

3. Simplicity of design, durability, and maneuverability. Usually the simpler the mower design, the easier it is to operate and adjust. However, mowers need to be versatile enough to perform the job, such as being able to hydraulically operate individual cutting units near stationary or unaccessible objects. Likewise, mowers should be well-braced and ruggedly built. Maintenance should be easily and routinely performed in order to minimize the power required to operate the equipment. Machines with easily accessible lubrication points, adjustments of belts, bearings, chains, and shafts will likely be better maintained by employees compared to designs which are not or require extensive effort to reach.
4. Turf type and/or use. Several types of mowers are available and used by golf course superintendents. These include reel, rotary, and flail mowers. Fine textured turf species such as bermudagrass or zoysiagrass should be mowed with a reel mower. This mower provides the finest, closest cut and is mandatory for high maintenance areas such as golf greens, collars, and tees. Turf species with wider leaf texture such as St. Augustinegrass or centipedegrass or upright growing species such as bahiagrass or tall fescue are usually mowed with a rotary mower. Most home lawns, and low maintenance areas such as roadsides or golf course roughs are maintained with a rotary mower. Flail mowers are also often used in low maintenance areas which do not demand the highest quality grass.

Care of equipment once it has been obtained is almost as important as initially choosing the right piece. Routine maintenance such as lubrication, oil changes, blade sharpening, tune-ups, belt adjustments, and proper cleaning are important in extending the useful life of equipment as well as lowering operating costs. Adequate, accurate records need to be maintained and observed to help pinpoint costs of operation and to justify purchase of new equipment. In addition, proper storage should be available to minimize the exposure of equipment to weather, to prevent accidents, and to maintain security. When a job is finished, the unit should be properly cleaned which includes rinsing, and stored in a clean, dry and secure area.

Reel mowers

Reel mowers consist of blades attached to a cylinder known as a reel. As this cylinder rotates,

grass leaves are pushed against a sharp, stationary bedknife and are severed. A reel mower that is properly adjusted cuts grass as cleanly as a sharp pair of scissors and exhibits better mowing quality than other type of mowers. Due to this superior cut, higher maintained turf areas such as golf course greens, tee, and fairways as well as athletic fields should be mowed with a properly adjusted reel mower.

Reel mowers also require less power, consume less fuel and, therefore, are more efficient to operate than rotary or flail mowers. Reel mowers use up to 50% less fuel per acre of cut than rotary mowers when used at the same mowing speed.

Factors influencing quality of cut of reel mowers include the mowing height, the number of blades on the reel, the rotational speed of the reel and forward speed of the mower. At mowing heights of 1/2 to 1 1/2 inches, a reel mower typically has 5 to 7 blades per cylinder. In order to use the same mower at a lower height of cut, the reel would have to be powered to revolve at a higher rate of speed than at a higher cutting height or a wavy or rippled appearance of the turf would develop. Nine or more blades per reel or a hydraulically-powered reel are required at mowing heights below 1/2 inch to provide a smooth cut. Golf green mowers typically have 11 to 13 blades on a relatively small diameter reel in order to provide the desired smooth surface that is required for putting.

The wavy or rippled appearance associated with an improper mower setting or height is a result of exceeding the designed 'clip' of the blade. The clip is defined as the horizontal forward distance covered between the time each reel blade engages the bedknife. This is influenced by number of blades and rotational speed of the reel and is independent of reel diameter. As mentioned previously, the greater the number of blades on a reel, the shorter the distance the mower travels before the reel again engages the bedknife and the smoother the resulting cut. This is also influenced by rotational speed of the reel in relation to ground speed. A faster rotating reel will produce a shorter clip length than a slower reel with the same number of blades. Usually the most uniform cut occurs when the clip equals the mowing height. Reel mowers that are ground-driven have a constant clip and can only provide a smooth cut at or above a certain height and will result in ripples when attempted to mow below that height. This rippling also occurs