

HONDA S600
**PERIODICAL
INSPECTION**



HONDA MOTOR CO., LTD.

INTRODUCTION

All automobiles require periodic maintenance to keep them in good operation condition. The higher the performance of the vehicle, the greater the importance of providing proper maintenance to maintain the vehicle in peak condition.

The HONDA S600 is a high performance vehicle equipped with a high speed engine and therefore, it is of utmost importance that the proper servicing be performed at the specified servicing periods.

This manual has been prepared to provide you with the proper servicing procedures and the correct methods of performing the periodic inspections.

Clear illustrations accompany each servicing item so that the instructions can be followed very easily.

HONDA MOTOR CO., LTD.

Service Department

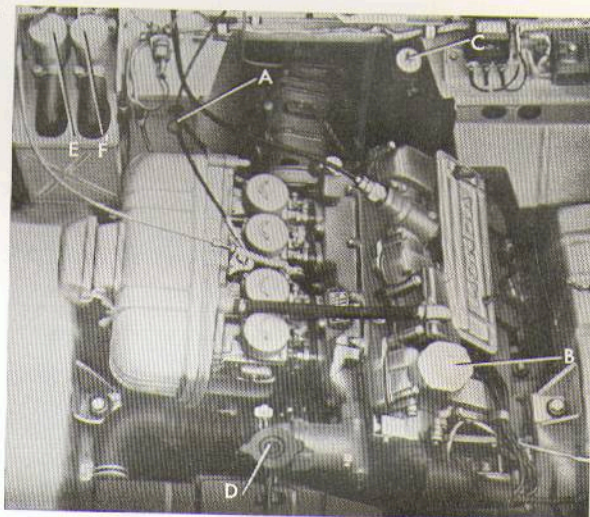
Daily Inspection and Servicing

Daily and Weekly Inspection

1. Inspect Engine Oil Level

Pull out the engine oil level gauge (A), wipe off completely and reinsert all the way before making the oil level inspection. If the oil level is below the Lower Limit mark, fill oil to the Upper Limit mark through the filler opening (B).

Fig. 1



Note :

The oil should be inspected at least 5 minutes after the engine has been stopped and with the vehicle setting level.

Use HD type oil of MS class. (API service group)

2. Tire Air Pressure

	Normal	High speed
Front and rear	1.4 kg/cm ² (20 lb/in ²)	1.7 kg/cm ² (24 lb/in ²)

3. Brake and Clutch Fluid Level

Remove fluid reservoir caps (E), (F), and check to see if the fluid is at the proper level, 8mm ($\frac{5}{16}$ in.) below the opening. Add fluid if the level is low.

Use hydraulic fluid SAE 70R₃ type HD or equivalent.

4. Battery Fluid

Check the battery electrolyte to make sure that it is within the upper and lower limit levels. If the electrolyte in any of the 6 cells are low, add distilled water to bring the level to the upper limit level.

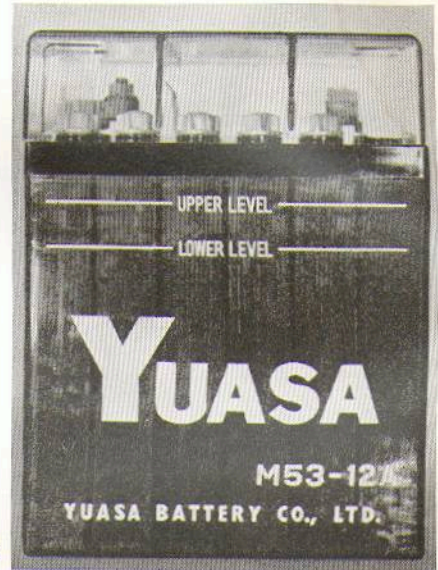


Fig. 2

5. Radiator

Remove radiator cap (D) and check to see that the water level is up to the filler opening. Add water if the level is low.

In addition, during the daily inspection, make it a point to check the following and if any unsatisfactory conditions are noticed, make a thorough check and correct any discrepancies.

1. *Play in the steering wheel.*
2. *Excessive play in the brake pedal or the clutch pedal.*
3. *Lever travel of the handbrake.*
4. *Action of the suspensions.*
5. *Operation of the lamps.*
6. *Operation of the horn, wiper and wipers.*
7. *Operation of all the gauges.*

1,000km (620 miles) Service

After every 1,000km (620 miles) operation, perform the following inspections and adjustments.

1. Play in the Brake and Clutch Pedals

■ Inspection :

Measure the brake pedal movement at the top of the pedal, determine the point of brake engagement and also the pedal clearance from the floor when depressed completely. Make the adjustment if they are not within the specified tolerances.

Pedal play	11.5 mm (0.45 in)
Pedal clearance from floor	50 mm (1.9 in)

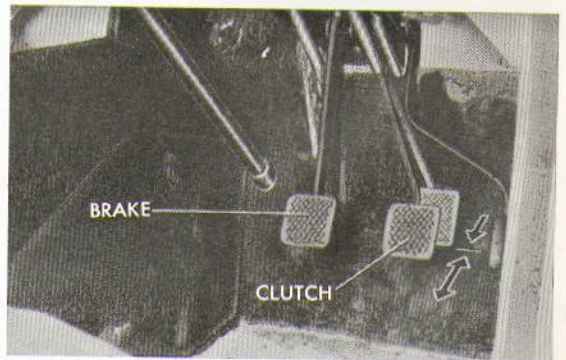


Fig. 3

If the brake feels spongy when the pedal is depressed, perform air bleed.

■ Brake Adjustment :

Remove the adjusting wheel plug (A), and make the adjustment through the hole.

Turn the adjusting sleeve in the → direction with the screwdriver until the brake shoe locks the wheel and then back off 3-4 notches until no drag exists between the brake shoe and drum.

● (Note)

There are 2 adjusting sleeves on each wheel, make sure that both of the sleeves are adjusted in the same manner.

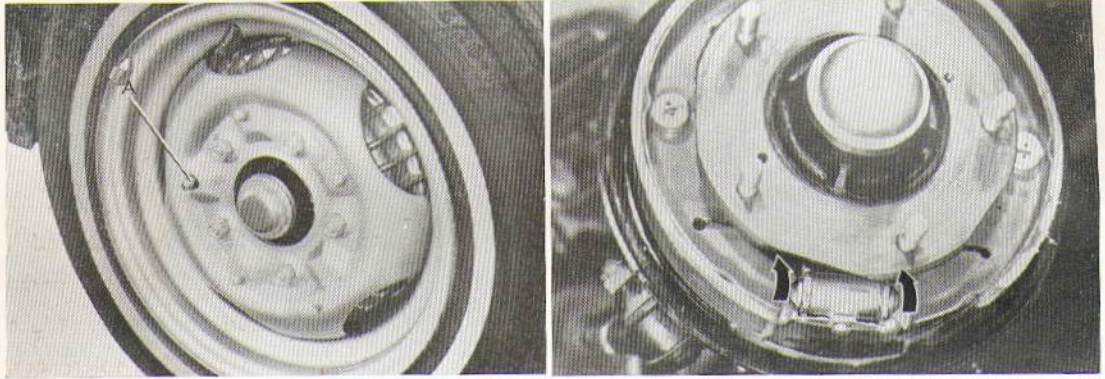


Fig. 4

■ Clutch adjustment :

Make the clutch play adjustment by tightening the push rod sleeve (C) under the floorboard. When the pushrod is turned in the direction of arrow (A), the play becomes small and the clearance between the pedal and the floor becomes greater. Turning the pushrod in the arrow direction (B) will change the adjustment in the opposite direction. The pedal travel should be 27–30 mm (1 in–1¼ in) measured at the top of the pedal, at which time, the clearance between the release bearing and the clutch spring is 1.2 mm (0.047 in) and 3.18 mm (0.125 in) when measured at the top of the clutch release arm A.

