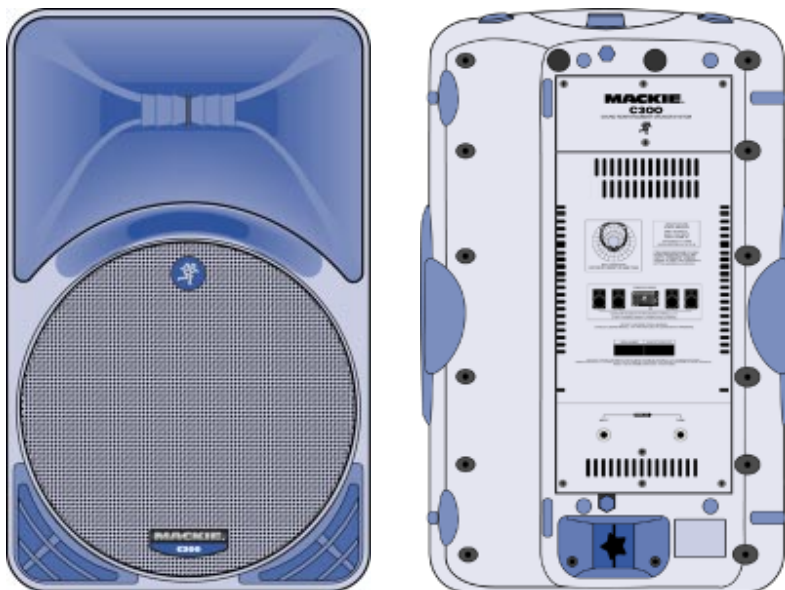


MACKIE®

C300

2-way passive loudspeaker



SERVICE MANUAL

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INTRODUCTION

	SERVICE ON THIS EQUIPMENT IS TO BE PERFORMED BY EXPERIENCED REPAIR TECHNICIANS ONLY <i>CONFIER L'ENTRETIEN AU PERSONNEL QUALIFIE</i>	
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This manual contains basic service information. It is essential that you have a copy of the user's manual as this contains the complete operating instructions.

SERVICE TECHNICAL ASSISTANCE

Mackie Designs, Service Technical Assistance, is available 8AM - 5PM PST, Monday through Friday for Authorized Mackie Service Centers, at 1-800-258-6883. Feel free to call with any questions and speak with a carefully-calibrated technician. If one is not available, leave a detailed message and a qualified Mackoid will return your call asap.

DISCLAIMER

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Overview

The C300 has a Speakon® input, and the C300i has a 1/4 inch phone jack. Apart from this difference, all details in this manual apply to both models.

The C300 is a portable two-way loudspeaker system, capable of extremely high sound pressure levels.

The Transducers

The C300 has a 12" high-power low-frequency woofer and a 1.75" mylar diaphragm high-output compression driver. The woofer incorporates technology used in large-format touring systems and has a precision 3-inch voice coil.

The high-frequency compression driver is mounted on a multi-cell aperture loaded on a constant directivity horn, providing an ultra-wide, controlled dispersion pattern and precise reproduction of the critical upper mid-range and high-frequencies. The result is a smooth off-axis response.

Each driver has been specifically designed for optimum performance in a lightweight high-strength cabinet.

The Crossover

This unique Low Impedance Compensated Crossover (LICC) design places inductors in series with the woofer whose values are markedly lower than conventional designs. This reduces the amount of energy that is typically wasted as heat and increases the amount of energy that is transformed into real acoustic power. It also incorporates dynamic protection for the compression driver from non-linear signals.

The Cabinet

The cabinet material is very strong and is rigid enough to prevent unwanted vibrations and standing waves in the cabinet. It has built-in fly points for hanging, and a socket in the bottom for mounting on a tripod stand. The asymmetrical trapezoidal design of the cabinet also makes it easy to use as a floor wedge for stage monitor applications.

