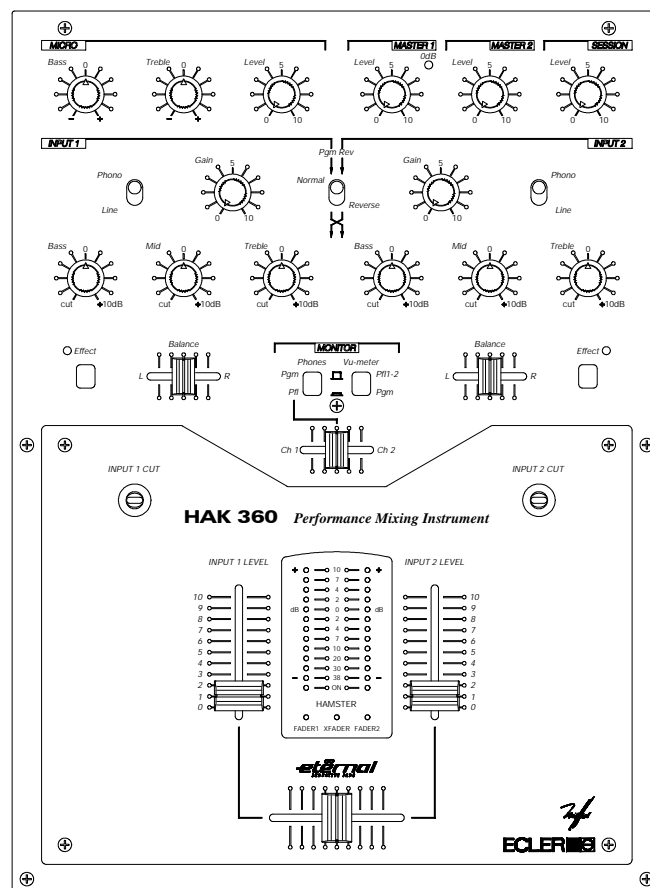


# HAK360

## SERVICE MANUAL



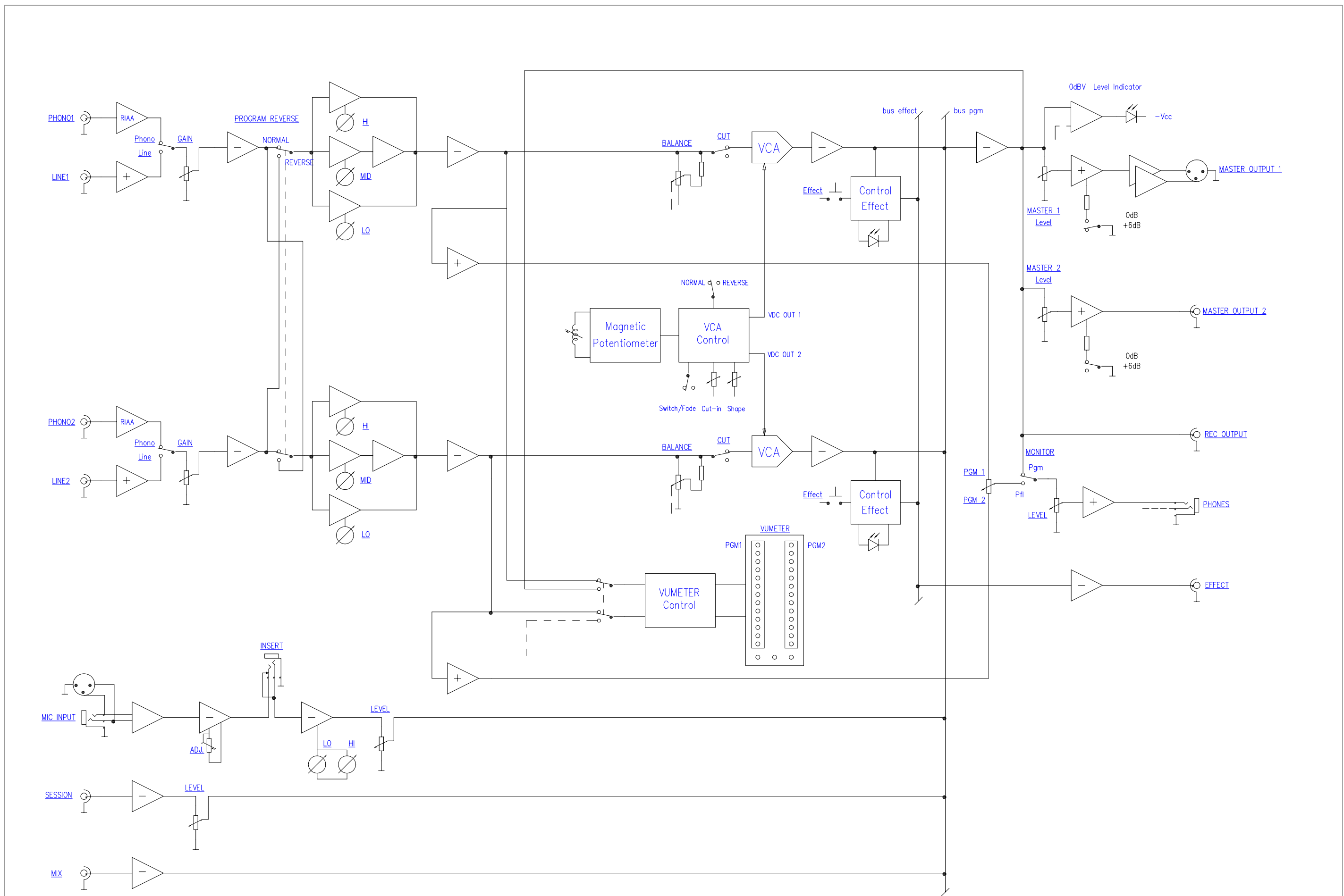
# ECLER

AUDIO CREATIVE POWER

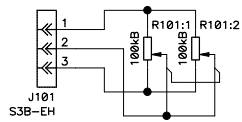
# SERVICE MANUAL HAK360

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Printed Board 11.0903



number: 10.0610    version: 01.00

drawn by: M. Amoros

project n: M14/15-01

product n: HAK310-360

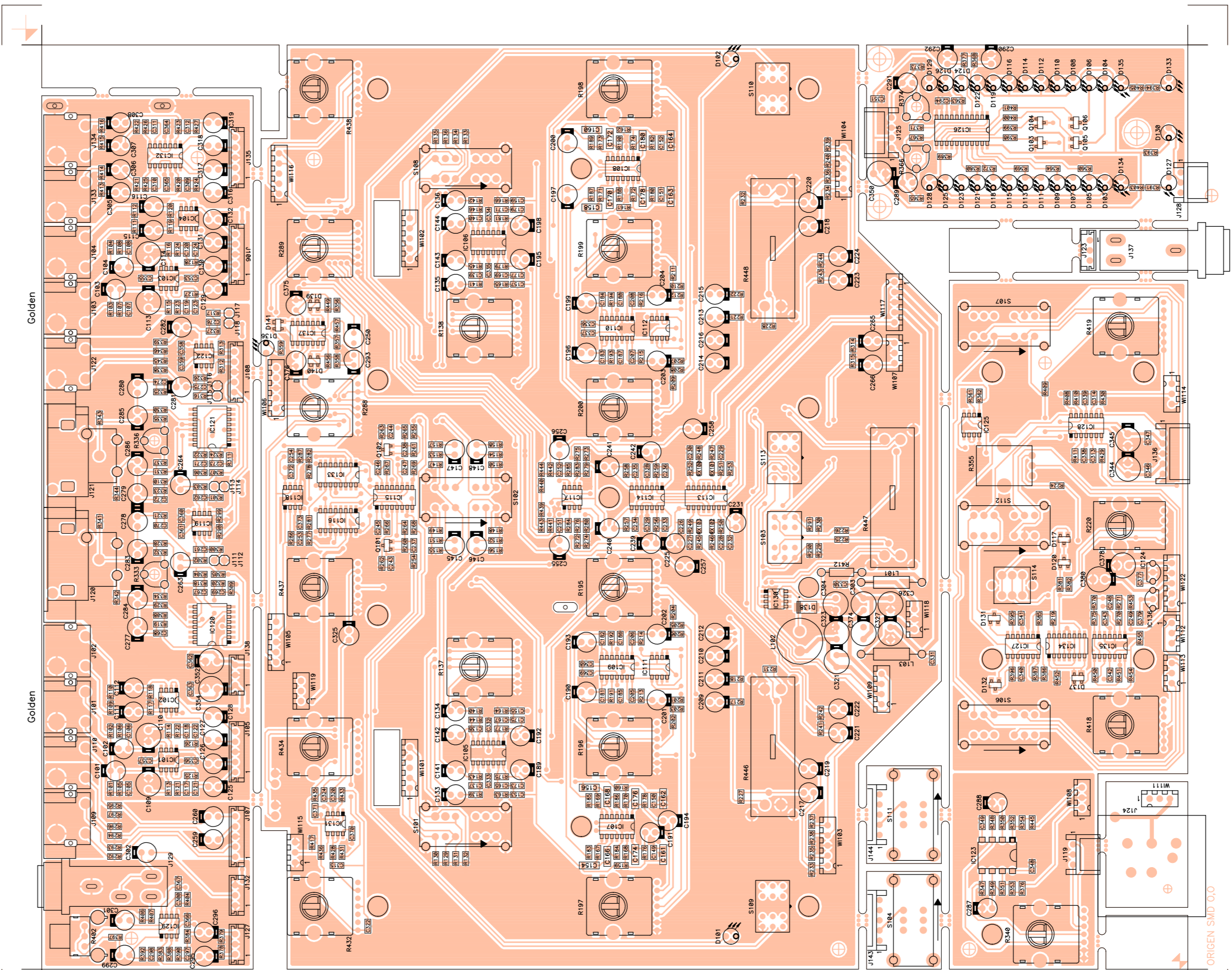
page: 1 of 1

date: 020422

approved: Domingo Mele

title:

Potentiometer Sch.



related to:	circuit no: 11.0917-03.00 schema no: 10.0582-01.01 insertion file no: 81.0064-01.00	side: Component
project n:	M14-01	view: Reference
number: 33.0686	version: 01.02	product n: HAK360
drawn by: M. Amoros	date: 011106	approved: Domingo Mele
title: Mains Cts.		

ORIGEN SMD 0/0



## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCCE300010	1u/63	C101
1	FCCE300010	1u/63	C102
1	FCCE300010	1u/63	C103
1	FCCE300010	1u/63	C104
1	FCXCD21000	100p	C105
1	FCXCD21000	100p	C106
1	FCXCD21000	100p	C107
1	FCXCD21000	100p	C108
1	FCCE030000	470u/10	C109
1	FCCE030000	470u/10	C110
1	FCCE100000	47u/16	C111
1	FCCE100000	47u/16	C112
1	FCCE030000	470u/10	C113
1	FCCE030000	470u/10	C114
1	FCCE100000	47u/16	C115
1	FCCE100000	47u/16	C116
1	FCXCD40100	10n	C117
1	FCXCD40100	10n	C118
1	FCXCD40100	10n	C119
1	FCXCD40100	10n	C120
1	FCXCD40330	33n	C121
1	FCXCD40330	33n	C122
1	FCXCD40330	33n	C123
1	FCXCD40330	33n	C124
1	FCCE100000	47u/16	C125
1	FCCE100000	47u/16	C126
1	FCCE100000	47u/16	C127
1	FCCE100000	47u/16	C128
1	FCCE100000	47u/16	C129
1	FCCE100000	47u/16	C130
1	FCCE100000	47u/16	C131
1	FCCE100000	47u/16	C132
1	FCCE100000	47u/16	C133
1	FCCE100000	47u/16	C134
1	FCCE100000	47u/16	C135
1	FCCE100000	47u/16	C136
1	FCXCD11000	10p	C137
1	FCXCD11000	10p	C138
1	FCXCD11000	10p	C139
1	FCXCD11000	10p	C140
1	FCCE100000	47u/16	C141
1	FCCE100000	47u/16	C142
1	FCCE100000	47u/16	C143
1	FCCE100000	47u/16	C144
1	FCCE100000	47u/16	C145
1	FCCE100000	47u/16	C146
1	FCCE100000	47u/16	C147
1	FCCE100000	47u/16	C148
1	FCXCD22200	220p	C149
1	FCXCD22200	220p	C150
1	FCXCD22200	220p	C151
1	FCXCD22200	220p	C152
1	FCXCD21000	100p	C153
1	FCXCN40022	2n2	C154
1	FCXCD21000	100p	C155
1	FCXCN40022	2n2	C156



## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCXCD21000	100p	C157
1	FCXCN40022	2n2	C158
1	FCXCD21000	100p	C159
1	FCXCN40022	2n2	C160
1	FCXCN40047	4n7	C161
1	FCXCN40047	4n7	C162
1	FCXCN40047	4n7	C163
1	FCXCN40047	4n7	C164
1	FCXCD21000	100p	C165
1	FCXCN40022	2n2	C166
