CONTENTS

INTRODUCTION

Thank you for choosing this Timberwolf brushwood chipper. Timberwolf chippers are designed to give safe and dependable service if operated according to the instructions.

Before using your new chipper, please take time to read this manual which contains IMPORTANT HEALTH AND SAFETY INFORMATION and explains the chipper controls. Failure to do so could result in:

- personal injury
- equipment damage
- damage to property
- a member of the general public becoming injured

This manual covers the operation and maintenance of the Timberwolf 125 & 150 range of machines. All information in this manual is based on the latest product information available at the time.

NOTE: Also supplied with this manual - 1 x Prop shaft instruction sheet.

All the information you need to operate the machine safely and effectively is contained within pages 3 to 23. Ensure that all operators are **adequately trained** for operating this machine, especially with regard to **safe working practices**.

Timberwolf's policy of constantly improving their products may involve major or minor changes to the chippers 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 chipper and the text in this manual.

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

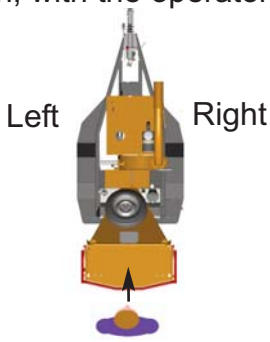
NOTE: For the purpose of this manual 'left' and 'right' of the machine are as shown, with the operator standing looking into the feed funnel.

Where section headings are shown in black text, the information applies to all models.

Where section headings are shown in blue text, the information applies to road tow models only.

Where section headings are shown in red text, the information applies to tracked models only.

Where section headings are shown in green text, the information applies to PTO models only.



Always follow safe operating and maintenance practices

CAUTION or WARNING

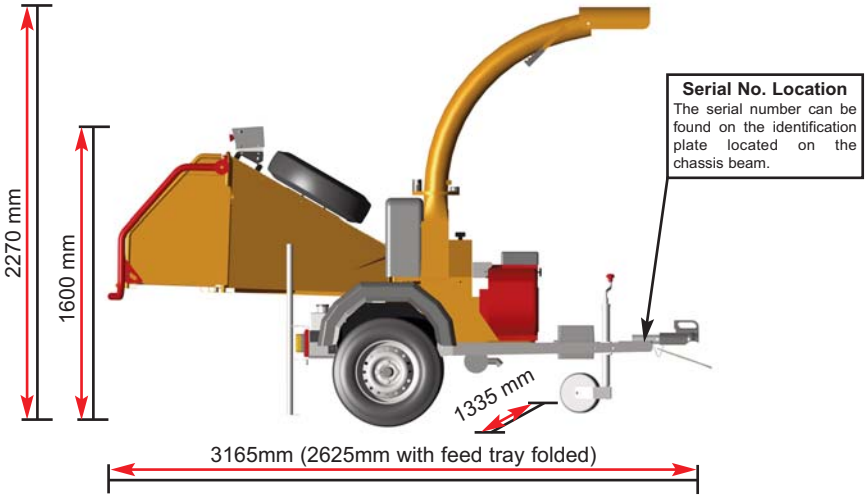
Be aware of this symbol and where shown, carefully follow the instructions.

This caution symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury to yourself or others, and carefully read the message that follows.

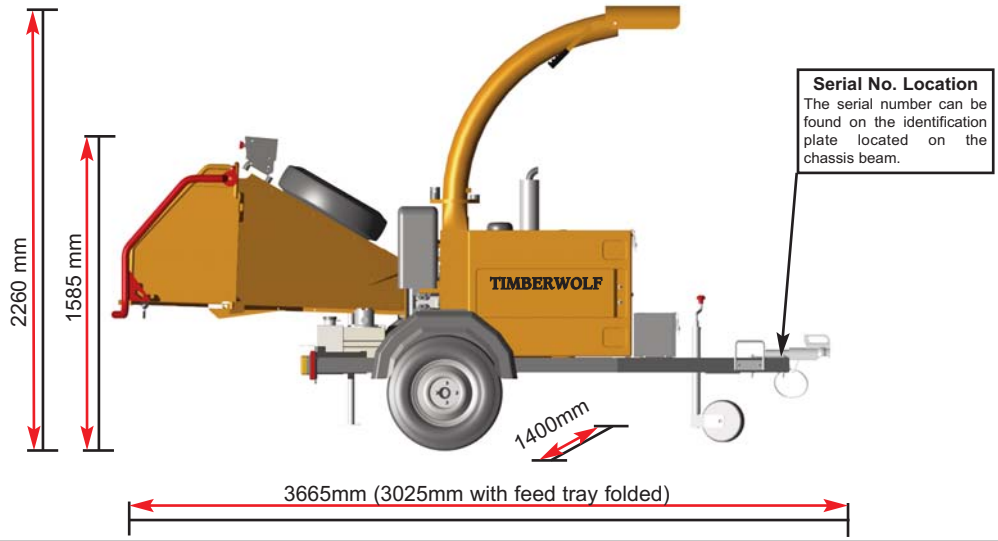
PURPOSE OF MACHINE

Timberwolf TW 125PH and TW 150DHB brushwood chippers are designed to chip solid wood material up to 150mm in diameter. They are capable of chipping up to 2 tonnes (125 models) and 4 tonnes (150 models) of brushwood per hour .

DIMENSIONS



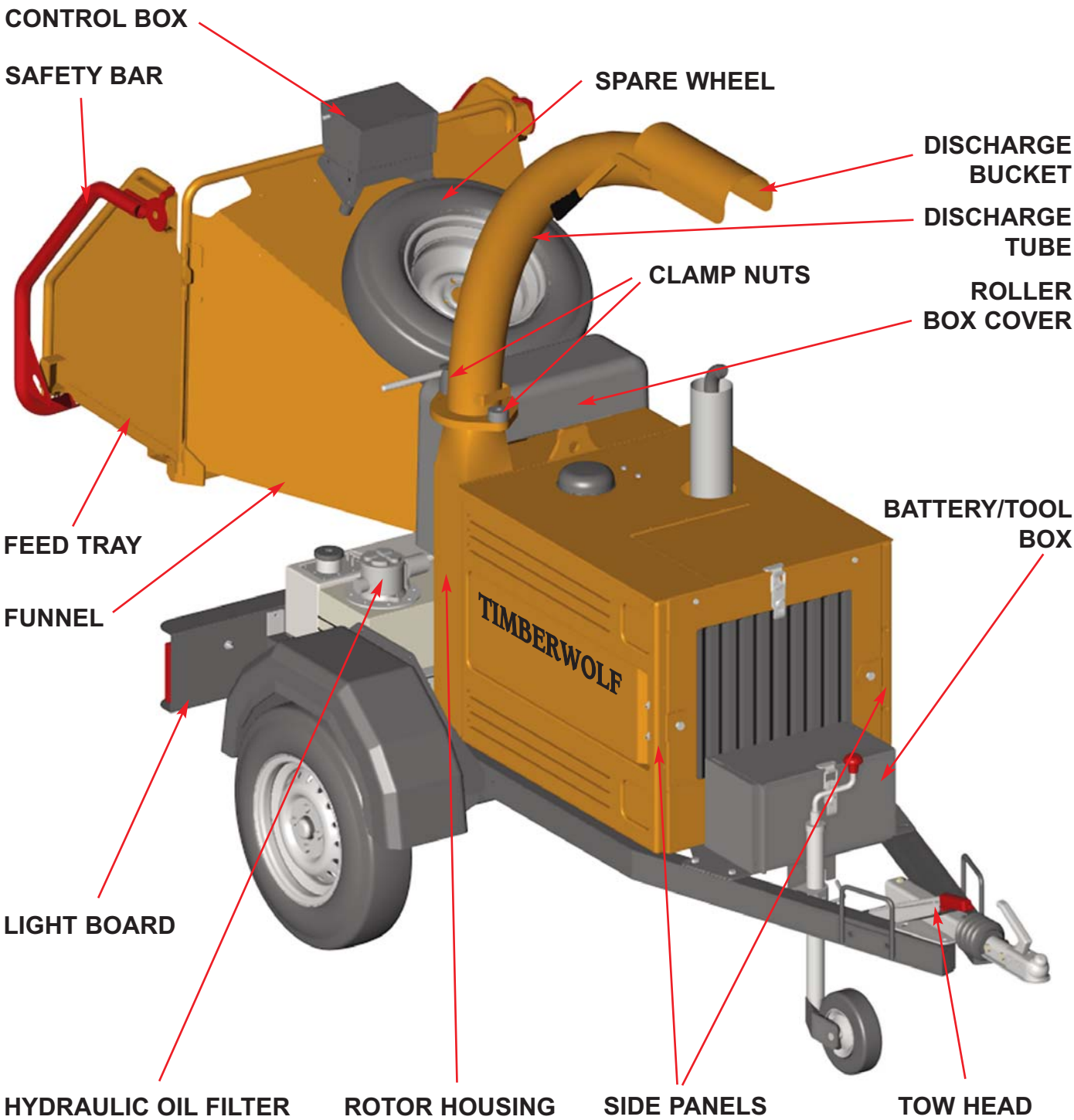
TW 125PH



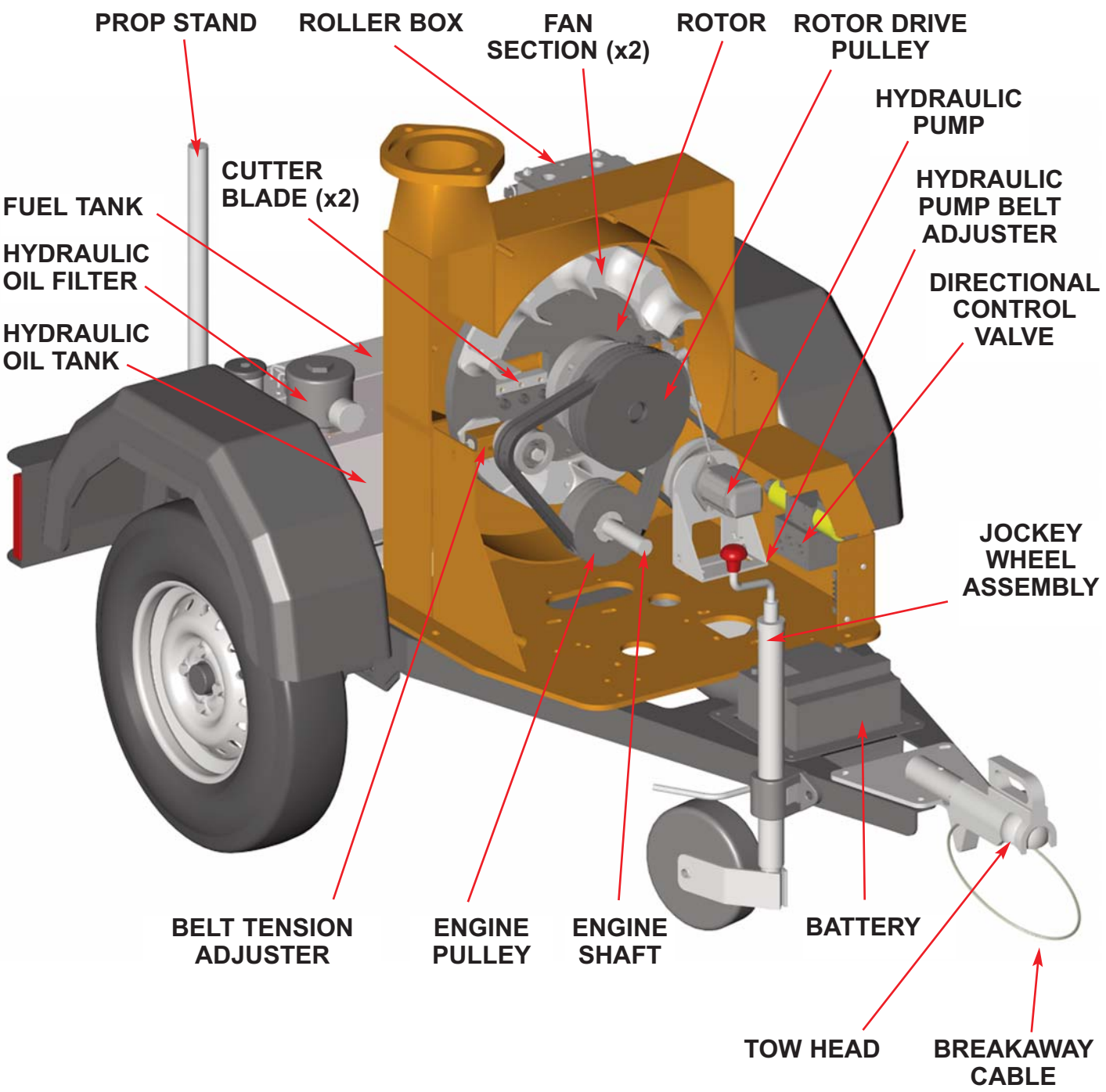
TW 150DHB

TIMBERWOLF TW 125 & 150DHB SPECIFICATIONS

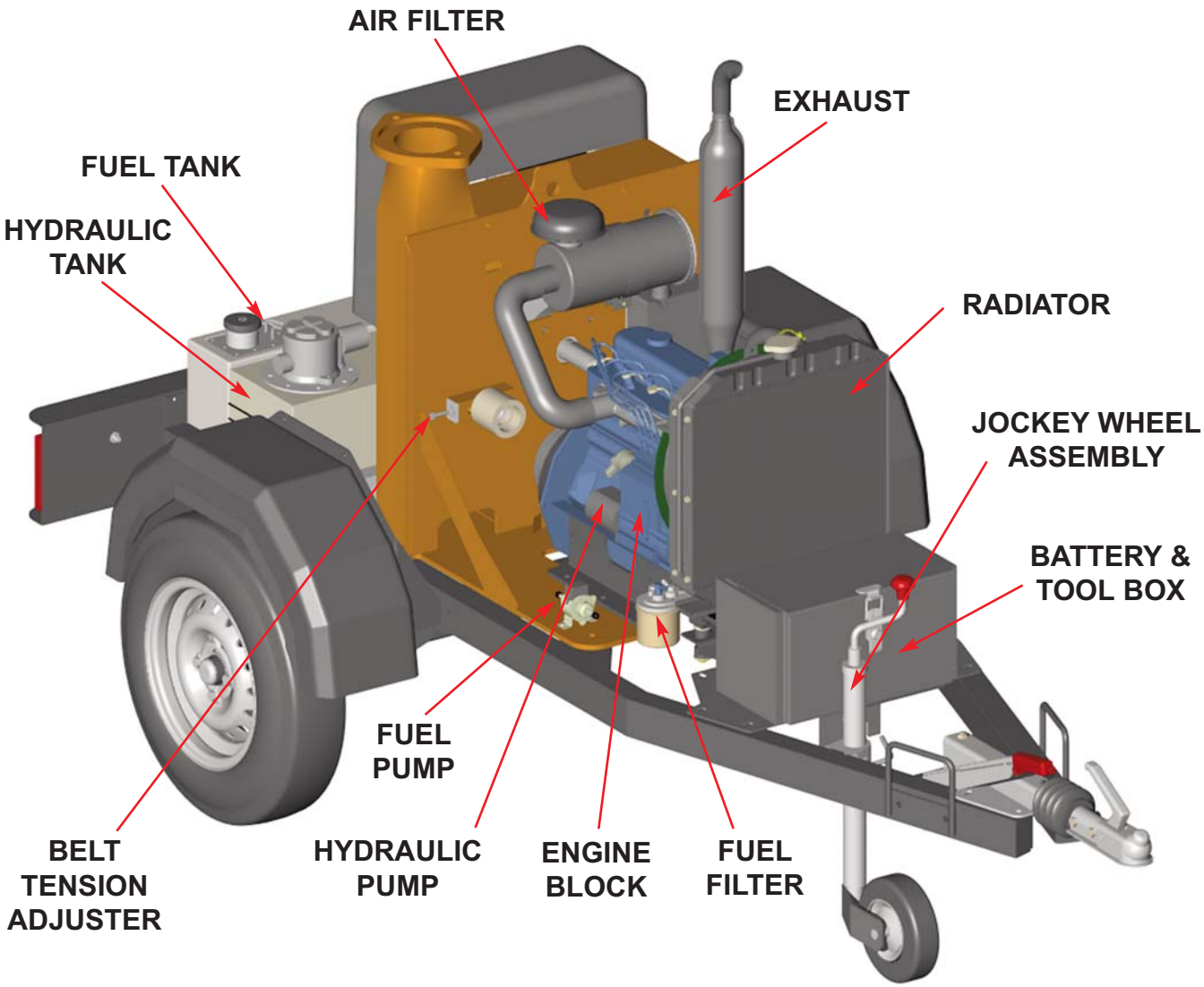
	TW 125PH	TW 150DHB
Engine type	*Honda v-twin petrol*	*Kubota 4-cylinder turbo diesel*
Maximum power	*14.9kW (20hp)*	*26kW (35hp)*
Cooling method	*Air cooled*	*Water cooled*
Overall weight	*575kg*	*737kg*
Starting method	*Electric*	*Electric*
Roller feed	*Twin series hydraulic motors*	*Twin series hydraulic motors*
Maximum diameter material	*125 mm (5")*	*150mm (6")*
Fuel capacity	*18 litres*	*16 litres*
Hydraulic oil capacity	*15.5 litres*	*13 litres*
Material processing capacity	*up to 2 tonnes/hr*	*up to 4 tonnes/hr*
Fuel type	*Unleaded petrol*	*Diesel*



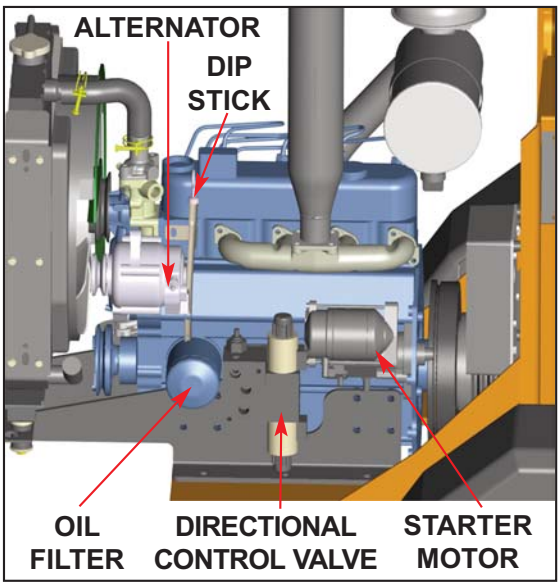
model shown 150DHB

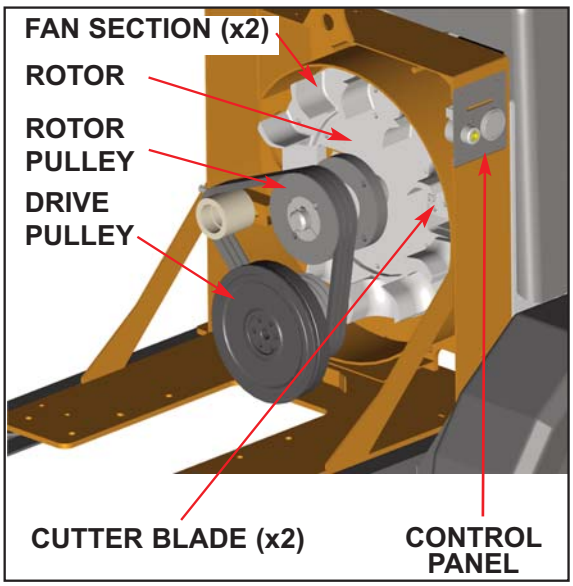


model shown 125PH



model shown 150DHB

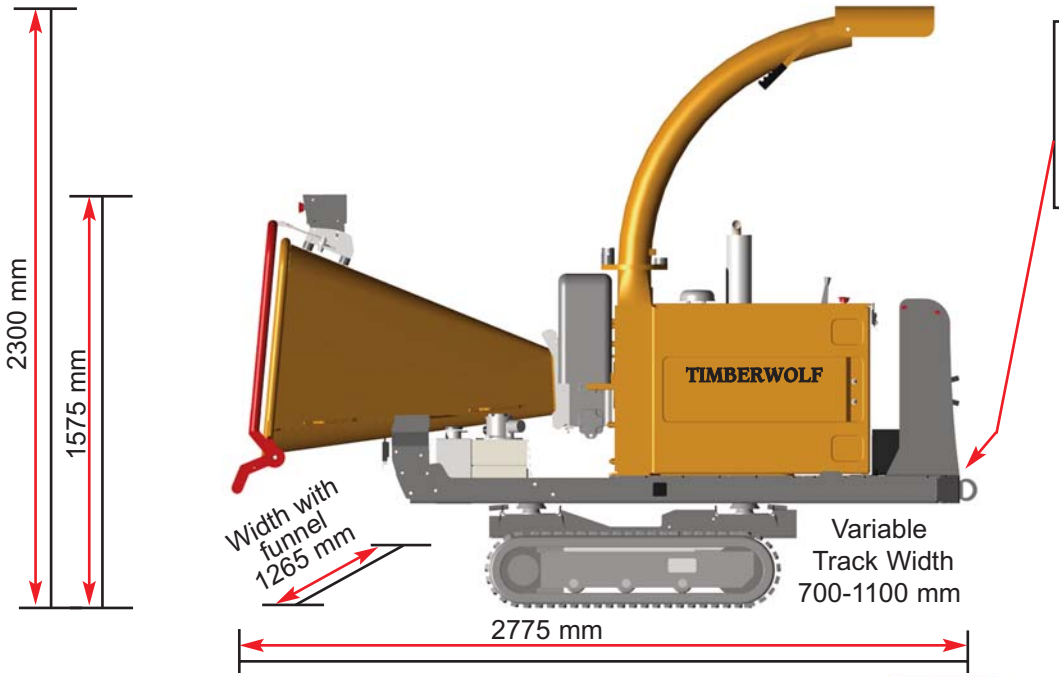




PURPOSE OF MACHINE

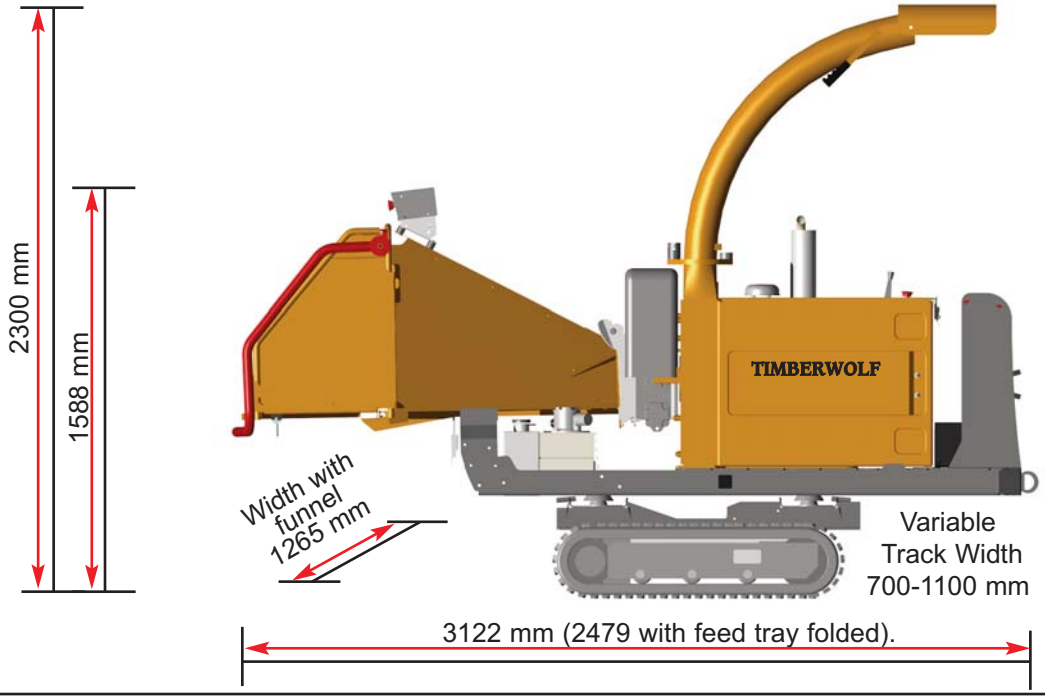
The Timberwolf TW 150VTR brushwood chipper is designed to chip solid wood material up to 150 mm in diameter. It is capable of chipping up to 4 tonnes of brushwood per hour.

DIMENSIONS



Serial No. Location
The serial number can be found on the information plate fixed to the chassis beam.

TW 150VTR WITH LOW FUNNEL

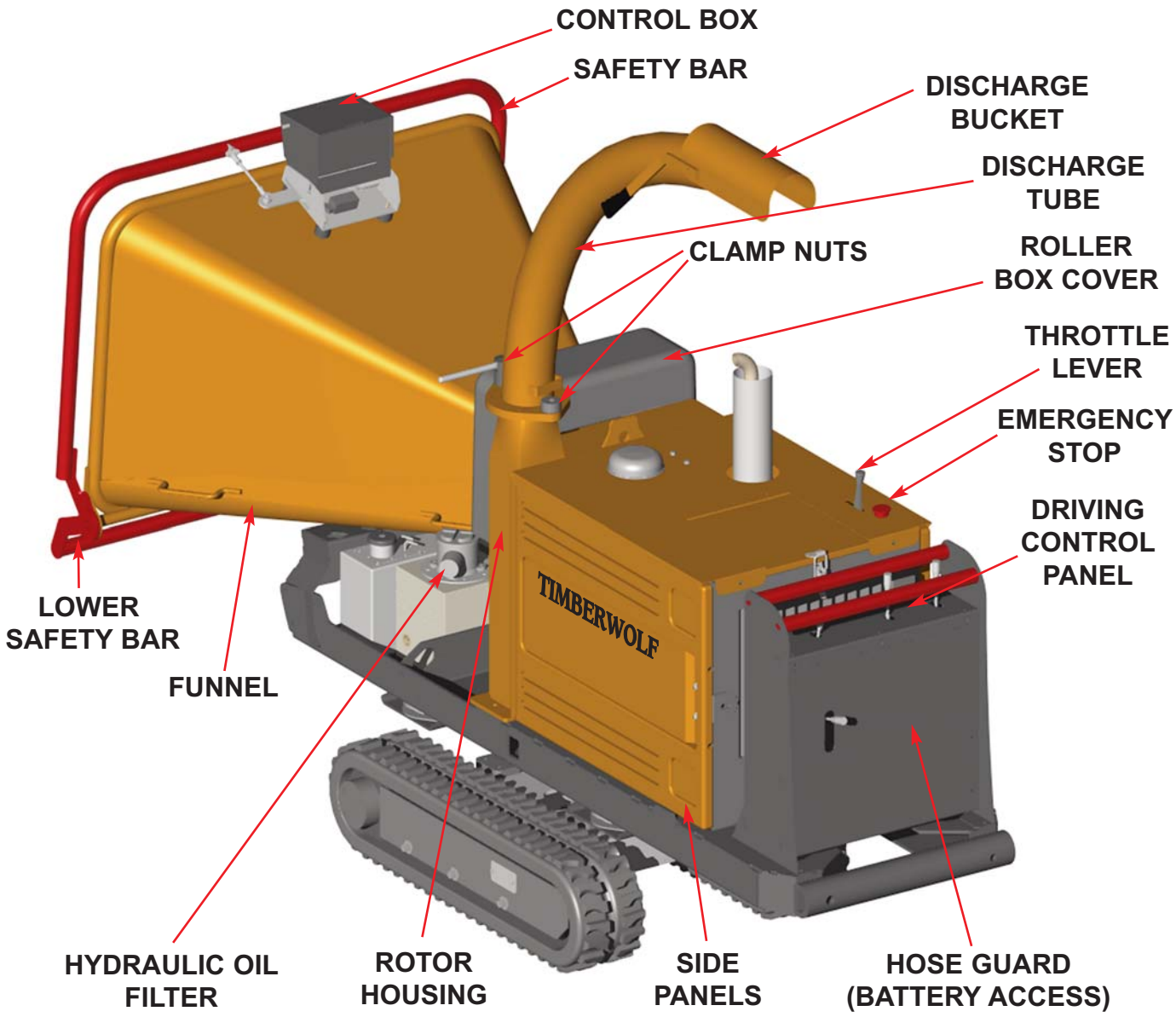


TW 150VTR WITH HIGH FUNNEL

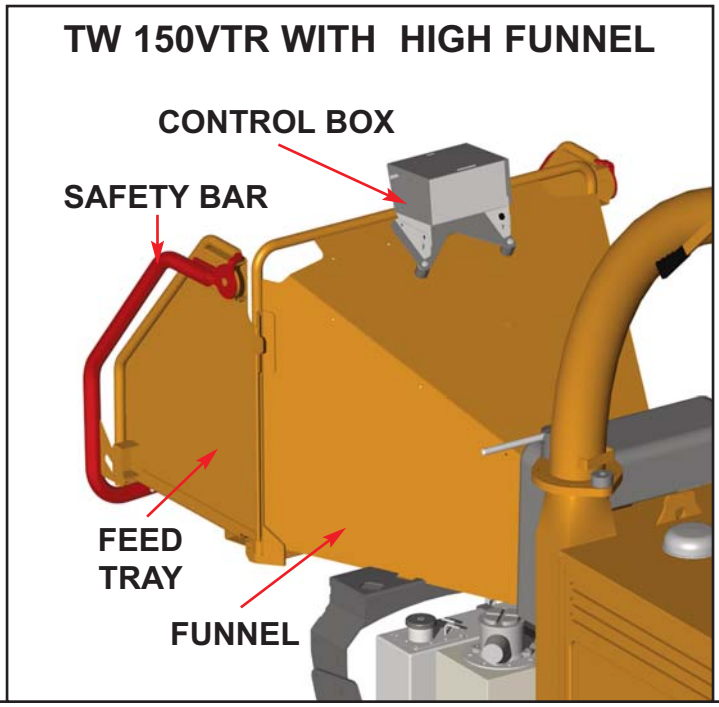
TIMBERWOLF TW 150VTR SPECIFICATION

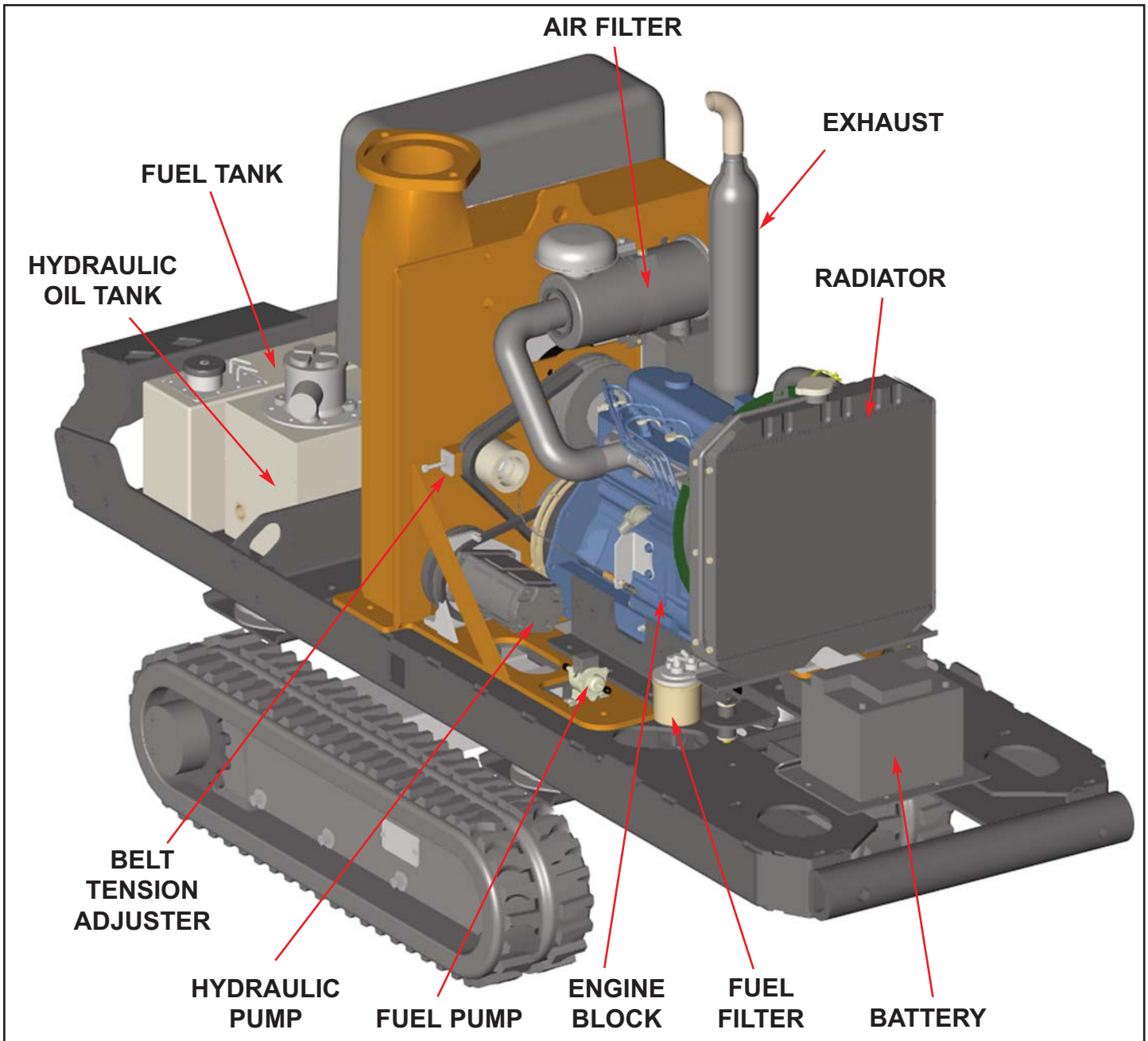
Engine type	*Kubota 4-cylinder diesel*	Maximum diameter material	*150 mm (6")*
Maximum power	*26kW (35hp)*	Fuel capacity	*18 litres*
Cooling method	*Water cooled*	Hydraulic oil capacity	*15.5 litres*
Overall weight	*1080kg*	Material processing capacity	*4 tonnes/hr*
Starting method	*Electric*	Fuel type	*Diesel*
Roller feed	*Twin series hydraulic motors*		

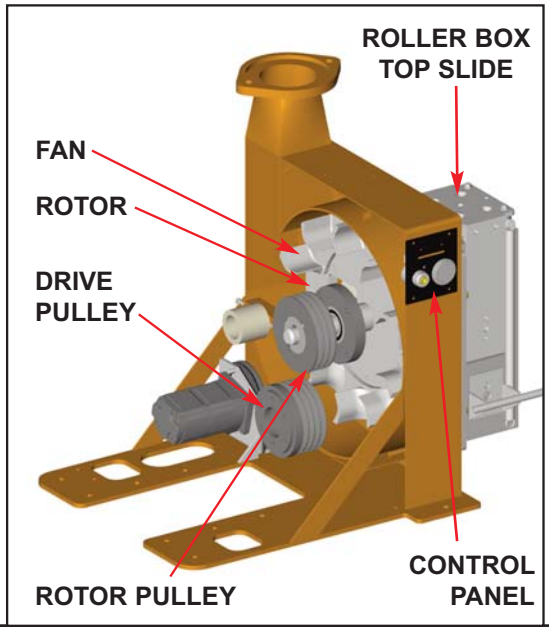
150TR PARTS LOCATOR 7

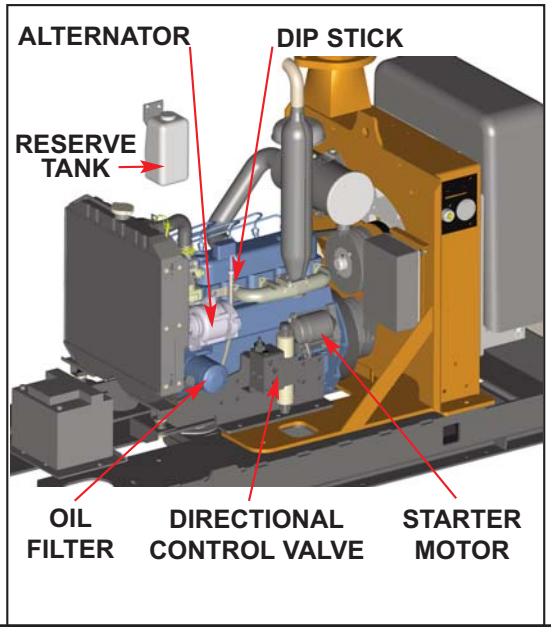


TW 150VTR WITH HIGH FUNNEL




AIR FILTER
EXHAUST
FUEL TANK
HYDRAULIC OIL TANK
RADIATOR
BELT TENSION ADJUSTER
HYDRAULIC PUMP
FUEL PUMP
ENGINE BLOCK
FUEL FILTER
BATTERY

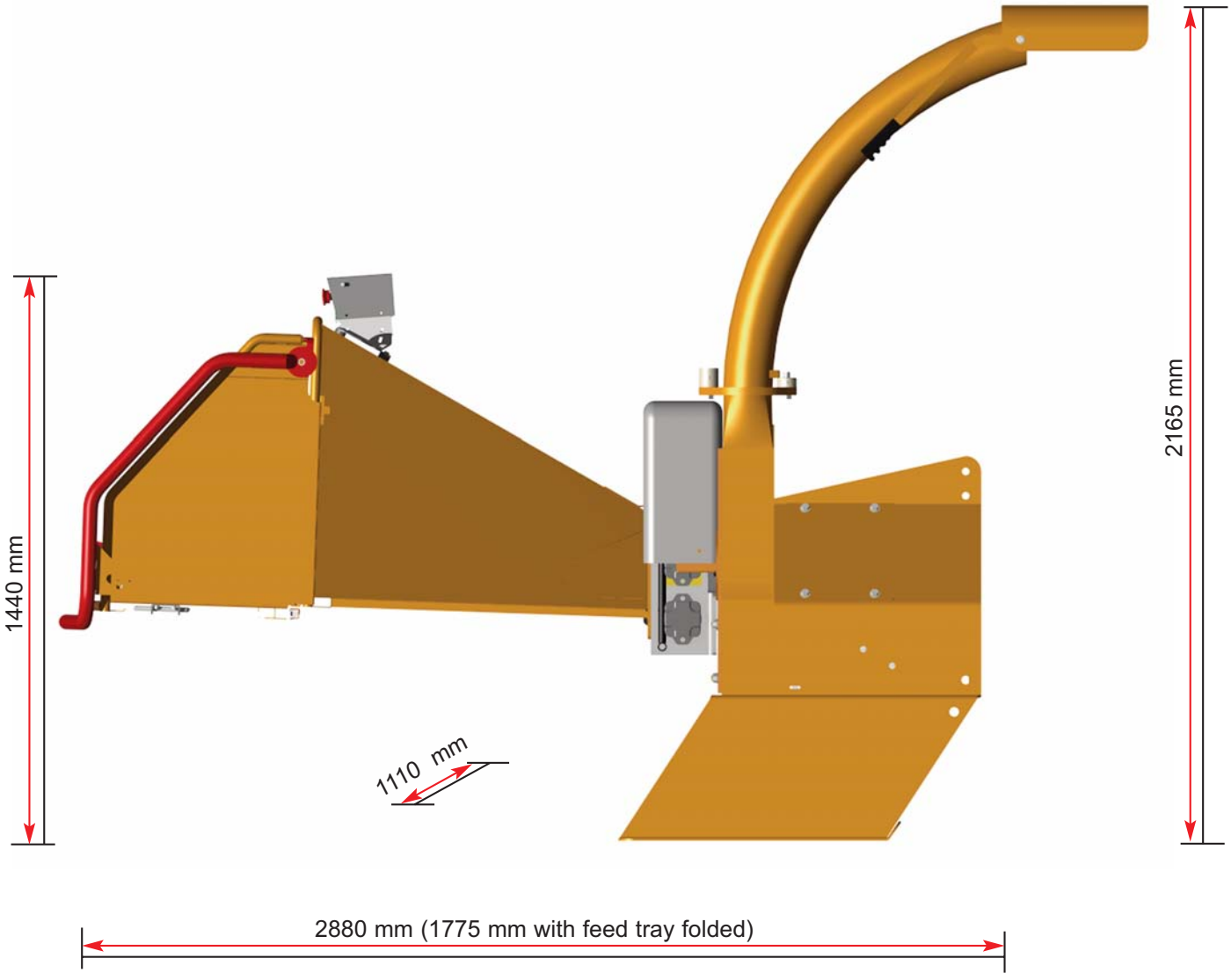

ROLLER BOX TOP SLIDE
FAN
ROTOR
DRIVE PULLEY
ROTOR PULLEY
CONTROL PANEL


ALTERNATOR
DIP STICK
RESERVE TANK
OIL FILTER
DIRECTIONAL CONTROL VALVE
STARTER MOTOR

PURPOSE OF MACHINE

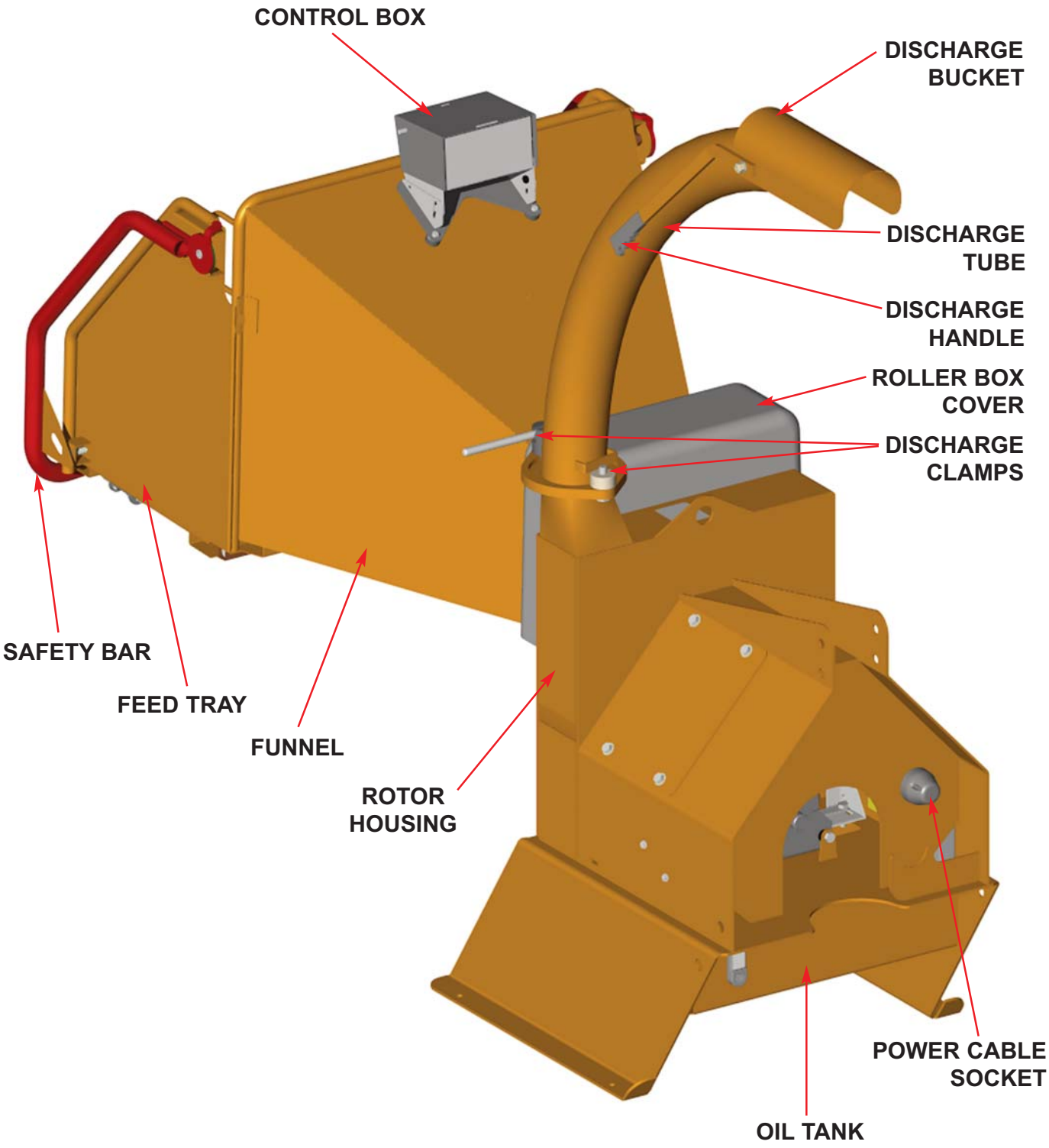
The Timberwolf PTO/150H brushwood chipper is designed to chip solid wood material up to 150 mm in diameter, depending on tractor horsepower. It is capable of chipping over three tonnes of brushwood per hour.

