

These instructions cover manual and hydrostatic machines, photographs may not represent all machines.

1. PREPARATION.

- 1.1. Park the machine on level ground and remove ignition key.
- 1.2. Chock wheels.
- 1.3. Open engine cover.
- 1.4. Switch battery isolator to 'OFF' and remove key.
- 1.5. Remove floor plate (5 x M10 Bolts).

2. WHEEL AND MUDGUARD REMOVAL

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



- 2.3. Unplug RH rear lights (if fitted).
- 2.4. Remove RH mudguard (4 x M10 Setscrews).



3. DRAIN HYDRAULIC OIL TANK.

- 3.1. Remove filler cap.
- 3.2. Place suitable container beneath oil drain plug (minimum 30L capacity).
- 3.3. Unscrew oil drain plug and allow oil to drain.
- 3.4. Refit drain plug and filler cap.



4. LEG GUARD AND STEERING COLUMN REMOVAL

- 4.1. Disconnect throttle cable from throttle pedal arm; note which hole used.
- 4.2. Remove throttle cable from brake pedal bracket and fold over to left hand side.
- 4.3. Remove inner leg guard hose shield.



- 4.4. Cut cable ties around hoses/harness.
- 4.5. Follow harness back, to cross brace; cutting cable ties, and unplugging front light harness and brake pedal switch (if fitted).
- 4.6. Unbolt control lever(s) from steering column, unplug from harness and remove.



4.7. Unscrew dashboard and remove, place harness and dashboard on top of engine.



4.8. Leaving hoses attached; unbolt and remove steering valve.

4.9. Reroute steering valve hoses to the left, so that valve can rest on left hand access step.

4.10. Unbolt and remove leg guard.



5. BRAKE PEDEL ASSEMBLY REMOVAL

5.1. Unbolt hose clamp above hydraulic tank.

5.2. Reroute brake reservoir hose over top of hydraulic tank breather.



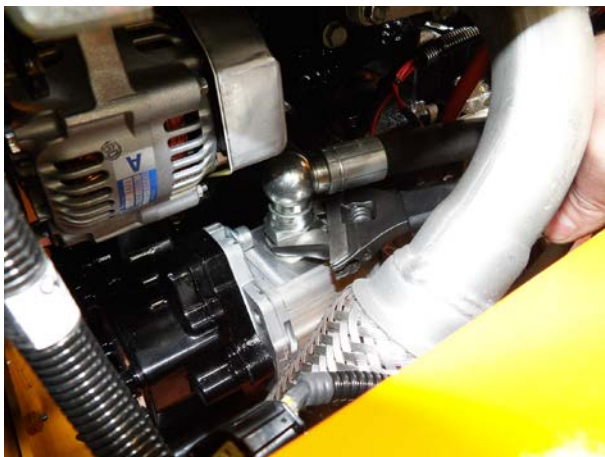
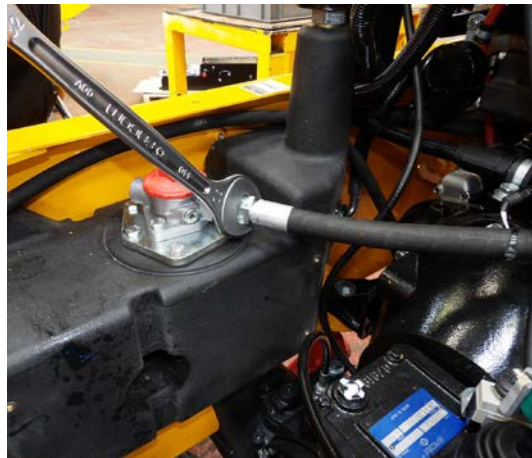
5.3. Leaving brake line attached; unbolt brake pedal assembly and move over to left.



