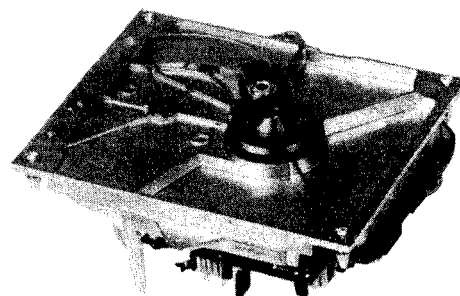


C.D.M.-1**Compact disc player****MECHANISM**

Service
Service
Service



35 367 A

Service Manual

For reasons of production, several versions of the C.D. mechanism have been applied.

The C.D. mechanisms are in most cases marked with a round, yellow sticker provided with a letter impression.

The Table below indicates which exploded view and which HF pre-amplifier/laser supply PCB should be consulted.

COMPACT
disc
DIGITAL AUDIO

Sticker C.D.M.	Exploded view drawing	H.F. Pre-amp.+laser supply PCB +circuit diagram
Absent	A	I
A	See Service Manual CDM-0	See Service Manual CDM-0
B	See Service Manual CDM-0	See Service Manual CDM-0
C	A	II
D	A	I
E	See Service Manual CDM-0	See Service Manual CDM-0
F	See Service Manual CDM-0	See Service Manual CDM-0
G	A	II
H	A	II

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

CLASS 1
LASER PRODUCT

3122 110 034 20

Documentation Technique Service Dokumentation Documentazione di Servizio Huolto-Ohje Manual de Servicio Manual de Servicio

Subject to modification



4822 725 20421

Printed in The Netherlands

SERVICING HINTS

In order to prevent loose metal objects from getting in the CD mechanism it will be necessary to see to a clean repair station.

The objective can be cleaned with a blow brush.

The CD-mechanism is provided with self-lubricating bearings and should thus NOT be lubricated.

Ensure that the player is not resting on the shaft of the turntable motor during repairs and measurements on the bottom.

Servicing the RAFOC unit (= Radial and Focusing unit pos. 61).

The RAFOC unit supplied by Service is the same one as in CDM-0. In the CDM-1 the bottom plate of this RAFOC unit has been replaced by frame item number 503. If the RAFOC unit is replaced, **carefully** an accurately perform the following operations:

- Take the two flex PCBs out of the connectors on the preamplifier PCB.
- Disassemble the **defective** RAFOC unit by removing the 4 bolts M3x18 mm and shaft item number 504.
- Remove shaft item number 504 of the new RAFOC unit.
Pay attention to the 3 intermediate washers item number 502 and spring washer item number 505, they should assume the same positions after assembly.

Loosen the 4 bolts M3x18 mm until the bottom plate can be removed.

Do not remove bolts M3x18 mm (they hold the new RAFOC unit together).

- Mount the new RAFOC unit on frame 503.
Ensure that the 3 intermediate washers 502 and spring washer 505 are positioned correctly before fixing shaft item number 504.
- Check that the arm moves freely and the angle setting as well (see check and possible adjustment of angle setting).
- For replacing the light pin it is not necessary to remove the RAFOC unit.

The light pin can be removed by turning it anti-clockwise by means of an open-ended spanner of 12 mm and afterwards pulling it out of the arm.

