
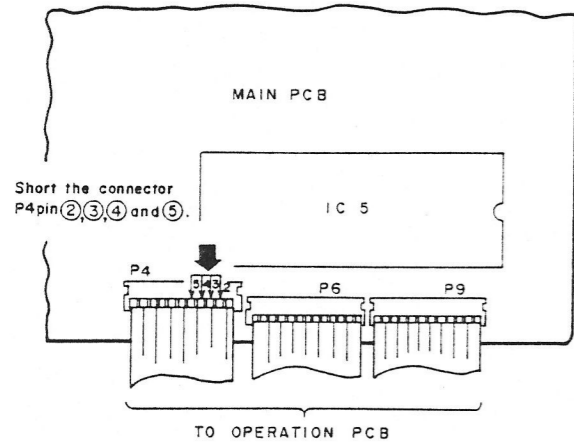






V. ELECTRICAL ADJUSTMENT

ABOUT THE TEST MODE

- This test mode is used for the adjustment or check.
- Turn on the power while shorting Pin ② ③ ④ and ⑤ of the connector P4 on the MAIN PCB, then unit is set to the TEST MODE.
- Indication of the FRONT PANEL is "0 ES:-0" when TEST MODE.
- When change the TEST MODE number, press the  key switch on the FRONT PANEL.
- When press the STOP key switch, TEST MODE number return to "0 ES:-0".
- When release from test mode, turn the power off.



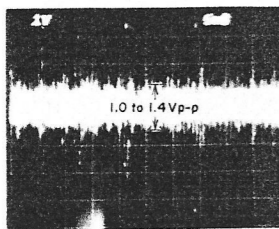
TEST MODE OPERATION, DISPLAY AND FUNCTION

OPERATION	DISPLAY	FUNCTION
POWER OR STOP	0 ES:-0	LASER OFF ALL SERVO OFF
FS 	1 ES:-1	LASER ON
FS 	2 ES:-2	FOCUS SERVO ON
FS 	3 ES:-3	SPINDLE MOTOR ON AUDIO MUTE OFF*
FS 	4 ES:-4	TRACKING SERVO ON SLIDE SERVO ON

* The functions of Test Mode 3 are activated only Focus ok (Focus servo ok)

4 FOCUS SERVO GAIN

1. Test Disc 5A (AT-751330)
2. Disc play.
3. TP (FCS), VR3
4. • Connect an Oscilloscope between TP (FCS) and GND.
 - 1.0V ~ 1.4Vp-p



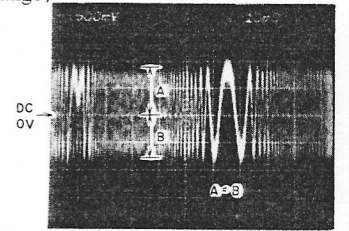
STEP	ADJUSTMENT ITEM
1.	Test Disc
2.	Mode
3.	Test Point & Adj. Part
4.	Result & Remarks

2 FOCUS OFF-SET

1. Test Disc 5A (AT-751330)
2. Test mode 2 and 0
3. TP (FE), VR2
4. • Connect a Digital Voltmeter between TP (FE) and GND. Check the voltage A. (Test mode 2)
 - Press STOP button. Then adjust voltage B so that the voltage is same as voltage A. (Test mode 0)
 - * Confirm Creaky noise from pick up while test mode 2, when turn the the compact disc by finger.

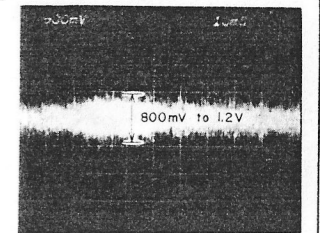
3 E-F BALANCE

1. Test Disc 5A (AT-751330)
2. Test mode 3.
3. TP (TE), VR1
4. • Connect an Oscilloscope between TP (TE) and GND.
 - A = B (DC Range)