6. REMOVAL OF HYDRALIC HOSES (MANUAL MACHINES)

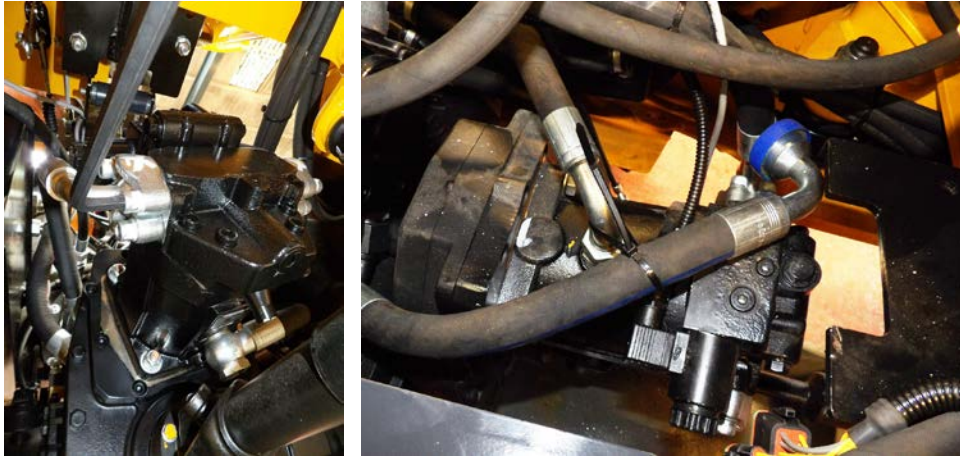
- 6.1. Detach steering return hose, at front of tank.
- 6.2. Detach hose from hydraulic filter.
- 6.3. Detach hose from top of gear pump, on side of engine.

Cap all hoses and ports to prevent contamination

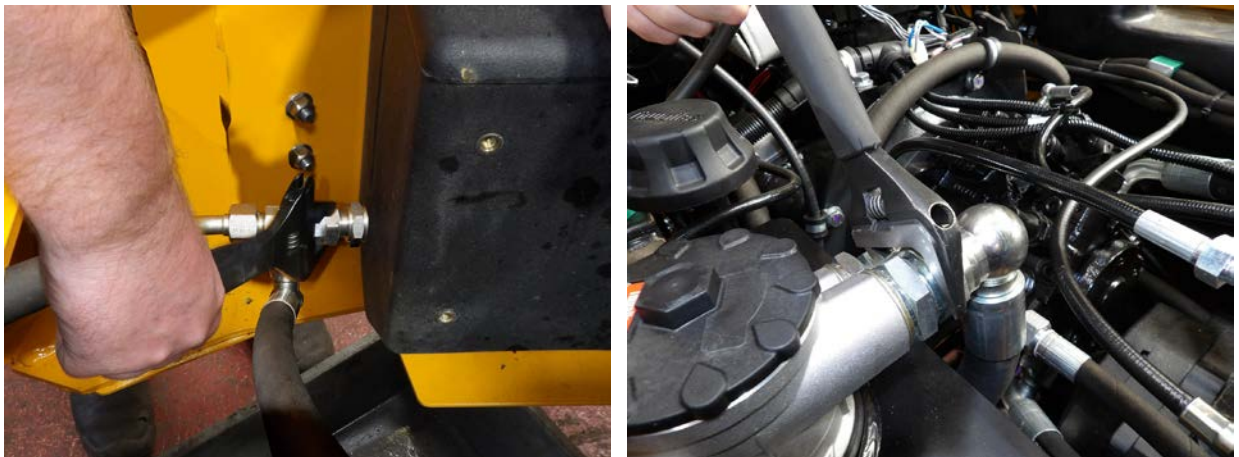


7. REMOVAL OF HYDRALIC HOSES (HYDROSTATIC MACHINES)

- 7.1. Place suitable container beneath hydraulic-motor.
- 7.2. Unbolt clamps retaining hose onto right hand side of hydraulic motor. Route hose over top of hydraulic-motor.

