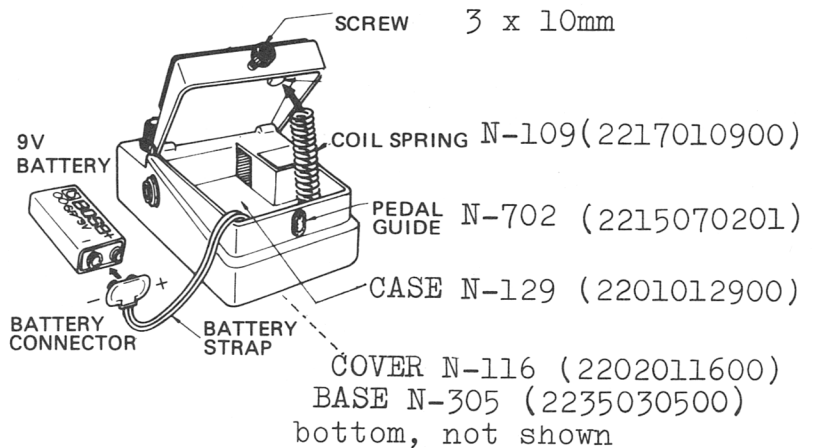


# BOSS PH-1R SERVICE NOTES

First Edition

**SPECIFICATIONS**

Power ..... Battery 9V (1)  
 AC Adaptor  
 Current draw ..... 11 mA at 9V  
 Phase shift ..... 4 steps, 720°  
 LFO Speed ..... 16 sec ~ 100 msec  
 SN ratio ..... Over 90 dB (IHF-A)  
 Input impedance ..... 470 kΩ  
 Output load impedance ..... Over 10 kΩ  
 Maximum input ..... -5 dBm  
 Gain ..... UNITY 1  
 Dimensions ..... 70(W) x 55(H) x 125(D) mm  
 Weight ..... 400g

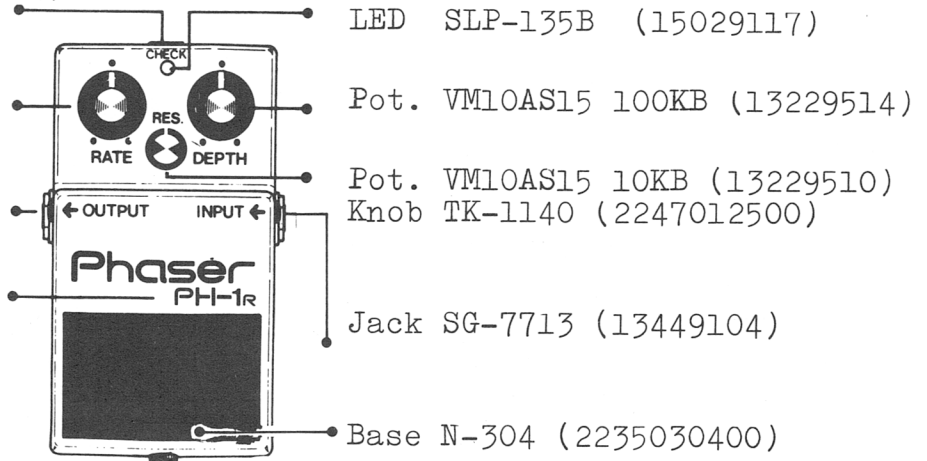


Jack HEC-0003 (13449702)  
 or  
 HEC-0317-1-1 (13449704)  
 (detail on parts list)

Pot. VM10AS15 1MC  
 (13229509)  
 Knob TK-1122 (2247010500)

Jack SG-7622 (13449106)

Pedal N-516 (2218051600)



**PARTS LIST**

Parts are designated in 8-10 digits accompanied by previous 6 digit number, if had, for cross reference.