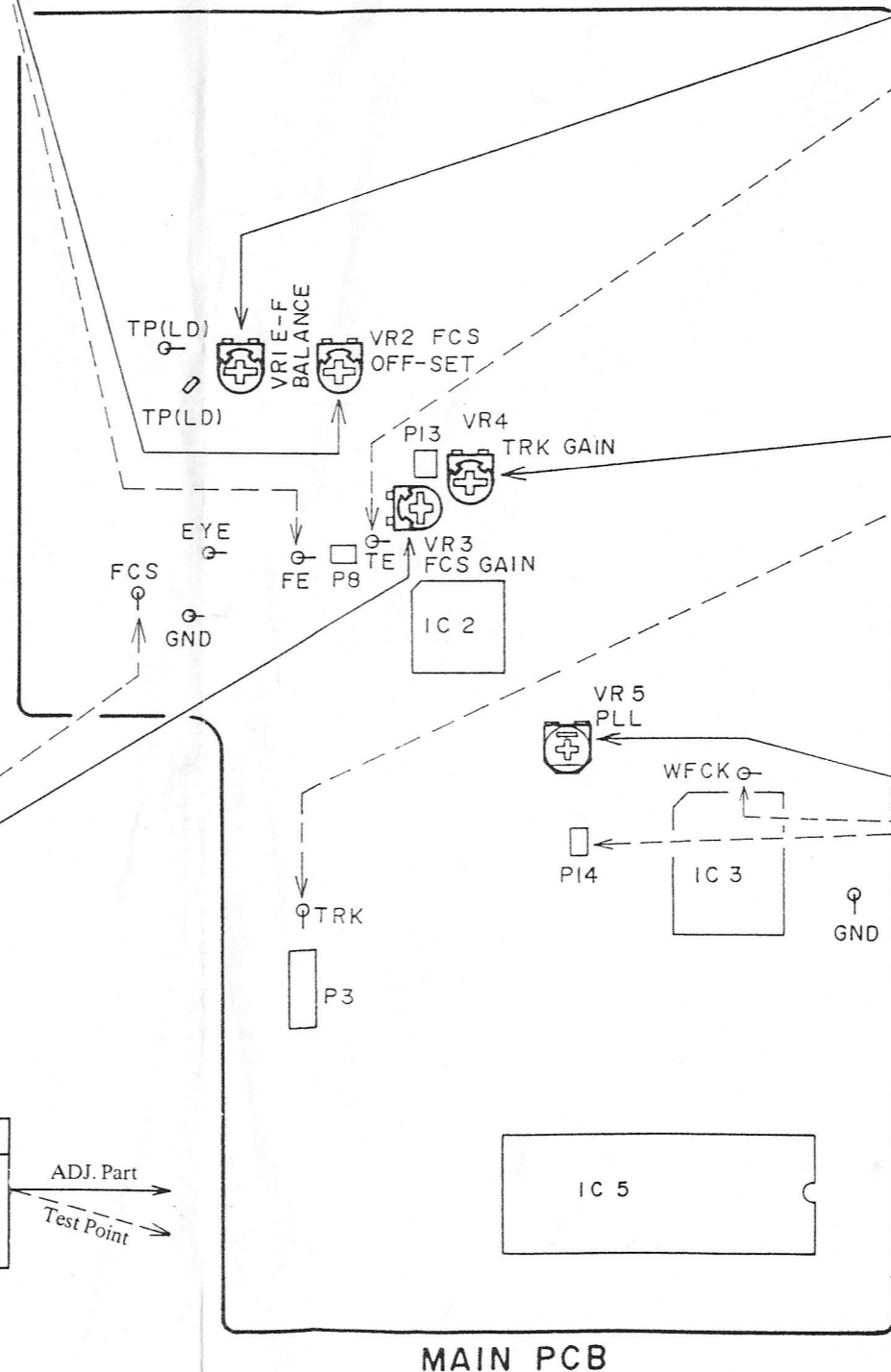
5 TRACKING SERVO GAIN

1. Test Disc 5A (AT-751330)
2. Disc play
3. TP (TRK), VR4
4. • Connect an Oscilloscope between TP (TRK) and GND.
 - 800mV ~ 1.2Vp-p

