ORBIT

ELECTRONICS

INC.

SUPER-HET

11612 ANABEL • JE 4-0170
GARDEN GROVE, CALIF.

FOREWORD

In the past few years, radio control has grown from a hobby only for the gifted few, to a sport enjoyed by thousands the world over.

At the same time, radio itself has undergone a great change, beginning with the old gas tube single channel receiver of yesteryear and progressing to the present day, very compact multi-channel units.

The development of transistors played a large part in this evolution. Their small size, low operating voltages, and long life, have allowed the size of equipment to be greatly reduced while the dependability and life span have been increased.

Not satisfied with the older gas tube receivers, the founders of Orbit Electronics set out to develop the best equipment possible. We have, in a sense, grown with the business, for as new and more compact parts became available, we quickly adopted them into the equipment.

Today, Orbit Electronics offers you the finest and most advanced radio control equipment available. Operating on examination-free frequencies, the Orbit multi-channel receivers and transmitters offer dependable operation with a standard of reliability that is acclaimed the world over. They are easily identified by their distinctive black cases bearing the popular ORBIT insignia.

It will always be the purpose of Orbit Electronics to bring you the finest equipment possible. Each day, new advances are being made in the field of radio. Where possible, they will be incorporated into Orbit equipment.

You are, truly, UP TO DATE and OUT IN FRONT with Orbit.

RECEIVER INFORMATION – GENERAL

The ORBIT tone receiver is enclosed in a durable lightweight case of black anodized aluminum. The components are so fitted into the printed circuit board as to form a neat and compact package. For all its lightness and compactness, the ORBIT receiver is nevertheless very rugged and can be depended upon to perform under the most adverse conditions since all ORBIT receivers are Temperature Stabilized. Resonant reeds are employed in ORBIT multi-channel receivers to separate the tones.

TRANSMITTER INFORMATION – GENERAL

The hand-held crystal-controlled ORBIT tone transmitter is enclosed in a heavy duty black anodized case. It features complete stability of tones with no drift occurring as the battery voltage drops. The effective range of this powerful unit is well beyond the visual range of your model. The rear cover of the transmitter case is easily removed for installing batteries or tuning. Each ORBIT transmitter comes equipped with a chrome-plated telescoping antenna which mounts firmly to the top of the case and is quickly removed when not in use.

WARRANTY

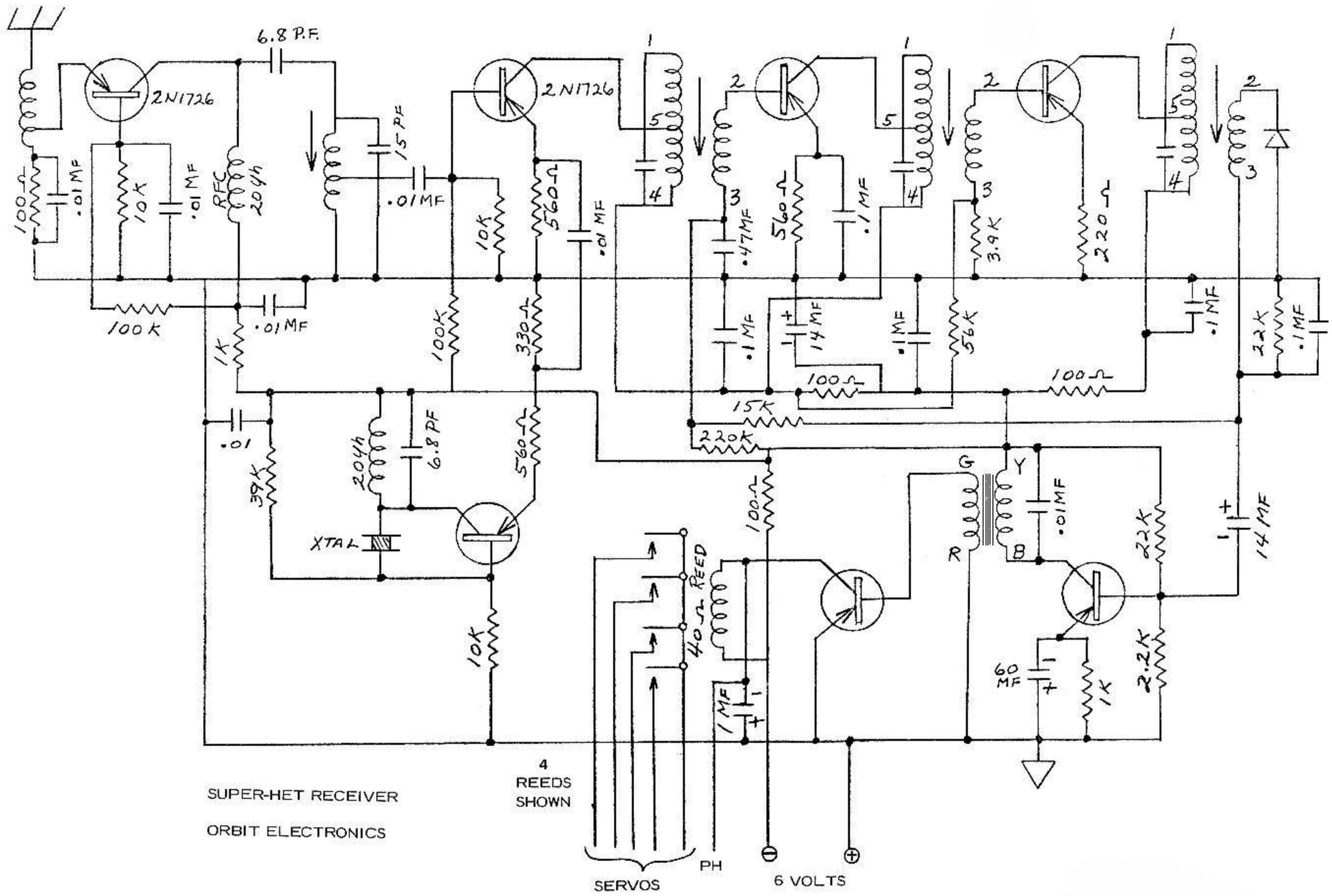
Orbit Electronics warrants for a period of 90 days from the date of shipment, that all parts shall be free of defects in material and workmanship under normal use and service. The foregoing warranty shall apply only to the original buyer.