Inputs

The C300 input is a Speakon connector, wired as follows:

Pin 1+ is Positive (+)

Pin 1- is Negative (-)

(Pins 2- and 2+ are not used)

The C300i input is 1/4" TS (tip-sleeve), wired as follows:

The Tip is Positive (+)

The Sleeve is Negative (-)

SPECIFICATIONS

Low-Frequency Transducer

Diameter	300mm (12")
Voice Coil Diameter	175mm (3")
Sensitivity (1W@1m)	98 dB
Nominal Impedance	8 ohms
Power Handling	300 watts
Frequency Range	50Hz – 3000Hz

High-Frequency Driver and Horn

Diaphragm Diameter	44.5mm (1.75")
Exit Throat Diameter	24.5mm (1")
Diaphragm Material	Mylar
Sensitivity (1W@1m)	106 dB
Nominal Impedance	8 ohms
Power Handling	150 watts
Frequency Range	1000Hz – 20,000Hz
Horn Type	Composite: Exponential/ Conical
Mouth Size	304.8mm (12") W x 177.8mm (7") H
Horizontal Coverage	90° ±10° (1kHz – 20kHz)
Vertical Coverage	45° ±10° (2.8kHz – 20kHz)

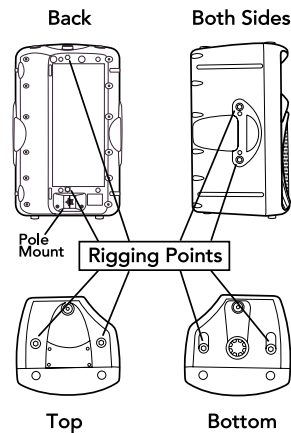
System Specifications

Input Type (C300i)	1/4-inch phone jack
Input Type (C300)	Speakon®
Input Impedance	8 ohms
Max Input Power	300 watt
Enclosure Alignment	Sixth-Order
Over-Excursion Protection	Second-Order High-Pass Filter
Acoustic Frequency Response	45Hz – 20,000Hz
Low Freq-3 dB Point	55Hz
Maximum SPL @ 1m	126 dB
Low-Frequency Crossover Type	24 dB/octave, time offset corrected
High-Frequency Crossover Type	24 dB/octave
Crossover Frequency	1800Hz
Driver Protection	Dynamic protection for compression driver
Operating Temp Range	-10°C - 45°C (14°F - 113°F)

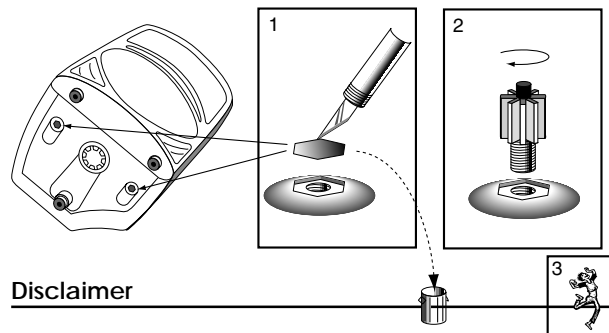
Physical Properties

Height	66.0cm (25.98")
Width	39.6cm (15.58")
Depth	37.5cm (14.75")
Weight	19.5kg (43lbs.)
Enclosure Geometry:	Asymmetrical Trapezoidal

Mounting Methods:
Integrated mounting points, 10mm, two each located on each side, top, bottom, and rear of the enclosure.