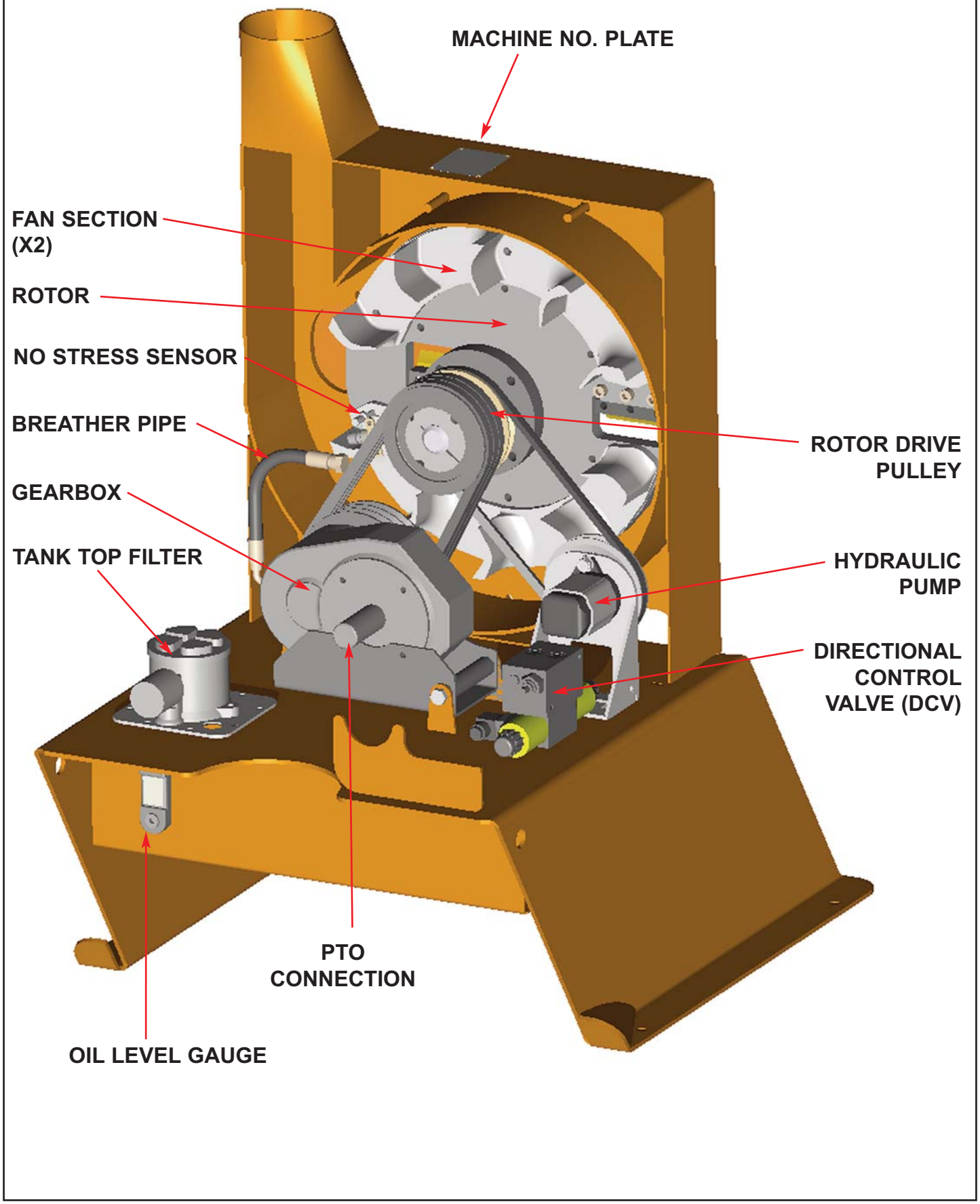
DIMENSIONS



TIMBERWOLF PTO/150H SPECIFICATION

Power source:	*Tractor PTO Drive*	Maximum diameter material:	*150 mm* (6”)
Overall weight:	*400kg*	Material processing capacity:	*3 tonnes/hr*
Type of feed:	*Hydraulic*	Required engine power:	*25 - 60hp*
		PTO speed:	*540rpm*


CONTROL BOX
DISCHARGE BUCKET
DISCHARGE TUBE
DISCHARGE HANDLE
ROLLER BOX COVER
DISCHARGE CLAMPS
SAFETY BAR
FEED TRAY
FUNNEL
ROTOR HOUSING
POWER CABLE SOCKET
OIL TANK

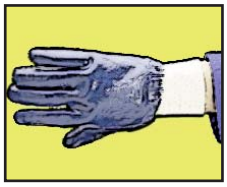

MACHINE NO. PLATE
FAN SECTION (X2)
ROTOR
NO STRESS SENSOR
BREATHER PIPE
GEARBOX
TANK TOP FILTER
ROTOR DRIVE PULLEY
HYDRAULIC PUMP
DIRECTIONAL CONTROL VALVE (DCV)
PTO CONNECTION
OIL LEVEL GAUGE

WARNING

The chipper will feed material through on its own. To do this, it relies on sharp blades on the chipper rotor. To keep the blades sharp, only feed the machine with clean brushwood. DO NOT put muddy/dirty wood, roots, potted plants, bricks, stones or metal into the chipper.

OPERATOR'S PERSONAL PROTECTIVE EQUIPMENT REQUIRED

Chainsaw safety helmet fitted with mesh visor and recommended ear defenders to the appropriate specifications.



Work gloves with elasticated wrist.

Steel toe cap safety boots.

Close fitting heavy-duty non-snag clothing.

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 chipper.

BASIC WOODCHIPPING SAFETY

The operator should be aware of the following points:

- MAINTAIN A SAFETY EXCLUSION ZONE around the chipper of at least 10 metres for the general public or employees without adequate protection. Use hazard tape to identify this working area and keep it clear from debris build up. Chips should be ejected away from any area the general public have access to.

- HAZARDOUS MATERIAL - Some species of trees and bushes are poisonous. The chipping 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 chipped before you start. Avoid confined spaces and use a facemask if necessary.

- BE AWARE when the chipper 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. Badly twisted brash should be trimmed before being chipped to avoid thrashing in the feed funnel.

- BE AWARE that the chipper can eject chips 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

DO'S AND DON'TS

ALWAYS stop the chipper engine (or, if PTO, stop the tractor engine and disconnect the PTO shaft) before making any adjustments, refuelling or cleaning.

ALWAYS check rotor has stopped rotating and remove chipper ignition key before maintenance of any kind, or whenever the machine is to be left unattended.

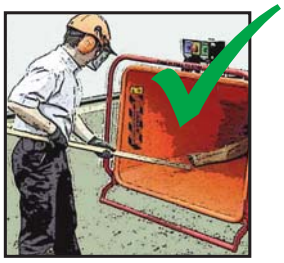
ALWAYS check the machine is well supported and cannot move.

ALWAYS operate the chipper with the engine set to maximum speed when chipping. For PTO models, always run tractor engine at required speed to acheive correct PTO 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 operate the chipper in a well ventilated area - exhaust fumes are dangerous.

DO NOT operate chipper unless available light is sufficient to see clearly.

DO NOT use or attempt to start the chipper or engage PTO without the feed funnel, guards and discharge unit securely in place.

DO NOT stand directly in front of the feed funnel when using the chipper. Stand to one side.

DO NOT allow -

- to enter the machine, as damage is likely.

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 machine is running.

DO NOT use the chipper inside buildings.

NOISE TEST

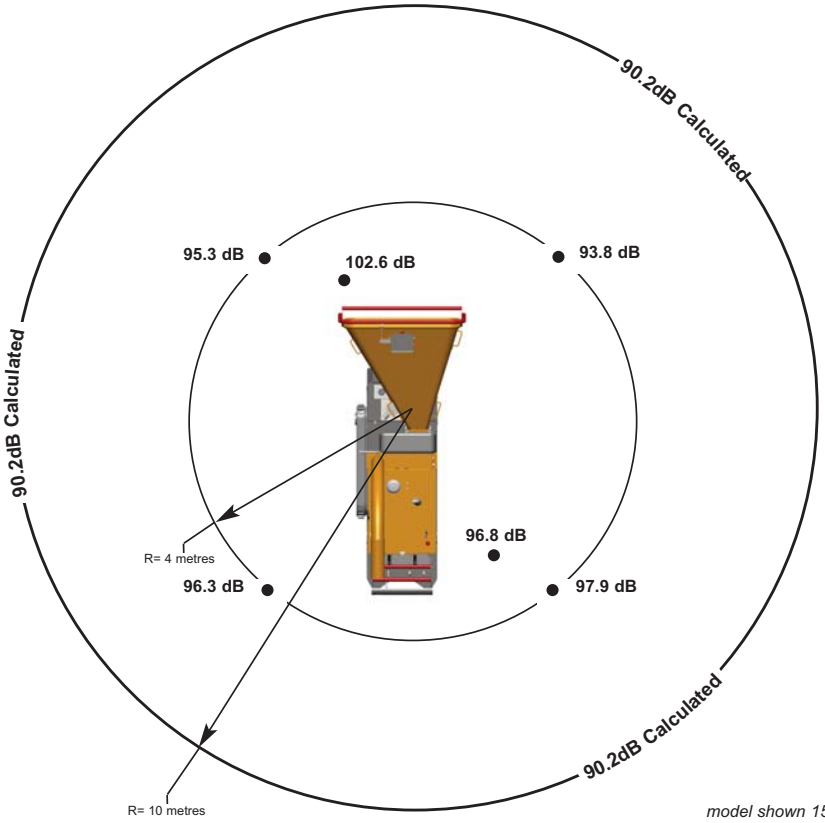
MACHINE:

TW 125/150 models

NOTES:

Tested Chipping 120 mm x 120 mm Corsican Pine 1.5m in length

Noise levels above 80dB (A) will be experienced at the working position. Wear ear protection at all times to prevent possible damage to hearing. All persons within a 4 metre radius must also wear good quality ear protection.



model shown 150TR

Guaranteed Sound Power: 150 models: 119dB (A) 125 models: 120dB (A)

As required by Supply of Machinery (safety) regulations of 2008.

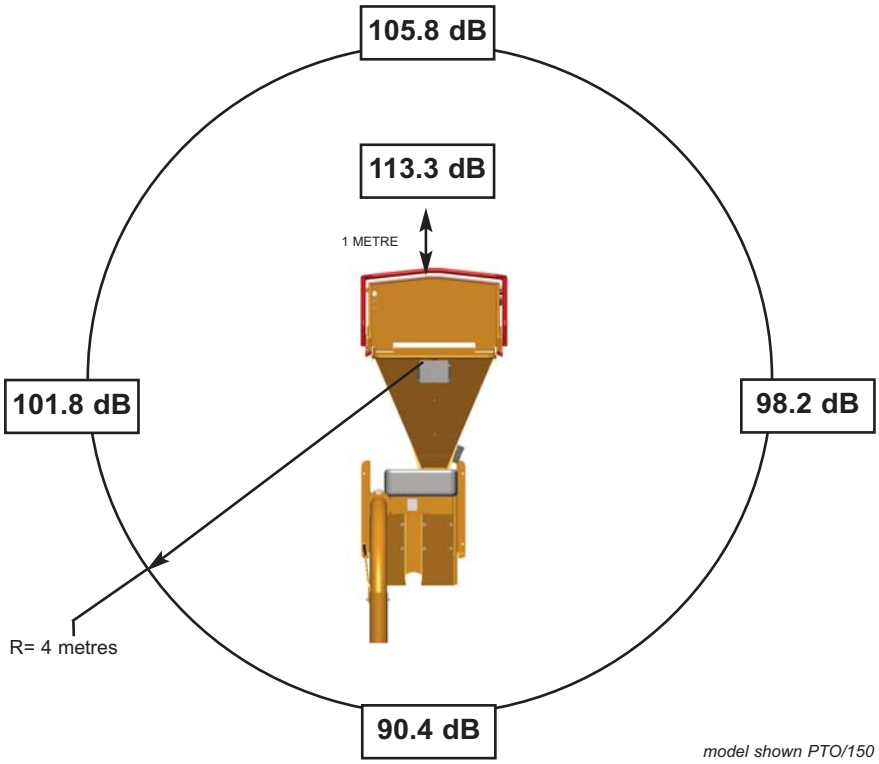
MACHINE:

TIMBERWOLF PTO/150H ATTACHED TO A 40HP TRACTOR

NOTES:

TESTED CHIPPING 4 INCH ROUND POLES

ALL READINGS REPRESENT TRACTOR WITH CHIPPER CHIPPING



model shown PTO/150

SAFE TRANSPORTATION (ROAD TOW MODELS ONLY)

WARNING

DO NOT RIDE ON THE CHIPPER WHEN IT IS BEING TOWED.

- WHEN towing a chipper the maximum speed limit is 60 mph.
- ON rough or bumpy road surfaces reduce speed accordingly to protect your machine from unnecessary vibration.
- WHEN towing off road be aware of objects that may catch the chipper undergear.
- WHEN towing off road ensure inclination is not excessive.
- AVOID excessively pot holed ground.
- WHEN reversing the chipper the short wheel base will react quickly to steering.
- ALWAYS check the discharge is tight before moving.
- KEEP tyre pressures inflated to 2.2 bar or 32 psi.
- CHECK wheel nuts are tightened to 90Nm or 65 lbs ft.
- CLEAR loose chippings and debris from the machine before departing.
- ENSURE feed funnel is closed and the catch is properly engaged before departing.

HITCHING ONTO THE TOW BALL (ROAD TOW MODELS ONLY)

- CHECK ball head is well greased.
- WIND jockey wheel assembly anticlockwise until the tow head is above the height of the ball hitch on the vehicle.
- REVERSE vehicle so the ball hitch is directly below the tow head.
- ATTACH breakaway cable to a strong point on the vehicle, not the ball hitch.
- ENSURE barrel lock is retracted from the tow head.
- GRASP handle on tow head and push back catch with thumb.
- WIND jockey wheel assembly clockwise, to lower the tow head onto the ball hitch.
- RELEASE handle and continue to wind jockey wheel clockwise. The tow head should snap into place on the ball hitch. If it doesn't, repeat previous 2 steps.
- WIND jockey wheel up until fully retracted and the jockey wheel frame is seated in its notch on the stem. The chipper weight should be fully on the vehicle.
- RELEASE jockey wheel clamp and slide the jockey wheel assembly fully up.
- TIGHTEN clamp on jockey wheel assembly.
- CONNECT electrical plug to socket on rear of towing vehicle and check operation of all the trailer and vehicle lights.
- INSERT barrel lock for security.
- THE chipper is now properly attached to the vehicle.

UNHITCHING THE CHIPPER (ROAD TOW MODELS ONLY)

- APPLY handbrake (where fitted).
- DISCONNECT electrical cable from the vehicle socket.
- RELEASE barrel lock.
- RELEASE breakaway cable.
- RELEASE jockey wheel assembly clamp.
- LOWER jockey wheel assembly fully.
- RETIGHTEN jockey wheel assembly clamp.
- WIND the jockey wheel assembly anticlockwise until it starts to take the weight of the chipper.
- GRASP the handle and release the catch with your thumb.
- CONTINUE to wind jockey wheel anticlockwise. This should lift the tow head clear of the ball hitch.
- DRIVE vehicle clear of the chipper.
- WIND jockey wheel assembly to a suitable point where the chipper is level.
- THE chipper is now fully detached from the vehicle.

OPERATING INSTRUCTIONS *16*

DELIVERY

All Timberwolf 125 & 150 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 chipper. 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 Work gloves with elasticated wrist.
- CLOSE - FITTING heavy-duty non-snag clothing.
- SAFETY footwear.
- FACE MASK (if appropriate).

See page 5 for more detailed information.

MANUAL CONTROLS

Roller control box - is the control box above the feed opening of the chipper funnel. Its function is to control the feed rollers. The feed rollers draw material into the machine. ***It does not control the main rotor.***

RED SAFETY BAR = This is the large red bar that surrounds the sides and top of the feed funnel (sides and bottom on high 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 (pushed or pulled...low funnel only) 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 control buttons.

WARNING

DO NOT remove, jam, disable, bypass, override or otherwise impede the effectiveness of the red safety bar.

RED SAFETY BAR TEST

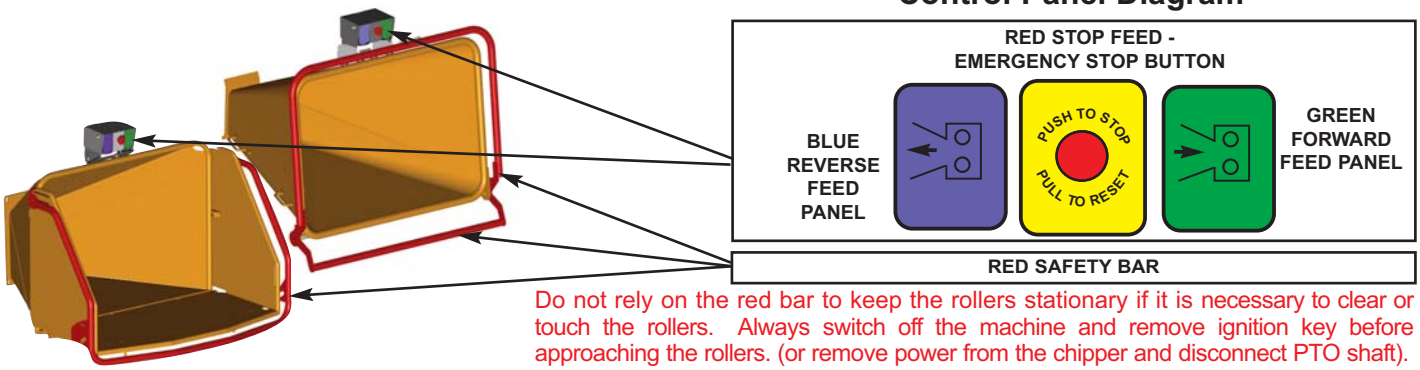
To ensure the safety bar is always operational it must be activated once before each work session. The rollers will not function until the bar is activated. This procedure must be repeated each time the ignition is switched off.

LOW SAFETY BAR = An additional safety bar is located along the bottom of the low funnel. This is linked directly to the main bar, and will stop the rollers if pushed *only.* Pulling this bar will only move it into its 'stowed' (up) position.

GREEN BUTTON = Forward feed - Push the button once - this activates the rollers and will allow you to start chipping (if the rotor speed is high enough).

RED BUTTON = Emergency stop - This button stops the rollers from feeding. It overrides all other buttons or bars and will not allow the other buttons to function until it has been reset. Pull the button out to reset, the forward and reverse buttons will now function.

BLUE BUTTON = 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 button. You do not have to press the STOP button before pressing the GREEN FEED button to recommence feeding. NOTE: This reverse function will work even if the safety bar is pushed *or* pulled.



Do not rely on the red bar to keep the rollers stationary if it is necessary to clear or touch the rollers. Always switch off the machine and remove ignition key before approaching the rollers. (or remove power from the chipper and disconnect PTO shaft).

AUTO CONTROLS

The engine should be set at full speed regardless of the size of wood to be processed. The chipper has a control unit that regulates the maximum permissible load applied to the engine when processing wood. The unit regulates the load by means of automatically turning the feed rollers off and on. This unit is not adjustable and preset at the factory. ***NOTE***: When the engine is set at low speed the unit will remove the forward rollers function. The reverse roller function can be operated at any engine speed. Warning: The roller can restart automatically without warning.

DAILY CHECKS BEFORE STARTING

- LOCATE the machine on firm level ground.
- CHECK machine is well supported and cannot move.
- 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 controls as described below.
- CHECK (visually) for fluid leaks.
- CHECK fuel and hydraulic oil levels.

FOR PTO MODELS:

- ENSURE drive shaft ends are securely fitted to PTO shaft and chipper input shaft.
- CHECK for properly guarded PTO shaft, chipper input shaft and drive shaft.
- CHECK that guard chains are securely attached to stationary frame to prevent rotation of guard.
- CONNECT power cable from tractor to chipper.

For parts location see diagrams on pages 3 & 4.

EMERGENCY STOPPING - ENGINE (ROAD TOW MODELS)

Move the throttle lever to the ‘tortoise’ position.
Turn the ignition key to position O.

EMERGENCY STOPPING - ENGINE (TRACKED MODELS)

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 again to reset it.

EMERGENCY STOPPING - (PTO MODELS)

Push the RED STOP button or push the RED SAFETY BAR (whichever is the quickest for you to reach). Turn off tractor ignition key or operate tractor stop lever.

The emergency stop will prevent any more material being fed into the chipper. The rotor will still be turning. The tractor must be disengaged or powered down to stop the rotor.

STOPPING - ROLLERS (ALL MODELS)

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

EMERGENCY STOPPING - ROLLERS (ALL MODELS)

Pushing the red Emergency button on the roller control box will stop the rollers immediately. The button will stay in the “pushed in” position, and will require resetting (pulling out) before being able to restart the roller functions. NOTE - This button does not turn off the engine.

DIESEL TANK INDICATOR

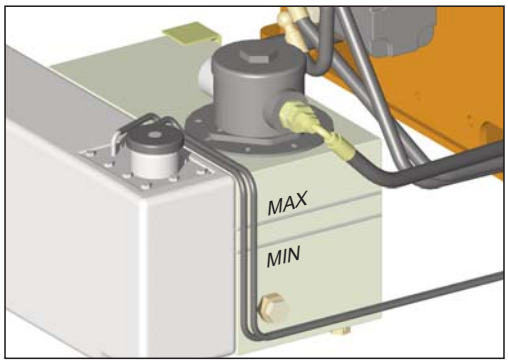
The fuel level can be seen through the wall of the fuel tank.

PETROL TANK INDICATOR

The fuel level may be inspected by removing the fuel filler cap and looking into the tank.

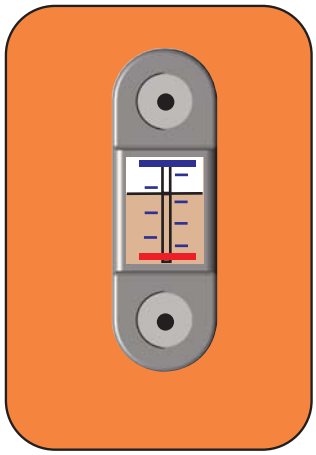
HYDRAULIC OIL LEVEL INDICATOR

The oil level will be visible through the tank wall. It should be within the upper and lower level marks.



HYDRAULIC OIL THERMOMETER / OIL LEVEL INDICATOR (PTO MODELS)

This is situated on the side of the hydraulic oil tank. When the chipper 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 chipper 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.



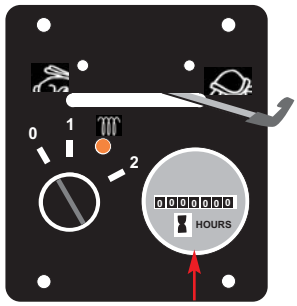
When the chipper is on level ground the oil level should sit between the red line at the bottom of the gauge and the blue line at the top. If this level drops significantly it indicates an oil leak. Stop immediately and investigate.

STARTING THE DIESEL ENGINE

- INSERT key.Turn to heat.
- HEATER LED comes on.
- WAIT FOR HEATER LED TO GO OUT.
- TURN key to start position until it fires.
- RELEASE key.

If the engine fails to start after 10 seconds leave for 1 minute and try again.

Road tow models



HOURS COUNTER

Tracked models

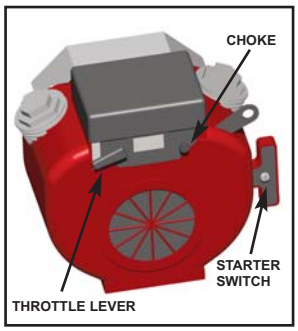
DIESEL ENGINE CONTROLS

A throttle lever controls the engine speed. The road chipper has a lever above the starter switch. The tracked chipper has a level on the bonnet for ease of speed adjustment whilst tracking. The lever at the “hare” position will increase the speed of the engine. The lever at the “tortoise” position will decrease the speed of the engineThe lever must be in the “hare” position whilst chipping. When tracking move the lever to select the appropriate engine speed. Note: while loading the chipper or manoeuvring in confined areas select the lowest engine speed “tortoise” for safer control.

STOPPING THE DIESEL 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.
- REMOVE ignition key.

STARTING THE PETROL ENGINE



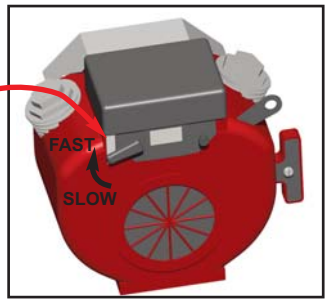
- FOR A COLD ENGINE:
  Place the throttle control at 1/3 throttle and pull the choke out.
  Insert ignition key into starter switch.
  Turn the key to start the engine. Release the key as soon as the engine starts.
  Gradually return the choke to the off position as the engine starts and warms up. Allow the engine to warm up for at least one minute before chipping.
- FOR A WARM ENGINE:
  Follow the instructions for a ‘cold engine’ but return the choke to the off position as soon as the engine starts.

  If engine fails to start after 10 seconds leave for 1minute and try again.

PETROL ENGINE CONTROLS

This label indicates the speed setting of the chipper. With the throttle lever in the fast position (hare) the machine is ready to chip.

When the machine is not in use for short periods of time move the lever to the idle position (tortoise) or turn off completely.



STOPPING THE PETROL ENGINE

- SET engine to idle position.
- SWITCH off and remove ignition key.
- ALLOW to run for at least one full minute.

For more detailed information refer to the Engine Owner’s Manual

CONNECTING TO TRACTOR (PTO MODELS)

Ensure the tractor is turned off and the ignition key removed before connecting the PTO. Rotating machinery can be very dangerous!

PTO SHAFT (PTO MODELS)

- CHECK the angle of the prop shaft when connected to the tractor, which should not exceed 16°.
- CHECK that when the machine is lifted for transport the prop shaft does not reach an angle that causes damage.
- IF the prop shaft is supplied with a torque limiter or clutch, this must be fitted to the chipper end of the drive shaft.

MOVING THE CHIPPER (PTO MODELS)

- DO NOT move the chipper with the rotor running.
- ALWAYS ensure the retaining nuts and clamp are tight when transporting with a discharge tube in place.
- NEVER pull the machine by the red safety bar as linkages will be damaged.

STOPPING THE CHIPPER (PTO MODELS)

- PUSH the RED STOP button (see control panel diagram, page 10).
- SHUT feed funnel.
- KEEPING PTO engaged set tractor speed to idle.
- WHEN idle speed steady stop tractor engine.
- WHEN engine stationary disengage PTO clutch.

WARNING! DO NOT disengage the PTO clutch while engine is running as the chipper cutting disc may continue to free wheel for a long time.

ROLLER CONTROLS (PTO MODELS)

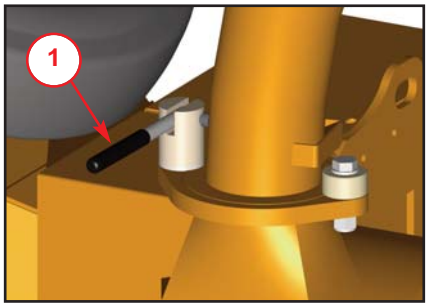
The machine is supplied with an electrical cable to plug into a standard tow socket. The side lights on the tractor MUST work and be turned on for the feed system to work.

DISCHARGE CONTROLS

Controlling the discharge is an essential part of safe working.

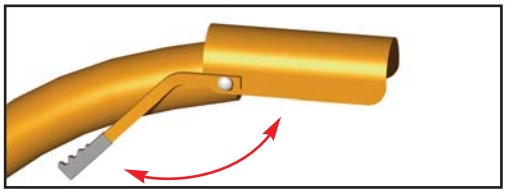
ROTATION

1. Slacken nut using integral handle.
2. Rotate tube.
3. Retighten nut.



BUCKET ANGLE

4. Adjust the bucket to the desired angle using the handle provided.



CRAWLER TRACK CONTROLS (TRACKED MODELS)

WARNING

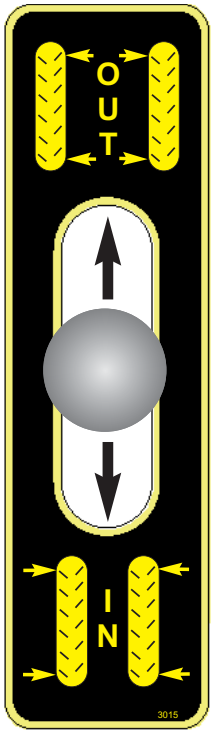
NEVER LEAVE CHIPPER ON A SLOPE UNATTENDED.

The chipper is designed to operate in either chipper or crawler mode, but not both at the same time.

CHIPPING MODE
Power is available to the feed rollers. The cutting disc is rotating but the unit is stationary.

CRAWLER TRACK MODE
Power is available to the crawler tracks. The cutting disc is rotating but the feed rollers are stationary.

To switch between modes, a lever is operated (see diagram below). This is located on the driving control panel (see parts locator on page 3). It is clearly marked.



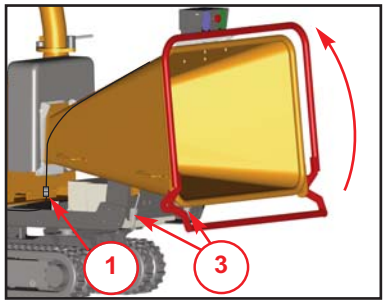
When Track mode is selected the two track control valves may be operated. These have direct control over the track relevant to each side of the machine. They are proportional valves, so increased movement will result in increased track speed.

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

NOTE: Ensure low safety bar on low funnel is rotated into the 'stowed' (up) position prior to tracking to avoid damage to the bar.

For machines fitted with variable tracks, track width adjustment is only possible with the track/chip control in the chip position. Track adjust handle is spring loaded to the middle (see diagram, right). The more you move the handle, the more the tracks adjust. To move the tracks outward, move the track adjust handle *up.* To bring tracks inward, move the track adjust handle *down.*

REMOVING THE FUNNEL (TRACKED MODELS)



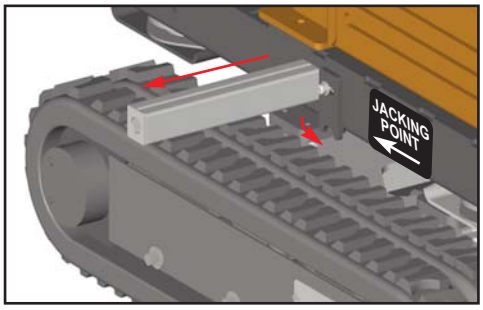
1. DISCONNECT the control box loom from the engine loom at the connection point location under the near side of the funnel.

2a. ON the high funnel / tray, ensure tray is closed and catches are latched.
2b. ON the low funnel, rotate low safety bar into its 'stowed' (up) position.

3. RELEASE the two catches that secure the funnel to the chassis, located underneath funnel. (Only one catch on high funnel).

4. WITH two people in position, lift the funnel by the handles (if fitted), ensure the wide end is lifted first then release the narrow end from the roller box assembly.

CHASSIS JACKING POINT (TRACKED MODELS)



1. LOOSEN the cover plate bolt on the appropriate side of the chipper.

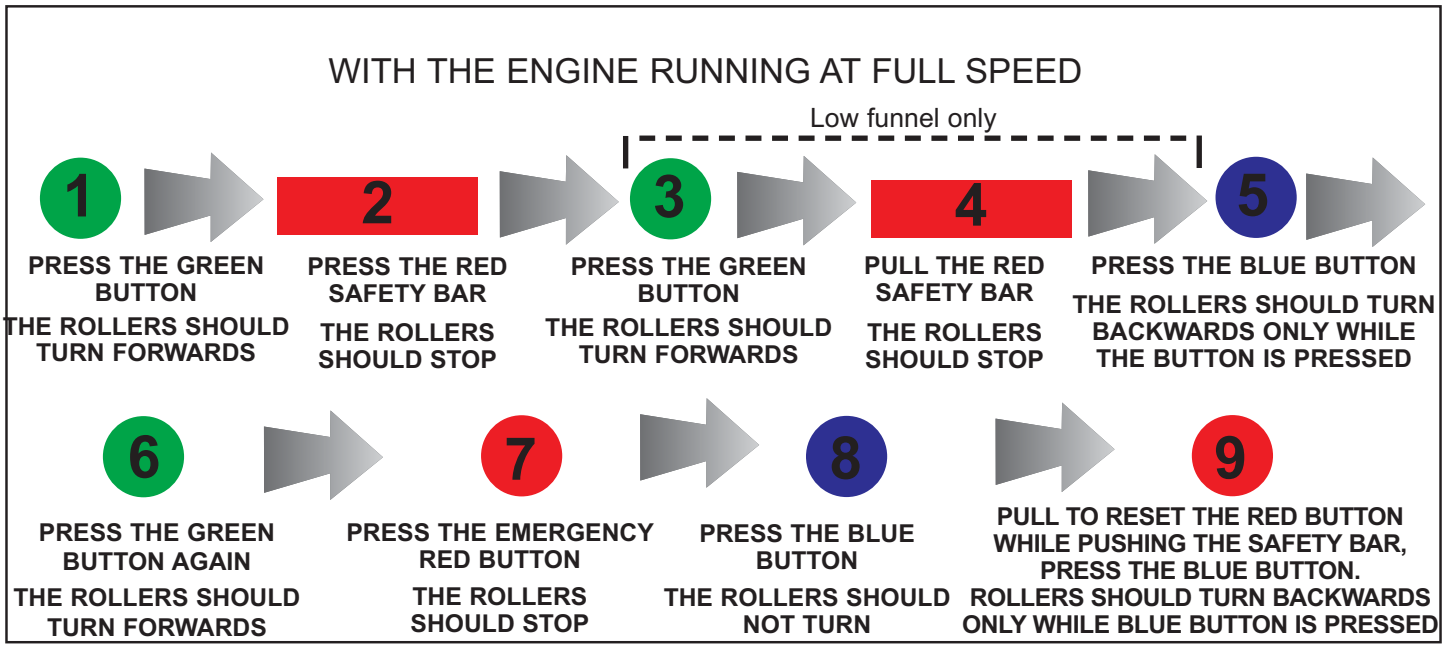
2. ROTATE cover plate, allowing it to remain attached to the chassis.

3. PULL the jacking beam from the access hole to its fullest extent (approx 300 mm).

4. AFTER use, push beam back into access hole and secure cover plate.

BEFORE USING THE CHIPPER

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 CHIP

WARNING

Ensure feed funnel, feed tray, feed roller guard, prop shaft guards and access covers are fitted and secure, and that the discharge unit is fitted and pointing in a safe direction. Failure to do so may result in personal injury or loss of life.

For PTO models:

- START tractor.
- GENTLY engage PTO clutch.
- INCREASE tractor revs until tractor PTO speed = 540 rpm.
- ***DO NOT RUN ON ANY OTHER PTO SPEED SETTING.***

For all 125/150 models:

- CHECK that chipper is running smoothly.
- RELEASE the catch on the feed tray and lower.
- PULL to release the red stop button, perform safety bar tests (as shown below).
- PRESS the green control button. The rollers will commence turning.
- STAND to one side of the feed funnel.
- PROCEED to feed material into the feed funnel.

CHIPPING

Wood up to 150 mm diameter can be fed into the feed funnel. Put the butt end in first and engage it with the feed roller. The hydraulic feed rollers will pull the branch into the machine quite quickly. Large diameter material will have its feed rate automatically controlled by the engine management unit. For PTO models large diameter material will have its feed rate automatically controlled depending on the tractor power available.

Sometimes a piece of wood that is a particularly awkward shape is too strong for the feed rollers to break. This will cause the top roller to either bounce up and down on the wood or both rollers to stall. If this occurs press the BLUE REVERSE button until the material has been released. Pull the material out of the feed funnel and trim it so the chipper can handle it.

Both feed rollers should always turn at the same speed. If one or both rollers stop or suddenly slow down it may be that a piece of wood has become stuck behind one of the rollers. If this occurs press the BLUE REVERSE button and hold for 2 seconds - then repress GREEN FEED button. This should enable the rollers to free the offending piece of material and continue rotation at the correct speed. If the rollers continue to stall in the 'forward feed' or 'reverse feed' position push the RED STOP BUTTON, turn engine off (tractor engine if PTO model), remove ignition key and investigate.

BLOCKAGES

Always be aware that what you are putting into the chipper must come out. If the chips stop coming out of the discharge tube but the chipper is taking material in - STOP IMMEDIATELY. Continuing to feed material into a blocked machine may cause damage and will make it difficult to clear.

- STOP the engine (or tractor if PTO) and remove the ignition keys.
- ENSURE tractor engine (if PTO) has come to a complete stop.
- REMOVE the discharge tube. Check that it is clear.
- WEARING gloves, reach into the rotor housing and scoop out the majority of the debris causing the blockage.
- REPLACE the discharge tube.
- RESTART the engine and increase to full speed, if PTO restart the tractor engine and increase revs to achieve PTO speed of 540 rpm.
- ALLOW machine time to clear excess chips still remaining in rotor housing before you continue feeding brushwood. Feed in a small piece of wood whilst watching to make sure that it comes out of the discharge. If this does not clear it, repeat the process and carefully inspect the discharge tube to find any obstruction.

WARNING

Do not reach into the rotor housing with unprotected hands. There are sharp blades and any small movement of the rotor may cause serious injury.

NOTE: Continuing to feed the chipper with brushwood once it has become blocked will cause the chipper to compact the chips in the rotor housing 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 CHIPPER.

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 WOODCHIPPERS. YOU ARE STRONGLY ADVISED TO TAKE YOUR CHIPPER 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 CHIPPERS 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, MAY INVALIDATE WARRANTY IN WHOLE OR IN PART.

PLEASE REFER TO YOUR AUTHORISED TIMBERWOLF SERVICE AGENT FOR SERVICE AND MAINTENANCE.

SERVICE INSTRUCTIONS 25

WARNING

Always immobilise the machine by stopping the engine, removing the ignition key and disconnecting the battery before undertaking any maintenance work.

For PTO models always immobilise the machine by stopping the tractor and removing the ignition key before undertaking any maintenance work. When the tractor is stopped it will be necessary to disengage the PTO so that the rotor can be turned.

SERVICE SCHEDULE	Daily Check	50 Hours	100 Hours	500 Hours	1 Year
Check water.	✓				
Check radiator is clear.	✓				
Check engine oil - top up if necessary (10W-30).	✓				
Check for engine oil / hydraulic oil leaks.	✓				
Check fuel level.	✓				
Check feed funnel, feed roller cover, access covers, engine covers and discharge unit are securely fitted.	✓				
Check blades.	✓				
Clean air filter element.	DEPENDING ON WORKING ENVIRONMENT				
Check tyre pressure is 2.2 Bar (32 psi).	✓				
Check safety bar mechanism.	✓				
Check hoses for signs of chafing or leakage.		✓			
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).		✓			
Grease the roller box slides.		✓ OR AS REQUIRED - SEE PAGE 24			
Grease the roller spline and bearing.		✓ OR AS REQUIRED - SEE PAGE 24			
Check safety bar mechanism.			✓		
Check fuel pipes and clamp bands.			✓		
Check battery electrolyte level.			✓		
Replace track drive unit oil.		(1ST TIME)	✓ THEN	✓ *OR*	✓
Replace hydraulic oil filter - every year or 100 hours after service or repair work to the hydraulic system.				✓ *OR*	✓
Replace hydraulic oil.				✓ *OR*	✓
Replace fuel pipes and clamp bands.	REFER TO YOUR ENGINE SUPPLIERS MANUAL				
Check coolant.					
Change engine oil.					
Replace engine oil filter cartridge.					
Check valve clearance.					
Replace anvils.	RETURN TO DEALER - 1500 HRS OR 3 YRS				
Axle maintenance.	REFER TO SUPPLIERS INSTRUCTION SHEET				
Tow head maintenance.					
Grease tandem pump spline drive.					✓

PTO models only - Lubricate PTO shaft coupling grease nipples every 16 hours.

NOTE: Your Timberwolf woodchipper 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.

Blue text = Road tow models only

Red text = Tracked models only

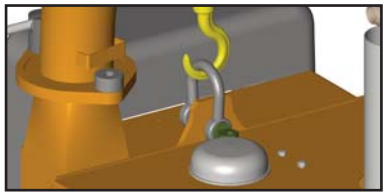
SAFE MAINTENANCE

ALWAYS IMMOBILISE THE ENGINE OR TRACTOR BEFORE UNDERTAKING ANY MAINTENANCE WORK ON THE CHIPPER BY REMOVING THE KEY AND DISCONNECTING THE NEGATIVE LEAD AT THE BATTERY.

- ALWAYS stop the tractor engine before installing or removing the prop shaft (PTO models).
- HANDLE blades with extreme caution to avoid injury. Gloves should always be worn when handling the cutter blades.
- AVOID contact with hydraulic oil and fuel.
- THE drive belts should be connected while changing blades, as this will restrict sudden movement of the rotor.
- THE major components of this machine are heavy. Lifting equipment must be used for disassembly.
- CLEAN machines are safer and easier to service.

SAFE LIFTING OF THE CHIPPER

The lifting eye is designed to lift the machine's weight only. Do not use hoist hook directly on the lifting eye, use a correctly rated safety shackle. Inspect the lifting eye prior to each use - DO NOT USE LIFTING EYE IF DAMAGED.



SPARES

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

CHECK FITTINGS

Timberwolf TW 125 & 150 models are subject to vibration 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 required torque (see 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 lbft	Torque Nm
Blade Bolts	M10	Standard	T50 Torx	45	61
Hyd Motor Retaining Bolts	M10	Standard	17mm Hex	34	46
Funnel Retaining Nuts	M12	Standard	17mm Hex	38	51
General	M8	Standard	13 mm Hex	17	23
General	M10	Standard	17 mm Hex	34	46
General	M12	Standard	19 mm Hex	60	80
Drain Bung in Fuel Tank	3/8" BSP	-	22 mm Hex	25	33.8

GREASING ROTOR BEARINGS

Both front and rear bearings are sealed and do not need greasing.

ENGINE MANUFACTURER'S HANDBOOK

Refer to your Engine Manufacturer's Handbook for detailed instructions on the following:

- Changing the fuel filter.
- Checking the engine oil.
- Changing the engine oil.
- Changing the engine oil filter.

CHECK HOSES

All the hydraulic hoses should be regularly inspected for chafing and leaks. The hydraulic system is pressurized to over 150 Bar (2175 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.

BATTERY REMOVAL AND MAINTENANCE - 125 MODELS

WARNING

Refer to the battery safety section on pages 16-17.

1. Remove the four M8 screws that retain the battery box top.
2. Remove the negative lead first and then the positive lead.
3. Clean, charge and/or top up the battery as required.
4. Refitting is the reverse of removal. Apply a smear of petroleum jelly to the terminals to prevent corrosion.

BATTERY REMOVAL AND MAINTENANCE - 150 ROAD TOW MODELS

WARNING

Refer to the battery safety section on pages 16-17.

1. Remove the four M8 screws that retain the battery box top.
2. Remove the negative lead first and then the positive lead.
3. Clean, charge and/or top up the battery as required.
4. Refitting is the reverse of removal. Apply a smear of petroleum jelly to the terminals to prevent corrosion.

BATTERY REMOVAL AND MAINTENANCE - TRACKED MODELS

WARNING

Refer to the battery safety section on pages 16-17.

BATTERY REMOVAL

1. Remove the seven M6 bolts securing the tracking controls front guard.
2. Remove the two M10 bolts securing the battery clamp.
3. Remove the negative battery lead.
4. Remove the positive battery lead.

BATTERY MAINTENANCE

1. Remove the seven M6 bolts securing the tracking controls front guard.

   When reinstalling the battery apply a small smear of Vaseline to the terminals.

2. The battery can be serviced in this position.

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 saftey 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 industial waste (be aware of the possible existance 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 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 SAFETY INFORMATION

WARNING NOTES AND SAFETY REGULATIONS FOR FILLED LEAD-ACID BATTERIES

For safety reasons, wear eye protection when handling a battery.

Keep children away from acid and batteries.

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, otherwise:

Explosion hazard:
-A highly explosive oxyhydrogen gas mixture is produced when batteries are charged.

Corrosive hazard:
-Battery acid is highly corrosive, therefore:
-Wear protective gloves and eye protection.
-Do not tilt the battery, acid may escapefrom the vent openings.

First aid:
-Rinse off acid splashed in the eyes immediately for several minutes with clear water! Then consult a doctor immediately.
-Neutralise acid splashes on the skin or clothes immediately with acid neutraliser (soda) or soap suds, and rinse with plenty of water.
-If acid is swallowed, consult a doctor immediately.

Warning notes: The battery case can become brittle, to avoid this:

-Do not store batteries in direct sunlight.
-Discharged batteries may freeze up, therefore store in an area free from frost.

Disposal:
-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.

BATTERY SAFETY INFORMATION...cont.

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.

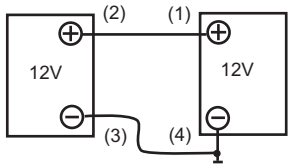
2. Initial operation
- The batteries are filled with acid at a density of 1.28g/ml during the manufacturing process and are ready for use.
- Recharge in case of insufficient starting power (cf. section 4).

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° Celsuis, 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 (cf. section 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.



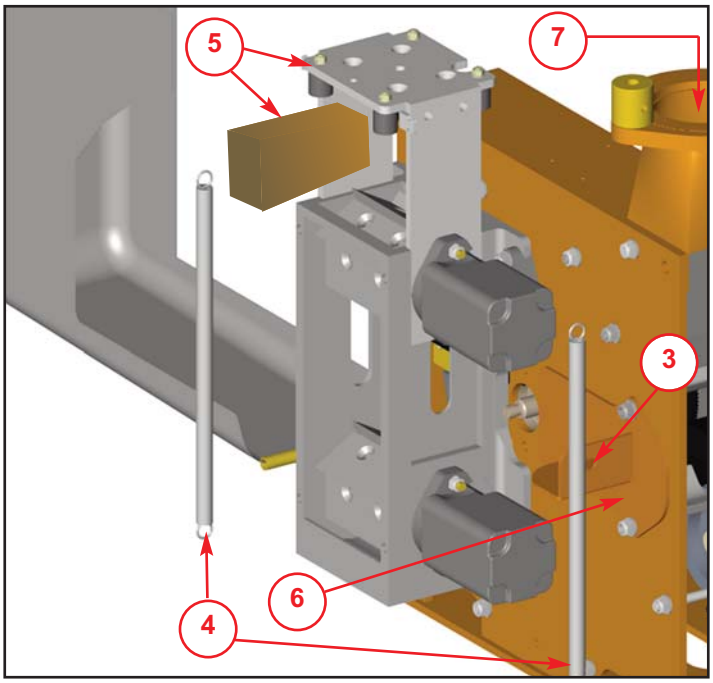
- Start the engine of the vehicle providing assistance, then start the engine of the vehicle requiring assistance for a maximum of 15 seconds.
- Disconnect the cables in reverse sequence (4-3-2-1).

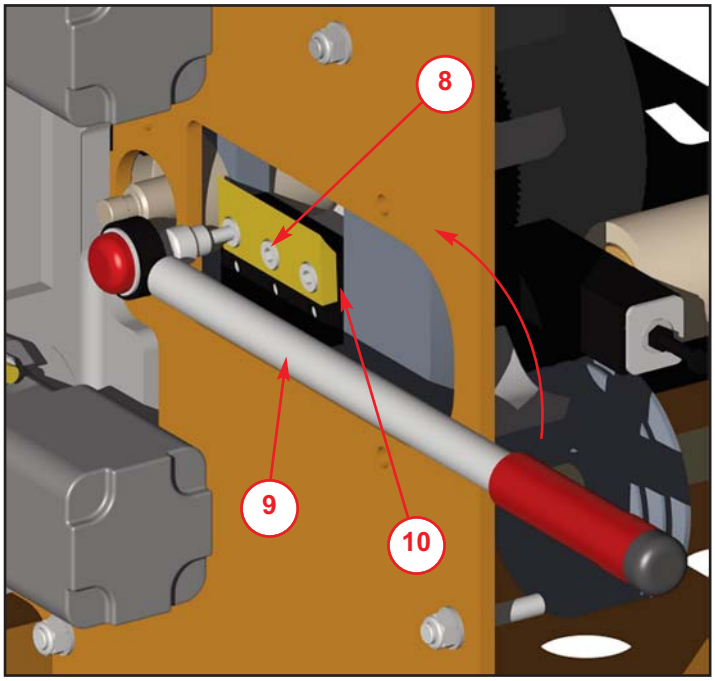
7. Taking the battery out of service
- Charge the battery; store in a cool place or in the vehicle with the negative terminal disconnected.
- Check the battery state of charge at regular intervals, and correct by recharging when necessary (cf. section 4).

CHANGE BLADES (ALL MODELS)

WARNING

Wear riggers gloves for the blade changing operation.