MULTI CHANNEL
SUPER-HETERODYNE RECEIVER

Super-Heterodyne Receiver . . . . . $ 89.95
Above with Power Pack with Charger $114.90

The ORBIT Super-Heterodyne Receiver presents the latest in design and engineering and provides a maximum amount of stability, selectivity, and sensitivity. New developments in the antenna system and its associated circuitry provide a highly selective tuned circuit greatly reducing the problem of interference. Resonant reeds are utilized for audio separation and new designs incorporated in the audio amplifier stage provide constant drive and eliminate the possibility of overdriving the reeds. Heavier reed construction affords maximum protection from vibration. The employment of two IF stages in the receiver provide increased gain, high stability, and improved sensitivity. The receiver is temperature compensated. No tuning is required for long periods of time under normal operating conditions.

Size – 2 1/8" X 2 7/8" X 1". Weight – 5 ounces.



TUNING INSTRUCTION FOR SUPER-HETERODYNE RECEIVER

RANGE CHECKING – Tuning adjustments on this unit are factory set and readjustments should not be required, nor is it recommended that it be attempted. For this reason, it is nearly impossible for the individual to determine when and if a receiver problem should arise. The following procedure is heartily recommended. Set yourself a standard of ground range, retract or remove the antenna and walk away from the receiver until you feel this is an adequate distance. Note this distance and range check before each flying session. If at any time in the future you should fail to get reliable response at this distance, it may be considered an indication of trouble, but don't overlook the possibility of weak batteries in the transmitter. If you should notice a drop-off in range severe enough to cause misgivings, it is likely to indicate that the receiver should be realigned. It is strongly urged that you return the unit to the factory for this service, for which the normal service charge of two dollars is applied. If it is not possible or practicable to return the unit, the following paragraph details tuning procedure using an oscilloscope. However, it is felt that some knowledge of the workings of a super-heterodyne receiver is invaluable, so if possible, enlist the services of someone familiar with these types.

