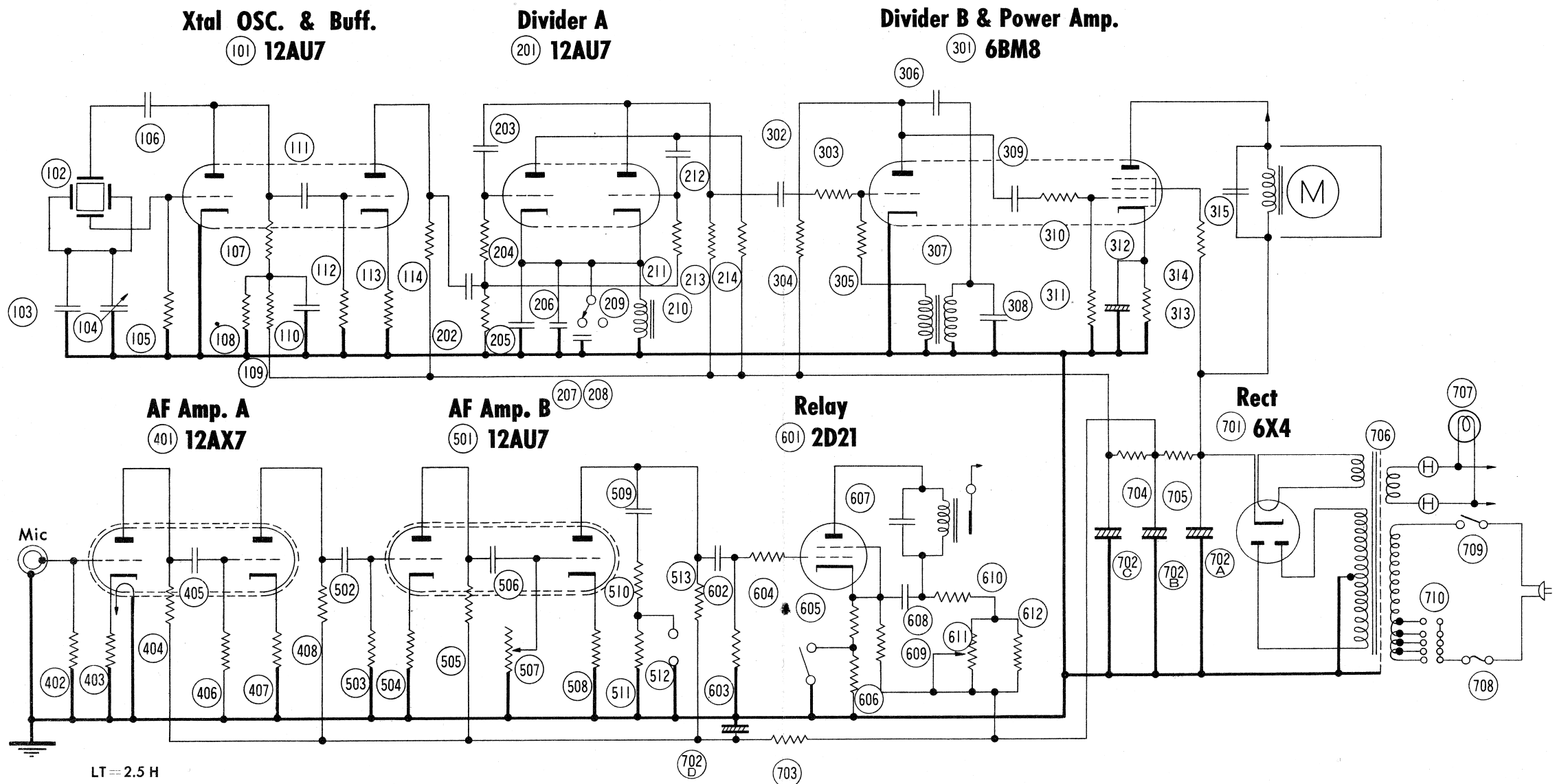


Circuit Diagram for Timegrapher Model P-61



LT = 2.5 H

CT1 + CT2 = 0.013 ~ 0.02 μ F (Polystyrol condenser 5%) 1/22 Divider (18,000 c/h)

WV above 120V

CT1 + CT2 = 0.002 ~ 0.009 μ F (Polystyrol condenser 5%) 1/20 Divider (19,800 c/h)

CT3 = $\frac{CT31 \text{ min.} + CT32 \text{ max.}}{2}$ CT31 = 0.01 ~ 0.018 μ F] 1/4 Divider (18,000 c/h)
CT32 = 0.005 ~ 0.013 μ F]

All resistances : deviation 10%

Condensers : each deviation is indicated in the figure.

