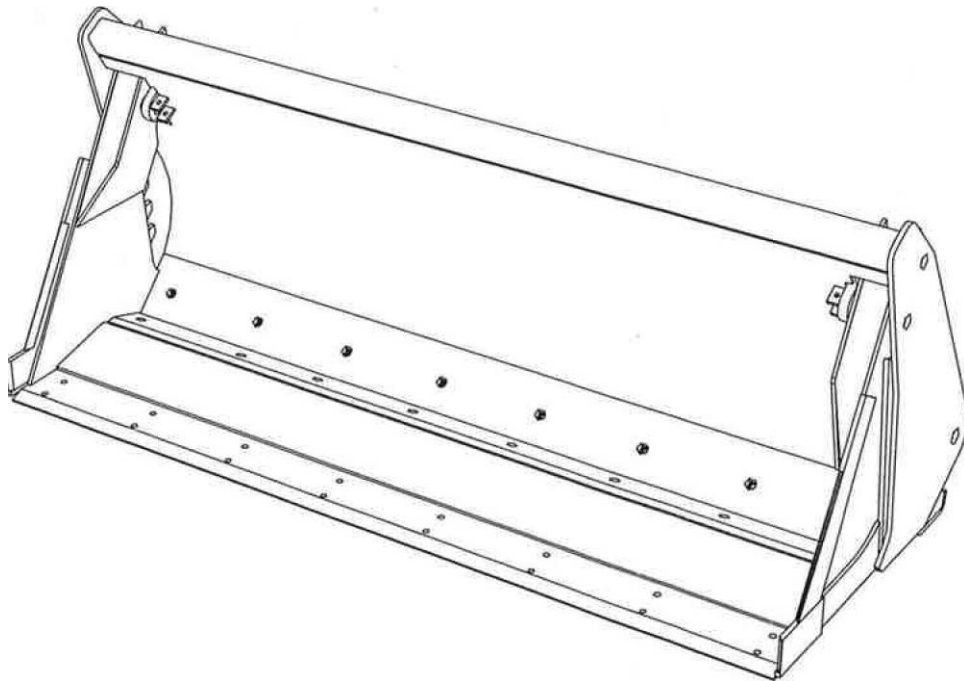


GANNON

MULTI-PURPOSE BUCKET

BF2319M88C

BF2319M92C



OPERATORS MANUAL

FOR NEW HOLLAND 555E, 575E, 655E, AND
675E LOADER BACKHOES

WainRoy

TO THE DEALER:

The Industrial Multi-Purpose Bucket and proper installation to the Loader Backhoe is the responsibility of the WainRoy dealer. Read manual instructions and safety rules. Make sure all items on the Pre-Delivery and Delivery Check Lists are completed before releasing equipment to the owner.

TO THE OWNER:

Read this manual before operating your WainRoy Industrial Multi-Purpose Bucket. 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 the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your dealer or by calling 1-800-848-3447, in the USA or Canada only.

The Industrial Multi-Purpose Bucket 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 Industrial Multi-Purpose Bucket and Valve Kit and tractor.

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 serial number of your Industrial Multi-Purpose Bucket in the space provided:

Model: BE2319M88C or BE2319M92C

Serial Number: (see page 6 for location) _____

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

Throughout this manual, the term **IMPORTANT** 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.



The Safety-Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



CAUTION

Denotes a reminder of safety practices or directs attention to unsafe practices which could result in personal injury if proper precautions are not taken.



WARNING

Denotes a hazard exists which can result in injury or death if proper precautions are not taken.



DANGER

Denotes an extreme intrinsic hazard exists which would result in high probability of death or irreparable injury if proper precautions are not taken.

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GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your multi-purpose bucket. 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 particular situation.

The illustrations and data used in this manual were current at the time of printing, but 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.

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.

Throughout this manual, references are made to right and left direction. These are determined by sitting in power unit operator's seat and facing the direction of forward travel.

SPECIFICATIONS

	<u>BF2319M88</u>	<u>BF2319M92</u>
Width	BB inches	92inches
Heaped Capacity	1-1/4 cu. yd.	1-1/4 cu. yd.
Weight	1830 lbs.	1903 lbs.
Cutting Edge	optional	optional
Bolt-On Teeth	optional	optional

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 a single careless act of an operator.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence 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 an operator.

The designed and tested safety of this equipment depends on it being operated within the limitations as explained in this manual.