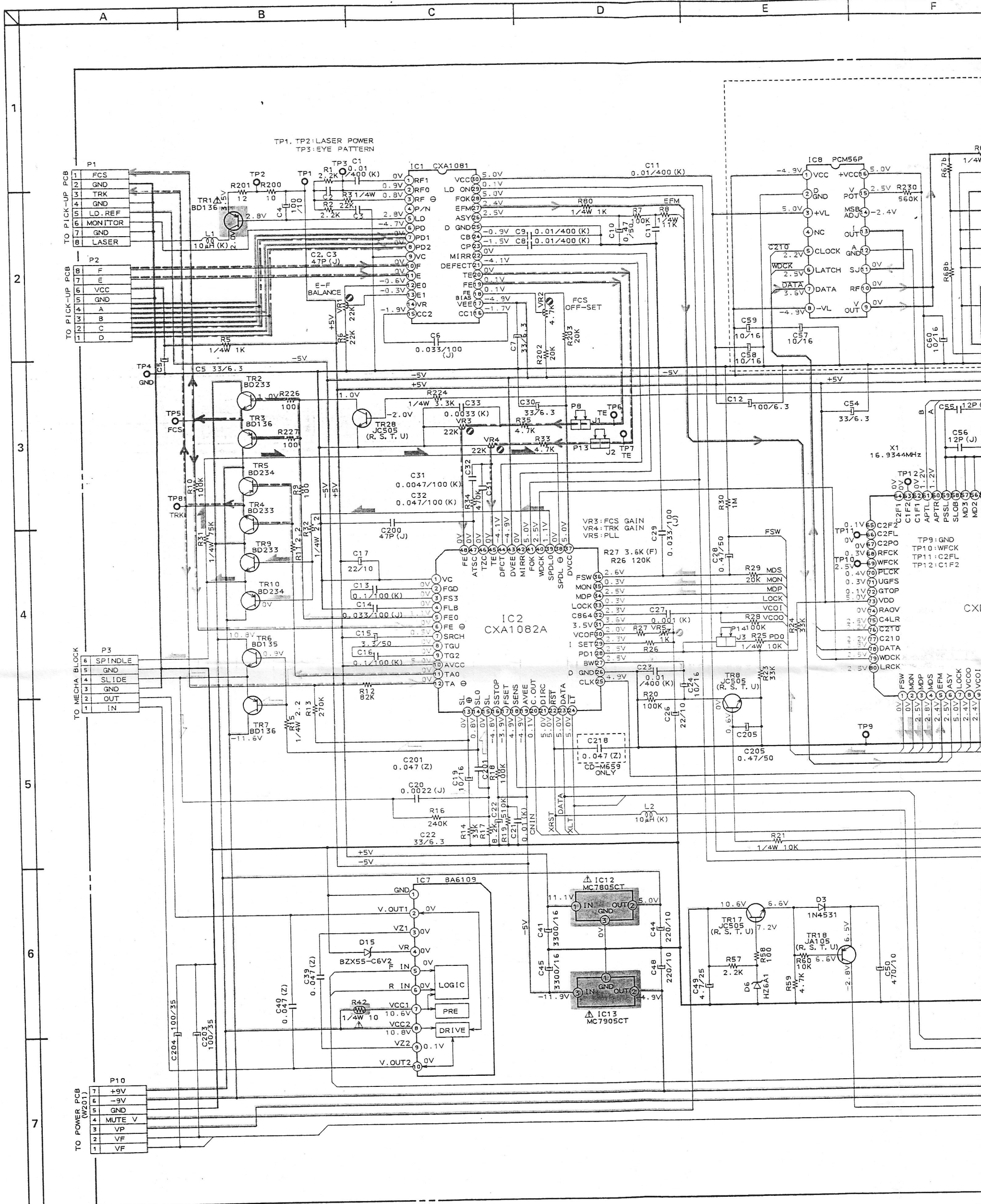


1 VCO

1. —
2. Power ON
3. TP (WFCK), VR5
4. • Connect a Frequency Counter between TP (WFCK) and GND. Disconnect a short connector P14.
 - 7350 ± 10 Hz
 - * Connect a short connector P14 after this adjustment.



