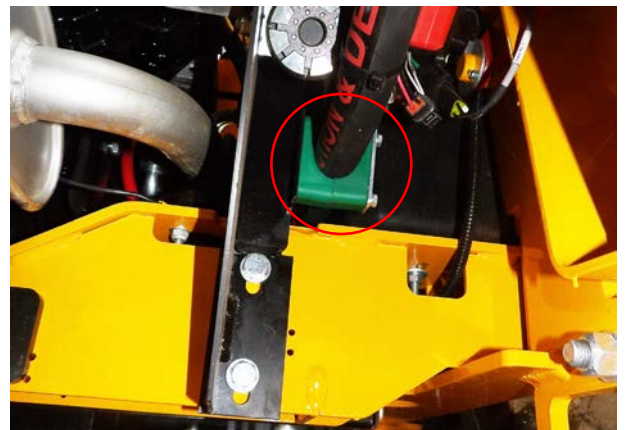
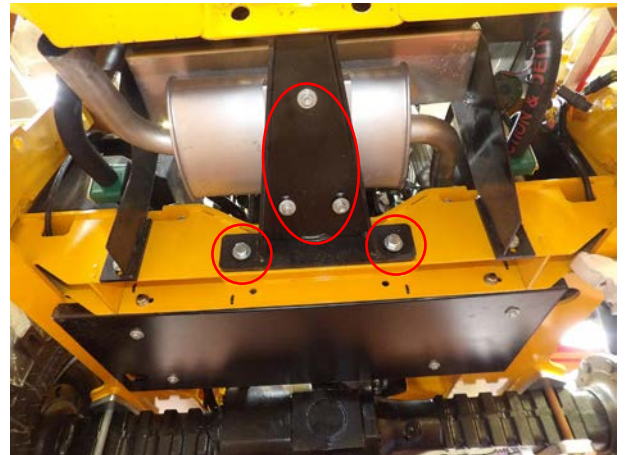


**1. PREPARATION.**

- 1.1. Park the machine on level ground.
- 1.2. Chock wheels.
- 1.3. Open engine cover.
- 1.4. Switch battery isolator to 'OFF' and remove key.
- 1.5. Remove floor plate (4 x M10 Bolts).

**2. TOWING JAW & WHEEL REMOVAL**

- 2.1. Remove towing jaw (2 x M16 Bolts).
- 2.2. Loosen towing bracket (2 x M12 Set screws) and exhaust silencer fixings (3x M8 Nuts).
- 2.3. Remove hose clamp from RH side of radiator bracket.



- 2.4. Support rear axle on suitable stand to allow RH rear wheel to be removed.
- 2.5. Remove RH rear wheel.

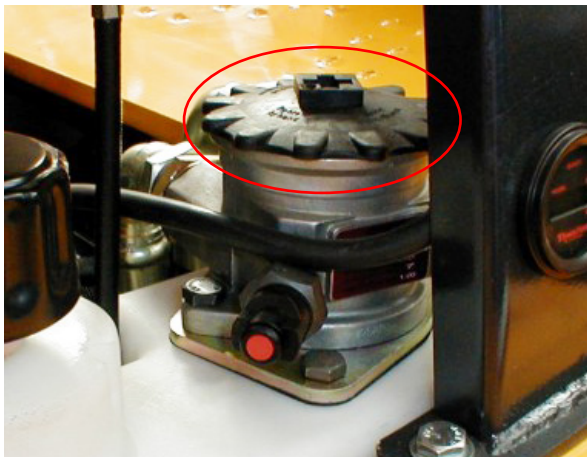


- 2.6. Unplug RH rear lights (if fitted).
- 2.7. Remove RH mudguard (4 x M12 Setscrews).



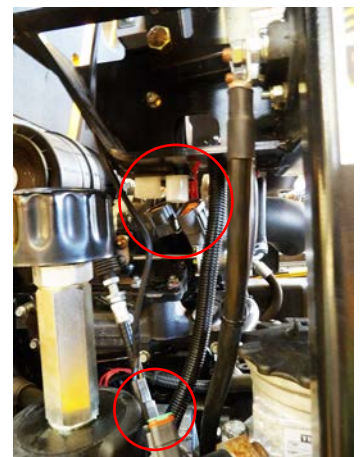
### 3. DRAIN HYDRAULIC OIL TANK.

- 3.1. Remove filler cap.
- 3.2. Place suitable container beneath oil drain plug (minimum 50L capacity).
- 3.3. Unscrew oil drain plug and allow oil to drain.
- 3.4. Refit drain plug and filler cap.