stabilizing feet



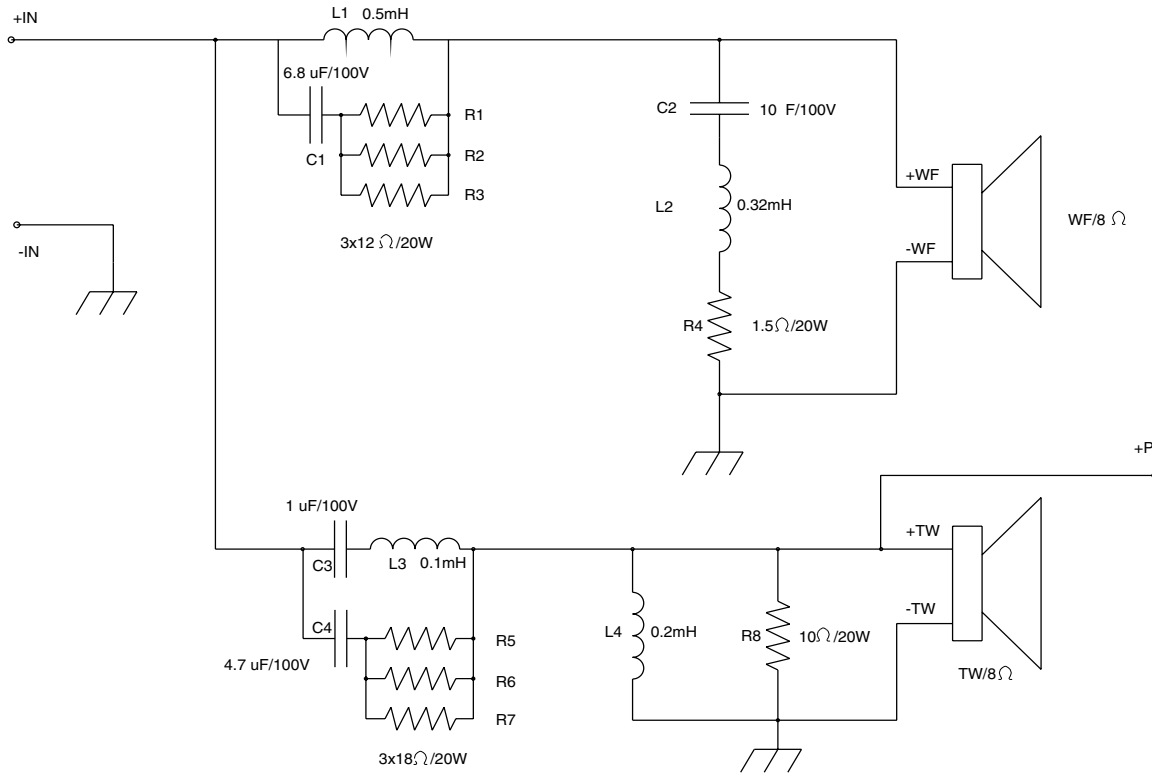
Disclaimer

Since we are always striving to make our products better by incorporating new and improved materials, components, and manufacturing methods, we reserve the right to change these specifications at any time without notice.

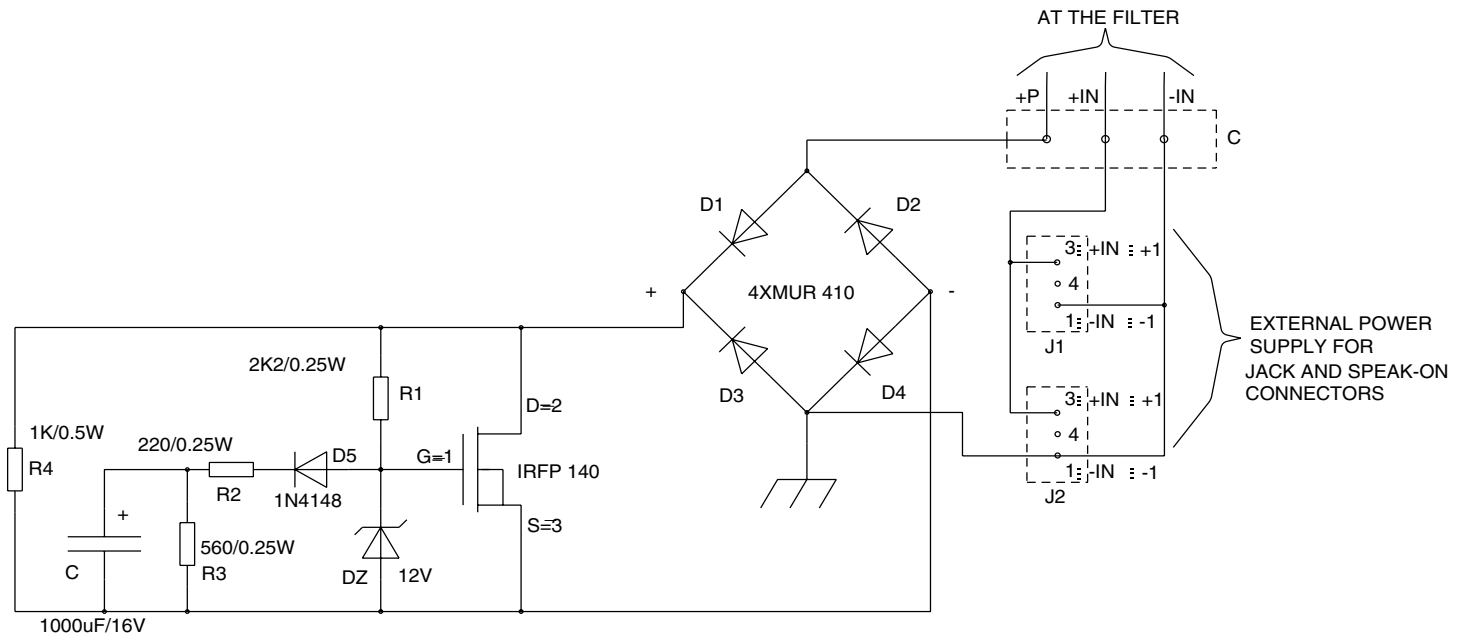
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C300/MACKIE12P FILTER. ELECTRIC DIAGRAM SE034414



