11. Turn the idle adjustment screw to a midpoint between the settings noted in Step 9 and Step 10.
12. Quickly open the throttle. If the engine dies, it is too lean. Turn the adjustment screw counterclockwise. If the engine stumbles, it is too rich. Turn the screw clockwise.
13. Adjust the idle speed screw to bring the idle speed to 750 ±50 rpm in gear.
14. On models equipped with a neutral warm-up speed screw on the end of the gear shift arm, shift the engine into NEUTRAL and open the throttle fully. If the tachometer does not read 1,500-1,800 rpm, adjust the warm-up speed screw as required.

Choke Solenoid Adjustment

1. Loosen the screw holding the solenoid plunger to the choke lever.
2. Slip a small piece of writing paper about 1/2 in. wide into the carburetor air horn. The paper will provide sufficient clearance to prevent the choke shutter from sticking closed.
3. Hold the choke lever in the closed position and depress the solenoid plunger (not the rod) until it bottoms in the solenoid, then tighten the choke lever screw.
4. Pull the paper from the air horn. There should be a slight drag as the paper is removed. If drag is excessive, repeat Step 3.
5. Install the carburetor intake cover with new gaskets.
6. Install the engine cover.

CHRYSLER OUTBOARDS 55 HP (1977-1980), 60 HP (1974-1976), 65 HP (1977-1978), AND 105, 120 AND 135 HP (1975-1977) WITH MAGNAPOWER II IGNITION

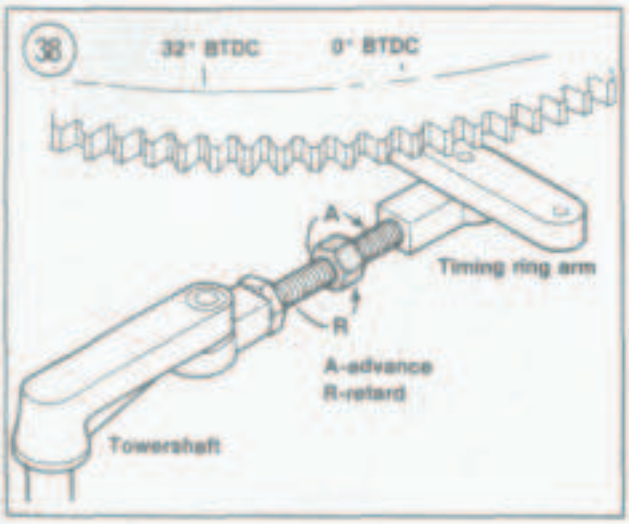
Engine Timing

1. Disconnect the negative battery lead.

2. Remove the engine cover.
3. Remove all spark plugs from the power head. See Chapter Four.
4. 55-65 hp—Check and adjust breaker points as required. An error of 0.0015 inch in the gap setting will change engine timing as much as 1 degree.
5. Thread timing tool barrel (part No. T 2937-1) into the top cylinder spark plug hole and screw it in completely.
6. Install the timing tool rod in the barrel with its 2 identification marks ("25-55 HP") toward the outside.
7. While holding the rod tightly against the piston, rotate the crankshaft clockwise to locate top dead center (TDC). This is the point at which the marks on the timing tool rod are at a maximum distance from the barrel. See A, **Figure 29**.
8. Thread the timing tool barrel in or out as required to align the inner timing rod mark with the edge of the barrel. See B, **Figure 29**.

NOTE

If the crankshaft is rotated too far in Step 9, the outer timing rod mark will go beyond the edge of the timing tool barrel. If this happens, repeat the step—do not try to position the rod mark by rotating the crankshaft counterclockwise.



9. Apply slight finger pressure on the end of the rod to prevent it from shooting out during the piston compression stroke. Rotate crankshaft clockwise almost one full turn until the outer timing rod mark aligns with the edge of the barrel. See **Figure 30**. The piston is now positioned exactly 32° before TDC.
10. Make sure the 32 degree mark on the flywheel ring gear decal aligns with the index mark at the top of the carburetor adapter flange (55-65 hp) or timing pointer index mark (105, 120 and 135 hp). If it does not, install a new decal.
11. Remove the timing tool and reinstall the spark plugs. Connect a timing light according to manufacturer's instructions.
12. With the engine in a test tank or on the boat in the water, place the throttle at the full retard position and crank the engine over while pointing the timing light at the flywheel timing marks. If the TDC mark on the timing decal does not align ±3° with the carburetor adapter flange index mark (55-65 hp) or timing pointer index mark (105, 120 and 135 hp), repeat Steps 3-11.
13. Start the engine and bring its speed up to 4,750-5,250 rpm (1980-on 55 hp) or 5,000-5,500 rpm (all others). Point the timing light at the flywheel timing marks. The 32° mark on the decal should align with the carburetor adapter flange index mark (55-65 hp) or timing pointer index mark (105, 120 and 135 hp).

