



# INSTALLATION INSTRUCTIONS PLOW MOUNTING KIT

Part Number: 81656

Application: YAMAHA GRIZZLY 350/350i

**\*Not compatible with 2.5ci or A2000 winches**

Your safety, and the safety of others, is very important. To help you make informed decisions about safety, we have provided installation and operating instructions and other information on labels and in this guide. This information alerts you to potential hazards that could hurt you or others. It is not possible to warn you about all potential hazards associated with this product, you must use your own good judgment.

**CARELESS INSTALLATION AND OPERATION CAN RESULT IN SERIOUS INJURY OR EQUIPMENT DAMAGE. READ AND UNDERSTAND ALL SAFETY PRECAUTIONS AND OPERATING INSTRUCTIONS BEFORE INSTALLING AND OPERATING THIS PRODUCT.**

This guide identifies potential hazards and has important safety messages that help you and others avoid personal injury or death. **WARNING** and **CAUTION** are signal words that identify the level of hazard. These signal words mean:

**▲WARNING** signals a hazard that *could* cause serious injury or death, if you do not follow recommendations. **▲CAUTION** signals a hazard that *may* cause minor to moderate injury, if you do not follow recommendations.

This guide uses **NOTICE** to call attention to important mechanical information, and **Note**: to emphasize general information worthy of special attention.

## ▲ WARNING

### INJURY HAZARD

**Failure to observe these instructions could lead to severe injury or death.**

- Always** Read the Plow Operator's Manual, the Winch Operator's Manual and all warning labels before operating.
- Always** use extreme caution when drilling on any vehicle. Make sure that all fuel lines, brake lines, electrical wires, and other objects are not punctured or damaged when/if drilling on the vehicle. Thoroughly inspect the area to be drilled (on both sides of material) prior to drilling, and relocate any objects that may be damaged. Failure to inspect the area to be drilled may result in vehicle damage, electrical shock, fire or personal injury.
- Always** wear safety glasses when installing this kit. A drilling operation will cause flying metal chips. Flying chips can cause eye injury.
- Always** use extreme caution when cutting and trimming during fitting.
- Always** remove jewelry and wear eye protection.
- Never** lean over battery while making connections.
- Never route electrical cables:**
  - Across any sharp edges.
  - Through or near moving parts.
  - Near parts that become hot.
- Always** insulate and protect all exposed wiring and electrical terminals.
- Always** install terminal boots as directed in installation instructions.
- Always** use appropriate and adequate care in lifting components into place.
- Always** insure components will remain secure during installation and operation.
- Always** tighten all nuts and bolts securely, per the installation instructions.
- Always** operate the vehicle at a walking speed with the blade installed. Never exceed 5 mph (8 km/h), even with blade up.
- Always** plow cautiously, impact with hidden or stationary object may cause the vehicle to stop suddenly or go out of control.
- Never** operate the vehicle on slopes greater than 10 degrees with the plow installed.
- Never** stand or ride on the plow.
- Always** stay clear of moving parts and joints. Always keep others away when operating or adjusting plow.
- Always** perform regular inspections and maintenance on the plow mechanism, fasteners, cable and related hardware.
- Always** replace all worn or damaged parts before operating.
- Never** operate this WARN product with damaged or missing parts.
- Always** drive slowly over bumpy and rough terrain. Driving at speeds that cause the plow to bounce while in the up position can cause the winch to back-drive, causing the plow to work its way down. This may result in the plow impacting a stationary object and cause damage to the vehicle and operator injury or death.
- Always** drive at speeds such that the plow does not bounce and be aware of the plow position while driving at all times.
- Always** be aware that the purpose of the j-bolt is to break the connection between the plow and the winch, to prevent serious damage to the ATV if the plow is raised too high. The plow blade will drop suddenly if the j-bolt breaks, so always be sure there are no bystanders when you raise and lower the plow.
- Never** raise the top of the plow above the headlights of the ATV, as it may damage the vehicle and plow.
- Always** replace a deformed or broken j-bolt with the spare j-bolt included in the kit.

