ASSEMBLY AND PREPARATION MANUAL

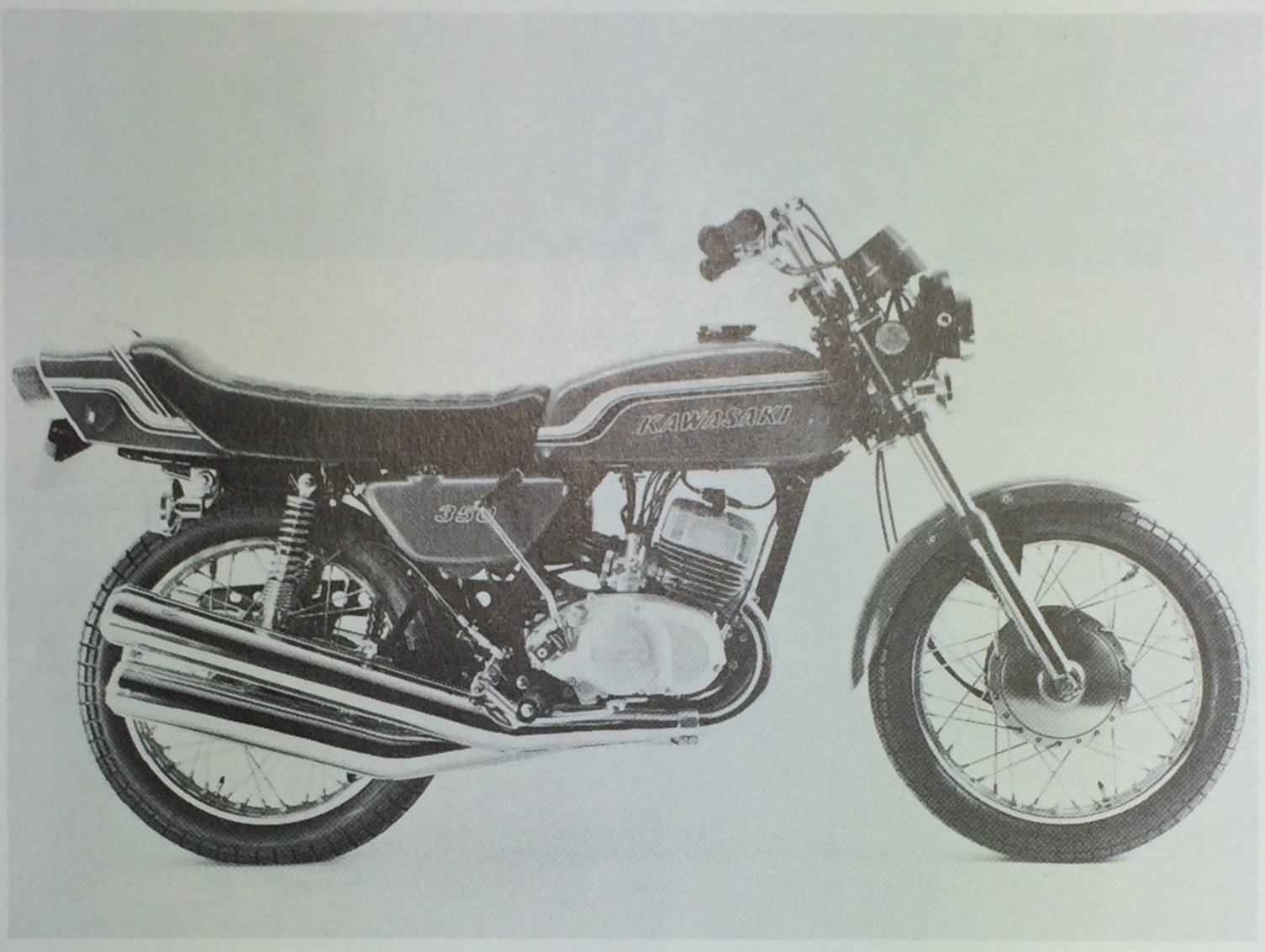
S2

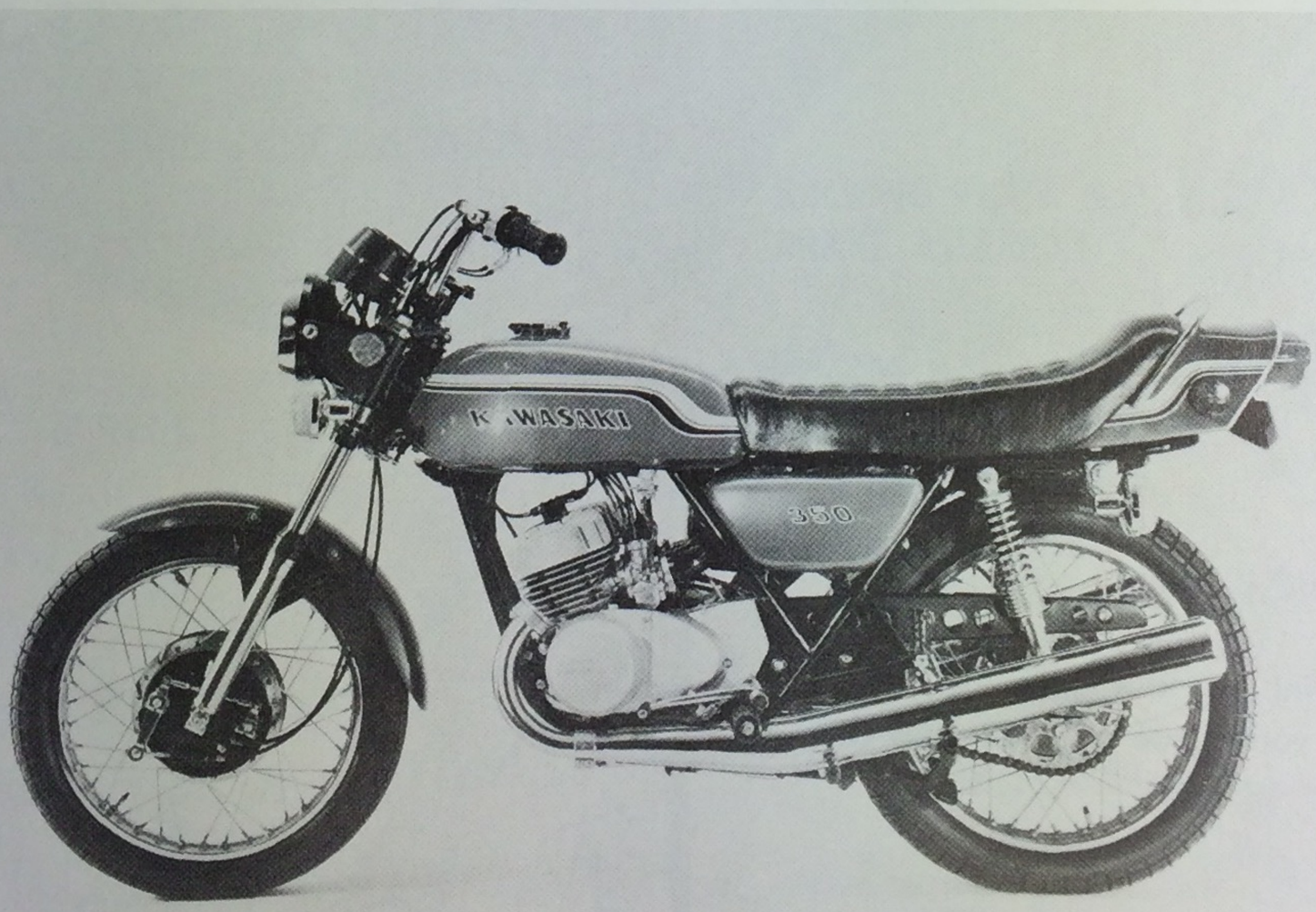
KAWASAKI MOTORS CORPORATION

KAWASAKI MODEL S2
ASSEMBLY AND PREPARATION MANUAL

There are three major sections in this manual:

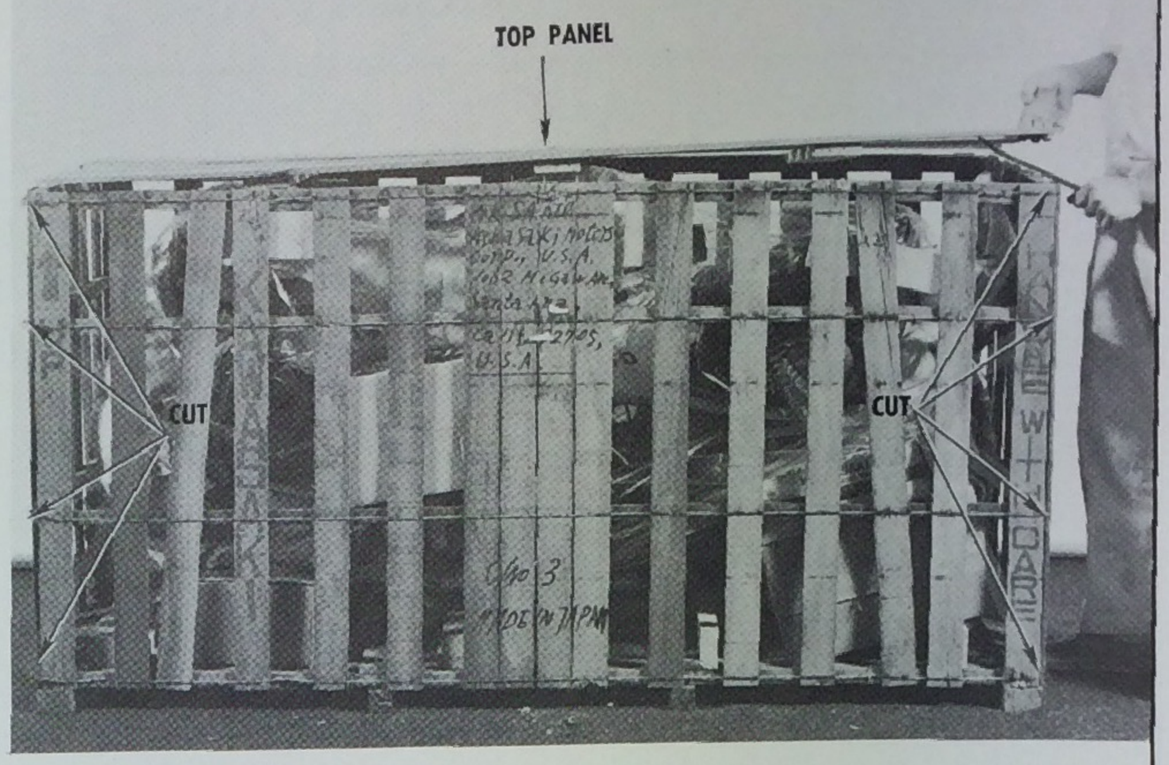
ASSEMBLY INSTRUCTIONS —Work performed during uncrating and assembly.
PREPARATION SERVICING —Detailing and inspection performed before delivery.
SERVICE SPECIFICATION —Handy specs for possible trouble-shooting.



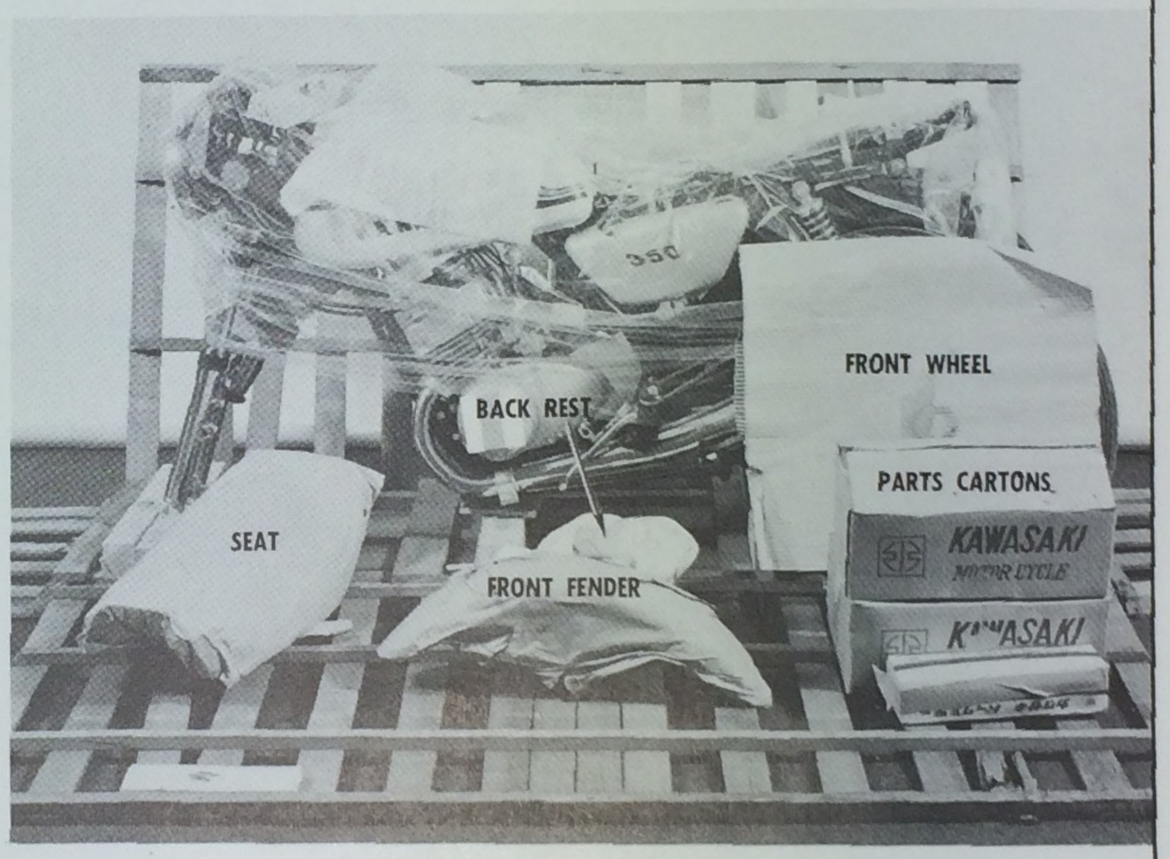


ASSEMBLY INSTRUCTIONS

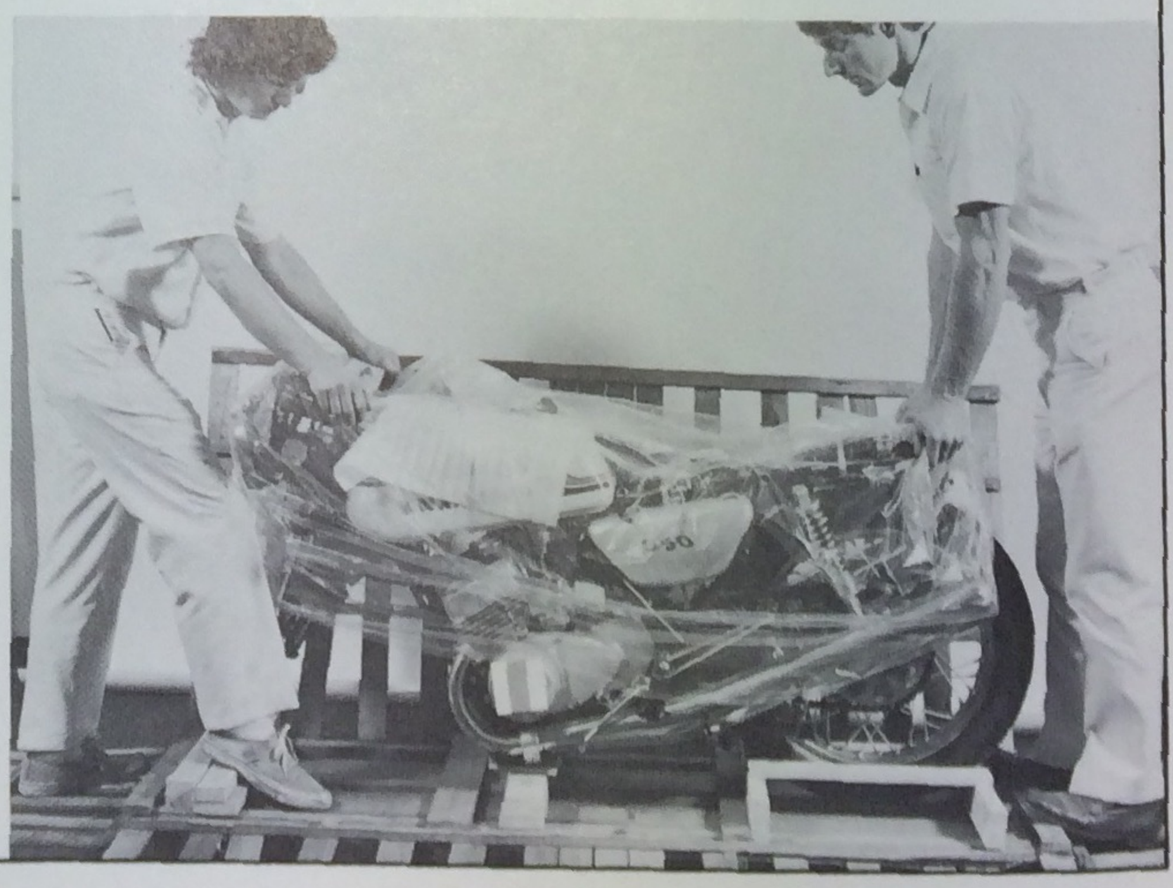
Clear 20' x 20' area, and then position the crate upright on its base. Pry off the top panel, and then cut the banding wires at the corners of the crate.



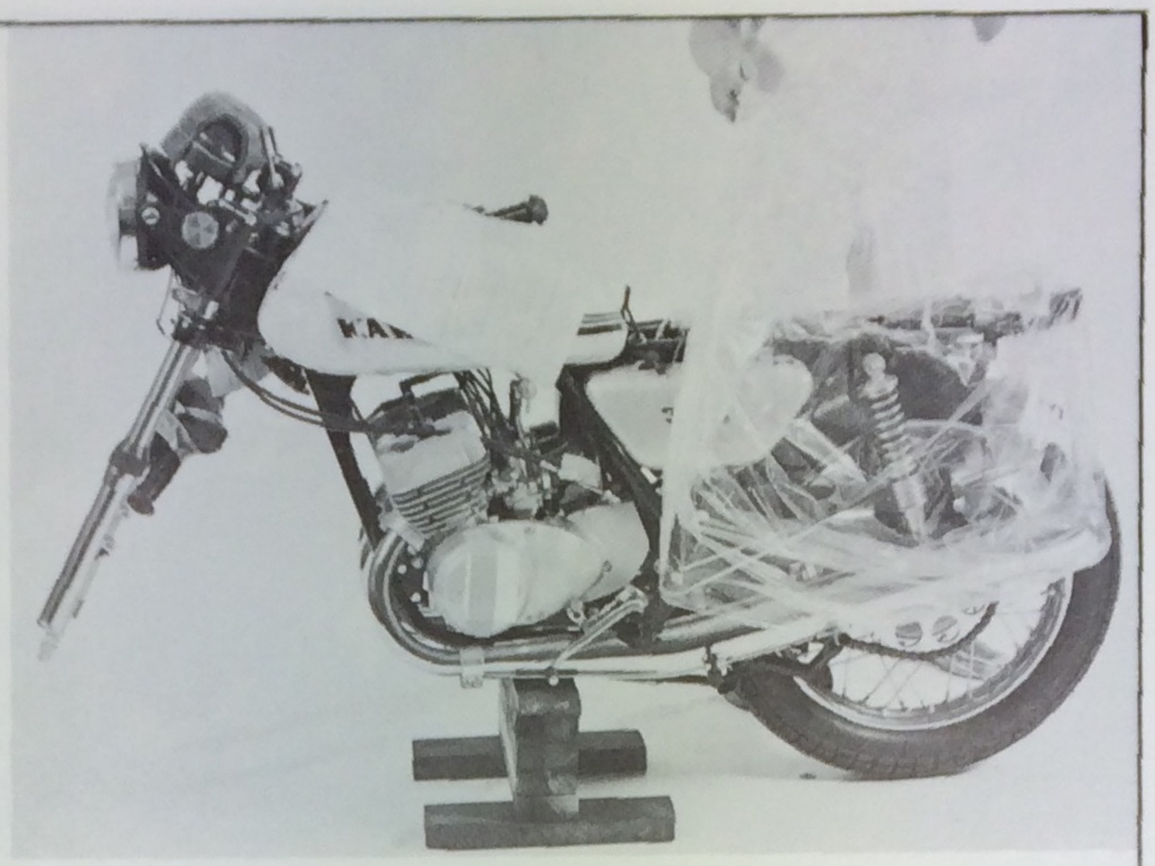
Fold down the crate end panels and the side panels. CAUTION: Peen over any protruding nails that could cause injury or puncture a tire. Remove the parts, cartons, seat, front wheel, front fender and back rest.



With an assistant, lift the unit from the crate base, roll it to your assembly area, and support it on a stand for assembly.

