOP from CH2.

(2) Change the SWEEP MODE to SINGLE from NORM, and then push the RESET switch.
(READY lamp is turned on.)

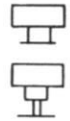
(3) Move the Carriage to right from left. The waveform as illustrated will be displayed on the CRT screen for an instance. (READY lamp goes off.)

(4) Return the Carriage to the left from the right, and push the RESET switch. (READY lamp is turned on.)

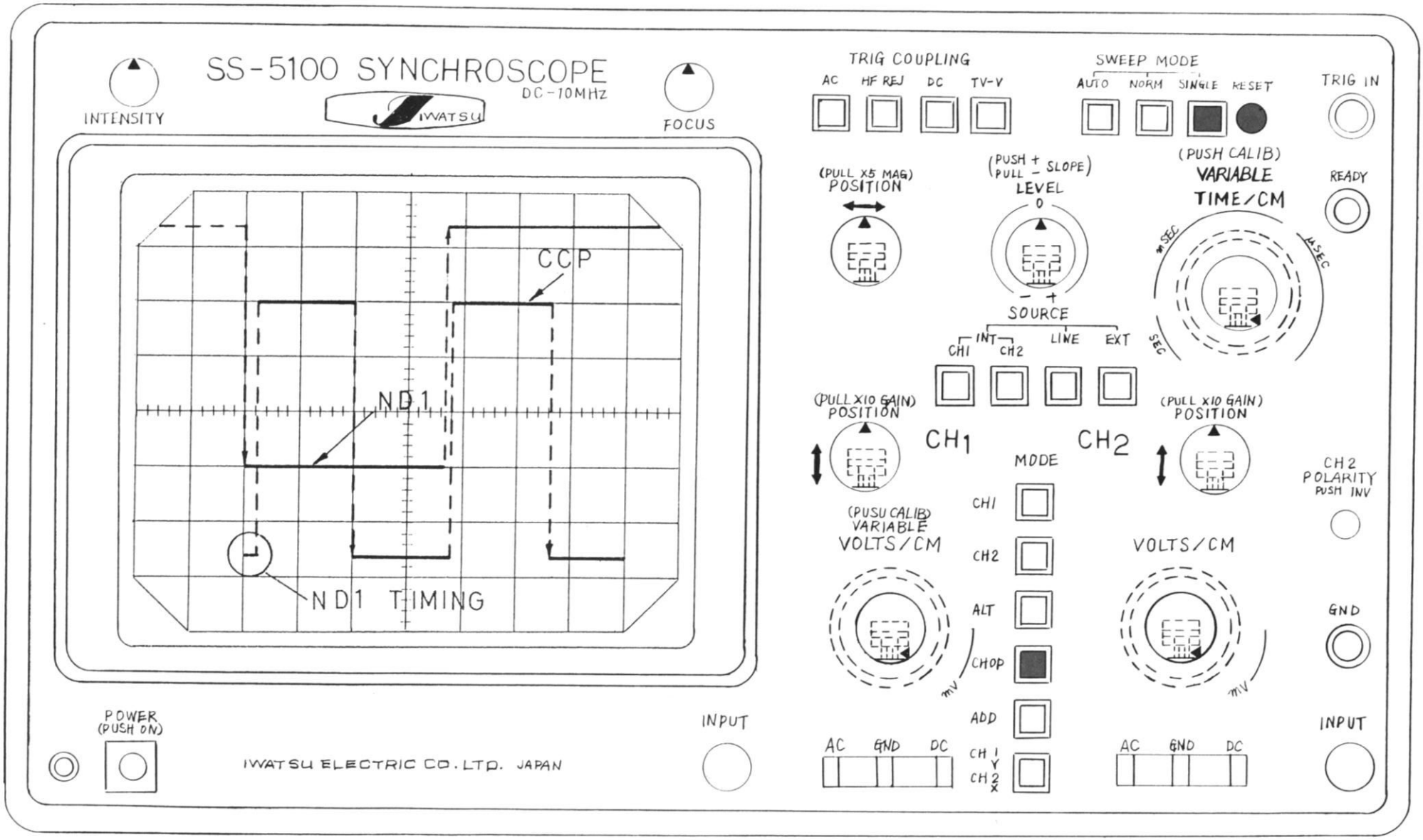
(5) Repeat step (3) and (4).

PUSH/PULL SWITCHES

■---- denotes the button is pushed



CARRIAGE – 7
ND 1-TIMING



7 SETTINGS FOR CHECKING THE CPU BOARD

7-1 SETTING THE CONTROLS FOR CPU - 1

(1) Confirm that [INITIAL SETTINGS - 1 & 2] have been completed.

