

### SPLIT BAR SWITCH KIT

The Shure Model RK199S Split Bar Switch Kit is designed to enable users of Shure base station microphones to monitor a communications channel by disabling the receiver squelch circuit before transmitting. Once installed, the microphone Transmit switch can be depressed only while the Monitor switch is depressed. The Monitor switch can be momentarily depressed, or locked in the "on" position by depressing it and sliding it forward.

The RK199S is especially useful in shared-channel radio systems using a continuous tone coded squelch system (CTCSS). CTCSS requires the addition of a tone encoder at the transmitter and a decoder at the receiver. The transmitted carrier is continuously modulated with a subaudible tone which is demodulated and decoded at the receiver, and used to activate the squelch circuit. The receiver remains squelched until it receives a carrier modulated with a tone of the proper frequency. The RK199S is designed to be installed in Shure Model 444D, 450 and 522 Base Station Microphones. The RK199S consists of the following parts.

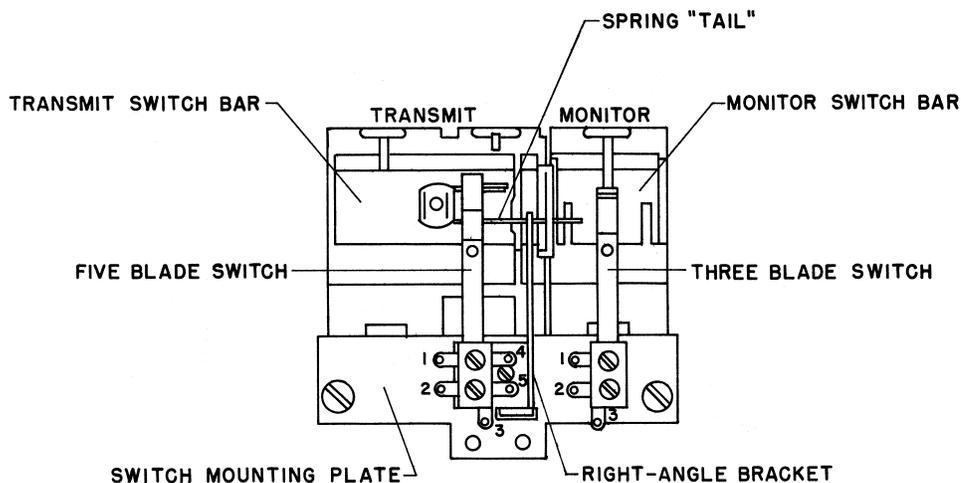
Transmit Label	28A366
Monitor Label	28B366
Lubriplate Capsule	90MF1371
1/2" No. 4 Phillips Head Self-Tapping Screws (2)	30E689A
5/16" No. 4 Binding Head Self-Tapping Screws (2)	30C640C

ITEM	PART NO.
Five-Blade Switch	90A3119
Three-Blade Switch	90A946
Transmit Switch Bar-Spring Assembly	90A1022
Monitor Switch Bar	65A1177A
Right-Angle Bracket	53A667

#### INSTALLATION

Install the RK199S as follows.

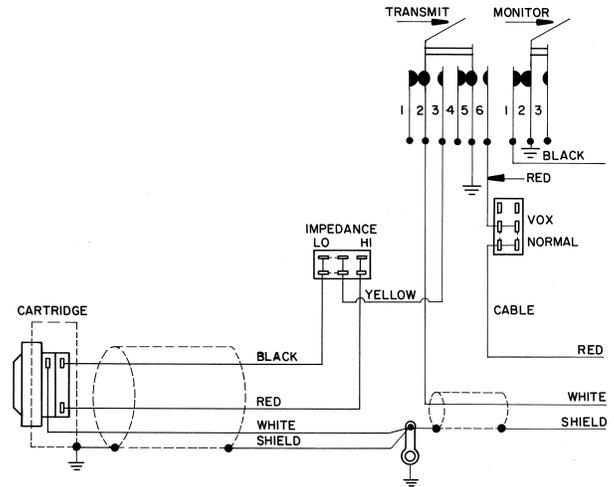
1. Remove the two screws fastening the baseplate to the bottom of the microphone.
2. Remove the baseplate, taking care not to stress the wiring to the switch mounted in the baseplate.
3. Loosen (unscrew about one turn), but do not remove, the screws holding the switch mounting plate to the base (see Figure 1). **NOTE:** The screws should be loosened only enough to allow the switch bar to be pushed down and out from underneath the switch mounting plate. If the plate is loosened too much, the tip of the mounting bracket extending through the upright portion of the base will slip out of the slot in the switch mounting plate. The tip must be replaced in the slot before reassembly can be accomplished.
4. Install the switch bars in the base, beginning with the Monitor (smaller of the two bars). Slip the pivot of the bar beneath the switch mounting plate, and snap it into place. Insert the Transmit bar (larger of the two bars) in the same manner, and tighten the screws holding the switch mounting plate to the base. Check the position of the mounting bracket tip as described in step 3.