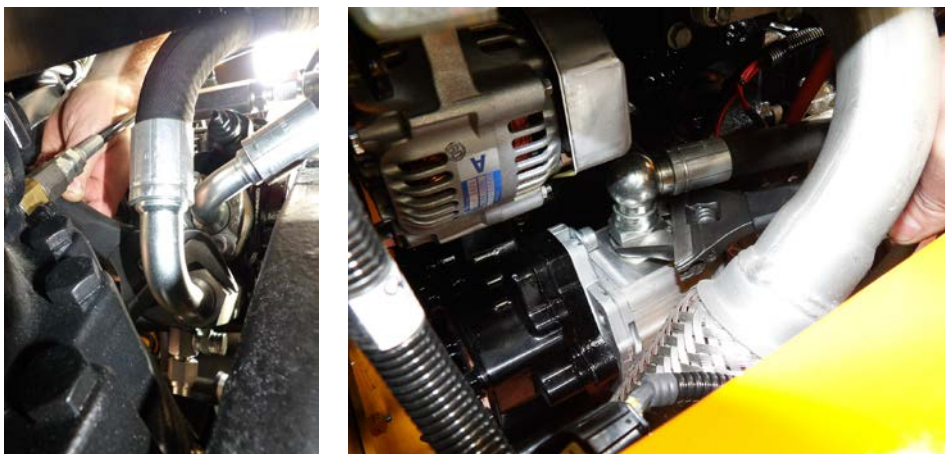


- 7.3. Remove return-tee from front end of tank, leave hoses connected.
- 7.4. Disconnect both hoses from hydraulic filter.



- 7.5. Slacken suction hose union, at bottom of hydraulic pump. Route over top of hydraulic motor.
- 7.6. Detach hose from top of gear pump, on side of engine.

Cap all hoses and ports to prevent contamination

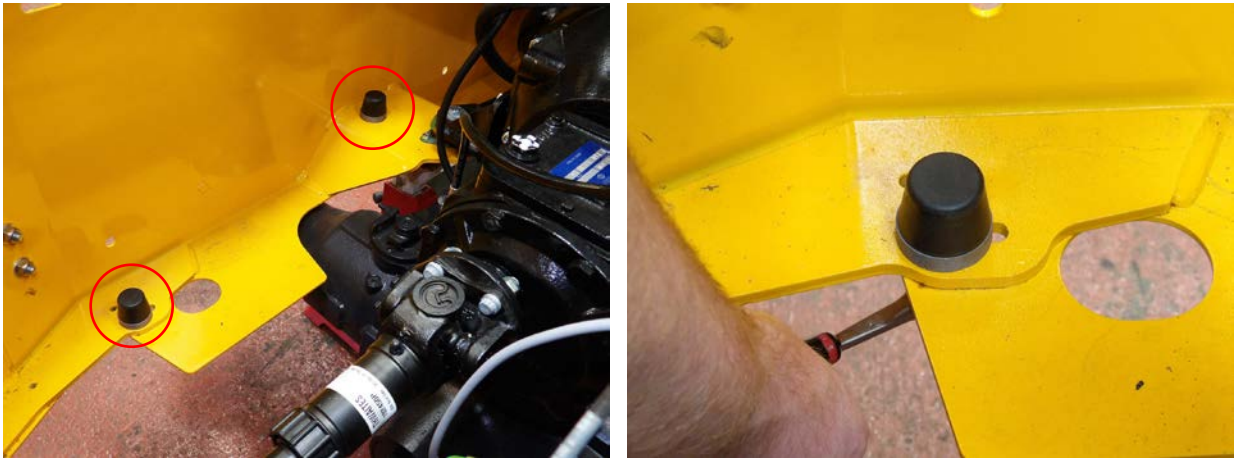


8. REMOVAL OF HYDRAULIC TANK

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

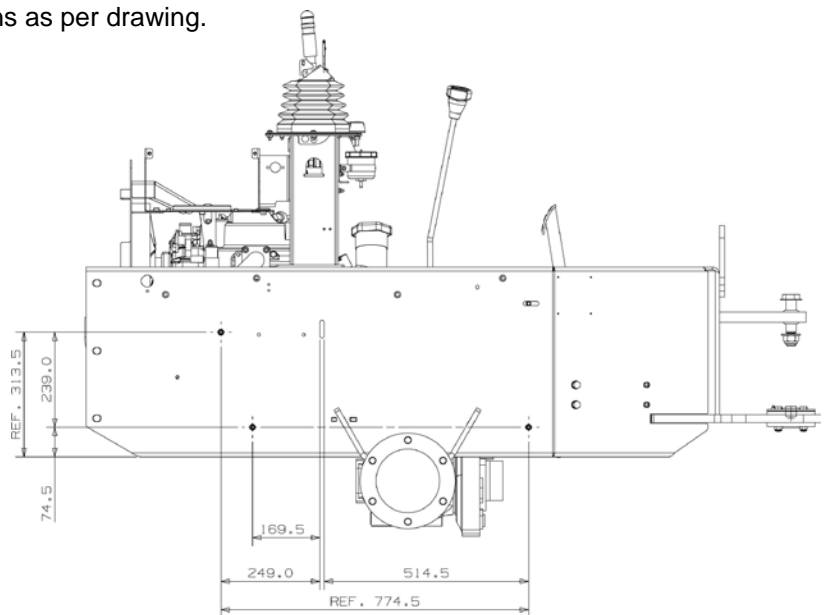


- 8.3. Remove the two rubber buffers from chassis. Discard.



