INTRODUCTION

This handbook has been designed to give you the information you will want, and need to know, to operate your Harley-Davidson, and to give it the kind of care which will enable it to serve you dependably and faithfully through many thousand miles of service. Follow the instructions carefully and you will be assured of the best performance that your motorcycle can give.

This handbook is intended for the rider only and therefore does not cover the overhaul of such major units as the engine, generator, and transmission. Work of this kind requires the attention of a skilled motorcycle mechanic and the use of special tools and equipment. Your Harley-Davidson dealer has the facilities, experience, and genuine Harley-Davidson parts which are necessary to properly render this valuable service.

HARLEY-DAVIDSON MOTOR CO.
Milwaukee, Wisconsin U.S.A.
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECIFICATIONS</td>
<td>4</td>
</tr>
<tr>
<td>OPERATION</td>
<td>5</td>
</tr>
<tr>
<td>Two Cycle Engine</td>
<td>5</td>
</tr>
<tr>
<td>Operating Controls</td>
<td>5</td>
</tr>
<tr>
<td>Starting the Engine</td>
<td>9</td>
</tr>
<tr>
<td>Stopping the Engine</td>
<td>9</td>
</tr>
<tr>
<td>Shifting Gears</td>
<td>9</td>
</tr>
<tr>
<td>Care of a New Engine</td>
<td>10</td>
</tr>
<tr>
<td>Operating Tips</td>
<td>12</td>
</tr>
<tr>
<td>LUBRICATION</td>
<td>14</td>
</tr>
<tr>
<td>Engine Oil</td>
<td>14</td>
</tr>
<tr>
<td>Transmission Oil</td>
<td>15</td>
</tr>
<tr>
<td>Chain Lubrication</td>
<td>16</td>
</tr>
<tr>
<td>Chassis Lubrication</td>
<td>16</td>
</tr>
<tr>
<td>Wheel Bearings</td>
<td>16</td>
</tr>
<tr>
<td>Oil Applications</td>
<td>17</td>
</tr>
<tr>
<td>MAINTENANCE</td>
<td>18</td>
</tr>
<tr>
<td>Spark Plug</td>
<td>18</td>
</tr>
<tr>
<td>Care and Adjustment of Drive Chains</td>
<td>18</td>
</tr>
<tr>
<td>Rear Brake Adjustment</td>
<td>19</td>
</tr>
<tr>
<td>Front Brake Adjustment</td>
<td>20</td>
</tr>
<tr>
<td>Carburetor</td>
<td>23</td>
</tr>
<tr>
<td>Adjustment of Circuit Breaker Points</td>
<td>24</td>
</tr>
<tr>
<td>Ignition Timing</td>
<td>25</td>
</tr>
<tr>
<td>Removing Carbon and Soot from Cylinder Ports and Muffler</td>
<td>27</td>
</tr>
<tr>
<td>Clutch</td>
<td>29</td>
</tr>
<tr>
<td>Wheels</td>
<td>33</td>
</tr>
<tr>
<td>Rubber Fork Springs</td>
<td>35</td>
</tr>
<tr>
<td>ELECTRICAL SYSTEM</td>
<td>37</td>
</tr>
<tr>
<td>Head Lamp Adjustment</td>
<td>37</td>
</tr>
<tr>
<td>Care of Storage Battery</td>
<td>37</td>
</tr>
<tr>
<td>Generator</td>
<td>39</td>
</tr>
</tbody>
</table>
Figure 1 - Right Side Harley-Davidson Model 125

1. Right Side Rear Axle Nut
2. Horn
3. Voltage Regulator
4. Positive Battery Terminal
5. Spark Plug
6. Front Wheel Brake Hand Lever
7. Control Cable Lubrication Fittings
8. Clutch Hand Lever
9. Head Lamp
10. Front Brake Operating Lever
11. Right Side Front Axle Nut
12. Front Wheel Brake Adjusting Sleeve
13. Transmission Filler Plug - Gage Rod Attached
14. Circuit Breaker Cover
15. Rear Wheel Brake Foot Pedal
16. Clutch Push Rod Adjusting Screw Locknut
17. Clutch Push Rod Adjusting Screw
18. Right Foot Rest
19. Muffler
20. Gear Position Indicator
21. Rear Drive Chain
22. Right Side Rear Wheel Axle Adjusting Stud
23. Rear Brake Operating Lever
Figure 2 - Left Side Harley-Davidson Model 125

1. Head Lamp Dimmer Switch
2. Speedometer
3. Ignition - Light Switch
4. Gasoline Tank Cap - Oil Measure Attached
5. Horn Button
6. Throttle Control Grip
7. Ignition Coil
8. Gasoline Shut-off and Reserve Supply Valve
9. Carburetor Priming Pin
10. Storage Battery
11. Negative Battery Terminal
12. Taill Lamp
13. Left Side Rear Axle Nut
14. Left Side Rear Wheel Axle Adjusting Stud
15. Jiffy Stand
16. Tool Box
17. Transmission Drain Plug
18. Starter Crank
19. Left Foot Rest
20. Clutch Case Cover
21. Gear Shifter Pedal
22. Carburetor
23. Carburetor Choke Lever and Air Cleaner
24. Left Side Front Axle Nut
25. Rubber Fork Springs
SERIAL NUMBER

The Engine (Serial) Number is stamped on a pad on the front end of the engine crankcase, on the left-hand side. Always give this number when ordering parts or making inquiry about your motorcycle.

WHEELBASE ........................................................................ 50-in.

ENGINE DATA

Model Designation Letter ................................................. S
Type of Engine ............................................................... 2 cycle
Number of Cylinders ....................................................... 1
Bore ........................................................................... (52.39 mm.) 2-1/16-in.
Stroke ........................................................................... (57.94 mm.) 2-9/32-in.
Piston Displacement ......................................................... (124.87 cc.) 7.6 cu. in.
Compression Ratio ............................................................. 6.6 to 1
Horsepower (N.A.C.C. Rating) ............................................ 1.7

BRAKE HORSEPOWER (approximate) ......................... 3

TIRE DATA

Tire Size ................................................................. 3.25-in. x 19-in.
Tire Inflation Pressure - Front ....................................... 14 lbs.
Tire Inflation Pressure - Rear ......................................... 20 lbs.

CAPACITIES

Gasoline Tank Total Capacity ........................................ 1-3/4 U.S. gal.
Main Supply ................................................................. 1-1/2 U.S. gal.
Reserve Supply ............................................................. 1 U.S. quart
Transmission Case ......................................................... 1-1/4 U.S. pints

GEAR RATIOS

Low (First) Gear ............................................................. 29.3 to 1
Second Gear ................................................................. 15.4 to 1
High (Third) Gear .......................................................... 8.45 to 1
OPERATION

THE TWO CYCLE ENGINE

The engine of the Harley-Davidson Model 125 operates on the two stroke cycle principle. The two-cycle engine differs from the familiar four-cycle engine in that it delivers power on every downward stroke of the piston instead of on every second downward stroke. The two-cycle engine requires no valves, push rods, rocker arms, or cam shaft, since the gasoline charge is admitted to the cylinder, and the exhaust gas is removed from the cylinder through ports in the cylinder walls. The gasoline and air mixture from the carburetor is drawn first into the engine crankcase by the up stroke of the piston. The downward movement of the piston then forces it up through the transfer port into the combustion chamber. The engine crankcase carries no supply of lubricating oil. Engine lubrication is provided by oil mixed with the gasoline which passes into the engine crankcase. The extreme simplicity of the Harley-Davidson two-cycle engine makes it an unusually easy engine to operate and care for, if the instructions and suggestions contained in the following sections of this handbook are carefully followed.

OPERATING CONTROLS

Gas Shut-off and Reserve Supply Valve

The gasoline shut-off and reserve supply valve (8, figure 2) is located just below the gasoline tank with the valve handle on the left hand side. As shown in figure 3, turn the handle counterclockwise (horizontal) to shut off all gasoline from the carburetor; straight down to open the valve for normal operation on main gasoline supply; and straight up to use the one quart reserve supply when the main supply has been used up.

The later 125 model has a different gasoline valve than shown in figure 3; a valve with two handles, one marked “Reserve,” the other unmarked.

Gasoline to carburetor is shut “OFF” when both handles are in horizontal position.