Parts List for Timegrapher Model P-61

101	Vacuum Tube	12AU7(ECC82)			401	Vacuum Tube	12AX7(ECC83)		
102	Crystal Oscillator	5.28Kc $\pm 3 \times 10^{-5}$ at10~50°C			402	Resistor	4M Ω	$\frac{1}{2}$ W	$\pm 10\%$
103	Adjust Condenser	30~200pF	400WV	$\pm 10\%$	403	Resistor	2K Ω	$\frac{1}{4}$ W	$\pm 10\%$
104	Adjust Condenser	Max 50pF Variable			404	Resistor	100K Ω	$\frac{1}{2}$ W	$\pm 10\%$
105	Resistor	1M Ω	$\frac{1}{4}$ W	$\pm 10\%$	405	Condenser	250pF	400WV	$\pm 10\%$
106	Condenser	0.01 μ F	400WV	$\pm 10\%$	406	Resistor	500K Ω	$\frac{1}{4}$ W	$\pm 10\%$
107	Resistor	500K Ω	$\frac{1}{2}$ W	$\pm 10\%$	407	Resistor	2K Ω	$\frac{1}{4}$ W	$\pm 10\%$
108	Resistor	50K Ω	$\frac{1}{2}$ W	$\pm 10\%$	408	Resistor	100K Ω	$\frac{1}{2}$ W	$\pm 10\%$
109	Resistor	100K Ω	$\frac{1}{2}$ W	$\pm 10\%$					
110	Condenser	0.01 μ F	400WV	$\pm 10\%$	501	Vacuum Tube	12AU7(ECC82)		
111	Condenser	0.01 μ F	400WV	$\pm 10\%$	502	Condenser	250pF	400WV	$\pm 10\%$
112	Resistor	1M Ω	$\frac{1}{4}$ W	$\pm 10\%$	503	Resistor	500K Ω	$\frac{1}{4}$ W	$\pm 10\%$
113	Resistor	1K Ω	$\frac{1}{4}$ W	$\pm 10\%$	504	Resistor	2K Ω	$\frac{1}{4}$ W	$\pm 10\%$
114	Resistor	30K Ω	$\frac{1}{2}$ W	$\pm 10\%$	505	Resistor	50K Ω	$\frac{1}{2}$ W	$\pm 10\%$
					506	Condenser	250pF	400WV	$\pm 10\%$
201	Vacuum Tube	12AU7(ECC82)			507	Resistor	500K Ω	A Variable	
202	Condenser	250pF	400WV	$\pm 10\%$	508	Resistor	2K Ω	$\frac{1}{4}$ W	$\pm 10\%$
203	Condenser	0.01 μ F	400WV	$\pm 10\%$	509	Condenser	250pF	400WV	$\pm 10\%$
204	Resistor	150K Ω	$\frac{1}{2}$ W	$\pm 10\%$	510	Resistor	250K Ω	$\frac{1}{4}$ W	$\pm 10\%$
205	Resistor	15K Ω	$\frac{1}{2}$ W	$\pm 10\%$	511	Resistor	250K Ω	$\frac{1}{4}$ W	$\pm 10\%$
206	Condenser	0.033 μ F	100WV	$\pm 10\%$	512	Receiver	Crystal Earphone		
207	Adjust Condenser	0.002~0.009 μ F	125WV	$\pm 5\%$	513	Resistor	50K Ω	$\frac{1}{2}$ W	$\pm 10\%$
208	Adjust Condenser	0.013~0.022 μ F	125WV	$\pm 5\%$					
209	Divid Switch				601	Vacuum Tube	2D2 I (PL2D2 I)		
210	Inductance Coil	2.5H		$\pm 0.1H$	602	Condenser	250pF	400WV	$\pm 10\%$
211	Resistor	150K Ω	$\frac{1}{2}$ W	$\pm 10\%$	603	Resistor	500K Ω	$\frac{1}{4}$ W	$\pm 10\%$
212	Condenser	0.01 μ F	400WV	$\pm 10\%$	604	Resistor	30K Ω	$\frac{1}{4}$ W	$\pm 10\%$
213	Resistor	50K Ω	$\frac{1}{2}$ W	$\pm 10\%$	605	Resistor	1.5K Ω	$\frac{1}{4}$ W	$\pm 10\%$
214	Resistor	50K Ω	$\frac{1}{2}$ W	$\pm 10\%$	606	Resistor	100K Ω	$\frac{1}{2}$ W	$\pm 10\%$
					607	Condenser	0.01 μ F	400WV	$\pm 10\%$
301	Vacuum Tube	6BM8(ECL82)			608	Condenser	1 μ F	400WV	$\pm 10\%$
302	Condenser	200pF	400WV	$\pm 10\%$	609	Resistor	100K Ω	$\frac{1}{2}$ W	$\pm 10\%$
303	Resistor	700K Ω	$\frac{1}{4}$ W	$\pm 10\%$	610	Resistor	50K Ω	$\frac{1}{2}$ W	$\pm 10\%$
304	Resistor	50K Ω	$\frac{1}{2}$ W	$\pm 10\%$	611	Resistor	200K Ω	B Vriable	
305	Resistor	60K Ω	$\frac{1}{4}$ W	$\pm 10\%$	612	Resistor	200K Ω	$\frac{1}{2}$ W	$\pm 10\%$
306	Condenser	0.05 μ F	400WV	$\pm 10\%$					
307	Dividing Transformer	BT-4X			701	Vacuum Tube	6X4(EZ90)		
308	Adjust Condenser	0.01~0.013 μ F	125WV	$\pm 5\%$	702	Condenser	20 ^A +20 ^B +10 ^C +3 ^D μ F 300WV		
309	Condenser	0.02 μ F	400WV	$\pm 10\%$	703	Resistor	10K Ω	$\frac{1}{2}$ W	$\pm 10\%$
310	Resistor	350K Ω	$\frac{1}{4}$ W	$\pm 10\%$	704	Resistor	8K Ω	1W	$\pm 10\%$
311	Resistor	500K Ω	$\frac{1}{4}$ W	$\pm 10\%$	705	Resistor	3K Ω	2W	$\pm 10\%$
312	Condenser	10 μ F	50WV		706	Power Supply Trnsformer	Secondary 6.3V	{ 2.73A 0.6A 215V $\times$ 2 57mA	
313	Resistor	400 Ω	2W	$\pm 10\%$	707	Pilot Lamp	6.3V	0.15A	
314	Resistor	10K Ω	2W	$\pm 10\%$	708	Fuse	1A		
315	Condenser	0.2 μ F	600WV	$\pm 10\%$	709	Power Switch			
					710	Voltage Change Jack			

