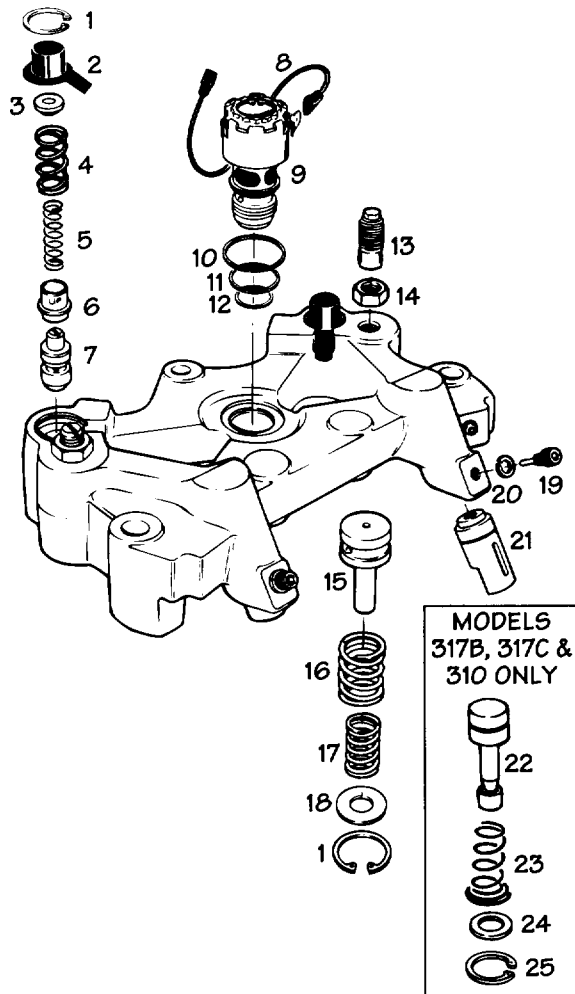


Tune-up Kit Instructions

Models C317/C317A/B/C

P/N 018162



Tune-up Kit Contents

Illus. No.	P/N	Part Name	Quantity
1	011284	Retaining ring	6
2	011252	Control valve cover	6
3	018697	Control valve cover insert	6
4	019190	Control valve outer spring	6
5	019504	Control valve inner spring	6
6	011251	Control valve collar	6
7	018434	Control valve	6
8	014619	Solenoid harness (C317/C317A)	3
8	017348	Solenoid harness (317B/317C)	3
10	001081	Upper seal ring	3
11	001082	Center seal ring	3
12	001083	Lower seal ring	3
23	019353	Master piston spring	6
NI	002299	Terminal leadout	3
NI	015906	Spacer gasket	3

Instructions

These instructions briefly describe how to properly remove, clean and reinstall engine brake components. For additional information on the Model 317 Series engine brakes, refer to the appropriate Jacobs Engine Brake Installation Manual.

NOTE:
ADDITIONAL PARTS MAY BE NEEDED FOR C317 AND C317A. REFER TO THE MASTER PISTON AND SLAVE PISTON SECTIONS ON PAGE 3.

Use OSHA-approved cleaning solvent for cleaning parts. Original parts to be reused should be inspected for wear and replaced as required. Be sure to coat parts with clean engine oil when reinstalling them. Wear safety glasses where indicated.



NEVER REMOVE ANY ENGINE BRAKE OR COMPONENT WITH THE ENGINE RUNNING.

Access Engine Brake

1. Thoroughly clean engine.
2. Remove the valve covers.
3. Disconnect the lead wires from the solenoid valves.
4. Remove the mounting nuts and washers from each engine brake housing. Remove the housings.



Disassemble Housings

The following describes the disassembly and inspection procedure for each component group. Note that during reassembly, the parts included in the kit are to replace the appropriate parts removed from the housing.

Solenoid Valve



DO NOT DISASSEMBLE OR TAMPER WITH THE SOLENOID VALVE. ENGINE DAMAGE COULD RESULT. THE SOLENOID VALVE IS NOT FIELD SERVICEABLE.

1. Disconnect the solenoid harness. Using 7/8" socket and extension, unscrew the solenoid valve.
2. Remove and discard the three rubber seal rings. If the lower ring stays in the bottom of the housing solenoid bore, remove with a seal pick.
3. Wash out the solenoid valve with an approved cleaning solvent. Use a brush to clean the oil screen. When clean, dry the valve with compressed air.
4. Clean out the solenoid valve bore in the housing. Use clean paper towels. Never use rags as they may leave lint and residue which can plug the oil passageways.
5. Using the new solenoid seal rings, coat them with clean lube oil. Install the upper and center seal rings on the solenoid body and the lower seal ring into the bottom of the solenoid bore in the housing.
6. Be sure the seals are seated properly and carefully screw the solenoid into the housing without unseating the seals. Torque the valve to 5 lb.-ft. (7 N•m). Be careful not to twist the seals while installing.

