

KOSS CORPORATION LOUDSPEAKER SERVICE GUIDE

11/81

KOSS LOUDSPEAKER
WARRANTY AND SERVICE GUIDE

Welcome to the family of Koss! This guide is designed to assist you in carrying out our warranty and service operations on Koss loudspeakers.

Any problems not covered in this guide should be referred to Koss Customer Service, (800) 558-0465.

KOSS WARRANTY REPAIR SERVICE GUIDE

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KOSS CORPORATION
SERVICE POLICY & PROCEDURE

A. STEREOPHONES (All Models)

Stereophones to be repaired at authorized service center:

ACOUSTECH, INC.
4111 N. Port Washington Ave.
Milwaukee, WI 53212

B. LOUDSPEAKERS (All models)

Loudspeakers to be repaired at local authorized service centers or shipped to central repair facility.

Parts and labor to be reimbursed per service agreement.

C. KOSS K/4DS DIGITAL DELAY SYSTEM

K/4DS to be returned for repair to:

KOSS CORPORATION
4129 N. Port Washington Ave.
Milwaukee, WI 53212

D. KOSS MUSIC BOX

Koss Music Box to be returned for repair to:

KOSS CORPORATION
4129 N. Port Washington Ave.
Milwaukee, WI 53212

90 day warranty.

Out-of-Warranty - Repair Charges

1. Complete unit (receiver and stereophone) - enclose \$20.00 for repair.
2. Receiver only - enclose \$20.00 for repair.
3. Stereophone only - enclose \$10.00 for repair.

Further information required? Please call Customer Service at 800-558-0465.

KOSS SERVICING PROGRAM

I. Servicing Center - Program Features

1. Service center can handle 80% of all customer repairs right in the store with repair parts kit.
2. In most cases, same day turnaround can be accomplished.
3. Paperwork is held to an absolute minimum.
4. No special equipment is required for participation.
5. Program is administered and controlled at Koss headquarters by the service manager.
6. Service center may release himself from the program at any time.
7. Parts do not have to be returned for replacements to be issued.
8. All stock used for in-warranty replacements will be automatically replenished at no charge upon submittal of claims.
9. Service center qualifies to buy all repair parts at dealer price, for out of warranty repairs.

II. To Participate

1. Service center qualifies for program by signing agreement and credit application.
2. Upon receipt of agreement at Koss, service center will be sent:
 - a. Repair parts kit (no charge)
 - b. Completed certificate
 - c. Parts price list.
 - d. Claim forms (you may use NARDA form)
 - e. Instructions

III. To Use

1. Customer brings in speaker that has defective component.
2. Service center fills in customer and product blocks on claim form.
3. Service center locates and replaces defective component with new one from kit.
4. Service center completes claim form.
5. Customer picks up unit.
6. Service center saves defective component for rep's next visit or 60 days.
7. Service center sends top copy of claim form to Koss.
8. Koss sends new part to replenish his kit at no charge.
9. Koss sends service center a check for \$12.00 for each speaker repair in warranty.

KOSS LOUDSPEAKER

TROUBLE SHOOTING

IMPORTANT

The CM 1010, 1020 and 1030 have been updated since their original production in 1977. The replacement parts provided in your initial parts inventory kit are for the updated models.

Below is a list of visual differences which will help you determine whether a speaker is of the new type or old:

	<u>OLD</u>	<u>NEW</u>
Switches	Black	White
Tweeters	Countersunk into wood	Flat over edges
Midrange; Woofer	Felt around edges	Black plastic trim rings
Grille Fasteners	Hook Lock	Male-Female
Wire Terminals	Screw Type	Spring Loaded

M-80

The M-80's have been updated since their original production. The replacement parts in your initial parts inventory kit are for the updated models which have a "N" in front of the serial number. Before replacing the defective part, identify which model it is. If it is the original model (no "N" in front of the serial number), call for the replacement part.

NOTE: If the defective part does not match the parts in your starter kit, call 1-800-558-0475 and we will ship you the correct parts.

TESTS

TEST "A"

Use "PINK NOISE" generator or FM tuner interstation noise (when tuned to open channel area on band with muting OFF) and set amplifier for 1 volt maximum into the speaker. This test allows you to determine which drivers are inoperative or which controls do not function.

TEST "B"

Sweep a sine wave signal from 20 Hz to 20 KHz at 3 volts into the speaker. A clean (low distortion) generator and amplifier is required for this test. If you are unsure about the equipment, listen to the output on a known good speaker system before making any decisions regarding faulty speakers or drivers. This test allows you to determine buzzes, rattles or distorted drivers in a system.

TEST "C":

Sweep low frequencies from 30 Hz to 100 Hz at 7.5 volts (3 volts on the M/80) using the same low distortion sine wave generator and amplifier as in test B. This test allows you to check for air leakage around all drivers, trim plates, input terminals, etc. Note that in all Koss speakers, the maximum pressure inside the cabinet occurs from 30 Hz to 40 Hz which is where you should test for worst-case air leakage. The M/80 should be checked at 100 Hz for noises such as buzzes or clicks.

TROUBLE SHOOTING CHART (ALL SPEAKERS)

System Inoperative (Speaker Produces No Sound)

First check the fuse if applicable to make sure it is of the correct amperage and type:

CM 530-1010	2 Amp Normal Blow	#3AG2A
CM 1020	2½ Amp Normal Blow	3AG2½A
CM 1030	3 Amp Normal Blow	3AG3A

If after checking the fuse the system is still inoperative, the wiring should be checked to make sure all connections are secure and correctly attached.

The solder joints/connections should also be checked to make sure they are good; repair/replace as needed. If the system still does not operate, test the drivers.

Driver(s) Inoperative

1. Use test "A" to find which drivers are operative and which are not.
2. Also, test the level controls, if applicable.
3. Once the problem driver(s) has been found, remove it from the system and measure its resistance (a good driver should measure 4 to 8 ohms DC).
4. If driver measures infinity, the voice coil is open and the driver should be replaced.
5. If the driver checks out okay, inspect wiring/solder connections for breaks, also check crossover for bad connections.
6. Repair or replace as needed.

Driver(s) Distorted

1. Use test "B" to find problem drivers.
2. Replace with known good driver.
3. If problem persists check crossover capacitors (especially 150 and 97 µF on CM 1020 - 1030) and wiring.
4. If midrange speaker distorts, replace with known good speaker and retest.
5. If problem persists, capacitor is probably faulty on the crossover (on CM 1030, 24 µF; on CM 1020, 16 µF).
6. Repair/replace as needed.

Speaker Buzzes, Rattles, or has Air Leaks

1. Use Test "C" to find problem (to determine if it is driver or cabinet related).
2. Inspect cabinet for cracks or joints broken loose, etc. (make sure drivers are securely mounted).
3. Then replace driver with known good driver (use known good audio amp and signal source).
4. If buzzing stops leave good driver in system, if not, replace with old driver and check cross-over for loose parts or faulty capacitors or resistors (if necessary check parts individually).
5. Also, look for internal buzzes caused by: driver cross-over wires hitting cones, loose parts on cross-over, cracks in cabinet and/or cross braces, damping material loose, or loose top trimplate or terminal plate.
6. Drive system with and without grilles to determine if grille rattles.

