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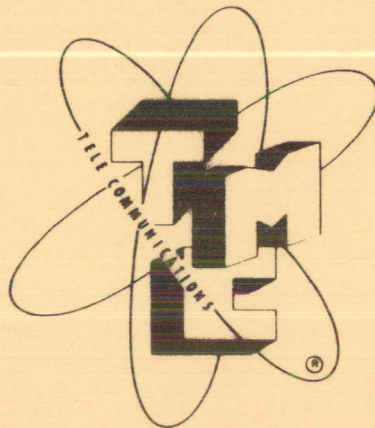
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TECHNICAL MANUAL

*for*

TRANSMITTING COUPLER

MODEL TRC-3500



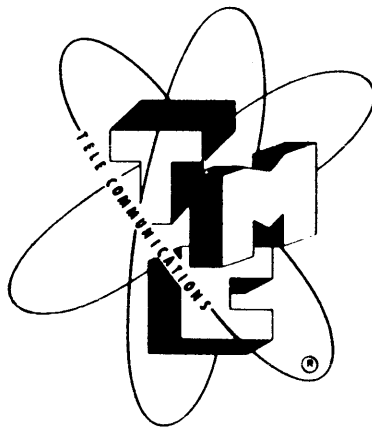
THE TECHNICAL MATERIEL CORPORATION  
MAMARONECK, N. Y.

OTTAWA, ONTARIO

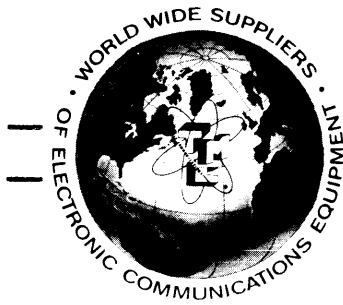
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MODEL TRC-3500



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MAMARONECK, N. Y. OTTAWA, ONTARIO



# THE TECHNICAL MATERIEL CORPORATION

C O M M U N I C A T I O N S   E N G I N E E R S

700 FENIMORE ROAD

MAMARONECK, N. Y.

## W a r r a n t y

The Technical Materiel Corporation, hereinafter referred to as TMC, warrants the equipment (except electron tubes, fuses, lamps, batteries and articles made of glass or other fragile or other expendable materials) purchased hereunder to be free from defect in materials and workmanship under normal use and service, when used for the purposes for which the same is designed, for a period of one year from the date of delivery F.O.B. factory. TMC further warrants that the equipment will perform in a manner equal to or better than published technical specifications as amended by any additions or corrections thereto accompanying the formal equipment offer.

TMC will replace or repair any such defective items, F.O.B. factory, which may fail within the stated warranty period, PROVIDED:

