

Futaba®

D60441

FET MOTOR CONTROL AMP W/BACK

FP-MC12B

Old 2GS, 2L, 2NL, And any other system using standard mini connector.

FP-MC112B

MAGNUM series, 2NBL, 2NBR, New 2GS and any other system that uses J connectors.

Please read this manual carefully and use the controller correctly.

MC12B/MC112B FEATURES

- Futaba up-to-date custom high power MOS FET (Field Effect Transistor) used for forward, reverse and brake.
- Special heat sink supplies running Nicad battery power to the motor at high efficiency.
- Neutral point and high point can be adjusted independently with two built-in trimmers.
- Despite its miniature size and light weight, an adjustment checker for each point is built-in. Best adjustment is possible at all times and a checker does not have to be carried. A special adjustment screwdriver is also supplied.
- Built-in constant voltage power supply circuit for receiver and servo. The vehicle can be made lighter by using the running Nicad battery as a common power supply.
- A mounting flange convenient for mounting to the vehicle is supplied. The motor control amp can be mounted at the old speed controller servo position. When unnecessary, the mounting flange can be cut off.
- The power switch has been removed for safety. The running Nicad battery connector serves as the power switch. Forgetting to turn off the switch is prevented by disconnecting the connector.

(Specifications are subject to change without prior notice.)

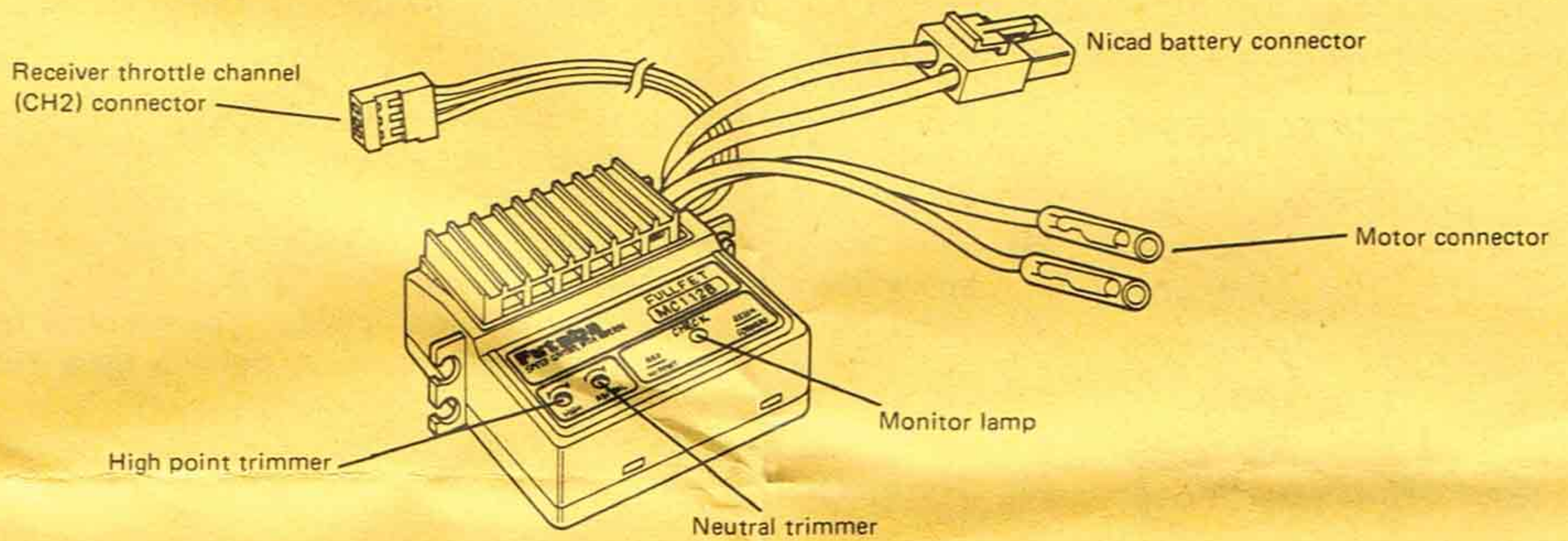
MC12B/MC112B SPECIFICATIONS

The MC12B is for the Old 2GS, 2L, 2NL and any other system using standard mini connector.

