

DISC MOWER

before the season

Cutting height 5 – 7 cm, working speed over 10 km/h, engine's speed 1600 – 1800 rpm/min – these are optimum work parameters of a disc mower. But before we start cutting grass the machine has to be properly prepared. How to do it recommends Leszek Szulc, service manager in company SaMASZ.

Season preparations of the mower should be started with thorough cleaning. After that any traces of rust should be removed and the area affected painted. This will prevent the rust from spreading – says Leszek Szulc. Then all the visible units and parts must be checked along with their connections – tighten all loose bolts and nuts and replace all damaged and/or worn parts with new genuine ones. After the above mentioned procedures have been done, proceed to

lubrication of all greasing points marked on the mower. Bear in mind, that rolling bearings must be greased with LT43 (or any other grease designed to lubrication of rolling and slide bearings working in temp. -30oC to +130oC). Main joints of the mower and telescopic tubes of PTO shaft are lubricated with STP grease. Do not forget, that crosses and tubes of PTO shafts must be greased every 8 hours.



When tightening V-belts check if the distance between plate tip and holder is 5 mm.

Cutterbar and...

In disc mowers – depending on the way of cutterbar's suspension – there are two solutions drive transmission. In the machines with side suspension of cutterbar, the discs are driven from tractor's PTO through PTO shaft, spline shaft, belt transmission and intersecting axis gear. In disc mowers with central suspension of cutterbar the drive from the tractor is transmitted through PTO shaft to intersecting axis gear and then by another PTO shaft equipped with friction clutch to second intersecting axis gear. Then through double joint and spline shaft is directed to gears placed inside the cutterbar. In case of disc mowers, maintenance activities of drive unit include checking oil level in the cutterbar and gearboxes and evaluation of V-belts tension.



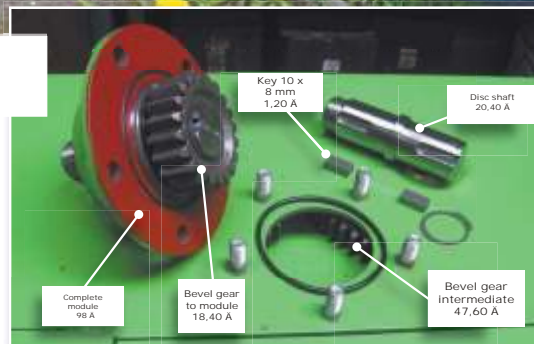
Fot. P. Stanisławski

The prices of working components of SaMASZ KDT mowers.

The oil used in the cutterbar is 80W90 – adds Leszek Szulc. In order to grease gears we can use oil Hipol 15 as well. Crucial thing is daily inspection of oil level through an inlet on top of the cutterbar. Proper oil level is 5 – 7 mm from the bottom of the bar. The oil has to be periodically replaced. Recommended frequency of the change is once in every three seasons. The similar rule applies to replacing oil in intersecting axis gears, in which oil Transol 680 – 1000 is used. The level of the liquid is checked through control inlet on the side of the gearbox.

If we state that the level is lower, first we need to remove the cause of oil leakage and then fill in or replace oil with new one. It is also worth noticing – especially when it comes to machines stored outside – if there is no water in the oil. If the color of oil is different or there is too much of it inside the cutterbar, then the whole liquid must be replaced. Otherwise the mechanisms inside are prone to corrosion. These are: bevel gears, bearings and shafts. Besides the leaks in the cutterbar have to be sealed.

Check if the discs rotate easily and if there is no backlash. If we find out that there is backlash in the discs then the module of disc's drive or its components have to be replaced e.g slide bearings. Next activity is checking knives and knife holders – says Leszek Szulc. If the knives are blunt, worn too much or notched then they have to be replaced with new ones always in sets. Replacing only one knife may cause extensive vibrations, which may lead to premature damage of bearings in mower's drive. When mounting knives bear in mind the direction of disc's rotation. The knives in disc mowers are not straight but slanted – left and right. During replacement also check the condition of knife holder pins and knife holders. The pin with diameter less than 10 mm



must be replaced with a new one.

In case of mowers equipped with belt transmission, always control the tension of V-belts before the season. If they are mounted too loosely they will not transmit the drive. On the other hand if their tension is too stiff, it can lead to extensive charge of bearings inside spline shaft housing or decreasing the viability of a V-belt. The tension of the belt can be checked through special windows. To check the tension more thoroughly remove the safety guard. A deflection of the properly tensioned belts under finger pressure should not exceed 15 mm. If the belts are too loose the nut on the tensioner should be screwed. The screwing is not enough. It is also crucial to adjust the distance between the housing and an indicator, which should come to at least 0,5 mm. If this condition is not fulfilled, V-belts have to be replaced with new ones, bearing in mind that the whole set of belts must be changed. In SaMASZ mowers there are 4 belts. The whole cost of them is... It is recommended to loosen the tension of V-belts during winter – says Leszek Szulc – because the change of temperature considerably decreases durability when they are tightened.



Not only do the knives wear. During usage knife holder's pin wears as well.

