

HOW TO INSTALL THE GRAVELY (PIERCE) GOVERNOR Model M-1884 (R3)

In order for you to properly install and service the Governor, you should know the following facts about the action of a governor.

1. The Governor functions to adjust the flow of fuel through the carburetor automatically, as the work load demands. It does this by the action of the governor weights, which, as the engine tends to slow down due to the work load, automatically moves a lever which in turn exerts pressure on the carburetor Bellcrank, opening it and allowing more fuel to reach the engine. Conversely, when the engine RPM increases due to a lighter work load, the governor moves the Bellcrank to decrease the flow of fuel.
2. The Pierce Governor, as all governors, is set to operate within a certain range of engine RPM. The Gravelly Tractor develops its maximum horsepower under load at about 2600 RPM of the engine. Therefore, it is the function of the Governor to feed the fuel automatically so the engine RPM will stay at the RPM that develops the maximum horsepower.

HOWEVER, once the engine is loaded above a certain point, the Carburetor is "wide open", which means that it is feeding all the fuel possible to the engine. Therefore, it is entirely possible that you may stall a tractor, even when governor equipped, simply because you have reached the limit of the ENGINE capacity. This is **not** any fault of the Governor.

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

LUBRICATION INSTRUCTIONS

WARNING! Governor is not lubricated, and must be lubricated before installation!

OIL CUP! Fill with oil to level of oil check valve. Use SAE30 oil in Summer, SAE 10 oil in winter. Check oil level daily.

INSTALLATION INSTRUCTIONS FOR THE PIERCE GOVERNOR, M-1884 (R3)

1. Install Governor on Bracket with 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 and Governor, replace Crankcase Capscrew (B in Figure 1). When correctly installed, 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.**

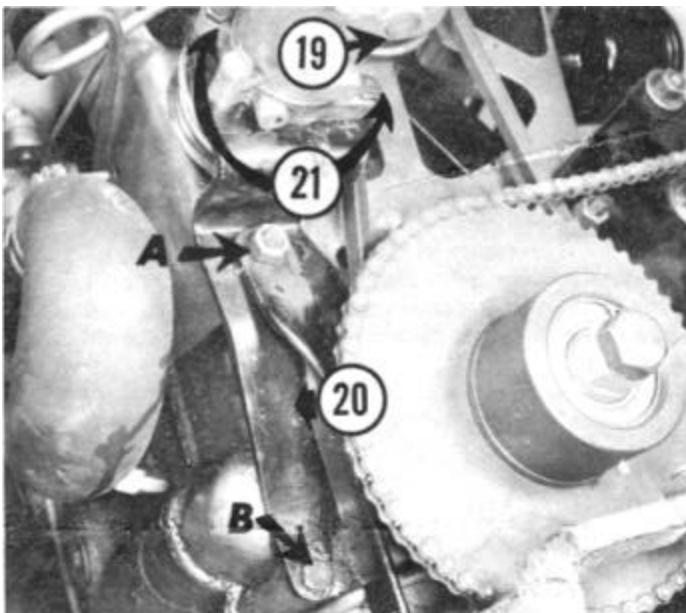


Figure 1

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6. Move Bracket to make Governor Pulley bear firmly on Fan Belt. Avoid excessive Belt pressure. Secure Bracket with Nut, Lockwasher (A in Figure 1).
7. Remove Thumb Throttle Lever and Wire. Retain Wire to be re-used.
8. Replace Throttle Wire on new Governor Throttle Lever. Insert Wire through L-743 Throttle Stud, then assemble Throttle Assembly to Tractor Handle. See Figure 2.
9. Remove the Screw (12 in Figure 3), from the Manifold-Carburetor Assembly