<b>⚠ Caution</b>
<b>Moving Parts Entanglement Hazard</b>
<b>Failure to observe these instructions could lead to minor or moderate injury.</b>
<input type="checkbox"/> <b>Always</b> take time to fully read and understand the installation and Operations Guide included with this product. <input type="checkbox"/> <b>Never</b> operate this product if you are under 16 years of age. <input type="checkbox"/> <b>Never</b> operate this product when under the influence of drugs, alcohol or medications.
<b>Read installation and operating instructions thoroughly.</b>

<b>Notice</b>
<b>Equipment Damage</b>
<input type="checkbox"/> <b>Always</b> refer to the Installation and Specification Guide, supplied in the winch kit, for all wiring schematics and specific details on how to wire this WARN product to your vehicle. <input type="checkbox"/> <b>Never</b> overtighten the j-bolt to the bracket. Doing so will pinch the winch cable against the bracket, damaging the cable. <input type="checkbox"/> <b>Always</b> put the end of the actuator cable through the slot in the Termination Bracket. Terminating the cable through any other hole in the bracket will cause the bracket to not function properly and will drastically reduce the life of the actuator cable. <input type="checkbox"/> This kit design is compatible with RT/XT WARN winches. Other winches may not fit. Contact customer service with questions on application.
<b>Read installation and operating instructions thoroughly.</b>

## Before You Begin

This kit is compatible with WARN's RT/XT line of ATV winches. Other winches may not fit.

Winch is sold separately. Please read WARN's Winching Technique guide provided with the winch prior to use of this product.

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## III. TOOLS REQUIRED

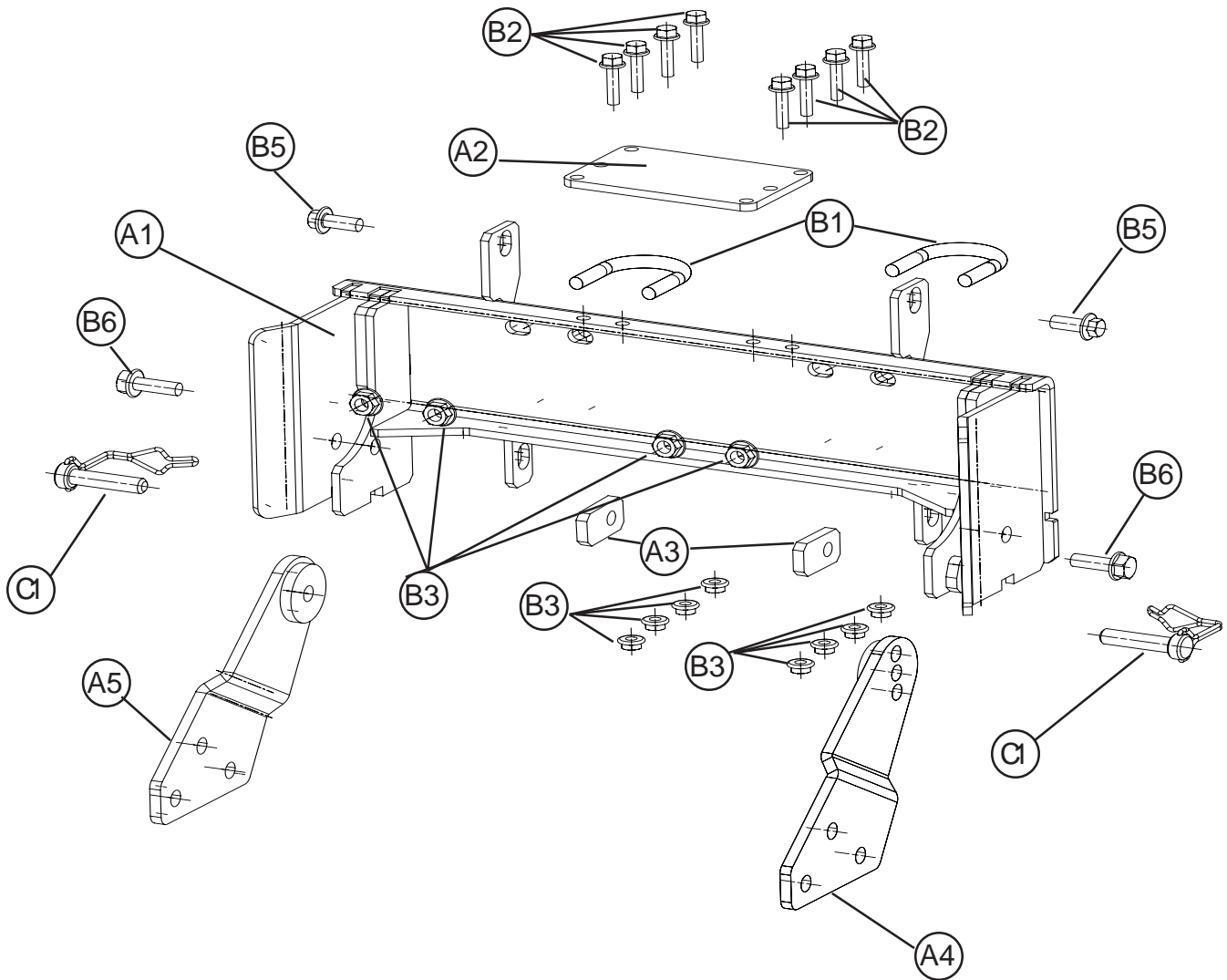
- RATCHET
- 10mm,12mm, 13mm, 15mm SOCKET
- 10mm, 12mm, 13mm, 15mm WRENCH
- SCREW DRIVER

