OWNER'S MANUAL

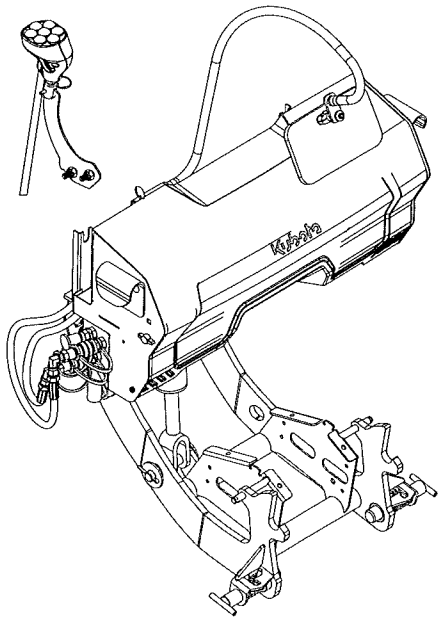
OM 0453OHEA / Rev0 10-20

MANUAL PN 77700-11308

Kubota®

V5293B - 4 POINT HITCH & POWER UNIT

SERIAL NO. 22000001 AND UP



Fill the unit with 3 liters of DEXTRON III or MERCON Automatic Transmission oil (not included).
Estimated assembly time 180 minutes

For RTV-X900 RTV-X1100C
RTV-X1120D / RTV-X1140

CALIFORNIA PROPOSITION 65

⚠ WARNING:
Cancer and reproductive harm - www.P65Warnings.ca.gov

PLEASE READ THIS MANUAL CAREFULLY
KEEP READY AT ALL TIMES

INTRODUCTION

TO THE PURCHASER

All products are designed to give safe, dependable service if they are operated and maintained according to instructions. **Read and understand this manual before operation, and keep it in your files for further reference.**

This manual has been prepared to assist the owner and operators in the safe operation and suitable maintenance of the equipment. The information is applicable to products at the time of manufacture and does not include modifications made afterwards.

Read and understand this operator's manual before attempting to put equipment into service. Familiarize yourself with the operating instructions **AND ALL THE SAFETY RECOMMENDATIONS** contained in this manual and those labeled on the equipment and on the machine. Follow the safety recommendations and make sure that those with whom you work follow them.

TO THE DEALER

Give this manual to the owner upon delivery of the equipment.

TO THE PURCHASER AND THE DEALER

Illustrations

The illustrations may not necessarily reproduce the full detail and the exact shape of the parts or depict the actual models, but are for reference only.

Direction Reference

All references to right and left, forward or rearward are from the operator seat.

To assist your dealer in handling your needs, please record hereafter the model number and serial number of your equipment and machine. It is also advisable to supply them to your insurance company. It will be helpful in the event that equipment or machine is lost or stolen

Product Category

MODEL: _____

SERIAL NUMBER: _____

DATE OF PURCHASE: _____

DEALER NAME: _____

DEALER TELEPHONE NUMBER: _____

INTRODUCTION

All products are designed to give safe, dependable service if they are operated and maintained according to instructions. **Read and understand this manual before operation**. It is the owner's responsibility to be certain anyone operating this product reads this manual, and all other applicable manuals, to become familiar with this equipment and all safety precautions. Failure to do so could result in serious personal injury or equipment damage. If you have any questions, consult your dealer.

SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully. It is essential that you read the instructions and safety regulations before you attempt to assemble or use this unit.

DANGER :	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING :	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION :	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
IMPORTANT :	Indicates that equipment or property damage could result if instructions are not followed.
NOTE :	Gives helpful information.

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The Product(s) described in this Publication are designed and manufactured only for the country in which they are initially wholesaled by Kubota. Kubota does not provide parts, warranty or service for any Product which is re-sold or retailed in any country other than the country for which the Product(s) were designed or manufactured.

TABLE OF CONTENTS

INTRODUCTION 1

TABLE OF CONTENTS 3

SAFETY INFORMATION 4

GENERAL SAFETY INFORMATION- Pictograms 6

DECAL 8

ESTIMATED ASSEMBLY TIME 9

ASSEMBLY 10

- 4 Point hitch and Subframe Assembly 10
  - Preparation of the vehicle with a grill guard 10
  - Installation of the Subframe 11
  - Installation of the 4 Point Hitch 13
  - Installation of the Hydraulic Cylinder 14
  - Connection of the hydraulic hoses to the Cylinder 15
  - Installation of the 156" Electrical Harness for Hydraulic Pump (77700-07055) 16
  - Installation of the Electrical Harness for Power unit (77700-07057) 19
  - Installation of the Tie Wraps 32
  - Installation of the Power unit 34
  - Connection of the hydraulic hoses to the Power unit 35
  - Oil Filling of the Power Unit 36
  - Removing the 4-Point Hitch 37
  - Connection of the Implement to the Vehicle Subframe 39
  - Hitch Positionning using the Alignment mirror 39

OPERATION 41

- General Preparation 41
- Control Handle Functions 42

MAINTENANCE 44

- Maintenance 44
- Lubrication 45
- Storage 46
- ELECTRIC & HYDRAULIC DIAGRAMS 47
  - Electrical harness installed on the vehicle 47
  - Electrical harness for the power unit 48
  - Hydraulic diagram - power unit 48
  - Control handle 49

AVAILABLE EQUIPMENT 50

TORQUE SPECIFICATION TABLE 51

ADAPTER INSTALLATION PROCESS 52

⚠ SAFETY INFORMATION

Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are generally attracted to machines and the work being done. Never assume children will remain where you last saw them

1. Keep children out of the operating area and under the watchful eye of another responsible adult.
2. Be alert and turn machine off if children enter the work area.
3. Before and when backing, look behind for small children.
4. Never carry children while operating the machine. They may fall off and be seriously injured or interfere with the safe operation of the machine.
5. Never allow children to play on the machine or attachment even when the machine is turned off.
6. Never allow children to operate the machine even under adult supervision.
7. Use extra care when approaching blind corners, shrubs, trees, or other obstructions that might hide children from sight.

Before Operation

1. Read and understand both the machine AND implement operator's manual before using the snowblower. Know how to operate all controls and how to stop the unit and disengage the controls quickly. Lack of knowledge can lead to accidents.
2. Park the machine/implement on level ground, set the parking brake, lower the implement to the ground, place all control levers in neutral, shut off the engine and remove the ignition key and allow the rotating parts to stop BEFORE making any implement adjustments, repairs or inspections.
3. Keep clear of all rotating parts. Do not put hands or feet under, or into snowblower and subframe with engine running.
4. For your safety, do not work under any hydraulically supported machine elements, they may creep down, suddenly drop or be accidentally lowered. Do not use loader, quick hitch, or an implement as a jack for servicing.
5. Do not operate the machine/implement that is defective or has missing parts. Make sure that all recommended maintenance procedures are completed before operating the unit.
6. Keep the machine/implement clean. Snow, dirt or ice build-up can lead to malfunction or personal injury from thawing and refreezing in garage. Inspect and clean every rotating parts.
7. Do not modify or alter this implement or any of its components, or any implement function without first consulting your dealer. The manufacturer will not claim responsibility for fitment of unapproved parts and/or accessories and any damages as a result of their use.
8. Verify that all machine/implement safety protective devices are in place. Shields, guards and covers must be correctly installed at all times. When necessary to remove these for servicing, cleaning, or repair work, they must be reinstalled immediately.
9. Always make sure all implement components are properly installed and securely fastened.
10. Check that all machine/implement drivelines are in good working order.
11. Check for moving parts excessive wear regularly. ALWAYS USE GENUINE PARTS WHEN REPLACEMENT PARTS ARE REQUIRED.
12. Prior to operation, clear work area and mark all curbs, pipes, etc. that cannot be moved.
13. Inspect the machine/implement after striking any foreign object to assure that all machine/implement parts are safe and secure and not damaged.
14. Handle fuel with care, as it is highly flammable. Use approved fuel container.
15. Never add fuel to a running engine or a hot engine.
16. Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors. Replace fuel cap securely and wipe up spilled fuel. Always refuel using properly grounded system.

⚠ SAFETY INFORMATION

17. Check all machine controls regularly and adjust where necessary. Make sure that the brakes are evenly adjusted. Periodically check all nuts and bolts for tightness, especially wheel hub and rim nuts.

18. Make sure the machine is counterweighted and has tire chains for better traction and stability as recommended by your dealer. Weights provide the necessary balance to improve stability, traction and steering. Use only those recommended by your dealer.

19. Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable noises.

During Operation

1. Never allow anyone to operate the machine and implement until they have read the manuals completely and are thoroughly familiar with their basic operation. Lack of operating knowledge can lead to accidents.

2. Do not allow anyone to ride on the machine/implement at any time. The only one allowed is the operator that MUST sit in the driver seat.

3. Never allow anyone near the work area. The debris that can be thrown could cause serious personal injuries.

4. Never stand alongside of the implement while the engine is running.

5. Never operate the implement without safety protective devices in place. All machine/implement shields, guards and covers must be correctly installed at all times.

6. Keep clear of all rotating parts. Do not put hands or feet under, or into the implement with engine running.

7. If the implement starts to vibrate abnormally, (If equipped with PTO), disengage the PTO, stop the engine immediately and check for cause. Excessive vibration is generally a sign of trouble.

8. Park the machine/implement on level ground, place the transmission in neutral, set the parking brake, disengage the driving system, lower the equipment to the ground, place all levers including auxiliary control levers in neutral, shut off the engine and remove the ignition key BEFORE LEAVING THE MACHINE.

9. Always drive the machine at speeds compatible with safety, especially when operating over rough ground, crossing ditches, slippery surface or when turning.

10. Operate only with good visibility and during daylight hours, or when the area is well lit with bright artificial light.

11. Do not run the engine indoors except when starting engine and transporting attachment in or out of building. Carbon monoxide gas is colorless, odorless and deadly.

12. Exercise extreme caution when operating on or crossing a gravel drive, walks, or roads. Stay alert for hidden hazards or traffic.

13. Use extra caution when backing up.

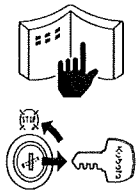
14. Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.

15. Drive machine backwards up steeper slopes with the implement off. Then operate as you travel down the slope.

16. Never park the machine on a steep slope. Do not attempt to operate on steep slopes. If operating on slopes is necessary, exercise extreme caution when changing direction.

17. Disengage power to implement when transporting or when not in use.

GENERAL SAFETY INFORMATION

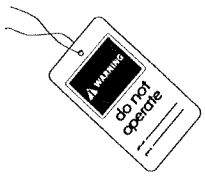


BEFORE YOU START SERVICE

- Read all instructions and safety instructions in this manual and on your machine safety decals.
- Clean the work area and machine.
- Park the machine on a stable and level ground, and set the parking brake.
- Lower the implement to the ground.
- Stop the engine, then remove the key.
- Disconnect the battery negative cable.
- Hang a **"DO NOT OPERATE"** tag in the operator station.

No Smoking or Open Flames while Fueling

- Fuel is extremely flammable and dangerous. Never smoke near fuel. If fuel is spilled on the machine, its engine, or electrical parts, it may cause a fire. If fuel is spilled, wipe it all up immediately.
- Never smoke while filling the machine with fuel. And always tighten the fuel cap securely and wipe up any spilled fuel.



- When performing maintenance on the equipment, hang the DO NOT OPERATE sign where it will be obvious from and around the driver's seat.
- When performing maintenance or repairs, always lower attachments to the ground, stop the engine and secure the tracks with blocks.
- When performing maintenance on the equipment, always disconnect the negative battery cable.
- Before using tools, make sure you understand how to use them correctly and use tools in good condition and of the right size for the job.

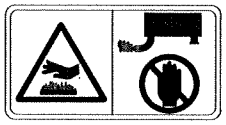
- Before getting on/off of the machine, clean off around the steps so there is no mud on them. Always give yourself 3-point support when getting on/off the machine.

CAUTION

- **3-point support means using both legs and one hand or both hands and one leg as you climb up/down.**

START SAFELY

- Do not do the procedures below when you start the engine.
  - short across starter terminals
  - bypass the safety start switch
- Do not alter or remove any part of machine safety system.
- Before you start the engine, make sure that all shift levers are in neutral positions or in disengaged positions.
- Do not start the engine when you stay on the ground. Start the engine only from operator's seat.



- Do not remove the radiator cap when the engine operates, or immediately after it stops. If not, hot water can spout out from the radiator. Only remove the radiator cap when it is at a sufficiently low temperature to touch with bare hands. Slowly loosen the cap to release the pressure before you remove it fully.

Starting the Machine Safely

- Before starting the engine, always sit in the driver's seat and make sure the area is safe and clear.
- As it is dangerous, never start the engine from anywhere but the driver's seat.
- Always check and make sure control lever(s) are not engaged before starting the engine.
- Never start the engine by hot-wiring the starter circuit. This is not only dangerous, but may damage the machine.

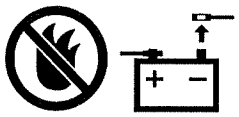
- The engine, muffler, radiator, hydraulic line, etc., have parts that remain very hot even after the engine has been stopped. Be sure to avoid these parts, as touching them can result in burns. Radiator coolant, hydraulic fluid and oil also remain hot. Therefore, do not attempt to remove caps and plugs, etc., before these fluids have sufficiently cooled.
- Make sure the coolant temperature has dropped sufficiently before opening the radiator cap. Also, since the inside of the radiator is pressurized, when removing the cap, first loosen it to release the pressure before removing the cap completely.

- Wear clothes appropriate for working on equipment. Do not wear loose-fitting clothes as they may catch on the machine controls.
- When working on the equipment, use all safety gear, such as a helmet, safety glasses and shoes, that are required by law or regulation.
- Never perform maintenance while drowsy or under the influence of alcohol or drugs.

- Grease is under high pressure inside the hydraulic cylinder. It is very dangerous to loosen a grease nipple quickly as it may shoot off. Always loosen grease nipples slowly.
- And never face a grease nipple while loosening it.

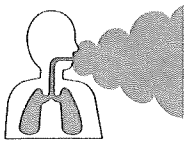
Be Ready for an Emergency

- Keep a first-aid kit and fire extinguisher close at hand so you can use it when needed.
- Keep emergency contact information for doctors, hospitals and ERs handy.



PREVENT A FIRE

- Fuel is very flammable and explosive under some conditions. Do not smoke or let flames or sparks in your work area.
- To prevent sparks from an accidental short circuit, always disconnect the battery negative cable first and connect it last.
- The battery gas can cause an explosion. Keep the sparks and open flame away from the top of battery, especially when you charge the battery.
- Make sure that you do not spill fuel on the engine.



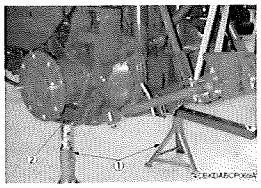
KEEP A GOOD AIRFLOW IN THE WORK AREA

- If the engine is in operation, make sure that the area has good airflow. Do not operate the engine in a closed area. The exhaust gas contains poisonous carbon monoxide.

Dispose of Waste Fluids Properly

- Never dispose of waste fluids on the ground, in the gutter, a river, pond or lake. Always dispose of hazardous substances like waste oil, coolant and electrolytic fluid in accordance with the relevant environmental protection regulations.
- Keep the safety plates clean so they can be read. If a safety plate is damaged and comes off or becomes illegible, put a plate with the same warnings back in its place.

GENERAL SAFETY INFORMATION

<table>
<tr>
<td rowspan="2">
 </td>
<td>• The pressure in the hydraulic circuit stays at pressure even after the engine stops. Before removing parts, such as hydraulic devices from the machine, first release the pressure. Please note that when releasing residual pressure, the machine itself and/or implements may move without warning, so be very careful when releasing the pressure.
• Oil gushing out under pressure is extremely dangerous as it may pierce your skin or your eyes. Similarly, oil leaking out of pinholes is not visible. So when checking for oil leaks, always wear safety glasses and gloves and use a piece of cardboard or a wood block to shield yourself from oil.</td>
<td rowspan="2">  </td>
<td>• When you need to access the underside of the machine for maintenance purposes, but sure to support the machine with a safety stand. Getting under the machine while supporting the machine by machine's own hydraulic cylinder or using a hydraulic jack can be extremely dangerous in the event of a hydraulic fluid leakage or similar mishap.
(1) Safety stand</td>
</tr>
<tr>
<td>• Do not open a fuel system under high pressure. The fluid under high pressure that stays in fuel lines can cause serious injury. Do not disconnect or repair the fuel lines, sensors, or any other components between the fuel pump and injectors on engines with a common rail fuel system under high pressure.
• Put on an applicable ear protective device (earmuffs or earplugs) to prevent injury against loud noises.
• Be careful about electric shock. The engine generates a high voltage of more than DC100 V in the ECU and is applied to the injector.</td>
<td>• Whenever it is necessary to open the engine covers or hood in order to service the machine, always prop them open.
• If it is absolutely necessary to run the engine while working on the machine, make sure you are clear of all rotating or moving parts. Also take care not to leave anything, such as tools or rags, near any moving parts.</td>
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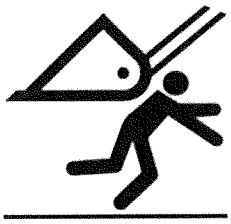
<td>  </td>
<td>• Engage the loader control valve lock to prevent accidental actuation when the implement is not in use or during transport. Do not utilize the valve lock for machine maintenance or repair.
• Do not perform machine maintenance with loader in the air. If possible, follow loader instructions to remove loader before performing maintenance.
• If the machine has a backhoe, engage swing and boom locks.</td>
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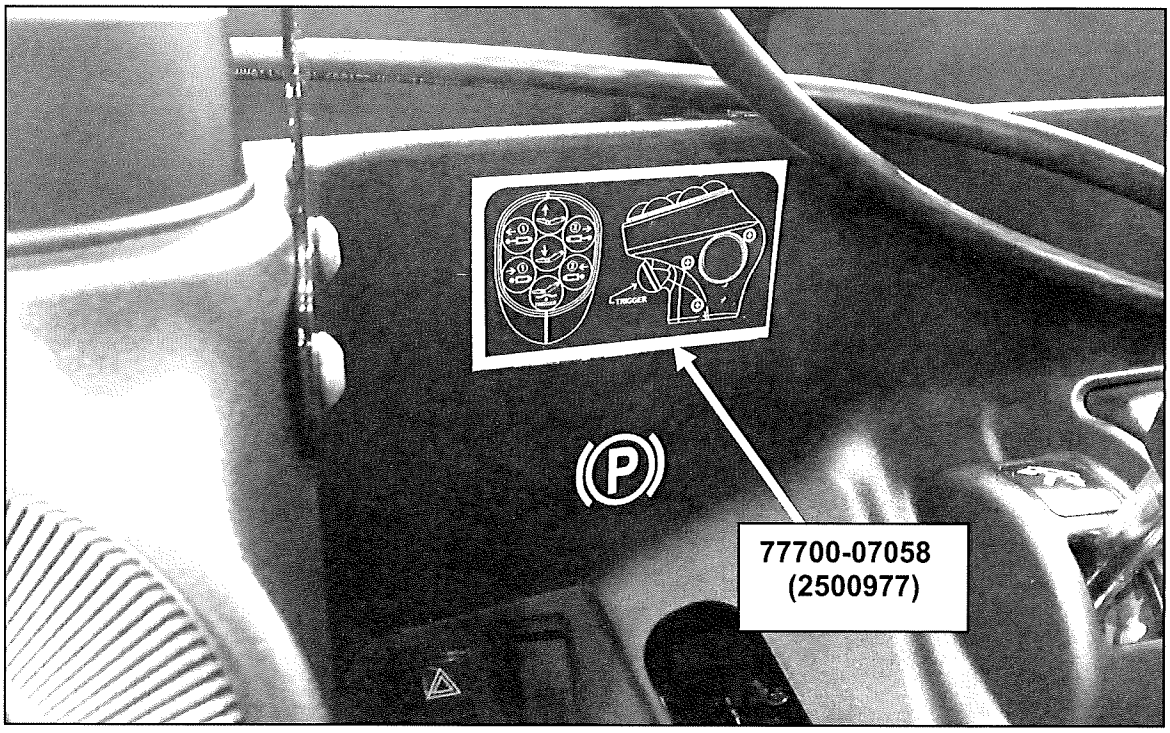
</table>

DECAL

IMPORTANT: Keep all decals clean and legible. Replace all missing, illegible, or damaged decals.

IMPORTANT: Decal placement locations shown are approximate; decals should not be placed in a location where the operator's field of view is impeded and should not cover any portion of other decals installed in the same vicinity.

INSTALLING OR REPLACING DECALS: Thoroughly clean the area where decal is to be placed using mild soap and water. Allow the surface to fully dry. Remove the backing from the decal, exposing the adhesive surface. Apply the decal to the recommended position shown in the diagram below and smooth out any bubbles.



ESTIMATED ASSEMBLY TIME

Refer to the following table for the estimated assembly time to open the package and assemble the equipment.

	4 POINT HITCH & SUBFRAME V5293B
Estimated initial installation time	180 min
Fill the unit with 3 liters of DEXTRON III or MERCON Automatic Transmission oil (not included).	

The assembly times of the table are only a reference under normal conditions according to the following assumptions:

1. The assembly is done by a competent person who is familiar with the equipment.
2. The following tools and materials are prepared:

1) Tools:
- Wrench set (flat wrenches)
- Ratchet & socket set
- Allen key set
- Vise-grip
- Cutting pliers
- Security gloves

2) Material:
- Thread locker (Loctite #243)
- Thread sealant (Teflon tape)

ASSEMBLY

4 POINT HITCH AND SUBFRAME ASSEMBLY

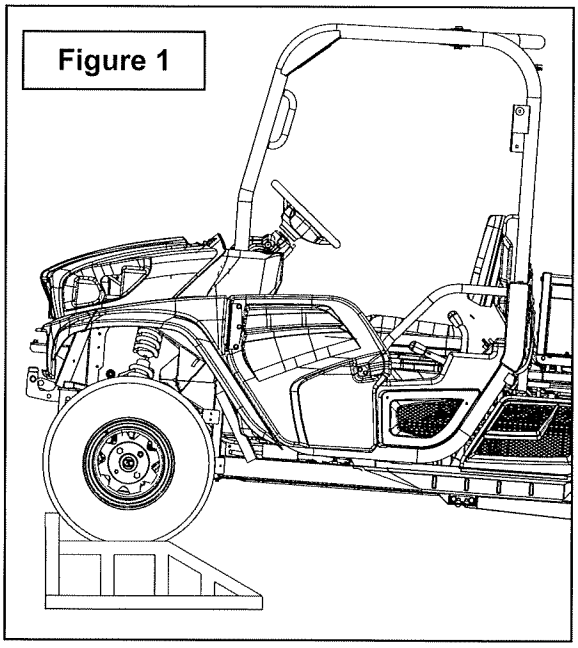
The 4 Point Hitch and the Subframe are partially assembled at the factory, however, parts contained in the bag and box must be installed. Use the present manual and lay out all parts for assembly. Separate bolts and nuts into various sizes. After assembly, torque all the bolts and the fittings according to the ***Torque Specification Table*** enclosed at the end of the manual.

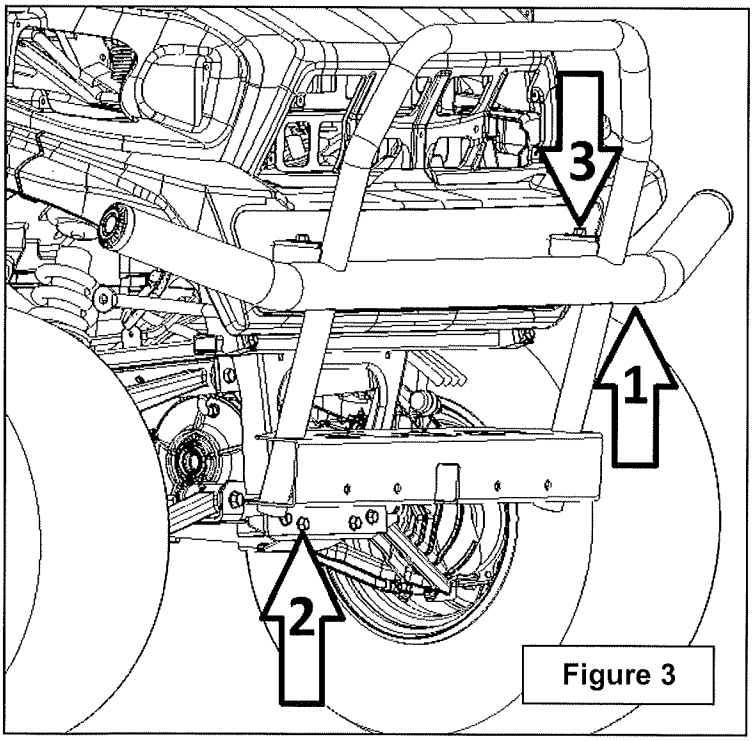
WARNING: To avoid serious personal injury or death: Perform all assembly with unit properly blocked and supported.