### 4. CROSS BRACE RELOCATION

- 4.1. Remove handbrake gaiter.
- 4.2. Disconnect handbrake cable and withdraw from handbrake bracket.
- 4.3. Unplug safety relay located on the handbrake bracket and the handbrake switch.

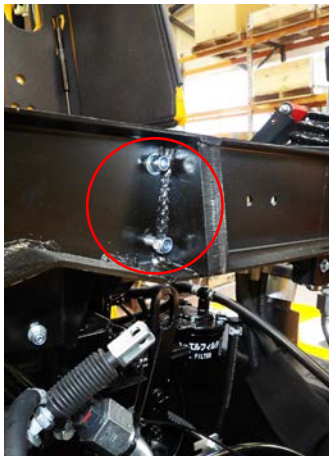


- 4.4. Remove relay, maxi fuse and holders from rear of cross brace.
- 4.5. Unplug hour meter wires (note orientation).
- 4.6. Remove battery earth cables from battery isolator.



#### 4.7. 3.5T Machine.

- 4.8. Remove air cleaner mounting bracket from cross brace (2 x M8 set screws).
- 4.9. Remove air cleaner cover and filter element.



- 4.10. Remove RH side cross brace fixings (2 x M10 bolts).
- 4.11. Slacken the hose into the tipping valve return port (1/4 turn).



- 4.12. Remove front LH side cross brace fixing (1 x m10 bolts).
- 4.13. Loosen rear LH side cross brace fixing (retain as pivot point).
- 4.14. Slew cross brace forward.



## 5. HINGE BACK REAR COVER

- 5.1. Attach suitable crane to top of ROPS frame and check the rear safety strap is correctly installed.
- 5.2. Loosen the bottom nuts and bolts (A) on both sides.  
**Do Not Remove these nuts and bolts!**
- 5.3. Remove top two nuts and bolts (B) on both sides.
- 5.4. Using suitable crane and slings pull back and lower rear cover and engine cover assembly onto safety strap.



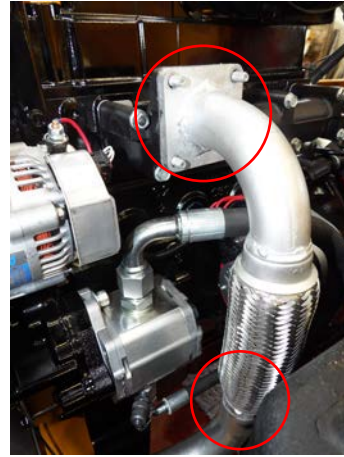
## 6. EXHAUST AND ACTUATOR

- 6.1. Slacken exhaust clamp.
- 6.2. Remove nuts from turbo outlet (5 x M8).
- 6.3. Remove downpipe.
- 6.4. Cover silencer inlet and turbo outlet.

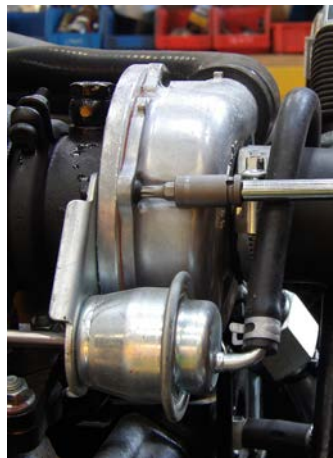


**6.5. 3.5T Machine.**

- 6.6. Slacken exhaust clamp.
- 6.7. Remove nuts from manifold (4 x M8).
- 6.8. Remove downpipe.

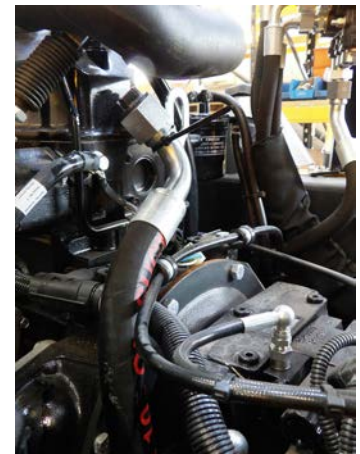


- 6.9. Remove C-clip from wastegate pivot pin.
- 6.10. Unscrew wastegate actuator from turbo (2 x Torx T25).
- 6.11. Withdraw actuator and place over the top of turbo.

