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IGNITION TIMING

Normally ignition timing adjustment should not be required. It has been set at factory and it should remain correctly adjusted since every part is fixed and not adjustable. The only time the ignition timing might have to be changed would be when replacing the crankshaft, the magneto flywheel, the CPS or the ECM. If the ignition timing is found incorrect, first check for proper crankshaft alignment. This might be the indication of a twisted crankshaft. Refer to LEAK TEST AND ENGINE DIMENSION MEASUREMENT.

The ignition timing can be checked with either the engine hot or cold. Also, the ignition timing is to be checked at 3500 RPM with a timing light.

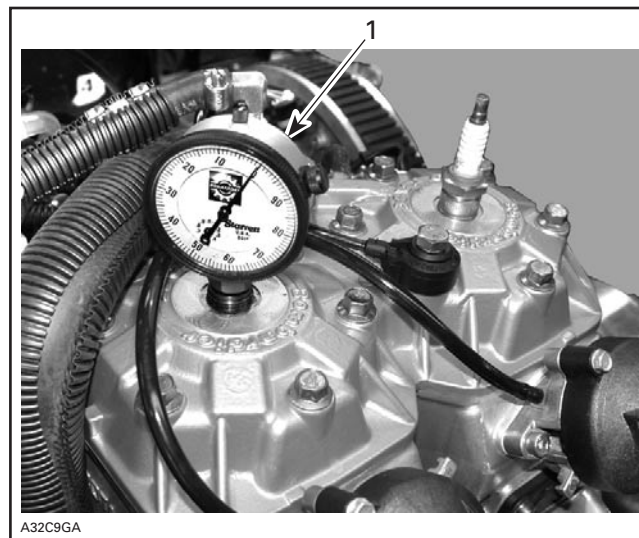
Engine break-in retard timing varies depending on engines/models for their first hour(s) of operation.

ENGINE	ENGINE RETARD TIMING (°)/DURATION (h)
793 SDI	- 2°/3 h

NOTE: Between 3000 and 4000 RPM, the spark advance does not change. So when checking ignition timing at 3500 RPM, a change in engine speed within ± 500 RPM will not affect the timing mark when checked with the timing light.

Scribing a Timing Mark

1. Clean the area around the MAG spark plug, and remove it.
2. Install the TDC gauge in the spark plug hole, (magneto side) and adjust as follows:
 - a. Position the MAG piston at approximately TDC.



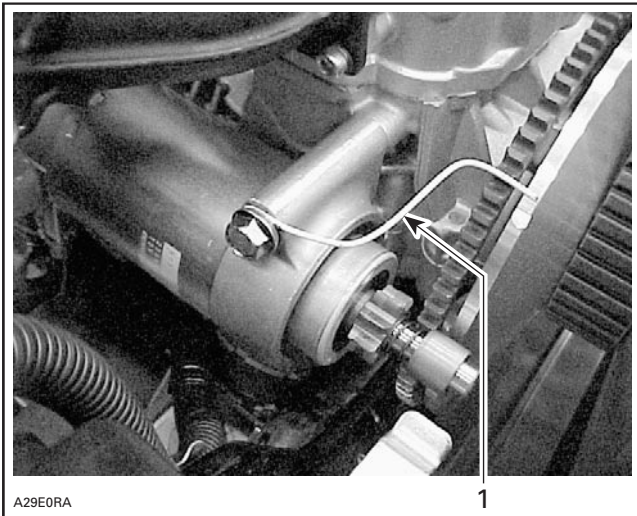
TYPICAL

1. TDC gauge on MAG side
 - b. Assemble the gauge to the adaptor and tighten the roller lock nut. Do not tighten the adaptor lock nut.
 - c. Screw the adaptor into the spark plug hole and tighten to prevent movement in the plug hole.
 - d. Position the dial face toward the PTO. Move the gauge down until the needle just begins to move, then move down a further 5 or 6 mm (approximately 1/4 in). Tighten adaptor lock nut by hand.
3. Locate the piston TDC position as follows:
 - a. Slowly rotate the drive pulley back and forth across TDC while observing the needle. Note that the needle stops moving only as the piston is changing direction.
 - b. Rotate the dial face so that "0" is in line with the needle when it stops moving.
 - c. Again, slowly rotate the drive pulley back and forth across TDC and adjust the dial face to "0", until the needle always stops exactly at "0" before changing direction.
 - d. "0" now indicates exact TDC.

