

WALLENSTEIN

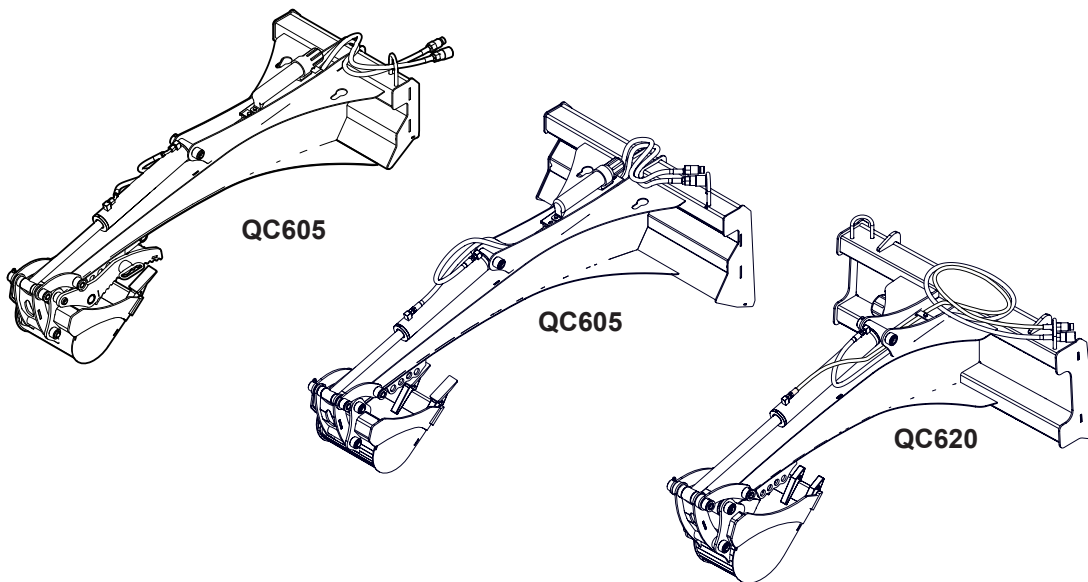
EMB Manufacturing Inc.

4144 Boomer Line · St. Clements, Ontario · N0B 2M0 · Canada

www.wallensteinequipment.com

OPERATOR'S MANUAL

QC605, QC605B, & QC620 Skid Steer Mounted Backhoe



Do not attempt to start or operate the equipment without thoroughly reviewing this manual for safe and proper operation.

**KEEP THIS MANUAL
WITH THE MACHINE AT
ALL TIMES**

1. Foreword

1.1 Introduction

Congratulations on choosing a Wallenstein QC600 Series skid steer-mounted backhoe. This machine is designed and manufactured to meet the needs of the timber and landscaping industries.

The QC600 Series is a rugged backhoe designed for skid steers, permitting digging depths up to 6 ft (1.8 m).

Following the instructions and information in this Operator's Manual provides safe, efficient and trouble-free operation.

This manual covers the Wallenstein skid steer mounted

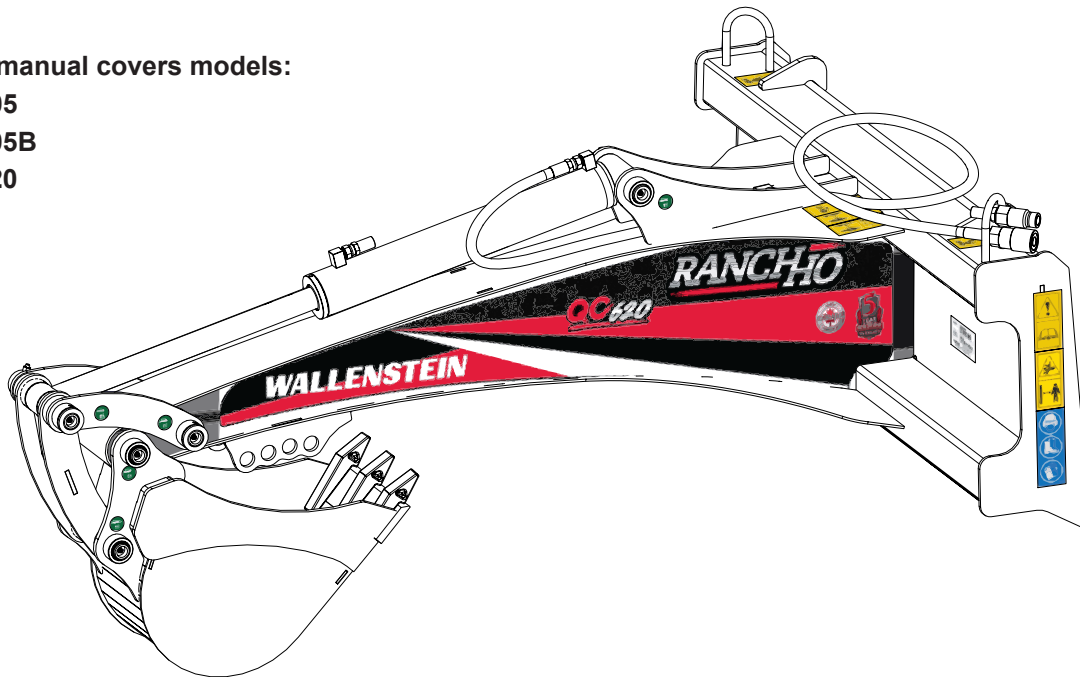
backhoe—QC605, QC605B and QC620. Models can vary from the illustrations shown depending on options.

The QC605 and QC620 backhoes are shipped from the factory in a basic, universal configuration that allows them to be mounted to any skid steer model. The QC605B backhoe is specifically designed to be mounted to a Bobcat® skid steer.

Keep this manual handy for reference. Pass it on to new operators or owners as required. Contact your Wallenstein dealer or the Distributor if assistance, information or additional copies are needed.

This manual covers models:

QC605
QC605B
QC620



(Model QC620 shown)

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1.2 Delivery Inspection Report

WALLENSTEIN

QC600–Series Skid Steer Mounted backhoe

To activate warranty, register your product online at:
<http://www.wallensteinequipment.com>

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer's Name _____

Contact Name _____

Dealer Name _____

(_____) _____
Phone Number

Serial Number _____

_____/_____/_____
Delivery Date (dd/mm/yy)

I have thoroughly instructed the buyer on the equipment care, adjustments, safe operation and applicable warranty policy and reviewed the manuals.

Dealer's Rep. Signature _____

_____/_____/_____
Delivery Date (dd/mm/yy)

The product manuals have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Owner's Signature _____

_____/_____/_____
Delivery Date (dd/mm/yy)

<input checked="" type="checkbox"/>	Pre-delivery Inspection
Inspect for damage from shipping. Immediately contact the shipping company if damage is found.	
QC600 – Series Skid Steer Mounted Backhoe	
	Check hydraulic hoses
	Check bucket function
	Check that all fasteners are tight
	Lubricate pivot points
Safety Checks	
	All Safety decals are clean and legible
	Check that hydraulic connections are tight
	Check that hydraulic lines are in good condition
	Check that pin retainers are installed and secured
	Check that operator's manual is inside storage tube
	Review operating and safety instructions in the operator's manual

1.3 Serial Number Location

Always give your dealer the serial number of your Wallenstein product when ordering parts or requesting service or other information.

Please record the product Model and Serial Number in the space provided below for future reference.

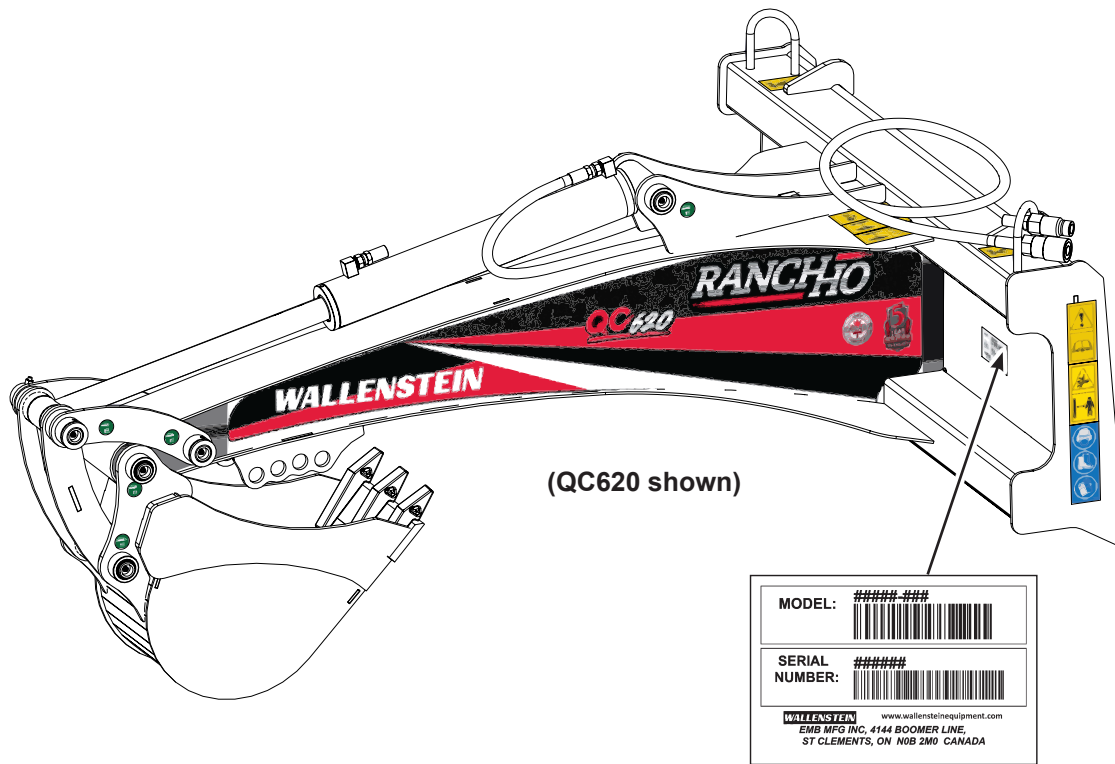


Fig. 1 – Serial Number Plate Location (Typical)

Record Product Information Here	
Model:	
Serial Number:	

1.4 Warranty



WALLENSTEIN

WARRANTY

Effective on products retailed on or after January 1, 2015.

