

**Model: Solis 26 HST**

**HST Unit Replacement Procedure**

# Foreword

## Important

- All repair operations described in this manual should be carried out exclusively by ITL authorised workshops. All instructions should be carefully observed and special equipment where indicated should be used.
- Anyone who carries out service operations described without carefully observing these prescriptions will be directly responsible for any damage caused.
- All work must be performed on level surface.
- Disconnect the battery terminals before starting the activity .
- Lift and handle all heavy components using lifting equipment with adequate capacity. Always support units.
- Make sure the work area is clear of all bystanders.
- Failure to comply could result in serious injury.

## Notice

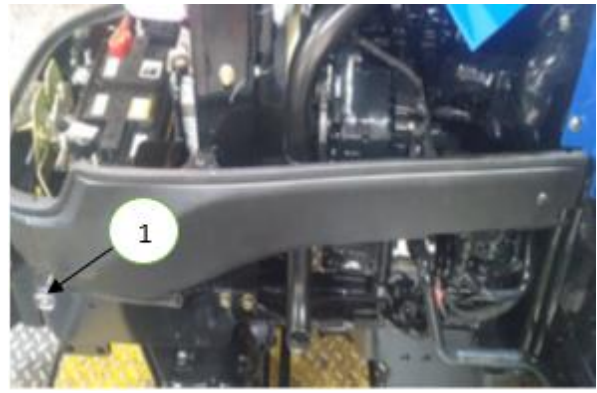
- The words “front”, “rear”, “right-hand side” and “left-hand side” refer to the different parts as seen from the operator’s seat oriented to the normal direction of movement of the tractor.

## Safety Rules

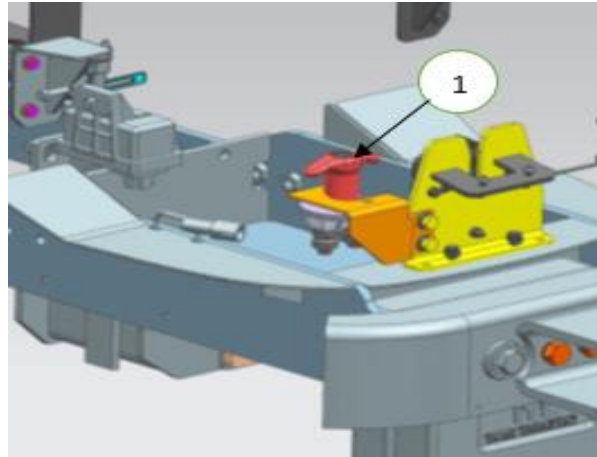
- Carefully follow specified repair and maintenance procedures mentioned in the Operator’s Manual
- Do not wear rings, wrist watches, jewels, unbuttoned or flapping clothing such as ties, torn clothes, scarves, open jackets or shirts with open zips which could get caught in moving parts. Use approved safety clothing such as anti-slipping footwear, gloves, safety goggles, helmets, etc.
- Wear safety glasses with side guards when cleaning parts using compressed air.
- Never carry out any repair on the machine if someone is sitting on the operator’s seat, except they are qualified operators assisting in the operation to be carried out.
- Always use lifting equipment of appropriate capacity to lift or move heavy components.

# Prior Service Instructions

1. Pull the knob (1) and open the bonnet.



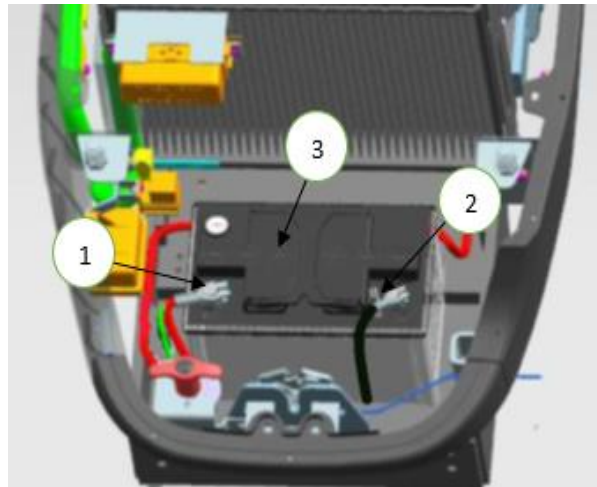
2. Rotate the battery cut-off knob (1) to OFF position.



3. Disconnect negative cable (1) from the battery.

4. Disconnect the Positive cable (2) from the battery (3).

***NOTE: Always disconnect the negative cable first.***



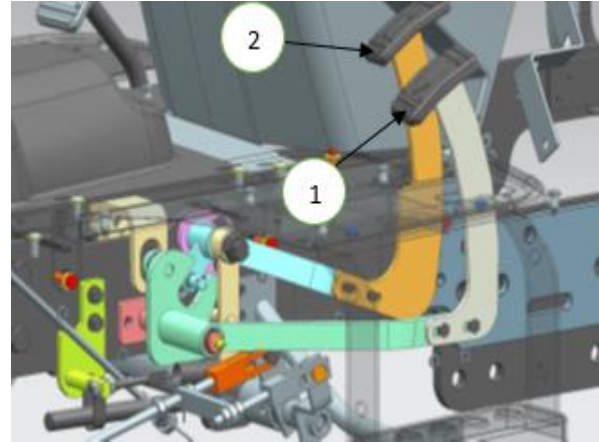
5. Drain the transmission oil form drain plug (1).

**Note: Collect the transmission oil in a suitable container**



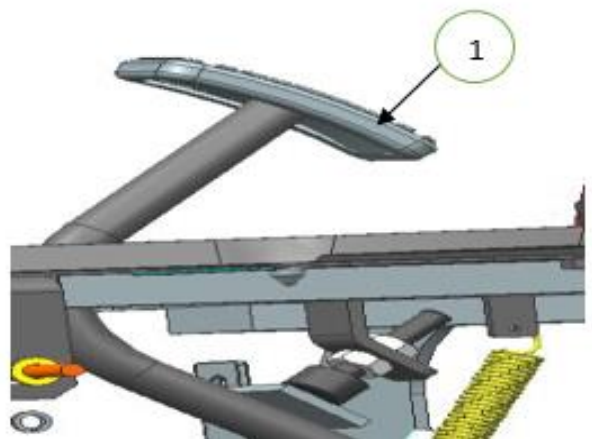
# Prior Service Instructions

6. Remove the rubber pad from reverse speed pedal (1), on right hand side of the Operator.



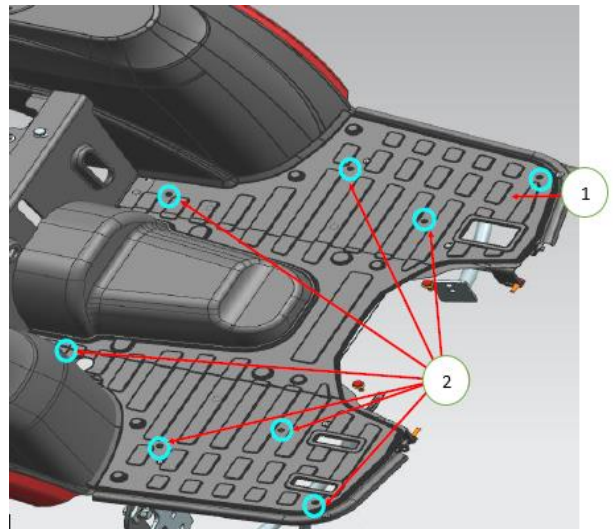
7. Remove the rubber pad from forward speed pedal (2).

8. Remove the rubber pad from brake pedal, on left-hand side of the operator.



9. Remove the push pins (2) from the floor mat (1).

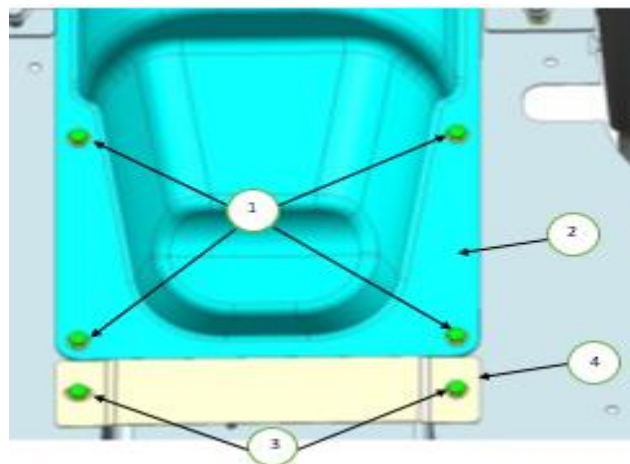
10 Remove the floor mar (1) from platform.



