



TIMBERWOLF®
Lead the pack

TW S426TFTR SHREDDER



INSTRUCTION MANUAL

timberwolf-uk.com

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CONTENTS

<i>Section</i>	<i>Page No.</i>
INTRODUCTION	1
PURPOSE OF MACHINE	2
MACHINE DIMENSIONS & SPECIFICATIONS	2
PARTS LOCATION DIAGRAMS	3
SAFE WORKING	5
Operator's Personal Protective Equipment Required	5
Basic Shredding Safety	5
General Safety Matters - Do's and Dont's	6
Noise Test	7
OPERATING INSTRUCTIONS	8
Delivery	8
Operator's Personal Protective Equipment Required	8
Manual Controls	8
Crawler Track Controls	9
Auto Controls	9
Emergency Stopping	9
Daily Checks Before Starting	10
Engine Controls	10
Starting the Engine	10
Controlling the Engine Speed	10
Stopping the Engine	10
Fuel Level Indicator	11
Hydraulic Oil Thermometer / Oil Level Indicator	11
Discharge Controls	11
Before Using the Shredder	11
Starting to Shred	12
Shredding	12
Blockages	12
SERVICE INSTRUCTIONS	13
Service Schedule	14
Spares	14
Safe Maintenance	15
Safe Lifting of the Shredder	15
Change Hydraulic Oil and Filter	15
Copper Ease Safety Information	16
Battery Removal and Maintenance	16
Battery Safety Information	17
Check Fittings	18
Check Free Rotation of Drum and Hammers	18
Change Hammers	19
Check Hoses	19
Grease the Drum Bearings	20
Tension the Drive Belts	20
Grease Roller Box Slides	21
Grease the Roller Spline and Bearing	21
Grease the Discharge Flange	21
Engine Manufacturer's Handbook	21
Track Base Maintenance-Safe Maintenance	22
Replacement of Oil in the Track Drive Unit	22
Draining the Oil in the Track Drive Unit	22
Reduction Unit Oil Types	22
Checking Track Tension	23
Track Loosening/Tightening Procedures	23
Checking the Rubber Tracks	24
Removing the Rubber Tracks	25
Installing the Rubber Tracks	25
Checking Sprocket Wear	25
WARRANTY STATEMENT	26
EC DECLARATION OF CONFORMITY CERTIFICATE	27
IDENTIFICATION PLATES	28
DECALS	29
ELECTRICAL DETAILS	31
HYDRAULIC LAYOUT	32
CIRCUIT DIAGRAM	33
V- BELT TENSIONING TABLE	34
WARRANTY SERVICE CHECK RECORD	35
SERVICE RECORD	36
PARTS LISTS	37

Thank you for choosing Timberwolf. Timberwolf shredders are designed to give safe and dependable service if operated according to the instructions.

IMPORTANT HEALTH AND SAFETY INFORMATION

Before using your new shredder, please take time to read this manual. Failure to do so could result in:

- personal injury
- equipment damage
- damage to property
- 3rd party injuries

This manual covers the operation and maintenance of the Timberwolf TW S426TFTR. All information in this manual is based on the latest product information available at the time of purchase.

All the information you need to operate the machine safely and effectively is contained within pages 2 to 12. Ensure that all operators are **properly trained** for operating this machine, especially in **safe working practices**.

Timberwolf's policy of regularly reviewing and improving their products may involve major or minor changes to the shredders or their accessories. Timberwolf reserves the right to make changes at any time without notice and without incurring any obligation.

Due to improvements in design and performance during production there may be, in some cases, minor discrepancies between the actual shredder and the text in this manual.

The manual should be considered an important part of the machine and should remain with it if the machine is resold.



THE TIMBERWOLF TW S426TFTR

The Timberwolf S426TFTR is a high speed, heavy duty professional shredder. It is designed to shred general green waste (brash, prunings, hedge trimmings, Leylandii, Christmas trees, rootballs, etc.), brushwood up to 100mm (4"), pallets, domestic doors, wooden and plastic window frames (all pre-cut to fit feed aperture), contaminated timber, chipboard, MDF, packaging materials, uPVC plastic, cardboard, wooden furniture, fence posts and similar items. The machine will tolerate drinks cans, plastic bottles, stones, rocks and concrete (up to fist size), nails, metal door furniture, glass bottles and similar items.

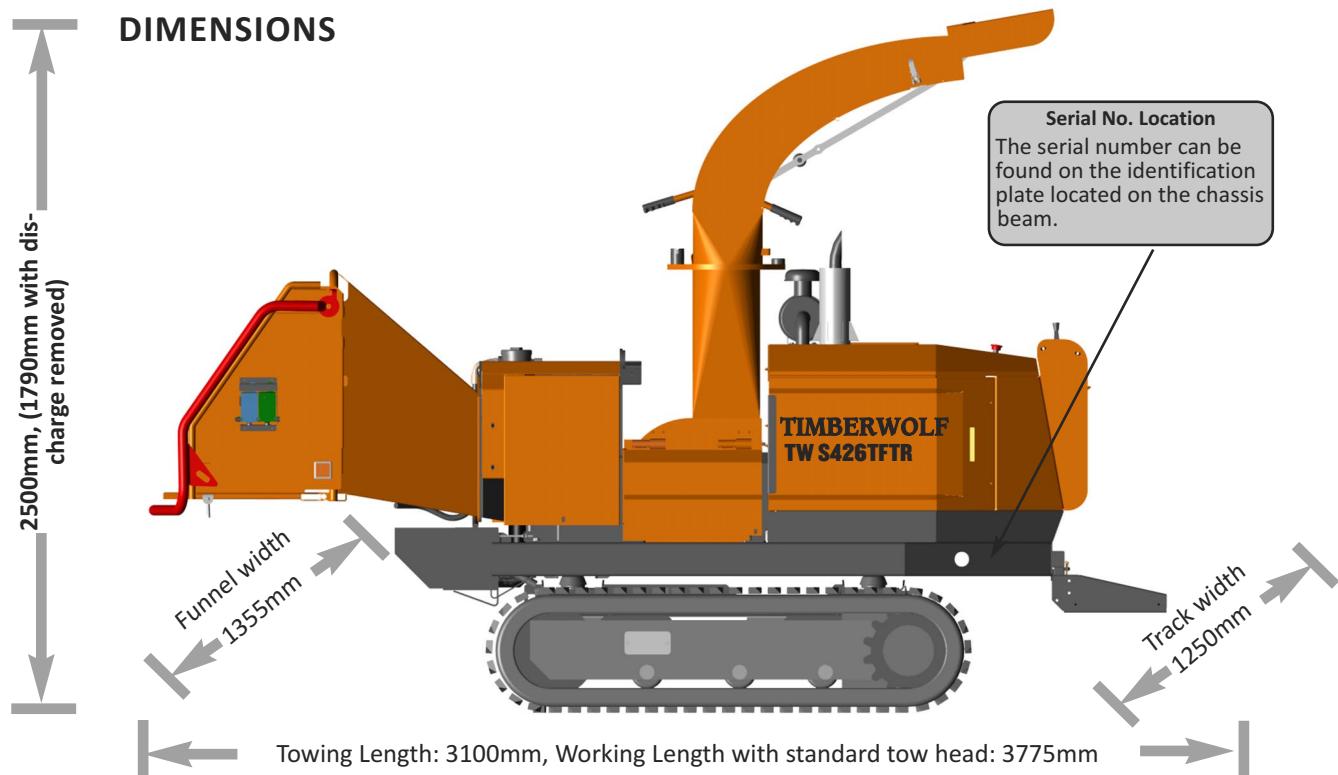


WARNING LIMITATIONS ON MATERIALS

To properly control the speed of material entering the shredder chamber, the machine relies on the large feed roller to grip the material. The feed roller can grip material down to 15mm in diameter. The machine will not tolerate or process items such as tyres, mattresses, heavy duty plastic containers (used for oils, chemicals, etc.), carpets, reinforced concrete, metallic items exceeding lightweight domestic door furniture, commercial plastic gas pipe, alkathene water pipe, metal reinforced drainage/irrigation pipe, baler twine, rope, metal banding, computer hard drives (which contain magnets) and any similar objects to the above.

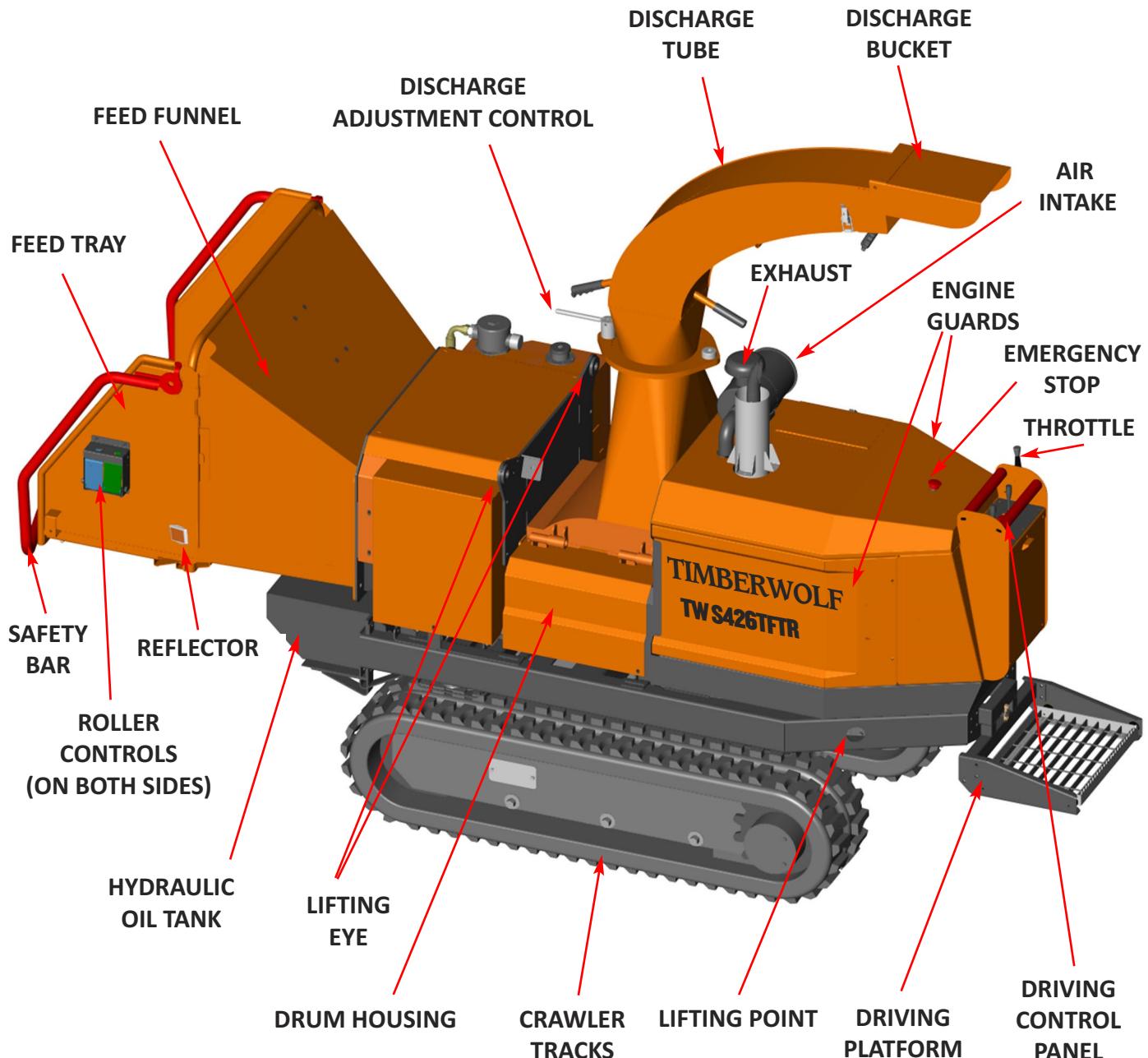
NOTE: When materials are corrosive they may attack and degrade the individual components. It is essential that the unit be thoroughly cleaned down after shredding anything that may contain materials of an aggressive nature.

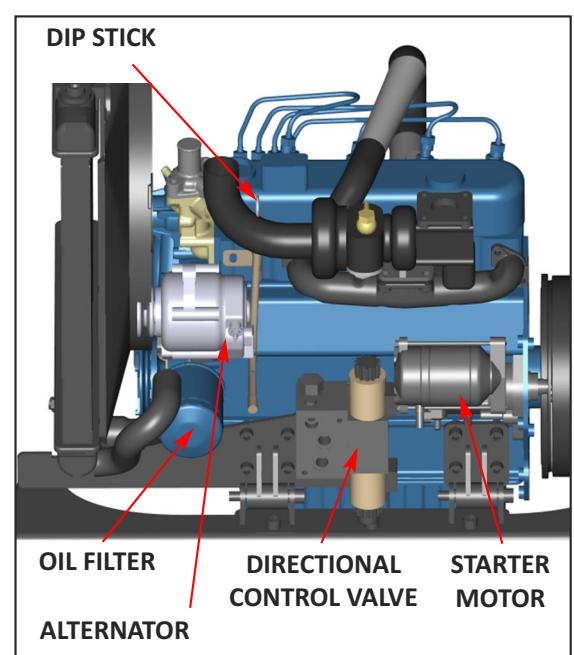
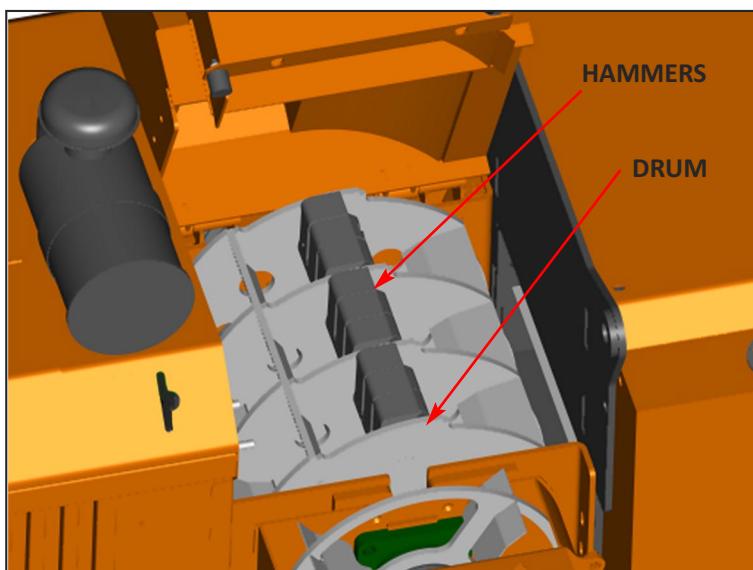
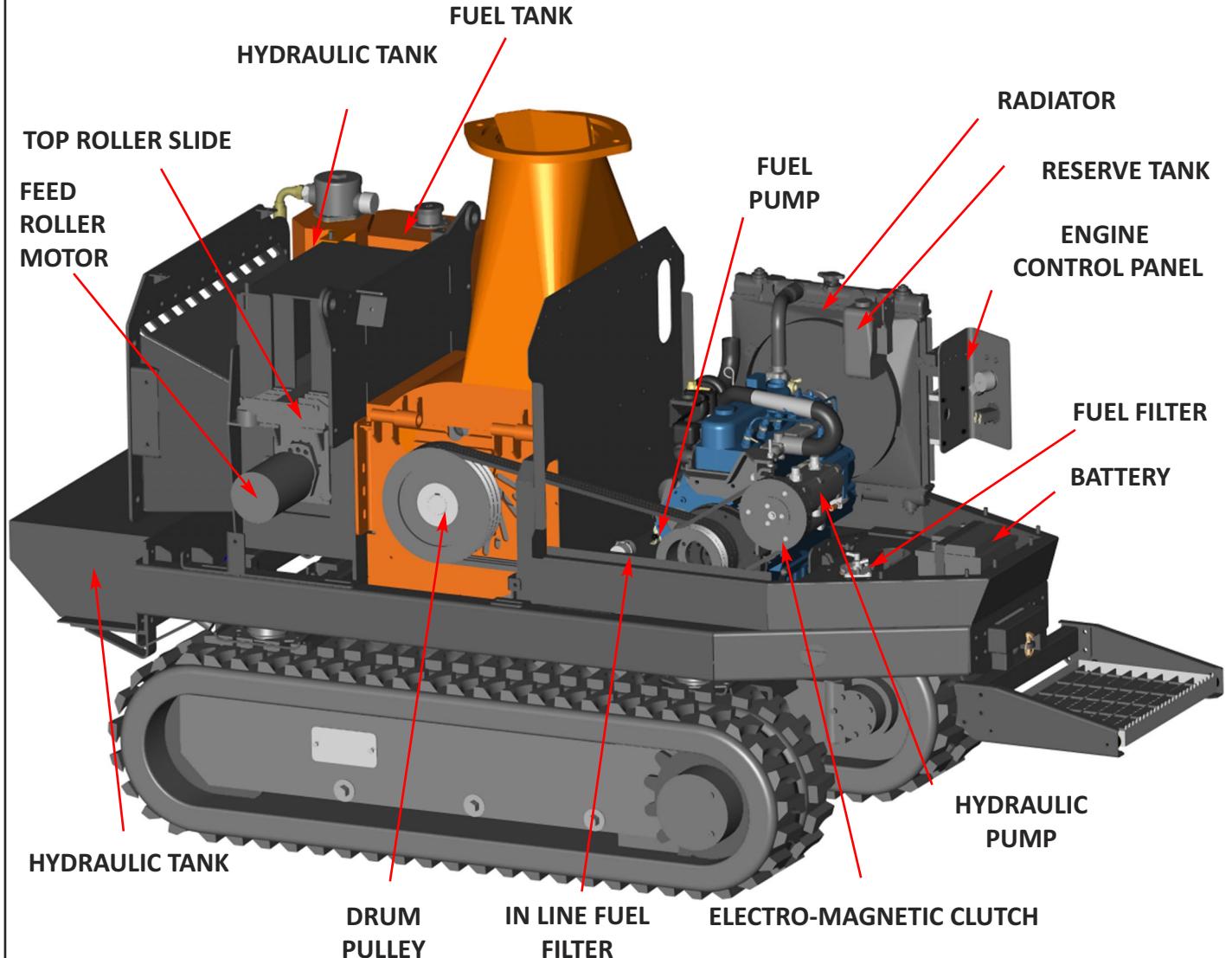
Ejection of material – **Warning!** The S426TFTR shredder ejects material at high speed. Ensure there is an adequate safety zone and that ejected material is aimed away from operators into a safe area, i.e. an enclosure or container with a back stop (i.e. wall) behind it to prevent ejected material from leaving the work area and causing injury and damage. If loading into a truck or trailer, ensure the structure is strong enough to cope with the impact from ejected material.



TIMBERWOLF TW S426TFTR SPECIFICATION

Engine type	Kubota 4-cylinder turbo diesel	Feed roller opening	426mm (17") x 230mm (9")
Maximum power	33kW (45hp)	Fuel capacity	33 litres
Cooling method	Water cooled	Hydraulic oil capacity	80 litres
Overall weight	1840kg	Material processing capacity	up to 3 tonnes/hr
Starting method	Electric	Fuel type	Diesel
Roller feed	Hydraulic motor		





OPERATOR'S PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Chainsaw safety helmet (EN 397) fitted with mesh visor (EN 1731) and ear defenders (EN 352).
- Work gloves with elasticated wrist.
- Steel toe cap safety boots (EN 345-1).
- Close fitting heavy-duty non-snag clothing. High-visibility clothing (EN 471) if risk assessment identifies the need.
- Face mask if appropriate.
- DO NOT wear rings, bracelets, watches, jewellery or any other items that could be caught in the material and draw you into the shredder.



WARNING

THE SHREDDER WILL FEED MATERIAL THROUGH ON ITS OWN. TO DO THIS, IT RELIES ON THE HAMMERS TO BE FREE TO SWING. DO NOT PUT BRICKS, LARGE STONES, STRING, CARPET, TYRES OR METAL INTO THE SHREDDER.

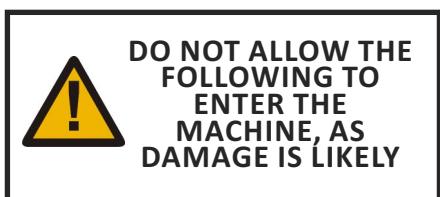
BASIC SHREDDING SAFETY

The operator should be aware of the following points:

- Maintain a safety exclusion zone around the shredder of at least 10 metres for the general public or employees without adequate protection. Due to the nature of material being shredded and the distance/velocity of discharge, the exclusion zone must be extended to 20 metres in front of the discharge tube exit. Use hazard tape to identify this working area and keep it clear from debris build up. Shredded material should be ejected away from any area the general public have access to.
- Hazardous material - Some species of trees and bushes are poisonous. The shredding action can produce vapour, spray and dust that can irritate the skin. This may lead to respiratory problems or even cause serious poisoning. Check the material to be shredded before you start. Avoid confined spaces and use a facemask if necessary.
- Be aware when the shredder is processing material that is an awkward shape. The material can move from side to side in the funnel with great force. If the material extends beyond the funnel, the brash may push you to one side causing danger.
- Be aware that the shredder can eject material out of the feed funnel with considerable force. Always wear full head and face protection.
- Always work on the side of the machine furthest from any local danger, e.g. not road side.

GENERAL SAFETY MATTERS

- Always stop the shredder engine before making any adjustments, refuelling or cleaning.
- Always check machine has stopped rotating and remove shredder ignition key before maintenance of any kind, or whenever the machine is to be left unattended.
- Always check machine is well supported and cannot move.
- Always run with the engine set to maximum speed.
- Always check (visually) for fluid leaks.
- Always take regular breaks. Wearing personal protective equipment for long periods can be tiring and hot.
- Always keep hands, feet and clothing out of feed opening, discharge and moving parts.
- Always use the next piece of material or a push stick to push in short pieces. Under no circumstances should you reach into the funnel.
- Always keep the operating area clear of people, animals and children.
- Always keep the operating area clear from debris build up.
- Always keep clear of the chip discharge tube. Foreign objects may be ejected with great force.
- Always ensure protective guarding is in place before commencing work. Failure to do so may result in personal injury or loss of life.
- Always use shredder in a well ventilated area - exhaust fumes are dangerous.



- Do not operate shredder unless available light is sufficient to see clearly.
- Do not use or attempt to start the shredder without the feed funnel, guards and discharge unit securely in place.
- Do not stand directly in front of the feed funnel when using the shredder. Stand to one side.
- Do not smoke when refuelling.
- Do not let anyone who has not received instruction operate the machine.
- Do not climb on the machine at any time.
- Do not handle material that is partially engaged in the machine.
- Do not touch any exposed wiring while the machine is running.
- Do not use the shredder inside buildings.

