## STEWART - WARNER CORP.

## Stewart-Warner Short Wave Converter R301-A, B, and E

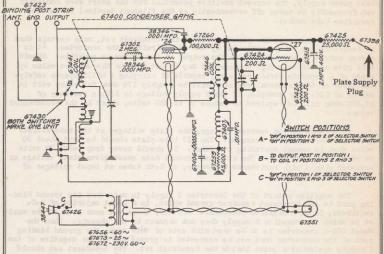


Plate supply plug (#67398) must be connected to some source of filtered D.C. at a potential of 180 to 280 volts. Recommended voltage is 250. The Ground Post of the converter is the negative return and must be con-

The Ground Post of the converter is the negative return and must be connected to the negative side of the external plate supply. The table below gives plate voltages at both tubes for three different plate supply voltages.

Voltage	'24 Plate	'27 Plate
180	26	70
250	34	93
280	37 .	102

## NOTES ON SHORT WAVE CONVERTER

When connecting the Stewart Warner 301 A short wave converter to any receiver other than the 102-A, the following points must be borne in mind.

The plate supply plug must connect to a source of filtered DC inside the radio receiver that will deliver approximately 8 milliamperes at 180 to 280 volts although the recommended plate voltage is 250 volts. If it drops below 180 volts the '27 oscillator tube may not oscillate at the higher frequencies. If it rises above 280 volts parasitic oscillations may be produced.

In this broadcast receivers in which the speaker field is in the positive side of the plate supply, a connection to the high voltage side of the speaker

## STEWART - WARNER CORP.

field will usually provide a satisfactory source of plate potential.

Where the speaker field and filter choke are in the negative side of the plate power supply, the correct positive potential for the short wave converter can frequently be taken off conveniently at the filament terminal of the 280 rectifier tube socket.

When tapping into the plate supply of any broadcast set, make certain that no resistors are being overloaded by the added drain of the converter. It is always safest to tap as close to the output of the filter as possible. Should this give excessively high voltage, it may be cut down to the correct value by means of a separate series resistor, capable of carrying 6 milliamperes safely. The value of this external resistor will be roughly 175 ohms for every volt in excess of 250. For example, if the B supply voltage is 350, a resistor of 17,500 ohms will be required to reduce it to 250 volts, which is the recommended value.

As a check on the correct voltage, the plate voltages at the tube sockets of the converter may be measured. The '27 tube plate should be kept about 90 volts when in normal operating condition. It should never drop below 70 volts or rise about 105 volts. The attached circuit data sheet gives plate voltage as measured with a high resistance voltmeter, of both tubes at input voltages of 180, 250 and 280.

The negative return of the Converter B supply is made thru its ground binding post to the broadcast receiver ground which, in a great majority of Accoreceivers, is at B negative potential. However, there are some sets on the market in which the negative B supply does not connect to the chassis. When the Model 301-A converter is to be used with sets of this type, the ground binding post of the converter must not be connected to ground but to the negative of the B supply system at a point inside the broadcast set. The broadcast set should be grounded in the usual way.

The plate supply lead of the converter should never go direct to a plate terminal of the broadcast set, since this may result in detuning and objectionable regeneration in the broadcast receiver.

The following advice should also be of interest.

"Don't tune above 33 meters for distant stations in daylight.

"Don't tune below 25 meters for distant stations after dark.

"Don't expect to hear many distant stations above 50 meters.

"Don't skim over the dials. Tune slowly.

"Don't expect to find stations on all parts of the dials. Short wave stations are widely separated except in a very few places.

"Don't expect stations to tune broadly. Most distant stations tune very sharply.