11. Loosen the bolts (1) with the washers from HST mid floor (2).

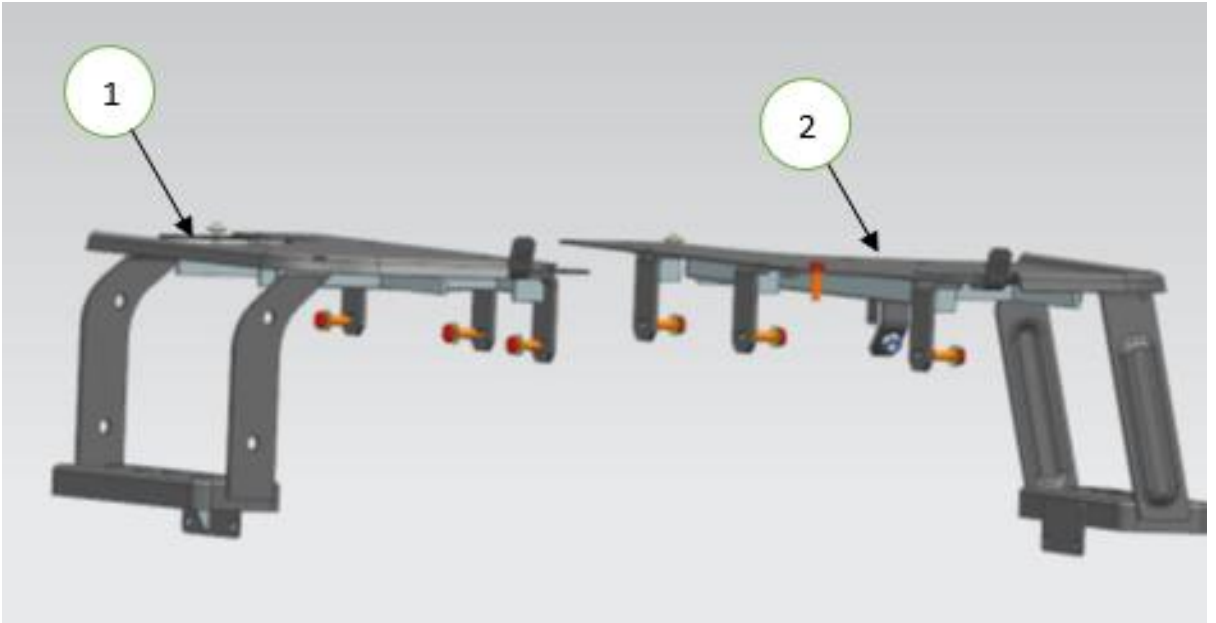
11. Remove the HST mid floor (2).

12. Loosen the bolts (3) with the washers. And Remove the mid plate (4).

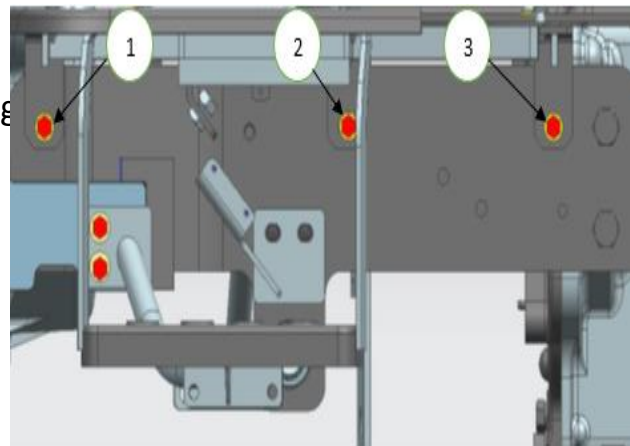


# Prior Service Instructions

Exploded view of the Left hand side platform (1) and right-hand side platform (2).



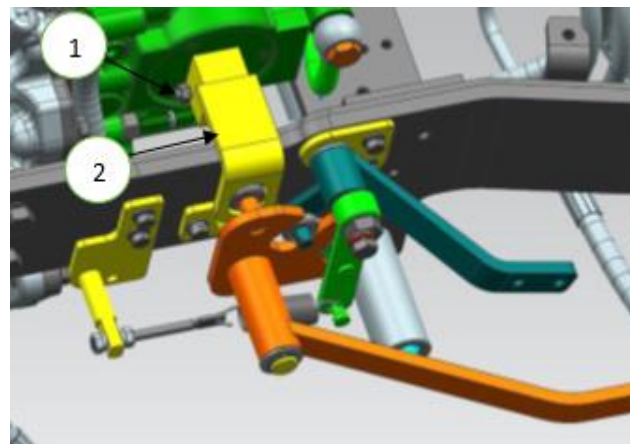
1. On left –hand side and below the floor, loosen the bolts (1), (2) and (3), which is securing floor with the main frame.



2. Repeat same procedure on right-hand side Of the operator.

3. Remove Right-hand and left-hand side floor.

4. Loosen the bolt (1) from the speed bracket (2).

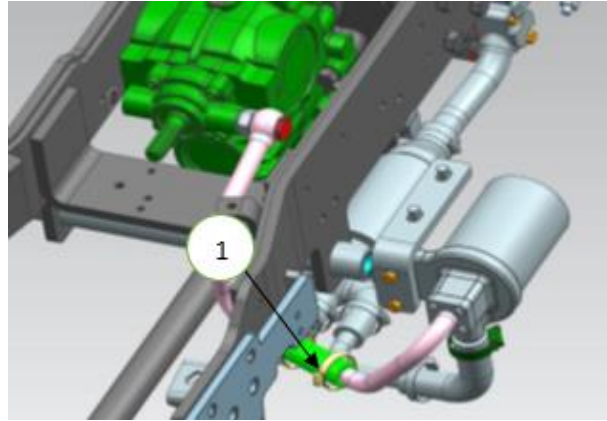


5. Disconnect the bracket (2) from the HST unit.

# Prior Service Instructions

1. Loosen the clamp (1) from the hose, which is Connecting suction filter and HST unit.

2. Disconnect the hose.

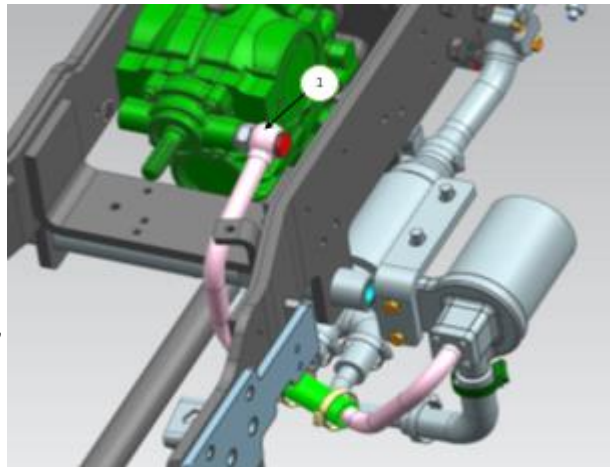


3. Loosen the banjo bolt (1) from HST unit.

4. Disconnect the hose from HST unit.

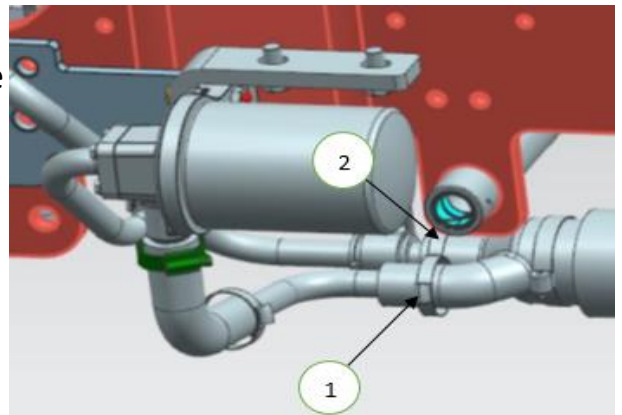
**Note: After disconnection the hoses cover all hydraulic ports with banjo bolts or suitable plug.**

**If not covered, then internal components of HST Unit may damage.**



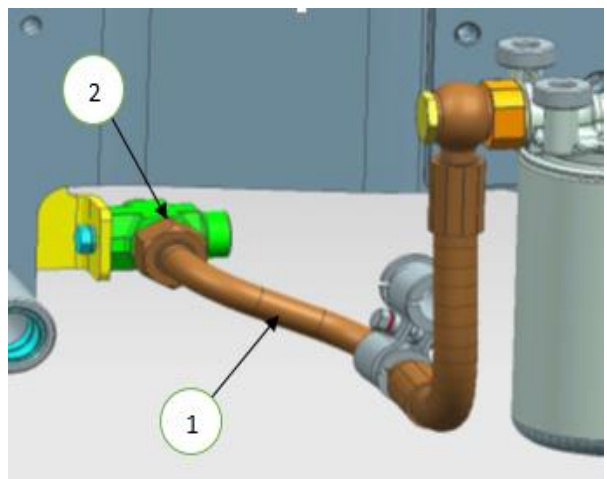
5. Loosen the clamps (1) and (2) from the Y hose Of the magnetic strainer.

