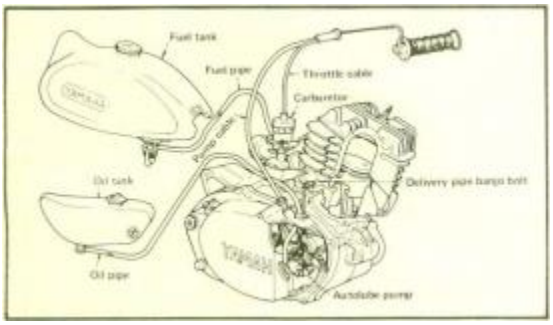
Yamaha Autolube System

The Yamaha Autolube is an advanced automatic lubrication system specifically designed for 2-stroke engines. Developed by the Yamaha Technical Institute, this system accurately meters oil to the engine based on engine speed and throttle position, using a precision pump. Unlike other 2-stroke engines that require pre-mixed fuel and oil, the Yamaha Autolube system ensures the engine receives proper lubrication without the need for manual mixing. Controlled lubrication is automatically delivered to the engine's working parts, making it one of the most efficient lubricating systems for 2-stroke engines. The oil pump is driven by the engine through a reduction gear system and is synchronized with the throttle.



Key Features of Yamaha Autolube:

1. No Pre-Mixing Required: Eliminates the hassle of manually mixing gas and oil.

2. Optimum Lubrication: Automatically adjusts lubrication based on engine speed and throttle position.

3. Reduces Spark Plug Fouling: Injects just the right amount of oil, minimizing the risk of spark plug fouling.

4. Reduced Oil Consumption: Cuts oil consumption by up to one-third compared to traditional 2-stroke engines.

5. Less Exhaust Smoke: Results in a cleaner exhaust with less smoke.

6. Engine Compression as a Brake: Oil injection continues based on engine RPM, even when the throttle is closed, allowing engine braking.

7. Improved Performance: No excess oil interferes with the combustion process, ensuring complete combustion of the air-fuel mixture.

8. Prolonged Engine Life: The system delivers clean, undiluted oil with each injection, extending the engine's lifespan.

Oil Pump Handling:

The oil pump in the Yamaha Autolube system is a precision-engineered component. It is crucial not to attempt disassembling the pump. When removing the oil pump from the engine, ensure it is protected from dust and debris. After reinstallation, the pump should be properly bled and adjusted. Proper handling is essential for maintaining the pump's reliability and preventing issues.

Checking Minimum Pump Stroke:

1. Procedure:

- Fully close the throttle.

- Rotate the oil pump starter plate in the direction indicated by the arrow on the plate.

- Observe the gap between the adjustment pulley and adjustment plate, ensuring it is as wide as possible.

- Measure this gap for accuracy.

By following these guidelines, the Yamaha Autolube system will ensure reliable performance and a longer engine lifespan, making it one of the most effective lubrication systems for 2-stroke engines.

Handling of the Oil Pump

The oil pump is a precision-engineered component, and proper handling is essential to ensure its reliability and longevity. Do not attempt to disassemble the oil pump under any circumstances. When removing the oil pump from the engine, it is important to protect it from contaminants such as dust and dirt. After reinstalling the pump, make sure to bleed and adjust it correctly. This careful handling will help avoid any operational issues with the pump.

1. Checking the Minimum Pump Stroke

a. Procedure:

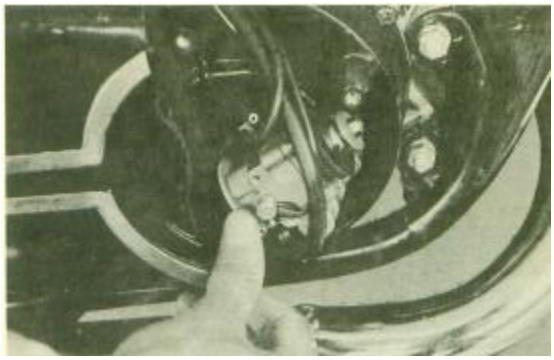
1) Ensure that the accelerator grip is fully closed.

2) Rotate the oil pump starter plate in the direction of the arrow marked on the plate.

3) While rotating, observe the gap between the adjustment pulley and the adjustment plate. Ensure the gap is as wide as possible.