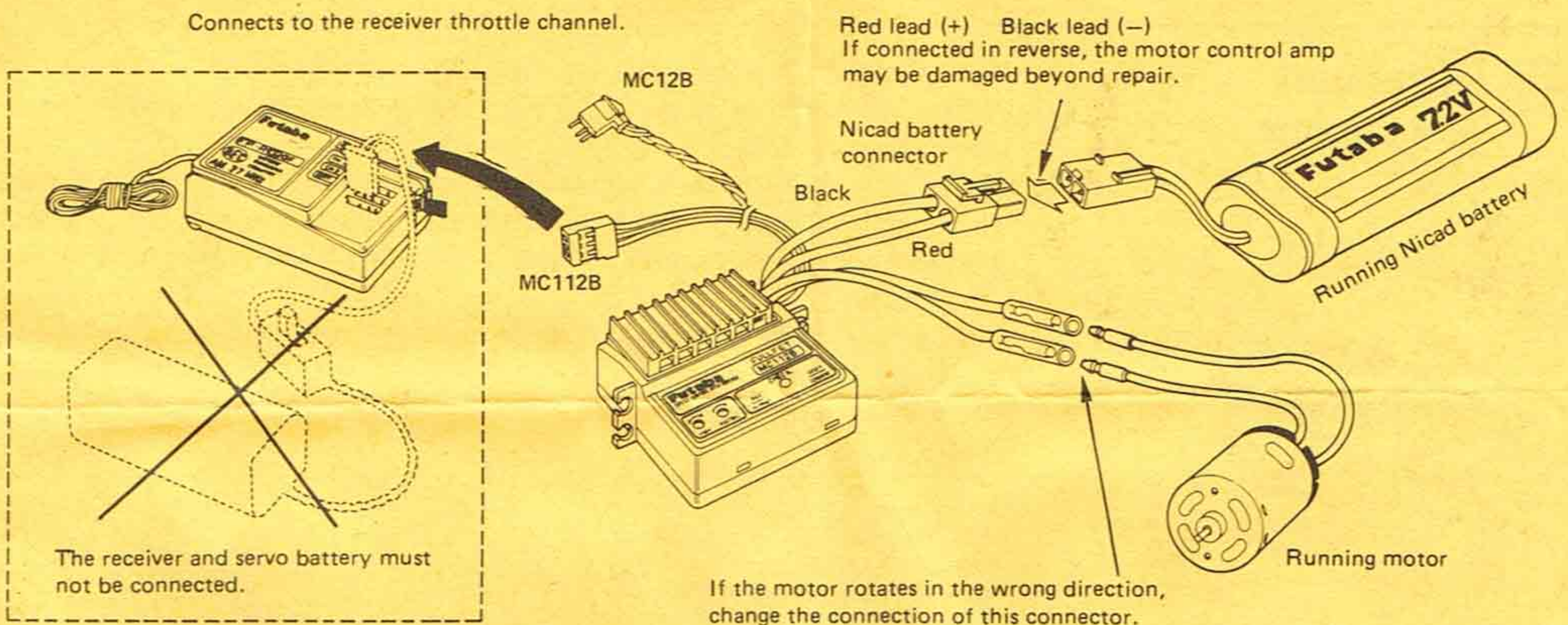
The MC112B is for the MAGNUM series, 2NBL, 2NBR, New 2GS and any other system that uses J connectors.

■ Operating system	Forward and reverse w/ electronic brake	■ Loss resistance	0.009 Ω x 2
■ Voltage	7.2 to 8.4 V	■ Dimensions	46.1 x 40.5 x 20.0 mm (excluding fins)
■ Regulator output	6 V/2 A (max)	■ Weight	57 g (excluding heat sink, including connectors)
■ Continuous maximum current	100 A		
■ Instantaneous maximum current	400 A		

