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|------------------------|----------------------------|
| 1—Injection Pump Lever | 4—Fuel Injection Pump |
| 2—Speed Control Cable | 5—Slow Idle Override Screw |
| 3—Fast Idle Stop | 6—Slow Idle Stop |

Fig. 21-Engine Speed Adjustment

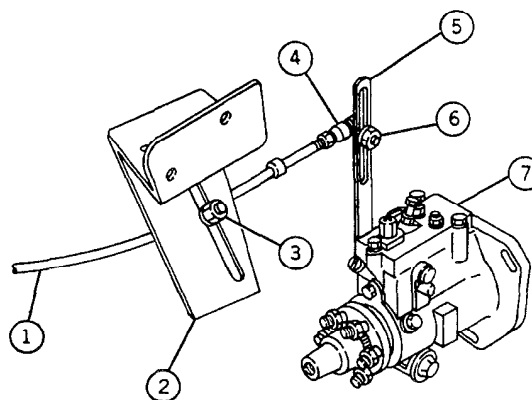
- Engage engine cold weather disconnect clutch.
- Disconnect engine speed control cable quick disconnect end (2, Fig. 21) from injection pump lever (1).
- Check injection pump throttle lever for proper operation. Check to see that there is no debris between the fast and slow idle stop screws and stops, and that lever override works freely.
- Run engine and rotate injection pump throttle lever fully to the rear until it touches the fast idle stop (3). Record engine speed. It should read 2300 to 2320 rpm. If not correct, adjust injection pump fast idle stop screw to obtain specified speed.
- Back out the slow idle override screw (5) on the injection pump lever far enough to make sure the slow idle stop screw (6) in the injection pump cover is being contacted.
- Rotate the injection pump lever fully forward until the slow idle stop screw in the injection pump cover is contacted. Record the engine speed. It should read 975 to 1025 rpm. If not correct, adjust slow idle stop screw (6) to obtain the specified speed.

7. With the injection pump lever held against the slow idle stop, adjust the slow idle override screw (5) until the engine speed just begins to raise above the slow idle speed set in Step 6. At this point, tighten the override screw lock nut.

8. Reconnect the engine speed control cable (2).

NOTE: Whenever either the fast or slow idle speeds are adjusted on the injection pump, the engine speed control lever to injection pump cable adjustment and engine speed control lever to automatic control valve variable orifice lever linkage adjustment should be checked.

Adjust engine speed control lever to injection pump cable linkage as follows:



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| 1—Fuel Injection Pump Cable | 5—Fuel Injection Pump Lever |
| 2—Cable Support Bracket | 6—Cable End |
| 3—Cable Clamp | 7—Fuel Injection Pump |
| 4—Quick Disconnect Ball Joint | |

Fig. 22-Fuel Injection Pump Cable Adjustment

- Place the throttle lever parallel to the forward and reverse speed control lever, with the forward and reverse speed control lever locked in the neutral position.
- Adjust the injection pump cable to cross shaft lever quick disconnect ball joint so there is 5/8 inch (16 mm) of thread showing between the quick disconnect ball joint and the end of thread on the cable. Secure the lock nut and connect the cable to cross shaft lever.
- Move the throttle lever against the fast idle stop in the console.

4. Loosely connect the cable clamp and cable (1, Fig. 22) to the engine cable support bracket (2). Separate the two parts of the quick disconnect ball joint (4). Attach the ball portion of the quick disconnect ball joint to the injection pump lever (5). Attach the remaining portion of the ball joint to the cable so there is 5/8 inch (16 mm) of thread showing between quick disconnect ball joint and the end of the thread on the cable. Secure cable end lock nut and attach the cable to the injection pump lever (5).

5. With the throttle lever firmly against the fast idle stop on the console, slide the cable (1) up or down in the injection pump lever (5) and cable support bracket (2) slots, so that the cable makes approximately a 90 degree angle with the injection pump lever (5) when the lever is just contacting the fast idle stop on the injection pump (7), ie., just touching the override spring. Secure the cable end (6) on the injection pump lever (5) and cable clamp (3) on the support bracket (2).

6. Move the throttle lever toward slow idle until the automatic control valve variable orifice lever just contacts the low variable orifice stop on the transmission control valve (lever rotated to the rear). Now adjust the throttle lever slow idle stop in the console, so the stop just contacts the lever.