WARNING

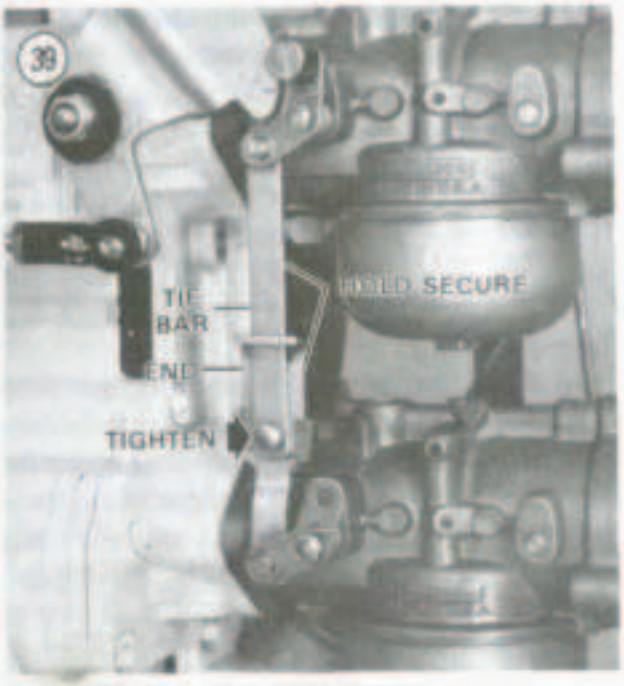
Do not attempt to adjust the tower shaft link with the engine running. It is close to the flywheel ring gear and serious personal injury can result.

14. If the timing marks do not align in Step 13, retard the engine and shut it off. Loosen the locknut on the tower shaft link under the flywheel and rotate the link clockwise to advance or counterclockwise to retard the timing as required. See **Figure 38**. One full turn of the link equals about a 2 degree change in timing.
15. Restart the engine and recheck any adjustment made in Step 14. Repeat Step 14 as required until the timing marks align. When adjustment is correct, shut the engine off and tighten the tower shaft link locknut securely.

5

Throttle Shutter Synchronization

1. Remove the carburetor intake cover and gaskets, if so equipped.
2. Disconnect the tower shaft throttle link at the throttle cam. Move cam away from carburetor throttle roller.
3. Remove the retaining ring holding the throttle tie bar to the top carburetor throttle arm.
4. Loosen the throttle tie bar screw (**Figure 39**).
5. Make sure the throttle shutters are closed, then tighten the tie bar screw.
6. Operate the tie bar and make sure its pivot goes in and out of the carburetor throttle arm without binding.
7. Install the retaining ring and connect the link to the cam.



Throttle Pick-up Point Adjustment

Adjust the throttle pick-up point as described under *35 and 45 hp (1966-on), 50 hp (1966 and 1981-on) and 55 hp (1967-1976)* in this chapter.

Carburetor Adjustment

1. Perform Steps 1-11 of *35 and 45 hp (1966-on), 50 hp (1966 and 1981-on) and 55 hp (1967-1976)* in this chapter to adjust the top carburetor.

2. Perform Steps 9-11 of *35 and 45 hp (1966-on), 50 hp (1966 and 1981-on) and 55 hp (1967-1976)* in this chapter to adjust the bottom carburetor.

3. Loosen the idle speed screw locknut on the tower shaft (**Figure 40**) and adjust stop screw as required until engine idles at 750-800 rpm in gear, then tighten the locknut.

Choke Shutter Synchronization

Refer to **Figure 41** for this procedure.

1. Loosen the screw on each choke swivel to free the choke link.

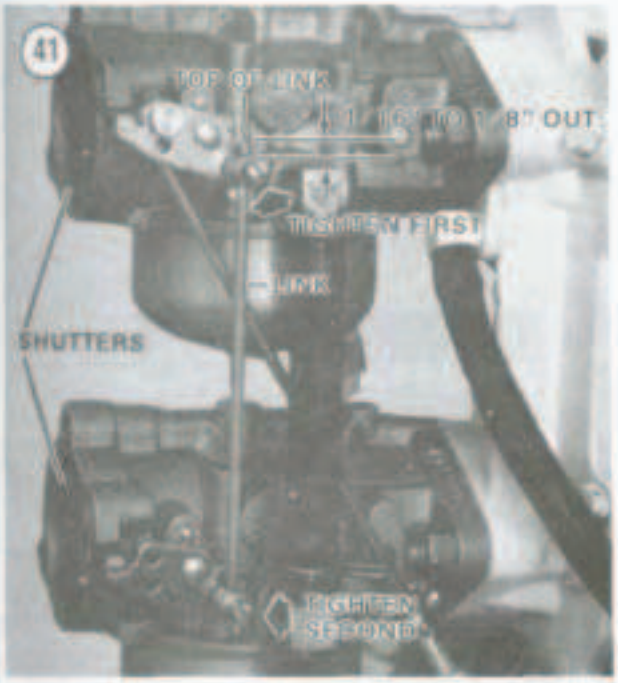
2. Adjust top end of link about 1/16-1/8 in. beyond the top of the choke swivel and tighten the screw to hold the link in that position.

