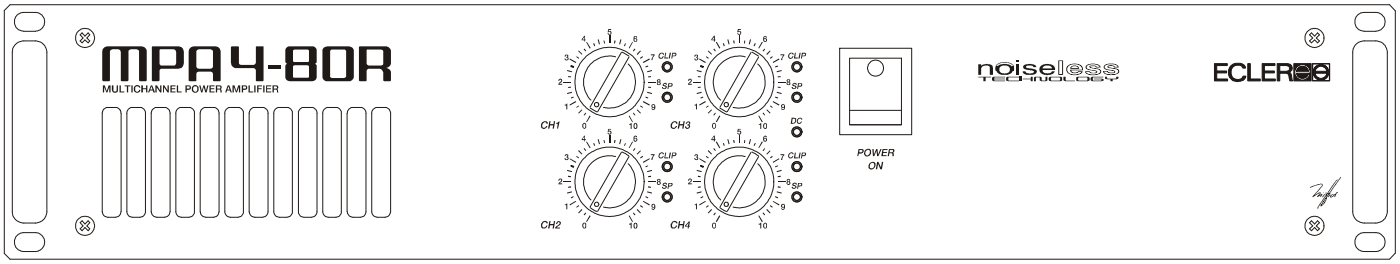
MPA4-80R

SERVICE MANUAL

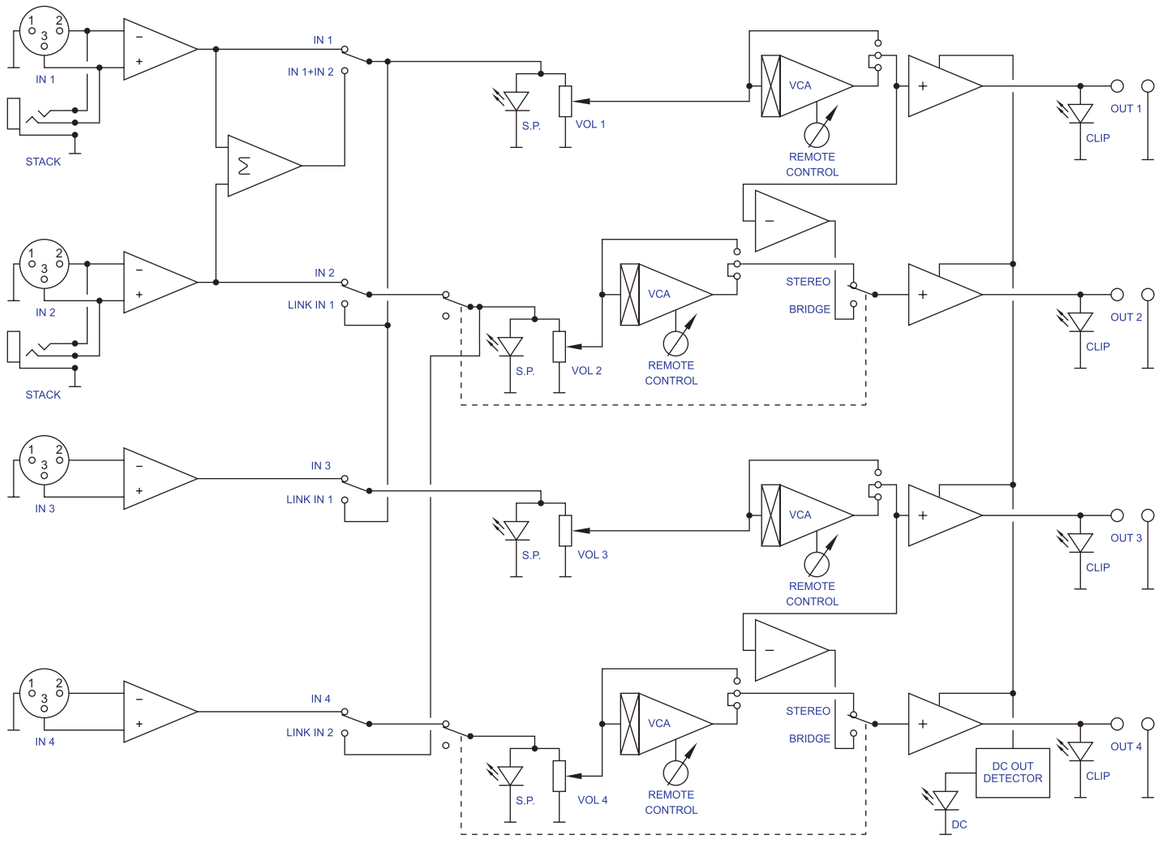


ECLER

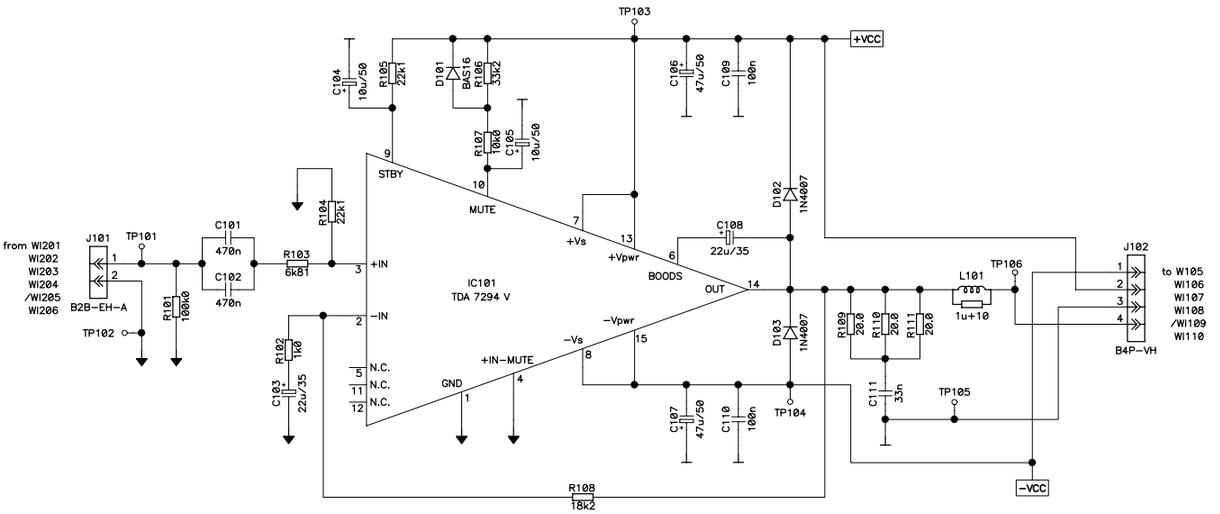
AUDIO CREATIVE POWER

SERVICE MANUAL MPA4-80R

INDEX

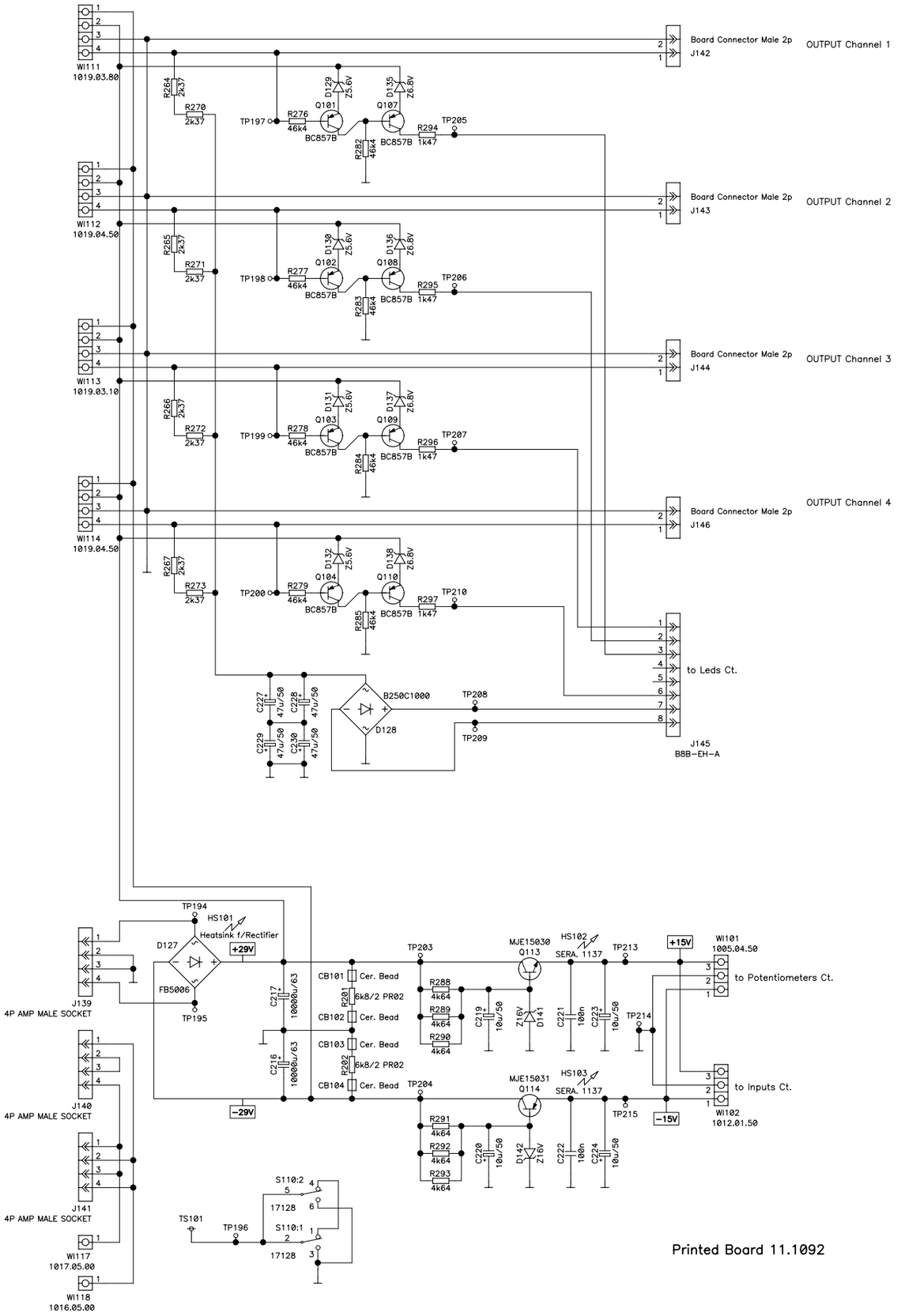


ECLEREE	drawn: J. Colomines	date: 060613	project: EP04-06	product: MPA4-80R
number: 10.0744 version: 01.00	approved: A.S.	title: BLOCK DIAGRAM		

