



Reg. No. CK 1989/023716/23
Vat Reg. No. 4830119907

THROTTLE LEVER

CLUTCH LEVER

CUTTER LEVER

9 H.P. ENGINE

REAR ROLLER ADJUSTER

RUBBERISED REAR ROLLERS

FRONT ROLLER ADJUSTER

GRASS BOX ARM

8-BLADED CUTTING CYLINDER

PROTEA 760 HD



Listed below are various procedures that should be followed to ensure a superior cut and trouble-free mowing:

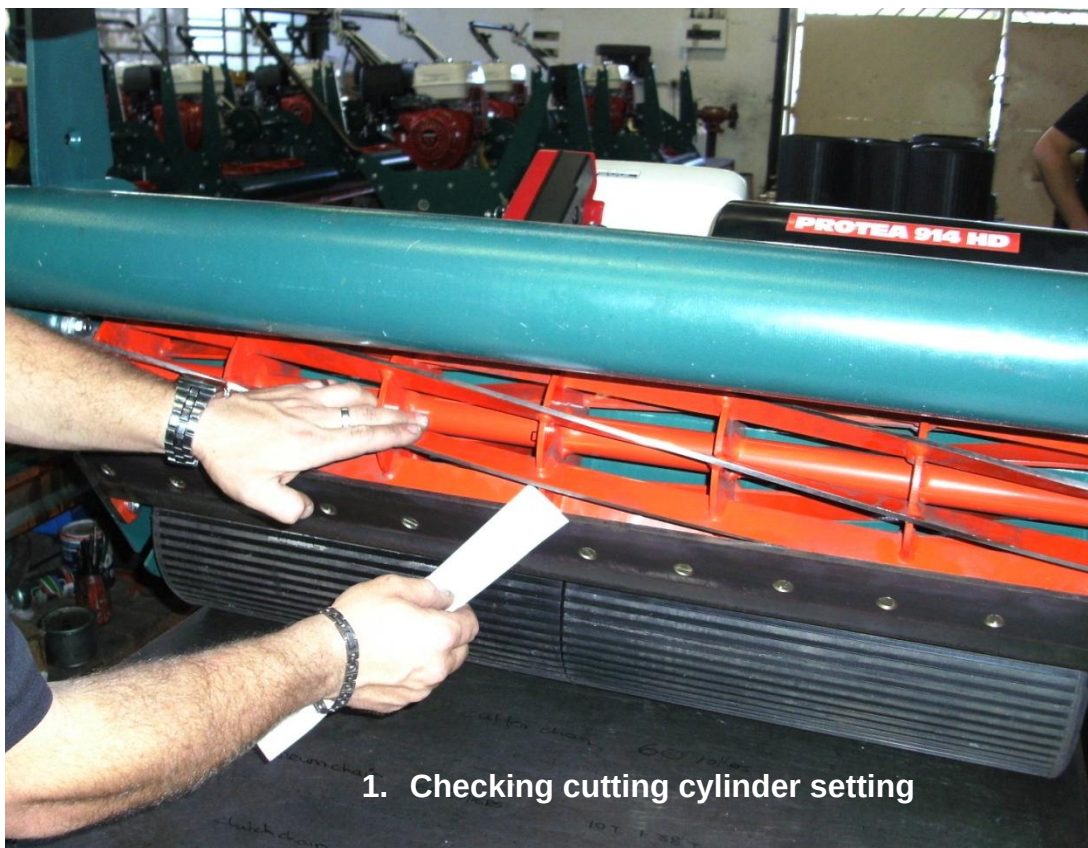
1. DAILY – CUTTING CYLINDER SETTING

- The cutting cylinder is set correctly when it is lightly touching the bottom blade along its full length.
- You can perform a cutting test by holding a piece of grass or paper (folded double) between the cutting cylinder and the bottom blade and turning the cutting cylinder by hand. You should get a clean cut over the full length of the bottom blade.
- **HOW TO SET:-**

Lay the machine back with the handle on the ground. Ensure that the petrol tap is “off”.

