GENERAL ELECTRIC

TELEVISION DIPOLE ANTENNA

MODELS HT-8 AND HT-8R

The General Electric Model HT-8 television dipole antenna is a very efficient and inexpensive horizontal dipole-type unit developed for use with television receivers. This antenna is constructed of hard-maple blocks and supporting members and of heavily zinc-plated steel fittings and rods. All wooden parts are protected by special impregnation and high quality paint. The juncture cavity in the pear-shaped block is filled with sealing compound rendering the joint weatherproof. The extremely light weight of this antenna (approximately 5 lbs.) permits ease in handling during installation.

GENERAL INSTALLATION INFORMATION

The television dipole antenna should be located as high as is practicable and in an area where the horizon in the direction of the television transmitter is not obstructed by buildings or structures. A noticeable gain in signal strength will be obtained as antenna height is increased. Since television radiation reacts similarly to light waves, reflection problems arise which often modify otherwise ideal installation locations. Consideration must also be given noise sources within buildings or ignition noises from vehicles on adjacent streets. It is usually best to locate the dipole antenna on the side of the building away from the street thus allowing the building to shield the antenna from ignition noises.

The dipole should be erected with arms parallel to the ground and at right angles to the direction of the television station. If noise or reflection interference exist it may be better to point the dipole arms in the direction of the interference.

Noise interference and poor signal strength may dictate the use of a reflector. A reflector will increase the signal strength appreciably as well as increase the horizontal directivity.

In regions of very high signal strength it is often desirable to use an antenna pad to cut down the signal strength and prevent receiver overloading. General Electric antenna pads are available with the following attenuation characteristics:

General Electric HM-10	10 db.
General Electric HM-20	20 db.
General Electric HM-30	30 db.
General Electric HM-40	40 db.

The antenna transmission line is specially designed to insure low loss of signal between dipole and receiver. When installing transmission line it should be tightly drawn and secured between a number of points by insulators to prevent swaying in the breeze. If loops or knots occur in the line they should be unwound rather than pulled out.

DIPOLE INSTALLATION INSTRUCTIONS

The Model HT-8 television dipole antenna kit contains all the parts necessary to complete the following installation.

Since the dipole unit (1) is completely assembled at the factory, getting the antenna ready for installation is extremely simple. Take the 4-foot pole with a groove in one end (3) and insert the grooved end in the socket of the pear-shaped juncture block (2) permitting the transmission line to pass through the groove. Fasten the pole and juncture block together by means of two wood screws inserted in holes pre-drilled at the factory. Staple the transmission line to this pole with the three insulated staples (4) to prevent chafing of the insulation by the wind. (See Fig. 1.)

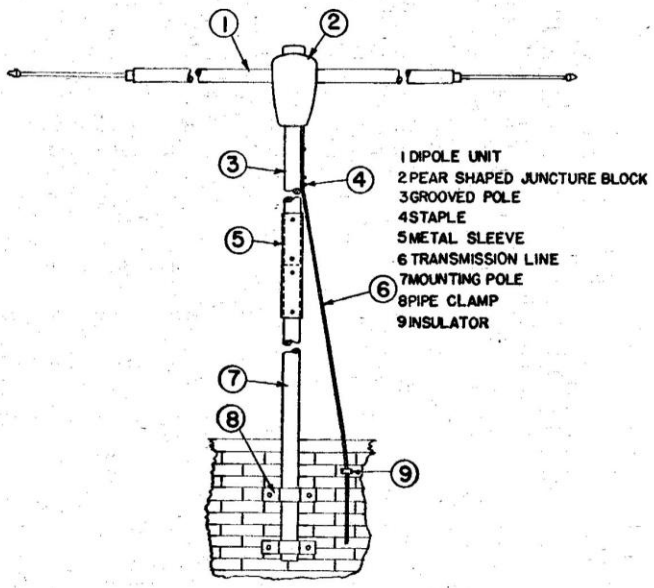

Fig. 1. Dipole Assembly

Clamp the 4-foot mounting pole and sleeve assembly (5 and 7), with the sleeve uppermost, to a vertical wall as shown in Fig. 1 using the two pipe clamps (8). Vertical pipes and poles may be used instead of vertical walls for mounting the 4-foot pole. In these cases the metal bands may be used in conjunction with the pipe clamps for easy installation. The grooved pole which has been attached to the dipole unit is now inserted in the sleeve as shown leaving the fastening screws out temporarily.