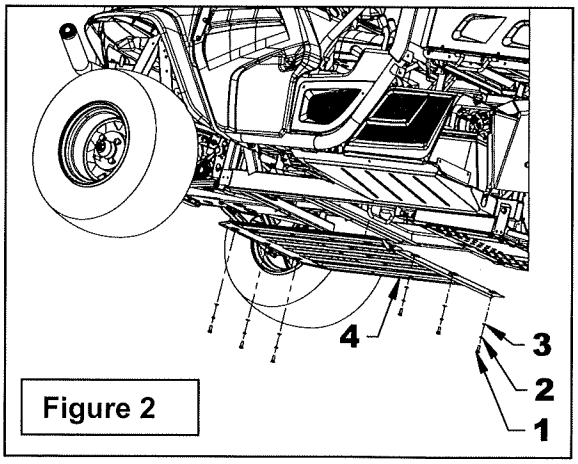
Preparation of the vehicle with a grill guard

1. **Figure 1:** Raise the front of the vehicle to facilitate the installation.
2. **Figure 2:** Remove the six M8 x 1.25mm bolts (item 1), the six flat washers (item 2) and the six lockwashers (item 3) and remove the protection plate (item 4).
3. **Figure 3:** Remove the grill guard (item 1) by removing the four lower bolts and the two upper bolts (items 2-3) and discard the hardware.

   NOTE: To reinstall the grill guard after the installation of the subframe, the Grill Guard Adaptor Kit **V5278** is needed.







ASSEMBLY

Installation of the Subframe

1. **For RTV-X1100C: Figure 4:** Lift the hood (item 1). Remove the six bolts (item 2) and two screws under the fender (item 3) and remove the front plastic protector (item 4). Keep the hardware.

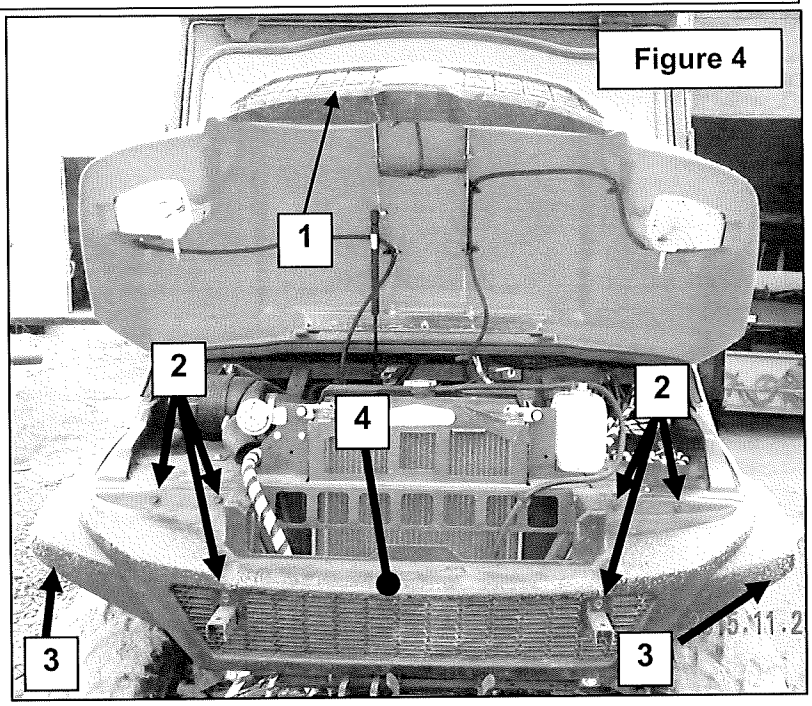


Figure 4

2. **For RTV-X1100C: Figure 5:** Remove the two lower side bolts (item 1) of the condenser. Keep the hardware.
3. **For RTV-X1100C: Figure 6:** Remove the two carriage bolts (item 1) at the top of the condenser. Discard the hardware.
4. **For RTV-X1100C: Figure 7:** Remove the two carriage bolts (item 1) under the condenser. Discard the hardware.

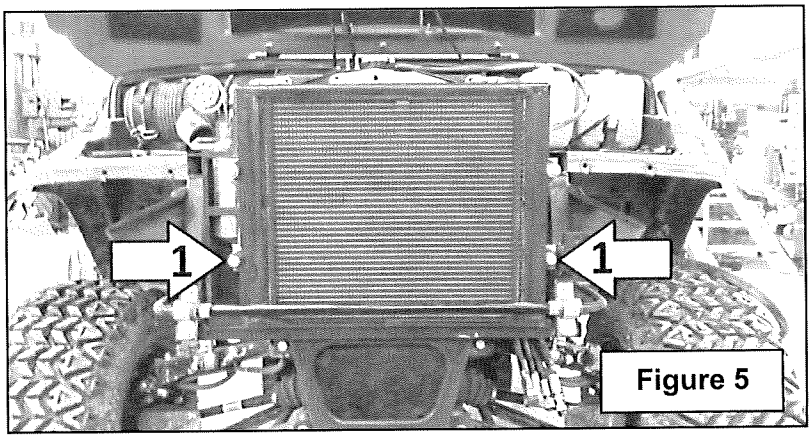


Figure 5

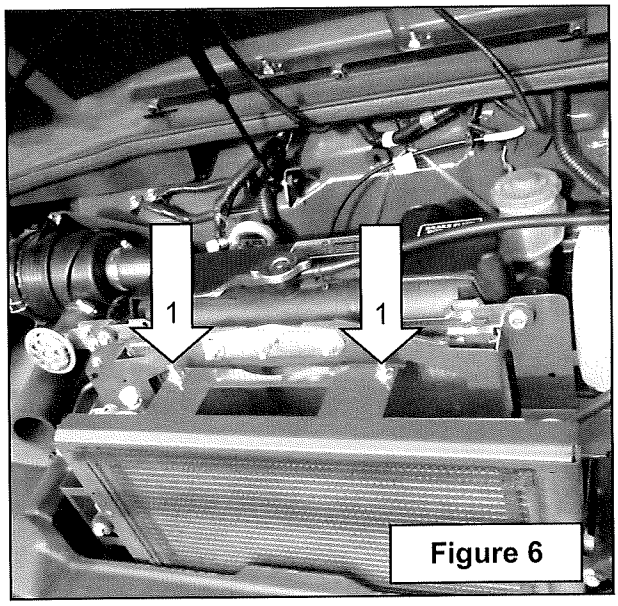


Figure 6

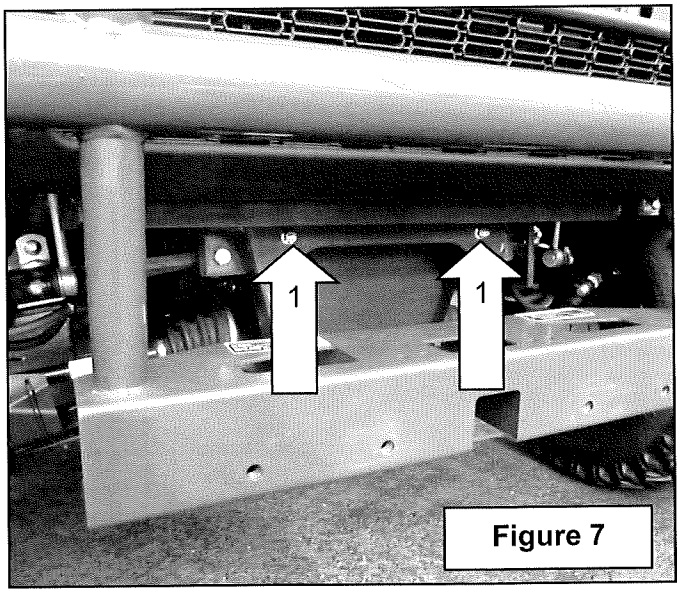
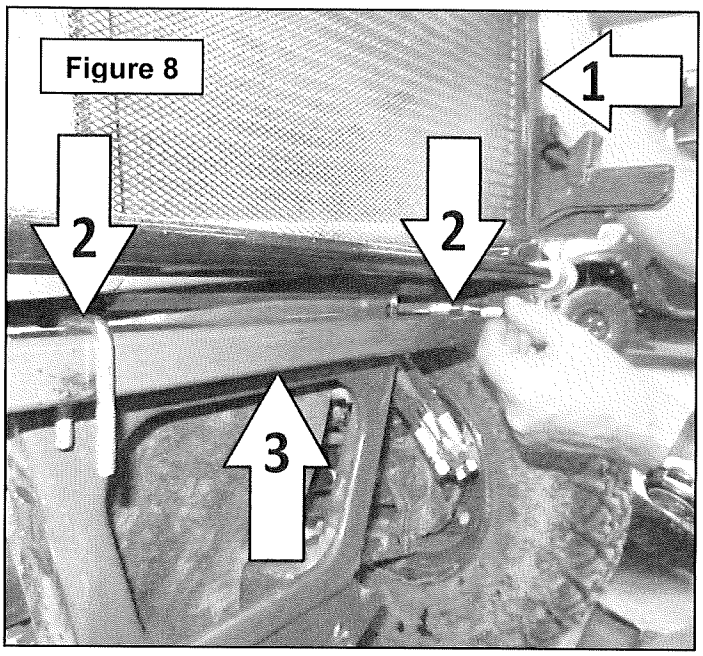
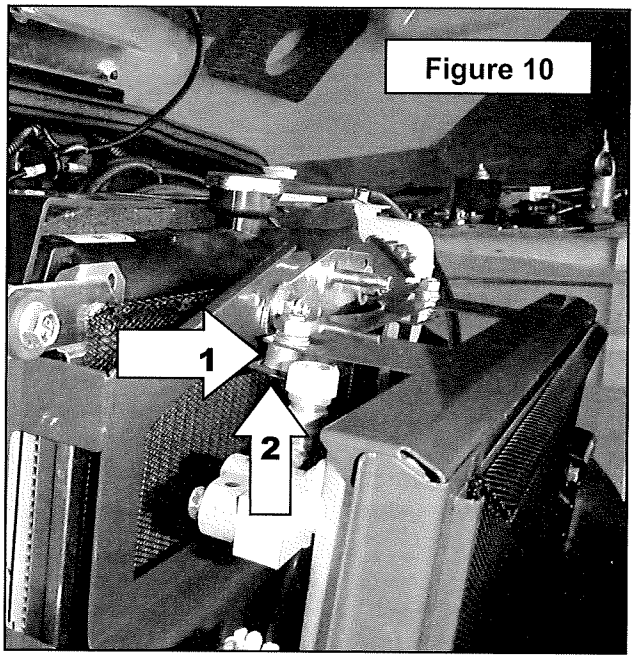


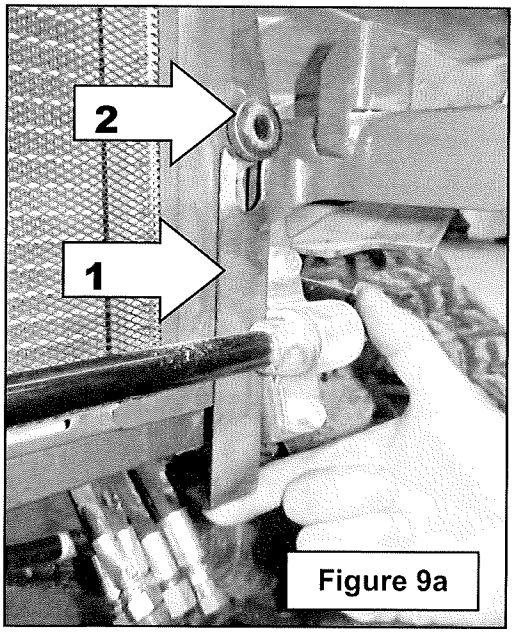
Figure 7

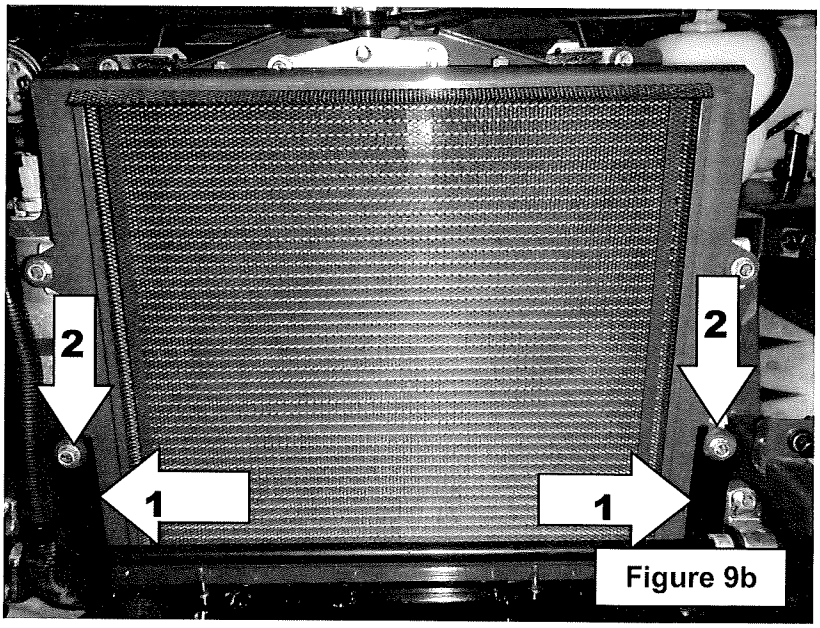
ASSEMBLY

5. **For RTV-X1100C: Figure 8:** Lift the condenser (item 1) and place the two U-bolts (item 2) on the square tube (item 3) of the frame.
6. **For RTV-X1100C: Figures 9a-9b:** Install the left and right condenser supports (item 1) on each side between the rubber bushing (item 2) and the condenser as illustrated.
7. **For RTV-X1100C: Figure 10:** Insert a spacer (item 1) between the holes of the condenser plate and the vehicle frame and secure the condenser with two 5/16"NC X 1" lg carriage bolts, 8mm (8.4mm int.) flat washers, 5/16" lockwashers and 5/16"NC nuts (item 2).









ASSEMBLY

8. **Figure 11:** Attach the subframe (item 1) to the vehicle with the U-bolts already installed on the frame (item 2), four 8mm (8.4mm hole) flat washers (item 3), 5/16" lockwashers (item 4) and 5/16"NC nuts (items 5). DO NOT TIGHTEN.
9. **Figure 12:** Attach the lower section with the four M12 X 1.25 X 50mm lg bolts (item 1), 12mm lockwashers (item 2), 12mm (13mm hole) flat washers (item 3) in the order shown. DO NOT TIGHTEN.
10. **Figure 12:** Tighten the U-bolts evenly so that the subframe is stable on the square tube of the frame. Then, torque the four M12 bolts (item 1) in the welded nuts of the vehicle frame at 70 lbs-ft (95 N-m).
11. **Figure 12:** Install and tighten a M12 nut (item 4) on the other end of each M12 bolts (item 1). Torque to 70 lbs-ft (95 N-m)
12. **For RTV-X1100C: Figure 11:** Secure each condenser support to the subframe with a 5/16"NC X 1" lg carriage bolt (item 6), 8mm (8.4mm hole) flat washer (item 7), 5/16" lockwasher (item 8) and 5/16"NC nut (item 9).
13. **For RTV-X1100C: Figure 5:** Leave approximately a 1/8" space between the U-bolts and the condenser and reinstall the bolts on each side of the condenser (item 1). Only tighten without torquing.

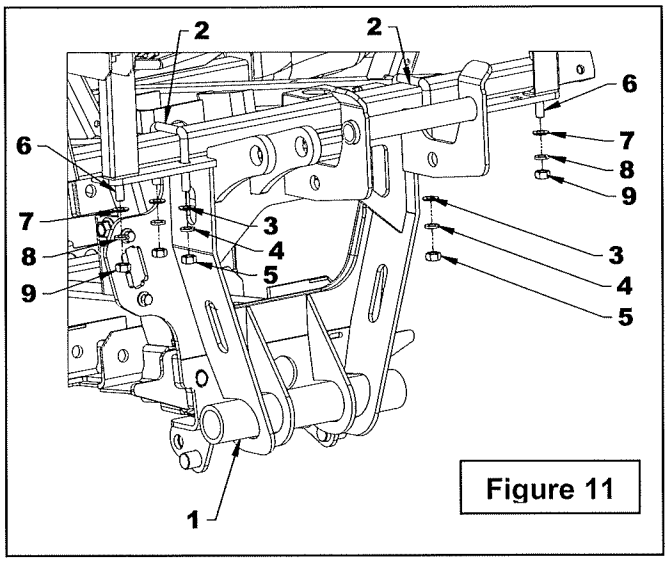


Figure 11

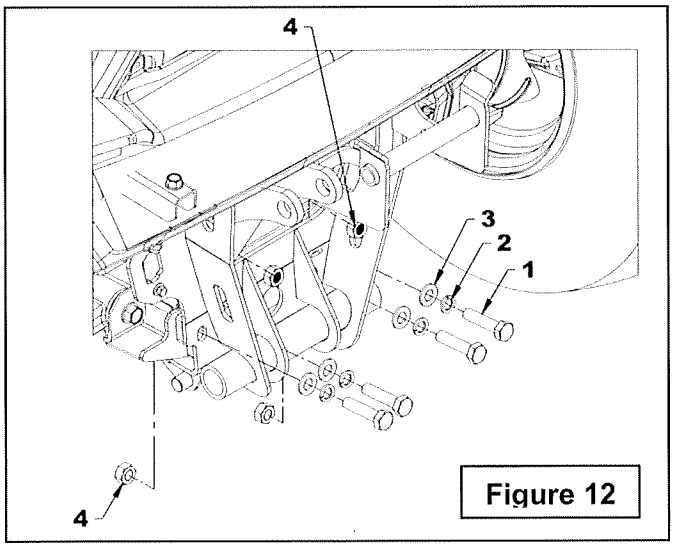
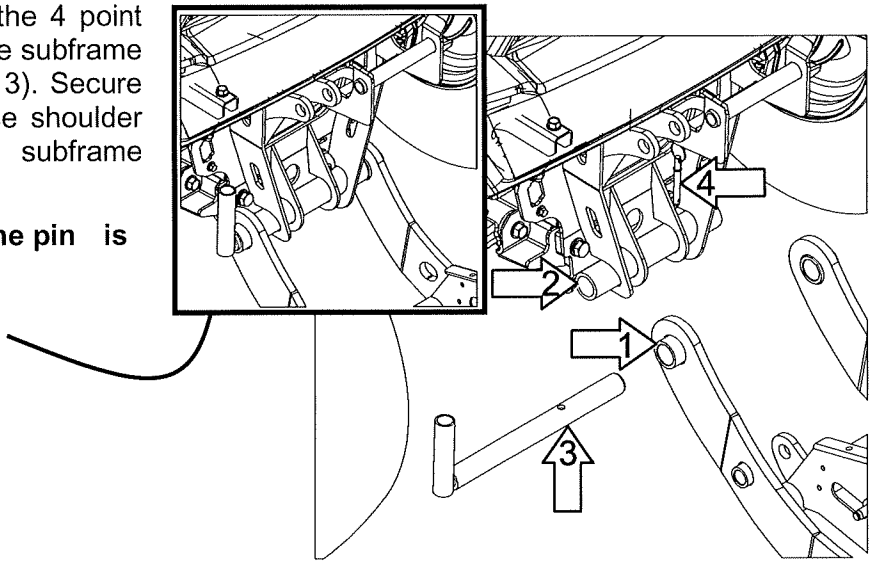


Figure 12

Installation of the 4 Point Hitch

Figure 13: Align the bushings of the 4 point hitch (item 1) with the bushing of the subframe (item 2) and insert the L pin (item 3). Secure by inserting the 5/16" quick release shoulder pin (item 4) in the hole of the subframe (item 2) and the L pin (item 3).

NOTE: Make sure the handle of the pin is pointing upward.

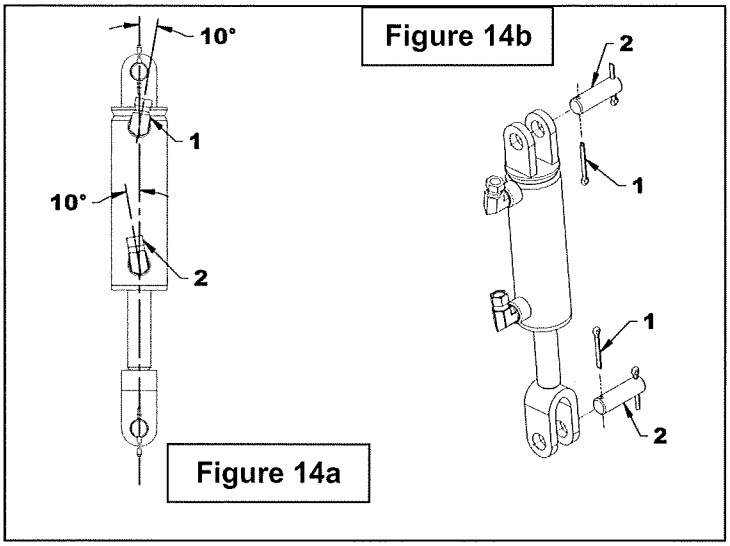


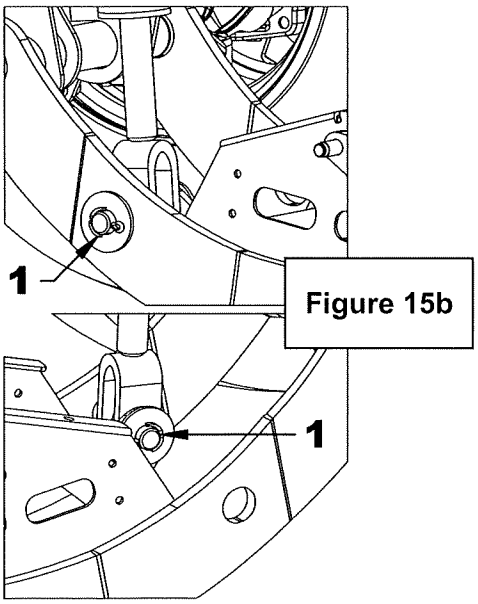
ASSEMBLY

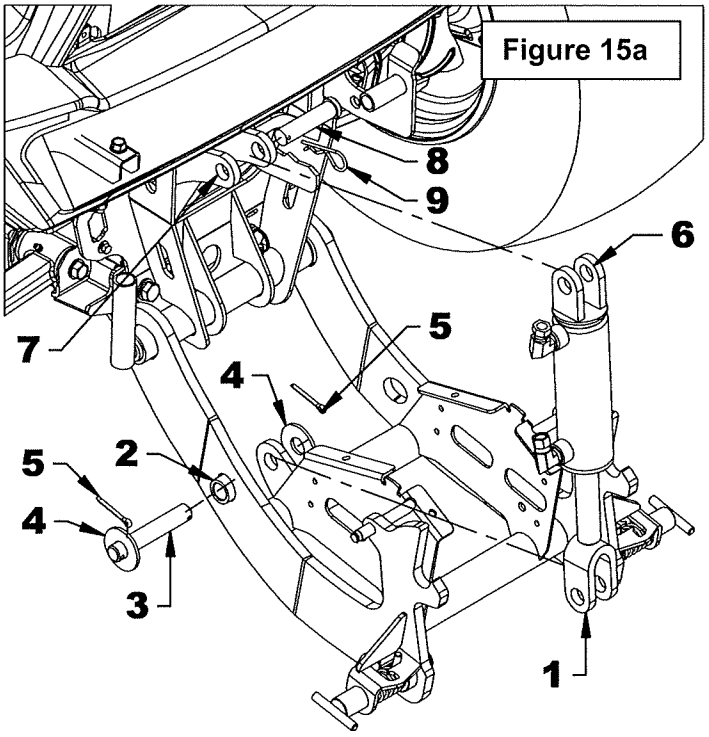
Installation of the Hydraulic Cylinder

1. **Figure 14a: Using thread sealant,** install a 3/8"NPT male X 1/4"NPT swivel female 90° elbow (item 1) on the cylinder base end and place it at an angle of 10° to the right.
2. **Figure 14a: Using thread sealant,** install a 3/8"NPT male X 1/4"NPT swivel female 90° flow restrictor elbow (item 2) on the cylinder rod end and place it at an angle of 10° to the left.
3. **Figure 14b**: Remove the cotter pins and pins from the cylinder ends (item 2). Discard the hardware.
4. **Figure 15a**: Attach the rod end of the cylinder (item 1) to the 4 point hitch bracket (item 2) with a 3/4" X 4 7/16" pin (item 3), two 3/4" flat washers (items 4) and two 3/16" X 1 1/2" cotter pins (items 5).
5. **Figure 15b:** Bend the two cotter pins (item 1) around the pin (item 1) with pliers.
6. **Figure 15a:** Attach the base end of the cylinder (item 6) to the subframe (item 7) with a 3/4" X 3" pin (item 8) and a 3mm X 65mm hairpin (item 9).

Torque all fittings according to the ***Torque Specification Table*** enclosed at the end of the manual.







ASSEMBLY

Connection of the hydraulic hoses to the Cylinder

1. **Figure 16:** Connect the 1/4" x 28" hose (item 1) to the lower cylinder port (item 2). Connect the 1/4" x 24" hose (item 3) to the upper cylinder port (item 4).
2. **Figure 16:** Install on the other end of each hose a 1/4"NPT male x 1/4"NPT female 90° elbow (item 5), a dust plug (item 7) and a 1/4"NPT quick coupler (item 6). DO NOT TIGHTEN the swivel of the 90° elbow.

   NOTE: hoses have nylon sleeve (not shown).
3. **Figure 16:** Install a blue identification ring (item 8) on the hose connected to the cylinder upper port (item 4) and a red identification ring (item 9) on the hose connected to the cylinder lower port (item 2).

