MODEL APPLICATION

Year	Model	Beginning Frame No.	Remarks
1978	KZ400-B1	K4-077801 ~	Front disc and rear drum brake system, 2-into-2 exhaust system, electric starter and kickstarter, six gear
	KZ400-C1	K4S-24701 ~	Front drum and rear drum brake system, 2-into-1 exhaust system, kickstarter only, five gears
1979	KZ400-B2	K4-099501 ~	Color and graphic changed
	KZ400-G1	K4-099501 ~	Cast-wheeled KZ400-B except front caliper, color and graphic
1980	KZ400-B3	K4-115001 ~	Kickstarter system discontinued, color and graphic changed, front caliper changed, automatic cam chain tensioner
	KZ400-G2	K4-115001 ~	Kickstarter system discontinued, automatic cam chain tensioner
1981	KZ400-B4	K4-116801 ~	...
	KZ400-G3	K4-116801 ~	Transistorized ignition system, color and graphic changed
	KZ400-H3	KZ400H-017201 ~	Stepped seat, pullback handlebar, cast wheels, and transistorized ignition system

KAWASAKI
HEAVY INDUSTRIES, LTD.
MOTORCYCLE DIVISION

Part No. 99924-1003-03

Printed in Japan

Kawasaki

KZ400

Motorcycle Service Manual

QUICK REFERENCE GUIDE

To use, bend the manual back and match the desired section below against the black spot showing at the edge of these pages.

Model Identification

KZ400-B1

KZ400-C1

A

Specifications

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SPECIFICATIONS

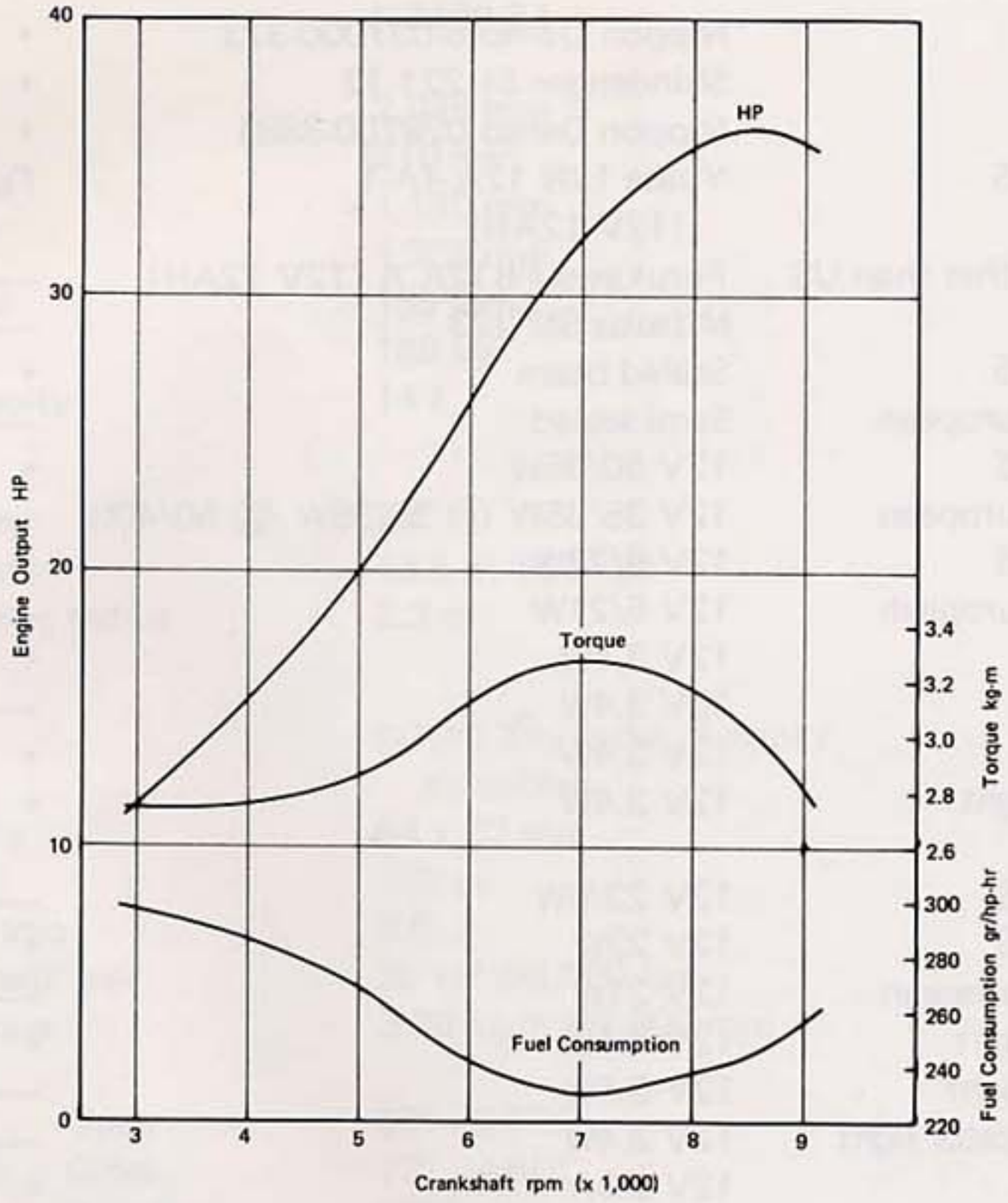
		KZ400-B1	KZ400-C1
Dimensions			
Overall length		2,045 mm	*
Overall width		810 mm	790 mm
Overall height		1,130 mm	1,100 mm
Wheelbase		1,365 mm	*
Road clearance		135 mm	160 mm
Dry weight		168 kg	155 kg
Fuel tank capacity		14 ℓ	*
Performance			
Climbing ability		24°	*
Braking distance		13.5 m @50 kph	*
Minimum turning radius		2.3 m	*
Engine			
Type		SOHC 2 cylinder, 4 stroke, air-cooled	*
Bore and stroke		64 x 62 mm	*
Displacement		398 cc	*
Compression ratio		9.5	*
Maximum horsepower		36 HP @8,500 rpm	34.5 HP 8,500 rpm
Maximum torque		3.28 kg-m @7,000 rpm	3.21 kg-m @6,500 rpm
Valve timing			
Inlet	Open	27° BTDC	*
	Close	73° ABDC	*
	Duration	280°	*
Exhaust	Open	70° BBDC	*
	Close	30° ATDC	*
	Duration	280°	*
Carburetors		Keihin VB32 x 2	*
Lubrication system		Forced lubrication (wet sump)	*
Engine oil		SE class SAE 10W40, 10W50, 20W40, 20W50	*
Engine oil capacity		2.9 ℓ	*
Starting system		Electric and kick	Kick
Ignition system		Battery and coil	*
Ignition timing		From 10° BTDC @1,100 rpm to 35° BTDC @3,200 rpm	*
Spark plugs		NGK B7ES or ND W22ES-U	*
Transmission			
Type		6-speed, constant mesh, return shift	5-speed, constant mesh, return shift
Clutch		Wet, multi disc	*
Gear ratio:	1st	2.54 (33/13)	2.57 (36/14)
	2nd	1.75 (28/16)	1.68 (32/19)
	3rd	1.32 (25/19)	1.27 (28/22)
	4th	1.10 (23/21)	1.04 (26/25)
	5th	0.96 (22/23)	0.89 (24/27)
	6th	0.88 (21/24)	—
Primary reduction ratio		2.43 (56/23)	*
Final reduction ratio		3.00 (45/15)	*
Overall drive ratio		6.39 (Top gear)	6.49 (Top gear)

		KZ400-B1	KZ400-C1
Electrical Equipment			
Generator (Dynamo)		Nippon Denso 5-037000-373	*
Regulator/Rectifier		Shindengen SH221-12	*
Ignition coil		Nippon Denso 029700-3881	*
Battery	US	Yuasa 12N 12A-4A-1 (12V 12AH)	Furukawa 12N 5.5-4A (12V 5.5AH)
	Other than US	Furukawa FB12A-A (12V 12AH)	—
Starter		Mitsuba SM-223	—
Headlight type	US	Sealed beam	*
	European	Semi-sealed	—
Headlight	US	12V 50/35W	*
	European	12V 35/35W Ⓕ 36/36W Ⓖ 50/40W	—
Tail/Brake light	US	12V 8/27W	*
	European	12V 5/21W	—
Speedometer light		12V 3.4W	*
Tachometer light		12V 3.4W	—
Neutral indicator light		12V 3.4W	*
High beam indicator light		12V 3.4W	*
Turn signal/Running position lights	US	12V 23/8W	—
Turn signal lights	US	12V 23W	*
	European	12V 21W	—
Turn signal indicator light		12V 3.4W	*
Oil pressure indicator light		12V 3.4W	—
Brake light failure indicator light		12V 3.4W	—
Horn		12V 2.5A	*
City light	European	12V 4W	—
Frame			
Type		Tubular, double-cradle	*
Steering angle		41° to either side	*
Castor		27°	*
Trail		100 mm	*
Tire size	Front	3.00S-18 4PR	*
	Rear	3.50S-18 4PR	*
Suspension	Front	Telescopic fork	*
	Rear	Swing arm	*
Suspension stroke	Front	150 mm	*
	Rear	95 mm	*
Front fork oil capacity (each fork)		145 ~ 155 cc	*
Front fork oil type		SAE 5W20	*
Brakes			
Type	Front	Disc brake	Internal expansion, two-leading
	Rear	Internal expansion, leading-trailing	*
Effective disc diameter		231 mm	—
Brake drum inside diameter and width	Front	—	180 x 30 mm
	Rear	160 x 30 mm	*

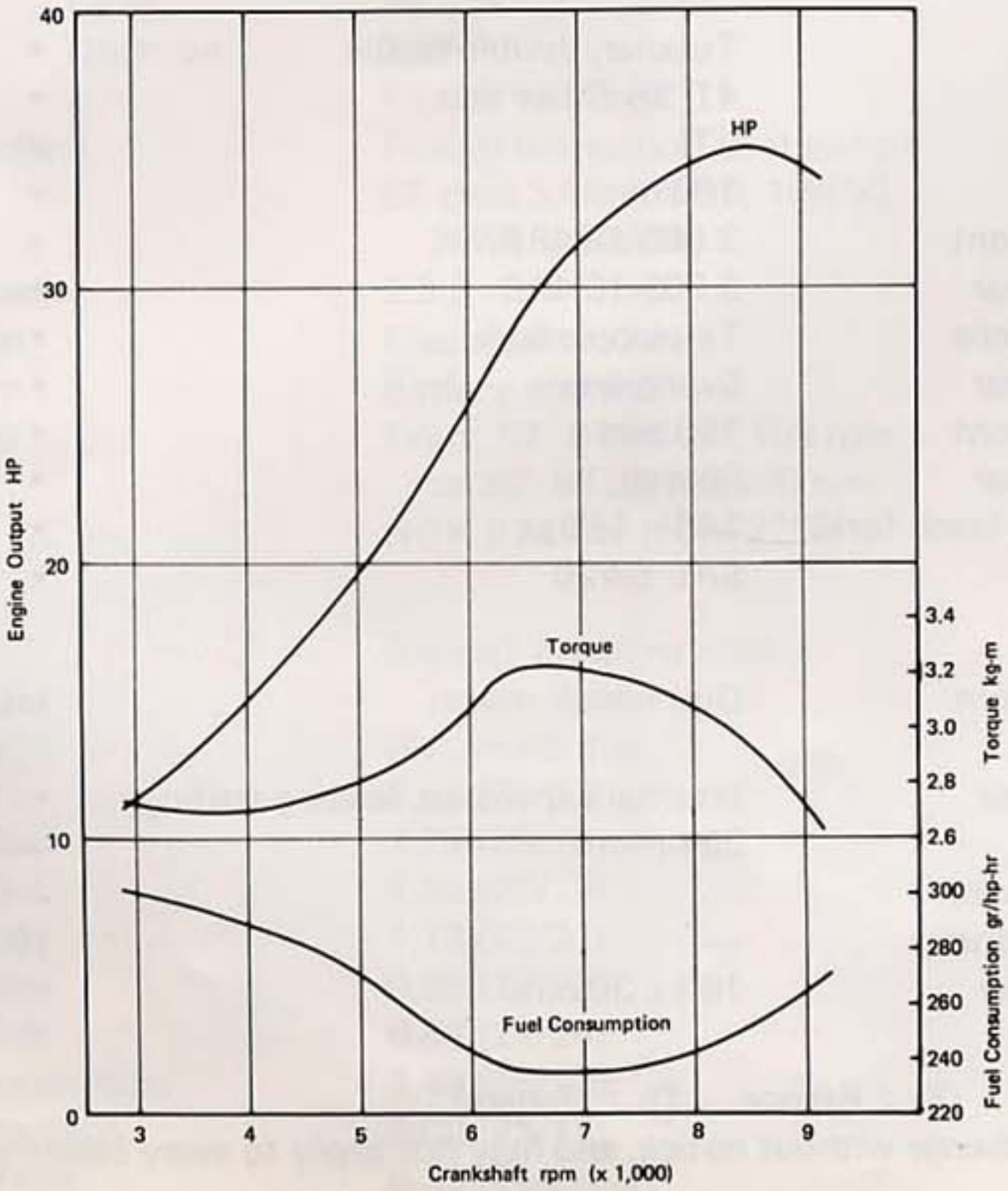
* : Identical to KZ400-B Ⓕ : France Ⓖ : General

Specifications subject to change without notice, and may not apply to every country.

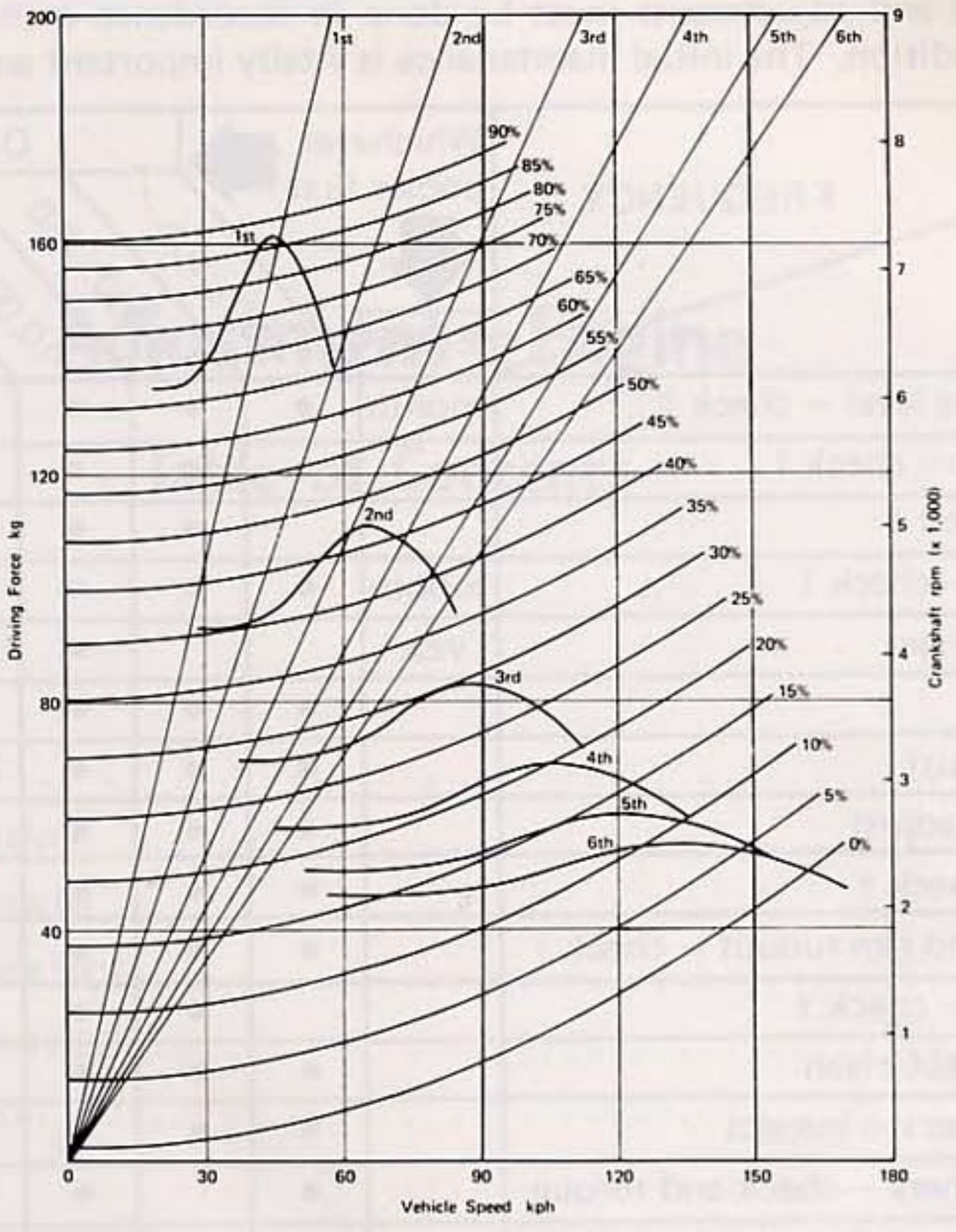
ENGINE PERFORMANCE CURVES (KZ400-B1)



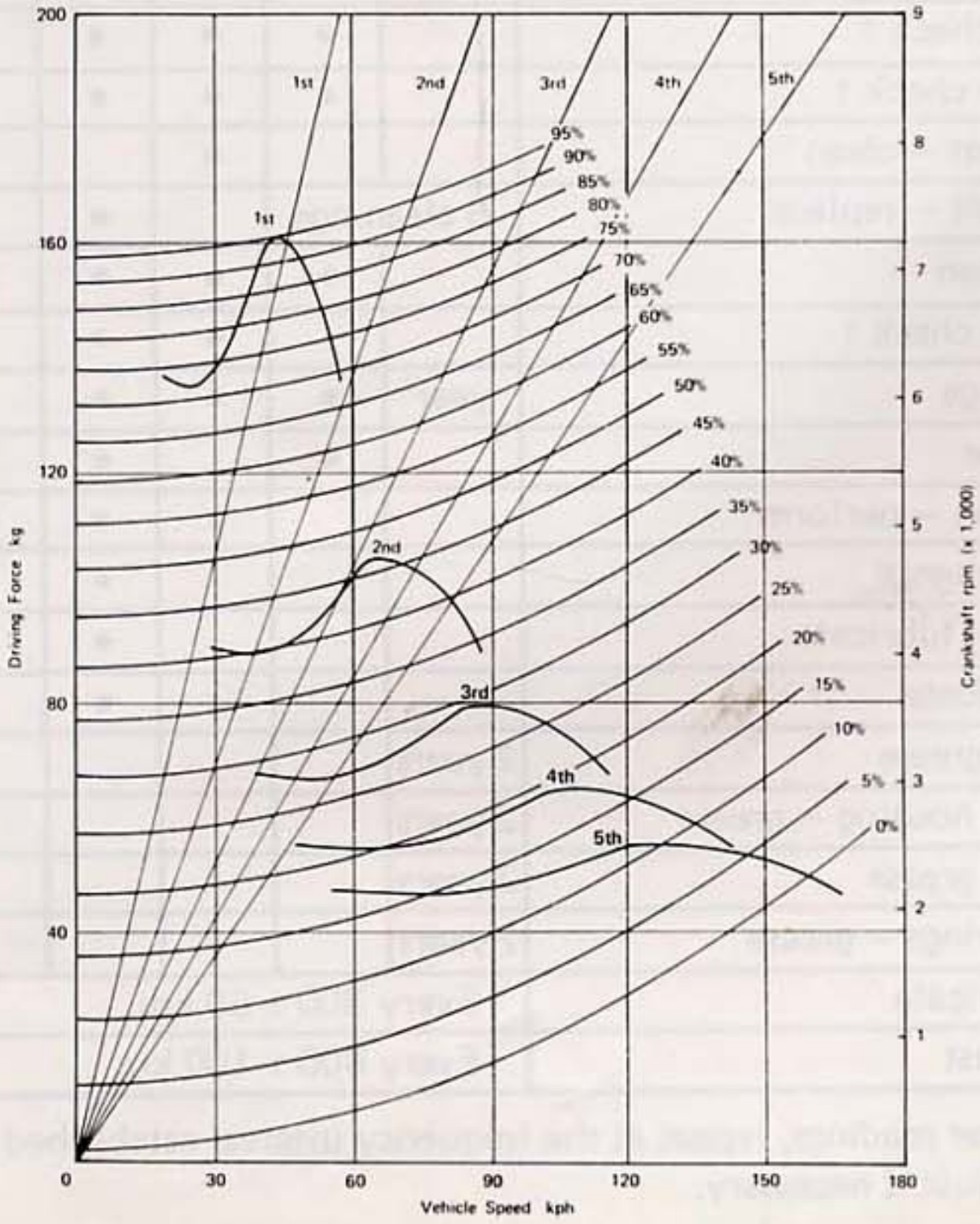
ENGINE PERFORMANCE CURVES (KZ400-C1)



RUNNING PERFORMANCE CURVES (KZ400-B1)



RUNNING PERFORMANCE CURVES (KZ400-C1)



PERIODIC MAINTENANCE CHART

The maintenance and adjustments must be done in accordance with this chart to keep the motorcycle in good running condition. **The initial maintenance is vitally important and must not be neglected.**

OPERATION \ FREQUENCY	Whichever comes first — Every	ODOMETER READING* km: 800±100	5,000±250	10,000±250	15,000±250	20,000±250	25,000±250	30,000±250	See Page
Battery electrolyte level — check †	month	•	•	•	•	•	•	•	218
Brake adjustment — check †		•	•	•	•	•	•	•	25
Brake wear — check †			•	•	•	•	•	•	205,206
Brake fluid level — check †	month	•	•	•	•	•	•	•	203
Brake fluid — change	year			•		•		•	202
Clutch — adjust		•	•	•	•	•	•	•	19
Carburetors — adjust		•	•	•	•	•	•	•	16
Throttle cables — adjust		•	•	•	•	•	•	•	15
Steering play — check †		•	•	•	•	•	•	•	28
Spoke tightness and rim runout — check †		•	•	•	•	•	•	•	196
Drive chain wear — check †			•	•	•	•	•	•	24
Front fork — inspect/clean		•	•	•	•	•	•	•	211
Rear shock absorbers — inspect		•	•	•	•	•	•	•	212
Nuts, Bolts, Fasteners — check and torque		•		•		•		•	37 ~ 40
Spark plugs — clean and gap †		•	•	•	•	•	•	•	12
Camshaft chain — adjust		•	•	•	•	•	•	•	14
Points, timing — check †		•	•	•	•	•	•	•	12
Valve clearance — check †		•	•	•	•	•	•	•	15,162
Air cleaner element — clean			•		•		•		149
Air cleaner element — replace	5 cleanings		•		•		•		149
Fuel system — clean		•	•	•	•	•	•	•	21
Tire tread wear — check †			•	•	•	•	•	•	195
Engine oil — change	year	•	•	•	•	•	•	•	20
Oil filter — replace		•		•		•		•	20,189
General lubrication — perform			•	•	•	•	•	•	31 ~ 33
Front fork oil — change				•		•		•	211
Timing advancer — lubricate				•		•		•	226
Swing arm — lubricate				•		•		•	214
Wheel bearings — grease	2 years					•			196
Speedometer gear housing — grease	2 years					•			197
Brake camshaft — grease	2 years					•			207
Steering stem bearings — grease	2 years					•			208
Drive chain — lubricate	Every 300 ± 50 km								198
Drive chain — adjust	Every 800 ± 100 km								24

*For higher odometer readings, repeat at the frequency interval established here.
†Replace, add or adjust if necessary.

Adjustment – Engine

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SPARK PLUGS

Neglecting the spark plugs eventually leads to difficult starting and poor performance. During normal operation, the electrodes gradually burn away and carbon builds up along the insulator. In accordance with the Periodic Maintenance Chart (Pg. 10), the plugs should be removed for inspection, cleaning, and to reset the gaps. If the center electrodes are fairly worn down, install new ones with the proper gap.

- Remove the spark plugs using a spark plug wrench.
- Clean the spark plugs, preferably in a sand-blasting device, and then clean off any abrasive particles. The plug may also be cleaned using a high flash-point solvent and a wire brush or other suitable tool. If the spark plug electrodes are corroded or damaged, or if the insulator is cracked, replace the plug. Use the standard plug or its equivalent.
- Measure the gap with a wire-type thickness gauge. If the gap is incorrect, carefully bend the side electrode with a suitable tool, to obtain the correct gap.

Spark Plug Gap

B1

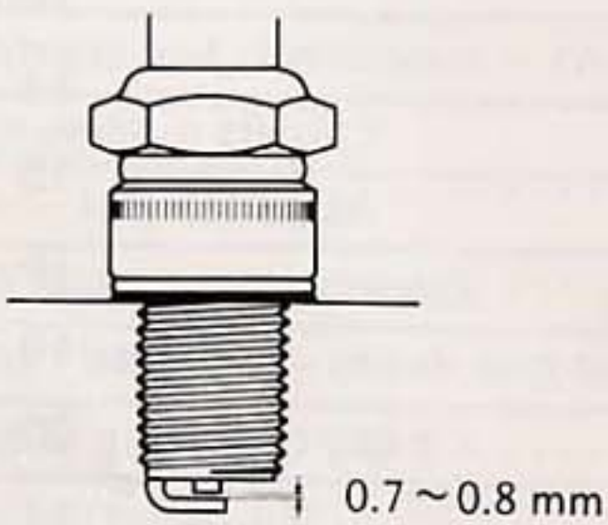


Table B1 Spark Plugs

Type	NGK B7ES or ND W22ES-U
Gap	0.7 ~ 0.8 mm
Tightening Torque	2.8 kg-m (20 ft-lbs)

- Tighten the spark plugs in the cylinder head to the specified torque.

NOTE: Refer to electrical maintenance section, Pg. 226, for detailed spark plug information.

IGNITION TIMING

Incorrect ignition timing can cause poor performance, knocking, overheating, and serious engine damage. Periodic adjustment will be necessary to compensate for wear of parts, and the ignition timing must be checked whenever ignition related parts have been disassembled or replaced.

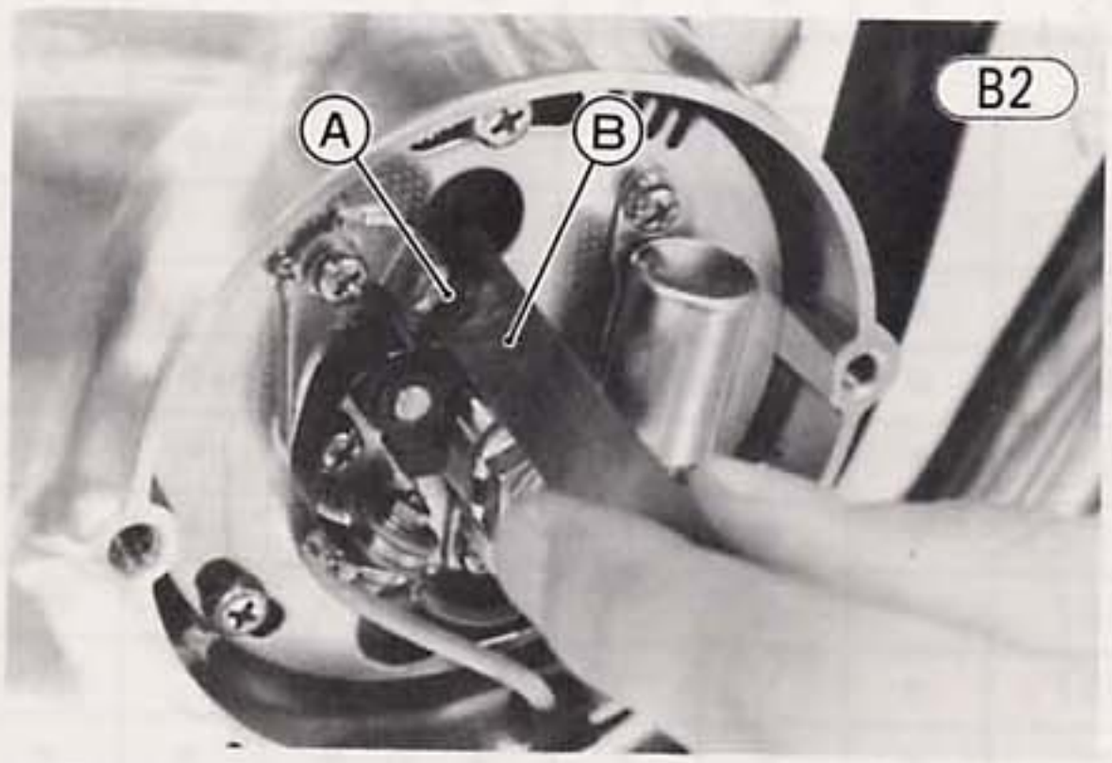
Correct ignition timing is achieved by first obtaining the correct contact breaker point gap (this can also be achieved by adjusting the dwell angle to the specified amount) and then changing the position of the contact breaker mounting plate. Often the first step returns the timing very close to the correct original setting. Once the timing has been adjusted, it may be checked for accuracy by the use of a strobe light.

NOTE: The dwell angle is the angular range for which the contact breaker points are closed. This allows the current to flow in the ignition coil primary winding.

Point Gap/Dwell Angle Adjustment

To check the point gap:

- Remove the screws (2), and remove the contact breaker cover.
- Clean the points with clean paper or cloth using an oil-free solvent. A business card soaked in trichloroethylene can be used to remove traces of oil. To repair light damage, use emery cloth or an oilstone. If the points are badly worn down or damaged, or if the spring is weak, replace the contact breaker.
- Lubricate the point cam felt sparingly with suitable point cam lubricant. Do not overlubricate. Replace the felt if it is worn.
- Check to see that the ignition switch is turned off.
- Using a 17 mm wrench on the crankshaft, turn the engine counterclockwise until the contact breaker points are at their widest opening.
- Determine the size of the point gap with a thickness gauge, or measure the dwell angle using a dwell angle tester.