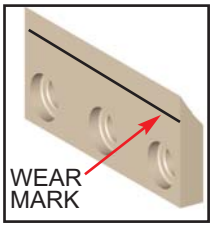


1. Turn the chipper (or tractor if PTO) off and remove the ignition keys.
2. Remove battery leads (or if PTO remove PTO shaft).
3. Remove bolt and washer retaining roller box guard and lift guard.
4. Remove the two springs on the roller box slide.
5. ***NOTE: Rollerbox slide weighs in excess of 20kg.*** Lift the roller box slide and wedge a suitably sized piece of wood to hold in place.
6. Remove blade access cover.
7. Remove discharge tube. Turn the rotor by hand by grasping fan section on rear of rotor disc until blade is visible through aperture.
8. Use a small screwdriver to remove sap and debris from Torx socket in screw - be particularly careful to ensure every last piece has been removed.
9. Undo blade screws using Torx socket drive provided. Rotor will turn until Torx socket has located on machine.
10. **Before fitting replacement blades carefully clean blade recess in rotor so that no debris is trapped between blade and rotor.**
11. When fitting blades replace any damaged screws with new and coat each screw with copperslip over the whole of the thread.
12. **Retighten each screw to 60Nm (45lbs ft).**

    NOTE: This torque setting is vitally important to ensure your bolts come out at a later date,Timberwolf recommend you purchase a torque wrench for this and other jobs on the chipper.
13. Grease all surfaces of the roller box sliding mechanism (see diagram on page 21).
14. Replace blade access cover.
15. ***NOTE: Rollerbox weighs in excess of 20kg.*** Remove wedge, lower roller and replace springs (take care when lowering the slide as it weighs in excess of 20kg).
16. Close roller box guard making sure that it is located over the retaining bracket, and ensure bolt and washer (as note 3) are tightened.
17. Refit battery leads (or if PTO remove PTO shaft).

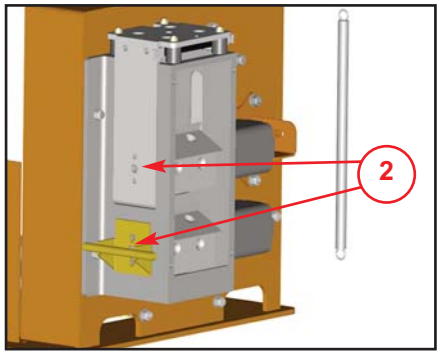
WARNING

Always sharpen blades on a regular basis. Failure to do so will cause the machine to under perform and will overload engine and bearings causing machine breakdown. Blades must not be sharpened beyond the wear mark (see diagram). Failure to comply with this could result in machine damage, injury or loss of life.



GREASE THE ROLLER SPLINE AND BEARING (ALL MODELS)

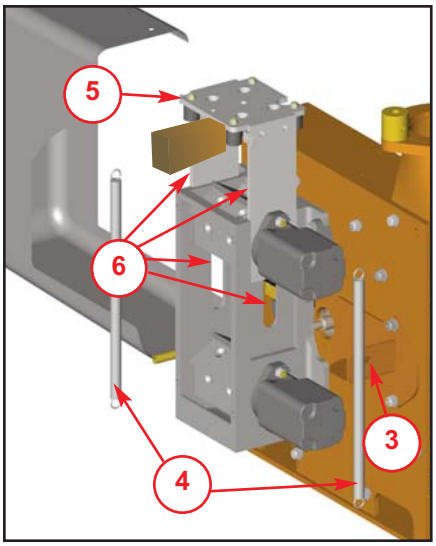
NOTE: This should be done regularly. In dirty and dusty conditions or during periods of hard work it should be weekly. If the bearings and splines are allowed to run dry premature wear will occur resulting in a breakdown and the need for replacement parts. This failure is not warranty. Early signs of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



1. Remove bolt and washer retaining roller box guard and lift guard (see diagram on page 18).
2. Locate two grease nipples; one in the centre of each roller shaft.
3. Use a pump action grease gun to apply a generous amount of grease to each roller drive. **DO NOT USE GRAPHITE BASED GREASE.** After applying grease, to penetrate all the bearing surfaces thoroughly, start the machine and operate the rollers for 20 seconds. Switch off the machine. Repeat this greasing/running procedure a further 3 times.
4. Close roller box guard making sure that it is located over the retaining bracket, and ensure bolt and washer are tightened.

GREASE THE ROLLER BOX SLIDES (ALL MODELS)

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

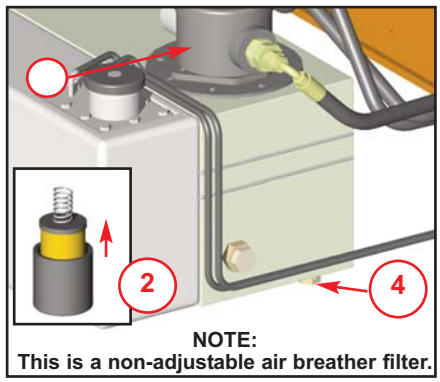


1. Turn the chipper (or tractor if PTO) off and remove the ignition keys.
2. Ensure machine has come to a complete stop - remove battery leads (or power cable if PTO).
3. Remove the bolt and washer retaining roller box guard and lift guard.
4. Remove the two springs on the roller box slide.
5. ***NOTE: Rollerbox slide weighs in excess of 20kg.*** Lift the top roller and wedge a suitably sized piece of wood to hold in place.
6. Apply thin grease with a brush to each slide on roller box and on inner cheeks of slider. **DO NOT USE GRAPHITE BASED GREASE.**
7. ***NOTE: Rollerbox slide weighs in excess of 20kg.*** Remove wedge, lower roller box slide and replace springs.
8. Close roller box guard making sure that it is located over the retaining bracket, and ensure bolt and washer (as note 3) are tightened.
9. Refit battery leads (or power cable if PTO).

CHANGE HYDRAULIC OIL AND FILTER (ROAD AND TRACKED MODELS)

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 chipper is standing level and brush away loose chips.



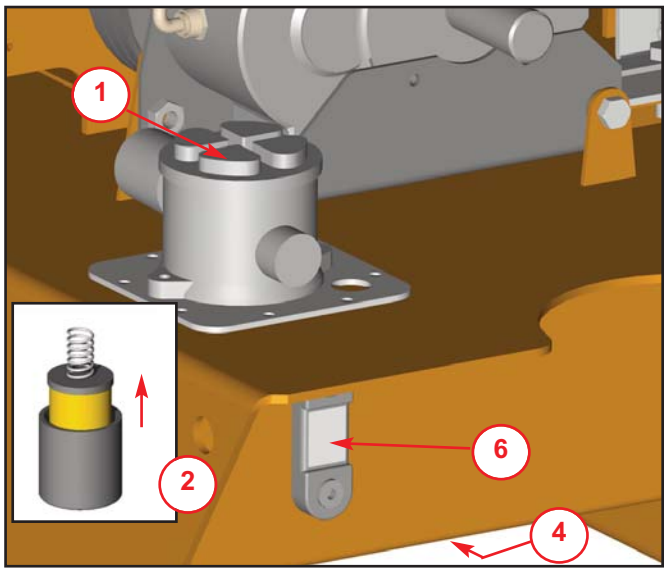
NOTE:
This is a non-adjustable air breather filter.

1. Remove the black screw cap from the top of the filter housing.
2. Partially remove filter element from inner cup. Leave filter to drain for 15 minutes.
3. Remove filter element from cup when clear of hydraulic oil.
4. Remove drain plug and drain oil into a suitable container.
5. Replace drain plug.
6. Refill with VG 32 hydraulic oil until the level is between the min and max marks (about 15 litres).
7. 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.

CHANGE HYDRAULIC OIL AND FILTER (PTO MODELS)

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 chipper is standing level and brush away loose chips.



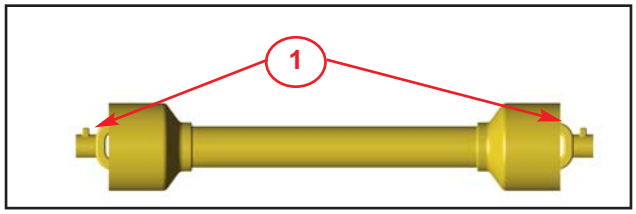
NOTE: This is a non-adjustable air breather filter.

1. Remove the black screw cap from the top of the filter housing.
2. Partially remove filter element from inner cup. Leave filter to drain for 15 minutes.
3. Remove filter element from cup when clear of hydraulic oil.
4. Remove drain plug and drain oil into a suitable container.
5. Replace drain plug.
6. Refill with VG 32 hydraulic oil until the level is half way up the sight glass (about 15 litres).
7. 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.

PTO DRIVE SHAFT MAINTENANCE (PTO MODELS)

1. Lubricate regularly. At least every 16 hours on coupling grease nipples and 8 hours on all other lubricated points.

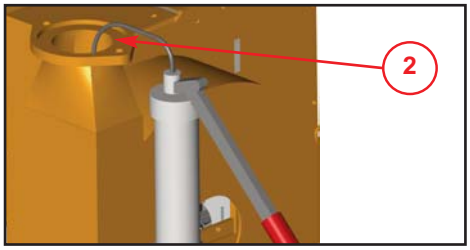
   Replace prop shaft shear bolts only with correct grade of bolt available from the shaft supplier.



SEE SEPARATE PROP SHAFT INSTRUCTION SHEET FOR FULL DETAILS.
Further information on the safe use of PTO shafts can be found in HSE leaflet AS 24

GREASE THE DISCHARGE FLANGE (ALL MODELS)

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



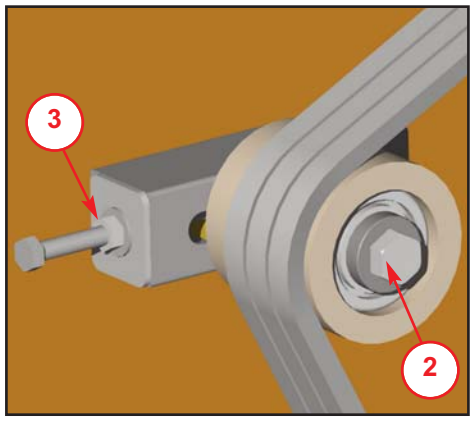
TENSION DRIVE BELTS

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. For instructions on checking belt tension & correct belt tension values, please refer to the Timberwolf V-Belt Tensioning Data Table (page 65).

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

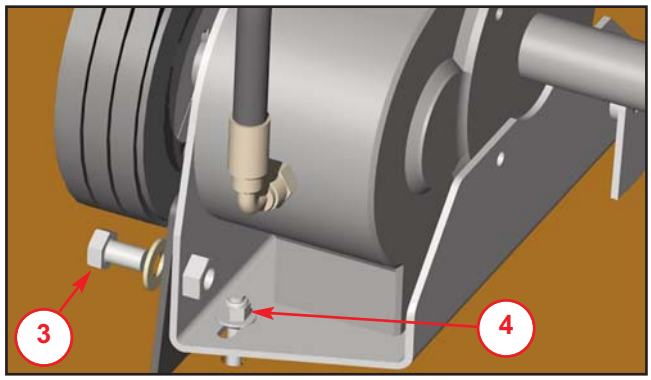
TENSION DRIVE BELTS - 125 & 150 MODELS

1. Remove belt guard (125 models) Remove side panel (150 models).
2. Loosen bolt in centre of tensioner pulley with a 19 mm spanner so that pulley is able to slide with minimal wobble.
3. Turn nut in end of tensioner pulley slider until correct belt tension is achieved.
5. Re-tighten bolt in centre of tensioner pulley.
6. Refit belt guard (125 models) Refit side panel (150 models).
7. Run machine and test, recheck belt tension.
8. NOTE: Slack drive belts will cause poor performance and excess belt and pulley wear.



TENSION DRIVE BELTS - PTO MODELS

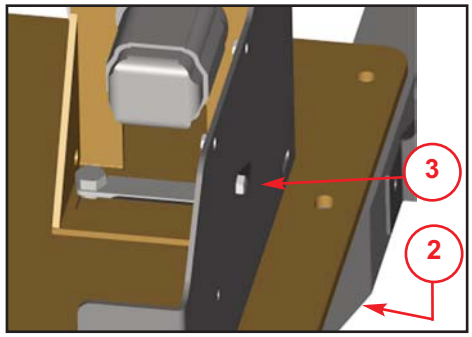
1. Remove the belt guard.
2. Check the belt tension. For instructions on checking belt tension & correct belt tension values, please refer to the Timberwolf V-Belt Tensioning Data Table (pg 36).
3. Loosen the M12 Bolt.
4. Adjust the belt tension by tightening the nut clamping the bracket to the base.
5. Re-tighten the M12 Bolt.
6. Refit belt guard.



N.B. *Early models were fitted with a gearbox on a slider. The belt tensioner for these models is located on the slide plate.*

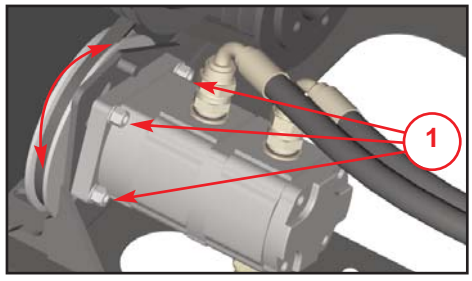
TENSION HYDRAULIC PUMP BELT - 125 & PTO MODELS

1. Remove belt guard.
2. Access the two nuts on the under side of the chassis and slacken using a 19 mm socket spanner.
3. Adjust the M8 bolt on the outside plate until the desired tension is achieved.
4. Retighten the two nuts to (80 Nm) 60 lbs/ft.
5. Refit belt guard.



TENSION HYDRAULIC PUMP BELT - TRACKED MODELS

1. Loosen the three outermost M8 nuts and bolts.
2. Pivot pump assembly up or down to achieve the correct belt tension.
3. Hold assembly at this position while tightening the three M8 nuts and bolts.



TRACK BASE MAINTENANCE (TRACKED MODELS)

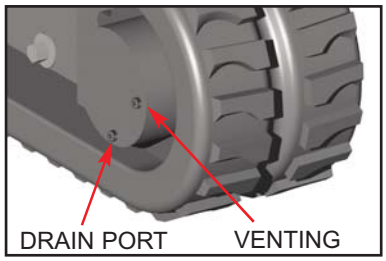
SAFE MAINTENANCE

- 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.
- Keep the tracks clean, removing excess oil, grease and dirt.
- Check for oil leaks and damaged hoses.
- Only use recommended lubricants. Do not mix different brands.
- Keep track adjuster grease nipples clean.

Maintenance intervals are only guidelines. The amount of times maintenance is conducted should be increased beyond recommended guidelines if severe conditions are encountered. Dispose of lubricants only in accordance with current environmental protection regulations.

DRAINING THE OIL IN THE TRACK DRIVE UNIT (TRACKED MODELS)

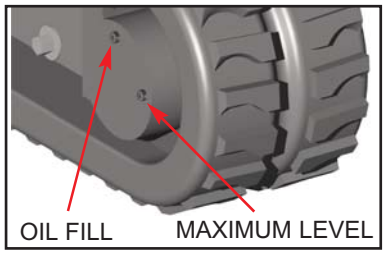
To drain the oil, track the machine until a plug is at 6 o'clock as shown. Unscrew both plugs and allow oil to discharge into a suitable container. Dispose of waste oil in a safe and approved way.



REPLACEMENT OF OIL IN THE TRACK DRIVE UNIT (TRACKED MODELS)

To fill with oil, track the chipper 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. Replace both plugs before moving.

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



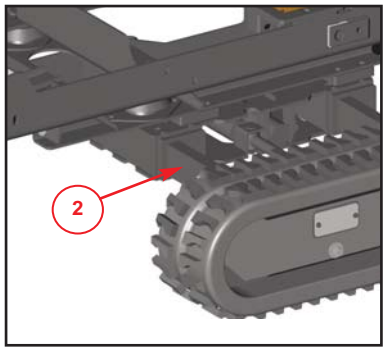
REDUCTION UNIT OIL TYPES (TRACKED MODELS)

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.

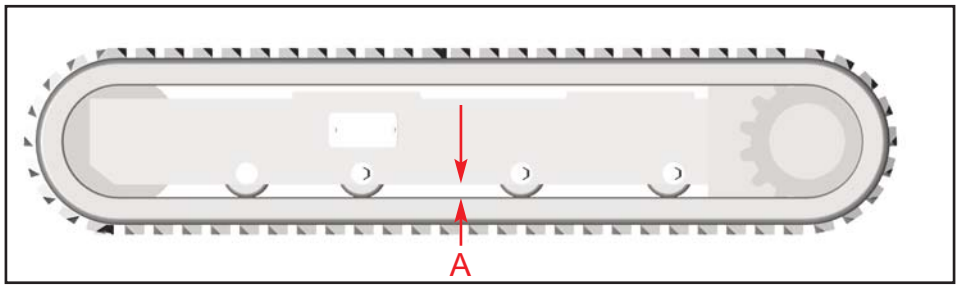
LUBRICATE VARIABLE TRACK BASE SLIDES (TRACKED MODELS)

The variable track base slides must be lubricated weekly or more often depending working conditions to prevent jamming.

1. Extend tracks fully.
2. Using a brush, generously coat all surfaces of the four slider bars with general purpose grease. **DO NOT USE GRAPHITE BASED GREASE.**
3. Retract the tracks fully.
4. Cycle tracks in and out two more times.



CHECKING 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).

(Be aware the track may be too tight or loose).

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) more than necessary 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 is within specified values.

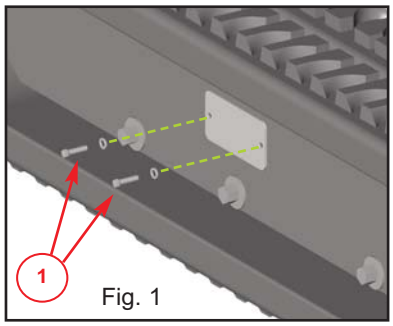
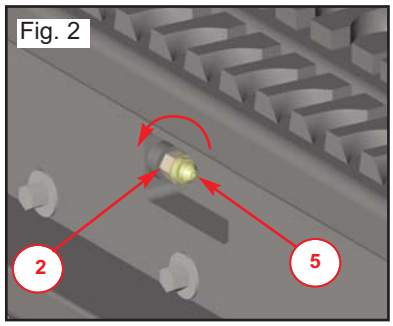


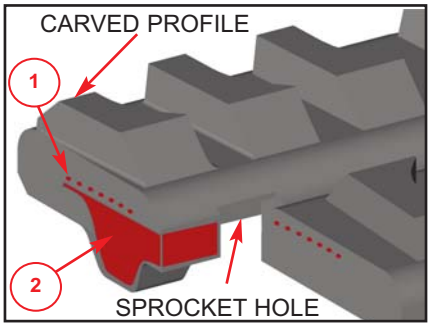
Fig. 1



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 tile 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.

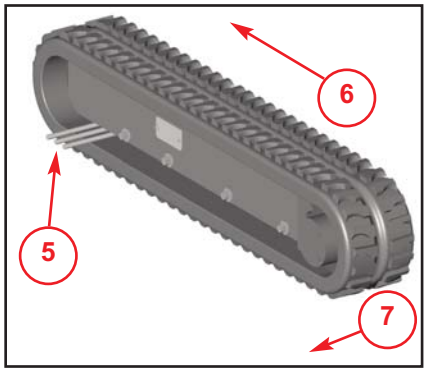
Cracks on the outside surface of the track are often due to contact with gravel, sharp stones and sharp materials such as sheet metal, nails and glass.

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 26).
3. To loosen a track slowly unscrew valve counter-clockwise (Fig. 2, page 26) only as many turns as necessary to release grease, (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.

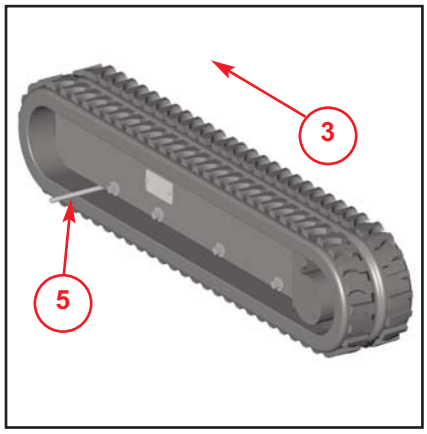
WARNING

The grease contained in the tension ram is under pressure. Never loosen the grease valve for more than 5 turns. If the valve is loosened too much then pressurized grease may exit and cause injury to the mechanic. 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 26).
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.

ENVIRONMENTAL MANUFACTURING LLP 12 MONTH CHIPPER WARRANTY

WARRANTY PERIOD

The warranty period for the woodchipper commences on the date of sale to the first end user and continues for a period of 12 months. This guarantee is to the first end user only and is not transferable except when an authorised Timberwolf Dealer has a woodchipper registered with Environmental Manufacturing LLP as a hire chipper or long term demonstrator – in these situations they are duly authorised to transfer any remaining warranty period to their first end user. Any warranty offered by the Timberwolf Dealer beyond the original 12 month period will be wholly covered by said Dealer.

LIABILITY

Our obligation under this warranty is limited to repair at Environmental Manufacturing LLP premises or at our option an Environmental Manufacturing LLP approved Timberwolf dealer. No liability will be accepted for special, indirect, incidental, or consequential loss or damages of any kind.

WARRANTY STATEMENT

Environmental Manufacturing LLP warrants to the first end user that;
-Your woodchipper shall be designed, built and equipped, at the point of sale, to meet all current applicable regulations.
-Your chipper shall be free from manufacturing defects both in materials and workmanship in normal service for the period mentioned above.

Warranty will not apply to a failure where normal use has exhausted the life of a component.

Engine units are covered independently by their respective manufacturer warranties.

OWNERS WARRANTY RESPONSIBILITIES

As the owner of an Environmental Manufacturing LLP woodchipper you are responsible for the following;
-Operation of the woodchipper in accordance with the Environmental Manufacturing LLP instruction manual.
-Performance of the required maintenance listed in your Environmental Manufacturing LLP instruction manual.
-In the event of a failure the Environmental Manufacturing LLP authorised Timberwolf dealer is to be notified within 10 days of failure and the equipment is to be made available for unmolested inspection by the dealer technician.

WARRANTY RESTRICTIONS

The Environmental Manufacturing LLP warranty is restricted to the first end user only and is not transferable except when an authorised Timberwolf Dealer has a woodchipper registered with Environmental Manufacturing LLP as a hire chipper or long term demonstrator – in these situations they are duly authorised to transfer any remaining warranty period to their first end user.

The Environmental Manufacturing LLP warranty may be invalidated if any of the following apply;
-The failed parts or assembly is interfered with in any way.
-Normal maintenance has not been performed.
-Incorrect reassembly of components.
-The machine has undergone modifications not approved in writing by Environmental Manufacturing LLP.
-In the case of tractor driven equipment, use has been on an unapproved tractor.
-Conditions of use can be deemed abnormal.
-The machine has been used to perform tasks contrary to those stated in the Environmental Manufacturing LLP instruction manual.

WARRANTY SERVICE

To obtain warranty service please contact your nearest Environmental Manufacturing LLP approved Timberwolf dealer. To obtain details of the nearest facility please contact Environmental Manufacturing LLP at the address on the front of this manual.
These warranty terms are in addition to and not in substitution for and do not affect any right and remedies which an owner might have under statute or at common law against the seller of the goods under the contract by which the owner acquired the goods.

Environmental Manufacturing LLP
Entec House,
Tomo Industrial Estate,
Stowmarket,
Suffolk IP14 5AY
Tel: 01449 765800 Fax: 01449 765801

E C Declaration of Conformity

CE

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 portable machine intended to chip up tree waste prior to disposal.
Model	:	TW 125PH
Serial No.		*Serial Manufacture*

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

BS EN 12100-1: 2003 Safety of Machinery- Basic concepts, BS EN 13857-1: 2008 Safety of Machinery-Safety distances to danger zones, BS EN 60204-1: 1998 Safe electrical practices, BS EN 13732-1:2006 Safety of Machinery – Temperatures of touchable surfaces, BS EN 13849-1: 2008 – Safety of Machinery – Safety related parts of control systems, BS EN 982: 1996 – Safety of Machinery – Hydraulics, BS EN 1088: 1995 – Safety of Machinery – Interlocking devices, BS EN 13525: 2005 – Forestry Machinery – Wood chippers – Safety.

"Responsible" Person empowered to sign: _____ Mr. Jeff Haines

Position in Company: Technical Director

Date: 1st December 2009

Environmental Manufacturing LLP CE cert

Environmental Manufacturing LLP
Entec House,
Tomo Industrial Estate,
Stowmarket,
Suffolk IP14 5AY
Tel: 01449 765800 Fax: 01449 765801

EC Declaration of Conformity

CE

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 portable machine intended to chip up tree waste prior to disposal.
Model	:	TW 150DH & DHB
Serial No.	:	*Serial Manufacture*

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

BS EN 12100-1: 2003 Safety of Machinery- Basic concepts, BS EN 13857-1: 2008 Safety of Machinery-Safety distances to danger zones, BS EN 60204-1: 1998 Safe electrical practices, BS EN 13732-1:2006 Safety of Machinery – Temperatures of touchable surfaces, BS EN 13849-1: 2008 – Safety of Machinery – Safety related parts of control systems, BS EN 982: 1996 – Safety of Machinery – Hydraulics, BS EN 1088: 1995 – Safety of Machinery – Interlocking devices, BS EN 13525: 2005 – Forestry Machinery – Wood chippers – Safety.

"Responsible" Person empowered to sign: _____ Mr. Jeff Haines

Position in Company: Technical Director

Date: 1st December 2009

Environmental Manufacturing LLP CE cert

Environmental Manufacturing LLP
Entec House,
Tomo Industrial Estate,
Stowmarket,
Suffolk IP14 5AY
Tel: 01449 765800 Fax: 01449 765801

E C Declaration of Conformity

CE

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 portable machine intended to chip up tree waste prior to disposal.
Model	:	TW 150 VTR/FTR
Serial No.		*Serial Manufacture*

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

BS EN 12100-1: 2003 Safety of Machinery- Basic concepts, BS EN 13857-1: 2008 Safety of Machinery-Safety distances to danger zones, BS EN 60204-1: 1998 Safe electrical practices, BS EN 13732-1:2006 Safety of Machinery – Temperatures of touchable surfaces, BS EN 13849-1: 2008 – Safety of Machinery – Safety related parts of control systems, BS EN 982: 1996 – Safety of Machinery – Hydraulics, BS EN 1088: 1995 – Safety of Machinery – Interlocking devices, BS EN 13525: 2005 – Forestry Machinery – Wood chippers – Safety.

"Responsible" Person empowered to sign: _____ Mr. Jeff Haines

Position in Company: Technical Director

Date: 1st December 2009

Environmental Manufacturing LLP CE cert

Environmental Manufacturing LLP
Entec House,
Tomo Industrial Estate,
Stowmarket,
Suffolk IP14 5AY
Tel: 01449 765800 Fax: 01449 765801

E C Declaration of Incorporation

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	:	Unpowered portable machinery designed to be incorporated into a suitable PTO power source, and chip up tree waste prior to disposal.
Model	:	TW PTO 150H
Serial No.		*Serial Manufacture*

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

BS EN 12100-1: 2003 Safety of Machinery- Basic concepts, BS EN 13857-1: 2008 Safety of Machinery-Safety distances to danger zones, BS EN 60204-1: 1998 Safe electrical practices, BS EN 13732-1:2006 Safety of Machinery – Temperatures of touchable surfaces, BS EN 13849-1: 2008 – Safety of Machinery – Safety related parts of control systems, BS EN 982: 1996 – Safety of Machinery – Hydraulics, BS EN 1088: 1995 – Safety of Machinery – Interlocking devices, BS EN 13525: 2005 – Forestry Machinery – Wood chippers – Safety.

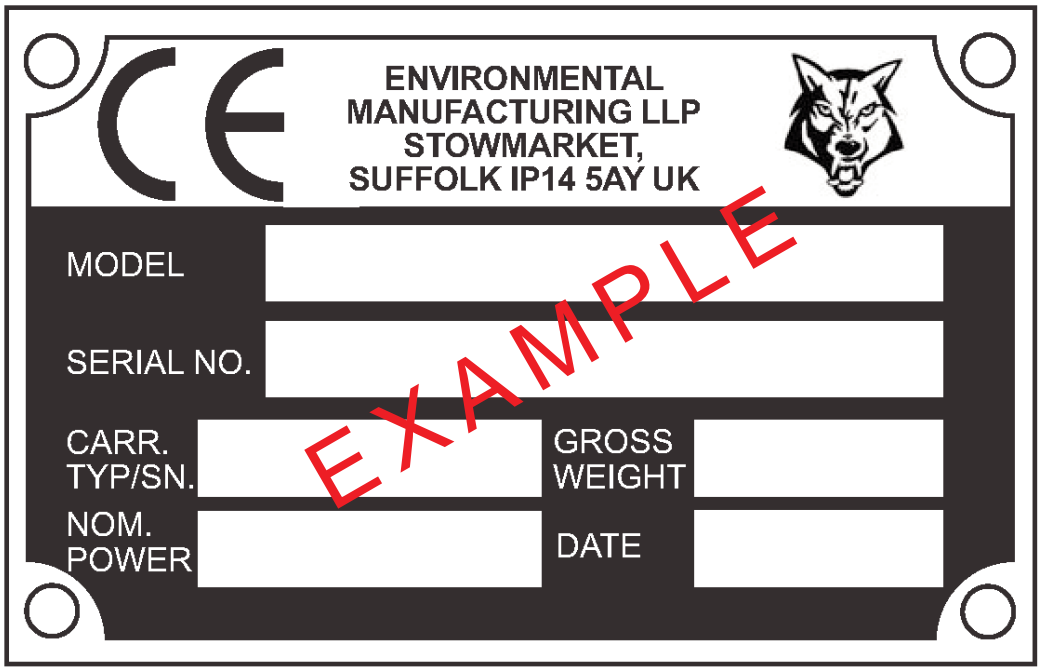
"Responsible" Person empowered to sign: _____ Mr. Jeff Haines

Position in Company: Technical Director

Date: 1st December 2009

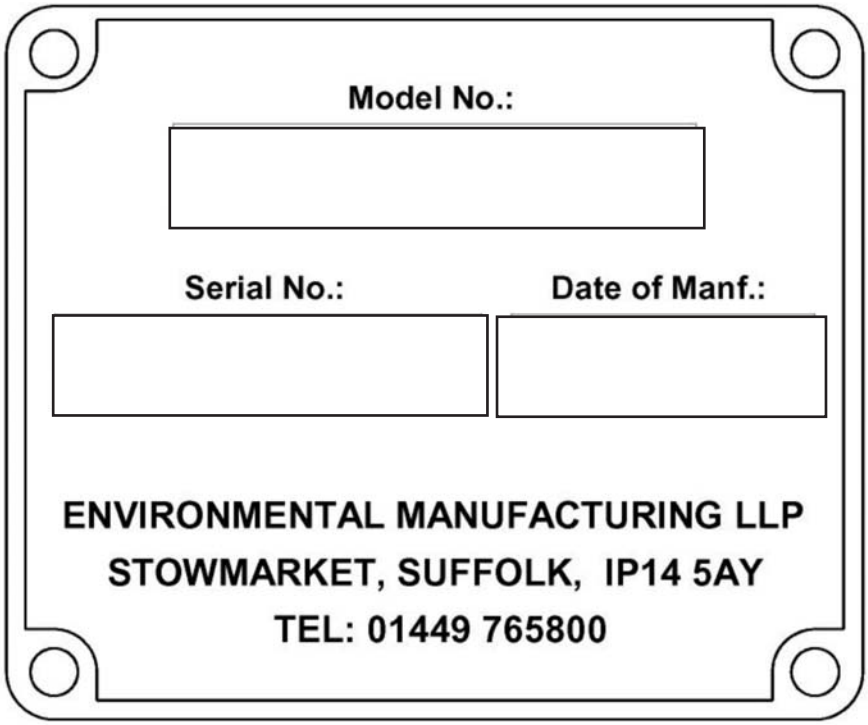
Environmental Manufacturing LLP Incorp cert

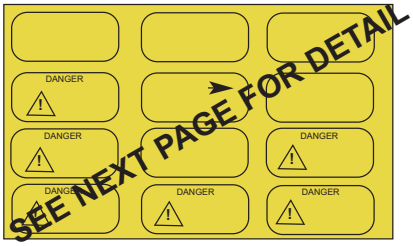
ROAD AND TRACKED MODELS



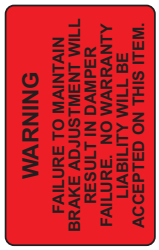
The identification plate is normally located on the nearside chassis beam.

PTO MODELS

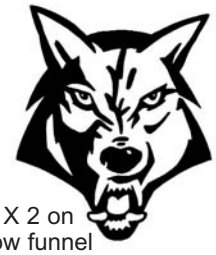




X2

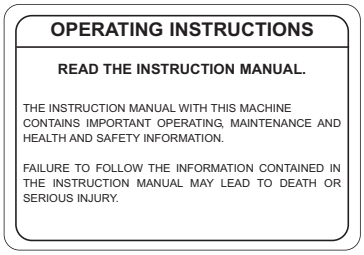


604 616 617 670 671 1136 1258

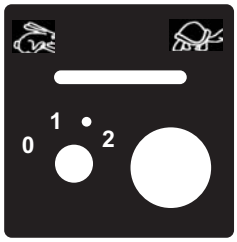


X 2 on low funnel

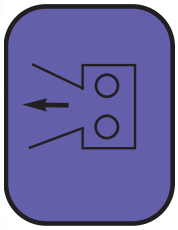
High Funnels Only

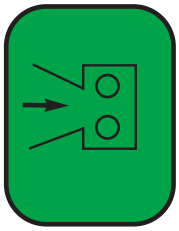


1363 1399 1522 1661 1662



(Not Used)

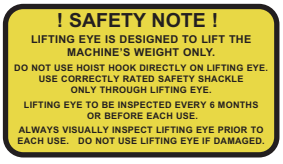




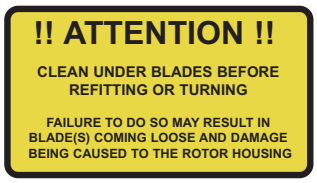
x 2

1745 1746 1747 1756 1848 1849 2800 2801 2802 2854

X 2



2857 2949 2950 2998 3004 3015



X 2

Low Funnel Only

X2

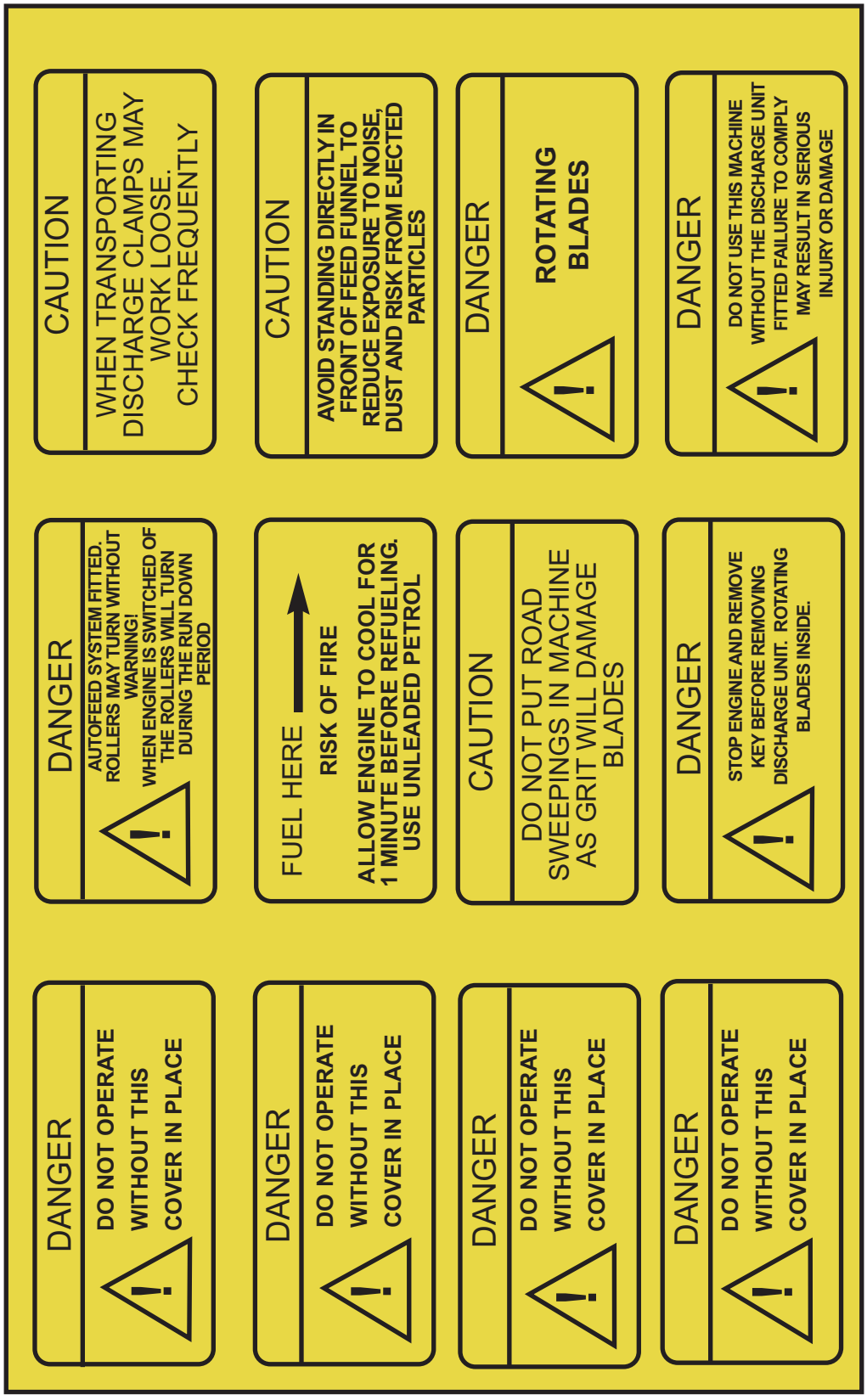
Low Funnel Only

3022 3059 3054 4099 4114 4138

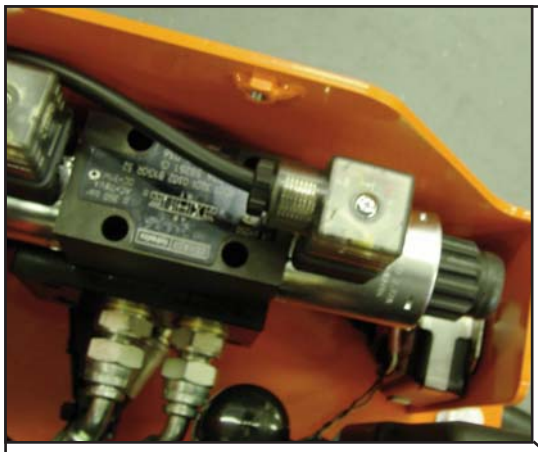
X 2

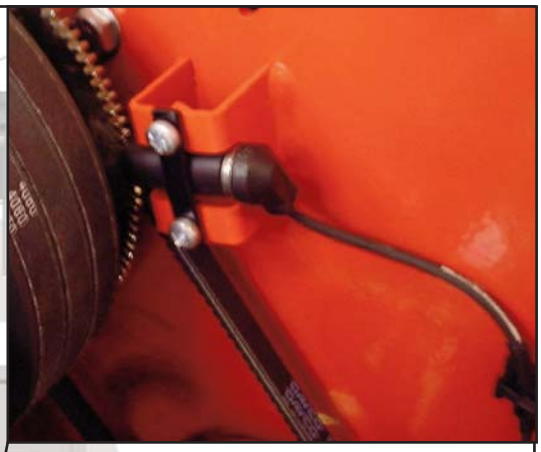
4276 4284 17450 18393 18438

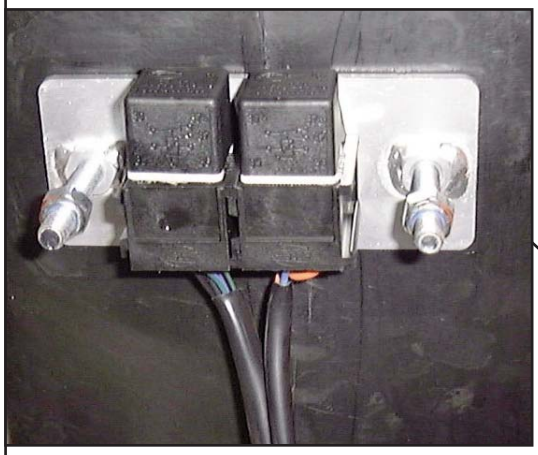
671


CAUTION
WHEN TRANSPORTING DISCHARGE CLAMPS MAY WORK LOOSE. CHECK FREQUENTLY
CAUTION
AVOID STANDING DIRECTLY IN FRONT OF FEED FUNNEL TO REDUCE EXPOSURE TO NOISE, DUST AND RISK FROM EJECTED PARTICLES
DANGER
ROTATING BLADES
DANGER
DO NOT USE THIS MACHINE WITHOUT THE DISCHARGE UNIT FITTED FAILURE TO COMPLY MAY RESULT IN SERIOUS INJURY OR DAMAGE
DANGER
AUTOFEED SYSTEM FITTED. ROLLERS MAY TURN WITHOUT WARNING! WHEN ENGINE IS SWITCHED OF THE ROLLERS WILL TURN DURING THE RUN DOWN PERIOD
FUEL HERE
RISK OF FIRE
ALLOW ENGINE TO COOL FOR 1 MINUTE BEFORE REFUELING. USE UNLEADED PETROL
CAUTION
DO NOT PUT ROAD SWEEPINGS IN MACHINE AS GRIT WILL DAMAGE BLADES
DANGER
STOP ENGINE AND REMOVE KEY BEFORE REMOVING DISCHARGE UNIT. ROTATING BLADES INSIDE.
DANGER
DO NOT OPERATE WITHOUT THIS COVER IN PLACE
DANGER
DO NOT OPERATE WITHOUT THIS COVER IN PLACE
DANGER
DO NOT OPERATE WITHOUT THIS COVER IN PLACE
DANGER
DO NOT OPERATE WITHOUT THIS COVER IN PLACE