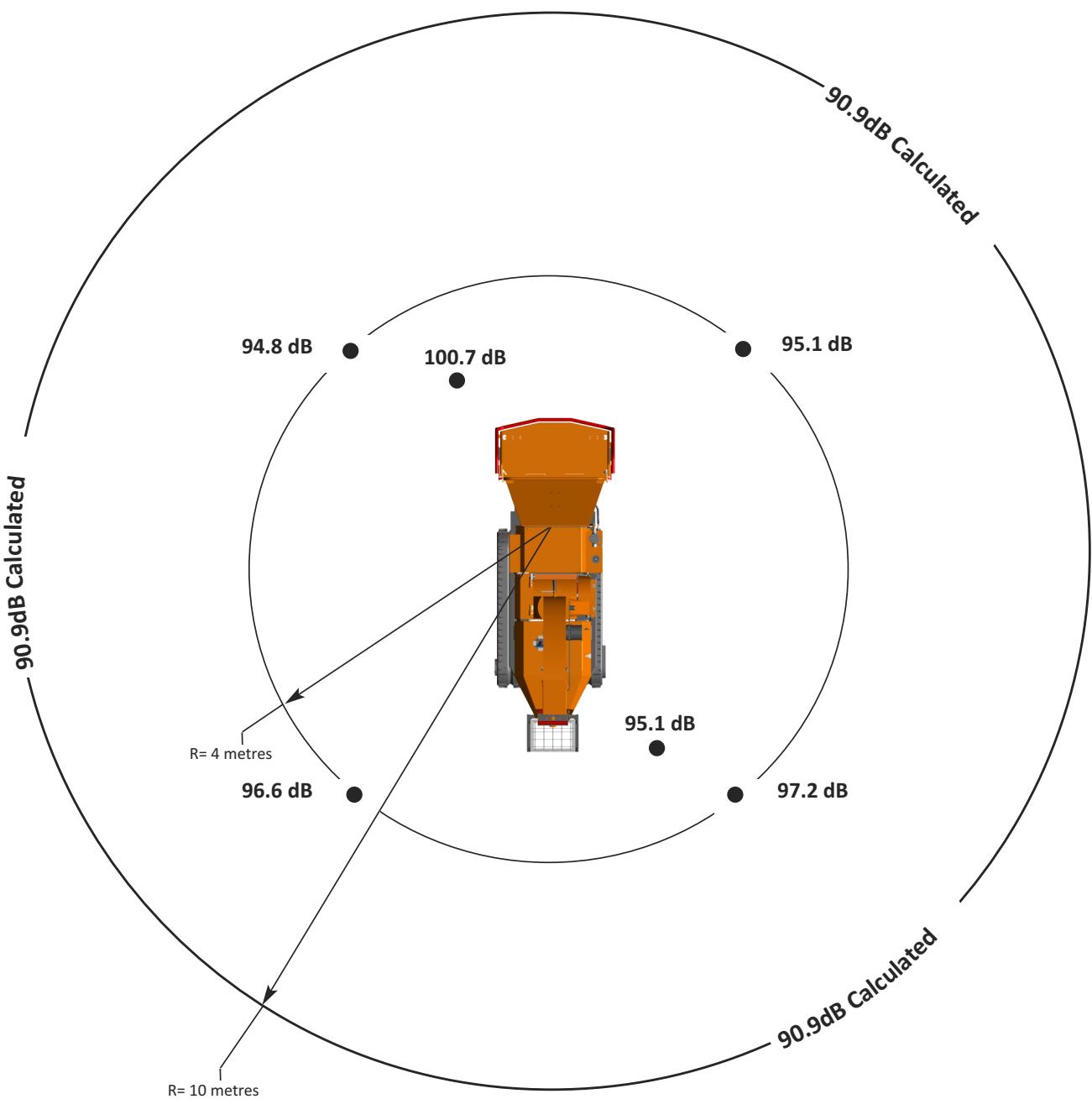


NOISE TEST

Machine: TW S426TFTR

Notes: Tested shredding 120mm x 120mm corsican pine 1.5m in length

Noise levels above 80dB (A) will be experienced at the working position. Prolonged exposure to loud noise may cause permanent hearing loss. All persons within a 4 metre radius must also wear good quality ear protection (EN 352) at all times to prevent possible damage to hearing.



Guaranteed Sound Power: 120dB (A)

As required by Annex III of Directive 2000/14/EC "Noise Emission in the environment by equipment for use outdoors".

DELIVERY

All Timberwolf S426TFTR machines have a full pre - delivery inspection before leaving the factory and are ready to use. Read and understand this instruction manual before attempting to operate the shredder. In particular, read pages 5-7 which contain important health and safety information and advice.

OPERATOR'S PERSONAL PROTECTIVE EQUIPMENT REQUIRED

- Chainsaw safety helmet fitted with visor and recommended ear defenders to an appropriate specification.
- Heavy-duty gloves with elasticated wrist area.
- Close - fitting heavy-duty non-snag clothing.
- Safety footwear.
- Face mask (if appropriate).

See page 5 for more detailed information.

MANUAL CONTROLS

Roller control boxes: a control box is located on either side of the feed funnel. Their function is to control the feed roller whilst processing material. They do not control the main drum.

RED SAFETY BAR: This is the large red bar that surrounds the feed tray and side of the feed funnel. The bar is spring loaded and connected to a switch that will interrupt the power to the rollers. The switch is designed so that it only activates if the bar is pushed to the limit of its travel. The rollers stop instantly, but can be made to turn again by pressing either the **green feed** or **blue reverse** feed control.

Red Safety Bar Test

To ensure the safety bar is always operational it must be activated once before each work session.

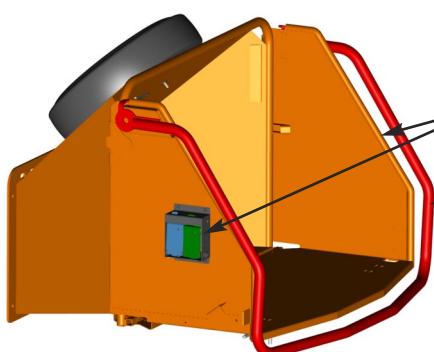
GREEN FEED CONTROL: forward feed - push the feed control once - this activates the rollers and will allow you to start shredding (if the drum speed is high enough).

BLUE FEED CONTROL: reverse feed - allows you to back material out of the rollers. The rollers will only turn in reverse as long as you keep pressing the feed control.



Control Box Diagram

There are two control boxes, located on either side of the feed tray.



Do not rely on the red bar to keep the roller stationary if it is necessary to clear or touch the roller. Always switch off the machine and remove ignition key before approaching the roller.

CRAWLER TRACK CONTROLS



WARNING

ALWAYS WEAR FULL PERSONAL PROTECTIVE EQUIPMENT WHEN DRIVING SHREDDER (SEE PAGE 5) AND ENSURE BUCKET IS CLOSED WITH DISCHARGE POINTING AWAY FROM DRIVING POSITION.

The shredder is designed to operate in either shredding or tracking mode, but not both at the same time. To switch between modes, the push/pull is operated, this is located on the driving control panel (see parts located on page 3 - it is clearly marked). Avoid repeatedly switching between shred and track mode. Allow 20 seconds between each mode selection.

SHREDDING MODE

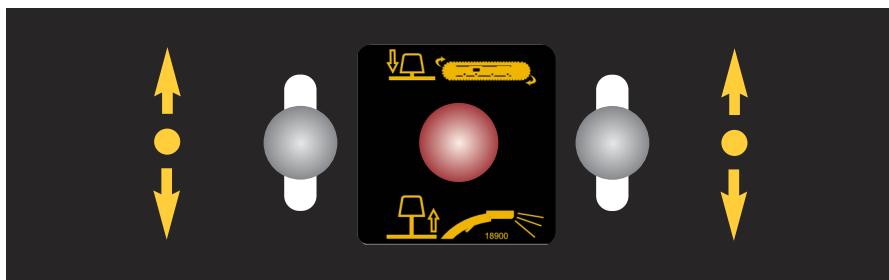
Power is supplied for the shredding function. The main feed roller can be operated as detailed on page 8. The machine cannot be tracked in this mode.

TRACKING MODE

Power is supplied for the track function. The machine can be tracked in this mode, the shredding drum and hammers will remain spinning. The roller controls are now inoperable.

When Track mode is selected the two track control valves may be operated. These have direct control over the track relevant to the each side of the machine. They are proportional valves so increased movement will result in increased track speed.

Tracking may be done at any engine speed. Manoeuvring the machine in tight spaces and while loading and unloading should be done with the engine on low speed.



AUTO CONTROLS

The engine management unit controls the feed rate of the material going into the shredding chamber. If the engine speed is below the predetermined level, the engine management unit will not allow the feed rollers to work in the forward "infeed" direction, until the drum speed rises above the predetermined level. At this point the feed rollers will start turning without warning. The reverse function will operate at any engine speed.

EMERGENCY STOPPING

There are two ways of stopping the S426TFTR chipper in the event of an emergency.

STOPPING THE ROLLERS

Activating the red safety bar will stop the rollers immediately. To restart the rollers, just push the green forward button or blue reverse button.

STOPPING THE ENGINE

Should the entire machine need to be stopped in an emergency the red button on top of the engine guard should be pushed. This will shut down the engine in the shortest possible time. The engine cannot be restarted until the button is pulled out and the main ignition switch is turned off to reset the machine.

DAILY CHECKS BEFORE STARTING

- Locate the machine on firm level ground.
- Check machine is well supported and cannot move.
- Check jack stand is lowered and secure.
- Check all guards are fitted and secure.
- Check the discharge unit is in place and fastened securely.
- Check discharge tube is pointing in a safe direction.
- Check the feed funnel to ensure no objects are inside.
- Check feed tray is in up position - to prevent people reaching the roller.
- Check for free rotation of drum and hammers (see instructions on page 19).
- Check controls as described below.
- Check (visually) for fluid leaks.
- Check fuel and hydraulic oil levels.

For parts location see diagrams on pages 3 & 4

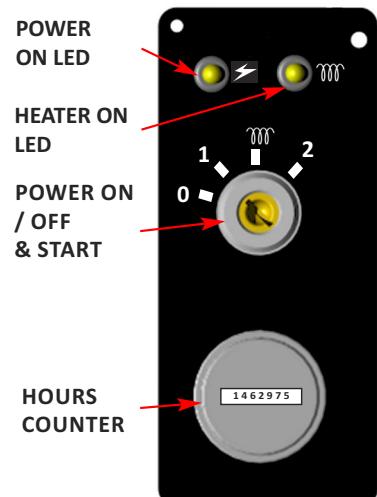
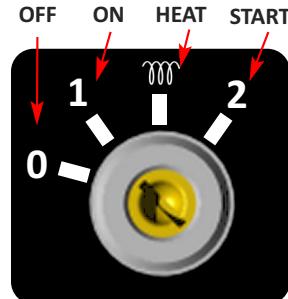
ENGINE CONTROLS

The engine ignition and the throttle lever are located on the control tower at the rear of the shredder. Before starting the engine set throttle to idle and select shredding mode on the Track/Shred pull button.

STARTING THE ENGINE

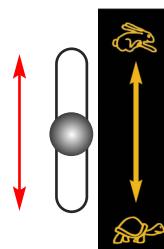
- Ensure throttle lever is in the slow (tortoise) position.
- Insert key. Turn to heat.
- Heater LED comes on.
- Wait for heater LED to go out.
- Turn key to engage starter motor.
- Release key once engine starts.

Do not engage starter motor for more than 20 seconds - allow one minute before attempting to start. Investigate reasons for failure to start.



CONTROLLING ENGINE SPEED

The engine has two throttle settings, idle and fast. These are controlled by the throttle lever on the bonnet. Moving the lever towards the 'Hare' on the pictogram will increase engine speed while moving it towards the 'Tortoise' will decrease the engine speed. All shredding is performed using fast engine speed. Tracking safely requires the selection of an appropriate engine speed for the terrain.



STOPPING THE ENGINE

- Move the throttle lever to the 'Tortoise' to reduce the engine speed to idle.
- Leave the engine running for 1 minute.
- Turn the power switch to position 0. The engine should stop after a few seconds.
- At the end of operations allow sufficient time for all shredded material to be ejected from the discharge before switching off.

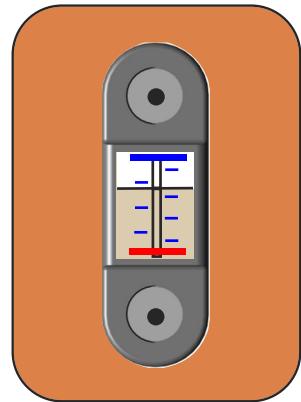
FUEL OIL LEVEL INDICATOR

The fuel level can be seen through the tube fitted to the side of the tank.

HYDRAULIC OIL LEVEL INDICATOR

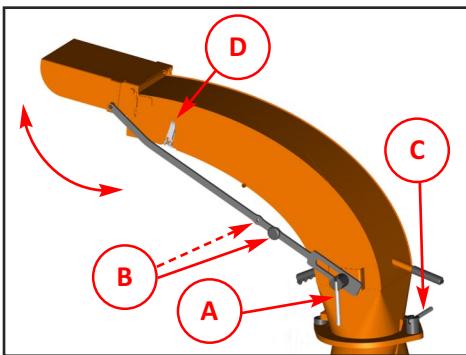
This is situated on the side of the hydraulic oil tank. When the shredder is running, the oil temperature should not exceed 65°C. If it does, stop the machine immediately. Failure to do so may result in damage. Overheating can result from the shredder being worked extremely hard in hot conditions, as the oil is not getting a chance to cool down. Stop the chipper and allow oil to cool before continuing. If the temperature goes above 65°C and the machine is not being worked hard or the air temperature is not particularly high this indicates low oil, a jammed hydraulic motor or valve. Stop immediately and investigate.

When the shredder is on level ground, the oil level should sit between the red line at the bottom of the gauge and the blue line at the top. If this level drops significantly it indicates an oil leak. Stop immediately and investigate.



DISCHARGE CONTROLS

Controlling the discharge is an essential part of safe working.



ROTATION

Slacken nut 'C' using integral handle, rotate tube, retighten nut.

BUCKET ANGLE

Adjust the bucket to the desired angle by loosening clamp 'A' and pushing/pulling handle 'B'. When angle achieved retighten clamp 'A'.

NOTE: Handle 'B' can be positioned in either upper or lower holes according to operator preference.

CLEARING PLATE

Unclip catches 'D' on both sides to open the clearing plate.

BEFORE USING THE SHREDDER

It is essential to carry out the following tests to check safety equipment - this sequence of tests will only take a few seconds to carry out. We recommend that these tests are carried out daily. Observing the function as described will confirm that the safety circuits are working correctly. This is also a good opportunity to remind all operators of the control and emergency stop systems.



STARTING TO SHRED



WARNING

DO NOT USE OR ATTEMPT TO START THE SHREDDER WITHOUT THE PROTECTIVE GUARDING AND DISCHARGE UNIT SECURELY IN PLACE. FAILURE TO DO SO MAY RESULT IN PERSONAL INJURY OR LOSS OF LIFE.

- Check that shredder is running smoothly.
- Release the catches on the feed tray and lower.
- Press the green control button. The roller will commence turning.
- Stand to one side of the feed funnel.
- Proceed to feed material into the feed funnel.
- At the end of operations allow sufficient time for all shredded material to be ejected from the discharge before switching off.

SHREDDING

WARNING
LIMITATIONS ON MATERIALS

To properly control the speed of material entering the shredder chamber, the machine relies on the large feed roller to grip the material. The feed roller can grip material down to 15mm in diameter. The machine will not tolerate or process items such as tyres, mattresses, heavy duty plastic containers (used for oils, chemicals, etc.), carpets, reinforced concrete, metallic items exceeding lightweight domestic door furniture, commercial plastic gas pipe, alkathene water pipe, metal reinforced drainage/irrigation pipe, baler twine, rope, metal banding, computer hard drives (which contain magnets) and any similar objects to the above.

NOTE: When materials are corrosive they may attack and degrade the individual components. It is essential that the unit be thoroughly cleaned down after shredding anything that may contain materials of an aggressive nature.

Ejection of material – **Warning!** The TW S426TFTF shredder ejects material at high speed. Ensure there is an adequate safety zone and that ejected material is aimed away from operators into a safe area, i.e. an enclosure or container with a back stop (i.e. wall) behind it to prevent ejected material from leaving the work area and causing injury and damage. If loading into a truck or trailer, ensure the structure is strong enough to cope with the impact from ejected material.

BLOCKAGES

Always be aware that what you are putting into the shredder must come out. If the material stops coming out of the discharge tube but the shredder is taking material in - STOP IMMEDIATELY. Continuing to feed material into a blocked machine may cause damage and will make it difficult to clear. Two areas of the machine can become blocked - the discharge tube and the drum housing. To clear a blockage proceed as follows:

- Stop the engine and remove the keys.
- Remove the two drum housing securing nuts and open the drum housing until it rests against the rubber stop. **WARNING!** Ensure the weight of the discharge tube is fully supported whilst opening the drum housing, to avoid injury and damage.
- Remove any blockage from the discharge tube, ensuring that it is clear along its entire length.
- Wearing gloves, reach into the drum housing and remove the material causing the blockage, including any material that may have also entered the side fan casing. **WARNING!** Beware of turning the drum whilst clearing a blockage, as this could lead to injury.
- Close the drum housing and replace and tighten the two securing nuts. **WARNING!** Ensure the weight of the discharge tube is fully supported whilst lowering the drum housing, to avoid injury and damage.
- Restart the engine and increase to full throttle. Allow sufficient time for the machine to clear any residual material before recommencing work.

Continuing to feed the shredder with material once it has become blocked will cause the shredder to compact material in the drum housing and discharge chute and it will be difficult and time consuming to clear.

AVOID THIS SITUATION - WATCH THE DISCHARGE TUBE AT ALL TIMES.



THE FOLLOWING PAGES DETAIL ONLY BASIC MAINTENANCE GUIDELINES SPECIFIC TO YOUR SHREDDER.



THIS IS NOT A WORKSHOP MANUAL.

The following guidelines are not exhaustive and do not extend to generally accepted standards of engineering/mechanical maintenance that should be applied to any piece of mechanical equipment and the chassis to which it is mounted.

Authorised Timberwolf service agents are fully trained in all aspects of total service and maintenance of Timberwolf wood shredders. You are strongly advised to take your shredder to an authorised agent for all but the most routine maintenance and checks.

Timberwolf accepts no responsibility for the failure of the owner/user of Timberwolf shredders to recognise generally accepted standards of engineering/mechanical maintenance and apply them throughout the machine.

The failure to apply generally accepted standards of maintenance, or the performance of inappropriate maintenance or modifications, may invalidate warranty and/or regulatory compliance, in whole or in part.

Please refer to your authorised Timberwolf service agent for service and maintenance.

SERVICE SCHEDULE

**WARNING**

ALWAYS IMMOBILISE THE MACHINE BY STOPPING THE ENGINE, REMOVING THE IGNITION KEY AND DISCONNECTING THE BATTERY BEFORE UNDERTAKING ANY MAINTENANCE WORK.

SERVICE SCHEDULE	Daily Check	50 Hours	100 Hours	500 Hours	1 Year
Check water.	✓				
Check engine oil - top up if necessary (10W-30).	✓				
Check for engine oil / hydraulic oil leaks.	✓				
Check hydraulic oil - top up if necessary.	✓				
Check fuel level - top up if necessary	✓				
Check feed funnel, feed roller cover, access covers, engine covers and discharge unit are securely fitted.	✓				
Check for free rotation of drum and hammers.	✓				
Check air intake is clear.	✓				
Clean air filter element.	DEPENDING ON WORKING ENVIRONMENT				
Grease the drum bearings.	GREASE DAILY OR AS REQUIRED WITH INFREQUENT USE - SEE PAGE 21				
Check safety bar mechanism.	✓				
Check for tightness all nuts, bolts and fastenings making sure nothing has worked loose.		✓			
Grease discharge flange.		✓			
Check tension of main drive belts (and tension if necessary).		✓			
Check tension of clutch drive belt (and tension if necessary).		✓			
Grease the roller box slides.		✓	OR AS REQUIRED - SEE PAGE 22		
Grease the roller spline and bearing.		✓	OR AS REQUIRED - SEE PAGE 22		
Check anvils for wear.	✓				
Check battery electrolyte level.			✓		
Check for loose electrical wiring.			✓		
Replace hydraulic oil filter - every year or 100 hours after service or repair work to the hydraulic system.			✓	OR	✓
Replace hydraulic oil.			✓	OR	✓
Replace anvils when worn.	RETURN TO DEALER FOR ANVIL CHANGE				

NOTE: Your Timberwolf shredder is covered by a full 12 months parts and labour warranty. Subject to correct maintenance and proper machine usage, the bearings are guaranteed for 12 months regardless of hours worked by the machine. In conditions of 'heavy usage' - i.e. in excess of 500 hours per year - it is recommended that the bearings are changed annually to ensure that the machine retains optimum working performance.

SPARES

Only fit genuine Timberwolf replacement screws and shredder spares. Failure to do so will result in the invalidation of the warranty and may result in damage to the shredder, personal injury or even loss of life.

SAFE MAINTENANCE

- Handle hammers with extreme caution to avoid injury. Gloves should always be worn when handling the hammers.
- The drive belts should be connected while changing blades, as this will restrict sudden movement of the drum.
- The major components of this machine are heavy. Lifting equipment must be used for disassembly.
- Clean machines are safer and easier to service.
- Avoid contact with hydraulic oil and fuel.

SAFE LIFTING/SECURING OF THE SHREDDER

Use slings rated at 2000kg each for the lifting procedure. The tube referred to is steel HFS tube Ø50.8mm outside diameter and minimum 6.3mm wall thickness, overall length 1250mm.

Lift from lugs (No. 1), using correctly rated 'D' shackles with slings approx 1500mm long giving an included angle of 36° (rear view).

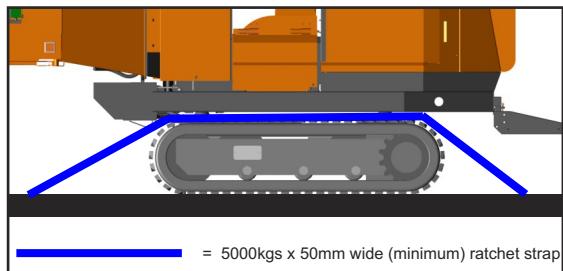
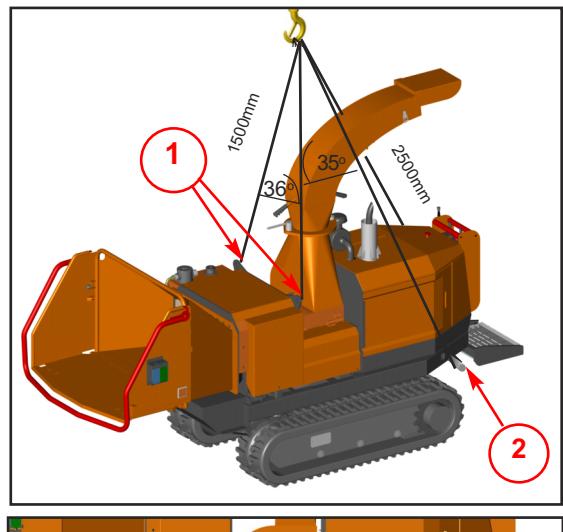
To balance lift, slide tube through side beams at No. 2. Lift from each end with slings approx. 2500mm long.

The ideal lift angle of these combined slings is 35° (side view).

Ensure area is clear of bystanders when lifting and do not walk/crawl under shredder when raised from floor.

The method of securing the shredder can vary depending on the type of carrier and position of tie down points available on the carrier. Timberwolf recommend where possible to secure machine to carrier using correctly rated ratchet straps over the full length of both rubber tracks.

Securing a Timberwolf shredder ready for transport must be carried out by competent qualified personnel. Failure to observe this procedure could result in chassis and/or undercarriage damage.

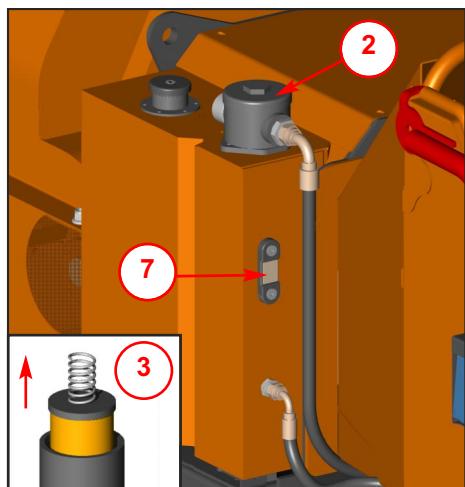


CHANGE HYDRAULIC OIL AND FILTER



WARNING

USE PLASTIC GLOVES TO KEEP OIL OFF SKIN AND DISPOSE OF THE USED OIL AND FILTER IN AN ECOLOGICALLY SOUND WAY. THE OIL AND FILTER SHOULD BE CHANGED ONCE A YEAR OR AT ANY TIME IT BECOMES CONTAMINATED. BEFORE STARTING CHECK THAT THE SHREDDER IS STANDING LEVEL AND THE ENGINE IS COOL.



- Remove the side panel.
- Remove the black screw cap from the top of the filter housing.
- Partially remove filter element from inner cup. Leave filter to drain for 15 minutes.
- Remove filter element from cup when clear of hydraulic oil.
- Remove drain plug and drain oil into a suitable container.
- Replace drain plug.
- Refill with VG 32 hydraulic oil until the level is half way up the sight glass (about 80 litres).
- Refit the filter cup, install a new filter element and refit the black screw cap to the filter housing, ensuring o-ring remains in place.

COPPER EASE SAFETY INFORMATION

Product name: Copper Ease.

Copper Ease contains no hazardous ingredients at or above regulatory disclosure limits, however, safety precautions should be taken when handling (use of oil-resistant gloves and safety glasses are recommended - respiratory protection is not required). Avoid direct contact with the substance and store in a cool, well ventilated area avoiding sources of ignition, strong oxidising agents and strong acids. Dispose of as normal industrial waste (be aware of the possible existence of regional or national regulations regarding disposal), do not discharge into drains or rivers.

In case of fire: in combustion the product emits toxic fumes, extinguish with alcohol or polymer foam, carbon dioxide or dry chemical powder. Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

FIRST AID

Skin contact: there may be mild irritation at the site of contact, wash immediately with plenty of soap and water.

Eye contact: there may be irritation and redness, bathe the eye with running water for 15 minutes.

Ingestion: there may be irritation of the throat, do not induce vomiting, wash out mouth with water.