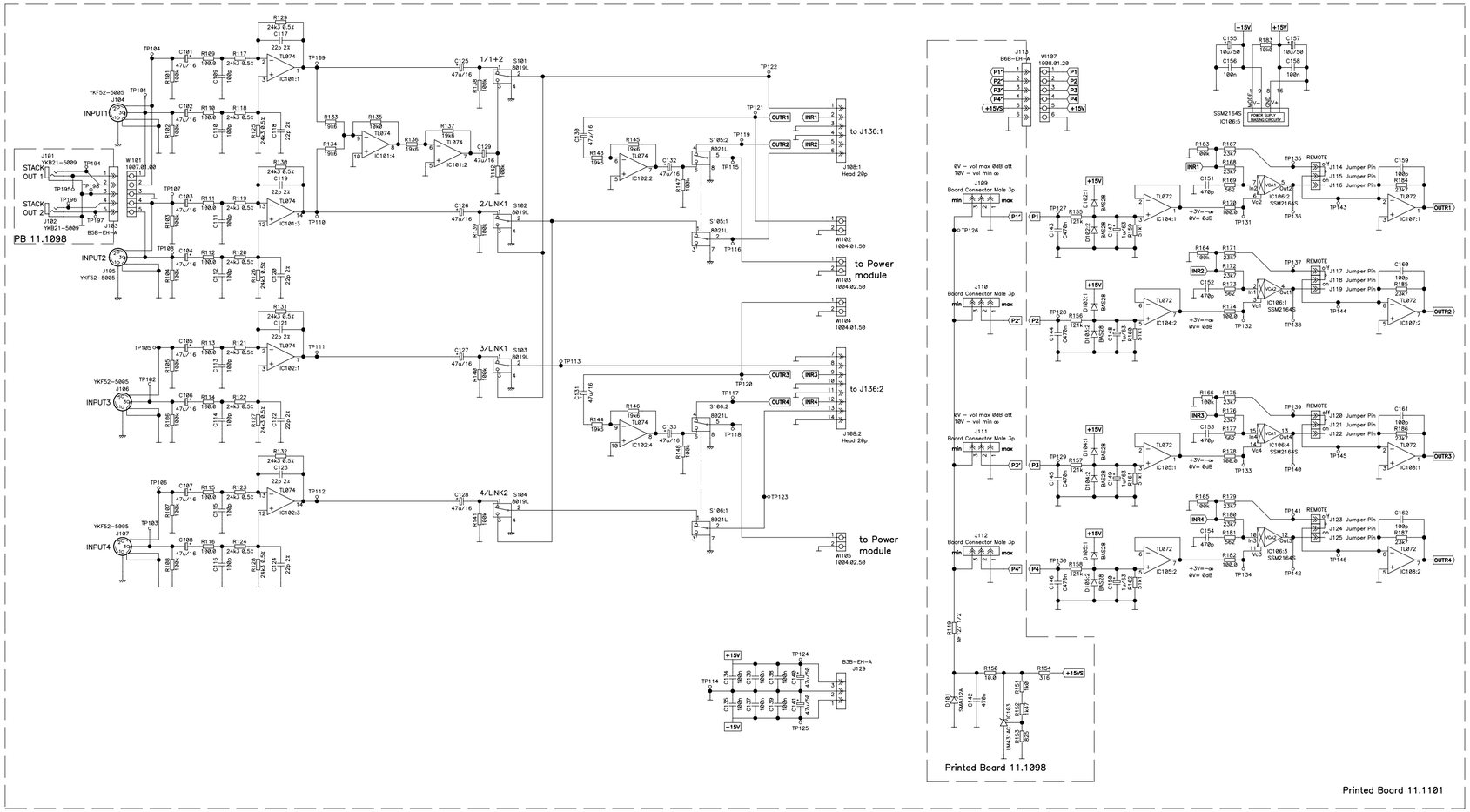


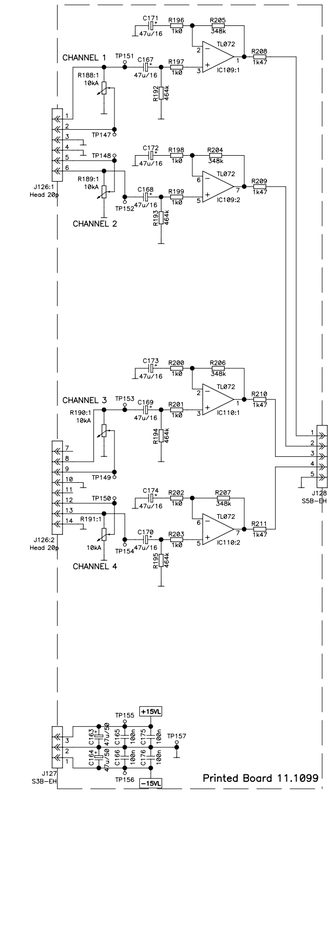
11.0761-01.02

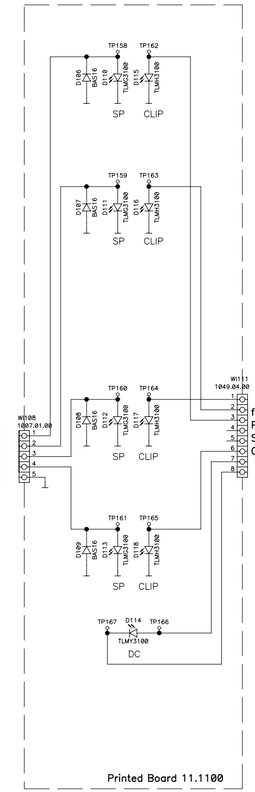
ECLEREO LABORATORIO DE ELECTRO-ACUSTICA S.A.	drawn by: M. Amoros	date: 000221	approved by: Angel Sanuy
	title: EP01-99 Power Amp.		
number: 10.0482	version: 01.02		



ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.		drawn by: M. Amoros	date: 061124	approved: Angel Sanuy
		project n: EP04-06	title: Power Supply + Outs	
		product n: MPA4-80 R		
number: 10.0769	version: 01.01	page: 1 of 1		

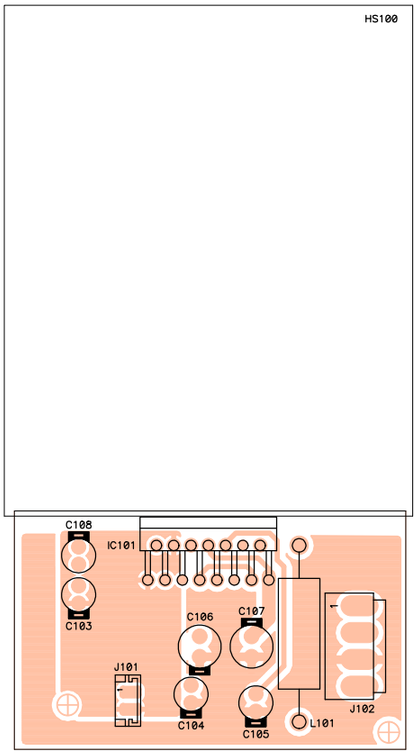




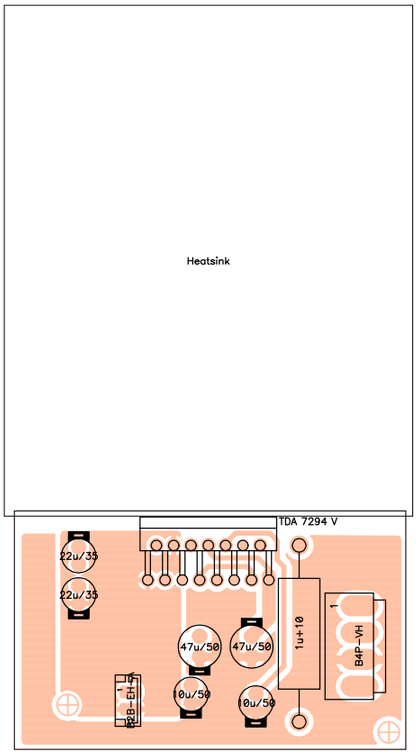


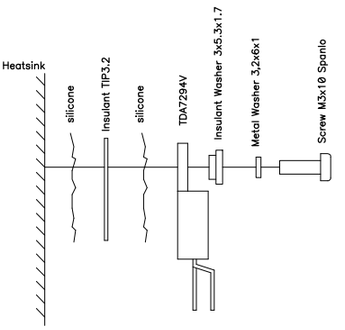
Printed Board 11.1102

ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.	drawn by: M. Amoros	date: 061124	approved: Angel Sanuy
	project n: EP04-06	title: Inputs&Pottmtr&Leds	
	product n: MPA4-80 R		
number: 10.0770	version: 01.01	page: 1 of 1	



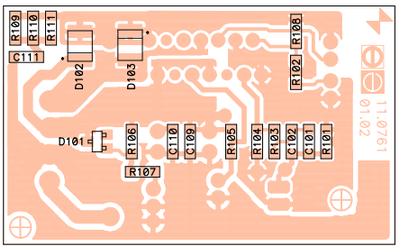
ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.	related to: circuit no: 11.0761-01.02 schema no: 10.0482-01.02 insertion file no: 81.0006-01.01		side: Component view: Reference
	drawn by: M. Amoros	date: 000209	approved by: Angel Sanuy
number: 33.0377 / version: 01.02	title: EP01-99 Power Amp.		



