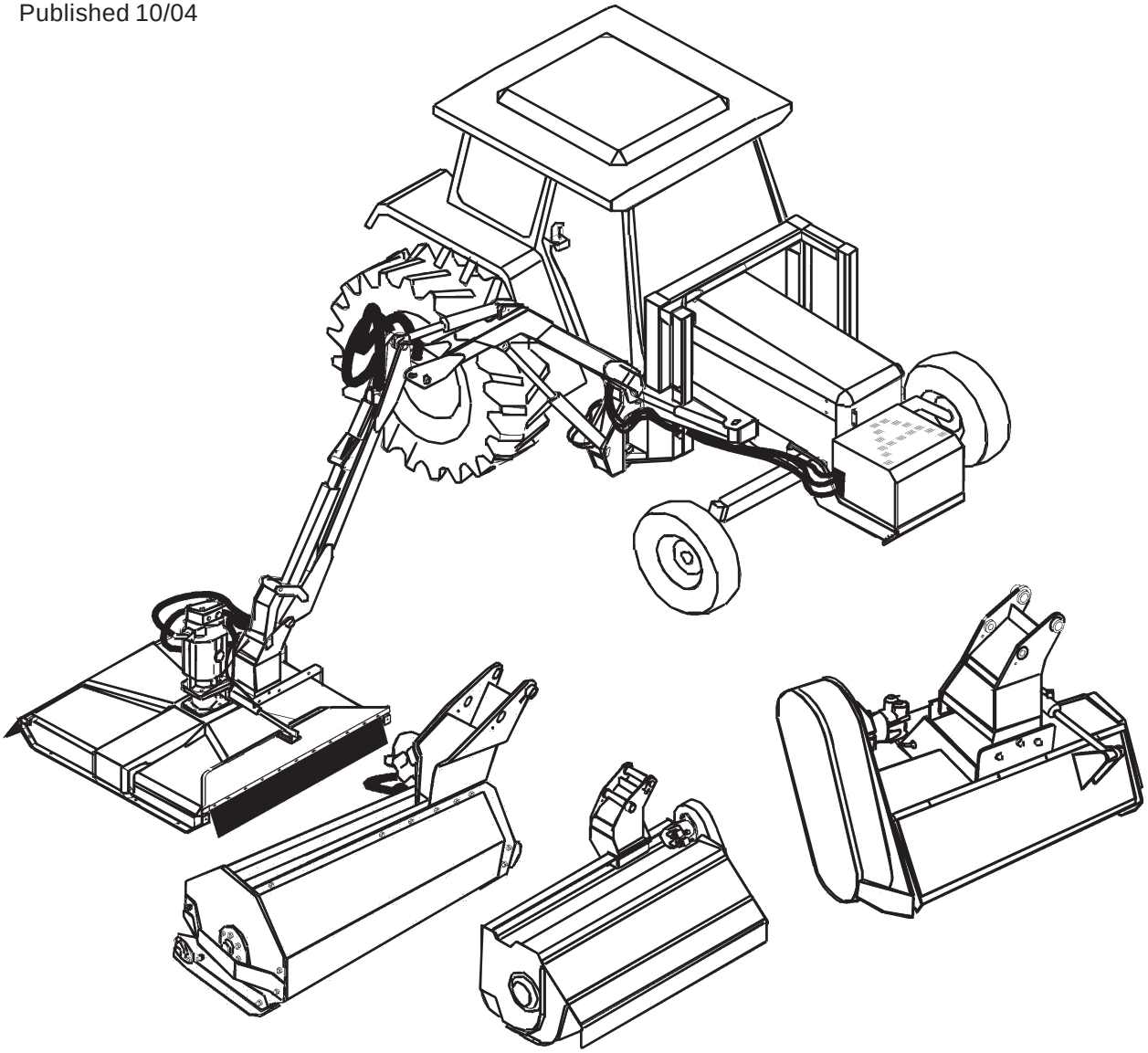
MACHETE

ALAMO INDUSTRIAL

Assembly Instruction Manual
John Deere 6215, 6320, 6415,6420

Published 10/04



Tractors equipped with additional options, special equipment, tractor manufacturer modifications, new tractor models, or Customer alterations may prevent this Mount Kit from being properly mounted to the tractor. Alamo Group is not responsible for modifications to the MountKit to accommodate these differences.

ALAMO INDUSTRIAL
1502 E. Walnut
Seguin, Texas 78155
830-379-1480

Part No. 02980007

MEMBER OF THE ALAMO GROUP
ALWAYS ON THE CUTTING EDGE

TO THE OWNER/OPERATOR/DEALER

All implements with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes the potential hazards and follows reasonable safety practices. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.**BEFORE YOU START!!** Read the safety messages on the implement and shown in your manual. Observe the rules of safety and common sense!

DANGER

FAILING TO FOLLOW SAFETY MESSAGES AND OPERATING INSTRUCTIONS CAN CAUSE SERIOUS BODILY INJURY OR EVEN DEATH TO OPERATOR AND OTHERS IN THE AREA.

1. 

2. NO RIDERS. NO CHILDREN OPERATORS.


3. USE SAFETY SHOES, HARD HAT, SAFETY GLASSES, SEAT BELTS, ROPS & OPS


4. BLOCK UP SECURELY BEFORE WORKING UNDER.


1. Study and understand Operator's Manuals, Safety Decals, and Instructional Decals for tractor and implement to prevent misuse, abuse, and accidents. Practice before operating in a confined area or near passersby.
- Learn how to stop engine suddenly in an emergency. Be alert for passersby and especially children

2. Allow no children on or near folding mower or tractor. Allow no riders on tractor or implement. Falling off may cause serious injury or death from being run over by tractor or mower or contact with rotating blades.

3. Operate only with tractor having Roll-Over Protective Structure (ROPS) and with seat belt securely fastened to prevent injury and possible death from falling off or tractor overturn.
- Personal Protective Equipment such as Hard Hat, Safety Glasses, Safety Shoes, & Ear Plugs are recommended.

4. Block up or support raised machine and all lifted components securely before putting hands or feet under or working underneath any lifted component to prevent crushing injury or death from sudden dropping or inadvertent operation of controls. Make certain area is clear before lowering or folding

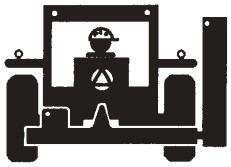
5. Before transporting, put Lift Lever in detent or full-lift position. Install Transport Safety Devices securely on folding mowers. Put Booms securely in Transport Rest.
- Folding and Boom Mowers have raised center of gravity. Slow down when turning and on hillsides.

6. Make certain that SMV sign, warning lights, and reflectors are clearly visible. Follow local traffic codes.

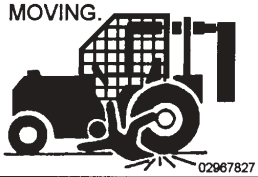
7. Never operate with Cutting Head or Folding Section raised if passersby, bystanders, or traffic are in the area to reduce possibility of injury or death from objects thrown by Blades under Guards or mower structure.

8. Before dismounting, secure implement in transport position or lower to ground.
- Put tractor in park or set brake, disengage PTO, stop engine, remove key, and wait until noise of rotation has ceased to prevent crushing by entanglement in rotating parts which could cause injury or death.
- Never mount or dismount a moving vehicle. Crushing from runover may cause serious injury or death.

5. TRANSPORT SAFELY, LOCK UP.


6. USE SMV, LIGHTS, & REFLECTORS.


7. DO NOT OPERATE WITH CUTTER OR WING RAISED.


8. DO NOT MOUNT OR DISMOUNT WHILE MOVING.


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WARRANTY INFORMATION:

Read and understand the complete Warranty Statement found in this Manual. Fill out the Warranty Registration Form in full and return it within 30 Days. Make certain the Serial Number of the Machine is recorded on the Warranty Card and on the Warranty Form that you retain. The use of "will-fit" parts will void your warranty and can cause catastrophic failure with possible injury or death.

INTRODUCTION

ABOUT THIS MANUAL:

The intent of this publication to provide the competent technician with the information necessary to perform the CORRECT Assembly to the Alamo Industrial Product. This will, in turn provide for complete customer satisfaction

It is hoped that the information contained in this and other Manuals will provide enough detail to eliminate the need for contact of the Alamo Industrial Technical Service Dept. However, it should be understood that many instances may arrive where correspondence with the Manufacturer is necessary.

CONTACTING MANUFACTURER: (Please help us Help You! Before You Call!)

Alamo Industrial Service Staff Members are dedicated to helping you solve your problem, or your customer's service problem as quickly and efficiently as possible. Unfortunately, we receive entirely to many calls with only a minimum amount of information. In some cases, the correspondent has never gone out to look at the equipment and merely calls inquiring of the problems described to him by the operator or customer.

Most calls received by Alamo Industrial Service can be classified into approx. 6 general categories.

1. Hydraulic or Mechanical Trouble Shooting.
2. Request for Technical Information or Specifications.
3. Mounting or Fitting Problem.
4. Special Service Problem.
5. Equipment Application Problems.
6. Tractor Problem Inquiries.

HOW YOU CAN HELP:

Make sure the call is necessary! Most of the calls received may not be necessary if the Dealer Service Technician would do the following.

1. Check the Service Information at your Dealership provided by Alamo Industrial, This would include, Service Bulletins, Information Bulletins, Parts Manuals, Operators Manuals, Assembly Manual or Service Manual, many of these are available via the Alamo Industrial Internet site (www.Alamo-Industrial.Com). Attempt to diagnose or repair problem before calling.

2. If a call to Alamo Industrial is needed, Certain Information should be available and ready for the Alamo Industrial Service Staff. Such information as, Machine Model, Serial Number, Your Dealer Name, Your Account Number and Any other information that will be useful. This information is vital for the development of a prompt and correct solution to the problem. This will also help to develop a database of problems and related solutions, which will expedite a solution to future problems of a similar nature.

3. The technician may be asked to provide detailed information about the problem including the results of any required trouble shooting techniques. If the information is not available, The technician may be asked to get the information and call back. Most recommendations for repairs will be based on the procedures listed in the Service Manual / Trouble Shooting Guide and Information provided by customer.

CONTACT ALAMO INDUSTRIAL:

Alamo Industrial, 1502 E. Walnut St. Seguin TX. 78155, Technical Service Dept. PH: 830-372-2708

INDEX - ASSEMBLY INSTRUCTION

INDEX - ASSEMBLY INSTRUCTION

Section 1

MACHETE

PRE-DELIVERY INSPECTION CHECKLIST

MACHETE PRE-DELIVERY INSPECTION CHECKLIST

Pre-Operation Inspection: Check the following items before operating the unit to assure that they are properly assembled. (See following page 1-4 for component location)

Saftey Equipment:

----- Operators Manual is with Unit.
----- The Safety Decals are installed as listed in the Assembly Manual.
----- Valve operation plate is installed.
----- Operators cage or Tractor Cab is in place. (Item 1 page 1-4)
----- Deflectors are installed on the Mower Head. (Item 2 page 1-4)
----- Tractor Rops or Cab with seatbels installed properly.

Frame and Boom:

----- Axle Plate Bolts are torqued to 240 ft. lbs. (Item 3 page 1-4)
----- Boom Rest Axle Plate Bolts are torqued to 240 ft. lbs.
----- Front Rail Bolts are torqued to 170 ft. lbs. (Item 17 page 1-4)
----- Front Support Bolts are torqued to 240 ft. lbs. (Item 4 page 1-4)
----- Hydraulic Tank mounting Pins / Bolts in place correctly.
----- Boom Main Pins are torqued to 170 ft. lbs.
----- King Pin Retaining Nut is properly locked in place.
----- All Welds inspected toinsure proper welds and locations.

Hydraulic System:

----- Oil Level in Hydraulic Tank is within the sight gauge. (Item 5 page 1-4)
----- Hose connections are tight.
----- Hoses do not have any kinks or twist in them.
----- Front Pump Shaft adapter bolts are tight. (Item 6 page 1-4)
----- Front Pump Shaft Coupler / Drive Shaft is lubricated and has an anti-seize compound on the Splines of Pump and Shafts. (Item 7 page 1-4)
----- The Pump Drive Shaft has correct alignment.
----- Suction Hose has no leaks or kinks.

Rotary Mower Head:

----- Skid Shoe Bolts are torqued to 120 ft. lbs. (Item 8 page 1-4)
----- Spindle Housing Bolts are torqued to 400 ft. lbs. (Item 9 page 1-4)
----- The Spindle Housing is properly lubricated. (item 10 page 1-4)
----- Motor Bolts are torqued to 120 ft. lbs. (Item 11 page 1-4)
----- Blade Carrier (Bar) Bolts torque to 400 ft. lbs. (Item 12 page 1-4)
----- Blade Bolts are torqued and the retainings Pins are in place. (item 13 page 1-4)
----- Blades Swing freely. (Item 14 page 1-4)

MACHETE PRE-DELIVERY INSPECTION CHECKLIST

Pre-Operation Inspection: Check the following items before operating the unit to assure that they are properly assembled. (See following page 1-4 for component location)

Flail Mower Head:

___ Skid Shoe Bolts are torqued to 120 ft-lbs (Location 15)
___ Motor Bolts are torqued to 120 ft-lbs
___ Belt Alignment& tension adjustment is correct
___ Cutter shaft bearings are properly lubricated
___ Roller bearings are properly lubricated (Location 16)
___ Blades swing freely

Tractor Mower Operation Inspection:

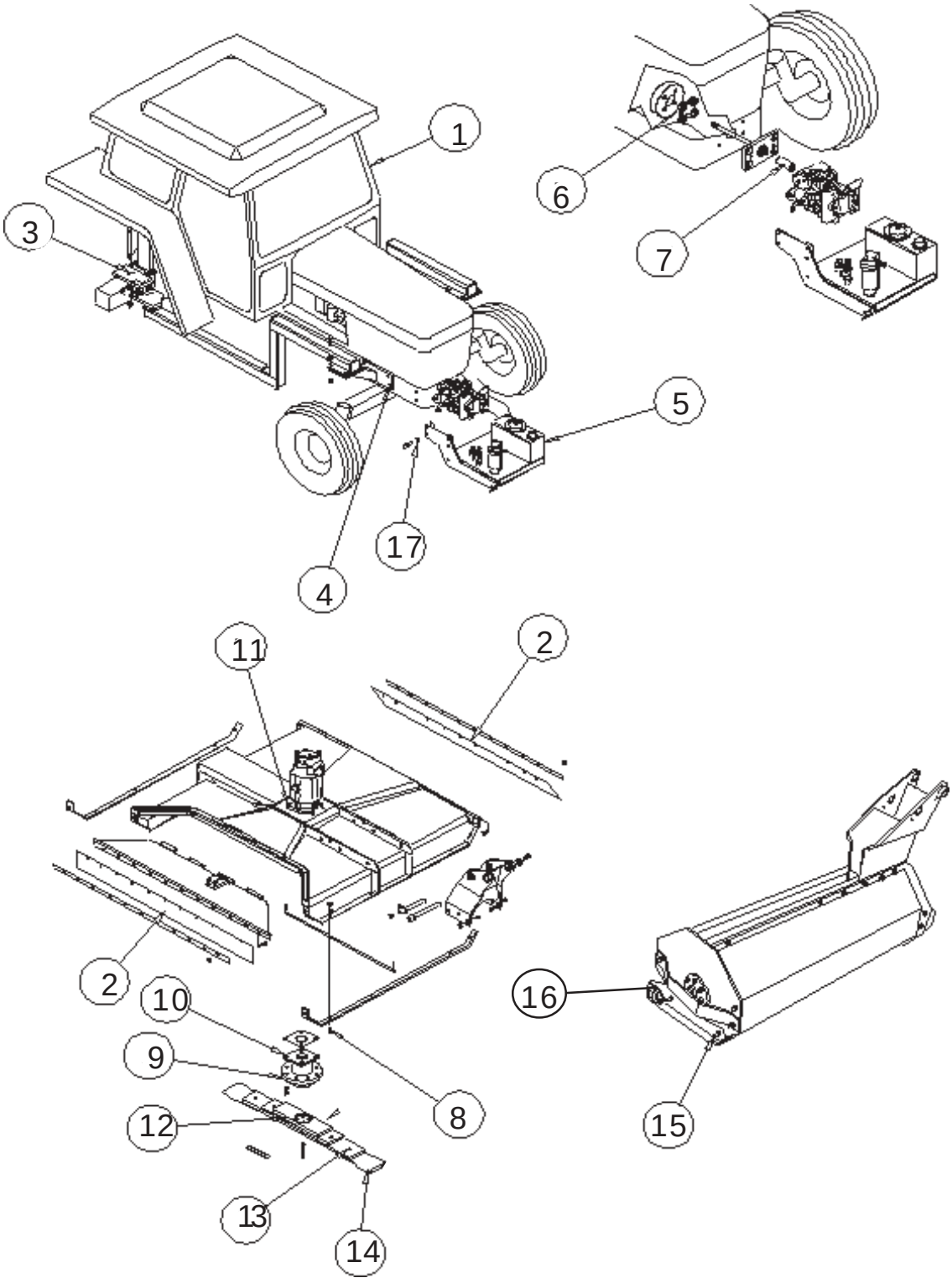
Using all Safety precautions, operate the Tractor and Mower unit for 30 minutes and while the unit is running check the following items: **Note!** Only make adjustments after the mower has been turned off and all motion has stopped and all hydraulic pressure has been relieved.

___ Check for Hydraulic oil leaks at the hose connections
___ Operate the boom and mower head throughout its full range of motion and check for hose's rubbing, pinching, or kinking.
___ Make sure the Return Filter Gauge is reading in the Green after Oil is warm.
___ Check the function of the Mower Head On-Off Valve and switch for proper function
___ Make sure that the tractor will not start with the mower on-off switch in the on position.
___ Check the Blade Rotation for the Rotary Mower Head to make sure it is turning Clockwise looking from the top of the mower deck.
___ Make sure the control valve boom movements agree with the valve operation decal.
___ Make Sure Boom Movement operates as expected and is smooth and under control (no air in the control system)
___ Look for any unusual or excessive noise or vibrations.
___ Make sure the left rear wheel of the tractor stays on the ground when the boom is fully extended horizontally with 200 lbs. placed on the outside of the mower head.

Post-Operation Inspection:

___ Check that the oil in the hydraulic tank has not turned milky in color or has foam on top.
___ Check that there are no loose fasteners or hardware.

Tractor - Mower Component Location For Check List



Machete (JD -62,63,6420 Asy Man) 10/04

Section 2

Machete

Wheel Weight Installation

Wheel Counter Weight 2 WD & 4 WD

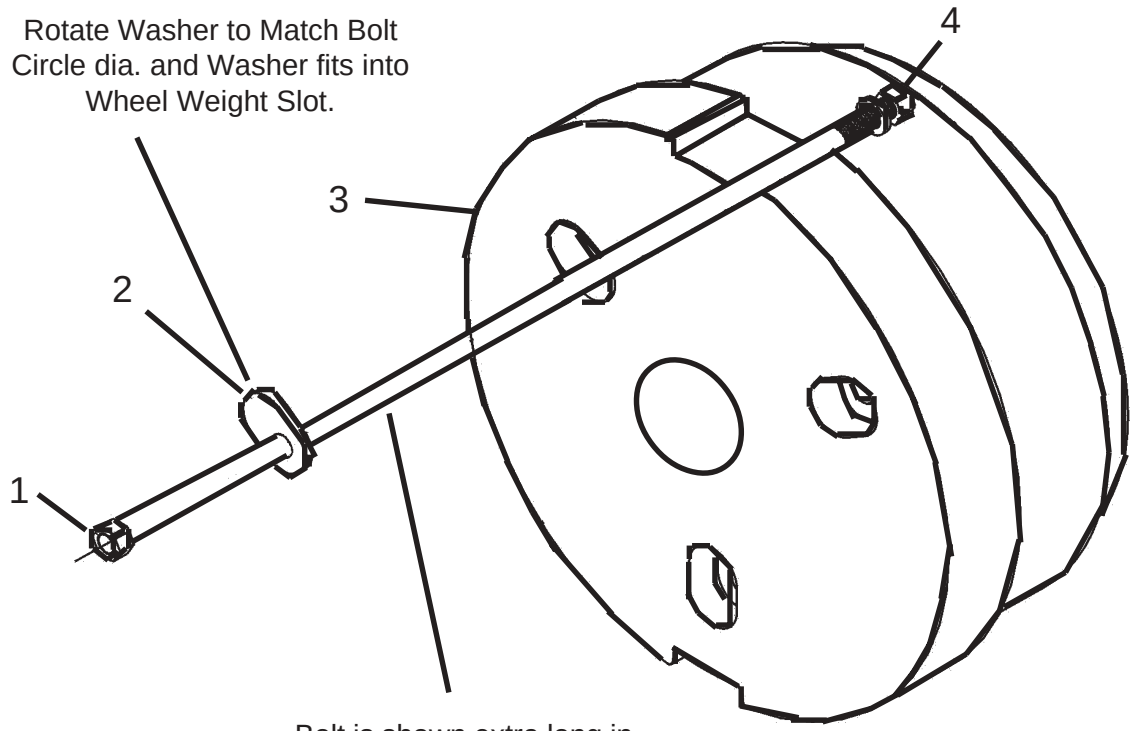


Figure 1

Item	Part No.	Qty	Description
1	02979603	3	Hex Head Bolt, 7/8" NC X 16"
2	02971569	3	Wheel Weight Washer, Special
3	02970758	1	Wheel Weight Casting, 1400 lbs.
4	5JRC1490	3	Locknut, Top Lock 7/8" NC

Note: some Older Units used a All Thread Rod with Hex Nuts Lock Nuts, with Flat Washer and Lock washer. This was replaced with the Bolt Type shown above. These Bolt and Nut combinations will replace the old All Thread type.

Wheel Counter Weight 2 WD & 4 WD

Installing Wheel Weight

1. This Wheel Weight is 1400 lbs. Always use caution when working with it.

2. Locate the three Holes in LH Rear Wheel. Make sure these holes are 15/16" dia. if not, they must be reamed out.

3. Lift Left Rear Tractor Wheel till it just clears the ground. This will allow the Wheel to be rotated when aligning mounting holes for Weight.

4. Using a forklift, lift Wheel Weight into Wheel. When Wheel Weight is centered in Wheel Secure Forklift and Set Parking Brake on Forklift. Insert one of the three bolts through Weight and Wheel (Rotate Wheel to align holes if needed). Install a Hex Lock Nut on inside. Insert the other two Bolts through Weight and Wheel and start the other two Locknuts. Do not tighten yet. **(See Figure 2)**

Figure 2

5. Looking at the outside make sure the three special Washers **(Figure 1 Item 2)** are aligned with the Slots in the Wheel Weight. Tighten the three Bolts now. You will need an assistant to hold the other Side while you are tightening the Bolts. While tightening Bolts, check to make sure the three special washers are seated correctly. If these Bolts are tightened and washer is not seated into the recess on Wheel Weight, damage will occur.

6. Remove forklift away from Wheel and Weight. Re-check tightness of Wheel Weight retaining Bolts. Bolts should torque to 500 ft. lbs.

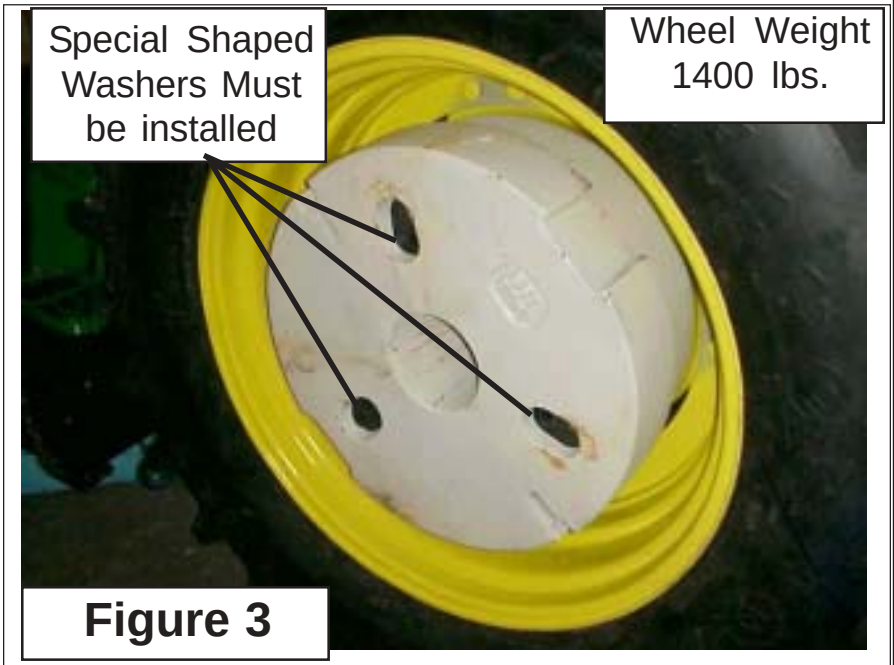


Figure 3

NOTES

Section 3

MACHETE

Front Pump, Drive Shaft and Hyd. Tank Installation

Pump / Drive Assembly Instructions

Installing Pump, Pump Drive Components and Hydraulic Tank:

This Section covers the installation of Pump Drive Components, Pump Assembly and the Hydraulic Tank. Some precautions must be followed during the Assembly Process and before unit is ever started for the first time.

1. Tractor must be disabled to prevent accidental engine start and prevent daamge to components.
2. All Fittings, Hose, Cylinders, Tank must be kept plugged at all times, No part of the Hydraulic System can be left open at any time
3. All Tools, Work Area, Components and Workers Hands must remain Clean when working on any part of the Hydraulic System.
4. All components should be rechecked for tightness at least twice, Hose routing also double checked.

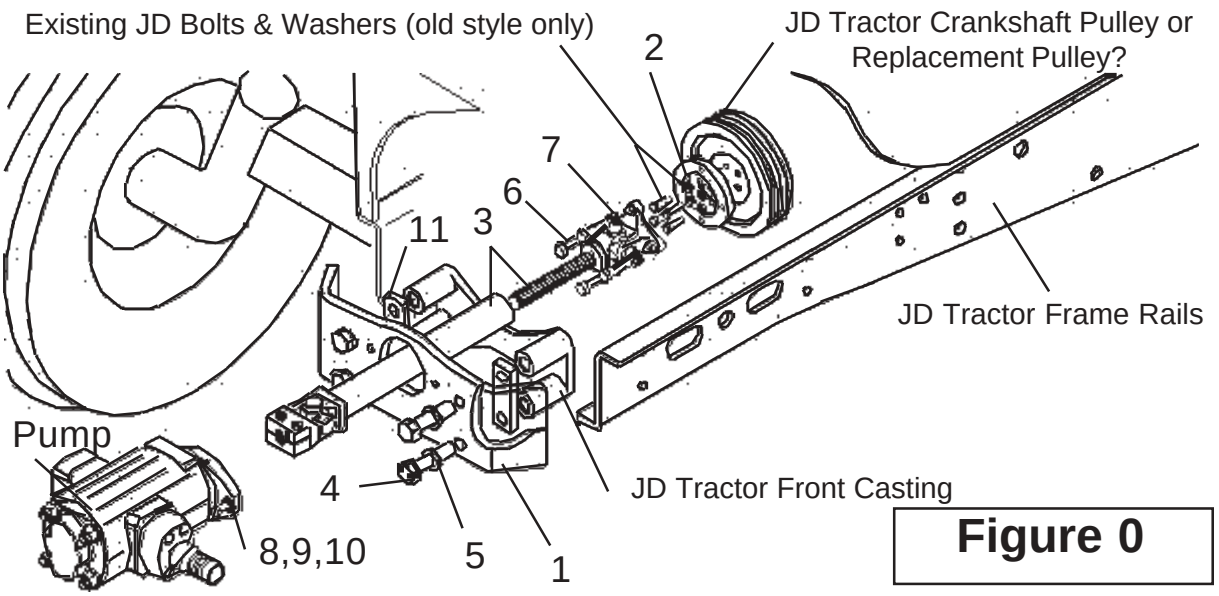


Figure 0

Item	Part No.	Qty	Description
1	02976087	1	Front Pump Plate
2	02973992	1	Pulley Adapter (use w/ OldPulley step 4A)
	02979790	1	Pulley Adapter (use w/ New Pulley step 4B)
3	02975257A	1	Driveline Assembly
4	02975669	4	Bolt, 20 mm 2.5P X 60 mm GR 10.9
5	02971158	4	Lockwasher, 20 mm
6	02976344	4	Bolt, 7/16" NC X 1-1/4" GR 8
7	00022200	4	Lockwasher, 7/16"
8	02892000	2	Bolt, 1/2" NC X 1-1/2" GR8
9	00001300	2	Lockwasher, 1/2"
10	00002700	2	Flatwasher, 1/2" (used on Machete Only)
11	02978480	2	Spacer, Pump Plate (JD 6020 Series Only)

Installing Pump Drive Components:

1. Remove Front Cover (See Figure 1), Remove the 4 plastic plugs shown in figure 1 and discard them, they will not be needed. Remove the 2 Allen Head Cover Retaining Bolts. After removal, this front cover will not be used. The front Casting will have a Driveline Hole in it. (See Figure 2). This will be the same on 2 WD or 4 WD.

Installing Pump Drive Components:

2. Access to Crankshaft Pulley. There are a number of ways that the Crankshaft Pulley can be removed. It is best to See Tractor Repair Manual for procedure to gain access and removal of the Crankshaft Pulley as recommended by Tractor Manufacturer.

3. There are 2 different styles of Pulleys used. This means there are two different Pulley Adapters being used. There is a Machined Pulley with threaded holes in it (Old Style) and there is a five spoke cast pulley (new Style). The Five Spoke Pulley must be replaced with a new replacement pulley. You must check which you have before beginning.

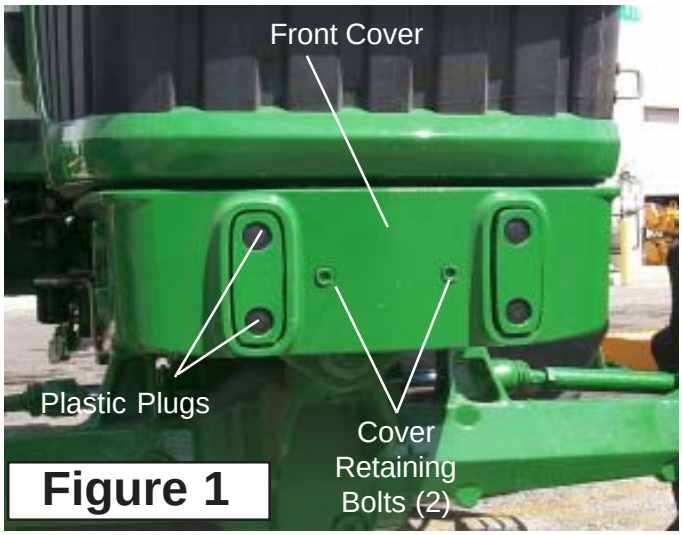


Figure 1

4A. Remove Factory Pulley OLD STYLE model & S/N JD-6415 S/N 6415M355435 & down JD-6320 S/N 6320H361092 & down JD-6420 S/N 6420H354699 & down

Remove Factory Pulley Adapter Spacer (**Old Style Machined Pulley (See Figure 3 Detail "B")**. Remove the 4 bolts in the center of the Crankshaft Pulley, save these Bolts and Washers to re-use to install Pulley adapter. The Tractor should be equipped with a Spacer or a John Deer Pulley Adapter (See Figure 3 Detail "A"). Remove the 3/8" Spacer or Pulley Adapter that is in center of Crankshaft Pulley. This will not be used. It will not be required to remove Crankshaft Pulley but center Retaining Bolt will have to be removed.

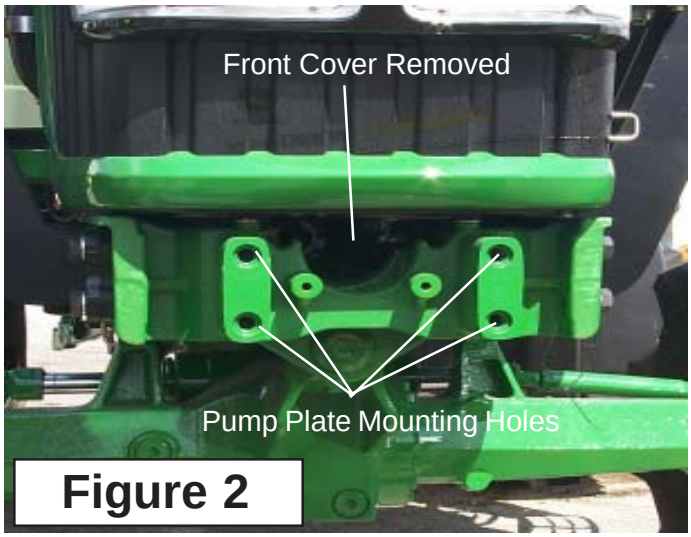
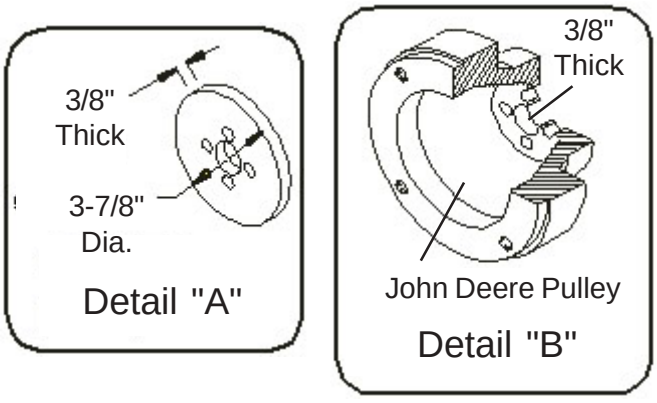


Figure 2

Installing the New Pulley Adapter Part # 02973992 **(See Figure 3)**. Re-use the existing 4 Bolts and Washers that were removed from Crankshaft Pulley. Coat the threads with Locktite and bolt Pulley Adapter to Crankshaft Pulley. **(See Figure 3)**. Torque these four bolts now, as you will not be able to later. **(See Bolt Torque Chart)**



Mchined Style Pulley (Old Style)

Figure 3

Installing Pump Drive Components: (continued)

4B. Remove Factory Pulley

NEW STYLE model & S/N
JD-6415 S/N 6415M355436 & up
JD-6320 S/N 6320H361093 & up
JD-6420 S/N 6420H354700 & up

(**New Style 5 Spoke Cast Pulley** See Figure 4). This Pulley must be replaced, as it will not work when mounting a Machete because the Driveshaft cannot be connected to it. Remove the center retaining Bolt that screws into Crankshaft. Using a long extension through the Crankshaft Access Hole in the front of tractor (See Figure 2) easily does this. The Pulley Retaining Bolt and Shouldered Washer will need to be removed, The Pulley and Shouldered Washer will not be reused (See Figure 4), the Retaining Bolt is the only thing you will reuse.

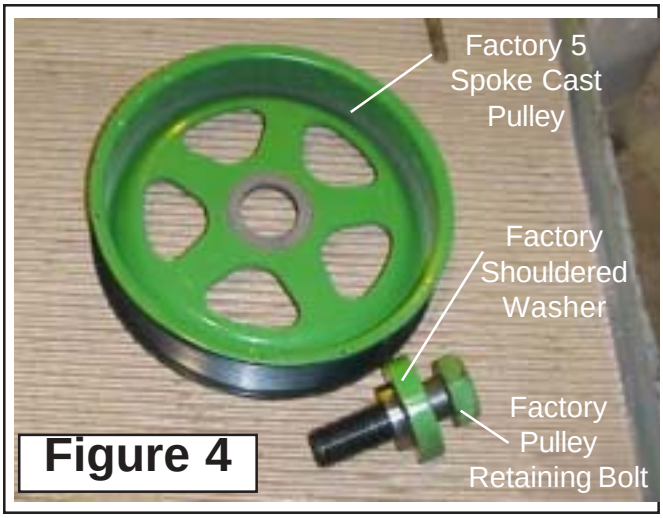


Figure 4

Install Replacement Crankshaft Pulley, All paint must be removed from ID of new pulley. Clean nose of crankshaft pulley using LOCKTITE 7649 (TY16285) clean and cure primer. Note: Do Not over apply retaining compound. Use only a thin coat of retaining compound to avoid difficulty in removal of vibration damper. Apply a light 2mm - 3mm (.079 - .118 in.) bead of Locktite 680 (TY15968) retaining compound (maximum Strength) (C) around the leading edge of the crankshaft nose. **(See Figure 7A)**

Use a new Retaining Bolt **(See Figure 4)** and the New washer (P/N 02979829) , the Bolt must be SAE Grade 8 or better **(See Figure 4, 5 & 7)** install the Replacement Pulley (P/N 02979857) **(See Figure 5 & 6).** Dip the Retaining bolt in clean SAE 30 engine oil. Make certain the Washer is fit inside center hole of replacement Pulley **(See Figure 7)**. Tighten original Pulley retaining Bolt to Tractor Engine now as you will not be able to after you install the Driveshaft Pulley Adapter. Tighten Crankshaft Pulley retaining bolt to John Deere Specifications. **The required torque specifications for the pulley retaining bolt (See Figure 4) is 369 ft. lbs (500 nm) Note this only applies to the tapered crankshaft pulley assembly.**

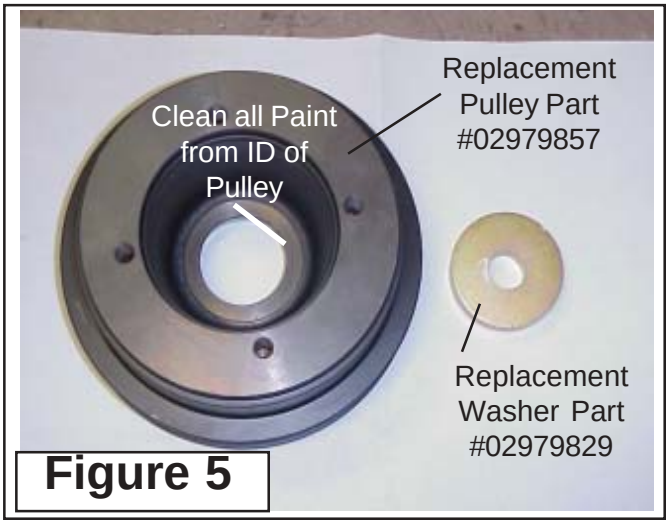


Figure 5

Figure 6

Installing Pump Drive Components: (continued)

4C. Install Pulley Adapter. The new Pulley adapter to be used with Replacement Pulley Part # 02979857 is a round plate with 4 threaded holes and four non-threaded holes in it. Notice this pulley adapter will not have a center hole in it **(See Figure 8).** The Pulley retaining bolt must be tightened before this adapter is installed because you will not be able to get to the Pulley retaining Bolt after it is installed. The Non-treaded holes are used to mount the Adapter to the Pulley using bolts # 02979791 (10mm 1.5 P X 35mm Gr.10.9) & Lockwasher # 00755954 (10 mm).

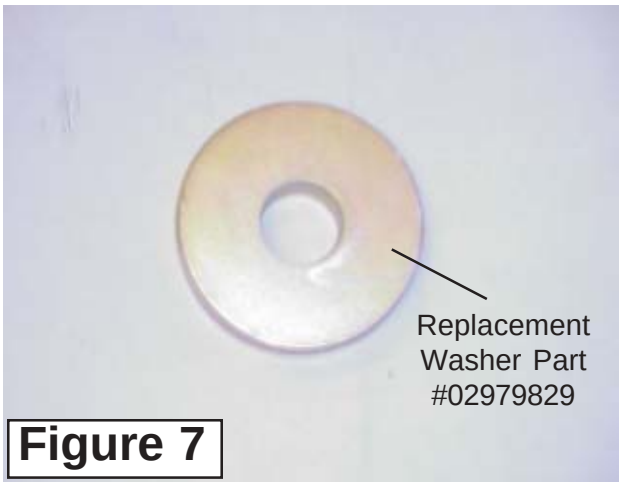


Figure 7

5. Driveshaft Assembly. The drive shaft is a two piece Assembly, an inner and outer shaft assembly **(See Figure 9).** The Shaft End has a four bolt flange yokes on it that connect to the Crankshaft Pulley Adapter. The Tube end has a splined clamp yoke on it that connects to the Pump. This Drive Shaft connects to the New Style or Old Style Pulley Adapter. Note that the Universals of the Driveshaft are in time. When installed in tractor they should be in time as shown.

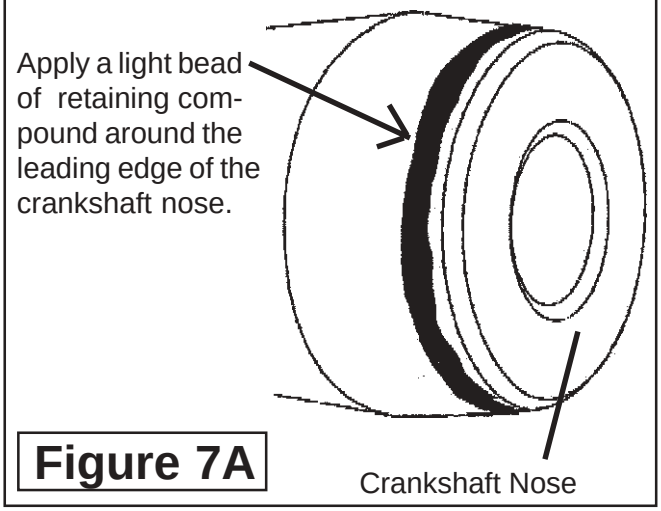


Figure 7A

6. Install Shaft End of Driveline / Engine end. Install the Shaft 1/2 Assembly w/ Flanged Yoke into the Engine compartment of Tractor, install it from the LH front Side down and under radiator. **(See Figure 10)**. This needs to be installed this way because the Flange Yoke will not go through the Crankshaft access hole in the front of the Tractor **(See Figure 2)**. Bolt the Flange Yoke to the Pulley Adapter using the four 7/16" X 1-1/4" Bolts (Part # 02976344), use the four Lock Washers (Part # 00022200), put Locktite on the threads of the Bolts and install them into Pulley Adapter. To Tighten these four Bolts, use a long extension and go through the front Crankshaft Pulley access hole in front of Tractor. Do Not use bolts longer than 1-1/4" long, longer bolts will damage Crankshaft Pulley.

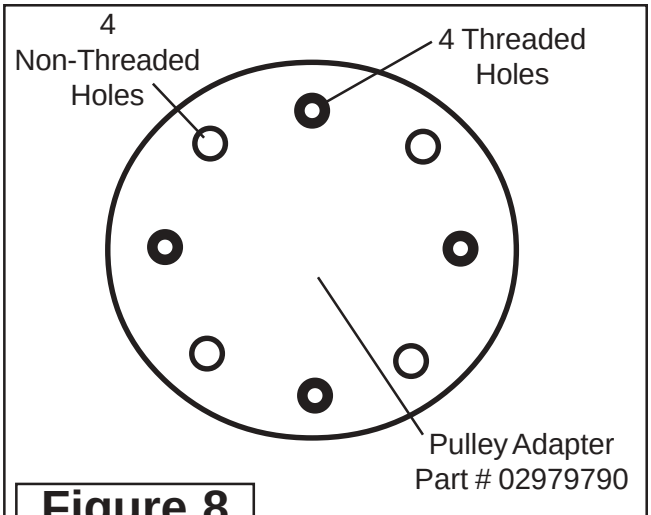


Figure 8

Install Front Tank Mounts & Front frame Rail Supports:

1. Remove Bolts from Tractor Frame Rails. Find the front most 4 Bolts in the Tractor Frame Rail, There are 4 on the RH side and 4 on the LH Side. **DO NOT REMOVE THE BOLTS FROM BOTH SIDES AT THE SAME TIME,** ONLY do one side at a time the RH or the LH. For illustration start with the RH Side **(See Figure 11).** The RH & LH Frame Rail Supports have a Right and a Left. They will not inter-change and must be mounted on the correct side. Notice the way they are built, the Plate part that bolts to Tractor is longer in the front on both LH & RH. Make sure the longest part is to the front **(See Figure 13).**

2. Install Frame Rail Support and Tank Mount Frame RH Side. This works best with a 2 man team. The RH Tank Mount Bracket and the Front Frame Rail Support is held on with the same Bolts. Install with the Tank Bracket next to Tractor then the Frame Rail Support Bracket. Start all 4 bolts with Lockwasher before any of the 4 are tightened **(See Figure 12).** When tightened down it will look like the picture in Figure 13.

3. Install Frame Rail Support and Tank Mount Frame LH Side. This will install the same as the RH side did. Remove the 4 bolts; Install the Tank Bracket next to tractor then the Front Frame Rail Support. Tighten the 4 bolts through Tractor Frame Rail.

Check to make sure the Tank Brackets are mounted correctly, The tank Brackets have Bends in them that bend to the Outside **(See Figure 12).** This makes the Tank Brackets wider where the tank slides in than where they are bolted to the tractor.

There is also a front Bumper Plate that bolts between the Tank Bracket with 3 bolts on each side. DO NOT install Bumper or Tank at this time, they cannot be installed untill after the Pump is installed.

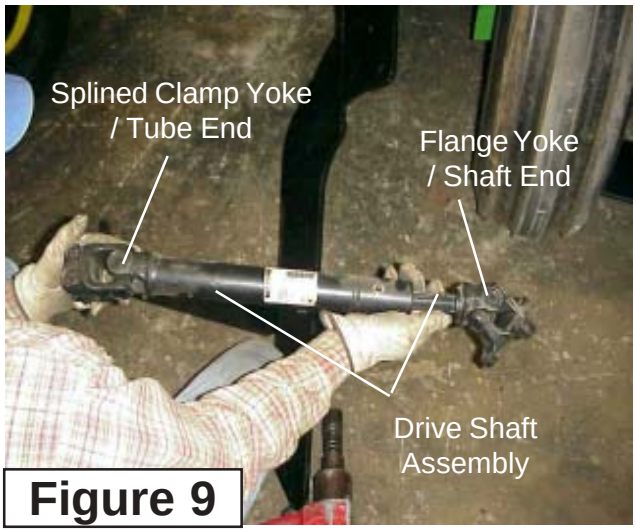


Figure 9

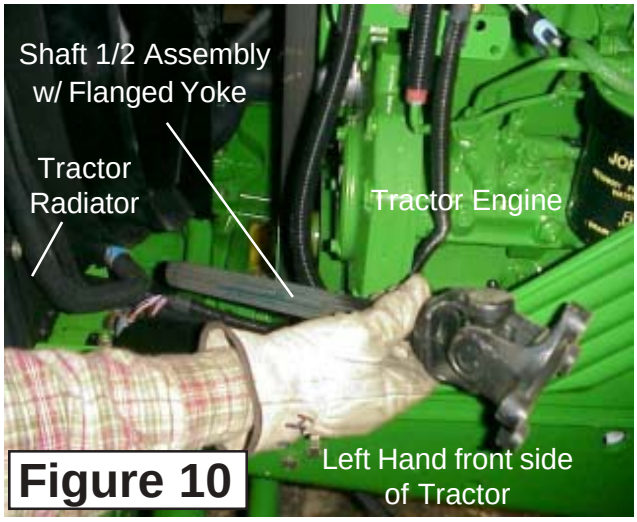


Figure 10

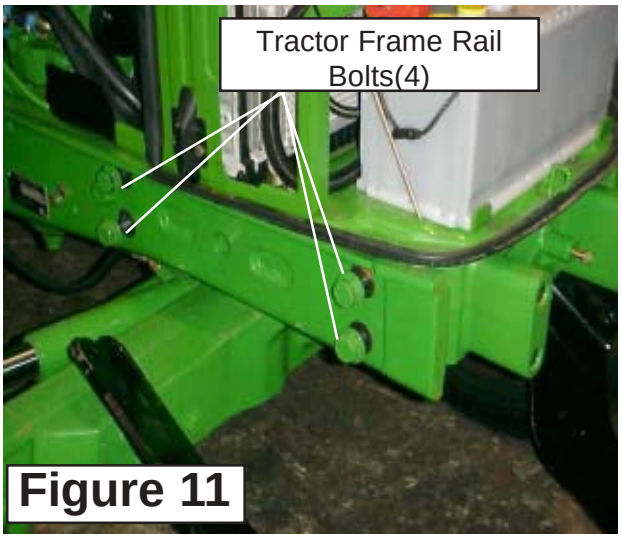


Figure 11

Installing Pump Mount Plate & Tube End of Driveshaft:

1. Install Pump Mount Plate. Install Front Pump Plate **(See Figure 14)** use the 2 Spacers on the JD 20 Series, Do not install Pump Mount Plate without using these Spacers. The Spacers are for Tractor Hood Clearance. Insert the 4 bolts and lock washers into Pump Mount Plate and spacers **(See Figure 14)**, tighten them to required Torque (See Bolt Torque Chart).

2. Install Tube End of Driveline / Pump End. Slide the Tube half of driveshaft through Pump Mount Plate and Tractor Crankshaft Access Hole **(See Figure 15).** You will have to align the Universals when doing this (time the Driveshaft). Slide the two together where the Universal are in time **(See Figure 9)**, this will help the driveshaft to operate smoothly.

3. Loosen Splined Clamp Yoke. Insert a bar through the Yoke to hold Driveshaft up and to help loosen the Bolts in the clamp Yoke **(See Figure 16)**. This can be loosened with a hand Wrench or a Socket whichever is easier for you **(See Figure 17).** Some times it is easier to test fit the Tube End of Driveshaft to the Pump while the Pump is on the bench.

