Buell®
AMERICAN MOTORCYCLES

BUELL BYTES

COMPUTER GENERATED
TECHNICAL UPDATES & INFORMATION
FOR BUELL MOTORCYCLES

ISSUE #4 **DECEMBER 1995**

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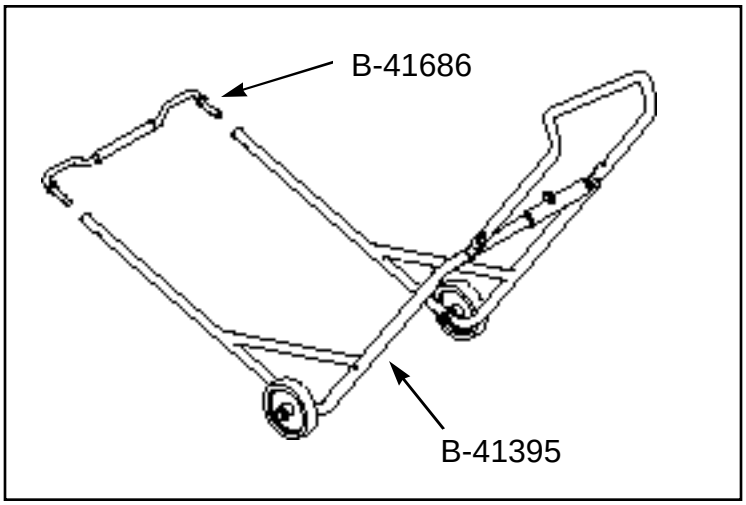
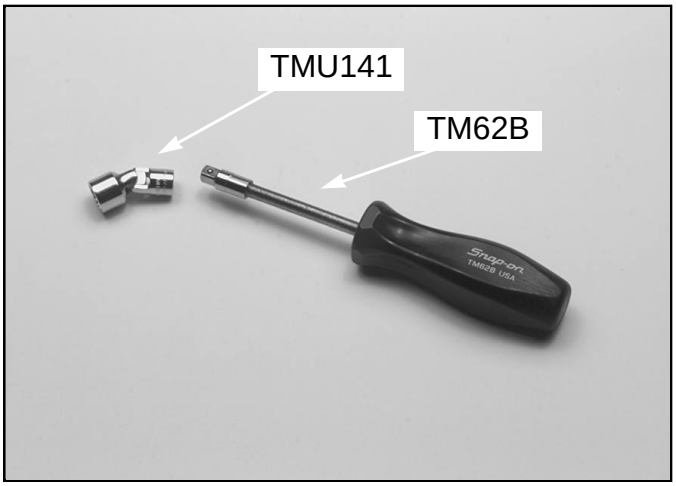
S1-LIGHTNING TOOLS



An adapter to the Front Lift Stand, B-41395, has been released and will be available in early January through Kent-Moore. The adapter, B-41686, will lift the S1 front end to permit access during all front end servicing including tire changes, front suspension servicing or head bearing adjustment.
The price is $96.50.

The Snap-On Phillips bit, TMP23A, makes it easy to set the vehicle's idle speed. The tool is used with the Kent-Moore carburetor idle adjusting tool, HD-33413.
The bit cost is $14.00.



Removing battery hardware is simplified using a Snap-On flexible handle and a 7/16 flex socket.
Available from your Snap-On dealer.

Flex handle	TM62B	$18.75
7/16 flex socket	TMU141	$23.15

LITERATURE UPDATE

Please remember that Buell literature is **NOT** automatically shipped to your dealership. You must place an order through the Buell Distribution Corporation (BDC).

1996 S1-Lightning

Predelivery & Setup Manual	99946-96Y
Warranty Job/Time Code	99996-96Y
Service Manual *	99490-96Y
Parts Catalog *	99571-96Y

1996 S2-Thunderbolt

Predelivery & Setup Manual	99947-96Y
Warranty Job/Time Code	99997-96Y
Service Manual	99489-96Y
Parts Catalog	99570-96Y

* - available in Feb. 1996

TOUCH-UP PAINT PART NUMBERS

Looking to repair a painted part? Here are the part numbers for 1 oz. containers of touch-up paint. Note: Some kits contain up to 3 bottles: base, top, and clear coat.