Turning “unmarked” handle to vertical position turns “ON” main gasoline supply; turning “Reserve” handle to vertical position turns “ON” reserve supply.

Ignition-Light Switch

As shown in figure 4, the ignition-light switch (3, figure 2), when unlocked, is turned to the LEFT for parking with tail lamp, CENTER (straight across) to turn off all lights and ignition, FIRST RIGHT for ignition only, and SECOND RIGHT for ignition and running lights (head lamp and tail lamp). Remember that lighting the head lamp when the
OPERATION

engine is not running also turns the ignition on. The switch can be locked in either the off or park positions only, by means of a key inserted in the lock beneath the hinged cover.

Throttle Control Grip

Turn the throttle control grip (6, figure 2) outward to close the throttle. Turn it inward to open the throttle.

Clutch Hand Lever

The clutch hand lever (8, figure 1) is located on the left handle bar where it may be conveniently operated with the fingers of the left hand. Pull the lever inward against the handle bar grip to release the clutch, release the lever to its outward position to engage the clutch.

Gear Shifter Pedal

The gear shifter pedal (21, figure 2) is located on the left side where it may be conveniently operated with the toe of the left foot. Complete instructions for shifting are given in the paragraph 'Shifting Gears.'

Gear Position Indicator

A gear position indicator (20, figure 1) is located on the right side to show at a glance, by means of numbers on the chain guard (1, 0, 2, 3) which gears are engaged.

Figure 3 - Gasoline Shut-off and Reserve Supply Valve
**Brakes**

The rear wheel brake foot pedal (15, figure 1) is located on the right side where it may be operated by the toe of the right foot. A hand lever (6, figure 1) is located on the right handle bar where it is operated by means of the fingers of the right hand to control the front wheel brake.

**Lights**

Both head lamp and tail lamp are turned on by means of the ignition-light switch (3, figure 2). A toggle switch mounted on the left handle bar may be pushed up or down with the left thumb to raise or lower the head lamp beam. The switch is pushed down for the high or driving beam, and up for the low or passing beam. None of the lights may be operated when the ignition-light switch is in the off position.

**Horn**

The horn (2, figure 1) is mounted to a bracket on the right side of the frame, at the rear, and is operated by the horn button (5, figure 2). Tone may be set at the desired pitch by turning the adjusting screw in the back of the horn.

**Speedometer**

The speedometer (2, figure 2) is mounted in the head lamp housing and is driven from the front wheel. It registers speeds up to 50 miles an hour and records the miles traveled.
1. Carburetor Priming Pin
2. Choke Lever
3. Positive (+) Battery Terminal
4. Negative (-) Battery Terminal
5. Starter Crank
6. Battery Strap Nut

7. Transmission Drain Plug
8. Transmission Filler Plug
9. Gear Shifter Pedal
10. Gasoline Shut-off and Reserve Supply Valve

Figure 5 - Engine Left Side View
STARTING THE ENGINE

When starting the engine, proceed as follows:

1. Hold motorcycle in a nearly vertical position.
2. Turn on the gasoline supply by turning the handle of the gasoline shut-off and reserve supply valve (10, figure 5) to the straight down position.
3. Prime the carburetor by pressing the carburetor priming pin (1, figure 5) down for a few seconds, or until gasoline comes out the small hole on the side of the carburetor bowl.
4. The carburetor choke is open when the choke lever (2, figure 5) is all the way down. Moving the choke lever upward, as far as it will go, fully closes the choke. In warm weather it is not necessary to use the choke at all. In cold weather (near freezing and colder) start cold engine with choke closed. Open choke as engine gets warm.
5. Turn on the ignition with the ignition-light switch (3, figure 2).
6. Open the throttle about half way by turning the throttle control grip (6, figure 2) inward.
7. If the transmission is not in neutral (as shown by gear position indicator) disengage the clutch with the hand lever (8, figure 1).
8. Start engine with vigorous strokes of the starter crank (5, figure 5.)
9. If engine is started with transmission in other than neutral position, immediately after the engine starts shift to neutral for idling or to first (low gear) to get under way.

STOPPING THE ENGINE

Stop the engine by turning the ignition-light switch to the “OFF” position. If the motorcycle is to be left standing for any length of time, turn off the fuel supply by turning the handle of the gasoline shut-off and reserve supply valve to a horizontal position. If the engine should be stalled or stopped in any other way than with the switch, and is not to be started again immediately, turn the switch off at once to prevent battery discharge through the breaker points.

SHIFTING GEARS

The transmission gears are shifted by a foot operated gear shifter pedal (21, figure 2). A gear position indicator (20, figure 1) is provided to show which gears of the transmission are engaged. As shown in the diagram, figure 6, pushing the shifter pedal all the way down (full stroke) shifts the transmission into the next lower gear, while lifting the pedal all the way up shifts the transmission into the next higher gear. The
operator must release the gear shifter pedal after each gear change, to allow the pedal to return to its central position. The pedal must return to this central position before another gear change can be made. Transmission neutral is between the first and second gear. To shift from second to neutral, the pedal is pushed only half way down, while to shift from first to neutral the pedal is lifted only half way up.

Do not attempt to shift from one gear into another while the motorcycle is standing without the engine running. Even with the engine running and the motorcycle standing still, difficulty may be experienced in shifting into low to get under way. This is because the transmission parts are not turning and the shifting parts are not lined up to permit engagement. When this difficulty is experienced, do not under any circumstances attempt to force the shift by "roughing" the shifter pedal, the result of such abuse will be a damaged or broken shifting mechanism. Roll the motorcycle forward or back, or engage the clutch very slightly and at the same time apply light pressure on the shifter pedal. This procedure sets transmission gears in motion and the shift can then easily be made.

With motorcycle in motion, when it may be desired to shift to lower gears, do not shift from "third" (high) to "second" until speed is reduced to 20 miles per hour or less; do not shift to "first" until speed is reduced to below 5 miles per hour.

Shifting to lower gears when speed is too high may result in damage to transmission or other parts.

CAUTION

Always disengage the clutch completely, that is, pull the clutch hand lever (8, figure 1) all the way in against the handle bar grip whenever shifting gears.

CARE OF A NEW ENGINE

Don't run a new engine faster than 25 to 30 miles (30 to 48 km.) per hour in high gear or 12 to 16 miles (19 to 25 km.) per hour in second gear for the first 500 miles. Below 1000 miles, avoid running at or near top speed for long distances. After a new motorcycle has been run its first 300 miles, and again at approximately 1000 miles, the motorcycle should be taken to the dealer from whom it was purchased for certain initial servicing operations with which the dealer is familiar. If it is impossible to take the motorcycle to a dealer at the mileage intervals mentioned, the owner should at least give the following outlined attention, or arrange to have it given, and take the motorcycle to the dealer for more complete servicing later on when it is convenient to do so. After the initial servicing has been completed, the motorcycle should then be taken to the dealer for check up at regular intervals of 750 to 1000 miles.
Figure 6 - Shifting Gears
OPERATION

Initial Servicing Operations

1. Check the adjustment of the rear drive chain (21, figure 1) and readjust if necessary. See “Care and Adjustment of Drive Chains” in Maintenance Section.
2. Check level of oil in transmission by means of the gauge rod attached to the transmission filler plug (13, figure 1) and add oil if needed. (See “Lubrication.”)
3. Lubricate all points indicated under “Chassis Lubrication” in the Lubrication Section.
4. Oil brake control, clutch and front brake hand levers, and saddle hinge bolt bearing.
5. Remove the air cleaner and rinse it out in clean solvent.
6. Check level of solution in battery and add distilled water if needed to bring level to 5/16-in. above plate separators. See that terminals are clean and connections tight. (See “Care of Storage Battery” in Electrical System Section.)
7. Check all nuts, bolts and screws and tighten any found loose.
8. Inspect, clean and adjust spark plug gap.

OPERATING TIPS

1. Use gasoline which is not leaded if it can be obtained. When such gasoline is not available, use the available gasoline that has the least lead content.
2. In cold weather run the engine slowly until it is thoroughly warmed up, to avoid possible damage.
3. Don’t idle the engine unnecessarily with the motorcycle standing still.
4. When plug needs to be replaced get new plug from your Harley-Davidson dealer. He can supply you with a new Harley-Davidson plug that is the same as original equipment, or one with a different heat range if required. Experimenting with plugs of unproven quality and suitability is inviting trouble.
5. IMPORTANT. When coasting against engine down a long, steep grade (longer than the equivalent of two city blocks and so steep that engine speed is quite high) it is advisable to turn ignition “OFF” and open throttle part way, rather than coast with ignition “ON” and throttle closed. Observing this recommendation assures good lubrication and cooling of the interior of engine while coasting.