Section 05 ELECTRICAL

Subsection 02 (IGNITION TIMING)

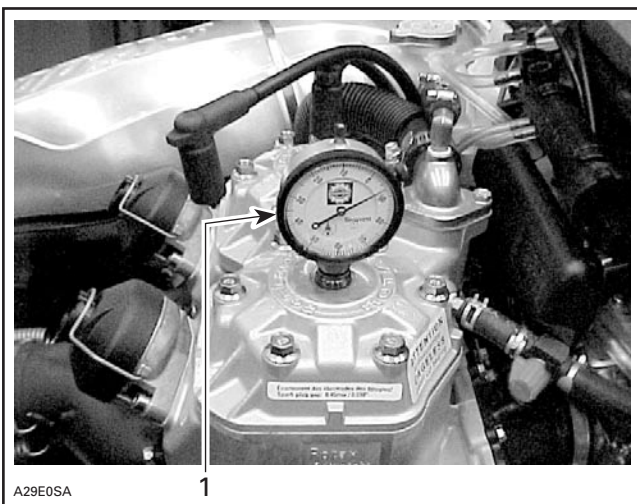
4. Rotate the drive pulley clockwise, one-quarter turn then carefully rotate it counterclockwise until the needle indicates the specified measurement, indicated in TECHNICAL DATA.
5. Twist a wire as shown and use it as a pointer. Install the wire on upper starter bolt.



TYPICAL

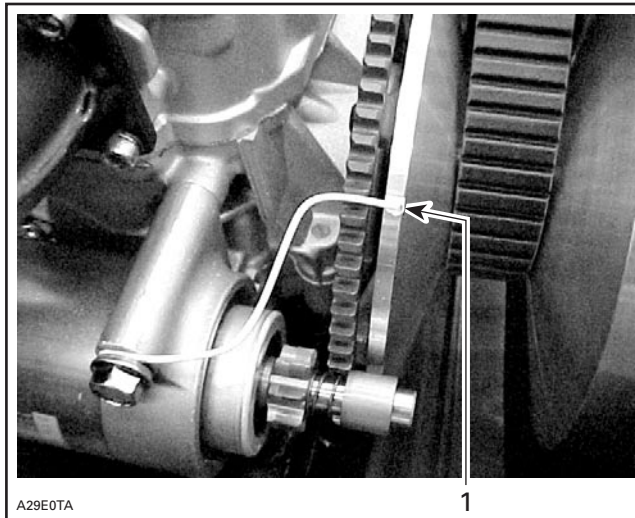
1. Pointer

6. With the TDC gauge indicating specified timing, scribe a mark on drive pulley inner half in line with pointer end.



TYPICAL

1. TDC gauge indicating specified timing

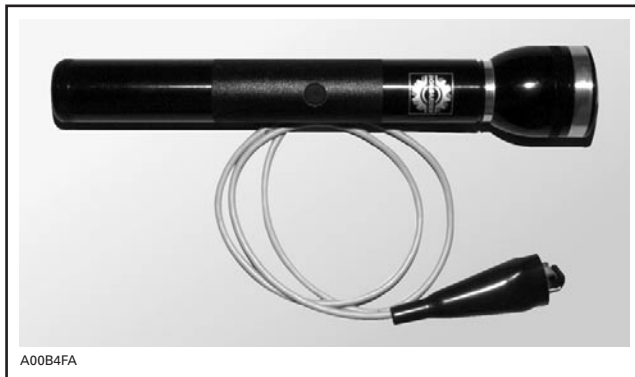


TYPICAL

1. Timing mark in line with pointer end

Checking Ignition Timing

Use timing light (P/N 529 031 900).



TIMING LIGHT (P/N 529 031 900)

To check the ignition timing, refer to illustration and proceed as follows:

⚠ WARNING

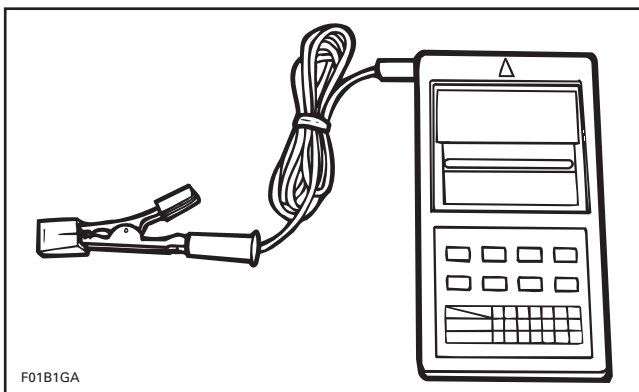
Place ski tips against a wall, raise rear of vehicle on a stand, so that track does not contact the ground. Do not allow anyone in front of or behind the vehicle while engine is running. Keep clear of track and do not wear loose clothing which can get caught in moving parts.

1. Connect the timing light pick-up to a spark plug cable.

Section 05 ELECTRICAL

Subsection 02 (IGNITION TIMING)

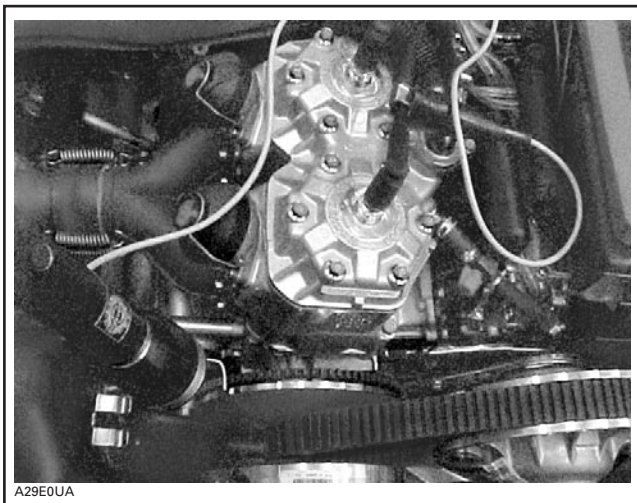
Connect a digital induction type tachometer (P/N 529 014 500).



