

## SYNCHRONIZATION AND LINKAGE ADJUSTMENTS

To ensure consistent engine idling and smooth operation throughout the full RPM range, it is important that each procedure be performed exactly as written and in the following sequence:

- 1 st - Ignition Timing Adjustment
- 2nd - Carburetor Synchronization
- 3rd - Oil Pump Aperture Adjustment



### WARNING

Before beginning procedures, disable the ignition system to prevent accidental engine startup.



### CAUTION

The following applies to all engines:

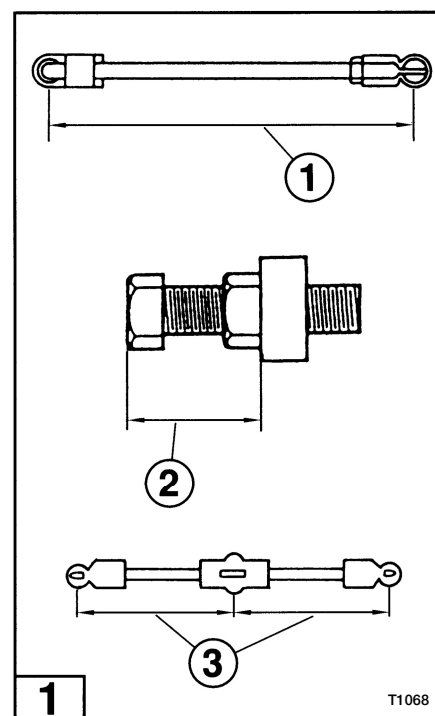
1. Should the stopper lever barely contact the stopper, damage to the carburetor may occur when the throttle lever is in the full throttle position. Stopper lever should firmly contact the stopper.
2. If stopper lever is not in firm contact with the stopper, but a small gap is present, no damage should occur.
3. Carburetors #2, #3 and/or #4 will have a gap between throttle stop and stopper when Carburetor #1 is properly adjusted.
4. After fine adjustment, stopper bolt lengths may differ from pre-adjustment settings.

### NOTE

- 1** Adjustment lengths for links (1), stoppers (2), and carburetor link rods (3) are measured as shown.

### NOTE

The seam at the mating surfaces of the crankcase halves is the alignment point for all ignition timing degree measurements.



# SECTION 2

## Ignition Timing Adjustment

Models 40D / 50D

- 2
1. Pre-set ignition timing link (1) and throttle link (2) to specified lengths.

| Model | Length (approximately)   |                   |
|-------|--------------------------|-------------------|
|       | Ignition Timing Link (1) | Throttle Link (2) |
| 40D   | 5.04 in [129 mm]         | 3.86 in [99 mm]   |
| 50D   | 5.04 in [129 mm]         | 3.86 in [99 mm]   |

- 3
2. Check that the carburetor throttle is fully open when the advancer arm (3) is in the fully advanced position. If throttle is not fully open, make fine adjustments using throttle link (2).

- 2
3. Adjust ignition timing link (1) so that the ignition timing at full throttle matches the following specifications:

| Model | Ignition Timing - Full Throttle |
|-------|---------------------------------|
| 40D   | BTDC 18° ± 1°                   |
| 50D   | BTDC 24° ± 1°                   |

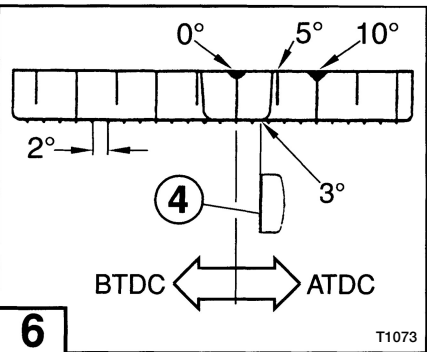
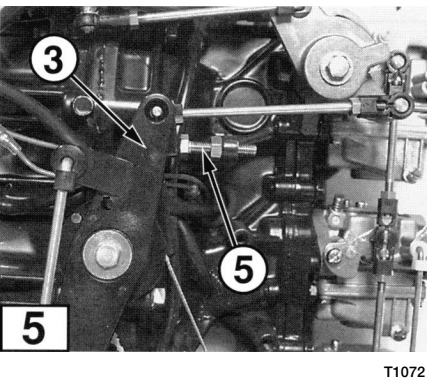
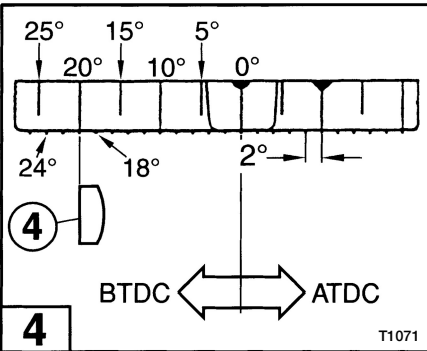
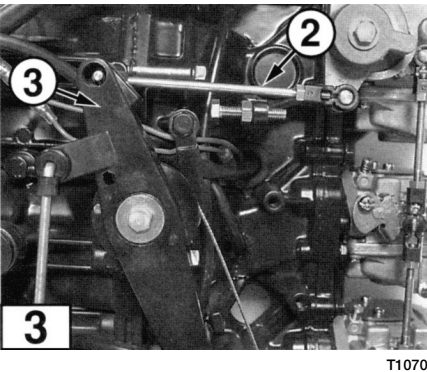
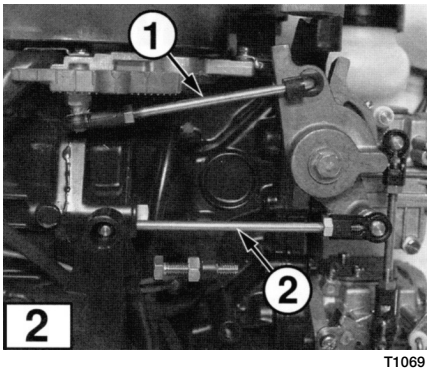
### NOTE