System Blows Fuses

1. Check to make sure correct size and type fuse is in system.
2. Then check to make sure wiring/solder connections are correct; check capacitors to make sure they are operational.
3. On CM 530 check hot melt adhesive on crossover board (around resistors) it should be clear - if it is burnt, speaker has been overdriven. (Caution customer to refrain from overdriving to avoid damaging speakers).
4. Also tell customer that Koss CM Speakers are 4 Ω systems and that they may cause some amplifiers to clip prematurely - which may be blowing the fuses. Note: Caution customer that not using the correct size (type) fuse voids the warranty and could damage the speaker. (Especially tell them this if the wrong fuse was in the speaker or if severe damage is noticed and the correct unblown fuse is in the system.)

Controls Malfunction

1. Use Test "A": to determine which controls are malfunctioning, replace with new switches or controls and retest.
2. If new control works, leave it in place, if it does not work, check wiring/solder connections.
3. If problem persists check crossover components that correspond to the switch or control.

System Produces Hissing or Air Breathing Sounds or Poor Bass

1. Test for possible air leaks using Test "C".
2. Check gaskets, terminal board, trim (switch) plate, and passive radiator for leaks.
3. Make sure acoustic material is stapled firmly to cabinet interior.

CM 1020 - 1030 ONLY

Problem: Loud crackling noise from woofer.
Solution: Check 150 μ F capacitor and/or test woofer by replacing with new unit, repair/replace as needed.

Problem: No High End (tweeter out)
Solution: Replace treble or high frequency tweeter (or both) and/or check level controls and/or crossover for bad components (check 97 μ F capacitor on CM 1030 if applicable) repair/replace as needed.

NOTE: On OLD CM 1030 models if the 97 μ F capacitor is bad, do not replace it, instead put in a jumper wire. Also, if either the 4.4 μ F capacitor and/or the 56 ohm 10w resistor fail, don't replace them, just take them out of circuit. If necessary, check old vs. new schematics to verify components.

CM 1010 ONLY

Problem: Loud crackling during bass passages.
Solution: Faulty woofer, replace with known good woofer, also check plastic dome on passive radiator. (It could be cracked or broken loose from F3 mass or paper cone, otherwise check crossover.)

Problem: Poor bass response.
Solution: Possible air leak, use Test "C", check gasket, trim and tweeter plates and terminal board. Repair/replace as needed.

CM 530

Problem: Loud crackling on bass.
Solution: Use Test "C" to verify problem, then check dust cap on voice coil of woofer. If loose repair or replace woofer.

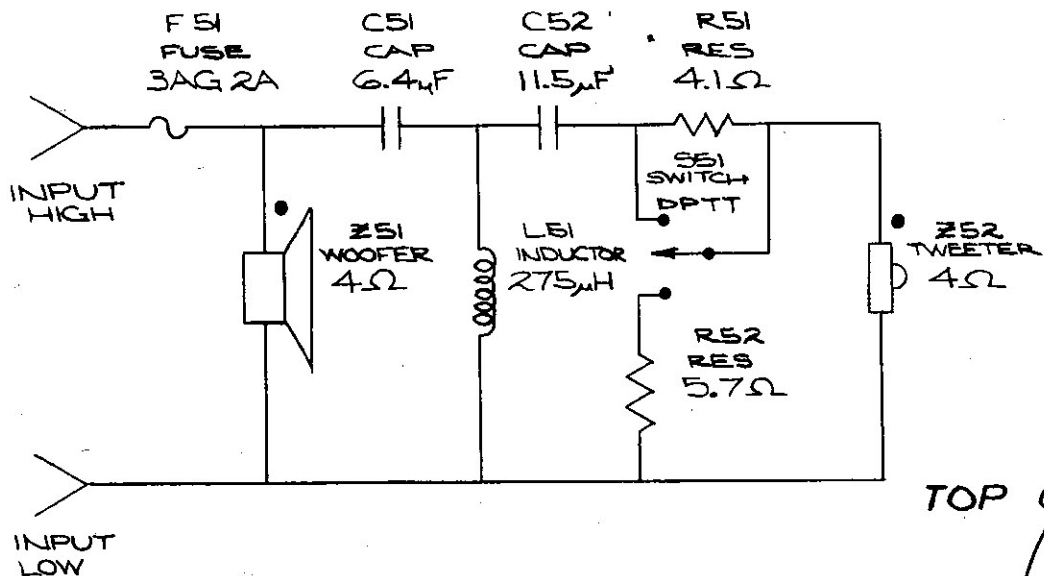
Problem: Poor bass response.
Solution: Use Test "C" to test for possible air leaks.

Problem: No high end.
Solution: Faulty tweeter (usually result of being over-driven), also check crossover and connections, check hot melt adhesive color, it should be clear, if it is burnt (check around resistors) this is a result of being overdriven (caution customer that overdriving can damage the speakers).

M/80

Problem: Poor bass.
Solution: Check for air leaks use Test "C". Seal air leaks as required.

Problem: No high end (tweeter out).
Solution: Check tweeter by substituting known good tweeter, check crossover components and wiring.



