

AP-I

OS SINGLE PROPORTIONAL UNIT

OS AP-1 PROPORTIONAL R/C SYSTEM INSTRUCTION

OS AP-1 PROPORTIONAL R/C SYSTEM is the single proportional system finally made out of long-period development and experiment and the most modern electronics of R/C. Every transmitter, receiver and servo are completely adjusted by the factory and require no re-adjustment.

Anyone can now enjoy "PROPORTIONAL R/C", even if they have no knowledge of electronics. There is no soldering or wiring for you to do, just connect the 4 plugs, and you are ready to go.

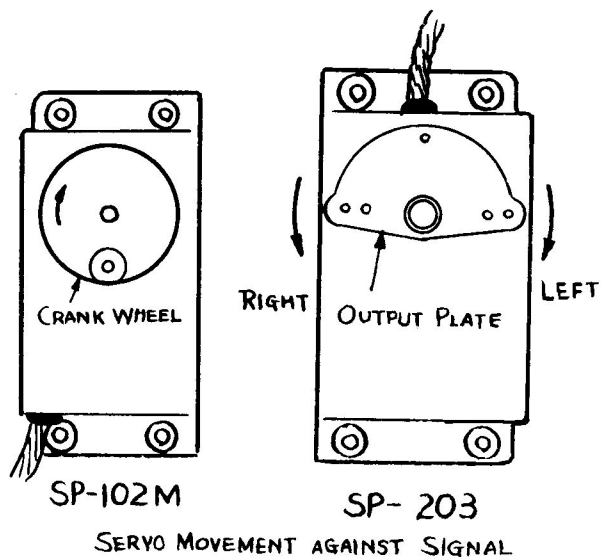
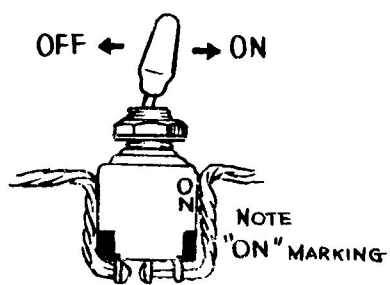
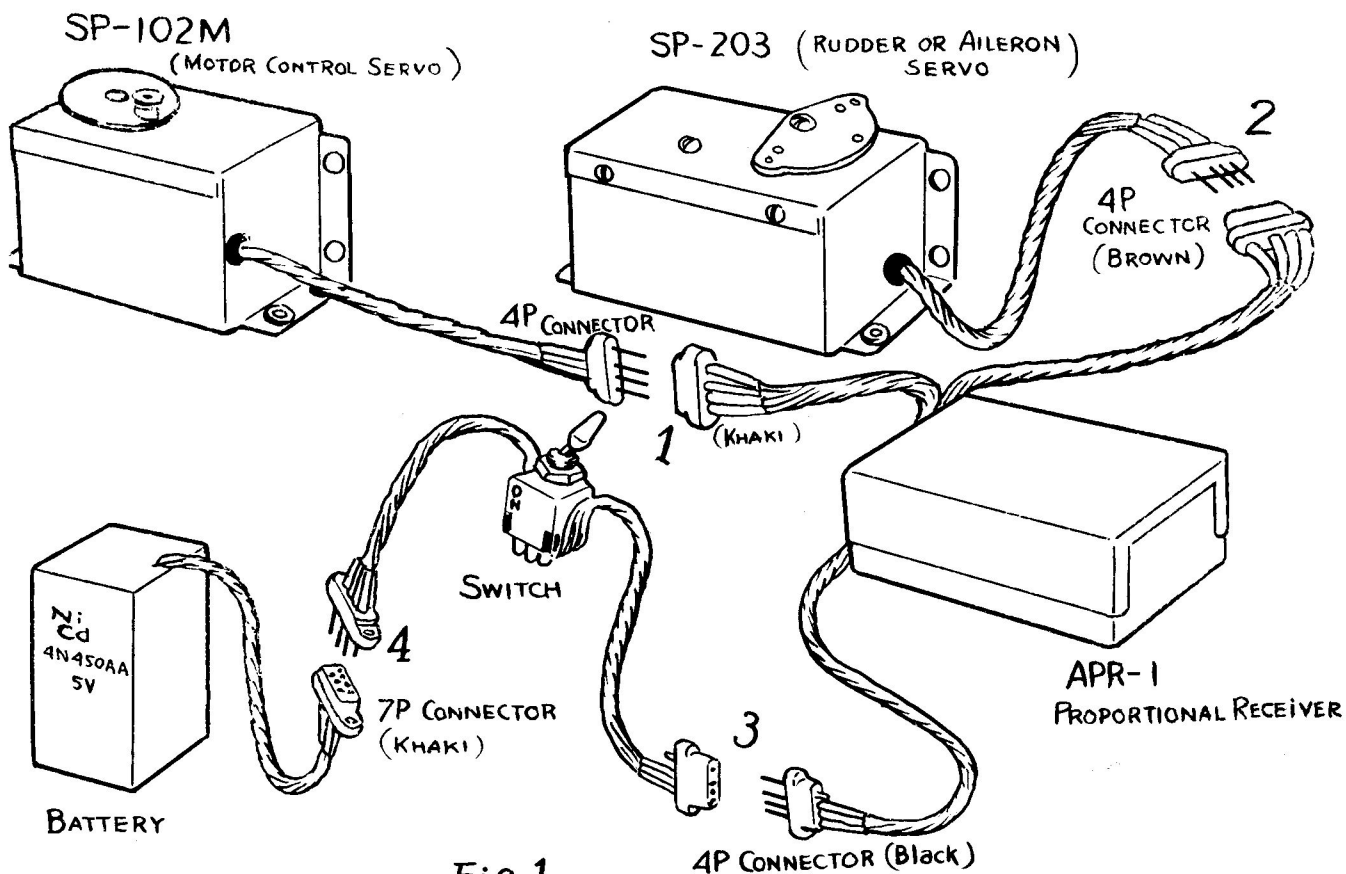
OS AP-1 proportional R/C system contains the following things.