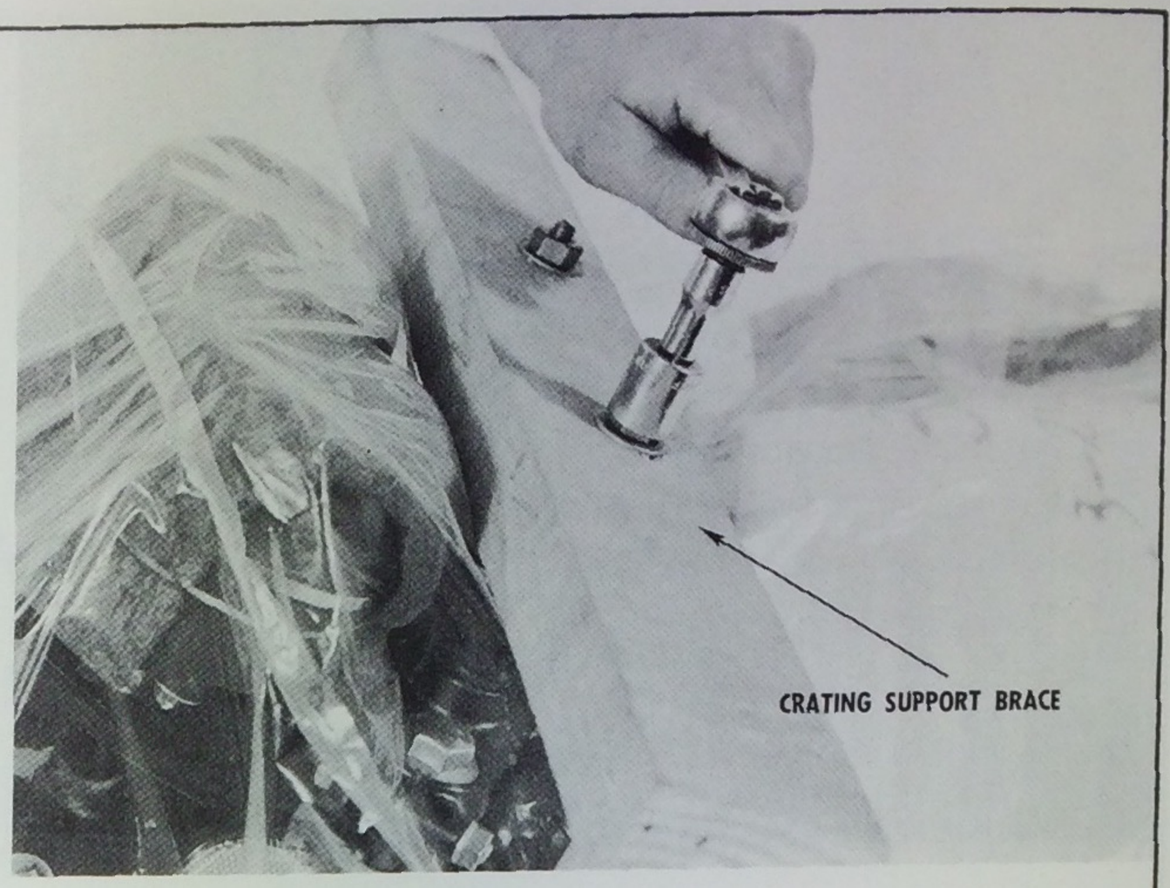


CAUTION: Do not remove the protective material from the fuel tank at this time. Remove all other protective packing materials.

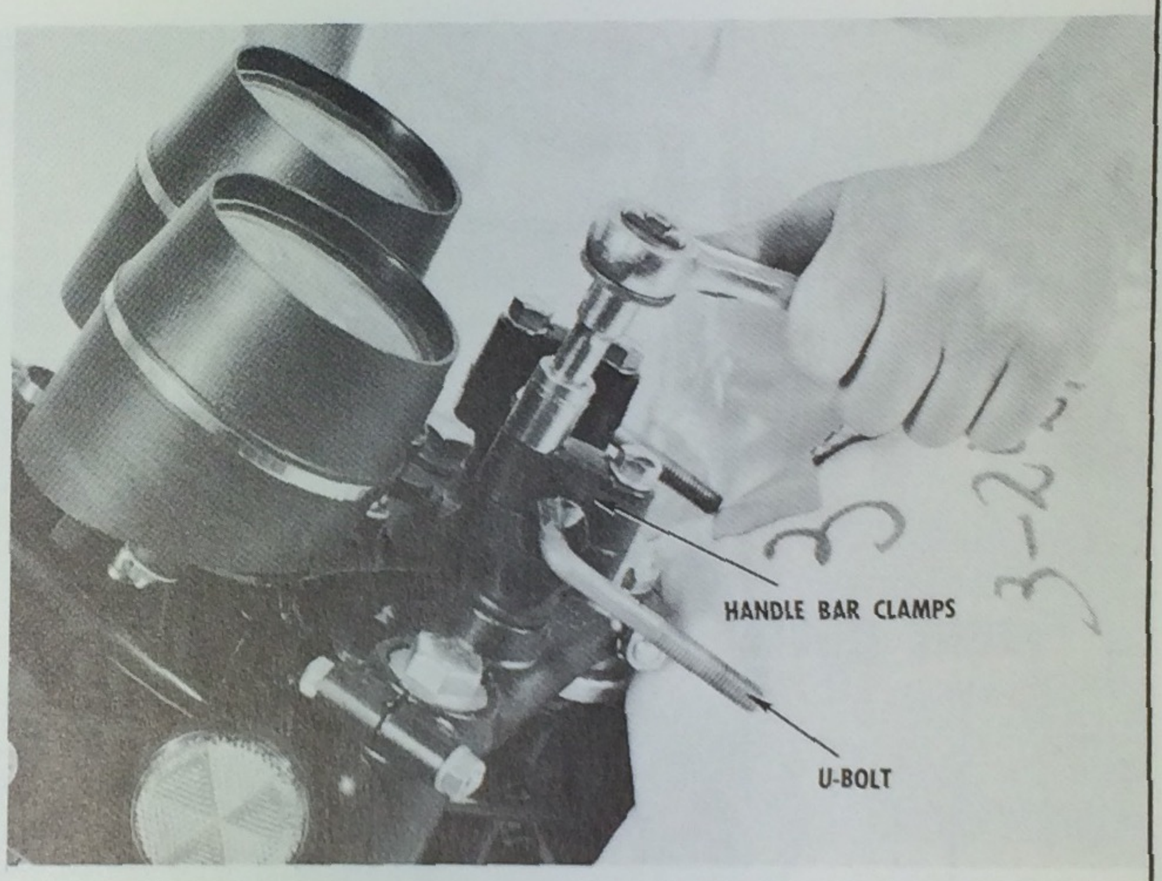


Open the parts cartons and check the contents and the items removed from the crate against this photo.

Remove the two nuts on the U-bolt clamp securing the crate support brace to the front fork assembly and discard the brace.

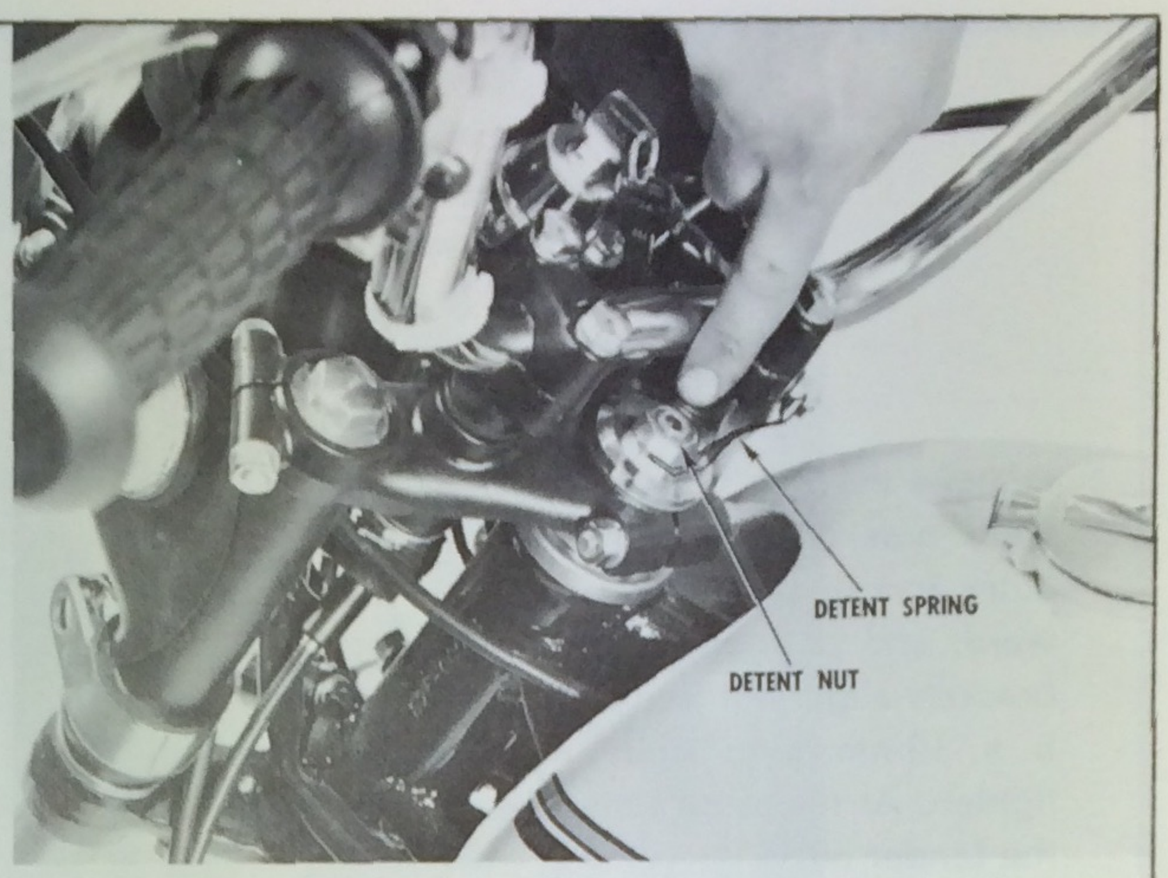


Remove the four handlebar clamp bolts and lockwashers, lift the handlebar clamps and discard the U-bolt.

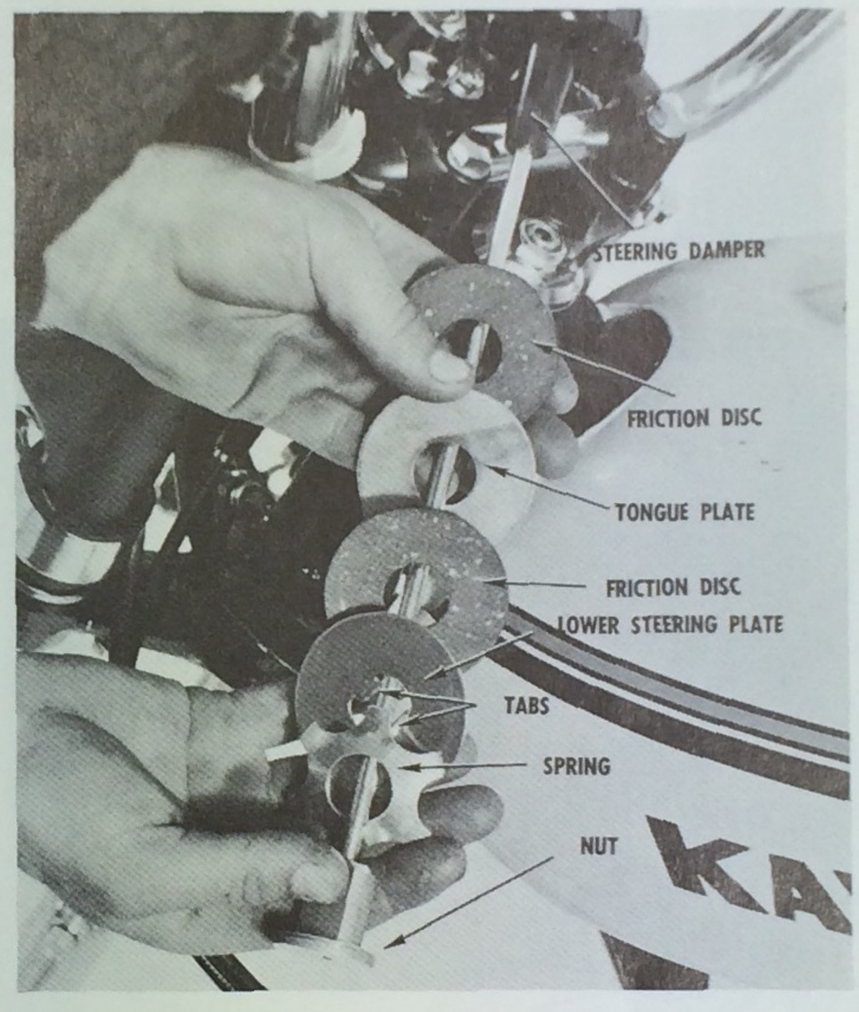


Position the handlebar on the steering head and install the handlebar clamps with the four bolts and lockwashers.

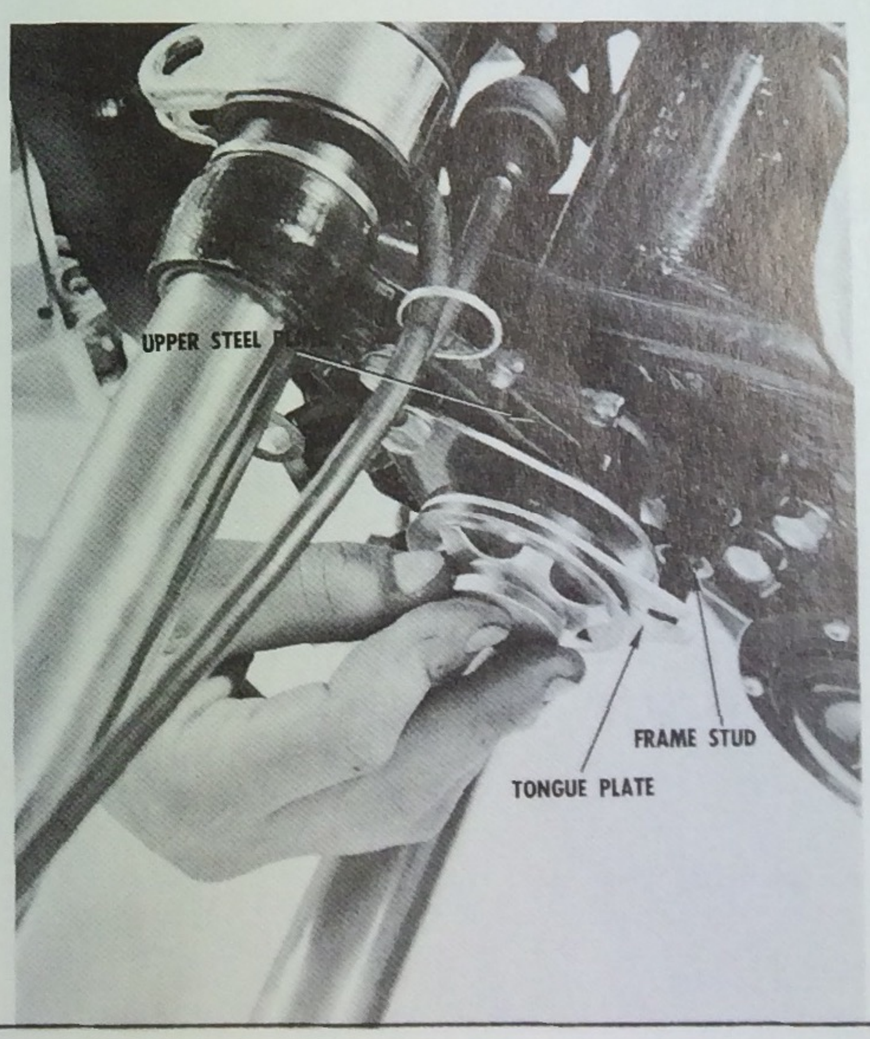
Remove the protective packaging materials from the fuel tank. Loosen the detent nut and position the damper knob detent spring with the tongue to the rear. Install and tighten the detent nut.



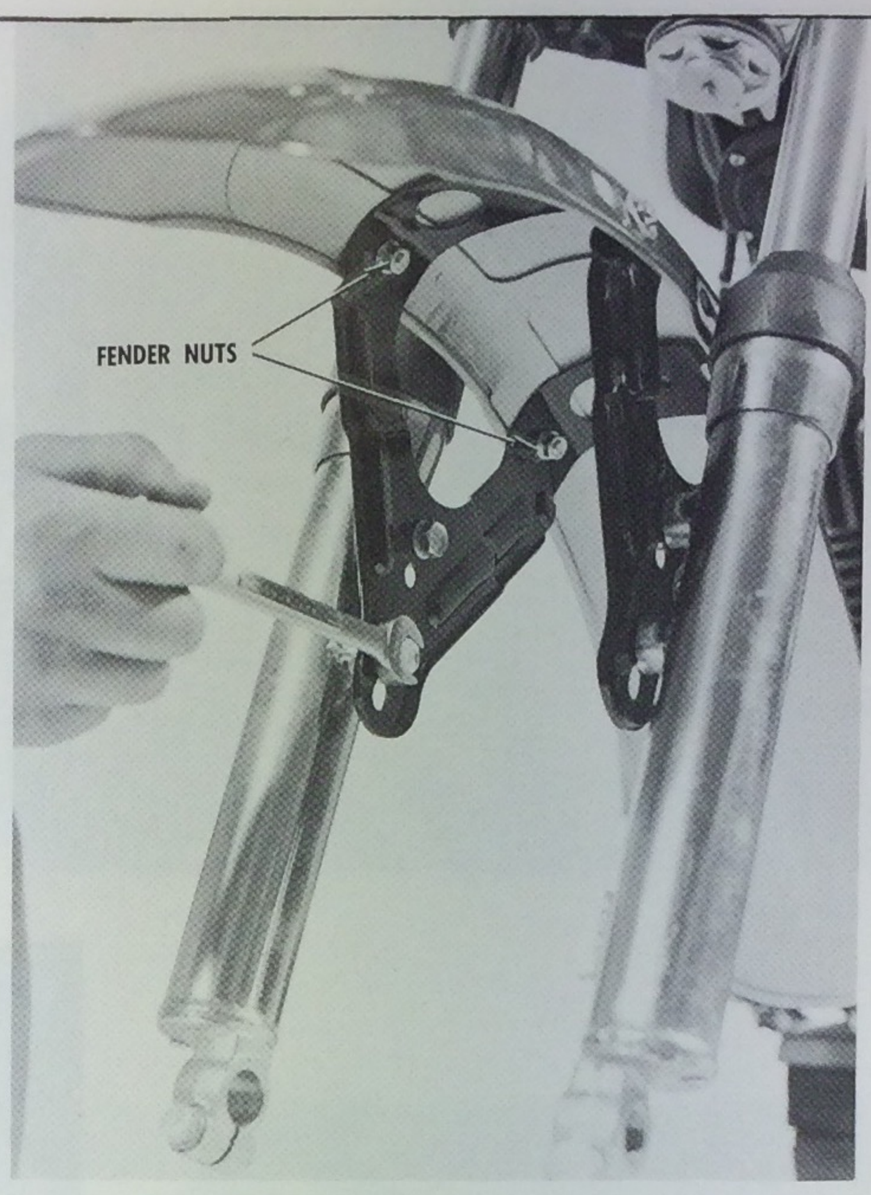
Clean all steering damper parts including the upper steel plate which is bolted under the steering stem at the factory. Use an oilless solvent, such as trichloroethylene. This will insure smooth damper action. Follow these assembly instructions exactly to prevent steering difficulties.