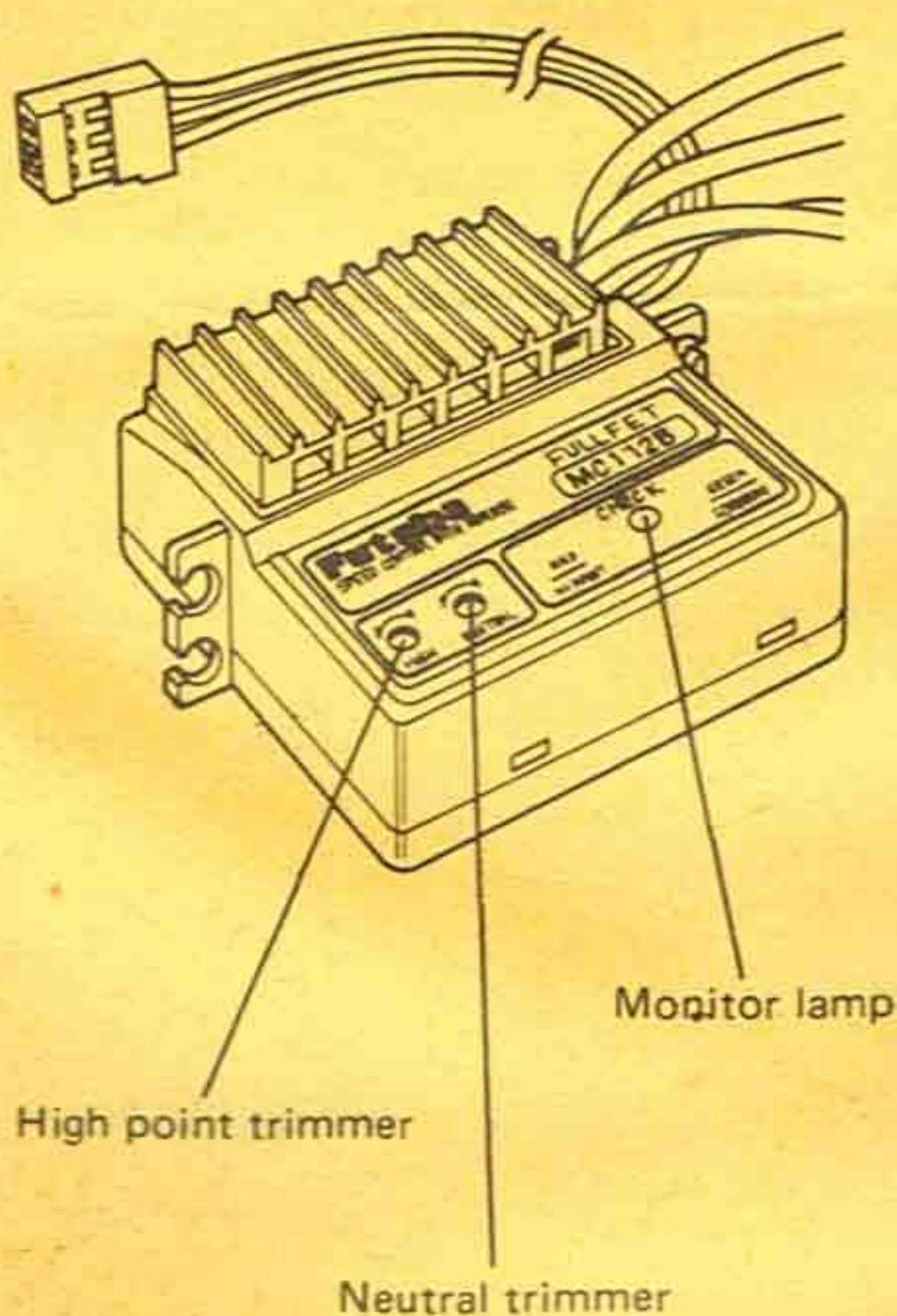
MC12B/MC112B NOMENCLATURE



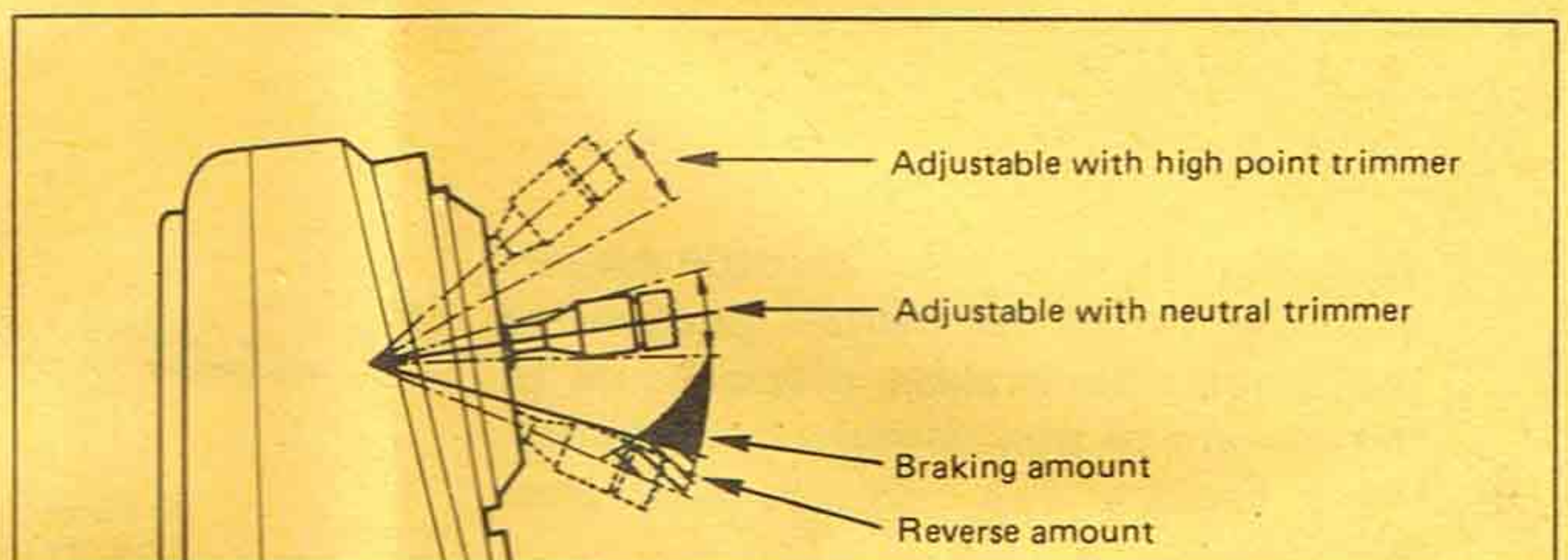
MC12B/MC112B CONNECTION



DESCRIPTION OF TRIMMERS



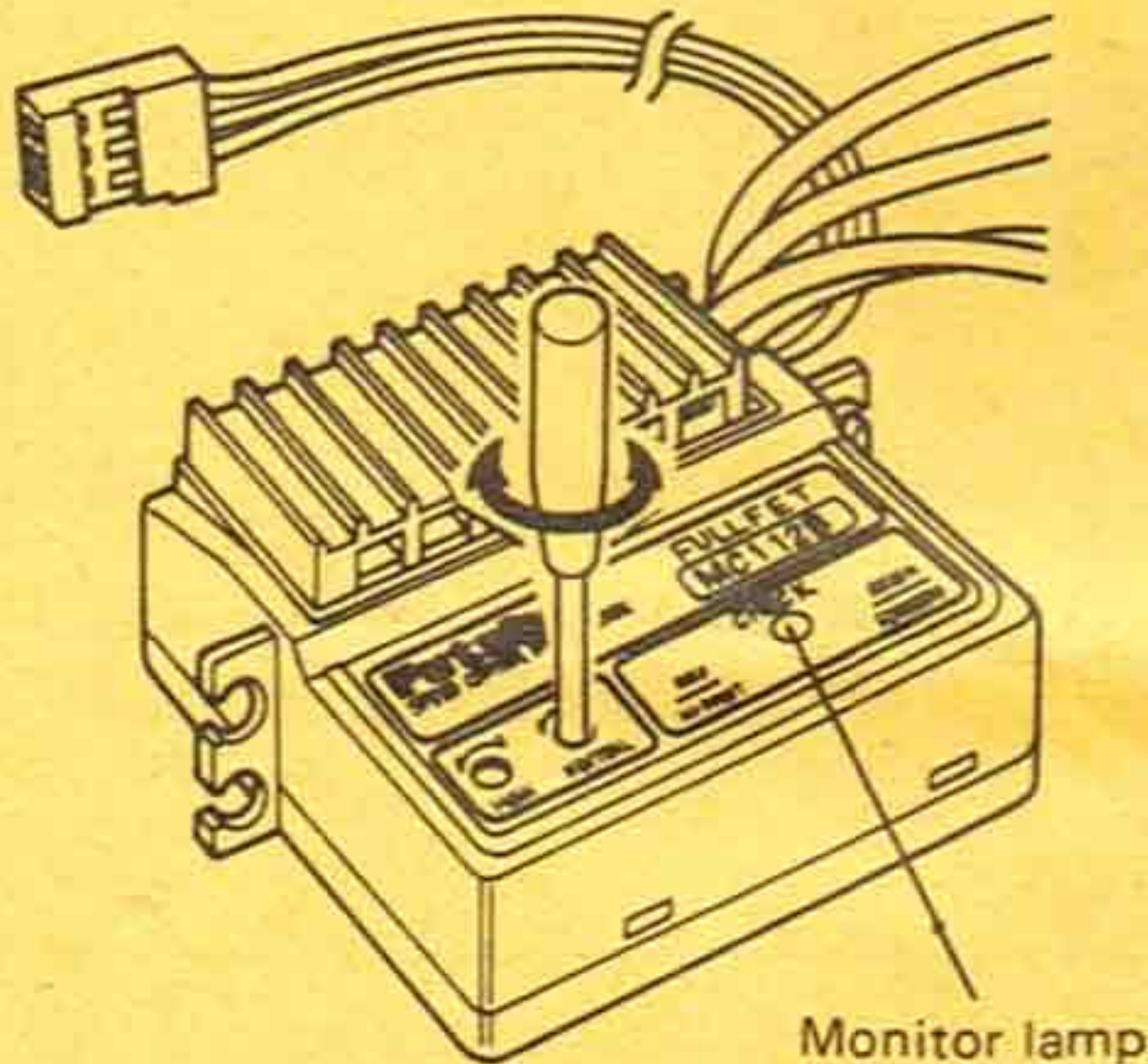
- **Neutral trimmer**
Trimmer that sets the transmitter throttle stick (throttle trigger) neutral position and amp neutral position.
- **High point trimmer**
Trimmer that sets the maximum speed when the transmitter throttle stick (throttle trigger) is set to maximum speed.
- **Monitor lamp**
Amp adjustment monitor lamp. Lights green in the forward state and lights red at the maximum forward speed. Does not light when braking and backing up.



TRIMMER SETTING

When adjusting the FET amp, do not connect the running motor. If the motor is connected, adjustments can not be made correctly.

