

1.2 6 GHz COMPONENTS

1.2.1 WAVEGUIDE SWITCHES

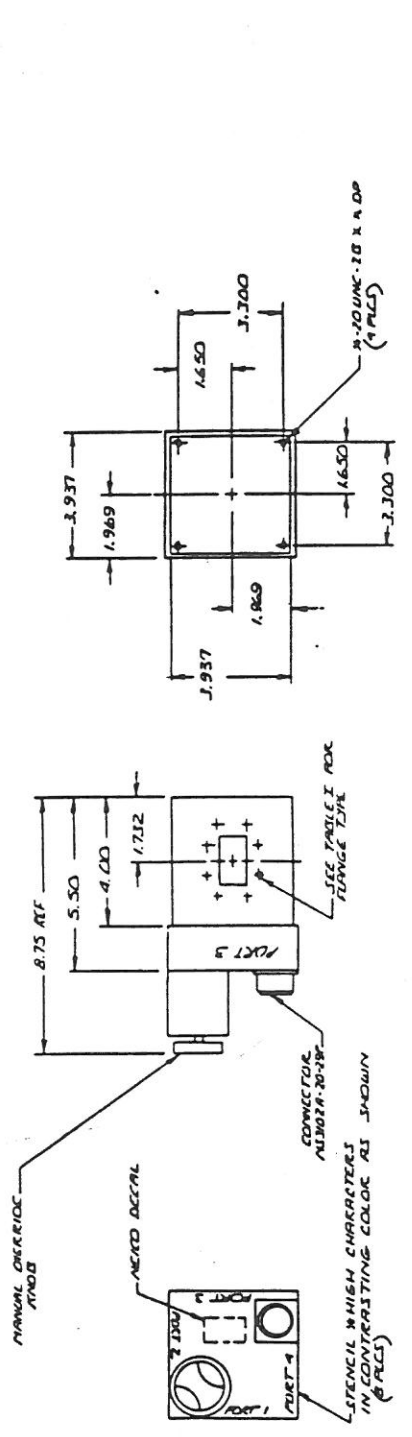
The Neico waveguide switch is an electromechanical transfer switch, the configuration of which is shown in Figure 1.2.1-1. The switch is operated electrically by a command voltage applied to the control pins of the power connector. The applied voltage may be steady state, or it may be a pulse of sufficient duration to allow the switch to transfer positions. Once a switch has reached a given position, no power is required to hold it in that position. This feature is known as "latching". During switching operations, RFI is minimized by means of diode transient suppression.

Form C switch contacts - three sets for each position of the waveguide switch - are wired through the power connector so that switch position can be indicated remotely. These switch contacts are actuated before the waveguide portion of the switch moves; therefore, the indicator switch circuits can also be used as interlocks to inhibit the HPAs while switching takes place.

The waveguide rotor assembly is shown schematically in Figure 1.2.1-1. This assembly has four orthogonal ports, as shown. Position 1 shows the waveguide switch in the normal state. Position 2 shows the waveguide switch in the "switched" position. The switch is bidirectional; therefore, the direction of the energy flow can be the reverse of that shown in the figure.

For manual over-ride operation, the drive voltage should be disconnected either at the source or the switch power connector. The manual over-ride knob can then be rotated to move the switch to the desired position, as shown by the indicator on the knob.

If, for any reason, it becomes necessary to remove the switch drive head, this can be without interrupting RF continuity through the waveguide rotor position of the switch. A recent Neico design improvement simplifies re-alignment of the switch drive head (See Figure 1.2.1-2). The new design has two guide rods that align the switch drive head with respect to the intermediate housing on the waveguide body of the switch. During removal and replacement of the switch drive head, the waveguide portion of the switch is held in position by a spring mechanism and mechanical stops.



- SPECIFICATIONS**
- REQ RANGE — 5000 TO 6425 MHZ
 - VSWR — 1.05 MAX
 - ISOLATION — 50.00 DB MIN
 - INSERTION LOSS — 0.02 DB MAX
 - SWITCHING TIME — 15 μSEC
 - ON TIME — 1 μSEC
 - OFF TIME — 1 μSEC

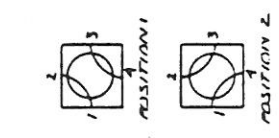


FIG. NO. DESIGNATION
 [] [] [] []
 TABLE I
 TABLE II
 TABLE III

TABLE I

FLANGE TYPE	HTG HOLES
CPC-139F	M-20 DIA. x 1/8" DP
CPC-139B	M-20 DIA. x 1/8" DP
CPC-139	M-20 DIA. x 1/8" DP

TABLE II

VOLTAGE	EXCITATION	SYMBOLIC
28VDC @ 5 AMPS	POSITIVE	—
48VDC @ 2 AMPS	POSITIVE	—
115 VAC	—	—
28VDC @ 1 AMPS	NEGATIVE	—
48VDC @ 2 AMPS	NEGATIVE	—