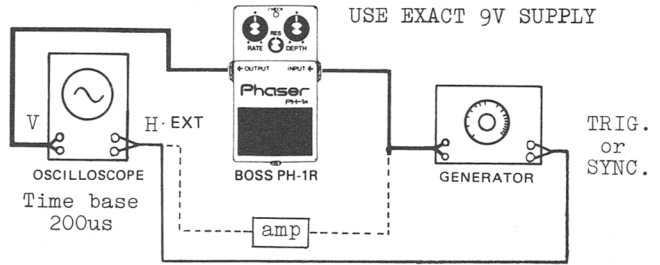
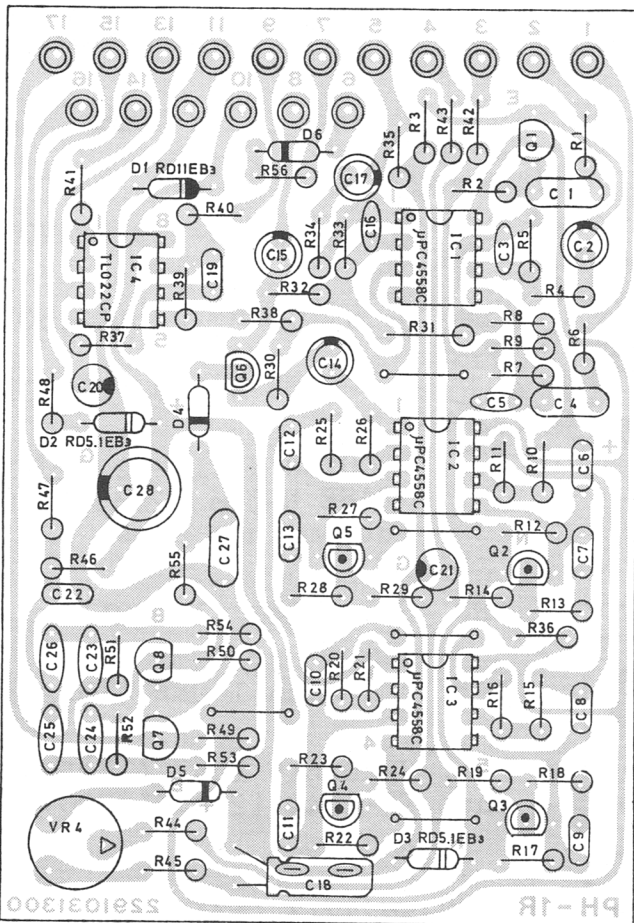
N- before abridged part number stands for NEW.

NEW	OLD	PART NAME			
				PCB	
				7521351001	Assy ET5213-510A (pcb 2291031300)
				POTENTIOMETER	
				13229509	028-466 VM10AS15 1MC
				13229510	028-447 VM10AS15 10KB
				13229514	028-450 VM10AS15 100KB
				SEMICONDUCTOR	
				15139101	017-014 2SK30A(TM)-Y FET
				15129108	017-110 2SC945-P transistor
				15129104	017-104 2SC732TM-GR transistor
				15139103A	017-016 2SK30A(TM)-GR selected for phase see detail on back page
				15019103	018-014 1S2473 diode
				15019523	018-075 RD5.1EB-3 zener
				15019547	018-039 RD11EB-3 zener
				15029117	019-034 SLP-135B LED
				15189105	020-097 uPC4558C BP MON Dual op amp
				15189115	020-164 TL022CP BP MON Dual op amp
				JACK	
				13449702	009-022 HEC-0003 (w/SCO mark)
				or	
				13449704	HEC-0317-1-1 (HOSHIDEN)

\*Differences in size: body and case's mounting hole.  
 Type -0003 can replace -0317 jack.

ADJUSTMENT and CHECKING

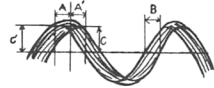
ET5213-510A (7521351001)  
(pcb 2291031300)



1. BIAS ADJUSTMENT



Test Signal:  
1kHz, sine -20dBm



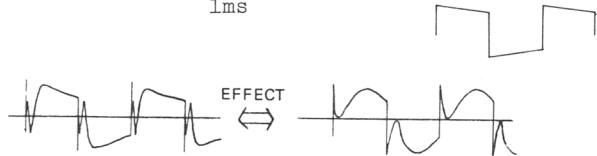
Test signal can be shifted to within the range 900-1100Hz to meet the specification. Adjust VR4 for A=A' or C=C'. B=more than 0.15ms. Turn DEPTH f.w. The same spec for 850-1150Hz.

