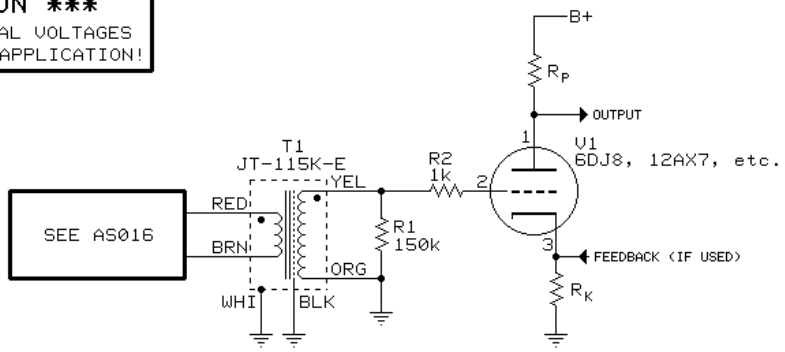
JT-115K-E TUBE MICROPHONE PREAMP GENERIC INPUT STAGE

***** 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 R_P AND R_K 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 V1 TO PREVENT POSSIBLE SPURIOUS VHF OSCILLATIONS

V1 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

jensen	AS020
	03/13/2000

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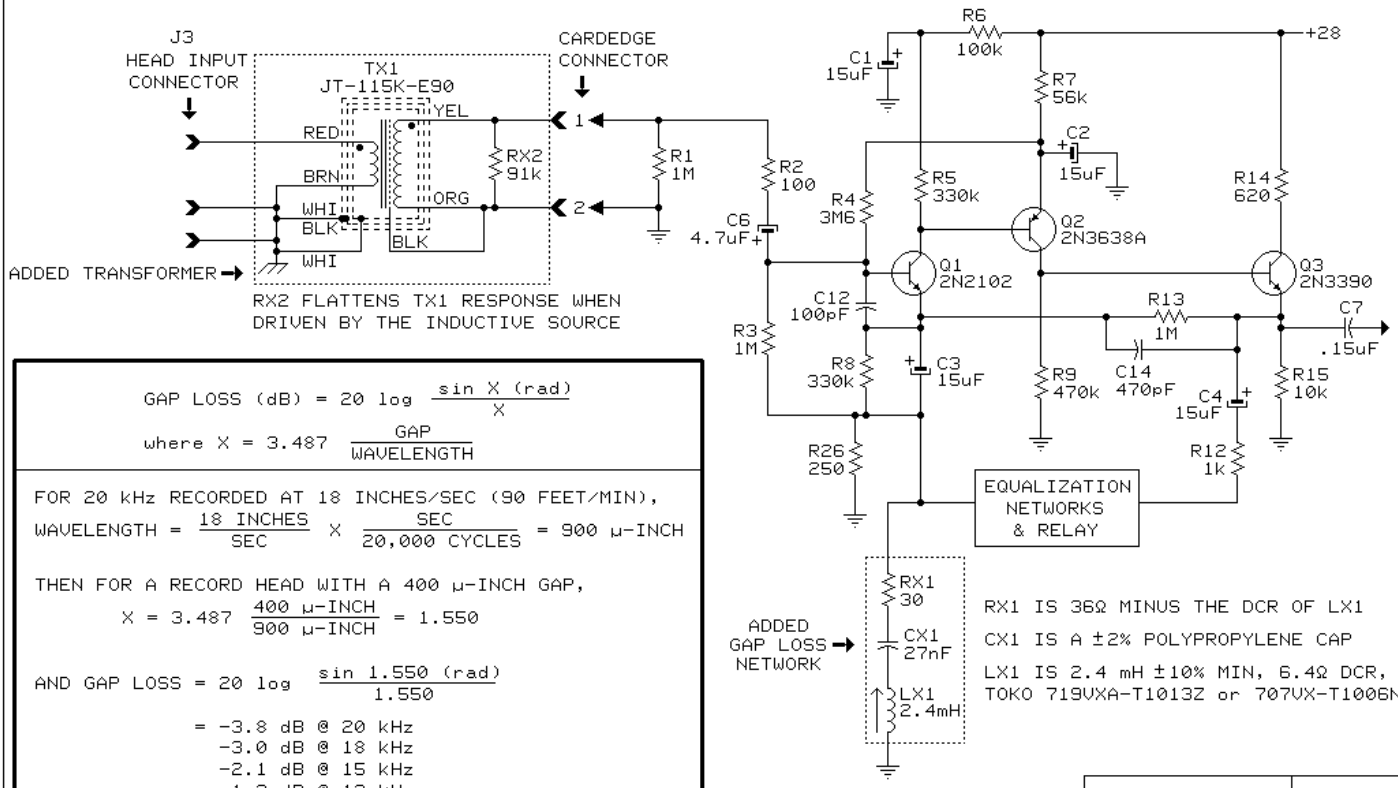
JT-115K-E90 "SYNC" CONVERSION FOR MAGNA-TECH 69C REPRO AMPLIFIER

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.



