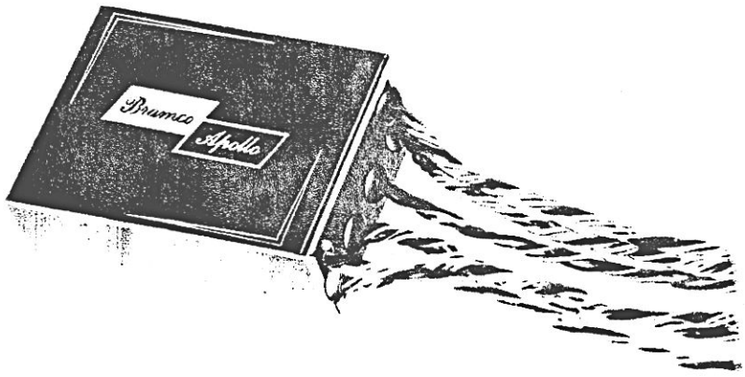
Apollo

RELAY LESS

RECEIVER

BRAMCO



OPERATING AND INSTALLATION INSTRUCTIONS

BRAMCO "APOLLO" 10 CHANNEL RELAYLESS RECEIVER

It is suggested that the receiver be thoroughly bench tested before putting it into operation. The operator should thoroughly acquaint himself with the receiver, as it represents a new concept in multi-channel radio control equipment.

The first step is the wiring of the receiver and servo power cable. The diagram should be carefully followed to avoid mistakes. Above all, do not connect the B battery, or the servo batteries backwards as it may damage or ruin the transistors in the receiver and servos.

After the receiver is wired, it may be turned on for initial tune up to your transmitter. The servos need not be connected for this operation. When the receiver is first turned on with no transmitter carrier present, the idle current will be 4 MA or less and quite unsteady. Turn on the transmitter switch. The receiver idle current should immediately drop to 1.2 MA or less. If this drop does not occur, it indicates the receiver is not properly tuned to the transmitter. Retuning should be accomplished with a non-metallic tuning wand. The slug is accessable through a hole in the bottom of the case. Remember, the receiver has been factory tuned, and therefore, the slug should not have to be rotated more than one or two turns from the set position to reach the current drop position.

At this point, the tones on the transmitter should be adjusted so that the proper stick position will start its appropriate reed. Any one of the reeds marked #1, 2, 3, or 4, may be operated simultaneously with any one of the remaining #5, 6, 7, 8, 9 and 10. However, reeds #4 and 5 are sometimes difficult to operate simultaneously. Due to the reed bank arrangement, simultaneous operation on these channels will be rare indeed.

While tuning the slug close to the transmitter, you will note that as you pass through the peak, it will be quite broad. As the receiver is removed from the area of the transmitter, this "tuned" area will become very sharp. The receiver should be fine tuned at a distance of at least 1,000 feet. No control on the transmitter should be pushed while checking idling current at this distance. After you have reached a normal idle, you should have someone press one of the tones on the transmitter and the receiver current should jump to about 4.5 MA or better.

At this distance, all of your controls should be tried. All of the channels must operate both separately and simultaneously without fail. If any erratic operation is noted, retune the tone section of the transmitter.

RECOMMENDED RECEIVER BATTERIES:

A - Battery: 1 Standard Penncell - 1-1/2 Volts
B - Battery: 1 Burgess V. 20 or equivalent - 30 Volts

It is recommended that the receiver B battery be changed when it reaches 24 Volts under load. The A battery should not be allowed to drop below 1.2 volts under load. Falling B battery voltage will cause poor simultaneous operation, even though single reed operation will still be good. The B battery should be replaced, if this condition occurs.

The reed contacts are all factory adjusted for best performance. If, for some reason, it becomes necessary to readjust them, use the following procedure: Lift the contact clear of the reed. This is most easily accomplished by carefully prying it up with a small screwdriver. Then, make the reed vibrate full amplitude by tuning the pots in the transmitter. Push the contactor down until the reed vibrates half of its free running amplitude. Follow this method on all contacts which require readjustment. This is the only adjustment necessary on the reed bank.