1. Proportional Transmitter APT-1 (With Nickel Cadmium Battery)
2. Proportional Receiver APR-1
3. Proportional Servo SP-203 (for Rudder or Aileron operation)
4. Motor Control Servo SP-102M (for Motor control)
5. Battery (Nickel Cadmium pack) (for Receiver & Servo)
6. Wired Unit (for Receiver & Servo)
7. Battery Charger C-30 (for Transmitter & Receiver Battery charging)

OPERATION TEST

READ INSTRUCTION COMPLETELY BEFORE TURNING SWITCH ON THE TRANSMITTER OR RECEIVER.

- * Firstly, fully charge the transmitter and receiver batteries. (Ref. BATTERY & CHARGING:)
- * OS proportional R/C components are completely pre-wired. Connect connectors No.1 thru 4 referring to Fig.1, being sure all switches are in the OFF position (see Fig.2).
- * After making all connections, turn ON the receiver switch.
Note: - The crank wheel of SP-102M revolves $1/3$ turn and stops.
- The output plate of SP-203 moves one way slightly and then return. (This point is neutral position for this plate)
- If batteries are not completely charged or if connections are poor, the output plate will remain OFF center.
- Swinging of output plate is caused by insufficient charge of batteries.
- * Transmitter switch to ON position, the output plate of SP-203 may move a little. In this case, turn trim lever (see Fig. 5) and adjust it to "Neutral" position. That is to say, the output plate should remain at the same position when switch of transmitter APT-1 is both ON and OFF.
- * Finally, confirm the operation of servo. Swing the control lever right and left, and assure the output plate of servo will follow the movement. When the Motor control button pushed and parted at once, the crank wheel of SP-102M moves at the next stop. This servo is a sequence 3P servo, and it will keep revolving if the button holds pushed on.



Note: When the distance between transmitter and receiver is within 9 ft, antenna of transmitter should be folded in to test. If it is extended, receiver might not operate by swamping phenomenon. Of course you can use them with antenna fully extended over 9 ft distant.

BATTERY & CHARGING

- * OS proportional transmitter & receiver contain nickel cadmium batteries which can be used permanently, as they can be recharged.
- * Both transmitter & receiver batteries are completely charged before shipment but may slightly discharged during storage and shipping. It is best to make certain that both batteries are fully charged. (Approx. 10 hrs for transmitter batteries and 20 hrs for receiver batteries)
- * The charging of the batteries is accomplished with our charger "C-30". Charging can be done individually, by putting the short plug on the end of charger lead wire (Fig. 4 & 5), or simultaneously by connecting as per Fig. 6. It is very important to make sure the transmitter switch is "OFF" when charging the batteries and voltage checking.
- * When properly connected, both electrode of neon lamp on the charger will light, if one of the electrodes fails to light, there something improperly connected and should be checked.
- * When charging is completed, pull the A.C. plug first, then disconnect the batteries. This is to prevent electric shock.
- * It is most certain to decide the discharging state by the time it is used. The transmitter battery can be used for approx. two hours and a half after fully charged. The receiver battery can be used for approx. one hour and a half, of course this depends upon the servo operation during the flight, as it also is used for the servo battery).
- * Charging time for the transmitter is 10 hours when the battery is completely discharged. (No indication of meter even if you push the "Voltage check button") or three times of the time it is used. The receiver charging time is over 20 hours when completely exhausted or seven times of its used time.
- * The OS charger C-30 is a uniform current charger (30 mA unif.), so it can not damage the batteries by over charging.