3. Close top carburetor choke shutter completely and hold in that position. Close bottom carburetor choke completely and tighten bottom choke swivel screw.

4. Loosen the 2 solenoid attaching screws just enough to permit the solenoid to be moved.

5. Slip a small piece of writing paper about 1/2 in. wide into each carburetor air horn. The paper will provide sufficient clearance to prevent the choke shutters from sticking closed.

6. Depress the solenoid plunger (not the rod) to close the choke shutters. See **Figure 42**.



Slide the solenoid against the plunger and tighten the solenoid attaching screws.

7. Release the solenoid plunger and push plunger into solenoid. Pull the papers from the air horn. There should be a slight drag as the papers are removed. If drag is excessive, repeat Step 5 and Step 6.

8. Release the solenoid plunger. If the choke shutters are not horizontal, bend the shutter stop groove pin in the carburetor air horn(s) as required to bring the shutters into a horizontal position.

9. Install the carburetor intake cover with new gaskets.

10. Install the engine cover.

CHRYSLER OUTBOARDS 70-135 HP (DISTRIBUTOR BREAKER POINT IGNITION)

Engine Timing

1. Disconnect the negative battery lead.

2. Remove the engine cover.

3. Remove all spark plugs from the power head. See Chapter Four.

4. Check and adjust breaker points as required. An error of 0.0015 inch in the gap setting will change engine timing as much as 1 degree.

5. Thread timing tool barrel (part No. T 2937-1) into the top cylinder spark plug hole and screw it in completely.

6. Install the timing tool rod in the barrel with its 2 identification marks ("70 hp and up") toward the outside.

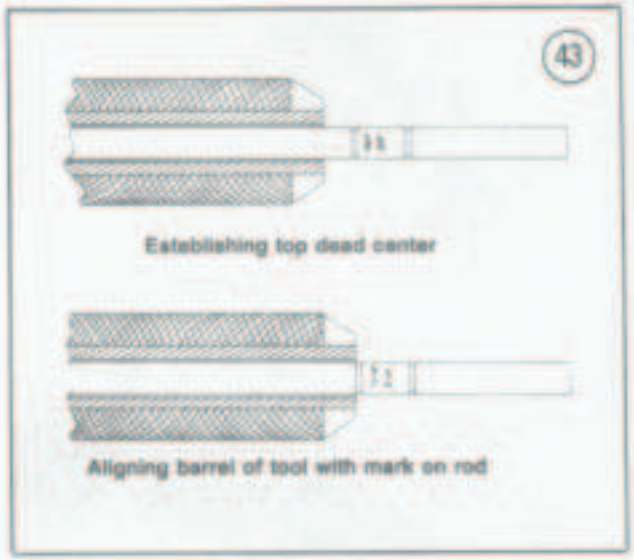
7. While holding the rod tightly against the piston, rotate the crankshaft clockwise to locate top dead center (TDC). This is the point at which the marks on the timing tool rod are at a maximum distance from the barrel. See **Figure 43**.

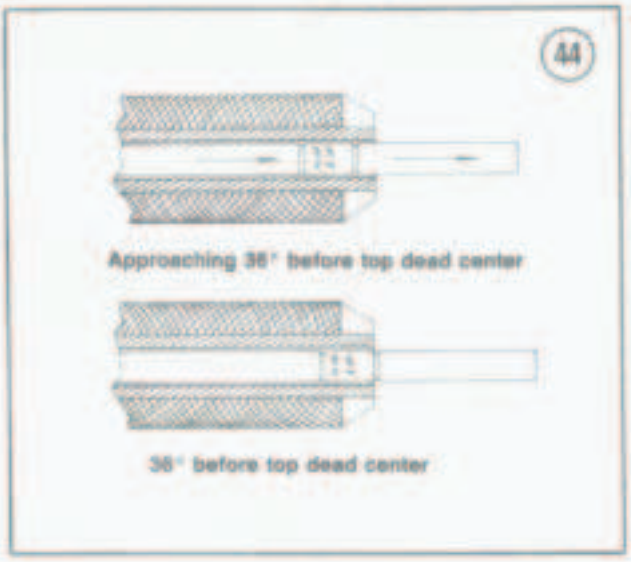
8. Thread the timing tool barrel in or out as required to align the inner timing rod mark with the edge of the barrel. See **Figure 43**.