TUNING – Using additional jumper wire, hook the green lead from RECEIVER FIVE PRONG PLUG to the vertical input jack of the oscilloscope. Another jumper is used from the receivery battery PLUS lead to GROUND of the 'scope. Remove receiver top, and coil up the antenna. With transmitter on and a tone being transmitted, either back out the slug in the tuning coil form, or have someone carry the transmitter far enough away to give a very weak signal indication, BUT AT NO TIME SHOULD THE SIGNAL INDICATE FULL SATURATION DURING THE ACTUAL TUNING OPERATION. A weak signal will appear sinisoidal in character,

while saturation is indicated by flattening of the peaks. Re-check I.F. tuning, and then replace cover on receiver. Uncoil the antenna, and peak the R.F. tuning slug to maximum signal indication again keeping the signal weak enough so that saturation does not occur. It will very likely be necessary to carry the transmitter off to a considerable distance at this time. This completes the alignment procedure, and receiver is now ready for use. Above procedures should be carried out with transmitter antenna REMOVED BUT WITH BACK OF TRANSMITTER ON.

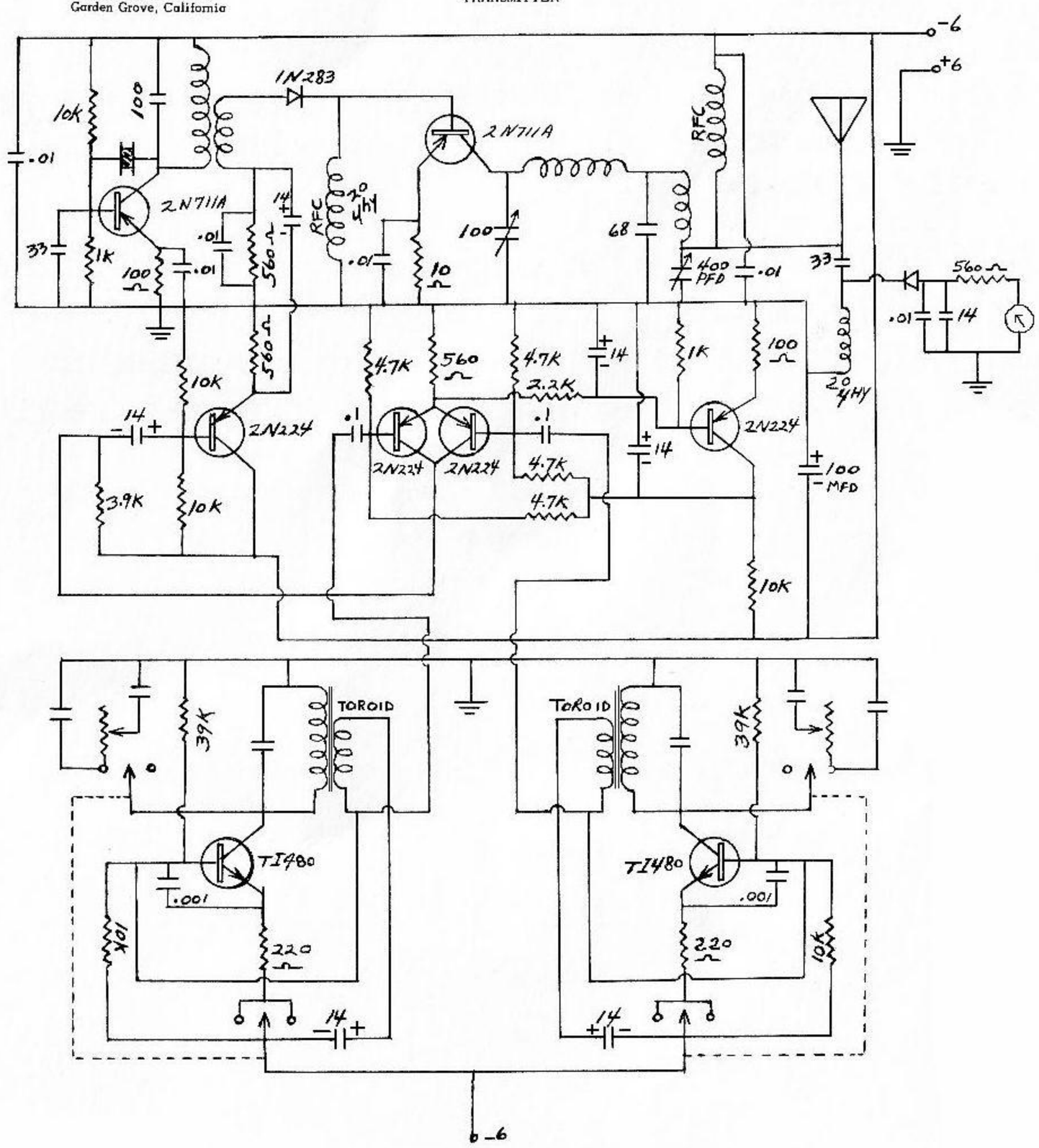
MULTI-CHANNEL
ALL-TRANSISTOR TRANSMITTER

All Transistor Transmitter	$118.50
Power Pack & Charger	29.95

ORBIT presents their latest innovation in the recently developed 10 Channel Transistorized Transmitter. The circuitry is composed of 8 transistors and utilizes silicon transistors in all critical circuits thereby providing maximum stability. A uniquely designed and engineered modulation circuit provides superior modulation permitting maximum reed drive under all operating conditions. All stages are temperature compensated for extreme climatic conditions. A newly designed center loaded antenna is incorporated for maximum output. A miniature edge reading meter is used to monitor the RF output. The transmitter makes provision for a built-in, sintered-plate, ni-cad, 6 volt, rechargeable power supply. The power supply is another development by Orbit and is designed to meet the specific requirements of the transmitter. The power pack is optional at extra cost. The transmitter is only 3" deep, 6½" wide and 7¾" high.