A safety data sheet for this product can be obtained by writing to the manufacturer at the following address: Comma Oil and Chemicals Ltd., Deering Way, Gravesend, Kent DA12 2QX. Tel: 01474 564311, Fax: 01474 333000.

BATTERY REMOVAL AND MAINTENANCE

The battery can be serviced in situ. To remove the battery, first remove the negative battery lead, followed by the positive battery lead, then the battery strap. When reinstalling the battery apply a small smear of Vaseline to the terminals.



WARNING

REFER TO THE BATTERY SAFETY SECTION ON PAGE 17.

BATTERY SAFETY INFORMATION

WARNING NOTES AND SAFETY REGULATIONS FOR FILLED LEAD-ACID BATTERIES

<ul style="list-style-type: none"> For safety reasons, wear eye protection when handling a battery. Keep out of reach of children. Fires, sparks, naked flames and smoking are prohibited. Avoid causing sparks when dealing with cables and electrical equipment, and beware of electrostatic discharges. Avoid short circuits. <p>Explosion hazard:</p> <ul style="list-style-type: none"> A highly explosive oxyhydrogen gas mixture is produced when batteries are charged. 	    	<p>Corrosive hazard: Battery acid is highly corrosive, therefore:</p> <ul style="list-style-type: none"> Wear protective gloves and eye protection. Do not tilt the battery, acid may escape from the vent openings. <p>First aid:</p> <ul style="list-style-type: none"> Rinse off acid splashed in the eyes immediately for several minutes with clear water! Remove contact lenses if worn and continue rinsing. Then consult a doctor immediately. Neutralise acid splashes on the skin or clothes immediately with acid neutraliser (soda) or soap 	<p>suds, and rinse with plenty of water.</p> <ul style="list-style-type: none"> If acid is swallowed, consult a doctor immediately. <p>Warning notes: The battery case can become brittle, to avoid this:</p> <ul style="list-style-type: none"> Do not store batteries in direct sunlight. Discharged batteries may freeze up, therefore store in an area free from frost. <p>Disposal:</p> <ul style="list-style-type: none"> Dispose of old batteries at an authorised collection point. The notes listed under item 1 are to be followed for transport. Never dispose of old batteries in household waste.
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1. Storage and transport

- Batteries are filled with acid.
- Always store and transport batteries upright and prevent from tilting so that no acid can escape.
- Store in a cool and dry place.
- Do not remove the protective cap from the positive terminal.
- Run a FIFO (first in-first out) warehouse management system.

2. Initial operation

- The batteries are filled with acid at a density of 1.28g/ml during the manufacturing process and are ready for use.
- Recharge in case of insufficient starting power (see no. 4).

3. Installation in the vehicle and removal from the vehicle

- Switch off the engine and all electrical equipment.
- When removing, disconnect the negative terminal first.
- Avoid short circuits caused by tools, for example.
- Remove any foreign body from the battery tray, and clamp battery tightly after installation.
- Clean the terminals and clamps, and lubricate slightly with battery grease.
- When installing, first connect the positive terminal, and check the terminal clamps for tight fit.
- After having fitted the battery in the vehicle, remove the protective cap from the positive terminal, and place it on the terminal of the replaced battery in order to prevent short circuits and possible sparks.
- Use parts from the replaced battery, such as the terminal covers, elbows, vent pipe connection and terminal holders (where applicable); use available or supplied filler caps.
- Leave at least one vent open, otherwise there is a danger of explosion. This also applies when old batteries are returned.

4. Charging

- Remove the battery from the vehicle; disconnect the lead of the negative terminal first.
- Ensure good ventilation.
- Use suitable direct current chargers only.
- Connect the positive terminal of the battery to the

positive output of the charger. Connect the negative terminal accordingly.

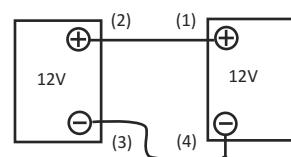
- Switch on the charger only after the battery has been connected, and switch off the charger first after charging has been completed.
- Charging current-recommendation: 1/10 ampere of the battery capacity Ah.
- Use a charger with a constant charging voltage of 14.4V for re-charging.
- If the acid temperature rises above 55° Celsius, stop charging.
- The battery is fully charged when the charging voltage has stopped rising for two hours.

5. Maintenance

- Keep the battery clean and dry.
- Use a moist anti-static cloth only to wipe the battery, otherwise there is a danger of explosion.
- Do not open the battery.
- Recharge in case of insufficient starting power (see no. 4).

6. Jump Starting

- Use the standardised jumper cable in compliance with DIN 72553 only, and follow the operating instructions.
- Use batteries of the same nominal voltage only.
- Switch off the engines of both vehicles.
- First connect the two positive terminals (1) and (2), then connect the negative terminal of the charged battery (3) to a metal part (4) of the vehicle requiring assistance away from the battery.
- Start the engine of the vehicle providing assistance, then start the engine of the vehicle requiring assistance for a maximum of 15 seconds.
- Disconnect the cables in reverse sequence (4-3-2-1).



7. Taking the battery out of service

- Charge the battery; store in a cool place or in the vehicle with the negative terminal disconnected.
- Check the battery state of charge at regular intervals, and correct by recharging when necessary (see no. 4).

CHECK FITTINGS

The TW S426TFTR is subject to large vibrations during the normal course of operation. Consequently there is always a possibility that nuts and bolts will work themselves loose. It is important that periodic checks are made to ensure the security of all fasteners. Fasteners should be tightened using a torque wrench to the settings listed below.

Uncalibrated torque wrenches can be inaccurate by as much as 25%. It is therefore essential that a calibrated torque wrench is used to achieve the tightening torques listed below.

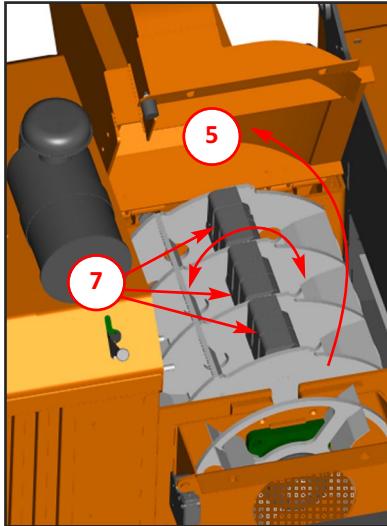
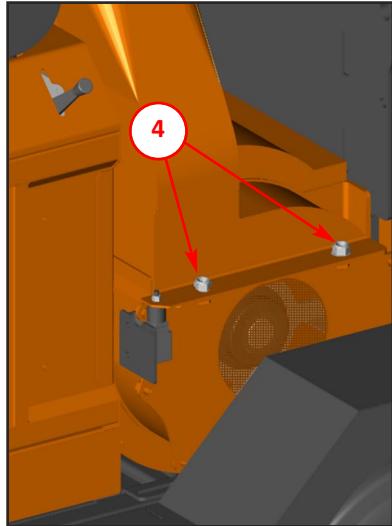
	Size	Pitch	Head	Torque Ibft	Torque Nm
Hammer Locating Bolts	M8	Standard	6 mm Allen Key	31	42
Anvil Bolts	M16	Standard	14 mm Allen Key	175	237
Drum Shaft Retaining Bolts	M16	Standard	24 mm Hex	90	122
Funnel Retaining Nuts	M12	Standard	19 mm Hex	60	80
General	M8	Standard	13 mm Hex	17	23
General	M10	Standard	17 mm Hex	34	46
General	M12	Standard	19 mm Hex	60	80

CHECK FREE ROTATION OF DRUM AND HAMMERS



WARNING

WEAR HEAVY GLOVES FOR THE DRUM DRUM/HAMMER CHECKING OPERATION.

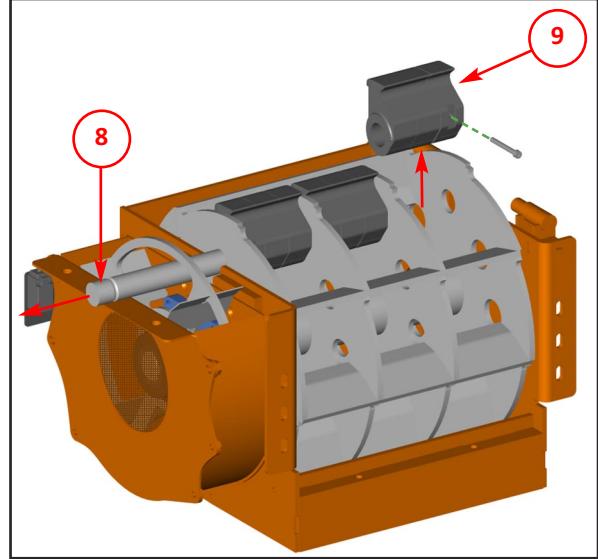
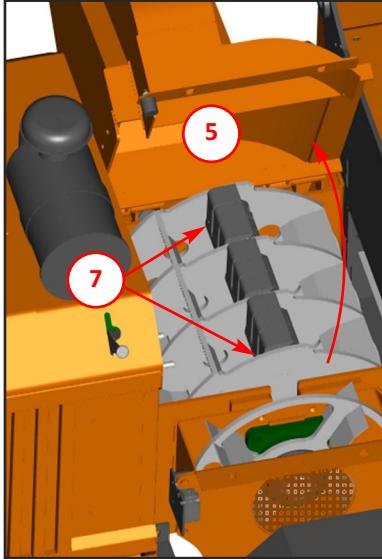
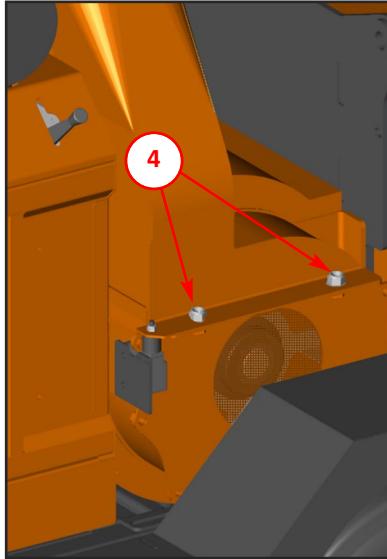


- 1 Turn off shredder and remove key.
- 2 Remove the negative battery lead.
- 3 Turn the discharge tube to point forward of the machine.
- 4 Using a 24 mm spanner remove the two M16 nuts clamping the drum housing shut.
- 5 Carefully lift the drum housing until it rests on its stop.
- 6 Using the paddles to turn the drum, set a bank of hammers at 12 o'clock.
- 7 Check that each of the 9 hammers in this bank all rotate freely through 360°.
- 8 Turn the drum to check the second bank of hammers.
- 9 Check all 9 hammers in second bank also rotate freely through 360°.
- 10 Lower the top of the drum housing and reinstall the two M16 nuts.
- 11 Torque these to 65lbft.
- 12 Re-attach the battery lead.

CHANGE HAMMERS



WARNING
**WEAR RIGGERS GLOVES FOR THE HAMMER
 CHANGING OPERATION.**



- 1 Turn off shredder and remove key.
- 2 Remove the negative battery lead.
- 3 Turn the discharge tube to point forward of the machine.
- 4 Using a 24 mm spanner remove the two M16 nuts clamping the drum housing shut.
- 5 Carefully lift the drum housing until it rests on its stop.
- 6 Using the paddles to turn the drum, set a bank of hammers at 12 o'clock.
- 7 With a 6mm hex key undo and remove the bolt in the hammer at each end of the bank of hammers.
- 8 The shaft can now be withdrawn. The shaft will need to be tapped away from the main drive pulley side.
- 9 As the shaft is removed the hammers will be released off the shaft. These need to be held and removed as the shaft is withdrawn.
- 10 The hammer replacement is the reverse of the above with the addition of some copper slip on the hammer retainer bolts. Note the hammer bushes should not be greased or lubricated in any way. Any build up of debris should be removed from both the shaft and the hammer bushes so the hammer can swing freely.
- 11 Turn the drum to change the second bank of hammers.
- 12 Lower the top of the drum housing and reinstall the two M16 nuts.
- 13 Torque these to 65lbft.
- 14 Re-attach the battery lead.

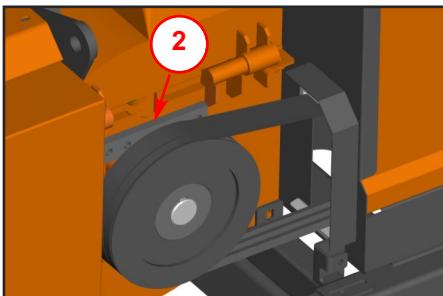
CHECK HOSES

All the hydraulic hoses should be regularly inspected for chafing and leaks. The hydraulic system is pressurized to 180 Bar (2610 PSI) and thus the equipment containing it must be kept in good condition.

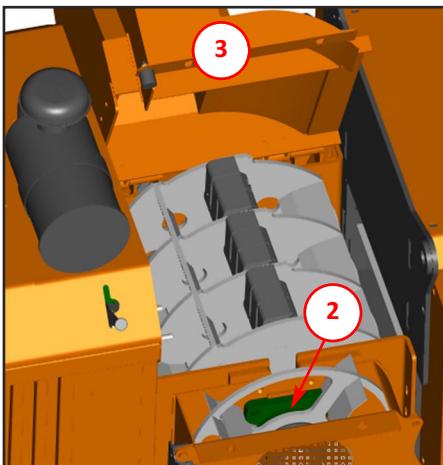
Identify the hoses that run to the top motor. These have the highest chance of damage as they are constantly moving. If any hydraulic components are changed new seals should be installed during reassembly. Fittings should then be retightened.

GREASE THE DRUM BEARINGS

BOTH BEARINGS NEED REGULARLY GREASING.



- 1 Remove the drum housing guard, situated on the offside of the machine.
- 2 Apply two pumps of grease to the bearing taking care not to over grease.
- 3 Refit guard.

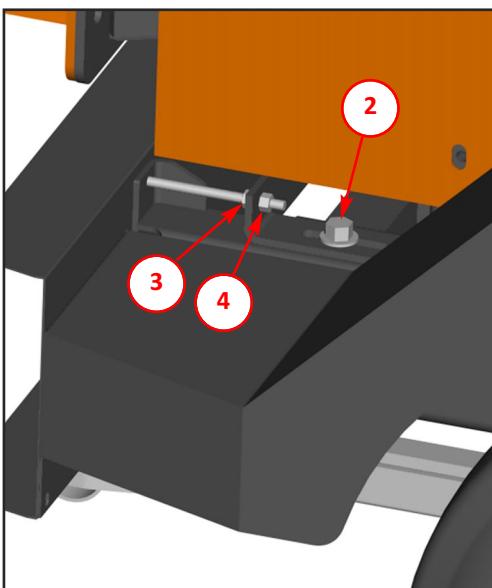


- 1 Turn the discharge tube to point forward of the machine.
- 2 Using a 24 mm spanner remove the two M16 nuts clamping the drum housing shut.
- 3 Carefully lift the drum housing until it rests on its stop.
- 4 Apply two pumps of grease to the bearing taking care not to over grease.
- 5 Lower the top of the drum housing and reinstall the two M16 nuts.
- 6 Torque these to 65lbft.

TENSION DRIVE BELTS

NOTE: There will normally be a rapid drop in tension during run-in period for new belts. When new belts are fitted, check the tension every 2 - 3 hours and adjust until the tension remains constant.

Belt failures due to lack of correct tensioning will not be covered under your Timberwolf warranty.

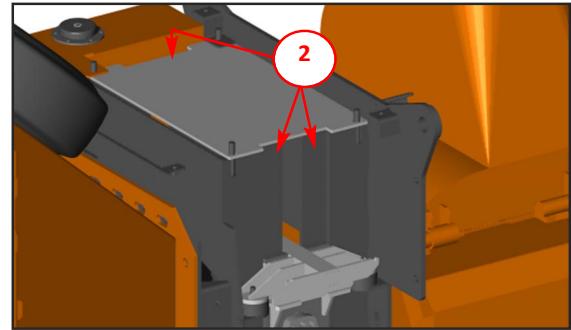


- 1 Remove the drum housing guards, (as shown in diagram above).
- 2 Slacken the six M12 bolts but do not remove (there are three located on each side of the machine).
- 3 Slacken the M8 tension nut from the adjuster bracket about 5mm on both sides of roller box.
- 4 Tension each of the M8 adjuster nuts drawing the drum housing, roller box and funnel away from the engine bay. For instructions on checking belt tension & correct belt tension values, please refer to the Timberwolf V-Belt Tensioning Data (page 34).
- 5 Check the belt tension and repeat as necessary.
- 6 Once belt tension is correct lock off the M8 nut against the tension bracket.
- 7 Retighten the six M12 bolts.
- 8 Refit the belt guard when finished.

GREASE THE ROLLER BOX SLIDES

NOTE: This should be done every 50 hours. In dirty or dusty conditions or during periods of hard work it should be done more frequently. If the slides become dry the top roller will tend to hang up and the pulling-in power of the roller will be much reduced. Excessive wear will ensue.

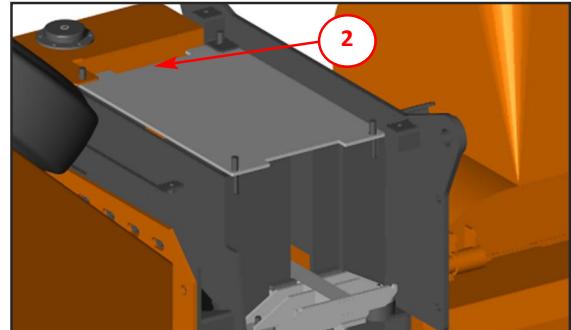
- 1 Remove the top roller box guard.
- 2 Remove the nearside roller box guard.
- 3 Apply multipurpose grease directly to the slide surfaces indicated. **DO NOT USE GRAPHITE BASED GREASE.**
- 4 Refit both the roller box guards.



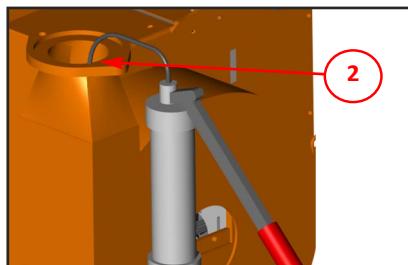
GREASE THE ROLLER SPLINE AND BEARING

NOTE: This should be done regularly. In dirty and dusty conditions or during periods of hard work it should be weekly. If the bearings and splines are allowed to run dry premature wear will occur resulting in a breakdown and the need for replacement parts. This failure is not warranty. Early signs of insufficient grease includes squeaking or knocking rollers.

- 1 Remove the top roller box guard.
- 2 Locate the grease nipple indicated.
- 3 Use a pump action grease gun to apply a generous amount of grease to each roller drive. **DO NOT USE GRAPHITE BASED GREASE.**
- 4 Refit the top roller box guard.



GREASE THE DISCHARGE FLANGE



- 1 Remove the discharge tube.
- 2 Apply multipurpose grease to surface shown.
- 3 Refit discharge tube.

ENGINE SERVICING

All engine servicing must be performed in accordance with the Engine Manufacturer's Handbook provided with the machine. **Failure to adhere to this may invalidate warranty and/or shorten engine life.**

TRACK BASE MAINTENANCE

Safe Maintenance

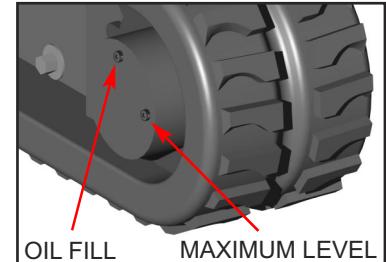
- Solidly support the under carriage if it needs to be lifted up for maintenance.
- Hydraulic systems may get very hot after working.
- Keep all components in good condition as they are exposed to high pressures.
- Immediately repair damage and replace worn or broken items.

Maintenance intervals are only guidelines. The amount of times maintenance is conducted should be increased beyond recommended guidelines if severe conditions are encountered.

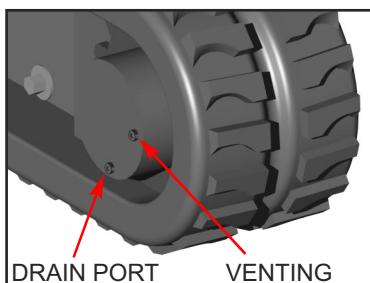
REPLACEMENT OF OIL IN THE TRACK DRIVE UNIT

To fill with oil, track the machine until the gearbox casing is level with a plug positioned at 12 o'clock as shown. Unscrew the two plugs and fill from the upper hole until oil reaches the level of the lower hole.

NOTE - Ensure the correct grade of oil is used: Gear Oil EP80W-90 GL5



DRAINING THE OIL IN THE TRACK DRIVE UNIT



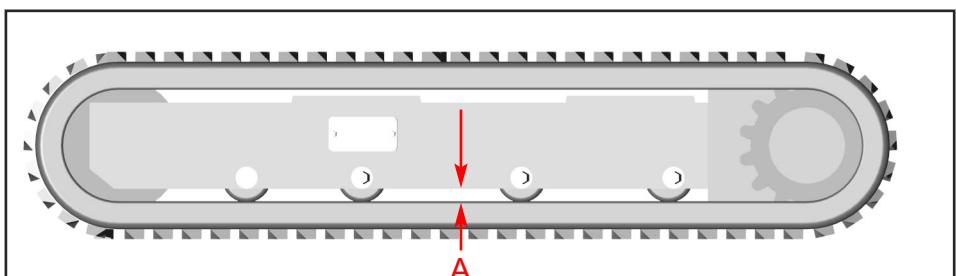
To drain the oil, track the machine until a plug is at 6 o'clock as shown. Unscrew both plugs and allow oil to discharge into a suitable container. Dispose of waste oil in a safe and approved way.

REDUCTION UNIT OIL TYPES

We recommend, for track drive gearboxes, using gear oils with E>P. additives and viscosity to SAE 80W/90 or ISO VG 150. Continuous duty temperature must not exceed 90°C.

CHECKING THE TRACK TENSION

- 1 Stop your machine on a flat and solid surface.
- 2 Lift it in safe conditions and put stable supports under the undercarriage frame to properly support it.
- 3 Measure distance A at the central roller of the undercarriage from the bottom of the roller to the rigid inside surface of the rubber track. Track tension is normal if dimension A is between 10 and 15 mm.
- 4 Adjust tension as described in the following paragraph if track tension does not comply with these dimensions (loose or too tight).

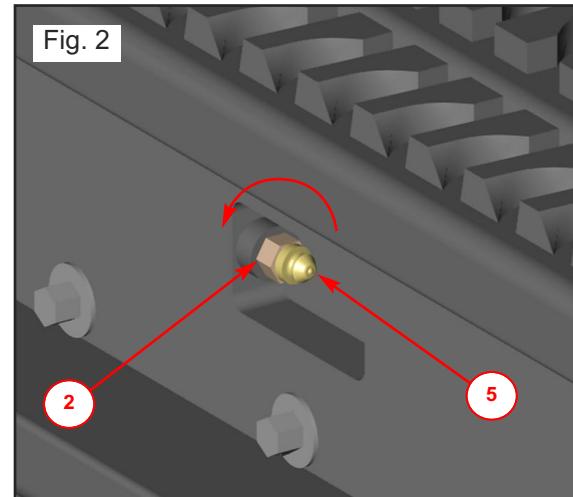
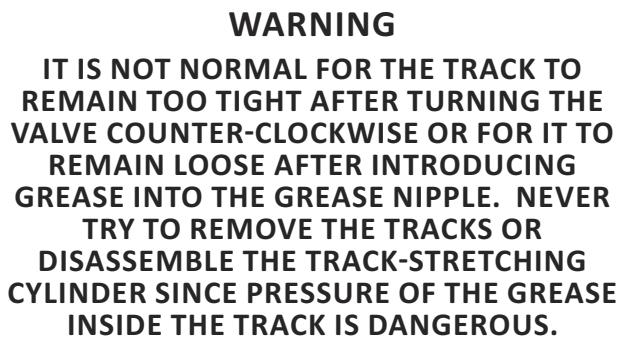
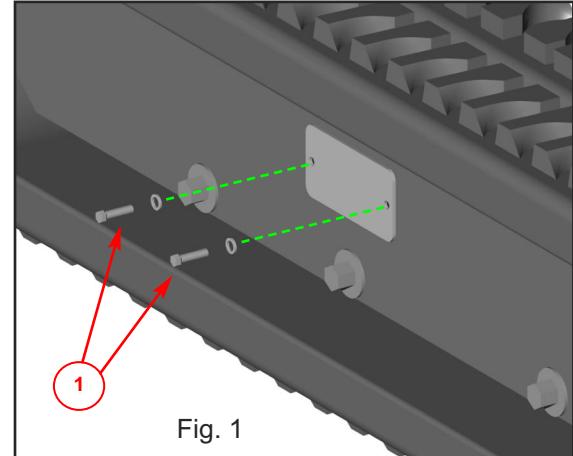


TRACK LOOSENING/TIGHTENING PROCEDURES

Track tension is maintained by grease in the adjuster unit. More grease will increase track tension, less grease will decrease it.