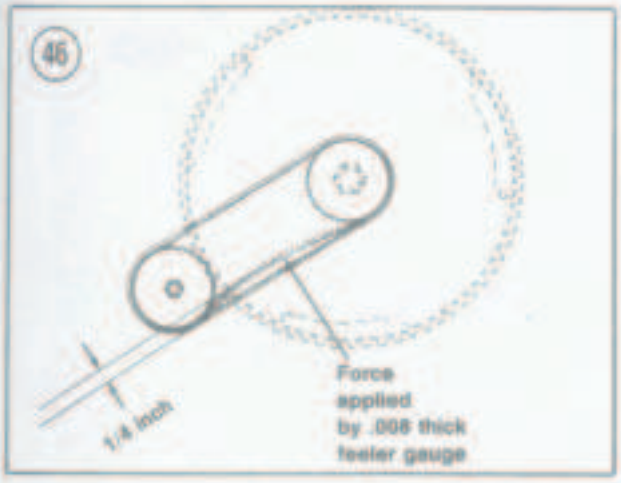
NOTE

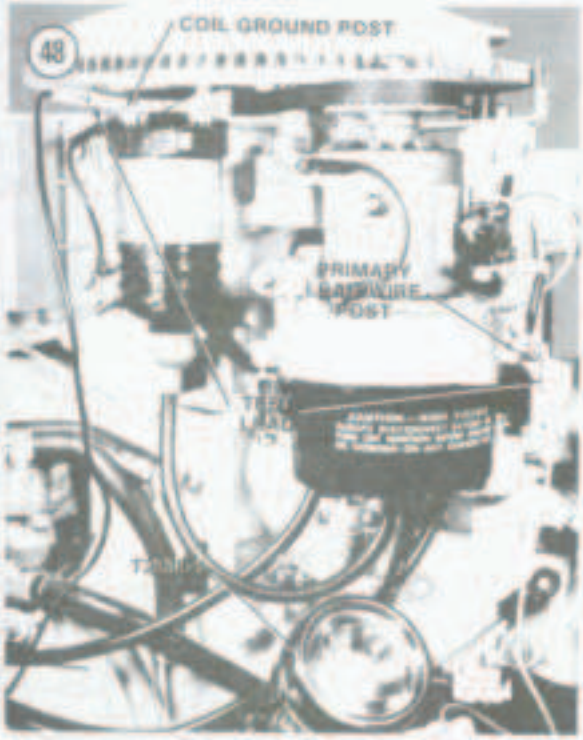
If the crankshaft is rotated too far in Step 9, the outer timing rod mark will go beyond the edge of the timing tool barrel. If this happens, repeat the step—do not try to position the rod mark by rotating the crankshaft counterclockwise.

9. Apply slight finger pressure on the end of the rod to prevent it from shooting out during the piston compression stroke. Rotate crankshaft clockwise almost one full turn until the outer timing rod mark aligns with the edge of the barrel. See **Figure 44**. The piston is now positioned exactly 36° before TDC.
10. Make sure the 36 degree mark on the flywheel ring gear decal aligns with the timing pointer index line. If it does not, loosen the timing pointer screws, align the pointer index line with the decal mark and tighten the pointer screws.
11. Rotate the flywheel to align the 0 degree mark with the timing pointer index line.
12. Rotate the distributor pulley to align the pulley index mark with the outer diameter of the flywheel. See **Figure 45**.
13. Install distributor belt (removed when breaker points were checked) over pulley. Position the tip of a 0.008 in. feeler gauge against the mid-point of the belt length. Push against the belt until the feeler gauge bends without moving the belt further. This should provide the desired 3/16-1/4 in. belt deflection. See **Figure 46**. Tighten the distributor bracket screws.
14. Disconnect the throttle link at the tower shaft. Move tower shaft to wide-open throttle position with the nylon stop resting against the cylinder crankcase cover.
15. Rotate the flywheel clockwise to align the 36 degree mark with the appropriate mark on the timing pointer as follows:
    a. -4 degree mark (32° BTDC) for all 3-cylinder and 105 hp. See **Figure 47**.









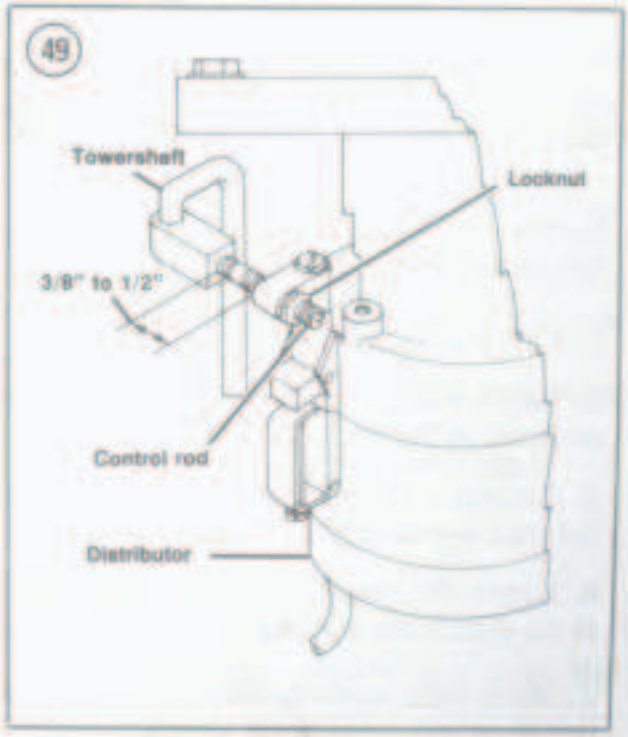
b. -2 degree mark (second to left of pointer index mark or 34° BTDC) for 120 and 130 hp.
c. -6 degree mark (left edge of pointer or 30° BTDC) for 135 hp.