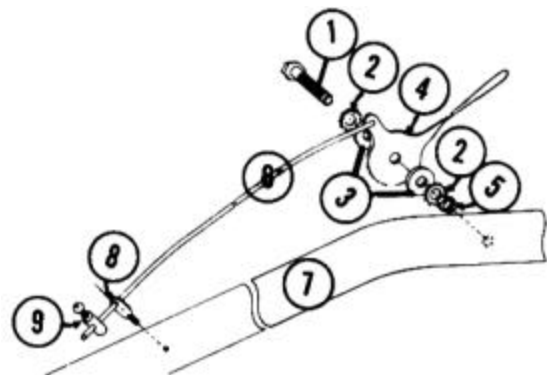


Figure 2

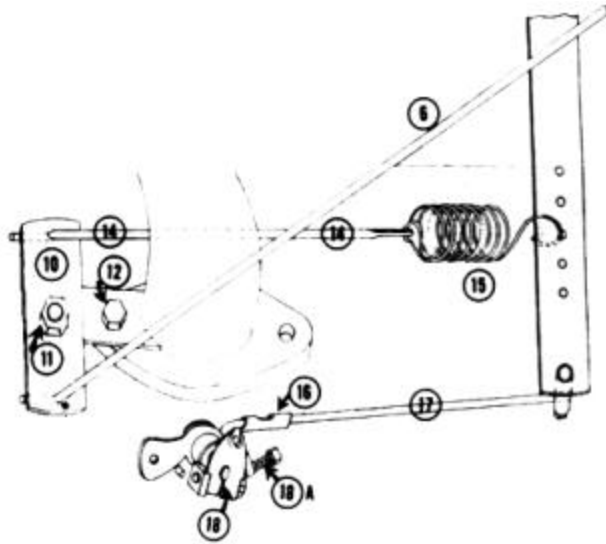


Figure 3

- 10, Assemble the Governor Control Bracket and Arm (10 and 12 in Figure 3) as shown, using the 191-S Pivot Screw and 242-N Pivot Screw Nut (11 in Figure 3).
11. Mount on the Manifold by using the same Screw you took from the Manifold-Carburetor 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).
12. Insert the Governor Control Link (14 in Figure 3) into the hole in the Governor Control Arm, extending it towards the Governor Lever.
13. Mount Bellcrank (18 in Figure 3) (furnished with 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 tightly (Figure 4).

14. Hold the Bellcrank in the wide open position as (see Figure 4), and the Governor Lever at its stop toward the Tractor. Fit Throttle Linkage Rod (17 in Figure 3) from Bellcrank to the end of the Governor Lever. This Rod must fit freely and firmly in place without binding or strain. Attach with the small clip provided, and tighten down screw in Swivel Pin on Governor Lever. **TEST THIS LINKAGE AFTER IT IS IN PLACE BY MOVING THROUGH IT'S ENTIRE TRAVEL.**

Be sure the Linkage is free, and not binding in any part, or rubbing against any other part of the Tractor.

15. Insert the Governor Spring (15 in Figure 3) into the **CENTER** hole in the Governor Lever and hook Spring into the slot in the Governor Control Link.
16. Slip the Governor Control Stop (9 in Figure 2) on the Throttle Wire.
17. 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 Governor Arm, then bend into a horizontal position to the ground. Observe Figure 5 for correct bend. Test to be sure Throttle Lever can move freely through its travel without binding the Throttle Wire portion that is within the hole in the Governor Arm. Adjust as required.

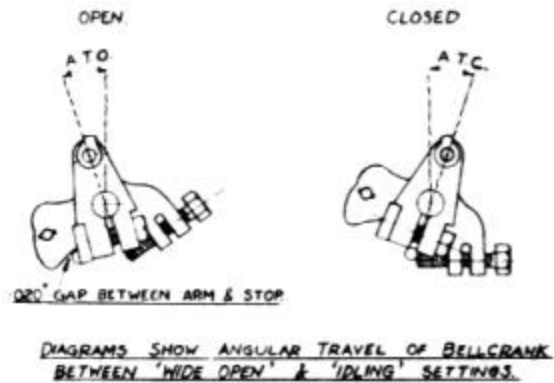
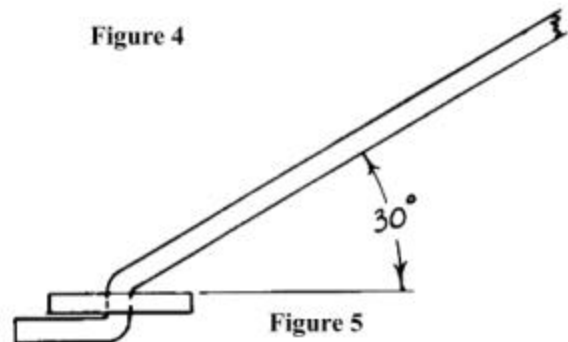