## IV. TORQUE SPECIFICATIONS

	Grade 8.8 Only
M6	10.5 N-m (8 lb. ft.)
M8	26 N-m (17 lb. ft.)
M10	51 N-m (30 lb. ft.)
M12	89 N-m (50 lb. ft.)
M14	141 N-m (75 lb. ft.)

## V. PARTS LIST

<u>Reference</u>	<u>Part Number</u>	<u>Qty</u>	<u>Description</u>
A1	81904	1	PLOW MOUNT
A2	82371	1	BRKT CONTACTOR
A3	81905	2	SPACER LOWER TAB
A4	79341	1	BOLT ON FLANGE LH
A5	79340	1	BOLT ON FLANGE RH
B1	79604	2	M8-1.25 X 35mm X 48.5MM U-BOLT
B2	64108	8	M6-1.00 X 25MM HEX FLANGE HD BOLT
B3	37533	8	M6-1.00 HEX NUT FLANGE W/SERRATIONS
B4	66129	4	M8-1.25, HEX NUT FLANGE W/SERRATIONS
B5	78648	2	M8-1.25 X 20mm, FLANGE BOLT
B6	65970	2	M8-1.25 X 25mm, FLANGE BOLT
C1	79712	2	3/8" DIA. L- CLIP RETAINING PIN



## VI. INSTALLATION

1. Remove the front grab bar assembly. Remove the 6 bolts attaching the front grab bar assembly to the frame of the unit. Remove the 2 fasteners attaching the skid pan to the grab bar assembly. Also remove the 2 plastic clips that secure the plastic fender to the front grab bar assembly. If this unit has an OEM winch mounting system then the contactor mounting bracket will be mounted up front and will need to be removed.



Figure 1

2. If the contactor is being mounted up front. Remove the contactor from the old mounting bracket and attach the contactor to the new plow mount contactor bracket with 4, M6-1.00 x 25mm hex flange bolts and 4, M6-1.00 hex nuts w/serrations.

