

NAVSHIPS 93122

Non-Registered

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TECHNICAL MANUAL
for
CONTROL PANEL
TELEGRAPH KEY
SB-315B/U

DITTMORE-FREIMUTH CORP.
MILWAUKEE, WISCONSIN

DEPARTMENT OF THE NAVY
BUREAU OF SHIPS

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To: All Activities concerned with the Installation,
Operation, and Maintenance of the Subject Equipment

Subj: Technical Manual for Control Panel Telegraph Key
SB-315B/U, NAVSHIPS 93122

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A. G. MUMMA
Chief of Bureau

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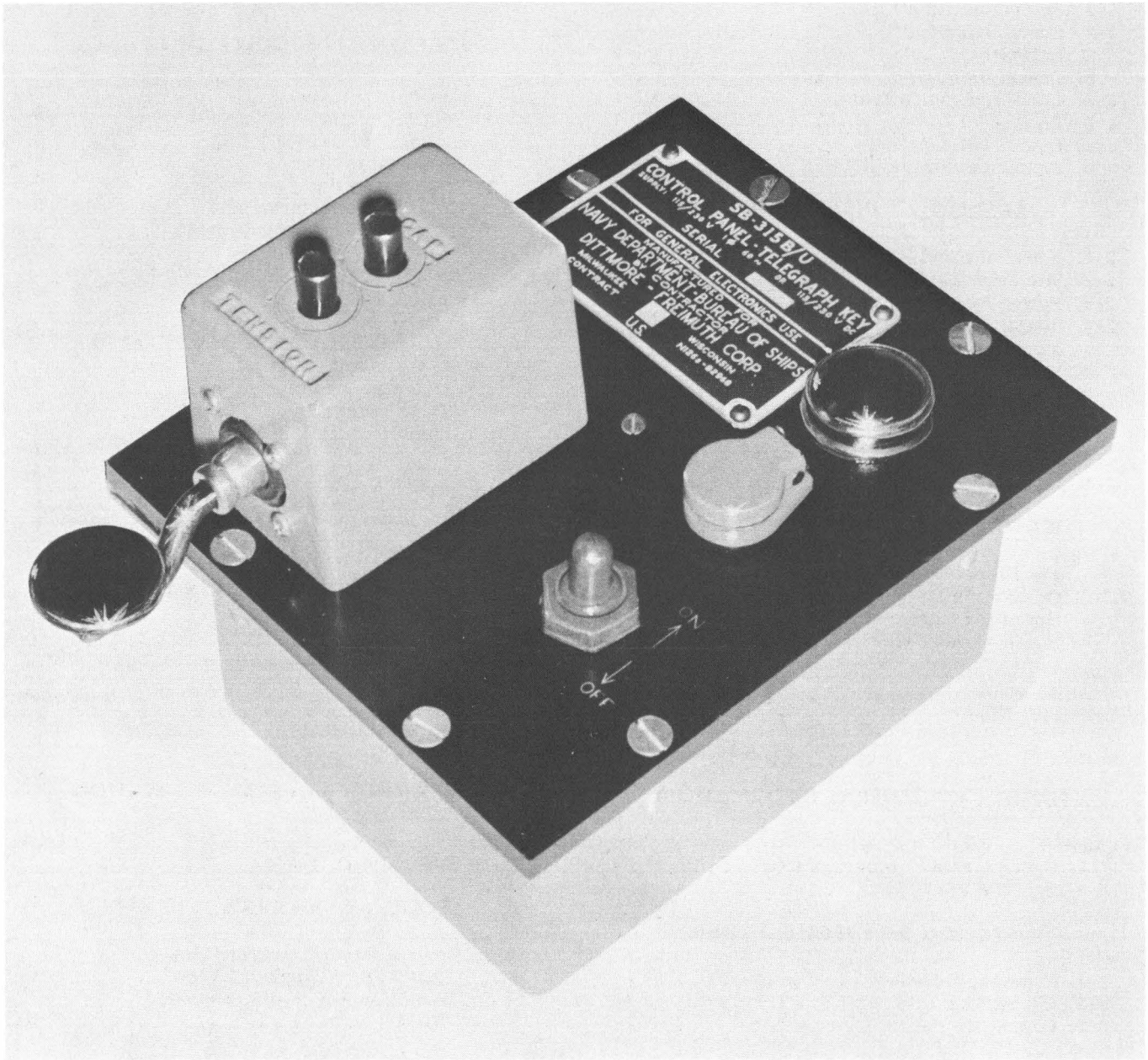


Figure 1-1. Control Panel Telegraph Key SB-315B/U

SECTION 1 GENERAL INFORMATION

1-1. EQUIPMENT ILLUSTRATION.

This technical manual covers the theory of operation, installation, and maintenance of Control Panel Telegraph Key SB-315B/U. A parts list is included in the last section of this technical manual. Figure 1-1 illustrates the complete unit.

1-2. FUNCTIONAL DESCRIPTION.

a. **PURPOSE.** - The Control Panel Telegraph Key SB-315B/U is intended for general electronics use in shipboard installations. It accomplishes the following operations from a remote location.

(1) Turns power on or off for an associated radio transmitter.

(2) Provides a visual indication when the transmitter is on.

(3) Permits keying the radio transmitter.

b. **DESCRIPTION.** - The Control Panel Telegraph Key SB-315B/U consists of a gray aluminum box-type enclosure with a black plastic panel. All components except the connector receptacle are mounted on the plastic panel. The connector receptacle is mounted on the inside of the enclosure. The overall dimensions of the unit are 5-1/2 x 8-3/8 x 4-7/16 inches. The panel is secured to the enclosure with eight mounting screws. All mating surfaces are sealed with neoprene gaskets to prevent the entrance of dust and moisture. Figure 1-2 shows an interior view of the unit with the panel removed from the enclosure.

1-3. QUICK REFERENCE DATA.

a. Nomenclature - Control Panel Telegraph Key SB-315B/U.

b. Contract - ESO N126s-82968 dated March 11,

1957.

c. Contractor - Dittmore-Freimuth Corp., Milwaukee, Wisconsin.

d. Cognizant Naval Inspector - Inspector of Naval Material, Milwaukee, Wisconsin.

e. Packages per Complete Shipment - One.

f. Cubic Contents - Crated 432 cubic inches; Un-crated 54 cubic inches.

g. Total Weights - Crated 3-1/2 pounds; Un-crated 2 pounds.

h. Power Supply - 115 V or 230 V, single phase, 60 cycles; or 115 V or 230 V DC.

i. Power Consumption - 4.5 watts for 115 V; 9 watts for 230 V.

1-4. EQUIPMENT LISTS.

a. **EQUIPMENT SUPPLIED.** - Table 1-1 lists equipment supplied for this contract.

b. **EQUIPMENT SIMILARITIES.** - Earlier units of the SB-315()/U series can be identified by the following construction differences:

(1) The push button switch formerly used has been replaced with a bat type switch in the SB-315B/U.

(2) The Key Assembly has been replaced with one that provides adjusting screws for key gap and tension adjustment.

(3) A key jack has been provided to enable use of an auxiliary key (i.e. "Speed Key").