ELECTRIC DIAGRAM FOR PROTECTION AND INPUT ASSEMBLY C300

C300/MACKIE12P

SE034530

C300i PARTS LIST

13110051 MACKIE C300i

PART NO.	DESCRIPTION	QTY	NOTES
SE034414	SCHEMATIC	1	SEE PAGE 5
SC034519	WIRING DIAGRAM	1	SEE PAGE 5
21110090	LOUDSPEAKER L12	1	WOOFER
23020530	PCB INPUTS-PROTECTION ASSY 34528-1	1	SEE PAGE 7
23030130	CROSSOVER 34412	1	SEE PAGE 7
23102840	SUPPORT DRIVER	1	
23103060	CABLE W-TW ASSEMBLY	1	
23103260	CABLE INPUTS ASSEMBLY	1	
23103270	CABLE PROTECTION ASSEMBLY	1	
23103690	ACCESSORIES BAG (FEET)	1	
25110140	TWEETER N 350-MACKIE P	1	TWEETER
32910010	FIBER WASHER 12108	2	
32910020	NYLON WASHER 11791	2	
33090290	REAR CASE 33928	1	
33090300	FRONT CASE 33929	1	
33100180	REAR PANEL 35027	1	
33160150	GASKET SUPPORT TW 33760	1	
33160530	GASKET WOOFER 21202	1	
33221370	GRILL WOOFER 34316	1	
33890070	CABLE FASTENER 110	1	
33890100	FOOT CABINET 34287	3	
33900100	HANDLE 33931	2	
33900110	TOP HANDLE 33937	1	
33900120	INSIDE HANDLE 33939	2	
33910170	KNOB 33934	1	
33910250	SOUND ABSORBING STUFF 34373	1	
33910260	WASHER FOR PCB 34599	4	
33920240	SPACER FOR HANDLE 33832	4	
33920300	NUT 33713	8	
33920510	NUT 34202	2	
33921480	INSERT 31832	10	
33921580	SPACER 33359	8	
33950530	NUMBER LABEL 50487	3	
33951180	C300 LABEL 33932	1	
33951360	MACKIE LABEL 34044	1	
33951420	INSERT COVER 34236	10	
33951570	MACKIE LABEL FOR INSERT 34410	1	
33960750	OWNER'S MANUAL MOD.1715	1	
33990640	INSIDE PACKAGING PROTECTION 34045	1	
33990830	INSIDE PACKAGING PROTECTION 34262	1	
33990840	BOX 34266	1	
33990850	BTM PANEL FOR PALLET 34263	0.0555	
33995370	CARD CORNER FOR BOX 33302	0.2222	
33995470	TOP COVER FOR BOX	0.0555	
43900140	GASKET	2.05	
43900820	GASKET	1.2	
51150311	SCREW+M4 X8 ZNN U7687 60951		
51150532	SCREW+M6X20 INOX ZNN U7687	4	
51170416	SCREW SC+M5X10 INOXZNN U7689	4	
51190310	SCREW CEI M6 X16 ZNN U5931	4	
51190336	SCREW CEI M6 X35 ZNN U5931 50762	8	
51240407	SCREW C+ B 3,9X9,5ZNN U6954	8	
51310523	SCREW+SL 4X20 ZNN 6175	3	
51992002	SCREW+AB POLI 3,5X16 ZNN	6	

