



Annco

Multi-Servo

FOR RADIO CONTROL SYSTEMS
of R/C Planes - Boats - Cars!

★ FEATURES —

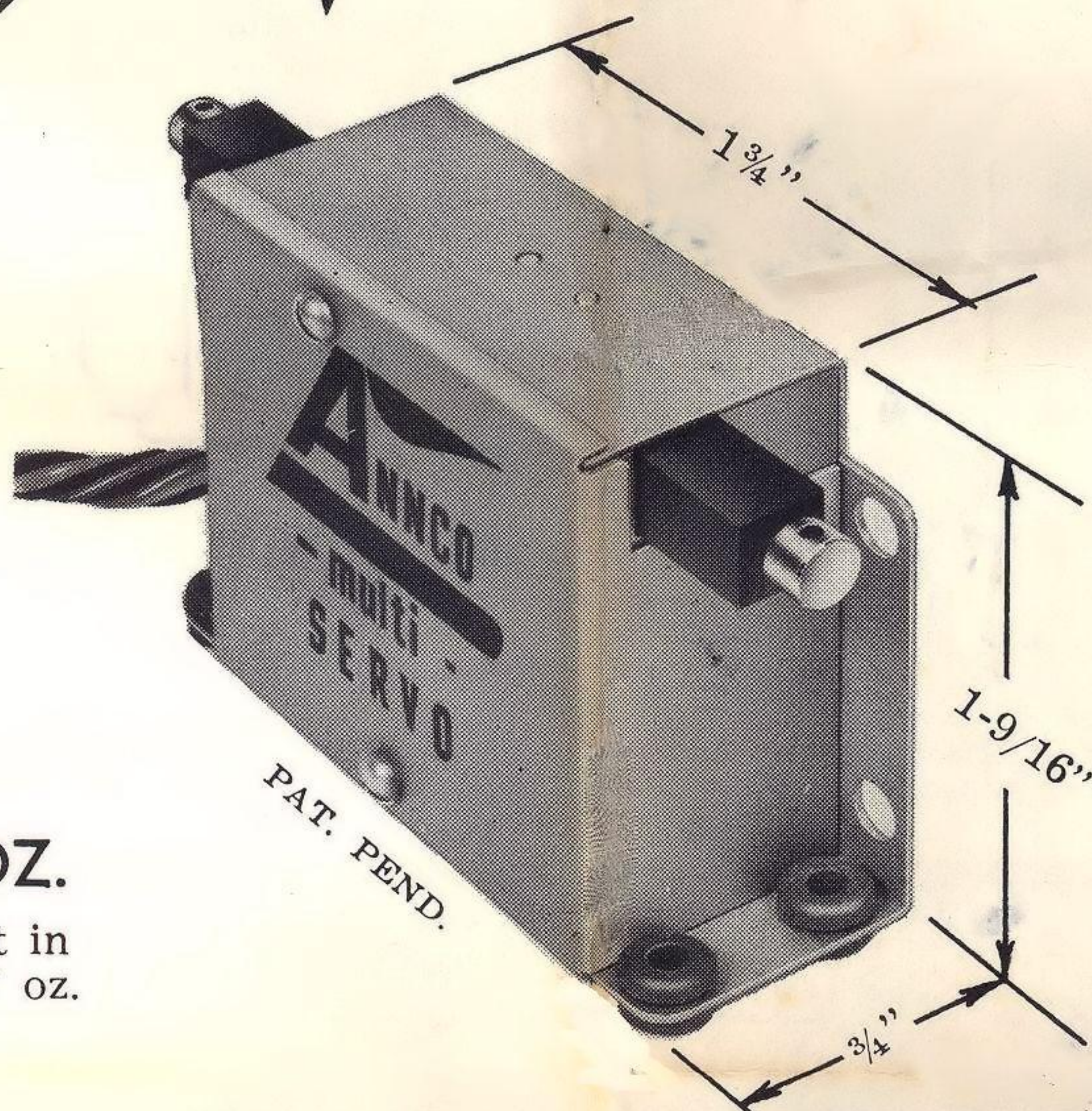
- LIGHT WEIGHT—only 1.3 oz.—Relayless only 1.7 oz.
- SMALL SIZE—1-3/4" long x 1-9/16" high x 3/4" thick
- TRAVEL—total of 5/8" STRAIGHT LINEAR MOTION
- TRANSIT TIME—1/2 sec. from neutral, average.
- DRAIN—110 to 250ma. no load, stalled 600ma.
@ 2.4 volts
- THRUST—over 2 pounds on standard models,
4 lbs. plus on slow speed models.
- TWO EXTRA FINE PITCH ADJUSTMENT SCREWS
- DUST & DIRT PROOF CASE.

