

Service Service Service

For repair information of the CD mechanism see
Service Manual of "Compact disc mechanism RCD1J"

For repair information of the cassette mechanism see
Service Manual of "Tape Transport RDR2".



Service Manual

COMPACT
disc
DIGITAL AUDIO

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**CLASS 1
LASER PRODUCT**



Service
Service
Service

Product Service Group CE Audio

Service Information

Already published Service Informations: none

RCD 1J Compact Disc mechanism

The complete disc drive assy RCD 1J 4822 691 10301 is not available on stock anymore.

If this code number is ordered RCD1.2D 4822 691 20768 will be delivered as replacement.

In case an old RCD 1J has to be exchanged by the new RCD1.2D the electronic circuit must be adapted as follows:

Minimum necessary changes (service solution)

Pos. no.	change to	Remark
R 804, R 805	8k2	HF gain
R 871	18k	Sledge section
R 872	47k	
C 814	4 μ 7	Focus search
C 829	4 μ 7	V _{ref} buffer

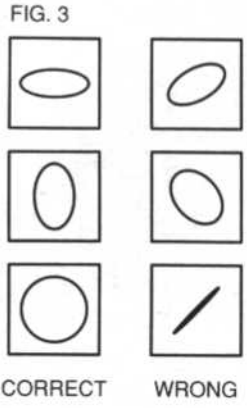
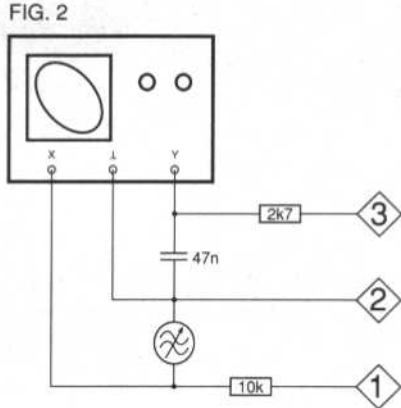
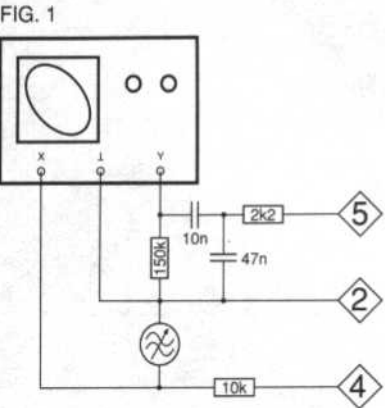
After adaption of the electronic circuit the electrical adjustment must be carried out according the enclosed new adjustment table!

ADJUSTMENT TABLE (valid for modified electronic acc. to service solution "Replacement RCD1→RCD1.2")

CD-PART					
LASER CURRENT					
The APC (Automatic Power Control) for the laser diode is located on the disc drive and has been adjusted in the production line. Therefore for service purpose it is not intended to adjust the laser current.					
TRACKING OFFSET					
STOP			R 840		Adjust to 0V DC ±10 mV
TRACKING BALANCE					
Service pos. 3* Display shows 3 --,--			R 803		Adjust to 0V DC offset
TRACKING GAIN					
Play with Test-Disc 5 Connect pin 3 of M51564 to V _{ref}	1100 Hz 180 mVrms	see Fig. 1	R 816		CHX = 100 mV/DIV CHY = 100 mV/DIV Adjust according to FIG.3
FOCUS GAIN					
Play with Test-Disc 5	960 Hz 300 mVrms	see Fig. 2	R 813		CHX = 200 mV/DIV CHY = 200 mV/DIV Adjust according to FIG.3
FOCUS OFFSET					
Play with Test-Disc 5			R 821		Max. HF
			Check only	DC voltage measured = U _x	
			R 821	Adjust to $\frac{U_x}{2}$	

Az8594

* How to enter service pos.3 see service test program
Test disc 5 4822 397 30096



SERVICE TEST PROGRAMME



Following can be tested with **testprogramme 1**:

