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CYLINDER MOWER SERVICING MANUAL



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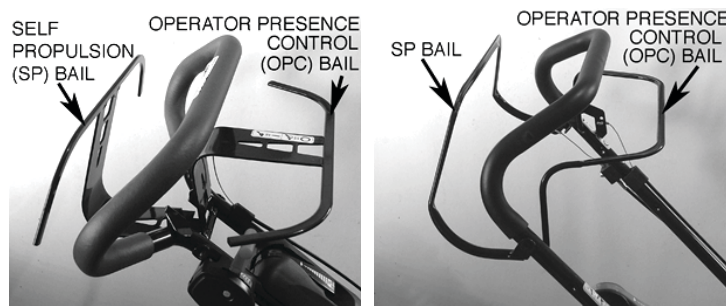
NOTE:- All positional descriptions such as left, right, front, rear, above and below refer to those places as seen by the operator when standing behind the handle of the mower in its normal grass-cutting orientation. Please note that these instructions are to be read in conjunction with the Owner's Manual for the mower and the Engine Manufacturer's Operator's Manual for the engine.

ALWAYS USE GENUINE MASPORT SPARE PARTS

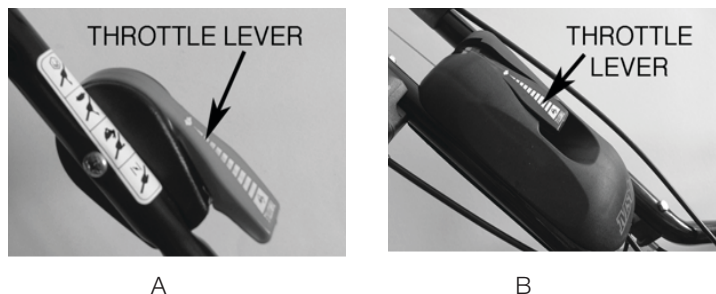
Controls

ENGINE CONTROLS

All engines have a throttle control to allow the engine speed to be varied as desired. This control does not operate the choke or stop switch on the engine. See the engine manual for information on using the choke and stop controls. Moving the throttle to the slow position will disengage the centrifugal engine clutch and stop rotation of the cutting cylinder. Some mowers are fitted with an Operator Presence Control (OPC) that allows the engine to run only while the OPC bail (a bar or hand-grips in front of the handle crossbar) is held against the handle. If the operator releases the bail, the engine stops immediately.



Throttle Control Adjustment



With the engine running, move the throttle lever through its full travel range. In the slow position, the engine should run at idling speed and the cutting cylinder should be stationary. At the fast end of the range the engine should be running at a speed that will require a brisk walk to keep up with the mower. If one end or the other of the lever travel does not produce the required result, simply release the clamp that holds the cable outer sleeve (on the engine), move the sleeve a few millimetres under the clamp and re-tighten it. Test again and adjust as necessary.

CAUTION. Do not run the engine for more than a few seconds with the cylinder rotating if the mower is not cutting grass. Grass lubricates the cutting edges, preventing overheating and premature wear.

Throttle Control Replacement

If the control is a type A shown above, simply detach the control box from the handle, note where the cable ties are fitted and cut them. After releasing the cable clamp screw on the engine, the new cable can be fitted and held in place with new cable ties. Clamp the control box onto the handle, refit the clamp screw and adjust the cable position as detailed above.

To gain access to the control box for type B throttle controls, remove the four screws under the throttle mount that hold the two halves of the mount onto the handle. The top throttle mount can then be lifted clear of the handle. Remove the M6x60 screw that fixes the control box to the top mount, note the cable tie positions and cut the cable ties. After the clamp screw on the engine has been removed, the throttle wire can be disengaged from the carburettor lever. The old control box can then be withdrawn from the top mount. Reverse this procedure to fit the new throttle control. Take care not to over-tighten the M6x60 screw that holds the control box to the top mount as this would make movement of the throttle lever very stiff. After fitting the cable wire into the carburettor lever, re-assemble the two halves of the throttle mount onto the handle, fit new cable ties, replace the clamp screw and adjust the throttle cable sleeve position under the clamp as described above to give correct operation of the engine.

OPC Control Adjustment

There are no adjustments provided on this control as it is a safety feature required in the Northern Hemisphere that might then be over-ridden. When the OPC bail (see the illustrations above) is held against the handle, the engine ignition can function and the mower can be started. When the bail is released, the primary winding of the ignition coil is shorted out, thus quenching the ignition spark and stopping the engine. If the OPC bail has been damaged and twisted out of shape, the bail may contact the handle before the ignition has been 'switched on'. This is rare, but straightening of the bail can provide a little extra control wire travel to correct the fault.

PROPULSION CONTROLS

Drive Clutch

The mower drive system is engaged by using the SP (Self Propulsion) bail. See the illustrations on the left. Of course, the drive clutch will not drive the roller unless the engine clutch is engaged and the cutting reel is rotating. The drive clutch is mounted inside the chaincase cover. Both clutches are designed to be fully engaged or fully released. **Any attempt to reduced travel speed by only partially engaging the clutches will lead to overheating of the clutch linings, causing serious damage.** It is important that the SP bail cable is adjusted to the correct length to provide the necessary clutch engagement pressure.

Drive Clutch Cable Adjustment

Step 1. Confirm that the cable inner wire will move at least 26 mm when the SP bail (see to the left) is moved from the clutch disengaged (open) position to the engaged (closed) position against the handle. Adjust the contour of the bail slightly if necessary to achieve this wire stroke.

