



## Mower and pruning equipment

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

Mowing and pruning equipment includes power take-off (PTO) mowers, flex-wing mowers, tree trunk edge mowers, and extended arm rotary toppers/hedgers. Aerial man-lift trucks are frequently utilized for tree pruning or removal.

General purpose mowers, whether PTO or self-propelled, are typically used for cutting and maintaining rights-of-way, landscaped areas, and general farm grounds. Mowers are not intended for heavy brush or small tree cutting uses (see the rotary cutter category for those applications). General purpose mowers are generally of similar design and use rotating blades to shear grasses and weeds. Mowers may be of practically any width, including 15 feet or more in width for three-section flex-wing PTO units. Some are specifically designed for use in orchards as tree trunk edge mowers.

Pruning applications require specific designs targeting the required applications. Some employ towed or self-propelled bucket lift devices. Most moderate to large farms tend to employ purpose-built, self-propelled equipment. These may use extended arms with multiple cutter units that are designed for a spec farming application. When operated properly, these units are usually as accurate as hand pruning but require far less time for the pruning operation. The two basic categories are hedgers and toppers. Hedgers are used to control the width of the tree/vine, and toppers are used to control the height.

OEM-built mowers and pruning equipment are designed, engineered, and constructed for use in specific applications and are typically designed to reduce the known or common risks associated with the application tasks. They are also provided with appropriate operating and safety guidelines. The best source of assembly, operation, maintenance, loss prevention, and safety information is contained in the OEM documents.

## Maintenance tips

- Due to the wide variety of types, designs, and construction of mowers and pruning equipment, it is important to understand and adhere to the assembly, operation, and maintenance guidelines provided by the OEM.
- Due to the heavy shock loading stresses applied to the cutting blades and drive train, the cutting blades and drives should be frequently inspected.
- The cutter spindle and wheel axle can use a considerable amount of grease in just a few hours of operation. To help prevent early wear and potential failure of the spindle and axle, make sure the cutter wheel is greased prior to each use.
- Surface dirt and rust can hide more serious deterioration. All surfaces of this equipment should be periodically cleaned and inspected for damage or deterioration.

## Failure/loss prevention tips

- The owner's manuals for OEM purpose-built equipment provide guidance in operation and maintenance that is focused on failure prevention as well as safe operation.
- Though the engine/main power source is critical for operation, the most common mechanical failure for this type of equipment is in the cutter mechanism and its drive train. In routine operation, repeated shock loading places severe strain on the bearings and spindles for the cutting mechanisms. Shock loading should be minimized where possible. The lubrication grease for the bearings and spindles should be checked prior to each use.
- Most failures are progressive and can result in a sudden and catastrophic failure. Early detection of problems is essential in preventing failures. Routine inspection of all moving parts and bearing supports can result in early detection of mechanical problems and can allow for a scheduled repair prior to catastrophic failure.
- To help prevent gearbox wear and potential early failure, check the oil level in the gearbox prior to each use. The shaft seal at the bottom of the gearbox is likely to leak. If this happens, replace the seal. If oil needs to be added, use only the grade specified by the manufacturer.
- Wheel spindles and bearings require proper lubrication to prevent severe wear and eventual failure. Spindle and bearing grease should be inspected and maintained at proper levels prior to each use.

## Safety tips

- Almost all equipment with moving parts presents possible pinch points and other hazards. Care must be taken to prevent potential severe injury to fingers, hands, and other body parts. Similarly, loose clothing or gloves can get caught and pull body parts into moving machine parts.
- Use equipment designed for the application. It is the best way to assure safe operation. Rotary cutters and mowers pose a hazard due to thrown objects. High-speed blades can throw stones, rocks, and debris hundreds of feet at a high velocity. To help prevent severe injury to the operator or bystanders, always maintain safety guards in place and in good working condition. Be aware of personnel and animals near the work area and keep them away from the equipment. For pruning, that distance should be at least 50 feet.

## Energy savings/conservation tips

- Proper maintenance and lubrication will result in more effective and efficient operation of the equipment.
- Replace mower air filters as recommended in the OEM manual. A clogged or dirty air filter puts added stress on the engine and burns gas less efficiently.