RX1 IS 36Ω MINUS THE DCR OF LX1

CX1 IS A ±2% POLYPROPYLENE CAP

LX1 IS 2.4 mH ±10% MIN, 6.4Ω DCR,
TOKO 719VXA-T1013Z or 707VX-T1006N

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

$$\text{where } X = 3.487 \frac{\text{GAP}}{\text{WAVELENGTH}}$$

FOR 20 kHz RECORDED AT 18 INCHES/SEC (90 FEET/MIN),

$$\text{WAVELENGTH} = \frac{18 \text{ INCHES}}{\text{SEC}} \times \frac{\text{SEC}}{20{,}000 \text{ CYCLES}} = 900 \text{ µ-INCH}$$

THEN FOR A RECORD HEAD WITH A 400 µ-INCH GAP,

$$X = 3.487 \frac{400 \text{ µ-INCH}}{900 \text{ µ-INCH}} = 1.550$$

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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09/18/95

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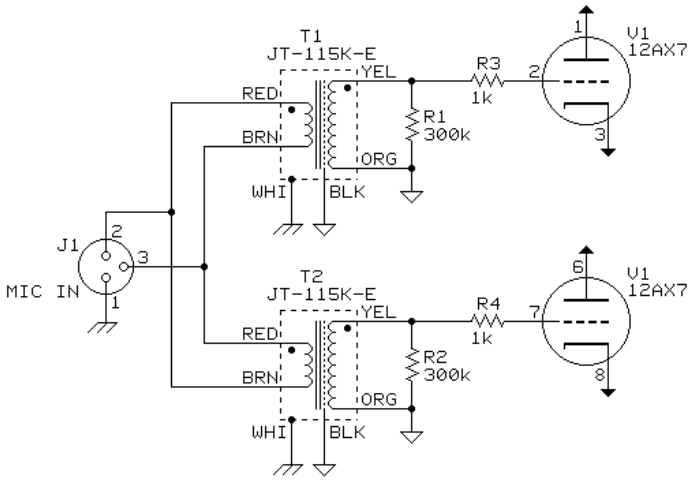
TWO JT-115K-E USED IN SYMMETRICAL MIC INPUT STAGE

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



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

***** CAUTION *****

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ARE USED IN THIS APPLICATION!

NOTES

1. ALL RESISTORS IN OHMS (6k81 = 6.81k, 68r1 = 68.1)
2. ALL RESISTORS ARE ±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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03/13/2000

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JT-115K-E CASCODE TUBE MICROPHONE INPUT STAGE

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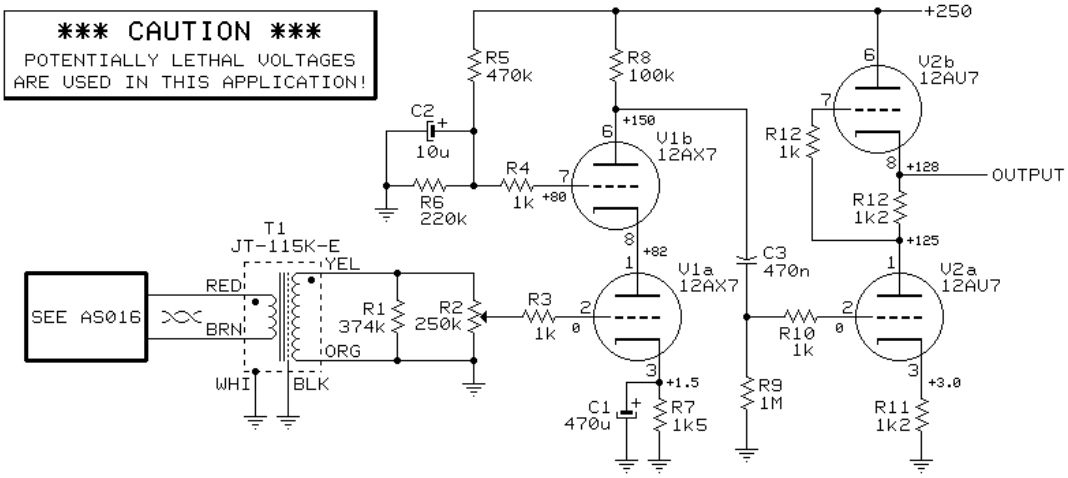
ARE USED IN THIS APPLICATION!



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 ±1% 1/4ω 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 VHF OSCILLATIONS
2. V1 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

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