

*Kustom*<sup>®</sup>



OWNER'S MANUAL



✓

# MONITOR AMPLIFIER

If You Didn't Get This From My Site,  
Then It Was Stolen From...  
[www.SteamPoweredRadio.Com](http://www.SteamPoweredRadio.Com)

P / N 006-0080-00

## KUSTOM WARRANTY

All Kustom amplifiers, power units, mixers, and their associated components and parts, except as specified below, are guaranteed, by Kustom Electronics, Inc., to the original purchaser to be free of defects in material or workmanship for a period of five (5) years from the date of purchase.

— and —

All Kustom speaker cabinets and their associated components and parts, except as specified below, are guaranteed, by Kustom Electronics, Inc., to the original purchaser to be free of any defects in materials and workmanship for a period of one (1) year from the date of purchase.

— provided —

- (1) The original purchaser applies for a Kustom Warranty Card for the guaranteed product(s) within 10 days of the date of purchase; and,
- (2) Within the applicable period of this guarantee, the original purchaser delivers, at his own expense, the defective product(s) to an Authorized Kustom Dealer or Service Center for repair; or, where no such dealer or service center is nearby, obtains at his own expense from Kustom Electronics, Inc., an "Authorization Number" to return merchandise and ships, at his own expense, the defective product(s) to Kustom Electronics Customer Service, 909 W. Cherry, Chanute, Kansas 66720. The repaired product(s) will be returned freight prepaid.

Kustom Electronics, Inc., will, at its option, repair or replace the defective part(s) or product(s).

Excluded from coverage by this warranty are exterior surfaces and finishes, face panels, grill cloth, covers, knobs, handles, casters and appearance items.

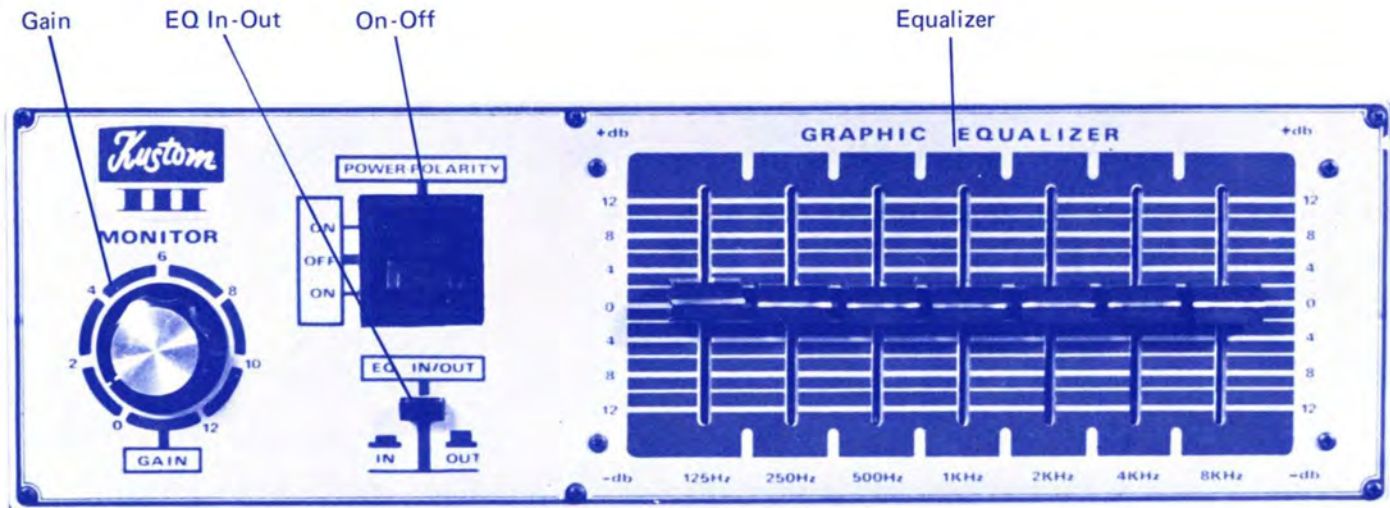
Any modification of the Kustom-manufactured product(s) such as the installation of substitute parts, rewiring or other changes to the system without written authorization from Kustom Electronics, Inc., will automatically void this warranty.