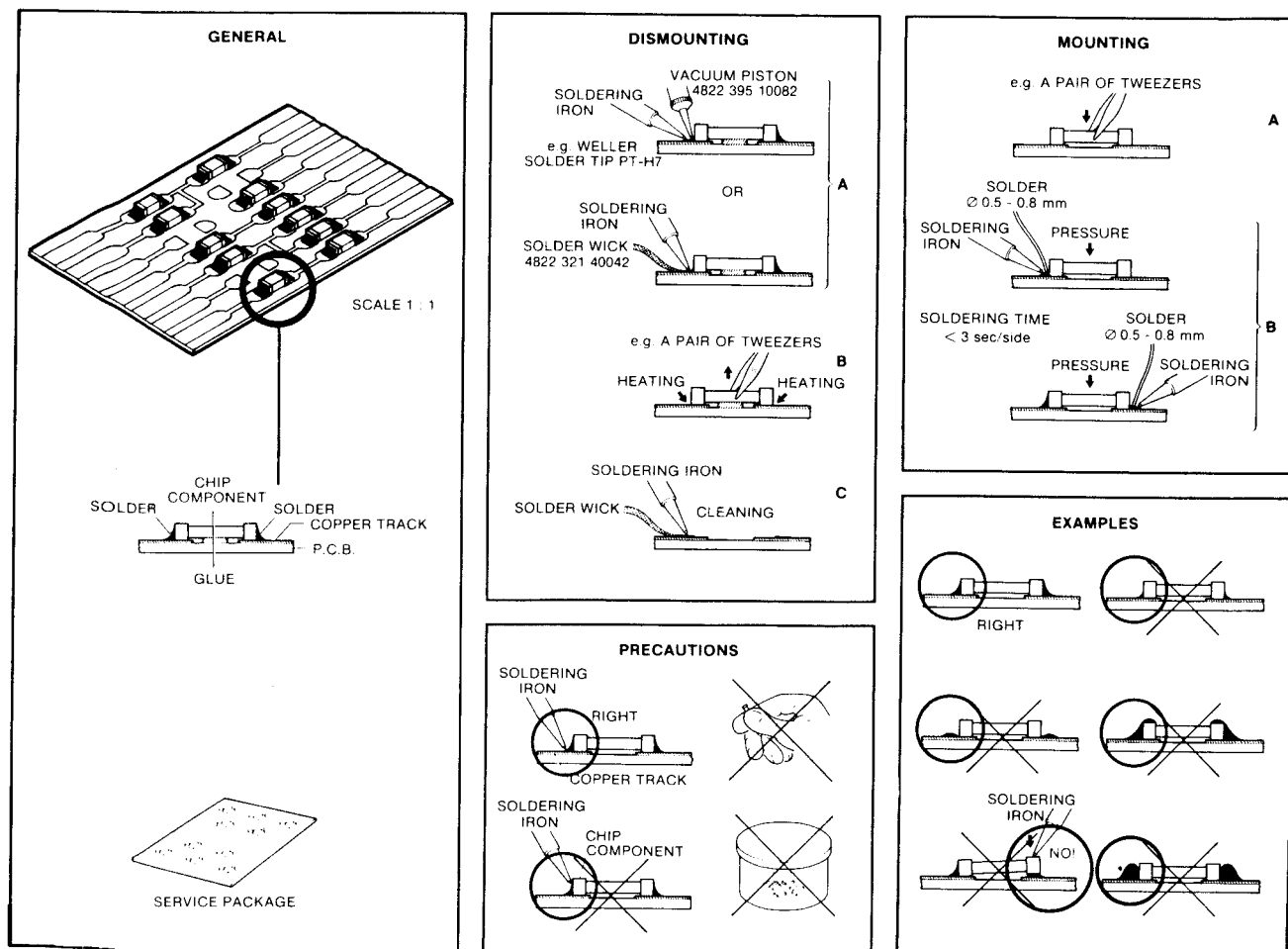
During mounting, the light pin must be pushed into the arm as far as possible, and turned clockwise.

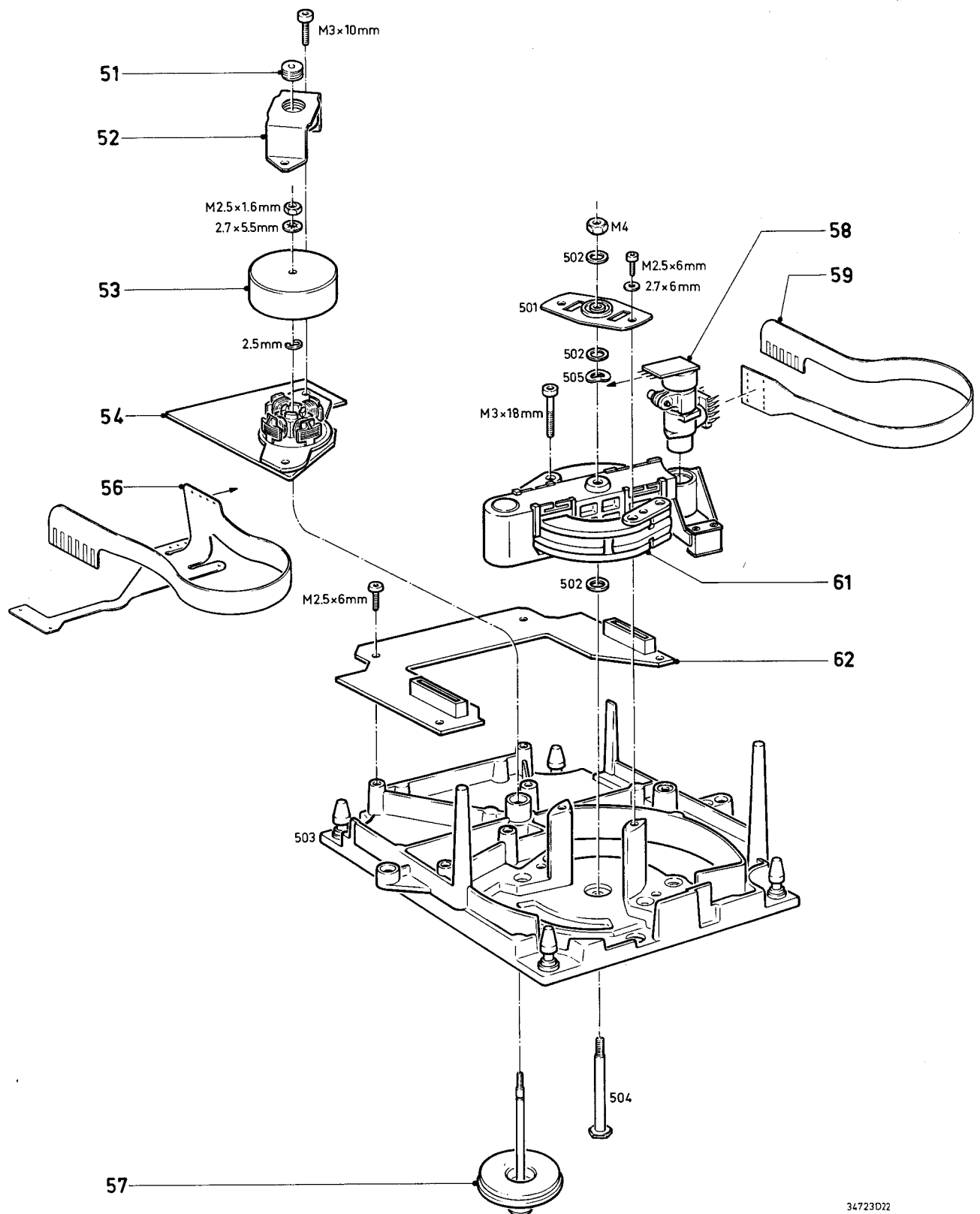
Attention:

To prevent adjustments from changing, NO SCREWS OTHER than those mentioned above should be loosened.