1	FCXCD21000	100p	C167
1	FCXCN40022	2n2	C168
1	FCXCD21000	100p	C169
1	FCXCN40022	2n2	C170
1	FCXCD21000	100p	C171
1	FCXCN40022	2n2	C172
1	FCXCD21000	100p	C173
1	FCXCN40022	2n2	C174
1	FCXCD21000	100p	C175
1	FCXCN40022	2n2	C176
1	FCXCD21000	100p	C177
1	FCXCN40022	2n2	C178
1	FCXCD21000	100p	C179
1	FCXCN40022	2n2	C180
1	FCXCD40010	1n	C181
1	FCXCD40010	1n	C182
1	FCXCD40010	1n	C183
1	FCXCD40010	1n	C184
1	FCXCD40010	1n	C185
1	FCXCD40010	1n	C186
1	FCXCD40010	1n	C187
1	FCXCD40010	1n	C188
1	FCCE100000	47u/16	C189
1	FCCE100000	47u/16	C190
1	FCCE100000	47u/16	C191
1	FCCE100000	47u/16	C192
1	FCCE100000	47u/16	C193
1	FCCE100000	47u/16	C194
1	FCCE100000	47u/16	C195
1	FCCE100000	47u/16	C196
1	FCCE100000	47u/16	C197
1	FCCE100000	47u/16	C198
1	FCCE100000	47u/16	C199
1	FCCE100000	47u/16	C200
1	FCCE100000	47u/16	C201
1	FCCE100000	47u/16	C202
1	FCCE100000	47u/16	C203
1	FCCE100000	47u/16	C204
1	FCXCD11000	10p	C205
1	FCXCD11000	10p	C206
1	FCXCD11000	10p	C207
1	FCXCD11000	10p	C208
1	FCCE100000	47u/16	C209
1	FCCE100000	47u/16	C210
1	FCCE100000	47u/16	C211
1	FCCE100000	47u/16	C212

## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCCE100000	47u/16	C213
1	FCCE100000	47u/16	C214
1	FCCE100000	47u/16	C215
1	FCCE100000	47u/16	C216
1	FCCE100000	47u/16	C217
1	FCCE100000	47u/16	C218
1	FCCE100000	47u/16	C219
1	FCCE100000	47u/16	C220
1	FCCE100000	47u/16	C221
1	FCCE100000	47u/16	C222
1	FCCE100000	47u/16	C223
1	FCCE100000	47u/16	C224
1	FCCE250100	10u/50	C225
1	FCXCD41000	100n	C226
1	FCXCD24700	470p	C227
1	FCXCD24700	470p	C228
1	FCXCD24700	470p	C229
1	FCXCD24700	470p	C230
1	FCCE250100	10u/50	C231
1	FCXCD41000	100n	C232
1	FCXCD21000	100p	C233
1	FCXCD21000	100p	C234
1	FCXCD21000	100p	C235
1	FCXCD21000	100p	C236
1	FCXCD41000	100n	C237
1	FCXCD41000	100n	C238
1	FCCE100000	47u/16	C239
1	FCCE100000	47u/16	C240
1	FCCE100000	47u/16	C241
1	FCCE100000	47u/16	C242
1	FCXCD41000	100n	C243
1	FCXCD41000	100n	C244
1	FCXCD41000	100n	C245
1	FCXCD41000	100n	C246
1	FCXCD42200	220n	C247
1	FCXCD41000	100n	C248
1	FCXCD40470	47n	C249
1	FCCE100000	47u/16	C250
1	FCXCD13300	33p	C251
1	FCXCD13300	33p	C252
1	FCXCD13300	33p	C253
1	FCXCD13300	33p	C254
1	FCCE100000	47u/16	C255
1	FCCE100000	47u/16	C256
1	FCCE100000	47u/16	C257
1	FCCE100000	47u/16	C258
1	FCCE100000	47u/16	C259
1	FCCE100000	47u/16	C260
1	FCXCD13300	33p	C261
1	FCXCD13300	33p	C262
1	FCCE100000	47u/16	C263
1	FCCE100000	47u/16	C264
1	FCCE100000	47u/16	C265
1	FCCE100000	47u/16	C266
1	FCXCD21000	100p	C267
1	FCXCD21000	100p	C268

## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCXCD21000	100p	C269
1	FCXCD21000	100p	C270
1	FCXCD21000	100p	C271
1	FCXCD21000	100p	C272
1	FCXCD21000	100p	C273
1	FCXCD21000	100p	C274
1	FCXCD13300	33p	C275
1	FCXCD13300	33p	C276
1	FCCE050000	220u/10	C277
1	FCCE050000	220u/10	C278
1	FCCE050000	220u/10	C279
1	FCCE050000	220u/10	C280
1	FCCE100000	47u/16	C281
1	FCCE100000	47u/16	C282
1	FCCE050000	220u/10	C283
1	FCCE050000	220u/10	C284
1	FCCE050000	220u/10	C285
1	FCCE050000	220u/10	C286
1	FCCE100000	47u/16	C287
1	FCCE100000	47u/16	C288
1	FCCE250100	10u/50	C289
1	FCCE200220	22u/35	C290
1	FCCE250100	10u/50	C291
1	FCCE200220	22u/35	C292
1	FCCE100000	47u/16	C293
1	FCXCD40100	10n	C294
1	FCCE100000	47u/16	C295
1	FCCE100000	47u/16	C296
1	FCXCD11500	15p	C297
1	FCXCD11500	15p	C298
1	FCCE100000	47u/16	C299
1	FCXCD11500	15p	C300
1	FCCE100000	47u/16	C301
1	FCCE100000	47u/16	C302
1	FCCE151000	100u/25	C303
1	FCCE151000	100u/25	C304
1	FCCE100000	47u/16	C305
1	FCCE100000	47u/16	C306
1	FCCE100000	47u/16	C307
1	FCCE100000	47u/16	C308
1	FCXCD13300	33p	C309
1	FCXCD13300	33p	C310
1	FCXCD13300	33p	C311
1	FCXCD13300	33p	C312
1	FCXCD40470	47n	C313
1	FCXCD40470	47n	C314
1	FCXCD40330	33n	C315
1	FCCE100000	47u/16	C316
1	FCCE100000	47u/16	C317
1	FCCE100000	47u/16	C318
1	FCCE100000	47u/16	C319
1	FCXCD40022	2n2	C320
1	FCCE030000	470u/10	C321
1	FCXCD40330	33n	C322
1	FCCE030000	470u/10	C323
1	FCXCD12200	22p	C324

## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCCE100000	47u/16	C325
1	FCCE250470	47u/50	C326
1	FCCE250470	47u/50	C327
1	FCXCD41000	100n	C328
1	FCXCD41000	100n	C329
1	FCXCD41000	100n	C330
1	FCXCD41000	100n	C331
1	FCXCD41000	100n	C332
1	FCXCD41000	100n	C333
1	FCXCD41000	100n	C334
1	FCXCD41000	100n	C335
1	FCXCD41000	100n	C336
1	FCXCD41000	100n	C337
1	FCXCD41000	100n	C338
1	FCXCD41000	100n	C339
1	FCXCD41000	100n	C340
1	FCXCD41000	100n	C341
1	FCXCD41000	100n	C342
1	FCXCD41000	100n	C343
1	FCCE250470	47u/50	C344
1	FCCE250470	47u/50	C345
1	FCXCD41000	100n	C346
1	FCXCD41000	100n	C347
1	FCXCD41000	100n	C348
1	FCXCD41000	100n	C349
1	FCCE151000	100u/25	C350
1	FCXCD41000	100n	C351
1	FCCE250470	47u/50	C352
1	FCXCD41000	100n	C353
1	FCCE250470	47u/50	C354
1	FCXCD41000	100n	C355
1	FCXCD41000	100n	C356
1	FCXCD41000	100n	C357
1	FCXCD41000	100n	C358
1	FCXCD41000	100n	C359
1	FCXCD41000	100n	C360
1	FCXCD41000	100n	C361
1	FCXCD41000	100n	C362
1	FCXCD41000	100n	C363
1	FCXCD41000	100n	C364
1	FCXCD41000	100n	C365
1	FCXCD41000	100n	C366
1	FCXCD41000	100n	C367
1	FCXCD41000	100n	C368
1	FCXCD41000	100n	C369
1	FCXCD41000	100n	C370
1	FCXCD41000	100n	C371
1	FCXCD41000	100n	C372
1	FCXCD41000	100n	C373
1	FCCE250470	47u/50	C374
1	FCCE300010	1u/63	C375
1	FCCE300010	1u/63	C376
1	FCXCD41000	100n	C377
1	FCCE151000	100u/25	C378
1	FCXCD41000	100n	C379
1	FCCE151000	100u/25	C380

## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCCIH09170	Printed Board 11.0917	CI101
1	FCLED300VE	LED3G	D101
1	FCLED300VE	LED3G	D102
1	FCLED300VE	LED3G	D103
1	FCLED300VE	LED3G	D104
1	FCLED300VE	LED3G	D105
1	FCLED300VE	LED3G	D106
1	FCLED300VE	LED3G	D107
1	FCLED300VE	LED3G	D108
1	FCLED300VE	LED3G	D109
1	FCLED300VE	LED3G	D110
1	FCLED300VE	LED3G	D111
1	FCLED300VE	LED3G	D112
1	FCLED300VE	LED3G	D113
1	FCLED300VE	LED3G	D114
1	FCLED300VE	LED3G	D115
1	FCLED300VE	LED3G	D116
1	FCXZ000068	Z6.8V	D117
1	FCLED300AM	LED3Y	D118
1	FCLED300AM	LED3Y	D119
1	FCXZ000068	Z6.8V	D120
1	FCLED300RO	LED3R	D121
1	FCLED300RO	LED3R	D122
1	FCLED300RO	LED3R	D123
1	FCLED300RO	LED3R	D124
1	FCLED300RO	LED3R	D125
1	FCLED300RO	LED3R	D126
1	FCLED300RO	LED3R	D127
1	FCLED300RO	LED3R	D128
1	FCLED300RO	LED3R	D129
1	FCLED300RO	LED3R	D130
1	FCXDDBAS16	BAS16	D131
1	FCXDDBAS16	BAS16	D132
1	FCLED300RO	LED3R	D133
1	FCLED300VE	LED3G	D134
1	FCLED300VE	LED3G	D135
1	FCLED300RO	LED3R	D136
1	FCXDDBAS28	BAS28	D137
1	FCXDDSB140	SB140	D138
1	FCXDDBAS28	BAS28	D139
1	FCXDDBAS28	BAS28	D140
1	FCXDDBAS28	BAS28	D141
1	FCIC4580E0	NJM4580E	IC101
1	FCIC072010	TL072	IC102
1	FCIC4580E0	NJM4580E	IC103
1	FCIC072010	TL072	IC104
1	FCIC074010	TL074	IC105
1	FCIC074010	TL074	IC106
1	FCIC074010	TL074	IC107
1	FCIC074010	TL074	IC108
1	FCIC074010	TL074	IC109
1	FCIC074010	TL074	IC110
1	FCIC072010	TL072	IC111
1	FCIC072010	TL072	IC112
1	FCIC216410	SSM2164S	IC113
1	FCIC074010	TL074	IC114

## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCIC741090	74HC109	IC115
1	FCIC212010	DG212	IC116
1	FCIC4580E0	NJM4580E	IC117
1	FCIC072010	TL072	IC118
1	FCIC072010	TL072	IC119
1	FCIC553210	NE5532D	IC120
1	FCIC553210	NE5532D	IC121
1	FCIC072010	TL072	IC122
1	FCIC455600	NJM4556D	IC123
1	FCREG78L15	78L15A	IC124
1	FCIC072010	TL072	IC125
1	FCIC682000	BA6820F	IC126
1	FCIC074010	TL074	IC127
1	FCIC074010	TL074	IC128
1	FCIC072010	TL072	IC129
1	FCIC259410	LM2594	IC130
1	FCIC072010	TL072	IC131
1	FCIC074010	TL074	IC132
1	FCIC212010	DG212	IC133
1	FCIC212010	DG212	IC134
1	FCIC074010	TL074	IC135
1	FCREG79L15	79L15A	IC136
1	FCIC074010	TL074	IC137
1	FCBASR0601	YKB21-3035	J101
1	FCBASR0600	YKB21-3035	J102
1	FCBASR0601	YKB21-3035	J103
1	FCBASR0600	YKB21-3035	J104
1	FCCTM00050	B5B-EH-A	J105
1	FCCTM00050	B5B-EH-A	J106
1	FCCTM00050	B5B-EH-A	J107
1	FCCTM00050	B5B-EH-A	J108
1	FCBASR0600	YKB21-3035	J109
1	FCBASR0600	YKB21-3035	J110
1	FCTERM0100	Jumper Pin	J111
1	FCTERM0100	Jumper Pin	J112
1	FCTERM0100	Jumper Pin	J113
1	FCTERM0100	Jumper Pin	J114
1	FCTERM0100	Jumper Pin	J115
1	FCTERM0100	Jumper Pin	J116
1	FCTERM0100	Jumper Pin	J117
1	FCTERM0100	Jumper Pin	J118
1	FCCTM10030	S3B-EH	J119
1	FCBASX1000	YKF52-5003	J120
1	FCBASX1000	YKF52-5003	J121
1	FCBASR0600	YKB21-3035	J122
1	FCCTM00030	B3B-EH-A	J123
1	FCBASX0800	NCJ6FI-H	J124
1	FCCTM10040	S4B-EH	J125
1	FCCTM00030	B3B-EH-A	J127
1	FCCTM10030	S3B-EH	J128
1	FCBASJ0100	YKB21-5166	J129
1	FCCTM00030	B3B-EH-A	J132
1	FCBASR0600	YKB21-3035	J133
1	FCBASR0600	YKB21-3035	J134
1	FCCTM00050	B5B-EH-A	J135
1	FCCTM10050	S5B-EH	J136

## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCBASJ0200	YKB21-5009	J137
1	FCCTM00030	B3B-EH-A	J138
1	FCCTM10050	S5B-EH	J143
1	FCCTM10050	S5B-EH	J144
1	FCCHK00100	10uH	L101
1	FCIND00400	220uH	L102
1	FCCHK00100	10uH	L103
1	FCMJ000100	Jumper	MJ100
1	FCMJ000100	Jumper	MJ101
1	FCXTT08570	BC857B	Q101
1	FCXTT08570	BC857B	Q102
1	FCXTT08570	BC857B	Q103
1	FCXTT08570	BC857B	Q104
1	FCXTT08570	BC857B	Q105
1	FCXTT08570	BC857B	Q106
1	FCXR551000	100k0	R101
1	FCXR551000	100k0	R102
1	FCXR551000	100k0	R103
1	FCXR551000	100k0	R104
1	FCXR551000	100k0	R105
1	FCXR551000	100k0	R106
1	FCXR551000	100k0	R107
1	FCXR551000	100k0	R108
1	FCXR551000	100k0	R109
1	FCXR551000	100k0	R110
1	FCXR551000	100k0	R111
1	FCXR551000	100k0	R112
1	FCXR521470	147	R113
1	FCXR521470	147	R114
1	FCXR521470	147	R115
1	FCXR521470	147	R116
1	FCXR551000	100k0	R117
1	FCXR551000	100k0	R118
1	FCXR551000	100k0	R119
1	FCXR551000	100k0	R120
1	FCXR538250	8k25	R121
1	FCXR538250	8k25	R122
1	FCXR538250	8k25	R123
1	FCXR538250	8k25	R124
1	FCXR551000	100k0	R125
1	FCXR551000	100k0	R126
1	FCXR551000	100k0	R127
1	FCXR551000	100k0	R128
1	FCXR551000	100k0	R129
1	FCXR551000	100k0	R130
1	FCXR551000	100k0	R131
1	FCXR551000	100k0	R132
1	FCXR551000	100k0	R133
1	FCXR551000	100k0	R134
1	FCXR551000	100k0	R135
1	FCXR551000	100k0	R136
1	FCPR210051	10kAx2	R137
1	FCPR210051	10kAx2	R138
1	FCXR542150	21k5	R139
1	FCXR542150	21k5	R140
1	FCXR542150	21k5	R141

## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCXR542150	21k5	R142
1	FCXR546810	68k1	R143
1	FCXR546810	68k1	R144
1	FCXR546810	68k1	R145
1	FCXR546810	68k1	R146
1	FCXR551000	100k0	R147
1	FCXR551000	100k0	R148
1	FCXR551000	100k0	R149
1	FCXR551000	100k0	R150
1	FCXR551000	100k0	R151
1	FCXR551000	100k0	R152
1	FCXR551000	100k0	R153
1	FCXR551000	100k0	R154
1	FCXR551000	100k0	R155
1	FCXR551000	100k0	R156
1	FCXR551000	100k0	R157
1	FCXR551000	100k0	R158
1	FCXR552370	237k	R159
1	FCXR552370	237k	R160
1	FCXR552370	237k	R161
1	FCXR552370	237k	R162
1	FCXR551620	162k	R163
1	FCXR551620	162k	R164
1	FCXR551620	162k	R165
1	FCXR551620	162k	R166
1	FCXR553480	348k	R167
1	FCXR552370	237k	R168
1	FCXR553480	348k	R169
1	FCXR552370	237k	R170
1	FCXR553480	348k	R171
1	FCXR552370	237k	R172
1	FCXR553480	348k	R173
1	FCXR552370	237k	R174
1	FCXR553480	348k	R175
1	FCXR552370	237k	R176
1	FCXR553480	348k	R177
1	FCXR552370	237k	R178
1	FCXR553480	348k	R179
1	FCXR552370	237k	R180
1	FCXR553480	348k	R181
1	FCXR552370	237k	R182
1	FCXR542370	23k7	R183
1	FCXR553480	348k	R184
1	FCXR542370	23k7	R185
1	FCXR553480	348k	R186
1	FCXR542370	23k7	R187
1	FCXR553480	348k	R188
1	FCXR542370	23k7	R189
1	FCXR553480	348k	R190
1	FCXR542370	23k7	R191
1	FCXR542370	23k7	R192
1	FCXR542370	23k7	R193
1	FCXR542370	23k7	R194
1	FCPR217031	50kBx2cc	R195
1	FCPR217031	50kBx2cc	R196
1	FCPR217031	50kBx2cc	R197



## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCPR217031	50kBx2cc	R198
1	FCPR217031	50kBx2cc	R199
1	FCPR217031	50kBx2cc	R200
1	FCXR542150	21k5	R201
1	FCXR542150	21k5	R202
1	FCXR542150	21k5	R203
1	FCXR542150	21k5	R204
1	FCXR542150	21k5	R205
1	FCXR542150	21k5	R206
1	FCXR542150	21k5	R207
1	FCXR542150	21k5	R208
1	FCXR542150	21k5	R209
1	FCXR542150	21k5	R210
1	FCXR542150	21k5	R211
1	FCXR542150	21k5	R212
1	FCXR549090	90k9	R213
1	FCXR549090	90k9	R214
1	FCXR549090	90k9	R215
1	FCXR549090	90k9	R216
1	FCXR541000	10k0	R217
1	FCXR541000	10k0	R218
1	FCXR541000	10k0	R219
1	FCPR120050	500kD	R220
1	FCXR541000	10k0	R221
1	FCXR541000	10k0	R222
1	FCXR541960	19k6	R224
1	FCXR531470	1k47	R225
1	FCXR531470	1k47	R226
1	FCXR531000	1k0	R227
1	FCXR531000	1k0	R228
1	FCXR551000	100k0	R229
1	FCXR551000	100k0	R230
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1	FCXR551000	100k0	R238
1	FCXR551000	100k0	R239
1	FCXR551000	100k0	R240
1	FCXR551000	100k0	R241
1	FCXR551000	100k0	R242
1	FCXR551000	100k0	R243
1	FCXR551000	100k0	R244
1	FCXR542370	23k7	R245
1	FCXR542370	23k7	R246
1	FCXR542370	23k7	R247
1	FCXR542370	23k7	R248
1	FCXR525620	562	R249
1	FCXR525620	562	R250
1	FCXR525620	562	R251
1	FCXR525620	562	R252
1	FCXR541000	10k0	R253
1	FCXR541000	10k0	R254

## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCXR541000	10k0	R255
1	FCXR542370	23k7	R256
1	FCXR542370	23k7	R257
1	FCXR542370	23k7	R258
1	FCXR542370	23k7	R259
1	FCXR541000	10k0	R260
1	FCXR541000	10k0	R261
1	FCXR542150	21k5	R262
1	FCXR542150	21k5	R263
1	FCXR524640	464	R264
1	FCXR524640	464	R265
1	FCXR551000	100k0	R266
1	FCXR551000	100k0	R267
1	FCXR531000	1k0	R268
1	FCXR531000	1k0	R269
1	FCXR549090	90k9	R270
1	FCXR533160	3k16	R271
1	FCXR551000	100k0	R272
1	FCXR551000	100k0	R273
1	FCXR551000	100k0	R274
1	FCXR551000	100k0	R275
1	FCXR542150	21k5	R276
1	FCXR542150	21k5	R277
1	FCXR542150	21k5	R278
1	FCXR542150	21k5	R279
1	FCXR542150	21k5	R280
1	FCXR542150	21k5	R281
1	FCXR542150	21k5	R282
1	FCXR542150	21k5	R283
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1	FCXR542150	21k5	R285
1	FCXR542150	21k5	R286
1	FCXR542150	21k5	R287
1	FCPR210051	10kAx2	R288
1	FCPR210051	10kAx2	R289
1	FCXR551000	100k0	R290
1	FCXR551000	100k0	R291
1	FCXR531000	1k0	R292
1	FCXR531000	1k0	R293
1	FCXR517500	75.0	R294
1	FCXR517500	75.0	R295
1	FCXR551000	100k0	R296
1	FCXR551000	100k0	R297
1	FCXR551000	100k0	R298
1	FCXR551000	100k0	R299
1	FCXR542150	21k5	R300
1	FCXR542150	21k5	R301
1	FCXR542150	21k5	R302
1	FCXR542150	21k5	R303
1	FCXR541000	10k0	R304
1	FCXR541000	10k0	R305
1	FCXR541000	10k0	R306
1	FCXR541000	10k0	R307
1	FCXR541000	10k0	R308
1	FCXR541000	10k0	R309
1	FCXR541000	10k0	R310

## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCXR541000	10k0	R311
1	FCXR551000	100k0	R312
1	FCXR551000	100k0	R313
1	FCXR551000	100k0	R314
1	FCXR551000	100k0	R315
1	FCXR542150	21k5	R316
1	FCXR542150	21k5	R317
1	FCXR541000	10k0	R318
1	FCXR541000	10k0	R319
1	FCXR541000	10k0	R320
1	FCXR541000	10k0	R321
1	FCXR541000	10k0	R322
1	FCXR541000	10k0	R323
1	FCXR541000	10k0	R324
1	FCXR541000	10k0	R325
1	FCXR542150	21k5	R326
1	FCXR542150	21k5	R327
1	FCXR517500	75.0	R328
1	FCXR517500	75.0	R329
1	FCXR517500	75.0	R330
1	FCXR517500	75.0	R331
1	FCXR531000	1k0	R332
1	FRCJ51000	10k	R333
1	FCXR531000	1k0	R334
1	FCXR531000	1k0	R335
1	FRCJ51000	10k	R336
1	FCXR531000	1k0	R337
1	FCXR517500	75.0	R338
1	FCXR517500	75.0	R339
1	FCPR210051	10kAx2	R340
1	FCXR551000	100k0	R341
1	FCXR551000	100k0	R342
1	FCXR551000	100k0	R343
1	FCXR551000	100k0	R344
1	FCXR551000	100k0	R345
1	FCXR551000	100k0	R346
1	FCXR551000	100k0	R347
1	FCXR551000	100k0	R348
1	FCXR525620	562	R349
1	FCXR525620	562	R350
1	FCXR542150	21k5	R351
1	FCXR542150	21k5	R352
1	FCXR517500	75.0	R353
1	FCXR517500	75.0	R354
1	FCPR110025	10k	R355
1	FCXR551470	147k	R356
1	FCXR531470	1k47	R357
1	FCXR551470	147k	R358
1	FCXR541210	12k1	R359
1	FCXR521470	147	R360
1	FCXR536190	6k19	R361
1	FCXR531000	1k0	R362
1	FCXR543830	38k3	R363
1	FCXR521470	147	R364
1	FCXR551000	100k0	R365
1	FRCJ51000	10K	R366

## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

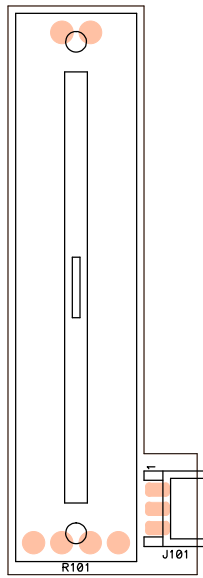
Q	Code	Description	Reference
1	FCXR531000	1k0	R367
1	FCXR542150	21k5	R368
1	FCXR521470	147	R369
1	FCXR542150	21k5	R370
1	FCXR531000	1k0	R371
1	FCXR521470	147	R372
1	FCXR551000	100k0	R373
1	FCRJC51000	10K	R374
1	FCXR542150	21k5	R375
1	FCXR517500	75.0	R376
1	FCXR542150	21k5	R377
1	FCXR551000	100k0	R378
1	FCXR551000	100k0	R379
1	FCXR521470	147	R380
1	FCXR535620	5k62	R381
1	FCXR541960	19k6	R382
1	FCXR531470	1k47	R383
1	FCXR531470	1k47	R384
1	FCXR531960	1k96	R385
1	FCXR541000	10k0	R386
1	FCXR541000	10k0	R387
1	FCXR552150	215k	R388
1	FCXR521470	147	R389
1	FCXR545110	51k1	R390
1	FCXR531000	1k0	R391
1	FCXR545110	51k1	R392
1	FCXR531000	1k0	R393
1	FCXR531000	1k0	R394
1	FCXR551000	100k0	R395
1	FCXR551000	100k0	R396
1	FCXR535110	5k11	R397
1	FCXR532150	2k15	R398
1	FCXR532150	2k15	R399
1	FCXR532150	2k15	R400
1	FCXR532150	2k15	R401
1	FCPR117030	50kB	R402
1	FCXR531000	1k0	R403
1	FCXR545110	51k1	R404
1	FCXR531000	1k0	R405
1	FCXR551000	100k0	R406
1	FCXR517500	75.0	R407
1	FCXR524640	464	R408
1	FCXR524640	464	R409
1	FCXR551000	100k0	R410
1	FCXR551000	100k0	R411
1	FCRF221000	NF10/ 1/2	R412
1	FCXR551000	100k0	R413
1	FCXR551000	100k0	R414
1	FCXR551000	100k0	R415
1	FCXR551000	100k0	R416
1	FCXR551000	100k0	R417
1	FCPR217031	50kBx2cc	R418
1	FCPR217031	50kBx2cc	R419
1	FCXR542150	21k5	R420
1	FCXR542150	21k5	R421
1	FCXR542150	21k5	R422


## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

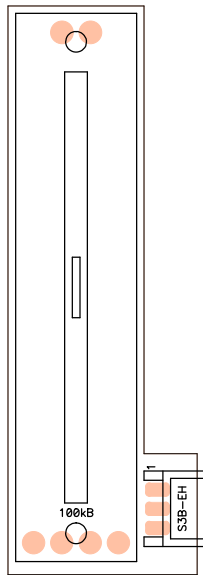
Q	Code	Description	Reference
1	FCXR542150	21k5	R423
1	FCXR542150	21k5	R424
1	FCXR542150	21k5	R425
1	FCXR542150	21k5	R426
1	FCXR542150	21k5	R427
1	FCXR541000	10k0	R428
1	FCXR544640	46k4	R429
1	FCXR544640	46k4	R430
1	FCXR536810	6k81	R431
1	FCPR217031	50kBx2cc	R432
1	FCXR541470	14k7	R433
1	FCPR217031	50kBx2cc	R434
1	FCXR536810	6k81	R435
1	FCXR541000	10k0	R436
1	FCPR210051	10kAx2	R437
1	FCPR210051	10kAx2	R438
1	FCXR542150	21k5	R439
1	FCXR542150	21k5	R440
1	FCXR542150	21k5	R441
1	FCXR542150	21k5	R442
1	FCXR542150	21k5	R443
1	FCXR542150	21k5	R444
1	FCXR517500	75.0	R445
1	FCPD020020	5kB	R446
1	FCPD020020	5kB	R447
1	FCPD020020	5kB	R448
1	FCXR551000	100k0	R449
1	FCXR571000	10M	R450
1	FCXR531000	1k0	R451
1	FCXR541000	10k0	R452
1	FCXR521000	100.0	R453
1	FCXR571000	10M	R454
1	FCXR531000	1k0	R455
1	FCXR551000	100k0	R456
1	FCXR542370	23k7	R457
1	FCXR500000	0	RX100
1	FCXR500000	0	RX101
1	FCXR500000	0	RX102
1	FCXR500000	0	RX103
1	FCINTAP077	LS001-A42BAK	S101
1	FCINTAP077	LS001-A42BAK	S102
1	FCINTAP015	17.010/CE	S103
1	FCINTAP075	LS001/BAa-KPA	S104
1	FCINTAP077	LS001-A42BAK	S106
1	FCINTAP077	LS001-A42BAK	S107
1	FCINTAP077	LS001-A42BAK	S108
1	FCINTAP016	17.010/SE	S109
1	FCINTAP016	17.010/SE	S110
1	FCINTAP075	LS001/BAa-KPA	S111
1	FCINTAP077	LS001-A42BAK	S112
1	FCINTAP015	17.010/CE	S113
1	FCINTAP150	TS40T-TS5	S114
1	FCSEPCI020	Spacer M3x13	SP100
1	FCSEPCI020	Spacer M3x13	SP101
1	FCSEPCI020	Spacer M3x13	SP102
1	FCSEPCI020	Spacer M3x13	SP103


