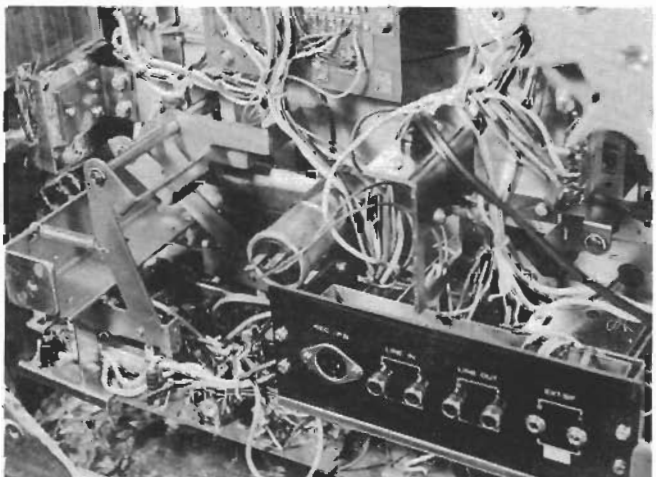
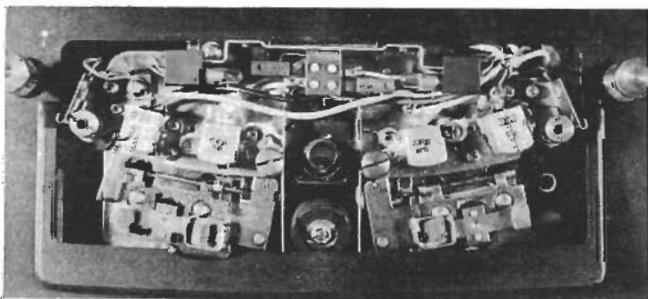
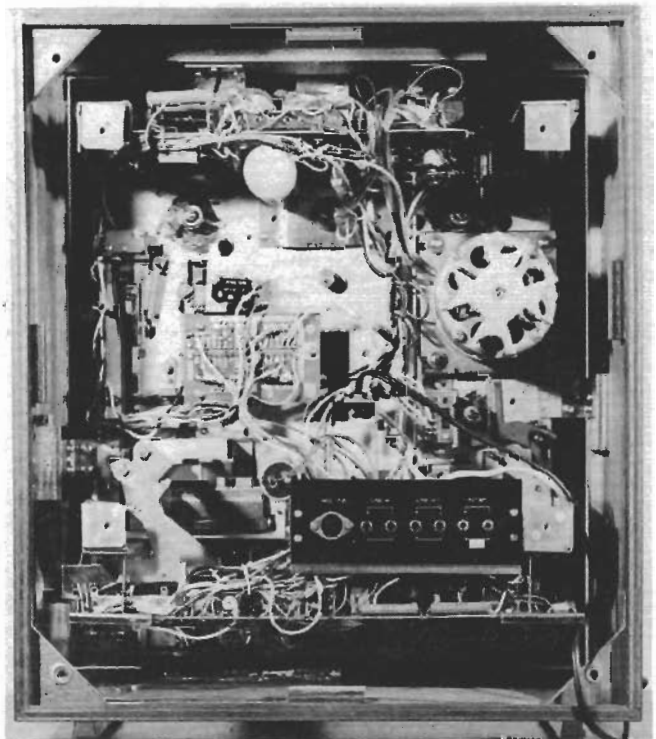


## WEBCOR STEREO TAPE RECORDER MODEL 5000R

by H. Burrell Hadden

Those of you that remember the name of Webcor from the early days of home tape recorders will have noted the recent resurgence of that name. It's not the same company as the earlier Webcor, originally the Webster-Chicago Corporation, which quietly folded its tent in 1967. Among its assets was the well-known name which became the property of Consolidated Merchandising, a part of massive U.S. Industries Inc. (\$1.2 billion sales in 1970). Earlier this year Consolidated became the Webcor Electronics Division of U.S. Industries and that once familiar name began another life.

All of which brings us to this month's tape recorder which is currently Webcor's top open-reel model. The 5000R is a four track stereo machine with automatic



reverse. It is supplied complete with a matched pair of loudspeakers and two microphones with table stands. The machine operates at three speeds,  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ , and  $1\frac{7}{8}$  i.p.s., and will accommodate reels up to 7 inches in diameter. Automatic level control is available on record, and the machine will record and reproduce in both the forward and reverse directions of tape motion. The equipment is housed in a walnut case, with the deck plate and front panel an attractive blend of matte black and self-anodised aluminum.