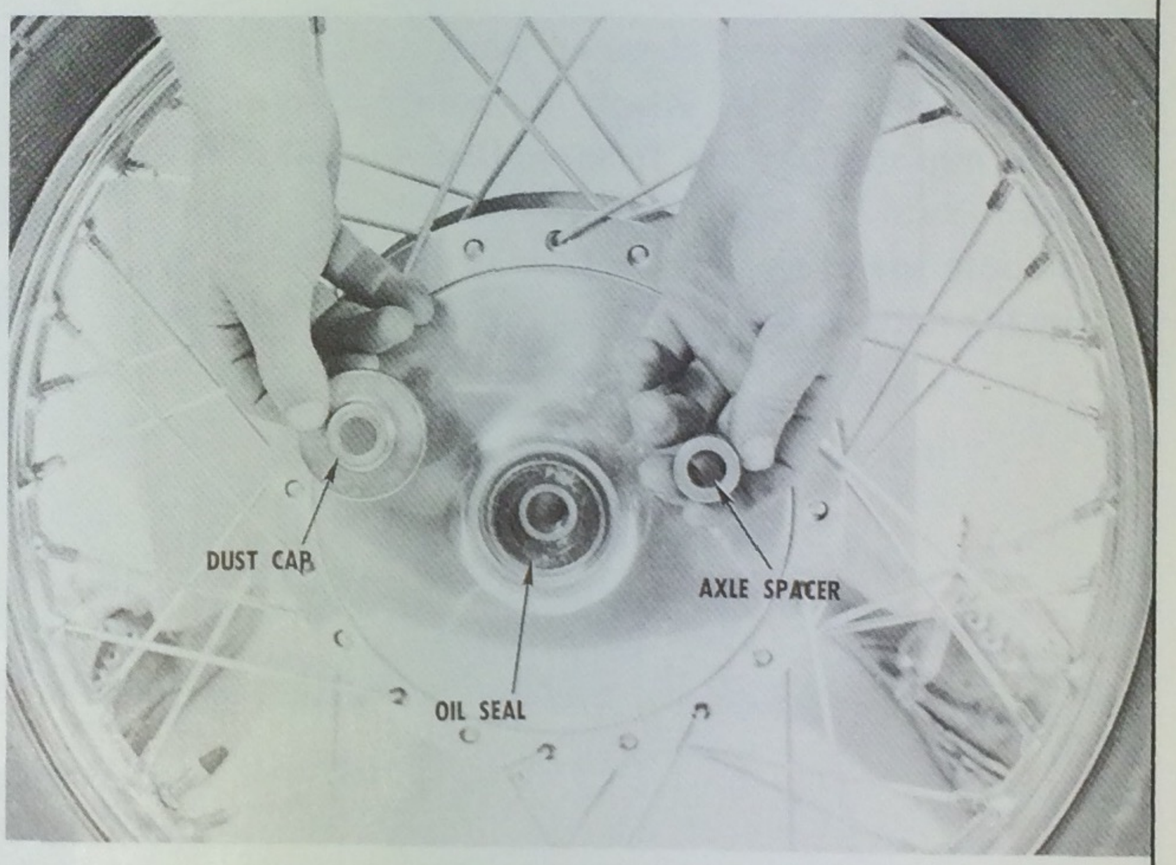
Install the parts shown in the previous step, taking care to engage the tongue plate with the frame stud. Screw the nut, with spring plate, onto the damper shaft. Finally,(insert the safety cotter pin and split the ends.



Remove the four bolts and lockwashers from the weld nuts on the outer fork tubes. Twist the outer fork tubes so that the weld nuts face inward, and position the front fender so that the brackets align with the weld nuts. Install the four 8 x 12mm long bolts with lockwashers and tighten. At the same time, check the tightness of the fender nuts.

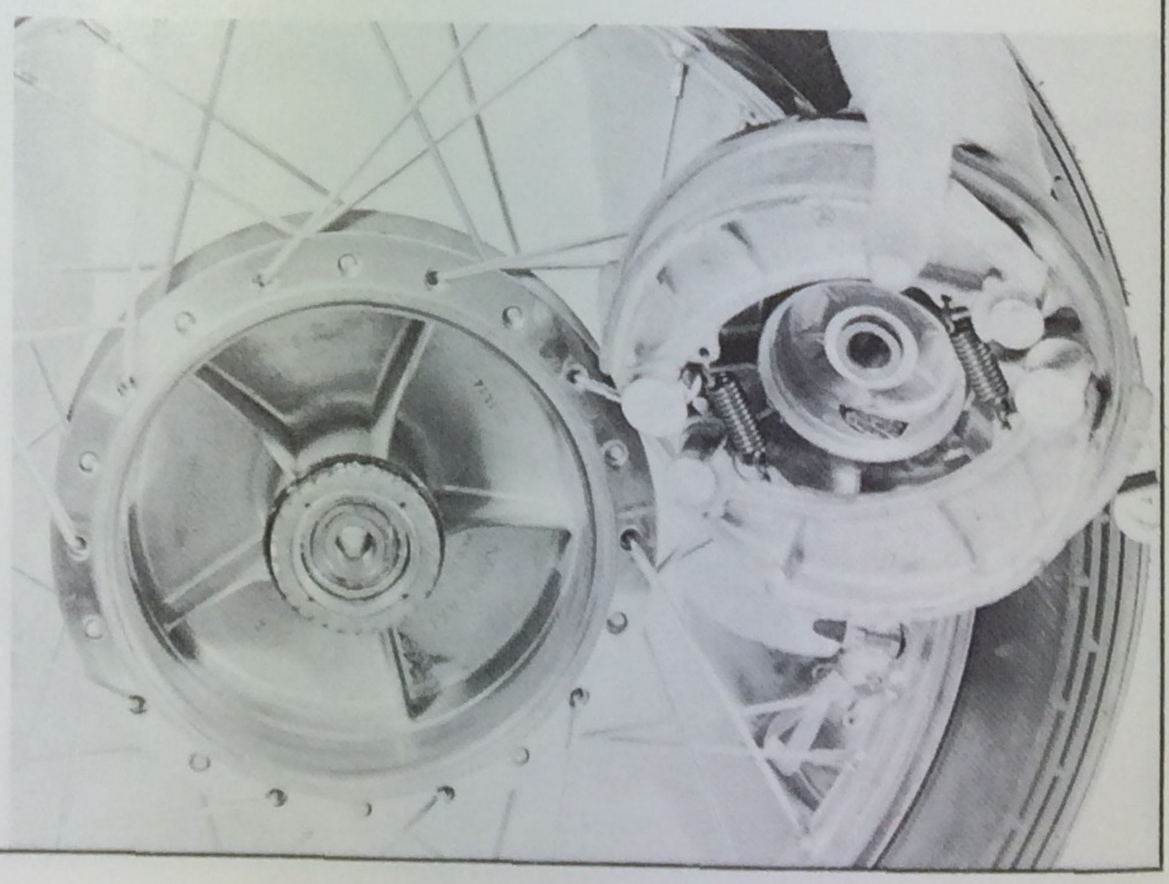


Grease the front axle spacer, and then insert it into the front oil seal. Smear thick grease in the dust cap to ease assembly, and then position the dust cap in the hub.

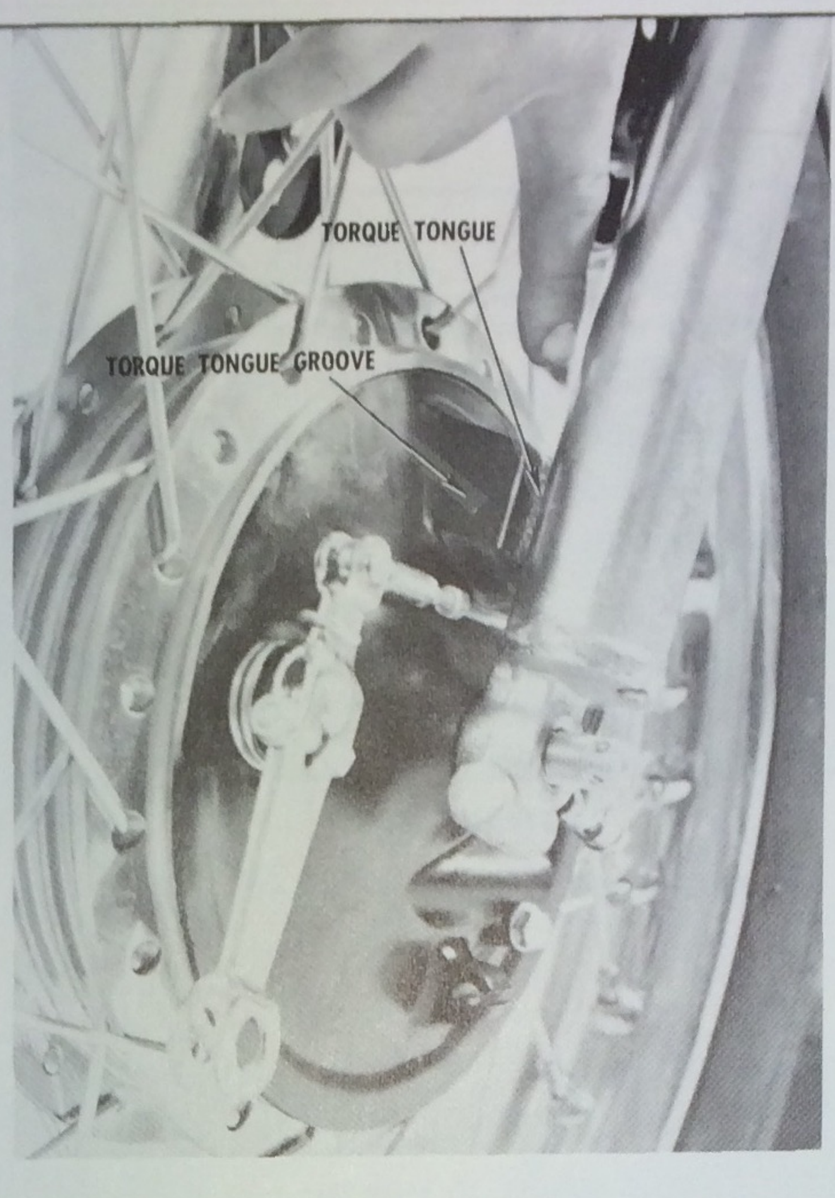


Check for any loose parts inside the brake panel and brake and install the brake panel assembly in the front wheel.

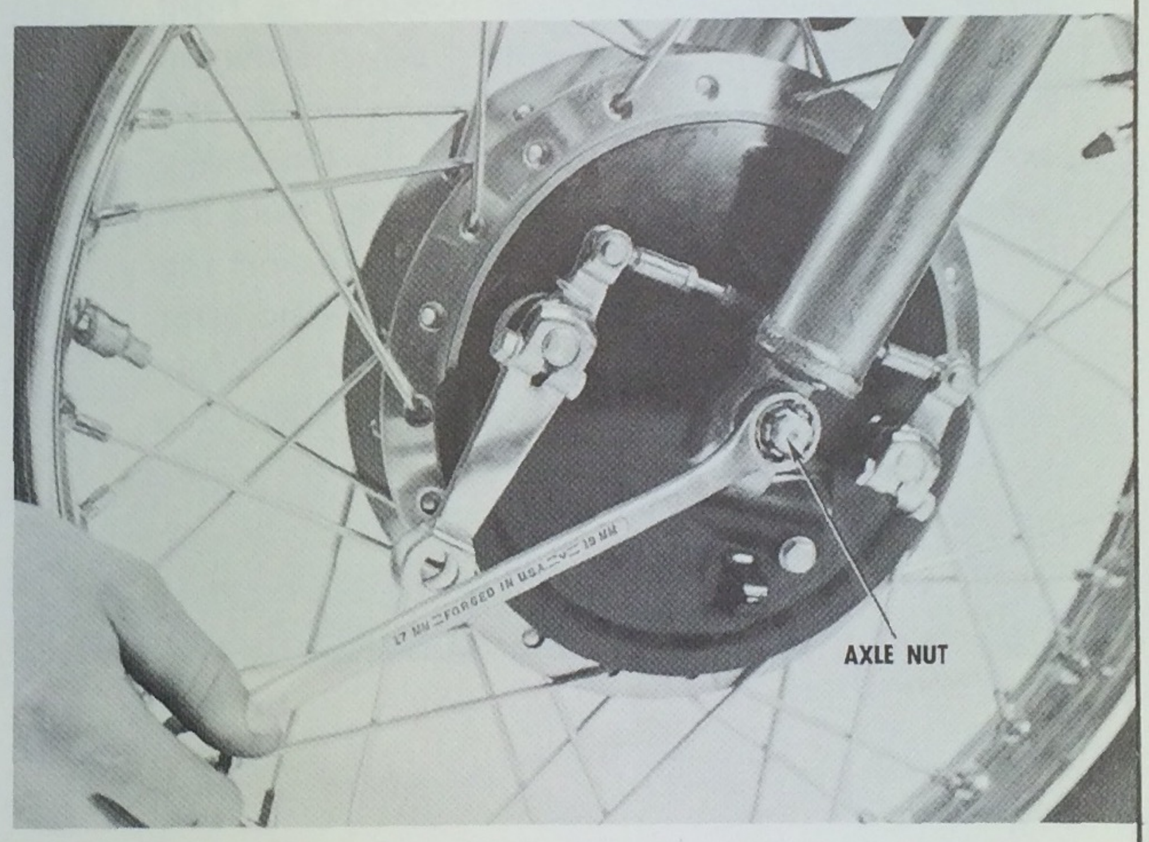
SAFETY NOTE: Loose parts inside the brake assembly could cause the front wheel to lock, resulting in loss of control.



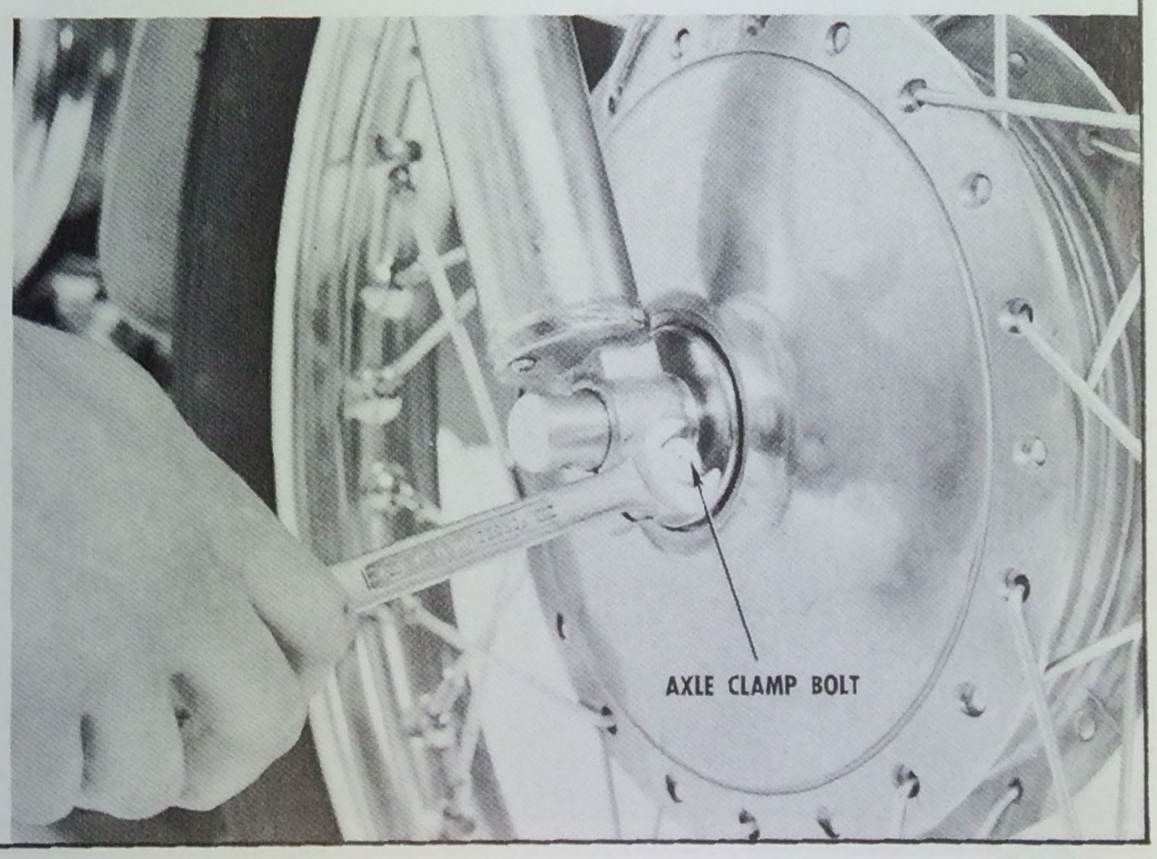
Position the front wheel assembly between the outer fork tubes, while matching the torque tongue (on the left outer fork tube) to the torque tongue groove on the brake panel. Insert the axle from the right side, through the right outer fork tube, the wheel assembly, and finally through the left outer fork tube.



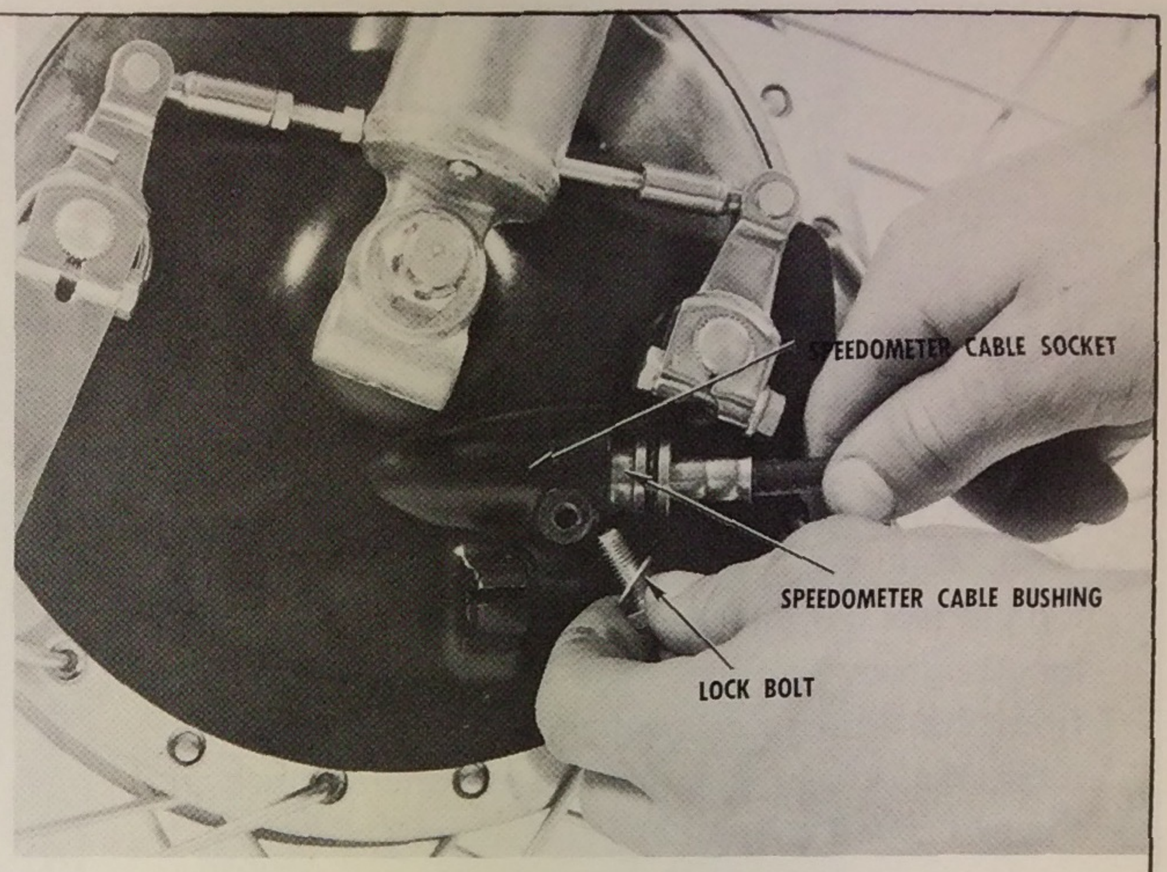
Thread the 14mm nut on the axle and tighten it. CAUTION: Be sure to install the cotter pin and split the ends.



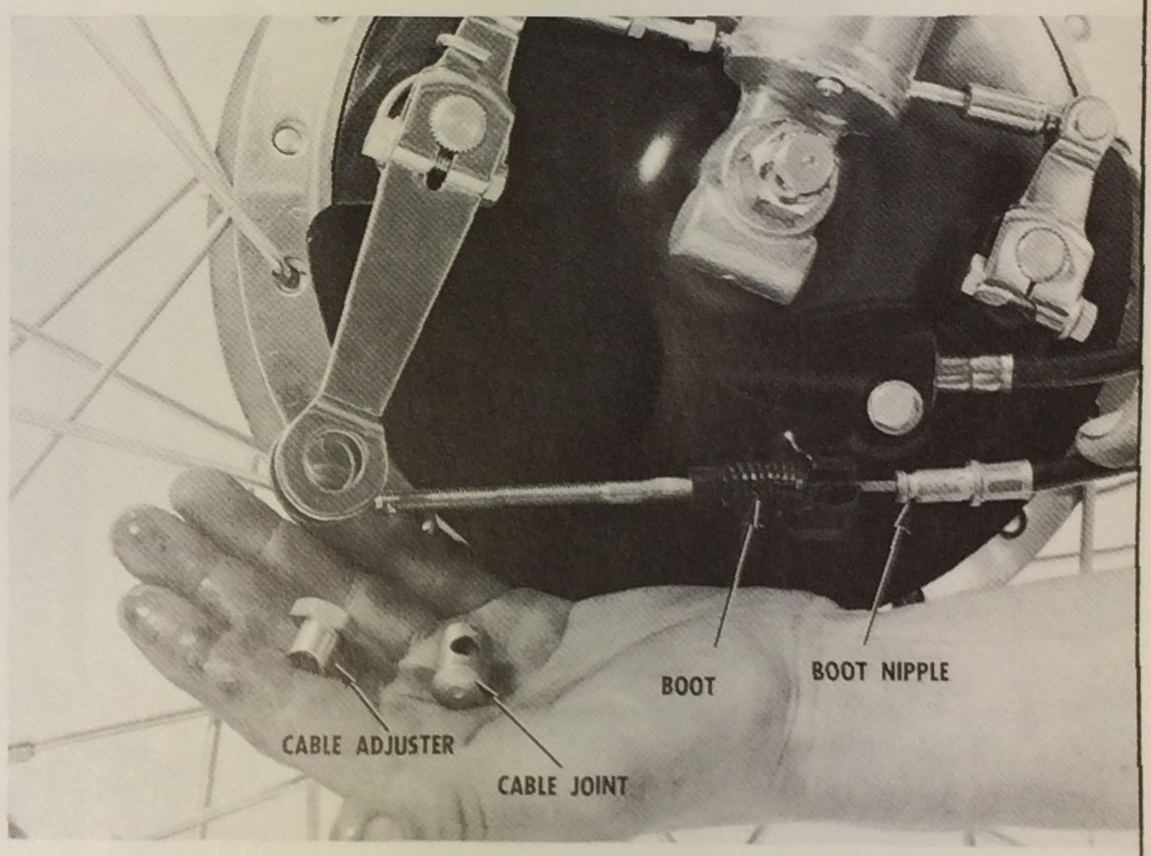
Push down on the handlebars several times, compressing the front fork, to align the right outer fork tube on the axle. Tighten one axle clamp bolt.



