



NU-STAR MATERIAL HANDLING LTD

IF IT ROLLS ... WE CAN MOVE IT! ®

SERVICE MANUAL

Nu-Star "Power Pusher" 15-45/10-45 Machine Series

DRIVE CHAIN RENEWAL PROCEDURE

English - 2018 Edition

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Introduction

The following guide shown below is intended for use by the end user of the product and will familiarise the user with the aforementioned maintenance procedure. The processes used are a standard procedure for Nu-Star Material Handling Ltd. and should be followed closely in order to minimise any risk of damage to the machine or self.

Always observe warning signs and notices. Refer to the user manual for further information.

Appropriate PPE **must** be worn for all tasks undertaken.

Nu-Star EM60/EM90 Batteries are sealed for maintenance-free service. **Do Not** attempt to open the units – risk of damage or serious injury may occur.

If you are unsure of a task or require further servicing information, call Nu-Star Material Handling Ltd on **+44(0) 115 880 0070**

DRIVE CHAIN RENEWAL PROCEDURE

For Power Pusher models including 15/45 & 10/45 tooth ratio machines

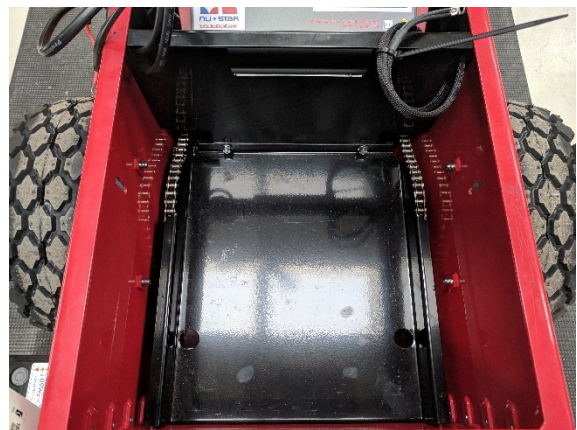
Step 1

With the machine **OFF** and **ISOLATED** through pressing the emergency stop button, place the body of the machine on sturdy blocks of wood that are sufficiently tall enough to raise the wheels of the machine off the work surface being used.



Step 2

Begin by disconnecting all Charger leads, Power leads and battery terminals from the EM60 battery units installed in the machine. Ensure leads are moved well out of the way by either tying back or removing (where able) and setting down to one side. Remove the battery securing clamp by undoing the retaining bolt found at each side of the machine. Once this has all been completed, **carefully** remove the battery units one at a time and store in an adequate area with plenty of room and ventilation.



Step 3

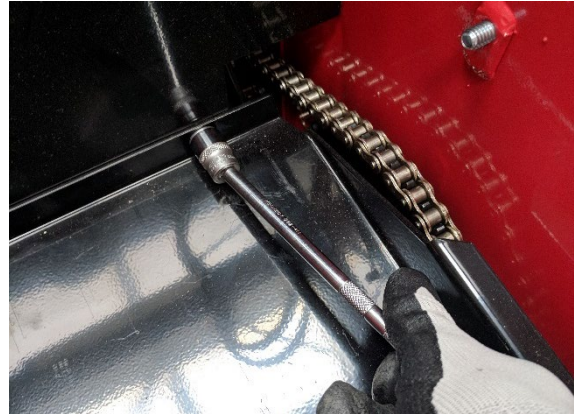
Before proceeding with this step, ensure that any attachment fitted to the front of the machine is removed (This includes if the machine is fitted with a separate front castor bracket). Once this has been done (where necessary), remove the securing bolts that hold the front of the battery tray in place.

Note: If battery tray weights are installed, it is strongly advised to remove these before continuing.



