# Trojan Mulcher

## Operators Manual


# Trojan Mulcher

Congratulations on your new Trojan Mulcher purchase!

With your correct care and maintenance, the Trojan will provide you with many years of valuable and dependable service.

Serial No: ----------

Configuration – ----------

## Contact Details

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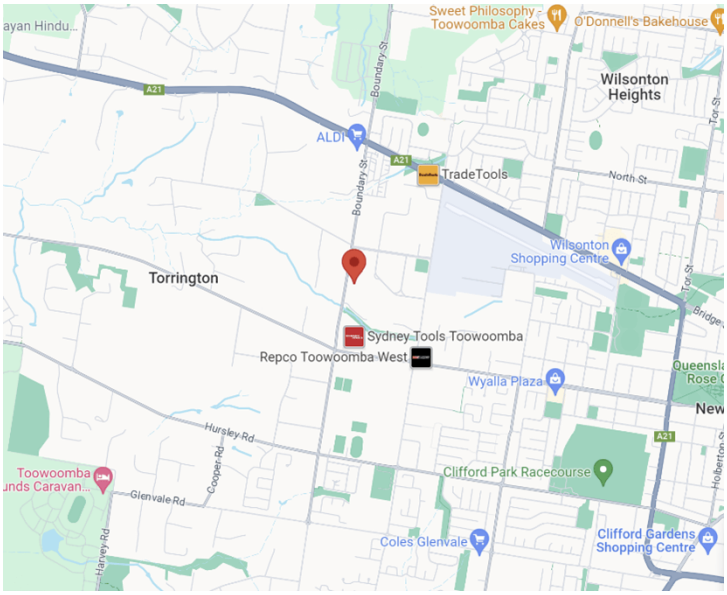



## Safety

Be sure to read this manual carefully to ensure accurate and safe operation of your machine.

It is your responsibility to ensure that the utmost care is taken when in charge of machinery.

The following procedures must be followed during start-up, operating and maintenance of your Trojan Mulcher.

Please note that some of the below procedures apply to a Trojan Combo.

Never ride, sit or stand on the machine whilst in operation or switched on. Nor allow any other person to do likewise.

Never put hands or feet between flails whilst the machine is switched on or in operation.

Never presume that someone else has checked the safety requirements of the machine.

Always turn off the PTO when dismounting from the tractor cab and at the end of each work program.

*Failure to comply with these procedures could cause serious injury or death.*

## Initial Set-Up of the Machine

The TTQ Trojan Mulcher is designed to mulch a variety of crops. Its rotational power to the flails is provided by the tractor PTO. Be familiar with the Trojan Mulcher before starting. The owner is responsible for training operators in the safe operation of the flail shredder.

## Attaching the Mulcher to the Tractor

1. Place the unit on a level, dry area free of debris and other foreign object.
2. Clear the area of bystanders, especially children.
3. Provide enough clearance to back the tractor safely into the unit.
4. Set the height of the 3-point hitch so that the quick hitch claws are lower than the mounting pins.
5. Make sure the 3-point hitch is set in the non-sway position. See the tractor manual for details.
6. Align the claws under the lower and upper mast mounting pins while backing up.
7. When the claws are aligned under the pins, slowly raise the 3-point hitch. Make sure each mounting pin sits in its respective claw.
8. Release the claw retainer locks to secure the mounting pins in the claws.
9. Check the top link frame. It should be free to slide in its mounting slots. This movement allows the unit to follow the ground contour when cresting a hill or going through a depression.

## Removing Mulcher from Tractor

Reverse the above procedure when removing the unit from the tractor.

## Principal Components

The TTQ Trojan Mulcher consists of large rotating drums with hinged steel flails attached that flare out. The flails pick up or strike crop residue or trash and mulch it. The rotational power to the drum is provided via the tractor PTO through a gearbox, to driveline and pulleys which are connected to belts.

PTO RPM: 1000-1030rpm depending on the crop density and tractor horsepower.

## PTO Driveline Length

The operator is responsible for measuring the dimensions of the driveline through its working range. These dimensions will indicate if the driveline requires shorting to operate on the tractor/unit attachment system. The operator must check the dimensions before using the unit for the first time and each time a different tractor is used with the unit.

Use the following procedure when determining the driveline dimension:

1. Clear the area of all personnel and animals.
2. Attach the 3-point hitch to the unit. Do not attach the PTO at this time.
3. Raise the unit until the tractor PTO and gearbox shafts are the same height.
4. Measure the distance between the shaft grooves on the tractor and the gearbox.
5. Move the unit to its highest and lowest working position and measure this dimension again.
6. If required, shorten the shaft to prevent bottoming out during use.

**NOTE:** An extra inch of compression space in the shaft can eliminate bottoming out during use. We recommend you measure to ensure this.

7. Use an abrasive wheel power saw to cut the male end of the shaft. Cut the same amount from both the splined shaft and trim safety shield to suit.
8. Always cut as little as possible off to minimize thr risk of shaft damage due to running with small amounts of shaft overlap.
9. Insert a grease nipple on the shaft slide to ensure the slide can be regularly greased to avoid shaft damage.