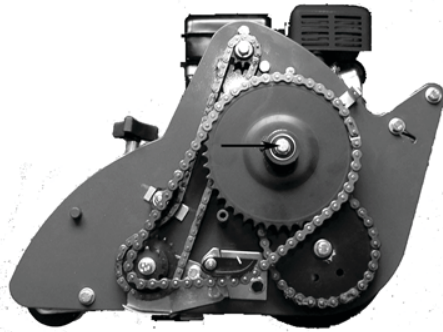
Step 2. Pull the mower backward toward you while gradually closing the SP bail, and note the position of the bail when extra resistance to backward movement indicates that the drive clutch is just engaging. This extra resistance should occur when the SP bail is about half way between open and closed.

Step 3. If the engagement point is incorrect, adjust it by rotating the thumb-wheel on the anchor block at the top of the drive clutch cable sleeve. Rotating the wheel clockwise will move the clutch engagement point nearer to the bail closed position, and anti-clockwise will move it toward the bail open position.

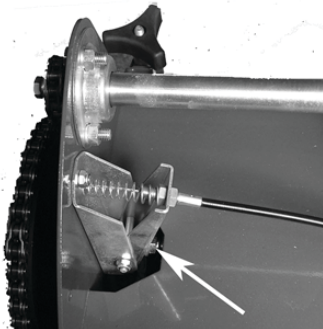
Step 4. Verify that the adjustment is correct by field testing the mower. It should be possible to close the bail against the handle without the need for excessive pressure, and there must be no sign of drive clutch slippage.

Step 5. Repeat this adjustment after 150 hours use of the mower or at any time if the mower drive seems to be slipping.

NOTE, If the available adjustment on the thumb-wheel is insufficient to achieve correct operation, another adjustment point is available on the drive clutch itself. The draw bolt through the centre of the clutch can be tightened to compensate for clutch lining wear



Access to the head of the bolt is gained by removing the chaincase cover from the left side of the mower.



To reach the nut of the clutch draw bolt, remove the transmission cover over the engine clutch and drive shaft. It may be necessary to remove the small angle bracket that provides the thread for one of the chaincase cover screws in order to lift the transmission cover clear. The draw bolt nut is directly under the aperture in the engine platform. Wind the thumb-wheel on the anchor block (at the top of the handle) clockwise about 12 full turns. Tighten the draw bolt until the clutch engages when the clutch lever is parallel to the mower side-plate. Test this by pushing the clutch lever by hand toward the side-plate. Check and adjust the clutch operation as described above, making further adjustments to the thumb-wheel and draw bolt if necessary. The two nuts on the lower end of the clutch cable sleeve are not intended for adjustment of the cable length. Replace the covers.

IMPORTANT: An incorrectly adjusted clutch cable, or using the mower with the SP bail not fully against the handle will cause clutch slippage, overheating and serious damage.

Mower Adjustments

CHAINS

There are three chains, but only the primary one requires adjustment as the secondary chain between the cutting cylinder and the drive clutch has an automatic tensioner. The final chain between the drive clutch and the rear roller is not adjustable. Altering the position of the primary chain adjuster should not be necessary unless the cutting cylinder has moved up or down a significant distance.



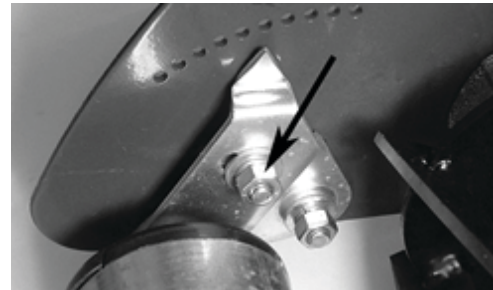
The plastic shoe should not be hard against the chain. Rotate the cutting cylinder several times in case there is a tight position of the chain. In the position where the chain is tightest, it should still be possible to move the chain with light hand pressure in and out a total of at least 5 millimetres at the mid point of the straight run between sprockets.

FRONT ROLLER(S)

To vary the grass cutting height, the front roller(s) are raised and lowered by turning a hand-wheel.

Curing uneven cutting (weatherboarding)

There is an initial adjustment which sets the front roller parallel to the rear roller so that the mower will not produce a 'weatherboard' cut. If it is suspected that the front and rear rollers are not parallel, set the mower to a low cutting height and place it on a perfectly flat surface such as an accurately flat concrete slab.



Slacken off the clamp screw on the right hand support bracket and move that end of the roller up or down until the mower is sitting firmly on the slab without rocking. A feeler gauge between the front roller and the flat surface at each end of the roller may help to establish when the roller is truly parallel to the surface.

Tighten the clamp screw and rotate the mower on the slab through 180 degrees. The mower should still not rock. If it can be rocked, the slab was not flat enough and a better test site should be found.

After setting the front and rear rollers parallel to each other as described above, use a feeler gauge between the baseplate blade and the test surface at each end of the blade. The maximum variation allowed is 0.5 mm for Golf mowers and 1.0 mm for all others. If the difference is outside the allowable tolerance, the probable cause is uneven wear of the cutting cylinder resulting in the cutting cylinder being a smaller diameter at one end than the other. The cure for this is a careful re-sharpening of the cutting cylinder and baseplate blade.

Note: Do not confuse weatherboarding with the different appearances of the freshly cut grass when the mower travels toward or away from the viewer. This 'light and dark' effect is perfectly normal, and is, in fact, frequently used deliberately on sports fields to good effect.