## PARTS LIST: PRINTED CIRCUIT 11.0917.03.00

Q	Code	Description	Reference
1	FCSEPCI020	Spacer M3x13	SP104
1	FCSEPCI020	Spacer M3x13	SP105
1	FCSEPCI020	Spacer M3x13	SP106
1	FCSEPCI020	Spacer M3x13	SP107
1	FCSEPCI020	Spacer M3x13	SP108
1	FCSEPCI020	Spacer M3x13	SP109
1	FCSEPCI020	Spacer M3x13	SP110
1	FCSEPCI020	Spacer M3x13	SP111
1	FCSEPCI020	Spacer M3x13	SP112
1	FCSEPCI020	Spacer M3x13	SP113
1	FCSEPCI020	Spacer M3x13	SP114
1	FCSEPCI020	Spacer M3x13	SP115
1	FC4K007150	1007.01.50	WI101
1	FC4K007150	1007.01.50	WI102
1	FC4K007100	1007.01.00	WI103
1	FC4K007100	1007.01.00	WI104
1	FC4K007150	1007.01.50	WI105
1	FC4K007150	1007.01.50	WI106
1	FC4I005250	1005.02.50	WI107
1	FC4I005070	1005.00.70	WI108
1	FC4J006100	1006.01.00	WI109
1	FC4I005070	1005.00.70	WI111
1	FC4I005150	1005.01.50	WI112
1	FC4I005200	1005.02.00	WI113
1	FC4I005200	1005.02.00	WI114
1	FC4I005150	1005.01.50	WI115
1	FC4K007150	1007.01.50	WI116
1	FC4K007250	1007.02.50	WI117
1	FC0C012340	1012.03.40	WI118
1	FC4I005150	1005.01.50	WI119
1	FC4K007150	1007.01.50	WI122



 LABORATORIO DE ELECTRO-ACUSTICA S.A.		related to:	circuit no: 11.0903-01.00 schema no: 10.0578-01.00 insertion file no:	side: Component
		project n:	M14/15-01	view: Reference
number:	33.0761	version:	01.00	title: <b>Potentiometer Ct.</b>
drawn by:	M. Amoros	date:	020422	
		product n:	HAK310-360	
		approved:	Domingo Mele	



 LABORATORIO DE ELECTRO-ACUSTICA S.A.		related to:	circuit no: 11.0903-01.00 schema no: 10.0578-01.00 insertion file no:	side: Component
		project n:	M14/15-01	view: Value
number:	33.0762	version:	01.00	title: <b>Potentiometer Ct.</b>
drawn by:	M. Amoros	date:	020422	
		product n:	HAK310-360	
		approved:	Domingo Mele	



PARTS LIST: PRINTED CIRCUIT 11.0903.01.00 (x3)

Q	Code	Description	Reference
1	FCCITC0903	Printed Board 11.0903	CI101
1	FCCITC0903	Printed Board 11.0903	CI101
1	FCCITC0903	Printed Board 11.0903	CI101
1	FCCTM10030	S3B-EH	J101
1	FCCTM10030	S3B-EH	J101
1	FCCTM10030	S3B-EH	J101

Input Sensitivities:

PHONO	-45dBV/50KΩ
LINE	-10dBV/50KΩ
SESSION	0dBV/20KΩ
MICRO (BAL)	-50/-30 dBV / 1.5KΩ
INSERT	0dBV/100KΩ
MIX	0dBV/20KΩ

Output Levels:

OUT 1 (BAL)	0 (+ 6)dBV/600Ω 1(2)V
OUT2	+ 6 (0)dBV/1KΩ 2(1)V
INSERT	0dBV/1KΩ
REC	0dBV/10KΩ
HEADPHONES	230mW/400Ω

VERIFICATION

Adjust the front-end control knobs to the positions listed below:

Tone control set to middle position.

Gain and Level potentiometers at their maximum.

Faders up to maximum.

Crossfader slided to its central position.

"PHONO/LINE" selection switches set to "LINE".

"NORMAL/REVERSE" selection switches set to "NORMAL".

"PGM/PFL" switch set to "PGM".

Vu-meter PFL 1-2/PGM choice switch set to PFL 1-2.

"Cut" switch turned OFF.

"BALANCE" and "MIX" control knobs centered.

Connect the unit to the mains supply, and verify that the main on/off switch is functioning correctly. Leave the unit turned on. Verify that both Vu-meter ON LED's are lit.

Apply an input signal from a sound source, such as a CD player, to LINE 1. Use the REC output to obtain the outgoing signal. Verify the gain's potentiometer sweep, which should allow to adjust gain from maximum down to signal cut-off.

Verify the tone control responses: Bass, mid, high.

Verify the Balance and Cut functions.

Verify the Fader 1's sweep and attenuation. Check the REVERSE function switch, which, when used, inverts the fader's functioning. When in use, its corresponding LED should be lit (at the bottom of the Vu-meter).

Verify the SHAPE 1 response curve, which should show a smooth transition at its left and a faster transition when turning it to the right.

Verify the CROSSFADER sweep and attenuation. Check the REVERSE function switch, which, when used, inverts the crossfader's functioning.

Verify the SHAPE response curve, which should show a smooth transition at its left and a faster transition when turning it to the right.

By using the adjustable CUT-IN slider, the crossfader's cut-in edge can physically be displaced.

Check the SWITCH/FADE selection switch. When set to SWITCH, the crossfader's transition is done quickly. When FADE is choosed, a smoother transition is obtained.

Apply the input signal to LINE 2 and repeat the verification procedure.

Using the GAIN and TONE controls, adjust the VU-meter's right channel, until the 0dB indicator LED lights up. Verify that all of the Vu-meter LEDS can be lit up, and also that the PEAK function is correct. Change the NORMAL/REVERSE switch to REVERSE and verify that the same happens to the left channel. The REVERSE function indicating LED should light up at the bottom of the Vu-meter.

Verify both PHONO inputs and their RIAA filter response. Without input signal but coupling a pick-up capsule or, if not available, a 600 $\Omega$  load impedance, no mains hum or noise of any kind (blow) should appear on the output. When applying signal simultaneously on LINE no signal should slip through the loaded PHONO channel.

Connect a balanced microphone to the mixer, first check the jack-type input, and the XLR-type MIC input connector afterwards. Check the correct sound quality, without hum or noise of any kind. Verify that using the backside gain control a 20dB damping can be applied. Verify this control's sweep.

Verify the tone controls and LEVEL potentiometer.

Verify the INSERT input/output jack-type connector (connector's tip is output, middle ring is input).

Again apply an input signal (from a CD player) to LINE 1 and check the OUT 1 (BAL) output, whose gain should be 0dB. Verify the MASTER 1 potentiometer sweep. Also check that when the output level is close to 0dB, the CLIP indicator LED lights up.

Verify the OUT 2 (RCA) output and it's +6dB gain. Verify MASTER 2's potentiometer sweep. Check that when the output level is close to +6dB, the CLIP indicator LED lights up.

Verify the MIX input.

Check the SESSION input, the input potentiometer's sweep and its attenuation.

Verify the EFFECT output. When applying signal to LINE and pressing its corresponding EFFECT pushbutton, signal should be carried to the unit's output. Check the EFFECT indicator LED is lit. Verify both channels.

Verify the HEADPHONES output; when the MONITOR selection switch is set to PFL, sliding the potentiometer from one side to another will allow us to hear channel one (PGM1) and two (PGM2); when slided to the center position, both signals are mixed. When the MASTER option is selected, the slider doesn't operate. Verify the HEADPHONES level potentiometer sweep.