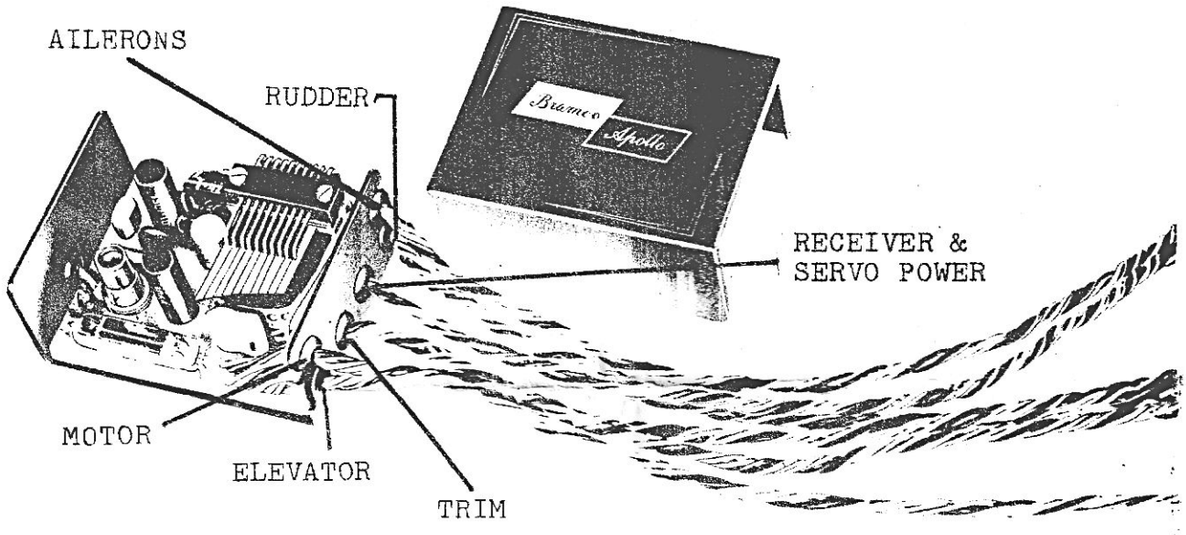
When wiring the cables into a plane or boat, use only good grade rosin core solder. The color coding on each servo cable is matched to Bonner Transmite servos, and like colors should be connected together through plugs. When mounting the receiver, it should be lightly wrapped in 3/8" or 1/2" foam rubber. Make sure it is protected on all sides from impact damage. Before flying, make a final checkout with the engine running. Never allow the receiver to touch anything in the fuselage, as it may transmit vibration and cause erratic operation.

Reverse direction of travel on the servos (i.e. Up elevator when down is keyed) may be corrected by reversing the yellow and orange wires at the plug connections.

IMPORTANT

The reeds have been purposely alternated to prevent any possible servo damage by the starting of two adjacent reeds at the same time. Do not attempt to change this arrangement or damage to servos may occur. The reed sequence has also been selected for optimum performance according to the special requirements of control surfaces.

RECEIVER CABLE ARRANGEMENT



All bramco radio control equipment is fully guaranteed against defective components and workmanship. If, for any reason, the receiver has to be returned to the factory, please include $5.00 to cover the servicing and handling.

