

MAN0978
(Rev. 11/24/2023)

ALITEC[®] SCRAP GRAPPLE

HLSG66

HLSG73

HLSG78

HLSG84

ROOT GRAPPLE

HLRG65

HLRG72

HLRG79

HLRG86

WainRoy

OPERATOR'S MANUAL

TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the WainRoy dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

The dealer must complete the online Product Registration form at the WainRoy Dealer Website which certifies that all Dealer Check List items have been completed. Dealers can register all WainRoy's product at www.wainroy.com under Product Registration.

Failure to register the product does not diminish customer's warranty rights.

TO THE OWNER:

Read this manual before operating your WainRoy equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your dealer. To locate your nearest dealer, check the Dealer Locator at www.wainroy.com, or in the United States and Canada call 1-800-848-3447.

The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the equipment.

For service, your authorized WainRoy dealer has trained mechanics, genuine WainRoy service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine WainRoy service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

Model: _____ **Date of Purchase:** _____

Serial Number: (see Safety Decal section for location) _____

Provide this information to your dealer to obtain correct repair parts.

Throughout this manual, the term **NOTICE** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING**, and **DANGER** are used in conjunction with the Safety-Alert Symbol (a triangle with an exclamation mark) to indicate the degree of hazard for items of personal safety.



This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



Indicates a hazardous situation that, if not avoided, will result in death or serious injury.



Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

**IMPORTANT
or NOTICE**

Is used to address practices not related to physical injury.

NOTE

Indicates helpful information.

ALITEC™

BMP®

CENTRAL FABRICATORS®

GANNON® GILL®

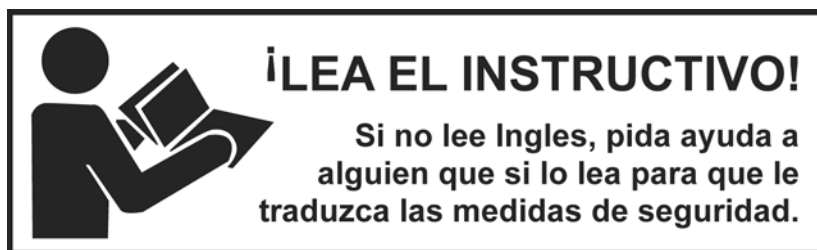
WAIN-ROY®

WainRoy

2 Introduction

TABLE OF CONTENTS

INTRODUCTION	2
SPECIFICATIONS	4
GENERAL INFORMATION	4
SAFETY RULES	5
SAFETY DECALS	8
OPERATION	9
DEALER SERVICE	15
OWNER SERVICE	14
ASSEMBLY	17
DEALER CHECK LISTS	17
PARTS	18
BOLT TORQUE CHART	22
BOLT SIZE CHART & ABBREVIATIONS	23
PRODUCT WARRANTY	24
REPLACEMENT PARTS WARRANTY	INSIDE BACK COVER



This Operator's Manual should be regarded as part of the machine. Suppliers of both new and second-hand machines must make sure that this manual is provided with the machine.

SPECIFICATIONS

	HLSG66	HLSG73	HLSG78	HLSG84
Width	66.75"	73.75"	78.75"	84.75"
Length	34.43"	34.43"	34.43"	34.43"
Height	26.65"	26.65"	26.65"	26.65"
Weight	773 lbs	823 lbs	873 lbs	923 lbs
Heaped Capacity (ft 3)	15.1	16.9	18.1	19.5
Cylinder Bore	2.76"	2.76"	2.76"	2.76"
Cylinder Rod	1.38"	1.38"	1.38"	1.38"
Grapple Opening	39.0"	39.0"	39.0"	39.0"
Bolt-on Reversible Edge	Yes	Yes	Yes	Yes

	HLRG65	HLRG72	HLRG79	HLRG86
Width	65.0"	72.1"	79.3"	86.4"
Length	33.5"	33.5"	33.5"	33.5"
Height	26.3"	26.3"	26.3"	26.3"
Weight	660 lbs	680 lbs	700 lbs	720 lbs
Number of Teeth	10	11	12	13
Tooth Spacing	6.8"	6.8"	6.8"	6.8"
Cylinder Bore	2.76"	2.76"	2.76"	2.76"
Cylinder Rod	1.38"	1.38"	1.38"	1.38"
Grapple Opening	37.0"	37.0"	37.0"	37.0"

GENERAL INFORMATION



WARNING

■ Some manual illustrations may show units with safety shields or guards removed to provide better views and/or needed explanations. Units are never to be modified or operated with safety shielding or guards removed.

The purpose of this manual is to assist you in operating and maintaining your scrap grapple. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive field experience and engineering data. Some information

may be general in nature, due to unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop procedures suitable to your situation. The illustrations and data used in this manual were current at the time of printing. However, due to possible inline production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.

Throughout this manual, references are made to right and left directions. These are determined by standing behind the tractor facing the direction of forward travel.



4 Introduction

MAN0978 (Rev. 11/24/2023)



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgement, and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said "The best safety device is an informed, careful operator." We ask you to be that kind of operator.

INSTALLATION

- Hydraulics must be connected as instructed in this manual. Do not substitute parts, modify, or connect in any other way.
- After connecting hoses, check that all control lever positions function as instructed in the Operator's Manual. Do not put into service until control lever and equipment movements are correct.

TRAINING

- Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer. To locate your nearest dealer, check the Dealer Locator at www.wainroy.com, or in the United States and Canada call 1-800-848-3447.) Failure to follow instructions or safety rules can result in serious injury or death.
- If you do not understand any part of this manual and need assistance, see your dealer.
- Know your controls and how to stop engine and attachment quickly in an emergency.
- Operators must be instructed in and be capable of the safe operation of the equipment, its attachments, and all controls. Do not allow anyone to operate this equipment without proper instructions.
- Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.

- Make sure that all operating and service personnel know that if hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury or gangrene, serious injury, or death will result. **CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.**

- Never allow children or untrained persons to operate equipment.

PREPARATION

- Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.
- Counterweight ballast may be required for machine stability. Check your power unit manual or contact your dealer.
- Air in hydraulic systems can cause erratic operation and allows loads or equipment components to drop unexpectedly. When connecting equipment or hoses or performing any hydraulic maintenance, purge any air in hydraulic system by operating all hydraulic functions several times. Do this before putting into service or allowing anyone to approach the equipment.
- After connecting hoses, check that all control lever positions function as instructed in the Operator's Manual. Do not put into service until control lever and equipment movements are correct.
- Protective hose sleeves must cover all hydraulic hoses within 20 inches of the operator and be secured onto metal hose fittings. Replace hoses or sleeves if damaged or if protective sleeve cannot be properly positioned or secured.
- Make sure all hydraulic hoses, fittings, and valves are in good condition and not leaking before starting power unit or using equipment. Check and route hoses carefully to prevent damage. Hoses must not be twisted, bent sharply, kinked, frayed, pinched, or come into contact with any moving parts. Operate moveable components through full operational range to check clearances. Replace any damaged hoses immediately.
- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

(Safety Rules continued on next page)



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

■ Be sure attachment is properly secured, adjusted, and in good operating condition. Coupler lockpins must be fully extended and properly engaged into attachment retaining slots.

■ Power unit must be equipped with ROPS and seat belt/operator restraint. Keep seat belt/operator restraint securely fastened/engaged. Falling off power unit can result in death from being run over or crushed. Keep ROPS systems in place at all times.

■ Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)

■ Make sure shields and guards are properly installed and in good condition. Replace if damaged.

OPERATION

■ Improper operation can cause the machine to tip or roll over and cause injury or death.

- Keep power unit lift arms and attachment as low as possible.
- Do not travel or turn with power unit lift arms and attachment raised.
- Turn only on level ground.
- Go up and down slopes, not across them.
- Keep the heavy end of the machine uphill.
- Do not overload the machine.

■ Never use attachment to carry loads that exceed the rated operating capacity or other specifications of the power unit. Check your power unit manual or see your dealer for rated operating capacity. Exceeding this capacity can cause machine to tip, roll over, or present other hazards that can cause injury or death.

■ Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.

■ Only raise load to dump.

- Only raise to required height on firm, level surface.
- Never dump under or around overhead power lines.
- Keep attachment positioned forward so that accidental spillage falls away from operator enclosure.

■ Contact with high voltage, overhead power lines, underground cables, gas lines, and other

hazards can cause serious injury or death from electrocution, explosion, or fire.

■ Keep bystanders away from equipment.

■ Do not operate or transport equipment while under the influence of alcohol or drugs.

■ Operate only in daylight or good artificial light.

■ Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.

■ Always comply with all state and local lighting and marking requirements.

■ Do not allow riders. Do not lift or carry anybody on the power unit or attachments.

■ Always sit in power unit seat when operating controls or starting engine. Securely fasten seat belt/operator restraint, place transmission in park or neutral, engage brake and ensure all other controls are disengaged before starting power unit engine.

■ Look down and to the rear and make sure area is clear before operating in reverse.

■ Use extreme care when working close to fences, ditches, other obstructions, or on hillsides.

■ Do not operate or transport on steep slopes.

■ Do not stop, start, or change directions suddenly on slopes.

■ Use extreme care and reduce ground speed on slopes and rough terrain.

■ Watch for hidden hazards on the terrain during operation.

■ Stop power unit and implement immediately upon striking an obstruction. Dismount power unit, using proper procedure. Inspect and repair any damage before resuming operation.