MAIN PCB

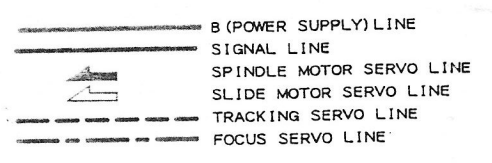


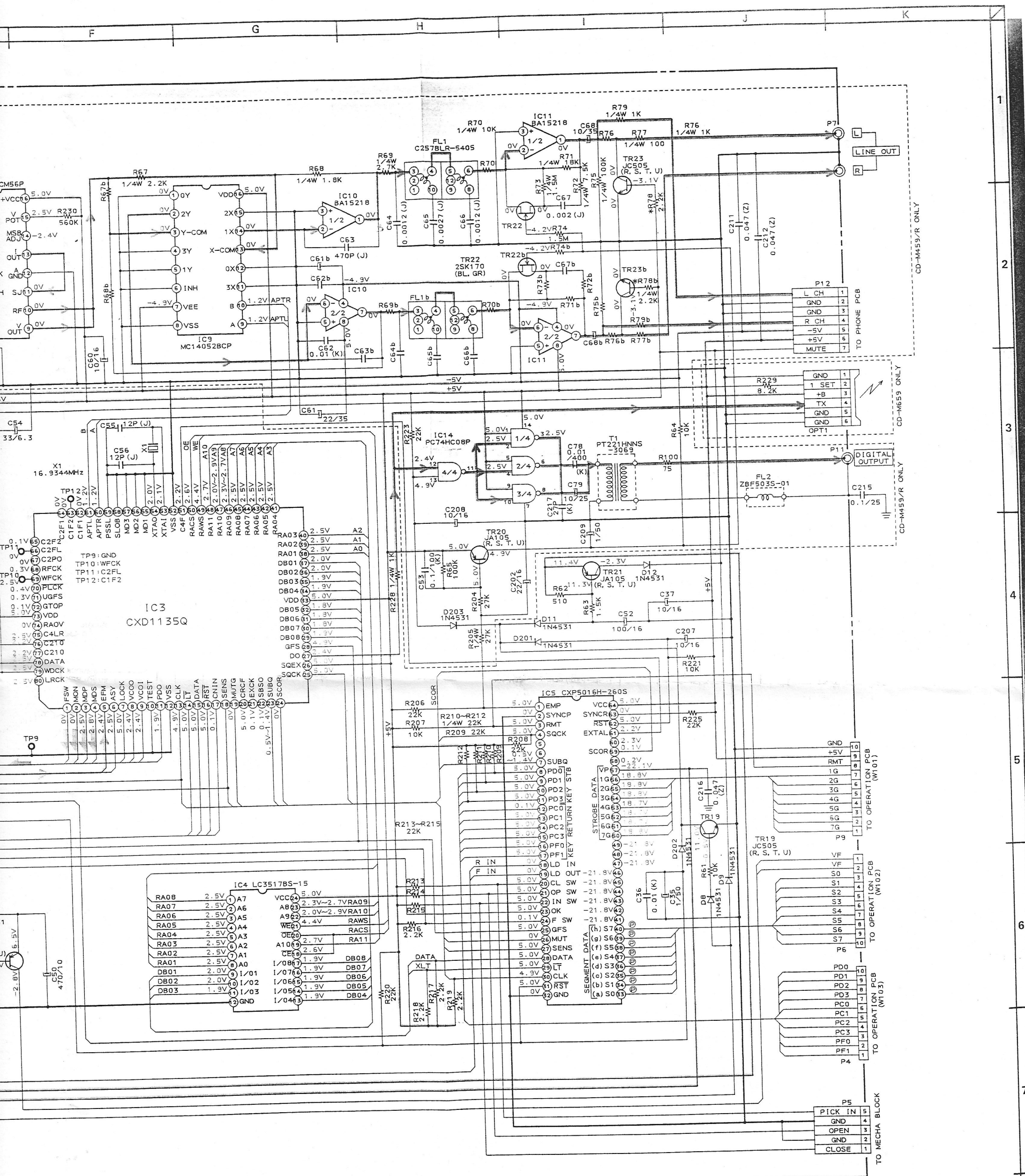
CROSS REFERENCE TABLE
TRANSISTOR

Original Part	Part Name	Equivalent Part	Part No.
BD136	2SD863-V8	ET-200986	
BD135	2SB764	ET-318237	
BD233	2SD612K	ET-310148	
BD234	2SB632K	ET-322598	
JA105	2SA1317	ET-353899	
JC505	2SC3330	ET-360067	

ZENER DIODE

Original Part	Part Name	Equivalent Part	Part No.
BZX55 C6V2	HZ6 C2	ED-337265	
BZX55 C7V5	HZ7 B3	ED-305706	
BZX55 C9V1	HZ9B2L	ED-346541	
BZX55 C22	HZ22-2	ED-329056	