THE LIGHT PIN IS MUCH MORE SENSITIVE TO STATIC CHARGE THAN A MOS IC. CARELESS TREATMENT DURING SERVICING MAY REDUCE LIFE EXPECTANCY DRASTICALLY. FOR THIS REASON CARE SHOULD BE TAKEN THAT DURING SERVICING THE POTENTIALS OF THE AIDS AND YOURSELF EQUAL THE POTENTIAL OF THE MECHANISM.

In the player chip components have been applied. For insertion and removal of chip components see Fig.





34723D22

51	4822 502 11701
52	4822 520 10529
53	4822 362 20225
54	4822 214 50395
56	4822 322 40051
57	4822 528 10491
58+59	4822 691 30129
59	4822 322 40048
61	4822 691 30128
62	4822 214 50394

MECHANICAL MEASUREMENTS AND ADJUSTMENTS

Height setting of the turntable

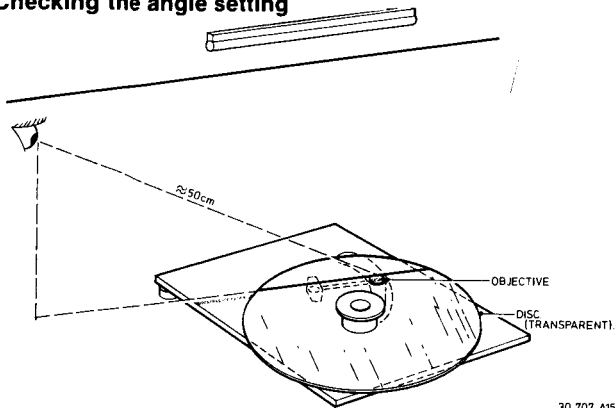
For this alignment the unit should be in the position of normal end use. The servicing supports 4822 395 30202 can be used here.

Playback track 1 of disc 4822 397 30096. (Disc without defects).

Connect a D.C. voltmeter between the **negative** of the focus motor and earth of the preamplifier print.

Adjust the height of the turntable with bearing screw 51 in such a way, that the voltage is 0 V $\pm$ 100 mV. Seal hereafter the screw with sealing paint.

Checking the angle setting



Place mirror 4822 395 90205 on the objective and glass disc 4822 395 90204 (with disc hold-down 4822 532 60906) on the turntable.

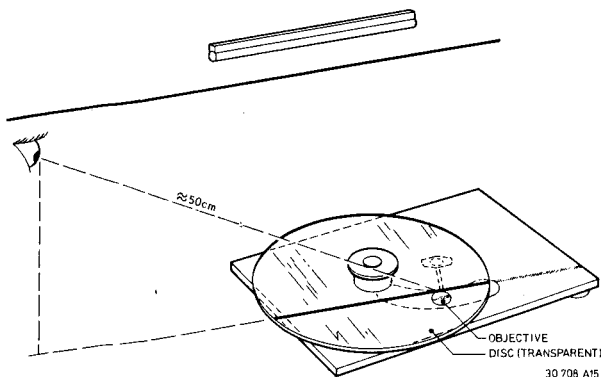
Locate the unit under a light source and under this light source a straight line should run (e.g. fluorescent tube with grid).

Set the arm to mid-position. Turn the unit until the arm is parallel to the line under the light source (see Fig.).

Look in the direction and in the prolongation of this line to its reflection on glass disc and mirror.

These lines should not be more than 4 mm apart:

Position the set in such a way that one line runs across the centre of the mirror. When the other line remains inside the mirror's surface, the distance is $\leq$ 4 mm.



Rotate the CD mechanism through 90° relative to the previous position.

The arm must be kept in mid-position (see Fig.).

Repeat the previous measurement.

Adjusting the angle setting

With respect to the adjustment of the angle between disc and light path, the factory has looked for a compromise between minimum angle deviation and minimum arm friction.

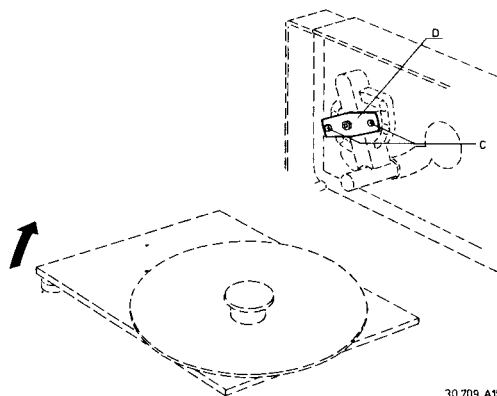
If the measurements show that the angle falls outside the tolerance given, the angle should NOT be adjusted for minimum deviation, but just within tolerance. The new setting should lie between the "old" setting and the optimum setting.

