



INTERSTATER

Assembly Instruction

Manual

Published 07-05

Part No. 02982245

McCORMICK CX75 - CX85 - CX95 -CX105 (Cab - 2 & 4 WD)



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
210-379-1480

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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



4. BLOCK UP SECURELY
BEFORE WORKING
UNDER.



1. Study and understand operator's manual, safety signs, and Instructional decals for tractor and implement to prevent misuse, abuse, and accidents.

- Learn how to stop engine suddenly in an emergency. Be alert for passerby and especially children.

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

3. Operate only with tractor having Roll-Over Protective Structure (ROPS) and with seatbelt fastened securely and snugly to prevent injury and possible death from falling off or tractor overturn. Personal Protective Equipment such as Hard Hat, Safety Glasses, Safety Shoes, and 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 components 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. Secure the implement for transport by installing Cylinder Stops or Transport Pin on Pull-type implement center axle and Wing Transport Locks on folding implements.

- Attach Safety Chain to cutter and towing unit securely. See Operator's Manual.

6. Make certain that the SMV sign, Warning Lights, and Reflectors are clearly visible. Follow local traffic codes.

7. Never operate with Cutting Head raised if passerby, bystanders, or traffic are in the area to reduce possibility of injury or death from Objects thrown by Blades under Guard or cutter structure.

8. Before dismounting, secure implement in transport position or lower to ground.

- Put tractor in park or set the brake, disengage PTO, stop engine, and remove key, and wait until noise of rotation has ceased to prevent entanglement in rotating parts which can cause injury or death.
- Never mount or dismount a moving vehicle. Crushing from runover may cause 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 to Alamo 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.

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: 830-379-1480

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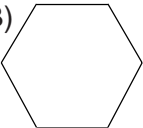
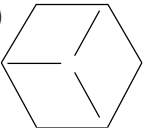

GENERAL INFORMATION:

The tools you will need at the assembly site are as follows:

1. Impact wrench or socket and ratchet set.
 2. Rubber mallet.
 3. Box-end, Allen, and adjustable wrenches.
 4. Alignment pins.
 5. Forklift or hydraulic floor jacks with rolling back boards.
 6. Small chain hoist or block-and-tackle.
 7. Multidirectional Levels.
 8. Hydraulic Filter Buggy or Cart.
 9. Safety shoes, safety glasses, and gloves.
- A hard hat should be worn by anyone working under any raised component.

Remember to follow each step closely and cautiously. Be aware of all support personnel at all times. Keep the assembly area as clean as possible; clean up all spills when they occur. An uncluttered assembly area and a crew that is sensitive to the hazards involved in putting this implement together will help prevent accidents. Keep all unauthorized personnel from the area. Do not allow children near the assembly site nor allow them on or near the tractor after assembly. There is no safe place for anyone except the operator on the tractor and those assisting with the assembly.

RECOMMENDED TORQUE VALUES CHART:

RECOMMENDED TORQUE IN FT.-LBS. (Nm) COARSE AND FINE THREADS			
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> 2 (B)  </div> <div style="text-align: center;"> 5 (D)  </div> <div style="text-align: center;"> 8 (F)  </div> </div>			
Bolt Dia.	Plain Head	Three Dashes	Six Dashes
1/4"	Not used	10 (14)	14 (19)
5/16"	Not used	20 (27)	30 (41)
3/8"	Not used	35 (47)	50 (68)
7/16"	35 (47)	55 (75)	80 (108)
1/2"	55 (75)	85 (115)	120 (163)
9/16"	75 (102)	130 (176)	175 (237)
5/8"	105 (142)	170 (230)	240 (325)
3/4"	185 (251)	300 (407)	425 (576)
7/8"	160 (217)	445 (603)	685 (929)
1"	250 (339)	670 (908)	1030 (1396)
1-1/8"	330 (447)	910 (1234)	1460 (1979)
1-1/4"	480 (651)	1250 (1695)	2060 (2793)

To help you assemble your new Brahma and mount it to your tractor, we provide you with drawings, instructions, and general information. When needed, you can get information or clarification from Your Dealer or Alamo Group Customer Service.

This publication provides general information not specifically for your case or tractor, but, in connection with the drawings and Parts Section, this publication offers you some valuable assistance - please read it thoroughly.

The mount kits are made for selected tractors with standard configurations. Only the noted options and tire sizes listed in the model specifications will work with these mount kits. Other options, front axles, or different tire sizes may prevent the mount kit from fitting your nonstandard tractor. Alamo Group cannot take responsibility for these problems or any modifications made to the unit.

Throughout these instructions, In the Parts Mnaual, Operators Manual and decals on unit you will see the following symbles, pay close attention to them. References are made to right or left directions. Right and left are determined by sitting on the tractor seat and facing the direction of travel.



This is the Safety-Apert symbol. When you see this symbol on your machine or in these instructions, be alert to the potential for personal injury. Follow recommended precautions and safe operating practices.

DANGER!



A signal word - **DANGER**, **WARNING**, or **CAUTION** - is used with the Safety Alert symbol. **DANGER** identifies the most serious hazards.

WARNING!

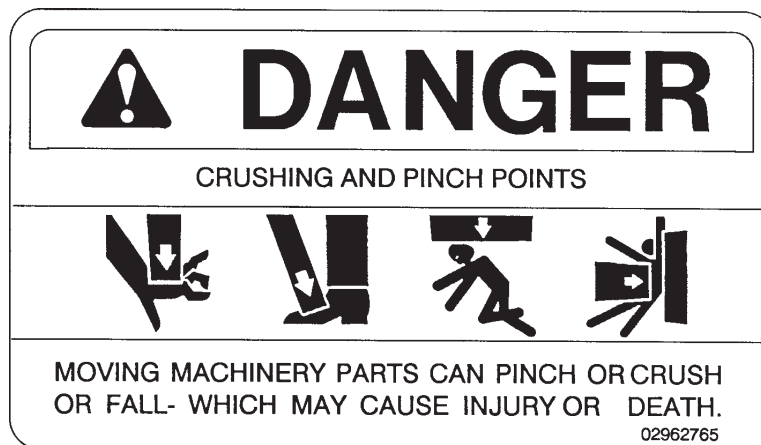


Safety signs with signal word **WARNING** are typically used to point out more serious hazards.

CAUTION!



General precautions are listed on **CAUTION** safety sign. **CAUTION** also calls attention to safety messages in these instructions.



NOTES

Section 1

INTERSTATER

McCormick

CX-75 / CX-85

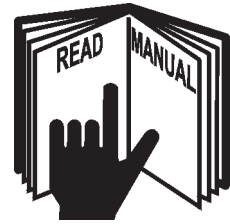
CX-95 / CX-105

Tractor

SAFETY

SECTION

Read these assembly instructions through completely and understand them before proceeding with the assembly of the equipment.



A safe and careful operator is the best operator. Safety is of primary importance to the manufacturer and should be to the owner/operator. Most accidents can be avoided by being aware of your equipment, your surroundings, and observing certain precautions. The first section of this manual includes a list of Safety Messages that, if followed, will help protect the operator and bystanders from injury or death. Read and understand these Safety Messages before assembling, operating or servicing this Implement. This equipment should only be operated by those persons who have read the Manual, who are responsible and trained, and who know how to do so safely and responsibly.

The Safety Alert Symbol combined with a Signal Word, as seen below, is used throughout this manual and on decals which are attached to the equipment. The Safety Alert Symbol means: “**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**” The Symbol and Signal Word are intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this equipment..

Practice all usual and customary safe working precautions and above all---remember safety is up to YOU. Only YOU can prevent serious injury or death from unsafe practices.

CAUTION!

The lowest level of Safety Message; warns of possible injury. Decals located on the Equipment with this Signal Word are Black and Yellow.



WARNING!

Serious injury or possible death! Decals are Black and Orange.



DANGER!

Imminent death/critical injury. Decals are Red and White. (SG-1)



PELIGRO! Si no lee Ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad. (SG-3)



¡LEA EL INSTRUCTIVO!

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death may occur unless care is taken to follow the warnings and instructions stated in the Safety Messages. Always use good common sense to avoid hazards.

(SG-2)



PELIGRO! Si no lee Ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad. (SG-3)



¡ LEA EL INSTRUCTIVO!

WARNING! Perform service, repairs and lubrication according to the maintenance section. Ensure the unit is properly lubricated as specified in the lubrication schedule and all bolts and nuts are properly torqued. Failure to properly service, repair and maintain this Implement in good operating condition could cause component failure and possible serious injury or even death. (SG-35)



WARNING! Operate this Equipment only with a Tractor equipped with an approved roll-over-protective system (ROPS). Always wear seat belts. Serious injury or even death could result from falling off the tractor--particularly during a turnover when the operator could be pinned under the ROPS. (SG-7)



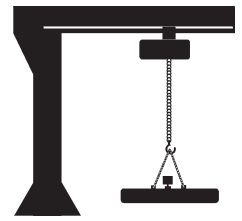
DANGER! Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause serious injury or even death. (SG-14)



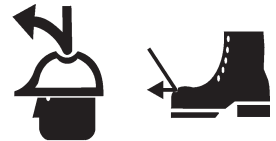
WARNING! Use caution and wear protective gloves when handling sharp objects such as blades, knives, and other cutting edges. Be alert to worn component surfaces which have sharp edges. Sharp surfaces can inflict severe laceration injuries if proper hand protection is not worn. (SG-37)



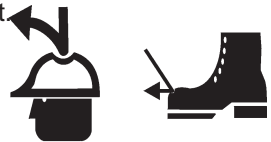
WARNING! Many of the parts are heavy and require lifting assistance. Do not try to lift the heavy parts by yourself. Get help from another employee or from an overhead crane.



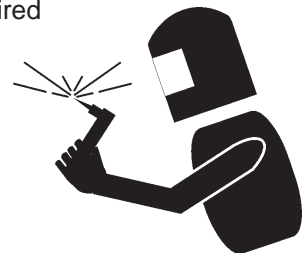
WARNING! The operator and all support personnel should wear hard hats, safety shoes, safety glasses, and proper hearing protection at all times for protection from injury including injury from items thrown by the equipment. (SG-16)



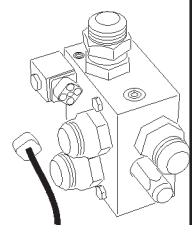
WARNING! Always wear safety shoes with steel toes when working on this equipment. It is recommended that the safety shoes have metatarsal guards.



WARNING! When welding use Welding hood with the appropriate OSHA required protective lens, welding apron, and welding gloves.



DANGER! Always disconnect the wire leads from the mower valve solenoid before performing service on the Tractor or Mower. Use caution when working on the Tractor or Mower. Tractor engine must be stopped before working on Mower or Tractor. The Mower Blades could inadvertently be turned on without warning and cause immediate dismemberment, injury or death. (SBM-12)



DANGER! Never run the tractor engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health. (SG-23)



DANGER!

Before starting the mower make sure the area is clear and the floor has been swept. The mower blade can throw objects several hundred feet. Thrown objects could damage property or cause severe bodily injuries even death.

WARNING!

Make certain that the "Slow Moving Vehicle" (SMV) sign is installed in such a way as to be clearly visible and legible. When transporting the Equipment use the Tractor flashing warning lights and follow all local traffic regulations. (SG-6)

**DANGER!**

Start tractor only when properly seated in the Tractor seat. Starting a tractor in gear can result in injury or death. Read the Tractor operators manual for proper starting instructions. (SG-13)

**DANGER!**

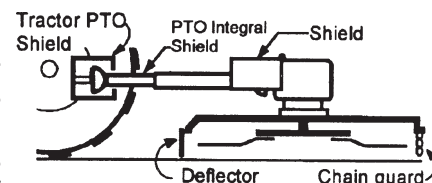
Do not operate this Equipment with hydraulic oil leaking. Oil is expensive and its presence could present a hazard. Do not check for leaks with your hand! Use a piece of heavy paper or cardboard. High-pressure oil streams from breaks in the line could penetrate the skin and cause tissue damage including gangrene. If oil does penetrate the skin, have the injury treated immediately by a physician knowledgeable and skilled in this procedure. (SG-15)

**WARNING!**

Always read carefully and comply fully with the manufacturers instructions when handling oil, solvents, cleansers, and any other chemical agent. (SG-22)

**DANGER!**

All Safety Shields, Guards and Safety devices including (but not limited to) - the Deflectors, Chain Guards, Steel Guards, Gearbox Shields, PTO integral shields, and Retractable Door Shields should be used and maintained in good working condition. All safety devices should be inspected carefully at least daily for missing or broken components. Missing, broken, or worn items must be replaced at once to reduce the possibility of injury or death from thrown objects, entanglement, or blade contact. (SGM-3)



DANGER!

NEVER use drugs or alcohol immediately before or while operating the Tractor and Implement. Drugs and alcohol will affect an operator's alertness and coordination and therefore affect the operator's ability to operate the equipment safely. Before operating the Tractor or Implement, an operator on prescription or over-the-counter medication must consult a medical professional regarding any side effects of the medication that would hinder their ability to operate the Equipment safely. **NEVER** knowingly allow anyone to operate this equipment when their alertness or coordination is impaired. Serious injury or death to the operator or others could result if the operator is under the influence of drugs or alcohol. (SG-27)

**DANGER!**

Operate the Tractor and/or Implement controls only while properly seated in the Tractor seat with the seat belt securely fastened around you. Inadvertent movement of the Tractor or Implement may cause serious injury or death. (SG-29)

WARNING!

Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. (SG-30)

WARNING!

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. Wash Hands after handling. (SG-31)

WARNING!

Use extreme caution when getting onto the Implement to perform repairs, maintenance and when removing accumulated material. Only stand on solid flat surfaces to ensure good footing. Use a ladder or raised stand to access high spots which cannot be reached from ground level. Slipping and falling can cause serious injury or death. (SG-33)

WARNING!

Avoid contact with hot surfaces including hydraulic oil tanks, pumps, motors, valves and hose connections. Relieve hydraulic pressure before performing maintenance or repairs. Use gloves and eye protection when servicing hot components. Contact with a hot surface or fluid can cause serious injury from burns or scalding. (SG-34)

WARNING!

Avoid contact with hot surfaces of the engine or muffler. Use gloves and eye protection when servicing hot components. Contact with a hot surface or fluid can cause serious injury from burns or scalding. (SG-38)

Section 2

INTERSTATER

McCormick

CX-75 / CX-85

CX-95 / CX-105

Tractor

PRE-DELIVERY INSPECTION CHECKLIST

INTERSTATER 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)

Safety 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
- ___ Deflectors are installed on the Mower Head
- ___ Tractor Rops or Cab with seatbelts installed properly.
- ___ All Foot Guards and safety switch are installed and functional.

Frame:

- ___ Axle Plate Bolts are torqued.
- ___ Head Mounting Bolts tightened.
- ___ Frame attaching Bolts tightened.
- ___ Front Support Bolts are torqued.
- ___ Hydraulic Tank mounting Pins / Bolts in place correctly.
- ___ All Welds inspected to insure 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.
- ___ Front Pump Shaft Coupler / Drive Shaft is lubricated and has an anti-seize compound on the Splines of Pump and Shafts.
- ___ The Pump Drive Shaft has correct alignment.
- ___ Suction Hose has no leaks or kinks.

Flail Mower Head:

- ___ Skid Shoe Bolts are torqued to 120 ft-lbs
- ___ 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
- ___ Blades swing freely.
- ___ All Pins and Clips for Rear Mower are installed
- ___ Clutch on Rear Mower has been checked for proper adjustment and conditions per parts book requirements.
- ___ All Belt guards are installed correctly.

INTERSTATER 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)

Tractor Mower Operation Inspection:

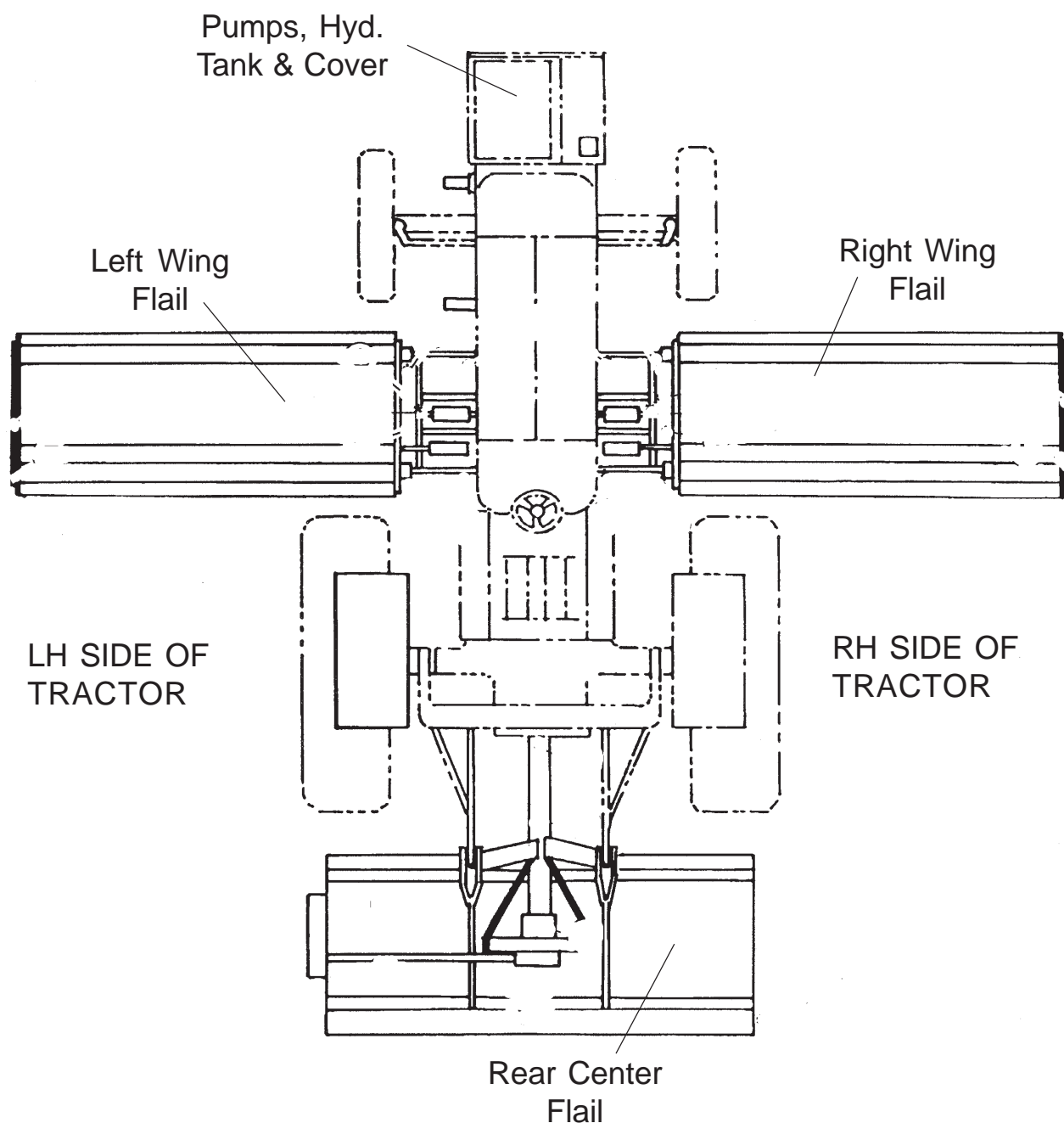
Using all Safety precautions, operate the Tractor and Mower unit for 30 minutes and while the unit is running check the following items: **Note!** Only make adjustments after the mower has been turned off and all motion has stopped and all hydraulic pressure has been relieved.

- ___ 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



Section 3

INTERSTATER

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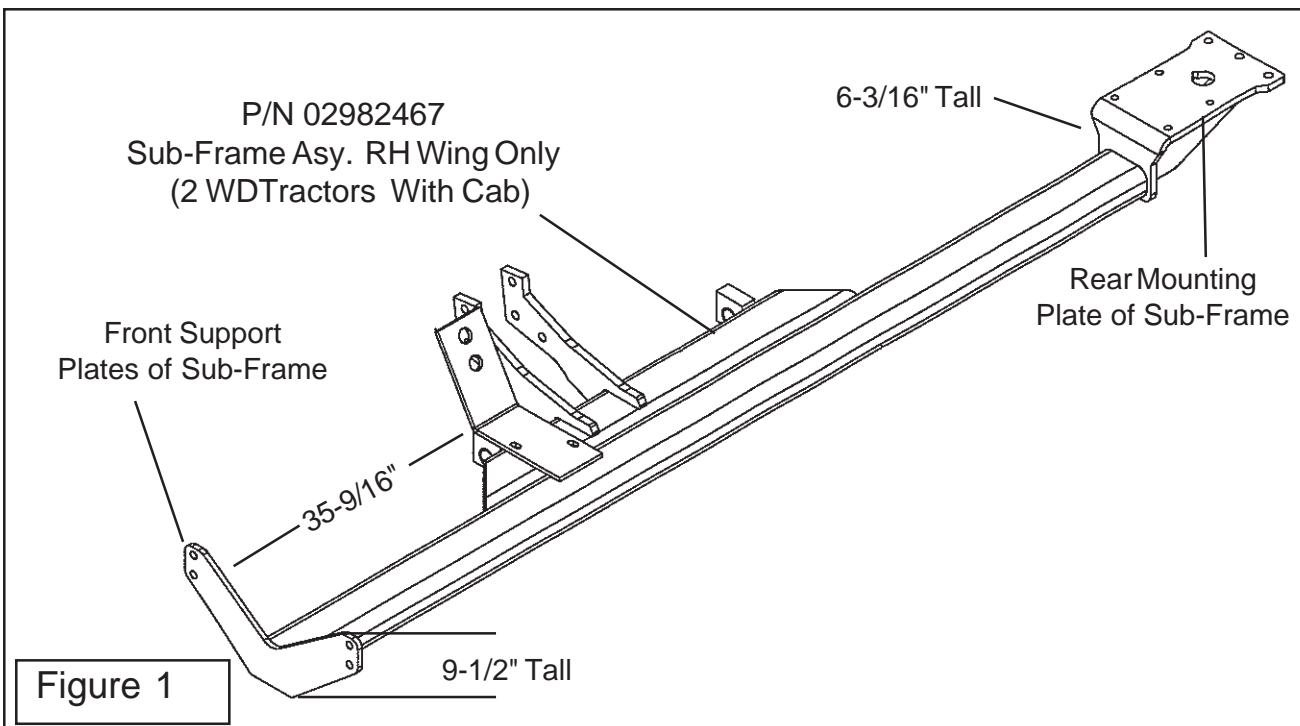
CX-75 / CX-85
CX-95 / CX-105

Tractor

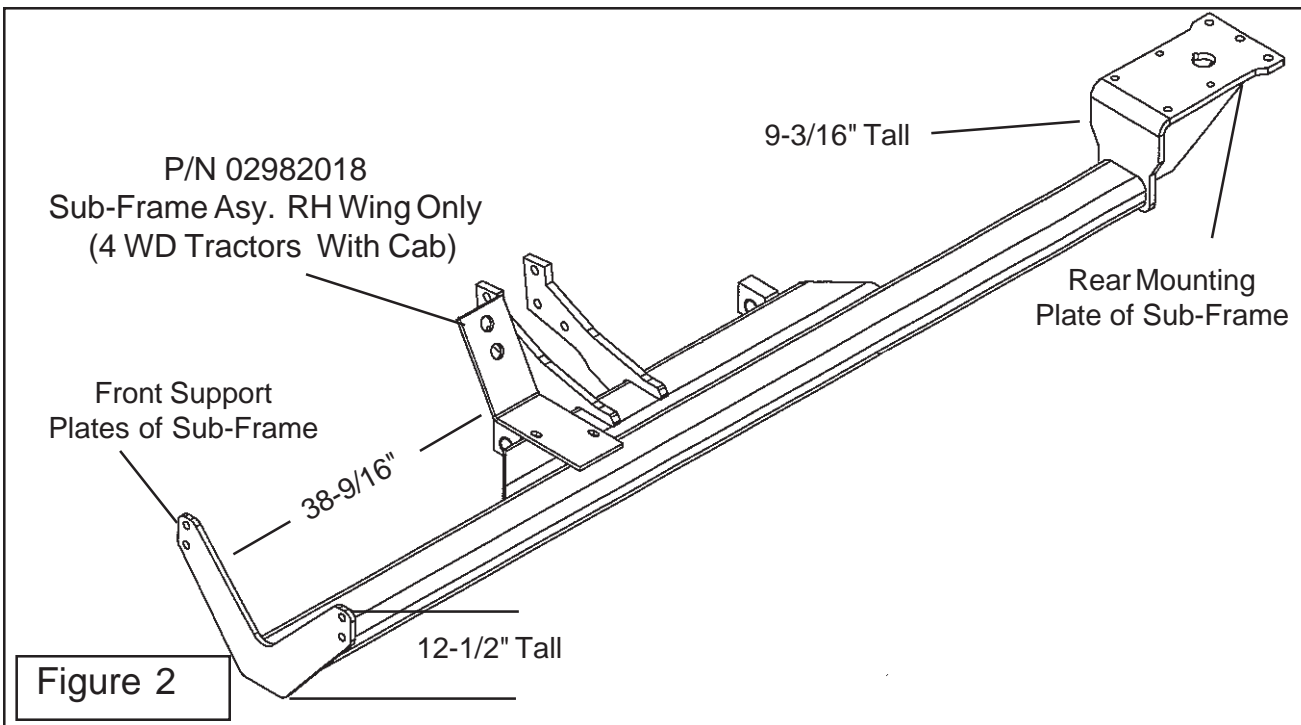
Mainframe Installation

Install Main Frame / RH Wing Only

1. Identify and locate the frame rail It will be easier to install the sub-frame before the pump, driveshaft and tank, it will be easier to align the front mounting bolts of the sub-frame. Two Wheel Drive Tractors use different sub-frame than the four wheel drive tractor, The sub-frame must match the tractor as they will not interchange. To determine if you have the correct sub-frame check the measurement shown (See Figure 1 & 2)
2. Remove RH Side Steps. The steps on the RH side of the tractor will be removed and not used so as not to interfere with the clearance of the mower head. The factory toolbox (if equipped) will need to be removed also for clearance. It will be dealer and/or customers choice on where and whether the toolbox can be remounted somewhere else for use, it is up to you..
3. Rear Draw Bar Bracket Removed The rear draw bar bracket will need to be removed as this is where the rear section of the sub-frame will connect to the rear axle of the tractor.
4. Install Frame Rail to Tractor. The frame rail (Figure 1 or 2) will be slid under the tractor on the RH side (See Figure 3). Make certain the plastic plugs have been removed from tractor frame, at the front bolster and the center ones at the rear axle.. Do NOT tighten the frame mounting bolts until all the bolts have been installed as frame will need to be moved slightly for alignment as the bolts are installed. The frame can be installed by balancing the frame on a floor jack, if using this method it is recommended two people perform this to prevent the frame from falling. Raise the frame up to the tractor frame (See Figure 3),
5. Raise the frame rail up under the tractor. Raise sub-frame under tractor until the rear mounting plate is under the rear axle and aligned with the bolt holes that did mount the draw bar bracket to the rear axle. Using the jack raise the frame up until it is against the rear axle housing. Install the new bolts, nuts, lockwashers, flatwashers and the axle strap (See Figure 1, 2, 3 & 4).