■ **AVOID INJURY OR DEATH FROM FALLING OBJECTS:**

- Do not carry shiftable items. Hay bales, logs, fence posts, stones, and other objects can roll or fall from a raised attachment and crush operator or bystanders.
- This unit is not equipped with any method to prevent objects such as round bales, posts, or logs from rolling back onto operator.
- Do not handle round hay bales.
- Carry loads low and drive slowly.
- Do not carry large objects that can fall out of attachment into operator zone.



SAFETY RULES

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



- Never lift load higher than necessary to clear the ground when moving.
- Before leaving operator's seat, lower lift arms and put attachment on the ground. Engage brake, stop engine, remove key, and remove seat belt.
- **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.
 - Service work does not require going underneath implement.
 - Read Operator's Manual for service instructions or have service performed by a qualified dealer.

MAINTENANCE

- Before performing service work that requires repair or replacement of parts, remove attachment from power unit. Hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.
- **NEVER GO UNDERNEATH EQUIPMENT.** Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.
 - Service work does not require going underneath implement.
 - Read Operator's Manual for service instructions or have service performed by a qualified dealer.
- Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.

- Your dealer can supply original equipment hydraulic accessories and repair parts. Substitute parts may not meet original equipment specifications and may be dangerous.
- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.
- Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.
- Be sure attachment is properly secured, adjusted, and in good operating condition. Coupler lockpins must be fully extended and properly engaged into attachment retaining slots.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Never perform service or maintenance with engine running.
- Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.
- Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)
- Make sure shields and guards are properly installed and in good condition. Replace if damaged.
- Do not disconnect hydraulic lines until all system pressure is relieved. Lower unit to ground, stop engine, and operate all hydraulic control levers.

STORAGE

- Follow manual instructions for storage.
- Keep children and bystanders away from storage area.



SAFETY & INSTRUCTIONAL DECALS

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

Replace Immediately If Damaged!



2 - PN 19924



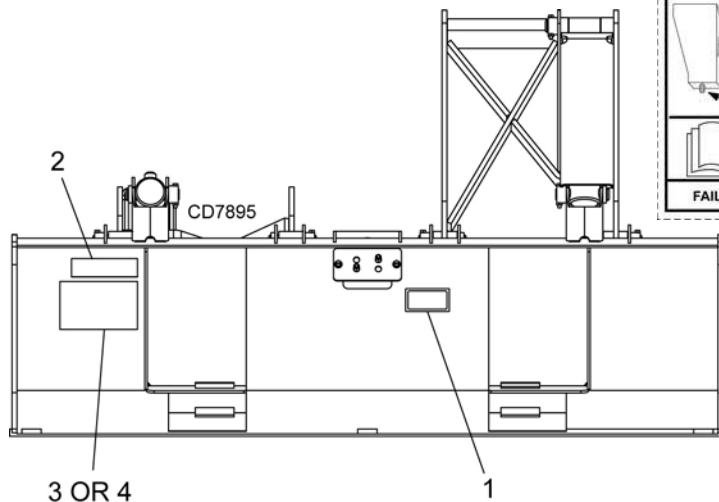
1 - Serial Number Plate

ALITEC™

Woods Equipment Company Oregon, Illinois, U.S.A.

Model No:

Serial No:
Mass:



4 - PN 1034605

WARNING	
	FALLING OFF CAN RESULT IN BEING RUN OVER ■ Skid steer must have ROPS and seat belt/operator restraint. ■ Never allow riders. ■ Never let children or untrained persons operate equipment.
	RAISED EQUIPMENT CAN DROP AND CRUSH ■ Never go underneath raised equipment that can drop from hydraulic or mechanical failure, or moving control levers. ■ Before leaving operator seat, lower lift arms and attachment to ground, stop engine, remove key, engage brake, and remove seat belt/operator restraint. ■ Service work does not require going underneath equipment.
	UNSECURED ATTACHMENT CAN DROP AND CRUSH ■ Read the skid steer operator's manual connection and removal instructions. ■ Only operate skid steer with attachment coupler handles in the locked position. Lock pins must be completely extended and secured in the retaining slots provided on the attachment.
READ AND UNDERSTAND THE LOADER OPERATOR'S MANUAL BEFORE OPERATING.	
FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.	

BE CAREFUL!

Use a clean, damp cloth to clean safety decals. Avoid spraying too close to decals when using a pressure washer; high-pressure water can enter through very small scratches or under edges of decals causing them to peel or come off.

Replacement safety decals can be ordered free from your WainRoy dealer. To locate your nearest dealer, check the Dealer Locator at www.wainroy.com, or in the United States and Canada call 1-800-848-3447.

3 - PN 1034603

WARNING	
	FALLING OFF CAN RESULT IN BEING RUN OVER ■ Always use ROPS and seat belt/operator restraint. ■ Never allow riders. ■ Never let children or untrained persons operate equipment.
	RAISED EQUIPMENT CAN DROP AND CRUSH ■ Never go underneath raised equipment that can drop from hydraulic or mechanical failure, or moving control levers. ■ Before leaving operator seat, lower loader and attachment to ground, stop engine, remove key, engage brake, and remove seat belt/operator restraint. ■ Service work does not require going underneath equipment.
	UNSECURED ATTACHMENT CAN DROP AND CRUSH ■ Read the loader operator's manual connection and removal instructions. ■ Only operate loader with attachment coupler handle in the locked position. Lock pins must be completely extended and secured in the retaining slots provided on the attachment.
READ AND UNDERSTAND THE LOADER OPERATOR'S MANUAL BEFORE OPERATING.	
FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.	

OPERATION

The operator is responsible for the safe operation of this equipment. Operators must be instructed in and be capable of the safe operation of the equipment, its attachments and all controls. Do not allow anyone to operate this equipment without proper instructions.

WARNING

■ **Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer. To locate your nearest dealer, check the Dealer Locator at www.wainroy.com, or in the United States and Canada call 1-800-848-3447.) Failure to follow instructions or safety rules can result in serious injury or death.**

■ **Never allow children or untrained persons to operate equipment.**

■ **Power unit must be equipped with ROPS and seat belt/operator restraint. Keep seat belt/operator restraint securely fastened/engaged. Falling off power unit can result in death from being run over or crushed. Keep ROPS systems in place at all times.**

■ **Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.**

■ **NEVER GO UNDERNEATH EQUIPMENT. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.**

- Service work does not require going underneath implement.
- Read Operator's Manual for service instructions or have service performed by a qualified dealer.

■ **Before leaving operator's seat, lower lift arms and put attachment on the ground. Engage brake, stop engine, remove key, and remove seat belt.**

This scrap grapple fits Bobcat, New Holland, John Deere, Case, and other skid steers equipped with a universal skid steer coupler. Read the skid steer operator's manual for instructions on proper skid steer operation and safety.

The scrap grapple bucket is designed for lifting and moving loose materials which can be held by the clamping action of the hydraulic grapple.

ATTACHING GRAPPLE BUCKET TO SKID STEER

WARNING

■ **Be sure attachment is properly secured, adjusted, and in good operating condition. Coupler lockpins must be fully extended and properly engaged into attachment retaining slots.**

Read the skid steer operator's manual connecting and removing instructions.

Position hydraulic hoses so they will not be pinched when connecting the attachment.

The skid steer coupler handles should be in the unlocked position and the lock pins retracted, Figure 1.

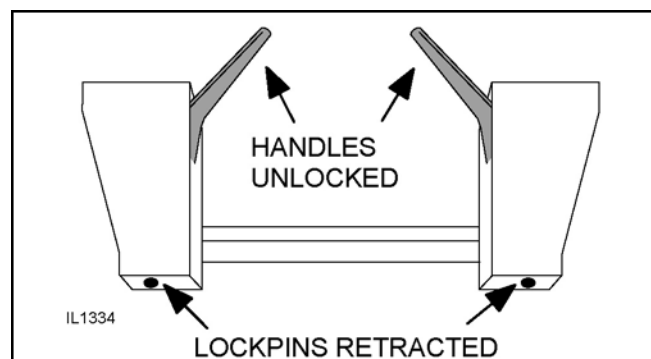


Figure 1. Skid Steer Coupler Handles - Unlocked

Move to the skid steer operator seat, fasten seat belt, engage operator restraint, and start engine. Lower skid steer lift arms to their lowest position.

Carefully move and align the skid steer coupler to the grapple bucket. The top of the skid steer coupler must index into the upper attachment flange, Figure 2.

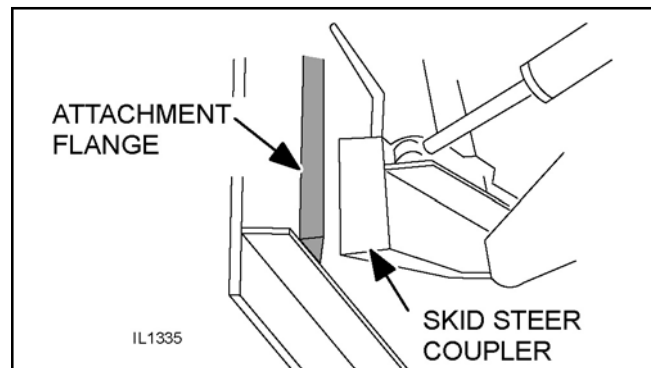


Figure 2. Attaching Scrap Grapple to Skid Steer

Roll the skid steer coupler into the grapple bucket hitch so the coupler handles can be engaged. Shut off the engine, set brake, remove key, remove seat belt, and release operator restraint. Dismount the skid steer.

