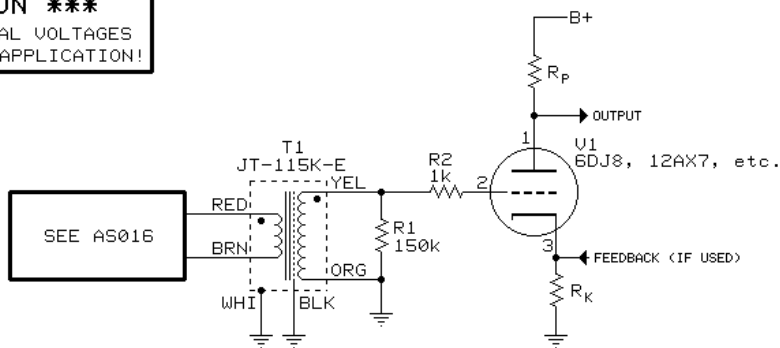


# JT-115K-E TUBE MICROPHONE PREAMP GENERIC INPUT STAGE

**\*\*\* CAUTION \*\*\***  
 POTENTIALLY LETHAL VOLTAGES  
 ARE USED IN THIS APPLICATION!



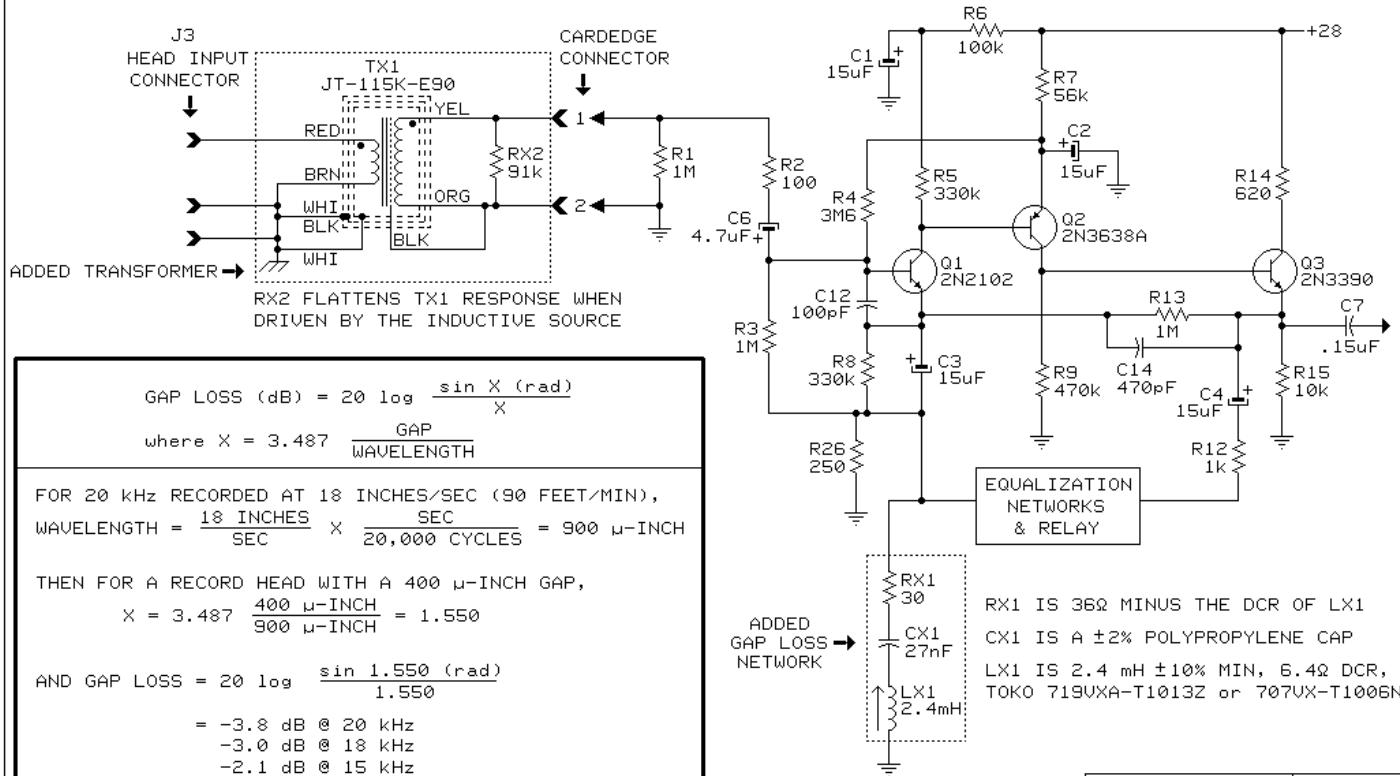
## NOTES

- RESISTORS R1 AND R2 ARE ±1% 1/4w METAL FILM TYPES, ROEDERSTEIN MK2-1 OR EQUIVALENT
- RESISTORS Rp AND Rk SHOULD BE WIREWOUND OR METAL FOIL TYPES TO REDUCE EXCESS NOISE CONTRIBUTION
- ALL RESISTORS IN OHMS ( 6k81 = 6.81k, 68r1 = 68.1 )
- RESISTOR R2 SHOULD BE MOUNTED AS CLOSE AS POSSIBLE TO U1 TO PREVENT POSSIBLE SPURIOUS VHF OSCILLATIONS
- U1 SOCKET SHOULD BE HIGH QUALITY NON-HYGROSCOPIC TYPE, SUCH AS PORCELAIN, FOR LOWEST NOISE
- USE OF VERY CLEAN DC POWER FOR PLATE AND HEATER IS HIGHLY RECOMMENDED
- IF T1 IS NEAR A POWER TRANSFORMER, CONSIDER USING THE TRIPLE MAGNETIC SHIELDED VERSION, THE JT-115K-E90

<b>jensen</b>	AS020
	03/13/2000
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# JT-115K-E90 "SYNC" CONVERSION FOR MAGNA-TECH 69C REPRO AMPLIFIER

THIS MODIFICATION WAS DESIGNED SPECIFICALLY FOR A TECCON #33100 HEAD OPERATING AT 18 INCHES/SEC  