Bear in mind, the 125 model engine is a two-cycle engine and its lubrication depends entirely on the oil-gasoline mixture passed through the carburetor to the interior of engine.

Night driving, of course, does not permit turning ignition “OFF” as lights would also be “OFF.” In this case, coast at moderate
speed even though doing so requires that engine braking be supplemented by use of wheel brakes.
6. There may be occasions when the engine will tend to reverse itself and run backwards when the motorcycle is not moving forward. This is an indication that:
   a. The circuit breaker point gap is set too close.
   b. The circuit breaker cam is not running true.
   c. Engine idling speed is set too low.
Possibly all three faults are present. Check and reset point gap and increase idling speed. If condition still exists, see your dealer.
LUBRICATION

ENGINE OIL

The two-cycle engine of the Model 125 has no crankcase oil reservoir or oil supply for lubricating the engine, as do four-cycle engines, but instead the oil is mixed with the fuel charge which enters the crankcase. Add Harley-Davidson "Two-Cycle" oil to the gasoline, one part of oil to 25 parts of gasoline. A convenient measure is attached to the under side of the gasoline tank cap. (See figure 7.) Use two measurefuls of oil for each U. S. gallon of gasoline placed in the tank to provide exactly the right amount of lubrication for the engine. Since the engine lubricating oil is carried in the gasoline, the same weight of oil may be used both summer and winter, and under all operating conditions.

When convenient to do so, pour gasoline and correct proportionate quantity of oil into a clean bucket or other suitable, clean receptacle and stir until mixed thoroughly before pouring into motorcycle tank.

When necessary to replenish gasoline supply from filling station pump directly to motorcycle tank, ask for a predetermined quantity of gasoline and pour the correct proportionate quantity of oil into tank be-

Figure 7
Lubricating Oil Measure
fore gasoline is pumped in. This procedure effects faster, thorough mixing of gasoline and oil than occurs when oil is poured into tank after gasoline has been pumped in. However, if tank has been run completely dry, first put at least one quart of gasoline in tank before the oil is poured in.

TRANSMISSION OIL

Use either Harley-Davidson "Two-Cycle" or "Medium Heavy" oil under all operating conditions. As colder temperatures make the transmission hard to shift, add only enough kerosene to make shifting easy. When warmer weather arrives in the spring, however, be sure to drain the transmission and refill to correct level with fresh oil.

Remove transmission oil filler plug and check oil level with gauge rod every two weeks or 750 miles, whichever comes first. (See figure 8.) Add oil if necessary to fill to top mark on gauge rod. The motorcycle should stand straight up, not lean on the Jiffy Stand when checking and adding oil to the transmission.

Drain transmission and refill to correct level with fresh oil every 6 months or 2500 miles, whichever comes first. If transmission should become submerged in water, drain immediately and refill to correct level.

Figure 8
Adding Oil to Transmission
LUBRICATION

CHAIN LUBRICATION

The front chain is completely enclosed in the clutch case and is therefore lubricated from the clutch and transmission oil reservoir. The rear chain, however, should be lubricated at 750 mile intervals. Under dry, hard surface road operation, simply brush off the dirt and apply Harley-Davidson “Chain Saver” oil. Under dusty, wet, or muddy conditions, oil the chain daily.

Occasionally the rear chain should have additional lubrication. Remove the chain from the motorcycle, and soak and wash it thoroughly in a pan of kerosene. Then hang it up to allow the kerosene to drain off. Immerse the chain for a short time in a pan of grease, heated to the consistency of light engine oil. If grease and facilities for heating are not at hand, substitute light engine oil. When immersed, move the chain around to be sure that the hot grease or oil works through all inside parts. Then allow the chain to drain and wipe all surplus grease or oil from its surface. Install the chain on the motorcycle and inspect the connecting link and spring clip closely. Replace these parts if necessary. Be sure the spring clip is securely locked on the pin end. Readjust the chain if necessary. (See “Care and Adjustment of Drive Chains” in the Maintenance Section.)

CHASSIS LUBRICATION

Use Harley-Davidson “Grease-All” grease on the following grease gun fittings:

- Clutch actuating worm
- Brake foot lever
- Rear brake operating shaft
- Front brake side cover
- Front brake operating shaft
- Front end suspension (5 fittings)

Lubricate a new motorcycle after the first 300 miles and every 750 miles thereafter.

Remove and grease the right handle bar grip spiral with fresh grease whenever operation of grip indicates that lubrication is needed.

Be careful about over-greasing brake operating shafts, as excess grease, working out of these bearings, will get onto brake linings and greatly reduce the efficiency of the brakes.

Pack frame head bearings with fresh grease every 20,000 miles or whenever there is occasion to remove fork for repair or replacement of parts.

WHEEL BEARINGS

Use a high melting point grease (Harley-Davidson Grease-All) for wheel bearings. Wheel bearings should be washed and repacked full
with grease every 3000 miles or at least twice a year. Wheel hubs must be disassembled for greasing. (See “Wheels” in the Maintenance Section.)

**OIL APPLICATIONS**

Oil the saddle hinge bolt bearing every 750 miles or oftener. Brake control joints, clutch hand lever and front brake hand lever should be oiled regularly, and particularly after washing the motorcycle or driving in wet weather, to keep all controls working freely. Lubrication fittings (7, figure 1) are provided on the clutch and front wheel brake cable housings. Apply oil at these points frequently and also on the cables at the ends of the housings.
MAINTENANCE

SPARK PLUG

Keep the spark plug (5, figure 1) clean and the gap between the points adjusted to .025-in. to .030-in. Do not take the plug apart for cleaning. Clean with a sand blast cleaner, found in nearly every service station. Plug size is 14 mm.

CARE AND ADJUSTMENT OF DRIVE CHAINS

Inspect adjustment of rear drive chain (21, figure 1) every week and readjust it if necessary. No adjustment of the front chain, located inside the clutch housing, is required. If the rear chain is allowed to run loose enough to strike the chain guard, it will cause the motorcycle to jerk, when running at low speeds, and there is excessive wear of chain and sprockets.

Adjust the chain so that it has about 1/2-inch free movement up and down, midway between sprockets. Do not adjust tighter, because running chains too tight is even more harmful than running them too loose. As chains stretch and wear in service they will run tighter at one point on the sprocket than at another. Always check adjustment at the tightest point.

Inspect the chain occasionally for links which may be in poor condition or damaged. If any such links are found, make repairs or replace the chain. The rear drive chain can be taken apart and removed, after locating and taking out the spring-locked connecting link. The spring lock

Figure 9 - Repairing Drive Chain
on this connecting link must be installed with the split end trailing the
direction of chain travel. The front chain is not provided with such a
connecting link. Therefore it is necessary to pull both the engine sprocket
and clutch sprocket simultaneously in order to remove the chain. A
special puller is required to perform this operation and it therefore
should be done by your Harley-Davidson dealer.

At least every 750 miles lubricate the rear chain as directed under
“Chain Lubrication” in the Lubrication Section.

Rear Chain Adjustment

The rear chain is adjusted by moving the rear wheel back to tighten
the chain or forward to loosen the chain. To adjust, loosen the right
and left rear axle nuts and move the axle forward or back by means of
the adjusting nuts on the axle adjusting stud at each end of the axle.
(See figure 10.) Turn the nuts on each side exactly the same number
of turns to maintain the alignment of the wheel. When the adjustment
has been made, retighten the two axle nuts and check the alignment of
the wheel by noting that the tire runs about midway between the rear
frame tubes, and also that the rear sprocket runs centrally in the chain.
If alignment is incorrect, readjust as necessary. After adjusting the
rear chain, the rear brake may be too tight. Readjust the brake if neces-
sary as outlined under “Rear Brake Adjustment.”

Repair of Drive Chain

When necessary to repair a chain, remove the damaged links by
pushing out the riveted link pins with a chain repair tool. (See figure
9.) Then fit the necessary repair links. The chain tool for making this
repair is included in the tool kit.

REAR BRAKE ADJUSTMENT (See figure 10.)