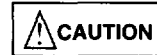
Control Valve



REMOVE CONTROL VALVE COVERS CAREFULLY AS THEY ARE UNDER LOAD FROM THE CONTROL VALVE SPRINGS. REMOVE WITH CARE TO AVOID PERSONAL INJURY.

1. Apply pressure on the control valve cover and rotate the retaining ring ears to the slot in the housing. Remove the retaining ring using retaining ring pliers.
2. Slowly remove the cover until spring pressure ceases, then remove the two control valve springs, insert and collar.

3. Using needle-nose pliers, reach into the bore and grasp the stem of the control valve. Remove the control valve.
4. Discard all parts.
5. Thoroughly clean the control valve bore in the housing using clean paper towels.
6. Reassemble the new parts contained in the tune-up kit, reversing the removal procedure.



BE SURE THE CONTROL VALVE IS INSTALLED WITH THE LONGER SIDE OF THE SLEEVE UP (SEE FIG. 1). ENGINE DAMAGE MAY RESULT IF INSTALLED UPSIDE DOWN.

7. Rotate the retaining ring so that the ears are located away from the slot in the housing (see Fig. 2).

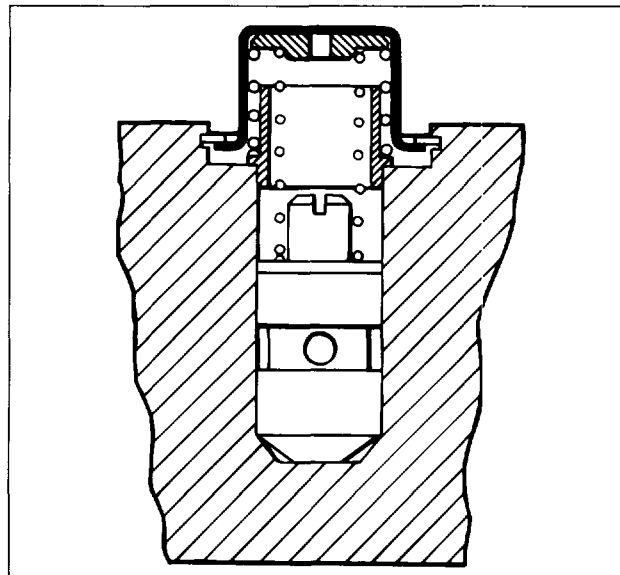


FIG. 1

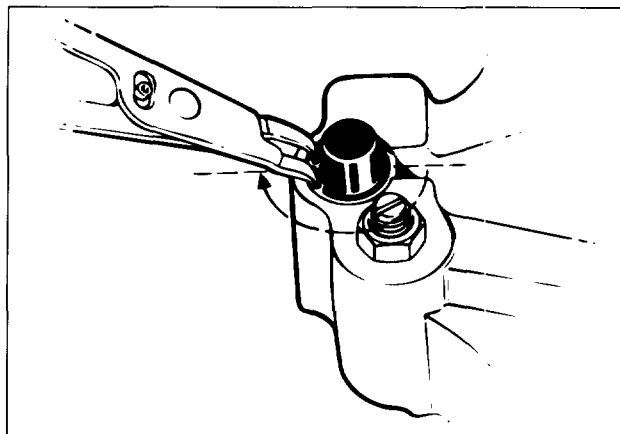


FIG. 2

Master Piston Models C317 and C317A

1. Remove the anti-rotation pin and lock washer from the housing.
2. Remove the master piston assembly.
3. Look at the part number on the base of the piston. If it is P/N 014710, or has no part number,
 - a. Replace the pistons with P/N 017381 Rev. "B" for Model C317.
 - b. Replace the pistons with a Master Piston Upgrade Group (P/N 020557) for Model C317A.

NOTE:
REPLACEMENT PISTONS MUST BE ORDERED SEPARATELY.

4. If the piston part number is okay, make sure that the piston is free of score or wear marks and moves freely in the bore. If not, replace as listed for each model in Step 3.
5. Compress the master piston spring using a pick or probe. Insert a small diameter pin into the access hole and remove the probe (see Fig. 3).