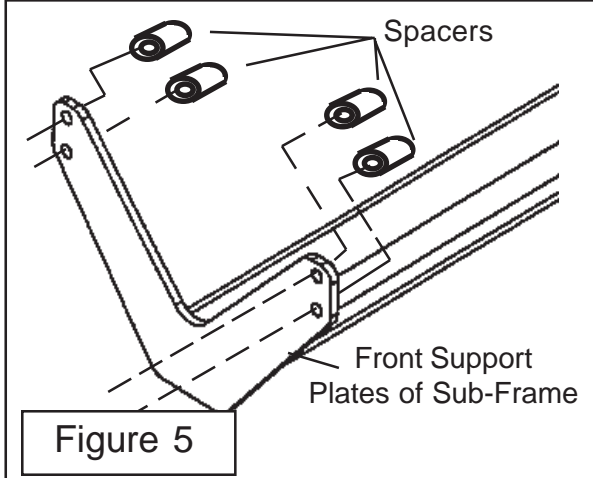
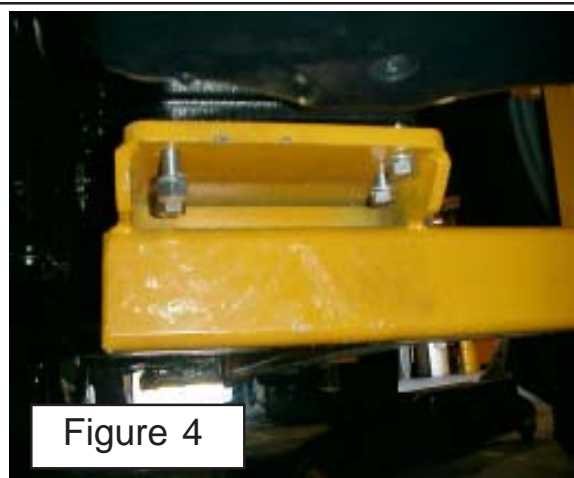
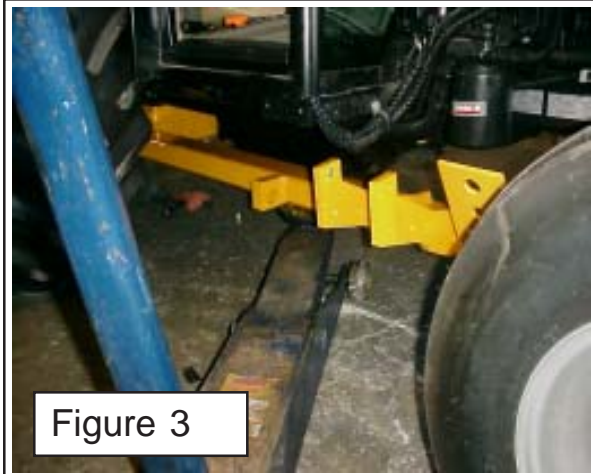


Install Main Frame / RH Wing Only



6. Start The Rear frame Rail Bolts. The bolts in the rear of the sub-frame should be started but not tightened, this will allow the frame to be moved around to align the front bolts (See Figure 4).

7. Frame Rail Front Mounting Bolts. Install the front frame rail mounting bolts (See Figure 5). The front sub-frame bolts will bolt to the front bolster behind the tank. There are 4 2" log spacers that are installed between the frame and bolster. Do not tighten the bolts until all the bolts are installed in frame rail. Leave floor jack and/or stands under frame rail until completely mounted (See Figure 5).



Install Main Frame / RH Wing Only

8. Tighten Rear Frame Rail Mounting Bolts to Center Rear Axle. Tighten the rear frame rail mounting bolts (See Figure 6). These bolts will be inserted into the center of the rear axle housing. On some models the drawbar may have to be removed in order to install the frame. Leave the floorjack and/or jack stands under frame rail until completely mounted and bolted down completely.

9. Tighten Front Frame Rail Bolts. After all bolts are installed into the frame rail they can be tightened. Make certain when tightening that none of the bolts are in a bind when tightening frame to bottom or front of tractor, DO NOT force the frame rail up if it will not go up smoothly (See Figure 5).

10. Install Cylinder Support Weldment. The cylinder support weldment (P/N 02980151) bolts to the frame rail (See Figure 7). Tighten the mounting bolts once installed.

11. Install RH Wing Lift frame. The wing lift frame pivots on two hinge pins, one to the front and one to the rear. When installing these pins they must be aligned in a way that will allow the retaining bolt to be installed (See Figure 8 & 9).

12. Install Hydraulic Cylinders. Install the hydraulic cylinders as shown. The ends will have to be installed on the rod ends, Note the collars on the cylinders. These collars have locking bolts in them and must be installed with the bolts to the top where they are accessible after assembly is complete (See Figure 10).

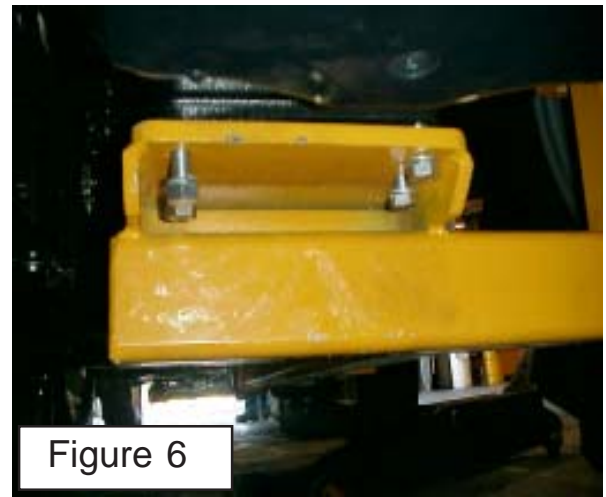


Figure 6

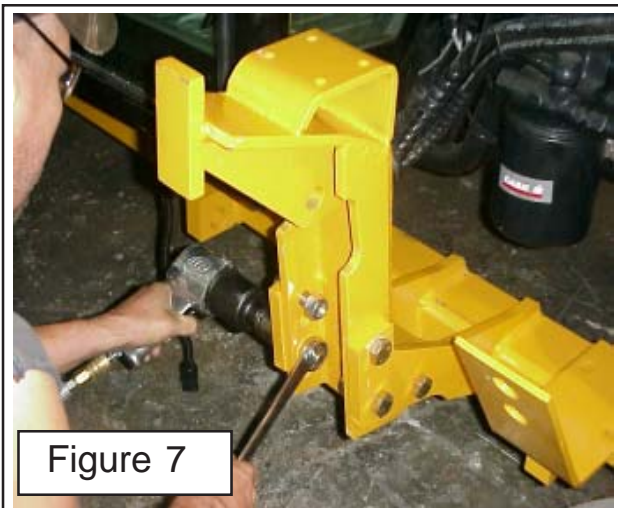


Figure 7

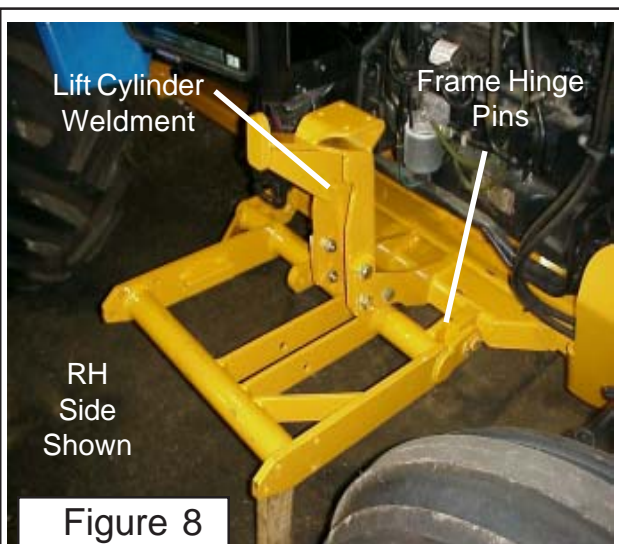


Figure 8

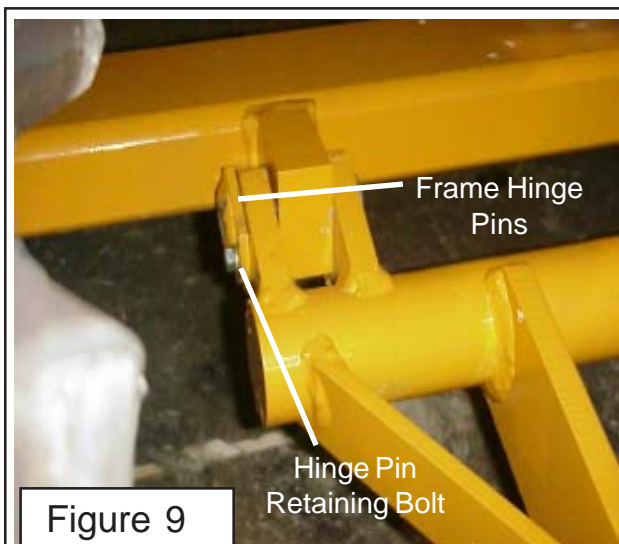


Figure 9

Install Main Frame / RH Wing Only

13. Check the Lift and Tilt Cylinders. check to make certain that when the Lift cylinder and the Tilt Cylinder were installed the grease fittings and the locking collars are pointed in the right direction (See Figure 12 & 13). When installing these they must be installed with the rod end clevis grease fitting facing up and out (See Figure 10, 11 & 13). Do not remove any shipping plugs from cylinders or hoses until you are ready to install the hoses, this will keep the system and components clean while unit is being assembled.

14. Connecting Cylinders To Control Valve. When the tractor hydraulics are used to supply and operate the cylinders there will not be a control valve shipped with the mower. The hydraulic cylinders will connect direct to the tractors remote outlets and the tractor controls will be used (See Figure 12). The three hoses used to connect the hydraulic cylinders to the tractor are all the same size and length (See Figure 12).

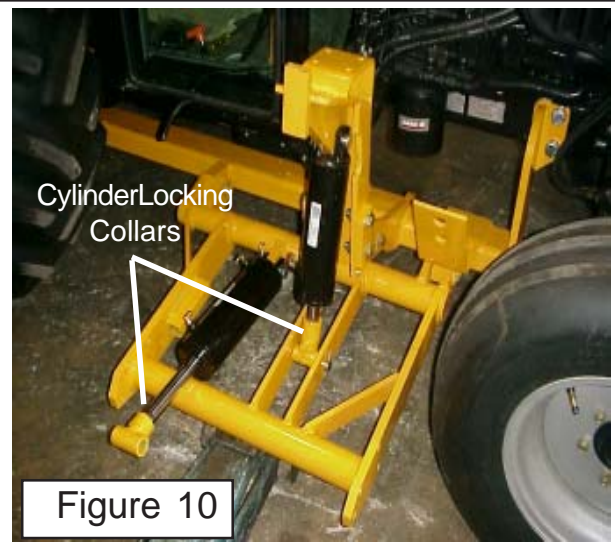


Figure 10

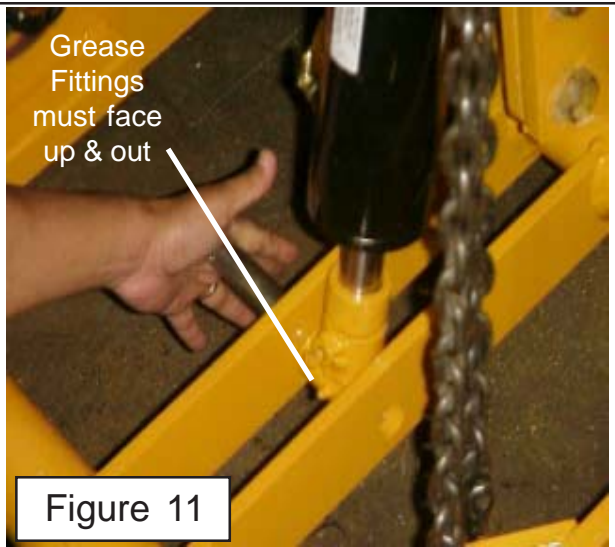


Figure 11

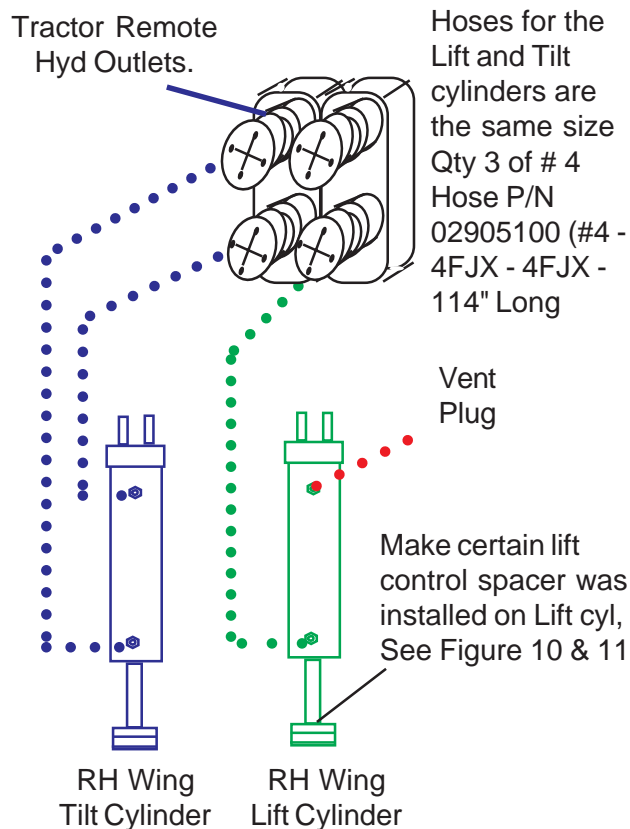


Figure 12

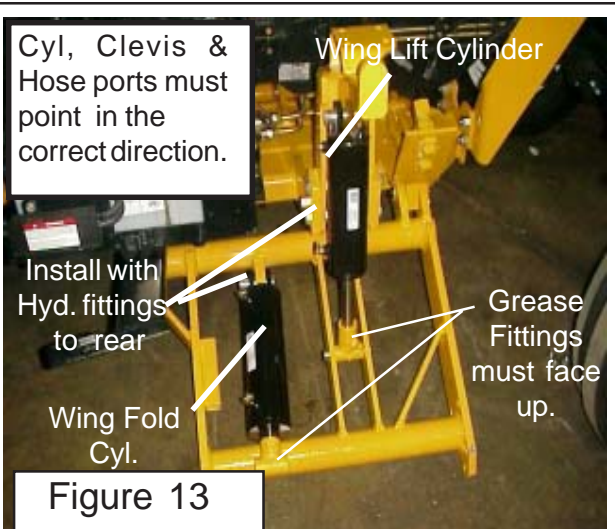


Figure 13

NOTES

Section 4

INTERSTATER

McCormick

CX-75 / CX-85
CX-95 / CX-105
Tractor

Driveshaft & Pump
Installation

Driveshaft & Pump Schematic

NOTE: This Model tractor uses the tractor hydraulic system to operate the lift and tilt cylinders

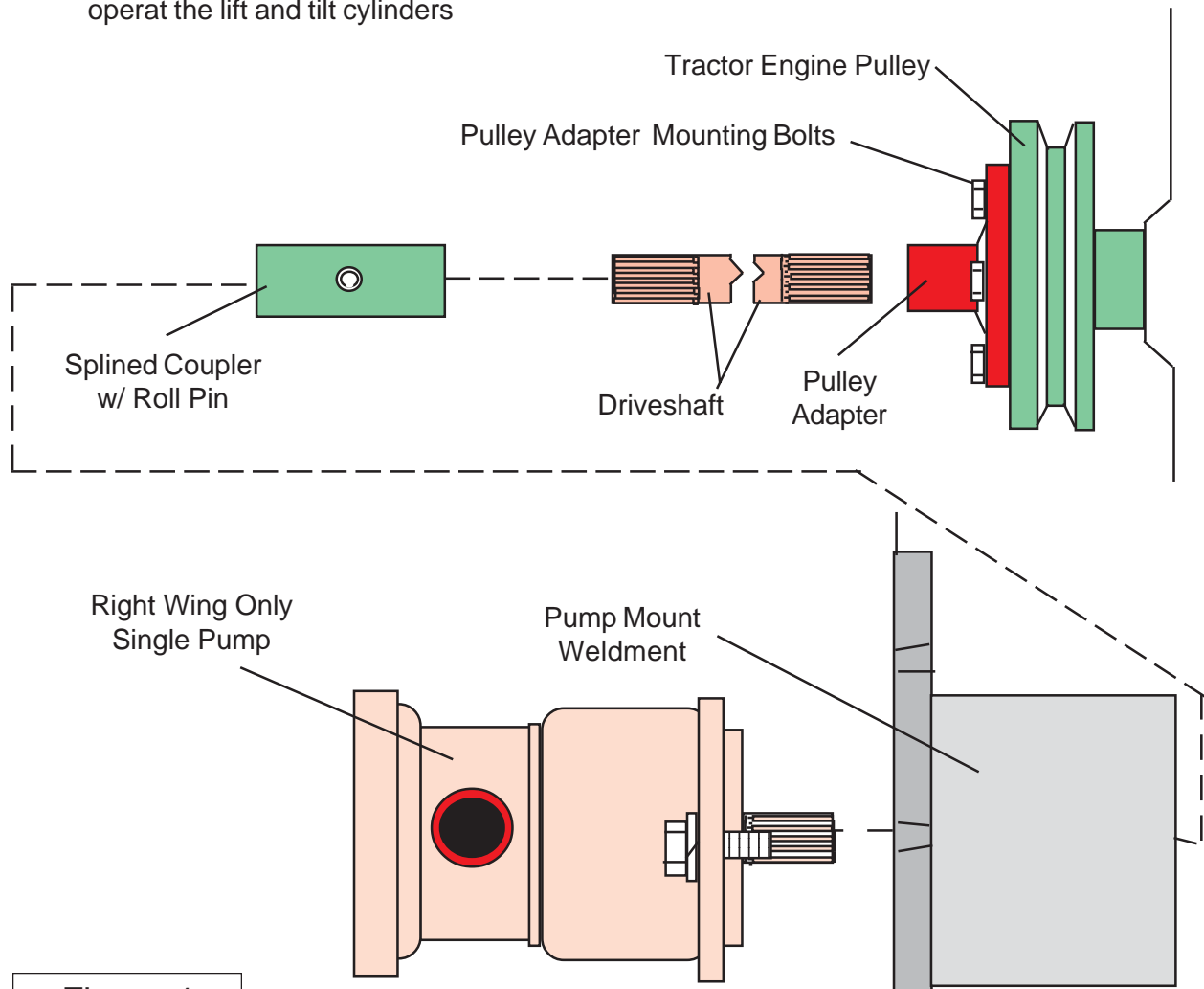


Figure 1

Pump & Drive Shaft Installation:

1. Remove RH Steps & Tool Box. The RH Steps and Tool box (if equipped with) need to be removed as they will not be used as they would interfere with the mower head when in transport position (See Figure 2).
2. Remove Engine Compartment Access Guards. If the engine has guards bolted onto the side to prevent access to the front of the engine. These guards need to be removed. The guards and mounting hardware will be reused
3. The Engine Crankshaft Pulley. The engine crankshaft pulley WILL NOT need to be removed, the pulley mounting bolts WILL NOT need to be loosened or removed (See Figure 2). The Crank Shaft Pulley adapter will mount over the pulley mounting bolts (See Figure 3)

Pump & Drive Shaft Installation:

4. Crankshaft Pulley Adapter. The crankshaft pulley adapter (P/N 02974786) uses four 7/16" bolts (P/N 02975781) ,Hex Head 7/16"-NF X 1-3/4" PL GR8 and four 7/16" Lockwashers (P/N 00022200). The pulley adapter comes with four robber coated steel grommets (Replacement P/N 02964620). Make certain these grommets are installed and centered. The Pulley adapter will be slid down into the engine compartment from the side (LH or RH side will work). Install the four bolts and lockwashers that mount the adapter to the engine crankshaft. Make certain that everything is aligned and tighten the for retaining bolts. The steel sleeve inside the rubber grommet will carry the force of tightening the mounting bolts not the rubber part of grommet. Pulley Adapter has a 7/8" X 13 spline sleeve built into the center of it (See Figure 1, 2 3 & 4).

5. Re-install Engine Compartment Access Guards. The engine compartment guards can be reinstalled after the pulley adapter has been tighten down, use the same bolts to reinstall guard as were taken out to remove them. These guards must be replaced the same as they were removed. DO NOT operate the tractor without these guards installed. The guards and mounting hardware will be reused.

6. Install Pump Drive Shaft (P/N 02958631). Coat the pump Drive Shaft splined end with a anti-seize compound (See Figure 6). Insert the drive shaft under the radiator and into the splined pulley adapter. NOTE: Some tractors may have rubber under radiator, if this rubber touches the driveshaft it will have to be trimmed to clear. The rubber under the radiator can be trimmed with a knife or in extreme case with a hole saw, The driveshaft must clear any objects by a minimum of 1/16" and not allowed to rub. The driveshaft has a 7/8" X 13 spline on both ends and can be installed in either direction (See Figure 5 & 6).