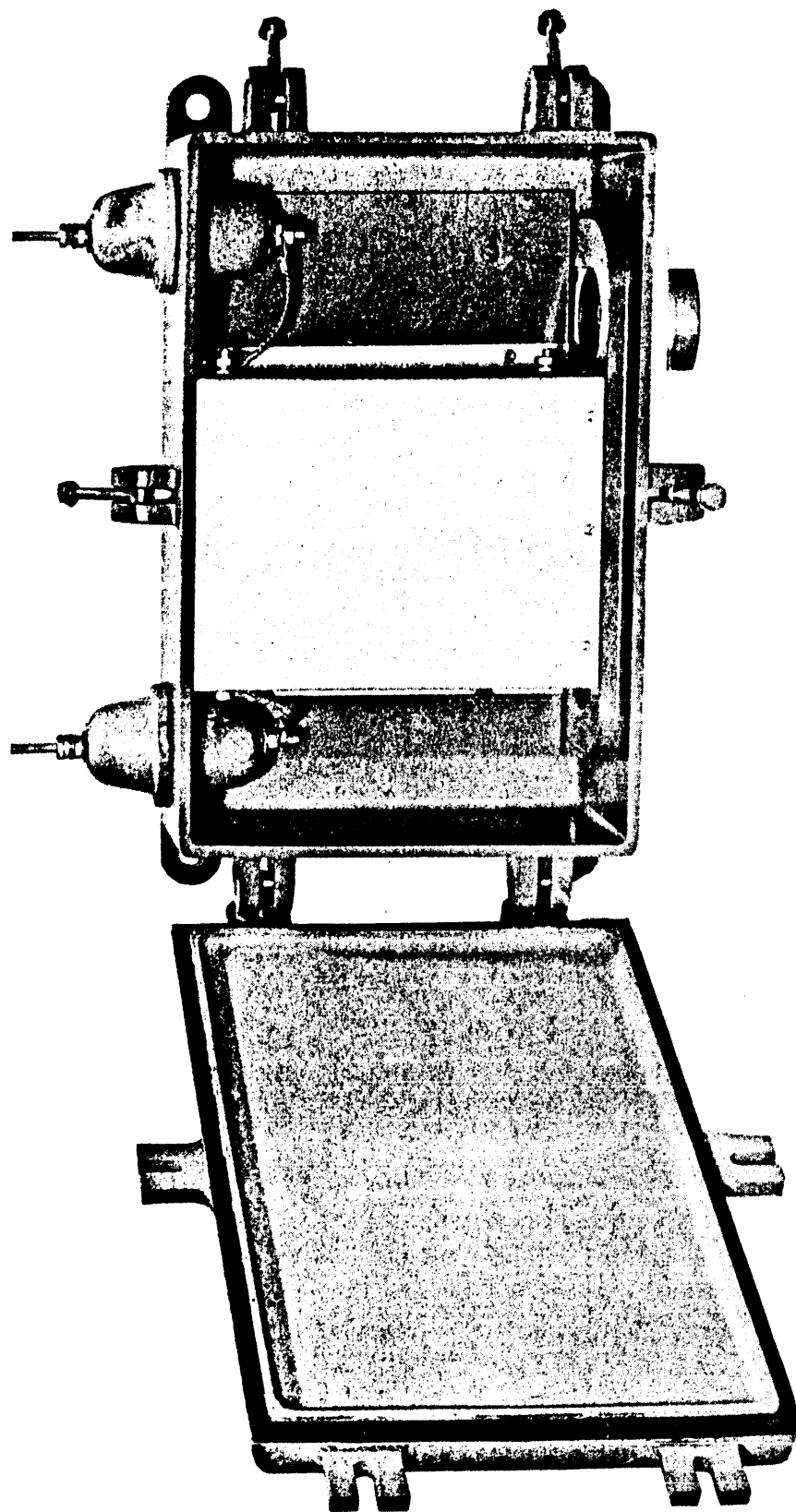
1. That any claim of defect under this warranty is made within sixty (60) days after discovery thereof and that inspection by TMC, if required, indicates the validity of such claim to TMC's satisfaction.
2. That the defect is not the result of damage incurred in shipment from or to the factory.
3. That the equipment has not been altered in any way either as to design or use whether by replacement parts not supplied or approved by TMC, or otherwise.
4. That any equipment or accessories furnished but not manufactured by TMC, or not of TMC design shall be subject only to such adjustments as TMC may obtain from the supplier thereof.

Electron tubes furnished by TMC, but manufactured by others, bear only the warranty given by such other manufacturers. Electron tube warranty claims should be made directly to the manufacturer of such tubes.

TMC's obligation under this warranty is limited to the repair or replacement of defective parts with the exceptions noted above.

At TMC's option any defective part or equipment which fails within the warranty period shall be returned to TMC's factory for inspection, properly packed with shipping charges prepaid. No parts or equipment shall be returned to TMC, unless a return authorization is issued by TMC.

No warranties, express or implied, other than those specifically set forth herein shall be applicable to any equipment manufactured or furnished by TMC and the foregoing warranty shall constitute the Buyers sole right and remedy. In no event does TMC assume any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of TMC Products, or any inability to use them either separately or in combination with other equipment or materials or from any other cause.



Front View, Cover Open, Model TRC-3500

## 1. GENERAL DESCRIPTION

Figure 1 shows the dimensional outline of Transmitting Coupler Model TRC-3500. All models are contained in waterproof, stress relieved aluminum cases with removable covers. Transformers within are

hermetically sealed and potted in a special plastic compound. Input and output connections are made outside the case without need for removal of the cover.

Table 1 presents technical specifications of the Model TRC-3500.