ELECTRICAL DETAIL - ROAD TOW *43*

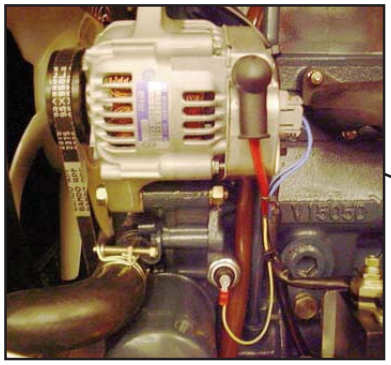


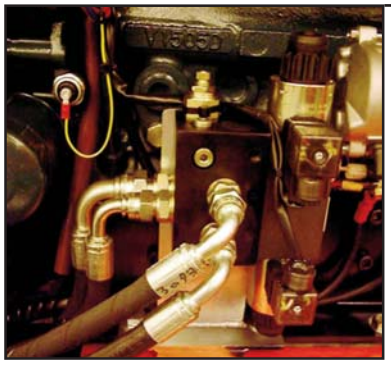


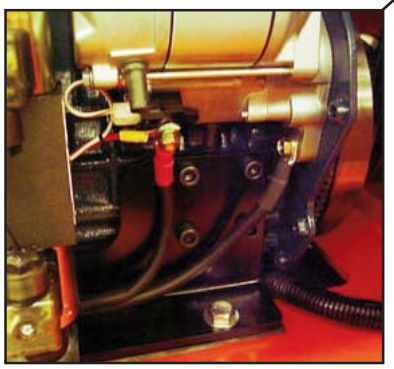


model shown 125PH

& ELKOPLAST ROMANIA ELECTRICAL DETAIL - TRACKED *44*



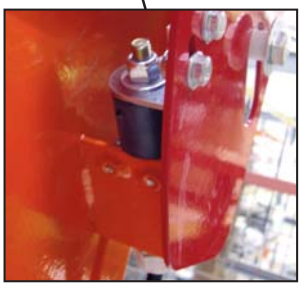




High funnel versions only

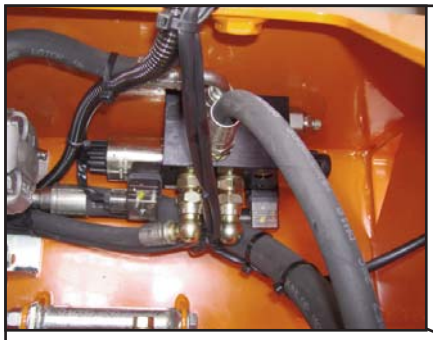
Low funnel versions only

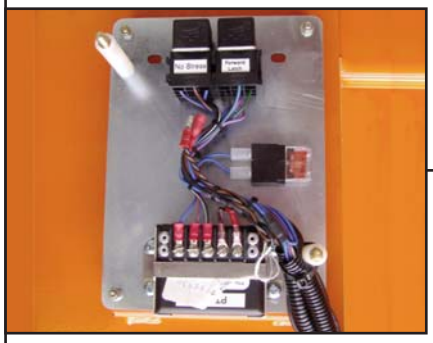
model shown 150TR

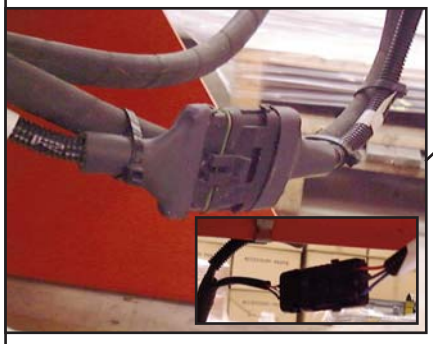


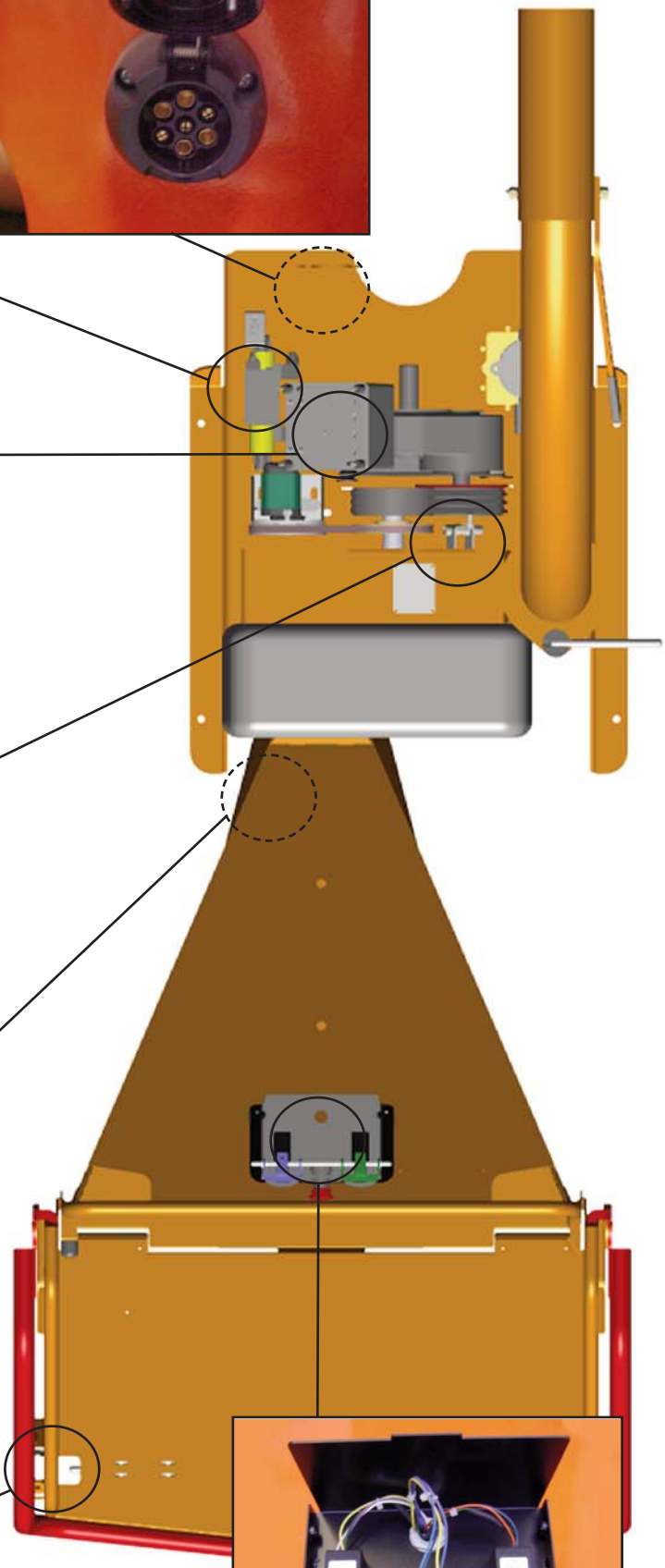
Date Last Modified: 11th Nov 05

ELECTRICAL DETAIL - PTO



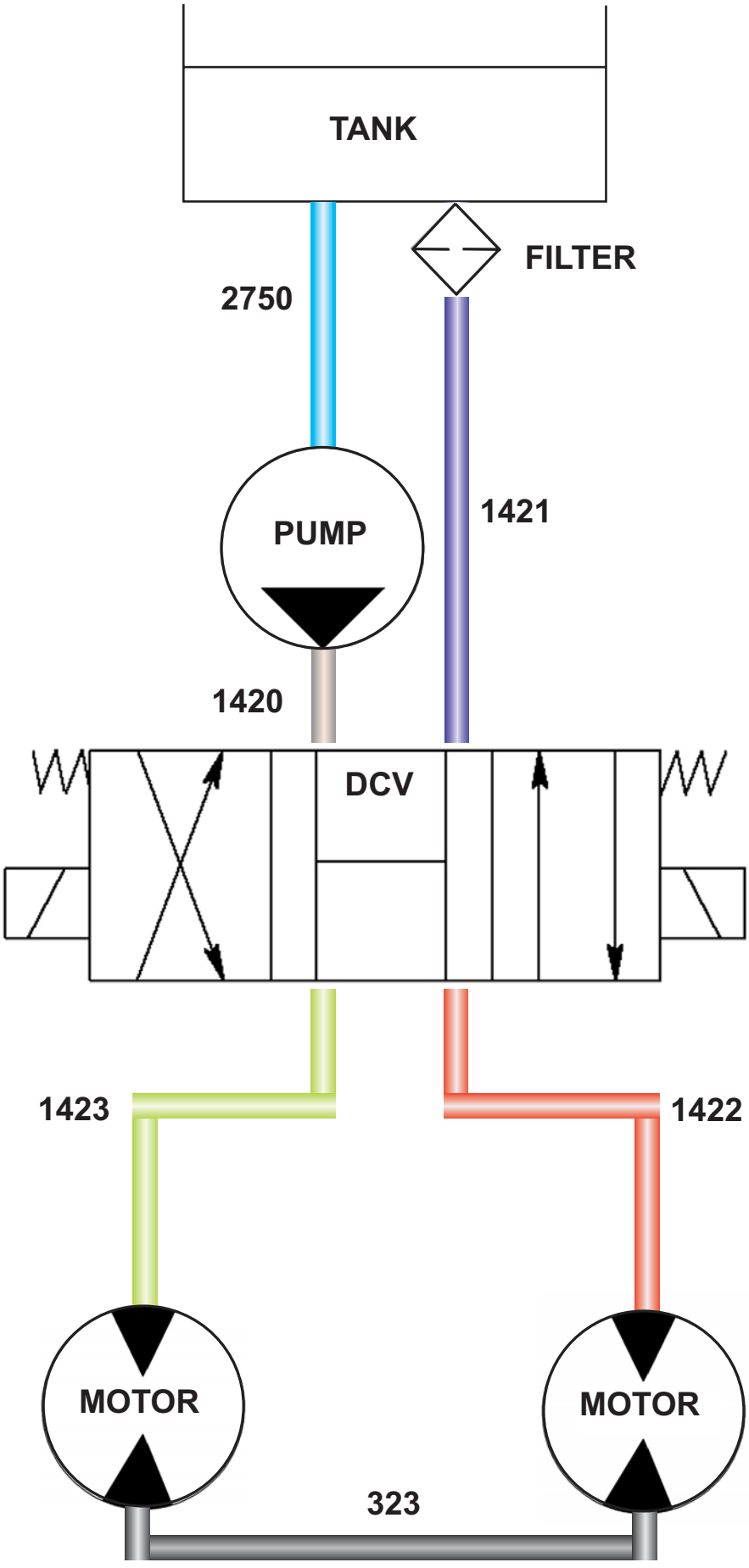




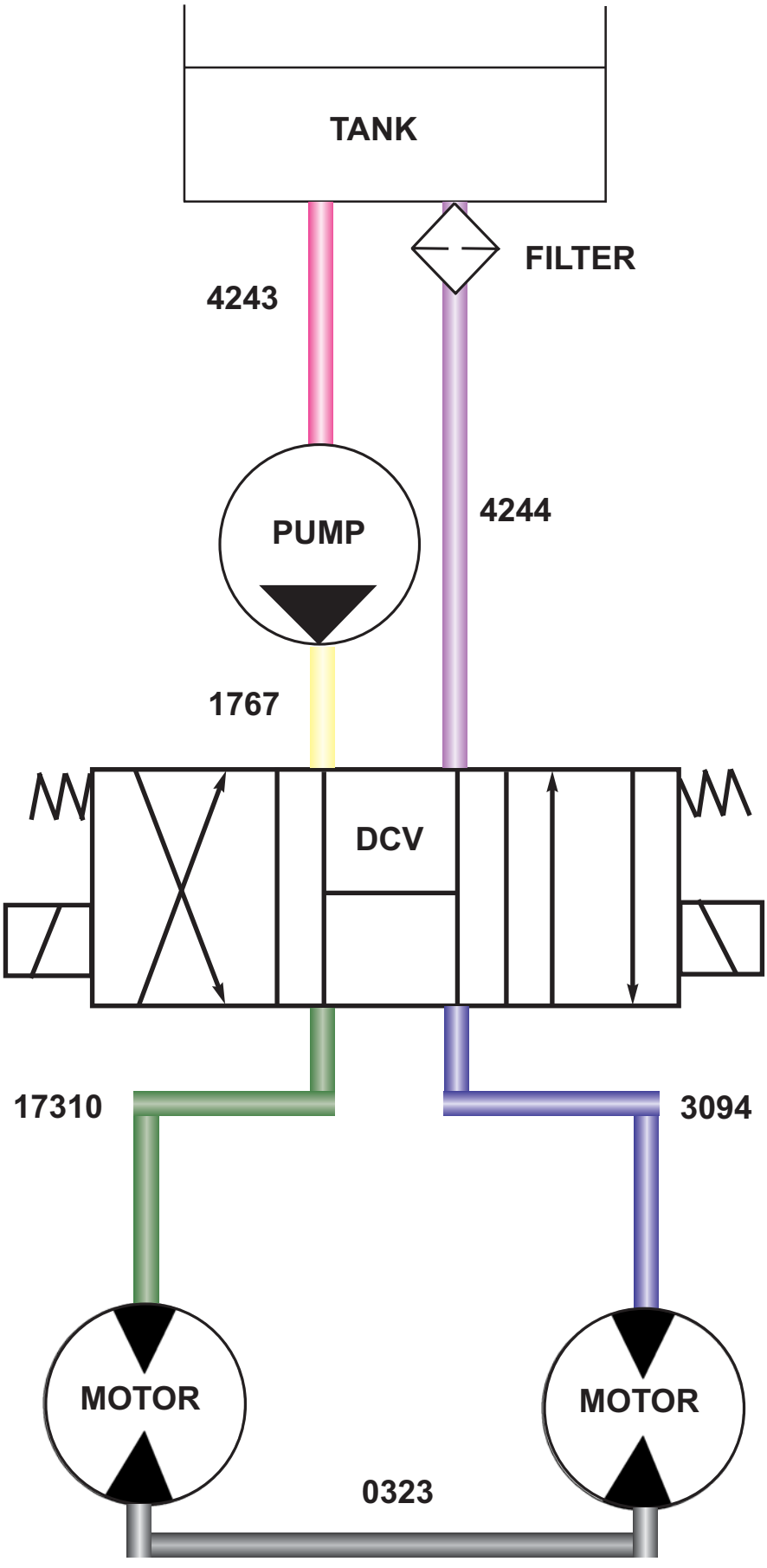


model shown PTO 150

Hose Kit 4298



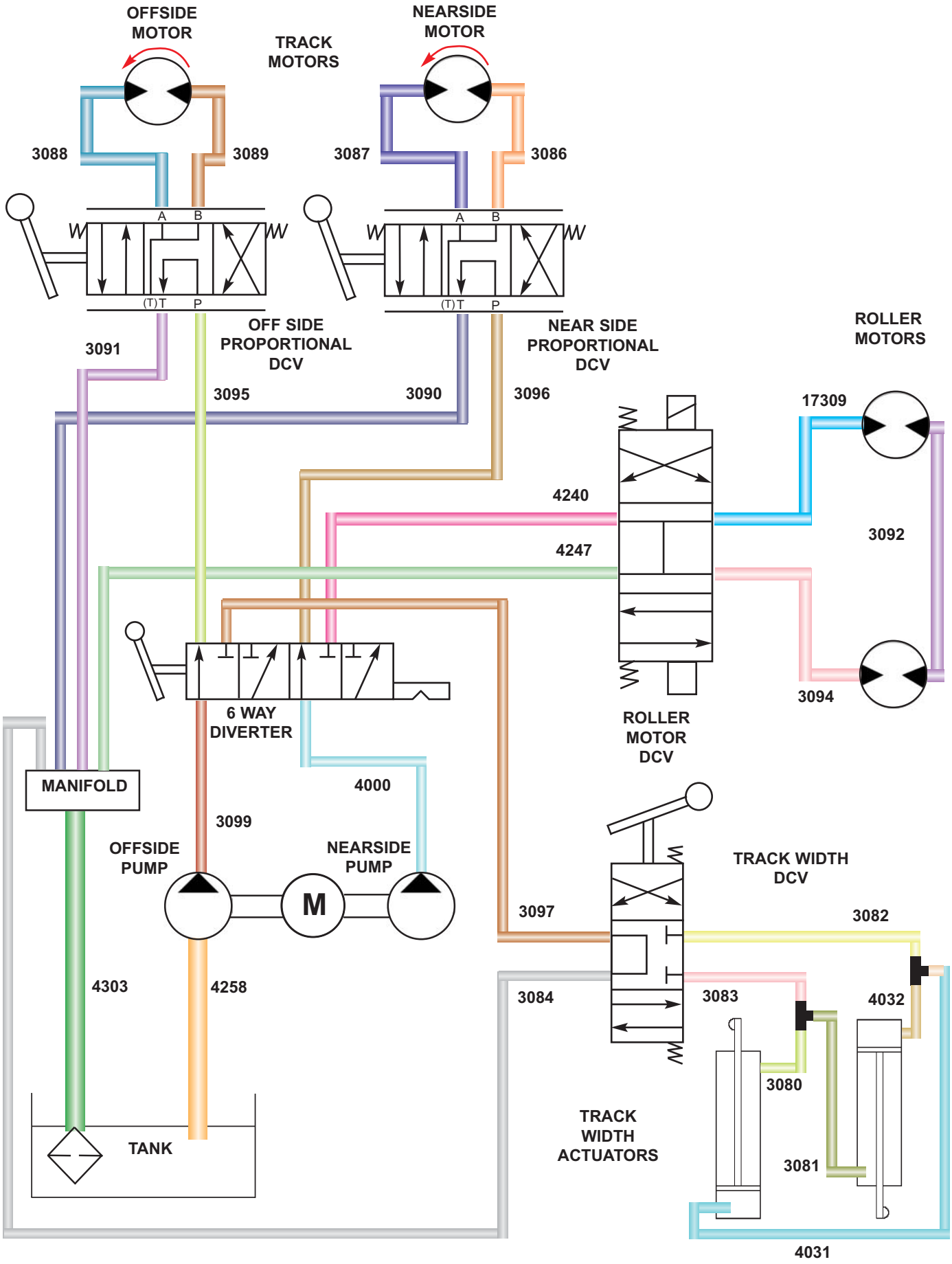
Hose Kit 4330



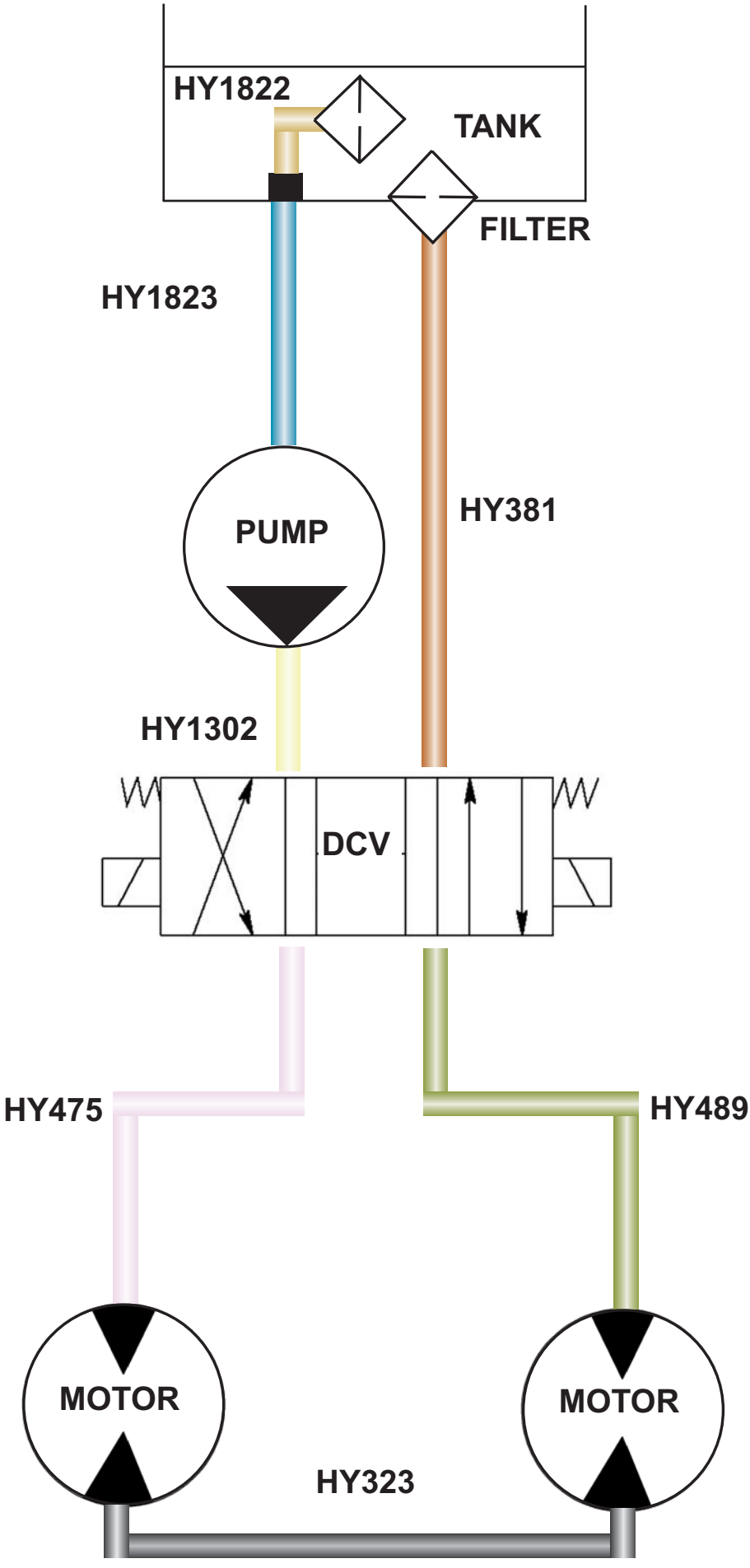
Date Last Modified: 31st Aug 05

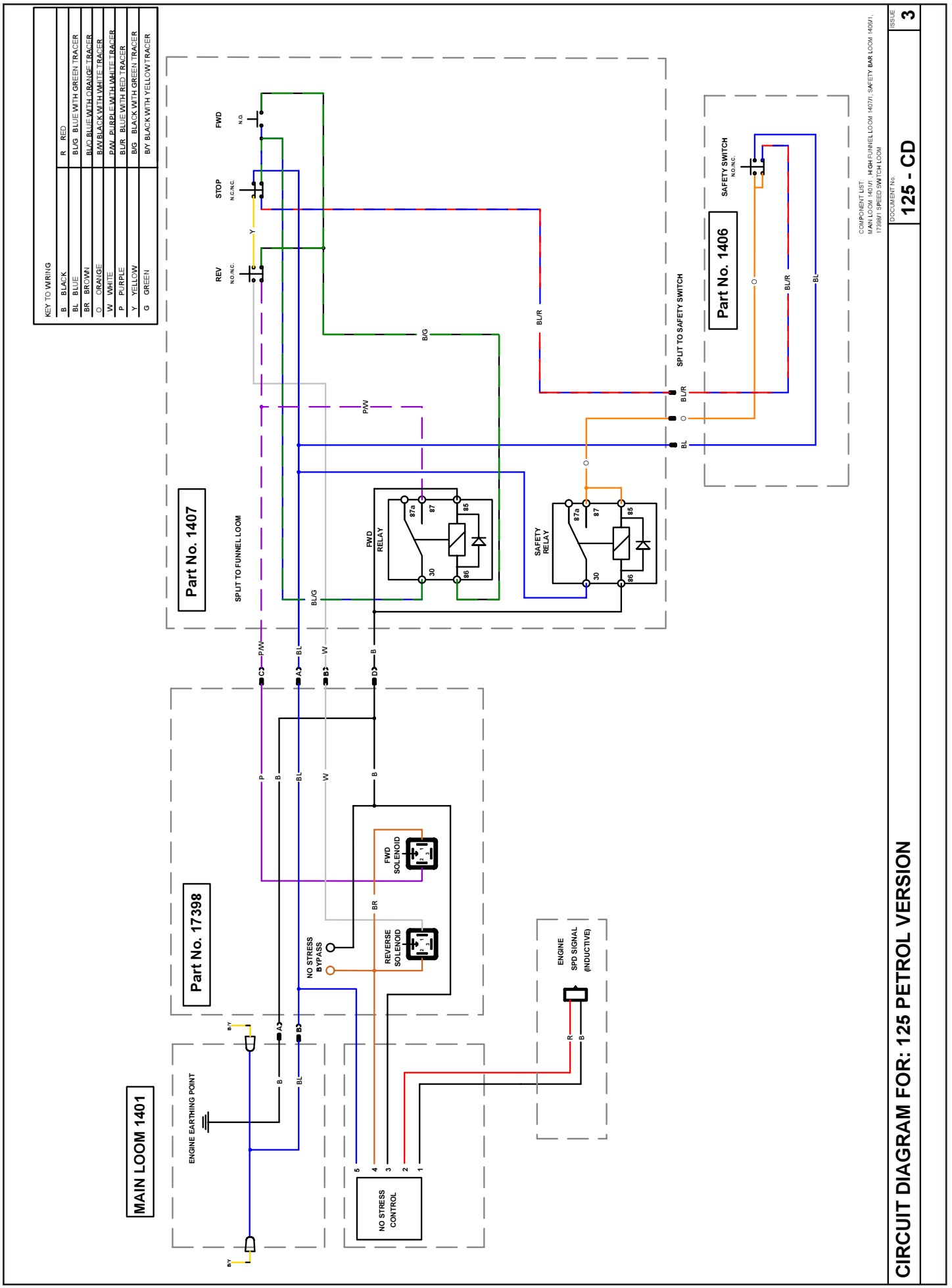
HYDRAULIC LAYOUT - 150 VTR 48

KIT NO: 18816

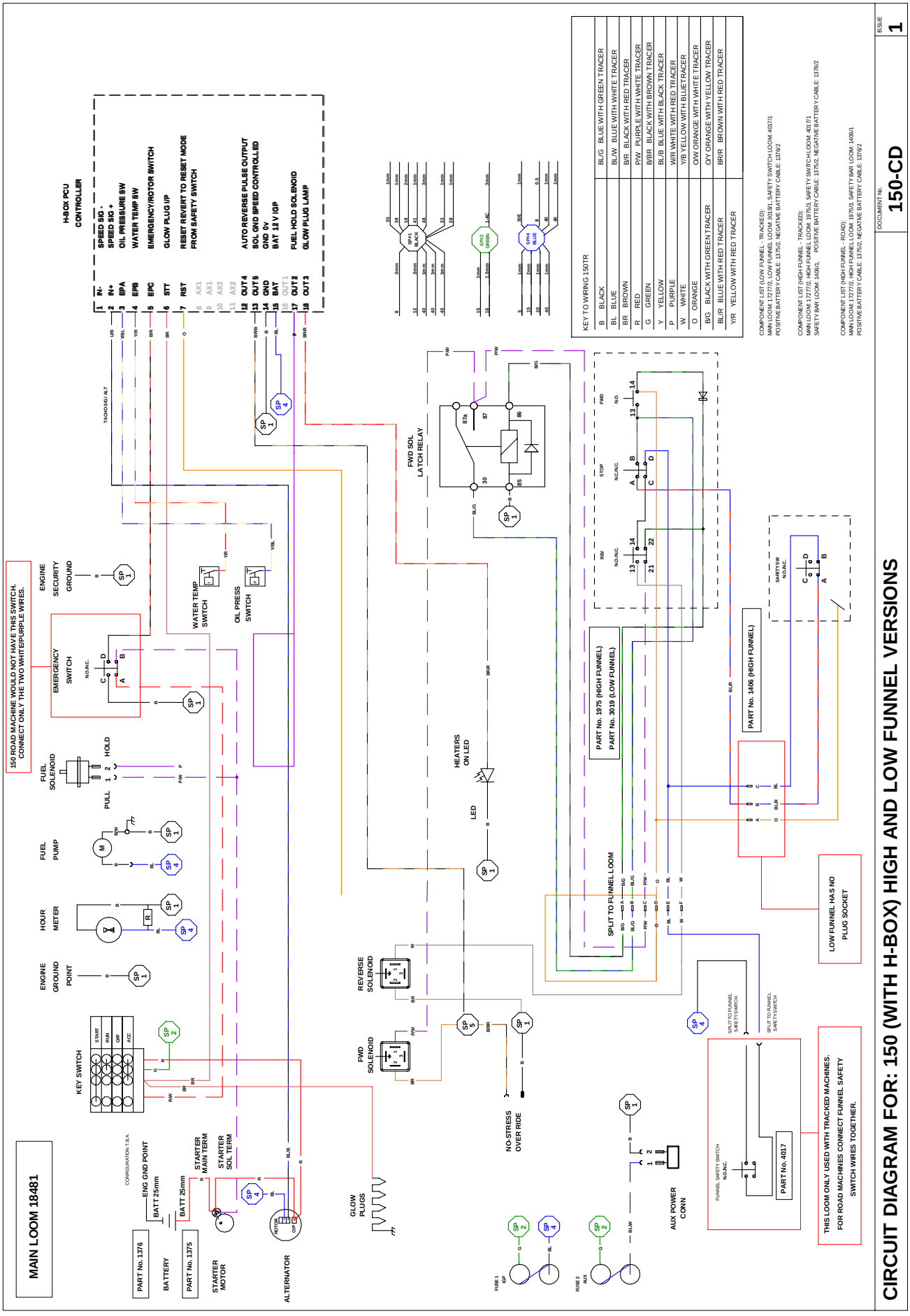


Date Last Modified: 31st Aug 05

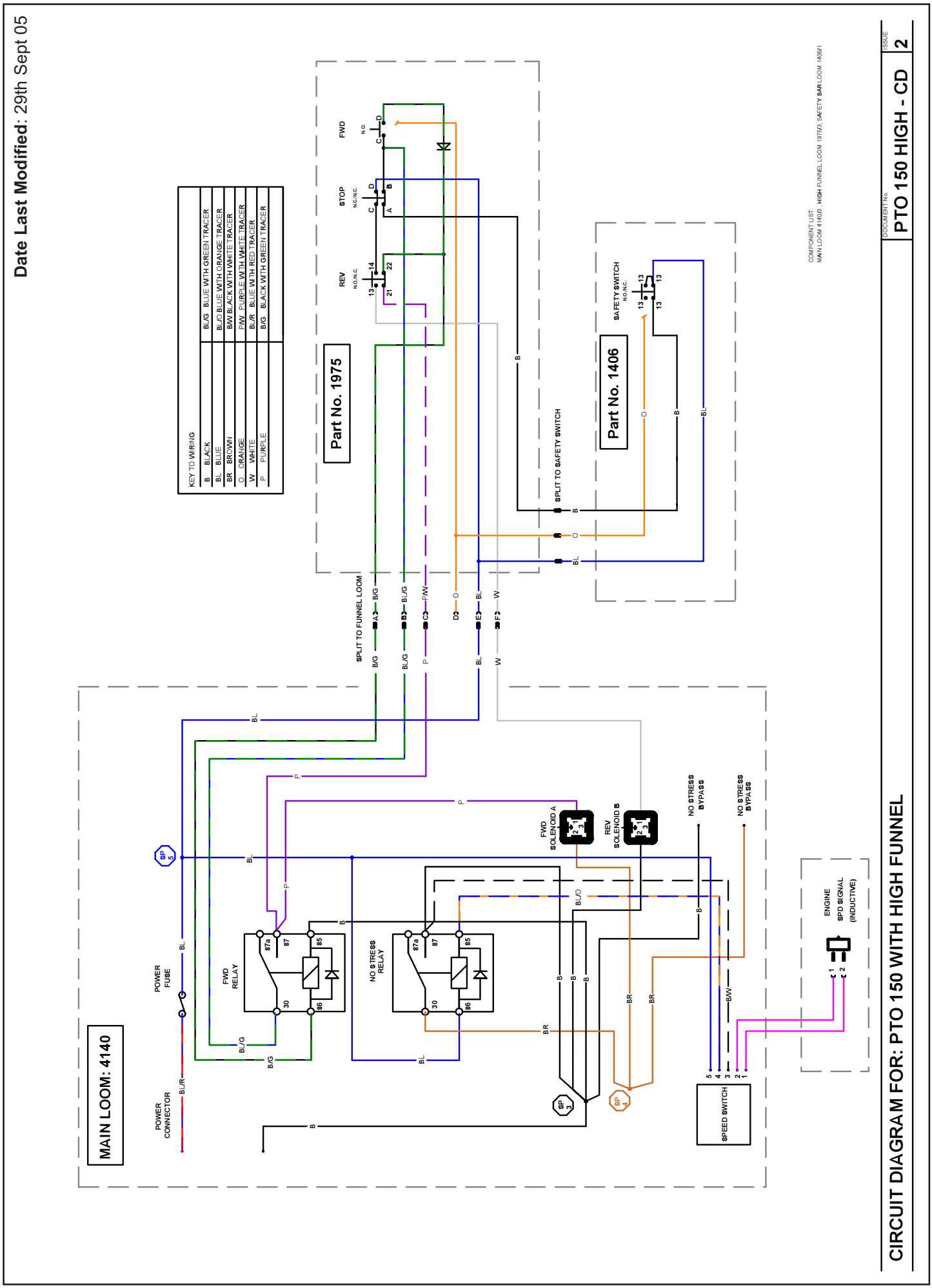

HY1822
TANK
FILTER
HY1823
HY381
PUMP
HY1302
DCV
HY475
HY489
MOTOR
MOTOR
HY323


KEY TO WIRING
B BLACK
BL BLUE
BR BROWN
O ORANGE
W WHITE
P PURPLE
Y YELLOW
G GREEN
R RED
BL/G BLUE WITH GREEN TRACER
BL/O BLUE WITH ORANGE TRACER
B/W BLACK WITH WHITE TRACER
P/W PURPLE WITH WHITE TRACER
BL/R BLUE WITH RED TRACER
B/G BLACK WITH GREEN TRACER
B/Y BLACK WITH YELLOW TRACER
MAIN LOOM 1401
Part No. 1407
SPLIT TO FUNNEL LOOM
Part No. 17398
Part No. 1406
SPLIT TO SAFETY SWITCH
FWD
STOP
REV
N.O.
N.C./N.C.
N.O./N.C.
FWD RELAY
SAFETY RELAY
SAFETY SWITCH
N.O./N.C.
FWD SOLENOID
REVERSE SOLENOID
NO STRESS BYPASS
NO STRESS CONTROL
ENGINE SPD SIGNAL (INDUCTIVE)
ENGINE EARTHING POINT
COMPONENT LIST:
MAIN LOOM 1401/1 , HIGH FUNNEL LOOM 1407/1 , SAFETY BAR LOOM 1406/1 ,
17398/1 SPEED SWITCH LOOM
DOCUMENT No.
125 - CD
ISSUE
3
CIRCUIT DIAGRAM FOR: 125 PETROL VERSION

CIRCUIT DIAGRAM - 150 MODELS 51

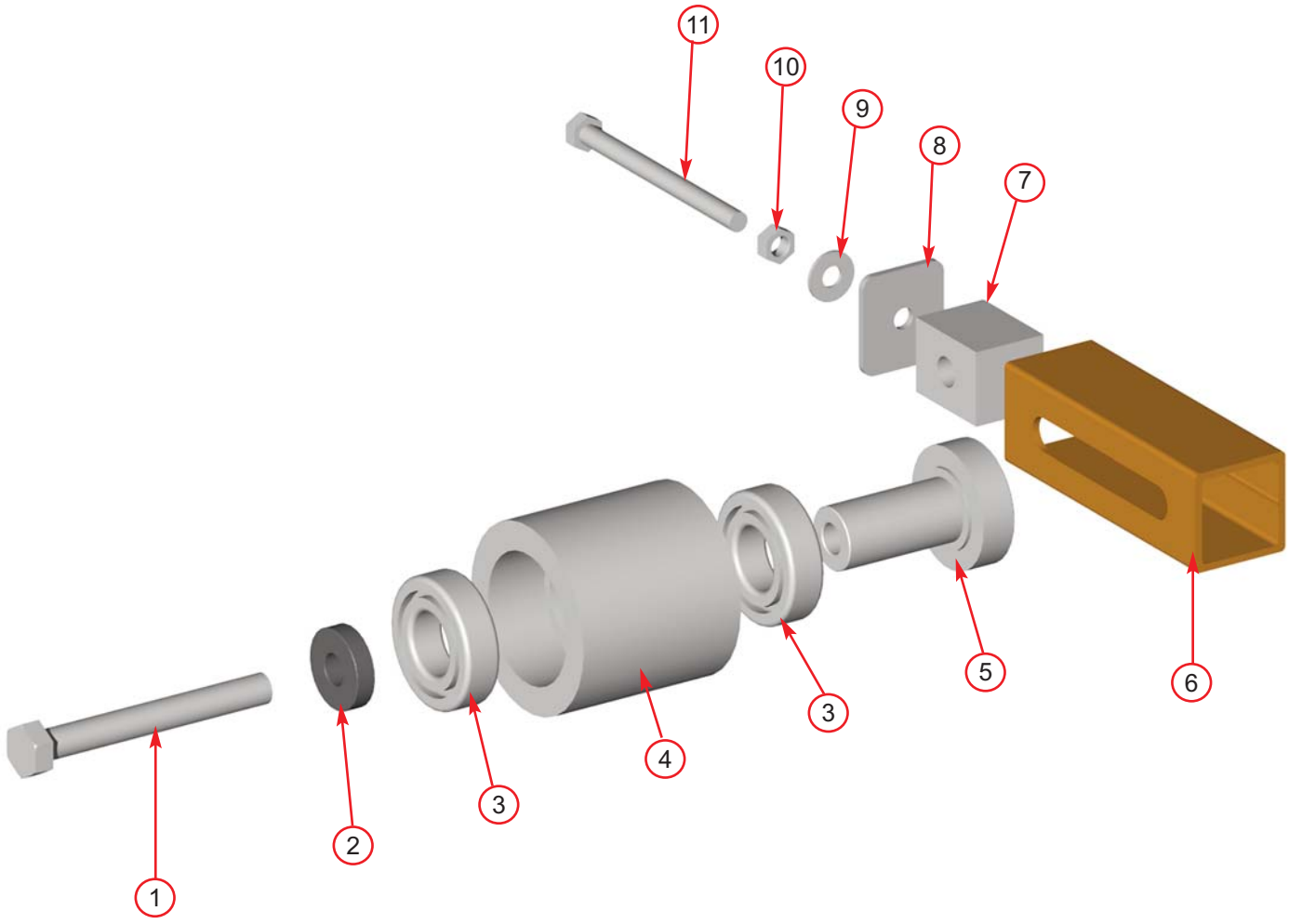


CIRCUIT DIAGRAM - PTO 150 52



TIMBERWOLF TW 125/150 PARTS LISTS

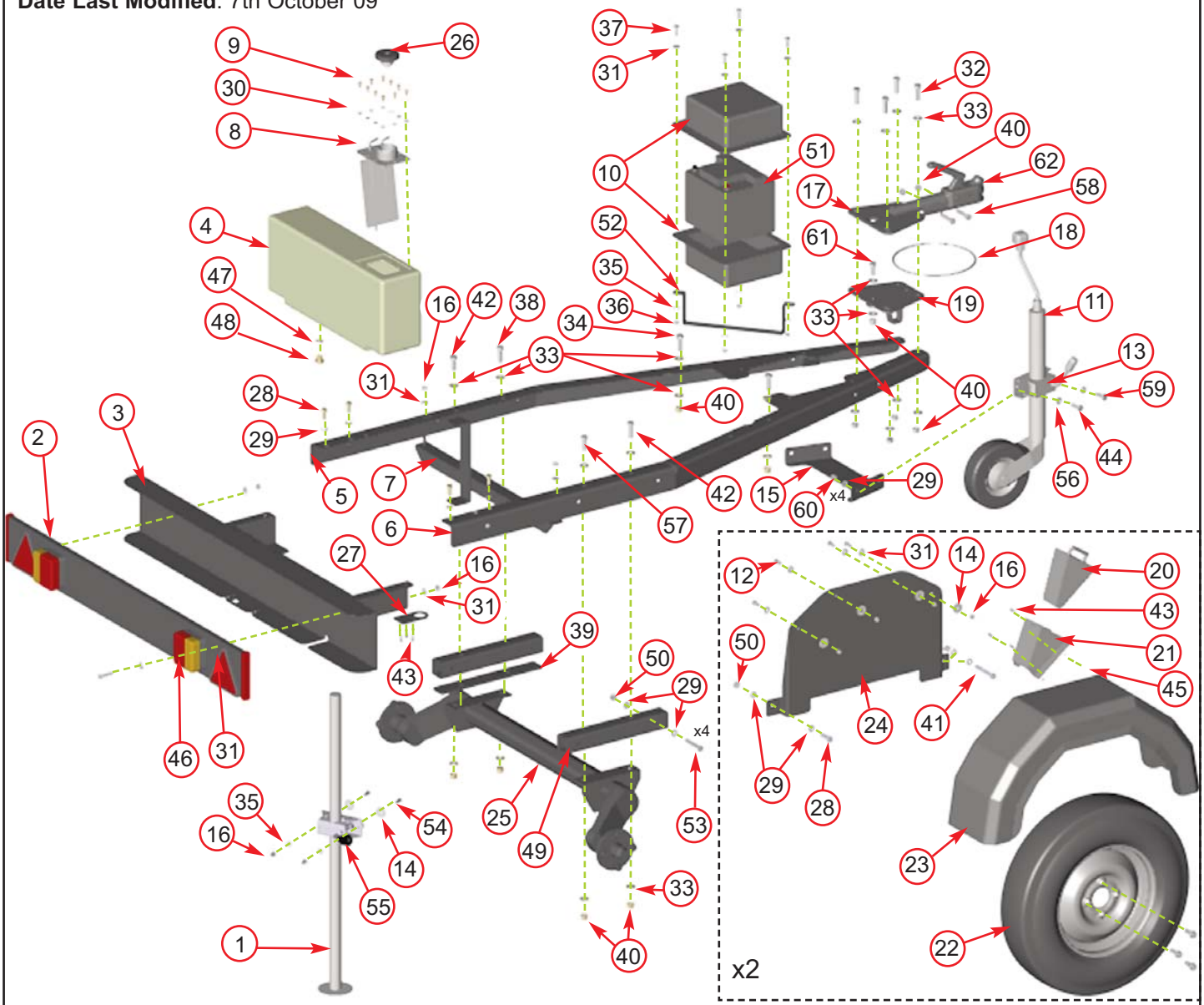
The following illustrations are for parts identification only. The removal or fitting of these parts may cause a hazard and should only be carried out by trained personnel.



Item	Part No	Part Name	Q'ty
1	0313	M12/100 Bolt	1
2	0415	Heavy Washer	1
3	0491	Bearing 6205	2
4	0411M	Pulley	1
5	0472M	Pulley Boss	1
6	*N/A to purchase*	Slider	1
7	0469MS	Slider Block	1
8	1342PS	End Plate	1
9	*made in production*	Washer	1
10	0476	Plain M8 Nut	1
11	2988	M8/90 Bolt	1

Date Last Modified: 17th Aug 05

Date Last Modified: 7th October 09

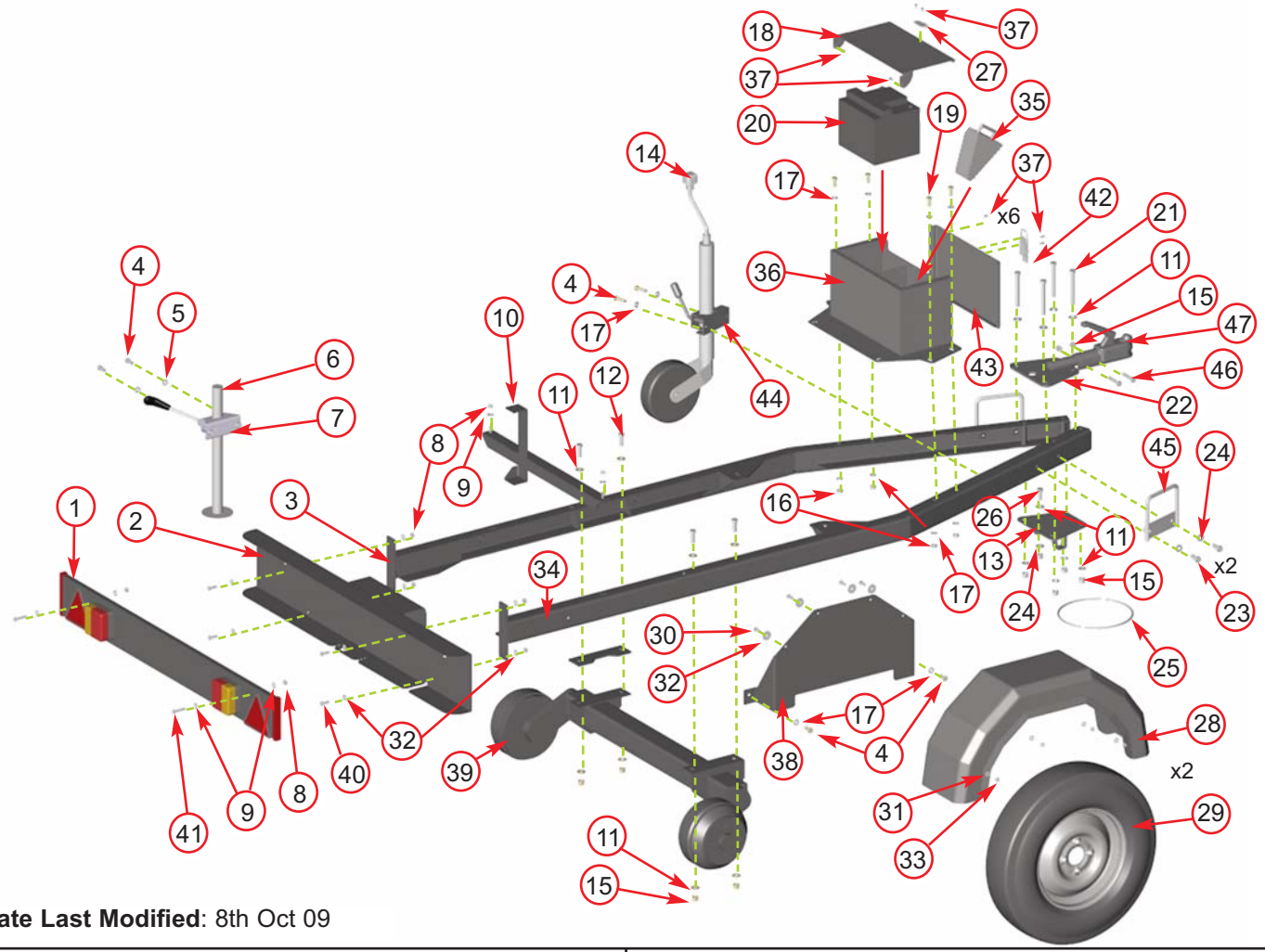


Item	Part No	Part Name	Q'ty
1	1247	Prop Stand	1
2	0445	Light Board	1
3	18959FB	Trailer Board	1
4	1872	Fuel Tank	1
5	18963FB	Beam N/S	1
6	18964FB	Beam O/S	1
7	1385FB	Tank Support	1
8	2813FS	Tank Top	1
9	1658	M6/12 Bolt	11
10	0764	Battery Box 1/2 Sect.	2
11	17478	Jockey Wheel Assy	1
12	0346	M8/20 Bolt	8
13	17515	Jockey Clamp Assy	1
14	0714	M8 Penny Washer	6
15	17520FB	Brace Bracket	1
16	0479	M8 P Nyloc Nut	14
17	18081FS	Delta Plate Assy	1
18	0018	Breakaway Cable	1
19	18626FS	Brace Plate	1
20	1390	Wheel Choc	2
21	1391F	Choc Holster	2

Item	Part No	Part Name	Q'ty
22	0200	Wheel (inc. spare)	3
23	0048	Mudguard	2
24	1383FB	Mudguard Support	2
25	17505	Axle	1
26	1374	Fuel Tank Cap	1
27	18962PB	Prop Support	1
28	0360	M10/25 Bolt	8
29	0839	M10 C Washer	28
30	0709	M6 C Washer	11
31	0712	M8 C Washer	14
32	0431	M12/40 Bolt	4
33	0704	M12 C Washer	19
34	0431	M12/40 Bolt	2
35	0711	M8 A Washer	6
36	0481	M8 T Nyloc Nut	4
37	0350	M8/25 Bolt	4
38	0313	M12/100 Bolt	1
39	17345B	Spacer Plate	1
40	0644	M12 P Nyloc Nut	13
41	0393	M10/80 Bolt	2
42	0332	M12/90 Bolt	2

Item	Part No	Part Name	Q'ty
43	0067	Pop Rivet	11
44	0382	M10/30 Bolt	1
45	0708	M5 C Washer	8
46	0352	M8/40 Bolt	2
47	0396	3/8" Dowty Washer	1
48	0211	3/8" Drain Plug	1
49	2899FB	Spacer Tube	2
50	0052	M10 T Nyloc Nut	6
51	0368	Battery	1
52	1808F	Tank Strap	1
53	0371	M10/70 Bolt	4
54	0347	M8/20 Button Head	2
55	0017	Prop Stand Clamp	1
56	0701	M10 A Washer	2
57	0331	M12/80 Bolt	1
58	18725	M12/60 Bolt	2
59	1812	M10/35 Bolt	1
60	4345	M10 P Nyloc Nut	4
61	0321	M12/30 Bolt	1
62	18090	50mm Coupling Head	1

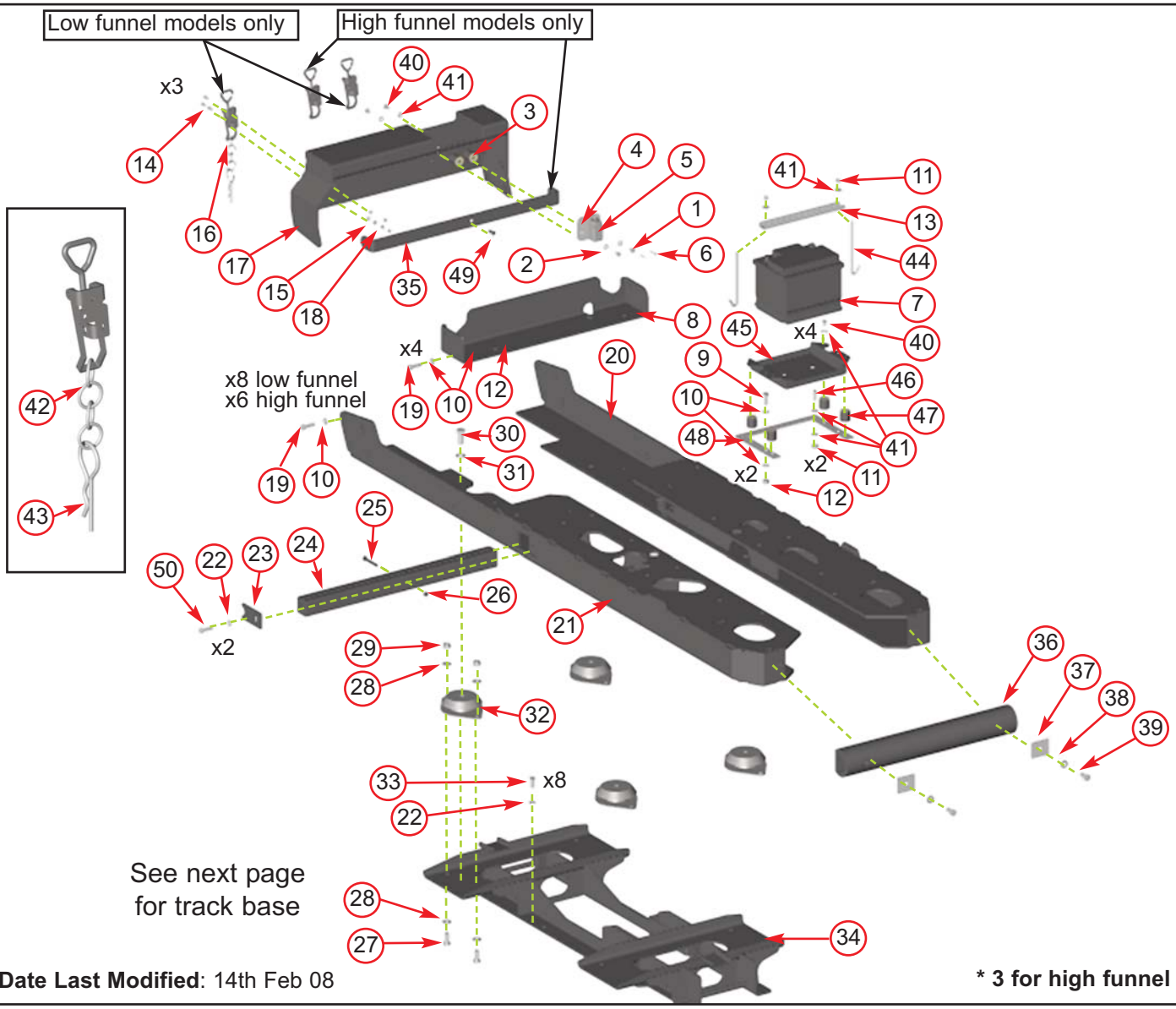
CHASSIS - 150DHB MODELS



Date Last Modified: 8th Oct 09

Item	Part No	Part Name	Q'ty
1	4004	Light Board	1
2	18971FB	Trailer Board	1
3	18917FB	Beam N/S	1
4	0309	M10/40 Bolt	8
5	0701	M10 A Washer	2
6	0012	Prop Stand	1
7	0017	34 mm Prop Clamp	1
8	0479	M8 P Nyloc Nut	8
9	0712	M8 C Washer	6
10	1701FB	Tank Support	1
11	0704	M12 C Washer	21
12	0430	M12/35 Bolt	4
13	18626FS	Brace Plate	1
14	17478	Jockey Wheel Assy	1
15	0644	M12 P Nyloc Nut	12
16	0052	M10 T Nyloc Nut	4
17	0839	M10 C Washer	14
18	3040FB	Battery/Tool Box Lid	1
19	0360	M10/25 Bolt	4
20	4210	Battery	1
21	0314	M12/110 Bolt	4
22	18081FS	Delta Plate Assy	1
23	1581	M12/35 Caphead	4
24	0702	M12 A Washer	5