To adjust the cutting cylinder, release the clamping nut on both sides of the cutting cylinder bearing housings with a 17mm ring-spanner. You can now tighten the cutter adjuster screw nut (clockwise) with a 14mm ring-spanner until the cutting cylinder is touching the bottom blade lightly on both sides. Do a cutting test and retighten the clamping nuts.

After setting, check the chain tensioner. Some slackness should be felt in the cutter chain.

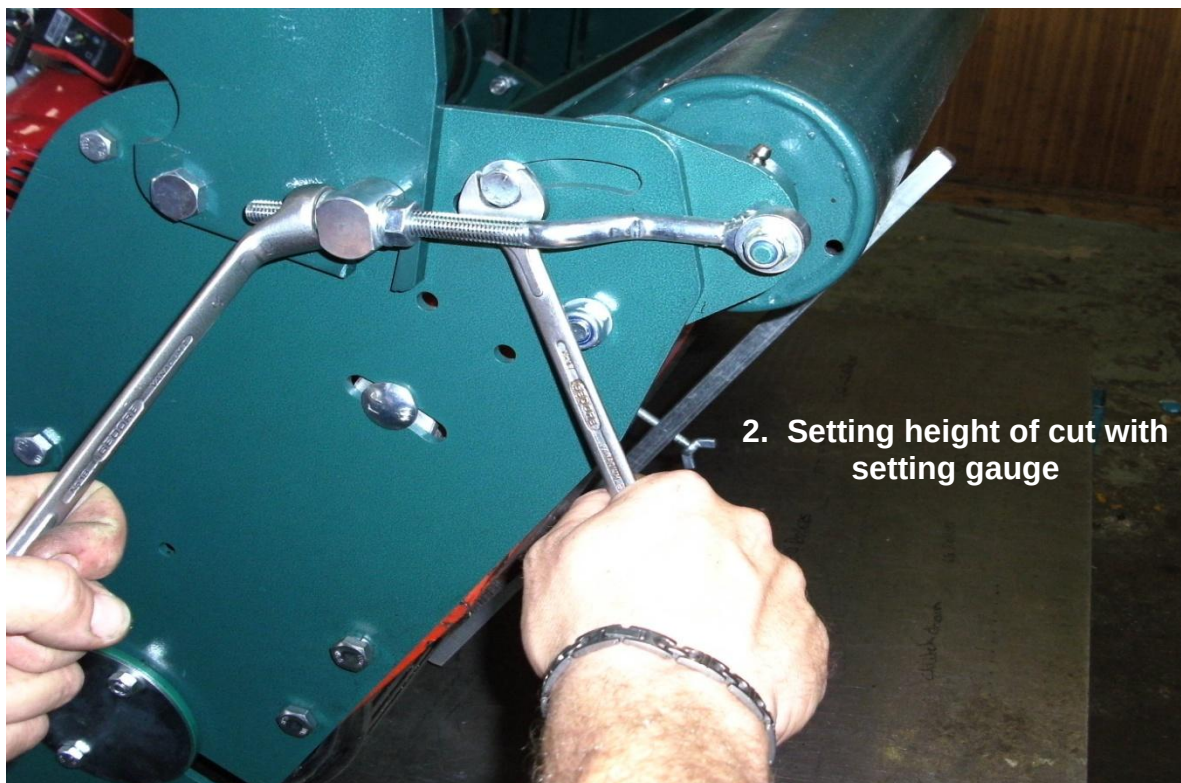


1. Checking cutting cylinder setting



2. HEIGHT OF CUT

- The height of cut is controlled by the front roller. The mower is factory set at 22mm. To change the mower's height of cut, you must set the setting gauge first to the required height.
Adjust the screw to the desired height and lock it up. You can now commence with adjusting the front roller.
- Lay the machine back with the handle on the ground. Ensure that the petrol tap is "off".
- Hook the head of the setting gauge screw onto the bottom blade, and allow the bottom edge of the setting gauge rest against the rear roller.
- Now adjust the front roller until it is touching the front-edge of the setting gauge on both sides of the mower. You need a 17mm and 14mm ring-spanner.
- With the 14mm spanner you slacken off the front roller scraper bar and front roller bracket on both sides, and with the 17mm spanner you adjust the front roller adjuster rod.