(4) The Incandescent Lamp used in the SB-315B/U replaces the neon lamp formerly used. The neon lamp gave a false power on indication due to the presence of stray R.F.

(5) This technical manual applies basically to SB-315/U through SB-315B/U. Field change 1-SB-315/U and 1-SB-315A/U modified these keys to be compatible with the SB-315B/U.

TABLE 1-1. CONTROL PANEL TELEGRAPH KEY SB-315B/U, EQUIPMENT AND PUBLICATIONS SUPPLIED

QUANT. PER EQUIP.	NOMENCLATURE		OVERALL DIMENSIONS			VOLUME	WEIGHT
	NAME	DESIGNATION	HEIGHT	WIDTH	DEPTH		
1	Control Panel Telegraph Key	SB-315B/U	6	12	6	0.25	3-1/2
2	Technical Manual	NAVSHIPS 93122	11	8-1/2	1/4	0.013	1/4

Unless otherwise stated, dimensions are in inches, volume in cubic feet, weight in pounds.

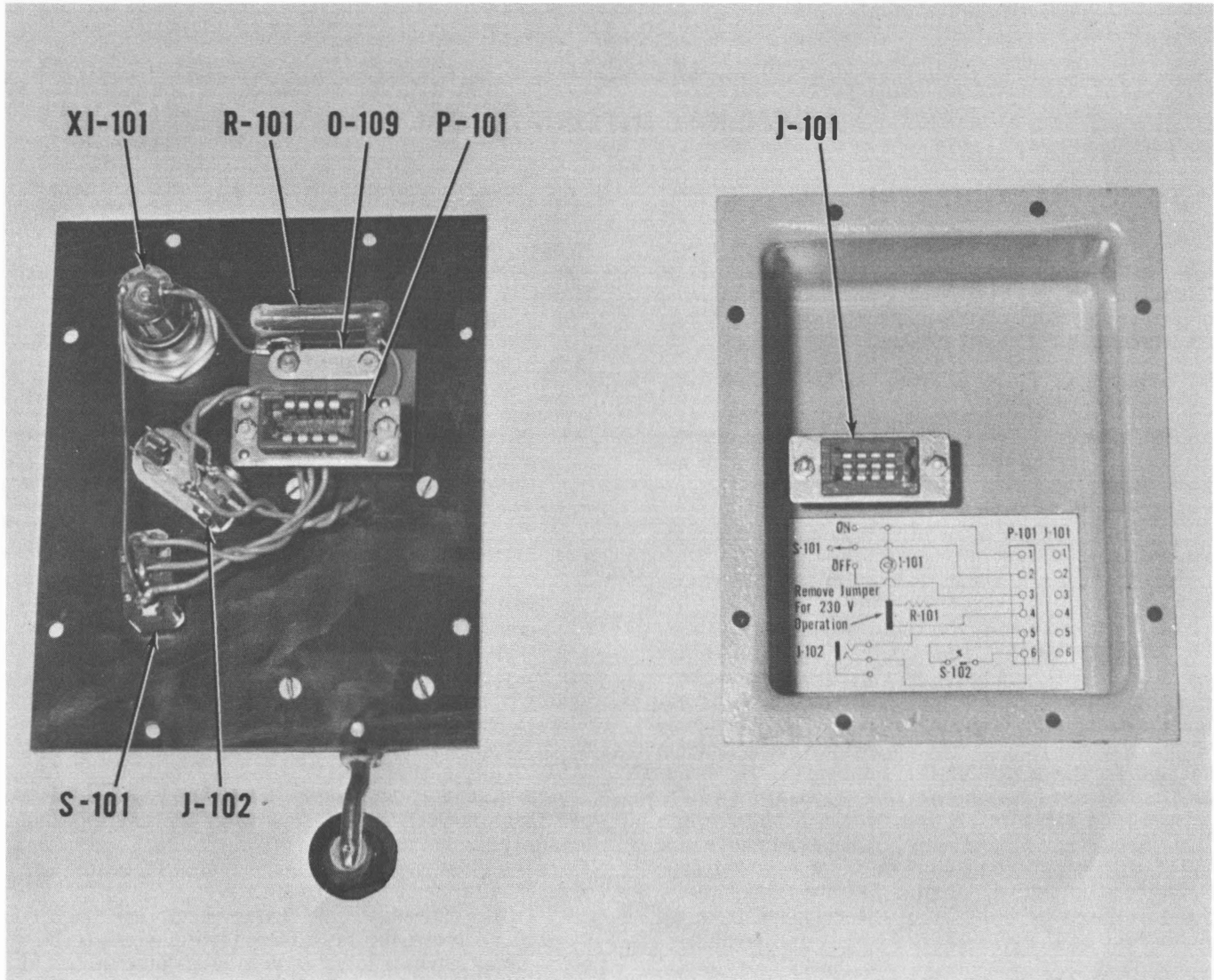


Figure 1-2. Control Panel Telegraph Key SB-315B/U, Interior View

SECTION 2 INSTALLATION

2-1. UNPACKING AND HANDLING.

The Control Panel Telegraph Key is packed and shipped in accordance with specification MIL-P-17555. Each unit is packed in a corrugated cardboard carton having a minimum Mullen test strength of 125 pounds. Corrugated cardboard liners, inserted in the carton, protect the unit from damage due to shock and vibration. Two technical manuals are included in each carton.

2-2. SITE SELECTION.

The Control Panel Telegraph Key is designed for recessed mounting in a 4-9/16 by 5-13/16-inch opening in the top of an operator's table. However, any

flat surface with a maximum thickness of 7/16-inch can also be used for mounting the unit. A minimum clearance of 2-1/4 inches is required below the mounting surface.

2-3. POWER REQUIREMENTS.

The SB-315B/U requires a power supply of 115 V or 230 V, single phase, 60 cycles, or 115 V or 230 V DC. Power consumption is 9 watts at 230 V and 4.5 watts at 115 V. A connecting link located on a terminal board mounted on the rear of the panel permits using the unit with a power supply of either 115 V or 230 V. When the unit is used with a 230 V supply, the link must be removed or opened.

