



<p>SERVICE BULLETIN 107</p> <p>INFORMATIONAL</p>
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ISSUED: May 1970
REVISED: June 1995
SUBJECT: Revised Safety Specifications for Rotary Type Power Lawnmowers
MODELS OR TYPES AFFECTED: All Tecumseh engines used to power a rotary type lawnmower.

The United States of America Standards Institute, sponsored by the Outdoor Power Equipment Institute has recently revised the maximum blade tip speed of 21,000 Ft./Min. downward to 19,000 Ft./Min.

As blade tip speed of a rotary type lawn mower is always in relation to engine RPM, it is extremely important that before delivery to an owner the maximum RPM is set so the maximum blade tip speed will not exceed the new 19,000 Ft./Min. specification.

The following chart gives the maximum blade RPM which will produce a blade tip speed of 19,000 Ft./Min. for the various blade lengths commonly found.

BLADE TIP SPEED	BLADE LENGTH	BLADE RPM	BLADE TIP SPEED	BLADE LENGTH	BLADE RPM
19,000 Ft./Min.	18"	4031	19,000 Ft./Min.	23	3154
19,000 Ft./Min.	19"	3819	19,000 Ft./Min.	24	3023
19,000 Ft./Min.	20"	3627	19,000 Ft./Min.	25	2903
19,000 Ft./Min.	21"	3454	19,000 Ft./Min.	26	2903
19,000 Ft./Min.	22"	3298			

The manufacturer of the equipment may have a recommended maximum blade RPM lower than the above maximum and in those cases follow the equipment manufacturer's recommendation for the lower maximum blade RPM.

If the cutter blade is mounted directly to the engine crankshaft, the blade and engine RPM will be the same. In this situation proceed as follows:

NOTE: Engine should always be mounted to mower deck with blade attached. Always operate mower on a clean hard surface to eliminate any cutting load on the blade.

1. Determine blade length measured diagonally across the cutting tips. (Detach spark plug high tension lead to avoid accidentally starting engine.)
2. Start engine and allow it to reach normal operating temperature.
3. Set carburetor control to "High" or "Run" for maximum speed.
4. Adjust carburetor for optimum operation.
5. Determine maximum allowable RPM for length of blade attached from chart above.
6. Determine engine RPM with a suitable tachometer and adjust the top governed speed of engine as necessary. (Refer to your Technician's Handbook for proper method of adjusting the particular governor found on the engine being adjusted.)

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7. It is suggested as an added safety measure that the top governed engine speed be set at 200 RPM less than chart shows.
8. After all adjustments are completed, recheck the top governed engine speed to be sure it is correct.

If the cutting blade is not directly mounted to the engine crankshaft, but is driven by means of belts and pulleys or through a gear box, the engine RPM and blade RPM may not be the same and the ratio will have to be determined. In this situation proceed as follows:

1. Determine blade length measured diagonally across cutting tips. (Detach spark plug high tension lead to avoid accidentally starting engine.)
2. If the top end of the shaft to which the blade is mounted is exposed, the blade RPM can be determined by use of a dial type tachometer and the same procedure should be used as set forth above for a direct mounted blade.
3. If a dial type tachometer is not available or the top end of blade shaft is not exposed, then the relation of engine RPM to blade RPM must be determined, which is easily done as follows:
 - A. Disconnect spark plug high tension wire to avoid accidentally starting engine.
 - B. Rotate engine one (1) full turn and observe the amount of blade rotation. If it is also one (1) full turn then proceed as if blade is directly mounted to engine crankshaft.
 - C. If for example the blade rotates 1-1/4 turns for each full turn of the engine, divide the blade rotation figure by 1.25. This will give you the maximum engine RPM which will not exceed the 19,000 Ft./Min. blade RPM.
 - D. Proceed to adjust engine top governed speed as set forth above.

IT IS IMPERATIVE THAT YOUR SHOP BE EQUIPPED WITH A SUITABLE TACHOMETER TO ACCURATELY DETERMINE ENGINE RPM AND BLADE TIP SPEEDS WHENEVER YOU SERVICE ENGINES ON LAWN MOWERS MANUFACTURED TO COMPLY WITH U.S.A.S.I. SAFETY SPECIFICATIONS.

IT IS ALSO IMPERATIVE THAT ALL MECHANICS BE MADE AWARE OF THE INFORMATION CONTAINED IN THIS BULLETIN AND THAT PROPER SHOP PROCEDURE BE ESTABLISHED TO CONFORM TO THE ABOVE.