The rear wheel brake adjustment is made by means of a nut (8)
which may be adjusted to change the effective length of the brake rod
(7). The adjusting nut has a notch which fits against the clevis pin in
the operating lever (9). Thus, it is locked in place on the rod but may
be turned up or backed off by half turns, as required. Set the adjust-
ing nut so that the brake does not start to take effect until the foot pedal
(5) is pushed downward about 3/4 to 1-inch. Turn the nut farther onto
the rod to tighten the brake; back it off to loosen the brake. Turn the
rear wheel to be sure the brake is not too tight and dragging.
Figure 10 - Rear Wheel Brake Operating Mechanism

FRONT BRAKE ADJUSTMENT (See figure 11.)

Readjust the front wheel brake whenever required. When properly adjusted, the hand lever will move freely about one quarter of its full movement before the brake starts to take effect. If adjusted tighter, the brake may drag. To adjust, loosen the lock nut (3) on control wire housing adjusting sleeve (2) and turn the sleeve up out of sleeve support to decrease the free movement of the hand lever (tighten brake), or down into sleeve support to increase the free movement (loosen brake). When free movement of the hand lever is about one quarter of its full movement, tighten sleeve lock nut securely against the support.
1. Cable Housing
2. Adjusting Sleeve
3. Adjusting Sleeve Lock Nut
4. Front Wheel Brake Cable
5. Front Wheel Brake Operating Lever

Figure 11 - Front Wheel Brake Mechanism
Figure 12 - Carburetor Cross Section

1. Control Wire Housing
2. Idling Speed Adjusting Sleeve
3. Adjusting Sleeve Lock Nut
4. Throttle Control Wire
5. Throttle Piston Spring
6. Alignment Screw
7. Pin Retainer
8. Metering Pin
9. Nozzle
10. Nozzle Holder
11. Metering Jet
12. Float
13. Priming Pin
14. Gasoline Line
15. Throttle Piston
16. Cap
CARBURETOR (See figure 12.)

When the throttle control grip is turned inward, the control wire (4) raises the throttle piston (15) and metering pin (8) to allow an increased amount of gasoline and air mixture to enter the engine. An alignment screw (6) registers in the slot of the throttle piston so that it cannot twist or turn as it moves up or down in the carburetor body. Idling speed adjustment is made by means of the control wire housing adjusting sleeve (2) which may be turned up or down in the carburetor cap (16) to raise or lower the closed throttle position of the piston and the metering pin.

Idle Speed Adjustment

To adjust the closed throttle idling speed of the engine, loosen the lock nut (3) and turn the adjusting sleeve (2) up to increase idling speed, down to decrease idling speed. When desired idling speed has been attained, retighten the lock nut securely.

Mixture Adjustment

The gasoline-air ratio or mixture entering the engine may be varied by raising or lowering the metering pin (8) (which controls the fuel) in relation to the throttle piston (15) (which controls the air). Three mixture variations are provided by means of the grooves in the metering pin into which the pin retainer (7) fits. The standard setting is with the retainer in the center groove of the metering pin (8). To change the gasoline-air mixture, unscrew the cap (16) and lift out the spring (5) and throttle piston from the carburetor body. Slip the control wire (4) out of the slot in the piston to free the piston and metering pin assembly. Remove the metering pin and pin retainer from the piston; remove the retainer and snap it into the bottom groove to provide a richer mixture, into the top groove to provide a leaner mixture. Replace the metering pin in the piston, and align the open end of the retainer with the slot in the piston. Replace the control wire in the piston slot. Be careful not to bend the retainer in replacing the wire. Insert the piston and metering pin assembly and spring into the carburetor body and screw down the cap securely.

Cleaning Carburetor and Gasoline Strainer

Remove the carburetor and clean all parts in cleaning solvent once a year or oftener if the need of cleaning is indicated by irregular carburation. Your Harley-Davidson dealer is best equipped to perform all carburetor cleaning, maintenance and adjustment operations. A gasoline strainer is attached to the top of the gasoline shut-off and reserve supply valve where it enters the gasoline tank. If gasoline does not flow properly, remove the valve and clean the strainer.
1. Lock Screw
2. Wire to Coil
3. Eccentric Adjusting Screw
4. Fiber Cam Follower
5. Cam
6. Timing Marks
7. Lock Screw
8. Cap Screw
9. Lead to "Gen." Terminal of Voltage Regulator

10. Lead to "F" Terminal of Voltage Regulator
11. Generator Terminals
12. Condenser
13. Breaker Points
14. Lock Screw
15. Clutch Push Rod Adjusting Screw
16. Push Rod Adjusting Screw Lock Nut

**Figure 13 - Circuit Breaker**

**ADJUSTMENT OF CIRCUIT BREAKER POINTS (See figure 13.)**

Every 3000 miles, or oftener if engine performance indicates the possible need of attention to points, remove the cover over the circuit breaker and generator. After cleaning points with a point file, check
the gap between the points (13) with a feeler gauge. If it is not exactly .020” when the fibre cam follower (4) is on the highest point of the cam (5), adjustment is necessary. Incorrect gap spacing affects ignition timing. To adjust the point gap, loosen the lock screw (14) and turn the eccentric adjusting screw (3) to raise or lower the adjustable contact point. Be sure that the cam follower (4) is on the highest point of the cam (5) and set the contact point gap at exactly .020”. Then retighten the lock screw and again check to be sure that the gap remains correct.

Each time circuit breaker points are adjusted apply two or three drops of engine oil to felt pad that lubricates circuit breaker cam.

IGNITION TIMING

Ignition timing is controlled by the circuit breaker. Correct ignition timing and correct setting of circuit breaker contact-point gap is absolutely necessary for proper engine operation. Original factory timing is indicated by the timing marks (6) on generator body and contact point holder assembly. When these two marks line up, timing is as it was originally set at factory. If, for any reason, retiming of the engine is necessary, other than by lining up factory timing marks, proceed as follows:

1. Remove the circuit breaker cover, ignition coil, and the cylinder head. When the head is removed the cylinder will be free. Secure it to the crankcase by means of a collar or stack of washers, the same thickness as the cylinder head, slipped over one of the studs and held in place by a cylinder head nut.
2. See that the point gap is set at exactly .020” as outlined above.
3. Shift into high gear and use rear wheel to turn engine over slowly in the direction in which it operates to bring piston to top dead center position (highest position of piston). Measure exact distance from top edge of piston to top edge of cylinder bore with piston in this position.
4. Then back up the engine until the top edge of the piston measures exactly 7/32” below the top dead center position (7/32-in. plus distance measured in step 3 below top edge of cylinder bore). This is the piston position at which spark should occur.
5. Loosen the two lock screws (1 and 7) and shift the contact point holder assembly so that the fiber cam follower (4) is coming up on the high point of the cam (5) just far enough so that the points (13) are starting to open. The spark occurs when the points open.
6. Then retighten lock screws, turn engine until the cam follower is on the highest point of cam, and check to see that contact point gap is still exactly .020”. If point gap has changed as a result of shifting contact point holder assembly, reset the gap and repeat timing procedure.
7. Replace cylinder head and circuit breaker cover.
REMOVING CARBON AND SOOT FROM CYLINDER PORTS AND MUFFLER (See figure 14.)

Carbon will tend to collect around the intake and exhaust ports of a two-cycle engine and will tend to clog the ports. After several thousand miles the engine may become sluggish and show a loss of power. Whenever this occurs, or at least every 5000 miles, the carbon should be cleaned from the cylinder ports and soot from the muffler. Your Harley-Davidson dealer can perform this operation for you, or, if you prefer, proceed as follows:

1. Remove the spark plug (13), gasoline line (8), coil (5), the gasoline tank front and rear bolts (6 and 14), and saddle bracket bolt (15). Remove the carburetor (17) from the cylinder (4), and loosen the exhaust pipe where it attaches to the cylinder.
2. Remove the four cylinder head nuts (9), lock washers (10), and plain washers (11) which secure the head (16) to the cylinder (4). Remove the cylinder head and cylinder head gasket.
3. Raise the tank sufficiently to provide clearance for the removal of the cylinder. Carefully slide the cylinder from the cylinder head studs.

**CAUTION**

Do not scrape carbon from ports without removing the cylinder. Unless cylinder is removed, carbon particles left on top of piston may cause damage to rings and cylinder walls.