Check that when the Vu-meter switch is pressed to select PGM, it displays the stereo output signal.

Verify that the unit's channel routing (L and R) is correct between inputs and outputs.

#### BURNING TEST.

To submit the unit to a burning test, leave it connected to the mains supply and turned on for 24 hours.

#### SAFETY VERIFICATION TESTS.

Preliminary:

Unplug the unit to be tested from the mains outlet.

Short all ground terminals from signal inputs, outputs and other external connectors, except the mains plug's ground.

Turn on the unit's main power switch.

Ground continuity test:

Connect the tester's probes between the mains ground contact and the unit's backside main ground test point. When applying a 10A current, verify that the ground impedance is lower than  $0'1\Omega$ .

Electrical insulation test:

Connect the electrical insulation tester's probes between the mains outlet ground contact and both shorted mains input poles. Adjust the tester's current limit down to 10mA. Apply 1500Vac during 5 seconds.

The unit's insulation should be able to resist this voltage, without generating spurious sparks or a sparkover effect, and the tester may not detect any dysfunction.

**CAUTION:** Do not disconnect nor touch the test probes until the test has finished completely!

#### VERIFICATION USING MUSIC

Verify all signal in- and outputs with music. Verify that all signal controls are functioning correctly, and that a good sound quality is obtained, noise- and distortion-free.

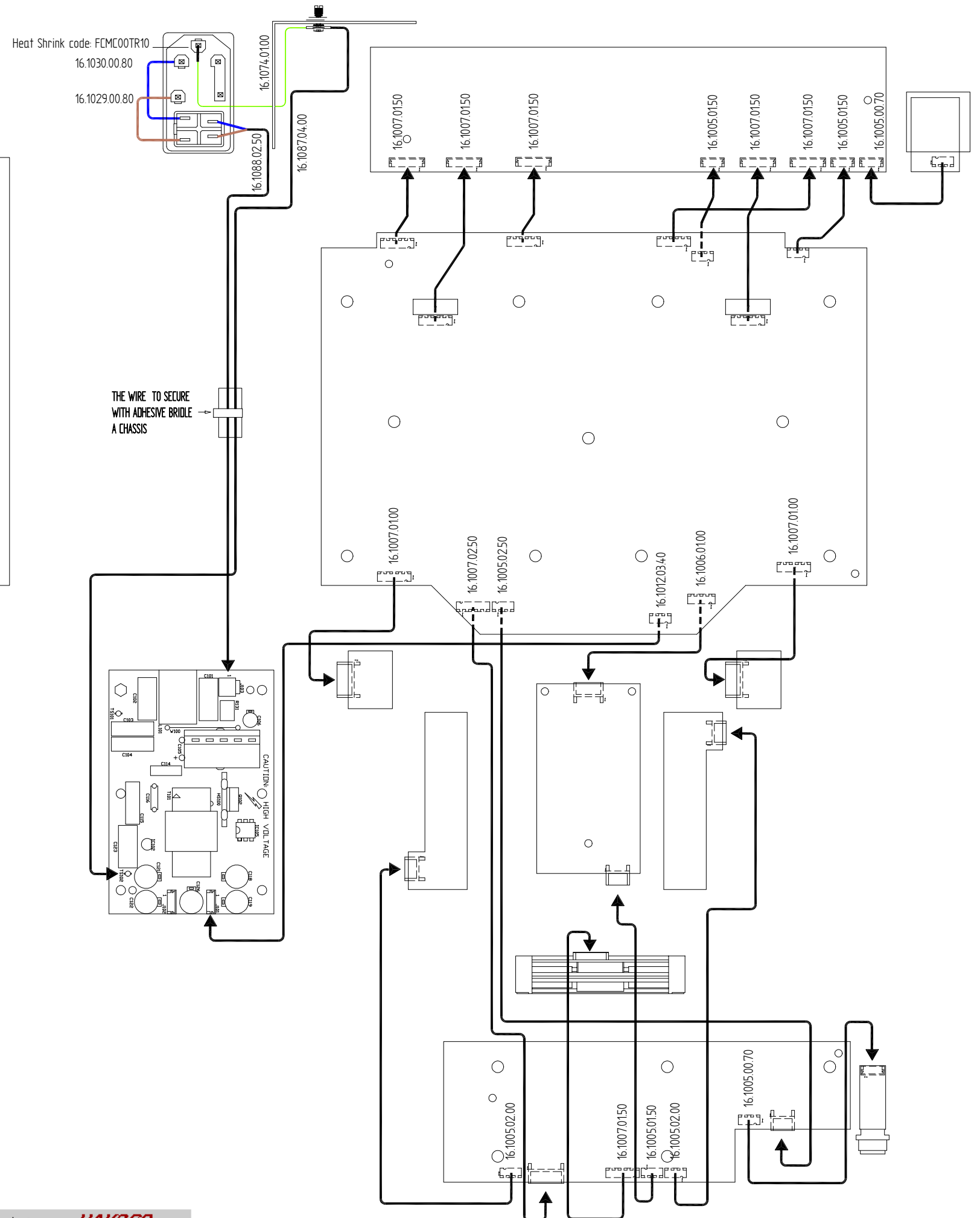
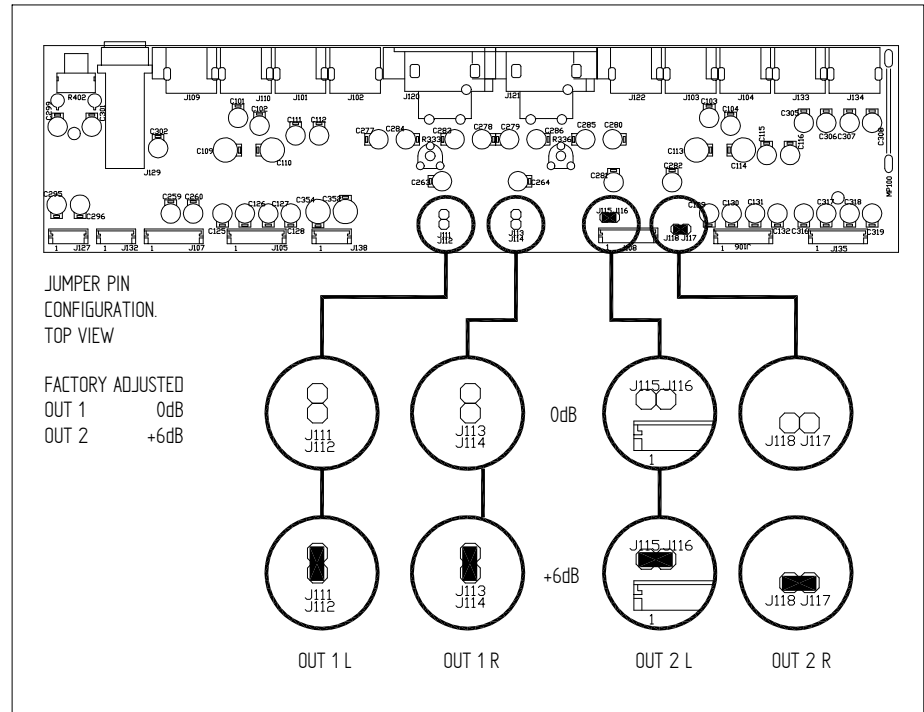
To ensure that all electrical junctions are well-fixed, hit the tested unit against your working table, obviously without damaging its outer presentation; no crispering or annoying background noise should be added to the output signal due to this.