MOUNTING OF SERVO

- * The moving direction of the servo will never change, therefore not the moving direction of the output plate and crank wheel, referring to Fig. 3.
- * Connection of push-rod, please note the following.
 - 1) Arrange all moving part to move as smooth and lightly as possible. (Removing such things as paint on hinges.)
 - 2) Make certain that the push-rod does not contact with the frame, former or fuselage side.
 - 3) Assure that every connecting part of the push-rod and operating plate of servo works smoothly even in its maximum throw (Fig. 7).
- * If you wish to reverse the 3 speed motor control sequence (high-mid--low to low-mid-high), note Fig. 8. To adjust to the mid. speed you want, alter the position of crank wheel, as per Fig. 9.

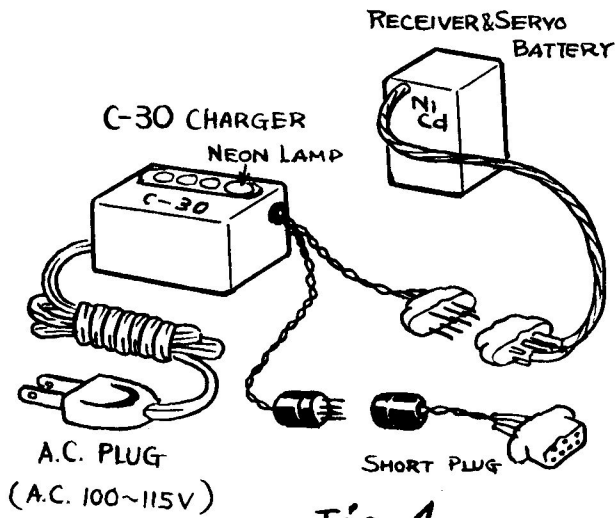


Fig. 4

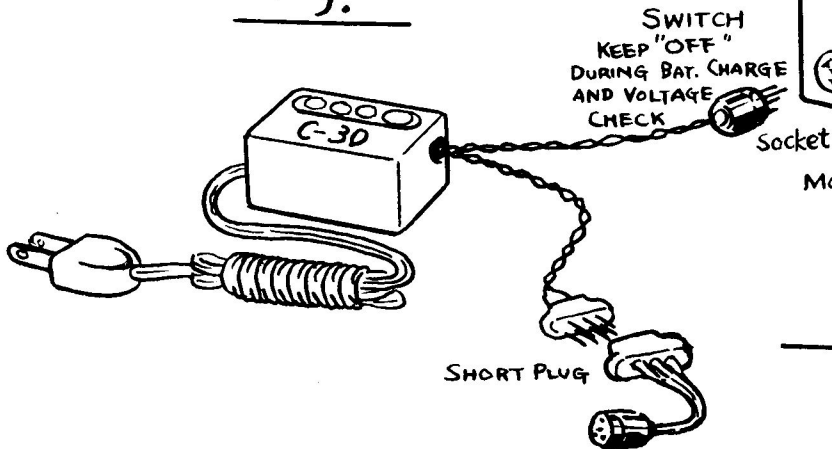


Fig. 5