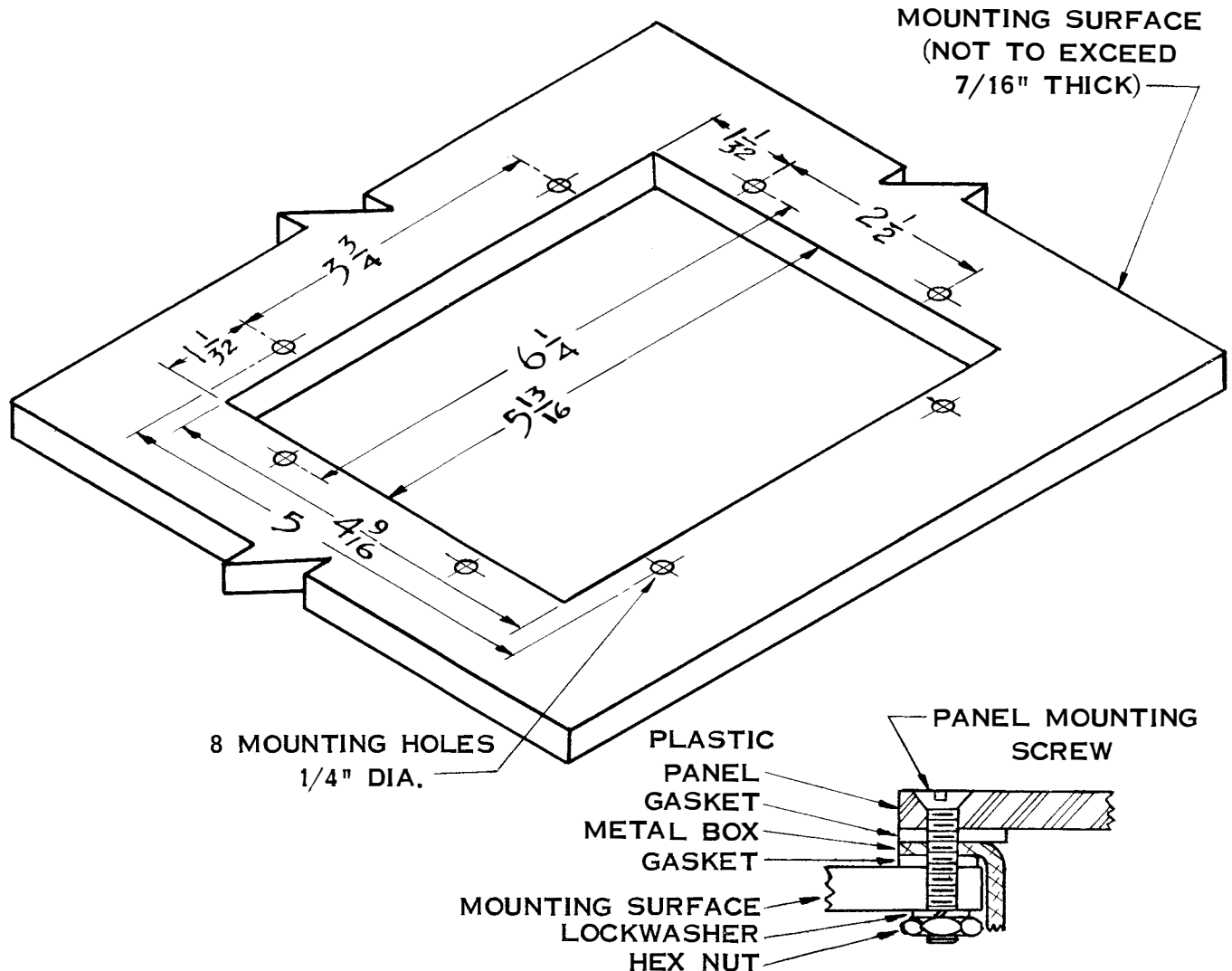


Figure 2-1. Control Panel Telegraph Key SB-315B/U, Mounting Details

2-4. INSTALLATION LAYOUT.

a. **MOUNTING HOLES.** - Eight 1/4-inch mounting holes are required for fastening the unit to the mounting surface. Figure 2-1 shows the mounting dimensioning.

b. **WIRING.** - Figure 3-1 shows a schematic diagram for wiring.

c. **ENCLOSURE GASKETS.** - Two gaskets having the same general size and shape as the flange of the enclosure are required as part of the unit but are not supplied. These gaskets are used to make a waterproof seal between the flange of the enclosure and the mounting surface. The other gasket is used between the flange of the enclosure and the plastic panel. The gaskets shall be fabricated from 1/16-inch thick neoprene stock. By placing the enclosure over the gasket stock, the outline and holes can be traced. Measure the distance between the outside of the flange and the inside edge of the box. This will be the width of the first gasket which is used between the flange of the enclosure and the plastic panel. Measure the distance between the edge of the flange and the outside of the enclosure. This will be the width of the second gasket which is used between the enclosure flange and the mounting surface. This procedure may be followed to fabricate replacement gaskets when needed.

d. **KEYER CAN GASKET.** - This gasket is not supplied with the unit. This gasket is used between the plastic panel and the Keyer Can. Figure 2-3 illustrates the gasket layout. The gasket shall be made from 1/16-inch thick neoprene. When installing the gasket place the two wires through the 3/8-inch diameter hole before soldering them in place. Remove the four mounting screws, which hold the Keyer Can, from the bottom of the plastic panel. Place gasket in position and fasten into position. When lifting Keyer Can, do so carefully, to avoid pulling out the wires. When replacing the gasket follow the above procedure.

e. **CABLE INSTALLATION.** - Cable entry holes may be drilled as required in the enclosure. Prior to drilling the cable entry holes in the enclosure, the plastic panel and the connector receptacle must be removed.

f. **TYPICAL INSTALLATION.** - Terminals 7 and 8 of J-101 are not to be used. Power for the indicator light I-101 is brought in to terminal 4 of J-101. If the radio transmitter is operated from a source of 115 volts, the link on the terminal board is left in the closed position, shorting out dropping resistor R-101. If the radio transmitter is operated from a source of 230 volts, the link must be removed, permitting R-101 to function as a voltage dropping resistor in series with the lamp I-101. Figure 3-1 shows a schematic diagram of the equipment.