6. Disconnect the hoses from Y hose.



7. On right-hand side, loosen adaptor (2) of the hose (1), this is the hose in between delivery Filter and T-Point .

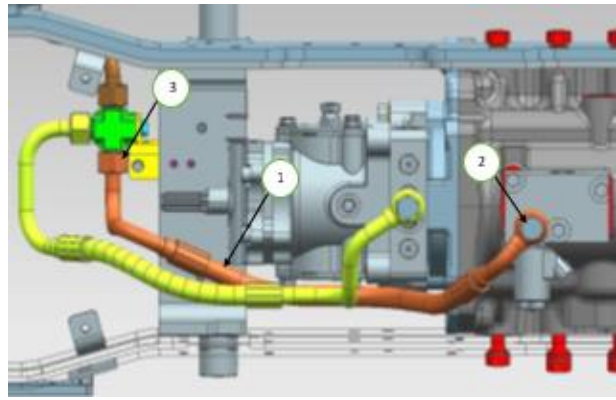
8. Disconnect the hose (1) from the T-Joint.



# Prior Service Instructions

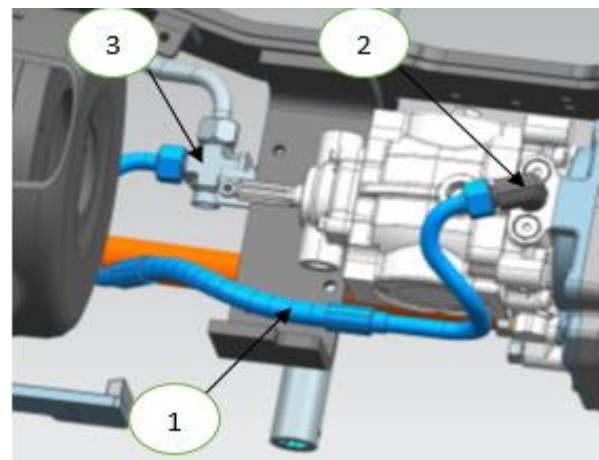
9. Loosen the hose (1) from PTO valve (2) and T-point (3).

10. Remove the hose (1).



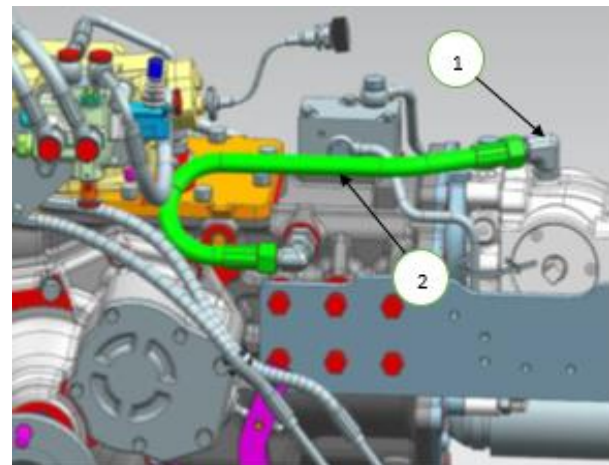
11. Loosen the hose (1) from HST unit (2) and T Point (3).

12. Remove the hose (1).



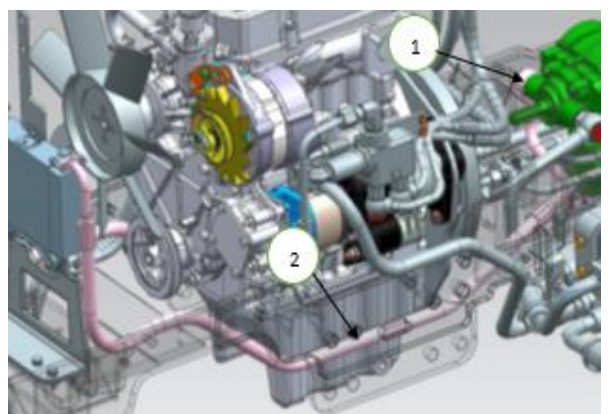
13. Loosen the adapter (1) from the HST unit.

14. Disconnect the flexible hose (2) from HST unit.



15. Loosen the banjo bolt from right-hand side Of the HST unit.

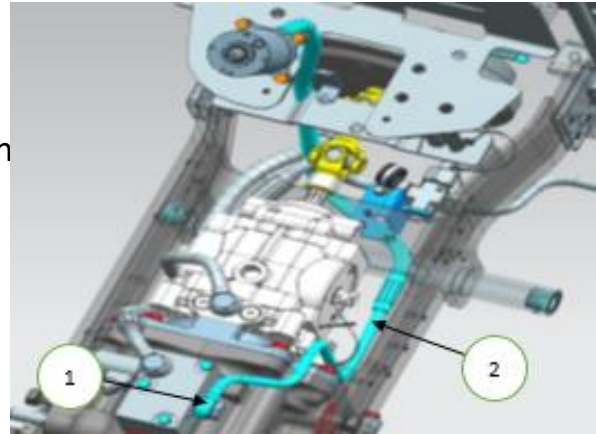
16. Disconnect the hose from HST unit, which is connecting to the intercooler.



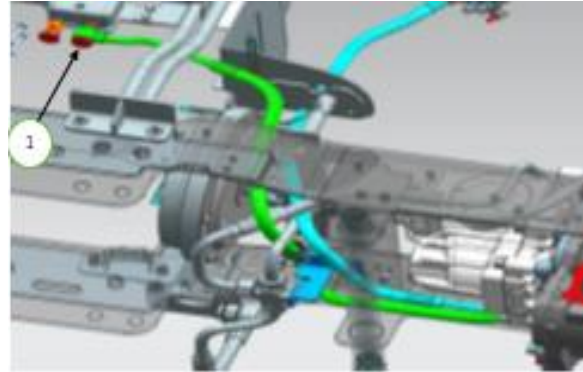
# Prior Service Instructions

17. Loosen the banjo bolt (1) from PTO valve.

18. Disconnect the hose (2) from PTO valve, which is connecting in between steering unit and PTO valve.

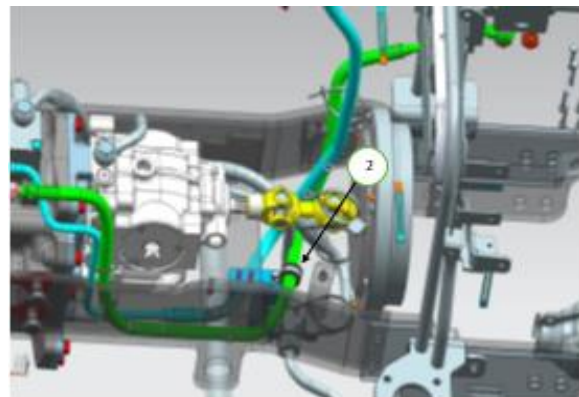


19. Loosen the banjo bolt (1) from the DCV unit. This hose is connecting in between DCV and priority valve.



20. Loosen the bolt from clamp (2).

21. Disconnect the hose from DCV side.

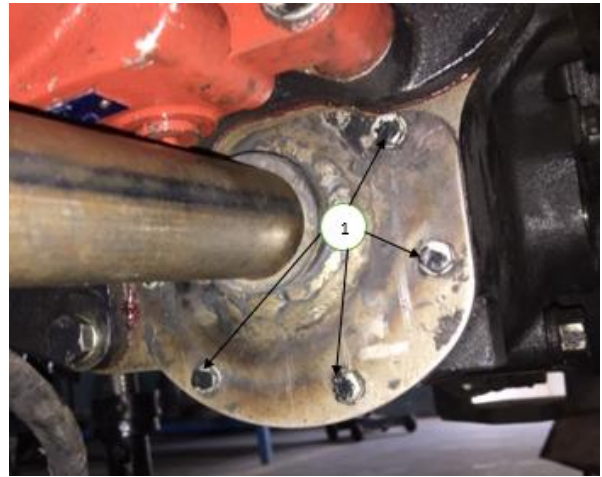




# Prior Service Instructions

## Removal of the Four wheel drive shaft (4WD)

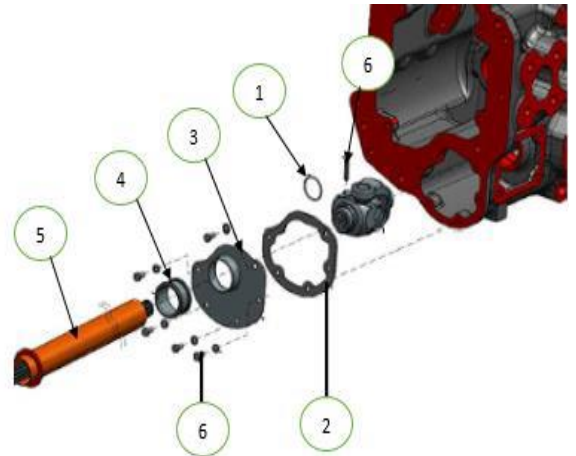
1. Loosen the bolts (1) from rear side of the 4WD Shaft.