Move the skid steer coupler handles to the locked position. The lock pins must be completely extended and secured into the retaining slots provided on the grapple bucket, Figure 3 and Figure 4.

Connect hydraulic hoses to skid steer auxiliary quick couplers.

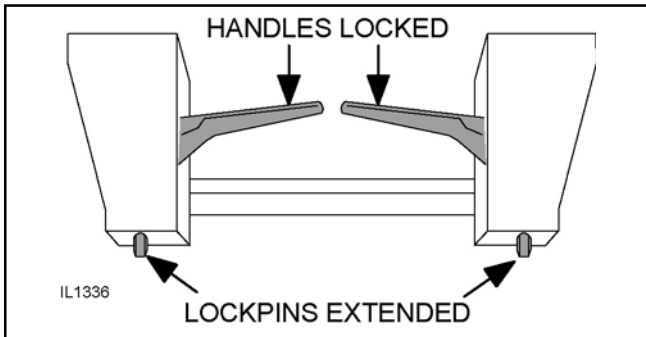


Figure 3. Skid Steer Coupler Handles - Locked

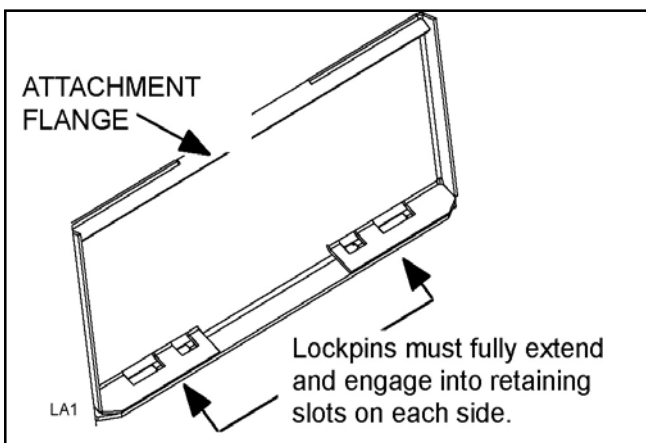


Figure 4. Retaining Slot Locations - Back View of Attachment

HYDRAULIC QUICK ATTACH COUPLERS

In some cases, hydraulic quick attach couplers may interfere with the factory hose location. (See Figure 5). In those cases, the hoses may be relocated to the top of the bucket.

Hose Relocation Instructions

1. Remove loader pressure and return lines from the bucket, the nuts from the tee fittings and the bulkhead plate.
2. Shim the bulkhead tee fittings with one 9/16 SAE flat washer (#B0920) each, between the fitting and the top channel of the bucket. Washer is included with buckets from the factory. It is installed between the tee fitting and the bulkhead plate.

3. Reinstall the fittings in the holes in the top of the bucket beneath the step. Reinstall the loader pressure and return lines. Be sure to direct the hoses so they do not get pinched between the loader coupler and the loader arm during a dump/rollback cycle. Reinstall the bulkhead plate to protect the hose cavity.



Figure 5. Hose Relocation

OPERATING GRAPPLE BUCKET

Operators using the grapple bucket must not exceed the skid steer operating capacity. The density of loose material is variable and care must be used to prevent overloading the skid steer. When loading dense or wet material, reduce the amount of material carried in the bucket. Lift and carry loads uniformly.

WARNING

- **Improper operation can cause the machine to tip or roll over and cause injury or death.**
 - Keep power unit lift arms and attachment as low as possible.
 - Do not travel or turn with power unit lift arms and attachment raised.
 - Turn only on level ground.
 - Go up and down slopes, not across them.
 - Keep the heavy end of the machine uphill.
 - Do not overload the machine.
- **Look down and to the rear and make sure area is clear before operating in reverse.**

Transporting Loads

WARNING

- **Never use attachment to carry loads that exceed the rated operating capacity or other specifications of the power unit. Check your power unit manual or see your dealer for rated operating capacity. Exceeding this capacity can cause machine to tip, roll over, or present other hazards that can cause injury or death.**

Always follow safety rules, carry low to ground, and travel slowly.

Make sure the grapples are holding the load securely so it cannot roll backwards or sideways.

Only raise a load when dumping.

Dumping Loads

WARNING

- **Only raise load to dump.**
 - Only raise to required height on firm, level surface.
 - Never dump under or around overhead power lines.
 - Keep attachment positioned forward so that accidental spillage falls away from operator enclosure.
- **AVOID INJURY OR DEATH FROM FALLING OBJECTS:**
 - Do not carry shiftable items. Hay bales, logs, fence posts, stones, and other objects can roll or fall from a raised attachment and crush operator or bystanders.
 - This unit is not equipped with any method to prevent objects such as round bales, posts, or logs from rolling back onto operator.
 - Do not handle round hay bales.
 - Carry loads low and drive slowly.
 - Do not carry large objects that can fall out of attachment into operator zone.
 - Never lift load higher than necessary to clear the ground when moving.

Transport to dumping location before raising. Only dump load when on a firm level surface.

Slowly raise load to required dumping height. Position bucket, rotate grapple bucket forward and release load. While raising, observe and keep rotation of grapple bucket slightly forward so that any accidental spillage will fall forward and away from the operator's cab.

Use care when dumping into trucks, wagons, spreaders, etc. Open grapple teeth will swing beyond bucket edge and can damage the opposite side of implement, out of the operator's sight.

REMOVING FROM SKID STEER

On a hard level surface, lower attachment to the ground and close grapples.

Shut off engine, set brake, remove key, remove seat belt and release operator restraint before leaving the skid steer operator's seat.

Move skid steer coupler handles to the unlocked position, Figure 1. Lock pins must be disengaged from attachment retaining slots.

Disconnect hydraulic hoses from quick couplers. Install dust plugs and couple hoses together for storage.

Move to the skid steer operator seat, fasten seat belt, engage operator restraint, and start engine.

Release brake and roll skid steer coupler until it is disengaged from the attachment. The attachment should be placed in storage position.

STORAGE

WARNING

- **Follow manual instructions for storage.**

CAUTION

- **Keep children and bystanders away from storage area.**

Inspect the grapple bucket thoroughly and prepare for storage. Repair or replace any damaged components.

Remove grapple bucket as described in "Removing From Skid Steer", above.

Rest the grapple bucket flat on the ground for storage with grapples completely closed. The bucket must rest with the buckets edge and bottom flat to the ground.

ATTACHING GRAPPLE BUCKET TO ISO QUICK ATTACH COUPLER

Position the hydraulic hoses so they will not be pinched when connecting the attachment.

The quick attach coupler handle should be in the unlocked (open) position with lock pins retracted, Figure 5.

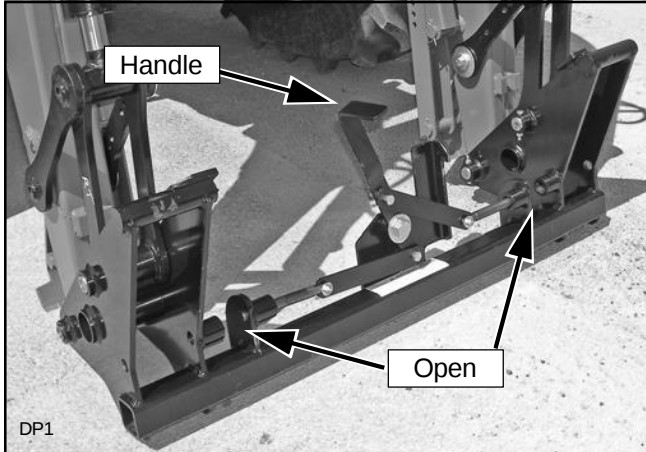


Figure 6. Quick Attach Coupler Handle - Unlocked

Move to the operator seat, fasten seat belt, and start engine.

Lower loader lift arms to their lowest position.

Carefully move and align the quick attach coupler to the bucket or attachment. The top of the quick attach coupler must completely engage the attachment or bucket hook, Figure 6.

Roll the attachment coupler into the attachment flange so the coupler handle can be engaged.



Figure 7. Connecting Bucket or Attachment to Loader

Shut off the engine, set brake, remove key, and remove seat belt. Dismount the tractor.

Move the attachment coupler handle to the locked (closed) position. The lockpins must be completely extended and secured into the retaining slots, Figure 7.

WARNING

■ Attachment coupler handles must always be rotated to **LOCK POSITION** to prevent coupler latch from disengaging and attachment from falling off.

Connect hydraulic hoses to loader auxiliary quick couplers (optional).

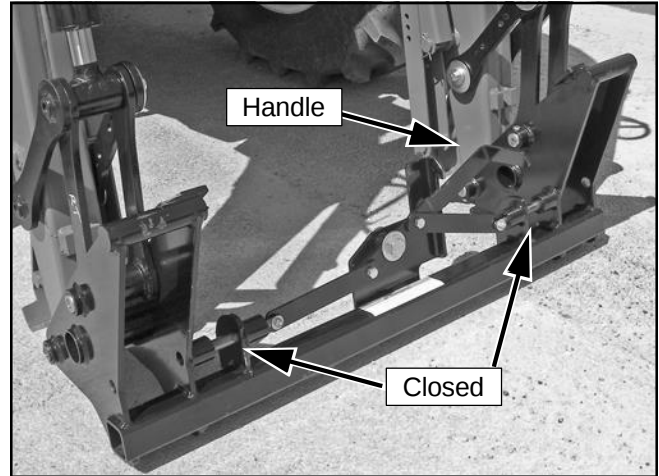


Figure 8. Attachment Coupler Handle - Locked

LOADER OPERATION

WARNING

■ Do not allow bystanders in the area when operating, attaching, removing, assembling, or servicing equipment.