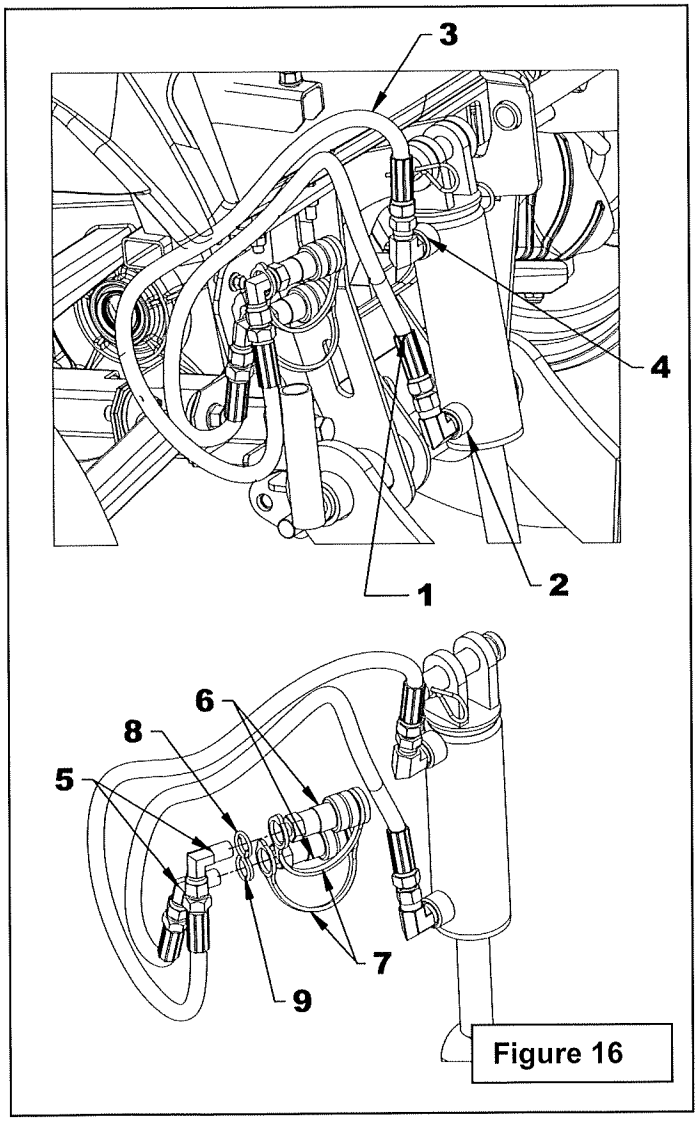


Figure 16

Torque all fittings according to the ***Torque Specification Table*** enclosed at the end of the manual.

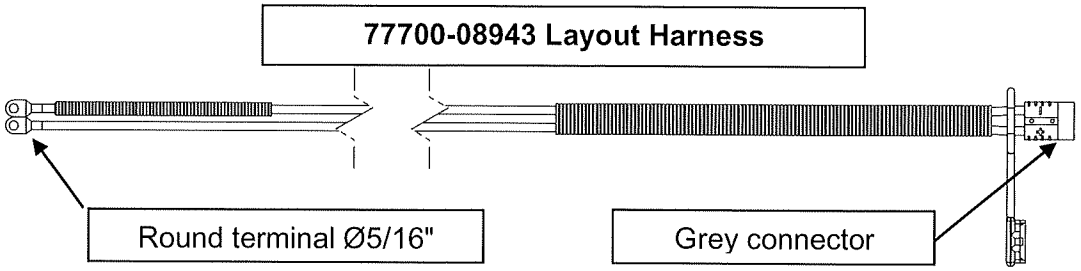
STEP 1: Apply a sealant/lubricant product to the NPT thread (teflon covered trads are preferable to other lubrication products) If PTFE tape (teflon) is used, turn between 1.5 or 2 turns clockwise, when viewed by the fitting and, keeping the two first threads. **CAUTION:** More than 2 turns can cause distortion or crack in the orifice.

STEP 2: Tighten the fitting manually.

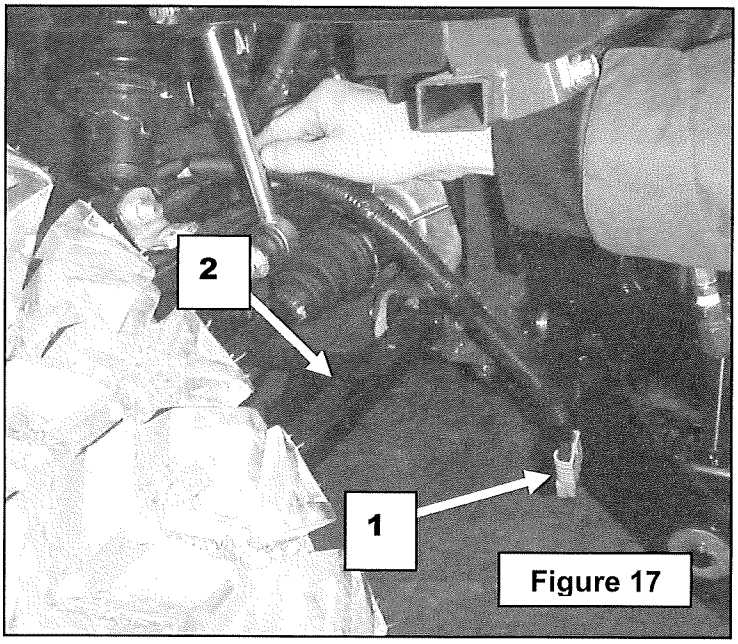
STEP 3: Screw the fiitting of 2 or 3 turns after the manual tightening. Never unscrew a fitting to obtain the proper alignment.

ASSEMBLY

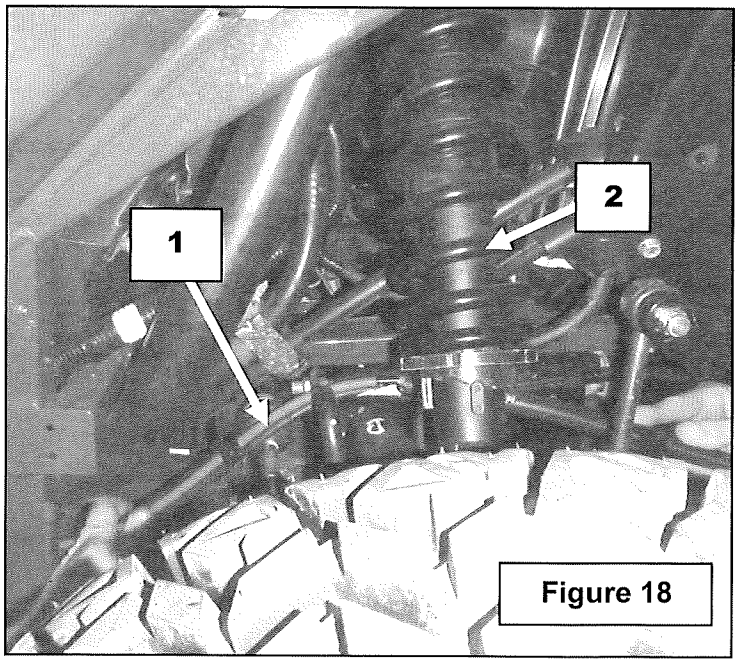
Installation of the 156" Electrical Harness for Pump (77700-08943)



1. **Figure 17:** Position the grey terminal (item 1) in front of the suspension arm (item 2).



2. **Figure 18**: Route the wire (item 1) behind the coil spring (item 2).



3. **Figure 19**: Route the wire (item 1) under the vehicle along the hydraulic hoses.

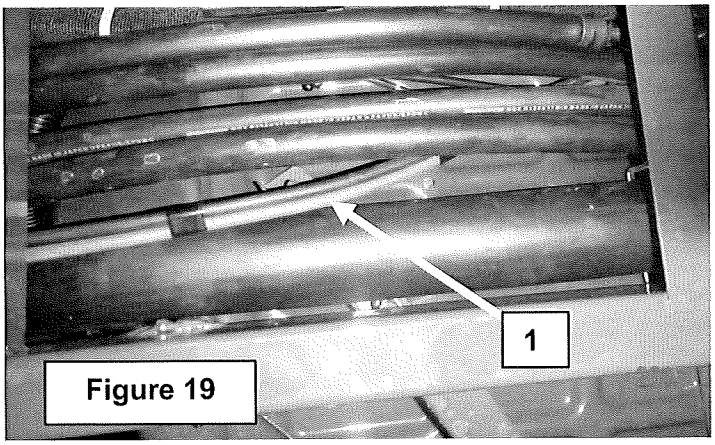


Figure 19

4. Lift both seats and remove the center box and center cover (not shown).
5. Remove the left cover on the side of the seat, also remove the panel for the battery.

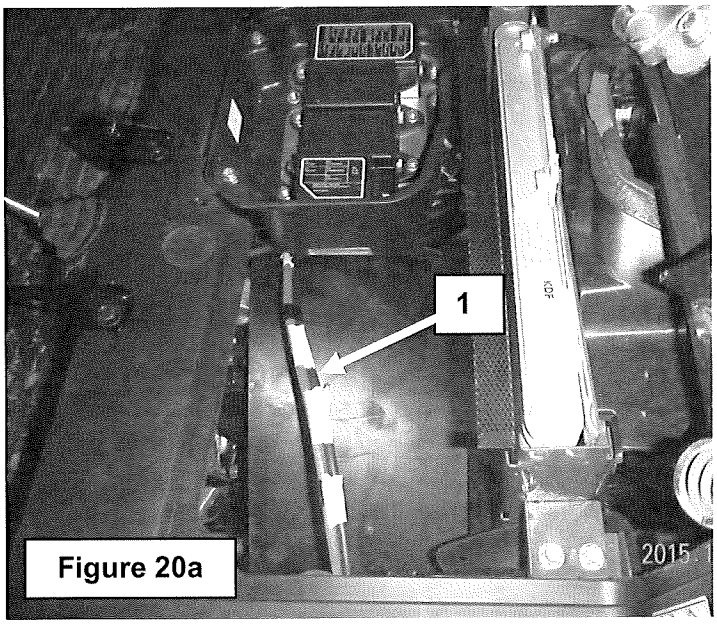


Figure 20a

6. **Figures 20a-20b**: Route the wire (item 1) under the seat. Then bring the wire near the battery.

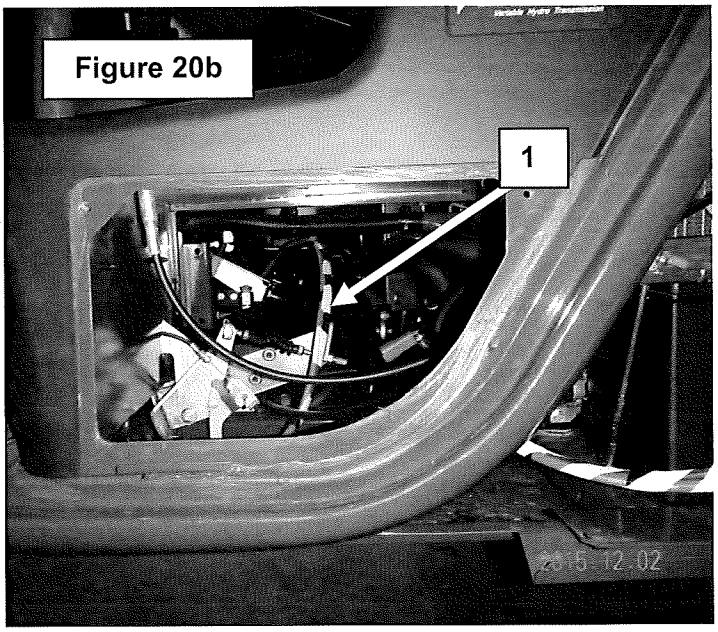
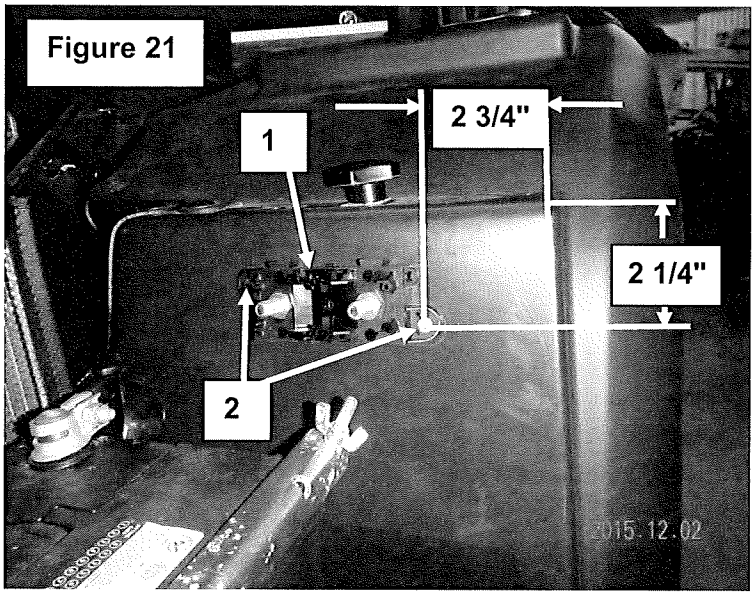


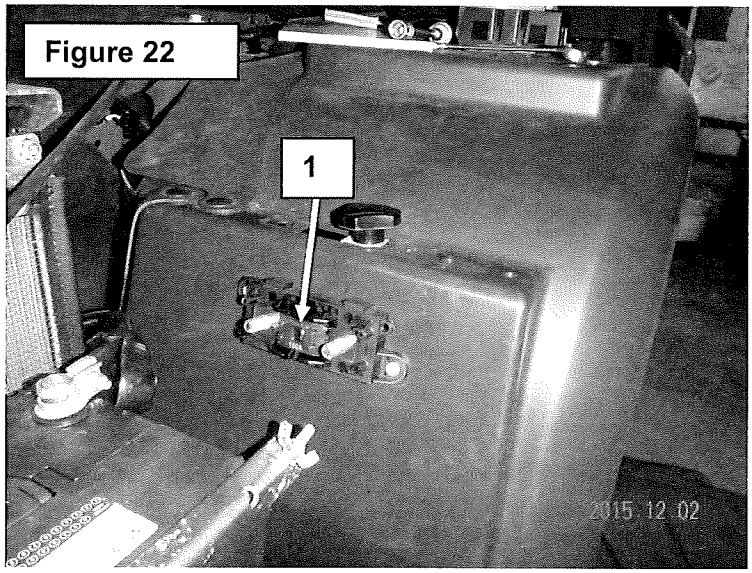
Figure 20b

ASSEMBLY

7. **Figure 21:** Position the fuse holder (item 1) according to the measures shown in the figure. Using the fuse holder, drill two 3/16" holes in the anchor holes of the fuse holder. Attach with two 8-32 x 3/4" lg machine screws round socket head quadrex (item 2), and secure on the other side of the fender with two #8 flat washers and 8/32" nylon insert locknuts.

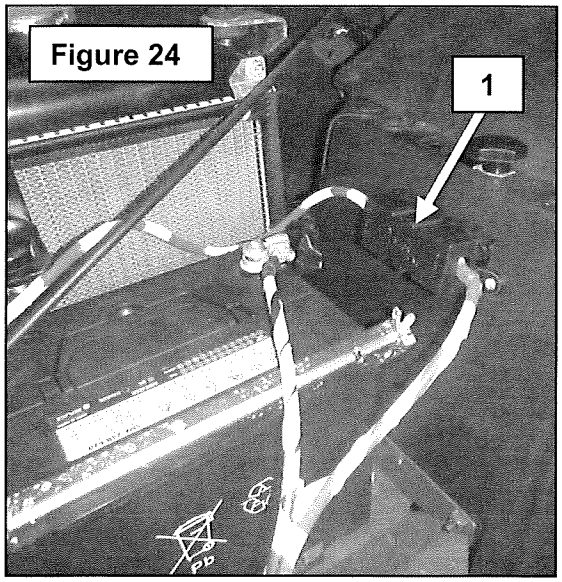


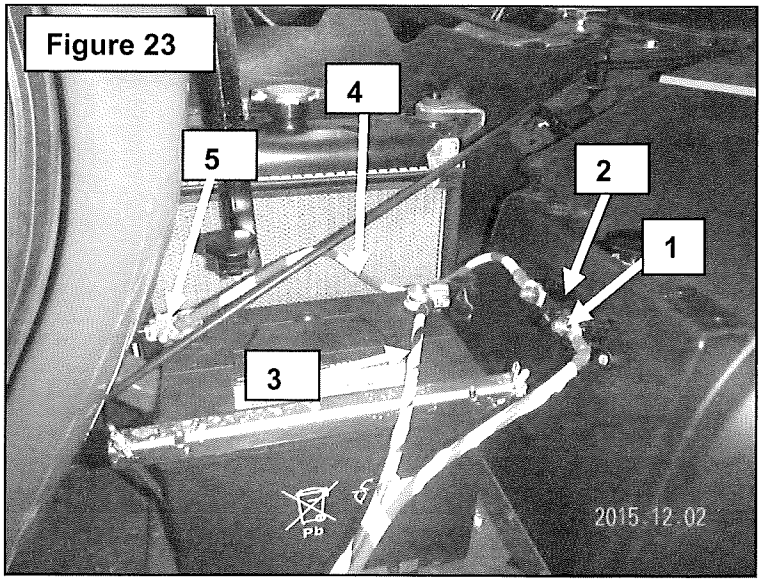
8. **Figure 22:** Install the 150-amp fuse (item 1).



9. **Figure 23:** Connect 5/16" terminal of the red wire (item 1) to the right terminal of the fuse holder (item 2). Connect the black wire (item 3) to the negative terminal of the battery. Connect the 19" red wire (item 4) to the left side of the fuse holder (item 2) and to the positive terminal of the battery (item 5).

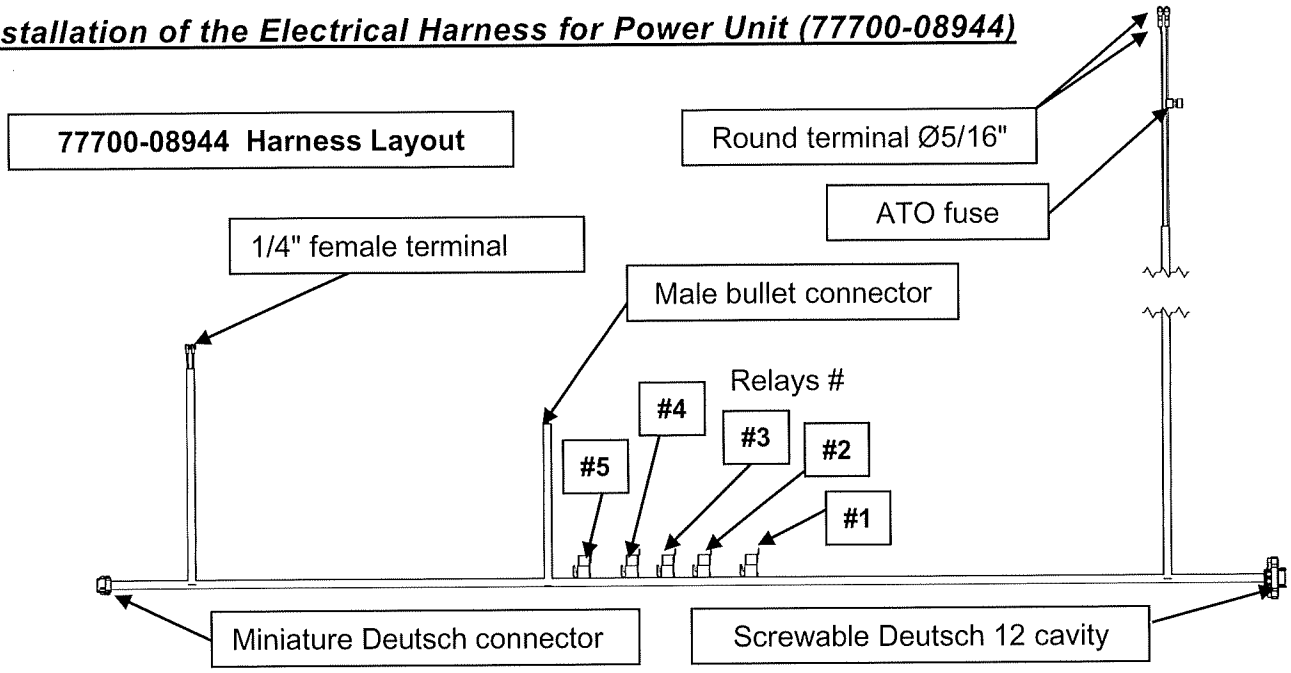
10. **Figure 24:** Reinstall the cap on the fuse holder (item 1).



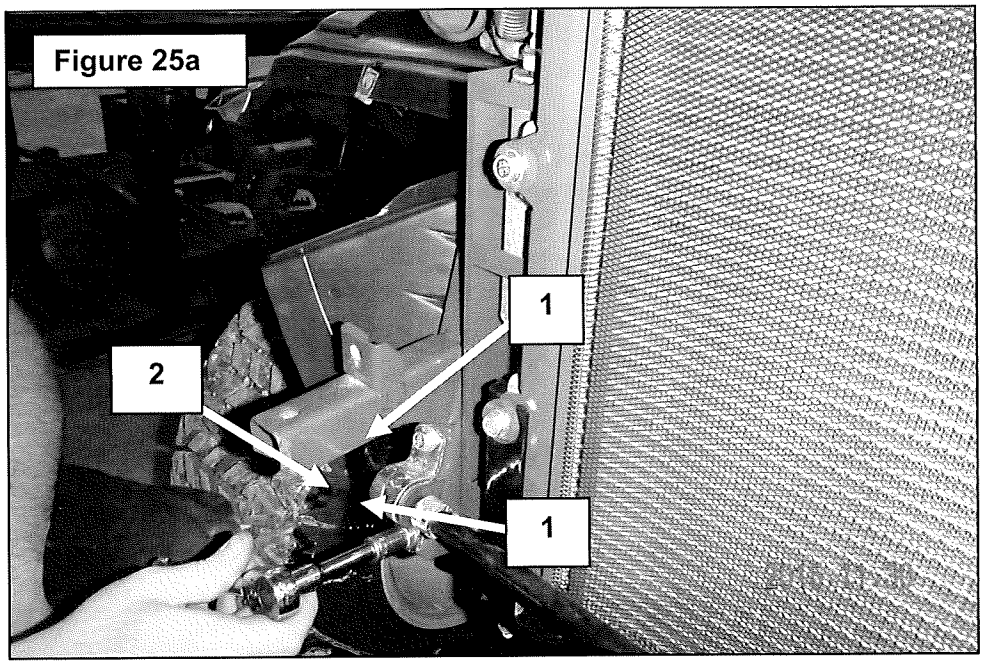


ASSEMBLY

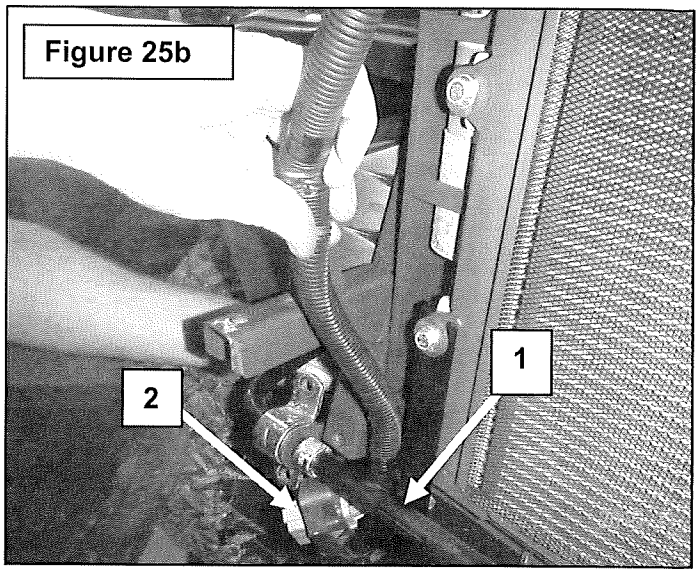
Installation of the Electrical Harness for Power Unit (77700-08944)



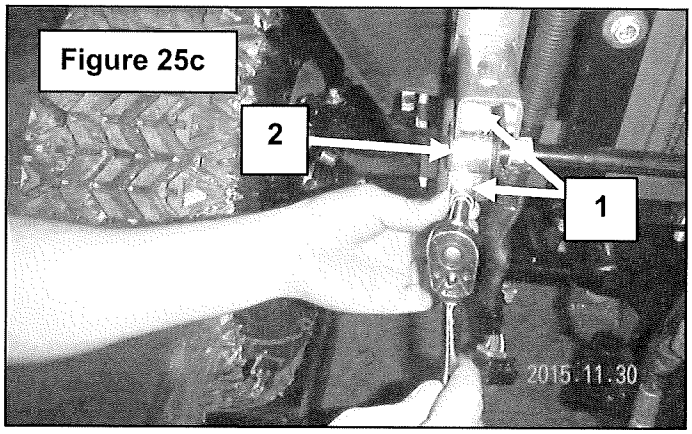
1. **For RTV-X1100C: Figure 25a:** Remove the two bolts (item 1) that retain the clamp (item 2) only on the left side when facing the vehicle, as shown in the figure.



2. **<u>For RTV-X1100C</u>: Figure 25b:** Pull the rod (item 1) untill you can insert the screwable Deutsch 12 cavity connector (item 2).