9. PREPARATION FOR NEW TANK (105489)

- 9.1. Mark out fixing hole positions as per drawing.



- 9.2. Alternatively a drilling template (105546) is available on request from Thwaites spare parts department.
- 9.3. Attach the drilling template to the chassis using two of the mudguard fixing holes.
- 9.4. Mark the three new hole positions.
- 9.5. Remove drilling template.
- 9.6. Drill three 12mm holes, apply paint into holes to prevent corrosion.



10. TANK BUILD

- 10.1. Place plastic tank onto sturdy work surface.
- 10.2. Remove breather cap and adapter; put to one side.



- 10.3. Remove hose adapter and seal from front port; put to one side.
- 10.4. Remove and discard suction hose.
- 10.5. Remove suction filter from rear of tank; put to one side.



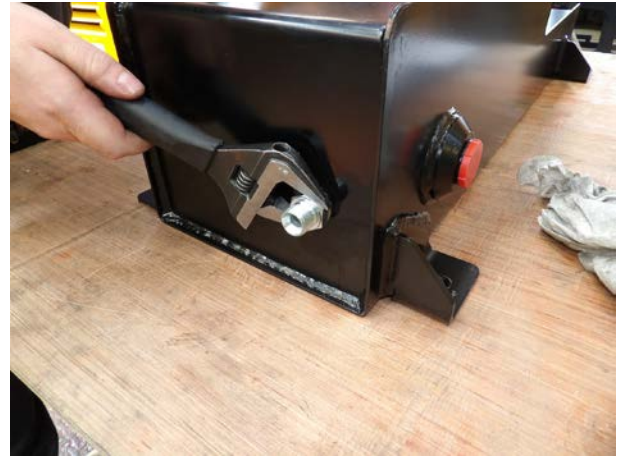
10.6. Remove Hydraulic filter unit from top of tank; put to one side (**MANUAL MACHINES ONLY**).



10.7. Discard plastic tank.

10.8. Place steel tank onto sturdy work surface.

10.9. Remove bung from front end of tank and fit hose adapter and seal, fully tighten and cap adapter.



10.10. Clean old sealant off of suction strainer threads.

10.11. Remove bung from rear end of tank, apply new sealant to threads of suction strainer, insert into port. Fully tighten and cap strainer.

10.12. Remove bung from inner face of tank. Apply sealant to threads of new sight-glass (105524) fit into port, carefully tighten 10Nm MAX.