The loader should be operated with the tractor engine running at a safe RPM. Excessive speeds are dangerous, and may cause bucket spillage and unnecessary strain on the tractor and loader.

CUTTING EDGE (OPTIONAL)

Bolt-on reversible cutting edges are available for all scrap grapple buckets.

SLAT KIT (OPTIONAL)

Bolt-in slat kits are available for all Root Grapple buckets. Slat kits reduce the tine spacing from 6.75" to 3.19".

RELIEF VALVE KIT (OPTIONAL)

An in-line relief valve kit is available for all Scrap and Root Grapple buckets. This kit limits the maximum loader pressure to 3000 psi, the rated pressure of the hydraulic cylinders. Loaders with operating pressures greater than 3000 psi should use the relief valve kit to ensure the integrity of the grapple bucket hydraulics.

CLEANING

After Each Use

- Remove large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Inspect machine and replace worn or damaged parts.
- Replace any safety decals that are missing or not readable.

Periodically or Before Extended Storage

- Clean large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Remove the remainder using a low-pressure water spray.

1. Be careful when spraying near scratched or torn safety decals or near edges of decals as water spray can peel decal off surface.
 2. Be careful when spraying near chipped or scratched paint as water spray can lift paint.
 3. If a pressure washer is used, follow the advice of the pressure washer manufacturer.
- Inspect machine and replace worn or damaged parts.
 - Sand down scratches and the edges of areas of missing paint and coat with WainRoy spray paint of matching color (purchase from your WainRoy dealer).
 - Replace any safety decals that are missing or not readable (supplied free by your WainRoy dealer). See Safety Decals section for location drawing.



PRE-OPERATION CHECK LIST

(OWNER'S RESPONSIBILITY)

- | | |
|--|--|
| ___ Review and follow all safety rules and safety decal instructions on page 5 through page 8. | ___ Do not allow riders. |
| ___ Check that all safety decals are installed and in good condition. Replace if damaged. | ___ Check and keep all bystanders away from equipment working area. |
| ___ Check that all shields and guards are properly installed and in good condition. Replace if damaged. | ___ Check all lubrication points and grease as instructed in "Service, Lubrication Information". |
| ___ Check that all hardware and cotter pins are properly installed and secured. | ___ Check that all hydraulic hoses and fittings are in good condition and not leaking before starting skid steer. Check that hoses are not twisted, bent sharply, kinked, frayed or pulled tight. Replace any damaged hoses immediately. |
| ___ Check that equipment is properly and securely attached to skid steer. | ___ Make sure skid steer ROPS and seat belt/operator restraint are in good condition. Keep seat belt/operator restraint securely fastened during operation. |
| ___ Consult local utilities before digging. Know location of and avoid contacting all underground cables, pipelines, overhead wires and other hazards in digging area. | |

OWNER SERVICE

The information in this section is written for operators who possess basic mechanical skills. Should you need help, your dealer has trained service technicians available. For your protection, read and follow all safety information in this manual.

⚠ WARNING

■ **Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer. To locate your nearest dealer, check the Dealer Locator at www.wainroy.com, or in the United States and Canada call 1-800-848-3447.) Failure to follow instructions or safety rules can result in serious injury or death.**

■ **Make sure shields and guards are properly installed and in good condition. Replace if damaged.**

■ **NEVER GO UNDERNEATH EQUIPMENT. Never place any part of the body underneath equipment or between moveable parts even when the engine has been turned off. Hydraulic system leak-down, hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.**

- Service work does not require going underneath implement.
- Read Operator's Manual for service instructions or have service performed by a qualified dealer.

■ **Before leaving operator's seat, lower lift arms and put attachment on the ground. Engage brake, stop engine, remove key, and remove seat belt.**

■ **Before performing service work that requires repair or replacement of parts, remove attachment from power unit. Hydraulic system failures, mechanical failures, or movement of control levers can cause equipment to drop or rotate unexpectedly and cause severe injury or death.**

■ **Keep all persons away from operator control area while performing adjustments, service, or maintenance.**

■ **Do not disconnect hydraulic lines until machine is securely blocked or placed in lowest position and system pressure is released by operating valve levers.**

⚠ CAUTION

■ **If you do not understand any part of this manual and need assistance, see your dealer.**

■ **Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.**

■ **Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.**

LUBRICATION

Do not let excess grease collect on or around parts, particularly when operating in sandy areas.

Figure 5 shows the lubrication points. The accompanying chart gives the frequency of lubrication in operating hours based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication. Some reference numbers have more than one location; be sure you lubricate all locations.

Use a lithium grease of #2 consistency with a MOLY (molybdenum disulfide) additive for all locations, unless otherwise noted. Be sure to clean fittings thoroughly before attaching grease gun. When applied according to the lubrication chart, one good pump of most guns is sufficient.

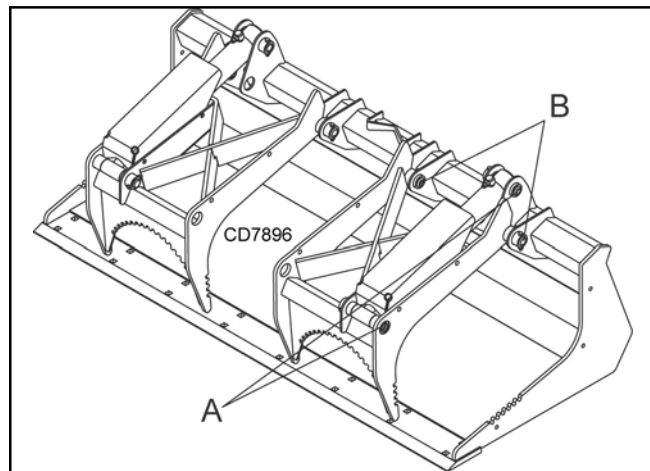


Figure 5. Lubrication

REF	LOCATION	FREQUENCY
A	Cylinder Pivot	8 Hours - Daily
B	Pivot Pins (4)	8 Hours

DEALER SERVICE

The information in this section is written for dealer service personnel. The repair described herein requires special skills and tools. If your shop is not properly equipped or your mechanics are not properly trained in this type of repair, you may be time and money ahead to replace complete assemblies.

WARNING

- Never work under a raised loader. Always lower loader to the ground with bucket or loader attachment in full roll-back position. Shut off tractor, set parking brake, and remove key. Operate valve levers to release any hydraulic pressure. If loader obstructs tractor maintenance, loader must be removed from tractor.
- Never allow anyone to get under the loader bucket or reach through the lift arms when the bucket is raised.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Do not disconnect hydraulic lines until all system pressure is relieved. Lower unit to ground, stop engine, and operate all hydraulic control levers.
- Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other body parts to check for leaks. Wear safety goggles. Hydraulic fluid under pressure can easily penetrate skin and will cause serious injury or death.
- Make sure that all operating and service personnel know that if hydraulic fluid penetrates skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury or gangrene, serious injury, or death will result. CONTACT A PHYSICIAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.

CAUTION

- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

CYLINDER SERVICE

The cylinders are designed to be reliable and easy to service. If a cylinder should malfunction during the warranty period, return the complete cylinder assembly, without disassembling, to your authorized service department or contact your authorized service department for instructions. Unauthorized disassembly of a cylinder in the warranty period will VOID WARRANTY.

NOTE: Repair to cylinders is limited to replacing seals, wear rings, and O-rings. Replacing rod, barrel, or pistons is not cost effective. Purchasing a complete cylinder is more economical.

The cylinder was assembled with a spanner nut assembly. See Figure 6. Spanner nut cylinders can also be identified by the letter "J" included in the stamping located at the base end port.

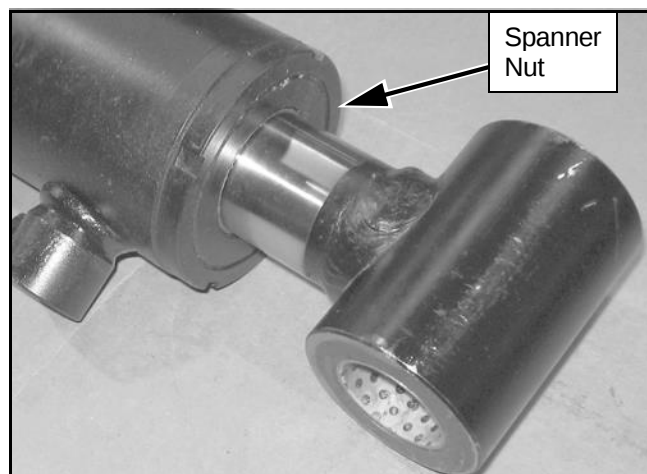


Figure 6. Spanner Nut Cylinder

CYLINDER REPAIR

Spanner Nut Cylinders

Disassembly

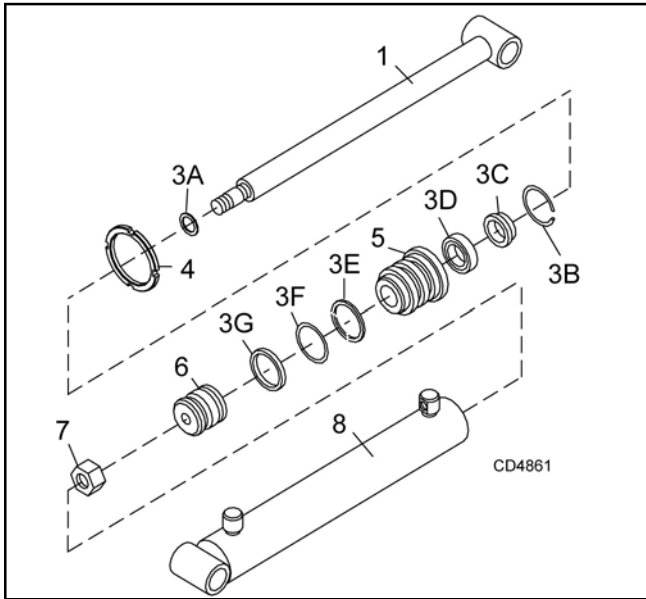


Figure 7. Spanner Nut Cylinder Assembly

On spanner nut style cylinders, unscrew spanner nut (4) using a spanner wrench, or carefully use a punch and hammer. (Spanner wrench 1021841 is available from WainRoy to help with these procedures.)