7. With the throttle lever against the slow idle stop in the console, check that the injection pump lever is also just contacting the slow idle stop on the injection pump (7). If the lever is just contacting the stop, the cable adjustment is correct. If it is not just contacting the stop, proceed as follows:

Loosen the quick disconnect ball joint end (6) in the injection pump lever (5) slot. Slide the cable end up or down as necessary so the lever (5) just contacts the slow idle stop on the injection pump (7). Secure cable end on injection pump lever.

8. Recheck the fast idle setting. Do this by moving the throttle lever until the injection pump lever (5, Fig. 22) just contacts the fast idle stop. Check to see that the automatic control valve variable orifice lever also is just contacting the stop. Do this at both fast and slow idle positions.

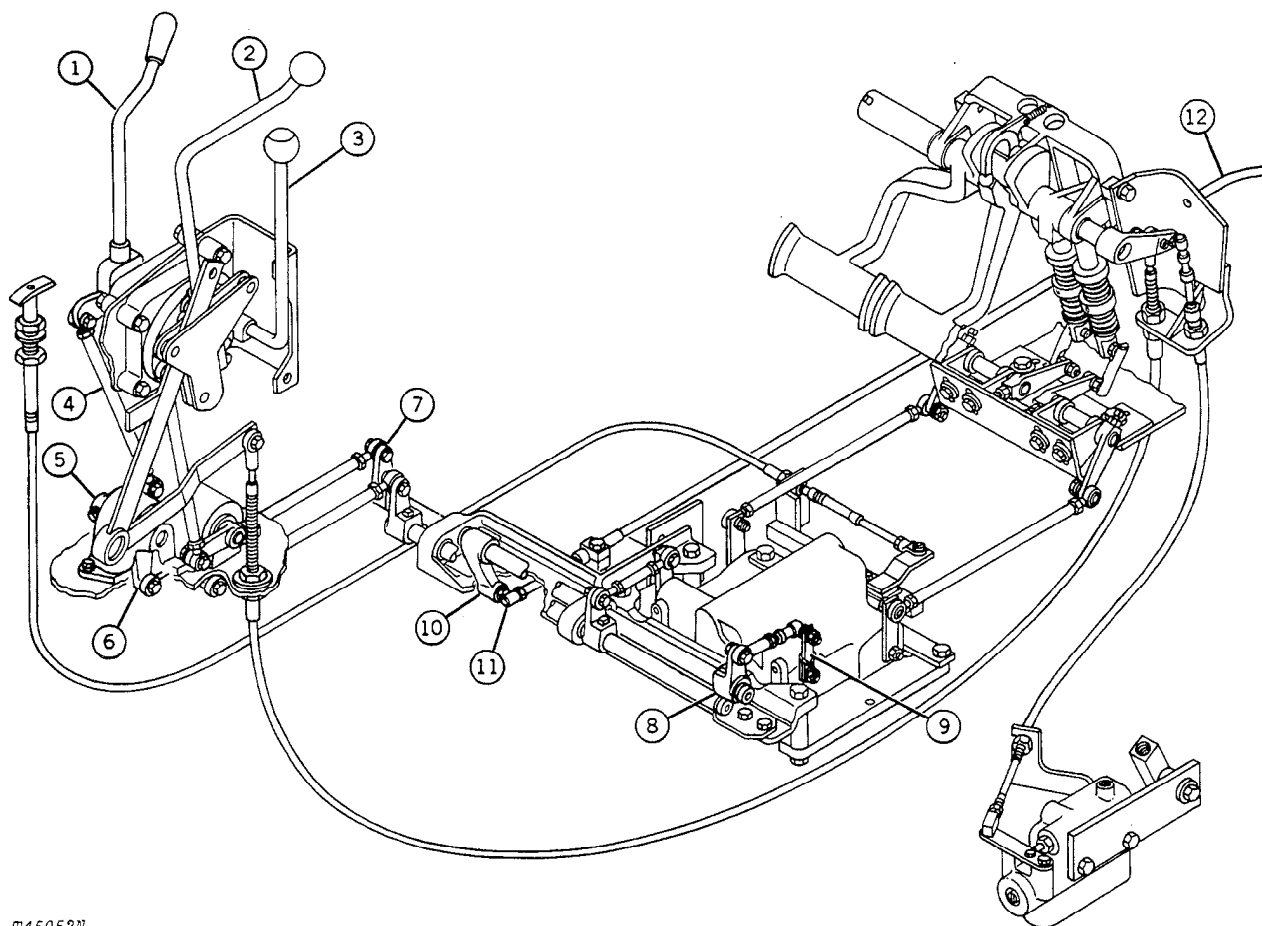
9. If both the slow and fast idle positions cannot be obtained in Step 8 above, or overtravel exists at the fast idle position, the procedure from Step 5 to Step 8 must be repeated beginning with a new cable clamp position (3, Fig. 22) in the slotted cable clamp support bracket (2).

