

## **PH1 5T to 10T Hydro Hydraulic Tank Change (Perkins)**

These instructions cover 5T to 10T machines photographs may not represent all machines.

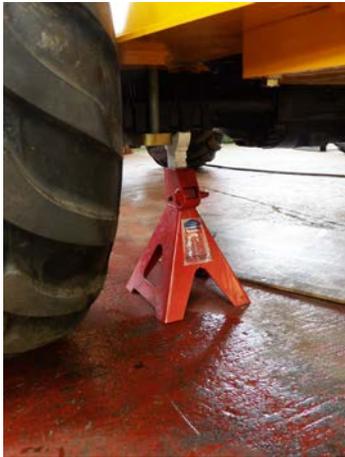
### **1. PREPARATION.**

- 1.1. Park the machine on level ground.
- 1.2. Chock front 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. WHEEL & MUDGUARD REMOVAL**

- 2.1. Support rear axle on suitable stand to allow LH rear wheel to be removed.
- 2.2. Remove LH rear wheel.

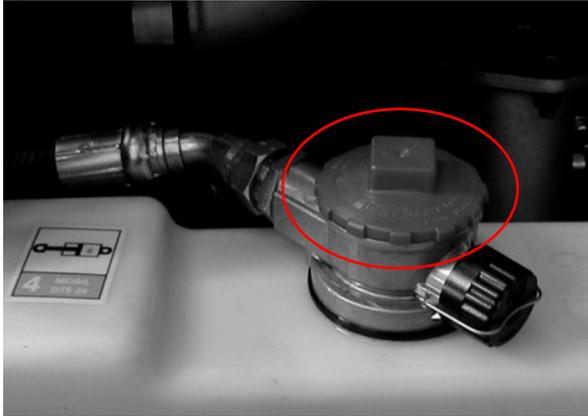


- 2.3. Unplug LH rear lights (if fitted).
- 2.4. Remove LH mudguard (4 x M12 Setscrews).



### 3. DRAIN HYDRAULIC OIL TANK.

- 3.1. Remove filler cap.
- 3.2. Place suitable container beneath oil drain plug.
- 3.3. Unscrew oil drain plug and allow oil to drain.
- 3.4. Refit drain plug and filler cap.



### 4. HINGE BACK REAR COVER

- 4.1. Unbolt and remove towing jaw & pin.
- 4.2. Remove towing support bracket nuts and bolts.



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



## 5. CROSS BRACE RELOCATION

5.1. Remove hose clamps from LH side of chassis.



Forward Tip



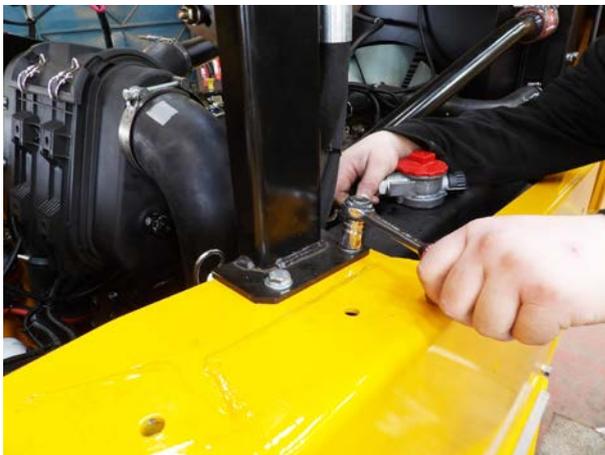
Powerswivel

5.2. Remove Return Filter Hose.

5.3. Cap hose and return filter.



5.4. Remove LH side cross brace fixings (2 x M10 bolts).



- 5.5. Remove rear RH side cross brace fixing (1 x M10 bolts).
- 5.6. Loosen front RH side cross brace fixing (retain as pivot point).
- 5.7. Slew cross brace forward.