With the exception of the pause and direction reversal control, all the tape transport modes are controlled by a set of five push buttons. These are left and right record, play, stop, and fast wind. The direction of the Play and Fast Wind are governed by the operation of the tape direction push buttons, actually the illuminated arrows on the tape head cover. Pressing the appropriate direction sets the direction of the tape. On switching the equipment on, the direction is always the normal left to right. Tape direction change can also be effected automatically by fixing sensing foils to the beginning and end of the tape. A contact in the tape path responds to these foils and operates the change over relay. In this condition the machine will repeat the tape indefinitely so long as the Auto Repeat switch is in the On position. Tape speed change is accomplished by moving a lever whilst the tape is in motion, and this serves to move the drive belt to a different diameter pulley. A normal pause control disengages the tape drive while leaving the machine in the function previously selected.

The other front panel controls are all concerned with the electronics. There are left and right volume controls, which serve as record level controls in the record mode, and left and right tone controls, which only operate on replay, and only on the loudspeaker outputs. They do not affect the line out circuit. A switch is provided to switch off the loudspeakers when the equipment is used with an external amplifier. Twin VU meters are provided for level monitoring, and these operate in both the record and replay modes.

Input and output connections are divided between the front and the rear of the machine. The line input and output, and the loudspeaker connections are on the rear of the equipment, together with the very useful DIN connector, which gives both in and out connections via a single cable to equipment equipped to this German standard. Microphone inputs are on the front of the recorder, as also is the jack for stereophonic headphones.

### Circuit

The circuit of the Webcor 5000R is fully solid state, and the two channels are identical in operation. In the record mode, the microphone signal passes directly to the first stage, line level signals passing to this stage via an attenuator. The first stage is the controlled stage for the automatic level control system, described below. The second stage is a preamplifier, and the level control is between this and the third stage. High frequency preemphasis is provided in this third stage, the amount being adjustable as a preset, in differing amount and frequency depending on the position of the speed control. The signal then passes to a further amplifier before reaching the power amplifier which drives the record head, via a matching transformer. The loudspeaker circuits and the headphone output are available for monitoring. The VU meter is also fed from the output stage, and a rectified signal

from the VU meter circuit is fed back to the input stage as the controlling voltage for the automatic level control, changing the emitter voltage of this stage, and controlling the gain. Bias is supplied by an oscillator/push-pull output generator for good waveform, and separate bias controls are provided for each of the four record heads, two in each direction.

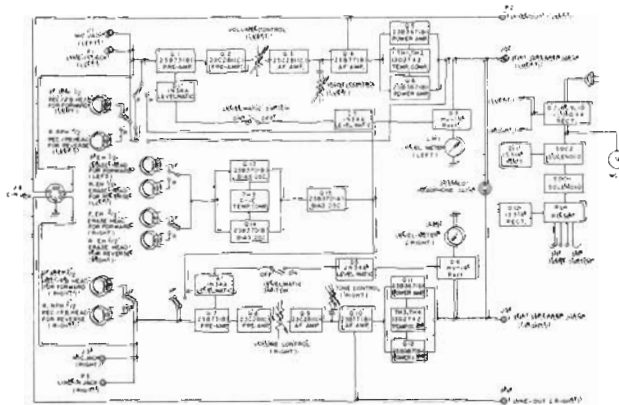
On replay, the tape head is connected to the first stage, and the ALC circuit is disabled. The second stage now acts as replay equaliser, again switched with the speed control for correct equalisation. The volume control is between the second and third stage, and if the loudspeaker switch is in the "on" position a loudness compensating network is connected at this point. The tone control, between the second and third stages, is also switched into circuit by the loudspeaker switch. The signal finally passes to the output stages, which produce four watts of power per channel into 8 ohms. The output for line out is taken from the third stage, and is also controlled by the loudspeaker switch. It is thus not possible to use both loudspeaker output and line output at the same time.