TOP OF CROSSOVER ASS'Y

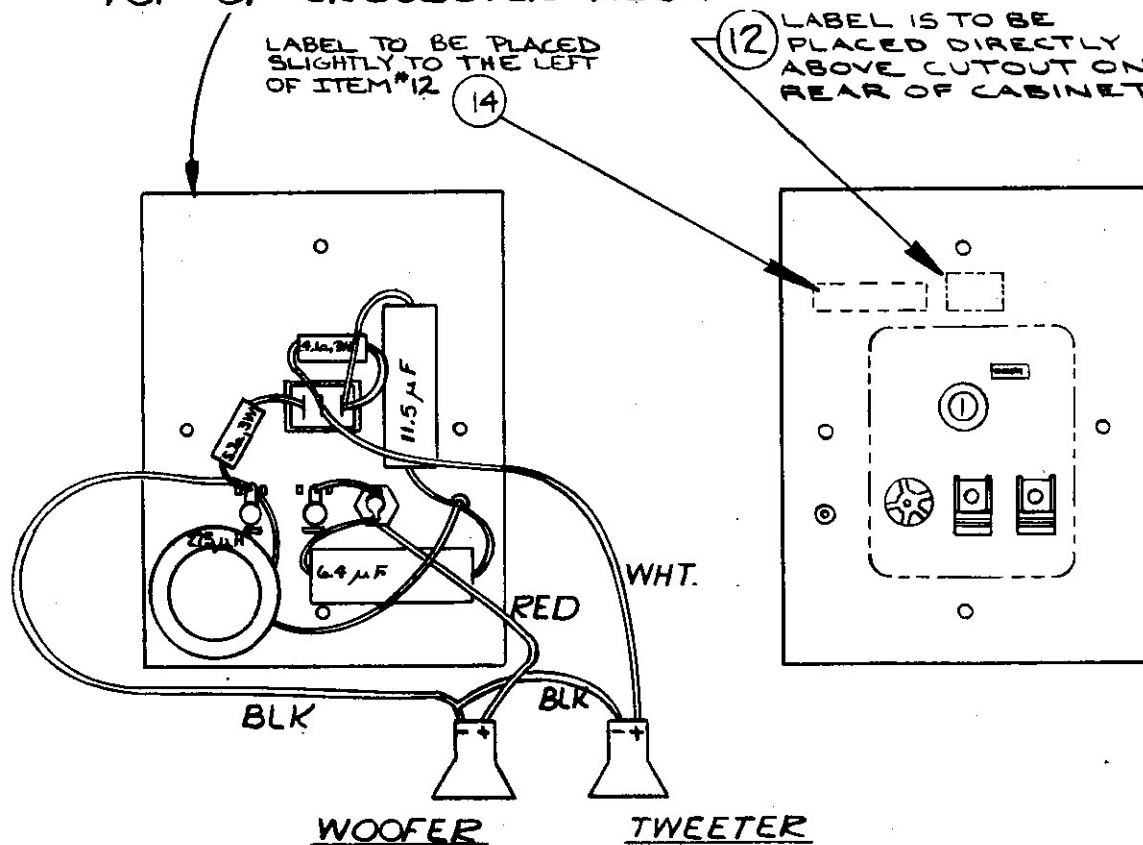
LABEL IS TO BE PLACED SLIGHTLY TO THE LEFT OF ITEM #12

12 LABEL IS TO BE PLACED DIRECTLY ABOVE CUTOUT ON REAR OF CABINET

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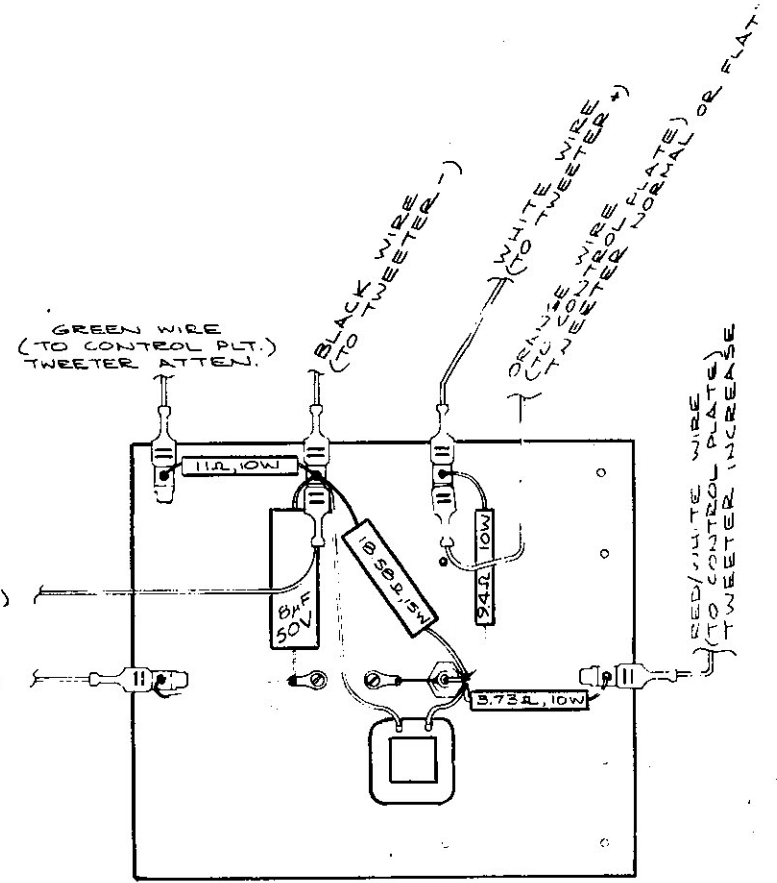
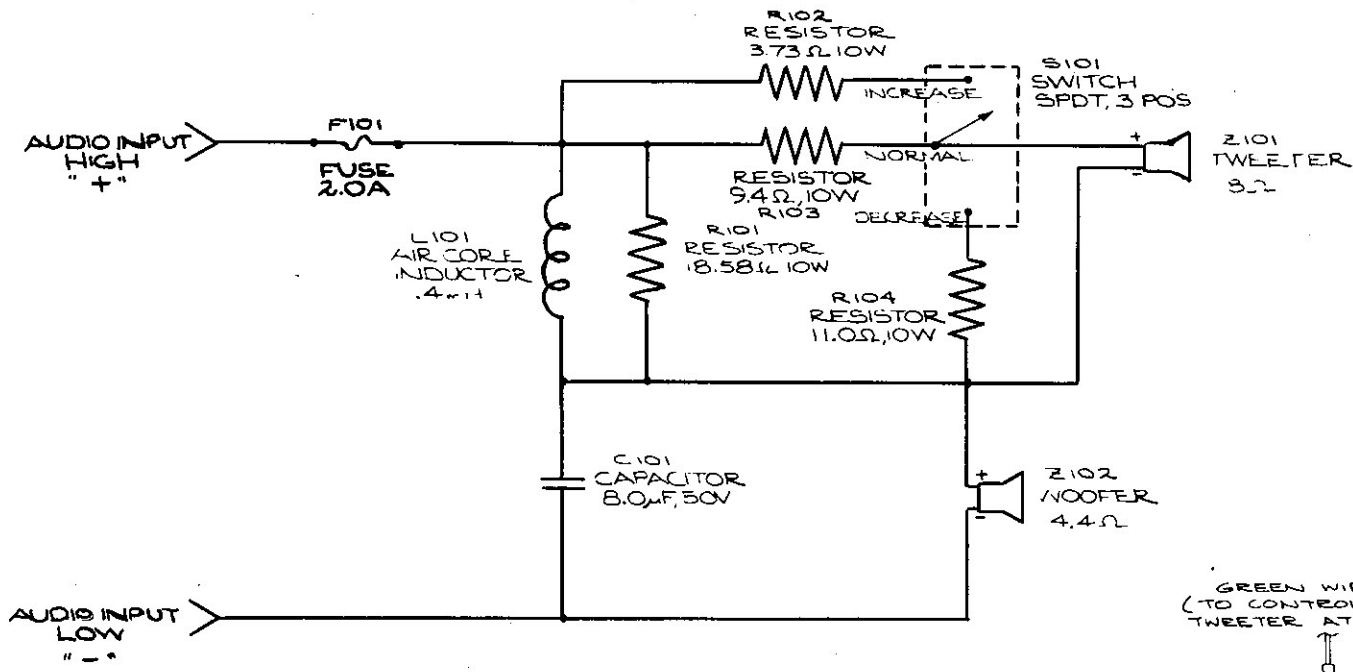
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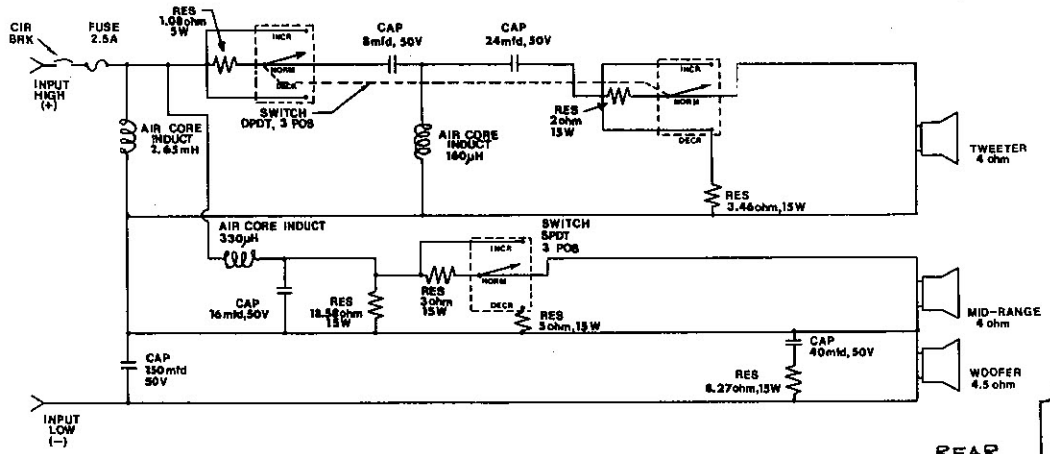
WOOFER