A. Contact Breaker Points **B. Thickness Gauge**

Table B2 Contact Breaker

	Standard
Point Gap	0.3 ~ 0.4 mm
Dwell Angle	185 ~ 200° (51.5 ~ 55.5%)

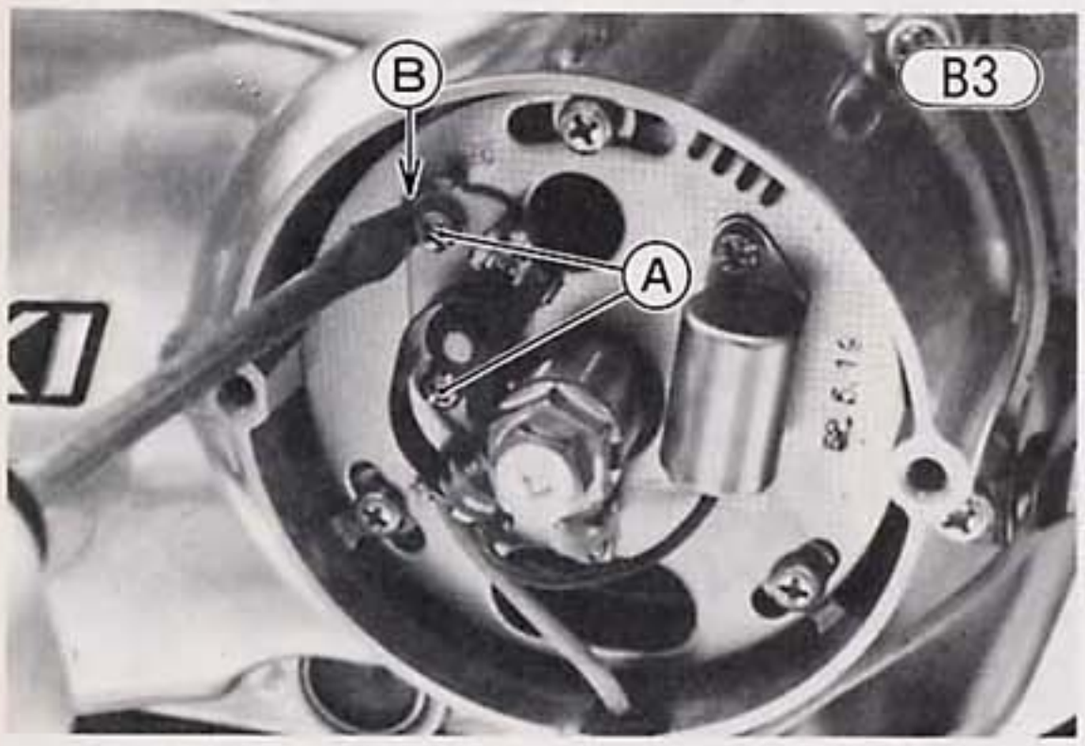
NOTE: The point gap is set more precisely using a dwell angle tester instead of a thickness gauge. Connect a dwell angle tester in the manner prescribed by the manufacturer in order to check the dwell angle.

WARNING **When measuring the dwell angle, make sure that no tools, clothes, or meter leads touch the spinning crankshaft. Touching the crankshaft of a running engine could cause an injury.**

To adjust the point gap:

- If the gap or dwell angle is not the same as the specification, loosen the contact breaker base screws (2) just enough so that a slot screwdriver can be used at the

contact breaker pry point to change the gap or dwell angle. Adjust the contact breaker until the correct point gap or dwell angle specification is obtained.



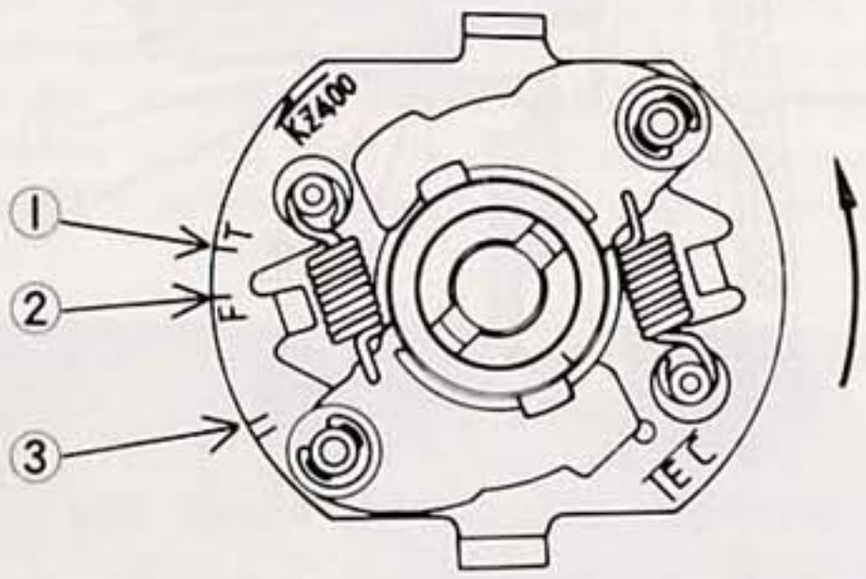
A. Base Screws B. Pry Point

- Tighten the screws (2).
- Perform the timing test.

Timing Test

To inspect the ignition timing there are two marks on the automatic timing advancer. One ("F" mark) is for checking the timing before advancing, and the other (a pair of lines) for checking the timing after it has advanced.

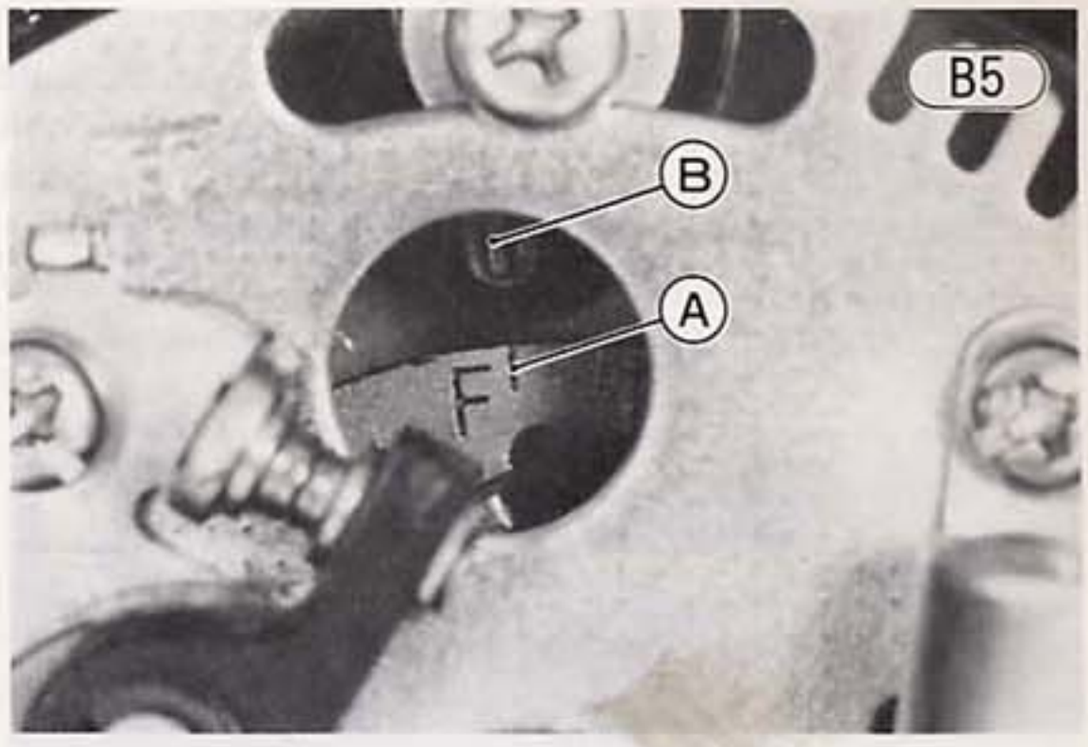
Timing Advancer



1. "T" Mark 2. "F" Mark 3. Advanced Mark

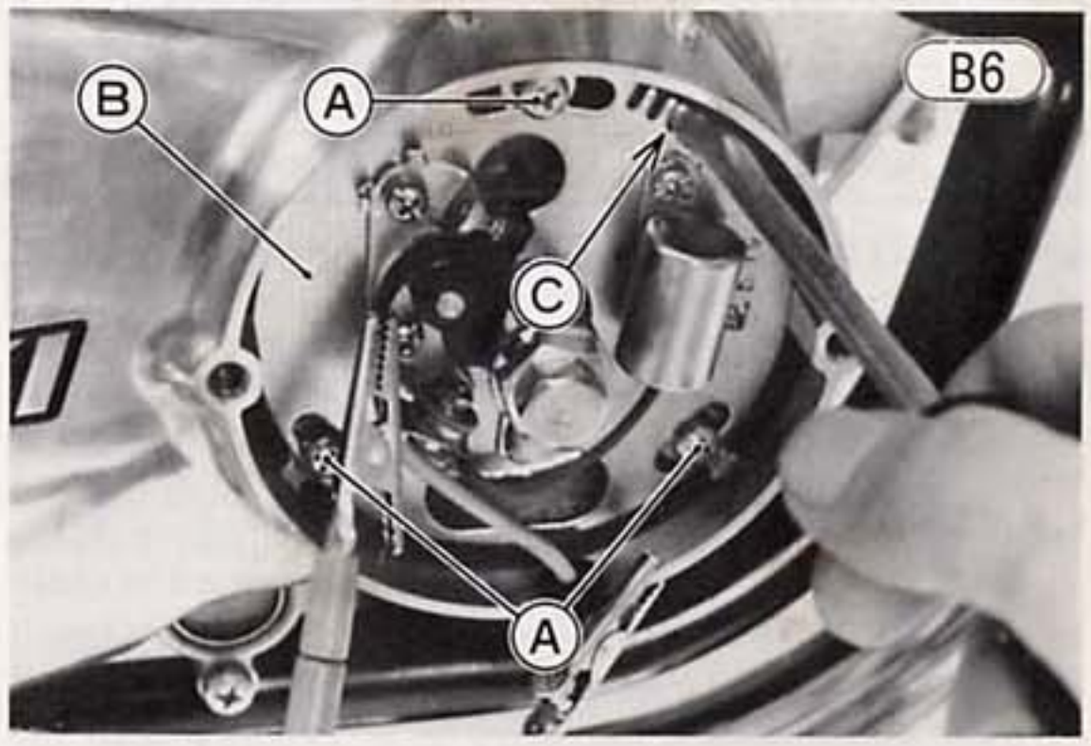
To check and adjust the timing (static):

- Check the point gap, and adjust if necessary.
- With the ignition switch turned off, turn the engine stop switch to one of the "OFF" positions to make the ohmmeter flicker easier to read.
- Set an ohmmeter to the x 1 Ω range and connect it across the points, one lead to the wire coming from the points (or to the spring leaf), and the other ohmmeter lead to chassis ground (engine, frame, contact breaker mounting etc.). Make sure that both leads are securely connected.
- Turning the cranksahft counterclockwise, check to see if the "F" mark is aligned with the timing mark when the needle jumps.



A. "F" Mark B. Timing Mark

- If the timing is incorrect, turn and stop the crankshaft so that the "F" mark (the line adjoining the "F") on the timing advancer is aligned with the timing mark.
- Loosen the contact breaker mounting plate screws (3), and turn the mounting plate (using a screwdriver in the pry points) so that the contacts are just at the point of opening. This point can be found by watching the ohmmeter needle, which will flicker just when the points begin to open or close.



A. Mounting Plate Screws C. Pry Points
B. Mounting Plate

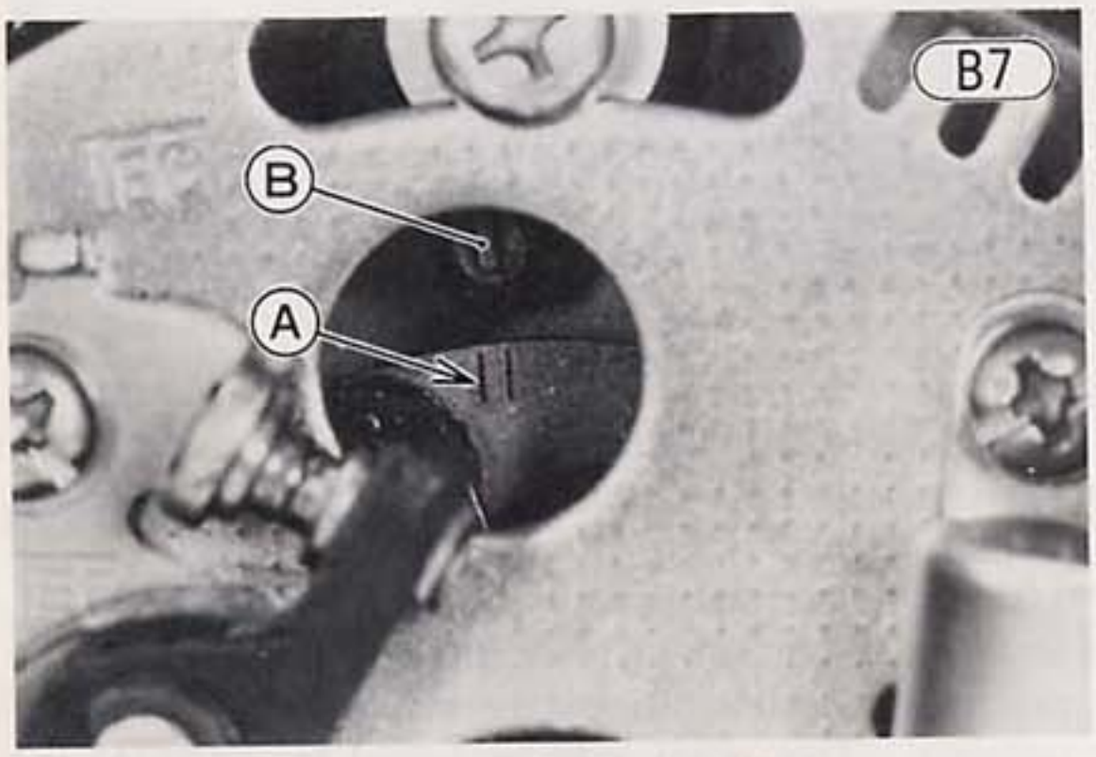
- Tighten the mounting plate screws (3).
- Check the point gap again, and adjust if it was disturbed.
- Disconnect the ohmmeter leads.
- Install the contact breaker cover and its gasket.

To check the timing (dynamic):

Timing advance begins at 1,400 ~ 1,600 rpm, and reaches the maximum advance at 3,000 ~ 3,400 rpm. So timing must be checked at idle below 1,400 rpm, and then above 3,400 rpm when it is fully advanced.

- Check the point gap, and adjust if necessary.
- Connect a strobe light in the manner prescribed by the manufacturer in order to check the ignition timing under operating conditions.

•Start the engine, and direct the light at the timing mark through the inspection window. Below 1,400 rpm, the timing mark and the "F" mark on the timing advancer must be aligned for correct low rpm ignition timing (Fig. B5). Above 3,400 rpm, the timing mark and the pair of lines on the timing advancer must be aligned for correct high rpm ignition timing as shown in Fig. B7. If both low and high rpm ignition timing are incorrect, adjust the timing as just explained. If either low or high rpm ignition timing is correct but the other is not, examine the timing advancer mechanism (Pg. 225).



A. Advanced Mark **B. Timing Mark**

Table B3 Timing Advancing

	Engine Speed
Advance Begins	1,400 ~ 1,600 rpm
Full Advance	3,000 ~ 3,400 rpm

•Check the point gap again, and adjust if it was disturbed.
•Install the contact breaker cover and its gasket.

CAMSHAFT CHAIN

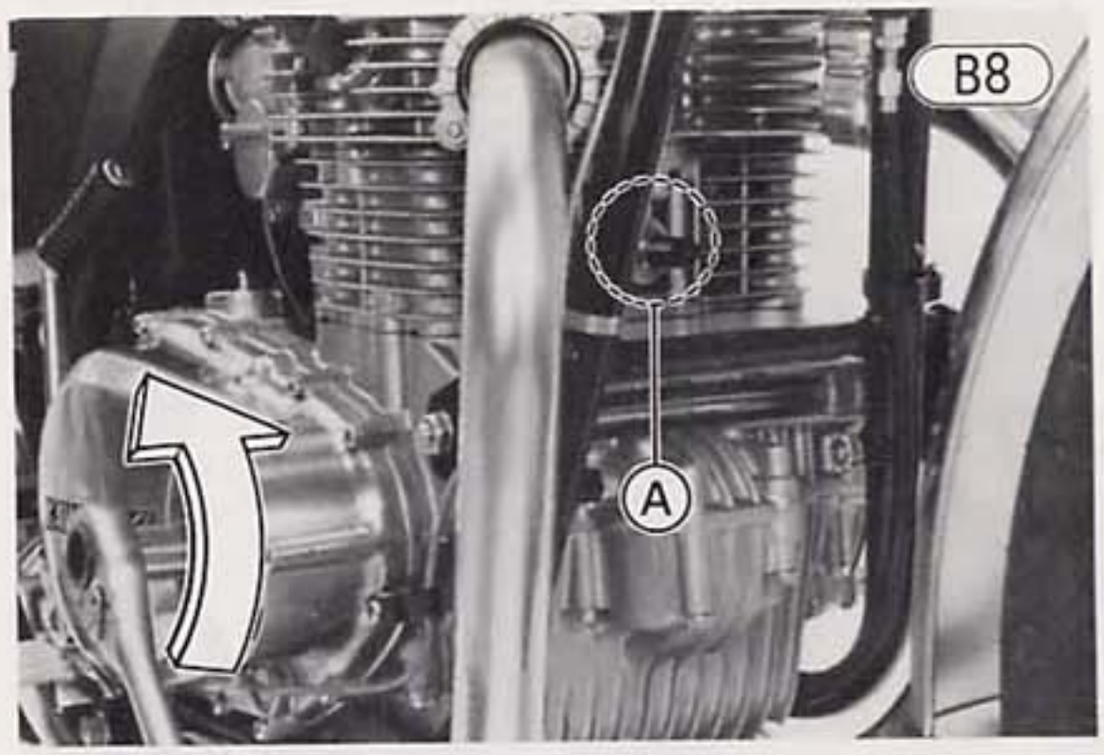
Camshaft chain and chain guide wear cause the chain to develop slack, which will cause noise and may result in engine damage. To keep the chain from making noise, periodic adjustment is necessary in accordance with the Periodic Maintenance Chart (Pg. 10).

However, if the adjustment fails to keep the chain from making noise, the camshaft chain or chain guides have probably worn past their service limits and will need to be replaced.

WARNING **To avoid a serious burn, never touch a hot engine or exhaust pipes during camshaft chain adjustment.**

To adjust the camshaft chain:
•Remove the chain tensioner cap and O ring.
•Remove the contact breaker cover.
•Check to see that the ignition switch is turned off.
•*Turn* the crankshaft counterclockwise while watching the push rod (in the center of the push rod guide) move in and out. Continue turning the crankshaft counterclockwise until the push rod again reaches the innermost position, and then stop.

NOTE: Do not turn the crankshaft backwards (clockwise). Turning the crankshaft backwards may cause improper adjustment.

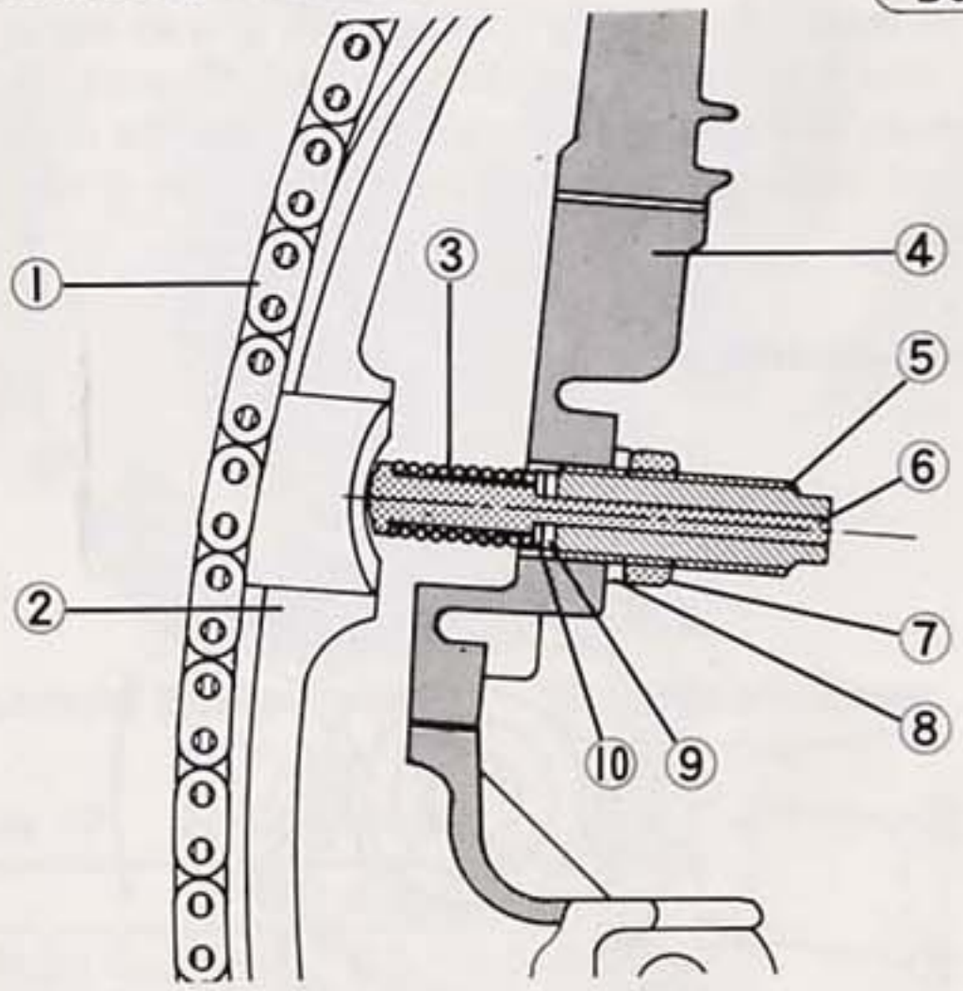


A. Camshaft Chain Tensioner

•Loosen the locknut, and turn in the push rod guide carefully until the ends of the push rod guide and push rod are flush.

CAUTION **Be sure that the ends are flush. Never overtighten the push rod guide after the ends are just flush, or the tensioner and chain may become damaged.**

Camshaft Chain Tensioner B9



1. Camshaft Chain
2. Chain Guide
3. Spring
4. Cylinder Block
5. Push Rod Guide
6. Push Rod
7. Locknut
8. Washer
9. Nylon Washer
10. Steel Washer

•Tighten the locknut to 1.5 kg-m (11.0 ft-lbs) of torque, and install the chain tensioner cap and O ring to 1.5 kg-m (11.0 ft-lbs) of torque.
•Install the contact breaker cover and its gasket.

VALVE CLEARANCE

Valve and valve seat wear decreases valve clearance, upsetting valve timing. If valve clearance is left unadjusted, the wear will eventually cause the valves to remain partly open; which lowers performance, burns the valves and valve seats, and may cause serious engine damage.

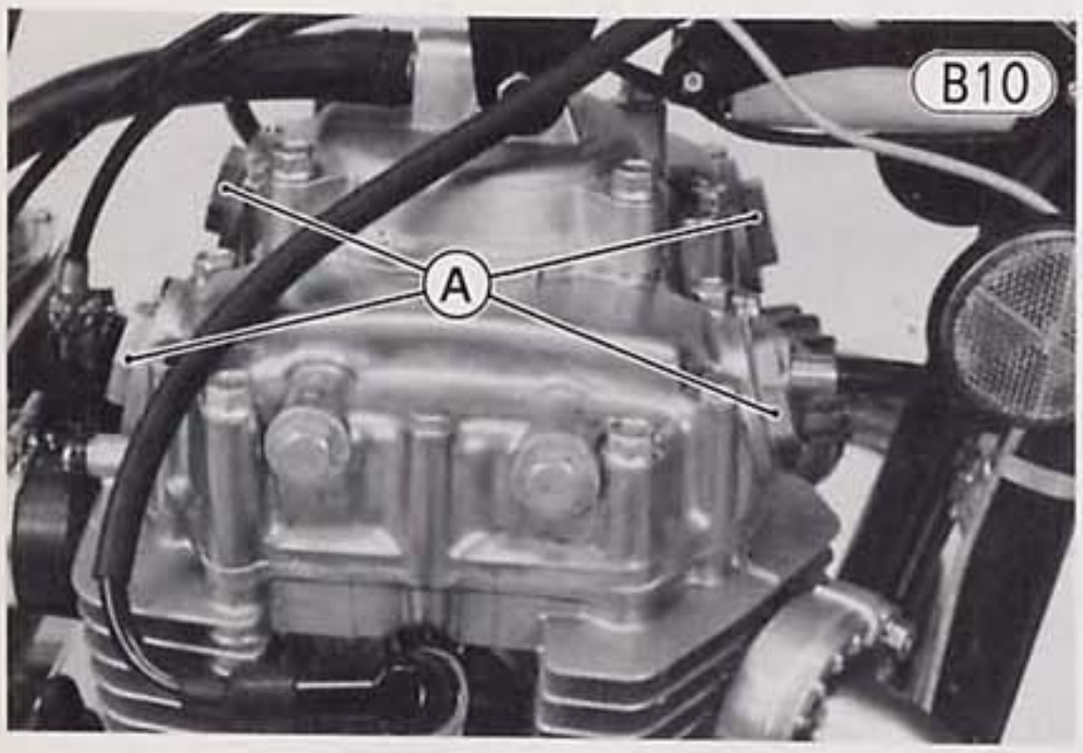
Valve clearance for each valve should be checked and adjusted if incorrect, in accordance with the Periodic Maintenance Chart (Pg. 10) and any time clearance may have been affected by disassembly.

When carrying out adjustment, be careful to adjust within the specified clearance. Adjusting to a larger value will both disturb valve timing and cause engine noise.

NOTE: Valve clearance must be checked when the engine is cold.

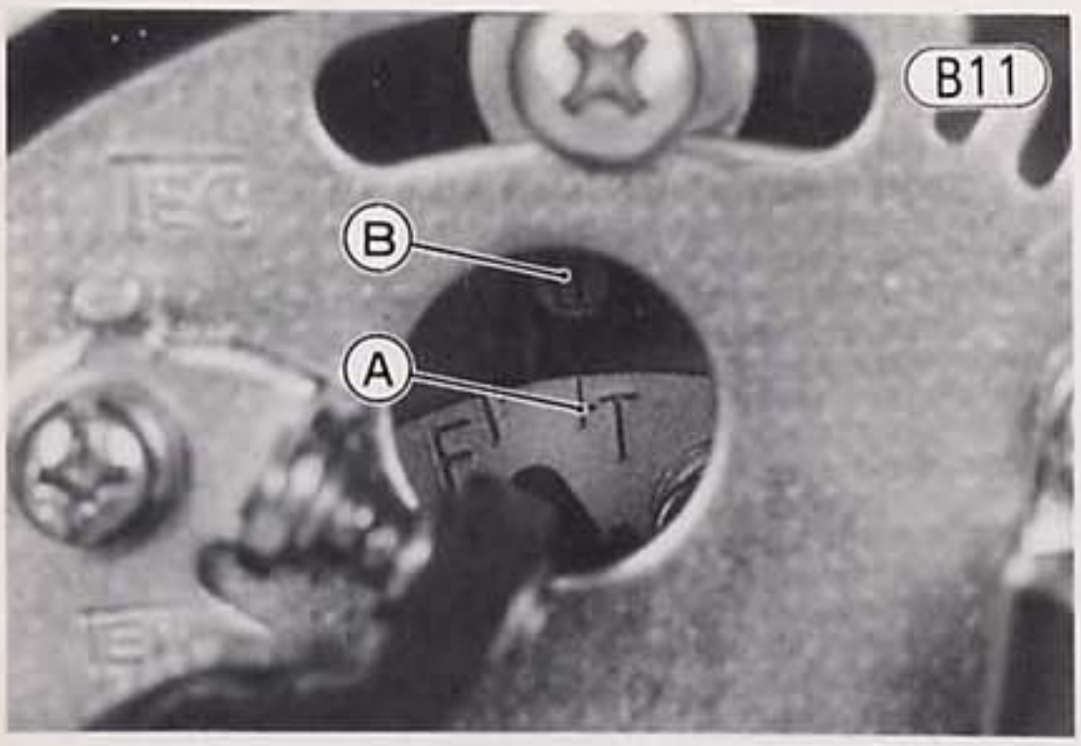
To check and adjust the valve clearance:

- Remove the fuel tank (Pg. 43).
- Remove the valve adjusting caps.



A. Valve Adjusting Caps

- Remove the screws (2), and remove the contact breaker cover.
- Using a 17 mm wrench, turn the crankshaft counterclockwise while watching the movement of the inlet valve (the valve to the rear) on the right side. When the valve has just finished opening and closing (moving downward and returning upward), turn the crankshaft in the same direction (counterclockwise) for about another ¼ turn until the "T" mark (the line adjoining the "T") on the timing advancer aligns with the timing mark.



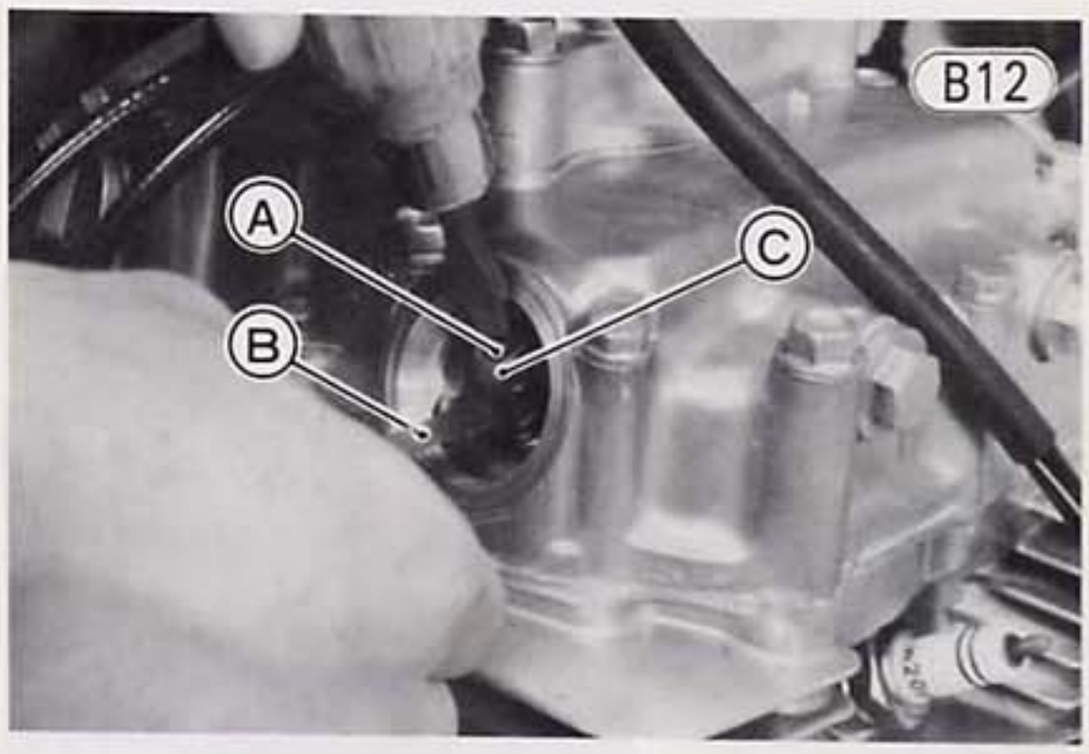
A. "T" Mark **B. Timing Mark**

- At this crankshaft position, the piston in the right cylinder is at the end of its compression stroke such that the inlet and exhaust valve for the right cylinder can be checked.
- Measure the clearance of each valve by inserting a thickness gauge (special tool) between the adjusting screw and the valve stem.