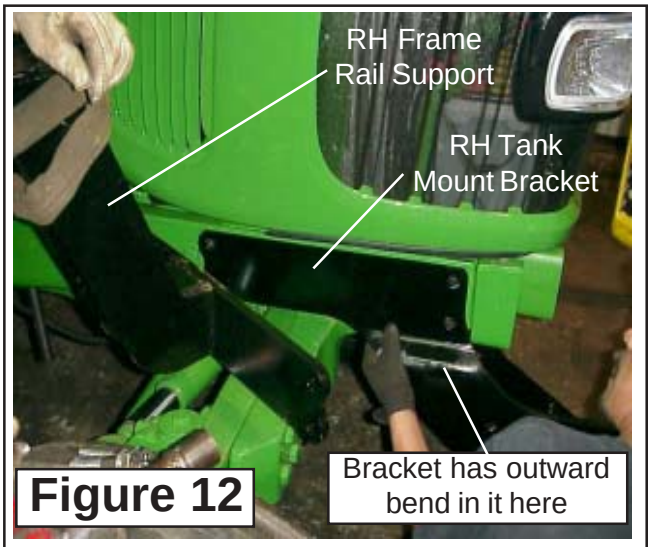


Figure 12

Figure 13

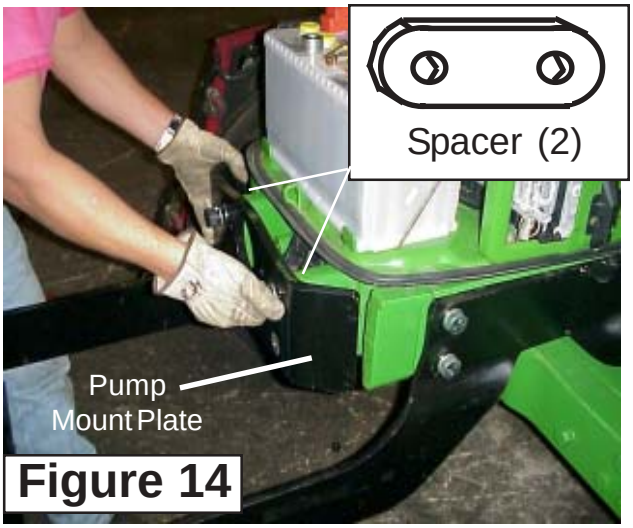


Figure 14

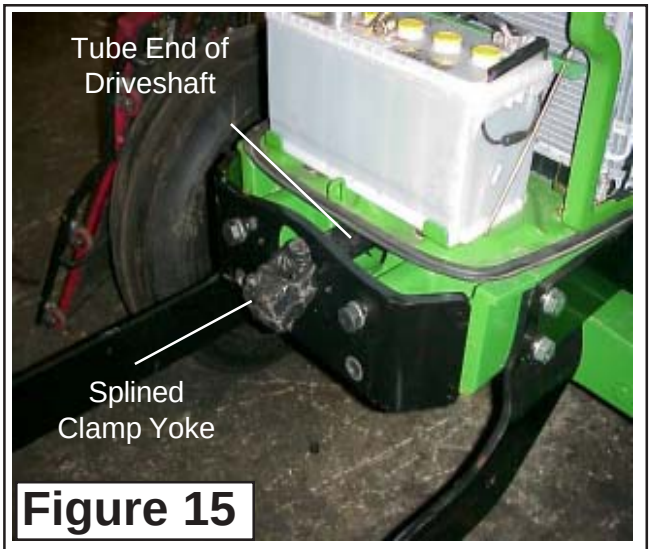


Figure 15

Pump / Drive Assembly Instructions

Installing Pump:

1. Locate Pump and Filter Assembly. The Pump and Filter are sent as an Assembly **(See Figure 18).** Inspect the Splines on Pump before trying to install it. It is easiest if you have already checked the Clamp Yoke on Drive Shaft for fit on Pump as described earlier.

2. Install Pump into Splined Clamp Yoke. Slide the Pump Splined Shaft into the Spline Clamp Yoke **(See Figure 19).** Leave the Bar stuck in through the Yoke as shown, this helps to stabilize the Yoke as you slide Shaft into the Yoke. Once Pump is slid into the Splined Yoke, keep the Pump supported; DO NOT let the Pump hang on the Yoke unsupported.

3. Pump / Driveshaft Yoke Gap Adjustment. After sliding Pump Shaft into Splined Clamp Yoke, the Pump and Yoke must be slid apart far enough to allow for a 1/16" to 1/8" Gap between them. The Yoke edge cannot touch the Pump Housing; it will damage the Housing and the Yoke if it does. This is a very critical adjustment **(See Figure 20).**

4. Tighten Clamp Yoke. After Gap between Yoke and Pump has been adjusted tighten the Bolts & Nuts on the Clamp Yoke **(See Figure 21, 22 & 24).** Check Pump to Yoke Gap once more. Keep Pump Supported do not let it hang on Yoke.

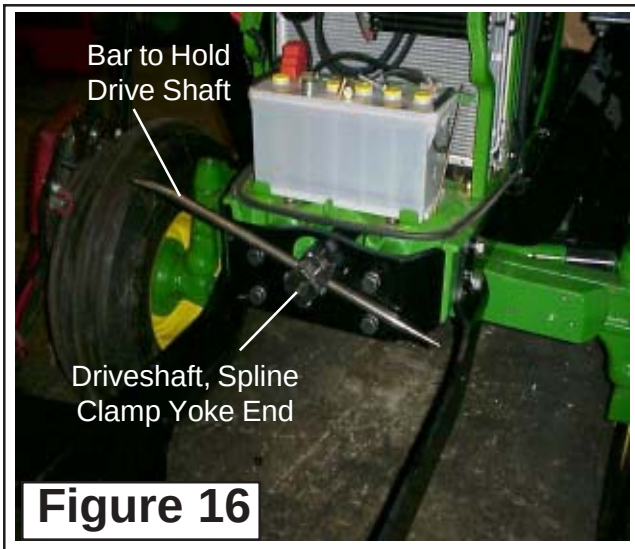


Figure 16

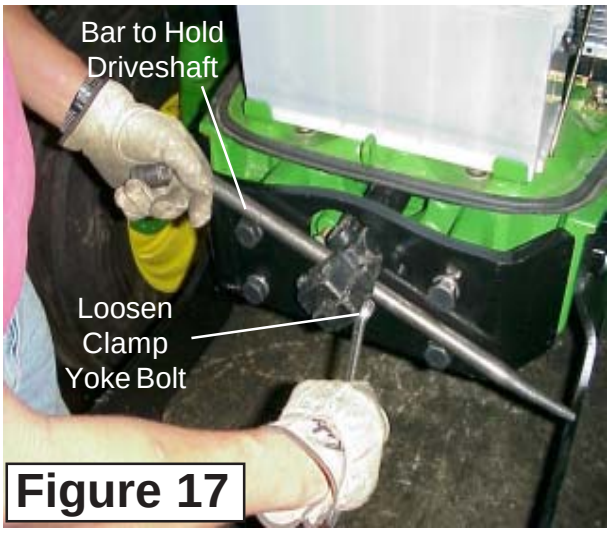


Figure 17

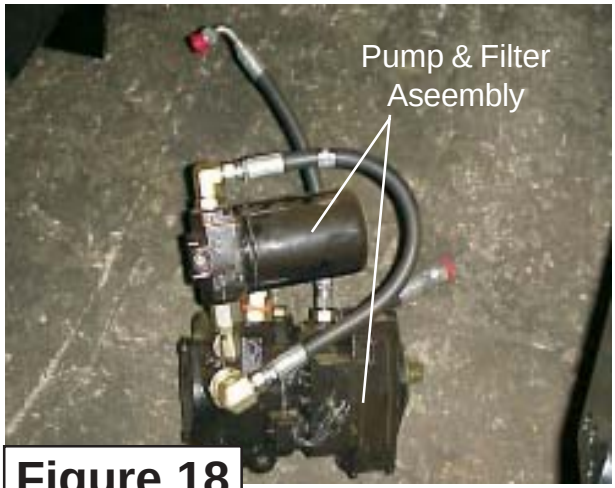


Figure 18

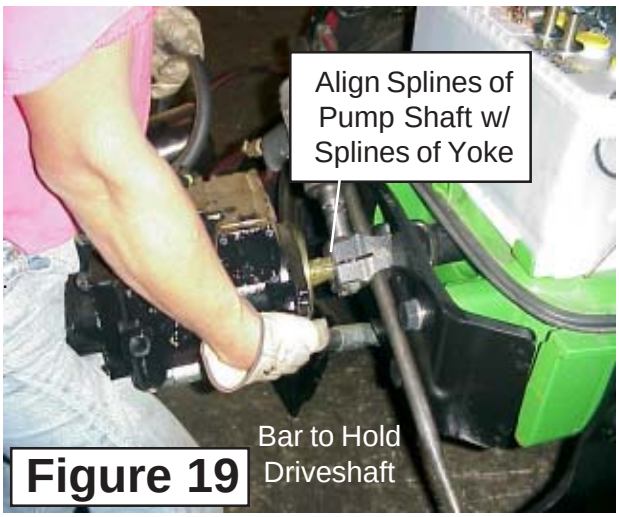


Figure 19

Installing Pump: (continued)

5. Mount Pump to Pump Plate. Remove the Bar that is slid through the Driveshaft Yoke and push the Pump inward **(See Figure 22).** This will make the two piece Driveshaft slide together allowing the Pump to be pushed towards the tractor. Do this untill the Pump is against the Pump Plate **(See Figure 23).**

6. Install Pump Mounting Bolts. While holding in on the Pump **(See Figure 23)** start the two Pump Retaining Bolts. Make sure both Bolts are started well before you stop supporting pump. The Bolts should be snugged untill pump sits level before you stop supporting it **(See Figure 24).** Let go of the Pump, it may slide back some and leave a slight gap between Pump and Mounting Plate **(See Figure 24).**

7. Tightening Pump Mounting Bolts. There is a shoulder on Pump Flange that must line up through hole in Pump Mounting Plate **(See Figure 24),** if the Pump is slid back as in figure 25 try to push it inward untill it is against Pump Mount Plate as shown **(See Figure 25).** Slowly and alternating from Left to the Right side, tighten the Pump mounting bolts untill they are tight. DO NOT FORCE Pump through Pump Mount Plate, if it will not freely slide in check for a problem of some kind. Excess force could damage Pump Housing.

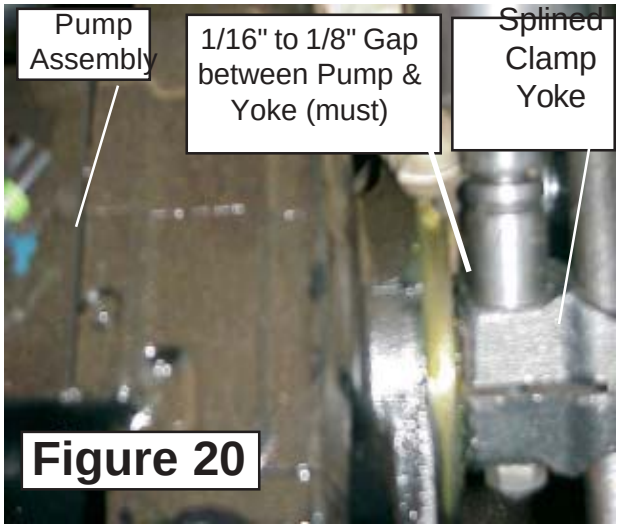


Figure 20

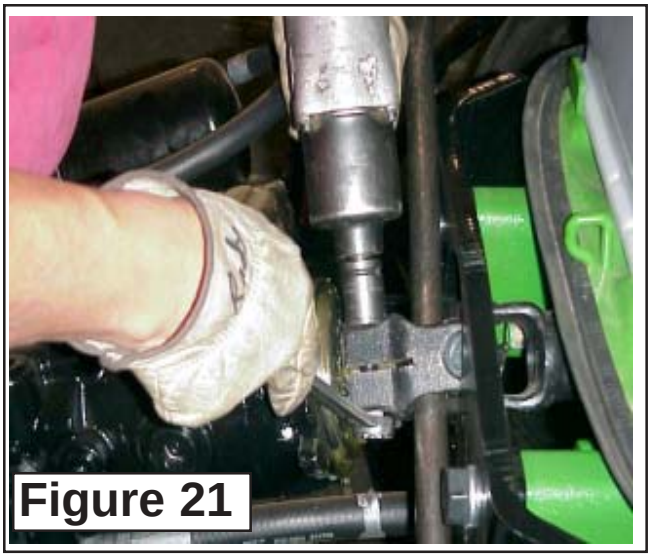


Figure 21

Figure 22

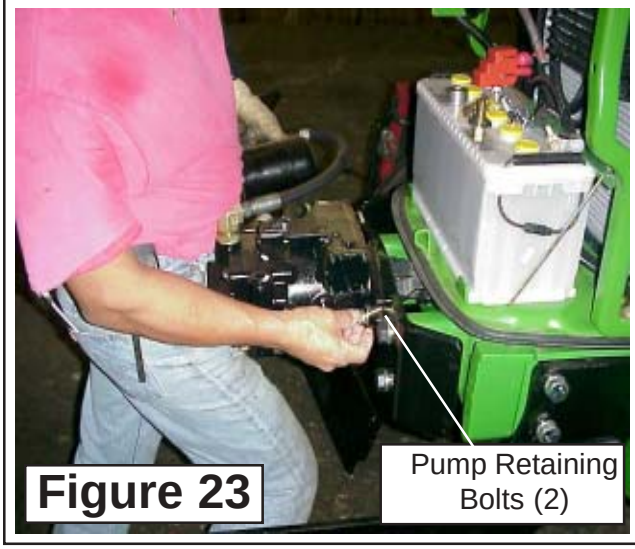


Figure 23

Installing Pump: (continued)

8. Suction Hose Alignment. The lower Hose and fitting on Pump is the Suction Hose. It will be easiest to tighten this Hose and Fitting now. The Hose should face the rear of the Tractor (toward Engine) and toward the RH side of Tractor at about 15 to 20 degrees off center **(See Figure 26 & 27).** Make sure Pump is mounted correctly, the suction hose must be on the bottom.

Installing Hydraulic Tank:

1. Hydraulic Tank. The Hydraulic tank is sent with the Valve Assembly bolted to it. The Tank Filler cap is attached to it and the Valve Filter Assembly in mounted on it. The Openings (For Hoses) are plugged and should remain Plugged untill Hoses are connected. Never leave a Hose or Fitting unplugged during Assembly **(See Figure 28).**

2. Tank Mounting Brackets & Bumper. Inspect the Tank Mounting Brackets. Notice the Bends in the Brackets, they should be bent to where they are wider at the Bumper end than at the Tractor Frame Rail Mounting End. Test fit Bumper, this will make sure that the Tank Mounting Brackets are correct and the Bumper will fit Ok. Remove Bumper as the Hydraulic Tank cannot be installed with the Bumper installed **(See Figure 29).**

Figure 24


Figure 25

Figure 26

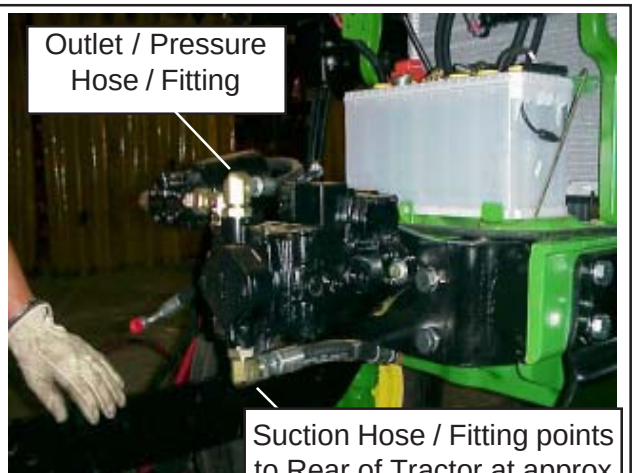


Figure 27

Installing Hydraulic Tank: (continued)

3. Hydraulic Tank Installation. Using a hoist to lift the Hydraulic Tank into position **(See Figure 30),** The Hydraulic Tank will slide in under Pump. Align the rear two mounting holes of Hydraulic Tank with the holes in the Tank Mounting Brackets **(See Figure 31).** These are the two closest to the tractor, Snug these two bolts at this time do not tighten them, as tank will have to move to align front Bolts. Note, the front Bolts that mount tank also mount Bumper. Leave the Tank supported by the Hoist.

4. Mounting Bumper. When installing the front bumper, Tank mount Brackets and the Bumper must all line up together as they share the same bolts. Start with one side or the other, in Figures below we started with the LH side **(See Figure 32 & 33).** There are three bolts on each side (total 6 for both sides). Insert the Bolts, Washers and Nuts, but do not tighten untill all 6 are installed. Tighten the 2 rear mounting bolts and the 6 front mounting bolts **(See Figure 31).**

5. Tightening Tank. Makes sure all the Mounting Bolts for the Tank and Bumper are tightened. Make sure that all Fittings and Hoses are plugged to prevent contamination from getting into system.

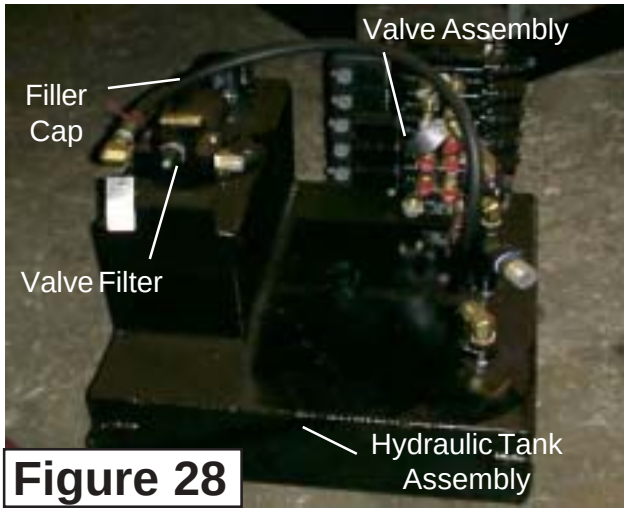


Figure 28

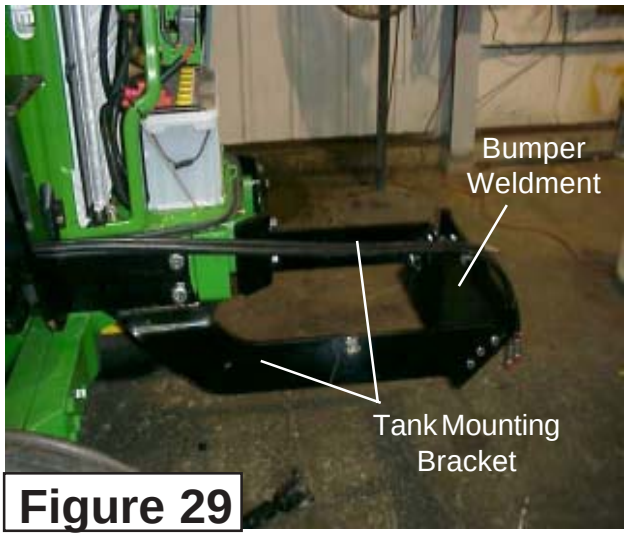


Figure 29

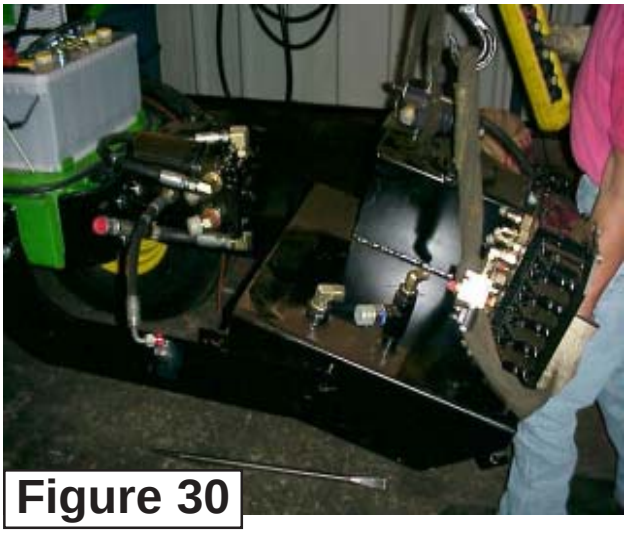


Figure 30


Figure 31

Figure 32

Figure 33

Section 4

MACHETE

Frame Rail / High Frame Setup/Pre- Assembly Installation

Frame Rail Set Up 2 WD & 4 WD

Frame Rail Pre-Assembly:

The Frame Rail Set UP. The Frame Rails for the Machete will be set up on the tractor, positioned, measured but not welded. The Machete High frame is set on to frame, positioned and leveled. After all is set up and positioned it will be Tack Welded in Place on Tractor. Then it will be dis-assembled and welded up on the Shop floor. This is done to ensure better welds and to enable the parts to be turned so the components can be Flat Welded. It has been found that this will make the components stronger. This also gives a chance for all frame components to be test fitted and broken loose during this trial if when another component makes the previous one interferes.

The Tractor should be covered and protected from Spark of the Welder and Grinder at all times. It will be your responsibility to protect the Tractor and its components. DO NOT WELD or GRIND near any Glass or Painted Surface unless it is protected from sparks, these Sparks will damage any surface. The purpose for Setting Frame up, tack welding it then removing it, is because with the amount of Welding that will have to be done these frame components will need to be repainted. The repainting is easier with frames off. The Frame components are shipped already painted but this is to protect the metal, plan on repainting them after welding.

DO NOT weld any frame or component untill instructed to do so in the instructions. Read through this entire instruction book to be familiar with which part goes where and when.

DO NOT try to man handle large components alone, one slip can break a window, damage a hood or worse. Note the order of assembly of other Assemblies, example the Pump Drive Shaft, Front Rail Supports, Rear Stack Valve Modifications and Joystick Assembly are assembled to Tractor before the frame rails. This is because some components will be in the way of others.

Tools that will be needed to complete this assembly. There are number of different ways to do things, some items are recommended to make assembly easier but may not be required.

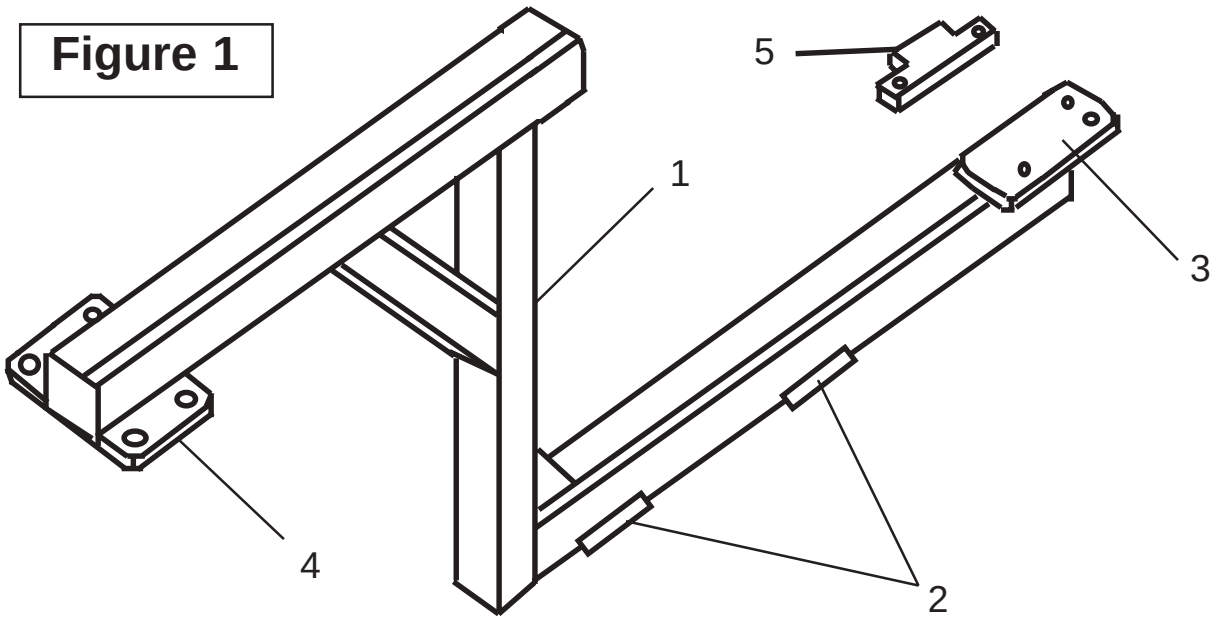
1. An over Head Hoist, the hoist (or Lift) should be a 2 ton capacity minimum. Hoist should be able to move and stop within fractions of an inch. Hoist should also have a 12 foot lift (Required).
2. Compressed Air, Air must be filtered and dry. A Safety air nozzle for blowing out Hoses and Fitting prior to assembly. (Required).
3. Air Impact Wrenches, 1/2" Drive and 3/4" drive (Recommended).
4. Torque Wrench, 400-ft lb. rating, can use a Torque Amplifier Wrench. (Required)
5. Complete Set of Combination Wrenches from 7/16" to 2" (Recommended).
6. Assortment of Screwdrivers, (Short ones and Long ones). (Required)
7. Electric Grinder, Size according to needs (Required).
8. Burr Grinder, Electric or Air optional, for resizing Holes and removing Burrs from stamped metal or stamped holes. (Required)
9. Welding Machine with an experienced Welder, capable of welding up to 3/8" material and Welding at different angles. (Required)
10. Flame Proof or flame retardant Material to Cover and protect Tractor finish and components during assembly. (Required)
11. A good fire Extinguisher on hand before any welding or grinding begins. (Required)
12. Clean dust free work area, clean Lint Free towels or wipes. Do not do any welding, use compressed Air or lay out any component unless area is clean. Material the size of a human hair can contaminate the Hydraulic System (Required).
13. A place to keep all Components separate till ready for them (Recommended)
14. Electrical Butt connectors and Electrical Pliers. (Required)
15. Paint Scraper to remove Paint before welding.

Frame Rail Installation 2 WD & 4 WD

Frame Rail Pre-Assembly: (continued)

RH & LH Frame Rails. Shown below are example of Frame rails, There is a Right and Left Frame Rail, They will not interchange from side to side. LH must be mounted on the Left and Right on the Right. To ID which is which, the easiest way is to look for the Counter Weight Mounting Tubes **(See Figure 1 Item 2),** these are welded on to the LH Frame Rail Only. The Rail Mounting Pad (See Figure 1 Item 4) is loose and not welded to the front of the Frame Rail untill final assembly.

Figure 1



Item	Part No.	Qty	Description
1	02978468	1	2 WD Frame Rail Weldment, LH (Shown)
	02978469	1	2 WD Frame Rail Weldment, RH (Not Shown)
2	----------	2	Frame CWT Mounting Tube (Welded on LH Frame Rail Only)
3	----------	2	Rear Mounting Plate (Welded on LH and RH Frame Rail)
4	02725900	2	Front Rail Mounting Pad (not welded to frame rail when recievedl)
5	02974704	2	Stabilizer Strap, (Axle Straps)

Note:

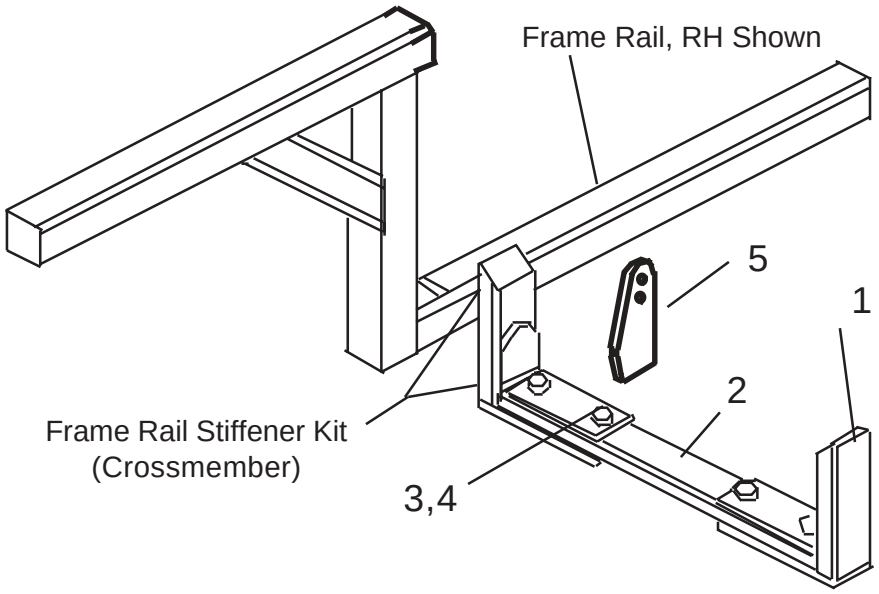
Item 2 is only welded on the LH Frame Rail. Item 3 is welded to both LH and RH Frame Rails from the factory. Item 4 will be welded on during assembly procedures. Do not weld on any components until instructed to do so, then check instructions carefully because some components are only to be tack welded then removed to be welded later.

Actual Tube Design may vary from drawing above. Shown above is a general Frame Rail Weldment. While Frame Rails may be designed different the mounting process will be the same.

Frame Rail Pre-Assembly: (continued)

Frame Rail Stiffener Kit (Crossmember). Shown below is the Frame Rail Stiffener Kit. This mounts under the Tractor and will be added to the Frame Rails during Assembly. Item 5 Rail Support Gussets are shipped loose and are not part of the Assembly, they will be bolted to the tractor and when instructed you will need to weld the Frame Rail Support to them **(See Figure 2).**

Frame Stiiffener Kit



Item	Part No.	Qty	Description
	02970118	--	Frame Rail Stiffener Kit (Item 1 thru 4)
1	02970115	2	Rail Stiffener Weldment
2	02970086	1	Tube, Rail Stiffiner
3	02712500	4	Bolt, 1" NC X 4" GR8
4	5JRC1680	4	Locknut, 1" NC (Toplock)
5	02978499	2	Gusset Rail Support

Figure 2

Frame Rail Pre-Assembly: (continued)

High Frame Mounting Tube Components. **(See Figure 3 & 4)** These Components are to be laid out and will be tack welded to frame Rails and High frame during Pre-Assembly Process. Locate and ID these Parts for later installation. Remember DO NOT Weld any components untill instructed to do so.

High Frame Mounting Tube Componnets

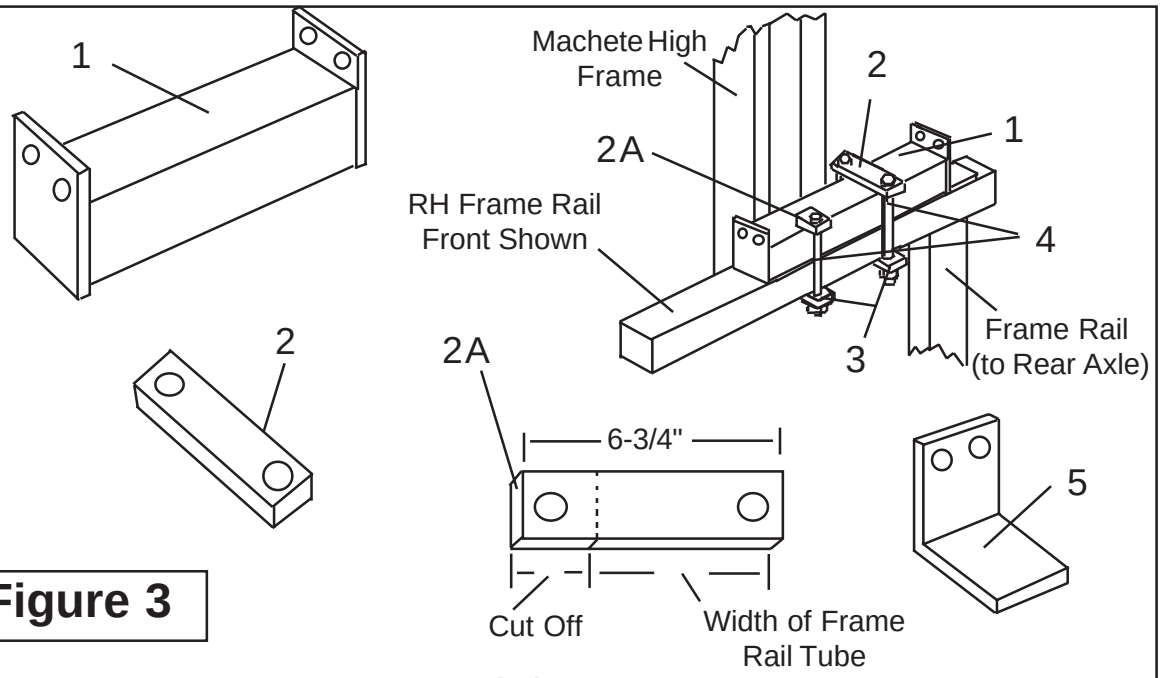


Figure 3

Item	Part No.	Qty	Description
1	---Ref-----	2	Mounting Tubes, (Length will Vary with Mount Kit).
	02918600	8	Bolt, 3/4" X 2" Long (Not Shown)
	00037200	8	Locknut, 3/4" Toplock (Not Shown
2	02966639	7	Bar Mounting Strap
2A	02966639	1	Bar Mounting Strap (Cut In Half)
3	00037200	8	Locknut, Toplock
4	02957039	8	Bolt, 3/4" X 10-1/2" Long
5	02966641	4	Angle Mount

Frame Rail Pre-Assembly: (continued)

High Frame Mounting Tube Components. **(See Figure 4)** These Components are Sitting in approx. position of assembly to illustrate where they are to be when tack welding them. Space is left between them for Illustration only, they will be closer together when assembled.
Also See Figure 3 on previous Page.

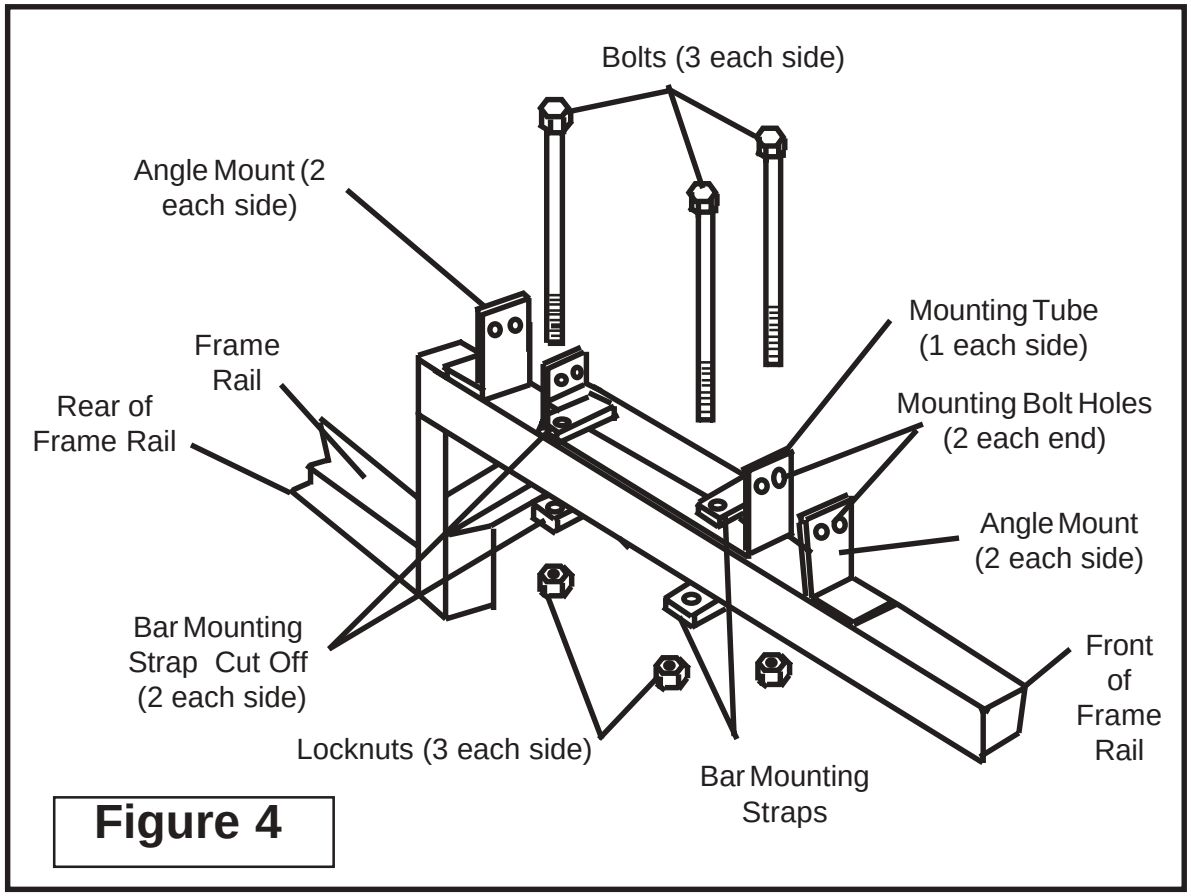


Figure 4

High Frame and King Post Frame Sub-Assembly. **(See Figure 5)** The High frame will come with the King Post Sub-Assembly Bolted to it. The King Post Sub-Assembly bolts to High Frame; these Bolts must torque to 375 ft. lbs. These should be Torqued when received from the factory. The Lift Cylinder will not be assembled to King Post; it is shown in figure 5 for Illustration and will have to be mounted later after final installation of High Frame. The 2 Wheel drive and 4 Wheel Drive High frames are different and will not interchange In Figure 5 the 2 Wheel drive High frame is shown, the 4 Wheel drive High Frame has the King Post Mounting plate welded higher up on frame than shown here. DO NOT try to use a 2 Wheel drive Frame on 4 Wheel Drive Tractor or vice versa, it will not work.

High Frame Installation 2 WD & 4 WD

High Frame & King Post Sub-Asy

NOTE: 2 Wheel Drive High Frame Shown, the 4 Wheel Drive frame looks the same except mounting of King Post and Bracing is higher up. The 2 Wheel Drive and the 4 Wheel Drive High Frames will not interchange.

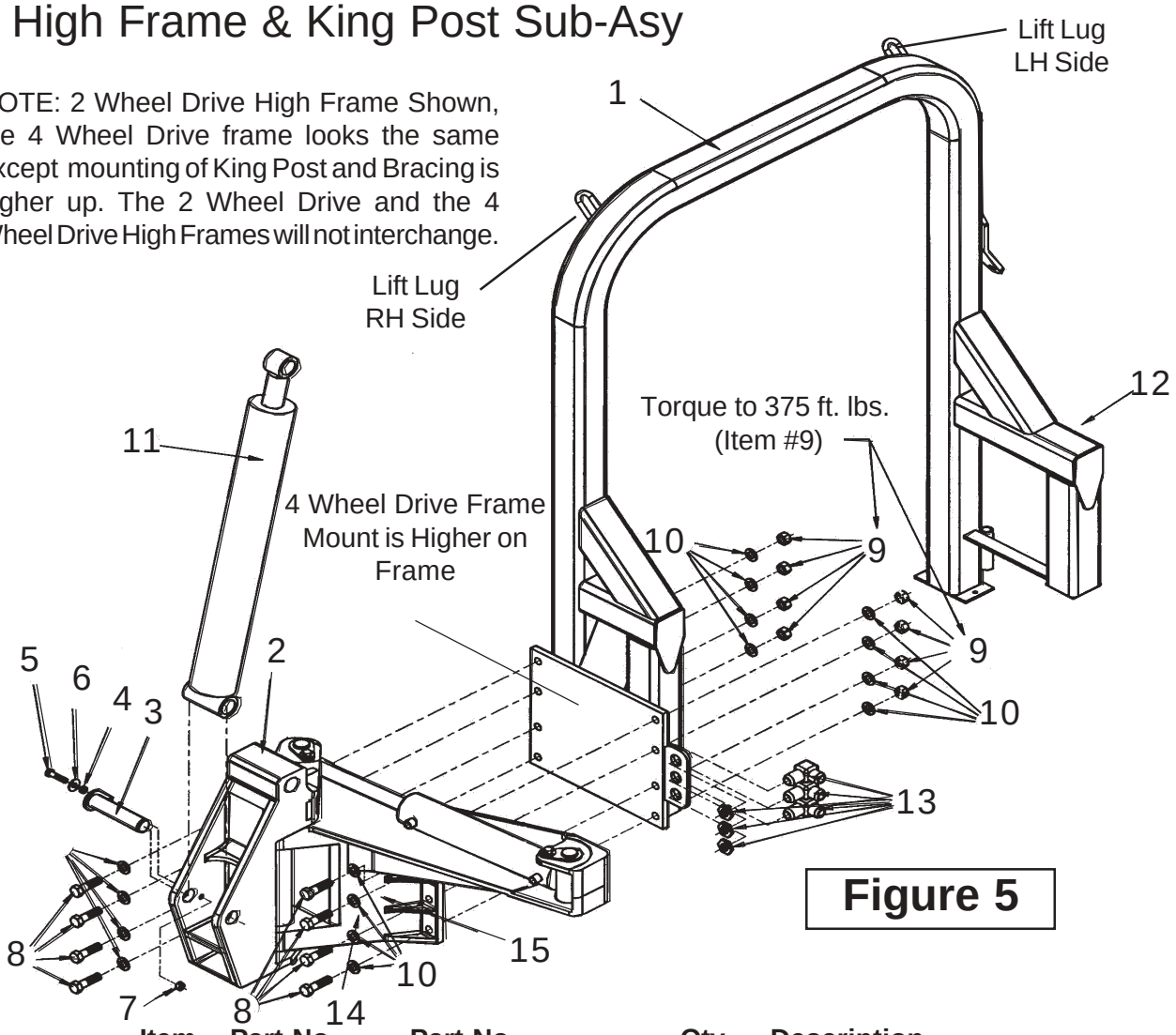


Figure 5

Item	Part No.	Part No.		Qty Description
	02978449	**----------**	**-**	**Frame Asy. 2 Wheel Drive (Shown)**
	----------	**0297845**	**-**	**Frame Asy. 4 Wheel Drive**
1	02978447	----------	1	Frame Weldment, 2Wheel Drive (Shown)
	----------	02978448	1	Frame Weldment, 4 Wheel Drive
2	02978000	02978000	1	King Post Frame Sub-Asy
3	02978461	02978461	1	Weldment, Pin
4	02975596	02978896	1	Tube Spacer
5	00013300	00013300	1	Hex Head Cap Screw 1/2
6	00002700	00002700	1	Flatwaser
7	00001800	00001800	1	Locknut
8	02960521	02960521	8	Hex Head Capscrew 3/4
9	00037200	00037200	8	Locknut
10	5312316	5312316	16	Washer 25/32
11	02968841	02968841	1	Lift Cylinder Asy.
12	00725746	00725746	1	Decal, Spanish Translation
13	02742500	02742500	3	Elbow
14	02962765	02962765	1	Decal Multi-Hazard
15	02965262	02965262	1	Decal Hose Burst

Frame Rail Installation 2 WD & 4 WD

Pre-Installing Frame Rails:

1. Lay Out Components in Display. It is helpful to lay out the component in as neat a display as possible. Lay out the Bolts according to size and length. Lay out the Nuts and washer by size. This will allow you to see how many of each part as you use them and help to identify any missing parts. (See figure 6) See ComponetnIdentification Section tohelp ID Components.

2. Front Frame Rail Supports. These Frame Rail Support Mounts (part # 02978463 LH & 02978464 RH). These should already be mounted from previous Assembly of Front Pump and Drive Shaft Components. It is easier to mount the Pump Drive Shaft before these Frame Supports are installed. If you are mounting the Frame rail supports now, there are important things to remember. There are 4 bolts that go through Tractor Frame that will have to be removed before this can be mounted, DO NOT remove these 4 bolts from both sides (LH & RH) of the Tractor at the same time. Remove the 4 from one side or the other, install the 4 retaining (New Bolts) that hold the Rail Support Weldment on and tighten them. Then go to the other side and remove the 4 Bolts from Tractor Frame Rail and install Machete Frame rail Supports using the 4 new Support Retaining Bolts. The Tank Support brackets connect to the Tractor. These will be mounted when the Frame Rail Supports are installed (See Figure 7).

3. Rail Support Gusset Mount. There are two Bolts in the Tractor frame rail that will need to be removed in order to mount this gusset support. It is easier to do now with the frame rails off. It will need to be installed now, as the Frame Stiffener Assembly will line up with these Gussets. Note the angle on the Gusset as it is being mounted **(See Figure 8)** See Figure 2 for drawing of Frame Stiffener Kit and Part numbers for components.

Figure 6

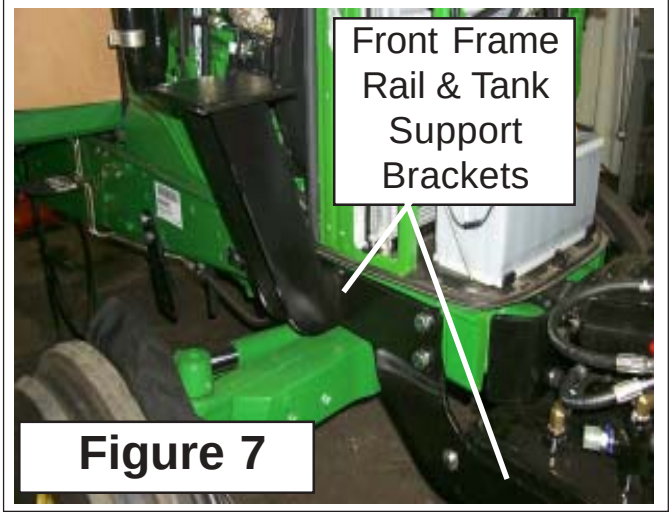


Figure 7

Figure 8

Pre-Installing Frame Rails: (continued)

4. Front Rail Mounting Pad. There are two of these Pads; one is used on the left and one on the right. These Pads are the same so it will not matter which goes on which side. **(See Figure 9).** Set the Pad down over the Front rail Support aligning the four holes in pad with the four holes Support. Insert the four Bolts into the mount pad and plates on front support mount **(See Figure 10).** Install a nut on one or two of the Bolts but do not tighten them, the Bolts are only installed to prevent the Pad from moving side to side.

5. Locate RH and LH Frame Rail. There are two different frame rails, RH and LH. Start with either one you want, for illustration we started with the RH **(See Figure 11).** Remember the LH is the one with the Counter Weight Mount Tubes welded onto it, **(See Figure 1)**

6. Prepare Tractor Axle Housing. First look up under Tractor at the rear axle where the frame Rails mount you will see holes in the Axle castings on both LH and RH side that has plastic plugs in them. The Plastic Plugs will have to be removed now as they cannot be removed once the Frame Rails are in place **(See Figure 12).**

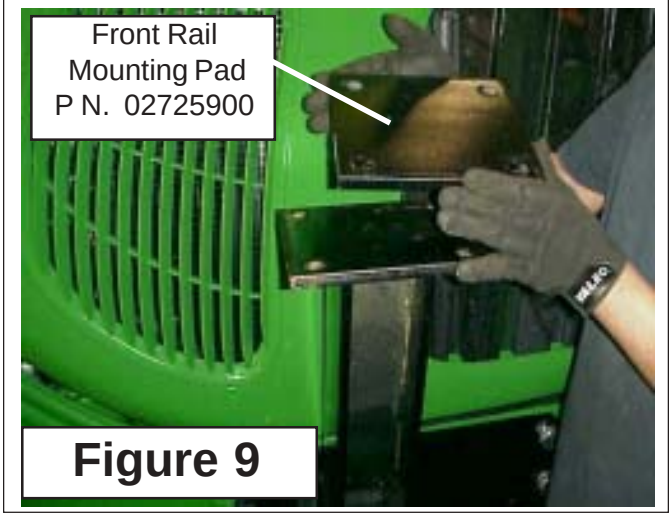


Figure 9

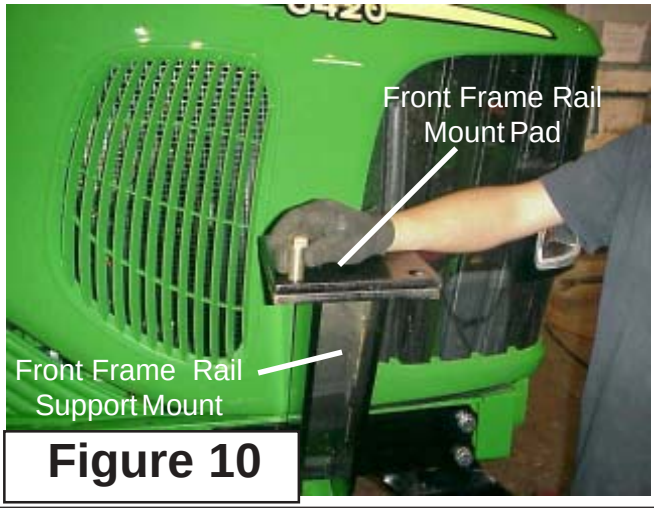


Figure 10

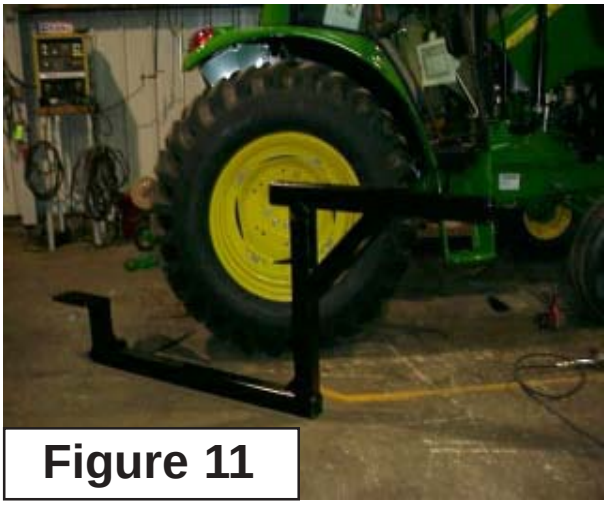


Figure 11

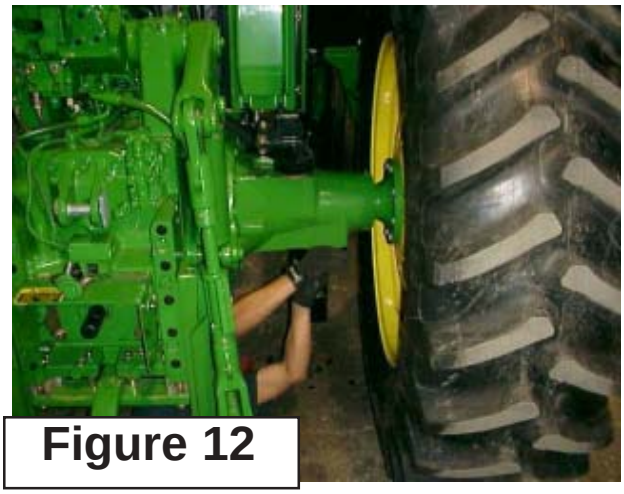


Figure 12

Pre-Installing Frame Rails: (continued)

7. Installing Frame Rails. Using a Hoist, lift the frame rail and slide it into place under the right rear Axle. Hold the frame rails as shown to prevent it from moving **(See Figure 13).** Using a Floor Jack **(See Figure 14)** support the Frame Rail up under the Axle. Note: the RH and LH Frame rail will install the same so you can work either side first.

8. **Install first** Frame Rail to Tractor & Rear Axle. The Frame Rails Mount to the rear Axle of Tractor. The RH Side has Longer Bolts than the LH Side does. This is because the Axle Mounted Boom Rest will also mount here using some of the same Bolts. For now use shorter Bolts to hold Frame Rail up to Axle while you finish the Pre-Installation. The Bolts that were removed from the Tractor when you mounted the Front Frame Rail Supports will work well for this **(See Figure 15**).

9. Install the other Frame Rail. The other frame rail will install the same as the first did. DO NOT do any welding at this time.