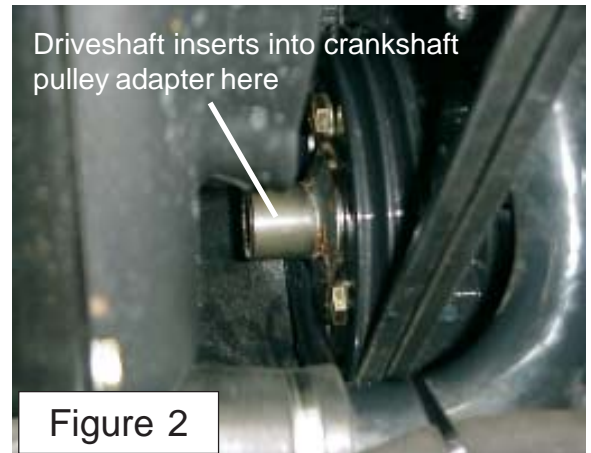


Figure 2

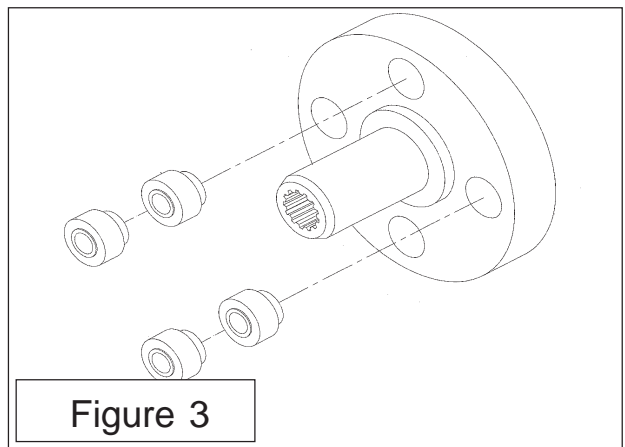


Figure 3

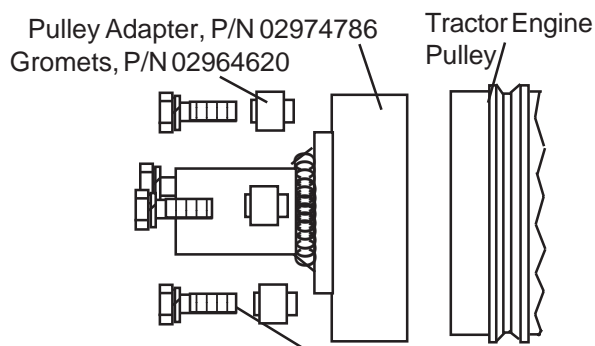


Figure 4

(Qty 4 ea) Bolts, P/N 02975781
Lockwasher P/N 00022200

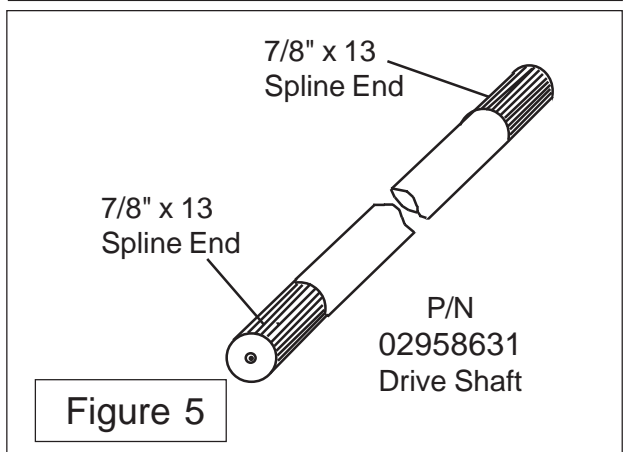


Figure 5

Pump & Drive Shaft Installation:

7. Install Machined Pump Mount Plate The machined pump mount plate (P/N 108780) bolts to the front of the bolster in the four existing threaded bolt holes (See Figure 7 & 8). These bolt holes will have plastic plugs in them that will need to be removed (See Figure 8). The pump mount Plate bolts to the tractor with 4 mounting bolts & Lockwasher. Tighten the two upper and two lower bolts down at this time to secure pump mount to tractor

8. Coat the splined end of shaft with anti-seize compound Coat the splines of the protruding end of end of the driveshaft with an anti-seize compound (See Figure 6). Do not use an excessive amount and do not use grease.

9. Install Tank Mount Rails The tank mount rails are the same LH (P/N 02982213) and RH. (P/N 02982214), These will mount to the tractor bolster, the LH and RH must be bolted to the correct side. When looking at the rail mounts note the tab with two holes in them welded to one side of the tank mount rails. This welded on tab goes to the inside of the tank mounting rails. Leave these bolts a bit loose it will make it easier to install hydraulic tank assembly (See Figure 9 & 10)

10. Install Hydraulic Tank The hydraulic tank mounts between the two front tank mounting rails (See Figure 14). DO NOT remove any caps and/or plugs from the hydraulic tank, leave the tank closed until ready to install lines and this will keep contamination out of hydraulic system. Use an overhead hoist is recommended for installing the hydraulic tank (See Figure 11). After hydraulic tanks bottom mounting strips are aligned with the holes in the Tank Mount Rails insert the retaining bolts, two on each side. But only snug the bolts for now, do not tighten them as they will have to be aligned with the bumper weldment later. (See Figure 12).

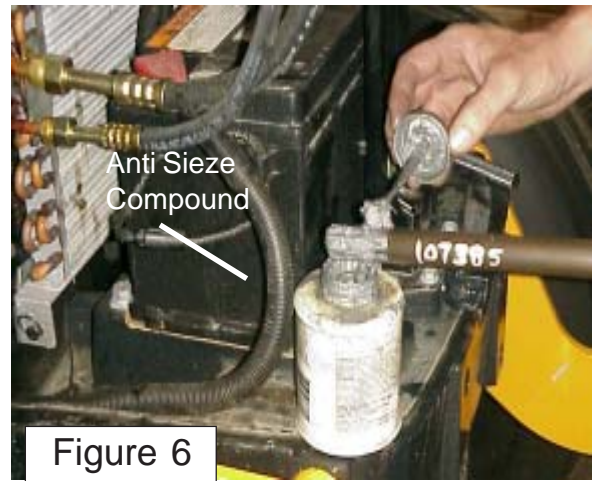


Figure 6

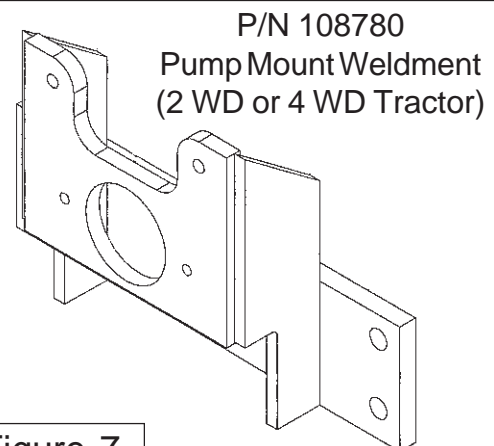


Figure 7

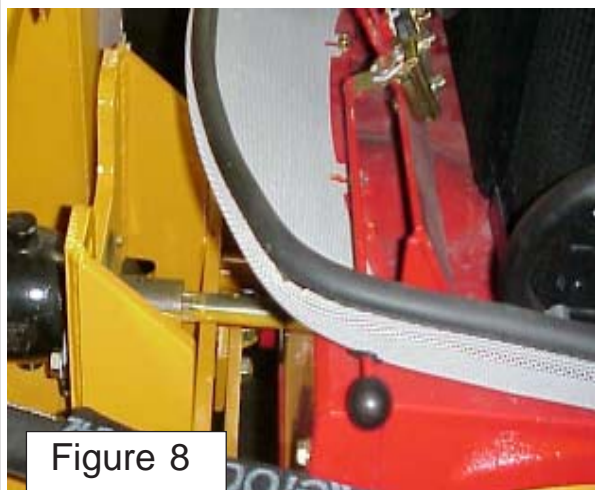
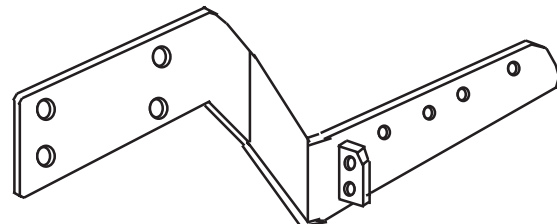


Figure 8



P/N 02982213 (LH Shown)
P/N 02982214 (RH Not Shown)
Tank Rail Weldment, LH and RH
are Mirror Image of each other
(2 WD or 4 WD Tractor)

Figure 9

Driveshaft, Pump & Tank Installation

11. Install Bumper. The bumper installs in front of the hydraulic tank with two bolts on each side (See Figure 12). Sometimes this will take some moving around to align the bolts and holes, usually this can be done by inserting a punch into one of the holes or by someone assisting you.

12. Tighten Hydraulic Tank, Tank Mount Rails & Bumper Mounting Bolts. Tighten the bolts now that are in the Tank mount rails, Hydraulic tank & Bumper now. Make certain all are tightened securely (See Figure 13).

13. Install Driveshaft Spline Coupler. The outer end of the driveshaft will use a splined coupler only (P/N 02982246) for TRACTORS that use the tractor hydraulics for cylinder hydraulics. The Splined Coupler will have roll pin in the center of it. The Splined Coupler will slide onto the splined shaft until the roll pin is against the shaft.



Figure 10



Figure 11

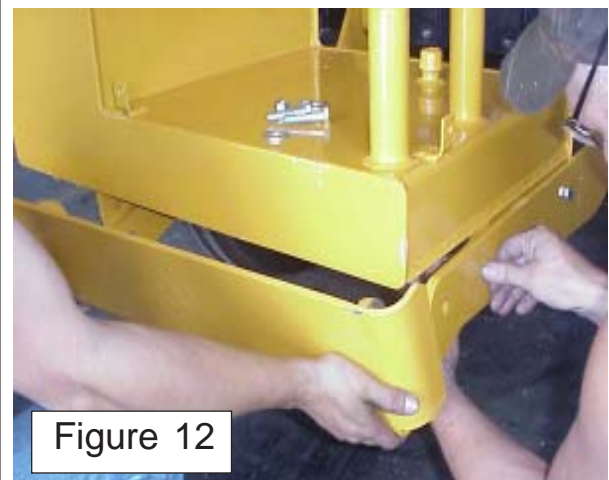


Figure 12



Figure 13

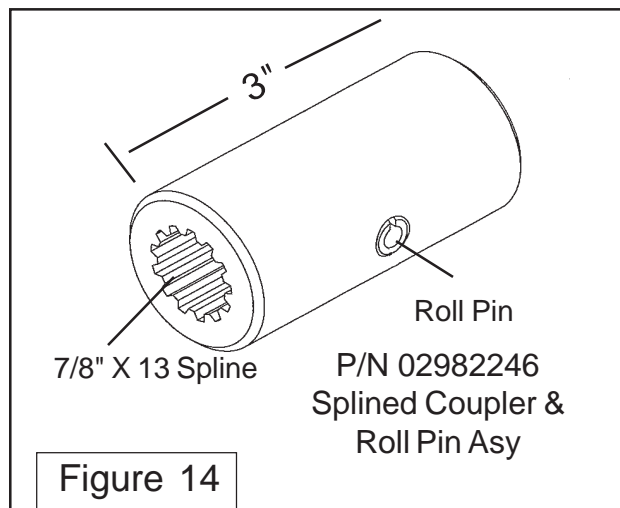


Figure 14

Driveshaft, Pump & Tank Installation

14. Coat Splined Pump Shaft with Anti Seize Compound. Coat the splined shaft with anti-seize compound, do not use excessive amount (See Figure 15).

15. Install Pump Retaining bolts. The pump retaining bolts are to be installed by hand. The pump should be seated into the opening provided in the pump mount weldment for the pump flange ring (See Figure 16). Install the two pump mounting bolts and tighten them. DO NOT use the bolts to force pump flange into the pump mount weldment, if you do you will break the flange ears off of the pump. If the pump will not go by pushing it in take the pump out and check the opening for excess paint or burrs. The pump must be installed with suction to LH side.

16. Recheck All Bolts and Components that have been installed. The bolts and components that have been installed should be check before moving on the next step. Make certain that all bolts have been tighten. It is a good practice to mark the bolts and nuts with some mark such as a dab of paint from a paint marker or anyway that you want so you will know that bolt has been tightened.

17. Prepare Pump Fittings The Pump will need to be prepared for connecting the hoses. There are fittings that must be changed or angles if fitting changed.. The Fittings in the pump should already be installed when you receive it from the factory (See Figure 26 & 27). The outer large cap on the tank suction ports will need to be replaced with elbow fittings and hose barbs (See Figure , 28). Coat the fittings that screw into pumps and tank with a pipe sealer (NOT Teflon Tape), do not put excess sealer on O.D. of fittings and none on I.D. of fittings (See Figure 28).



Figure 15

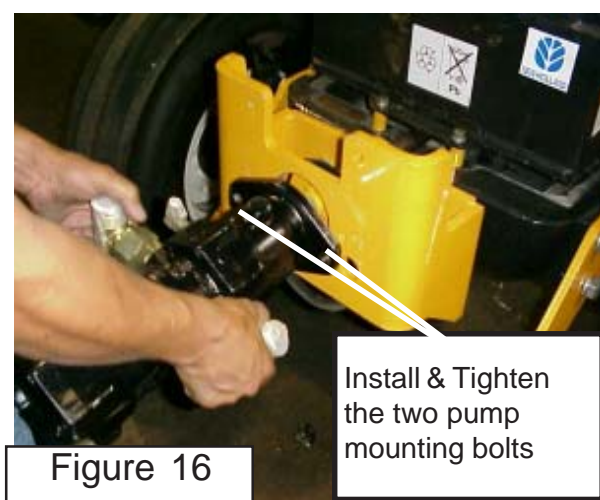


Figure 16

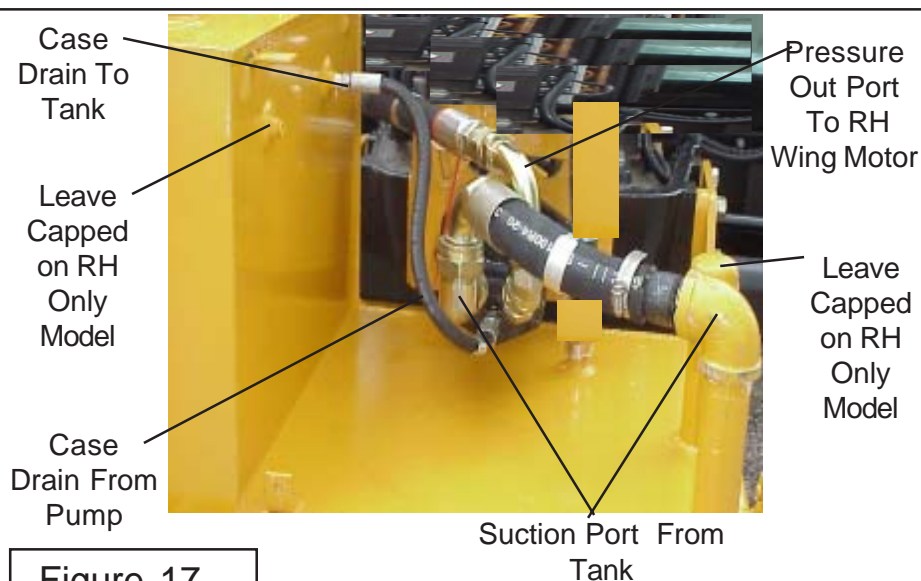


Figure 17

Driveshaft, Pump & Tank Installation

18. Connect Motor Pressure Supply Hoses to Pump. The Pump for the RH Wing Only (Single Pump) has one pressure hose. The LH side (sitting on Tractor looking forward) is the supply for the RH Wing Motor. The hose for the RH Wing should be marked with a red plastic tie on it, Connect these two hoses at the pump now (See Figure 17).

19. Connect Pump Case Drain Hose. The Case drain hose should already be connected, if not connect it now. Hose & Fittings with Pipe thread will need a thread sealer used , do not use excess sealer and no sealer on ID of fittings (See Figure 17).

20. Connect Pump Suction Hose. The Pump Suction hoses will be sent longer than needed and will need to be cut to fit, DO NOT install any suction hose with kinks in them. Kinked hose could starve pump of oil.. (See Figure 17). The Auxiliary. Before connecting the pump suction hose, fill the fitting and hose with clean recommended type hydraulic oil. This will prevent the pump from starting dry and damaging pump, connected pump suction hose now (See Figure 17).

21. Cover Pressure Hose with Sleevng. The pressure hose will be run through the hose retaining ring that will be bolted to the side of mainframe mounting brackets later, slide the hose sleevng up over the pressure hose . Slide sleevng up until it is about 2 inches past the edge of the hydraulic tank. Leave the hose fittings loose at the Pump for now as you may have to take them off later to insert hoses through the hose ring and down the side of the frame.

22. Install Hose Fittings into Return Filter in Tank. There is a return filter in the top of the RH side of tank. In the end of the filter housing install a Tee Fitting with an Elbow in it. In the end of the Tee there will be reducer to allow the installing of a smaller hose. This reducer is where the return hose from the control valve will connect (See Figure 18 & 19).

23. Install Return Filter Pressure Gauge. The return filter pressure gauge screws into the side of the return filter housing. This gauge is a low pressure gauge that is marked in green and red areas. (See Figure 32). The Oil Pressure return gauge has a rubbery tip on top of it, the tip till have to have the tip of it cutoff. Using a utility knife (or suitable knife) cut the tip off now (See Figure 20). This will need to be done before unit is run.

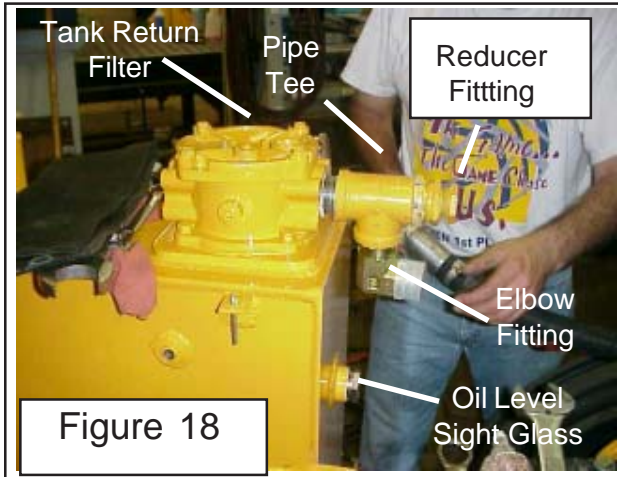


Figure 18

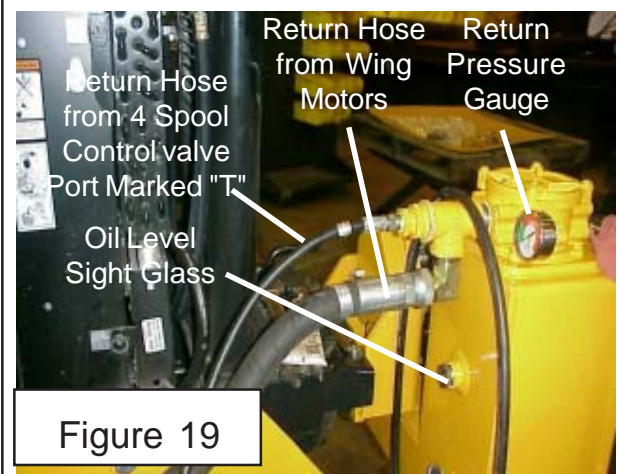


Figure 19



Figure 20

Driveshaft, Pump & Tank Installation

24. Install Return Filter Pressure Gauge. The return filter pressure gauge screws into the side of the return filter housing. This gauge is a low pressure gauge that is marked in green and red areas. (See Figure 20). The Oil Pressure return gauge has a rubbery tip on top of it, the tip will have to have the tip of it cutoff. Using a utility knife (or suitable knife) cut the tip off now (See Figure 20). This will need to be done before unit is run.

29. Install the Oil Level Sight Glass. The Oil Level sight Glass screws into the Hydraulic tank. This is to be covered with oil when tank is at operating level. (See Figure 19)

Section 5

INTERSTATER

McCormick
CX-75 / CX-85
CX-95 / CX-105
Tractor

Wing Mower Installation

Wing Mower Installation

Wing Cut Off Switch:

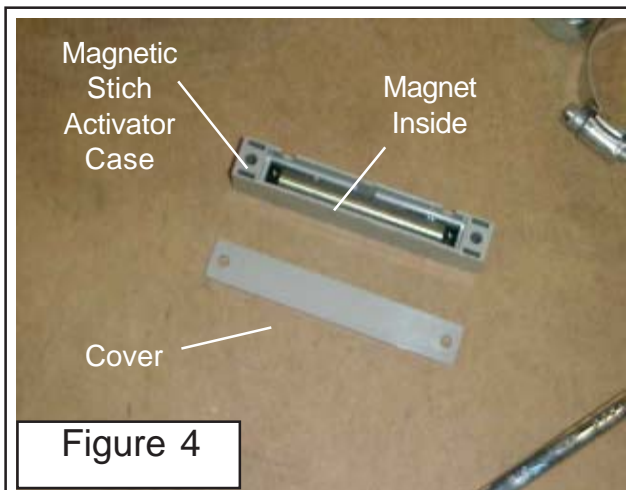
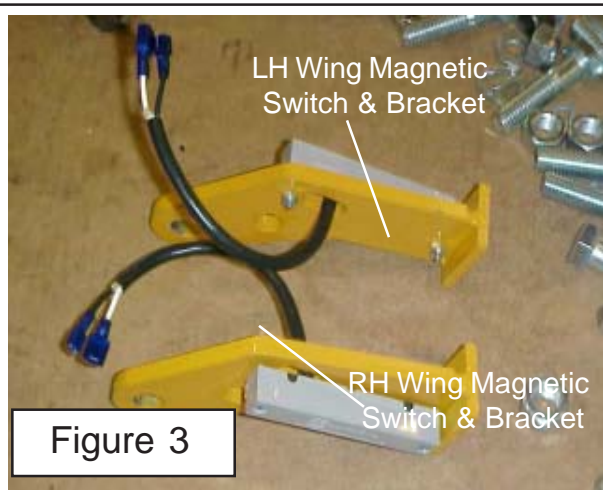
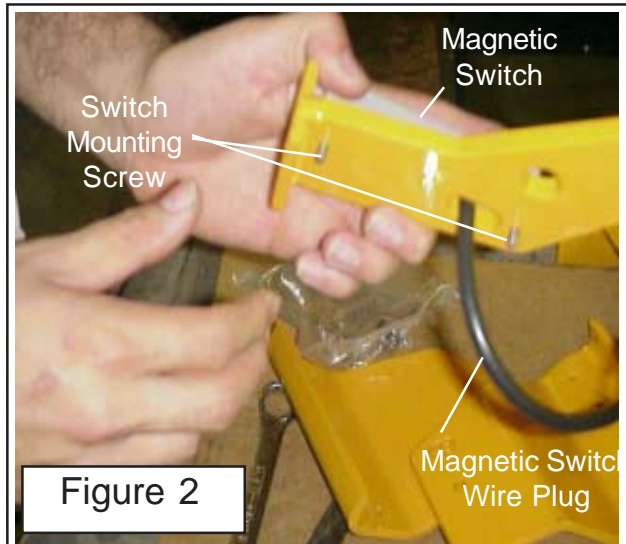
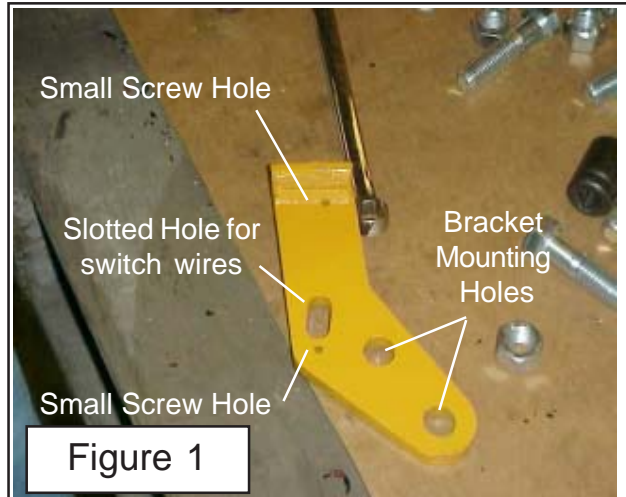
NOTE: This section will show Dual Wing installation. The LH and RIGHT hand wing will assemble the same except in a mirror image.