Kustom Electronics, Inc., shall not be liable for any direct, special, incidental or consequential damages incurred by reason of a breach of the above provisions, except as expressly provided above.

The provisions of this warranty shall be covered by the local laws of the state where the original purchaser shall purchase products covered hereby, and shall be enforceable only to the extent, and in the manner, permitted under such laws.

**EXCEPT AS HEREIN EXPRESSLY PROVIDED, KUSTOM ELECTRONICS, INC., MAKES NO WARRANTY, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE.**

# KUSTOM III MONITOR



## INTRODUCTION

The Kustom III Monitor is a high-performance, reliable and versatile graphic equalizer-power amplifier combination. This instruction manual provides useful information which could prevent problems on a gig. A little time spent reading the manual could save a lot of time trying to find problems that do not exist.

## GENERAL

The Kustom III Monitor is designed for the most demanding professional application. The standard system consists of one graphic-equalizer-power amplifier and two monitor slants (cabinets). The monitor slants each contain a 12" bass speaker, a diffraction horn and driver, and a crossover network. The speaker components are carefully designed to allow very high levels without feedback when used correctly.

The monitor-amplifier-graphic equalizer is designed for maximum flexibility of operation, as can be seen in the functional block diagram (Figure 2). The equalizer in/out switch allows use of the unit as a graphic equalizer, a power amplifier, or a combination of the two functions.

## INPUTS

The Kustom III Monitor is equipped with two high-impedance input jacks which are wired in parallel. This allows the connection of up to 10 equalizer-amplifiers in a system.

Connect equalizer-amplifiers from INPUT to INPUT, rather than from LINE OUT to INPUT when using more than one unit. If one unit in the series thermal cycles (cuts off until normal operating temperature is reached), and the equalizer-amplifiers are connected INPUT to INPUT, only the cycling unit will be lost. However, if the series is connected LINE OUT to INPUT and one of the units cycles, power will be lost to all of the equalizer-amplifiers following the cycling unit in the series.

## OUTPUTS

The Kustom III Monitor is equipped with two power output jacks and one line level output jack. Two monitor slants are used in the normal configuration and constitute a correct load for the power amplifier. Only the recommended speaker cabinets should be used with the power amplifier-equalizer. Although the power amplifier will not be damaged with abnormal loads, it is possible to produce distortion and over-heating. When the power amplifier overheats, a protective device in the unit will cause it to turn off for several minutes. Normal operation will resume when the amplifier cools to its rated operating temperature.

The line output jack is provided to allow the unit to be used as a graphic equalizer only and to provide a low impedance (600 ohm) line level (1.0V RMS) output for driving tape recorders or additional power amplifiers. (The latter is not recommended; see "INPUTS".)

## CONNECTION AND LOCATION

The location of the monitor slants will be the most critical of all speaker systems in preventing feedback. Cardioid microphones **MUST** be used, and the monitor slants should be placed at the "null point" (the point of least sensitivity) at the rear of the microphone. In some instances, a movement of two or three inches of the microphone or monitor slant will cause or eliminate feedback.

Location of the power amplifier-equalizer is a matter of choice. However, if more than one amplifier-equalizer is employed, units should not be stacked. Heat generated by the power amplifiers might cause thermal cycling if units are stacked. The recommended grouping is to stand the amplifier-equalizers on end, at least 3.0 inches apart.

## OPERATION

The Kustom III Monitor will provide very high monitor levels when operated properly.

To adjust the system properly before a performance, adjust the main sound reinforcement system levels until the feedback point is reached. Then place the equalizer IN/OUT switch to the IN position and adjust the equalizer slides to the center or "flat" position. Gradually turn up the MAIN LEVEL control until feedback occurs. At this point, adjust the GRAPHIC EQUALIZER until feedback is gone.

You are now at the point of optimum equalization and level.

Some adjustment of the MAIN LEVEL control may be necessary after the group starts playing, due to the possibility that various instruments might cause feedback at a second frequency. Once the system is adjusted, monitor operation should be "hands off" for the rest of the gig.