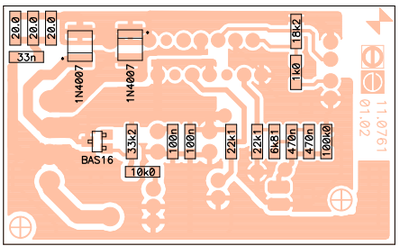


NOTE: Insert TDA7294V completely and perpendicular to print board

ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.	related to: circuit no: 11.0761-01.02 schema no: 10.0482-01.02 insertion file no: 81.0006-01.01		side: Component view: Value
	drawn by: M. Amoros	date: 000209	approved by: Angel Sanuy
number: 33.0378 / version: 01.02	title: EP01-99 Power Amp.		



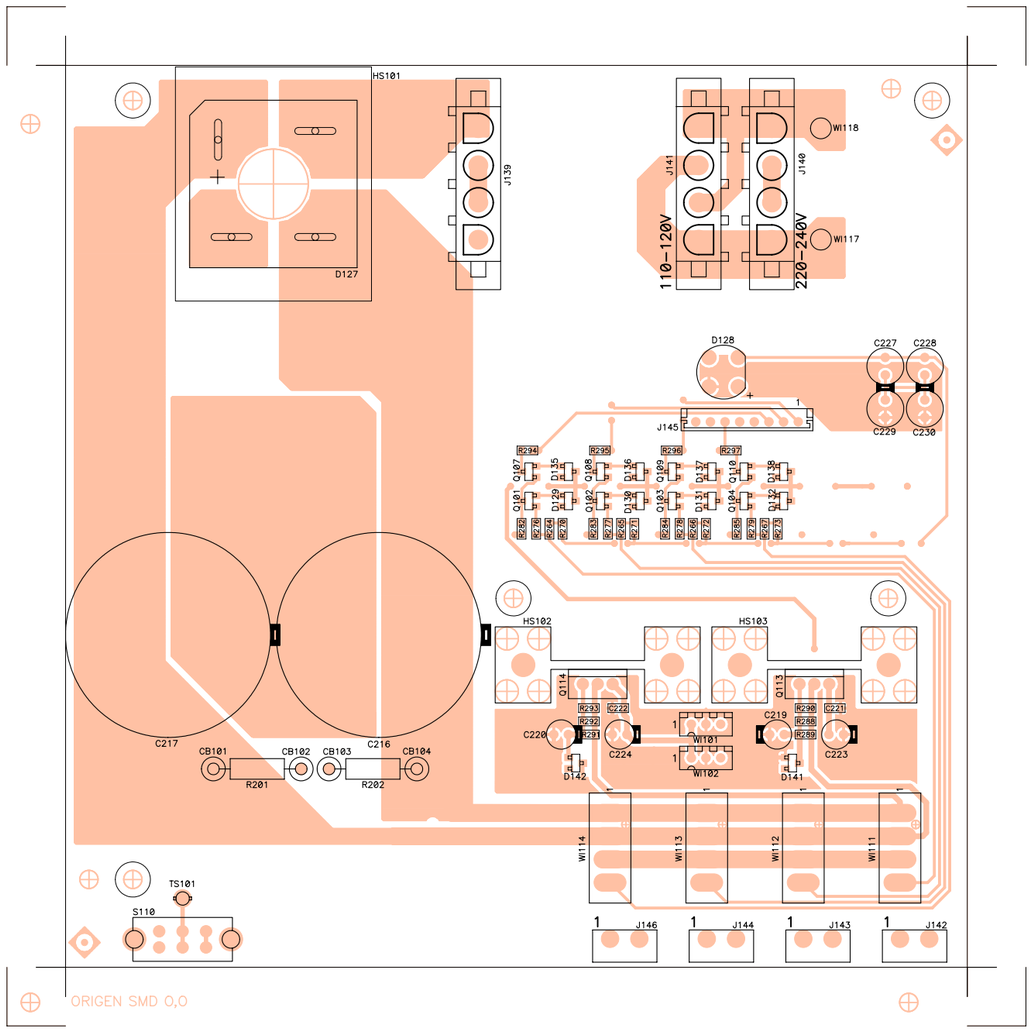
ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.	related to: circuit no: 11.0761-01.02 schema no: 10.0482-01.02 insertion file no: 81.0006-01.01		side: Solder view: Reference
	drawn by: M. Amoros	date: 000209	approved by: Angel Sanuy
number: 33.0379 / version: 01.02	title: EP01-99 Power Amp.		



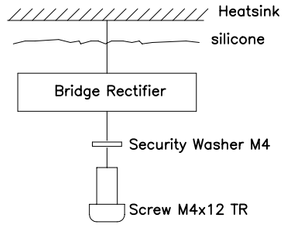
ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.	related to: circuit no: 11.0761-01.02 schema no: 10.0482-01.02 insertion file no: 81.0006-01.01		side: Solder view: Value
	drawn by: M. Amoros	date: 000209	approved by: Angel Sanuy
number: 33.0380 / version: 01.02	title: EP01-99 Power Amp.		

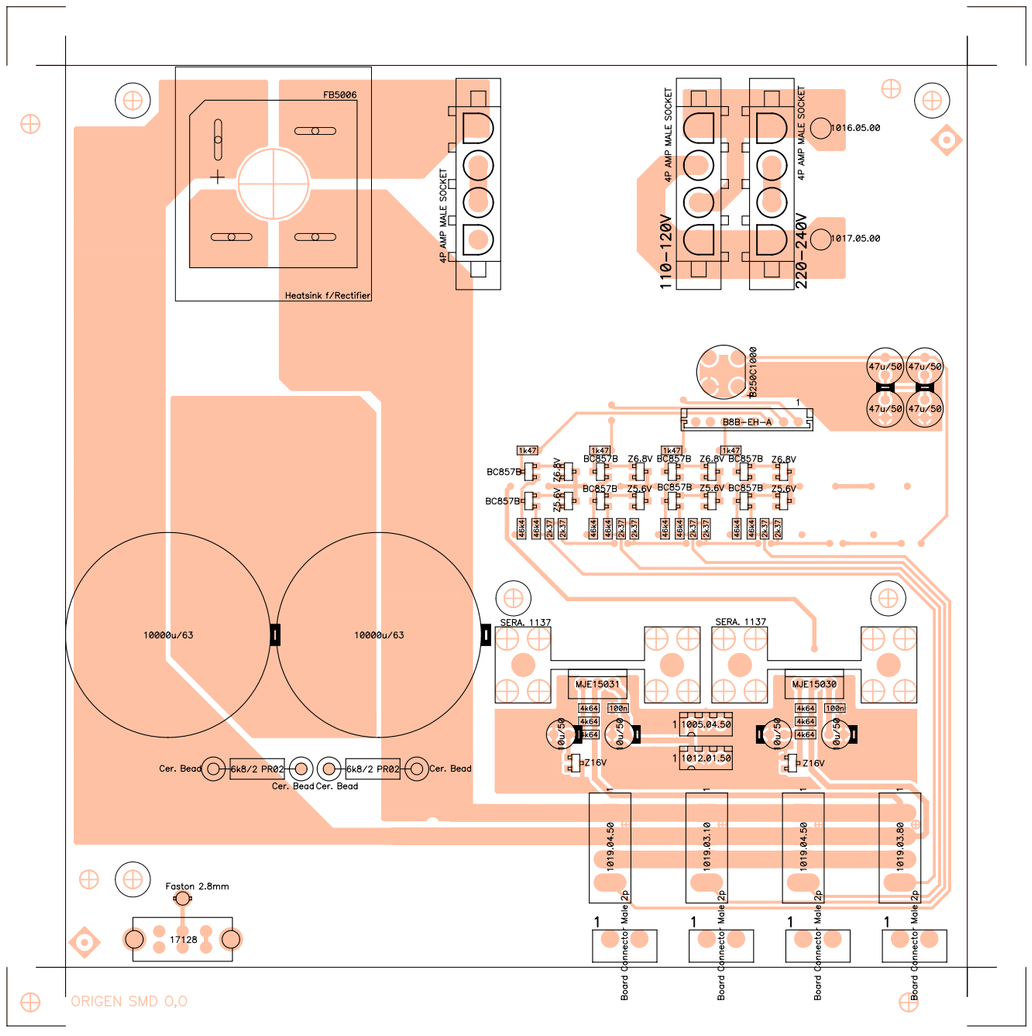
PARTS LIST: PRINTED CIRCUIT 11.0761.01.02

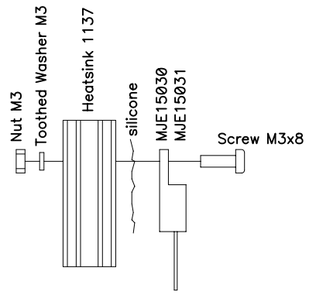
Code	Description	Reference
FCXCN4470000	470n	C101
FCXCN4470000	470n	C102
FCCE20022000	22u/35	C103
FCCE25010000	10u/50	C104
FCCE25010000	10u/50	C105
FCCE25047000	47u/50	C106
FCCE25047000	47u/50	C107
FCCE20022000	22u/35	C108
FCXCN4100000	100n	C109
FCXCN4100000	100n	C110
FCXCN4033000	33n	C111
FCCIMPA76100	11.0761-01.02	CI101
FCXDDBAS1600	BAS16	D101
FCXDD4007000	1N4007	D102
FCXDD4007000	1N4007	D103
FCRAD0100000	Heatsink	HS100
FCIC72940000	TDA 7294 V	IC101
FCMICTIP3200	Insulant TIP3.2	IN100
FCCTM0002000	B2B-EH-A	J101
FCCTJ1004000	B4P-VH	J102
FCIND0020000	1u+10	L101
FCXR15100000	100k0	R101
FCXR13100000	1k0	R102
FCXR13681000	6k81	R103
FCXR14221000	22k1	R104
FCXR14221000	22k1	R105
FCXR14332000	33k2	R106
FCXR14100000	10k0	R107
FCXR14182000	18k2	R108
FCXR11200000	20.0	R109
FCXR11200000	20.0	R110
FCXR11200000	20.0	R111
FCT803010000	Screw M3x10 SPA	SC100
FCARM3201000	Metal Washer 3.	WA100
FCARAT000000	Washer insulant	WA101