- * Displays (CD + Tuner)
- * Sledge motor
- * Focus servo
- * Track servo

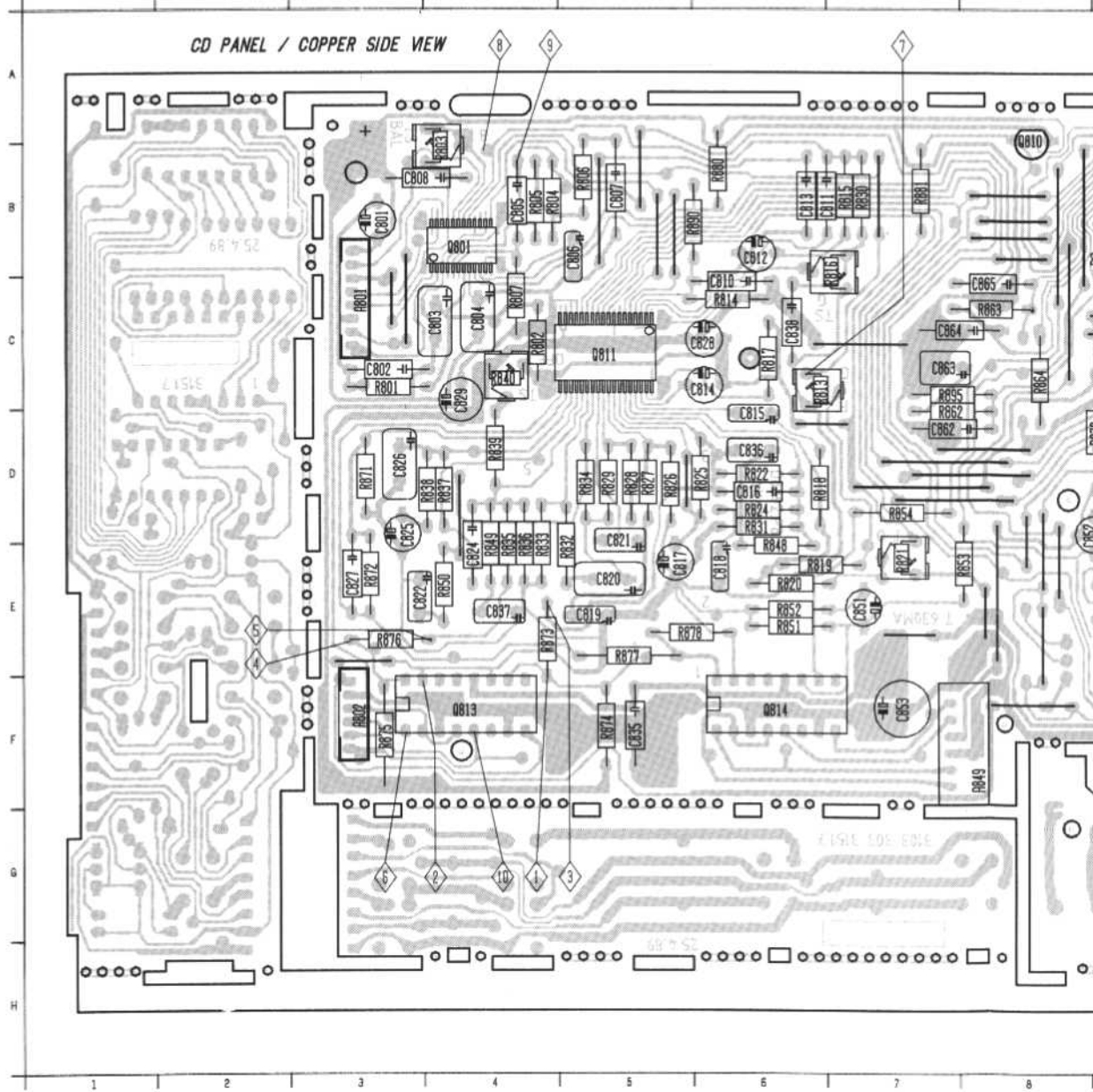
Operating sequence	Display shows	Remarks	In case of problems check
<p>Insert any disc in CD-compartment and shut CD-door.</p> <p>To start testprogramme 1 set mode switch to "radio" or "tape" first. Hold switches "display" and "clear" depressed while setting mode switch to "CD" → now step 1 of the test programme is reached.</p>		<p>During step 1 – 3 "mute" is active.</p>	<p>connection Display</p>
<p>Press "play" to get to step 2</p> <p>Press "next"</p> <p>Press "previous"</p>		<p>From step 2 onwards tuner display is switched off.</p> <p>Sledge will be moved outside as long as "next" will be hold depressed (display shows fig.2b) and moved inside as long as "previous" will be hold depressed (display shows fig.2c).</p>	<p>Sledge motor and driver circuit for sledge motor</p>
<p>Press "play" to get to step 3</p>		<p>Laser is now switched on and objective will be focussed (while focussing display shows fig.3a).</p> <p>As soon as focus is o.k. display shows fig.3b and disc motor is switched on.</p> <p>Sledge servo and tracking servo are switched off → "tracking offset" can be adjusted.</p>	<p>Focus servo circuit</p>
<p>Press "play" to get to step 4</p> <p>Press "next"</p> <p>Press "previous"</p>		<p>Track servo loop is active → normal "play" mode.</p> <p>"Mute" will be switched off after pressing "next" or "previous".</p> <p>By pressing "next" or "previous" track servo will jump in steps of either 16 tracks forward or backward.</p>	
<p>Press "stop" to get back in normal CD-mode</p>		<p>By pressing "stop" Service Testprogramme can be interrupted during each step.</p>	

With testprogramme 2 **FREQUENCY of CLOCK OSCILLATOR** can be tested respectively adjusted.

