Installation Instructions

GRAVELY (Pierce) GOVERNOR — MODEL GC-1464

this is the sheet that came with the governor on the tractor –

GENERAL INFORMATION

The Governor functions to adjust the flow of fuel through the Carburetor automatically as the work load demands. It does this by action of governor weights: as the engine tends to slow down due to work load, the weights automatically move a lever which in turn exerts pressure on the Carburetor Bellcrank. This action opens the Bellcrank and allows more fuel to reach the engine. Conversely, when engine RPM increases due to a lighter work load, the Governor moves the Bellcrank to decrease the flow of fuel.

The Pierce Governor, as all governors, is set to operate within a certain range of engine RPM. The Gravely Tractor develops maximum horsepower under load at about 2600 RPM. It is the function of the Governor to feed the fuel automatically so the engine RPM will remain at the level that develops maximum horsepower.

However, once the engine is loaded above a certain point, the Carburetor is "wide open". This means it is feeding all the fuel possible to the engine. Thus, it is entirely possible to stall the Tractor, even when Governor-equipped, simply because the limit of engine capacity has been reached. This is not any fault of the Governor.

Faulty installation and adjustment of the Governor will allow the engine to operate at excessive RPM, or not allow the engine to idle, etc. Therefore, it is most important that these instructions be followed carefully and thoroughly.

LUBRICATION INSTRUCTIONS

1. The Governor is not lubricated at the factory. It must be lubricated at the time of installation.
2. Oil Cup: Fill to level of Oil Check Valve. Use Mobiloil (SAE 30) in summer and Mobiloil (SAE 10) in winter. Check oil level daily.

INSTALLATION INSTRUCTIONS

1. Install Governor on Bracket using Bolts, Nuts, and Lockwashers supplied.
2. Be sure Governor Lever is straight. (It may have been bent in shipping; straighten it before attempting any adjustments.)
3. Remove Capscrew (B in Figure 1) from Crankcase, and Nut and Lockwasher (A in Figure 1) from Fan Housing.
4. Install Governor Bracket with Governor. Replace Crankcase Capscrew (B in Figure 1). When installed correctly, Governor Lever lies horizontally at top of Governor.
5. Check alignment of Belt and Governor Pulley. Bend Bracket until Governor Pulley is absolutely straight and square with Fan Belt.
6. Move Bracket to make Governor Pulley bear firmly on Fan Belt. Avoid excessive Belt pressure. Secure Bracket with Nut and Lockwasher (A in Figure 1).
7. On Tractor with Carburetor L-806-Z (12108-C): Remove Throttle Assembly and Throttle Wire. Retain Wire to be re-used. Change Throttle Lever to position shown in Figure 2. Insert Wire through L-743 Throttle Stud (8 in Figure 2). Then assemble Throttle Assembly to Tractor Handle as shown in Figure 2.
   On Tractor with Carburetor L-806-Z (12108-D): Detach Throttle Wire from Carburetor Bellcrank, leaving Wire through L-743 Throttle Stud. Leave Throttle Assembly intact on Tractor Handle.
8. Remove Screw (12 in Figure 3-A) from the Carburetor-Manifold Assembly.
9. Assemble the Governor Control Bracket and Arm (10 and 12 in Figure 3-A) as shown, using the 191-S Pivot Screw Nut (11 in Figure 3-A).
10. Mount the Governor Control Bracket and Arm on the Manifold by using the same screw taken from the Carburetor-Manifold Assembly. The Governor Control Arm should move easily with very light pressure; adjust loose tension with the 242-N Pivot Screw Nut (11 in Figure 3-A).
11. Insert the Governor Control Link (14 in Figure 3-A) into the hole in the Governor Control Arm, extending it toward the Governor Lever.
12. Mount Bellcrank (18 in Figures 3-A and 3-B)--furnished with the Governor Kit--to Carburetor, discarding old Bellcrank. Mount so there is equal travel between a vertical center line and wide open, and a vertical center line and closed. Then just barely "crack" the Bellcrank away from the wide open stop with a .020" feeler gauge. Tighten Bellcrank Screw securely (Figure 4).
13. Hold the Bellcrank in the wide open position (Figure 4) and the Governor Lever at its stop toward the Tractor. Fit Throttle Linkage Rod (17 in Figures 3-A and 3-B) from Bellcrank to the end of the Governor Lever. For Tractors with the L-806-Z (12108-D) Carburetor: The Throttle Linkage Rod must be bent slightly. Approximate dimensions of this bend are shown in Figure 5. In every case the Rod must fit freely and firmly in place without binding or strain. Attach Rod to Bellcrank with small Clip provided. Tighten down Screw in Swivel Pin on Governor Lever. Test this linkage after it is placed by moving it through its entire travel. Be sure the linkage is free--not binding or rubbing against any other part of the Tractor.
14. Insert the Governor Spring (15 in Figure 3-A) into the center hole in the Governor Lever. Hook Spring into the slot in the Governor Control Link.
15. Slip the Governor Control Stop (9 in Figure 2) onto the Throttle Wire.
16. Bend the Throttle Wire 5/8" from the end in a downward position so the end is vertical to the ground. Insert into hole in the Governor Arm and then bend into a horizontal position to the ground. See Figure 6 for correct bend. Test to make sure Throttle Wire can move freely through its entire travel without binding the Throttle Wire portion that is within the Governor Arm. Adjust as required.
17. Be sure Governor is lubricated. See Lubrication Instructions.
18. Start the Tractor. With Throttle Lever closed, adjust the Idle Screw (18-A in Figures 3-A and 3-B) until the Tractor is idling satisfactorily, being sure the Idle Screw contacts the stop while this is being done.
19. A Tachometer is necessary to set the Governor properly. There is no other method which will accomplish this next--and vital--step in installation. With the Tachometer in place on the Crankshaft, begin moving the Throttle Lever toward the open position, observing the Tachometer. Stop when the engine RPM is 2500/2700.
20. At this point the Governor Spring will be extended. Now move the small Governor Control Stop that has been threaded onto the Throttle Wire (in Step 16) until it is firmly against the Throttle Wire Control Stud (8 in Figure 2). Tighten the small screw firmly and securely against the Throttle Wire.