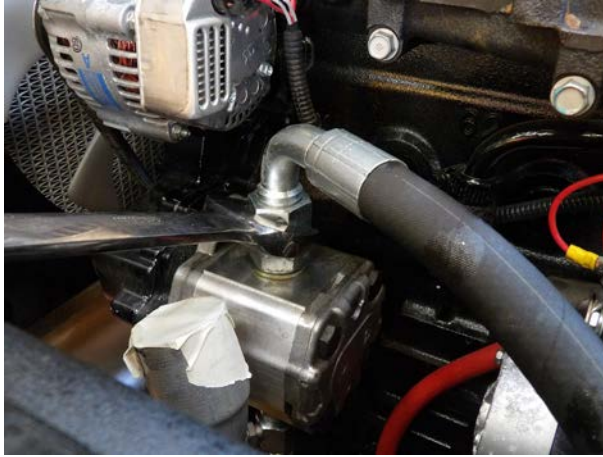


**7. REMOVAL OF HYDRAULIC TANK**

- 7.1. Remove cooler and suction hoses from filter head, cap filter and hoses.
- 7.2. Feed cooler hose rearwards to clear tank area.
- 7.3. Tie back suction hose to engine lifting eye.

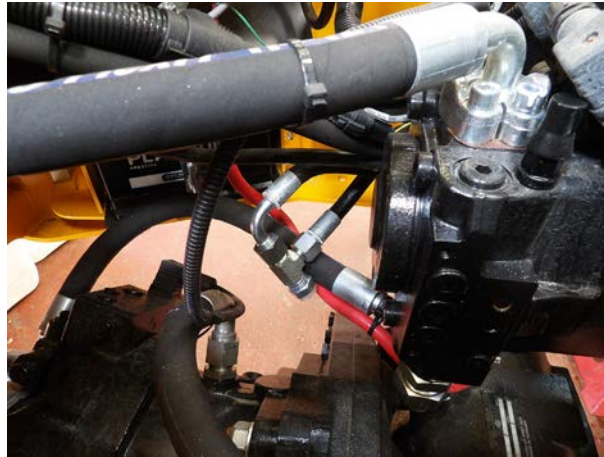


7.4. Remove suction hose from top of gear pump, tie back to tank.



7.5. Remove return tee from lower front of tank, cap tee and tank union.

7.6. Feed tee away from tank area.



7.7. Extract harness from behind tank and lay over chassis.

7.8. Unbolt hydraulic tank from chassis (2 x M10 bolts). Discard all fixings.

7.9. Hydraulic tank can now be lifted out of chassis.

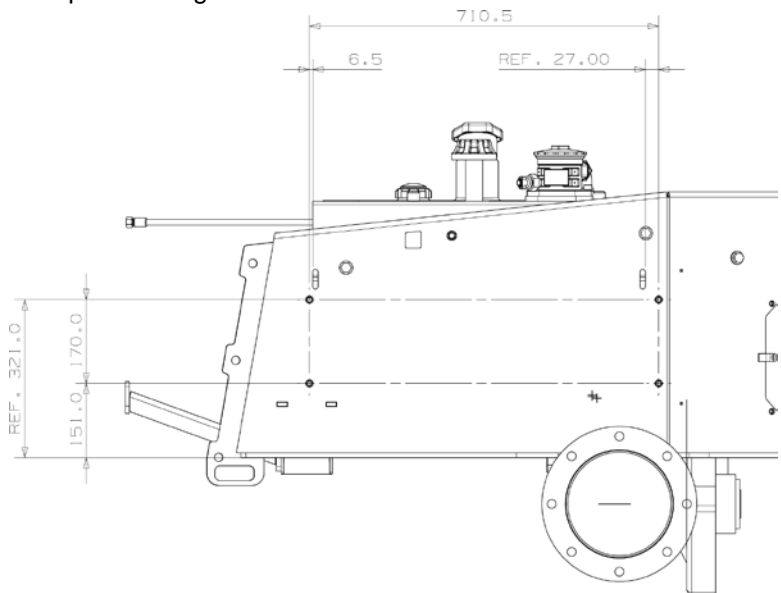


7.10. Remove the two rubber buffers from chassis. Discard.



## 8. PREPARATION FOR NEW TANK (105489)

8.1. Mark out fixing hole positions as per drawing.



8.2. Alternatively a drilling template (105545) is available on request from Thwaites spare parts department.

8.3. Attach the drilling template to the chassis using two of the mudguard fixing holes.

8.4. Mark the four new hole positions.

8.5. Remove drilling template.

8.6. Drill four 12mm holes.



## 9. TANK BUILD

- 9.1. Remove suction hose and suction strainer from plastic tank.
- 9.2. Clean strainer and hose, check condition and change if necessary.
- 9.3. Refit strainer use PTFE tape or sealer (70Nm) and hose into new tank, hose should be at 90° to the tank face.