Cutting reel

The positioning of the reel in relation to the baseplate blade is very important for clean cutting and long reel life. Too large a gap, and the grass will not be cut cleanly, and too small, or no gap at all will cause the reel to rub on the bottom blade, causing overheating and excessive wear of the blade and reel.

Step 1. Remove the chaincase cover and the transmission cover over the engine clutch and driveshaft. It may be necessary to remove the small angle bracket that provides the thread for one of the chaincase cover screws in order to lift the transmission cover clear.

Step 2. Check that the primary chain is not under tension due to the adjuster being hard against the chain. If it is, slacken the clamp bolt and move the adjuster out to relieve the tension.

Step 3. Tip the mower backwards on its rear roller until the handle touches the ground. Place a weight on the handle to ensure the mower will stay safely in this position.

Step 4. Rotate the reel by turning the engine clutch drum by hand in the direction it runs when cutting. (Forward at the top of the drum).

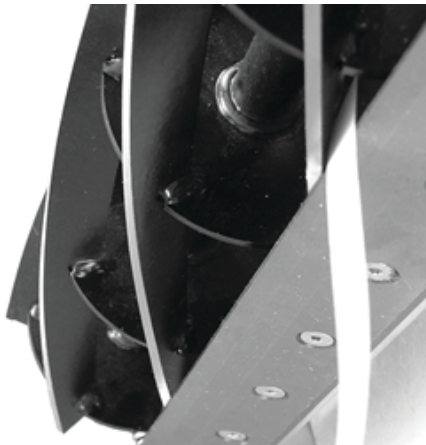
Turning the reel by gripping the reel itself can result in serious hand injury.

Step 5. Confirm that the reel is not touching the baseplate blade. If it is, you will hear a scraping sound. Careful listening as the ends of the reel spiral blades come to, or pass off, the baseplate blade will reveal where the reel is rubbing on the blade. If it is touching, carry out Step 6.



Step 6. Back off the adjusting screws (turning anti-clockwise) at one or both sides of the reel as appropriate until the reel no longer touches the blade. Move the adjusters only a fraction of a turn each time an adjustment is made.

Step 7. Prepare several 20 mm wide strips of 80 gsm copy paper.



Step 8. Holding a paper strip against the front edge of the baseplate blade at an angle that would be vertical if the mower were not tilted back, carefully rotate the cutting reel by turning the clutch drum. Tighten the adjusting screws carefully as required. When correctly adjusted, the paper will be cut cleanly and the reel will still not quite touch the baseplate blade. Repeat the test at various points along the length of the reel. A clean cut should be possible for at least 80 % of the blade length, with the remaining length (up to 20%) able to cut a double layer of paper strip. When correctly adjusted, there will be a 0.05mm gap (2 thousandths of an inch) between the reel and the baseplate blade.

Step 9. If a clean cut cannot be obtained, due to the reel blades and baseplate blade having rounded cutting edges, the reel and baseplate blade will need sharpening. This requires removal of the cutting unit from the mower and specialised grinding equipment.

GRASS DEFLECTOR

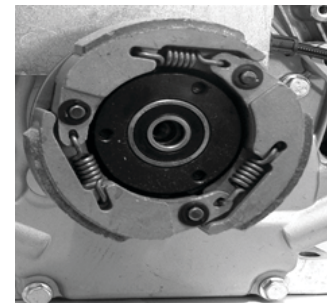
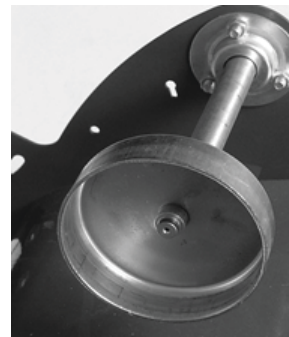
This is the curved steel panel directly above the cutting reel. Its purpose is to direct the flow of air and grass clippings from the reel into the grass catcher. The closer the deflector is to the reel, the further forward the grass clippings will be ejected.



The distribution of clippings into the grass catcher can be varied by raising or lowering the front of the deflector. Slacken the two clamp screws to move the deflector and re-tighten them when the desired results have been achieved

Dismantling the Mower

ENGINE CLUTCH



There are no adjustable parts in the clutch, and dismantling is rarely required. If a bearing requires replacement or the clutch linings are worn out, access is gained by removing the engine from the mower. Remove the transmission cover and the four mounting bolts in the base of the engine. This will allow the engine to be moved to the right, taking with it the clutch hub and clutch shoes.

Engine Clutch Spring Replacement

Sometimes it may be necessary to replace the three springs in the engine clutch because the clutch does not disengage when the engine is idling. Check first that the idling speed is not excessive. Check also that the alignment of the engine on the mower deck is correct. To do this, slacken the engine mounting bolts and, using the clearance between the bolts and engine base, move the engine around a little. If this does not cure the problem, open up the engine clutch as explained above and fit a new set of springs.





When removing the old springs, lever the spring end closest to the shoe pivot post out of its slot first. When fitting the new springs, use 'Vicegrip' pliers to hook the spring over the edge of the hole nearest the pivot post and then gently tap the spring end down into position. Do not spread the spring coils or over-stretch the new springs when fitting them as this will allow the clutch to engage at a lower speed than intended. When fitting new shoes, confirm that the outside diameter over the new linings is not over 107 mm. If necessary, trim the three pads equally to come within this size.

Engine Clutch assembly

When assembled, the clutch plate assembly should be 3 to 4 mm inside the mouth of the clutch drum, and this distance should be constant all round the drum when the engine is finally bolted in position.

