WSM

WORKSHOP MANUAL

T1880,T2080,T2380

Kubota

KiSC issued 02, 2016 A

9 MOWER

Inspect the crankshaft bearing journal surfaces for wear, scoring, grooving, etc. If they show signs of damage or are out of running clearance specifications, the crankshaft must be replaced.

Inspect the crankshaft keyways. If worn or chipped, replacement of the crankshaft will be necessary.

Inspect the crankpin for wear, score marks or aluminum transfer. Slight score marks can be cleaned with crocus cloth soaked in oil. If wear limits are exceeded (see "1. GENERAL, [7] Specifications"), it will be necessary to replace the crankshaft.

[4] Crankcase

Inspection and Service

Check all gasket surfaces to make sure they are free of gasket fragments and deep scratches or nicks.

Check the cylinder wall for scoring. In severe cases, unburned fuel can wash the necessary lubricating oil off the piston and cylinder wall. The piston rings make metal to metal contact with the wall, causing scuffing and scoring. Scoring of the cylinder wall can also be caused by localized hot spots from blocked cooling fins or from inadequate or contaminated lubrication.

If the cylinder bore is scored, worn, tapered, or out-of-round, resizing may be possible. Use an inside micrometer or telescoping gauge to determine the amount of wear (refer to "1. GENERAL, [7]"). If wear exceeds the published limits, a 0.08 mm (0.003 in.) oversize piston is available. If the cylinder will not clean up at 0.08 mm (0.003 in.) oversize, a short block or replacement engine will need to be considered.

Honing

While most commercially available cylinder hones can be used with either portable drills or drill presses, the use of a low speed drill press is preferred as it facilitates more accurate alignment of the bore in relation to the crankshaft counter bore. Honing is best accomplished at a drill speed of about 250 rpm and 60 strokes per minute. After installing coarse stones in hone, proceed as follows:

1. Lower the hone into the bore and, after centering, adjust it so that the stones are in contact with the cylinder wall. Use of a commercial cutting-cooling agent is recommended.
2. With the lower edge of each stone positioned even with the lowest edge of the bore, start the drill and honing process. Move the hone up and down while resizing to prevent the formation of cutting ridges. Check the size frequently. Make sure the bore is cool when measuring.
3. When the bore is within 0.064 mm (0.0025 in.) of desired size, remove the coarse stones and replace with burnishing stones. Continue with the burnishing stones until within 0.013 mm (0.0005 in.) of desired size and then use finish stones (220-280 grit) and polish to final size. A crosshatch should be observed if honing is done correctly. The crosshatch should intersect at approximately 23-33× off the horizontal. Too flat an angle could cause the rings to skip and wear excessively, too steep an angle will result in high oil consumption (refer to Figure 9-2).

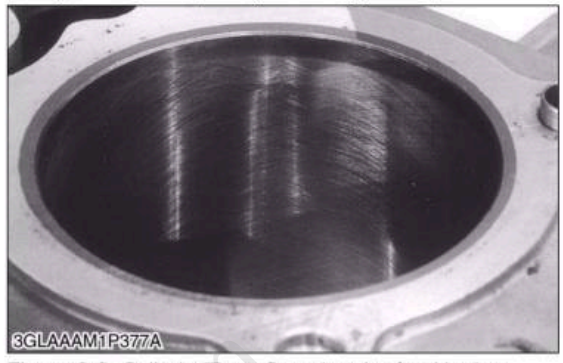


Figure 9-2. Cylinder Bore Crosshatch after Honing.

4. After honing, check the bore for roundness, taper, and size. Use an inside micrometer, telescoping gauge, or bore gauge to take measurements. The measurements should be taken at three locations in the cylinder - at the top, middle, and bottom. Two measurements should be taken (perpendicular to each other) at each of the three locations.

Clean Cylinder Bore after Honing

Proper cleaning of the cylinder walls following honing is critical. Grit left in the cylinder bore can destroy an engine in less than one hour of operation after a rebuild. The final cleaning operation should always be a thorough scrubbing with a brush and hot, soapy water. Use a strong detergent that is capable of breaking down the machining oil while maintaining a good level of suds. If the suds break down during cleaning, discard the dirty water and start again with more hot water and detergent. Following the scrubbing, rinse the cylinder with very hot, clear water, dry it completely, and apply a light coating of engine oil to prevent rusting.

[5] Measuring Piston-to-Bore Clearance

Before installing the piston into the cylinder bore, it is necessary that the clearance be accurately checked. This step is often overlooked, and if the clearances are not within specifications, engine failure will usually result.