Troubles in Mechanical System :

1. Symptom : The motor does not run.

Check : Inspect every revolving and moving parts and give oil if necessary.

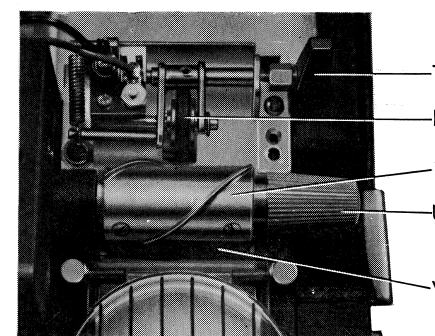
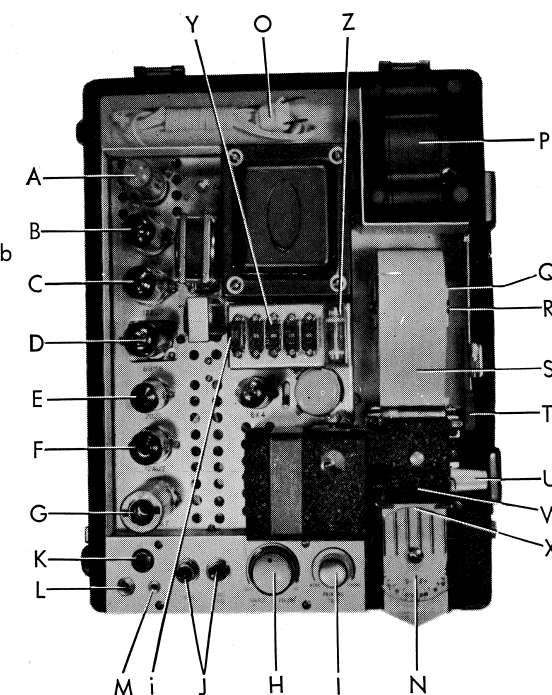
Note : The contact between spiral roller and ink roller should have the lightest touch each other as it can be printed.

2. Symptom : Ticking sounds of the watch is normal, but the recordings do not appear on the paper.

Check : Printing Bar is too low to print on the paper. Therefore, the supporting rubber of printing bar should be lifted to the point where a paper can be easily inserted.

NAME OF PARTS

- (A) Quartz Crystal
- (B) Tubes 12AU7
- (C) " 12AU7
- (D) " 6BM8
- (E) " 2D21
- (F) " 12AU7
- (G) " 12AX7
- (H) Push Button switch for Power Source & Volume
- (I) Knocking Intensity Adjusting Knob
- (J) Crystal Changing Push Button
- (K) Pilot Lamp
- (L) Microphone Jack
- (M) Receiver Jack
- (N) Measure-Plate
- (O) Plug Power Cord
- (P) Microphone
- (Q) Paper Stand
- (R) Shaft
- (S) Paper
- (T) Paper Lever
- (U) Handle
- (V) Paper Holding Plate
- (W) Ink Roller
- (X) Spiral Roller
- (Y) Voltage Changing Jack
- (Z) Fuse



- (a) Stand Microphone Jack
- (b) Holding Plate
- (c) Mike Handle
- (d) Oscillating Plate
- (e) Earphone
- (f) Mikrophone Cord
- (g) Grid Cover
- (h) Paper Feed Roller
- (i) Voltage Changing Plug
- (j) Brush