S2/S2-T Thunderbolt

Yellow Jacket Pearl	96001-94Y
Ice White Pearl	96002-94Y
Caribbean Candy Blue	96003-94Y
Black Sapphire Pearl	96004-94Y
Red Snap	96005-94Y
Parkway Blue	96006-96Y
Canyon Red	96007-96Y
Quicksilver Metallic	96008-96Y
Silver Titanium (for S2-T frames/wheels)	96012-96Y
White (for S2 frames)	96009-96Y
White (for wheels)	96010-96Y

S1-Lightning

Red Snap	96005-94Y
High Voltage Yellow	96013-96Y
Carbon Black	96014-96Y
Charcoal Metallic (for S1 frames/wheels)	96011-96Y

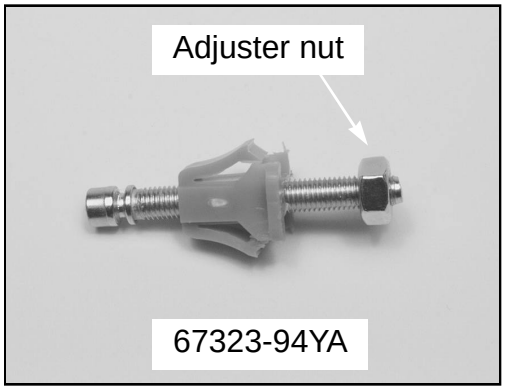
NEW PARTS

Headlight Adjusters

S2 & S2-T Thunderbolt models can now have the headlight adjusted without removing the front fairing. A new one piece adjuster has a nut fixed to the threaded shaft permitting adjustment. This new part, 67323-94YA, can be retrofit to earlier vehicles.

Beginning VIN numbers

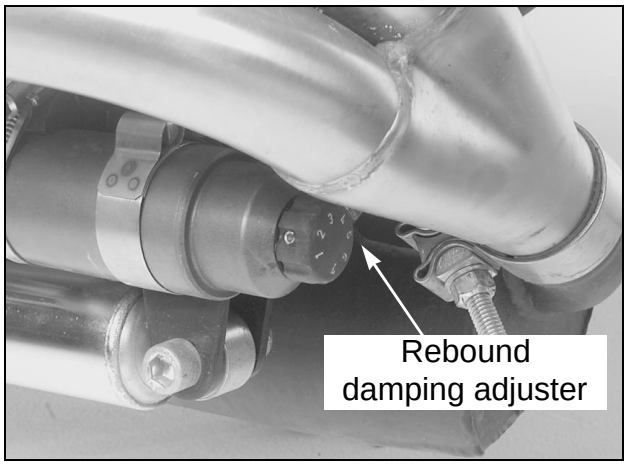
1996	49 state	Calif.
S2	074	001
S2-T	167	001

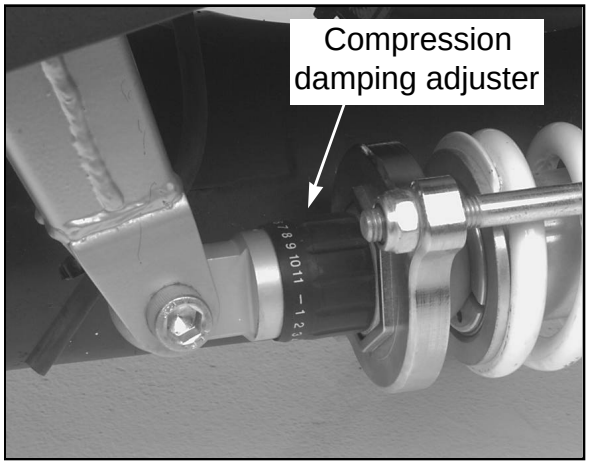


LITERATURE CHANGES

Suspension Adjusters

The identification of the rear suspension adjusters was incorrect on the S1 Predelivery & Set-up Manual. Corrective replacement pages are included in this Buell Bytes for your dealership.





Tire Pressures

It has also been decided to have two tire pressure recommendations for the S1. Please note the changes.