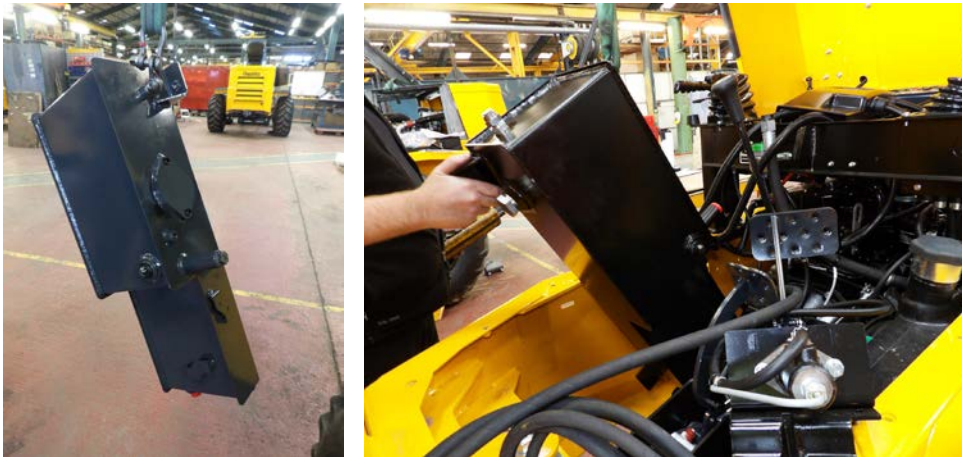


11. INSTALL TANK

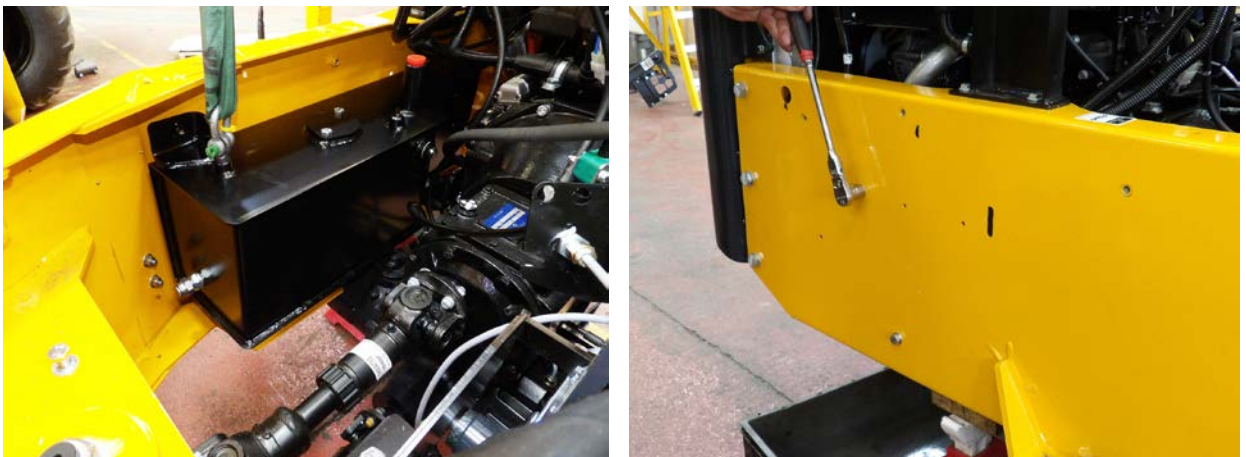
- 11.1. Slacken hose fitting on to bottom of gear pump, and move hose across towards engine.
- 11.2. Release handbrake and pull cable across to engine and bolt to flywheel cover using P-clip (18261) supplied.
- 11.3. Reapply handbrake.



- 11.4. Using a suitable lifting device suspend the tank from the foremost lifting point, so that it hangs almost vertical.
- 11.5. Lower tank into chassis guiding the rear of the tank alongside the engine, be careful not to trap any wiring or hoses etc.

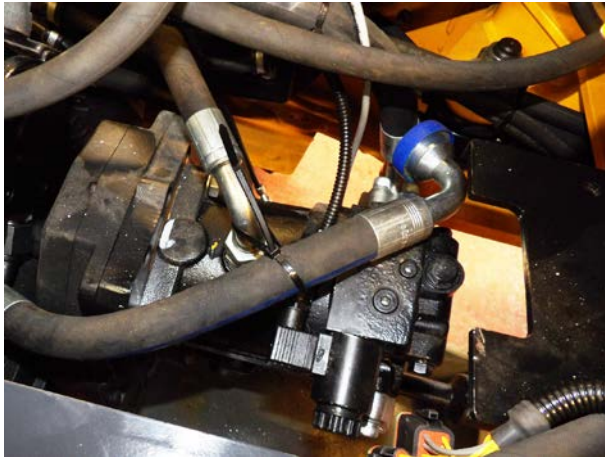


- 11.6. Bolt the tank into the chassis, secure with set screws (7466) spring washers (13362) and washers (15819)
- 11.7. Remove lifting device.



12. RECONNECT TANK

- 12.1. Reconnect hose onto right hand side of hydraulic motor (**HYDROSTATIC MACHINES ONLY**).