\$12⁹⁵

MODEL NO. 2R

**WEIGHS
ONLY 1.3 OZ.**

Weight with built in
amplifier only 1.7 oz.



★ FIRST MULTI SERVO WITH OUTPUT ARM EXTENDING FROM EACH END! ★

THIS FEATURE ALLOWS FOR INDIVIDUAL AILERON HOOKUP AND ADJUSTMENT,
PLUS MANY OTHER HOOKUP ARRANGEMENTS, WITH EASE AND SIMPLICITY.

In addition to all the excellent features mentioned above, "Annco" now offers, for the first time, the very desirable feature of "slow speed" servo operation for throttle servo or elevator trim servo or both. Slow speed transit time is: 2-1/8 seconds on 5/8" travel. Slow speed servos can be had in the following ways:

As a complete unit in the 3R and 3RL models, priced at \$2.00 more than standard models. (see price list below)

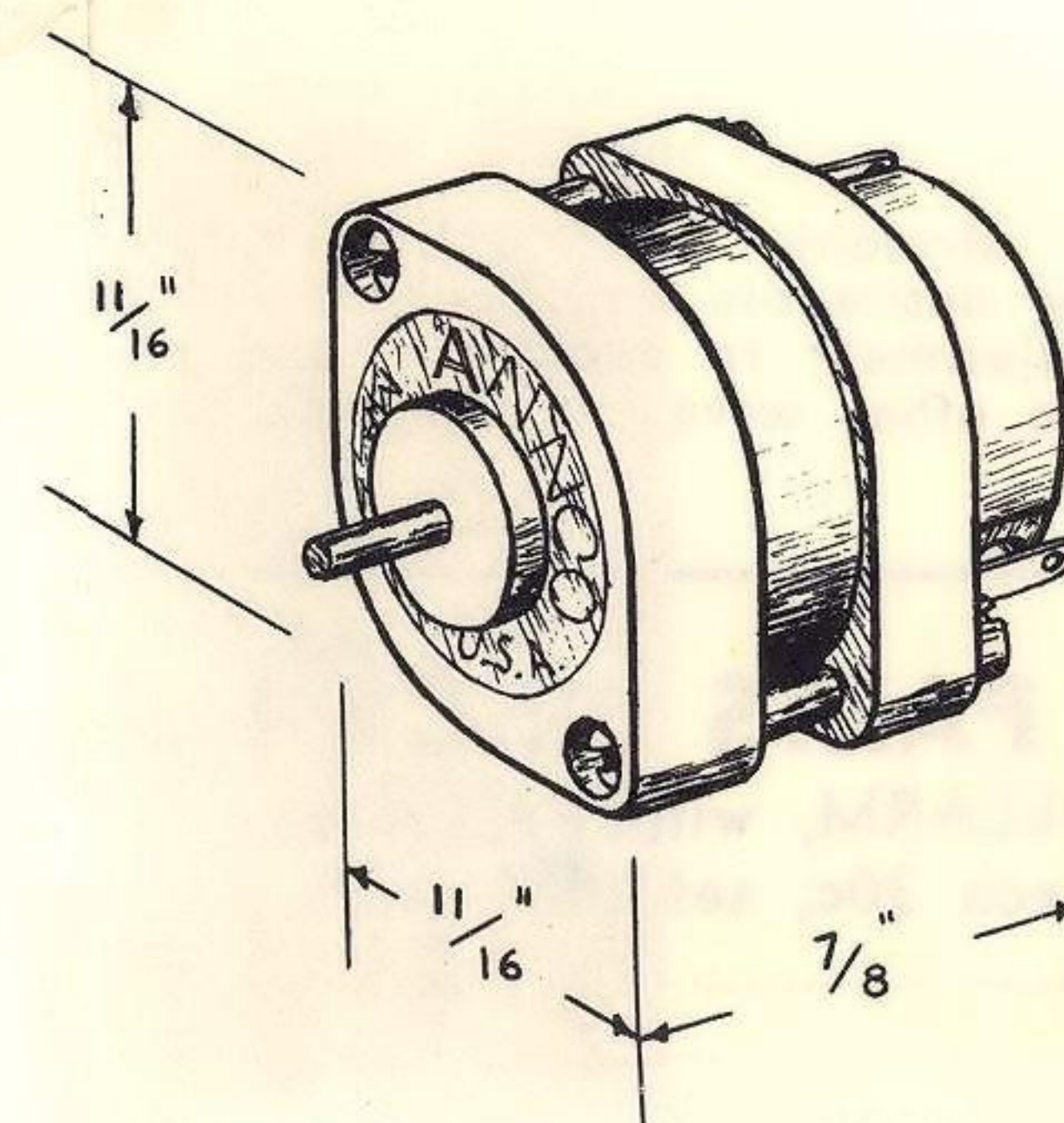
Standard models may be sent to factory for conversion to SLOW SPEED operation for a nominal charge of \$2.50 including parts, or you may buy a conversion kit, consisting of modified push pull arm and extra gear. Price of conversion kit is \$2.00.