Operation of the Kustom III Monitor as a graphic equalizer ONLY is accomplished by placing the EQUALIZER IN/OUT switch in the IN position and taking the output from the LINE OUT jack.

The Kustom III Monitor may be used as a power amplifier by placing the EQUALIZER IN/OUT switch in the OUT position and connecting the speaker systems to the speaker output jack.

## **MONITOR SLANTS**

The Kustom III Monitor slants are designed for very tight pattern control in the vertical and horizontal planes. This pattern control is essential for maximum sound pressure level before feedback.

The monitor slants are full-range, high-power handling capability systems containing one 12-inch SRO bass, and one 120° horizontal x 90° vertical diffraction horn with an 800Hz taper rate. A 12dB / octave crossover network at 1.0KHz is used for frequency division.

## **RACK MOUNTING**

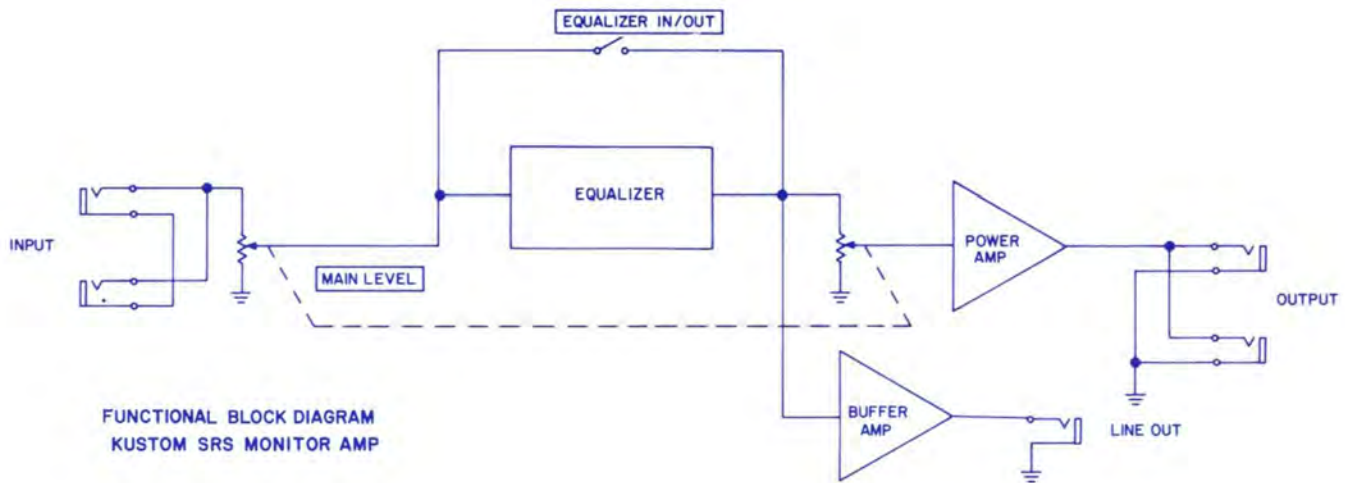
The Kustom III Monitor may be rack mounted in a standard 19" rack frame. Two brackets and the required hardware are available as an option for the Kustom III Monitor. To rack mount the unit, remove the chassis from the cabinet and attach the brackets with the supplied hardware. Two standard rack-spaces are occupied by each amplifier. Whenever two or more units are rack mounted, a fan should be used to keep the units at a reasonable operating temperature. All racks, fans, and related equipment are standard industrial items which may be purchased from almost any industrial electronics distributor.