1. Assemble Brackets & Magnetic Switches.

Locate the Magnetic switch mounting bracket, dual wings there will be two of these (See Figure 1). If Dual wings the two brackets will have the switches mounted on the opposite side (See Figure 2). Once these have the switches bolted on lay the brackets aside for now. (See Figure 20)

2. Assemble Magnetic Switch Activators. This magnetic switch activator has a magnet inside and a cover that must be installed (See Figure 4). There are brackets that these bolt to. With dual wings there is a LH and RH bracket. Bolt the Magnetic activators to the brackets (See Figure 5) LH Bracket Shown). Note there are two sets of mounting holes. In figure 5 the set that have the bolts through them is used to shut wing off at 45 degree up. If the other set of holes are used wing mower will shut off at 90 degrees up. The 45 degree setting is recommended for standard applications.

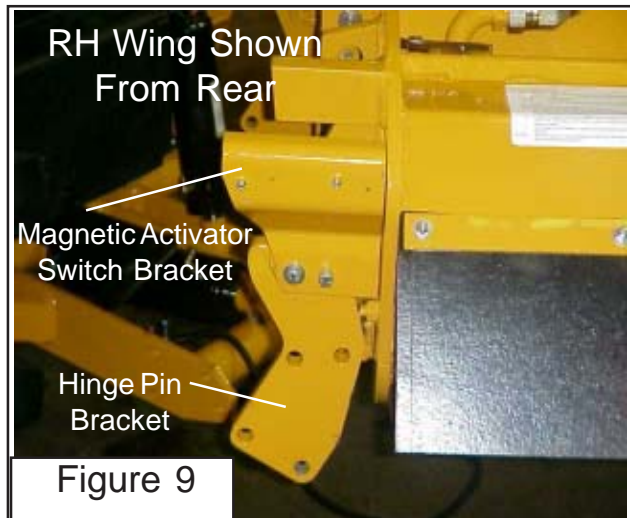
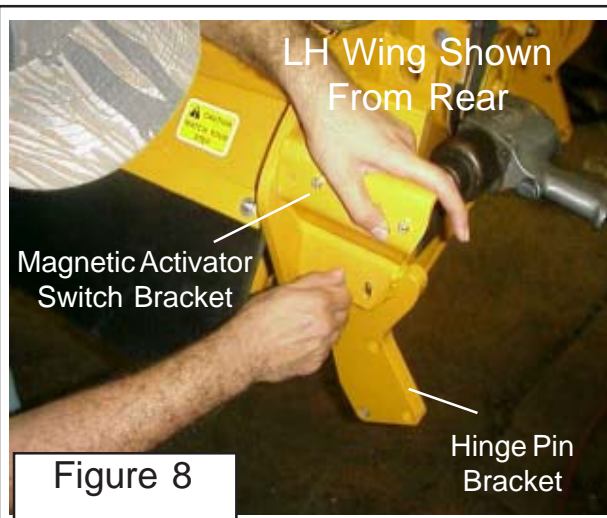
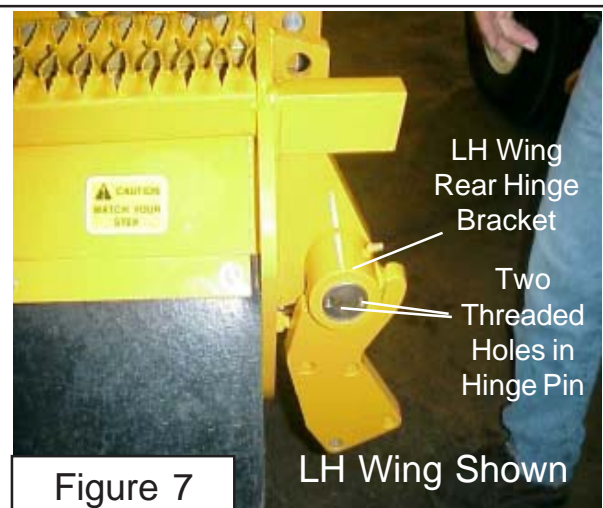
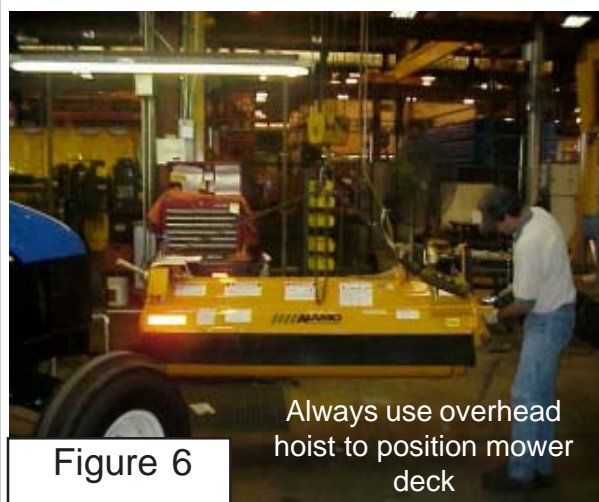
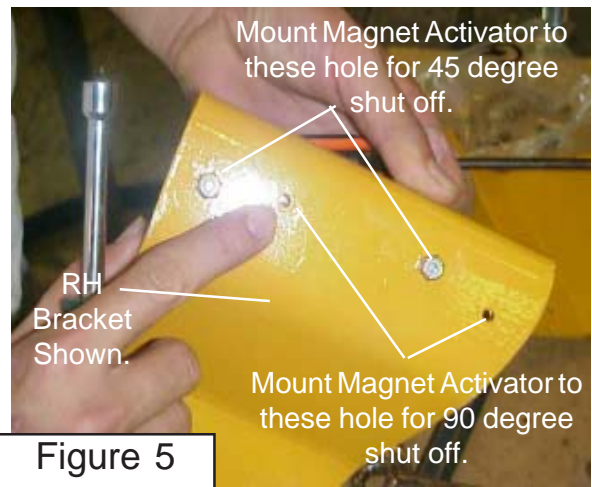
3. Install Switch Brackets & Head Mounting Brackets. Use a hoist to lift the Wing Mower and position it for mounting. DO NOT get under Mower while lifted on a hoist (See Figure 6). Mower is only be positions so that switch brackets and hinge brackets can be installed to head, this must be done before mower can be mounted to lift frame.



Wing Mower Installation

Wing Cut Off Switch: (continued)

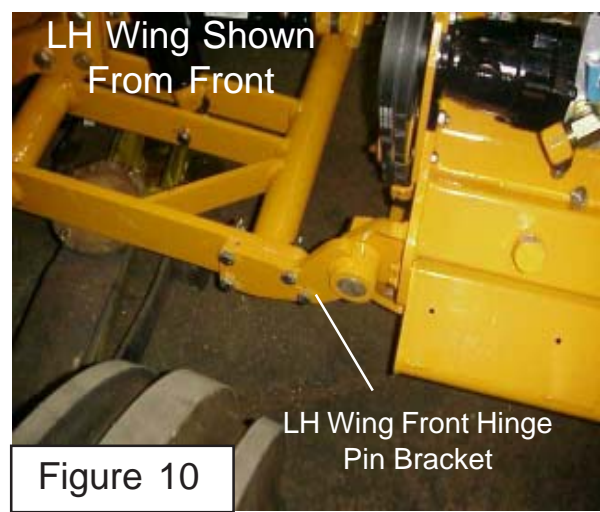
4. Install Mower Rear Mounting Brackets & Magnetic Switches. The Mower Hinge Link has a LH & RH (See Figure 7). These brackets will slide over the Hinge Pin which is bolted to the mower deck at the factory. There are two Threaded holes in the end of the hinge pin (See Figure 7) These two holes serve dual purpose. First they hold the hinge bracket on and the Magnetic Activator Bracket on. Some times you will need to loosen the Hinge pin to align the two holes so the bracket will bolt on. (See Figure 8 & 9). Tighten the two mounting bolts in to the hinge pin. The Hinge bracket will still turn free.



Wing Mower Installation

Wing Cut Off Switch: (continued)

5. Install Mower Front Mounting Brackets. The Mower Hinge Front Bracket has a LH & RH (See Figure 10). These brackets will slide over the Hinge Pin which is bolted to the mower deck at the factory. This bracket will be bolted to the Lift frame with four bolts. This hinge Pin WILL NOT have threaded holes as the rear hinge pin did.
6. Install Wing Mower to Lift Frame. Using the over head hoist position the Mower Deck (See Figure 10) to where the front hinge bracket will align with the lift frame. Install at least two of the mounting bolts and snug them down.
7. Install the wire harness to wings. The Wire harness will have a lead to each wing. These can be determined by the length, the longer lead will go to the left wing. There is a piece of square tube welded to the lift frame on the back for the wire harness to be run through (See Figure 11). The wire harness will be run down and under the round bar of lift frame. Leave harness here for now.
8. Install Magnetic Switch Pickup & Bracket as well as the rear hinge bracket. The Rear hinge Bracket will install similar to the way the front does, but not the same because the Magnetic switches and brackets bolt on with it. Before installing the rear Hinge bracket locate the magnetic Switch Bracket (See Figure 12). There are two spacers about 3/4" long that must be installed between the magnetic switch bracket and the hinge Bracket (See Figure 12), Also the wire harness must be run between these two spacers and between these two brackets (See Figure 13 & 14). Install the remaining two bolts and tighten all the hinge bracket bolts, this will include the front hinge bracket bolts. (See Figure 21)
9. Plug Magnetic Switch into Wire Harness. The wire harness should have a plug that aligns with the magnetic switch wire. Plug these together now and continued to run wire harness up behind the hinge and on up to the mower decks motor. (See Figure 21)

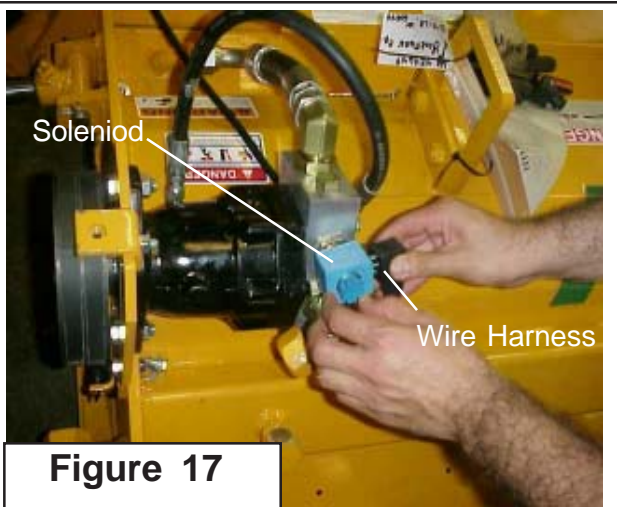
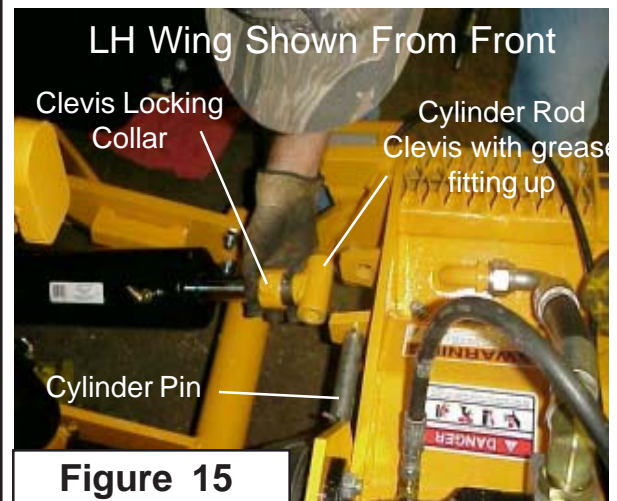


Wing Mower Installation

Wing Cut Off Switch: (continued)

10. Connect Tilt Cylinder to Mower Deck. The Tilt Cylinder connects to the mower head (See Figure 15 & 16). Note you will need to remove the belt guard to connect this cylinder so you will have room for the cylinder mounting pin to be installed (See Figure 16). When connecting the cylinder the grease fitting on the rod end must face up, the locking collar on the cylinder must face up and be tightened on rod end. The RH Wing and the LH Wing will mount the same. Install the RH wing the same as the LH wing . Reinstall Belt Guard.

11. Install Wire Harness to Motor Solenoid. The thumb nut on top of the solenoid will allow the solenoid to be turned to different direction if needed. (See Figure 17 & 21)



Wing Mower Installation

Connecting Mower Motor Hoses:

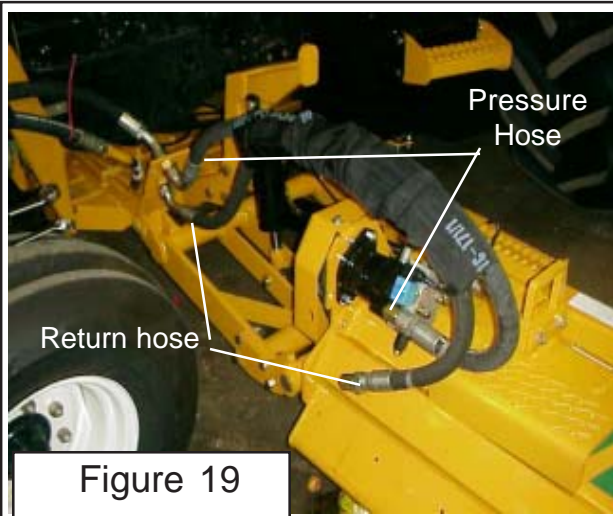
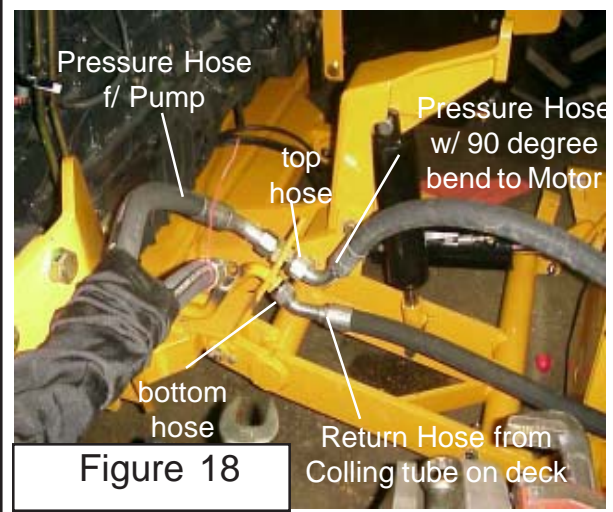
1. Connect Motor Pressure & Return Hoses to Mower Deck. Connecting the Motor Hoses is very critical that they are connected to the correct fittings. If these hoses are connected backwards it will damage the cooling tubes on the deck, the cooling tubes cannot take the pressure it will make them swell up and bulge.

IMPORTANT FACT. When connecting the hoses to the fittings on the mainframe crossmember remember the top hose is always the pressure hose and will only connect to the motor, never the cooling tubes on the deck. The bottom hoses are the return hoses and will always connect to the cooling tubes on the mower deck. (See Figure 18 & 19). The RH wing will connect the same as the LH mower (Shown). **IMPORTANT.** On the RH Wing the top hose is pressure and connect to the Motor and the bottom hose connects to the Tank return.

2. Double Check all Hose Connections. Before operating the mower make certain all hydraulic hoses are connected correctly. IT IS MOST critical that you make certain NO HIGH PRESSURE hoses are connected to the wet tubes of the mower deck. The wet tubes will expand (swell up) and be damaged if the High Pressure hose is connected to the deck wet (cooling) tubes. See Figure 21, 22, 23, 24, 25, 26 & 27. Looking at all these figures before going on to next step is important.

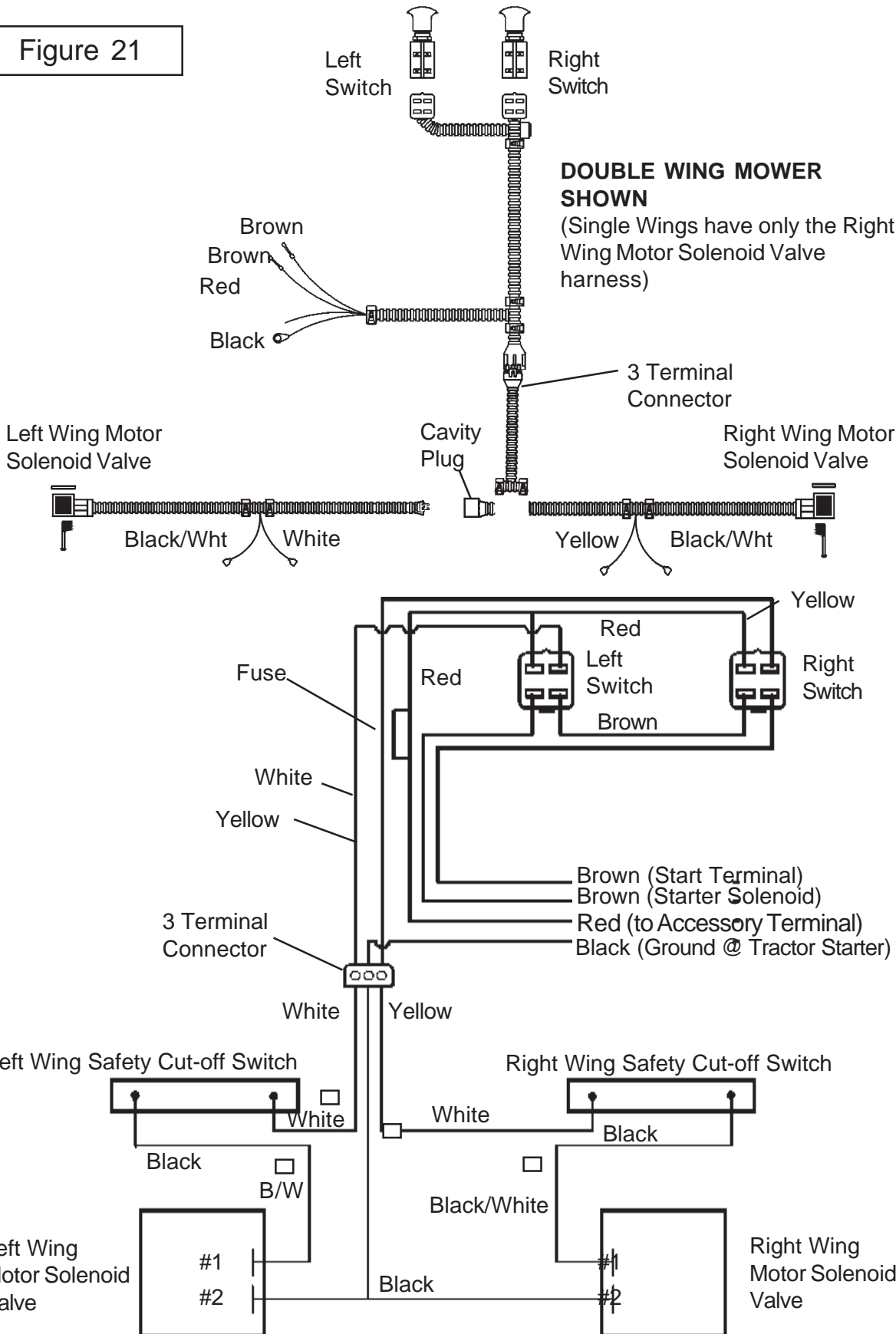
3. Install Pump Cover. The front pump cover will bolt to the tank, this cover will cover pumps and all hoses and/or fittings connected to the pump (See Figure 20). Set the cover down over the pumps. Align the hose in cover with the tabs welded to the tank (See Figure 20).

4. Install Rear Mower. Go on to the Install rear mower section which will also include the Initial Start up procedures. DO NOT START Tractor until you have completed the initial start up section.



Wing Cut Off Switch Wiring Schematic (Dual Wing)