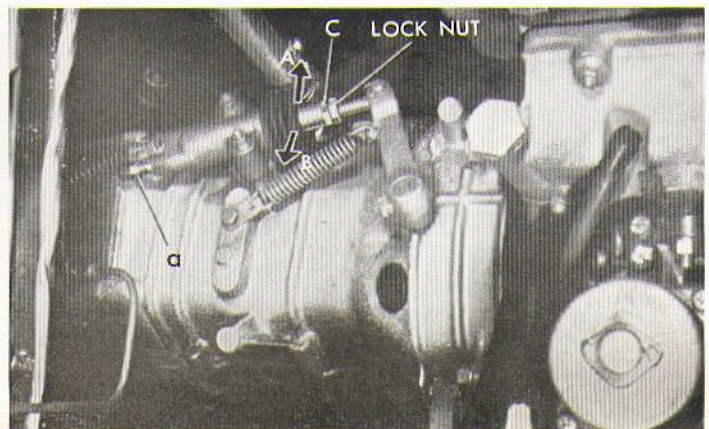


Fig. 5

- **Air bleed :** Attach a vinyl tube to the slave cylinder bleed screw (a) and pump the brake pedal gently several times. While the pedal is being pumped, open the bleed screw for a short period and close quickly, performing the operation several times.

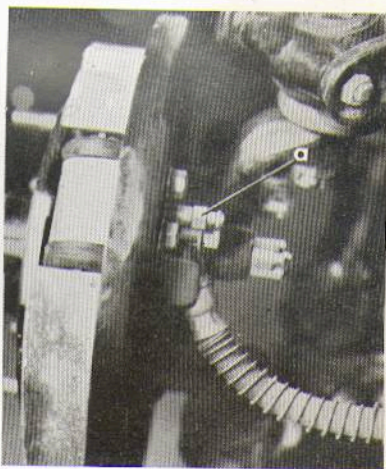


Fig. 6

- **Caution :** Check and make sure that there is sufficient hydraulic fluid in the master cylinder.
Perform the air bleeding at the rear brake.

2. Inspection of the Brake and Clutch Hydraulic Hoses

Inspect the hose joints while operating the pedals and check for any leaks. Make corrections as necessary.

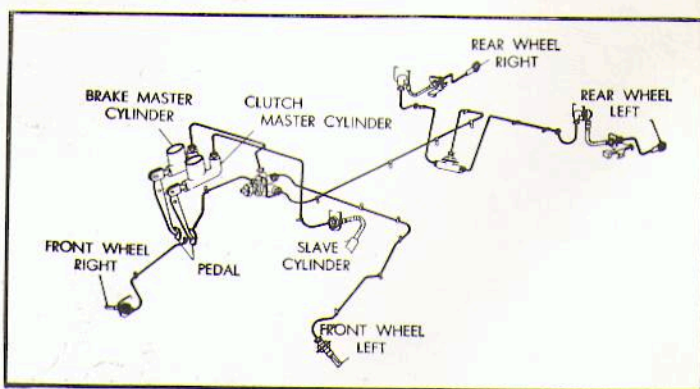


Fig. 7

3. Fan Belt Tension

■ **Inspection :**

Check the tension of the fan belt at the center of the belt. The looseness should be 10-20 mm ($\frac{3}{8}$ ~ $\frac{3}{4}$ in), adjust if necessary.

■ **Adjustment :**

Loosen nut (B) and tighten the fan belt by moving the AC dynamo in the direction of the ←

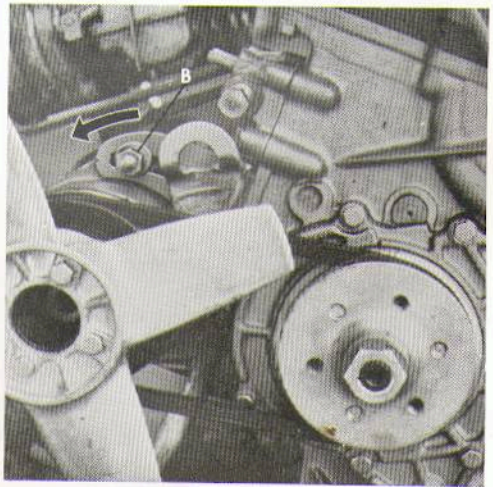


Fig. 8

4. Replacement of Oil Filter Element

Remove the oil filter bolts indicated in the Fig. 9 by the arrows and the oil filter cover can be separated together with the filter element. Replace the filter element with a new unit every 36,000 km (22,000 miles) or wash every 3,000 km (1,800 miles).

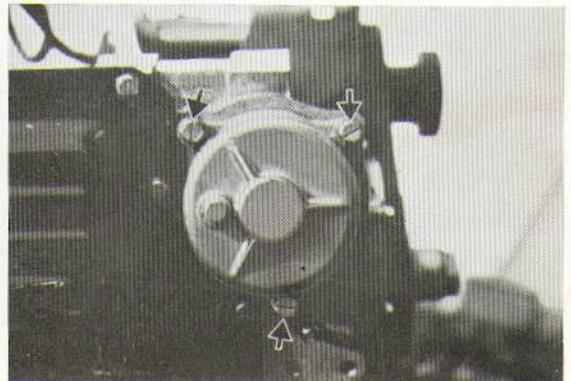


Fig. 9

5. Cam Chain Tension

Turn the belt pulley in the clockwise direction and set the No. 1 cylinder in the top-dead-center position, loosen the chain tensioner bolt (A) approximately 3 turns, retighten and lock with the locknut (B).



Fig. 10

● (Note)

When positioning the cylinder to the top-dead-center, do not turn the engine in the reverse direction.

6. Rear Drive Chain Tension

■ Inspection :

Place the change lever in gear and after jacking up the rear wheel, rotate the wheel back and forth to check the amount of looseness in the chain. If the looseness is excessive, adjust the tension of the chain.

■ Adjustment :

Loosen bolt (A) and move adjuster arm (D) in the direction of the arrow (B) as far as it will go and then move the adjuster arm back approximately 3 mm ($\frac{1}{8}$ in) and lock.