The transmission line is next run down to the receiver through stand-off insulators located at convenient points. The porcelain lead-in tube should be used to conduct the transmission line into the building. To install the porcelain tube drill an entrance hole through a window frame near the receiver with the hole slanting downward toward the outside to prevent

rain water seeping in. Insert the tube in the hole. While it is desirable to make the transmission line as short as possible, care should be exercised to avoid close proximity to power lines and particularly runs in parallel with such lines for any appreciable distance. The height of the antenna location should not be sacrificed to make a shorter transmission line.

After the transmission line has been connected to the receiver orient the dipole with respect to the direction of the incoming signal by turning the upper section of the pole in the metal sleeve until the best reception is obtained. As soon as the dipole is oriented. secure it in position by wood screws through the holes in the sleeve.

If the size or strength of the mounting surface does not permit a rugged installation guy wires should be used.

MODEL HT-8R

DIPOLE WITH REFLECTOR INSTALLATION

While for the great majority of cases the use of the Model HT-8 television dipole antenna should be entirely adequate, under certain conditions a greater directivity and gain may be required. This may occur when the signal level is low or when the effect of some local electrical interference has to be reduced. In these cases a special reflector Model HT-8R, should be used in conjunction with the dipole.

Erect the mounting pole-metal sleeve assembly on a vertical surface as previously described.

The reflector proper (4) (see Fig. 2) is very similar to the dipole unit, differing from it only in that it has no external connections. It is a continuous electrical conductor running parallel to the dipole and is loaded at the center by an inductance of a few turns of solid wire.

The adapter mounting (3) consists of 4-foot spacer pole to the center of which is attached a masthead. One end of the spacer pole is grooved for insertion into the dipole juncture block. The other end is to be inserted into the reflector juncture block. These parts are fastened together by means of wood screws inserted in holes predrilled at the factory.

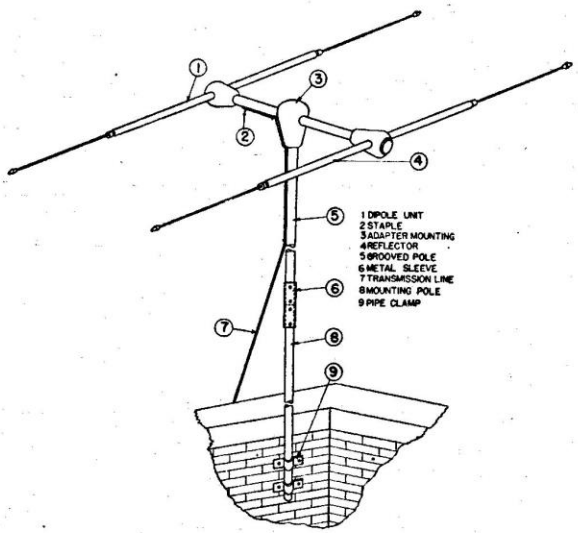

Fig. 2. Dipole and Reflector Assembly

Into the masthead cavity slip the grooved pole (5) and fasten with wood screws. The assembly is then ready to raise into position. Slide the free end of the grooved pole (5) into the metal sleeve (6) which is attached to the mounting pole (8). Do not fasten with wood screws until the dipole and reflector unit have been finally oriented.

The transmission line is next secured to the horizontal and vertical poles by staples as shown. The remainder of the installation is carried out as described for the Model HT-8 dipole antenna.

REPLACEMENT PARTS LIST

Stock No.	Description	List Price
RA-319	ASSEMBLY—Adapter assembly with 4-foot spacer and masthead	$1.30
RB-202	METAL BAND—For attaching clamp to pipe or pole (Pkg. 2)	.15
RC-1997	CAP—For end of antenna arm (Pkg. 2)	.10
RC-1998	CLAMP—Pipe or pole clamp (Pkg. 2)	.10
RI-101	INSULATOR—Transmission line stand-off insulator	.25
RP-403	POLE—4-foot grooved pole	.80
RP-404	POLE—4-foot mounting pole	.65
RS-930	SLEEVE—Metal sleeve	.40
RT-902	TUBE—Porcelain tube	.10
RW-610	WIRE—90 feet transmission line	3.75

(Prices subject to change without notice)

GENERAL ELECTRIC COMPANY
RADIO & TELEVISION DEPARTMENT
BRIDGEPORT, CONN.