■ **NOTE**

- **Do not use a feeler gauge to measure piston-to-bore clearance - it will yield inaccurate measurements. Always use a micrometer.**

Use the following procedure to accurately measure the piston-to-bore clearance:

1. Use a micrometer and measure the diameter of the piston perpendicular to the piston pin, up 8 mm (0.314 in.) from the bottom of the piston skirt as indicated in Figure 9-3.

Throttle Control Installation

1. Loosen two cable clamp screws on speed control bracket assembly.
2. Move application throttle control lever to maximum full (fast) throttle position, and then move it back 3/16" or 4.75 mm. Insert cable boden wire into throttle control lever on control plate.
3. Position throttle cable under cable clamp.
4. Early Models: Early models use a single alignment hole to set engine RPM. Align hole in throttle lever with hole in speed control bracket by inserting a pencil or 6.35 mm (1/4 in.) drill bit.

   Later Models: Later models utilize a new design control assembly, identified by two opposing alignment holes (close to throttle lever pivot), instead of one. Based upon intended high speed (RPM) setting, throttle cable adjustment must be made matching hole in control lever with appropriate alignment hole. Use lower (left side) hole for high-speed settings 3000 RPM and above. Use upper (right side) hole for high-speed settings less than 3000 RPM. Move throttle lever to align hole in lever with appropriate hole in control bracket. Insert a pencil or a 6.35 mm (1/4 in.) drill bit to hold in position.

   Current Models: Current models use a new control assembly, identified by three alignment holes (close to throttle lever pivot). Based upon intended high-speed (RPM) setting, throttle cable adjustment must be made by matching hole in control lever with correct alignment hole. Use appropriate hole for corresponding high-speed settings. Move throttle lever to align hole in lever with correct hole in control bracket. Insert a pencil or a 6.35 mm (1/4 in.) drill bit to hold in position.
5. Pull on outer shield of throttle control cable to remove any slack. Tighten cable clamp securely.
6. Move application throttle lever to slow position, then to full throttle. Check engine control to ensure it stops against stop screw, which means it is properly set.

Choke Control Installation

1. Connect choke cable boden wire to engine choke control lever on speed control bracket assembly.
2. Position choke cable under cable clamp.
3. Push/move choke control to off position in application panel until it bottoms, then pull it back approximately 1/16 in.
4. Push on choke cable, ahead of clamp on engine control plate, until choke lever stops. Do not force. Then tighten cable clamp screw.
5. Move choke control until it stops (on position). Check that choke link cannot be moved towards carburetor by applying finger pressure on lower link/lever below engine control plate. If choke link moves, readjust by following steps 3 and 4.
6. Push/move choke control in/down until it bottoms. Choke lever and link should be to right at end of its travel, with linkage free so engine does not run on partial choke.

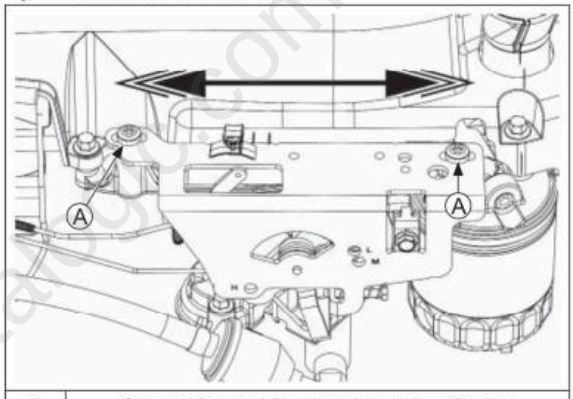
Starting an Engine Equipped with Separate Control Cables

1. Place throttle control midway between slow and fast positions. Place choke control into on position.
2. Start engine.
3. For a Cold Engine – Gradually return choke control to off position after engine starts and warms up.

   Engine/equipment may be operated during warm up period, but it may be necessary to leave choke partially on until engine warms up.
4. For a Warm Engine – Return choke to off position as soon as engine starts.

Changing High Speed (RPM) on Engines with Separate Controls (Increase or Decrease RPM)

Speed Control Bracket Details



A	Speed Control Bracket Mounting Screw

1. Check that governor spring and installation matches intended high speed RPM operating range.
2. Start engine, move application throttle lever to full throttle/fast, and loosen mounting screws of main speed control bracket to allow repositioning.
3. To increase RPM: Move speed control bracket, towards carburetor. To decrease RPM: Move speed control bracket, away from carburetor. Check RPM with a tachometer and tighten screws when correct setting has been obtained.
4. To ensure that RPM has been obtained, move throttle lever to low idle/slow then back to full throttle/ fast position and check RPM with a tachometer.

Setting Low Idle RPM

1. Move application control to slow position.
2. Using a tachometer, check RPM. Then, using a screwdriver, turn low idle speed screw inward (clockwise) to increase RPM, and outward (counterclockwise) to lower RPM.

two hex flange nuts to 6.2-7.3 N·m (55-65 in. lb.). See Figure 10-70.