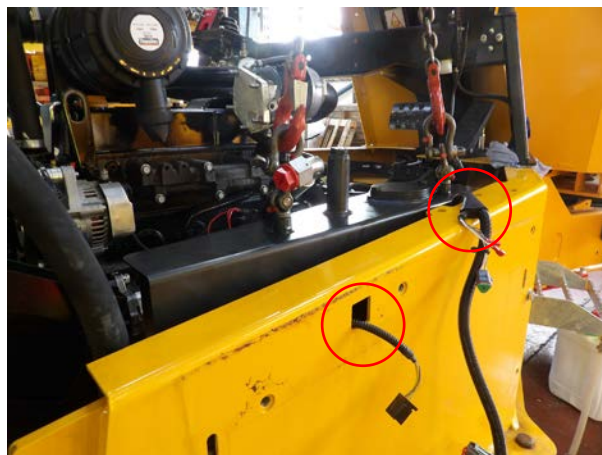


- 9.4. Remove, clean and refit level indicator (10Nm).
- 9.5. Remove and refit male adaptor.



## 10. INSTALL TANK

- 10.1. Using a suitable lifting device pick up and lower tank carefully into chassis. (35kg).
- 10.2. Ensure harness lies between the tank and chassis. Feed rear light plug through hole in chassis.



- 10.3. Line up tank with new fixing holes and secure with set screws (20618) washers(15819) and nuts (13064)
- 10.4. Remove lifting device.



## 11. RECONNECT TANK

- 11.1. Remove return filter from plastic tank. Discard fixings.
- 11.2. Clean filter, check condition and change if necessary.
- 11.3. Remove blanking plate from new tank. Discard.
- 11.4. Fit return filter into new tank with caphead set screws (102226) and copper washers (9510). Torque to 20Nm.



- 11.5. Refit return tee to lower front of tank.
- 11.6. Refit cooler and suction hoses to filter head.

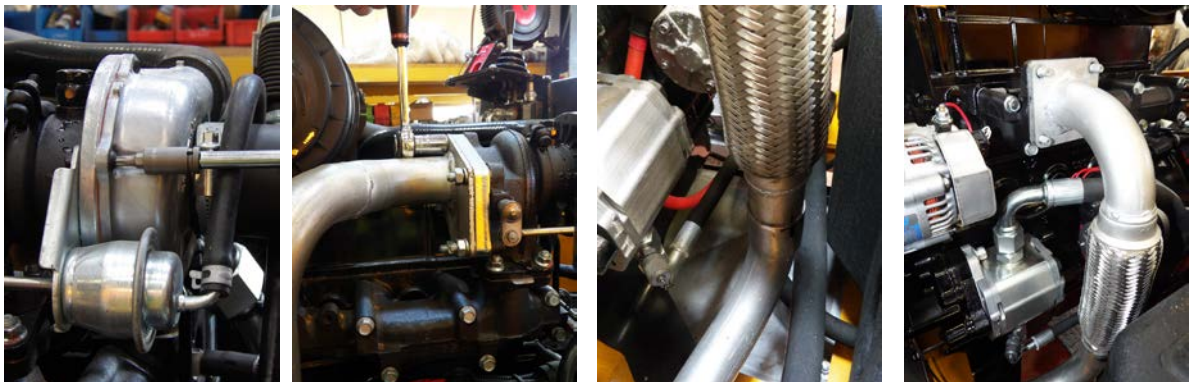


11.7. Refit suction hose to top of gear pump.



## 12. REFIT EXHAUST AND ACTUATOR

- 12.1. Refit wastegate actuator to turbo (2 x Torx T25).
- 12.2. Replace C-clip to wastegate pivot pin.
- 12.3. Remove covers from silencer inlet and turbo outlet.
- 12.4. Refit exhaust downpipe to turbo outlet (5 x M8 Nuts) and silencer, leave silencer connection loose.



3.5T Machine

## 13. CROSS BRACE

- 13.1. Move cross brace back to correct position and secure (4 x m10 bolts).
- 13.2. Tighten tipping valve return hose.
- 13.3. Refit Relay and Maxi Fuse and holders to rear of cross brace.