TIRE POSITION	SOLO RIDING	GVWR
Front	32 psi	36 psi
Rear	36 psi	38 psi

California Idle Settings

All California S1-Lightnings were certified at a very specific idle setting. The idle should be set at **1150-1250** rpm.

SUSPENSION

INSPECTION

Check factory suspension adjustments against Table 2.

Adjust front forks by first turning the slotted dial clockwise with a screwdriver until it stops. Then turn the dial counterclockwise the recommended 12 or 20 positions. A higher number of clicks increases damping.

NOTE

Rear spring preload must be set before the customer adjusts any other suspension settings. See REAR PRELOAD ADJUSTMENT on page 18.

Table 2. Suspension Settings

ADJUSTMENT	RANGE IN CLICKS	FACTORY SETTING	SEE FIGURE
Front fork compression	28	20	20
Front fork rebound	28	12	20
Rear shock rebound	7	3	21
Rear shock compression	11	5	22

FASTENER CHECK

Check mounting torque and adjust for rider weight.

1. See Figure 23. Tighten shock absorber fasteners (metric) to 30-50 ft-lbs (41-68 Nm) torque.
2. See FORK AND STEERING HEAD CLAMPS on page 24 for front suspension fasteners.

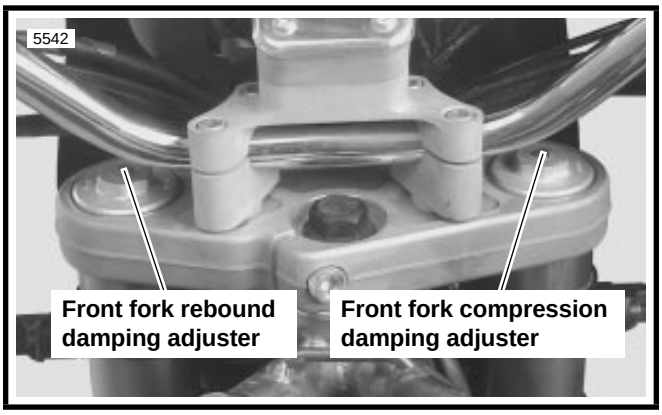


Figure 20. Front Fork Adjustments

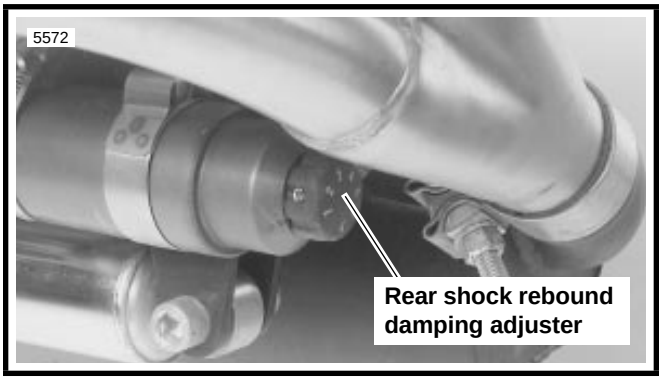


Figure 21. Rear Shock Rebound Adjuster