Tap rod guide (5) into barrel (8) about 1/2". Remove round retaining ring (3B). Pull on rod (1) to remove parts from barrel.

Clamp cross pin end of rod assembly (1) in a vise with protective jaws. Remove lock nut (7) from rod assem-

bly. Remove piston (6), stop tube (2) if equipped, and rod guide (5) from rod.

Remove and discard all seals, wear rings and O-rings. Clean all components in solvent and blow dry with low pressure air.

Inspect inside diameter of barrel (8). Replace cylinder if damaged.

Assembly

Lubricate O-rings and seals with clean hydraulic fluid. Install back-up washer (3E) on rod guide (5), then install O-ring (3F) in exterior O-ring groove of rod guide. Install rod seal (3D) into inner groove of rod guide with open portion of V-groove toward piston.

Place rod wiper (3C) in outer rod guide groove. Slide rod guide assembly (5) onto rod (1). Place crown piston seal (3G) in piston groove.

Lightly coat rod threads with hydraulic oil and slide O-ring (3A) over threads and into groove. Install stop tube (if equipped) and piston (6) onto rod (1) as shown in Figure 8. Completely clean threads of hydraulic oil, apply Locquic® Primer 7649 and Loctite® 242 to the rod threads, and install lock nut (7). Torque to 175 lbs- ft.

Compress crown piston seal and carefully insert piston and rod assembly into barrel. Use care to prevent damage while installing.

Carefully push or tap rod guide (5) into barrel (8) just past groove inside barrel. Insert retaining ring (3B) into groove and pull rod (1) to seat rod guide (5) against ring. Apply Loctite 242 to rod guide threads. Screw spanner nut (4) into rod guide (5) using a spanner wrench, or carefully use a punch and hammer.

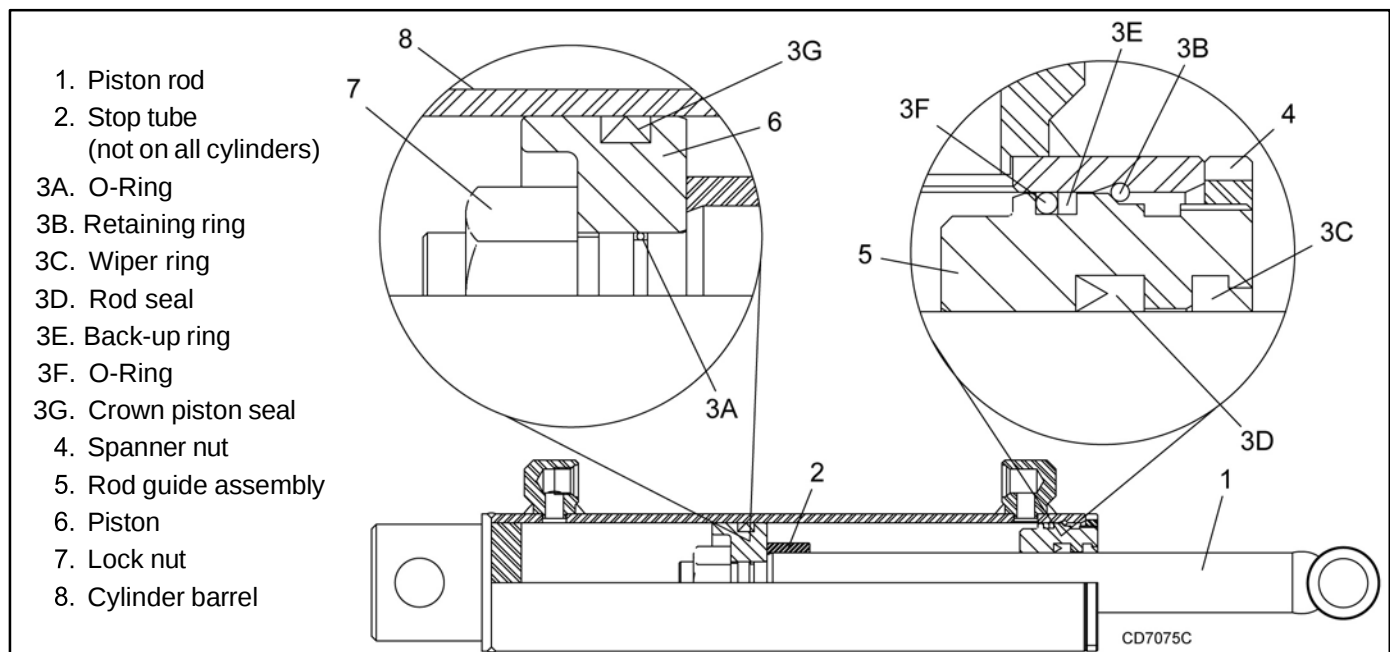


Figure 8. Spanner Nut Cylinder Assembly

ASSEMBLY

CUTTING EDGE (OPTIONAL)

Bolt-on reversible cutting edges are available for scrap grapple buckets.

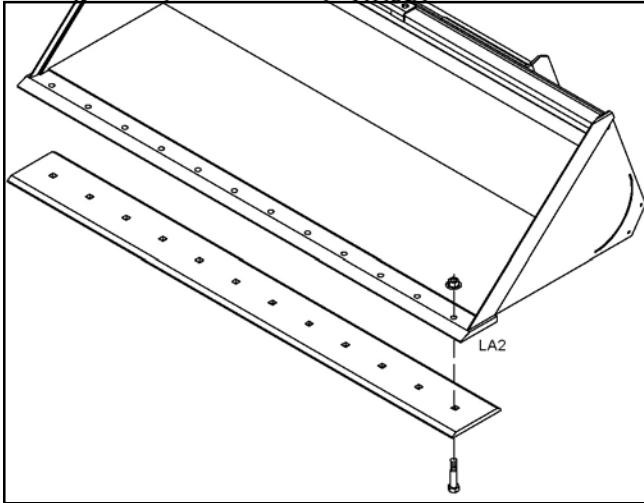


Figure 6. Cutting Edge

DEALER CHECK LISTS

Pre-Delivery Check List

(Dealer's Responsibility)

Inspect the equipment thoroughly after assembly to ensure it is set up properly before delivering it to the customer.

The following check lists are a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

- ___ Check that all safety decals are installed and in good condition. Replace if damaged.
- ___ Check that shields and guards are properly installed and in good condition. Replace if damaged.
- ___ Check all bolts to be sure they are tight.