**NOTE:** Cutting one inch off the shaft shortens both the minimum and maximum lengths by one inch.

## Field Operations

The TTQ Trojan Mulcher is designed with the flexibility to operate in almost any kind of crop and terrain conditions. However, the operator is responsible for being familiar with all operating and safety procedures and following them. Each operator should review this Field Operations section at the start of the season and as often as required to be familiar with the unit.

## Pre-Operation Checklist

(Owners Responsibility)

This Pre-Operation Check List is provided for the operator. It is important to follow for both personal safety and maintenance of the Trojan Mulcher.

Check all lubrication points and grease (8-12 Pumps manual grease gun - check stickers for details):

- Check that the unit is properly attached to the tractor. Be sure retainers are used on the mounting pins;
- Check oil level in gearbox;
- Check that the PTO driveline turns freely;
- Check tyre pressure. Inflate to the specified level;
- Check flails. Inspect for damage or breakage, make sure they swing freely on their mount. Never replace individual flails as it could upset the machine balance; and
- Install and secure all guards, doors, and covers.

**NOTE:** 240HP Tractors and above are recommended for use with TTQ Trojan Mulchers.

## Break-in of the Mulcher

The following should be observed when operating the unit for the first time:

After First Hour of Operation

1. Check all nuts, bolts, and other fasteners.
2. Check that the flails are in good condition and swing freely.
3. Check the oil level in the gearbox. Add oil if needed.
4. Check that the PTO driveline shield turns freely.
5. Lubricate all grease points.

After Five to Ten Hours

1. Repeat steps one through five above.
2. Follow the regular service schedule at the end of each work session or every twelve hours.

## Gearbox Operation – Oil Type & Level

The temperature range when in operation is between 90-120ºC (194-250ºF).

Note if your gearbox is running over 100ºC (212ºF) oil will need replacing at 5000hrs intervals or at the end of each season, whichever comes first.

**An EP220** grade gear oil is recommended for gearboxes.

Fill Procedure

Remove both side filling plugs.

Fill oil through the top hole until it drains out of the bottom hole.

Replace both plugs firmly into position.

## Preparing for Operation

Pull into the field and position the unit in a level area.

Lower into operating position.

Set the 3-point so the quick hitch is vertical, and the floating upper mast is forward.

## Set Operating Height

Set the lower 3-point arms in the free-float position.

Set the hitch in the non-swing position.

Set the hydraulic system to allow the 3-point to float. Refer to the tractor manual for instructions.

Be sure the floating mast is free to slide in its mounting frame to allow the machine to follow ground contours.

## Mulching Heights

Mulching heights between 2½–3½” (6-8.5cm) based off the plant base height. Special note for dryland plants. Mulching Heights is governed by the highest point in the field.

## Mulching Speeds

The average mulching speed recommended is 11-16km/h, depending on the crop and field conditions.

## Turning

Always raise the unit to lift the rear wheels off the ground before turning. This will eliminate side loads on the wheel assembly.

## Cleaning

After each use:

Remove large debris such as clumps of dirt, grass, crop residue, etc. from the machine.

Inspect the machine and check for worn or damaged parts.

If the gearbox is running hot clear away any trash from the breather and from within the gearbox cavity.

Every 24 hours it is advisable to remove the bottom cover off the PTO and blow out around the gearbox.

If the gearbox temperature is still running high additives can be added to the oil, such as smith lubricant.

Left: Covers that should be taken off to clean out trash

Remove the remainder using a low-pressure water spray or air compressor.

Be careful when spraying near scratched or torn safety decals or near edges of decals as water spray/high air pressure can peel the decal off the surface.

Be careful when spraying near chipped or scratched paint as water spray/high-pressure air can lift the paint.

If a pressure washer is used, follow the advice of the pressure washer manufacturer.

## General Maintenance

### Belts and Belt Tension – (refer to picture below)

Push up the underside of the belts in the centre with one finger and pull upward.

The result of this should see 10mm (1/4”) of movement with ease.

With force the belt should move an additional 5mm.

Movement total 15mm (1/2”) and this should not be exceeded.

### Belt Tensioning

Loosen nuts.

Rotate the belts clockwise for two full rotations of the rotor, then recheck tension.

If belts are too loose repeat the process and check the tension again.

The picture below shows how to check belt tension.


Location of the drive belts with covers removed.

## Flail and Pin Replacement

Rotate the flails and pins 180 degrees after they begin to wear off completely on one side.

After rotation the flails and pins will work another 2,000–3,000 acres then should be replaced.

**NOTE: All Drums are balanced at full operating speed at the time of manufacture and assembly. If excessive vibration is noticed check the flails and make sure the drum is clean. If the problem persists, call your dealer.**

## Cross Shaft

Take out and clean in full and re-lube the shaft. This should be done every 50 hours and at the end of every season.

## Drive Shaft

Check for wear.

Check the universal joints a minimum of every 12 hours and grease all the nipples.

## Internal Wear Skin & Rear Access Door (how and when to repair)

The skins can be accessed through panels on the front and rear of the machine.

The wear skins should be replaced if holes or splits appear.