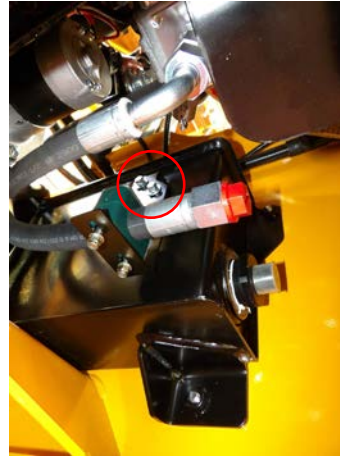
- 12.2. Bolt brake pedal assembly back into position.
12.3. Reroute brake reservoir hose back against chassis.
12.4. Reroute pressure-hose (from gear pump) back over to chassis.
12.5. Loosely assemble clamp to hold both hoses to the chassis.



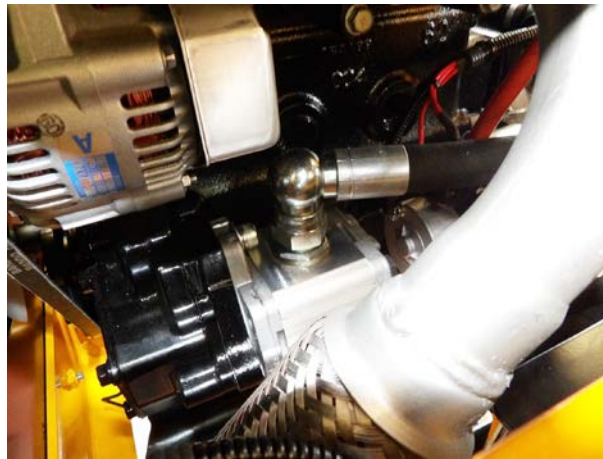
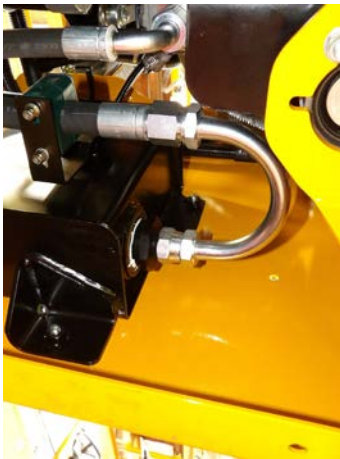
- 12.6. Loosely assemble new hose clamp (104996) on top of hydraulic tank to route pressure hose.



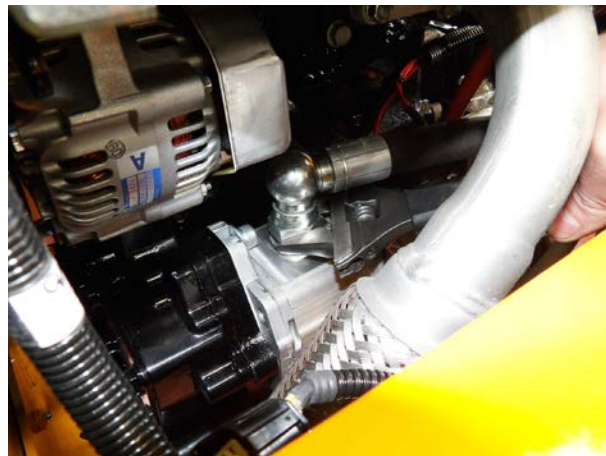
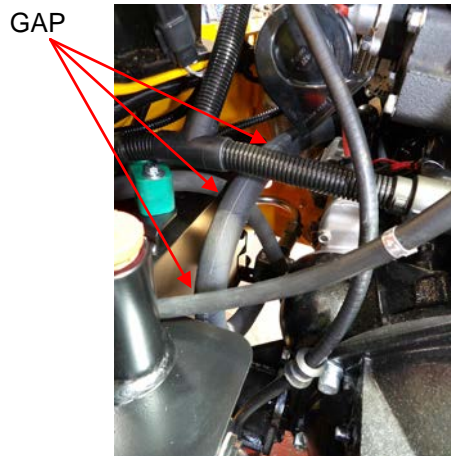
- 12.7. Loosely assemble new clamp (105355) and L-bracket (105534) onto new suction hose (105544).
- 12.8. Loosely attach the L-bracket assembly onto the hydraulic tank.



- 12.9. Loosely attach the 'U-bend' fitting (105543) to the suction filter and suction hose.
- 12.10. Loosely attach suction hose to gear pump inlet.