5. Connect the breather hose to the air cleaner base and secure with the clamp. See Figure 10-71.

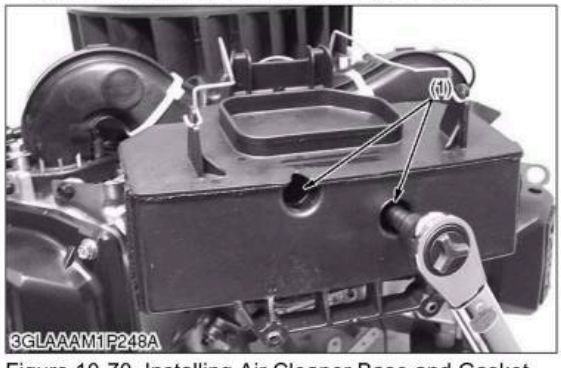


Figure 10-70. Installing Air Cleaner Base and Gasket.

(1) Mounting Location

Figure 10-71. Connecting Breather Hose.

(1) Breather Hose and Clamp (2) Connection Port

6. Move the governor lever toward the carburetor as far as it will go (wide-open throttle), and hold in position.
7. Insert a nail or similar tool into the hole on the cross shaft and rotate the shaft counterclockwise as far as will turn, then torque the hex nut to 6.8 N·m (60 in. lb.). See Figure 10-72.

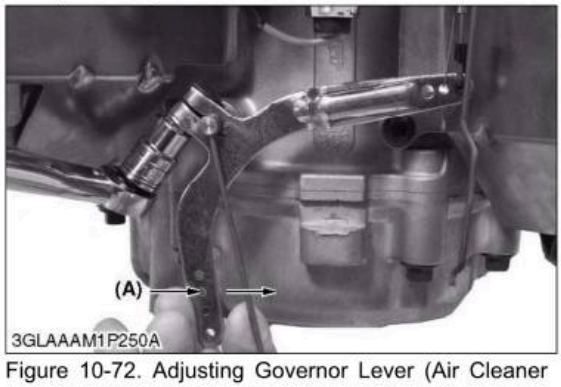


Figure 10-72. Adjusting Governor Lever (Air Cleaner Base Removed for Clarity).

(A) Move / Rotate

(27) Install Air Cleaner Element

1. Install the air cleaner element (with precleaner if equipped), onto the air cleaner base. Secure with the latch. See Figure 10-73.

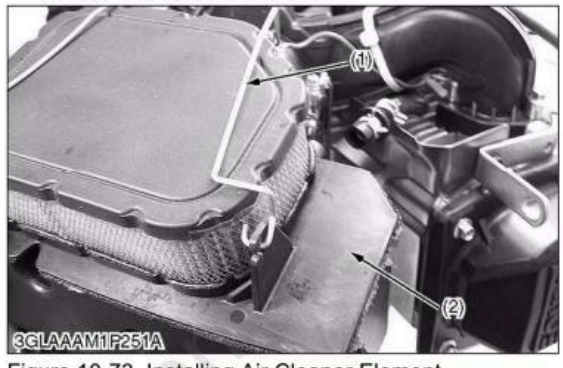


Figure 10-73. Installing Air Cleaner Element.

(1) Latch (2) Element

(28) Install Throttle And Choke Controls

1. Connect the choke linkage to the choke actuator lever on the main control bracket assembly. See Figure 10-74.

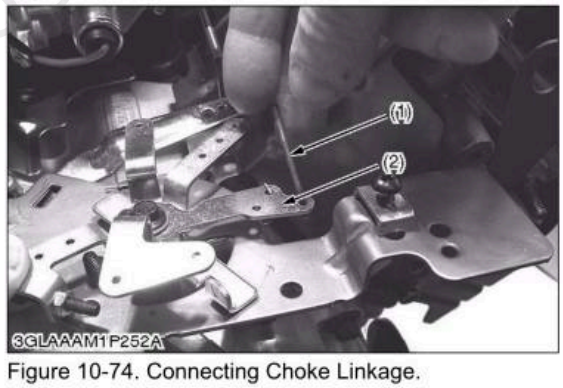


Figure 10-74. Connecting Choke Linkage.

(1) Choke Linkage (2) Choke Actuating Lever

2. Install the main control bracket to the cylinder heads using the four hex flange screws. The two lower screws should also secure the inner baffles. Torque the screws to 10.7 N·m (95 in. lb.) into new holes, or 7.3 N·m (65 in. lb.) into used holes. See Figure 10-75.

Full Version Available

Kubota T1880 Lawn Tractor Workshop Manual

This is a short preview. The complete manual contains all chapters, wiring diagrams, torque specifications and full service procedures.