Register your product online at www.wallensteinequipment.com
within 30 days of purchase to activate warranty.

This product is warranted to be free of defects in materials and workmanship under normal use and service, for a period of

Five (5) Years for Consumer
Two (2) Years for Commercial / Rental

from the date of purchase, when operated and maintained in accordance with the Operating and Maintenance Instructions supplied with this unit. Warranty is limited to the repair of the product and/or replacement of parts.

This warranty does not cover the following items:

- 1) Machines or parts lost or damaged during shipment,
- 2) Normal maintenance or adjustments after initial pre-service and set up is completed
- 3) Normal replacement of service items.
- 4) Accessory items / parts not supplied by EMB MFG INC.
- 5) Damages resulting from:
 - misuse, negligence, accident, theft or fire
 - use of improper or insufficient fuel, fluids or lubricants
 - use of parts or after market accessories other than genuine EMB MFG INC. parts
 - modifications, alteration, tampering or improper repair performed by parties other than an authorized dealer
 - any device or accessories installed by parties other than an authorized EMB dealer or distributor

Engines are covered by the manufacturer of the engine and covered by the warranty period specified by that manufacturer.

Engine warranty must be registered at the engine manufacturer's website. For service, contact your local engine dealer.

Under no circumstances will the manufacturer be liable for any consequential damage or expense of any kind, including loss of profits. The manufacturer is under no circumstances liable for tow vehicle of any kind. The manufacturer is not liable for the maintenance of the product.

This warranty is extended only to the original purchaser and is not transferable. Warranty is void if repairs are attempted by anyone other than a Wallenstein Authorized Service Centre.

If a difficulty develops with the product, contact the local dealer from which you purchased the unit. Only Wallenstein authorized dealers are authorized to make repairs to the product or affect the replacement of defective parts, which will be done at no charge within a reasonable time after the receipt of the product. Unit or parts shall be returned at the customer's expense to the Authorized Service Centre. Damage in transit is not covered by warranty. Include the original purchase receipt with any claim (keep a copy of the receipt for your files).

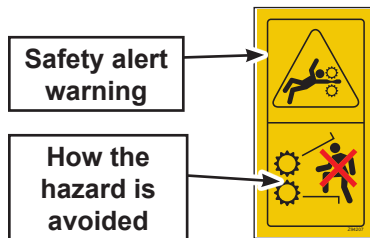
The distributor's liability under warranty is limited to the repair of the product and/or replacement of parts and is given to the purchaser in lieu of all other remedies including incidental and consequential charges. There are no warranties, expressed or implied, other than those specified herein.

EMB MFG Inc
4144 Boomer Line, St Clements, ON N0B 2M0 Canada
Phone: 519-699-9283 Fax: 519-699-4146 : attention to Warranty Dept
Email: warranty@embmfg.com

1.5 Decal Information

There are different types of decals on Wallenstein products. These decals provide safety warnings, operating information, and product identification. The following information describes each type.

Safety Signs are yellow and have two panels. The top panel identifies the potential hazard (safety alert) and the bottom panel shows how to avoid the hazard (message).



See *Safety Signs* on page 16 for further explanation.

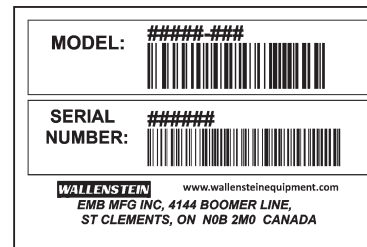
Safety Notice decals have a blue background and are generally rectangular with single or multiple symbols. This decal shows suggested PPE requirements for safe operation.



Informative decals are white and can vary in the number of panels. These decals provide operating information on a feature of the machine.



Product decals are white and can carry various messages such as model, serial number, and manufacturer.



Maintenance decals are green. They can have various messages and vary in the number of panels. These decals indicate the maintenance type and can indicate the service interval. Maintenance decals are further explained in the Service and Maintenance section.



For complete illustrations of decal locations on the machine, download the parts manual for this product model at www.wallensteinequipment.com.

2. Safety

2.1 Safety Alert Symbol

This Safety Alert Symbol means:

ATTENTION! BE ALERT!
YOUR SAFETY IS INVOLVED!

The **Safety Alert Symbol** identifies important safety messages on Wallenstein equipment and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.



2.2 Signal Words

The signal words **DANGER**, **WARNING** and **CAUTION** determine the seriousness level of the warning messages in this manual. The appropriate signal word for each message in this manual has been selected using the following guidelines:

DANGER –

Indicates an imminently hazardous situation that, if not avoided, **WILL** result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.


WARNING –

Indicates a potentially hazardous situation that, if not avoided, **COULD** result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION –

Indicates a potentially hazardous situation that, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices.

IMPORTANT—To avoid confusing equipment protection with personal safety messages, a signal word **IMPORTANT** indicates a situation that if not avoided, could result in damage to the machine.

 **NOTE:** *(plus text)—indicates an additional explanation for an element of information.*

For further information or additional copies of this manual, please contact your dealer or EMB Manufacturing, 4144 Boomer Line, St. Clements, ON, N0B 2M0
Phone (519) 699-9283 or Fax (519) 699-4146.

www.wallensteinequipment.com

2.3 Why is SAFETY important?

Three Big Reasons:

- **Accidents Disable and Kill**
- **Accidents Cost**
- **Accidents Can Be Avoided**

The policy of EMB Manufacturing Inc. (EMB) is to produce products that are safe and reliable. However, even when using well-engineered equipment, there is always an element of risk. To minimize the risks and promote safety at all times, this section of the operator's manual details a number of safety rules that must always be followed and obeyed.

YOU are responsible for the SAFE operation and maintenance of your Wallenstein Skid Steer Mounted backhoe Attachment. **YOU** must ensure that you and anyone else who is going to use, maintain or work around the backhoe be familiar with the operating and maintenance procedures and related **SAFETY** information contained in this manual. This manual provides good safety practices that should be followed while using the Wallenstein Backhoe.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** using this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented.

Do not risk injury or death by ignoring good safety practices.

2.4 Safety Rules

- **DO** give operating instructions to operators or employees before allowing them to operate the machine.
- **DO** read, understand and follow ALL Safety and Operating instructions in the manual. Most accidents can be avoided. The most important safety device on this equipment is a SAFE operator.
- **DO** review safety related items annually with all personnel who will be operating or performing maintenance.



- **DO** wear appropriate Personal Protective Equipment (PPE). This equipment includes but is not limited to the following:
 - Hearing Protection
 - Protective shoes with slip resistant soles
 - Protective glasses, goggles or face shield
 - Protective work gloves



- **DO** set the machine in a Safe Condition before performing any service, maintenance work, storage preparation, or hooking up.
- **DO** have a first-aid kit available for use should the need arise and know how to use it.



- **DO** read and understand all safety signs located on the machine before using, maintaining, adjusting or cleaning.
- **DO** inspect and secure all guards before starting.
- **DO** have a fire extinguisher available for use should the need arise and know how to use it.
- **DO** think SAFETY! Work SAFELY!



- **DO NOT** allow any person to operate the machine who has not read and understood all the safety instructions. An untrained operator is not qualified and is exposed, and exposes bystanders to possible serious injury or death. It is the owner's responsibility to the operator to ensure familiarity and understanding of the machine.
- **DO NOT** modify the equipment in any way. Unauthorized modification may impair function or safety, and could affect the life of the equipment.
- **DO NOT** allow riders during transport. Never carry, lift or move people on boom or bucket.
- **DO NOT** risk injury or death by ignoring good safety practices.

2.5 Safety Training

1. Safety is a primary concern in the design and manufacture of Wallenstein products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander.
2. The best safety feature is an informed, careful operator—we ask you to be that kind of an operator. It is the operator's responsibility to read, understand and follow ALL safety and operation instructions in the manual. Accidents can be avoided.
3. Do not allow anyone to use this machine until they have read this manual. Operator's must have a thorough understanding of the safety precautions and of how the machine works. Review the safety instructions with all users annually.



2.6 Operating Safety

It is important to read and pay attention to the safety signs on the backhoe. Clean or replace all safety signs if they cannot be clearly read and understood. They are there for your safety, as well as the safety of others. The safe use of this machine is strictly up to you, the operator.

All things with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes potential hazards and follows reasonable safety practices.

1. Learn the machine controls and how to stop quickly in an emergency. A person who has not read and understood all operation and safety instructions is not qualified to use the machine.
2. Never allow young children near this equipment. This equipment is dangerous to children and persons unfamiliar with its operation.
3. Make sure the operator is a responsible, properly trained and physically-able person familiar with machinery. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
4. Never place any part of your body where it would be in danger if movement of equipment should occur during assembly, installation, operation, maintenance, repairing, removal or moving.
5. Do not operate engine inside a closed building. Asphyxiation could result from engine exhaust.