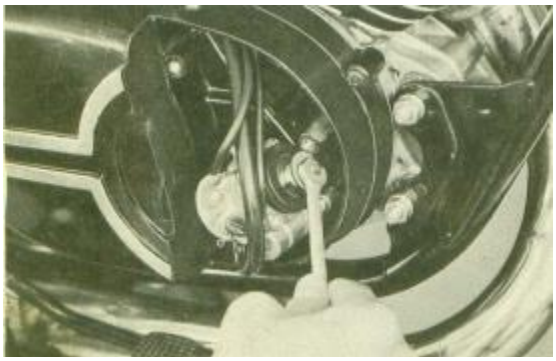
4) Measure the gap between the adjustment pulley and the adjustment plate.

By following these steps, you can confirm that the oil pump is functioning within the correct specifications for optimal engine performance.



b. Adjustment Procedure:

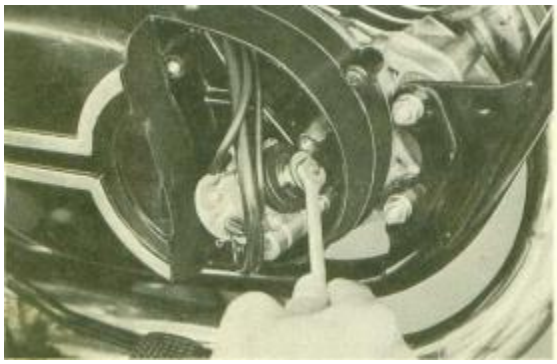
1. Remove the Adjustment Plate:



- Take off the adjustment plate lock nut and the adjustment plate.

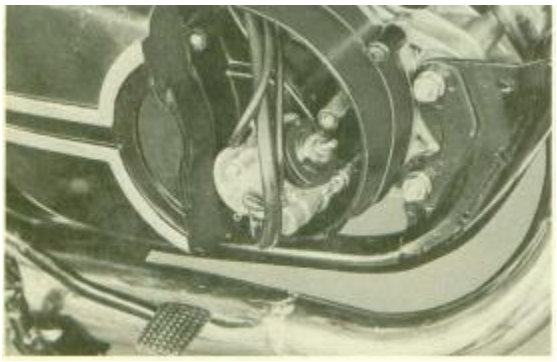
2. Modify the Minimum Pump Stroke:

- To adjust the minimum pump stroke, add or remove a 0.1 mm adjustment shim at the location where the adjustment plate was previously installed.



3. Reinstall and Measure:

- Once the shim has been adjusted, reinstall the adjustment plate and lock nut. Then, recheck the minimum pump stroke to ensure it falls within the correct tolerance.



2. Pump and Carburetor Setting

After confirming the minimum pump stroke, proceed with adjusting the oil pump and carburetors as follows:

a. Adjustment Procedure:

1. Synchronize the Carburetors:

- Adjust both carburetors so that the slides raise and lower simultaneously. Ensure the throttle cables have the correct amount of slack at the carburetors. (Refer to the carburetor section for additional details.)

2. Throttle Cable Adjustment:

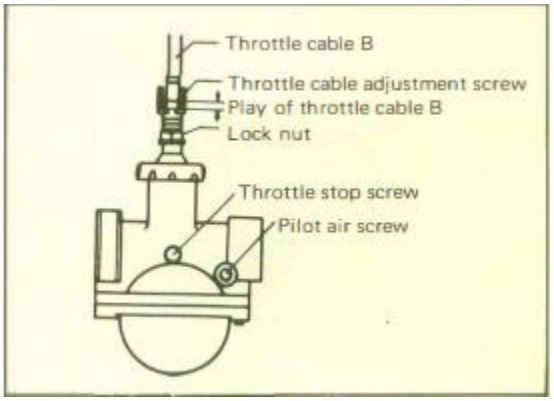
- Adjust the throttle cable at the throttle grip, ensuring proper slack. (Refer to Fig. 1-3-6 for reference.)

3. Set Idle Mixture Screws:

- Turn the idle mixture screws to 1-3/4 turns out from a lightly seated position.

4. Warm Up the Engine:

- Start the engine and allow it to warm up. Synchronize the idle speeds to achieve an idle range of 1,300-1,500 rpm.



5. Throttle and Cable Slack Adjustment:

- Completely close the throttle grip, then twist it open just enough to remove all cable slack, stopping before the carburetor slides begin to lift.