Table B4 Valve Adjustment (When cold)

Valve Clearance (for both inlet and exhaust)	0.17~0.22 mm
Locknut Tightening Torque	1.5 kg-m 11.0 ft-lbs

- If a valve clearance is incorrect, loosen its adjusting screw locknut, and turn the adjusting screw until correct clearance is obtained.



A. Adjusting Screw **C. Locknut**
B. Thickness Gauge (57001-1013)

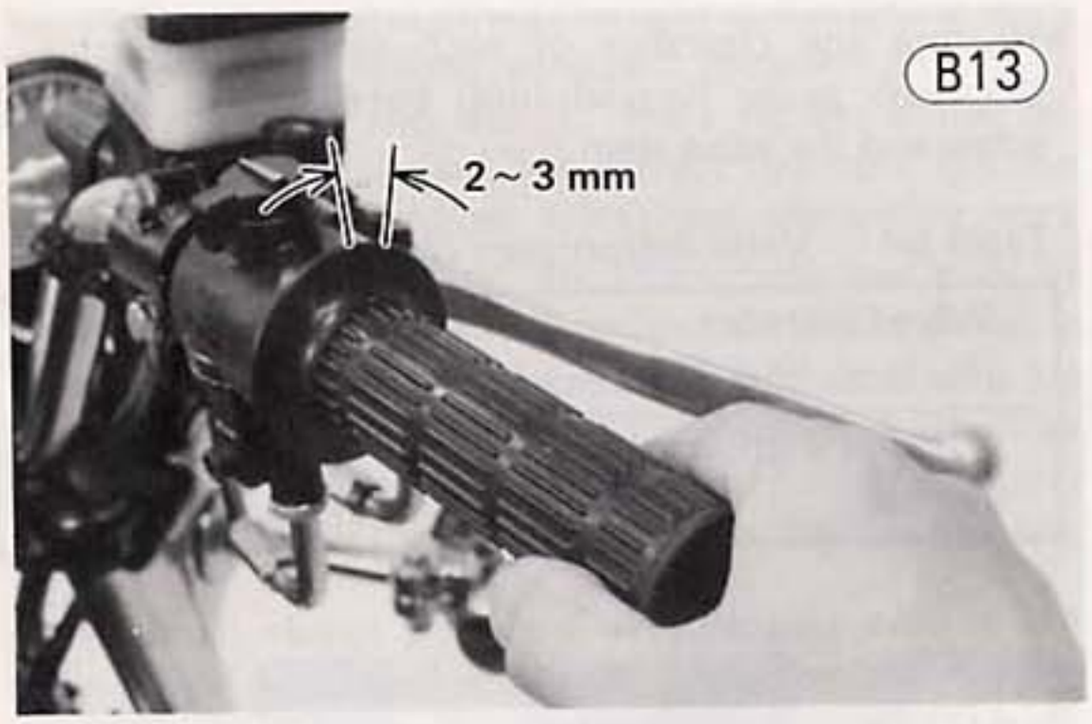
- Tighten the locknut to the specified torque.
- After finishing with the right cylinder valves, turn the crankshaft counterclockwise one full turn so that the "T" mark again aligns with the timing mark. Check the left cylinder valves, and adjust if necessary.
- Install the valve adjusting caps together with O rings.
- Install the contact breaker cover and its gasket.
- Install the fuel tank (Pg. 43).

THROTTLE CABLES

There are two throttle cables: an accelerator cable for opening the butterfly valves, and a decelerator cable for closing them. If the cables are too loose due either to cable stretch or maladjustment, the excessive play in the throttle grip will cause a delay in throttle response, which will be especially noticeable at low rpm. Also, the butterfly valves may not open fully at full throttle. On the other hand, if the cables are too tight, the throttle will be hard to control, and the idling speed will be erratic.

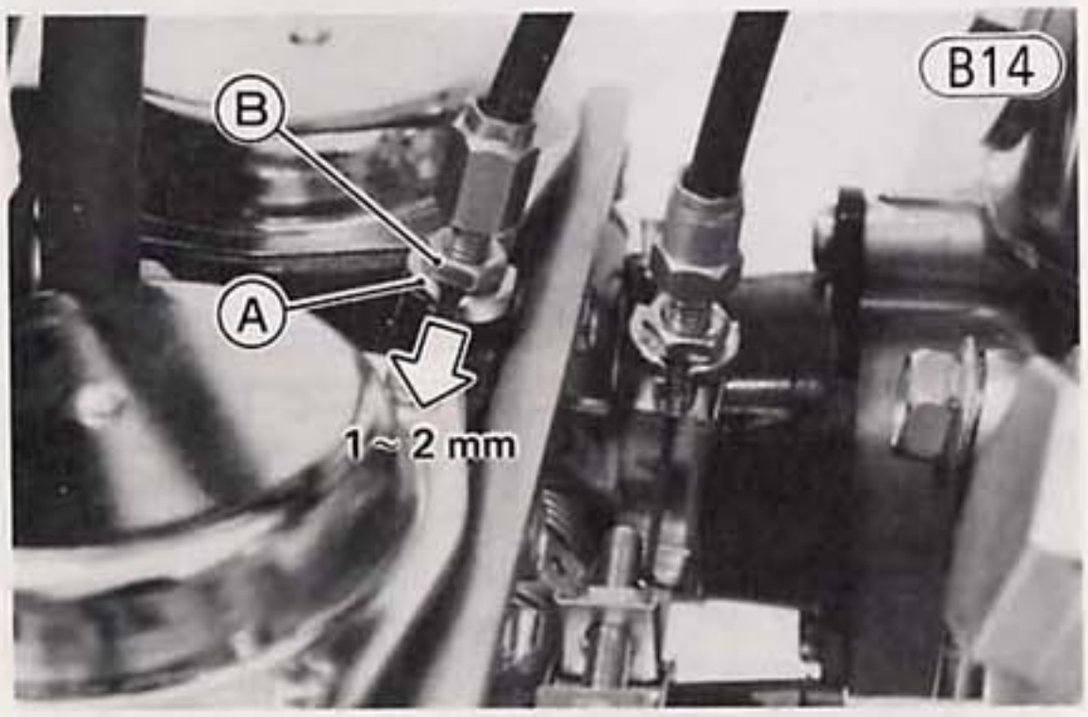
To check the throttle cable adjustment:

- Check that there is 2 ~ 3 mm throttle grip play (Fig. B13).



●Push the throttle grip completely closed. At this time the decelerator throttle cable bracket should be pushed down 1~2 mm. When the throttle grip is released, the cable bracket should be returned to its rest position by the spring tension.

NOTE: This assures that the stress of throttle grip return will be taken by the throttle grip, protecting the carburetor linkage mechanism.

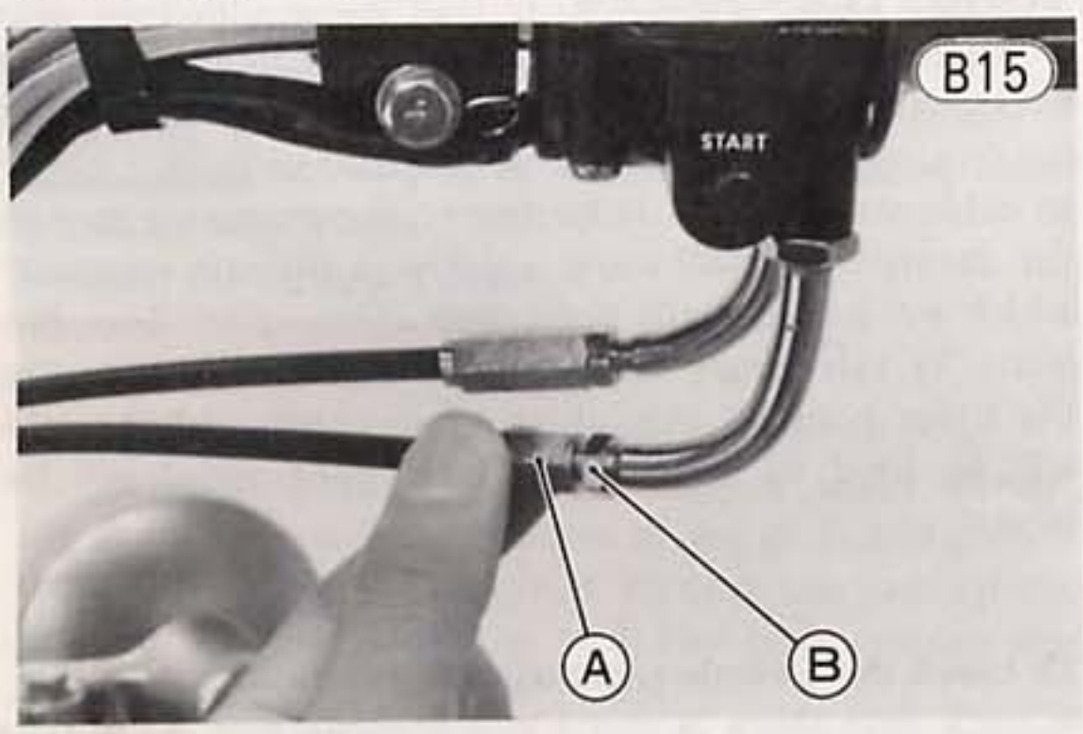


A. Decelerator Throttle Cable Bracket
B. Locknut

If any one of the above checks shows improper adjustment, adjust the throttle cables as follows:

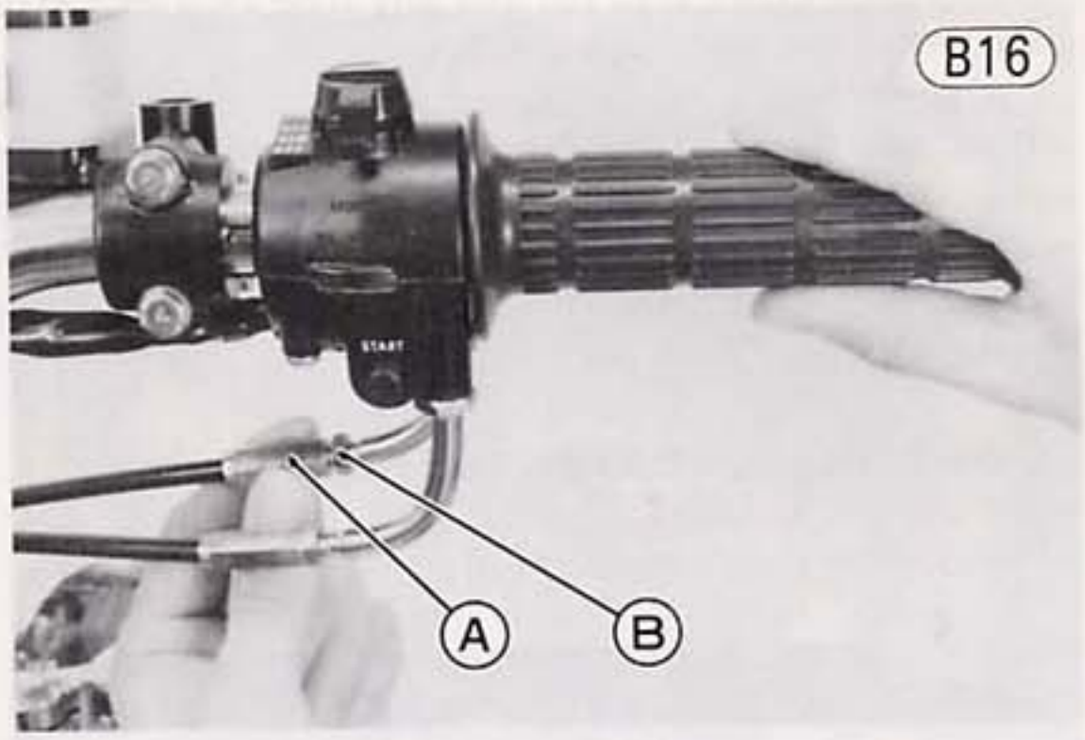
●Loosen the locknuts, and screw both throttle cable adjusting nuts in fully at the upper end of the throttle cables so as to give the throttle grip plenty of play.

●Turn out the decelerator cable adjusting nut until the cable bracket is pushed down 1~2 mm when the throttle grip is completely closed. Tighten the locknut.



A. Decelerator Cable Adjusting Nut **B. Locknut**

●Turn the accelerator cable adjusting nut until 2~3 mm of throttle grip play is obtained. Tighten the locknut.



A. Accelerator Cable Adjusting Nut
B. Locknut

NOTE: If the throttle cables can not be adjusted by using the cable adjusting nuts at the upper end of the throttle cables, use the cable adjusters at the lower ends of the throttle cables. Do not forget to securely tighten the adjuster locknuts.

CARBURETORS

Although some internal carburetor parts can be adjusted by replacement, repositioning, etc., these adjustments are covered in the maintenance section of this manual. The following procedure covers the idling adjustment, which is the adjustment necessary in periodic maintenance and whenever the idling setting has been disturbed. This procedure also includes the necessary steps for obtaining proper carburetor synchronization.

When the idle speed is too low, the engine may stall; when the idle speed is too high, the fuel comsumption becomes excessive, and the resulting lack of engine braking may make the motorcycle difficult to control. Poor carburetor synchronization will cause unstable idling, sluggish throttle response, and reduced engine power and performance.

The following procedure consists of four parts: preliminary checks, preliminary adjustment (sometimes necessary), idling adjustment, and carburetor synchronization.

Preliminary Checks

In order to obtain correct carburetor adjustment, first check the following and adjust if necessary:

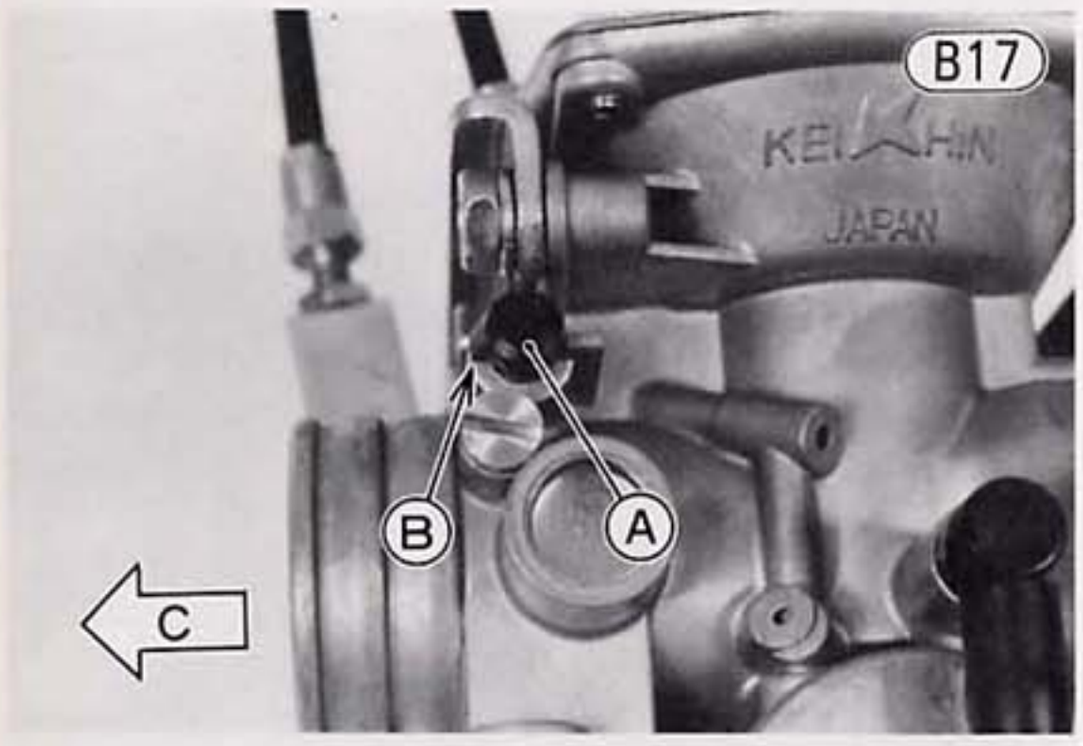
Engine Oil (Pg. 20)
Spark Plugs (Pg. 12)
Ignition Timing (Pg. 12)
Throttle Cables (Pg. 15)
Cylinder Compression (Pg. 167)
Air Cleaner Element (Pg. 149)
Air Cleaner Duct and Carburetor Holder Leakage
Camshaft Chain (Pg. 14)
Valve Clearance (Pg. 14)

Preliminary Adjustment

If the engine idling is especially rough or the carburetors have been disassembled, it is necessary to pre-adjust the butterfly valves, pilot screws, and choke mechanism before making the idling adjustment and the fine synchronization. First remove the carburetors from the engine (Pg. 45) leaving the throttle cables connected, and adjust the following.

Pilot screws

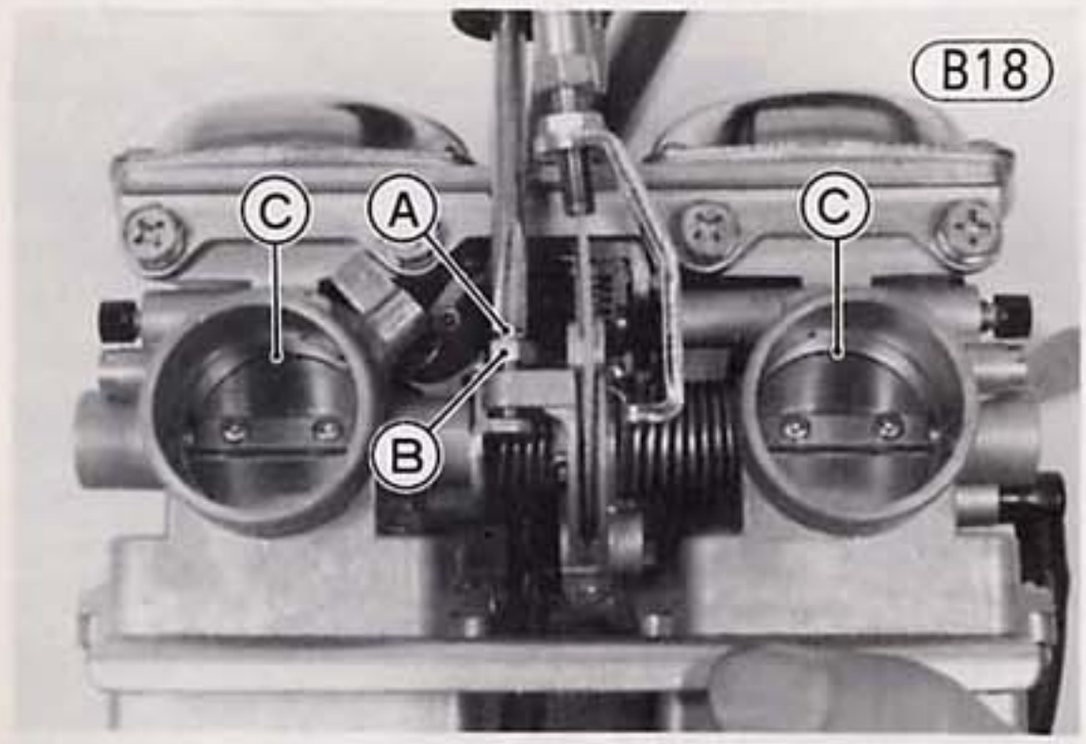
- If the carburetors were disassembled, turn in the pilot screw until it seats lightly, and then back it out 1¼ turns. Remount the pilot screw limiter to the pilot screw so that the ridge of its points towards the front.



A. Pilot Screw Limiter C. Front
B. Ridge

Butterfly valves

- Check to see that both butterfly valves open and close smoothly without no binding when turning the throttle grip.
- If the butterfly valves do not close at the same time by visual inspection, synchronize them using the following procedure.
- Loosen the locknut and turn the balance adjusting screw to obtain the same gap between the butterfly valve and the bore in each carburetor.

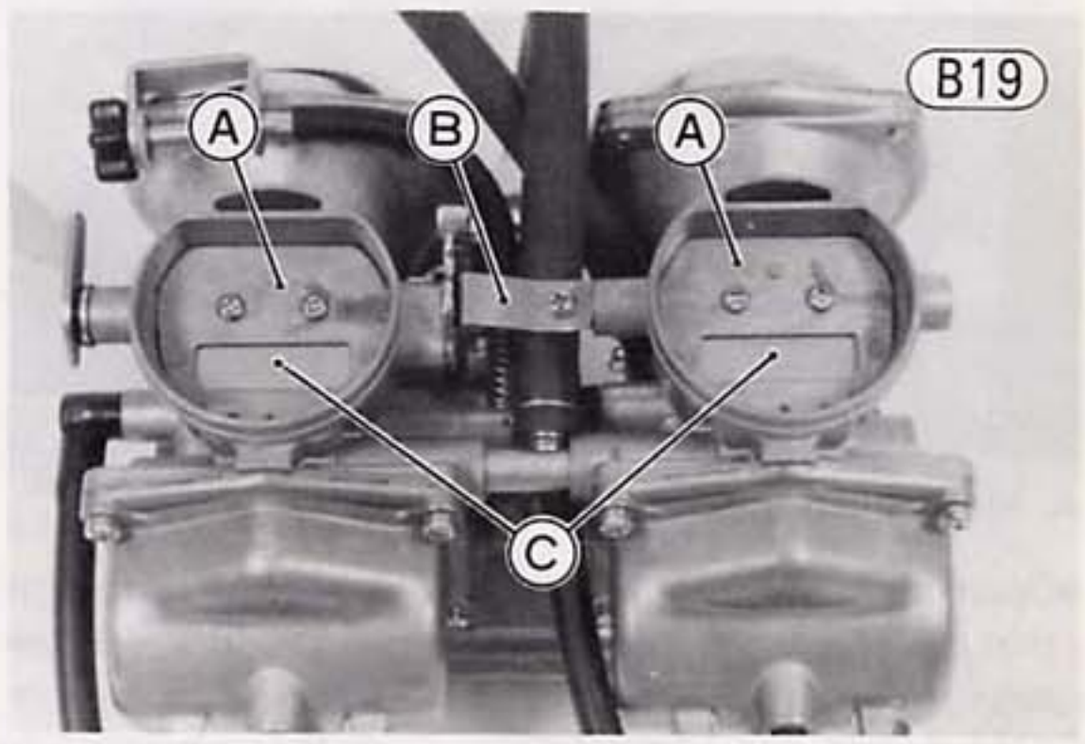


A. Balance Adjusting Screw C. Gap
B. Locknut

- Tighten the locknut.

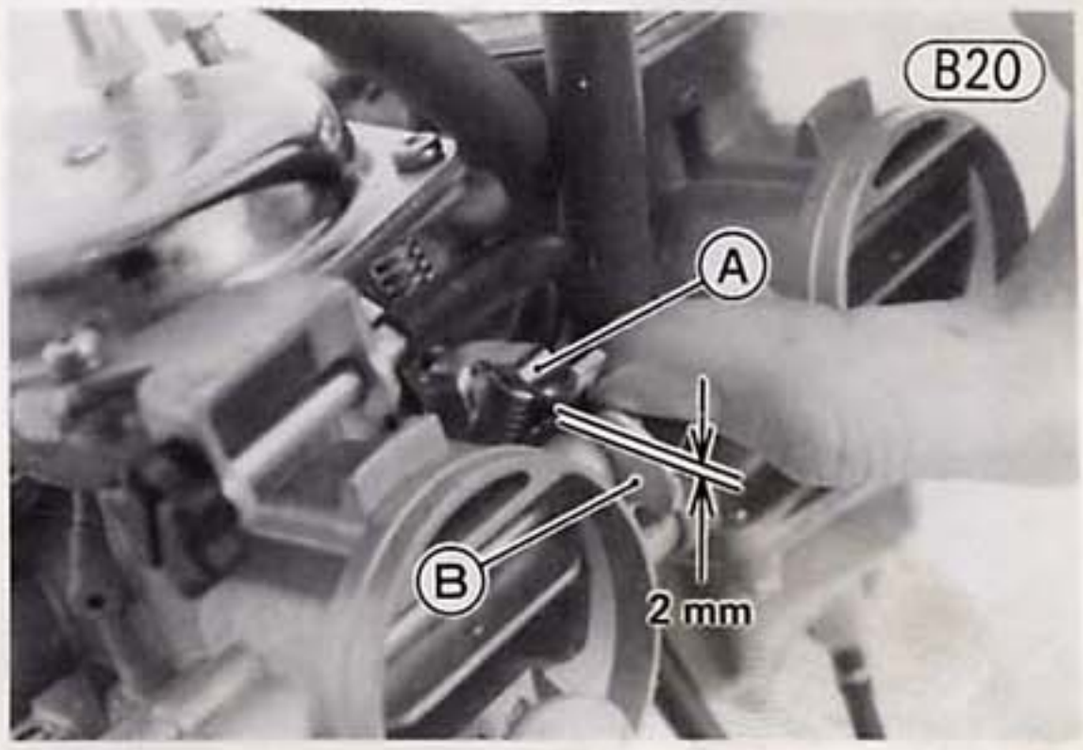
Choke linkage

- Check to see that the choke valve in each carburetor closes completely when the choke lever is pulled up. If they do not, adjust them by bending the link plate carefully.



A. Choke Valve C. Relief Valves
B. Link Plate

- Check to see that the relief valve in each carburetor opens easily and closes under spring tension. If it does not, replace the damage parts.
- Turn out the idle adjusting screw until both butterfly valves close fully.
- Check whether or not there is a slight clearance (about 2 mm) between the idling link and the idling cam when the idling link is pushed up with the choke valve fully opened (choke lever pushed down).



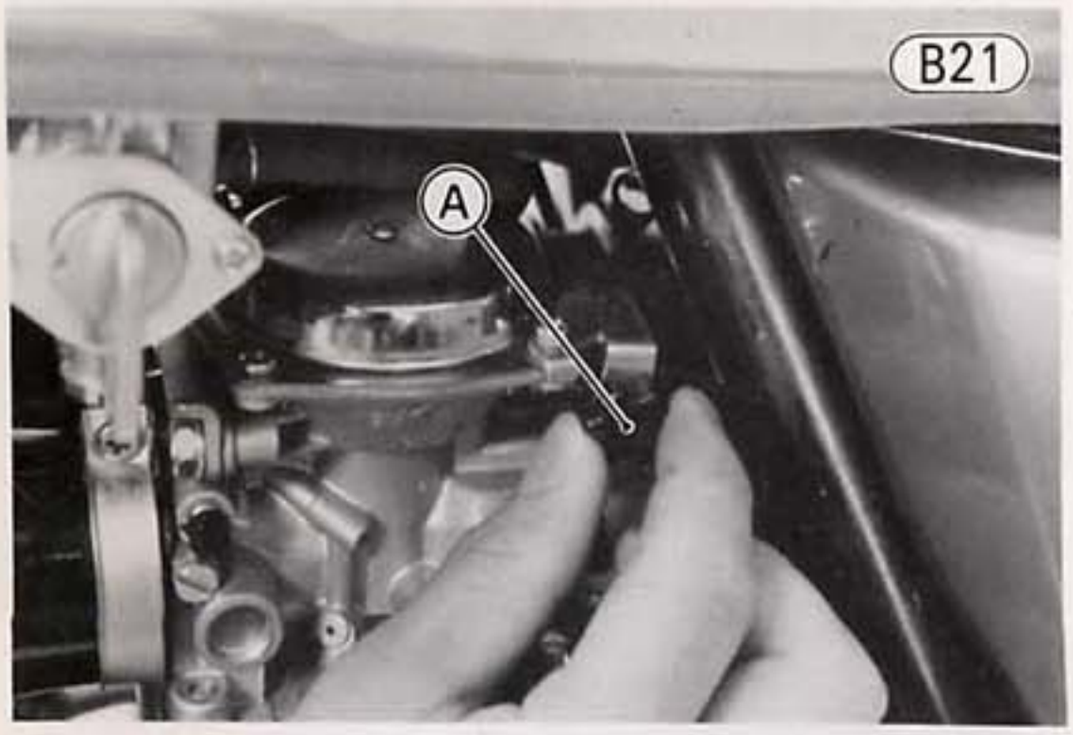
A. Idling Link B. Idling Cam

- If there is not proper clearance, adjust the clearance by bending the idling link carefully.
- Install the carburetors (Pg. 46), and check the play in the throttle cables (Pg. 15).

Idling Adjustment

- If the carburetors were disassembled, set the pilot screws as explained in Preliminary Adjustment.
- Start the engine, and warm it up for 5 minutes.

- Adjust the idle speed to 1,000 ~ 1,200 rpm by turning the idle adjusting screw (KZ400-B).
- Back out the idle adjusting screw until the engine is at the lowest rpm that it turns over smoothly (KZ400-C).



A. Idle Adjusting Screw

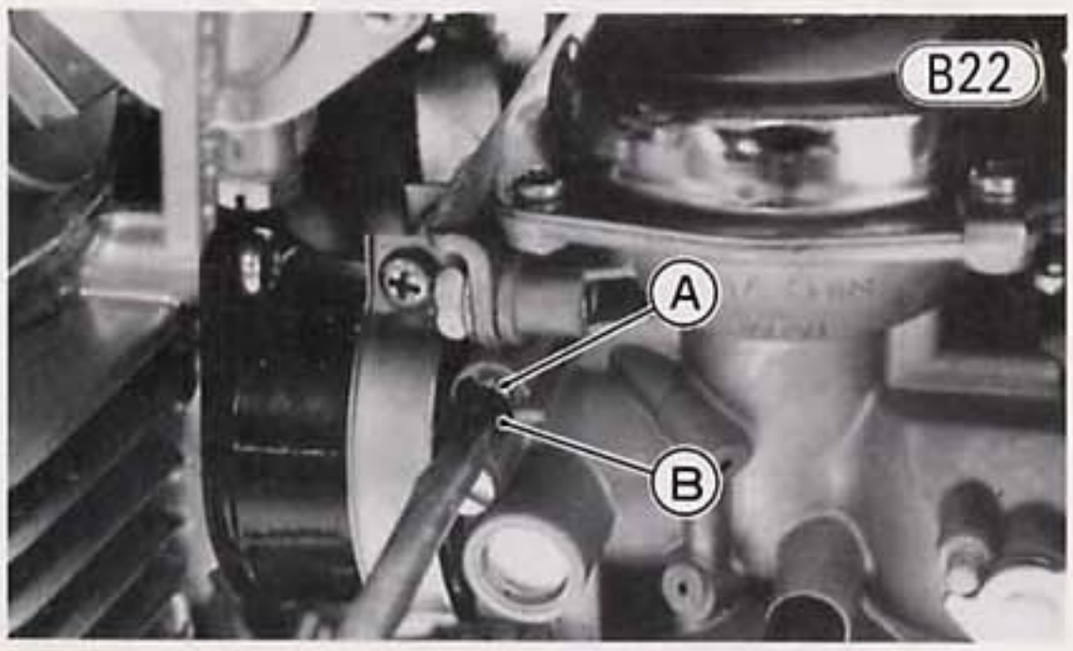
- Open and close the throttle a few times to make sure that the idle speed does not change. Readjust if necessary.