2. Setting height of cut with setting gauge



3. ADJUSTING BELT TENSION

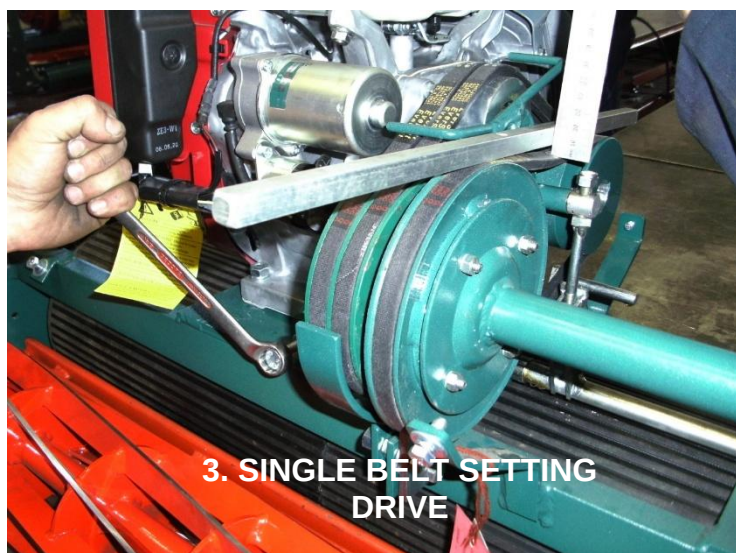
The machine features three (3) belts which are identical. Two (2) belts drive the cutting cylinder, and the single belt drives the rear rollers.

SINGLE BELT DRIVE:

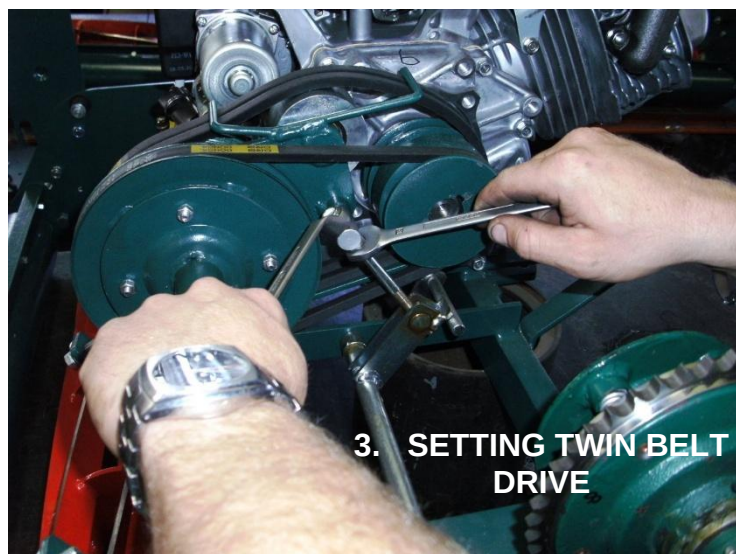
- To adjust the tensioning of the single belt, slacken the engine mounting bolts, and tension belt with the engine adjuster screw. (Tools = 17mm flat spanner). **DO NOT OVER TENSION – ALLOW BELT TO DEPRESS 10MM** from a straight edge placed along top belt.

TWIN BELT DRIVE:

- To tension the twin drive belts, screw the jockey pulley adjuster upwards (anticlockwise), and tighten the nyloc nut when set. (Tools – 13mm flat spanner).



DO NOT OVER TENSION- when engaging the drum clutch lever, only light pressure is necessary to engage the tensioning mechanism.