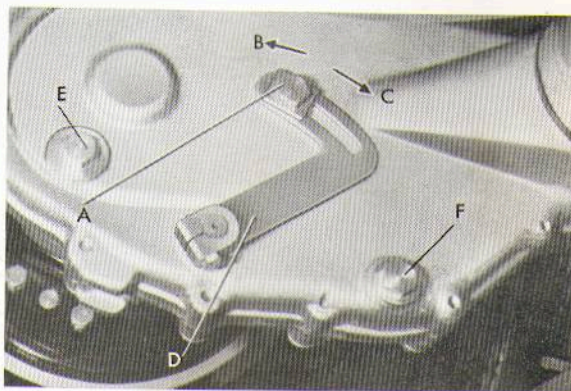


Fig. 11

7. Oil Change

- (a) Engine oil (2.5 *l*) (4.4 Imp. Pt., 5.3 U.S. Pt.)

The next oil change is at 3,000 km (1,800 miles) and at every 3,000 km (1,800 miles) thereafter. Remove drain plug (G) and drain the oil completely; fill oil through the filler opening (B) to the upper limit on the oil level gauge. (Fig. 1)



Fig. 12

- (b) Gear box oil (1.0 *l*) (1.8 Imp. Pt., 2.1 U.S. Pt.)

The next oil change is at 18,000 km (11,000 miles) and at every 18,000 km (11,000 miles) thereafter. Remove the drain plug (H) and drain the oil completely; fill oil through the filler pipe (C) to the upper limit on the oil gauge. (Fig. 1)

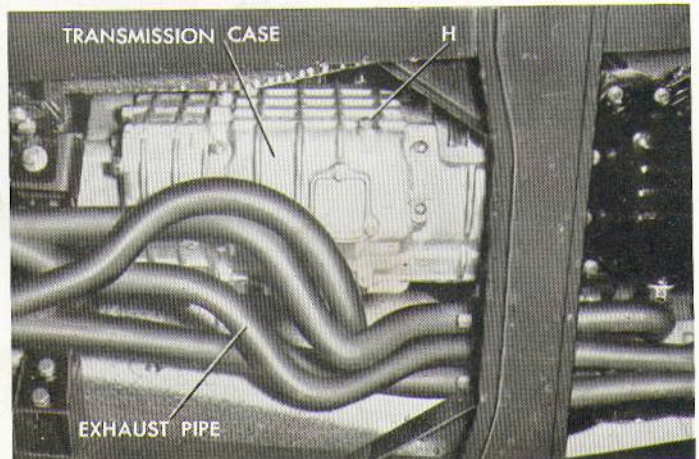
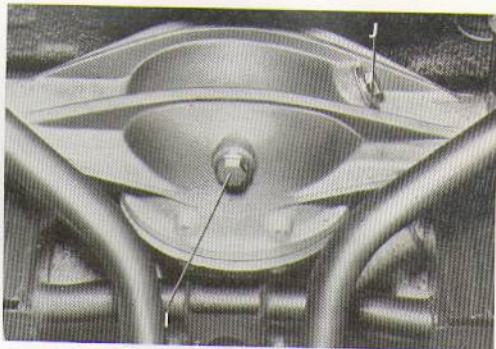


Fig. 13

- (c) Rear axle housing oil (0.8 ℓ) (1.4 Imp. Pt., 1.7 U.S. Pt.)

The next oil change is at 18,000 km (11,000 miles) and at every 18,000 km (11,000 miles) thereafter. Remove the drain plug (I) and drain the oil completely; fill oil through the filler plug opening (J) until the oil flows out of the opening.

Fig. 14



- (d) Chain case oil (0.23 ℓ) (0.4 Imp. Pt., 0.5 U.S. Pt.)

Drain the oil from the drain plug (F) shown in Fig. 11 and fill oil through the filler plug (E) until the oil flows out the filler opening. The next oil change is at 18,000 km (11,000 miles) and at every 18,000 km (11,000 miles) thereafter.

Type Oil

- Engine : Type HD, class MS (API service classification)
The SAE grade No. will depend upon the operating temperature condition.
- Gearbox : Type HD, hypoid use, SAE grade 80
- Rear axle housing : Type HD, hypoid use, SAE grade 80
- Chain case : Type HD, hypoid use, SAE grade 80

4,500km (2,800 miles) Servicing

After 4,500 km (2,800 miles) of operation, inspect and service the following items.

1. Check the pedal play of both the brake and clutch and adjust if required. Refer to the 1,000 km (620 miles) servicing procedure.
2. Check the tension of the fan belt and adjust if required. Refer to the 1,000 km (620 miles) servicing procedure.
3. Check the rear drive chain, and the cam shaft drive chain and adjust if required. Refer to the 1,000 km (620 miles) servicing procedure.
4. Fuel Filter Cleaning
Loosen the cup nut (A) and remove the fuel cup. Wash the filter element in clean gasoline.

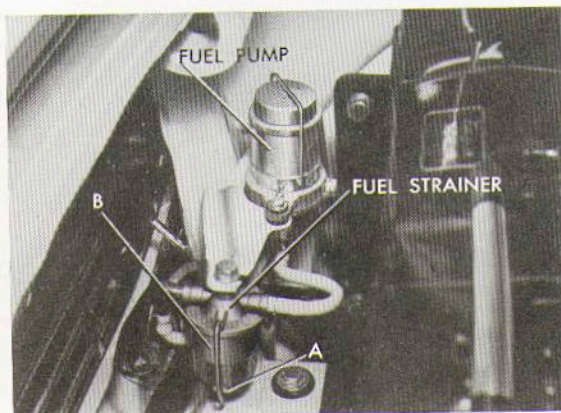


Fig. 15

9,000km (5,600 miles) Servicing

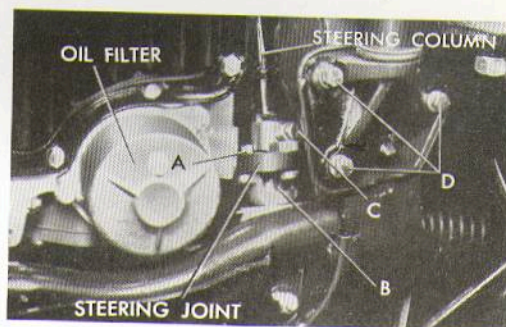
After every 9,000 km, (5,600 miles) operation, perform the following inspections in addition to the regular 1,000 (620 miles) and 4,500 km, (2,800 miles) servicing.

1. Steering Wheel

■ *Inspection :*

- a. Check the column hanger bolts (A) and the steering joint bolts (B) for tightness in addition to the other nuts and bolts, and tighten if required.

Fig. 16



- b. Check the looseness and the drag of the steering wheel while driving.

● (Note)

1. If any unsatisfactory conditions are noticed during the driving inspection, check the tire air pressure, uneven tire wear and the alignment of the wheels.

Refer to the 18,000 km (11,000 miles) servicing procedure.

Fig. 17



2. Check the drag of the steering wheel by jacking the front wheels off the floor. The steering wheel should turn at less than 1.5 kg (3.3 lbs) force.