16. Connect a 12-volt test light between the distributor primary lead wire post and the coil ground post. See **Figure 48**.

17. Loosen distributor control rod locknut (**Figure 49**):
a. If test light is off, rotate control rod clockwise until light just comes on.
b. If test light is on, rotate control rod counterclockwise until light just goes off.

18. Depress distributor belt lightly several times. Test light should come on and go off each time.

19. Check the length of the control rod between the tower shaft swivel and distributor. It should be 3/8-1/2 in. See **Figure 49**. If it is not within specifications, one of the following mistakes was made. Correct as required:



a. The flywheel was turned in the wrong direction to align the 36 degree mark with the timing pointer.
b. The breaker point gap is not correct.
c. The No. 1 cylinder was not at top dead center when the distributor drive belt was installed.

20. When control rod length is correct, hold rod in position and tighten locknut securely.

Neutral Interlock Switch Adjustment

1. Shift engine to NEUTRAL.

2. Advance tower shaft to neutral stop arm as shown in **Figure 50**.

3. Connect a 12-volt test light to the neutral interlock switch as shown in **Figure 51**.

4. Loosen the screws holding the switch cam to the distributor housing.

5. Move cam upward until test light just comes on and tighten cam screws.

Neutral Interlock Switch Cam (Shift Arm) Adjustment

1. Shift engine to NEUTRAL.

2. Advance tower shaft to neutral stop arm as shown in **Figure 50**.

3. Connect a 12-volt test light to the neutral interlock switch as shown in **Figure 52**.

4. Loosen the screws holding the switch cam to the shift arm.

5. Move cam upward until test light just comes on and tighten cam screws.

Throttle Shutter Synchronization (3-cylinder Engines)

1. Disconnect throttle link from tower shaft. Pivot throttle cam away from carburetor throttle roller.

2. Loosen the throttle tie bar screws. See **Figure 53**.

3. Make sure throttle shutters are fully closed and tighten tie bar screws (**Figure 53**).

4. Connect throttle link to tower shaft. Set engine at wide-open throttle and make sure throttle shutters are horizontal. If they are not, adjust the throttle cam-to-tower shaft link as required.

Throttle Shutter Synchronization (4-cylinder Engines)

1. Disconnect throttle link from tower shaft. Pivot throttle cam away from carburetor throttle roller.
2. Remove retaining ring holding throttle tie bar to the top carburetor throttle arm.
3. Loosen the throttle tie bar screws. See **Figure 54**.
4. Make sure throttle shutters are fully closed and tighten tie bar screws (**Figure 54**).
5. Check to see that the throttle tie bar end pivot goe in and out of carburetor throttle arm without binding.
6. Install retaining ring to hold throttle tie bar to the top carburetor throttle arm.
7. Connect throttle link to tower shaft.

Throttle Pick-up Point Adjustment

1. Disconnect the throttle link from the tower shaft.

2. Loosen throttle roller shaft locknut. Rotate shaft until throttle roller just touches the throttle cam at the index line as shown in **Figure 55**, then tighten locknut.

3. Reconnect throttle link at the tower shaft.

4. Move tower shaft to wide-open throttle position.

5. Loosen throttle link jam nuts and adjust link until throttle shutters are horizontal, then tighten the jam nuts.

Carburetor Adjustment (3-cylinder Engines)

1. Perform Steps 1-11 of *35 and 45 hp (1966-on), 50 hp (1966 and 1981-on) and 55 hp (1967-1976)* in this chapter to adjust the top carburetor.

2. Perform Steps 9-11 of *35 and 45 hp (1966-on), 50 hp (1966 and 1981-on) and 55 hp (1967-1976)* in this chapter to adjust the middle carburetor.

3. Shut the engine off and turn the top and middle carburetor idle adjustment needles clockwise until they lightly seat. Note the number of turns required to seat the needle on each carburetor.

4. Take the average of the settings noted in Step 3 and set all carburetors accordingly. For example, if the top carburetor required 7/8 turn and the middle carburetor required 5/8 turn, the average of the 2 is 6/8 or 3/4. Back all 3 carburetor needles out 3/4 turn from a lightly seated position.

