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INSTRUCTION
 SHEET
 FOR
 SERIES 74
 COAXWITCH®
 RF COAXIAL SELECTOR SWITCH

General

The Bird Series 74 COAXWITCH® RF Coaxial Selector Switch is a manually operated selector switch for use in 50/51.5 and 70/75 ohm coaxial circuits. It is designed for use in switching antenna, transmitters, receivers, and other gear using 50/70 ohm coaxial impedance.

This switch is very rugged in construction and will meet most military specifications. The unit is housed in a black anodized aluminum casting, with nickel plated brass Female N connectors and connector plate. A selectively hardened cadmium plated ground steel shaft is used for the switching operation. The connectors and shaft have neoprene seals, making the entire switch installation splash proof.

Characteristics

Connectors.....		Female N type
Useful Frequency Range	50 ohm units.....	DC to 10 GHz
	70 ohm units.....	DC to 1 GHz
Maximum RF Voltage		500 Volts RMS
Attenuation to Unused Channel	50 ohm units	75 dB (cross talk)
	70 ohm units.....	60 dB
Ambient Operating Temperature.....		-60°C to +65°C (-76F to 149F)
Weight.....		2.5 lb (1.13 kg)

Electrical Performance Data

Frequency	VSWR	Insertion Loss	Max. RF Power Rating
100 MHz	1.05:1 max	.02 dB	850 W
1 GHz	1.1:1 max	.09 dB	200 W
4 GHz	1.30:1 max	.22 dB	75 W

Installation

Figure 1 illustrates the outline and mounting dimensions. Panel mounting is accomplished by means of three 10-32 x 3/8 inch Truss head machine screws through the dial plate and panel. Loosen the 10-32 set screw on the hub of the actuator knob then remove the knob and dial plate. Drill the mounting panel according to the face layout of the switch. Brackets are recommended for wall or table mounting. When installing the switch, take advantage of the manner in which the Female connectors are positioned, parallel to the axis of the switch. This eliminates the need for right- angle connectors, which results in a saving of space.

Operation

To select the position desired, pull knob out, rotate, and push it in to make contact. The shaft push-pull motion is just over one-half inch. A ball and spring detent retains the rotor at the selected position. There is a 60° rotation between detents. A garter spring and ball mechanism assists in closing of the contacts, and will maintain firm contact even under shock and vibration.

Maintenance - Lubrication

The COAXWITCH® RF Selector Switch is rugged and simple. It requires only nominal routine care. Periodic cleaning of the RF connectors is recommended. Be sure to clean the insulator surfaces as well as the metal contacts. A little dry solvent such as alcohol or Freon on a cotton swab stick should be used for cleaning. Avoid breathing the fumes when using solvents, use only in a well ventilated area.

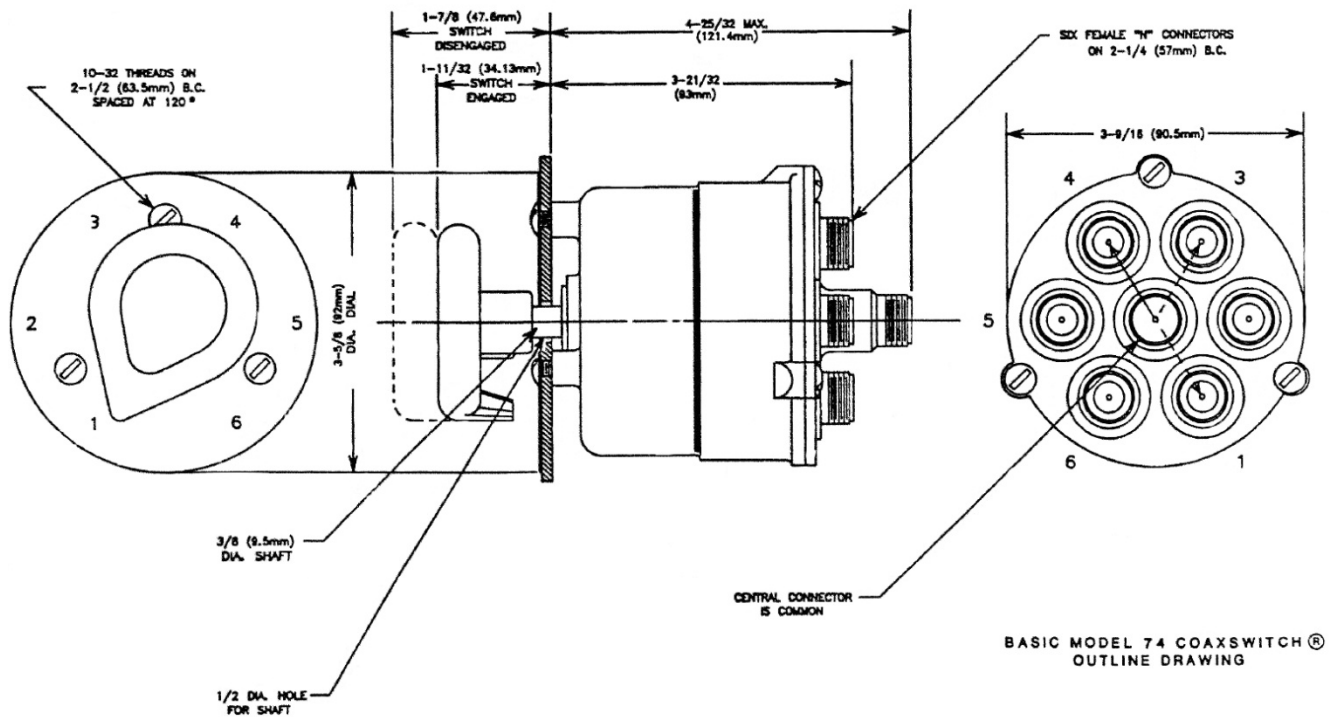
The switch may be opened for inspection by removing the screws on the connector end. If flexibility of the cables permits, they need not be disconnected to remove the entire cable connector plate. The rotor assembly may be lifted out if the knob has been removed.

Before lubricating the unit, clean the shaft and mating bearing shaft hole. Use light machine oil, a drop or two, on the center shaft. Do not allow oil to get into contacts. Use ball bearing grease, low temperature type, on the rotary detent ball. Work the grease into hole behind ball and on the three push- in balls on the inside of the housing at the bottom. A drop of oil on the shaft close to the dial plate, with the switch disengaged, will relieve drag at the neoprene shaft seal.

For access to the push-in balls and associated garter spring after the connector assembly and shaft have been removed, use a flat blade as a screw driver and unscrew the shaft bushing. Screw the bushing in tight when reassembling. The detent ball and the spring may be removed by pushing or driving with a small pin or drill into the side hole behind the ball.

Figure 1. Series 74 Outline Drawing

MODEL	CIRCUIT	TERMNAL OUTLINE
74	Single Circuit Six Position	
7422	Single Circuit Two Position	
7431	Single Circuit Four Position	
7441	Single Circuit Three Position	



Note: The models 7420/30/40 coaxial switches are the identical in essence to the models 7422/31/41 respectively except they are designed to be used in circuits of 70/75 ohm impedance. Basically all other parameters apply.