



*The #1 Choice in
Performance Boating!™*

**THROTTLES AND CONTROLS
Model # TH SERIES
(All Configurations)
Installation Instructions**

Thank you for choosing Livorsi Marine® controls. Your new marine engine controls feature a 1 year warranty and are built entirely of bronze and stainless steel to insure years of trouble free service.

To install your controls the following tools are needed:

- * Phillips screwdriver
- * 7/16" wrench or socket
- * 3/16" Allen wrench

Livorsi Marine® controls are very easy to install. Please follow these next few steps.

1. Installation requires the use of 33 series cables. You will need 2 cables per engine; one for shifting and one for throttle. When installing new controls it is suggested to use new cables. When removing old cables, attach new cables and route as you remove old cables.
2. After connecting cables to engine and transmission, connect cables to controls using hardware provided. Screw end clevis on cable. Remove plate or brad on side of lever to expose installation point. Note: 3 mounting points are provided to adjust different cable throws.
3. Install pin in clevis and insert into desired mounting hole. Reinstall brad to hold pin.
4. Use "U" bracket to secure cable to base of control.
5. Repeat on additional handles before installing control in desired installation location.
6. Control is now ready to be installed in the desired location.

WARNING: Make sure to adjust cables before operating engines.

Adjust detent and friction to desired tension by turning allen screw at base of handle.

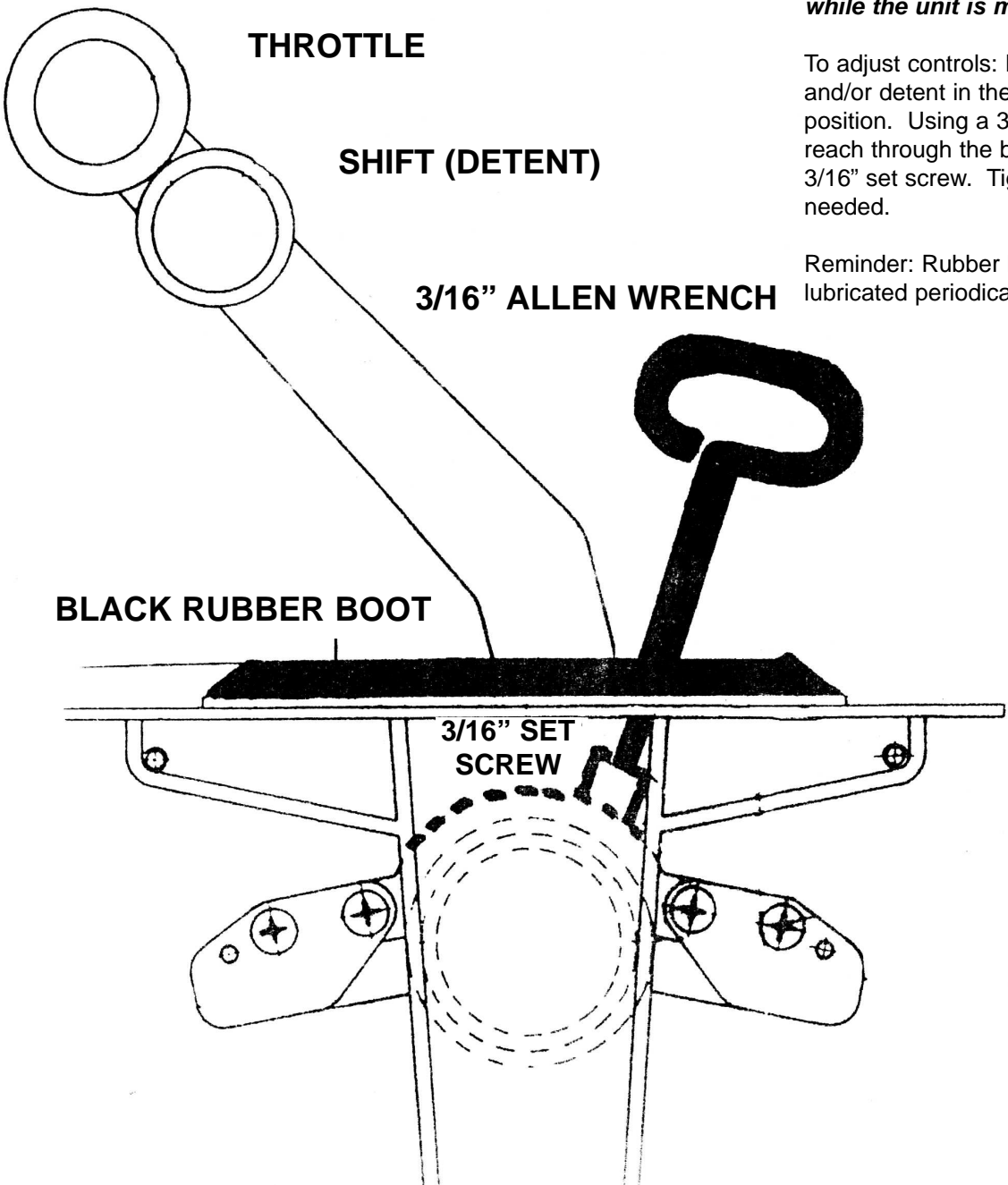
Periodic lubrication of rubber boots in needed. Teflon base lubricant works best.