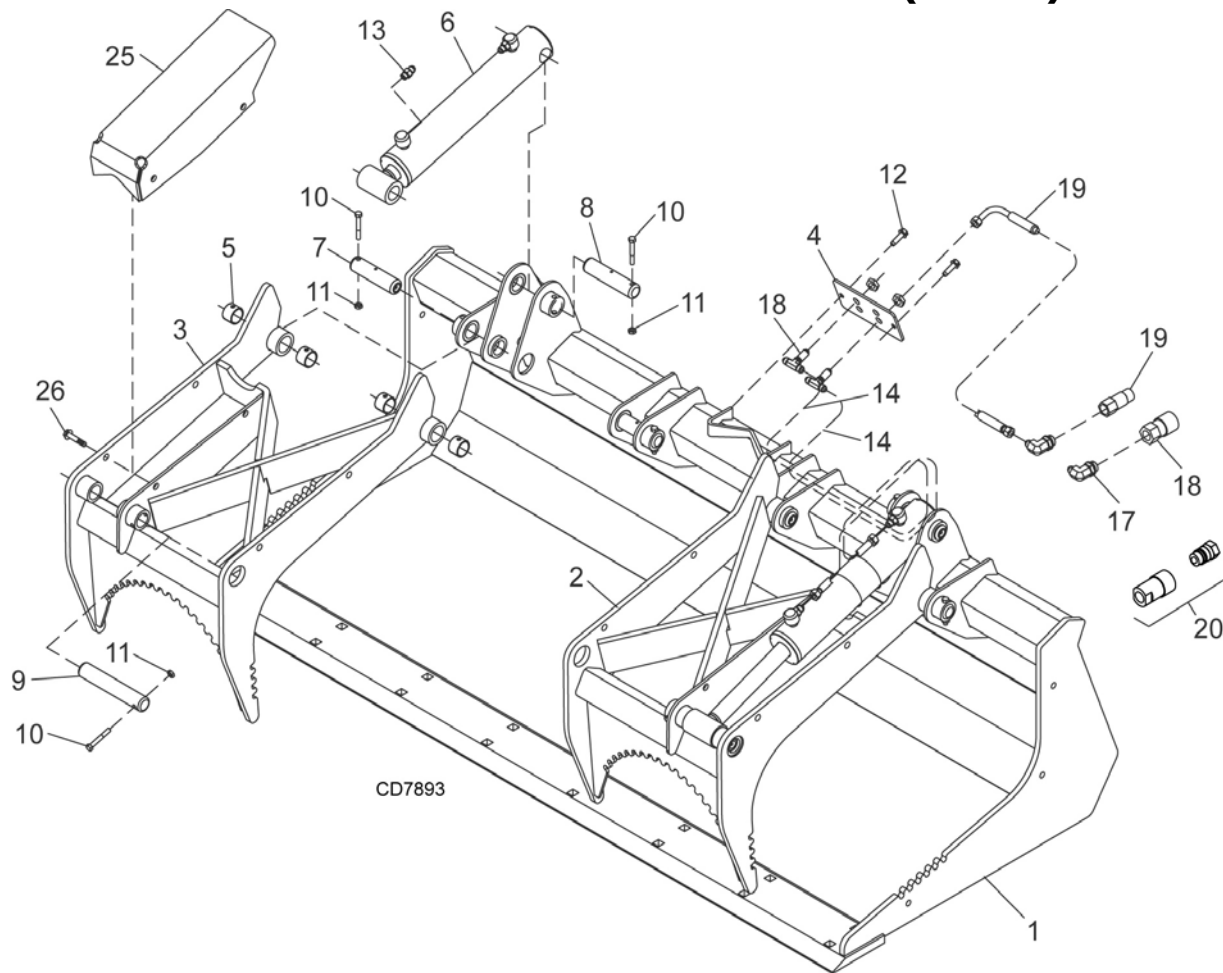
- ___ Check that all cotter pins and safety pins are properly installed. Replace if damaged.
- ___ Check and grease all lubrication points as identified in "Service, Lubrication Information".

Delivery Check List

(Dealer's Responsibility)

- ___ Show customer how to make adjustments.
- ___ Instruct customer how to lubricate and explain importance of lubrication.
- ___ Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.
- ___ Present Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.
- ___ Explain to customer the potential crushing hazards of going underneath raised equipment. Instruct customer that service work does not require going underneath unit and never to do so.
- ___ Show customer the safe, proper procedures to be used when mounting, dismounting, and storing equipment.
- ___ Explain to customer that when equipment is transported on a road or highway, safety devices should be used to give adequate warning to operators of other vehicles.
- ___ Make customer aware of optional equipment available so that customer can make proper choices as required.
- ___ Point out all guards and shields. Explain their importance and the safety hazards that exist when not kept in place and in good condition.

HEAVY-DUTY SCRAP GRAPPLE (HLSG)



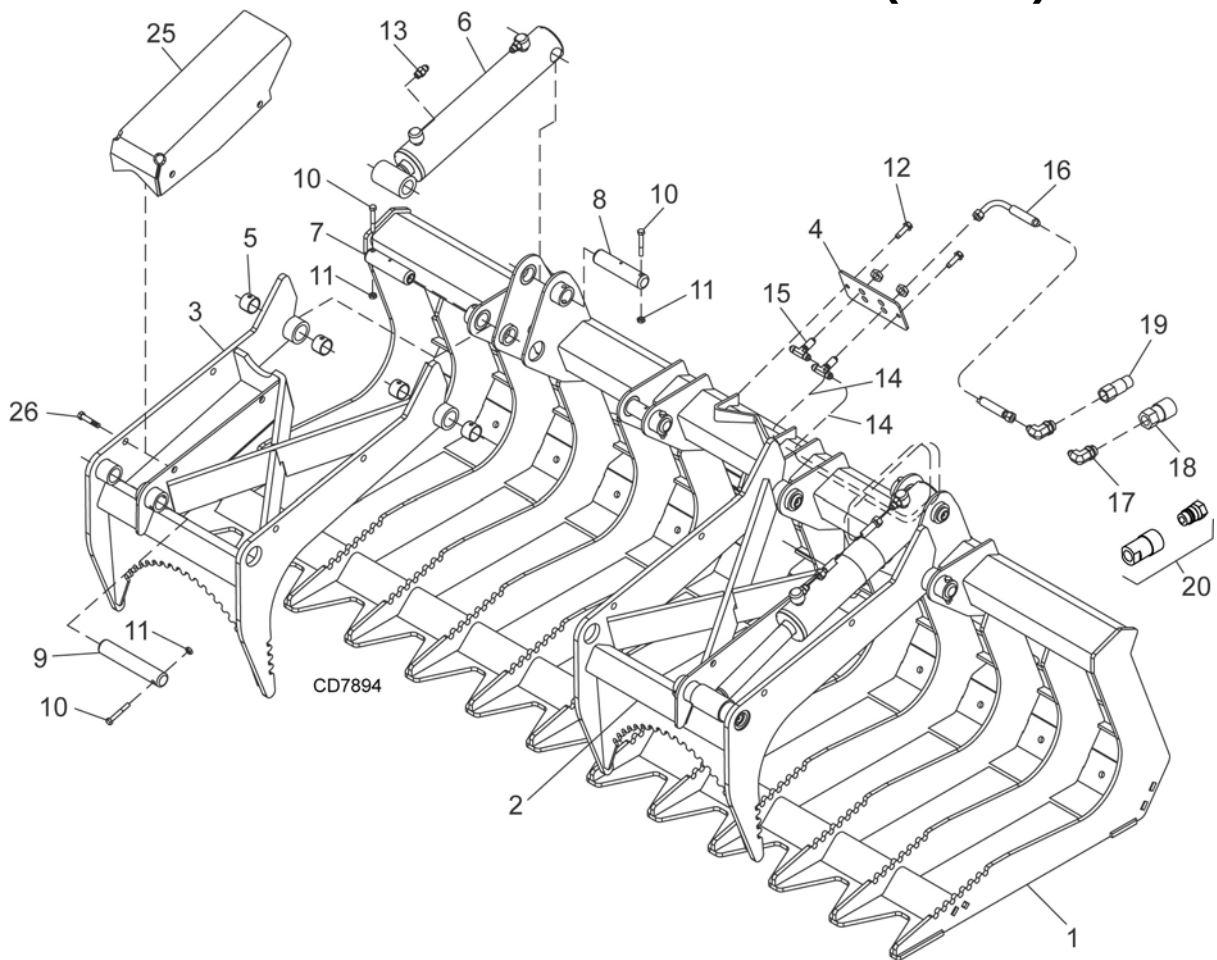
REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	NSS	1	WA, grapple bucket	13	62367	4	Connector, 9/16-18 to O-ring
2	1034015	1	WA, left grapple	14	1034600	4	Hose, 1/4 48 9/16 JICF 9/16 JICF
3	1034016	1	WA, right grapple	15	55734	2	Fitting, bulkhead branch tee 6 JICM
4	1034024	1	Grapple hose cover plate	16	1034601	2	Hose, 3/8 75 9/16 JICF 9/16 JICF
5	37429	8	Bearing, 1.25 x 1.41 x 1.00	17	313037	2	90 Deg 7/8 O-ring M 9/16 JICM elbow
6	1021517	2	Cylinder, hydraulic 2.76 x 1.38 x 9.80	-OR-		-OR-	
-	1023728	1	Seal kit, hydraulic cylinder	17	54315	2	Straight adapter 1/2 NPTM 9/16 JICM
7	1020279	4	Pin, 1.25 x 4.88	18	HC546	1	QD 1/2 x SAE #10 O-ring F Flat Face
8	1020348	2	Pin, 1.25 x 5.50	19	HC547	1	QD 1/2 x SAE #10 O-ring M Flat Face
9	1020013	2	Pin, 1.25 x 7.08	20	26124	1	QD 1/2 Ag poppet (Male/Female set)
10	7164 *	8	5/16 NC x 2-1/4 HHCS GR5	25	1034604	2	WA, cylinder cover
11	6778 *	8	5/16 NC Hex lock nut	26	1031225	8	1/2 NC x 1-1/4 HFS GR5
12	12400 *	2	3/8 NC x 1 Self tapping screw				

HHCS Hex Head Cap Screw

HFS Hex Flange Screw

* Standard hardware, obtain locally

HEAVY-DUTY ROOT GRAPPLE (HLRG)



REF	PART	QTY	DESCRIPTION
1	NSS	1	WA, grapple bucket
2	1034015	1	WA, left grapple
3	1034016	1	WA, right grapple
4	1034024	1	Grapple hose cover plate
5	37429	8	Bearing, 1.25 x 1.41 x 1.00
6	1021517	2	Cylinder, hydraulic 2.76 x 1.38 x 9.80
-	1023728	1	Seal kit, hydraulic cylinder
7	1020279	4	Pin, 1.25 x 4.88
8	1020348	2	Pin, 1.25 x 5.50
9	1020013	2	Pin, 1.25 x 7.08
10	7164 *	8	5/16 NC x 2-1/4 HHCS GR5
11	6778 *	8	5/16 NC Hex lock nut
12	12400 *	2	3/8 NC x 1 Self tapping screw