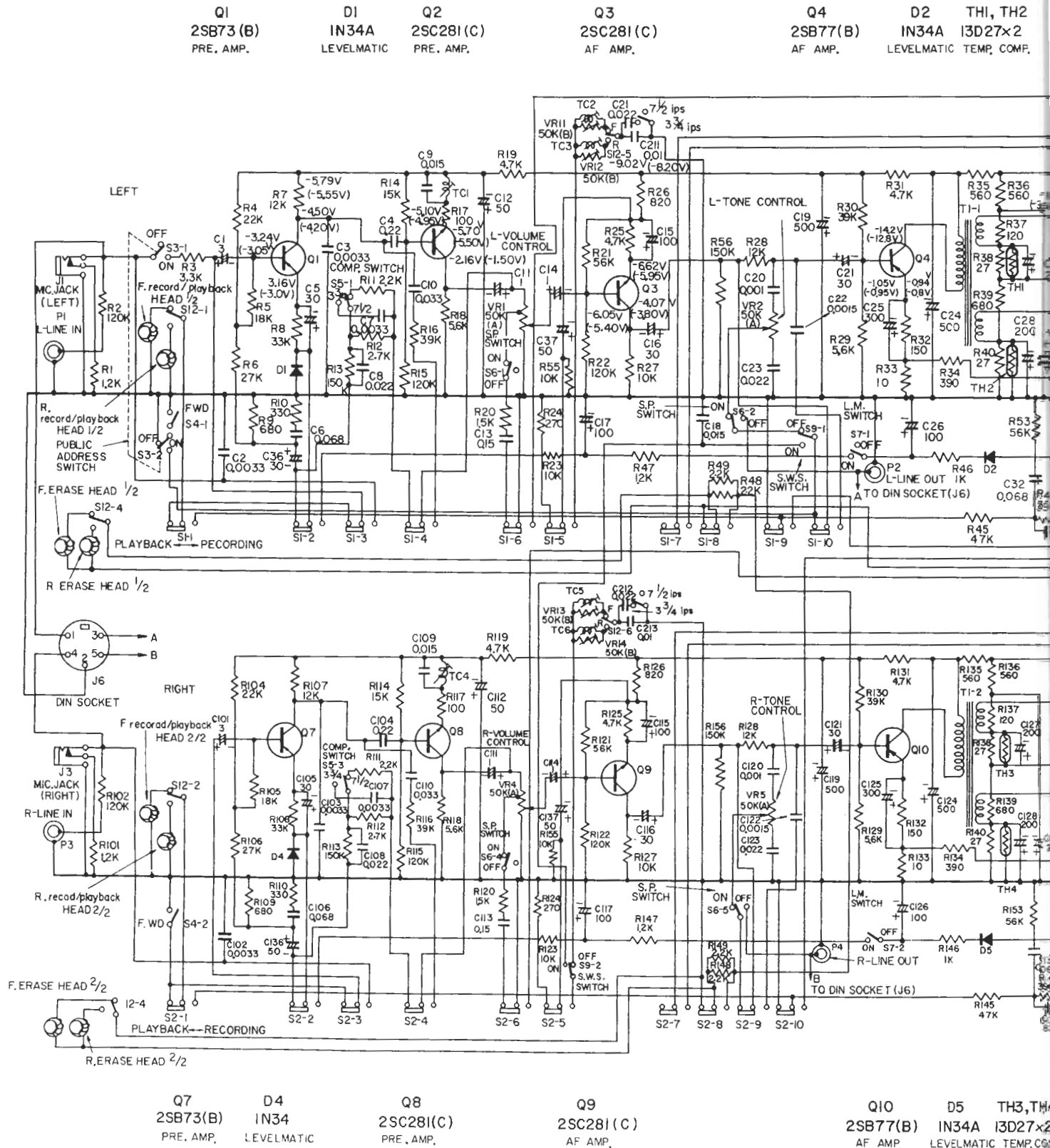
The record and play functions, using the same amplifiers have the usual switching system to arrange the circuitry for the respective functions. This switching is somewhat complicated by the addition of the extra relay contacts necessary for the two way operation, but the excellent circuit diagram is quite easy to follow and no difficulties should be encountered.

I wish I could say the same for the operating manual and the servicing instructions. This machine was made for Webcor in the Far East, as in fact most North American machines are. It's been some years since a consumer tape machine was made on this continent. The manuals are a very strange brand of Oriental English, and in some cases the strange phraseology makes the meaning quite difficult to understand. Some exercise of editorial powers might have produced a more easily followed set of instructions.

There are no complaints about this machine. In operation it performed well, and was easy to handle. Results on my favourite test tapes showed good quality of reproduction, suggesting that laboratory measurement would show that the makers specifications were being met. The performance appeared to be unaffected by tape direction, a fault which appears in some "two way" machines. The loading of the transport is especially simple, since the rubber pinch wheel "disappears" into the flywheel when the machine is in the Stop position (See photo of heads).