## TECHNICAL SPECIFICATIONS

Power output measured into a 4.0 ohm load at 1.0KHz. Equalizer out.	132 Watts RMS @ 1.0% THD
Signal-to-noise ratio. Main level maximum. Equalizer adjusted at center position.	76dB
Frequency response. Measured with Equalizer in and adjusted to center position.	$\pm 2.0$ dB, 40Hz to 17KHz
Equalizer control range at each frequency.	$\pm 12.0$ dB
Nominal input impedance.	10K ohms
Line output at rated power.	1.0 volt RMS
Absolute minimum speaker load impedance.	3.0 ohms
AC accessory receptacle maximum load.	200 Watts

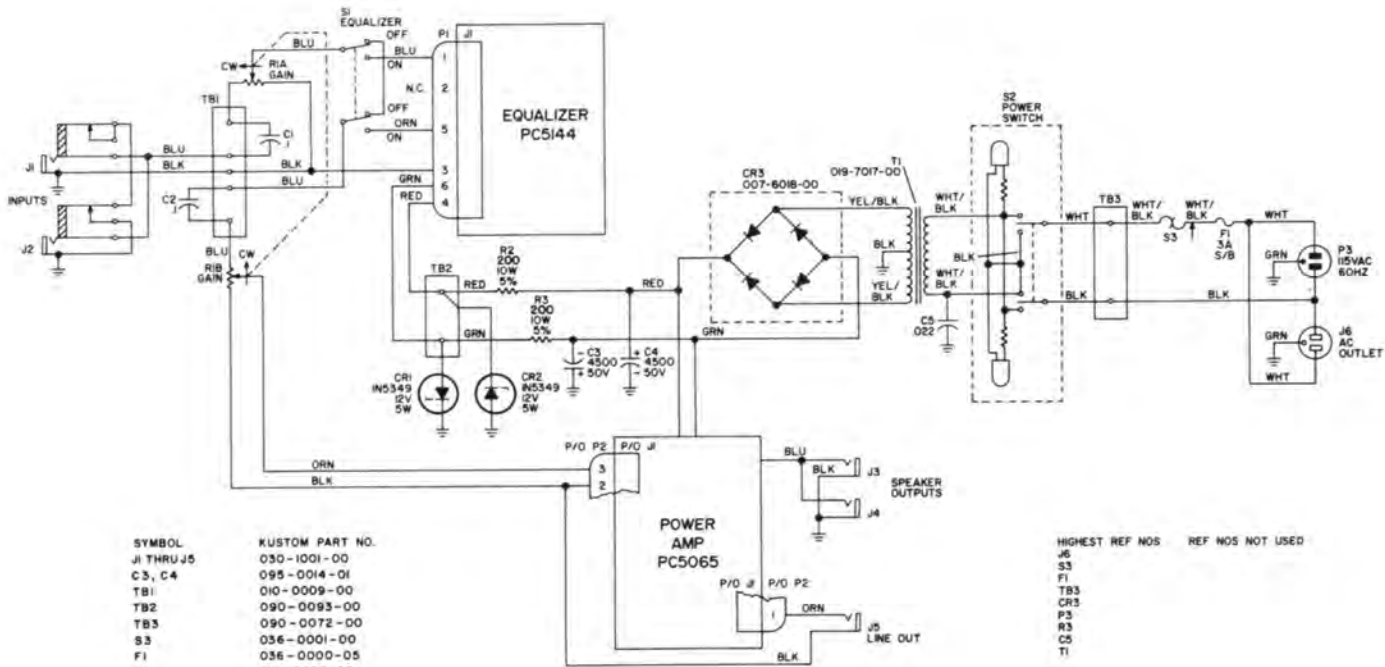
# FUNCTIONAL BLOCK DIAGRAM





**KUSTOM ELECTRONICS, INC.**  
1010 WEST CHESTNUT, CHANUTE, KANSAS 66720

If You Didn't Get This From My Site,  
Then It Was Stolen From...  
**[www.SteamPoweredRadio.Com](http://www.SteamPoweredRadio.Com)**