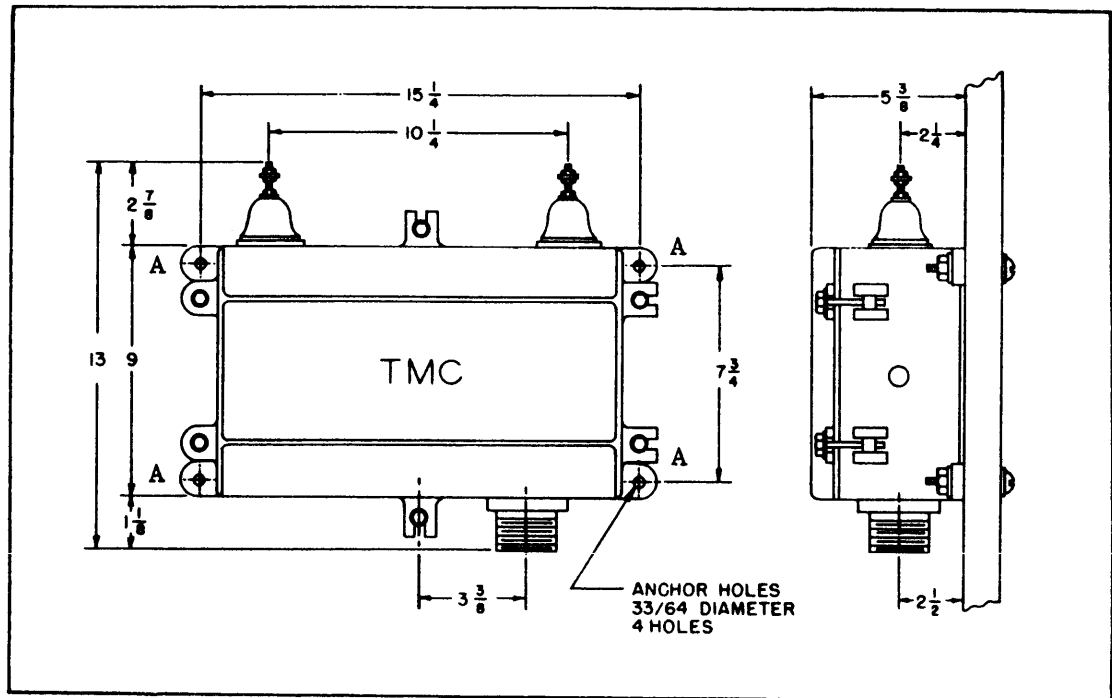


Figure 1. Dimensional Outline and Mounting, Model TRC-3500

TABLE 1. Technical Specifications of Transmitting Coupler, TRC-3500

INPUT IMPEDANCE:	72 ohms unbalanced
OUTPUT IMPEDANCE:	600 ohms balanced
FREQUENCY RANGE:	2 to 20 megacycles 20 to 32 megacycles with reduced efficiency
POWER RATING:	3500 watts with a VSWR of 2 : 1
INSERTION LOSS:	Less than 1 db
INPUT TERMINAL:	Standard boss designed to fit an RG-85/U End Seal. Other fittings can be supplied upon request.
OUTPUT TERMINALS:	Insulator Bowls
INSULATION BREAKDOWN TEST:	Primary and secondary to ground, 4000 volts.
SHIPPING WEIGHT:	Domestic; 45 lbs. Export; 65 lbs.

## 2. THEORY

TMC's broadband transmitting couplers (TRC-3500) are passive devices requiring no power supplies and no timing adjustments at any time. Their frequency range is from 2 to 30 megacycles.

Basically, the TRC-3500 is a 70-ohm primary (toward transmitter) to 600-ohm secondary (toward rhombic antenna) transformer, housed in a waterproof case, as shown in Figure 1. Use of the TRC-3500 will permit the impedance matching of a 72-ohm coaxial cable to a balanced 600-ohm rhombic antenna. Figure 2 presents data on the 70:600 ohm transformer (TR-149).

## 3. INSTALLATION

Lugs A are used to mount the TRC-3500 to a flat surface (as indicated in the side view of Figure 1) or to a pole (in this case fasten straps to lug A; these straps are customer supplied).

As shown in Table 1, Model TRC-3500 accommodates RG-85/U input plug. Figure 3 shows a special installation using Connector ESW-787 to accommodate 7/8 inch "Heliax" cable.

## 4. MAINTENANCE

Periodically (every three months) open cover and inspect inside of case. Clean enclosed components. As often as required, keep insulators clean.