The grease contained in the hydraulic track is pressurized. Never release grease valve (No. 2, Fig. 2) for more than necessary to release grease to a maximum of five turns. If the valve is loosened too much you risk expelling grease under pressure and possible injury to the machine operator. Never loosen the grease nipple (No. 5, Fig. 2). Remove gravel or mud when they are jammed between the sprocket and the track link before loosening the track.

- 1 Remove the screws and take off the cover to access the adjustment system.
- 2 To loosen the track turn the valve counter-clockwise slowly until the grease begins to expell to a maximum of five turns.
- 3 If grease does not start to drain out then slowly rotate the track forward and reverse to free adjuster mechanism.
- 4 When you have obtained correct track tension then turn valve clockwise and tighten it. Clean all traces of extruded grease.
- 5 To stretch the track connect a grease gun to grease nipple and add grease until track tension falls within specified values.



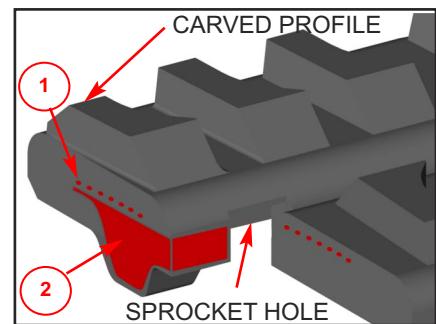
WARNING

IT IS NOT NORMAL FOR THE TRACK TO REMAIN TOO TIGHT AFTER TURNING THE VALVE COUNTER-CLOCKWISE OR FOR IT TO REMAIN LOOSE AFTER INTRODUCING GREASE INTO THE GREASE NIPPLE. NEVER TRY TO REMOVE THE TRACKS OR DISASSEMBLE THE TRACK-STRETCHING CYLINDER SINCE PRESSURE OF THE GREASE INSIDE THE TRACK IS DANGEROUS.

CHECKING THE RUBBER TRACKS

The structure of the rubber track is shown in this diagram. The steel cables (1) and metal core (2) are embedded in the rubber.

There are many ways in which rubber tracks may be damaged. Some of these are terminal for the tracks, others are only cosmetic.



BREAKAGES OF STEEL CABLES AND METAL CORES.

Excess track tension can cause steel cables to break. Excess tension may be caused by;

- Stones or foreign matter accumulating between the track and the undercarriage frame.
- The track slipping off its guide system.
- Extreme friction such as rapid changes in direction.
- Improper contact between track and sprocket.
- Operation on sandy terrain.

FATIGUE CRACKS AND ABRASION.

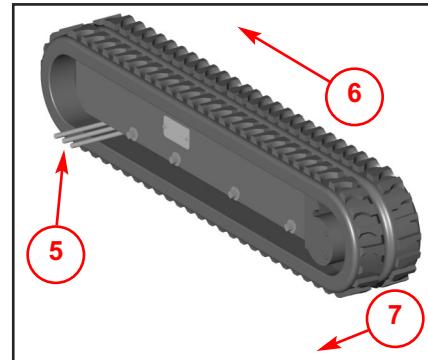
- Cracks at the base of the carved profiles are caused by rubber fatigue due to bending.
- Cracks and bends on the edge of the rubber are caused by manoeuvring the track on concrete edges and curbs.
- Cracks and abrasions in the rubber on the guide roller paths are caused by compression fatigue of the rubber due to the weight of the wheel combined with operation on sandy terrain or repeated sudden changes in direction.
- Abrasion of the carved profile may be caused, in particular, by rotation on concrete or gravel surfaces or hard surfaces.
- Cracks on the outside surface of the track are often due to contact with gravel, sharp stones and sharp materials such as sheet metal, nails and glass.
- Cracks on the inside surface of the circumference and on the edge of the rubber are caused by contact between track and the undercarriage structure or with sharp concrete edges.

These methods of damage are progressive. The track can continue to be used until wear exposes the metal cores. If this exposure extends for more than half of the circumference of the track then it is time to replace the track, even though it can still be used.

REMOVING THE RUBBER TRACKS

REMOVE GRAVEL OR MUD WHEN THEY ARE JAMMED BETWEEN THE SPROCKET AND THE TRACK LINK BEFORE LOOSENING THE TRACK.

- 1 Stop your machine on a solid and level surface. Lift it up and support it in safe conditions.
- 2 Remove the screws and take off the cover that gives access to the adjustment system (Fig. 1, page 23).
- 3 To loosen a track slowly unscrew valve counter-clockwise (Fig. 2, page 23) only as many turns as necessary to release grease, to a maximum of five turns.
- 4 If grease does not start to drain out then slowly rotate the track forward and reverse to free adjuster mechanism.
- 5 Insert three steel tubes inside the track in the space between the rollers.
- 6 Rotate the driving gear in reverse so that the steel tubes proceed with the track and engage in the track-stretching wheel.
- 7 Exercise force sideways to slide the track and lift it off the track-stretching wheel.



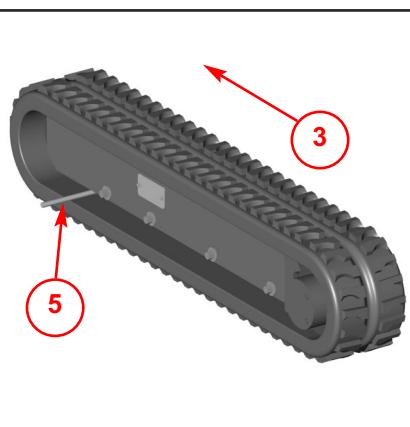
WARNING

THE GREASE CONTAINED IN THE HYDRAULIC TANK IS UNDER PRESSURE. NEVER LOOSEN THE GREASE VALVE FOR MORE THAN 5 TURNS. IF THE VALVE IS LOOSENERED TOO MUCH THEN PRESSURIZED GREASE MAY EXIT AND CAUSE INJURY TO THE MACHINE OPERATOR. NEVER LOOSEN THE GREASE NIPPLE

INSTALLING THE RUBBER TRACKS

WARNING

MAKE SURE THAT YOU ARE ALWAYS IN SAFE CONDITIONS WITH THE MACHINE LIFTED TO PERFORM THE OPERATION FOR TRACK INSTALLING.



- 1 Check that the grease contained in the hydraulic cylinder has been removed.
- 2 Mesh the track links in the sprocket and place the other end of the track on the track-stretching wheel.
- 3 Rotate the driving gear in reverse and pull the track soles inside the frame.
- 4 Position the track using a steel tube and turn the driving gear again.
- 5 Make sure track links mesh correctly in the sprocket and in the track stretching wheel.
- 6 Adjust track tension (see track loosening procedures on page 23).
- 7 Set the tracked undercarriage on the ground.

CHECKING SPROCKET WEAR

Measuring wear on sprocket and driving gear teeth is one of the most difficult measurements to be done. You must always consider the point where wear is greatest.

There should always be enough tooth left on the sprocket to engage fully with the rubber track. When the sprocket meshing distance is reduced significantly the sprocket should be changed.

TIMBERWOLF NO-NONSENSE WARRANTY

All new Timberwolf machines come with peace of mind built in. Our no-nonsense warranty is your guarantee of your Timberwolf wood shredder not letting you down.

Your warranty statement is included in your manual pack. Please ensure you register your machine with your dealer to ensure you are eligible for the full Timberwolf warranty period.



Environmental Manufacturing LLP

Entec House,
Tomo Industrial Estate,
Stowmarket,
Suffolk IP14 5AY

Tel: 01449 765800 Fax: 01449 765801

E C Declaration of Conformity



Environmental Manufacturing LLP as the designer and manufacturer, certifies that the machine stipulated below complies with all the relevant provisions of the:

Machinery Directive; 2006/42/EC (& other relevant directives)

and the National Laws and Regulations adopting these directives.

Designer/Manufacturer	:	Environmental Manufacturing LLP
Description of Machinery	:	Self-powered track mounted machine intended to shred general green waste, contaminated brushwood pallets, door frames, wooden furniture, metal door furniture, plastic bottles & other similar items.
Model	:	TW S426 TR Tracked Turbo Shredder
Serial No.	:	<u>Serial Manufacture</u>

BSI Transposed Harmonised Standards applied: (including parts/clauses of):

BS EN 12100-1: 2010 Safety of Machinery- Basic concepts, BS EN 13857-1: 2008 Safety of Machinery-Safety distances to danger zones, BS EN 60204-1: 2006 +A1 2009 Safe electrical practices, BS EN 13732-1:2008 Safety of Machinery – Temperatures of touchable surfaces, BS EN 13849-1: 2008 – Safety of Machinery – Safety related parts of control systems, BS13850:2008 safety of Machinery Emergency stop BS EN 982: 1996 + A1 2005 – Safety of Machinery – Hydraulics, BS EN 1088: 1995 + A2 2008 – Safety of Machinery – Interlocking devices, BS EN 13525: 2005 + A2 2009 – Forestry Machinery – Wood chippers – Safety. BS EN 953:1997+A1:2009

"Responsible" Person empowered to sign:
Position in Company:

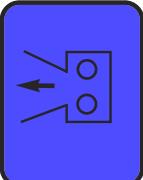
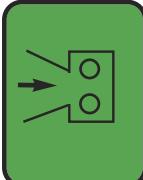
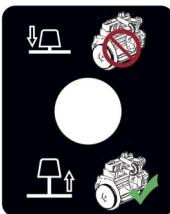
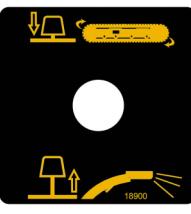
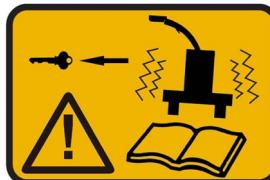
Mr. Chris Perry

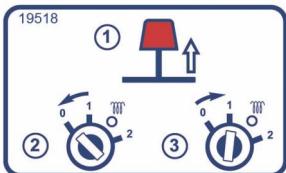
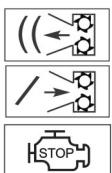
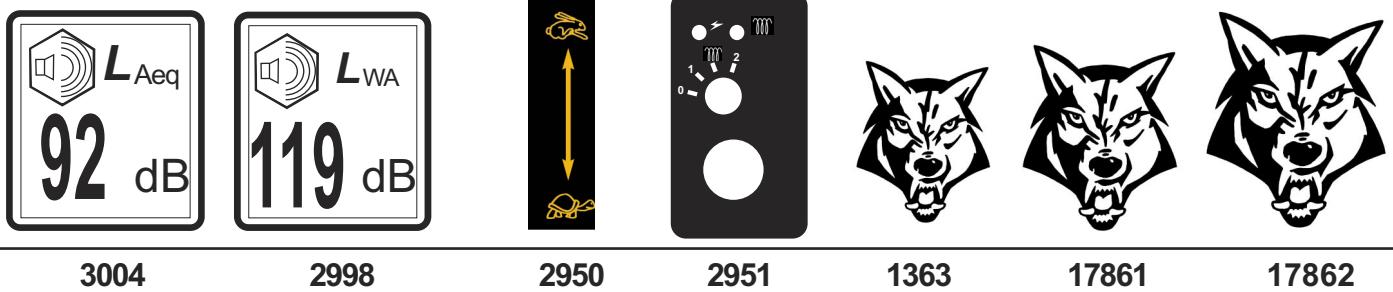
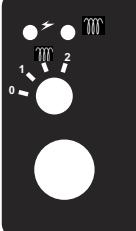
Managing Director

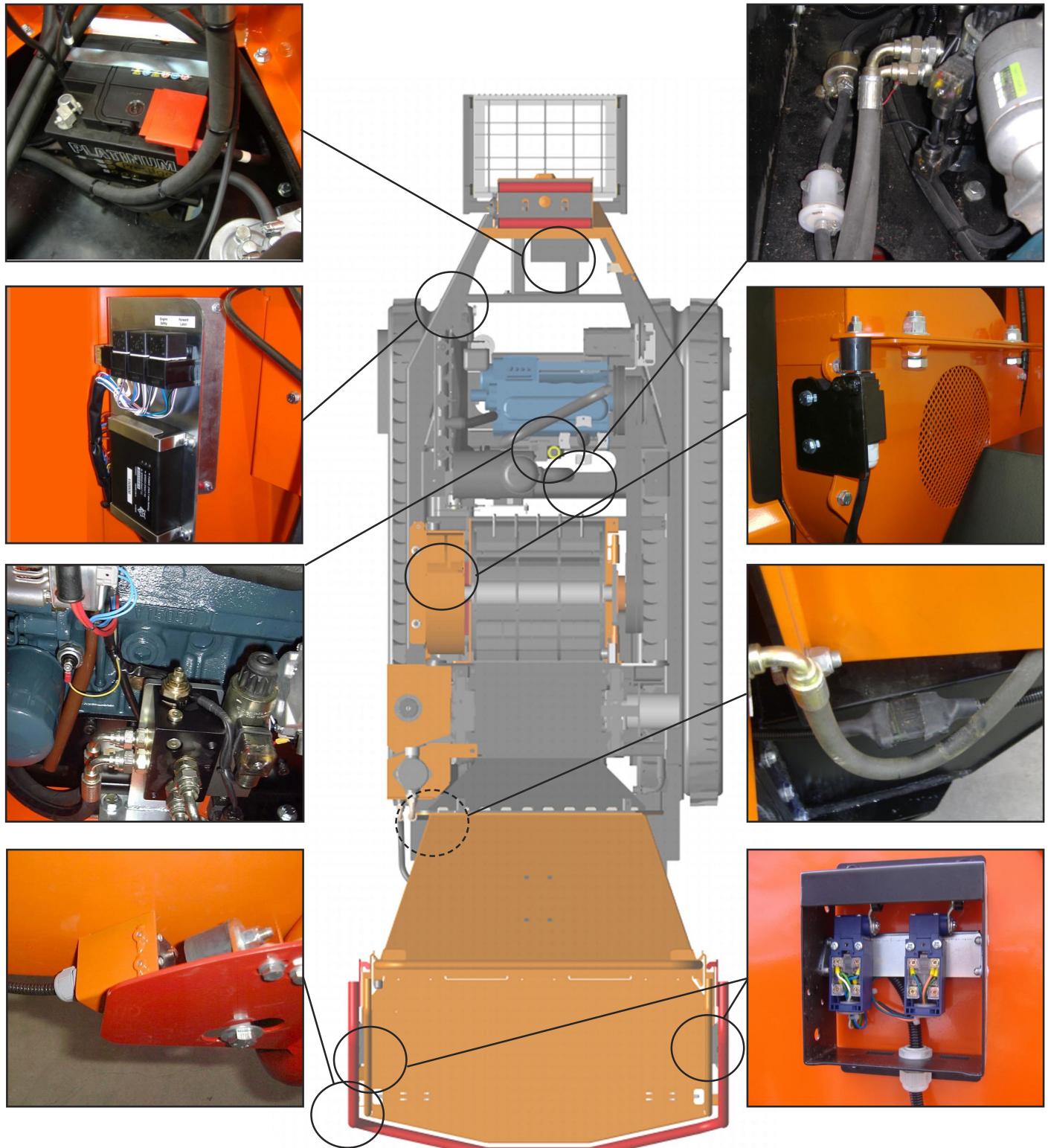
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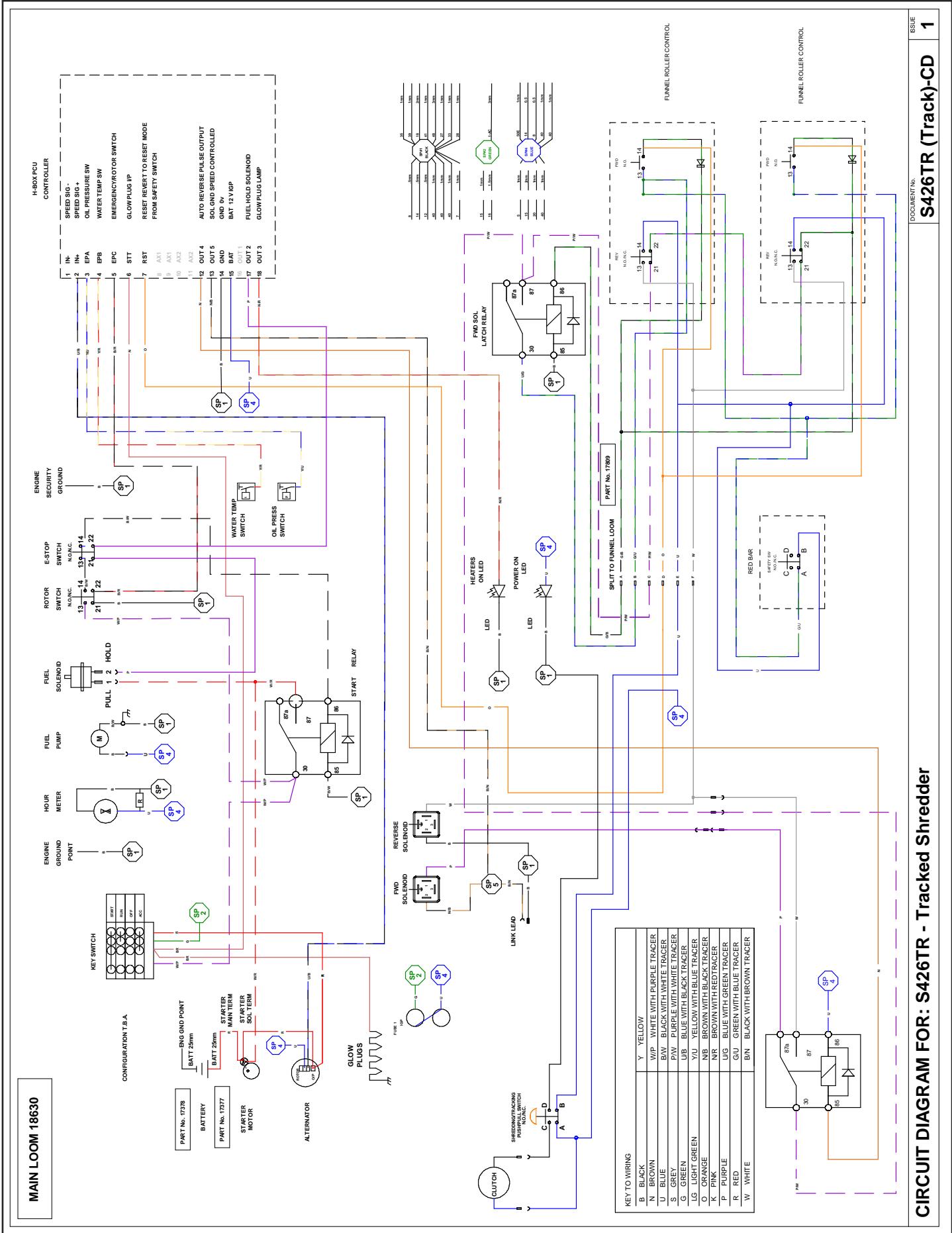
5th July 2018

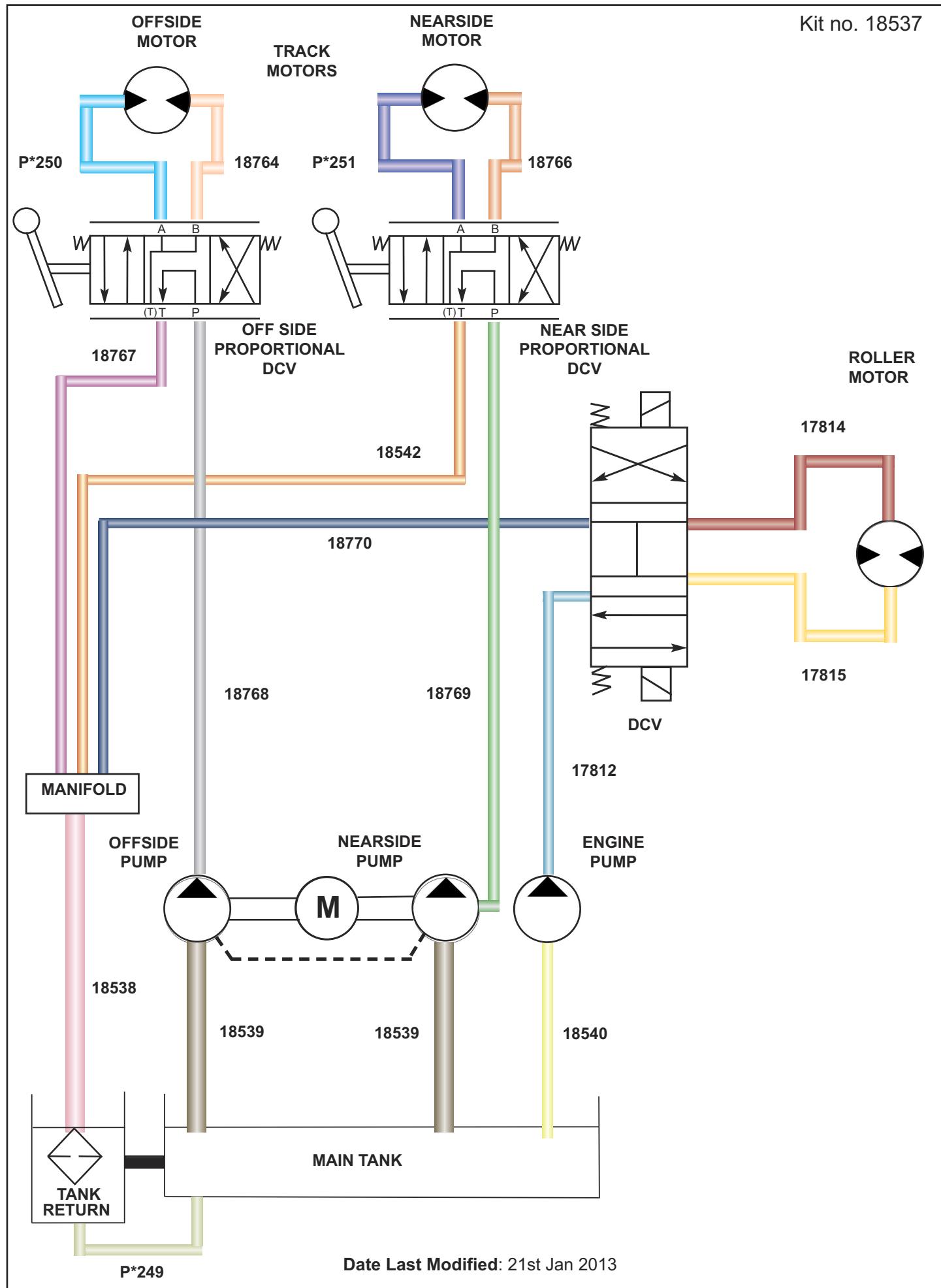


Decal	Description	Decal	Description
	616 Hot exhaust		4099 Danger. Rotating blades. Keep hands and feet out.
	617 High velocity discharge - keep clear	2800  2801 	Reverse feed Forward feed
	670 Personal Protective Equipment required		P1299 Push to stop, Pull to reset. (engine)
	1661 Read the instruction manual for greasing and maintenance information		18653 Close bucket and point discharge away from driving position. Protective equipment must be worn when driving machine.
	1662 The instruction manual with this machine contains important operating, maintenance and health and safety information. Failure to follow the information contained in the instruction manual may lead to death or serious injury.		2949 Lifting eye is designed to lift the machine's weight only. Do not use hoist hook directly on lifting eye. Use correctly rated safety shackle only through lifting eye. Lifting eye to be inspected every 6 months or before each use. Always visually inspect lifting eye prior to each use. Do not use lifting eye if damaged.
	18393 New drive belts need retensioning. When new belts are fitted check tension every 2-3 hours & adjust until tension remains constant.		18900 Push to track. Pull to shred.
	18713 If excessive vibration is noted whilst using this shredder switch off immediately, check for free rotation of rotor drum & hammers. Refer to instruction manual		18714 Allow time for all shredded material to be ejected from the discharge before switching off.
	1399 Push to stop.		P691 Do not pull here.