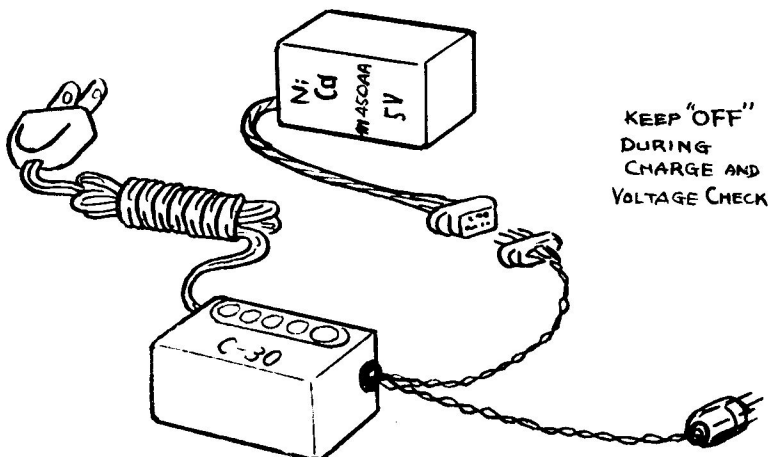
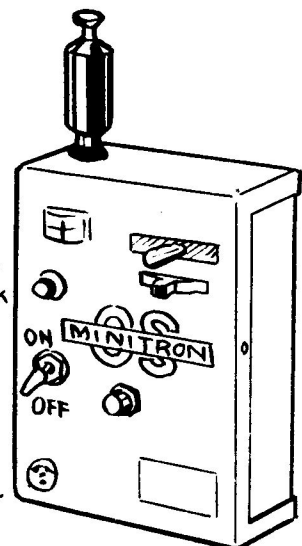
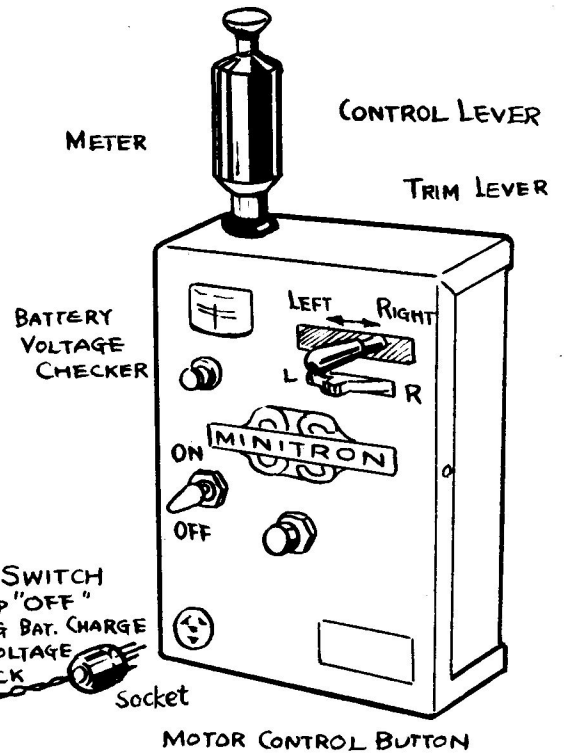


Fig. 6



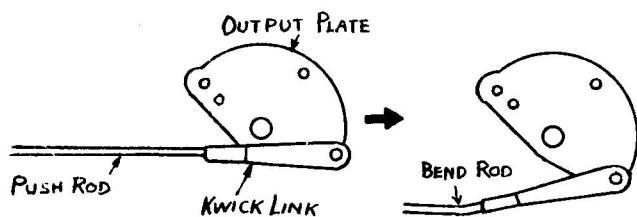
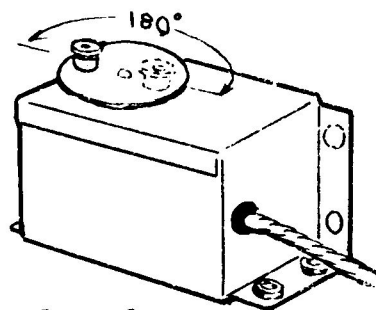


Fig. 7



MOTOR SPEED CONTROL
SEQUENCE CAN BE REVERSED BY
RESETTING THE CRANK WHEEL AS
SHOWN IN ABOVE FIGURE.

Fig. 8

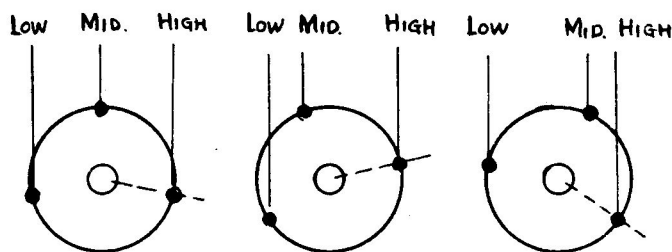


Fig. 9

No parts of the OS proportional servo SP-203 & SP-102M, neither internal nor external require any adjustment. The internal parts are especially complicated, DO NOT DISASSEMBLE either unit.

MOUNTING OF RECEIVER

* Mounting is made in the same way as the conventional receiver. Make certain that even minor vibration of the model does not inflict on receiver by mounting it in foam rubber or sponge.

Note: Use receiver with the antenna fully extended.

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