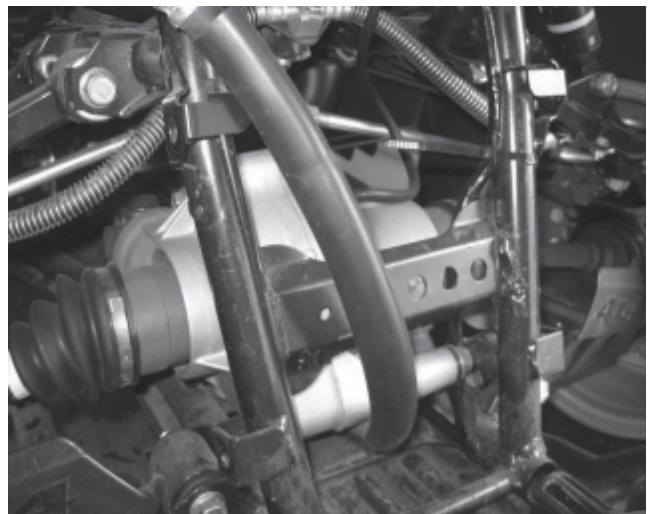


Figure 2

4. Place the front plow mounting bracket into position on the front of the vehicle. The bracket will be in front of the two main frame rails. Use the 2, M8-1.25 x 20mm flange hex bolts to help hold the mounting bracket into position. Run the M8 hex bolts through the top 2 tabs and into the mounting tabs on the frame tube. Do not tighten these bolts at this time, these are just to hold the bracket into position, see figures 3.

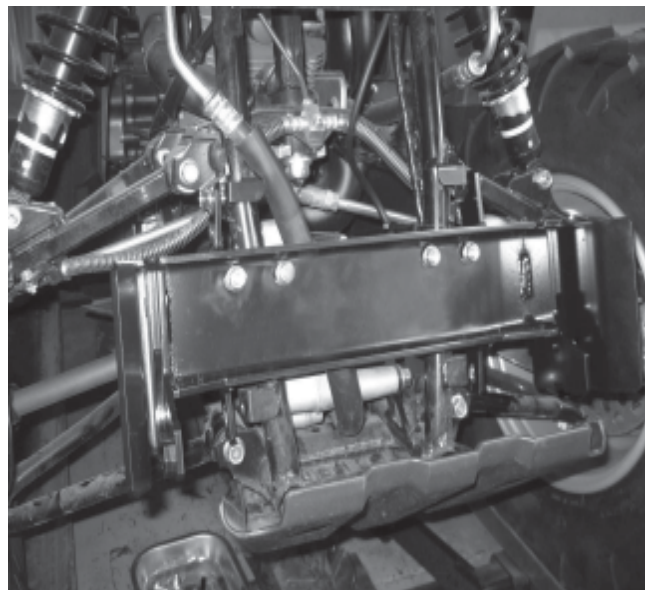


Figure 3

## INSTALLATION CONT.

- Center the mounting bracket between the top 2 mounting tabs. The front grab bar assembly will have to fit between the mounting tabs on the frame tubes and the mounting tabs on the front plow mount bracket. Once the mounting bracket is centered place the 2, M8 u-bolts around the frame tubes and into the front plow mount bracket, see figures 4 and 5. Do not tighten the u-bolts at this time just snug them up. The bracket may need to be moved slightly to allow for the front bumper assembly to fit into position.