(A) Neutral adjustment

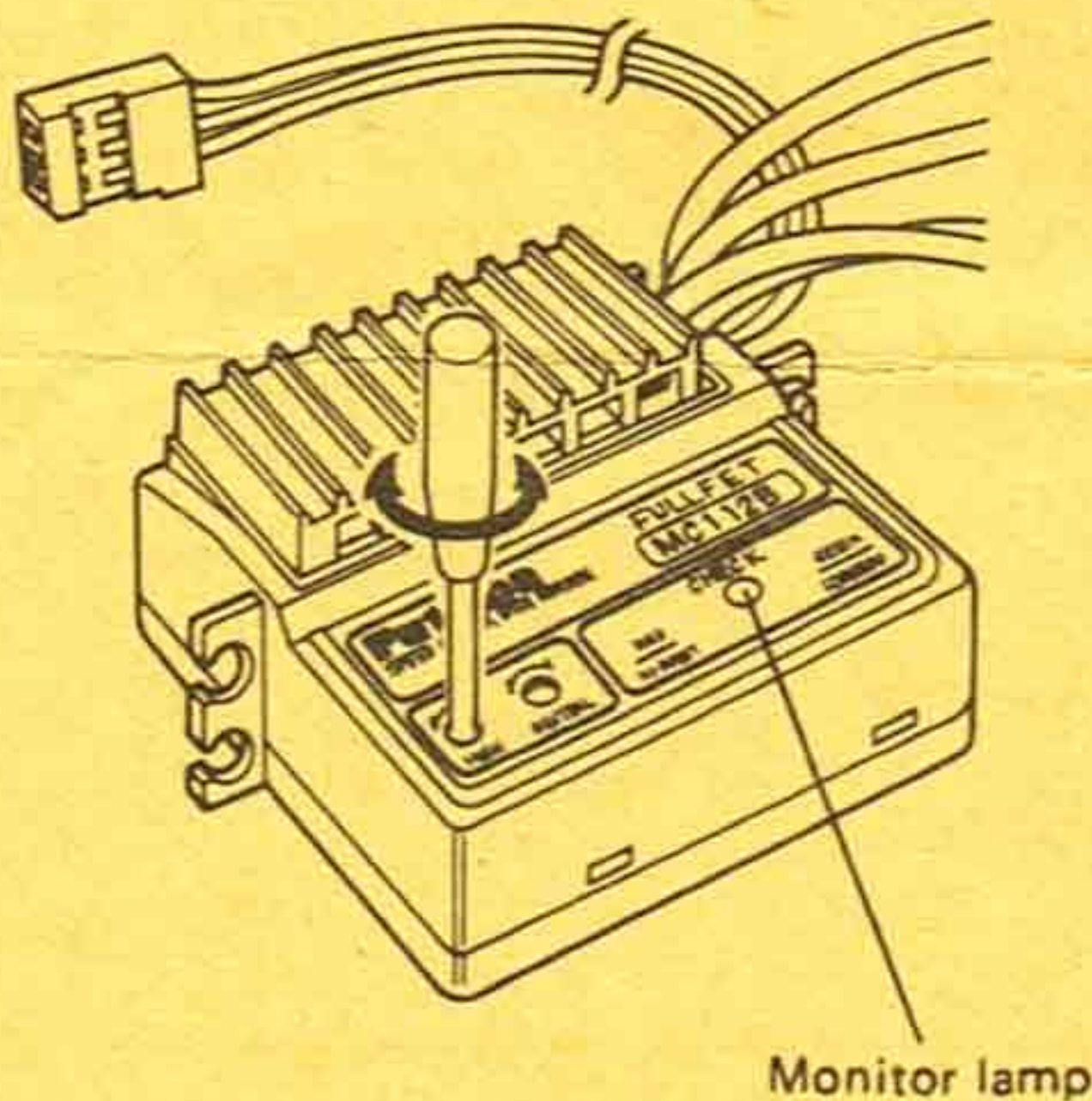


- (1) Set the transmitter power switch to ON.
- (2) Connect the amp to the running battery.
- (3) At this time, the monitor lamp comes on or goes off.
- (4) Turn the high point trimmer fully counterclockwise with the small screwdriver supplied with the amp.
- (5) Similarly turn the neutral trimmer slowly. The monitor lamp will come on or go off at a certain point. A point a little before the point at which the lamp goes off is the neutral point. Set the neutral trimmer to this point.
- (6) The monitor lamp lights green when the motor is running.

NOTES

- The monitor lamp also goes off at braking.
- Do not operate the transmitter throttle stick (throttle trigger).