IT SHOULD WORK WELL FOR ANY OTHER RECORD HEAD HAVING ABOUT 8 mH INDUCTANCE AND A 400 MICRO-INCH GAP.



$$\text{GAP LOSS (dB)} = 20 \log \frac{\sin X \text{ (rad)}}{X}$$
 where  $X = 3.487 \frac{\text{GAP}}{\text{WAVELENGTH}}$

FOR 20 kHz RECORDED AT 18 INCHES/SEC (90 FEET/MIN),  
 $\text{WAVELENGTH} = \frac{18 \text{ INCHES}}{\text{SEC}} \times \frac{\text{SEC}}{20,000 \text{ CYCLES}} = 900 \mu\text{-INCH}$

THEN FOR A RECORD HEAD WITH A 400  $\mu\text{-INCH}$  GAP,  
 $X = 3.487 \frac{400 \mu\text{-INCH}}{900 \mu\text{-INCH}} = 1.550$

AND GAP LOSS =  $20 \log \frac{\sin 1.550 \text{ (rad)}}{1.550}$

= -3.8 dB @ 20 kHz  
 = -3.0 dB @ 18 kHz  
 = -2.1 dB @ 15 kHz  
 = -1.3 dB @ 12 kHz  
 = -0.9 dB @ 10 kHz  
 = -0.6 dB @ 8 kHz  
 = -0.2 dB @ 5 kHz  
 = -0.1 dB @ 3 kHz

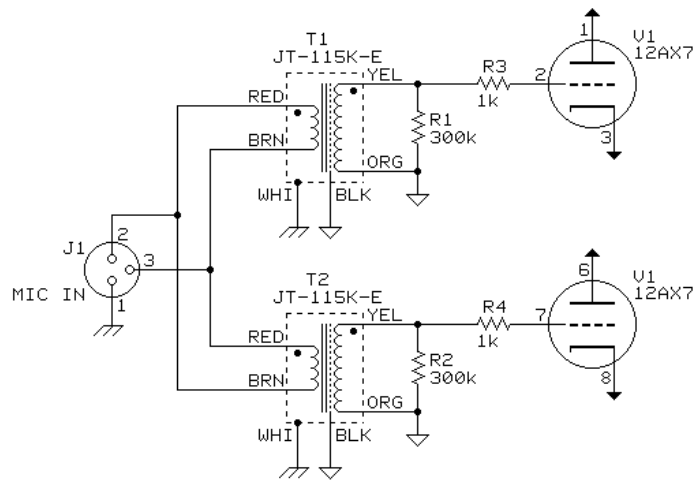
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RX1 IS 36 $\Omega$  MINUS THE DCR OF LX1  
 CX1 IS A  $\pm 2\%$  POLYPROPYLENE CAP  
 LX1 IS 2.4 mH  $\pm 10\%$  MIN, 6.4 $\Omega$  DCR,  
 TOKO 719VXA-T1013Z or 707VX-T1006N