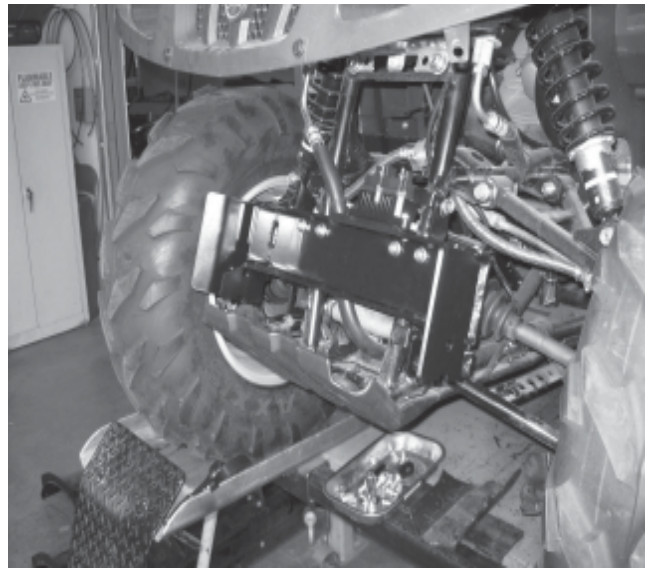


Figure 4

- If the contactor is being mounted up front. Attach the contactor and bracket to the plow mounting bracket as indicated in figure 5. Place the contactor and bracket on top of the plow mounting plate, make sure the contactor clears the oil coolant line. Use 2, M6-1.00 x 25mm hex flange bolts and 2, M6-1.00 hex nuts w/serrations, see the torque specifications on page 2.

**NOTE:** *If the contactor is being mounted on the plow mounting bracket make sure that there is clearance between the contactor and the front differential and the oil coolant line.*

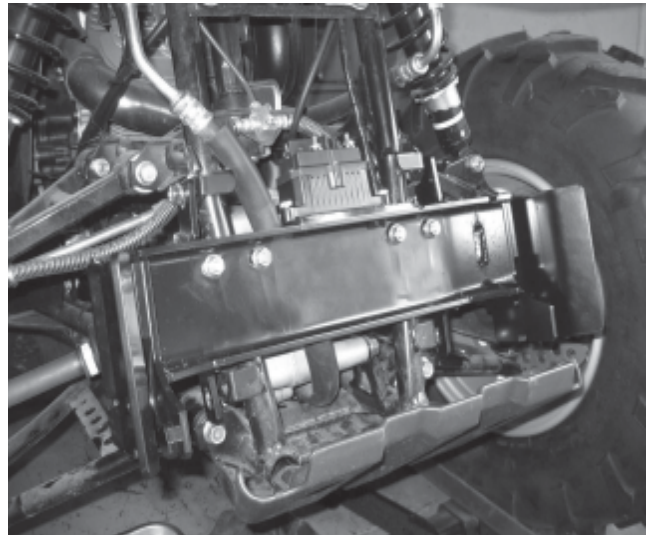


Figure 5

- Remove the two M8-1.25 x 20mm hex flange bolts from the top mounting tabs. The u-bolts should be tightened enough to hold the front plow mounting plate in position.
- Place the grab bar assembly and winch back into position. Attach the front grab bar assembly to the rack using the fasteners removed in step 1. This will hold the grab bar into position while attaching the upper and lower tabs of the plow mounting plate to the grab bar assembly.