INSTRUCTIONS RHTI-10

GENERAL ELECTRIC

TELEVISION DIPOLE ANTENNA

MODEL HT-10

The General Electric Model HT-10 de luxe television dipole antenna is scientifically designed to insure maximum performance and permanence of installation. This antenna is constructed of heavy gauge steel tubing. All metal parts are heavily plated to offer a maximum protection against the weather.

GENERAL INSTALLATION INFORMATION

The television dipole antenna should be located as high as is practicable and in an area where the horizon in the direction of the television transmitter is not obstructed by buildings or structures. A noticeable gain in signal strength will be obtained as antenna height is increased. Since television radiation reacts similarly to light waves, reflection problems arise which often modify otherwise ideal installation locations. Consideration must also be given noise sources within buildings or ignition noises from vehicles on adjacent streets. It is usually best to locate the dipole antenna on the side of the building away from the street, thus allowing the building to shield the antenna from ignition noises.

The dipole should be erected with arms parallel to the ground and at right angles to the direction of the television station. If noise or reflection interference exist it may be better to point the dipole arms in the direction of the interference.

Noise interference and poor signal strength may dictate the use of a reflector. A reflector will increase the signal strength appreciably as well as increase the horizontal directivity.

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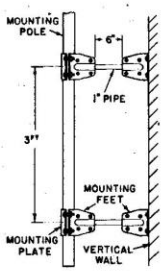
MODEL HT-10-A
DE LUXE DIPOLE ANTENNA

This antenna is for general use in locations which have adequate signal strength and in which comparatively little reflection interference is encountered.

Model HT-10-A antenna consists of the following:

(a) Dipole assembly (1)
(b) 18¼ inch mounting arm (5)
(c) Set of Bolts and Nuts
(d) Set of Mounting Feet (6)
(e) 90 feet of Transmission Line (7)

To assemble this antenna (see Fig. 1) place the end of the mounting arm (5), in which two holes are drilled, between the prongs of the dipole assembly "U" bracket (3), aligning the bolt holes in arm and bracket and inserting the ¼-20 x 2" long bolts. Secure the bolts in position with the washers and nuts provided. On the other end of the mounting arm place the two mounting feet (6) and clamp them together with the nuts, bolts and washers enclosed. The HT-10-A antenna is now ready to be mounted on any horizontal or vertical surface. Mounting on vertical pipes and poles can be accomplished with appropriate metal fixtures. When mounting on vertical surfaces an extension may have to be used to locate the dipole above surrounding obstructing surfaces. A 1-inch galvanized pipe may be used as an extension. To attach a vertical pole to a vertical surface the arrangement shown below may be used which requires four sets of mounting feet, two short sections of steel pipe and two mounting plates. The anchorages should be three feet apart.



A Method of Mounting on Vertical Surface

To attach the transmission line take one of the rubber plugs (8), pass about five feet of transmission line through the plug and then push the line up through the mounting arm (5). Place the other rubber plug on the short leads coming out of the dipole junction. Solder the line to these leads and tape the joints. Pull the connected line down through the mounting arm until the slack is removed. Slip the two rubber plugs along the wire to either end of the mounting arm and insert in arm as shown in Fig. 1. As soon as the dipole antenna is mounted the transmission line can be run down to the receiver. Stand-off insulators should be spaced at frequent intervals to prevent the insulation on the wire from chafing and to prevent the wind from whipping the line. A porcelain lead-in tube should be used to conduct the transmission line indoors. A hole drilled downward and outward in the window casing will be a satisfactory way to install the porcelain tube.

MODEL HT-10-B
DE LUXE DIPOLE WITH REFLECTOR

This antenna (see Fig. 2) is designed for use in areas where the signal strength is low or where reception conditions are comparatively poor.

