Owner's Manual

INSTALLATION • OPERATION • MAINTENANCE

CAT 938M

301-10 – Hydraulic Wing Assembly

~ Thank You for Purchasing a CRAIG Product, Your Continued Patronage ~ And Loyalty is Greatly Recognized and Appreciated. You are Our Valued Customer.

Before attempting any installation, operation, or maintenance read and understand this manual fully. This will insure proper functionality and longevity of your equipment, and most importantly your safety.

Introduction

The following pages and illustrations are printed to help you with the knowledge to better operate and service your new CRAIG equipment. We are proud to have you as a customer and feel you will be proud to be a CRAIG equipment owner.

Any piece of equipment requires, and must have a certain amount of service and maintenance to keep it in top condition. We have attempted to cover all the different areas of operation and maintenance, however, there may be times when special care must be taken to fit a specific condition.

Study your manual carefully and become acquainted with all the adjustments and operating procedures before attempting to operate your new equipment. Remember, it is a machine and it has been designed and tested to do an efficient job in most operating conditions and will perform in relation to the services it receives. If special attention is required for some conditions, ask your CRAIG dealer or call CRAIG MANUFACTURING LTD. We will be glad to help and answer any questions on operation and service of your new equipment.

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Check out Craig Tech Tips on YouTube.

www.youtube.com/craigmanufacturing

Safety

Safety Precautions

CRAIG attachments can cause bodily injury, property damage, and damage to your equipment if used improperly. Read and understand labels and this booklet before operating or making adjustments. Improper installation, operation or failure to head these warnings may affect your warranty.

Warning Labels

Become familiar with and inform users about all warning and instruction labels on your attachments. They are in place to inform the user about points of interest of any given attachment. They may contain operation instruction, or a hazard that the user needs to be aware of.

NOTE: If labels are missing or cannot be read, call 1-800-565-5007.

Hydraulic Safety

Always inspect hydraulic components before operating your equipment. Replace any damaged or worn parts immediately. Lower blade when machine is not in use. Temperature changes can change hydraulic pressure, allowing the blade to drop unexpectedly causing injury or damaging hydraulic components. Hydraulic fluid under pressure can cause bodily harm. If you suspect a hydraulic leak use a piece of wood or cardboard to investigate, DO NOT use your hand. If you are injured by hydraulic fluid, seek medical attention immediately.

Summary of Important Symbols

T13000000

Indicates the Craig serial number of the entire equipment assembly, ensure all components are stickered with matching serial numbers before completing the installation. Failure to do this may result in damage to the equipment or the machine.

Read instructions in owner's manual carefully before performing indicated function

Pay close attention to indicated warning, failure to do so may result in injury, death, or damage to equipment

Do not use attachment in indicated function; doing so may result in damage to equipment

Indicates proper operation techniques for attachment

Indicates vital grease areas that need attention beyond what a normal maintenance schedule gives.

⚠ATTENTION

Indicates that danger may be evident to machine and or operator. Before any further steps are taken, the owner's manual should be thoroughly read and special precautions taken.

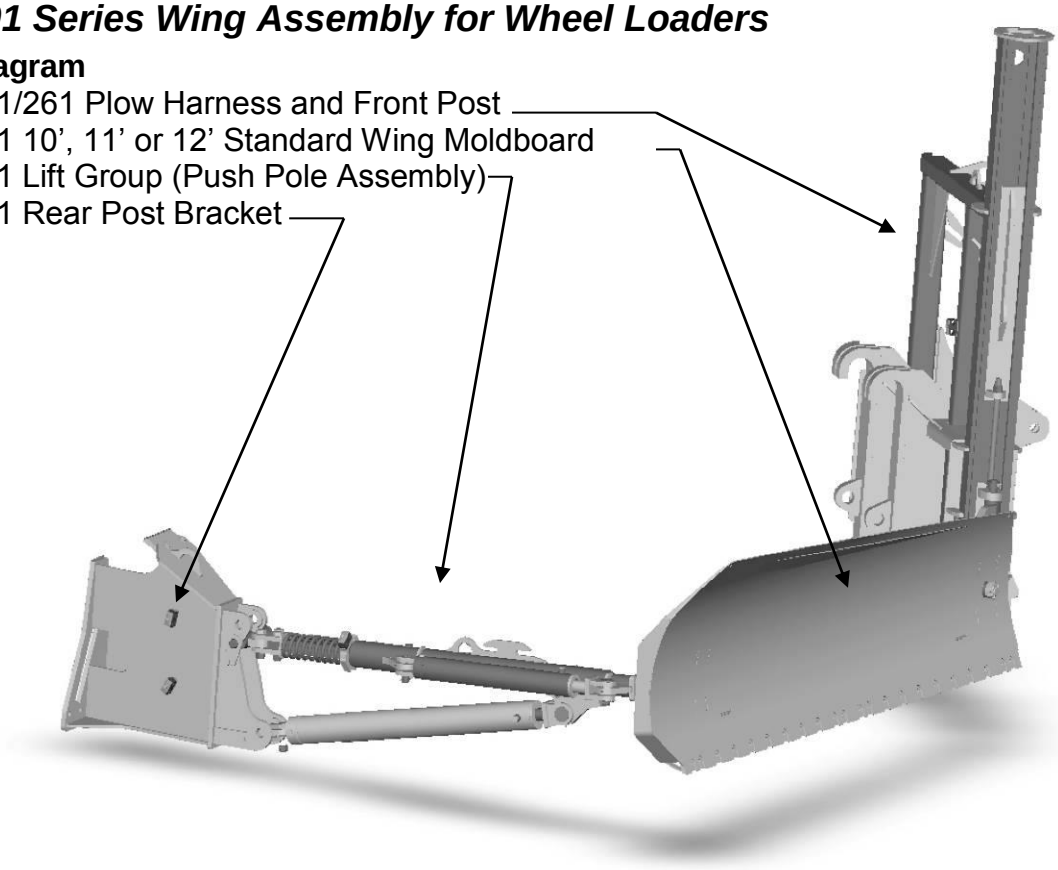
These symbols are typically found on decals on your attachments. If at any point in the life of your attachments the safety decals become damaged or age to the point that they become illegible, Craig Manufacturing has replacement decals available. To obtain Safety decals, please contact the parts department.

Know Your Equipment

301 Series Wing Assembly for Wheel Loaders

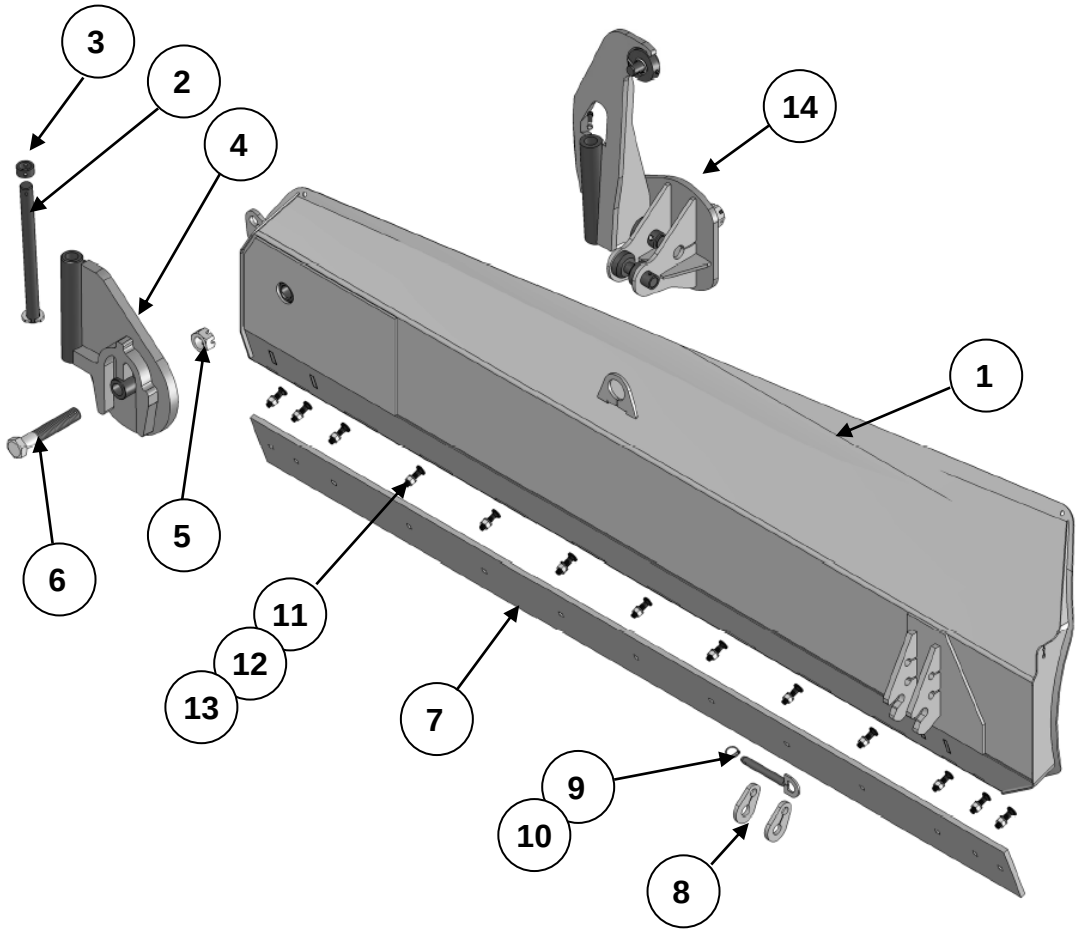
Diagram

121/261 Plow Harness and Front Post
201 10', 11' or 12' Standard Wing Moldboard
301 Lift Group (Push Pole Assembly)
301 Rear Post Bracket



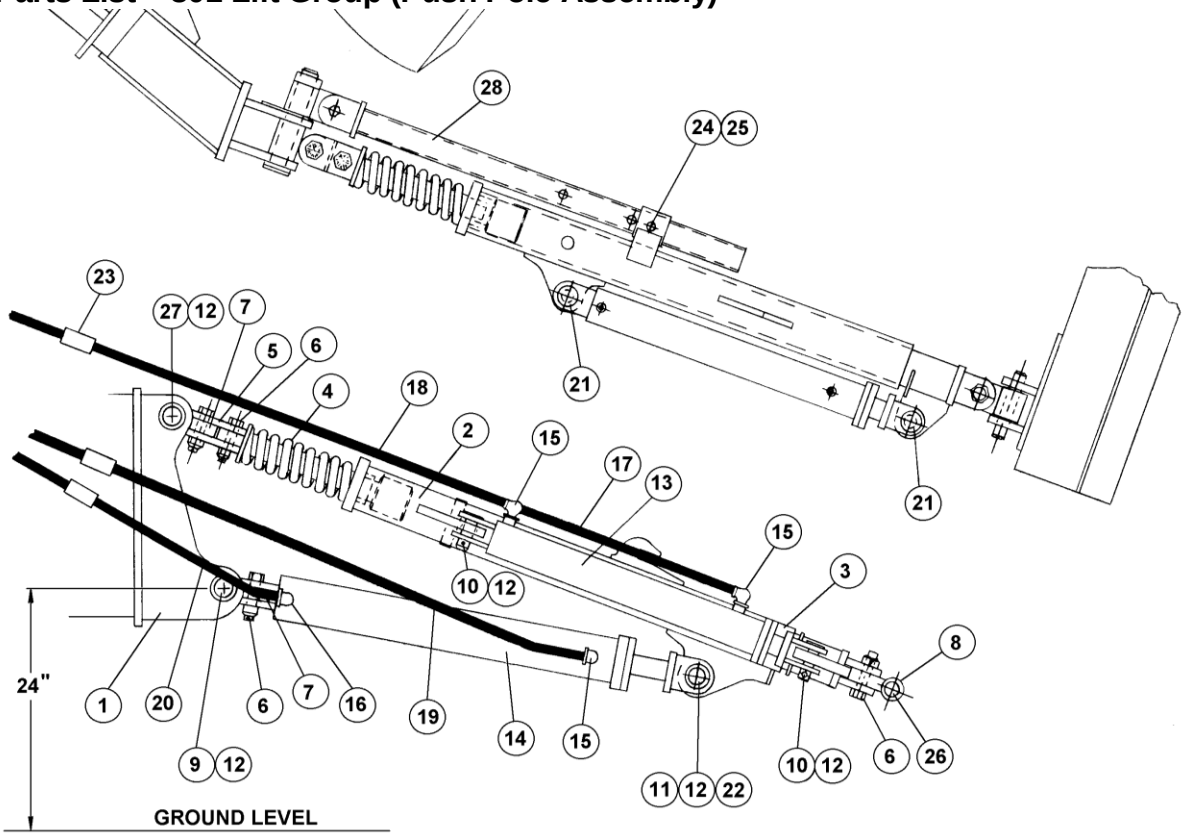
NOTE: When replacing any part of your CRAIG snow gear, use only genuine CRAIG replacement parts. Please contact our parts department @ 1-800-565-5007.

Parts List – 201 Standard Wing Moldboard



NO	DESCRIPTION	QTY	10 foot	11 foot	12 foot
1	Moldboard	1	Customer specific – Please call for details		
2	Slide Pin	1	09620-00	09620-00	09620-00
3	Slide Pin Collar	1	09621-00	09621-00	09621-00
4	Bell Swivel	1	10050-02	10050-02	10050-02
5	Castle Nut	1	00705-00	00705-00	00705-00
6	Shear Bolt	1	00702-00	00702-00	00702-00
7	Cutting Edge	1+	Custom Hole Spacing – Please call for details		
8	Teardrop Lug	2	08976-00	08976-00	08976-00
9	Wing Bracket Pin	1	08977-00	08977-00	08977-00
10	Lynch Pin	1	05833-00	05833-00	05833-00
11	Cutting Edge Bolt	Varies	Custom for each edge – Please call for details		
12	Cutting Edge Lock Washer	Varies	Custom for each edge – Please call for details		
13	Cutting Edge Nut	Varies	Custom for each edge – Please call for details		
14	Hydraulic Trip Swivel (Optional)	1	131839-00	131839-00	131839-00
	- Shear Bolt for Hyd Trip	1	116473-00	116473-00	116473-00

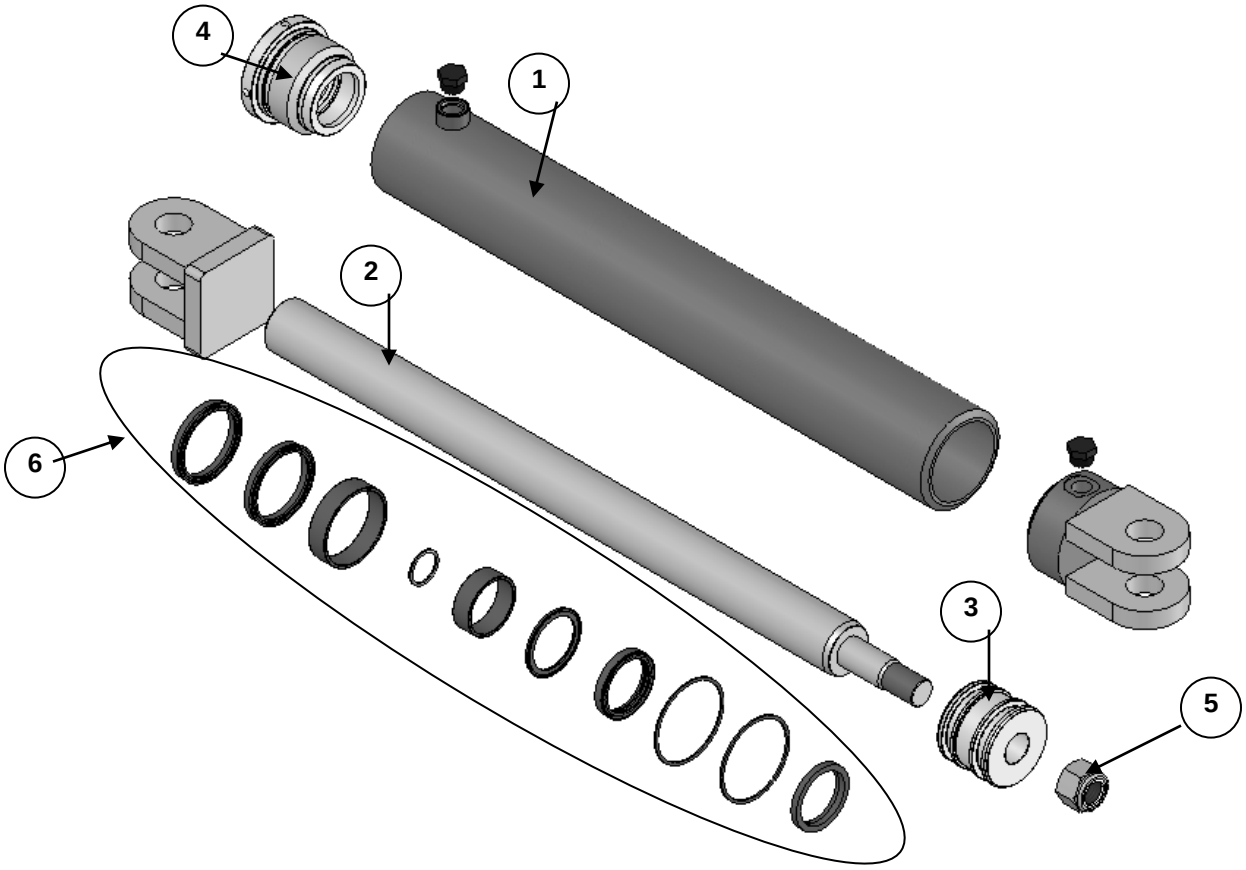
Parts List – 301 Lift Group (Push Pole Assembly)



PART	DESCRIPTION	QTY	PART NO	NO	DESCRIPTION	QTY	PART NO
1	Universal Bracket	1	6903-00	15	Street Elbow 90°	3	Varies
2	Outer Tube	1	8893-03	16	Street Elbow 45°	1	Varies
3	Inner Tube	1	8894-02	17	⅜” Hyd. Hose X ?	1	Varies
4	Spring	1	8018-00	18	⅜” Hyd. Hose X ?	1	Varies
5	Yoke	1	9105-00	19	⅜” Hyd. Hose X ?	1	Varies
6	Bolt & Lock Nut	4	7363-00	20	⅜” Hyd. Hose X ?	1	Varies
7	Swivel	2	6460-04	21	Self-Aligning Bushing	2	6849-00
8	Swivel	1	8970-00	22	Self-Aligning Bushing	1	7932-00
9	Pin Weldment	1	6740-04	23	Hose Connection	4	Varies
10	Pin Weldment	2	7349-04	24	Pin Weldment	1	7867-00
11	Pin Weldment	1	7348-04	25	Hair Pin	1	11046-00
12	Cotter Pin	3	11534-00	26	Pin Weldment	1	7349-00
13	Slide Cylinder	1	40463-21.5	27	Pin Weldment	1	7348-00
14	Lift Cylinder	1	40405-26.0	28	Brace Kit*	1	9566-00