NOTE: With the engine idling, turn the handlebar to either side. If handlebar movement changes idle speed, the throttle cables may be improperly adjusted or incorrectly routed, or they may be damaged.

WARNING **Operation with improperly adjusted, incorrectly routed, or damaged cables could result in an unsafe riding condition.**

NOTE: A satisfactory result may be obtained by using the procedure just described, but an experienced mechanic can get a more precise adjustment of engine idle mixture by using the following 3 steps.

- Turn both pilot screws, one at a time, to obtain the highest engine rpm. Turn the pilot screw only within the range allowed by the ridge on the pilot screw limiter.



A. Pilot Screw **B. Pilot Screw Limiter**

- Adjust the idle speed to the specified rpm by turning the idle adjusting screw (KZ400-B).
- Turn the idle adjusting screw to set the idle speed to the lowest stable speed obtainable (KZ400-C).
- Check to see if the engine rpm rises when the pilot screw positions are altered. If it rises, repeat the last two steps alternately until the engine is idling satisfactorily, and engine speed cannot be increased by further adjustment of the pilot screws.

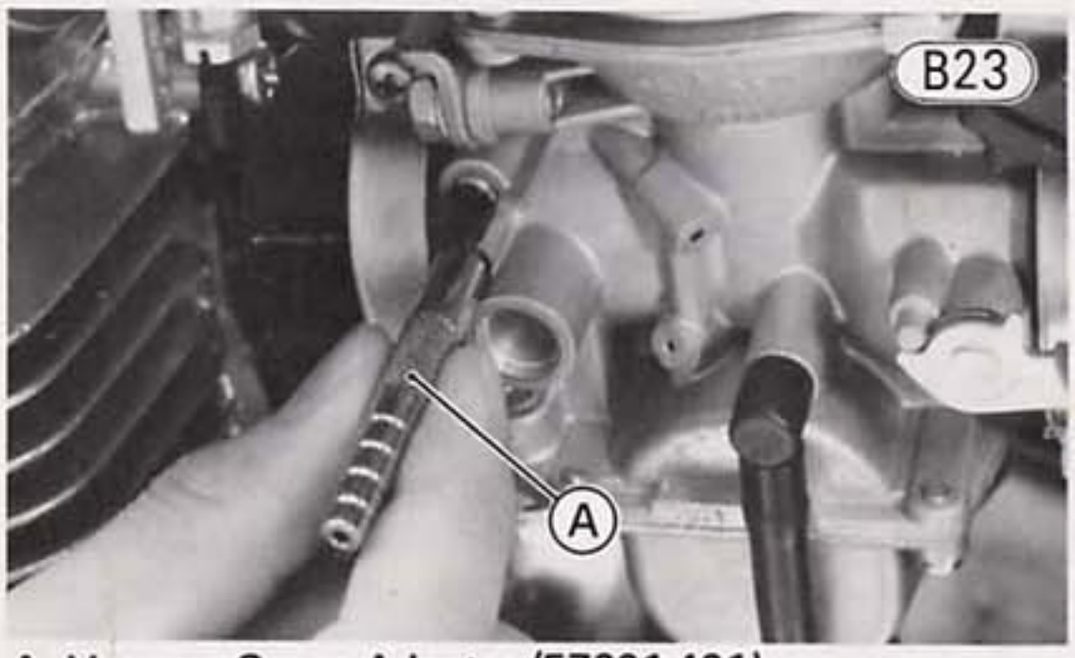
Carburetor Synchronization

Fine adjustment of carburetor synchronization, necessary for smooth engine operation, requires the use of vacuum gauges. Differences between the left and right cylinders might be found from exhaust noise and exhasut pressure; but to accurately synchronize each carburetor, the use of vacuum gauges is essential.

NOTE: During carburetor synchronization, the fuel tank will be removed. In most cases, it will be necessary to temporarily replace the standard fuel line with line long enough to reach the fuel tank while it is located on your workbench. Plug the open end of the vacuum hose during carburetor synchronization so that no extra air can be drawn into the carburetor.

WARNING **Use extreme caution when working with gasoline, open fuel lines, etc. to avoid a fire or explosion.**

- Start the engine, and warm it up for 5 minutes.
- Perform idling adjustment (Pg. 17).
- Stop the engine.
- Remove the vacuum plugs from each carburetor, and attach the vacuum gauge and adapter (special tools).

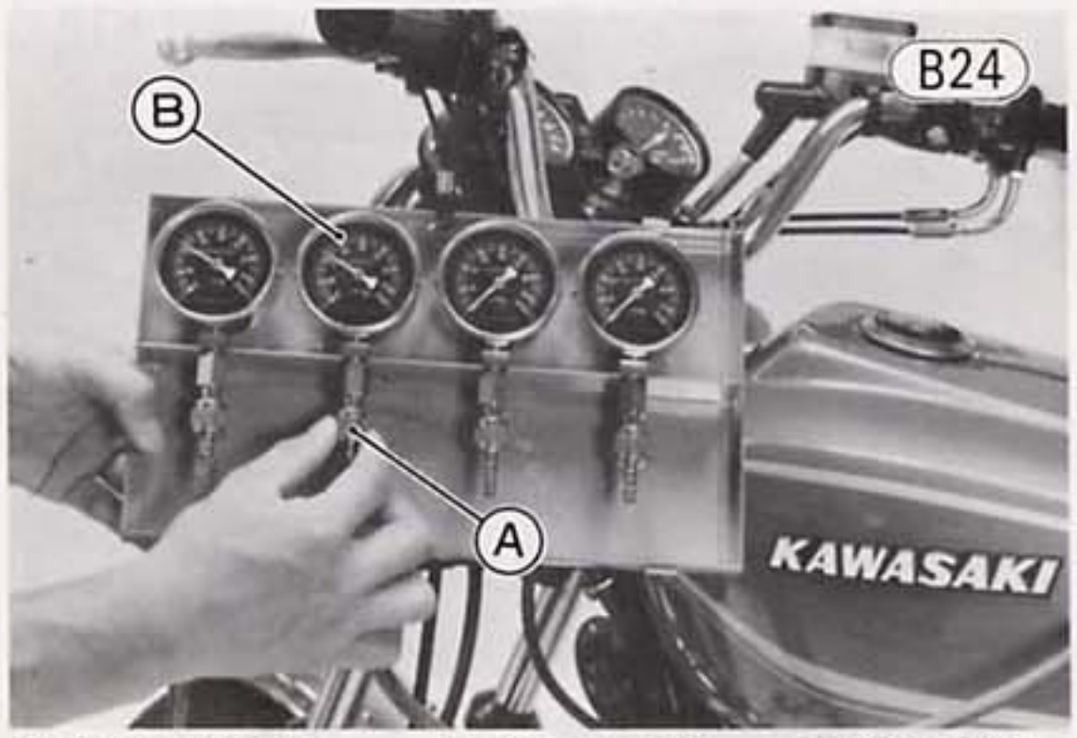


A. Vacuum Gauge Adapter (57001-401)

- Completely close the vacuum gauge damper valves, and then start the engine.
- With the engine running at idle speed, slowly open the vacuum gauge damper valves until gauge needle flutter is less than 3 cm Hg and note the gauge readings.

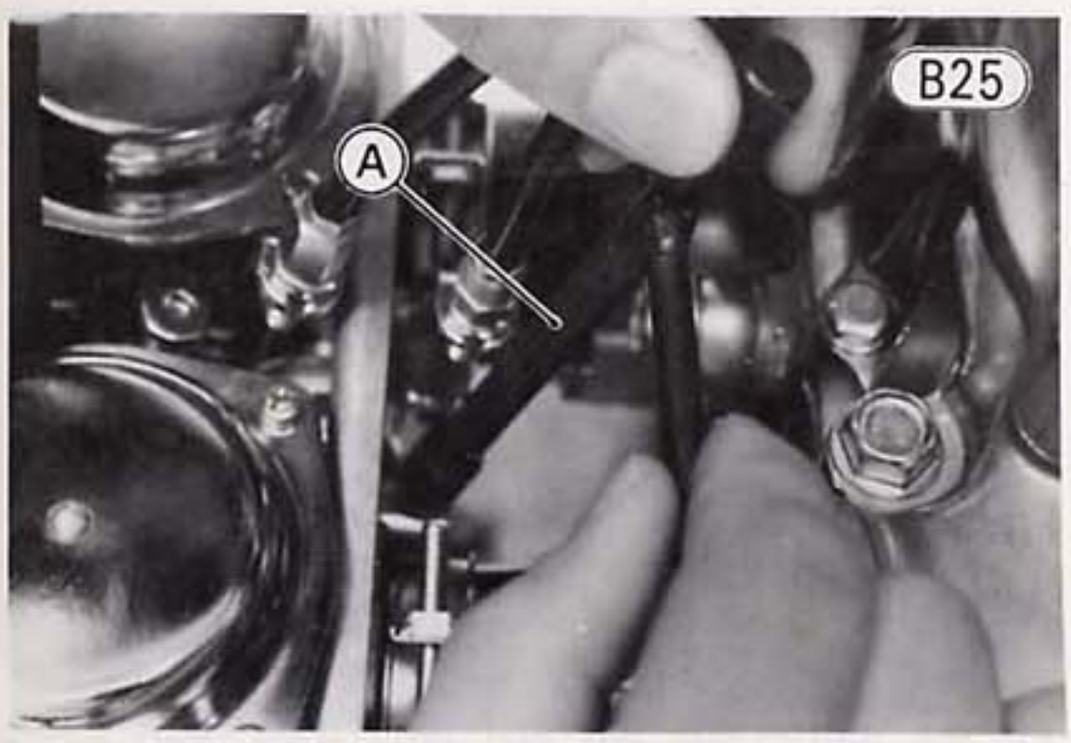
Table B5 Engine Vacuum

Engine Vacuum	21 ~ 27 cm Hg
Difference between two cylinders	less than 3 cm Hg

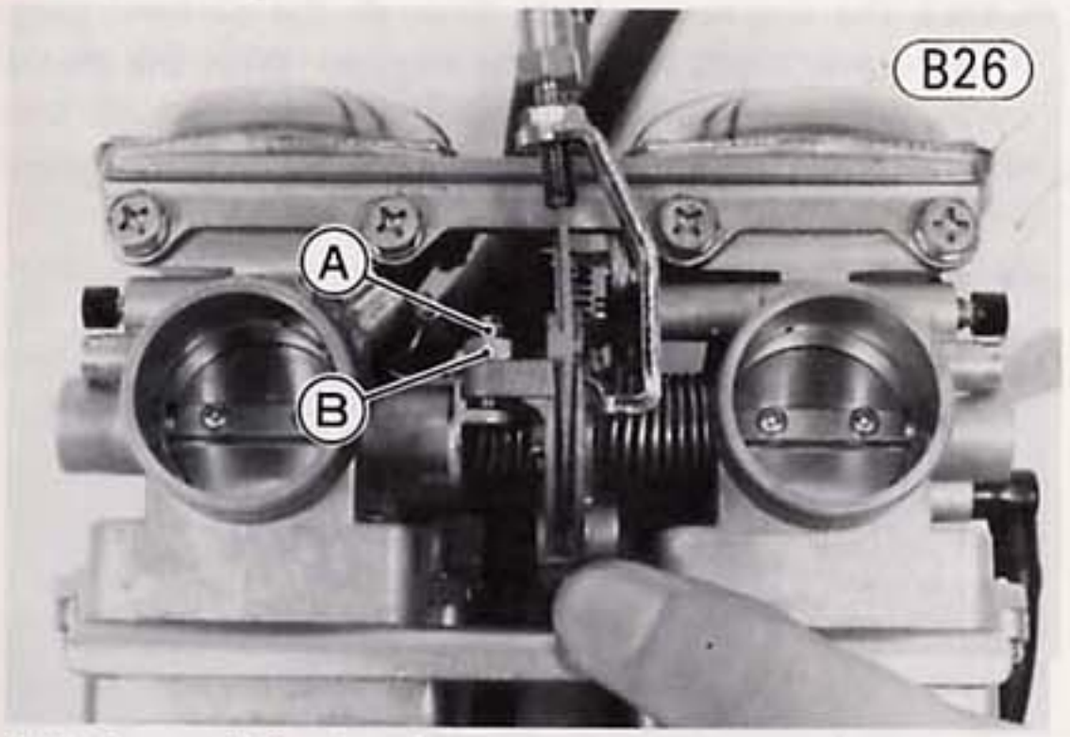


A. Damper Valve **B. Vacuum Gauge (57001-226)**

- If there is a differnece of more than the specified value between the two gauges, stop the engine, and synchronize the carburetors according to the following procedure.
- Remove the fuel tank (Pg. 43), and supply fuel for the carburetors by some means during adjustment.
- With the engine running at idle speed, loosen the locknut and alter the balance adjusting screw position using the balance adjuster (special tool) to obtain a difference in readings which is less than the specified value. Tighten the locknut.



A. Balance Adjuster (57001-351)



A. Balance Adjusting Screw B. Locknut

- Perform idling adjustment again.
- Open the throttle grip and let it snap shut a few times. Make sure the vacuum readings stay within the specified vacuum reading. If they do not, repeat the last two steps.
- If any gauge reads 5 cm Hg or more below the specified pressure after synchronizing the carburetors; recheck the points listed in Preliminary Checks (Pg. 17).
- After the carburetors are properly synchronized, tighten the locknut without changing the position of the adjusting screw.
- Detach the vacuum gauges and adapter, and install the vacuum plugs.
- Install the fuel tank (Pg. 43).

CLUTCH

Clutch cable stretch causes the clutch lever to develop excessive play. Too much play will prevent complete disengagement and may result in shifting difficulty and possible clutch and transmission damage. Most of the play must be adjusted out, but a small amount must remain so that the clutch release lever will function properly.

Clutch plate wear also causes the clutch to go out of adjustment. This wear causes the play between the push rod and the clutch release to gradually diminish until the push rod touches the clutch release. When this play is lost, the clutch will not engage fully, causing the clutch to slip.

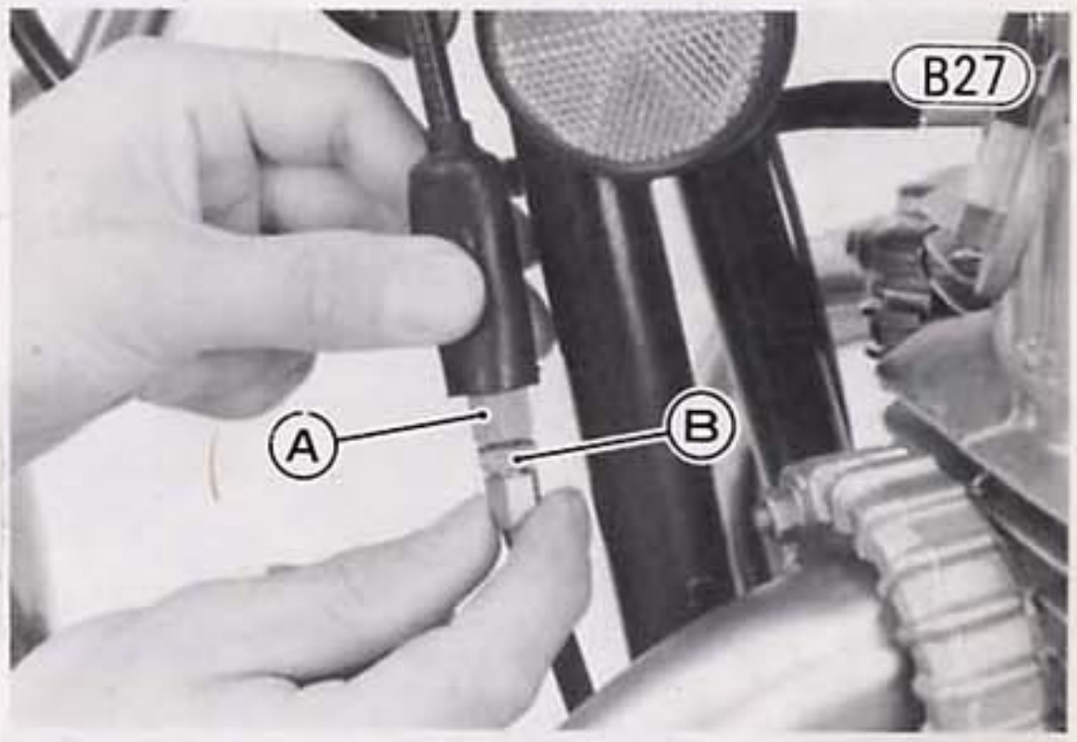
NOTE: Even though the proper amount of play exists at the clutch lever, clutch lever play alone cannot be used to determine whenever or not the clutch requires adjustment.

The following adjustment procedure compensates for both cable stretch and plate wear.

WARNING **To avoid a serious burn, never touch a hot engine or exhaust pipe during clutch adjustment.**

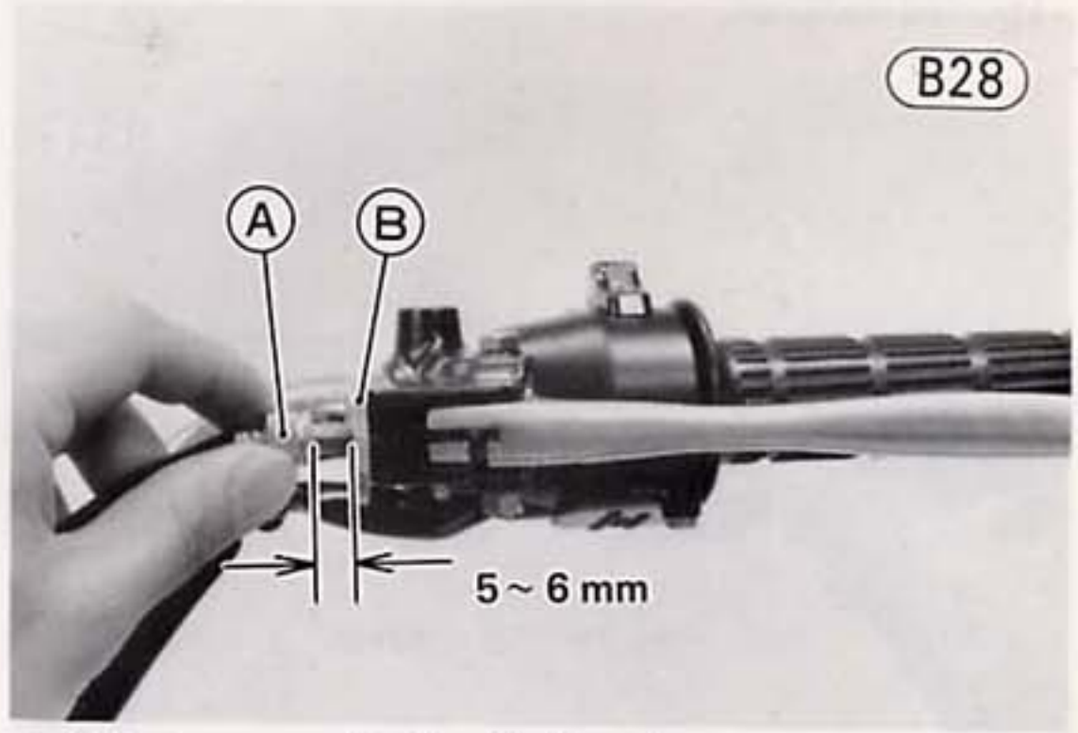
To adjust the clutch:

- Slide up the adjuster dust cover out of place.
- Loosen the locknut, and turn in fully the adjusting nut at the center of the clutch cable to give the cable plenty of play.



A. Adjusting Nut B. Locknut

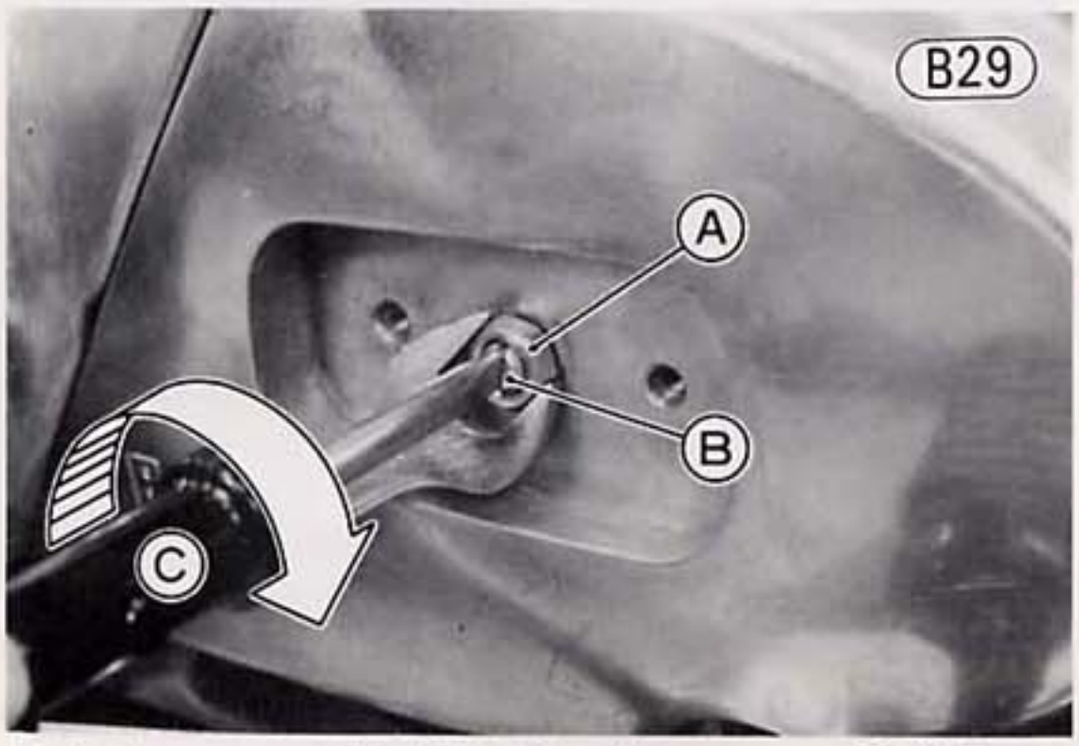
- Loosen the knurled locknut at the clutch lever just enough so that the adjuster will turn freely, and then turn the adjuster to make a 5~6 mm gap between the adjuster and knurled locknut.



A. Adjuster B. Knurled Locknut

- Remove the clutch release adjusting cover.

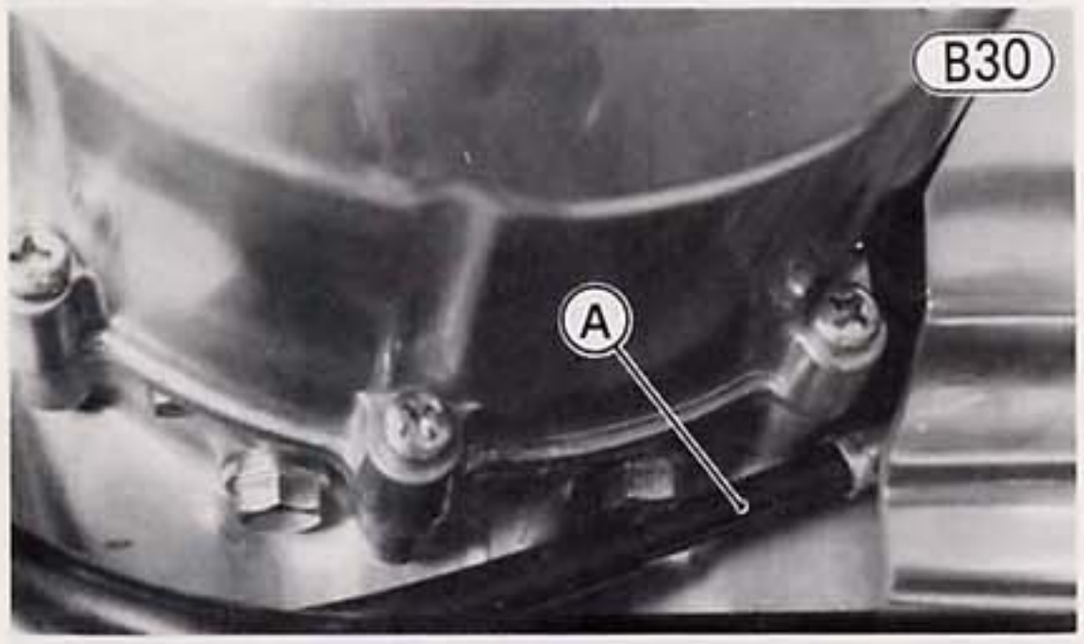
- Loosen the locknut, and turn in the adjusting screw until the screw turns without drag.
- Turn **out** the adjusting screw until it becomes hard to turn. This is the point where the clutch is just starting the release.
- Turn **in** the adjusting screw ¼ turn from that point, and tighten the locknut.



A. Locknut B. Adjusting Screw C. ¼ Turn

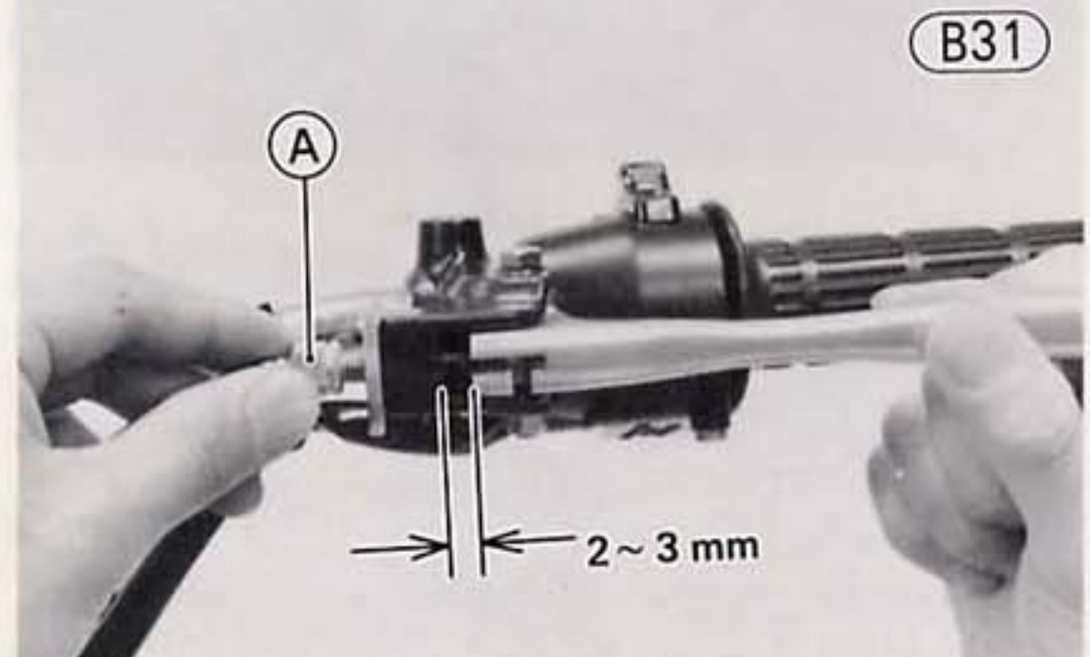
- Take up all the cable play with the adjusting nut at the center of the cable, and then tighten the locknut.

WARNING **Be sure the cable is fully seated in the engine sprocket cover hole, or it could slip into place later, creating enough cable play to prevent clutch disengagement.**



A. Clutch Cable

- Slide back the adjuster dust cover.
- Turn the adjuster at the clutch lever so that the clutch lever will have 2 ~ 3 mm of play and tighten the knurled locknut.



A. Adjuster

- Install the clutch release adjusting cover.

ENGINE OIL

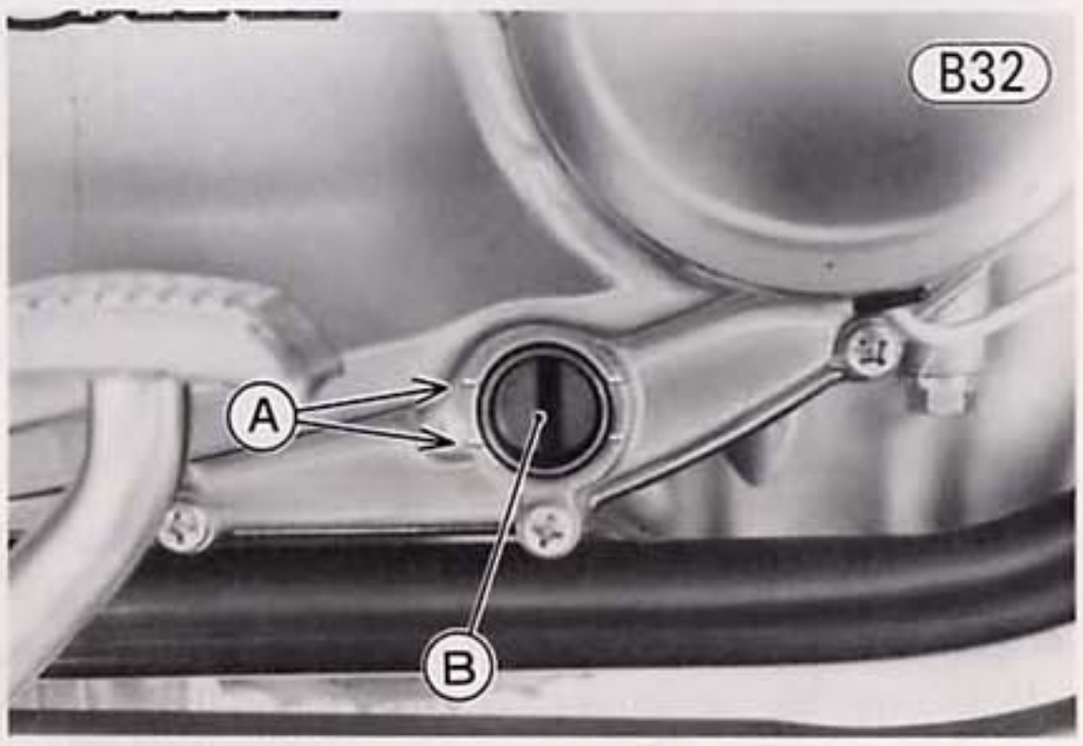
In order for the engine, transmission, and clutch to function properly; maintain the engine oil at the proper level, and change the oil in accordance with the Periodic Maintenance Chart (Pg. 10). Motorcycle operation with insufficient, deteriorated, or contaminated engine oil will cause accelerated wear and may result in engine or transmission seizure.