Figure 21



Motor Control Switch - Dual Wing

LH Wing Push-Pull Switch **RH Wing Push-Pull Switch**

16 Yellow
RH Wing &
#16 White
LH Wing

16 Red

ON / Off
Switch Plug

12 Brn

Starter Solenoid Wire
Starter Solenoid Wire
Switched Power Supply
Ground

#16 Black/White

Solenoid
Connector

Connectors
Shipped Loose in
Separate Plastic
Bag

16 Black (-)

12 Brown
Line Connector
to Starter
Solenoid

#16 Red (+) to
Switched Power
Supply

3 Terminal
Connector

#16 Black/White

Left Wing Motor
Solenoid Valve

#16 White

Connector to RH Wing
Wire Harness

Cavity
Plug

Right Wing Motor
Solenoid Valve

16 Yellow

Connector to RH Wing
Wire Harness

#16 Black/White

Figure 22

Figure 22

Interstater (McCormick CX-75, CX-85, CX-95 & CX-105 Asy. Man.) 07/05

Motor Control Switch - RH Wing Only

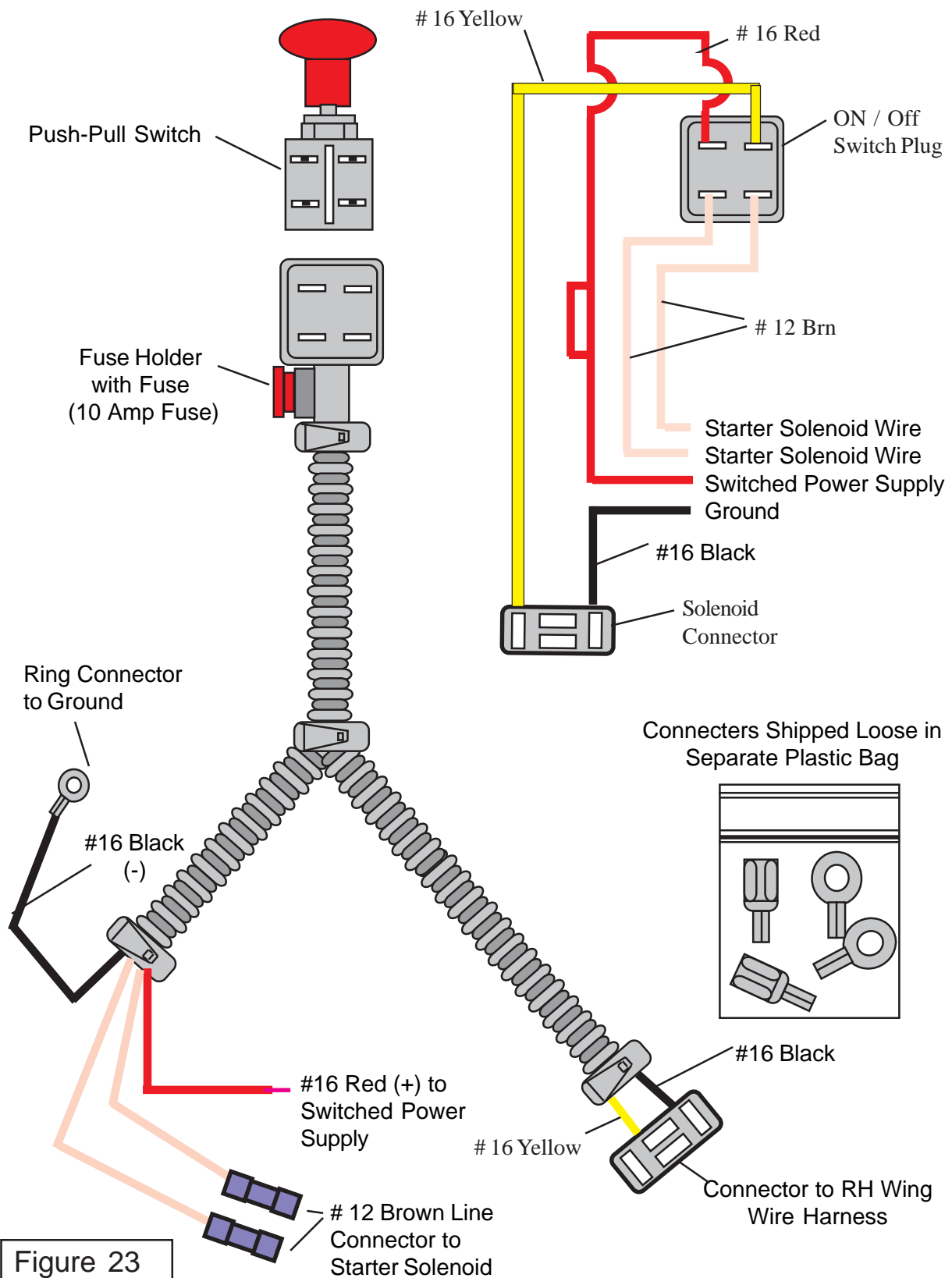
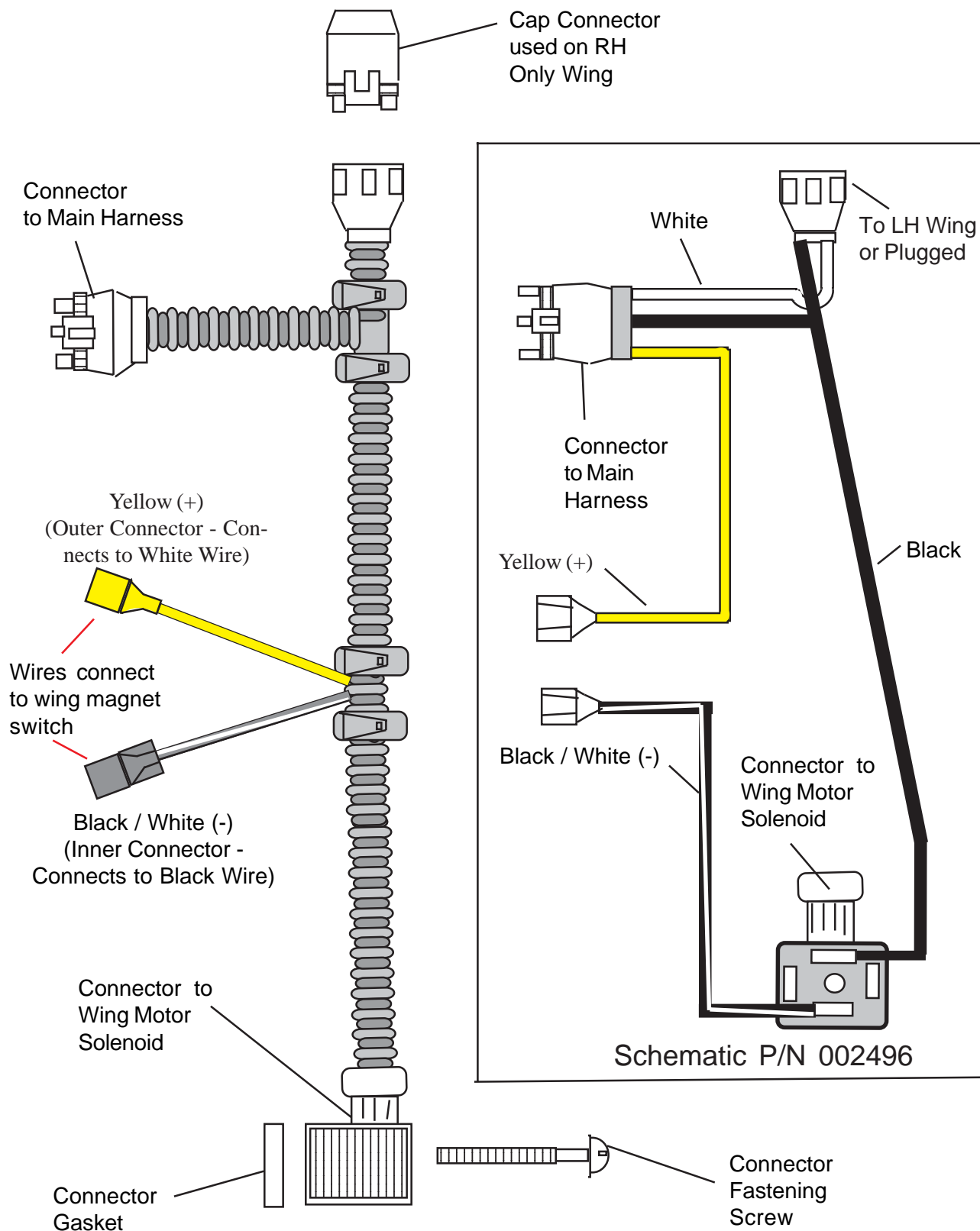


Figure 23

Component ID - RH Wing Wire Harness

Wire Harness P/N 002496



Pump & Motor Hyd Schematic (RH Wing Only)

With Auxillary Pump & Control Vale

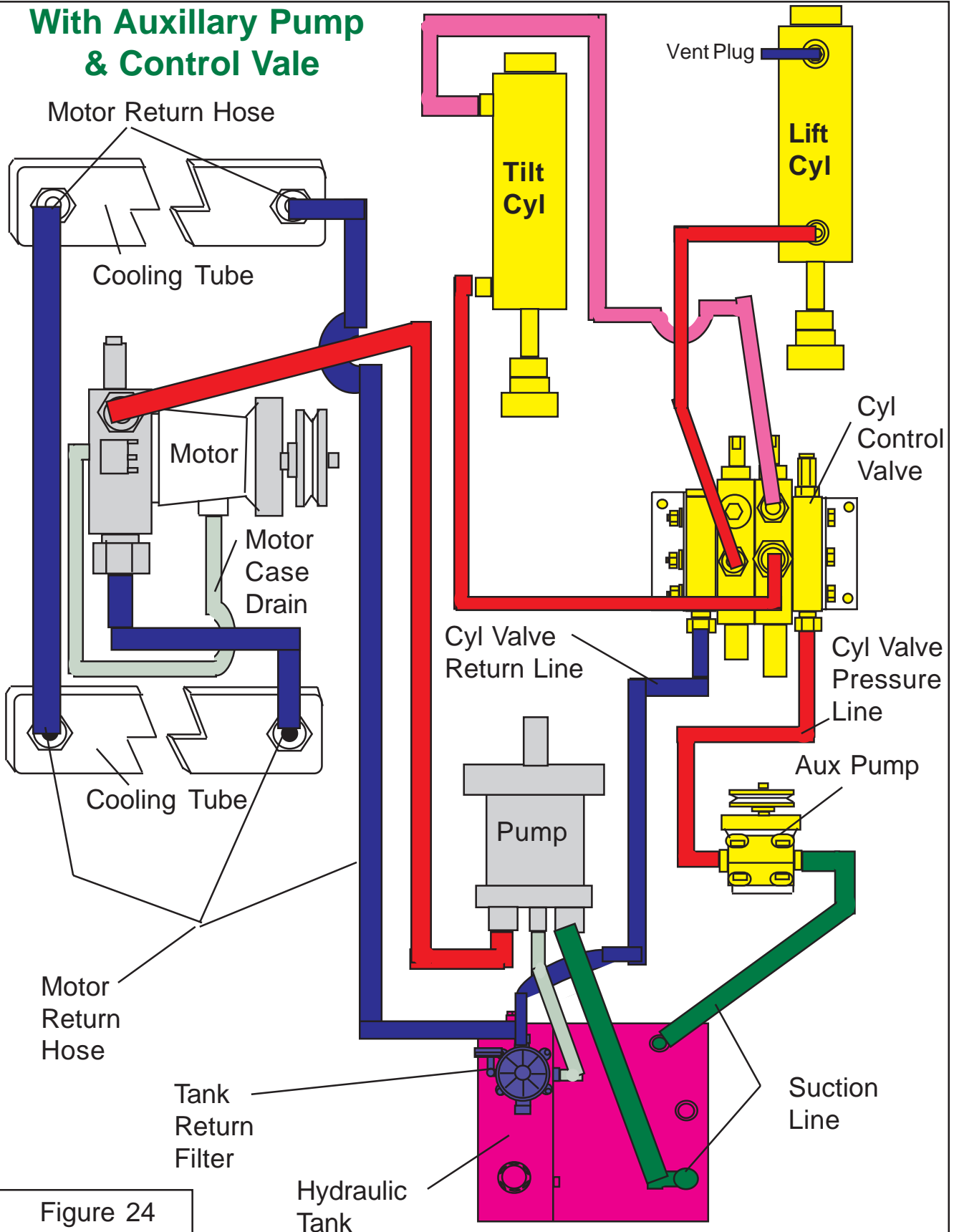


Figure 24

Pump & Motor Hyd Schematic (RH Wing Only)

With Tractor Remotes For Control Valve

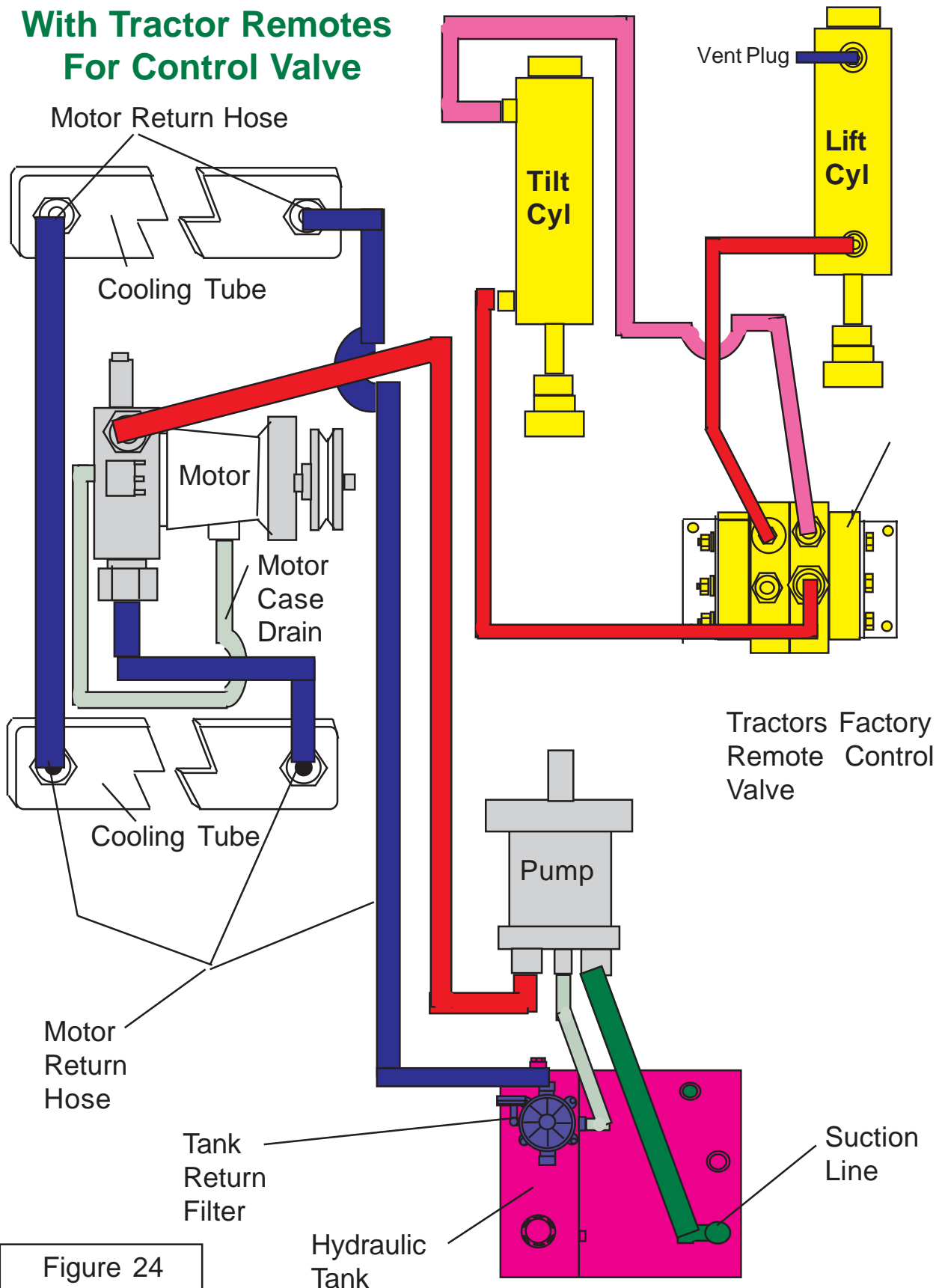
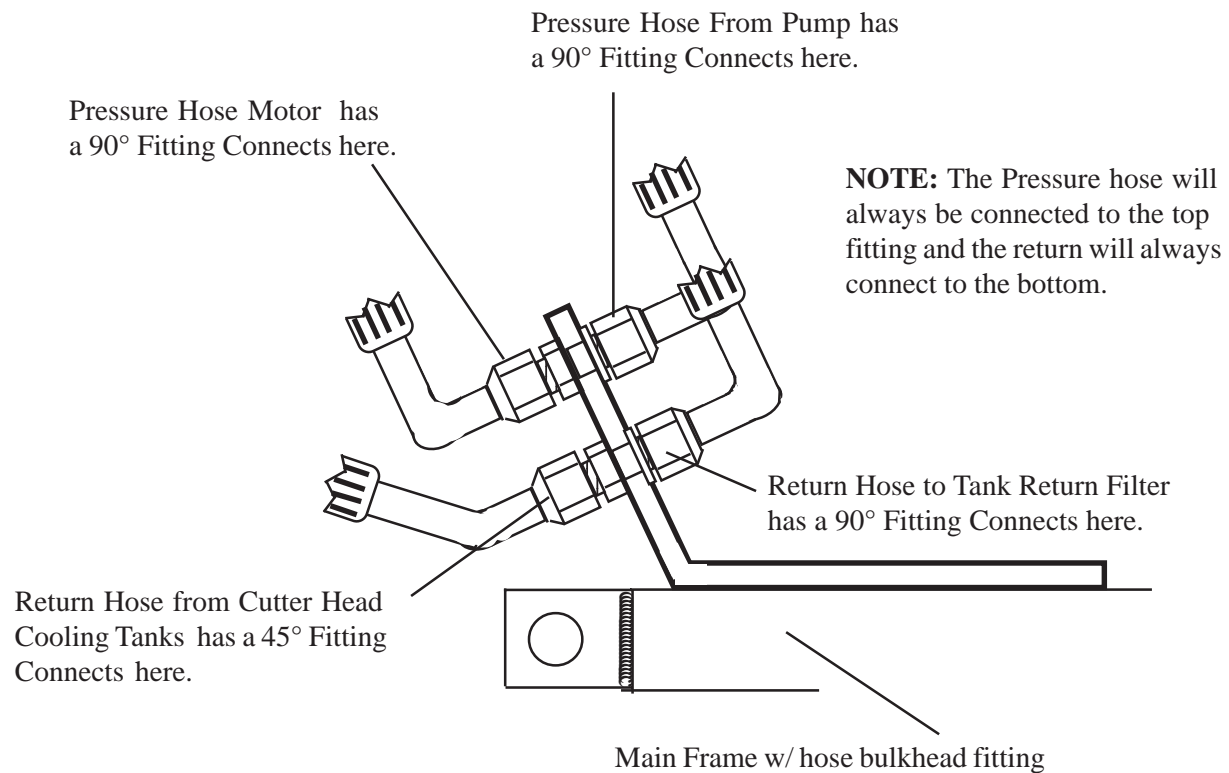


Figure 24

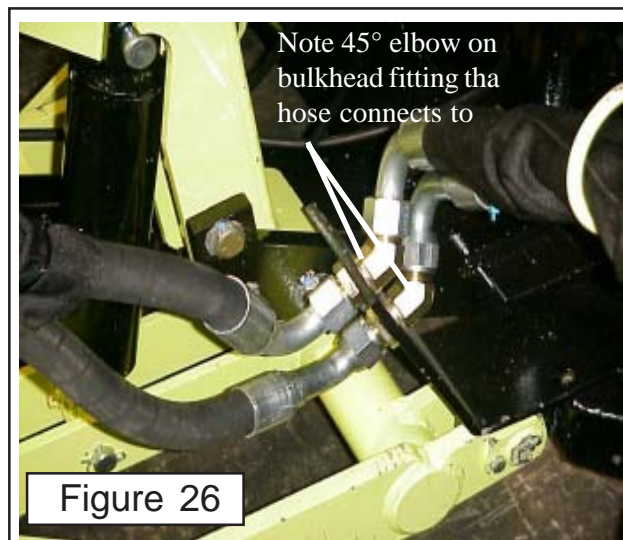
Pump & Motor Hydraulic Schematic (RH Wing Only)



RH side of tractor looking from front to rear of tractor

Single Wing Shown, Dual Wing has metal cross over pipe with a Tee in it for the return.

Figure 25



Pump & Motor Hydraulic Schematic (Dual Wing)