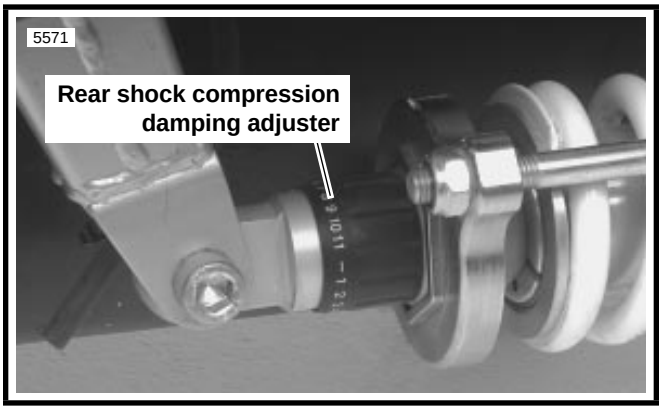


Figure 22. Rear Shock Compression Adjuster

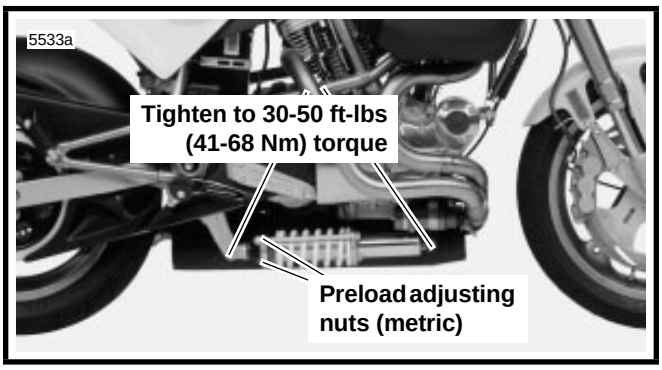


Figure 23. Shock Absorber Mounting Hardware

TIRES AND WHEELS

TIRE INFLATION

⚠WARNING

Do not inflate any tire beyond its maximum inflation pressure as specified on tire sidewall. Overinflation may cause tire to suddenly deflate leading to personal injury.

Check air pressure when tires are cold. Compare pressure against Table 3.

Table 3. Tire Pressures

TIRE POSITION	PRESSURE FOR SOLO RIDING	PRESSURE AT GVWR
Front	32 PSI	36 PSI
Rear	36 PSI	38 PSI

FRONT AXLE NUT

See Figure 24. Tighten front axle nut (metric) to proper torque as follows:

1. Loosen front axle pinch screws (metric).
2. Insert screwdriver/rod through hole in axle to hold axle from rotating.
3. Tighten axle nut (metric) to 50 ft-lbs (68 Nm) torque.
4. Bounce front end a few times to make sure fork lowers are not binding on axle.
5. Tighten front axle pinch screws (metric) to 11-13 ft-lbs (15-18 Nm) torque.

REAR AXLE NUT

See Figure 25. Check axle nut (metric) for proper torque. Torque should be 70 ft-lbs (95 Nm).

SPEEDOMETER CABLE ROUTING

See Figure 26. Verify that speedometer cable is routed so it does not contact front tire, fender or fork.