TWEETER



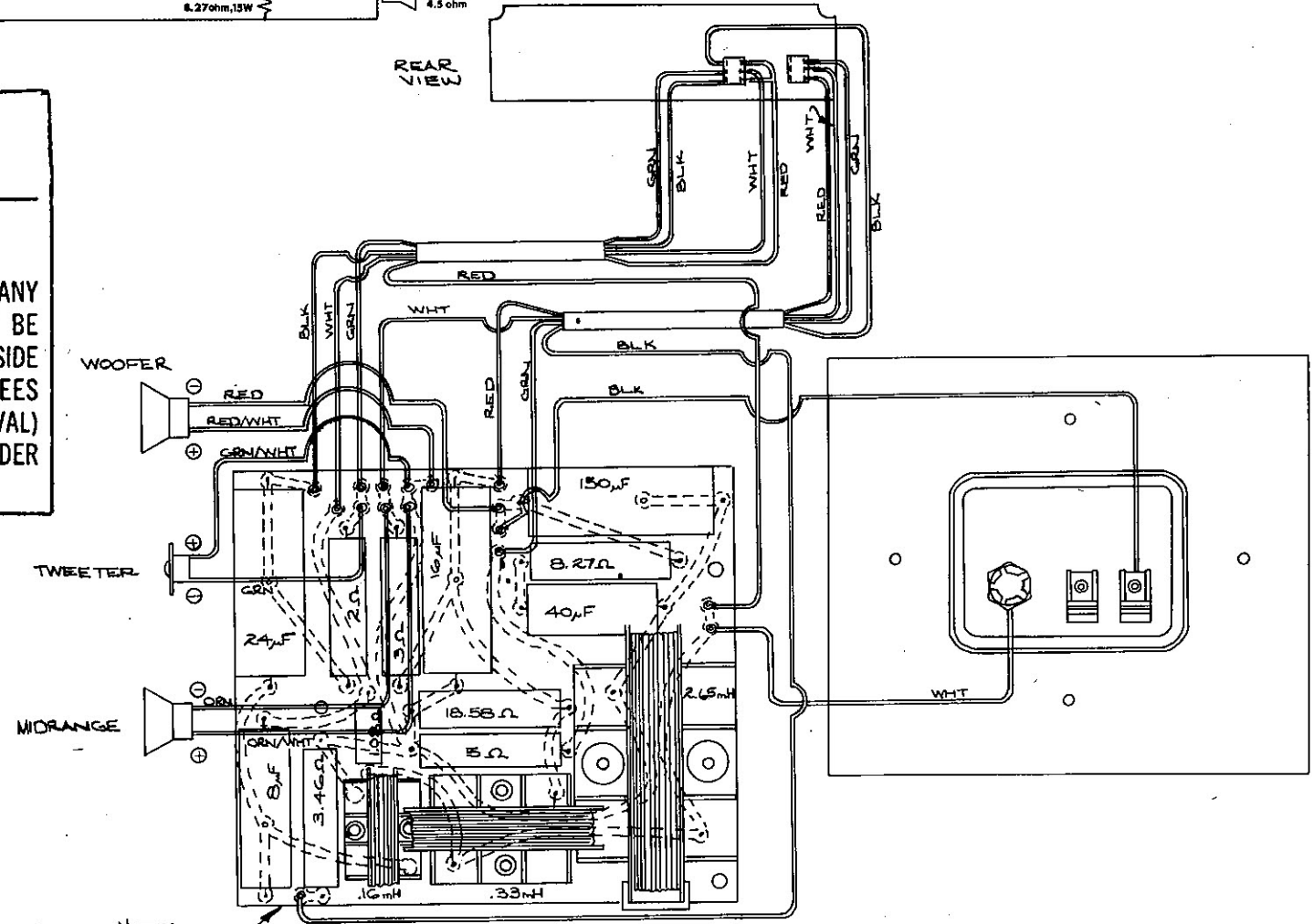
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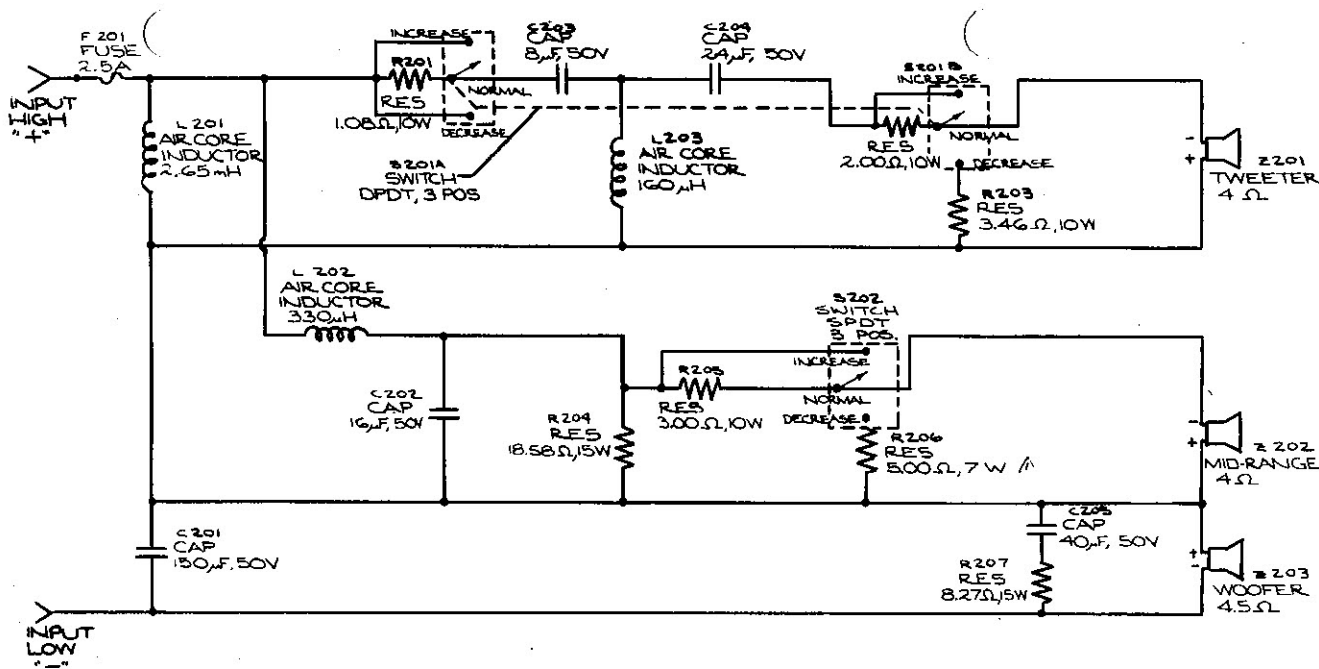