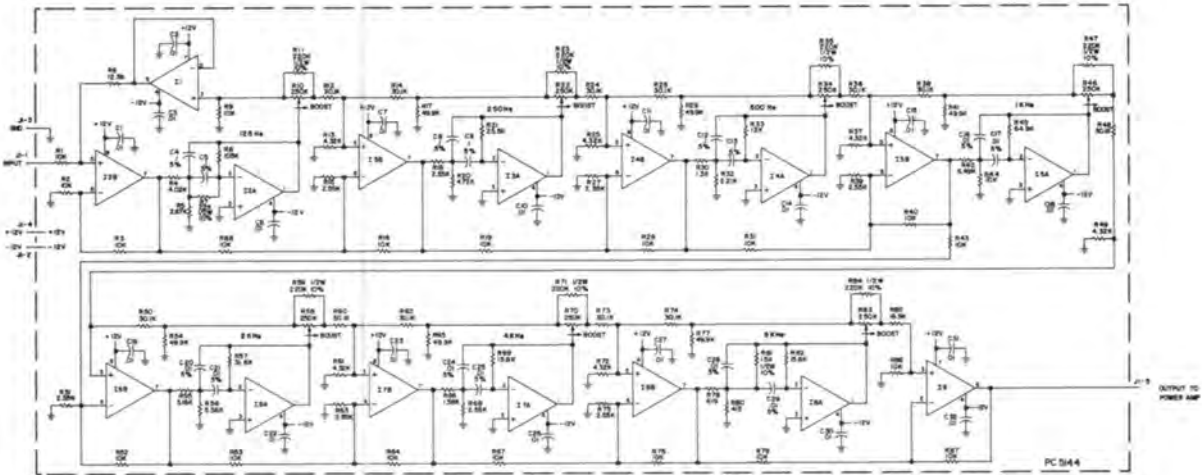


SYMBOL	KUSTOM PART NO.
J1 THRU J5	030-1001-00
C3, C4	095-0014-01
TB1	010-0009-00
TB2	090-0093-00
TB3	090-0072-00
S3	036-0001-00
F1	036-0000-05
S2	031-0059-00
S1	031-0056-00
J6	030-2066-00
C1, C2	105-0030-39
C5	106-0000-02
R1	133-0066-00
R2, R3	136-0000-13
CR1, CR2	007-5349-00

HIGHEST REF NOS	REF NOS NOT USED
J6	
S3	
F1	
TB3	
CR3	
P3	
R3	
C5	
T1	

If You Didn't Get This From My Site,  
Then It Was Stolen From...  
[www.SteamPoweredRadio.Com](http://www.SteamPoweredRadio.Com)

KUSTOM ELECTRONICS, INC.		CRANFORD, KANSAS 66728	
DATE	REV	TO ORDER	NONE
1 / 2	1	BY	SCHELL
2 / 2	1	DATE	5-74
PART NAME		KUSTOM INTERCONNECT DIAG	
PART NUMBER		KUSTOM III MONITOR	
DATE	REV	TO ORDER	NONE
1 / 2	1	BY	SCHELL
2 / 2	1	DATE	5-74
PART NAME		KUSTOM INTERCONNECT DIAG	
PART NUMBER		KUSTOM III MONITOR	
DATE	REV	TO ORDER	NONE
1 / 2	1	BY	SCHELL
2 / 2	1	DATE	5-74
PART NAME		KUSTOM INTERCONNECT DIAG	
PART NUMBER		KUSTOM III MONITOR	