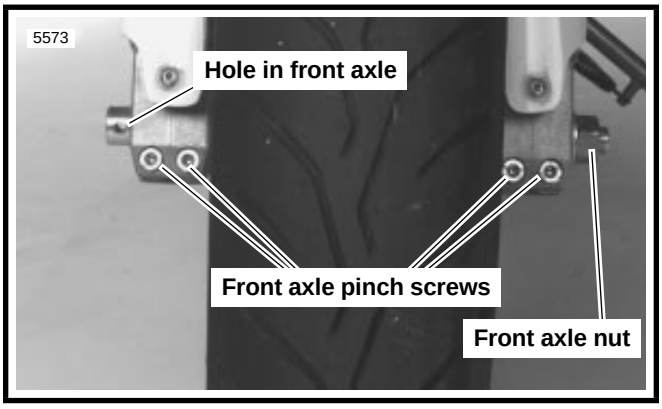


Figure 24. Front Axle

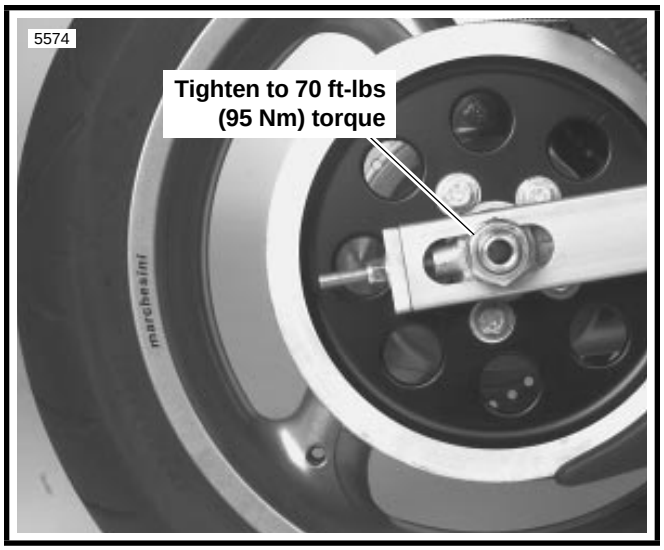


Figure 25. Rear Axle

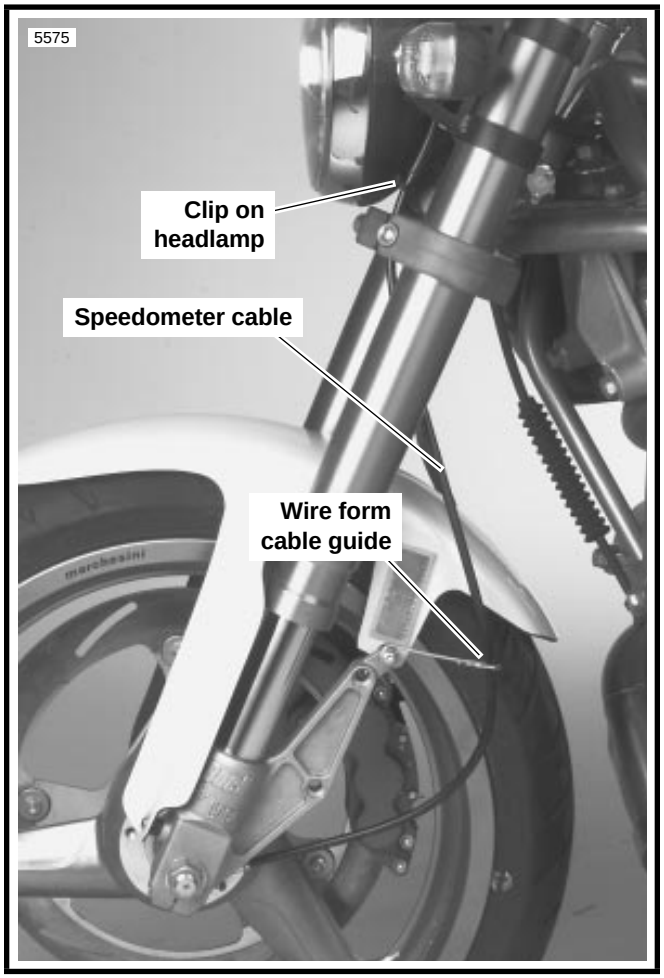


Figure 26. Speedometer Cable

ENRICHENER CABLE

Check operation and adjustment.

See Figure 57. Verify that fuel enrichener knob (2) opens with relative ease, remains fully open without holding and closes without binding. If adjustment is needed, perform the following:

1. Loosen hex nut (5) at inboard side of mounting bracket. Remove cable assembly from mounting bracket slot.
2. Hold cable assembly at flats (4). Turn plastic nut (1) counterclockwise until fuel enrichener knob (2) slides inward without restriction.
3. Turn plastic nut (1) clockwise against lockwasher (3) until fuel enrichener knob (2) remains fully open without holding and closes with relative ease.
4. Position cable assembly in mounting bracket slot. Tighten hex nut (5) against mounting bracket.

NOTE

Do not lubricate fuel enrichener cable. Cable must have sliding resistance to work properly.

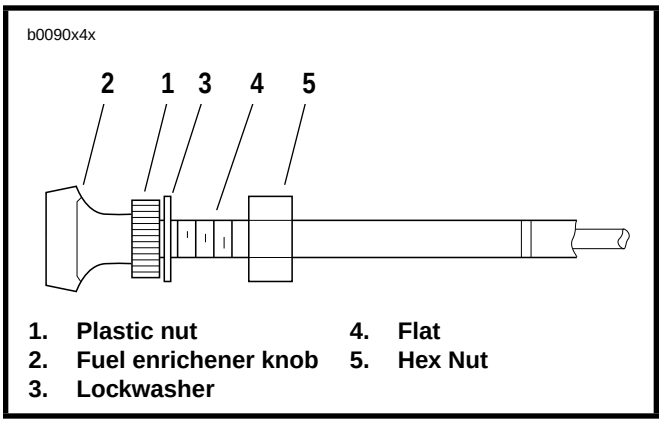


Figure 57. Enrichener Knob

CARBURETOR IDLE

Check idle and fast idle settings against Table 7.