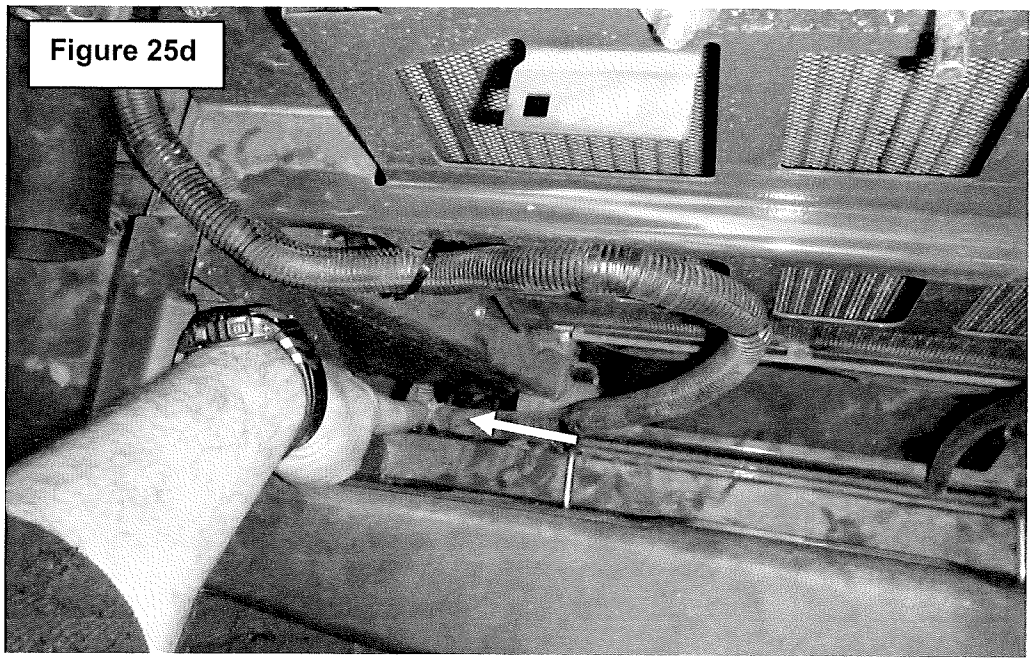


3. **<u>For RTV-X1100C</u>: Figure 25c:** Reinstall the two bolts (item 1) that retain the clamp (item 2) previously removed. Torque to 19 lbs-ft (26 N-m).



4. **<u>For RTV-X900 / RTV-X1120D & RTV- X1140</u>:**

   Figure 25d: Insert the 12 cavities screwable Deutsch connector in the front opening of the frame.



5. **Figure 26:** Secure the screwable Deutsch 12 cavity connector of the Hydraulic Control harness (item 1) to the subframe (item 2) with two M6 x 1.00 x 20 hex bolts, two lockwashers and two #12 (1/4" hole) flat washers (items 3-4-5).

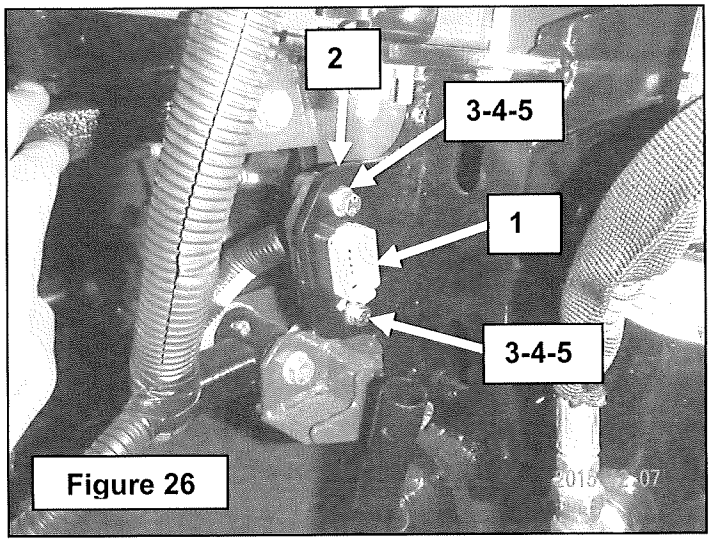


Figure 26

6. **Figure 27:** Route the relay section of the harness (item 1) from the screwable 12 pin Deutsch 12 cavity connector on the left condenser side (item 2) and under the horn (item 3).

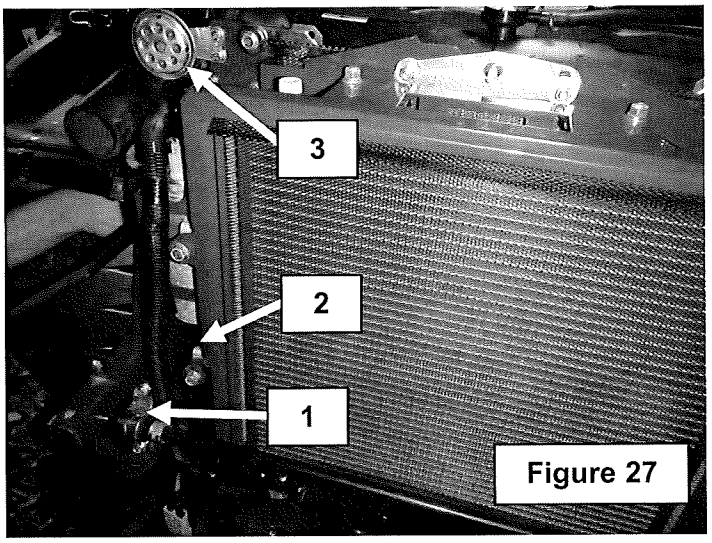


Figure 27

7. **<u>For RTV-X1100C</u>: Figure 28**: Unlatch the plastic retainer (item 1) from the RTV anchor point.

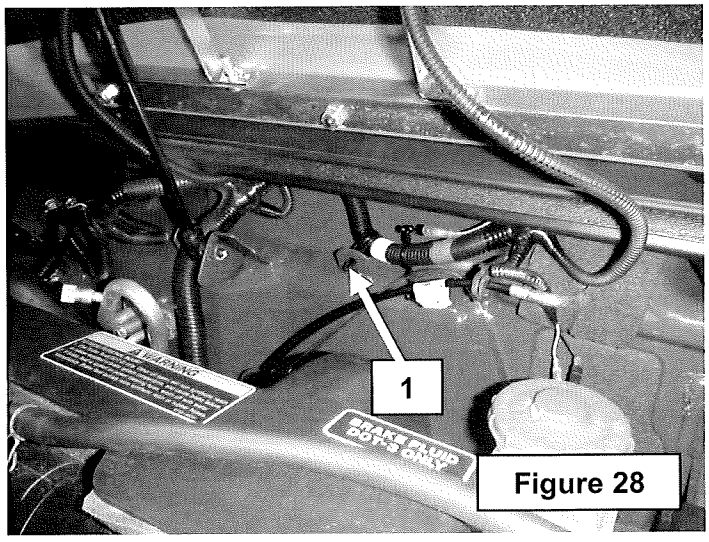
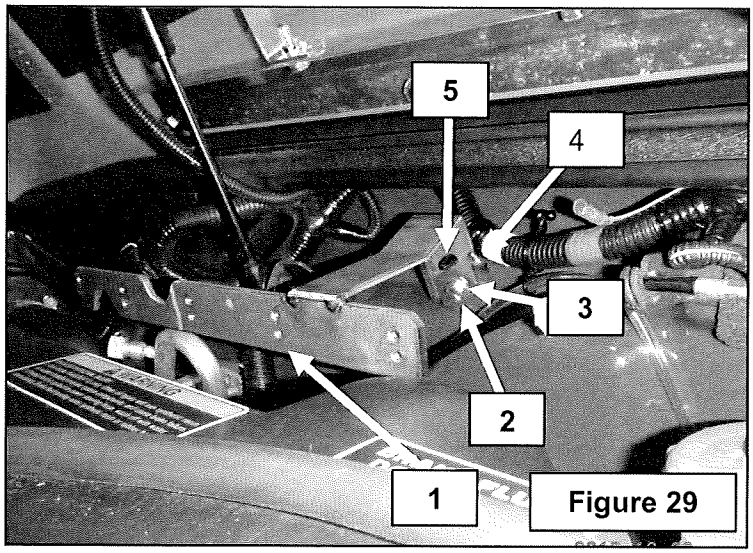
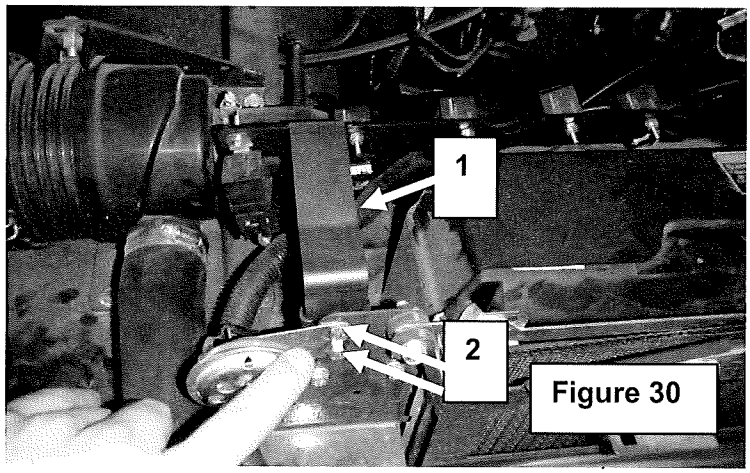


Figure 28

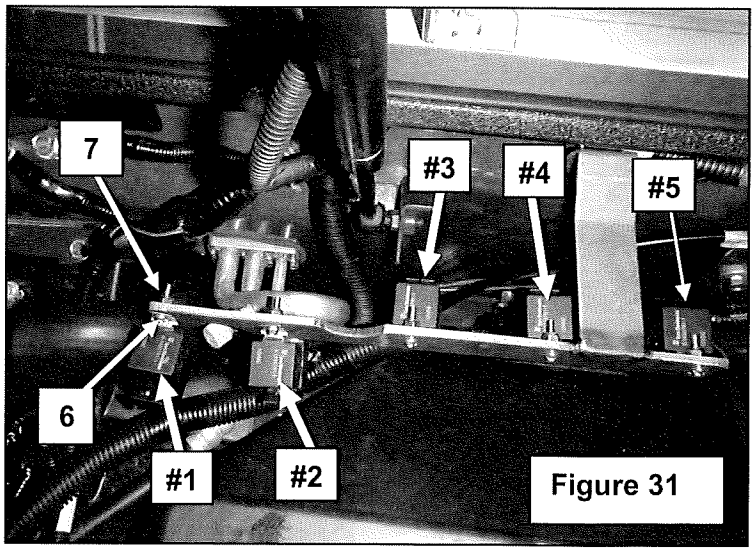
8. **For RTV-X1100C: Figure 29**: Install the relay bracket (item 1) on the RTV. Secure the bracket with a M6 X 1.00X 25mm bolt (item 2),6mm flat washer (item 3, not shown) and nylon insert locknut (item 4). Reinstall the plastic retainer (item 5).



9. **For RTV-X900 / RTV-X1120D & RTV-X1140: Figure 30:** Replace both flange nuts of the horn by two M6 X 1.00 X 25mm hex bolts (item 2). Install the relay support (item 1) against the welded nut of the horn bracket welded to the RTV frame. Secure the relay support (item 1) with two nylon insert locknuts (not shown).



10. **For RTV-X1100C: Figure 31:** Secure the five relays on the relay bracket with 8-32 x 3/4" lg bolts (item 6) and nylon insert locknuts (item 7). One bolt and one nut are required for each relay. The reference #1 to #5 of the relays must be in accordance with the relay numbers illustrated on the **"77700-08944 Harness Layout"** on page 19.



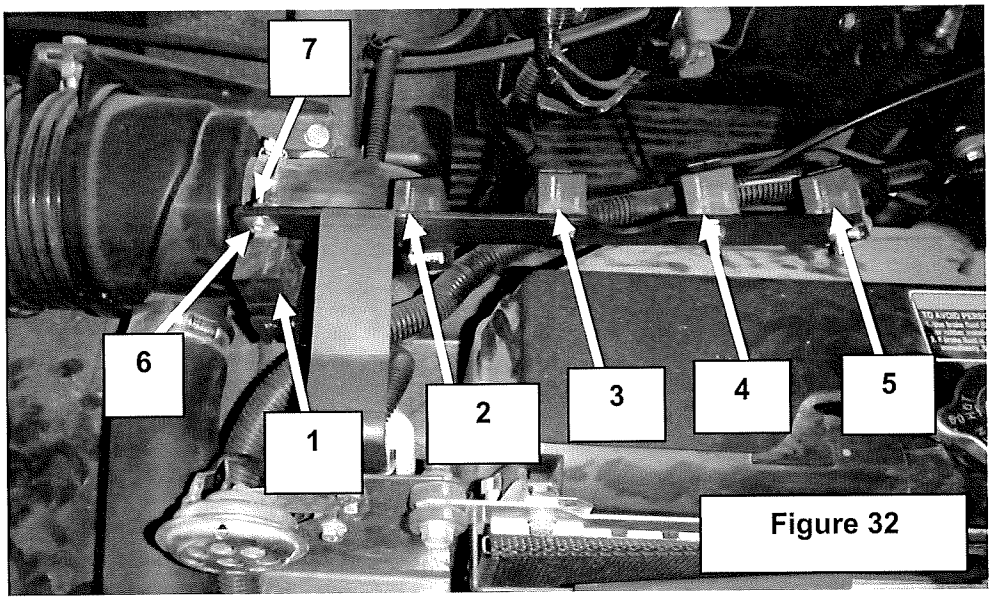


Figure 32

11. **For RTV-X900 / RTV-X1120D & RTV - X1140: Figure 32**: Secure the five relays on the relay support with 8-32 x 3/4" lg bolts (item 6) and nylon insert locknuts (item 7). One bolt and one nut are required for each relay. The references #1 to #5 of the relays must be in accordance with the numbers of the relays shown on the **"77700-08944 harness model"** on page 19.

12. **Figure 33:** Connect the male bullet connector of the harness (item 1) to the femelle bullet connector (item 2) of the RTV's accessory output (green with yellow stripe wire).

13. **For RTV-X1100C: Figure 34:** Push the miniature Deutsch connector (item 1) and the 1/4" female connector (item 2) of the harness through the grommet (item 3).

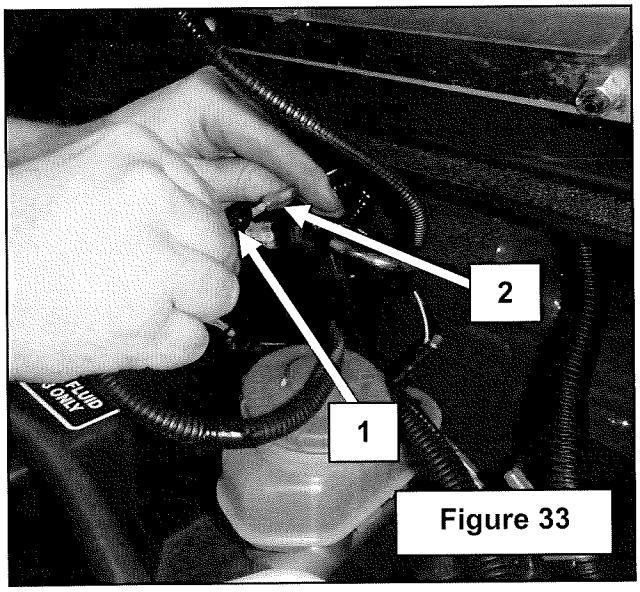


Figure 33

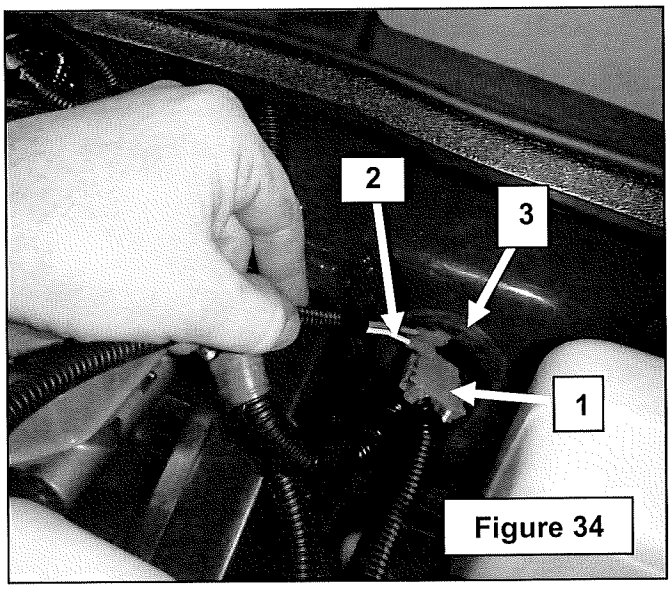


Figure 34

14. <u>For RTV-X900 / RTV-X1120D &</u>

<u>RTV-X1140</u>: **Figures 35a-35b:** Bring the wire with the miniature Deutsch connector (item1) inside the vehicle.

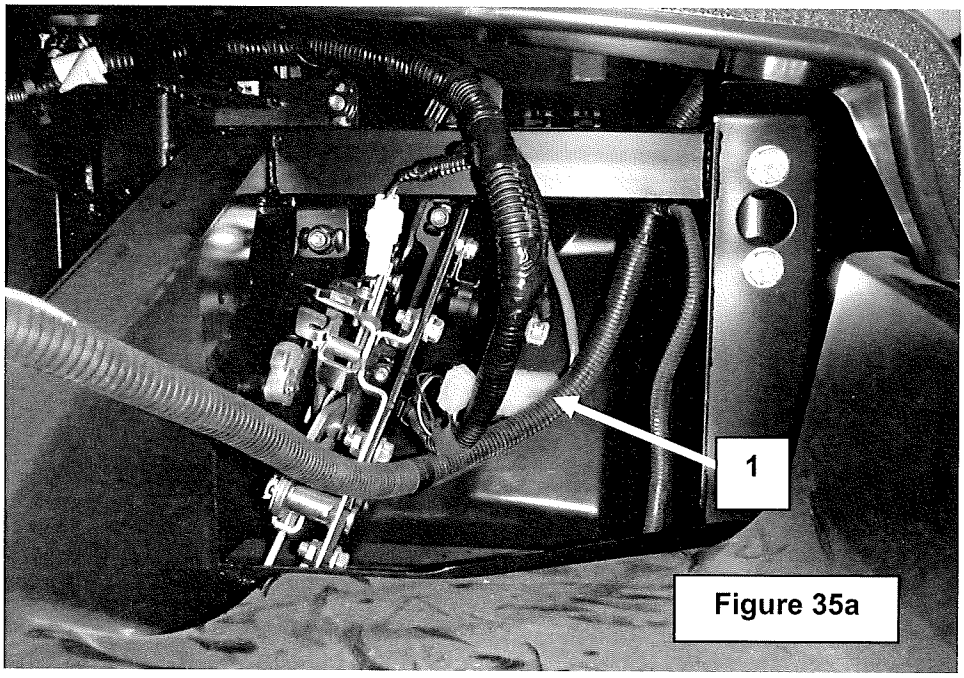


Figure 35a

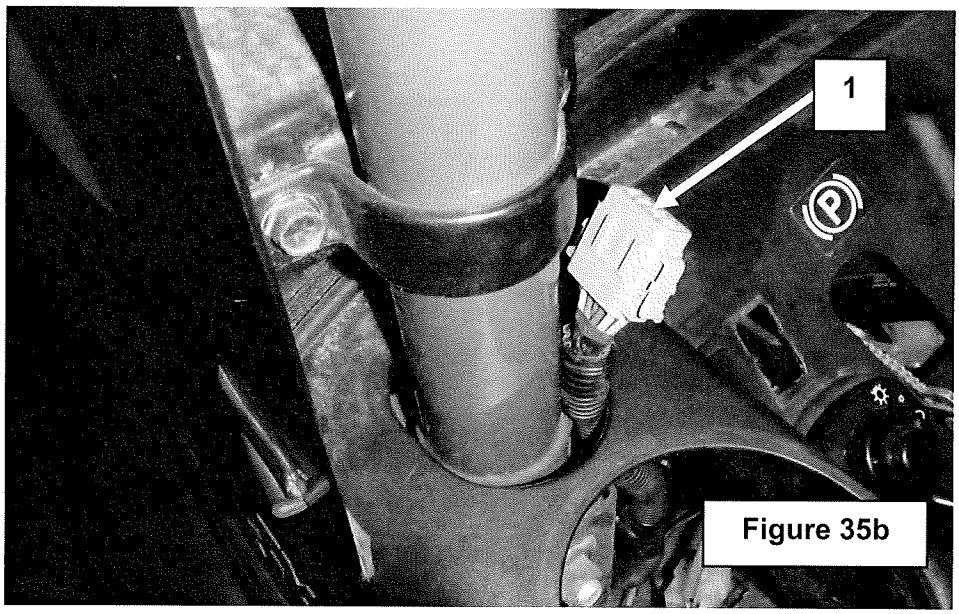


Figure 35b

15. **Figure 36a:** Pull upward the cup holder (item 1).
16. **Figure 36b:** Turn counter clockwise the cup holder (item 1) and remove it. Keep the cup holder for reinstallation.

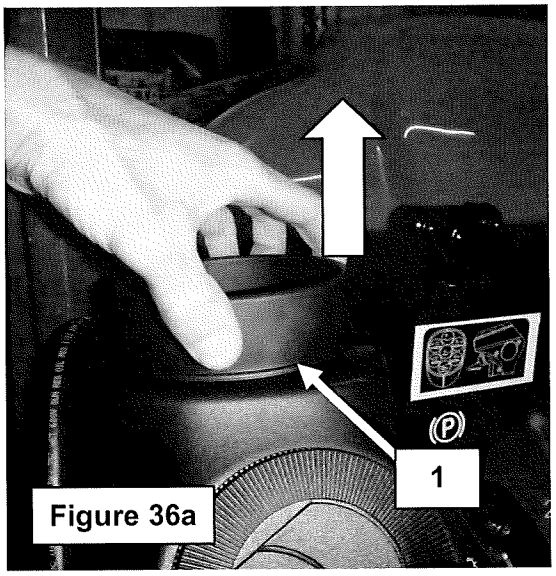


Figure 36a

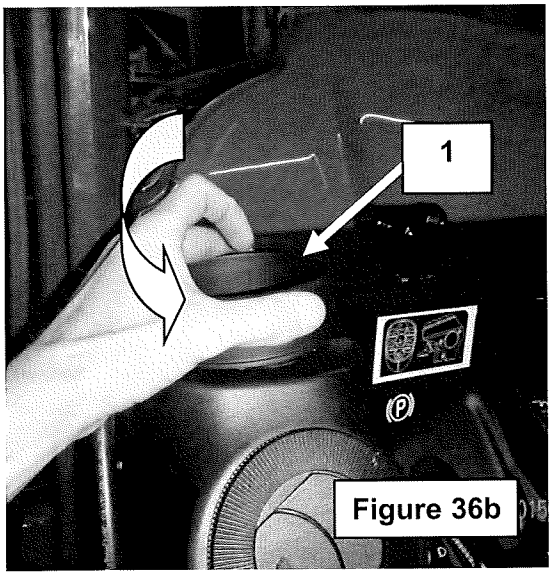


Figure 36b

17. **<u>For RTV-X1100C</u>: Figure 37**: Position the drilling template (item 1) on the top of plastic dashboard (item 2). Push the template against the slope in the dashboard. Mark the two holes (item 4).

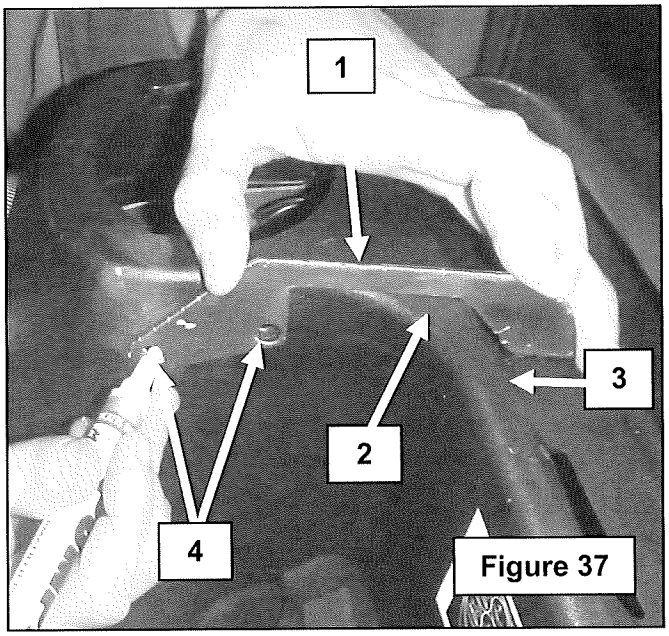


Figure 37

18. <u>For / RTV-X900 / RTV-X1120D & RTV-X1140:</u>

Figure 38: Position the drill template (item 1) on top of the plastic dash (item 2). Push the template against the slope of the dashboard. Mark both holes (item 4).

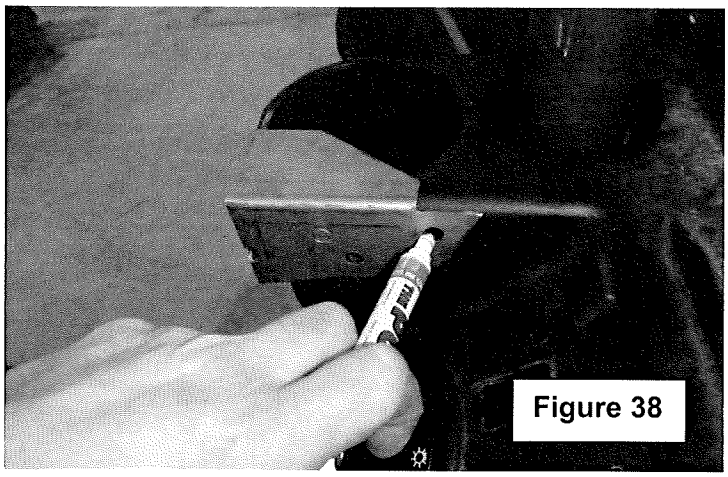


Figure 38

19. <u>For RTV-X1100C</u>: **Figure 35:** Remove the two bolts and flat washers (items 1-2).