* Brace can be purchased separate from kit using part number 8979-00-B

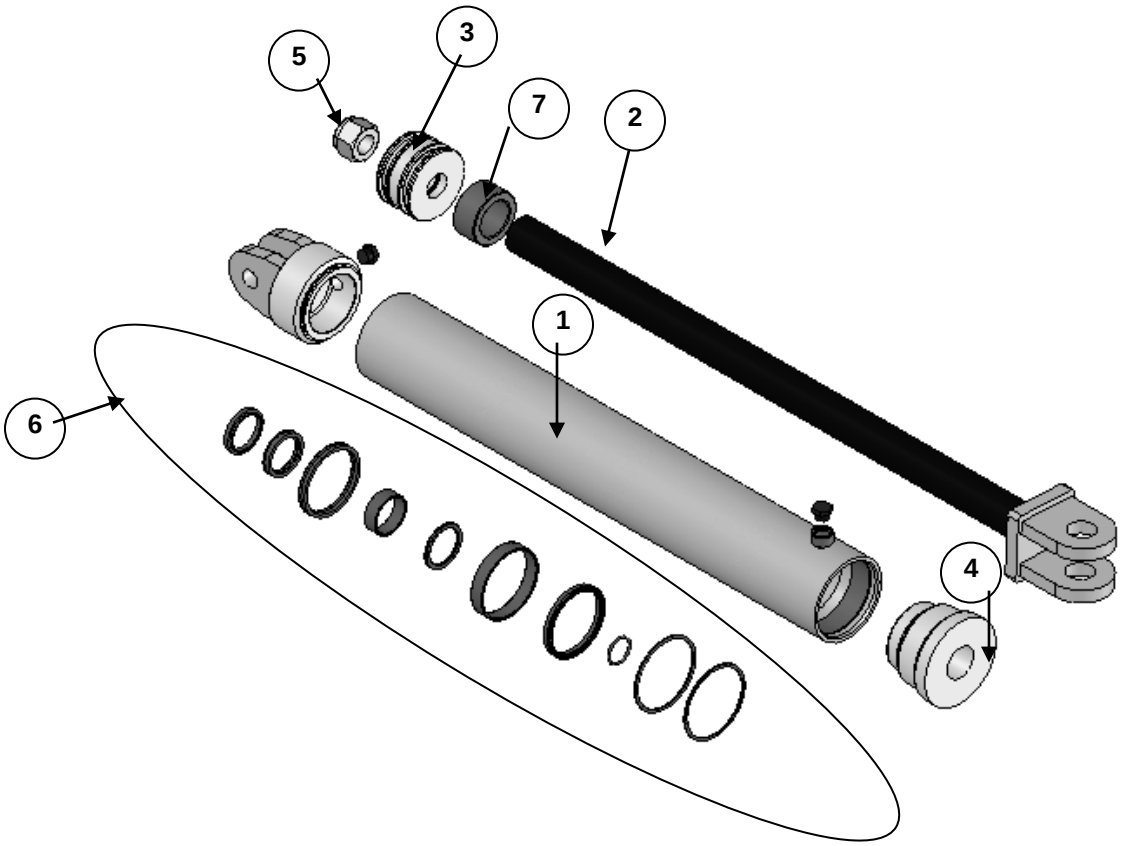
Parts List – 40463-21.5 Push Pole Slide Cylinder



Cylinder rated for 4000 psi

NO	DESCRIPTION	QTY	PART
1	Barrel Weldment	1	40464-26.25
2	Shaft Weldment	1	106668-30.375
3	Piston	1	38764-00
4	Packing Gland	1	40416-00
5	Cylinder Nut	1	38659-00
6	Kit Seal (Complete)	1	39222-00

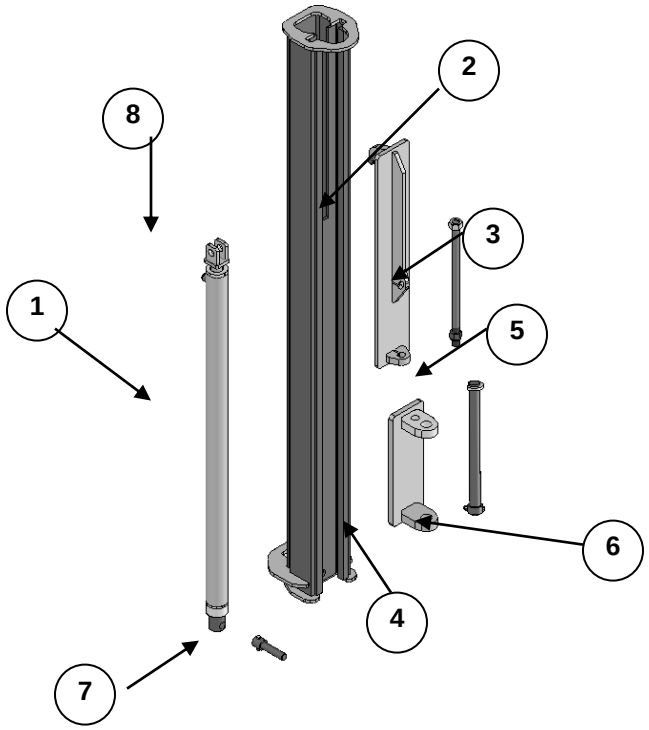
Parts List – 40405-26.0 Push Pole Lift Cylinder



Cylinder rated for 4000 psi

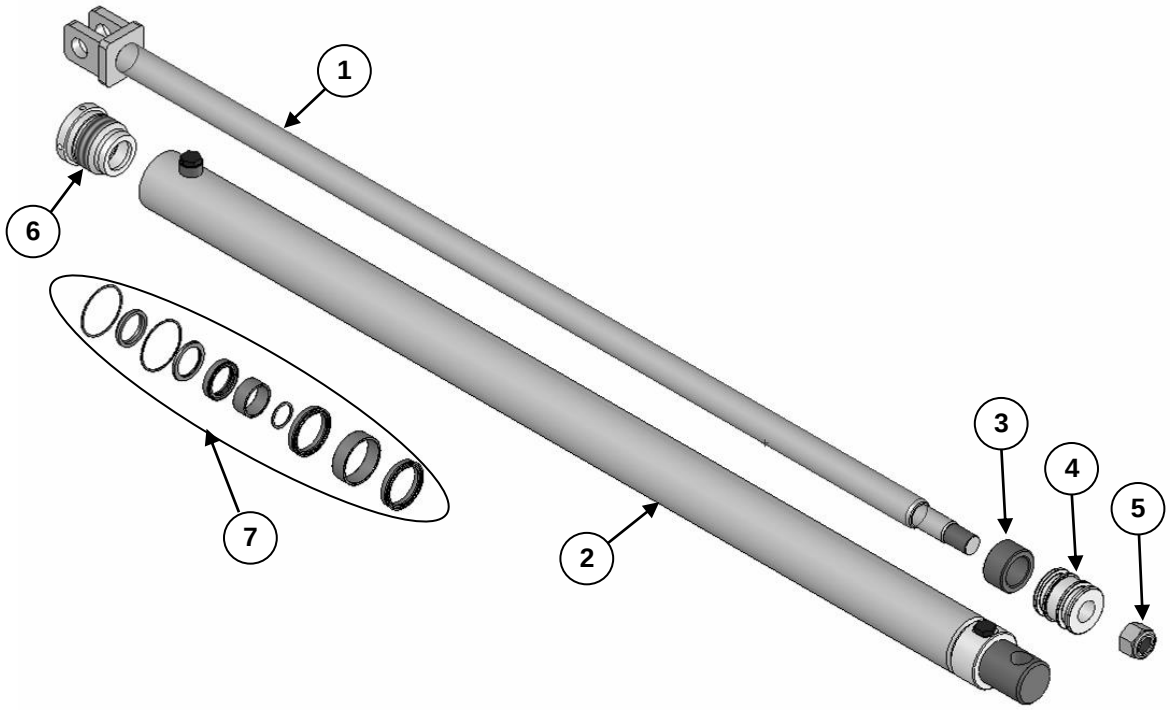
NO	DESCRIPTION	QTY	PART
1	Barrel Weldment	1	40418-32.500
2	Shaft Weldment	1	40419-36.187
3	Piston	1	38677-00
4	Packing Gland	1	40416-00
5	Cylinder Nut	1	38700-00
6	Kit Seal (Complete)	1	38706-00
7	Piston Stop	1	18229-00

Parts List – 261 Plow Harness Hydraulic Front Post



NO	DESCRIPTION	QTY	PART
1	Cylinder (4000 psi)	1	39240-48.0
2	Upper Slide	1	16019-01
3	Lift Bolt	1	09850-01
4	Lower Slide	1	17508-00
5	Bell Swivel Pin	1	09620-00
6	Collar	1	09621-00
7	Lower Cylinder Pin	1	16022-00
8	Upper Cylinder Pin	1	09622-00

Parts List – 39240-48.0BS Front Post Cylinder

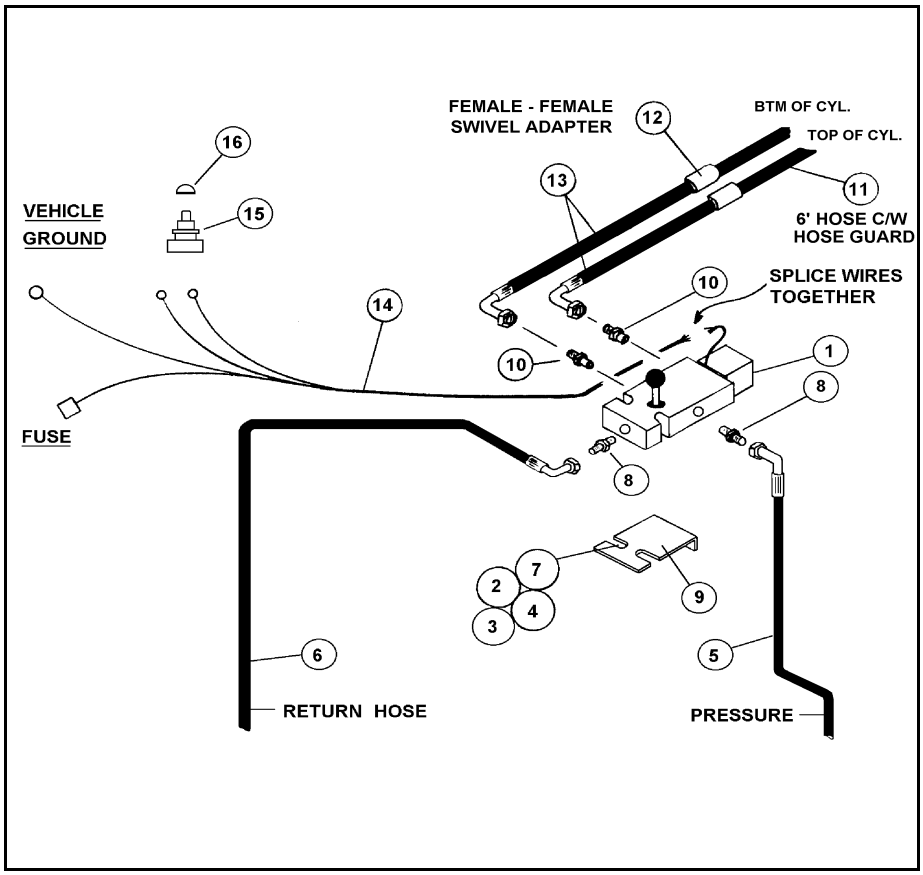


Cylinder rated for 4000 psi

NO	DESCRIPTION	QTY	PART
1	Shaft Weldment	1	106257-56.562
2	Barrel Weldment	1	39717-54.000B
3	Piston Stop	1	39727-00-B
4	Piston	1	39693-00-D
5	Cylinder Nut	1	38659-00
6	Packing Gland	1	39692-00-D
7	Seal Kit	1	39723-00

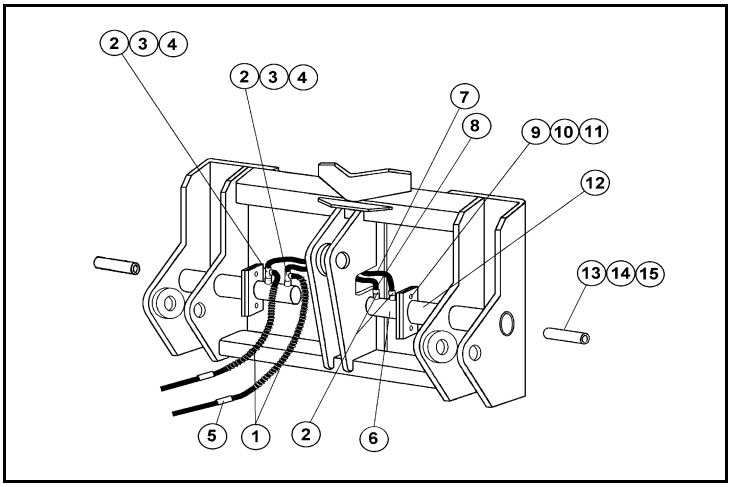
Parts List – Hydraulic Hose Kit
GENERIC PARTS AND INSTALLATION OF MALE MASTER ELECTRIC OVER HYDRAULIC HOSE KIT FOR LOADERS

TOLL FREE: 1-800-565-5007 (CANADA) 1-800-561-0201 (U.S.)
FAX: 506-375-4848 TOLL FREE FAX: (CANADA & U.S.) 1-800-267-5578



	DESCRIPTION	QTY	PART NO	NO	DESCRIPTION	QTY	PART NO
1	ELECTRIC VALVE - 24V OR ELECTRIC VALVE - 12V	1	20256-00 19388-00	9	MOUNTING BRACKET	1	20103-00
2	LOCKWASHER	2	11455-00	10	ST ADAPTER, ORS - ORB	2	19389-00
3	NUT	2	11473-00	11	HOSE, 6' C/W GUARD	2	
4	FLATWASHER	2	11492-00	12	ADAPTER	2	123203-00
5	PRESSURE, 3/8 x ?	1	Varies	13	SUPPLY, 3/8 x ?	2	Varies
6	RETURN, 3/8 x ?	1	Varies	14	WIRING HARNESS	1	19395-00
7	BOLT	2	11518-00	15	SWITCH	1	30954-00
8	ST ADAPTER, ORS - ORB	2	19386-00	16	CAP	1	19393-00

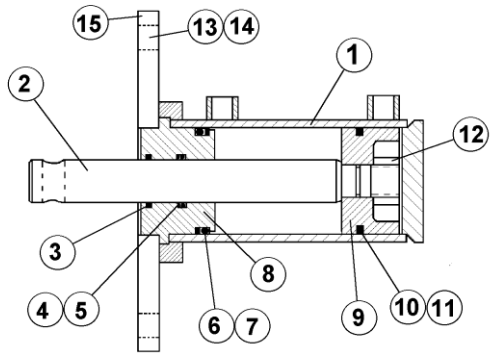
Parts List – Quick Key Male Master
GENERIC PARTS AND INSTALLATION FOR A QUICK KEY MALE MASTER (QKM) FOR LOADERS



	DESCRIPTION	QTY	PART NO
1	HOSE ASSEMBLY C/W HOSE GUARD	2	Varies
2	90 DEGREE FITTING	2	11215-00
3	45 DEGREE FITTING	4	120695(6)-00
4	TEE	2	20908-00
5	ADAPTER, RIGID FEMALE - SWIVEL FEMALE	2	Varies
6	CYLINDER (2-1/2" X 3" STROKE) * STANDARD * CYLINDER (2-1/2" X 4-1/2" STROKE") CYLINDER (2-1/2" X 3" STROKE – THREADED SHAFT)	2	24783-00 (STD) 36871-00 (NON STD) 6860-00 (OLDER)
7	HOSE ASSEMBLY	1	Varies
8	HOSE ASSEMBLY	1	Varies
9	BOLT, 1/2 UNC X 2	4	11577-00
10	NUT, 1/2 UNC	4	11477-00
11	LOCKWASHER, 1/2	4	11459-00
12	TUBE ASSEMBLY	2	8871-00
13	LOCK PIN (2" DIA X 9.375") LOCK PIN (2" DIA X 12.5625") LOCK PIN (2" DIA X 9.375") THREADED LOCK PIN (2-3/4" DIA X 11.5625") THREADED	2	24765-00 (STANDARD) 24092-00 5783-00 6961-01
14	SPACER (ONLY USED IN OLDER COUPLER)	2 *	25261-00
15	DOWEL PIN * OR * SELF ALIGNING COUPLER (LARGE MACHINES)	2 **	30916-00 (STANDARD) 11223-00

Parts List – Hydraulic Cylinder
PART NO. 24783-00
2-1/2" BORE X 3" STROKE
FOR QKM QUICK KEY MALE MASTERS

TOLL FREE: 1-800-565-5007 (CANADA & U.S.)
FAX: 506-375-4848 TOLL FREE FAX: (CANADA & U.S.) 1-800-267-5578



	DESCRIPTION	QTY	PART NO
1	BARREL WELDMENT	1	6861-00
2	SHAFT	1	24767-00
3	WIPER	1	6870-00
4	BACK UP RING	1	6871-00
5	O-RING	1	6872-00
6	BACK UP RING	1	6873-00
7	O-RING	1	6874-00
8	PACKING GLAND	1	6866-00
9	PISTON	1	24766-00
10	O-RING	1	6875-00
11	WEAR RING	1	6876-00
12	LOCKNUT	1	25212-00
13	CAP SCREW	4	6878-00
14	WASHER	4	11457-00
15	TOP PLATE	1	6869-00
16	COMPLETE SEAL KIT	1	11037-00

CAT 938M-Craig Wing Assembly Installation

IMPORTANT:

There will be some welding to the machines frame as part of this installation procedure. **Disconnect all power** prior to striking an arc on the machine. Also be sure to **cover all windows and cylinder shafts** in the direct vicinity of the welding location to protect from unwanted weld spatter.

For the purpose of this install the right hand side of the machine is viewed as the operator's right side.

Hose lengths and gear are dependent on your specific equipment, and may not match the pictures as shown in the manual.

Install Wing Assembly Hardware

1. Begin the installation by removing the front fender from operator's right hand side of machine.

2. Ensure the mounting plates are bolted to the rear post bracket tight enough that they do not move up and down but will move slightly sideways.

3. Align the rear post bracket to the machine so the *bottom bolting plate* of the bracket is *underneath* the bottom plate of the loader, the top plate is resting tight against the machine and the bracket is standing plumb to the ground.

*-Leave at least a half an inch showing on the bottom bracket for weld.