Inspect periodically or after 50 hours.

## Wheel Hub & Stub Bearing Replacement

It is advised that every 12 hours the wheel bearings in the Hub & Stub be checked for wear, heat and movement.

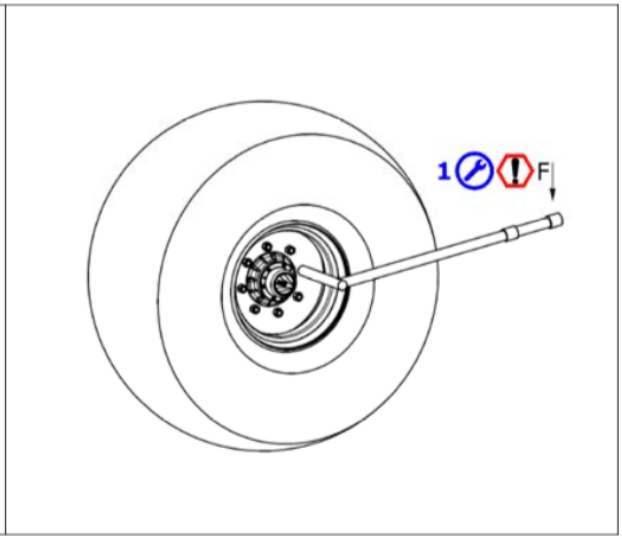
To re-tension the bearings, tighten the bearing all the way then quarter turn back.

The bearing must be spinning freely.

## Wheel Nuts

**1. Wheel nut torque check.**

**After the first 10 km at full load, every wheel change and every 500 working hours (or every 8500 km travelled) and not over one year of use.**
Tighten the wheel nuts as indicated in the table below, using a torque wrench. If a torque wrench is not available, use a pipe wrench with an extension. In the second to last column on the right of the table is the length of the lever corresponding to the required tightening torque, calculated for force F = approximately 60 kg.




## Bearings

Bearings have been proven to last 50,000 plus acres. But it is a good idea to check the bearing temperature once a week and at the end of each season, for longevity of the bearings.

The idler pulley temperature runs between 60-80ºC (140-175ºF).

The 22216 bearings temperature runs between 40-60ºC (105-140ºF).

Remove the guards, set the machines down on tyres and linkage, use a block then use a long bar under the pulley to check for movement.

Do NOT over-grease the bearings! 8-10 pumps with handgun minimum of 12-hour intervals.

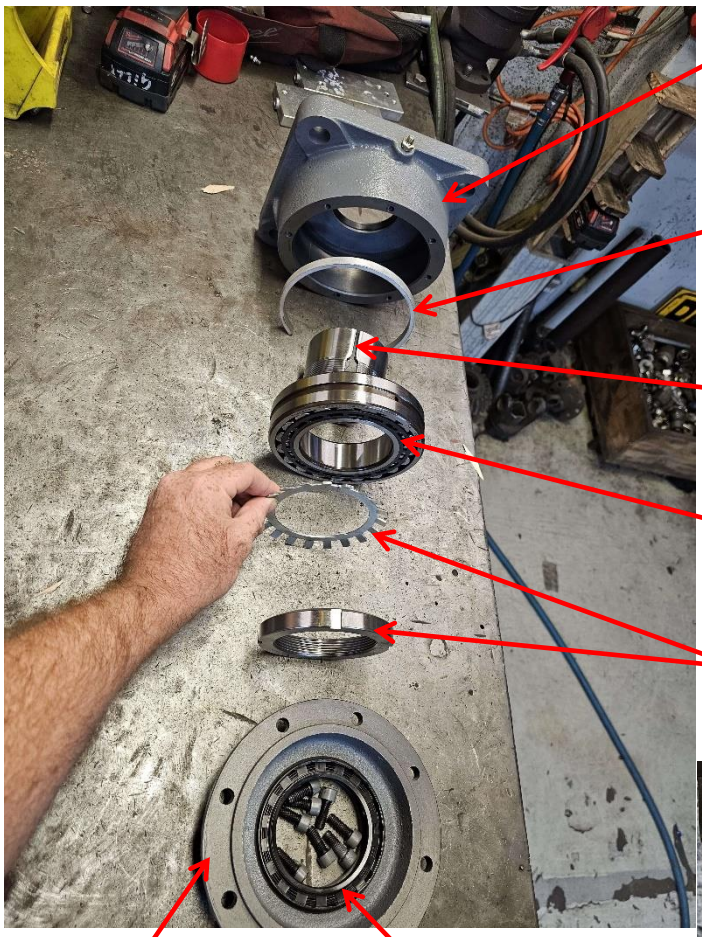
The bearings and belts should be checked every 24 hours.

They should be changed if fatigued, vibrations, cracks or stress points begin to appear.

## Bearing Replacements

The bearing assembly arrangement in order from main housing outwards.

The C spacer is needed on the outside of the bearing only, the shaft floats on the inside bearings.



FCM516

'C' Spacer Outside Only

H316 Sleeve

22216 Bearing

H316 Lock Tab & Nut

FCM516 Cap

RSM0709510LNC 70 x 95 x 10