INSTALLATION

■ Only use this product for mounting on NEW HOLLAND 555E, 575E, 655E, AND 675E Loader Backhoes. Any other use or modification of this mounting kit may result in serious injury or death.

■ After connecting hoses, check that all control lever positions function as instructed in the Operator's Manual. Do not operate 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 are available from dealer 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

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 in the event 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.**

■ Do not allow children or untrained persons to operate equipment. body parts to check for leaks. Wear safety

PREPARATION

■ Never use attachment to carry loads that exceed power unit rated operating capacity or other specifications. 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.

■ Check that all hardware is tight and properly installed. Always tighten to torque chart specifications.

■ Air in hydraulic systems can cause erratic operation and allows loads or equipment components to drop unexpectedly.

Before operating or allowing anyone to approach the equipment, purge any air in the system by operating all hydraulic functions several times after connecting equipment, connecting hoses, or doing any hydraulic maintenance.

■ After connecting hoses, check that all control lever positions function as instructed in the Operator's Manual. Do not operate until control lever and equipment movements are correct.

■ 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.

(Safety Rules continued on next page)

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



(Safety Rules continued from previous page)

■ 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.

■ Ensure implement is properly attached, adjusted and in good operating condition.

■ Power unit must be equipped with ROPS or ROPS CAB and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in "locked up" position at all times.

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

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

OPERATIONAL SAFETY

■ Do not allow other people 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 accidental spillage falls away from operator cab.

■ Material carried by grapple use of bucket clam section has a greater possibility of becoming dislodged and falling. Always carry material low to the ground. Never lift or position bucket so that dislodged material can fall into the operator zone.

■ Consult local utilities before working. Know location of and avoid contacting all underground cables, pipelines, overhead wires and other hazards in working area.

■ Contact with high voltage, overhead power lines, underground cables, gas lines, and etc. can cause serious injury or death from electrocution, explosion, or fire.

■ Keep bystanders away from equipment while it is in operation.

■ Never go underneath equipment lowered to the ground or raised. 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.

- Read operator's manual for service instructions or have done by a qualified dealer.

■ Do not operate 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 loader or in the bucket or attachments.

■ Power unit must be equipped with ROPS or ROPS CAB and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in "locked up" position at all times.

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 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.

■ AVOID INJURY OR DEATH FROM FALLING OBJECTS:

- Logs, posts, stones, and other objects can roll or become dislodged from bucket. Do not carry or raise loose shiftable loads.

- Always carry material low to the ground.

- Never lift or carry loads so that dislodged material can fall toward the operator zone.

SAFETY RULES



ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



■ AVOID INJURY OR DEATH FROM FALLING BALES AND OTHER OBJECTS:

- Hay bales, logs, fence posts, stones, and other objects can roll or fall from a raised bucket and crush operator. Do not carry shiftable items in loader bucket.
 - Do not handle round bales unless loader is equipped with approved bale handling attachment.
 - Handle raised loads with caution.
 - Carry loads low and drive slowly.

■ Before leaving operator's seat, follow power unit manual instructions. Lower lift arms, close the bucket clam section, and put attachment on the ground. Stop engine, remove key, engage brake, and remove seat belt/operator restraint.

MAINTENANCE SAFETY

■ 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 entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.

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

■ 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 operating.

■ Never go underneath equipment lowered to the ground or raised. 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.

• Read operator's manual for service Instructions or have done by a qualified dealer.

■ Ensure implement is properly attached, adjusted and in good operating condition.

■ Never perform service or maintenance with engine running.

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

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

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

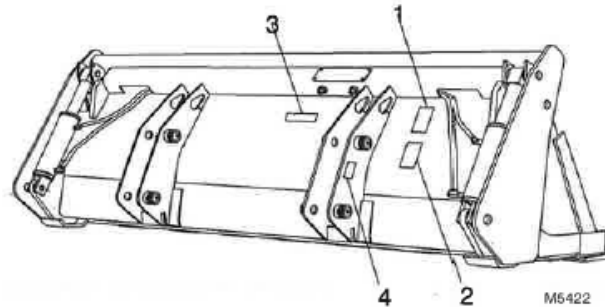
■ Do not disconnect hydraulic lines until machine is securely blocked or placed in lowest position and system pressure is released by operating valve levers.

■ When servicing or replacing pins in cylinder ends, buckets, etc., always use a brass drift and hammer. Failure to do so could result in injury from flying metal fragments.

NOTES

SAFETY DECALS

! ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! !
Replace Immediately If Damaged!