6. Before servicing, repairing or maintaining the machine, perform the **Safe Condition** procedure. See *Safe Condition on page 12*.
7. Do not dig under machine. A cave-in could result and the machine could fall into the excavation.
8. Never carry, lift or move people with the bucket.
9. Do not walk or work under a raised machine or attachment unless it is securely blocked or held in position. Do not depend on the skid steer hydraulic system to hold the machine or attachment in place.
10. Never consume alcohol or drugs while using this equipment. These can hinder alertness or coordination. Consult your doctor about using this machine while taking prescription medications.
11. Operate only on level ground. Do not operate on hillsides or when working area is cluttered, wet, muddy or icy to prevent slipping and tripping.
12. Apply parking brake, lower back hoe to ground and stop engine when leaving the machine unattended.
13. Always make sure face plate is securely locked to front of loader when attaching to prevent movement during operation.
14. Read and understand the operator's manual before starting. Review safety instructions annually.

2.7 Equipment Safety Guidelines

The safety of the operator and bystanders is one of the main concerns in designing and developing equipment. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment.

As the operator, you can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist everyone follows them.

Always place the skid steer machine in a **Safe Condition** before performing any service, maintenance work, storage preparation, or hooking/unhooking backhoe.



SAFE CONDITION

1. Lower backhoe to ground.
 2. Release hydraulic controls.
 3. Set parking brake.
 4. Shut off the engine.
 5. Relieve hydraulic system pressure by actuating controls.
 6. Remove and retain ignition key.
7. Replace any safety sign or instruction sign that is not readable or is missing. Location of such safety signs is indicated in this manual.
 8. Mount the backhoe only on a skid steer machine equipped with an approved Roll Over Protective Structure (ROPS).
 9. Never exceed the limitations of the machine. If its ability to do the job, or to do it safely is in question—**STOP!**
 10. Do not modify the equipment in any way. Unauthorized modification may result in serious injury or death, and may impair the function and life of the equipment.

If this machine is used by anyone other than a trained operator, or is loaned or rented, it is the machine owner's responsibility to make certain that prior to using, the operator must:

- Read and understand the operator's manual
- Be fully trained in safe and proper use of the equipment
- Understand and know how to perform the Safe Condition procedure

2.8 Maintenance Safety

Follow good shop practices.

1. Keep service area clean and dry.
2. Be sure electrical outlets and tools are properly grounded.
3. Use adequate light for the job at hand.
4. Make sure there is plenty of ventilation. Never operate the engine of the skid steer in a closed building. The exhaust fumes may cause asphyxiation.
5. Never work under unsupported equipment. Engage a hydraulic cylinder lift-arm lockout device when the boom is in the upright position for any repairs or maintenance.
6. Always wear appropriate personal protective equipment when performing any service or maintenance work.
7. Inspect and tighten all bolts, nuts and screws and check that all connections are properly secured.
8. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.



9. Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.
10. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.
11. When cleaning any parts, do not use gasoline or diesel fuel. Use a regular cleanser.

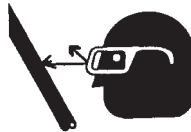
12. Always use proper tools that are in good condition. Make sure the procedure is understood before performing any service work.

2.9 Hydraulic System Safety

1. Make sure that all the components in the hydraulic system are kept clean and in good condition.
2. Make sure all components are tight, and that lines, hoses and couplings are not damaged before applying pressure to the system.
3. Do not use a hand to check for hydraulic oil leaks. Hydraulic fluid escaping under pressure can penetrate the skin causing serious injury. Use a piece of cardboard.



4. Wear proper hand and eye protection when searching for a high pressure hydraulic leak.



5. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
6. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. Doing so can cause sudden failure and create a hazardous and unsafe condition.
7. Relieve pressure on the hydraulic system before working it. The hydraulic system operates under extremely high pressure.
8. Replace any hydraulic hose immediately that shows signs of swelling, wear, leaks or damage before it bursts.
9. Do not bend or strike high-pressure lines, tubes or hoses, or reinstall them in a bent or damaged condition.
10. Check to make sure hydraulic hoses are not worn or damaged, and are routed to avoid chafing.
11. Never adjust a pressure relief valve or other pressure-limiting device to a higher pressure than specified.
12. Never disable a hydraulic system interlock device. They prevent the engine from starting or the hydraulic system from engaging if the operator restraint is not fastened or properly positioned.

2.10 Preparation

1. Do not use the backhoe until this manual, the skid steer operator's manual, and the safety signs on the skid steer and machine are read and understood.
2. Personal Protection Equipment (PPE) including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, cleaning, or moving the unit. Do not allow long hair, loose fitting clothing or jewelry near equipment.



3. Prolonged exposure to loud noise may cause permanent hearing loss! Machine noise can cause permanent, partial hearing loss. Wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80 dB. Noise over 85 dB on a long-term basis can cause severe hearing loss. Noise over 90 dB adjacent to the Operator over a long-term basis may cause permanent, total hearing loss.



4. Always wear the seat belt when operating the skid steer. Serious injury or even death could result from falling off the skid steer, particularly during a rollover when the operator could be pinned under the machine.



5. Clear working area of stones, branches or hidden obstacles that might be hooked or snagged, causing injury or damage.
6. Do not install backhoe on the skid steer if the total skid steer and equipment weight exceeds the ROPS weight certification.
7. Have underground utilities located and marked before starting to dig. Take care not to contact overhead and underground obstructions during operation.

8. Keep boom and bucket away from overhead and underground power lines. Electrocutation can occur even without direct contact with an overhead power line.
9. Operate only in daylight or good artificial light.
10. Be sure machine is properly mounted, adjusted and in good operating condition.
11. Ensure that all safety shielding and safety signs are properly installed and in good condition.

3. Safety Signs

The types of safety signs and locations on the equipment are shown in the illustrations that follow.

Working safely requires being familiar with the type of warning and the machine function related to that area that requires your awareness.

Think SAFETY! Work SAFELY!

3.1 Model QC605 & QC605B

Model QC605B is shown. Safety signs and their location are the same for both the QC605 and QC605B models.

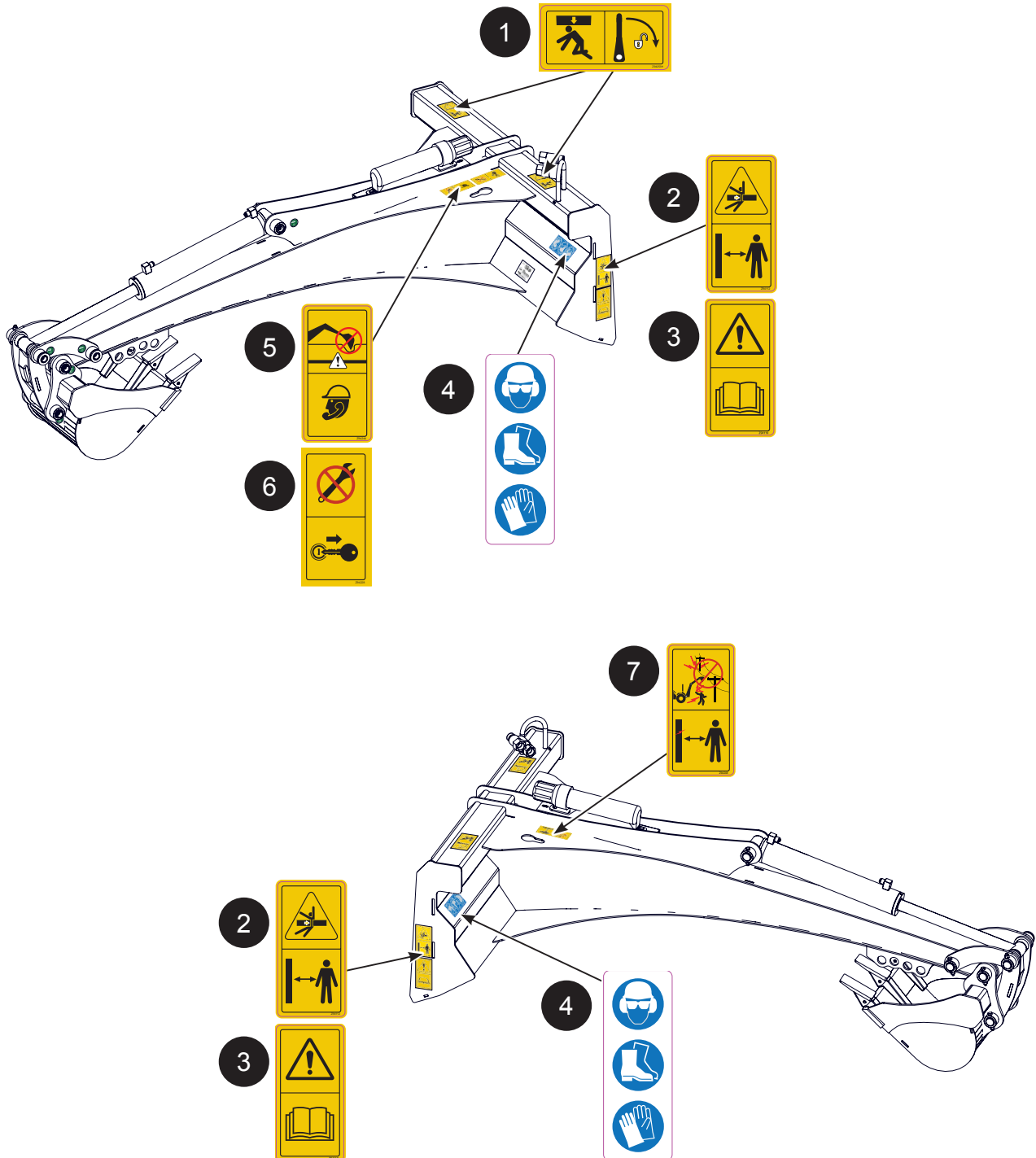


Fig. 2– QC605 & QC605B Safety Decals

QC605 and QC605B Safety Sign Explanations

1. Warning



Ensure lock pins are securely latched before using the equipment. Failure to secure the pins could result in severe personal injury.