ECLEREE LABORATORIO DE ELECTRO-ACUSTICA S.A.	related to: circuit no: 11.1092-02.00 schema no: 10.0769-01.01 insertion file no: 81.0116-01.00	side: Component view: Reference	
number: 33.0997	version: 01.01	project n: EP04-06 product n: MPA4-80 R	title: Power Supply + Outputs
drawn by: M. Amoros	date: 061124	approved: Angel Sanuy	







IMPORTANT NOTE: Apply Clear Silicone Sealant
between the 10000u/63V electrolitic capacitors

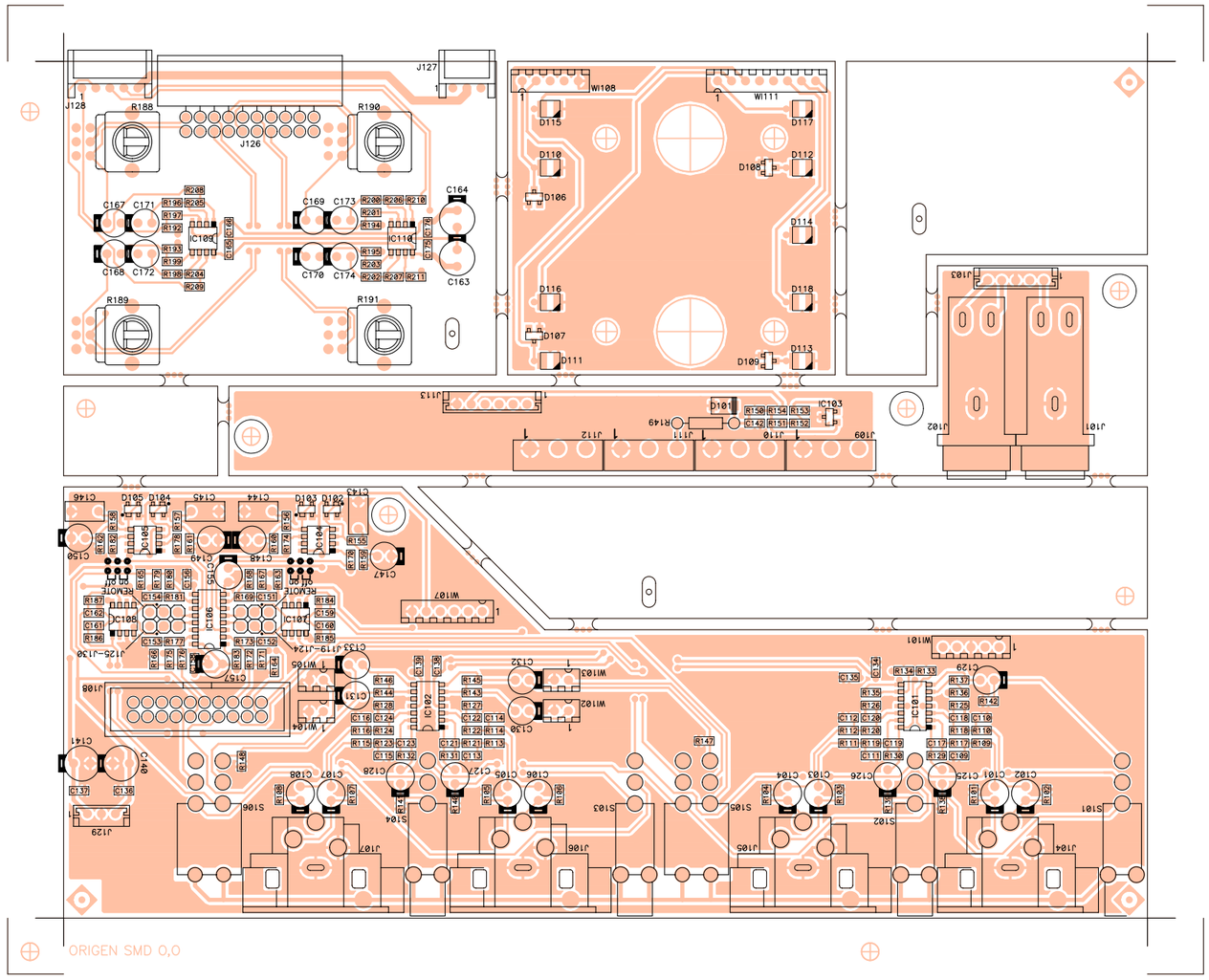
ECLEREE LABORATORIO DE ELECTRO-ACUSTICA S.A.	related to: circuit no: 11.1092-02.00 schema no: 10.0769-01.01 insertion file no: 81.0116-01.00	side: Component view: Value	
number: 33.0998	version: 01.01	project n: EP04-06	title: Power Supply + Outputs
drawn by: M. Amoros	date: 061124	product n: MPA4-80 R	
		approved: Angel Sanuy	

PARTS LIST: PRINTED CIRCUIT 11.1092.02.00

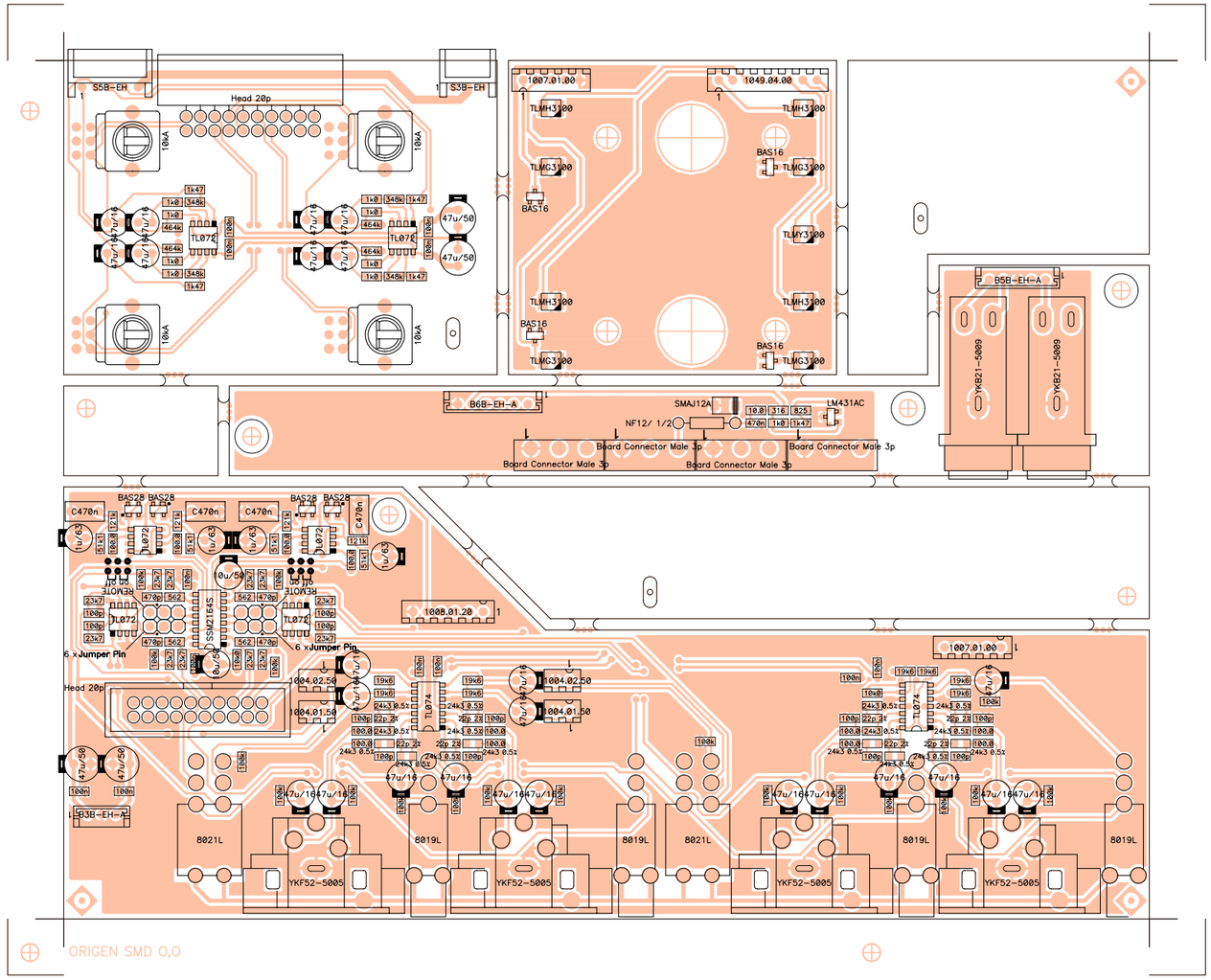
Code	Description	Reference
FCCE32100000	10000u/63	C216
FCCE32100000	10000u/63	C217
FCCE25010000	10u/50	C219
FCCE25010000	10u/50	C220
FCXCD4100000	100n	C221
FCXCD4100000	100n	C222
FCCE25010000	10u/50	C223
FCCE25010000	10u/50	C224
FCCE25047000	47u/50	C227
FCCE25047000	47u/50	C228
FCCE25047000	47u/50	C229
FCCE25047000	47u/50	C230
FCPERL255000	Cer. Bead	CB101
FCPERL255000	Cer. Bead	CB102
FCPERL255000	Cer. Bead	CB103
FCPERL255000	Cer. Bead	CB104
FCCI01092000	Printed Board 11.1092	CI101
FCREC5006000	FB5006	D127
FCREC2510000	B250C1000	D128
FCXZ00005600	Z5.6V	D129
FCXZ00005600	Z5.6V	D130
FCXZ00005600	Z5.6V	D131
FCXZ00005600	Z5.6V	D132
FCXZ00006800	Z6.8V	D135
FCXZ00006800	Z6.8V	D136
FCXZ00006800	Z6.8V	D137
FCXZ00006800	Z6.8V	D138
FCXZ00016000	Z16V	D141
FCXZ00016000	Z16V	D142
FCRAD1151500	Heatsink f/Rectifier	HS101
FCRAD1263600	SERA. 1137	HS102
FCRAD1263600	SERA. 1137	HS103
FCCTAMP04000	4P AMP MALE SOCKET	J139
FCCTAMP04000	4P AMP MALE SOCKET	J140
FCCTAMP04000	4P AMP MALE SOCKET	J141
FCREG1016000	Board Connector Male 2p	J142
FCREG1016000	Board Connector Male 2p	J143
FCREG1016000	Board Connector Male 2p	J144
FCCTM0008000	B8B-EH-A	J145
FCREG1016000	Board Connector Male 2p	J146
FCTUE0030000	Nut M3	NV101
FCTUE0030000	Nut M3	NV102
FCXTT0857000	BC857B	Q101
FCXTT0857000	BC857B	Q102
FCXTT0857000	BC857B	Q103
FCXTT0857000	BC857B	Q104
FCXTT0857000	BC857B	Q107
FCXTT0857000	BC857B	Q108
FCXTT0857000	BC857B	Q109
FCXTT0857000	BC857B	Q110
FCTR15030000	MJE15030	Q113
FCTR15031000	MJE15031	Q114
FCRP54680000	6k8/2 PR02	R201
FCRP54680000	6k8/2 PR02	R202
FCXR53237000	2k37	R264
FCXR53237000	2k37	R265