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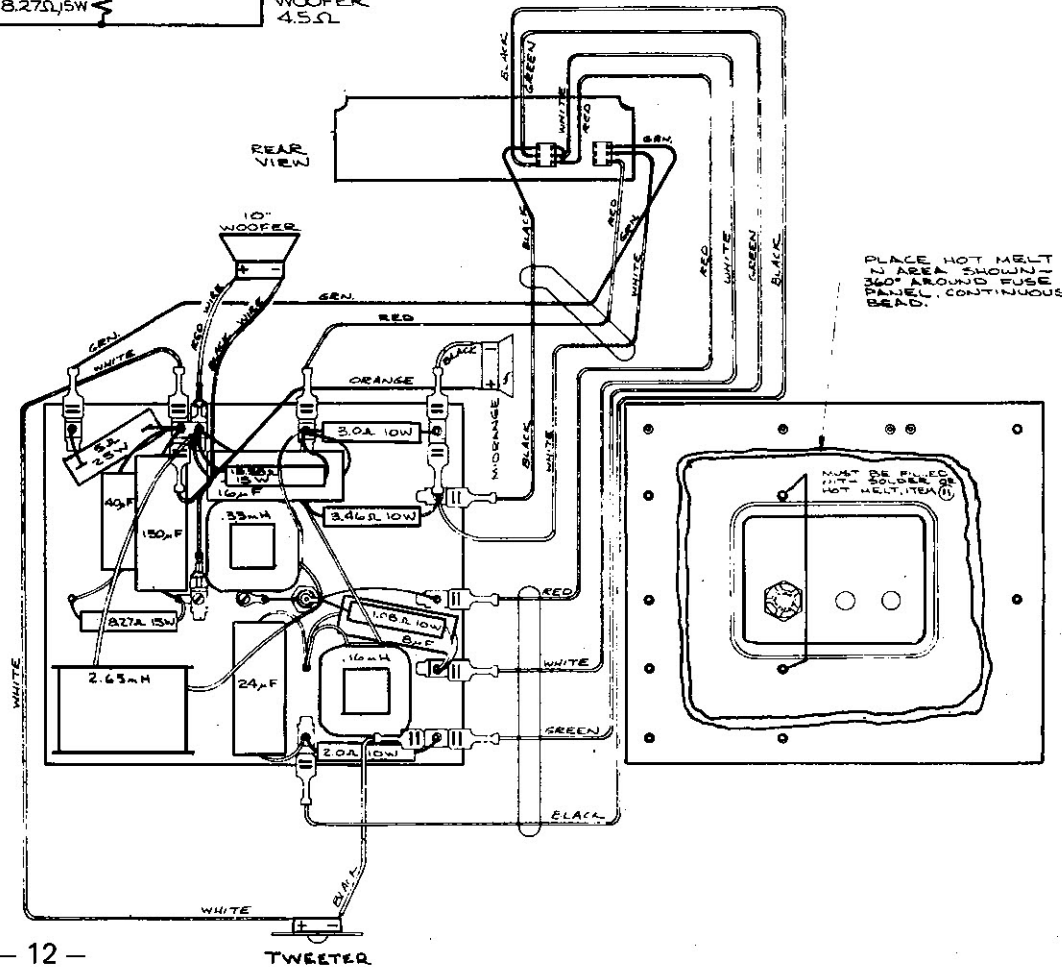
NOTE:
THIS EDGE TO BE BUTTED
AGAINST BACK INSIDE WALL
OF CABINET