2. Suspension Ball Stud

Apply grease to the upper and lower suspension ball studs indicated by arrows. Check for any looseness at the tie rod ends and the knuckle arm joints. Replace any worn or defective parts with new items.

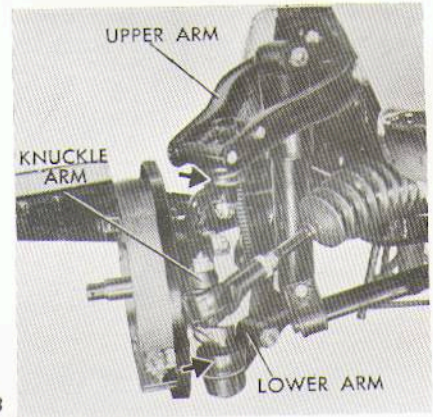


Fig. 18

3. Handbrake

■ Inspection

Pull the handbrake lever until the brakes are locked and then check to see if the locking pawl is located within 5-7 notches from the bottom of the sector.

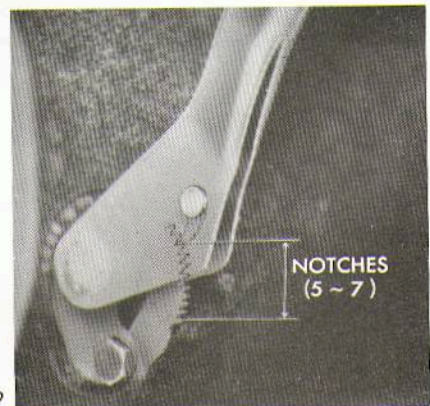


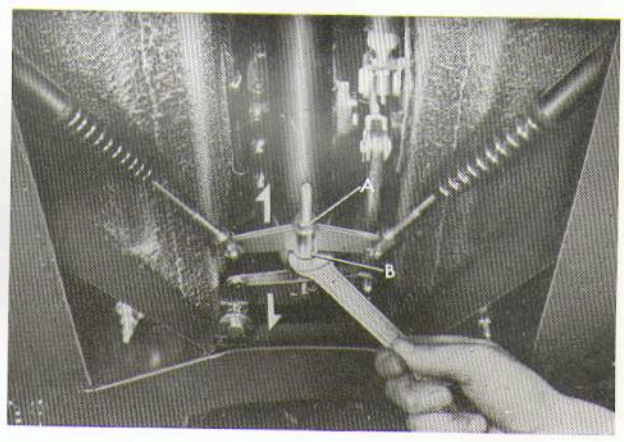
Fig. 19

■ Adjust:

After adjusting the footbrake, adjust the handbrake by changing the position of the equalizer arm with nuts (A) and (B).

Moving the arm forward will shorten the lever movement and the movement will become longer if the arm is moved to the rear.

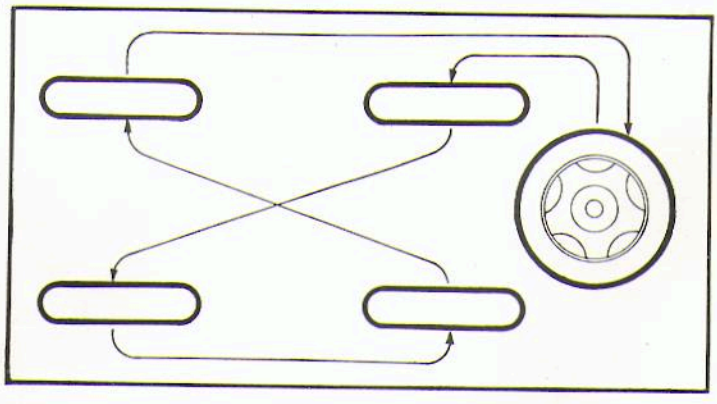
Fig. 20



4. Tire Rotation

Rotate the position of the tires as shown in the figure. Remove or install the wheels by loosening or tightening the every other wheel nuts.

Fig. 21

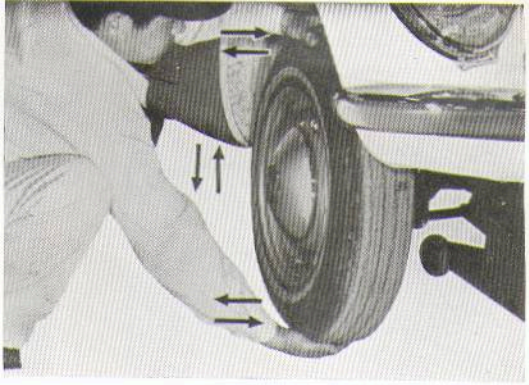


5. Front Wheel

Raise the front wheels off the floor and check for looseness of the wheel bearings by grasping the tire at the top and bottom. Eliminate any looseness by first tightening the front

hub nut and then loosen just enough until the drag disappears and the wheel rotates freely.

Fig. 22



6. Rear Damper

Check for looseness of the rear damper attaching bolts, indicated by (→), and tighten any loose bolts. At the same time, visually check for any broken springs or oil leaks and replace any defective parts.

Fig. 23

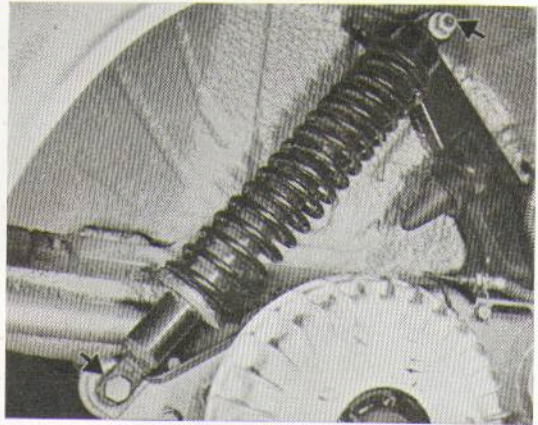


Fig. 24



7. Propeller Shaft

Check the 4 universal joint yoke to flange attaching bolts indicated by the arrows and tighten any that are found loose.

8. Exhaust Pipe

Check the tightness of the bolts indicated by the arrows, and tighten any loose bolts.

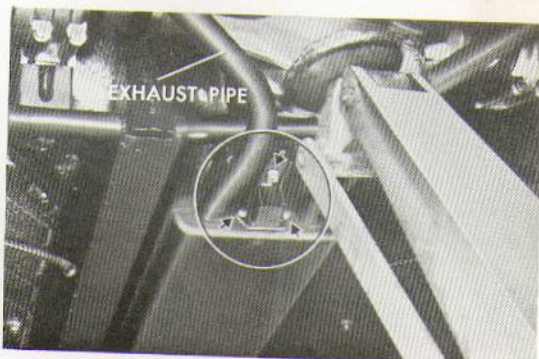


Fig. 25

9. Contact Breaker

■ Inspection :

Remove the cap and rotor, turn the engine so that the breaker points are at maximum opening and then measure the point gap opening with the thickness gauge. The point gap should be 0.3–0.4 mm (0.012 in–0.016 in). Badly pitted points should be repaired or replaced.