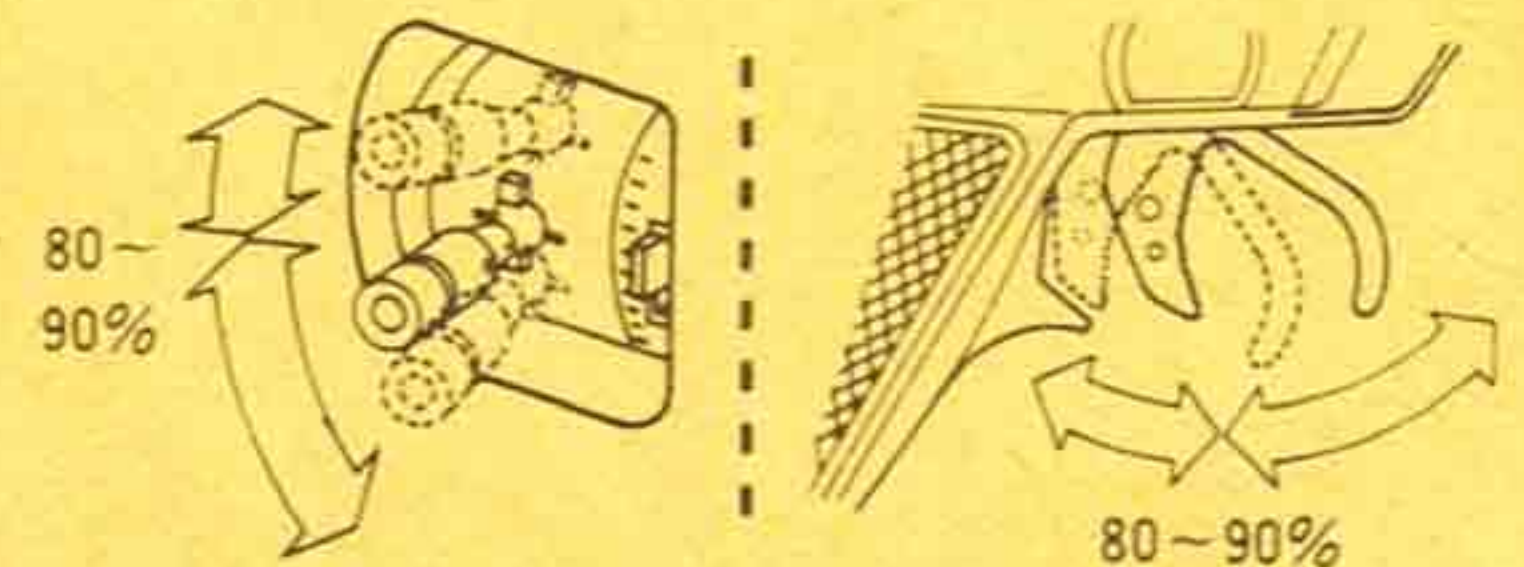
(B) High point adjustment



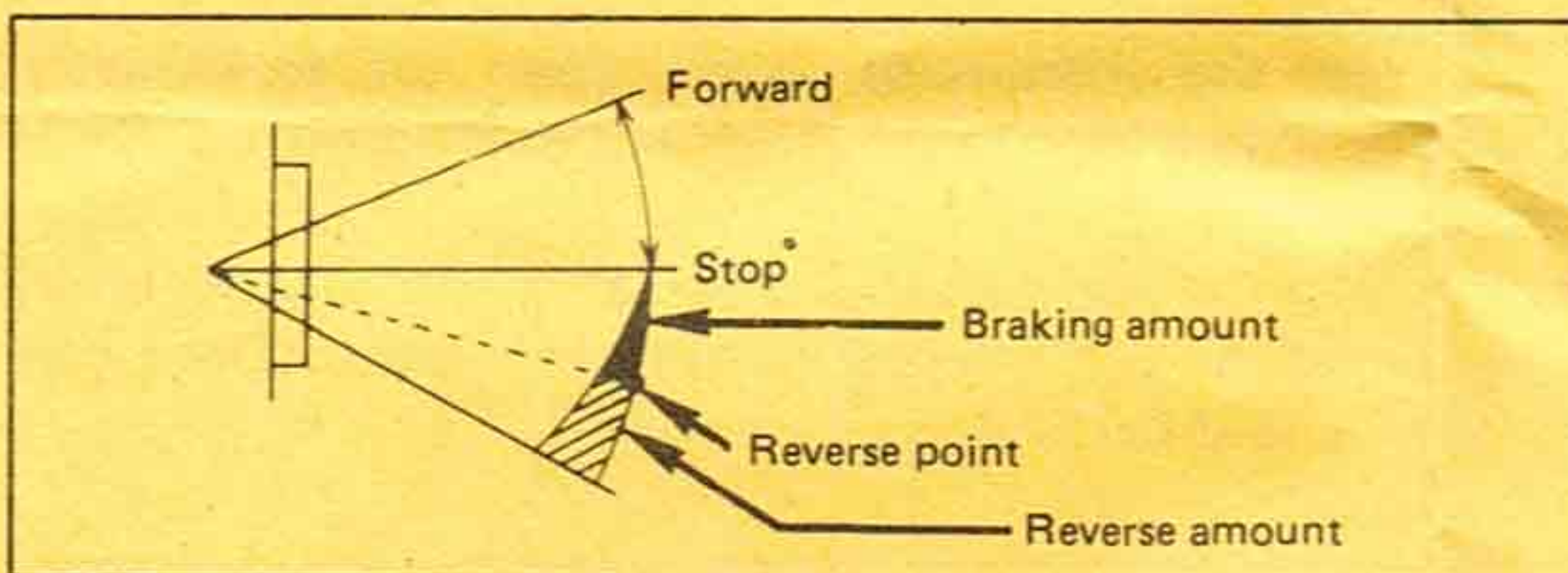
- (1) Adjust the high point after neutral adjustment.
- (2) When the throttle stick (throttle trigger) is set to maximum speed, the monitor lamp lights green.
- (3) When the high point trimmer is turned slowly with the small screwdriver supplied with the amp, there is a point at which the monitor lamp changes from green to red. This point is the high point (maximum speed).
- (4) Adjust the high point trimmer so that the monitor lamp lights red a little before (80% to 90%) the throttle stick (throttle trigger) is set to maximum speed.