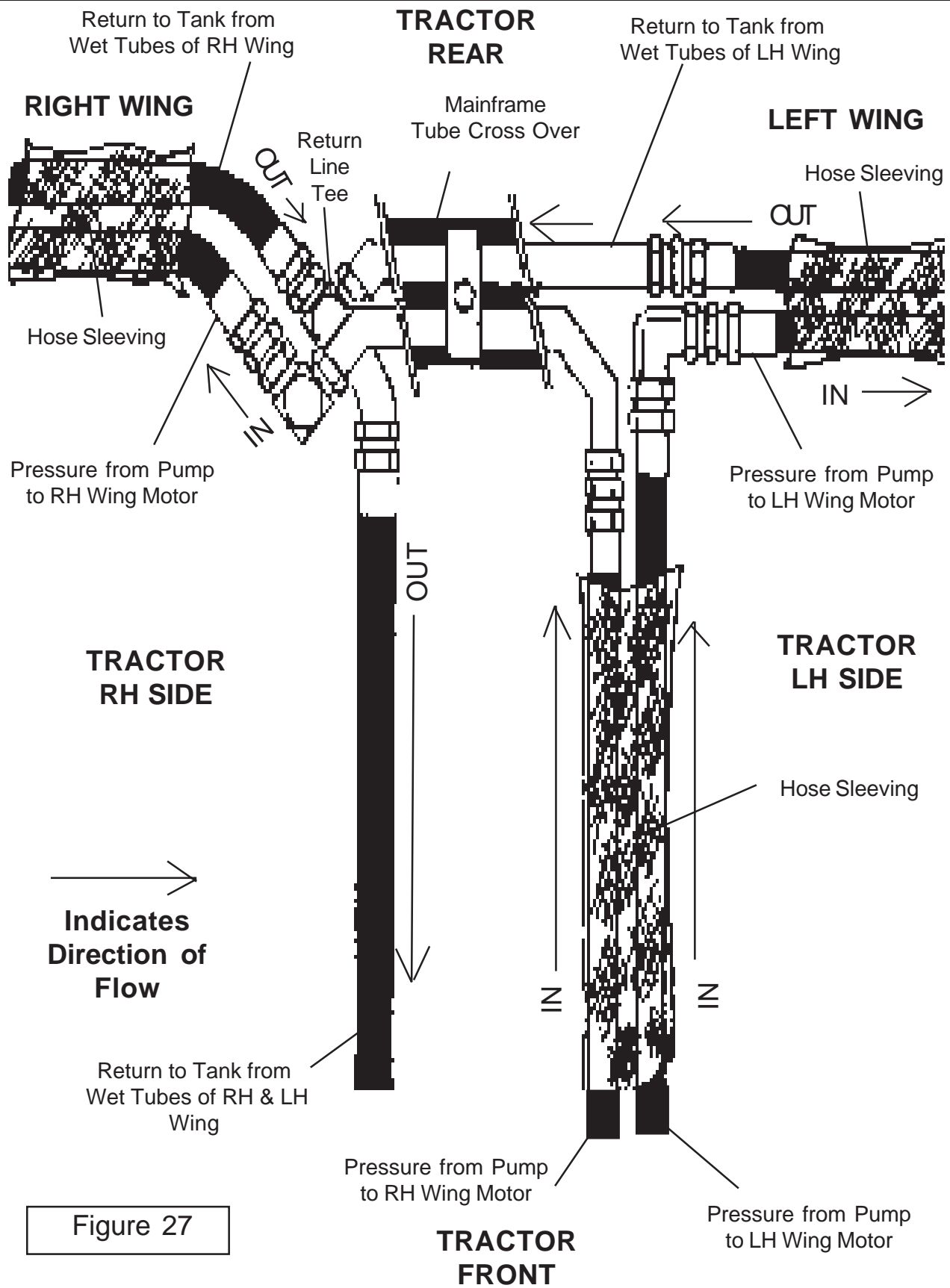


Figure 27

Pump & Motor Hydraulic Schematic

RH WING ONLY HYDRAULIC MOTOR SHOWN

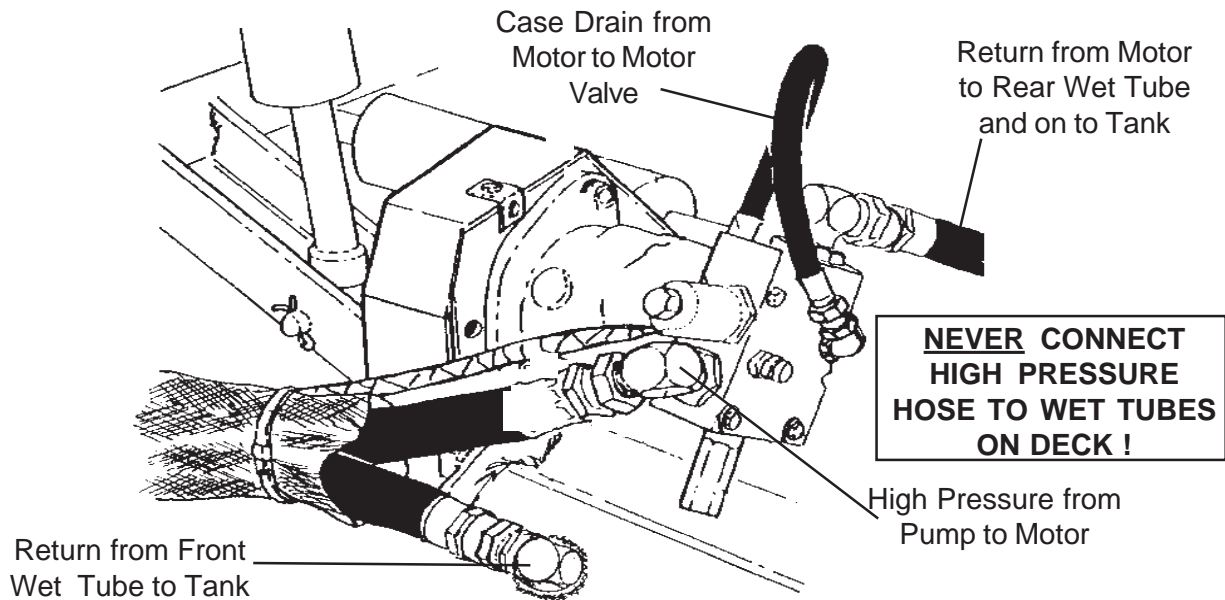


Figure 28

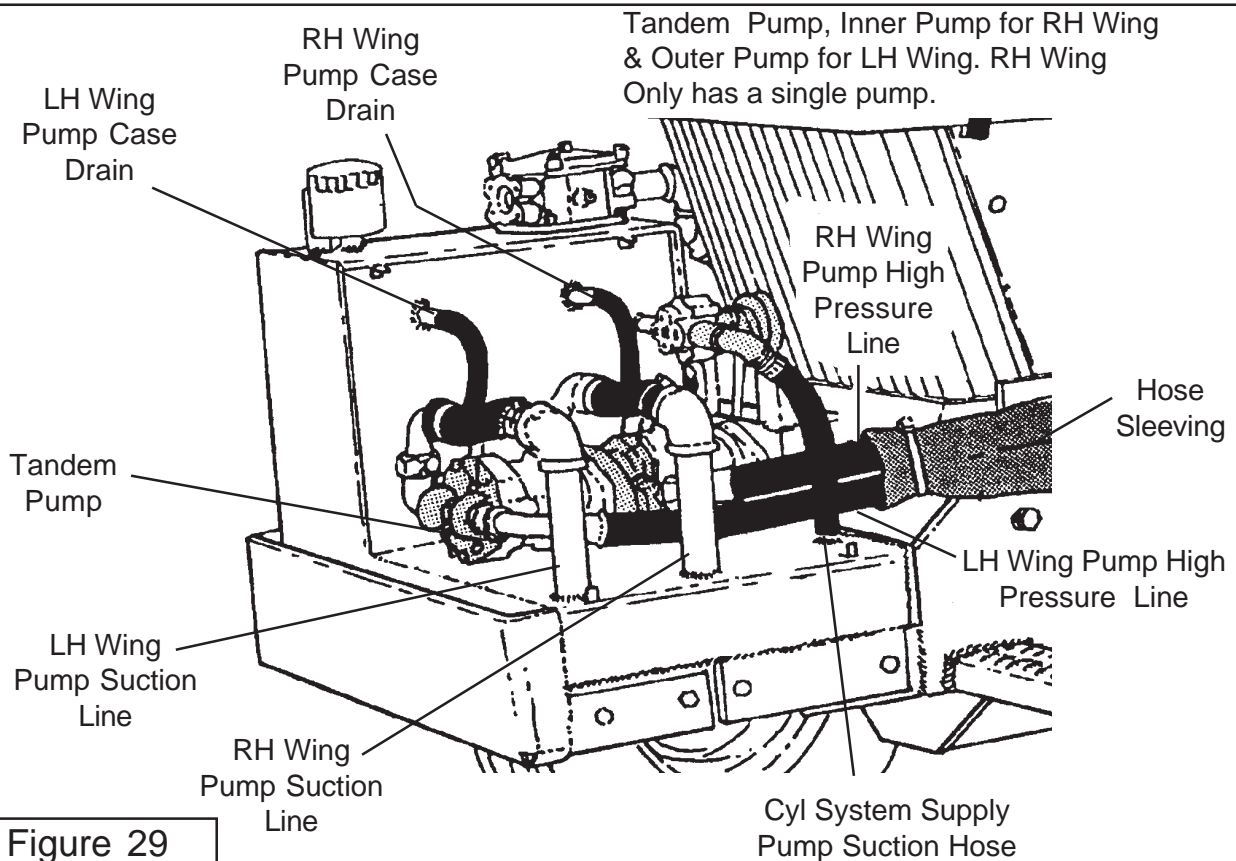


Figure 29

Pump & Motor Hydraulic Schematic

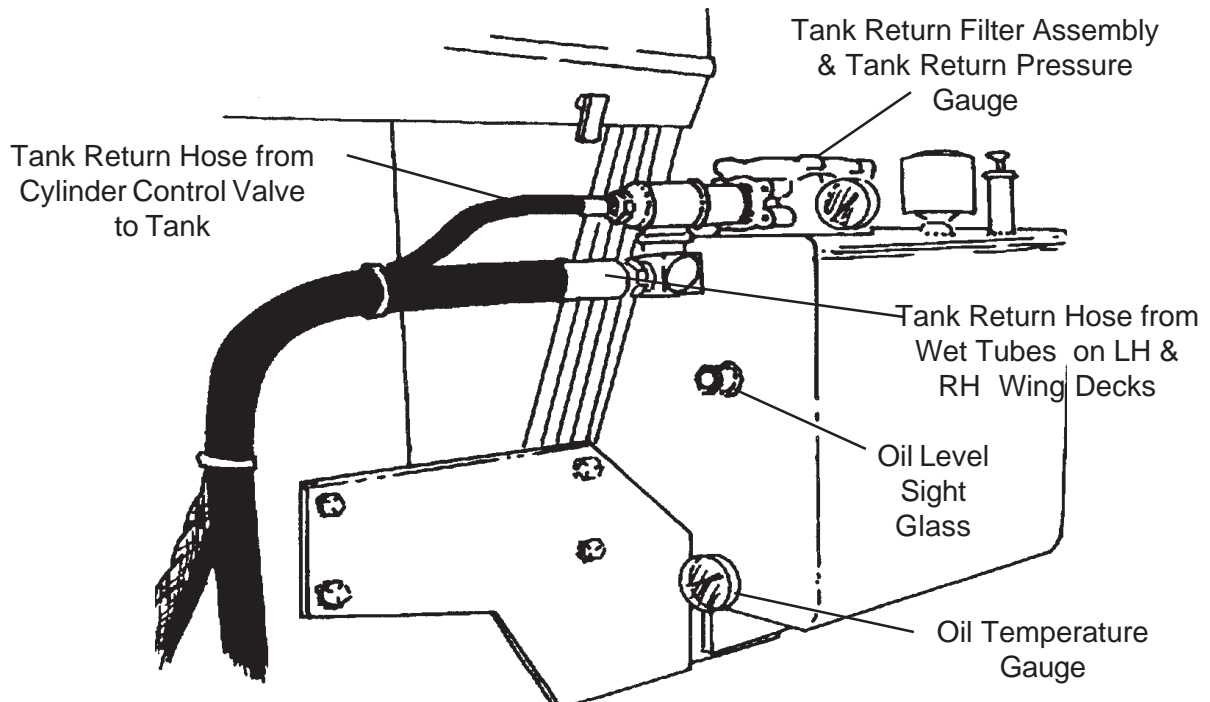
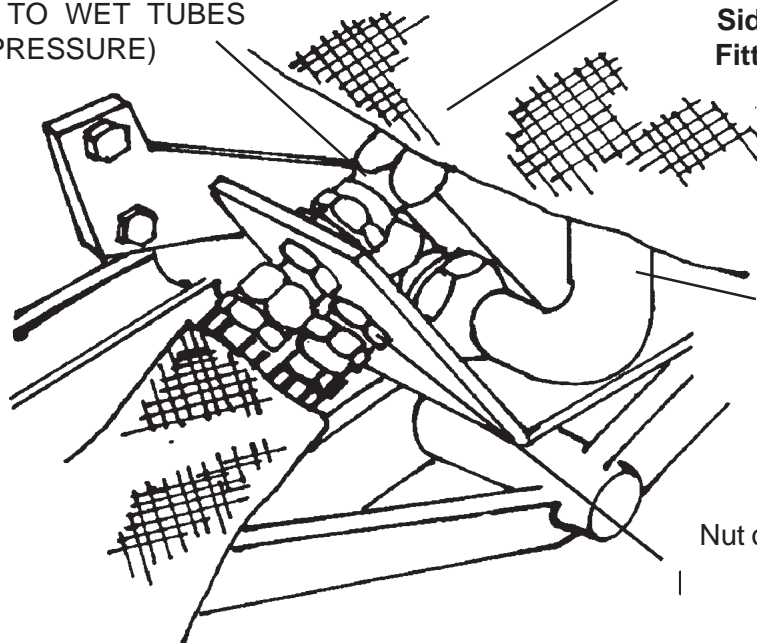


Figure 30

Upper Connection Always from Pump To Wing Motors NEVER TO WET TUBES (HIGH PRESSURE)

Main Frame Cross Over Bracket & Tubes (RH Side Shown, note Tee Fitting in lower fittings)



Lower Connection Always from Deck Wet Tubes to Filter Tank Return Line (LOW PRESSURE)

Figure 31

Pump & Motor Hydraulic Schematic

Wings have a front and a rear wet tube for cooling the oil. At the outer end of the decks there is a cross over hose which allows the oil to cross from the rear tube to the front tube, The Tubes and the cross over hose are in the oil return to tank circuit which has to be low pressure..

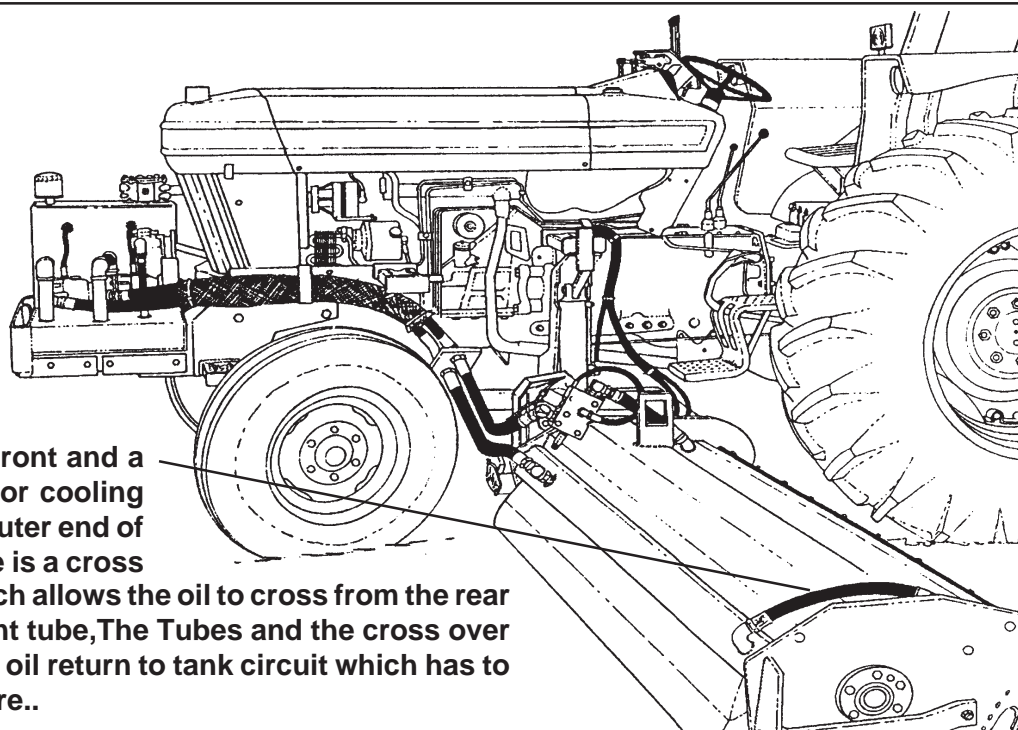


Figure 32

NOTES

Section 6

INTERSTATER

McCormick

CX-75 / CX-85

CX-95 / CX-105

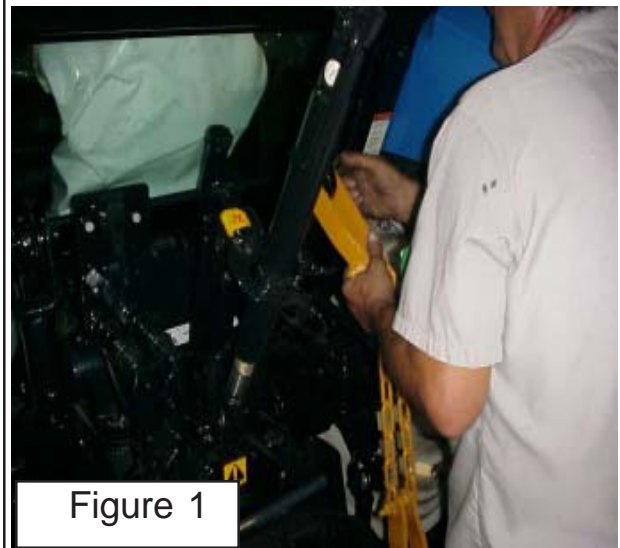
Tractor

Rear Mower Installation

Rear Three Point Mower

Rear Three Point Mower Connection:

1. Install Rear Lift Chains. The rear lift chains will replace the three point lift links using the same pins you removed from the lift links. These chains allow the mower to float with the contour of the ground.



Rear Three Point Mower

2. The Rear Mower is a standard Three Point Hitch mounted mower that is PTO driven through a driveline. It will be sent already assembled with the driveline tied to it. (See Figure 1)

3. Connect Lower Hitch Pins. The lower hitch pins connect to the lift arms of the tractor with click pins, these pins are furnished with the mower. (See Figure 5 & 7). It is best to connect the lower arms of the three point first. You can use the lower arms to

4. Connect Upper Hitch Pin. The upper hitch pin will connect to the top three point adjustable Link with a pin and click pin. The Top Link is furnished with the tractor not with the mower. The Top Link is adjustable in length and is used to level the mower. (See Figure 8)

5. Connect Driveline. The Driveline arrive tied to the mower (See Figure 6 & 9). Cut the ties loose from mower. Connect the clutch end of the driveline to the mower, the clutch is retained to the gearbox input shaft by a clamp yoke on clutch hub. Slip the clutch onto the input shaft until holes in clamp yoke are aligned with the grooves in the input shaft. Install and tighten the two bolts and nuts. The QD Yoke end connect to the Tractor PTO.



Figure 6



Figure 7



Figure 8



Figure 9

Rear Three Point Mower

6. Leveling the Rear Mower & Adjust cutting Height. The Rear Mower is leveled with the top Three Point Link. The Cutting Height is adjusted by moving the Roller up or down by change the bearing bracket mounting hole. The is a decal on the deck next the Operators/ parts manual cannister (See Figure 10 & 11)

7. Rear Mower Completely Connected. With the rear mower completely connected. Check all Oil levels and grease mower components (See Figure 14) before running mower. Also DO NOT start tractor if the rest of the assembly to the interstater is not done. Make certain that all hoses, components, wiring is completed and Oil Tank for interstater has been filled with oil.

8. Slip clutch is incorporated in the PTO driveline. It is designed to slip, absorb the shock load, and protect the driveline. It is important that the clutch lining plates slip when an obstacle or load heavier than clutch setting is encountered. Therefore, if the machine sits outside longer than 30 days and is exposed to rain and/or humid air it is important to make sure that the clutch lining plates are not rusted/corroded together. Before using the mower use the following procedure to make sure the clutch will slip and give the overload protection required. (See Figure 13) This is a required step because the driveline has been sitting and may be stuck.

- A.** Loosen nuts on springs until the springs can freely rotate, yet remain secure on bolts.
- B.** Attach mower to tractor and start the tractor. Set the engine speed at 1200 RPM.
- C.** Mark outer plates with marker, paint or any form that will work for you to tell if the components of the clutch slipped.
- D.** Engage the PTO (approximately one second) and then quickly disengage it. The friction lining plates should break loose (check the mark).
- E.** Turn tractor off and tighten the nuts on the springs to their original position of 1-5/16" compressed spring length.



Figure 10

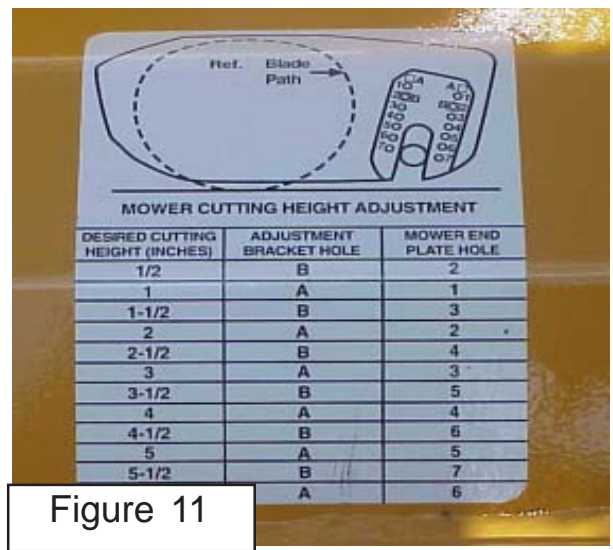


Figure 11



Figure 12

Rear Three Point Mower

9. Slip clutch is incorporated in the PTO driveline. It is designed to slip, absorb the shock load, and protect the driveline. After the first hour of operation, the slip clutch should be checked for overheating. After this first check, the slip clutch should be checked weekly or anytime there is overheating. To adjust the slip clutch, tighten the spring bolts $1/8$ (maximum) turn at a time. Bolts should NEVER be adjusted to the point where the springs are compressed solid. The slip clutch should be checked periodically and adjusted to compensate for wear. The lining plates are $1/8$ " thick when new. Replace after $1/32$ " wear. If the mower has been idle for an extended period of time, or in wet weather, before operating check to be sure the friction lining plates are not frozen or rusted together. Should this freezing occur refer to the procedure described in the "Seasonal Clutch Maintenance" section on the next page. There are four friction lining plates in the slip clutch. These should be checked weekly for oil or grease, wear, and moisture which could cause corrosion on the drive plates. (See Step 8) **NOTE: Above information is listed as a reference and is listed in the operators manual as well.**

10. Check All Shields. Make certain any shields that were removed during assembly they are reinstalled. **DO NOT** operate mower or tractor with any shields or guards missing.

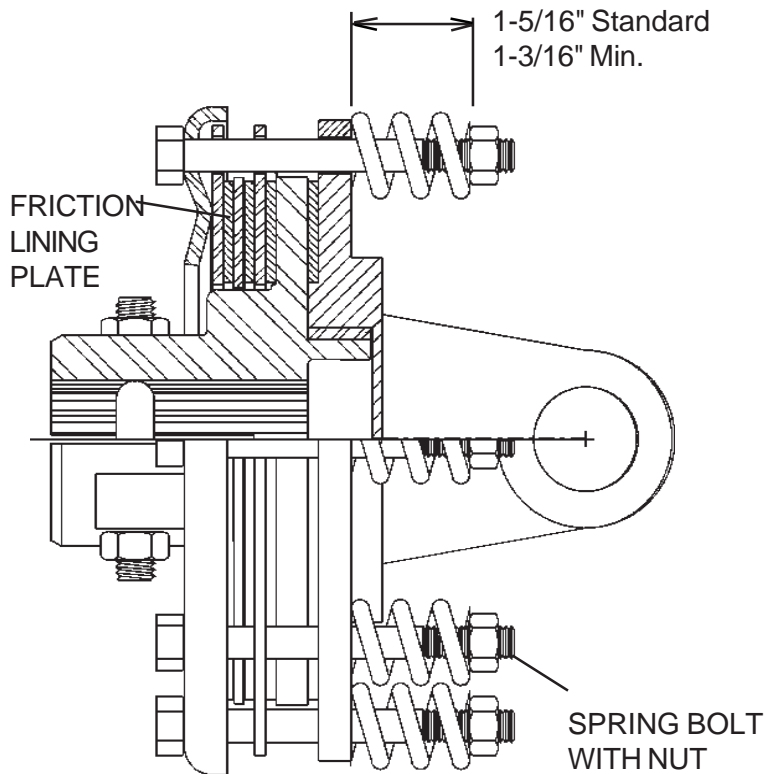
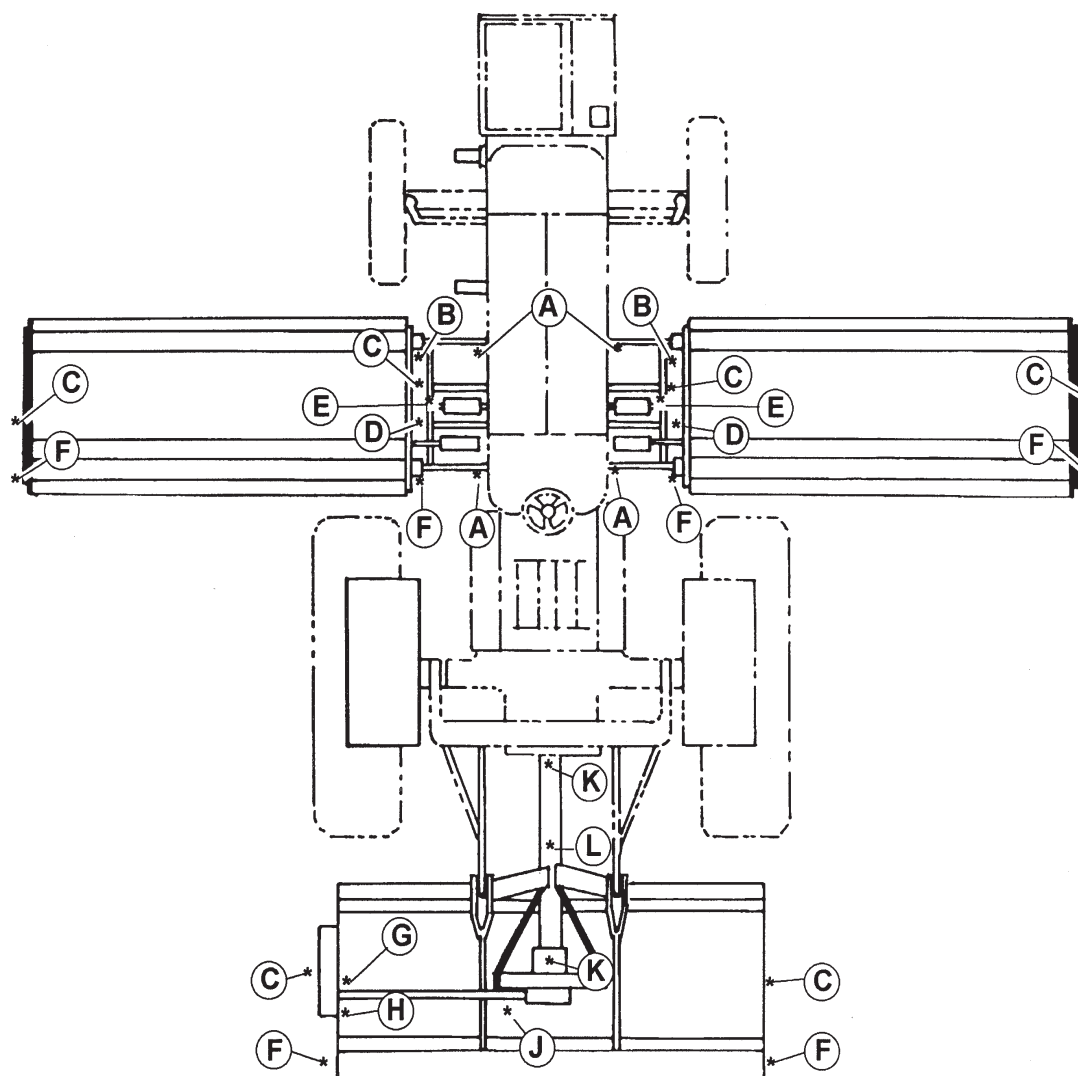


Figure 13



Figure 14

Lubrication Points



LUBRICATE ALL POINTS BEFORE OPERATING MOWER FIRST TIME

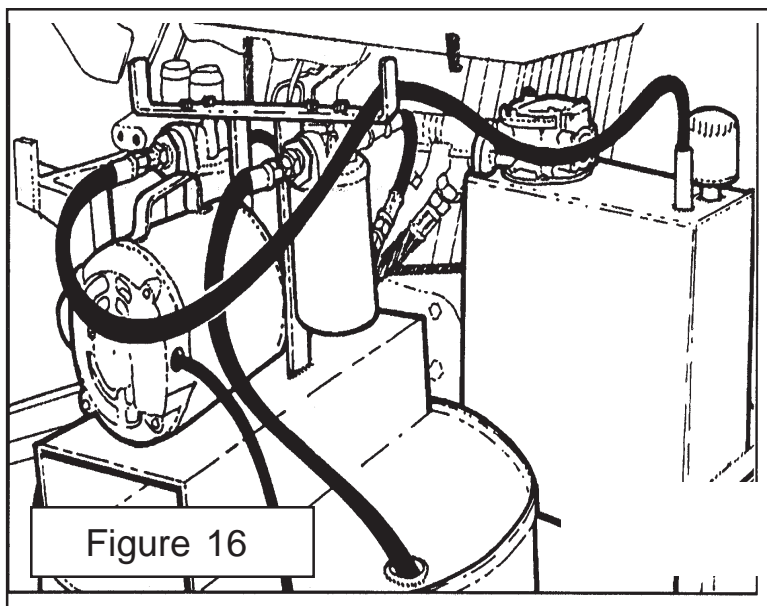
- | | | | |
|---|---------------------------|---|----------------------|
| A | Lift Frame Pivot Pin | G | Rear Mower Idler Arm |
| B | Wing Mower Belt Idler Arm | H | Banjo Bearings |
| C | Cuttershaft Bearings | J | Banjo Coupling |
| D | Tilt Cylinder Rod Ends | K | Driveline Yoke |
| E | Lift Cylinder Rod Ends | L | Driveline slip |
| F | Roller Bearings | | |

Figure 15

Initial Start-Up Procedure

INITIAL START-UP PROCEDURE:

1. Check all nuts and hex head bolts to ensure all are tight and all lock washers are fully compressed (flattened).
2. Check all hoses and hydraulic connections. Make certain they are secure.
3. Inspect all moving parts and make certain that no wires or hoses will be caught or pinched when the tractor or the INTERSTATER is in operation. Tie down loose wires and hoses.
4. Thoroughly grease the INTERSTATER and install a lubricap on each grease fitting. Refer to the Operation and Maintenance Section.
5. Jack front of tractor up enough to allow axle to pivot through its full range. While turning wheels through their limits, right and left, swing them up and down. Look for interference between tires and any part of the INTERSTATER. If interference occurs, shims (not furnished) must be welded to axle pivot stop or steering arm to limit the movement enough to avoid interference. Tractors with an adjustable front axle may require an outward adjustment of the wheels.
6. To fill the INTERSTATER reservoir with new, clean hydraulic oil, follow the steps below. Refer to the Operation and Maintenance Section for specifications. (See Figure 16)
 - A. With a hydraulic jack raise the right side of the tractor. This will tilt the tank and allow only a minimum amount of air when filling.
 - B. Avoid hydraulic contamination by filtering the hydraulic oil while filling the hydraulic tank.
 - C. 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 the overhauled machine's hydraulic system.
 - D. After the first 10 hours of operation, replace the hydraulic filter with a new one. An extra Filter Element is provided for you. Refer to the Operation and Maintenance Section for instruction.
7. After the Interstater mower is completely assembled to the tractor and with the wings on the ground, fill the mower hydraulic tank above the oil level sight gauge approximately 5" or 1" below the top of the tank.
8. With mower ON/OFF switches in "ON" position and tractor fuel cut off, crank engine for about 30 to 45 seconds to allow oil to fill pumps and motors. Check the oil level in the sight gauge. If no oil is seen add oil to bring the level up to the sight gauge. NOTE: Do not fill the tank with oil above the level of the sight gauge. Over filling the tank with oil after the initial filling may result in oil being discharged through the air filter on top of the hydraulic tank. Start the tractor and run it for 2 minutes and then turn it off. Again check the oil level in the sight gauge. If the oil level is in the sight gauge, the unit is ready to run. If no oil is seen, add oil to bring the level up to the sight gauge.



