

# COBRA 2000 MODIFICATION

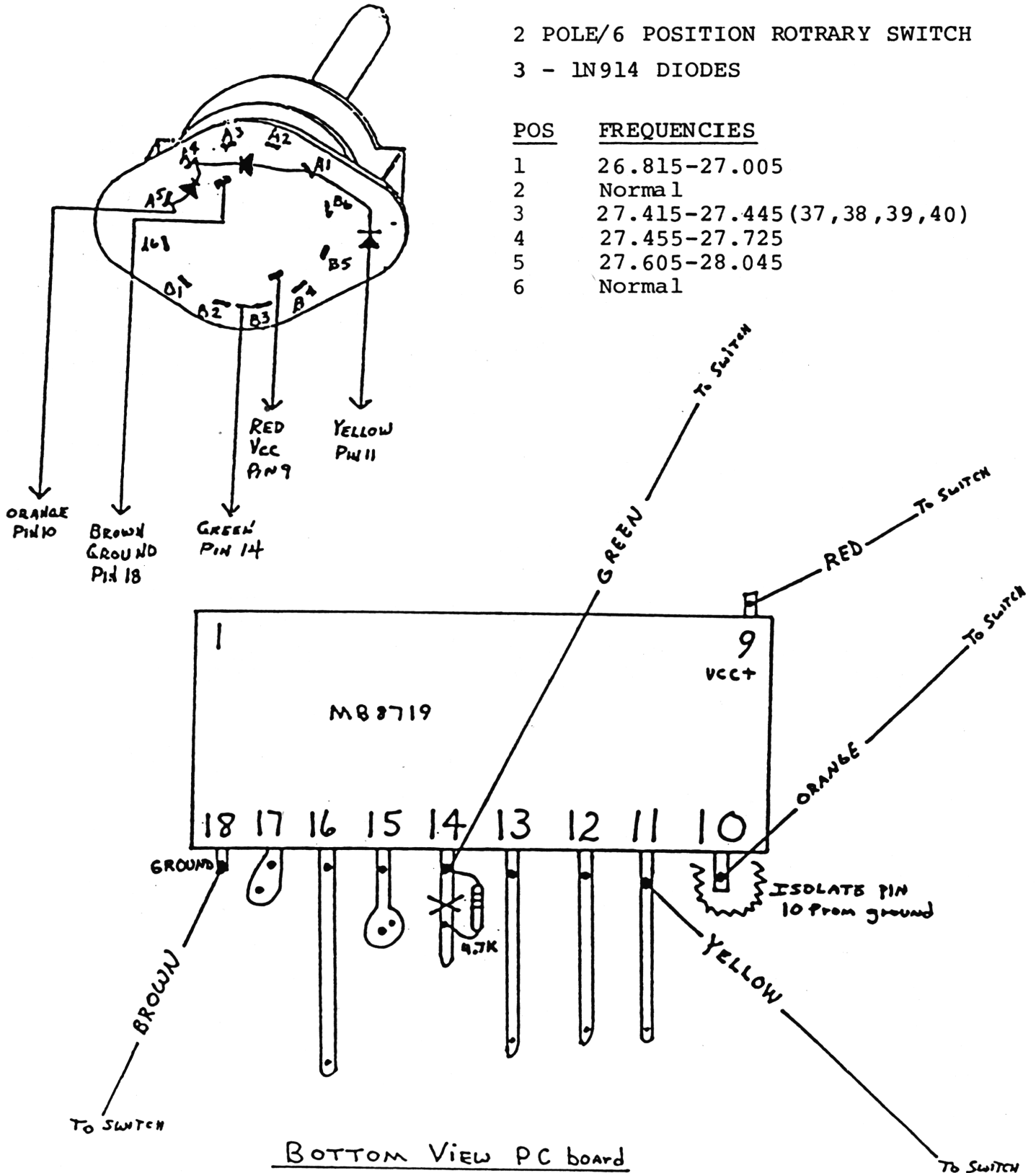
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2 POLE/6 POSITION ROTARY SWITCH

3 - 1N914 DIODES

POS      FREQUENCIES

<u>POS</u>	<u>FREQUENCIES</u>
1	26.815-27.005
2	Normal
3	27.415-27.445 (37, 38, 39, 40)
4	27.455-27.725
5	27.605-28.045
6	Normal



BOTTOM VIEW PC board

COBRA 2000 CONTINUED:

1. Remove the MB8734 PLL chip using a grounded soldering iron and a wrist strap or touch the radio at all times. Install the white coded chip, taking care to observe all of the rules for CMOS devices. When installed the radio will have the normal 40 channels. This completes this part of the expansion modification for now. We will come back to it later.
  
2. Cut D52.  
Jump R175 located between VR402 coarse control and ground. Cut the red wire from the other end of FVL and run to pin 1 of IC4, MB3756.  
Cut R44, short R174.  
Cut the brown wire on the FVL.  
Replace D35 with a super diode.  
Adjust L23 for AM; L59 for USB; L22 for LSB.

(SEE DIAGRAM ON NEXT PAGE).