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## TWO JT-115K-E USED IN SYMMETRICAL MIC INPUT STAGE

A 1:20 STEP-UP TRANSFORMER WITH CENTER-TAPPED SECONDARY IS EFFECTIVELY REALIZED



NOTE INTENTIONAL "OUT-OF-PHASE" PRIMARY HOOK-UP

**\*\*\* CAUTION \*\*\***  
POTENTIALLY LETHAL VOLTAGES  
ARE USED IN THIS APPLICATION!

### NOTES

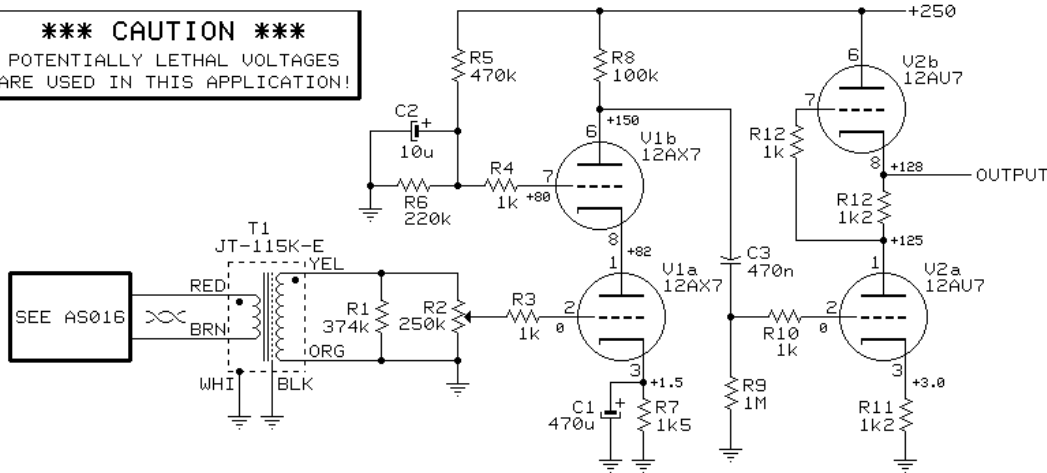
1. ALL RESISTORS IN OHMS ( 6k81 = 6.81k, 68r1 = 68.1 )
2. ALL RESISTORS ARE  $\pm 1\%$  1/4w METAL FILM TYPES, ROEDERSTEIN MK2-1 OR EQUIVALENT
3. IF T1 AND T2 ARE NEAR A POWER TRANSFORMER, CONSIDER USING THE TRIPLE MAGNETIC SHIELDED VERSION, THE JT-115K-E90

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## JT-115K-E CASCADE TUBE MICROPHONE INPUT STAGE

**\*\*\* CAUTION \*\*\***  
POTENTIALLY LETHAL VOLTAGES  
ARE USED IN THIS APPLICATION!



CAN BE DC COUPLED  
TO UPPER GRID IN  
OUTPUT DRIVER OF  
JENSEN JT-10K61-1M  
DATA SHEET.

OVERALL GAIN (INCLUDING TRANSFORMER) = 5000x (74 dB) MAX  
ELECTRONIC GAIN = 550x (55 dB) MAX

### NOTES

1. RESISTORS ARE  $\pm 1\%$  1/4w METAL FILM TYPES, ROEDERSTEIN MK2-1 OR EQUIVALENT  
R8 SHOULD BE WIREWOUND OR METAL FOIL TYPE TO REDUCE EXCESS NOISE CONTRIBUTION  
1 k RESISTORS SHOULD BE AS CLOSE AS POSSIBLE TO TUBES TO PREVENT POSSIBLE SPURIOUS UHF OSCILLATIONS
2. U1 SOCKET SHOULD BE HIGH QUALITY NON-HYGROSCOPIC TYPE, SUCH AS PORCELAIN, FOR LOWEST NOISE
3. IF T1 IS NEAR A POWER TRANSFORMER, CONSIDER THE TRIPLE MAGNETIC SHIELDED JT-115K-E90
4. USE OF VERY CLEAN DC POWER FOR PLATE AND HEATER IS HIGHLY RECOMMENDED

**jensen**

AS054

03/13/2000

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