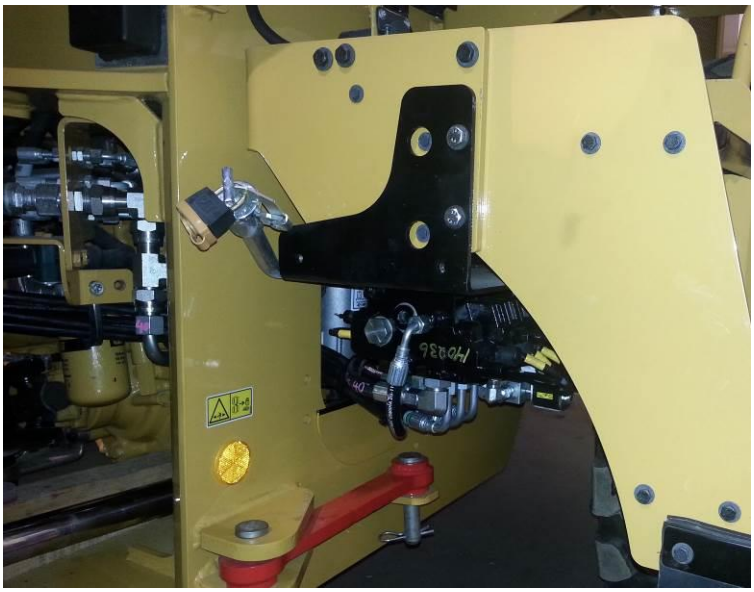
4. Mark locations where the plates contact the machine and temporarily remove the bracket.

5. Sand paint away in the marked areas and from the bracket mounting plates.

6. Replace the rear post bracket and tack mounting plates to machine.

7. Unbolt the rear post bracket and weld the mounting plates to the machine, top side only.

8. Re-attach the Rear Post Bracket to the mounting plates.

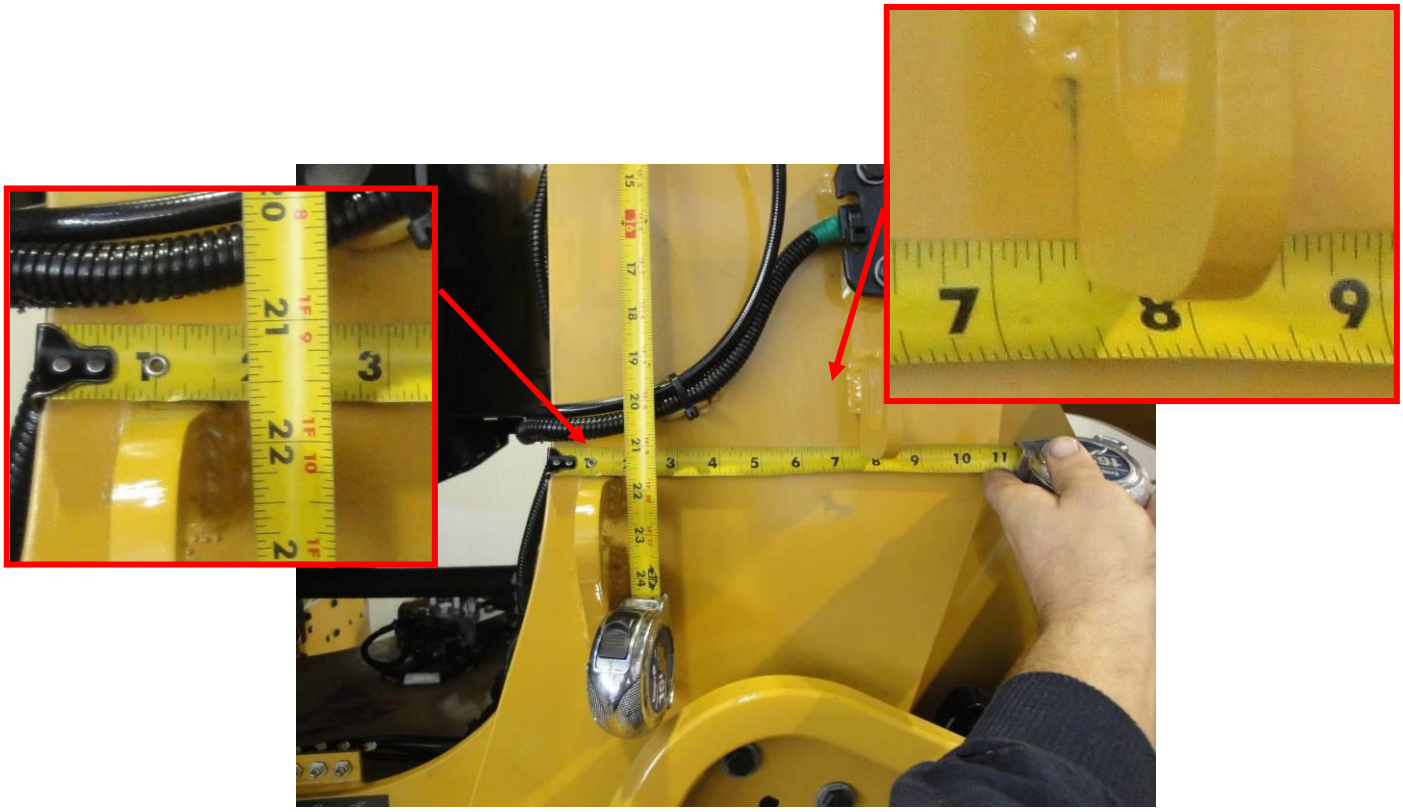


9. The Valve mounting plate is fastened underneath the left side ladder.

*Remove the two lower ladder bolts on each side.

10. It is easier to mount your valve to the valve plate prior to installing the mounting plate on the machine.

11. The valve cover is then bolted to the mounting plate, upon completion of install and testing.



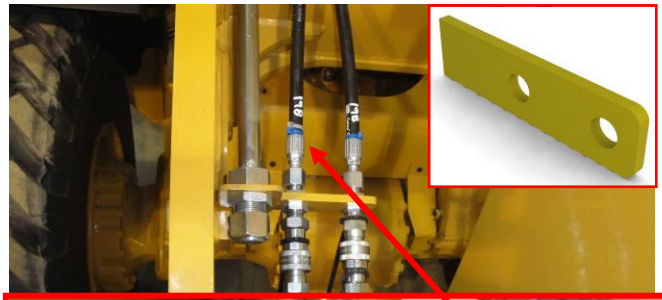
12. Locate the chain anchor lug and the chain hanger lug in the supplied kit.

13. Weld these lugs to the side of the machine above the rear post bracket. Follow the dimensions shown.

    *Vertical dimension is taken from the top of the side plate

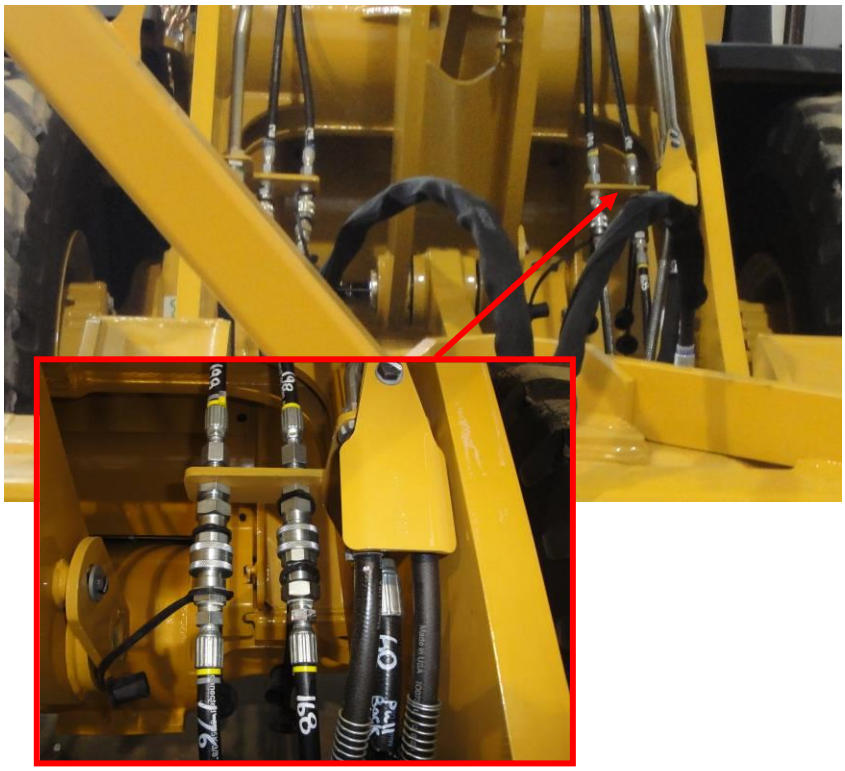
14. Remove the OEM stop, on the right side of the machine Add the supplied articulation stop.

NOTE: Failure to add the supplied stop will cause damage.



15. There is a bulkhead plate included in the kit (there will be two if there is a trip swivel or Reversible plow).

16. Weld to the inside of the boom arms, in the location shown) on the operator's right hand side.



17. The second bulkhead plate gets welded to the opposite side.

18. A hose clamp needs to be welded to the front module as shown.

19. Remove the Light from the wing side of the machine and install the supplied mounting plate to the existing bracket.

20. There are 2 holes in one end of the mounting plate; this end mounts to the bracket. The second hole will need to be drilled in the mounting plate to stabilize the light.

Note: Make sure that the light will still mount to the top without interfering with the bracket before drilling the second hole.

21. Re-mount the light.

22. Mount the Craig Plow Harness (DPF/High visibility style shown) to the coupler or boom arms.

23. Mount Craig Bell Swivel or Hydraulic Trip Swivel to the front post.

24. Mount the rear lift group to the rear post bracket.

25. Connect the wing to the front bell swivel using the supplied Bolt. Use only a 1-1/2” Grade 2 bolt.

26. Connect rear lift group to the back of the wing

Joystick Install

(This section contains machine specific pictures and is used in conjunction with the Generic Joystick Section)

1. To install the joystick bracket, remove the outside plastic cover from the console to access the bolts for the armrest.
2. Remove the arm rest and place the spacer plate as shown in photo. (it does not bolt down)
3. Replace the top armrest and make sure bolts are tight.
4. Re-install the outside plastic cover sandwiching the joystick bracket to the side of the console using original hardware.
5. Mount joystick to bracket.

Note: If the armrest is all the way ahead and the seat is all the way ahead the joystick may contact the computer display.

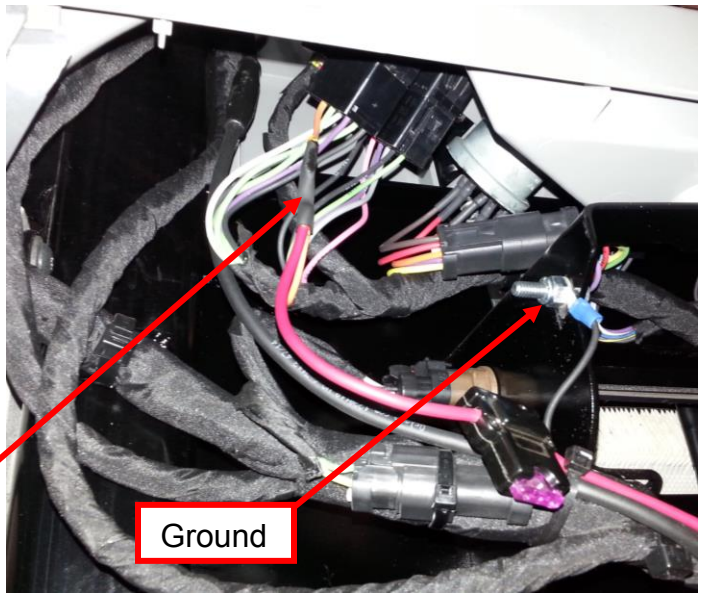
6. Remove the console cover on the right hand side of the machine. The joystick control box mounts as shown.

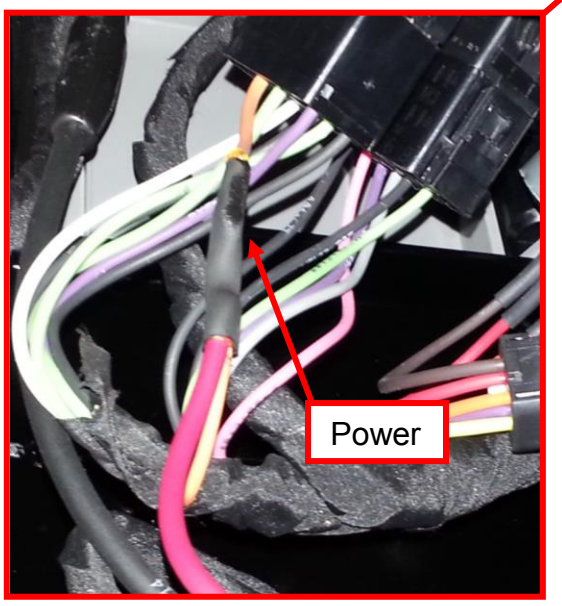
7. The wire for the joystick runs out to the armrest, under the rubber matting and then up to the joystick.

8. The thick wire harness goes down through the floor in the cab and to the Craig Valve.

9. The power and ground are taken from under the control console.

10. The power is tapped into at the hydraulic safety switch using an inline fuse.





11. Tap into the orange wire from the switch for power.

12. The ground is attached to the console frame using a bolt.

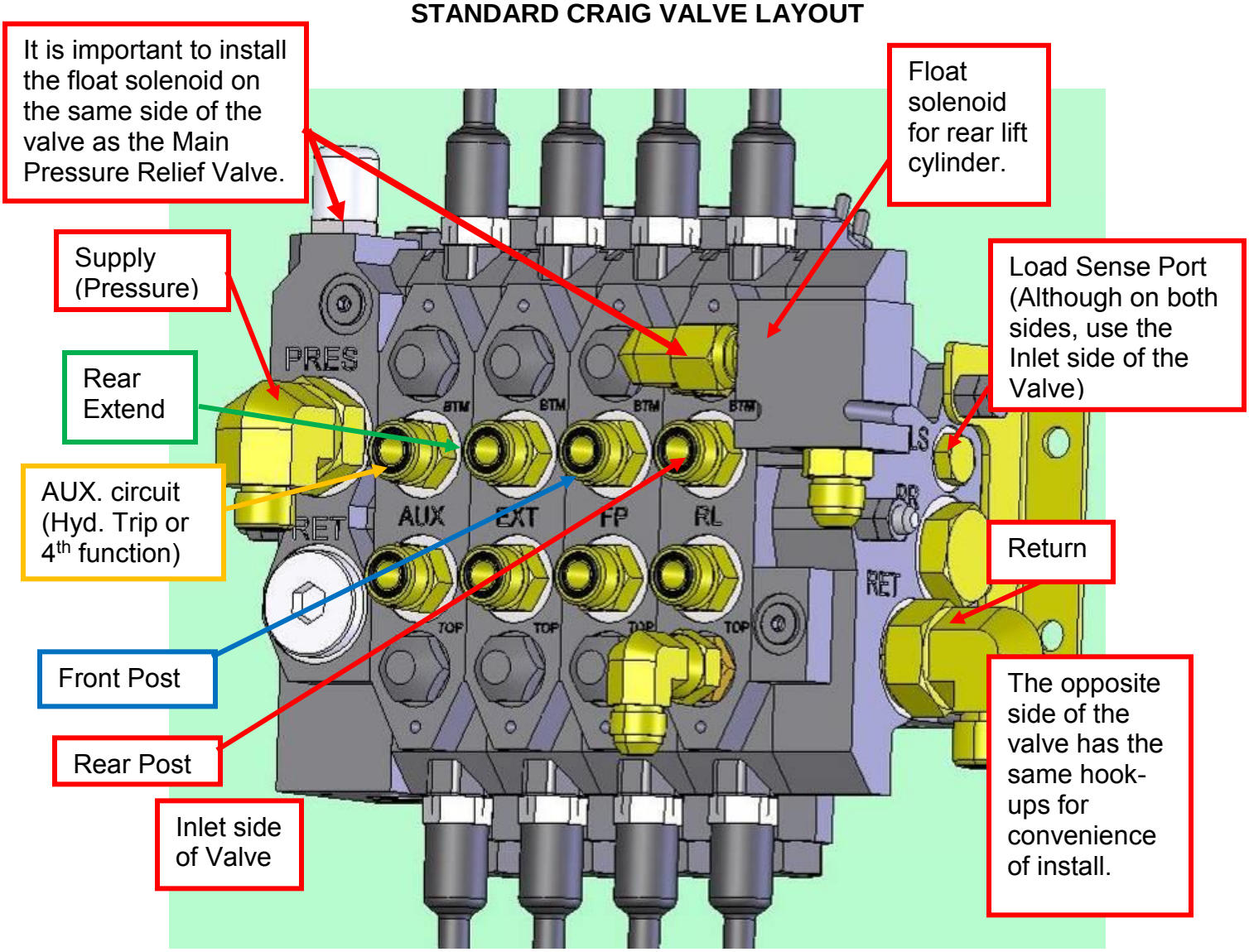
Install Hydraulic Hoses and Adapters

It is recommended to route your hoses to check hose lengths before attaching them. At Craig Manufacturing, Zip Ties are used to mark hoses.

