NOTE: "Four-cycling" refers to a condition of operation under which cylinders fire every other revolution rather than once every revolution. It is indicated by the loss of power and a characteristic low-frequency exhaust note. If, in making high speed mixture adjustment, it is found that four-cycling cannot be induced, even though high speed mixture adjusting needle is turned to full rich position, it is possible that a restriction in fuel flow exists between fuel tank and carburetors. Operation of engine under condition of reduced fuel flow may cause damage due to lean fuel mixture and resultant overheating.

B. High Speed Adjustment -- Mark 78-78A-75A

Mark 78-78A-75A models have high speed fixed jet carburetors. The standard jet, installed at the factory, is recommended for operation from sea level to 2500 ft. elevation. If engine is operated above 2500 ft., select and install correct jets from chart below. Note that aperature decreases .002" as elevation increases each 2500 ft. Before changing jets, check engine out, unless previous tests indicate exact jet size.

Model	Up to 2500′	2500-5000′	5000-7500′	7500-10000′
Mark 78-78A	.063"	.061"	.059"	.057"
Mark 75A	.055"	.053"	.051"	.049"

Note: Jet size recommendations are intended as a guide, like a propeller chart. Try a size larger or smaller if in doubt.

No change in spark advance is recommended for elevation operation. Propellers of lower pitch should be used at high elevations to allow proper engine RPM.

It is recommended that the propeller be removed and a Test Wheel (48-28369 for Mark 78-78A-75A; 48-26575 for Mark 75) be installed when testing. Engine then should turn at 5200-5400 RPM at full throttle in test tank and 5000 RPM on back of a boat.

C. Idle Adjustment Screws

The idle adjustment screws also have been adjusted at the factory. If readjustment is necessary, it can be done with the Test Wheel (48-28369 for Mark 78-78A-75A; 48-26575 for Mark 75) or a regular propeller in the test tank or on the boat. Start with all idle needles 7/8 turn open and adjust for maximum RPM with distributor retarded to give about 600-to-700 RPM. Warm engine before attempting adjustment.

With the motor running at idling speed while in forward gear, turn the low speed mixture adjusting needle counterclockwise until affected cylinders start to "load up" or fire unevenly due to over-rich mixture. (Figure 8) Then slowly turn the needle clockwise until cylinders fire evenly and motor picks up speed. Continue turning clockwise until too-lean a mixture is obtained and engine slows down and misfires. Set adjustment screw half way between rich and lean (approx. ½ turn on Mark 78-78A-75A). If a Mark 75 tends to start hard after engine is warm, turn idle adjustment screw 1/16-to-1/8 turn slightly richer. Do not adjust leaner than necessary to attain reasonably smooth idling. When in doubt, it is preferable to have the mixture set slightly rich rather than too lean.

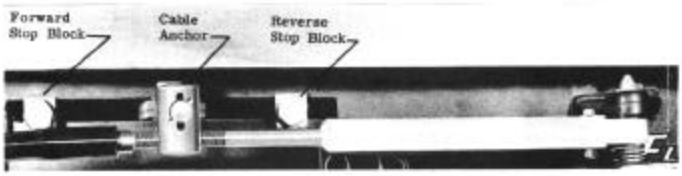

Figure 10

III. REMOTE CONTROL ADJUSTMENT

A. Cable Anchor

The brass cable anchor on the engine end of the remote control cable must be adjusted by turning so that the bottom cowl lever will strike the stop block in the bottom cowl in both forward and reverse before the stroke is used up in the remote control box. If this adjustment is not made, either full forward throttle operation or full reverse throttle operation will not be obtainable. (Figure 10)

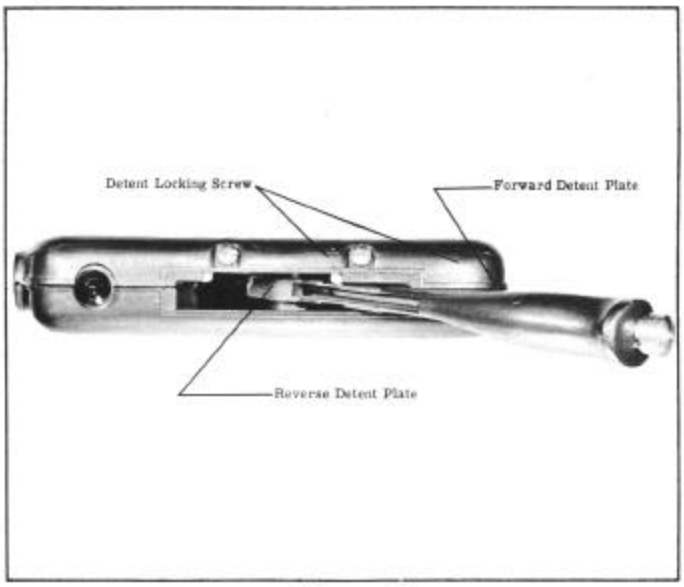

Figure 11

B. Forward Start Position

Remove front cover from engine. Move remote control lever forward until carburetor butterfly starts to open. Move detent plate in control box up against front side of control lever and lock in place with screw provided, as shown in Figure 11 (top), or adjust detent screw as shown in Figure 11 (bottom).

C. Reverse Start Position

Move remote control lever backwards (reverse) until carburetor butterfly starts to open. Move detent plate in control box up against back side of control lever and lock in place with screw provided, as shown in Figure 11 (top), or adjust detent screw as shown in Figure 11 (bottom).