NOTE

- If the high point trimmer is set so that the monitor lamp lights red when the transmitter throttle stick (throttle trigger) is set to maximum speed, the motor may not run at maximum speed. Always set the trimmer so that the monitor lamp lights at about the 80% to 90% position.



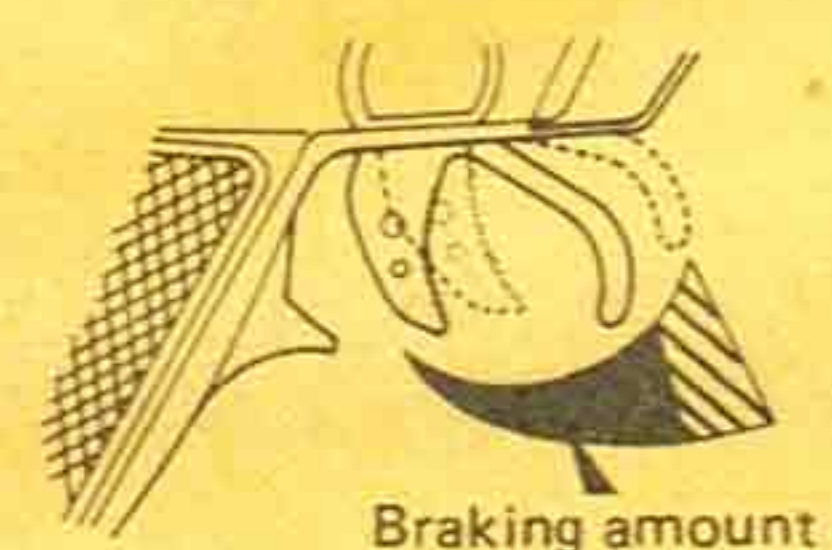
Reverse point



- (1) Set the reverse point to 70 to 80% at the reverse side of the throttle stick (throttle trigger).
- (2) Set the transmitter neutral lever (throttle neutral adjuster) so that the stick (trigger) is at the center (neutral) position.
- (3) If the stick is not set to the center position, reverse may not be entered.
- (4) When going in reverse, the monitor lamp does not light.

Brake

- (1) When the throttle stick (throttle trigger) is moved from the neutral position to the brake side, braking proportional to the amount of stick movement is applied.
- (2) When braking, the monitor lamp does not light.



The braking amount increases as the throttle stick (throttle trigger) is moved to the brake side.

POINTS THAT CAN BE ADJUSTED WITH THE TRANSMITTER

- (1) Make the basic settings by setting (A) and (B) above at the FET amp side.
- (2) Only the functions installed at the transmitter can be adjusted at the transmitter. Make all other adjustments at the amp.
- (3) Set the throttle neutral adjuster so that the stick (trigger) is at the center (neutral) position.
- (4) The neutral point and maximum braking amount can be adjusted with the throttle trimmer.
- (5) The high point can be adjusted with the throttle high side ATL trimmer.
- (6) The power curve can be adjusted with the throttle exponential knob.

NOTE

- Only special functions installed at the transmitter can be set at the transmitter. Make all other adjustments at the amp.

OTHER HANDLING PRECAUTIONS

- (1) When using this amp with the FP-R102GF receiver with built-in BEC & ASP, set the ASP system to OFF as shown in the figure.

When using this amp with an FP-R102GF receiver

- Set the ASP system to OFF with the ASP reset connector. (For more information, refer to the ASP section of the set instruction manual.)