10. Frame Stabilizer Kit. Locate the Frame Stabilizer Kit **(See Figure 16).** This should be bolted together as shown, for fitting under tractor and to Frame rails it must be bolted together.

Figure 13

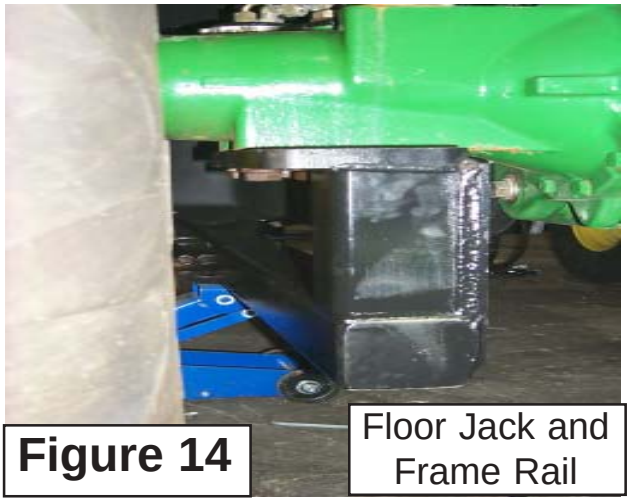
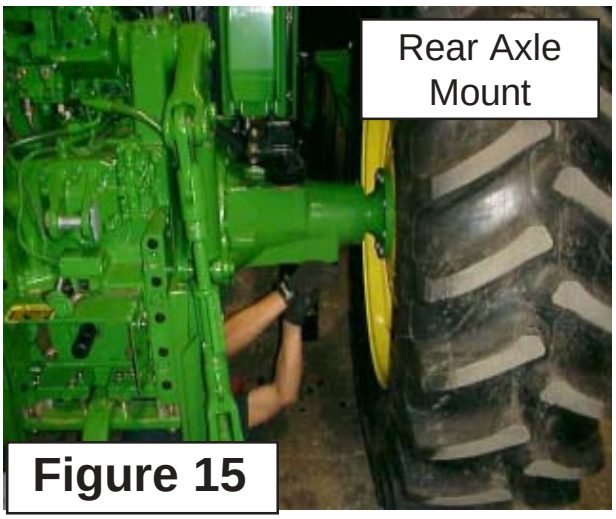


Figure 14

Floor Jack and Frame Rail



Rear Axle Mount

Figure 15

Figure 16

Pre-Installing Frame Rails: (continued)

11. Raising Frame Stabilizer Kit Up Under Tractor. Using a Floor Jack slide Stabilizer Kit under Tractor right behind the front wheels. **(See Figure 17).** Note the Floor Jack used here has had channel built for it that cradles the square shape, this is also good for supporting the frame rails during assembly. Using Jack helps to align Stabilizer to frame rails.

Figure 17

12. Align Stabilizer Kit. Raise Stabilizer Kit with the Floor Jack up till it is flush up against the Stabilizer Gusset Support that should already be bolted to the frame from earlier installation steps **(See Figure 18)**. This should be this way on the RH and LH side. DO NOT Weld Gusset to Stabilizer yet this will be done later. Secure the Stabilizer kit to the Frame Rails with C-Clamps on both LH and RH **(See Figure 19).** You may leave the Floor Jack or remove it.

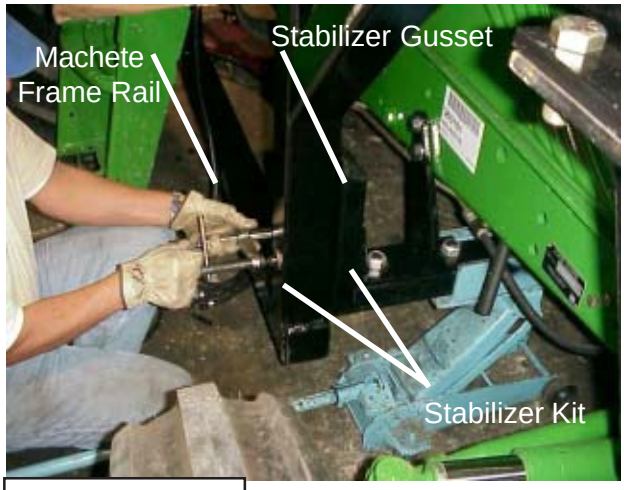


Figure 18

13. Align Frame Rails on Front Mount Pads. Locate the Front Frame rails on the mount pad so that there is room for the Bolt heads to clear the Frame Rail. Here we have wedged a Screwdriver with a 1/4" shank between the Bolt Head and the Frame Rail. Anything about that size can be used to keep enough distance so bolt can be removed and reinstalled without interference. Use a C-Clamp to hold it in place when aligned. Do this on Both the RH and LH side. **(See Figure. 20)**

Figure 19

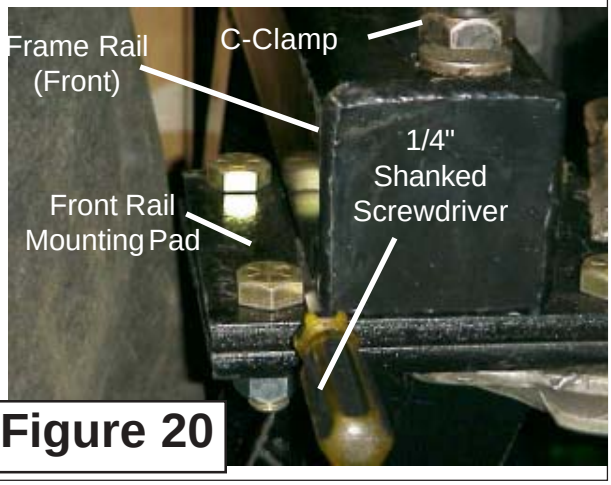


Figure 20

Frame Rail Installation 2 WD & 4 WD

Pre-Installing High Frame:

1. High Frame Shipping Pallet. The High frame is shipped bolted to a Pallet, Do not unbolt this from the Pallet untill the Hoist has been connected to the High frame. The Hoist must be supporting the weight of the High Frame before any of the bolts holding High frame to pallet are removed.

2. Prepare High Frame for Lifting. There are two lift lugs welded to the top of the High frame for lifting it **(See Figure 21).** These Lugs will lift the bare High Frame straight without the King Post Sub-Assembly bolted to it. With the King Post Sub-Assembly bolted to the High Frame it will require you to adjust the length of the lifting chain and lifting point to balance the load **(See Figure 22)** and lift High frame level. High frame must be level when lifted over Frame rails.

3. Level High Frame. Use two magnetic Levels as shown. These magnets should be installed before lifting High frame.

The First Magnetic level is put on the Top of the High Frame on the Bottom Side **(See Figure 23).** This level will allow you to level the frame from left to right without having to climb up later to use a Level that you hold.

The Second Magnetic Level is put on the Kin Post Pivot toward the front of the tractor so that it will level the High Frame from front to rear as shown **(See Figure 24).**

Figure 21

Figure 22

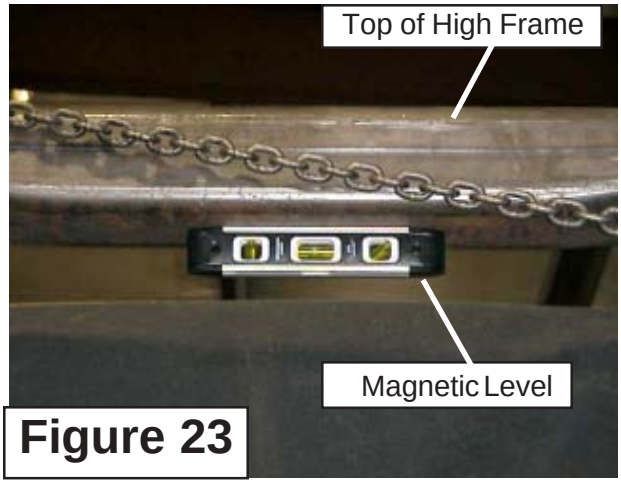


Figure 23

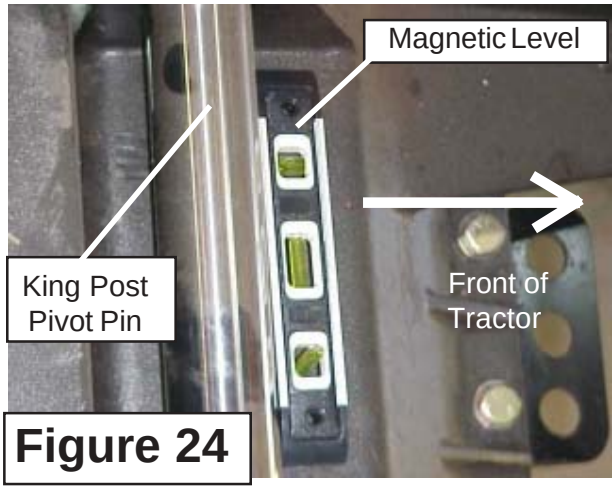


Figure 24

Pre-Installing High Frame: (continued)

4. Lower High frame down over Tractor. This is a two man job in order to keep control of High Frame on both sides of tractor **(See Figure 25)**. Lower the High Frame down over the Frame rails **(See Figure 26)** slowly, as it must straddle the Frame Rails **(See Figure 26).** Lower High Frame untill the top of the High Frame is no higher than the cab of The Tractor; this is a general Rule and may vary. Another mark to look at is the Horizontal tube of the High frame should be parallel up and down with the Frame Rail Tube as shown on next page **(See Figure 29).**

Figure 25

5. Check High Frame for Level. Check the two Magnetic Levels that you installed earlier. The Top Level should be from side to side of the Tractor **(See Figure 27).** The level on the King Post Pivot Pin should be level making High Frame Level straight up and Down **(See Figure 28).** Leave the Magnets on the High frame, as you will have to check then one more time later. DO NOT do any welding at this time.

Figure 26

6. Secure High Frame to Frame Rails. Secure the High Frame to the Frame rails with C-Clamps on both sides **(See Figure 29).** Do not weld anything at this time.

Figure 27

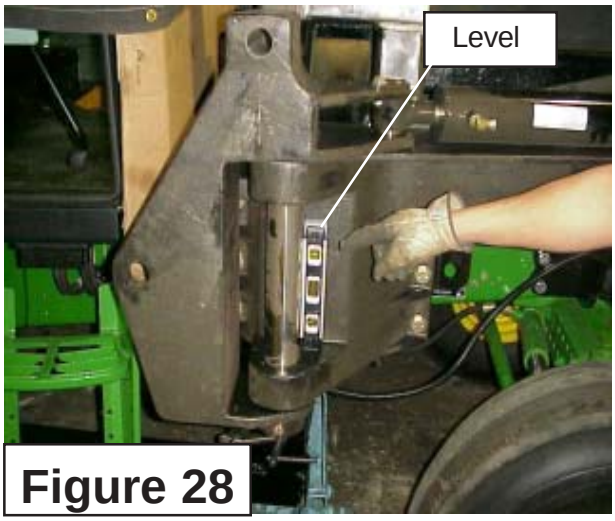


Figure 28

Pre-Installing High Frame: (continued)

7. Align High frame to Frame Rails. The High Frame Vertical Tube should be as directly above the Vertical tube of the frame rails as possible **(See Figure 30)**. The illustrations in figure 30 shows the High Frame not directly over the Frame Rail Vertical Tube, try to get it as directly over it as you can.

The height of the High frame should be no higher than the Cab of the Tractor. The horizontal tube of the High Frame should be just above the height of the horizontal Tube of the Frame Rail **(See Figure 29 & 30)**

Clamp the High frame to the Frame Rail when aligned and leveled. **(See Figure 29)**. Leave the Hoist connected to the High frame for safety and additional support.

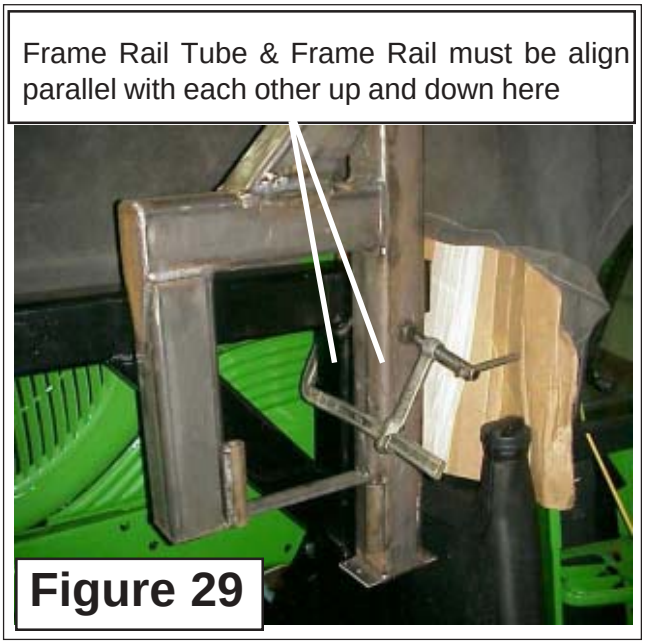


Figure 29

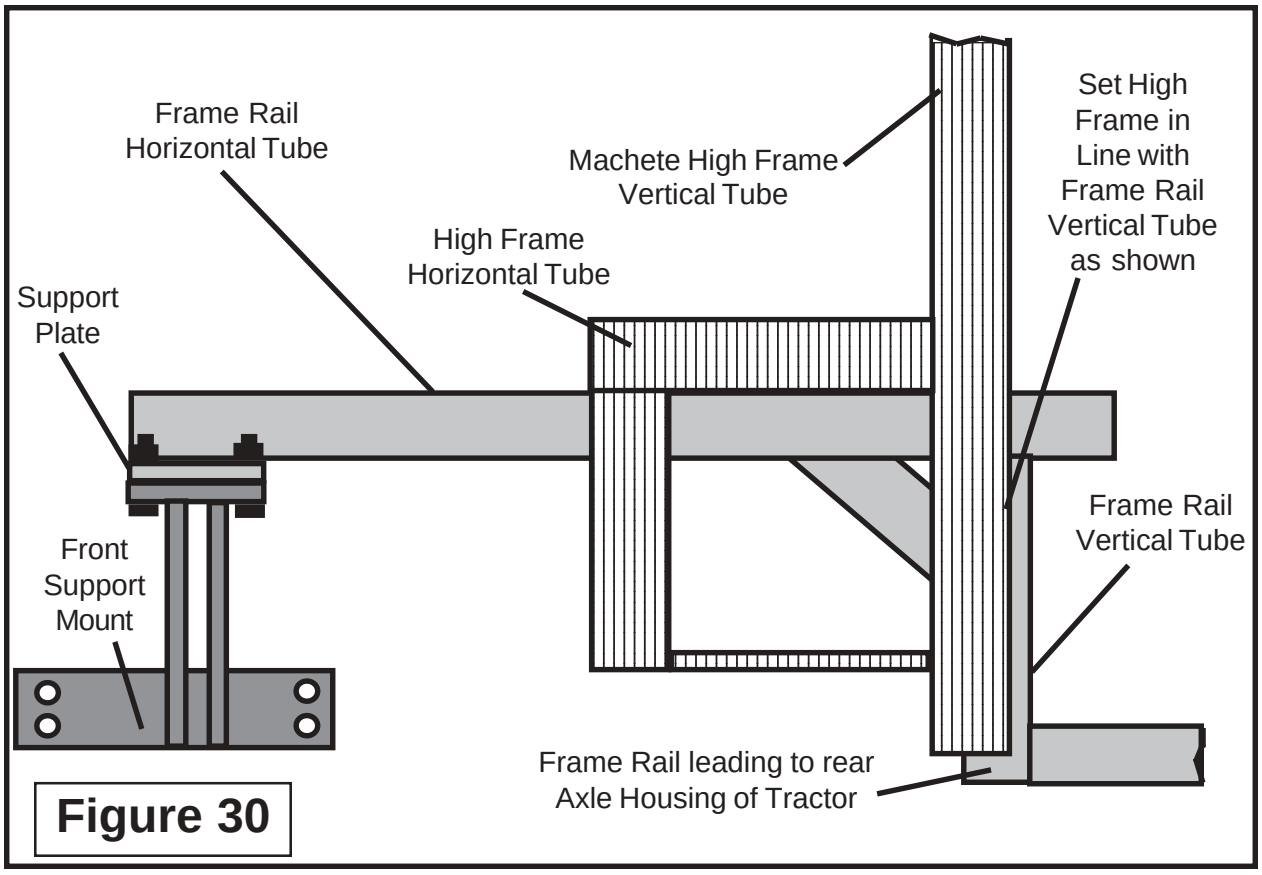


Figure 30

8. Re-check all alignment points. Re-check the alignment of the Frame Rails, High Frame for level and mounting position. These components must be aligned now before e any Tack welding begins.

Pre-Install Mounting Tubes for High Frame: (continued)

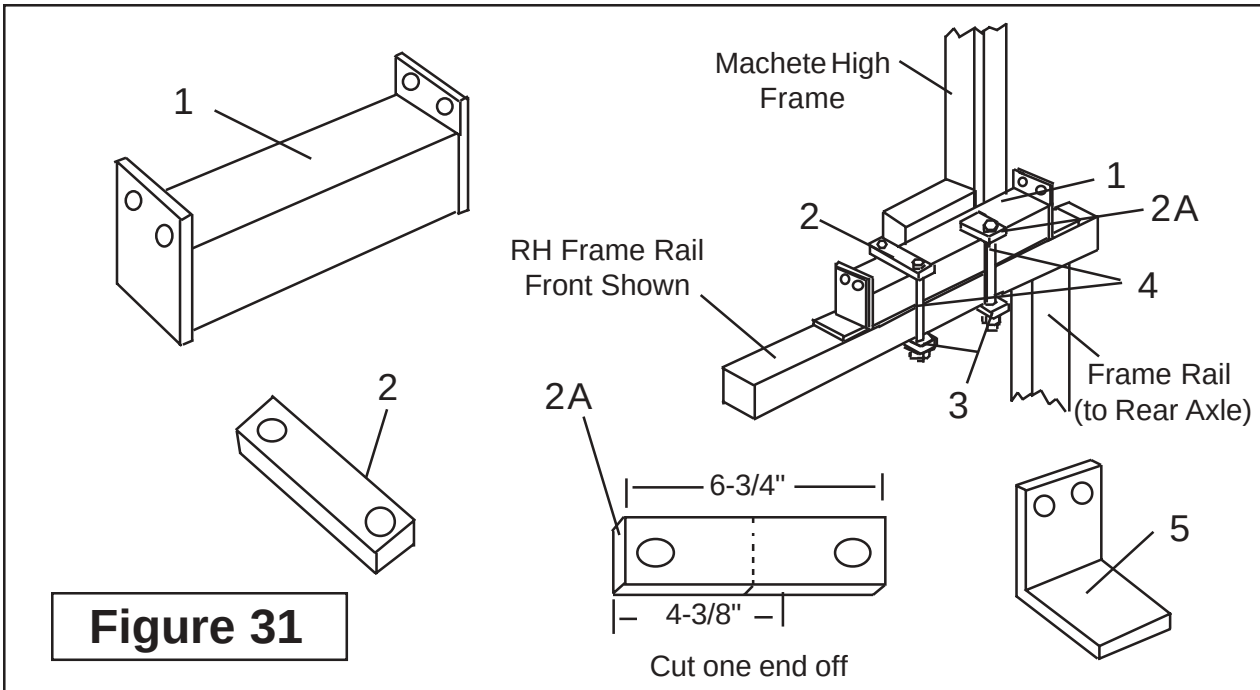


Figure 31

Item	Part No.	Qty	Description
1	---Ref-----	2	Mounting Tubes, (Length may Vary with Mount Kit).
	02918600	8	Bolt, 3/4" X 2" Long (Not Shown)
	00037200	8	Locknut, 3/4" Toplock (Not Shown
2	02966639	4	Bar Mounting Strap
2A	02966639	4	Bar Mounting Strap (Cut one end off)
3	00037200	8	Locknut, Toplock
4	02957039	8	Bolt, 3/4" X 10-1/2" Long
5	02966641	4	Angle Mount (Front or Rear)

9. Install Mounting Tubes and Rear Angle Mount. Loosely bolt the Rear Angle Mount on, one end of each Mounting Tube **(See Figure 32).** Slide 1 Mounting Tube in on top of the Frame Rail on each side, the end that has the Angle Mount bolted to it goes to the rear towards the Tractor Cab. The mounting Tube should be slid back till the Mounting angle is about 1/2" from the end of the Frame Rail. **(See Figure 34)**. Do Not Tack Weld any components at this time. Note: in figure 32 note the location of High Frame Tube Height as compared to Mounting Tube Height, this is the way that it will appear as looking over the Hood of the Tractor toward LH Side.

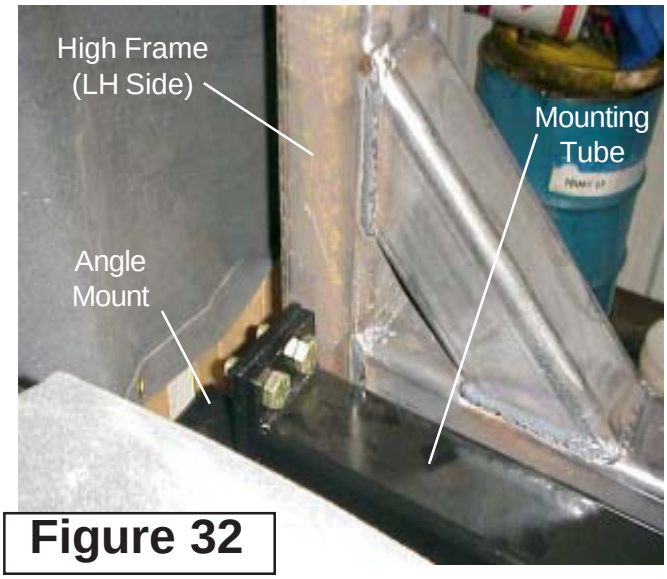


Figure 32

Pre-Install Mounting Tubes for High Frame: (continued)

10. Install Front Angle Mount. Loosely bolt the Front Angle Mount on the other end (front) of each Mounting Tube **(See Figure 33).** Notice the washer that is installed between the Angle Mount and Mount Tube, This is there because about a 1/16" Gap is needed between the Mount Tube Plate and the Angle Mount Plate. Putting this 1/8" thick washer on the front Angle Mount end only will allow for this Gap on both ends. **(See Figure 33 & 34)** This should be done on right hand and left hand side Mounting Tube. This Gap allows the High Frame with the Mounting Tubes welded onto it, to be lowered down between the front and rear Angle Mount, which will be welded to the Frame rails later. Do not do any tack welding till instructed to.

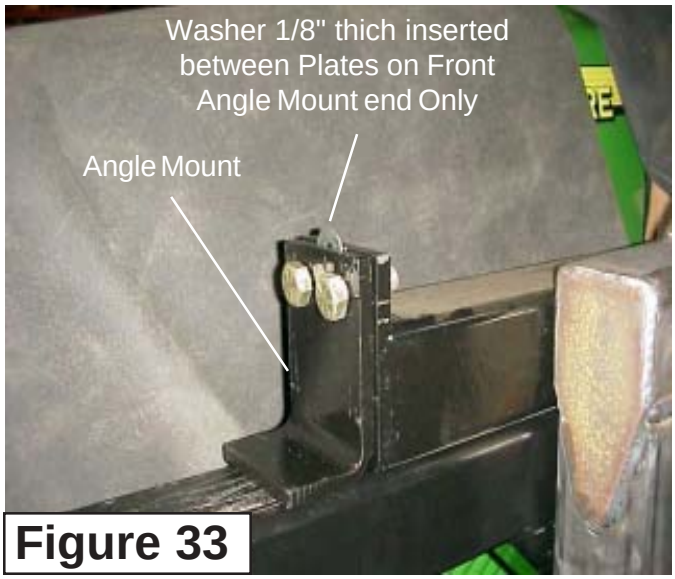


Figure 33

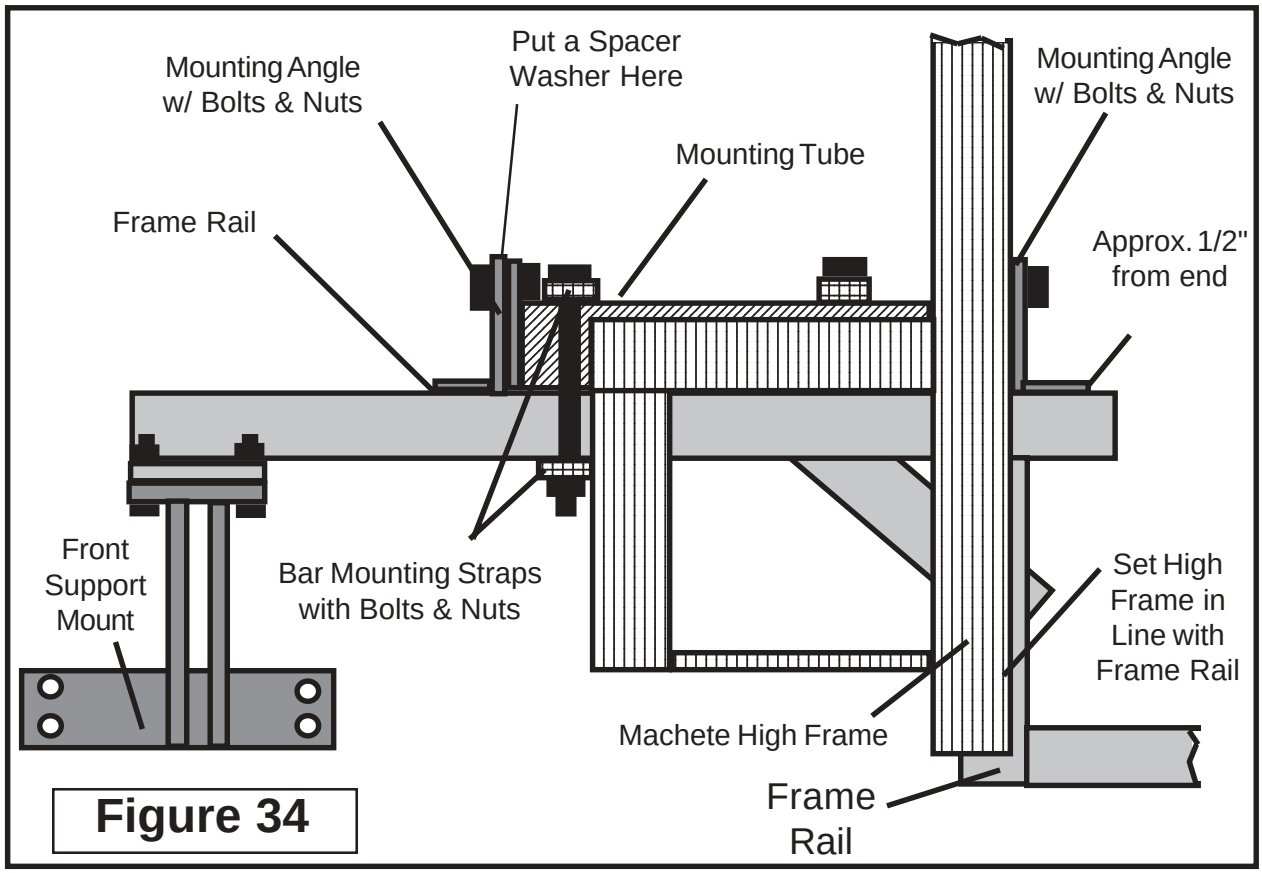


Figure 34

Tack Welding Frame Rails:

1. Tack Weld Frame Rails to Front Mounting Pads. Check to make sure that the Frame rail is still aligned on front rail Mounting Pad, Frame Rail should not interfere with the Mounting Pad bolt heads Check the LH and RH Frame rail **(See Figure 35)**. If alignment is correct Tack Weld the Frame Rails to the Front Rail Mounting Pads. **(See Figure 32).** When tack Welding use 4 good tack welds per Frame rail, 2 on each side of Tube. **(See Figure 37).** The C- Clamp on The Frame Rail Tube at the mounting pad can be left on till later.

2. Tack Weld Frame rails to Frame Rail Stiffener. Tack Weld the frame Stiffener Brackets to the Frame Rails, but be sure you DO NOT tack Weld the Stabilizer Gusset at this time **(See Figure 38).** The reason for not welding the stabilizer gusset at this time is because it would make it more difficult for you when you remove the High Frame and Frame rails for final welding. The Tube Crossmember of the Frame Stabilizer can be removed now. Remove the four mounting bolts and slide the Tube forward or back to get it out. **(See Figure 39).**

3. Go back and check to make sure you have tack welded the Frame Rail to Mounting Plate and Stabilizer to Frame Rail **(See Figures 31 through 39).**

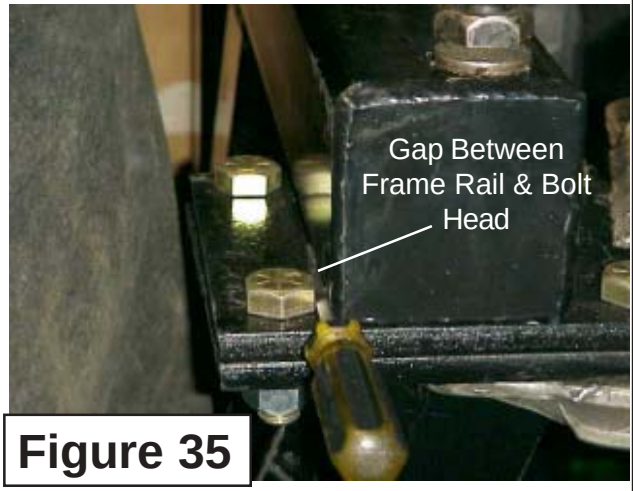


Figure 35

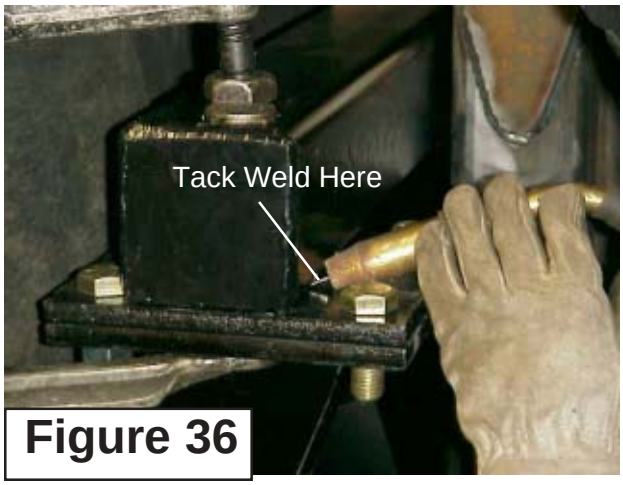


Figure 36

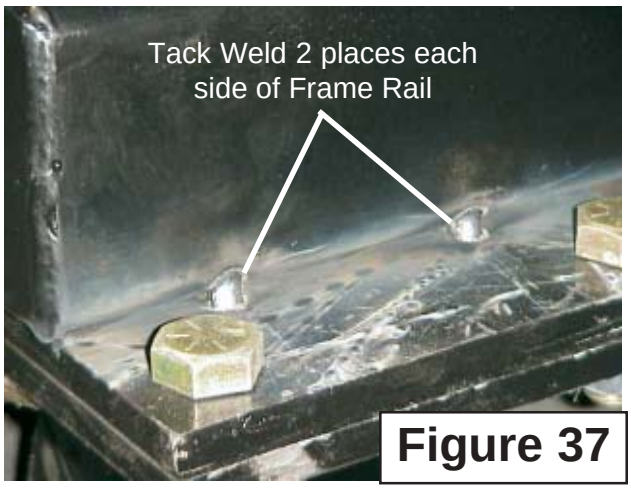


Figure 37

Figure 38

Tack Welding Frame Rails: (continued)

4. Frame Stiffener Assembly. The frame stiffener is an assembly designed to run under the Tractor to tie the two Frame Rails together and support each other. The Gusset Rail Support is designed to stabilize the Frame Rails to the tractor frame. Re-check the left hand and right hand sides to make sure the alignment is still correct and the tack Welding has been performed.

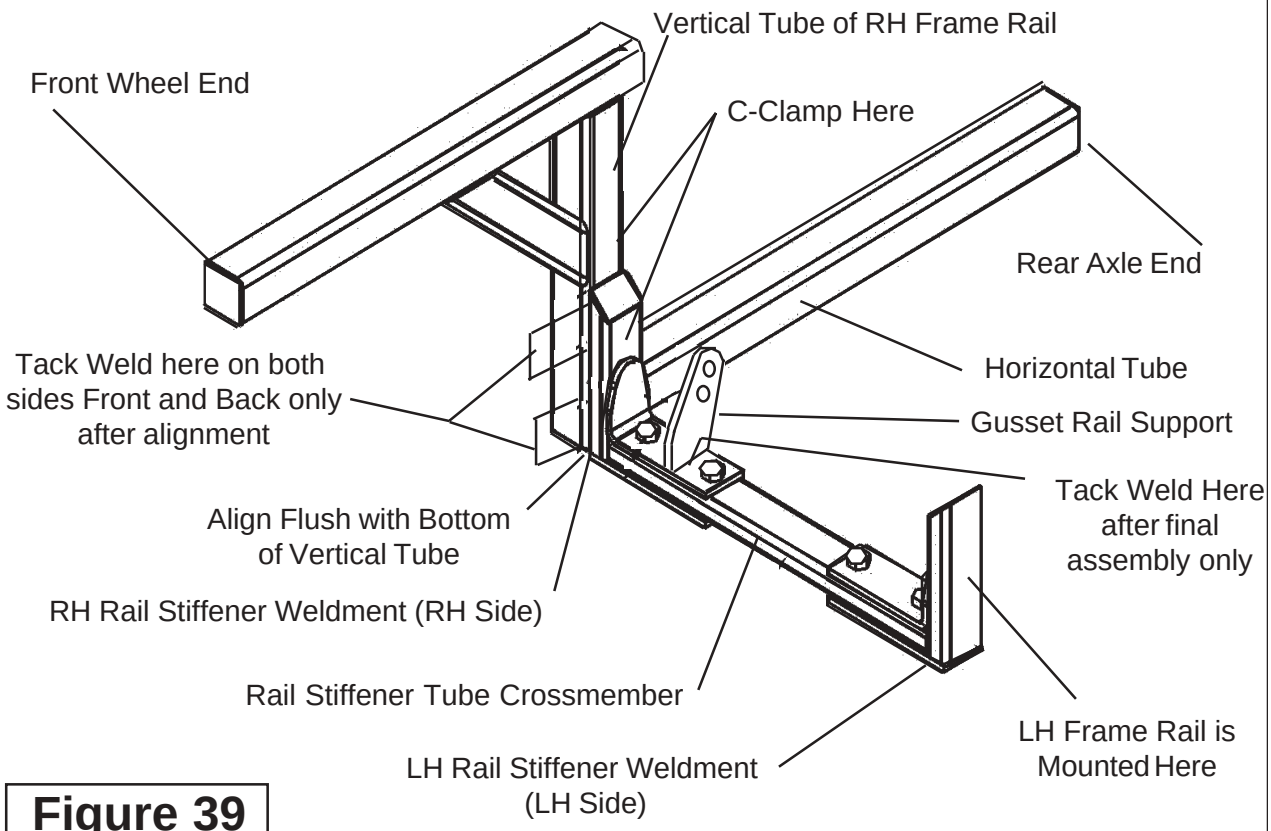


Figure 39

5. Locate Mounting Tubes and Hardware. **See Figure 31** for breakdown of these components.

- **A.** There will be one Mounting Tube for each side; these tubes are the same so it will not matter which is on which side. The Mounting Tubes are the same on either end. **(See Figure 31 - Item 1).**
- **B.** There will be 8 Bar Mounting Straps (Part # 02966639); these straps are the same but later in the assembly process 4 will have to be cut **(See Figure 31 - Item 2 & 2A)**.
- **C**. There are 4 Angle Mounts (Part # 02966641), these have two holes in them and when mounted the hole will be up. **(See Figure 31 - Item 5).**
- **D.** There are 8 bolts (Part # 02957039) & Locknuts (Part # 00037200), the bolts are 3/4" X 10-1/2" Long **(See Figure 31 - Item 4).**

Tack Weld ing Frame Rails: (continued)

6. Tack Weld Front and Rear Angle Mounts. The Angle Mounts should be tack Welded to the Frame Rails in 4 places each. This works best by weld a tack Weld in each corner of Angle Mount. **(See Figure 40 & 41)**. All 4 of the Angle Mounts must be Tack Welded to frame rail now.

7. Tack Weld Mounting Tubes to High Frame. The Mounting tubes will be Tack Welded to the High Frame in 3 places on top and 3 places on the bottom, on both LH & RH Side **(See Figure 42 & 43)**. These Tack Welds need to be done in an alternating pattern so Mounting Tubes do not Lift or move. There should not be any gaps between Frame Rails, High Frame or Mounting Tubes. Do this on LH and RH Frames.

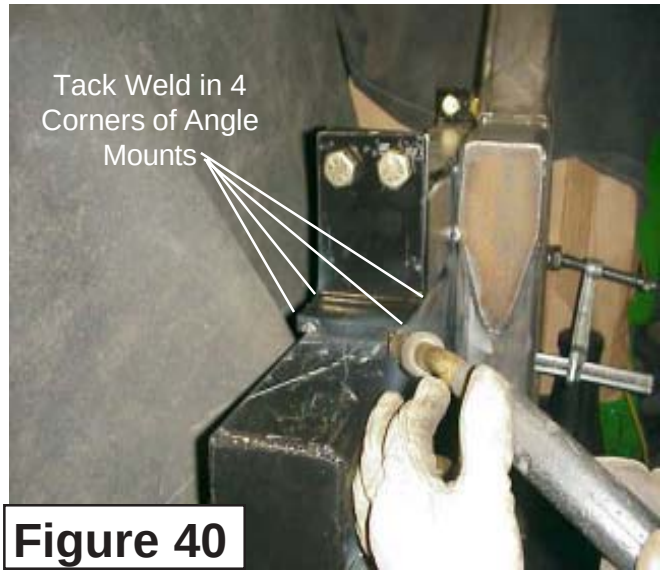


Figure 40

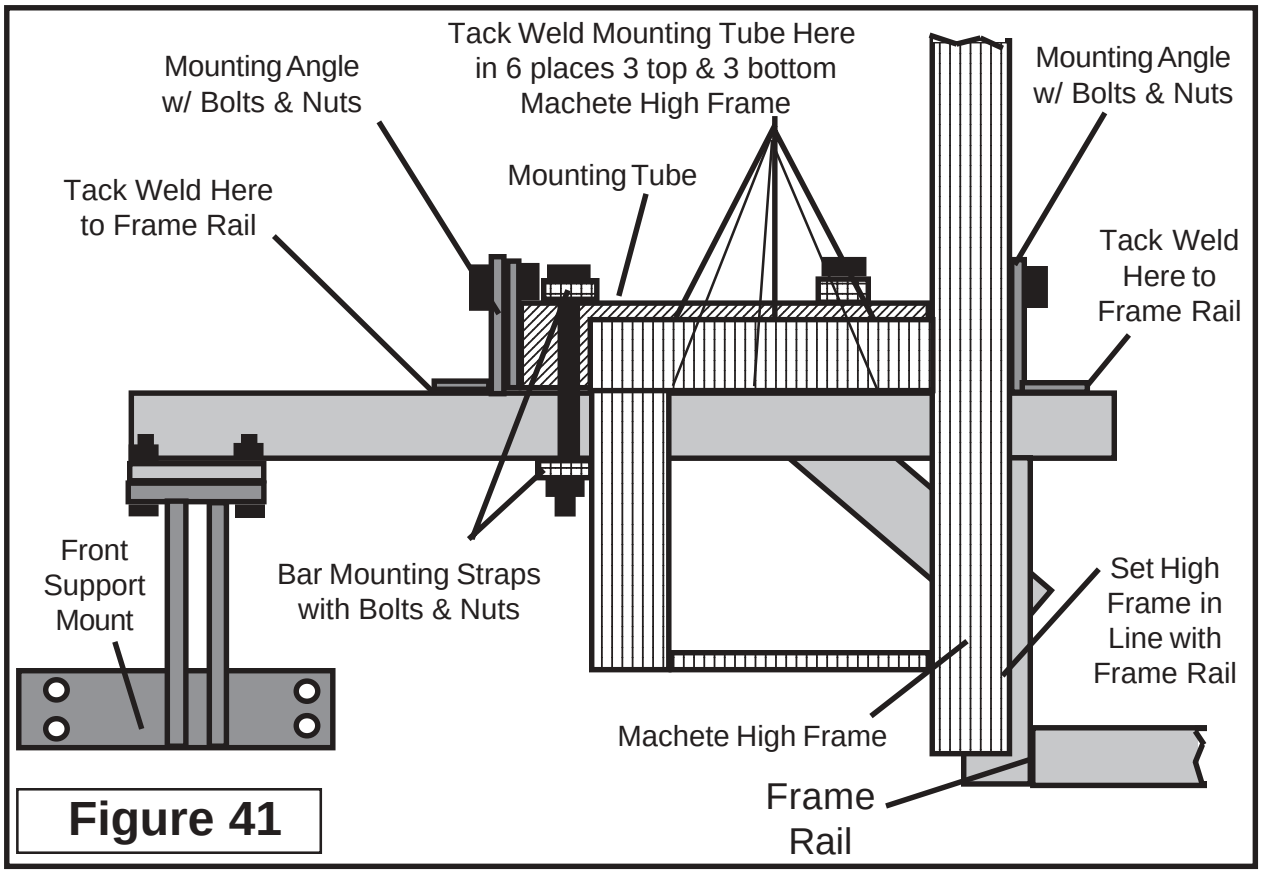


Figure 41

Tack Weld ing Frame Rails: (continued)

8. Weld Bar Mounting Straps. The Rear bar Mounting Straps will have to be cut **(See Figure 31)** and welded to the top of the Mounting Tube **(See Figure 43)**. Another one cut off and welded to the Bottom of the Frame Rail. **(See Figure 45)** The length of these Bar mounting straps is cutso it will not be sticking over past frame rail.

These can be Tack Welded while still mounted on Tractor, Illustrations are shown with frame rails off of Tractor because it is easier to see and it can be done after they are removed from tractor if you want.

These must be Tack welded in alignment when installed, so the holes are in line. If not in line the Bolt cannot be installed. Measure the distance from the Angle Mounting to the Mounting Bar that you have welded to the mounting Tube. **(See Figure 43)**. Transfer that measurement to the bottom of the Frame Rail and Tack Weld a cut off Bar Mounting Strap there. **(See Figure 44)**. Figure 44 shows a top (Un-Cut) Mounting Bar being held down with a C-Clamp, this is done to make it easier to transfer measurement to lower Bar Mounting Strap. Do not weld a strap to the top of the Frame Rail here. **(See Figure 44)**

9. Recheck that all components are Tack Welded. **(See Figures 31 through 45)**

Figure 42

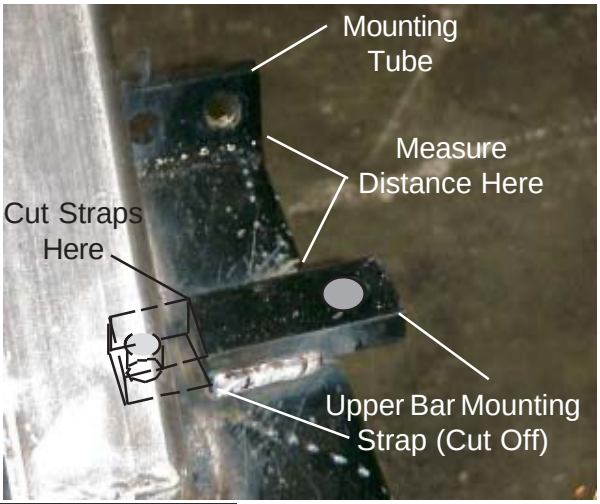


Figure 43

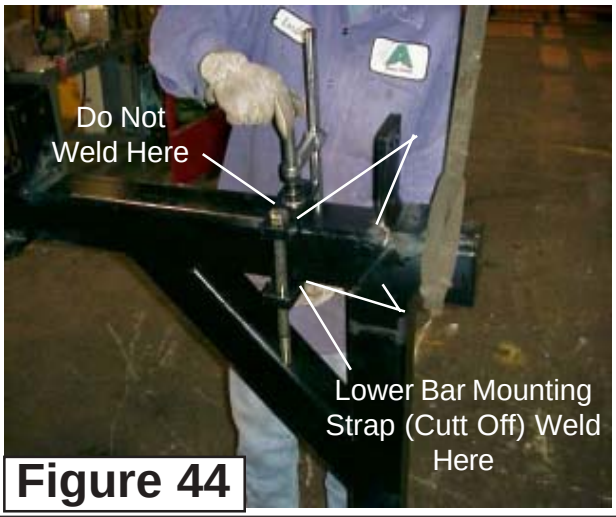


Figure 44

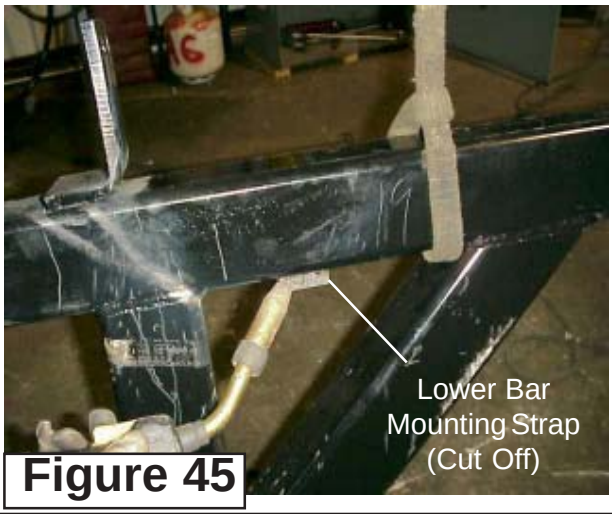


Figure 45

Remove High Frame for Final Welding.:

1. Remove and Weld High Frame. Lift the High frame back up off of frame rails **(See Figure 46).** Finish Weld Mount Tubes. The Mounting Tubes are to be welded completely all the way around. This is why it is best to take High frame off, so that the Weld can done as strong as possible and in places that you can't get to with High frame mounted on Frame rails. This is also recommended so Assemblies can be turned while welding to get maximum quality welds.

2. Welding Mounting Tubes all the way around. The Mounting Tubes must be welded to the High Frame all the way around, Turn High frame as required to weld all the way around **(See Figure 49 & 50)**. These must be strong Welds.

Figure 46

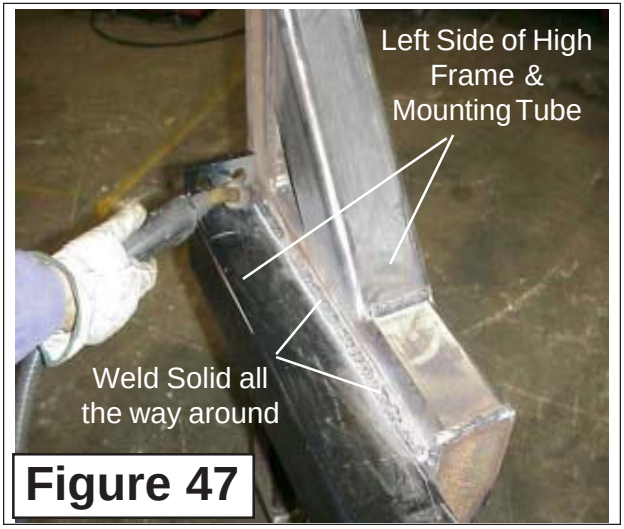


Figure 47

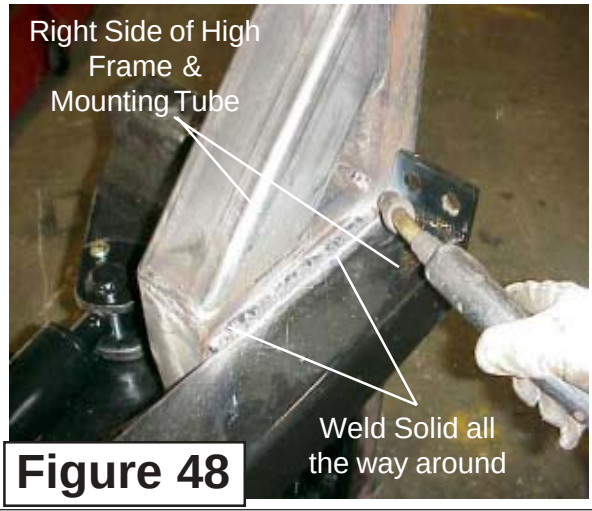


Figure 48

Figure 49

Figure 50

Remove High Frame for Welding.:

1. Remove Frame Rails. It is best to remove the Frame Rails to weld them. Frame Rails will need to be welded in five places. Note: The RH Frame Rail and the LH Frame Rail will have the same Welding done. For Illustration we are showing the RH Frame Rail, but the LH will have to be done also.