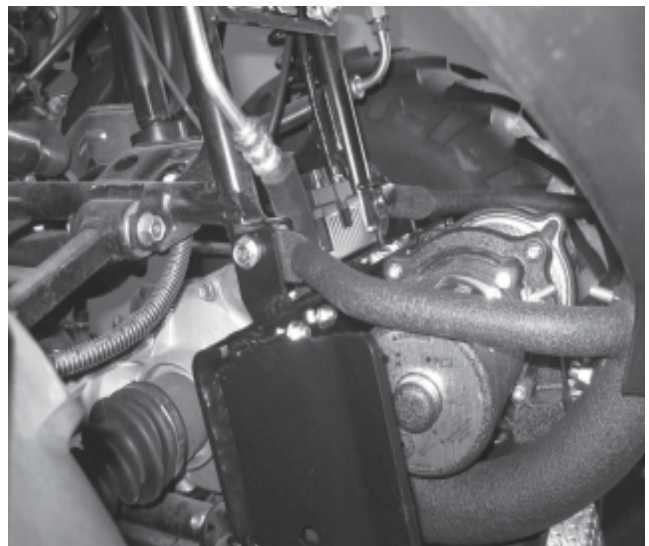
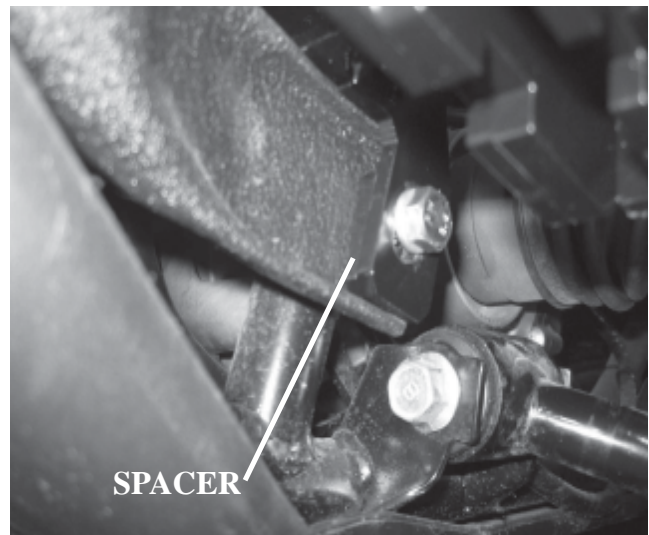


Figure 6

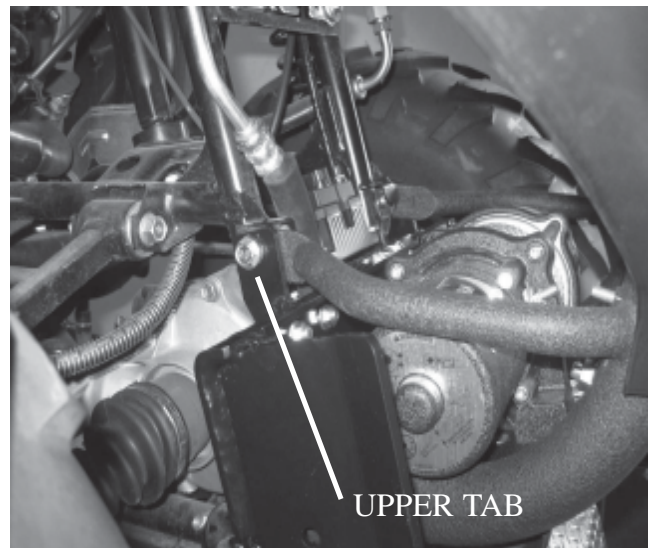
**INSTALLATION CONT.**

9. Slip the lower tab spacers into position behind the lower mounting tabs and between the lower grab bar. Use 2 - M8-1.25 x 25mm hex flange head bolts to attach.



**Figure 7**

10. Attach the upper mounting tabs of the plow mounting plate to the upper grab bar mounting position. Use 2 - M8-1.25 x 20mm hex flange head bolts to attach.