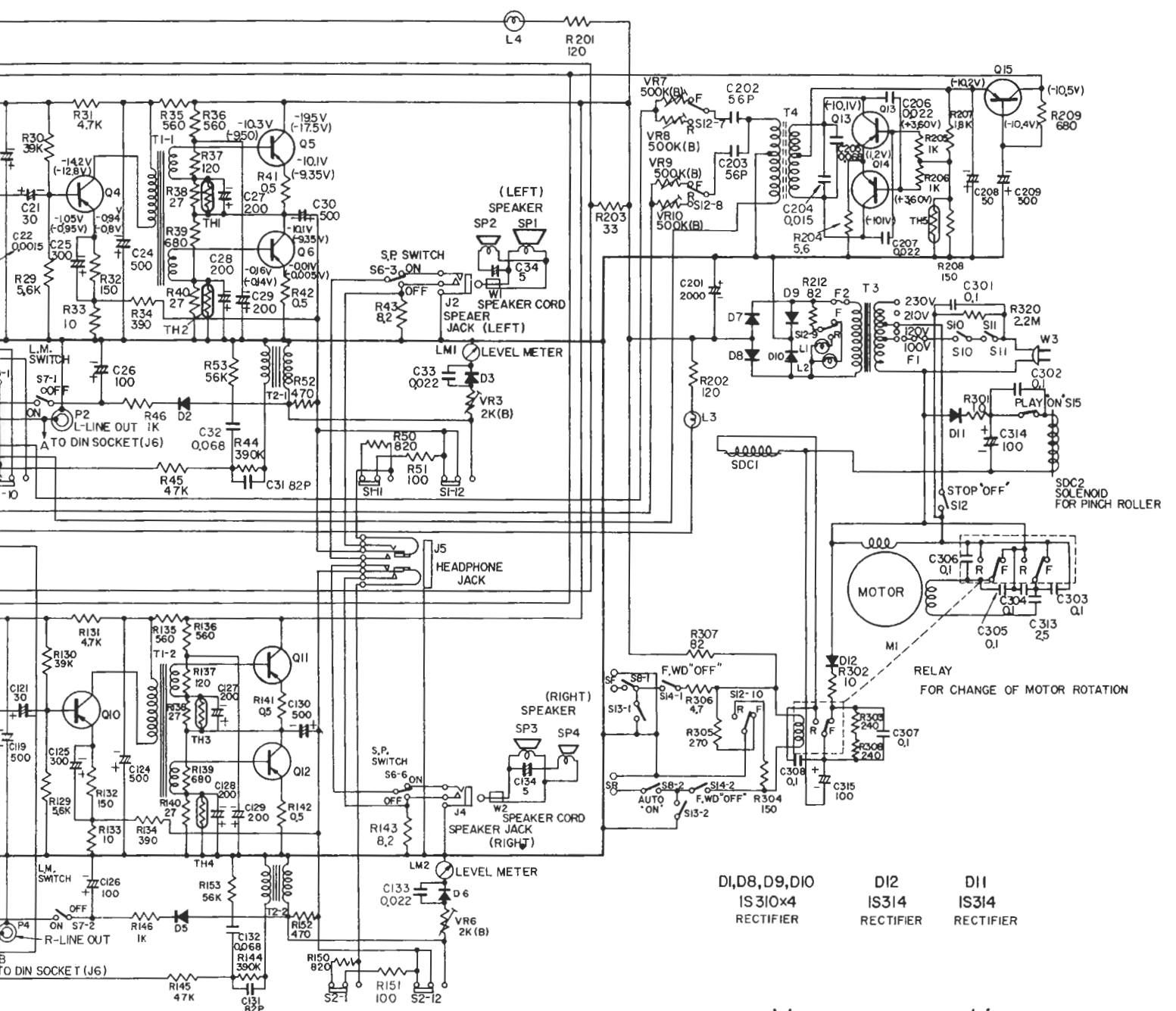
All in all, a useful piece of domestic sound equipment presently listing for \$499.95. ☛





# WEBCOR STEREO TAPE RECORDER MODEL 5000R

4 177(B) AMP.	D2 IN34A LEVELMATIC TEMP. COMP.	TH1, TH2 13D27x2	Q5, Q6 2SB367(B)x2 POWER AMP.	D3 HV-16 RECT. for L.M.	Q13, Q14 2SB370(B)x2 BIAS OSC.	TH5 D-IE TEMP. COMP.	Q15 2SB370(A) BIAS OSC.
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Q10 2SB77(B) AF AMP.	D5 IN34A LEVELMATIC TEMP. COMP.	TH3, TH4 13D27x2	Q11, Q12 2SB67(B)x2 POWER AMP.	D6 HV-16 RECT. for L.M.
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D1, D8, D9, D10 IS310x4 RECTIFIER	D12 IS314 RECTIFIER	D11 IS314 RECTIFIER
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- NOTE 1. 'F' MEANS FORWARD CONDITION; 'R' MEANS REVERSE CONDITION.  
 2. VOLTAGE MEASURED WITH VOLTMETER, BASE OF ⊕ SIDE EARTH, VOLUME CONTROL AT MINIMUM AND NO SIGNAL.  
 VOLTAGE SHOWN IN ( ) ARE IN RECORDING CONDITION AND EXCEPT ( ) IS PLAYBACK CONDITION.  
 3. ALL RESISTANCE VALUES IN OHMS, K=1000.  
 4. ALL CAPACITANCE VALUES IN μF EXCEPT 'P' NOTED.  
 P=μμ F=PF