(cont'd. on back)

Belt used to drive Governor is an "A" section, 31" belt or a GATES-2310

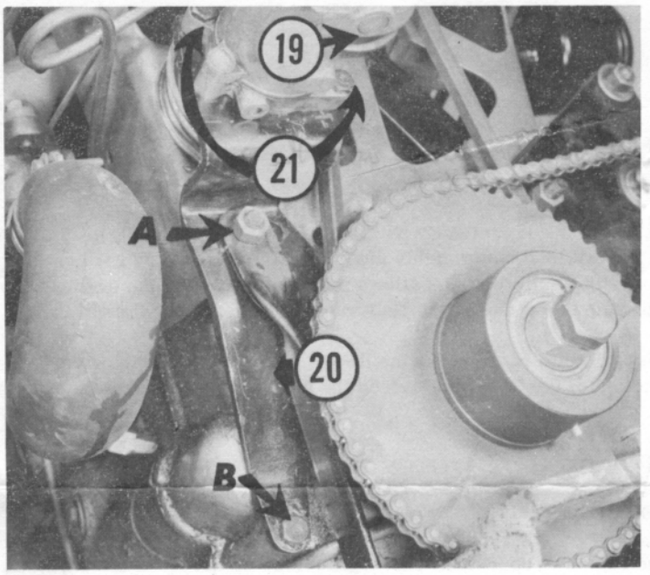


Figure 1

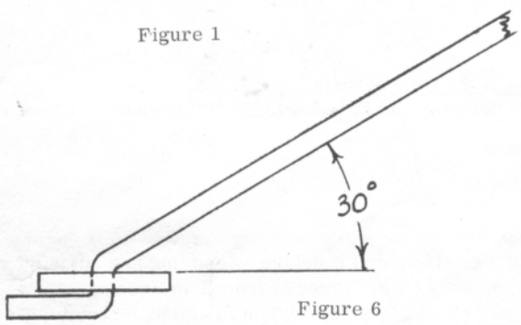
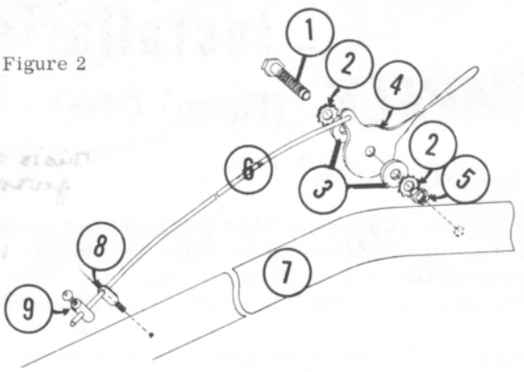
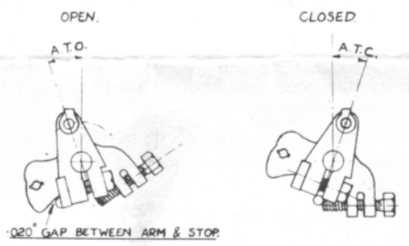


Figure 6

Figure 2





DIAGRAMS SHOW ANGULAR TRAVEL OF BELLCRANK BETWEEN 'WIDE OPEN' & 'IDLING' SETTINGS.