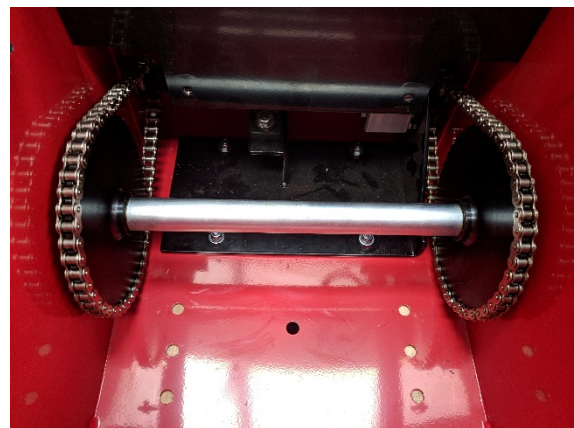
Step 4

Remove the rear securing bolts at the back of the battery tray. **Tip:** Use a knuckle joint adapter or ball-headed extension in conjunction with a socket in order to get the best possible purchase on the bolt heads.



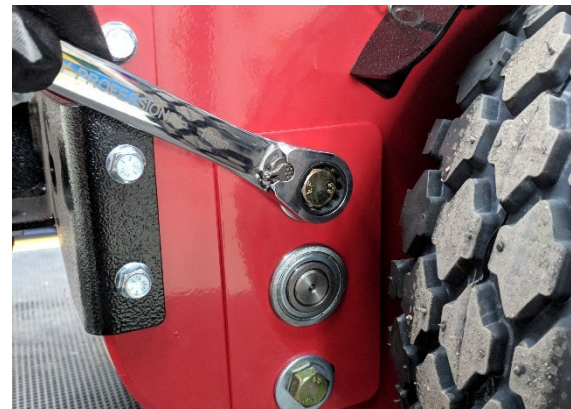
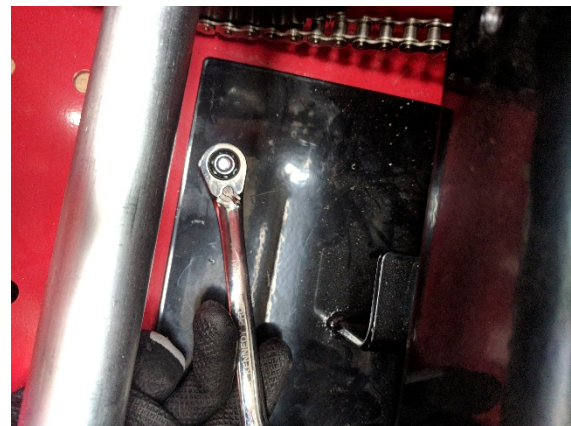
Step 5

Remove battery tray from machine and set down to one side. There will now be full access available to the drive chains of the machine. **Note:** If the machine is outfitted with belly weights, it is highly advised to remove these before continuing.



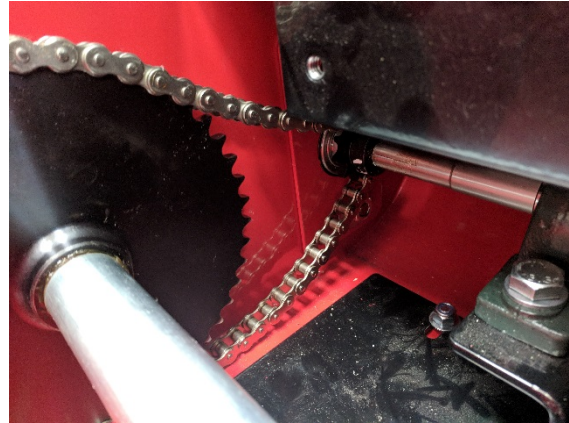
Step 6

Use a 13mm ring spanner to slacken the 4 internal motor plate retaining coach-bolts that secure the motor baseplate to the floor of the machine body. Then, using a 19mm ring spanner, loosen the external output axle bearing retainer bolts. Each fitting should **only** be loosened enough to allow the motor assembly to slide forward in the machine chassis.