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TACHOMETER (P/N 529 014 500)

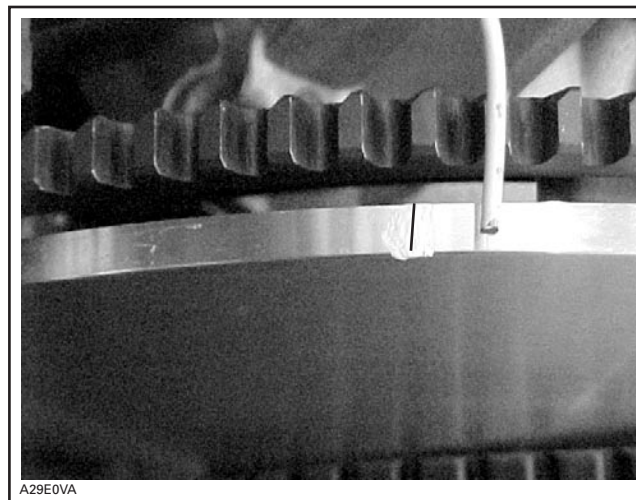
2. Start the engine and point timing light on timing mark. Bring engine to 3500 RPM for a brief instant.



A29E0UA

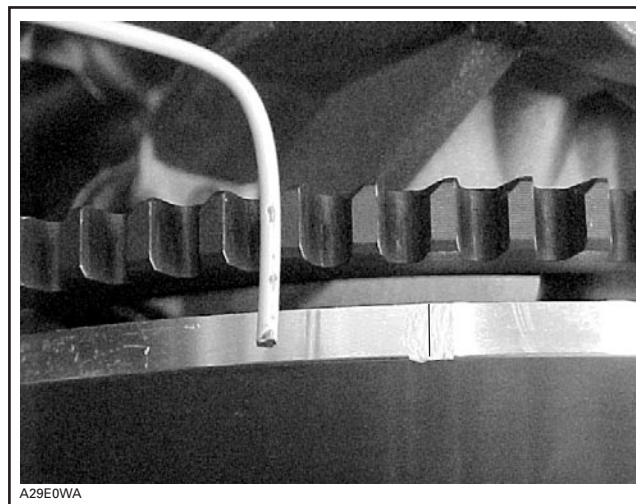
TYPICAL

The timing mark must be aligned with pointer end. If such is not the case, note if timing is retarded or advanced. Tolerance is $\pm 0.5^\circ$.



A29E0VA

TIMING RETARDED BY ABOUT 2°



A29E0WA

TIMING ADVANCED BY ABOUT 2°

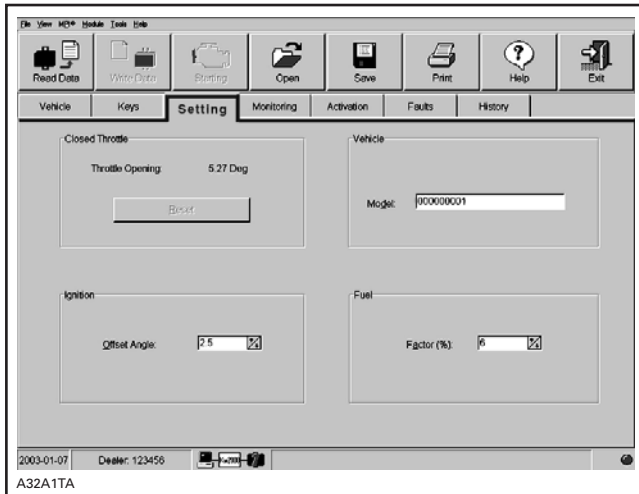
Section 05 ELECTRICAL

Subsection 02 (IGNITION TIMING)

Changing Timing

VCK (Vehicle Communication Kit)

VCK (Vehicle Communication Kit) (P/N 295 035 844) must be used, with B.U.D.S. software to change the ignition timing. Look under the proper **Setting** section of the B.U.D.S. software to change the ignition timing.



Detailed information about the B.U.D.S. software and it's usage is available under it's **Help** section.

TESTING PROCEDURE

HEADLIGHT AND ACCESSORIES SYSTEMS TESTING

Connect VCK (P/N 529 035 844). In B.U.D.S. click on the relay 2 (R2) button to supply headlight system with 12 volts.

To supply 12 volts in the accessories system, click on the relay 3 (R3) button.

Use the wiring diagram in WIRING DIAGRAM section to troubleshoot headlight system and accessories system.