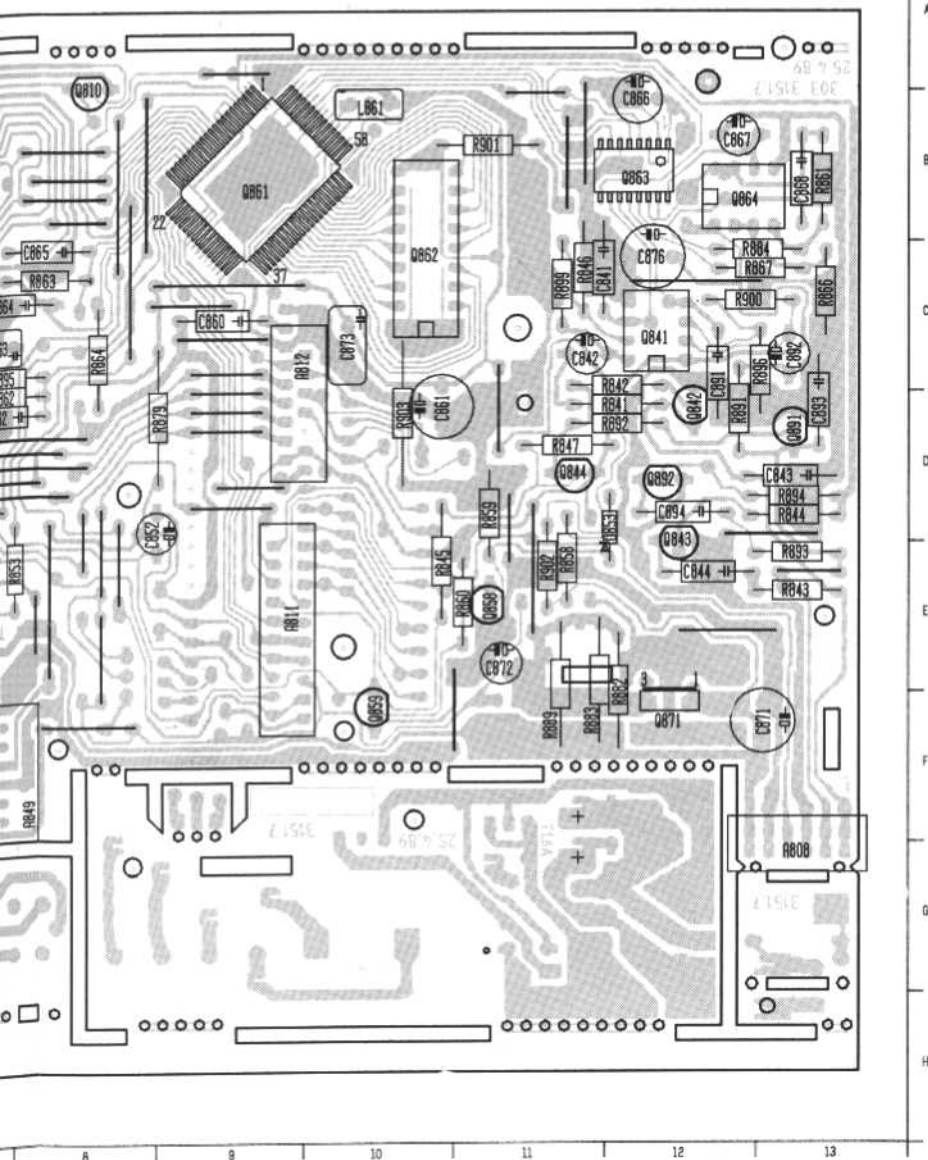
Attention: Disc door (door switch) must be open during testprogramme 2 to avoid overloading of the μP .

Operating sequence	Display shows	Remarks
<p>To start testprogramme 2 set mode switch to "radio" or "tape" first. Hold switches "clear", "store" and "display" depressed while setting mode switch to "CD". Now step 1 has been reached.</p> <p>Release switches "clear", "store" and "display".</p> <p>Press "play".</p>	 <p>FIG. 5</p> <p>FIG. 6</p> <p>FIG. 7</p>	<p>CD display shows fig.5 as long as "clear", "store" and "display" will be hold depressed. Tuner display shows time.</p> <p>After releasing "clear", "store" and "display" display shows fig.6 and motor of volume pot. will be switched on until "play" will be pressed.</p>
<p>Press "play" again to get to step 2.</p>	 <p>FIG. 8</p>	<p>Both displays are switched off. Frequency of clock oscillator can now be checked or adjusted:</p> <ul style="list-style-type: none"> * measure on \diamond (pin 36 of μP) * adjust frequency to $32 \text{ Hz} \pm 10 \text{ ppm}$ (or period of $31,25 \text{ ms} \pm 10 \text{ ppm}$) with C 706.
<p>Press "play" to get to step 1 of testprogramme 1 or press "stop" to get in normal CD mode.</p>		<p>By pressing "stop" Service Test Programme can be interrupted during each step.</p>