ORBIT ELECTRONICS
11612 Anabel Avenue
Garden Grove, California

ALL-TRANSISTOR
TRANSMITTER



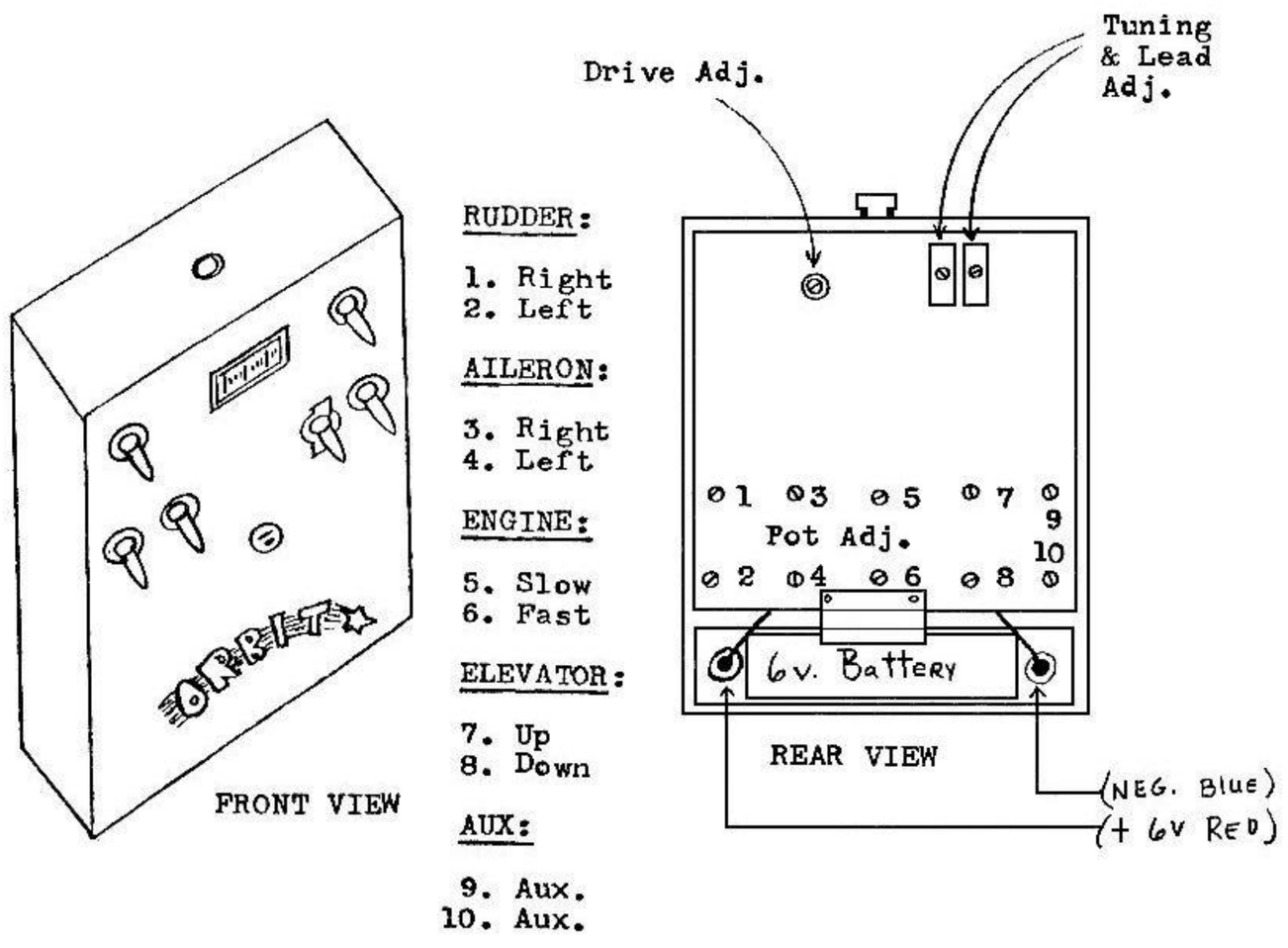
10 CHANNEL TRANSISTOR TRANSMITTER
TUNING INSTRUCTIONS

DRIVE ADJUSTMENT (¼" coil form with tuning slug): —
This adjustment is pre-set at the factory and should not be attempted in the field.

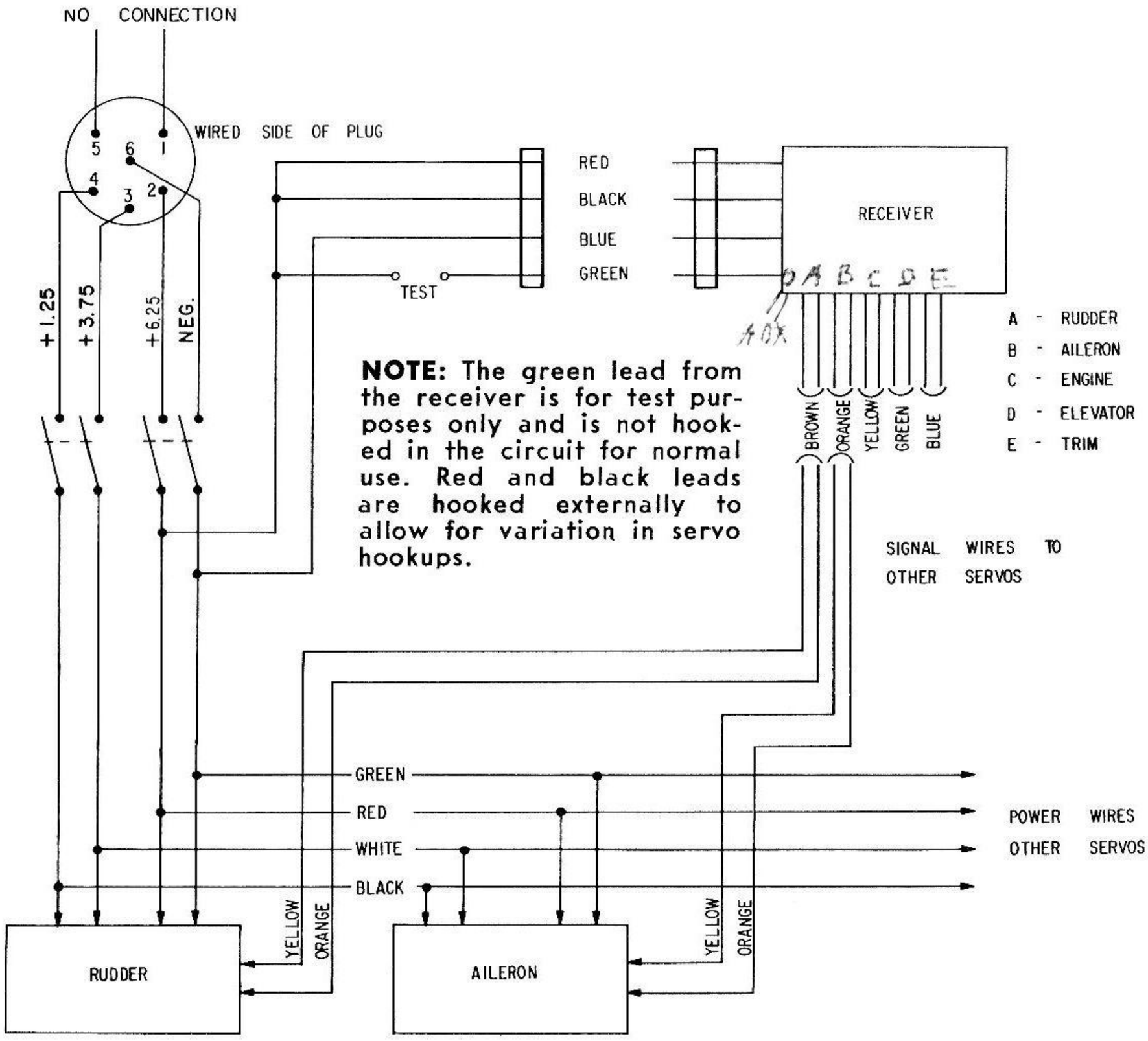
TUNING & LOAD ADJUSTMENT (2 trimmer condensers): —
These adjustments are tuned at the factory, however the following procedure is used in the event adjustment is necessary. BEFORE ATTEMPTING ADJUSTMENTS, ANTENNA MUST BE INSTALLED AND FULLY EXTENDED. Tune to maximum reading on the meter with the antenna fully extended while holding simultaneous controls. These adjustments are interacting (PI Network) and should be alternately tuned until a peak reading is obtained on the meter.