2. Weld Front Mount Plate. Weld down each side between Bolt Holes. Do not Weld to where the Weld will interfere with the Hex Head of Bolts when they are installed. Also weld across the Front of the Mounting Pad. **(See Figure 51, 55 & 56)**

3. Weld Front Angle Mount. Weld the Front Angle Mount to the Frame Rail on the Sides running parallel to the Frame Rail, Not across Frame Rail **(See Figure 52 & 58).** Weld the Rear Angle Mount to Frame rail the same as the front **(See Figure 53).**

4. Bar Mounting Strap. Weld these all the way around, first check your measurements for placement. The Bar Mounting Straps are cut and must be placed to where they will line up with the ones that you welded to the High frame mounting tubes earlier. **(See Figure 53)**

5. Frame Rail Stiffener Weldment. Weld the Frame stiffener to Frame rail on both sides. **(See Figure 24). Touch up or re-paint frame components after welding is completed. There are other components that need to be installed before you reinstall frame.**

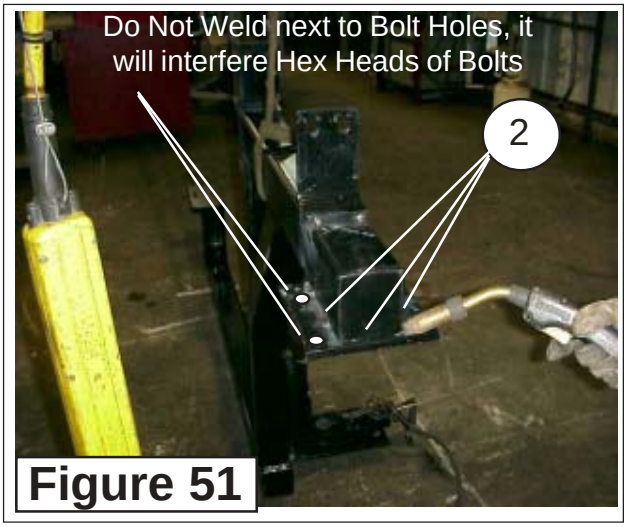


Figure 51

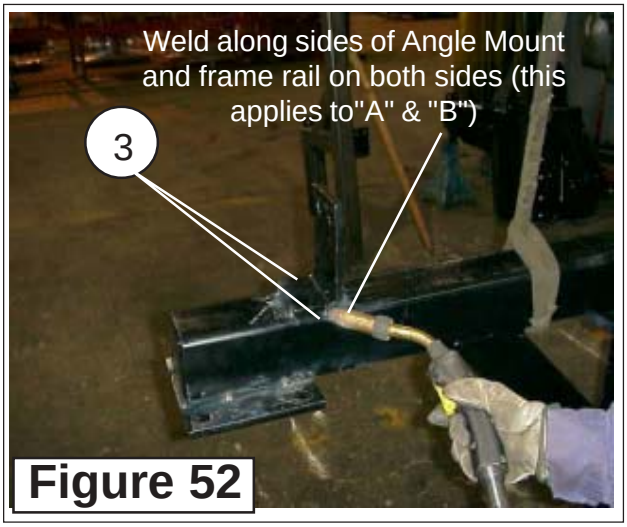


Figure 52

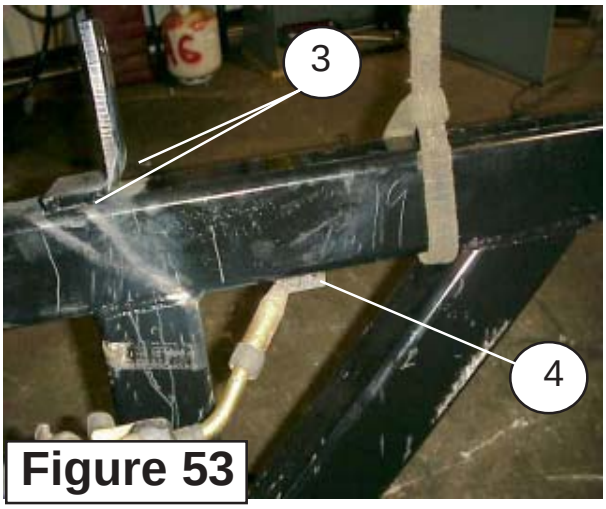


Figure 53

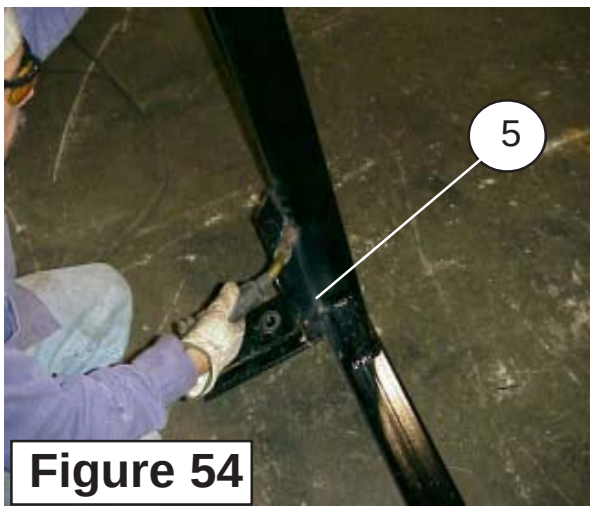


Figure 54

Remove High Frame for Welding.: (Continued)

6. The Side Rails. This should already be done but Check it before you are finished welding. These Frame rails will be welded to the Rail Support Plates, so it will be necessary to scrape the paint off approximately 5/8" of the base before attaching. Clamp Side Rails to Front Mount Supports. **(See Figure 55).** Tack-weld rails to Front Mount Brackets. After thorough check for horizontal and parallel location, weld a solid 1/4" fillet weld bead 8" long on both sides. **(See Figure 56).** Note that any Step Type Counter Weight must clear the Left Rear Tire.

***NOTE**: This step may vary from tractor to tractor, if larger than normal Tires have been installed.*

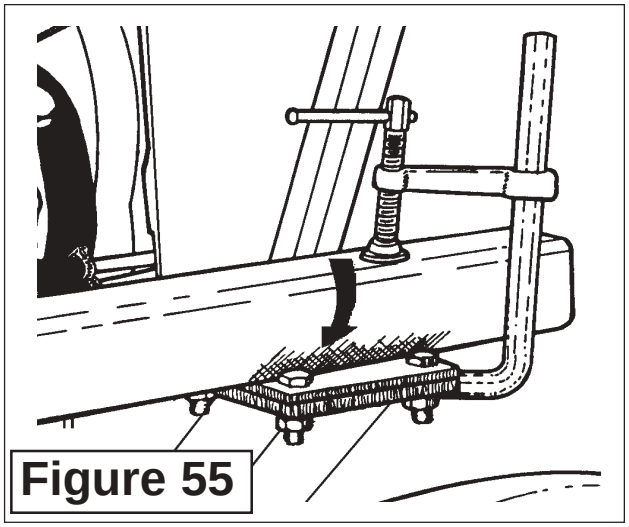


Figure 55

7. The Pig Tail Brackets will be welded to the underside of the Rails, so it will be necessary to scrape the paint off from this area before attaching and welding them (See Figure 57)**.** These Pigtails are to hold the Hoses up. Be sure to run the hoses for the Boom through these Pigtail rings.

***NOTE:** All parts are painted. When welding is required, scrape away the paint in the area to be welded to help assure the integrity of the weld.*

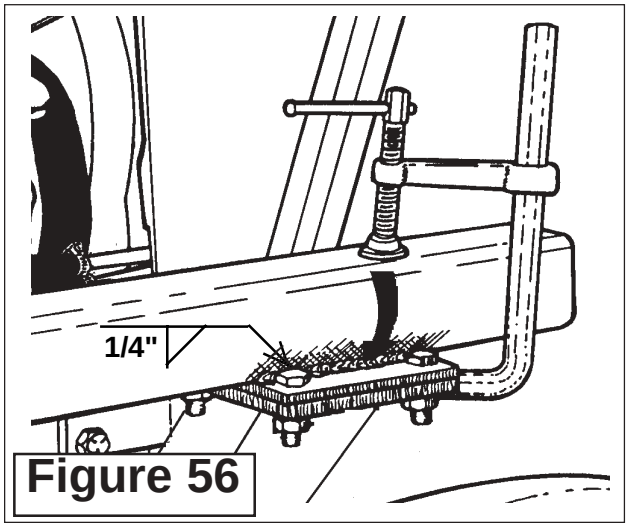


Figure 56

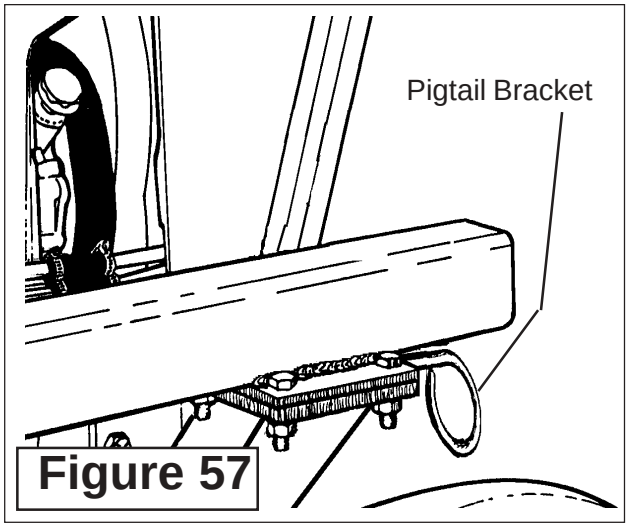


Figure 57

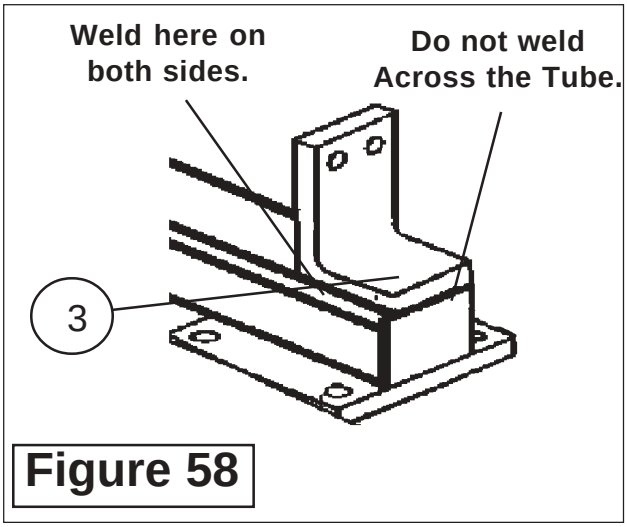


Figure 58

NOTES

Section 5

MACHETE

Tractor Stack Valve Modification & Hose Installation

NOTICE:

Page 5-1 Through 5-10 For Tractors with S/N 398796 Dec. 2003 & Down

Page 5-11 Through 5-20 For Tractors with S/N 398797 Jan. 2004 & Up

You Must check type Stack Valve before beginning this installation

Tractor Stack Valve Modifications S/N 398796 & Down

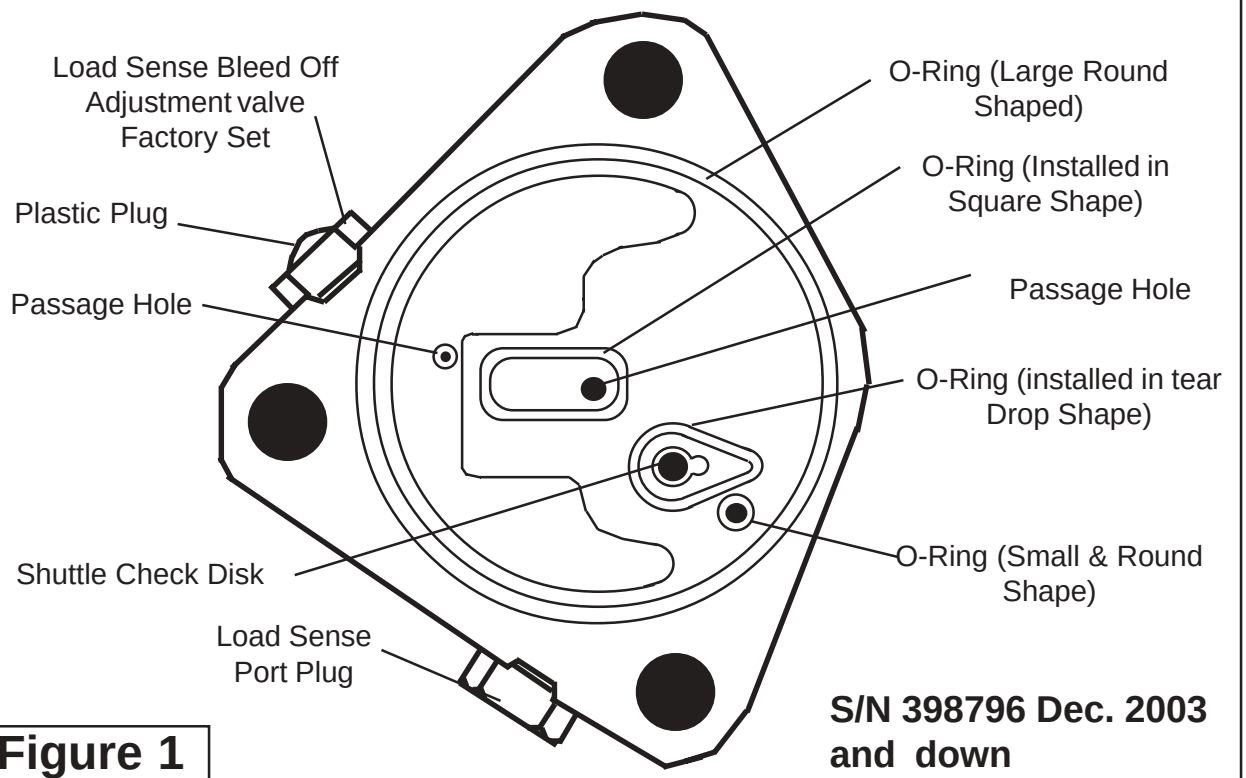


Figure 1

Tractor Stack Valve Modifications: S/N 398796 Dec. 2003 and down

The LH End Plate of the Tractor Stack Valve must be replaced. **This applies to units with S/N 398796 Dec. 2003 and down only**. For trators with later S/N and Date see the end of this section for installation of the new RH end plate.. **CHECK which Valve & S/N you have before starting this assembly.** The original Stack valve does not have the Load Sense Port or the Load Sense Bleed Off Adjustment Valve. These are required to make the Machete Control Valve Hydraulic systems operate using the Tractor Hydraulic Source. Shown above in Figure 1 is a drawing of the replacement LH End Plate for the Stack Valve, The replacement part is furnished as part of the mount kit

The replacement of this end plate is critical; the method of changing the end plate is critical. It is recommended that you read this entire section before starting any work as you can damage the Stack Valve and Tractor Hydraulic System if this is not done correctly. There are some things that must be done.

1. The area around the Stack Valve must be Clean. No dirt, Paint chips or anything that would contaminate the hydraulic system can not be present.
2. The Stack Valve must never be unbolted unless the Valve has been clamped together to prevent any pieces from slipping apart or getting mis-aligned. There are small metal disks between sections that must not be allowed to slip out of place, The replacement end plate has a metal disc that must be in place.
3. All Hoses and fitting must be clean, before installing any Hoses or fittings clean them with clean filtered compressed air. Watch for any metal shavings that would splinter off of a threaded part or hole. Remove any that are found. Do not let any Thread Sealer, Pieces of O-Rings or Gaskets enter system it will plug and damage system.

Tractor Stack Valve Modifications S/N 398796 & Down

Tractor Stack Valve Modification:

1. Clean the Are around Stack Valve on rear of Tractor. The area around the Stack Valve on Tractor must be cleaned of all dirt before any work is performed; NO DIRT or any contamination can be allowed to get in Hydraulic System at all. If Hydraulic System is contaminated it will be damaged.

2. Clamping Stack Valve to Prevent Movement of Valve Components. This is very critical, do not loosen or remove any Bolts or Nuts till this has been done, Stack Valve must stay clamped together the complete time this replacement is being done! **(See Figure 2)**

3. Un-Bolt Original LH End Plate. There are 3 Nuts on the left end Plate of Stack Valve, remove these 3 nuts. These Nuts are sunk into a machined recess and will require a tool that will fit into the recess. **(See Figure 3)**

4. Remove Original LH End Plate. Pull the original LH End Plate off (See Figure 4), Check to make sure that all the O-Rings came off with the End plate. If not take the O-Rings off of Stack Valve.

5. Inspect Stack Valve End Plate Area. Area must be clean. **(See Figure 5)**

Figure 2

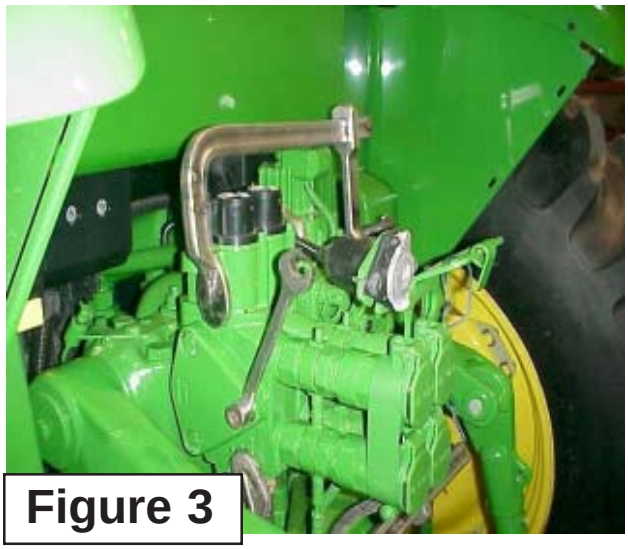


Figure 3

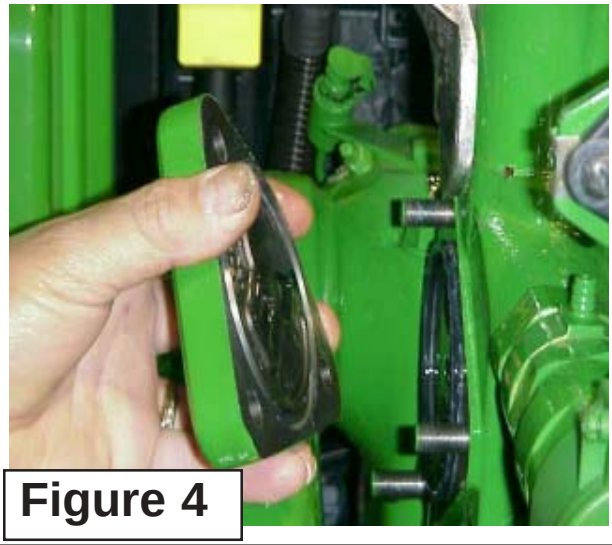


Figure 4

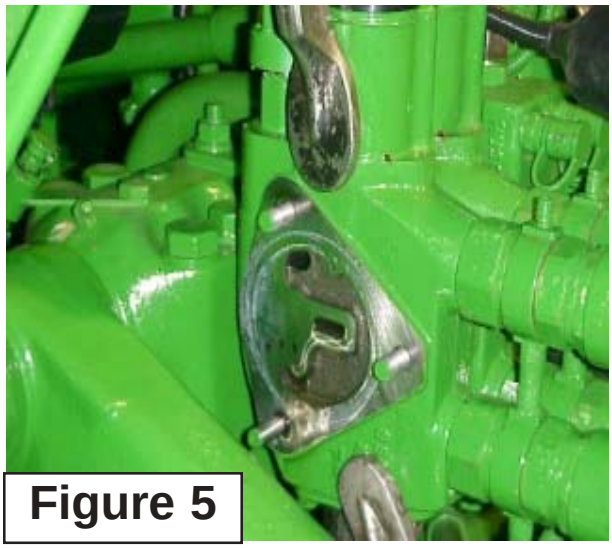


Figure 5

Tractor Stack Valve Modification:

6. Locate Replacement LH End Plate for Stack Valve. The replacement LH End Plate is shipped as part of Machete **(See Figure 6)**. The new end plate comes with a shipping plate and gasket bolted on to it with three bolts and nuts. DO NOT remove this Shipping Plate till after the Load Sense elbow has been installed.

7. Install Load Sense Elbow in End Plate. There are 2 plugs in the Replacement End Plate. These can be identified by the type plug used. The Load Sense Port Pug is a solid Hex Headed Plug; the Load Sense Bleed Off Adjustment is a Hex Headed Plug that has a plastic removable Plug in the center of it. If you were to remove the plastic plug you would see a slotted screw in the hole, this is the adjusting screw. For the current Machete application this screw is screwed all the way in from the factory and should remain that way. **(See Figure 6)**. Screw the 90 deg. # 4 Elbow into the load sense port. Tighten Elbow to where it is pointing back (See Figure 8).

8. Remove End Plates Shipping Plate & Gasket. Remove 3 bolts and Nuts from shipping plate. Carefully lift up shipping plate **(See Figure 9)**. Make sure that Shuttle Check Disk and the End Plate O-Rings did not stick to the Gasket **(See Figure 10).** Put the Shipping Plate on the old End Plate to protect it and the O-Rings.

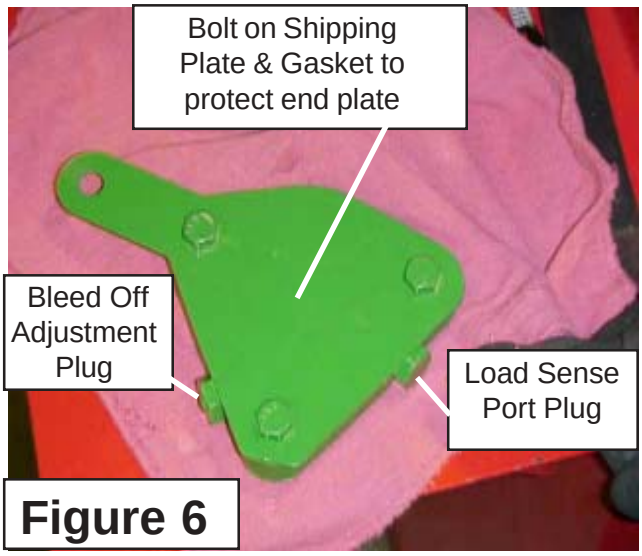


Figure 6

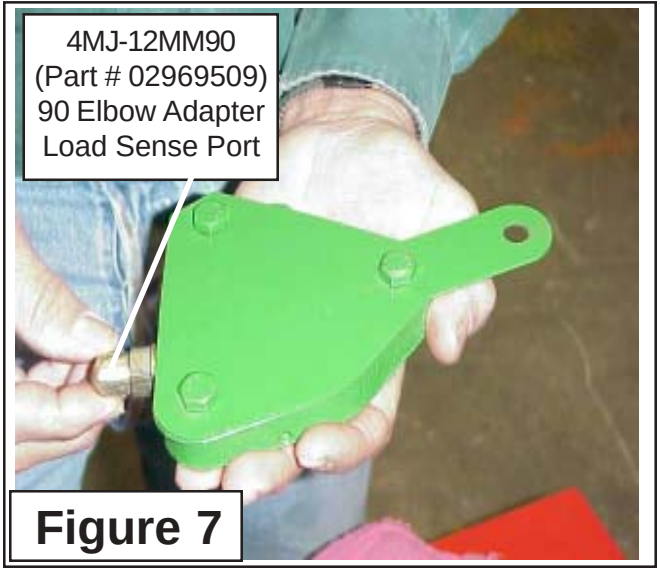


Figure 7

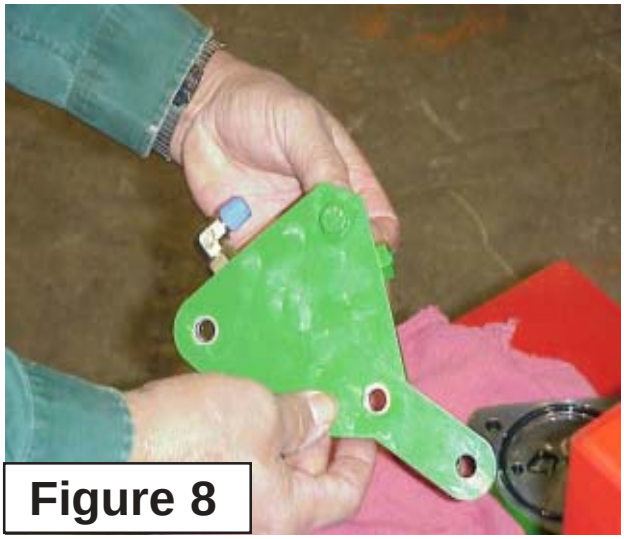


Figure 8

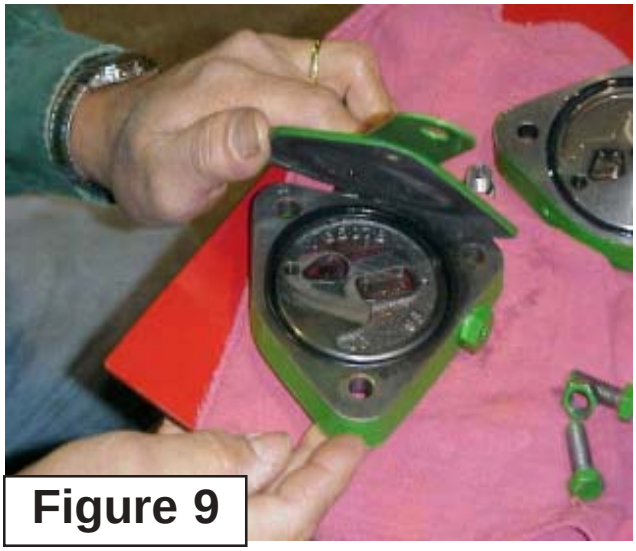


Figure 9

Tractor Stack Valve Modification:

9. Shuttle Check Disk. The replacement LH End Plate is shipped with a Shuttle Check Disk insert into it. This Disk must not fall out; it is coated with grease to hold it in. Check to make sure it is in the proper recessed are of End Plate **(See Figure 10)**

10. End Plate O-Rings. There are 4 O-Rings total, a large one around the outside, a very small round one, one in a tear drop shaped recess and one in a square shaped recess. All the O-Rings are round, it is the recessed shaped that holds them different. O-rings are coated with grease to help hold them. Make sure al these O-Rings are in Place **(See Figure 10)**. Make sure none of these slip out.

11. Install Replacement End Plate Gasket. Install the Replacement End Plate with the Bleed Off Adjustment Plug up and the Load Sense Port Elbow in the down position. **(See Figure 11)**. Using the same three nuts that retained the original End Plate bolt the new one on. When tightening the Nuts do it in an alternating pattern so the End Plate will be tightened slowly and evenly. These 3 Nuts should torque to approx. 25 ft lbs.

12. Remove C-Clamps from Stack Valve. Only remove C- Clamps after inspection. Inspect the End Plate Change to be sure that all the components have been tightened and the Load Sense Elbow in pointing in the correct direction **(See Figure 12)**. Figure 12 is what your Stack Valve LH End Plate should look like now with the C-Clamps removed.

13. Stack Valve Operation. Do Not try to operate Tractor or tractor Hydraulics untill all Assembly is completed. If Tractor Hydraulic have a problem when tried always come back to the Stack Valve to Check for trouble or something in one of the Valve Sections.

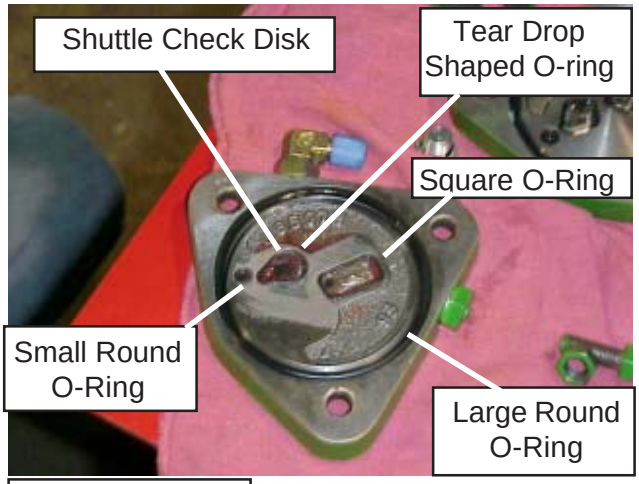


Figure 10

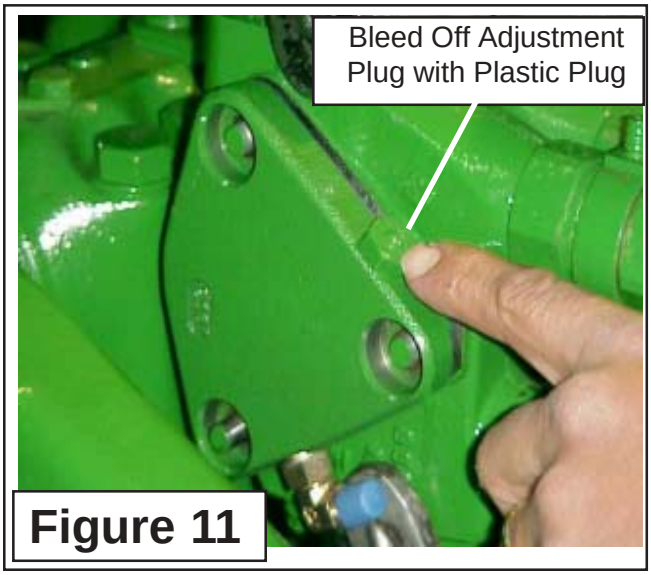


Figure 11

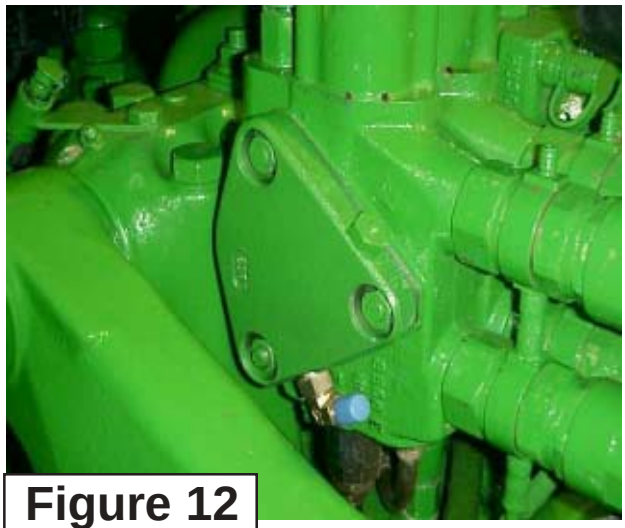


Figure 12

Tractor Stack Valve Hose Connections:

1. Clean the Area around Stack Valve on rear of Tractor. The area around the Stack Valve on Tractor must be cleaned of all dirt before any work is performed; NO DIRT or any contamination can be allowed to get in Hydraulic System at all. If Hydraulic System is contaminated it will be damaged.

2. Identify the Pressure and Return Ports on the JD Stack Valve. These are located on the Tractor Stack valve in the rear of the Tractor. The Pressure and Return Ports will have plastic Plugs in them **(See Figure 13)**. Remove the Plastic plugs and using an Allen Wrench remove the Allen Head Plugs one at a time (See Figure 14).

3. Install Straight Adapters. The Plugs will be replaced with the two Straight Hydraulic Adapters 10MJ-22MM (Part # 02969508), tighten these Adapters to proper torque now but leave plastic caps on them **(See Figure 15).** See Chart on Page 5-10 to torque specs.

4. Install Elbow Adapters. Attach two Elbow Adapters 10FJX-BMJ90 (Part # 02969401) to the two Straight Hydraulic Adapters. Tighten these Elbows with them pointing down, leave the plastic caps on them. **(See Figure 16 and 17)**

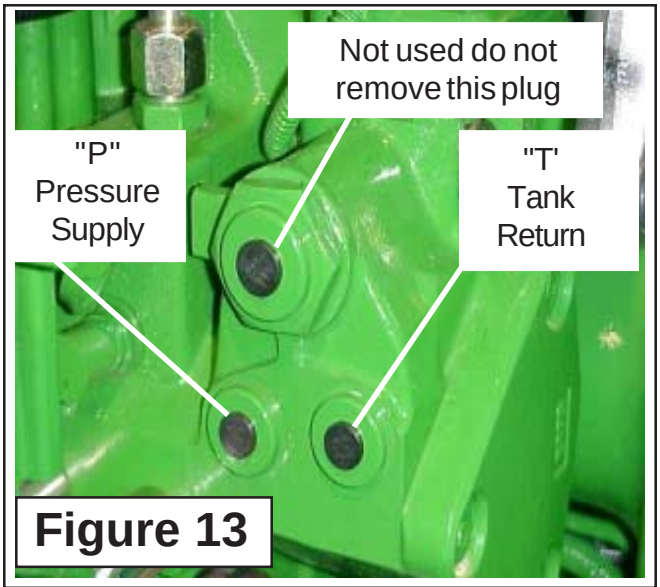


Figure 13

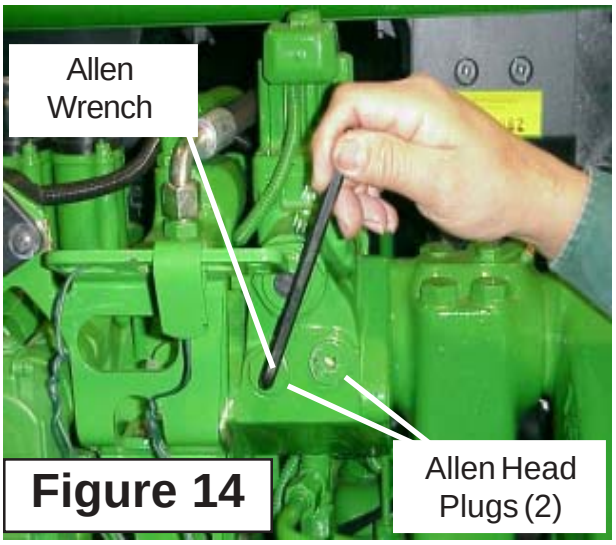


Figure 14

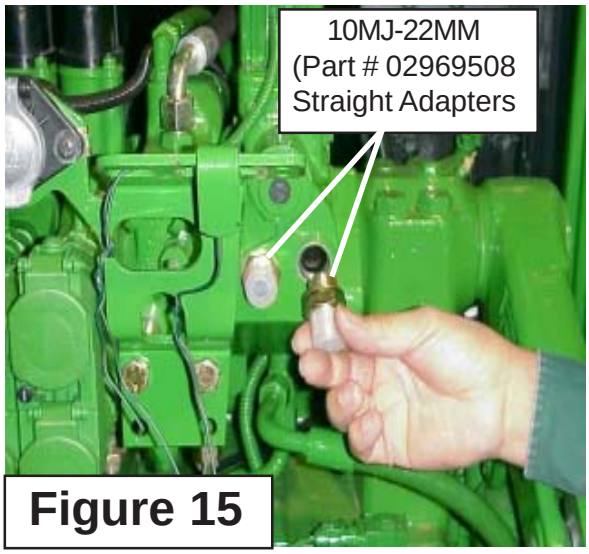


Figure 15

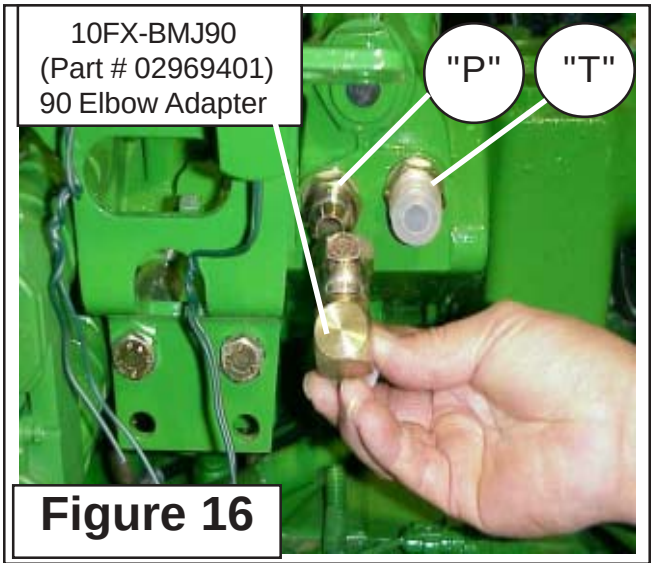


Figure 16

Tractor Stack Valve Hose Connections: (continued)

5. Pressure and Return Hose Connections. Locate the two # 8 Hoses, one hose has a Red Plastic tie (hose part # 02976714) and the other Hose has an Orange Plastic tie (hose part # 02976713). Both Hoses are 190" long and will have a Plastic tie on both ends. Hoses need to be inserted down under valve to prevent the 3 Point Lift Arm Cylinders of tractor from interfering with them **(See Figure 17)**. After Both Hoses are connected and tightened (See Figure 18), the Hoses will be run under floor of tractor cab to just under RH Door **(See Figure 21)**. Here they come out and are run along Tractor RH Frame Rail to the Front of Tractor **(See Figure 22)**. The Hoses will lay behind RH front Rail support **(See Figure 10).** Do not tie hose to frame rail at this time.

6. Load Sense Hose Connection on the JD Stack Valve. The load sense hose connects to the replacement end plate that has been installed to LH end of Stack valve. **(See Figure 19).** This is a # 4 Hose that is 190" Long, (hose part # 02215700). Run the hose through under Cab with the Pressure and Return Hoses. This hose will come out and run along with them to the front. **(See Figure 19, 20, 21 & 22)**. Do not tie hoses to Tractor Frame Rail yet, this will be done later.

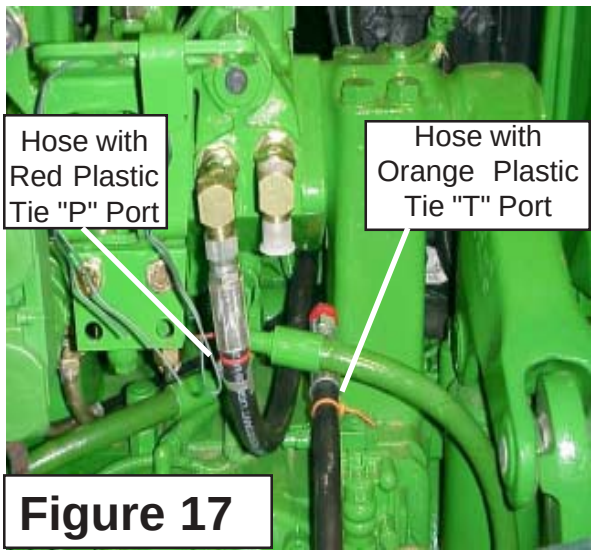


Figure 17

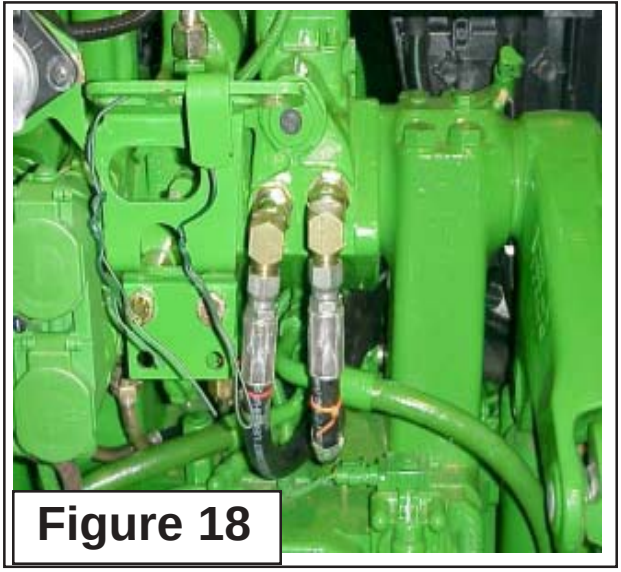


Figure 18

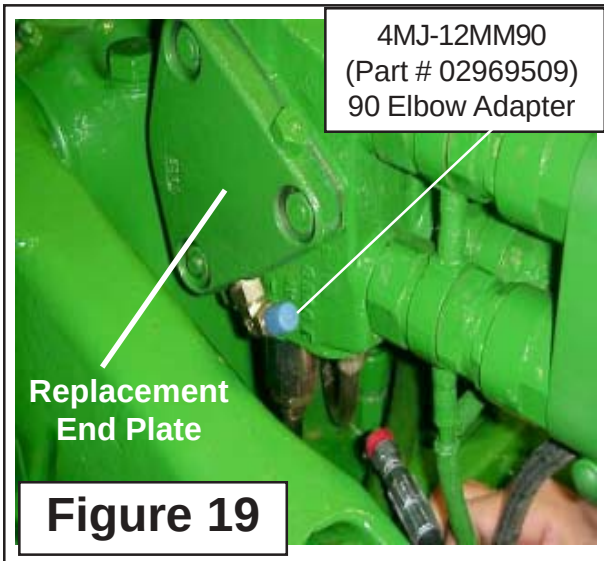


Figure 19

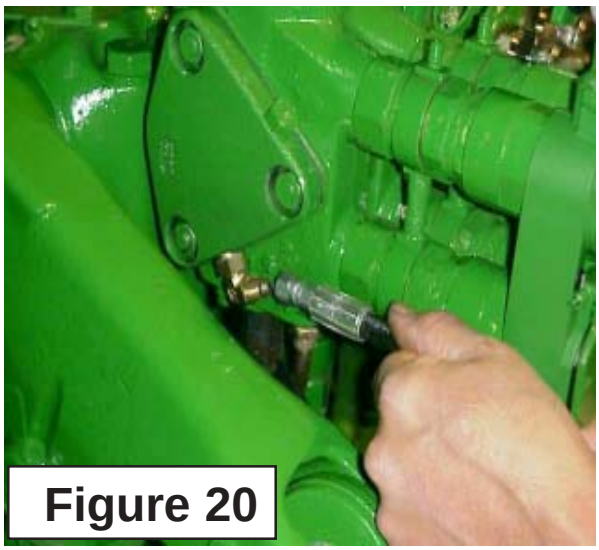


Figure 20

Tractor Stack Valve Hose Connections: (continued)

7. Stack Valve to Control Valve Hose Routing. The Hoses from the Stack Valve, Note LH reference is from sitting in Tractor Seat Looking forward.

A. The Pressure "P" Port Hose from Tractor Stack Valve to the "IN" side of the Filter. This Filter is the smaller canister Filter mounted on the LH side of Tank **(See Figure 25).** The Hose on the "OUT" side of Filter will run to the "P" Port of Control Valve.

B. The Return "T" Port Hose will run direct from the Stack Valve of Tractor to the "T" Port of Control valve **(See Figure 26).**

C. The Load Sense Hose runs from the Tractor Stack Valve to the Lower LH side of the Control Valve **(See Figure 26).** This will be an Elbow fitting coming out of the Lower Valve End Plate next to the "P" Port opening. If the Valve does not have this Load Sense Port, Check to make sure the Valve is a Load Sense Type.

D. Hose routing Schematic. For Hose Routing Stack valve to Control Valve **(See Figure 23 & 26).**

8. Reinstall Slow Moving Vehicle Sign. Reinstall the Tractors Slow Moving Vehicle Sign, the Slow Moving vehicle Sign is not furnished as part of the Machete Components. Sign should be on Tractor as part of Tractor Equipment **(See Figure 24).**

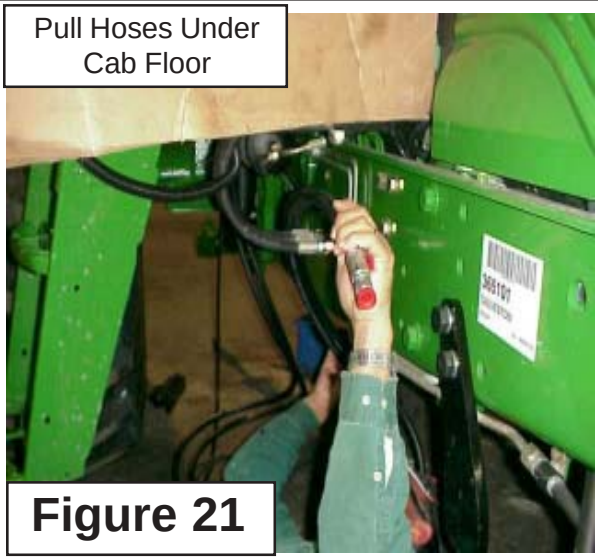


Figure 21


Figure 22

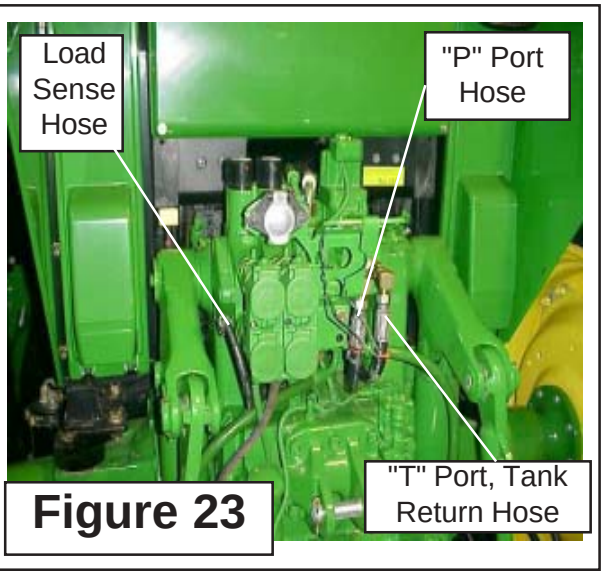


Figure 23


Figure 24

Tractor Stack Valve Hose Connections: (continued)

9. Stack Valve to Control Valve Hose Routing. The Hoses from the Stack Valveare the hoses that run from the rear of the Tractor Stack Valve to the front of the Tractor. This is where the Machete control Valve is mounted on the Hydraulic tank. These Hoses run alongside the Right Tractor Frame Rail. The Hoses willl be tied to the Tractor frame rail later in the Assembly process.

10. Hose Size and tightening. The Next page list the torque for the hose fitting, the Hose number to decimal size.

Also shown is a drawing of the Rear Stack Valve and how it must be connected to make the system work, review these after assembly is completed to assure it is correct.

The "B" ports will always connect to the Rod end of the Cylinder and will have the hoses with the striped plastic ties on them. The "A" Ports will connect to Butt end of the Cylinder and will have the hoses with the solid colored plastic tie.

The "T" Port always returns to the Tank. The "P" port is the pressure supply side. the "T" and the "P" are marked in the Valve casting.

Always refer to this when running the hoses to the Valve.

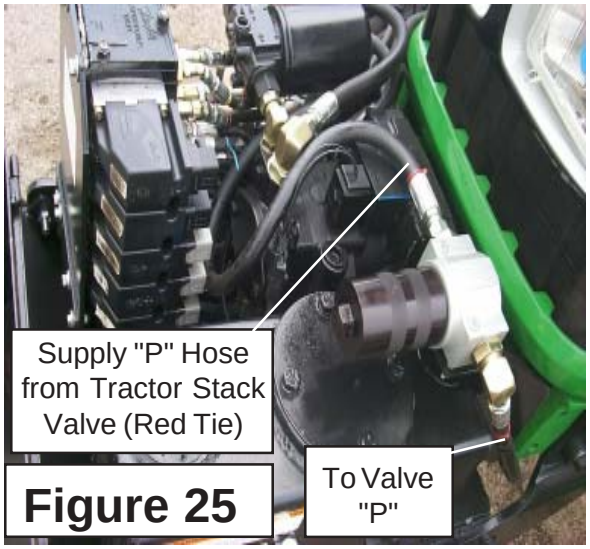


Figure 25

Machete Control Valve Viewed from Tractor Seat

NOTE! Cylinder Ports Ports "A" and "B" will use # 6 Hoses w/ the Color Plastic Tie as listed in this drawing

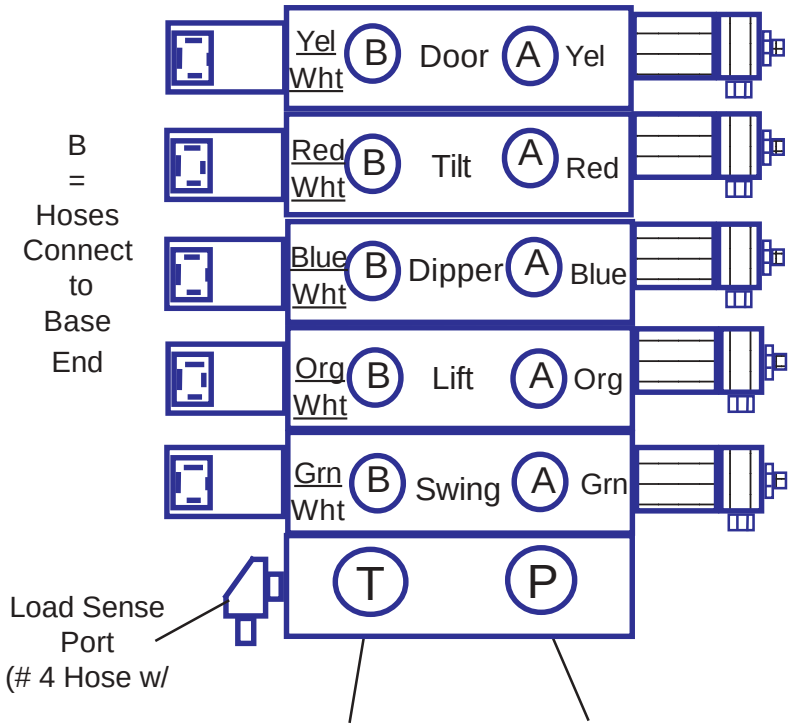


Figure 26

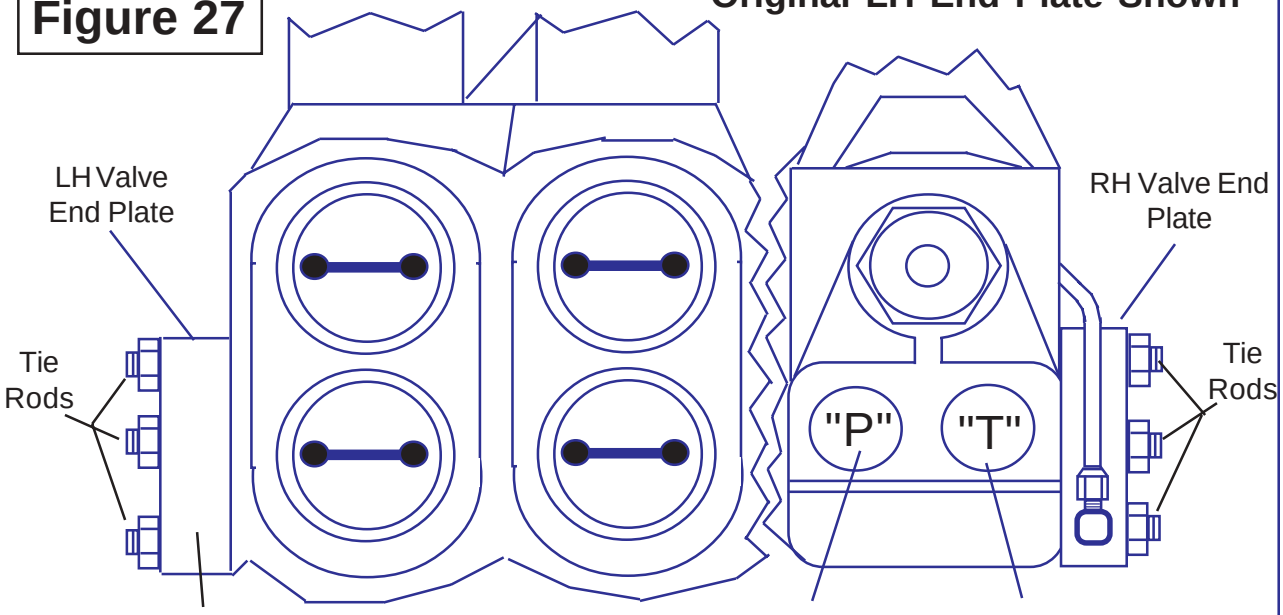
Tractor Stack Valve Modifications S/N 398796 & Down

Tractor Rear Hydraulic Valve Stack Connections:

Change End Plate Summary, The original JD Factory LH Valve End Plate (See Figure 2) on the rear of the Tractor Hydraulic Valve Stack Outlet will have to be changed. The New LH Valve End Plate is Part # 02978829. This is done to install a new Valve End Plate with the Load Sense Port (See Figure 5 and 6). The following steps are for installation of the new Valve End Plate, if these procedures are not followed damage to the Tractor Hydraulic Outlet could occur. Figure 27 is standing behind Tractor looking forward and shows the Old End Plate.