4. CLUTCH SETTING

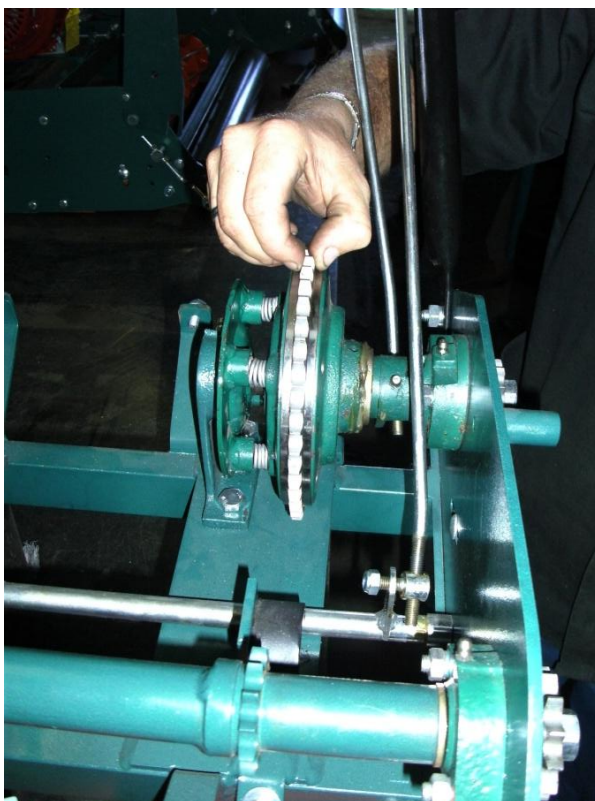
After a few months of usage, the clutch may need to be readjusted.

- HOW TO SET THE CLUTCH

Pull up the drum clutch lever. The clutch sprocket should be loose in this position, bend over and hold onto the clutch sprocket, and you should be able to slide the sprocket sideways, i.e. the sprocket should rattle slightly. If the sprocket is tight, loosen the bearing housing ramp and turn the ramp downwards until the sprocket is loose, and lock the nuts again (2 nuts -13mm spanner).

Now push the clutch lever all the way down. The clutch sprocket will now be tight, but the thrust washer next to the clutch must be slightly loose.

Just to reiterate – when the clutch lever is pulled up the sprocket must be loose, but when the lever is pushed down the thrust washer must be loose.





5. SETTING OF PIVOT STOP (656763) FOR CUTTER LEVER

- Do not allow the cutter lever to become too slack, otherwise the cutting cylinder can disengage itself, or just slip. The cutter lever must firmly snap into position on the handlebar.
- The pivot stop acts as a backstop – the higher or more upright you set the position of the back stop the tighter the lever becomes. If the backstop is already in its most upright position, you can adjust the control rod pivots, which are screwed on at the end of the control rod. Turn the pivots upwards (clockwise) to shorten the control rod until you get the lever snapping tightly into position.

When everything is set up, the pivot stop must be tightened again properly to stop it from moving.





6. SETTING OF CLUTCH LEVER

The clutch lever must also snap back into position when pulled up. If the lever is too slack turn the control rod pivot upwards (clockwise) to shorten the control rod until the lever snaps into position on the handlebar.

7. REAR ROLLER ASSY

Keep an eye out for excessive play between the two drums. This should be checked every 6 (six) months.

The rear rollers are factory set with hardly any sideways play. If the drums display more than 1.5mm play, then they will need to be readjusted.

The entire drum assembly will need to be removed from the mower, and the two (2) drums have to be readjusted separately to eliminate any sideways play prior to fitting them back into the machine.

Excessive play can cause the cast gears in between the drums to wear down rapidly. Each roller needs to be checked separately for sideways play.

8. LUBRICATION

- **THE FOLLOWING POINTS REQUIRE GREASE LUBRICATION:**
 - A. Front roller bearings
 - B. Cutter bearings
 - C. Counter shaft bearing housing
 - D. Drum clutch bearing housing, both ends.