PARTS LIST: PRINTED CIRCUIT 11.1092.02.00

Code	Description	Reference
FCXR53237000	2k37	R266
FCXR53237000	2k37	R267
FCXR53237000	2k37	R270
FCXR53237000	2k37	R271
FCXR53237000	2k37	R272
FCXR53237000	2k37	R273
FCXR54464000	46k4	R276
FCXR54464000	46k4	R277
FCXR54464000	46k4	R278
FCXR54464000	46k4	R279
FCXR54464000	46k4	R282
FCXR54464000	46k4	R283
FCXR54464000	46k4	R284
FCXR54464000	46k4	R285
FCXR53464000	4k64	R288
FCXR53464000	4k64	R289
FCXR53464000	4k64	R290
FCXR53464000	4k64	R291
FCXR53464000	4k64	R292
FCXR53464000	4k64	R293
FCXR53147000	1k47	R294
FCXR53147000	1k47	R295
FCXR53147000	1k47	R296
FCXR53147000	1k47	R297
FCINTD400000	17128	S110
FCT750300800	Screw M3x8	SC101
FCT750300800	Screw M3x8	SC102
FCT380401200	Screw M4x12 TR	SC103
FCTERMF28000	Faston 2.8mm	TS101
FCARDE030000	Toothed Washer f/M3	WA101
FCARDE030000	Toothed Washer f/M3	WA102
FCARDE040000	Toothed Washer f/M4	WA103
FC4I00545000	1005.04.50	WI101
FC0C01215000	1012.01.50	WI102
FC0E01938000	1019.03.80	WI111
FC0E01945000	1019.04.50	WI112
FC0E01931000	1019.03.10	WI113
FC0E01945000	1019.04.50	WI114
FC2F01750000	1017.05.00	WI117
FC2F01650000	1016.05.00	WI118



ECLER LABORATORIO DE ELECTRO-ACUSTICA S.A.	related to: circuit no: 11.1102-02.00 schema no: 10.0770-01.01 insertion file no: 81.0117-01.00	side: Component view: Reference	
number: 33.0999	version: 01.01	project n: EP04-06	title: Inputs&Pottmtr&Leds
drawn by: M. Amoros	date: 061124	product n: MPA4-80 R	
		approved: Angel Sanuy	



IMPORTANT NOTE: Apply Clear Silicone Sealant in all header conectors

ECLEREE LABORATORIO DE ELECTRO-ACUSTICA S.A.	related to: circuit no: 11.1102-02.00 schema no: 10.0770-01.01 insertion file no: 81.0117-01.00	side: Component view: Value	
number: 33.1000	version: 01.01	project n: EP04-06	title: Inputs&Pottmtr&Leds
drawn by: M. Amoros	date: 061124	product n: MPA4-80 R	
		approved: Angel Sanuy	

PARTS LIST: PRINTED CIRCUIT 11.1102.02.00

Code	Description	Reference
FCCE10000000	47u/16	C101
FCCE10000000	47u/16	C102
FCCE10000000	47u/16	C103
FCCE10000000	47u/16	C104
FCCE10000000	47u/16	C105
FCCE10000000	47u/16	C106
FCCE10000000	47u/16	C107
FCCE10000000	47u/16	C108
FCXCD2100000	100p	C109
FCXCD2100000	100p	C110
FCXCD2100000	100p	C111
FCXCD2100000	100p	C112
FCXCD2100000	100p	C113
FCXCD2100000	100p	C114
FCXCD2100000	100p	C115
FCXCD2100000	100p	C116
FCXCN1220100	22p 2%	C117
FCXCN1220100	22p 2%	C118
FCXCN1220100	22p 2%	C119
FCXCN1220100	22p 2%	C120
FCXCN1220100	22p 2%	C121
FCXCN1220100	22p 2%	C122
FCXCN1220100	22p 2%	C123
FCXCN1220100	22p 2%	C124
FCCE10000000	47u/16	C125
FCCE10000000	47u/16	C126
FCCE10000000	47u/16	C127
FCCE10000000	47u/16	C128
FCCE10000000	47u/16	C129
FCCE10000000	47u/16	C130
FCCE10000000	47u/16	C131
FCCE10000000	47u/16	C132
FCCE10000000	47u/16	C133
FCXCD4100000	100n	C134
FCXCD4100000	100n	C135
FCXCD4100000	100n	C136
FCXCD4100000	100n	C137
FCXCD4100000	100n	C138
FCXCD4100000	100n	C139
FCCE25047000	47u/50	C140
FCCE25047000	47u/50	C141
FCXCD4470000	470n	C142
FCCDK1470000	C470n	C143
FCCDK1470000	C470n	C144
FCCDK1470000	C470n	C145
FCCDK1470000	C470n	C146
FCCE30001000	1u/63	C147
FCCE30001000	1u/63	C148
FCCE30001000	1u/63	C149
FCCE30001000	1u/63	C150
FCXCD2470000	470p	C151
FCXCD2470000	470p	C152
FCXCD2470000	470p	C153
FCXCD2470000	470p	C154
FCCE25010000	10u/50	C155
FCXCD4100000	100n	C156

PARTS LIST: PRINTED CIRCUIT 11.1102.02.00

Code	Description	Reference
FCCE25010000	10u/50	C157
FCXCD4100000	100n	C158
FCXCD2100000	100p	C159
FCXCD2100000	100p	C160
FCXCD2100000	100p	C161
FCXCD2100000	100p	C162
FCCE25047000	47u/50	C163
FCCE25047000	47u/50	C164
FCXCD4100000	100n	C165
FCXCD4100000	100n	C166
FCCE10000000	47u/16	C167
FCCE10000000	47u/16	C168
FCCE10000000	47u/16	C169
FCCE10000000	47u/16	C170
FCCE10000000	47u/16	C171
FCCE10000000	47u/16	C172
FCCE10000000	47u/16	C173
FCCE10000000	47u/16	C174
FCXCD4100000	100n	C175
FCXCD4100000	100n	C176
FCCI01102000	Printed Board 11.1102	CI101
FCDDKE120000	SMAJ12A	D101
FCXDDBAS2800	BAS28	D102
FCXDDBAS2800	BAS28	D103
FCXDDBAS2800	BAS28	D104
FCXDDBAS2800	BAS28	D105
FCXDDBAS1600	BAS16	D106
FCXDDBAS1600	BAS16	D107
FCXDDBAS1600	BAS16	D108
FCXDDBAS1600	BAS16	D109
FCLEDSMD3000	TLMG3100	D110
FCLEDSMD3000	TLMG3100	D111
FCLEDSMD3000	TLMG3100	D112
FCLEDSMD3000	TLMG3100	D113
FCLEDSMD2500	TLMY3100	D114
FCLEDSMD2000	TLMH3100	D115
FCLEDSMD2000	TLMH3100	D116
FCLEDSMD2000	TLMH3100	D117
FCLEDSMD2000	TLMH3100	D118
FCIC07401000	TL074	IC101
FCIC07401000	TL074	IC102
FCIC43101000	LM431AC	IC103
FCIC07201000	TL072	IC104
FCIC07201000	TL072	IC105
FCIC21641000	SSM2164S	IC106
FCIC07201000	TL072	IC107
FCIC07201000	TL072	IC108
FCIC07201000	TL072	IC109
FCIC07201000	TL072	IC110
FCBASJ020000	YKB21-5009	J101
FCBASJ020000	YKB21-5009	J102
FCCTM0005000	B5B-EH-A	J103
FCBASX090000	YKF52-5005	J104
FCBASX090000	YKF52-5005	J105
FCBASX090000	YKF52-5005	J106
FCBASX090000	YKF52-5005	J107