2. Remove bolts (5), Cover (4) and mounting plate (3).

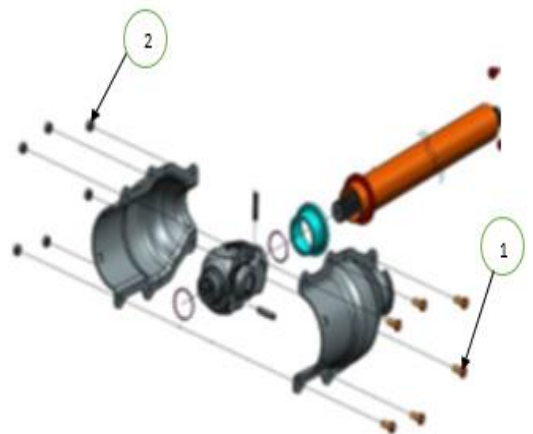
3. Remove gasket (2).

4. Remove snap ring (1) and pin (6) from Universal joint.



5. Loosen bolts (1) with the nuts (2).

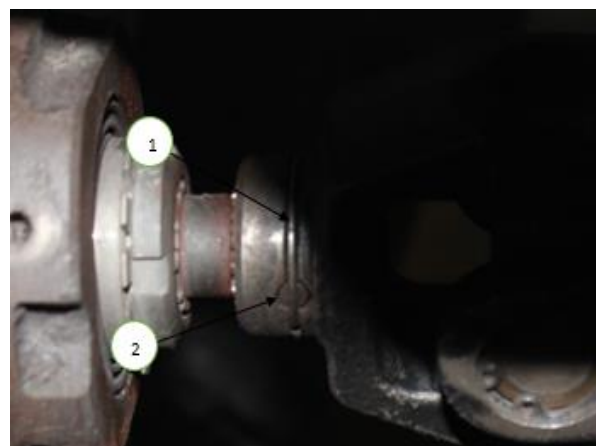
6. Remove mounting covers from front side of the 4WD shaft.



7. Remove snap ring (1).

8. Remove pin (2) from universal joint.

9. Remove 4WD shaft from front side.



# Prior Service Instructions

## Removal of the HST unit

### Important :

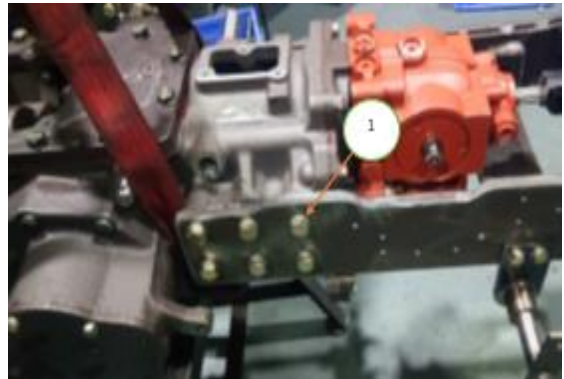
Support front axle with a movable jack and rail below the engine frame.

Place the screw jack below the engine sump.

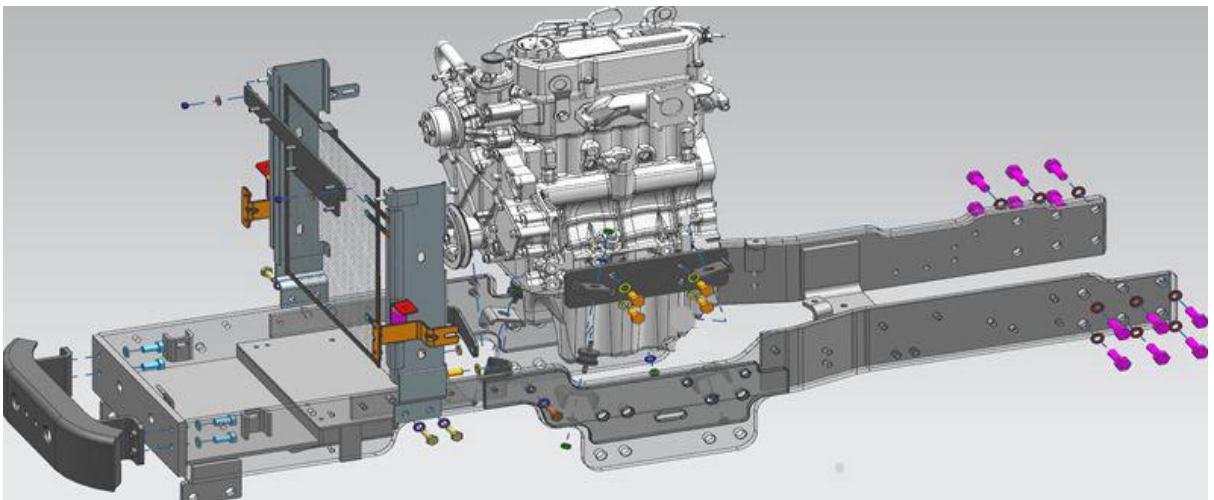
Use wooden wedge between the axle and front axle support to prevent articulation.

Jack up rear tractor and place two suitable stands under the transmission housing to support the rear axle and transmission housing

1. Loosen the bolts (1) from right-hand side of the frame.
2. Repeat same procedure on left-hand side of the frame.

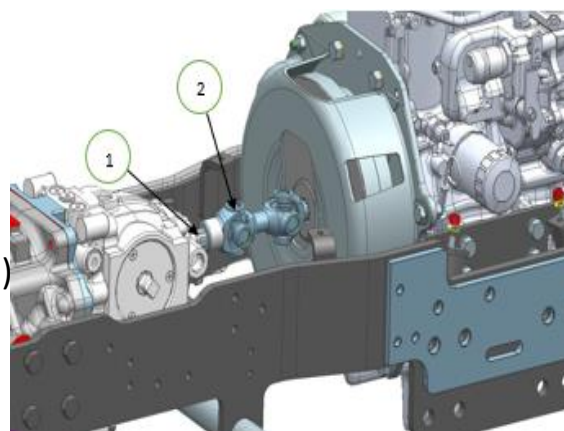


### Exploded view of buckle up bolts of frame



3. Pull front side assembly away using moving rail jack, which is mounted below the front axle and engine sump

4. Disconnect the HST unit (1) from universal joint (2) and pull away front assembly from rear assembly.



# Prior Service Instructions

5. Loosen the bolts (1) from left-hand side of The HST unit.



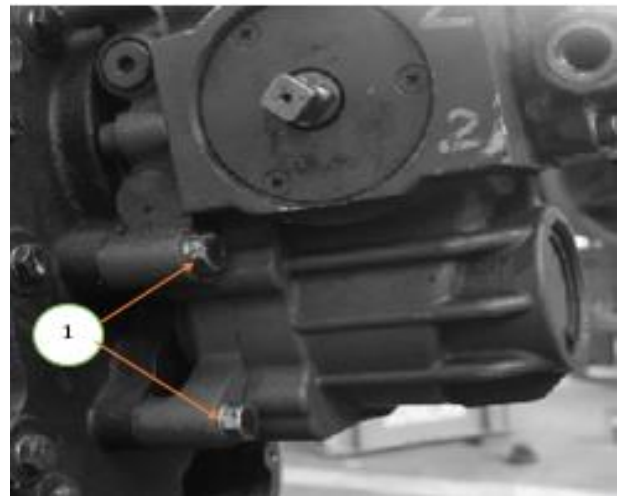
## Heavy objects!