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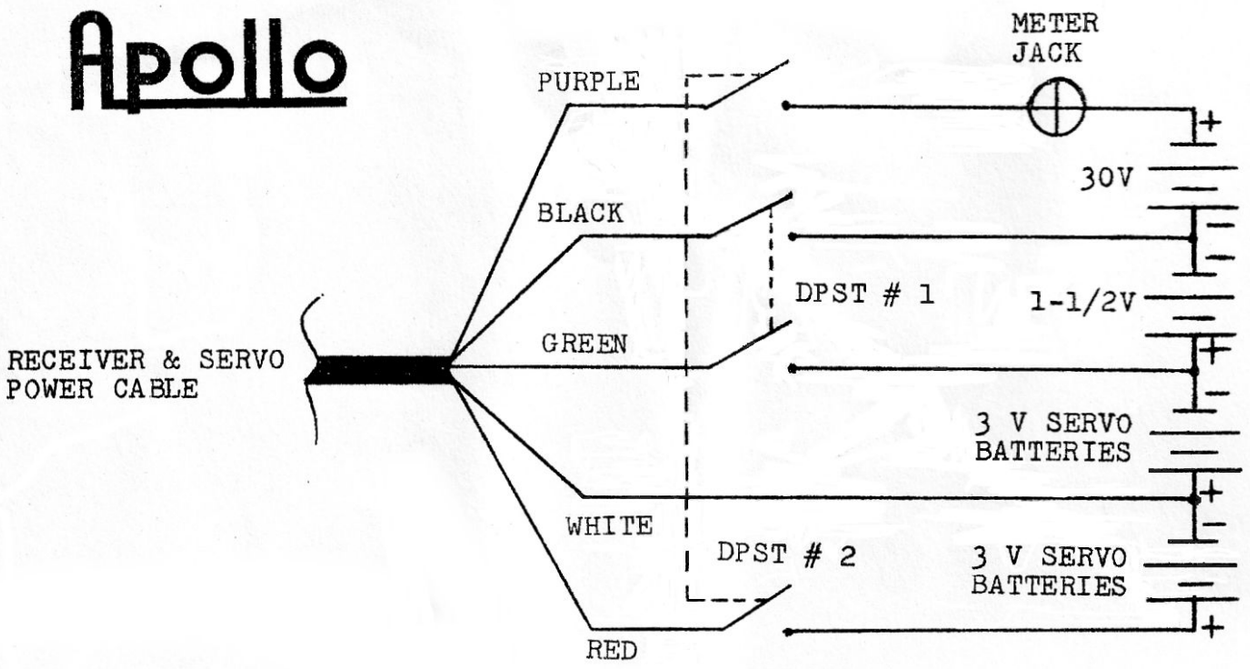
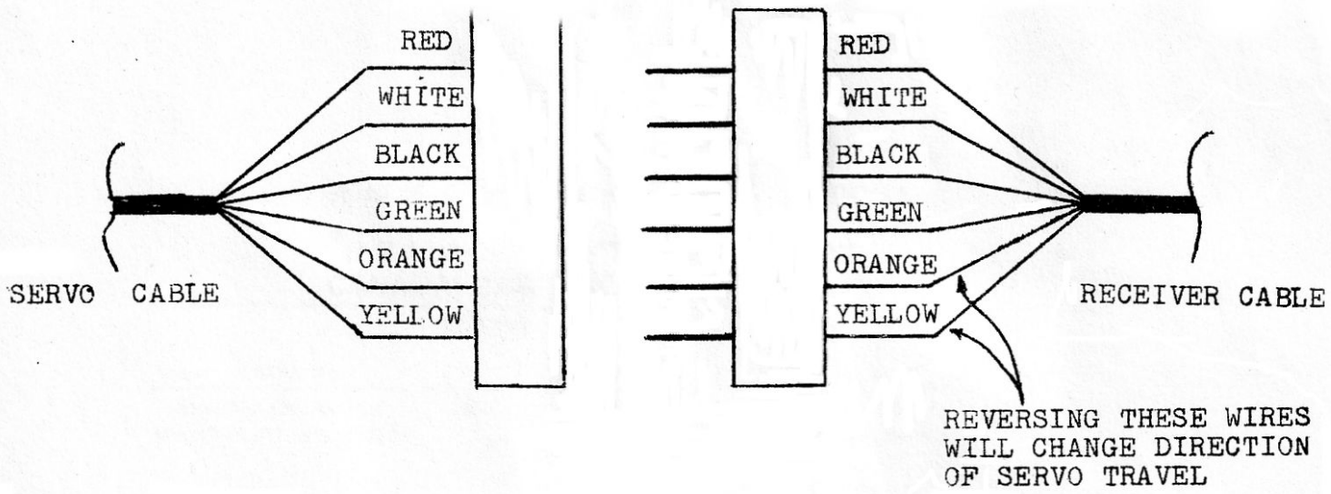
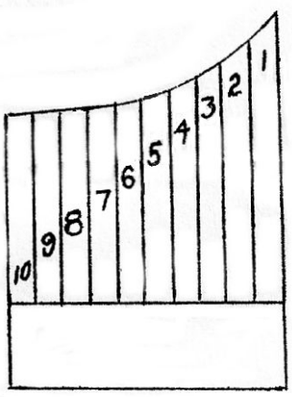