Decal	Description	Decal	Description		
	P637 Danger. Do not operate without this cover in place.		P653 Danger. Rotating blades inside. Stop engine and remove key before removing discharge unit.		
	P650 Danger. Autofeed system fitted. Rollers may turn without warning! When the engine is switched off the rollers will turn during the run down period.		P654 Caution. When transporting, discharge clamps may work loose. Check frequently.		
	P655 Caution. Avoid standing directly in front of feed funnel to reduce exposure to noise, dust and risk from ejected particles.		P656 Danger. Do not use this machine without the discharge unit fitted. Failure to comply may result in serious injury or damage.		
	19518 When the emergency stop button is pressed it must be pulled out again and the ignition switch turned off to reset the machine before attempting to restart.		19517 Warning Do not engage starter motor for more than 20 seconds. Allow one minute before attempting to start. Investigate reasons for failure to start. Excessive cranking will result in starter motor failure. This will not be covered under warranty.		
	P1809 Relays - Auto back-off P1810 Forward latch, P1811 Engine safety		C192-0112 Fuel Here. Risk of fire. Allow engine to cool for 1 minute before refuelling. Use diesel fuel only.		
	3004  2998  2950  2951  1363  17861  17862 				
	1746		18654		P*159



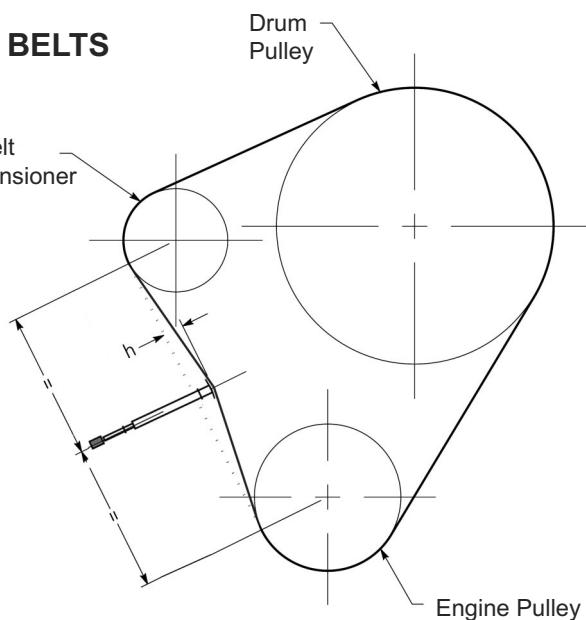
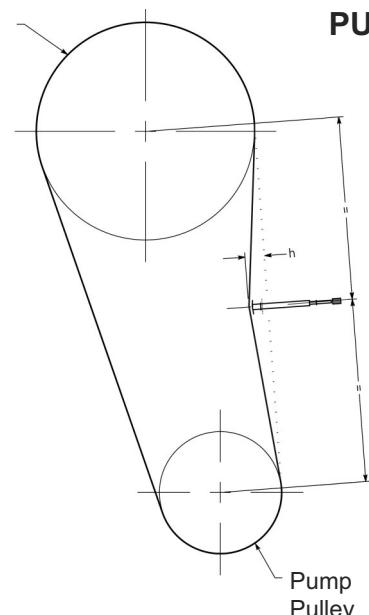




METHOD:

- 1 Set the deflection distance on the lower scale of the tension gauge so that the underside of the 'o'-ring equals the 'h' value given in the table.
- 2 Ensure that the deflection force scale is zero'd by pushing the upper 'o'-ring all the way down.
- 3 Place the tension gauge in the centre of the belt span as shown in the diagram.
- 4 Press downwards on the rubber buffer, deflecting the belt until the underside of the lower 'o'-ring is level with the belt behind (use a straight edge if there is only 1 belt).
- 5 Take the reading from the deflection scale of the tension meter (read at the lower edge of the 'o'-ring) & compare this value with that given in the table.
- 6 Tighten or loosen belts as required following procedure given in this operator's manual.

Tension gauges are available from Timberwolf spares, quoting part no. 18091

DRUM BELTS**Drum Pulley****PUMP BELTS**

280TVGTR		Drum Belts	Pump Belts
Belt Mfr / Type		Gates Super HC-MN	Gates Super HC-MN
Belt Pitch Designation		SPB	SPA
Belt Length in mm		2120	1060
Belt Deflection in mm	= h	8.0	4.0
Force Reading (Kg)	New belt	3.3 - 3.5	2.7 - 2.9
	Used Belt	2.9 - 3.1	2.3 - 2.5

TIPS ON BELT TIGHTENING:

- There will normally be a rapid drop in tension during the run-in period for new belts. When new belts are fitted, check the tension every 2-3 hours & adjust until the tension remains constant.
- The best tension for V-belt drives is the lowest tension at which the belts do not slip or ratchet under the highest load condition.
- Too much tension shortens belt & bearing life.
- Too little tension will affect the performance of your machine especially in respect of no-stress devices.
- Ensure that belt drives are kept free of any foreign materials.
- If a belt slips - tighten it!

Model number:		Serial number:	
Date of delivery/ handover:		Options/extras:	
Dealer pre delivery check:			
Inspected by:			

50 HOUR WARRANTY SERVICE CHECK

Date:

Hours:

Invoice number:

Signature:

Next service due:

Authorised dealer stamp

11 MONTH WARRANTY SERVICE CHECK

Date:

Hours:

Invoice number:

Signature:

Next service due:

Authorised dealer stamp

23 MONTH WARRANTY SERVICE CHECK

Date:

Hours:

Invoice number:

Signature:

Next service due:

Authorised dealer stamp



Date:

Authorised dealer stamp

Hours:

Invoice number:

Signature:

Next service due:

Date:

Authorised dealer stamp

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Date:

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Invoice number:

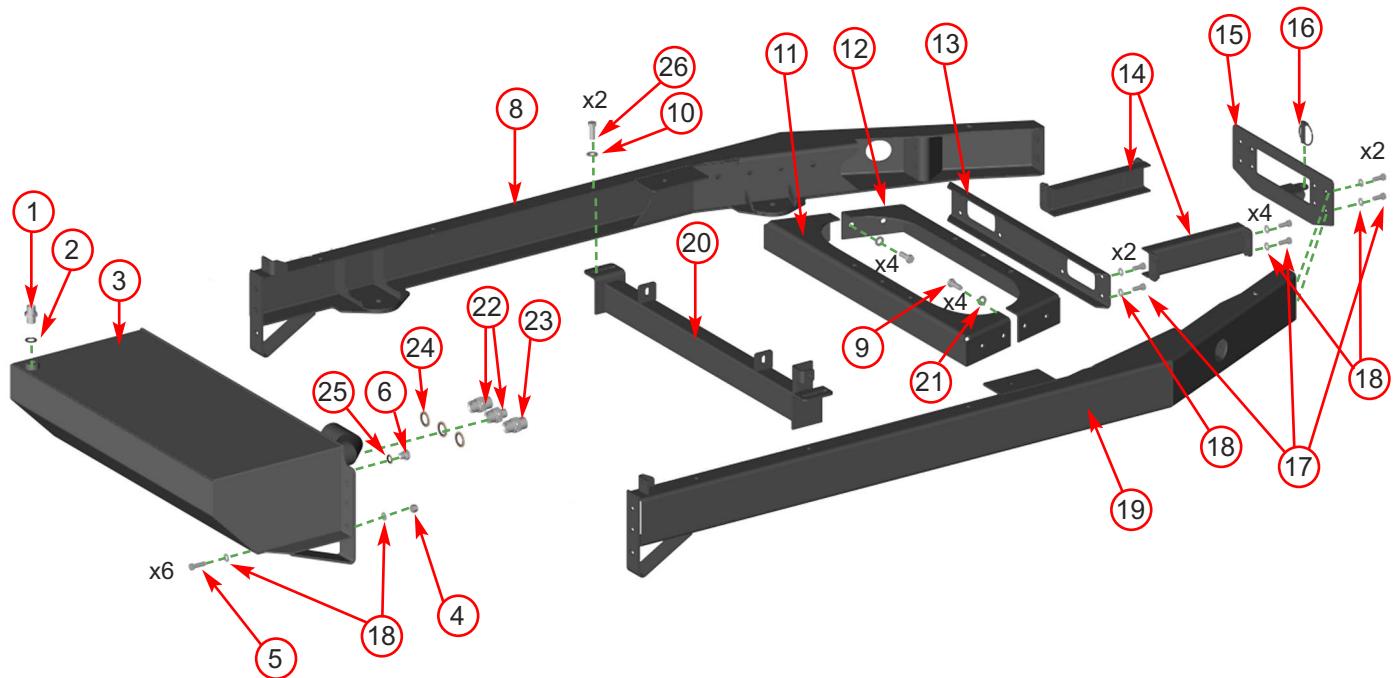
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Next service due:

PARTS LISTS

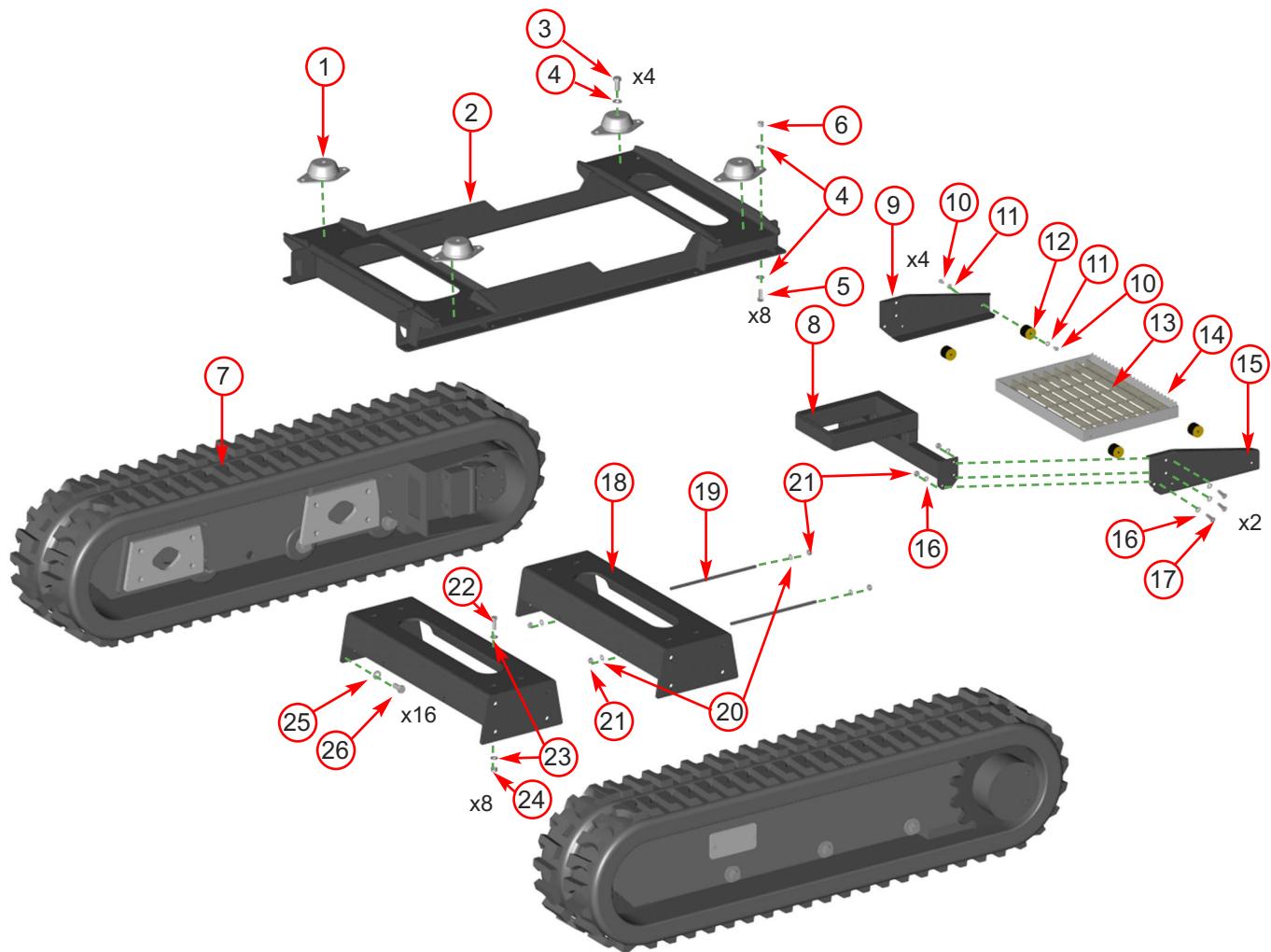
THE FOLLOWING ILLUSTRATIONS ARE FOR PARTS IDENTIFICATION ONLY. THE REMOVAL OR FITTING OF THESE PARTS MAY CAUSE A HAZARD AND SHOULD ONLY BE CARRIED OUT BY TRAINED PERSONNEL.

	Page No.
CHASSIS (UPPER)	38
CHASSIS (LOWER)	39
CONTROL BOX	40
CONTROL PANEL	41
CONTROL TOWER	42
DISCHARGE	43
DRUM	44
DRUM HOUSING	45
DRIVE TRAIN	46
ELECTRICAL LAYOUT	47
ENGINE	48
ENGINE BAY	49
FUEL TANK/GUARDS	50
FUNNEL	51
HYDRAULICS - UPPER SECTION	52
HYDRAULICS - LOWER SECTION	53
ROLLER BOX	54
DECALS	55



Date Last Modified: 3rd May 2012

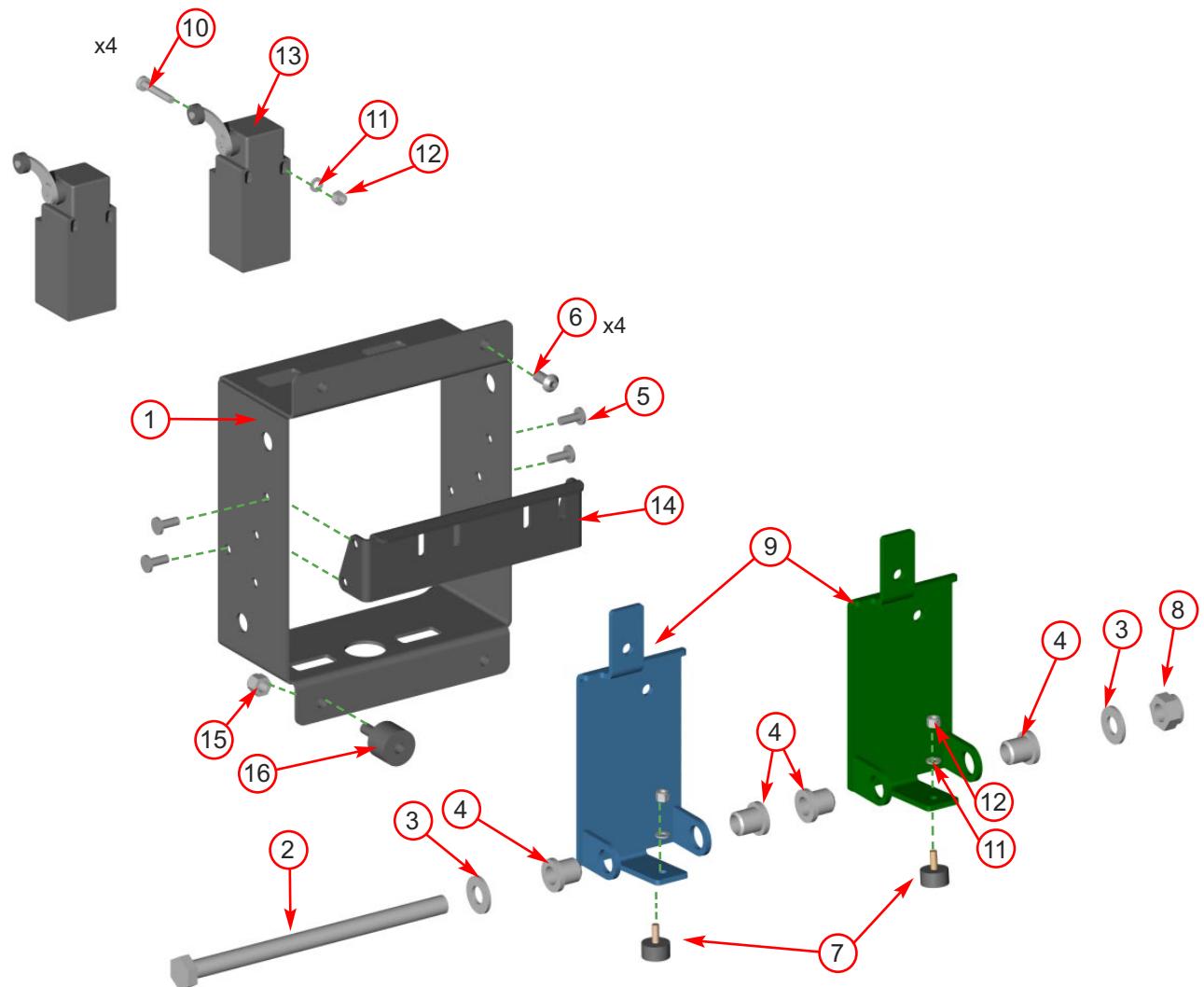
Item	Part No	Part Name	Q'ty	Item	Part No	Part Name	Q'ty
1	0027	1/2" - 1/2" MM Adaptor	1	14	18528FB	Platform Channel	2
2	0398	1/2" Dowty Washer	1	15	18526FB	Front Bracket	1
3	18532FB	Hydraulic Slab Tank	1	16	0942	Lynch Pin	1
4	4345	M10 P Nyloc Nut	6	17	0360	M10/25 Bolt	16
5	1812	M10/35 Bolt	6	18	0839	M10 C Washer	28
6	0211	3/8" Blanking Plug	1	19	18400F	O/S Track Beam	1
7	0481	M8 T Nyloc Nut	2	20	18352	Drum Housing Cross Beam	1
8	18399F	N/S Track Beam	1	21	0702	M12 A Washer	8
9	0321	M12/30 Bolt	8	22	18557	1" - 1" MM Adaptor	2
10	0415	Heavy Washer	2	23	2694	1" - 3/4" MM Adaptor	1
11	17547FB	Rear Cross Beam	1	24	2693	1" Dowty Washer	3
12	17548FB	Front Cross Beam	1	25	0396	3/8" Dowty Washer	1
13	18527FB	Platform Base	1	26	0429	M12/35 Bolt	2



Date Last Modified: 24th March 11

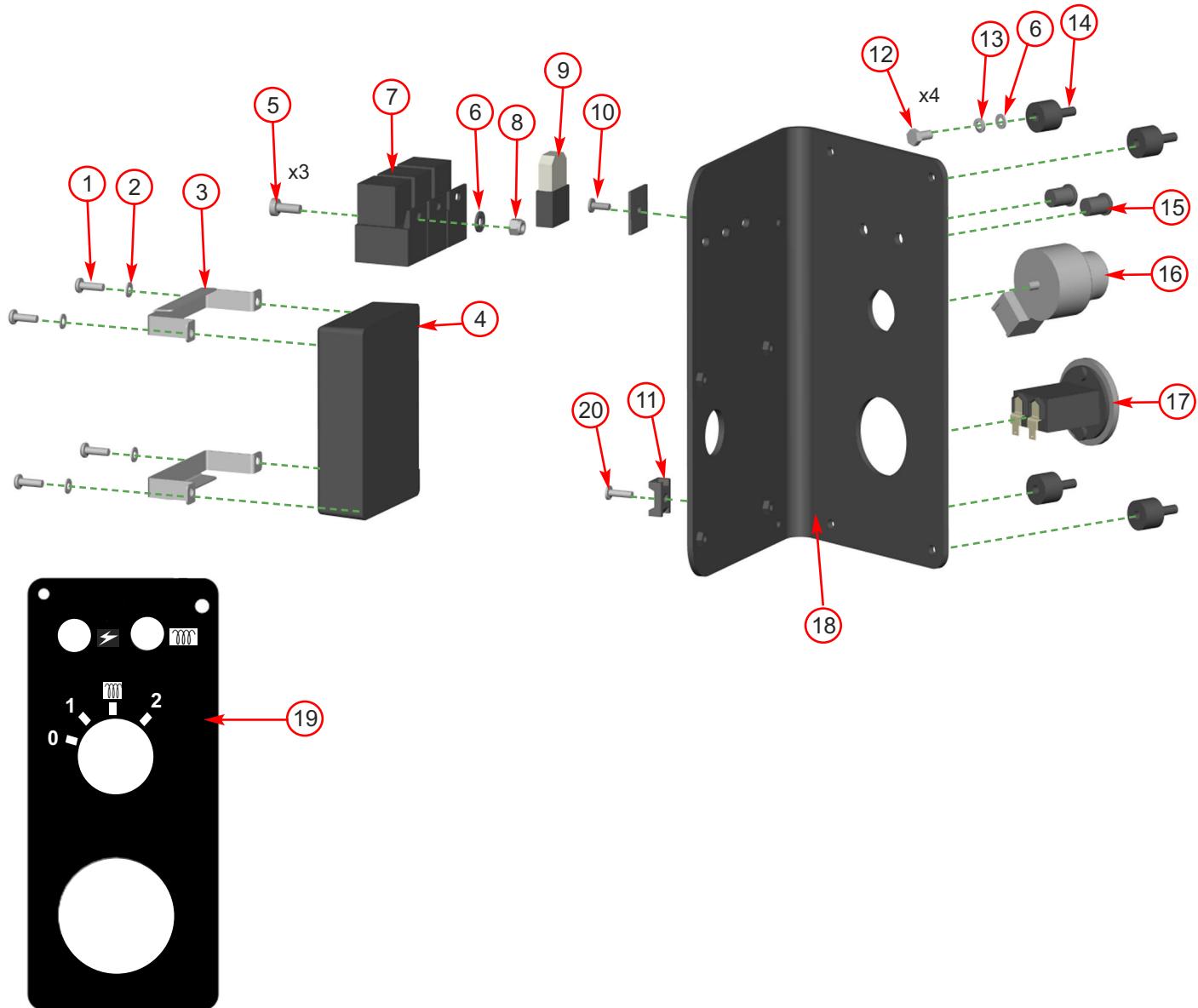
Item	Part No	Part Name	Q'ty
1	1795	AV Mount	4
2	18396FB	Track Mtg Frame	1
3	1628	M16/35 Bolt	4
4	1143	M16 A Washer	20
5	1679	M16/40 Bolt	8
6	1511	M16 P Nyloc Nut	8
7	18927FB	Track Set	1
8	18529FB	Platform Frame	1
9	18530FB	N/S Platform Sideplate	1
10	18037	M8/12 Bolt	8
11	0711	M8 A Washer	16
12	1868	AV Mount	4
13	1861	Foot Plate	1

Item	Part No	Part Name	Q'ty
14	1798FS	Footplate Frame	1
15	18531FB	O/S Platform Sideplate	1
16	0701	M10 A Washer	12
17	0382	M10/30 Bolt	6
18	18928FB	Shredder Track Base	2
19	18536M	Track Hose Support 330mm	2
20	0839	M10 C Washer	4
21	4345	M10 P Nyloc Nut	10
22	0431	M12/40 Bolt	8
23	0704	M12 C Washer	16
24	0644	M12 P Nyloc Nut	8
25	1354	M16 C Washer	16
26	18523	M16/30 Bolt	16