■ Adjustment :

Loosen screws (A) and turn the breaker assembly indicated by the arrow to make the adjustment.

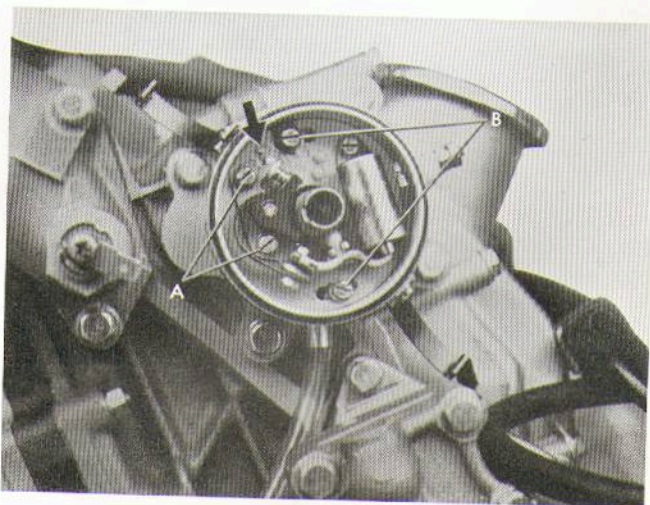


Fig. 26

10. Spark Plug

Remove the spark plug cover and then remove the spark plugs. Clean the plugs with the plug cleaner, check the gap with the thickness gauge and adjust to 0.7 mm (0.03 in).

● **Caution :** *Adjust the gap by bending only the side electrode.*

11. Battery

Remove both terminals and clean off any corrosion with hot water and wipe dry followed by applying vaseline to the terminals before reconnecting to the battery. Check the specific gravity of the battery electrolyte in each cell with a hydrometer and if the specific gravity is below 1.22, the battery should be recharged.

● **(Note)** *A fully charged battery will show a specific gravity of 1.28 (at electrolyte temperature of 20°C (68°F)). The specific gravity indication will vary 0.007 for every degree change in temperature. The specific gravity will give a lowering in reading with the rise in temperature.*

12. Carburettor

Adjust the idling of each carburettor.

■ **Adjustment :** The standard idling adjustment of the air screw is $\frac{3}{4}$ turn open from full close, however, disregard the standard setting and adjust the carburettor to the maximum RPM by the air screws indicated by the arrows and then back off $\frac{1}{8}$ th of a

turn. Perform the adjustment to all 4 carburetors in the same manner.

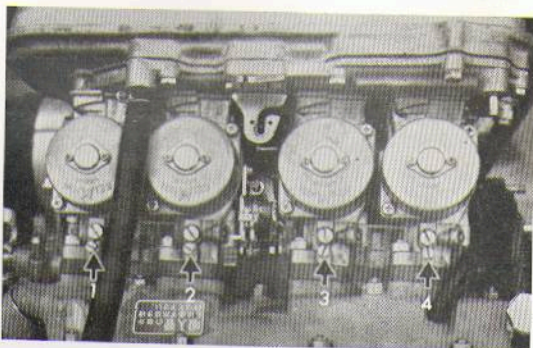


Fig. 27

13. Air Cleaner

Remove the cleaner element from the case and clean the area around the carburettor by applying vacuum air.

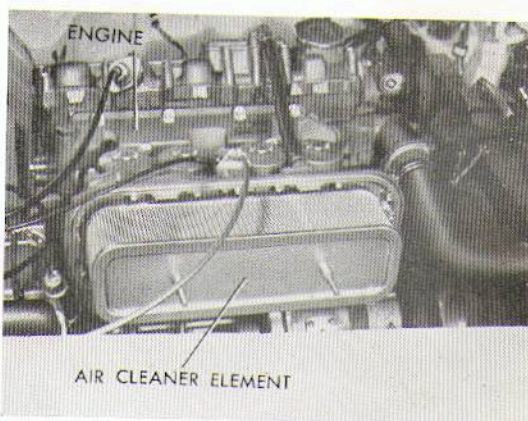


Fig. 28

14. Oil Level Inspection

Check the oil level of the gearbox, chain case and rear axle housing, and add oil if low. Use type HD, hypoid oil.

Upon completion of inspection and adjustment, operate the engine and check for any oil leaks around the gearbox, chain case and rear axle housing, and also check for water leaks around the radiator.

13,500 km (8,400 miles) Servicing

After 13,500 km (8,400 miles) of operation, perform the following inspections.

1. Brake adjustment (refer to 1,000 km (620 miles) servicing)
2. Fuel filter cleaning (refer to 4,500 km (2,800 miles) servicing)

18,000 km (11,000 miles) Servicing

After every 18,000 km (11,000 miles) of operation, perform the following inspections in addition to the 9,000 km (5,600 miles) servicing and adjustment.

1. Steering Gear Box

Check for any looseness of bolts (A) in the steering gear box and tighten if any are found loose.

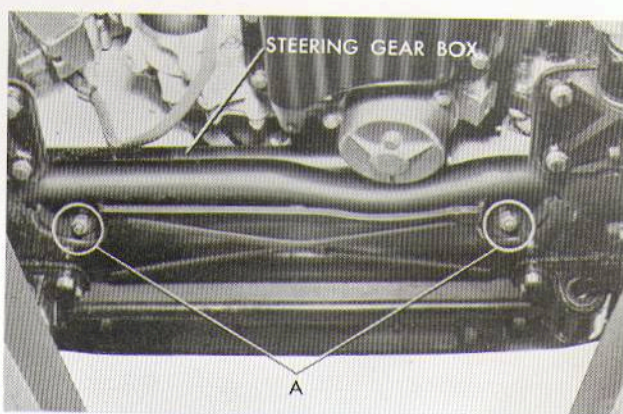


Fig. 29

2. Tierod

Disengage the tierod ends from the knuckle arm with the ball stud puller. Apply grease to the ball stud ends if required and at the same time check for wear and damages; replace if necessary.

Use grease type HD, multi-purpose, NLGI No. 2.

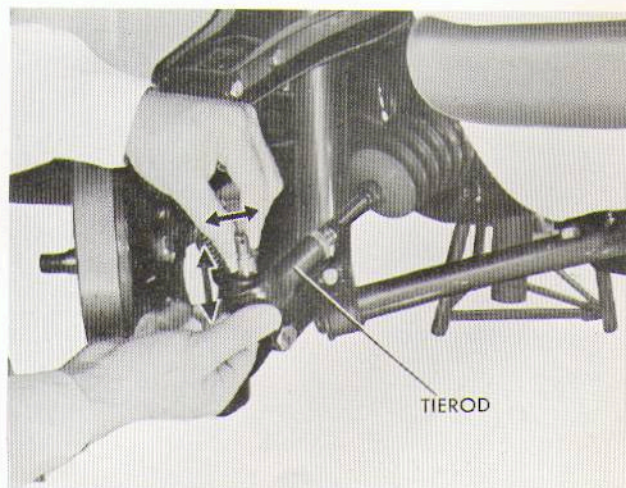


Fig. 30

3. Front alignment

Inspection : Check the camber and side slip, adjust if necessary.