**Lift and handle all heavy components using lifting equipment with adequate capacity. Always support units or parts with suitable slings or hooks.**

**Failure to comply could result in death or serious injury.**

6. Loosen the bolts (1) from right-hand side of The HST unit

7. Remove the HST unit from rear assembly and Place at suitable place.



***Note: Cover all hydraulic open ports with banjo bolts or plugs.***

# Assembly Instructions

# Installation Instructions

1. Apply **Loctite 5188** on surface of the gearbox (1).



2. Install the HST unit on the gearbox using Suitable lifting device.

3. Insert the bolts (1) with the spring washer on left hand-hand side of the HST unit.

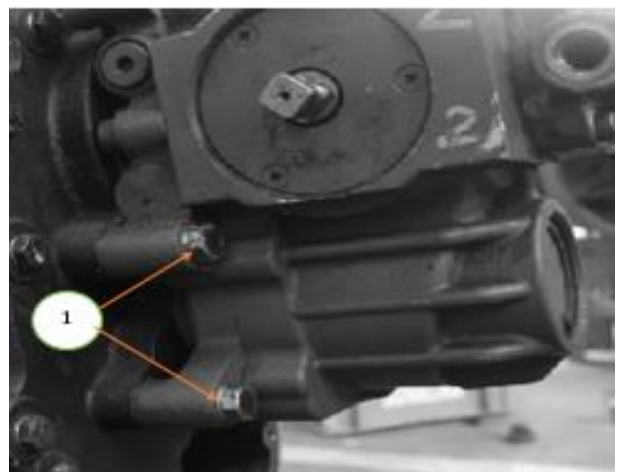
**Note : Use dowel pin to install the HST unit**

**Note: Apply Loctite 243 on the bolts**



4. Insert and tighten the bolts (1) with spring washer on right-hand side of the HST unit.

**Note: Apply Loctite 243 on the bolts**



5. Torque the bolts to 60 Nm using torque wrench (1).

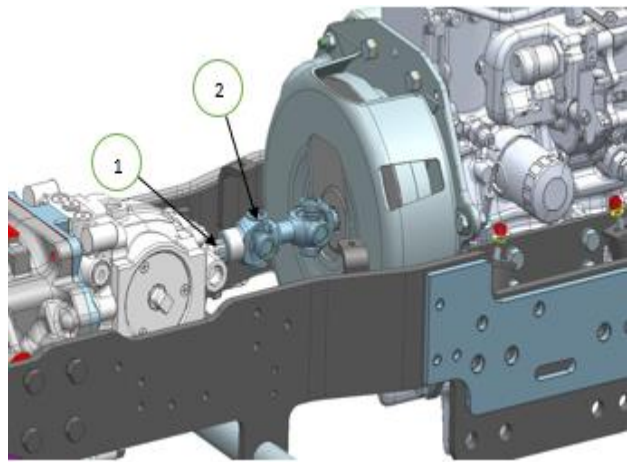


# Installation Instructions

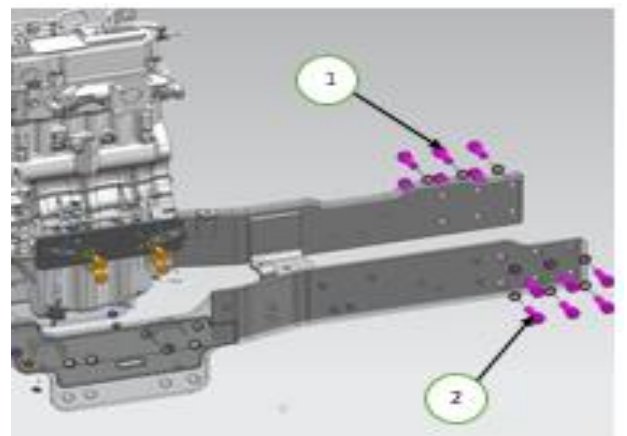
6. Move the front axle assembly towards rear side, using movable jack.

7. Install HST unit spline (1) with the universal joint.

**Note: Apply grease on spline for smooth fitment of HST unit to universal joint.**



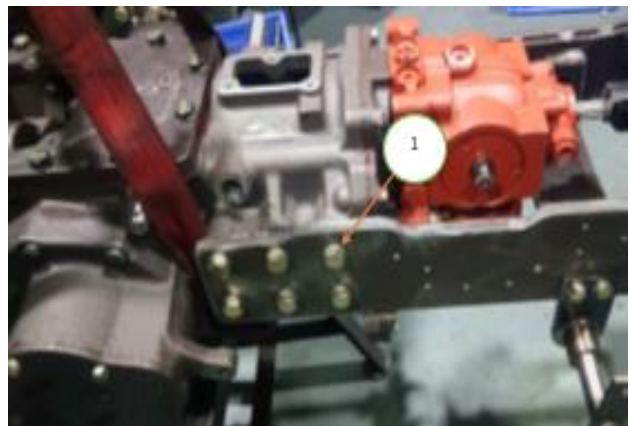
8. Apply **Loctite 243** on the bolts (1) and (2).



9. Align the frame with the transmission housing.

10. Insert the bolts with the washers on left-hand side and right-hand side of the seat.

11. Torque the bolts to **110-120 Nm**.

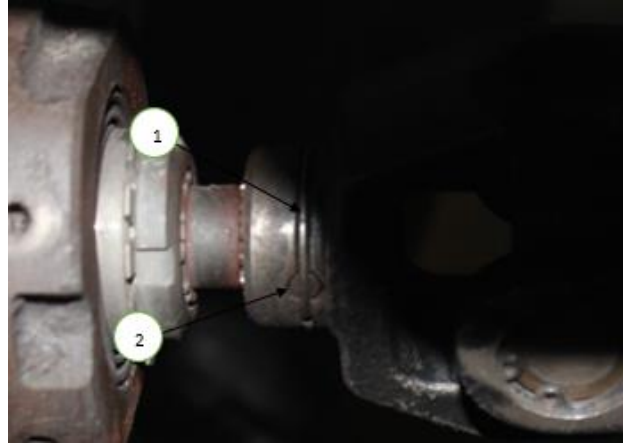


# Installation Instructions

12. Install universal joint with the front spline.

13. Insert the pin (2).

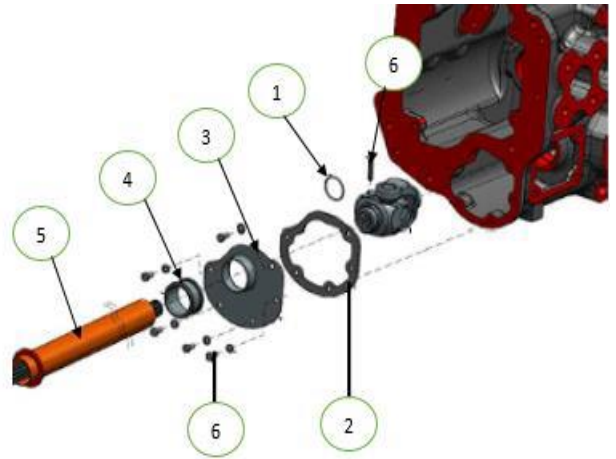
14. Fit the snap ring (1).



15. On rear side, insert the shaft (5) thru cover (4), gasket mounting plate (3) and gasket (2).

16. Insert shaft (5) spline to universal joint.

17. Insert pin (6) and fit the snap ring (1).



18. Tighten the bolts (1) with the spring washer.

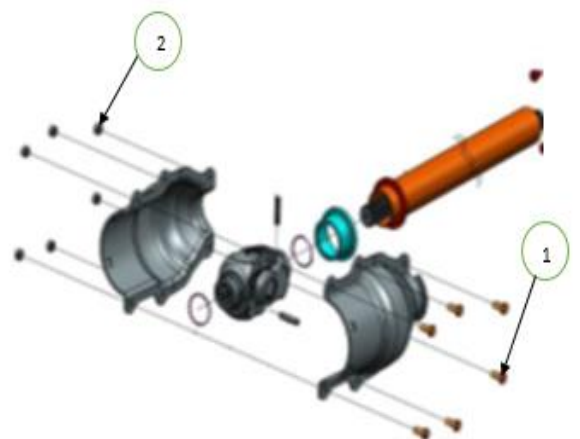
19. Torque the bolts to 5-10 Nm.