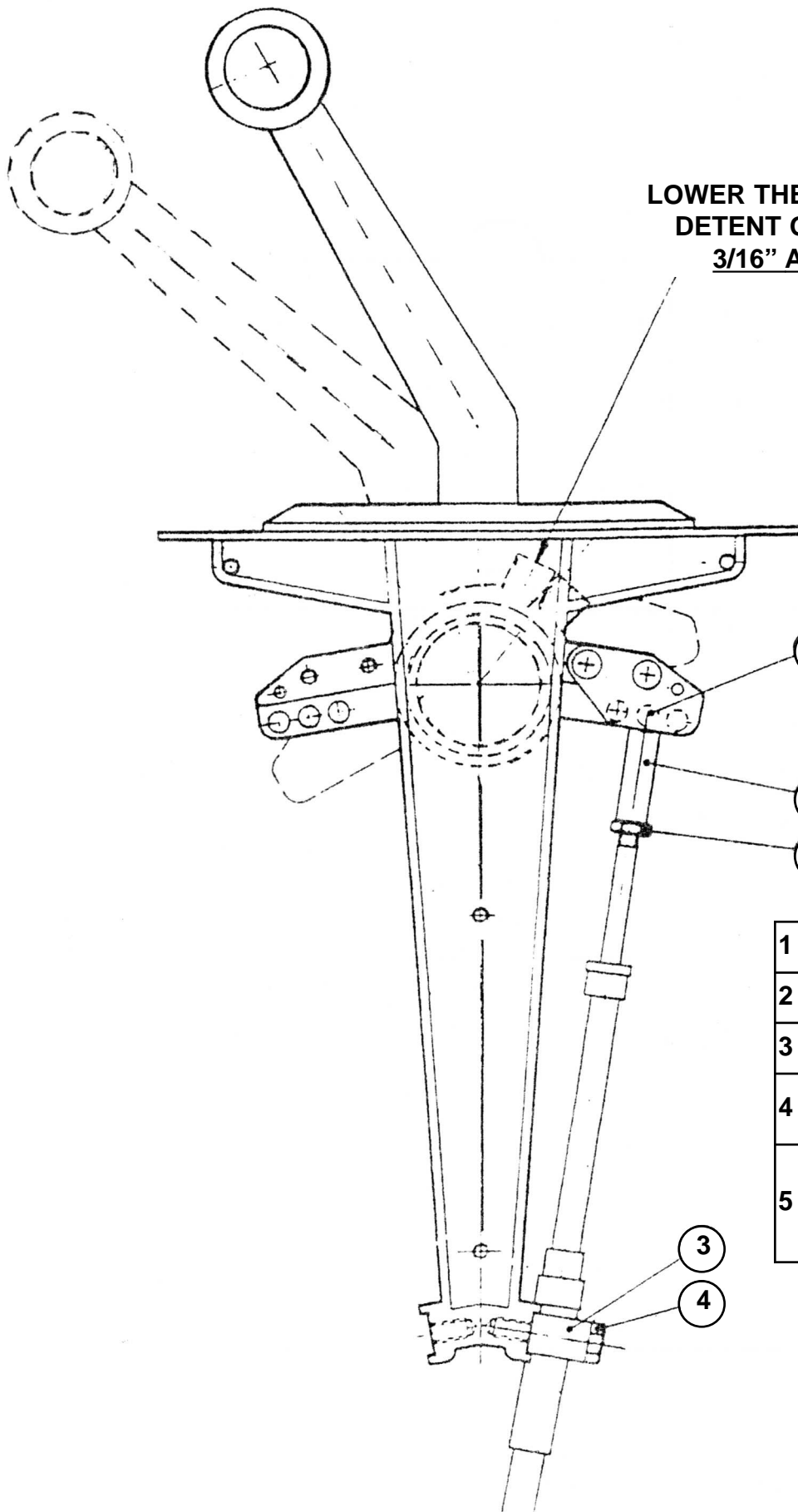
THROTTLE	CUTOUT DIMENSIONS	OVERALL DIMENSIONS
1 HANDLE	1 1/2 W x 6 1/2 L	2 1/4 W x 7 3/4 L
2 HANDLE	2 5/8 W x 6 1/2 L	3 3/8 W x 7 3/4 L
3 HANDLE	3 3/4 W x 6 1/2 L	4 3/8 W x 7 3/4 L
4 HANDLE	4 3/4 W x 6 1/2 L	5 5/8 W x 7 3/4 L
6 HANDLE	7 W x 6 1/2 L	7 3/4 W x 7 3/4 L