NOTE: It may also be necessary to adjust the threaded portion of the quick disconnect ball joint at the injection pump lever to obtain the approximate 90 degree angle at the fast idle position.

10. Adjust the throttle lever stops in the console, so there is 1/2 inch (12.7 mm) of over travel at both the fast and slow idle positions. If this cannot be obtained, adjust the stops so that the lever strikes the stops just before reaching the end of the slot in the console panel.

Adjust engine speed control lever to automatic control orifice lever linkage adjustment as follows:

- 1 - Place the throttle lever (1, Fig. 23) parallel to the forward and reverse speed control lever (2), with the forward and reverse speed control lever locked in the neutral (3) position.
- 2 - Adjust link (4) between the throttle lever pivot and pivot casting upper lever (5), so the pivot casting lower lever (6) is in the vertical straight down position.
- 3 - Adjust link from pivot casting lower lever (6) to cross shaft lever (7), so the cross shaft lever (7) is in the vertical straight up position. The cross shaft lever (8) will also be in the vertical straight up position.
- 4 - Place the throttle lever so the front of the lever is approximately 7/8 inch (22 mm) from the front end of the slot in the console panel. Adjust the fast idle throttle lever stop screw in the console to just contact the throttle lever.
- 5 - Connect the quick disconnect end of link to the automatic control valve variable orifice lever (9) on the transmission control valve.
- 6 - Adjust the monoball end of link so the attaching hole of the monoball is exactly aligned with the attaching hole in cross shaft lever (8), when the automatic control valve variable orifice lever (9) is just contacting the high variable orifice stop (lever rotated forward).



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- 1—Throttle Lever
- 2—Forward and Reverse Speed Control Lever
- 3—Neutral Lock Lever
- 4—Control Link

- 5—Pivot Casting Upper Lever
- 6—Pivot Casting Lower Lever
- 7—Cross Shaft Lever
- 8—Cross Shaft Lever

- 9—Automatic Control Valve Variable Orifice Lever
- 10—Cross Shaft Lever
- 11—Cable Quick Disconnect Ball Joint
- 12—Cable to Fuel Injection Pump

Fig. 23-Transmission Control Valve Linkage

NOTE: Care must be taken that the automatic control valve variable orifice lever (9) is just contacting the stop, but the override spring on the lever is not compressed.

Secure the link lock nut and monoball to cross shaft lever (8) cap screw.

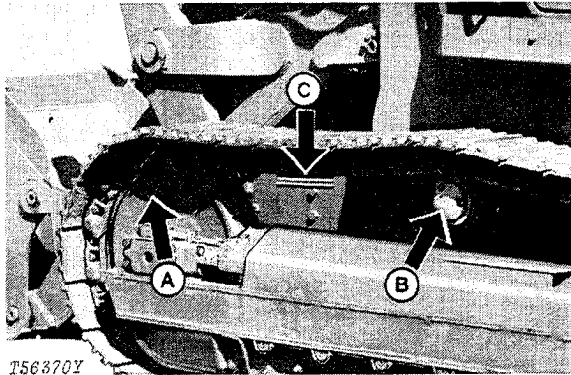
- 7 - To check for correct adjustment, move the throttle lever (1) to slow idle. Then move the lever back to fast idle, until the fast idle stop screw is contacted on the console. At this point the automatic control valve variable orifice lever (9) should just contact the high variable orifice stop. If not correct, readjust per Step 6.

NOTE: If either the forward and reverse speed control lever or the throttle lever does not operate smoothly (requires excessive effort to move), adjust the set screws evenly on the side of each control head until the feeling of lever movement is acceptable. Do not back set screws all the way out. Adjust the forward and reverse speed control lever so that a force of 6 ± 1 lbs. (27 ± 5 N) with a spring gauge hooked under knob will move lever smoothly. Adjust the throttle lever so that a force of 19 ± 2 lbs. (86 ± 9 N) with a spring gauge hooked under handle will move lever smoothly.