- 12.11. Align suction hose so that it is unable to rub against any other components or hoses.
- 12.12. Tighten hose union onto top of gear pump.

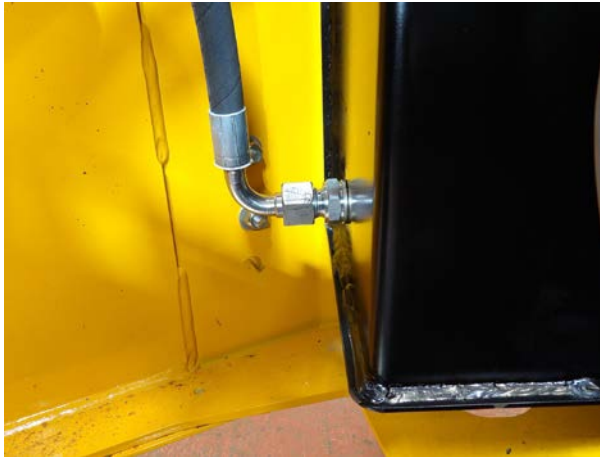


- 12.13. Tighten suction hose union onto U-bend.
- 12.14. Tighten U-bend onto suction filter.
- 12.15. Tighten L-bracket & hose clamp to complete fitting of new suction hose.
- 12.16. Check alignment of pressure hose, to ensure no contact with components or other hoses.

12.17. Tighten pressure hose union onto bottom of gear pump.

12.18. Position pressure hose, to ensure smooth route and no fouling, tighten tank-top-clamp & chassis-clamp.

12.19. Fit steering return hose onto adapter at front of tank; align and fully tighten.



(MANUAL MACHINES)



(HYDROSTATIC MACHINES)

12.20. Remove hydraulic tank top plate and refill with recommended lubricant (see Service Manual) up to level of sight-glass.



12.21. Fit hydraulic oil filter unit, using cap head screws (102226) and copper washers (9510). Torque to 20Nm. On Manual Machines reuse existing filter on Hydrostatic Machines fit new Filter (105525).



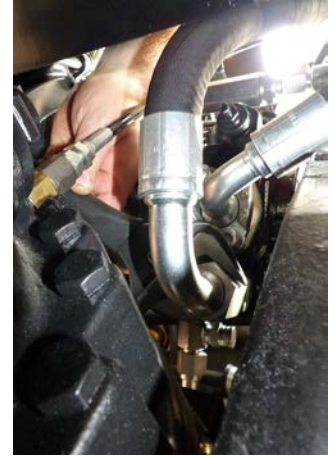
(MANUAL MACHINES)



(HYDROSTATIC MACHINES)

12.22. Reconnect filter hose(s) fully tighten.

12.23. On Hydrostatic Machines re-tighten suction hose union, at bottom of hydraulic pump.



12.24. Screw breather onto stand-pipe.

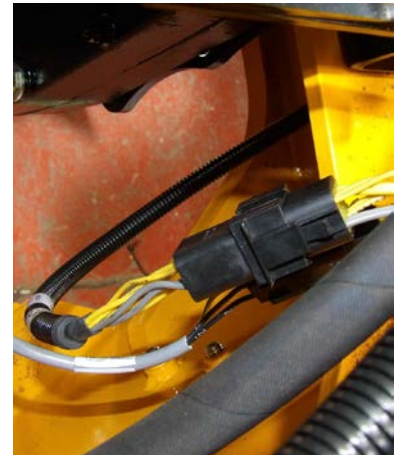


13. REBUILD

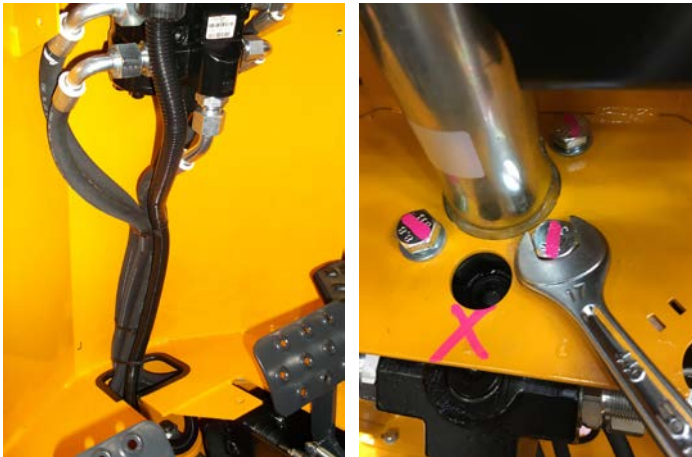
13.1. Reroute dashboard harness into 'nosecone' area; secure with cable ties.