- **THE FOLLOWING POINTS REQUIRE OIL LUBRICATION:**
 - A. Drum clutch ramp
 - B. Drum clutch plate, do not use excessive amount of oil, 2 or 3 drops of oil in hole every 3 months (to keep the lubrication strip moist)
 - C. Jockey lift/pivot pin
 - D. Pivot tube both ends
 - E. Lightly oil chains – particular attention to the clutch sprocket chain – avoid any excess oil on large sprocket.
 - F. Cutter and clutch levers
 - G. Drive tube



TROUBLE SHOOTING (FAULT FINDING)

1. ENGINE DOES NOT START

- i. Check petrol
- ii. Check the oil level. If the oil level is too low the engine will automatically cut off, and if there is too much oil it will cause the carburetor to flood. It is important to maintain oil level between the two markings on the dipstick.
- iii. Check the air filter.
- iv. Check the sparkplug.

2. MOWER DOES NOT MOVE FORWARD WHEN THE CLUTCH LEVER IS ENGAGED (PUSHED DOWNWARDS)

- i. Remove the top fibreglass cover as well as the chain cover.
- ii. Engage the clutch lever. If only the clutch sprocket is rotating, but not the clutch plates, evaluate the following:
 - a) Check to see if the nut at the end of the clutch shafts has come loose. Tighten with a 19mm spanner.
 - b) The pressure plate is stuck. Use an oil spray, Q20 or similar, and try to get oil in-between the clutch shaft and the pressure plate. (see picture below). Also tap the clutch plate with a small hammer lightly, and the four (4) springs will push the pressure plate against the clutch sprocket. (see picture)
 - c) Check if the thrust washer (657512), which is right next to the clutch body, is loose when the clutch lever is pushed down. If the washer is tight and you cannot turn it by hand, the bearing housing and ramp (656069) need to be reset. With a 13mm spanner loosen the nuts of the bearing housing and ramp and rotate it clockwise until the thrust washer has +/- 0.5mm – 1mm clearance and tighten the nuts back up again.
 - d) The clutch should now be working properly, and you should see the drum chain moving and the drum sprocket turning. If the mower still does not want to move forward, the back drum assembly will need to come out. You will find that the back drums will have too much side play and will have to be reset, or the bronze pinions are worn out or broken and need to be replaced.



LOOSEN CLUTCH



3. MOWER MOVES FORWARD BUT DOES NOT STOP WHEN CLUTCH LEVER IS PULLED UP

- a) The clutch has been over adjusted and does not release the clutch sprocket.

CHECK AS FOLLOWS:

Pull up the clutch lever, bend over and feel the clutch sprocket. There should be some play, and you must be able to move the clutch sprocket sideways. If the sprocket is tight, loosen the two nuts of the bearing housing ramp and with a 13mm spanner, turn it anticlockwise until the clutch sprocket has about 1mm play, and lock again.

10. GENERAL POINTS

- a) When engaging the clutch lever or cutter lever, always push the levers all the way down – not halfway. Same goes for disengaging; the lever must be pulled all the way, so that they lock in against the handlebar. Not engaging the levers properly can cause “V”-belts to heat up and elongate which will make the clutch slip.
- b) Never allow the cutting cylinder run “dry” against the bottom blade. When you have finished cutting, the cutting cylinder must be disengaged, that means PULL UP the cutter lever. Driving the mower with the cutting cylinder rubbing against the bottom blade can cause the cutting cylinder to heat up and expand. This can cause clutch failures, and the engine can be choked off.
- b) In case of an emergency, and you must stop the mower immediately PULL BOTH LEVERS UP and everything will stop. Do not try to figure out which lever is which – just pull both levers back. This goes especially for operators who are not familiar with the machinery yet. THIS IS VERY IMPORTANT TO REMEMBER TO PREVENT ACCIDENTS and damage to the machine.