Figure 27

Original LH End Plate Shown



Valve Hose to Tractor Connections:

1. Hose Pressure Supply, ("P" Marked on Valve), Qty of one, # 8 hose X 190" Long, hose (# 02976714) with Red Tie. This connects to the rear of the Tractor (See Figure 1)
2. Hose for Tank Return, ("T" Marked on Valve), Qty of one, # 8 hose X 190" Long, hose (# 02976713) with Orange Tie. This connects to the rear of the Tractor (See Figure 1).
3. Hose for Load Sense, (Note Marked on Valve See Figure 1) Qty of one, #4 hose X 190" Long, hose (#02215700). This Hose connects to the rear of the Tractor (See Figure 2) This Hose cannot be connected till Stack Valve has been modified with New LH End Plate.

Hose End Fitting Torque Specs: (Stack Valve Connections)

Hose End Type: 37 Degree Angle End Steel Hose End Fittings*

Dash Size	Nominal Cyl. Size (in.)	Torque in. lbs.	Torque ft .lbs.
-4	1/4"	140	12
-6	3/8"	230	19
-8	1/2"	450	38

* Straight Threads do not always seal better when higher torque is used. Too much torque causes distortion and may lead to leakage. DO NOT over torque fittings and DO NOT allow any contaminants to enter system through fittings when installing them.

Section 5

MACHETE

Tractor Stack Valve Modification & Hose Installation

NOTICE:

Page 5-1 Through 5-10 For Tractors with S/N 398796 Dec. 2003 & Down

Page 5-11 Through 5-20 For Tractors with S/N 398797 Jan. 2004 & Up

You Must check type Stack Valve before beginning this installation

Tractor Stack Valve Modifications S/N 398797 & UP

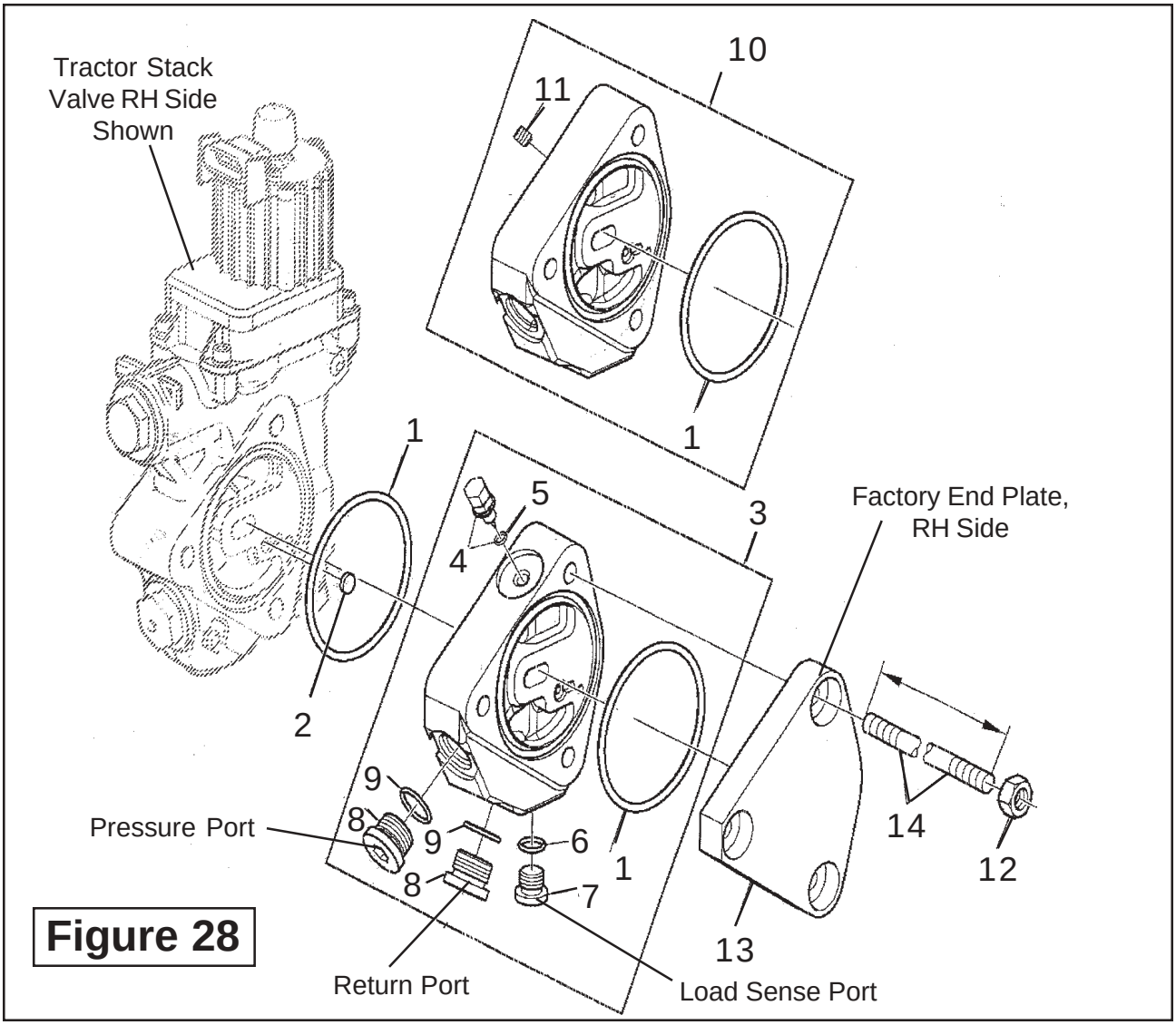


Figure 28

Item	Part No.	Qty	Description
	02980927	**1**	**RH Stack Valve Spacer Kit** (Complete)
1.	----------	a/r	O-Ring
2.	02980925	a/r	Disk
3.	02980924	1	Spacer Block, RH End (w/items 1,4,5,6,7,8 & 9)
4.	----------	1	Screw
5.	----------	1	O-Ring
6.	----------	1	O-Ring
7.	----------	1	Drain Plug
8.	----------	2	Drain Plug
9.	----------	2	O-Ring
10.	----------	1	Spacer Block RH End (w/ items 1 & 11)
11.	----------	1	Set Screw
12.	02980928	3	Nut
13.	----------	3	RH End Cover (Factory Cover already on tractor)
14.	02980926	3	Tie Rod Stud (f/ use w/ 2 remote valve)

Tractor Stack Valve Modifications S/N 398797 & UP

Tractor Stack Valve Modifications: S/N 398797 Jan. 2004 and Up

The RH End Spacer Block of the Tractor Stack Valve must be added. **This applies to units with S/N 398797 Jan. 2004 and Up only**. For trators with Earlier S/N and Date see the front of this section for installation of the old LH end plate.. **CHECK which Valve & S/N you have before starting this assembly.** The original Stack valve does not have the Load Sense Port or the Load Sense Bleed Off Adjustment Valve. These are required to make the Machete Control Valve Hydraulic systems operate using the Tractor Hydraulic Source. Shown in Figure 1 is a drawing of the replacement RH End Spacer Block for the Stack Valve, The replacement part is furnished as part of the mount kit as Assembly P/N 02980927.

The replacement of this end Spacer Block is critical; the method of changing the end plate is critical. It is recommended that you read this entire section before starting any work as you can damage the Stack Valve and Tractor Hydraulic System if this is not done correctly. There are some things that must be done.

1. The area around the Stack Valve must be Clean. No dirt, Paint chips or anything that would contaminate the hydraulic system can not be present.
2. The Stack Valve must never be unbolted unless the Valve has been clamped together to prevent any pieces from slipping apart or getting mis-aligned. There are small metal disks between sections that must not be allowed to slip out of place, The replacement Spacer Block has a metal disc that must be in place.
3. All Hoses and fitting must be clean, before installing any Hoses or fittings clean them with clean filtered compressed air. Watch for any metal shavings that would splinter off of a threaded part or hole. Remove any that are found. Do not let any Thread Sealer, Pieces of O-Rings or Gaskets enter system it will plug and damage system.

1. Effective January 2004, John Deere implemented a new rear remote valve on all 6015 & 6020 series tractors *(See Figure 28, 29 & 34)*. The right side of the valve is significantly different and can be easily identified from its predecessor (See figure 30 or the prevous pages). As a result, a new right hand power beyond end plate kit #02980927 is provided with each mount kit - effective April 2, 2004. For tractors produced before January below serial #398797, you will need to order the old left hand valve end plate kit #02980930 as a separate line item. *Caution:* The new valve end plate kit is set up for tractors equipped with either a one or two spool remote valve. Tractors equipped with three remotes *(See Figure 31)* or more will require longer end plate mounting studs - which must be purchased from John Deere at the dealer/customer's expense.

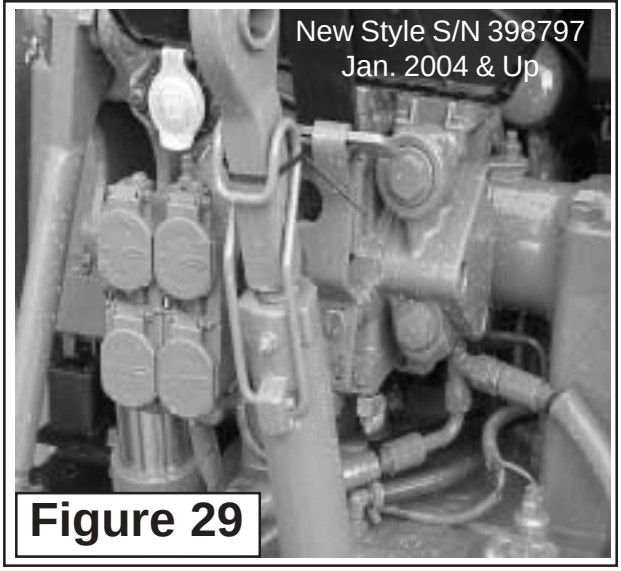


Figure 29

For John Deere Publication: See Catalog Name - 6320, 6420 Tractors (North American Edition), Page Name - Selective Control Valves. Catalog: 4357 / Grid: 7F6 / Section: 72 / Page: 11

2. Remove RH Stack Valve End Plate. The instructions to change the RH end plate are very sinialr to the instructions for LH end plate. Use the same precautions and preperations. The valve must be clamped together to prevent any of the components from moving. (See Figure 32 & 33)

Tractor Stack Valve Modifications S/N 398797 & UP

Tractor Stack Valve Hose Connections:

1. Clean the Area around Stack Valve on rear of Tractor. The area around the Stack Valve on Tractor must be cleaned of all dirt before any work is performed; NO DIRT or any contamination can be allowed to get in Hydraulic System at all. If Hydraulic System is contaminated it will be damaged.

2. Identify the Pressure and Return Ports on the new Spacer Block of Stack Valve. These are located on the Stack valve spacer in the rear of the Tractor. The Pressure and Return Ports will have Plugs in them **(See Figure 28)**. Remove the plugs and using an Allen Wrench remove the Allen Head Plugs one at a time (See Figure 28).

3. Install Straight Adapters. The Plugs will be replaced with the two Straight Hydraulic Adapters (Part # 02980922), tighten these Adapters to proper torque now but leave plastic caps on them**.** See Chart on Page 5-10 to torque specs. The Pressure and return has # 8 adapters and the load sense has # 4 (P/N 02980923)

4. Install Elbow Adapters. Attach two Elbow Adapters (Part # 02761100) to the two Straight Hydraulic Adapters. Tighten these Elbows with them pointing down, (See Figure 34) leave the plastic caps on them until you are ready to install the hoses (See Figure 34) Install the Elbow Adapter for the load sense port (P/N 02962022)

Figure 30

Figure 31


Figure 32


Figure 33

Tractor Stack Valve Modifications S/N 398797 & UP

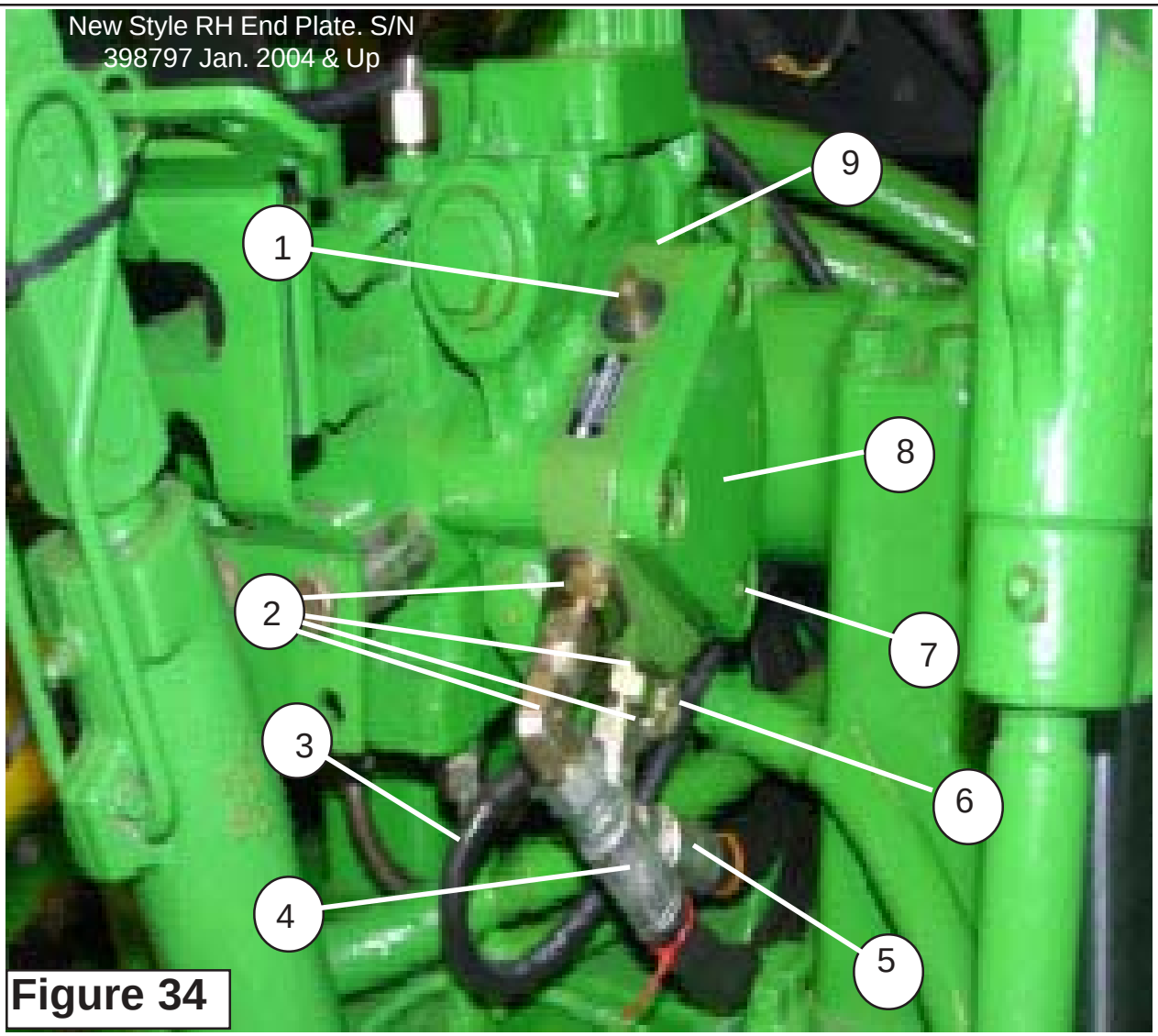


Figure 34

Item	Part No.	Qty	Description
1	----------	1	Load Sense Bleed Off Adjustment Valve, Factory Set.
2	02980922	2	Adapter Hyd, 8MJIC - 22 Metric Straight
	02761100	2	Adapter Hyd, Elbow 8MJ - 8FJX - 90 Deg.
3	----------	1	Load Sense Hose, # 4 Hose
4	----------	1	Pressure Hose to Control Valve # 8 Hose w/ Red Tie
5	----------	1	Return Hose from Control Valve # 8 hose w/ Orange Tie
6	02980923	1	Adapter Hyd, 4 MJIC - 14 Metric Straight
	02962022	1	Adapter Hyd, Elbow 4MJ - 4 FJX - 90 Deg.
7	02980926	3	Stud, M10-P1.0 X 120 mm PL Gr 10.9
	02980928	3	Nut, heax M10-P1.0 PL
8	----------	1	Stack valve RH End Plate (Factory Installed on tractor)
9	02980927	1	Stack Vavle Spacer Boluck f/ Power Beyond.

Tractor Stack Valve Hose Connections: (continued)

5. Pressure and Return Hose Connections. Locate the two # 8 Hoses, one hose has a Red Plastic tie (hose part # 02976714) and the other Hose has an Orange Plastic tie (hose part # 02976713). Both Hoses are 190" long and will have a Plastic tie on both ends. Hoses need to be inserted down under valve to prevent the 3 Point Lift Arm Cylinders of tractor from interfering with them **(See Figure 35)**. After Both Hoses are connected and tightened (See Figure 35), the Hoses will be run under floor of tractor cab to just under RH Door **(See Figure 36)**. Here they come out and are run along Tractor RH Frame Rail to the Front of Tractor. The Hoses will lay behind RH front Rail support **and run along the other hose to the front of the tractor.** Do not tie hose to frame rail at this time.

Figure 35

6. Load Sense Hose Connection on the JD Stack Valve. The load sense hose connects to the replacement end spacer that has been installed to RH end of Stack valve. **(See Figure 35).** This is a # 4 Hose that is 190" Long, (hose part # 02215700). Run the hose through under Cab with the Pressure and Return Hoses. This hose will come out and run along with them to the front. **(36 & 37)**. Do not tie hoses to Tractor Frame Rail yet, this will be done later.

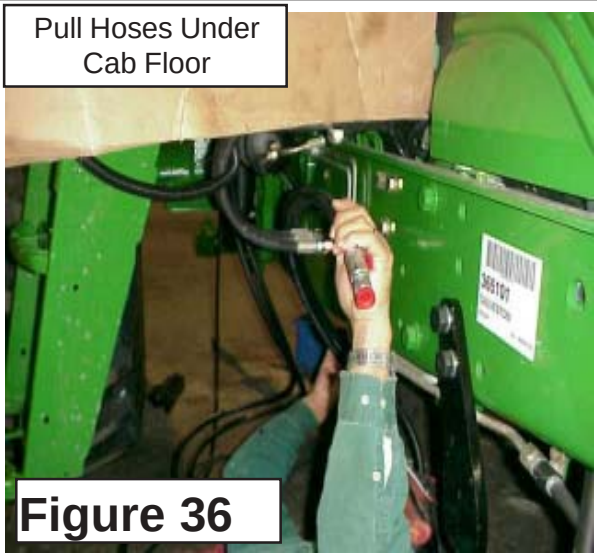


Figure 36

7. Stack Valve to Control Valve Hose Routing. The Hoses from the Stack Valve, Note LH reference is from sitting in Tractor Seat Looking forward.

A. The Pressure "P" Port Hose from Tractor Stack Valve to the "IN" side of the Filter. This Filter is the smaller canister Filter mounted on the LH side of Tank **(See Figure 38).** The Hose on the "OUT" side of Filter will run to the "P" Port of Control Valve.

B. The Return "T" Port Hose will run direct from the Stack Valve of Tractor to the "T" Port of Control valve **(See Figure 38).**

C. The Load Sense Hose runs from the Tractor Stack Valve to the Lower LH side of the Control Valve **(See Figure 40).** This will be an Elbow fitting coming out of the Lower Valve End Plate next to the "P" Port opening. If the Valve does not have this Load Sense Port, Check to make sure the Valve is a Load Sense Type.

D. Hose routing Schematic. For Hose Routing Stack valve to Control Valve **(See Figure 40).**

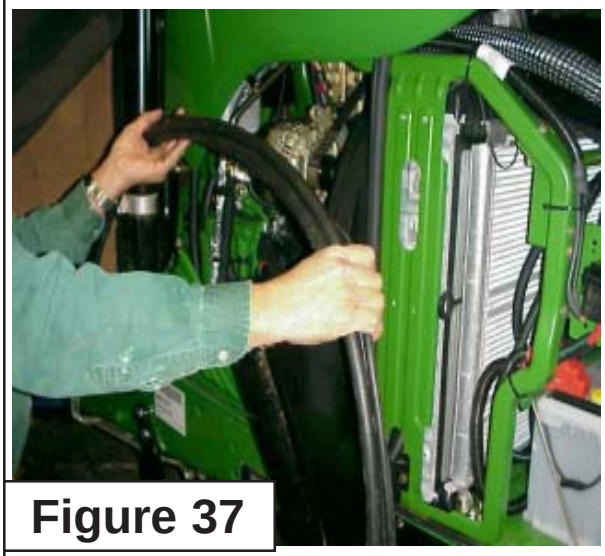


Figure 37

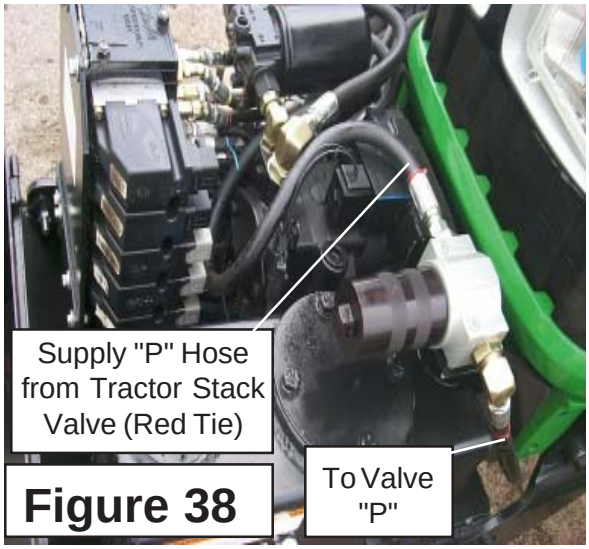


Figure 38

Figure 39

Tractor Stack Valve Hose Connections: (continued)

8. Reinstall Slow Moving Vehicle Sign. Reinstall the Tractors Slow Moving Vehicle Sign, the Slow Moving vehicle Sign is not furnished as part of the Machete Components. Sign should be on Tractor as part of Tractor Equipment **(See Figure 39).**

9. Stack Valve to Control Valve Hose Routing. The Hoses from the Stack Valveare the hoses that run from the rear of the Tractor Stack Valve to the front of the Tractor. This is where the Machete control Valve is mounted on the Hydraulic tank. These Hoses run alongside the Right Tractor Frame Rail. The Hoses willl be tied to the Tractor frame rail later in the Assembly process. (See Figure 40 & 41

Machete Control Valve Viewed from Tractor Seat

NOTE! Cylinder Ports Ports "A" and "B" will use # 6 Hoses w/ the Color Plastic Tie as listed in this drawing

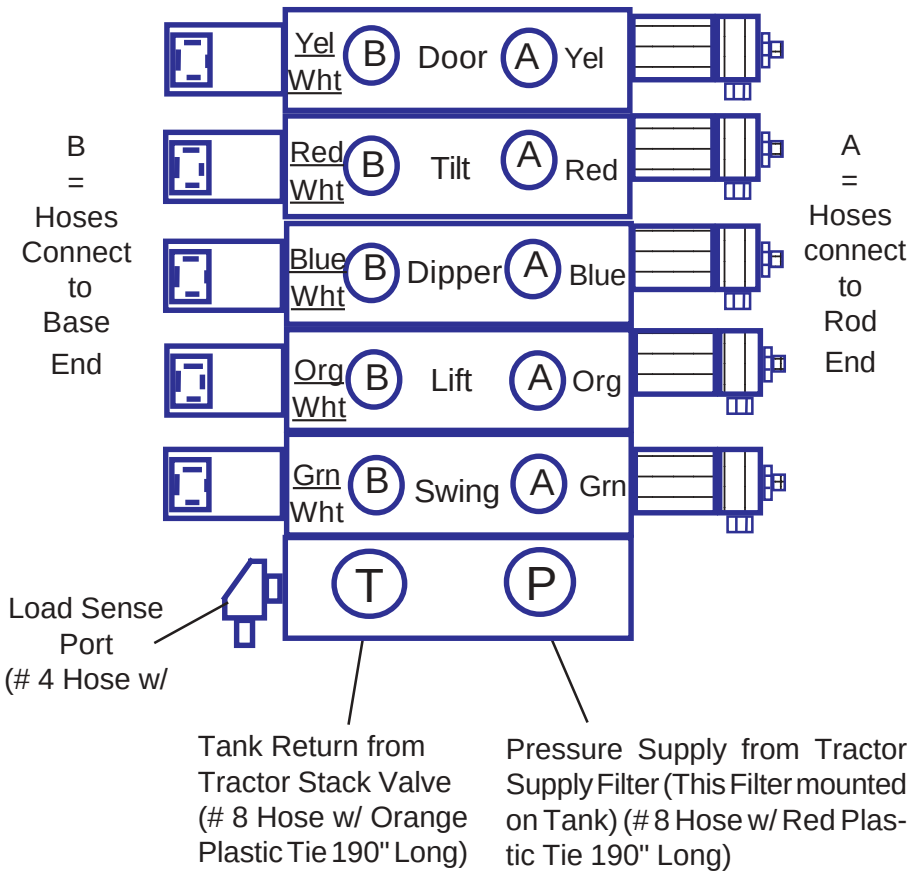


Figure 40

Tractor Stack Valve Hose Connections: (continued)

10. Hose Size and tightening. The Next page list the torque for the hose fitting, the Hose number to decimal size. Also shown is a drawing of the Rear Stack Valve and how it must be connected to make the system work, review these after assembly is completed to assure it is correct.

The "B" ports will always connect to the Rod end of the Cylinder and will have the hoses with the striped plastic ties on them. The "A" Ports will connect to Butt end of the Cylinder and will have the hoses with the solid colored plastic tie.

The "T" Port always returns to the Tank. The "P" port is the pressure supply side. the "T" and the "P" are marked in the Valve casting.

Always refer to this when running the hoses to the Valve.

Tractor Rear Hydraulic Valve Stack Connections:

Change End Plate Summary, The original JD Factory LH Valve End Plate (See Figure 2) on the rear of the Tractor Hydraulic Valve Stack Outlet will have to be changed. The New LH Valve End Plate is Part # 02978829. This is done to install a new Valve End Plate with the Load Sense Port (See Figure 5 and 6). The following steps are for installation of the new Valve End Plate, if these procedures are not followed damage to the Tractor Hydraulic Outlet could occur. Figure 41 is standing behind Tractor looking forward and shows the original end plates as well as the spacer block power beyonf that has been installed. This a 2 remote valve shown, If you have the option 3 remote valve it will connect the same way except you will have to use longer studs to install the spacer bloc, see the john deere dealer for these studs.

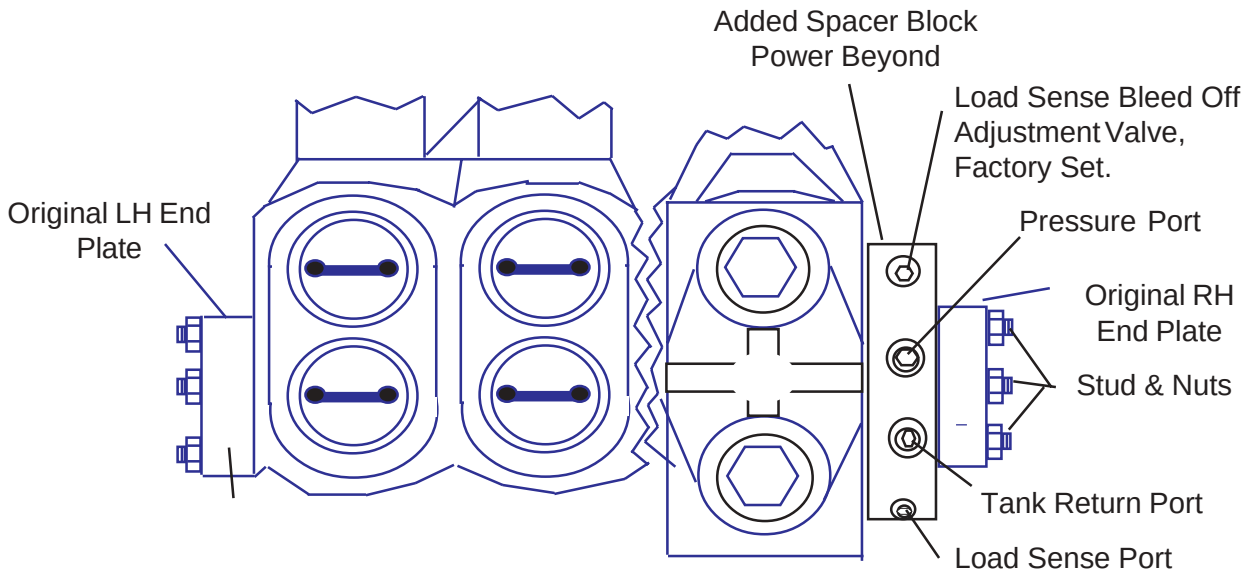


Figure 41

No Ports in JD Original Valve End Plate

Tractor Stack Valve Modifications S/N 398797 & UP

Valve Hose to Tractor Connections:

1. Hose Pressure Supply, ("P" Marked on Valve), Qty of one, # 8 hose X 190" Long, hose (# 02976714) with Red Tie. This connects to the rear of the Tractor (See Figure 1)

2. Hose for Tank Return, ("T" Marked on Valve), Qty of one, # 8 hose X 190" Long, hose (# 02976713) with Orange Tie. This connects to the rear of the Tractor (See Figure 1).

3. Hose for Load Sense, (Note Marked on Valve See Figure 1) Qty of one, #4 hose X 190" Long, hose (#02215700). This Hose connects to the rear of the Tractor (See Figure 2) This Hose cannot be connected till Stack Valve has been modified with New LH End Plate.

Hose End Fitting Torque Specs: (Stack Valve Connections)

Hose End Type: 37 Degree Angle End Steel Hose End Fittings*

Dash Size	Nominal Cyl. Size (in.)	Torque in. lbs.	Torque ft .lbs.
-4	1/4"	140	12
-6	3/8"	230	19
-8	1/2"	450	38

* Straight Threads do not always seal better when higher torque is used. Too much torque causes distortion and may lead to leakage. DO NOT over torque fittings and DO NOT allow any contaminants to enter system through fittings when installing them.

NOTES

Section 6

MACHETE

Joystick - Wire Harness Installation

Joystick Mounting 2 WD & 4 WD

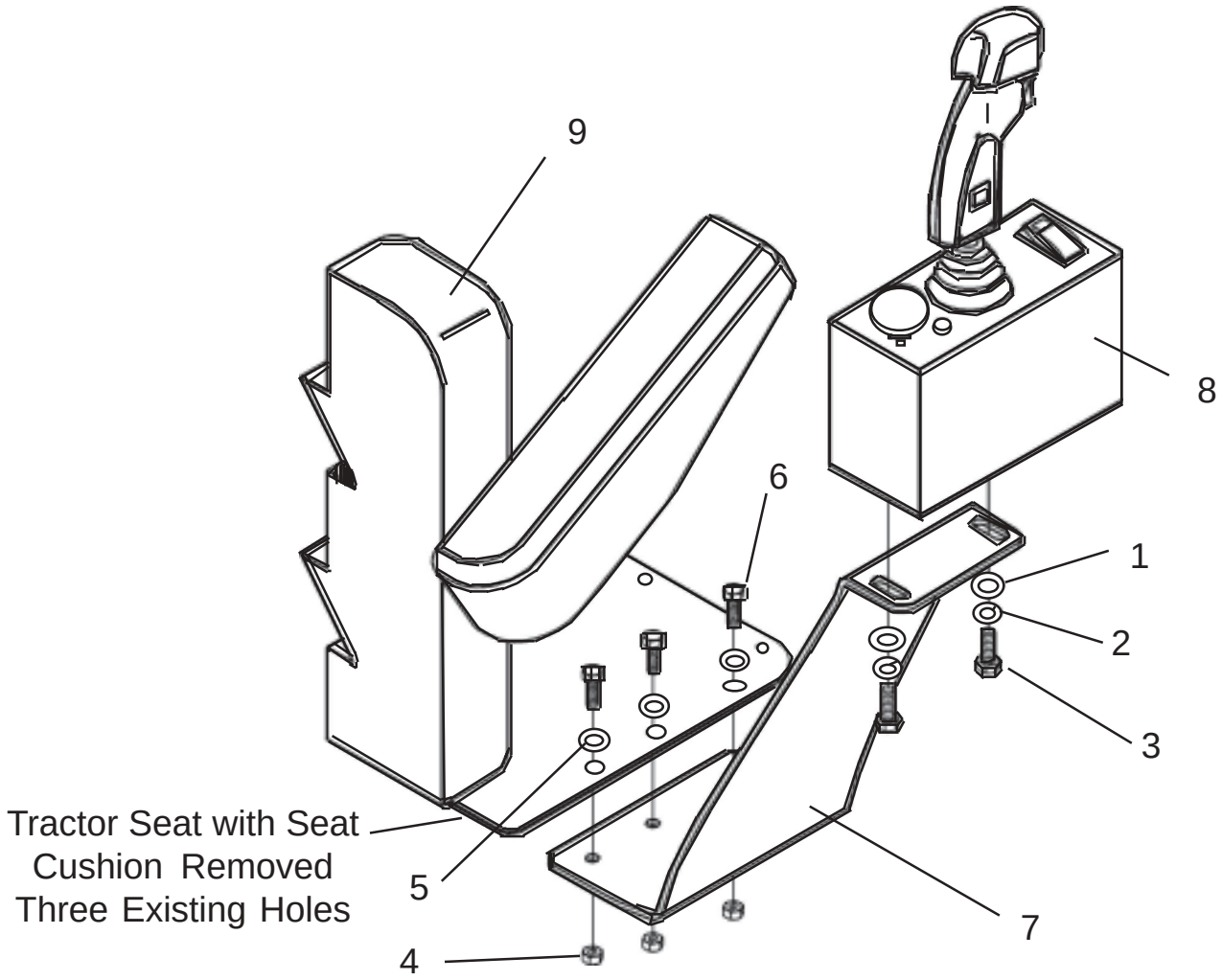


FIGURE 1

Item	Part No.	Qty	Description
1	00011100	2	Flatwasher, 3/8"
2	00012101	2	Lockwasher, 3/8"
3	00011400	2	Bolt, 3/8" NC X 1"
4	00750940	3	Locknut, 5/16" Toplock
5	00023500	3	Flatwasher, 5/16"
6	10119000	3	Bolt, 5/16" NC X 1"
7	02978806	1	Bracket, Seat Mounted Joystick
8	----------	1	Joystick (Shown as Illustration Only)
9	----------	--	Tractor Seat

Joystick Mounting 2 WD & 4 WD

Installing Joystick Mount to Tractor Seat:

1. **Remove Tractor Seat Cushion**. Remove Lower Seat Cushion from Tractor Seat. The Seat Cushion should have three phillips head screws across the front edge (See Figure 2). Once these screws are removed, lift up on the front of the Seat Cushion which should slide forward and out.

2. **Joystick Bracket mounting holes.** The three mounting holes are already in the Standard Seat Mounting Plate. If a custom Seat or for some reason these three holes have to be drilled, use caution not to drill them in to where the bolts will interfere with the Tractor Seat Slide Adjustment Rail.

3. **Bolt Mounting Bracket to Seat**. Insert the three 5/16" Bolts with Flatwashers on them through the holes in the Seat Plate (See Figure 4). The Mounting Bracket is under the Seat Plate as shown in the drawing. Install the three 5/16" Locknuts on the Bolts from the Bottom. Tighten the three Bolts and nuts.

4. **Re-install Tractor Seat Cushion**. Re-install Tractor Seat Cushion in reverse of step 1. Test Seat to make Sure that it does not bind when slid forward or back as adjustment. If there is a Bind, check and correct problem.

FIGURE 2

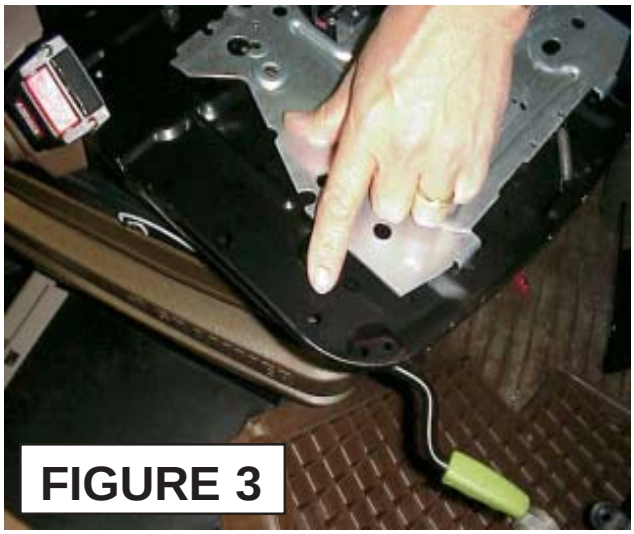


FIGURE 3

FIGURE 4

FIGURE 5

Joystick Mounting 2 WD & 4 WD

InstallingJoystick to Bracket:

1. **Bolt Joystick to Mounting Bracket.** Set Joystick Assembly on Mounting Bracket. Make sure Joystick is mounted as shown, the Push Pull Switch in rear and Toggle Switch to the front. (See Figure 6)

2. **Installing Joystick Mounting Bolts.** Find the two 3/8" bolt, put Lockwasher and Flatwasher on them. Start these bolts from the bottom up through Bracket and into Joystick Console. The Joystick Console holes are threaded so no Nuts are needed. Tightened the two retaining Bolts (See Figure 1 Item 3 and Figure 2).

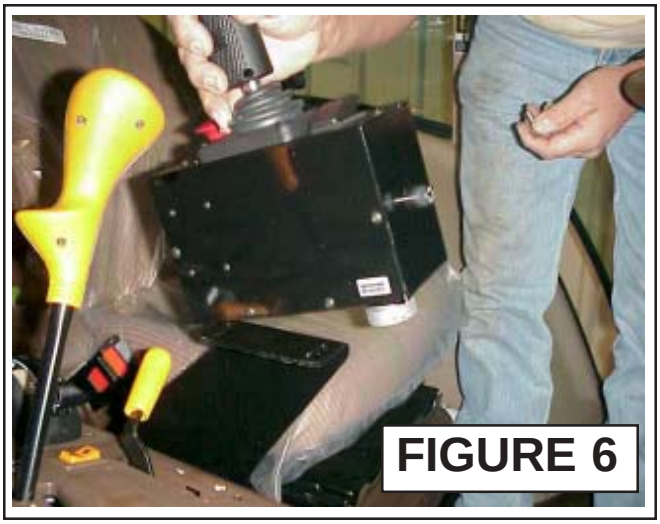


FIGURE 6

Installing Wiring Harness for Joystick:

1. **It is recommended** that the Wires for Joystick be connected at the Tractor Ignition Switch. But they can be connected as explained below. If connected as shown below Wires must be traced to find the correct wires.

2. **Preparing Tractor Floor Mat.** First thing to do is remove the Battery Cables from Battery, Do Not perform any work on Tractor unless this has been done. Raise the Floor Mat up on the RH Side by the RH Door, You will need to fold it back approx. 12 to 14 inches (See Figure 8). DO NOT Tear or Cut any Holes in Floor Mat, as it will NOT be required. You will also find a large oblong shaped rubber plug, this will be pulled up later but it is not necessary at this time.

3. **Tractor Wiring Harness.** Under the Floor Mat on the right hand side you will find a Tractor Wiring Loom Running across Floor, remove the plastic cover that is over the wire loom. Using Tractor Manufacturers Service Manual Identify Which Wire is in this Loom.


FIGURE 7

FIGURE 8

Installing Wiring Harness for Joystick: (Continued)

4. **Wires to be Connected.** You will need to find the wire from the switch that activates the Starter Solenoid for the Tractor This wire will need to be cut to form 2 ends. You will need to locate the Ignition Switch Power Wire; this wire will have current only when Ignition Switch is on. This Wire will have a wire Tee'd into it. (See Figure 9)

5. **Wire Harness Through Cab.** There is a large rubber plug in floor; this is where the Joystick wiring harness will be put through the cab floor. This plug can be pulled up through the floor (See Figure 10). it will be required to cut a hole in this plug for the Wire harness to run through.

6. **Insert it Wire harness through Floor Plug** till the 4 wires that are not in the wire Harness are even with the Floor. The wires that are sticking out of harness will be run under Floor mat and under dash panel to switch or connected to the tractor harness. These wires are made long because of the different places they can be connected on various models.

7. Connecting Harness Wires. There are 4 wires that must be connected inside Tractor. 1. Red Wire (power supply), 1 Black Wire (Ground) and 2 Brown Wires (Neutral Safety Switch). These will have to be spliced into Tractor circuits. (See Figure 13).

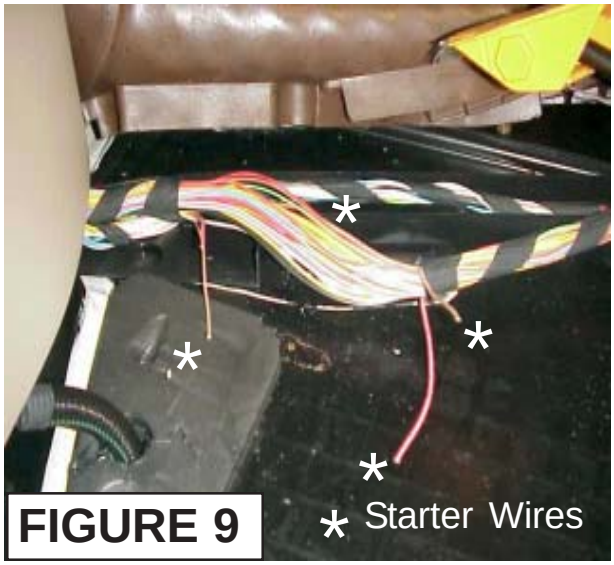


FIGURE 9

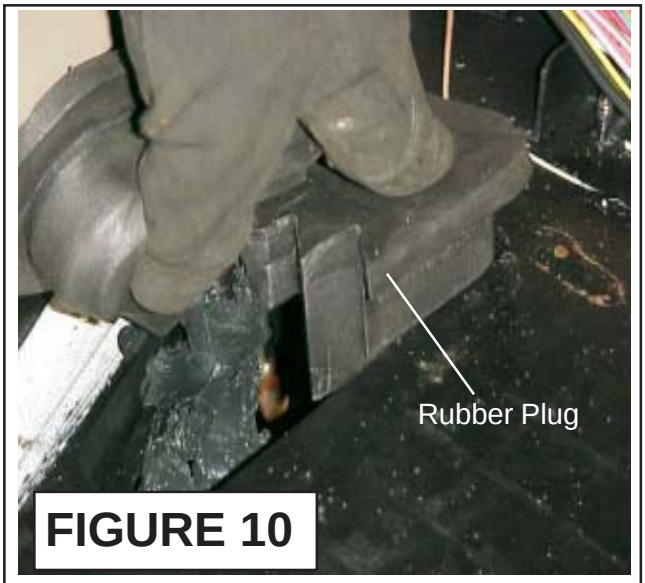


FIGURE 10

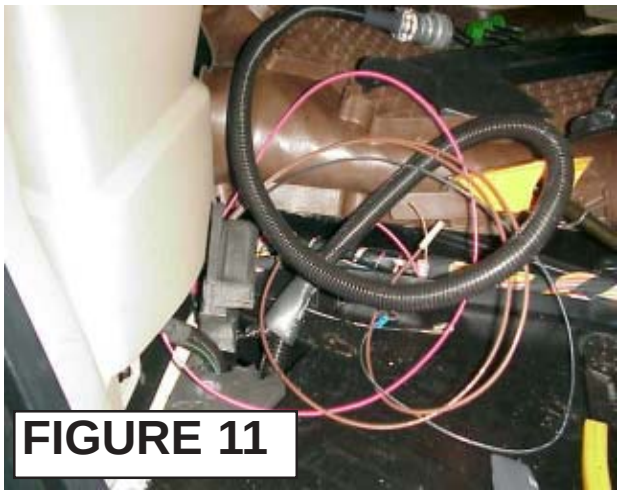


FIGURE 11

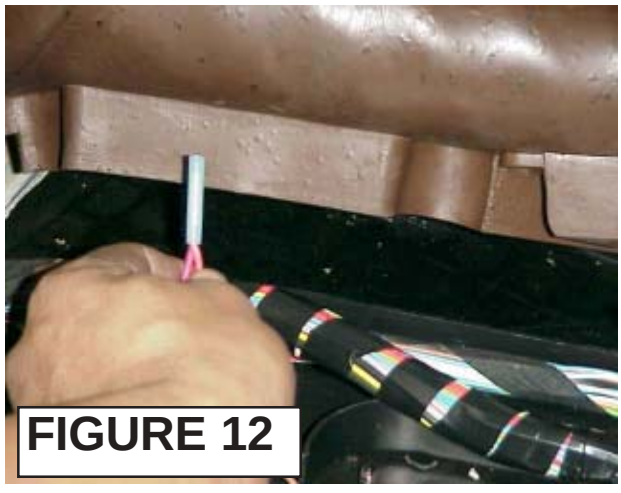


FIGURE 12

Installing Wiring Harness to Joystick:

(Continued)

8. Ground Wire. The Black wire at the harness (See Figure 11 and 13) can be connected inside the cab floor, or it can be run down through the floor and connected to the frame below the cab. If grounding to the Cab floor connect ground now.

9. Install Wiring Harness to Joystick. Pull the Wiring Harness up till it touches the bottom of the Joystick connection (See Figure 14). Align the Plug Guides (there are 1 wide and 2 narrow lugs) that prevent the plug from being installed wrong. Screw the plug retainer onto the Joystick Plug, this will be hand tightened.

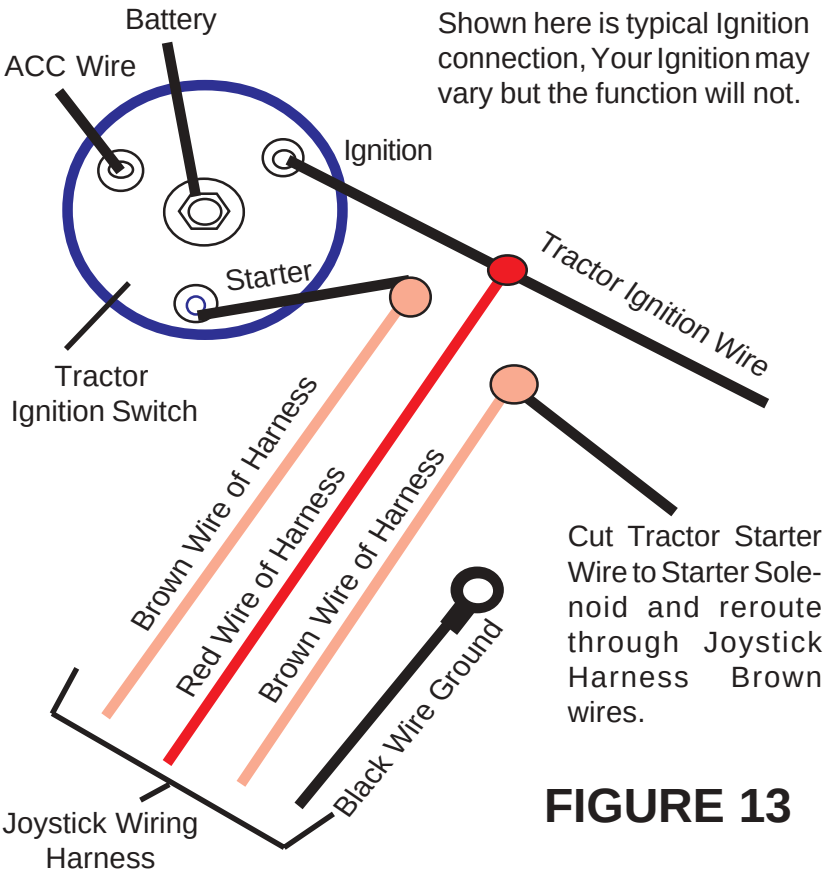


FIGURE 13

FIGURE 14

FIGURE 15

10. Reinstall Floor Mat. DO NOT cut Floor Mat. Make sure you have remounted the wire harness protector over wire harness under floor mat (See figure 8). Push the wire harness over against the side panel (See Figure 15). Put the floor mat down as it was originally. When finished floor mat should be as smooth as it was before installation.

Installing Warning and Instruction Decals:

1. Always clean windows before installing decals. Windows must be dry and free of any oil, after cleaning do not touch windows before decals are installed. Take precaution to make sure decals are right side up and straight when installing them, they cannot be taken off and redone.

2. Identify Decals. Lay all the Decals out and ID each one so you will know which is installed where. The Decals will have the Part Number on them in the lower corners.

Decal No.	Description
00763977	Notice to Owner
02964677	Important - Boom Rest
02963524	Attention - Boom Swing
02965093	Proper Engine Operating
02965262	Warning - Hose Burst
02967827	Multi - Hazard

3. Multi-Hazard - Danger Decal. This is installed on the Left Side Window of Cab on the inside to Drivers Left. (See Figure 16)

4. Warning Hose Burst Decal. This installs on the Right Side Window of Cab on the Inside to Drivers Right (See Figure 17)

5. Notice To Owner Decal. This installs on the inside top rear of Right Door Glass (See Figure 18)

6. Attention Boom Swing Decal. This installs on the inside top rear of Right Door Glass (See Figure 18)

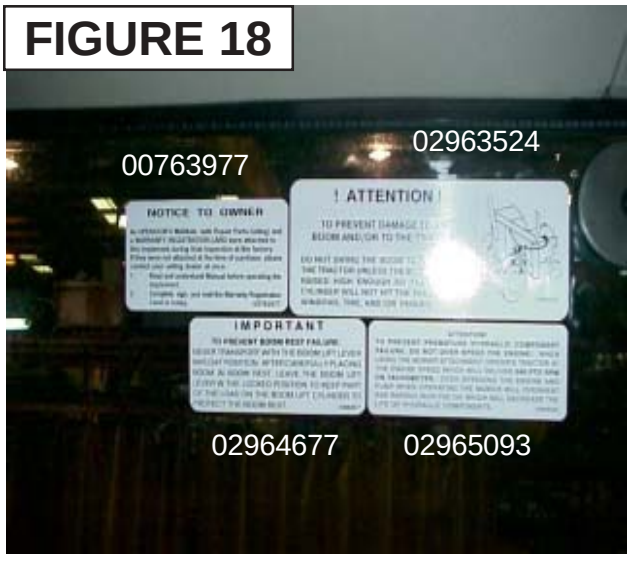
7. Important Boom Rest Decal. This installs on the inside top rear of Right Door Glass (See Figure 18)

8. Proper Engine Operating Decal. This installs on the inside top rear of Right Door Glass (See Figure 18)

FIGURE 16

FIGURE 17

FIGURE 18



Installing Wire Harness To Valve:

1. Wire Harness From Cab to Front. The wire harness runs out the bottom of the Cab on the right hand side. Run Harness along RH Frame rail of Tractor to the front of the Tractor (See Figure 19). Note the wire harness runs along with the hydraulic Hose from the Tractor Stack Valve to the front of the tractor. Do Not tie the Harness or Hoses to the Tractor frame rail at this time.