Oil Level Inspection

- Situate the motorcycle so that it is perpendicular to the ground.
- If the oil has just been changed, start the engine and run it for several minutes at idle speed. This fills the oil filter with oil. Stop the engine, then wait several minutes until the oil settles.

CAUTION **Run the engine at idle speed for several minutes. Racing the engine before the oil reaches every part can cause engine seizure.**

- If the motorcycle has just been used, wait several minutes for all the oil to drain down.
- Check the engine oil level through the oil level gauge in the lower right side of the engine. With the motorcycle held level or on the center stand, the oil level should come up between the lines next to the gauge.



A. Level Lines B. Oil Level Gauge

- If the oil level is too high, remove the excess oil, using a syringe or some other suitable device.
- If the amount of oil is insufficient, add the correct amount of oil through the oil filler opening. Use the same type and make of oil that is already in the engine.

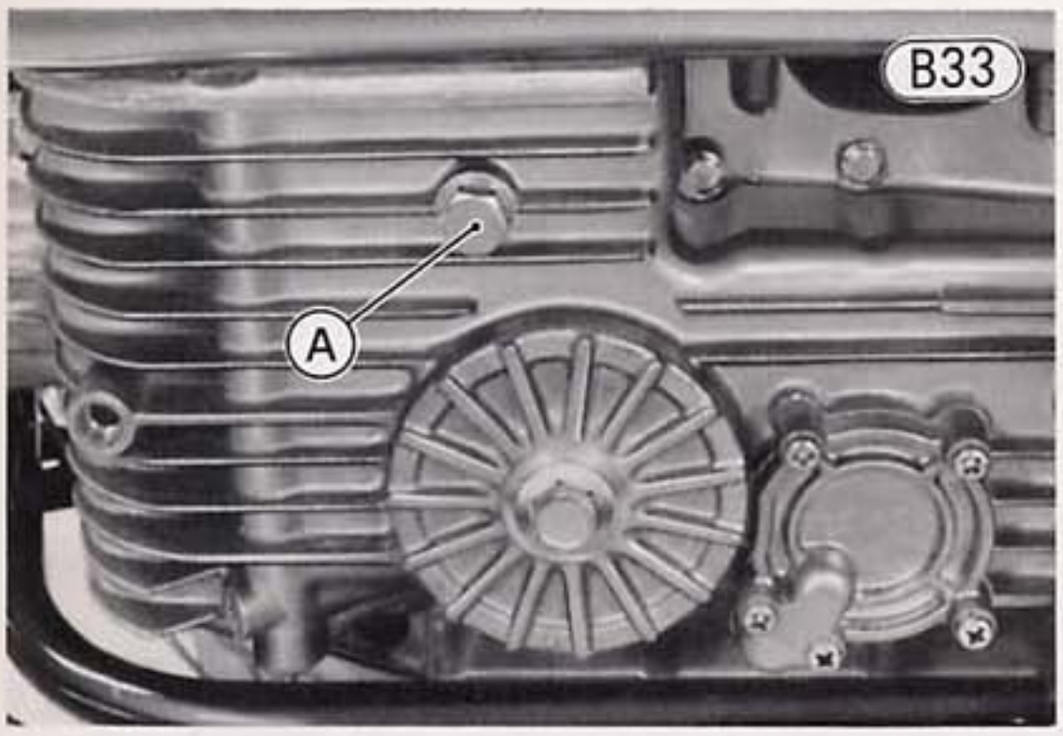
CAUTION **If the engine oil get extremely low or if the oil pump or oil passages clog up or otherwise do not function properly, the red oil pressure warning light in the switch panel will light. If this light stays on when the engine speed is above 1,500 rpm, stop the engine immediately, and find the cause.**

WARNING **If the engine runs without oil, it will be severely damaged. In addition, the engine may suddenly seize, locking the rear wheel and causing**

an accident if the clutch lever is not pulled in fast enough.

Oil and Oil Filter Change

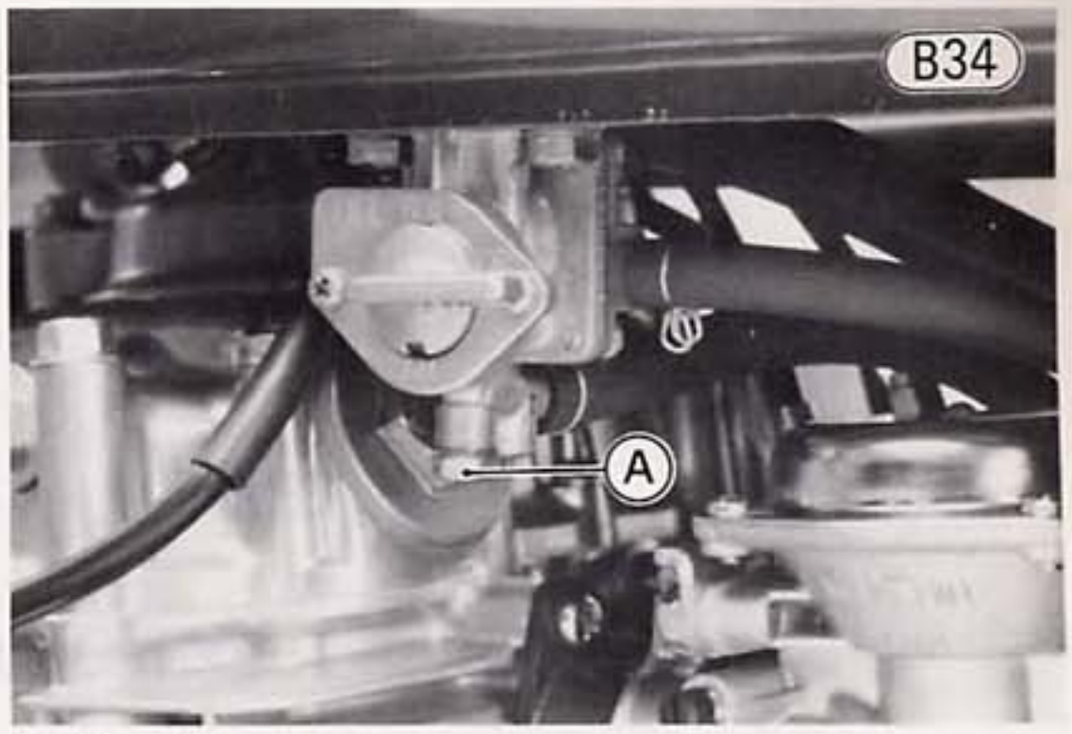
- Warm up the engine thoroughly, and then stop the engine.
- Situate the motorcycle so that it is perpendicular to the ground, place an oil pan beneath the engine, and remove the engine drain plug.



A. Engine Drain Plug

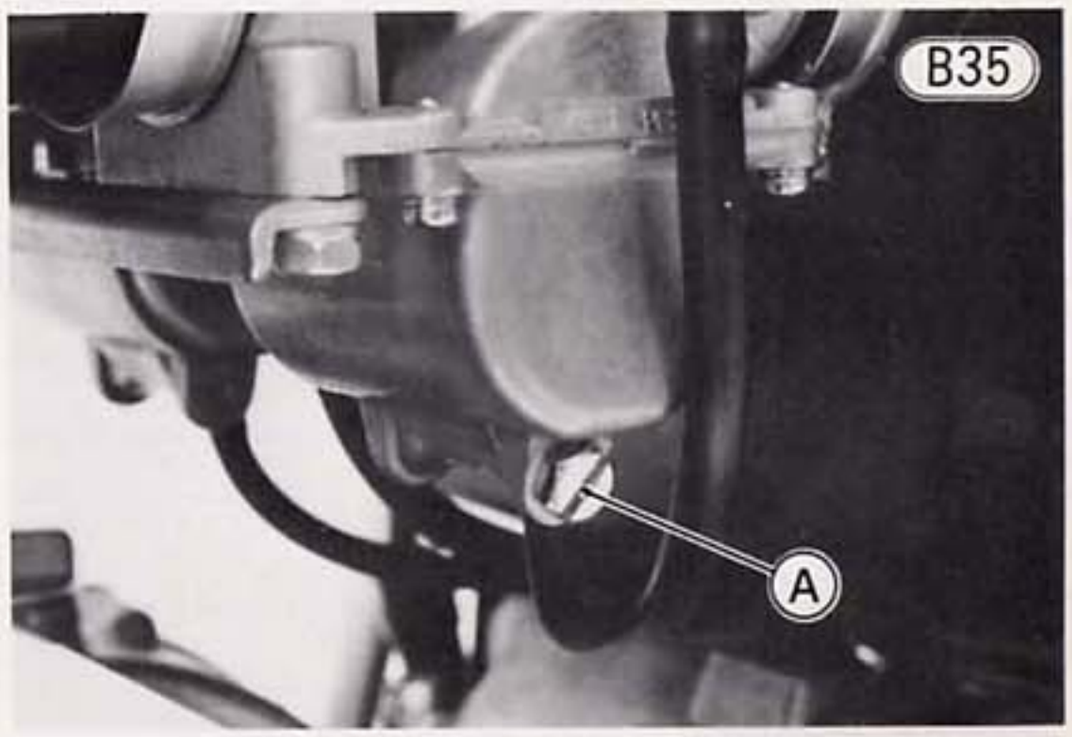
- If the oil filter is to be changed, replace the oil filter as explained on Pgs. 77~78.
- After the oil has completely drained out, install the drain plug and gasket. Replace the damaged gasket with a new one. Proper torque for the engine drain plug is 3.0 kg-m (22 ft-lbs).
- Fill the engine up to the upper level with SE class SAE 10W40, 10W50, 20W40, or 20W50 motor oil. It will take about 2.9 liters when the filter is changed. When the filter is not changed, a refill takes about 2.5 liters.

NOTE: After the engine has been run and then stopped for a few minutes, the oil level should be between the upper and lower marks.



A. Drain Plug

- Install the gasket and the drain plug on the tap.
- If there was water inside the fuel tank, there may also be some in the carburetor float bowls.
- Remove the drain plug from the bottom of each carburetor float bowl to drain the bowls.



A. Drain Plug

- Install the O rings and drain plugs on the float bowls.

FUEL SYSTEM

Water anywhere in the fuel system can cause starting difficulty, poor running, and lack of power. Clean out the fuel system as follows:

WARNING

1. **Clean the fuel system in a well-ventilated area, and take ample care that there are no sparks or flame anywhere near the working area.**
2. **Never clean out the fuel system when the engine is still warm.**
3. **Wipe any fuel off the engine before starting it.**

- Remove the drain plug at the bottom of the fuel tap.
- Holding a container under the fuel tap, turn the tap to the "PRI" position to drain the tank until only gasoline comes out, and then turn the tap to the "ON" position.

Adjustment — Chassis

Table of Contents

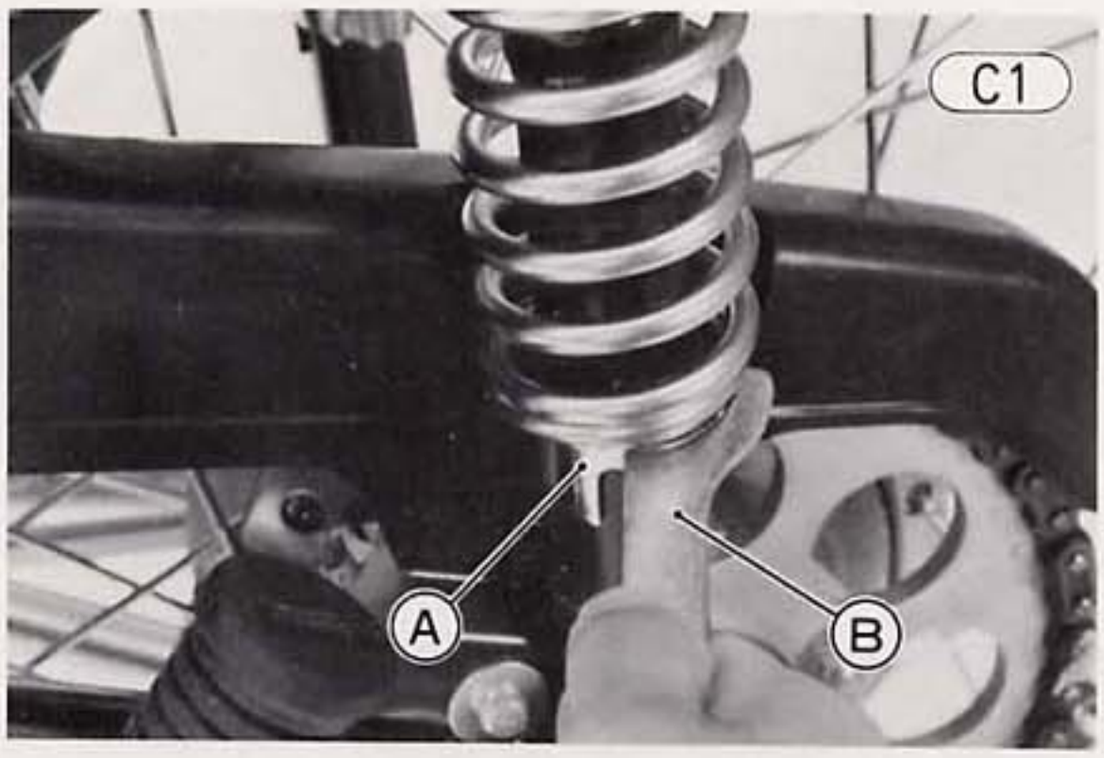
C

REAR SHOCK ABSORBERS

The rear shock absorbers can be adjusted to one of five positions to suit riding conditions. They can be left soft for average riding but should be adjusted harder for high speed riding, riding on bad roads, or riding with a passenger. Shock absorbers adjusted either too soft or too hard adversely affect riding comfort and stability.

To adjust the rear shock absorbers:

- Turn the adjusting sleeve on each shock absorber to the desired position with a hook spanner. The higher the adjusting sleeve is positioned, the stronger the spring tension, and the harder the ride.



A. Adjusting Sleeve **B. Hook Spanner**

- Check to see that both adjusting sleeves are turned to the same relative position.

WARNING **If they are not adjusted to the same position, an unsafe riding condition may result.**

DRIVE CHAIN

Chain and sprocket wear causes the chain to stretch, which results in power loss, accelerated chain and sprocket wear, and increased noise. A chain that has been adjusted too loose may be thrown off the sprockets. A chain that has been adjusted too tight will wear excessively and possibly break.

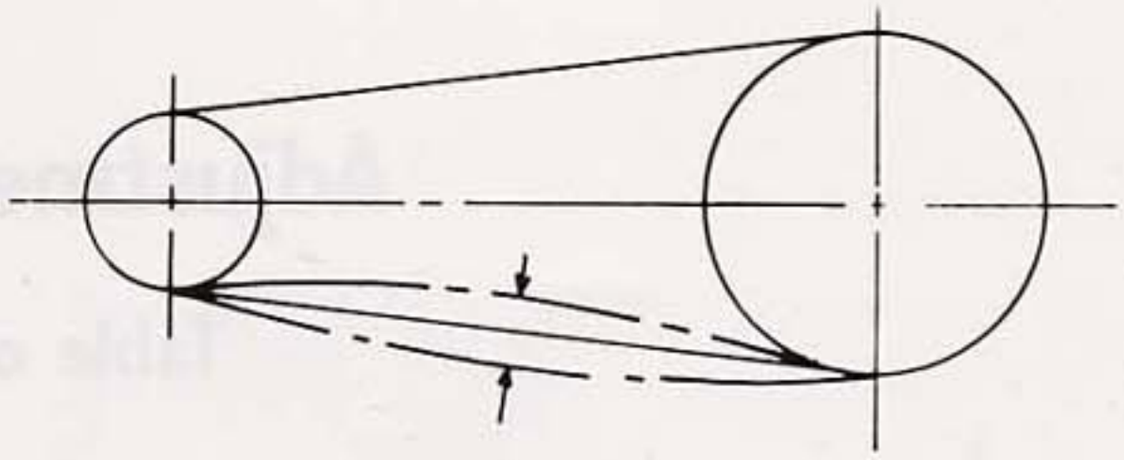
To check the drive chain slack:

- Check to see if the drive chain wear is past the service limit (Pg. 198). A chain worn past the service limit must be replaced with a new one.

WARNING **A chain worn past the service limit must be replaced. Such wear cannot be adequately compensated for by adjustment.**

- Set the motorcycle up on its center stand. In the case of KZ400-C, stand the motorcycle on its side stand.
- Rotate the rear wheel to find the position where the chain is tightest, and measure the vertical movement midway between the sprockets.

Chain Slack



- If the drive chain is too tight or too loose, adjust it so that the vertical movement will be within the standard value.

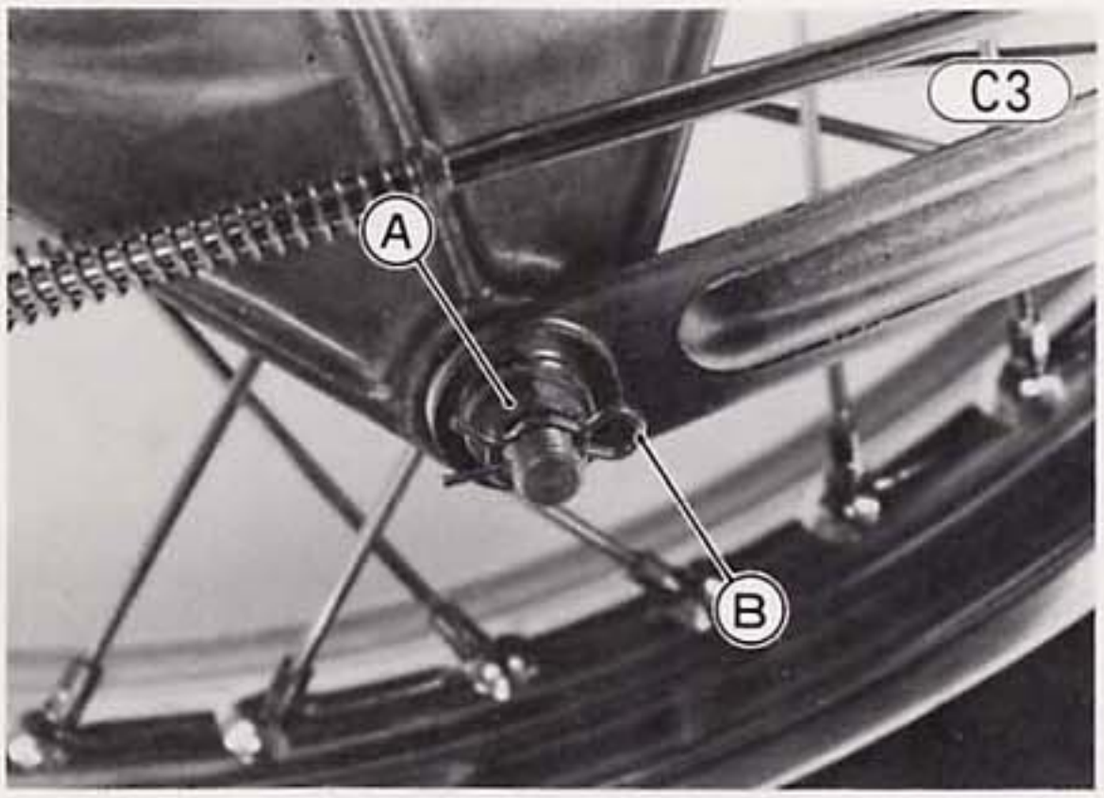
Table C1 Drive Chain Slack

	Vertical Movement	
Model	Standard (no adjustment required)	Too tight or too loose (adjustment required)
KZ400-B (on center stand)	25 ~ 30 mm	less than 25 mm more than 35 mm
KZ400-C (on side stand)	20 ~ 25 mm	less than 20 mm more than 30 mm

To adjust the drive chain:

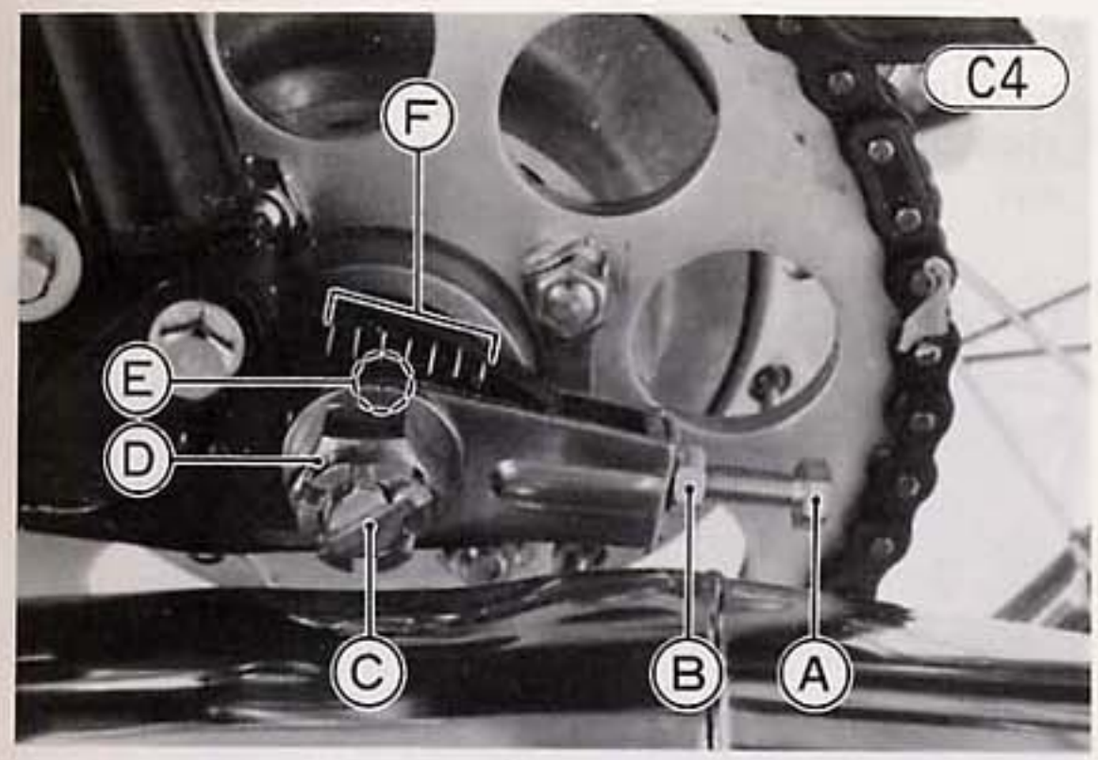
- Remove the safety clip, and loosen the nut at the rear end of the torque link.

CAUTION **If you don't loosen the torque link nut, it may lead to brake panel fracture when the chain adjusters are set.**



A. Torque Link Nut **B. Clip**

- Loosen the left and right chain adjusting bolt locknuts.
- Remove the axle cotter pin and loosen the axle nut.



A. Adjusting Bolt
B. Locknut
C. Cotter Pin
D. Axle Nut
E. Notch
F. Alignment Marks

- If the chain is too tight, back out the left and right chain adjusting bolts evenly, and kick the wheel forward until the chain is too loose.
- Turn the left and right chain adjusting bolts evenly until the drive chain has the correct amount of slack. To keep the chain and wheel aligned, the notch on the left chain adjuster should align with the same swing arm mark that the right chain adjuster notch aligns with.

NOTE: Wheel alignment can also be checked using the straightedge or string method.

WARNING **Misalignment of the wheel will result in abnormal wear, and may result in an unsafe riding condition.**

- Tighten both chain adjuster locknuts (Make sure the axle stays aligned).
- Center the brake panel assembly in the brake drum. This is done by tightening the axle lightly, spinning the wheel, and depressing the brake pedal forcefully. The partially tightened axle allows the brake panel assembly to center itself within the brake drum.

NOTE: This procedure can prevent a soft, or "spongy feeling" brake.

- Tighten the axle nut to 12.0 kg-m (87 ft-lbs) of torque.
- Rotate the wheel, measure the vertical movement again at the tightest position, and readjust if necessary.
- Insert a new cotter pin through the axle nut and axle, and spread its ends.
- Tighten the torque link rear nut to 3.0 kg-m (22 ft-lbs) of torque, and then insert the safety clip.
- Check the rear brake (Pg. 27).

BRAKES

Front Brake (on KZ400-B)

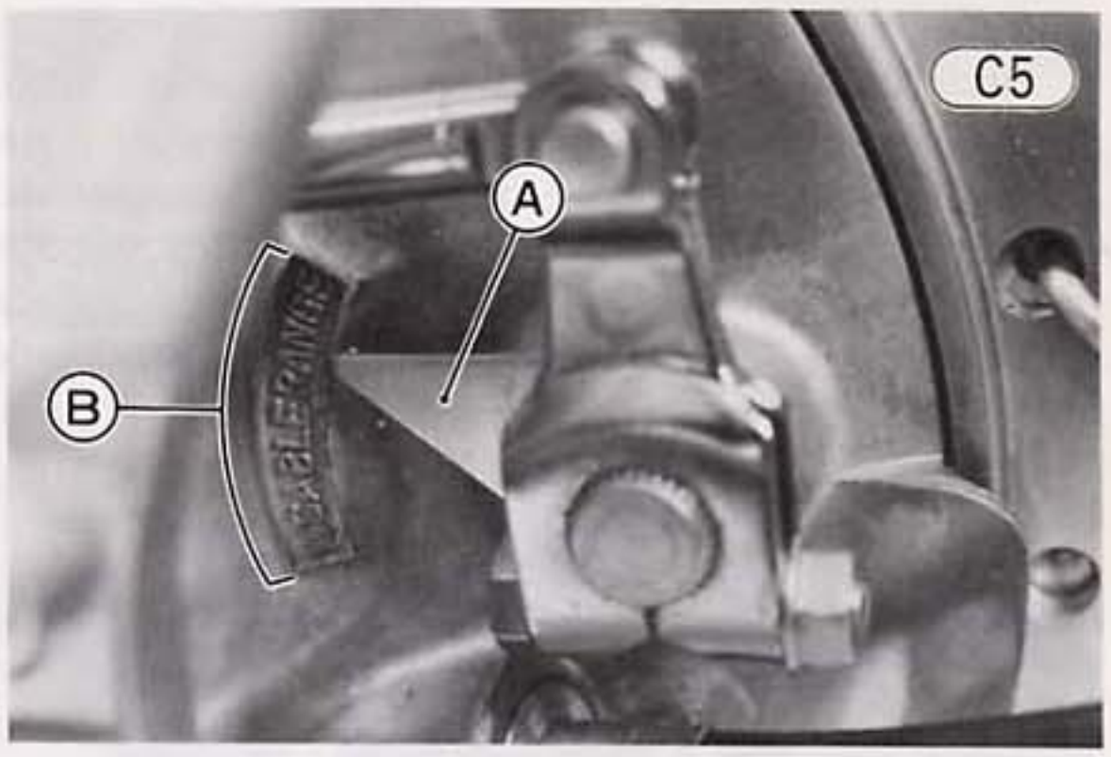
Disc and disc pad wear is automatically compensated for and has no effect on the brake lever action. So there are no parts that require adjustment on the front brake. However if the brake lever has a soft, or "spongy feeling", check the brake fluid level in the master cylinder and bleed the air from the brake line (Pg. 203).

Front Brake (on KZ400-C)

Brake lining and drum wear, and cable stretch cause the brakes to go out of adjustment, increasing lever play and decreasing braking effectiveness. Brake adjustment to compensate for this actually consists of following three adjustments: cam lever angle, brake shoe synchronization, and brake lever.

If brake drag is detected during brake adjustment, disassemble the brake (Pg. 111), and inspect for wear or damage (Pg. 206). Also, if the brake lever does not return to its rest position quickly upon release, inspect the brake for wear or damage. If the brake has a soft, or "spongy feeling", make sure the brake panel is properly synchronized.

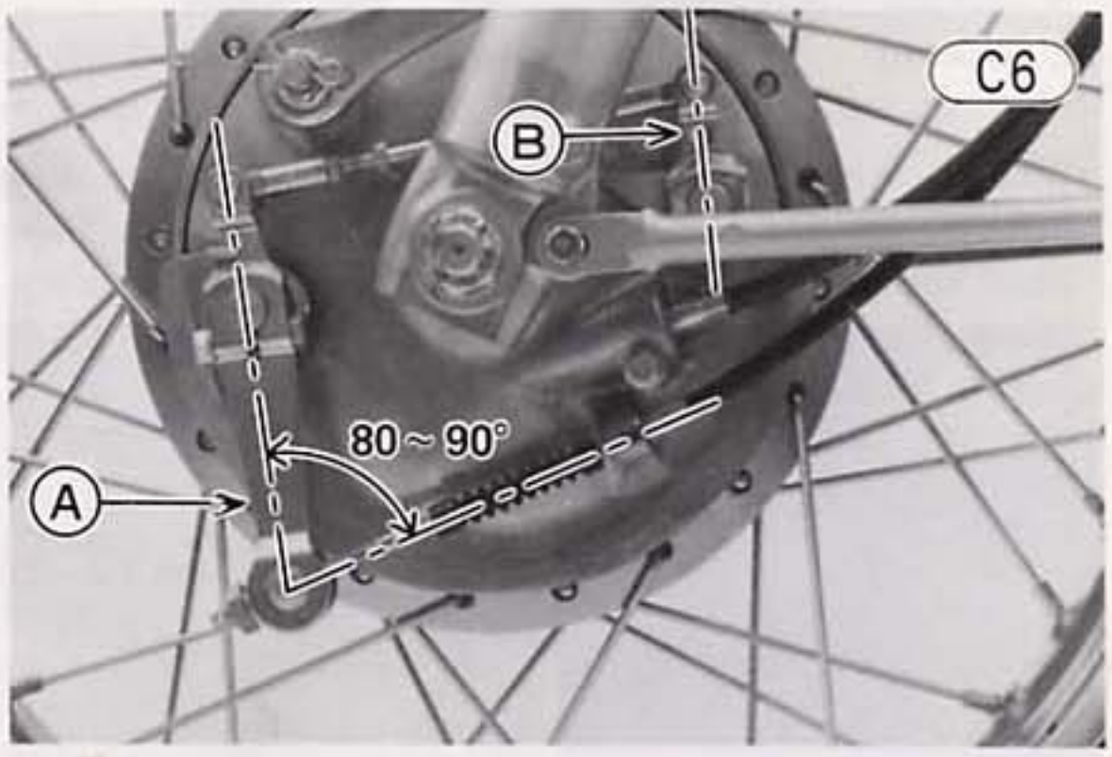
On the outside of the front brake panel there is a brake lining wear indicator. Whenever the indicator has gone past USABLE RANGE, the brake shoes must be immediately replaced and the other brake parts examined. Adjustment alone cannot compensate for the wear of a brake worn past USABLE RANGE.



