

Simple Lawn Mower Maintenance



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History of the Lawnmower

1828-First mower built by Edwin Budding, an engineer from Stroud, Gloucestershire, England, patented in 1830.

1870-Elwood McGuire of Richmond, Indiana designed a lighter machine with fewer moving parts that was much easier to push; very popular with home owners.

1885-America was building 50,000 lawnmowers a year which supplied a global market.



http://www.american-lawns.com/history/history_mower.html

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http://www.antiquemystique.com/images/4277aa_jpg.jpg

Reel Mower - Circa 1925

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Gas-powered, walk-behind reel mower

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<http://lawn-boy.co.uk/shop/images/553hws.jpg>

Rotary Mower

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Two-stroke engine:
Requires an oil gas mixture
Fewer moving parts
Lighter
Louder

Four-stroke engine:
Separate oil and gas tank
More reliable
Better torque
More fuel efficient
Quieter
Fewer emissions
More common in modern lawnmowers

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Functions of Motor Oil

Lubricant
Coolant
Detergent



<https://www.autoguru.com.au/car-advice/articles/does-my-choice-of-engine-oil-affect-my-cars-performance-or-fuel-economy>



<https://www.shutterstock.com/search/lube-oil-filter>

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<https://www.ebay.com/itm/205189030278>

Lawn mower cooling fan

- Cools the engine
- Dissipates heat



<https://www.greentractortalk.com/threads/importance-of-a-clean-cooling-fan.20946/>

Keep the cooling fan screen free of debris while mowing

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Air Filter Maintenance



- **Do not** use compressed air to clean a paper filter.
- Tap paper element on the ground to knock out the dust.



- Wash sponge pre-cleaner with dish soap and water.
- Wring out dry.
- Wrap in a cloth rag and repeat.
- Apply a coat of air filter oil to the pre-cleaner.



Fuel

Regular unleaded should be used in small engines.

Ethanol-based gasoline can be used unless the owners manual instructs you not to.

Do not store your mower for long periods with ethanol-based fuel in the tank. Ethanol will varnish the carburetor over time.



<http://blog.autoparkchryslerjeep.com/does-ethanol-really-cause-damage-to-your-engine/>

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Cleaning sparkplugs



<http://www.samarins.com/diagnose/p0301.html>



<http://www.reluctantmechanic.com/images/new-old-spark-plugs.jpg>

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Cleaning spark plugs



<http://i.ehow.com/images/a04/8a/10/clean-lawn-mower-spark-plug-800x800.jpg>



http://www.handymantyness.com/archives/outdoor/power_equipment/snowblower_1/maintenance.html

Clean and gap spark plugs annually or as needed.

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Cleaning sparkplugs

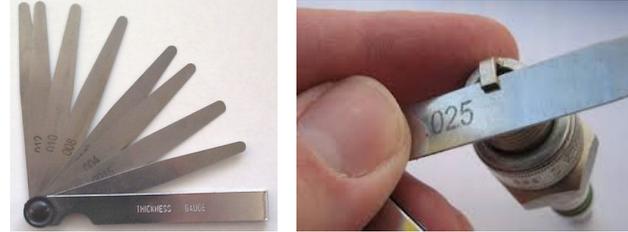


https://c1.staticflickr.com/5/4055/4495432565_b005cd038d.jpg



<http://www.klotzcanada.com/images/products/KL-609.jpg>

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<http://www.carpartkings.com/blog/2014/05/gapping-spark-plugs-efficient-firing.html>

Gap spark plugs with a gap gauge before installation and after cleaning.

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Rotary mower blade

<http://www.four-h.purdue.edu/tractor/pictures/057.jpg>

Discard blade when arm width wears down to one inch.

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- Worn rotary mower blade that should be discarded.
- The blade tip speed on a 20 inch walk behind rotary mower running at 3600 rpm is approx. 214 mph or 314 feet per second.

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Mowing

Rotary mower blade maintenance

- Sharpen blades after every eight hours of use
- Sharpen at a 30° angle
 - 20° will cut but cutting edge will chip easily
 - 40° is too blunt
- Sharpen blade on top side only
- Attach blade to mower with sail positioned upward

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Pedestal grinder



Bench grinder



Sharpen by hand with vice and file

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<https://laidbackgardener.blog/2018/08/31/sharp-blades-mow-better/>

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Mowing

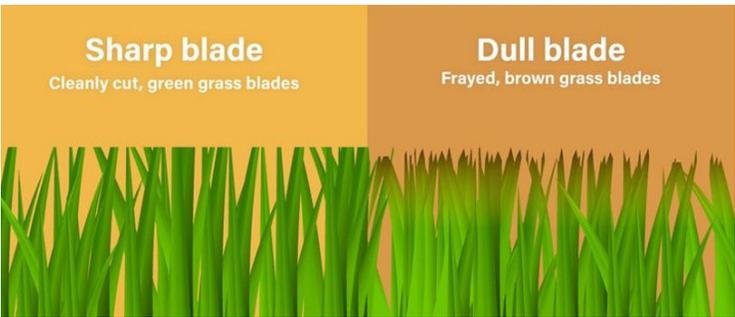
Dull mower blades cause:

- A reduction in turfgrass quality
- An increase in disease susceptibility
- A decrease mower fuel efficiency by 22%

Steinegger et al., 1983

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Sharp blade
Cleanly cut, green grass blades

Dull blade
Frayed, brown grass blades

<https://www.lawnstartr.com/blog/lawn-care-equipment/how-often-should-you-sharpen-mower-blades/>

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Daily Mower Maintenance

- Check oil level
- Clean the filter and pre-cleaner
- Lube all grease zerks
- Check fuel tank before leaving the garage
- Clearly note the type of fuel used (gasoline or diesel)
- Check blade sharpness
- Check tire pressure

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Periodic Riding Mower Maintenance

- Check brake fluid level
- Hydraulic oil level
- Spark plugs

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<https://todayshomeowner.com/lawn-garden/guides/how-to-change-a-lawn-mower-spark-plug/>

Disconnect the spark plug every time you work under the deck to service your mower.

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