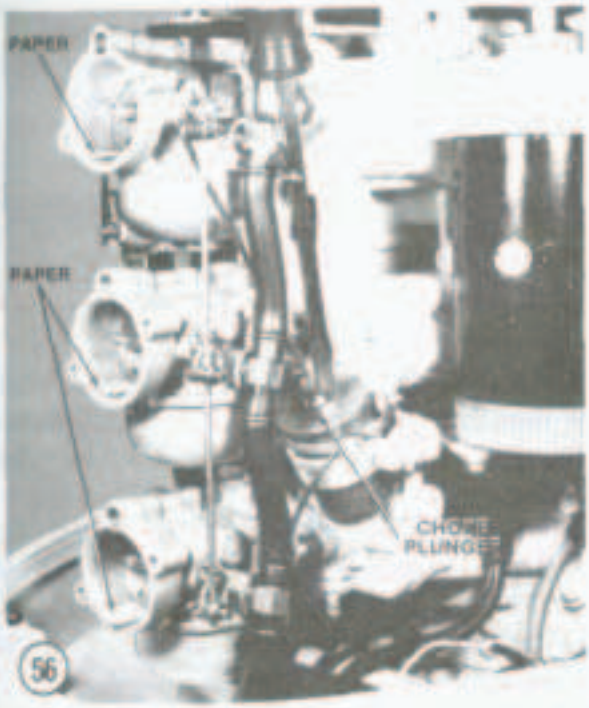
5. Adjust the idle stop screw on the tower shaft as required until engine idles at 700-900 rpm in NEUTRAL.

Carburetor Adjustment (4-cylinder Engines)

1. Perform Steps 1-11 of *35 and 45 hp (1966-on), 50 hp (1966 and 1981-on) and 55 hp (1967-1976)* in this chapter to adjust the top carburetor.
2. Perform Steps 9-11 of *35 and 45 hp (1966-on), 50 hp (1966 and 1981-on) and 55 hp (1967-1976)* in this chapter to adjust the bottom carburetor.
3. Adjust the idle stop screw on the tower shaft as required until engine idles at 700-900 rpm in NEUTRAL.

Choke Shutter Synchronization (3-cylinder Engines)

Refer to **Figure 56** for this procedure.
1. Loosen the screw on each choke swivel to free the choke link.
2. Adjust top end of link about 1/16-1/8 in. beyond the top of the choke swivel and tighten the screw to hold the link in that position.



3. Close the top and middle carburetor choke shutters completely and hold in that position. Tighten middle choke swivel screw.

4. Close bottom carburetor choke completely and tighten bottom choke swivel screw.

5. Loosen the 2 solenoid attaching screws just enough to permit the solenoid to be moved.

6. Slip a small piece of writing paper about 1/2 in. wide into each carburetor air horn. The paper will provide sufficient clearance to prevent the choke shutters from sticking closed.

7. Depress the solenoid plunger (not the rod) to close the choke shutters. Slide the solenoid against the plunger and tighten the solenoid attaching screws.

8. Release the solenoid plunger and push plunger into solenoid. Pull the papers from the air horn. There should be a slight drag as the papers are removed. If drag is excessive, repeat Steps 5-7.

9. Release the solenoid plunger. If the choke shutters are not horizontal, bend the shutter stop groove pin in the carburetor air horn(s) as required to bring the shutters into a horizontal position.

10. Install the carburetor intake cover with new gaskets.

11. Install the engine cover.

Choke Shutter Synchronization (4-cylinder Engines)

The choke shutters are synchronized as described under *Chrysler outboards 35 and 45 hp (1966-on), 50 hp (1966 and 1981-on) and 55 hp (1967-1976)* in this chapter.

CHRYSLER OUTBOARDS 70-140 HP (MOTOROLA ELECTRONIC DISTRIBUTOR IGNITION)

Engine Timing Preparation

1. Disconnect the negative battery lead.
2. Remove the engine cover.
3. Remove all spark plugs from the power head. See Chapter Four.
4. Check position of timing decal on flywheel ring gear. The TDC and 36° marks on the decal must align with the top of the 0° and 36° flywheel lines. If they do not, align and install a new decal.
5. Thread timing tool barrel (part No. T 2937-1) into the top cylinder spark plug hole and screw it in completely.

NOTE

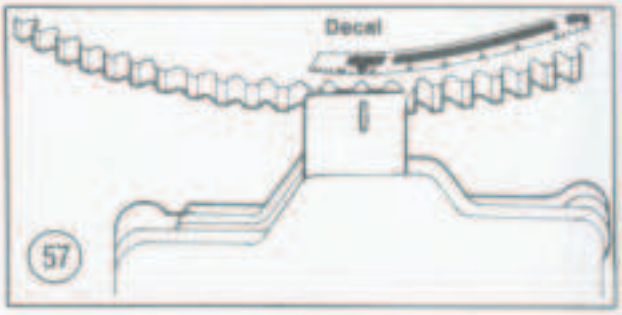
The 85 hp high performance engine has a short crankshaft throw. Top dead center must be found with a dial indicator instead of the timing tool described below. After locating TDC, zero the dial indicator and rotate the flywheel counterclockwise until the indicator gauge reads 0.266 in. Proceed with Step 10.