(2) Turn the POSITION knob (PULL X10 GAIN) on CH2, and set the trace at the position on the CRT screen as indicated on the illustration.

(3) MODE: push CH2 switch.

(4) TIME/CM: set to 20mSEC.

(5) Set the AC-GND-DC switch on CH2 to "GND".

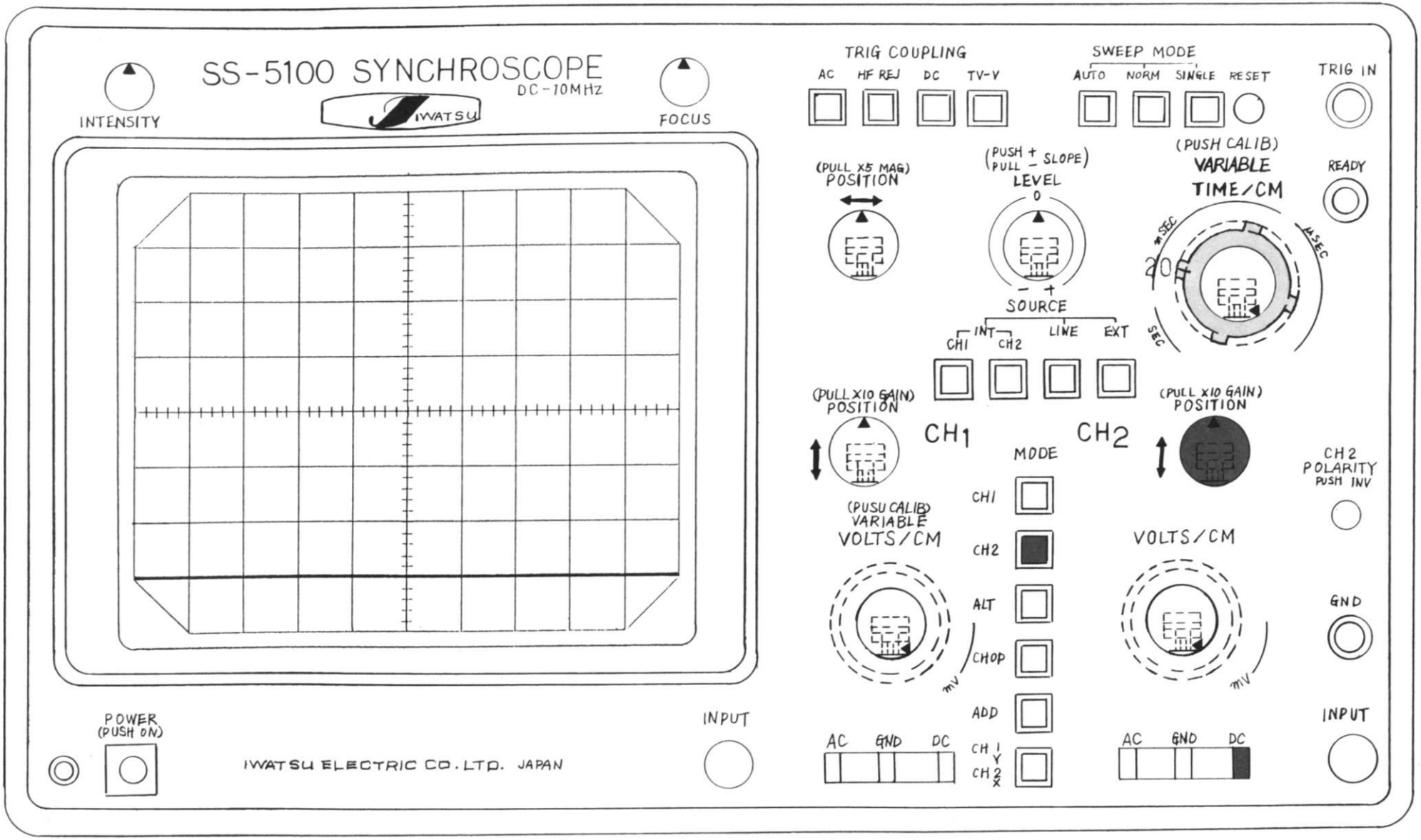
PUSH/PULL SWITCHES

■----denotes the button is pushed

--- pushed state

--- pulled state

(CPU-1)



7-2 SETTINGS THE CONTROLS FOR CPU - 2

(1) Confirm that [INITIAL SETTINGS - 1 & 2] have been completed.

(2) Follow the operation in CPU - 1.

(3) TIME/CM: set to 5 SEC.