In some cases it may be necessary to adjust the unit's tension. This takes seconds, literally and **can be done while the unit is mounted in boat.**

To adjust controls: Place throttle arm and/or detent in the slightly forward position. Using a 3/16" allen wrench, reach through the black rubber to the 3/16" set screw. Tighten or loosen as needed.

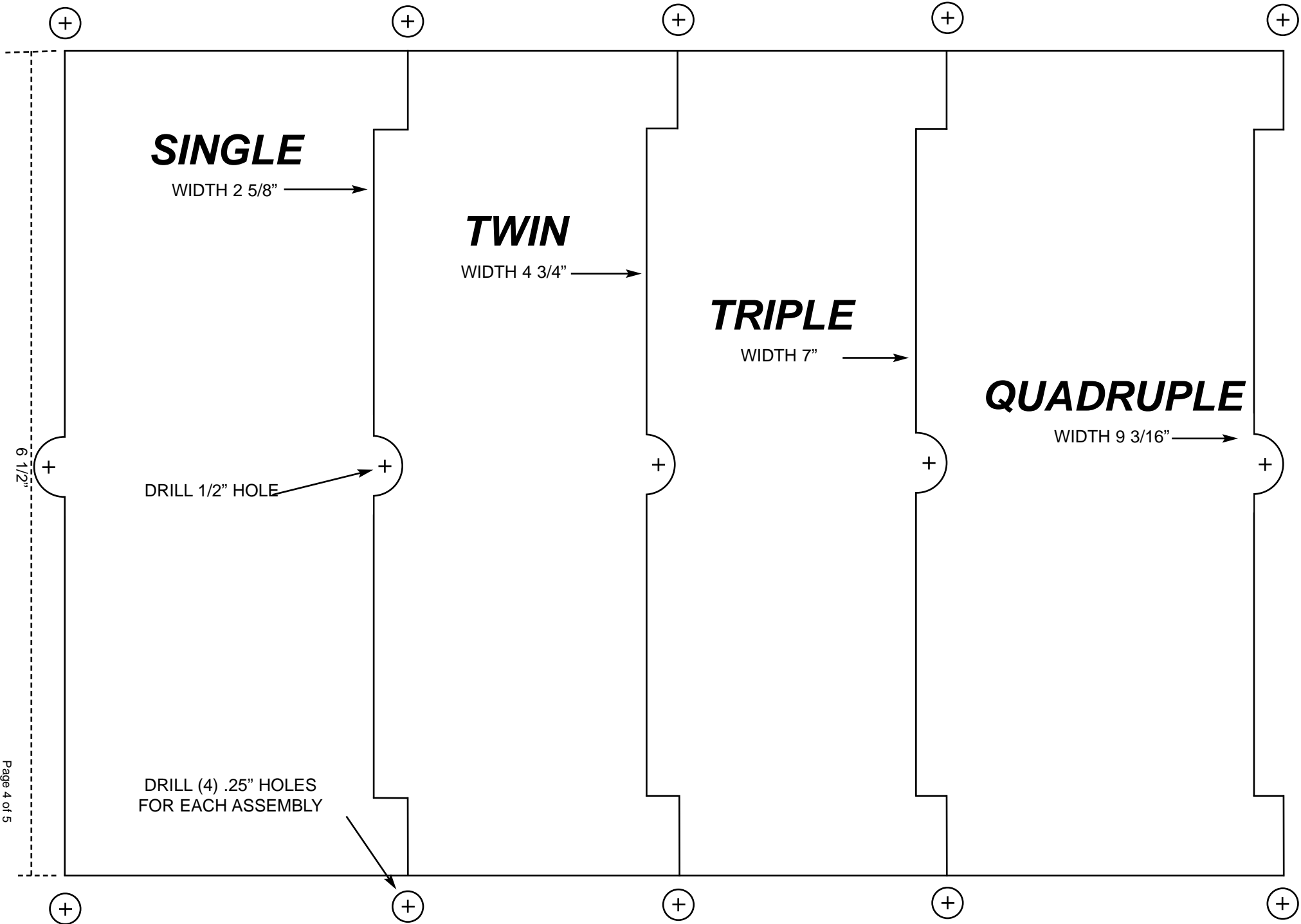
Reminder: Rubber boots should be lubricated periodically.