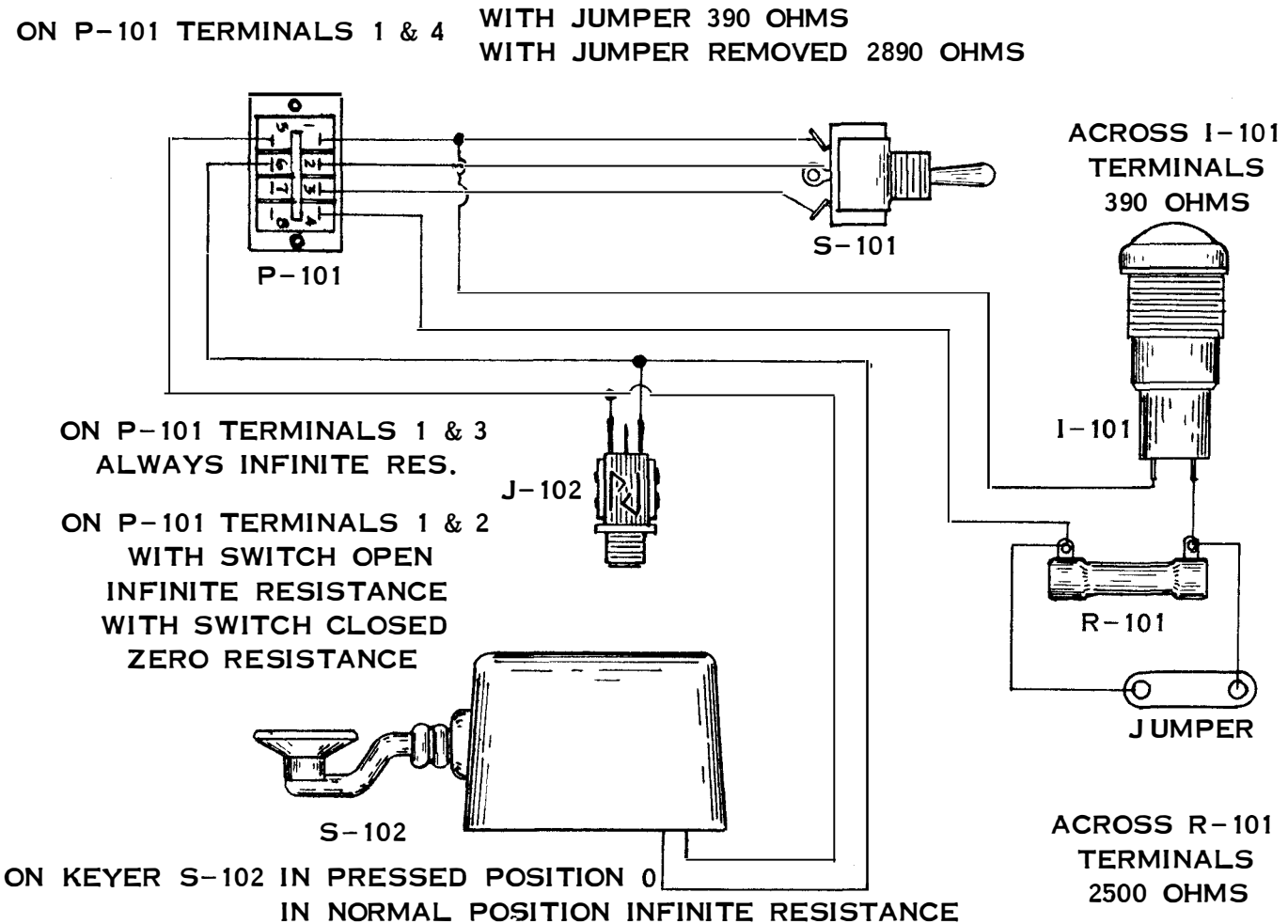


Figure 2-2. Control Panel Telegraph Key SB-315B/U, Wiring Diagram

2-5. INSTALLATION REQUIREMENTS.

The following step-by-step procedure describes the method of mounting the unit. Do not make any electrical connections to the radio transmitter until the unit is completely installed.

a. Remove the eight panel mounting screws, lock-washers, and nuts that fasten the panel to the enclosure. Do not damage the two gaskets that are mounted between the flange of the enclosure and the plastic panel.

b. Remove the connector receptacle from the enclosure. The connector receptacle is mounted by two screws, sealing washers, lockwashers, nuts and spacers. See figure 6-1.

c. Make a 4-9/16 by 5-13/16-inch opening in the surface on which the unit is to be mounted. Make sure there is sufficient clearance beneath the mounting surface to accept the bottom of the enclosure. The shorter dimension of the opening must be parallel to the front edge of the mounting surface.

d. Place the enclosure, base down, in the opening made in step c and mark the locations of the eight 1/4-inch mounting holes. Remove the enclosure and drill the holes in the mounting surface.

e. Drill a cable entrance hole in the enclosure.

f. Place the proper gasket over the bottom of the

enclosure. Mount the enclosure, base down, in the mounting recess. The mounting surface should be dry and free of all dirt, oil or other foreign material.

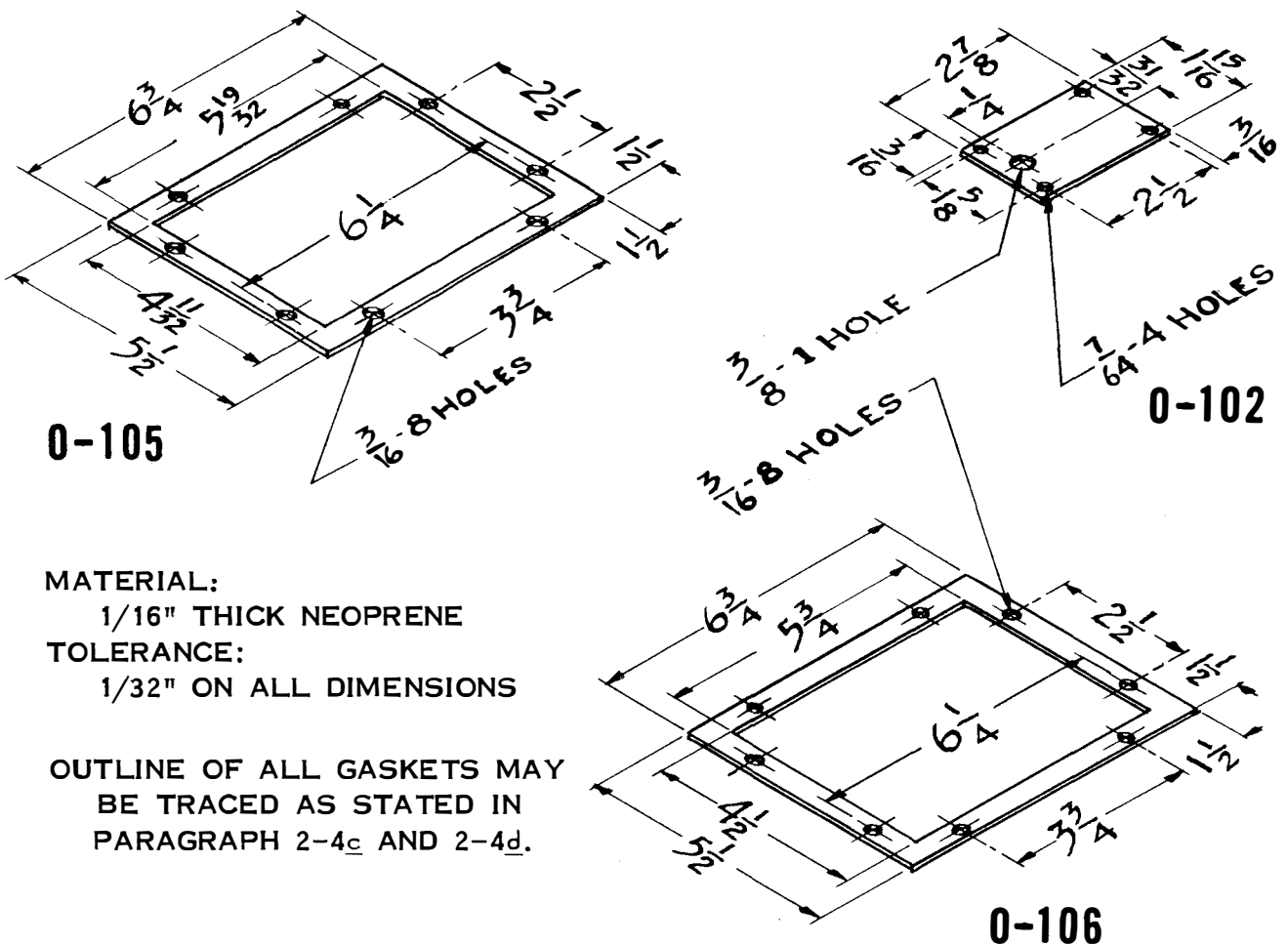
NOTE

The two gaskets referred to in paragraph 2-4c are of slightly different sizes. The gasket with the larger inside dimensions should be used.

g. Draw the cable from the radio transmitter through the cable entrance and into the enclosure. Make all electrical connections to the connector receptacle. After electrical connections are made remount the connector receptacle in the enclosure. Never try to make electrical connections while the connector receptacle is mounted. A cable clamp should be used to hold the cable firmly in the box.

h. Place the remaining gasket on the flange of the enclosure. Place the plastic panel over the gasket and insert eight mounting screws. Install the lock-washers and nuts on the screws from under the mounting surface. Draw the nuts up snug with a socket wrench. Do not tighten the nuts to the point where the gaskets are compressed excessively.

i. Check the unit for proper operation.