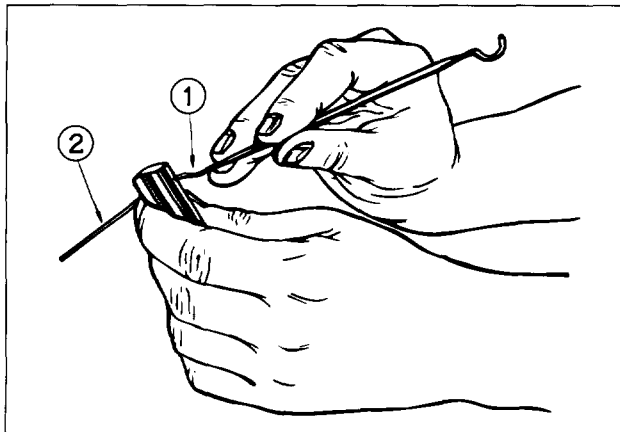


FIG. 3

6. Insert the master piston into the housing bore. Install the anti-rotation pin and lock washer in the housing and remove the holding pin from the access hole.



MAKE SURE THAT THE ANTI-ROTATION PIN DOES NOT GO THROUGH THE SPRING COILS, BUT THAT THE SPRING SITS SQUARELY ON THE SPRING SEAT AND THE PIN IS ON THE OTHER SIDE OF THE SEAT (SEE FIG. 4).

7. Using a 3/16" hex key, torque the anti-rotation pin to 40 lb.-in. (4.5 N•m).

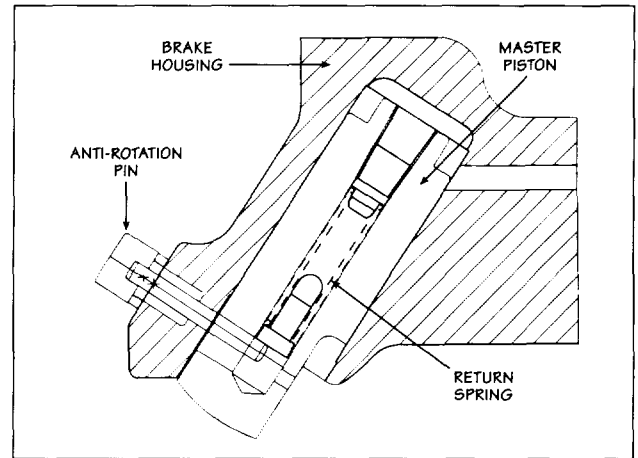


FIG. 4

Master Piston Models 317B and 317C

1. While depressing the retainer, remove the master piston snap ring. Remove the master piston spring and piston and inspect the piston for score or wear marks. Replace if necessary.
2. Clean the master piston bore using a clean paper towel.
3. Install the master piston into the housing using the new springs included in the kit. Make sure that the snap ring is fully seated in the housing groove.

Slave Piston Adjusting Screws

Look for the part number printed on the top of the adjusting screws. If the part number is 014811, Jacobs recommends the adjusting screws be replaced using the Model C317/C317A Upgrade Kit, P/N 019505 (order separately). Instructions for the replacement are included in the upgrade kit.

Brake Housing Installation

1. Position the engine brake housings over the mounting studs and install the hold-down nuts, finger tight.
2. Install a mounting bolt through each housing and through the spacer.
3. Make sure that the slave piston foot is aligned squarely over the pin in the exhaust bridge. Reposition the housing if necessary.
4. Torque the hold-down nuts to 59 lb.-ft. (80 N•m).
5. Torque the mounting bolts to 41 lb.-ft. (55 N•m).

6. For Model C317 only: Jacobs recommends replacing any Extended Front Mounting Studs, P/N 016088, with the Standard Bolt, P/N 014800 (needs to be ordered separately).
7. Set the slave piston lash according to the appropriate installation manual.

Spacer Installation

1. Install the new spacer seal included in the tune-up kit. Be sure to leave a 0.375" (9.5 mm) gap at each end of the seal. Cut to length as necessary.
2. Install the three covers on the valve cover base.
3. If the spacer originally had a spade terminal leadout, replace it with the terminals provided in the tune-up kit.
4. Connect a new solenoid lead wire (either spade or bullet type as appropriate) to both the solenoid and the inside of the terminal leadout. Connect the engine's solenoid wire to the outside of the terminal leadout.
5. Replace the valve cover and cover bolts. Torque the cover bolts to 5 lb.-ft. (7 N•m).

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