



# Rotary cutters

HSB, a Munich Re company, is a technology-driven company built on a foundation of specialty insurance, engineering, and technology, all working together to drive innovation in a modern world.

## Equipment description

Rotary cutters are designed for cutting heavy or tall grasses and weeds. Many are designed to cut and chop small diameter brush and tree saplings. Some are self-propelled, but most are attached to a tractor and use the power-take-off to drive the cutters. This equipment is different from common mowing equipment.

Rotary cutters are usually constructed of heavy gauge steel components and incorporate features such as cutting blades mounted on hydraulic pivots or swivels. They are designed to reduce equipment damage from rocks, stumps, and other objects. The cutting blades are usually attached laterally to a central axis and spin parallel to the ground. The height and pitch are usually controlled by wheels that are mounted on the device. Many have hydraulic boom arms to reach areas that otherwise could not be cut.

Rotary cutters require a substantial and powerful design to drive blades that must tear through heavy, overgrown vegetation. The rotary cutter blades are usually heat-treated, high carbon steel and are very heavy, and can be up to an inch thick.

## Maintenance tips

- Due to the heavy shock loading stresses applied to the cutting blade drive train, rotary cutter equipment requires routine maintenance to prolong the useful life of the components. Pay attention to the very specific maintenance guidance provided by the original equipment manufacturer. The main cutter spindles and wheel axles can use a considerable amount of grease during operation. To help prevent early wear and potential failure of the spindle and axle, make sure the equipment is greased or lubricated at the manufacturer's recommended frequencies.

- Surface dirt and rust often hide more serious deterioration. All surfaces of the equipment should be periodically cleaned and inspected for damage or deterioration.

## Failure/Loss prevention tips

- Breakdown of the cutting blade assembly and drivetrain are the most common cause for mechanical failures for rotary cutters. The blade can bend or break and the bearings can fail. Shock loading from the cutting surfaces hitting stumps, brush, and tree trunks that are too large are a major cause of equipment failure. Constant attention should be paid to foreign objects in the cutting path to avoid these types of failures.
- To help prevent gearbox wear and potential early failure, check the oil level in the gearbox prior to each use. The shaft seals on the gearbox are common points of failure and should be inspected for leakage.
- Many failures are progressive, and over time can result in a sudden and catastrophic failure. Detecting small problems early is essential to preventing catastrophic failures. Routine inspection of all moving parts and bearing supports reduces the severity of mechanical damages and reduces repair costs.
- New rotary cutter equipment comes complete with operating instructions as well as maintenance guides. Proper operation and use of the equipment will maximize the useful service life of the equipment.

## Energy savings/conservation tips

- Performing recommended maintenance and lubrication will result in more effective and efficient operation of the equipment and reduce energy and fuel consumption.

## Safety tips

- Equipment with moving parts presents many possible pinch points and other hazards. Care must be taken to prevent potentially severe injury to fingers, hands, and other body parts resulting from contact with moving parts.
- Strict adherence to the safety recommendations in the operating manual is the best way to assure safe operation. Always wear protective equipment recommended by the OEM when operating the equipment.
- Keep hands and feet clear of the cutting blades when in operation, and never reach into or under the equipment while the equipment is operating.
- Rotary cutters pose a hazard from thrown objects. High-speed blades can throw stones, rocks, and roadside debris hundreds of feet at a very high speed, creating risk for serious injury.
- To help prevent injury to the operator and bystanders, always make sure all safety guards are in place and in good condition as specified by the OEM.
- Be aware of people and animals near the work area. Avoid operating this equipment with people or animals nearby. Rotary cutters can throw objects such as rocks or glass over 100 feet.