20. On front side of the 4WD shaft, install Left-hand side and right-hand side cover.

21. Tighten the bolts (1) with the nuts

22. Torque the bolts to 5-10 Nm.

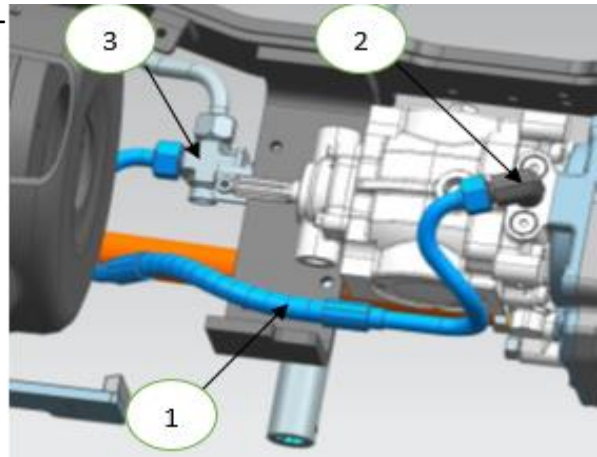


# Prior Service Instructions

1. Connect the hose (1) from T-adopter (3) to HST Unit (2).

**Note: Apply Loctite 577 on threads**

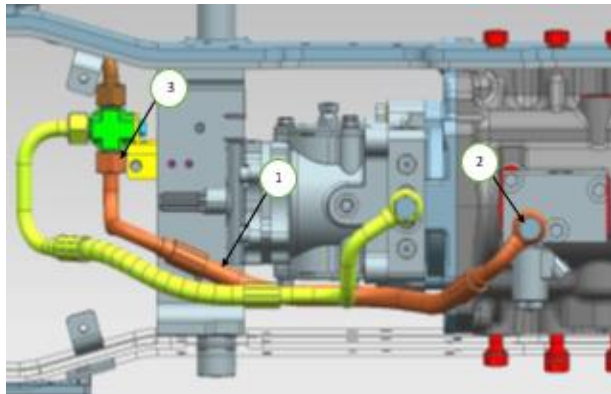
2. Torque the elbow (2) and Adopter (3) to 50 Nm.



3. Connect the hose (1) from T-adopter to PTO valve.

**Note: Apply Loctite 577 on threads**

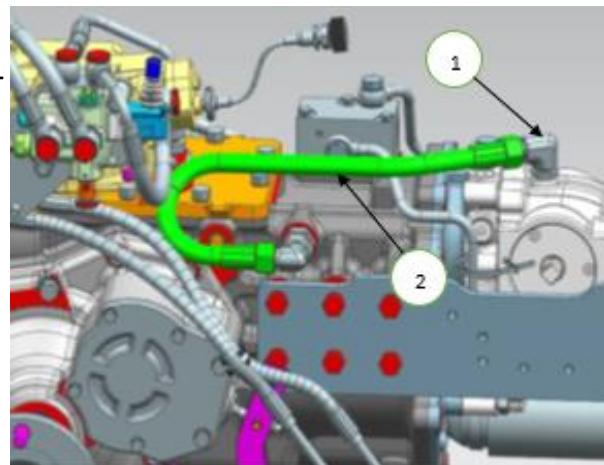
4. Tighten the banjo bolt (2) with bonded seal to 25 Nm.



5. Connect the hose (2) from transmission to HST Unit.

**Note: Apply Loctite 577**

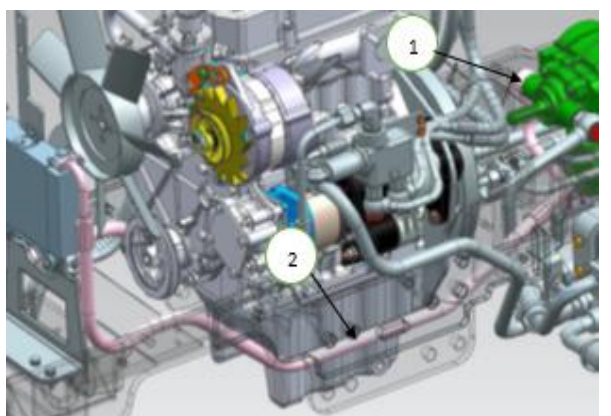
6. Torque the elbow to **75-95 Nm**.



7. Connect the hose (2) to right-hand side of the HST unit.

8. Tighten the banjo bolt (1) with the bonded Seal.

9. Torque the bolt (1) to **25 Nm**.



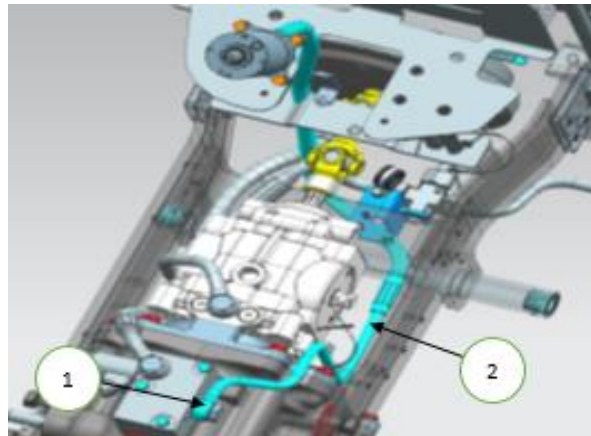


# Prior Service Instructions

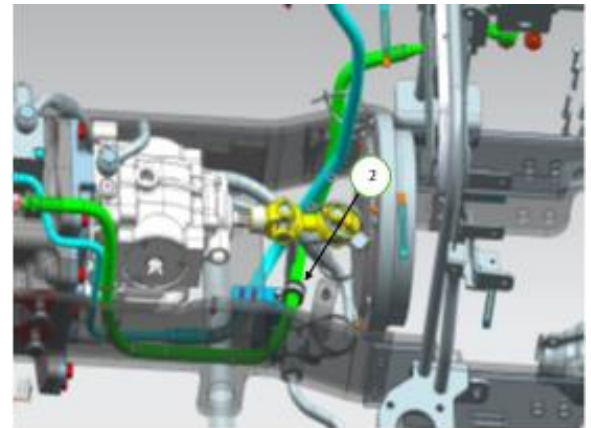
10. Connect the hose (2) to the right-hand side of the PTO valve, other end connected to the Steering unit.

11. Tighten the banjo bolt with two bonded seals.

12. Torque the bolt to **25 Nm**

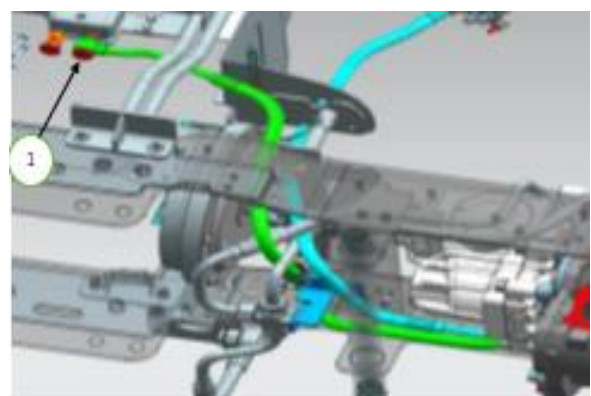


13. Connect the hose through clamp (2), this is In between priority valve and 1DA DCV.



14. Tighten the banjo bolt (1) with two bonded Seals.

15. Torque the banjo bolt to 25 Nm.

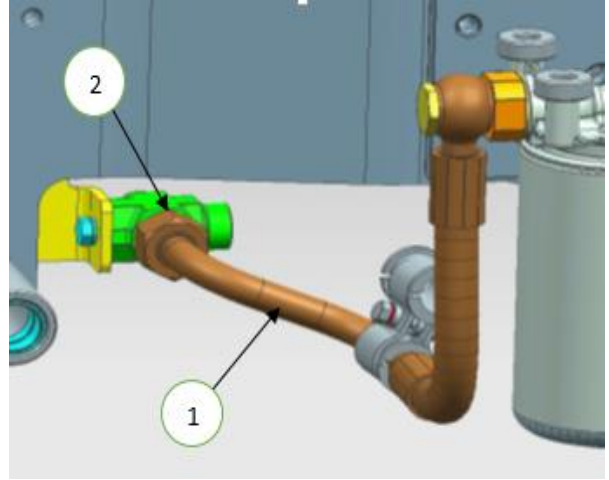


# Prior Service Instructions

16. Connect the hose (1) to the T adopter , located below the HST unit.

17. Torque the adopter (2) to 45-55 Nm.

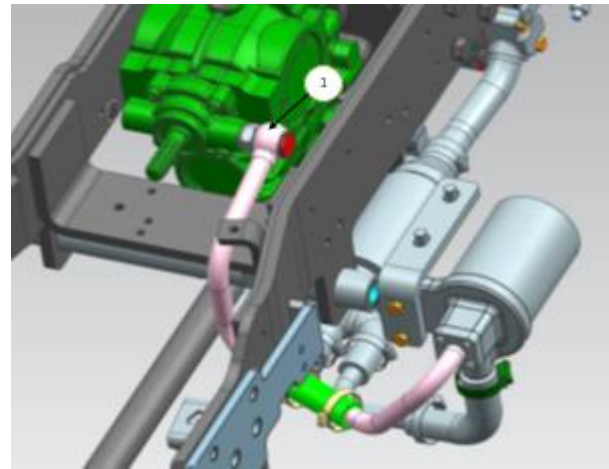
**Note: Apply Loctite 577.**



18. Install the hose which is connecting HST inlet from suction filter.

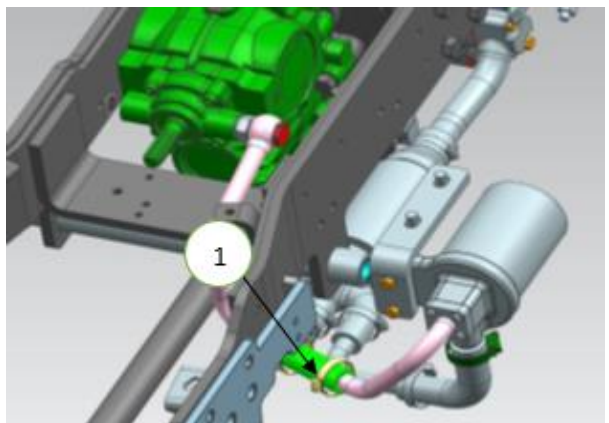
19. Tighten the banjo bolt (1) with the two bonded seas and adopter.