2. Wire Harness & Front Rail Support. The wire harness runs behind the front rail support on the RH side along side the hoses from the rear Tractor Stack valve. (See Figure 20). Do not tie any hoses or wire harness at this time. Run Wire Harness along the front RH side till it reaches the front of the Tank (See Figure 21)

4. Gaskets on Valve Terminals. There are 5 wire terminals on Valve, A Gasket will have to installed on each one. These gaskets will only fit one way, there are 4 slots in gasket. 1 Slot is wider than the other 3, align these slots with correct terminal on Valve. (See Figure 22 & 23). These Gaskets must be used.

FIGURE 19

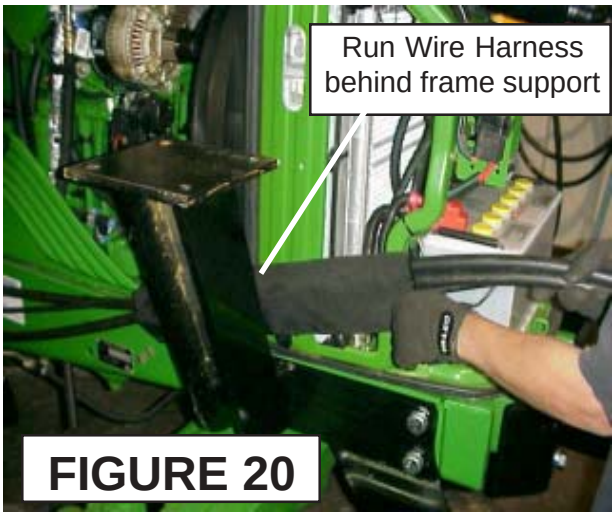


FIGURE 20

FIGURE 21

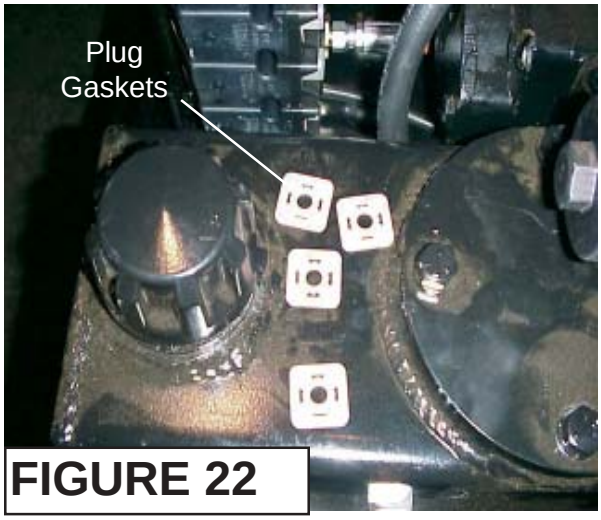


FIGURE 22

Installing Wire Harness To Valve: (Continued)

5. Wire Harness Terminal Identification. The Wire Harness Terminal Plugs are marked in writing on the plug. Swing, Lift, Dipper, Tilt and Door terminal plugs (5 Total). The Valve terminals are in this same order starting at the bottom and coming up on the valve. You will need to have a short handle Phillips screwdriver for this. (See Figure 26).

6. Wire Harness Terminal Installation. You will need to feed wire harness under the fitting across tank (See Figure 24) lay the Plugs out in the Order they are to be installed starting at the bottom terminal.

7. Terminal Connections. Make sure that each terminal Plug on Valve has had the Gasket installed on it, then Install Swing Terminal and tighten Plug Retaining Screw. Continue this with all 5 plugs starting at the bottom and coming up (See Figure25)

PLUG	FUNCTION
1 Bottom Plug	Swing Terminal
2 2 nd Plug Up	Lift Terminal
3 3 rd Plug Up	Dipper Terminal
4 4 th Plug Up	Tilt Terminal
5 Top Plug	Door Terminal

Connect and tighten all 5 terminal plugs one at a time till all 5 are connected. (See Figure 26)

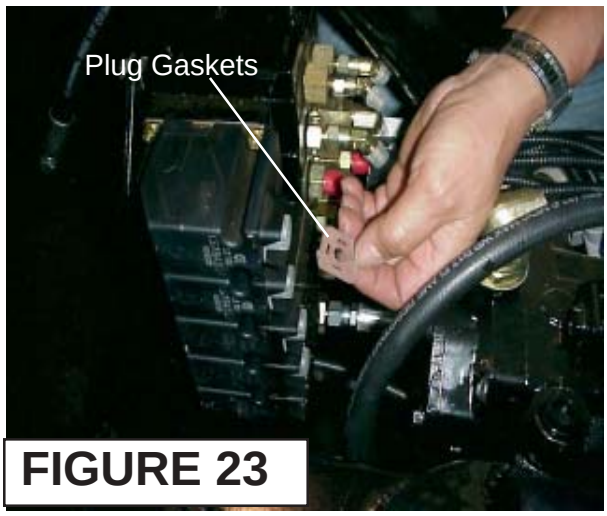


FIGURE 23

FIGURE 24

Photo without Pump & Hoses shown for illustration only

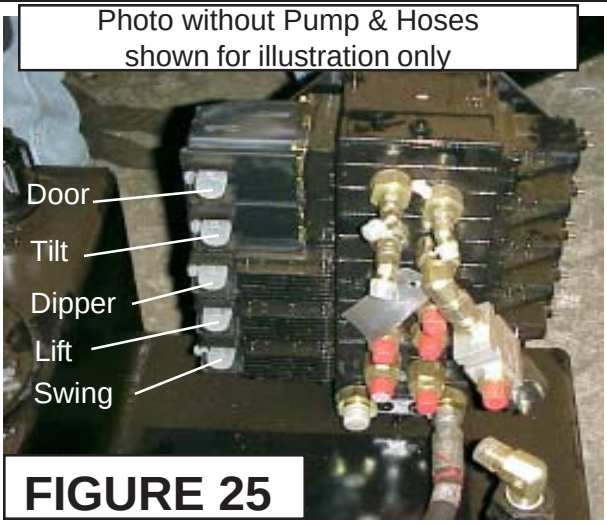


FIGURE 25

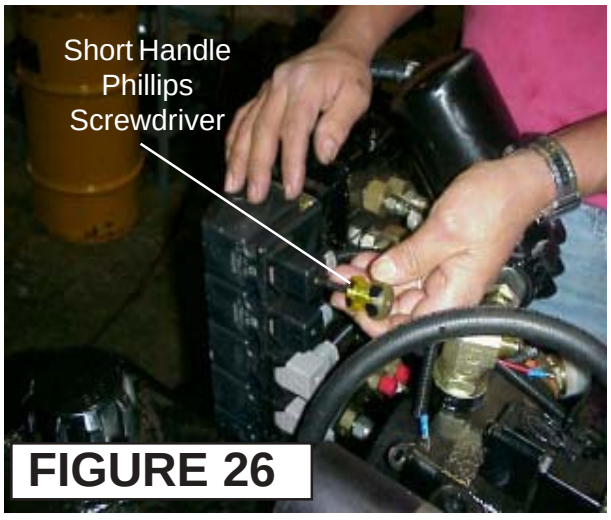


FIGURE 26

Installing Wire Harness To Valve: (Continued)

8. Solenoid Lock Valve Connection. Solenoid Lock valve is mounted on the Valve Tilt Port on the RH Side (See Figure 27). Find the two wires in harness that has eye terminals on them. Connect them to the Solenoid Lock Valve (See Figure 27)

9. Servo Control Manifold Solenoid. Locate the last Plug in the harness. This Plug is a two wire self sealing push connector. the Control manifolds Solenoid is located on the top of the Pump and activates the Pump when engaged. (See Figure 28 and 29).

10. Wire Harness Completed. Pull the Wire harness back toward Cab to remove any excess slack, only enough to remove slack not to make Wire Harness tight. Do Not tie wire harness or hoses to Tractor Frame Rails Yet. Tying Wire Harness and Hose up out of way will be done later. The Wiring Schematic is shown in this book as a reference only, the wire harness will come to you assembled and ready to mount. The only wires that will have to be altered are the wires inside that connect to the existing Tractor Wires. These inside wires are intentionally left long so they can be cut as needed. None of the wires with the factory plugs will have to be cut.

11. See the next two pages for Wiring Schematic, this is listed as reference only. Pin locations in schematic are actual pin locations in Plugs. Plugs are marked with the letters as shown. This schematic is listed to assist you in tracing wires through harness if needed. Do not change or modify the harness plugs in any way.

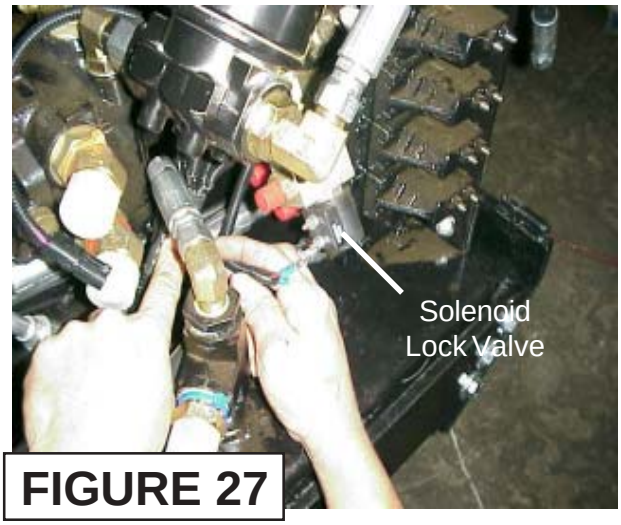


FIGURE 27

FIGURE 28

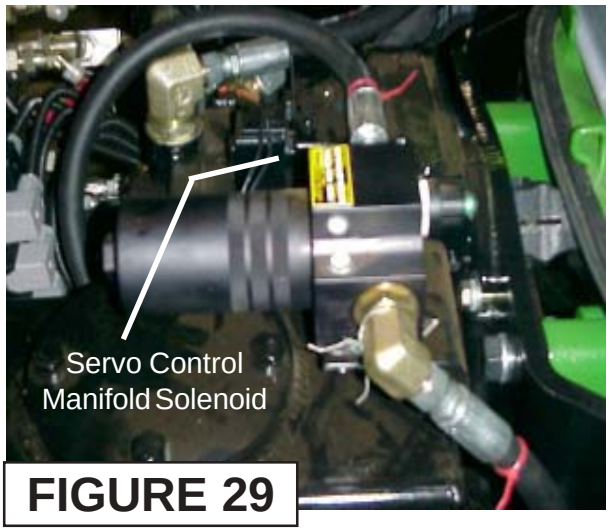
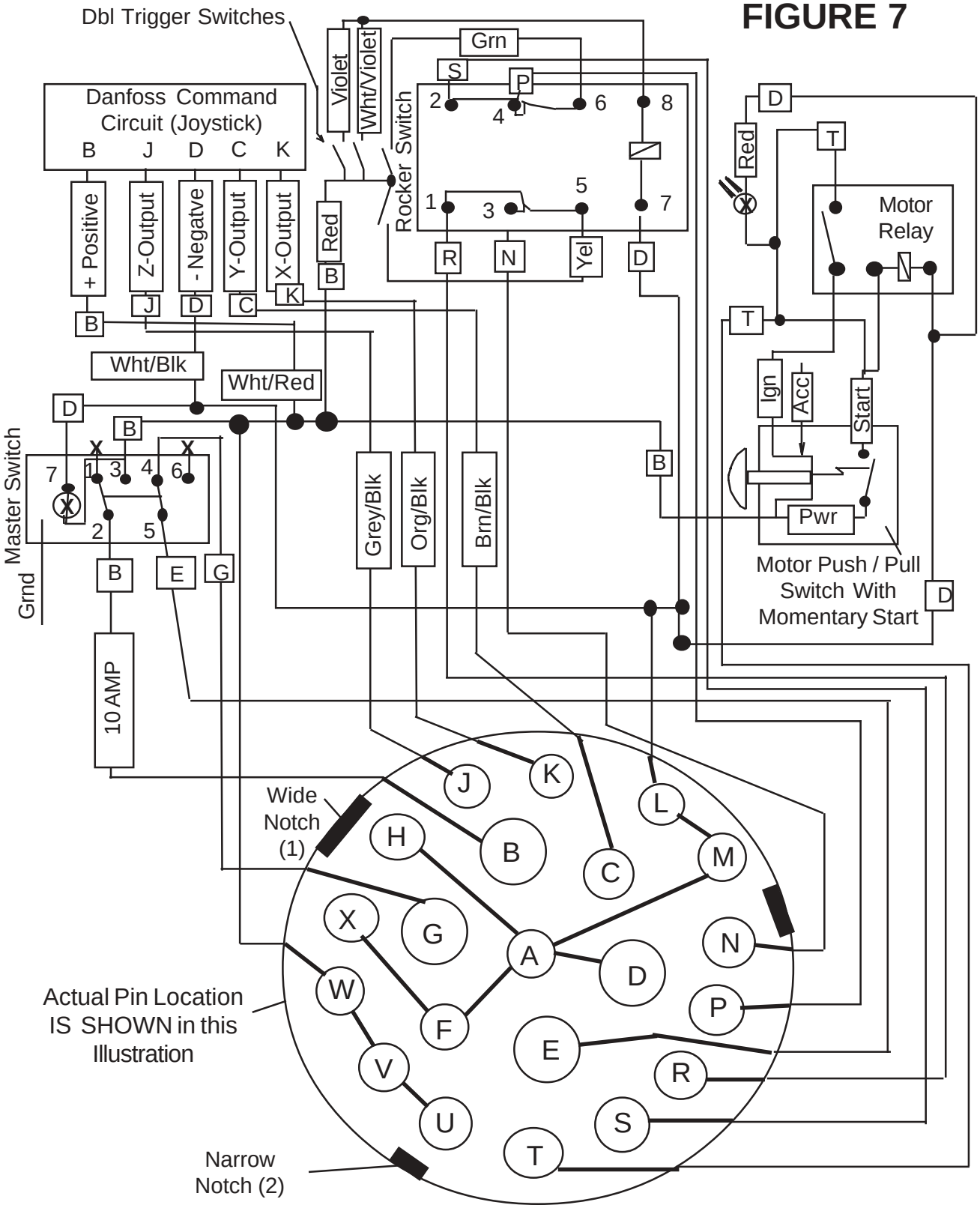


FIGURE 29

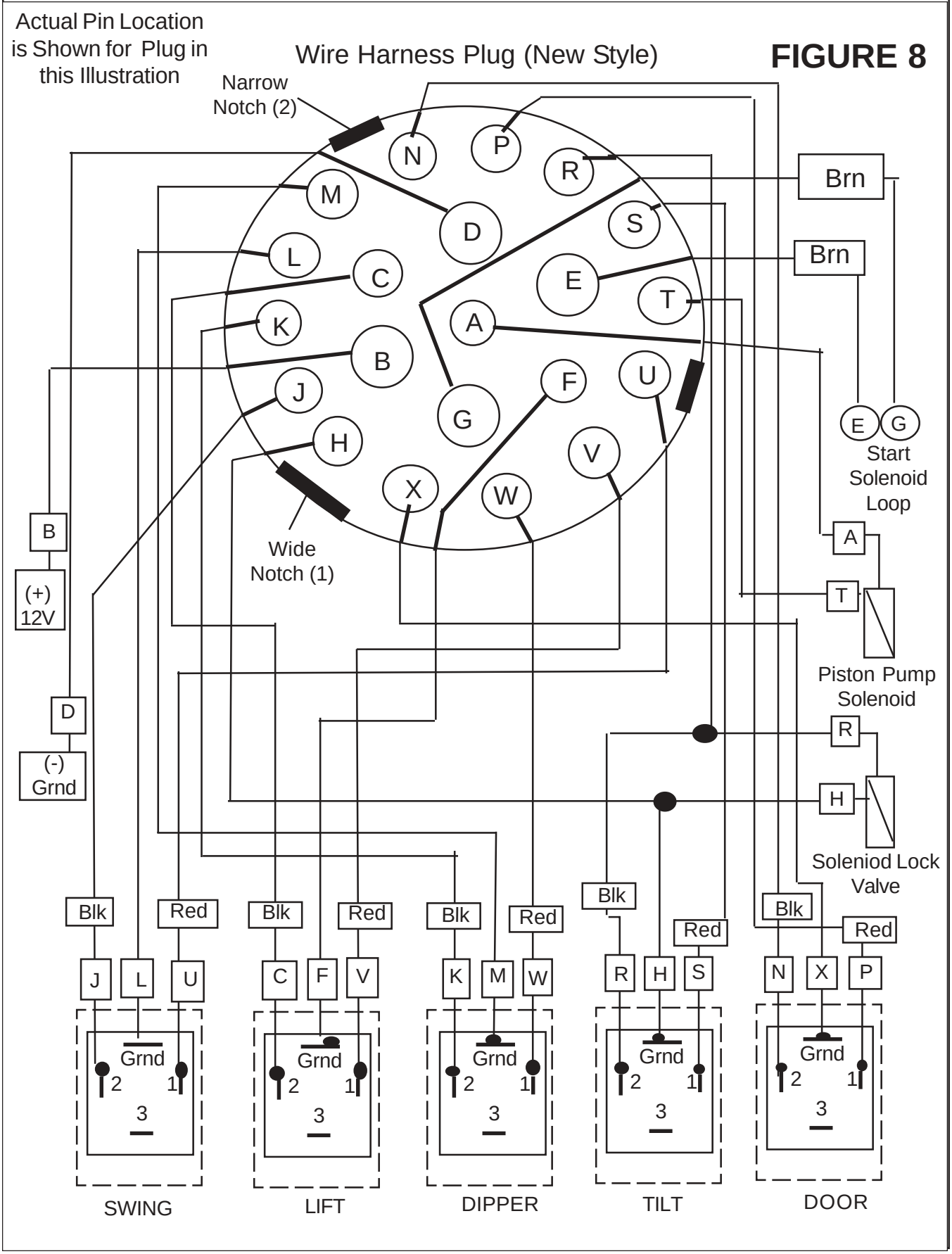
Joystick Plug (Bottom of Joystick Console)

Joystick w/ Push/Pull Motor Switch & Rocker Master Switch

FIGURE 7



Wire Harness (Joystick Console Plug to Valve)



Section 7

MACHETE

Frame Rail & CWT Final Installation

Frame Rail Installation 2 WD & 4 WD

Re-Install Frame Rails to Tractor:

1. Re-Install Frame Rails. With the Welding done touch up or re-paint frame rails before re-installing them. The RH and the LH Rail will install to the Tractor the same except for the Boom rest that installs on the RH Rail Rear Mount. It is best to do the Left Hand Frame Rail first then the RH Rail. Use a Hoist to install Frame rails to Tractor. **(See Figure 1)**.

Figure 1

2. Install the Bolts into the rear Axle Housing to support the rear of the frame rails. This is the same for LH & RH. Snug the Bolts only. Do not tighten them yet because the frame rails will have to be moved around to align all the Bolt Holes. **(See Figure 56).** The RH rear Frame Rail Mounting will need the Bolts removed to install the Axle Mounted Boom Rest **(See figure 5, 6 & 7).**

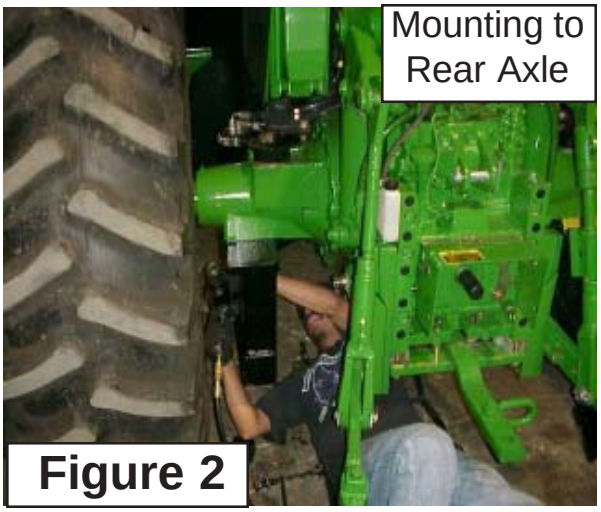


Figure 2

3. Install the Bolts into the front mounting Plates on the LH and RH Side. Snug them only. **(See Figure 3).**

4. Install the LH Axle Straps. The LH Axle Strap can be installed now **(See Figure 4).** The Left Hand Axle Strap uses two long Bolts with Nuts. The Bolts go down through the Holes in the rear Axle Mounting Plate that is welded to the rear of the frame rail. Once the Rear Axle Strap is installed the Bolts for the LH Frame Rail and Axle Strap, snug the Bolts only, do not tightened them down **(See Figure 1, 2, 3 & 4).**

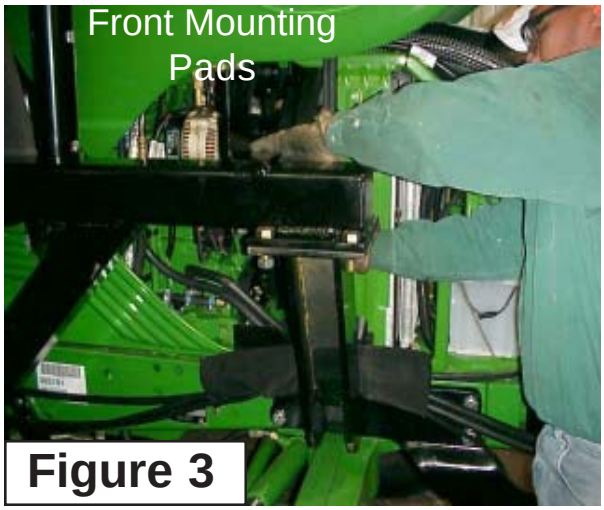


Figure 3

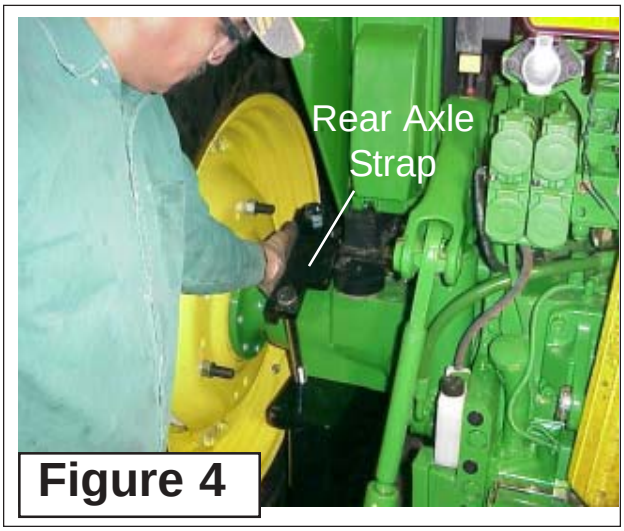


Figure 4

Re-Install Frame Rails to Tractor: (continued)

5. Install Axle Mounted Boom Rest. This will require two people, one to align the Boom rest with the Hoist and one to align the Bolt holes on the bottom to start them into the Axle Housing. **(See Figure 5, 6 & 7)**

When the Bolts are installed into the Frame Rail & Boom Rest Plates and snugged up to Axle housing, install the RH Axle Mounting Strap **(See Figure 8, 9 & 10)**. Do not tighten Bolts snug them only for now.

Figure 5

Figure 6

Figure 8

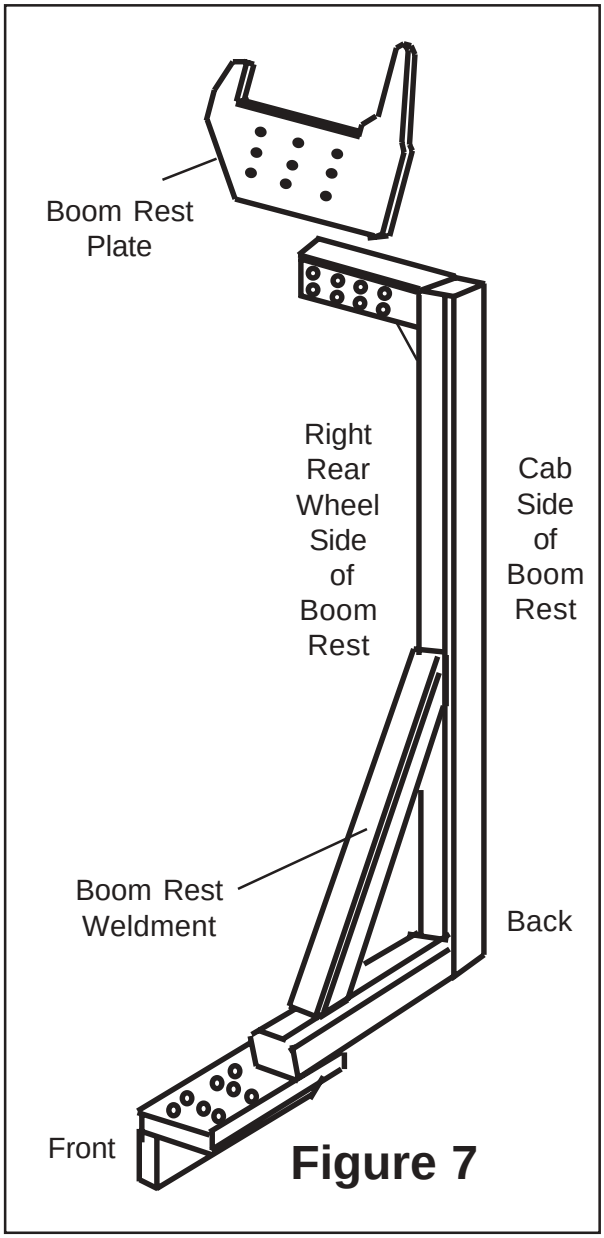


Figure 7

Re-Install Frame Rails to Tractor: (continued)

6. Install Stabilizer Crossmember. This will consist of a Tube cross member and four Bolts and Nuts **(See Figure 11).** Install the Bolts with the Nuts on Top and bolts coming in from the Bottom **(See Figure 12),** this way only the Head of the Bolt is lower than the Crossmember. Snug the Bolts; do not tighten them yet.

7. Weld Stabilizer Gusset to Rail Stiffener Weldment. Weld the Gusset to the Stabilizer Weldment now, Weld on both sides of the Gusset. The LH Gusset and RH Gusset must be welded. **(See Figure 13). Check that all Bolts and Nuts are installed.**

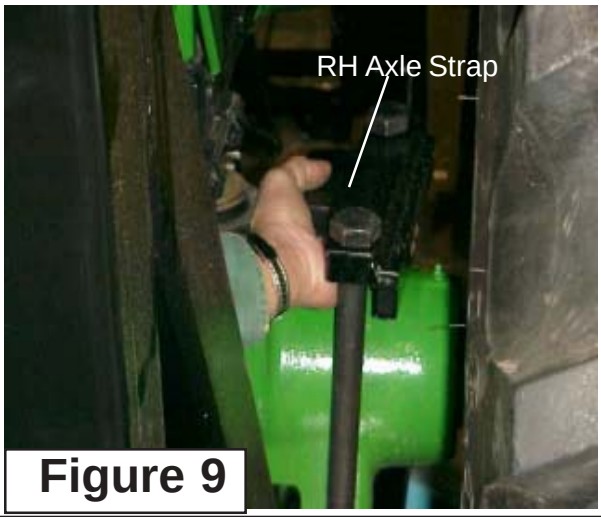


Figure 9

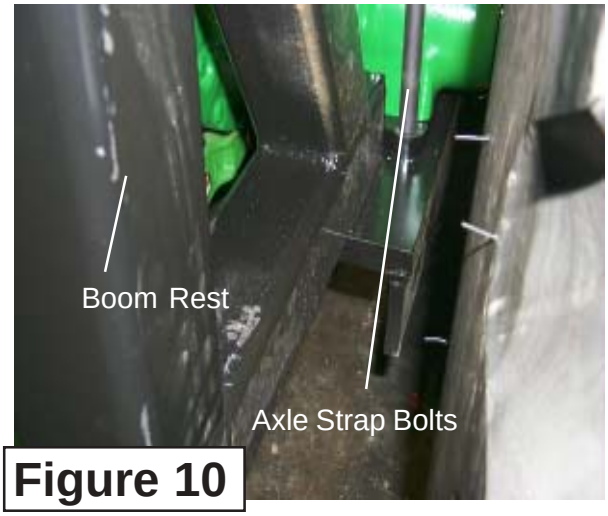


Figure 10

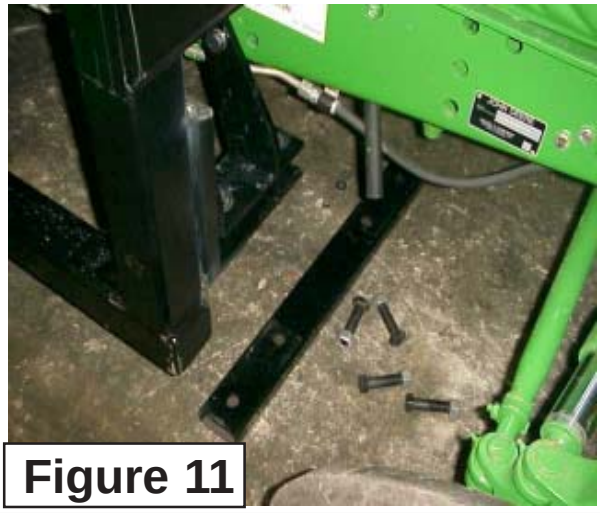


Figure 11

Figure 12

Figure 13

Frame Rail Installation 2 WD & 4 WD

Re-Install High Frame to Tractor:

1. High Frame Paint. Re-Paint or Touch up Paint on High Frame now before lowering it on to Tractor. Keep in mind there will be one more Place to Weld on High frame that will need touch up Paint later, The Counter Weight Lug that weld to High frame when installed later.

2. High Frame Mounting to Tractor. This is a two Person Job to maintain control of High Frame and guide it down over frame rails. **(See Figure 14)**

3. Align High Frame. The High frame with the Mounting tubes welded to it will sit down over Frame Rails. The welded on Mounting tubes will slide down into the Angle mounts that are welded to the Frame rails. **(See Figure 15 & 16).** Both sides must go down evenly.

4. Aligning Mounting Holes. The Holes in the Angle Mounts welded to the Frame Rail and the Mounting Tube Plates that are welded to the High Frame must be aligned. This can be done with a Pry Bar inserted into one of the holes and moved around **(See Figure 17).** In some cases the Frame Rails may have to be moved slightly, this is the reason the Bolts were only snugged and not tightened. Do not take Hoist off of High Frame untill all Bolts are tightened. There are 8 bolts and Nuts that must be installed into the holes of the Angle Mounts. Snug these

Figure 14

Figure 15

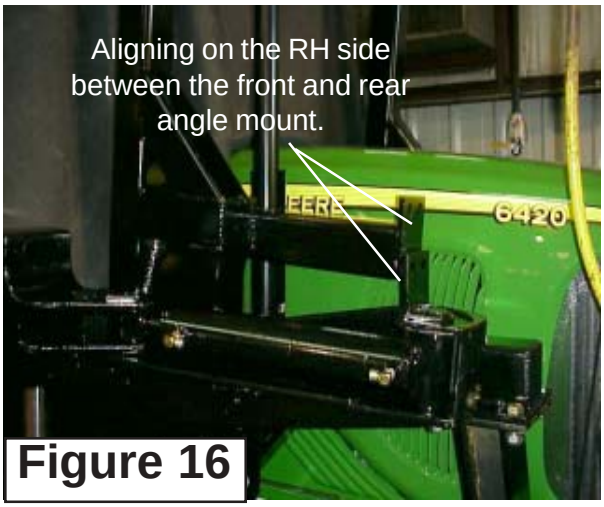


Figure 16

Figure 17

Re-Install High Frame to Tractor: (continued)

5. Install Mounting Tube Bolts. The High frame must still be hung on the Hoist for safety and support, but sitting down on the frame rails. There are 8 Bolts and Nuts that go through the Angle Mounts and the Plates on the end of the Mounting Tubes. There are 2 on each end and 4 on each side. Install these 8 Bolts now but snug them only do not tighten them down yet **(See Figure 18).** You may need to insert a bar into one of the holes to align them (See **Figure 19).**


Figure 18

6. Install Bar Mounting Straps. The rear Bar Mounting Straps are the ones that were cut and welded to the tubes, just put the Bolt through these (See Figure 20). Snug the Bolt in using the Lock Nuts. The Front Bar Mounting Strap will have a strap on the Bottom and another one on the top with a bolt on each side. Install these bolts and nuts. Snug them only for now. (See Figure 21). Install the Bar mounting Straps with Bolts and Nuts on the LH and RH Side.


Figure 19

7. Tighten High frame Mounting Bolts. Tighten the 8 Bolts and Nuts for the Mounting Tubes **(See Figure 18 & 19).** Tighten the Bolts for the Bar Mounting Straps, These bolts must be tighten so the straps stay even on both sides so Bars will stay even. The rear bar strap mounting bolt uses the Bars that are welded to tube and only have one bolt **(See figure 20 & 21).**

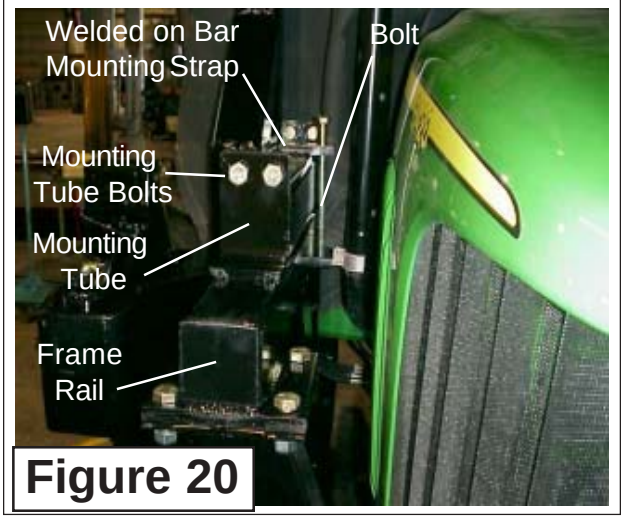


Figure 20


Figure 21

Re-Install High Frame to Tractor: (continued)

8. Tighten All Frame Mounting Bolts. Tighten all the Frame Mounting bolts that have only be snugged till now. Go through and make sure none are missed.

A. Front Mounting Pad Bolts. There are 4 Bolts on each Pad the LH and RH, 8 Total **(See Figure 22).**

B. Frame Stiffener Crossmember. There are 2 bolts on each side or 4 total. Make sure these bolts have been installed with the nuts on top. **(See Figure 23).**

C. Frame Rails to Rear Axles. The Rear of the frame rails bolt up to the Bottom of the Tractor Axle Housing. There is also an Axle Strap on each side which has long bolts through them from Axle Strap on top down and through the Frame rail Mount Plate. The RH side also has the Boom rest bolted on with it and the Axle Strap bolts go through it. Tighten all of these bolts at the rear axle of tractor. **(See Figure 24 & 25).**

D. Check all Bolts for Tightness. Check to make sure all Frame Mounting bolts and nuts have been tightened, Also inspect to make sure they are installed correctly **(See Figures 1 through 27).**

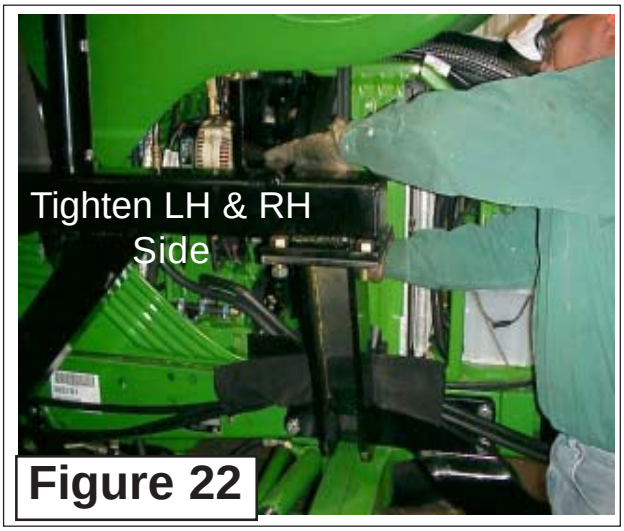


Figure 22

Figure 23

Figure 24

Figure 25

Re-Install High Frame to Tractor: (continued)

9. Frame Mount should look like. Shown below is basically what the High Frame should look like when assembled **(See Figure 26).**

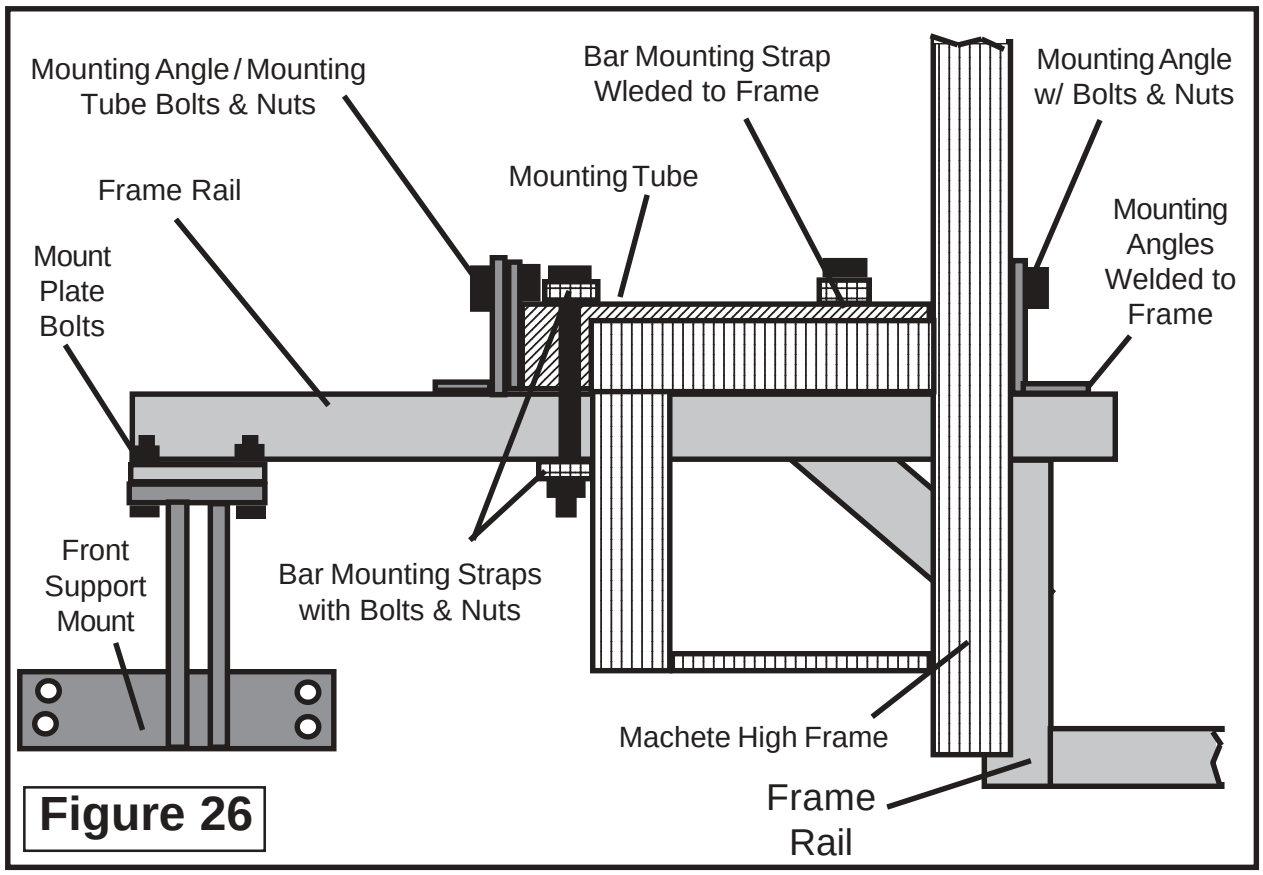


Figure 26

10. Tie Hoses to Tractor Frame Rail. Use Plastic Wire Ties to tie the Hoses from the Stack Valve in the rear to the Tractor Frame Rail. Note: below it is shown with the Frame Rails not mounted to Tractor, this is done for illustration only **(See Figure 27).**

Inspect all the Hoses and Wire harness to make sure they are secured and will not be rubbed or chaffed on anything. Hoses and Wire harness should not be hanging down where they will be caught on anything. If there is excess length in hoses or wire harness, gather this excess up under cab and secure it out of the way. There will most likely be excess length in these hoses and wire harness.

Figure 27

Frame Rail Installation 2 WD & 4 WD

Counter Weight Installation:

1. Counter Weight (CWT) Installation. The Counter weight **(See Figure 83)** mounts on the LH side Frame Rail with a Support Rod running up to a Bracket that welds to the High Frame. The Bolts must be installed as shown with the Locknuts to the inside . Installing the Bolts this way will make them easier to tighten up **(See Figure 28 & 30).** Install both bolts as shown **(See Figure 28)**. Snug the Bolts, don't tighten them yet.

2. Level Counter Weight (CWT). Use a Floor Jack to lsupport and level counter Weight after Hinge Bolts have been installed **(See Figure 31).** Use a Framing Square to align the CWT with the High frame **(See Figure 32).**

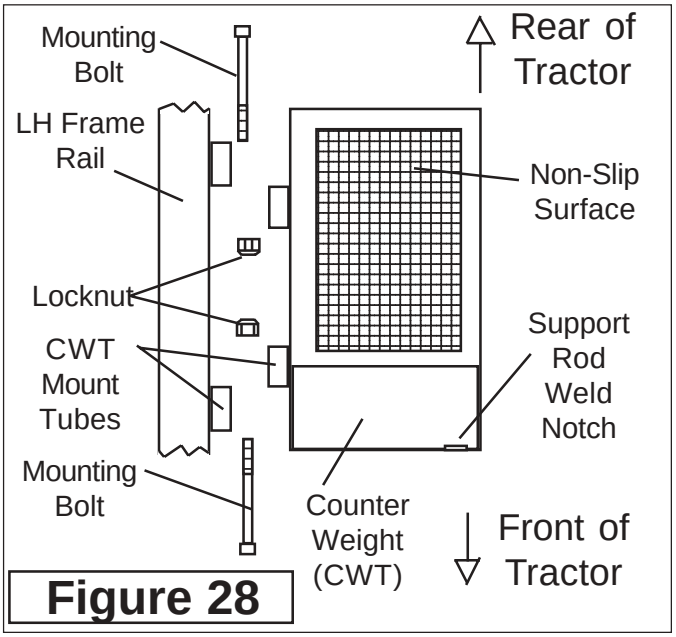


Figure 28

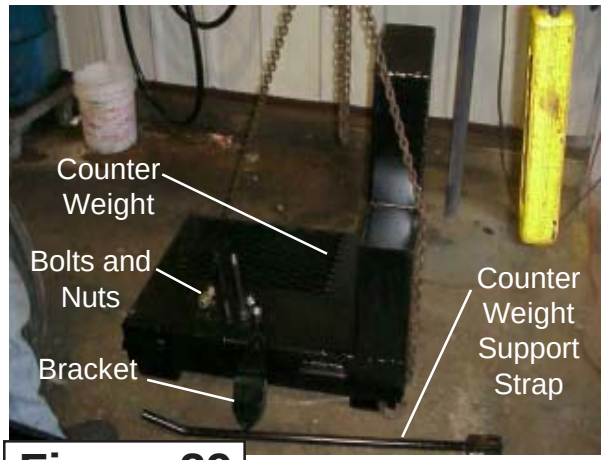


Figure 29

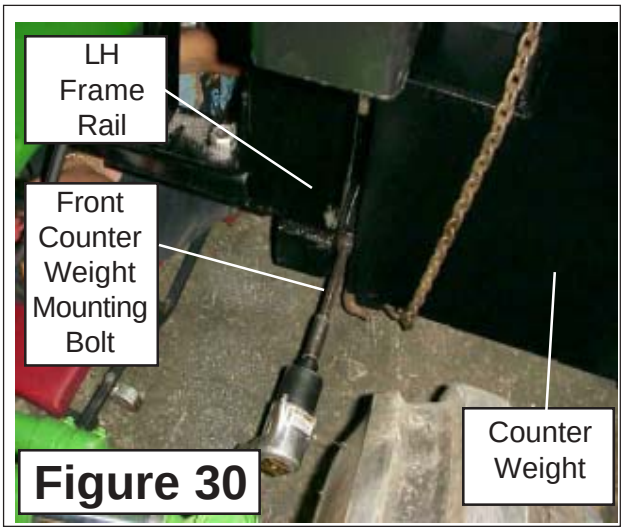


Figure 30


Figure 31


Figure 32

Counter Weight Installation: (continued)

3. Counter Weight (CWT) Support Rod Installation. The Counter weight Mounting Bracket will Connect to the High Frame with a weld on Bracket. **(See Figure 35)** The bracket has to aligned with the Counter Weight Support Rod Notch **(See Figure 33).** When aligned clamp the Bracket to the High frame on the LH outer side **(See Figure 34).**

4. Weld Counter Weight Bracket and Support Rod. Weld the Support Rod Bracket to the High Frame, weld up each side and over the top **(See Figure 89).** Counter Weight must be supported to where it is level during the entire mounting process. If it is not supportted it will sag after being welded.

Figure 33

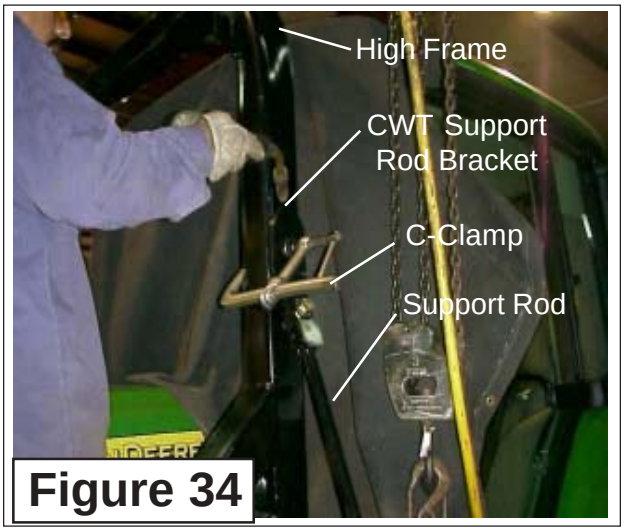


Figure 34

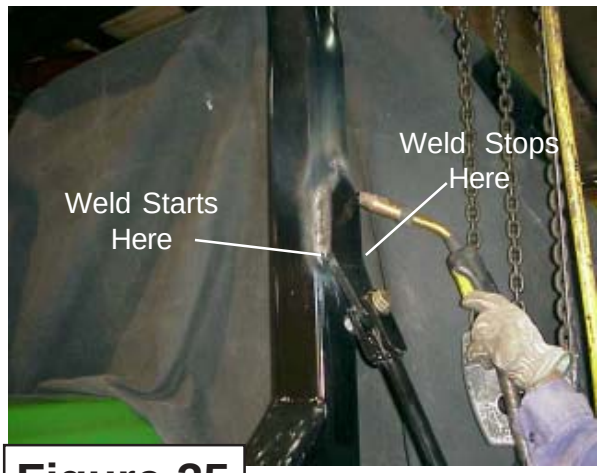


Figure 35


Figure 36


Figure 37

Counter Weight Installation: (continued)

5. Install Counter Weight Support Rod to Counter Weight. Level and Support Counter Weight at all times till completly welded. Weld the Support Rod at the top where Rod meets Counter Weight **(See Figure 36),** Check tha tSupport Rod is into Notch correctly. If not hit with a hammer **(See Figure 37)** to force it in, then finish welding it **(See Figure 38).**

6. Counter Weight (CWT) Support Rod Installed. The Counter weight Mounting Bracket welded to the High frame, the Support Rod welded to the Counter Weight. Touch up the Paint where these were welded. Tighten the two long Allen Head bolts that hold the Counter Weight to the Frame Rail. Remove the Hoist and install the decal on the side of the Counter Weight **(See Figure 38 & 39)**

7. Touch Up Paint on Counter Weight. Paint the places that you had to weld on frame and counter weight now before installing Decals.

8. Decals on Counter Weight. Install Decals on Counter Weight after you have touch up the paint. **(See Figure 39 & 40).**

9. Decals on Front Pump Cover. These Decal can be installed now if not on front cover already.

Figure 38

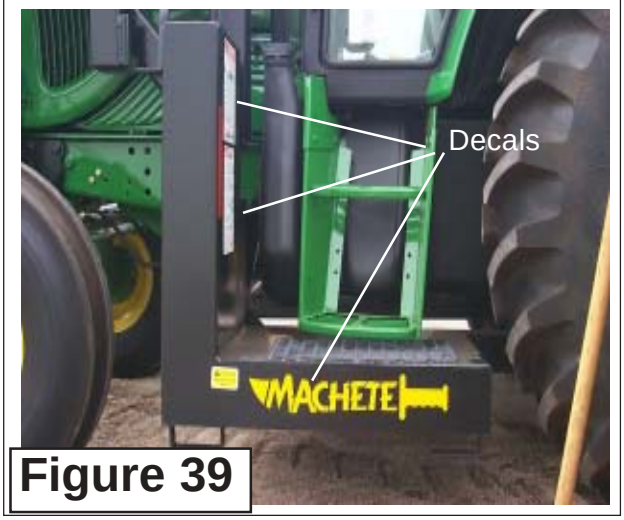


Figure 39

Figure 40

NOTES

Section 8

Hose / Tractor Stack Valve Modification Installation

Hose & Fitting Specifications

Hose Installation 2 WD & 4 WD

Boom Hoses / Tank Hoses:

1. Install Hose Fittings Through Frame. These are 90 deg bulkhead fittings, there are 3 of them. These will mount on the RH side in a plate with 3 large holes in it **(See Figure 1).** These holes are stamped and some times the holes will need to cleaned out.. Clean them with a burr grinder **(See Figure 1).** Install the Bulkhead Elbows one at a time starting at the top, tighten the retaining nut in each Elbow as you install it **(See Figure 2).** Clean each Elbow ID and Hose with clean compressed Air, put the plastic caps back on the Elbows till Hose is connected to it (See Figure 3).