Table 7. Carburetor Settings

IDLE SPEED AT NORMAL OPERATING TEMPERATURE	RPM
Regular idle-49 state models	950-1050
Regular idle-California models	1150-1250
Fast idle-all models (with enrichener knob out)	2000

FUEL VALVE

INSPECTION

⚠CAUTION

Some fuel suppliers sell gasoline which has been blended with an alcohol or an ether. The type and amount of alcohol or ether added to the fuel is important.

- **DO NOT USE GASOLINES CONTAINING METHANOL (methyl alcohol or wood alcohol). Using gasoline/methanol blends will result in starting and driveability deterioration and damage to critical fuel system components.**
- **Gasolines containing ETHANOL (ethyl alcohol or grain alcohol) can be used. Gasoline/ethanol blends are a mixture of 10% ethanol and 90% unleaded gasoline. They are identified as "gasohol," "ethanol enhanced," or "contains ethanol."**
- **Gasolines containing METHYL TERTIARY BUTYL ETHER (MTBE) can also be used. Gasoline/MTBE blends are a mixture of gasoline and as much as 15% MTBE.**
- **REFORMULATED OR OXYGENATED GASOLINES (RFG): "Reformulated gasoline" is a term used to describe gasoline blends that are specifically designed to burn cleaner than other types of gasoline, leaving fewer "tailpipe" emissions. They are also formulated to evaporate less when you are filling your tank. Reformulated gasolines use additives to "oxygenate" the gas. Your motorcycle will run normally using this type of gas. Buell recommends you use it when possible, as an aid to cleaner air in our environment.**

Because of their different chemical properties (which affect fuel volatility and ignition characteristics), these blends may adversely affect the starting, driveability, and fuel efficiency of the motorcycle. If you experience these problems, Buell recommends using straight, unleaded gasoline.

Fill fuel tank and check for leaks at fuel valve and carburetor.

1. Partially fill fuel tank with a premium unleaded gasoline, 91 octane or higher.
2. See Figure 58. After adding gasoline, check for smooth operation of the fuel valve.
3. Inspect fuel lines and valve for leaks.