REF	PART	QTY	DESCRIPTION
13	62367	4	Connector, 9/16-18 to O-ring
14	1034600	4	Hose, 1/4 48 9/16 JICF 9/16 JICF
15	55734	2	Fitting, bulkhead branch tee 6 JICM
16	1034601	2	Hose, 3/8 75 9/16 JICF 9/16 JICF
17	313037	2	90 Deg 7/8 O-ring M 9/16 JICM elbow
-OR-		-OR-	
17	54315	2	Straight adapter 1/2 NPTM 9/16 JICM
18	HC546	1	QD 1/2 x SAE #10 O-ring F Flat Face
19	HC547	1	QD 1/2 x SAE #10 O-ring M Flat Face
20	26124	1	QD 1/2 Ag poppet (Male/Female set)
25	1034604	2	WA, cylinder cover
26	1031225	8	1/2 NC x 1-1/4 HFS GR5

HHCS Hex Head Cap Screw

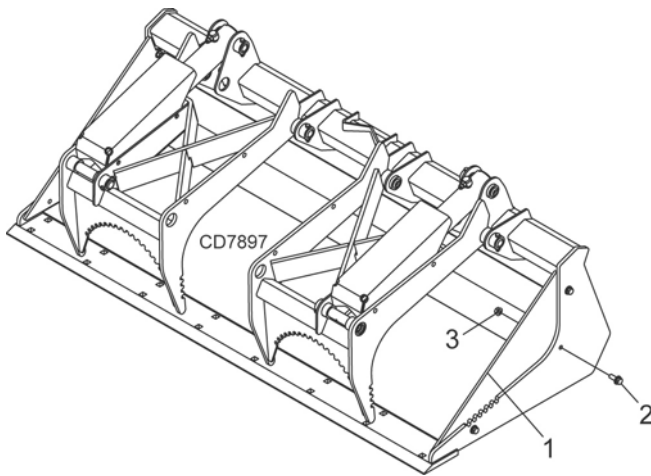
HFS Hex Flange Screw

* Standard hardware, obtain locally

HLSG & HLRG HYDRAULIC CYLINDER

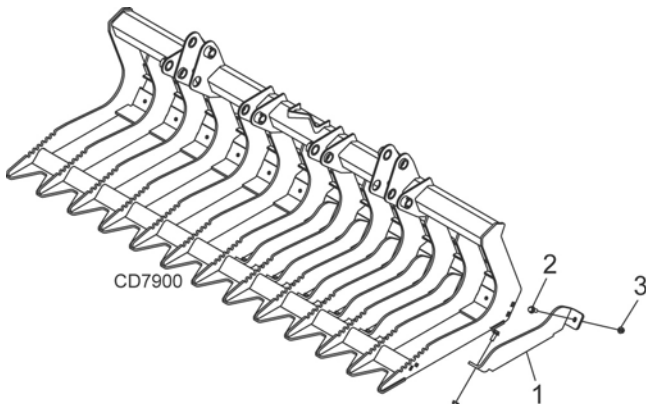
			Length		Seal Kit	
Cylinder	Tube ID	Rod OD	Extended	Retracted	Spanner Nut Style Cylinder	Complete Assembly
HLSG & HLRG Grapple Cylinder	2.76	1.38	27.92	18.12	1023728	1021517

HLSG END PLATE KIT



REF	PART	QTY	DESCRIPTION
	1034606	1	HLSG End plate extension kit
1	1034607	2	End plate
2	1031225	6	1/2 NC x 1-1/4 Hex Flange Screw GR5
3	11900	6	1/2 NC Hex Flange Lock Nut

HLRG SLAT KIT



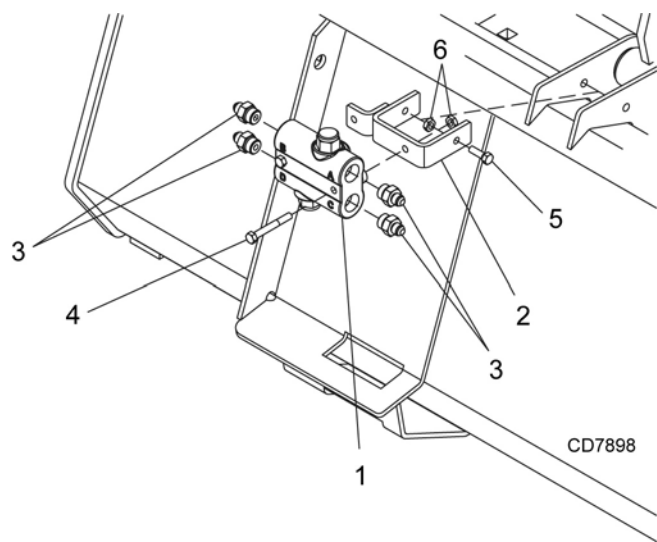
REF	PART	QTY	DESCRIPTION
	1034609	1	HLRG 9 Slat kit
	1034610	1	HLRG 10 Slat kit
	1034611	1	HLRG 11 Slat kit
	1034612	1	HLRG 12 Slat kit
1	1035318	A/R	Slat
2	1031225	A/R	1/2 NC x 1-1/4 Hex Flange Screw GR5
3	11900	A/R	1/2 NC Hex Flange Lock Nut

A/R As Required

20 Parts

MAN0978 (Rev. 11/24/2023)

GRAPPLE BUCKET RELIEF VALVE KIT



REF	PART	QTY	DESCRIPTION
	1034608	1	Relief valve kit
1	1034615	1	Relief valve, 3000 PSI
2	1034618	1	WA, Relief valve mount
3	69	4	Straight connector
4	10509 *	2	HHCS, 5/16 NC x 2-1/2 GR5
5	14562 *	2	HHCS, 5/16 NC x 1 GR5
6	6778 *	4	Nut, 5/16 NC hex lock7
7	1034619	2	Hose, 3/8 18 9/16 JICF 9/16 JICF (not shown)

* - Standard Hardware, Obtain Locally
HHCS - Hex Head Cap Screw

BOLT TORQUE CHART

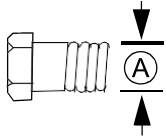
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade as specified in the manual parts list.

Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware.

Make sure fastener threads are clean and you start thread engagement properly.

All torque values are given to specifications used on hardware defined by SAE J1701 MAR 99 & J1701M JUL 96.



SAE SERIES TORQUE CHART

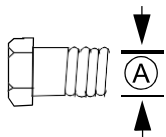

SAE Grade 2
(No Dashes)

SAE Bolt Head Identification


SAE Grade 5
(3 Radial Dashes)


SAE Grade 8
(6 Radial Dashes)

Ⓐ Diameter (Inches)	Wrench Size	MARKING ON HEAD					
		SAE 2		SAE 5		SAE 8	
		lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m
1/4"	7/16"	6	8	10	13	14	18
5/16"	1/2"	12	17	19	26	27	37
3/8"	9/16"	23	31	35	47	49	67
7/16"	5/8"	36	48	55	75	78	106
1/2"	3/4"	55	75	85	115	120	163
9/16"	13/16"	78	106	121	164	171	232
5/8"	15/16"	110	149	170	230	240	325
3/4"	1-1/8"	192	261	297	403	420	569
7/8"	1-5/16"	306	416	474	642	669	907
1"	1-1/2"	467	634	722	979	1020	1383



METRIC SERIES TORQUE CHART

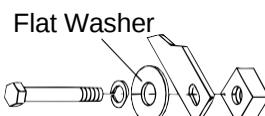
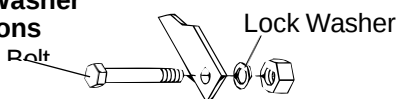

Metric
Grade 8.8

Metric Bolt Head Identification


Metric
Grade 10.9

Ⓐ Diameter & Thread Pitch (Millimeters)	Wrench Size	Coarse Thread				Fine Thread				Ⓐ Diameter & Thread Pitch (Millimeters)
		Marking on Head				Marking on Head				
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	
6 x 1.0	10 mm	8	6	11	8	8	6	11	8	6 x 1.0
8 x 1.25	13 mm	20	15	27	20	21	16	29	22	8 x 1.0
10 x 1.5	16 mm	39	29	54	40	41	30	57	42	10 x 1.25
12 x 1.75	18 mm	68	50	94	70	75	55	103	76	12 x 1.25
14 x 2.0	21 mm	109	80	151	111	118	87	163	120	14 x 1.5
16 x 2.0	24 mm	169	125	234	173	181	133	250	184	16 x 1.5
18 x 2.5	27 mm	234	172	323	239	263	194	363	268	18 x 1.5
20 x 2.5	30 mm	330	244	457	337	367	270	507	374	20 x 1.5
22 x 2.5	34 mm	451	332	623	460	495	365	684	505	22 x 1.5
24 x 3.0	36 mm	571	421	790	583	623	459	861	635	24 x 2.0
30 x 3.0	46 mm	1175	867	1626	1199	1258	928	1740	1283	30 x 2.0