#### QUALITY CONTROL

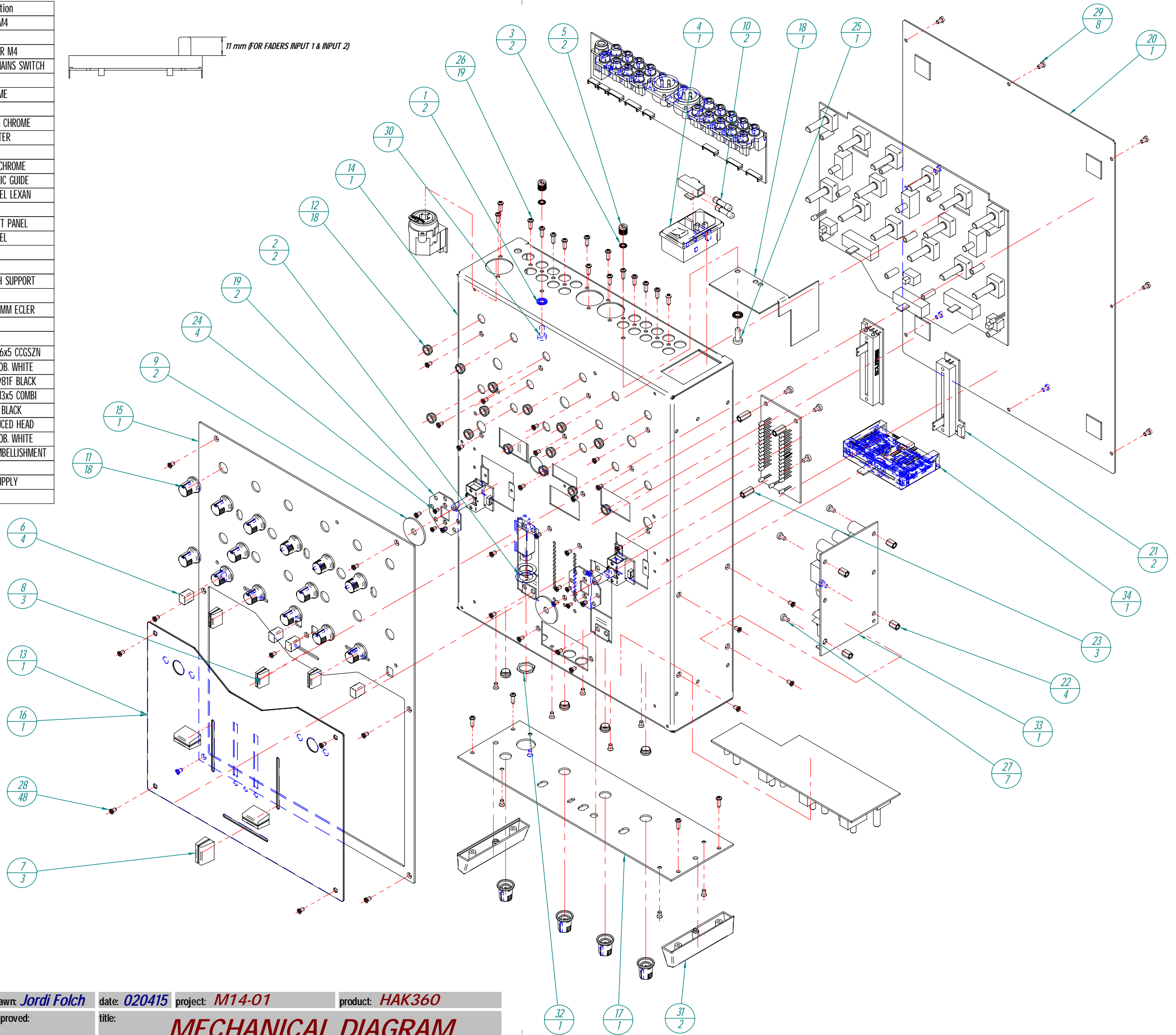
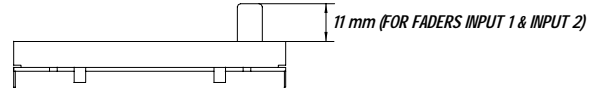
All mechanical parts should be visually revised, in order to detect scratches on the unit's painting; all screws should be on their place, correctly tight and unmarked. Check out the unit's general presentation.

Inputs Sensitivity nom/Impedance	PHONO	-45 dBV/50k $\Omega$
	LINE	-10 dBV/50k $\Omega$
	SESSION	0 dBV/20k $\Omega$
	MICRO (BAL)	-50 ÷ -30dBV/1.5k $\Omega$
	INSERT	0 dBV/100k $\Omega$
	MIX	0 dBV/20k $\Omega$
Outputs Level/Minimum Load	OUT 1 (BAL)	0(+ 6) *dBV 600 $\Omega$ 1 (2)V
	OUT 2	+ 6(0) *dBV 1k $\Omega$ 2 (1)V
	INSERT (MIC)	0dBV/1k $\Omega$
	EFFECT	0dBV/1k $\Omega$
	REC	0dBV/10k $\Omega$
	HEADPHONES	230mW/400 $\Omega$
	Maximum Input level (full gain)	PHONO
LINE		+ 8dBV
MICRO		-10dBV
Input tone adjust	MICRO	$\pm$ 10dB @ 100Hz $\pm$ 10dB @ 10kHz
Frequency Response	PHONO	RIAA $\pm$ 0.5dB
	LINE	10Hz ÷ 30kHz -1dB
	MICRO	10Hz ÷ 30kHz -1dB
THD + N	PHONO	< 0.09%
	LINE	< 0.05%
	MICRO	< 0.15%
CMRR	MICRO	> 75dB 1kHz
Signal Noise Ratio	PHONO	> 85dBV
	LINE	> 100dBV
	MICRO	> 75dBV
Tone control	BASS	-30/ + 10dB
	MID	-25/ + 10dB
	TREBLE	-30/ + 10dB
Kill Filters (cut frequency at -6dB) Slope 12dB/oct in all the cases	HIGH	6.5kHz
	LOW	200Hz
	MID	6.5kHz & 200Hz
Mains	VOLTAGE	90-264 VAC
Power consumption	FREQUENCY	47-63 Hz
		22 VA
Dimensions	Panel	265x360mm
Weight	Depth	80mm
		4.3kg.

\*Internally selectable



N°	Qty	ECLER Code	Description
1	2	FCARDE0400	TOOTHED WASHER M4
2	2	FCARM18120	WASHER 18X12X0,5
3	2	FCARS40000	SEGMENTED WASHER M4
4	1	FCBASRE400	MAINS SOCKET W/MAINS SWITCH
5	2	FCBOR00300	GROUND TERMINAL
6	4	FCBOTCO0BL	BUTTON 7X9 CHROME
7	3	FCBOTDO900	HAK FADER KNOB
8	3	FCBOTDO910	LITTLE FADER KNOB CHROME
9	2	FCDISC6260	CIRCULAR DUST FILTER
10	2	FCFUS50110	FUSE 500mA
11	18	GENERIC	ROTARY KNOB D15 CHROME
12	18	FCINSPLA20	ROTARY POT. PLASTIC GUIDE
13	1	FCLXHAK360	FADERS FRONT PANEL LEXAN
14	1	FCMEC02698	BASE CHASSIS
15	1	FCMEC02699	ROTARY POTS FRONT PANEL
16	1	FCMEC02700	FADERS FRONT PANEL
17	1	FCMEC02701	FRONTAL PANEL
18	1	FCMEC02726	SHIELDING PLATE
19	2	FCMECHK010	ORIENTABLE SWITCH SUPPORT
20	1	FCMECS050	BOTTOM COVER
21	2	FCPD220025	XFADER 2X100K 45MM ECLER
22	4	FCSEP30800	SPACER M3x8
23	3	FCSEP31200	SPACER M3x12
24	4	FCT2002605	SCREW DIN965 M2,6x5 CCGSZN
25	1	FCT3804012	SCREW M4x12 TRILOB. WHITE
26	19	FCT4002909	SCREW 2,9x9,5 D7981F BLACK
27	7	FCT8030050	SCREW DIN 7985 M3x5 COMBI
28	48	FCT8030055	SCREW D965 M3x5 BLACK
29	8	FCT8503005	SCREW M3x5 REDUCED HEAD
30	1	FCT8504110	SCREW M4x10 TRILOB. WHITE
31	2	FCTOPPL030	PLASTIC CORNER EMBELLISHMENT
32	1	FCTUE01200	NUT M12
33	1	GENERIC	FONT30C POWER SUPPLY
34	1	GENERIC	ETERNAL XFADER



N°	Qty	ECLER Code	Description
1	2	FCBOL0010000	BAG 60x80
2	1	FCBOL0020000	PLASTIC BAG 120x180
3	1	FCBOLS010000	STANDARD BAG 43x60
4	1	FCCAJSTA0500	PACKING CARDBOARD BOX
5	2	FCCANT117000	INTERIOR REINFORCEMENT
6	1	FCCONX017500	MAINS CABLE 3x1
7	1	FLETI0951140	PRODUCT LABEL PACK (ONE FOR EACH UNIT)
8	1	FCETIECL1000	ECLER STICKER 300x50
9	1	FCFUNMAN0000	USER MANUAL BAG
10	1	FCMANHAK3600	USER MANUAL HAK360
11	5	FCMJ00010000	MINI JUMPER EDJ120
12	4	FCPIE1125500	RUBBER FOOT
13	1	FCTARJG00000	WARRANTY CARD