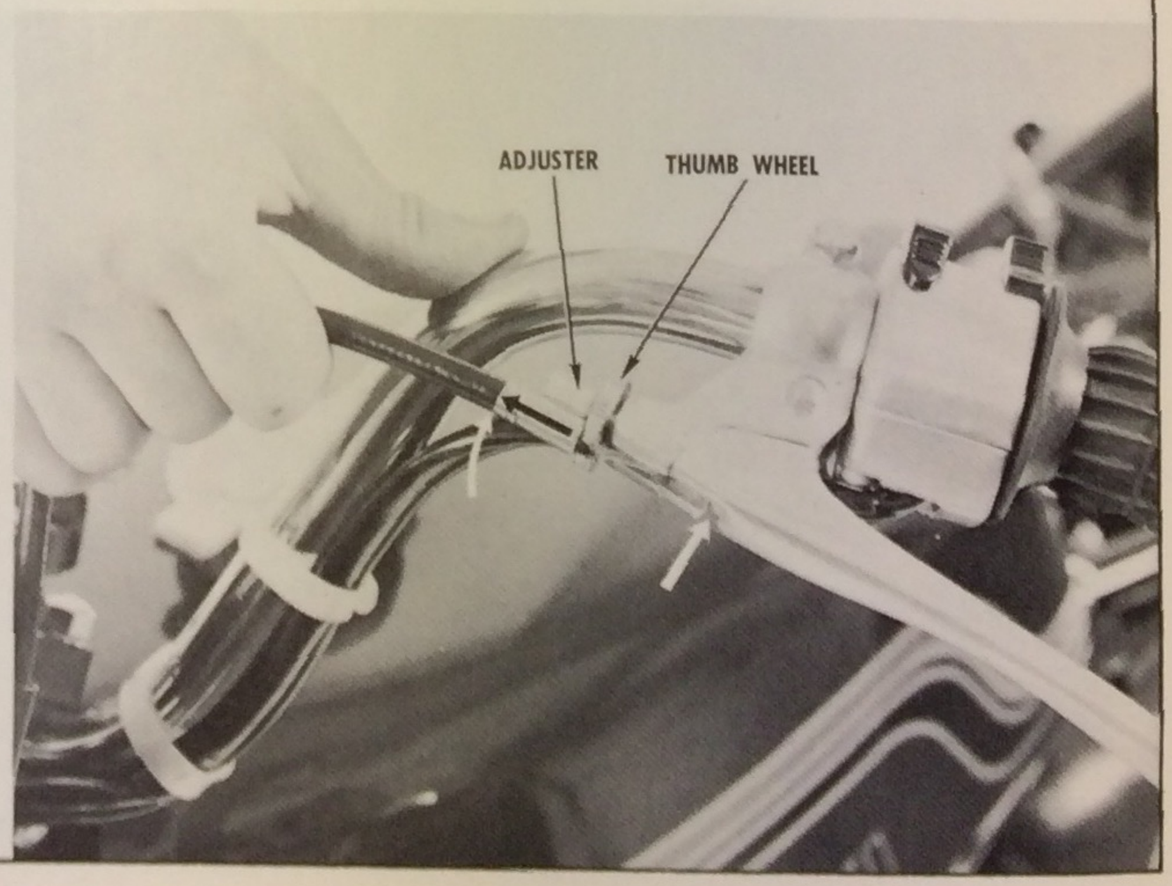
Remove the lock bolt and washer from the brake panel speedometer socket. Slowly turning the front wheel, push the speedometer cable bushing into the speedometer socket. Replace the lockbolt and washer and tighten it.



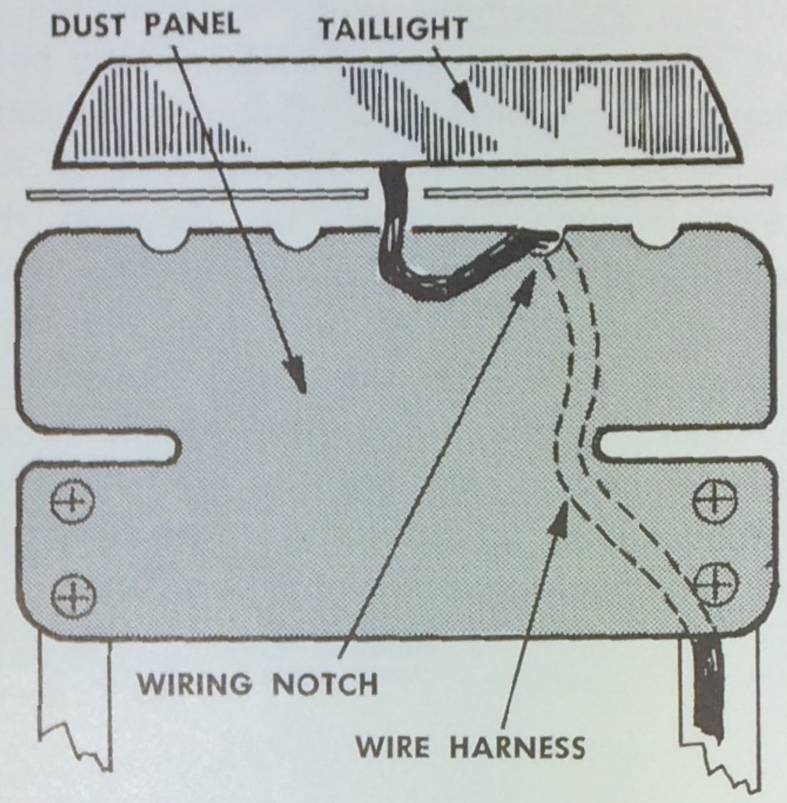
Route the brake cable down through the right hand cable loop at the tach, and down between the fork tubes. Remove the adjuster, joint, and boot, and then insert the cable into the brake panel ear. Push the boot onto the cable. Hold the cable joint in the brake cam lever and insert the cable in the joint. Thread on the cable adjuster with the ramps facing the joint. Insert the safety cotter pin and split the ends. Stretch the cable boot to engage it with the nipple on the cable sheath.



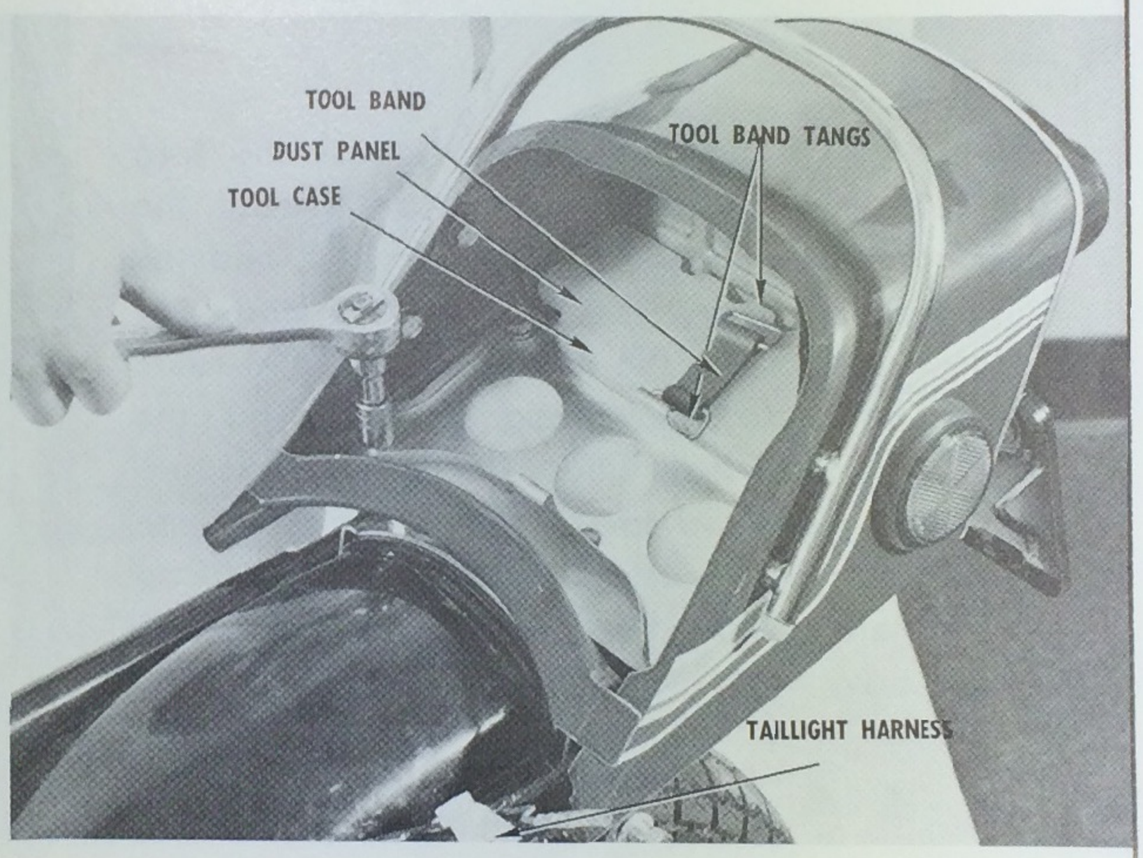
Turn the adjuster and thumbwheel into the clutch lever bracket as far as possible and then back out until the slots line up. Make sure the clutch cable is routed through the speedometer cable loop. Push the cable nipple up into the lever socket. Pull on the cable sheath, and then swing the cable into the adjuster and release it.



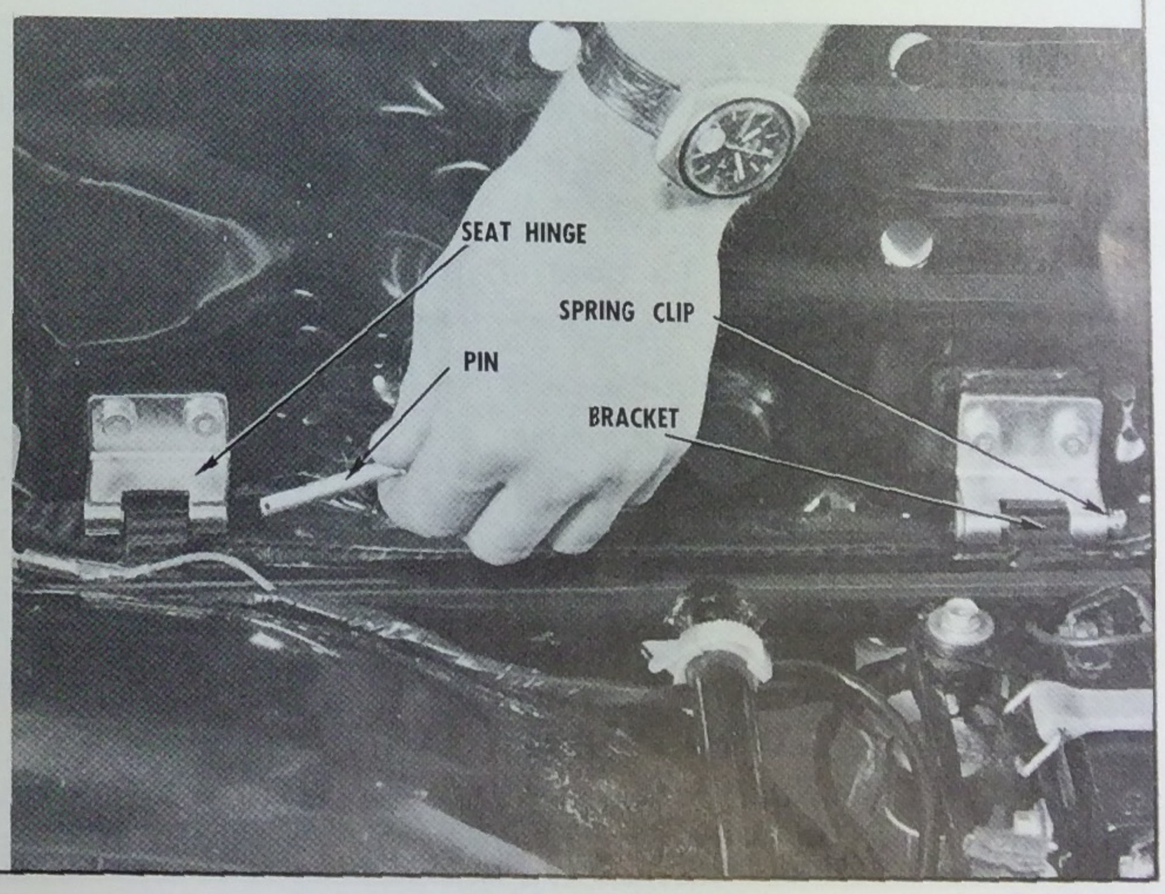
Position the dust panel in the seat bracket so that the wiring notch is on the left. Route the tail-light wire harness through the notch and under the panel.



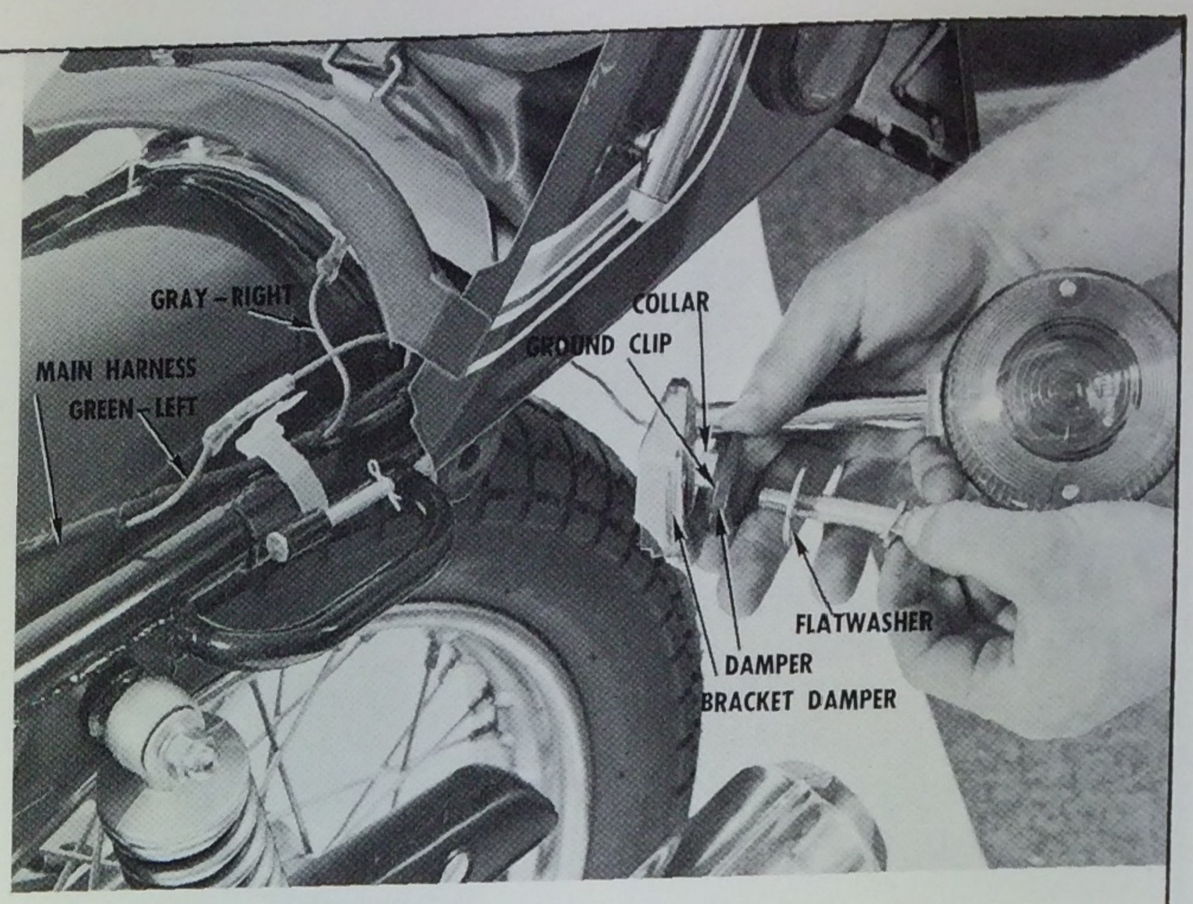
Remove the four bolts, flatwashers, and lock-washers from the frame tabs. Place the seat back-rest assembly on the frame and position the tool case inside, as shown. Install the four bolts, with washers. Route the tail light harness along the left tube, and connect the leads to the main harness.



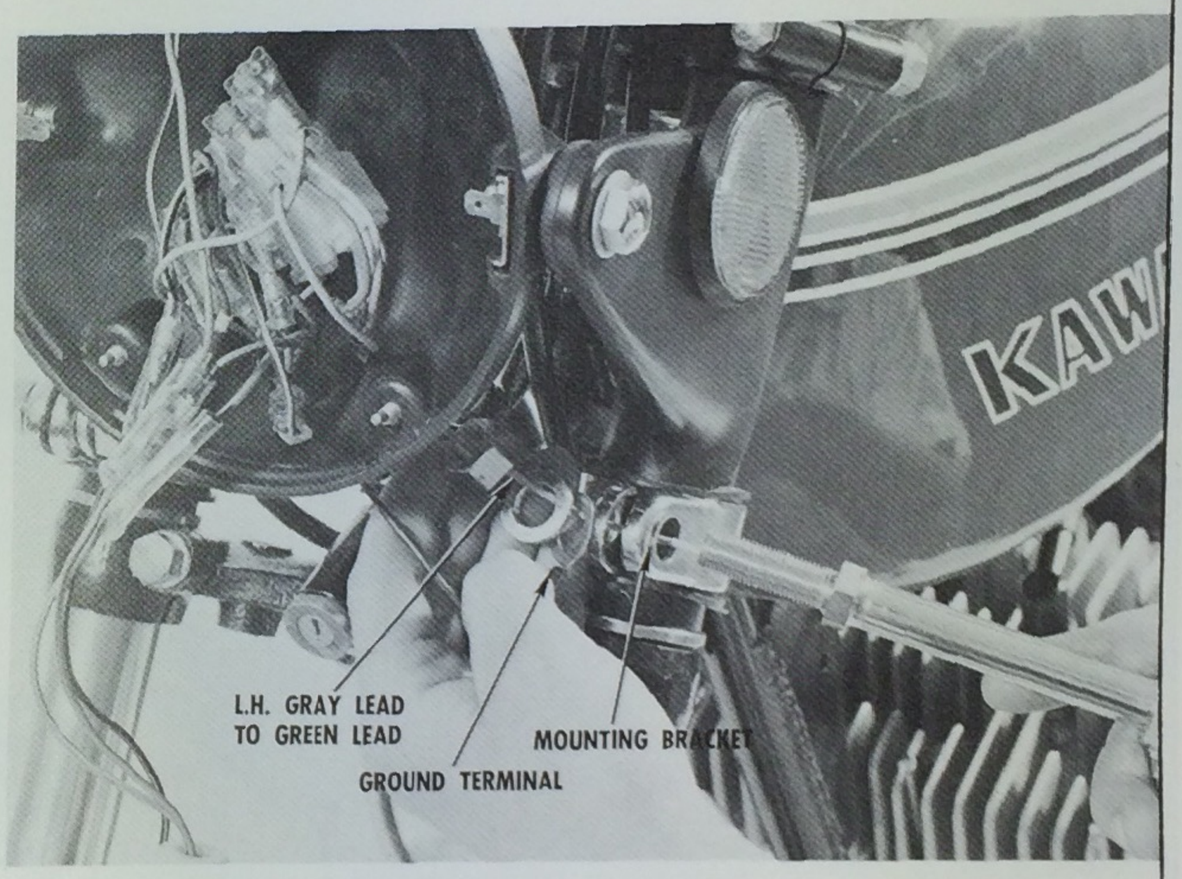
Locate the seat so that the seat hinges align with the frame brackets. Install the two hinge pins. NOTE: Be sure to install the two spring clips.



Install the rear turn indicators. Be sure that the ground clip and damper, with the collar, are as shown in the photo. Insert the 55mm long bolt, position the turn indicator and tighten the bolt. Route the gray lead wire to the rear of the indicator mounting bracket, up between the frame rail and the fender, to the indicator leads under the seat. NOTE: All four turn indicators have gray leads. The left side turn indicator gray leads, front and rear, are connected to the green leads from the main harness. The right side turn indicator gray leads, front and rear, are connected to the gray leads from the main harness.