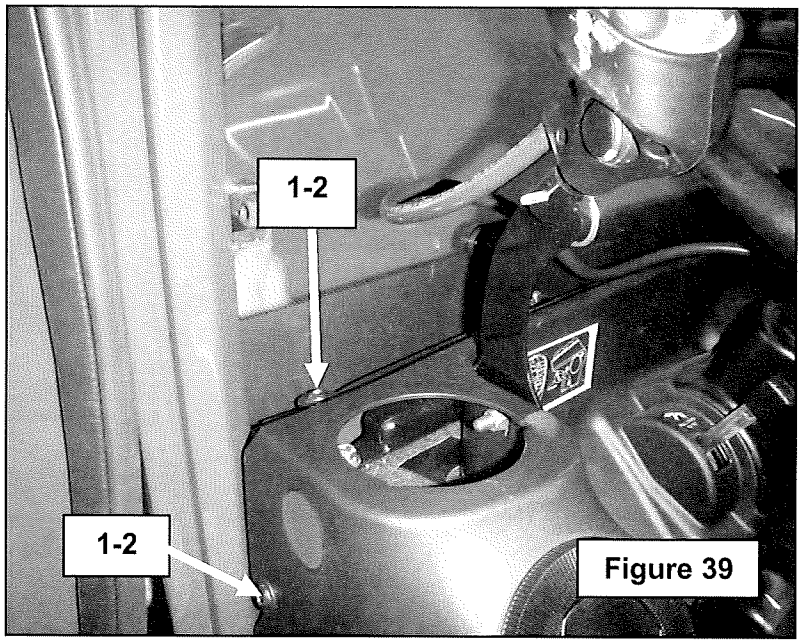


Figure 39

20. <u>For RTV-X1100C</u>: **Figure 36**: Remove the two bolts and flat washers (items 1-2).

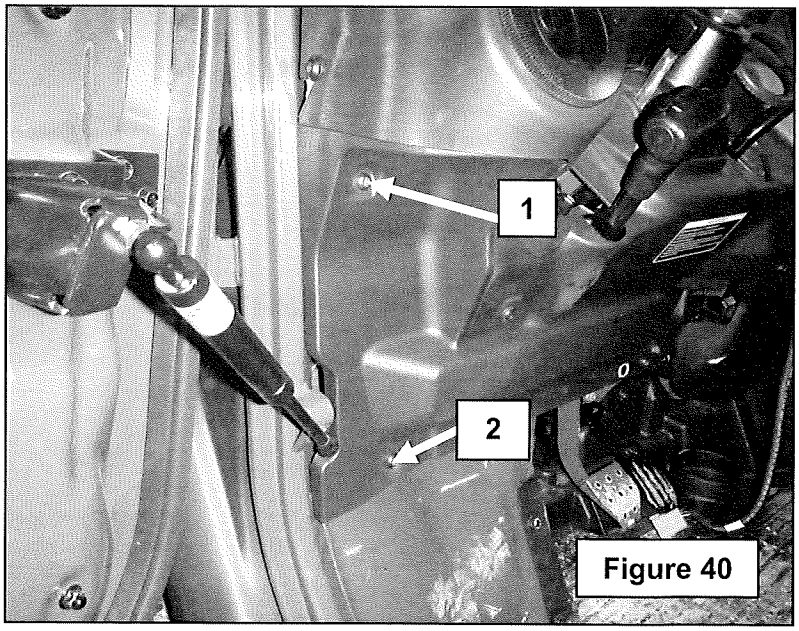


Figure 40

21. **For RTV-X1100C: Figure 41**: Pull down the wire (item 1) that was routed through the grommet (in **figure 34**) until all the wire is through.

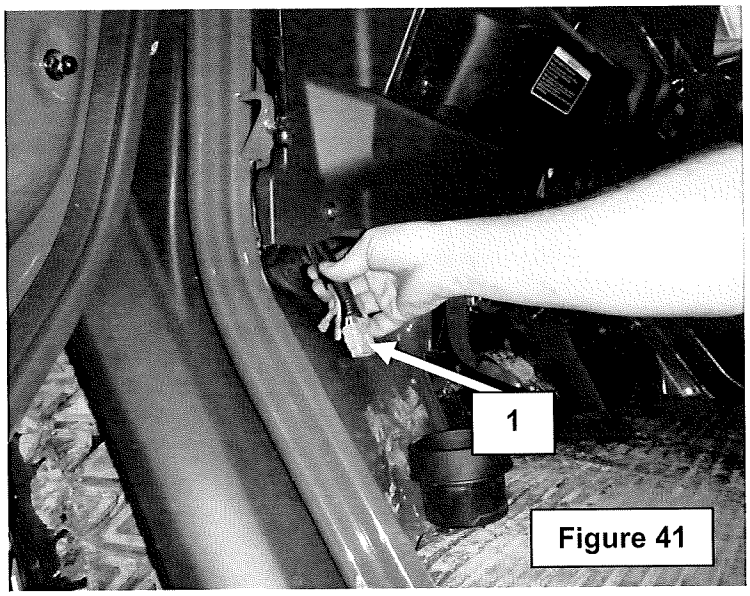


Figure 41

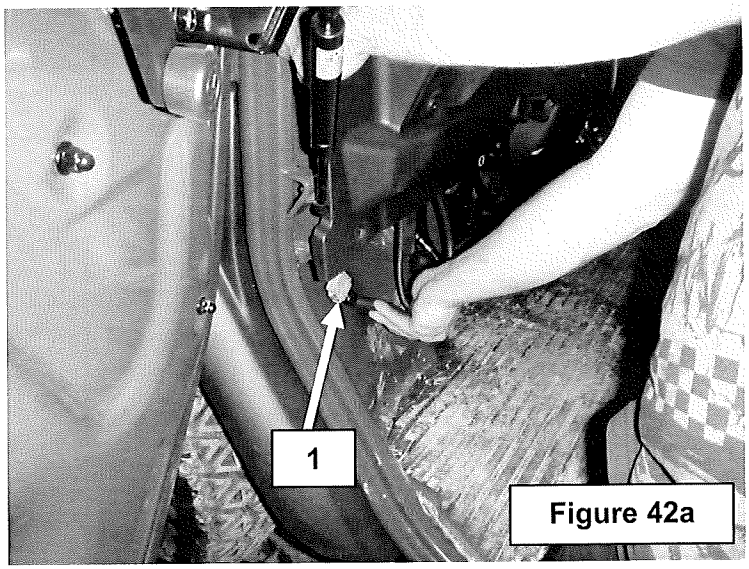


Figure 42a

22. **For RTV-X1100C: Figures 42a-42b:** Route the wire (item 1) through the cup holder hole as shown in the figure until the miniature Deutsch connector is in the hole for the cup holder.

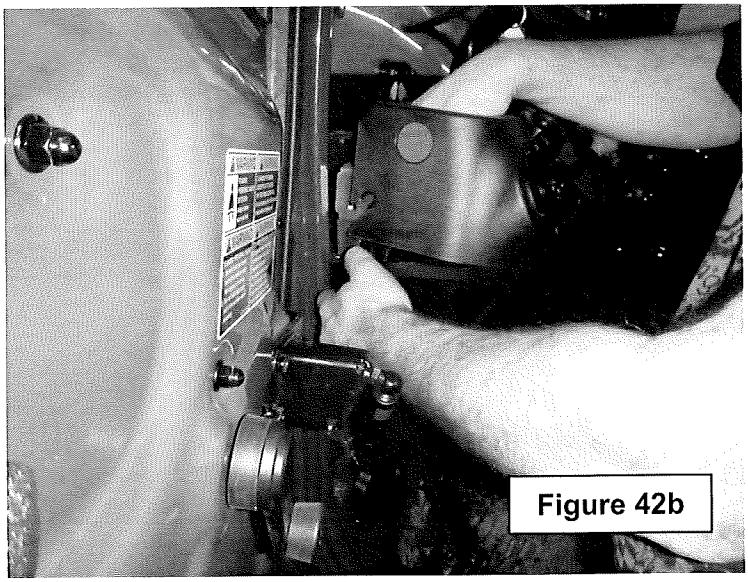


Figure 42b

ASSEMBLY

23. **Figure 43a:** Attach the control handle support (item 1) with two 5/16" x 3/4"lg allen button head cap screws (items 2-3) and two 5/16"NC nylon insert locknuts (not shown).
24. **Figure 43a:** Route the handle control wire behind the dashboard and to the cup holder hole with the relay harness.

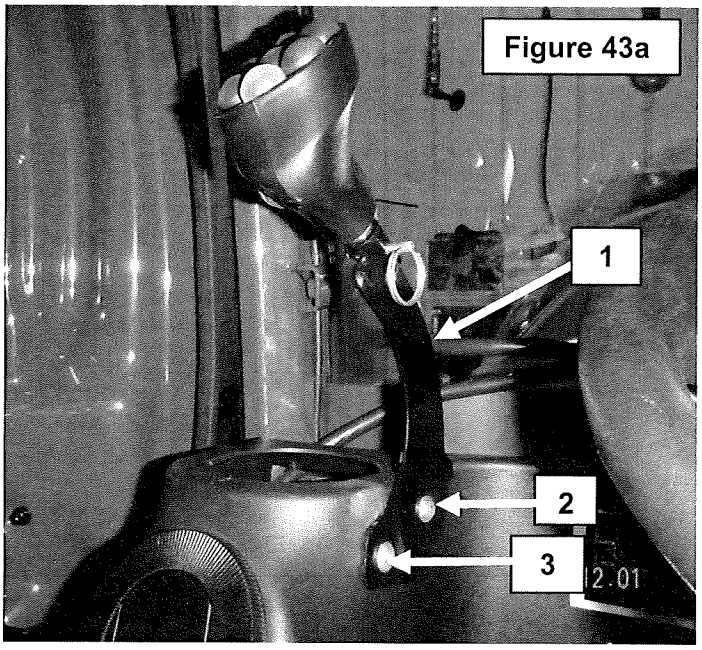


Figure 43a

25. **Figure 43b:** Screw completely the M10-1.25 nut (item 1) onto the threaded portion of the control handle retaining pin (item 2).
26. **Figure 43b:** Screw the control handle retaining pin on the control handle into the control handle hole (item 3). The hole in the pin must be perpendicular with the control handle.
27. **Figure 43b:** Screw the M10-1.25 nut against the base of the control handle (item 3).
28. **Figure 43b:** Insert the control handle assembly (items 1-2-3) into the the control handle support (item 4) and secure with the 3/16" x 1" lg quick-release shoulder pin (item 5).

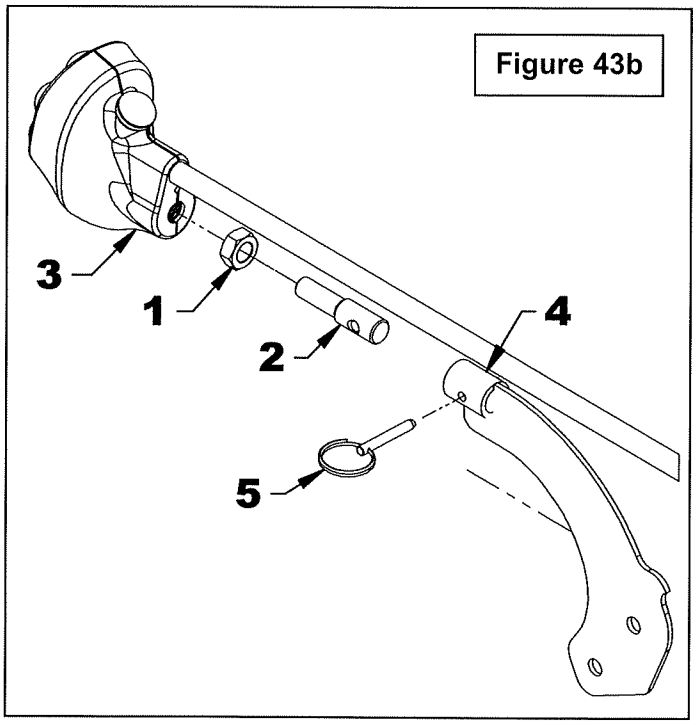
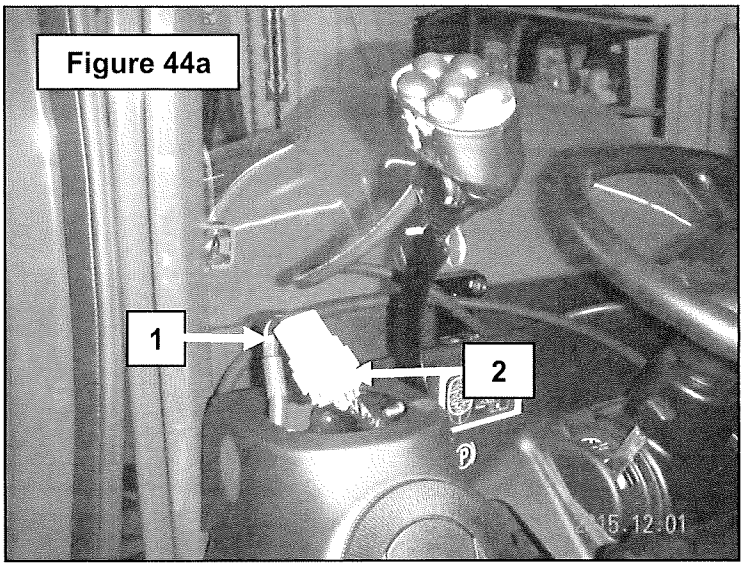
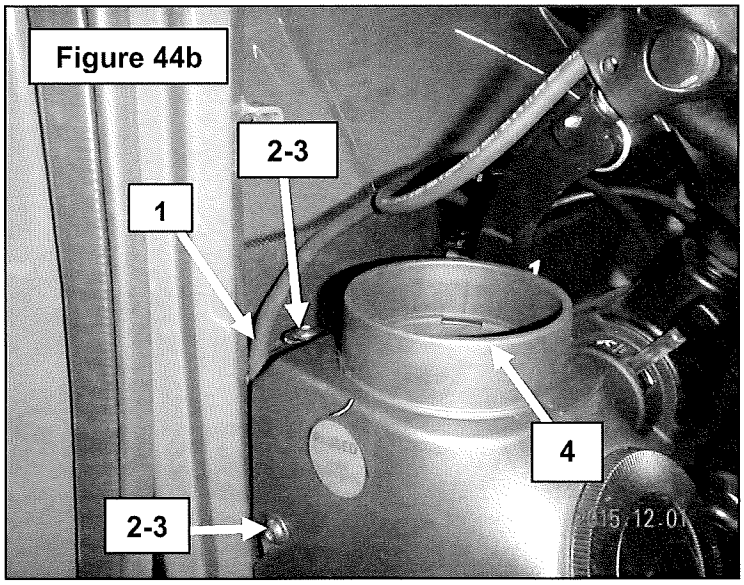


Figure 43b

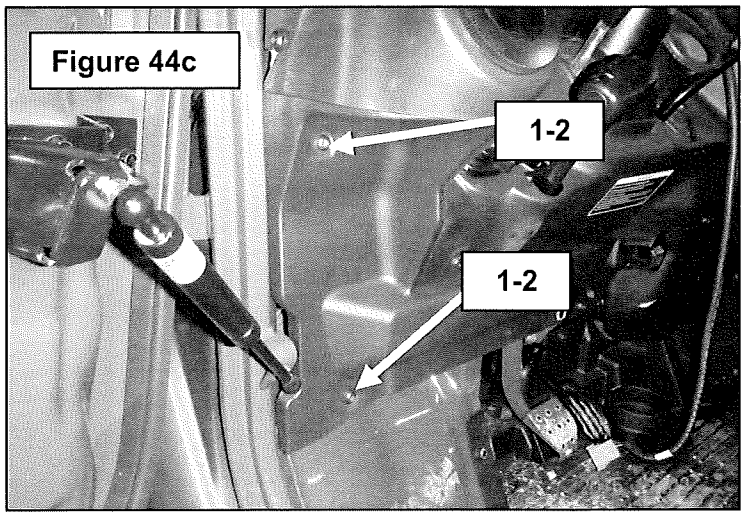
29. **Figure 44a:** Connect the Deutsch connector of the control handle (item 1) to the miniature Deutsch connector of the harness 77700-08944 (item 2). Use the minimum possible of control handle wire to do the connection and leave the excess handle wire on the dashboard. Push the two Deutsch connectors in the hole of the cup holder.



30. **<u>For RTV-X1100C</u>: Figure 44b:** Place the handle control wire (item 1) as shown in the figure. Reinstall the two bolts and flat washers (items 2-3).
31. **<u>For RTV-X1100C</u>: Figure 44b:** Snap cup holder (item 4) into place.
32. **<u>For RTV-X1100C</u>: Figure 44b:** Reinstall the two bolts and flat washers (items 1-2).



33. **<u>For RTV-X1100C</u>: Figure 44c**: Reinstall the two bolts and flat washers (items 1-2).



34. **Figure 45a-45b:** Route the 5/16" terminal section of the power unit harness (item 1) from the screwable Deutsch 12 from the screwable deutsch 12 pin connector shown in Figure 26 along the pump harness that was routed in figures 17 through 20b to the battery.

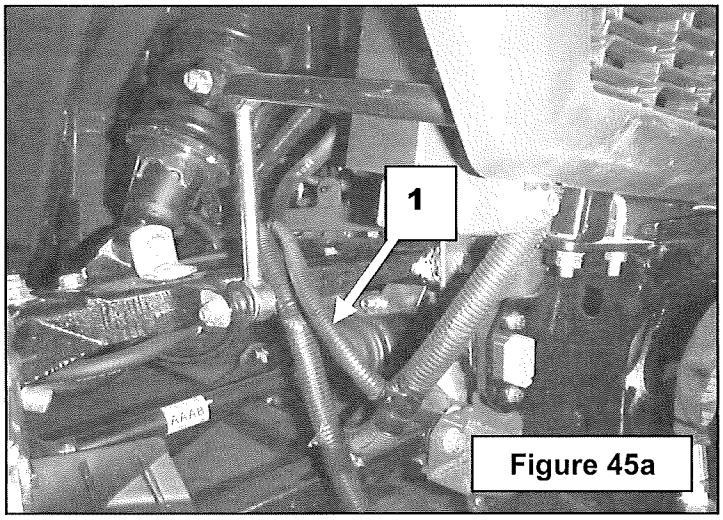


Figure 45a

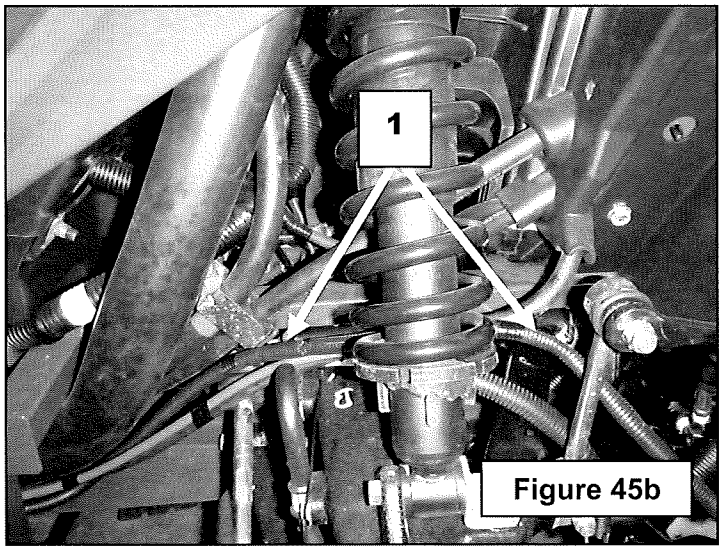


Figure 45b

35. **Figure 45c**: Route the harness section with two 5/16" terminals (item 1) (previously routed behind the right wheel) under the vehicle floor as shown in the figure. Then, go up to the inside of the vehicle cabin.

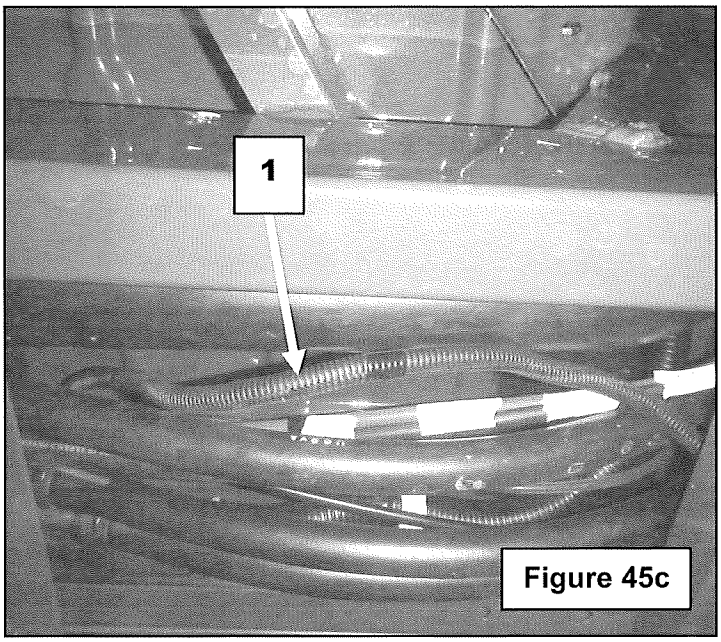


Figure 45c

36. **Figure 46a**: Route the power unit harness (item 1) along the pump harness (item 2) as shown in figures 20a and 20b to battery.

37. **Figure 46a**: Then route the wire (item 1) towards the battery.

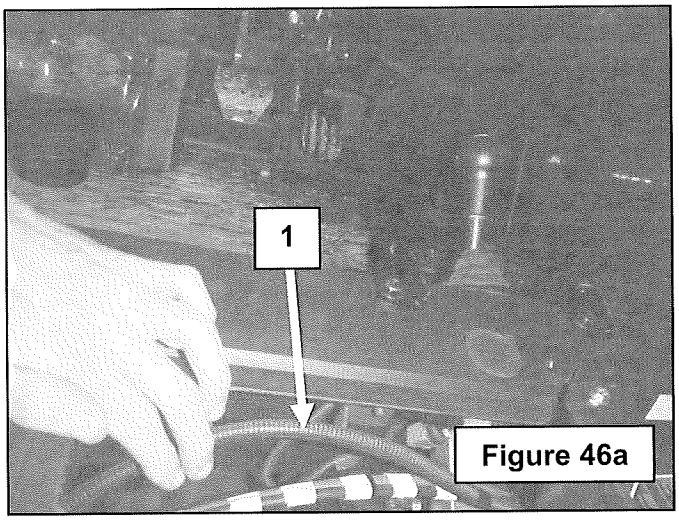


Figure 46a

38. **Figure 46b:** Route the harness section with the ATO fuse holder (item 1) (from the inside cabin) at the location shown in the figure.

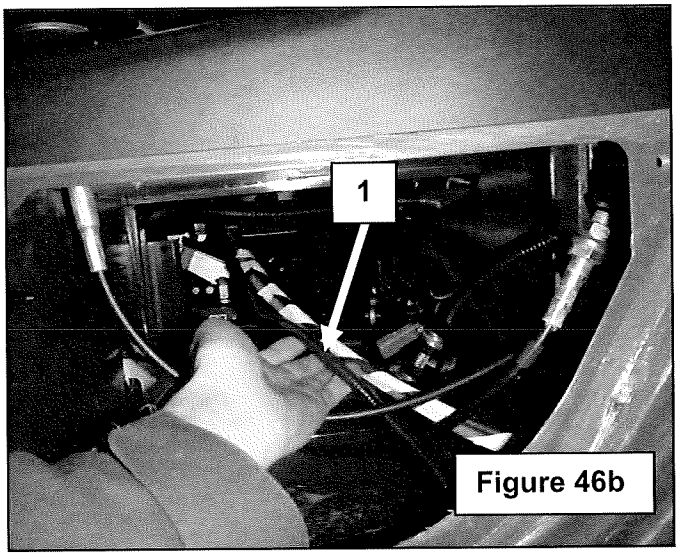


Figure 46b

39. **Figure 46c:** Connect the red wire (item 1) from the ATO fuse to the positive terminal of the battery. Connect the green wire (item 2) to the negative terminal of the battery.