TABLE III

FINISH
PLAT. BAREK
DRY P. 10-100-10-10

FIGURE 1.2.1-1

DATE: 1/21/59

DRAWN BY: *[Signature]*

APPROVED BY: *[Signature]*

REVISIONS:

NO.	DESCRIPTION	DATE
1

COMPANY: HICO MICROWAVE COMPANY
 435 JEWETT (LW-139)
 (1 REV) (L POSITION)

DRAWING NO: 23372 D
 PART NO: R1369-000

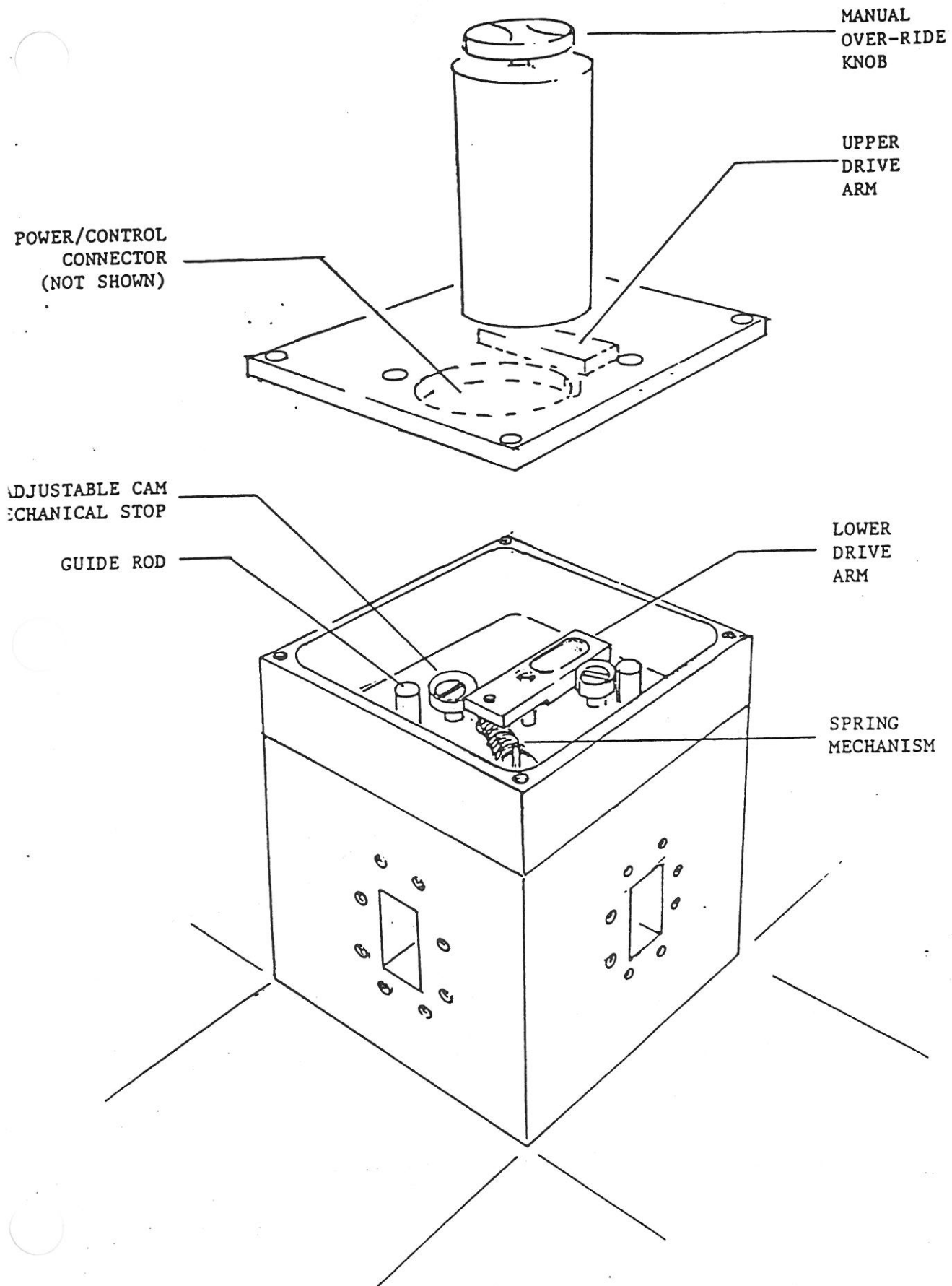


FIGURE 1.2.1-2