4. Carefully scrape all carbon from the cylinder, cylinder head and piston. Pay particular attention to the intake and exhaust ports in the cylinder and see that all carbon is removed. Use care in removing piston rings to scrape out ring grooves. Note that the rings are pinned in position and must be replaced correctly or the cylinder cannot be installed.

**Key for Figure 14 - Removing Carbon**

1. Tank
2. Gasoline Shut-off and Reserve Supply Valve
3. Studs
4. Cylinder
5. Coil
6. Tank Bolt - Front
7. Cylinder Base Gasket
8. Gasoline Line
9. Head Nuts
10. Lock Washers
11. Plain Washers
12. Cylinder Head Gasket
13. Spark Plug
14. Tank Bolt - Rear
15. Saddle Bracket Bolt - Rear
16. Cylinder Head
17. Carburetor
5. See that cylinder base gasket (7) is in good condition and if not replace it. Apply gasket cement to both sides of this gasket before sliding it over the cylinder head studs.

6. Carefully slide the cylinder into place over the piston. See that the rings are compressed and located properly as they slide into the cylinder.

7. Examine the cylinder head gasket carefully and replace it if necessary. Apply gasket cement to both sides of this gasket and slip it into place over the studs. Then replace the cylinder head and secure it with the plain washers, lockwashers and cylinder head nuts. Be sure that nuts are pulled up tightly on the studs.

8. Replace the gasoline tank bolts, coil, spark plug, gasoline line, and carburetor.

9. Remove the entire muffler from the motorcycle by removing the cap screw and lockwasher from the bracket.

10. Disassemble the muffler by removing the brass nut and lockwasher which secure the tail piece and core to the muffler body. (See figure 15.)

11. Clean all parts thoroughly with a wire brush or soak in carbon solvent, if available, before reassembling and reinstalling the muffler assembly and exhaust pipe on the motorcycle.
NOTE

Do not alter the muffler in any way. The muffler is designed to maintain the correct back pressure and any change will affect engine performance.

CLUTCH

The need for attention to clutch and controls will be indicated by the clutch slipping under load or dragging in released position. In either case, the first thing to be checked is the adjustment of the control.

Figure 16 - Generator and Sprocket Cover Removed

1. Cable End Fitting
2. Cable Slot
3. Cable Housing
4. Generator and Sprocket Cover
5. Spring
6. Clutch Actuating Lever and Worm
7. Fillister Head Screws
8. Clutch Push Rod
MAINTENANCE

Control Adjustment

The clutch hand lever (8, figure 1) should have 1/8 to 1/4 of its travel as free movement, before the clutch starts to disengage. If it does not move in toward the handle bar 1/8 to 1/4 of its movement before there is a noticeable increase in tension, loosen the clutch pushrod adjusting screw lock nut (16, figure 13) and readjust the clutch pushrod adjusting screw (15, figure 13) with a screwdriver until the lever has the required free movement. Turn the screw to the right for less free movement, to the left for more free movement of the lever. When adjustment is correct, retighten the lock nut.

Clutch Repair (See figures 17 and 18.)

If the clutch does not hold after making sure of the correct adjustment, as outlined above, it must be taken apart for inspection of the discs. The disc fabric facings may be worn, requiring replacement of discs. When the clutch must be taken apart, it is advisable to have it serviced at a Harley-Davidson service station where any needed new parts are at hand. If, however, it is impossible to take the motorcycle to a Harley-Davidson dealer, and the clutch must be taken apart, proceed as follows:

1. Drain the oil at the transmission case drain plug (7, figure 5). Then loosen the clamp screws on the gear shifter pedal and starter crank, and pull them from the sleeve and shaft to which they are clamped.
2. Remove the five fillister head screws which secure the clutch case cover to the crankcase and remove the cover, exposing the clutch, engine sprocket, front chain, and starter mechanism as shown in figure 17.
3. Insert two clutch spring compressing studs (7, figure 18) (Harley-Davidson part No. 23305-47) through the holes in the clutch spring plate and screw them into the threaded holes in the clutch pressure plate. Then turn the two compression nuts (8, figure 18) (Harley-Davidson part No. 7675) down on the studs against the clutch spring plate to compress the clutch springs.
4. Remove the clutch spring plate retaining ring (6, figure 18) and carefully lift the clutch discs from the shell and hub. Do not disassemble the clutch spring plate, clutch pressure plate, and springs unless it is necessary to replace some of these parts.
5. Do not attempt to remove the clutch shell and sprocket, or clutch hub. (In order to do this it is necessary to remove the clutch hub, clutch shell and sprocket, the engine sprocket and front chain all at the same time. A special puller is required to do this and the operation should be performed by your Harley-Davidson dealer.)
6. Reassemble the clutch parts in the reverse order of disassembly, taking care to see that the discs are replaced in the proper sequence.
1. Clutch Case Cover Gasket
2. Front Drive Chain
3. Engine Sprocket
4. Clutch
5. Clutch Case Cover
6. Starter Spring
7. Starter Crank
8. Gear Shifter Pedal
9. Fillister Head Screws

Figure 17 - Clutch Case Cover Removed
1. Clutch Shell and Sprocket
2. Clutch Hub
3. Steel Friction Discs
4. Clutch Pressure Plate
5. Clutch Spring Plate
6. Spring Plate Retaining Ring
7. Compression Studs (for disassembly only - Harley-Davidson Part No. 23305-47)
8. Compression Nuts (for disassembly only - Harley-Davidson Part No. 7675)
9. Fabric Faced Friction Discs

Figure 18 - Clutch Disassembled
WHEELS

The front and rear wheels must be removed from the motorcycle for tire changing, brake service, or when it is necessary to repack the wheel bearings with grease at the specified 3000 mile intervals.

Removing Front Wheel

Disconnect the front brake cable at the front brake operating lever by removing the cotter pin, plain washer, and slotted clevis pin. Disconnect the speedometer drive cable and housing by removing the round head screw (on later models the grease fitting secures the speedometer drive) and pulling the housing from the socket. The speedometer drive gear is a slip fit on the end of the speedometer cable. If it comes out with the cable, be careful to see that it is not lost. Then loosen the axle nuts on each side of the fork, lay the machine over on its left side, and remove the wheel from the slotted fork ends. In re-installing the wheel use care to slide the slot in the brake side cover over the anchor stud on the fork side and be sure the axle plain washers are on the outside of the fork ends.

Removing Rear Wheel

Disconnect the chain at the master link, and loosen the rear wheel adjusting stud lock nuts. Disconnect the brake rod at the operating lever. Loosen the axle nuts far enough so that the rear wheel adjusting studs can be removed from the slots at the sides of the frame. Then lay the machine on its left side and remove the rear wheel. In re-installing the rear wheel use care to slide the slot in the brake side cover over the anchor stud on the frame. Be sure to adjust the chain properly and realign the wheel, as described in the previous paragraph “Care and Adjustment of Drive Chains.”

Disassembly of Wheel Hubs

When it is necessary to disassemble the wheel hubs to permit inspecting bearings or repacking with grease, at the specified 3000 mile interval, remove the wheel as directed in the previous paragraph.
Figure 19 - Rubber Fork Springs Assembled on Fork (Head Lamp and Speedometer Removed)
Then remove the brake mechanism from the hub, the felt washer and retainer on the left hand side, and unscrew the bearing retainer on the left hand side. The bearings may then be removed by tapping against the axle from either side. In reinstalling the axle and bearings, be sure that the shielded side of the bearing is placed on the outside, away from the center of the hub.

1. Cotter Pin
2. Upper Rubber Fork Spring
3. Upper Rubber Fork Spring Bushing
4. Upper Rubber Fork Spring Bracket Pin Spacer
5. Upper Rubber Fork Spring Bracket Pin
6. Hex Head Cap Screw
7. Lock Washer
8. Intermediate Shaft Washer
9. Intermediate Shaft Rubber Bushing
10. Intermediate Shaft
11. Cotter Pin
12. Lower Rubber Spring Collar
13. Lower Rubber Spring Bushing
14. Inner Lower Rubber Fork Spring
15. Outer Lower Rubber Fork Spring

Figure 20 - Rubber Fork Springs and Parts Removed from Fork

RUBBER FORK SPRINGS (See figure 20.)

Figure 19, shows the rubber fork springs assembled on the fork, while figure 20 shows all parts of the assembly. To disassemble, re-
move the cotter pins (1 and 11) and the hex head cap screws (6) which extend through the head lamp housing. Tip up the head lamp housing and withdraw the intermediate shaft (10).