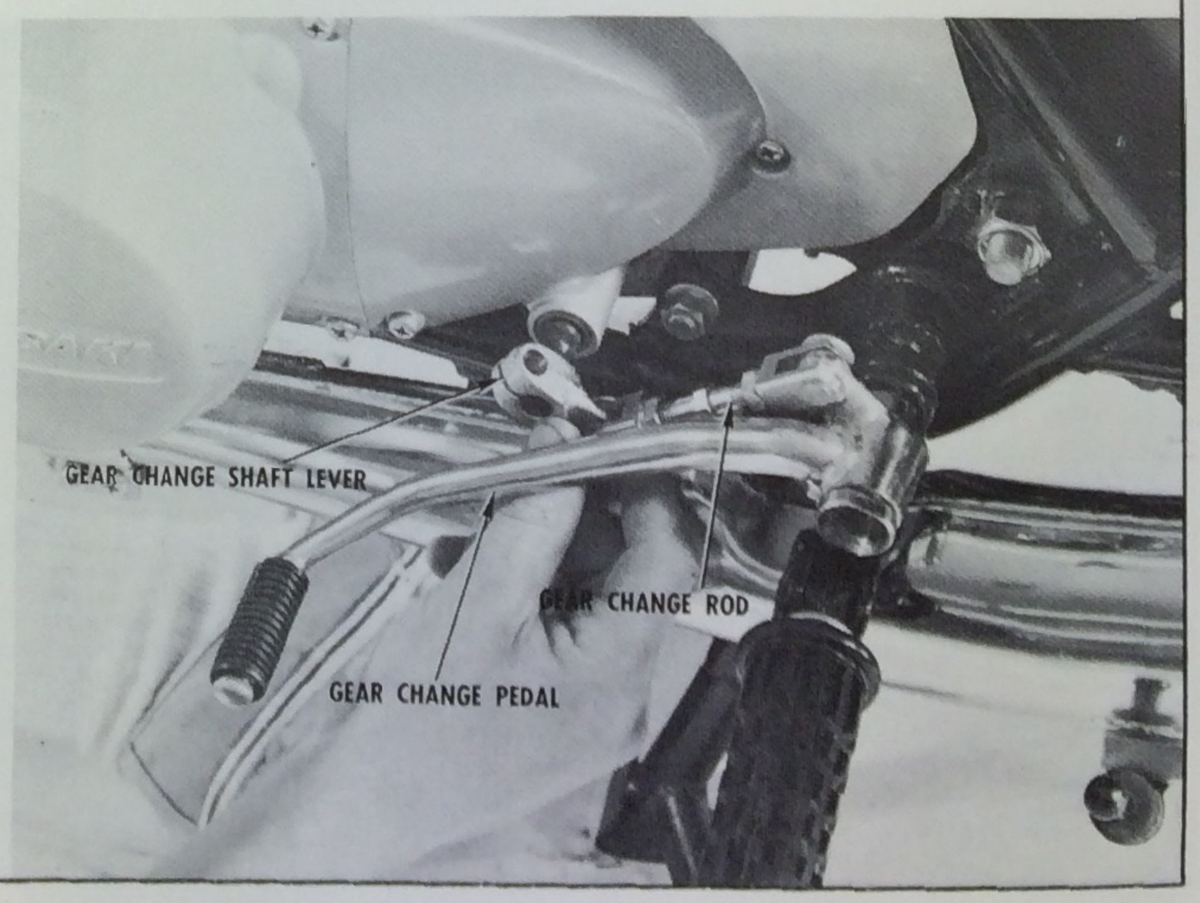


Install the front turn indicators. Pass the turn indicator lead and the threaded stud through the mounting bracket, the ground terminal, and the lockwasher. Thread the nut onto the stud, and tighten it. Remove the headlamp unit and route the turn indicator lead through the opening at the rear of the headlamp body. Connect the left turn indicator gray lead to the green lead, and the right gray lead to the gray lead in the headlamp body. Reinstall the headlamp unit in the headlamp body.



Remove the bolt and lockwasher from the gear change shaft lever. Pull the lever off of the gear change shaft and lift the gear change pedal to a comfortable height: level with the footrest. Push the lever back on the gear change shaft, taking care to maintain the S-shap of the linkage. NOTE: If the linkage is improperly installed, the shift sequence will be reversed.

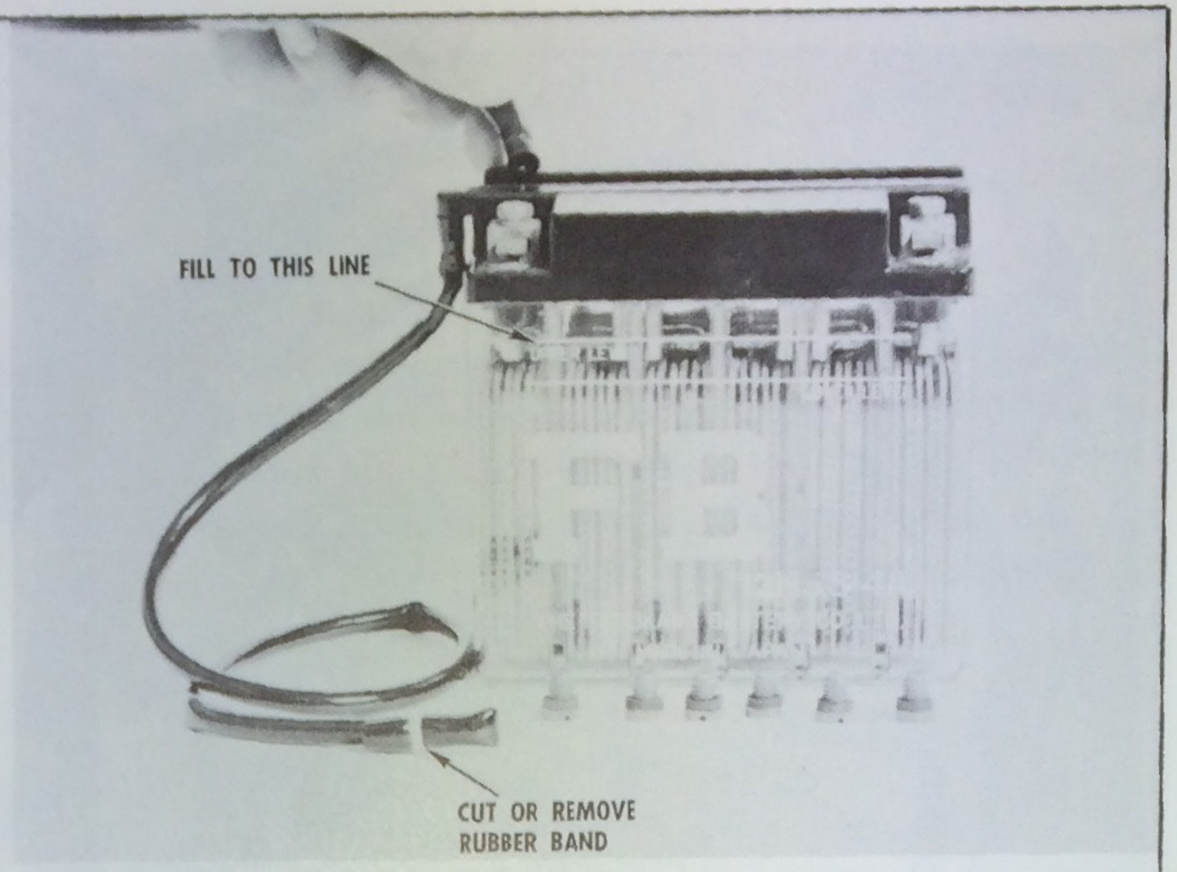
Refix the bolt and lockwasher and tighten it securely. CAUTION: Be sure that the lever will not hit the muffler on a full down shift. Adjustment can be made by loosening the locknuts on the gear change rod and rotating it to raise or lower the pedal. Tighten the locknuts after the adjustment.



PREPARATION SERVICING

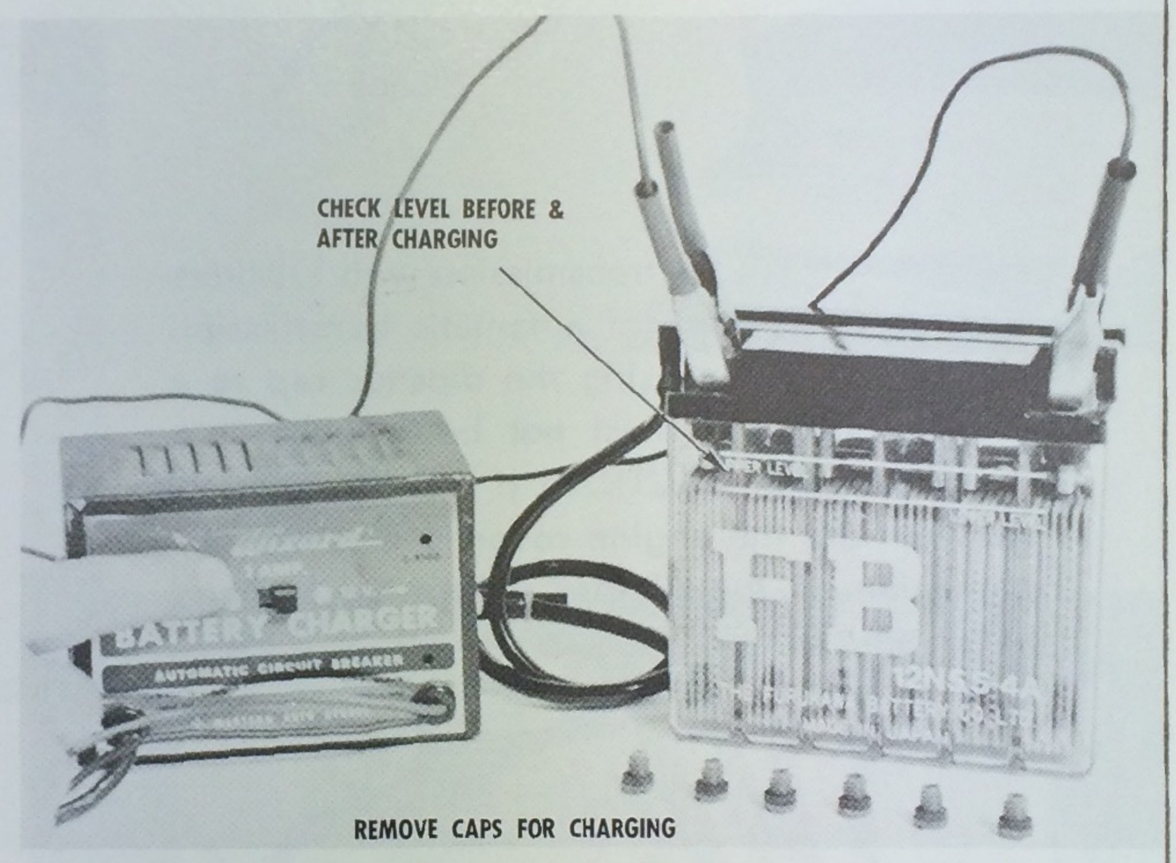
FILLING

Lift the seat and remove the battery. Cut the battery vent hose. Fill the battery to the top level line with fresh electrolyte fluid, at a temperature of 85°F or less. Let the battery stand for 2 hours. If the fluid level drops below the super line, top up with more electrolyte before charging.



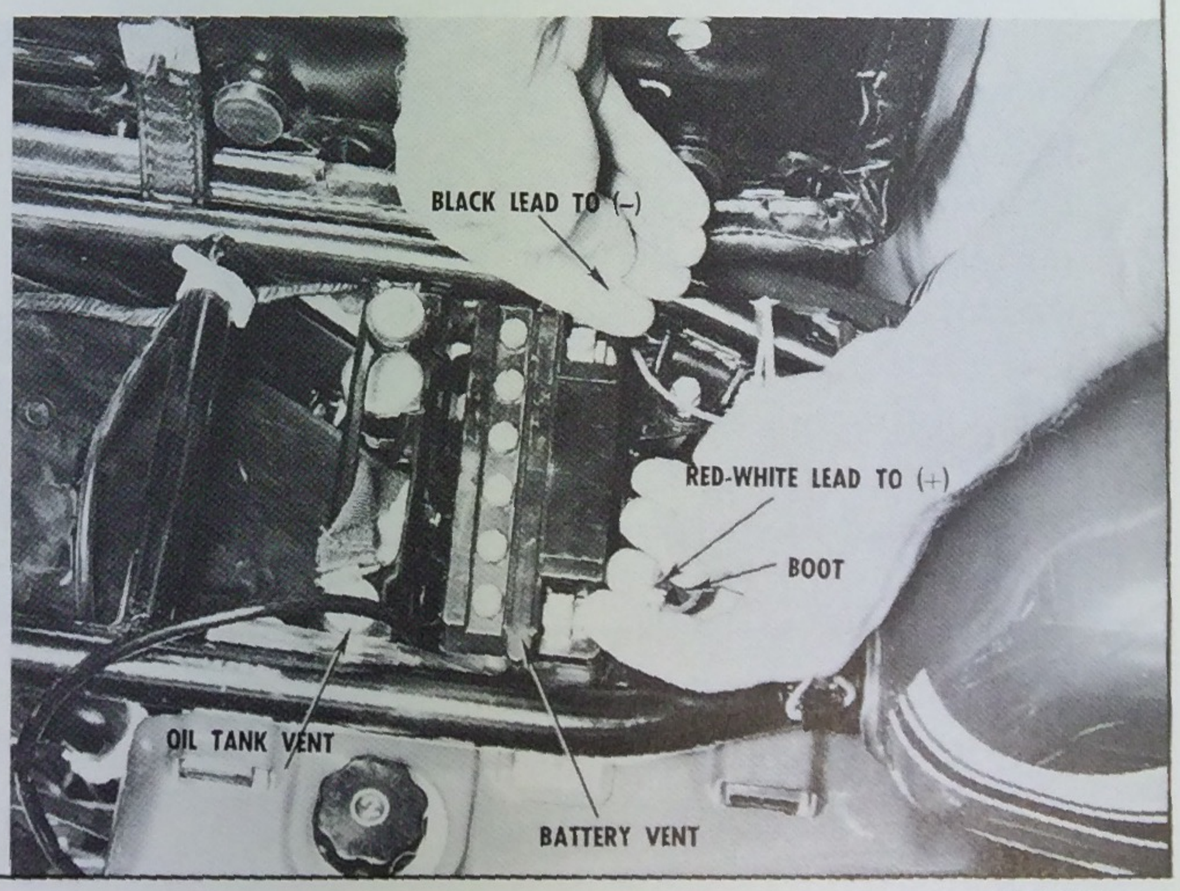
CHARGING

To avoid battery damage, remove all of the caps. Connect the battery charger leads (red to +, black to –) to the battery posts. CAUTION: Do not charge at a rate greater than 1 amp. An initial charging is recommended before placing in service. Charge for 15 to 20 hours. Discontinue charging if temperature rises to 115°F. If the electrolyte level drops, refill with distilled water only.

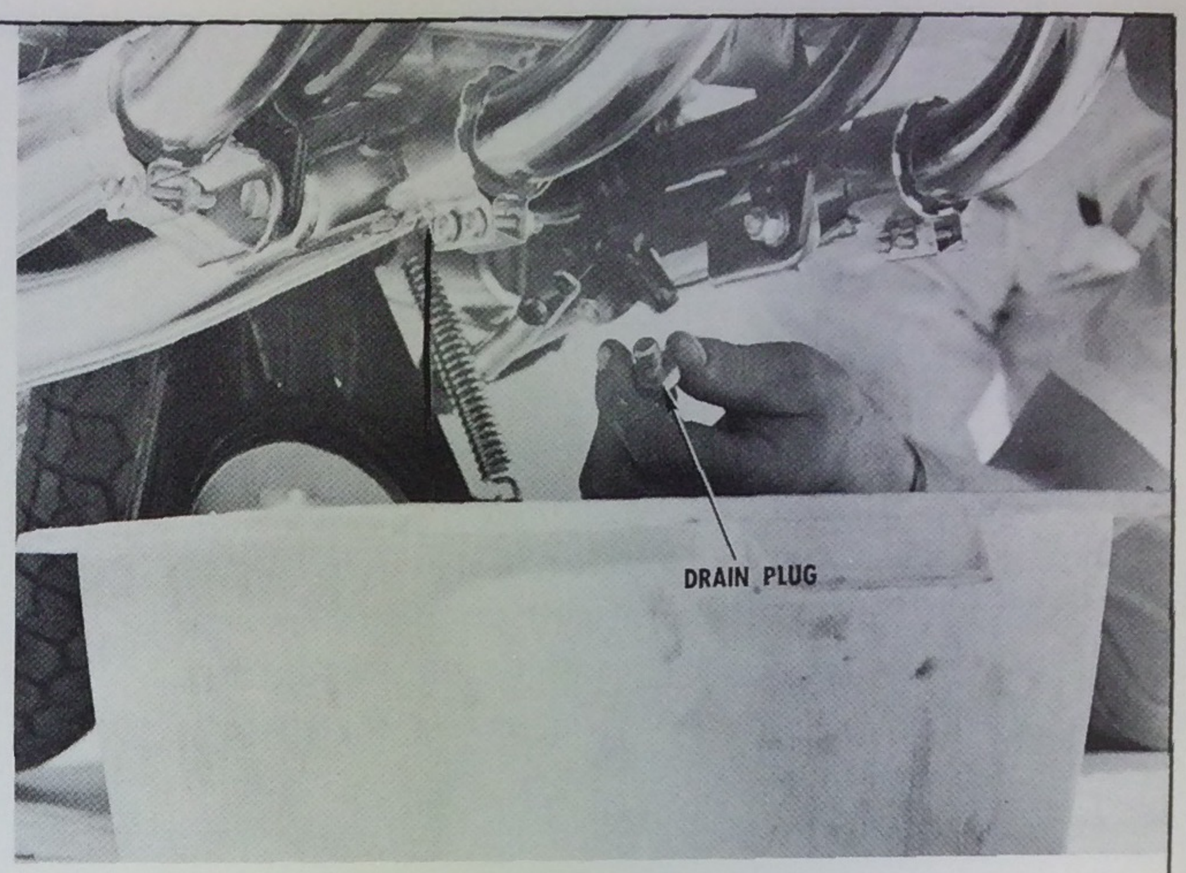


INSTALLATION

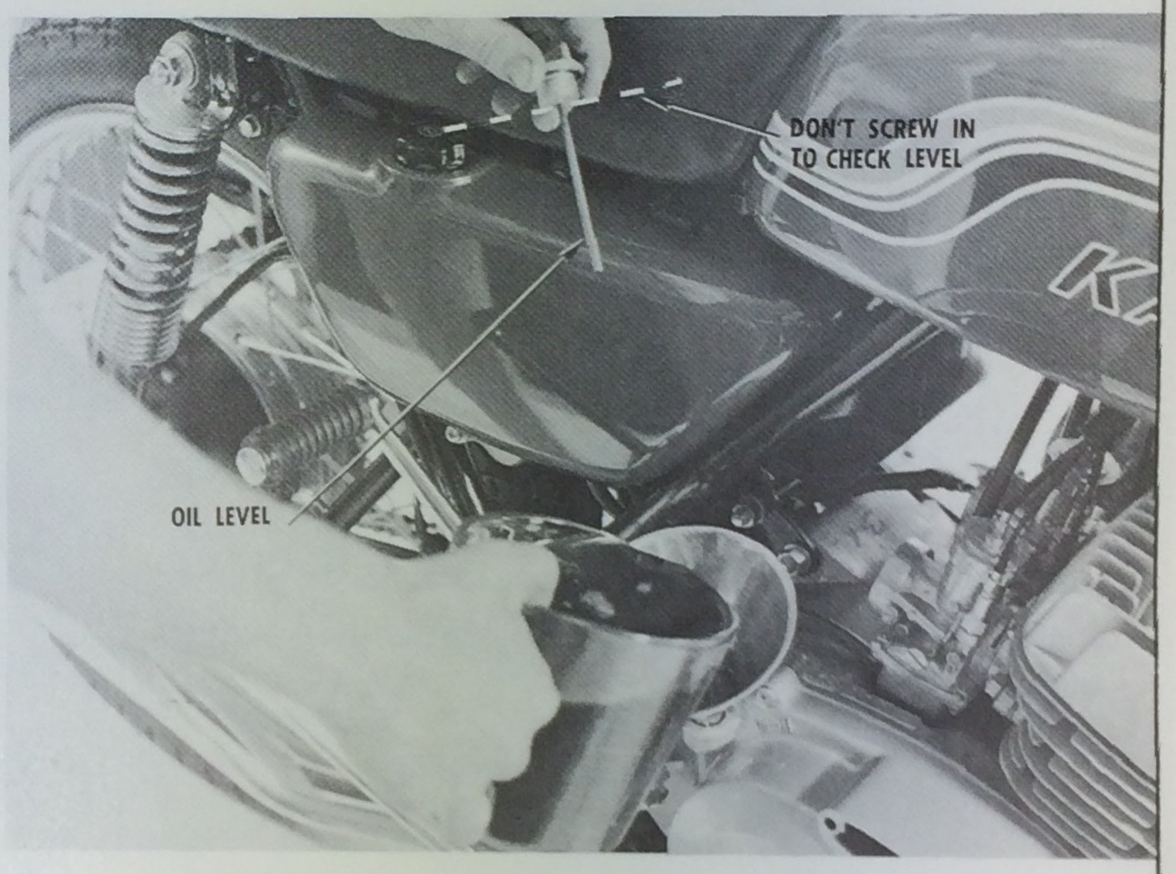
Wash off any spilled acid with fresh water. Be sure that the battery mat is in position in the bottom of the battery box to protect the battery. Install the battery so that both the posts face forward, with the positive post and the vent tube on the right side. Connect the red-white lead to the positive (+) post and cover it with the rubber boot. Connect the black lead to the negative (–) post. Connect the white wire of the red-white Y-terminal lead to the white lead from the fuse. Route the vent tube down behind the oil tank, and between the engine case and the frame tube.