Item	Part No	Part Name	Q'ty
25	0018	Breakaway Cable	1
26	0321	M12/30 Bolt	1
27	4088	Catch Plate	1
28	0048	Mudguard	2
29	0200	Wheel	3
30	0346	M8/20 Bolt	8
31	0714	M8 Penny Washer	8
32	0711	M8 A Washer	16
33	0481	M8 T Nyloc Nut	8
34	18918FB	Beam O/S	1
35	1390	Wheel Choc	2
36	3035FB	Battery/Tool Box	1
37	0067	Pop Rivet	12
38	1700FB	Mudguard Mount	2
39	17483	Axle	1
40	0350	M8/25 Bolt	2
41	0352	M8/40 Bolt	2
42	2963	Catch	1
43	4009FB	Manual Tray	1
44	18083	Jockey Wheel Clamp	1
45	3045FS	Chassis Handle	2
46	18725	M12/60 Bolt	2
47	18090	50mm Coupling Head	1

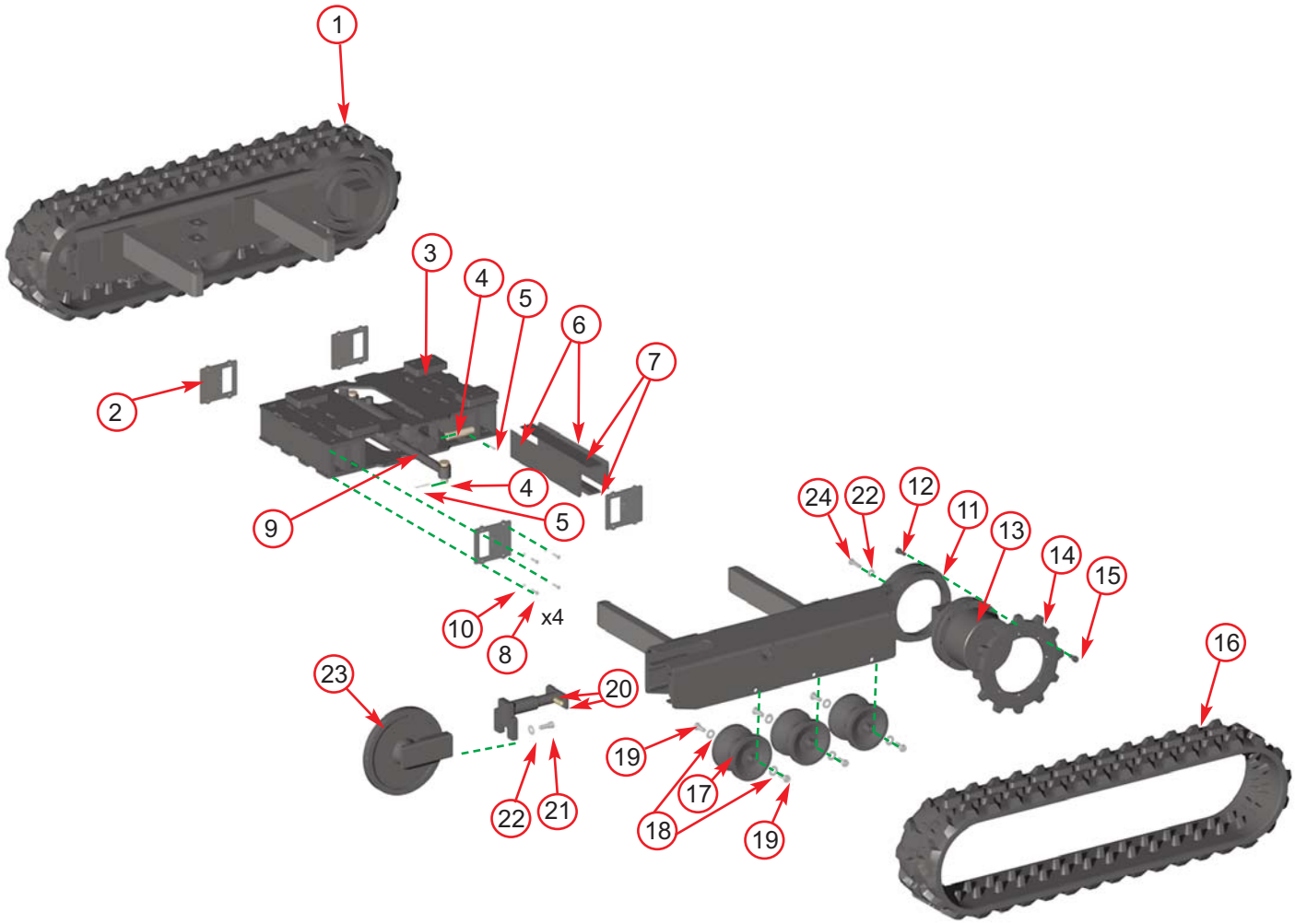


Date Last Modified: 14th Feb 08

*** 3 for high funnel**

Item	Part No	Part Name	Q'ty
1	1721	M8/10 Bolt	2
2	0711	M8 A Washer	2
3	1868	M8 AV Mount	2
4	1691FS	Switch Back Plate	1
5	1692	Limit Switch	1
6	1006	M4/30 Pan Pozi	2
7	4210	Battery	1
8	3042FB	Chassis Bridge	1
9	0360	M10/25 Bolt	2
10	0701	M10 A Washer	20
11	0479	M8 P Nyloc Nut	4
12	0052	M10 T Nyloc Nut	4
13	18040FS	Battery Clamp	1
14	0256	M5/16 Csk Socket Screw	6*
15	0708	M5 C Washer	6*
16	4092	Draw Latch *High Funnel 1, Low Funnel 2*	
17	3010FB	Funnel Support	1
18	18102	M5 T Nyloc Nut	6*
19	1812	M10/35 Bolt	12
20	2990FB	Near Side Beam	1
21	2991FB	Off Side Beam	1
22	0839	M10 C Washer	10
23	4008B	Jacking Beam Cover	1
24	4007FB	Jacking Beam	1
25	0354	M8/60 Bolt	1

Item	Part No	Part Name	Q'ty
26	0481	M8 T Nyloc Nut	1
27	0321	M12/30 Bolt	8
28	0704	M12 C Washer	16
29	0644	M12 P Nyloc Nut	8
30	1628	M16/35 Bolt	4
31	1143	M16 A Washer	4
32	1796	M16 AV Mount	4
33	0360	M10/25 Bolt	8
34	1869FB	Track Mount Adapter Bracket	1
35	4106FB	Tank Stop Bar	1
36	2930	Rubber Buffer	1
37	4067S	D Rubber Fixing Plate	1
38	0702	M12 A Washer	2
39	0431	M12/40 Bolt	2
40	18037	M8/12 Bolt	4
41	0712	M8 C Washer	12
42	4105	Chain 40 x 16 x 3.8	2
43	4094	R Clip 5 mm x 85	2
44	18041	M8 x 170 Hook Bolt	2
45	18039FB	Battery Tray	1
46	0350	M8/25 Bolt	2
47	1644	AV Mount	4
48	18038FS	Battery Base Plate	1
49	0347	M8/20 Button Head	1
50	0382	M10/30 Bolt	2

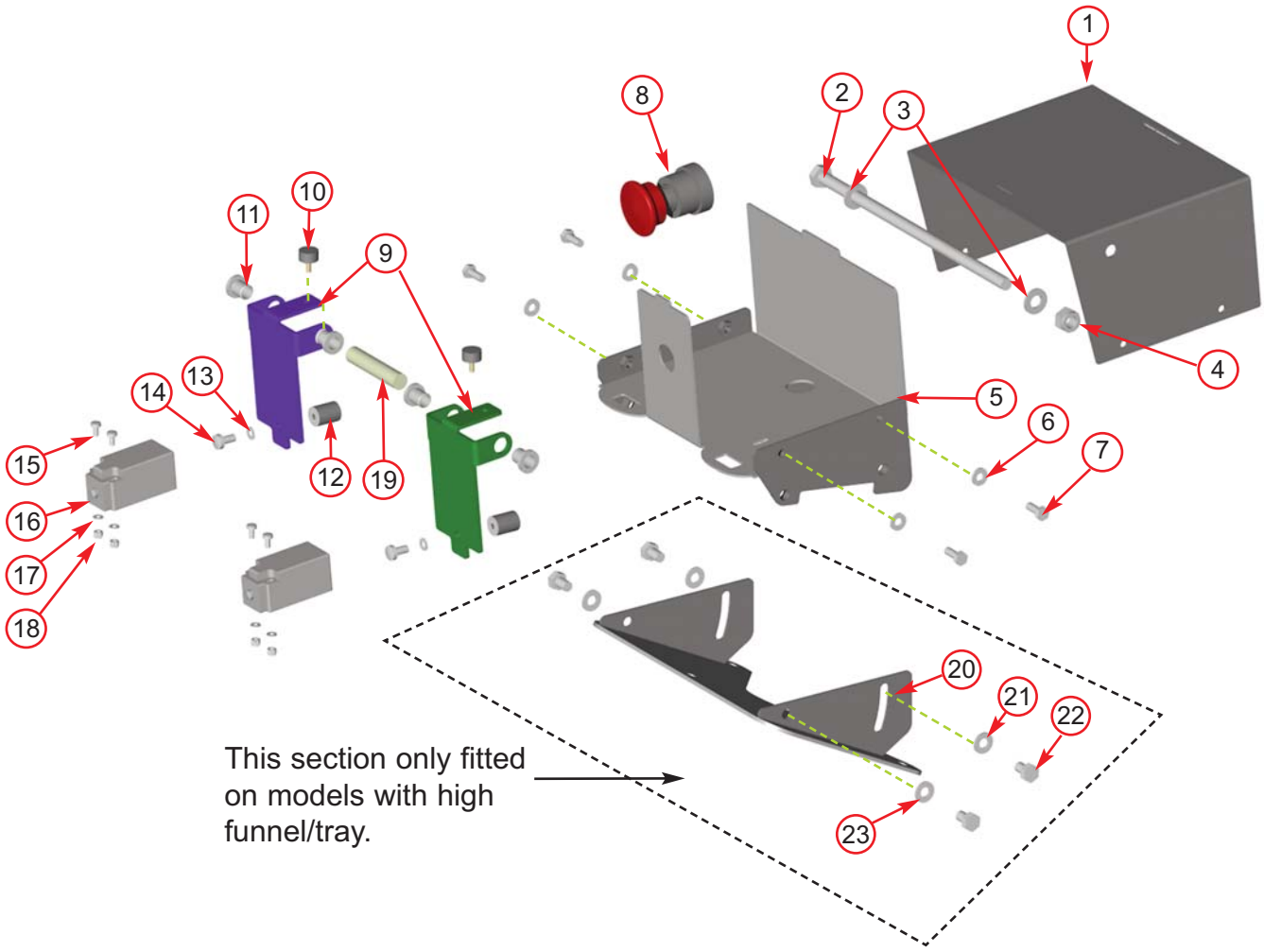


Date Last Modified: 7th Jan 10

Item	Part No	Part Name	Q'ty
1	18952	Crawler Track Assy	2
2	3077FB	Slip Retainer	4
3	3074FB	Variable Track Bridge	1
4	18014MS	Cylinder Pin	4
5	1276	Split Pin	4
6	4045	Plastic Strip	8
7	4044	Plastic Strip	8
8	18105	M5/20 Bolt	16
9	4046	Hydraulic Cylinders	2
10	0708	M5 C Washer	16
11	18955	VTR Track Frame (handed pair)	1
12	1629	M10/25 Caphead	14

Item	Part No	Part Name	Q'ty
13	18951	Motor Gear Box	2
14	19035	Sprocket	2
15	0373	M10/20 Caphead	16
16	19033	Rubber Track	2
17	19034	Bottom Roller	6
18	0704	M12 C Washer	12
19	0321	M12/30 Bolt	12
20	19036	Adjuster/Tensioner	2
21	0382	M10/30 Bolt	4
22	0701	M10 A Washer	4
23	19037	Idler Wheel	2
24	4068	M10/40 Bolt	2

CONTROL BOX (UPPER SECTION) *60*



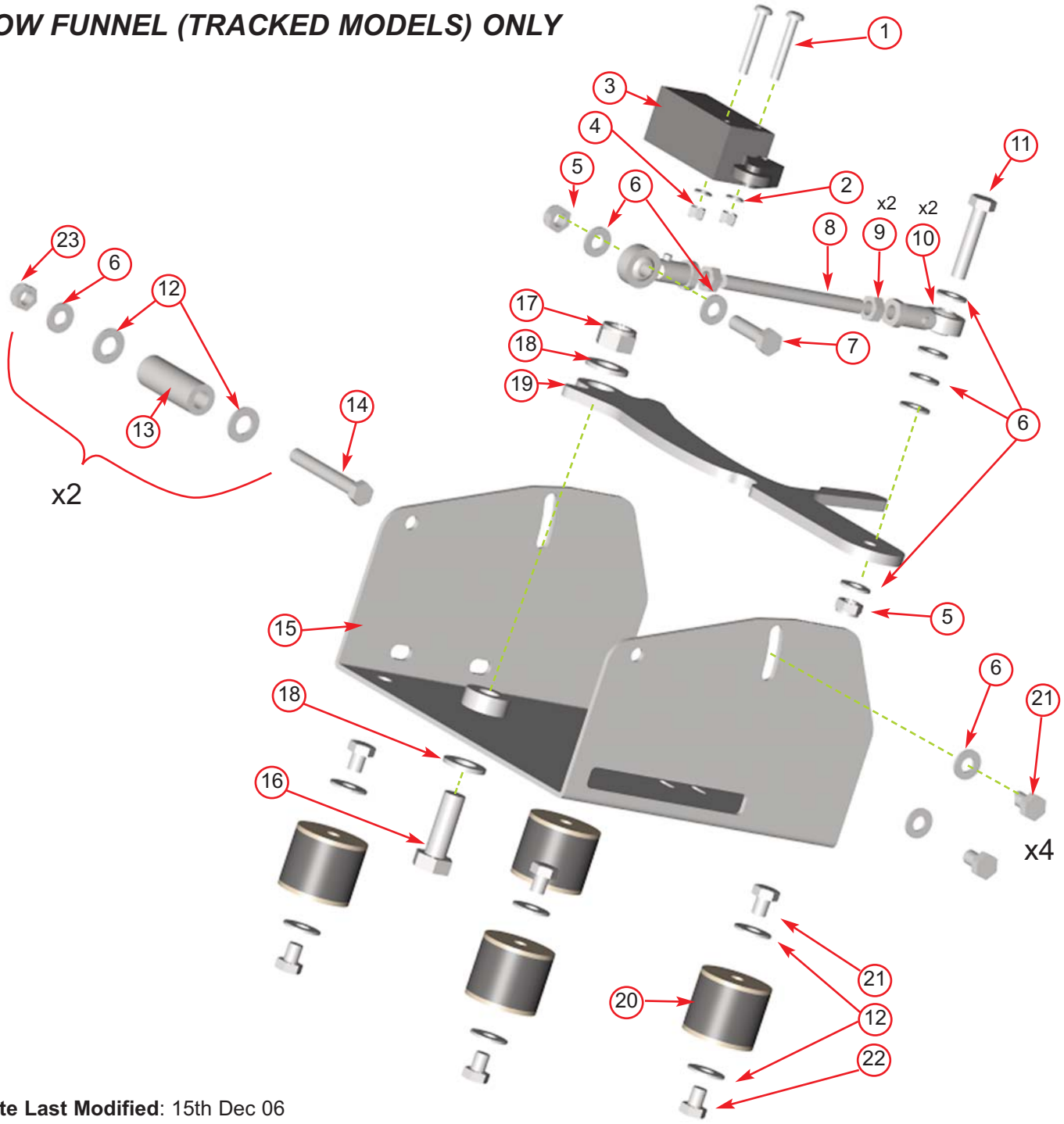
Date Last Modified: 21st July 05

Item	Part No	Part Name	Q'ty
1	2794FB	Control Box Cover	1
2	2803	M10/240 Bolt	1
3	0839	M10 C Washer	2
4	4345	M10 P Nyloc Nut	1
5	2795FB	Control Box Base	1
6	0709	M6 C Washer	4
7	1658	M6/12 Bolt	4
8	2853	Stop Switch	1
9	2796FS	Finger Plate	2
10	2834	AV Mount	2
11	2804	Bush M10 Top Hat	4
12	2807	AV Mount 20 x 16	2

Item	Part No	Part Name	Q'ty
13	0857	M5 A Washer	2
14	18103	M5/8 Pan Pozi	2
15	18168	M4/35 Pan Pozi	4
16	1348	Limit Switch	2
17	18100	M4 Washer	6
18	18235	M4 P Nyloc Nut	6
19	made in production	65mm Spacer	1
20	2793FB	Bracket Mounting Control Box	1
21	0712	M8 C Washer	2
22	0344	M8/16 Bolt	4
23	0711	M8 A Washer	2

CONTROL BOX (LOWER SECTION) *61*

LOW FUNNEL (TRACKED MODELS) ONLY

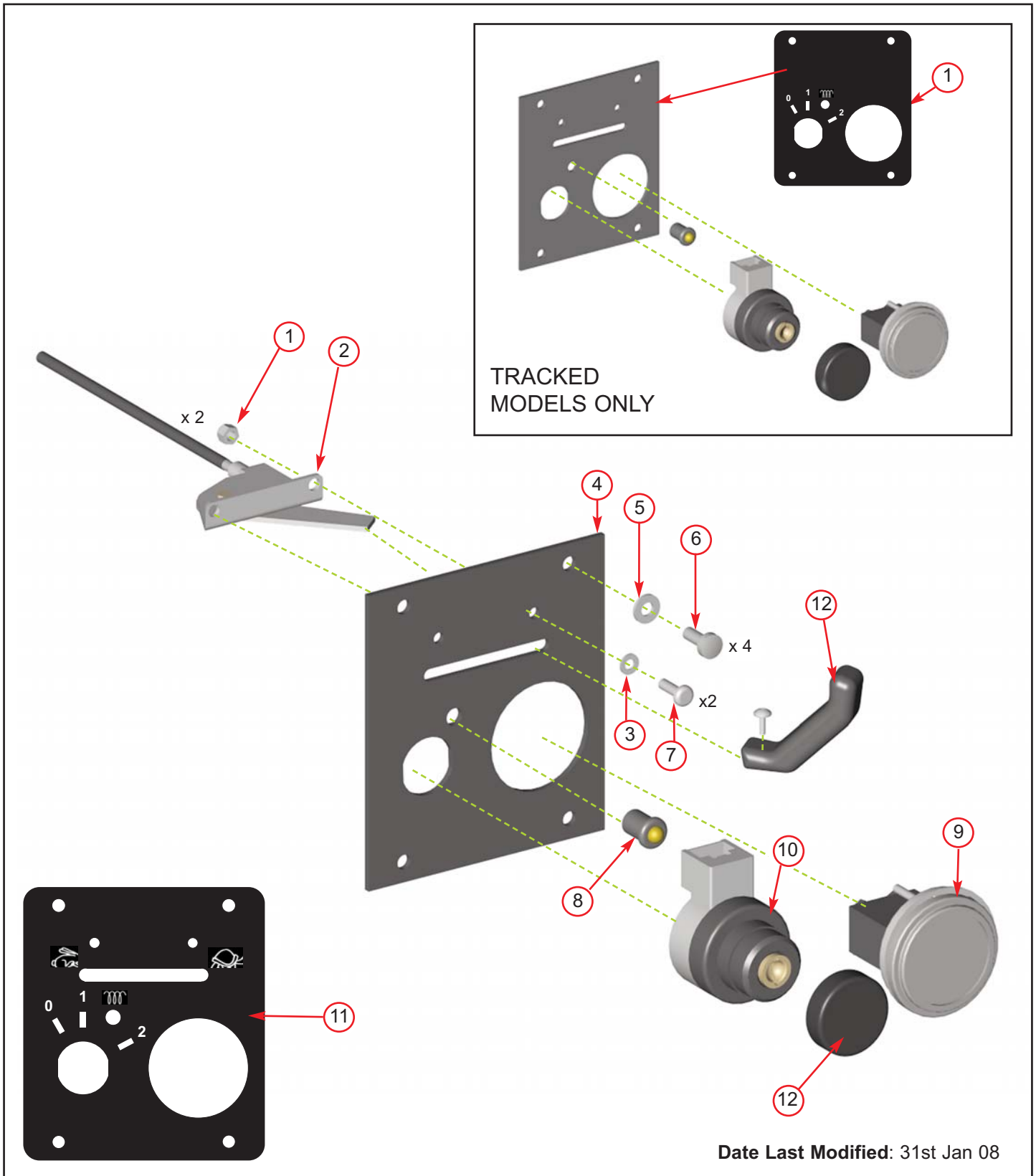


Date Last Modified: 15th Dec 06

Item	Part No	Part Name	Q'ty
1	18168	M4/35 Pan Pozi	2
2	18100	M4 A Washer	2
3	1692	Limit Switch	1
4	18235	M4 P Nyloc Nut	2
5	0481	M8 T Nyloc Nut	2
6	0711	M8 A Washer	13
7	0351	M8/30 Bolt	1
8	made in production	M8 Threaded Rod	1
9	0476	M8 Plain Nut	2
10	0925	Rose Joint Rod End	2
11	18117	M8/35 Bolt	1
12	0712	M8 C Washer	12

Item	Part No	Part Name	Q'ty
13	1603	Spring	2
14	18119	M8/70 Bolt	2
15	3055FB	Link Mechanism Casing	1
16	0431	M12/40 Bolt	1
17	0045	M12 T Nyloc Nut	1
18	0702	M12 A Washer	2
19	3058PS	Link Mechanism Arm	1
20	1868	AV Mount	4
21	18037	M8/12 Bolt	4
22	1721	M8/10 Bolt	8
23	0479	M8 P Nyloc Nut	2

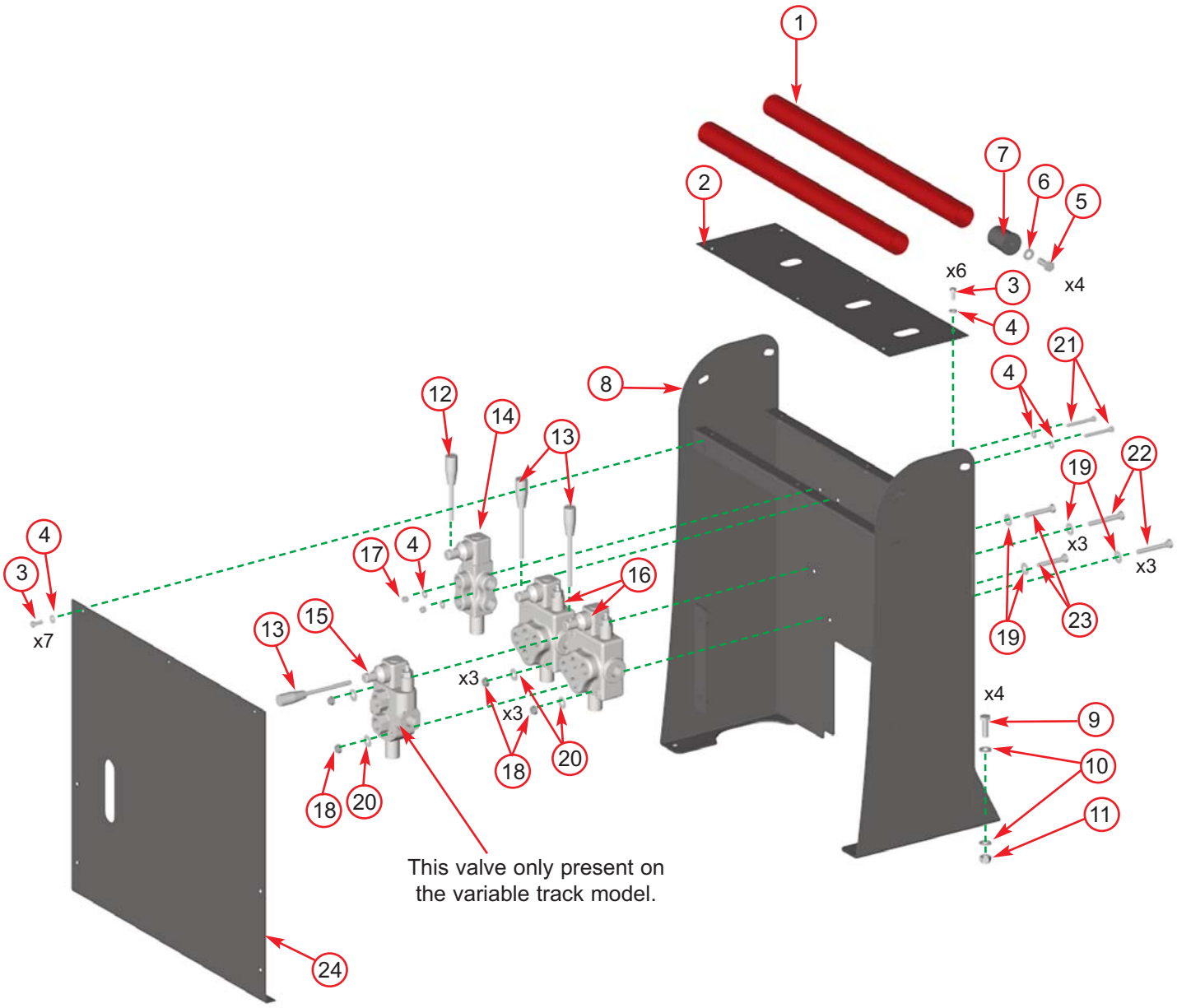
CONTROL PANEL - ROAD/TRACKED MODELS 62



Date Last Modified: 31st Jan 08

Item	Part No	Part Name	Q'ty
1	0236	M5 P Nyloc Nut	2
2	0911	Throttle Cable	1
3	0708	M5 C Washer	2
4	1758S	Control Panel	1
5	0704	M12 C Washers	8
6	0431	M12/40 Bolt	4
7	0435	M5/16 Pan Pozi	4

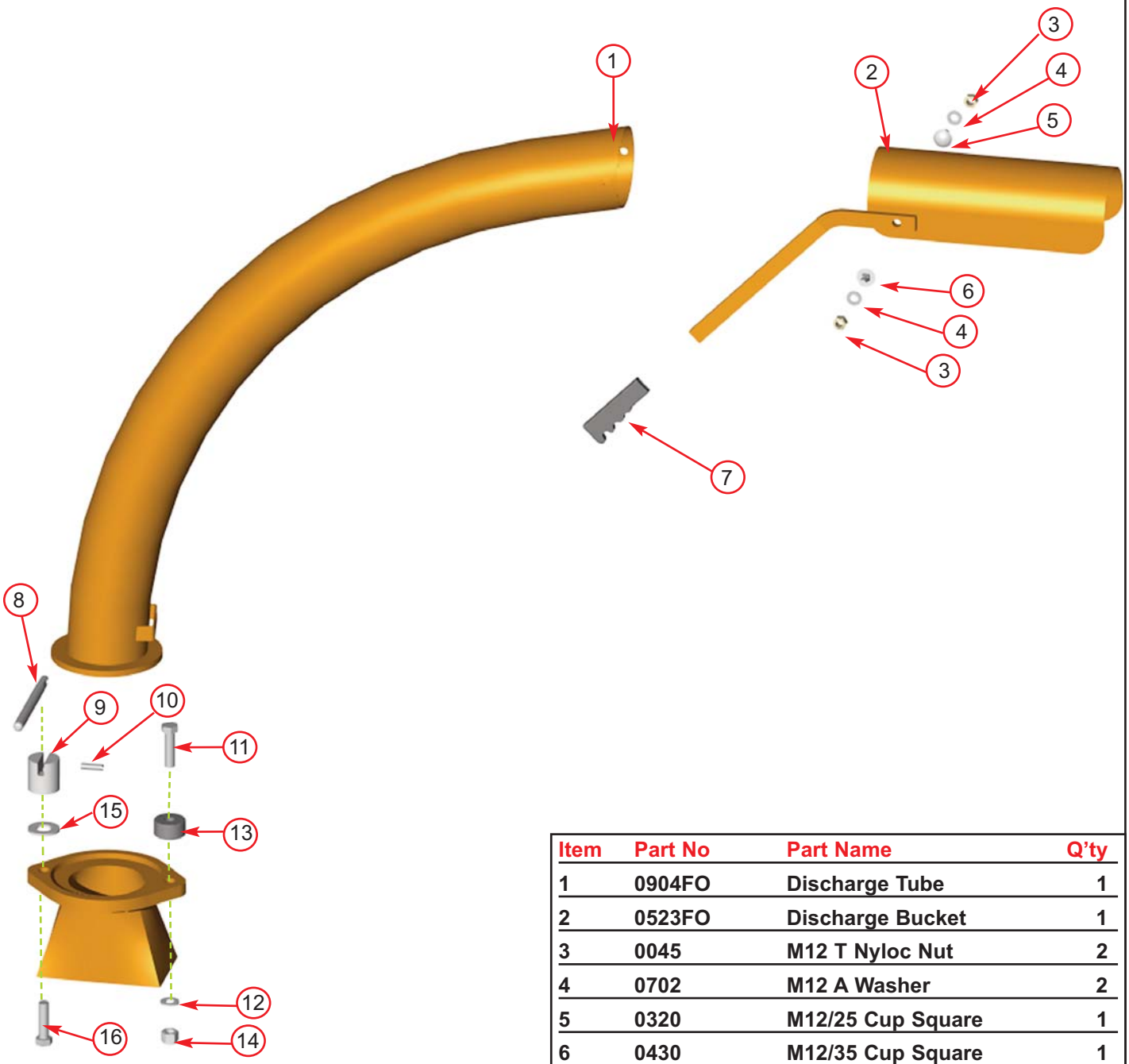
Item	Part No	Part Name	Q'ty
8	1757	Amber LED	1
9	0327	Hours Counter	1
10	*Supp'd with engine*	Ignition Switch	1
11	1756	Control Panel Decal	1
12	1397	Throttle Lever	1
13	1470	Rubber Protector	1
14	18008	Control Panel Decal	1



Date Last Modified: 24th Jan 07

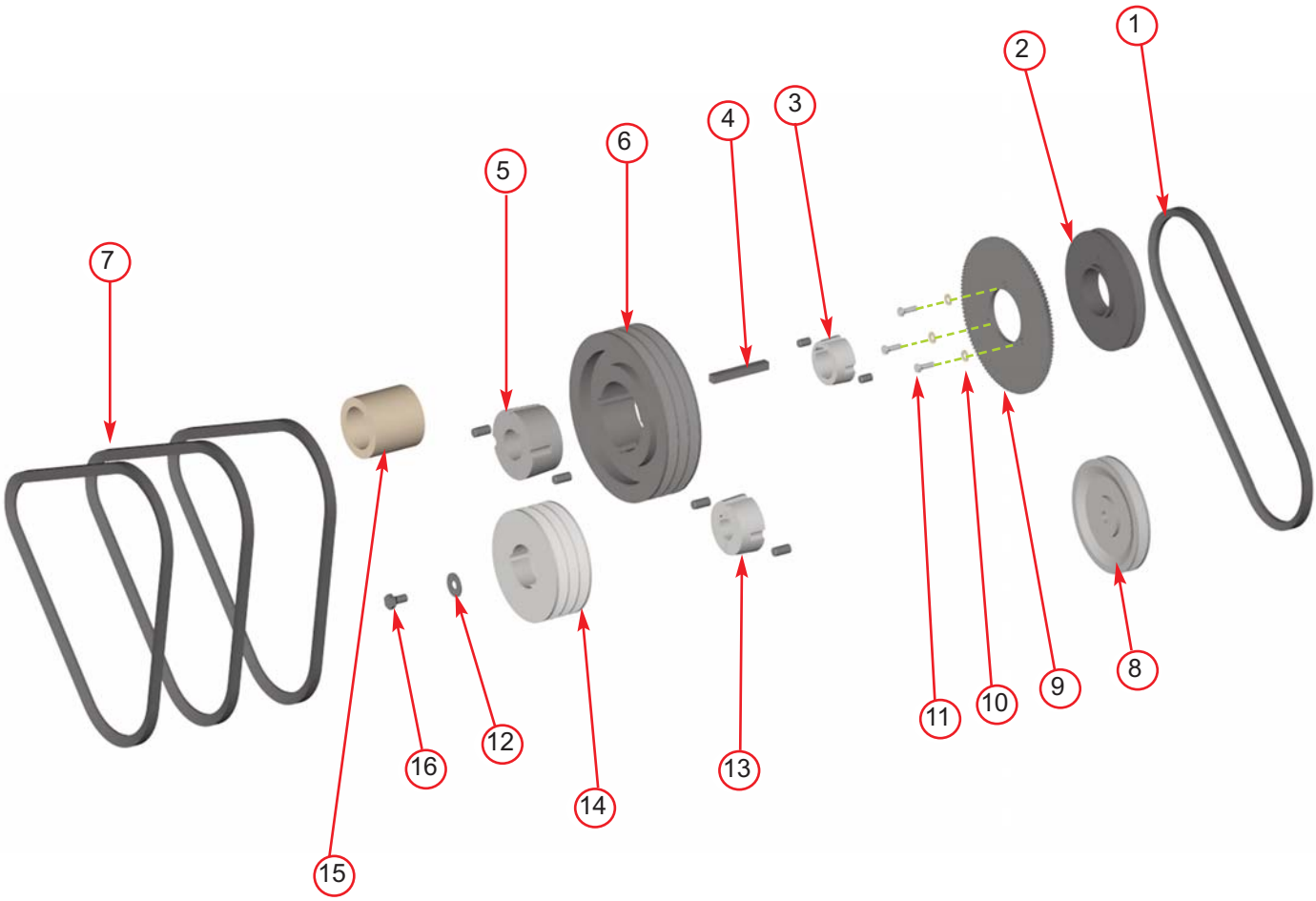
Item	Part No	Part Name	Q'ty
1	1802FR	Cross Bar	2
2	1879FB	Control Panel Tracked	1
3	0437	M6/16 Bolt	13
4	0709	M6 C Washer	17
5	0360	M10/25 Bolt	4
6	0701	M10 A Washer	4
7	1803P	End Plug	4
8	1883FB	Control Tower Tracked	1
9	0382	M10/30 Bolt	4
10	0839	M10 C Washer	8
11	0052	M10 T Nyloc Nut	4
12	1860	M8 Lever	1

Item	Part No	Part Name	Q'ty
13	1737	M8 Lever	3
14	1738	Six Way Diverter Valve	1
15	3005	Four Port Valve	1
16	4261	Proportional Crossover Valve	2
17	0142	M6 P Nyloc Nut	2
18	0481	M8 T Nyloc Nut	8
19	0712	M8 C Washer	8
20	0711	M8 A Washer	8
21	0341	M6/50 Bolt	2
22	0354	M8/60 Bolt	6
23	1319	M8/50 Bolt	2
24	1882FB	Hose Guard	1



Item	Part No	Part Name	Q'ty
1	0904FO	Discharge Tube	1
2	0523FO	Discharge Bucket	1
3	0045	M12 T Nyloc Nut	2
4	0702	M12 A Washer	2
5	0320	M12/25 Cup Square	1
6	0430	M12/35 Cup Square	1
7	0134	Black Handle Grip	1
8	1649MS	Discharge Clamp Handle	1
9	4109M	M16 Clamp Nut	1
10	4131	Roll Pin	1
11	0434	M16/70 Hex Bolt	1
12	1354	M16 C Washer	1
13	2837M	Clamp Nut Small	1
14	1511	M16 P Nyloc Nut	1
15	0832	M24 Washer	1
16	0333	M16/60 Hex Bolt	1

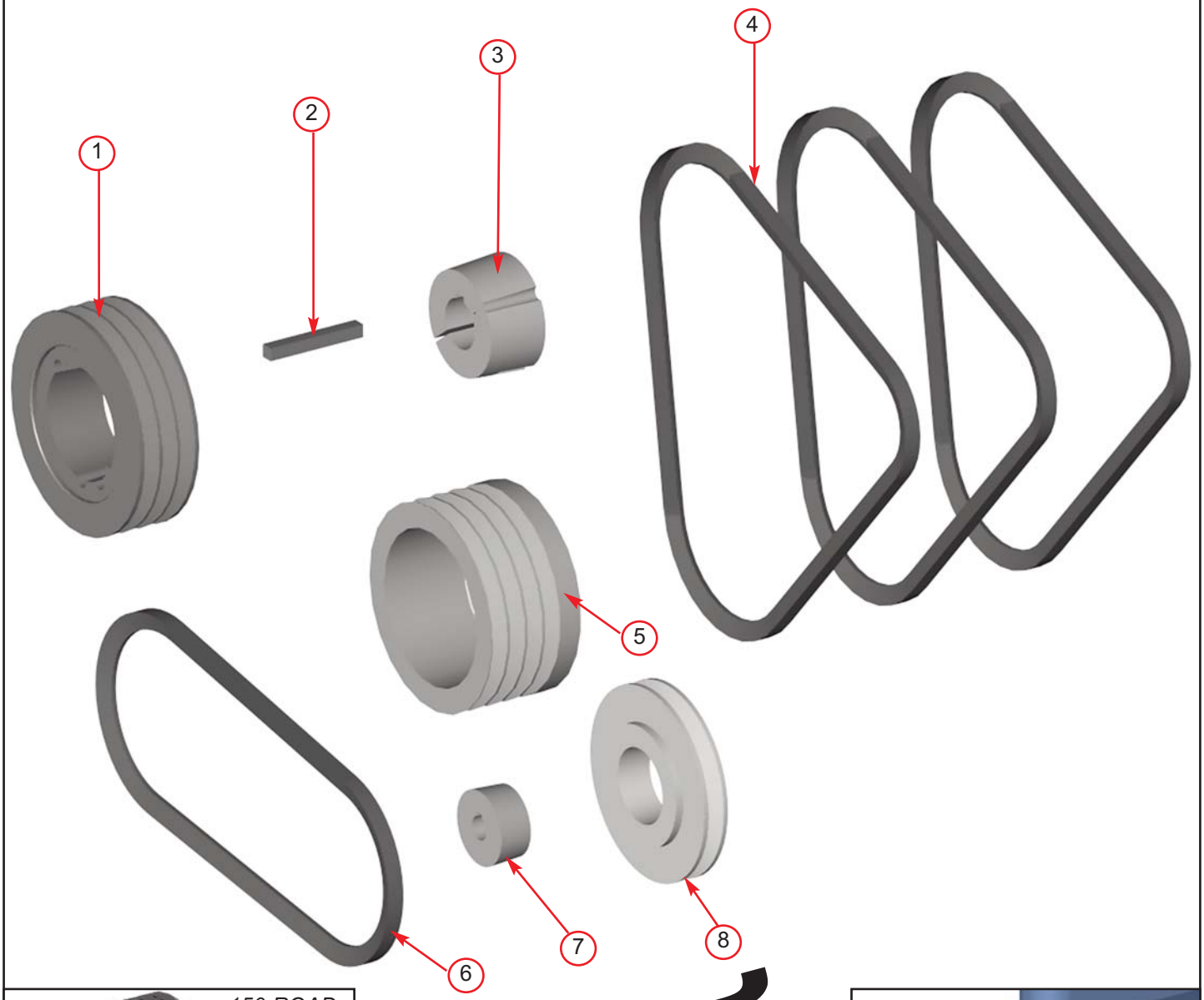
Date Last Modified: 19th Dec 07

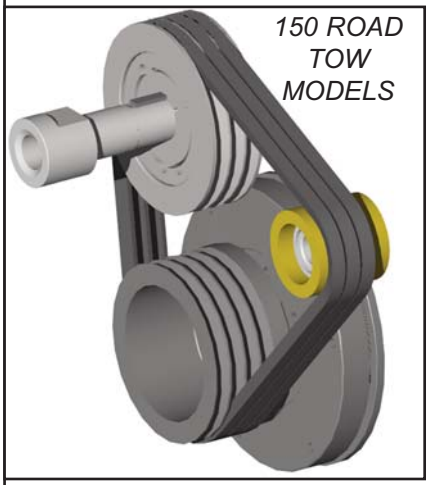


Date Last Modified: 5th April 06

Item	Part No	Part Name	Q'ty
1	0994	Belt 950	1
2	0949M	Pulley 140 X 1 SPA	1
3	0412	Bush 1610 38 mm	1
4	0072	Key	1
5	0410	Bush 2517 38 mm	1
6	1351	Pulley 200 X 3 SPA	1
7	0310	Belt 1060	3
8	0983MS	Pulley 139 X 1 SPA	1

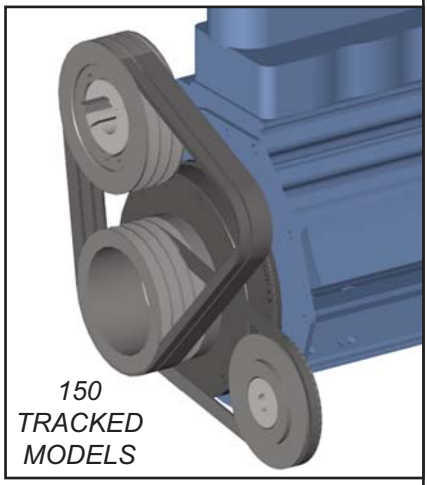
Item	Part No	Part Name	Q'ty
9	1028S	Trigger	1
10	0709	M6 C Washer	3
11	1236	M6/20 Bolt	3
12	4344	M10/30 Washer	1
13	0408	Bush 2012 1"	1
14	0444	Pulley 132 X 3 SPA	1
15	0411MS	Belt Tension Pulley	1
16	17283	Long Socket Head Screw	1





150 ROAD TOW MODELS

TRACKED MODELS ONLY

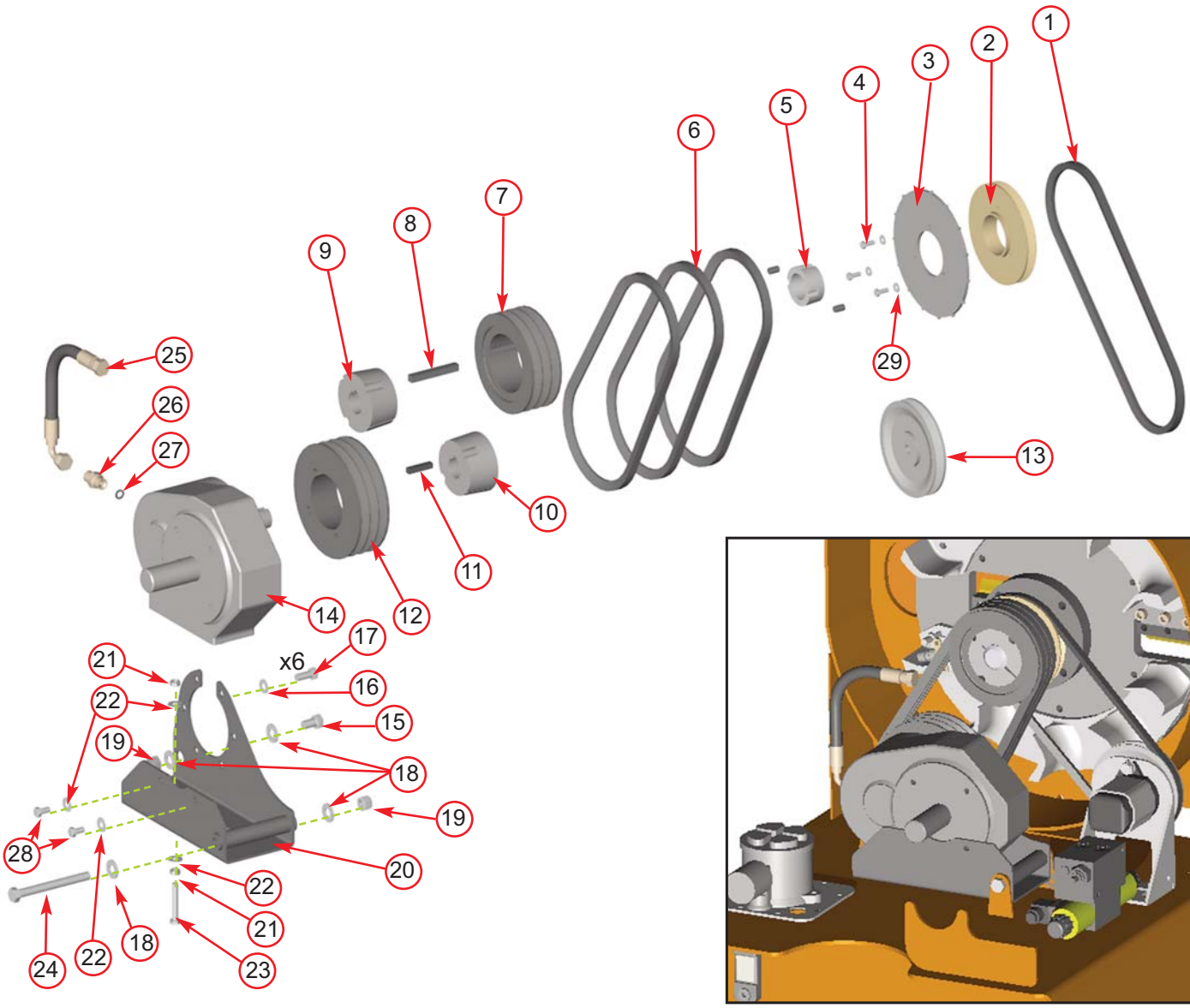


150 TRACKED MODELS

Date Last Modified: 29th June 05

Item	Part No	Part Name	Q'ty
1	1175	Rotor Pulley	1
2	0072	Key	1
3	1410	Taper Lock Bush 2517	1
4	0310	Belt SPA 1060	3