After adjustment, the friction of the arm should be checked. This is done by means of a spring-pressure gauge which is connected to the counterweight. The friction of the arm, measured over the total scanning deflection, is not allowed to exceed 30 mN.

When the friction appears to be too high, the angle should be reset to its old value. Then replace the arm by a new one and check the angle once more.

Adjustment of the angle is performed as follows:

Place the set on the servicing supports 4822 395 30202.



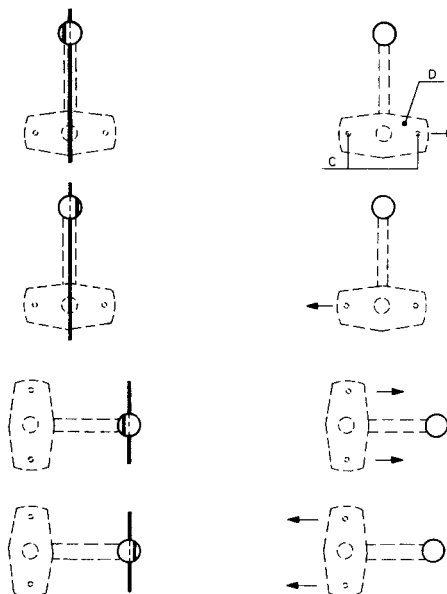
Loosen screws C (see Fig.) until bearing plate D can be shifted.

Correct the angle setting by shifting the bearing plate in the direction indicated on the Figure.

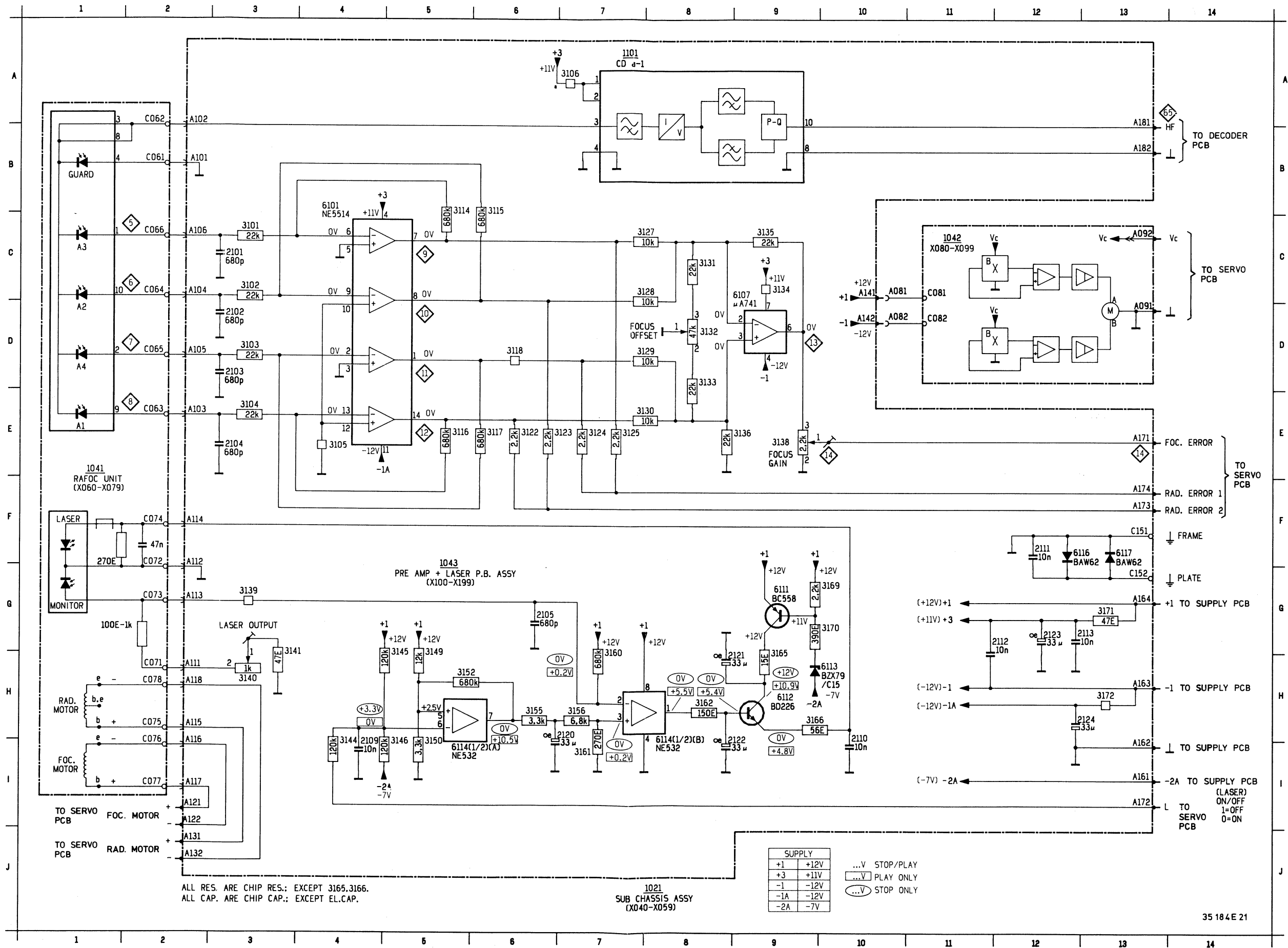
Tighten screws C ensuring that the setting does not drift. Double check the angle setting in two directions.