Initial Start-Up Procedure

CAUTION**ROTATING KNIVES!**

Remove all foreign objects and stand clear of cutter units. **DO NOT GET NEAR!**



NOTE: On tractor hydraulic powered circuit only, make certain that there is full flow from tractor hydraulic system to control valve. Refer to tractor manual.

- 9.** After hydraulic system is fully charged and functioning properly, switch cutter units on, then speed engine up to 540 RPM PTO speed. Maintain this speed for about 5 minutes. Check complete INTERSTATER, look for any leaks, loose connections, or anything that could cause premature wear or failure.

FINAL CHECK

Run INTERSTATER for about 1/2 hour at full speed. Check for leaks and vibrations. Frequently check oil temperature. Make certain it does not exceed 180 deg.

NOTE: When raising wings, make certain there is no interference with mower, frame, cylinders or tractor. Lift wings slowly.

CAUTION: DO NOT leave unit unattended, and COMPLY WITH ALL WARNING DECALS.



If unit starts to make unusual noise, stop unit and check oil level. Also check for frothy oil which would indicate a leak on suction side of system.

Section 7

INTERSTATER

McCormick

CX-75 / CX-85

CX-95 / CX-105

Tractor

Mounting Specifications & Component Identification

Mount Kit - Bill of Material

McCormick CX75/85/95/105 Cab/2&4wd

Front Tire Size: 11.2-24 (R-1) Max

As Of Date:12-02-04

Rear Tire Size: 16.9-30 (R-1) Max

Mount Kit:

Mainframe: 2wd Right Hand Only (Offset 5")02982467

Mainframe: 4wd Right Hand Only (Offset 5") 02982218

Component Crate:

Component Crate: RH Only w/Tractor Hyd (Tier II Only) 02982079

Options:

Lift Chain Kit (See Spec Below) 701150

Extra Interstater Installation Manual02982245

Important notes & Specifications:

1. Both RH only mainframes were either designed or revised according to dimensions provided by Storr Tractor Co. Before proceeding with additional orders, it would be wise to mount one of the two configurations at our Seguin facility for proper verification. Otherwise, the dealer/customer may become responsible for any necessary modifications (CNP 2-10-05)
2. Special wing heads must be fabricated for 4wd tractors such that the cooling tube return fitting is moved out 12" for front tire clearance during transport. An engineering change request (ECR) must be submitted to revise the heads prior to accepting any new 4wd orders. Clipped foot guards are also recommended for this application.
3. This mount kit includes an exhaust modification kit (shown below) which allows the vertical A-post style exhaust to be moved in approximately 9" for head transport clearance.
4. Due to the proximity of the cylinder mount, the battery box must be rotated 180° so that the battery can still be removed with ease. As a result, new mounting holes must be drilled in the bottom and the plastic cover must be notched for battery cable clearance.
5. If a rear head is needed, it can be ordered as a 96" centered or 88" with an 8.5" offset.
6. The 4wd mainframe will only allow approximately 7" of ground clearance when equipped with the maximum tire sizes listed above. However, the 2wd frame should clear by approx. 11".
7. The right hand steps must be removed for head clearance. Ingress/egress on the right is otherwise blocked by the control stand.
8. Two lift chains are recommended for centered heads, while offset heads should only be ordered with one.
9. The right hand only component crate for tractor hydraulics includes hoses and fittings for coupling to the rear tractor hydraulic remotes. Note, the tractor must be equipped with two remotes.
10. The McCormick CX series Tier II engines were implemented with Ser.#JJE20523644 for the CX75/95/105 models and Ser.#JJE2053184 for the CX85 model. Notice, the CX70/80/90 and CX100 went out of production during this transition. The Tier II models now include a different engine and crankshaft pulley. As a result, a different pulley adapter and driveline is required for both 2&4wd models.

Mount Kit - Bill of Material



Factory Exhaust Pipe Removed



Replacement Exhaust Pipe Installed



Exhaust Moved Inward Approx 9"



Tractor Hydraulic Used for Cylinder

Mount Kit - Bill of Material

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.

TRACTOR: Cab, 2 & 4 WD: Use Tractor Hyd for Cylinders

Main Frame Asy P/N 02982467 (2 WD RH Wing Only): Includes Items Below (For McCormick CX-75,CX-85,CX-95 & CX-105 Cab 2 WD)

Item	Part No.	Qty	Description
1	02982467	1	MAINFRAME WELDMENT

Main Frame Asy P/N 02982218 (4 WD RH Wing Only): Includes Items Below (For McCormick CX-75,CX-85,CX-95 & CX-105 Cab 4 WD)

Item	Part No.	Qty	Description
1	02982218	1	MAINFRAME WELDMENT

Component Crate P/N 02982079 (2 & 4 WD RH Wing Only) : Includes items below (For McCormick CX-75,CX-85,CX-95 & CX-105 Cab 2 WD & 4 WD)

Item	Part No.	Qty	Description
1	002364	1	HOSE, #16 - 16FJX - 16FJX45 - 65.5" LG
2	002365	1	HOSE, #16 - 16FJX - 16FJX90 - 62.5" LG
3	002501	1	WIRE HARNESS, RH1ST W/CAB
4	02966874	1	BOOT,CABLE
5	108436	1	LIFT FRAME WELDMENT, RH
6	702717	1	PUMP ASY, SINGLE
7	02905100	3	HOSE, #4 - 4FJX - 4FJX - 114" LG
8	02980151	1	CYLINDER SUPPORT WELDMENT
9	02982080	1	CARTON, SMALL PARTS
10	108107	1	PUMP MOUNT WELDMENT, MACHINED
11	02982236	1	HOSE #16 - 16FJX - 16FJX90 - 79" LG
12	02982235	1	HOSE, #16 - 16FJX - 16FJX90 - 54" LG
13	02982213	1	TANK RAIL WELDMENT, LH
14	02982214	1	TANK RAIL WELDMENT, RH
15	02982247	1	EXHAUST RELOCATION KIT
16	02958631	1	DRIVESHAFT 7/8 X 7/8 X 22.87

Above items are included in Component Crate P/N 02982079

Carton Small Parts P/N 02982080 (2 & 4 WD RH Wing Only) : Includes items below (For McCormick CX-75,CX-85,CX-95 & CX-105 Cab 2 WD & 4 WD)

Item	Part No.	Qty	Description
1	00763977	1	DECAL, NOTICE TO OWNER
2	02906300	2	CORDURA SLEEVING - 48" LG
3	02919400	2	ADAPTER, HYD ELBOW 16MJ - 16MJ45
4	02961115	1	ADAPTER, PIPE 20FP - 20FP90DEG

Continued Next Page

Mount Kit - Bill of Material

Continued From Previous Page

5	02961286	1	ADAPTER, HYD STRAIGHT 20FJ -16MJ
6	02962748	1	DECAL, "ON" - "OFF" SWITCH, CUTTER VLV
7	02964028	1	SWITCH, PUSH-PULL
8	02966873	1	DRAWING, INST BOOT
9	803213A	1	INTERSTATER OPERATORS MANUAL ASY
10	02980177	1	WLDMENT, SWITCH MOUNT
11	02978281	2	HOSE RING WELDMENT
12	002338	1	CAP, 3/4" FEMALE PIPE
13	02822100	3	ADAPTER, HYD ELBOW 4MJ - 8MP90
14	02811300	3	CHECK VALVE
15	651312	3	COUPLER HALF, MALE
16	108748	1	SPACER 1 CYL COLLAR
17	03200285	1	DECAL-WATCH YOUR STEP
18	000859	8	TIE, PLASTIC
19	02982081	1	BOLT BAG, McCORMICK CX CAB/2&4
20	02974786	1	PULLEY ADAPTOR ASY. 7/8" SHAFT
21	107499	4	SPACER, 1-1/4" X 7/32" WALL 2LG
22	02982246	1	ASSY, COUPLER & ROLL PIN
23	02982245	1	MANUAL, INST MCCORMICK CX INTST
24	02960408	1	ADP HYD 20MP - 20MJ 45°

Above items are included in Component Crate P/N 02982079

Bolt Bag P/N 02982081 (2 & 4 WD RH Wing Only) : Includes items below **(For McCormick CX-75, CX-85, CX-95 & CX-105 Cab 2 WD & 4 WD)**

Item	Part No.	Qty	Description
1	00022200	4	LOCKWASHER, 7/16" PL
2	02971158	12	LOCKWASHER, 20MM
3	02975781	4	BOLT, HEX HEAD 7/16"-NF X 1-3/4" PL GR8
4	00002000	2	BOLT, HEX HEAD 3/8"-NC X 3/4" PL GR5
5	00015800	2	LOCKNUT, TOPLOCK 3/8"
6	00011100	2	FLATWASHER, STD 3/8"
7	02971342	6	BOLT, HEX HEAD M20-P2.5 X 45MM PL GR10.9
8	02975723	4	BOLT, HEX HEAD M20-P2.5 X 100MM PL GR10.9
9	02975692	2	BOLT, HEX HEAD M20-P2.5 X 50MM PL GR10.9
10	7AH5101114	3	BOLT, HEX HEAD 5/8"-NC X 1-3/4" PL GR8
11	00695100	4	LOCKNUT, TOPLOCK 5/8"
12	00001300	4	LOCKWASHER, 1/2"
13	02892000	4	BOLT, HEX HEAD 1/2"-13NC X 1-1/2" PL GR8
14	00010300	3	LOCKWASHER, 5/8
15	00753753	4	BOLT, HEX HEAD 5/8"-NC X 2" PL GR8

Above items are included in Bolt Bag which is included in Component Crate P/N 02982079

Exhaust Relocation Kit P/N 02982247 (2 & 4 WD RH Wing Only) Includes items below **(For McCormick CX-75, CX-85, CX-95 & CX-105 Cab 2 WD & 4 WD)**

Item	Part No.	Qty	Description
1	02982242	1	EXHAUST SUPPORT WELDMENT
2	02982240	1	EXHAUST PIPE, McCORMICK CX INT

Continued Next Page

Mount Kit - Bill of Material

Continued From Previous Page

Item	Part No.	Qty	Description
3	02980584	2	EXHAUST CLAMP KIT, 3"
4	02982237	1	EXHAUST GUSSET
5	02970065	2	LOCKWASHER, 8MM
6	02980727	2	BOLT, SOCKET HEAD , M8-P1.25 X 35mm PL GR10.9

Above items are included in Exhaust Relocation Kit P/N 02982247

Common Crate P/N 703525 (2 & 4 WD RH Wing Only) Includes items below (For McCormick CX-75,CX-85,CX-95 & CX-105 Cab 2 WD & 4 WD)

Common Crate is shipped with all units, RH Wing Only

Item	Part No.	Qty	Description
1	00017000	4	LOCKWASHER, 1/4" PL STD
2	00024100	4	FLATWASHER, STD 1/4" PL
3	001783	1	HOSE #20 - 20FJX90 - BLANK -13" LG
4	002496	1	WIRE HARNESS, RH WING
5	00756059	1	DECAL, WARNING OIL LEAK
6	02965093	1	DECAL, PROPER ENGINE OPERATING
7	02971123	1	DECAL, WARNING PRESSURIZED TANK
8	02971943	1	DECAL, ALAMO IND YELLOW
9	02977385	1	MANUAL HOLDER CANISTER
10	02977417	1	DECAL OPERATORS MANUAL INSIDE
11	10058000	4	BOLT, HEX HEAD 1/4"-NC X 1" PL GR5
12	103051	2	SHOE / WEAR PLATE
13	106572	1	BUMPER WELDMENT
14	107222	1	SWITCH MOUNTING WELDMENT
15	107224	1	CUT-OFF SWITCH MOUNT RH
16	701104A	1	LIFT CYL, W/O FITTINGS
17	701105A	1	TILT CYL, W/O FITTINGS
18	702706	2	OUTER PIVOT ASY, W/ZERK & CAP
19	703526	1	CARTON, SMALL PARTS, RH1 (COMMON CRATE)
20	02966305	1	DECAL, UNIVERSAL TRACTOR
21	803213CA	1	CANISTER MANUAL, INTERSTATER
22	02981133	1	TANK SUB-ASY, COMMON
23	02981124	1	TANK COVER WELDMENT, INTERSTATER

Above items are included in Common Crate P/N 703525

Carton Small Parts P/N 703526 (2 & 4 WD RH Wing Only) Includes items below (For McCormick CX-75,CX-85,CX-95 & CX-105 Cab 2 WD & 4 WD)

Common Crate is shipped with all units, RH Wing Only

Item	Part No.	Qty	Description
1	000859	15	TIE, PLASTIC
2	001859	1	HOSE, #6 - 6FJX - 4MP - 19" LG
3	002019	1	MAGNET, SWITCH ACTUATOR
4	002020	2	SPACER, PLASTIC
5	002369	1	DECAL, DANGER-MULTI HAZARD
6	00751596	1	ADAPTER, PIPE, ELBOW

Continued Next Page

Mount Kit - Bill of Material

Continued From Previous Page

Item	Part No.	Qty	Description
7	00753840	2	DECAL, SAFETY WING LOWERING
8	02956851	1	ADAPTER, HYD ELBOW 16MJ -16FJX90
9	02961001	1	FILTER ELEMENT
10	02962963	1	DIAL INDICATOR, IN TANK FILTER
11	03200300	1	HOSE BIB, 20MP - #20 HOSE
12	63078500	1	PIPE CAP, 20 FP
13	700883	2	INNER PIVOT PIN W/ZERK
14	702800	1	MANIFOLD ASY, RETURN RH1st / RHO
15	703520	1	SAFETY SWITCH ASY.
16	703527	1	BOLT BAG ASY. COMMON SING WING

Carton Small Parts P/N 703526 is included in Common Crate P/N 703525

Bolt Bag Asy P/N 703527 (2 & 4 WD RH Wing Only) Includes items below
(For McCormick CX-75,CX-85,CX-95 & CX-105 Cab 2 WD & 4 WD)

Common Crate is shipped with all units, RH Wing Only

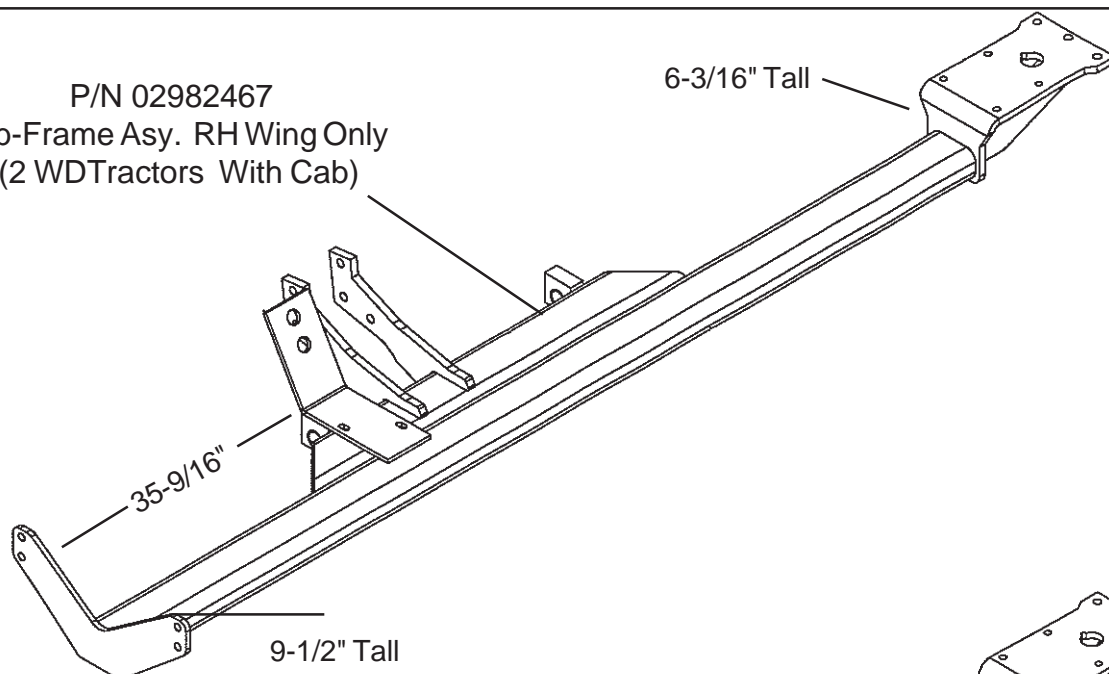
Item	Part No.	Qty	Description
1	000859	15	TIE, PLASTIC
1	00001300	2	LOCKWASHER, 1/2"
2	00001800	16	LOCKNUT, TOPLOCK 1/2"-NC PLB
3	00002700	10	FLATWASHER, 1/2" PL STD
4	00011700	7	LOCKWASHER, 5/16" PL STD
5	00013300	8	BOLT, HEX HEAD 1/2"-NC X 2" PL GR5
6	00023500	5	FLATWASHER, 5/16" PL
7	00037200	6	LOCKNUT, 3/4"-NC
8	00695100	8	LOCKNUT, TOPLOCK 5/8"-NC
9	00750311	2	BOLT, HEX HEAD, 5/8"-NC X 3-1/2" ZP GR5
10	00750952	6	BOLT, HEX HEAD, 5/8"-NC X 2-1/2" ZP GR5
11	00751003	1	PIPE PLUG, 1/4" NPTM STANDARD
12	00755153	2	COTTER PIN, 3/16" X 1-1/2" PLATED
13	02026200	1	HOSE CLAMP, 1-5/16" TO 2-1/4"
14	02035400	2	BOLT, HEX HEAD 3/8"-NF X 3/4" PL GR5
15	02886900	2	CARRIAGE BOLT, 1/2"-13UNC X 1-1/2" PL GR5
16	02892000	2	BOLT, HEX HEAD 1/2"-13NC X 1-1/2" PL GR8
17	02960018	3	ADAPTER, HYD ELBOW 4MB - 4MJ90
18	02960054	1	PLUG, #4 MB W/T-VENT & O-RING
19	02963584	4	LOCKNUT, 8-32 PL
20	02963585	4	SCREW, SLOTTED #8-32 X 1-1/4" RD HD
21	03101646	2	LOCKWASHER, 3/8"
22	103266	1	CYLINDER PIN
23	107242	2	SPACER
24	2A381312	4	BOLT, PLOW 1/2"-NC X 1-1/2" GR5
25	37107B13	2	HAIR PIN
26	8354	2	PIN, HYD. CYLINDER
27	02959390	6	BOLT, HEX HEAD 3/4"-NC X 2-1/4" PL GR8
28	000032	7	BOLT, HEX HEAD 5/16"-NF X 7/8" PL GR5

Bolt Bag Asy P/N 703527 is in Carton Small Parts P/N 703526 & is in Common Crate P/N 703525

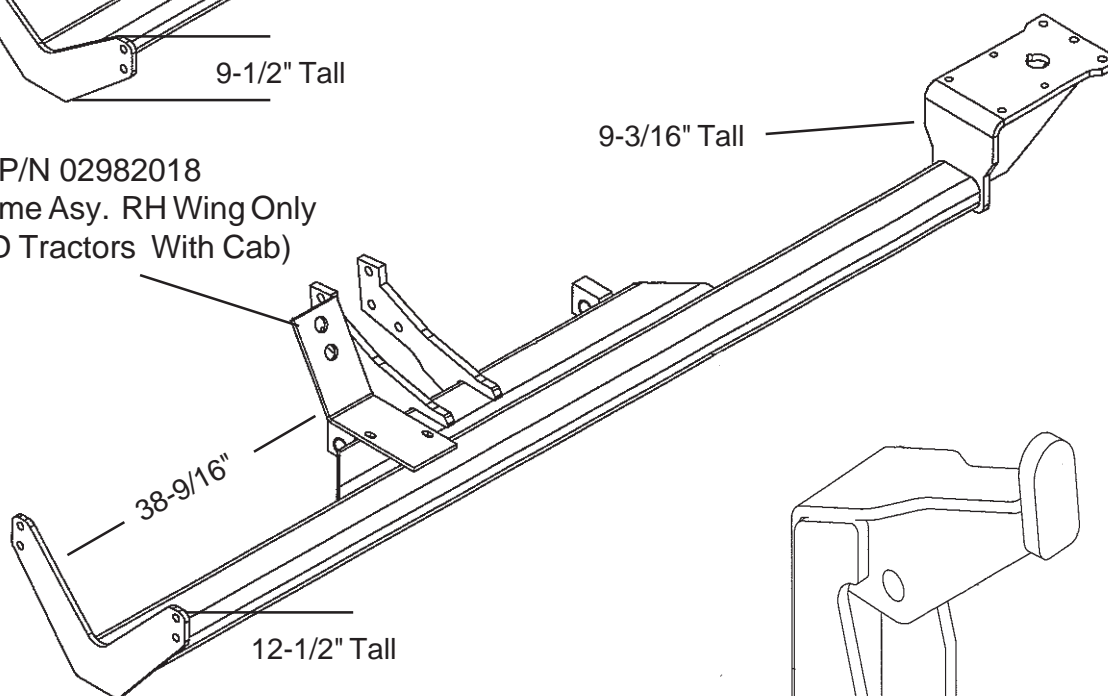
Interstater (McCormick CX-75, CX-85, CX-95 & CX-105 Asy. Man.) 07/05

Component Identification

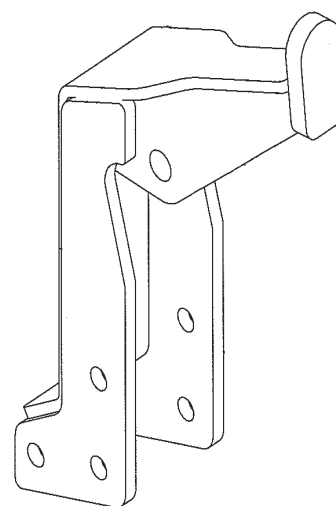
P/N 02982467
Sub-Frame Asy. RH Wing Only
(2 WD Tractors With Cab)



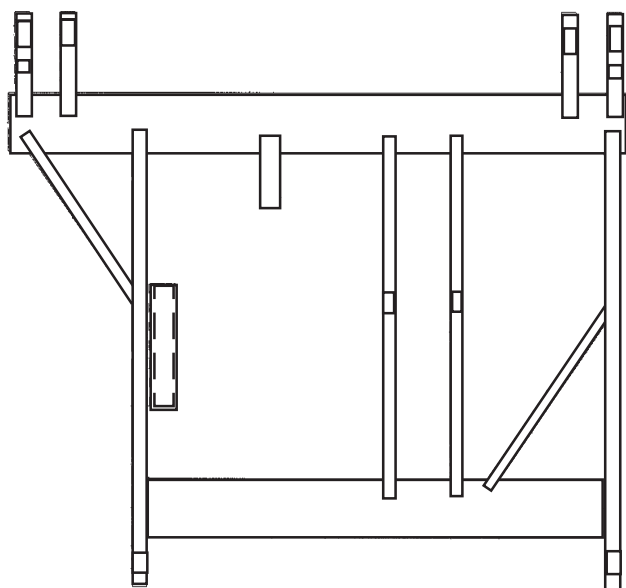
P/N 02982018
Sub-Frame Asy. RH Wing Only
(4 WD Tractors With Cab)