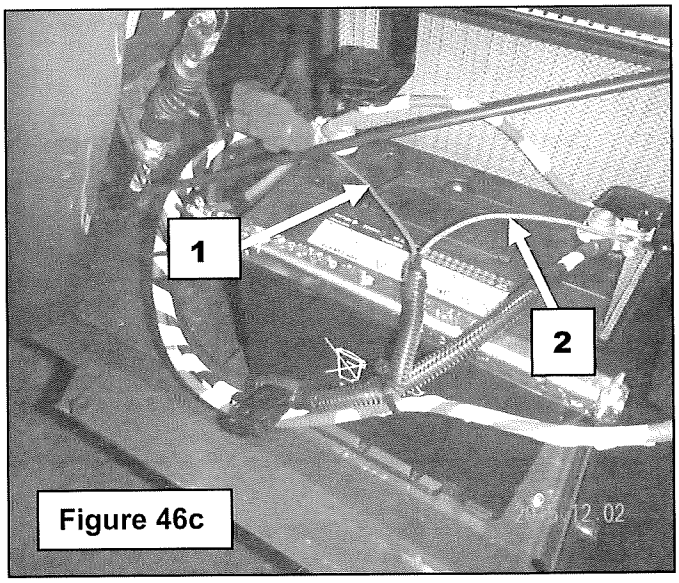
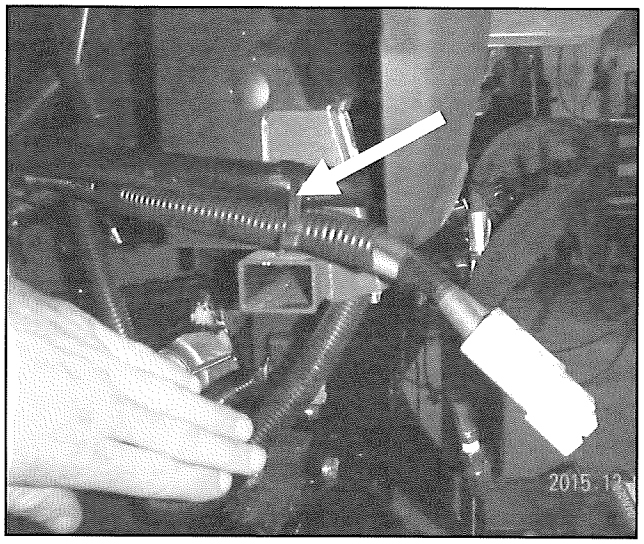
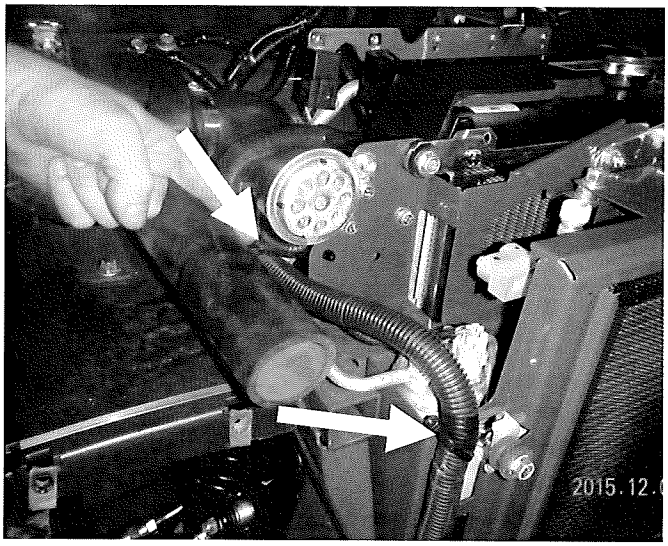


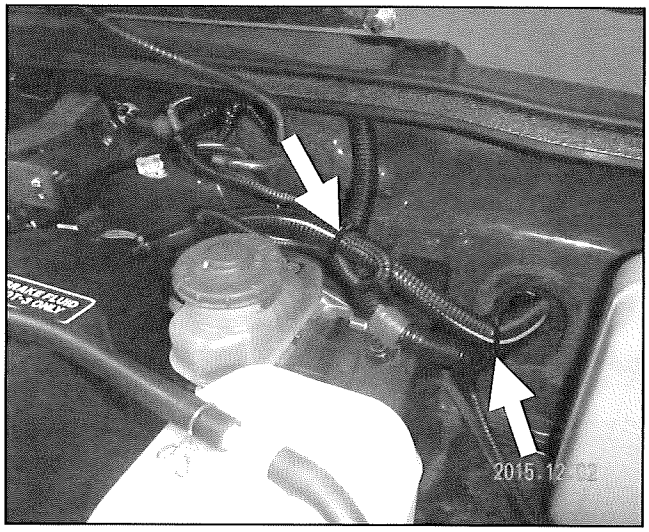
Figure 46c

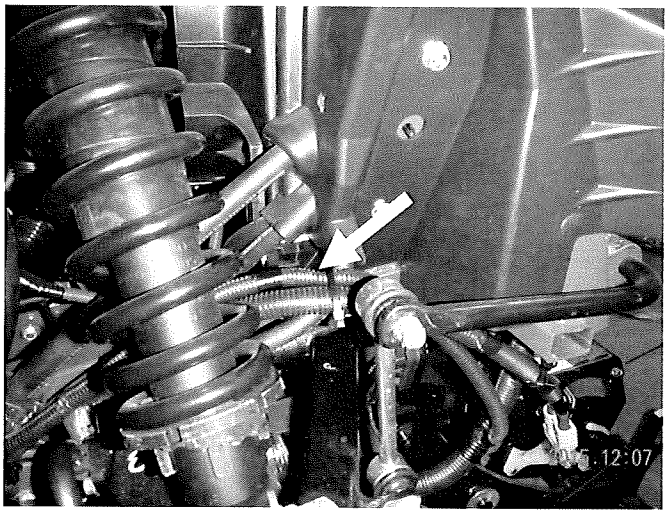
Installation of the Tie Wraps

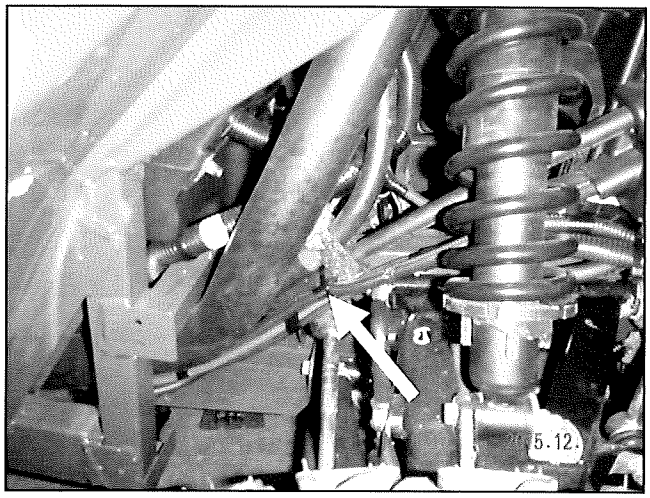
Figures below and next page: Install the tie wraps as shown in the figures.

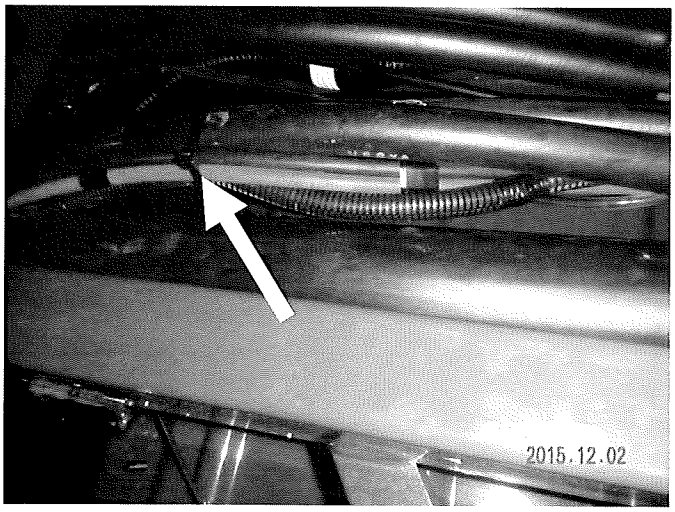


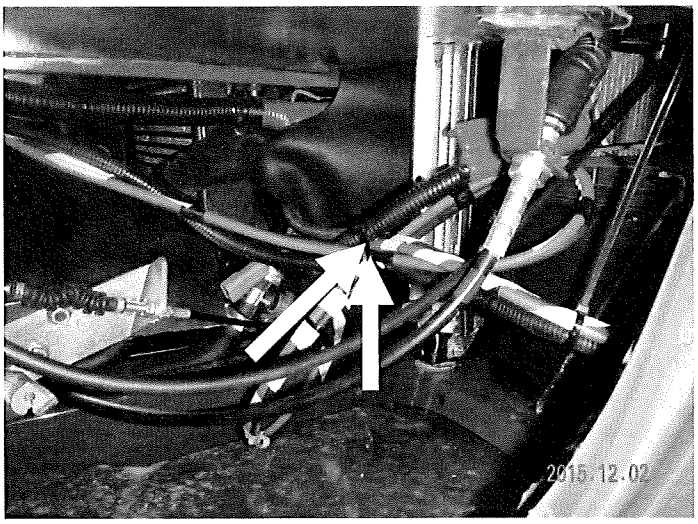


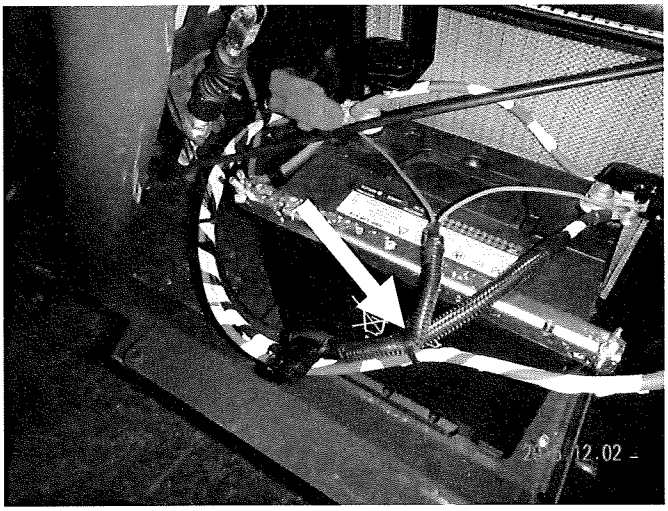




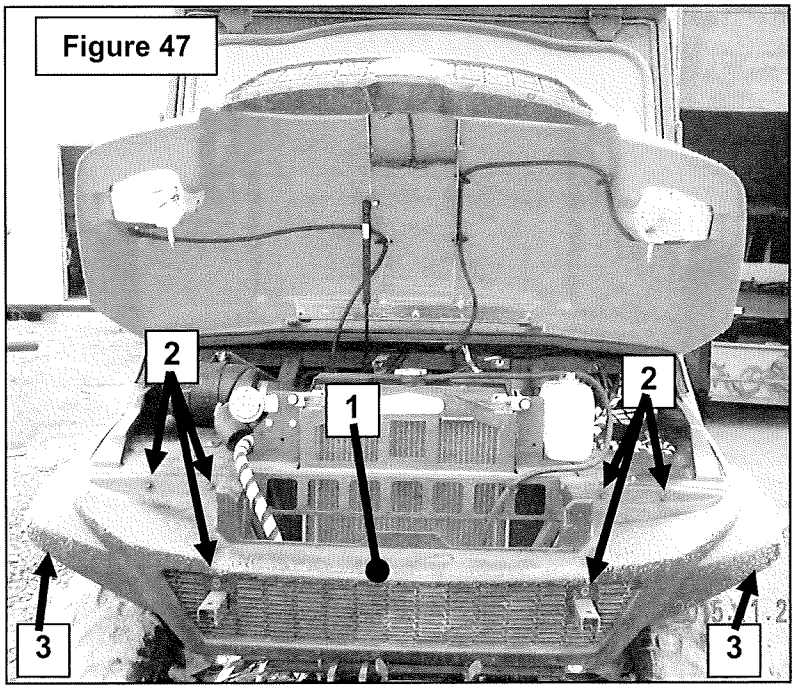








<u>For RTV-X1100C</u>: Figure 47: Reinstall the front plastic protector (item 2) and secure with the six original bolts (item 2) and the two screws (item 3).



ASSEMBLY

Installation of the Power Unit

1. **Figure 48a:** Lift the power unit with the handles (item 1) and hang it on the subframe support (item 2) with the hooks (item 3) in the back of the power unit.

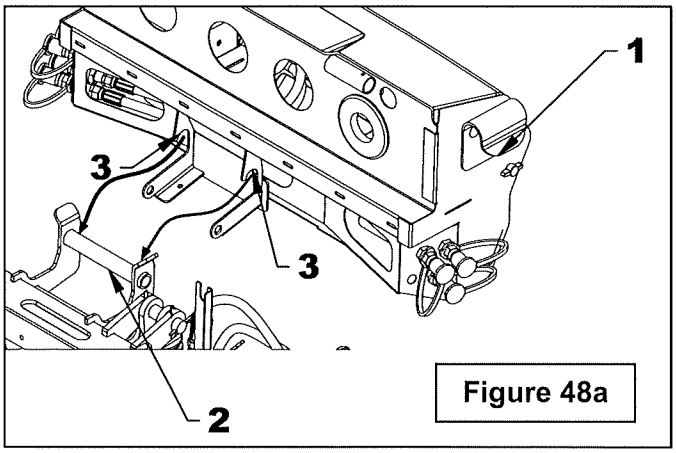


Figure 48a

2. **Figure 48b**: Attach the power unit (item 1) to the subframe (item 2) with the 1/2" x 6" lg. pin (item 3) and the 3mm x 65 mm hairpin (item 4).

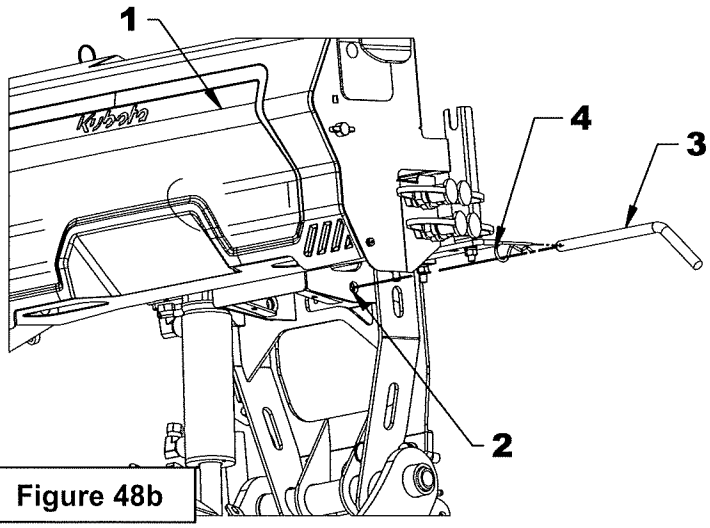


Figure 48b

3. **Figure 49:** Connect the Deutsch connector (item 1) and connect the grey connector (item 2).

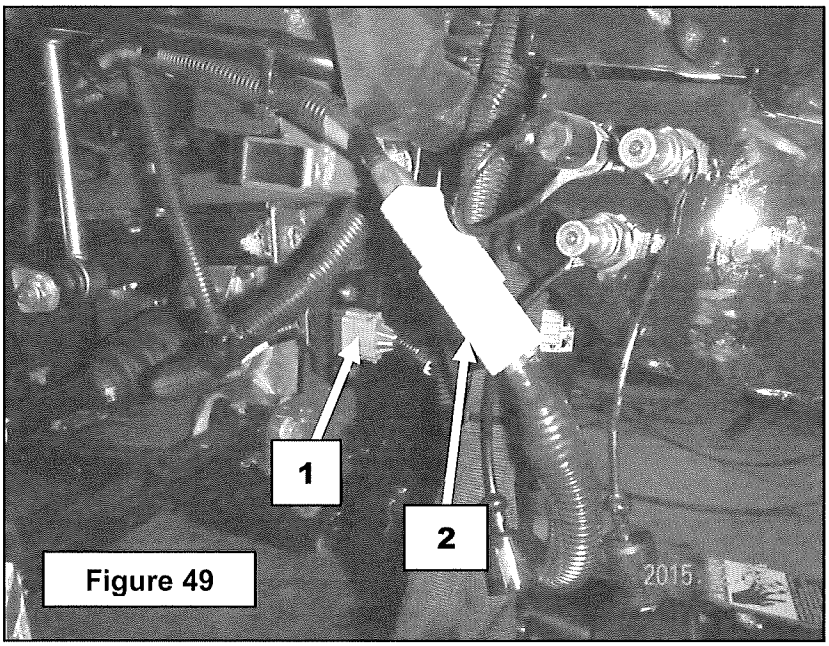


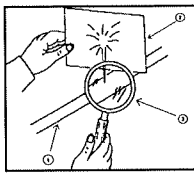
Figure 49

ASSEMBLY

Connection of the hydraulic hoses to the Power unit

WARNING: To avoid serious personal injury or death: Escaping hydraulic/ diesel fluid under pressure can penetrate the skin causing serious injury.

- **Do not use your hands to check for leaks. Use a piece of cardboard or paper to search for leaks.**



1. Hydraulic hose
2. Cardboard
3. Magnifying glass

- **Stop engine and place in float mode with hand controller (see Function Table on page 42) before connecting or disconnecting lines.**
- **Torque all connections before starting engine or pressurizing lines.**

If any fluid is injected into the skin, obtain medical attention immediately or gangrene may result.

Torque all fittings according to the ***Torque Specification Table*** enclosed at the end of the manual.

1. **Figure 50a:** Connect the 24" hose female quick coupler with the blue identification ring (item 2) of the base end cylinder on the power unit male quick coupler with the blue identification ring (item 1). Attach the hose together with a tie wrap (item 5).
2. **Figure 50a:** Connect the 28" hose female quick coupler with the red identification ring (item 3) of the rod end cylinder on the power unit male quick coupler with the red identification ring (item 4). Torque the swivel of the 90° elbow of both hoses.

   NOTE: Make sure that the hydraulic hoses doesn't interfere with the wheel or the suspension arms when the wheels is completely turned.

3. **Figure 50b:** Install a black plastic guard for hose (item 1) by covering the metal end of the hose with the blue identification ring. Attach with a nylon tie wrap (item 2)

NOTE: If the hoses do not point as in the figure, loosen the swivel part of the 90° elbow and reposition the hoses as in the figure. Then torque the swivel part of the 90° elbow.

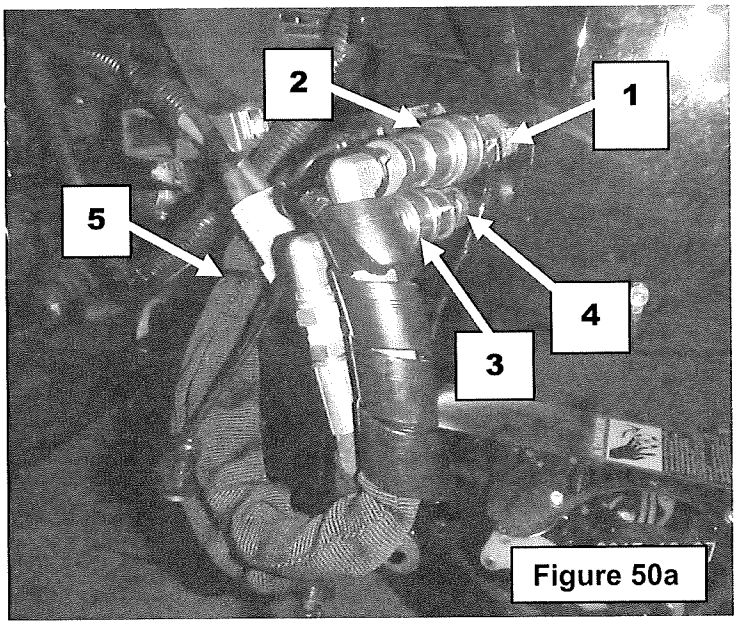


Figure 50a

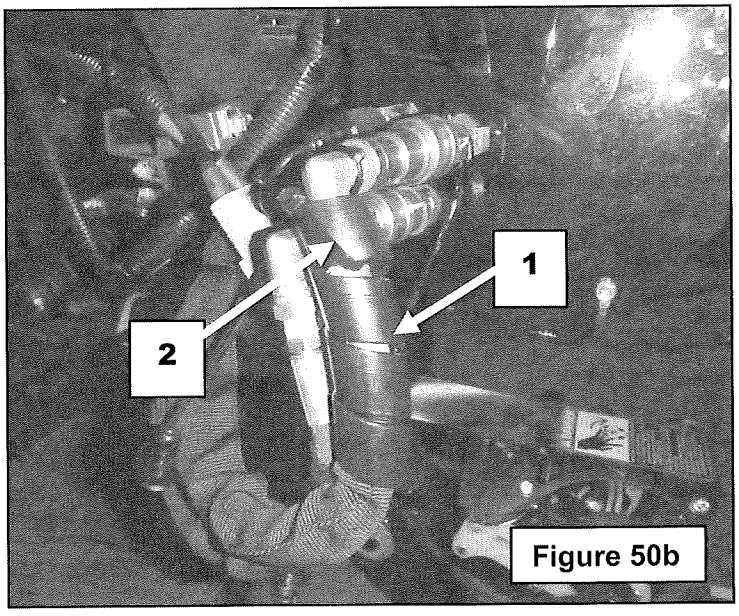


Figure 50b

Oil Filling of the Power Unit

1. **Figure 51:** Remove the two "T" plastic thumb screws (item 1). Lower the plastic guard (item 2). Remove the allen setscrew (item 3) and the plastic plug (item 4).
2. Fill up completely the plastic tank with automatic transmission oil **DEXRON-III or MERCON.** The initial fill should require approximately 3 liters then an adjustment might be required after the initial hook-up with an implement.
3. **Figure 51:** Reinstall the allen setscrew (item 3) and the plastic plug (item 4). Raise the plastic guard (item 2) and reinstall the two "T" plastic thumb screws (item 1).

IMPORTANT: Add oil after the installation of each new implement to replenish oil used to fill the implements's hydraulic components.

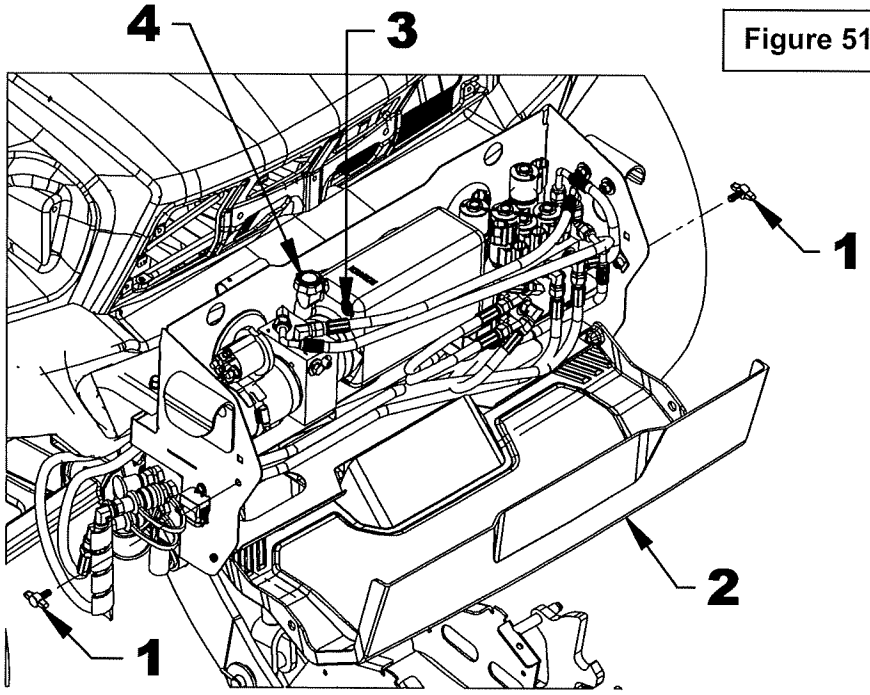


Figure 51

Removing the 4-point Hitch

1. Stop engine and place in float mode with hand controller (see **Function Table** on page 42) before connecting or disconnecting lines.
2. **Figure 52a:** Disconnect the electrical power wire (item 2) and the Deutsch 12 cavity connector (item 1).
3. **Figure 52b:** Remove the 12 cavity connector (item 1) installed on the cap (item 2).
4. **Figure 52c:** Connect the 12 cavity connector (item 1) to the 12 cavity receptacle (item 2) already installed on the hitch to protect against dust. Install also the red cap (item 3) on the 12V power wire.
5. **Figure 52d:** Disconnect the two cylinder hoses (items 1-2) from the power unit. Install the dust plugs on the male and female quick couplers.