R801	C 3	C804	C 4	C814	C 6	C824	E 4	C838	C 6	C861	D10	C872	E11	Q801	B 4	Q858	E11	R801	C 3	R815	B 7	R825	D 6	R834
R802	F 3	C805	B 4	C815	D 6	C825	D 3	C841	C11	C862	D 7	C873	C10	Q810	A 8	Q859	F10	R802	C 4	R816	B 7	R826	D 5	R835
R808	D13	C806	B 5	C816	D 6	C826	D 3	C842	C11	C863	C 7	C876	C12	Q811	C 5	Q861	B 9	R803	B 4	R817	C 6	R827	D 5	R836
R811	E 9	C807	B 5	C817	E 5	C827	E 3	C843	D13	C864	C 7	C891	C12	Q813	F 4	Q862	C10	R804	B 4	R818	D 6	R828	D 5	R837
R812	C 9	C808	B 3	C818	E 6	C828	C 6	C844	E12	C865	C 8	C892	C13	Q814	F 6	Q863	B12	R805	B 4	R819	E 6	R829	D 5	R838
R849	F 8	C810	C 6	C819	E 5	C829	C 4	C851	E 7	C866	B12	C893	D13	Q841	C12	Q864	B12	R806	B 5	R820	E 6	R830	B 7	R839
C801	B 3	C811	B 6	C820	E 5	C835	F 5	C852	D 8	C867	B12	C894	D12	Q842	D12	Q871	F12	R807	C 4	R821	E 7	R831	D 6	R840
C802	C 3	C812	B 6	C821	D 5	C836	D 6	C853	F 7	C868	B13	C853	D12	Q843	D12	Q891	D13	R808	C 6	R822	D 6	R832	E 5	R841
C803	C 4	C813	B 6	C822	E 3	C837	E 4	C860	C 9	C871	F13	L861	B10	Q844	D11	Q892	D12	R814	C 6	R824	D 6	R833	E 4	R842



7	R825	D 6	R834	D 5	R843	E 13	R852	E 6	R864	C 8	R877	E 5	R890	B 6	R901	B 11
7	R826	D 5	R835	E 4	R844	D 13	R853	E 8	R866	C 13	R878	E 5	R891	D 12	R902	E 11
6	R827	D 5	R836	E 4	R845	E 10	R854	D 7	R867	C 13	R879	D 9	R892	D 12	R903	D 10
6	R828	D 5	R837	D 4	R846	C 11	R858	E 11	R871	D 3	R880	B 6	R894	E 13		
6	R829	D 5	R838	D 4	R847	D 11	R859	D 11	R872	E 3	R881	B 7	R894	D 13		
6	R830	B 7	R839	D 4	R848	E 6	R860	E 11	R873	E 4	R882	E 12	R895	C 7		
7	R831	D 6	R840	C 4	R849	E 4	R861	B 13	R874	F 5	R883	E 11	R896	C 13		
6	R832	E 5	R841	D 12	R850	E 4	R862	D 7	R875	F 3	R884	C 13	R899	C 11		
6	R833	E 4	R842	C 12	R851	E 6	R863	C 8	R876	E 3	R889	E 11	R900	C 12		
		8		9		10		11		12						13