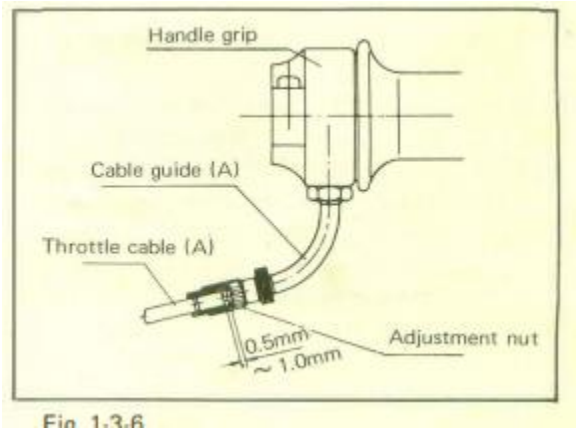
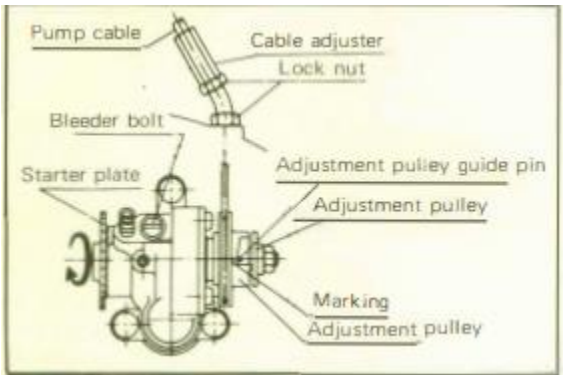


Fig. 1-3-6

6. Pump Cable Adjustment:

- Adjust the pump cable so that the raised mark on the pump pulley aligns with the guide pin. This adjustor is located at the bottom end of the cable, screwed into the top of the right case.

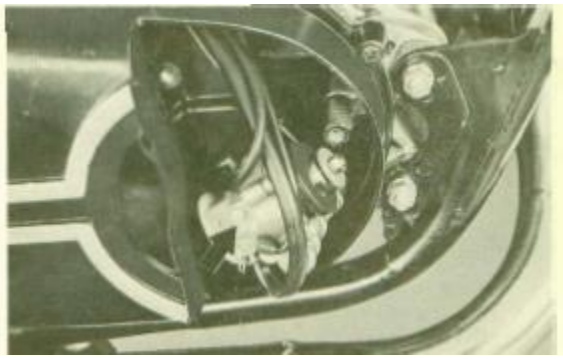


3. Bleeding the Oil Pump

When the oil pump has been removed or the Autolube oil tank has run dry, air may enter the system, causing irregular oil flow after reinstalling the pump or refilling the oil tank. To prevent irregular oil flow, follow this bleeding procedure:

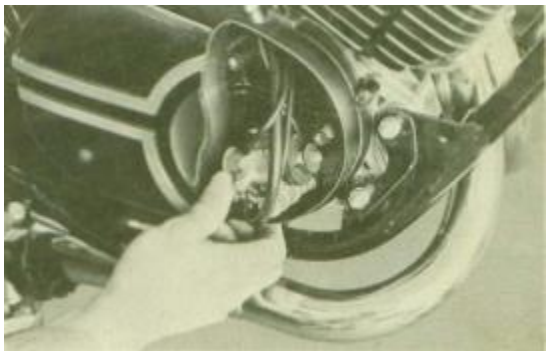
1. Remove the Bleeder Bolt:

- Start by removing the bleeder bolt from the oil pump.



2. Rotate the Starter Plate:

- Rotate the starter plate in the direction indicated by the arrow on the plate. Continue rotating until all air is expelled from the pump.



3. Tighten the Bleeder Bolt:

- Once all the air has been removed, tighten the bleeder bolt securely.

4. Accelerator Grip:

- To expedite the bleeding process, fully open the accelerator grip. As the plunger stroke increases, the air will bleed more quickly.

By following these steps, the oil pump will operate correctly, ensuring smooth and consistent lubrication for the engine.

Description of 5-Port Cylinder

1. Extract and structure text from a PDF with multiple columns more accurately.

2. Output the text into a well-organized format (such as a Word document), keeping columns separate and preserving the content.

Would you like to:

- Implement additional formatting options for extracted text, such as handling headers, sub-headers, or indented sections?

- Add handling for text that may be split between lines (as seen in the word "limitations" being split as "I imitations")?

Let me know if these are the features you need or if you're facing another specific issue!