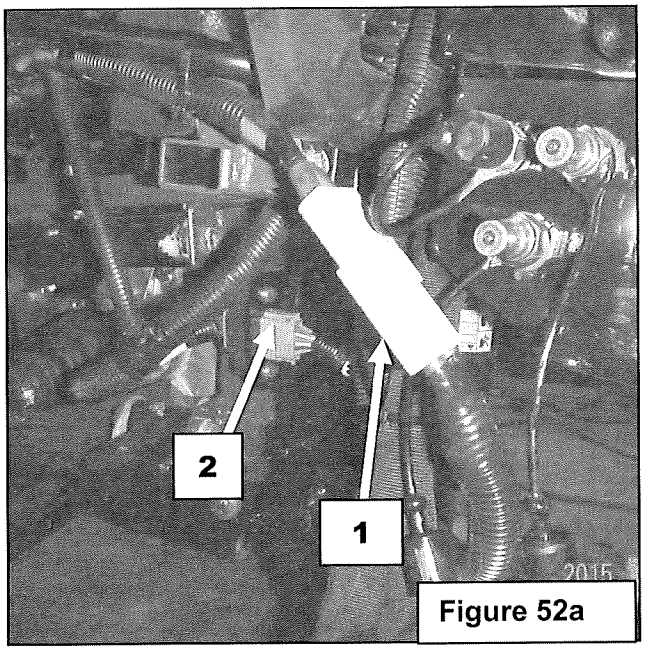


Figure 52a

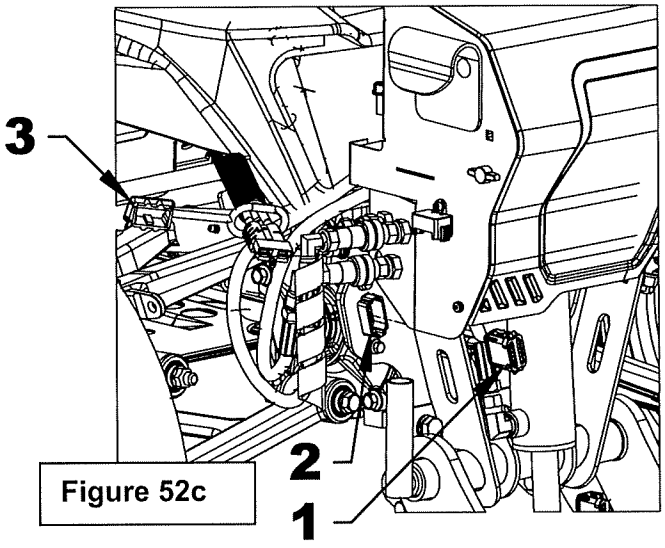


Figure 52c

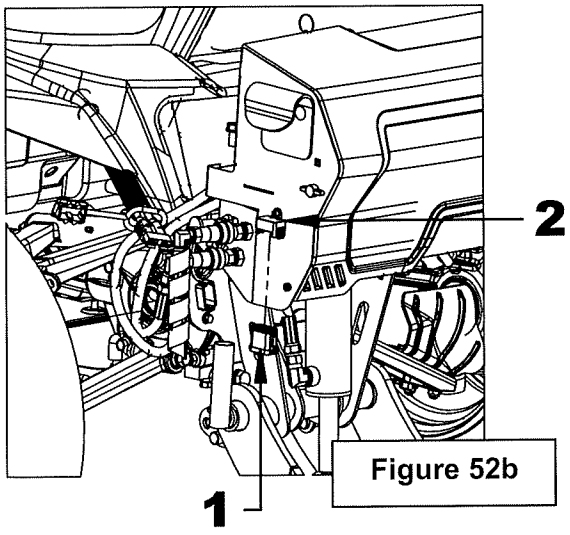


Figure 52b

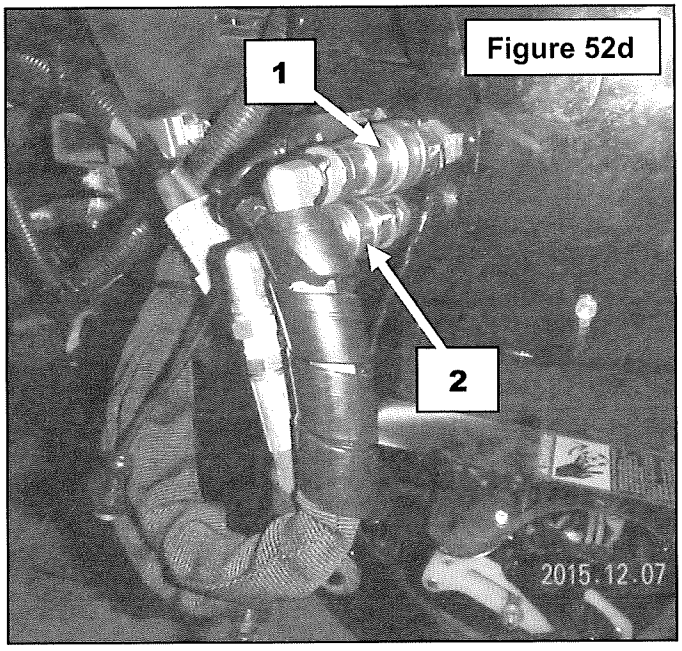


Figure 52d

6. **Figure 52e:** Remove the 3mm x 65mm hairpin (item 1) and the 3/4" x 3" pin lg (item 2). Then, remove the L pin (item 3) by taking out the 5/16 x 1.8" lg quick-release shoulder pin (item 4). Finaly remove the 4-point hitch (item 5).

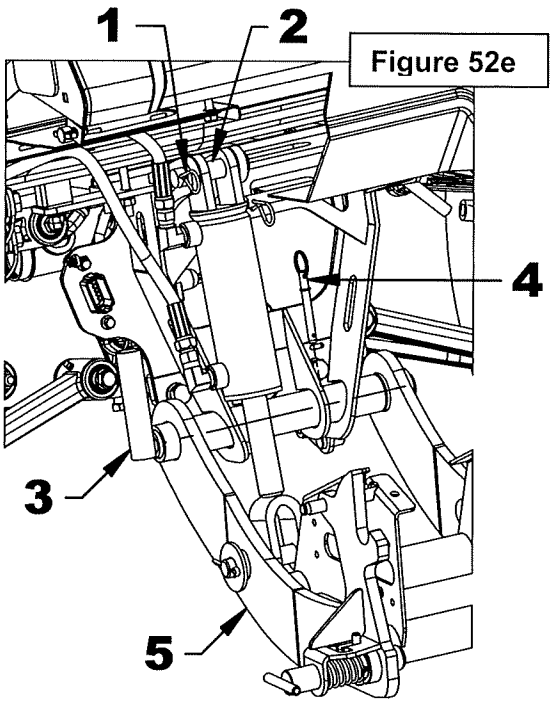


Figure 52e

7. **Figure 52f:** Remove the hair pin (item 2) and then remove the bent pin (item 1).

8. **Figure 52g:** Lift and pull forward the power unit with the handles (item 1) and unhook from the subframe support (item 2).

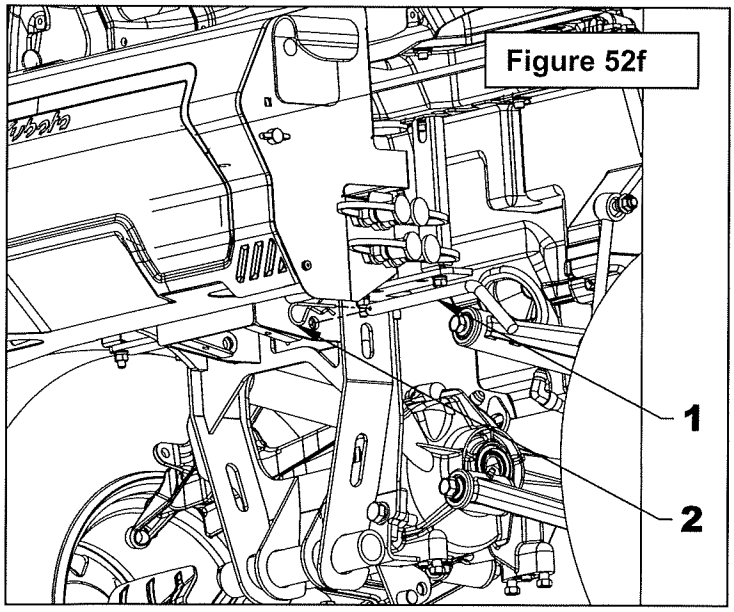


Figure 52f

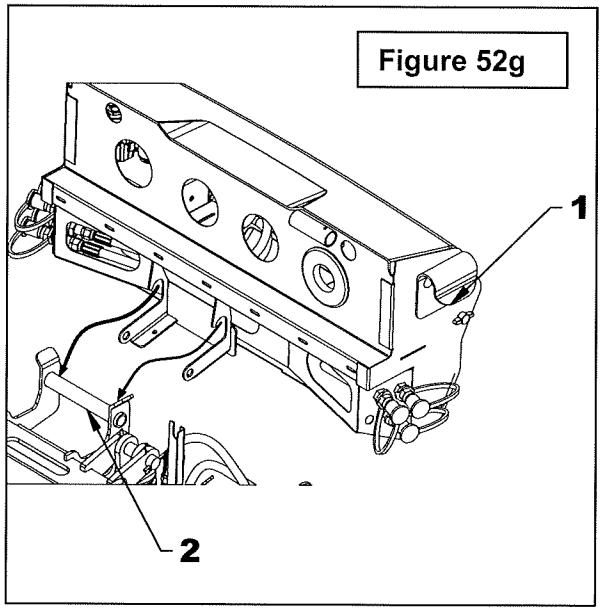


Figure 52g

ASSEMBLY

Connection of the Implement to the Vehicle Subframe

WARNING: To avoid serious personal injury or death: Park the vehicle on level ground, place the transmission in neutral, set the parking brake, place all control levers in neutral, shut off the engine, remove the ignition key and allow the rotating parts to stop BEFORE removing the subframefrom the vehicle.

IMPORTANT: Position the T pins, and the engagement lever of the mechanical drive if applicable, of the subframe according to the procedure in the Implement Operator Manual, BEFORE making the connection to the subframe.

Alignment Mirror Assembly

1. **Figure 53a:** Install the positioning arm (item 1) in the alignment mirror holder pin (item 2).
2. **Figure 53a:** Attach the alignment mirror support (item 3) to the other end positioning arm (item 1).
3. **Figure 53a:** Insert the threaded rod (item 4) of the alignment mirror of the V4358 kit, in the alignment mirror support (item 3). Secure with two flat washers (item 5), the lockwasher (item 6) and the nut (item 7) supplied with the V4358 alignment mirror kit.

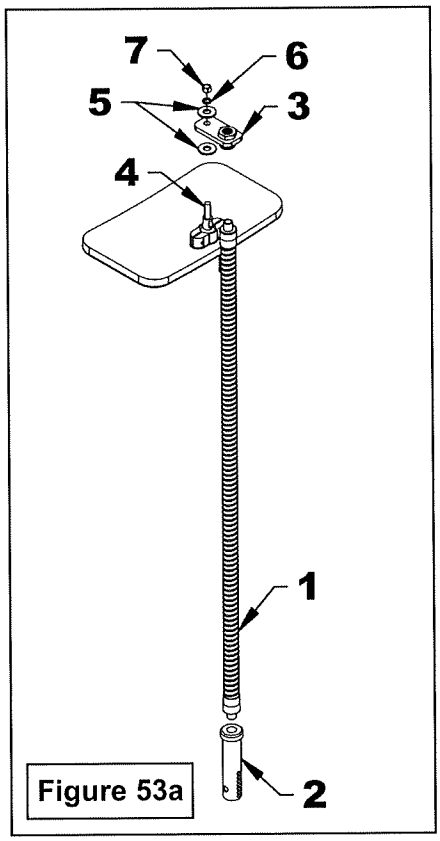


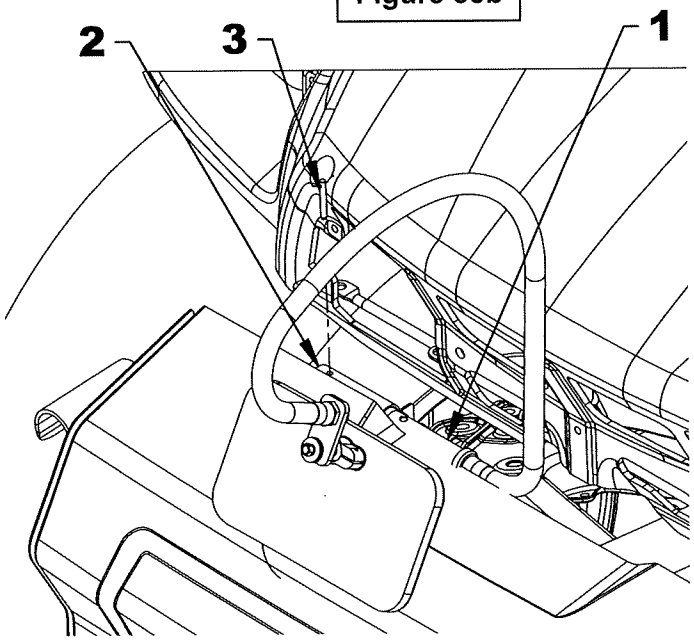
Figure 53a

Hitch Positionning using the Alignment mirror

IMPORTANT: Check and remove any debris and dirt that have accumulated on the female coupling shaft and on the 4 point hitch.

1. **Figure 53b:** Insert the pin of the alignment mirror assembly (item 1) in the bushing of the hydraulic unit (item 2). Secure with the 3/16" x 1" lg quick-release shoulder pin (item 3).

Figure 53b



2. **Figures 54a:** From the operator's seat look in the alignment mirror to verify if you can see the two upper hooks of the hitch. If you can't see these hooks in the alignment mirror, adjust the alignment mirror until you can see these hooks.
3. Start the vehicle, remove the parking brake and drive forward slowly lining up the RTV hitch perpendicular with the center of the hitch and to the implement hitch. Get as close as possible but DO NOT connect the implement.
4. **Figures 54b: LOWER** the 4-point hitch (item 1) until the vehicle starts to raise, then activate the **FLOAT** mode (see the ***"Handle Control Function"*** Table on page 42).
5. **Figures 54-54a:** Slightly **RAISE** the hitch. Then move slowly looking in the alignment mirror to align the yellow square connection mark decals of the hitches to finally insert the hooks of the vehicle hitch (item 1) on the pins of the equipment hitch (item 2).
6. If only one side of the equipment's pin is touching the back of the hook, turn the wheel toward the side that is touching, drive forward and the other side's pin should touch the back of the hook. **RAISE** the 4-point hitch to connect.
7. **Figures 54c:** Reposition the two T pins (item 1, right side view), and the engagement lever of the mechanical drive if applicable, of the subframe according to the procedure in the Implement Operator Manual. **Make sure the pins are completely inserted.**
8. Remove the alignment mirror and store it under the driver seat.

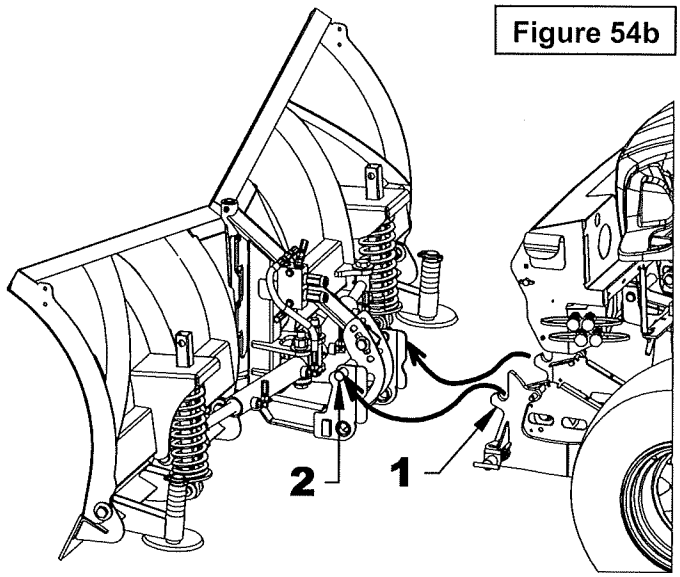


Figure 54b

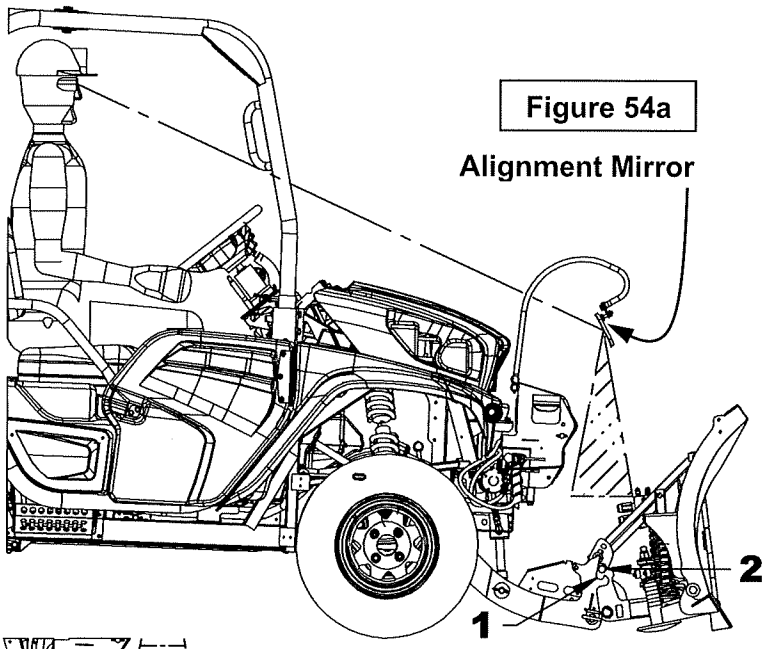
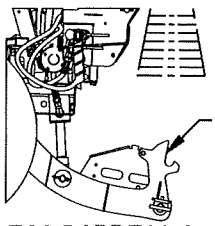


Figure 54a



Pin of implement lined up touching the back of the hook.

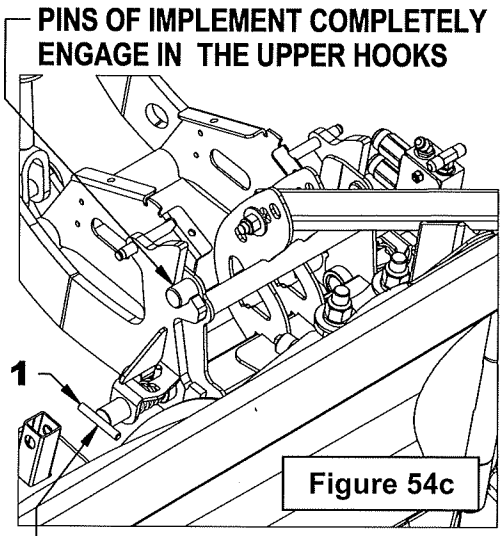


Figure 54c

OPERATION

GENERAL PREPARATION

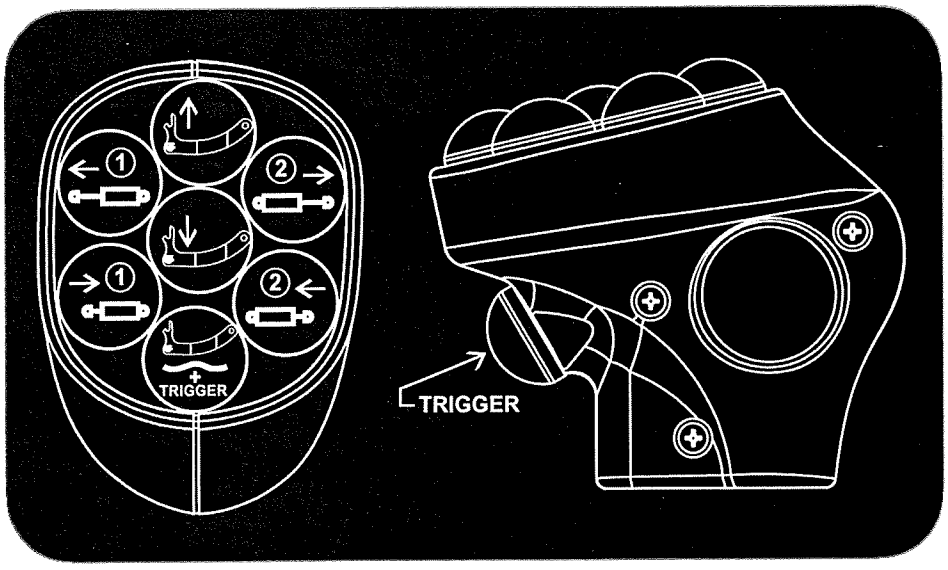
1. Make sure the hydraulic control hoses are properly connected.
2. Connect the hoses of the quick hitch making sure to match the identification rings.
3. Connect the hoses of the equipment to be used making sure to match the identification rings.

WARNING: To avoid serious injuries or death:

- **Do not allow bystanders near working area.**
- **Before cleaning, adjusting or repairing the hydraulic control: bring the vehicle to a complete stop, wait for all movement to stop, apply parking brake, lower the equipment to the ground, shut off the engine and remove the ignition key.**
- **The oil supply and return hoses of the hydraulic control must be correctly connected to the hydraulic block before starting the engine (see figure 46). Starting the vehicle's engine with the hoses not connected could seriously damage the engine.**
- **This hydraulic control kit was designed to be used on Kubota approved equipment only.**

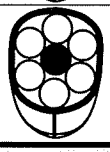
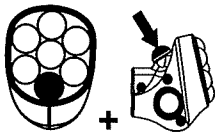
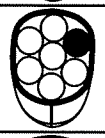
ATTENTION

Always operate the hydraulic control from the driver's seat.

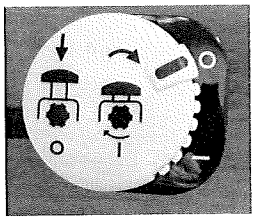


OPERATION

Control Handle Functions

Fonction	Button	Description
V5293B - 4 Point Hich - control		
RAISE		Press the upper middle button to raise the 4 point hitch and disengage the "FLOAT" mode.
LOWER		Press the center middle button to lower the 4 point hitch and disengage the "FLOAT" mode.
FLOAT MODE - Activation		
FLOAT		Press the lower middle button and the rear button simultaneously to engage the "FLOAT" mode. The Blue LED light is ON
Note: The engine must be running or the key positioned to "KEY-ON" in order to be able to activate the float function.		
V5294A - Straight - control		
ROTATION TO THE RIGHT		Press the upper left button to turn the straight blade to the right.
ROTATION TO THE LEFT		Press the lower left button to turn the straight blade to the left.
V5295A - V Blade - control		
EXTENSION OF THE LEFT WING		Press the upper left button to extend forward the left wing (the wing moves away from the vehicle).
RETRACTION OF THE LEFT WING		Press the lower left button to retract the left wing (the wing moves closer to the vehicle).
EXTENSION OF THE RIGHT WING		Press the upper right button to extend forward the right wing (the wing moves away from the vehicle).
RETRACTION OF THE RIGHT WING		Press the lower right button to retract the right wing (the wing moves closer to the vehicle).

OPERATION

Function	Button	Description
V5266 - Rotary Broom – control – only for RTV-X1100C and RTV-X1120D		
IMPORTANT!		**DO NOT press the center button to lower the broom, so as not to unnecessarily increase the load on the wheels of the broom.**
ROTATION TO THE LEFT		Press the upper left button to rotate the implement to the left.
ROTATION TO THE RIGHT		Press the lower left button to rotate the implement to the right.
WARNING	**Engage the broom only when the engine is running at low RPM, and the broom brush does not touch the ground. Once the brush is engaged, lower the brush to ground level with the floating function and gradually increase the engine revolution.**	
To increase the speed of rotation of the broom pull on the handle throttle control. To decrease the speed of rotation of the broom push on the handle throttle control.		
MECHANICAL ACTIVATION - Rotary Broom & Snowblower		
REVOLUTION		The activation of the mechanical revolution of the broom & snowblower is made from the switch to the right of the operator's steering wheel. • To **activate** the revolution, press and rotate the switch clockwise. • To **deactivate** the revolution, rotate the switch counter clockwise or simply press on the switch.
V5296 - Snowblower – control – only for RTV-X1100C and RTV-X1120D		
MOVING DOWN THE CHUTE DEFLECTOR		Press the upper left button to extend the chute cylinder (the chute deflector move down forward).
MOVING UP THE CHUTE DEFLECTOR		Press the lower left button to retract the chute cylinder (the chute deflector move up backward).
LEFT ROTATION OF THE CHUTE		Press the upper right button to rotate the chute to the left.
RIGHT ROTATION OF THE CHUTE		Press the lower right button to rotate the chute to the right.

MAINTENANCE

ALWAYS USE GENUINE PARTS WHEN REPLACEMENT PARTS ARE REQUIRED

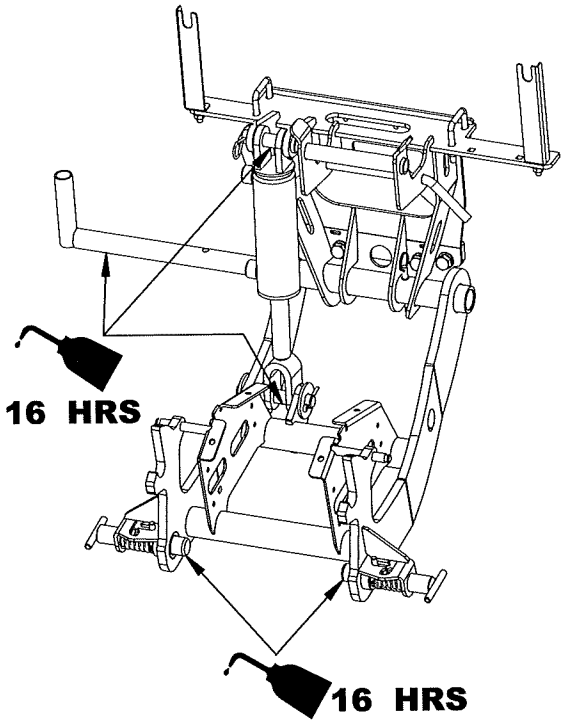
1. Keep the vehicle and implement properly maintained.
2. Park the vehicle/implement on level ground, place the transmission in neutral, set the parking brake, lower the equipment to the ground, place all control levers in neutral, shut off the engine and remove the ignition key BEFORE making any adjustments.
3. To avoid injury, remove the key from the ignition. Do not adjust, unblock the driving system, or service the blade with the vehicle engine running. Make sure rotating components have completely stopped before leaving the operator's seat.
4. Keep the vehicle/implement clean. Snow, dirt or ice build-up can lead to malfunction or personal injury from thawing and refreezing in garage.
5. Always wear eye protection when cleaning or servicing the implement or quick hitch.
6. DO NOT service the vehicle while the engine is running or hot, or if the unit is in motion. Always lower implement to the ground. If necessary, to service implement in raised position, securely support with stands or suitable blocking before working underneath. DO NOT rely on hydraulically supported devices for your safety. They can settle suddenly, leak down, or be accidentally lowered.
7. DO NOT attempt to service machine, clear obstructions or unclog the equipment with the engine running. Always shut off engine and allow all motion to cease.
8. The manufacturer will not claim responsibility for fitment of unapproved parts and/or accessories and any damages as a result of their use.
9. Make sure all shields and guards are securely in place following all service, cleaning, or repair work.
10. DO NOT modify or alter this equipment or any of its components or operating functions. If you have questions concerning modifications, consult with your dealer.
11. DO NOT operate a unit that is defective or has missing parts. Make sure that all recommended maintenance procedures are completed before operating the unit.
12. Check all controls regularly and adjust where necessary. Make sure that the brakes are evenly adjusted.
13. Periodically check all nuts and bolts for tightness, especially wheel hub and rim nuts.
14. Escaping hydraulic/diesel fluid under pressure can penetrate the skin causing serious injury. DO NOT use your hands to check for leaks. Use a piece of cardboard or paper to search for leaks. If you are injured by escaping high pressure fluid, see a medical doctor at once.
15. Stop engine and relieve pressure before connecting or disconnecting hydraulic lines. Tighten all connections before starting engine or pressurizing lines.