Figure 1

2. Pump Pressure and Return Hoses. Locate the three # 16 (1") hoses. These hoses will have plastic Ties on them at the fittings.

1 st # 16 X 52" Long and will have a Red Tie on it (Hose Part # 02968158). Pressure Hose

2 nd. # 16 X 52" long and will have an Orange Tie on it (Hose Part # 02968157). Tank Return Hose

3 rd # 16 X 48" long and have Blue Tie on it (Hose Part # 02958647). Case Drain Hose Install these hose in the correct order as shown, this is critical that the do not get mixed. **(See Figure 4)**


Figure 2

3. Slide Sleeving over the Hoses running to theTank. The Sleeving is used to protect the hoses from scrapping and being damaged. **(See Figure 5, 6,7)**

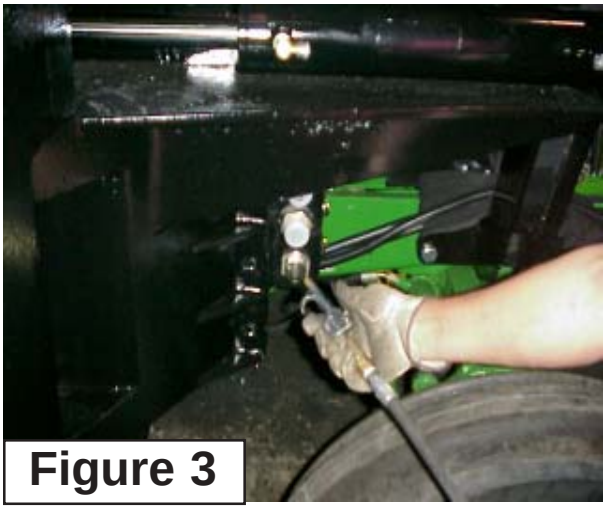


Figure 3

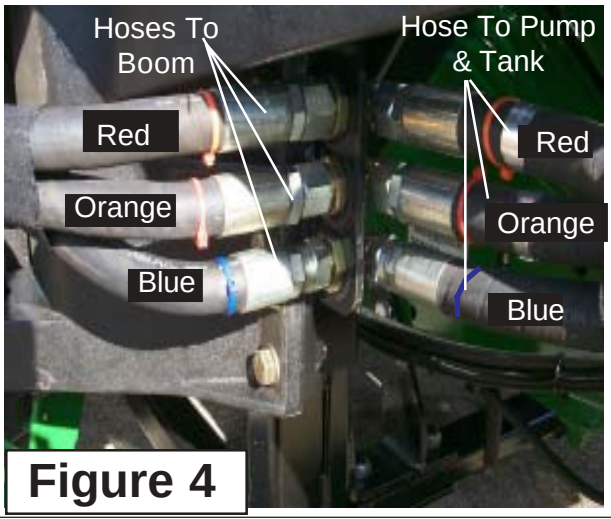


Figure 4

Hose Installation 2 WD & 4 WD

Boom Hoses / Tank Hoses:

1. Install Hose To Pump and Tank. These hoses go through a hose holder that is welded to the front Rail support that is bolted to tractor frame Rail, these hose must be run here before connecting them to Pump and tank **(See Figure 10).** These are the pressure and return hoses. The fitting on the Tank will have plastic ties on them that match the Plastic ties on the Hoses **(See Figure 8 & 9)**. Connect these hose to the correct colors, Red Pressure, Orange Tank Return from Motor and Blue Tank Return from Bypass.

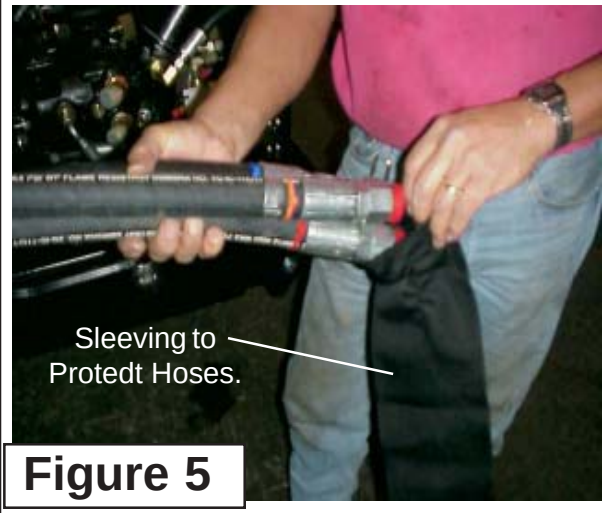


Figure 5

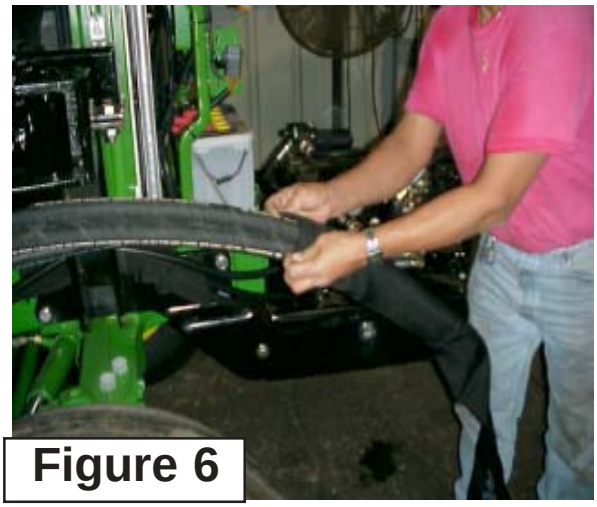


Figure 6

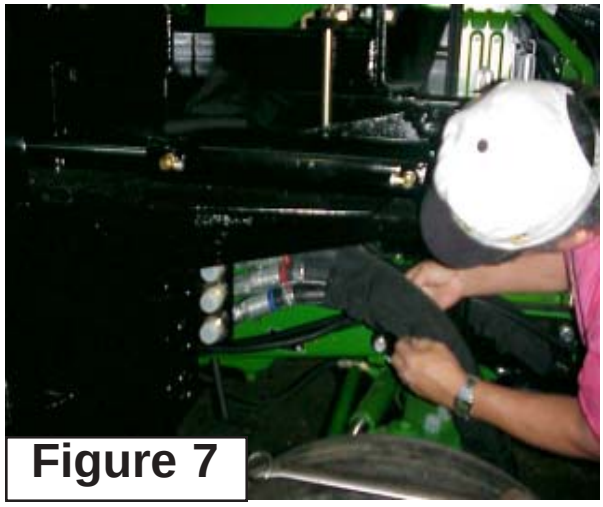
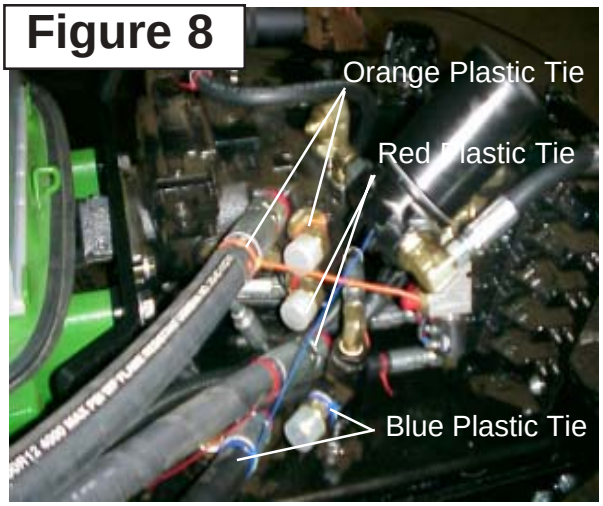


Figure 7

Figure 8



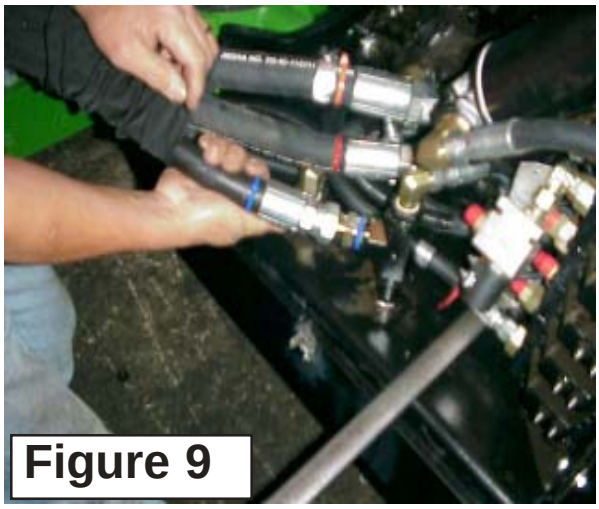


Figure 9

Hose Installation 2 WD & 4 WD

Boom Hoses / Tank Hoses:

1. Install Swing Cylinder Hoses. These # 6 hoses, The Cylinder Base end is a # 6 X 44" Long Hose (Hose Part # 02976735) with a Green Plastic Tie with a White Stripe on it. The Cylinder Rod End has a # 6 X 44" long Hose (Hose Part # 02976734) with a Solid Green Plastic Tie on it. Connect these two hoses to the Cylinder and have them pointing toward each other. The hoses will run up and over the top of the Swing Cylinder. **(See Figure 10 & 11).**

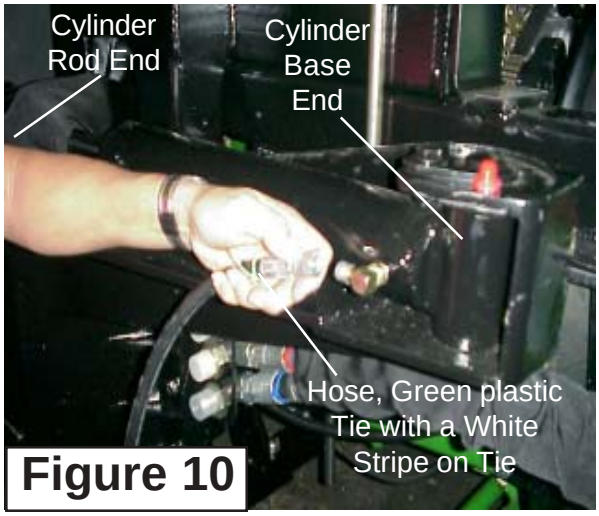


Figure 10

2. Install Lift Cylinder. Set Lift Cylinder Base End into King Post Casting **(See Figure 12).** Note the Hose fittings go toward the down side of Cylinder **(See Figure 12 & 13).** Insert Cylinder Retaining Pin, Pin installs from the Backside going toward the front. If it is installed the wrong way you will not be able to bolt the Pin down. **(See Figure 12 & 13).** When Bolting the Lift Cylinder retaining Pin in there must be a Washer and a Bushing on the Bolt, Look at the Hole in the Pin you will note how much larger hole is than bolt. Do not install Retaining Bolt with out this bushing, Pin will be to tight and could be damaged. **(See Figure 13).**

Connect the Hoses to the Lift Cylinder. The Lift Cylinder Hoses are # 6, Base end is a # 6 X 64" long Hose (Hose Part # 02976710) with an Orange with White Stripe Plastic Tie. The Rod End hose is a # 6 X 64" Long Hose (Hose Part # 02976709) with a Solid Orange Plastic Tie. **(See Figure 14)**

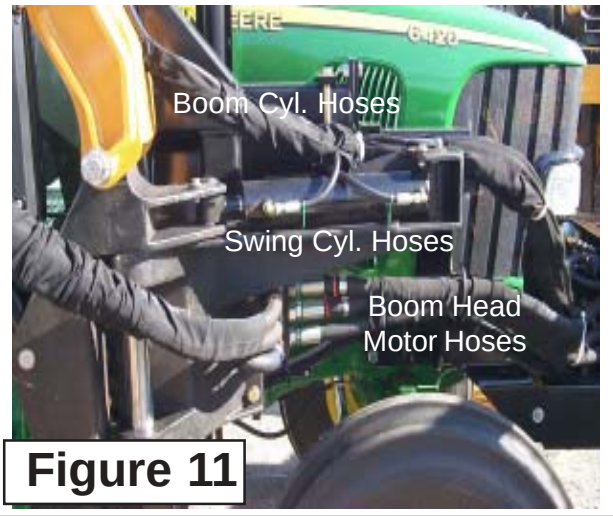


Figure 11

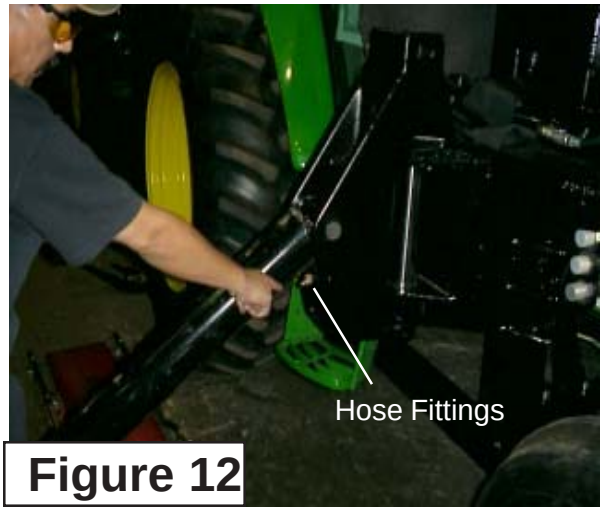


Figure 12

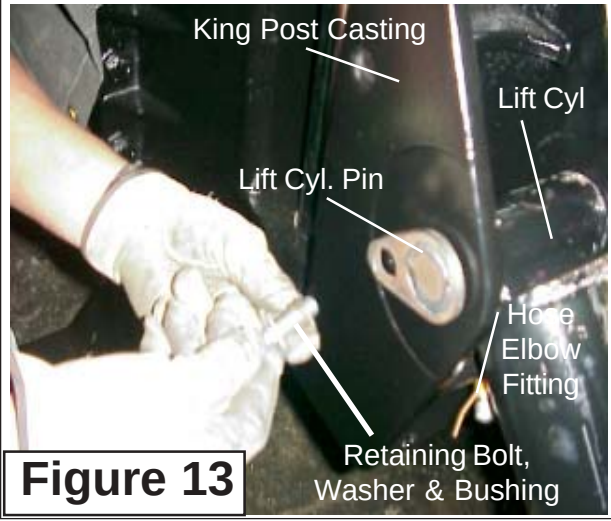


Figure 13

Boom Hoses / Tank Hoses:

3. Connect Cylinder Hoses To Control Valve. These Hose connections from Cylinder to Valve will match the Color Plastic ties on hose and match them with the Color in the drawing below (See Figure 15). Hose must be run where they will not interfere with Boom Movement or be hooked on something during use. Start with the Swing Cylinder and Connect the Hoses as you go up, connect and tighten a Left hose (Hoses with solid color Plastic ties) to the Left side then the Hose with the plastic tie that has a white stripe next. Put both hoses on for one Cylinder before you go up to the next. If not it is very difficult to tighten the Hose because the other one will interfere. The Hoses will be connected to the Boom Assembly already, so only the Hoses to the Valve should need to be connected. There are Hoses that are used as extensions in some Kits to make the Hoses reach the Valve. If Kit contains extension hoses they will be the same color ties to match the hoses you have. Connect the Extension hoses together with the other hoses and connect these to the Valve.

Figure 14

4. This is a 5 Spool Load Sense Valve. Only the Load Sense Valve will have the Load Sense Port (See Figure15). If the valve does not have this load sense Port it is most likely a Fixed Displacement valve and will not work for this application. This valve should be easy to spot if it is wrong as one of the first hoses that should have been connected to it was the Load Sense Hose that runs from the Stack valve at the rear of the tractor.

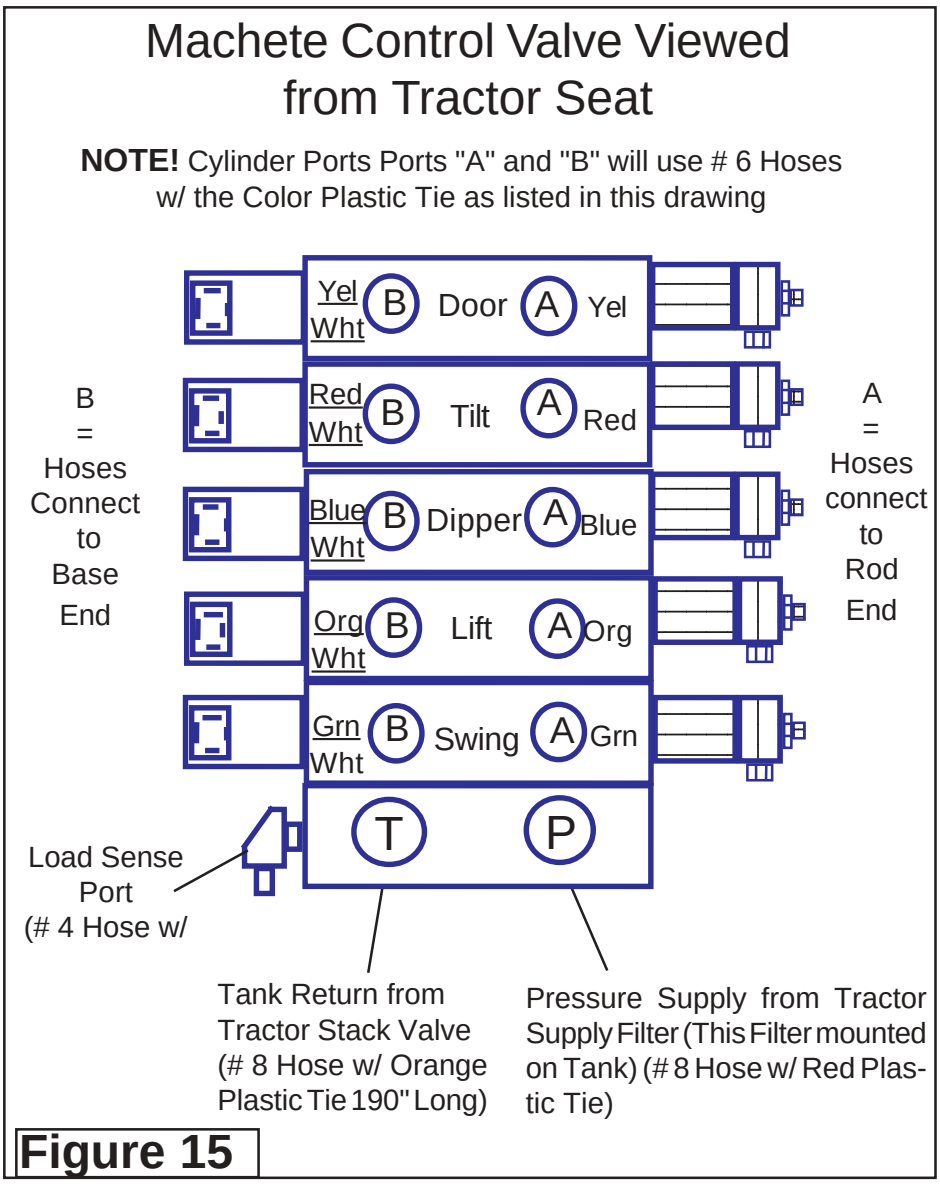


Figure 15

Hose Connecting Instructions

Valve Hose to Boom Hose Connections:

1. Hoses for Door Cylinder, Qty of two, # 4 hoses X 66" Long, one hose (# 02969124) with Yellow Tie and one hose (# 02979123) with Yellow / White Stripe Tie.
2. Hoses for Tilt Cylinder, Qty of two, # 6 hoses X 58" Long, one hose (# 02976728) with Red Tie and one hose (# 02976729) with Red / White Stripe.
3. Hoses for Dipper Cylinder, Qty of 2, # 6 hoses X 64" Long, one hose (# 02976705) with Blue Tie and one hose (# 02976706) with Blue / White Stripe Tie.
4. Hoses for Lift Cylinder, Qty of 2, # 6 hoses X 64" Long, one hose (# 02976709) with Or ange Tie and one hose (# 02976710) with Orange / White Stripe Tie.
5. Hoses for Swing Cylinder, Qty of 2, # 6 hoses X 44" long, one hose (# 02976734) with Green Tie and one hose (# 02976735) with Green / White Stripe Tie.

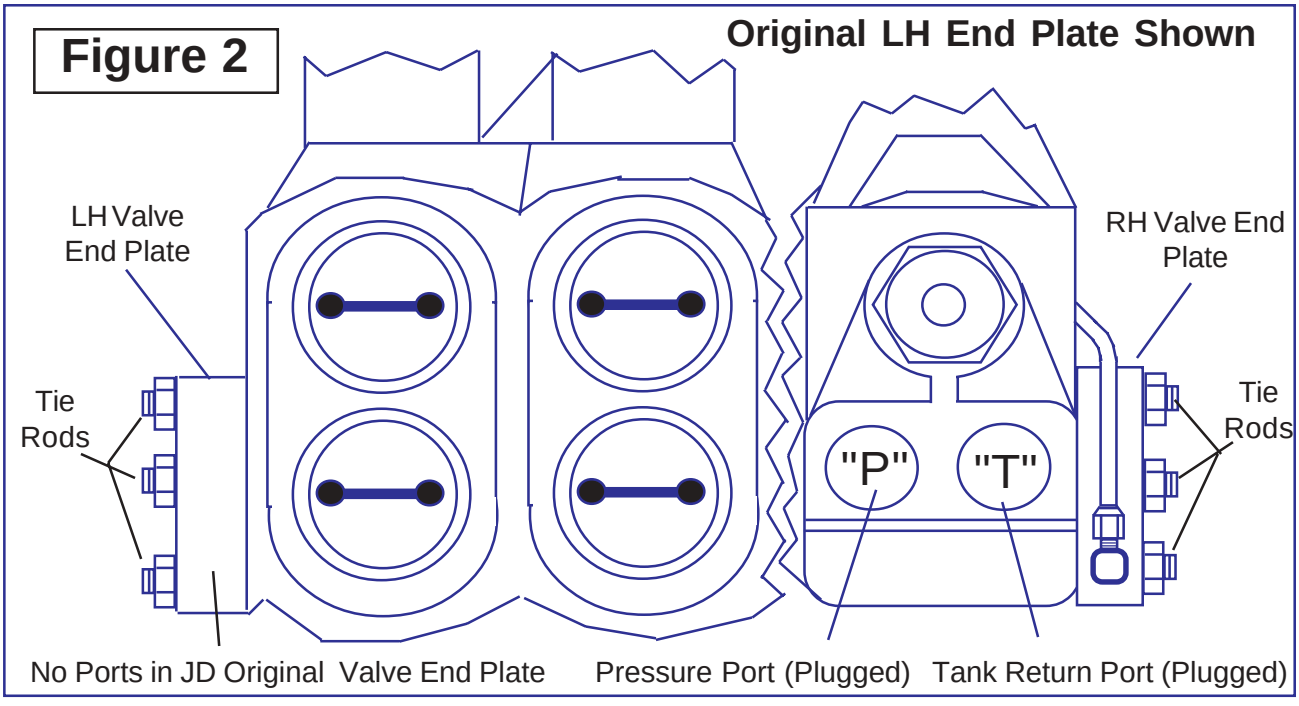
Valve Hose to Tractor Connections:

1. Hoses Pressure Supply, ("P" Marked on Valve), Qty of one, # 8 hose X 190" Long, hose (# 02976714) with Red Tie. This connects to the rear of the Tractor **(See Figure 1)**
2. Hose for Tank Return, ("T" Marked on Valve), Qty of one, # 8 hose X 190" Long, hose (# 02976713) with Orange Tie. This connects to the rear of the Tractor **(See Figure 1).**
3. Hose for Load Sense, (Note Marked on Valve **See Figure 1)** Qty of one, #4 hose X 190" Long, hose (#02215700). This Hose connects to the rear of the Tractor **(See Figure 2)** This Hose cannot be connected till Stack Valve has been modified with New LH End Plate.

Tractor Rear Hydraulic Valve Stack Connections:

Change End Plate, The original JD Factory LH or the RH Valve End Plate **(See Figure 2)** on the rear of the Tractor Hydraulic Valve Stack Outlet will have to be changed depending on the tractor s/n. The New LH Valve End Plate is Part # 02978829. This is done to install a new Valve End Plate with the Load Sense Port **(See Figure 5 and 6).** The following steps are for installation of the new Valve End Plate, if these procedures are not followed damage to the Tractor Hydraulic Outlet could occur. **Figure 2** is standing behind Tractor looking forward and shows the Old End Plate.

Figure 2



Hose Connecting Instructions

1. Hydraulic Hose Codes:

Hydraulic Hose Band Mark Color Codes: Hose's and/or fittings are marked with a Color Coded Plastic Band around it. Some Bands are a solid Color and some have a Colored Stripe. DO NOT remove these bands unless you replace them. All Bands with Solid Colors connect to Rod End of Cylinder. All Bands with Stripes connects to Butt End of Hydraulic Cylinder (or connections leading to them).

Always Check Hose Size & Color Code

Color Tie	Color Tie Abr.	Hose Size	Hydraulic Connection
Orange	OR	Medium (#6)	Lift Cylinder, Rod End
Orange	OR	Large (#16)	Return Flow from Motor To Tank
Orange / White Stripe	OR / W	Medium (#6)	Lift Cylinder, Butt End
Green	G	Medium (#6)	Swing Cylinder, Rod End
Green / White Stripe	G / W	Medium (#6)	Swing Cylinder, Butt End
Blue	B	Medium (#6)	Dipper Cylinder, Rod End
Blue	B	Large (#16)	Case Drain for Motor To Tank
Blue / White Stripe	B / W	Medium (#6)	Dipper Cylinder, Butt End
Red	R	Medium (#6)	Tilt Cylinder, Rod End
Red	R	Large (#16)	Pressure Flow Pump To Motor
Red / White Stripe	R / W	Medium (#6)	Tilt Cylinder, Butt End
Yellow	Y	Small (#4)	Door Cylinder, Rod End
Yellow / White Stripe	Y / W	Small (#4)	Door Cylinder, Butt End
Red	R	Medium (#8)	Tractor Pressure to Control Valve
Orange	OR	Medium (#8)	Control Valve to Tractor Tank Return
Red	R	Small (#4)	Load Sense Control Valve to Tractor Valve

2. Hose End Fitting Torque Specs:

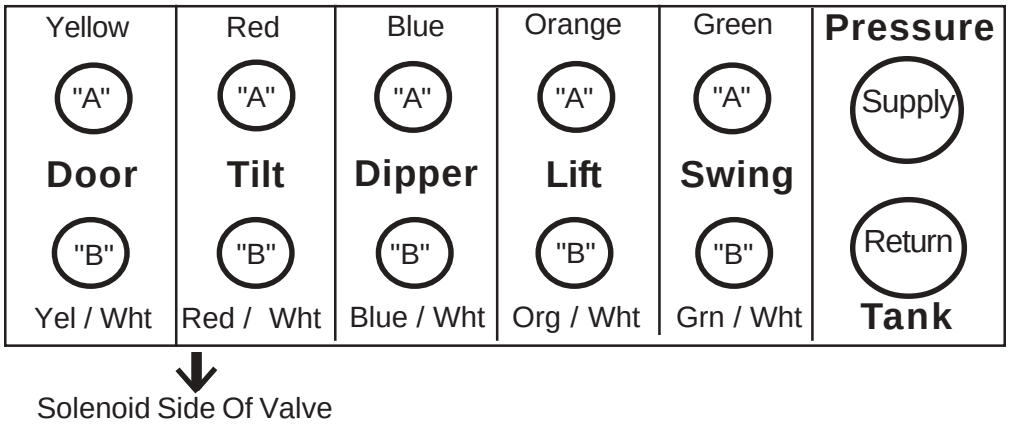
Hose End Type: 37 Degree Angle End Steel Hose End Fittings*

Dash Size	Nominal Cyl. Size (in.)	Torque in. lbs.	Torque ft .lbs.
-4	1/4"	140	12
-6	3/8"	230	19
-8	1/2"	450	38
-10	5/8"	650	54
-12	3/4"	900	75
-16	1"	1200	100
-20	1-1/4"	1600	133
-24	1-1/2"	2000	167
-32	2"	2800	233

* Straight Threads do not always seal better when higher torques are used. Too much torque causes distortion and may lead to leakage. DO NOT over torque fittings and DO NOT allow any contaminants to enter system through fittings when installing them.

3. Valve Port Markings:

Valve Port Markings: Ports Marked with letter "A" (solid marking hose bands) are for Functions Connected to Rod End of Cylinders. Ports Marked with letter "B" (Striped marking hose band) are for Functions Connect to Butt End of Cylinders. (See Decal # 02969106 Hydraulic Hose Hook-Up on previous pages). **Note:** Old style Valve (Apitech 10 Plug Wire Harness type) is not shown Below, this is the later style 5 Plug Harness type.



4. Valve Restrictors:

The Restrictors Vary in size from Spool to Spool, Some Ports do not use restrictors at all, See parts page for types and sizes. Restrictors operate by controlling the rate of flow to or from a Cylinder, This is most commonly done by the size of the Hole the Oil is sent through, But can be done by Hose Size. There are also 1 way and 2 way restrictors, Check Parts pages. DO NOT Remove, Change or Modify Restrictors.

Valve Spool Funtions & Specs:

Port Marked	Spool No.	Cyl. Function	Cyl. Travel	Flow GPM	Pressure Rating	Restrictor Size	Cycle Time
"A"	1	Swing	Forward	2.3	2000 psi.	0.040"	8.5 Seconds
"B"	1	Swing	Back	3.5	2000 psi.	0.050"	9.0 Seconds
"A"	2	Lift	Down	4.5	1000 psi.	---------	12 Seconds
"B"	2	Lift	Up	6.5	2000 psi.	0.070"	11 Seconds
"A"	3	Dipper	Out	4.0	2300 psi.	0.063"	10 Seconds
"B"	3	Dipper	In	5.5	1000 psi.	----------	10 Seconds
"A"	4	Tilt	Up	4.0	System	0.050"	6.0 Seconds
"B"	4	Tilt	Down	4.0	System	Lock Valve	8.0 Seconds
"A"	5	Door	Open	2.5	System	----------	5.0 Seconds
"B"	5	Door	Close	2.5	System	----------	6.0 Seconds

Section 9

Boom Installation
Head Installation
Fill Oil Tank

Boom Installation 2 WD & 4 WD

Boom Installation / Boom Hoses:

1. Hoses on Booms are shipped folded back inside Boom. Hoses must be pulled out and moved to clear, then routed in the end of Boom before installing Boom on the King Post **(See Figure 1)**

2. Pull the Lift Cylinder out to its full stroke, to aid in the installation of the Lift arm (See Figure 1). When Pulling Cylinder Out, attach a Hose to the Rod end and lay the Hose in a drain pan. This will catch any Oil expelled when Cylinder is pulled out.

3. With a hoist raise the Boom Arm (1) and lower onto the King Post (2). Align the Boom Arm and King Post with the Lift Hinge Point. Insert Main Pin Bolt (3) into Boom Weldment and Turning Arm. Attach Lockwasher (4), Washer (5) and Bolt (6) and tighten (also see Parts Section on the Boom Assembly) **(See Figure 2)**

4. Attach the Rod end of the Lift Cylinder (7) to the Lift Section with Pin (8), Bolt (9) and Nut (10) (also see Parts Section on the Boom Assembly) **(See Figure 3).**

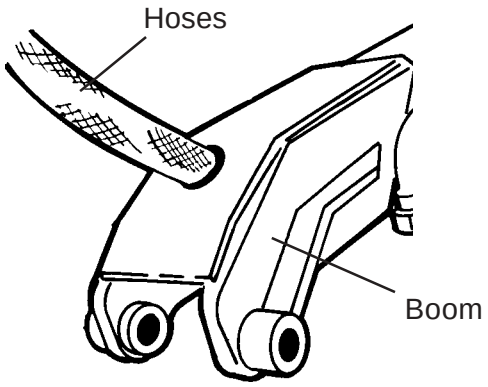


Figure 1

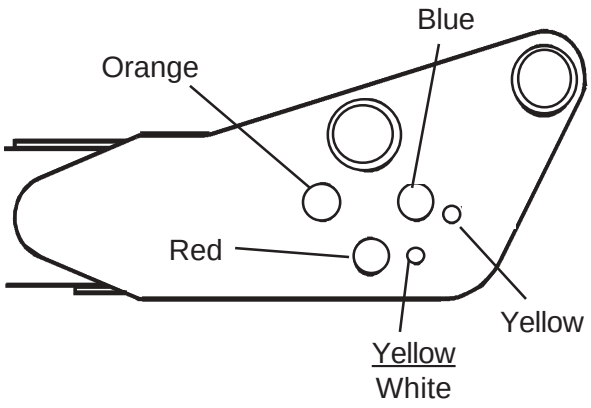


Figure 2

Head End Boom, Hose Colors

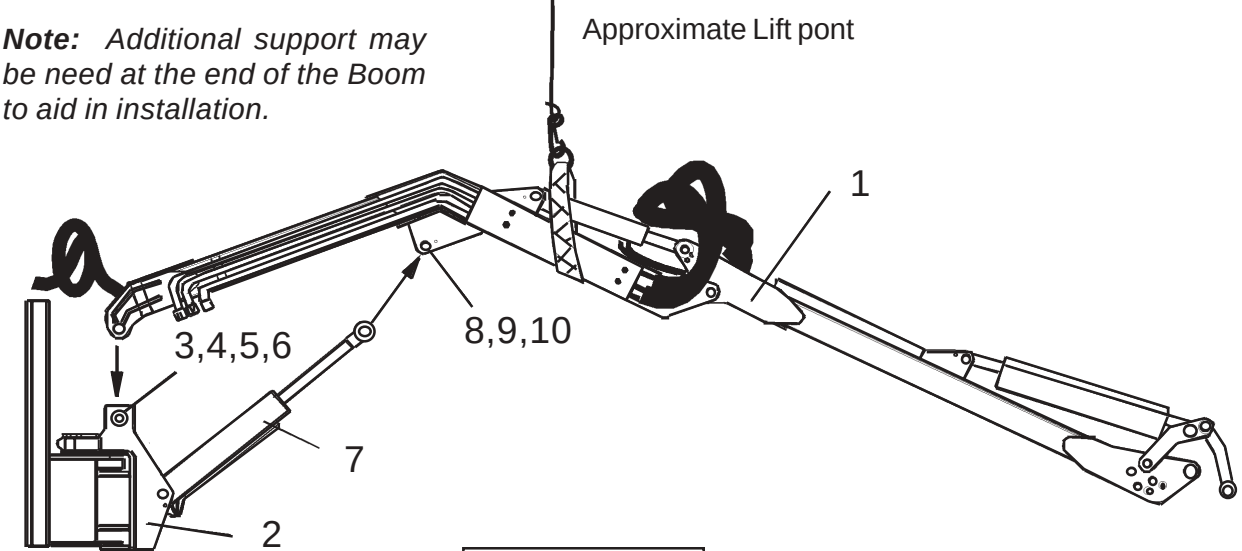


Figure 3

Boom Installation / Boom Hoses:

5. Install Boom on King Post. The Boom will arrive already assembled with hoses and Cylinder (Except Lift Cylinder) which already has been installed in earlier Steps.

The Boom will need to be lifted with a hoist **(See Figure 3 & 4)**. It will not have the Head installed. For illustrations we are showing the Rotary Head installed, this helps stabilize the Boom while it is being installed on Tractor. Insert the Boom Pivot Pin Weldment and Retaining Nut Tighten the retaining Nut Now. **(See Figure 5).**

Figure 4

6. Connect Boom Hoses. The hoses are already connected to Boom (See Figure 1 & 6), they will have the Same Color Plastic Ties as the Hoses that run from the Plate on frame to the Tank and Pump **(See Figure 7)**. Connect these hose to the Bulkhead Fittings on frame **(See Figure 7)**

The Red Plastic tie ID's the pressure Line that supplies the Motor from Pump.

The Orange Plastic Tie is Tank return from Motor back to Tank.

The Blue Plastic tie is the case drain from Motor back to Tank.

DO NOT Mix any of these hose; if you mix any it will damage Pump when started.

Figure 5

7. Connect Lift Cylinder to Boom. This is simple, as the Cylinder will only connect in one place. (See Figure 3). The Lines coming out of Boom are capped **(See Figure 2)**

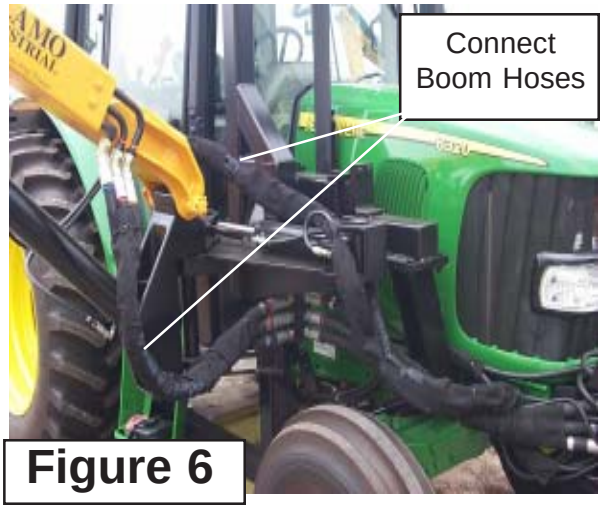


Figure 6

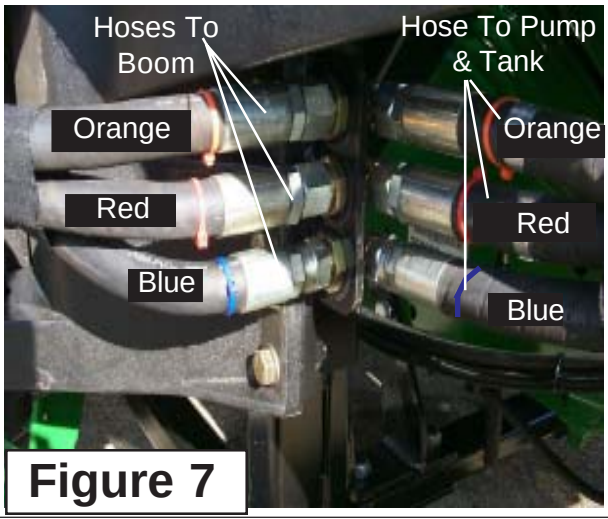


Figure 7

Boom Installation / Boom Hoses: (Continued)

8. Connect hoses to Head. This will vary with the type Head being installed. See the Head Hose Connections for the head being used in the Head Installation Steps in next pages.

9. Hoses connected to Valve. Finish connecting Boom Cylinder Hoses to Front Valve if you have not already done so, With these hoses you shoud have them connected by color code Plastic Tie on Pony.Connect the hoses from the Swing, Lift, Dipper, Tilt & Door **(See Figure 9)**. Figure 9 is shown without hoses or Pump installed to better be able to see location of each connection is. All the hose connections should be done now.

10. Install front Pump Cover. Install front pump cover which is hinged and held down with rubber strap which will need to be installed **(See Figure 10 & 11).** The Parts Manual container installs on the LH side of the Pump Cover **(See Figure 11).**

11. Hose Rings. There are Hose rings welded on to the front of the RH Frame Rail that Hoses should be run through **(See Figure 2**), this hold Hose up and in place, These rings should have been install in an earlier Assembly Step and should have had hoses run through them when hoses were installed. Make sure none of the hoses are going to scraped or damged by other components **(See Figure 4, 5 & 6).**

Figure 8

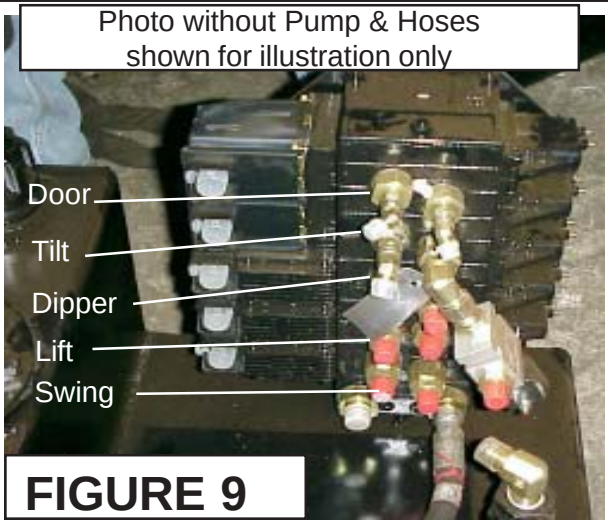


FIGURE 9

Figure 10

Figure 11

Head Installation 2 WD & 4 WD

Boom Head Installation / Head Hoses:

1. With the hoist, lower the Boom (1) down to the Machete head (2). Align the Boom with the Machete Head Hitch Post (3) Insert the Upper Hitch Pin (4) Thru the Dipper end of the Boom and the Machete Head Upper Hitch Post. Attach with Washer (5), Nut (6), and Cotter Pin (13) as shown in **Figure 12** .

2. Align the Lower Linkage (7) of the Boom and insert the Lower Hitch Pin (8) thru the Hitch Post. Attach with Nut (9) and Bolt (10).

3. Following Hydraulic Connection Decal on Boom, Attach the Motor Hydraulics (11), To the Boom and the Motor. Attach the Door Cylinder Hoses (12) from the Boom the Machete Heads Door Cylinder. Each of these are color coded for ease of identification. Do Not cross any hose connections, check them RED = Pressure Supply to Motor, Orange = Motor Return back to Tank, Blue = Motor case drain Back to Tank. Yellow = Rod end of Door Cylinder, Yellow with White Stripe = Base end of cylinder. If the Head you are useing doesn't have a Door leave the connection for Door Cicuit capped at the Boom **(See Figure 12).**

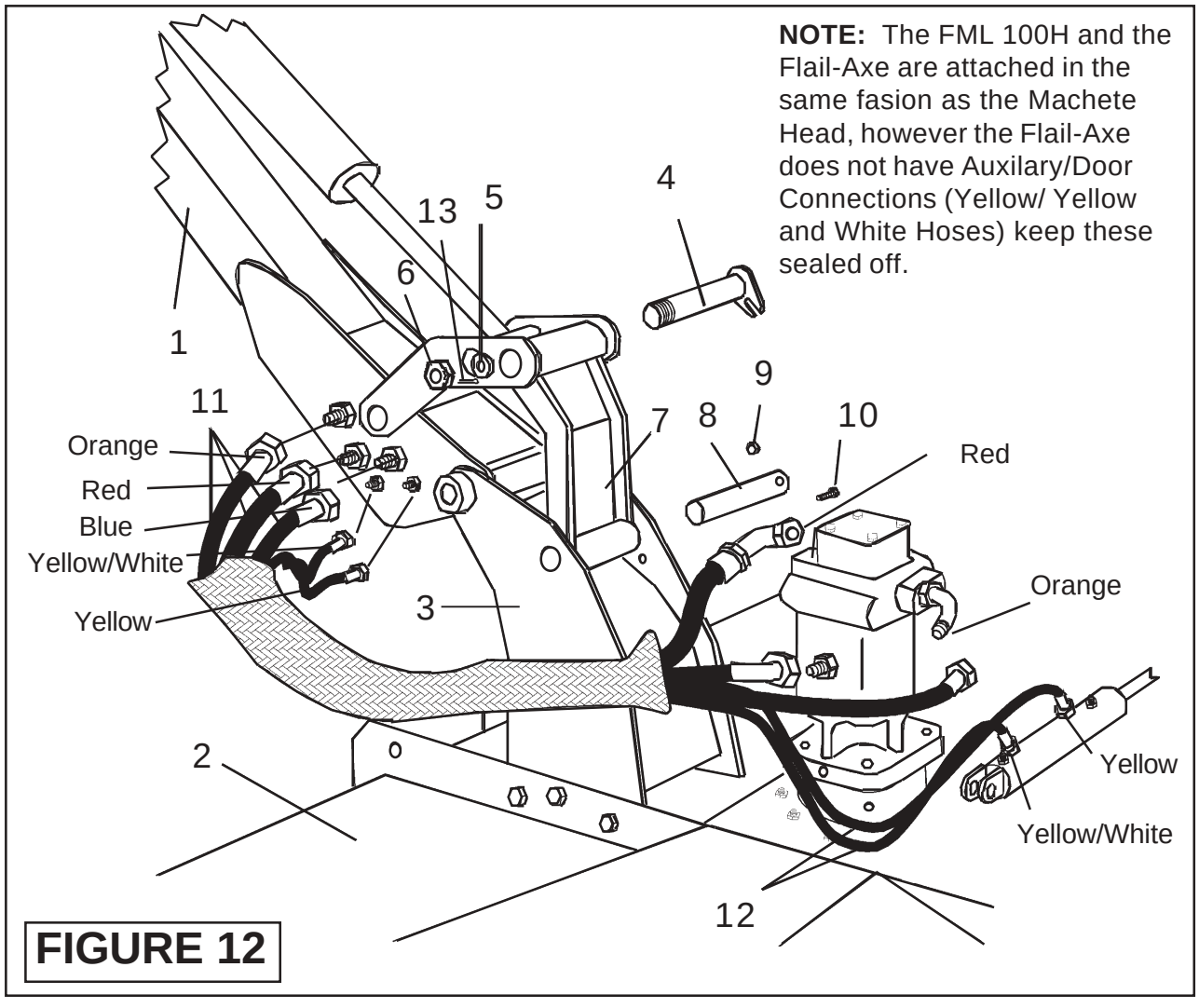


FIGURE 12

Timbercat Solenoid Valve to Pump Assembly:

1. Mounting the TimberCat on the Machete requires the addition of an additional solenoid cartridge and a new adjustable Servo-Stop End Cap to the pump. These items are included with the TimberCat Head Assembly.

2. With the tractor off, parking brake set, key removed, and all switches on the joystick console in the off position, locate the plug on the pump as shown in **Figure 23**. Remove the plug and replace it with the cartridge valve (02972835) as shown in **(Figure 13 Detail A)**. Tighten the cartridge valve to 20 ft. lb. (240 lb-in). Install the coil over the stem of the cartridge valve. The writing on the coil faces away from the pump. Install the solenoid nut onto the stem making sure NOT TO OVERTIGHTEN - torque to 5 ft. lb (60 lb-in).

3. Remove the wire harness connection from 'A' and attach to 'B' **(See Figure 13 detail B)**. Whenever the TimberCat is installed, the harness must be attached to 'B'. When any other head is installed the harness must be attached to connection 'A'. Locate the Servo End Cap on the pump, as shown in **Figure 13 Detail A**. Remove and replace with the Adjustable Servo Stop End Cap (02972837). Torque the four mounting bolts to 40-48 lin. lb.