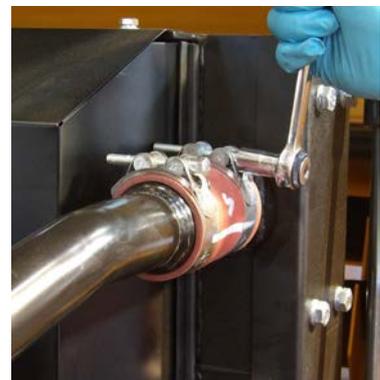


## 6. EXHAUST AND TURBO

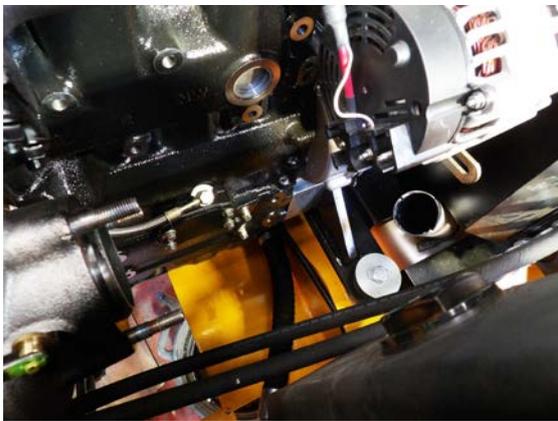
- 6.1. Remove pipe from turbo outlet.



OR



- 6.2. Remove nuts securing downpipe and turbo guard.
- 6.3. Remove guard.
- 6.4. Slacken exhaust clamps and remove downpipe.



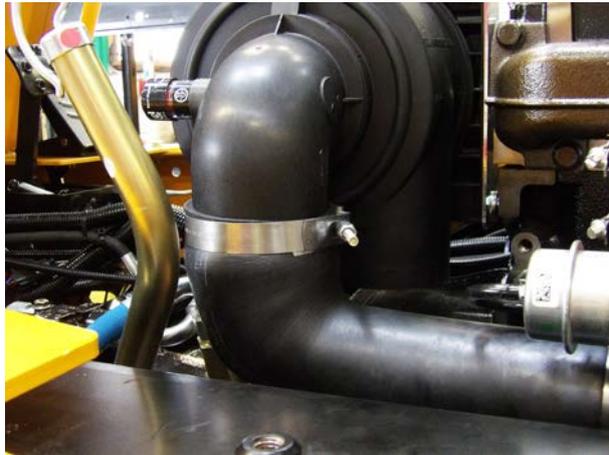
- 6.5. Disconnect the turbo oil drain and oil supply pipes from engine.



6.6. Slacken air cleaner hose clamp.



OR



6.7. Remove nuts turbo to manifold (4 x M8).  
6.8. Remove turbo assembly.



## 7. REMOVAL OF HYDRAULIC TANK

- 7.1. Remove return hose from lower front of tank.
- 7.2. Cap hose and union.



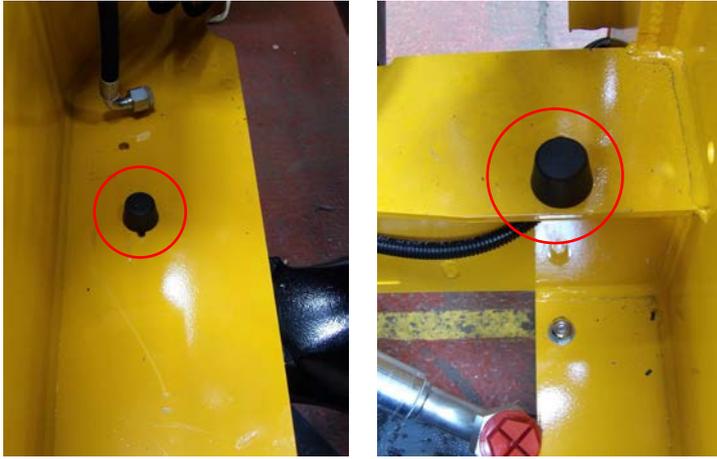
- 7.3. Remove suction hose cover plate (if fitted).
- 7.4. Remove suction hose for the rear underside of tank.
- 7.5. Cap hose and filler.