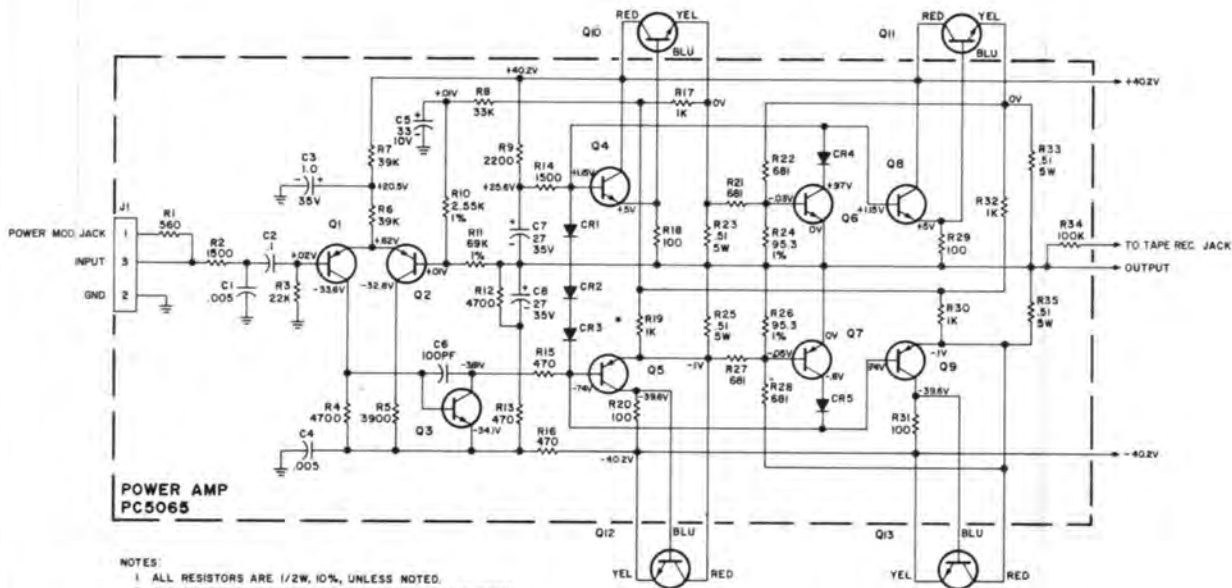
NOTE: 1. ALL RESISTORS ARE 1/4W, 5% TOLERANCE UNLESS NOTED.  
 2. ALL CAPACITOR VALUES ARE IN MICROFARADS UNLESS NOTED.

DIAGNOSIS  
 71-19  
 21 7490-28  
 842-012-034  
 842-012-034E

CUSTOM PART NO.  
 007-1042-02  
 007-7023-00  
 101-1040-00

HONEYWELL REF. NO. REF. NO. NOT USED  
 888  
 126  
 24

PC 2144 1 1 1	REV.	DATE	BY	CHKD
	REV.	DATE	BY	CHKD
	REV.	DATE	BY	CHKD
	REV.	DATE	BY	CHKD
PART NAME		ELECTRONICS, INC.		
REV.		DANA		
REV.		1975		
REV.		EQ		
REV.		EQUILIZER PC 2144		
REV.		1		
REV.		000-3944-00		



**POWER AMP  
PC5065**

**NOTES:**

- 1 ALL RESISTORS ARE 1/2W, 10%, UNLESS NOTED.
- 2 ALL CAPACITOR VALUES ARE IN MICROFARADS, UNLESS NOTED.
- \*3. DIODE CR3 IS MOUNTED IN A CLIP ON THE CHASSIS.
- 4 TRANSISTORS Q10, Q11, Q12, & Q13 ARE MOUNTED IN A BRACKET ON THE CHASSIS
5. VOLTAGE MEASUREMENTS ARE WITH POWER ON, NO SIGNAL, NO LOAD AND MEASURED FROM COMMON GROUND.

SYMBOL	KUSTOM PART NO
CR1 & CR2	007-6011-00
CR3	007-6006-00
CR4 & CR5	007-6016-00
Q1 & Q2	007-0009-00
Q3	007-0002-00
Q4 & Q8	007-0011-00
Q5 & Q9	007-0012-00
Q6	007-0005-00
Q7	007-0006-00
Q1	030-2034-00
J1	007-0000-00
Q10 THRU Q13	

If You Didn't Get This From My Site,  
Then It Was Stolen From...  
[www.SteamPoweredRadio.Com](http://www.SteamPoweredRadio.Com)

REV.	UNIT	DATE
1	002-5144-00	9-74

**KUSTOM III  
MONITOR  
P/N 006-0108-00**

REV.	DATE	BY	CHKD.
1	11/27/72	WJ	
2	11/27/72	WJ	
3	11/27/72	WJ	
4	11/27/72	WJ	
5	11/27/72	WJ	
6	11/27/72	WJ	

PART NUMBER		DESCRIPTION		ITEM
ELECTRONICS, INC.		CHANDLER, KAN		84720
DESIGN	DATE	TOLERANCES	MATERIAL	
SPRITS	5-71	NONE	NONE	
CHKD.	DATE	NAME	SCHEMATIC DIAGRAM - POWER AMP PC5065	
ISSUED	BY	PART NUMBER	002-5065-00	
NONE	OF 1			