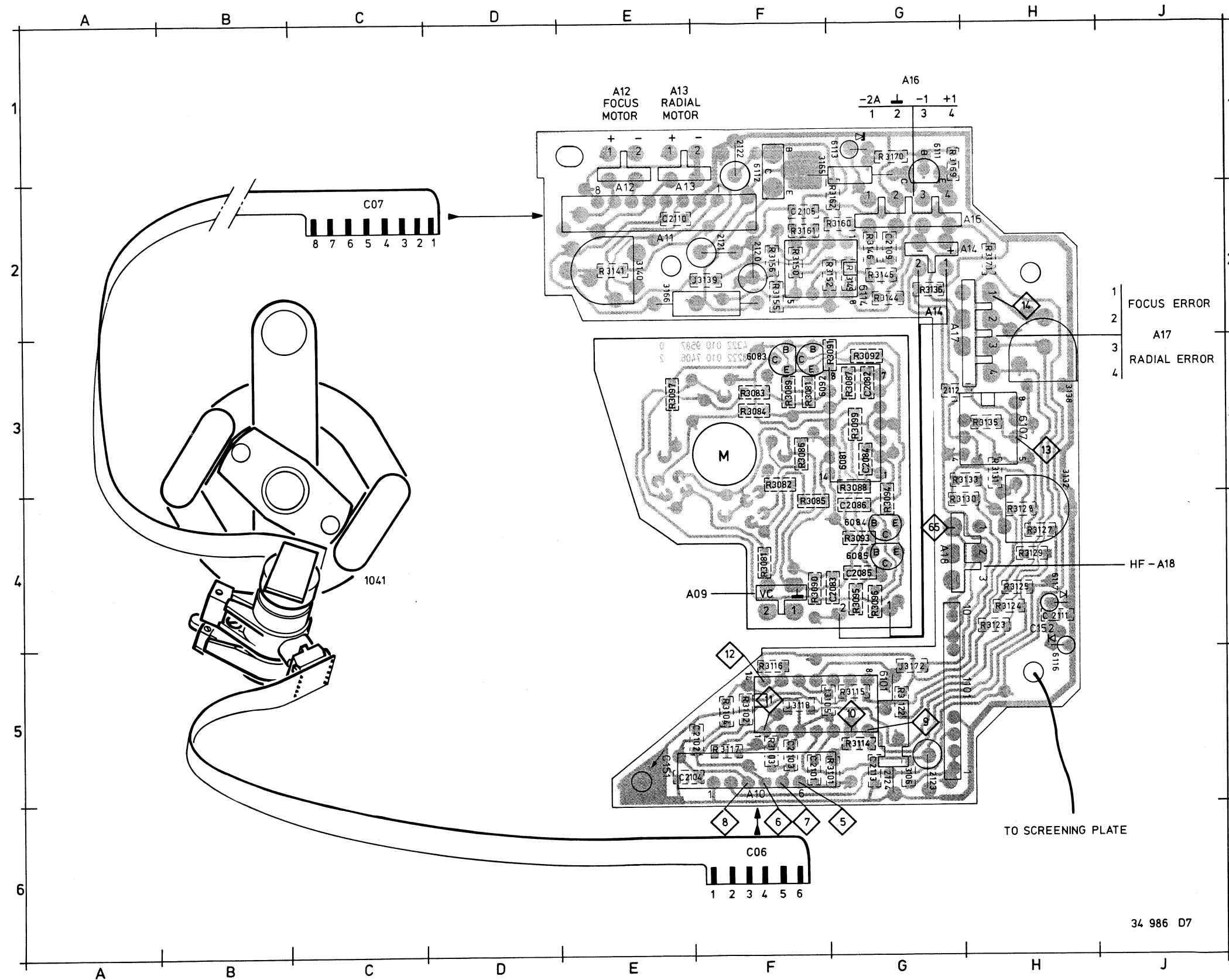
Attention

After setting the angle, the height setting of the turntable should be checked.



1101	A 7	2104	E 3	2111	F12	2121	H 9	3101	C 3	3105	E 4	3116	E 5	3123	E 7	3128	C 8	3132	D 8	3136	E 9	3141	G 3	3149	G 5	3156	H 7	3165	G 9	3171	G13	6111	G 9	6114(1/5)	
2101	C 3	2105	G 6	2112	G12	2122	H 9	3102	C 3	3106	A 7	3117	E 6	3124	E 7	3129	D 8	3133	D 8	3138	E 9	3144	I 4	3150	I 5	3160	G 7	3166	H 9	3172	H13	6112	H 9	6116	F13
2102	D 3	2109	I 4	2113	G13	2123	G12	3103	D 3	3114	B 5	3118	D 6	3125	E 7	3130	E 8	3134	C 9	3139	G 3	3145	G 5	3152	H 5	3161	I 7	3169	G10	6101	B 4	6113	H10	6117	F13
2103	D 3	2110	H10	2120	H 7	2124	H13	3104	E 3	3115	B 6	3122	E 6	3127	C 8	3131	C 8	3135	C 9	3140	H 3	3146	I 5	3155	H 6	3162	H 8	3170	G10	6107	C 9	6114(1/8)			