TUNING TRANSMITTER TONES TO THE RECEIVER REEDS: —
The transmitter tones are tuned at the factory, however, the following procedure is used in the event further adjustments are necessary. Hold the rudder control at one position (right) while tuning the elevator or engine pots and then hold the elevator lever at one position (up) while tuning the aileron or rudder pots. While holding the respective controls adjust the corresponding pot screw until the correct reed stops driving (turning clockwise), then turn the screw in the counter-clockwise direction until the reed starts driving again. Leave the pot screw in this position and tune each control in the same manner.

POWER PACK: — Before the initial use of the transmitter power supply it is most important that it be charged for at least 24 hours to assure that it is up to full charge and then generally it should be charged over night when operation is intended the next day.

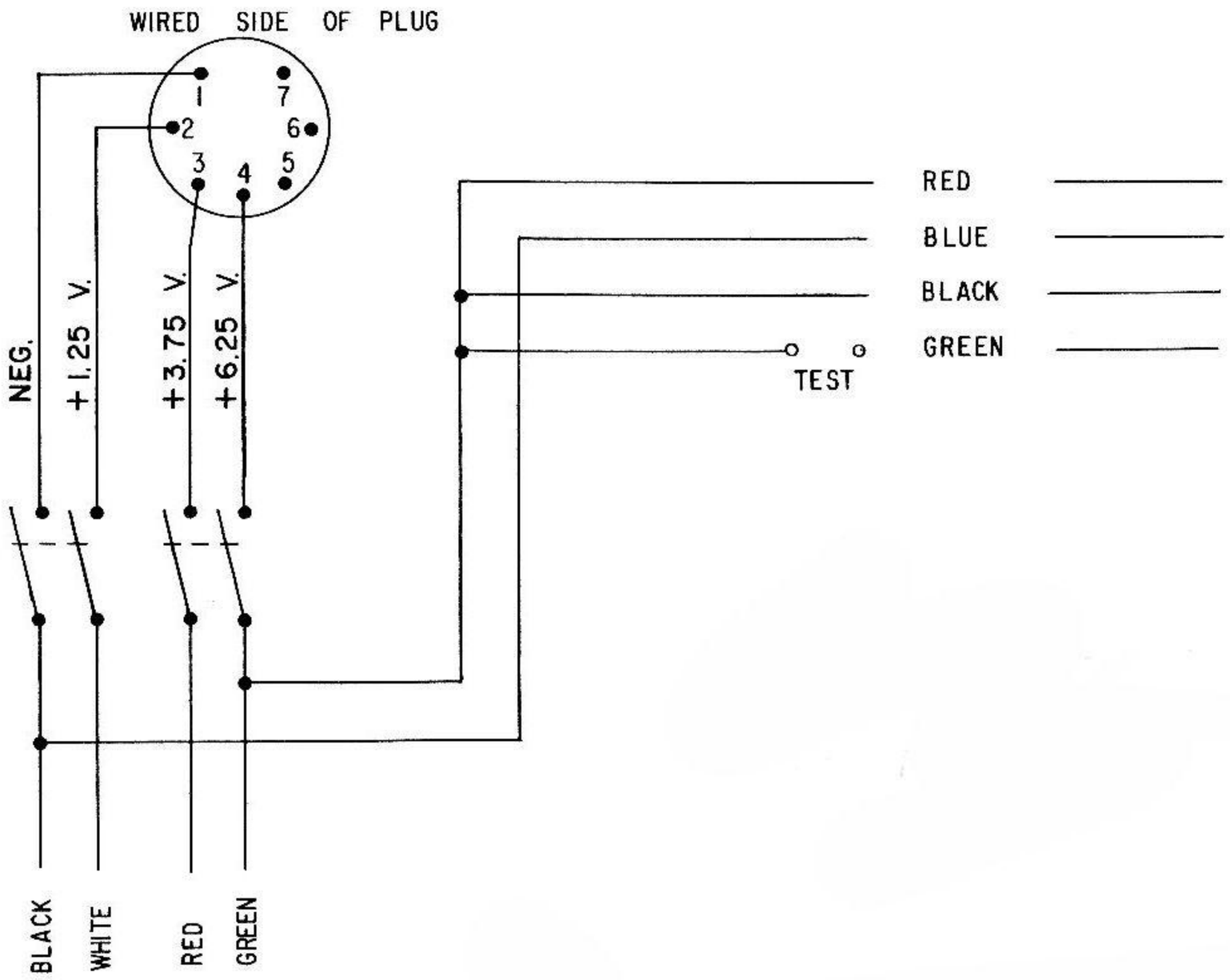


WIRING SCHEMATIC FOR SUPER-HET SYSTEM



NOTE: The green lead from the receiver is for test purposes only and is not hooked in the circuit for normal use. Red and black leads are hooked externally to allow for variation in servo hookups.