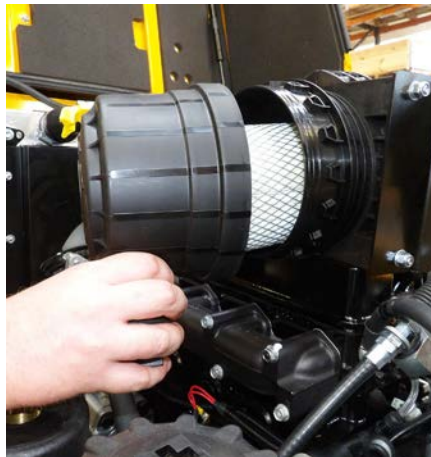


- 13.4. Reconnect Safety Relay on the handbrake bracket.
- 13.5. Reconnect hour meter.
- 13.6. Reconnect battery earth cables to Battery Isolator.

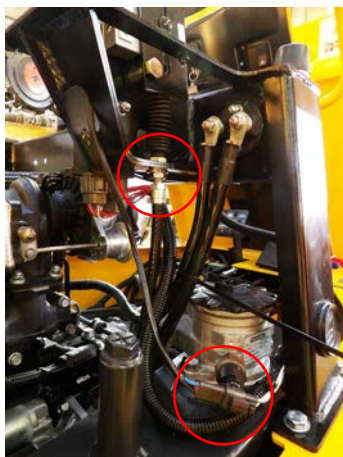


### 13.7. **3.5T Machine**

- 13.8. Refit air cleaner mounting bracket to cross brace (2 x M10 set screws).
- 13.9. Refit filter element and air cleaner cover.



- 13.10. Refit handbrake cable, handbrake my need adjusting see Service Manual for correct procedure.
- 13.11. Reconnect the handbrake switch.
- 13.12. Refit handbrake gaiter.



- 13.13. Fit 'P' Clip (11514) to the inside of the hydraulic tank to secure handbrake cable.  
13.14. Cable tie harness and cables as appropriate.

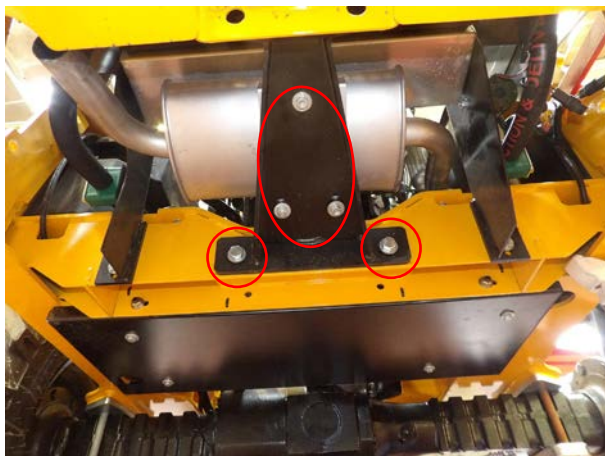


## 14. REAR COVER

- 14.1. Refit suction hose clamp to RH side of Radiator Bracket.  
14.2. Close the rear cover and refit 4 x nuts and bolts do not fully tighten.  
14.3. Refit Towing Jaw (2 x M16 Bolts).  
14.4. Tighten rear cover nuts and bolts 250Nm.



- 14.5. Tighten towing bracket and silencer fixings.  
14.6. Refit exhaust clamp.



- 14.7. Refit RH rear wheel 330Nm.  
14.8. Refit RH mudguard and reconnect rear lights.  
14.9. Remove machine from axle stand.

## 15. COMPLETION

- 15.1. Remove breather cap from plastic hydraulic tank and fit to new tank.
- 15.2. Fit Hydraulic Oil Decal (103359) to top of tank
- 15.3. Remove return filter cap and filter tube assembly.



- 15.4. Fill tank with recommended lubricant, see Service Manual.
- 15.5. Refit filter tube assembly and return filter cap.

### Take Care when testing with Floor Plate removed.

- 15.6. Replace isolator key and switch to ON.
- 15.7. Start engine, drive forward and backwards and activate all hydraulic cylinders.
- 15.8. Stop engine and check for leaks.
- 15.9. Top up lubricant as required.
- 15.10. Refit floor plate (4 x M10 Bolts).

## Parts List

105489	HYDRAULIC TANK	1 off
20618	SET SCREW M10 x 30	4 off
15819	WASHER M10	8 off
13064	STOVER NUT M10	4 off
11514	P CLIP	1 off
7465	SET SCREW M8 x 20	1 off
12972	SPRING WASHER	1 off
12973	WASHER	1 off
102226	CAP HEAD SCREW M10 x 40	2 off
9510	COPPER WASHER M10	2 off
103359	HYDRAULIC OIL DECAL	1 off
	CABLE TIES	as req.