Q 841 NJM 4560D

- pin 1 5V
- 2 2,5V
- 3 2,5V
- 4 0V
- 5 2,5V
- 6 2,5V
- 7 5V
- 8 8V

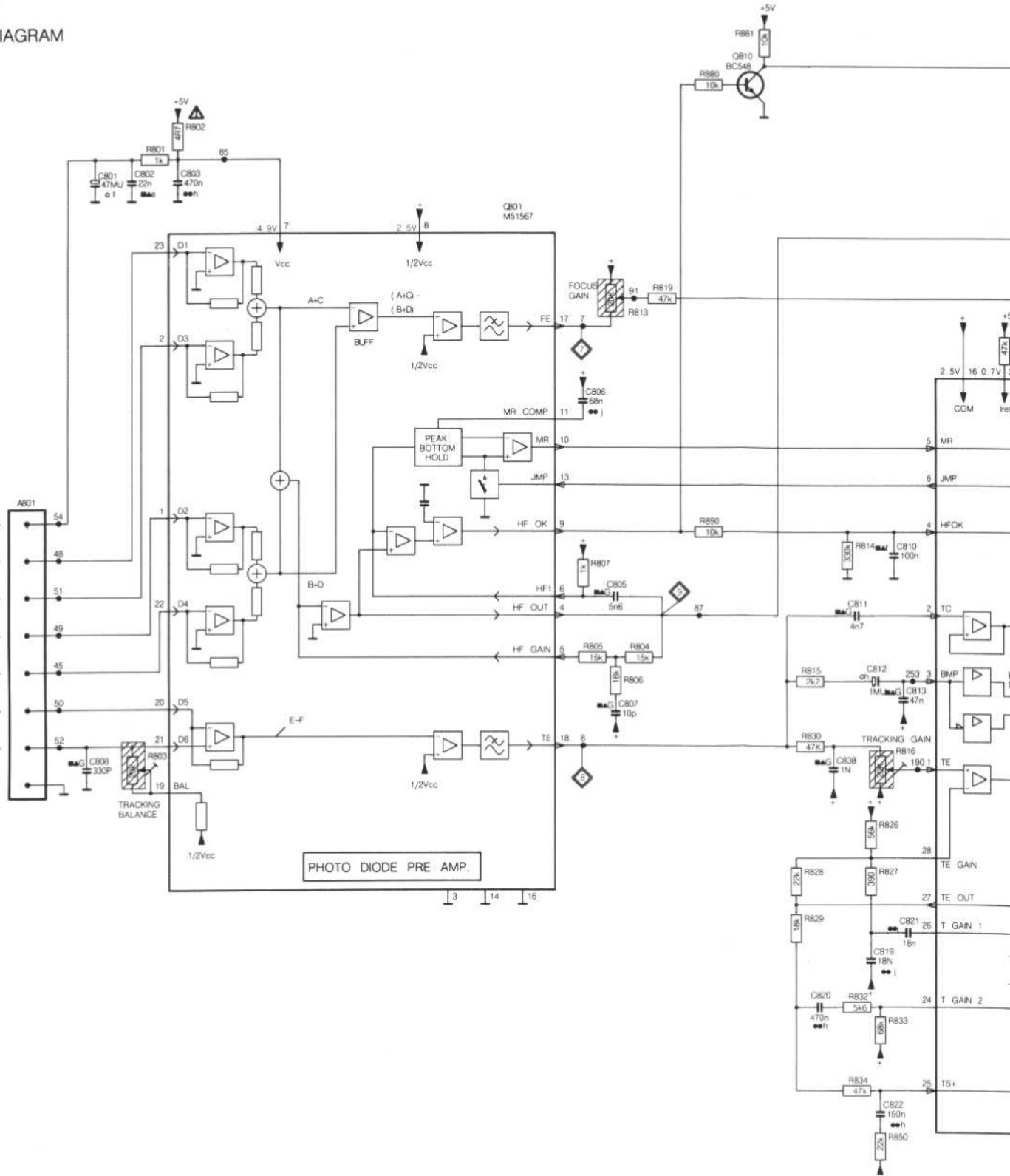
Q 864 NJM 4560D

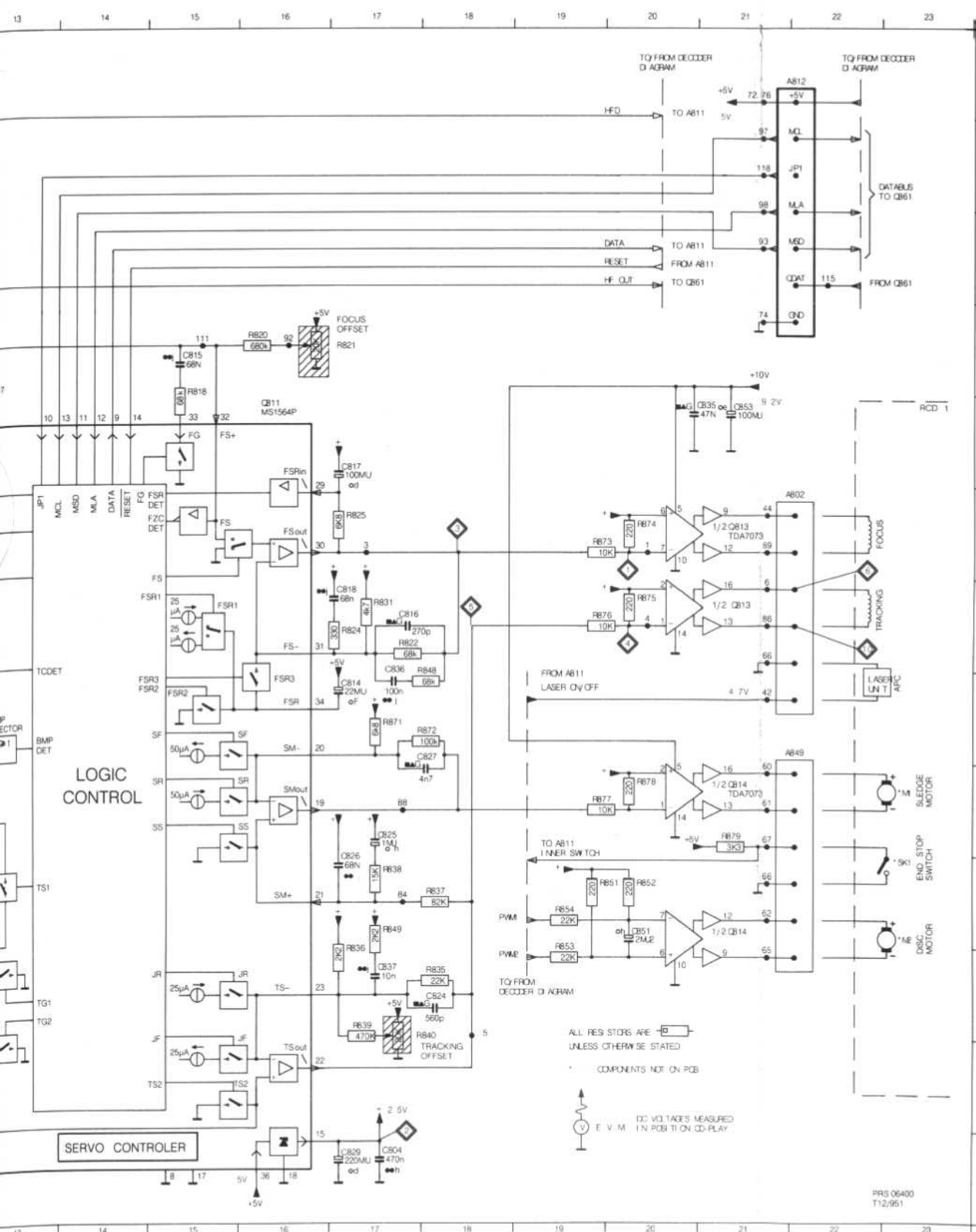
- pin 1 2,5V
- 2 2,5V
- 3 2,5V
- 4 0V
- 5 2,5V
- 6 2,5V
- 7 2,5V
- 8 8V