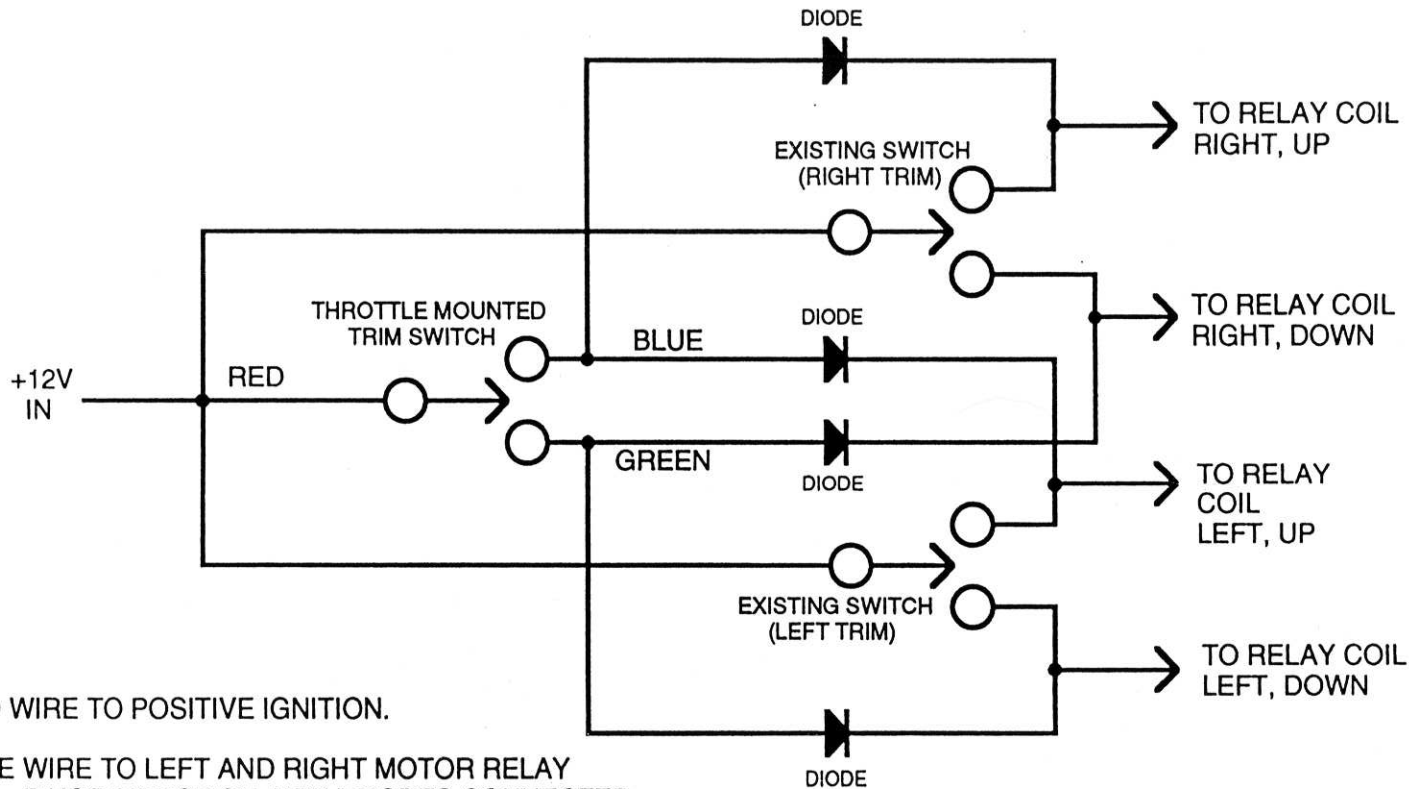




**LOWER THE HANDLE & ADJUST
DETENT OR FRICTION WITH
3/16" ALLEN WRENCH**

1	END CLEVIS
2	ADJUST NUT
3	"U" BRACKET
4	"U" BRACKET BOLT
5	PIN Note: Install pin into one of three holes to adjust cable throw





RED WIRE TO POSITIVE IGNITION.

BLUE WIRE TO LEFT AND RIGHT MOTOR RELAY COIL, RAISE DIRECTION, WITH DIODES CONNECTED AS DESCRIBED BELOW.

GREEN WIRE TO LEFT AND RIGHT MOTOR RELAY COIL, LOWER DIRECTION, WITH DIODES CONNECTED AS DESCRIBED BELOW.

SOLDER DIODES IN LINE WITH WIRES, WHITE STRIPE ON DIODE SHOULD FACE AWAY FROM THROTTLE MOUNTED TRIM SWITCH.

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