PARTS LIST: PRINTED CIRCUIT 11.1102.02.00

Code	Description	Reference
FCHEA1002000	Head 20p	J108
FCREG1017000	Board Connector Male 3p	J109
FCREG1017000	Board Connector Male 3p	J110
FCREG1017000	Board Connector Male 3p	J111
FCREG1017000	Board Connector Male 3p	J112
FCCTM0006000	B6B-EH-A	J113
FCTERM010000	Jumper Pin	J114
FCTERM010000	Jumper Pin	J115
FCTERM010000	Jumper Pin	J116
FCTERM010000	Jumper Pin	J117
FCTERM010000	Jumper Pin	J118
FCTERM010000	Jumper Pin	J119
FCTERM010000	Jumper Pin	J120
FCTERM010000	Jumper Pin	J121
FCTERM010000	Jumper Pin	J122
FCTERM010000	Jumper Pin	J123
FCTERM010000	Jumper Pin	J124
FCTERM010000	Jumper Pin	J125
FCHEA0020000	Head 20p	J126
FCCTM1003000	S3B-EH	J127
FCCTM1005000	S5B-EH	J128
FCCTM0003000	B3B-EH-A	J129
FCMJ00010000	Jumper	MJ101
FCMJ00010000	Jumper	MJ102
FCMJ00010000	Jumper	MJ103
FCMJ00010000	Jumper	MJ104
FCXR55100000	100k	R101
FCXR55100000	100k	R102
FCXR55100000	100k	R103
FCXR55100000	100k	R104
FCXR55100000	100k	R105
FCXR55100000	100k	R106
FCXR55100000	100k	R107
FCXR55100000	100k	R108
FCXR52100000	100.0	R109
FCXR52100000	100.0	R110
FCXR52100000	100.0	R111
FCXR52100000	100.0	R112
FCXR52100000	100.0	R113
FCXR52100000	100.0	R114
FCXR52100000	100.0	R115
FCXR52100000	100.0	R116
FCXR64243000	24k3 0.5%	R117
FCXR64243000	24k3 0.5%	R118
FCXR64243000	24k3 0.5%	R119
FCXR64243000	24k3 0.5%	R120
FCXR64243000	24k3 0.5%	R121
FCXR64243000	24k3 0.5%	R122
FCXR64243000	24k3 0.5%	R123
FCXR64243000	24k3 0.5%	R124
FCXR64243000	24k3 0.5%	R125
FCXR64243000	24k3 0.5%	R126
FCXR64243000	24k3 0.5%	R127
FCXR64243000	24k3 0.5%	R128
FCXR64243000	24k3 0.5%	R129
FCXR64243000	24k3 0.5%	R130

PARTS LIST: PRINTED CIRCUIT 11.1102.02.00

Code	Description	Reference
FCXR64243000	24k3 0.5%	R131
FCXR64243000	24k3 0.5%	R132
FCXR54196000	19k6	R133
FCXR54196000	19k6	R134
FCXR54100000	10k0	R135
FCXR54196000	19k6	R136
FCXR54196000	19k6	R137
FCXR55100000	100k	R138
FCXR55100000	100k	R139
FCXR55100000	100k	R140
FCXR55100000	100k	R141
FCXR55100000	100k	R142
FCXR54196000	19k6	R143
FCXR54196000	19k6	R144
FCXR54196000	19k6	R145
FCXR54196000	19k6	R146
FCXR55100000	100k	R147
FCXR55100000	100k	R148
FCRF22120000	NF12/ 1/2	R149
FCXR51100000	10.0	R150
FCXR53100000	1k0	R151
FCXR53147000	1k47	R152
FCXR52825000	825	R153
FCXR52316000	316	R154
FCXR55121000	121k	R155
FCXR55121000	121k	R156
FCXR55121000	121k	R157
FCXR55121000	121k	R158
FCXR54511000	51k1	R159
FCXR54511000	51k1	R160
FCXR54511000	51k1	R161
FCXR54511000	51k1	R162
FCXR55100000	100k	R163
FCXR55100000	100k	R164
FCXR55100000	100k	R165
FCXR55100000	100k	R166
FCXR54237000	23k7	R167
FCXR54237000	23k7	R168
FCXR52562000	562	R169
FCXR52100000	100.0	R170
FCXR54237000	23k7	R171
FCXR54237000	23k7	R172
FCXR52562000	562	R173
FCXR52100000	100.0	R174
FCXR54237000	23k7	R175
FCXR54237000	23k7	R176
FCXR52562000	562	R177
FCXR52100000	100.0	R178
FCXR54237000	23k7	R179
FCXR54237000	23k7	R180
FCXR52562000	562	R181
FCXR52100000	100.0	R182
FCXR54100000	10k0	R183
FCXR54237000	23k7	R184
FCXR54237000	23k7	R185
FCXR54237000	23k7	R186

PARTS LIST: PRINTED CIRCUIT 11.1102.02.00

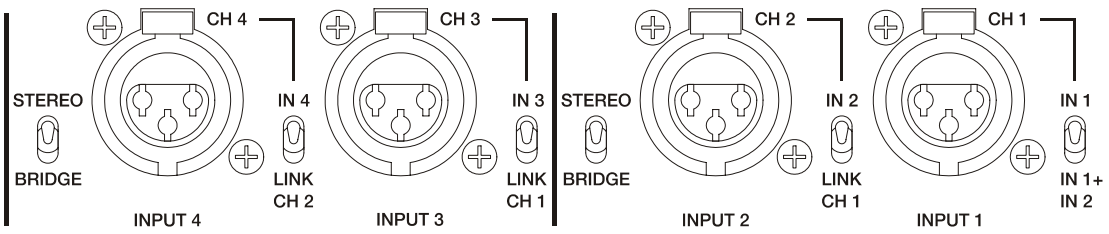
Code	Description	Reference
FCXR54237000	23k7	R187
FCPR21006000	10kA	R188
FCPR21006000	10kA	R189
FCPR21006000	10kA	R190
FCPR21006000	10kA	R191
FCXR55464000	464k	R192
FCXR55464000	464k	R193
FCXR55464000	464k	R194
FCXR55464000	464k	R195
FCXR53100000	1k0	R196
FCXR53100000	1k0	R197
FCXR53100000	1k0	R198
FCXR53100000	1k0	R199
FCXR53100000	1k0	R200
FCXR53100000	1k0	R201
FCXR53100000	1k0	R202
FCXR53100000	1k0	R203
FCXR55348000	348k	R204
FCXR55348000	348k	R205
FCXR55348000	348k	R206
FCXR55348000	348k	R207
FCXR53147000	1k47	R208
FCXR53147000	1k47	R209
FCXR53147000	1k47	R210
FCXR53147000	1k47	R211
FCINTAP13000	8019L	S101
FCINTAP13000	8019L	S102
FCINTAP13000	8019L	S103
FCINTAP13000	8019L	S104
FCINTAP14000	8021L	S105
FCINTAP14000	8021L	S106
FC4K00710000	1007.01.00	WI101
FC4G00415000	1004.01.50	WI102
FC4G00425000	1004.02.50	WI103
FC4G00415000	1004.01.50	WI104
FC4G00425000	1004.02.50	WI105
FC4L00812000	1008.01.20	WI107
FC4K00710000	1007.01.00	WI108
FC4N04940000	1049.04.00	WI111

PRELIMINARY:

1. Check the Ground Link switch.
   - When the main power switch is turned off, there should be no continuity between the amplifier's frame and power ground.
2. Be sure that the correct cable types are used.
3. Verify that the unit's power supplies, outputs and frame are not shorted.
4. Main power switch OFF.
5. Prepare a sine wave generator providing a 0dB 1kHz output signal, but do not turn it on yet.
6. Plug the signal generator into Channel 1's XLR-type input.
7. Connect four 4Ω load impedances to each output 1, 2, 3, and 4. In case you have not four impedances available, just use two, connecting them to each couple of outputs, depending of the test step you are running.
8. Connect the millivoltmeter and the oscilloscope to the amplifier's channels 1 and 2.
9. Turn down all of the potentiometers.
10. Configure Mini-jumpers to set REMOTE CONTROL to ON. See configuration scheme for details.
11. Connect the amplifier's mains plug to a variac outlet, and leave its output down to 0 volts.

SWITCH POSITIONS:

SWITCH	POSITION
IN1/IN1+IN2	IN1
IN2/LINK CH1	LINK CH1
STEREO / BRIDGE	STEREO
IN3/LINK CH1	LINK CH1
IN4/LINK CH2	LINK CH2
STEREO / BRIDGE	STEREO



VERIFICATION:

1. Turn the tested unit's main power switch ON.
2. Increase gradually the variac's output, until reaching 230V mains voltage. While increasing, observe carefully the unit, in order to detect any malfunction (heavy vibrations on the transformer, DC voltage on the amplifier module output, etc.)
3. Check that the red neon is lit.
4. Turn on the signal generator.
5. Verify that all the SIGNAL PRESENT LED's are also lit.
6. Turn up channel one's input potentiometer. Check that it turns easily and smoothly. At its maximum position, check that Vo=14Vrms
7. The output signal monitored on OUTPUT1 should be only dependent from the channel 1's input signal.
8. Turn up channel two's input potentiometer. Check that it turns easily and smoothly. At its maximum position, check that Vo=14Vrms
9. The output signal monitored on OUTPUT2 should be only dependent from the channel 2's input signal.
10. Both output signals should be in identical phase.
11. Now change the STEREO / BRIDGE channel 1 & 2 selector to BRIDGE position
12. OUTPUT1 and OUTPUT2 should now have opposite phase.
13. Channel 2's Signal Present indicating LED turns off.
14. The unit's gain level is now controlled only by channel one's input potentiometer. Turn it up and leave it at its maximum position.
15. Now connect the millivoltmeter and oscilloscope probes to the amplifier's outputs 3 and 4.
16. Turn up channel three's input potentiometer. Check that it turns easily and smoothly. At its maximum position, check that Vo=14Vrms
17. The output signal monitored on the output should be only dependent from the channel 3's input signal.
18. Turn up channel four's input potentiometer. Check that it turns easily and smoothly. At its maximum position, check that Vo=14Vrms
19. The output signal monitored on the output should be only dependent from the channel 4's input signal.
20. Both output signals should be in identical phase.
21. Now change the STEREO / BRIDGE cannel 3 & 4 selector to BRIDGE position.
22. OUTPUT3 and OUTPUT4 should now have opposite phase.
23. Channel 4's Signal Present indicating LED turns off.
24. The unit's gain level is now controlled only by channel three's input potentiometer. Turn it up and leave it at its maximum position.
25. At this point, all clip indicators should be lighting. If necessary, add a little bit of level to the input signal.
26. Set the IN1/IN1+IN2 selector to IN1+IN2, and verify that the output signal level drops 6dB on all outputs.
27. Return the switch back to IN1.

DC OUT VERIFICATION (please proceed without loaded outputs)

1. Select a 10Hz 0dB sine wave output on the signal generator.
2. Check that the yellow DC-indicating LED lights up, together with the green S.P. LED's.
3. Select a 25Hz 0dB sine wave output on the signal generator.
4. Check that the yellow DC-indicating LED turns off.