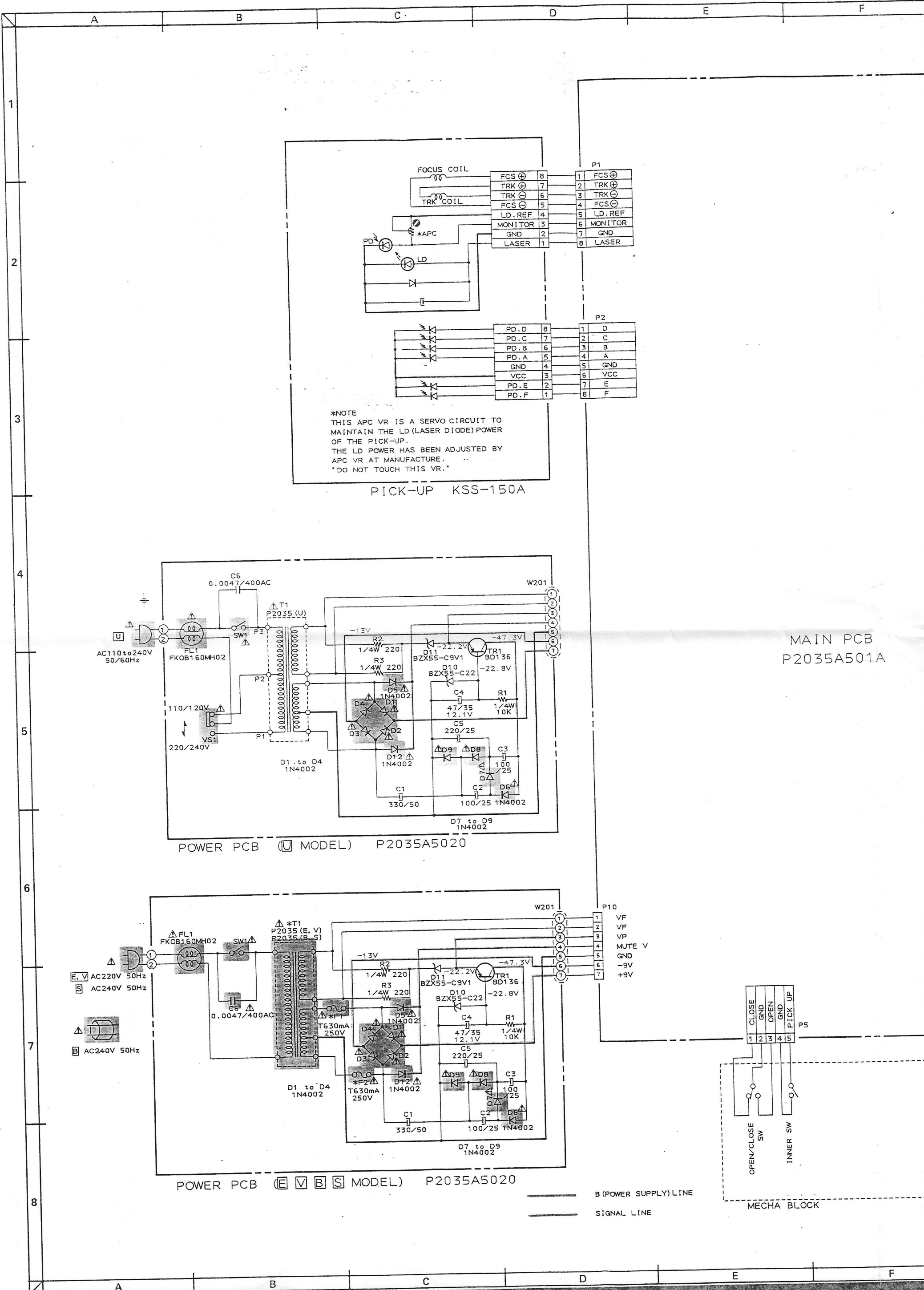




NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS (1/4W) (J)
ALL CAPACITORS IN μ F (50WV) (M)
INDICATED VOLTAGE MEASURED BY
DIGITAL VOLTMETER AT PLAY MODE.

WARNING: Δ AND \square INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS
AVERTISSEMENT: Δ ET \square ILS INDIQUENT LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

CD-M459/R, CD-M659
MAIN PCB
SCHEMATIC DIAGRAM
NO. 2-2 P203502M



*NOTE
 THIS APC VR IS A SERVO CIRCUIT TO
 MAINTAIN THE LD (LASER DIODE) POWER
 OF THE PICK-UP.
 THE LD POWER HAS BEEN ADJUSTED BY
 APC VR AT MANUFACTURE.
 DO NOT TOUCH THIS VR.