MATERIAL:

1/16" THICK NEOPRENE

TOLERANCE:

1/32" ON ALL DIMENSIONS

OUTLINE OF ALL GASKETS MAY BE TRACED AS STATED IN PARAGRAPH 2-4c AND 2-4d.

Figure 2-3. Control Panel Telegraph Key SB-315B/U, Gasket Layout

SECTION 3 OPERATOR'S SECTION

3-1. FUNCTIONAL OPERATION.

a. The Control Panel Telegraph Key SB-315B/U (figure 1-1) contains the components and circuitry necessary to control the operation of the radio transmitter from a remote operating position. A toggle switch, located on the plastic panel, provides a means for turning a transmitter on or off. An indicator light glows red when the transmitter is on. The telegraph key is mounted at the front edge of the panel so that the telegraph key knob projects past the edge of the panel. This arrangement permits the fingers of the operator's hand to rest on the operating desk and not on the panel.

b. A connecting link located on a terminal board which is mounted on the rear of the panel permits using the unit with a power supply of either 115 volts or 230 volts. When the unit is used with a 230 volt supply, the link must be removed or opened.

c. A typical installation will provide the following type of operation. When the toggle switch is pushed

toward the ON position, the transmitter is turned on. The indicator light on the panel will then glow indicating that the transmitter is operating. The transmitter can then be keyed by means of the telegraph key mounted on the panel. When the toggle switch is pushed toward the off position the transmitter is turned off and the indicator light goes out. If more than one Control Panel Telegraph Key is used with the Transmitter, the indicator light on all transmitter panels will light when any Control Panel Telegraph Key is used.

3-2. OPERATOR'S MAINTENANCE.

a. OPERATING CHECKS AND ADJUSTMENTS. - Operator should check gap and tension of the key and adjust to suit his touch.

b. ROUTINE CHECK CHARTS. - Table 3-1 is a routine check chart. The chart contains maintenance procedures that can be performed by nontechnical operating personnel.

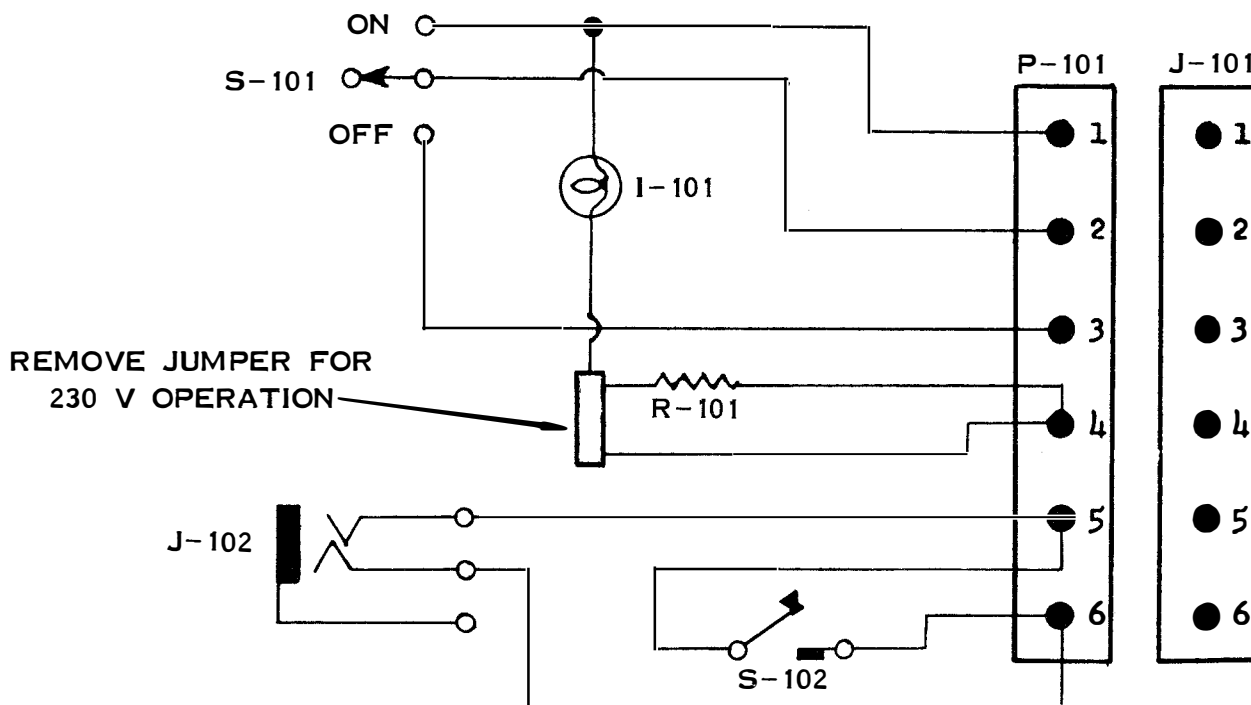


Figure 3-1. Control Panel Telegraph Key SB-315B/U, Schematic Diagram

TABLE 3-1. CONTROL PANEL TELEGRAPH KEY SB-315B/U, ROUTINE CHECK CHART

WHAT TO CHECK	HOW TO CHECK	PRECAUTIONS
Pilot Light	Remove indicator light lens by lifting straight up. Unscrew indicator lamp and lift lamp from socket. Replace lamp with a new lamp.	
ON and OFF Switch	Check rubber hex seal for cracks, excessive wear, and corrosion.	
Telegraph Key Gasket	Check gasket for cracks, excessive wear, and corrosion.	
Telegraph Key Adjustments	Check for faulty spring pressure, excessive play, or incorrect adjustments.	
Panel Mounting Screws	Check panel mounting screws for tightness. Check panel gaskets for proper sealing.	
No pilot light indication after operating toggle switch	Check that control panel telegraph key is connected to a transmitter through ships transmitter transfer switchboard (if used).	

SECTION 4 PRINCIPLES OF OPERATION

4-1. OVERALL FUNCTIONAL DESCRIPTION.

a. Before operating the Control Panel Telegraph Key determine if the transmitter is on by examining the indicator light. If the indicator light is on, it indicates that the transmitter is being operated from another Control Panel Telegraph Key. If the indicator

light is off, the unit may be operated as described in the following paragraph.

b. First, push the toggle switch to the ON position. The indicator light will glow. As soon as the indicator light glows, the telegraph key may be operated. At the end of the transmission, push the switch to the OFF position. The indicator light will go out indicating that the transmitter is off.

SECTION 5 TROUBLE-SHOOTING

5-1. GENERAL.