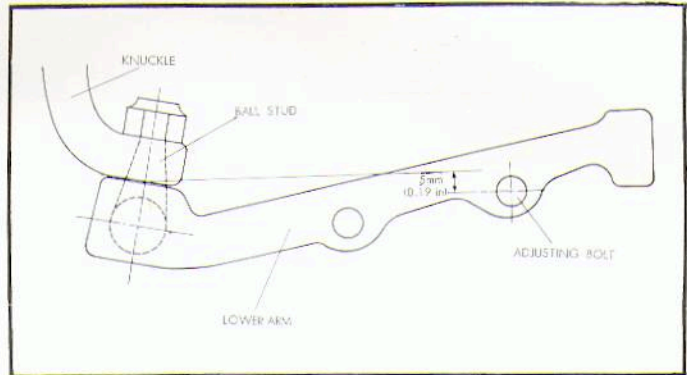


Fig 31

(Note) Before taking measurement, position the empty vehicle in accordance with the dimension shown in the figure.

Adjustment : Camber, upper arm bracket tightening. Loosen areas indicated with the arrows and insert camber shim (A) between the frame and upper arm bracket to make the adjustment. The camber is increased as shims are added and decreased when shims are removed. The standard camber is $1.5^{\circ} \pm 15'$.

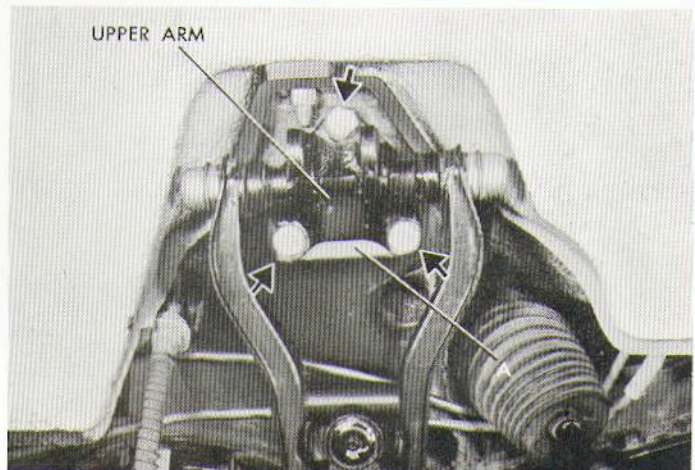


Fig. 32

■ **Side slip test :** Adjust with the tierod if beyond the standard tolerance. Standard side slip is 5 mm (0.19 in) maximum at 1 meter (3.3 ft).

- **(Note)**
1. Only 1 test rider is specified.
 2. Use sufficient roll (at least 3 meters (10 ft)) and set the vehicle on a straight line.

■ **Toe-in :** Loosen the tierod locknut and screw (C) in the direction of (B) to increase the toe-in; loosening in the direction of (A) will decrease the toe-in.

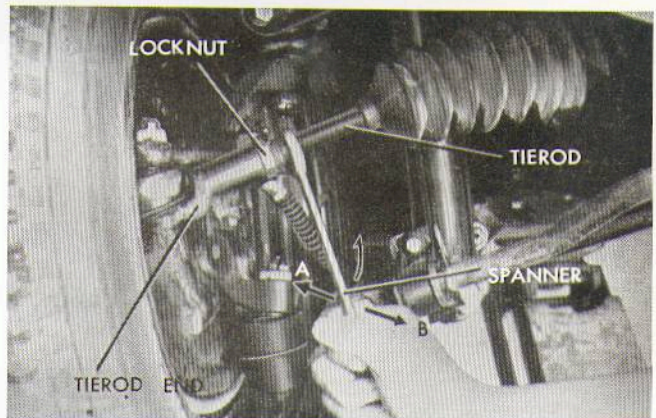


Fig. 33

4. Brake Shoe

Remove the wheel and measure the thickness of the brake lining and the inside diameter of the brake drum. Replace any parts which have been excessively worn.

	Standard value	Serviceable limit
Brake lining thickness	5.0 mm (0.19 in)	2.0 mm (0.08 in) min.
Drum inside diameter	212 mm (8.35 in)	213 mm (8.4 in) max.

Depress the brake pedal and check the shoe spring return action. Replace any weak springs.

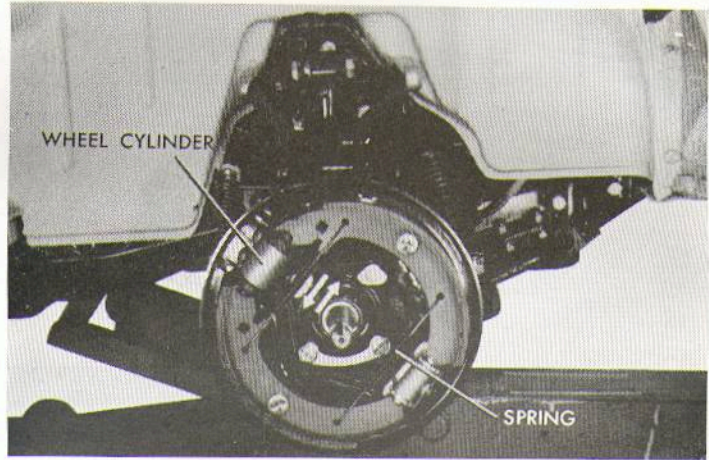


Fig. 34

5. Front Wheel Bearing

Remove the front wheel drum, hub and check the wheel bearings (A) and (B) and apply grease as required.

Use type HD multi-purpose grease, grade NLGI No. 2.

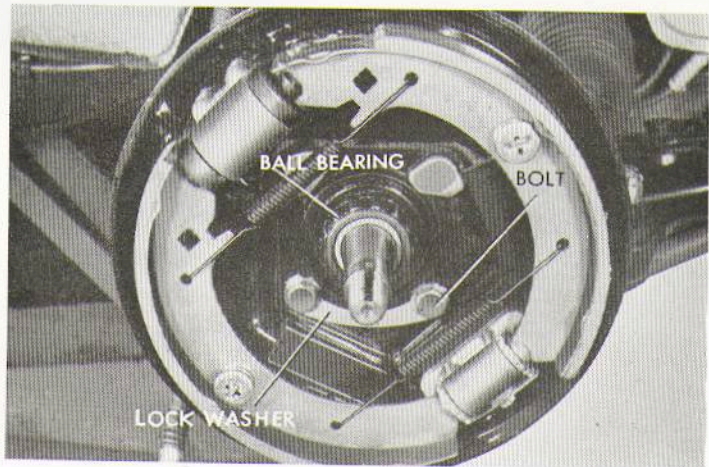


Fig. 35

6. Front Suspension

Check the front cushion spring, lower arm and radius rod joints indicated by the arrows, for tightness. Tighten if any are loose.