Q 871 NJM 7805

- pin 1 9,2V
- 2 0V
- 3 5V

CD PART
SERVO DIAGRAM



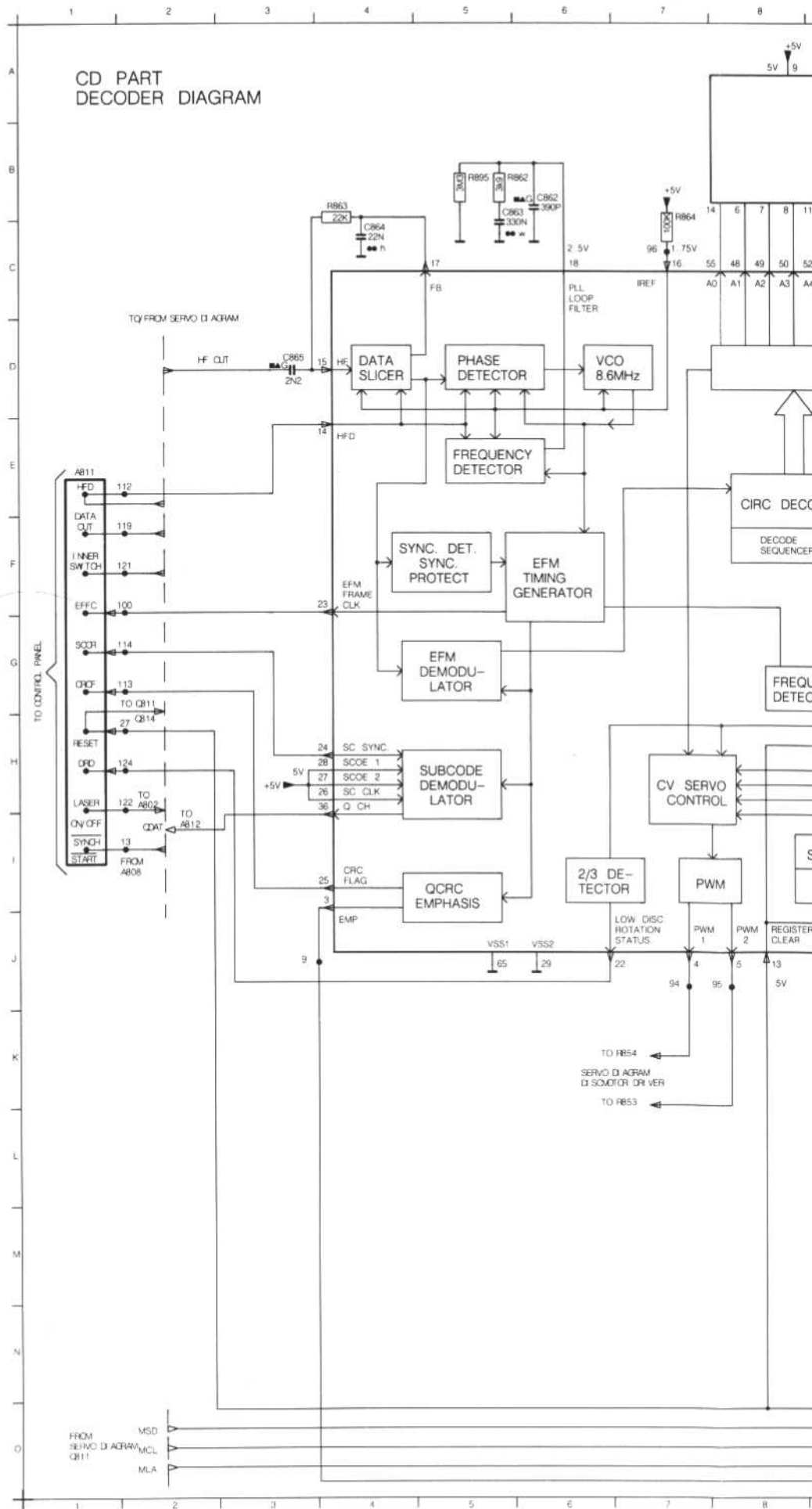


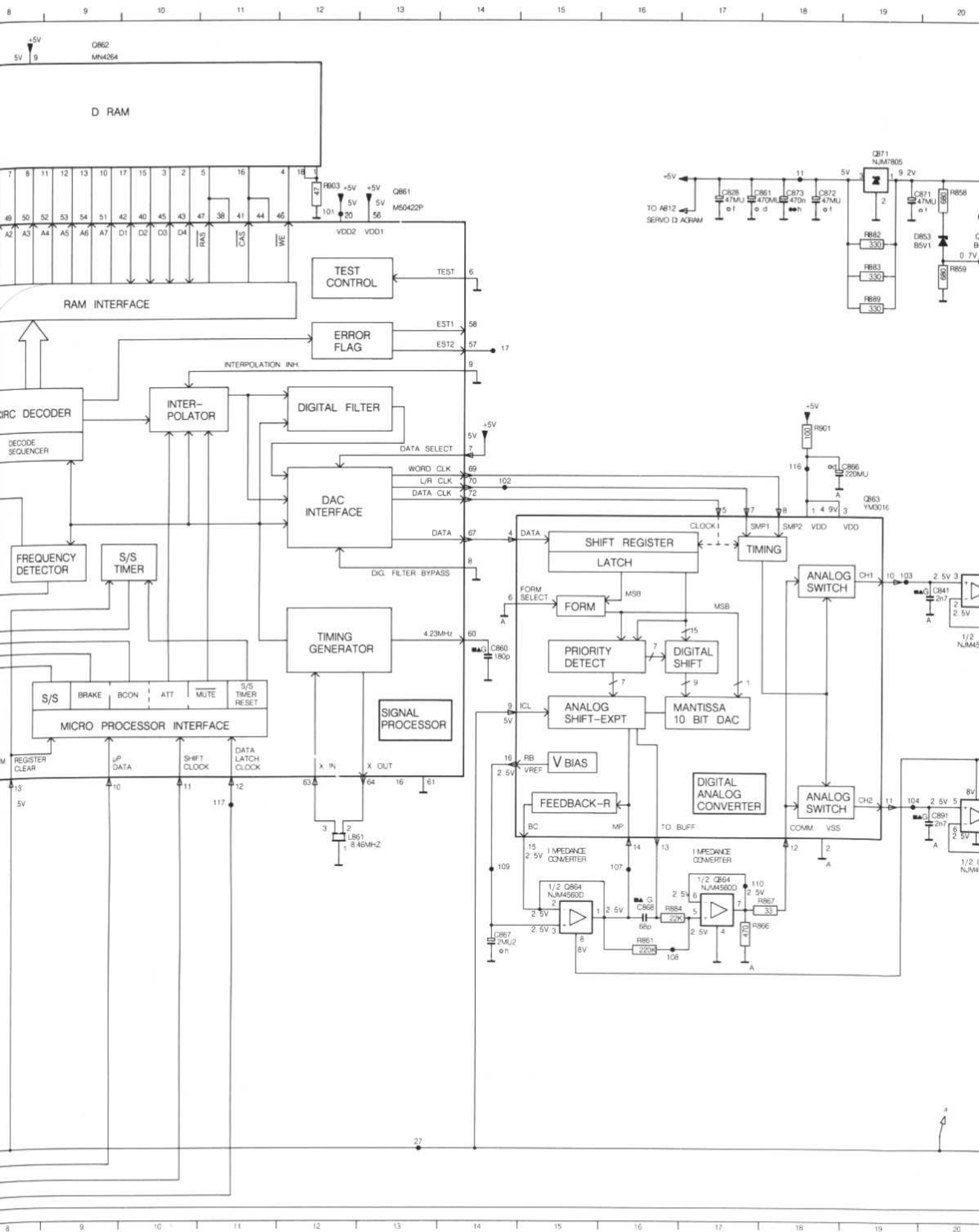
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M	J 23
M	SK 1
A	AB01 F 2
A	AB02 F 22
A	AB12 A 22
A	AB49 H 22
B	CB01 C 3
B	CB02 C 3
B	CB03 C 4
B	CB04 M 7
B	CB05 G 8
B	CB06 E 8
B	CB07 H 8
B	CB08 I 3
B	CB10 G 11
B	CB11 G 11
B	CB12 H 11
B	CB13 H 11
B	CB14 H 17
C	CB15 D 15
C	CB16 G 17
C	CB17 E 17
C	CB18 G 16
C	CB19 K 11
C	CB20 K 11
C	CB21 K 12
C	CB22 M 1
D	CB24 K 16
D	CB25 I 17
D	CB26 J 17
D	CB27 H 18
D	CB29 M 7
D	CB35 E 20
D	CB36 G 17
D	CB37 K 17
E	CB38 I 11
E	CB51 J 20
E	CB53 E 21
E	CB01 C 7
E	CB10 A 10
E	CB11 E 16
E	CB13 F 21