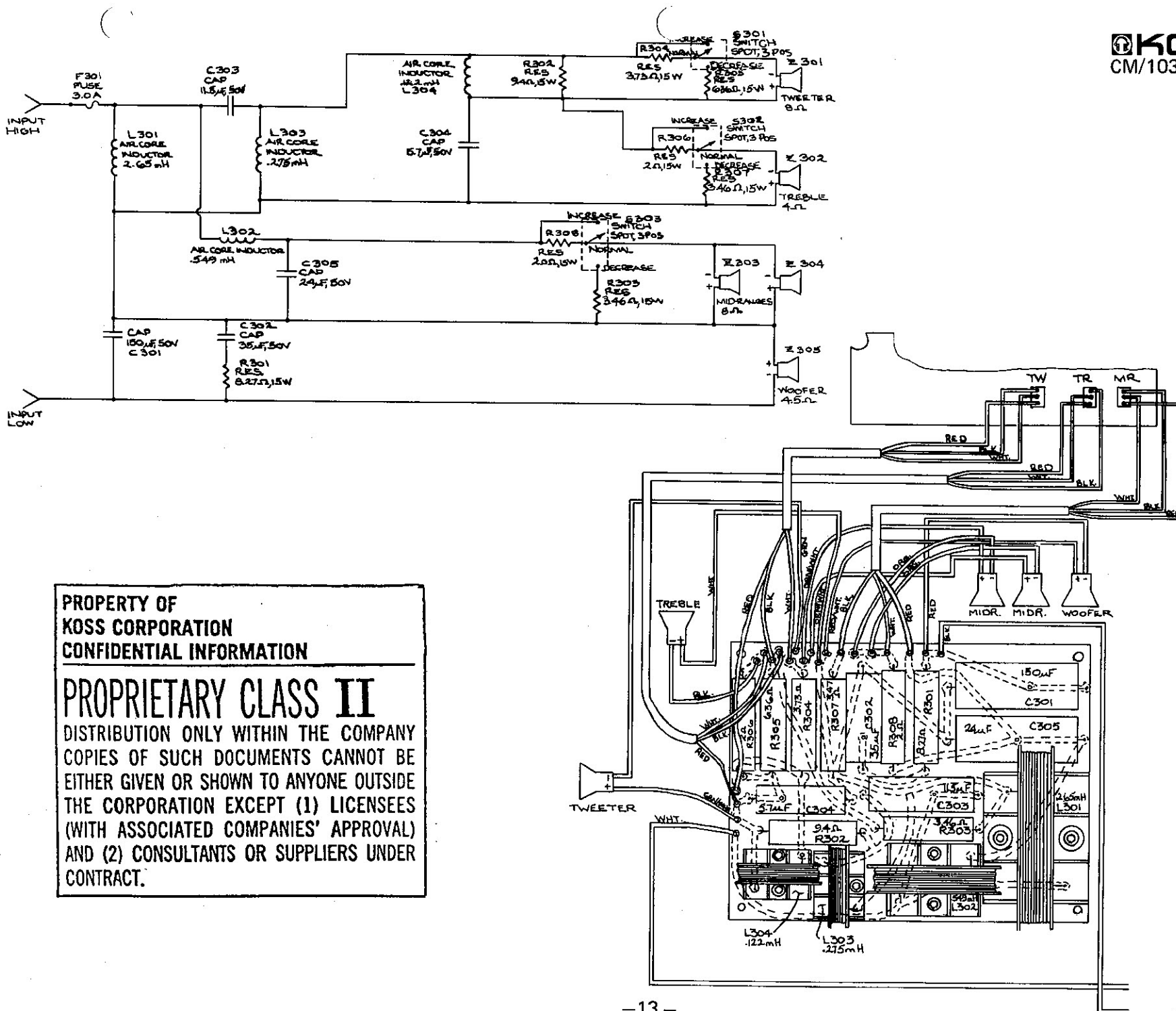


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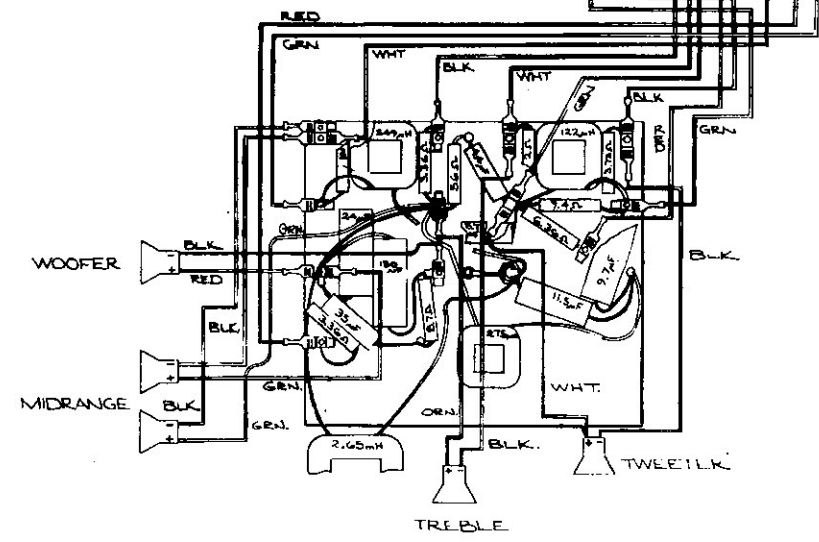
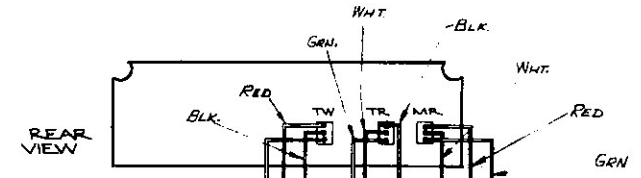
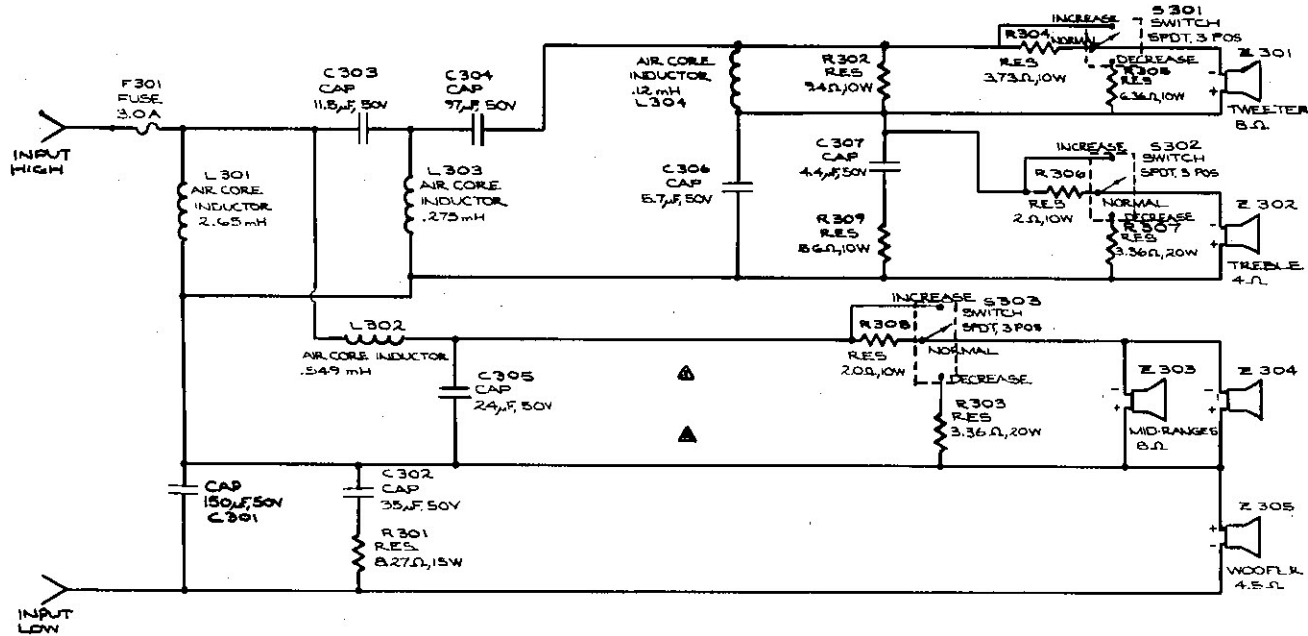