20. Torque the banjo bolt to **40-50 Nm**.



21. Connect the hose with suction filter.

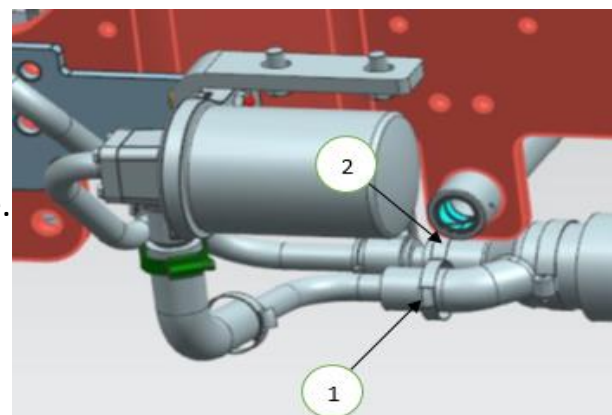
22. Tighten the two clamps (1).



23. Connect the hose to Y hose, which is Connected to hydraulic pump.

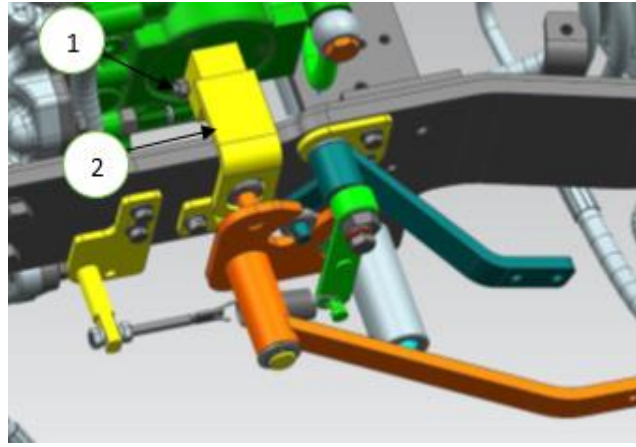
24. Connect the hose from suction filter to Y-hose.

25. Tighten the clamps (1) and (2).

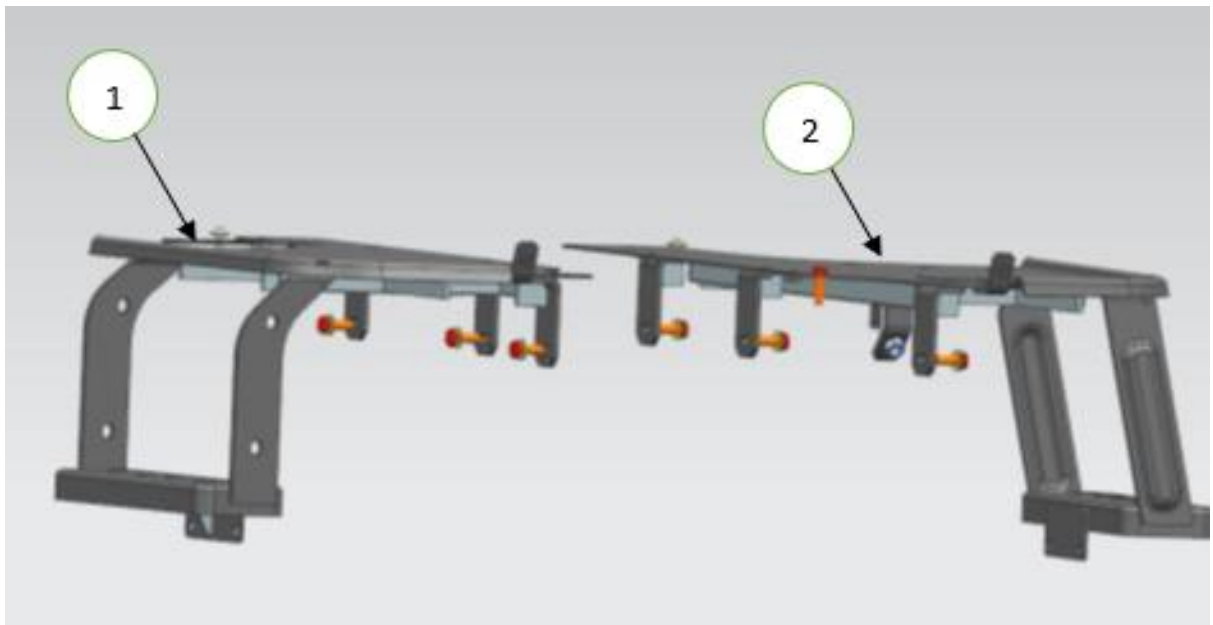


# Prior Service Instructions

1. Tighten the bracket (2) on the HST unit with bolt and nut.



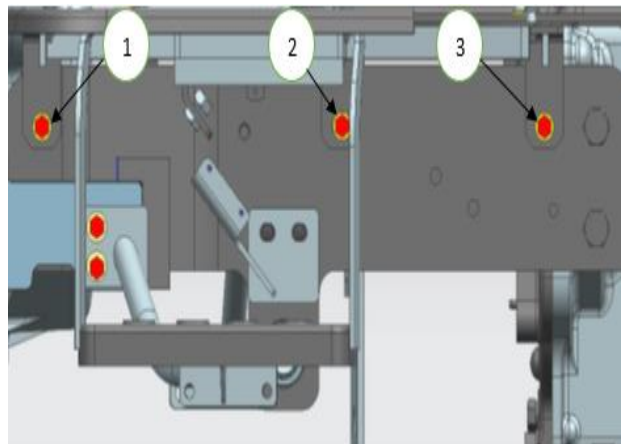
**Exploded view of the Left hand side platform (1) and right-hand side platform (2).**



2. Install the left-hand side floor (1) and right-hand side floor (2).

3. Tighten the bolts (1), (2) and (3) on left-hand side of floor with plain and spring washers .

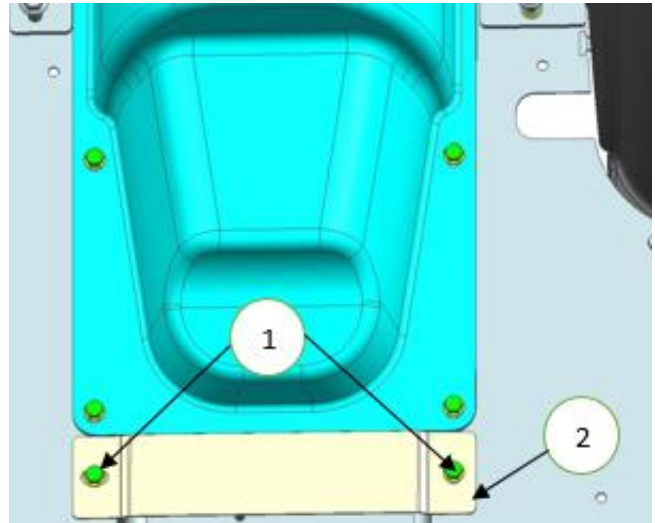
4. Repeat same procedure on right-hand side of floor.



# Installation Instructions

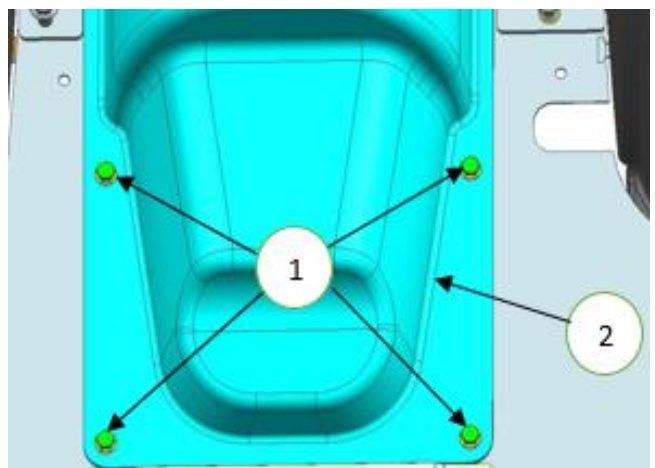
5. Install the HST mid plate (2) on floor.