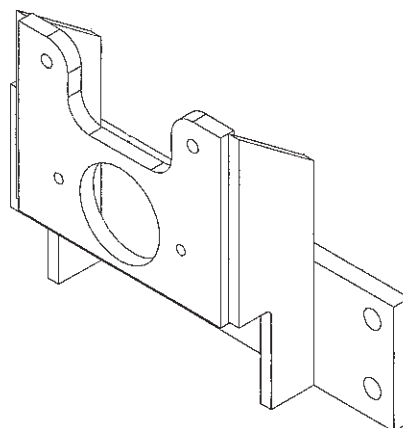
P/N 02980151
Cylinder Support Weldment
(2 WD or 4 WD Tractor)



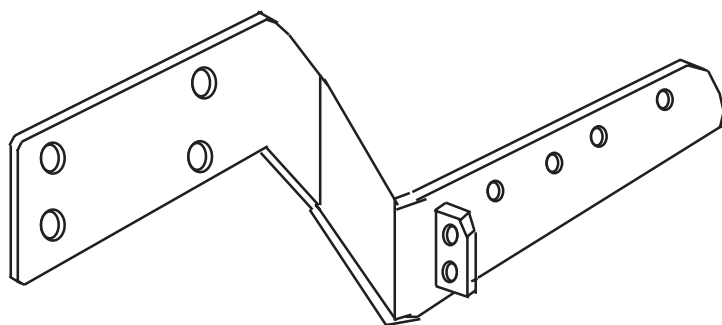
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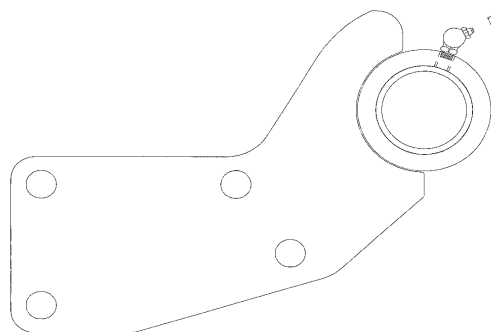
P/N 108436
Lift Frame Weldment
RH Wing Only
(2 WD or 4 WD Tractor)



P/N 108780
Pump Mount Weldment
(2 WD or 4 WD Tractor)

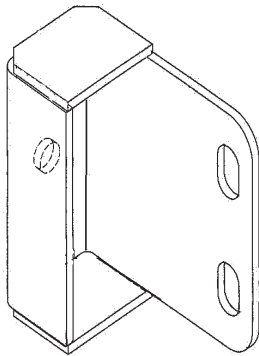


P/N 02982213 (LH Shown)
P/N 02982214 (RH Not Shown)
Tank Rail Weldment, LH and RH
are Mirror Image of each other
(2 WD or 4 WD Tractor)

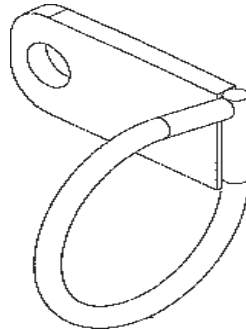


P/N 702706
Outer Pivot Asy w/ Zerk & Cap
(2 WD or 4 WD Tractor)

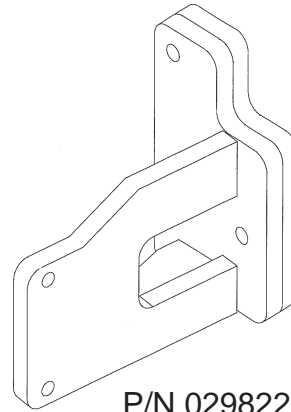
Component Identification



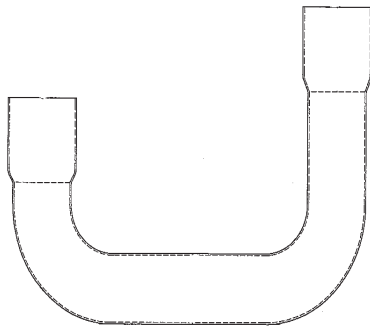
P/N 02980177
Switch Mount Weldment
(2 WD or 4 WD Tractor)



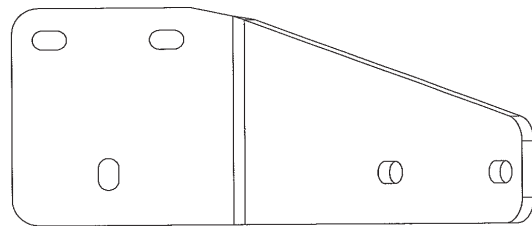
P/N 02978281
Hose Ring Weldment
(2 WD or 4 WD Tractor)



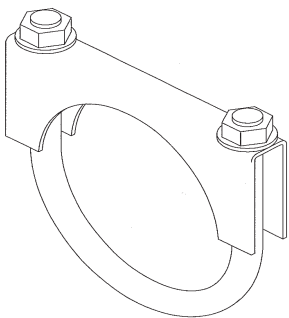
P/N 02982242
Exhaust Support Weldment
(2 WD or 4 WD Tractor)



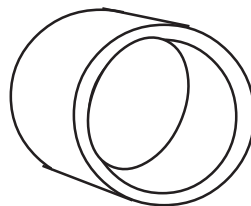
P/N 02982240
Exhaust Pipe
(2 WD or 4 WD Tractor)



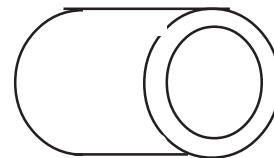
P/N 02982237
Exhaust Gusset
(2 WD or 4 WD Tractor)



P/N 02980584
Exhaust Clamp 3"
(2 WD or 4 WD Tractor)

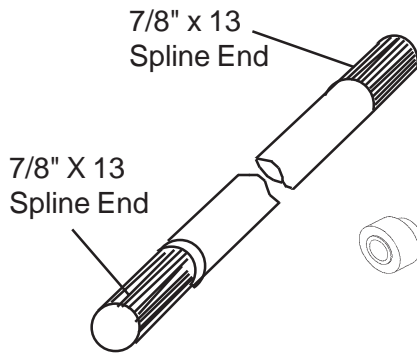


P/N 108748
Spacer, Cyl Collar
(1-3/16" ID X 1-7/8" OD X 1" LG)
(2 WD or 4 WD Tractor)

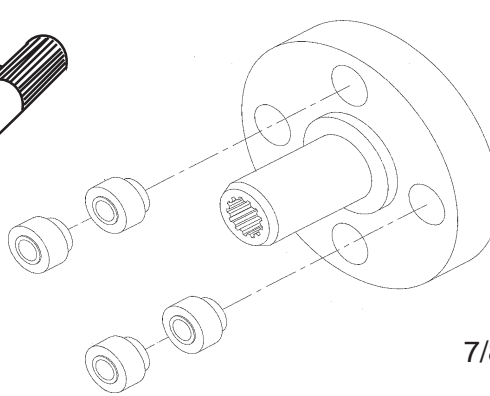


P/N 107499
Spacer, Cyl Collar
(13/16" ID X 1-1/4" OD X 2" LG)
(2 WD or 4 WD Tractor)

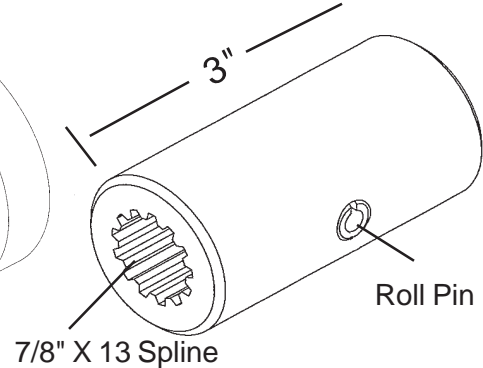
Component Identification



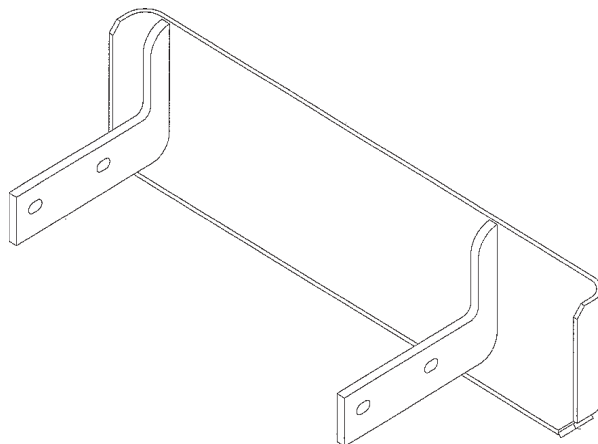
P/N 02958631
Drive Shaft (22.87" LG)
(2 wd or 4 WD Tractor)



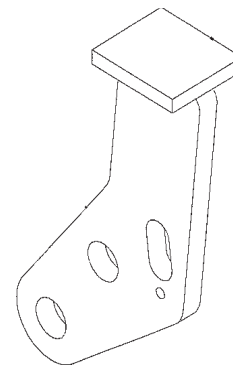
P/N 02974786
Pulley Adapter w/ Grommets
(2 WD or 4 WD Tractor)



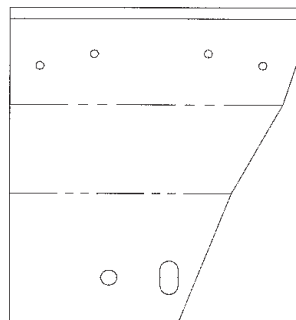
P/N 02982246
Splined Coupler & Roll Pin Asy
(2 WD or 4 WD Tractor)



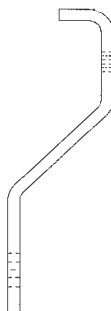
P/N 106572
Bumper Weldment
(2 WD or 4 WD Tractor)



P/N 107222
Cut-Off Switch Mounting Weldment
(2 WD or 4 WD Tractor)

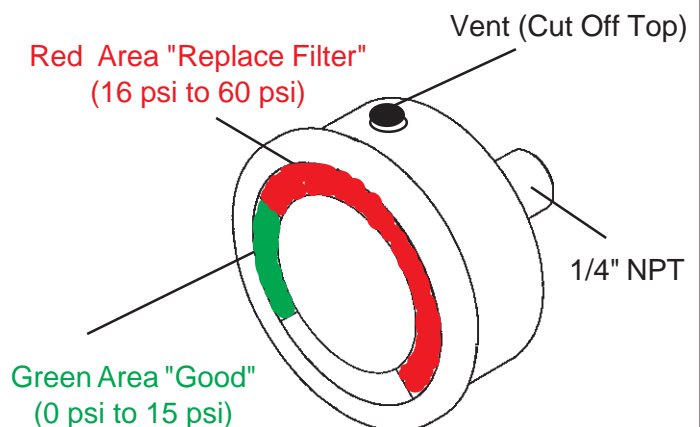


Side View



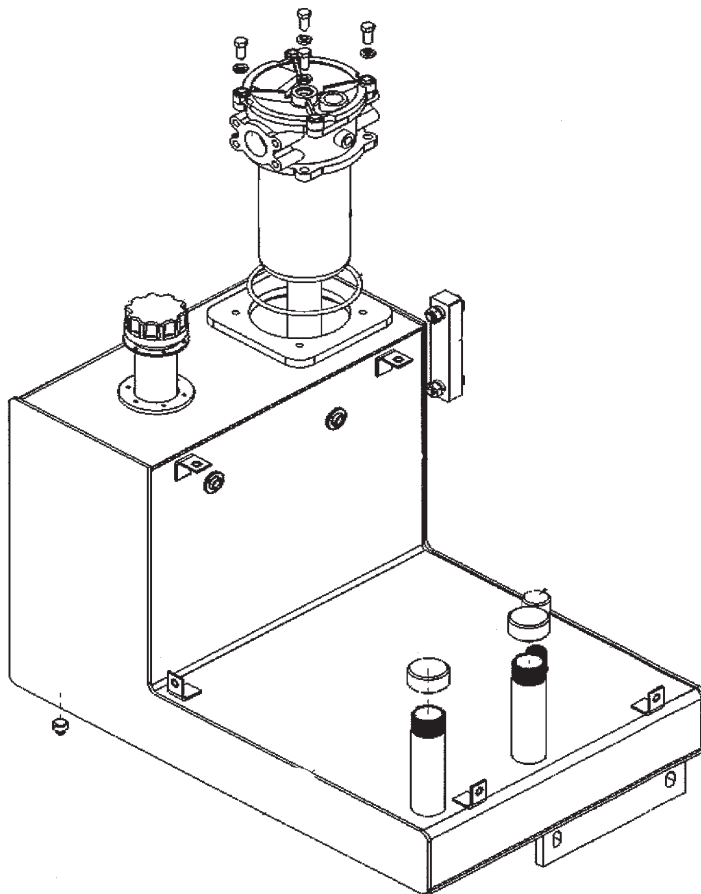
Top View

P/N 107224
Cut-Off Switch Mount, RH
(2 WD or 4 WD Tractor)

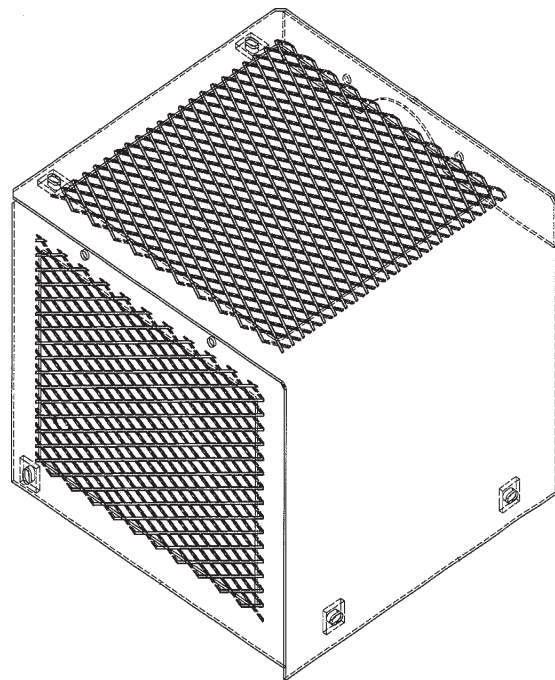


P/N 02962963
Return Pressure Gauge
(Glycerin Filled)
(2 WD or 4 WD Tractor)

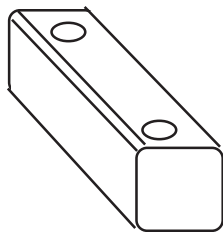
Component Identification



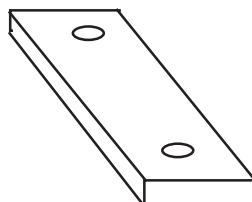
P/N 02981133
Tank Sub-Assembly
(2 WD or 4 WD Tractor)



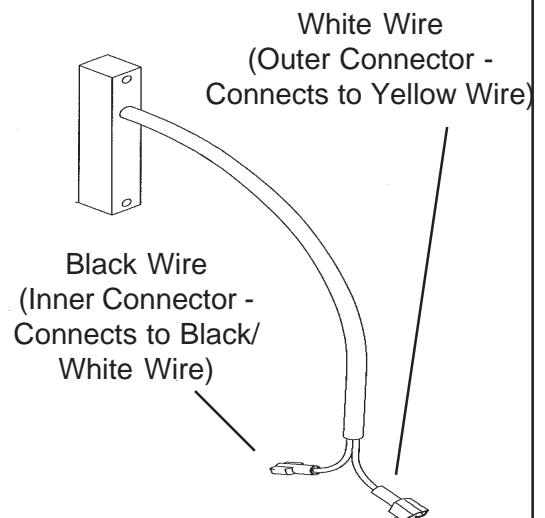
P/N 02981124
Tank Cover Weldment
(2 WD or 4 WD Tractor)



P/N 002019
Magnetic Switch Activator
(2 WD or 4 WD Tractor)

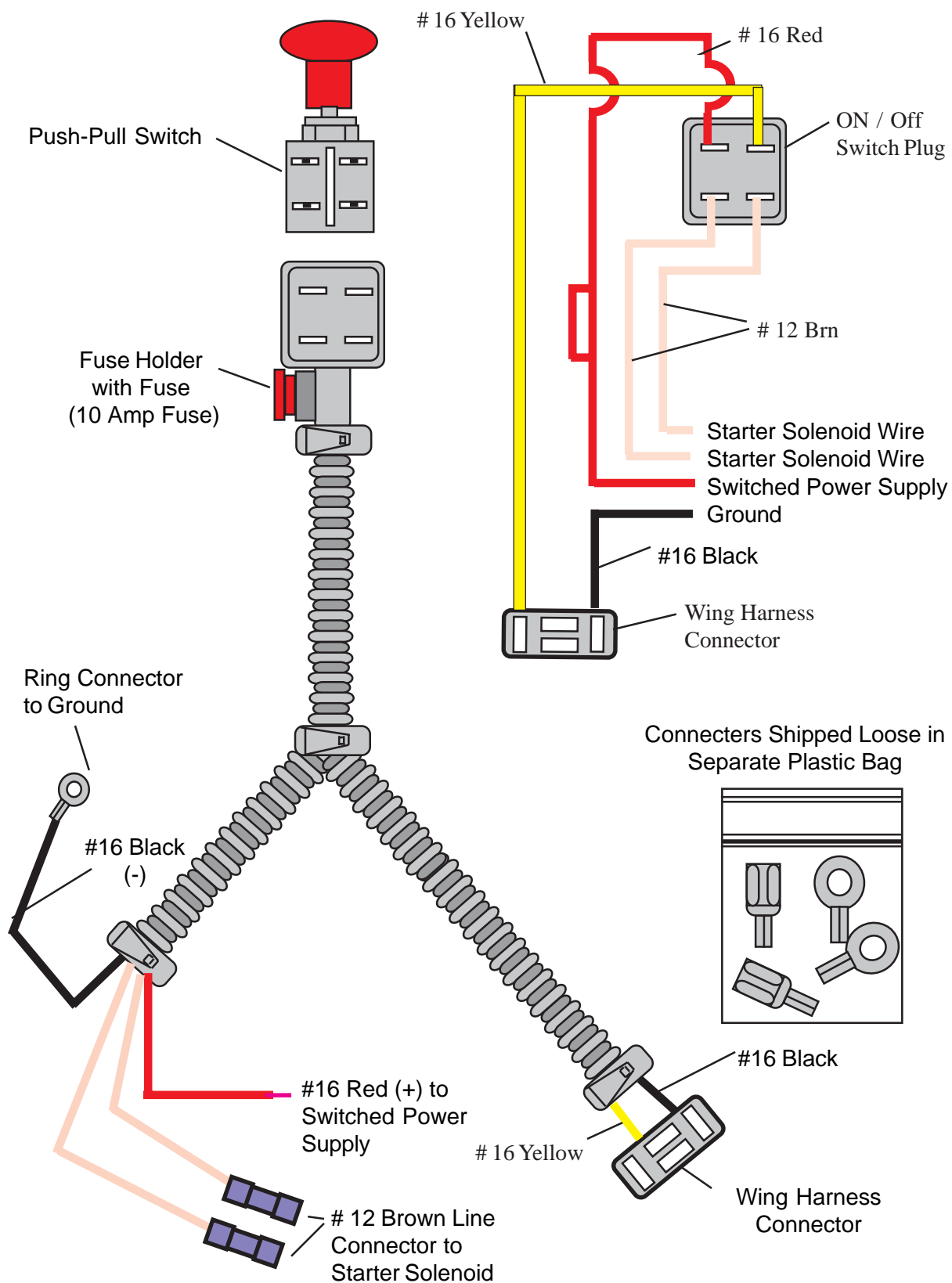


P/N 002020
Spacer, Plastic
(2 WD or 4 WD Tractor)



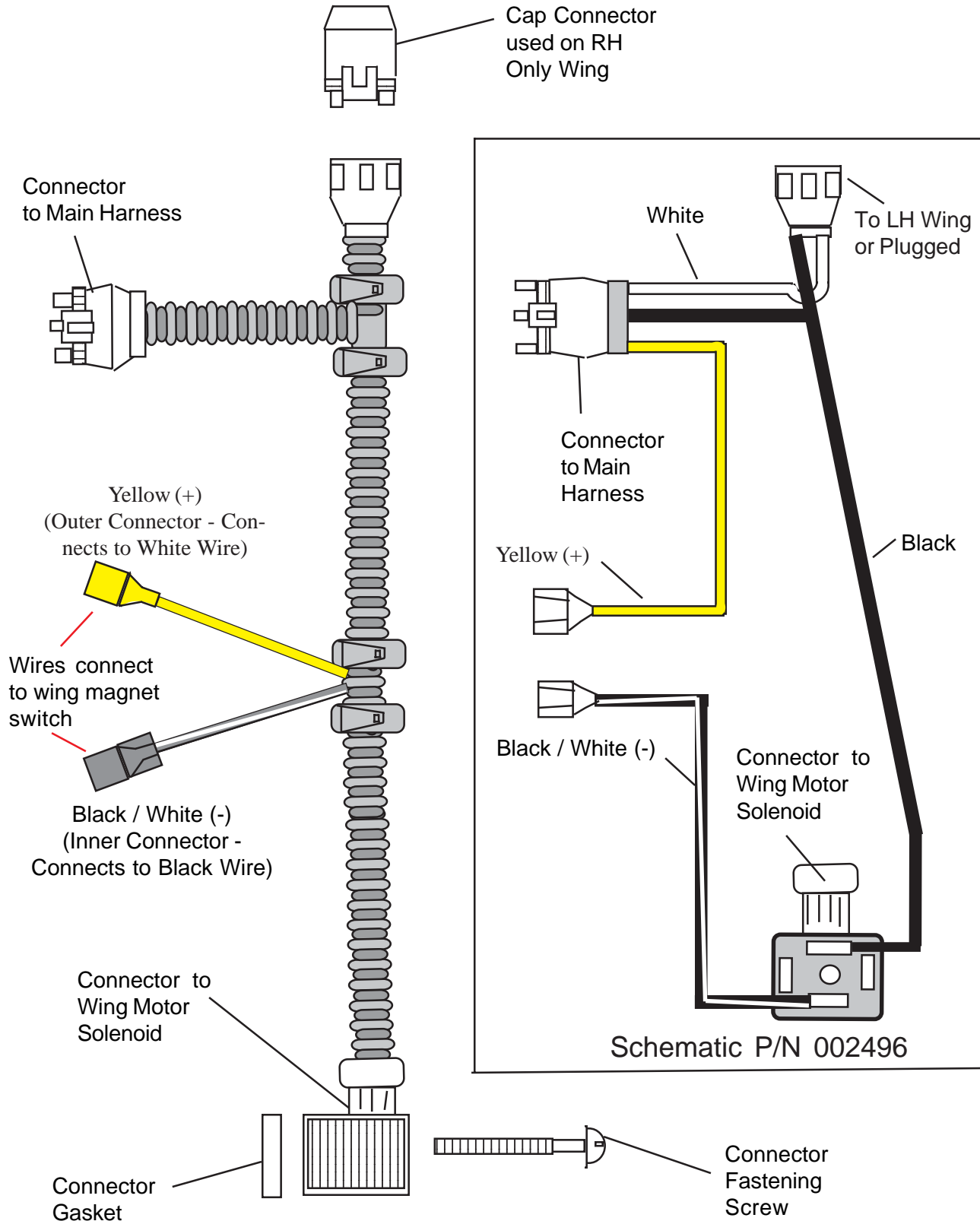
P/N 703520
Switch, Safety Cut-Off
(2 WD or 4 WD Tractor)

Component ID - Main Wire Harness



Component ID - RH Wing Wire Harness

Wire Harness P/N 002496





**Interstater Assembly Manual
McCormick CX-75, CX-85, CX-95 & CX-105
2005 Edition
P/N 02982245**