2. Warning



Be aware of collision and pinch hazards from moving parts. In this case, the boom and bucket.

3. Warning



Read and understand ALL safety and operating instructions in the manual, read and understand ALL safety signs located on the machine. The most important safety device on this equipment is an informed SAFE operator.

4. Safety Notice



Always wear appropriate Personal Protective Equipment (PPE) when operating this machine

5. Warning



Contact Underground Utilities locating and marking Services. Be aware of buried utilities (cable, pipes, electrical conduit) damage to the backhoe or injury could result.

6. Warning



Before performing any service or repairs, ensure backhoe is in transport mode, or bucket is resting on the ground

7. Warning



Be aware of and stay 50 ft (15 m) or more away from overhead electrical cables. Electrocutation is possible with out direct contact (arcing). Serious injury or death from electrocutation could occur.

IMPORTANT! If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied.

New safety signs are available from your authorized dealer.

3.2 Model QC620

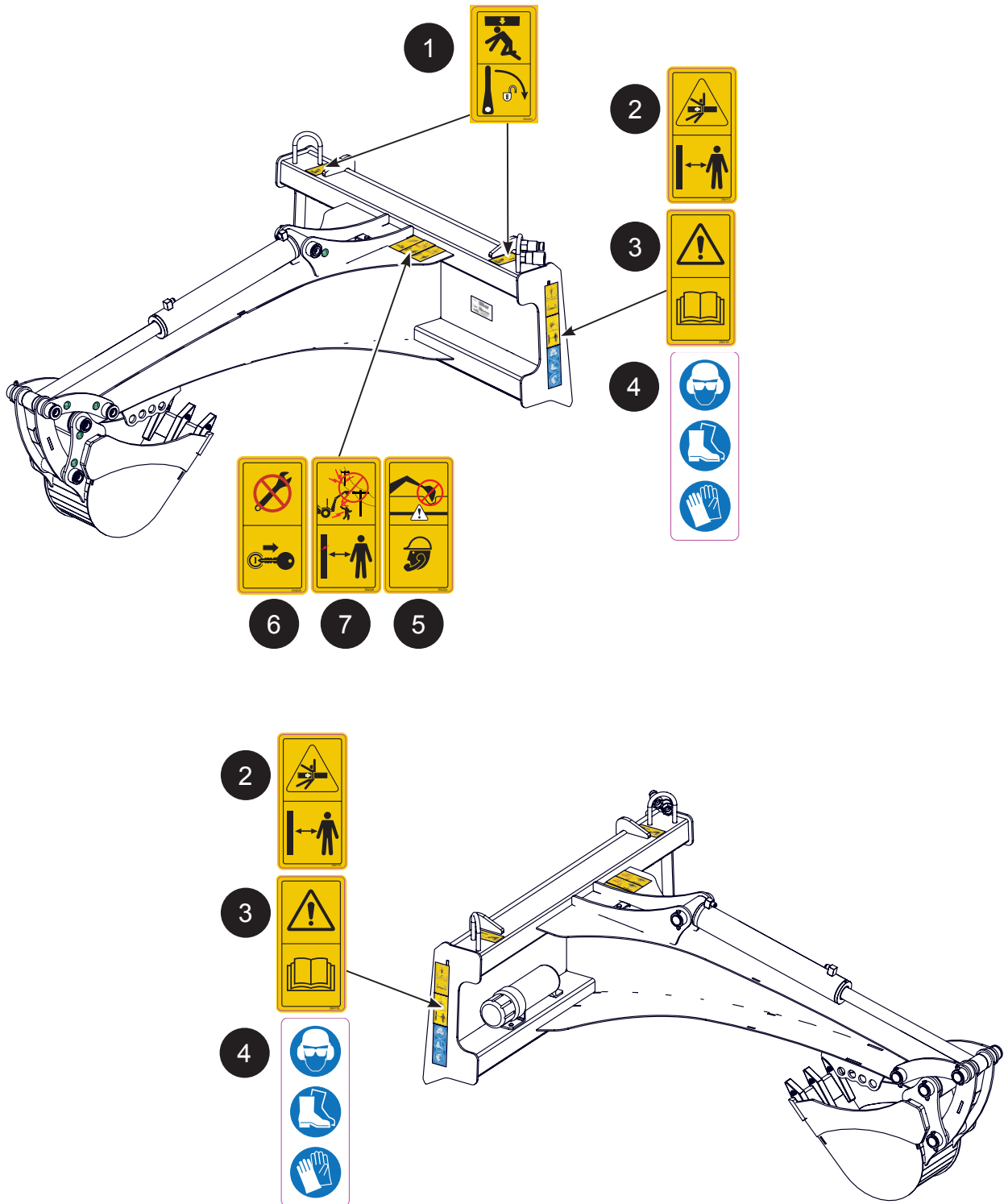


Fig. 3—QC620 Safety Decals

QC620 Safety Sign Explanations

1. Warning



Ensure lock pins are securely latched before using the equipment. Failure to secure the pins could result in severe personal injury.

2. Warning



Be aware of collision and pinch hazards from moving parts. In this case, the boom and bucket.

3. Warning



Read and understand ALL safety and operating instructions in the manual, read and understand ALL safety signs located on the machine. The most important safety device on this equipment is an informed SAFE operator.

4. Safety Notice



Always wear appropriate Personal Protective Equipment (PPE) when operating this machine

5. Warning



Contact Underground Utilities locating and marking Services. Be aware of buried utilities (cable, pipes, electrical conduit) damage to the backhoe or injury could result.

6. Warning



Before performing any service or repairs, ensure backhoe is in transport mode, or bucket is resting on the ground

7. Warning



Be aware of and stay 50 ft (15 m) or more away from overhead electrical cables. Serious injury or death from electrocution could occur. Electrocution is possible with out direct contact (arcing).

IMPORTANT! If safety signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied.

New safety signs are available from your authorized dealer.

3.3 Replace Damaged Safety Signs

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Parts that were replaced with a safety decal on them must have the safety sign replaced.
- Replacement safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

3.4 How to Install Safety Signs

Installation area must be clean, dry, and free of grease or oil.

Ambient temperature must be above 50 °F (10 °C).

Determine exact position before removing the backing paper.

1. Peel back the corner of the backing paper.
2. Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
3. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal.
4. Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

4. Familiarization

Wallenstein QC600 Series backhoes are light-duty machines that attach to a skid steer. They can be used for all light duty digging, trenching, and excavating.

4.1 To the New Operator or Owner

It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. Follow all safety instructions. Untrained operators should not be allowed to use the machine.

Many features incorporated into this machine are the result of suggestions made by Wallenstein customers. Read this manual carefully to learn how to use the backhoe safely. Following the instructions in this manual along with a good maintenance program can provide many years of trouble-free service.

IMPORTANT! Make sure all operators understand how to put the machine in a Safe Condition before servicing or repairing. See *Safe Condition* on page 12.

4.2 Operator Orientation

IMPORTANT! The directions for left-hand, right-hand, backward and forward as mentioned throughout this manual, are determined when sitting in the operator's seat facing the direction of forward travel.

4.3 Machine Components

The Wallenstein QC600 Series Skid Steer Mounted backhoe attaches to the loader face plate of a skid steer.

Power to operate the hydraulics is provided by the skid steer hydraulics. The machine controls are part of the skid steer.

The boom frame mounts rigidly to the loader face plate and boom movement / motion is controlled by switches on the hand control in the cab.

Skid steer must be equipped with hydraulic connections on the front of the frame.

Models QC605 and QC605B

QC605 is shown, but both models have the same features.