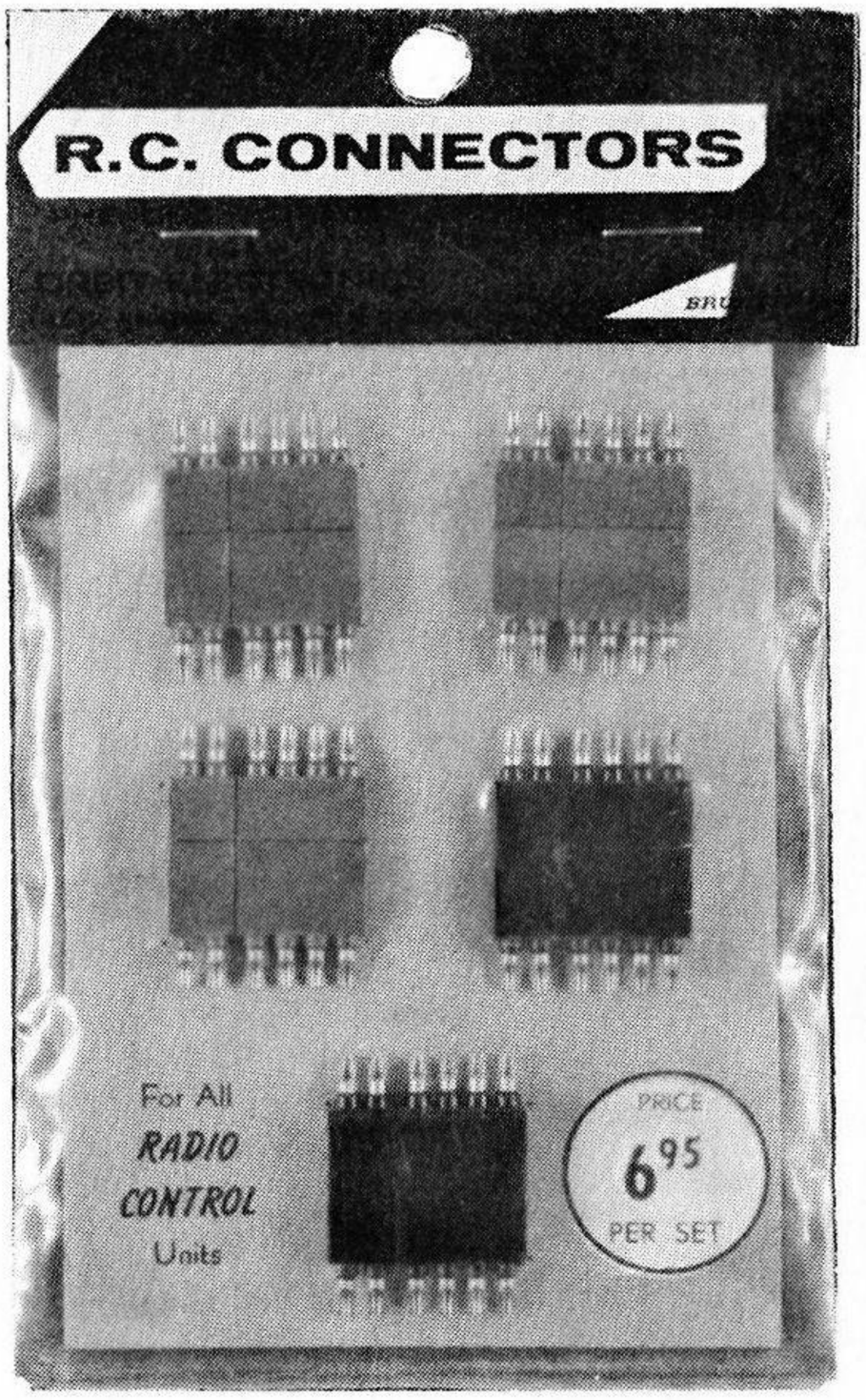
WIRING DIAGRAM FOR OLD STYLE PLUG & SOCKET 5B30 & 5500 PACK



ORBIT'S R/C CONNECTORS

The new R/C Connectors are another recent development by ORBIT. Each set consists of five (5) six (6) pin plugs and sockets. They cannot be connected improperly. The composition of these connectors is phenolic which affords protection from the elements, in particular they are hot fuel proof. In addition, color coding permits ease of wiring the equipment and provides positive identification which prevents damage to the radio circuit. The connectors are scored for separation into smaller segments if desired.

SET OF 5 $6.95



TRANSMITTER PARTS

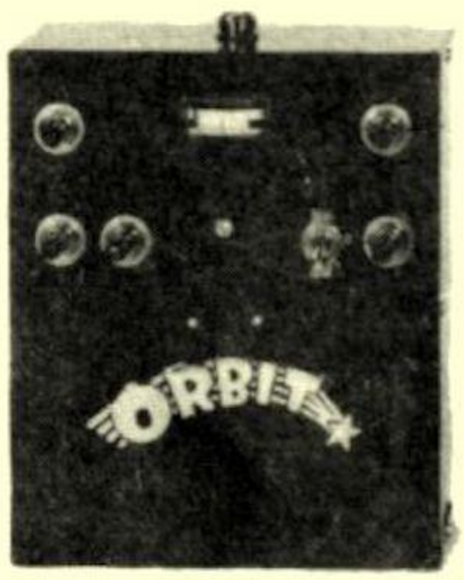
Antenna, Center-Loaded (Chrome Plated)	$ 6.95	each
Battery Box, Transmitter	2.25	"
Capacitors, Disc	.20	"
Capacitors, Electrolytic	.75	"
" , Trimmer #653	.45	"
" , Trimmer #659	.60	"
" , Tubular	.60	"
Case, Punched, Anodized (with "Orbit" Emblem)	6.95	"
Coils, Wound (10 & 13 Turn)	.75	set
Coil, Tuning	1.10	each