- 4
- Align flat surface (4) of crankcase mold boss with calibration of set ring.
- 5
4. After adjusting at maximum engine speed, set the advancer arm (3) to minimum engine speed and adjust the ignition to ATDC 3° ± 1° using the low speed side stopper (5).

| Model | Ignition Timing - Throttle Closed |
|-------|-----------------------------------|
| 40D   | ATDC 3° ± 1°                      |
| 50D   | ATDC 3° ± 1°                      |

### NOTE

- 6
- Align flat surface (4) of crankcase mold boss with calibration marks on set ring.



# GENERAL SERVICE INFORMATION

## Ignition Timing Adjustment

### Models 40D2 / 50D2

- 7** 1. Adjust ignition timing link (1) and throttle link (2) to specified length.

| Model | Length                   |                   |
|-------|--------------------------|-------------------|
|       | Ignition Timing Link (1) | Throttle Link (2) |
| 40D2  | 3.98 in [101 mm]         | 4.53 in [115 mm]  |
| 50D2  | 3.86 in [98 mm]          | 4.53 in [115 mm]  |

- 8** 2. Place advancer arm (3) in the maximum speed position (wide open throttle) and make sure the carburetor throttle is fully open. If throttle is not fully open, make fine adjustments using throttle link (2).

- 7** 3. Adjust ignition timing link (1) so ignition timing at full throttle matches the following specifications:

| Model | Ignition Timing - Full Throttle |
|-------|---------------------------------|
| 40D2  | BTDC $18^{\circ} \pm 1^{\circ}$ |
| 50D2  | BTDC $20^{\circ} \pm 1^{\circ}$ |

### NOTE

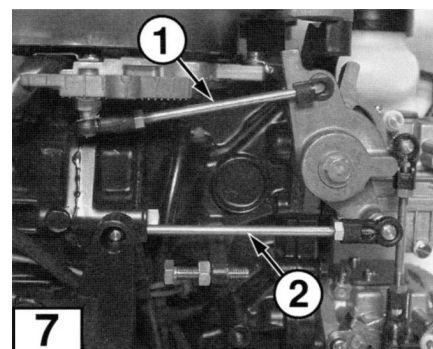
- 9** Align flat surface (4) of crankcase mold boss with calibration marks on set ring.

- 10** 4. Place advancer arm (3) in the minimum speed position (throttle fully closed) and adjust low speed side stopper (5) so ignition timing matches the following specifications:

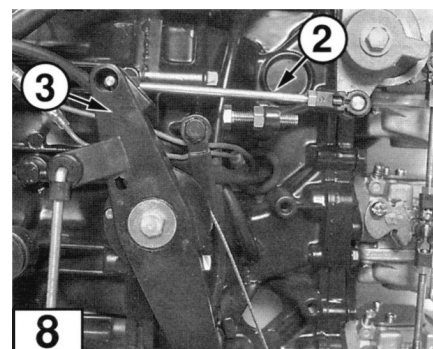
| Model | Ignition Timing - Throttle Closed |
|-------|-----------------------------------|
| 40D2  | ATDC $3^{\circ} \pm 1^{\circ}$    |
| 50D2  | ATDC $3^{\circ} \pm 1^{\circ}$    |

### NOTE

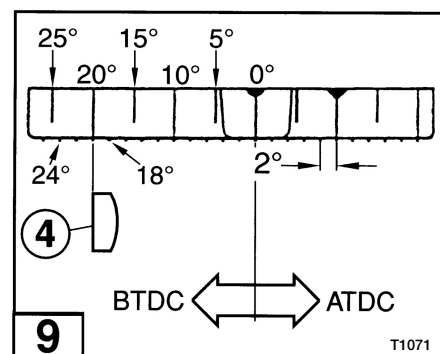
- 11** Align flat surface (4) of crankcase mold boss with calibration marks on set ring.



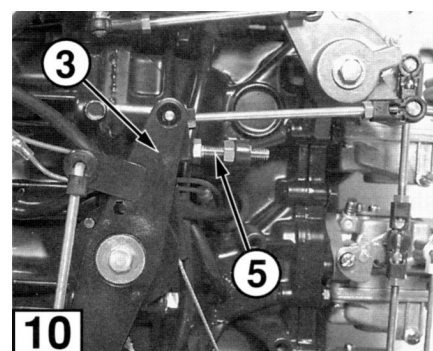
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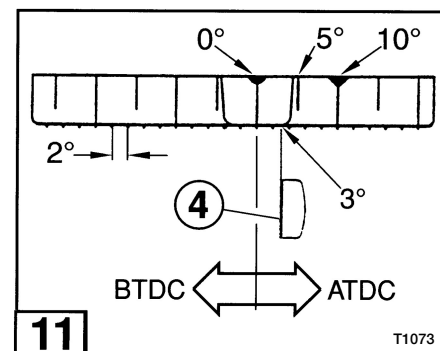
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