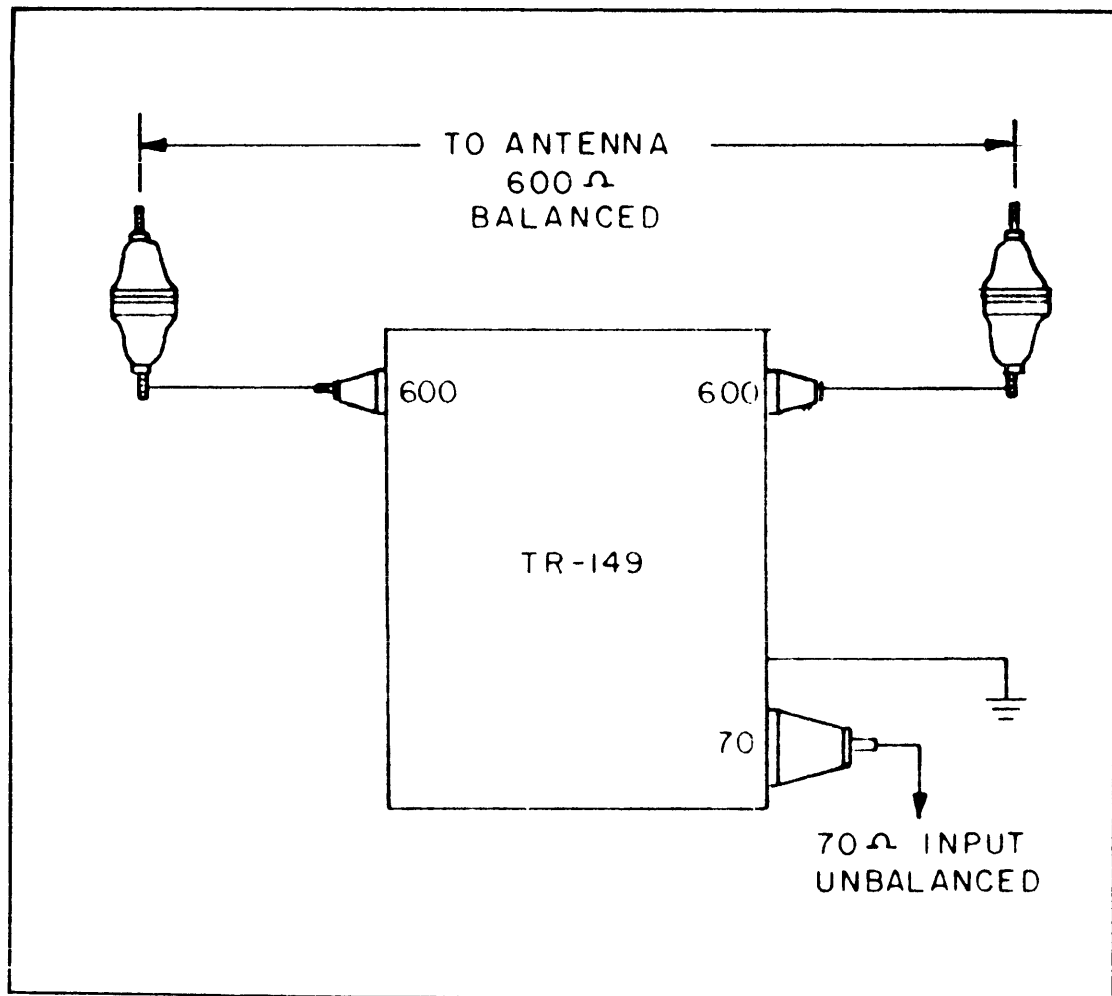


Figure 2. Diagram of Transformer (TR-149) Connections.

5. REPLACEABLE PARTS LIST DESCRIPTION	TMC DWG OR PT NO	QTY PER UNIT
GASKET, flange; neoprene; 2½ in. o.d., 1½ in. i.d. 3/16 in. thk.	GA-102	1
GASKET, flange; neoprene; 14 in. x 6 in. outside, 13-3/8 in. x 5-3/8 in. inside, 3/16 thick.	GA-107	1
GASKET, flange: neoprene; 2½ in. o.d., 1-7/8 in i.d., 1/32 in. thick.	GA-126	4
GLAND, neoprene: 3/4 in. dia. x 25/32 in. lg. o/a.	RY-112	1
PLUG, button: screened opening; fits 1 inch hole; 1-3/16 in. dia. x ½ in. lg. o/a.	HB-103	2
INSULATOR, bowl type: steatite; 2½ inch dia. x 1-3/4 in. lg. o/a for 3/8 inch stud.	NS-115	4
TRANSFORMER, broadband R.F.: 2-32 mc; primary-70 ohm unbalanced; sec. 600 ohm balanced; 3500 watt max.	TR-149	1