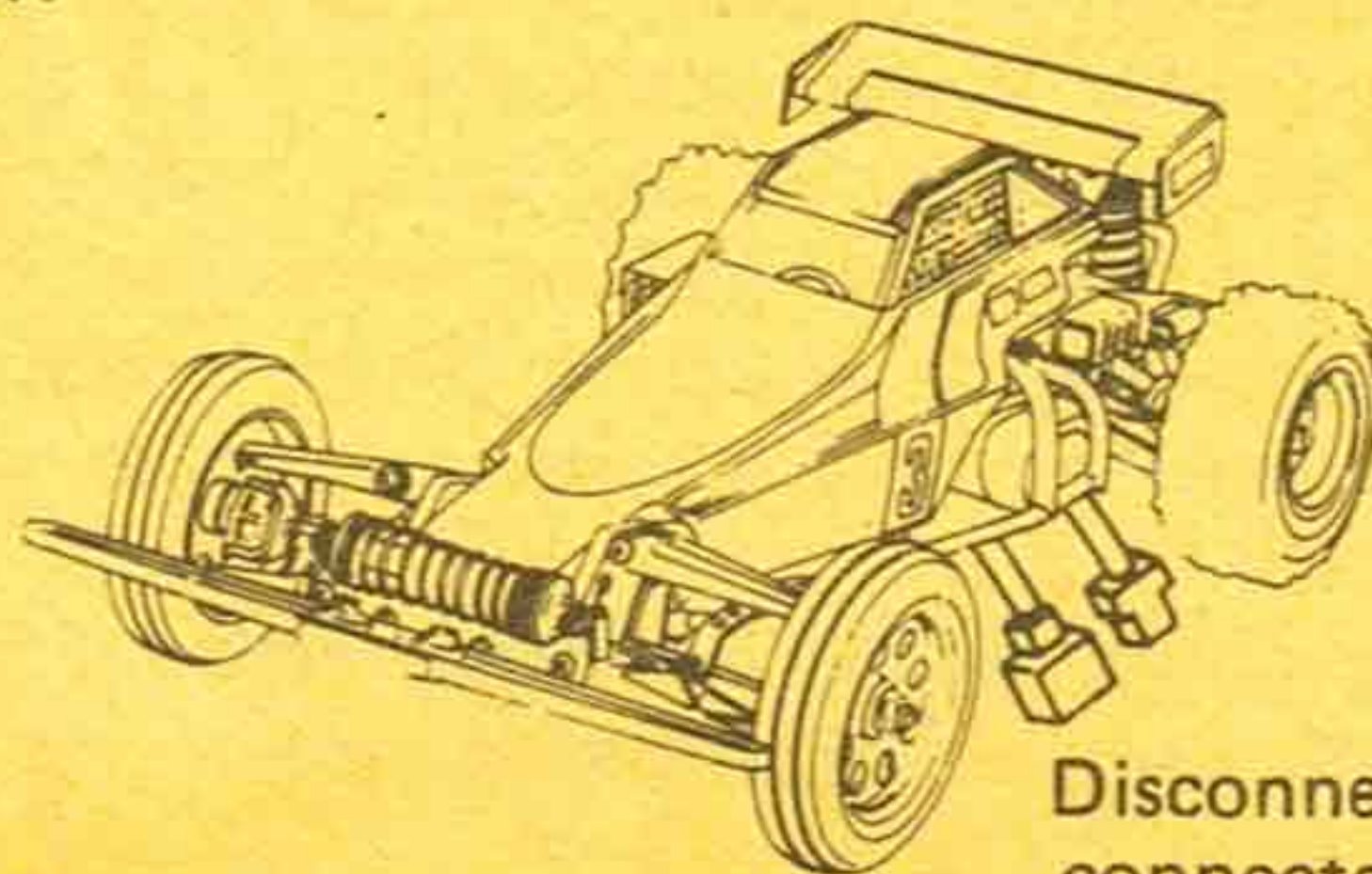
R102GF ASP reset connector

Insert the ASP reset connector (female pins) packed with the set onto the 2P connector (male pins) on the PWB.

- (2) The power is turned off by disconnecting the running battery connector.

For safety, always disconnect the running battery connector during storage (when not running). Note that the motor starts the instant the running battery is connected.

- (3) Do not run the vehicle with pebbles, etc. caught in the gears, or when the vehicle has struck an obstruction. Because the running motor is locked and an overcurrent flows, the amp may be irreparably damaged.
- (4) Pay careful attention to WATERPROOFING. Water drops in the amp or on the connectors will cause trouble.
- (5) Always install a noise killer capacitor to the running motor.
- (6) Do not back up while running forward. Also, do not back up for a long time. The motor, battery, and amp may be adversely affected.
- (7) To protect the motor and battery, wait more than 10 minutes between each running on one Nicad pack.
- (8) When using the motor checker, disconnect the connector between the FET amp and the motor.
- (9) When going and returning from the circuit, when the vehicle is stored, and other times when the vehicle is not running, always disconnect the running Nicad battery connector.



Disconnect the connector

- Futaba products are subjected to stringent quality control. If you are dissatisfied with your product, contact your local dealer or one of the radio control service centers listed below.



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Futaba

LIMITED WARRANTY

Your new FUTABA Digital Proportional R/C System is warranted to the original purchaser for 180 days from the date of purchase against defects in material and workmanship. During this period Futaba will repair or replace, at our discretion, the defective component.

This warranty does not apply to any unit which has been improperly installed, handled, abused, damaged in a crash, nor to any unit which has been repaired or altered by unauthorized agencies. Under no circumstances will the buyer be entitled to consequential or incidental damages. This Limited Warranty gives you specific legal rights, you may also have other rights which vary from state to state. Batteries and plastic housings are not covered by warranty.

WARRANTY PROCEDURE

In the event that service is required, send your equipment for Factory servicing together with your Bill of Sale (legible photocopy acceptable). **IMPORTANT.** . . Bill of Sale must accompany equipment if purchased as a complete system. Components and accessories purchased separately must also be accompanied by acceptable proof of purchase.

Ship your equipment in its original carton or equivalent, fully insured and prepaid. FUTABA is not responsible for any damages incurred during shipping. Please include a complete description of the equipment returned (model number, frequency, serial number, etc.). Describe the problem and action you with taken. We will, at our discretion, notify you of repair costs before returning your equipent, or ship it C.O.D. You are required to pay all postage, shipping and insurance charges.

THIS WARRANTY APPLIES ONLY TO EQUIPMENT PURCHASED AND USED IN THE CONTINENTAL UNITED STATES, HAWAII AND ALASKA.