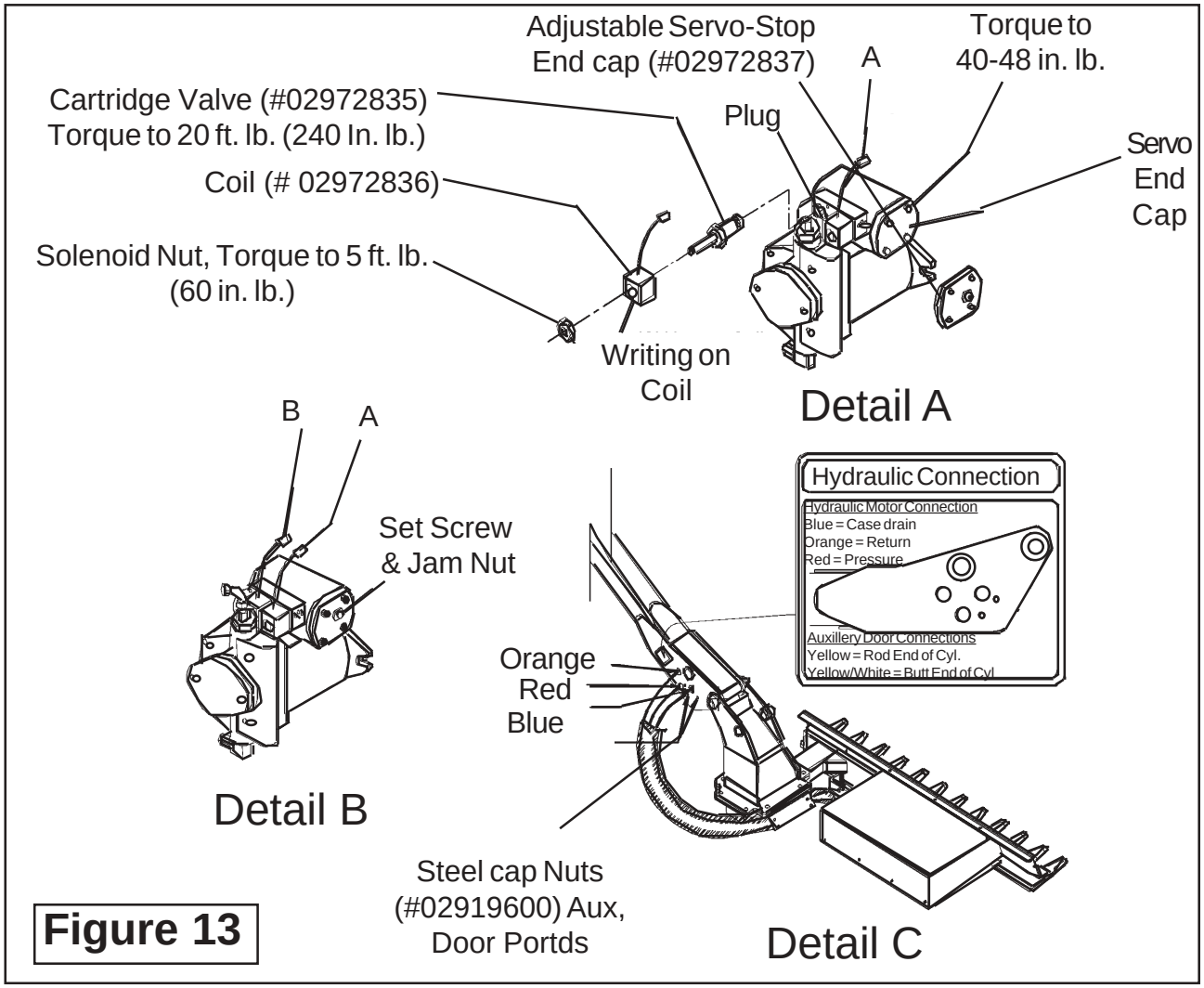


Figure 13

Timbercat Solenoid Valve to Pump Assembly: (continued)

4. Attach the TimberCat Head Assembly to the boom using the existing pins and fasteners. Attach the hoses to the ports in the boom according to the Hydraulic Connection Diagram, shown (See Figure 13 Detail C), and on the decal on the boom. Attach the steel cap nuts (02919600) to the two auxiliary/door connection ports of the boom, if they are not already installed. Check Hoses for correct connections. There is a decal on the side of the Boom showing hose connections **(See Figure 14).**

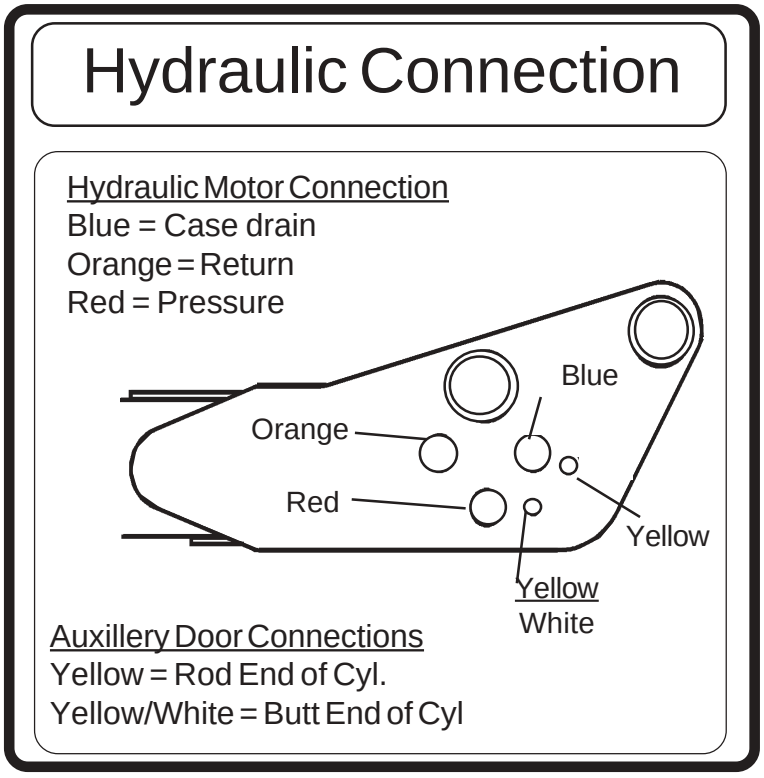


Figure 14 Boom Head Decal

Ditcher Head Assembly:

1. Attach sraight adapter (2) to case drain port. Then fasten hose (8) to elbow (1) and attach to straight adapter (2) --- LEAVE LOOSE. Hose must be connected at Angles shown to clear. **(See Figure 15)**

2. Attach hoses (3 & 4) on boom end and tighten. **(See Figure 15** Boom Side View)

3. Tighten the fittings on the bottom hose (8).

4. Attach and tighten all hoses to motor after head is attached.

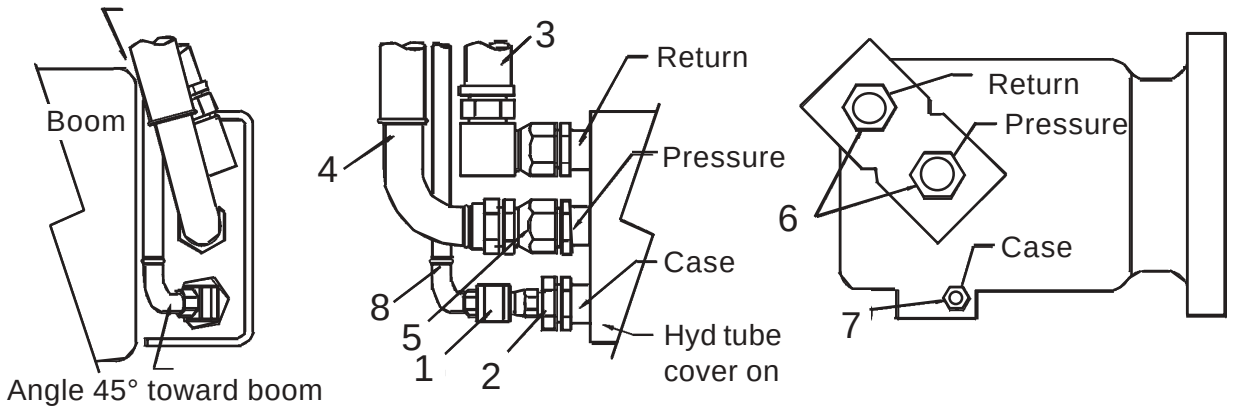


Figure 15

Hydraulic Oil Installation 2 WD & 4 WD

Hydraulic Tank Filling:

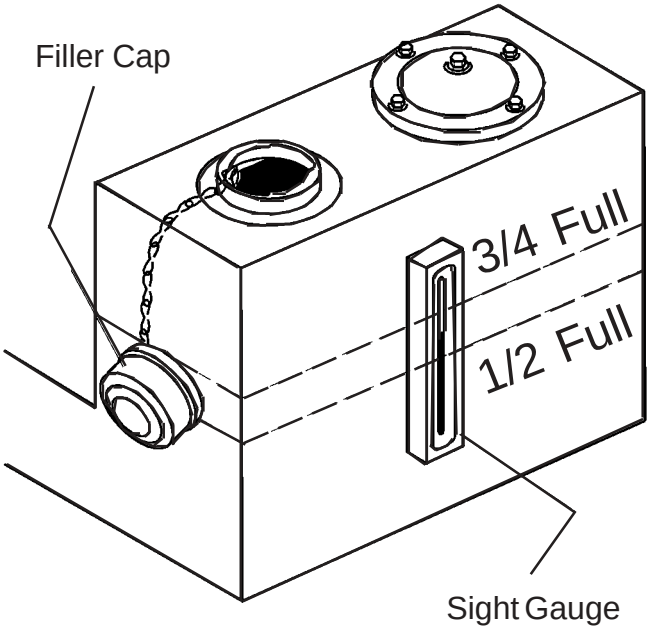


Figure 16

1. Remove the Filler Cap and fill the Hydraulic Tank completely full of AW ISO VG 100 Hydraulic Fluid, however do not over flow, or spill over.

2. Replace Filler Cap and clear area **to start the Tractor** and the Hydraulic Pump as outlined in the Operation Section. Make certain that the Mower Head is in a clear safe mowing position (ie. Blades down and the Door Closed).

3. Check that all the hydraulic connections are complete on the Motor Hydraulic System and the Cylinder Hydraulic System.

4. Start the Tractor and Engage the **Mower** (see the START UP PROCEDURE IN THIS SECTION, SAFETY SECTION, AND OPERATION SECTION for details) Run the Mower Head for 5 minutes. While tractor is running, wearing protective clothing and eye protection, CAREFULLY check for leaking hydraulic fittings, hoses and ports at this point with a piece of cardboard, DO NOT USE YOUR HAND! Shut down completely the Mower and Tractor. And correct any leaking connections.

5. The Pump, Hydraulic Lines, Hoses, and Motor should now be filled with the Hydraulic Fluid. Check the Sight Gauge and add more AW ISO VG 100 Hydraulic Fluid to bring the level up to Half to Three Quarters up on the Gauge.

6. IMPORTANT:Change the return filter in tank and suction filters after the first 200 hours of operation. Change the filters again at 800 hours; then, change the oil and filters at 1600 hours. After that, continue to change the filter every 800 hours and the oil every 1600 hours. Hydraulic oil to be used, AW ISO VG 100 Tractor Hydraulic. Use the above procedures as part of a good filter maintenance program.

7. TIMBER CAT HEADS ONLY - FIGURE 26 After starting the tractor, turn on the cutter switch. Bring the tractor's RPM up to normal operating speed (540 PTO RPM). Adjust the Servo Set Screw to achieve 40 to 50 cycles* a minute (10 to 13 cycles per 15 seconds). DO NOT adjust speed any faster; premature failure will occur!

8. TIMBER CAT HEADS ONLY - One cycle is defined as the complete movement of the blade from fully retracted to fully extended and back to fully retracted. Once this cycle time is achieved, tighten the Servo Set Screw Jamnut.

9. TIMBER CAT HEADS ONLY - REMEMBER: Solenoid connection 'B' must be used whenever the TimberCat Head is attached. Solenoid connection 'A' must be used whenever any other head is attached.

Hydraulic Oil Installation 2 WD & 4 WD

Hydraulic Tank Filling:

10. Important: Change the return filter in tank and suction filters after the first 200 hours of operation. Change the filters again at 800 hours; then , change the Oil anf filters at 1600 hrs. After that, continues to change the Filter every 800 hrs and the Oil every 1600 hrs. Hydraulic Oil to be used, AW ISO VG 100 Tractor Hydraulic Oil. Always use a good Filter Maintance program.

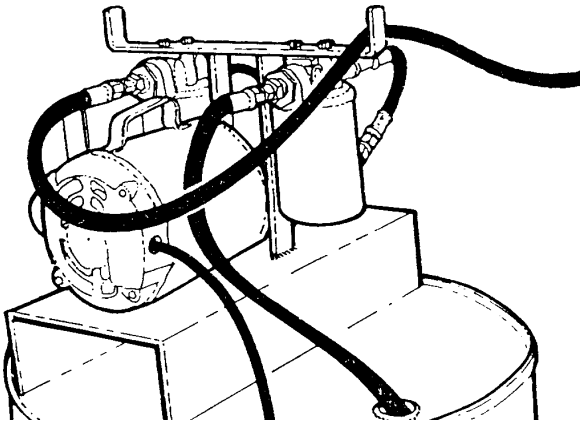


Figure 17

11. Avoid hydraulic contamination by filtering the hydraulic oil while filling the hydraulic tank. Filter buggies or carts are commercially available for hydraulic system cleanup. These consist of a high-efficiency, high-capacity filter, a circulating pump, a drive motor, and hoses for connecting to the overhauled machine's hydraulic system. **(See Figure 17 & 18)**

When adding hydraulic oil, use only new oil from a sealed barrel. Used oil or oil from an open barrel may contain high levels of contamination. Transfer the new oil into the hydraulic tank by using a hydraulic filter pump unit equipped with a properly operating 10 micron filter. This will insure that the oil being added is clean. Do not just pour the oil directly into the hydraulic tank since most oils (even from a sealed barrel) have contaminants that should be removed, before operating the hydraulic system. (See Figure 17 & 18)

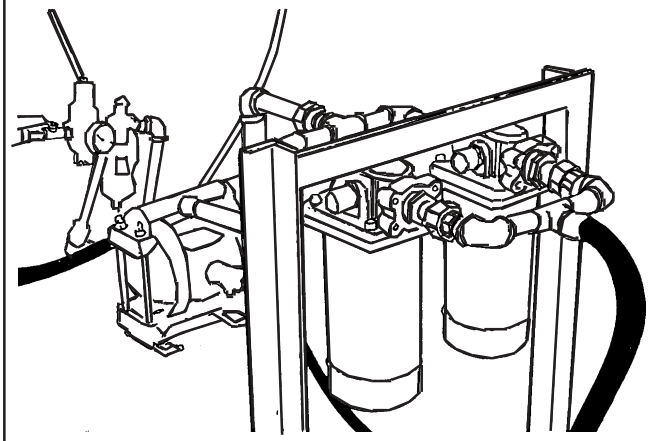


Figure 18

12. Basic trouble shooting guide for first start up. Listed below are some of the most common things that may be wrong, But not all problems.

- **a.** Electrical solenoid valve does not work - check wiring, possible faulty switch, possible faulty solenoid.
- **b.** Pump is making noise - check for obstruction in suction hose and tank suction assembly, check alignment of pump driveshaft.
- **c.** Cylinders will not raise - hoses from cylinder incorrectly connected to valve bank, pump not suppling oil.
- **d.** Cylinder raise slowly - hoses from cylinder incorrectly connected to valve bank, work port reliefs on valve bank set too low - replace as required.
- **e.** The mower head slows down or stops completely - the filter may be clogged, replace.

NOTES

Section 10

MACHETE

Mount Kit Components Identification

Mount Kit Component Identification

John Deere 6120/6215/6220/6320/6415/6420 Cab/2&4wd

Closed Center, Load Sense Valve *As of Date: 4-19-02*
13.6-24 Max Front Tire
18.4-30 Min Rear Tire
18.4-34 Max Rear Tire

Mount Kits:

Machete Mount Kit ***(JD6020 Tier II Models Only)*** **……**02979115
Machete Mount Kit ***(JD6015 Models Only)*** **……**02980647

Options:

Lexan Door Kit **……** 02973305
Side Screen Kit **……** 02966151
Rear Screen Kit **……** 02977499
Tier I Engine Pulley Adapter **……** 02973992
Left Hand Valve End Plate Kit *(See Notes Below)* **……**02980930
Extra Machete Installation Manual **……**02980007

Restrictions:

1. Must be ordered with a high frame due to high opening hood design.
2. Mount kit designed for right hand, thru-hood exhaust. A-post exhausts may interfere with the boom and must be modified at the dealer/customer's expense.
3. Until further notice, dealer/customer is responsible for providing any additional counterweight needed for mounting a 24' boom.
4. Wheel weights may not fit tractors with rack & pinion rear axles. Dealer/customer is responsible for providing an adapter if necessary.
5. A minimum 18.4-30 rear tire is needed to allow for proper installation of the 1400# wheel weight.
6. The JD6015 series mount kit can be utilized for JD6020 series tractors by ordering seat mounted joystick kit #02979110. Likewise, the JD6020 series mount kit can be used on the JD6015 series tractors by ordering seat mounted joystick kit #02978157 and one each of hydraulic fittings #01500058 & #02967150.
7. Tractors equipped with 4wd may require a steering stop and/or articulation block - not included.
8. A Lexan window insert can not be installed with the rear screen due to the glass curvature.
9. Customers w/ JD6020 series tractors produced with Tier I engines prior to December 16, 2002 must order pulley adapter #02973992 & installation drawing #02977082 for proper driveline compatibility.
10. Effective January 2004, John Deere implemented a new rear remote valve on all 6015 & 6020 series tractors *(See Figure 3)*. The right side of the valve is significantly different and can be easily identified from its predecessor in the next figure. As a result, we are providing a new right hand power beyond end plate kit #02980927 with each mount kit - effective April 2, 2004. For tractors produced before January below serial #398797, you will need to order the old left hand valve end plate kit #02980930 as a separate line item. *Caution:* The new valve end plate kit is set up for tractors equipped with either a one or two spool remote valve. Tractors equipped with three remotes *(See Figure 5)* or more will require longer end plate mounting studs - which must be purchased from John Deere at the dealer/customer's expense.

Mount Kit Component Identification

Figure 1: Right Side View

Figure 2: Left Side View

Figure 3: New Style Stack Valve

Figure 4: Old Style Stack Valve

Figure 5: New Style Stack Valve w/ 3 Remotes

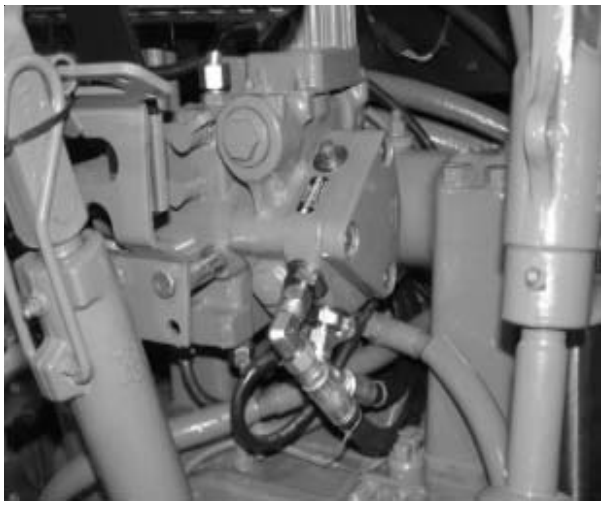


Figure 6: New Valve w/End Plate

Mount Kit Component Identification

IMPORTANT NOTICE: The following Part / Assembly Numbers are for reference and should not be ordered as replacement parts, unless all the components in that assembly are wanted. These will break down to bills of material of the components. Some of numbers listed are NOT individual Parts but complete assemblies and/or box of assemblies. Check before ordering.

02979115 Machete Mount Kit (f/ JD6020 Series Tier II Models Only): Consist of the Following 8 Asy No.

Item	Asy. No.	Qty	Description
1.	02966153	1	Boom Rest Weldment
2.	02969602	1	CWT Tie Rod Weldment
3.	02970118	1	Frame Rail Support Kit
4.	02970758	1	Wheel Weight, 1400 lbs.
5.	02971969	1	Counter Weight Weldment, JD 6000 Series
6.	02978468	1	LH Frame Weldment
7.	02978469	1	RH Frame Weldment
8.	02979116	1	Component Box, JD6020 Tier II Series w/ Cab

These Eight items are included in Machete Mount Kit P/N 02979115

02980647 Machete Mount Kit (f/ JD6015 Series Tier II Models Only): Consist of the Following 8 Asy No.

Item	Asy. No.	Qty	Description
1.	02966153	1	Boom Rest Weldment
2.	02969602	1	CWT Tie Rod Weldment
3.	02970118	1	Frame Rail Support Kit
4.	02970758	1	Wheel Weight, 1400 lbs.
5.	02971969	1	Counter Weight Weldment, JD 6000 Series
6.	02978468	1	LH Frame Weldment
7.	02978469	1	RH Frame Weldment
8.	02980648	1	Component Box, JD 6015 Series w/ Cab

These Eight items are included in Machete Mount Kit P/N 02979115

SPECIAL NOTICE: The Mount Kits listed above are very similar, the difference is in the Component Box (Item 8). The Difference between component boxes is the kit for Seat mounted joystick (item 43 in component box). When checking parts make certain which mount kit you have before continuing.

Mount Kit Component Identification

02979116 Component Box (f/ JD6020 Series Tier II Models Only): Consist of the following Item No.

Item	Part No.	Qty	Description
1.	000859	2	Tie, Plastic
2.	00679800	1	Pig Tail Bracket
3.	00763977	1	Decal, Notice to Owner
4.	02215700	1	Hose, # 4 - 4FJX - 4 FJX - 190" Lg
5.	02725900	2	Support Plate
6.	02753400	3	Plastic Tie-On 15" Lg
7.	02775500	10	Plastic Tie-On 21" Lg
8.	02963524	1	Decal, Attention - Boom Swinging
9.	02964677	1	Decal, Boom Rest
10.	02965093	1	Decal, proper Engine Operating
11.	02965262	1	Decal, Warning - Hose Burst
12.	02966874	1	Boot, Cable Cover
13.	02969123	1	Hose, # 4 - 4FJX - 4MJ - 66" Lg w/ Yellow & White Tie
14.	02969124	1	Hose, # 4 - 4FJX - 4MJ - 66" Lg w/ Yellow Tie
15.	02971538	1	Plate, Boom Rest
16.	02974704	2	Axle Stabilizer Strap Weldment
17.	02975257A	1	Driveline Asy, 1" X 15 Spline
18.	02976087	1	Pump Mount Plate, Machined
19.	02976705	1	Hose, # 6 - 6FJX - 6MJ - 64" Lg w/ Blue tie
20.	02976706	1	Hose, # 6 - 6FJX - 6MJ - 64" Lg w/ Blue & White Tie
21.	02976709	1	Hose, # 6 - 6FJX - 6MJ - 64" Lg w/ Orange Tie
22.	02976710	1	Hose, # 6 - 6FJX - 6MJ - 64" Lg w/ Orange & White Tie
23.	02976713	1	Hose, # 8 - 8FJX - 8FJX - 190" Lg w/ Orange tie
24.	02976714	1	Hose, # 8 - 8FJX - 8FJX - 190" Lg w/ Red Tie
25.	02976728	1	Hose, # 6 - 6FJX - 6MJ - 58" Lg w/ Red Tie
26.	02976729	1	Hose, # 6 - 6FJX - 6MJ - 58" Lg w/ Red & White Tie
27.	02976734	1	Hose, # 6 - 6FJX - 6MJ - 44" Lg w/ Green Tie
28.	02976735	1	Hose, # 6 - 6FJX - 6MJ - 44" Lg w/ Green & White Tie
29.	02978463	1	LH Front Mount Weldment
30.	02978464	1	RH Front Mount Weldment
31.	02978480	2	Spacer, Pump Plate
32.	02978499	2	Gusset, Rail Support
33.	02979113	1	RH Tank Rail Weldment
34.	02979114	1	Plate, LH Tank Rail
35.	02979117	1	Bolt Bag, JD 6020 Series Cab
36.	63118700	5	Plastic Tie Wrap, 3/16" X 7"
37.	02967827	1	Decal, Multi Hazard
38.	02979862	1	Pulley Kit, w/ Adapter & Hardware
39.	02980007	1	Installation Manual, JD 6020 Series
40.	02969418	1	Hose, # 16 - 16FJX - 16FJX - 66" Lg w/ Orange Tie
41.	02969419	1	Hose, # 16 - 16FJX - 16FJX - 66" Lg w/ Red Tie
42.	02969420	1	Hose, # 16 - 16FJX - 16FJX - 62" Lg w/ Blue Tie
43.	02979110	1	Seat Mount Kit f/ Joystick (f/ JD 6020 Series Tier II)
44.	02980927	1	RH Stack Valve End Kit f/ JD

Component Box P/N 02979116 is included in Machete Mount Kit P/N 02979115

Mount Kit Component Identification

02980648 Component Box (f/ JD6015 Series Tier II Models Only): Consist of the following Item No.

Item	Part No.	Qty	Description
1.	000859	2	Tie, Plastic
2.	00679800	1	Pig Tail Bracket
3.	00763977	1	Decal, Notice to Owner
4.	02215700	1	Hose, # 4 - 4FJX - 4 FJX - 190" Lg
5.	02725900	2	Support Plate
6.	02753400	3	Plastic Tie-On 15" Lg
7.	02775500	10	Plastic Tie-On 21" Lg
8.	02963524	1	Decal, Attention - Boom Swinging
9.	02964677	1	Decal, Boom Rest
10.	02965093	1	Decal, proper Engine Operating
11.	02965262	1	Decal, Warning - Hose Burst
12.	02966874	1	Boot, Cable Cover
13.	02969123	1	Hose, # 4 - 4FJX - 4MJ - 66" Lg w/ Yellow & White Tie
14.	02969124	1	Hose, # 4 - 4FJX - 4MJ - 66" Lg w/ Yellow Tie
15.	02971538	1	Plate, Boom Rest
16.	02974704	2	Axle Stabilizer Strap Weldment
17.	02975257A	1	Driveline Asy, 1" X 15 Spline
18.	02976087	1	Pump Mount Plate, Machined
19.	02976705	1	Hose, # 6 - 6FJX - 6MJ - 64" Lg w/ Blue tie
20.	02976706	1	Hose, # 6 - 6FJX - 6MJ - 64" Lg w/ Blue & White Tie
21.	02976709	1	Hose, # 6 - 6FJX - 6MJ - 64" Lg w/ Orange Tie
22.	02976710	1	Hose, # 6 - 6FJX - 6MJ - 64" Lg w/ Orange & White Tie
23.	02976713	1	Hose, # 8 - 8FJX - 8FJX - 190" Lg w/ Orange tie
24.	02976714	1	Hose, # 8 - 8FJX - 8FJX - 190" Lg w/ Red Tie
25.	02976728	1	Hose, # 6 - 6FJX - 6MJ - 58" Lg w/ Red Tie
26.	02976729	1	Hose, # 6 - 6FJX - 6MJ - 58" Lg w/ Red & White Tie
27.	02976734	1	Hose, # 6 - 6FJX - 6MJ - 44" Lg w/ Green Tie
28.	02976735	1	Hose, # 6 - 6FJX - 6MJ - 44" Lg w/ Green & White Tie
29.	02978463	1	LH Front Mount Weldment
30.	02978464	1	RH Front Mount Weldment
31.	02978480	2	Spacer, Pump Plate
32.	02978499	2	Gusset, Rail Support
33.	02979113	1	RH Tank Rail Weldment
34.	02979114	1	Plate, LH Tank Rail
35.	02979117	1	Bolt Bag, JD 6020 Series Cab
36.	63118700	5	Plastic Tie Wrap, 3/16" X 7"
37.	02967827	1	Decal, Multi Hazard
38.	02979862	1	Pulley Kit, w/ Adapter & Hardware
39.	02980007	1	Installation Manual, JD 6020 Series
40.	02969418	1	Hose, # 16 - 16FJX - 16FJX - 66" Lg w/ Orange Tie
41.	02969419	1	Hose, # 16 - 16FJX - 16FJX - 66" Lg w/ Red Tie
42.	02969420	1	Hose, # 16 - 16FJX - 16FJX - 62" Lg w/ Blue Tie
43.	02978157	1	Seat Mount Kit f/ Joystick (f/ JD 6015 Series Tier II)
44.	02980927	1	RH Stack Valve End Kit f/ JD

Component Box P/N 02980648 is in Machete Mount Kit P/N 02980647

Mount Kit Component Identification

02979117 Bolt Bag (f/ JD 6020 Series Tier II and JD6015 Series Models): Consist of the following Item No.

Item	Part No.	Qty	Description
	02979117	**--**	**Bolt Bag Kit (Items 1 thru 21)**
1.	00001200	4	Nut, Hex 1/2"-NC PL
2.	00001300	6	Lockwasher, 1/2"
3.	00002700	8	Flatwasher, 1/2"
4.	00022200	4	Lockwasher, 7/16" PL
5.	00037200	11	Locknut, Toplock 3/4"-NC
6.	002528	6	Bolt, Hex Head M20-P2.5 X 110 mm PL Gr-10.9
7.	02030300	4	Locknut, Toplock 1"-NC PLB
8.	02892000	2	Bolt, Hex Head 1/2"-13NC X 1-1/2" PL Gr-8
9.	02918600	8	Bolt, Hex Head 3/4"-10NC X 2" PL Gr-8
10.	02956765	4	Bolt, Hex Head 1/2"-NC X 4-1/2" PL Gr-8
11.	02962777	2	Bolt, Socket Head 3/4"-NC X 11" PL Gr-8
12.	02963646	1	Bolt, Hex Head 3/4"-NC X 2-1/2" PL Gr-8
13.	02966321	2	Bolt, Hex Head 1"-NC X 12" PL Gr-8
14.	02966556	2	Bolt, Hex Head 1"-NC X 11" PL Gr-8
15.	02971097	8	Bolt, Hex Head M20-P2.5 X 90 mm PL Gr-10.9
16.	02971158	28	Lockwasher, 20 mm
17.	02975669	8	Bolt, Hex Head M20-P2.5 X 60 mm PL Gr-10.9
18.	02975738	6	Bolt, Hex Head M20-P2.5 X 70 mm PL Gr-10.9
19.	02976344	4	Bolt, Hex Head 7/16"-NC X 1-1/4" PL Gr-8
20.	5312316	8	Flatwasher, Hardened 3/4" Non-PL
21.	00759635	2	Flatwasher, Hardened 1/2" Non-PL

Bolt Bag P/N 02979117 is in Component Box P/N 02979116 & 02980648

02970118 Frame Rail Support Kit (f/ JD 6020 Series Tier II and JD6015 Series Models): Consist of the following Item No.

Item	Part No.	Qty	Description
	02970118	**--**	**Frame rail Stiffener Kit (items 1 thru 4)**
1.	02970086	1	Tube Crossmember Rail Stiffener
2.	02970115	2	Rail Stiffener Weldments
3.	5JRC16180	4	Locknut, Toplock 1"-NC PL
4.	02980513	4	Bolt, Hex Head 1"-8NC X 4-1/4" PL Gr-8

Frame Rail Support Kit P/N 02979118 is in Mount Kit P/N 02979115 & 02980647

Mount Kit Component Identification

02979862 Pulley Kit (f/ JD 6020 Tier II & JD6015 Tier II Series): Consist of the following Item No.

Item	Part No.	Qty	Description
	02979862	--	Pulley Kit, w/ Adapter & Hardware
1.	02979829	1	Washer, f/ Crankshaft Pu;lley
2.	02979857	1	Crankshaft Pulley, (JD P/N R516320)
3.	02979790	1	Machined Spacer
4.	02979791	4	Bolt, Hex Head M10-P1.5 X 35 mm PL Gr-10.9
5.	00755954	4	Lockwasher M10 Spring
6.	02980406	2	Locktite 680 Retaining Compound
7.	02980407	1	Locktite 7649 Primer

Pulley Kit P/N 02979117 is in Component Box P/N 02979116 & 02980648

02979110 Seat Mount Kit f/ Joystick (f/ JD 6020 Tier II Series): Consist of the following Item No.

Item	Part No.	Qty	Description
	02979110	**--**	**Seat Mount Kit f/ Joystick (f JD 6020 Tier II Series)**
1.	00011100	2	Flatwasher, Std. 3/8"
2.	00011400	2	Bolt, Hex head 3/8"-NC X 1" PL Gr-5
3.	00012101	2	Lockwasher, 3/8" PL
4.	00023500	3	Flatwasher, 5/16" PL
5.	00750940	3	Locknut, Toplock 5/16"-NC PLB
6.	02978806	1	Bracket, Seat Mounted Joystick Mount
7.	02978807	1	Installation Drawing, Seat Mounted Joystick
8.	10119000	3	Bolt, Hex Head 5/16"-NC X 1" Gr-5

Seat Mount Kit P/N 02979110 is in Component Box P/N 02979116

02978157 Seat Mount Kit f/ Joystick (f/ JD 6015 Tier II Series): Consist of the following Item No.

Item	Part No.	Qty	Description
	02978157	**--**	**Seat Mount Kit f/ Joystick (f JD 6015 Tier II Series)**
1.	00011100	6	Flatwasher, Std. 3/8"
2.	00011400	4	Bolt, Hex head 3/8"-NC X 1" PL Gr-5
3.	00012101	2	Lockwasher, 3/8" PL
4.	00015800	2	Locknut, Toplock 3/8"-NC PLB
5.	02978151	1	Bracket, Seat Mounted Joystick Mount
6.	02978156	1	Installation Drawing, Seat Mounted Joystick

Seat Mount Kit P/N 02978157 is in Component Box P/N 02980648

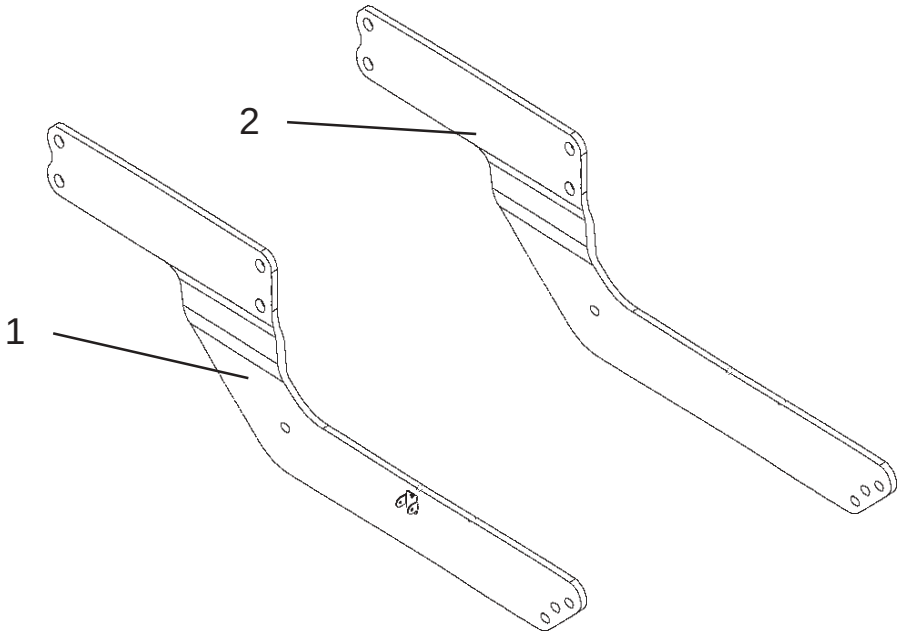
Mount Kit Component Identification

02980927 Stack Valve RH End Kit (f/ JD 6020 Tier II & JD6015 Tier II): Consist of the following Item No.

Item	Part No.	Qty	Description
	02980927	--	Stack Valve RH End Kit
1.	02980922	2	Adapter Hyd, 8MJIC - 22 Metric Straight
2.	02980923	1	Adapter Hyd, 4MJIC - 14 Metric Straight
3.	02980924	1	Plate, RH Valve End
4.	02980925	1	Disk, Control "Dime" Valve
5.	00780926	3	Stud, M10-P1.0 X 120 mm PL Gr-10.9
6.	02980928	3	Nut, Hex M10-P1.0 PL
7.	02761100	2	Adapter Hyd, Elbow 8MJ - 8FJX - 90 Deg.
8.	02962022	1	Adapter Hyd, Elbow 4MJ - 4FJX - 90 Deg.

Stack Valve RH End Kit P/N 02980927 is in Component Box P/N 02979116 & 02980648

Front Tank Rail Mounts

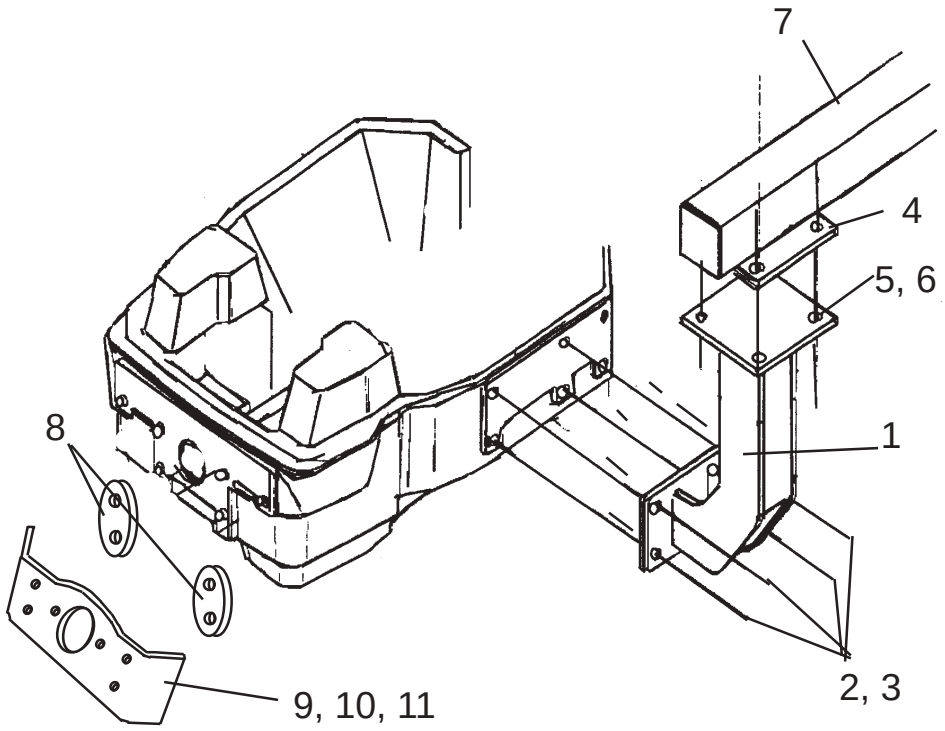


Item	Part No.	Qty	Description
1	02979113	1	Tank Rail Mount Bracket RH
2	02979114	1	Tank Rail Mount Bracket LH

Tank Rail Mounr P/N 02979113 & 02979114 is in Component Box P/N 02979116 & 02980648

Mount Kit Component Identification

Front Frame Rail Support Weldments

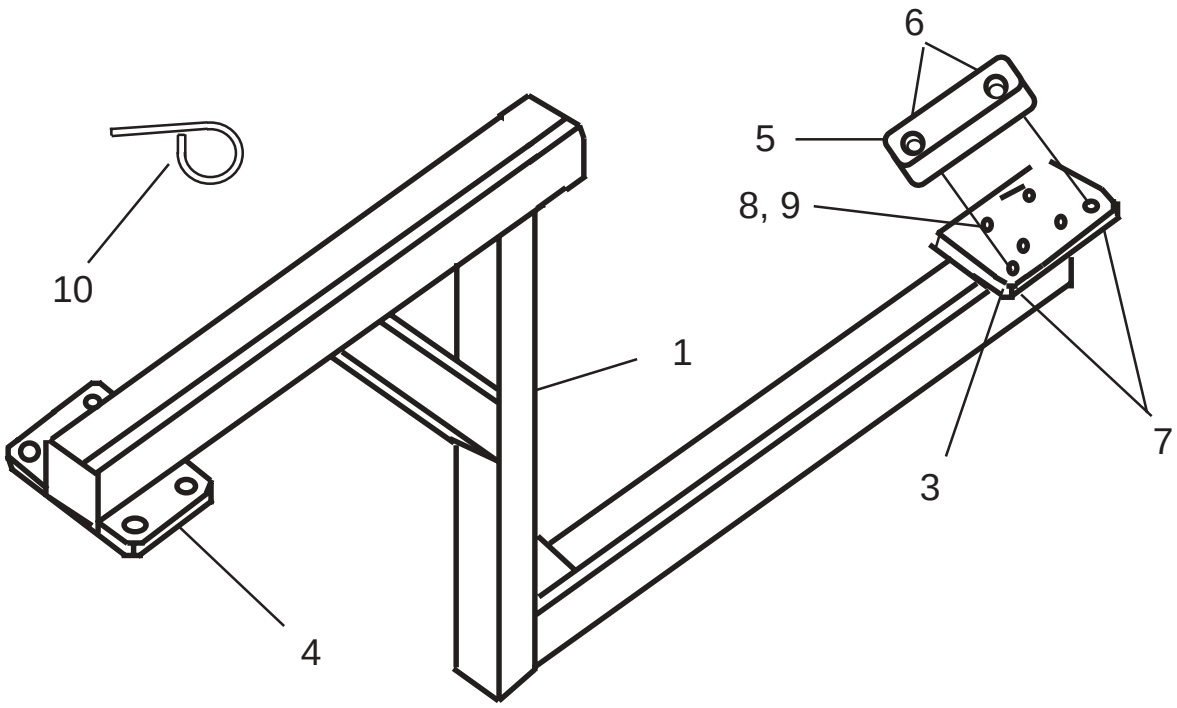


Item	Part No.	Qty.	Description
1.	02978463	1	Front Mount Weldment LH
	02978464	1	Front Mount Weldment RH (Not Shown)
2.	02975669	8	Bolt, Hex Head, M20-P2.5 X 60 mm PL10.9 (4 ea. side)
3.	02971158	12	Lockwasher, 20 mm(4 ea. side)
4.	02725900	2	Support Plate (will be welded to frame Rail, 1 ea. side)
5.	02918600	8	Bolt, 3/4"-10 NC X 2" PL 8 (4 ea. side)
6.	00037200	8	Locknut, 3/4"-10 NC
7.	02978468	1	Frame Rail Weldment LH Side (Shown)
	02978469	1	Frame Rail Weldment RH Side (Not Shown)
8.	02978480	2	Pump Plate Spacers
9.	02976087	1	Pump Mount Plate, Machined
10.	02975738	4	Bolt, Hex Head M20-P2.5 X 70 mm PL Gr-10.9
11.	02971158	4	Lockwasher, 20mm

Note:
These components are listed to be used with the Tractors this manual is intended for and at the date of this manuals printing, see the bottom of pages for Tractor Type and date of this manual. This manual is shipped with the A-Boom Mount Kit and should remain with the tractor & A-Boom for reference later. As Changes are made to components the numbers listed here may change.

Mount Kit Component Identification

Frame Rails & Axle Straps



Item	Part No.	Qty	Description
1.	02978468	1	Frame Rail Weldment, LH (Shown)
	02978469	1	Frame Rail Weldment, RH (Not Shown)
3.	----------	2	Rear Mounting Plate (Welded on LH and RH Frame Rail)
4.	02725900	2	Support Plate (not welded to frame rail when received)
5.	02974704	2	Axle Strap, Fit above Axle. (LH & RH side)
6.	02966321	2	Bolt, Axle Strap Hex Head 1" - 11 NC X 12" PL
	02966556	2	Bolt, Axle Strap Hex Head 1" - 11 NC X 11" Pl (RH Side)
7.	02030300	4	Locknut, 1" - 11NC
8.	02975738	6	Bolt, Hex Head M20-P1.5 X 70 mm GR 10.9 (LH Side)
	002528	6	Bolt, Hex Head M20-P1.5 X 110 mm GR 10.9 (RH Side)
9.	02971158	8	Lockwasher, 20 mm
10.	00679800	2	Hose Support Bracket Pigtail (Weld on Hose Support.

Note:

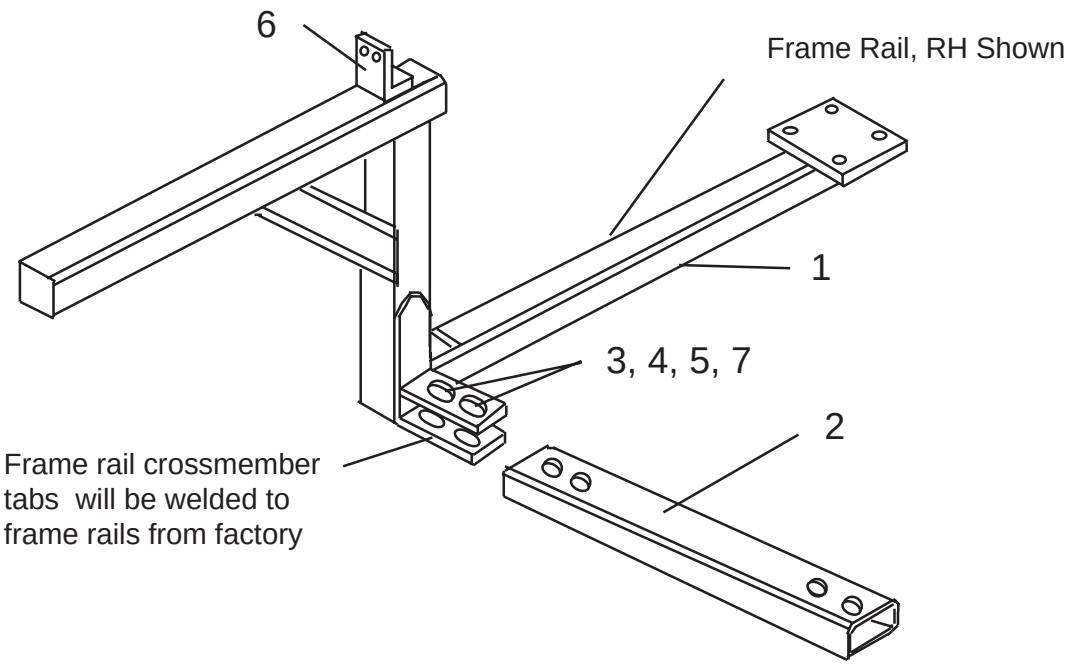
Item 3 is welded to both LH and RH Frame Rails from the factory. Item 4 will be welded on during assembly procedures. Do not weld on any components until instructed to do so, then check instructions carefully because some components are only to be tack welded then removed to be welded later.

Actual Tube Design may vary from drawing above. Shown above is a general Frame Rail Weldment. While Frame Rails may be designed different the mounting process will be the same.

3 Point Arm Stabilizers on tractor will have to be removed when mounting Frame rails remounted under frame rail rear plates. If stabilizer need to be modified to remount them it will be customers responsibility.

Mount Kit Component Identification

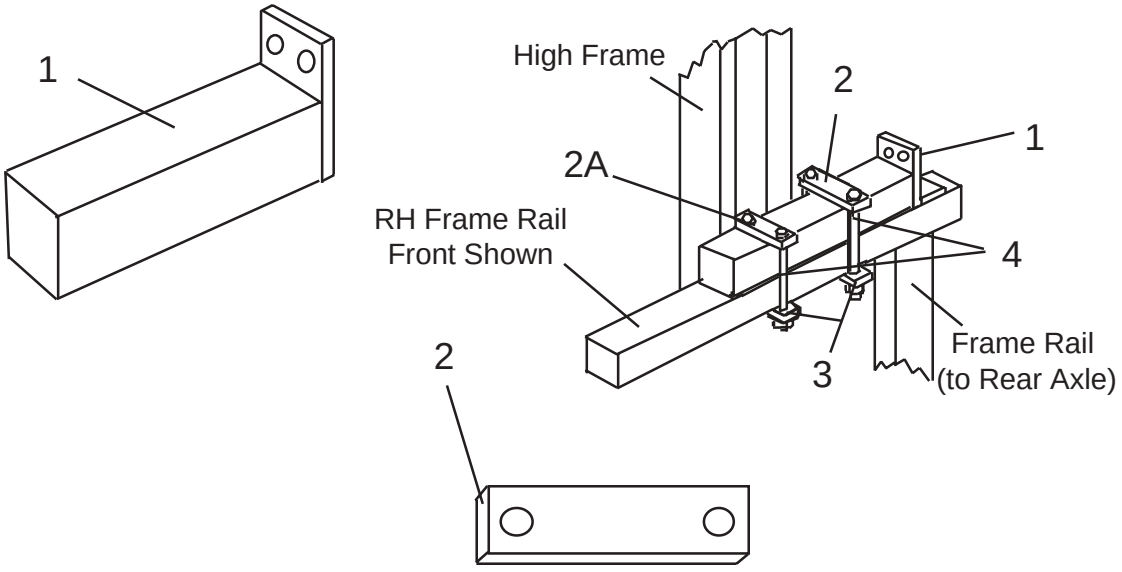
Frame Crossmember



Item	Part No.	Qty	Description
	02970118	**--**	**Frame rail Stiffener Kit**
1.	02978469	1	Frame Rail (RH Shown)
	02978468	1	Frame Rail (LH Not Shown)
2.	02970086	1	Crossmember Tube
3.	02980513	4	Bolt, 1"-8NC X 4-1/4" gr. 8
4.	5JRC16180	4	Locknut, 1" NC (Toplock)
5.	02970115	2	Mount Tube Angle Bracket
6.	02958473	2	Mount Tube Angle Bracket
7.	02978499	2	Gusset Rail Support (Not Shown, Weld on Gusset)

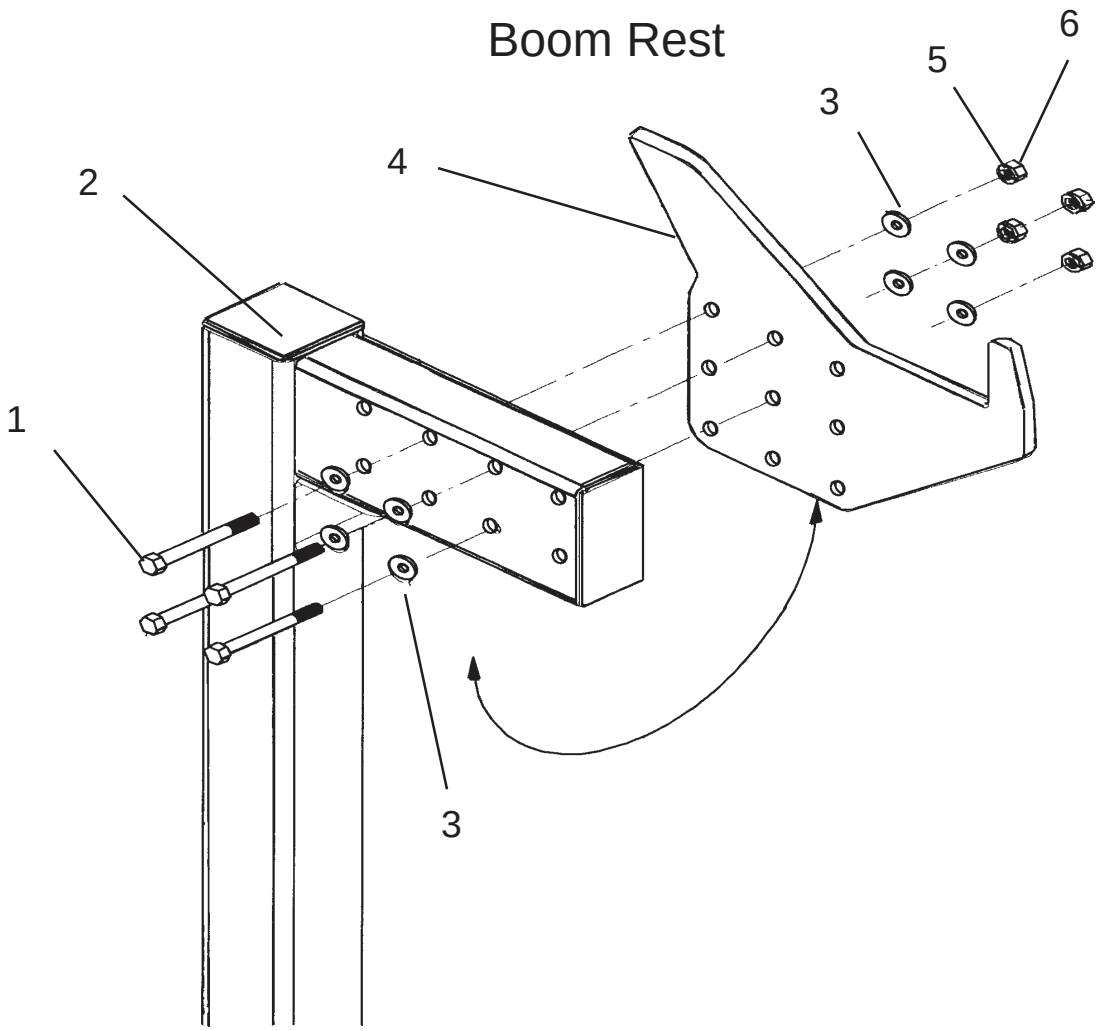
Mount Kit Component Identification

High Frame Mounting Tube Components



Item	Part No.	Qty	Description
1	02014500	4	Mounting Tube
	02918600	8	Bolt, 3/4" X 2" Long (Not Shown)
	00037200	8	Locknut, 3/4" Toplock (Not Shown
2	02966639	8	Bar Mounting Strap
2A	----------	a/r	Bar Mounting Strap (cut item 2)
3	00037200	8	Locknut 3/4", Toplock
4	02957039	8	Bolt, 3/4" X 10-1/2" Long

Mount Kit Component Identification



Item	Part No.	Qty	Description
1	02956765	4	Bolt, Hex Head 1/2" NC X 4-1/2"
2	02966153	1	Boom Rest Weldment
3	00002700	8	Flatwasher, 1/2"
4	02971538	1	Boom Rest Mount Plate
5	00001300	4	Lockwasher, 1/2"
6	00001200	4	Nut, 1/2" NC

Machete Assembly Manual
John Deere
6215, 6320, 6415, 6420
2003 Edition
P/N 02980007

Machete (JD-62, 63, 6420 Asy Man) 10/04