Item	Part No	Part Name	Q'ty
5	1170M	Engine Pulley	1
6	1533	Vee Belt SPA 900	1
7	2975	Taper Lock Bush 1610 18 mm	1
8	2974	Pulley 140 x 1 SPA	1

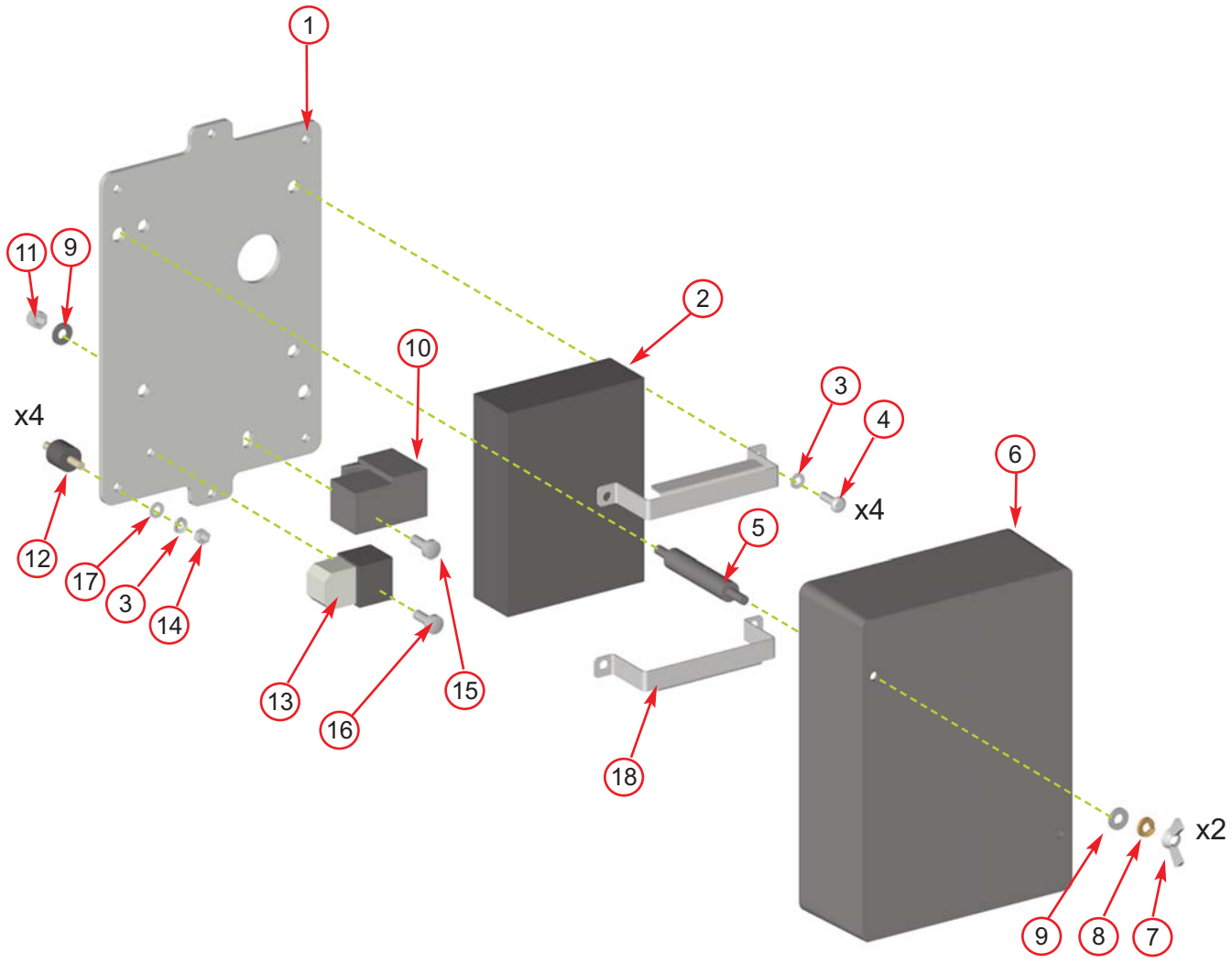


Date Last Modified: 30th Jan 08

Item	Part No	Part Name	Q'ty
1	0994	Belt	1
2	0949M	Pulley 140 x 1 SPA	1
3	1923S	Trigger	1
4	0437	M6/16 Bolt	3
5	0412	Bush 1610 38 mm	1
6	1533	Belt 900 SPA	3
7	1471	Pulley 140 x 3 SPA	1
8	0072	Key	1
9	0410	Bush 2517 38 mm	1
10	1616	Bush 2517 30 mm	1
11	0073	Key	1
12	1175	Pulley 160 x 3 SPA	1
13	0983MS	Pulley 139 x 1 SPA	1
14	1617	Gear Box	1
15	0321	M12/30 Bolt	1

Item	Part No	Part Name	Q'ty
16	0701	M10 A Washer	6
17	0878	M10/20 Bolt	6
18	0704	M12 C Washer	4
19	0644	M12 P Nyloc Nut	1
20	1531FS	Gear Box Bracket	1
21	0476	M8 Plain Nut	1
22	0712	M8 C Washer	4
23	0354	M8/60 Bolt	1
24	18175	M12/160 Bolt	1
25	4239	3/8" Breather Hose	1
26	0161	3/8" M/M Adapter	1
27	0396	3/8" Dowty Washer	1
28	0344	M8/16 Bolt	2
29	0709	M6 C Washer	3

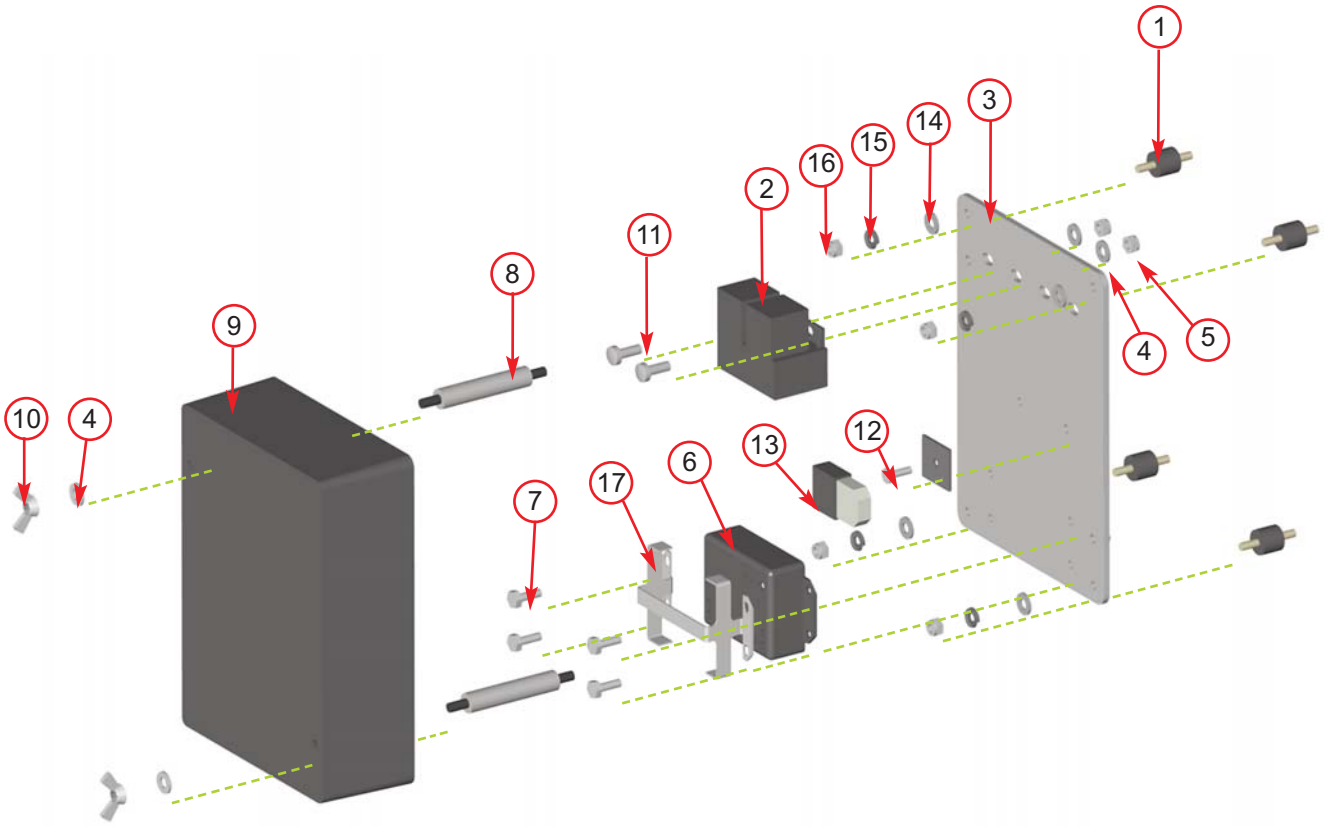
ELECTRICAL PANEL - 150 MODELS



Date Last Modified: 11th March 08

Item	Part No	Part Name	Q'ty
1	3038FS	Electrical Panel	1
2	18405	H-Box	1
3	0857	M5 A Washer	8
4	0435	M5/16 Pan Pozi	4
5	2725	Electrical Cover Stand Off	3
6	1930	Electrical Cover	1
7	18107	M6 Wing Nut	2
8	18106	M6 Spring Washer	2
9	0709	M6 C Washer	4

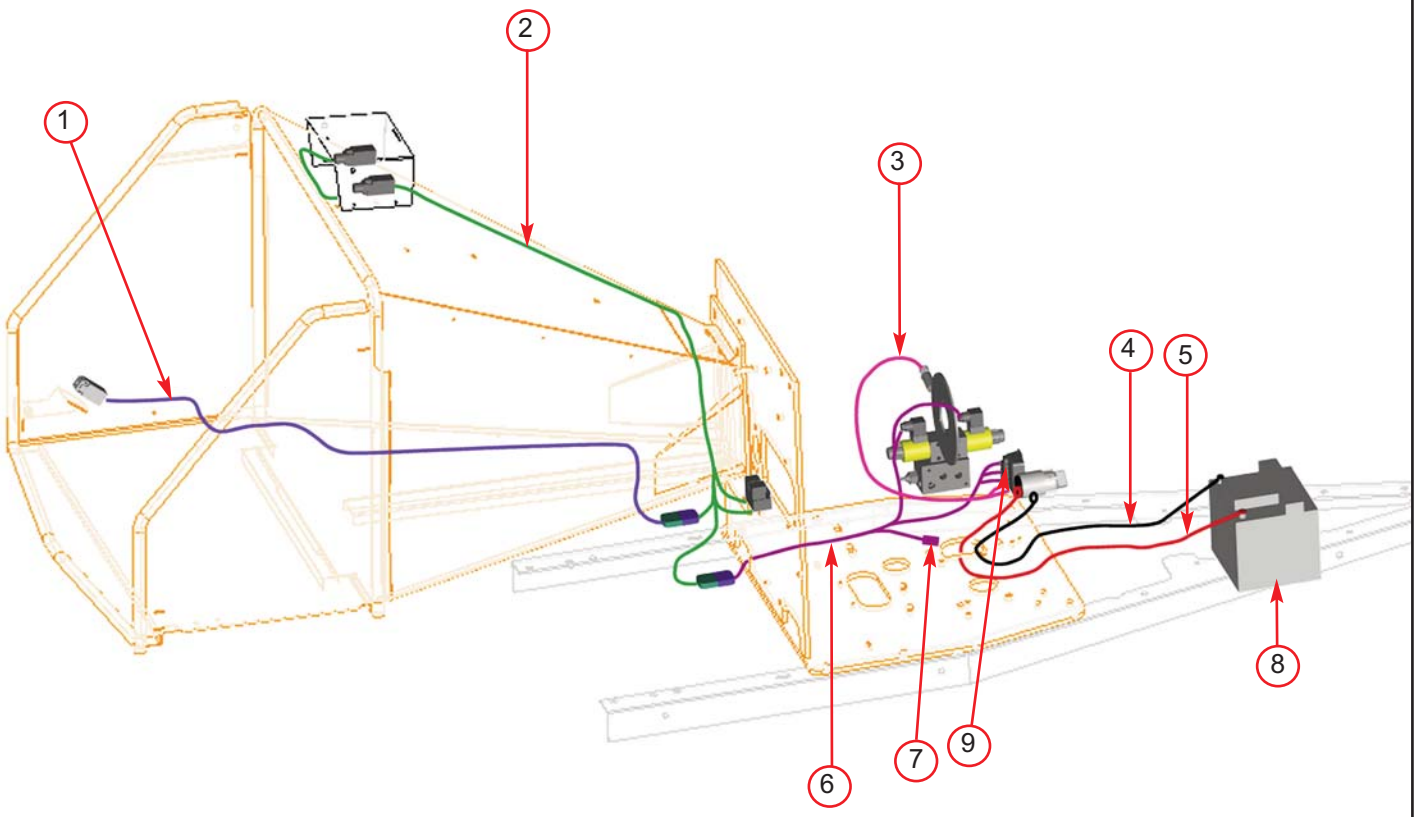
Item	Part No	Part Name	Q'ty
10	*Supp'd with loom*	Relay	1
11	0391	M6 T Nyloc Nut	2
12	4033	M5 AV Mount	4
13	*Supp'd with loom*	Fuse	2
14	18291	M5 Plain Nut	4
15	0438	M6/16 Pan Pozi	1
16	1151	Countersunk Pop Rivet	1
17	3024	M5 Spring Washer	4
18	18398	Mounting Bracket	4



Date Last Modified: 13th March 06

Item	Part No	Part Name	Q'ty
1	4033	AV Mount	4
2	supp'd with loom 4140	Relay	2
3	1921FS	Electrical Plate	1
4	0709	M6 C Washer	4
5	0142	M6 T Nyloc Nut	2
6	4350	Speed Switch	1
7	0855	M5/10 Pan Pozi	4
8	2725	M6 Stand Off	2
9	1930	Electrical Cover	1

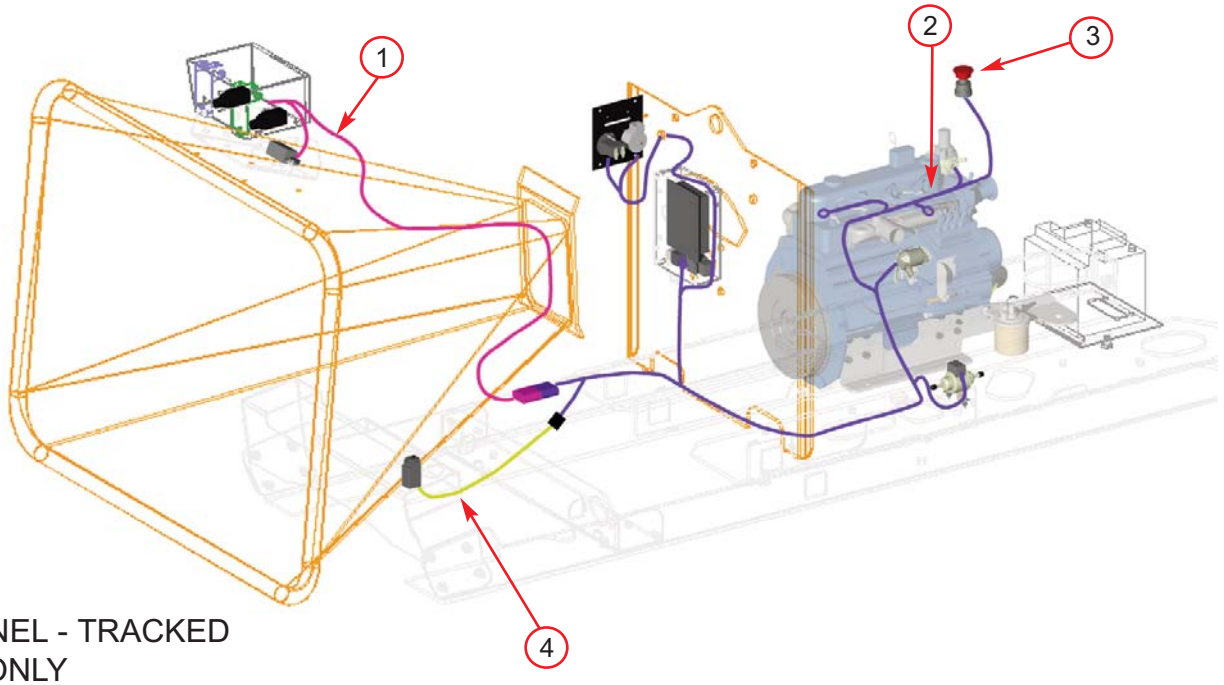
Item	Part No	Part Name	Q'ty
10	18107	M6 Wing Nut	2
11	0438	M6/16 Pan Pozi	2
12	1151	Countersunk Pop Rivet	1
13	Supp'd with loom	Fuse	1
14	0857	M5 A Washer	4
15	3024	M5 Spring Washer	4
16	0236	M5 P Nyloc Nut	4
17	17338	Speed Switch Bracket	1



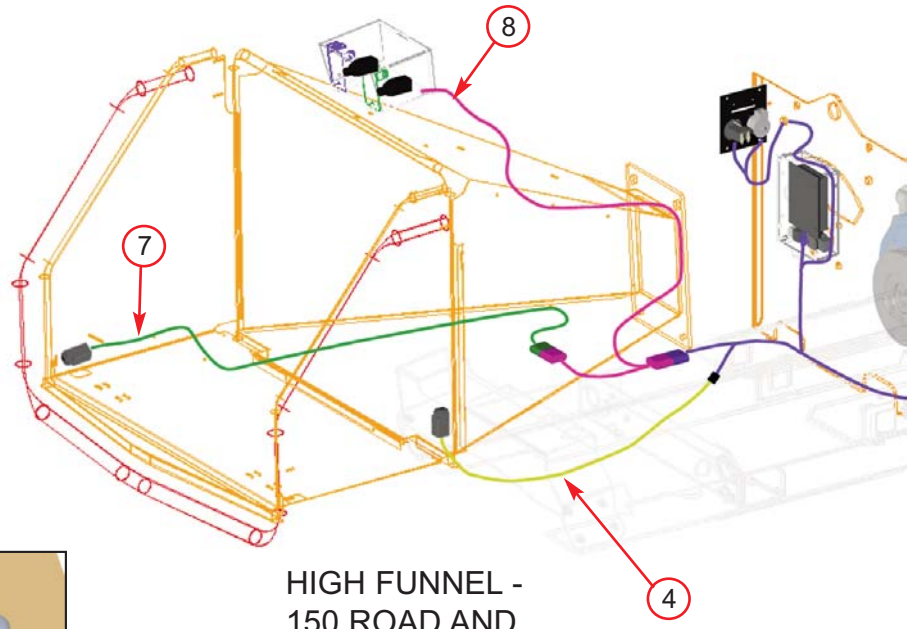
Date Last Modified: 29th March 06

Item	Part No	Part Name	Q'ty
1	1406	Limit Switch Loom	1
2	1407	Control Box Loom	1
3	1638	No Stress Sensor	1
4	3063	$^{-}$VE Battery Cable	1
5	3064	$^{+}$VEBattery Cable	1

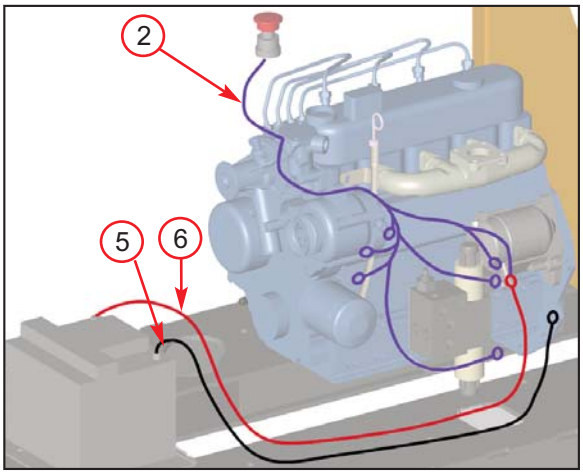
Item	Part No	Part Name	Q'ty
6	17398	No Stress Loom	1
7	1401	Honda Adapter	1
8	0368	Battery	1
9	4350	Speed Switch	1



LOW FUNNEL - TRACKED MODELS ONLY



HIGH FUNNEL - 150 ROAD AND TRACKED

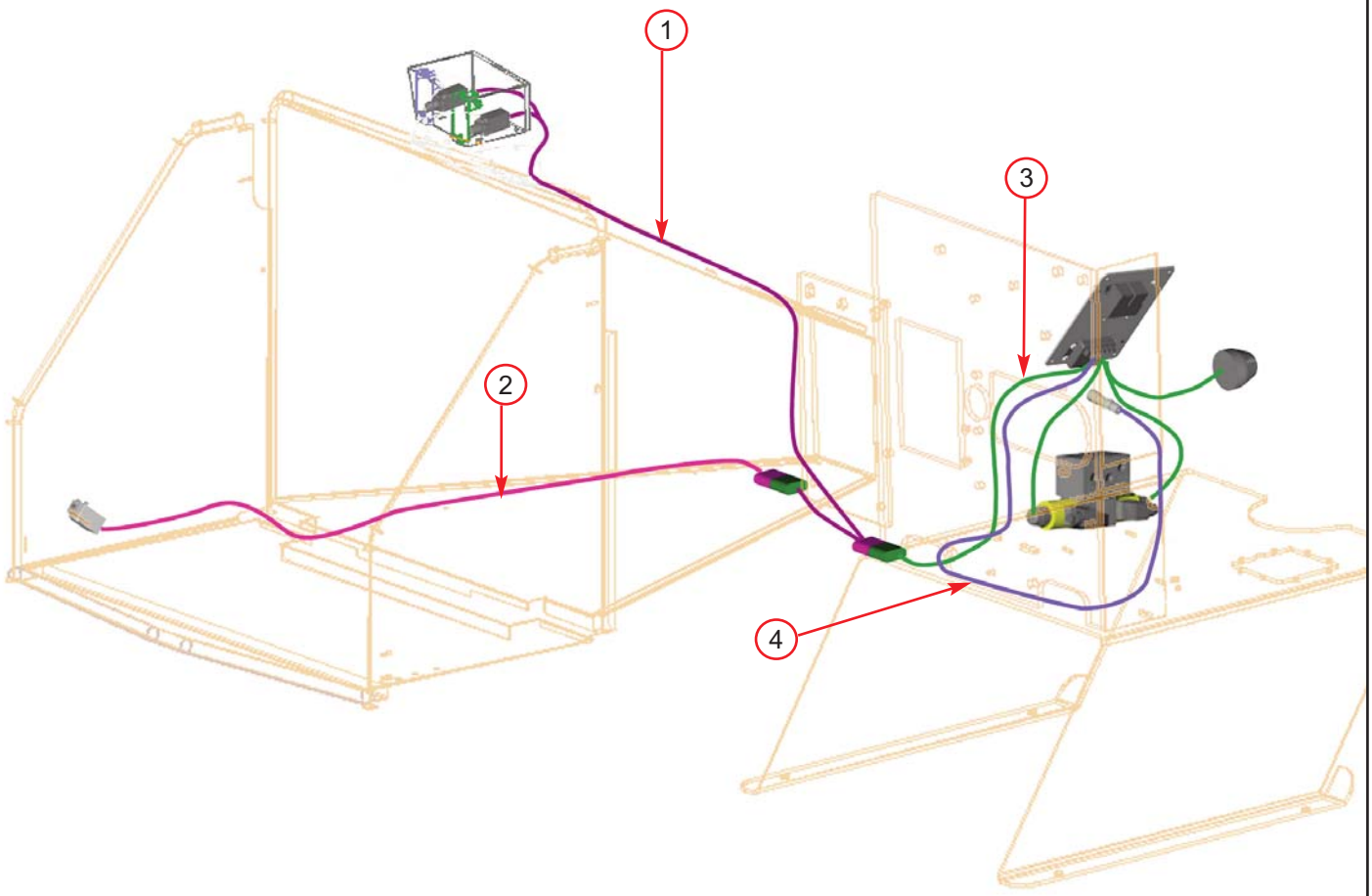


Date Last Modified: 11th March 08

Item	Part No	Part Name	Q'ty
1	3019	Control Box Loom	1
2	18481	Engine Loom	1
3	2627	Emergency Stop Switch	1
4	4017	Safety Switch Loom	1

Item	Part No	Part Name	Q'ty
5	1376	$^{-}$VE Battery Cable	1
6	1375	$^{+}$VE Battery Cable	1
7	1406	Safety Bar Loom	1
8	1975	Control Box Loom	1

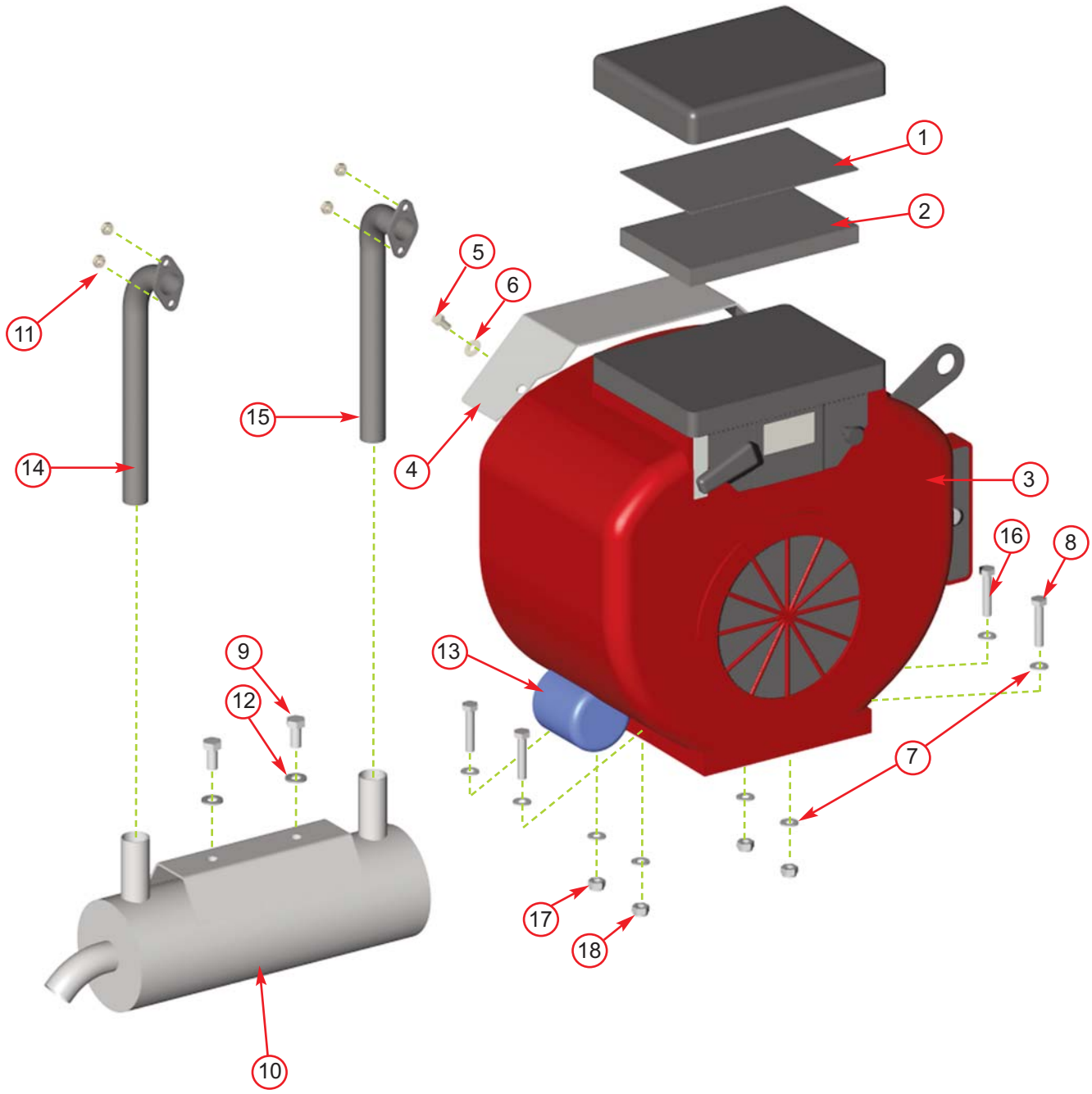
ELECTRICAL LAYOUT - PTO MODELS 72



Date Last Modified: 3rd Dec 08

Item	Part No	Part Name	Q'ty
1	1975	Control Box Loom	1
2	1406	Limit Switch Loom	1

Item	Part No	Part Name	Q'ty
3	4140	Main Loom	1
4	1902	No Stress Sensor	1

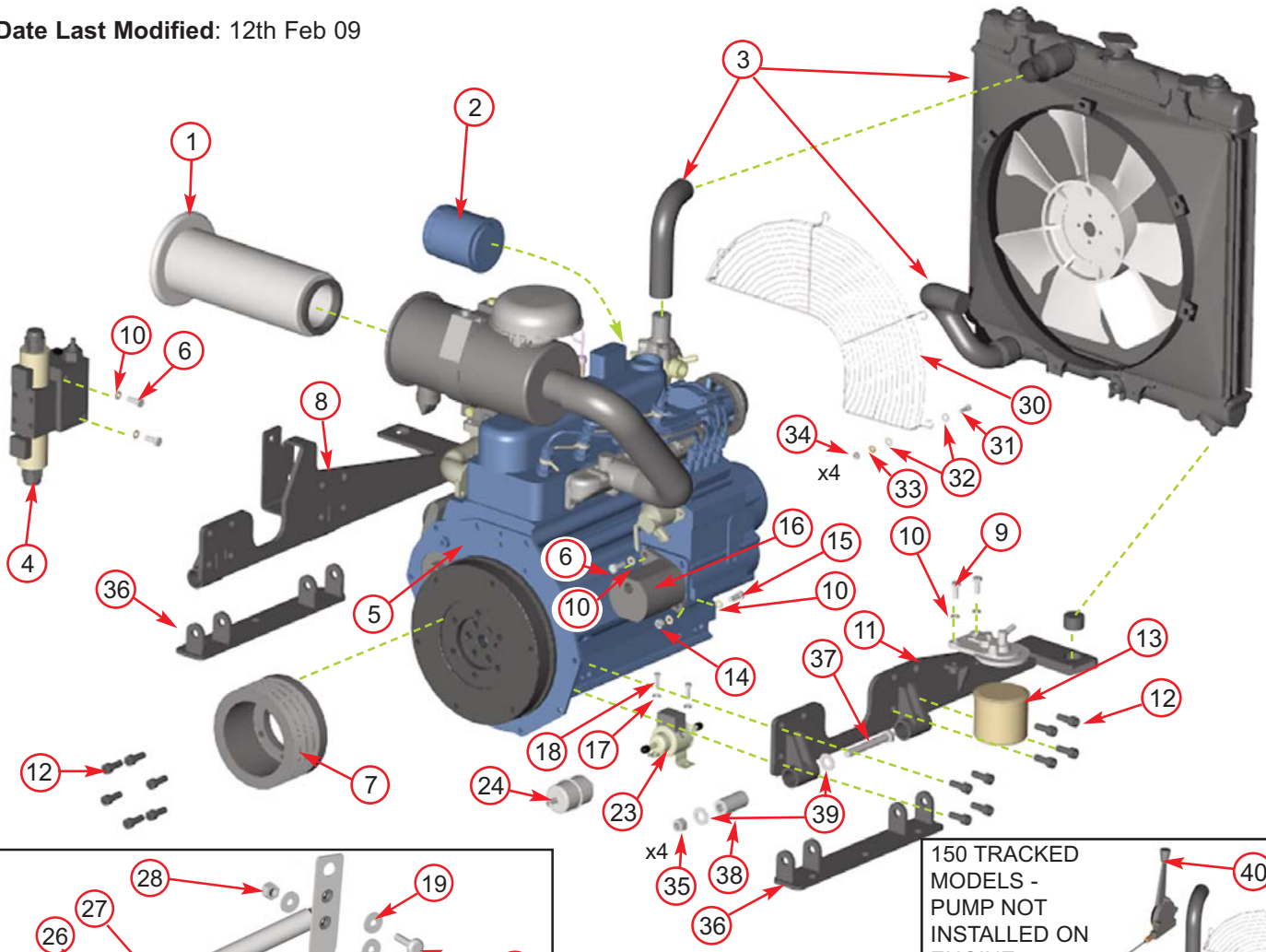


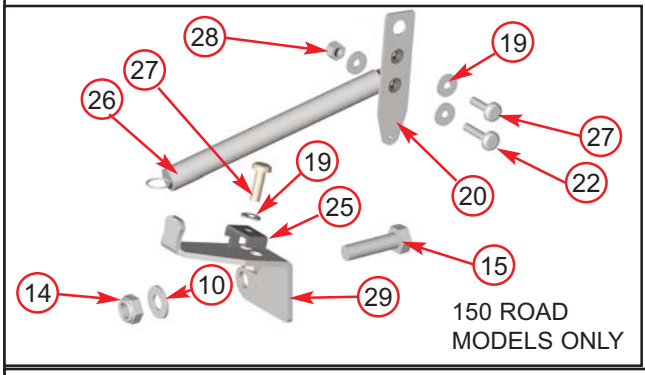
Date Last Modified: 3rd July 07

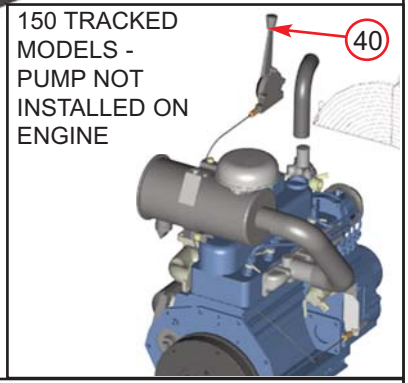
Item	Part No	Part Name	Q'ty
1	1424	Foam Filter Element	1
2	1425	Paper Filter Element	1
3	18252	Engine	1
4	17318	Guard Top Engine	1
5	0344	M8/16 Bolt	2
6	0712	M8 C Washer	2
7	0839	M10 C Washer	8
8	1252	M10/50 Bolt	2
9	0277	M12/25 Bolt	2

Item	Part No	Part Name	Q'ty
10	4211F	Muffler	1
11	supp'd with engine	M8 Nut	4
12	0702	M12 A Washer	2
13	1426	Oil Filter	1
14	4212F	Exhaust Pipe	1
15	4213F	Exhaust Pipe	1
16	1580	M10/60 Bolt	2
17	4345	M10 P Nyloc	2
18	0052	M10 T Nyloc	2

Date Last Modified: 12th Feb 09



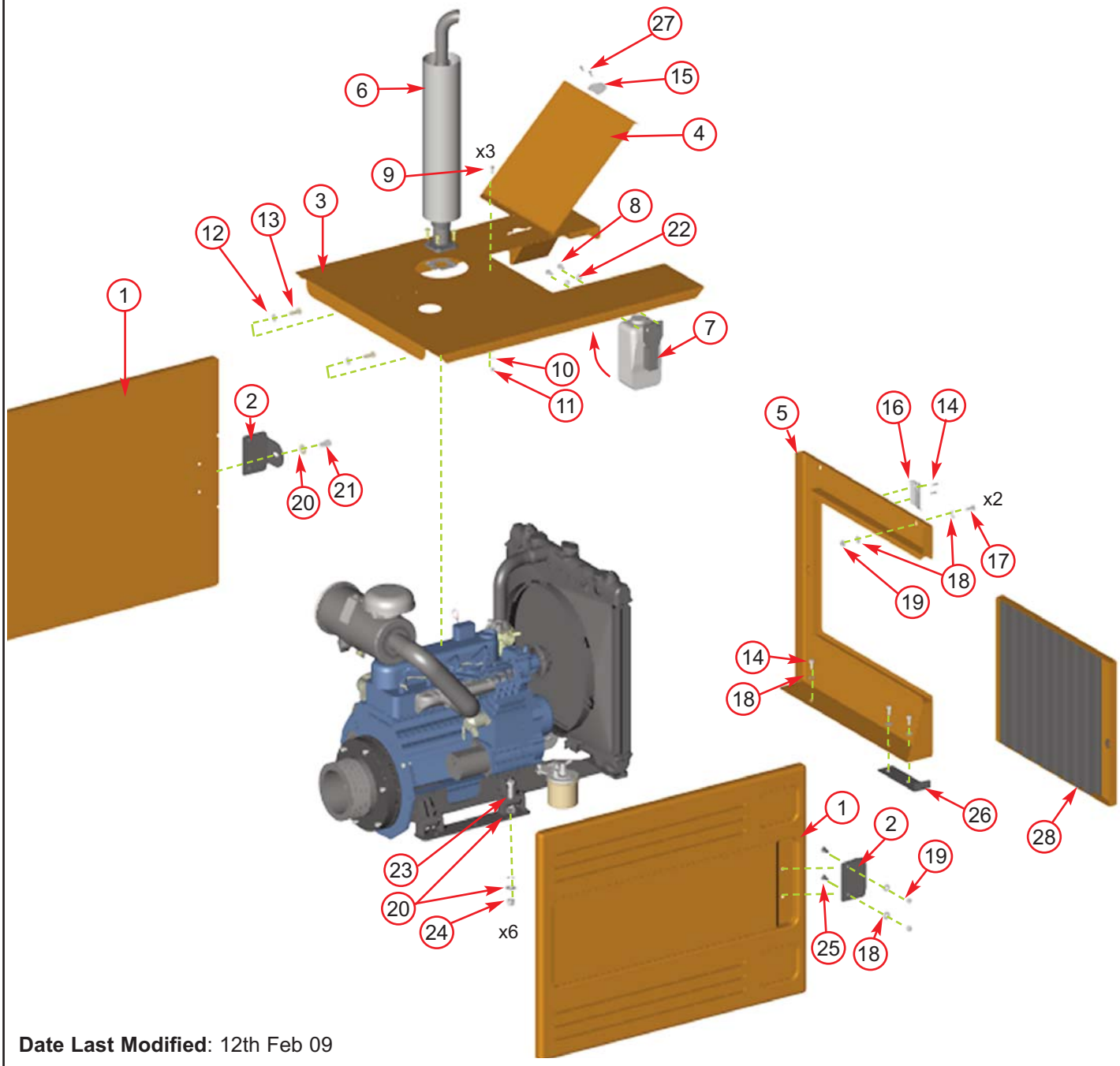




Item	Part No	Part Name	Q'ty
1	0086	Air Filter	1
2	0095	Oil Filter	1
3	4319	Radiator Kit	1
4	1613	Directional Control Valve (DCV)	1
5	0879	Engine	1
6	0346	M8/20 Bolt	3
7	1170M	Pulley Engine 150 x 4	1
8	18740FB	Bracket Engine Mount	1
9	0350	M8/25 Bolt	2
10	0711	M8 A Washer	8
11	18739FB	Bracket Engine Mount	1
12	0304	M10/25 Fine Thread Socket Cap	22
13	0085	Fuel Filter	1
14	0481	M8 T Nyloc Nut	2
15	0352	M8/40 Bolt	2
16	1660	Hydraulic Pump	1
17	0709	M6 C Washer	2
18	1236	M6/20 Bolt	2
19	0708	M5 C Washers	4
20	1090F	Throttle Arm Extension	1

Item	Part No	Part Name	Q'ty
21	0712	M8 C Washer	3
22	0856	M5/20 Pan Pozi	1
23	0807	Fuel Pump	1
24	4315	In-Line Fuel Filter	1
25	0699	Throttle Clamp	1
26	1306	Spring	1
27	0435	M5/16 Pan Pozi	2
28	0236	M5 P Nyloc Nut	1
29	2814FS	Throttle Cable Clamp	1
30	4335	Radiator Fan Guard	1
31	0437	M6/16 Bolt	4
32	0709	M6 C Washer	8
33	18106	M6 Spring Washer	4
34	0392	M6 Plain Nut	4
35	0644	M12 P Nyloc Nut	4
36	18338FB	Engine Bracket Base	2
37	0332	M12/90 Bolt	4
38	18332	AV Mount	4
39	0704	M12 C Washer	8
40	2946	Throttle Cable	1

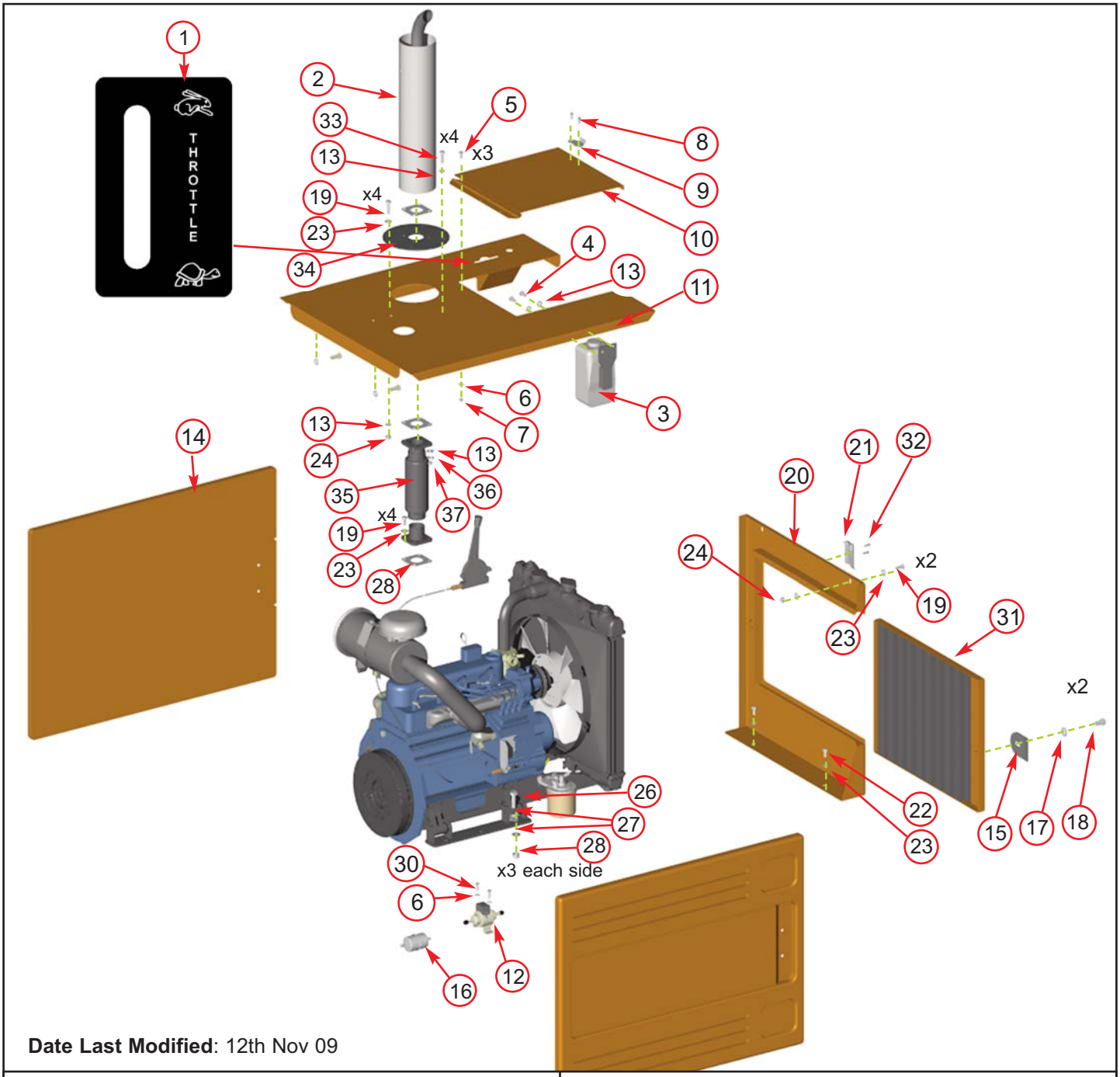
ENGINE BAY - 150 ROAD MODELS



Date Last Modified: 12th Feb 09

Item	Part No	Part Name	Q'ty
1	0765O	Side Panel	2
2	0825FS	Handle Side Plastic	2
3	17292FO	Top Bonnet	1
4	0607FO	Access Cover	1
5	18580FO	Guard Front Engine Bay	1
6	18327FB	Exhaust Muffler Complete	1
7	4320	Reserve Tank	1
8	0344	M8/16 Bolt	2
9	0438	M6/16 Pozi	3
10	0709	M6 C Washer	3
11	0391	M6 T Nyloc Nut	3
12	0701	M10 A Washer	2
13	0360	M10/25 Bolt	2
14	0067	Pop Rivet 4.8 x 12	2

Item	Part No	Part Name	Q'ty
15	4088	Catch Plate	1
16	0235	Catch	1
17	0346	M8/20 Bolt	5
18	0712	M8 C Washer	14
19	0479	M8 P Nyloc Nut	8
20	0704	M12 C Washer	14
21	0318	M12/20 Bolt	2
22	0711	M8 A Washer	2
23	0431	M12/40 Bolt	6
24	0644	M12 P Nyloc Nut	6
25	0348	M8/20 Skt Csk Bolt	4
26	17312FB	Side Panel Retainer	1
27	0066	Pop Rivet 5 x 6	2
28	18581FO	Front Filter Grill	1