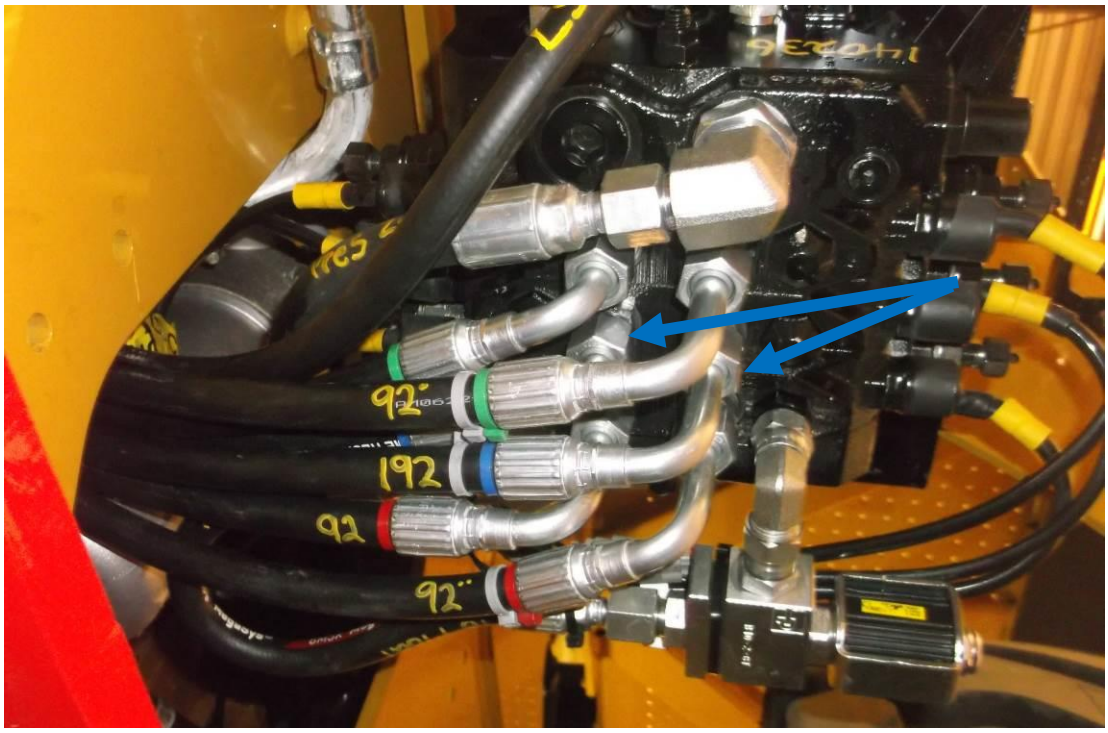
Blue- Front Post
Red- Rear Post
Green- Rear Extend
Yellow- Trip Swivel

Grey (with another color) – Barrel End of Cylinder

STANDARD CRAIG VALVE LAYOUT



FRONT POST HYDRAULICS



1. The front post hydraulics connects from the middle spool of the Craig Valve and routes through the articulation point, through the hose clamp, over the backside of the front module.

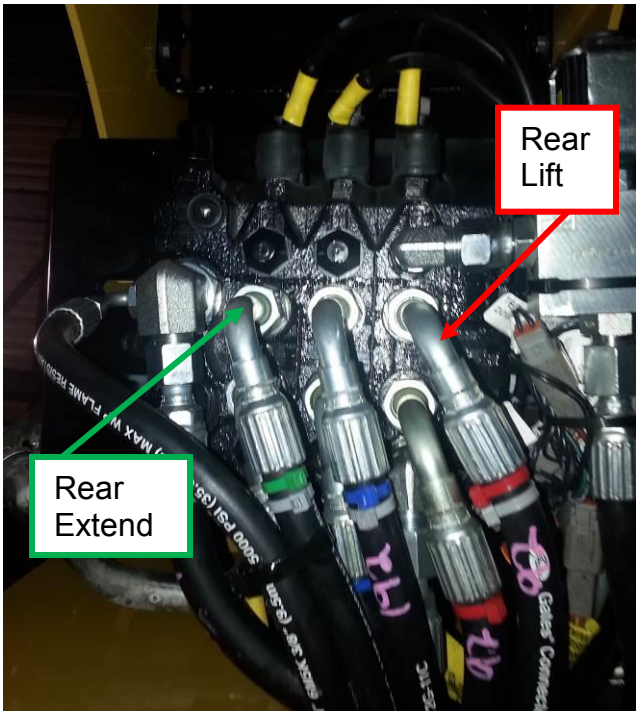
**Always check your machines articulation to make sure any hoses are routed safely through the articulation point.*

2. The hydraulic hose is routed over the torque tube to the bulkhead plate previously installed on the boom arm.

3. From there the hoses from the front post are attached to the quick disconnect fittings.

4. The hoses for the front post must be routed through the coupler, and care must be taken to leave enough slack for movement.

REAR EXTEND and REAR LIFT HYDRAULICS

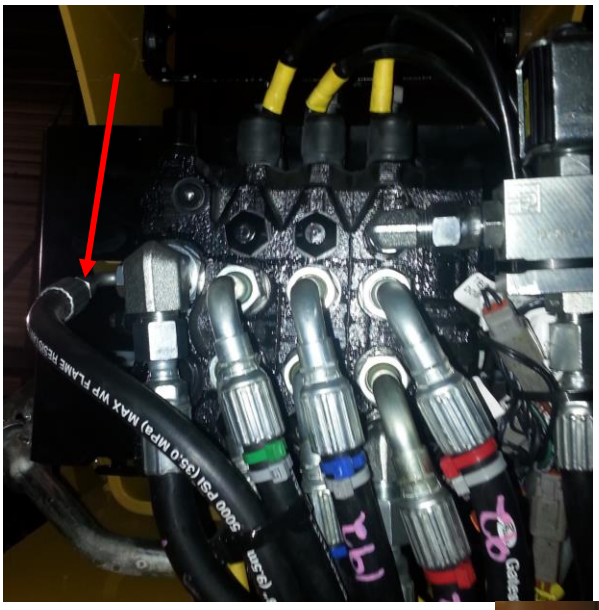


5. The rear extend and rear lift hoses are routed through the articulation point and to the bulkhead (if fitted with a Craig Quik-Pik) or hose clamps attached to the rear post.

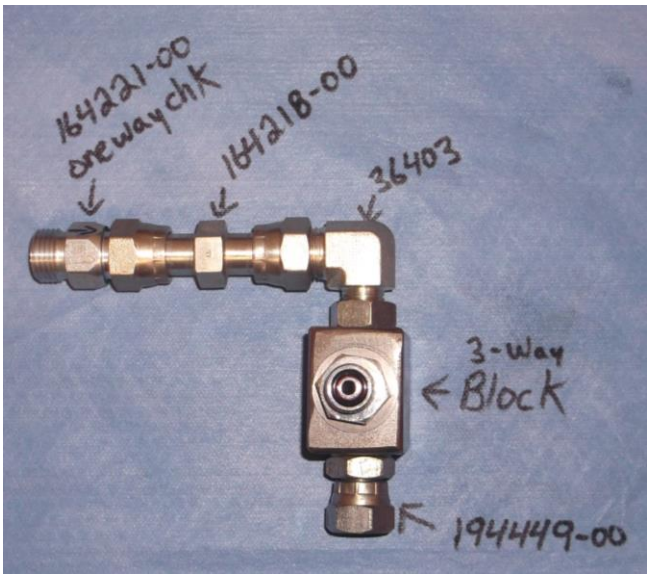
IMPORTANT-For the remainder of the Hydraulic Install a Vacuum should be put on the system to prevent the loss and contamination of hydraulic fluid.

Here at Craig's, an air powered Venturi valve is used to put a vacuum on the hydraulic tank.

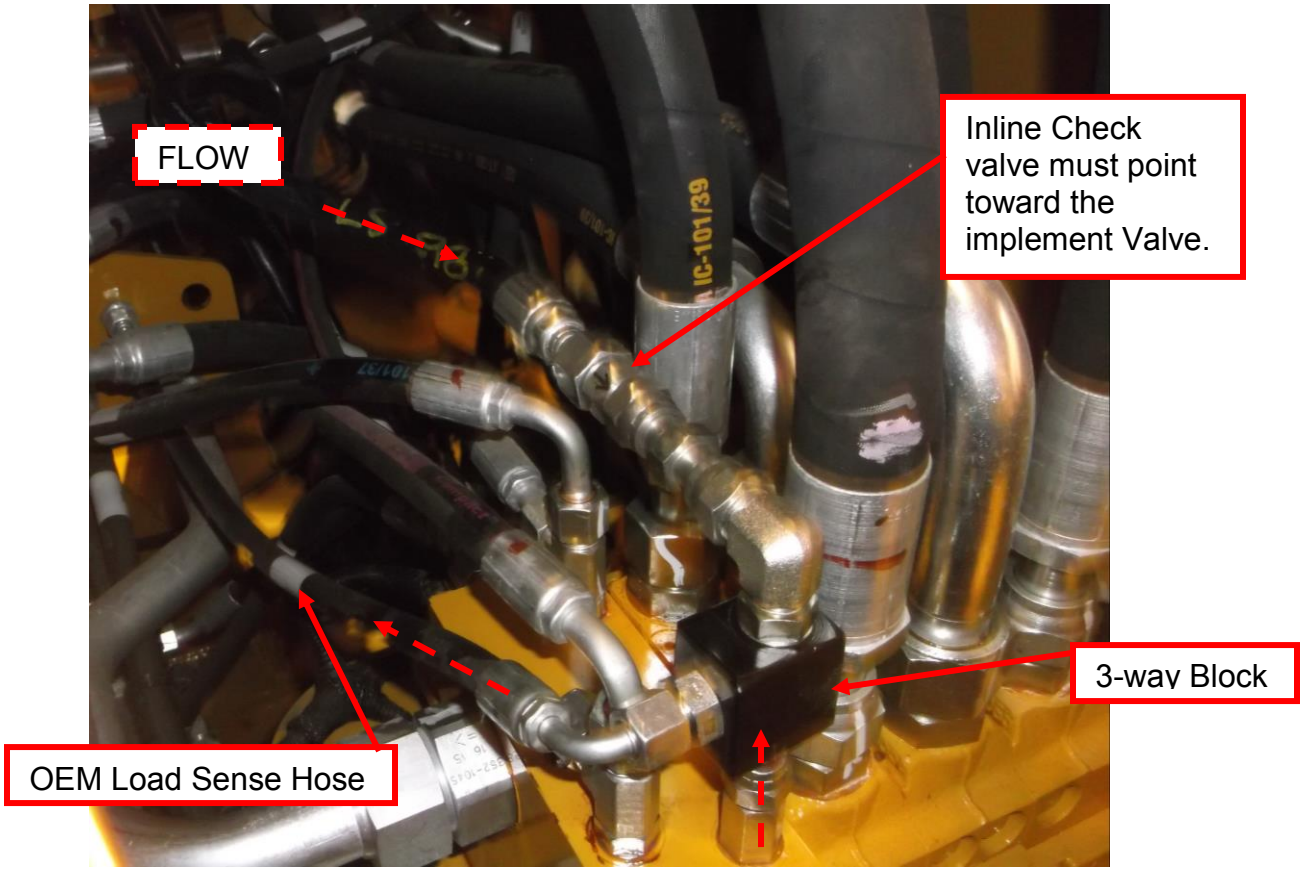
LOAD SENSE CIRCUIT



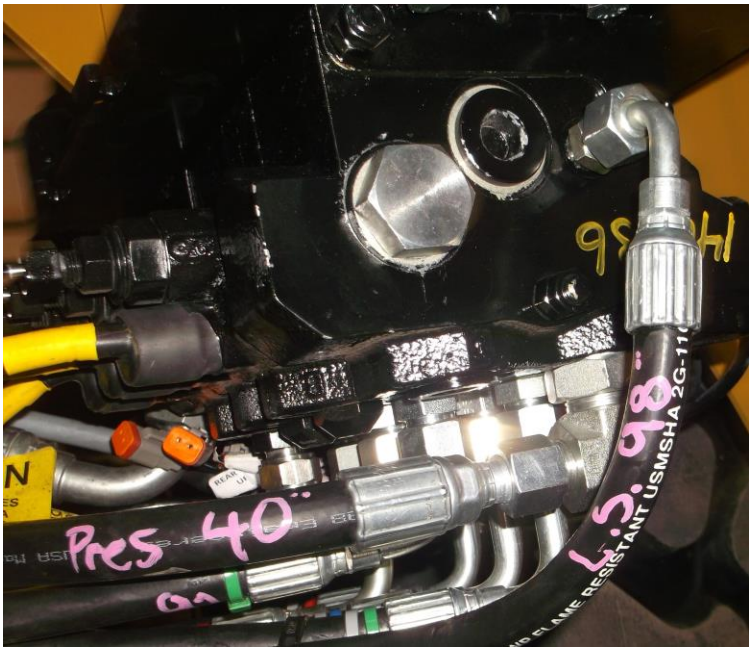
5. The load sense circuit comes from the Craig Valve and connects to the Craig supplied 3-way ORB Block, that is mounted on the loader implement valve.



6. The hose connects to an inline check valve and then connected to the Block which is connected to the OEM load sense and the loader implement valve. (This check valve is very important to have inline the correct way. Flow direction is marked on Check Vv)



PRESSURE (SUPPLY) CIRCUIT



7. The pressure line comes from the Craig Valve and runs under the cab to the OEM pressure fitting just inside of the loader.

8. The Craig pressure line tees into the machine pressure line from the implement pump, on the left side of the loader, in front of the engine block.

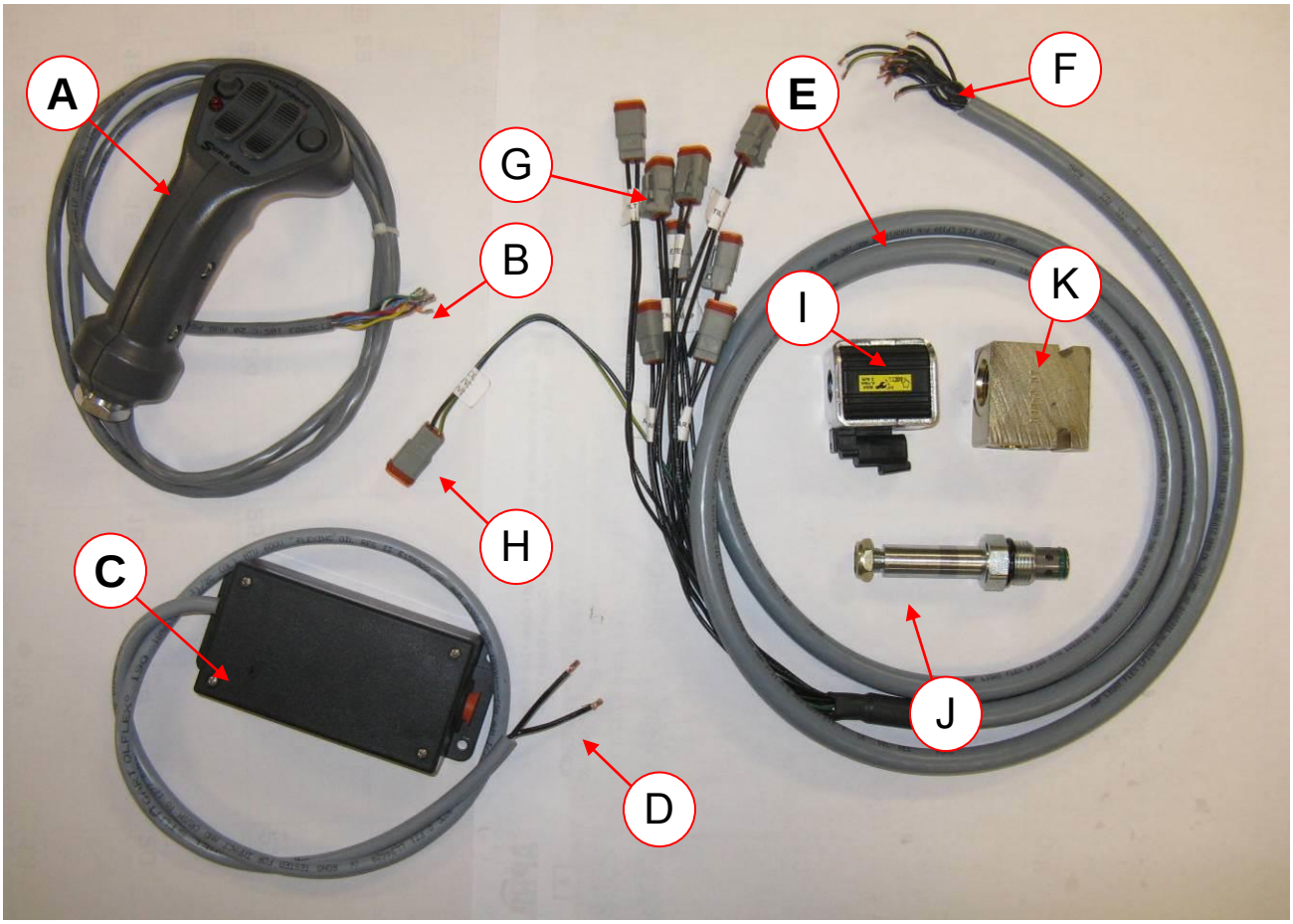
RETURN CIRCUIT

9. The return circuit is a hose that is routed from the Craig Valve under the cab towards the rear of the machine, where it is teed into the machine return line at the tank. This is at the left hand side of the machine in the engine compartment. (And very hard to reach, but with some patience can be achieved.)


Ret b2
716 -8


Ret

Generic On/Off Joystick Kit



Joystick Kit Components

A	**-**	**On / Off Joystick Wiring Harness**
B	**-**	**Color Coded Wires to Connect Inside Control Box**
C	**-**	**Joystick Control Box (2A fuse inside for float circuit)**
D	**-**	**Numbered Wires for Power and Ground**
E	**-**	**Valve Wiring Harness**
F	**-**	**Numbered Wires to Connect Inside Control Box**
G	**-**	**“DEUTSCH” Connectors to Connect to CRAIG Valve**
H	**-**	**“DEUTSCH” for Float Solenoid**
I	**-**	**Float Solenoid to Mount on CRAIG Valve**
J	**-**	**Float Solenoid Insert**
K	**-**	**Float Valve Body**

On / Off Joystick Controls

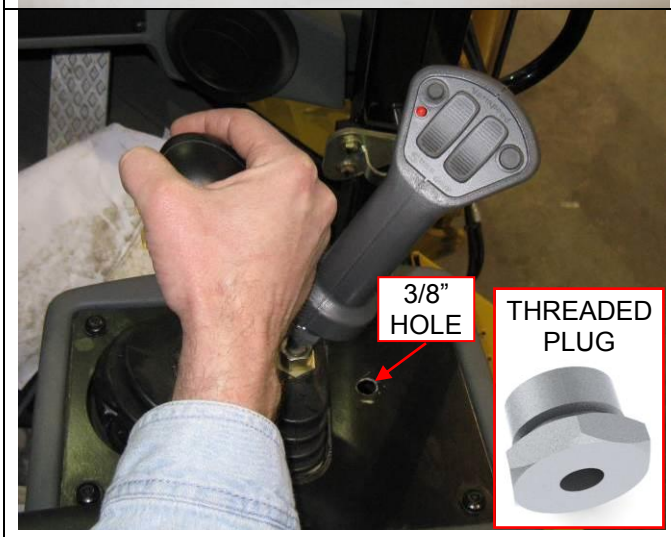
1. Turns float valve on and off
2. “Emergency Up” button (front and rear of wing raise simultaneously)
3. Red light indicates that float is active
4. Toggle switches operate the wing functions

Note:

- The trigger on the underside of the joystick, when held, allow the toggle switches to operate two (2) different functions, i.e. Wing extension, HTS, Reversible plow, Snow gate…

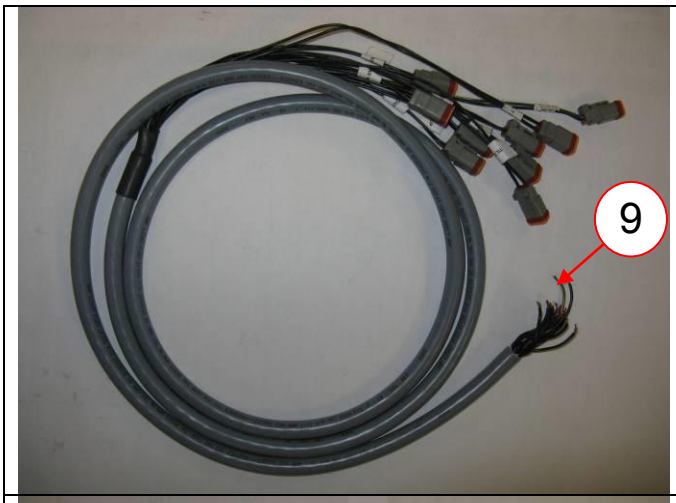
Joystick Wiring Harness

The joystick leads are shipped loose to allow the cable to be routed through the console in the cab using a small hole (ø3/8”)



5. Install CRAIG joystick. Generally the joystick can be installed on top of the factory 3rd spool lever.
6. Remove the plug from the bottom of the joystick. Drill and tap it to match the post in the existing lever.
7. The existing post may need modified to allow the use of both levers without contacting the opposite lever.
8. Drill a 3/8” hole next to this location for joystick leads.