Crystals (All)	2.95	"
Diode, IN90	.45	"
Diode, IN283	.75	"
Insignia "Orbit" (Chrome Plated)	1.25	"
Meter, (0-1Ma)	3.95	"
Plug, 3 Pin (Shields & Cover)	.90	"
Potentiometers	.85	"
Printed Circuit Board (Terminal Installed)	6.95	"
Resistors	.10	"
R. F. Choke	.45	"
Socket, 3 Pin	.60	"
Switch, Lev-r Action	2.45	"
" , On & Off (DPST)	1.85	"
Toroid Coils (In Bakelite Case)	15.60	set
Transistors (Selected)	2.45	each

RECEIVER PARTS

Tank Coil (wound – tapped with 15mmfd Cap)	$ 1.10	each
All Electrolytic Condensers	.75	"
Resistors	.10	"
Condensers	.20	"
Transistors (selected)	2.45	"
R. F. Choke (standard)	.45	"
R. F. Choke (tapped)	.95	"
I. F. Transformer	2.35	"
Case (aluminum – 10 channel)	2.95	"
Reed Bank – 10 channel	18.50	"
Crystal	2.95	"

NOTE

The manufacturer warrants that this transmitting equipment, when used in the manner prescribed in the accompanying instructions, will meet all F.C.C. requirements regarding frequency stability, emission etc.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