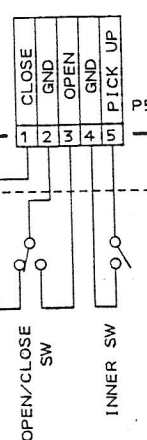
PICK-UP KSS-150A

POWER PCB (U MODEL) P2035A5020

POWER PCB (E V B S MODEL) P2035A5020

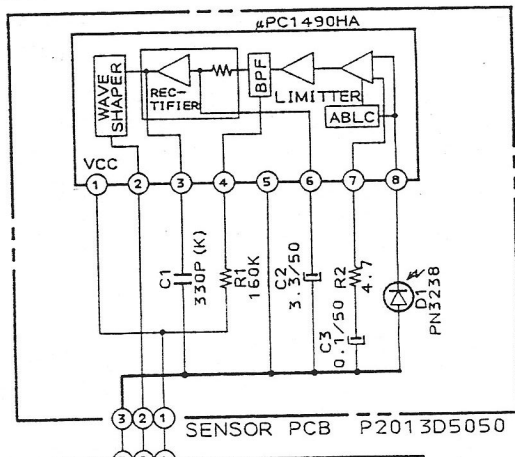
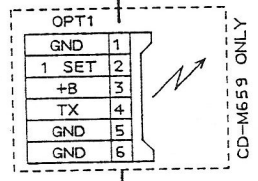
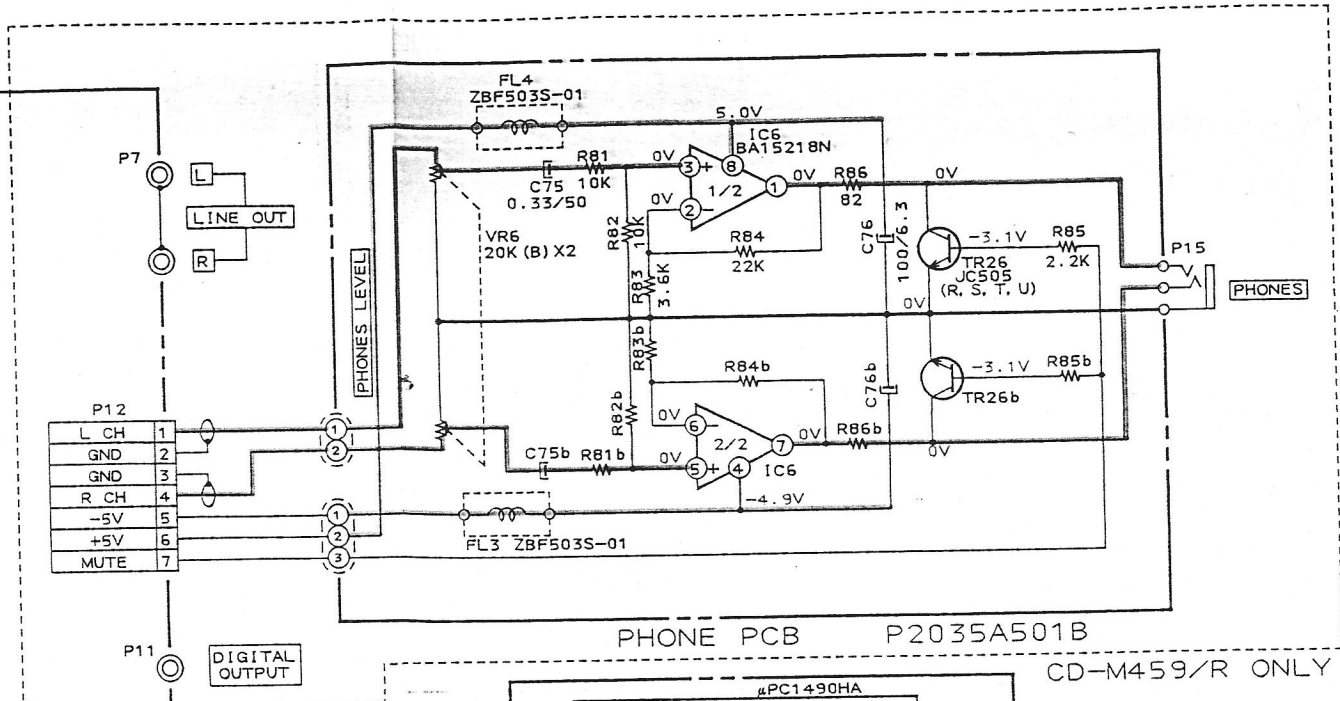
MAIN PCB
 P2035A501A