Remove the drain plug, and drain the shipping oil from the transmission. Replace the drain plug with gasket, and tighten it. NOTE: Be sure that the motorcycle is in a vertical position for complete drainage.

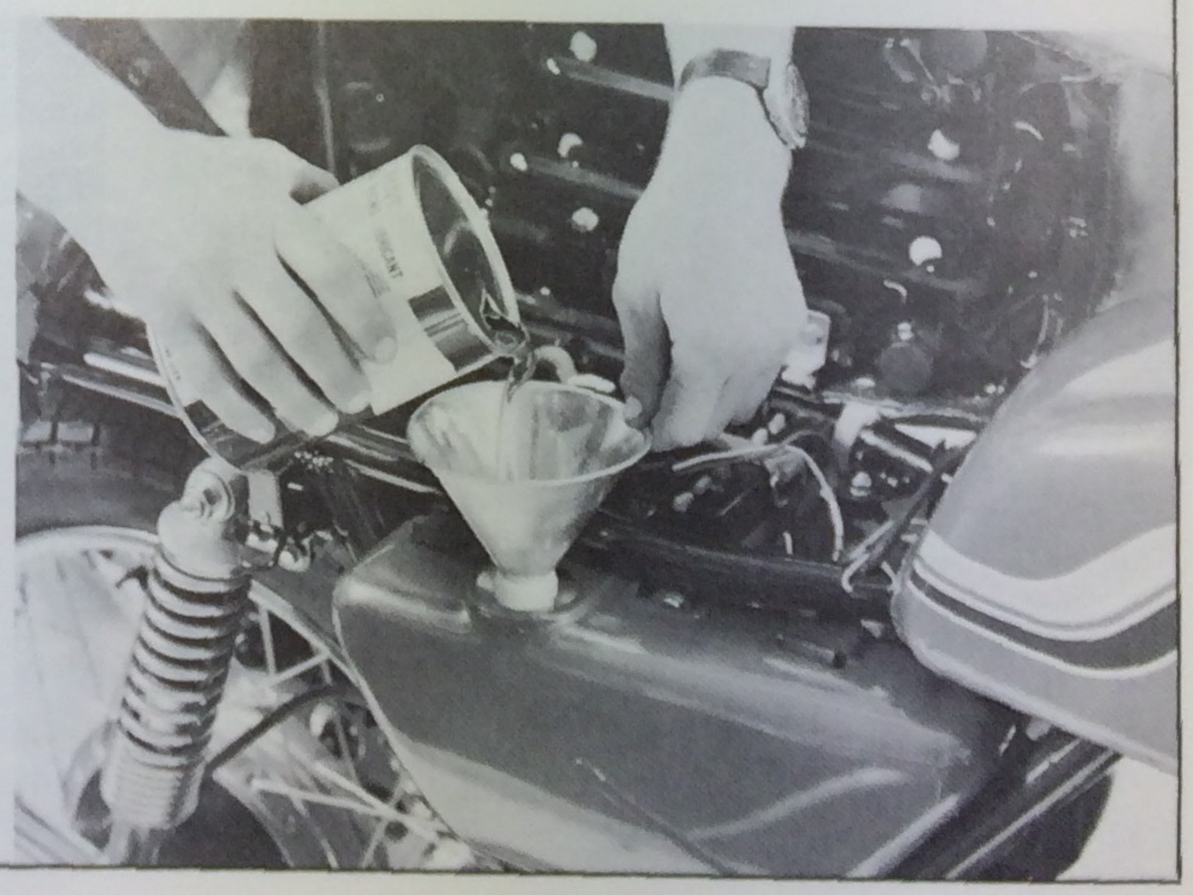


Fill the transmission with 1.1 liters (1.2 qt. or 37 fl. ozs.) of automatic transmission fluid (type F). When using the dipstick cap as a measuring device it must **not** be screwed into the engine cover: CAUTION: If the dipstick cap is screwed into the engine cover to measure the transmission oil, the oil level will be too low and severe damage could result.

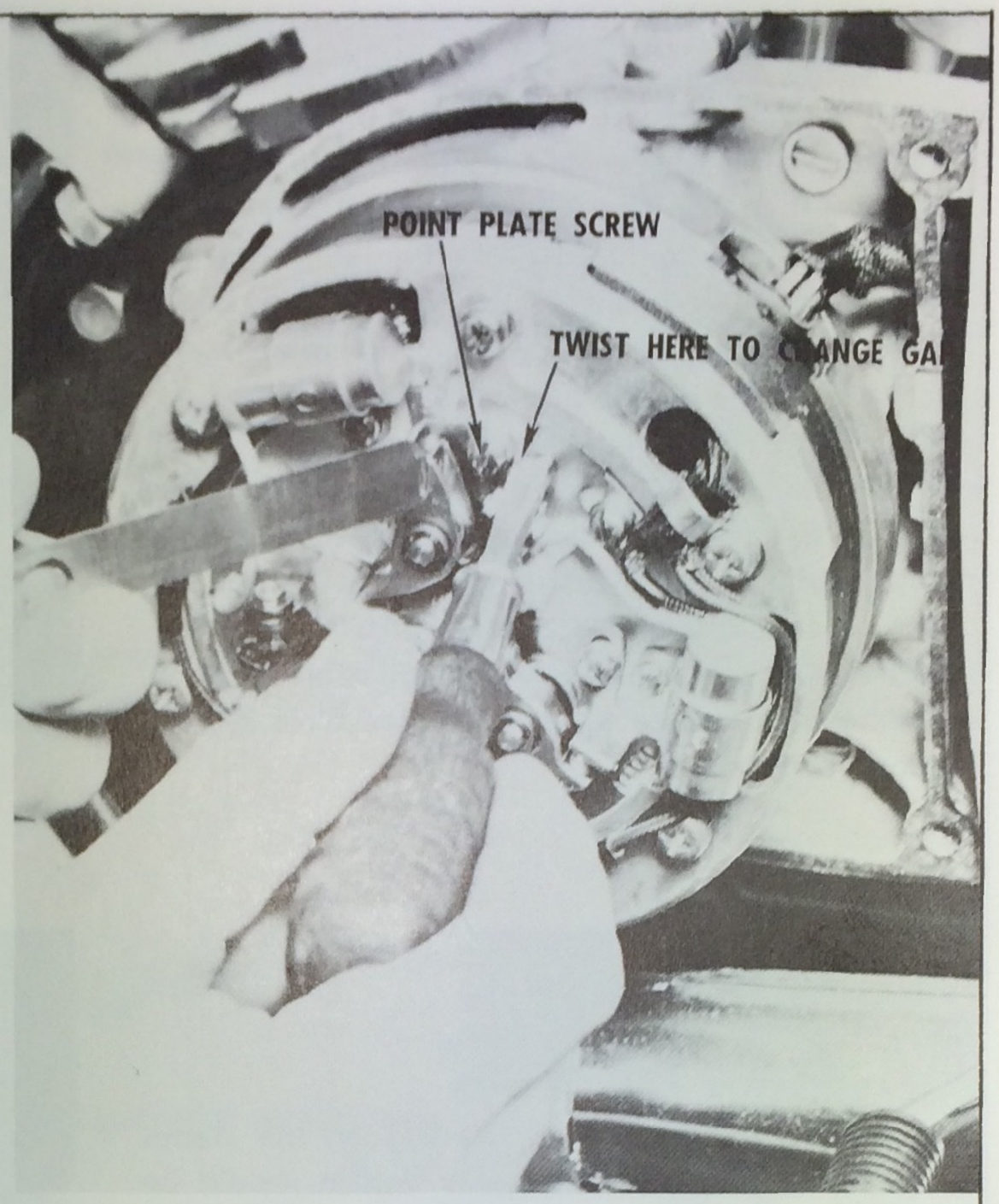


Remove the oil tank filler cap, and fill the oil tank with a good quality two-stroke oil. CAUTION: Be sure that the oil tank vent nipple and vent line are open. Route the vent line forward along the top right hand frame tube, under the oil tank bracket, through the hole in the frame brace, down in front of the air cleaner housing and into the hole provided in the front sprocket cover. Be sure that the oil line is securely attached to the oil tank.

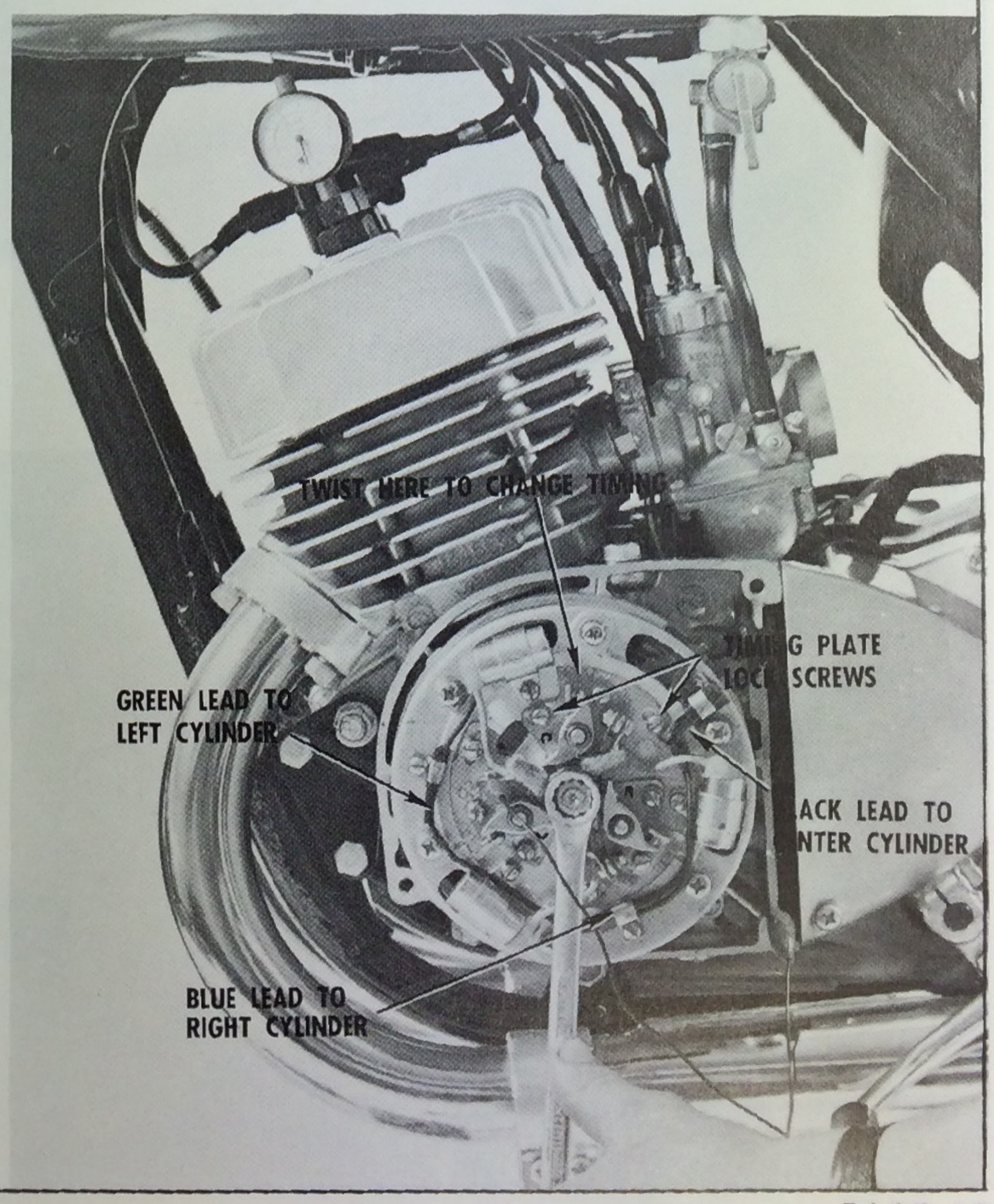
Replace the oil tank filler cap after filling the oil tank. Be sure that the filler neck strainer screen is in place.



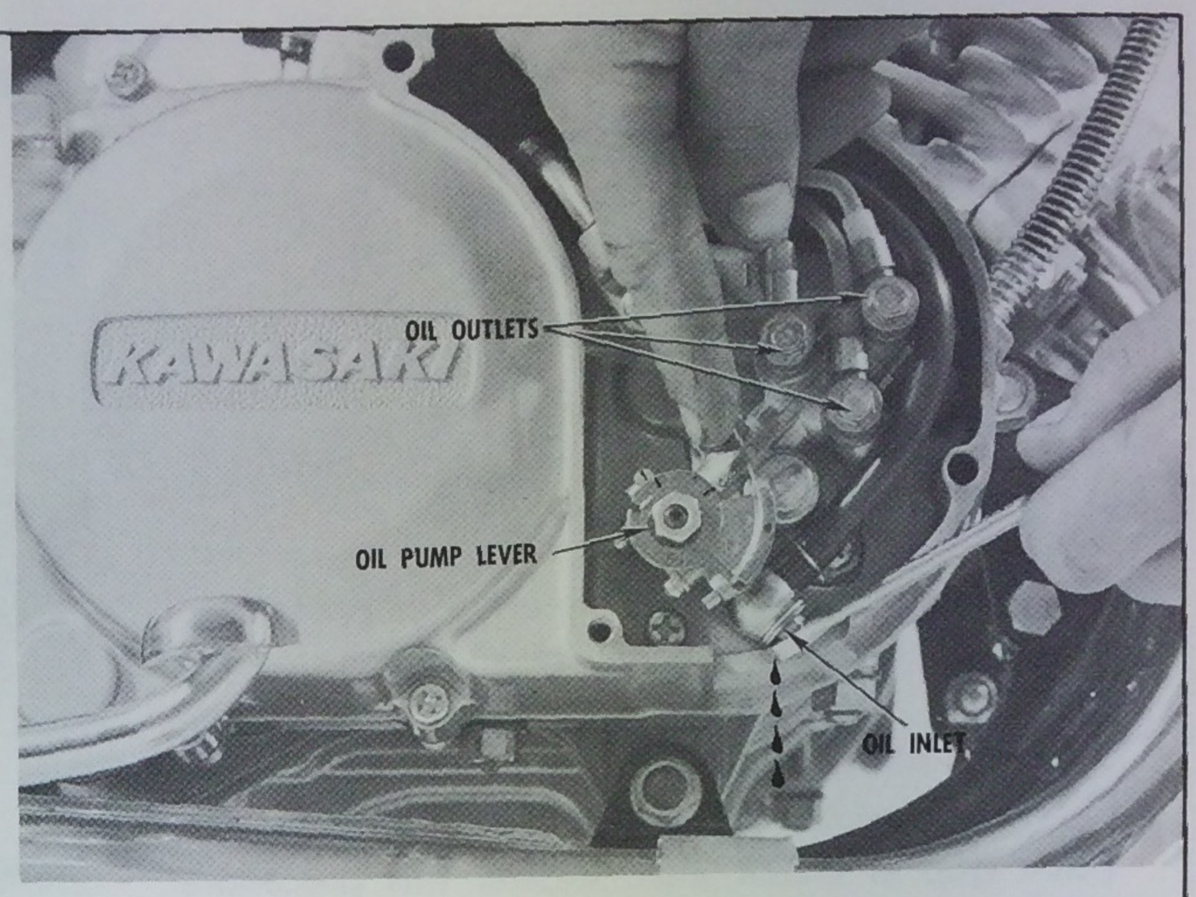
Remove the left engine cover to expose the stator. Remove all three spark plugs. Rotate the crankshaft counterclockwise with a 12mm wrench until one point set is at its widest gap. Loosen the point plate lock screw, and set the point gap at 0.014 inch. Repeat this procedure with the other two sets of points.



Place the dial indicator in the left hand cylinder and attach the timing tester by connecting the red lead to the contact breaker point terminal and the black lead to ground. With a 12mm wrench, rotate the crankshaft until the dial indicator shows top dead center. Turn on the timing tester and rotate the crankshaft clockwise until the dial indicator shows that the piston is at a position 2.60mm (23°) before top dead center. If the timing is correct, a change of tone in the timing tester will be heard. If the timing is not correct, loosen the two timing plate screws, and adjust the timing as required. When the timing adjustment is completed, recheck the contact breaker point gap, and secure the lockscrews. Move the dial indicator to the center cylinder and check the timing; and then repeat the process on the right cylinder. Replace the engine cover.

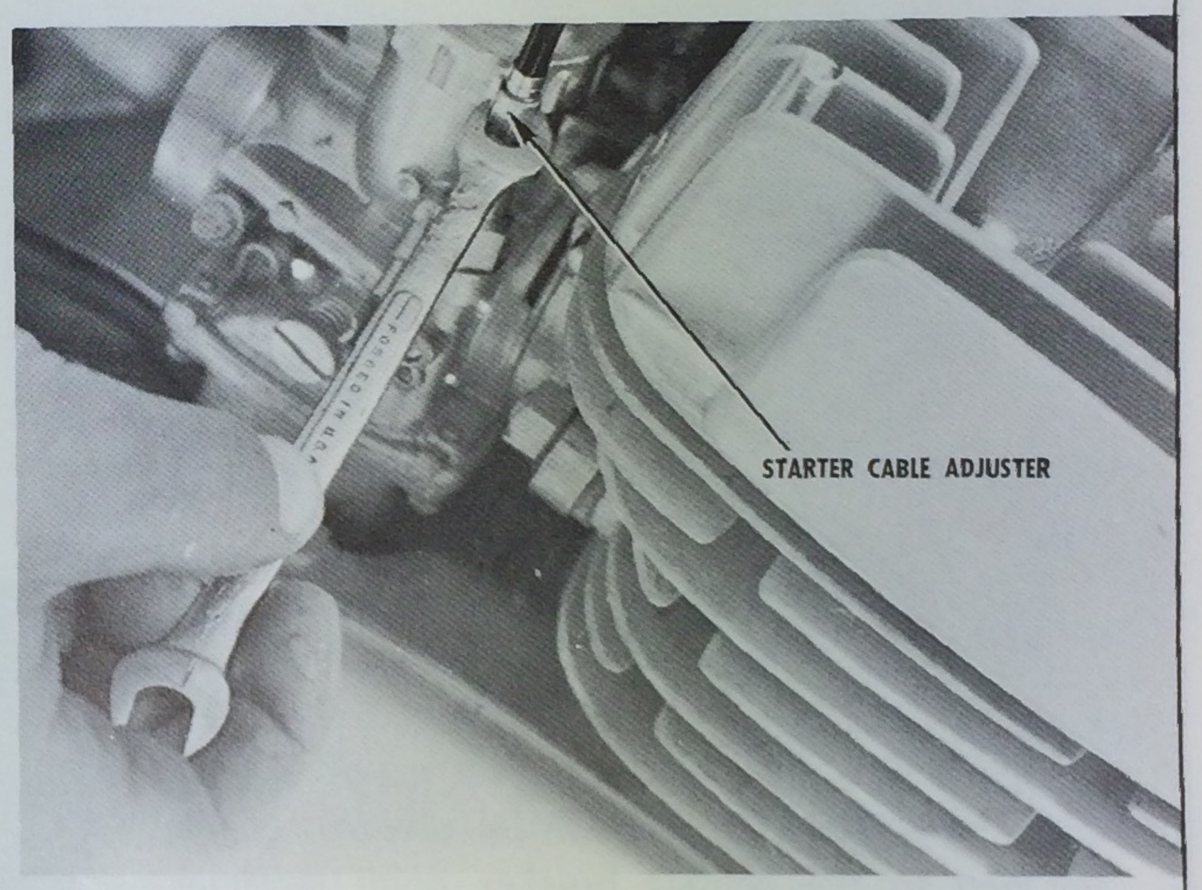


Remove the oil pump cover and the right hand engine cover grommet. Loosen the oil inlet banjo bolt and allow the oil to flow out of the oil inlet banjo fitting for two minutes. CAUTON: If the oil flow is slow or stops altogether, check the oil pipe from the oil tank for clogging or pinching. Also check the tightness of the oil outlet banjo bolts. Start the engine and maintain engine speed at 1500 to 2000 rpm. Hold the oil pump lever in the full open position to bleed any air bubbles out of the oil pump body, and the oil pressure lines. When the exhaust smokes heavily, release the lever and stop the engine. CAUTION: If the exhaust does not smoke or if bubbles are present in the oil pressure lines, check for blockage or loose connections.