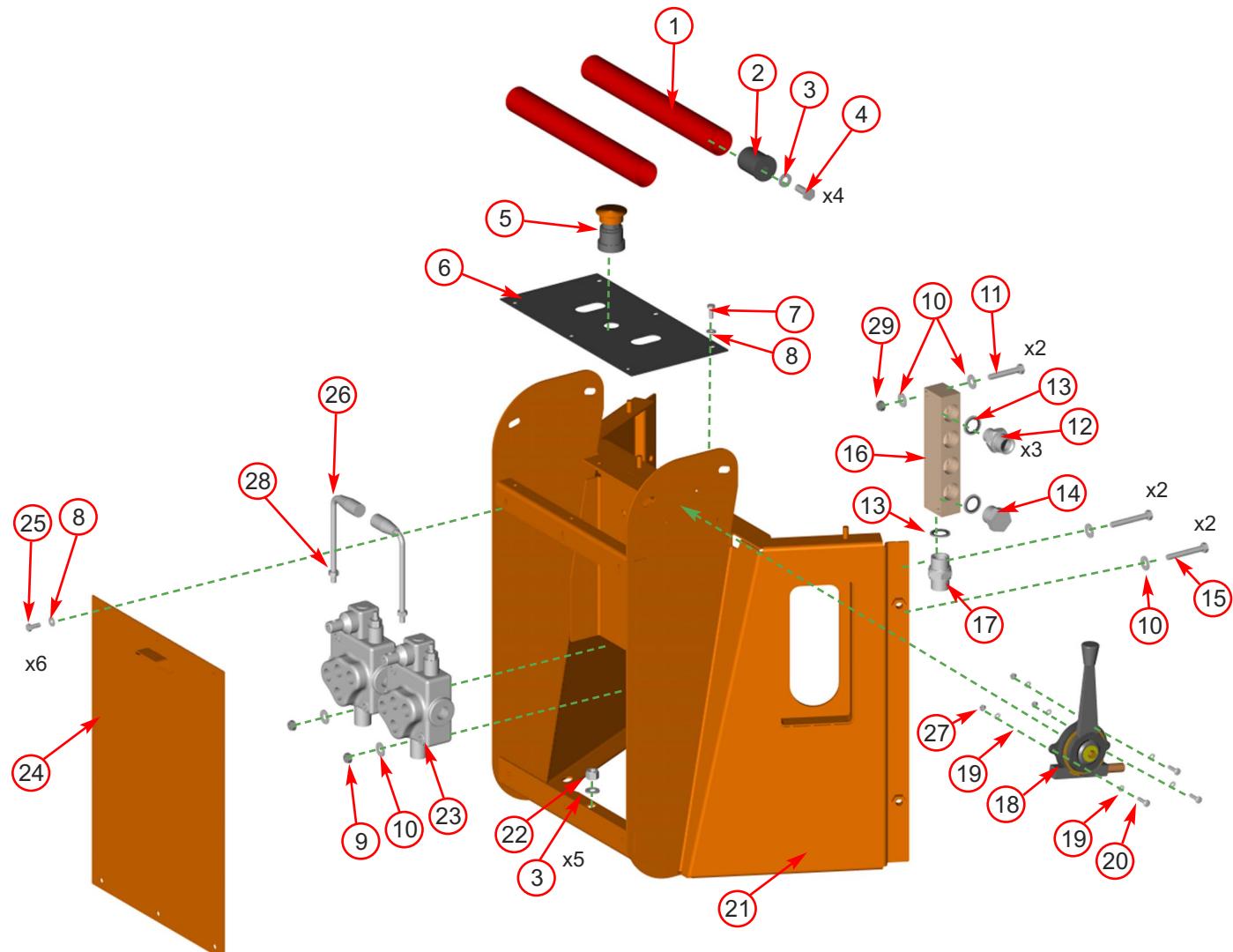
Date Last Modified: 31st March 11

Item	Part No	Part Name	Q'ty	Item	Part No	Part Name	Q'ty
1	17802FB	Control Box Cover	1	9	17803FS	Finger Plate	2
2	17963	M10/160 Bolt	1	10	18168	M4/35 Pan Pozi	4
3	0839	M10 C Washer	2	11	18100	M4 Washer	4
4	2804	Bush M10 Top Hat	4	12	18235	M4 P Nyloc Nut	4
5	0067	Pop Rivet M5/12	4	13	17927	Limit Switch	2
6	18108	M6/8 Pan Pozi	4	14	17805FS	Switch Mounting Plate	1
7	2834	AV Mount VE Type	2	15	0142	M6 P Nyloc Nut	4
8	4345	M10 P Nyloc Nut	1	16	18000	AV Mount	3



Date Last Modified: 3rd May 2012

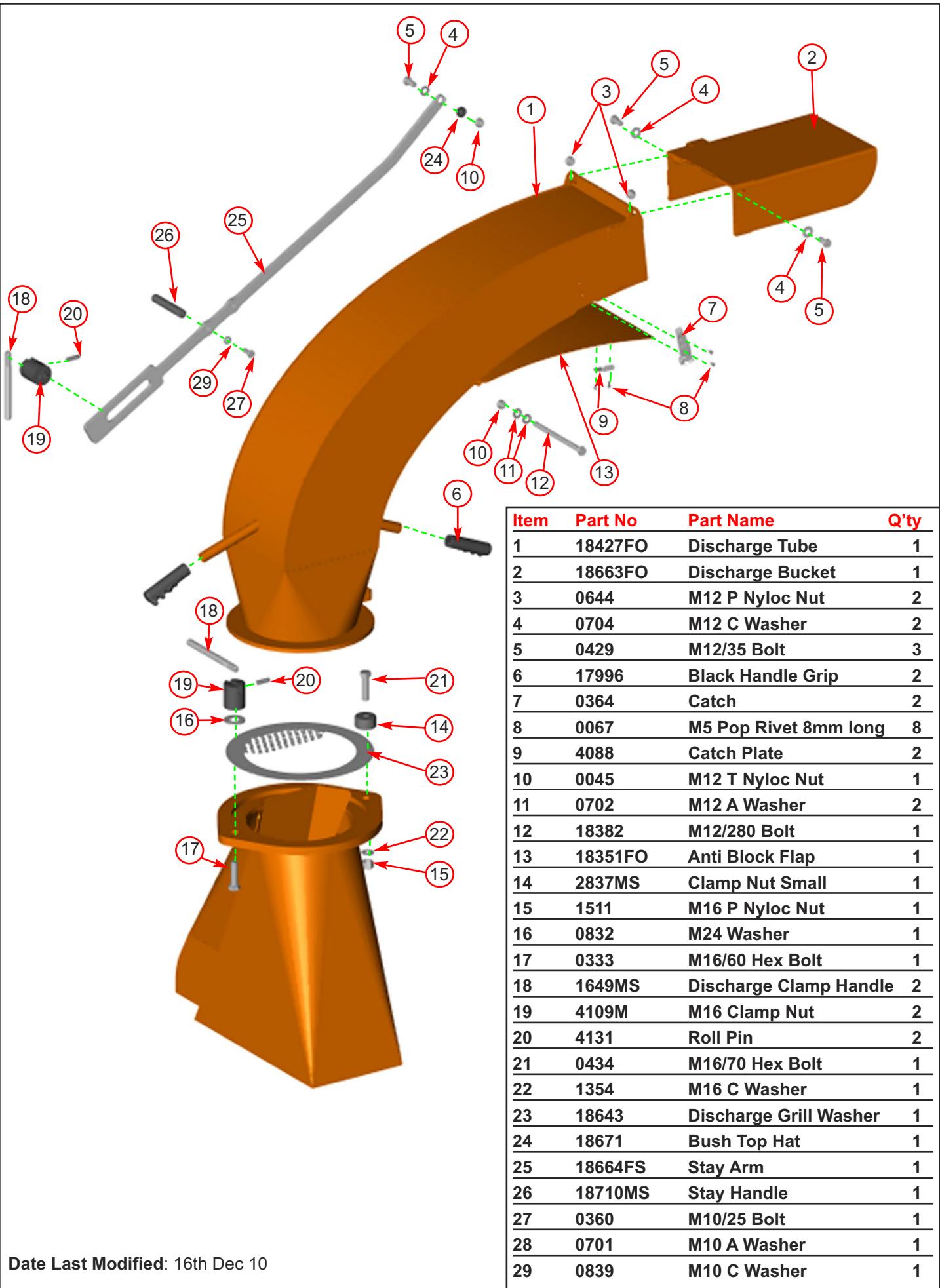
Item	Part No	Part Name	Q'ty	Item	Part No	Part Name	Q'ty
1	18104	M5/12 Pan Pozi	4	11	18196	Tie Mount	1
2	0857	M5 A Washer	4	12	1658	M6/12 Screw	4
3	18398F	H-Box Bracket	2	13	18106	M6 Spring Washer	4
4	18405	H-Box	1	14	18000	M6 AV Mount	4
5	0438	M6/16 Pan Pozi	3	15	Supp'd with loom	LED	2
6	0709	M6 C Washer	7	16	Supp'd with engine	Ignition Switch	1
7	Supp'd with loom	Relay	3	17	0327	Hours Counter	1
8	0391	M6 T Nyloc Nut	3	18	18631FS	Control Panel	4
9	Supp'd with loom	Fuse	1	19	2951	Control Panel Decal	1
10	1151	Countersunk Pop Rivet	1	20	1353	4.8 x 12mm Pop Rivet	1

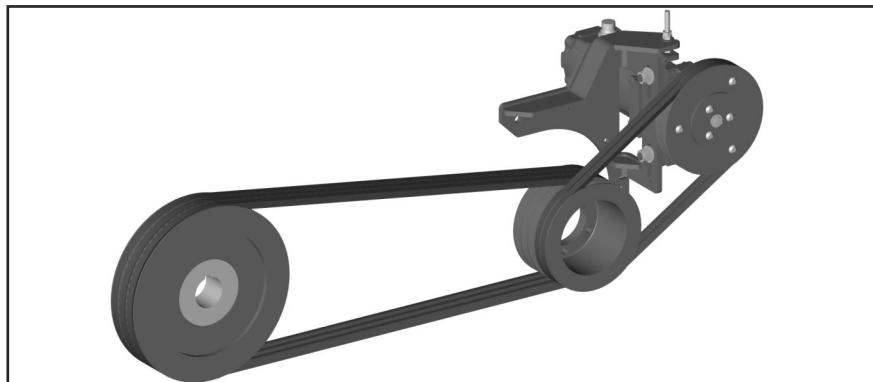
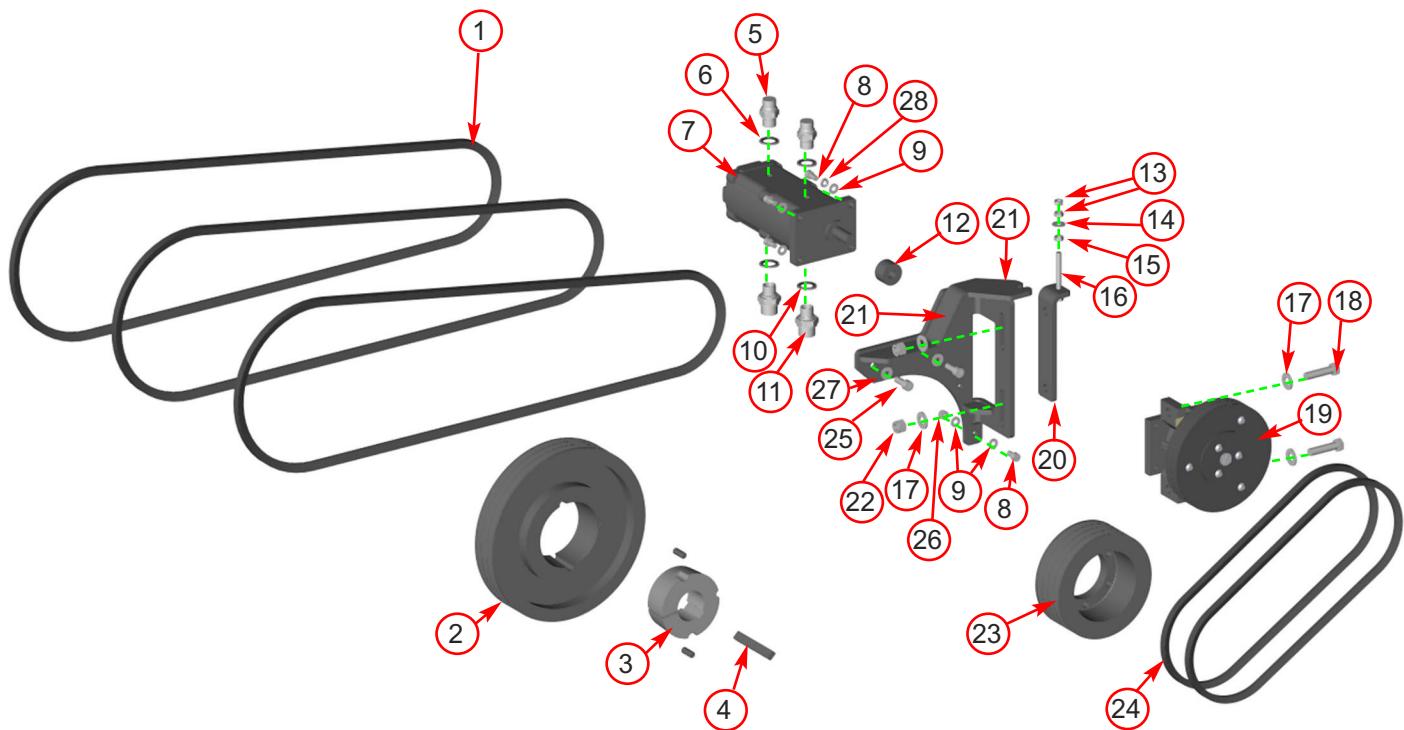


Date Last Modified: 4th Oct 2012

Item	Part No	Part Name	Q'ty
1	18554FR	Control Bar	2
2	1803P	End Plug	4
3	0839	M10 C Washer	9
4	0360	M10/25 Bolt	4
5	18574	Track/Shred Mode Switch	1
6	18555FO	Top Panel	1
7	1658	M6/12 Bolt	6
8	0709	M6 C Washer	12
9	0481	M8 T Nyloc Nut	4
10	0711	M8 A Washer	12
11	0354	M8/60 Bolt	2
12	1583	3/4" - 1/2" MM Adapter	3
13	0152	3/4" Dowty Washer	5
14	1632	3/4" Blanking Plug	1
15	0354	M8/60 Bolt	4

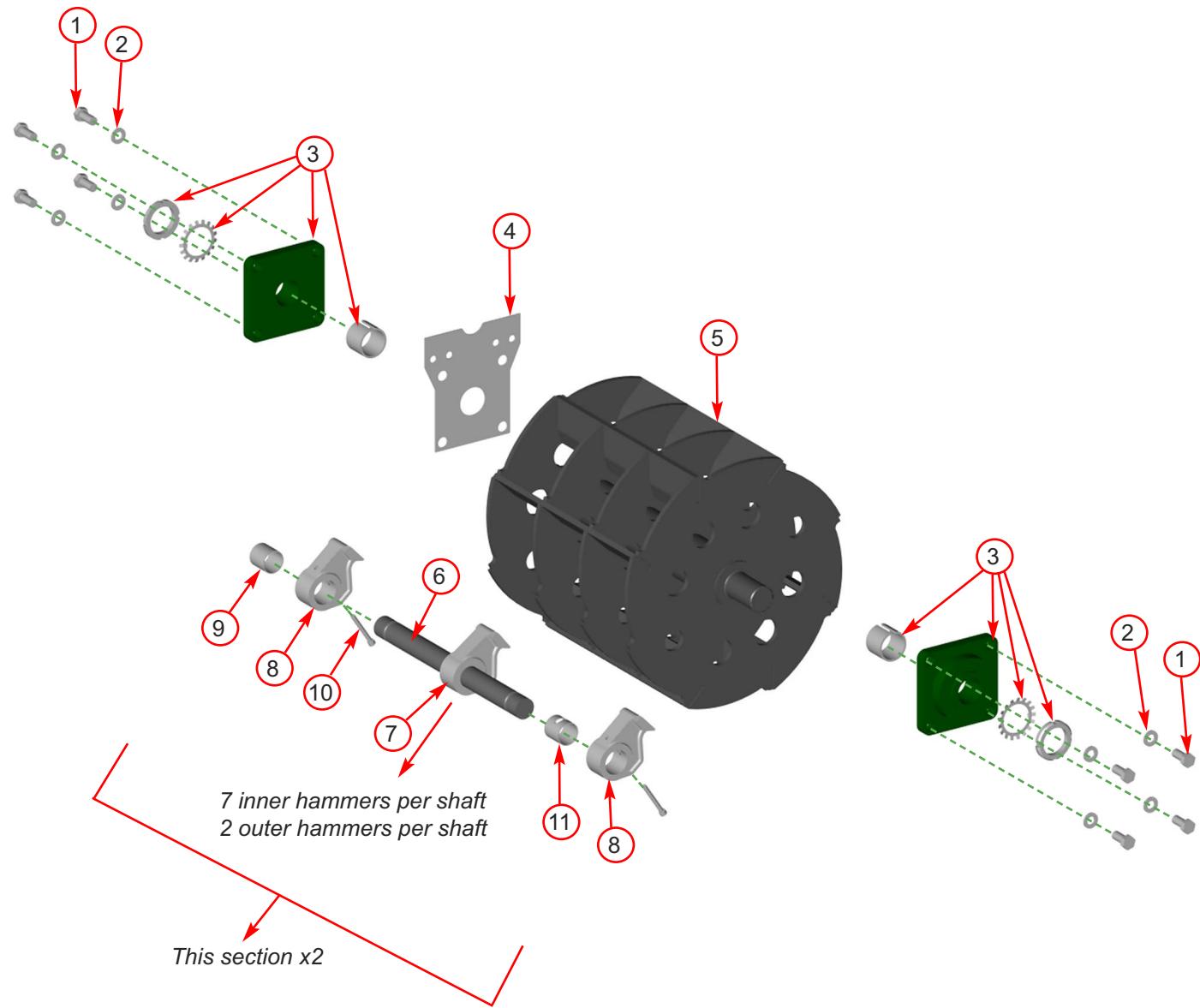
Item	Part No	Part Name	Q'ty
16	1839M	Manifold Block	1
17	1766	3/4" - 3/4" MM Adapter	1
18	2946	Throttle Assembly	1
19	0857	M5 A Washer	6
20	0435	M5/16 Pan Pozi	3
21	18408FO	Control Tower	5
22	4345	M10 P Nyloc Nut	1
23	P*24	Proportional Valve	2
24	18556FO	Front Cover	1
25	0437	M6/16 Bolt	6
26	18850F	L-Shaped Track Handle	2
27	18102	M5 T Nyloc	3
28	0476	M8 Plain Nut	2
29	0479	M8 P Nyloc Nut	2





Date Last Modified: 3rd May 2012

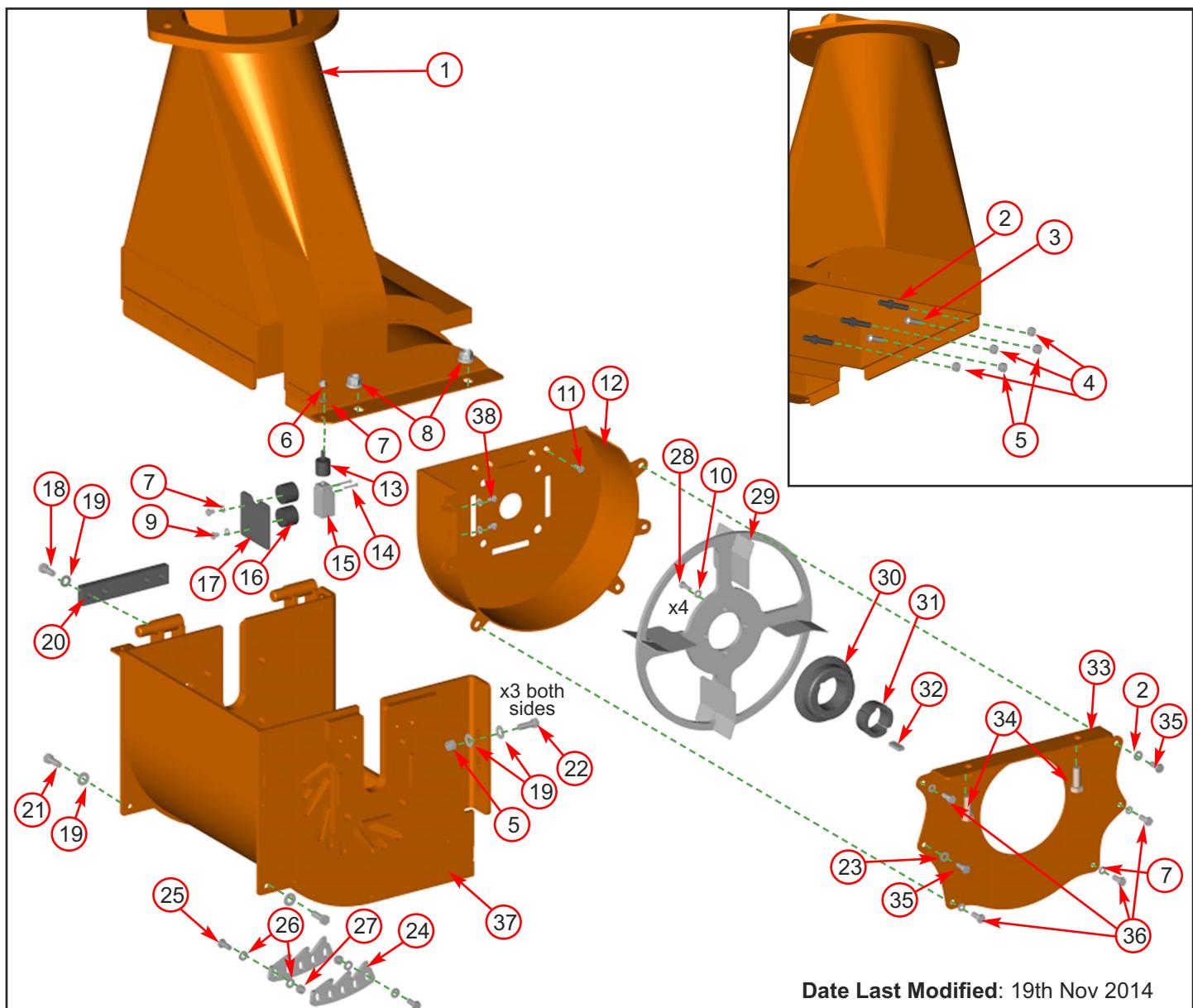
Item	Part No	Part Name	Q'ty	Item	Part No	Part Name	Q'ty
1	18068	Belt SPB 2120	3	15	0052	M10 T Nyloc Nut	1
2	18067	Drive Pulley (280 x 3 SPB)	1	16	0393	M10/80 Bolt	1
3	17921	Taperlock Bush (3020)	1	17	0704	M12 C Washer	4
4	18328	Key (14 x 9)	1	18	0987	M12/60 Bolt	2
5	0027	1/2" - 1/2" MM Adapter	2	19	18564	Electro-Magnetic Clutch	1
6	0398	1/2" Dowty Washer	2	20	18548FS	Adjuster Bar	1
7	18565	Hydraulic Pump (14cc)	1	21	18439FB	Pump/Clutch Bracket	1
8	0351	M8/30 Bolt	5	22	0644	M12 P Nyloc Nut	2
9	0711	M8 A Washer	5	23	18411M	Engine Pulley	1
10	0152	3/4" Dowty Washer	2	24	0310	Belt SPA 1060	2
11	2694	1" - 3/4" Adapter	2	25	4054	M10/35 Finethread Caphead	2
12	18566	Splined Adapter	1	26	0479	M8 P Nyloc Nut	1
13	1036	M10 Nut	2	27	0701	M10 A Washer	2
14	0839	M10 C Washer	1	28	1008	M8 Spring Washer	4



Date Last Modified: 11th June 12

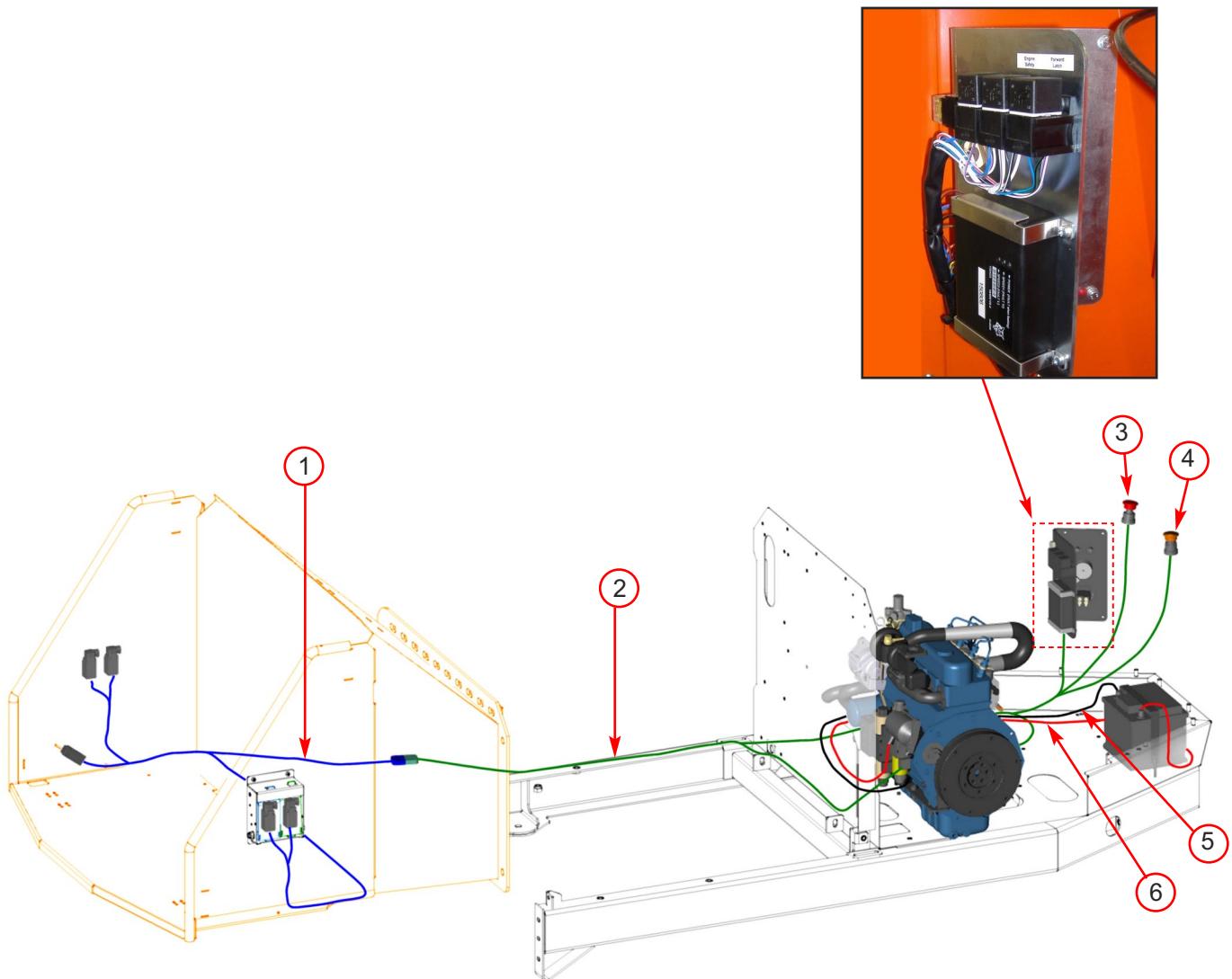
Item	Part No	Part Name	Q'ty
1	18381	M16/45 Bolt	8
2	1218	M16 Hardened Washer	8
3	17793	Bearings	2
4	18350PS	Bearing Shield	1
5	18141F	Drum	1
6	17616	Hammer Shaft	2