PART NO.	DESCRIPTION	QTY
51992003	SCREW 1/2C.B.+GS3 4,2X20 ZNN	4
51992004	SCREW 1/2C.B.+GS3 4,2X30 ZNN	6
51992007	SCREW C+GS3 4,8X50 ZNN	4
51992008	SCREW C+GS3 4,2X20 ZNN	9
51992010	SCREW 1/2C.B.+GS3 4,8X50 ZNN	2
51992012	SCREW 1/2C.B.+GS3 4,8X60 ZNN	15
52100101	WASHER 15X28 ZNC U6592	10
52100121	WASHER 6,4X12,5ZNNU6592 0174	12
52100133	WASHER 15X28 ZNN U6592	2
52301004	WASHER A 6,4 U1751 171	4
59023472	BAG 500+100+100X1200 34174	1
59999990	STRING CM 7	1
59999994	STRING T & B M 23 50152	1
83433027	C3C33-019M004- 4P MALE CONNECTOR	1

23020530 INPUT/PROTECTION PCB ASSEMBLY

PART NO.	DESCRIPTION	QTY	NOTES
33030550	PCB C.S.MR 34528-1	1	
33120380	HEATSINK 35023	1	FOR MOSFET
51150220	SCREW V.TC+M3 X10ZNC U7687 50149	1	
52100103	WASHER 3.2X 6ZNC U6592 12272	1	
81121029	C1R21-251J221-RES.STR. 1/4W5% 220	1	RESISTOR
81121034	C1R21-251J561-RES.STR. 1/4W5% 560	1	RESISTOR
81121041	C1R21-251J222-RES.STR. 1/4W5% 2.2K	1	RESISTOR
81121110	C1R21-501J102-RES.STR. 1/2W5% 1K	1	RESISTOR
81511039	C1E11-160*102-COND.EL. 16V1000 U	1	CAP. LYTIC 16V, 1000UF
82112001	C2D12-750*151-DIODE 1N4148	1	DIODE
82122015	C2D22-101*402-DIODE MUR410	4	DIODE
82131050	C2D31-501J120-ZENER 0.5W 12V	1	ZENER DIODE 12V
82262014	C2T62-313A101-MOSFET IRFP140	1	MOSFET IRFP140
83412015	C3C12-014F003- STEREO JACK	2	
83434002	C3C34-002M003-FASTON 90	1	
83811009	C3A11-009 -INSULATING STRIP	1	

23030130 FILTER ASSEMBLY

PART NO.	DESCRIPTION	QTY	NOTES
01821203	M6R21-003B -ADHESIVE	5	
01881104	M6R81-004M -HARDENER	5	
33030380	PCB C.S.MR 34412	1	
33120370	HEATSINK FOR RESISTORS 35018	1	
54100620	RIVET OU 35-50 SN 50269 1/2	2	
59999992	SEAL T & B M 24	2	
59999994	SEAL T & B M 23 50152	3	
59999995	SEAL T & B M 25	2	
81244156	C1F44-203J1R5-RES.FILO 20W5% 1.5	1	WIRE WOUND RESISTOR
81246013	C1F46-203J100-RES.FILO 20W5% 10	1	WIRE WOUND RESISTOR
81246014	C1F46-203J120-RES.FILO 20W5% 12	3	WIRE WOUND RESISTOR
81246016	C1F46-203J180-RES.FILO 20W5% 18	3	WIRE WOUND RESISTOR
81412019	C1C12-101K105-CAP.FILM100V10% 1U	1	CAP,FILM
81412023	C1C12-101K475-CAP.FILM100V10% 4.7U	1	CAP,FILM
81412024	C1C12-101K685-CAP.FILM100V10% 6.8U	1	CAP,FILM
81412025	C1C12-101K106-CAP.FILM100V10% 10U	1	CAP,FILM
81612045	C1L12-101B281-INDUCTOR	1	INDUCTOR
81632015	C1L32-501A281-INDUCTOR	1	
81632017	C1L32-321A231-INDUCTOR	1	
81632020	C1L32-201A181-INDUCTOR	1	

MACKIE C300 SERVICE MANUAL

NOTE: The C-300 speaker is the same as the C300i except for the following parts:

13112039 MACKIE C300

PART NO.	DESCRIPTION		QTY	NOTES
23020520	PCB INPUTS-PROTECTION ASSY	335016	1	
33100140	REAR PANEL	35016	1	

NOTE: The C300 PCB INPUT BOARD (23020520) uses the SPEAKON connector, not the 1/4" stereo jacks like the C300i.

The SPEAKON connector is part number:

83415001	C3C15-001F004-CONNECTOR		2	
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