E	CB14 I 21
F	RB01 B 3
F	RB02 B 4
F	RB03 I 4
F	RB04 H 9
F	RB05 H 8
F	RB06 H 8
F	RB07 G 8
F	RB13 D 9
F	RB14 G 11
G	RB15 H 10
G	RB16 I 12
G	RB17 D 13
G	RB18 D 15
G	RB19 D 9
G	RB20 D 16
G	RB21 D 16
G	RB22 G 17
H	RB24 G 17
H	RB25 F 17
H	RB26 J 11
H	RB27 J 11
H	RB28 J 10
H	RB29 K 10
H	RB30 I 10
H	RB31 G 17
I	RB32 K 11
I	RB33 L 11
I	RB34 L 11
I	RB35 K 18
I	RB36 J 17
I	RB37 J 18
I	RB38 J 17
I	RB39 K 17
J	RB40 K 17
J	RB48 G 18
J	RB49 J 17
J	RB50 M 1
J	RB51 J 19
J	RB52 J 20
J	RB53 J 19
J	RB54 J 19
K	RB71 H 17
K	RB72 H 18
K	RB73 F 19
K	RB74 F 20
K	RB75 G 20
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K	RB77 I 19
K	RB78 I 20
K	RB79 I 21
K	RB80 B 9
K	RB81 A 10
K	RB90 F 9