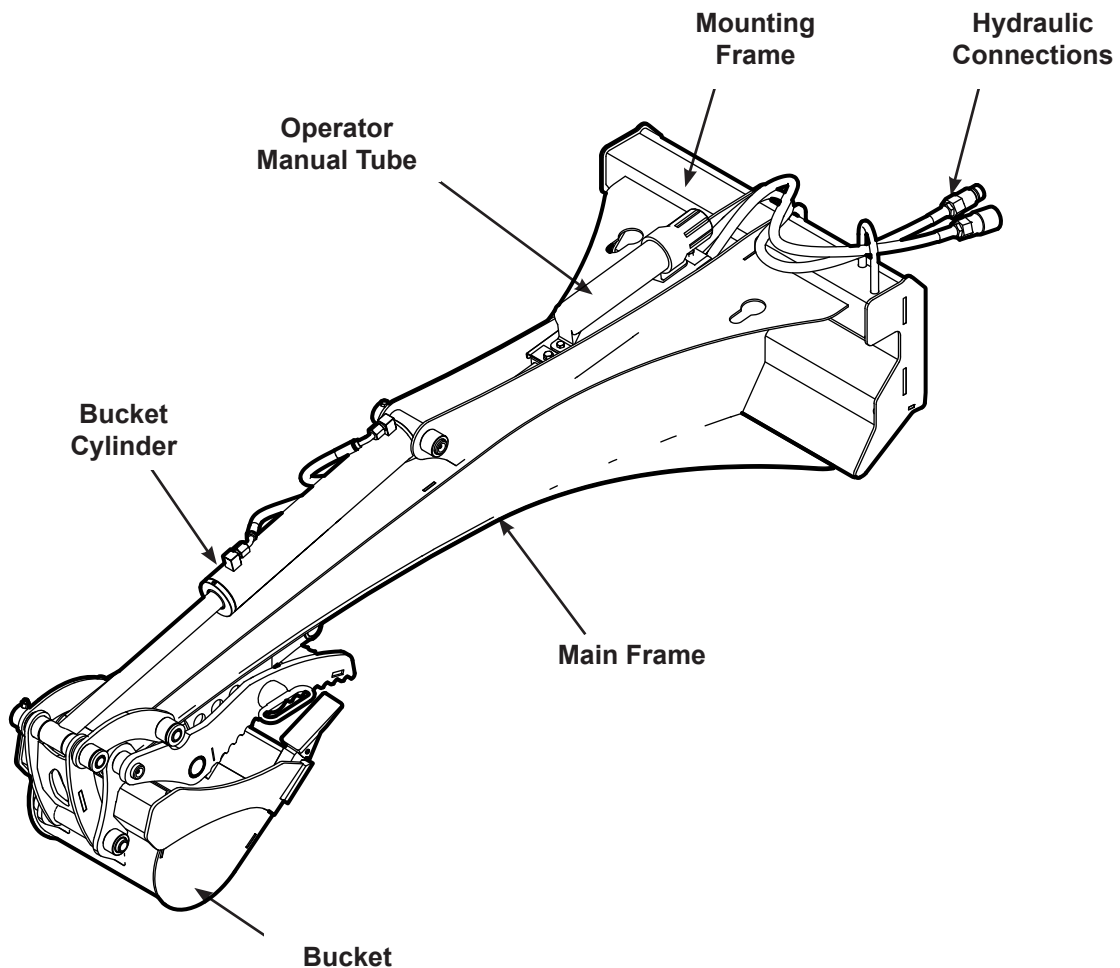


Fig. 4–QC605 and QC605B Machine Components

Model QC620

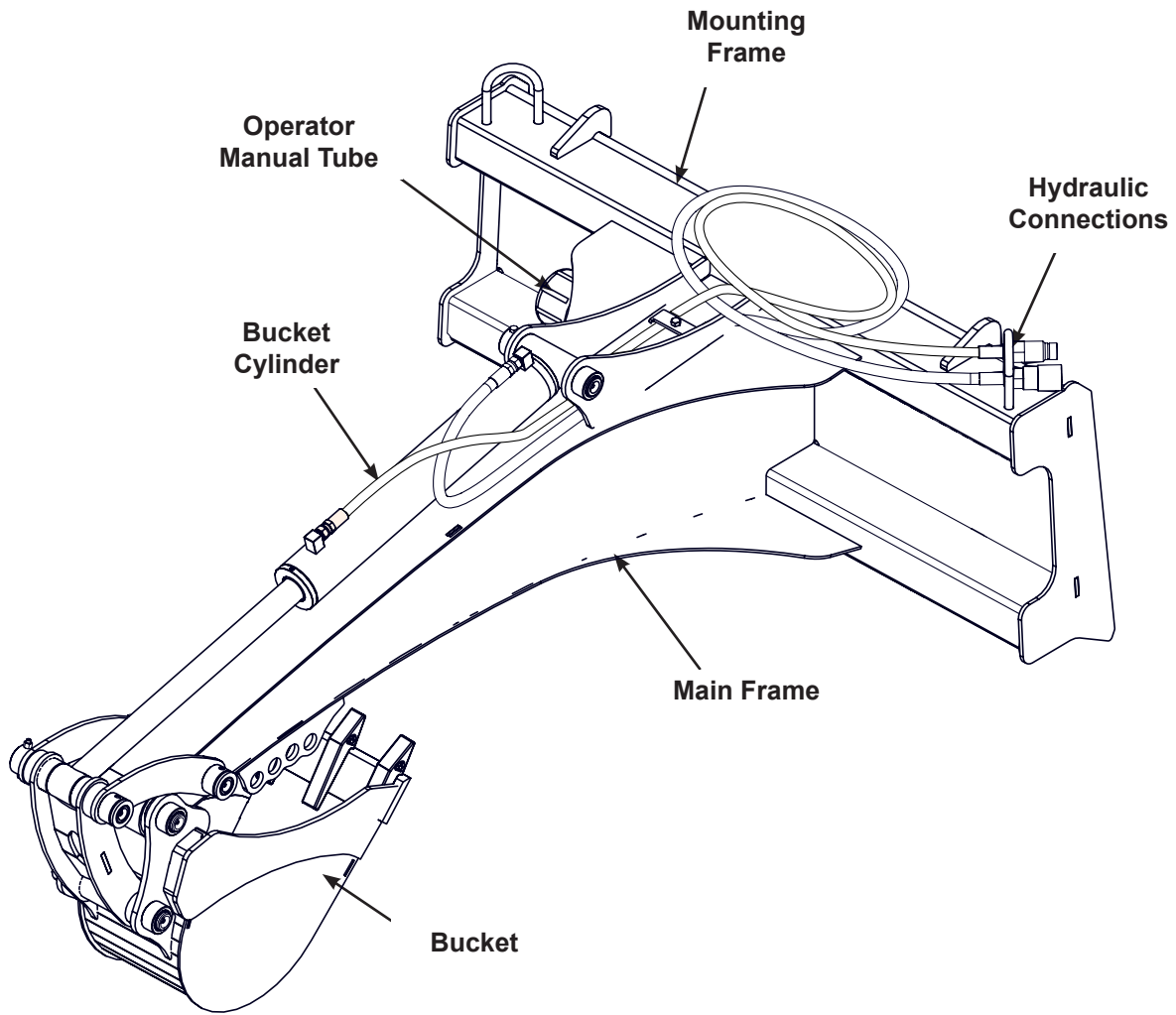


Fig. 5–QC620 Machine Components

4.4 Equipment Matching

- The QC605 and QC605B back hoes are designed to mount on mini skid steer machines. The QC605B backhoe is specifically designed to mount on Bobcat® mini skid steers.
- The QC620 is designed to mount on regular-sized skid steer machines.

WARNING!

Risk of ROPS failure. Do not install backhoe on the skid steer if the total skid steer and equipment weight exceeds the ROPS weight certification.

W022

To insure the safe and reliable operation of the backhoe, it is necessary to make sure the backhoe and skid steer are properly matched. The skid steer must be equipped with remote hydraulic connections on the front of the loader frame.

Consult the skid steer operator's manual for machine specifications. Use the following requirements as a guide.

1. **Horsepower:** The ideal skid steer horsepower range is 50–65 hp.
2. **Skid Steer Weight:** Follow the skid steer attachment weight recommendation to provide stability for the unit when digging or transporting.
3. **Hydraulic System:** The skid steer hydraulic system must be capable of 5 gpm (19 Lpm) at 2000 psi (13,800 kPa). The backhoe requires two circuits—one for the dipper and one for the bucket.

4.5 Controls

Always review the controls section of the Skid Steer operator's manual to be familiar with the location, settings and function of the controls. Be familiar with the controls before starting.

4.6 Attaching and Unhooking Backhoe

4.6.1 Attaching Backhoe

Refer to the skid steer operator's manual for instructions on installing an attachment.

WARNING!

Ensure lock pins are securely latched before operation. Failure to secure pins could result in serious injury or death.


W014

1. Position the backhoe on level ground in a clear area. Make sure there is enough space to drive the skid steer safely up to the backhoe.
2. Begin driving up to the backhoe while aligning the mounting components.
3. Drive into the mounting frame.
4. Seat the top of the face plate into the frame of the backhoe.
5. Raise the skid steer loader and tilt the face plate until it is fully mated.
6. Engage the lock pins to secure the backhoe to the skid steer.
7. Connect hydraulic couplers. Make sure they are securely seated.
8. Start the engine and slowly cycle the bucket cylinder several times to purge the system of air. Check for leaks.

4.6.2 Unhooking Backhoe

Reverse the above procedure when unhooking.

1. Set the backhoe down on wood blocking and turn the engine off.
2. Move the bucket tilt control lever several times to relieve any trapped pressure in the lines.
3. Disconnect the couplers, install the dust caps and place them in their stowed position.
4. Follow the skid steer manual for detaching an attachment.

 **NOTE:** *If storing the backhoe for a period of time, refer to Storage on page 29.*

4.7 Job Site Familiarization

Become thoroughly familiar with the work site prior to starting. There should be a complete understanding of the tasks expected. Some items the operators should check include the following.

1. Before any excavating is started, determine the soil conditions and plan out the job first. Plan where the excavated material is to go.
2. Organize the work site to minimize the distance to travel between digging and dumping. The shorter the travel distance, the faster the dig / dump cycle is and the more work that can be done.
3. Have underground utilities located and marked before starting to dig. Wires, cables, pipes or other obstructions may exist underground in the area to be excavated.
7. Level off the work area prior to starting. Rougher surfaces require slow speeds that shorten the work cycle times.
8. Stop the machine whenever unauthorized personnel enter the working area. Unauthorized personnel can get in the way or get pinched / caught by components. Do not resume work until the area is clear.
9. The recommended travel for a skid steer is up or down a slope, not across it. Keep the backhoe low to the ground to improve stability. Extra care is required if working on a slope. If working on a slope is necessary, work the boom up-slope to minimize the chance of tipping.

WARNING!