Figure 4

Note: Bellcrank shown here is for Carburetor L-806-Z (12108-C). Position of Bellcrank in relation to Carburetor L-806-Z (12108-D) is as shown in Figure 3-B. Adjustment instructions in Step 12 apply to both Carburetors.

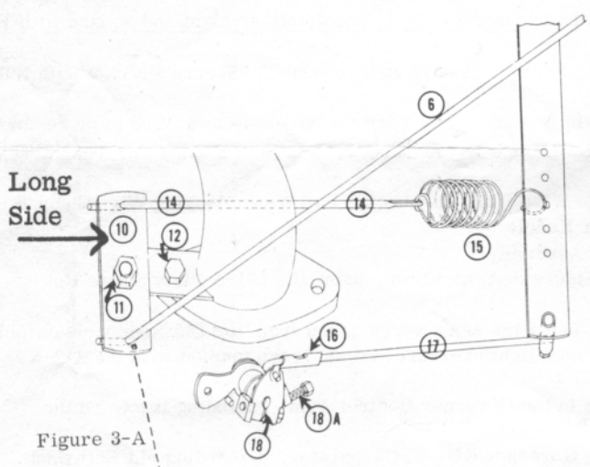


Figure 3-A

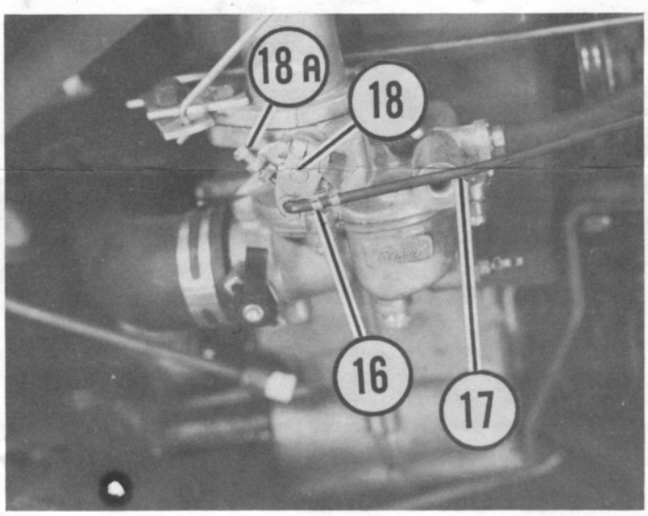
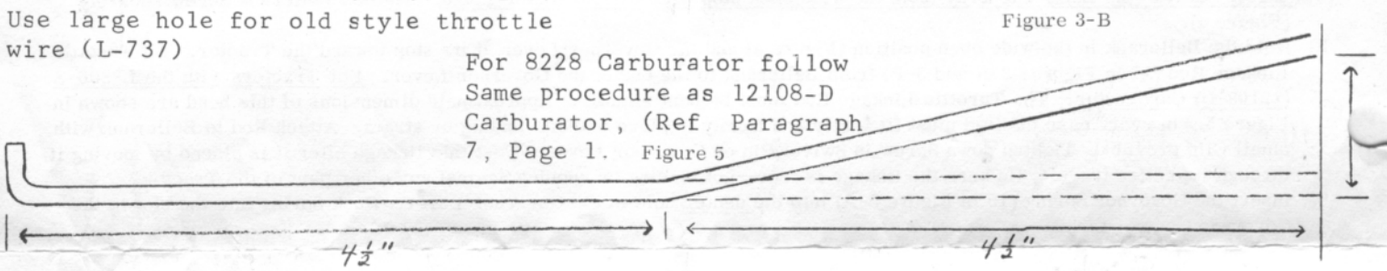


Figure 3-B

Add 3/32" hole for new throttle wire. Use large hole for old style throttle wire (L-737)

For 8228 Carburator follow Same procedure as 12108-D Carburator, (Ref Paragraph 7, Page 1.

Figure 5



When installed properly, the Governor Control Stop prevents the Throttle Lever from being depressed past the position that allows 2700 RPM. Unless the Governor Control Stop is used, there is no way to prevent the Throttle Lever from being depressed fully, thus extending the Governor Spring fully and preventing the Governor from operating.

21. The purpose of the holes in the Governor Lever is to control the sensitivity of response by the Governor to the engine load. If the Governor is not responding quickly enough to load, move the Spring one hole closer to the Governor. If it is responding too quickly, move the Spring one hole away, continuing until it responds satisfactorily.

GRAVELY TRACTOR DIVISION Studebaker CORPORATION

DUNBAR, WEST VIRGINIA

(Printed in U.S.A. 3/62)