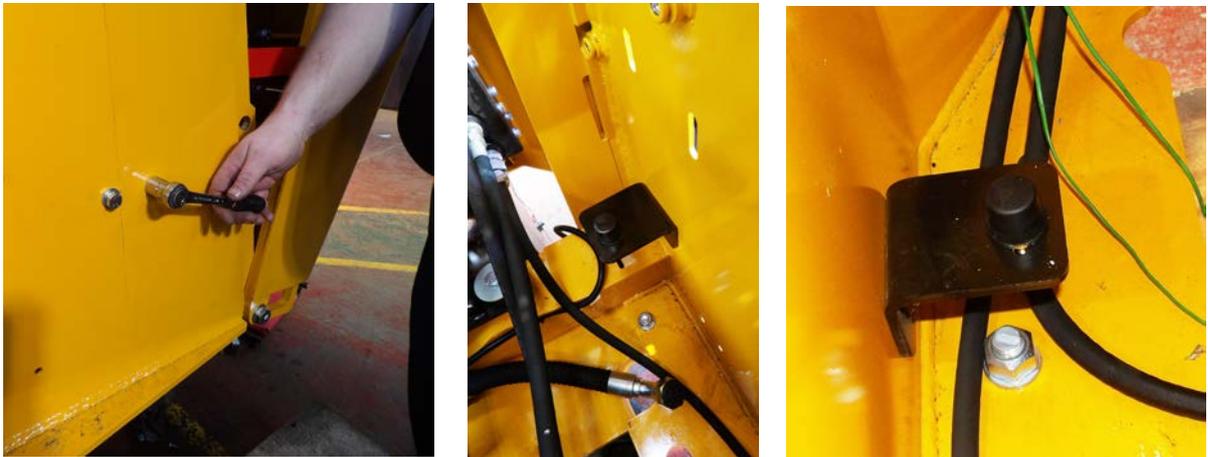
- 7.6. Unbolt hydraulic tank from chassis (2 x M10 bolts). Discard all fixings.
- 7.7. Hydraulic tank can now be lifted out of chassis.



7.8. Remove the two rubber buffers from chassis 5 & 6T machines. Discard.



7.9. Remove mounting brackets and rubber buffers from chassis 9 & 10T machines. Discard.

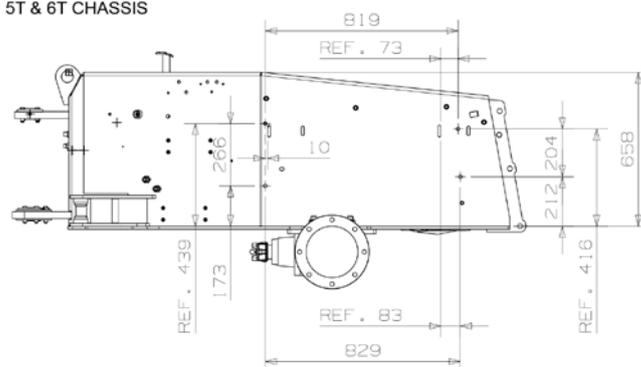


## 8. PREPARATION FOR NEW TANK (105489)

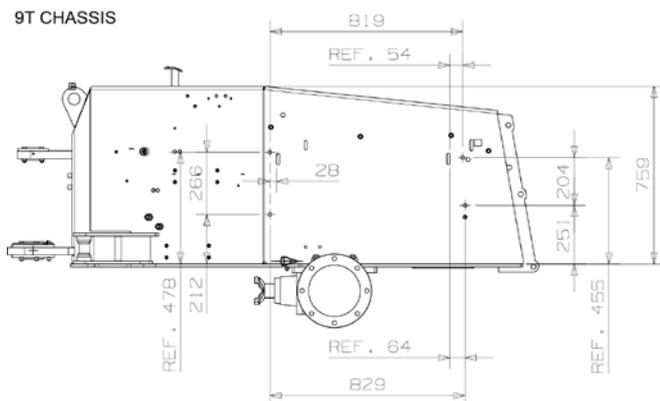
8.1. Mark out fixing hole positions as per drawing.



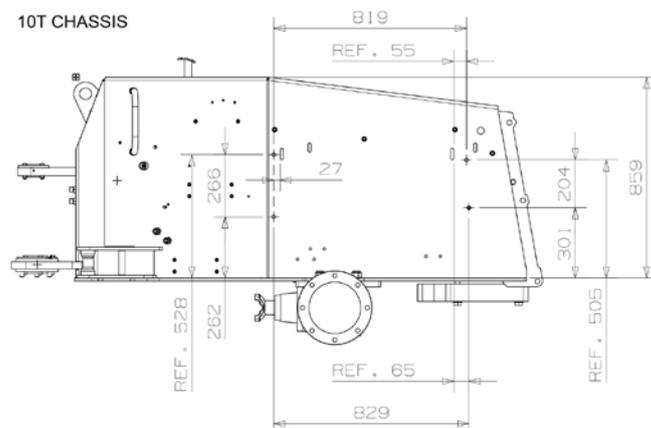
5T & 6T CHASSIS



9T CHASSIS



10T CHASSIS



- 8.2. Alternatively a drilling template (105547) 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, check condition and change if necessary.
- 9.3. Refit strainer in to new tank, use PTFE tape or sealer (70Nm).
- 9.4. Fit level indicator (104353) to new tank (10Nm).