Check radio for slide before going on to the next step. On receive, adjust radio to 27.200 and key the radio into a dummy load with a F $\emptyset$  counter. The transmitter should read 27.200. Slide up 5KHz and check again. If all is OK, proceed on to the next steps.

3. To increase the F $\emptyset$  range of the radio or broadbanding you must locate IC2, the VCO UHIC007. Cut the trace on Pin 6 and install a super diode across the cut cathode towards Pin 6. Retune L20 using a RF voltmeter. Check the top & bottom channels and the slide for proper operation.
  
4. One of the largest complaints is low modulation on AM and low power on SSB but if you cut TR24 and modify IC3 AN612 balanced modulator, you can solve the problem. Remove the 47pf on Pin 3 and remove R206 270K and replace it with a 35K resistor. Check AM and SSB modulation before proceeding to the next section. Adjust VR10 for AM carrier, VR12 for AM AMC, VR11 SSB ALC. Adjust L38, L42, L45, L46 for maximum AM peak power with a 1000 Hz tone. This completes the transmitter alignment - we will come back and do this again as soon as we complete the rest of the modifications.

Now we have completed all the other modifications we are ready for the channel expansions. Make up a switch kit as shown or buy one from your favorite kit supplier.

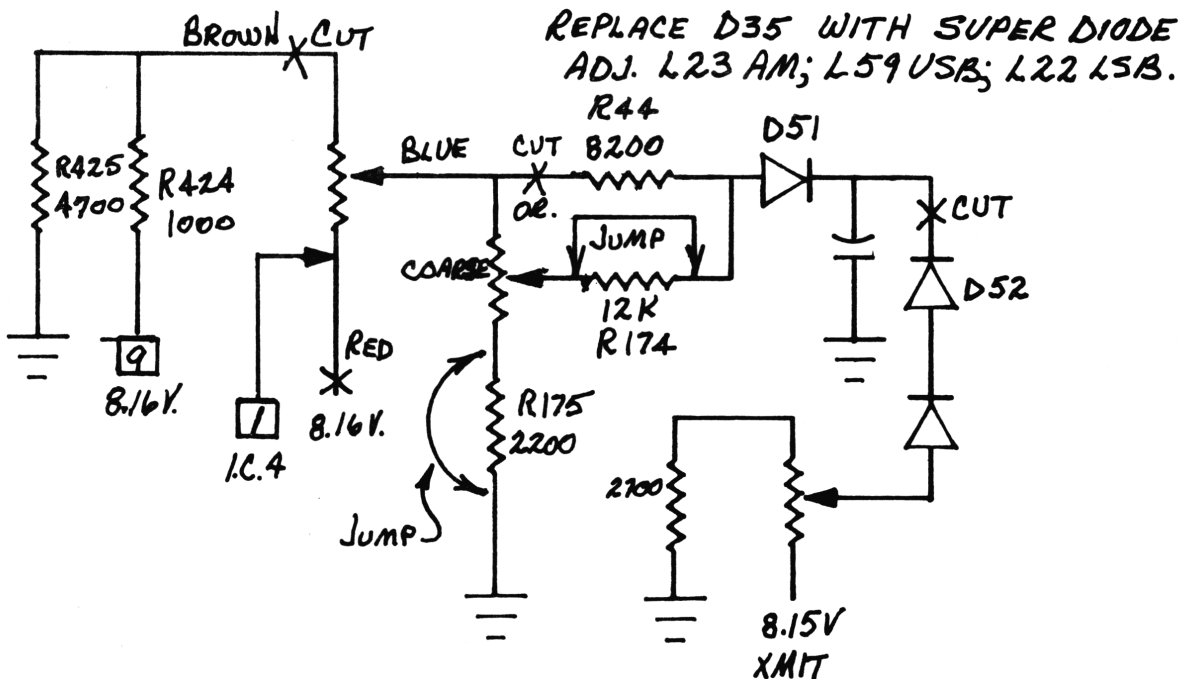
## COBRA 2000 CONTINUED

Remove the auxiliary jack from the front panel and tape it up inside the radio. This leaves a convenient hole for you to mount the new switch kit. Cut the shaft on the 6 position, 2 pole switch and install in radio. Install knob and you are ready to go. The switch kit comes with plenty of wire cut to length.

Now move your new selector switch to the #4 position and set the radio for approximately 27.500 and follow the alignment steps above and realign. Check for highest F $\phi$  and lowest F $\phi$  to make sure the radio is working on all F $\phi$ . This completes this part of the modification.

Now you are ready to move the F $\phi$  range up to the 10 meter band. As I mentioned before, we are doing this in small steps because it may be difficult to go the whole range at once. You will need a 11.8391 MHz xtal or a 11.660 or a 11.400. The 11.3891 will give you the best amateur range. Install the xtal and tune up, checking the highest/lowest F $\phi$  as you go. Now you are ready to go on the air. Good luck.

CAUTION: Any time you are tuning for unauthorized frequencies, use a dummy load.



COBRA 2000 SLIDE MODIFICATION