6. Install the timing tool rod in the barrel with its 2 identification marks ("25-55 hp") toward the outside.
7. While holding the rod tightly against the piston, rotate the crankshaft clockwise to locate top dead center (TDC). This is the point at which the marks on the timing tool rod are at a maximum distance from the barrel. See A, **Figure 29**.
8. Thread the timing tool barrel in or out as required to align the inner timing rod mark with the edge of the barrel. See B, **Figure 29**.

NOTE

If the crankshaft is rotated too far in Step 9, the outer timing rod mark will go beyond the edge of the timing tool barrel. If this happens, repeat the step—do not try to position the rod mark by rotating the crankshaft counterclockwise.

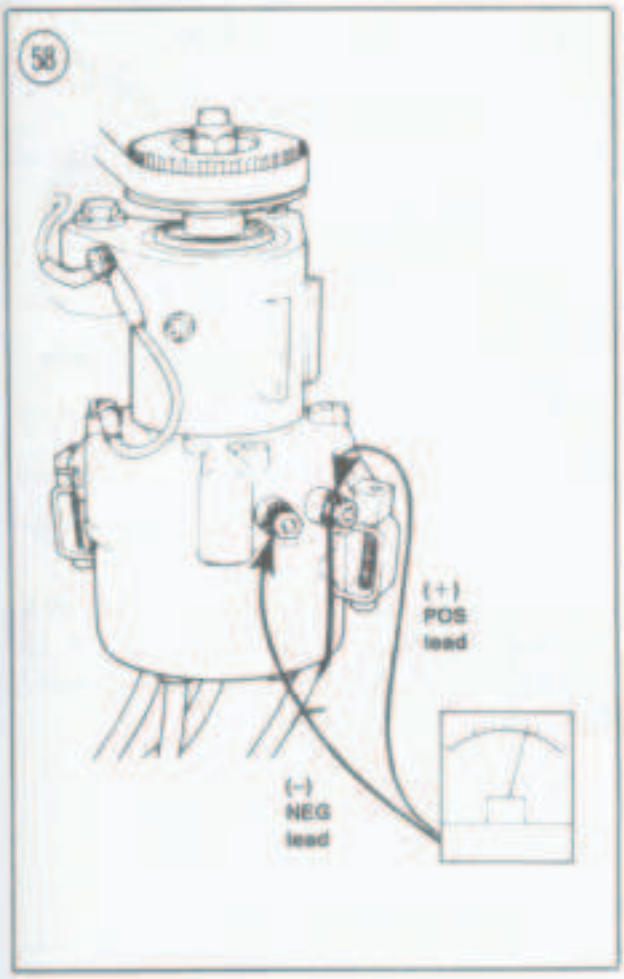
9. Apply slight finger pressure on the end of the rod to prevent it from shooting out during the piston compression stroke. Rotate crankshaft clockwise almost one full turn until the outer timing rod mark aligns with the edge of the barrel. See **Figure 30**. The piston is now positioned exactly 32° before TDC.
10. Make sure the 32 degree mark on the flywheel ring gear decal aligns with the timing pointer index line. See **Figure 57**. If it does not, loosen the timing pointer screws, align the pointer index line with the decal mark and tighten the pointer screws.
11. Rotate the flywheel to align the 0 degree mark with the timing pointer index line.
12. Carefully pry drive belt off distributor pulley.
13. Rotate the distributor pulley to align the pulley index mark with the outer diameter of the flywheel. See **Figure 45**.
14. Install drive belt over distributor pulley. Position the tip of a 0.008 in. feeler gauge against the mid-point of the belt length. Push



against the belt until the feeler gauge bends without moving the belt further. This should provide the desired 3/16-1/4 in. belt deflection. See **Figure 46**.
15. Check the length of the control rod between the tower shaft swivel and distributor. If it is not between 3/8-1/2 in., adjust the nylon swivels as required. See **Figure 49**.
16. Perform *Static Timing* or *Dynamic Timing* as described in this chapter.

Static Timing

1. Disconnect the white/black stripe wire from the distributor housing terminal.
2. Move the tower shaft to the wide-open throttle position.
3. Rotate the flywheel clockwise to align the timing decal 32 degree mark with the timing pointer index mark.
4. Connect a voltmeter between the distributor blue wire and white/black wire terminals as shown in **Figure 58**.
5. Connect the negative battery lead and turn the ignition switch to the ON or RUN position without starting the engine.
6. Loosen the distributor control rod locknut (**Figure 49**). Rotate the control rod until the voltmeter needle moves from 0 volts to 12 volts. Hold control rod in this position and tighten locknut.
7. Lightly depress distributor drive belt several times while watching the meter scale. The needle should deflect each time the belt is depressed. If it does not, repeat Step 6.