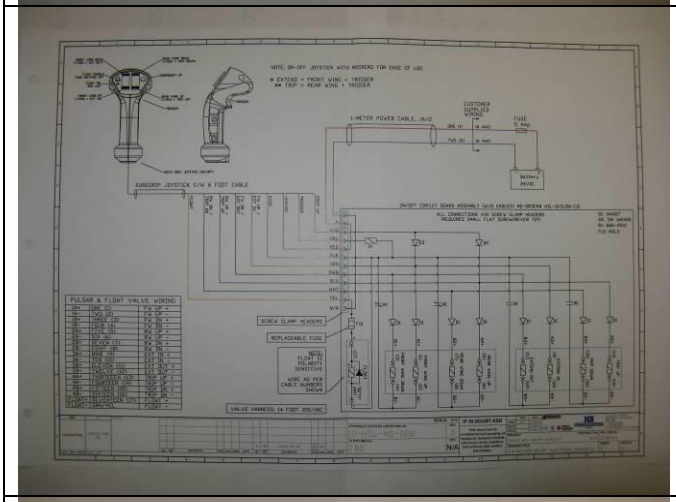
Be careful not to drill through anything that may be under the console.
Be sure that there is enough cable to allow the lever to move through the full range of motion.



9. Valve wiring harness

Valve harness leads are also loose to allow the cable to be routed into the console through a single small hole drilled in the cab floor.(ø13/16”)

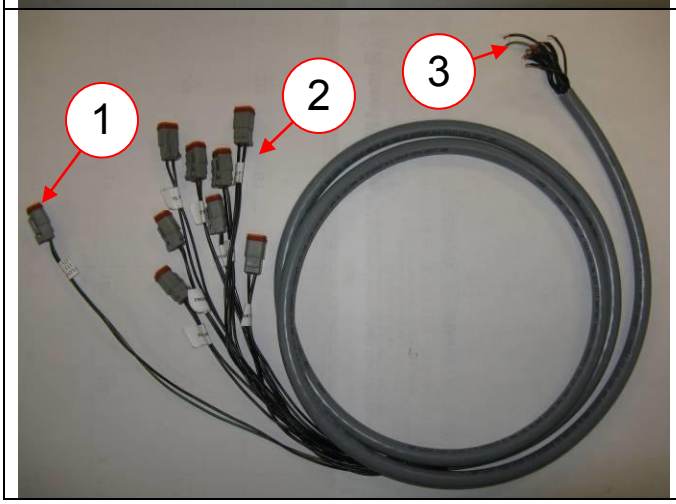
Note:
All wires have a specific location that they must be connected. If any wire is not connected on the proper location the joystick may not function properly.



There is a full wiring schematic is located at the back of this manual

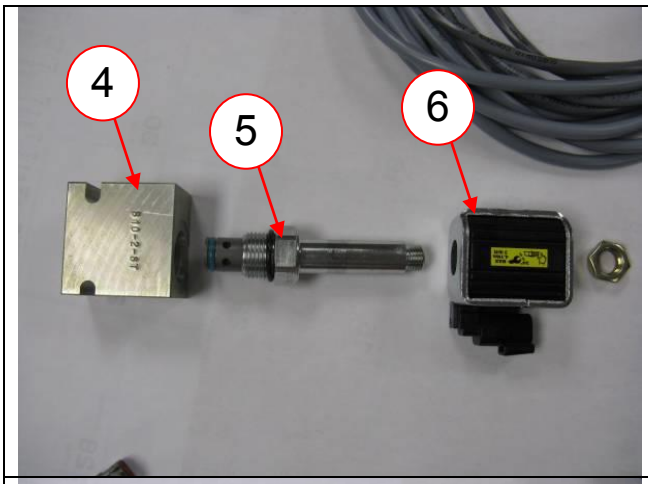
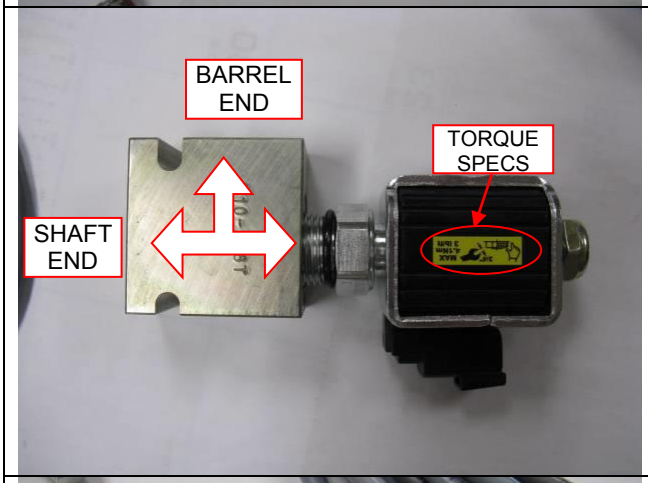
Use the supplied wiring schematic to match all numbered and colored wires with the proper location in the control box.

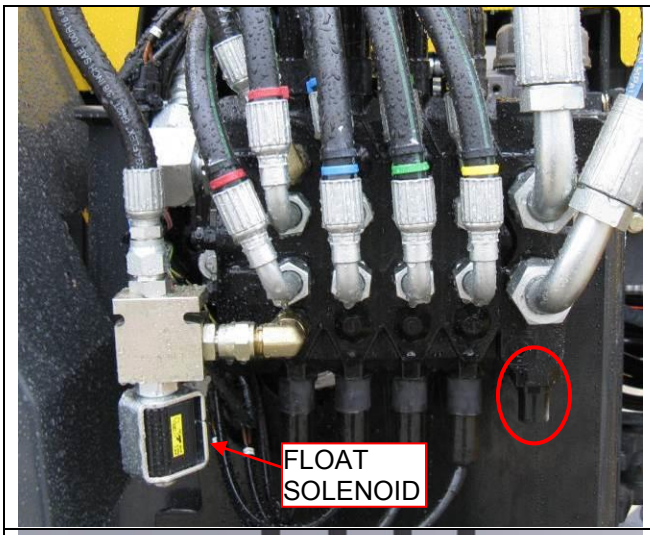
If you have any problems with this call our technical support team at 1-800-565-5007



Valve Wiring Harness

1. This connector is for the float circuit and is connected to the float solenoid on the CRAIG valve
2. These ends with connectors are labeled as to which function they control and are connected to the corresponding function on the CRAIG valve
3. All loose wires on this end go inside control box.

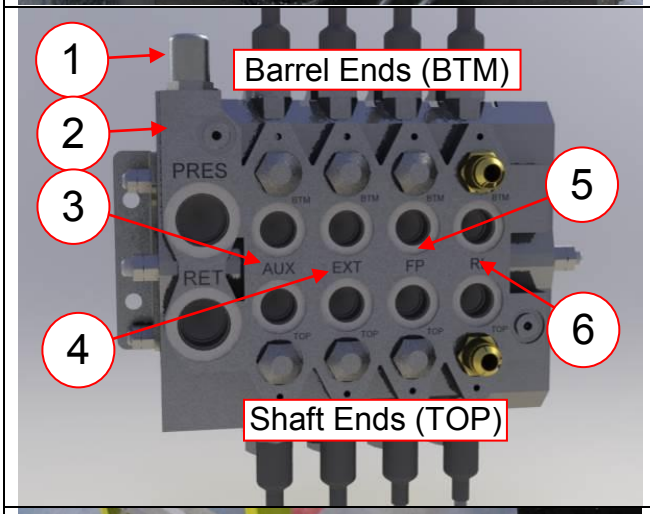
	4. Solenoid Valve Block – Connects to the "REAR LIFT" section of the CRAIG valve 5. Solenoid switch cartridge – controls the oil flow for the float circuit 6. Electro Magnet – controlled by the "FLOAT" button on the CRAIG joystick.
	Assemble the float solenoid assembly as shown in photo **Note**: • The orientation of the block is critical for proper orientation • The torque specifications for the nut are written on The electro magnet (**Do Not Over Tighten**)
	Designated connector on valve harness connects to the float solenoid as shown in photo following installation on CRAIG valve



IMPORTANT

- Regardless of the orientation of the CRAIG valve, the float solenoid **MUST** be installed in the proper orientation.
- The valve shown here is oriented upside down due to the path chosen for routing the hoses.
- Circled in the photo is an aluminum cap (pilot control cartridge, see #1 below).

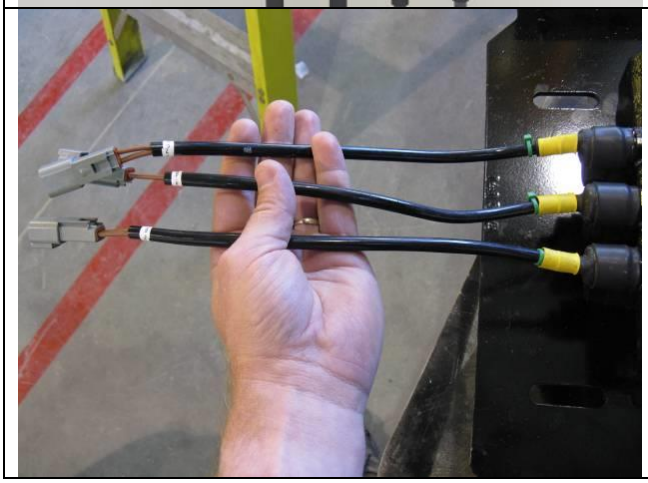
THE FLOAT SOLENOID MUST BE INSTALLED ON THE SAME SIDE AS THIS CAP IN ORDER FOR CONTROLS TO OPERATE PROPERLY.



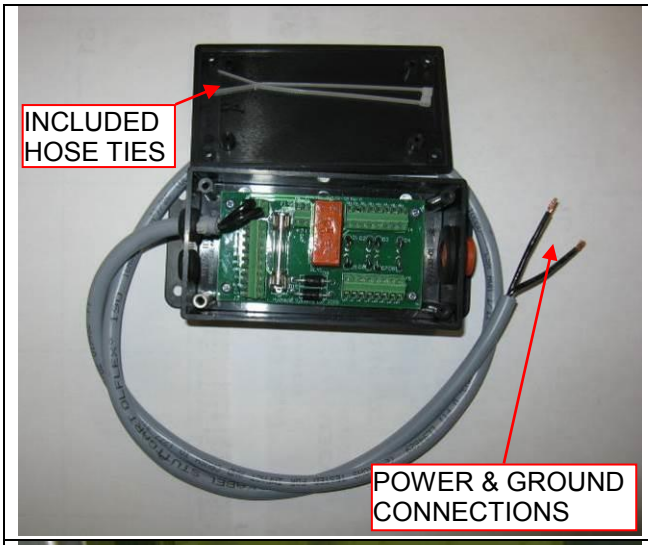
CRAIG Valve

1. Pilot control cartridge (Aluminum Cap)
2. Inlet valve section
3. Aux valve section (HTS, Reversible Plow, Snow Gate, etc…)
4. Push pole extension section
5. Front post section
6. Push pole rear lift section

Note: Item #1 will always locate the ports that are to be connected to the BTM (barrel end) of the cylinder.



"DEUTSCH" Female Valve Connector Will Come Pre-Assembled With The Valve



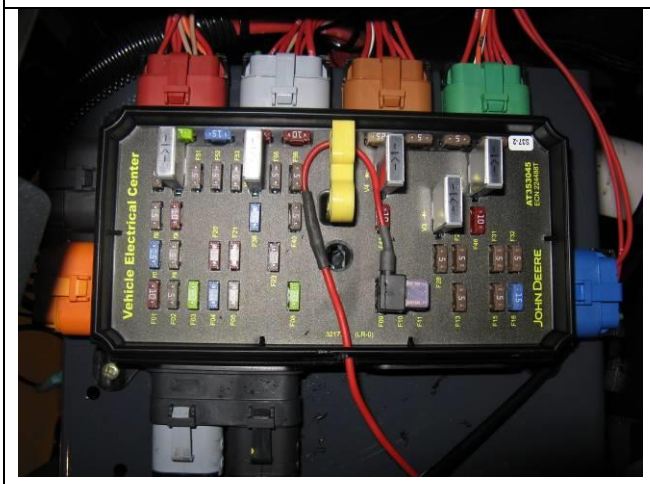
Joystick Control Box

- Prior to beginning connections in the control box, find a location inside the cab (usually in the fuse box area) where the box will be protected from the weather.
- All loose wires are to be connected inside of this box. They are either numbered or color coded for ease of locating on the wiring schematic supplied at the rear of this manual.
- The fuse located inside the control box is intended to protect the float solenoid circuit only.

Power Connection

The power connection must be connected to fused 24V keyed power. This fused connection will protect the joystick control box from any electrical surges.

1. The easiest location to get keyed 24V power to the control box is in the machines fuse panel. There will be an "Add a circuit" included in the HYDK supplied, this will take one (1) existing fuse and convert it to two (2) fuses each on its own circuit. So if one blows (if installed correctly) the other still has power.



2. Locate an existing fuse (keyed power) less than 10A. Install the "Add a Circuit" according to the instructions printed on the package and both the existing and the new fuse will work independently.

Note:

- Slight modifications to the fuse panel cover (if equipped) may be required in some cases to allow the cover to close tightly.

3. Locate a suitable ground connection to ground the control box.

Generally there will be a suitable ground post in the same location as the fuse box of the machine.

Finish Installation

- After all connections have been made and are secure inside the control box, use the included hose ties and clamp ends of cables inside the box tightly. This will help to keep the wires securely in the box and prevent them from accidentally being pulled out.

Note:
Do not complete these final steps until the entire installation is complete (including the hydraulics) and tested to ensure proper operation.

Replace the cover on the control box and install the supplied decal on top of the box. The joystick installation is complete. If you encounter any problems or have a suggestion about something that may not have been clear in this manual please feel free to call us toll free at 1-800-565-5007, or send us an e-mail at techsupport@craigattachments.com

The final test procedure involves:

- Stroking all functions of the wing assembly to ensure all cylinders are full of oil, and are operating to the full range of motion. **Note:** All strokes of the cylinders are stamped on the barrel of the cylinder.

Set-Up and Operating Instructions

Before sending your newly installed snow gear out into the streets, be sure to top up the machine hydraulic tank with an OEM approved oil. It usually takes about one (1) 20L pail to fill all new cylinders and hoses.

The following pages and illustrations are printed to help you gain the knowledge to better operate and service your new CRAIG equipment. We are proud to have you as a customer and feel you will be proud to be a CRAIG equipment owner. Any piece of equipment requires a certain amount of service and maintenance to keep it in top condition. We have attempted to cover all the different areas of operation and maintenance; however, there may be times when special care must be taken to fit a unique situation.

Study this manual carefully and become acquainted with all adjustments and procedures before attempting to operate your new equipment. Remember, it is a machine and it has been designed and tested to do an efficient job in most operating conditions. However, it will only perform as well as the services it receives. If you come across something that is not covered in this manual, feel free to make a suggestion to our technical support staff at 1-800-565-5007 or e-mail at sales@craigattachments.com. If you experience difficulties during your installation, ask your CRAIG dealer or call for CRAIG Technical support at 1-800-565-5007. Our experienced staff can help you with any questions you may have on the installation, operation and service of your new CRAIG snow gear.

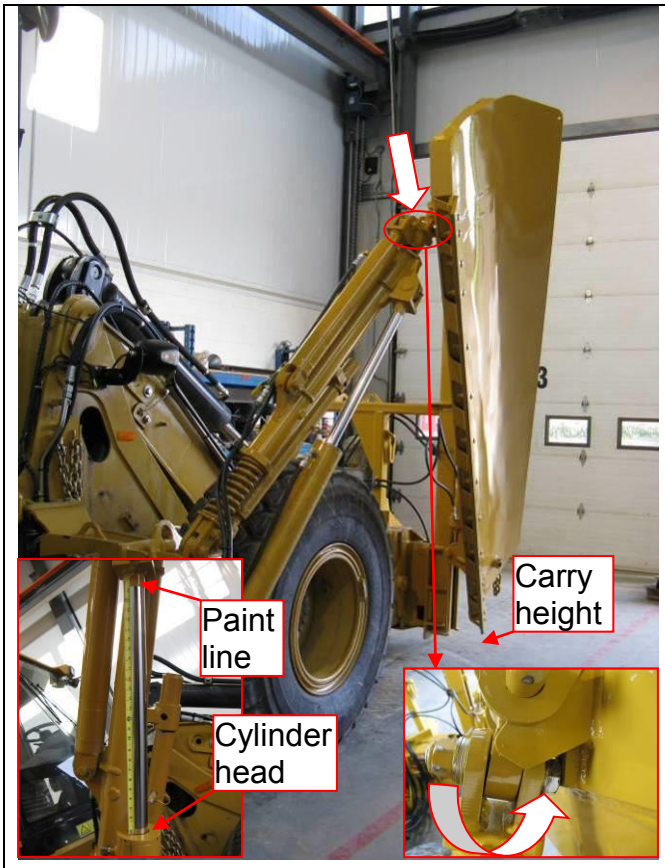
Before You Start

It is the responsibility of the installer of the attachment to read and complete the following instructions. Following these instructions will ensure that your CRAIG attachment continues to work as it was designed to for a long time. Failure to complete these instructions may cause severe damage to the machine, the attachment and possibly void the warranty.

If you encounter any problems and are unsure on how to continue, do not hesitate to contact our technical support staff at 1-800-565-5007. We will be happy to guide you through any question that you may have in regards to your newly purchased CRAIG attachment.