Electrocution Hazard. Be aware and stay 50 ft (15 m) or more away from overhead electrical wires. Serious injury or death from electrocution could occur. Electrocution is possible without direct contact (arcing).

W015

4. Be aware of power lines, obstructions or overhangs. Power lines can lead to electrocution if the machine gets too close. Overhead obstructions can cause a loss of control or tipping from contact. Overhangs can collapse or give way causing the machine to move unexpectedly as the footing gives way.
5. Do not try to lift objects that are beyond the lifting limits of the machine. Be aware of people and objects when lifting. When moving a load, travel slowly and know the travel path.
6. Set-up the work site so the prevailing winds blow debris away from the operator. As result, the work zone is safer because vision is not be obscured while digging and dumping.

CAUTION!

Position the machine so prevailing winds blow exhaust gases / fumes away from the operator.

W006

5. Operation

The operator has the responsibility of being familiar with all operating and safety procedures and following them.

Although the QC600 Series skid steer-mounted backhoes are easy to use, each operator should review this section to become familiar with the detailed safety and operating procedures.

WARNING!

Ensure lock pins are securely latched before operation. Failure to secure pins could result in serious injury or death.

W014

5.1 Be Prepared

- Review the section on *Safe Condition on page 12*.
- Clear the area of bystanders, especially small children.
- Each operator must be trained and familiar with the set up and operation of the backhoe and its components.
- Review and follow the Pre-Operation Checklist.
- Survey the work site, remove debris and make note of nearby or overhead obstructions.
- Wear appropriate Personal Protective Equipment (PPE) whenever operating the backhoe.

CAUTION!

Hearing loss hazard. Prolonged exposure to loud noise may cause permanent hearing loss. Use suitable protection while operating the machine.

W016

5.2 Machine Break-In


Although there are no operational restrictions on the backhoe when used for the first time, it is recommended that the following items be checked at first use:

After 1/2 hour of operation:

1. Check the condition of all hydraulic hoses and connections. Replace any that are damaged. Re-route those that are rubbing, pinched or crimped. Tighten any connection that is leaking.
2. Check the condition of the teeth on the bucket. Replace any that are bent, chipped, broken or missing. See *Bucket Tooth Replacement on page 23*.
3. Check the boom and bucket pivot pins. Be sure they are greased and the retainer bolts are in place.

5.3 Pre-Operation Checklist

Review the Pre-operation Checklist before beginning. Use it for safe operation and to keep the back hoe in good mechanical condition.

Pre-operation Checklist	
Check that the machine is properly attached to the skid steer.	
Check and lubricate the machine per the schedule outlined in the Maintenance Section.	
Check for entangled material and remove.	
Check that the bucket pivot can move freely.	
Check condition of the bucket teeth.	
Check that hydraulic hoses are not chafed, pinched or crimped. Re-route as required.	
Check for hydraulic leaks. Tighten fittings or replace components to stop leaks.	
Check all fasteners and hardware. Tighten as required.	

5.4 Digging Action

WARNING!

Underground utility hazard. Contact an underground utility locating and marking service before digging.

W017

When digging with the back hoe, the loader arms should be partially raised with the bucket pointed outwards, away from the operator.

5.4.1 Digging With Boom

1. Use the loader and bucket cylinder to set the back hoe bucket at about a 30 degree angle into the ground. Set the boom angle so that the teeth are digging and the heel of the bucket is off the ground.
2. Tilt the bucket cylinder to pull the back hoe through the soil until it is full.
3. Curl the bucket up and raise the loader.
4. Rotate the skid steer to dump the load.

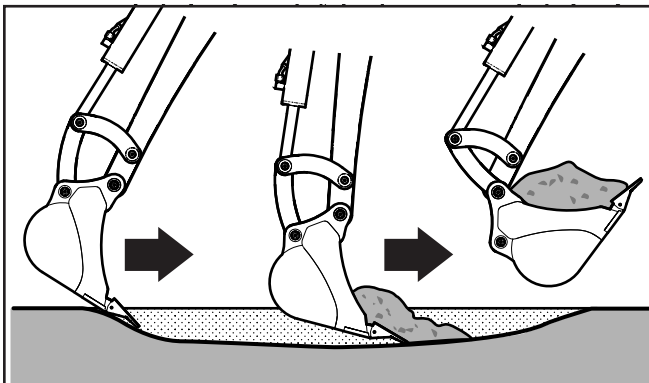


Fig. 6–Digging with Boom

5.4.2 Digging With Bucket

1. Use the loader face plate to set the bucket angle for digging at about 30 degrees to the ground.
2. Use the loader face plate / boom to force the bucket into the ground and at the same time, curl the bucket back to fill it.
3. Raise the boom and rotate the skid steer to dump the bucket.
4. Continue to dig 3–6 in (75–150 mm) deeper each pass.

WARNING!

Avoid risk of falling into the hole or collapsing the sides of the hole. Back away from the hole before rotating machine.

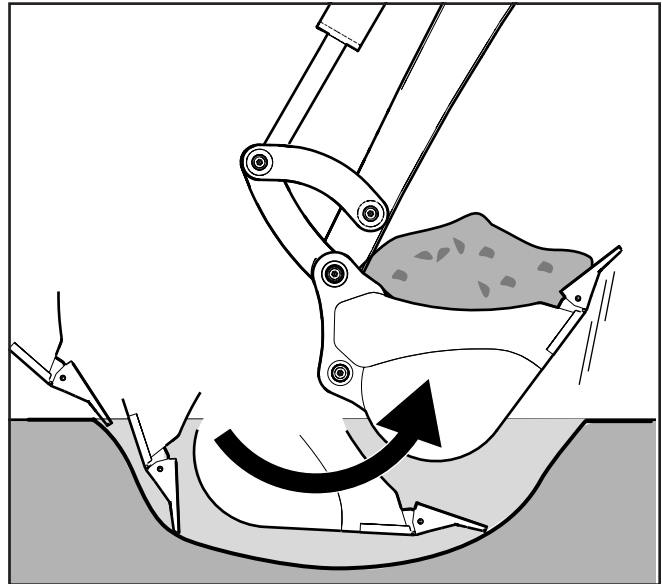


Fig. 7–Digging with Bucket

5.4.3 Trenching

1. Mark out the excavation.
2. Use the boom or bucket method to dig.
3. Make the first cut shallow and accurate. This first cut keeps the next cuts accurate and the trench straight.

5.4.4 Filling Holes

1. Use the bucket to reach beyond the trench and travel in reverse to PULL material into the trench or hole.
2. Use the back of the bucket and travel forward to PUSH the material into the trench or hole.

5.4.5 Excavating

1. Use either the arm or the bucket digging method to excavate the hole.
2. Plan ahead and dump the bucket far enough away from the excavation that the material does not fall back into the hole.

5.4.6 Loads

The backhoe can be used to lift and place lines, pipes or other loads into trenches or excavations if it is equipped with a thumb. See *Mechanical Thumb*.

1. Do not exceed the lifting capacity of the backhoe. Review the Specifications on *page 35*.
2. Always position the skid steer at right angles to the trench or excavation when moving loads.
3. Do not carry or lift people on the backhoe.

5.5 Operating Hints

- Review work site before positioning backhoe and starting work. Stay away from utility lines and obstructions.
- Back away from the hole and turn the skid steer when emptying bucket.
- Stay away from edge of hole.
- Do not allow untrained personnel to operate the machine.
- Do not operate machine when unauthorized people are in work area. Stop until they leave.
- Operate the machine only while sitting in the skid steer seat. Never operate controls while standing on the ground.
- Do not carry personnel on the boom or bucket.
- Do not exceed lift capacity of backhoe.
- Keep hydraulic components and fittings tight and in good condition.

5.6 Mechanical Thumb (Optional)

QC Backhoes can be equipped with an optional fixed mechanical thumb that is used as a back-stop when picking up a load. They mount to the underside of the boom arm.

6. Transporting

Follow the instructions provided in the skid steer operator's manual to transport the skid steer machine.

6.1 Transporting Safety

- Perform a walk-around check before transport to ensure everything is safe.
- Comply with provincial / state and local laws governing safety and transporting of machinery on public roads for highway lighting and marking requirements. Flashing amber warning lights and a Slow Moving Vehicle (SMV) sign may be required.
- Do not exceed a safe travel speed. Slow down for rough terrain and cornering.
- Plan the route to avoid heavy traffic.
- Do not drink and drive.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, and so on. Watch for traffic when operating near or crossing roadways.
- Turn into curves or go up or down hills only at a low speed and a gradual steering angle. Slow down on rough or uneven ground.
- Never allow riders on the machine.

WARNING!

Ensure lock pins are securely latched before operation. Failure to secure pins could result in serious injury or death.

W014

- Make sure that the backhoe is securely attached to the skid steer and lock pins are latched.
- Clean all mud and debris from the machine.
- When transporting a skid steer on a truck or trailer bed, always use tie-down attachments to secure.

6.2 Relocating to Another Site

1. Fully extend the bucket straight out from the skid steer. Lower the backhoe close to the ground for stability and visibility.
2. Warn and stay clear of other personnel or bystanders. Do not allow riders.
3. Avoid abrupt starts, stops, and turns.
4. Drive slowly over rough ground and on slopes. Stay clear of ditches and excavations to avoid tip over.