A. Wear Indicator
B. USABLE RANGE

Cam Lever Angle

- When the brake is fully applied, the primary brake cam lever should come to an 80~90° angle with the threaded extension of the brake cable, at the same time as which the secondary brake cam lever should be parallel with the primary brake cam lever.



A. Primary Brake Cam Lever
B. Secondary Brake Cam Lever

- If they do not, remove the cam levers and then remount them at new positions on the shafts to achieve the proper angle, or loosen the locknut and turn the connecting rod to make the two cam levers parallel.

WARNING **Since a cam lever angle greater than 90° reduces braking effectiveness, this adjustment should not be neglected. When remounting the**

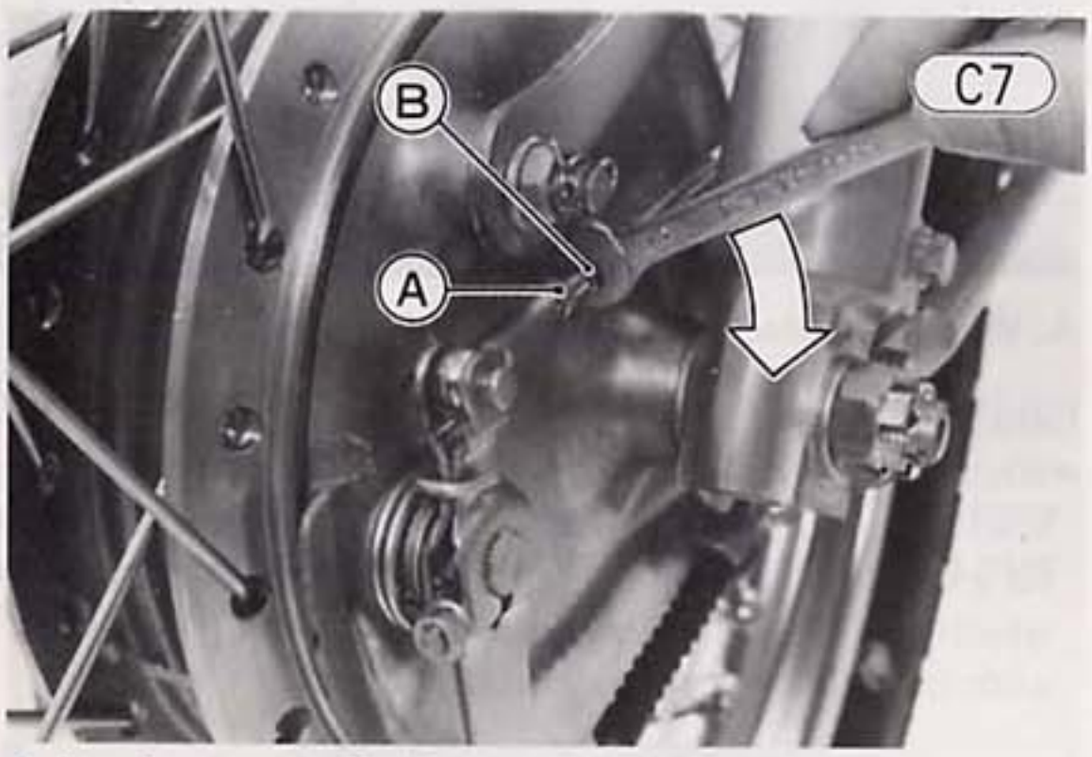
cam, be sure that the position of the indicator on the serrated shaft is not altered. See Pg. 112 for detailed information on the position of the wear indicator when the cam lever is not on the shaft. A change in cam lever angle is caused by wear of internal brake parts. Whenever the cam lever angle is adjusted, also check for drag and proper lever operation, taking particular note of the brake lining wear indicator position. In case of doubt as to braking effectiveness, disassemble and inspect all internal brake parts. Worn parts could cause the brake to lock or fail.

- Rotate the wheel to check for brake drag.
- Operate the brake lever a few times to see that it returns to its rest position immediately upon release.
- Adjust the front brake lever.

Brake Shoe Synchronization

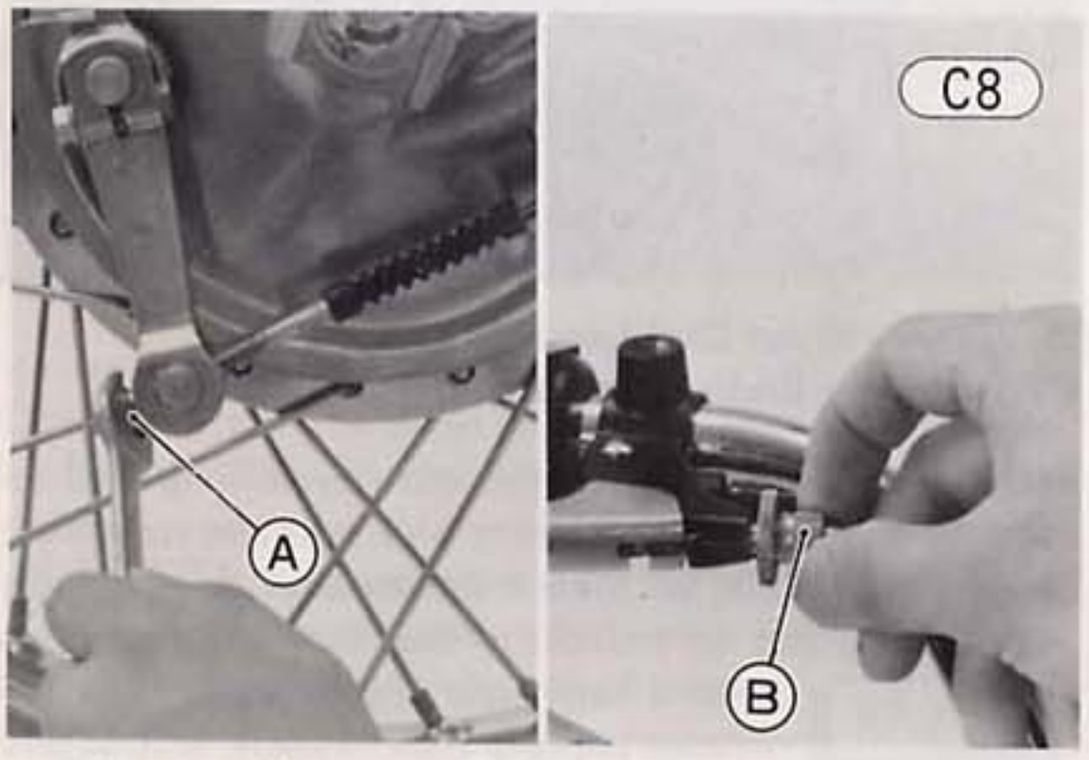
After the front wheel is removed, or after the brake was disassembled, synchronize the brake shoes.

- Raise the front wheel off the ground by some means.
- Loosen the locknut and turn the connecting rod one turn clockwise. This procedure backs off the secondary brake shoe so that it will not operate when the primary shoe contacts the inside surface of the drum.



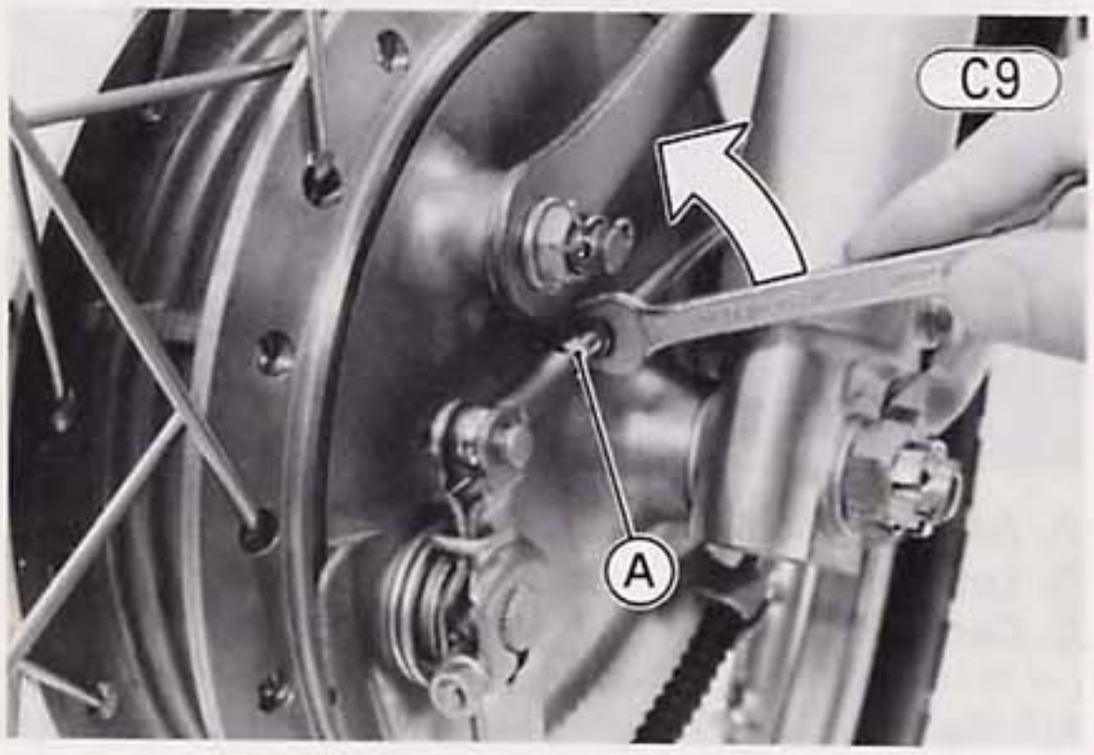
A. Locknut B. Connecting Rod

- While spinning the wheel lightly, turn in the adjusting nut and/or turn out the adjuster at the front brake lever until the primary shoe just starts touching the drum. When the shoe starts touching the drum, light dragging can be felt or heard.



A. Adjusting Nut B. Adjuster

- Spinning the wheel lightly, turn the connecting rod counterclockwise until the secondary brake shoe just starts dragging on the drum, and then tighten the locknut.

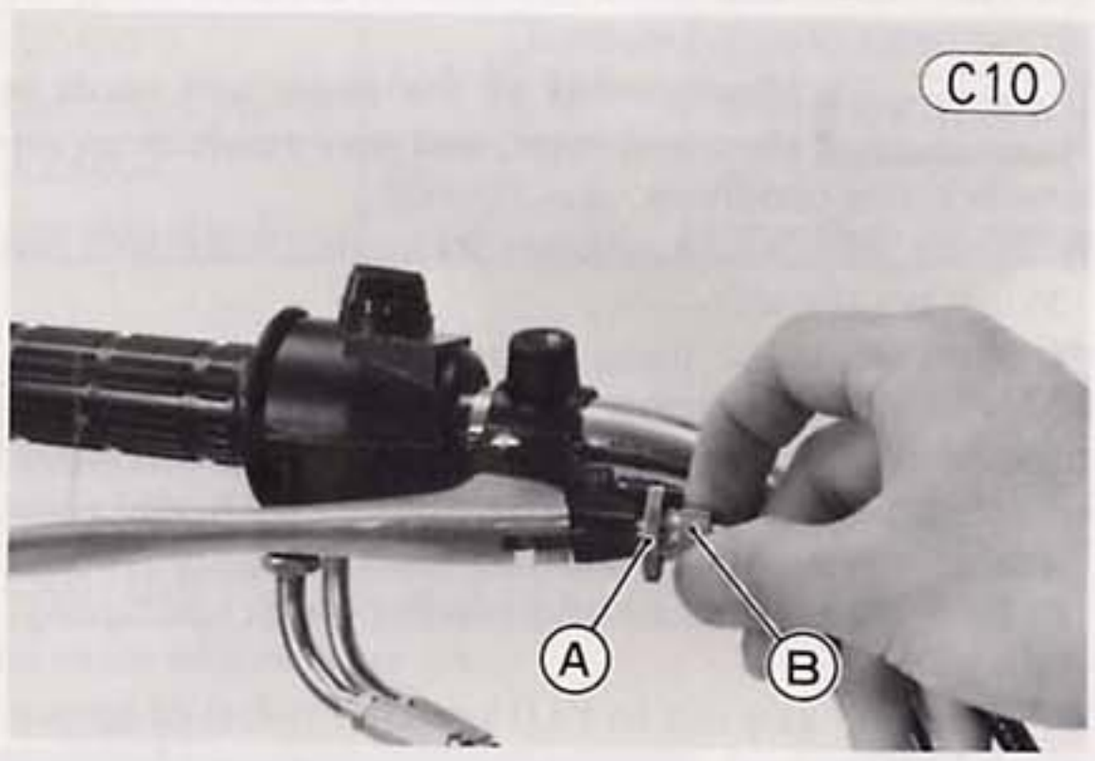


A. Locknut

- Adjust the front brake lever.

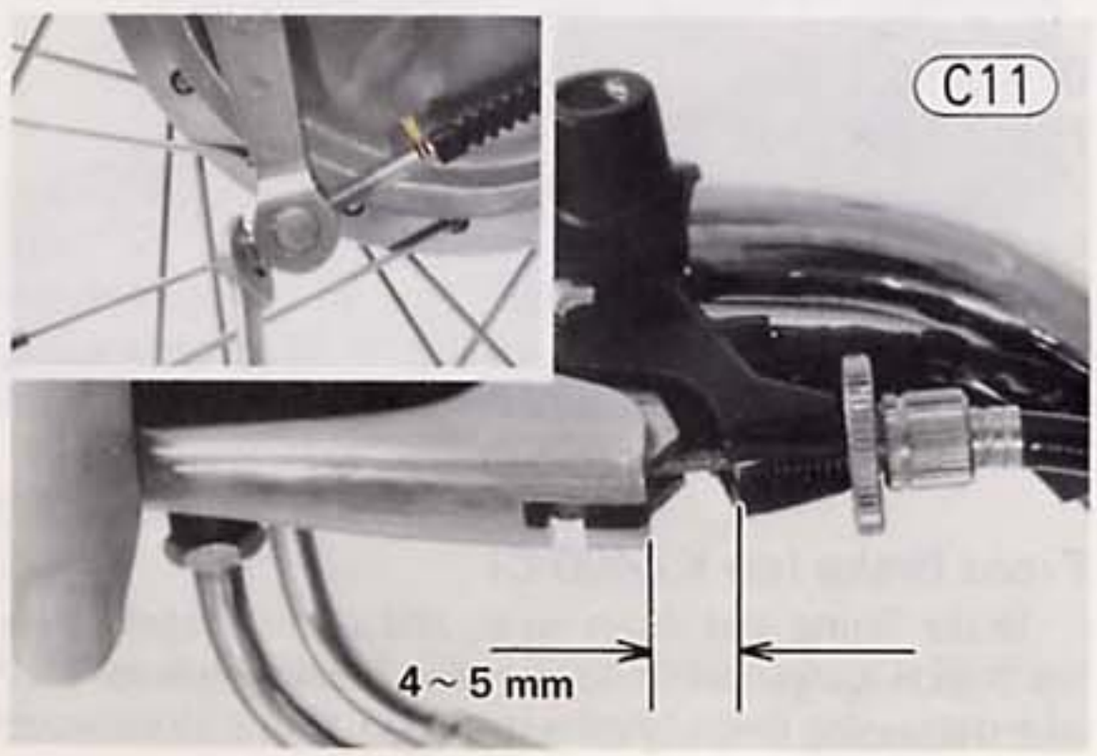
Front Brake Lever

- Loosen the knurled locknut at the front brake lever, turn the adjuster fully in, and tighten the locknut.



A. Knurled Locknut B. Adjuster

- Turn the adjusting nut on the lower end of the front brake cable so that the brake lever will have 4 ~ 5 mm of play as shown in the figure.



•If sufficient adjustment cannot be made with the adjusting nut at the lower end of the brake cable, complete the adjustment with the adjuster at the brake lever, and then tighten the locknut.
•Check for brake drag.
•Operate the lever a few times to see that it returns to its rest position immediately upon release.
•For minor corrections, use the adjuster at the front brake lever.

Rear Brake

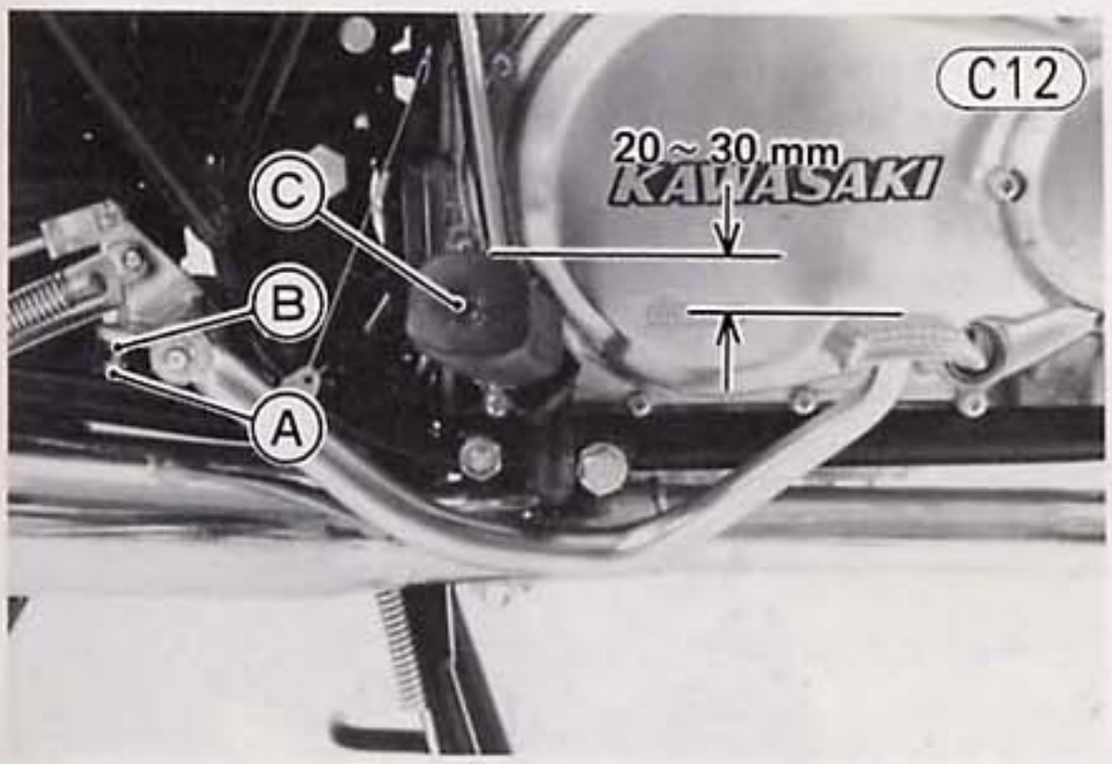
Brake lining and drum wear causes the rear brake to go out of adjustment, increasing pedal play and decreasing braking effectiveness. Rear brake adjustment to compensate for this actually consists of three successive adjustments: brake pedal position, cam lever angle, and brake pedal travel.

If brake drag is detected during brake adjustment, disassemble the brake (Pg. 120), and inspect for wear or damage (Pg. 206). Also, if the brake pedal does not return to its rest position quickly upon release, inspect the brake for wear or damage. If the brake has a soft, or "spongy feeling", make sure the brake panel is properly centered. See the second "NOTE" in drive chain adjustment procedure (Pg. 25).

On the outside of the rear brake panel there is a brake lining wear indicator. Whenever the indicator has gone past USABLE RANGE, the brake shoes must be immediately replaced and the other brake parts examined. Adjustment alone cannot compensate for the wear of a brake worn past USABLE RANGE.

Brake Pedal Position

•When the brake pedal is in its rest position, it should be 20~30 mm lower than the top of the footpeg. If it is too high, turn out the adjusting nut at the end of the brake rod to give the brake pedal plenty of play. If it is too low, go to the next step.

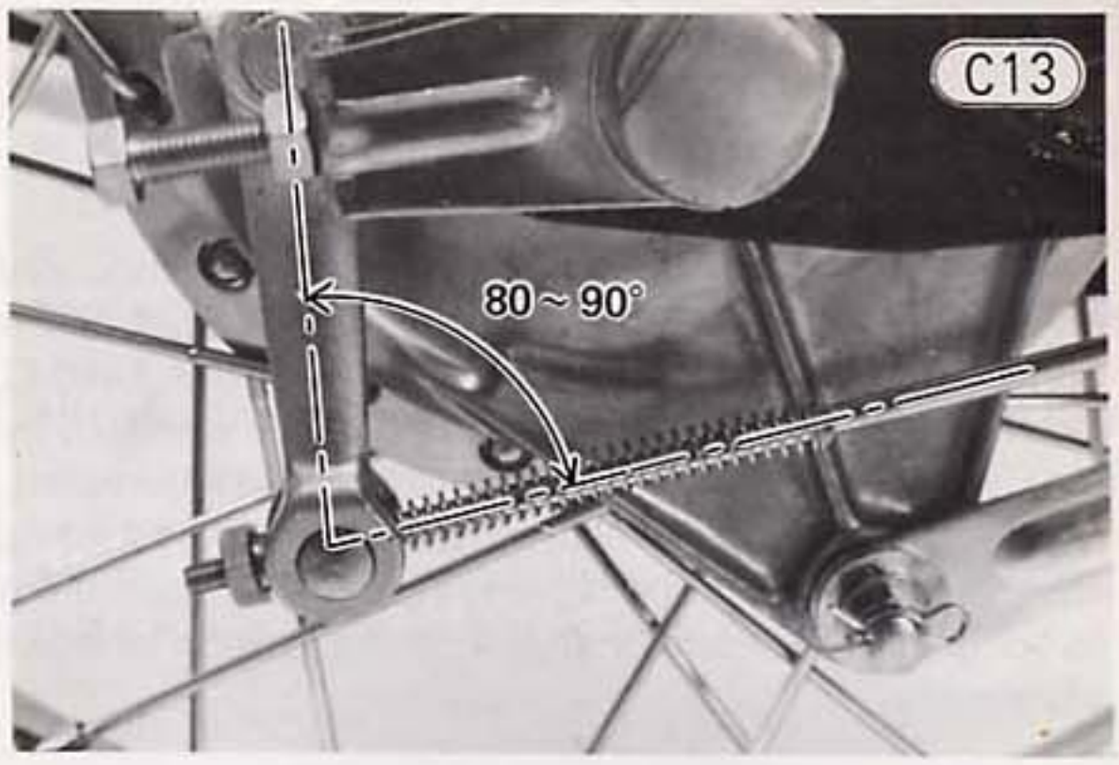


A. **Adjusting Bolt** B. **Locknut** C. **Footpeg**

•Loosen the brake pedal adjusting bolt locknut, turn the adjusting bolt to obtain the correct pedal position, and tighten the locknut.
•Check the brake pedal travel.
•Check the rear brake light switch operation.

Cam Lever Angle

•When the brake is fully applied, the brake cam lever should come to an 80~90° angle with the brake rod.



•If it does not, remove the cam lever, and then remount it at a new position on the shaft for the proper angle.

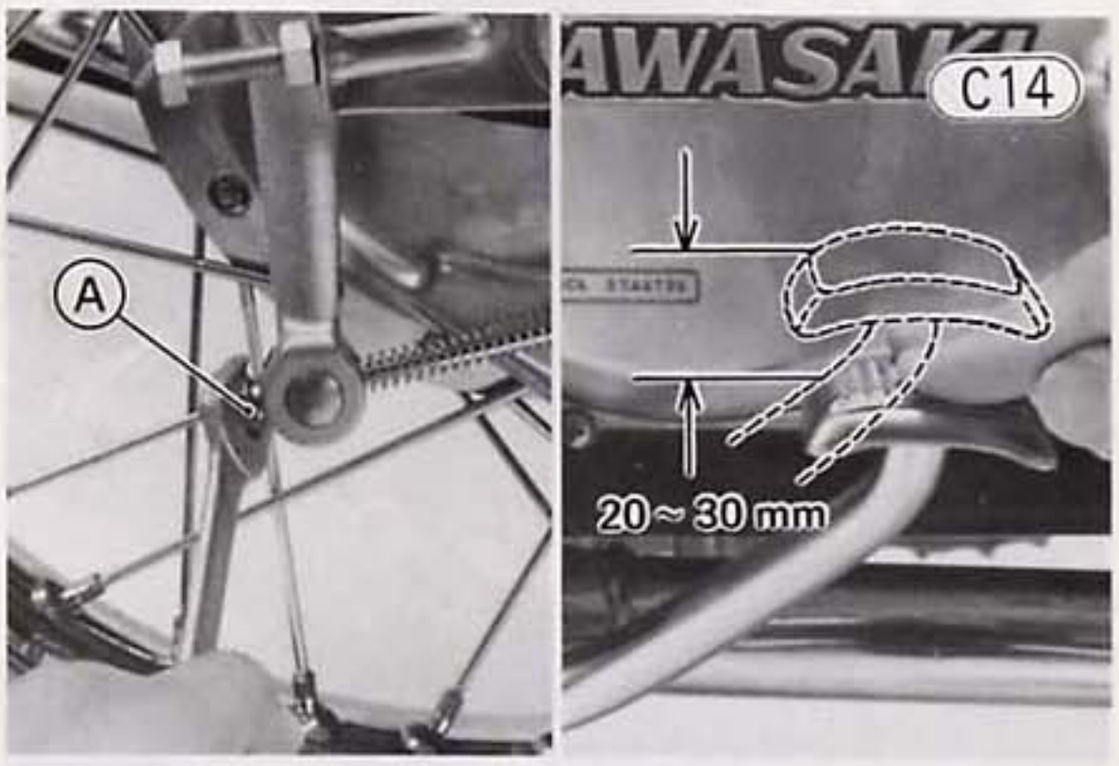
WARNING

Since a cam lever angle greater than 90° reduces braking effectiveness, this adjustment should not be neglected. When remounting the cam, be sure that the position of the indicator on the serrated shaft is not altered. See Pg. 120 for detailed information on the position of the wear indicator when the cam lever is not on the shaft. A change in cam lever angle is caused by wear of internal brake parts. Whenever the cam lever angle is adjusted, also check for drag and proper pedal operation, taking particular note of the brake lining wear indicator position. In case of doubt as to braking effectiveness, disassemble and inspect all internal brake parts. Worn parts could cause the brake to lock or fail.

•Rotate the rear wheel to check for brake drag.
•Operate the pedal a few times to see that it returns to its rest position immediately upon release.
•Adjust the brake pedal travel.

Brake Pedal Travel

•Check to see that the brake pedal has 20~30 mm of travel from the rest position to the fully applied position when the brake pedal is pushed down lightly by hand.



A. **Adjusting Nut**

•If it does not, turn the adjusting nut on the end of the brake rod so that the brake pedal has the proper travel.

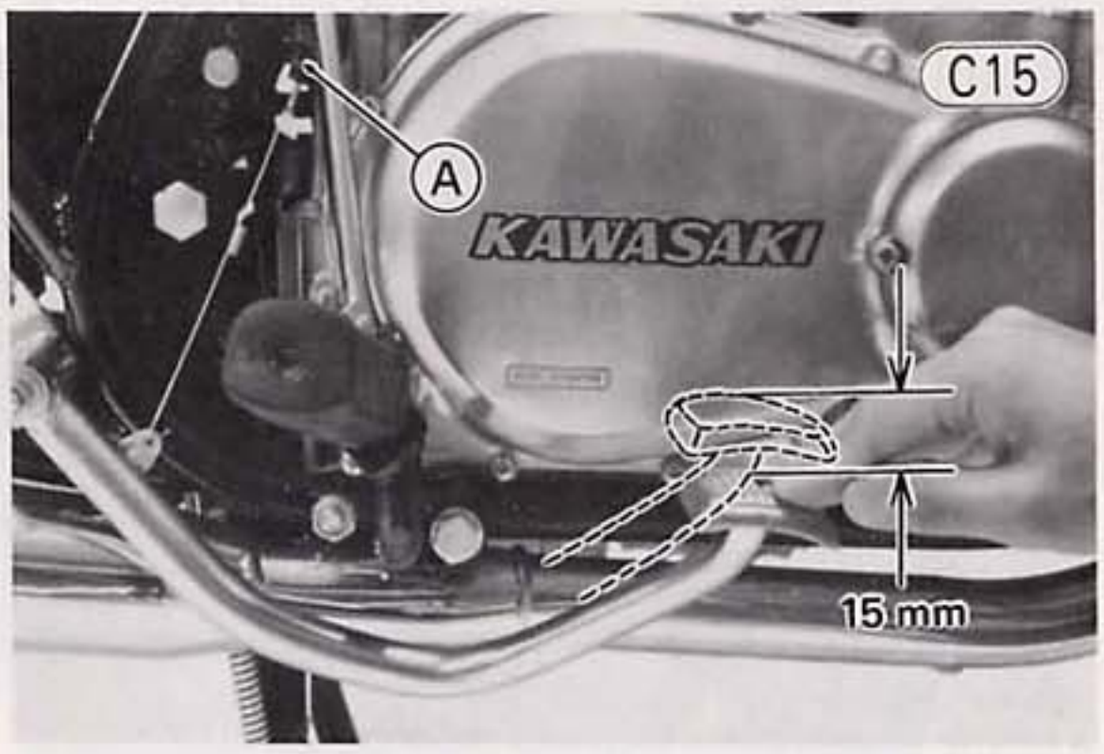
- Rotate the rear wheel to check for brake drag.
- Operate the pedal a few timse to see that it returns to its rest position immediately upon release.
- Check the rear brake light switch operation.

BRAKE LIGHT SWITCH

The front brake light switch of KZ400-B, mounted on the steering stem base, operates hydraulically and is non-adjustable. The front brake light switch of KZ400-C, mounted on the front brake lever holder, is operated by simple electrical contact and should not need adjustment. However, the rear brake light switch, activated by a spring attached to the brake pedal, requires periodic adjustment to compensate for any change in spring tension or brake adjustment.