Setting Wing Stop

This procedure should be performed with all snow gear installed on the machine. There is no front plow installed on this machine. This illustration is for demonstration purposes only.



Following this procedure is the responsibility of the installer and will ensure that when the wing is being transported in the carry position there is no excessive "slap" or movement in the wing, which may cause premature damage to the equipment.
This procedure should be repeated periodically or as require.

- **Failure to complete this procedure may result in damage to the snow gear or to the machine, and may void manufacturer's warranty.**

1. Raise front of wing to height off the ground at which you will be carrying your wing in travel.(Approx 10"-12")
2. Completely raise the rear lift group.
3. Measure the full stroke of the lift cylinder from the top of the cylinder head to the paint line on the shaft. As shown in the lower left picture.
4. Have someone lower the lift cylinder so that the measurement is now ½" less than the full stroke, note this measurement.

i.e. If the full stroke measurement is 26" lower to 25½". Use this measurement for the rest of the procedure.

5. The bolt head at the end of the lift group (indicated by the block arrow) should contact the back of the wing at this point.
6. Visually measure distance between the bolt and the back of the wing.
7. Lower wing to a height were this bolt is easily accessible.
8. Apply a slight amount of upward pressure on the wing moldboard to support it while the bolt is removed. Making sure the wing **CAN NOT** accidentally fall.
9. Remove washers from the locknut side of the bolt and add them to the bolt head side until the head of the bolt contacts the back of the wing.
10. Raise wing fully to ensure all moving parts tighten up and there is no excessive movement in this position.

Set-Up

NOTE: The following instructions assume the use of a CRAIG QKM style coupler. If your machine is equipped with a different coupler or uses pin-on attachments see your OEM owner's manual for safe installation of attachments. Make sure that the plow, plow harness and wing moldboard are assembled as shown in Figure 1.1 before proceeding.


Figure 1.1 – The assembled plow, lift group & wing
Figure 1.1 – Assembled Plow Group & Wing


Figure 1.2 – Engaging The Coupler
Figure 1.1 – Assembled Plow Group & Wing

Connecting To The Plow and Wing Assembly

Engage the loader into the plow quick coupler, roll the coupler back until it is seated, and actuate the coupler pins. Visually check the pins to ensure the plow harness is fastened securely (see Figure 1.2). Attach the hydraulic line to the plow harness front post and any lines required for hydraulic adjustable or hydraulic reversible plows.

Figure 1.4 – Moving Brace Kit Pin from A to B
Figure 1.1 – Assembled Plow Group & Wing

At the lift group bracket unhook the safety chain, and lower the hydraulic lift group as shown in figure 1.3. When the hydraulic lift group is completely lowered remove the lock pin from Position A on the brace kit and place in Position B as shown in figure 1.5.

Note: The lift group will have a tendency to swing around ...brace yourself


Figure 1.5 – Wing Bracket
Figure 1.1 – Assembled Plow Group & W

Hook the hydraulic lift wing and install the group pin into the wing bracket on the back of the safety pin and lugs as seen in Figure 1.5.

PLACE THE LOCK PIN IN POSITION "A" ONLY WHEN THE HYDRAULIC LIFT GROUP IS IN THE CARRY POSITION AND WITH THE WING UNATTACHED, IF THE WING IS OPERATED WITH THE LOCK PIN IN POSITION "A", SEVERE DAMAGE WILL OCCUR TO THE HYDRAULIC LIFT GROUP AND BRACE KIT,

Pre-Use Procedures and Inspection

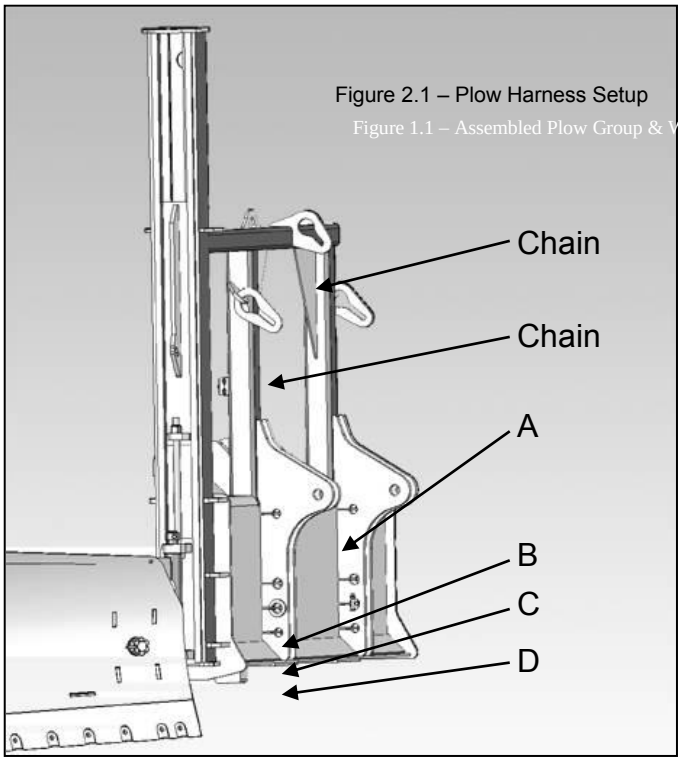


Figure 2.1 – Plow Harness Setup

Figure 1.1 – Assembled Plow Group & V

Extend all hydraulic components through their full range to purge air from the system.
Check to ensure the plow is pinned to the plow harness in the correct hole (see figure 2.1). Holes A and D are to be used for plows equipped with down pressure only. Hole B is for reversible plows and Hole C is designed for one way plows. If the plow is not set in the proper holes as described and shown, change to the correct hole.

Lower the plow to the proper plowing position as shown in figures 2.2, 2.3 and 2.4. The front post should be in a vertical position and approximately 10" - 12" from the ground. The bottom of the push frame should be parallel to the ground. When in this position plows equipped with lift chains should have a slight amount of slack in the chains allowing the plow enough travel to dip into the contours of the road. Plows equipped with down pressure arms should have the front pin centered in the float slots (See figure 2.5). If adjustment is necessary tilt the plow harness forward or back until the desired position is reached.

WITH THE FLOATING TYPE CHAIN LIFT PLOWS **DO NOT** OPERATE THE LOADER BOOM ARMS IN THE "FLOAT" POSITION, AS THE PLOW AND PLOW HARNESS WILL DRAG ON THE GROUND AND CAUSE SEVERE DAMAGE TO THE PLOW HARNESS AND UNDERSIDE OF THE PLOW PUSH FRAME.

Coupler

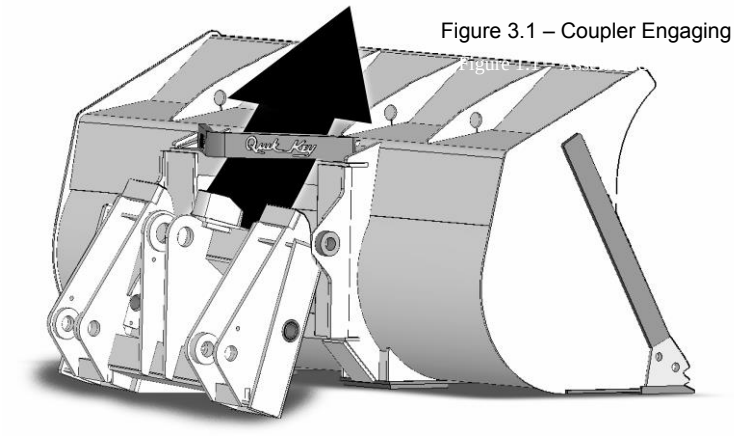


Figure 3.1 – Coupler Engaging

Retract the coupler lock pins by pressing the momentary control button in the cab. Tip the male master forward while driving up to the attachment. Engage the male master into the female blank on your attachment by rolling back the male as shown in figures 3.1. Release the cylinder lock pins by taking pressure off the momentary control button. Visually check to ensure the coupler pins are fully extended.

LEAVE THE COUPLER LOCK PINS IN THE EXTENDED POSITION AT ALL TIMES WHILE OPERATING LOADER WITH THE ATTACHMENT ON.

Plow

Figure 4.1 – Lift Chains

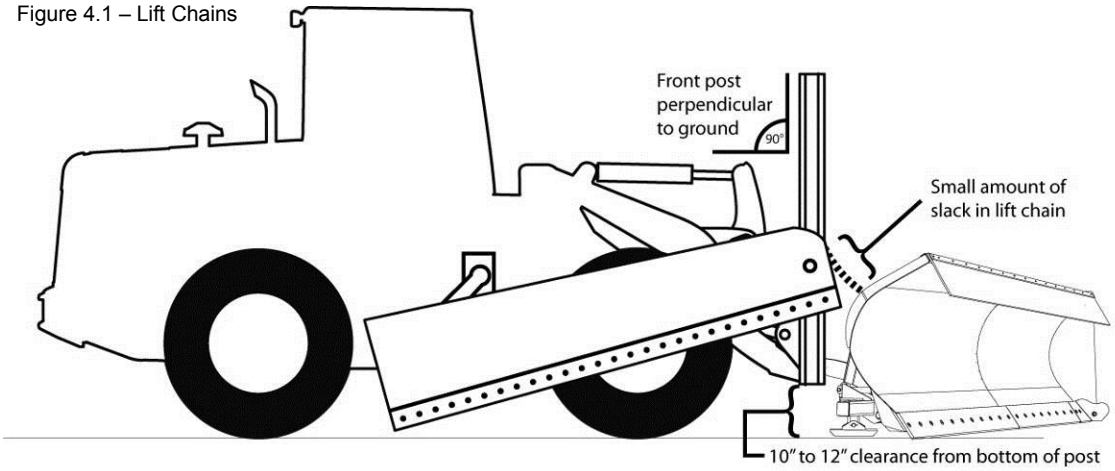
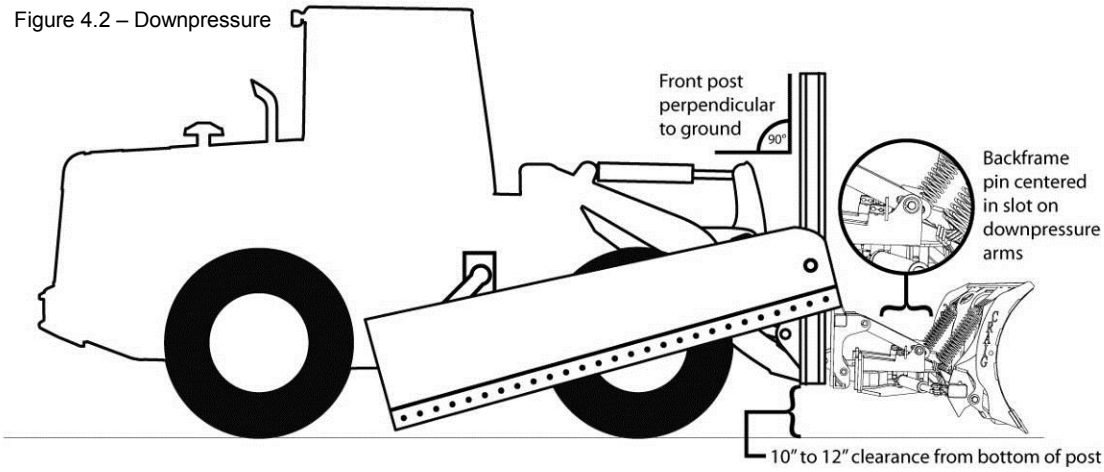


Figure 4.2 – Downpressure



Carry the loader plow harness and plow so the front slide post is in a vertical position and the bottom of the front post is approximately 10" - 12" above the ground surface (see figures 4.1 and 4.2). After the plow harness and snow plow have been setup in the proper plowing position, use the loader boom lift handle or the loader tilt handle (not both) to raise and lower the plow. Use the lift chains or downpressure arms as a guide to lower the plow to the proper plowing position. Once the lift chains become slightly slack or the downpressure arms center the back frame pin you know the plow, plow harness, and front post are in the correct plowing position.

WITH THE FLOATING TYPE CHAIN LIFT PLOWS, DO NOT OPERATE THE LOADER BOOM IN THE FLOAT POSITION. THE PLOW AND PLOW HARNESS WILL DRAG ON THE GROUND CAUSING SEVERE DAMAGE TO THE PLOW HARNESS AND UNDERSIDE OF THE PLOW PUSH FRAME.

Wing and Hydraulic Lift Group

When flat winging on the road surface, operate the rear hydraulic lift cylinder in the FLOAT position. This will allow the wing to follow the contours of the road surface.

When operating the wing hanging out over a ditch, or "shelving", leave the rear lift cylinder control handle in the hold or neutral. This will hold the wing in a fixed position. When the wing is being operated in this position, the hydraulic lift group has been designed to allow the wing to rise up over an obstruction (maximum 18" high obstruction) and return to the set position.

As an additional safety feature the hydraulic valve that controls the slide cylinder (extension cylinder) of the hydraulic lift group is equipped with a "work port relief' valve. This will allow the slide cylinder (when extended) to collapse if an obstruction is encountered. Since the relief valve relies on the extension cylinder collapsing it is recommended that the extension cylinder always remain extended a few inches when in operation. This gives room for the cylinder to collapse if an obstruction is encountered.

This slide cylinder is handy in tight areas where there are narrow roads and on bridges. In addition the slide cylinder is used when "shelving" or "benching" to push the snow out as far as possible without having to run your machine too close to the ditch of the road.

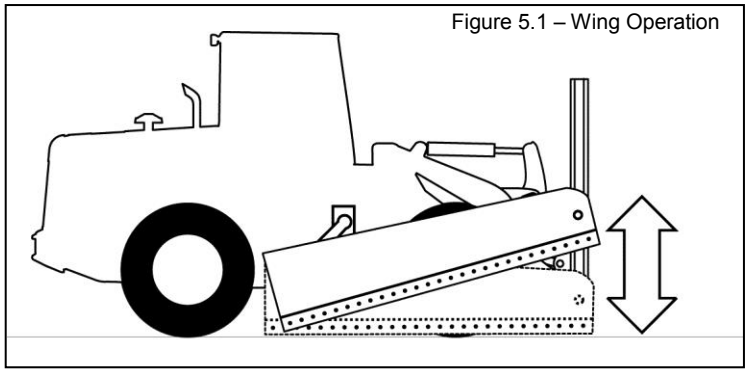


Figure 5.1 – Wing Operation

When raising the wing from the ground surface, raise the front of the wing first and then lift the heel of the wing as shown in figure 5.1. This prevents the front of the wing from gouging into the road. To lower the wing, lower the heel of the wing first and then lower the front.

Maintenance and Adjustments

The following section deals with maintaining, adjusting and storing your CRAIG equipment. Remember, the time and money you use to maintain your equipment is minimal compared to the time and money spent when you are down.

Daily Maintenance 301 Wing Assembly

Grease Points – Craig Front Post

This process should be done periodically, check all equipment for grease and excessive wear each day of use to ensure proper lubrication is maintained.

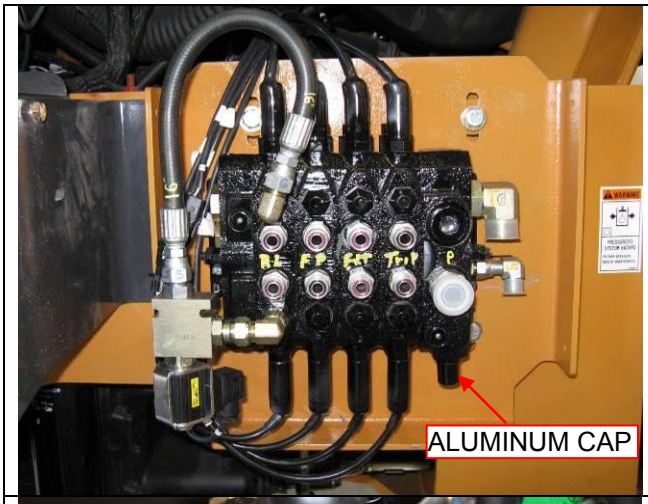
1. Apply ample amounts of grease to indicated areas.
2. Smear grease, with an old paint brush, to completely cover all surfaces that come in contact with all moving parts in the front post.
3. The back side of the bell swivel or trip swivel (indicated with the green arrow) should be greased thoroughly on mating surfaces.
4. If you have a Craig hydraulic trip swivel grease all fittings thoroughly.

Grease Points – Craig Rear Lift Group

1. Thoroughly grease all fittings on rear lift group once a week… they are not all shown in this photo.
2. Operate wing through its full range of motion to ensure that everything moves freely without binding or sticking.

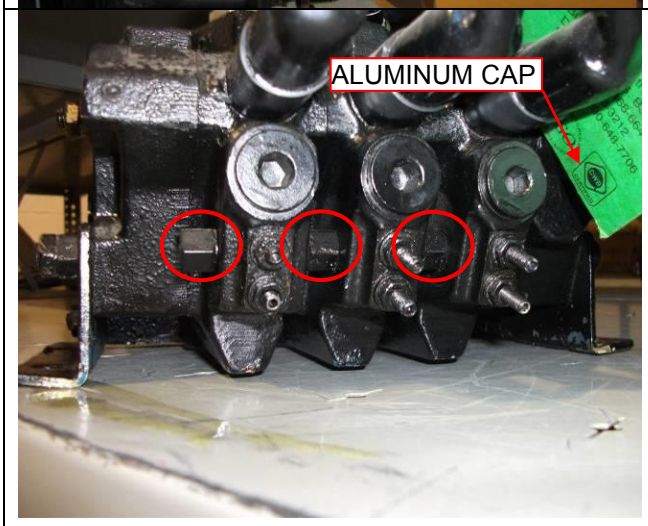
Check all bolts, nuts, etc. for tightness before each day of use.
Properly maintained equipment ensures that it keeps working efficiently for a long time.
Congratulations on the purchase of your new Craig snow gear

Hydraulic Valve Maintenance



Locating Manual Overrides

1. The manual overrides are always on the same side of the valve as the aluminum cap shown in the adjacent photo.
2. In case of a joystick or electrical failure, the implements can be operated using a 1/2” box end wrench.



Operating Manual Overrides

→ Overrides are lubricated from the factory… however they need to be coated with grease OR penetrating fluid on a regular basis to prevent sticking (corrosion) between the valve casting and shaft.