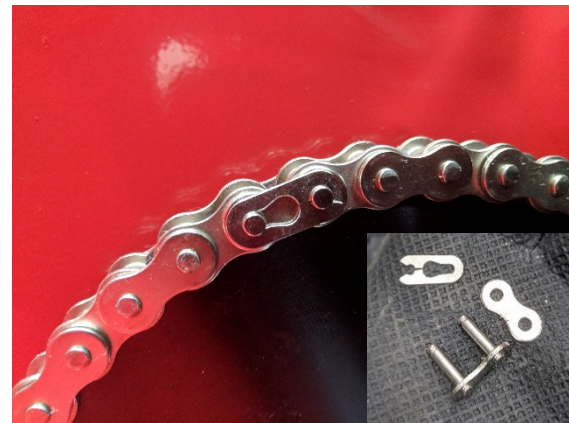
Step 7

Carefully slide the motor assembly forward within the machine body to release tension in the drive chains.



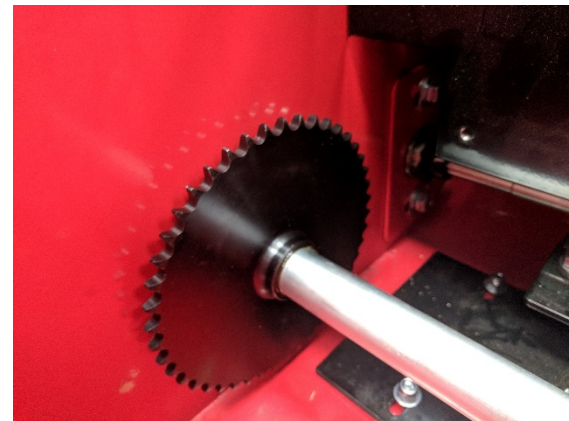
Step 8

Locate the master pin in the drive chain to be replaced. Use a chain link tool to remove the retaining clip, then take the master link out.



Step 9

Remove the drive chain from the drive sprockets, ensuring that it does not snag on bearings or fixtures during removal.



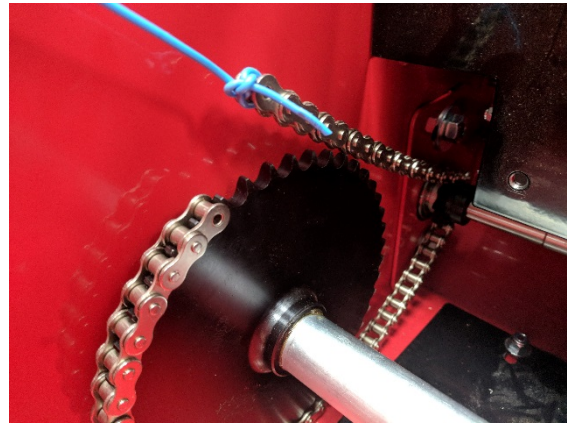
Step 10

The new drive chain is now ready for fitting. Using a clean & dry surface free from dust and dirt, take the new chain out of the bag it is supplied in and inspect the unit for any defects or damage. Although unlikely, it is always good practice to check before fitting.