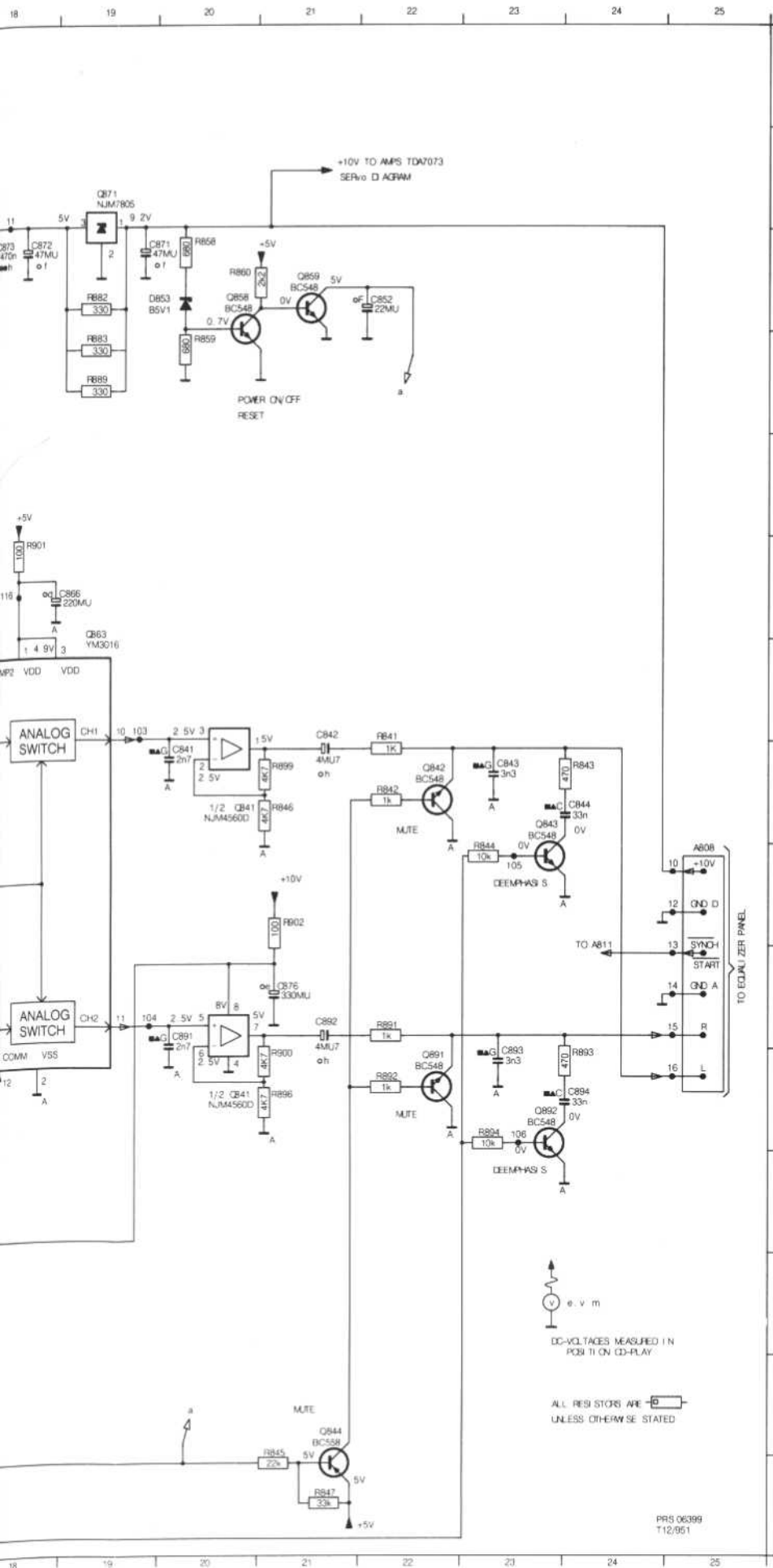
ALL RESISTORS ARE
UNLESS OTHERWISE STATED
* COMPONENTS NOT ON PCB



PRS 06400
T12/951







- A808 I 25
- A811 E 1
- C828 C17
- C841 H20
- C842 Q21
- C843 H23
- C844 H23
- C852 C21
- C860 H14
- C861 C17
- C862 B 6
- C863 B 5
- C864 C 4
- C865 D 3
- C866 F18
- C867 L14
- C868 L16
- C871 C19
- C872 C18
- C873 C18
- C876 J21
- C891 J20
- C892 J21
- C893 K23
- C894 K23
- C853 C19
- L861 K12
- Q841 H20
- D842 H22
- Q843 H23
- Q844 N21
- Q858 C20
- Q859 C21
- Q861 C13
- Q862 A 9
- Q863 F19
- E864 K15
- Q871 B19
- Q891 K22
- Q892 K23
- F841 Q22
- F842 H22
- F843 H23
- F844 I 23
- F845 N21
- F846 H21
- F847 Q21
- F858 C20
- F859 D20
- F860 C20
- F861 L16
- F862 B 5
- F863 B 4
- G864 B 7
- F866 L17
- F867 K18
- F882 C19
- F883 D19
- F884 L16
- F889 D19
- F891 J22
- H892 K22
- F893 K23
- F894 K23
- F895 B 5
- F896 K21
- F899 H21
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- I802 I 21
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