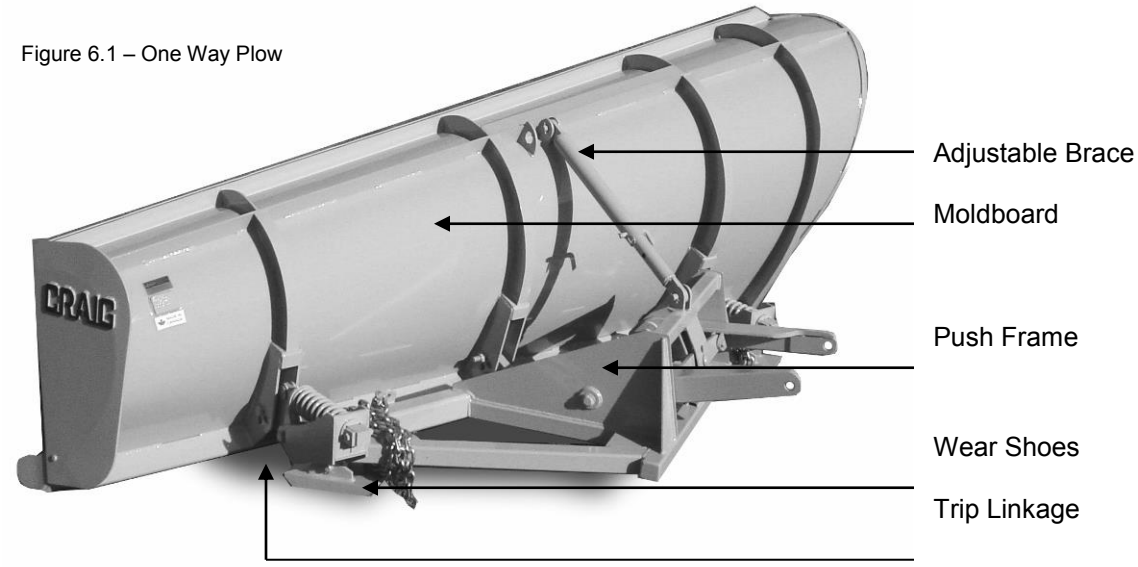
→ Spray fluid and/or pack grease around the hex heads of the overrides (circled in photo)

→ If the spool seems to be sticking or not moving freely use a 1/2” box end wrench to manually shift the spools several times in both directions and pack with grease again. (Recommend that loader be turned off during this procedure).

Attachments, Optional Equipment

One way Plows

Figure 6.1 – One Way Plow



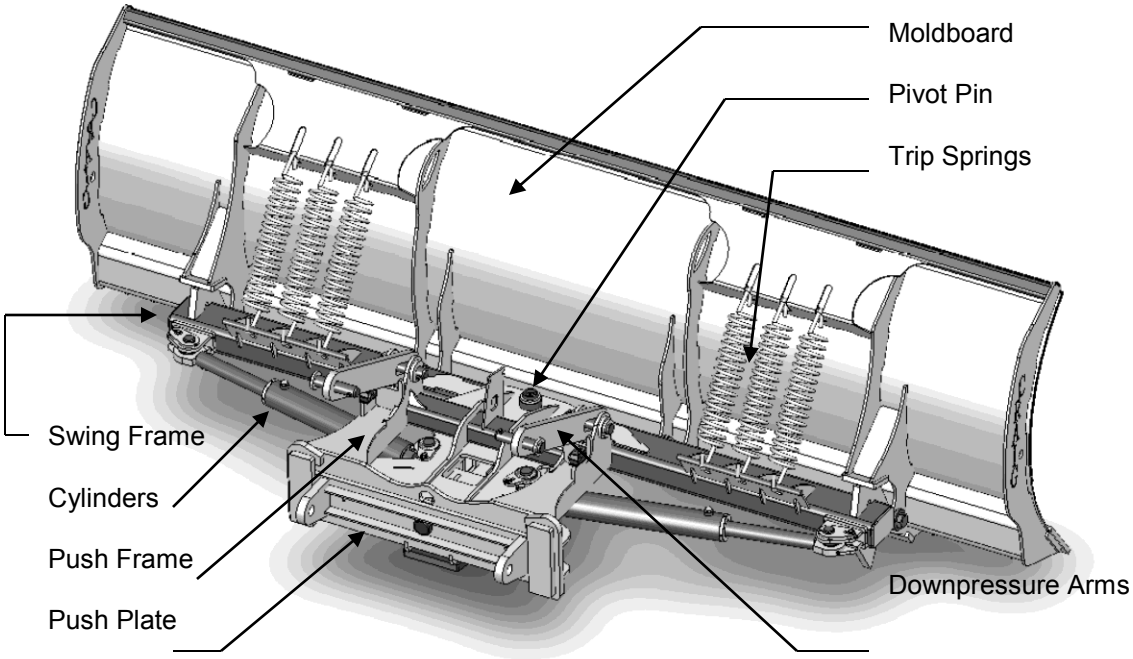
Shown in figure 6.1 is a typical one way plow (push pole type).

Daily Checks:

- Check all bolts and nuts. Tighten any loose bolts or replace if they are worn or missing. When replacing worn or missing bolts, do not replace with bolts that are smaller or of a different grade.
- Check the cutting edge for wear. When replacing the cutting edges, the bolts, nuts and lock washers should be replaced with new ones.
- Check trip spring and linkage to ensure that all bolts are tight and that they are not worn or missing. Adjust the spring if it is loose by screwing the locknuts back tight against the spring. This complete assembly should be greased daily, especially the shaft that is inside the spring. Replace the spring if it is broken or if it cannot be tightened anymore by the locknuts.
    - To replace the spring:
        - Screw the locknuts back towards the trip link and remove the pin.
        - Remove the collar at the other end of the shaft
        - Slide the new spring over the shaft and replace the pin and collar.
        - Tighten the locknuts back against the spring
- Check the adjustable brace and pin for wear or bend. Replace as necessary.
- Adjust the moldboard angle as desired. It is possible to set the moldboard at 53°, 59°, or 65°. For light snow conditions, CRAIG recommends the full open position of 53°. Close the moldboard face as heavier snow conditions require.

DO NOT WELD TRIP LINKAGE SOLID OR INHIBIT THE MOVEMENT OF THE TRIP LINKAGE. DO NOT REMOVE THE SHOES. SEVERE DAMAGE MAY OCCUR.

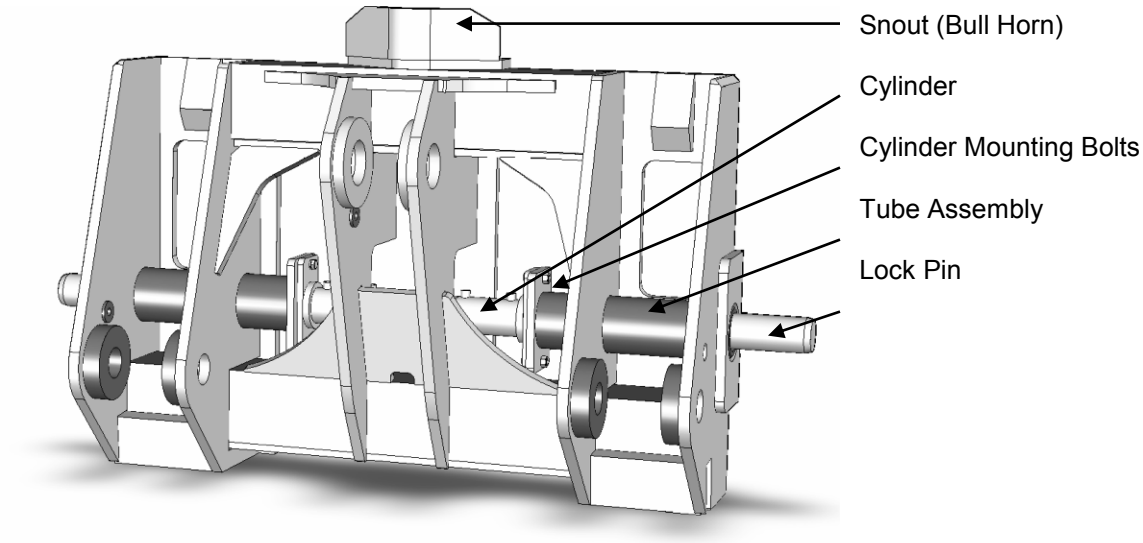
Reversible Plow



Daily Checks:

- Check all bolts and nuts. Tighten any loose bolts or replace if they are worn or missing. When replacing worn or missing bolts, do not replace with bolts that are smaller or of a different grade.
- Check the cutting edge for wear. When replacing the cutting edges, the bolts, nuts and lock washers should be replaced with new ones.
- Check Pivot Pin for loose tolerances. Replace pin if excessive slop is detected.
- Check for broken or fatigued trip springs. Replace as necessary
- Check Push Plate Pin for loose tolerances. Replace pin if excessive slop is detected.
- Apply grease to all fittings (Located on both ends of the cylinders and on the pivot pin).

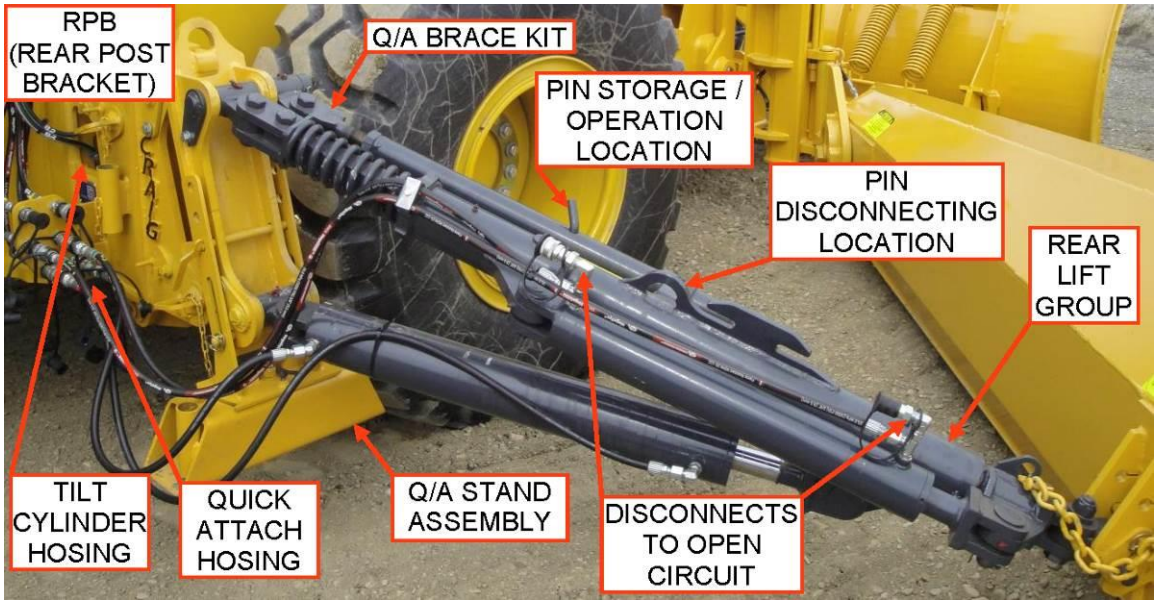
Coupler



Daily Checks:

- Coat the coupler pins and pin bosses with oil to prevent corrosion and to ensure ease of operation.
- Check OEM pins and locks per Wheel Loader owner's manual OEM specifications.
- Check the lock pins to be sure that there is no excessive slop and they continue to properly secure the attachment to the loader. Replace when necessary
    - To replace the lock pin:
        - remove the hydraulic hoses from the cylinder
        - remove the mounting bolts holding the cylinder in place
        - slide the cylinder towards the centre of the coupler
        - you will see the cylinder shaft and a wrist pin connecting the shaft to the lock pin once you pull the cylinder back.
        - Hammer out the wrist pin and slide the lock pin from the tube assembly. This wrist pin cannot be reused.
        - Reverse the steps above to install your new lock and wrist pins.

Quik-Pik Pushpole Operation



Familiarize yourself with the locations and terms in the photo above. You will see these terms throughout this section. The following pages will outline the proper operating procedure for setting up, disconnecting and reconnecting your Craig wing assembly equipped with the new “Quik-Pik” Pushpole. This procedure should be completed several times in a controlled environment to ensure that the operator becomes familiar with how your “Quick Pik” bracket will operate in different situations.

Thanks for making Craig Manufacturing Ltd your choice, and we are proud to have you as our customer. If there are any questions or comments please contact us at 1-800-565-5007.

Setting up Wing for Operation

There are a couple of small things that will need to completed for the Craig "Quick-Pik" to operate as intended. In order to complete these instructions, the wing assembly will need to be fully operational. Follow the procedure below:

1. Park the machine in the location where you will be disconnecting the wing the majority of the time.

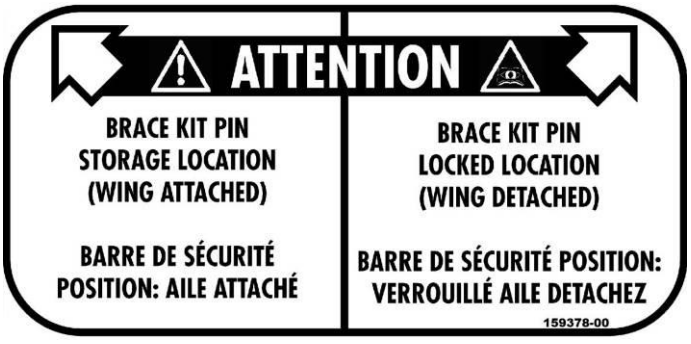
Hint: The ground does not have to be perfect but the more level this location is, the easier it will be to operate.

2. With the front plow harness as close to vertical as possible, lower all snow gear to the ground position.

3. Loosen jam nut on brace kit to allow the threaded tube to be adjusted.

4. Adjust the brace out until the hole in the tube lines up with the hole in the guide and the pin can be put in.
5. Retighten the jam nut to ensure that the brace will not move unexpectedly.

NOTE:
DO NOT OPERATE THE WING ASSEMBLY UNLESS THE PIN IS IN THE STORAGE LOCATION. SEE DECAL FOR PROPER PIN LOCATIONS.



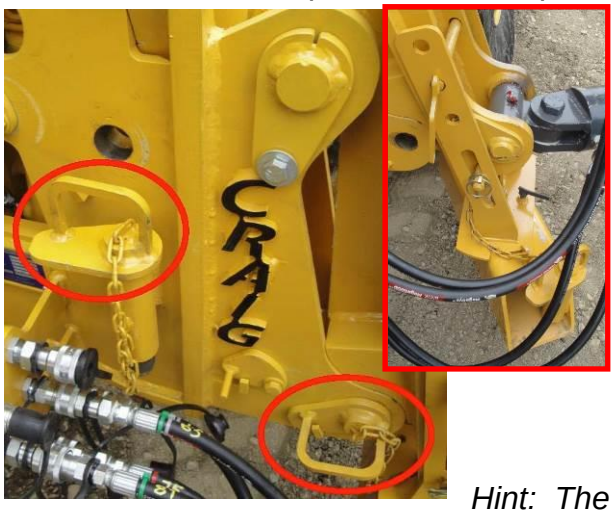
THIS SAME DECAL IS ON THE PUSHPOLE

Disconnecting Wing

1. Drive machine to the location where the wing will be dropped.
2. Articulate the loader between 10° and 20° to the left as shown. This will ensure enough room to back out of the wing assembly when completely detached.
3. Lower wing and the front plow to about 4" off the ground and put the rear lift in float and allow the wing to settle on the ground.

Hint: With the wing still in float, push the rear lift group down <u>slightly</u> and let off the button. Watch for the lift group to raise back up, this will make it easier to remove the hose disconnects.

4. Lower the front post completely. (Bottom the cylinder out). The front post and the disconnect cylinders are operated by the same function, by bottoming this cylinder out, it will pull the disconnect bracket in tight to the machine, making it possible to remove the pins to disconnect from the wing.
5. Do not lower the plow; it should be kept off the ground to avoid digging up the ground while dropping the wing.
6. Turn off the machine and walk around to the rear post bracket.
7. Remove the 2 pins shown and put them in their storage sleeves.



8. Lower the stand to one of the 2 adjustments. *See Hint*
9. Loosen the locking bolt for the swivel bottom.
10. Rotate all of the way around to square the bottom with the pushpole then tighten bolt securely.

Hint: The 2 adjustments are there for a reason. The center hole works well for uneven ground like loose gravel and the top hole for even ground like a cement pad.

11. Remove the lift group hoses. Starting with the rear lift cylinder.
12. Reconnect these hoses to the disconnects on the extend cylinder

The 2 rear cylinders need to be connected barrel to barrel and shaft to shaft (as shown below) in order for the system to perform as intended.

In order to achieve this, at the time of install, all common hoses should be marked by color. Colored hose ties work well to indicate which hose goes where, there is a key below of colors used in this manual. As shown above the rear lift cylinder hoses are marked using gray and red hose ties for the barrel end of the cylinder and simply red for the shaft end of the cylinder. The quick disconnects mounted on the extend cylinder are also marked with the same color to indicate that is where the rear lift hoses are to be connected to disconnect the wing.

WING ASSEMBLY KIT - HOSE TIE COLOR CODE		
FUNCTION	ZIP TIE COLOR	SPECIAL
REAR LIFT	RED	AN ADDITIONAL GREY IS USED ON THE HOSES THAT RUN TO THE BARREL END OF THE CYLINDERS
FRONT POST	BLUE	
REAR EXTEND	GREEN	
PLOW HARNESS	ORANGE	
TRIP SWIVEL	YELLOW	
REAR POST (302)	PURPLE	
REVERSIBLE PLOW	PURPLE	

13. Remove the extend hoses, install the caps on the hose and place them on top of the lift group, as shown.

Note:
If this pin is not in place, when the wing is lowered to the ground the lift group could fall over.

14. Ensure that the holes are lined up in the brace.

15. Remove the pin from the storage location and install it into the disconnect location as shown.

Move on to the front post hoses.

16. Close the ball valves on the front post hoses and disconnect the hoses.

Note:
This will keep the hoses from pressurizing while disconnecting and reconnecting the wing.

17. Disconnect the hoses to the reversible.
18. Put caps on all hoses and pass all hoses <u>through</u> the coupler and rest them on top of the reversible where they cannot be pinched.
19. Start the machine up and feather the tilt cylinder (front post function) in short bursts, when the stand hits the ground, start to articulate away from the wing as you continue to lower the bracket.

Hint: Completely lower the bracket and allow the highlighted surfaces to contact each other on the way down. This will level out the bracket so that it is resting securely on the ground.

20. Finish straightening the loader out and raise the rear bracket back into place.
21. Roll out of the plow harness and drive away. Be sure that there is enough room to back out without contacting the rear lift group.

Re-Connecting to Wing

1. Line up with the plow harness, leaving enough room to drive in past the rear lift group without hitting it.
2. Couple into the front harness and raise the plow about 4” off the ground to avoid digging up the ground while connecting to the rest of the wing.

The coupler should be fully engaged and the plow about 4” off the ground, in order to maneuver to the connection of the rear of the wing.