To check the brake light switch:

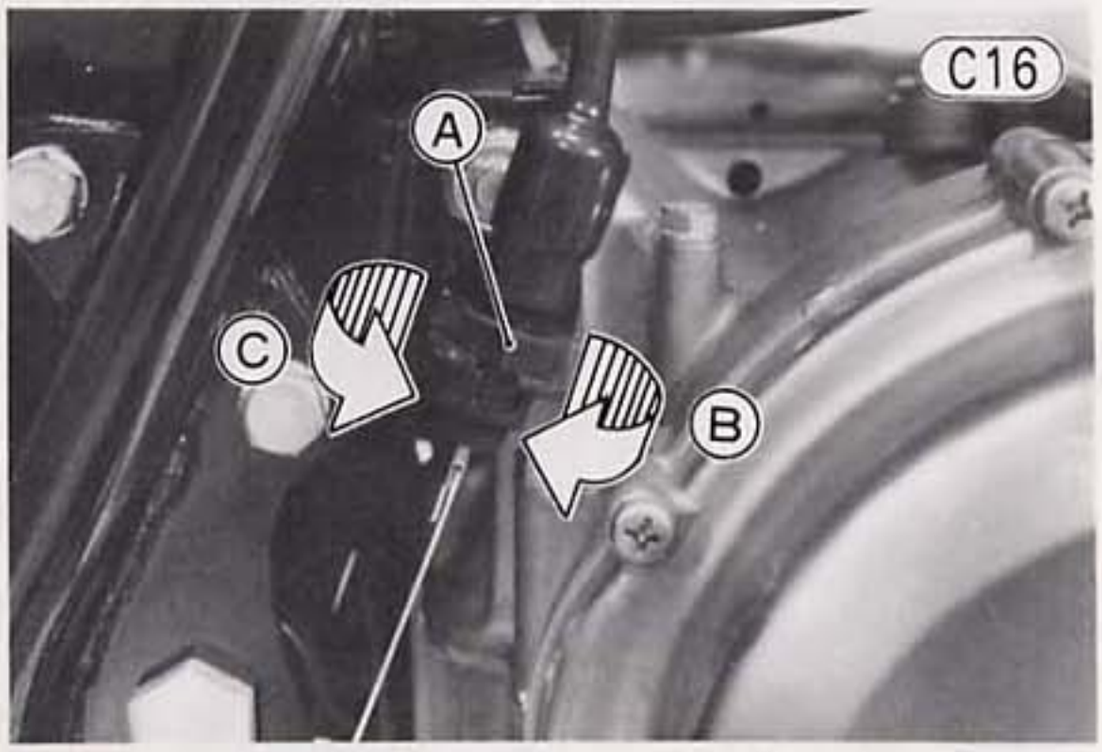
- With the ignition switch on, depress the brake pedal and note the brake pedal travel until the brake light goes on. The brake light should go on after 15 mm of pedal travel.



A. Brake Light Switch

To adjust the brake light switch:

- Turn the adjusting nut on the brake light switch body so that the brake light will go on after the proper amount of brake pedal travel. Raising the switch will make the light go on after less travel; lowering it will require more travel.



A. Adjusting Nut **C. Lights later**
B. Lights sooner

CAUTION **To avoid damaging the electrical connections inside the switch, do not turn the switch body during adjustment.**

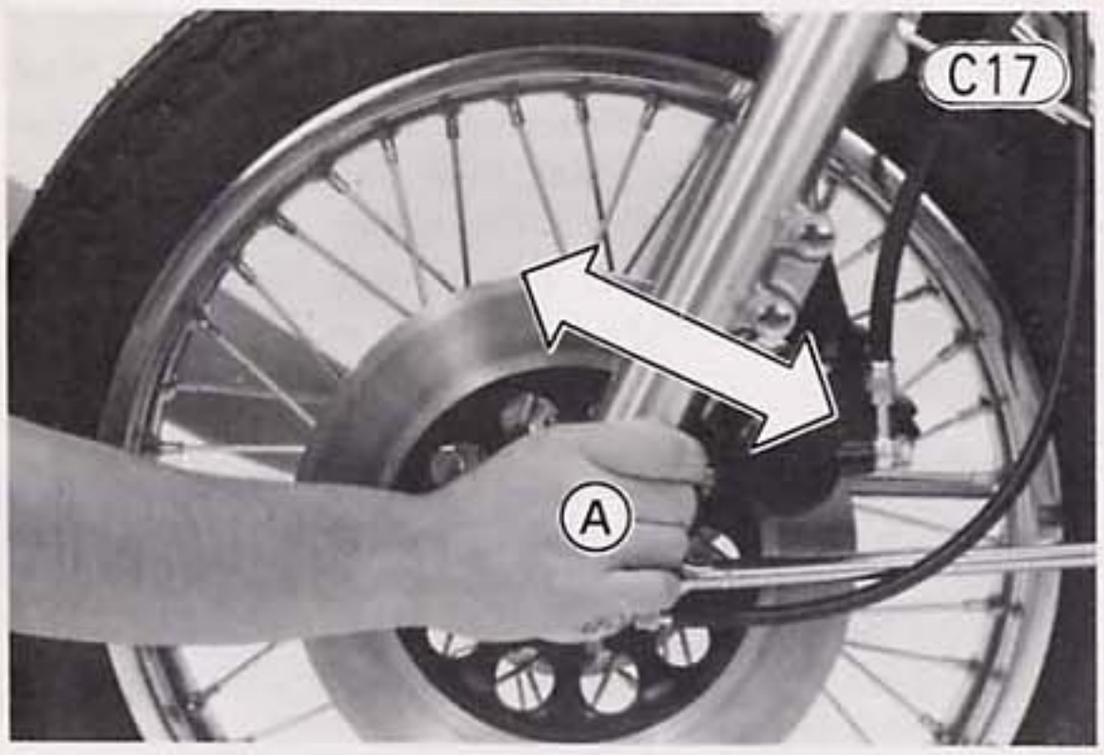
STEERING

For safety, the steering should always be kept adjusted so that the handlebar will turn freely but have no play.

If the steering is too tight, it will be difficult to turn the handlebar quickly, the motorcycle may pull to one side, and the steering stem bearings may become damaged. If the steering is too loose, the handlebar will vibrate and the motorcycle will be unstable and difficult to steer in a straight line.

To check the steering adjustment:

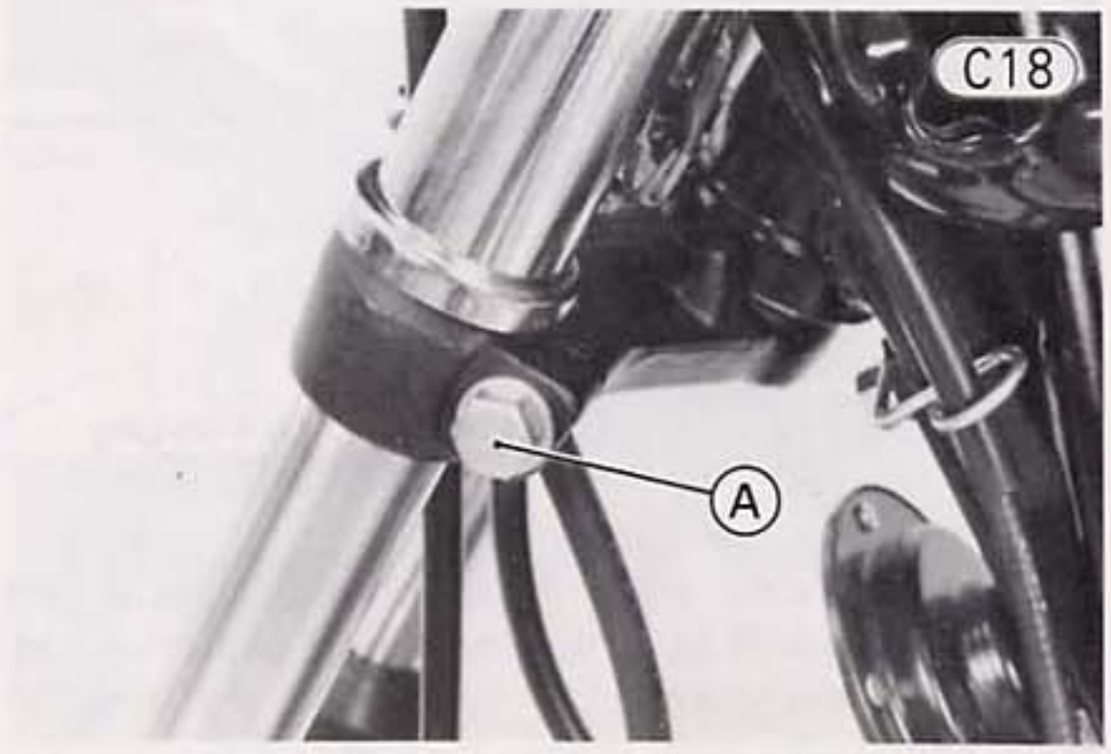
- Raise the front wheel off the ground.
- Push the handlebar lightly to either side; if it continues moving under its own momentum, the steering is not too tight.
- Squatting in front of the motorcycle, grasp the lower ends of the front fork at the axle, and push and pull the fork end back and forth; if play is felt, the steering is too loose.



A. Push and pull

To adjust the steering:

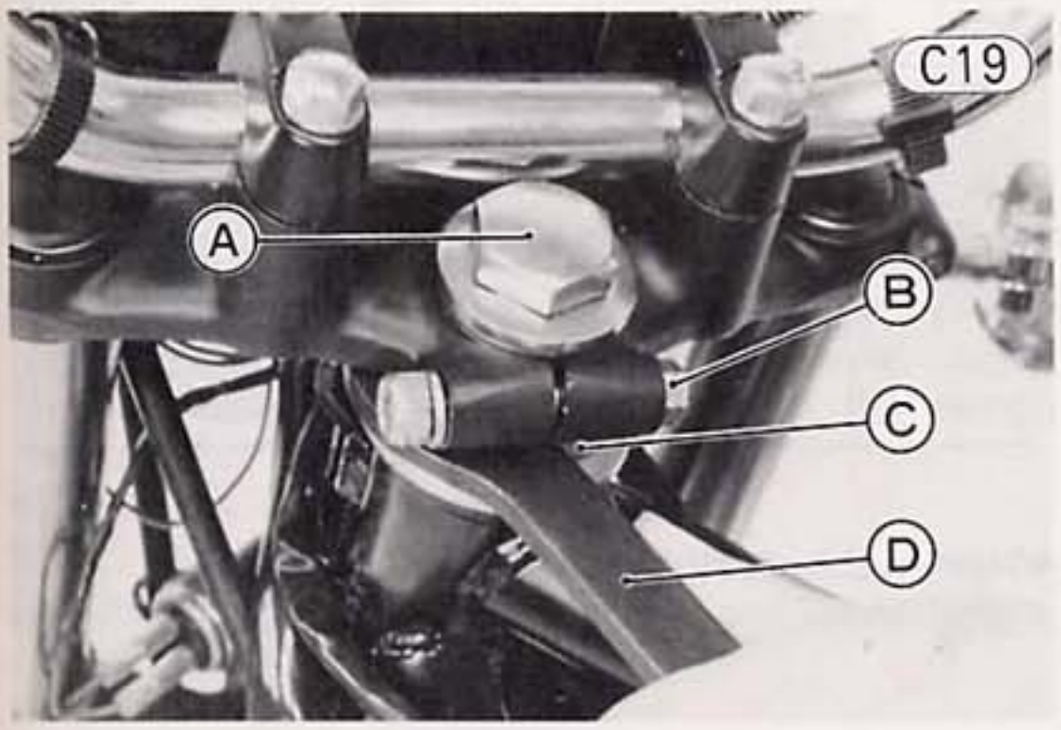
- Remove the fuel tank (Pg. 43) to avoid damaging the painted surface.
- Loosen the front fork lower clamp bolts (2) to free the fork tubes from the steering stem base during adjustment.



A. Lowr Clamp Bolt

•Loosen the steering stem head bolt and head clamp bolt, and back out the steering stem locknut using the stem nut wrench (special tool) 1 or 2 turns until it turns without drag.

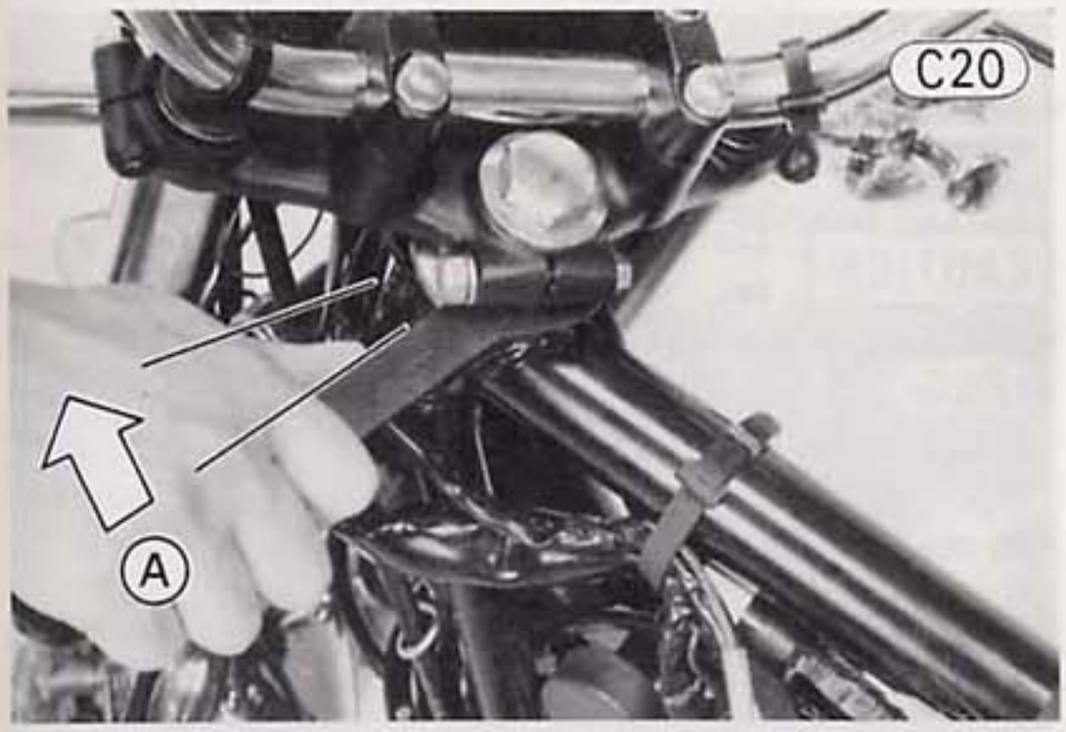
NOTE: Do not back out the steering stem locknut more than a couple of turns. If the locknut is backed off too far, the bearing balls in the steering stem may fall out of place. This will necessitate steering stem removal and installation.



A. Stem Head Bolt
B. Head Clamp Bolt
C. Stem Locknut
D. Stem Nut Wrench (57001-134 or 57001-1100)

•Tighten the stem locknut to 3.0 kg-m (22 ft-lbs) of torque.

NOTE: If a suitable torque wrench is not available, tighten the steering stem locknut lightly (until it just becomes hard to turn), and then continue for another 1/16 turn (about 20° travel) from that point.



A. 1/16 Turn (20°)

•Tighten the steering stem head bolt to 4.5 kg-m (33 ft-lbs) of torque.
•Tighten the steering stem head clamp bolt to 1.8 kg-m (13.0 ft-lbs) of torque.
•Tighten the front fork lower clamp bolts (2) to 3.0 kg-m (22 ft-lbs) of torque.
•Check the steering again. If the steering is too tight or too loose in spite of correct adjustment, inspect the steering stem parts according to the maintenance section (Pg. 208).
•Remount the fuel tank (Pg. 43).

WHEEL BALANCE

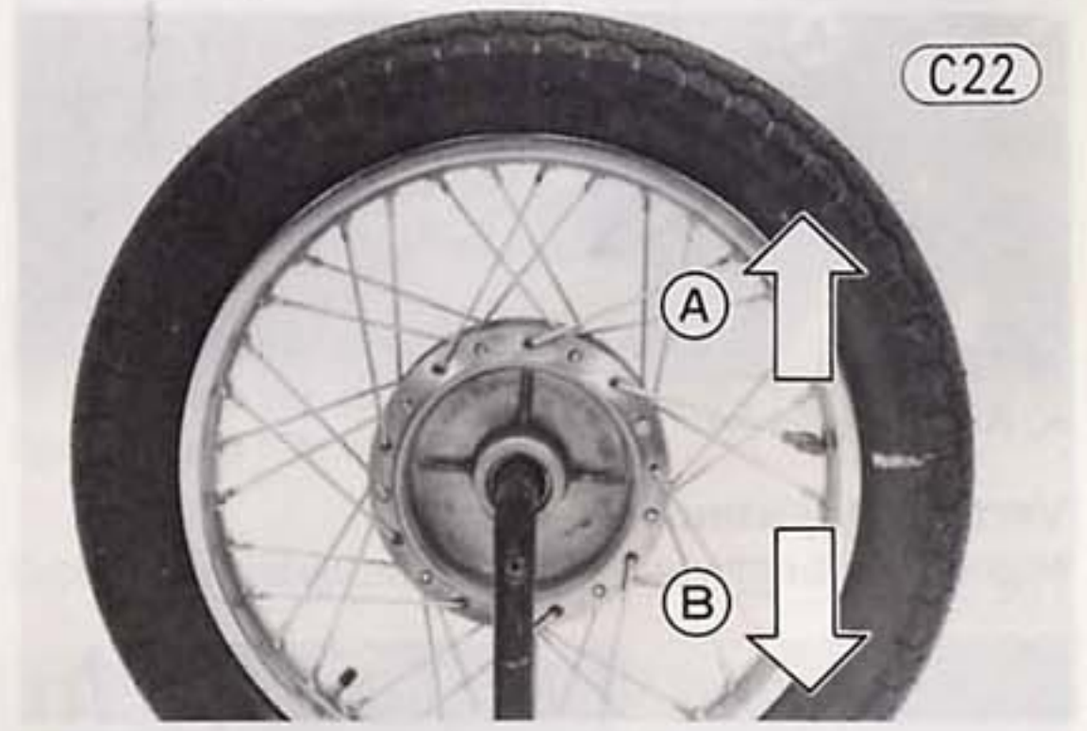
To improve stability and decrease vibration at high speed, the front and rear wheels must be kept balanced.

Check and balance the wheels when required, or when a tire is replaced with a new one.

•Remove the wheel (Pg. 107, 110, or 119).
•Check the all the spokes are tightened evenly and the rim runout is within the service limit (Pg. 196).
•Suspend the wheel so that it can be spun freely.
•Spin the wheel lightly, and mark the spoke at the top when the wheel stops.
•Repeat this procedure several times. If the wheel stops of its own accord in various positions, it is well balanced.
•However, if the wheel always stops in one position, attach a balance weight loosely to the marked spoke.

A. Balance Weight

•Rotate the wheel ¼ turn, and see whether or not the wheel stays in this position. If it does, the correct balance weight is being used.



A. Use heavier size **B. Use lighter size**

•If the wheel rotates and the weight goes up, replace the weight with the next heavier size. If the wheel rotates and the weight goes down, replace the weight with the next lighter size. Repeat these steps until the wheel remains at rest after being rotated ¼ turn.
•Rotate the wheel another ¼ turn and then another ¼ turn to see if the wheel is correctly balanced.
•Repeat the entire procedure as many times as necessary to achieve correct wheel balance, and then clamp on the balance weights firmly using pliers.
•Mount the wheel back onto the motorcycle (Pg. 107, 110, or 120).

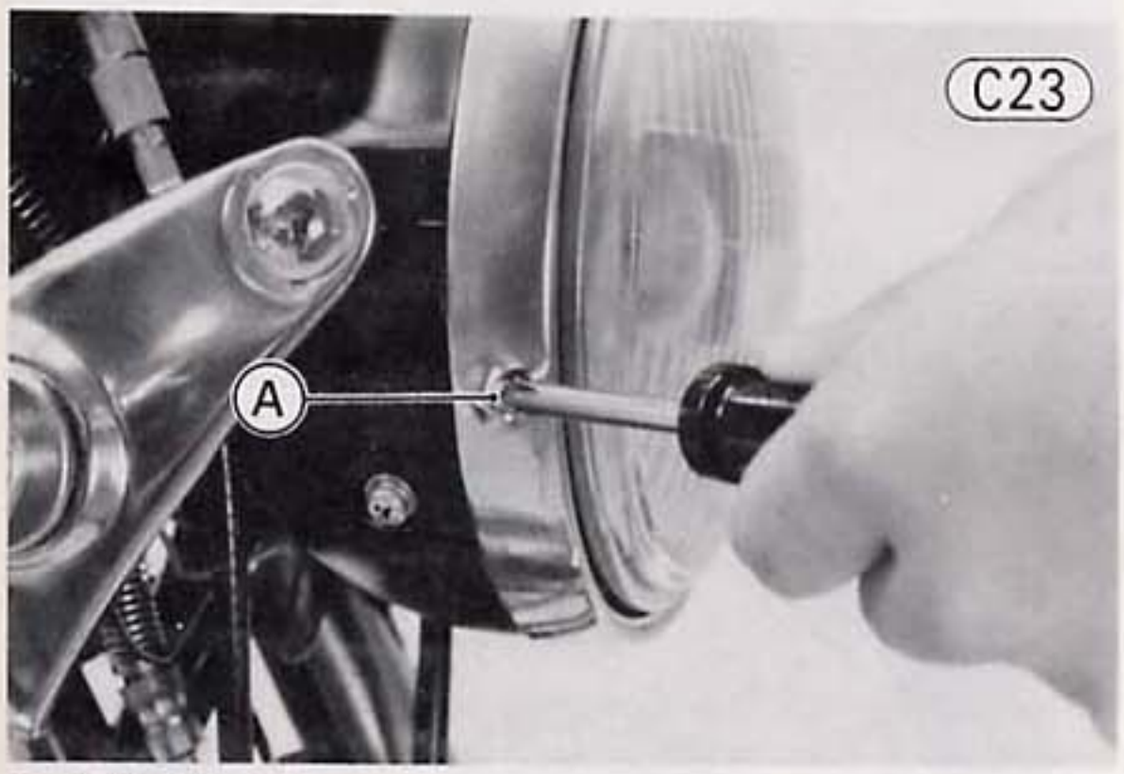
NOTES: 1. Balance weights are available from Kawasaki Dealers in 5, 10, 20, and 30 gram sizes. An imbalance of less than 10 grams will not usually affect running stability.
2. When removing a tire from a rim, mark the valve stem location on the tire so that it can be installed in the same position.
3. When installing a new tire, be sure to go through the balancing procedure.
4. If a new tire is installed, the yellow paint mark on the tire should be aligned with the valve stem for best balancing results.

HEADLIGHT

The headlight beam is adjustable both horizontally and vertically. If not properly adjusted horizontally, the beam will point to one side rather than straight ahead. If adjusted too low vertically, neither low nor high beam will illuminate the road far enough ahead. If adjusted too high vertically, high beam will fail to illuminate the road close ahead, and low beam will blind oncoming drivers.

Horizontal Adjustment

- Turn the small screw on the headlight rim in or out until the beam points straight ahead. Turning the adjusting screw clockwise makes the headlight beam point to the left.



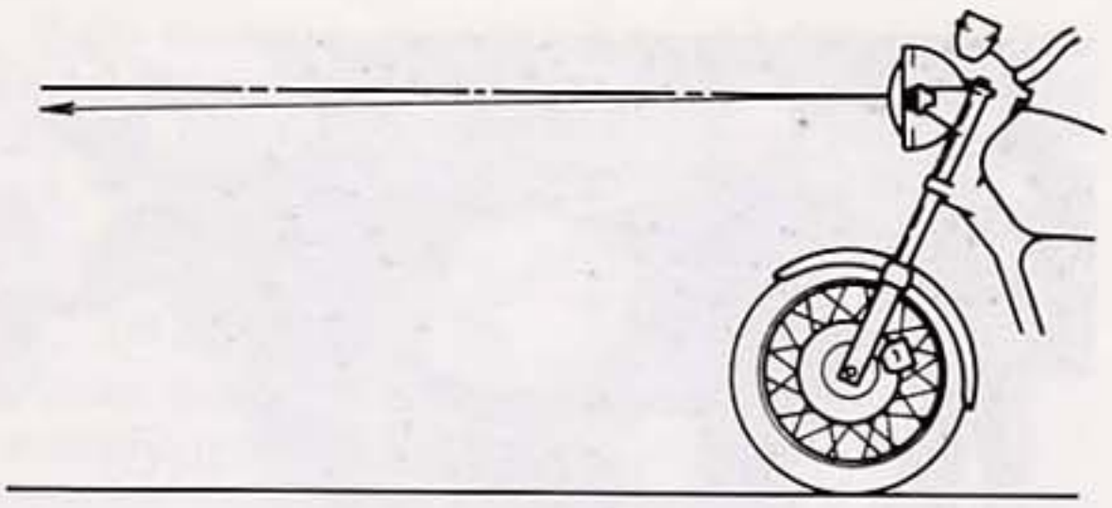
A. Adjusting Screw

Vertical Adjustment

- Loosen the headlight housing mounting bolts.
- Move the headlight up or down by hand to where the vertical aim is correct.

NOTE: On high beam, the brightest point should be slightly below horizontal. Adjust the headlight to the proper angle according to local regulations.

Vertical Adjustment C25



- Tighten the headlight housing mounting bolts.

HORN

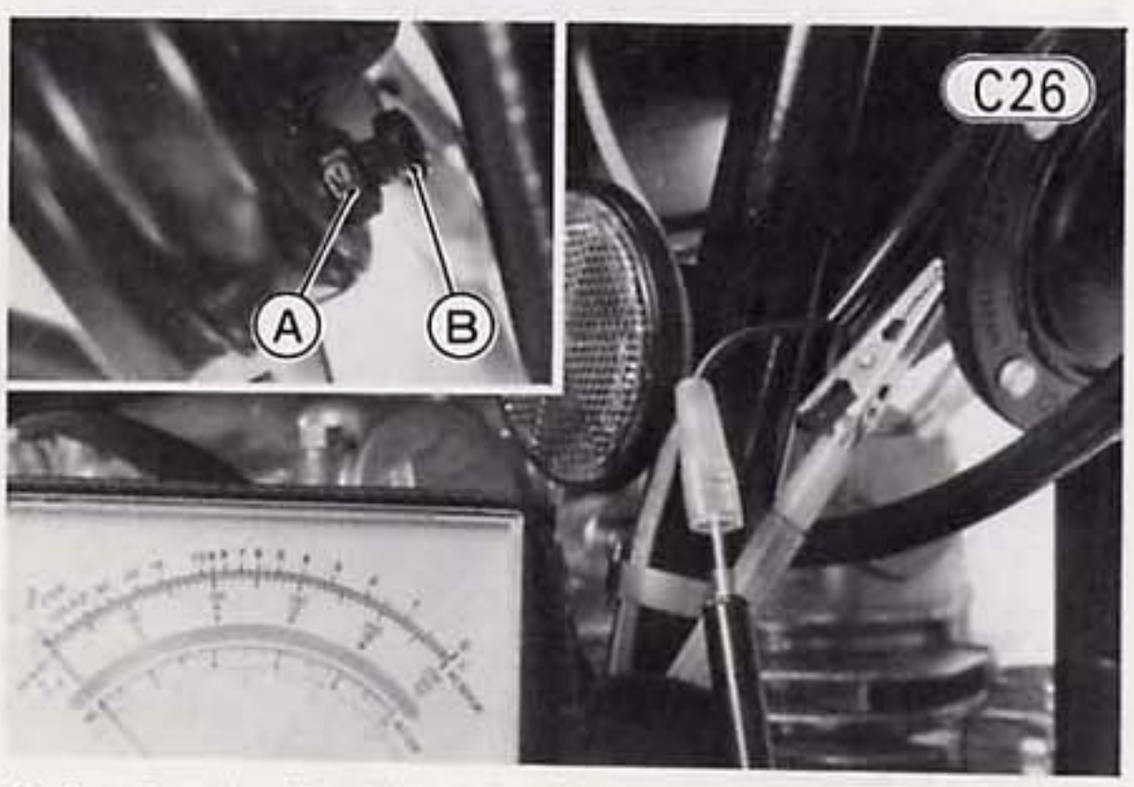
The horn contacts wear down after long use and may need to be adjusted from time to time. Turning in the adjusting screw compensates for contact wear. If satisfactory horn performance cannot be obtained by this adjustment when the rest of the electrical system is functioning properly, the horn must be replaced. It cannot be disassembled.

WARNING **To avoid a serious burn, never touch the engine or exhaust pipes during horn adjustment.**

CAUTION **Do not turn the adjusting screw in too far, since doing so will increase horn current with the possibility of burning out the horn coil.**

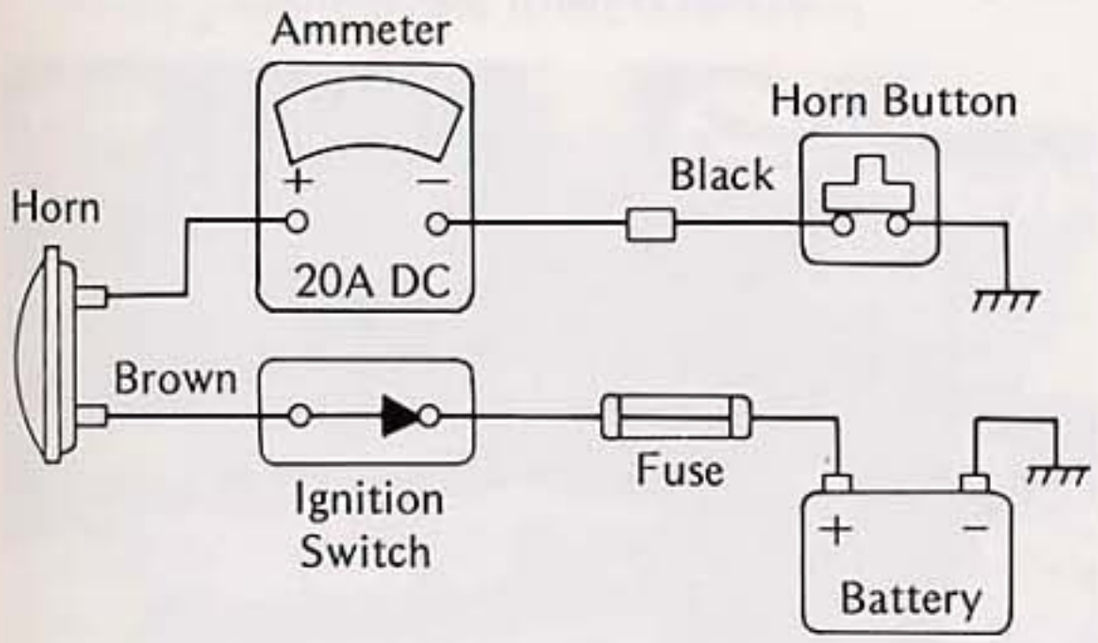
- Disconnect the black horn lead, and connect an ammeter in series to the horn circuit. The + ammeter lead goes to the horn terminal and the – ammeter lead to the black lead.

A. Mounting Bolt



A. Locknut B. Adjusting Screw

Horn Current Measurement C27



- Fully loosen the adjusting screw locknut.
- Turn on the ignition key, and keep the horn button pressed while turning the horn adjusting screw. Adjust for the best horn sound while keeping the current between 2.0 ~ 3.0 amperes.
- Tighten the adjusting screw locknut.