Since there is no alteration to the physical dimensions in converting to slow speed, it is a simple matter to convert back to standard operation if desired.

ANNCO MULTI SERVOS PRICED AS FOLLOWS

MODEL NO.	PRICE	MODEL NO.	PRICE
2R For relay operation	\$12.95	3R Slow speed, relay operation	\$14.95
2RL Relayless, with built in transistor amplifier	\$29.95	3RL Slow speed, relayless with built in transistor amplifier	\$31.95

SEE REVERSE SIDE FOR PRICE LIST OF SEPARATE PARTS



NEW ANNCO SUBMINIATURE ELECTRIC MOTOR

Featuring 93% Silver Graphite Brushes
Operates on 1 to 4 Volts DC — 150 ma. drain

ANNCO ENGINEERING CO.

6621-10th Ave. So., Minneapolis 23, Minnesota

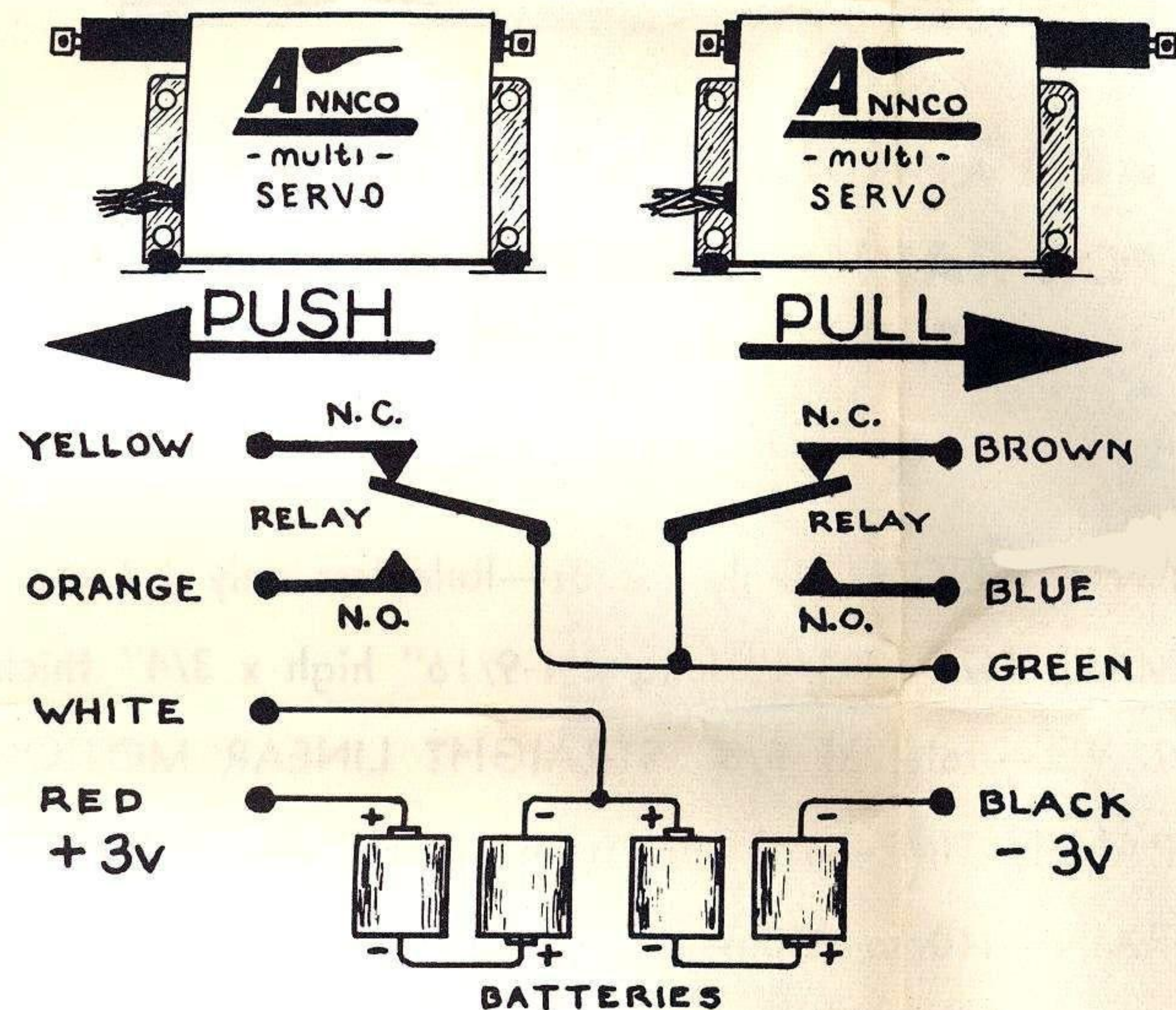
SOLD BY

WIRING INSTRUCTIONS

RELAY — MODEL NUMBERS 2R and 3R

Check your radio receiver instructions to determine which receiver socket terminals are connected to the N.C. (normally closed) and N.O. (normally open) relay contacts, then connect wires from servo to relays and batteries as shown below.