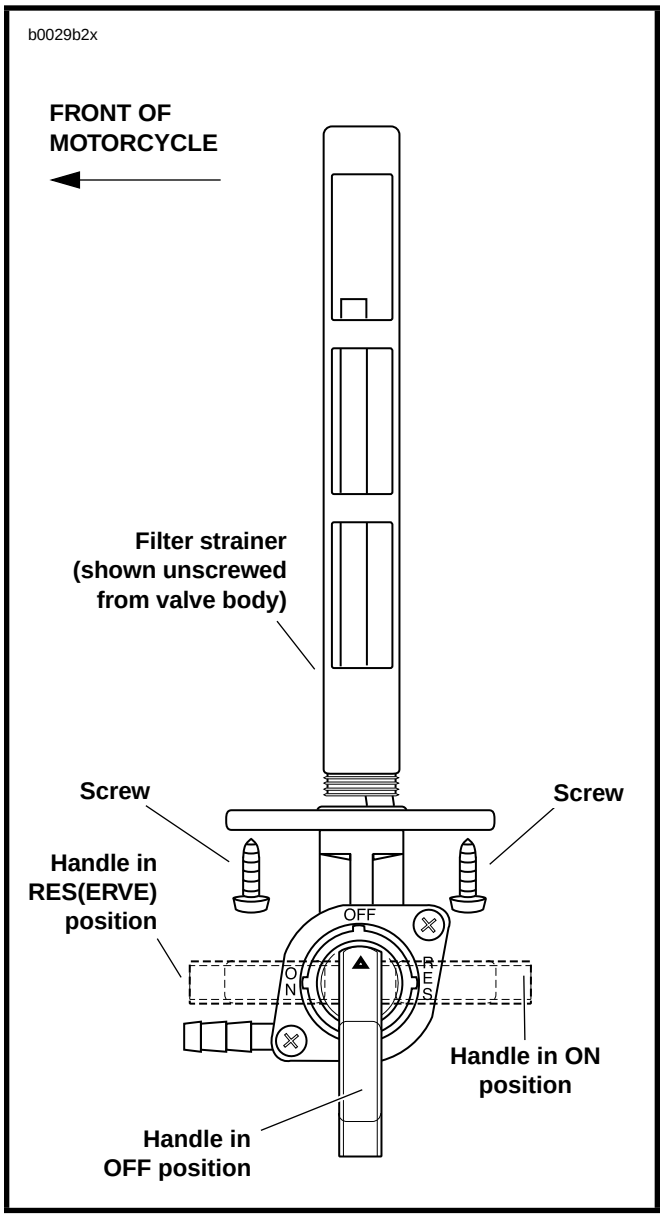


Figure 58. Fuel Valve

IGNITION TIMING

ADJUSTMENT

Check for proper RPM and ignition timing as follows:

1. See Figure 59. Thread TIMING MARK VIEW PLUG (Part No. HD 96295-65D) into timing inspection hole. Be sure view plug does not touch flywheel.

2. Connect leads of INDUCTIVE TIMING LIGHT (Part No. HD-33813) to front spark plug cable, to battery positive terminal and to ground.

3. Be sure vacuum hose is properly installed at carburetor and at vacuum-operated electric switch (V.O.E.S.).

4. Start engine. Set engine speed by turning idle adjustment screw clockwise to increase speed or counterclockwise to decrease speed. Use CARBURETOR IDLE ADJUSTMENT TOOL (Part No. HD-33413) and TIP (SNAP-ON Part No. TMP23A) as shown in Figure 60.

   a. On 49 state models, idle speed is 950-1050 RPM

   b. On California models, idle speed is 1150-1250 RPM

5. Timing light will flash each time ignition spark occurs. Aim timing light into timing inspection hole. Front cylinder advance timing mark should be centered in timing inspection hole. If not, refer to Service Manual procedures to adjust ignition timing.

6. Set engine slow idle speed as described in Step 4 with engine running at normal operating temperature and with enrichener control knob pushed in fully.

NOTE

- *Buells have an enrichener circuit that will cause the engine to idle at approximately 2000 RPM with the engine at normal operating temperature and the enrichener knob pulled out fully. The increase in idle speed is intended to alert the rider that the engine is warmed up to normal operating temperature and that the enrichener knob should be pushed in all the way. Continuing to use the enrichener circuit when the engine is at normal operating temperature will cause fouled plugs.*

- *Be sure the engine is warmed up to normal operating temperature and the enrichener knob is pushed all the way in before adjusting engine idle speed. Be aware that, because there are variations in individual components, it is possible for a properly warmed-up engine to idle at 2000 RPM with the enrichener knob pulled out partially.*

7. After engine has reached normal operating temperature, turn engine off. Check engine oil level in manner previously specified. This time, fill oil tank to upper level mark on dipstick.

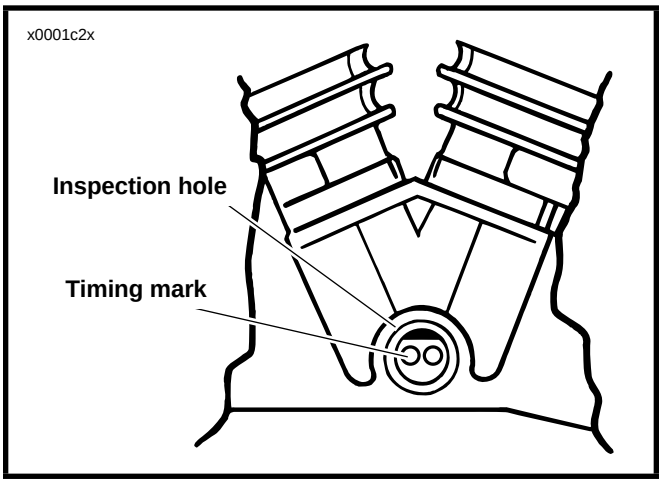


Figure 59. Timing Inspection Hole

Figure 60. Adjusting Idle Speed

NOTES