Engine speeds checked
Adjustment required

Yes	No
Yes	No

16. Track Tension Adjustment



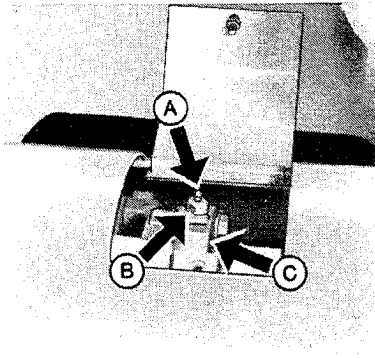
A—Fast Idler
 B—Upper Idler

C—1 to 1-1/2 in.
 (25.4 to 38 mm)

Fig. 24—Measuring Track Tension

Measure amount of sag in center of track between upper idler and front idler. Sag should be 1 to 1-1/2 inches (25.4 to 38 mm).

NOTE: A pin and bushing must be lined up over the upper idler.



A—Grease Fitting
 B—Check Valve

C—Vent Hole

Fig. 25—Adjusting Track Tension

Loosen screw and open access cover.

To increase track tension:

- 1 - Attach a grease gun (8000 psi [552 bar] [562 kg/cm²] max.) to the grease fitting on the track adjuster.
- 2 - Apply grease until the proper track tension is achieved.

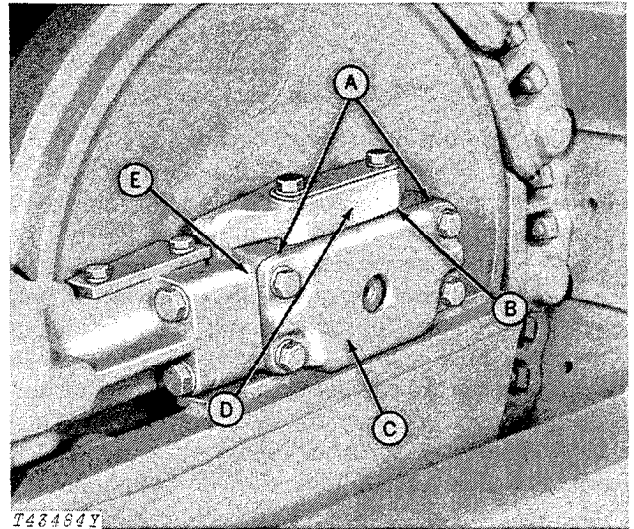
To decrease track tension:

- 1 - Turn check valve 1 to 3 turns counterclockwise. This will allow grease to escape through the vent hole.
- 2 - Turn check valve clockwise to close valve.

CAUTION: High pressure may be present in the track adjuster cylinder. If grease does not immediately escape from the vent hole, drive the unit forward and backwards slowly, then tighten the check valve.

IMPORTANT: Never lubricate fitting on hydraulic track adjusting cylinder except when track is in need of adjustment.

IMPORTANT: When forward edge of track adjuster stop contacts plate on track frame (block is approximately 1 inch [25.4 mm] from the end of the track frame), track bushings and pins should be inspected for excessive wear.



A—Horizontal Adjusting Shims
 B—Vertical Adjusting Shims

C—Outer Guide
 D—Inner Guide
 E—Block

Fig. 26—Track Wear Adjustment Components

Shims are designed to eliminate looseness due to wear. If joint is loose, add shims as required to eliminate looseness.

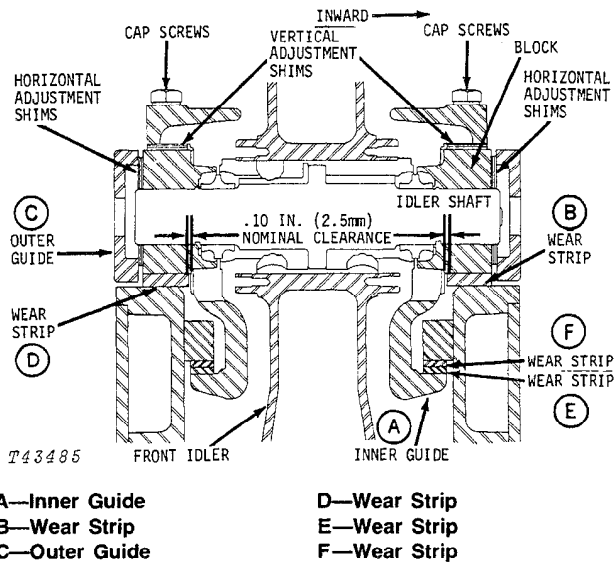


Fig. 27-Track Wear Shim Adjustments

Slide the front idler inward. If inner guide (A, Fig. 27) does not contact inward side of wear strip (B), additional shims must be added. To add shims, remove outer guide (C). Add shims as required until outer guide contacts outward edge of wear strip (D) at the same time that the inner guide (A) contacts the inward side of wear strip (B). Replace and tighten cap screws on outer guide (C).