This section contains general information to aid personnel engaged in the duty of trouble-shooting.

5-2. TEST EQUIPMENT AND SPECIAL TOOLS.

- a. Voltmeter
- b. Ohmmeter
- c. Wire leads and clips

5-3. OVERALL TROUBLE-SHOOTING.

The first step in servicing a defective unit is to trace the fault to the component or circuit responsible for abnormal operation of the unit. The second step is to trace the fault to the defective part responsible for the abnormal operation.

a. **VISUAL INSPECTION.** - In determining the cause of a faulty unit performance, make a careful visual inspection. The fault may be due to a drop of solder, the end of a conductor protruding through the solder lug and touching the chassis, etc. These faults may not always be revealed by a visual inspection, but will eventually show up when a resistance check of the station is made.

b. **VOLTAGE AND RESISTANCE CHECK.** - The

majority of faults must be located by checking voltage and resistance. This is the quickest method of checking if the visual inspection fails to show anything.

(1) **VOLTAGE MEASUREMENTS** - The voltage measurements are an almost indispensable aid to the repairman, because many troubles either result from abnormal voltages or produce abnormal voltages.

(a) Always begin by setting the voltmeter on highest range so that the voltmeter will not be overloaded. Then, if necessary to obtain increased accuracy, set voltmeter to lower range.

(b) It is essential that the voltmeter resistance be at least ten times as large as the resistance of the circuit across which the voltage is measured.

(2) **RESISTANCE MEASUREMENTS.** - When a fault develops in a circuit, its effect will frequently show up as a change in the resistance values.

(a) Before making any resistance measurements, turn off the power.

(b) It is important to know when to use the low-resistance range and when to use the high-resistance range of an ohmmeter. When checking the circuit continuity, the ohmmeter should be set at the lowest range. When checking high resistances or measuring the leakage resistance of cables, the highest range should be used. For resistance measurements see Figure 2-2.

TABLE 5-1. CONTROL PANEL TELEGRAPH KEY SB-315B/U, TYPICAL TROUBLES

TROUBLE	NATURE OF TROUBLE	SYMPTOMS
Key is not functioning	Gap adjusting screw is too tight. Tension adjusting screw is too tight.	No travel in key
Indicating lamp does not light	Defective: bulb; power line; indicating lamp socket; toggle switch; resistor, R-101; connectors P-101 or J-101; external circuit.	Key will not function
Key does not operate transmitter	Defective: telegraph key contacts; connectors P-101 or J-101; external circuit.	No transmission
Switch does not turn off transmitter	Defective: switch S-101; connectors P-101 or J-101; external circuit.	Indicator lamp will be on

SECTION 6 SERVICE AND REPAIR

6-1. FAILURE REPORT.

FAILURE REPORT

"Report each failure of the equipment, whether caused by a defective part, wear, improper operation, or an external cause. Use ELECTRONIC FAILURE REPORT form DD787. Each pad of the forms includes full instructions for filling out the forms and forwarding them to the Bureau of Ships. However, the importance of providing complete information cannot be emphasized too much. Be sure that you include the model designation and serial number of

the equipment (from the equipment identification plate), the type number and serial number of the major unit (from the major unit identification plate), and the type number and reference designation of the particular defective part (from the technical manual). Describe the cause of the failure completely, continuing on the back of the form if necessary. Do not substitute brevity for clarity. And remember - there are two sides to the failure report--

"YOUR SIDE"

"BUREAU SIDE"

"Every FAILURE REPORT is a boost for you:

"The Bureau of Ships uses the information to:

1. It shows that you are doing your job.
2. It helps make your job easier.
3. It insures available replacements.
4. It gives you a chance to pass your knowledge to every man on the team.

1. Evaluate present equipment.
2. Improve future equipment.
3. Order replacements for stock.
4. Prepare field changes.
5. Publish maintenance data.

Always keep a supply of failure report forms on board. You can get them from the nearest Forms and Publications Supply Point."

6-2. REMOVAL, ADJUSTMENT, REPAIR AND REASSEMBLY OF PARTS.

NOTE

Disconnect all wiring before proceeding with the disassembly.

a. ILLUSTRATIONS. - See figure 1-2 for the location of circuit elements. See figures 6-1 and 6-2 for location of mechanical parts.

b. WIRING DIAGRAM. - See figure 2-2.

c. ADJUSTMENT AND REPAIR.

(1) SPRING TENSION ADJUSTMENT. - Turn the adjustment screw clockwise to increase spring tension. Turn the adjustment screw counterclockwise to decrease pressure.

(2) KEY TRAVEL ADJUSTMENT. - Turn the adjustment screw clockwise to increase key travel. Turn the adjustment screw counterclockwise to decrease key travel.

(b) Loosen and remove two screws (H-121), nuts (H-125), lockwashers (H-122), and spacers (H-110); and remove receptacle connector (J-101) from the enclosure (A-105).

(c) Loosen and remove two screws (H-136), nuts (H-114), lockwashers (H-137), and spacers (H-115); and remove plug connector (P-101) and board (O-118) from the control panel (A-104).

(d) Loosen and remove nut (H-126) and remove jumper (O-109).

(e) Loosen and remove nut (H-133) and remove terminal (H-132). Loosen and remove screw (H-129), nut (H-131), and washer (H-130).

(f) Loosen and remove hex seal (O-108) and toggle switch (S-101) from the control panel (A-104).

(g) Loosen and remove hex nut (H-128) and lockwasher (O-111), and remove indicator light (XI-101) and rubber gasket (O-116). Remove lens (XI-101A) and pilot light (I-101).

(h) Loosen and remove jack (J-102) and jack cover (H-135) from panel (A-104).

(i) Remove four screws (H-116) and remove telegraph key assembly (S-102) and rubber gasket (O-102) from the control panel (A-104).

6-3. DISASSEMBLY.

Exploded views of the Control Panel Telegraph Key SB-315B/U are shown in figures 6-1 and 6-2. To disassemble the unit, refer to figure 6-1. To disassemble the telegraph key assembly refer to figure 6-2. The complete disassembly procedure is listed below:

(a) Loosen and remove eight screws (H-127), nuts (H-117), and lockwashers (H-118); and remove control panel (A-104) and two neoprene gaskets (O-105) and (O-106) from the enclosure (A-105).