2. WAVEFORM CHECKING



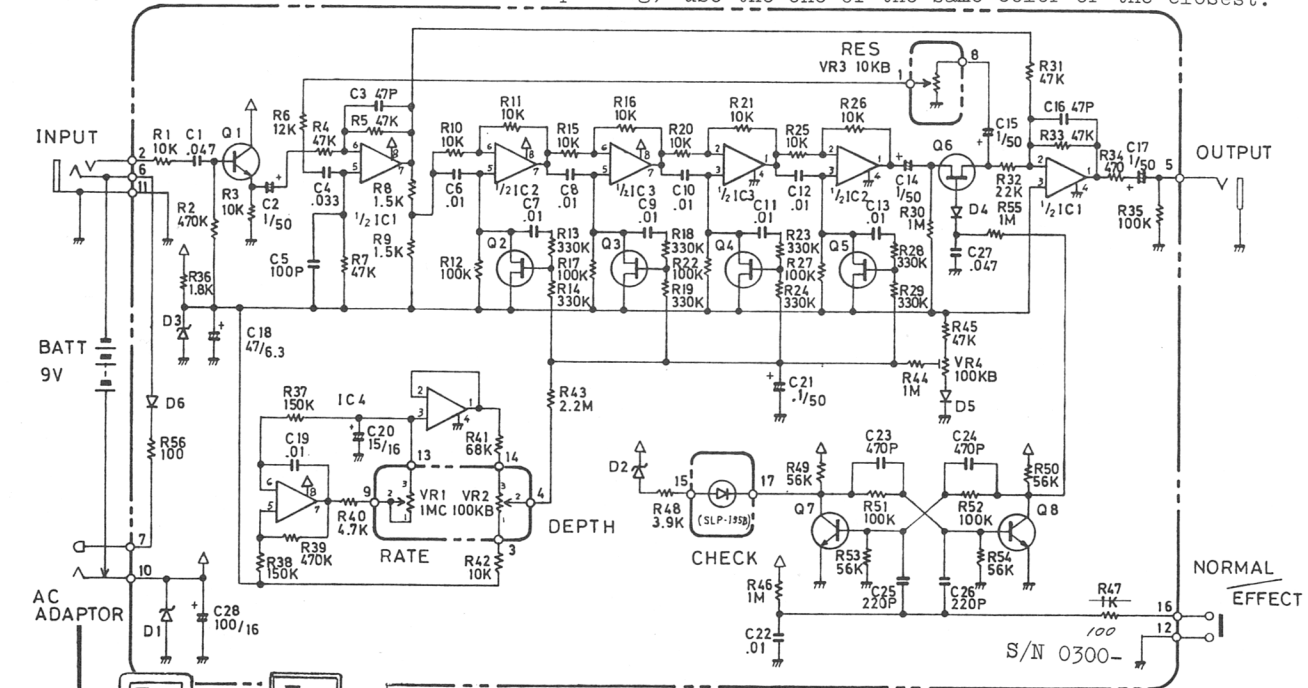
Test Signal:  
200Hz, square, 80mV pp  
Scope Time Base  
1ms

NORMAL



Waveform Changing Time: approx. 16S.

2SK30AGR's for Q2-Q5 are a set of factory selected ones; graded based on Pinch-Off, and dotted in a color of the standard code. When replacing, use the one of the same color or the closest.



HEC-0003 HOSHIDEN HEC-0317-1-1

- IC 1-3: uPC4558C
- IC 4: TL022CP
- Q 1: 2SC732TM-GR
- Q 2-5: 2SK30A-GR selected
- Q 6: 2SK30A-Y
- Q 7,8: 2SC945-P
- D 1: RD11EB3
- D 2,3: RD5.1EB3
- D 4-6: 1S2473

S/N 0300-