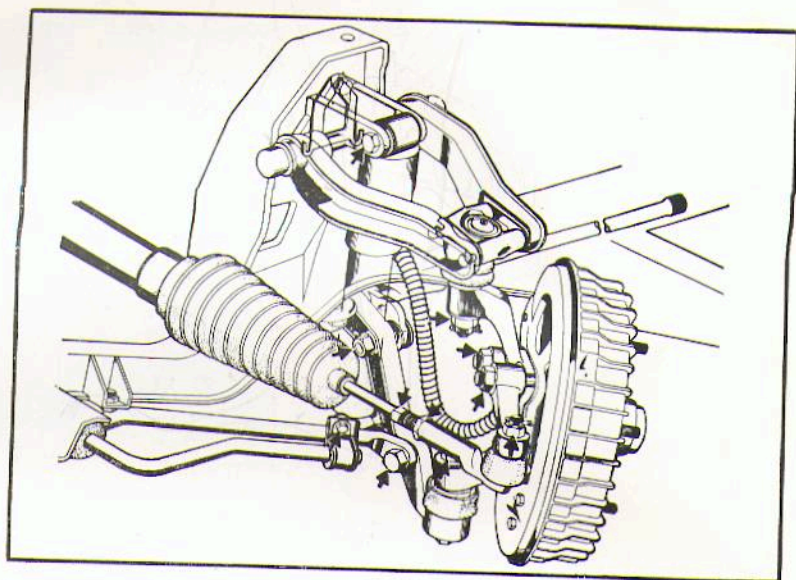


Fig. 36

7. Chain Case

Remove the rear wheel and drain oil from the drain plug (Fig. 11), disassemble the chain case and check the rear hub shaft bearings indicated by the arrows. Apply grease to the bearings as necessary. Replace the chain case oil with new oil. (0.23 ℓ) (0.4 Imp. Pt., 0.5 U.S. Pt.)

Use type HD, hypoid grade oil.

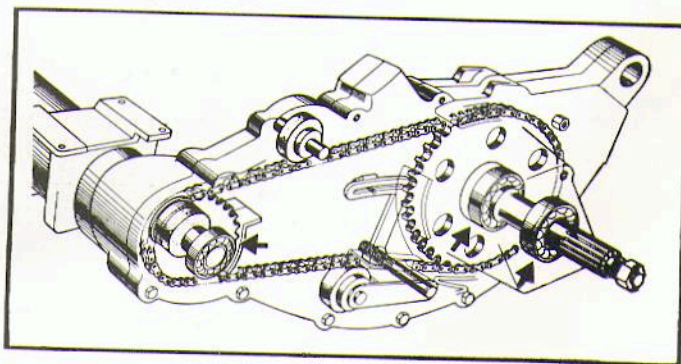


Fig. 37

8. Clutch Operation

Check to see that the gear change into first gear or reverse can be made smoothly. With the gears engaged, release the clutch gradually to check for any slippage; if any slippage exists,

check the friction disk and the diaphragm spring for wear. Replace any parts which are excessively worn.

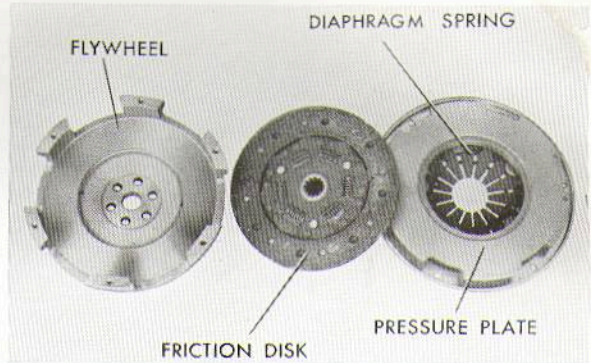


Fig. 38

9. Fuel Pump Breaker Points

■ **Inspection :**

Remove the fuel pump breaker point cover and check the point gap by rotating the engine and positioning the breaker points to the maximum opening. Dress the points if they are pitted and if pitted excessively, replace with new breaker point.

■ **Adjustment :**

Loosen screw (A) and make the adjustment with a screwdriver at the point indicated by the arrow.

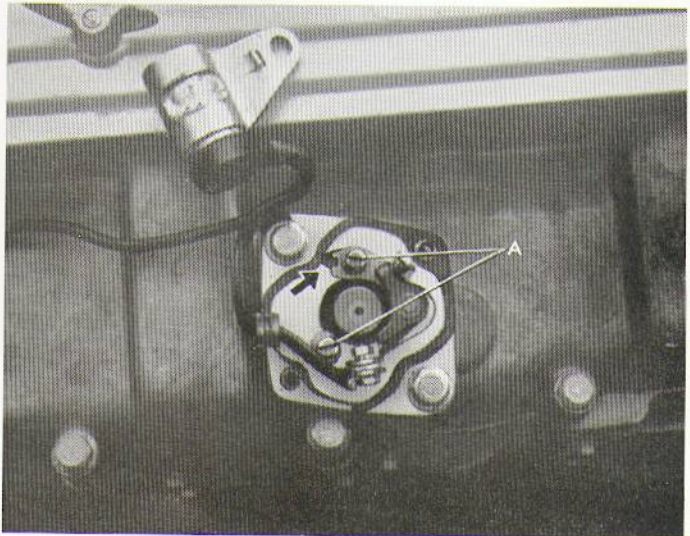


Fig. 39

10. Ignition Timing

■ Inspection :

Using the timing tester, check to see that the ignition is timed when the timing mark on the lower side of the belt pulley is aligned with the timing mark on the front cover.

Make adjustment as required.

When using the timing bulb, connect one lead to the primary coil terminal and earth the other lead to the engine.

Use 12 V bulb.

● Caution :

Do not leave the ignition switch in the ON position for any length of time.

■ Adjustment :

Loosen screw (B) shown in Fig. 25 and move the base plate to make the adjustment.

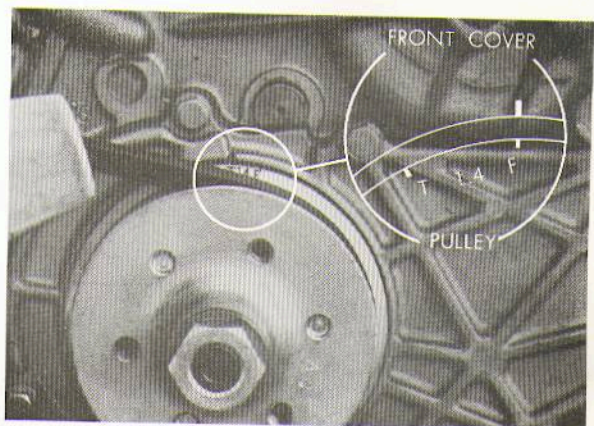


Fig. 40

11. Oil Change

Perform transmission and rear axle housing oil changes. Refer to 1,000 km (620 miles) servicing section.

Use type HD, hypoid use, grade SAE 80 gear oil.

12. Lubrication Points

Apply a small amount of grease to the following lubrication points.

Handbrake ring shaft friction areas

Change lever and lever holder friction areas

Door regulator friction areas

Brake pedal and clutch pedal shaft friction areas

Seat sliding surfaces

Upon completion of the above inspections and adjustments, start the engine and check for any oil leaks.