—— B (POWER SUPPLY) LINE
 ——— SIGNAL LINE

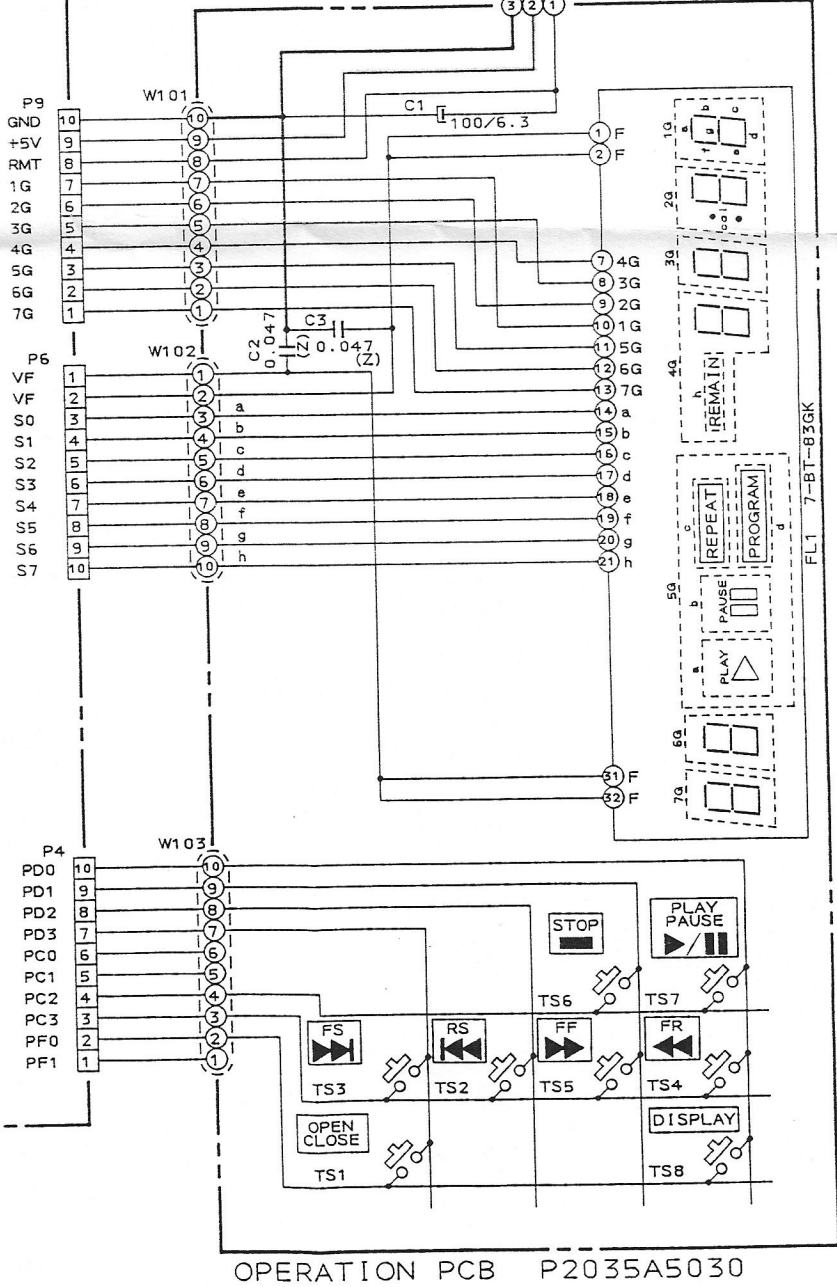


MECHA BLOCK

F G H I J K



AIN PCB
035A501A



NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W(J)
ALL CAPACITORS IN #F 50W(M)
INDICATED VOLTAGE MEASURED BY
DIGITAL VOLTMETER AT PLAYMODE.

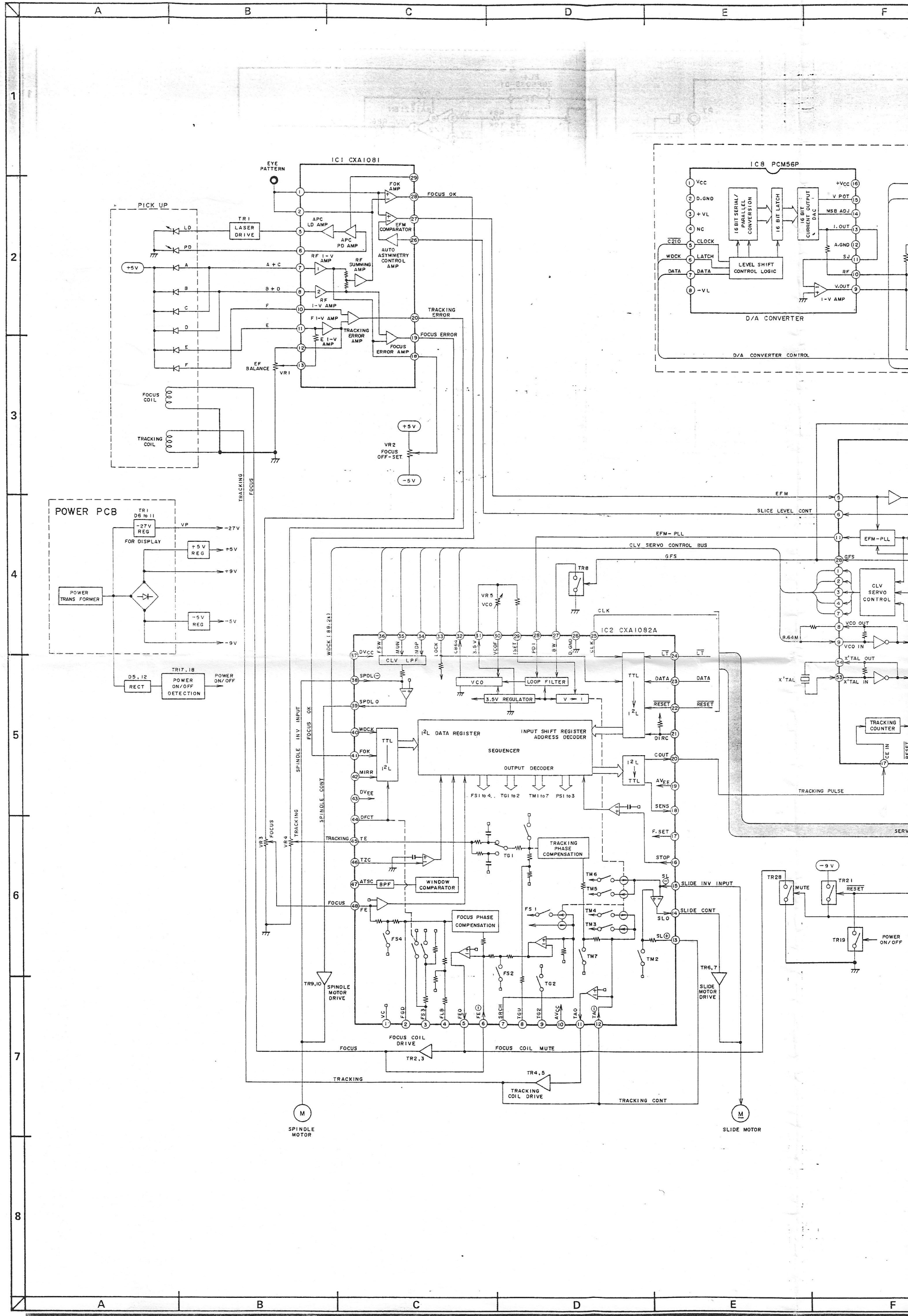
- SPINDLE MOTOR RF-310T11400
- SLIDE MOTOR RD-050Y-10240
- LOADING MOTOR RF-510T (12620)