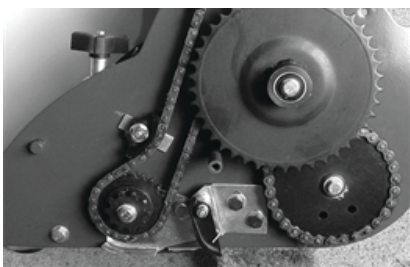
Clutch Drum Assembly removal

First remove the primary chain. It will be necessary to remove the engine from the mower as described above, but the top sprocket should be removed from the driveshaft before removing the engine as this supports the shaft while the sprocket is being removed. Early model mowers have the sprocket mounted on a RIGHT HAND THREAD, so it can be unscrewed for removal and release of the clutch drum shaft ballrace if required. To get a grip on the sprocket, wrap an old chain around it and use a pipe wrench on the outside of the chain. Later models have a retaining bolt in the end of the shaft and the sprocket is driven by a key. Remove the bolt and use a wheel puller to draw off the sprocket. When using a wheel puller, always screw the retaining bolt at least six turns into its original hole and place the wheel puller against the bolt. Using the puller against the threaded hole will damage the thread.

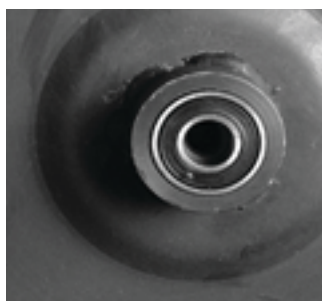
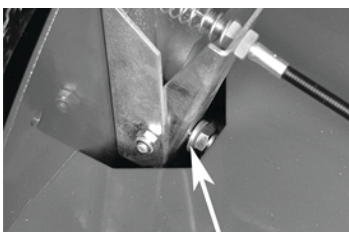
ROLLER CLUTCH

Step 1. Remove the transmission cover, and the chaincase cover. It may be necessary to remove the small angle bracket that provides the thread for one of the chaincase cover screws in order to lift the transmission cover clear.

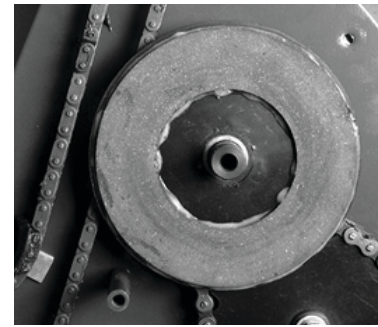
Step 2. Remove the secondary chain (the one between the cutting reel and the drive clutch) by extracting the chain connector link.



Step 3. Remove the clutch draw bolt. The head of the bolt is in the centre of the drive clutch, while its nut is accessible through the cut-out of the mower deck. Take great care, when removing the nut, not to drop it down inside the mower. Also be very careful not to drop the bronze thrust washer fitted between the draw bolt nut and the clutch lever. Note that when re-assembling the draw bolt the rounded side of the bronze thrust washer should be against the clutch lever.



Step 4. The large drive clutch sprocket can now be pulled off to reveal the driven plate with its friction facing. Be careful to keep all oil and grease from reaching the friction face.

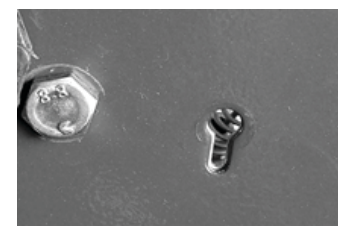
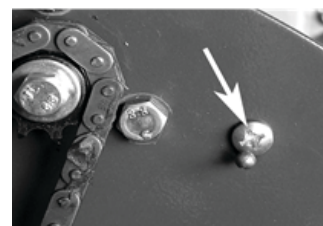


Step 5. Remove the connecting link on the roller chain. First slide off the link retaining clip, then rotate the rear roller a little until the chain connector is behind the clutch plate. The clutch plate can then be drawn outwards a little to give room behind the chain to extract the rest of the connecting link. With the chain removed, it is now possible to draw the clutch plate and sprocket assembly completely off the clutch post.



Step 6. There is rarely any need to dismantle the drive clutch any further, but if you wish to remove the clutch post and clutch lever assembly, remember the clutch post has a LEFT HAND THREAD. Using a suitable 'C' spanner or bar in the hole through the post, it can be unscrewed from the clutch lever assembly.

Step 7. Remove the small screw adjacent to the lower end of the clutch cable wire. The wire can then be moved sideways in the slot and withdrawn from its anchor position in the mower side-plate



Step 8. Remove the clutch lever assembly from the mower.



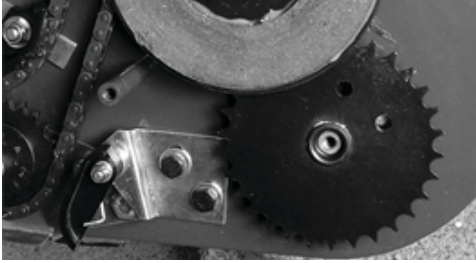
When re-assembling the clutch draw bolt, be sure to put the rounded face of the thrust washer against the clutch lever. (See the illustration at Step 3).

REAR ROLLER

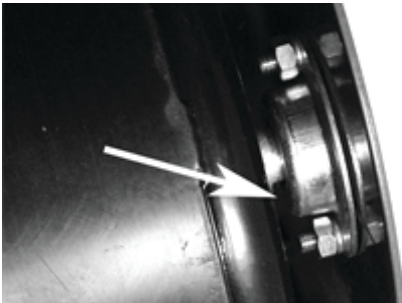
Dismantling procedure

Step 1. To get access, it is necessary to carry out Steps 1 to 5 above for dismantling the drive clutch.