Should there be cause to remove and replace fork rocker link bolts, the two bolts that attach rocker links to upper and lower end of frame head fork stem must be carefully readjusted. With lock nuts securely tightened there should be just perceptible side play and rocker action must be entirely free. If adjusted tight, fork action will be stiff and breakage at some point may result. The bolts and nuts that attach rocker links to fork sides may be pulled tight as there are bearing sleeves through the fork that correctly space the link ends.
ELECTRICAL SYSTEM

A complete diagram of the electrical system is given, and all parts and connections are shown in the illustration.

HEAD LAMP ADJUSTMENT

The head lamp is the pre-focused type and does not require refocusing but the beam must be adjusted for direction when required. To get the greatest efficiency from the lamp, and to meet the requirements of law, make the following adjustments. Adjust in a darkened room or at night.

1. Have the motorcycle standing on a level surface about 25 feet away from and headed toward a wall or screen upon which a horizontal line has been drawn at exactly the same height as the lamp center. The motorcycle must be resting on both wheels and the front wheel must be in straight-ahead alignment. Block up the motorcycle so that it stands straight up.

2. Turn the ignition-light switch on, and set the handle bar toggle switch in the upper beam position. Then check the beam for height. The top of the main beam of light should register on the wall or screen even with, but not higher than, the horizontal line mentioned above.

3. Loosen the two cap-screws on the side of the head lamp housing and tilt the light up or down to properly locate its upper beam in relation to the horizontal line. No left to right adjustment of the head lamp beam is provided.

CAUTION

Do not install extra lighting equipment other than approved and furnished by the factory. Doing so will overload and is likely to damage generator.

CARE OF STORAGE BATTERY

It is the care given a battery, rather than time and miles in service, which is most important in determining its life. Don’t neglect it.

1. Inspect battery every week. Add pure distilled water as often as necessary to keep solution above the plates. (See “Adding Water to Battery.”)

2. Remove battery and have it given a charge from an outside source, when a hydrometer test shows that this attention is needed. Allowing battery to remain in a discharged condition for any length of time shortens its life. It is especially important that the battery be kept well charged in below freezing weather. A low or discharged battery is very likely to be frozen and ruined. Be sure battery is reinstalled

37
with its positive (+) terminal on the right side, as reversing the battery will cause damage to the voltage regulator.

3. Keep the battery clean, and terminal connections tight. Occasionally put a little grease on the battery terminals.
Adding Water to Battery

The motorcycle should be standing straight up, not leaning on the Jiffy Stand, when adding water to the battery. Loosen the hex nut (6, figure 5) on the battery hold-down strap at the left side, and raise strap to remove battery cover. Take out the three screw-in filler plugs, and with a hydrometer or syringe, add water to each cell to raise the level of the solution about 5/16-in. above the plates and separators.

CAUTION

If battery is filled to a higher level, some of the solution will be forced out through vent holes when battery is charging. This not only weakens battery solution, but also may damage parts near the battery.

Battery Charging Rate

When charging a battery from an outside source, the charging rate is constant and should not be allowed to go over 1/2 ampere. A higher rate will heat and damage the battery.

CAUTION

Do not allow the battery to be charged in the same line with automobile batteries, at a high charge rate.

GENERATOR

The generator on the Model 125 is mounted on the right hand end of the crankshaft, with the generator leadwires located directly below the circuit breaker.

Generator Charging Rate and Voltage Regulator

The generator itself has no adjustment for control of charging rate. This is controlled by the voltage regulator (3, figure 1). The voltage regulator functions to increase charging rate when battery is low or lamps are lighted, and to decrease charging rate when no lamps are lighted and when battery is “up.” Voltage regulator requires no regular interval attention. The cutout relay is combined with the voltage regulator in a single unit. Should any electrical system trouble
ELECTRICAL SYSTEM

be experienced that might be traceable to the voltage regulator, motorcycle should be taken to your Harley-Davidson dealer who has the necessary electrical testing equipment to give required attention.

Inspecting or Replacing Generator Brushes

Remove the generator and sprocket cover to inspect or replace the generator brushes. The springs which hold the brushes in place are clipped to the brush holders and may be easily snapped out so that the brush may be withdrawn and new brushes installed, if required. When a brush is worn to approximately 1/2-inch long it should be replaced.
LUBRICATION

1951 Model

The 1951 Tele-Glide fork is grease-lubricated through a grease gun fitting near lower end of each fork side. Every 750 miles give each fork side 10 shots of Harley-Davidson "Grease All" grease, using grease gun, catalog No. 95790-47 or 95791-38, obtainable from your Harley-Davidson dealer.

1952 Model

The 1952 Tele-Glide fork is oil-lubricated, and therefore does not have grease gun fittings. At the top end of each fork side, in the center of the large (1½ inch) hex-head cap screw is a smaller, 5/8 inch hex-head cap screw (See Illustration). This smaller cap screw is hollow and serves as an oil measuring cup. When lubricating fork
LUBRICATION

sides at regular 750 mile intervals, remove the smaller cap screws, turn upside down, fill with oil, pour oil into fork sides and reinstall cap screws. One screwful per fork side is sufficient. Harley-Davidson "Chain Saver" oil is recommended for fork lubrication as this oil has greater "cling" than most other lubricating oils, and therefore lubricates more effectively for a longer period of operation. If "Chain Saver" oil is not available, use engine oil.

CAUTION

Do not remove large (1½ inch) hex-head cap screws from top end of fork sides. Read the following information carefully.

Tele-Glide fork recoil snubbing is achieved by engaging spring ends with an external thread on upper end of fork slider, and an internal thread in large cap screw (1½ inch) at top end of fork side. These cap screws (one for each fork side) secure fork sides to fork upper plate. Cap screw thread in fork side is much finer pitch than internal thread for spring end engagement, therefore, when there may be reason to remove large cap screw, the front wheel and front mudguard must first be removed so that slider can be turned to disengage upper end of spring, and reengage it with cap screw when reassembling. The lower end of rubber dirt guard will of course have to be made free before slider can be turned.

After cap screw has been reinstalled and securely tightened, push slider and spring into tube to engage spring end and cap screw, then turn slider clockwise until spring end bottoms in cap screw. Observe position of slider mudguard attaching brackets. If brackets are not in alignment to permit installing mudguard without putting spring under twisting tension, turn slider anti-clockwise just enough to attain alignment without tension. After mudguard has been reinstalled on fork sliders, rubber dirt guard lower end must again be secured 1 inch above slider lower end fitting from which mudguard attaching brackets extend.
REMOVING CARBON FROM MUFFLER (1951 and later)

Remove muffler from motorcycle; Remove cap screw and lock washer from muffler bracket; also loosen muffler clamp screw.

Disassemble muffler; Grasp with both hands in vertical position and bring rear end of muffler core down sharply against a block of wood. This will drive muffler core upward out of muffler shell.

Soak muffler parts in carbon solvent, if available, and clean with a wire brush. Reassemble muffler making sure that muffler core is driven into muffler shell until small flare on large end of core contacts front end of shell.

Driving Out Muffler Core

Muffler Disassembled

Harley-Davidson
Rider's Hand Book
SUPPLEMENT

APPLYING TO THE
165 SINGLE CYLINDER MODEL

This Supplement and Single Cylinder Hand Book – #99463-48 contain complete operating and care instructions applying to all Single Cylinder Models
SERIAL NUMBER

The Engine (Serial) Number is stamped on a pad on the front end of the engine crankcase, on the left-hand side. Always give this number when ordering parts or making inquiry about your motorcycle.

WHEELBASE ................................................................. 51 in.

ENGINE DATA

Model Designation Letters .............................................. ST
Type of Engine ............................................................ 2 cycle
Number of Cylinders ....................................................... 1
Bore .............................................................................. (60.3 mm) 2-3/8 in.
Stroke ............................................................................ (57.94 mm) 2-9/32 in.
Piston Displacement ......................................................... (165 cc) 10.1 cu. in.
Compression Ratio ............................................................. 6.6 to 1
Horsepower (N.A.C.C. Rating) ........................................... 2-1/4

BRAKE HORSEPOWER (approximate) ................................ 5-1/2

TIRE DATA

Tire Size ........................................................................... 3.25 in. x 19 in.
Tire Inflation Pressure – Front ........................................... 14 lbs.
Tire Inflation Pressure – Rear ............................................ 20 lbs.

