

Winter Maintenance of Mowers

Sharpening:

The reel type cutting unit cuts grass using the principles of shears. It is important therefore that the cutting edges of the reel and bedknife are sharp. This will give a clean cut and will help to eliminate the discolouration one sees if tearing occurs because a dull mower has been used. The process of sharpening is that of reshaping the cutting edge of the bedknife and the reel by grinding or lapping. When the blade becomes rounded the grass is pinched off instead of being cut cleanly. Sharpening is also required when the grass is not being cut across the width of the reel. This may be caused by nicks or uneven wear, improper adjustment on the reel or bedknife. Depending on the severity of the condition, lapping maybe all that is required to remedy the problem.

On any fine bladed reel mower the bedknife does five times the work because the reel blades all have to cut against it. So the bedknife is the major cutting component and made therefore of heavier and harder steels. If the shearing edges of the reels are in reasonably good shape it maybe necessary to just sharpen the bedknife. The mowing unit in question should always be checked thoroughly to determine the reason for its unsatisfactory condition. Often a minor adjustment is all that is required, that or perhaps lapping maybe sufficient. For a mower to run easily and cut properly as well, a proper relief angle or bevel must be ground on the bedknife cutting edge as well as the reel blade cutting edge. This will give room behind the contacting edges and reduces drag and friction as well. Too little bevel would let more metal make contact, hence cause the reel to run hard. Too much clearance would weaken the cutting edges so they would tend to nick more easily and would not stay in adjustment.

Condition Checklist:

Any piece of equipment when brought in at season's end should have its condition checked against a list particularly when the equipment in question is being put away for the winter. In this way problems can be found and rectified prior to next season.

- 1) Check rollers, bearings, sleeves, roller hangers, for excessive wear or breakage.
- 2) Pinions and pawls - Check by turning wheels quickly to see if reel is positively driven. If you experience slippage new pinions gears and pawls maybe required.
- 3) Frame - check frame to make sure it is not loose, also that the front spacer bar and bedknife are tight. Check alignment if frame is loose. Sight along the front spacer bar using the reel axle shaft as a reference to tell if there two are running parallel with each other. If they are not the mower has to be twisted by loosening one end of the spacer bar and one end of the bed knife assembly and then twist the mower frame until all is aligned Exercise care when re-tightening the spacing bar so that the mower is not spread further apart, because this will cause problems with the reel bearing adjustment. Check the

side plates for cracking and check the bed knife adjusting screws for stripped threads.

- 4) Check and see if there is enough metal left to grind. Some knives will last two years others may be turned and used longer. Also check general condition of cast back and pivot points.
- 5) Reel - Test the reel for proper rotation on its axis (bearing races) examine the blades on the reels for nicks. This will tell you if your reel has a twist or a sprung spider. Make sure the reel blades are fastened to the spiders and that the spiders are securely attached to the reel shaft.
- 6) Reel bearings - Test for vertical or end play of the reel which may be due to wear or improper adjustment of the reel bearings or pitted cups or cones. Bearings of the non-adjustable type if worn or loose will need to be replaced.

Points to Consider for Sprayer End of Season Storage

1. Completely clean the sprayer's exterior surfaces using steam or high pressure. Flush the tank and all lines with a detergent solution. Coat the interior of the tank with an oil spray or grease to prevent scale build-up. Caution: When working inside the tank, stand on a sack or mat to prevent damaging the protective coating of the tank's interior and observe all safety precautions.
2. Remove all nozzles from the boom; soak in gasoline; then clean using a small brush and compressed-air. Store nozzles in a closed container to keep them free of dirt and foreign particles.
3. Remove and drain the pump assembly. Gear and piston pumps should be flushed with a new lightweight engine oil. Do not use old engine oil as it may contain acids expelled from the combustion process. These would adversely affect the pump's components. Cast iron gear, vane or nylon roller pumps can be stored for prolonged periods in oil. Do not use oil in pumps having rubber fins.
4. Drain the boom and store it inside off the ground and away from dirt.
5. Remove the gun and coat inside parts with lightweight oil. Leave gun in open position and store in dry area.
6. Remove pressure regulator and drain. Water left inside the gauge could freeze and distort the instrument.
7. Remove, drain and inspect sprayer hoses for cracks and deterioration. Coil and store in a cool dry area.
8. Touch up rust spots on trailer, boom, brackets, etc., to prevent rust or deterioration.
9. Lubricate wheel bearing, u-joints and pto shaft as required.
10. On engine driven sprayers, prepare the engine for storage.
11. If possible, park your sprayers indoors throughout the off-season.