NOTE: TWO DPST SWITCHES ARE REQUIRED

RECEIVER WIRING



TYPICAL SERVO CABLE WIRING



REED ARRANGEMENT

Low Tones

1 - Right Rudder
2 - Right Aileron
3 - Left Rudder
4 - Left Aileron

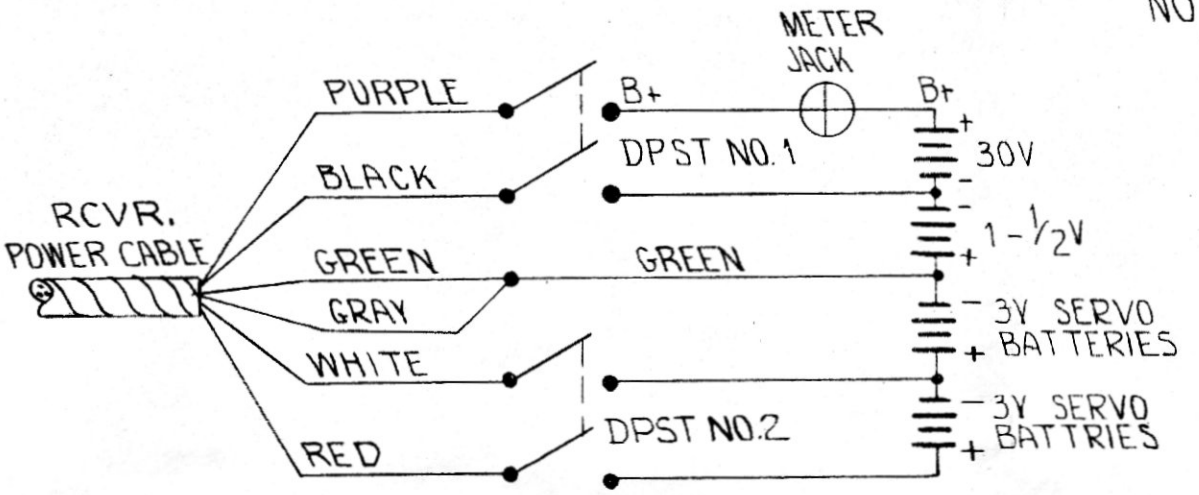
High Tones

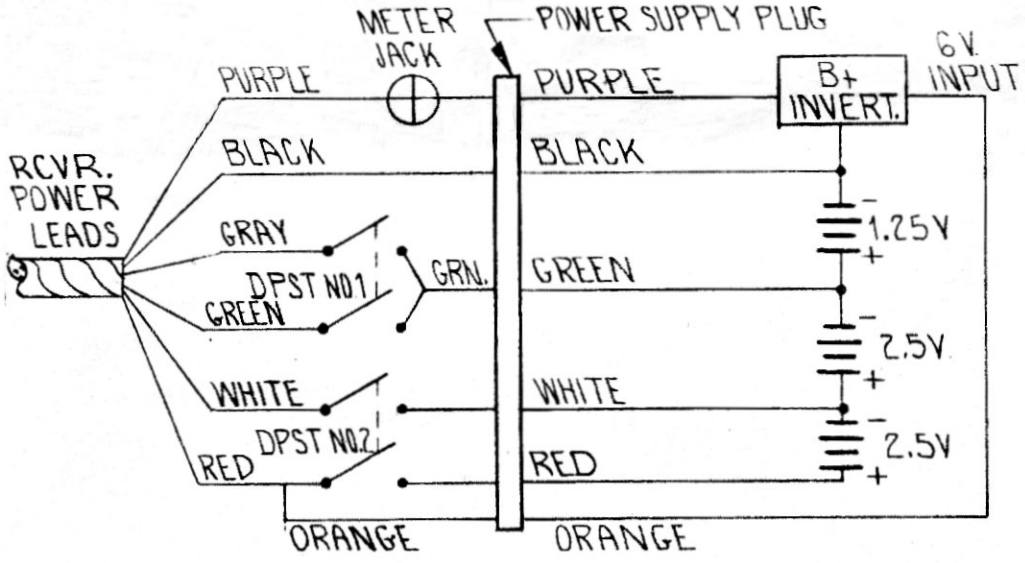
5 - High Motor
6 - Up Elevator
7 - Low Motor
8 - Down Elevator
9 - Trim
10 - Trim

BRAMCO INC.
4501 BELVIDERE DETROIT 14, MICHIGAN

NO.	REV.
102 A 00105-00001	0

NOTE:—
SWITCH NO. 1 MUST BE TURNED ON FIRST, & TURNED OFF LAST! OTHERWISE TUBE MAY BE DAMAGED.





REV. NO.	REVISIONS	BY	DATE	APP'D

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES BEFORE / AFTER HEAT TREAT & FINISH
LIMITS: FRACTIONS ± .010 DECIMALS ± .005 ANGLES ± 1° LEADS ± 5° TO CENTER LINE SHOWN

MATERIAL

HEAT TREAT

FINISH

NEXT ASS'Y. (FIRST USED) | FINAL ASS'Y. (FIRST USED)

MODEL: APOLLO

BRAMCO INC.
SUBSIDIARY OF
LEDEX INC.
4501 BELVIDERE
DETROIT 14, MICHIGAN

INDEX | SCALE

DFT. L. Talson — DATE 2-7-62
CHK. J.E.K. — DATE 2-8-62
ENGR. L. Payne — RELEASE DATE 2-8-62

SUPERSEDES

TITLE: POWER SUPPLY WIRING DIAGRAM

NO. 102A00105-00001 — REV. 0

SHEET OF