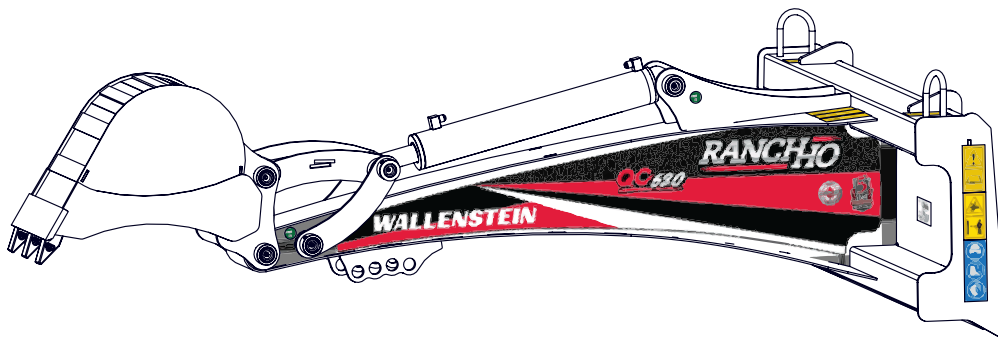


Fig. 8—Backhoe Transport Position

7. Storage

When the backhoe is not going to be used for a period of time, remove it from the skid steer and place it in storage.

- Store in a dry, level area away from human activity. Support the frame with blocking as required.
- Do not allow children to play on or around a stored machine.

7.1 Placing in Storage

1. Clean the backhoe removing all mud, dirt and grease.
2. Inspect the bucket and boom for damage or entangled material. Repair or replace damaged parts. Remove all entangled material.
3. Lubricate all grease fittings. Make sure all grease cavities have been filled with grease to remove any water residue from washing.
4. Select a storage area that is dry, level and free of debris.
5. Fully retract the bucket cylinder and lower the backhoe onto wood blocking.
6. Disconnect hydraulic hoses from skid steer.
7. Cover the ends of the hydraulic couplers to keep them clean. Stow hydraulic hoses in storage brackets to keep them off the ground.
8. Touch up all paint nicks and scratches to prevent rusting. Replace any damaged safety signs.
9. Apply a coat of heavy grease to any exposed area of cylinder rod to prevent rusting.
10. If the machine cannot be stored inside, cover with a waterproof tarp.

7.2 Removing from Storage

1. Attach backhoe to the skid steer as indicated on page 23.
2. Check all fasteners and torque-tighten as required.
3. Check all hydraulic lines, fittings and connections for leaks. Tighten as required.
4. Remove grease or protective coating from cylinder rod.
5. Check condition of bucket teeth. Replace as necessary.
6. Review and follow the Pre-operation Checklist. See *Pre-Operation Checklist on page 25*.

8. Service and Maintenance

Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.

8.1 Service

By following a careful service and maintenance program for your machine, you will enjoy many years or trouble-free operation.

8.1.1 Greasing

Use an SAE multipurpose, high-temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium-based grease.

1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing to avoid injecting dirt and grit.
3. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fittings if necessary.
4. Replace and repair grease fittings that are not working properly immediately.

8.1.2 Servicing Intervals

See *Maintenance Schedule on page 34* for service interval information. The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication.

8.1.3 Storing Lubricants

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture, and other contaminants.

8.2 QC605 and QC605B Grease Points

IMPORTANT! Do Not over grease.



Look for this decal on your machine. It indicates a grease point and service interval in hours.

Location	Every 8 hours or daily
1	Cylinder pivot points.
2	Bucket linkage pivot points.

Every 100 hours or annually

Wash and clean backhoe. Remove any entangled material or debris.

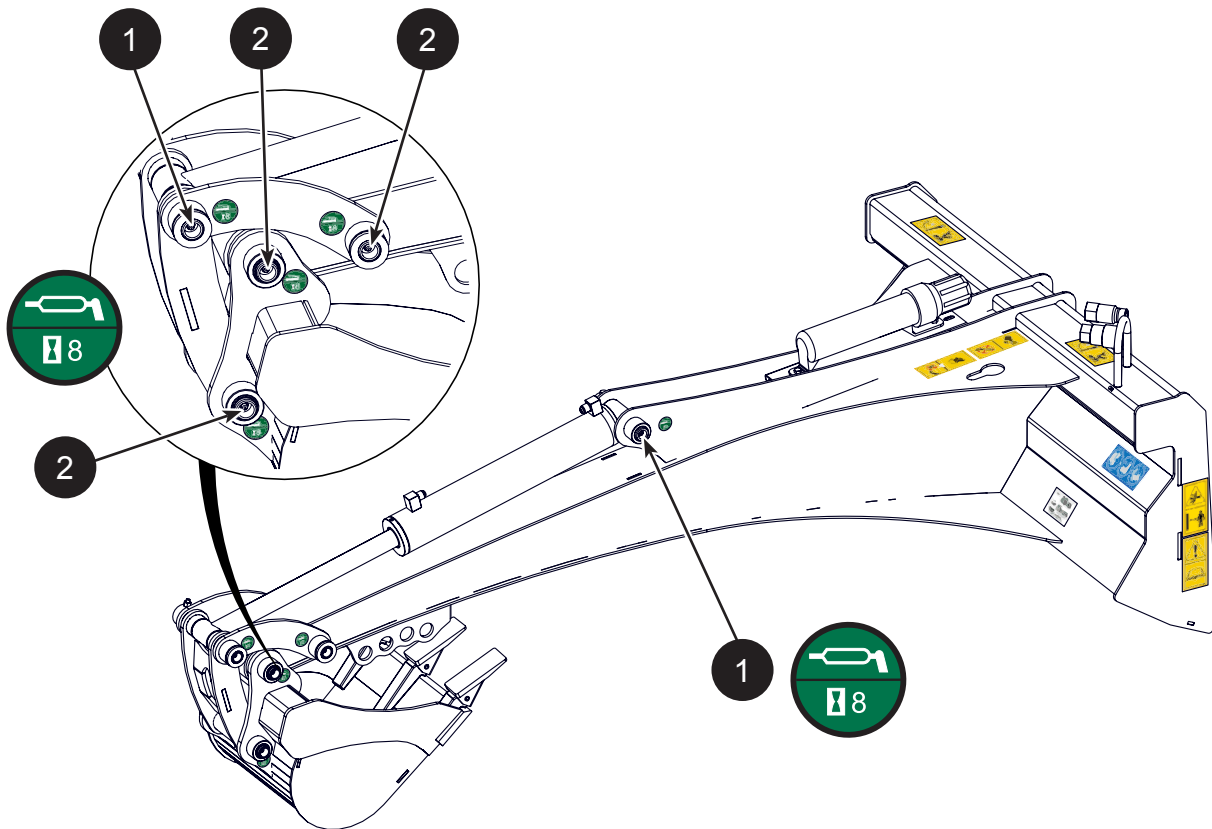


Fig. 9—QC605 and QC605B Grease Points

8.3 QC620 Grease Points

IMPORTANT! Do Not over grease.



Look for this decal on your machine. It indicates a grease point and service interval in hours.

Location	Every 8 hours or daily
1	Cylinder pivot points.
.2	Bucket linkage pivot points.

Every 100 hours or annually
Wash and clean backhoe. Remove any entangled material or debris.

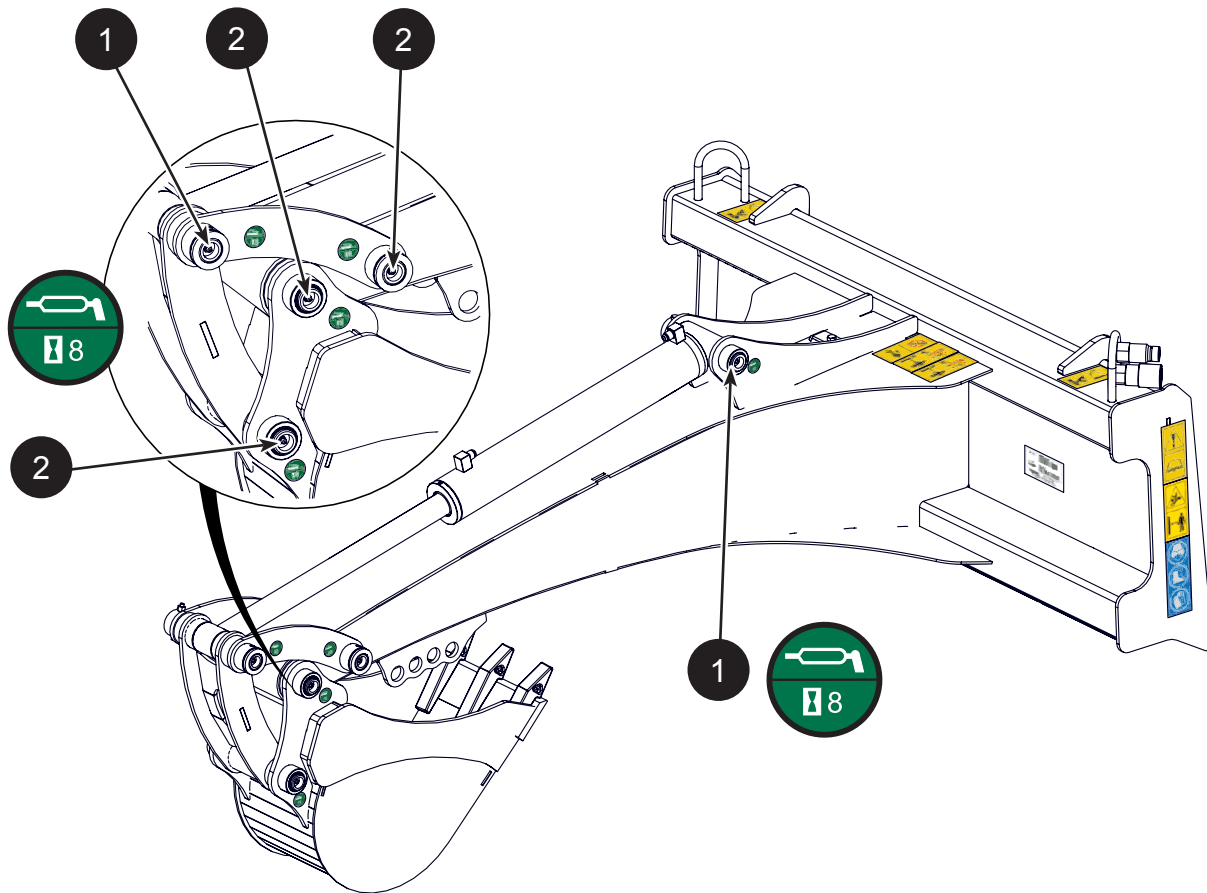


Fig. 10—QC620 Grease Points

8.4 Bucket Tooth Replacement

The bucket teeth are replaceable. Check on their condition weekly. Replace if damaged or worn out.