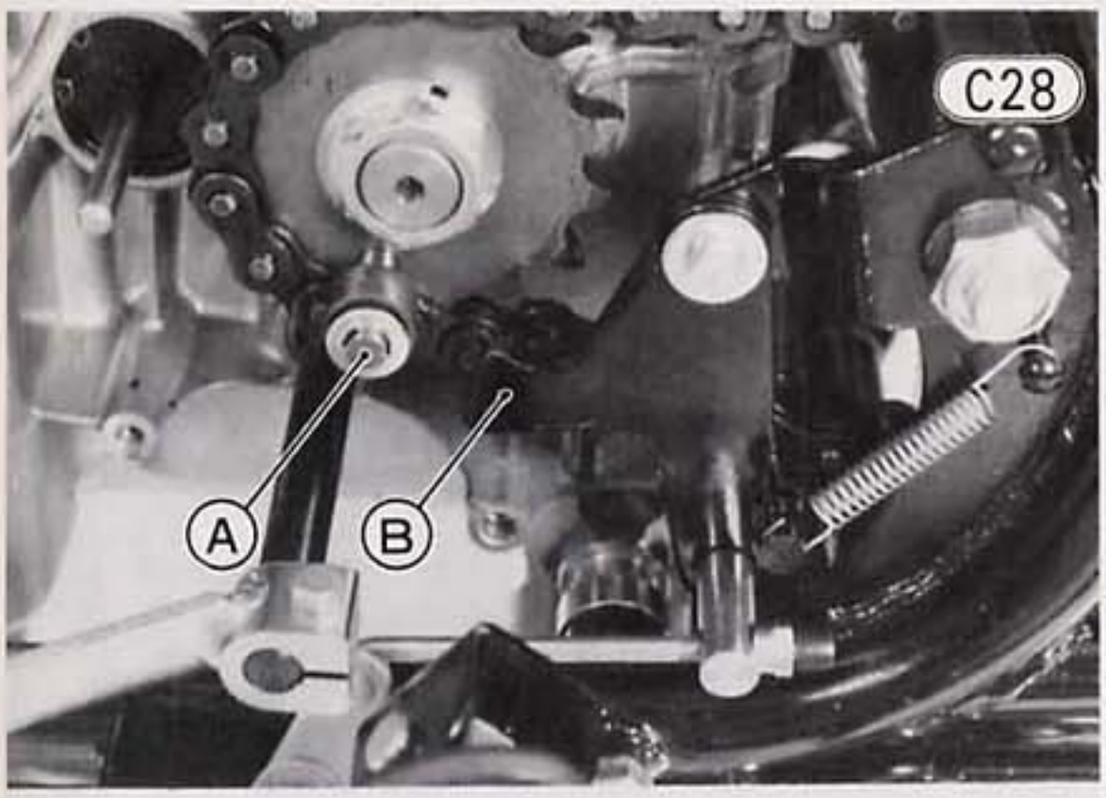
NOTE: The horn will not sound properly if it is mounted incorrectly or if any cable or other part is touching it.

AUTOMATIC SIDE STAND RETURN MECHANISM

Adjust the automatic side stand return mechanism whenever it does not work satisfactorily. If any damage to the mechanism is suspected or if it cannot be adjusted properly as explained below, consult the Maintenance Section (Pg. 214).

To check the mechanism:

- Swing down the side stand, and turn the rear wheel or walk the motorcycle. The side stand should return to its rest position when the rear wheel turns.
- Return the side stand to its rest position, and check that the pin on the engine sprocket does not hit the mechanism lever when the rear wheel rotates. The engine sprocket cover needs not be removed to check this tapping noise.



C28

A. Pin **B. Mechanism Lever**

If any one of the above checks shows improper adjustment, or if there is a regular tapping noise from the mechanism when riding the motorcycle, adjust the mechanism.

To adjust the mechanism:

- Remove the rubber cap from the end of the rod.
- Turn the adjusting nut so that the proper adjustment is obtained. If the side stand does not return automatically, screw in the adjusting nut. If the pin hits the lever, screw out the adjusting nut.

C29

A. Adjusting Nut

- Install the rubber cap on the end of the rod.
- Check the mechanism operation, and readjust if necessary.

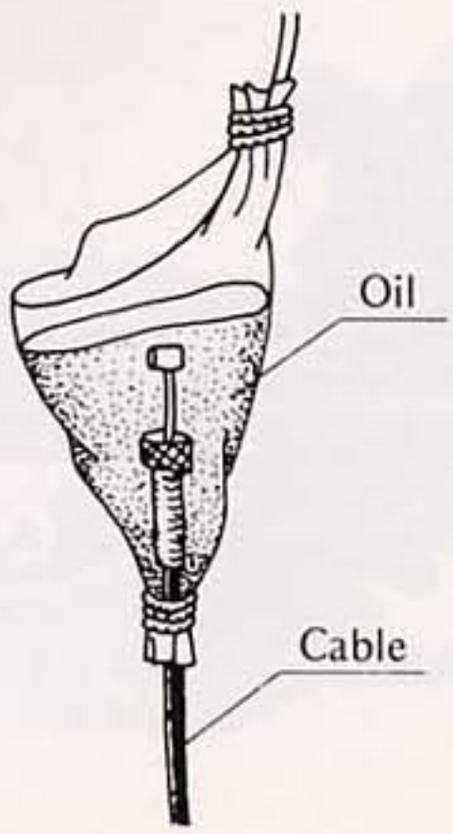
LUBRICATION

Lubricate exposed parts which are subject to rust, with either motor oil or regular grease whenever the vehicle has been operated under wet or rainy conditions, and especially after using a high-pressure spray washer. Before lubricating each part, clean off any rusty spots with rust remover and wipe off any grease, oil, dirt, or grime.

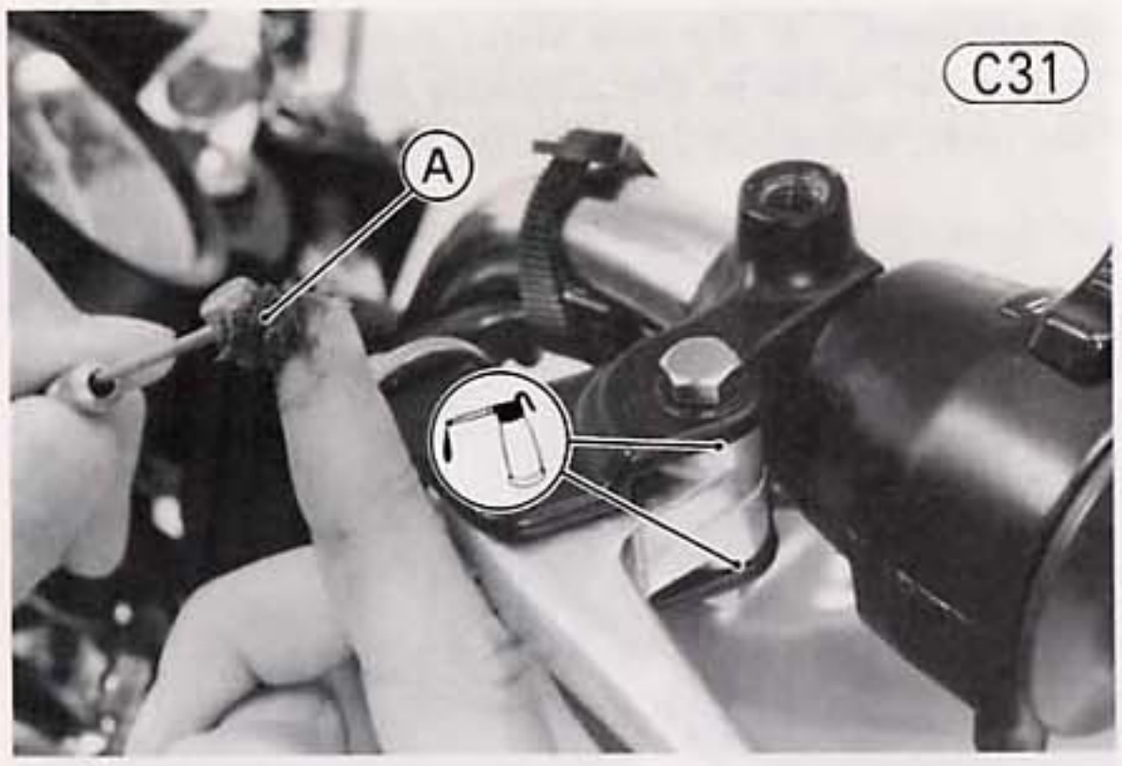
Clutch, Brake, and Throttle Cables

Lubricate the cables as shown in the figure. Refer to Pgs. 125 and 126 for cable removal.

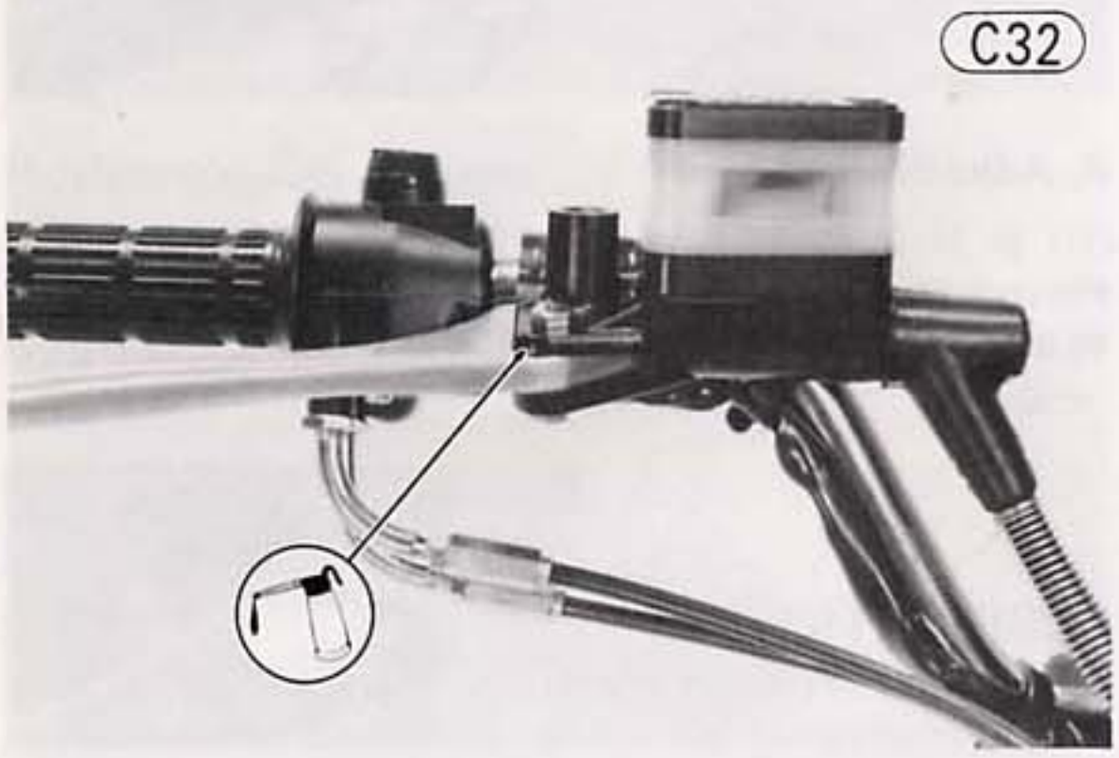
Cable Lubrication C30



Clutch and Brake Levers



A. Grease



Throttle Grip

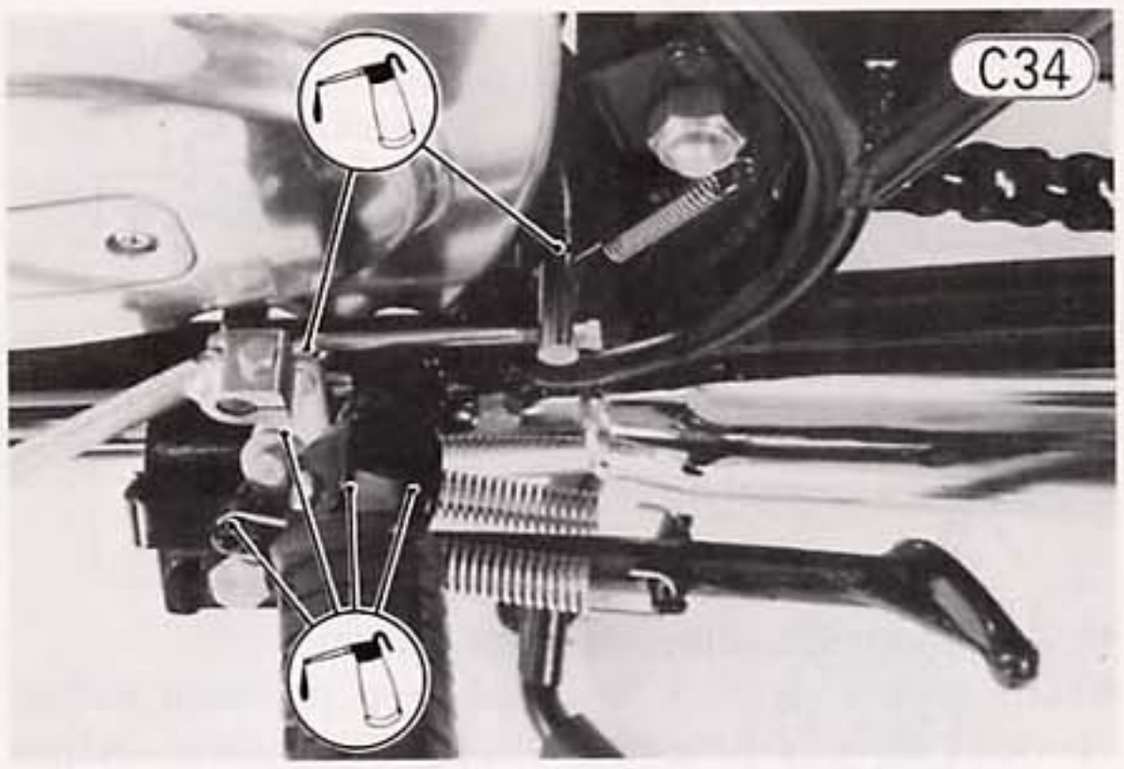
Apply grease to the handlebar where the throttle grip turns.

Apply a light coat of grease to the exposed portion of the throttle grip inner cables and their catches in the throttle grip.

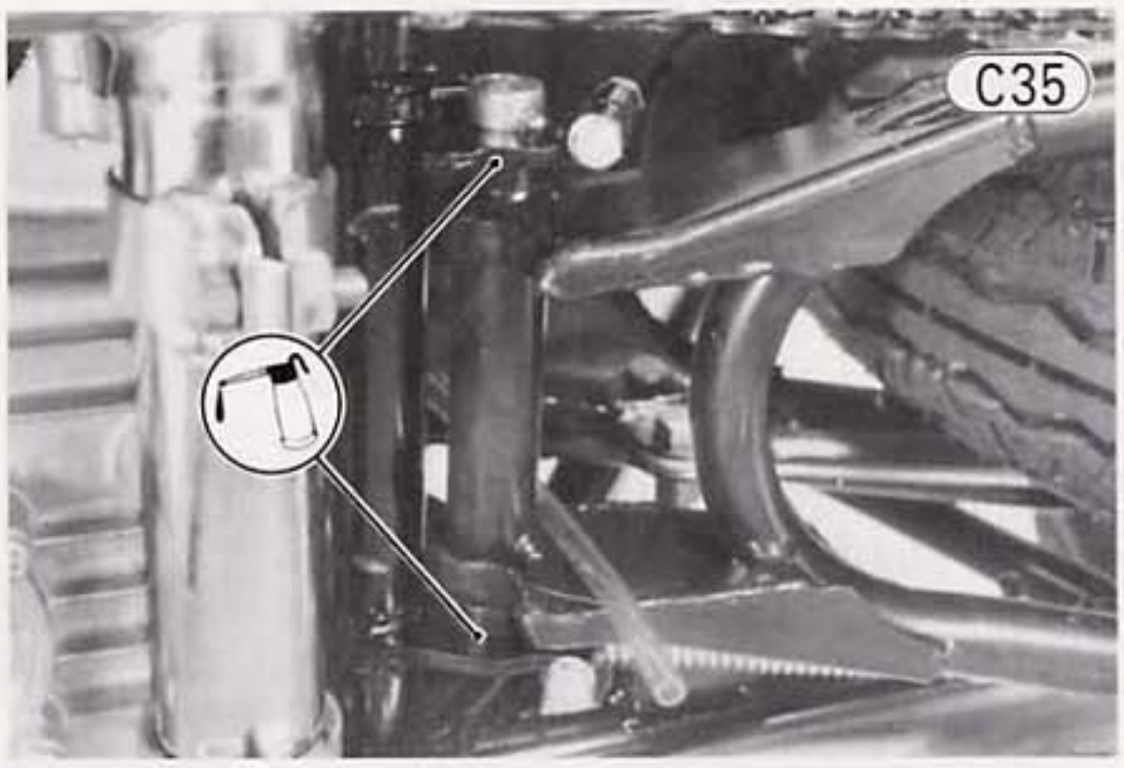
Fit the throttle cables into the throttle grip. Refer to throttle cable installation (Pg. 127).

A. Grease

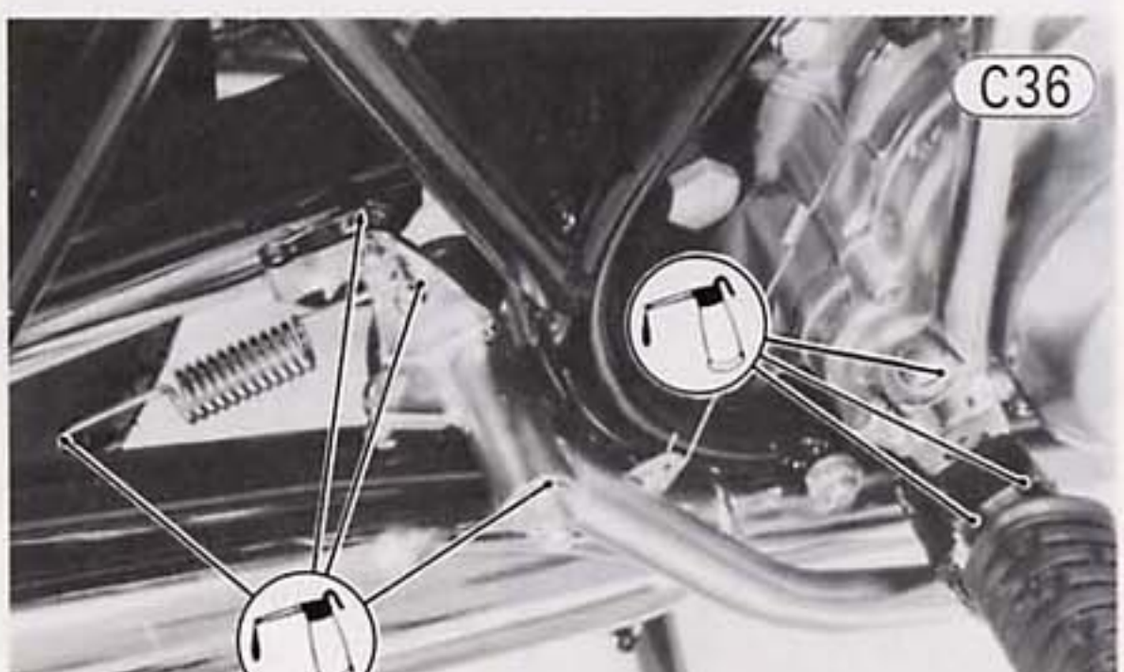
Left Footpeg, Side Stand, Stand Return Mechanism



Center Stand

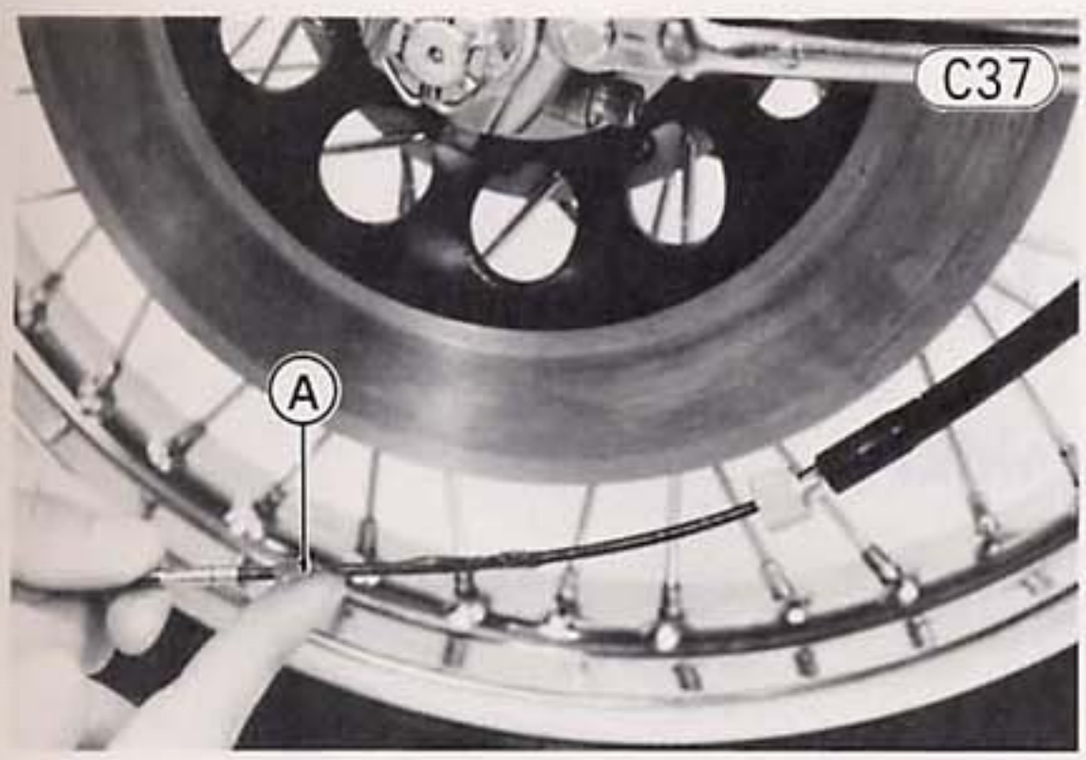


Kickstarter Pedal, Right Footpeg, Brake Pedal, and Brake Rod



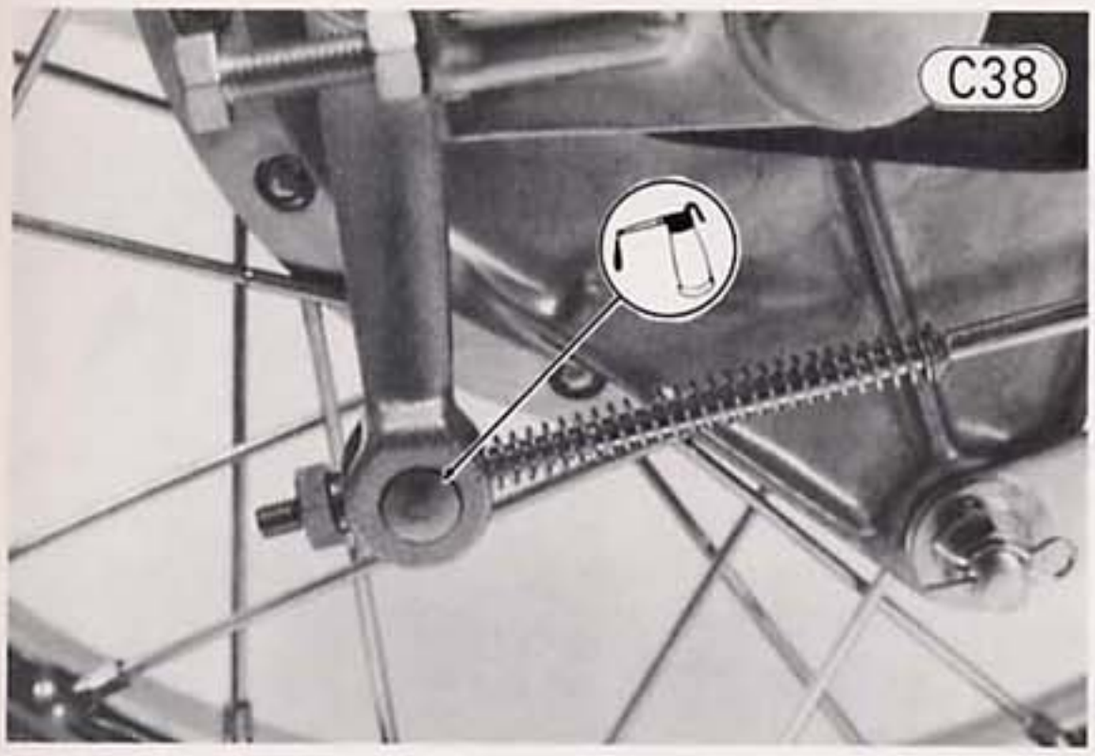
Speedometer and Tachometer Cables

Apply grease sparingly to the inner cables.

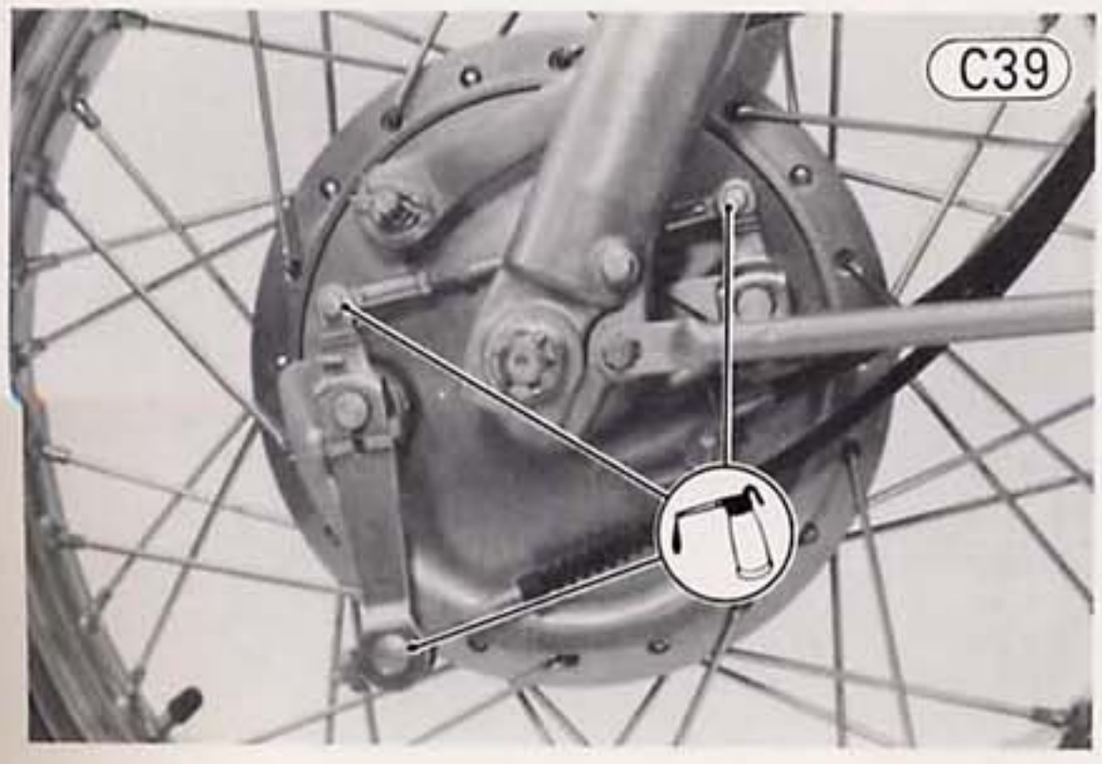


A. Grease

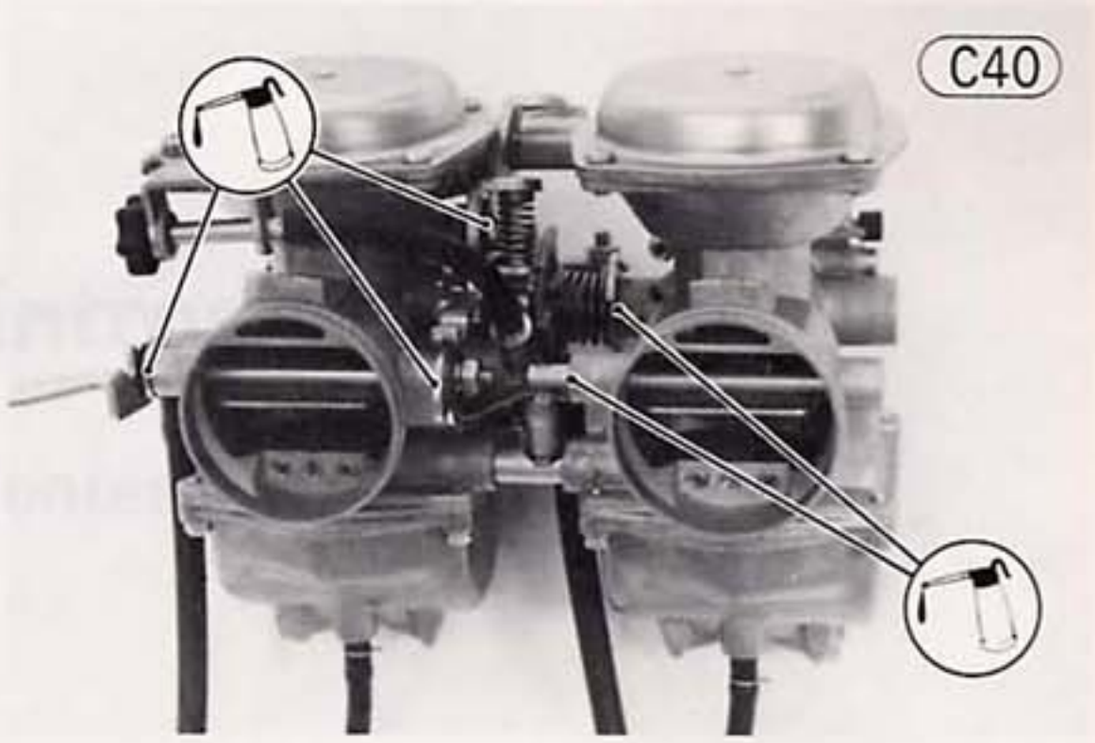
Brake Rod Joint



Brake Cam Lever Connecting Rod, Cable Joint



Carburetor Link Mechanism



Others

Lubricate the drive chain, wheel bearings, speedometer gear housing, swing arm pivot, and steering stem bearings as explained in the Maintenance Section.

NOTE: A few drops of oil are effective to keep bolts and nuts from rusting and sticking. This makes removal easier. Badly rusted nuts, bolt, etc. should be repalced with new ones.