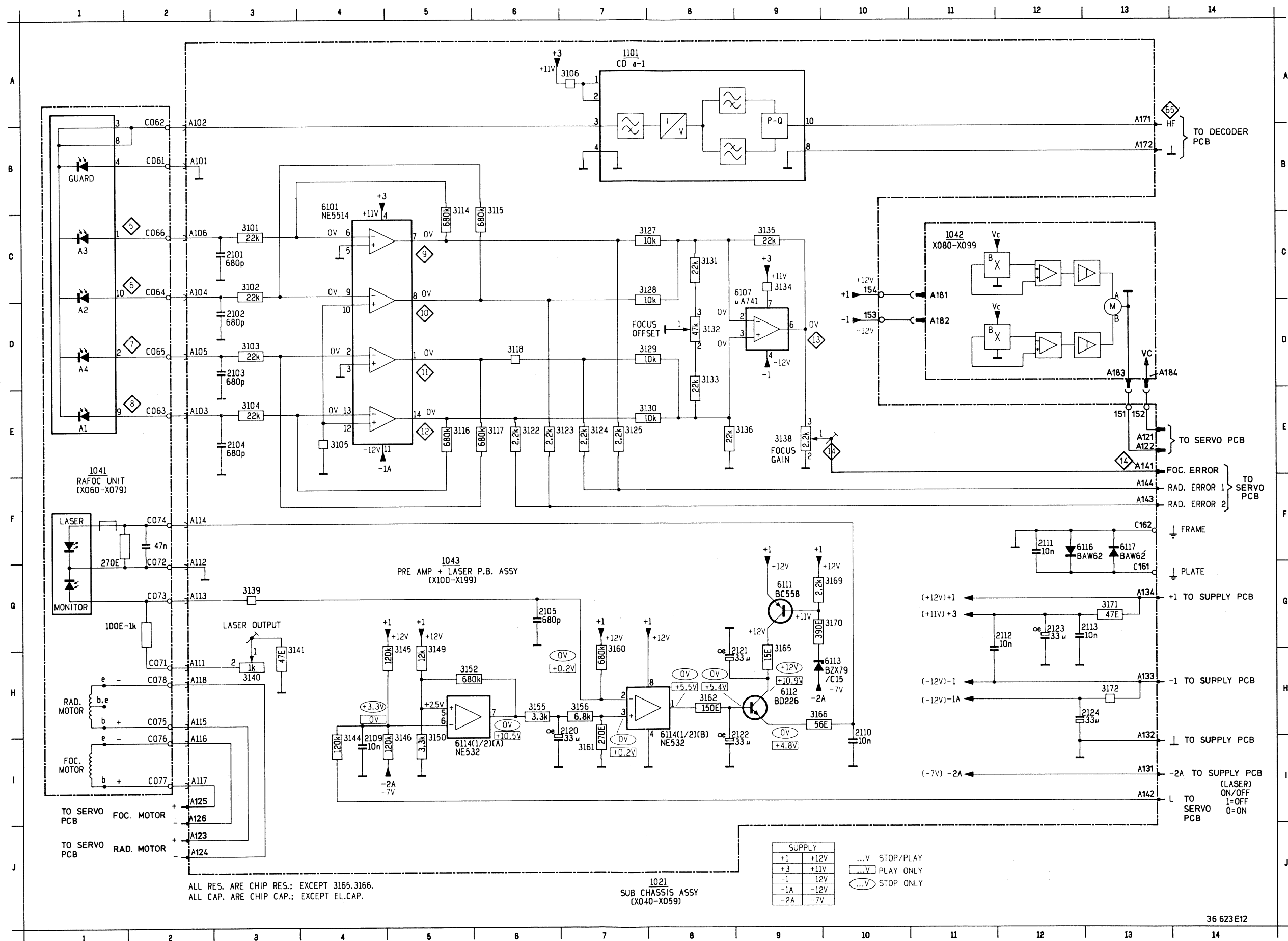


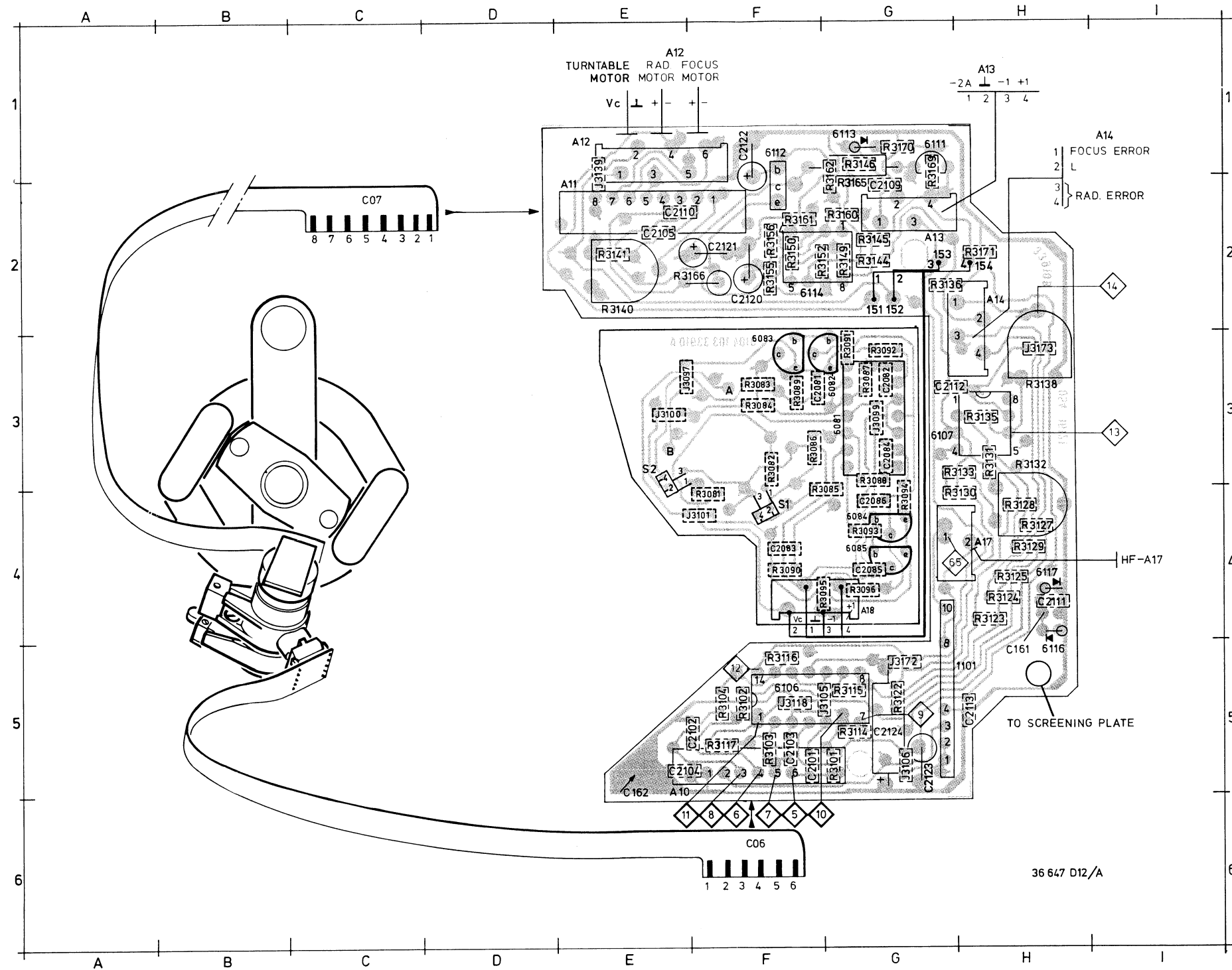


UNIT		
1101	Thick film unit HF	4822 218 10157
NE532N NE5514N μA714N		
BC558 BD226		
BZX79-C15 BAW62		
3132	47k	4822 100 10583
3138	2k2	4822 100 20116
3140	1k	4822 100 20115
3165	15E MR30	5322 116 54914
3166	56E PR37	5322 116 54929
0E 47E 150E 270E 390E 2k2 3k3 6k8 10k 12k 22k 120k 680k		
680 pF 10 nF		

1101 G05	2113 G05	3102 F05	3133 H01	3169 G01
2082 G03	3081 F04	3103 F05	3135 H01	3170 G01
2083 F04	3082 F03	3104 F05	3136 G01	3171 H02
2084 G03	3083 F03	3105 F05	3138 H01	3172 G05
2085 G04	3084 F03	3106 G05	3139 F01	6081 G03
2086 G04	3085 F04	3114 G05	3140 E01	6083 F03
2101 F05	3086 F03	3115 G05	3141 E01	6084 G04
2102 F05	3087 G03	3116 F05	3144 G01	6085 G04
2103 F05	3088 G03	3117 F05	3145 G01	6092 F03
2104 F05	3089 F03	3118 F05	3146 G01	6101 G05
2105 F02	3090 F04	3122 G05	3149 G01	6107 H03
2109 G02	3091 F03	3123 H04	3150 F01	6111 G01
2110 F02	3092 G03	3124 H04	3152 G01	6112 F01
2111 H04	3093 G04	3125 H04	3155 F01	6113 G01
2112 G03	3094 G04	3127 H04	3156 F01	6116 H05
2113 G05	3095 G04	3128 H04	3160 G01	6117 H04
2120 F02	3096 G04	3129 H04	3161 F01	
2121 F02	3097 F03	3130 H04	3162 G01	
2122 F01	3099 G03	3131 H03	3165 G01	
2124 G05	3101 F05	3132 H04	3166 F01	