Loosen the two cap screws on the top of inner guide (A). Pry inner guide up between the inner guide and block. If inner guide (A) is free to move up, additional shims must be added. Remove the two cap screws and add vertical adjustment shims as required. When shimming is completed, there should be .00 to .04 (1 mm) maximum gap vertical movement between inner guide (A) and block.

The previous adjustment has eliminated the clearance between the wear strip on the inner guide (A) and the wear slip (F) on the track frame.

Replace and tighten cap screws on inner guide (A).

The same procedure applies when checking the shim adjustment on the opposite side of the front idler. Repeat both procedures for checking front idler vertical adjustment on opposite side of the crawler.

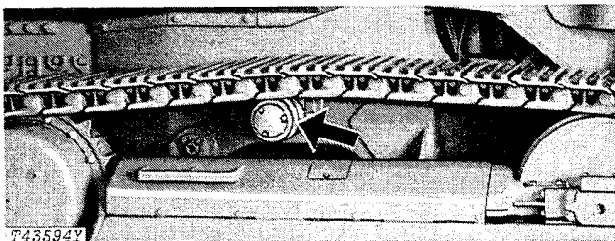
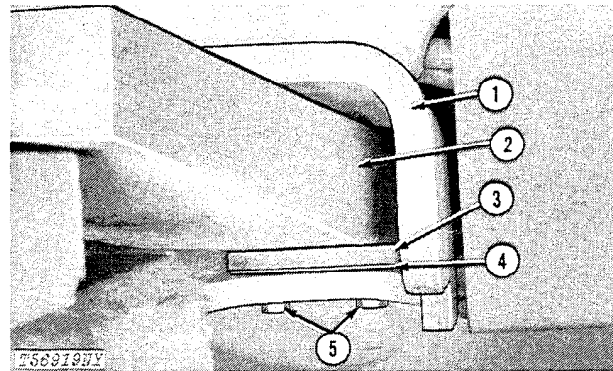


Fig. 28-Movable Upper Idler Support

The upper idler support is movable to compensate for uneven track wear. To adjust, remove the four cap screws and the support and add or delete shims (in pairs), as required, until center of track is aligned with center of upper idler. Tighten cap screws to idler support.

IMPORTANT: Do not adjust the upper idler support until all of the track tension and shim adjustments have been completed.

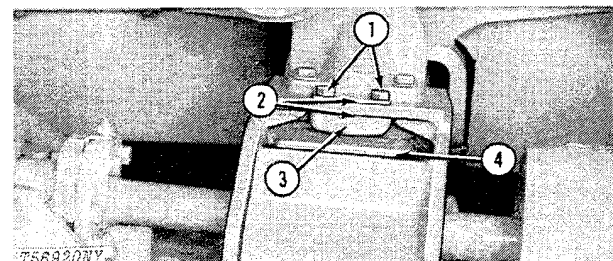


1—Saddle Frame
2—Front Crossbar
3—Block Pad
4—Shim
5—Cap Screws

Fig. 29-Front Crossbar Shim Adjustment

Install shims (4, Fig. 13) under block pad (3) until there is zero clearance between block pad and front crossbar (2).

Remove shims (4) to obtain 0.060 inch (1.52 mm) minimum clearance between block pad and front crossbar.



1—Cap Screw
2—Shim
3—Hold-Down Pad
4—Front Crossbar

Fig. 30-Hold-Down Pad Shim Adjustment

NOTE: A minimum of 3 shims (4, Fig. 29 and 2, Fig. 30) must be used to keep cap screws from protruding through the block pad (3, Fig. 29) and hold-down pad (3, Fig. 30). Store the excess shims under the cap screw heads if required.

Use shims (2, Fig. 30) to obtain 0.24 in. (6 mm) minimum clearance between hold-down pad (3) and crossbar (4).

Track tension checked	Yes	No
Front idler and upper idler wear checked	Yes	No
Front crossbar and hold-down shims checked	Yes	No
Adjustment required	Yes	No



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