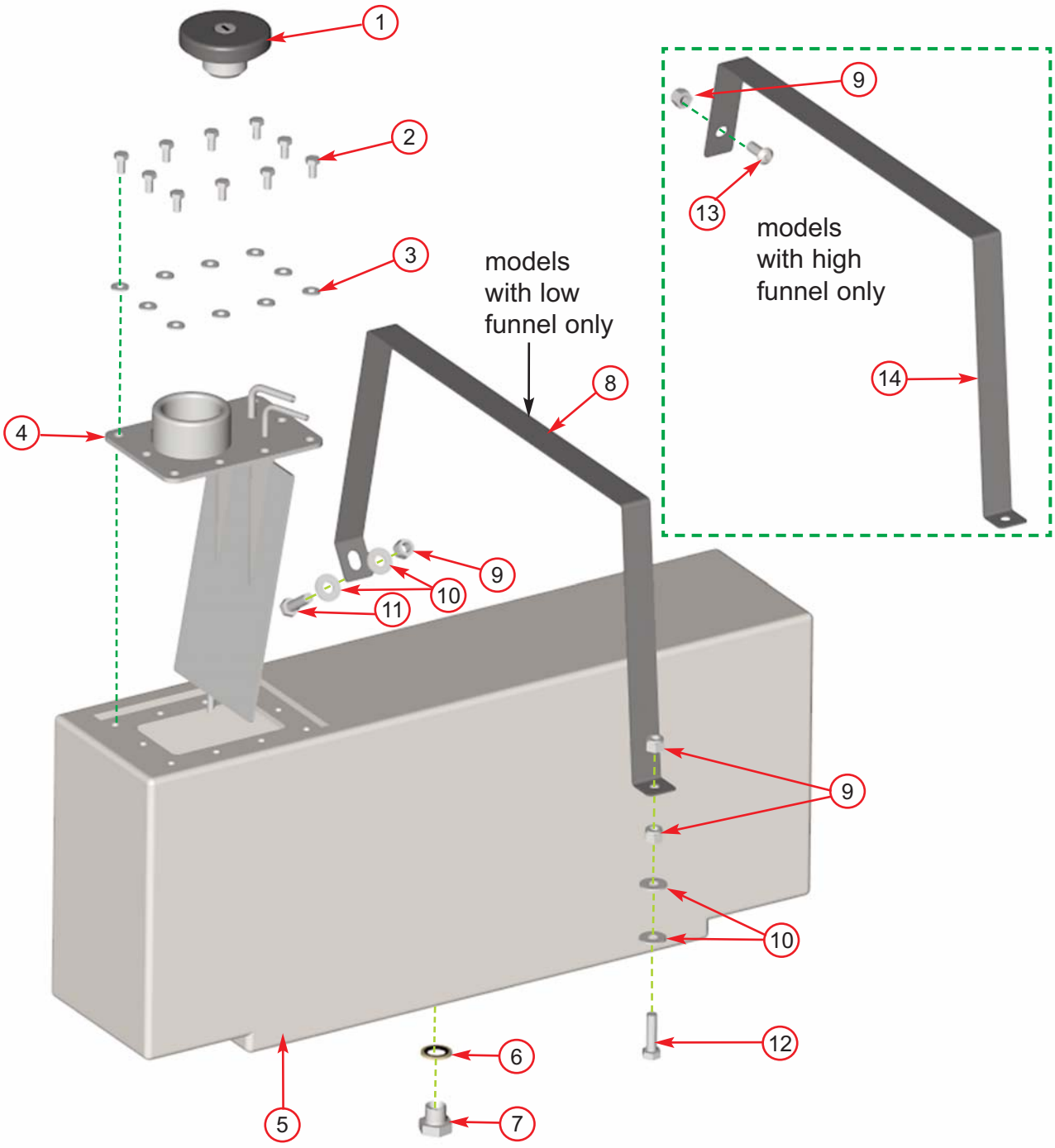


Date Last Modified: 12th Nov 09

Item	Part No	Part Name	Q'ty
1	2950	Throttle Decal	1
2	18915F	Exhaust Muffler Complete	1
3	4320	Reserve Tank	1
4	0344	M8/16 Bolt	2
5	0438	M6/16 Pan Pozi	3
6	0709	M6 C Washer	5
7	0142	M6 P Nyloc Nut	3
8	0066	Pop Rivet 5 x 6	2
9	4088	Catch Plate	1
10	0607FO	Access Cover	1
11	17292FO	Top Bonnet	1
12	0807	Fuel Pump	1
13	0711	M8 A Washer	14
14	0765O	Side Panel	2
15	2836FO	Engine Guard Retainer	2
16	4315	In-Line Fuel Filter	1
17	0704	M12 C Washer	14
18	0318	M12/20 Bolt	2

Item	Part No	Part Name	Q'ty
19	0346	M8/20 Bolt	10
20	18580FO	Front Engine Bay Guard	1
21	0235	Catch	1
22	0350	M8/25 Bolt	2
23	0712	M8 C Washer	12
24	1757	M8 P Nyloc Nut	6
25	0431	M12/40 Bolt	6
26	1008	Spring Washer	4
27	0476	M8 Plain Nut	4
28	17988	Gasket	3
29	0644	M12 P Nyloc Nut	6
30	0437	M6/16 Bolt	2
31	18581FO	Shroud Radiator with Grille	1
32	0067	Pop Rivet 4.8 x 12	2
33	18117	M8/35 Bolt	4
34	18851	Muffler Plate	1
35	19092	Flexi Adaptor	1

FUEL TANK- 150 MODELS 77

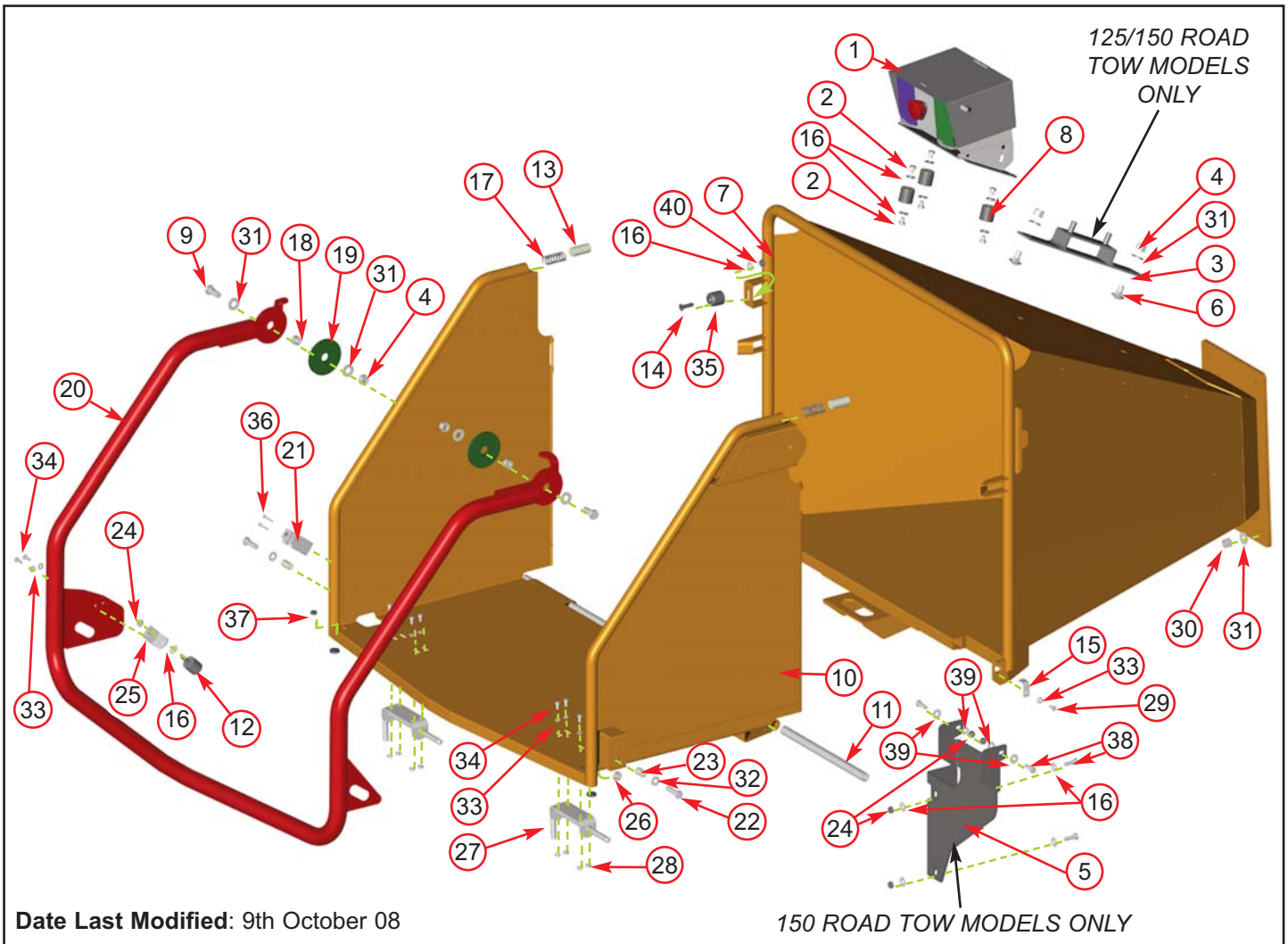


Date Last Modified: 5th Dec 07

Item	Part No	Part Name	Q'ty
1	1374	Locking Tank Cap	1
2	1658	M6/12 Bolt	10
3	0709	M6 C Washer	10
4	1576FS	Tank Top	1
5	18391K	Fuel Tank Kit (inc. parts 6 & 7)	1
6	0396	3/8" Dowty Washer	1
7	0211	3/8" Drain Plug	1

Item	Part No	Part Name	Q'ty
8	4087F	Tank Strap (Tracked models only)	1
9	1757	M8 P Nyloc Nut	4
10	0712	M8 C Washer	4
11	0346	M8/20 Bolt	1
12	0351	M8/30 Bolt	1
13	0347	M8/20 Button Head	1
14	18042F	Tank Strap-short (Tracked models only)	1

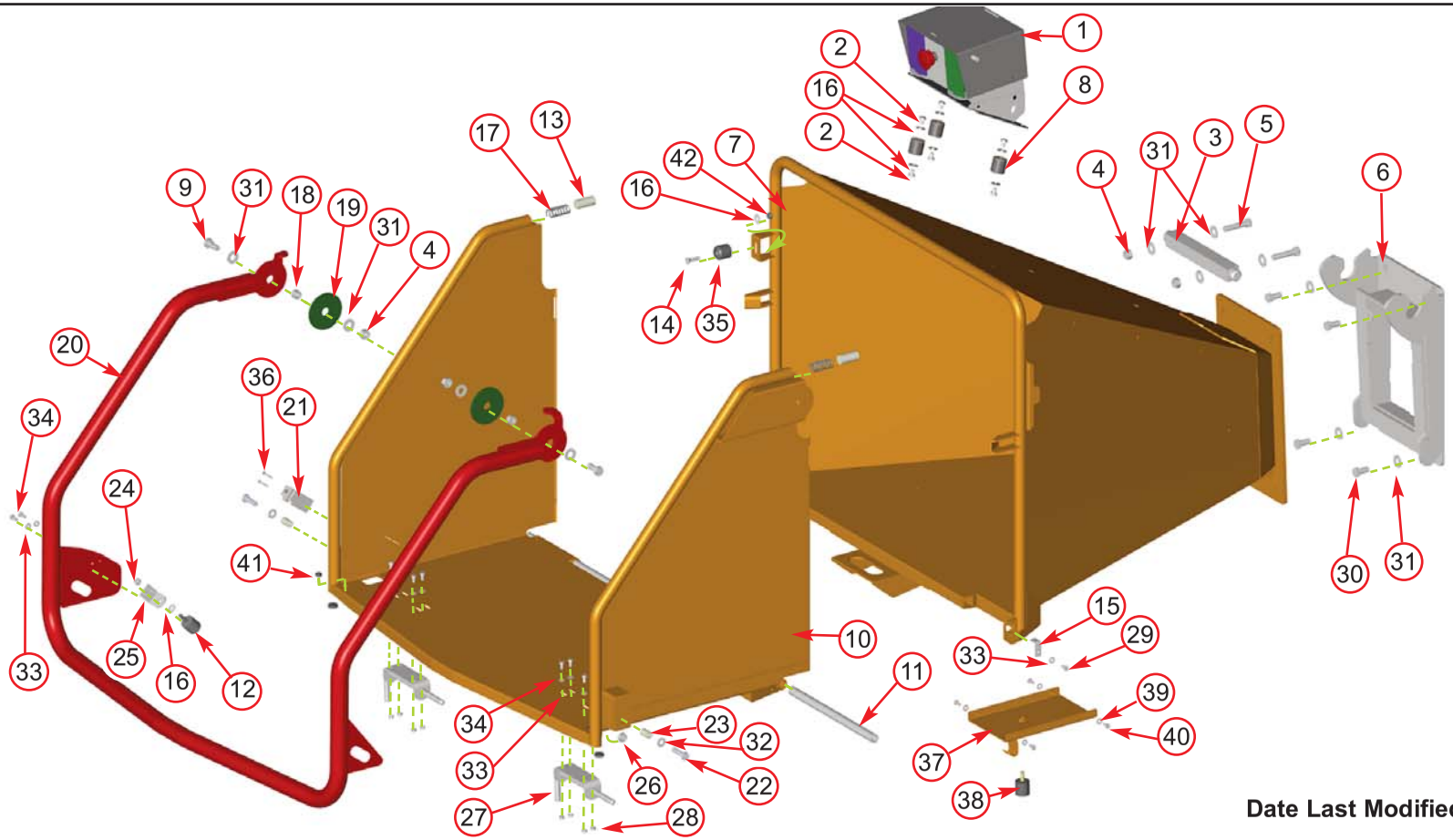
FUNNEL - 125/150 ROAD & PTO MODELS 78



Date Last Modified: 9th October 08

Item	Part No	Part Name	Q'ty
1	2809F	Control Box (detail on pg 34)	1
2	1721	M8/10 Bolt	6
3	0289FS	Spare Wheel Bracket	1
4	0045	M12 T Nyloc	4
5	17451FB	Funnel Support Bracket	1
6	0320	M12/25 Cup Square	2
7	4238FO	Funnel	1
8	1644	M8 Anti-Vibration Mount	3
9	0429	M12/35 Bolt	2
10	2919FO	Feed Tray	1
11	2922FS	Hinge Pin	2
12	0178	Rubber End Stop	1
13	1600	Nylon Pistons	2
14	0353	M8/50 Csk Soc.	1
15	4018S	Pin Bracket	2
16	0712	M8 C Washer	12
17	1603	Die Springs	2
18	1605M	Stainless Spacer	2
19	1599	Bearing Washer	2
20	1570FR	Safety Bar	1

Item	Part No	Part Name	Q'ty
21	1348	Limit Switch	1
22	1520	M10/45 Bolt	2
23	1591	Nylon Spacer	2
24	0479	M8 P Nyloc Nut	5
25	2727FS	Bracket Actuator	1
26	4345	M10 P Nyloc Nut	2
27	2986	1/2" Spring Bolt	2
28	0391	M6 T Nyloc Nut	8
29	1236	M6/20 Bolt	2
30	0046	M12 Plain Nut	4
31	0704	M12 C Washer	10
32	4344	M10 Repair Washer	2
33	0709	M6 C Washer	12
34	0437	M6/16 Bolt	10
35	4206	Nylon Bush	1
36	1006	M4/30 Pan Pozi	2
37	2493	Rubber Cap	2
38	0350	M8/25 Bolt	4
39	0711	M8 A Washer	4
40	0481	M8 T Nyloc Nut	1



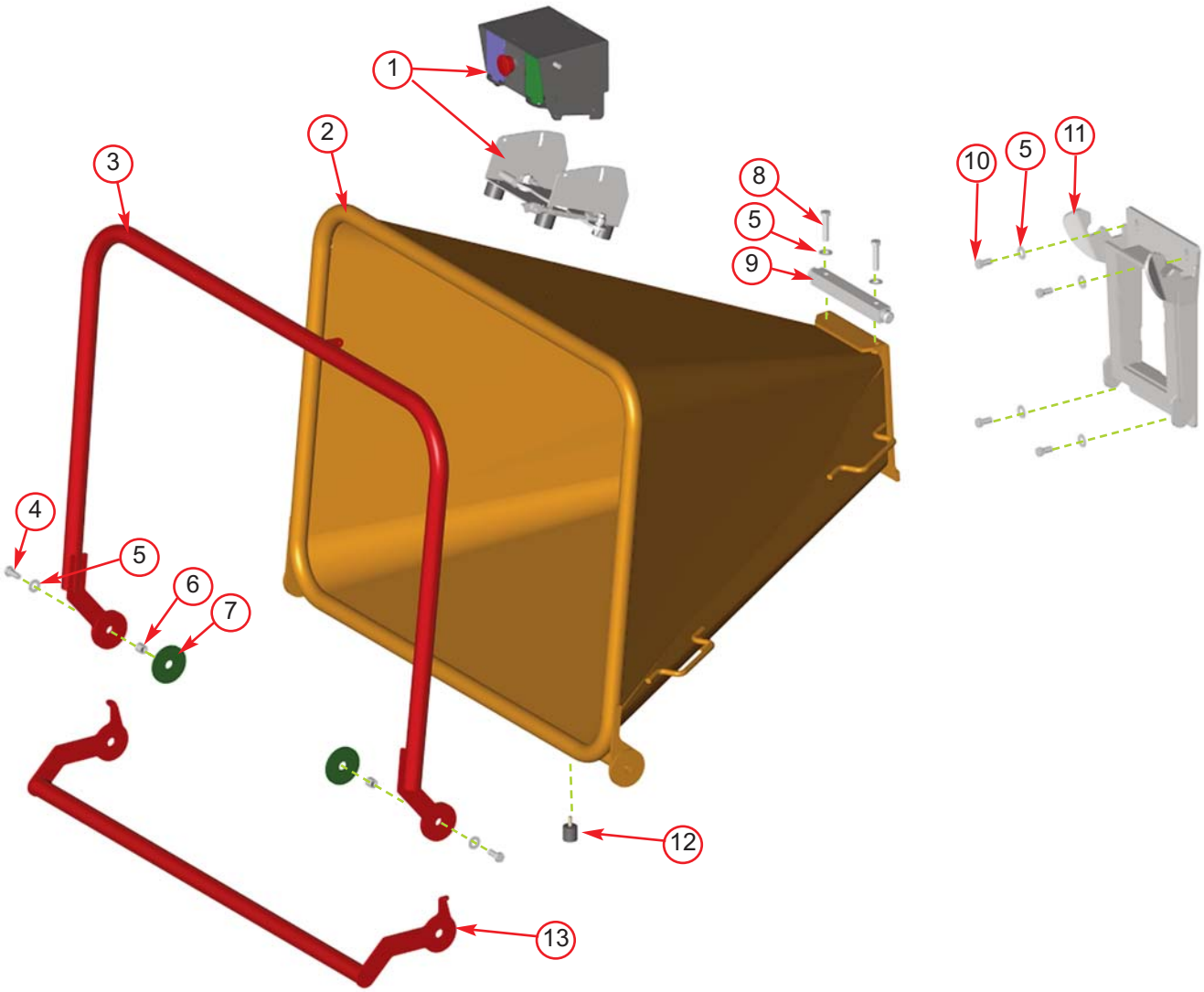
Date Last Modified: 9th Oct 08

Item	Part No	Part Name	Q'ty
1	2809F	Control Box (detail on pages 38/39)	1
2	1721	M8/10 Bolt	6
3	4282MS	Quick Release Pivot Bar	1
4	0045	M12 T Nyloc	4
5	18173	M12/55 Bolt	2
6	4283F	Quick Release Mechanism	1
7	4238FO	Funnel	1
8	1644	M8 Anti-Vibration Mount	3
9	0429	M12/35 Bolt	2
10	2919FO	Feed Tray	1
11	2922FS	Hinge Pin	2
12	0178	Rubber End Stop	1
13	1600	Nylon Pistons	2
14	4342	M8/30 Csk Soc.	1

Item	Part No	Part Name	Q'ty
15	4018S	Pin Bracket	2
16	0712	M8 C Washer	8
17	1603	Die Springs	2
18	1605M	Stainless Spacer	2
19	1599	Bearing Washer	2
20	1570FR	Safety Bar	1
21	1348	Limit Switch	1
22	1520	M10/45 Bolt	2
23	1591	Nylon Spacer	2
24	0479	M8 P Nyloc Nut	1
25	2727FS	Bracket Actuator	1
26	4345	M10 P Nyloc Nut	2
27	2986	1/2" Spring Bolt	2
28	0391	M6 T Nyloc Nut	8

Item	Part No	Part Name	Q'ty
29	1236	M6/20 Bolt	2
30	0321	M12/30 Bolt	4
31	0704	M12 C Washer	12
32	4344	M10 Repair Washer	2
33	0709	M6 C Washer	12
34	0437	M6/16 Bolt	10
35	4206	Nylon Bush	1
36	1006	M4/30 Pan Pozi	2
37	4107FO	Retro High Funnel Bracket	1
38	17421	AV Mount	1
39	—	M6 A Washer	4
40	0439	M6/20 Hex Screw	4
41	2493	Rubber Cap	2
42	0481	M8 T Nyloc Nut	1

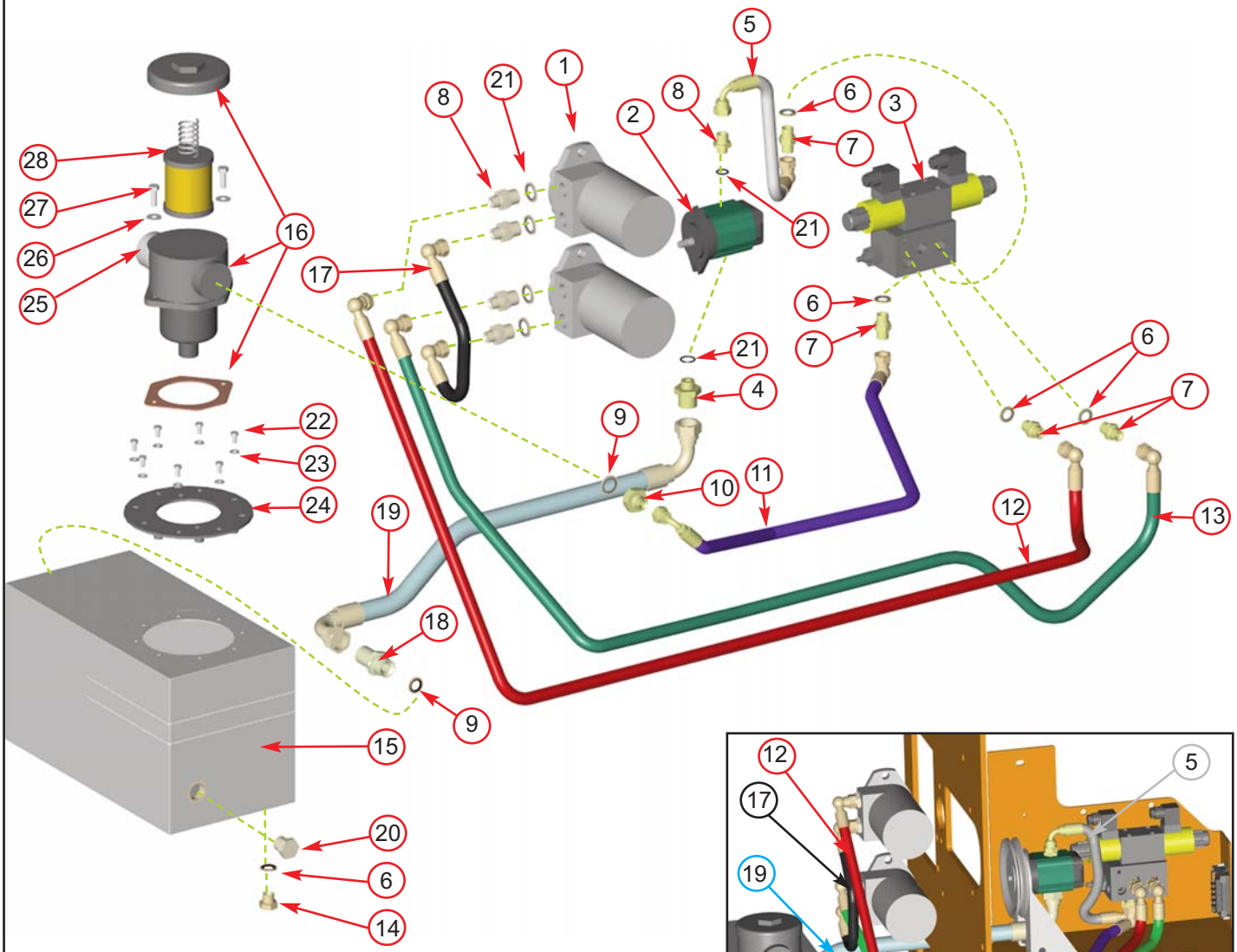
FUNNEL - 150 TRACKED (LOW) 80

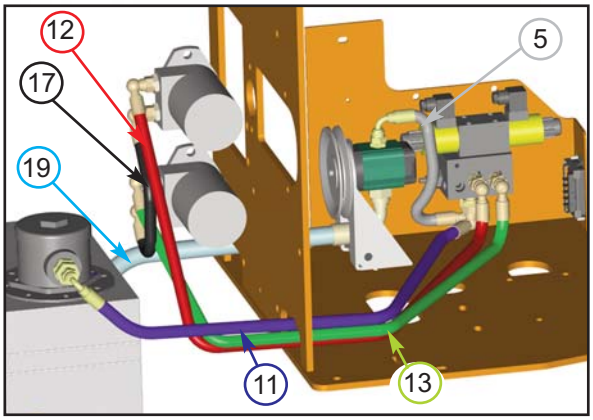


Date Last Modified: 28th March 06

Item	Part No	Part Name	Q'ty
1	See pages 38/39	Control Box	1
2	3008FO	Funnel	1
3	2989FR	Safety Bar	1
4	0431	M12/40 Bolt	2
5	0704	M12 C Washer	8
6	4116M	Spacer Tube	2
7	1599	Bearing Washer	2

Item	Part No	Part Name	Q'ty
8	18173	M12/55 Bolt	2
9	4282MS	Quick Release Pivot Bar	1
10	0277	M12/25 Bolt	4
11	4283FO	Quick Release Mechanism	1
12	17421	AV Mount	1
13	4115FR	Underslung Safety Bar	1



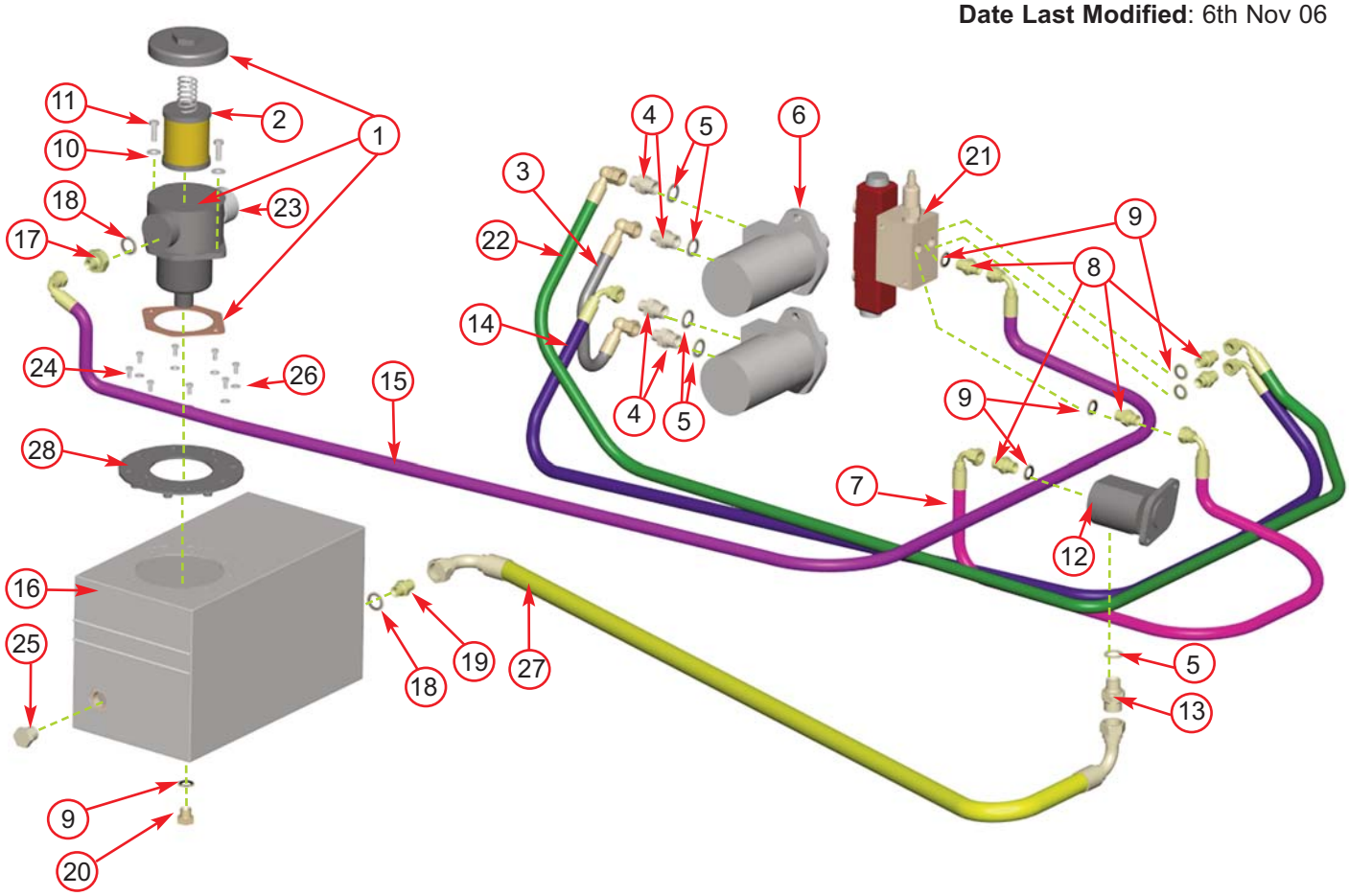


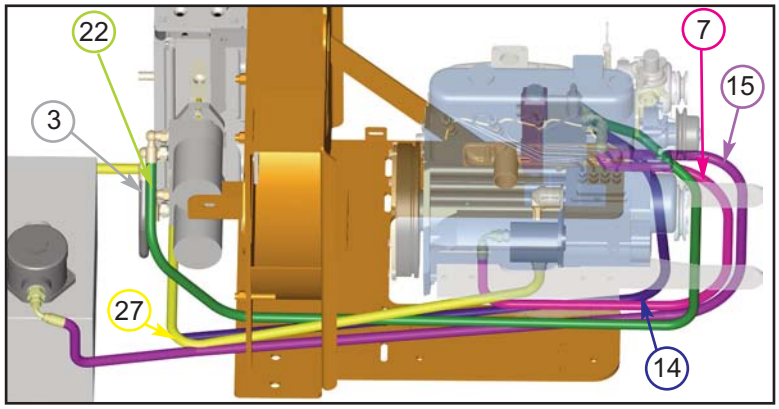
Date Last Modified: 16th May 07

Item	Part No	Part Name	Q'ty
1	2982	Hydraulic Motor	2
2	0980	Hydraulic Pump	1
3	4252	Directional Control Valve (DCV)	1
4	1583	Adaptor mm 1/2" to 3/4" BSP	1
5	1420	3/8" Hose	1
6	0396	Washer Dowty 3/8"	5
7	0161	Adaptor mm 3/8" to 3/8" BSP	4
8	0026	Adaptor 1/2" - 3/8" BSP	5
9	0152	Washer Dowty 3/4"	3
10	0225	Adaptor mm 3/4" to 3/8" BSP	1
11	1421	3/8" Hose, Hyd Filter to DCV	1
12	4296	3/8" Hose, Top Motor to DCV	1
13	4295	3/8" Hose, Bottom Motor to DCV	1
14	0211	3/8" BSP Plug	1

Item	Part No	Part Name	Q'ty
15	1703	Hydraulic Tank	1
16	1413	Tank Top Filter	1
17	0323	3/8" Hose, Top Motor to Btm Motor	1
18	0766	3/4" - 3/4" BSP Adapter	1
19	2750	3/4" Hose, Hyd Tank to Pump	1
20	4219	3/4" Tapered Blanking Plug	1
21	0398	Washer Dowty 1/2"	6
22	1658	M6/12 Bolt	8
23	0709	M6 C Washer	8
24	1702FS	Tank Top Plate	1
25	1067	Breather Filter	1
26	0712	M8 C Washer	2
27	0350	M8/25 Bolt	2
28	0100	Filter	1

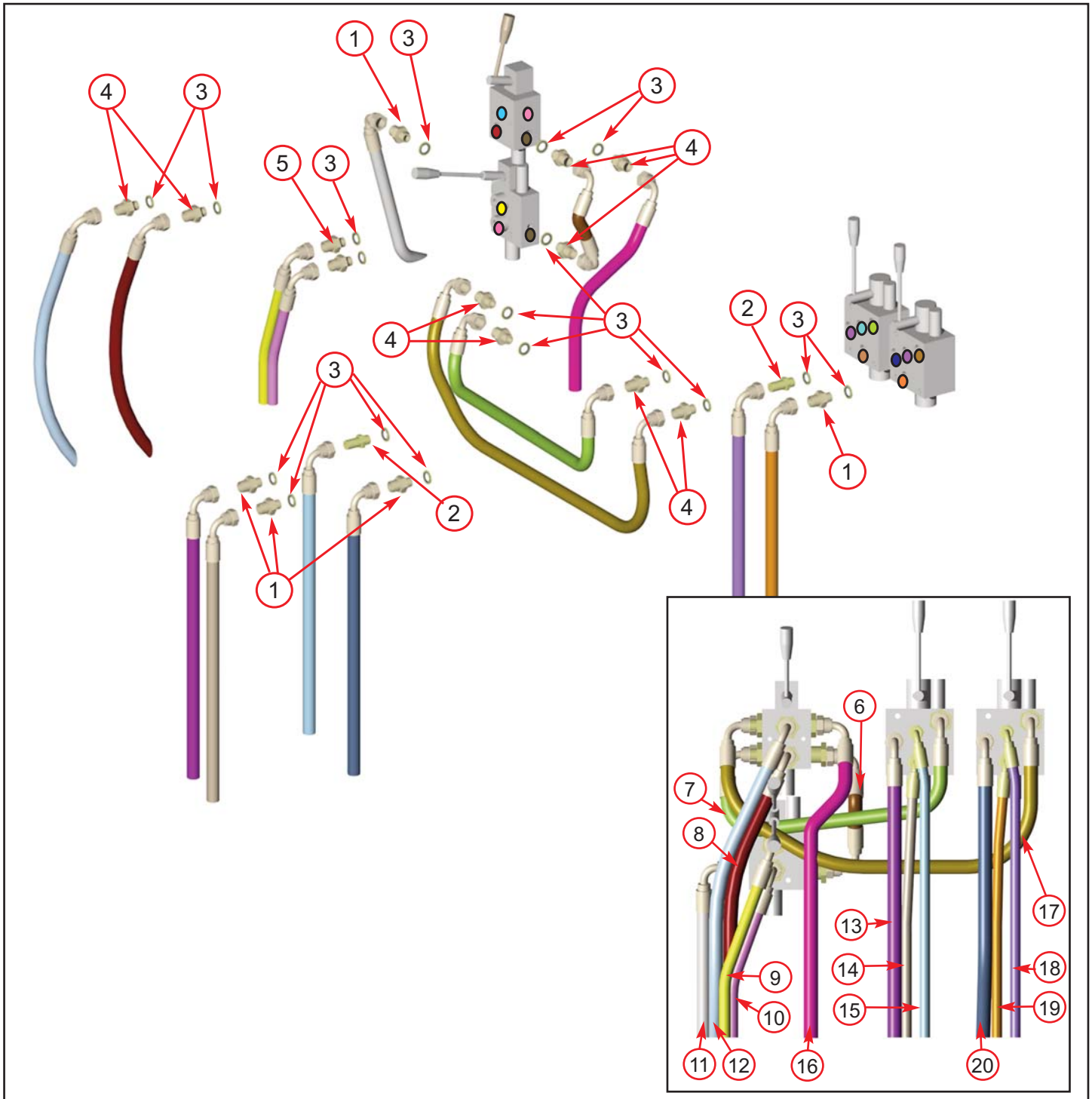
Date Last Modified: 6th Nov 06





Item	Part No	Part Name	Q'ty
1	1434	Tank Top Filter Housing	1
2	0100	Filter	1
3	0323	3/8" Hose, Top Motor to Btm Motor	1
4	0026	Adaptor mm 1/2"- 3/8" BSP	4
5	0398	Washer Dowty 1/2"	5
6	2982	Hydraulic Motor	2
7	4243	3/8" Hose, Pump to DCV	1
8	0161	Adaptor mm 3/8"- 3/8" BSP	5
9	0396	Washer Dowty 3/8"	6
10	0711	M8 A Washer	2
11	0350	M8/25 Bolt	2
12	1660	Hydraulic Pump	1
13	1583	Adaptor 1/2"- 3/4" BSP	1
14	3094	3/8" Hose, Bottom Motor to DCV	1

Item	Part No	Part Name	Q'ty
15	4244	3/8" Hose, Hyd Filter to DCV	1
16	1703	Hydraulic Oil Tank	1
17	0225	Adaptor 3/4" - 3/8"	1
18	0152	Washer Dowty 3/4"	2
19	1766	Adapter 3/4" - 3/4" BSP	2
20	0211	3/8" BSP Plug	1
21	1613	Directional Control Valve (DCV)	1
22	17310	3/8" Hose, DCV to Top Motor	1
23	1067	Breather Filter	1
24	1658	M6/12 Bolt	8
25	4219	3/4" Tapered Blanking Plug	1
26	0709	M6 C Washer	8
27	1767	3/4" Hose, Hyd Tank to Pump	1
28	1702F	Tank Top Plate	1

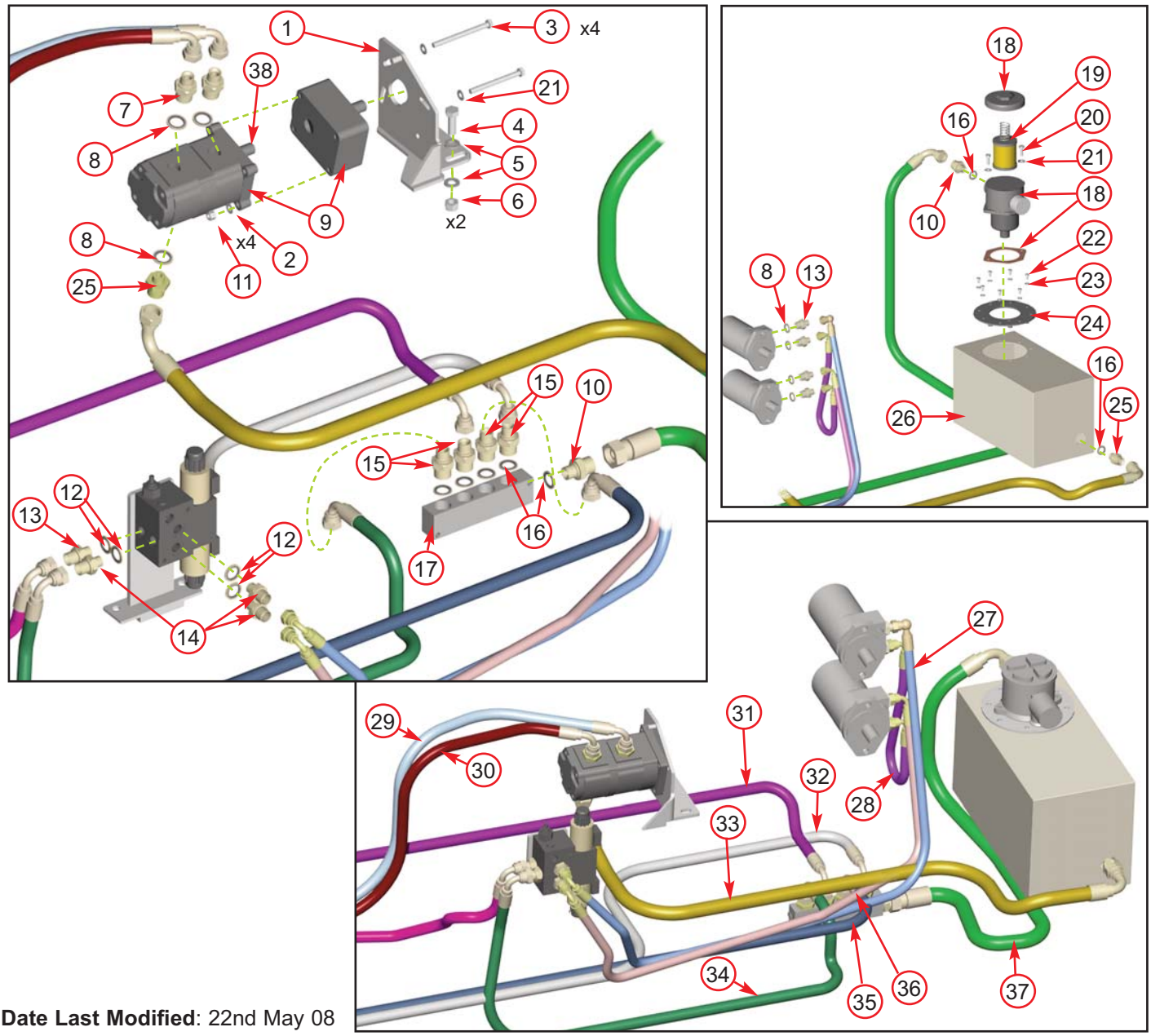


Date Last Modified: 3rd May 05

Item	Part No	Part Name	Q'ty
1	0161	3/8" - 3/8" Adapter	5
2	0828	3/8" Bulk Head Adapter	2
3	0396	3/8" Dowty Washer	18
4	0026	3/8" - 1/2" Adapter	9
5	0033	1/4" - 3/8" Adapter	2
6	3097	1/2" Hose, 6-way to 4-way valve	1
7	3095	1/2" Hose, 6-way to prop. valve	1
8	3099	1/2" Hose to pump front	1
9	3082	1/4" Hose, cylinder feed	1
10	3083	1/4" Hose, cylinder return	1

Item	Part No	Part Name	Q'ty
11	3084	3/8" Hose to manifold rear	1
12	4000	1/2" Hose to pump rear connection	1
13	3091	3/8" Hose to manifold	1
14	3089	3/8" Hose to bottom of track motor	1
15	3088	3/8" Hose to top of track motor	1
16	4240	1/2" Hose to DCV port 'P'	1
17	3096	1/2" Hose, 6-way to prop. valve	1
18	3087	3/8" Hose to top of track motor	1
19	3086	3/8" Hose to bottom of track motor	1
20	3090	3/8" Hose to manifold	1

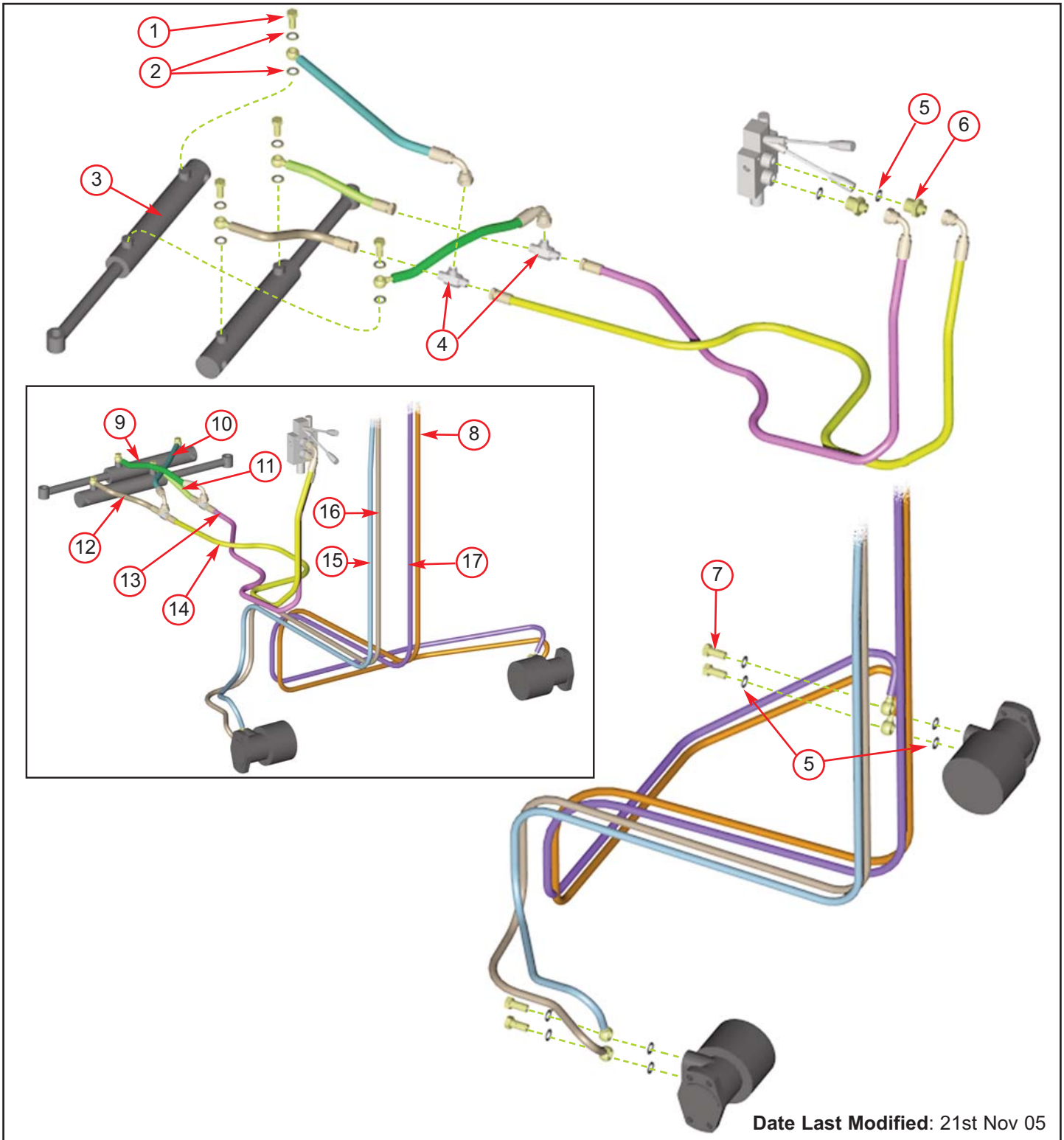
HYDRAULICS TW 150VTR (2) 84



Date Last Modified: 22nd May 08

Item	Part No	Part Name	Q'ty
1	1913FS	Pump Bracket	1
2	0711	M8 A Washer	4
3	2988	M8/90 Bolt	4
4	0429	M12/35 Bolt	2
5	0702	M12 A Washer	4
6	0479	M12 P Nyloc Nut	2
7	0027	1/2" - 1/2" Adapter	2
8	0398	1/2" Dowty Seal	7
9	17344	Hydraulic Pump	1
10	0028	1/2"- 3/4" Adapter	2
11	0479	M8 P Nyloc Nut	4
12	0396	3/8" Dowty Seal	4
13	0026	3/8" - 1/2" Adapter	5
14	0161	3/8" - 3/8" Adapter	3
15	0225	3/4" - 3/8" Adapter	4
16	0152	3/4" Dowty Seal	7
17	1839MA	Manifold	1
18	1954	Tank Top Filter	1
19	0100	Filter Element	1