Dynamic Timing

1. Reconnect the negative battery lead and reinstall the spark plugs.
2. Connect a timing light as shown in **Figure 59**.
3. With the engine in a test tank or on the boat in the water, start the engine and accelerate to wide-open throttle.
4. Point the timing light at the flywheel and timing pointer and check timing mark alignment. If the 32 degree mark on the decal does not align with the timing pointer index mark, retard the engine and shut it off.
5. Loosen the control rod locknut (**Figure 49**) and adjust the control rod clockwise to retard or counterclockwise to advance the timing.
6. Restart the engine and repeat Step 4. If timing is correct, shut the engine off and tighten the control rod locknut. If timing is still incorrect, repeat the procedure as required until the marks align, then tighten the locknut.

Carburetor Adjustment, Throttle and Choke Shutter Synchronization

Adjust the carburetors and synchronize the throttle and choke shutters as described under *70-135 hp (Distributor Breaker Point Ignition)* in this chapter.

CHRYSLER OUTBOARDS 55, 125 AND 140 HP (PRESTOLITE CD IGNITION)

Engine Timing

The engine should be in a test tank or on the boat in the water for this procedure.

1. Remove the engine cover.
2. Connect a timing light according to manufacturer's instructions.
3. Move the throttle to the full retard position and crank the engine while pointing the timing light at the flywheel and carburetor flange adapter timing marks. The TDC mark

on the flywheel should align with the adapter timing mark ±2°.

WARNING

Do not attempt to adjust the timing link with the engine running. It is close to the flywheel ring gear and serious personal injury can result.

4. If the timing marks do not align as specified in Step 3, loosen the timing link locknut (**Figure 60**) and turn the adjusting screw clockwise to retard or counterclockwise to advance the timing. Tighten the locknut and repeat Step 3.

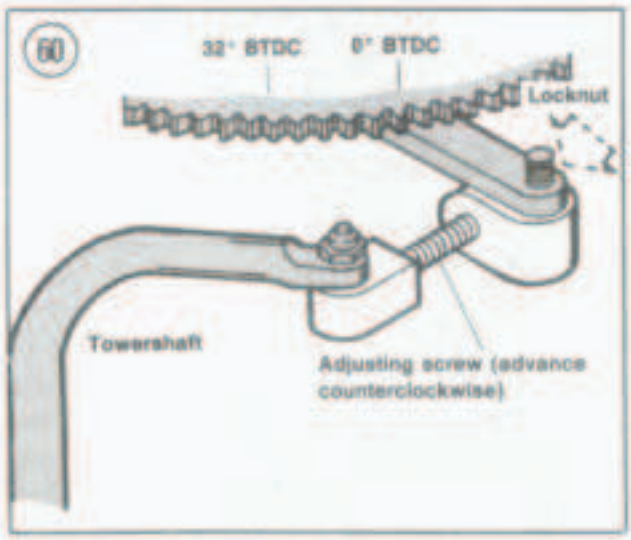
NOTE

All 1978-1981 140 hp models were factory-timed at 32° BTDC. Due to variations in fuel quality and octane rating, Chrysler Marine changed the timing to 30° BTDC on 1982 models and recommends that the timing on all previous 140 hp models be reset from 32° to 30°.

5. When the timing marks align in Step 3, start the engine and run at 4,500-5,500 rpm. Check timing mark alignment with the timing light. The 32 degree (55 and 125 hp) or 30 degree (140 hp) mark should align with the timing pointer index mark.
6. If the timing marks do not align as specified in Step 5, shut the engine OFF. Loosen the timing link locknut (**Figure 60**) and turn the adjusting screw clockwise to retard or counterclockwise to advance the timing.
7. Repeat Step 5 and Step 6 as required. When the timing is correct, shut the engine off and tighten the locknut.

Carburetor Adjustment, Throttle and Choke Shutter Synchronization

Adjust the carburetors and synchronize the throttle and choke shutters as described under *Chrysler outboards 55 hp (1977-1980), 60 hp (1974-1976), 65 hp (1977-1978) and 105, 120 and 135 hp (1975-1977) with Magnapower II Ignition* in this chapter.



FORCE OUTBOARDS 4, 9.9 AND 15 HP

Throttle Pick-up Point Adjustment

1. Remove the engine cover.
2. Advance the throttle control until the carburetor throttle plate starts to open. If adjustment is correct, the center of the throttle shaft follower should be aligned with the cam mark. See **Figure 61**.
3. If the cam mark did not intersect the follower at the point where the throttle started to open, loosen the screw holding the throttle cam to the stator plate.
4. Pivot the cam in or out as required to align the mark with the center of the follower. Tighten the screw securely.
5. Repeat Step 2 to recheck the adjustment. If still not correct, repeat Step 3 and Step 4.

Carburetor Adjustment

1. Turn the idle adjustment screw clockwise until it lightly seats in the carburetor. Do not