REMOTE CONTROL VERIFICATION

1- Release all of the input circuit selection switches. ↑.
2- Attenuation potentiometers should all be turned up to their maximum level (right).
3- Apply a 0dB 1kHz signal on channel 1 input.
4- Check the output signal on channel 1's output. Vo=14 Vrms.
5- Connect the tool equipped with a potentiometer to REMOTE CONTROL CH1.
6- Check the potentiometer sweep, its response curve and attenuation.
7- Repeat this procedure on the rest of inputs and outputs, and on remote controls.
8- When done, leave the REMOTE CONTROL configuration again OFF.

BURNING TEST

Leave the tested unit connected to its correspondent mains voltage, applying input signal and connecting load impedances, and running at its burn test level for at least 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 0.1Ω.

Electrical insulation test:

Connect the electrical insulation tester 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 disfunction.

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

VERIFICATION USING MUSIC

Note: As this is a four-channel amplifier, with a versatile input signal selection system which enhances its connectivity options, the previous procedures have checked that the input circuitry selection options are functioning correctly when running with input signals.

1. Release all of the input circuitry selector switches. ↑
2. Verify the outputs 1 and 2's STACK function by testing their jack-type output connections.
3. Verify individually each of the inputs and their outputs.
4. Verify the sweep of all potentiometers, which should turn easily and smoothly, without producing noise or scratches.
5. Verify the sound quality (do not allow any kind of scratch or distortion)
6. To ensure that all electrical junctions are well-fixed, hit the tested unit softly against your working table.
7. Short the output terminals while carrying amplified signal, and verify that once the short-circuit is removed, the unit recovers normal functioning.
8. Without input signal, and with the potentiometers turned all down first, and also turning them up to maximum level, verify that the unit's output signal is free of hum and noise when listening the output signal through loudspeakers.

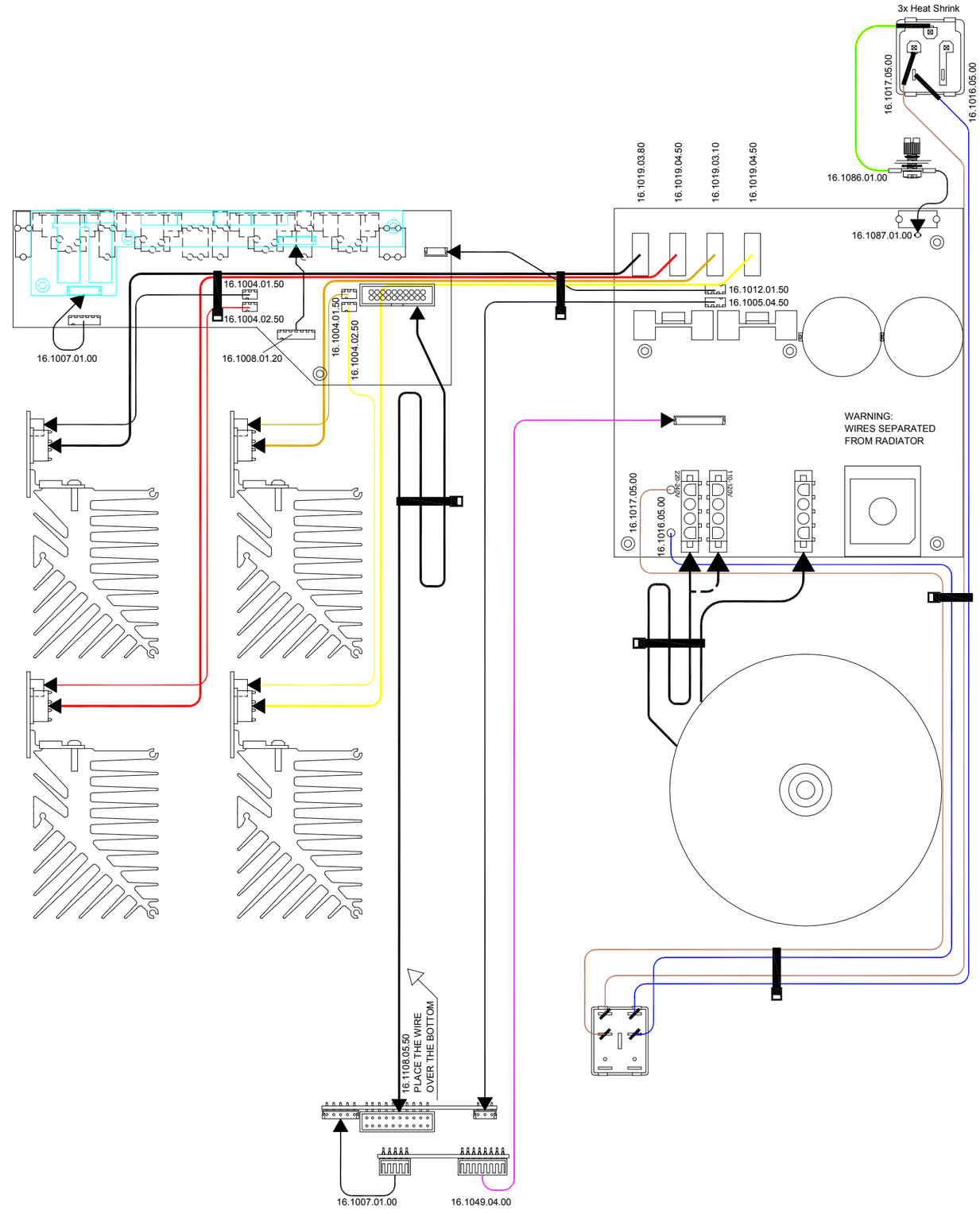
QUALITY CONTROL

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.

POWER 20-20kHz 1% THD

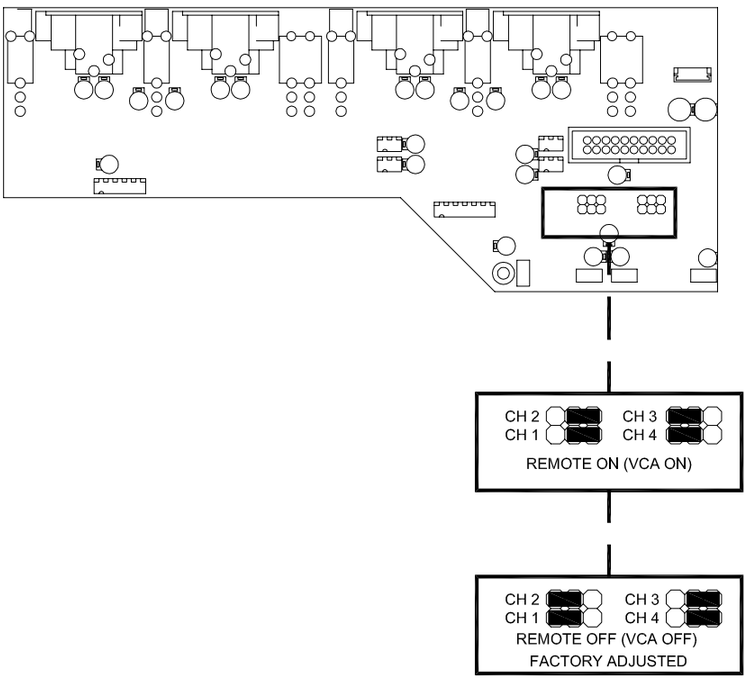
1 Channel @ 4Ω	80 WRMS
1 Channel @ 8Ω	50 WRMS
All Channels @ 4Ω	55 WRMS
All Channels @ 8Ω	40 WRMS
1 Bridged channel @ 8Ω (all channels driven)	117 WRMS
Frequency response (-1dB)	20Hz - 30kHz
* THD+Noise @ 1kHz Full Pwr.	<0.02%
* Intermodulation distortion 50Hz & 7kHz, 4:1	<0.02%
* TIM 100	<0.05%
* S+N/N 20Hz -20kHz @ 1W/4Ω	>90dB
Damping factor 1kHz @ 8Ω	>160
Slew Rate	±10V/µs
* Channel crosstalk @ 1kHz	>60dB
Input Sensitivity / Impedance	0dBV/>20kΩ
Mains Voltage	See characteristics in the back of the unit.
Power consumption (max. Out)	524VA
Dimensions	482.6x88x391mm
Weight	9.5kg

* VCA OFF



ECLER	drawn: J. Colomines	date: 061128	project: EP04-06	product: MPA4-80R
number: 310230 version 01.00	approved:	title: WIRING DIAGRAM		