- 9.5. For all machines without a Combi Oil Cooler remove male adaptor and dowty washer from plastic tank and refit in to new tank.
- 9.6. For all machines with a Combi Oil Cooler fit 45° elbow (105550) elbow should face downwards.



Combi Oil Cooler Only

## 10. INSTALL TANK

- 10.1. Tape hoses to the inside of chassis to allow clearance (except machines with combi oil cooler).



- 10.2. Using a suitable lifting device pick up and lower tank carefully into chassis front end first (35kg).



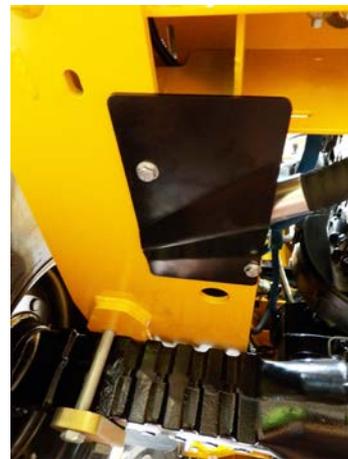
- 10.3. Line up tank with new fixing holes and secure with set screws (7466) spring washers(13362) and washers (15819)
- 10.4. Remove lifting device.
- 10.5. Remove tape from hoses on the inside of chassis.



## 11. RECONNECT TANK HOSES

- 11.1. Refit and suction hose to filter.
- 11.2. Refit suction hose cover plate (if fitted).

**Note:** 5 & 6T machines require a new suction hose cover plate (105554).



- 11.3. Refit return hose to lower front of tank.

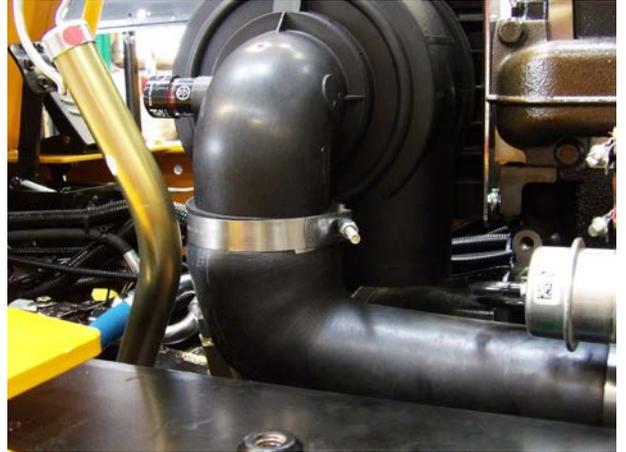
**Note:** On machines fitted with a Combi Oil Cooler hose is routed under the tank.



Combi Oil Cooler Only

## 12. REFIT TURBO AND EXHAUST

- 12.1. Refit turbo assembly to manifold.
- 12.2. Connect air cleaner hose and clamp.
- 12.3. Reconnect the turbo oil drain and oil supply pipes to engine.
- 12.4. Refit exhaust downpipe.
- 12.5. Refit pipe to turbo outlet.