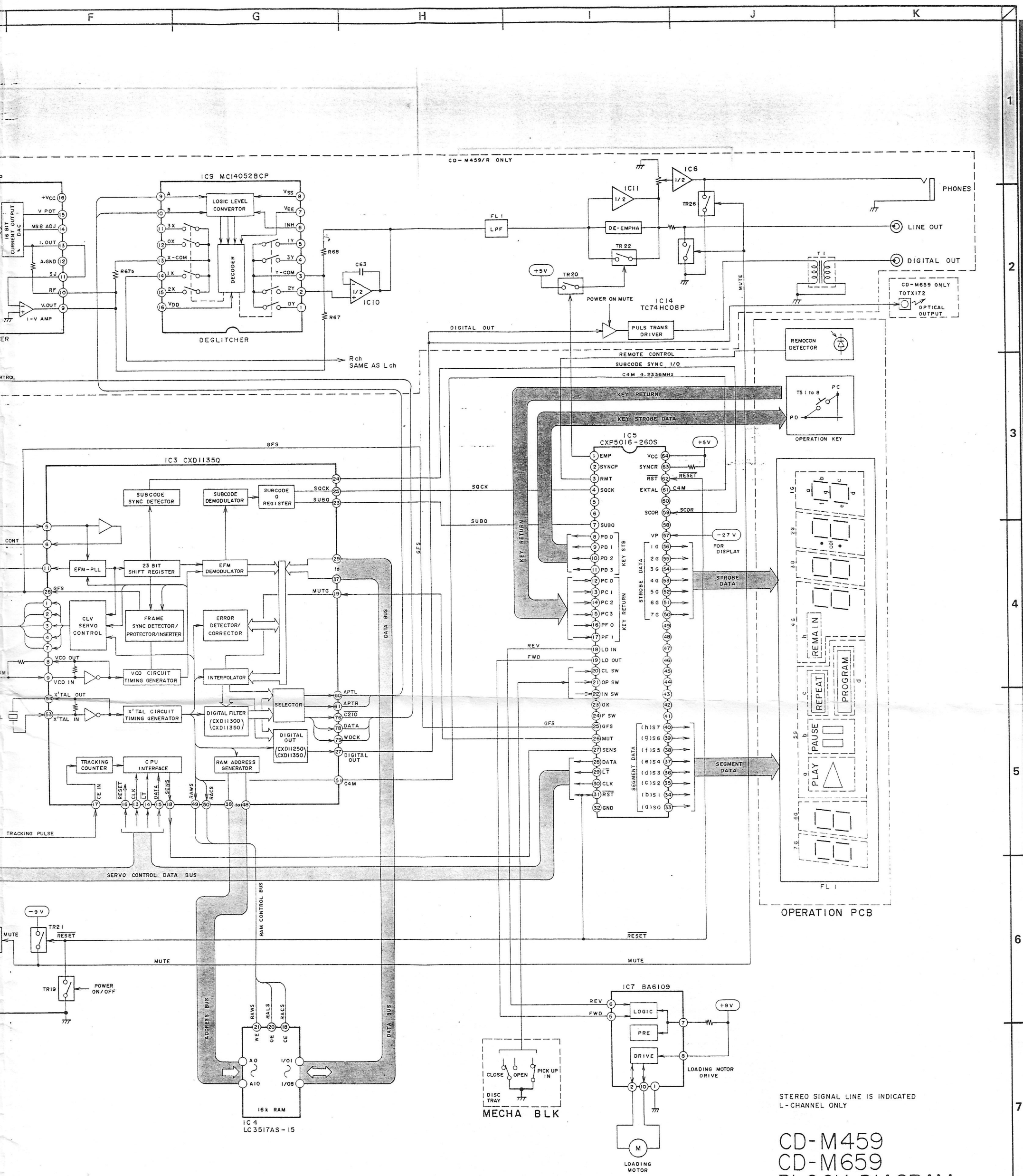
WARNING: Δ AND \square INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
AVERTISSEMENT: Δ ET \square , ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

CD-M459/R, CD-M659
CONNECTION DIAGRAM
NO. 2-1 P203501M

1
2
3
4
5
6
7
8

F G H I J K





STEREO SIGNAL LINE IS INDICATED L-CHANNEL ONLY

CD-M459
CD-M659
BLOCK DIAGRAM
No. 871208B

1
2
3
4
5
6
7
8