Figure 4



18. Be sure Governor is lubricated. See **LUBRICATION INSTRUCTIONS.**
19. Start the Tractor. With Governor Throttle closed, adjust the idle screw (18-A in Figure 3) until the Tractor is idling satisfactorily, being sure idle screw contacts the stop while this is being done.
20. **A TACHOMETER IS NECESSARY IN ORDER TO PROPERLY SET THE GOVERNOR. THERE IS NO OTHER METHOD WHICH WILL ACCOMPLISH THIS NEXT -- AND VITAL -- STEP IN INSTALLTION.**
With the Tachometer in place on the Crankshaft of the Tractor, begin moving the Governor Throttle Handle toward the open position, observing the Tachometer. When the Engine RPM is 2500/2700 RPM, stop.

21. At this point, the Governor Spring will be extended. Now, move the small Governor Control Stop that has been threaded on the Throttle Wire in step 16, until it is firmly against the Throttle Stud (8 in Figure 2). Tighten the small Screw until it firmly and securely holds the Throttle Wire.

The purpose of the Governor Control Stop is to control the travel of the Governor Throttle Handle. When the Governor Control Stop is properly installed, the Throttle Handle can then only be moved far enough towards open position to prevent running the Engine of 2700 RPM. Unless this Throttle Wire Stop is used, there is no way to prevent the Throttle Handle from being opened fully. This extends the Spring completely, which prevents the Governor from operating.

22. The purpose of the holes in the Governor Lever is to control the sensitivity of the Governor response to load. If your Governor is not responding quickly enough to load, move the Spring one hole closer to the Governor. If it is responding too quickly, one hole away, continuing until it suits you requirements.

GRAVELY (PIERCE) GOVERNOR, MODEL M-1884 (R3) PARTS PRICE LIST

Figure No.	Part No.	Description	No. Req'd.	Price (list)
1	106-S	Throttle Lever Screw	1	\$.02
2	304-W	Throttle Lever Lockwashers	2	.01
3	L-744	Throttle Lever Nylon Washers	2	.06
4	L-740-A	Throttle Lever (21/64" Hole)	1	.24
5	214-N	Throttle Lever Screw Locknut	1	.02
6	L-737	Throttle Wire	0*	
7	L-724-L	Drive Handle, Left	0*	
8	L-743	Throttle Wire Control Bolt	0*	
9	G-113	Governor Control Stop	1	.15
10	G-111	Governor Control Arm	1	.20
11	191-S	Pivot Screw for G-111	1	.03
12	G-110	Governor Control Bracket	1	.15
NS	242-N	Pivot Screw Nut for 191-S	1	.06
14	G-112	Governor Control Link	1	.15
15	SN-5	Governor Lever Spring	1	.19
16	C-858	Throttle Clip. LH	1	.20
17	G-109	Throttle Rod	1	.15
18	AC-575	Carburetor Bellcrank	1	.44
19	G-101	Governor	1	21.22
20	G-106	Mounting Bracket	1	1.52
21	177-S	Governor to Mounting Bracket Screw	2	.03
NS	303-W	Governor to Mounting Bracket Lockwasher	2	.01
NS	201-N	Governor to Mounting Bracket Nut	2	.02

* 6, 7, and 8 are already on the Tractor, no parts required to install Governor.

GRAVELY TRACTOR DIVISION OF STUDEBAKER-PACKARD CORPORATION **DUNBAR WEST VIRGINIA**
(July 1960)