Model HT-10-B antenna consists of two Model HT-10-A dipole assemblies mounting arms, mounting feet, and sets of bolts and nuts. Ninety feet of transmission line is included in the assembly.

Assemble both dipole units exactly as described for the Model HT-10-A except on the transmission line connection. Connect the transmission line as described previously to only one of the dipole units. Clip off the short leads on the other dipole unit at the bushing. This unit then becomes the reflector (11). Interconnect the metal rods of the reflector using the wire and clips provided (12). Obtain a one inch pipe or a two or three inch wooden pole (10) and erect in the chosen location as previously described. Clamp the two dipole unit foot assemblies to one another around the vertical mast and orient as required for maximum performance. Transmission line connections should be made as explained previously.

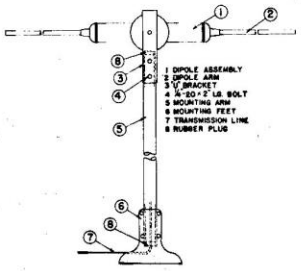


Fig. 1
Model HT-10-A
DeLuxe Dipole Antenna

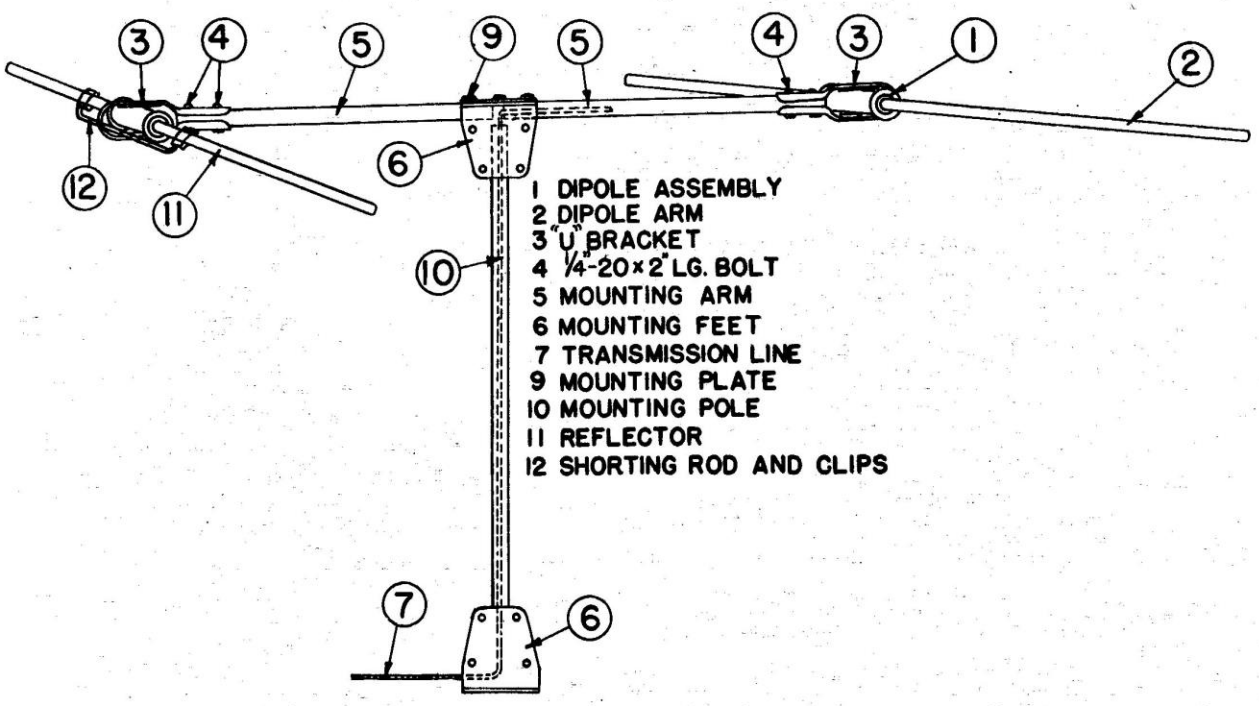


Fig. 2
Model HT-10-B
De Luxe Dipole with Reflector

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