13.2. Reconnect plugs for brake pedal switch, and front lights (if fitted). Secure with cable tie.

13.3. Reconnect plugs for brake pedal switch, and front lights (if fitted). Secure with cable tie.



- 13.4. Refit leg guard & bolt down; being careful not to trap harness or hoses
- 13.5. Reroute steering hoses and bolt steering valve back into place. Bolts must be tightened sequentially to ensure valve is seated correctly. 20Nm MAX



- 13.6. Reroute dashboard harness up leg guard.
- 13.7. Fix dashboard to leg guard, ensuring that plug for lighting lever is routed through hole in top face.
- 13.8. Plug lever(s) back into harness and clamp to steering column.



- 13.9. Cable tie steering hoses and harness together.
- 13.10. Refit inner leg guard hose shield



- 13.11. Reattach throttle cable to brake pedal bracket.
- 13.12. Fix throttle cable to throttle pedal; ensure correct hole (in lever) used.
- 13.13. Adjust throttle cable pedal to correct length.



14. Test

Take Care when testing with Floor Plate removed.

- 14.1. Replace isolator key and switch to ON.
- 14.2. Turn on ignition and check function of dashboard, lights, etc.
- 14.3. Start engine; check operation of foot throttle.
- 14.4. Test operation of steering.
- 14.5. Test operation of skip functions.
- 14.6. Check operation of foot brake.
- 14.7. Check operation of handbrake.
- 14.8. Check operation of transmission functions.
- 14.9. Stop engine and remove key.
- 14.10. Allow to stand then check hydraulic oil level, top up as required.
- 14.11. Refit floorplate.

Parts Lists

Manual Machines

105520	HYDRAULIC TANK	1 off
7466	SET SCREW M10 x 25	4 off
13362	SPRING WASHER M10	4 off
15819	WASHER M10	5 off
105524	LEVEL INDICATOR	1 off
105534	STAUFF CLAMP BRACKET	1 off
16477	SET SCREW M6 x 20	2 off
14837	SPRING WASHER M6	4 off
13911	WASHER M6	4 off
105355	HOSE CLAMP	1 off
105356	COVER PLATE	1 off
17920	BOLT M6 x 65	2 off
15830	HEAVY DUTY WASHER	4 off
16481	NYLOC NUT	2 off
104996	HOSE CLAMP	1 off
16664	BOLT M6 x 50	2 off
18261	P CLIP	1 off
105543	SWEPT ELBOW	1 off
105544	HOSE	1 off
102226	CAP HEAD SCREW M10 x 40	2 off
9510	COPPER WASHER	2 off
103359	HYDRAULIC OIL DECAL	1 off
	CABLE TIES	as req.

Hydrostatic Machines

105519	HYDRAULIC TANK	1 off
7466	SET SCREW M10 x 25	4 off
13362	SPRING WASHER M10	4 off
15819	WASHER M10	5 off
105524	LEVEL INDICATOR	1 off
105534	STAUFF CLAMP BRACKET	1 off
16477	SET SCREW M6 x 20	2 off
14837	SPRING WASHER M6	4 off
13911	WASHER M6	4 off
105355	HOSE CLAMP	1 off
105356	COVER PLATE	1 off
17920	BOLT M6 x 65	2 off
15830	HEAVY DUTY WASHER	4 off
16481	NYLOC NUT	2 off
104996	HOSE CLAMP	1 off
16664	BOLT M6 x 50	2 off
18261	P CLIP	1 off
105543	SWEPT ELBOW	1 off
105544	HOSE	1 off
102226	CAP HEAD SCREW M10 x 40	2 off
9510	COPPER WASHER	2 off
105525	SUCTION / RETURN FILTER	1 off
103359	HYDRAULIC OIL DECAL	1 off
	CABLE TIES	as req.