SELF-NEUTRALIZING CONTROL CIRCUIT

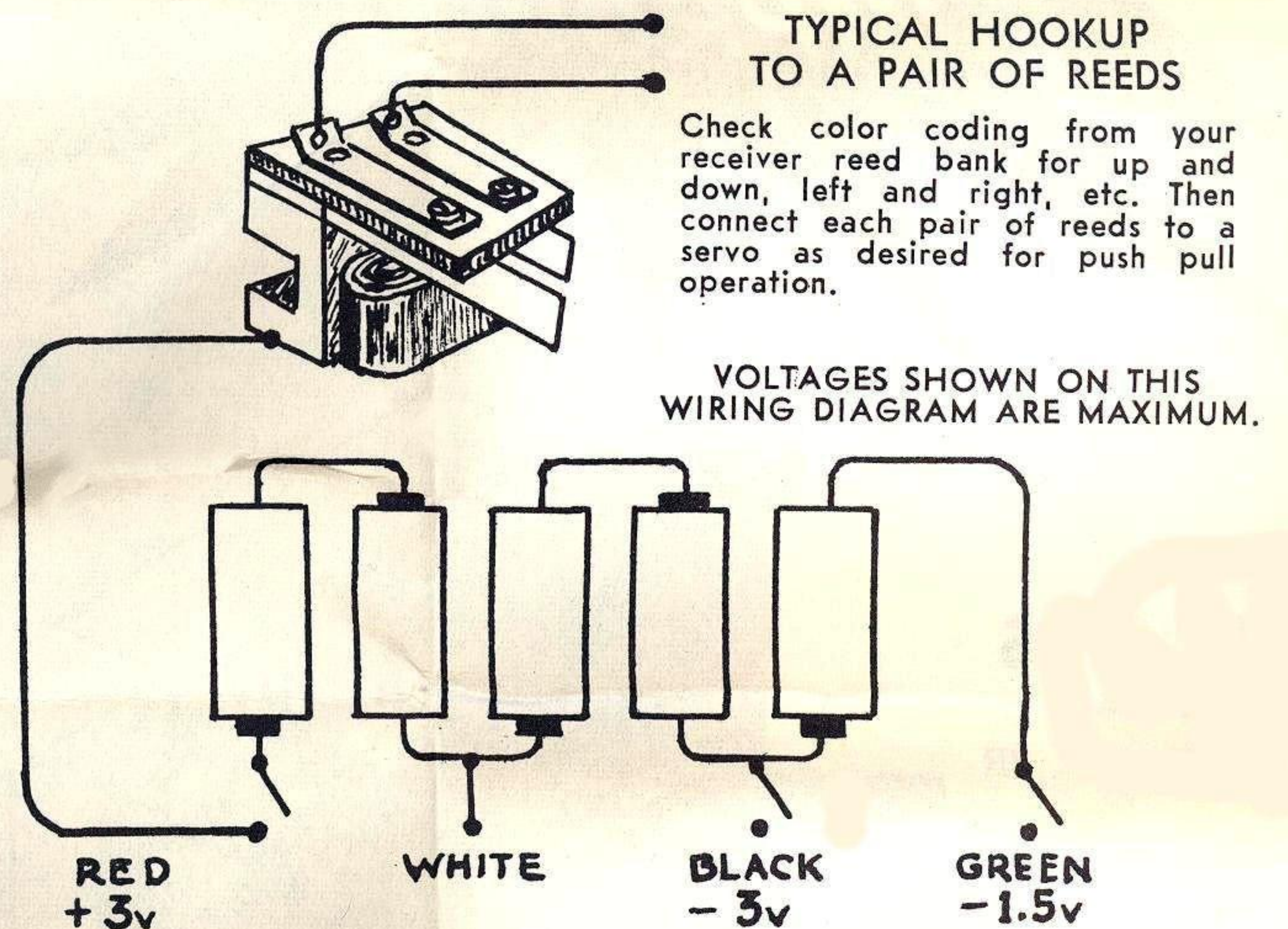


FOR TRIMMABLE CONTROL
eliminate Brown & Yellow wires

RELAYLESS — MODEL NUMBERS 2RL and 3RL

Perform the function of 2 relays and reed filter operation directly from a standard reed bank (not a split insulated reed bank) of any relayless reed receiver. Check instructions with your receiver, then connect servo wires to reeds and batteries as shown below.

SELF-NEUTRALIZING CONTROL CIRCUIT



TYPICAL HOOKUP
TO A PAIR OF REEDS
Check color coding from your receiver reed bank for up and down, left and right, etc. Then connect each pair of reeds to a servo as desired for push pull operation.

VOLTAGES SHOWN ON THIS
WIRING DIAGRAM ARE MAXIMUM.

FOR TRIMMABLE CONTROL, bend the 2 outermost contact wipers down against wiper holder so they do not make contact with switcher board

CONSTRUCTION FEATURES

1. The rugged, well made and attractive case and cover are neatly fitted together to provide noise shielding to radio and protect internals from dust and dirt.
2. The parts are molded from a plastic material called Nylatron. It has a tensile strength 80% greater than nylon, is extremely wear resistant and, therefore, it is ideally suited for the gears and rack output arm, in our servo.
3. The printed circuit switcher board in the cover is a two piece adjustable board of glass epoxy material. Switching circuit is silver plated.
4. MOTOR: The ANCO subminiature electric motor is fabricated by us to close tolerances, and features, 93% Silver Graphite brushes, Nylatron molded end caps, Ferrite ring magnet, and brush terminals mounted for ease of servicing.
5. AMPLIFIER: The ANCO D-K6, six transistor amplifier is built on a glass epoxy printed circuit board. All components are mounted to military specifications. Capacitors used are Tantalum for extreme ruggedness and temperature variation. Amplifiers are secured in the servo by two mounting screws. Safety features include protection from burning out due to two reeds being driven at once. If two reeds are pulled in at the same time, the DK-6 drives the output arm in one direction until signal is released. No current is drawn until signal is given. If loss of bias voltage occurs, amplifier will still drive in one direction.
6. The double-ended straight linear action output arm on the Anco servo is extremely desirable for hooking up aileron control surfaces with individual adjustment to each one, and is a natural for auxiliary operation from the other servo positions for brakes, flaps, hatches, etc.