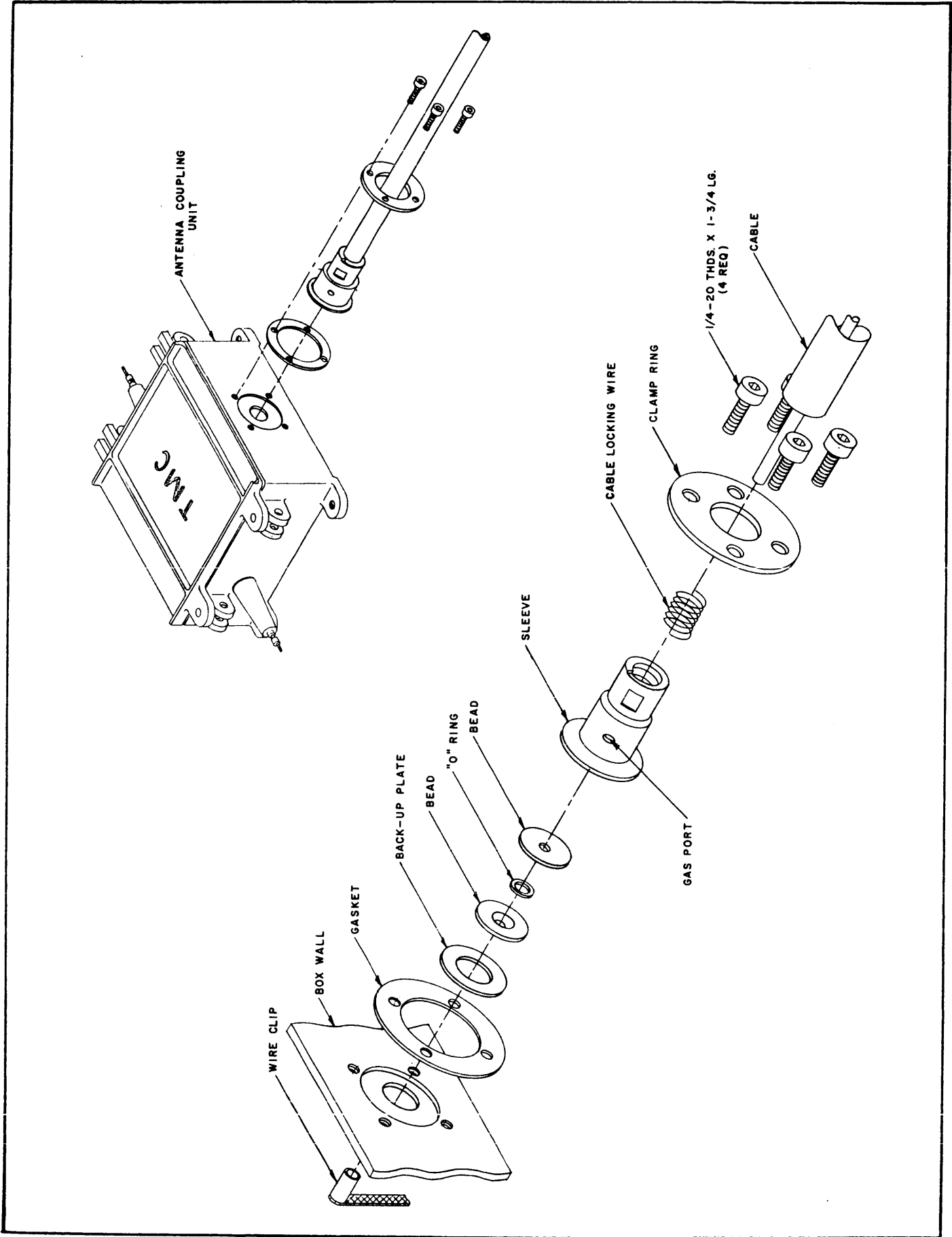


Figure 3. ESW-787 Connector for 7/8 inch "Hellax" Cable



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