MAINTENANCE

LUBRICATION

Pivot Bushings

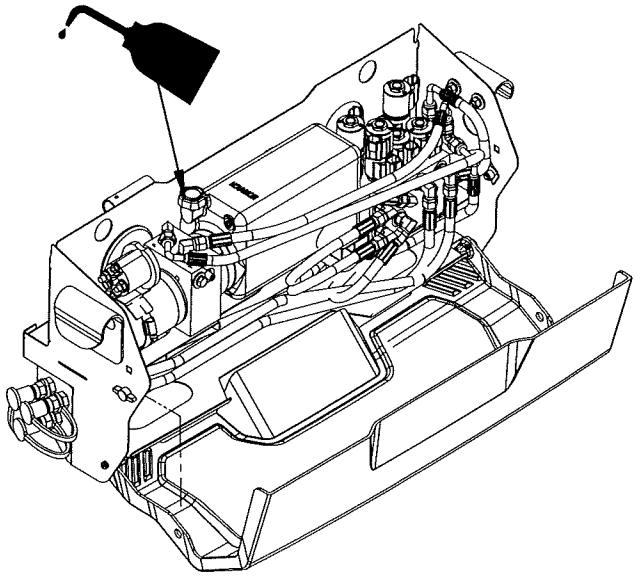
Lubricate with chain saw oil, heavy grade or with a viscosity grade SAE minimal of 20W40.



Power Unit

Lubricate with automatic transmission oil DEXRON-III or MERCON.

Once a year



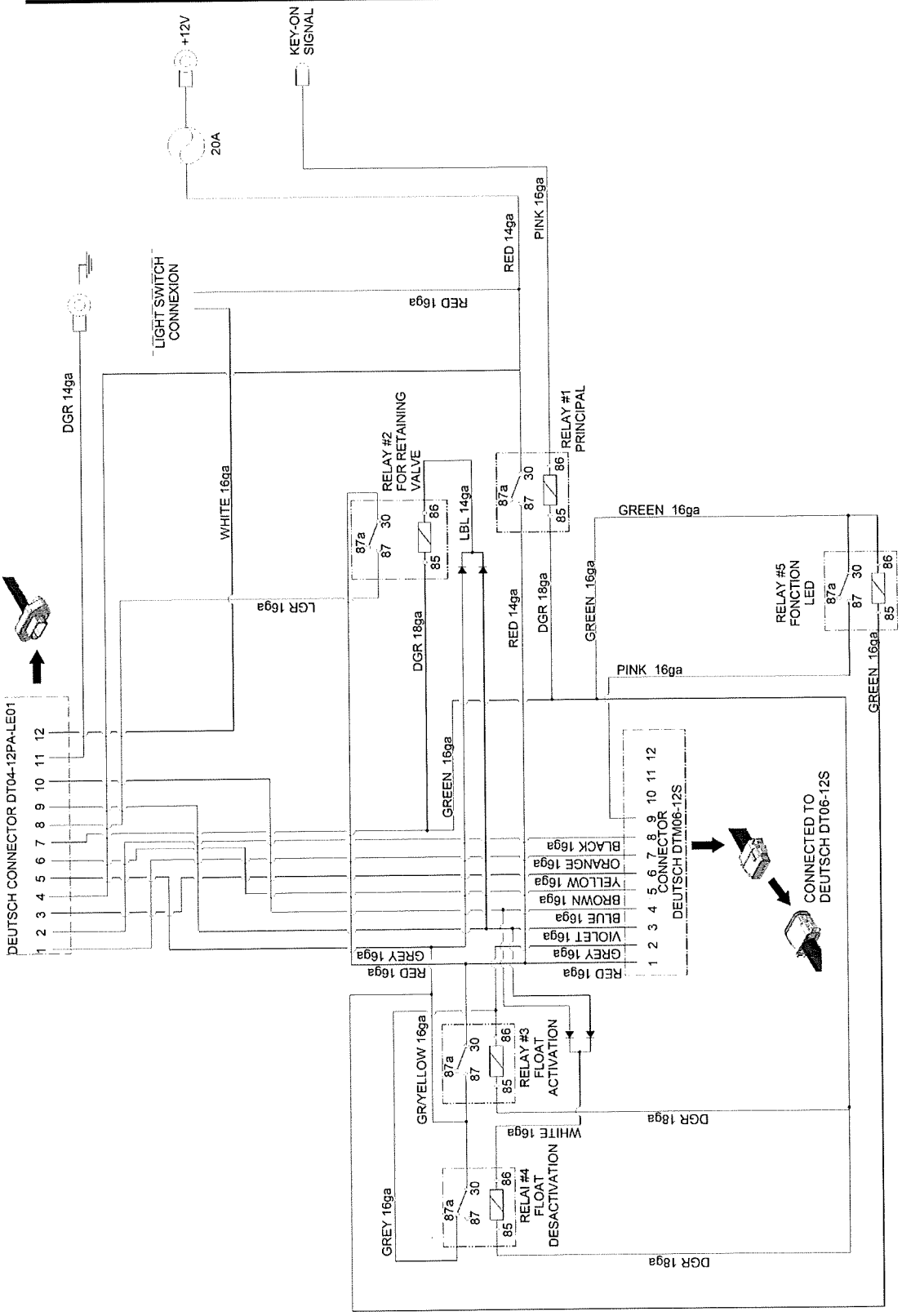
STORAGE

Before storing the subframe or implement, certain precautions should be taken to protect it from deterioration.

1. Clean the subframe and implement thoroughly.
2. Make all the necessary repairs.
3. Replace all safety signs that are damaged, lost, or otherwise become illegible. If a part to be replaced has a sign on it, obtain a new safety sign from your dealer and install it in the same place as on the removed part.
4. Repaint all parts from which paint has worn or peeled.
5. Lubricate the subframe and implement as instructed under **"Lubrication"** section.
6. When the subframe and implement are dry, oil all moving parts. Apply oil liberally to all surfaces to protect against rust.
7. Store in a dry place.
8. If equipment has hydraulic components, install protective plugs and caps on the quick couplers.

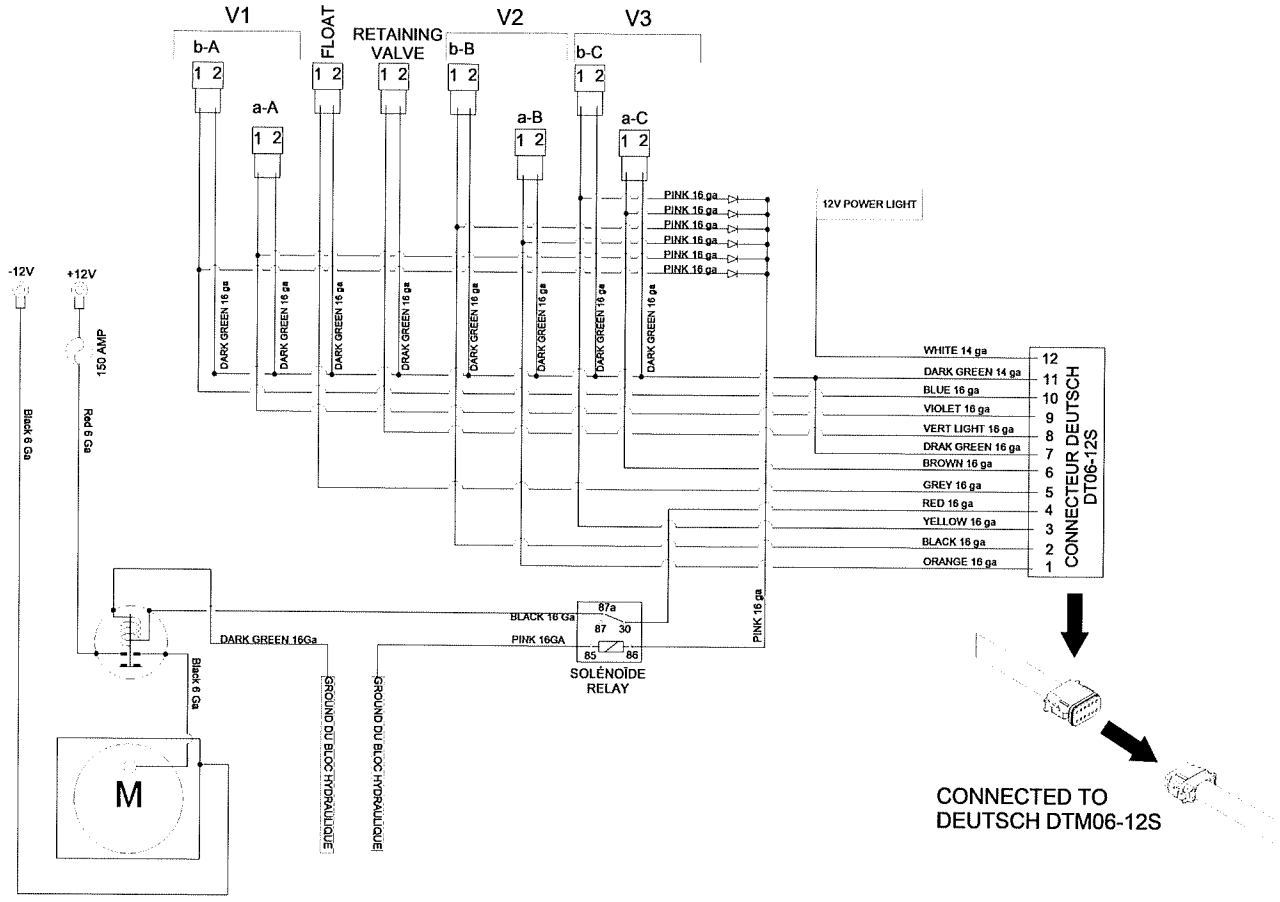
ELECTRIC DIAGRAM

ELECTRICAL HARNESS INSTALLED ON THE VEHICLE

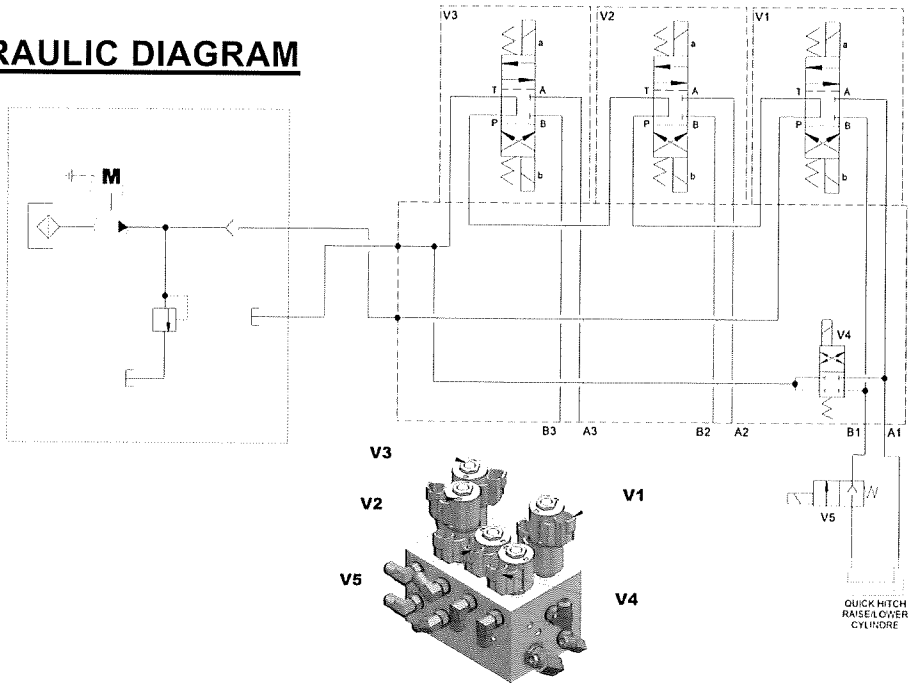


ELECTRIC & HYDRAULIC DIAGRAMS

ELECTRICAL HARNESS FOR THE POWER UNIT

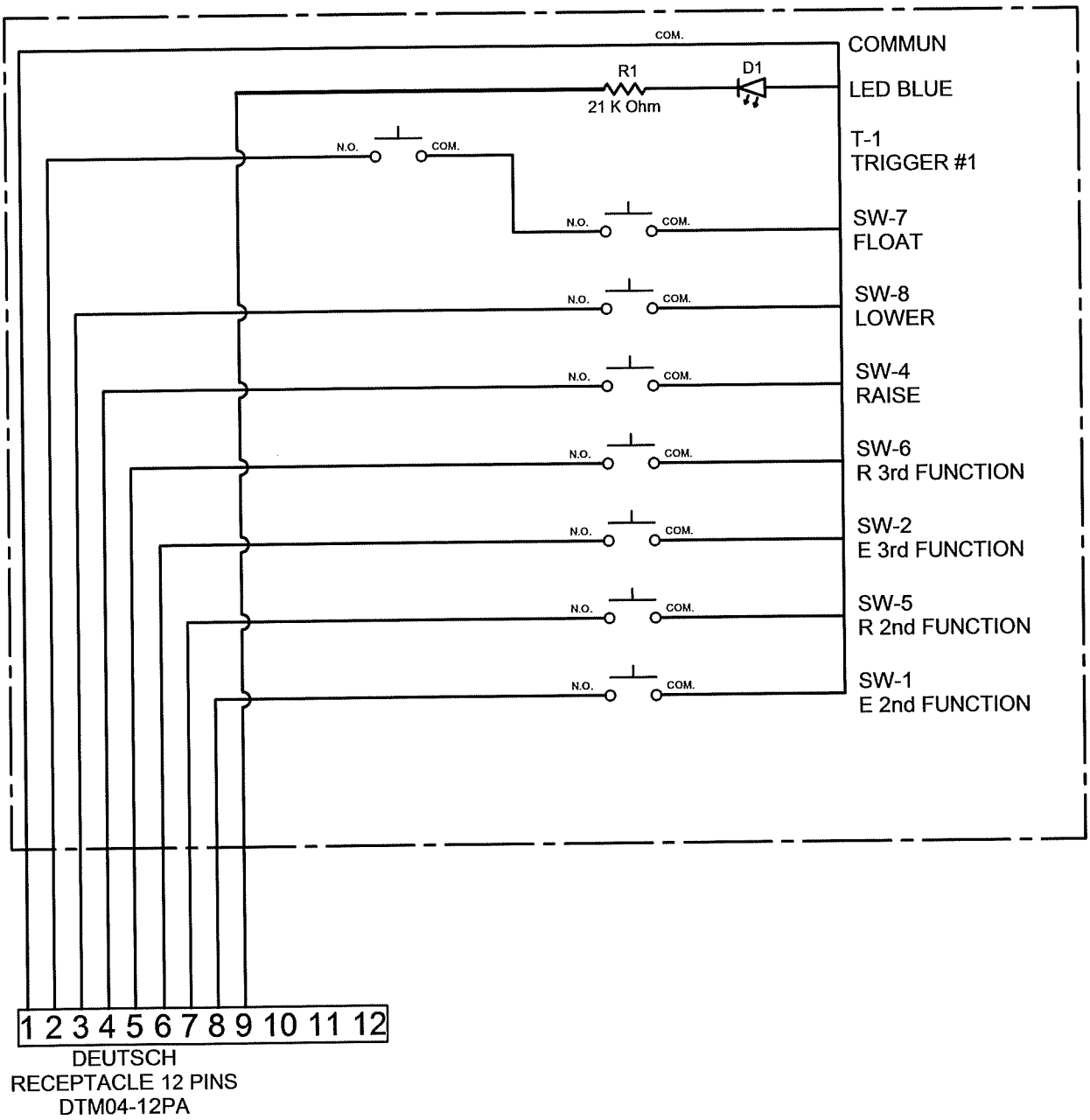


HYDRAULIC DIAGRAM



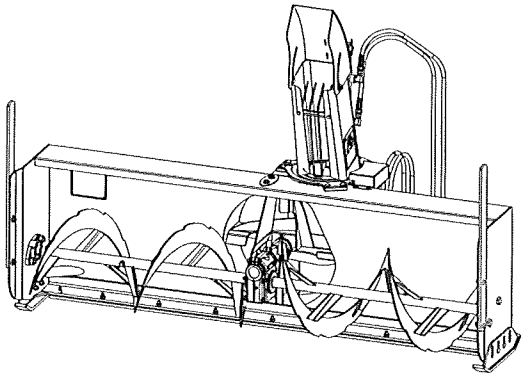
ELECTRIC DIAGRAM

CONTROL HANDLE



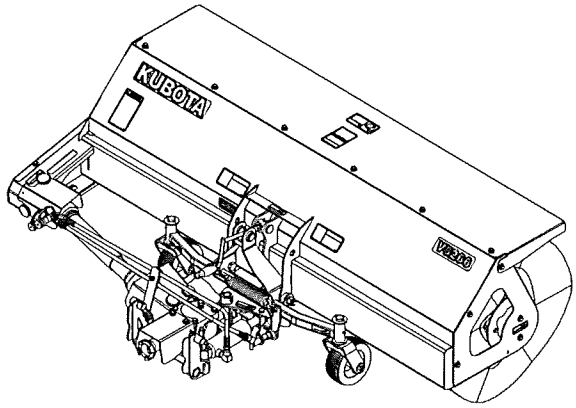
AVAILABLE EQUIPMENT

SNOWBLOWER



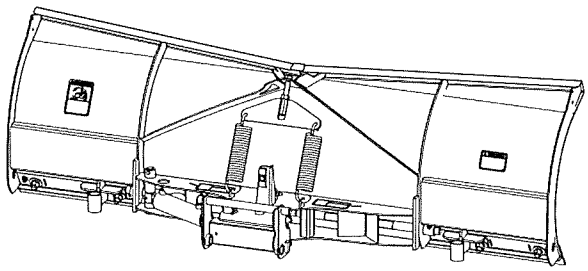
Only for RTV-X1100C and RTV-X1120D

ROTARY BROOM

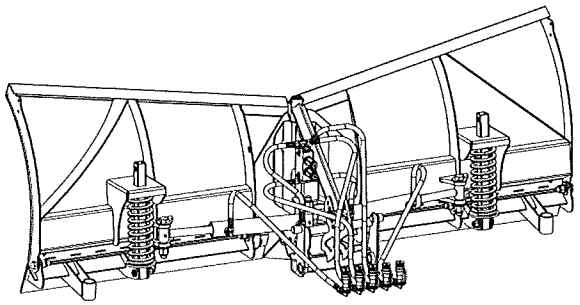


Only for RTV-X1100C and RTV-X1120D

STRAIGHT BLADE



"V" BLADE



TORQUE SPECIFICATION TABLE

GENERAL SPECIFICATION TABLE

USE THE FOLLOWING TORQUES WHEN SPECIAL TORQUES ARE NOT GIVEN

Note:These values apply to fasteners as received from supplier dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly sidulphide greases or other extreme pressure lubricants are used. These values apply to dry conditions; under lubricated conditions reduce by 25% the torques in this table.

BOLT HEAD IDENTIFICATION

INCHES Bolt Size	Grade 2		Grade 5		Grade 8	
in-tpi [1]	N-m [2]	lbs-ft [3]	N-m	lbs-ft	N-m	lbs-ft
1/4" – 20NC	7.4	5.6	11	8	16	12
1/4" – 28NF	8.5	6	13	10	18	14
5/16" – 18NC	15	11	24	17	33	25
5/16" – 24NF	17	13	26	19	37	27
3/8" – 16NC	27	20	42	31	59	44
3/8" – 24NF	31	22	47	35	67	49
7/16" – 14NC	43	32	67	49	95	70
7/16" – 20NF	49	36	75	55	105	78
1/2" – 13NC	66	49	105	76	145	105
1/2" – 20NF	75	55	115	85	165	120
9/16" – 12NC	95	70	150	110	210	155
9/16" – 18NF	105	79	165	120	235	170
5/8" – 11NC	130	97	205	150	285	210
5/8" – 18NF	150	110	230	170	325	240
3/4" – 10NC	235	170	360	265	510	375
3/4" – 16NF	260	190	405	295	570	420
7/8" – 9NC	225	165	585	430	820	605
7/8" – 14NF	250	185	640	475	905	670
1" – 8NC	340	250	875	645	1230	910
1" – 12NF	370	275	955	705	1350	995
1 1/8" – 7NC	480	355	1080	795	1750	1290
1 1/8" – 12NF	540	395	1210	890	1960	1440
1 1/4" – 7NC	680	500	1520	1120	2460	1820
1 1/4" – 12NF	750	555	1680	1240	2730	2010
1 3/8" – 6NC	890	655	1990	1470	3230	2380
1 3/8" – 12NF	1010	745	2270	1670	3680	2710
1 1/2" – 6NC	1180	870	2640	1950	4290	3160
1 1/2" – 12NF	1330	980	2970	2190	4820	3560

METRIC Bolt Size	5.8 Class 5.8		8.8 Class 8.8		NP 10.9 Class 10.9	
mm x pitch [4]	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

[1] in-tpi = nominal thread diameter in inches-threads per inch

[2] N-m = newton-meters

[3] lbs-ft= pounds-foot

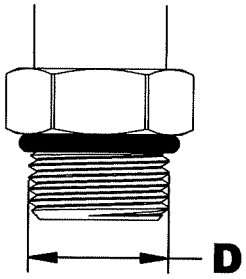
[4] mm x pitch = nominal thread diameter in millimeters x thread Pitch

*Torque tolerance +0%, -15% of torquing values. Unless otherwise specified use torque values listed above

*NOTE: 1 lbs-ft = 12 lbs-in

ADAPTER INSTALLATION PROCESS

ORB (O-RING BOSS) THREAD IDENTIFICATION & TORQUE



D		Identification of adapter	TORQUE	
in	mm		lbs-ft	N-m
-		3/8 ORB	8-9	12-13
0.433	11	7/16 ORB	13-15	18-20
0.496	12.6	1/2 ORB	14-15	19-21
0.559	14.2	9/16 ORB	23-24	32-33
0.740	18.8	3/4 ORB	40-43	55-57
0.870	22.1	7/8 ORB	43-48	59-64
1.055	26.8	1 1/16 ORB	68-75	93-101
1.185	30.1	1 3/16 ORB	83-90	113-122
1.307	33.2	1 5/16 ORB	112-123	152-166
1.618	41.1	1 5/8 ORB	146-161	198-218
1.870	47.5	1 7/8 ORB	154-170	209-230
2.492	63.3	2 1/2 ORB	218-240	296-325

SAE O-rings (O-Ring Boss) are straight thread fittings that seal using an O-ring between the thread and the wrench flats of the fitting. The O-ring seals against the machined seat on the female port.

O-ring fittings can be either adjustable or non-adjustable. Nonadjustable fittings are screwed into a port where no alignment is needed. Adjustable fittings can be oriented in a specific direction.

Fittings with O-rings offer advantages over metal-to-metal fittings. Under or over-tightening any fitting can allow leakage, but all-metal fittings are more susceptible to leakage because they must be tightened to a higher and narrower torque range. This makes it easier to strip threads or crack or distort fitting components, which prevents proper sealing.

NOTE: Do not apply thread sealant (teflon tape) on the ORB threads.

Leaks can also result from vibration, thermal cycling and from loads being supported by the connection (i.e. using the fitting in the connection to support mechanical loads).

IMPORTANT: Use the lowest torque value from the chart when wet torquing.

RECOMMENDED ASSEMBLY ORB (O-RING) NON-ADJUSTABLE

STEP 1: Inspect all components for damage or contamination.

STEP 2: Lubricate O-ring and threads on fitting with your hydraulic system fluid.

STEP 3: Turn fitting into port until finger tight, then torque to the value shown in the following table.

NOTE: Use the lowest torque value from the chart when wet torquing.

RECOMMENDED ASSEMBLY ORB (O-RING) ADJUSTABLE

STEP 1: Inspect all components for damage or contamination.

STEP 2: Lubricate O-ring and threads on fitting with your hydraulic system fluid.

STEP 3: Looking at fitting from the male ORB end, turn manually the nut as far as possible from the O-ring.

STEP 4: Using wrench, turn fitting into port until the washer touches thread nearest wrench pad.

STEP 5: Back off• fitting counterclockwise not exceeding one revolution until it is oriented in the correct position.

STEP 6 : Place wrench on the wrench pad of fitting to prevent fitting from turning, and torque nut to the value shown in the above table.