PARTS PRICE LIST

A - PUSH PULLARM, with adj. screws	1.50
B - GEARS, each 30c, set of 4	1.20
C - YOKE	2.00
D - MOTOR	4.95
E - CASE, with grommets	1.25
F - SWITCHER BOARD, with wires	1.25
G - COVER, less switcher board	1.25

MISC. ITEMS

Brass pinion gear	.25
No. 2—56 x 3/32 long R.H. screws	.15
No. 2—56 x 1/8 long Pan head screws	.30
ANCO HOOKUP WIRE, 26 Ga. 19 strand,	
3 ft. each of 8 colors	.60
Also 8 ft. each of Red, Black & White	.60
ANCO GROMMETS	.25

Add 25c for postage

no C.O.D.s please

OPERATIONAL INSTRUCTIONS

1. MOUNTING: Either upright or flat, using #2-56 bolts or #2 wood screws, with washers under each head. Pull down snug but not too tight. Also drill 1/4" dia. clearance holes in your plywood tray so cover screw does not touch tray.
2. ADJUSTMENT FOR NEUTRAL: The new Anco servo has a two piece adjustable sliding switcher board to give you close or open centering, on all models relay or relayless. Place servo so you can read the printing on the cover. Notice the two screws which are in the two slots. Loosen both screws and move them to the RIGHT for wider centering, and to the LEFT for closer centering. On close centering (this has already been set at the factory) adjust for one bounce of the output arm on its return to neutral. Do not allow output arm to hunt back and forth, continuously. The adjustable switcher board also allows you to shorten or lengthen the stroke on a trimmable servo as much as 1/16" on each side of the normal 5/8" travel of the output arm.
3. TENSION OF WIPERS: Proper wiper tension is maintained if wipers extend 1/32" above sides of case (with cover removed).
4. DISASSEMBLY OF SERVO: Remove screw in each of the opposite narrow flanges of the cover, remove cover. Remove the single brass screw from the back (this screw is very important as it holds the Yoke assembly firmly inside the case). Now put servo in a flat position, (notice how the motor is placed with the brush terminals at an angle to the base). Gently spring apart sides of case and lift up on motor and Yoke assembly while gently sliding gear shafts out of their respective holes in the case.
5. ASSEMBLY OF SERVO: With gears and output arm properly mounted on Yoke, and with motor inserted in Yoke, (make sure motor pinion gear is not jammed up on the first nylatron gear but is meshing properly), motor must be positioned with one brush terminal uppermost and toward the outside of the case. This is important. Otherwise adjusting screw from switcher board will jam up against motor end cap. Spring apart sides of case and insert motor and Yoke assembly while guiding the two gear shafts into their respective holes. Replace screw from the back that holds Yoke assembly in place, check for no binding operation, replace cover and cover screws. Take up internal slack of wires by pulling gently on each wire, one at a time.
6. SLOW SPEED CONVERSION: After receiving Slow Speed conversion kit, disassemble servo as per paragraph 4, reverse green and white motor leads at the brush terminals, remove standard speed output arms and insert new gear from kit on shaft next to motor shaft. Then insert slow speed output arm, and reassemble servo as per paragraph 5. When you wish to change back to normal speed operation, be sure to put green and white motor leads back to their original brush terminals. (GREEN WIRE MUST BE AT BRUSH TERMINAL THAT LIES BETWEEN TWO DIMPLES ON REAR END CAP OF MOTOR, FOR NORMAL SPEED OPERATION).
7. INSTALLATION OF AMPLIFIER IN RELAY MODEL SERVOS: Disassemble servo as per paragraph 4. Take output arm out of Yoke and set Yoke in place in the case. Then position the insulator piece under the Yoke, mark and drill mounting holes with a 7/64" drill. Now unsolder each wire from the switcher board, and solder the same color SHORT wire from the amplifier in place on the switcher board terminals. Feed the LONG wires from the amplifier out through the grommet. The SHORT green and white wires from the amplifier are now soldered to the motor terminals, (after removing long wires from motor). Be sure to match the color exactly, or remember the green wire goes to the terminal that has the two dimples on each side. Mount amplifier with the two #2 screws provided, making sure insulator piece is in place under amplifier, then reassemble servo as per paragraph 5.

ANCO DK-6 AMPLIFIER, separately — \$16.95