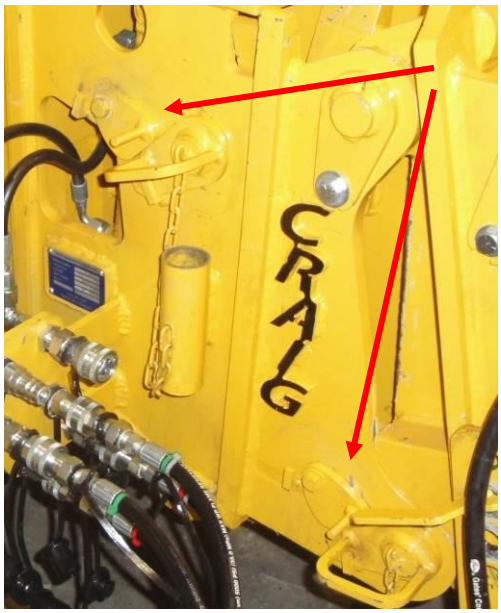
3. Lower the bracket and position loader so the top pin of the disconnect bracket is situated directly under the hook on the lift group.
4. Ease the bracket up into place.

Note:
If the bracket gets misaligned enough that it will not find its way into place, drive the machine forward or back slightly will help get it squared up (it will have to be quite drastic in order not to fall into place).

5. If the bracket is fully raised into place and there is a gap at the bottom of the bracket, like the one shown here. Articulate the machine to push on the wing assembly, it does not need much.
6. Once you see steel hit steel, shut down the machine and reinsert the pins before doing anything else.
7. Once the pins are in, reconnect your hoses in the reverse order of connection.

8. Ensure the Brace Kit Pin is in the storage position. *Not doing this can cause damage to the Pushpole assembly*.

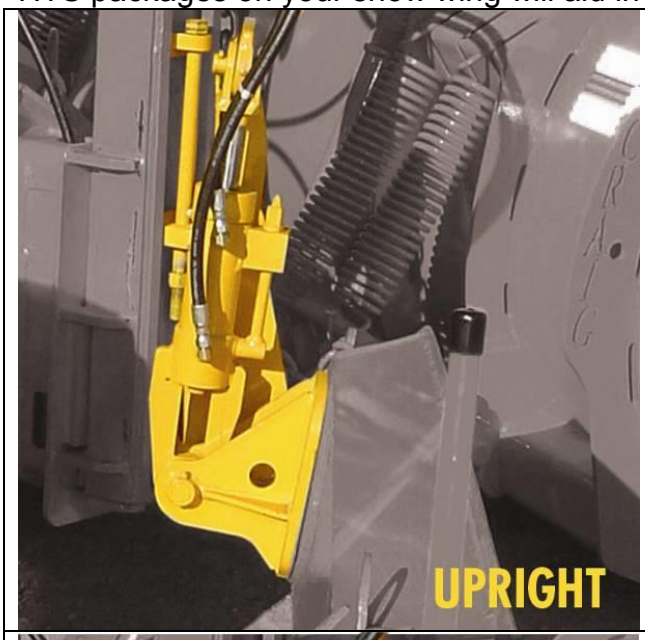
9. Ensure the pin locks are in place to keep the pins from backing out.



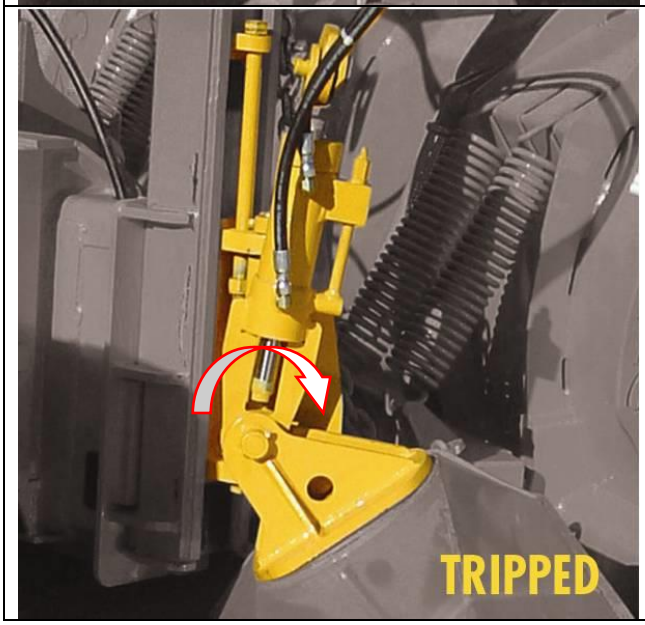
Hydraulic Trip Swivel (HTS-200) Operation

The Craig hydraulic trip swivel is an add-on option that can be purchased at the time of the initial order or as a separate item through our parts department at 1-800-565-5007. If ordering as a separate item, please have the serial number of your existing snow wing ready when you call.

When plowing snow it is difficult to see what lies beneath that fresh blanket of snow. The Craig HTS is designed work with virtually any Craig wing package. Having a Craig HTS packages on your snow wing will aid in the protection of your machine and snow gear.



- The hydraulic trip swivel (shown in yellow) is shown here in the full upright position. This is the position that the wing should be in for everyday plowing.
- The trip swivel can also be used to adjust the angle at which the cutting edge hits the ground. This can be useful in different types of snow conditions.
- Be careful not to raise the wing in the tripped position, it could contact the front post and cause damage to either the post or the wing.
- The joints on your trip swivel should be greased as specified in the maintenance section of this manual.
-



- When a solid object is struck while plowing the wing will “trip” over to help protect your machine and the snow gear.
- When the HTS trips it can be stood up from the inside the cab. There is a decal located inside of the cab that shows how to operate the controls of your wing.
- To reset the trip swivel hold the trigger down and press the lower right rocker switch on the joystick as shown in the photo.

When ordering parts for your Craig Trip Swivel, use only genuine Craig parts. Contact our parts department at 1-800-565-5007.

Wing Assembly and Hydraulics

Hydraulic Adjustments

The following adjustments can be made to the CRAIG hydraulic system. Before making any adjustment on the system, be sure the system is operating correctly and all linkages are free and lubricated. Once the system is adjusted properly it should need no further adjustment.

Do not make any adjustments to your loader hydraulic system until you have referred to the loader operator's manual.

Valve handles with Cable hookup

To adjust the cables that control the valve, loosen the Allen screws that hold the ring on to the valve spool. With the ring loose, turn the sleeve. As you turn the sleeve you will notice the valve handle moving. Adjust the sleeve until the lever is in the proper centered position. Ensure that the lever has a full range of motion in both directions and can fully open and close the valve. Finish by tightening the Allen screws so the ring is tight against the valve spool.

Relief Valve Setting

Main Relief Valve Setting
The system consists of a plow valve which is powered by one of the existing pumps (30 GPM or less) on the loader. The pressure port of the pump is connected directly to the CRAIG plow valve, then the pressurized oil is powered back into the loader system where it was originally connected. The main relief valve setting of the CRAIG plow valve should be set at a minimum of 150 PSI above the main relief setting of the loader hydraulic setting. (See owner's manual)

Work Port Relief Valve Setting
The Work port relief settings on the slide or extension cylinder are factory set at 900 PSI. It is not recommended to increase this setting to any more than 1100 PSI maximum, then only if the slide (extension) cylinder is collapsing excessively.

Summer Storage

When storing your equipment for the summer, all the parts should be washed down thoroughly. After washing the equipment, it should be either painted or sprayed with rust inhibitor. All the cylinders should be retracted, or covered, so that there is as little chrome shaft exposed to the environment as possible. All hose ends and ports should be capped to prevent any dirt from contaminating the system. Finally, set the equipment up on blocks, clear of the ground.

EQUIPMENT WARRANTY POLICY (Revised: Oct. 28th, 2014)

OUR COMMITMENT TO YOU

Craig Manufacturing Ltd. ("CRAIG") warrants, for a period of (12) months starting from the attachment in-service date, to the original purchaser of a product manufactured by CRAIG that the product is free from defects in design, material and workmanship. If the in-service date cannot be proven to the satisfaction of CRAIG, the original invoice date will be considered the in-service date. In no event will the in-service date be later than (12) months after the original invoice date.

If a failure occurs during the warranty period CRAIG will make every effort to get you working again, and your claim resolved, within the shortest possible time.

WHAT TO DO IF SOMETHING GOES WRONG

If you find yourself with a CRAIG product that's causing you a problem that you suspect may be eligible for warranty you should:

- Call CRAIG Tech Support at 1-800-565-5007. Our experienced technicians may very well get you back working again with just a little technical guidance.
- If it looks like the call is going to need to be resolved through the warranty process, the technician will put you through to the Warranty Administrator for further help and guidance on how CRAIG will be working with you through your warranty claim.

NOTE: PLEASE SEEK GUIDANCE AND APPROVAL FROM THE CRAIG WARRANTY ADMINISTRATOR BEFORE ANY REPAIR IS INITIATED. FAILURE TO DO SO CAN VOID YOUR WARRANTY.

WHAT INFORMATION IS NEEDED TO PROCESS A CLAIM?

TAKE PICTURES! As part of our goal of continuous improvement we request that all warranty claims be accompanied by photos of the failure. These are an invaluable tool in our product improvement process. If you've done APPROVED work in your shop or hired an APPROVED sublet service to resolve the failure, make sure to attach all required supporting documentation including: work orders, sublet invoices and any other related documents requested by the Warranty Administrator. "APPROVED" means approved by the CRAIG Warranty Administrator.

Please hold **ALL** defective parts for a period of 90 days after the failure. We may request that these be shipped back to our factory for inspection.*

NOTE: FAILURE TO SUBMIT ALL REQUIRED INFORMATION COULD RESULT IN WARRANTY DELAY OR DENIAL.FAILURE TO COMPLY WITH CRAIG PAYMENT TERMS MAY VOID PRODUCT WARRANTY.

IT'S FIXED! NOW HOW DO I GET COMPENSATED?

PARTS If a failure was caused by a part proven to be defective, it will be repaired, replaced, or at our option, credited back at dealer net value.

REPAIR If a failure has been repaired by an approved CRAIG dealer shop, a credit for the labour will be issued to that dealer. Acceptable repair time and rate will be determined by the CRAIG Warranty Administrator and only the hours deemed acceptable will be credited.

LIMITED Maximum warranty reimbursement allowed will not exceed the dealer net value of the attachment or option(s). Items such as hydraulic hoses and fittings are covered at a fixed rate. Call the CRAIG Warranty Administrator for details.

BE REALISTIC, NOT EVERYTHING IS COVERED

Due to the nature of heavy construction and industrial snow removal, there are certain things that are simply expected to wear. These are powerful machines and inexperienced or careless operation will also cause failures.

WARRANTY CLAIMS WILL NOT BE CONSIDERED FOR

- FAILURES DUE TO NEGLECT OR MISUSE
- ITEMS NOT SUPPLIED BY CRAIG
- TRAVEL, DOWNTIME, LOSS OF PRODUCTIVITY, LOSS OF PROFIT
- ANY ADDITONAL WARRANTY OR BENEFIT OUTSIDE THE CRAIG WARRANTY POLICY
- EXPOSURE TO THE ELEMENTS DUE TO IMPROPER STORAGE
- PAINT OR FINISH
- ALTERED ATTACHMENTS
- PERSONAL INJURY, OR DAMAGE TO MACHINE OR PROPERTY
- WEAR ITEMS AND CONSUMABLES
- SHOP SUPPLIES OR ENVIRONMENTAL CHARGES

- All warranty-related shipping FROM CRAIG will be covered by CRAIG. All warranty related shipping TO CRAIG will be covered by the customer. Unpaid shipping TO CRAIG will result in a deduction to any warranty credit issued in the amount of unpaid shipping fees.

PARTS WARRANTY POLICY (Revised: Oct. 28th, 2014)

OUR COMMITMENT TO YOU

Craig Manufacturing Ltd. ("CRAIG") warrants, for a period of (12) months starting from the part delivery date to the original purchaser, any part purchased from CRAIG is free from defects in design, material, and workmanship. Parts that could reasonably be considered consumable parts are **NOT COVERED** by this warranty.

WHAT TO DO IF SOMETHING GOES WRONG

If you find yourself with a CRAIG part that's causing you a problem that you suspect may be eligible for warranty you should:

- Call CRAIG Tech Support at 1-800-565-5007. Our experienced technicians may very well get you back working again with just a little technical guidance.
- If it looks like the call is going to need to be resolved through the warranty process by sending replacement parts, the Warranty Administrator will get the parts you require on the way.

NOTE: PLEASE SEEK GUIDANCE AND APPROVAL FROM THE CRAIG WARRANTY ADMINISTRATOR BEFORE ANY REPAIR IS INITIATED. FAILURE TO DO SO CAN VOID YOUR WARRANTY.

WHAT INFORMATION IS NEEDED TO PROCESS A CLAIM?

TAKE PICTURES! As part of our goal of continuous improvement we request that all warranty claims be accompanied by photos of the failure. These are an invaluable tool in our product improvement process. If you've done APPROVED work in your shop or hired an APPROVED sublet service to resolve the failure, make sure to attach all required supporting documentation including: work orders, sublet invoices and any other related documents requested by the Warranty Administrator. "APPROVED" means approved by the CRAIG Warranty Administrator.

Please hold **ALL** defective parts for a period of 90 days after the failure. We may request that these be shipped back to our factory for inspection. *

NOTE: FAILURE TO SUBMIT ALL REQUIRED INFORMATION COULD RESULT IN WARRANTY DELAY OR DENIAL.FAILURE TO COMPLY WITH CRAIG PAYMENT TERMS MAY VOID PRODUCT WARRANTY.

IT'S FIXED! NOW HOW DO I GET COMPENSATED?

PARTS If a failure was caused by a part proven to be defective, it will be repaired, replaced, or at our option, credited back at dealer net value. Cost to remove and re-install are not covered under warranty.

LIMITED Maximum warranty reimbursement allowed will not exceed the dealer net value of the defective part. Items such as hydraulic hoses and fittings are covered at a fixed rate. Call the CRAIG Warranty Administrator for details.

BE REALISTIC, NOT EVERYTHING IS COVERED

Due to the nature of heavy construction and industrial snow removal, there are certain things that are simply expected to wear. These are powerful machines and inexperienced or careless operation will also cause failures.

WARRANTY CLAIMS WILL NOT BE CONSIDERED FOR

- FAILURES DUE TO NEGLECT OR MISUSE
- ITEMS NOT SUPPLIED BY CRAIG
- TRAVEL, DOWNTIME, LOSS OF PRODUCTIVITY, LOSS OF PROFIT
- ANY ADDITONAL WARRANTY OR BENEFIT OUTSIDE THE CRAIG WARRANTY POLICY
- EXPOSURE TO THE ELEMENTS DUE TO IMPROPER STORAGE
- PAINT OR FINISH
- ALTERED ATTACHMENTS
- PERSONAL INJURY, OR DAMAGE TO MACHINE OR PROPERTY
- WEAR ITEMS AND CONSUMABLES
- SHOP SUPPLIES OR ENVIRONMENTAL CHARGES

- All warranty-related shipping FROM CRAIG will be covered by CRAIG. All warranty related shipping TO CRAIG will be covered by the customer. Unpaid shipping TO CRAIG will result in a deduction to any warranty credit issued in the amount of unpaid shipping fees.

SERVICE WARRANTY POLICY (Revised: Oct. 28th, 2014)

OUR COMMITMENT TO YOU

Craig Manufacturing Ltd. ("CRAIG") warrants, to the original purchaser that all services provided to the original purchaser by CRAIG will be free from defects in design, material, and workmanship from the service delivery date until the expiry of the applicable period below:

- Rebuilds, Bore Build Up/Align Bore, Custom Fabrications – Six (6) Months Warranty
- Welding Services – Thirty (30) Days Warranty

WHAT TO DO IF SOMETHING GOES WRONG

If you find yourself with a CRAIG service job that's causing you a problem that you suspect may be eligible for warranty you should:

- Call CRAIG Tech Support at 1-800-565-5007. Our experienced technicians may very well get you back working again with just a little technical guidance.
- If it looks like the call is going to need to be resolved through the warranty process, the Warranty Administrator will facilitate the process of having CRAIG authorized personnel attend to the problem.

NOTE: PLEASE SEEK GUIDANCE AND APPROVAL FROM THE CRAIG WARRANTY ADMINISTRATOR BEFORE ANY REPAIR IS INITIATED. FAILURE TO DO SO CAN VOID YOUR WARRANTY.

WHAT INFORMATION IS NEEDED TO PROCESS A CLAIM?

TAKE PICTURES! As part of our goal of continuous improvement we request that all warranty claims be accompanied by photos of the failure. These are an invaluable tool in our product improvement process. If you've done APPROVED work in your shop or hired an APPROVED sublet service to resolve the failure, make sure to attach all required supporting documentation including: work orders, sublet invoices and any other related documents requested by the Warranty Administrator. "APPROVED" means approved by the CRAIG Warranty Administrator.

Please hold **ALL** defective parts for a period of 90 days after the failure. We may request that these be shipped back to our factory for inspection.*

NOTE: FAILURE TO SUBMIT ALL REQUIRED INFORMATION COULD RESULT IN WARRANTY DELAY OR DENIAL.FAILURE TO COMPLY WITH CRAIG PAYMENT TERMS MAY VOID PRODUCT WARRANTY.

IT'S FIXED! NOW HOW DO I GET COMPENSATED?

PARTS If a failure was caused by a part proven to be defective, it will be repaired, replaced, or at our option, credited back at dealer net value.

REPAIR If a failure has been repaired by an approved CRAIG dealer shop, a credit for the labour will be issued to that dealer. Acceptable repair time and rate will be determined by the CRAIG Warranty Administrator and only the hours deemed acceptable will be credited.

LIMITED Maximum warranty reimbursement allowed will not exceed the dealer net value of **APPROVED** service work performed. Items such as hydraulic hoses and fittings are covered at a fixed rate. Call the CRAIG Warranty Administrator for details.

BE REALISTIC, NOT EVERYTHING IS COVERED

Due to the nature of heavy construction and industrial snow removal, there are certain things that are simply expected to wear. These are powerful machines and inexperienced or careless operation will also cause failures.

WARRANTY CLAIMS WILL NOT BE CONSIDERED FOR

- FAILURES DUE TO NEGLECT OR MISUSE
- ITEMS NOT SUPPLIED BY CRAIG
- TRAVEL, DOWNTIME, LOSS OF PRODUCTIVITY, LOSS OF PROFIT
- ANY ADDITONAL WARRANTY OR BENEFIT OUTSIDE THE CRAIG WARRANTY POLICY
- EXPOSURE TO THE ELEMENTS DUE TO IMPROPER STORAGE
- PAINT OR FINISH
- ALTERED ATTACHMENTS
- PERSONAL INJURY, OR DAMAGE TO MACHINE OR PROPERTY
- WEAR ITEMS AND CONSUMABLES
- SHOP SUPPLIES OR ENVIRONMENTAL CHARGES