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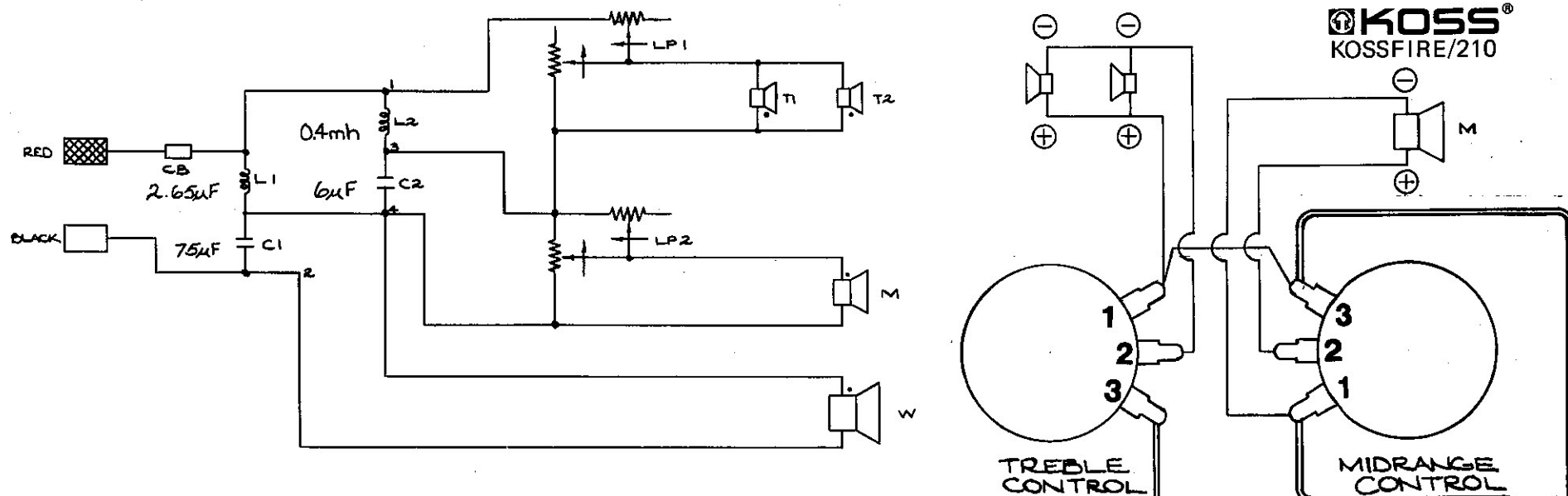
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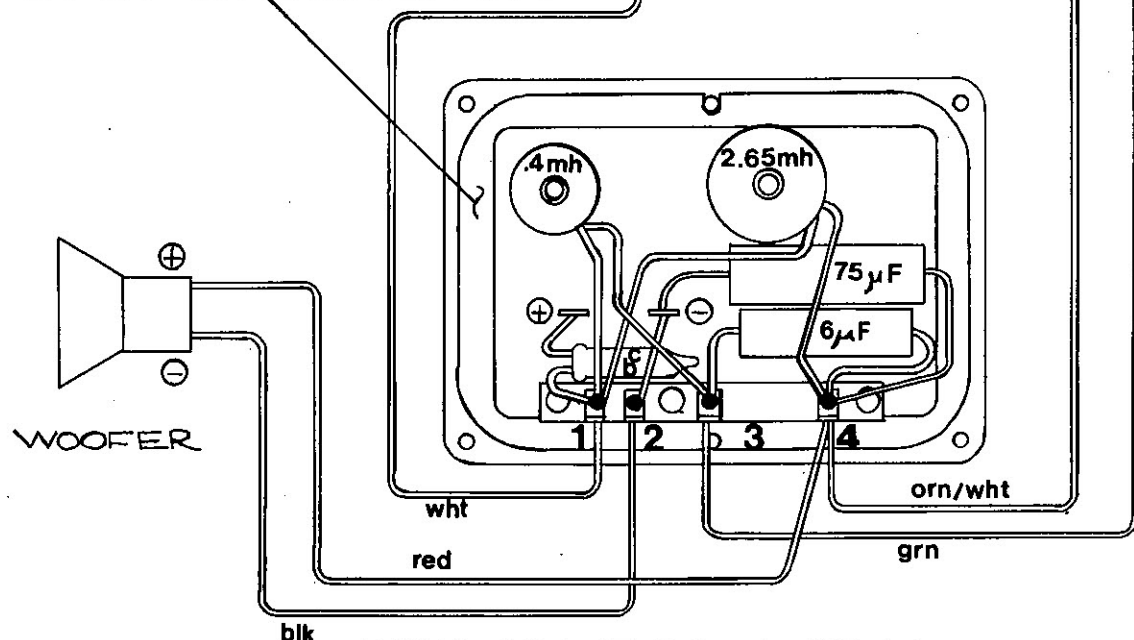


OPTIONAL INSTALLATION
ON CUP OR CABINET REAR

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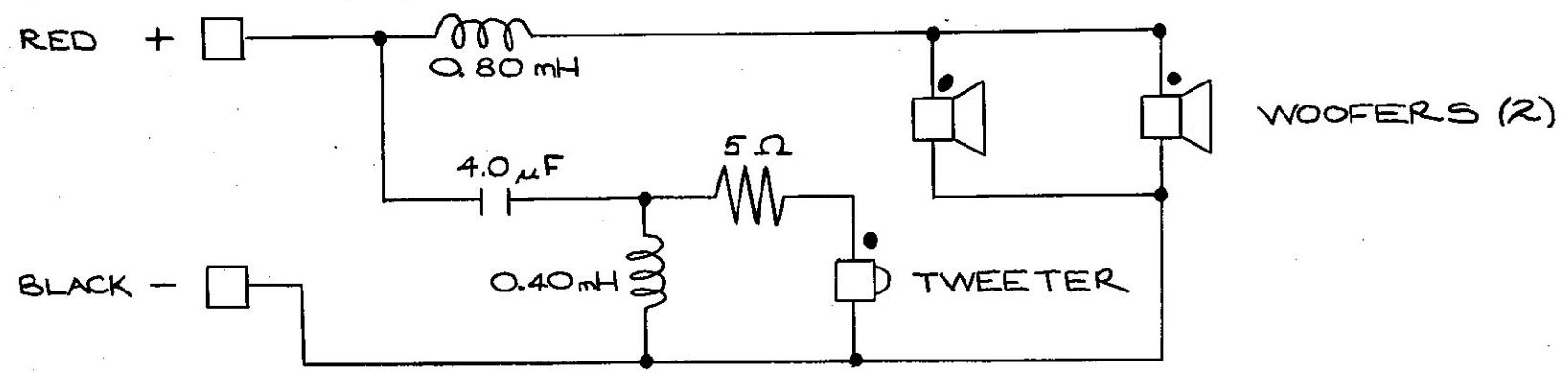
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WIRE CONNECTION DETAIL