Fot. P. Stanisławski

In most popular SaMASZ disc mowers – KDT series, the discs are driven by gears through special modules. A fundamental component of the module is a shaft with bearings placed in the lower part on a smaller gear. In the top part an upper disc hub is mounted to the shaft. The disc is directly mounted to the hub. In order to secure bevel gears placed inside the

areas, when driving on the meadow it is worth taking one or two spare modules, because...
-it will enable their quick replacement on the field without long pauses in operation – adds service engineer Leszek Szulc. Only two wrenches are needed - 19 and 46. First, four disc bolts must be unscrewed, then the nut from upper disc



If the safety device breaks away too easily, tighten up the spring approximately 1-2 mm.

cutterbar against damage, there is a simple design solution. In the event of hitting into an obstacle the key placed between the gears and disc shaft is cut off. That is why, according to Leszek Szulc, when the farmers operate on bigger

hub and five bolts fastening the module to bar cover. Then the whole module with cut-off pin can be taken out and in its place a new one may be put. Of course, damaged module can be regenerated.

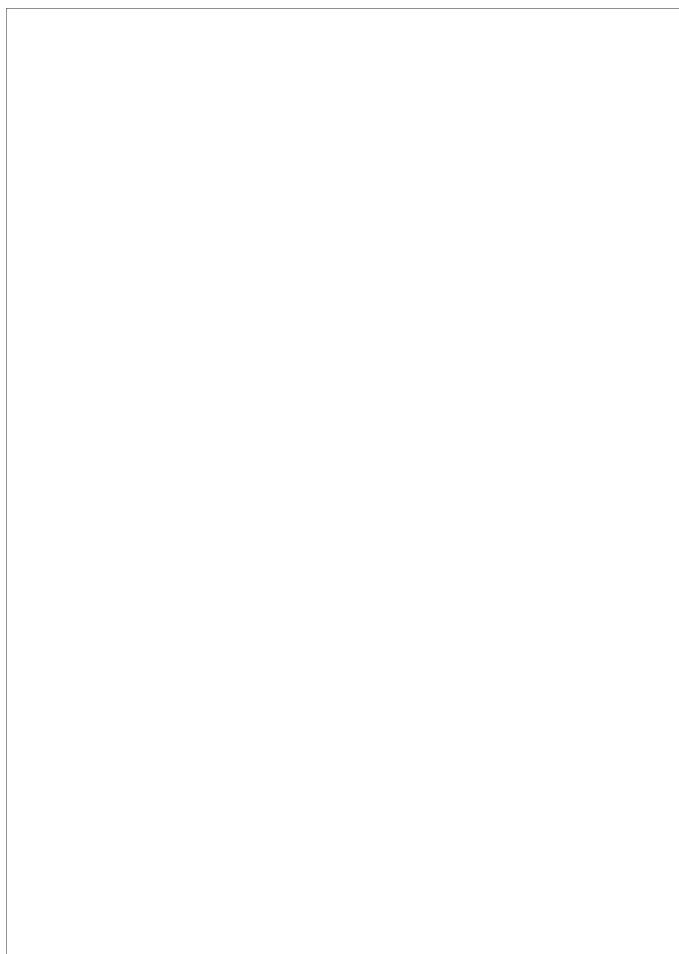
Cut-off keys are the securing components of the cutterbar against damage. Mowers are also equipped with overloading safety breakaway devices. Often in disc mowers, as well as drum mowers there are mechanic safety breakaway devices with the regulated spring. Recommended length of safety device spring should be 143 mm (KDT mowers) or 145 mm (KDL) – adds Leszek Szulc. - If the safety device breaks away too easily, tighten up the spring approximately 1-2 mm. Do not tighten up too much, because you may prevent the safety device from working and damage the mower. If the safety device even than works too often, then 2 pcs of safety device cubes must be replaced. Mowers with central suspension have hydraulic safety breakaway device. It protects the mower against hitting small obstacles. In the event of hitting an immovable obstacle the cutterbar folds back and at the same time rises about 70 cm. After that, the cutterbar automatically comes back to working position. Hydraulic hoses should be periodically checked and if any damage occur or they expire, replace with new ones. Never use scotch tape to repair hydraulic hoses. Expiry period should not exceed 5 years.



The farmers very often forget that before dismantling a disc mower from a tractor the hitch must be secured against falling by putting the pin into bevel bar. Particularly it concerns the farms which have based so far on drum mowers. In these types of mowers there are no support springs, so without any other activities they can be dismantled from the tractor. In disc mowers with central suspension of cutterbar before we dismount the mower from the tractor push out spring block and secure it with a pin (see picture). In the machines with side suspension of the cutterbar the pin must be inserted in the bevel bar.

When preparing the machine to season do not forget about checking and, if need be, replacing safety curtains and guards. These are only units protecting outsiders when the knife falls off or hard objects are thrown off. During preparations pay attention to safety curtain's stiffness. Bear in mind, that in operation of disc mower daily maintenance plays very

important role – adds Leszek Szulc. Clean the mower each day after working, especially between discs and the cutterbar, because grass with mud may damage bearings in the disc module and block free rotation of the disc. Check the condition of cutting unit, grease PTO shaft and control oil level in intersecting axis gears.



- Trommelmäher
- Scheibenmäher
- Mulchgeräte
- Auslegemulcher
- Kreiseltwender
- Kreiselschwader
- Schneepflüge