CAPACITIES

Gasoline Tank Total Capacity ............................................ 1-3/4 U.S. gallons
Main Supply .................................................................... 1-1/2 U.S. gallons
Reserve Supply ................................................................ 1 U.S. quart
Transmission Case ............................................................ 1-1/4 U.S. pints

NUMBER OF SPROCKET TEETH

Engine Sprocket .................................................................. 15
Clutch Sprocket ................................................................ 31
Countershaft Sprocket ....................................................... 14
Rear Wheel Sprocket .......................................................... 49

GEAR RATIOS

Low (First) Gear ............................................................... 20.8 to 1
Second Gear .................................................................... 12.2 to 1
High (Third) Gear ............................................................ 7.23 to 1

IGNITION TIMING

Piston should be 13/64 in. before top dead center when spark occurs. For details see “Ignition Timing” in Single Cylinder Hand Book.
KEY TO WIRING DIAGRAM

A. LOOM (two wires) — Red wire with yellow tracer and black wire with red tracer.
B. LOOM (two wires) — Red wire with black tracer and black wire with white tracer.
C. FOUR WIRE CABLE — Yellow wire, black wire, red wire and green wire.
D. FOUR WIRE CABLE — Yellow wire, black wire, red wire and green wire.
E. LOOM (one or two wires) — Green wire only if motorcycle is not equipped with stop lamp; green wire and red wire if motorcycle is equipped with stop lamp.
F. LOOM (three wires) — Two red wires and one yellow wire.

1. SWITCH TERMINAL — Cable "C" red wire from horn (19).
2. SWITCH TERMINAL — Cable "C" yellow wire from terminal 9 on terminal plate (8).
3. SWITCH TERMINAL — Not used with standard equipment.
4. SWITCH TERMINAL — Cable "C" green wire from terminal 18 on mudguard (24).
5. SWITCH TERMINAL — Cable "C" black wire from ignition coil upper terminal.
6. HEADLAMP — Loom "A" black wire with red tracer from headlamp "high" and "low" beam switch (27) to larger terminal screw; loom "A" red wire with yellow tracer from headlamp "high" and "low" beam switch (27) to smaller terminal screw.
7. HORN BUTTON — Loom "B" black wire with white tracer from terminal 25 stamped on terminal plate (8).
8. TERMINAL PLATE (Mounted on ignition coil) — Terminals 9 and 25 stamped on plate.
9. JUNCTION TERMINAL — On terminal plate (8) — Loom "B" red wire with black tracer from headlamp "high" and "low" beam switch (27) and cable "C" yellow wire from terminal 2 on ignition-light switch (26).
10. IGNITION COIL — Cable "C" black wire from terminal 17 on mudguard (24) to ignition coil lower terminal; cable "C" black wire from terminal 5 on ignition light switch (26) to ignition coil upper terminal.
11. GENERATOR AND CIRCUIT BREAKER — See items 13, 14, 15 and 16 for terminal identification.
12. VOLTAGE REGULATOR — Cable "D" green wire from generator terminal 16 to regulator "F" terminal. Cable "D" red wire from generator terminal 15 to regulator "GEN" terminal. Red wire from battery positive terminal 20 to regulator "BAT" terminal.
13. JUNCTION TERMINAL — For condenser wire (not shown), and cable "D" black ignition timer wire from terminal 17 on rear mudguard (24). Circuit breaker lever spring is also secured to this terminal.
14. GROUND TERMINAL (first terminal clockwise from terminal 13) — For two ground brush wires (not shown) and cable "D" yellow wire from voltage regulator mounting bracket.
15. JUNCTION TERMINAL (second terminal clockwise from terminal 13) — For right side generator field coil wire (not shown), two positive brush wires (not shown) and cable "D" red wire from voltage regulator "GEN" terminal.
16. JUNCTION TERMINAL (third terminal clockwise from terminal 13) — For left side generator field coil wire (not shown), and cable "D" green wire from voltage regulator "F" terminal.
17. JUNCTION TERMINAL — On rear mudguard (24) — Cable "D" black wire from generator terminal 13 and cable "C" black wire from ignition coil lower terminal.
18. TERMINAL — On rear mudguard (24) — Cable "C" green wire from terminal 4 on ignition-light switch (26).
19. HORN — Loom "F" red wire from terminal 1 on ignition-light switch (26), red wire from battery positive terminal 20, and red wire from tail and stop lamp switch (22) to one horn terminal; loom "F" yellow wire from terminal 25 stamped on terminal plate (8) to other horn terminal.
20. BATTERY POSITIVE TERMINAL — Loom "F" red wire from horn (19) and red wire from voltage regulator "BAT" terminal.
21. BATTERY NEGATIVE TERMINAL — Black wire from voltage regulator mounting bracket.
22. STOP LAMP SWITCH — Red wire from horn (19) and loom "E" red wire from tail and stop lamp (23).
23. TAIL AND STOP LAMP — Loom "E" red wire from stop lamp switch (22) and loom "E" green wire from terminal 18 on rear mudguard (24).
24. REAR MUDGUARD — Terminals 17 and 18 installed on front end of guard are insulated from guard.
25. JUNCTION TERMINAL (on terminal plate 8) — Loom "B" black wire with white tracer from horn button (7) and cable "C" yellow wire from horn (19).
26. IGNITION-LIGHT SWITCH (top view) — For operation of switch see Fig. 4, page 7.
27. HEADLAMP "HIGH" AND "LOW" BEAM SWITCH — Loom "A" black wire with red tracer from headlamp larger terminal screw; red wire with yellow tracer from headlamp smaller terminal screw; loom "B" red wire with black tracer
1 - Transmission and Primary Drive Oil Filler Plug
2 - Grease Gun Fittings for Sprocket and Armature Shaft Bearings
3 - Carburetor Priming Pin
4 - Carburetor Cover Screw

Remove filler plug (1) and check oil level every two weeks or 750 miles, whichever comes first. Add oil as needed. Fill to the level of filler opening, with motorcycle standing straight up. Do not lean motorcycle on jiffy stand when checking and adding oil. There is an opening between transmission and front chain compartments and the same oil supply lubricates the parts in both compartments.

Lubricate sprocket and armature shaft bearings every two weeks or 750 miles, whichever comes first. Also if motorcycle is to be taken out of service for an extended period of time, directly before taking motor cycle out of service run engine until it is at normal operating temperature and just before stopping engine lubricate these bearings. Three or four shots of grease to each bearing with Harley-Davidson grease gun Part No. 95790-47 or 95791-38 is sufficient lubrication.

Before starting cold engine press priming pin (3) all the way down and hold it for three to four seconds. Also see instructions under "Starting the Engine" in Single Cylinder Hand Book.

Removing carburetor cover screw (4) and like screw on opposite side of engine permits removing covers around carburetor and carburetor air cleaner.
Harley-Davidson
Rider's Hand Book
SUPPLEMENT

APPLYING TO THE
HUMMER

This Supplement and Model 165
Hand Book – #99463-55
contain complete operating
and care instructions.

99471-55
Price 25 cents
SERIAL NUMBER

The Engine (Serial) Number is stamped on a pad on the front end of the engine crankcase, on the left-hand side. Always give this number when ordering parts or making inquiry about your Hummer.

WHEELBASE ........................................ 51-1/2-in.

ENGINE DATA

Model Designation Letter .................................. B
Type of Engine ........................................... 2 cycle
Number of Cylinders ........................................ 1
Bore .................................................... (52.39 mm.) 2-1/16-in.
Stroke ..................................................... (57.94 mm.) 2-9/32-in.
Piston Displacement ....................................... (124.87 cc.) 7.6 cu. in.
Compression Ratio ......................................... 6.6 to 1
Horsepower (N.A.C.C. Rating) ............................ 1.7

BRAKE HORSEPOWER (approximate) ..................... 3-1/2

Spark Plug – Size ......................................... 14 mm
Gap ....................................................... .025 to .030 in.