6. Tighten the bolts (2) with the washers.



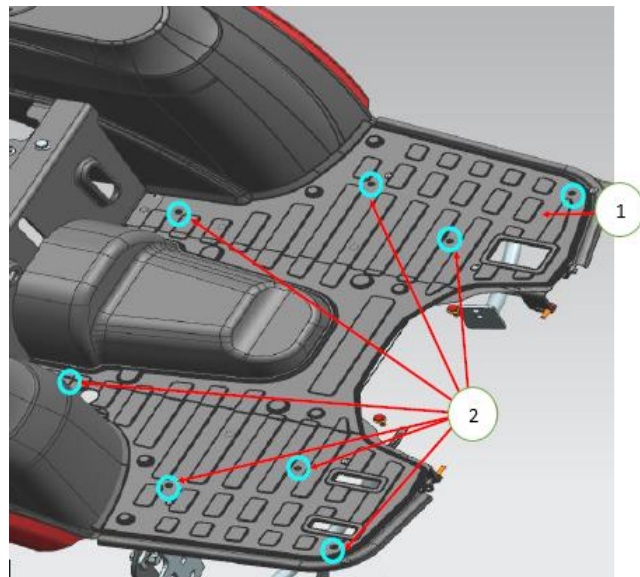
7. Install the HST mid floor cover (2).

8. Tighten the bolts (1) with washers.

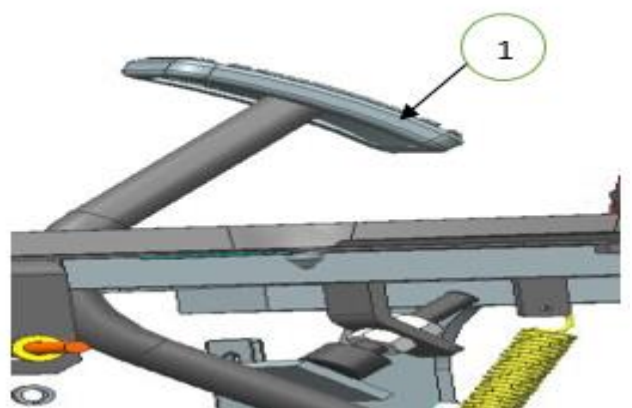


9. Install floor mat (1) on the floor.

10. Insert the push pins (2) and fix the floor.

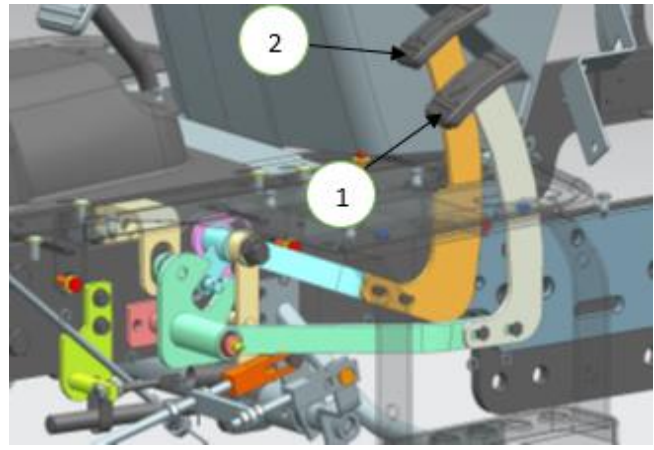


11. Install pad (1) on brake pedal, left-hand side.



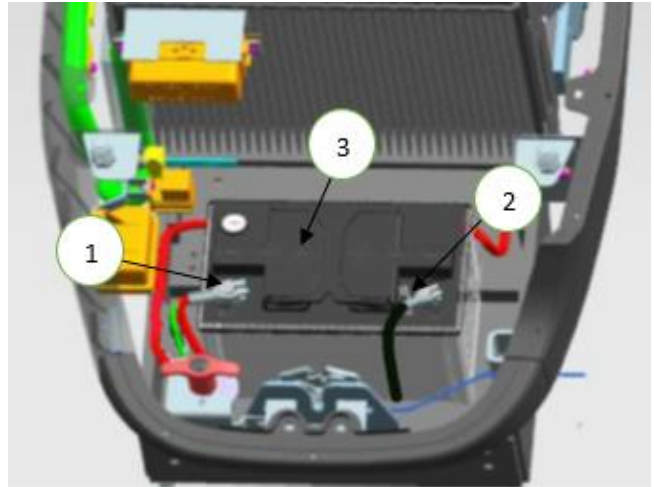
# Installation Instructions

12. Install rubber pads (1) and (2) on reverse and Forward speed respectively.



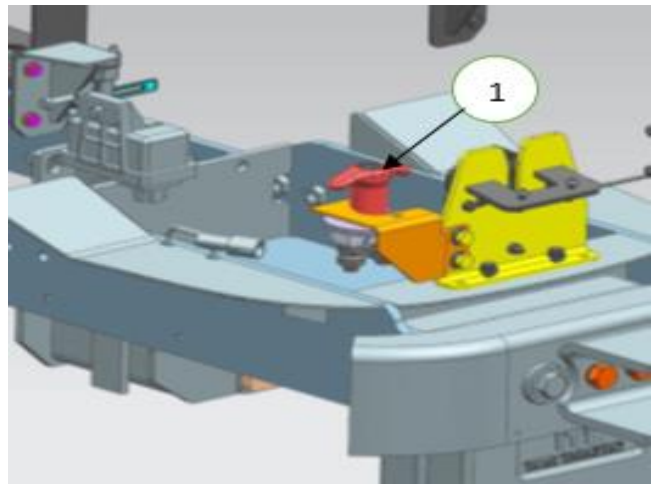
13. Connect the positive cable (2) of the battery (3).

14. Connect negative cable of the Battery (3)

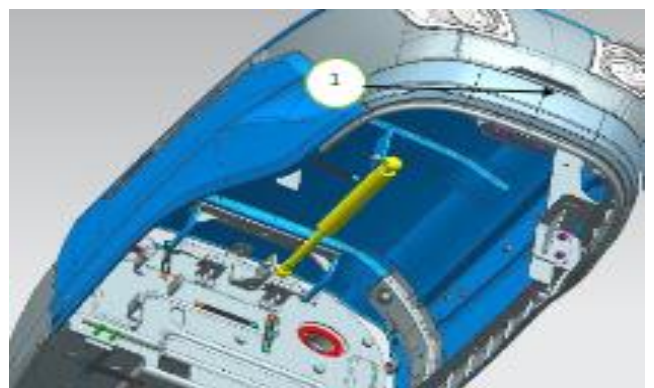


**Note: After complete assembly, fill transmission oil from filling point, which is located on rear side of the tractor.**

15. Turn ON the battery cut-off switch.



16. Close the bonnet (1).



# Installation Instructions

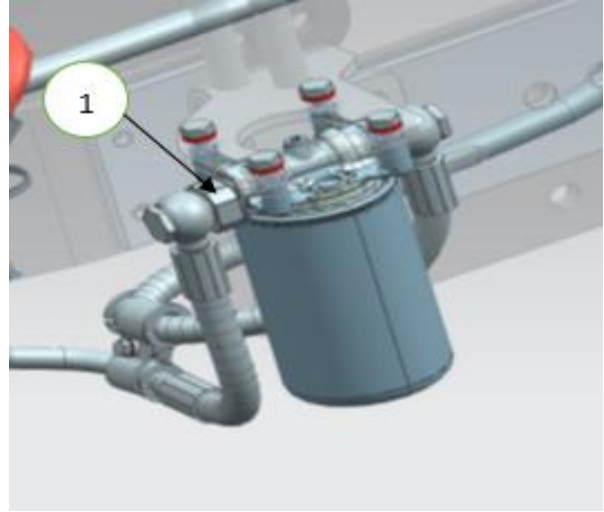
Bleed the system after complete assembly.

## **Bleeding Procedure:**

Start the tractor on idle RPM.

Loosen the banjo bolt (1) of the hydraulic filter. Bleed the system for 60 to 70 seconds by bleeding 400 to 500 ml oil.

**Note:** While bleeding, the tractor should be ON. After bleeding tractor should be OFF only if the bleeding port has been tightened properly.



After bleeding add transmission oil up to the mark from filling point.

**Note:** Use ONLY VG 32 grade transmission oil and check the oil level and ensure that transmission oil up to the mark.