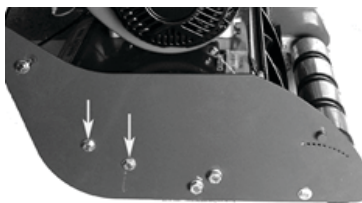
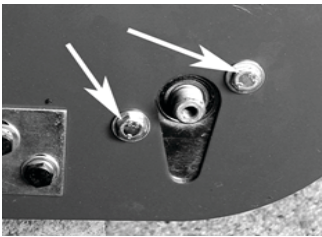
Step 6. Remove the rear roller sprocket. This is mounted on the roller shaft by a LEFT HAND THREAD. Using a lever engaging in the two holes in the sprocket, turn the sprocket clockwise to remove it. Usually a light hammer blow on the lever will start the sprocket moving.



If the roller needs restraining while doing this, there are two flats on the roller shaft at the right hand end (just inside the bearing) to which a narrow spanner can be fitted.



Step 7. Remove the four bolts (two each side) that are holding the bearing housings to the mower sideplates.



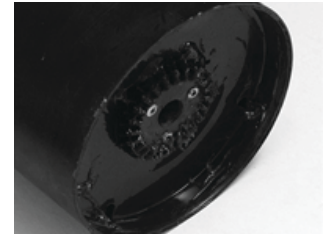
Step 8. It should now be possible to lower the rear roller and extract it from between the mower sideplates. It can help to gently tap the right bearing housing in toward the roller to gain more room to manoeuvre the roller as it is extracted.

Note the position of the cover plate on the left end (the threaded end) of the roller shaft so that it will be re-fitted correctly later. It sits between the left bearing housing and the sideplate.



Step 9. If you wish to dismantle the roller assembly, carefully draw the ballraces from each end of the shaft using a bearing puller that engages behind the bearing housings.

Step 10. Remove the circlip and washer from each end of the shaft. The roller halves can then be withdrawn from the shaft to give access to the differential gears for servicing or lubrication.



Before pulling them from the shaft, mark the half roller which is adjacent to the threaded end of the shaft so that it will be in its correct position on re-assembly.

NOTES .

1. If the 24 teeth bevel driving gear fastening rivets have sheared, replace them only with stainless steel pop rivets.
2. If the tension pin fixing the bevel pinion carrier to the roller spindle has failed, replace it by a high tensile M6x55 bolt, secured by an M6 nyloc nut.



3. When re-assembling the rollers, always put a generous coating of grease on the bevel gears and on the rubber lip of the dirt seal.
4. When re-fitting ballraces, press or drive them on ONLY BY THE CENTRE RING. Hammering the outer ring will indent the bearing groove and ruin the race. If the old bearings have suffered such damage during dismantling, replace them by new ones.

CUTTING UNIT

Removing this unit is necessary only when grinding the reel or the baseplate blade, or if a reel bearing replacement is necessary. Step 1. Remove the chaincase cover.

Step 2. Remove the primary chain tension adjuster, the primary chain and the secondary chain (the one between the cutting reel and the roller clutch).

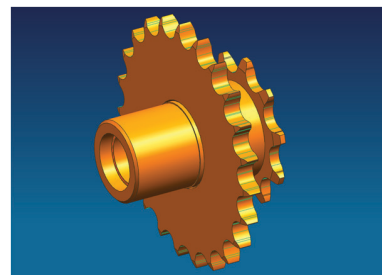
Step 3. Remove the two screws holding the secondary chain tension adjuster and lift it clear.

Step 4. Remove the two grass deflector adjusting screws. (See Grass deflector in MOWER ADJUSTMENTS).

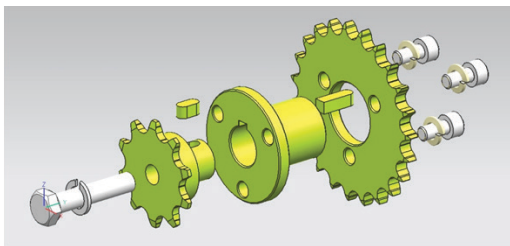
Step 5. Remove the sprocket assembly from the reel shaft.

Early models

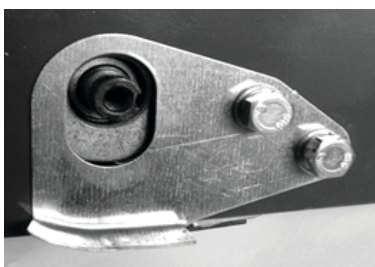
These have a LEFT HAND THREAD mount for the welded sprocket assembly. Prevent the reel from turning by inserting a wooden hammer handle between the reel blades. Wrap an old chain around the small sprocket and use a pipe wrench on the outside of the chain.



Later models. (From Serial No.7353010 – August 2010). These use a key to lock the bolted together sprocket assembly to the shaft. For these, extract the retaining bolt in the centre of the shaft, and draw the sprocket off, using, if necessary, a wheel puller engaging behind the small sprocket. When using a wheel puller, always screw the sprocket retaining bolt at least six turns into its original hole and place the wheel puller against the bolt. Using the puller against the threaded hole will damage the thread.



Step 6. Extract the four screws holding the cutting unit to the mower chassis (two each side of the mower). The two left side screws hold the chaincase seal plate in place on the outside of the sideplate as shown.