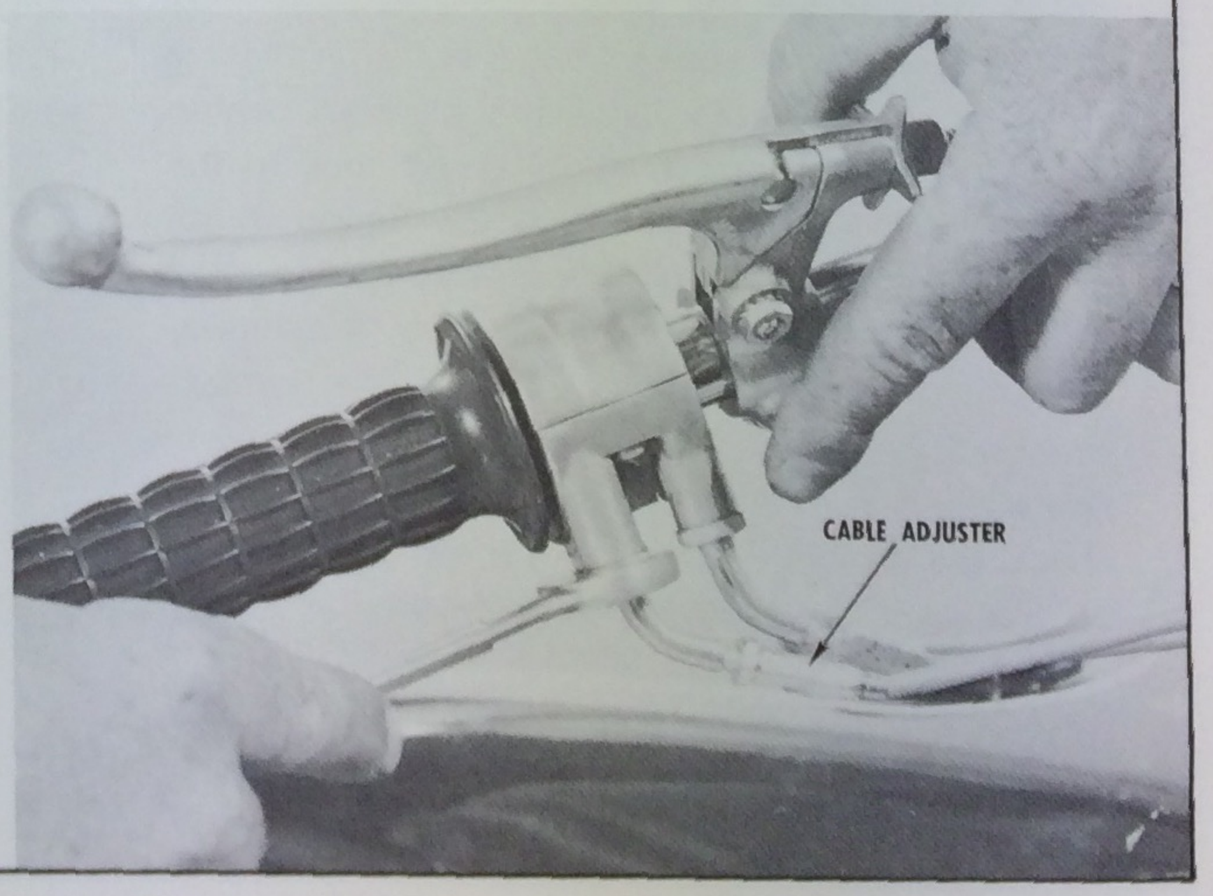
CARBURETOR ADJUSTMENTS

Remove the air inlet pipes. Tug on the starter cables to check for free play, which should be about ⅛" on each cable. NOTE: If there is no slack, the starter plunger will be held open slightly, causing rich mixtures from the carburetor. To adjust the starter cable slack pull up the rubber cap, loosen the locknut, and turn the adjuster. Tighten the locknut after adjusting.

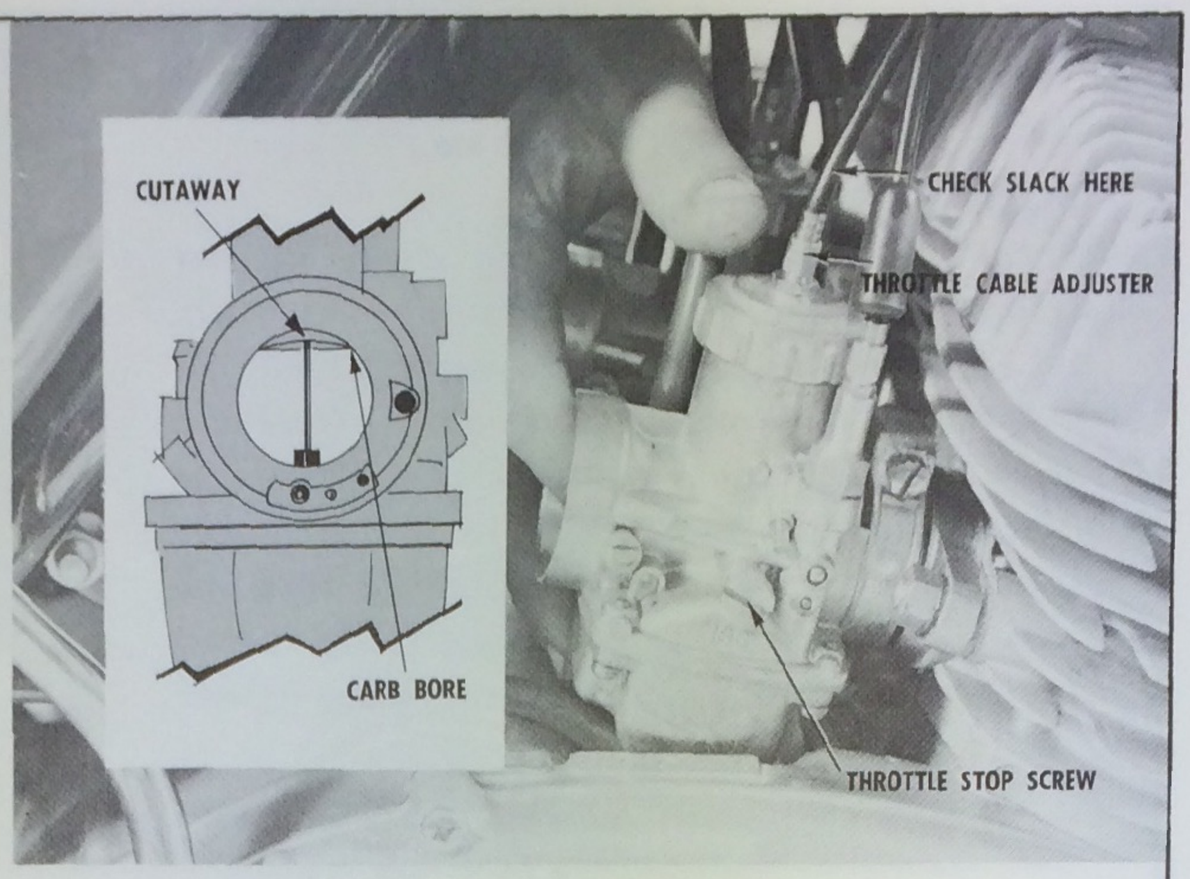


CARBURETOR SYNCHRONIZATION

For smooth, reliable performance, the three carburetors must all have the same slide position at any throttle opening. To check synchronization, loosen the cable adjuster on the twistgrip to obtain sufficient slack in the control cable.

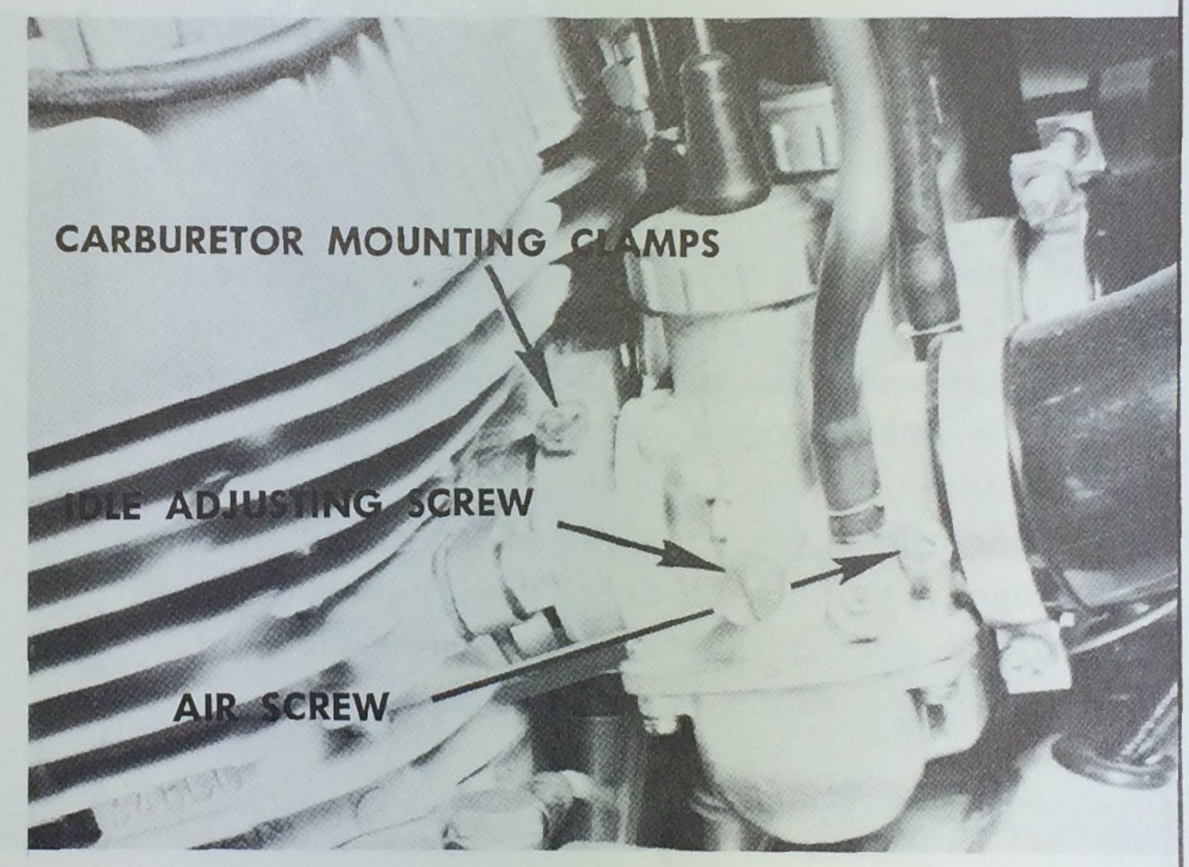


Back out all three throttle stop screws so that the throttle valves rest on the bottom of the carburetor venturis. At this point, all three carburetor slides will be at the same position: completely closed. Slide the rubber boot off the throttle cable adjuster, loosen the locknut, and turn the adjuster until each cable has 1/16" slack. Tighten the locknut and refix the rubber boot. The carburetor slides will now be sychronized at any throttle position from fully closed to wide-open. To verify adjustment, you can take off the rubber inlet pipes, then open the twistgrip so that all three slide cutaways align with the tops of the carb throats.



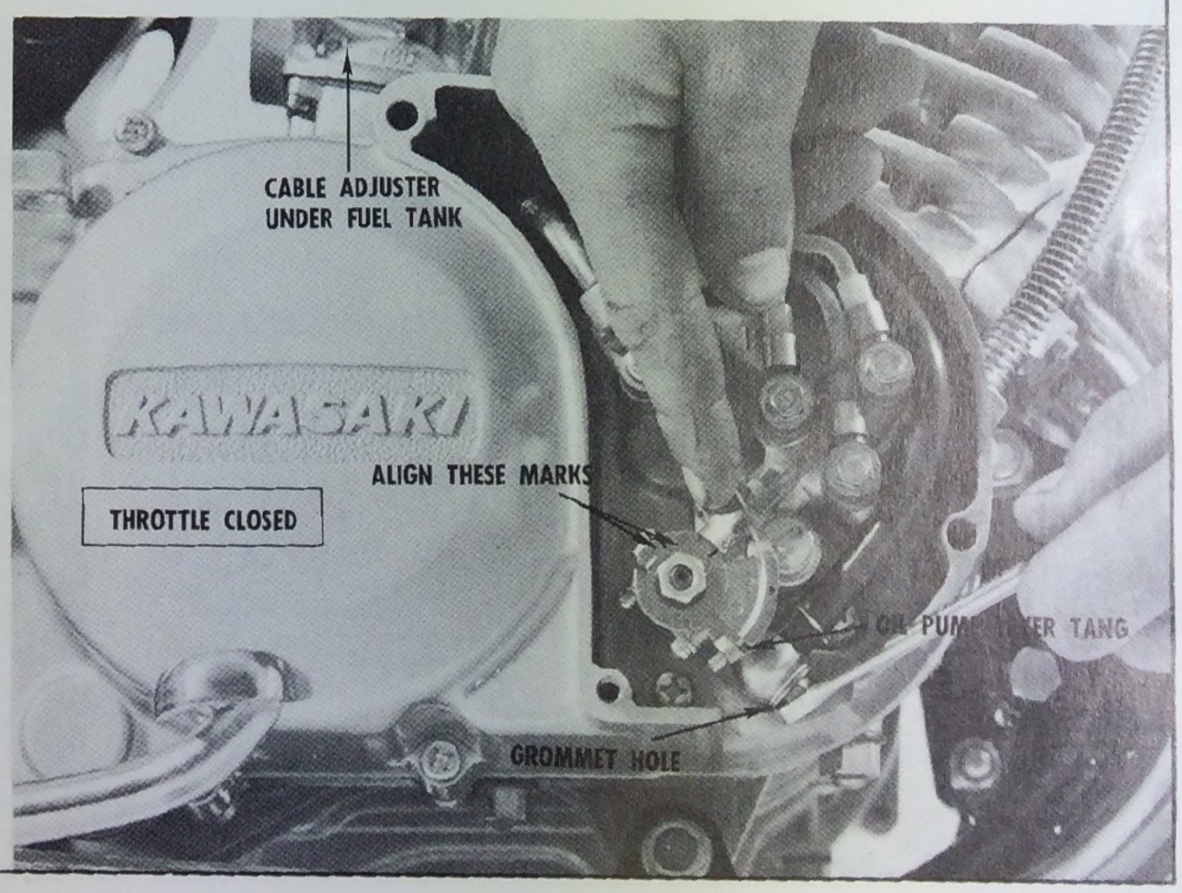
IDLE ADJUSTMENT

Turn in each air screw until it bottoms lightly, and then back it out 1½ turns. Start the engine and warm it up for a minute or two; then screw in the idle adjustment screws evenly until a stable idle of 1300 - 1500 rpm is obtained. Hold your hands over the mufflers to see if the exhaust pressure is balanced among the three cylinders. To balance the exhaust, turn the idle adjustment screws — back out the screw on a "strong" cylinder; turn in the screw on a "weak" cylinder. When the idle is balanced; stop the engine and lengthen the throttle cable adjuster at the right hand grip until there is 1/16 to 1/8" play in the throttle. Finally, check the tightness of the carburetor mounting clamps.



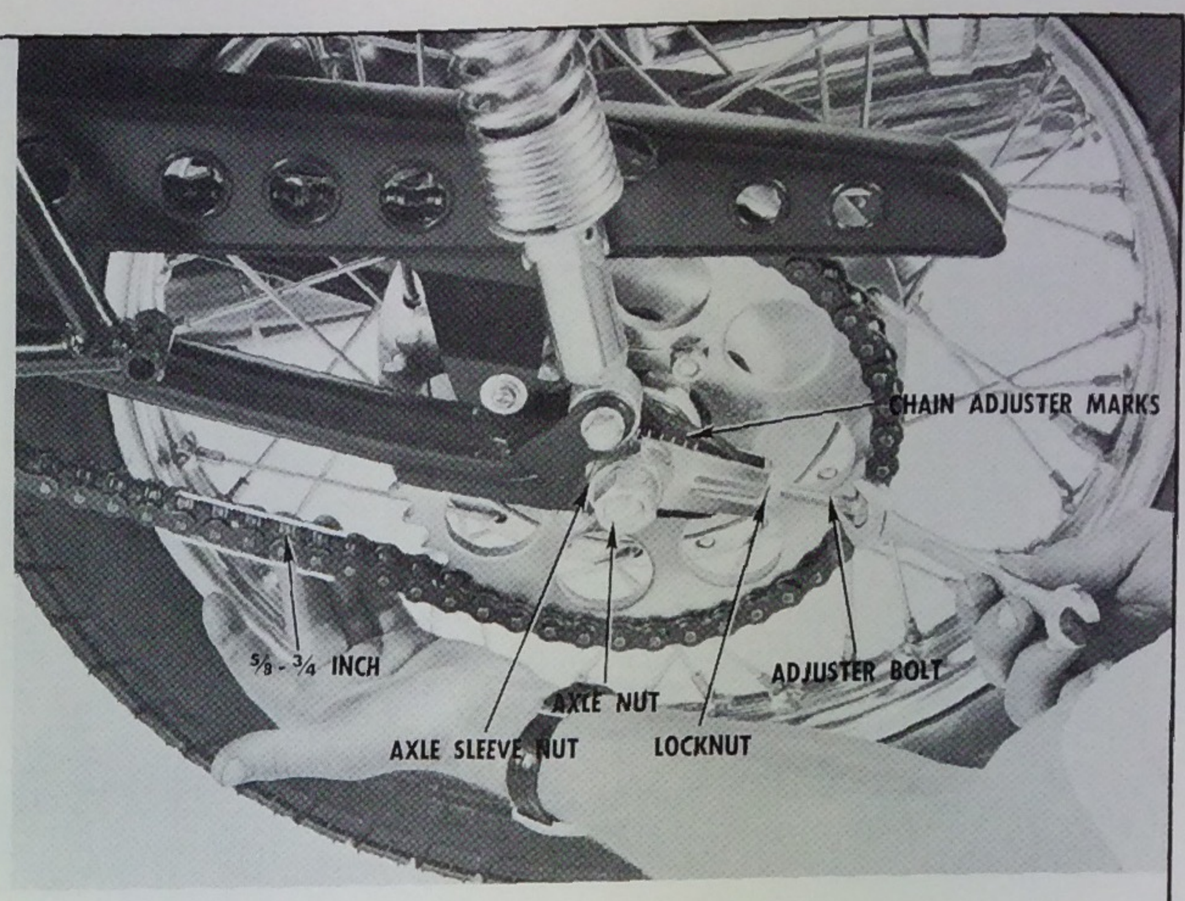
OIL PUMP ADJUSTMENT

Only after adjusting the carburetors, inspect the oil pump adjustment. Close the twist grip completely and check that the mark on the oil pump lever aligns with the mark on the oil pump body. If the marks do not align, turn the adjuster under the fuel tank until the alignment is correct. Be sure to tighten the adjuster locknut after this operation. At the same time, make sure the lever tang is bent over the cable nipple. Refit the grommet and the oil pump cover.