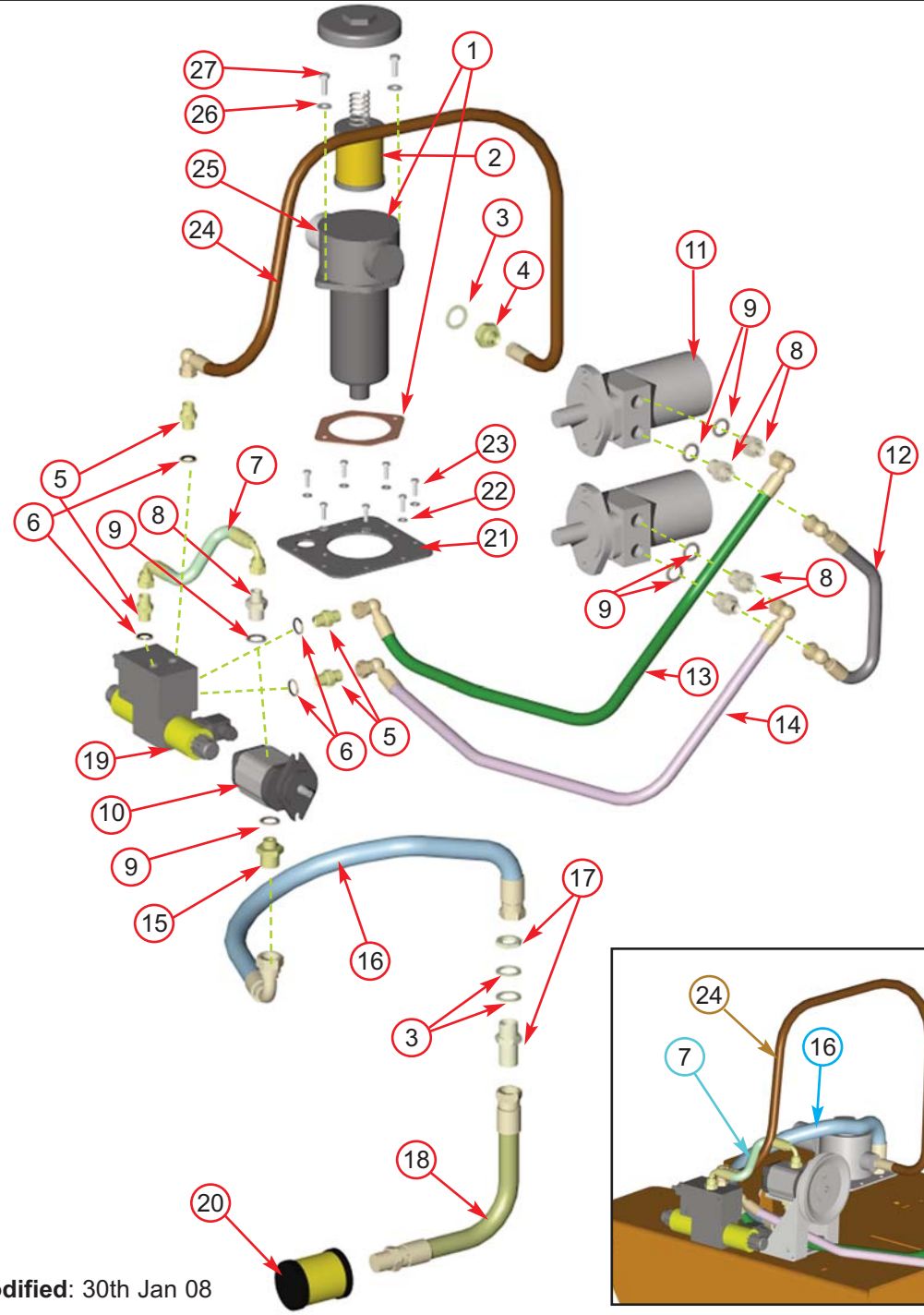
Item	Part No	Part Name	Q'ty
20	0350	M8/25 Bolt	2
21	0712	M8 C Washer	6
22	1658	M6/12 Bolt	8
23	0709	M6 C Washer	8
24	1702FS	Tank Top Plate	1
25	2694	3/4" - 1" Adapter	2
26	1703	Hydraulic Tank	1
27	17309	3/8" Hose, DCV to upper motor	1
28	3092	3/8" Hose, motor to motor	1
29	4000	1/2" Hose, pump rear to 6-way valve	1
30	3099	1/2" Hose, pump front to 6-way valve	1
31	3091	3/8" Hose, manifold to LH valve	1
32	3084	3/8" Hose, manifold to 4-port valve	1
33	4258	1" Hose, tank to pump front	1
34	4247	3/8" Hose, manifold to DCV	1
35	3090	3/8" Hose, manifold to RH valve	1
36	3094	3/8" Hose, DCV to lower motor	1
37	4303	1/2" Hose, manifold to hyd filter	1
38	18508	Pump Spline	1

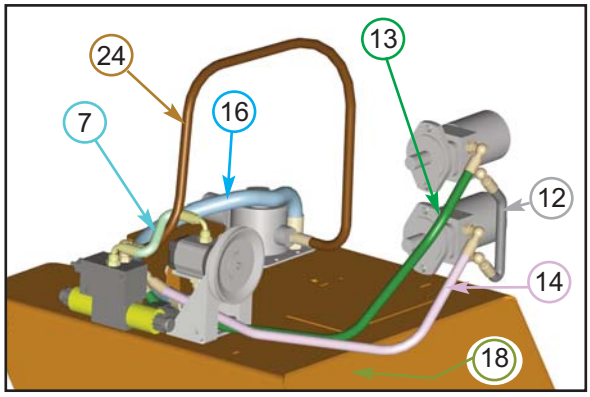


Date Last Modified: 21st Nov 05

Item	Part No	Part Name	Q'ty
1	4059	1/4" Banjo Bolt	4
2	0395	1/4" Dowty Washer	8
3	4046	Hydraulic Cylinders	2
4	4058	1/4" Tee Adapter	2
5	0396	3/8" Dowty Washer	10
6	0033	1/4" - 3/8" Adapter	2
7	4060	3/8" Banjo Bolt	2
8	3086	3/8" Hose, RH lower trk motor - valve	1
9	3081	1/4" Hose, LH track retract	1

Item	Part No	Part Name	Q'ty
10	4031	1/4" Hose, LH track extend	1
11	3080	1/4" Hose, RH track retract	1
12	4032	1/4" Hose, RH track extend	1
13	3083	1/4" Hose, trk extend feed	1
14	3082	1/4" Hose, trk retract feed - valve	1
15	3088	3/8" Hose, LH upper trk motor - valve	1
16	3089	3/8" Hose, LH lower trk motor - valve	1
17	3087	3/8" Hose, RH upper trk motor - valve	1



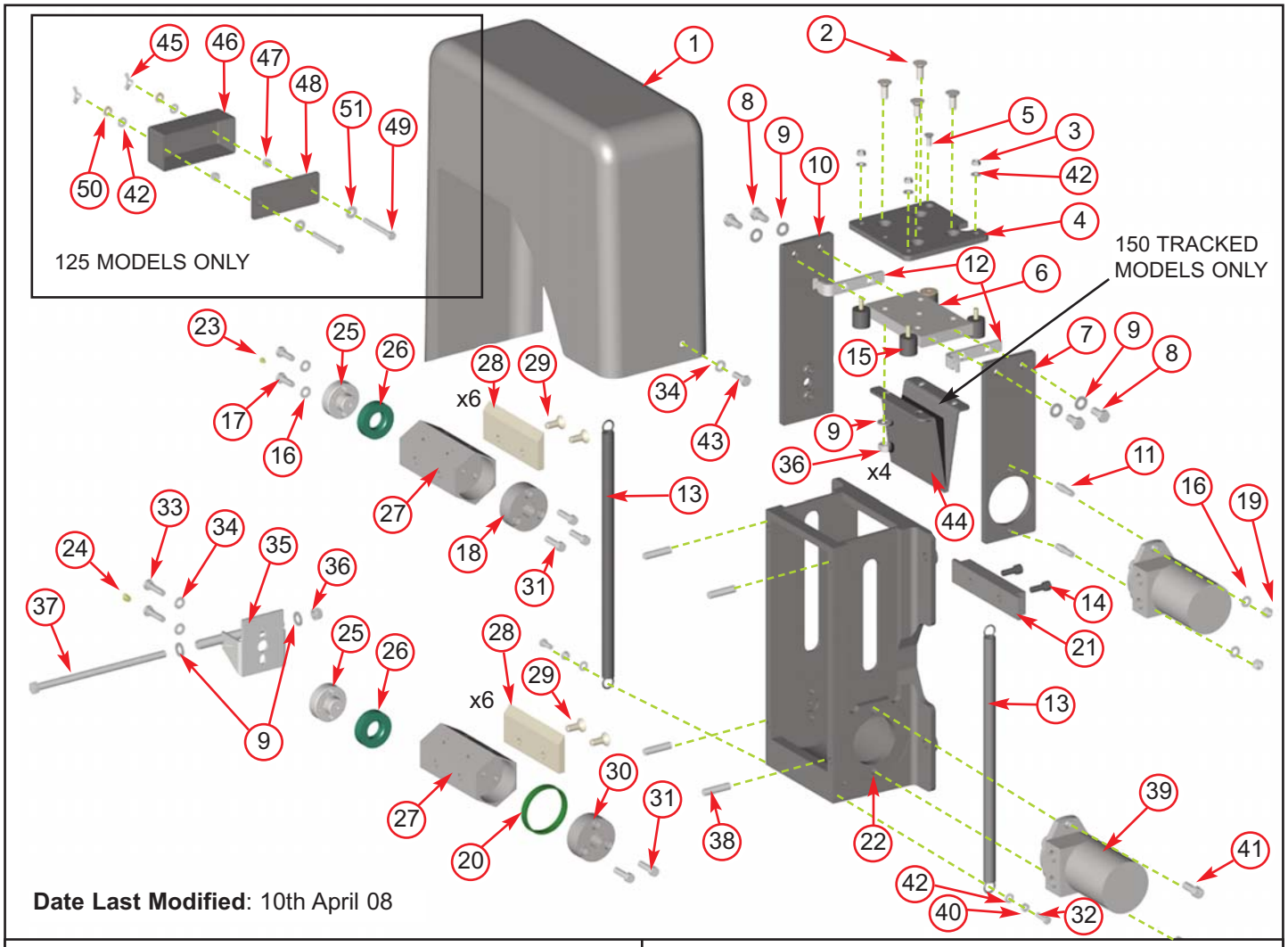


Date Last Modified: 30th Jan 08

Item	Part No	Part Name	Q'ty
1	1434	Tank Top Filter Housing	1
2	0100	Filter	1
3	0152	Washer Dowty 3/4"	3
4	0225	Adapter mm 3/4"- 3/8" BSP	1
5	0161	Adapter mm 3/8"- 3/8" BSP	4
6	0396	Washer Dowty 3/8"	4
7	1302	Hose 3/8" DCV to Pump	1
8	0026	Adapter mm 3/8"- 1/2" BSP	5
9	0398	Washer Dowty 1/2"	5
10	0980	Hydraulic Pump	1
11	2982	Hydraulic Motor	2
12	0323	Hose 3/8" Top to Bottom Motor	1
13	0489	Hose 3/8" Top Motor to DCV	1
14	0475	Hose 3/8" Bottom Motor to DCV	1

Item	Part No	Part Name	Q'ty
15	1583	Adapter mm 1/2"- 3/4" BSP	1
16	1823	Hose 3/4" Pump to Tank	1
17	0827	Adapter 3/4" Bulkhead	1
18	1822	Hose 3/4" Tank to Filter	1
19	4252	Directional Control Valve (DCV)	1
20	0734	Strainer	1
21	1690FS	Tank Top Plate	1
22	0709	M6 C Washer	8
23	1236	M6/20 Bolt	8
24	0381	Hose 3/8" Tank Return	1
25	1067	Breather Filter	1
26	0711	M8 A Washer	2
27	1009	M8/25 Buttonhead Bolt	2

ROLLER BOX

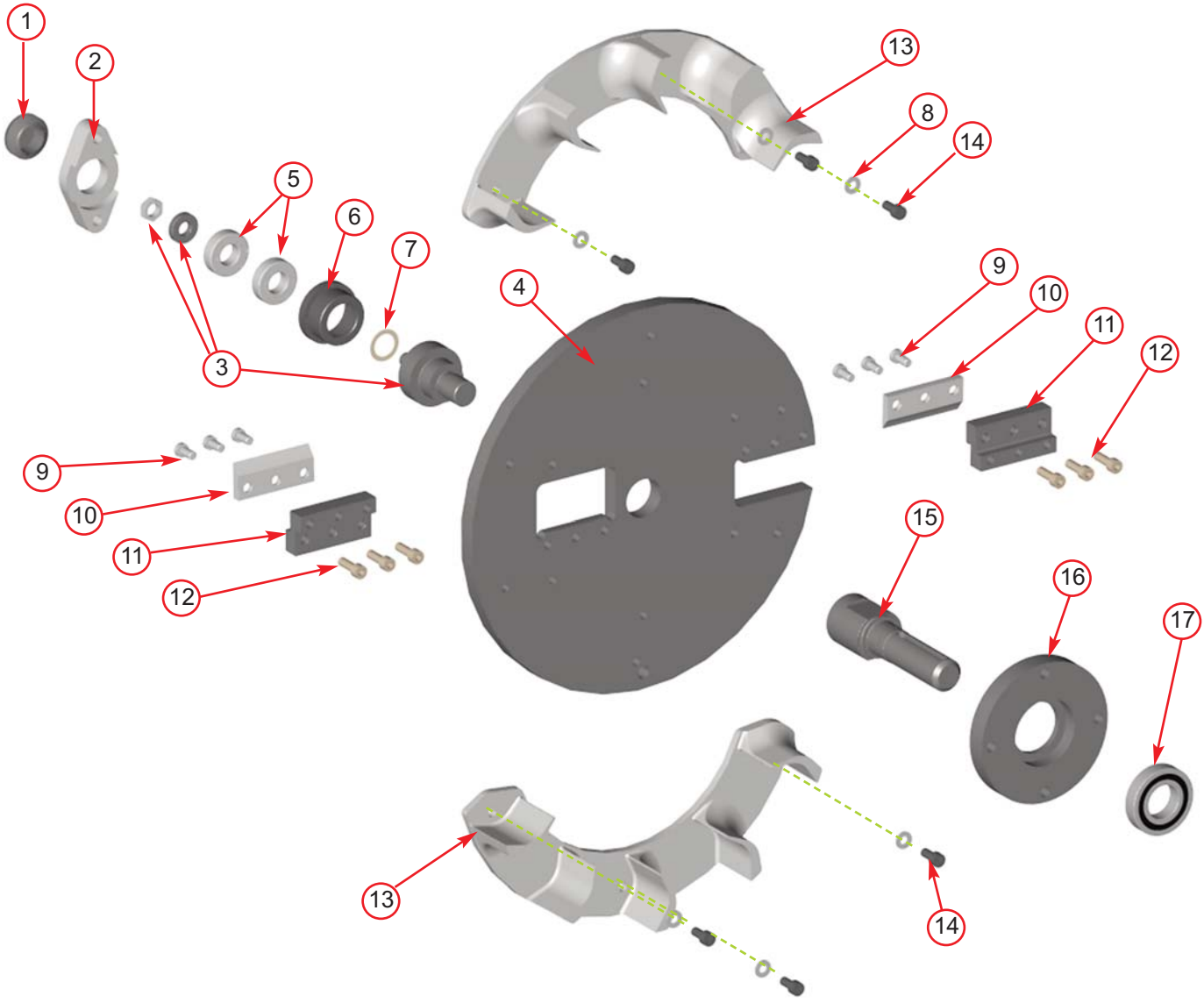


Date Last Modified: 10th April 08

Item	Part No	Part Name	Q'ty
1	0672	Rollerbox Cover	1
2	18316	M12/50 Csk Bolt	4
3	0481	M8 T Nyloc Nut	3
4	18027M	Plate Top Damper Carrier	1
5	0348	M8/20 Csk Socket	1
6	1962FMS	Block Top Damped	1
7	18024M	Drive Side Plate	1
8	0429	M12/35 Bolt	4
9	0702	M12 A Washer	10
10	18025	Non Drive Side Plate	1
11	1162	Motor Studs	2
12	18028FS	Bracket Spring Hanger	2
13	18070	Roller Box Spring	2
14	0305	M10/25 Caphead	2
15	1768	AV Mount 30x30	4
16	0701	M10 A Washer	2
17	0382	M10/30 Bolt	4
18	1361M	Drive Spline	1
19	4345	M10 P Nyloc Nut	2
20	2757	Bush Bearing Spline	1
21	0103MH	Anvil	1
22	0228M	Roller Box	1
23	0985	Straight Grease Nipple	1
24	0986	45° Grease Nipple	1
25	0055	Bearing Boss	2
26	0788	Plastic Bush	2

Item	Part No	Part Name	Q'ty
27	1362M	Roller Body	2
28	0325M	Roller Blade	12
29	0428	M12/30 Csk Soc.	24
30	4100M	Spline 6B Retro Bottom	1
31	0386	M10/30 Cap Screw	5
32	0350	M8/25 Bolt	2
33	4068	M10/40 Cap Head Bolt	2
34	0839	M10 C Washer	3
35	0534FS	Cover Bracket	1
36	0045	M12 T Nyloc Nut	5
37	0319	M12/220 Bolt	1
38	0356	Funnel Studs M12/50	4
39	2982	Motor	2
40	0476	M8 Plain Nut	2
41	1985	M12/30 Caphead	2
42	0711	M8 A Washer	9
43	0360	M10/25 Bolt	1
44	4013	Rotor Guard	1
45	1673	M8 Wing Nut	2
46	1595	Relay Cover	1
47	0479	M8 P Nut	2
48	1672FS	Relay Back Plate	1
49	0354	M8/60 Set Screw	2
50	1008	M8 Spring Washer	2
51	0714	M8 Mudguard Washer	2

ROTOR

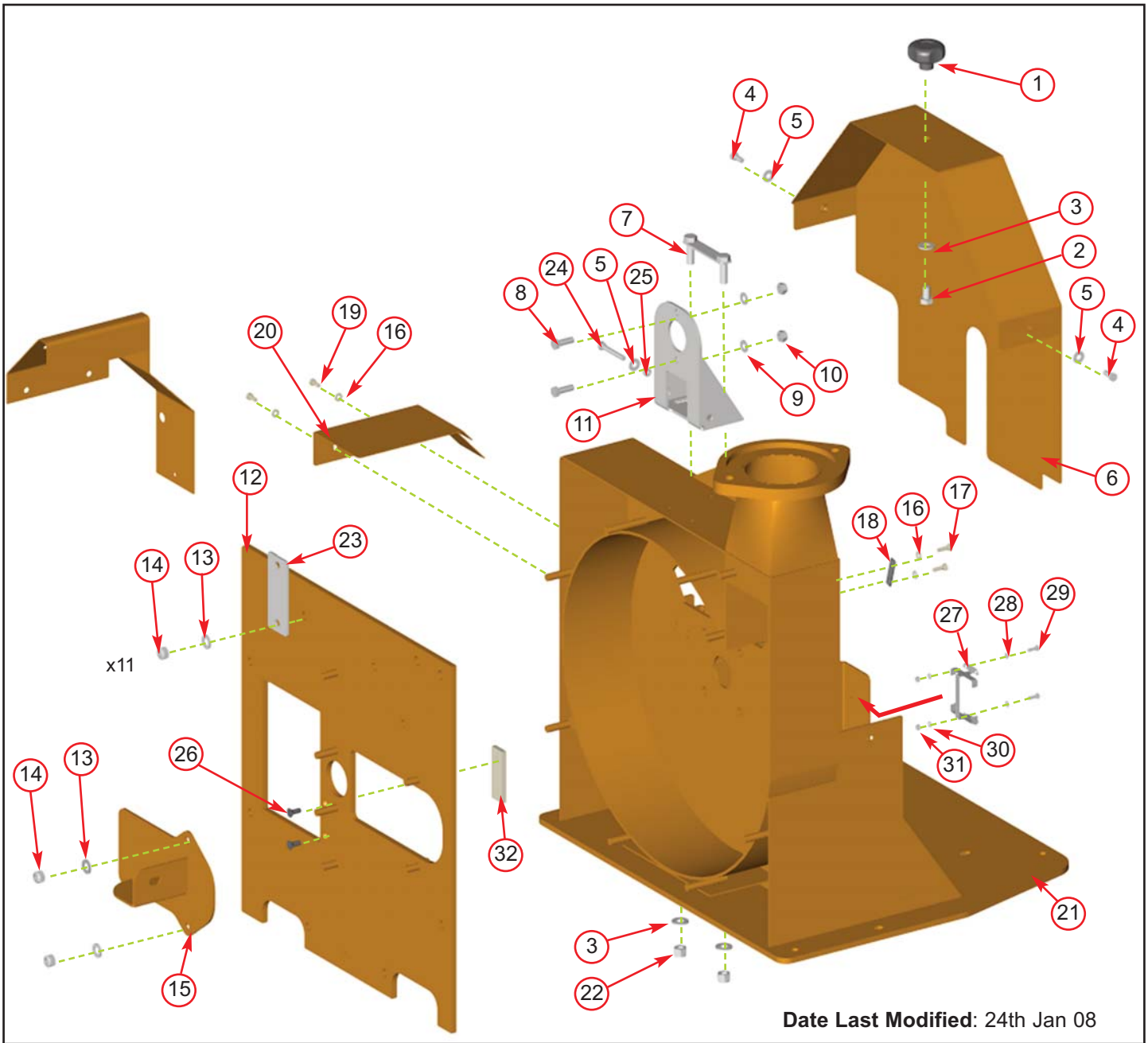


Date Last Modified: 28th Feb 08

Item	Part No	Part Name	Q'ty
1	0959	Plastic Cap	1
2	0884MS	Bearing Housing Front	1
3	18479K	Rotor Nose Shaft Kit	1
4	0880M	Rotor	1
5	0491	Bearing 6205	2
6	0883MCB	Bearing Cup	1
7	0796	20 Thou Shim	As Req'd
8	0701	M10 A Washer	6
9	0900	M10/20 Star Cap Screw	6

Item	Part No	Part Name	Q'ty
10	083MH	Cutter Blade 4"	2
11	18275M	Blade Pocket	2
12	0386	M10/30 Cap Screw	6
13	1571	Fan Section	2
14	0386	M10/30 Caphead	6
15	4062M	Rear Shaft	1
16	4063MCB	Bearing Housing Rear	1
17	0495	Bearing 6208	1

ROTOR HOUSING- 125 MODELS

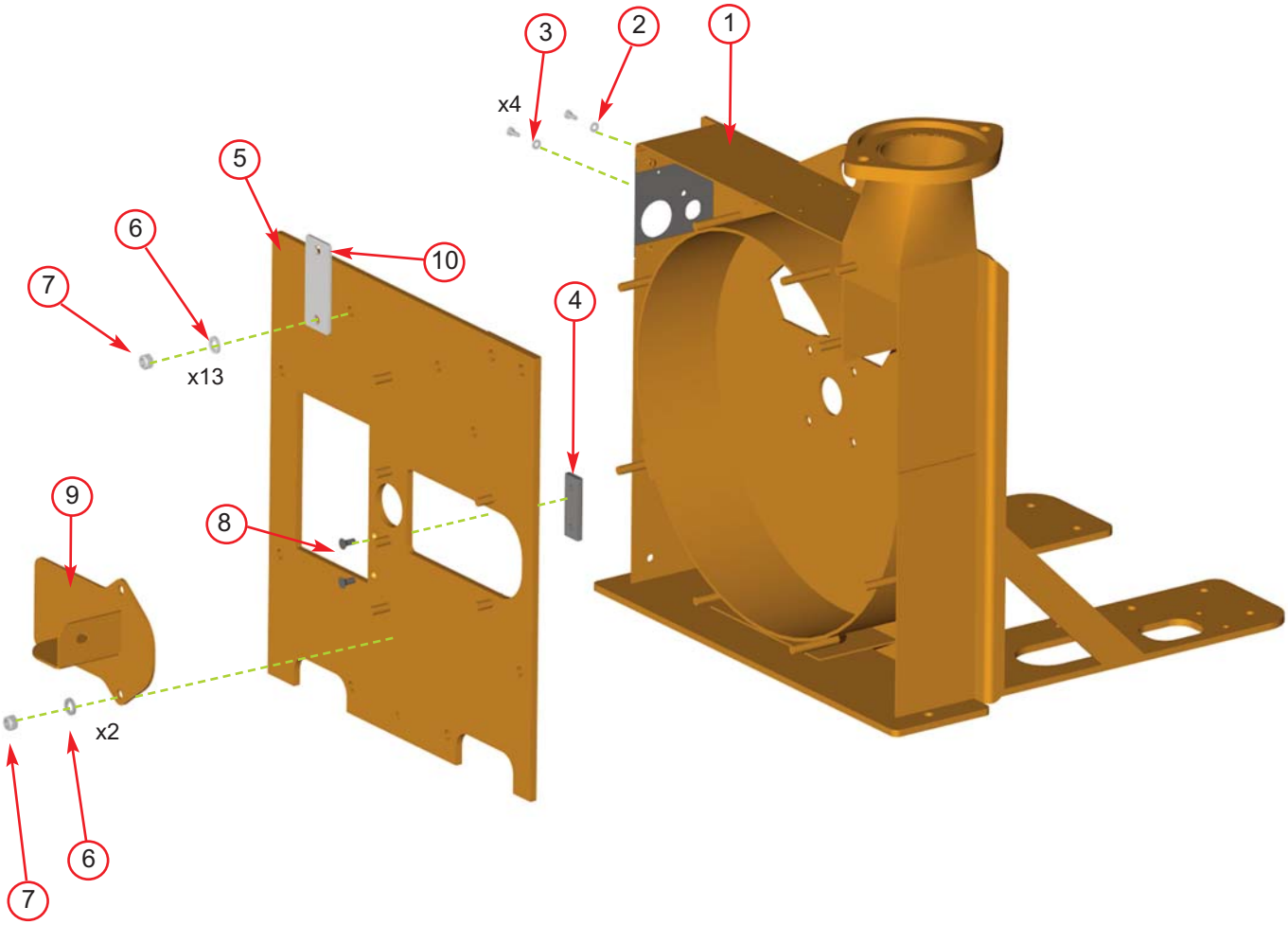


Date Last Modified: 24th Jan 08

Item	Part No	Part Name	Q'ty
1	0361	M12 Knob	1
2	0318	M12/20 Bolt	1
3	0704	M12 C Washer	2
4	0346	M8/20 Bolt	2
5	0712	M8 C Washer	3
6	4290FO	Belt Guard	1
7	1027FS	Bolt Support Plate	1
8	0382	M10/30 Bolt	2
9	0839	M10 C Washer	2
10	0052	M10 T Nyloc Nut	2
11	0886FS	Pump Bracket	1
12	1267FO	Front Plate	1
13	0702	M12 A Washer	13
14	0045	M12 T Nyloc Nut	13
15	1268FO	Access Cover	1
16	0709	M6 C Washer	4

Item	Part No	Part Name	Q'ty
17	0348	M6/20 Pozi Pan	2
18	1416P	Sensor Clamp	1
19	0438	M6/16 Pozi Pan	2
20	1410FO	Inner Guard	1
21	18444FO	Rotor Housing	1
22	0644	M12 P Nyloc Nut	2
23	18023PS	Guard Stand-Off Plate	1
24	0353	M8/50 Bolt	1
25	0476	M8 Plain Nut	1
26	0355	M8/16 C/Sunk Bolt	2
27	17338	Bracket	1
28	0435	M5 C Washer	2
29	0708	M5/16 Pan Pozi	2
30	0857	M5 A Washer	2
31	18102	M5 T Nyloc Nut	2
32	0101MH	Anvil Vertical	1

ROTOR HOUSING - 150 MODELS

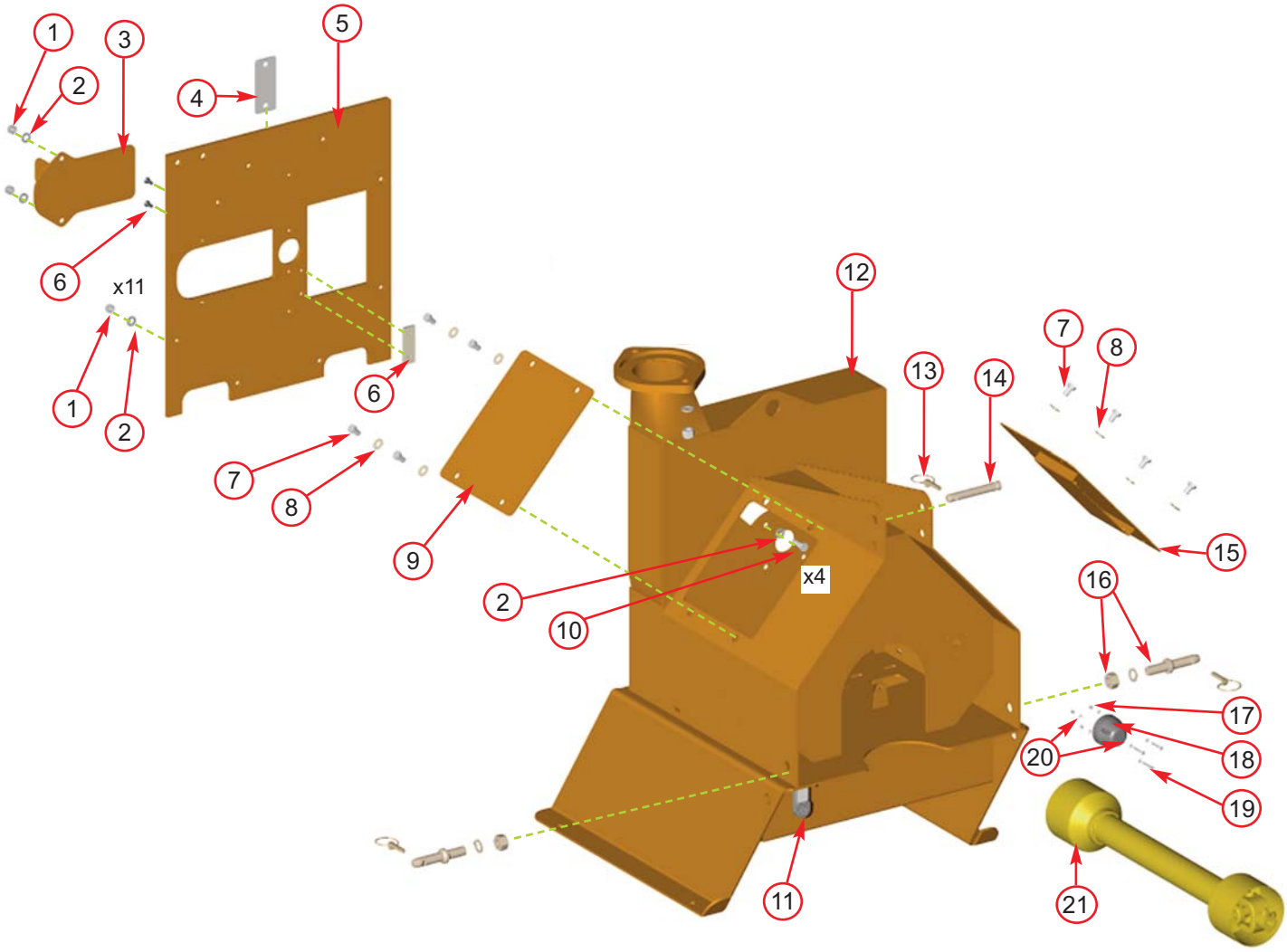


Date Last Modified: 24th Jan 08

Item	Part No	Part Name	Q'ty
1	18446FO	Rotor Housing	1
2	0438	M6/16 Pozi Pan	4
3	0709	M6 C Washer	4
4	0101MH	Anvil Vertical	1
5	1267FO	Front Plate	1

Item	Part No	Part Name	Q'ty
6	0702	M12 A Washer	17
7	0045	M12 T Nyloc Nut	15
8	0355	M8/16 C/Sunk Bolt	2
9	1268FO	Access Cover	1
10	18023PS	Guard Stand-Off Plate	1

ROTOR HOUSING - PTO MODELS 91

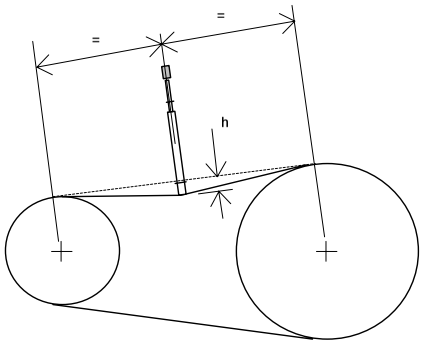


Date Last Modified: 24th Jan 08

Item	Part No	Part Name	Q'ty
1	0045	M12 T Nyloc Nut	13
2	0702	M12 A Washer	13
3	1268FO	Access Cover	1
4	18023PS	Guard Stand-Off Plate	1
5	1267FO	Front Plate	1
6	0101MH	Anvil Vertical	1
7	0277	M12/25 Bolt	8
8	0704	M12 C Washer	8
9	0588O	Access Cover	1
10	0321	M12/30 Bolt	4
11	1163	Oil Level Gauge	1

Item	Part No	Part Name	Q'ty
1	218451FO	Rotor Housing	1
13	0942	Linch Pin	3
14	0943	Top Pin	1
15	4143FO	Access Cover	1
16	0941	Side Pin	2
17	0236	M5 P Nyloc Nut	3
18	0483	Trailer Socket	1
19	1589	M5/35 Pan Pozi	3
20	0857	M5 A Washer	6
21	0430	M12/35 Cup Square	1

TIMBERWOLF V-BELT TENSIONING DATA TABLE



METHOD:

1. SET THE DEFLECTION DISTANCE ON THE LOWER SCALE OF THE TENSION GUAGE SO THAT THE UNDERSIDE OF THE 'O'-RING EQUALS THE 'h' VALUE GIVEN IN THE TABLE BELOW
2. ENSURE THAT THE DEFLECTION FORCE SCALE IS ZERO'D BY PUSHING THE UPPER 'O'-RING ALL THE WAY DOWN
3. PLACE THE TENSION GUAGE IN THE CENTRE OF THE BELT SPAN AS SHOWN IN THE DIAGRAM LEFT
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 BELOW
6. TIGHTEN OR LOOSEN BELTS AS REQUIRED FOLLOWING PROCEDURE GIVEN IN THE OPERATOR'S MANUAL

TENSION GUAGES ARE AVAILABLE FROM TIMBERWOLF SPARES, QUOTING PART No. 18091

TIPS ON BELT TIGHTENING:

A) 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

B) 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

C) TOO MUCH TENSION SHORTENS BELT & BEARING LIFE

D) TOO LITTLE TENSION WILL AFFECT THE PERFORMANCE OF YOUR MACHINE ESPECIALLY IN RESPECT OF NO-STRESS DEVICES

E) ENSURE THAT BELT DRIVES ARE KEPT FREE OF ANY FOREIGN MATERIALS

F) IF A BELT SLIPS - TIGHTEN IT!

	TW MODEL No.:			13/75G	18/100G	125PH	150DH/DHB	150FTR	150VTR	190DH	190FTR	190TDH	190TFTR 190TVGTR	230TR	250DH	PTO100	PTO150	PTO300	S425/S426 SHREDDER
ROTOR BELTS	Belt Mfr / Type			Gates Super HC-MN	Gates Super HC-MN	Gates Super HC-MN	Gates Super HC-MN	Gates Super HC-MN	Gates Super HC-MN	Gates Super HC-MN	Gates Super HC-MN	Gates Super HC-MN	Gates Super HC-MN	Gates Super HC-MN	Gates Quad Power II	Gates Super HC-MN	Gates Super HC-MN	N/A	Gates Super HC-MN
	Belt Pitch Designation			SPA	SPA	SPA	SPA	SPA	SPA	SPA	SPA	SPA	SPA	SPB	XPB	SPA	SPA		SPB
	Belt Length			900.0	1060.0	1060.0	1060.0	1060.0	1060.0	1232.0	1232.0	1232.0	1232.0	1950.0	3350.0	900.0	900.0		2120.0
	Belt deflection	=	h	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**6.0**	**10.0**	**4.0**	**4.0**		**8.0**
	Force reading (Kgf)	**New belt**		**3.4 - 3.6**	**3.1 - 3.3**	**3.0 - 3.2**	**4.3 - 4.5**	**4.3 - 4.5**	**4.3 - 4.5**	**3.3 - 3.5**	**3.3 - 3.5**	**3.9 - 4.1**	**3.9 - 4.1**	**3.4 - 3.6**	**3.5 - 3.7***	**3.3 - 3.5**	**3.8 - 4.0**		**3.3 - 3.5***
		Used belt		3.0 - 3.2	2.8 - 3.0	2.7 - 2.9	3.7 - 4.0	3.7 - 4.0	3.7 - 4.0	2.8 - 3.0	2.8 - 3.0	3.4 - 3.6	3.4 - 3.6	3.0 - 3.2	3.1 - 3.3*	2.9 - 3.0	3.3 - 3.5		2.9 - 3.1*
PUMP BELT	Belt Mfr / Type			N/A	N/A	Gates Super HC-MN	N/A	Gates Super HC-MN	Gates Super HC-MN	N/A	Gates Super HC-MN	N/A	Gates Super HC-MN	Gates Super HC-MN	N/A	N/A	Gates Super HC-MN	Gates Super HC-MN	N/A
	Belt Pitch Designation					SPA		SPA	SPA		SPA		SPA	SPA			SPA	SPA	
	Belt Length					950.0		900.0	900.0		925.0		925.0	950.0			950.0	1000.0	
	Belt deflection	=	h			**4.0**		**4.0**	**4.0**		**4.0**		**4.0**	**4.0**			**4.0**	**4.0**	
	Force reading (Kgf) Ver 2.0 - 12-10-07	**New belt**				**1.9 - 2.0**		**2.3 - 2.4**	**2.3 - 2.4**		**2.3 - 2.4**		**2.3 - 2.4**	**1.5 - 1.6**			**2.0 - 2.2**	**1.9 - 2.0**	
		Used belt				1.7 - 1.8		2.0 - 2.1	2.0 - 2.1		2.0 - 2.2		2.0 - 2.2	1.3 - 1.4			1.8 - 2.0	1.7 - 1.8	

* DUE TO THE EXTENDED BELT SPAN LENGTHS ON THE 250DH & S425/S426 SHREDDER, THE FORCE READINGS ARE INCREASED BY 0.5Kgf OVER THE DESIGN IQ OUTPUTS

ELKOPLAST ROMANIA
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TIMBERWOLF®
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TW125PH WOODCHIPPER

SAFETY INFORMATION AND BASIC OPERATING INSTRUCTIONS

Safety instructions

1. Before using this chipper, take time to read this safety and user's guide completely. **Misuse of this equipment can cause personal injury, equipment damage, damage to property and bodily injury.**
2. Familiarise yourself with the machine prior to use.
3. Do not attempt to start or use this machine if it is damaged. Contact the hire outlet before proceeding.
4. Do not allow minors, or anyone who is unwell or under the influence of drugs or alcohol to use this machine.
5. Petrol is highly flammable. Do not smoke when operating or refuelling.
6. This chipper is designed to chip solid wood material up to 125mm in diameter Do not feed larger wood or other foreign material into the chipper.
7. Wear appropriate personal protective equipment (PPE). This includes face and eye protection and work gloves with snug cuffs. Noise levels above 85dB(A) will be experienced at the working position. Wear ear protection in compliance with EN352, with a SNR of 15dB or above. The use of a face mask is recommended if working conditions require. Do not wear loose clothing, jewellery or anything that could create a snag hazard.
8. Maintain a safety-exclusion zone around the chipper of at least 10 metres. Stop operations and turn off machine if unauthorised or unprotected individuals breach this zone.
9. Be aware that the chipper can eject chips out of the feed chute with considerable force. Always wear full head and face protection.
10. Only use this chipper in a well-ventilated area.

(Guaranteed Sound Power 121dB (A).

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Safe Transportation…

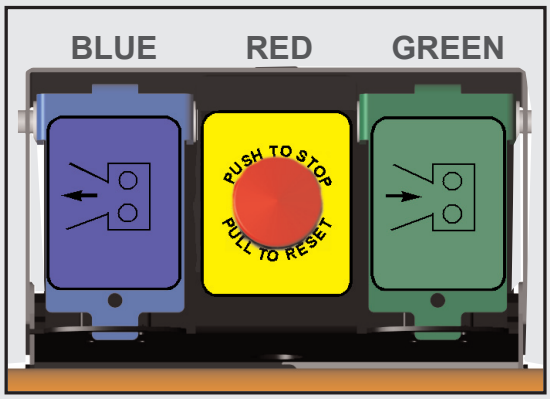
- ✓ Confirm a positive and locked connection between chipper and towing vehicle. Use the secondary coupling provided for.
- ✓ Observe maximum towing speeds. Reduce towing speed on rough or bumpy surfaces to maintain control, and to prevent damage to the machine.
- ✓ Ensure feed tray is securely latched closed.
- ✓ Verify discharge tube clamps are tight. Recheck often on long journeys.
- ✓ Check correct function of chassis lights.

Understanding the *"No Stress"* system…

The "No Stress" system controls the feed rate of the material going into the chipping chamber. Engine speeds will vary depending on the chipper's workload. If the engine speed falls below the predetermined level, the No Stress system stops the feed rollers until the engine speed rises, at which point the feed rollers will start turning without warning, and feeding will recommence.

Understanding the *"Roller Control Box"* functions…

The roller control box is located on top of the feed funnel. It controls the feed rollers that draw material into the chipping chamber. ***It does not control the main rotor.***

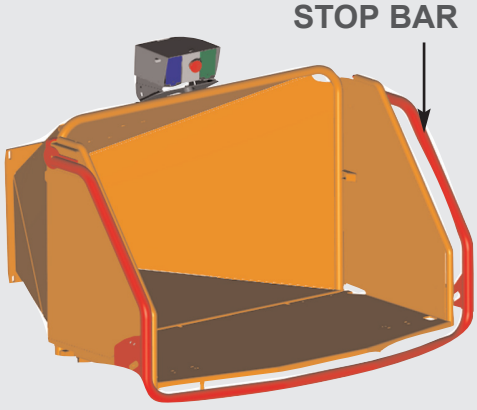


GREEN BUTTON - Forward (IN) feed - Push the button once - this starts the rollers and allows you to start chipping (as long as the engine speed is high enough - see 'No Stress').

RED BUTTON - Stop feed/emergency stop - This button stops the rollers from feeding. It overrides all other buttons or bars, and will not allow the other buttons to function until it has been reset. To reset, pull it out fully. The forward and reverse buttons will now function. The red stop button does **not** stop the engine or the rotor.

BLUE BUTTON - Reverse (OUT) feed - Push and hold - this allows you to back material out of the rollers while the button is pushed. You do not have to press the red stop bar or button before pressing the GREEN FEED button to recommence feeding. **NOTE:** It is important to check the correct function of the control box buttons before attempting to chip material. If any of the controls do not function as described above, DO NOT USE the chipper. Contact the hire centre.

Understanding the *"Safety STOP bar"* function…



This is the large red bar that surrounds the sides and bottom of the feed funnel extension (tray). The bar is spring loaded and connected to a switch that interrupts the power to the feed rollers. The switch and bar are designed so that the switch is only activated if the bar is pushed to the limit of its travel. The bar does not need to be held there to stop the rollers. The feed rollers stop instantly, but can be made to turn again by pressing either the GREEN FEED or BLUE REVERSE control buttons. **NOTE:** It is important to check the correct function of the safety bar before attempting to chip material. If it does not function as described above, DO NOT USE the chipper. Contact the hire centre.

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Before starting…

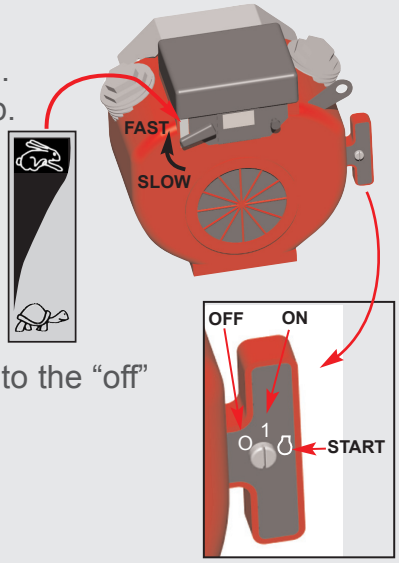
- Ensure that the exclusion zone is well marked. The use of hazard tape is highly recommended.
- Locate the machine on firm, level ground. Use prop stand if fitted.
- Make sure that all guards are in place.
- Check all fluids are within operating range. Contact hire outlet if servicing is required.
- Check the fuel level. Only clean, uncontaminated, diesel fuel must be used.
- Check the infeed chute and clear it of any objects.
- Adjust the discharge deflector to a safe direction.
- Wear appropriate safety gear (PPE).
- Clear the working area of unauthorised/unprotected personnel.

Starting the engine…

FOR A COLD ENGINE

1. Place throttle lever at 1/3rd open and pull choke out to “on”.
2. Insert key, turn to "start" and release to “on” once engine starts.
3. Gradually return choke to the “off” position as engine warms up.
4. Allow engine to run at least 1 minute before starting to chip.

If the engine fails to start after 10 seconds of cranking, leave for 1 minute and try again.



FOR A WARM ENGINE

Follow the instructions for a “cold engine” but return the choke to the “off” position as soon as the engine starts.

Stopping the engine…

1. Reduce the throttle to idle.
2. Leave the engine to run for 1 full minute.
3. Switch the key to the "OFF" position.
4. Remove ignition key.

Chipping wood…

- Maximum diameter wood to be chipped in the TW 125PH is 125mm.
- Increase throttle to full. Never attempt to chip without throttle in full.
- ***BE AWARE…*** awkward shaped wood being chipped can thrash from side to side in the funnel with great force. Stand clear of wood extending from the funnel.
- Load wood from either side of funnel opening avoiding the middle as much as possible.
- Load wood butt end first.
- Trim badly twisted brash before attempting to feed it into the chipper.
- ***NEVER REACH IN TO*** the funnel while the chipper is running, use a push stick suitable for the job.
- Always observe the discharge for exiting wood chippings. REMEMBER… what goes in must come out. If there are no chippings exiting the discharge while chipping wood, a blockage has occurred. You must stop the chipping operation, turn off the machine and clear the blockage. (see "Clearing blockages" section on next page.)

Clearing Blockages…

1. Stop the engine and remove ignition key. Wait for engine to run down.
2. Remove discharge tube by unscrewing clamp with fitted handle only. Check and clear if necessary.
3. Wearing gloves, reach into the rotor housing and scoop out the majority of any debris causing the blockage. ***WARNING…*** never reach into the rotor housing with unprotected hands. There are sharp blades inside, and any small movement of the rotor can cause serious injury.
4. Replace discharge tube.
5. Restart engine and increase to full throttle.
6. Allow sufficient time for machine to clear excess chips before commencing work.

Never attempt to carry on chipping once a blockage is identified. Carrying on chipping in this instance will compact chips in the rotor housing and will become very difficult to clear.

- The machine must be returned in a clean condition. Cleaning is chargeable at the hire outlet.
- Any damage to the machine is chargeable.

Dealer Stamp