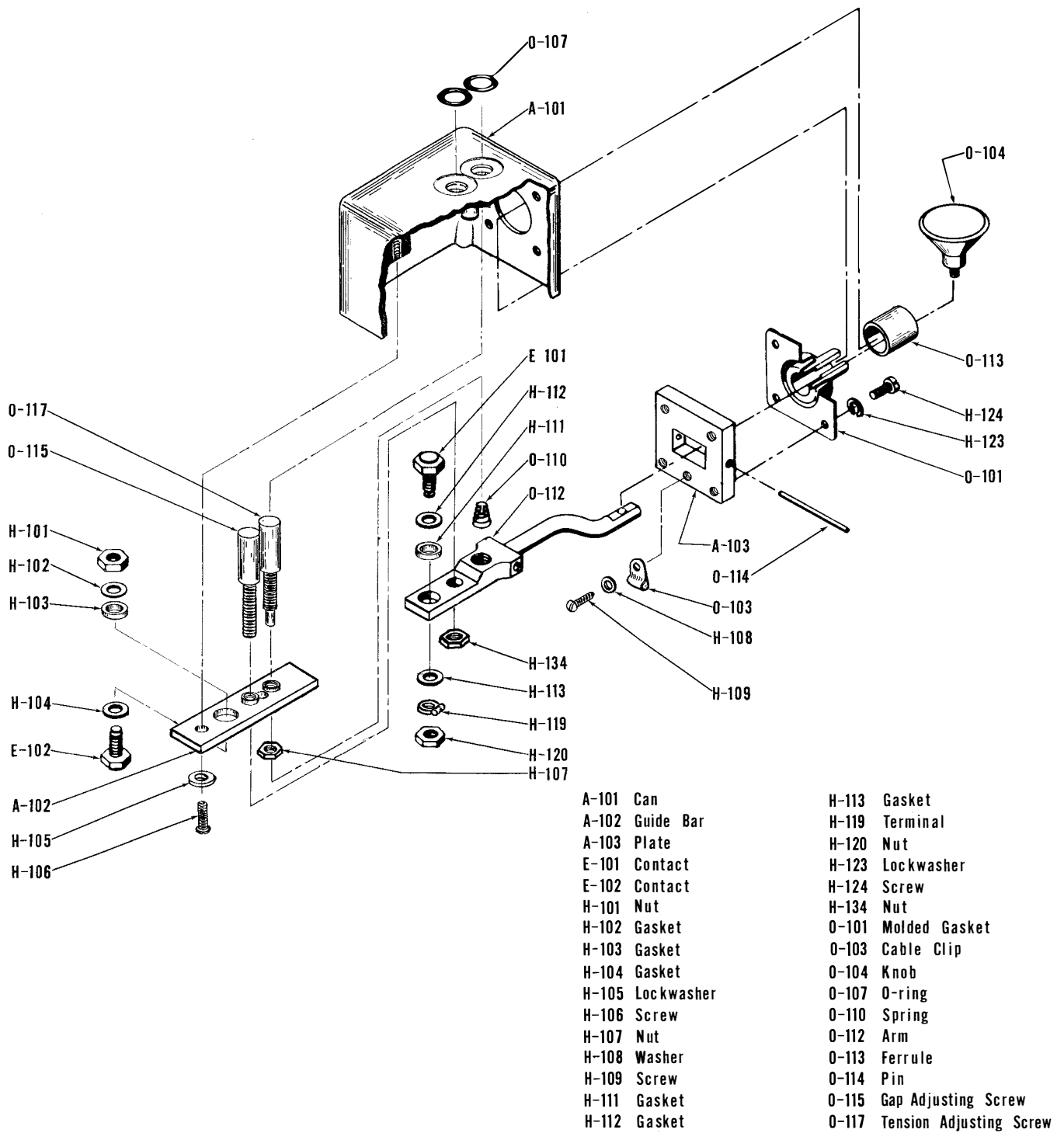


Figure 6-2. Control Panel Telegraph Key S-102, Exploded View

NOTE

Remainder of disassembly refers to figure 6-2.

(j) Unscrew and remove knob (O-104) from arm (O-112).

(k) Loosen and remove four screws (H-124) and lockwashers (H-123) from can (A-101).

(l) Loosen and remove soldered nut (H-134) and remove gap adjusting screw (O-115).

(m) Turn the tension adjusting screw (O-117) counterclockwise as far as it will go.

(n) Push arm (O-112) in and allow spring (O-110) to drop out and then continue moving the arm (O-112) in and toward the base of the can (A-101) until it is completely out.

(o) Remove the wire from the terminal (H-119). Loosen and remove nut (H-120), terminal (H-119), contact (E-101), gasket (H-111), and two gaskets (H-112) and (H-113) from arm (O-112).

(p) Drive roll pin (O-114) from plate (A-103) and arm (O-112). Loosen and remove screw (H-109), washer (H-108) and remove cable clip (O-103). Re-

move plate (A-103).

(q) Pry ferrule (O-113) loose and remove ferrule and molded gasket (O-101) from arm (O-112).

(r) Loosen and remove two screws (H-106) and lockwashers (H-105). Lift guide bar (A-102) out and unsolder wire.

(s) Remove O-ring (O-107) from can (A-101).

(t) Loosen and remove soldered nut (H-107) and remove tension adjusting screw.

(u) Loosen and remove nut (H-101), contact (E-102), gasket (H-103) and two gaskets (H-102) and (H-104) from guide bar (A-102).

6-4. REASSEMBLY.

The reassembly procedure for this equipment is essentially the same as the disassembly procedure in reverse. Therefore, to reassemble the Control Panel Telegraph Key SB-315B/U, start with step (u) of the disassembly procedure and work forward. When soldering be careful not to let solder fall unnecessarily. See figure 3-1 for schematic diagram.

SECTION 7 PARTS LIST

7-1. INTRODUCTION.

This section consists of a "Maintenance Parts List," and a "List of Manufacturers." These tables contain information that will enable maintenance and supply activities to fabricate or procure circuit components or parts subject to replacement because of wear.

New Stock Number Identification Tables (SNIT's) issued by the Electronics Supply Office include Federal Stock Numbers and Source, Maintenance, and Recoverability Codes. Therefore, reference shall be made to the SNIT for this information.

a. To use the Maintenance Parts List (Table 7-1), first identify the part by its reference designation

symbol. This information may be obtained from the Description Section or from the wiring schematic or installation diagram. Then locate the symbol in the first column of Table 7-1.

The "Name and Description" column contains the nomenclature of the part, its design characteristics, the manufacturer's prefix code, and the part or drawing number in the order indicated. The "Locating Function" column presents a brief summary of the component's function in the equipment.

b. The List of Manufacturers (Table 7-2) contains a list of the names and addresses of the manufacturers supplying parts used in the equipment and their prefix codes. These codes appear as combinations of capital letters or names near the end of the part description in the Maintenance Parts List, Table 7-1.