Right hand cutting unit screws.



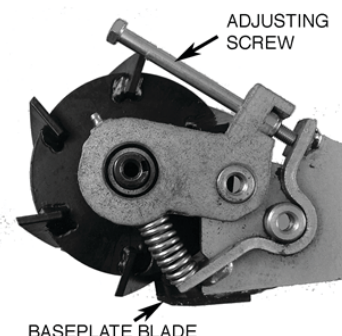
Step 7. The cutting unit can now be lowered carefully from between the mower side plates.

Step 8. Unclip the bottom edge of the grass deflector plate from the top edge of the baseplate.

Dismantling the cutting unit

This should be necessary only for grinding the cutting reel or baseplate blade, or for replacing the reel bearings.

Step 1. Turn the two adjusting screws anticlockwise by two or three turns at a time, moving from one to the other alternately so that the reel does not become severely out of parallel with the baseplate blade while doing this.



Step 2. Back off the adjusting screws until they are no longer carrying any load.

Step 3. Carefully lever the springs from their locating buttons. Lever off the lower ends of the springs as the retaining buttons are shorter there. (Beware of flying springs).

Step 4. The reel bearing housings can now be pulled from each end of the cutting reel. As always, if a wheel puller is used, screw a bolt well into the thread on the end of the shaft and place the puller against the bolt. If this is not done, the shaft thread will be damaged.



Cutting unit spring re-assembly

The coil springs are quite stiff and a spring compressor tool may be needed to fit them. Alternatively, it is permitted to grind up to 3 mm from the bearing housings at the point where they contact the baseplate when the adjusters are fully backed off. This will allow the spring seats to open further for easier spring assembly

Sharpening hints

When grinding the reel, always support it on the ballraces or the ballrace seats on the shaft rather than the centres in the ends of the shaft as the centres are easily damaged resulting in a reel that does not run true when re-assembled.

When fitting a new baseplate blade, always clean the blade seat and the blade thoroughly. Tighten the mounting screws sequentially as when fitting a car wheel before pulling them up very firmly. Then grind the new bottom blade to ensure that its cutting edge is accurately straight and parallel with its mounting.

FRONT ROLLER(S)

Some models have a one piece roller, while others have a number of short rollers mounted across the front of the machine. Instructions for adjusting the roller are given above (See MOWER ADJUSTMENTS – Front roller(s)). Removal of the front roller system is rarely required.

Step 1. Unwind the height adjusting knob until it comes right off the adjusting rod.

Step 2. Remove the mounting bolt at each side of the mower.

Step 3. Lower the whole assembly down until the adjusting rod is clear of the bracket at the front of the mower deck. Take care not to lose the two bushes on which the assembly pivots.

Step 4. If further disassembly is required, drive out one of the tension pins and withdraw the mounting bracket.

NOTE. Occasionally the rollers in the multi roller assembly may not rotate freely due to an accumulation of maximum length tolerances. In this case, replace one or more of the 4 mm thick spacing washers (Part No 501432) by 1 mm thick washers (Part No. 537967).

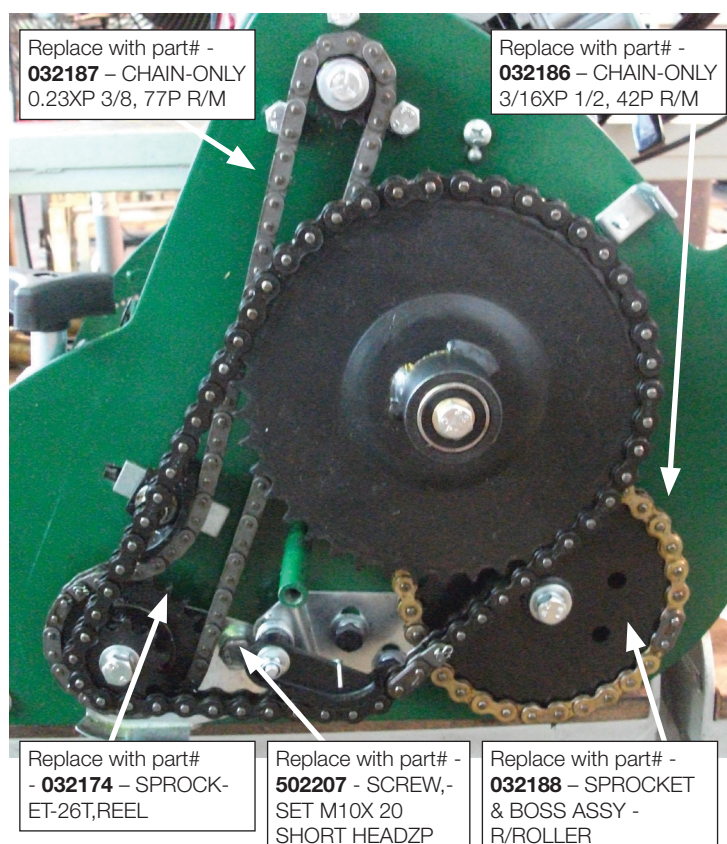
Slow Down Kit

For customers who want to have a lower ground speed Masport has created a Slow Down Kit, part number 732181

Content of this kit

Part No.	Description	Quantity
032174	SPROCKET-26T,REEL	1
032186	CHAIN-ONLY 3/16XP 1/2, 42P R/M	1
032187	CHAIN-ONLY 0.23XP 3/8, 77P R/M	1
032188	SPROCKET & BOSS ASSY-R/ROLLER	1
502207	SCREW,SET M10X 20 SHORT HEADZP	1