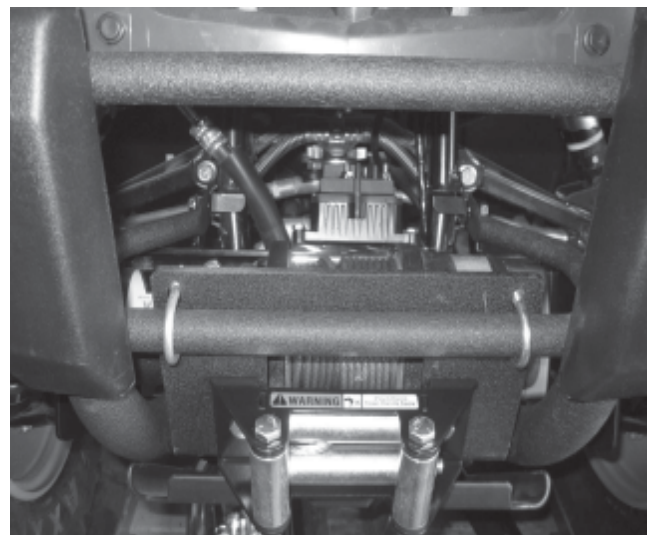
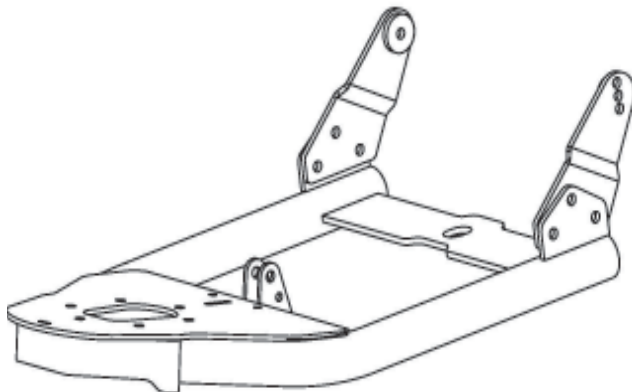


**Figure 8**

11. Tighten all fasteners down at this time. Use the torque specifications from page 2 to set all of the torques.

**NOTE:** *It may be necessary to loosen and remove the winch mounting bolts to get adequate access to torque down the u-bolt fasteners.*

12. Attach the left and right bolt on flanges onto the push tubes. See Figure 10. The left and right bolt on flanges will be found in the plow mounting kit, the hardware for attaching the flanges to



**Figure 9**

## VI. MAINTENANCE/CARE

- Inspect all metal parts on the plow, plow mount, and related hardware. Replace all parts that appears rusted or deformed prior to use.
- Inspect all nuts and bolts on the plow, plow mount, and related hardware prior to each use. Tighten all nuts and bolts that appear to be loose. Stripped, fractured, or bent bolts or nuts need to be replaced immediately.
- Check all cables prior to use. Replace cables that are worn or frayed.
- Check all moving and rotating parts. Remove debris that may inhibit the part from moving freely.

## VII. TROUBLE SHOOTING

Trouble	Inspection	Diagnosis	Action
Difficulty getting bolts to line up with holes in chassis.	A. Check that the side slots in skidpan align with the hole and nut in the chassis.	1. Make sure the skidpan slots aligns with the hole when the mount is not compressed against it.	1. Adjust and move the skidpan while compressing the plow mount against it until the skidpan slots align with the hole.
		2. Make sure the skidpan slots align with the hole when the U-bolts are put through the skidpan.	2. Increase the diameter or slot the holes drilled through the skidpan until the skidpan slots align with the holes.
Difficulty getting plow pins through the plow and plow mount.	A. Check the alignment of the plow mount holes in relation to the plow holes.	1. Make sure the plow and vehicle are both on a flat non-sloping surface.	1. Move the plow and vehicle to a flat non-sloping surface.
		2. Make sure the plow holes align perfectly with the plow mount holes.	2. Place a smaller diameter rod (such as a drill bit) through the holes and align the two. Once the two are aligned, hold the plow in place and put the plow pin through the two holes.
The electric actuator cable will not rotate within the termination bracket.	A. Check the termination of the actuator cable.	1. Make sure the cable is in the slot of the termination bracket, the cylindrical pin is attached to the cable, and the termination bracket is attached such that it leans toward the plow blade.	1. Mount the bracket to the plow crossmember on the plow blade side angling toward the blade. Slide the end of the actuator cable through the termination bracket slot. Slide the cylindrical pin over the end of the cable and terminate with a 1/4" nut (D). The completed assembly should look like Figure 12.