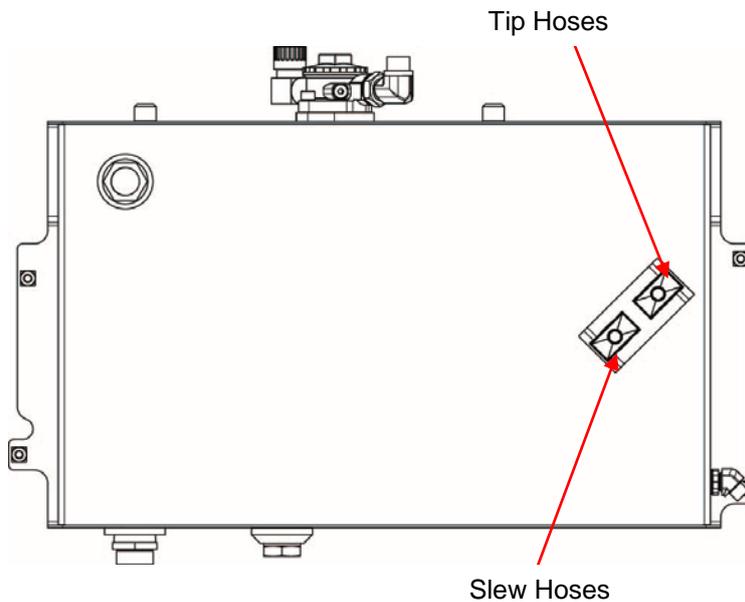
### 13. CROSS BRACE

13.1. Move cross brace back to correct position and secure (4 x M10 bolts).



### 14. SKIP HOSES

- 14.1. Reposition skips hoses to the inside of tank.
- 14.2. Use existing clamps removed from chassis with new fixings.
- 14.3. Cable tie hose to ensure clearance from tank.

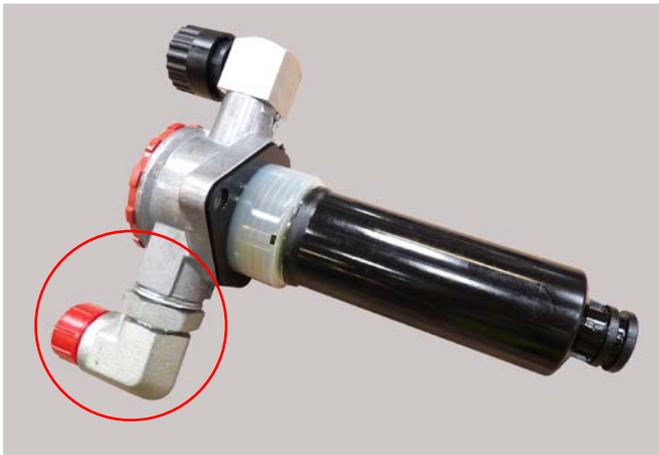


## 15. RETURN FILTER

- 15.1. Remove blanking plate from new tank. Discard.
- 15.2. Fill tank with recommended lubricant, see Service Manual.



- 15.3. Fit 90° elbow to the Return Filter (104523) hand tight as shown.
- 15.4. Fit Return Filter into new tank with caphead set screws (102226) and copper washers (9510). Torque to 20Nm.



- 15.5. Remove existing Return Filter Hose from Tipping Valve. Discard.
- 15.6. Fit Return Filter Hose (105551) to Tipping Valve and Return Filter Elbow hand tight.
- 15.7. Allow Hose to take its natural position, tighten Hose and Elbow.



## 16. REAR COVER

- 16.1. Close the rear cover and refit 4 x nuts and bolts.
- 16.2. Refit towing support bracket nuts and bolts.
- 16.3. Refit towing jaw & pin.



- 16.4. Refit LH rear wheel 330Nm.
- 16.5. Refit LH mudguard and reconnect rear lights (if fitted).
- 16.6. Remove machine from axle stand.

## 17. COMPLETION

- 17.1. Fit Hydraulic Oil Decal (103359) to top of tank



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

- 17.2. Replace isolator key and switch to ON.
- 17.3. Start engine, drive forward and backwards and activate all hydraulic cylinders.
- 17.4. Stop engine and check for leaks.
- 17.5. Top up lubricant as required.
- 17.6. Refit floor plate (4 x M10 Bolts).

## **Parts List**

105550	HYDRAULIC TANK	1 off
7466	SET SCREW M10 x 25	4 off
15819	WASHER M10	4 off
13362	SPRING WASHER M10	4 off
104353	LEVEL INDICATOR	1 off
104523	RETURN FILTER	1 off
102226	CAP HEAD SCREW M10 x 40	2 off
9510	COPPER WASHER M10	2 off
105551	HOSE	1 off
105552	90° ELBOW	1 off
105553	45° ELBOW	1 off
100353	BOLT M8 x 50	2 off
17157	BOLT M8 x 60	1 off
102277	COVER PLATE	1 off
101901	COVER PLATE	1 off
12972	SPRING WASHER M8	2 off
12973	WASHER M8	2 off
103359	HYDRAULIC OIL DECAL	1 off
	CABLE TIES	as req.