REMOTE CONTROL

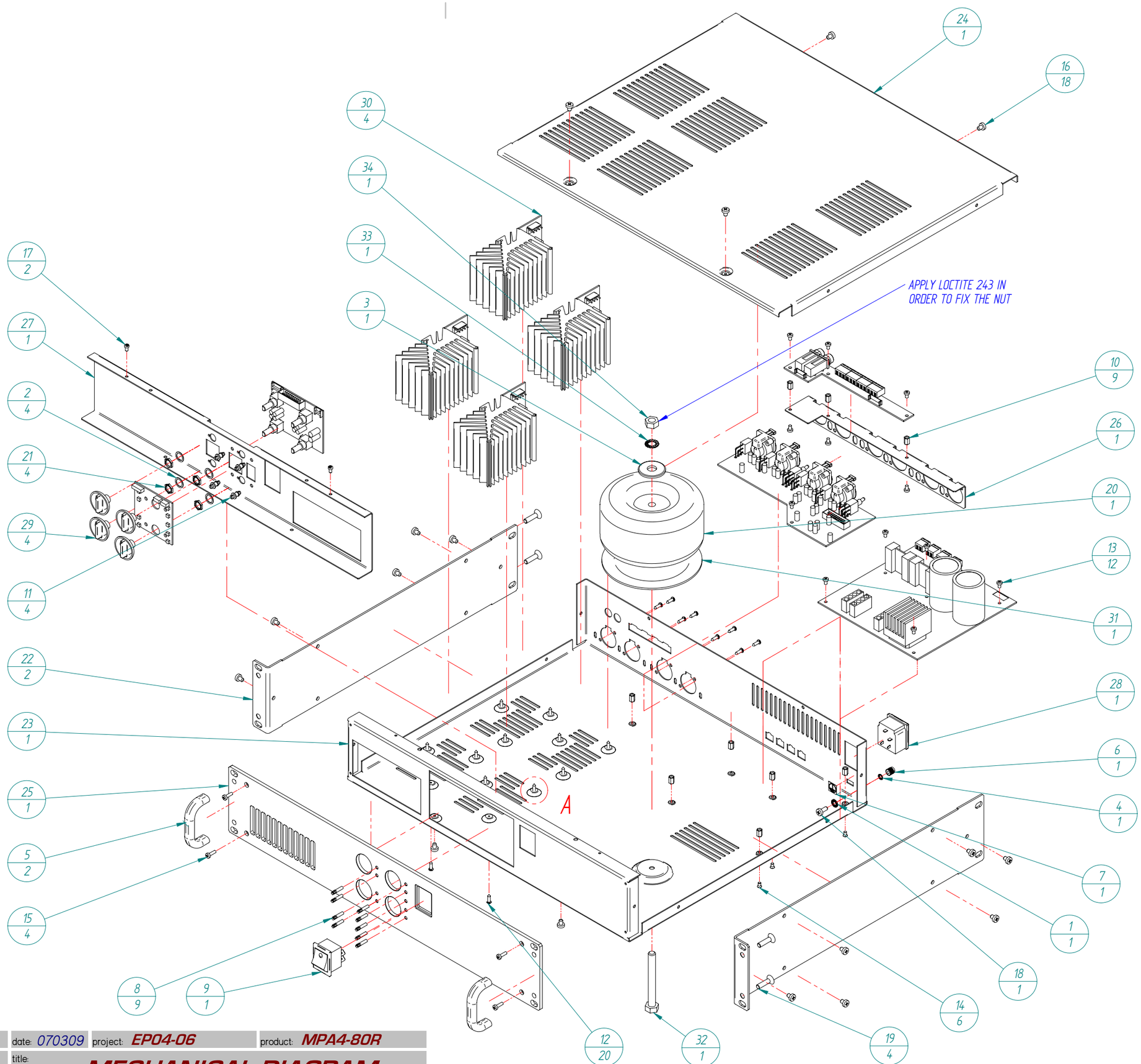


ECLER	drawn: J. Colomines	date: 061024	project: EP04-06	product: MPA4-80R
number: 31.0228 version 01.00	approved:	title: CONFIGURATION DIAGRAM		

Nº	Qty.	Code	Description
1	1	FCARDE040000	TOOTHED WASHER M4
2	4	FCARDEPOTE00	ROTARY POT. WASHER M9
3	1	FCARM1050000	WASHER 10,5X30X2,5M
4	1	FCARS4000000	SEGMENTED WASHER M4
5	2	FCASAPWM1000	FRONTAL HANDLE
6	1	FCBOR0030000	GROUND TERMINAL
7	1	FCETIZTT0000	EARTH TAG
8	9	FCGUIAL10000	LIGHT PIPE GUIDE VERTICAL
9	1	FCINTRED3000	MAINS SWITCH W/LIGHT
10	9	FCSEP3080000	SPACER M3x8
11	4	FCSOPMSP4000	PLASTIC SPACER MSP-4N
12	20	FCT400290900	SCREW 2,9x9,5 D7981F BLACK
13	12	FCT803005000	SCREW DIN 7985 M3x5 COMBI
14	6	FCT803005500	SCREW D965 M3x5 BLACK
15	4	FCT803010000	SCREW DIN7985 M3x10 SPANLO
16	18	FCT804006000	SCREW M4x6 SPANLO BLACK
17	2	FCT850300500	SCREW M3x5 REDUCED HEAD
18	1	FCT850411000	SCREW M4x10 TRILOB. WHITE
19	4	FCTALL516000	SCREW DIN7991 M5x16 ALLEN
20	1	FCTFTMPA7000	TOTOIDAL TRANSFORMER
21	4	FCTUPOT00000	ROTARY POT. NUT M9
22	2	FP0282500000	LEFT/RIGHT SIDE
23	1	FP0294700000	BASE CHASSIS
24	1	FP0294900000	TOP COVER
25	1	FP0295000000	FRONT PANEL
26	1	FP0295500000	INPUT BOARD MEC. SUPPORT ANGLE
27	1	FP0299500000	FRONTAL MECHANICAL SUPORT
28	1	FRBASRE20300	MAINS SOCKET FUSE 4A
29	4	FRBOTRD24100	ROTARY KNOB D24 ROTATED INDEX
30	4	FXINS1107610	POWER AMP MODULE
31	1	GENERIC	TRANSFORMER RUBBER DISC
32	1	GENERIC	SCREW M8 TRANSFORMER
33	1	GENERIC	TRANSFORMER TOOTHED WASHER M8
34	1	GENERIC	TRANSFORMER NUT M8

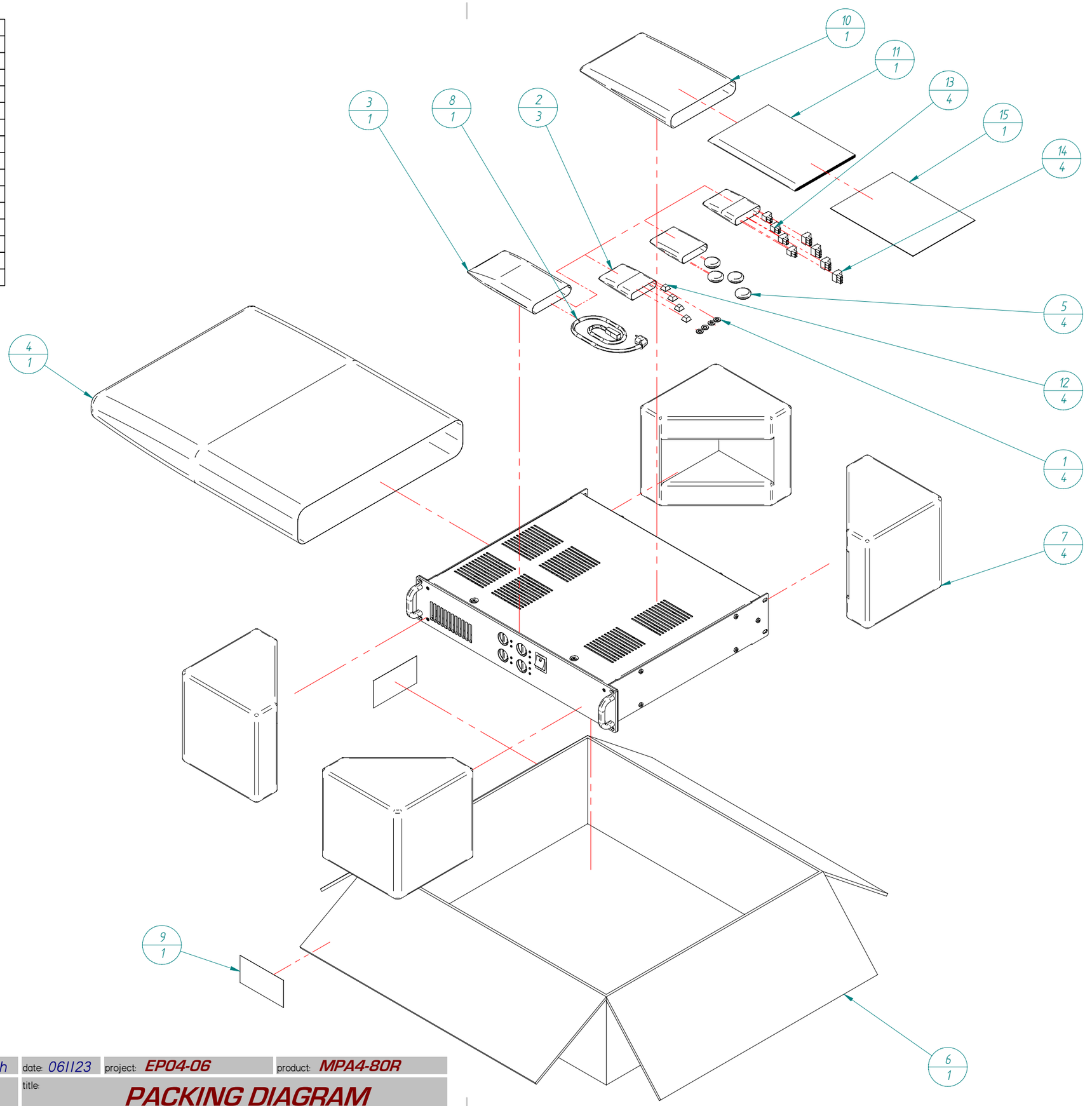
DETAIL A

TO FIX POWER AMP MODULES
USE SCREWS FCT400290900



ECLER	drawn: Jordi Folch	date: 070309	project: EP04-06	product: MPA4-80R
number: 30.0225 version 01.01	approved:	title: MECHANICAL DIAGRAM		

N°	Qty.	Code	Description
1	4	FCARANY06000	WASHER M6 NYLON BLACK 12x6,4x1,5
2	3	FCBOL0010000	BAG 60x80
3	1	FCBOL0020000	PLASTIC BAG 120x180
4	1	FCBOLS020000	STANDARD BAG 75x65
5	4	FCBOTD240100	ROT. KNOB PROTECTION COVER
6	1	FCCAJSTA2300	PACKING CARDBOARD BOX
7	4	FCCANT116000	INTERIOR REINFORCEMENT
8	1	FCCONX017600	MAINS CORD 3x1,5 ST EU
9	1	FCETI0951140	PRODUCT LABEL PACK (ONE FOR EACH UNIT)
10	1	FCFUNMAN0000	USER MANUAL BAG
11	1	FCMANMPA7300	USER MANUAL MPA4-80R 6-80R
12	4	FCPIE1125500	RUBBER FOOT
13	4	FCREG1006000	CONNECTING TERMINAL STRIPS 2C
14	4	FCREG1007000	CONNECTING TERMINAL STRIPS 3C
15	1	FCTARJG00000	WARRANTY CARD



ECLEREE

drawn: Jordi Folch | date: 061123 | project: EP04-06 | product: MPA4-80R

approved:

number: 32.0143 | version 01.00

title:

PACKING DIAGRAM