1101	A 7	2104	E 3	2111	F12	2121	H 9	3101	C 3	3105	E 4	3116	E 5	3123	E 7	3128	C 8	3132	D 8	3136	E 9	3141	G 3	3149	G 5	3156	H 7	3165	G 9	3171	G13	6111	G 9	6114(*I 5	
2101	C 3	2105	G 6	2112	G12	2122	H 9	3102	C 3	3106	A 7	3117	E 6	3124	E 7	3129	D 8	3133	D 8	3138	E 9	3144	I 4	3150	I 5	3160	G 7	3166	H 9	3172	H13	6112	H 9	6116	F13
2102	D 3	2109	I 4	2113	G13	2123	G12	3103	D 3	3114	B 5	3118	D 6	3125	E 7	3130	E 8	3134	C 9	3139	G 3	3145	G 5	3152	H 5	3161	I 7	3169	G10	6101	B 4	6113	H10	6117	F13
2103	D 3	2110	H10	2120	H 7	2124	H13	3104	E 3	3115	B 6	3122	E 6	3127	C 8	3131	C 8	3135	C 9	3140	H 3	3146	I 5	3155	H 6	3162	H 8	3170	G10	6107	C 9	6114(*H 8			



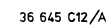


1101	G05	2086	G04	2105	E02	2113	H05	2124	G05	3085	F04	3090	F04	3095	G04	3102	F05	3114	G05
2082	G03	2101	F05	2109	G02	2120	F02	3081	F03	3086	F03	3091	G03	3096	G04	3103	F05	3115	G05
2083	G04	2102	F05	2110	E02	2121	F02	3082	F03	3087	G03	3092	G03	3097	E03	3104	F05	3116	F05
2084	G03	2103	F05	2111	H04	2122	F01	3083	F03	3088	G03	3093	G04	3099	G03	3105	G05	3117	F05
2085	G04	2104	E05	2112	G03	2123	G05	3084	F03	3089	F03	3094	G04	3101	G05	3106	G05	3118	F05
3122	G05	3128	H04	3133	H03	3140	E02	3149	G02	3160	G02	3169	G01	6081	G03	6106	F05	6114	F02
3123	H04	3129	H04	3135	H03	3141	E02	3150	F02	3161	F02	3170	G01	6083	F03	6107	H03	6116	H04
3124	H04	3130	H04	3136	G02	3144	G02	3152	G02	3162	G01	3171	H02	6084	G04	6111	G01	6117	H04
3125	H04	3131	H03	3138	H03	3145	G02	3155	F02	3165	G01	3172	G05	6085	G04	6112	F01		
3127	H04	3132	H03	3139	E01	3146	G01	3156	F02	3166	F02	3173	H03	6092	F03	6113	G01		

UNIT		
1101	Thick film unit HF	4822 218 10157
NE532N		4822 209 80818
NE5514N		4822 209 81451
μA714N		4822 209 80617
BC558		4822 130 40941
BD226		5322 130 44244
BZX79-C15		4822 130 34281
BAW62		4822 130 30613
3132	47k	4822 100 10583
3138	2k2	4822 100 20116
3140	1k	4822 100 20115
3165	15E MR30	5322 116 54914
3166	56E PR37	5322 116 54929
0E		4822 111 90163
47E		4822 111 90217
150E		5322 111 90098
270E		4822 111 90154
390E		5322 111 90138
2k2		4822 111 90249
3k3		4822 111 90157
6k8		5322 111 90117
10k		4822 111 90249
12k		5322 111 90097
22k		4822 111 90251
120k		4822 111 90149
680k		4822 111 90488
680 pF		4822 122 31809
10 nF		4822 122 31728



3123	D02
3124	D02
3127	E03
3128	E03
3129	E03
3130	D03
3131	D03
3132	E03
3133	D03
3135	D04
3136	D05
3138	E04
3139	B05
3140	B05
3141	B05
3144	D05
3145	D05
3146	C05
3149	C05
3150	C05
3152	C05
3155	C05
3156	C05
3160	C05
3161	C05
3162	C05
3165	C05
3166	B05
3169	D06
3170	D06
3171	D05
3172	D02
6081	C04
6082	C04
6083	C04
6084	C03
6085	C03
6103	C02
6107	D04
6111	D06
6112	C06
6113	C06
6116	E02
6117	E03



2101	D02	3117	B02
2081	C04	3118	C02
2082	C04	3122	D02
2083	C03	3123	D02
2084	C04	3124	D03
2085	C03	3125	D03
2086	C03	3127	E03
2101	C01	3128	E03
2102	B02	3129	E03
2103	C02	3130	D03
2104	B01	3131	D03
2105	B05	3132	C03
2109	D05	3133	D03
2110	B05	3135	D04
2111	E03	3138	E04
2112	D04	3139	B05
2113	D02	3140	B05
2120	C05	3141	B05
2121	C05	3144	C05
2122	C05	3145	C05
2123	D02	3146	C05
2124	D02	3149	C05
3081	C03	3150	C05
3082	C03	3152	C05
3083	C04	3155	C05
3084	C04	3156	C05
3085	C03	3160	C05
3086	C04	3161	C05
3087	C04	3162	C05
3088	C03	3165	C06
3090	C03	3166	B05
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3092	C04	3170	D06
3093	C03	3171	D05
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3098	C04	6083	C04
3099	C04	6084	C03
3101	C01	6085	C03
3102	C02	6101	C02
3103	C02	6107	D04
3104	B02	6111	D06
3105	C02	6112	C05
3106	D01	6114	C05
3113	C06	6116	E02
3114	C02	6117	E03