36,000 km (22,000 miles) Servicing

After 36,000 km (22,000 miles) of operation, perform the following inspections in addition to the 18,000 km (11,000 miles) servicing ; also change the grease. Refer to the separate maintenance manual for the disassembly and assembly procedures.

1. Remove the following parts, wash off all old grease and check for any wear. Apply new grease before assembling. Replace all worn or damaged parts.
 - a. Steering rack and pinion ball bearing within the steering gear case.
 - b. Steering gear box to tierod ball housing bushing.
 - c. Upper and lower shaft and arm shaft bushing.
 - d. Propeller shaft centering piece and serration.
 - e. Front wheel bearings (A) and (B).
 - f. Universal joint yoke.
 - g. Rear axle supporter.
 - h. Chain case ball bearing.

Use type HD multi-purpose grease, grade NLGI No. 2.

2. Clutch and Brake Master Cylinder

Remove master cylinder and disassemble cylinder (A), piston (B), baffle plate (C), secondary cup (D), push rod (E) and return spring (F). Check for any damage, corrosion or excessive wear ; make replacement as necessary.

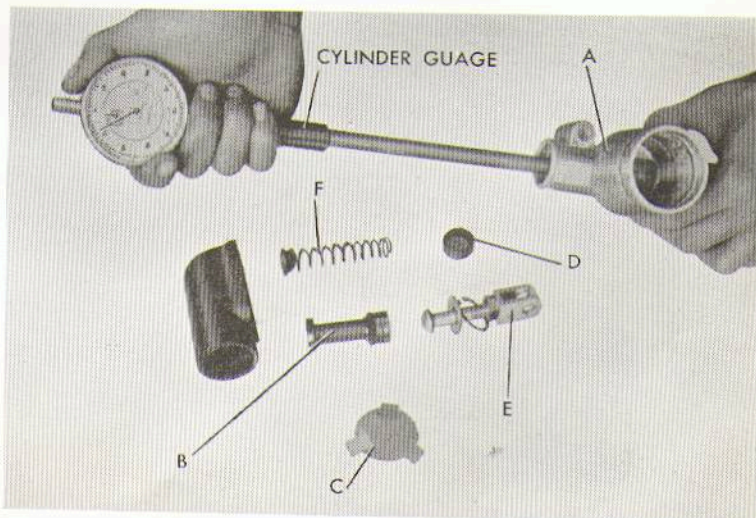


Fig. 41

	Standard value	Serviceable limit
Master cylinder to piston clearance	0.05mm (0.002 in)	0.1mm (0.004 in) max.

After assembly, fill with new hydraulic fluid.

Use type HD, SAE 70R₃ hydraulic fluid or equivalent.

3. Wheel Cylinders

Disassemble the wheel cylinder as shown in the Fig. 42; check the cylinder, piston and bushing for damage, corrosion or excessive wear; make replacement as necessary.

	Standard value	Serviceable limit
Cylinder to piston clearance	0.05mm (0.002 in)	0.1mm (0.004 in) max.

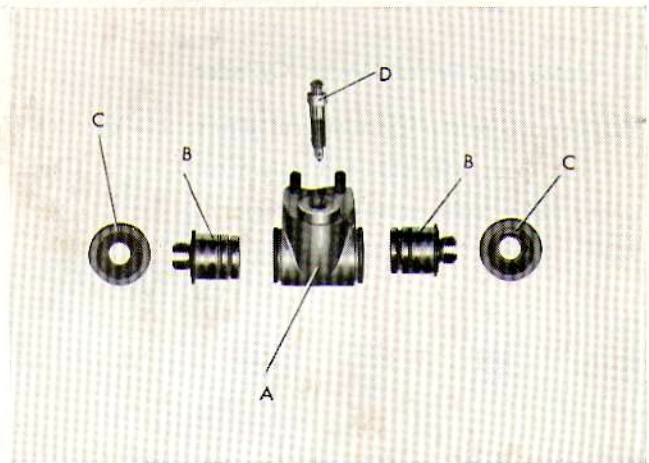


Fig. 42



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Changes to the HONDA S600 Periodic Inspection Manual

A. Reflect the following changes to the servicing periods.

1. 1,000 km (620 miles) Servicing
 - a. Add item 8, Fuel Filter Cleaning. Transfer this item shown in item 4, page 12.
2. 9,000 km (5,600 miles) Servicing
 - a. Add item 15, Replacement of Oil Filter Element. Transfer this item shown in item 4, page 8.
 - b. Add item 16, Lubricate Rear Axle Supporter. Transfer this item shown in item page 29.
3. 22,000 km (22,000 miles) Servicing.
 - a. Add item 4, Inspect Tierod. Transfer this item shown in item 2, page 21.
4. The servicing periods have been changed and the following have been established.

Daily Inspection and Servicing	18,000 km (11,000 miles) Servicing
1,000 km (620 miles) Servicing	21,000 km (13,000 miles) Servicing
3,000 km (1,800 miles) Servicing	24,000 km (15,000 miles) Servicing
6,000 km (3,700 miles) Servicing	27,000 km (16,800 miles) Servicing
9,000 km (5,600 miles) Servicing	30,000 km (18,700 miles) Servicing
12,000 km (7,500 miles) Servicing	33,000 km (20,600 miles) Servicing
15,000 km (9,300 miles) Servicing	36,000 km (22,000 miles) Servicing

B. Change and Corrections

1. Corrections
 - a. Correct item 7 (a), page 10; Engine oil....to read—(a) Engine oil (3.2 ℓ) (4.4 Imp. pt., 5.3 U. S. pt.)
 - b. Correct item, 7 (c), page 11; Rear axle housing....to read—(c) Rear axle housing oil (1.0 ℓ) (1.8 Imp. pt., 2.1 U. S. pt.)
 - c. Correct item 10, page 27; Adjustment: Loosen screw (B) shown in Fig. 25....to read—Loosen screw (B) shown in Fig. 26.....
2. Deletions
 - a. Delete 4,500 km (2,800 miles) Servicing, page 12 and 13,500 km (8,400 miles) Servicing, page 20.
3. Amendments
 - a. Add the following to item 7 (b), page 10; Oil Change—Service and add oil at initial 3,000 km (1,800 miles) and at every 3,000 km thereafter.
 - b. Add the following to items 7 (c) and 7 (d), page 11; Oil Change—Service and add oil at initial 9,000 km (5,600 miles) and at every 9,000 km thereafter.

3,000 km (1,800 miles) Servicing

After every 3,000 km (1,800 miles) of operation, perform the following adjustment and servicing.

1. Fan belt tension
Refer to item 3; 1,000 km Servicing.
2. Engine oil change
Refer to item 7 (a), 1,000 km Servicing.
3. Gear box oil inspection
Add oil if required
4. Brake and clutch fluid inspection
Add fluid if required
- * 5. Lubricate suspension ball stud, upper and lower.
- * 6. Lubricate tierod ends.

Note

* Initial servicing for these item at 9,000 km (5,400 miles) with servicing after every 3,000 km thereafter.