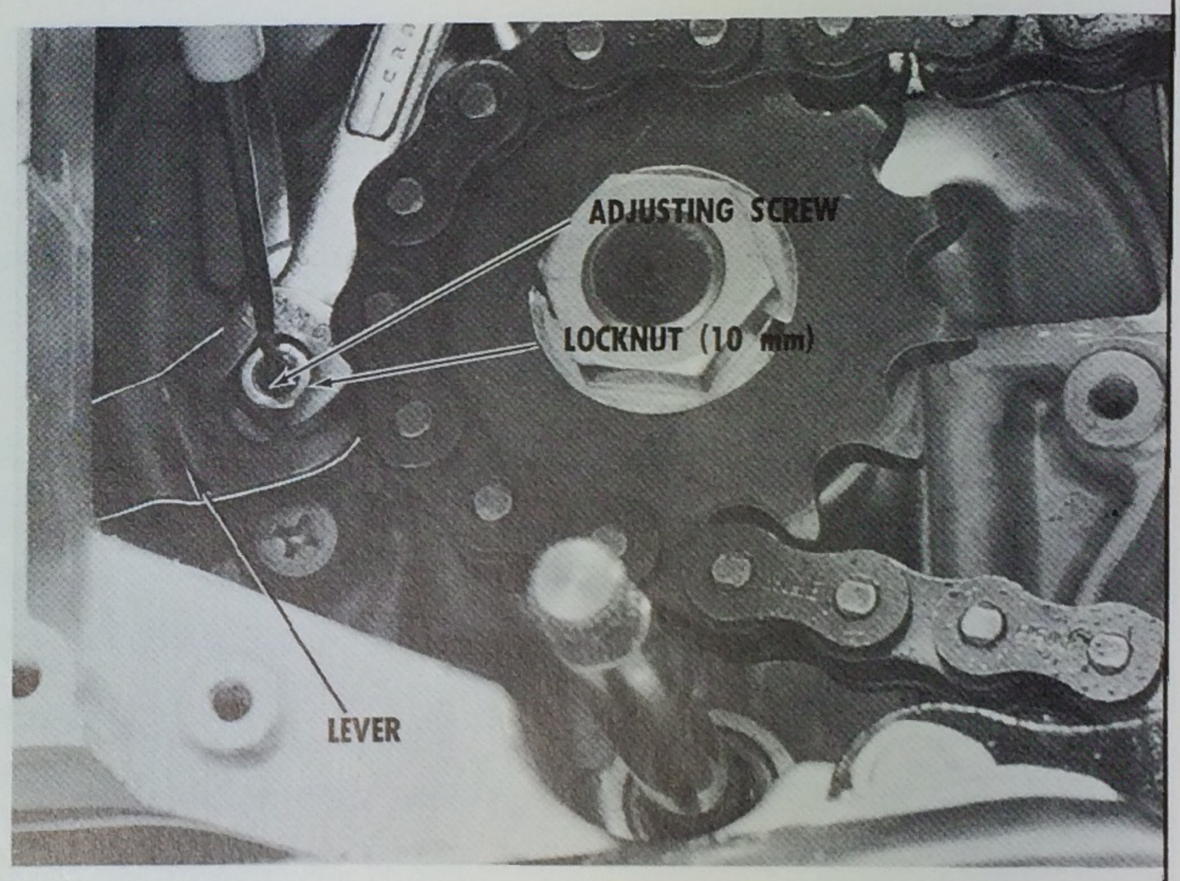
CHAIN ADJUSTMENT

Loosen the rear axle nuts and chain adjuster locknuts on either side of the swing arm. Turn the adjuster bolts until the drive chain has from 5/8 to 3/4 inch slack midway between the front and rear sprockets. Tighten the locknuts, and axle nuts after this adjustment. NOTE: To insure proper wheel and sprocket alignment, make sure the marks on the chain adjusters are equally spaced on the divisions on the swing arm tabs.

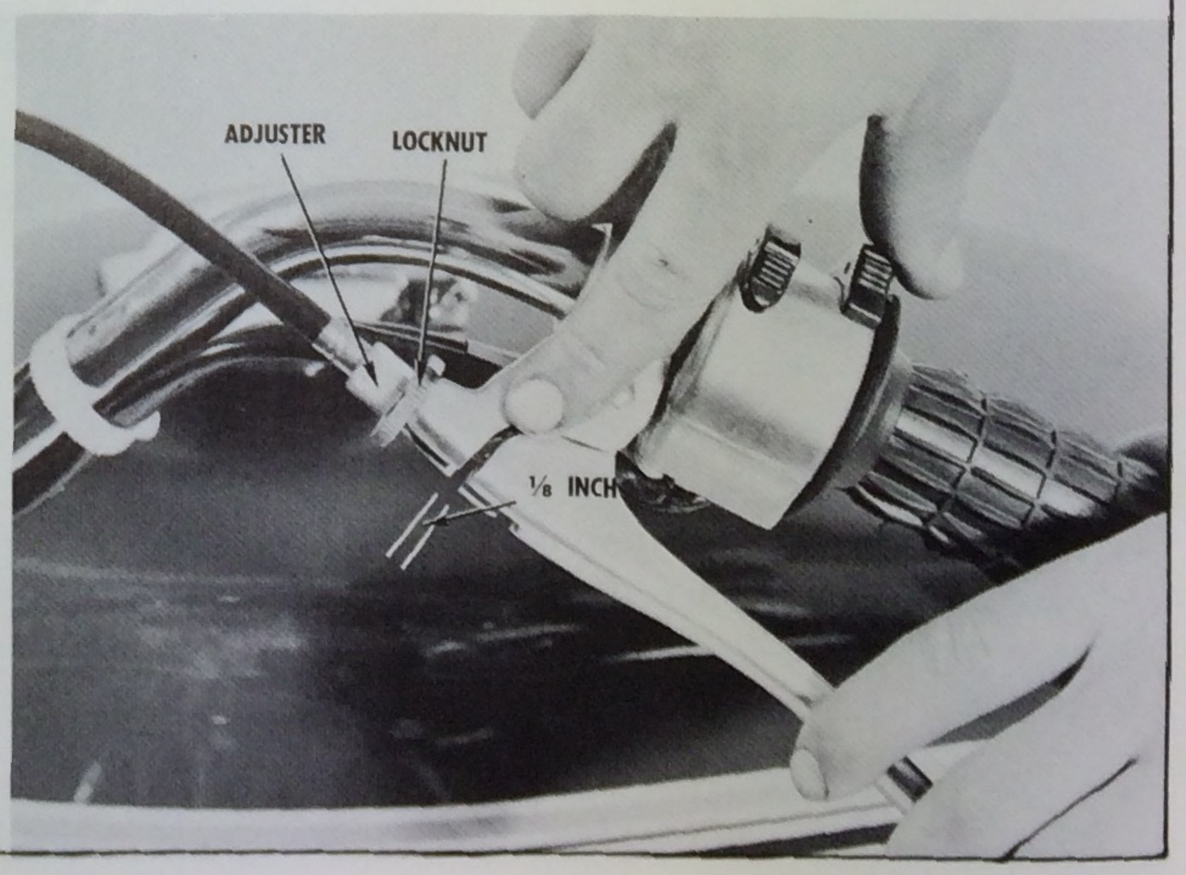


CLUTCH ADJUSTMENT

Remove the sprocket cover, and check the position of the clutch release lever, which should be at approximately 8 o'clock, as shown. Correct the lever position by turning the clutch cable adjuster under the gas tank. Loosen the locknut on the release screw and then turn the screw clockwise until you just start to feel clutch spring tension. Hold the screw in this position while tightening the locknut. Check the tightness of the sprocket nut, making sure the washer is bent, and then replace the sprocket cover.

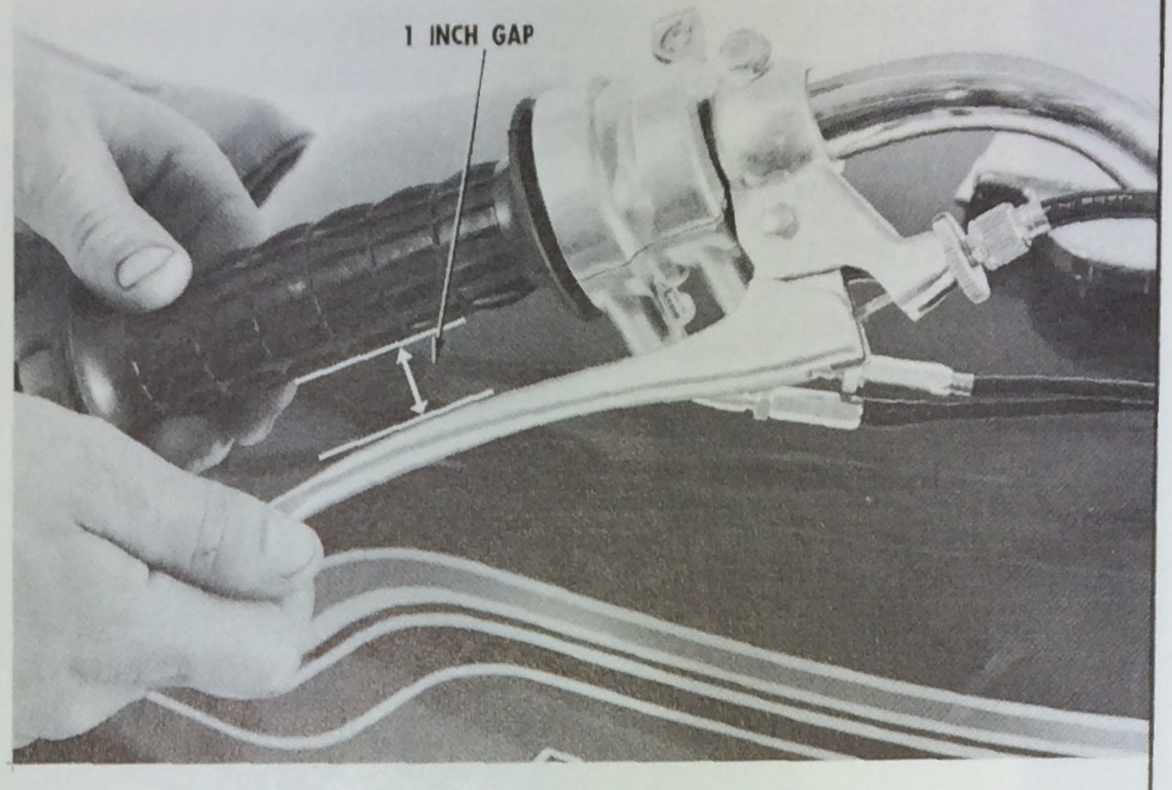


Turn the clutch adjuster on the handlebar to obtain a 1/8-inch gap when you just start to feel clutch tension, and then tighten the locknut.



FRONT BRAKE ADJUSTMENT

Loosen the locknut on the brake cable adjuster at the right handgrip. Turn the adjuster as far into the brake lever bracket as possible, back it out 2 turns, and tighten the locknut. Tighten the brake cable adjuster on the front wheel brake panel until the hand brake lever clears the twistgrip by about 1 inch with the front brake applied.

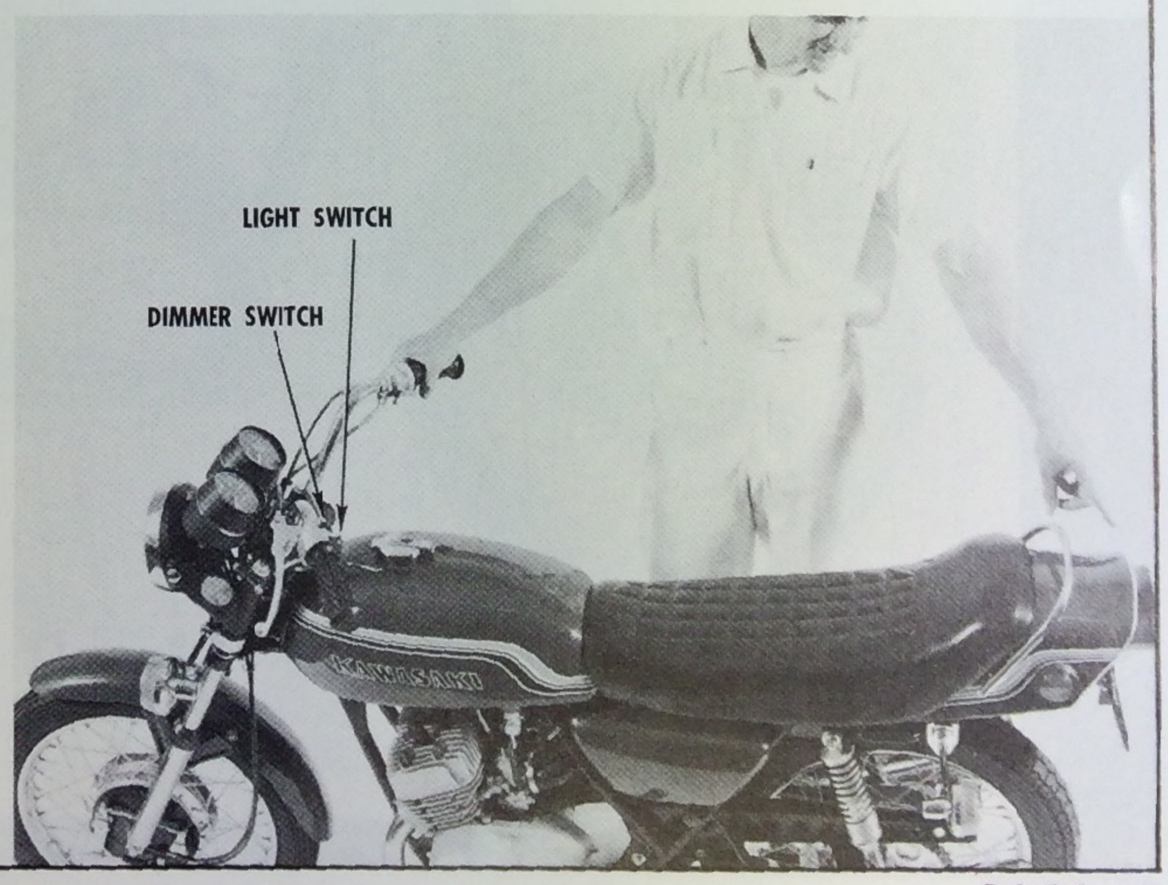


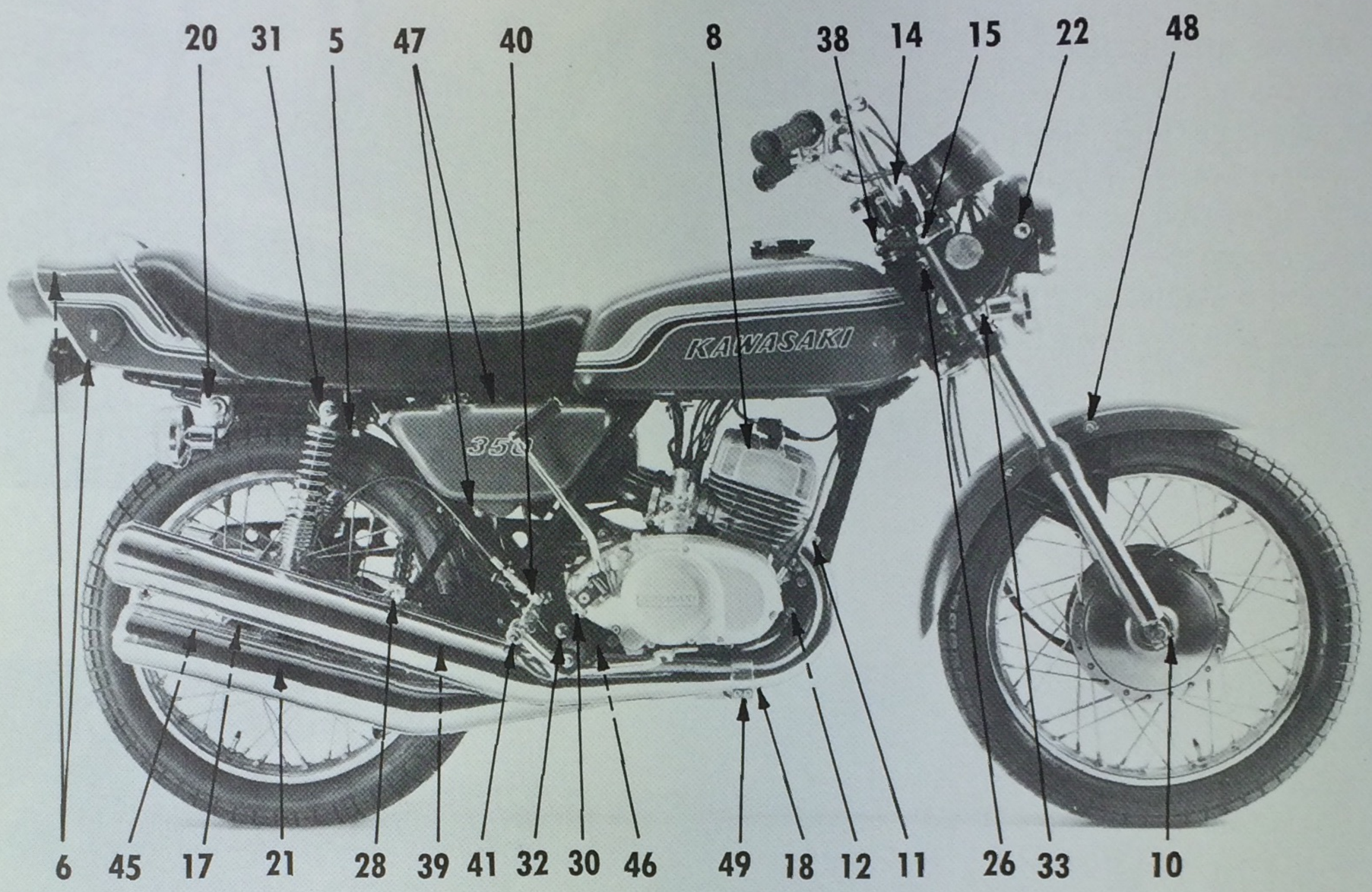
REAR BRAKE ADJUSTMENT

Before adjusting the pedal travel, turn the stop bolt to adjust the pedal rest position (stop bolt not shown). The pedal arm should just clear the footrest. Tighten the locknut. Turn the brake cable adjuster at the rear brake panel so that the pedal travels 1 - 1½ inch on application. Turn on the main switch and then operate the rear brake. The brake lamp should light when the pedal travels ½ - ¾ inch.

Adjust the brakelamp switch by loosening the locknut and turning the adjustment nut. Tighten the locknut after this adjustment.

Operate the front brake lever to make sure the brake lamp lights; no adjustment is required. Flip on the light switch and check the taillight, instrument lights, and headlamp high-low beam for illumination. Push the horn button and check for horn volume; adjust the volume screw on the horn if neccessary. Operate the left and right turn indicators.

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KAWASAKI MODEL S2
PRE-SALE SERVICING
CHECK THESE ITEMS BEFORE DELIVERY

ITEM	DESCRIPTION	TOOL SIZE	REMARKS
1	Lever pivot nuts (2)	8mm	with star washer
2	Instrument nuts (4)	10mm	Acorn-type
3	Lever bracket clamp bolts (2)	10mm	
4	Turn signal clamp bolts (4)	10mm	
5	Seat latch bolt	10mm	
6	Taillamp bracket nuts	10mm	
7	Brake cam lever nuts (3)	10mm	
8	Cylinder head nuts (12)	12mm	18 lb.-ft.
9	Carb manifold nuts (6)	12mm	
10	Front axle clamp bolt	13mm	
11	Exhaust pipe holder nuts (6)	13mm	9.5 lb.-ft.
12	Front engine mount plate nuts (4)	13mm	
13	Backrest bolts (8)	13mm	
14	Handlebar clamp bolts (4)	13mm	10 lb.-ft.
15	Fork tube top pinch bolts (2)	13mm	
16	Steering stem clamp bolt	13mm	
17	Chain adjuster lock nuts (2)	13mm	
18	Front muffler hanger bolts (2)	13mm	
19	Shift lever clamp bolt	13mm	
20	Rear turn signal mount nuts (2)	14mm	
21	Torque rod rear nut	14mm	with cotter pin
22	Headlamp housing bolts	14mm	Check aim
23	Rear sprocket nuts (4)	14mm	with lock tabs
24	Sidestand nut	14mm	
25	Fork tube bottom pinch bolts (2)	14mm	
26	Lower handlebar clamp nuts (2)	14mm	with cotter pin
27	Engine mount stud nuts (6)	14mm	
28	Passenger peg nuts (2)	14mm	
29	Lower shock mount bolts (2)	14mm	
30	Kickstarter lever bolt	14mm	
31	Upper shock mount nuts (2)	17mm	Acorn-type
32	Footpeg bolt	17mm	
33	Front turn signal mount nuts (2)	17mm	
34	Swing arm nut	22mm	40 lb.-ft.
35	Rear axle nuts (2)	24mm	
36	Fuel valve nut	26mm	
37	Axle sleeve nut	32mm	
38	Steering stem ring nut	42mm	Spanner type —Do not bind. No excessive play
39	Torque rod anchor pin	washer & cotter pin	
40	Rear brake linkage joint	washer & cotter pin	
41	Brake pedal pivot	washer & cotter pin	
42	Brake linkage pin (2)	washer & cotter pin	
43	Seat hinge pin (2)	cotter pin	
44	Front brake cable	cotter pin	
45	Rear brake cable	cotter pin	
46	Center stand pivot joint	cotter pin	
47	Oil tank mount screws	#2 Phillips	
48	Fender bracket screws (4)	#2 Phillips	
49	Exhaust pipe clamp screws (6)	#2 Phillips	
50	Chain guard screws (2)	#2 Phillips	
51	Tire pressure front	25 PSI	
52	Tire pressure rear	31 PSI	
53	Spoke nipples		Check & Tighten

KAWASAKI MODEL S2
SERVICE SPECIFICATIONS

CARBURETOR	
Manufacture & Type	Mikuni VM 24SC
Float Level	26.5mm ± 1.0mm
Main Jet Size & Type	#85R
Needle Jet	#0-2
Jet Needle & Clip Position	4EJ3-3rd
Pilot Jet	#25
Throttle Valve Cutaway	#2.0
Air Screw (Turns out)	1½
IGNITION	
Contact Point Gap	0.014 inch ± 0.002
Ignition Timing	23° BTDC (2.60mm)
Spark Plug Type	NGK B-9HC
Electrode Gap	0.020 inch
LUBRICANTS	
Front Fork Oil Type (below 50°F)	20w non-detergent
Front Fork Oil Type (over 50°F)	30W non-detergent
Front Fork Oil Quantity (each fork)	210cc
Front Fork Oil Level (fully extended)	375mm from top of inner tube
Transmission Oil Type	ATF (type F)
Transmission Oil Quantity	1100cc 1.16 qt. 37 fl. ozs.