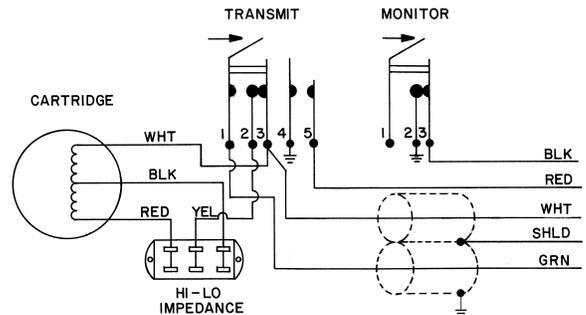
MODEL RK199S SPLIT BAR SWITCH KIT  
(INSTALLED)

FIGURE 1

5. Remove the two screws securing the present switch stack and carefully move the switch stack to one side. Attach the right-angle bracket to the switch mounting plate using a  $\frac{5}{16}$ " screw and the single mounting plate hole next to the switch stack screw holes. The long "tail" of the coil spring on the Transmit bar must be in front of the right-angle bracket. The assembly should be such that the Transmit bar cannot be activated unless the Monitor bar has been depressed. NOTE: The other two holes in the right-angle bracket should be directly over the screw holes to which the original switch was fastened.
6. Assemble the three-blade switch stack to the switch mounting plate so that it is under the Monitor bar. If the original switch is to be used for transmitting, place it in its original position over the right-angle bracket. If the five-blade switch supplied with the RK199S is to replace the original switch, fasten the new switch over the right-angle bracket to the switch mounting plate.
7. Perforate the LUBRIPLATE capsule and apply the lubricant where the Monitor switch bar touches the Monitor switch, and where the Transmit switch bar touches the Transmit switch.
8. Solder the cartridge, cable and associated circuitry leads to the switch stack terminals as required (see *Wiring* section).
9. Bend or "knife" the Monitor and Transmit switch blades as required to make proper contact in the desired sequence.
10. Replace the baseplate and fasten it with the screws previously removed.
11. Remove the paper backing from the Monitor and Transmit labels and affix them on or adjacent to the Monitor and Transmit switch bars.



MODEL 444D-RK199S SWITCH WIRING  
FIGURE 2



MODEL 450-RK199S SWITCH WIRING  
FIGURE 3

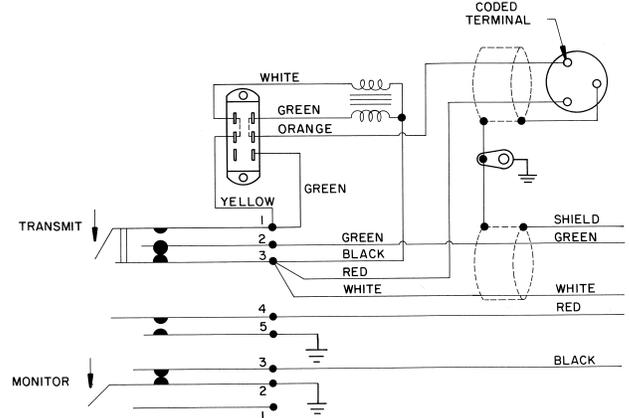
## WIRING

Refer to the transceiver and microphone data sheets, and wire the microphone for the desired functions. Note that wiring for open or shorted squelch and transmit circuits can be employed. In the three wiring examples that follow, the grounded-squelch configuration has been used.

Figure 2 shows a typical wiring arrangement for a Shure 444D microphone. Note that on the five-terminal switch, the connection between the black lead and ground has been opened, and the black lead has been connected to pin 1 of the three-blade switch.

Figure 3 shows typical wiring for a Shure 450 microphone. The RK199S has been installed using the original switch stack.

Figure 4 depicts the RK199S in a Shure 522 microphone. The black lead has been disconnected from the PTT switch relay circuit, and connected to one insulated terminal of the Monitor switch (depending on whether normally-open or normally-closed operation is desired). The PTT switch has been grounded where the black wire was removed.



MODEL 522-RK199S SWITCH WIRING  
FIGURE 4

# SHURE®

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