(4) Connect the CH1 probe (straight pin tip) to LSI pin 42, and adjust the IFT so as 23 peaks of waveforms are displayed on the CRT screen.

A. By turning the POSITION knob (PULL X5 MAG), set a peak of the waveform at either the left of right end graticule line.

B. Count the peak of the waveform, and adjust the IFT if necessary.

IFT volume: turned in the counterclockwise direction, frequency increases.

IFT volume: turn in the clockwise direction, frequency decreases.

C. When the IFT volume is turned, the position of a peak at the left or right end graticule line will shift.
At each time, adjust the position of the peak by turning the POSITION knob (PULL X5 MAG).

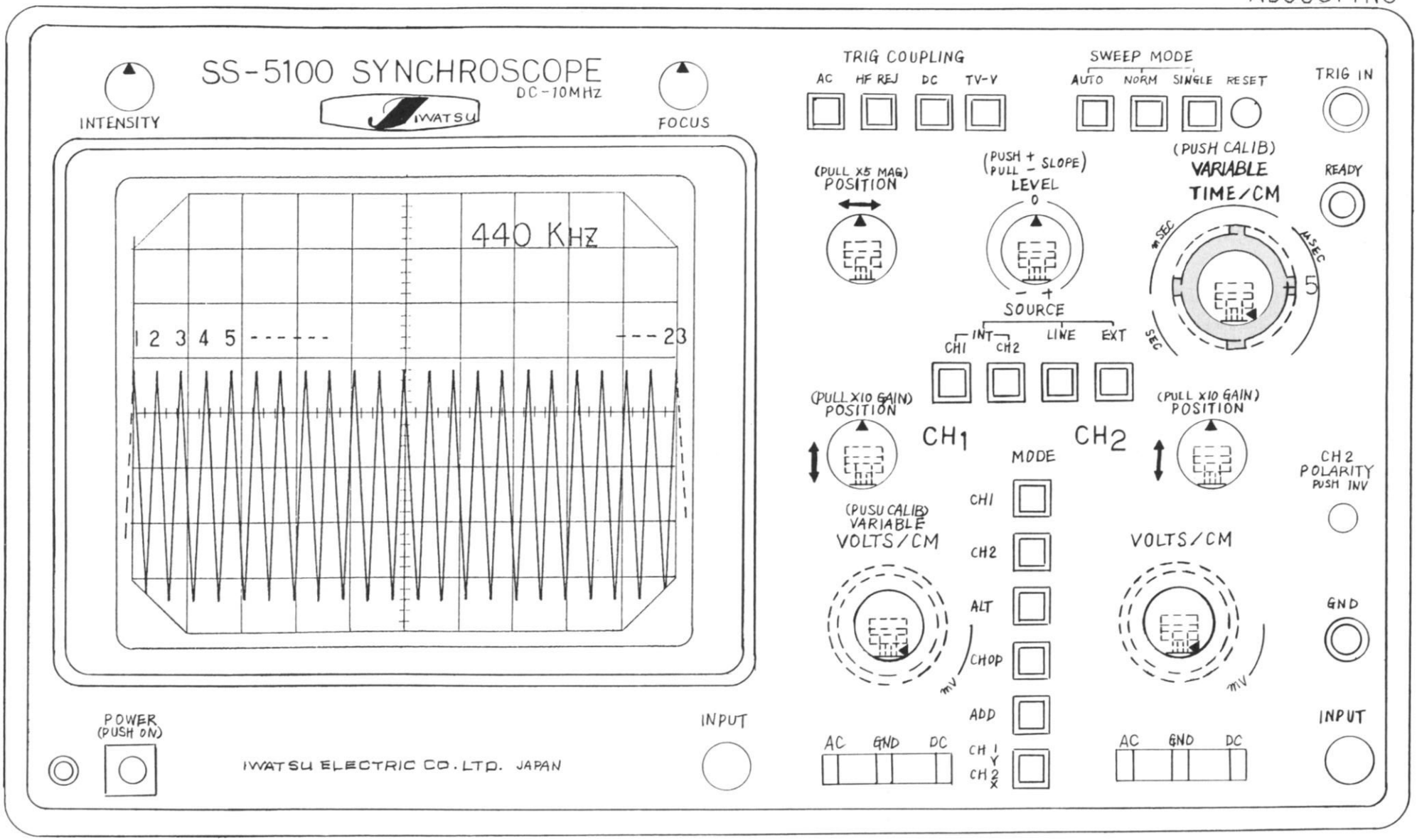
PUSH/PULL SWITCHES

■---- denotes the button is pushed

---- pushed state

---- pulled state

(CPU – 2
IFT – FREQUENCY ADJUSTING)



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