Item	Part No	Part Name	Q'ty
7	18072MH	Hammer Plain - Forging	14
8	18073MH	Hammer with Cross Drill - Forging	4
9	18354	Hammer Bush 40 x 40	14
10	P0000022	M8/80 Caphead	4
11	18355M	Hammer Bush 40 x 40 Cross for Drill	4



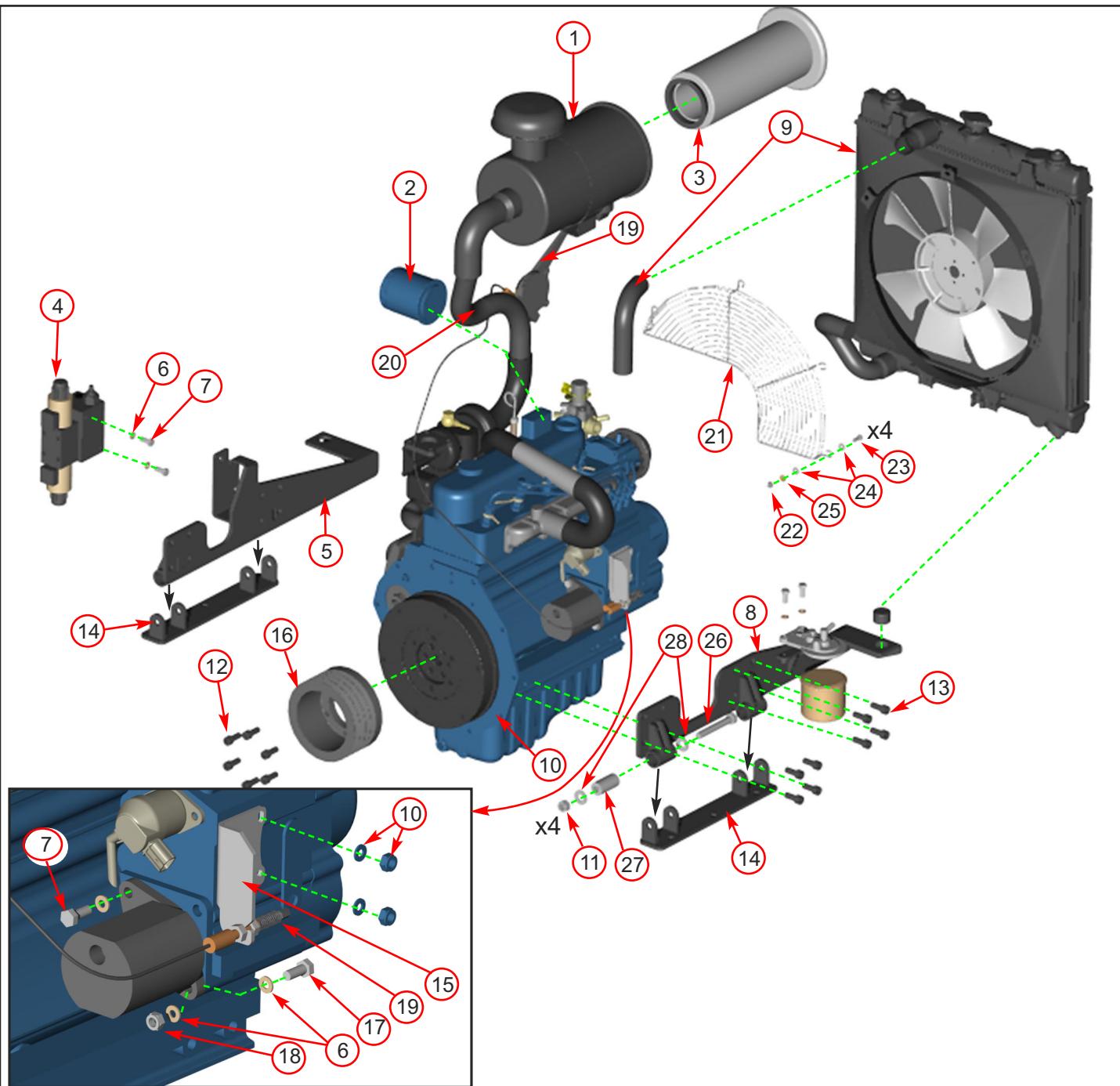
Date Last Modified: 19th Nov 2014

Item	Part No	Part Name	Q'ty	Item	Part No	Part Name	Q'ty
1	18425FO	Top Section Drum Housing	1	20	18330MS	Side Brace	1
2	18485	Catcher Finger	3	21	0429	M12/35 Bolt	2
3	18484	M12/30 Button Head	2	22	0431	M12/40 Bolt	6
4	0045	M12 T Nyloc Nut	3	23	0702	M12 A Washer	2
5	0644	M12 P Nyloc Nut	8	24	18331PS	Catcher Plate	2
6	0479	M8 P Nyloc Nut	1	25	4068	M10/40 Caphead	10
7	0712	M8 C Washer	7	26	0701	M10 A Washer	20
8	2978S	M16 Flange Nuts	2	27	0052	M10 T Nyloc Nut	10
9	1721	M8/10 Bolt	2	28	0350	M8/25 Bolt	4
10	0711	M8 A Washer	4	29	18143FS	Fan Assembly	1
11	0355	M8/16 Csk	4	30	18144M	Fan Hub	1
12	18149FO	Lower Fan Housing	1	31	2850	Taper Lock 2012 50	1
13	0178	Rubber End Stop	1	32	18329	Key 22 x 14 x 9	1
14	18168	M4/35 Pan Pozi	2	33	18150FO	Fan Cover	1
15	1348	Limit Switch	1	34	18381	M16/45 Bolt	2
16	1868	M8 AV Mount	2	35	0277	M12/25 Bolt	2
17	18153PS	Switch Mounting Plate	1	36	0350	M8/25 Bolt	4
18	1321	M12/30 Bolt	4	37	18167FO	Base Section Drum Housing	1
19	0704	M12 C Washer	18	38	P*12	M8/10 Csk Screw	2



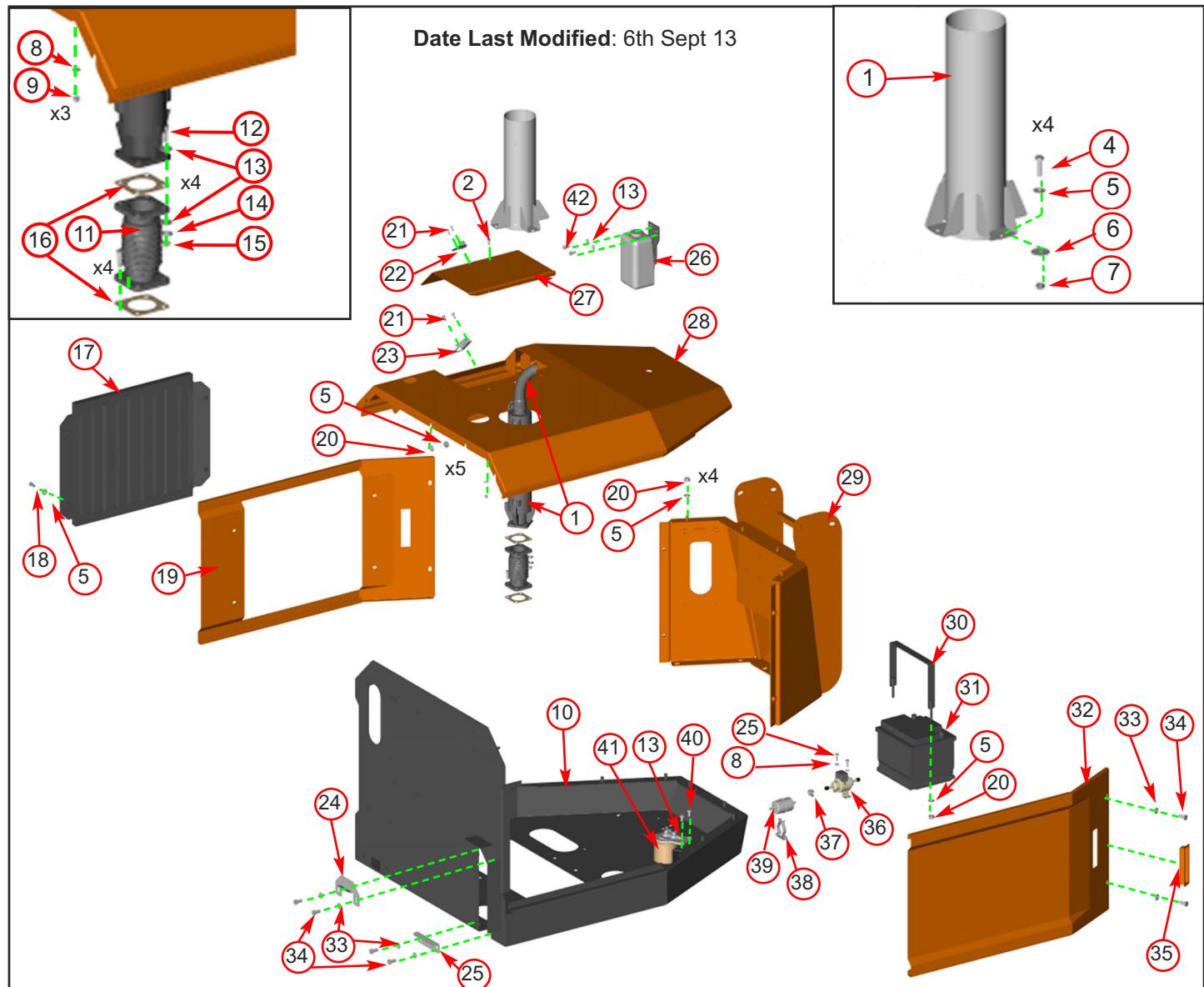
Date Last Modified: 14th Aug 08

Item	Part No	Part Name	Q'ty	Item	Part No	Part Name	Q'ty
1	17809	Control Box/Safety Switch Loom	1	4	18574	Track/Shred Mode Switch	1
2	18630	Main Loom	1	5	17378	Negative Battery Cable	1
3	2627	Emergency Stop	1	6	17377	Positive Battery Cable	1

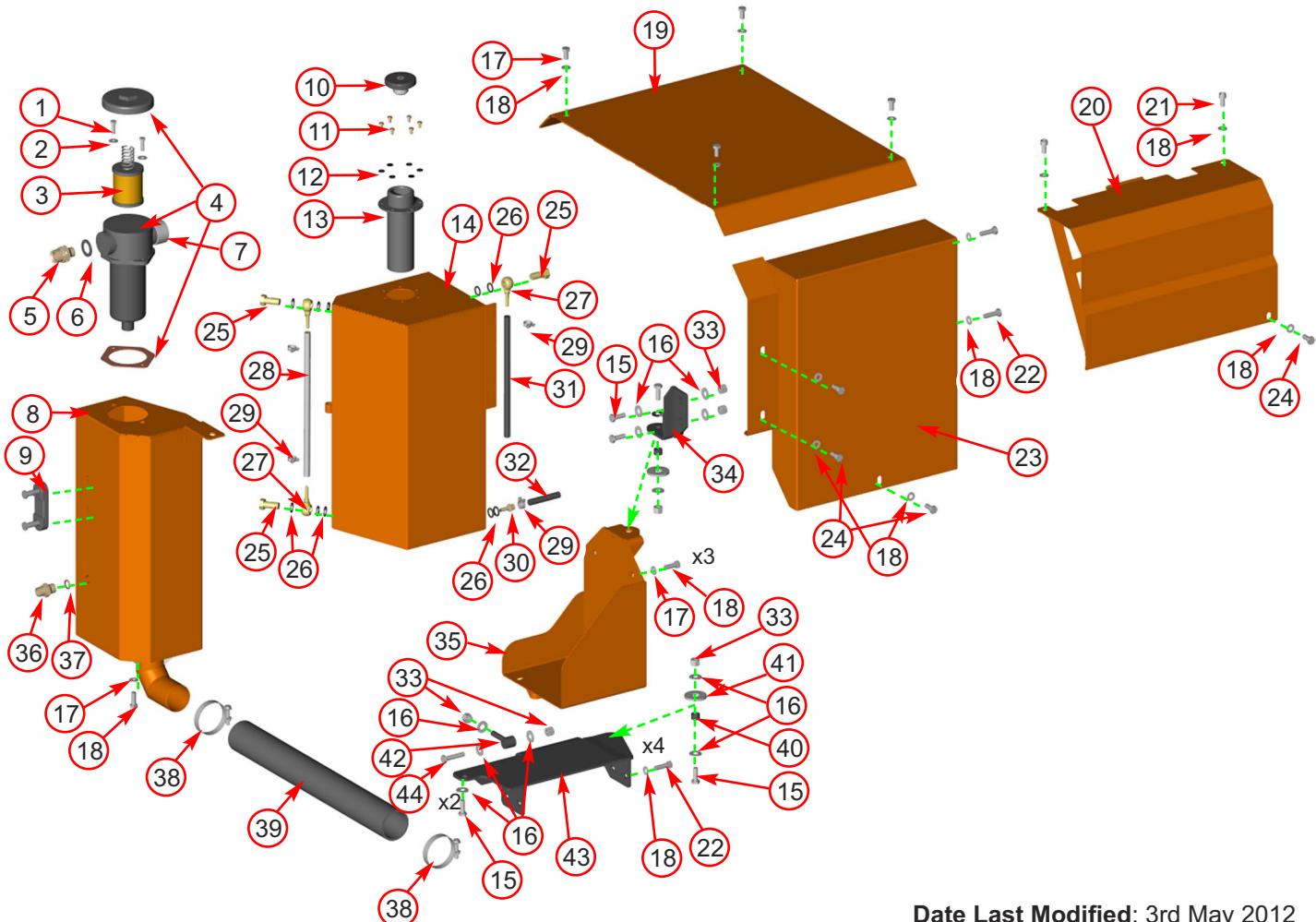


Date Last Modified: 19th Dec 13

Item	Part No	Part Name	Q'ty	Item	Part No	Part Name	Q'ty
1		Air Cleaner	1	15	2954	Throttle Cable Bracket	1
2	0095	Oil Filter	1	16	18029	Pulley Engine 168 x 3 SPB	1
3	18345	Air Filter	1	17	0352	M8/40 Bolt	1
4	19369	Directional Control Valve (DCV)	1	18	0481	M8 T Nyloc Nut	1
5	19156FB	Engine Bracket Nearside	1	19	2946	Throttle Assembly	1
6	0711	M8 A Washer	5	20	17794FB	Air Intake Tube	1
7	0346	M8/20 Bolt	3	21	4335	Radiator Fan Guard	1
8	19155FB	Engine Bracket Offside	1	22	0392	M6 Plain Nut	4
9	4319	Radiator Kit	1	23	0437	M6/16 Bolt	4
10	4313	Engine	1	24	0709	M6 C Washer	8
11	0644	M12 P Nyloc Nut	4	25	18106	M6 Spring Washer	4
12	4054	M10/35 Fine Thread Socket Cap	6	26	0332	M12/90 Bolt	4
13	1629	M10/25 Fine Thread Socket Cap	16	27	18332	AV Mount	4
14	18338FS	Engine Bracket Base	2	28	0704	M12 C Washer	8



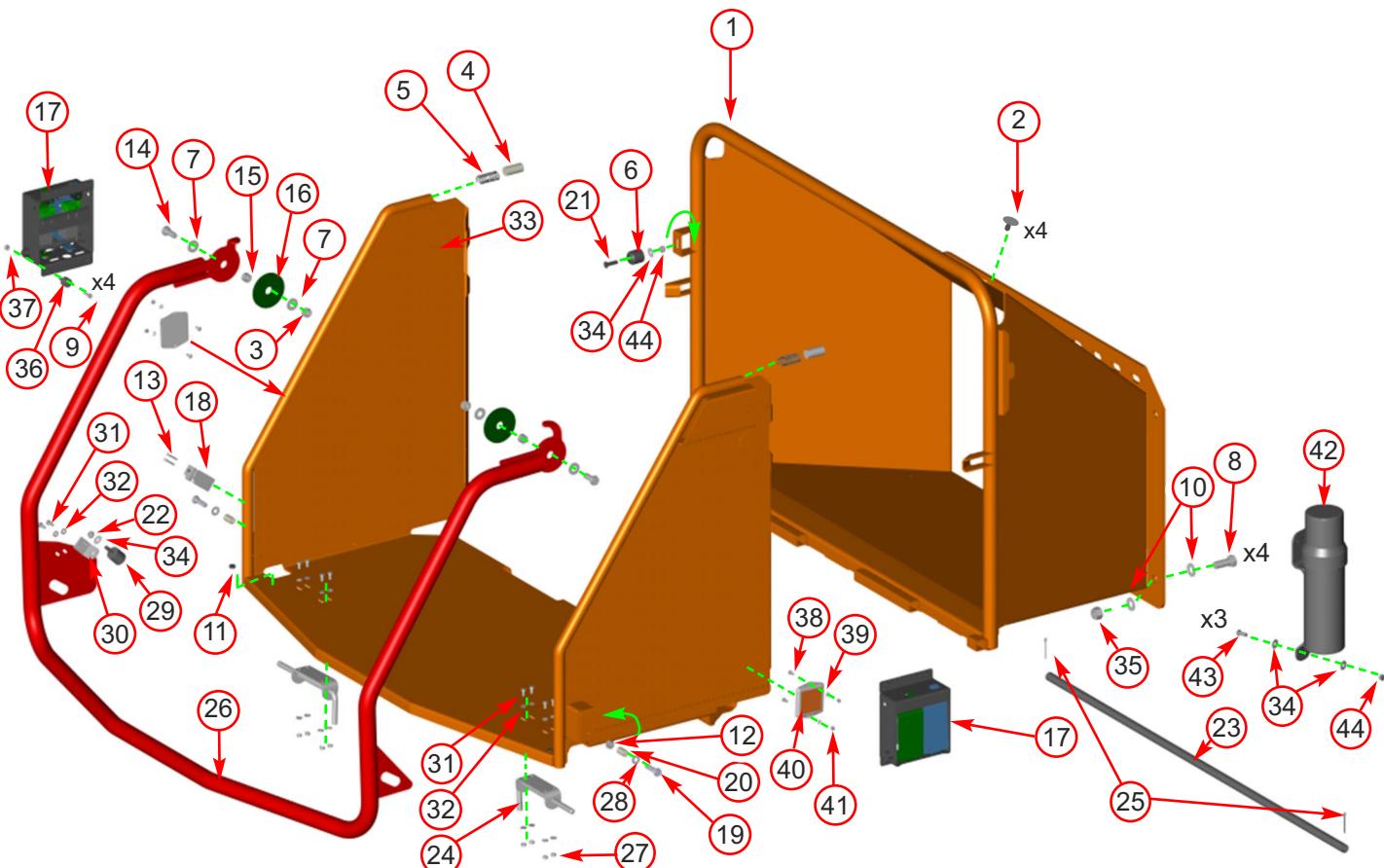
Item	Part No	Part Name	Q'ty	Item	Part No	Part Name	Q'ty
1	18423F	CLF Exhaust	1	22	4088	Catch Plate	1
2	0438	M6/16 Pan Pozi	3	23	0235	Locking Catch	1
3	0344	M6/16 Bolt	2	24	17738FS	Belt Guide Top	1
4	0346	M8/20 Bolt	4	25	17737FS	Belt Guide Bottom	1
5	0712	M8 C Washer	19	26	4320	Reserve Tank	1
6	0714	M8 Penny Washer	4	27	17544FO	Access Panel	1
7	0481	M8 T Nyloc Nut	4	28	18552FO	Top Bonnet	1
8	0709	M6 C Washer	5	29	18408FO	Control Tower	1
9	0142	M6 P Nyloc Nut	3	30	17776FS	Battery Strap	1
10	18573F	Engine Bay	1	31	4210	Battery	1
11	18456	Flexi Adaptor	1	32	18558FO	O/S Side Guard	1
12	0351	M8/30 Bolt	4	33	0839	M10 C Washer	8
13	0711	M8 A Washer	8	34	0878	M10/20 Bolt	8
14	1008	M8 Spring Washer	4	35	17991	Guard Handle	2
15	0476	M8 Plain Nut	4	36	4314	Fuel Pump	1
16	17988	Gasket	2	37	0279	Jubilee Clip	1
17	18012FB	Mesh for Side Guard	1	38	2851	Fuel Clip	1
18	0347	M8/20 Buttonhead	4	39	4315	In Line Fuel Filter	1
19	18559FO	N/S Sideguard	1	40	0350	M8/25 Bolt	2
20	0479	M8 P Nyloc Nut	11	41	0085	Fuel Filter	1
21	0067	Pop Rivet	4	42	0344	M8/16 Bolt	2



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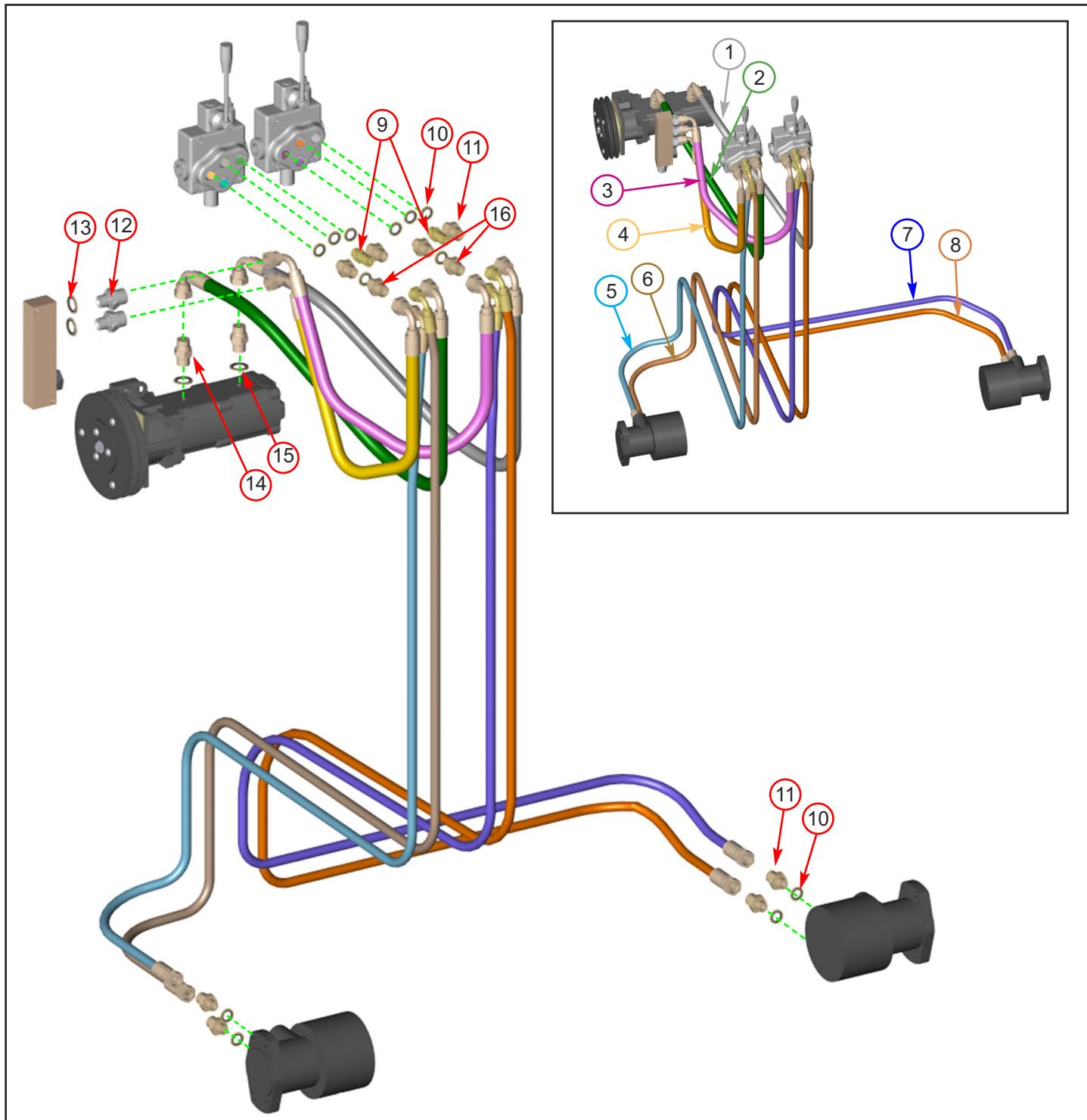
Item	Part No	Part Name	Q'ty
1	0350	M8/25 Bolt	2
2	0711	M8 A Washer	2
3	0100	Filter	1
4	1954	Tank Top Filter Housing	1
5	2694	1" - 3/4" MM Adapter	1
6	2693	1" Dowty Washer	1
7	1067	Breather Filter	1
8	18533FO	Hydraulic Tower Tank	1
9	1163	Level Guage	1
10	1374	Locking Tank Cap	1
11	1658	M6/12 Bolt	6
12	0709	M6 C Washer	6
13	2617FS	Fuel Tank Filler Assy	1
14	18534FO	Fuel Tank	1
15	0431	M12/40 Bolt	6
16	0704	M12 C Washer	13
17	0878	M10/20 Bolt	10
18	0839	M10 C Washer	22
19	18310FO	Roller Box Lid	1
20	18311FO	Offside Drum Housing Guard	1
21	0373	M10/20 Caphead	2
22	0382	M10/30 Bolt	6