CAPACITIES

Gasoline Tank Total Capacity ................................ 1-7/8 U.S. gal.
Main Supply ............................................... 1-1/2 U.S. gal.
Reserve Supply (approximate) .............................. 1-1/2 U.S. quart
Transmission Case ......................................... 1-1/4 U.S. pints

NUMBER OF SPROCKET TEETH

Engine Sprocket ........................................... 12
Clutch Sprocket ........................................... 33
Countershaft Sprocket .................................... 14
Rear Wheel Sprocket ...................................... 43

GEAR RATIOS

Low (First) Gear .......................................... 26.5 to 1
Second Gear .............................................. 15.4 to 1
High (Third) Gear ......................................... 8.45 to 1

TIRE DATA

Tire Size .................................................. 3.50 x 18
Tire Pressure ..............................................
Front .................................................... 12 lbs.
Rear ....................................................... 14 lbs.
(Solo Rider Only)

The tire inflation pressures given are based on a rider weighing approximately 150 lbs. When this load is exceeded by 50 lbs. or more, increase tire pressures as follows: for each 50 lbs. of overload, increase pressure of rear tire 2 lbs., front tire 1 lb.
See Pages 9 and 20 of Hand Book for Information on Gasoline and Engine Oil.

STARTING ENGINE
See that gasoline supply valve is turned ON.

COLD ENGINE –
Fully close choke (See Figure 4).
Set throttle 1/2 to full open.
Start engine with vigorous strokes of kick starter.
When engine starts, immediately move choke lever to 1/2 open position and partially close throttle.
If shortly after a cold start, engine stops, set choke 1/2 open and repeat starting operations.
As engine warms up, move choke lever to full open position.

HOT ENGINE –
Choke fully open.
Open throttle about 1/2.
Start engine with vigorous strokes of starter –
If engine does not start with three strokes of starter, this indicates that engine has cooled too much for hot starting procedure, and cold engine starting procedure should be followed.

STOPPING ENGINE
Push cutout button (1, Figure 1) inward until ignition cuts out and hold it until engine stops.

Figure 1. Ignition Cutout Button
Figure 2. Light Switch

As indicated in Figure 2, switch is OFF with knob (1) in center position – Turn right to light head lamp high beam and tail lamp – Turn left to light head lamp low beam and tail lamp.

LAMP BULBS

<table>
<thead>
<tr>
<th>Lamp Description</th>
<th>Candle Power</th>
<th>Harley-Davidson Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head Lamp</td>
<td>High Beam</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Low Beam</td>
<td>21</td>
</tr>
<tr>
<td>Tail Lamp</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

CAUTION

Lighting coil (10, Figure 5) of magneto-generator provides the electrical energy required for lighting a 21 candle power head lamp bulb, and a 3 candle power tail lamp bulb. Lamp bulbs of greater candle power must not be installed as the magneto-generator is designed to furnish adequate output for only the two lamp bulb sizes specified.

If either the head lamp bulb or tail lamp bulb fails, it must be replaced immediately because when this occurs, all of the output of lighting coil goes to one lamp, and the bulb of that lamp is likely to burn out.
Figure 3. Adding Oil to Transmission

TRANSMISSION LUBRICATION

Use Harley-Davidson 75 (medium heavy) oil when predominating temperature is 32 F and above. Use Harley-Davidson 58 (light) oil when predominating temperature is 32 F and below. Remove transmission oil filler plug (1, Figure 3) and check oil level every month or 750 miles. Add oil as necessary to bring oil level up to upper mark on gauge rod attached to filler plug. The motorcycle should stand straight up, not lean on jiffy stand, when checking and adding oil to the transmission.

Drain transmission and refill to correct level with fresh oil at intervals of one year or 5000 miles, whichever comes first. If transmission should become submerged in water, drain immediately and refill to correct level.
Figure 4. Carburetor

1. Choke Lever (Open Position)
2. Throttle Lever
3. Idle Mixture Adjusting Screw
4. Throttle Stop Screw—With which Closed Throttle Idling Speed is Adjusted
5. Mixture Main Adjusting Screw

CARBURETOR ADJUSTMENTS

Both mixture adjusting screws (3 and 5, Figure 4) turn to the right to lean mixture for the respective speed ranges they control. Backing them out (turning left) makes mixture richer.

Normal setting of both adjusting screws for satisfactory performance is about one turn open.

Closed throttle, idling speed of engine is adjusted with stop screw (4). Before making this adjustment, be sure throttle control wire is so adjusted that throttle fully closes with outward handlebar grip movement; engine should be at normal operating temperature. Turn screw (4) to the right for faster idling speed; to the left for slower idling. It is advisable to adjust for a fairly fast closed throttle idling speed. An engine does not start and run at its best when adjusted for extremely slow idling. Readjusting idling speed may change idling mixture slightly, therefore after making this adjustment, it may be found necessary to make minor readjustment of adjusting screw (3).
CARE OF MAGNETO-GENERATOR

After every 100 hours or 2,000 miles of service, whichever occurs first, give the following attention:

Inspect circuit breaker points (1, Figure 5); clean points and readjust gap, if necessary. Correct point gap is .018".
Apply two drops of oil to felt oiler (4). Use the same oil used for engine lubrication. Do not apply more than two drops of oil, as excess oil is likely to get on points, resulting in poor contact and abnormal point burning. After applying oil, wipe off any excess oil that can be observed around felt oiler and on breaker cam (2), also be sure points are clean and free of oil.

Inspecting and Cleaning Points: Normally point contact surfaces should appear clean, dull grey, slightly rough.

If points are found dirty but otherwise in apparent good condition, clean with a strip of hard surfaced, heavy paper saturated with clean, white gasoline.

If points are found with deep pits and/or badly burned areas, it is advisable to have point assembly replaced with a new assembly, rather than attempt to redress and smooth up the old points.

Adjusting Points: Disconnect wire from spark plug to avoid any chance of engine starting, and with starter crank turn engine to the position where cam follower (3) is definitely on the highest point of cam (2). Point gap will then be at its maximum. Check gap with a feeler gauge and if it is found not exactly .018", readjust to correct gap by slightly loosening pivot screw (5) and loosening lock screw (6) just enough to allow tapping breaker assembly base near screw (6) to shift it as required to attain correct point gap.

After correct adjustment is attained, securely tighten screws (6) and (5) and recheck gap.

IGNITION TIMING

Ignition is timed to occur when piston is 7/32" before top dead center.

After engine is correctly timed at the factory, the magneto-generator base and crankcase are marked (12, Figure 5) for guidance when engine may later require tuning and servicing.

Good engine performance depends on maintaining correct ignition timing. The important thing is maintaining correct ignition timing is keeping circuit breaker point gap correctly adjusted to .018" (See "Care of Magneto-Generator"), as the gap was adjusted when engine was timed at the factory. If point gap is allowed to close up to less than .018", ignition will be late; if gap is more than .018", ignition will be early.

It is advisable to have your dealer check ignition timing in relation to piston position each time circuit breaker point assembly requires renewal, or at least once a year. If with point gap adjusted to .018", he finds time of ignition is not exactly right, he will re-adjust by loosening screws (8 and 9, Figure 5) and shifting magneto-generator base clockwise to retard timing or counterclockwise to advance timing, as may be needed. Spark occurs just as points start opening and break their contact.
Figure 6. Wiring Diagram
WIRING DIAGRAM KEY

A. Loom (two wires) one Red wire, one Green wire from headlamp (6) to light switch (4) on left, rear side of fork upper plate.

C. Loom (two wires) Red wire with knife terminal from switch (4) to knife terminal on end of wire from lighting coil at top of magneto-generator. Green wire with eyelet terminal from switch (4) to junction terminal (8) on rear mudguard.

D. Loom (one wire) Green wire from junction terminal (8) on rear mudguard to tail lamp (10).

1. Switch Terminal – Green wire through loom (C) to junction terminal (8) on rear mudguard.

2. Switch Terminal – Green wire through loom (A) to headlamp.

3. Switch Terminal – Red wire through loom (A) to headlamp.

B. Switch Terminal – Red wire through loom (C) to knife terminal junction with wire from lighting coil on magneto-generator.

4. Light Switch – (Backside view).

5. Light Switch – (Operating side).

6. Headlamp – with one Red and one Green wire through loom (A) to light switch (4).

7. Magneto-Generator.

8. Junction terminal on rear mudguard – Green wire through loom (C) to terminal #1 of light switch (4). Green wire through loom (D) to tail lamp.

9. Rear Mudguard.

10. Tail lamp – with one Green wire through loom (D) to junction terminal #8, on rear mudguard.

11. Knife terminal wire connection with plastic insulator.

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