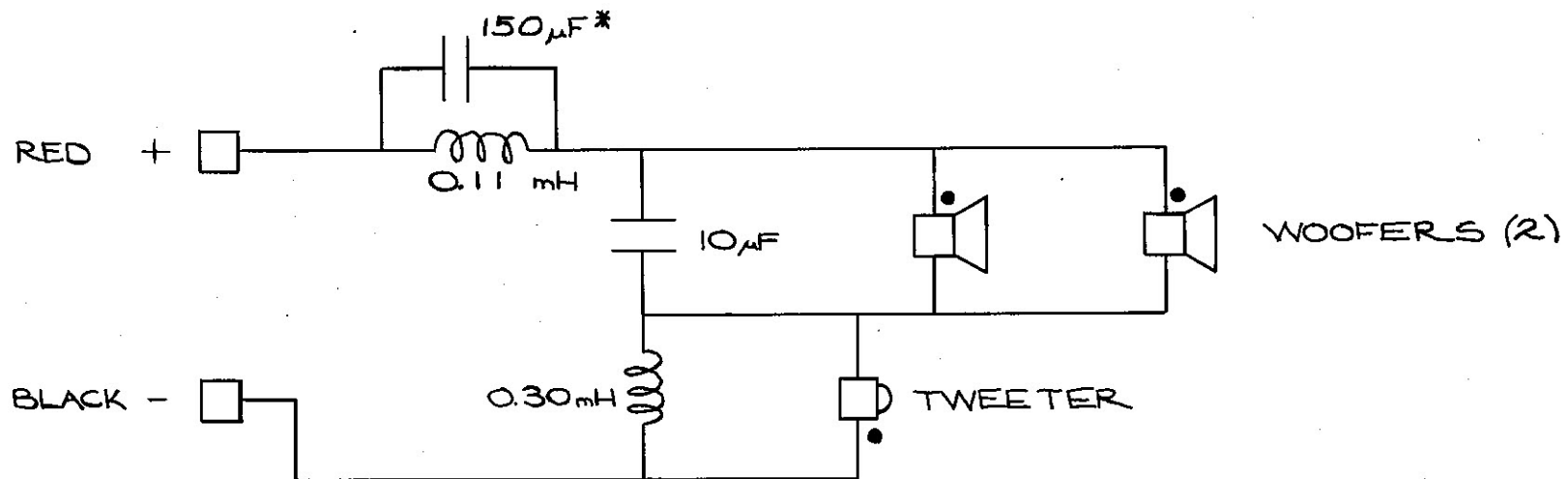
SCALE: NONE

NOTE: REAR VIEW OF POTENTIOMETERS
AND CROSSOVER SHOWN.



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*Early units used 47 μ F. If you require
a 47 μ F, please contact Customer Service
at Koss.

THE FOLLOWING IS A LIST OF RECOMMENDED DEALER REPLACEMENT PARTS FOR OUT OF WARRANTY SPEAKER REPAIR:

CM 530

<u>ITEM</u>	<u>P/N OLD</u>	<u>P/N NEW</u>	<u>RETAIL</u>	<u>DEALER</u>
Woofers 8"	5605	5574	\$52.00	\$31.00
Passive Radiator 8"	5606	5582	22.00	13.25
Tweeter 1"	5607	5656	25.85	15.50
Grille Assembly	5608	5657	48.00	28.75

THE FOLLOWING IS A LIST OF RECOMMENDED DEALER REPLACEMENT PARTS FOR OUT OF WARRANTY SPEAKER REPAIR:

CM 1010

<u>ITEM</u>	<u>P/N OLD</u>	<u>P/N NEW</u>	<u>RETAIL</u>	<u>DEALER</u>
Passive Radiator Assembly 10"	5391	5597	\$27.35	\$16.40
Woofers 8"	5392	5598	65.00	39.00
Tweeter 8 Ohm Assy. Eyeletted w/plate (1" dome)	5393	5602	39.00	23.40
Alignment Weight	5394	5394	3.50	2.35
Grille Assembly	5395	5395	49.00	29.50
Switch	8102	8102	3.95	2.40

THE FOLLOWING IS A LIST OF RECOMMENDED DEALER REPLACEMENT PARTS FOR OUT OF WARRANTY SPEAKER REPAIR:

CM 1020

<u>ITEM</u>	<u>P/N OLD</u>	<u>P/N NEW</u>	<u>RETAIL</u>	<u>DEALER</u>
Woofers 10"	5396	5599	\$65.10	\$39.00
Midrange Driver 4 Ohm 4-1/2"	5397	5601	48.75	29.25
Tweeter 4 Ohm eyeletted 1"	5398	5603	40.60	24.50
Grille Assembly	5399	5399	46.75	28.00
Switch (Set of 2)	8104	8104	12.70	7.60
Trim Gasket (Woofers)				
150 uF capacitor	8105	8105	5.80	3.50

THE FOLLOWING IS A LIST OF RECOMMENDED DEALER REPLACEMENT PARTS FOR OUT OF WARRANTY SPEAKER REPAIR:

CM 1030

<u>ITEM</u>	<u>P/N OLD</u>	<u>P/N NEW</u>	<u>RETAIL</u>	<u>DEALER</u>
Woofer 10"	5396	5599	\$70.00	\$41.50
Midrange 8 Ohm 4-1/2"	5400	5600	47.50	28.50
Treble Driver 4 Ohm Eyeletted 1"	5401	5604	44.00	26.25
Tweeter 8 Ohm Eyeletted 1"	5393	5602	40.50	24.25
Grille Assembly	5402	5402	55.50	33.25
Switch (Set of 3)	8103	8103	10.25	6.15
150 uF capacitor	8105	8105	5.80	3.50

KOSSFIRE 210

<u>ITEM</u>	<u>P/N</u>	<u>SUGGESTED RETAIL</u>	<u>DEALER</u>
Woofers	6514	\$71.00	\$42.60
Grille Assembly	6517	20.00	12.10
Midrange	6526	28.85	17.30
Tweeter	8100	11.70	7.00
Control Knob	6529	1.00	.60
L Pad Rotary Potentiometer	8106	6.75	4.00
Gasket Set	6665	1.50	.90
Trim Plate (Mid & Tweeters)	6619	5.80	3.50
Crossover Assembly	6520	25.25	15.20
75 uF Capacitor	6544	1.95	1.15
6 uF Capacitor	6627	1.10	.66
Circuit Breaker	6547	2.80	1.70

THE FOLLOWING IS A LIST OF RECOMMENDED DEALER REPLACEMENT PARTS FOR OUT OF WARRANTY SPEAKER REPAIR:

M-80

<u>ITEM</u>	<u>P/N OLD</u>	<u>P/N NEW (N-Series)</u>	<u>SUGGESTED RETAIL</u>	<u>DEALER</u>
Woofers 4"	6707	6984	\$29.55	\$17.75
Tweeter	6708	6985	25.25	15.15
Grille Assy.	6778	6988	16.75	10.00
Crossover Assy.	6876	6983	19.35	11.60