TABLE 7-1. CONTROL PANEL TELEGRAPH KEY SB-315B/U, PARTS LIST

REF. DESIG.	NAME AND DESCRIPTION	LOCATING FUNCTION
E-101	CONTACT, ELECTRICAL: 1 point coin silver overlay 1/4 in. dia. 1/16 in. high contact area; brass silver plated finish; overall dim. 5/16 in. hex, by 21/32 in. lg.; 8-32 thd. mtg. stud by 1/2 in. lg. Baker #MD1444 Modified.	Movable contact for part S-102
E-102	CONTACT, ELECTRICAL: (Same as E-101).	Stationary contact for part S-102
H-135	JACK COVER: Steel, rubber, brass; overall dim. 1-1/8 in. lg. by 7/8 in. wd. by 7/16 in. high; with brass nut; 3/8-32NEF thd; molded rubber seal. Switchcraft #520.	Moisture seal
I-101	LAMP, INCANDESCENT: 10 watt, 230 V, 65 lumens; 6 mm spherical CP; candelabra base; overall length 1-11/16 in.; clear bulb; burns in any position. Sylvania #S6S-230V.	Indicator lamp
J-101	CONNECTOR, RECEPTACLE: 8 male flat contacts; polarized; straight type; 57/64 in. lg. excluding protruding terminals, 2-1/16 in. wide, 7/8 in. high; contact rating 5 amp 600 V DC; body rectangular plastic, stainless steel molded-in mounting plate; 2 mounting holes 1/8 in. dia. on 1.687 mounting centers; gold plated contacts. Amphenol #26-182.	Terminates external cabling in unit
J-102	JACK TELEPHONE: Spring leaf per MIL-J-641A type JJ-103; 3/8-32NEF thd; overall dim., 1-3/4 in. lg. by 1-11/16 in. high including terminals, by 3/4 in. wide. Switchcraft #SF-JAX C52 B.	For external key
O-101	SEAL, WATER: Synthetic rubber; square base with deep corrugated diaphragm and tubular center extension; 1-3/16 in. square by 5/8 in. lg. overall; four 1/8 in. mounting holes on 13/16 in. centers; center extension fits 1/4 in. dia. key shaft. D-F No. 2151-8-A.	Seals telegraph key arm to housing, part of S-102
O-102	GASKET: Waterproofing; neoprene; 2-7/8 in. by 1-15/16 in. by 1/16 in. thk. overall; four 7/64 in. dia. holes on 2-1/2 in. by 1-5/8 in. mtg. centers, one 3/8 in. dia. hole for wiring located on center line 1/4 in. from 1-15/16 in. side.	Seals telegraph key to control panel

TABLE 7-1. CONTROL PANEL TELEGRAPH KEY SB-315B/U, PARTS LIST (CONT)

REF. DESIG.	NAME AND DESCRIPTION	LOCATING FUNCTION
O-104	KNOB: Round, black phenolic; has mounting stud 8-32 thd; 5/32 in. lg.; overall dim. 11/16 in. lg., 1-1/8 in. dia. E.F. Johnson No. 114-350 Modified.	Telegraph key knob part of S-102
O-105	GASKET: Waterproofing neoprene; eight 3/16 in. dia. holes; 6-3/4 in. lg. by 5-1/2 in. wd. by 1/16 in. thk. overall; has 5-3/4 in. lg. by 4-1/2 in. wd. cut out.	Seals panel to case
O-106	GASKET: Waterproofing; neoprene; eight 3/16 in. dia. holes; 6-3/4 in. lg. by 5-1/2 in. wd. by 1/16 in. thk. overall; has 5-19/32 in. lg. by 4-11/32 in. wd. cut out.	Seals case to mounting surface
O-107	O-RING: Rubber; overall dim. 5/16 in. I.D. by 7/16 in. O.D. by 1/16 in. dia. cross section. Parker type No. AN6227B-6.	Seal for adjusting screws
O-108	CAP, SEAL: Nonmetallic; rubber; overall dim. 13/16 in. hex by 7/8 in. lg., 15/32-32 thd. A.P.M. #1030.	Seal for switch S-101
O-110	SPRING, HELICAL, COMPRESSION: Conical shape; MBCA Ref Dwg Group 65; five and one half turns, three and one half working turns, right hand twist; spring steel, cadmium plated #15 ga. wire. D-F No. 2151-13-A.	Regulate tension on key
O-115	SCREW, GAP ADJUSTING: Brass; black oxide finish; overall dim. 1-7/8 in. lg. by 5/16 in. dia. with 6-32 thd. 1-1/8 in. lg. D-F No. 2151-11-A.	Adjust the key travel
O-116	GASKET: Synthetic rubber; 1/32 in. thk. by 1 in. I.D. by 1-1/8 in. O.D. D-F No. 2151-22-A.	Seals light holder to panel
O-117	SCREW, TENSION ADJUSTING: Brass, black oxide finish; overall dim. 1-7/16 in. lg. by 5/16 in. dia. with 6-32 thd., 5/8 in. lg. D-F No. 2151-12-A.	Adjusts key tension
P-101	CONNECTOR, PLUG: 8 female flat contacts; polarized; straight type; overall dim. 7/8 in. lg. excluding protruding terminals, 2-1/16 in. wd. 7/8 in. high; contact rating 5 amp, 600 V DC; rectangular plastic body with stainless steel molded-in mtg. plate; two 1/8 in. dia. mtg. holes on 1.687 in. mtg. centers with floating bushings; gold plated contacts. Amphenol #26-183.	Receives wiring of unit to mate with external connection
R-101	RESISTOR, FIXED: Wire wound; 2,500 ohms total resistance, 5% tolerance; 5 watts; MIL-R-26B type RW29G252; Milwaukee Resistor.	Voltage dropping for lamp when used on 230 V
S-101	SWITCH, TOGGLE: Single hole flush mtg., single pole; 1-1/8 in. lg. by 5/8 in. wd. by 2-13/64 in. high overall dim.; three hot tinned dipped solder lugs. Per MS35058-18, Network #ST42G.	To control remote circuit
S-102	KEY, TELEGRAPH: Manual actuation brass lever, cadmium plated and black iridite finish; overall dim. 4-3/4 in. lg. by 1-3/4 in. wd. by 2-1/8 in. high, 2 contacts, 1/4 in. dia. coin silver; four 6-32 thd. mtg. holes; case is 2-3/8 in. lg. by 1-3/4 in. wd. overall dim.; key is waterproof. D-F No. 2151-AY1-D.	Keys external signal
XI-101A	LIGHT HOLDER: 1 in. jewel; candelabra screw base for 125 V, 75 watt; solder terminals; mounts in 1 in. dia. hole; length, excluding terminals, 2-1/2 in. Panel hardware highly polished chrome; all other parts cadmium plated. Drake No. 75AP.	Holds I-101
XI-101B	LENS: Smooth, clear, red jewel; part of Drake No. 75AP.	For XI-101A

TABLE 7-2. CONTROL PANEL TELEGRAPH KEY SB-315B/U, LIST OF MANUFACTURERS

ABBREVIATION	NAME	ADDRESS
Amphenol	Amphenol Electronics Corp.	1858 South 54th Ave., Chicago, Ill.
A.P.M.	Automatic & Precision Mfg. Co.	254 Hawthorne Ave., Yonkers, N.Y.
Baker	Baker & Co., Inc.	113 Astor St., Newark 5, N.J.
D-F	Dittmore-Freimuth Corp.	2517 E. Norwich St., Milwaukee 7, Wis.
Drake	Drake Mfg. Co.	1709 W. Hubbard St., Chicago 22, Ill.
E.F. Johnson	E.F. Johnson Co.	620 Second Ave., S.W., Waseca, Minn.
Milwaukee Resistor	Milwaukee Resistor Co.	702 W. Virginia Ave., Milwaukee 4, Wis.
Network	Network Mfg. Corp.	P.O. Box Q, Bergen Point Station, Bayonne, N.J.
Parker	Parker Appliance Co.	17325 Euclid Ave., Cleveland 12, Ohio
Switchcraft	Switchcraft, Inc.	1310 N. Halsted St., Chicago 22, Ill.
Sylvania	Sylvania Electric Products, Inc.	1740 Broadway, New York 19, N.Y.

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