The photo below shows where each part of the kit is to be used:



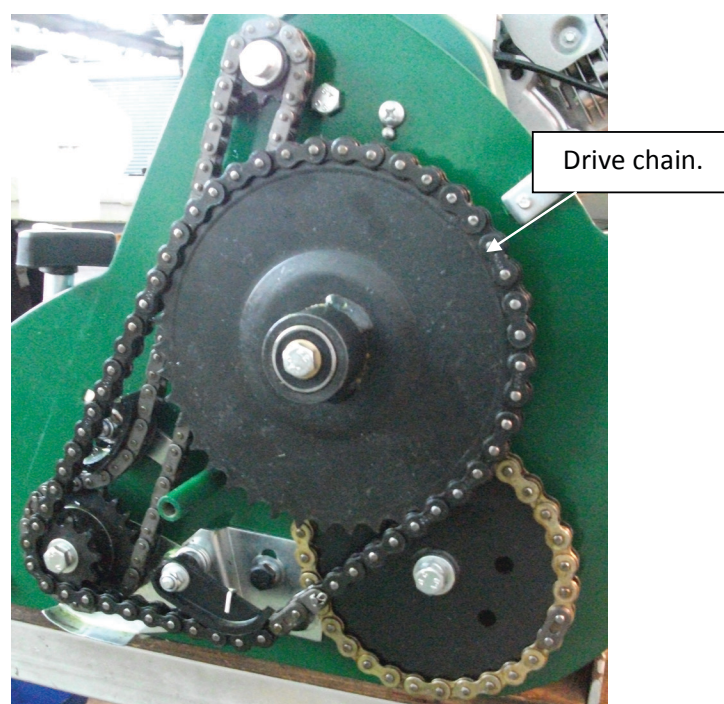
- Before starting this procedure, the engine switch should be set to the "OFF" position, the fuel tap turned off and the lead from the spark plug disconnected to ensure the engine cannot be started accidentally.



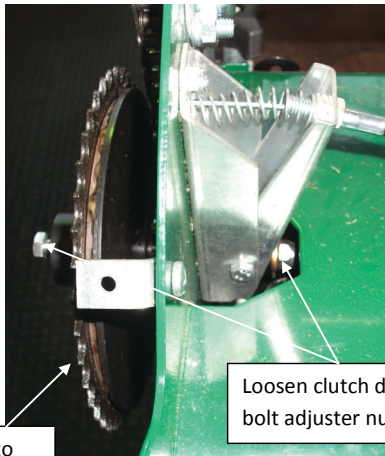
- Remove the Chain cover and the Shaft cover.
- To ensure no parts are lost or misplaced, use the Chain cover to store loose parts during this procedure.

ROLLER DRIVE - REMOVAL

- Remove the drive chain shown in the below photo.



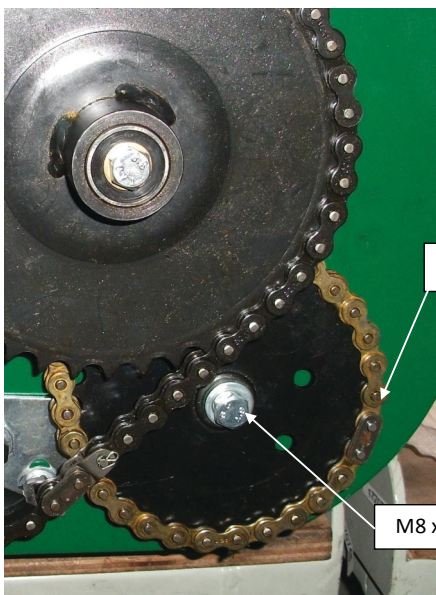
- Loosen the rear roller clutch draw bolt adjuster nut. This will allow the clutch assembly to be moved outwards, allowing better access to the rear roller drive chain and sprocket. Removal of the bolt is not necessary, 10mm movement will be sufficient.



Allows the clutch assembly to be moved outwards 10mm.

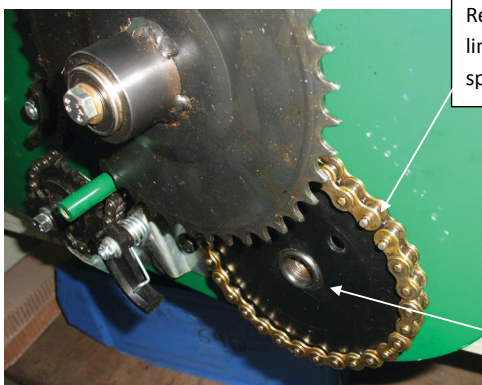
Loosen clutch draw bolt adjuster nut.

3. Remove the M8 x 20 set screw.
4. Remove the rear roller drive chain. This is done by removing the split link shown in the picture below.



Remove split link

M8 x 20 Set screw.



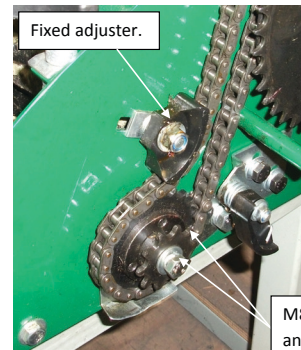
Rear roller drive chain split link. (Shown here with spring clip removed)

Left hand thread, rotate clockwise to remove.

5. Remove the roller sprocket from the spindle. This is left-handed thread; therefore the sprocket will have to be rotated clockwise to be removed.