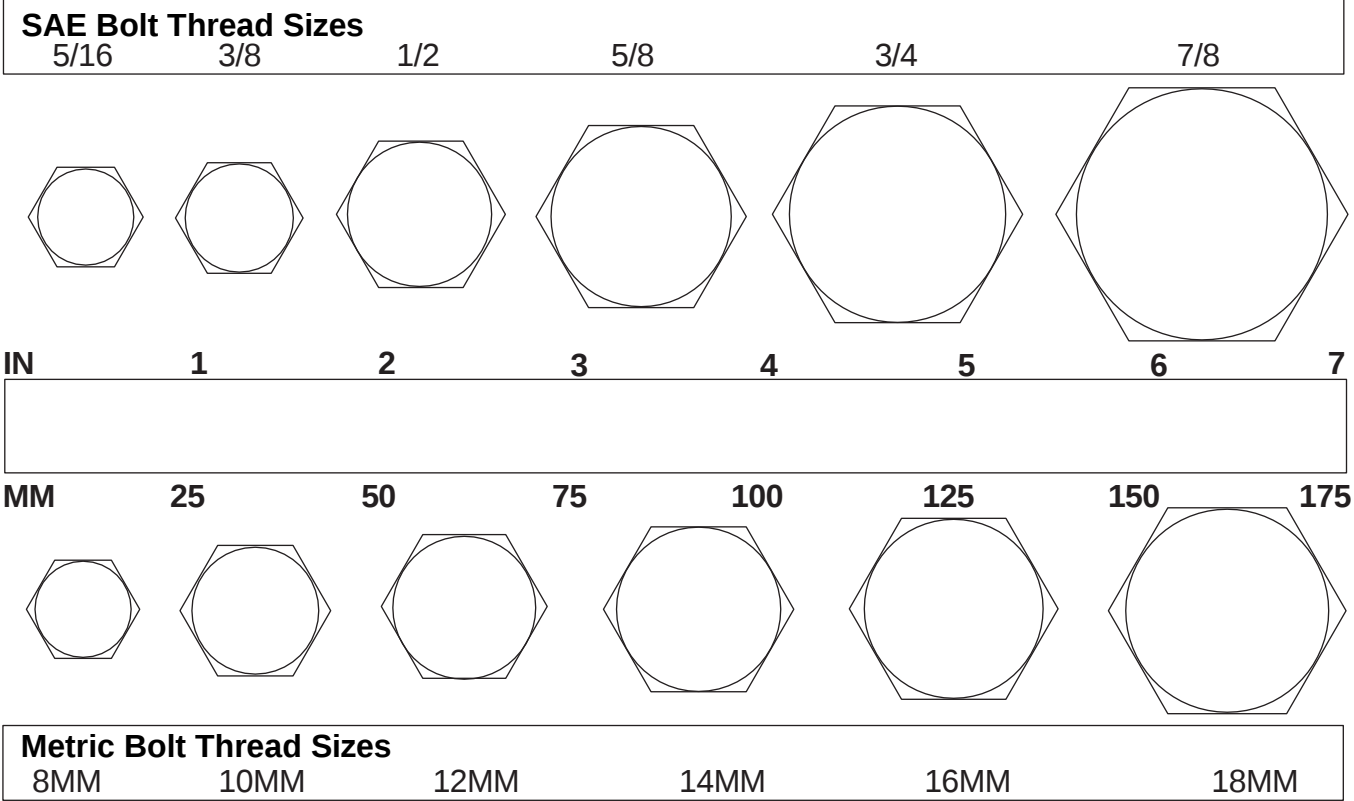
Typical Washer Installations



8/9/00

BOLT SIZE CHART

NOTE: Chart shows bolt thread sizes and corresponding head (wrench) sizes for standard SAE and metric bolts.



ABBREVIATIONS

AG	Agriculture	MPa	Mega Pascal
ASABE	American Society of Agricultural & Biological Engineers (formerly ASAE)	N	Newton
ASAE	American Society of Agricultural Engineers	NC	National Coarse
ATF	Automatic Transmission Fluid	NF	National Fine
BSPP	British Standard Pipe Parallel	NPSM	National Pipe Straight Mechanical
BSPTM	British Standard Pipe Tapered Male	NPT	National Pipe Tapered
CV	Constant Velocity	NPT SWF	National Pipe Tapered Swivel Female
CCW	Counter-Clockwise	ORBM	O-Ring Boss - Male
CW	Clockwise	P	Pitch
F	Female	PBY	Power-Beyond
FT	Full Thread	psi	Pounds per Square Inch
GA	Gauge	PTO	Power Take Off
GR (5, etc.)	Grade (5, etc.)	QD	Quick Disconnect
HHCS	Hex Head Cap Screw	RH	Right Hand
HT	Heat-Treated	ROPS	Roll-Over Protective Structure
JIC	Joint Industry Council 37° Degree Flare	RPM	Revolutions Per Minute
LH	Left Hand	RT	Right
LT	Left	SAE	Society of Automotive Engineers
m	Meter	UNC	Unified Coarse
mm	Millimeter	UNF	Unified Fine
M	Male	UNS	Unified Special

WARRANTY

WainRoy Construction and Mining Attachments

Please Enter the Information Below and Save it For Future Reference.

Date of Purchase: _____

From (Dealer): _____

Model Number: _____

Serial Number: _____

EPIROC Drilling Tools, LLC; dba: WainRoy construction attachments, warrants this product to be free from defects in material and workmanship. Except as otherwise set forth below, the duration of this Warranty shall be for TWELVE (12) MONTHS COMMENCING ON THE INSTALLATION OF THE PRODUCTS TO THE ORIGINAL PURCHASER or FIFTEEN (15) MONTHS FROM THE ORIGINAL INVOICE DATE or 2000 HOURS OF SERVICE, whichever occurs first. Proof of the in-service date must be provided for claims involving product that originally shipped more than twelve (12) months prior to the date of the claim.

Under no circumstances will this Warranty apply if the product, in the good faith opinion of WainRoy construction attachments, has been subjected to improper operations, improper maintenance, misuse, or an accident. This Warranty does not apply if the product has been materially modified or repaired by someone other than WainRoy, a WainRoy authorized dealer or distributor, and/or WainRoy authorized service center. This Warranty does not cover normal wear or tear, or normal maintenance items. This warranty also does not cover repairs made with parts other than those obtainable through WainRoy.

This Warranty is extended solely to the original purchaser of the product. Should such original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third-party purchaser in any way. There are no third-party beneficiaries of this Warranty.

WainRoy makes no warranty, express or implied, with respect to engines, batteries, tires, or other parts or accessories not manufactured by WainRoy. Warranties for these items, if any, are provided separately by their respective manufacturers.

WainRoy's obligation under this Warranty is limited to, at WainRoy's option, the repair or replacement, free of charge, of the product if WainRoy, in its sole discretion, deems it to be defective or in noncompliance with this Warranty. The product must be returned to WainRoy with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid. WainRoy shall complete such repair or replacement within a reasonable time after WainRoy receives the product. THERE ARE NO OTHER REMEDIES UNDER THIS WARRANTY. THE REMEDY OF REPAIR OR REPLACEMENT IS THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. WainRoy MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND WainRoy SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

WainRoy shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort, or any other legal theory. Without limiting the generality of the foregoing, WainRoy specifically disclaims any damages relating to (i) lost profits, business, revenue, or goodwill; (ii) any expense or loss incurred for labor, supplies, substitute machinery, or rental; or (iii) any other type of damage to property or economic loss.

This Warranty is subject to any existing conditions of supply, which may directly affect WainRoy's ability to obtain materials or manufacture replacement parts.

No agent, representative, dealer, distributor, service person, or employee of any company, including without limitation, WainRoy, its authorized dealers, distributors, and service centers, is authorized to alter, modify or enlarge this Warranty.

Answers to any questions regarding Warranty service and locations may be obtained by contacting:

Epiroc Drilling Tools LLC: doing business as WainRoy
1962 Queenland Dr.
Mosinee, WI 54455
Tel: 800-848-3447

Examples of Common, Non-Covered Claims

1. The owner and operator are responsible for maintaining weld integrity on attachments subject to weld erosion from ongoing contact with soils, rocks, and other materials. Different materials have differing abrasive characteristics that will erode the structural welds of ground-engaging attachments at differing rates. Structural failures may occur as a result of excessive weld erosion. The owner and operator are responsible for maintaining necessary weld sizes and re-welding eroded welds with industry-approved procedures. WainRoy will not accept warranty claims for weld erosion or structural failures of the attachment as a result of weld erosion.
2. Attachments are used extensively in ground-engaging operations and, as a result, the teeth, tooth holders, cutting edges, bucket edges, ripper shanks, and other portions of the attachment are subject to abrasion and resulting wear. WainRoy will not accept warranty claims for wear of components or wear of areas of the attachment subject to ground-engaging wear.
3. The owner and operator are responsible for examining the attachment for any weld or structural cracking. Any such cracking caused by a defect in materials or workmanship by WainRoy will be covered under the WainRoy Warranty Policy. If the owner or operator continues to operate the attachment after weld cracking or structural cracking is visible or should have reasonably been visible, and as a result of continued operation, additional damage to the attachment results, WainRoy will not accept responsibility for the additional damage caused to other welds or to the attachment structure.
4. Materially modifying WainRoy attachments may result in premature failures of the attachment. WainRoy will not accept warranty claims on attachments that have been misapplied. For instance, using a general purpose excavator bucket in an application requiring a heavy or severe duty bucket or using the excavator bucket as a "jack hammer" to break concrete or as a "tamper" to drive rock or beams are considered misapplications.

PART NO.
MAN0978

WainRoy
Tools & Attachments Division
Epiroc Drilling Tools LLC
1962 Queenland Drive
Mosinee, WI 54455
U.S. 1-800-848-3447
www.wainroy.com
Email: cesales@wainroy.com

WainRoy