Item	Part No	Part Name	Q'ty
23	18309FO	Offside Roller Box Guard	1
24	0360	M10/25 Bolt	5
25	4059	Banjo Bolt	3
26	2896	Copper Washer	11
27	17998	Banjo Fitting	3
28	18563M	Site Level Tube	1
29	0279	Jubilee Clip	4
30	1992	Hose Connector	1
31	0384	5mm Fuel Pipe	As Rq'd
32	0389	8mm Fuel Pipe	As Rq'd
33	0644	M12 P Nyloc Nut	4
34	18550FB	Pivot Support Bracket	1
35	18535FO	Fuel Tank Tray	1
36	0027	1/2" - 1/2" MM Adapter	1
37	0398	1/2" Dowty Washer	1
38	18560	Hose Clamp	2
39	18561M	Tank Connection Hose 650mm	1
40	1605M	Pivot Spacer	2
41	18553M	Bearing Washer	2
42	18551FS	Tray Lock Catch	1
43	18549FB	Pivot Mtg Bracket	1
44	0987	M12/60 Bolt	1



Item	Part No	Part Name	Q'ty
1	18321FO	Funnel	1
2	0654	Grommet	4
3	0045	M12 T Nyloc Nut	2
4	1601	Nylon Piston	2
5	1603	Die Spring	2
6	4206	Nylon Bush	1
7	0704	M12 C Washer	4
8	18381	M16/45 Bolt	4
9	18108	M6/8 Pan Pozi	8
10	1143	M16 A Washer	8
11	2493	Rubber Cap	2
12	4345	M10 P Nyloc Nut	1
13	1006	M4/30 Pan Pozi	2
14	0429	M12/35 Bolt	2
15	1605M	Stainless Spacer	2
16	1599	Bearing Washer	2
17	(see page 37)	Control Box	2
18	1348	Limit Switch	1
19	1520	M10/45 Bolt	2
20	1591	Nylon Spacer	2
21	18115	M8/50 Csk Soc.	1
22	0479	M8 P Nyloc Nut	1

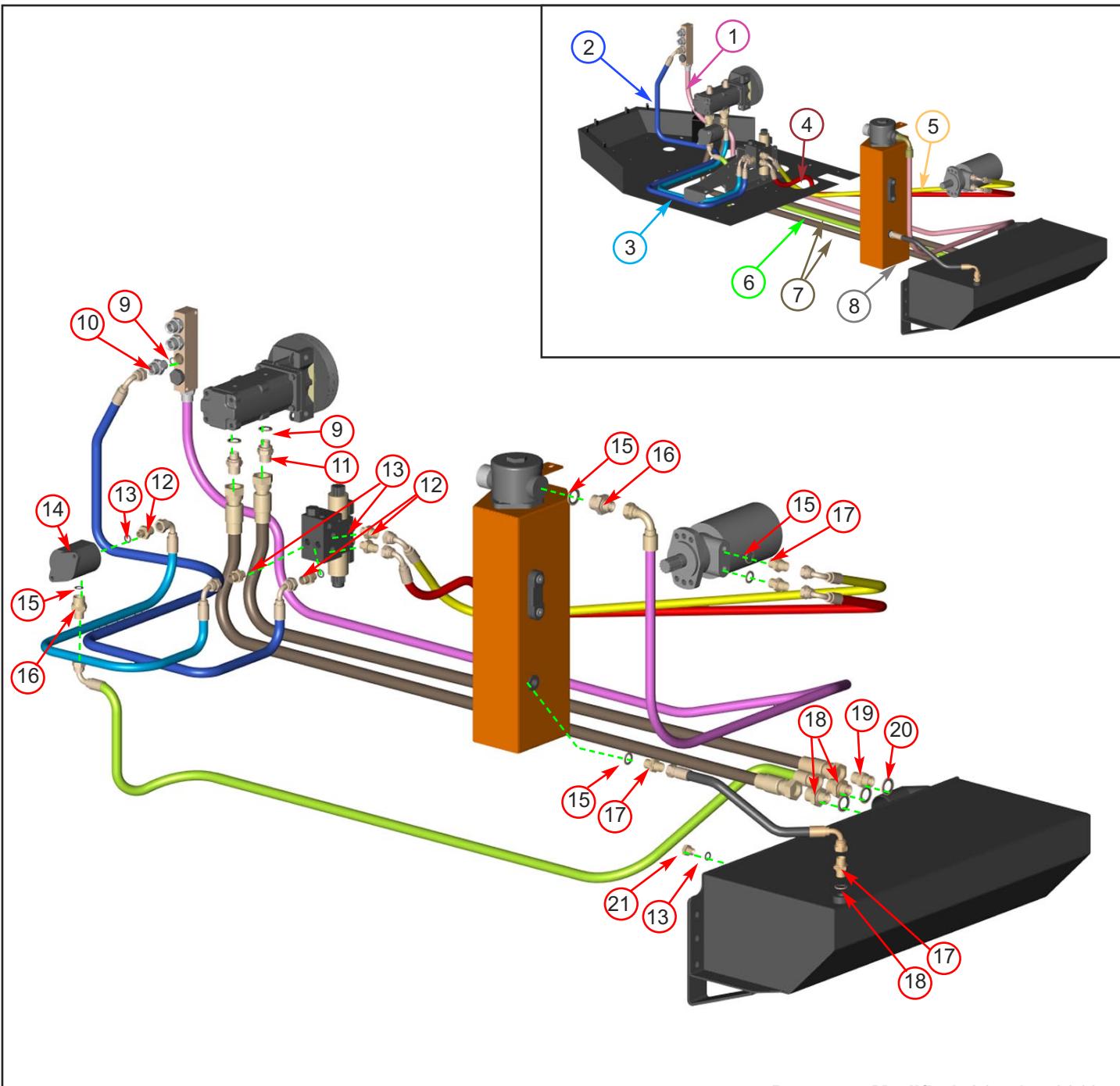
Item	Part No	Part Name	Q'ty
23	2923FS	Hinge Pin	1
24	2986	1/2" Spring Bolt	2
25	1276	Split Pin	2
26	1598FR	Safety Bar	1
27	0391	M6 T Nyloc Nut	8
28	4344	M10 C Repair Washer	2
29	0178	Rubber End Stop	1
30	2727FS	Actuator Bracket	1
31	0437	M6/16 Bolt	10
32	0709	M6 C Washer	10
33	P3501F	Feed Tray	1
34	0712	M8 C Washer	8
35	1511	M16 P Nyloc Nut	4
36	1800	AV Mount	8
37	0142	M6 P Nyloc Nut	8
38	18104	M5/12 Pan Pozi	4
39	0857	M5 A Washer	4
40	18924	Square Reflector	2
41	18102	M5 T Nyloc Nut	2
42	P*144	Operator's Manual Cannister	1
43	0347	M8/20 Button Head	3
44	0481	M8 T Nyloc Nut	4



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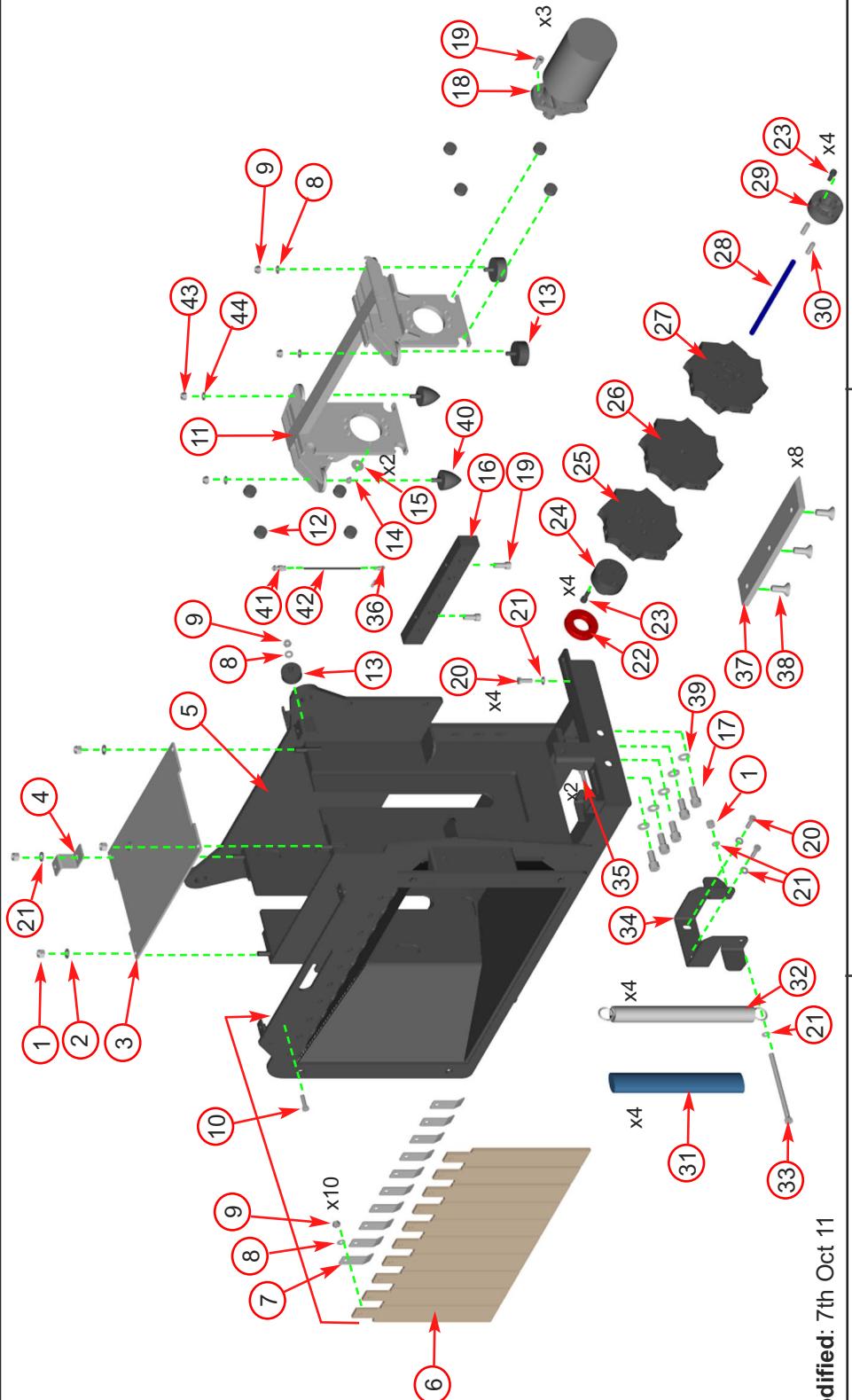
Item	Part No	Part Name	Q'ty
1	18768	Hose 1/2"	1
2	18769	Hose 1/2"	1
3	18767	Hose 1/2"	1
4	18542	Hose 1/2"	1
5	P*250	Hose 1/2"	1
6	18764	Hose 1/2"	1
7	P*251	Hose 1/2"	1
8	18766	Hose 1/2"	1

Item	Part No	Part Name	Q'ty
9	0828	3/8" Bulk Head Adapter	2
10	0396	3/8" Dowty Washer	12
11	0026	3/8"- 1/2" MM Adapter	10
12	1583	3/4"- 1/2" MM Adapter	2
13	0152	3/4" Dowty Washer	2
14	0027	1/2"- 1/2" MM Adapter	2
15	0398	1/2" Dowty Washer	2
16	0161	3/8"- 3/8" MM Adapter	2



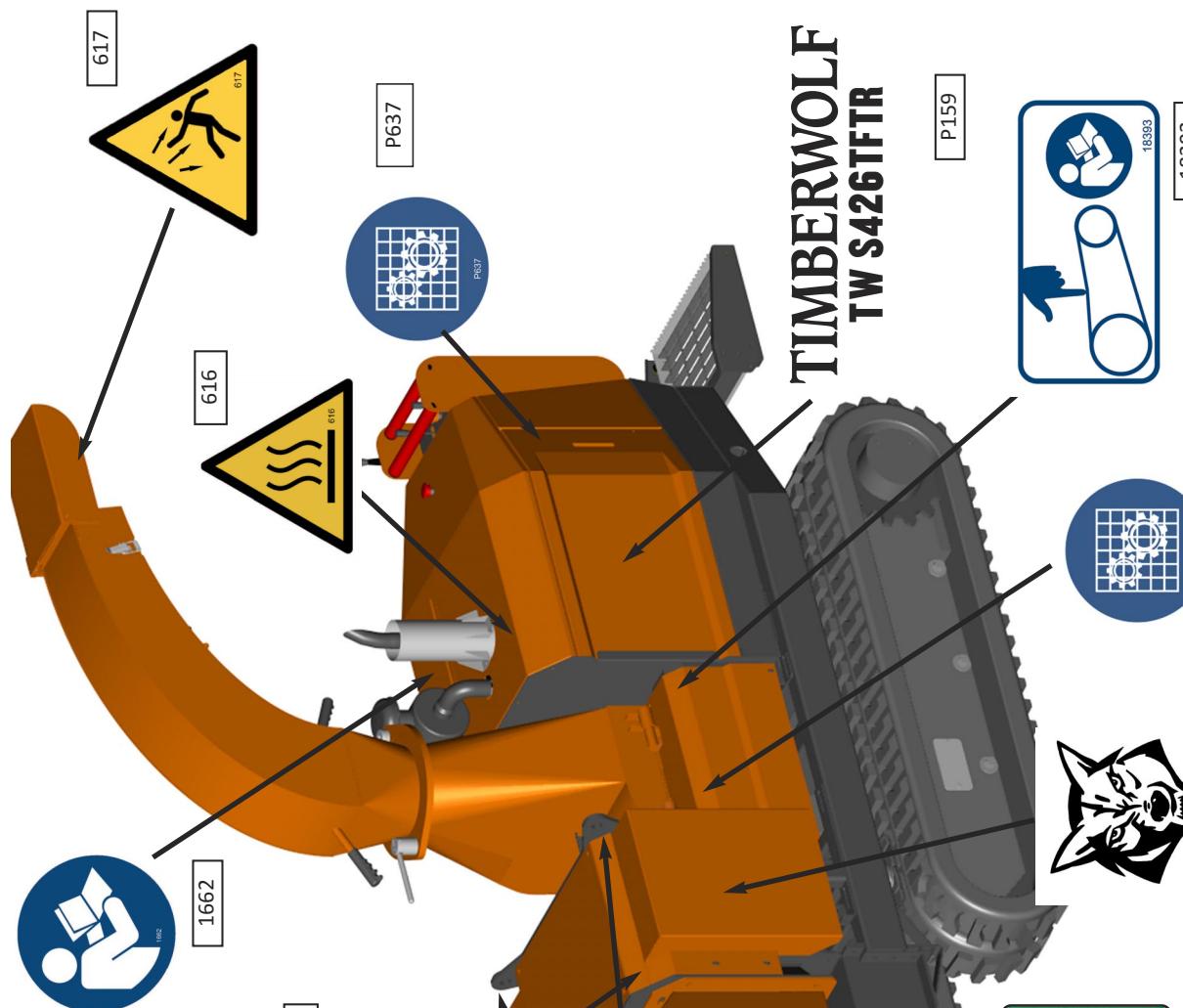
Date Last Modified: 21st Jan 2013

Item	Part No	Part Name	Q'ty	Item	Part No	Part Name	Q'ty
1	18538	Hose 3/4"	1	12	0026	3/8" - 1/2" MM Adapter	5
2	18770	Hose 1/2"	1	13	0396	3/8" Dowty Washer	6
3	17812	Hose 1/2"	1	14	1660	Hydraulic Pump	1
4	17814	Hose 1/2"	1	15	0398	1/2" Dowty Washer	5
5	17815	Hose 1/2"	1	16	1583	1/2" - 3/4" BSP Adapter	2
6	18540	Hose 3/4"	1	17	0027	1/2" - 1/2" BSP Adapter	4
7	18539	Hose 1"	2	18	18557	1" - 1" MM Adaptor	3
8	P*249	Hose 1/2"	1	19	2694	1" - 3/4" MM Adaptor	1
9	0152	3/4" Dowty Washer	3	20	2693	1" Dowty Washer	3
10	1583	3/4" - 1/2" MM Adapter	1	21	0211	3/8" Blanking Plug	1
11	2694	1" - 3/4" Adapter	2				

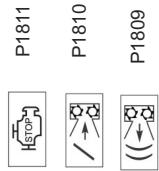


Date Last Modified: 7th Oct 11

Item	Part No	Part Name	Q'ty	Item	Part No	Part Name	Q'ty	Item	Part No	Part Name	Q'ty
1	0644	M12 P Nyloc Nut	5	16	17553	Anvil	1	31	0839	Layflat Spring Protector	4
2	0702	M12 A Washer	4	17	18181	M16/35 Caphead	5	32	2116	Spring	4
3	17556S	Top Plate	1	18	17810	Motor	1	33	4333	M12/170 Bolt	1
4	17775FS	Top Guard Bracket	1	19	1985	M12/30 Caphead	8	34	17774FS	Spring Hanger Bracket	1
5	18571FB	Roller Box	1	20	0321	M12/30 Bolt	6	35	0429	M12/35 Bolt	2
6	17609	Flap	10	21	0704	M12 C Washer	9	36	18474	Rotating Fitting	1
7	17608FS	Flap Holder	10	22	17662M	Nylube Bush	1	37	17568	Roller Blades	8
8	0701	M10 A Washer	13	23	0386	M10/30 Caphead	8	38	18059	M16/35 Csk Screw	24
9	4345	M10 P Nyloc Nut	13	24	18628M	Non-Motor Drive Boss	1	39	18285	M16 Nordlock Washer	5
10	1812	M10/35 Bolt	10	25	17615	Spacer Plate Stub	1	40	18475	Buffer Cone	2
11	17557	Top Roller Slide	1	26	17571	Centre Plate Roller	1	41	18192	Remote Greaser	1
12	3009	Slide Plug	8	27	17570	Spline Drive End Plate	1	42	—	150mm x 5mm Pipe	1
13	17808	AV Mount	3	28	18379	315mm Tube	1	43	0479	M8 P Nyloc Nut	2
14	1721	M8/10 Bolt	2	29	18016M	14T Spline Drive	1	44	0712	M8 C Washer	2
15	0714	M8 Penny Washer	2	30	18017	12mm x 40mm Dowels	2				



To go on relays



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X218654
X2

P691

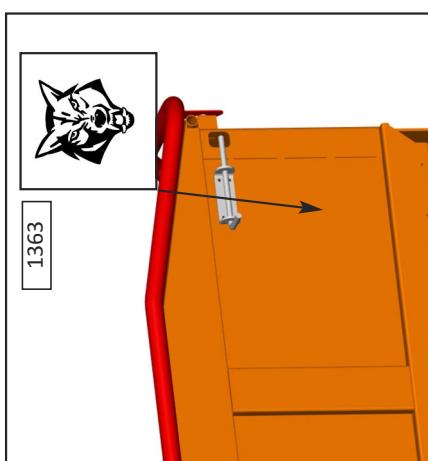
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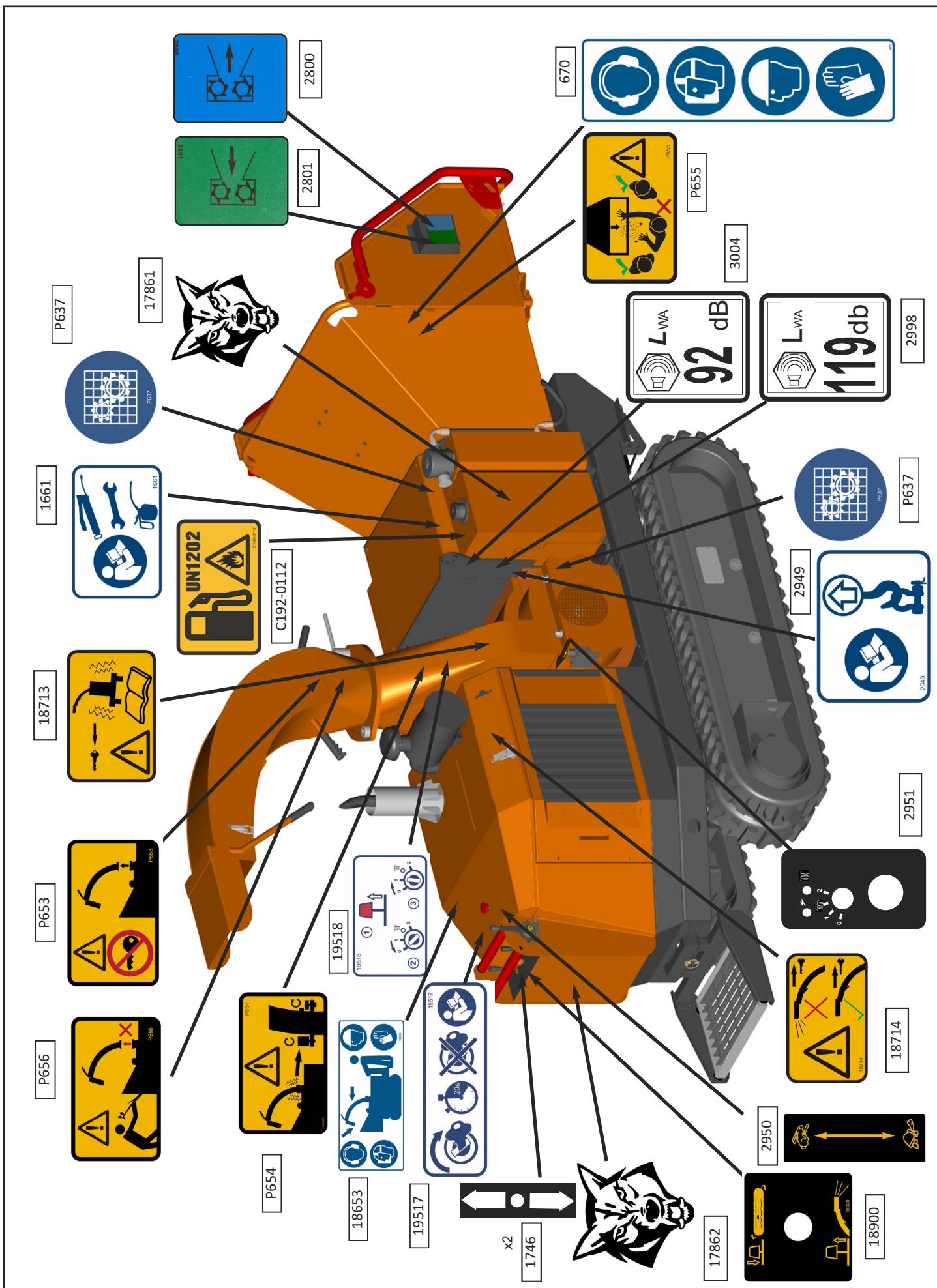
P691

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