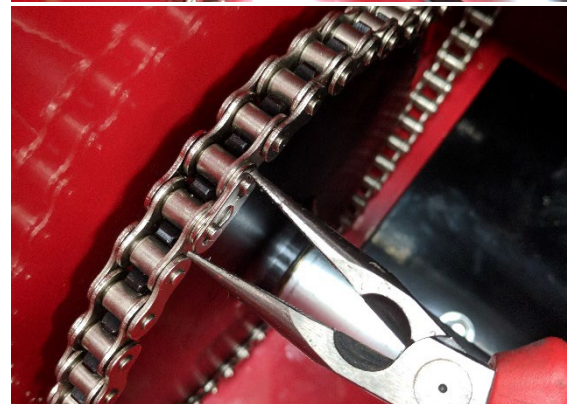
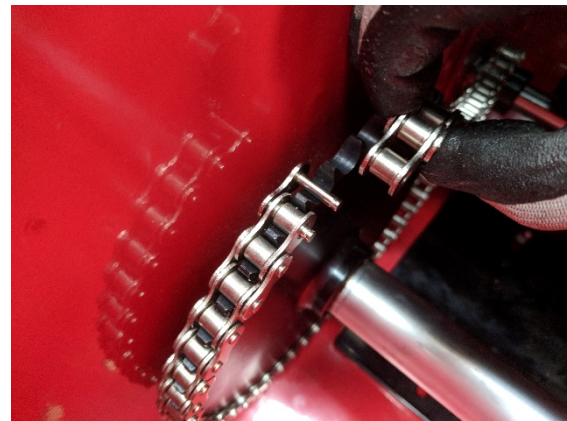
Step 11

Firstly, uncouple the master link in the new chain and set to one side. Then, securely fasten a length of wire to one end of the chain in order to make fitment of the new unit easier. Using the wire, loop the new chain under the drive sprockets and finish with the open ends of the chain at the top (pictured).



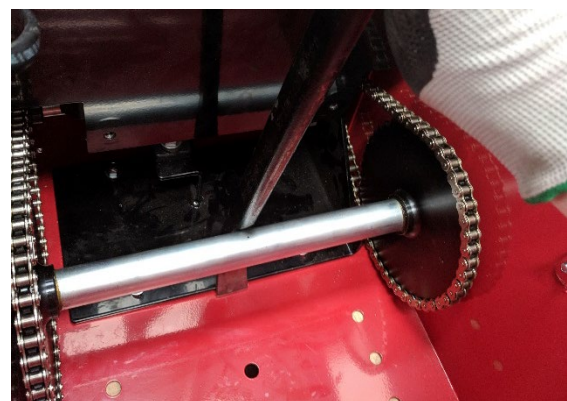
Step 12

Once both ends of the chain are adjacent on the sprocket and the guide wire removed, fit the new master link that was side aside earlier. **Note:** In order to make installation as easy as possible, ensure that the open end of the master link is facing in to the machine, as pictured.



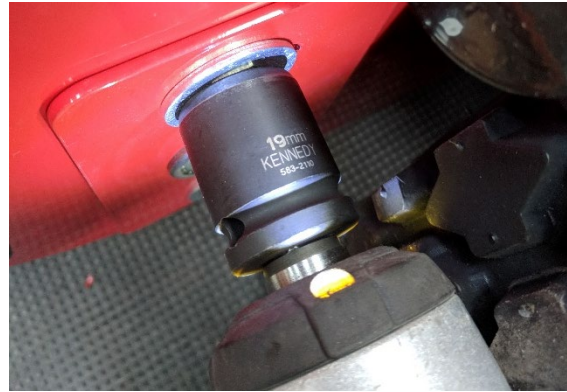
Step 13

With the new chain fully installed, the motor plate assembly must be re-tensioned. Use a pry-bar, or large flat-headed screwdriver to apply tension to the assembly (pictured). With tension applied, tighten the motor mount plate bolts to clamp the assembly back down to the chassis floor.



Step 14

Use an impact wrench to re-tighten the outer bearing mount bolts. If any of the inner nuts fail to 'grab' and instead spin during tightening of the outer bolt, use a long flat-headed screwdriver to hold the nut in place while tightening.



Step 15

With the drive assembly now tensioned, apply grease to the drive chains. Ideally, HP Lithium Grease should be used in this application. Following this, the battery tray (and weights, if fitted) can be reinstalled into the machine - This should be done as the reverse of the removal procedure. Re-fit the battery units and retaining clamp, ensuring terminals are fitted to the correct polarity at all times. Test the unit for operation while it is still on the supporting blocks – with everything finished and in running order, the machine will be ready for service once again.