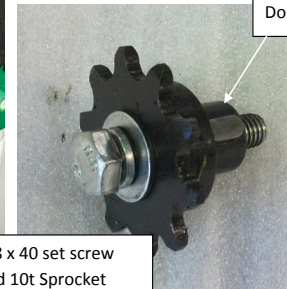
REEL DRIVE – REMOVAL

Lock the reel so that it can't be turned using a piece of timber, or similar. Undo the M8 set screw and remove the small sprocket from the sprocket assembly. Loosen the fixed adjuster so the chain can be removed. See below.



Fixed adjuster.

M8 x 40 set screw and 10t Sprocket

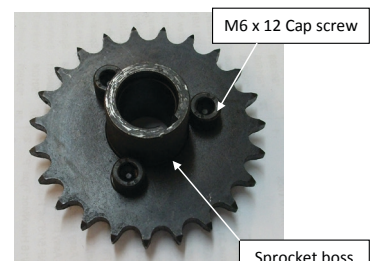


Do not lose the key.

6. The reel drive sprocket can now be removed.
7. Remove the M10 x 20 Set Screw, shown in the picture below, and replace with part# 502207 – SCREW,SET M10X 20. The shorter head is required to clear the drive chain once the larger sprocket is fitted.



M10 x 20 Set Screw to be replaced.



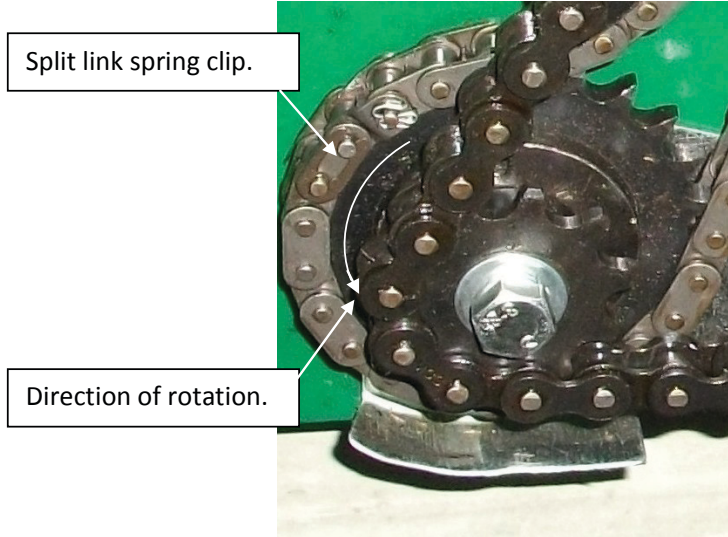
M6 x 12 Cap screw

Sprocket boss

8. Remove the M6 x 12 cap screws and remove the sprocket from the boss, replacing with part# 032174 – SPROCKET-26T,REEL.

REASSEMBLY – REEL DRIVE

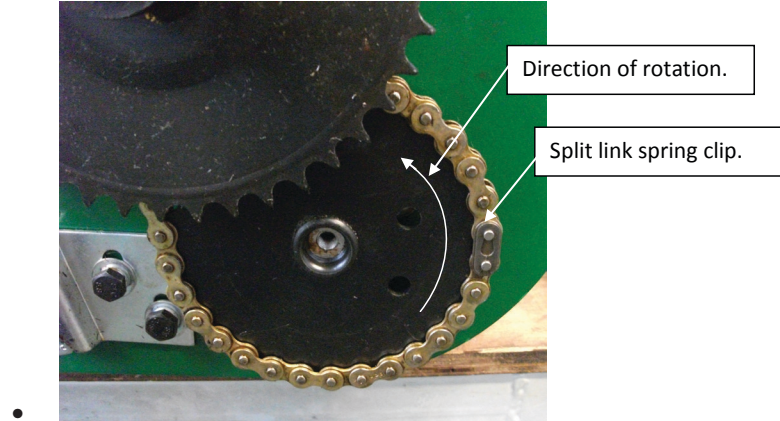
1. Refit the reel drive sprocket onto the shaft, check the key is in the slot on the shaft, and tap lightly into place.
2. Fit part# **032187 – CHAIN-ONLY 0.23XP 3/8, 77P R/M.** Splitting at the split link will ease fitting of the chain. The split link should be inserted from the inside so that the spring clip can be easily fitted. Fit the spring clip so the closed end is “leading” when the mower is running, as shown below.



3. With the new chain fitted, tension the fixed adjuster following the procedure outlined in the owner's manual.
4. Refit the small sprocket, again remembering to fit the key into the slot and fit the reel drive chain. Tighten the M8 Set screw securing the small sprocket to the reel.

REASSEMBLY – ROLLER DRIVE

1. Fit part #**032188 SPROCKET & BOSS ASSY-R/ROLLER**, to the spindle. Lightly tap anti-clockwise with a soft faced hammer to tighten. Fit the M8 x 20 Set screw and washers that were removed in operation 4 and tighten up.
 2. Fit part #**032186 – CHAIN-ONLY 3/16XP 1/2, 42P R/M.** The split link should be inserted from the inside so that the spring clip can be easily fitted. Note the rotation of the roller, the spring clip should be fitted as shown in the picture below.
 3. Re-tighten the clutch draw bolt adjusting nut, following the procedure outlined in the owner's manual.
 4. Re-fit the drive chain.
- Before refitting the covers, ensure all parts are in place and tightened, and that all the chains are installed and tensioned correctly.
 - Re-fit the chain cover and the shaft cover.





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