Place the machine in a Safe Condition. See *Safe Condition* on page 12.

1. Lower dipper and bucket to the ground. Place controls in neutral.
2. Drive out the roll pin and remove the tooth.
3. Clean the tooth shank and install the new tooth.
4. Reinstall the roll pin.

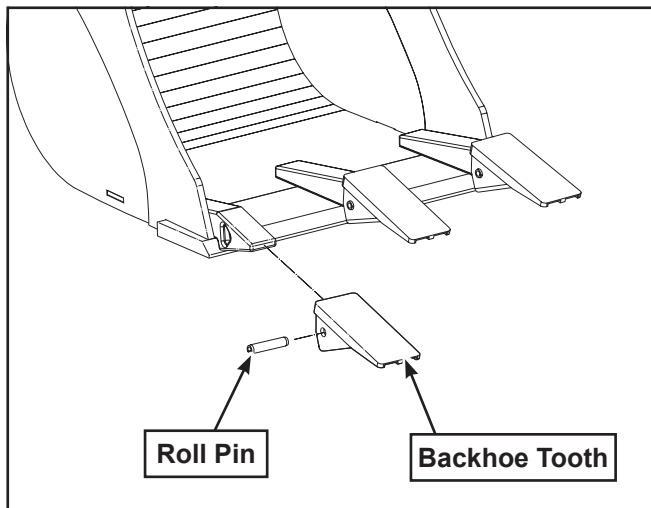


Fig. 11 – Bucket Teeth

8.5 Bucket Removal

The bucket can be easily changed out with another size bucket. Buckets are available in a range of sizes from your dealer. See *Specifications* on page 35.

WARNING!

Crush Hazard. Unsupported machine can fall causing serious injury or death. Use proper support stands or blocking.

W012

The Bucket is held in place with two pins. Remove pins to replace the bucket. Be careful not to damage the pins during removal.

1. Position the boom so that the bucket is resting on the ground and there is no load on the bucket pins
2. Remove retaining bolts and nuts that secure the pins.
3. From the side of the bucket, drive out the pins. Be careful that the bucket doesn't drop unexpectedly.
4. Carefully remove the bucket and position the new bucket in its place.
5. Clean and lightly grease the pins.
6. Install the pins and secure with retaining bolts and nuts.
7. Lubricate both pin grease fittings before putting the backhoe into operation.

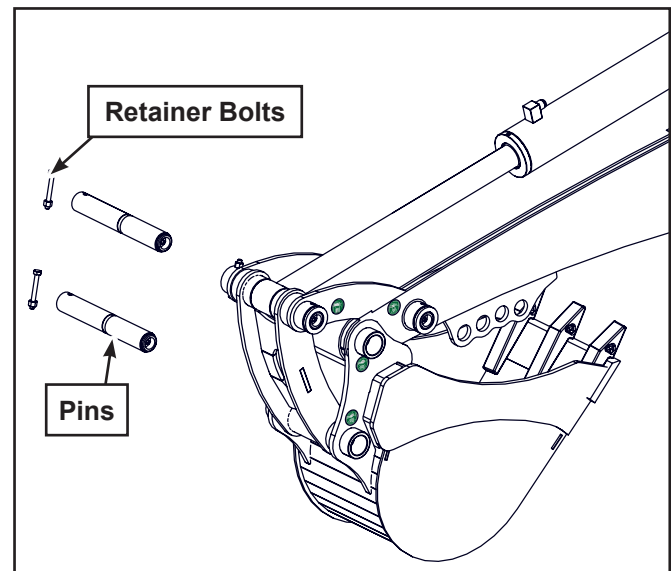


Fig. 12 – Bucket Removal

8.6 Maintenance Schedule

Maintenance schedule

Perform at time shown or hour interval, whichever comes first. Item	Every 8 hours or Daily	Every 100 hours or Annually
Check hydraulic hoses, fittings, frame	✓	
Check that all fasteners are secure	✓	
Grease cylinder pivot points	✓	
Grease bucket linkage points	✓	
Clean machine		✓

9. Trouble Shooting

The Wallenstein QC600 Series Skid Steer mounted backhoe is designed for light digging and trenching duties. It is a simple and reliable machine that requires minimal maintenance.

The following table lists causes and solutions to problems that could be encountered.

If a problem encountered that is difficult to solve, contact a Wallenstein distributor or dealer. Have the backhoe serial number handy.

Always wear **Personal Protective Equipment (PPE)** whenever operating the backhoe or working in the vicinity.

Problem	Cause	Solution	Caution ⚠
Cylinder rods move slowly or don't move.	No pressurized hydraulic oil.	Low hydraulic oil level, top up.	Ensure machine is off and cooled down.
	Pump worn out.	Replace pump.	Ensure machine is off.
	Not enough flow.	Flow control set too low. Set control higher for more flow.	
	Low engine speed.	Set engine speed faster.	
Cylinder jerks, doesn't run smoothly.	Leak in hydraulic system.	Air getting into system. Tighten all hydraulic connections.	Ensure machine is off.
	Low oil level.	Check oil level, add as required.	Ensure machine is off.
Bucket drifts down.	Leaking seals.	Replace cylinder seals.	Ensure machine is off.

10. Specifications

Model	QC605	QC605B	QC620
Digging Depth — in (mm)	72 in (1829 mm)	72 in (1829 mm)	72 in (1829 mm)
Weight — lb (kg)	182 lb (83 kg)	235 lb (107 kg)	296 lb (134 kg)
Max System Pressure — psi (kPa)	3000 psi (20,694 kPa)	3000 psi (20,694 kPa)	3000 psi (20,694 kPa)
Recommended Horsepower — hp (kW)	20–45 hp (15–33 kW)	20–45 hp (15–33 kW)	50–65 hp (37–48 kW)
Available Bucket Sizes	9, 12, 15, 18	9, 12, 15, 18	9, 12, 15, 18, 24

10.1 Hydraulic Fitting Torque

Tightening Flare Type Tube Fittings

1. Check flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Hand-tighten swivel nut until snug.
4. To prevent twisting the tube, use two wrenches. Place one wrench on the connector body and tighten the swivel nut with the second. Torque to values shown.

If a torque wrench is not available, use the FFFT (Flats From Finger Tight) method.

Hydraulic Fitting Torque					
Tube Size OD	Hex Size Across Flats	Torque value		Flats From Finger Tight	
		Inches	N•m	Flats	Turns
3/16	7/16	6	8	2	1/6
1/4	9/16	11–12	15–17	2	1/6
5/16	5/8	14–16	19–22	2	1/6
3/8	11/16	20–22	27–30	1-1/4	1/6
1/2	7/8	44–48	59–65	1	1/6
5/8	1	50–58	68–79	1	1/6
3/4	1-1/4	79–88	107–119	1	1/8
1	1-5/8	117–125	158–170	1	1/8

Values shown are for non-lubricated connections.


10.2 Bolt Torque

Checking Bolt Torque

The tables shown give correct torque values for various bolts and capscrews. Tighten all bolts to the torque values specified in the table, unless indicated otherwise. Check tightness of bolts periodically.

IMPORTANT! If replacing hardware, use fasteners of the same grade.

IMPORTANT! Torque figures indicated in the table are for non-greased or non-oiled threads. Do not grease or oil threads unless indicated otherwise. When using a thread locker, increase torque values by 5%.

 **NOTE:** Bolt grades are identified by their head markings.

Imperial Bolt Torque Specifications						
Bolt Diameter	Torque Value					
	SAE Gr. 2		SAE Gr. 5		SAE Gr. 8	
	lbf•ft	N•m	lbf•ft	N•m	lbf•ft	N•m
1/4"	6	8	9	12	12	17
5/16"	10	13	19	25	27	36
3/8"	20	27	33	45	45	63
7/16"	30	41	53	72	75	100
1/2"	45	61	80	110	115	155
9/16"	60	95	115	155	165	220
5/8"	95	128	160	215	220	305
3/4"	165	225	290	390	400	540
7/8"	170	230	420	570	650	880
1"	225	345	630	850	970	1320



Metric Bolt Torque Specifications				
Bolt Diameter	Torque Value			
	Gr. 8.8		Gr. 10.9	
	lbf•ft	N•m	lbf•ft	N•m
M3	0.4	0.5	1.3	1.8
M4	2.2	3	3.3	4.5
M6	7	10	11	15
M8	18	25	26	35
M10	37	50	52	70
M12	66	90	92	125
M16	166	225	229	310
M20	321	435	450	610
M30	1,103	1 495	1,550	2 100
M36	1,917	2 600	2,700	3 675



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