1-PN-26-0351

! DANGER



**SERIOUS INJURY OR DEATH
CAN RESULT FROM CONTACT
WITH ELECTRICAL LINES.**

! DANGER



ROLLOVERS CAN RESULT IN INJURY OR DEATH

- ALWAYS USE ROPS AND SEAT BELT.
- ADD REAR TRACTOR BALLAST
- MOVE WHEELS TO WIDEST SETTING.
- AVOID SLOPE OPERATION.
- OPERATE AT LOW SPEEDS.
- CARRY LOAD LOW.

26-0351

2-PN-26-0352

! WARNING

- Read and understand Operator's Manual before operating (available from dealer or call 1-800-319-6637).
- Keep others away when operating loader.
- Do not allow children or untrained persons to operate equipment.
- Lower loader to ground, stop engine, set park brake and remove key before leaving tractor seat.
- Failure to follow safety rules can result in serious injury or death.

! WARNING



FALLING LOAD HAZARD TO AVOID INJURY OR DEATH:

- Do not handle round bale or other shiftable load unless loader is equipped with approved attachments. (Read Operator's Manual.)
- Lift and carry only one bale at a time.
- Handle raised load with caution.
- Carry load low.

26-0352

4 - Serial Number Plate

WOODS OREGON, U.S.A.		YR OF MFG	MASS (KG)
MODEL & SERIAL NO.			
MACHINE MODEL	CAPACITY	CLAM EDGE	
SHANK		CYLINDER	
CUTTING EDGE		DOZER EDGE	

10-96

3 - PN-19924



19924

! WARNING

HIGH PRESSURE HYDRAULIC OIL LEADS CAN PENETRATE SKIN.

- CHECK FOR LEADS WITH CARDBOARD; NEVER USE HAND.
- BEFORE LOOSENING FITTINGS: LOWER LOAD, RELEASE PRESSURE, AND BE SURE OIL IS COOL.
- CONSULT PHYSICIAN IMMEDIATELY IF SKIN PENETRATION OCCURS.

SKIN PENETRATION CAN RESULT IN SERIOUS INJURY AND GANGRENE.

BOLT TORQUE CHART

SAE Series 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.

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

SAE Bolt Head Identification



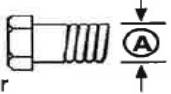
**SAE Grade 2
(No Dashes)**



**SAE Grade 5
(3 Radial Dashes)**



**SAE Grade 8
(6 Radial Dashes)**

Bolt Diameter "A"	Wrench Size	MARKING ON HEAD					
		SAE2		SAE5		SAE8	
		Lbs.-Ft.	(N-m)	Lbs.-Ft.	(N-m)	Lbs.-Ft.	(N-m)
1/4"	7/16"	6	(8)	11	(15)	14	(19)
5/16"	1/2"	13	(18)	21	(28)	25	(34)
3/8"	9/16"	23	(31)	38	(52)	55	(75)
7/16"	5/8"	37	(50)	55	(75)	80	(110)
1/2"	3/4"	57	(77)	85	(115)	120	(165)
9/16"	13/16"	82	(111)	125	(170)	180	(245)
5/8"	15/16"	111	(150)	175	(240)	230	(310)
3/4"	1-1/8"	200	(270)	300	(410)	440	(600)
7/8"	1-5/16"	280	(380)	450	(610)	720	(975)
1"	1-1/2"	350	(475)	680	(925)	1035	(1400)
1-1/8"	1-11/16"	450	(610)	885	(1200)		
1-1/4"	1-7/8"	600	(815)	1255	(1700)		
1-3/8"	2-1/16"	675	(915)	1620	(2200)		
1-1/2"	2-1/4"	920	(1250)	2200	(2900)		

Metric Series Torque Chart

Use only metric tools on metric hardware.

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.

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

Bolt Diameter "A"	Wrench Size	MARKING ON HEAD			
		8.8		10.9	
		N-m	(Lbs.-Ft.)	N-m	(Lbs.-Ft.)
5mm	8mm	6	(4.5)	9	(6.5)
6mm	10mm	10	(7.5)	15	(11)
8mm	13mm	25	(18)	35	(26)
10mm	16mm	50	(37)	75	(55)
12mm	18mm	85	(63)	130	(97)
14mm	21mm	110	(80)	150	(110)
16mm	24mm	215	(159)	315	(232)
20mm	30mm	435	(321)	620	(457)
24mm	36mm	750	(553)	1070	(789)
30mm	46mm	1495	(1103)	2130	(1571)

Metric Bolt Head Identification



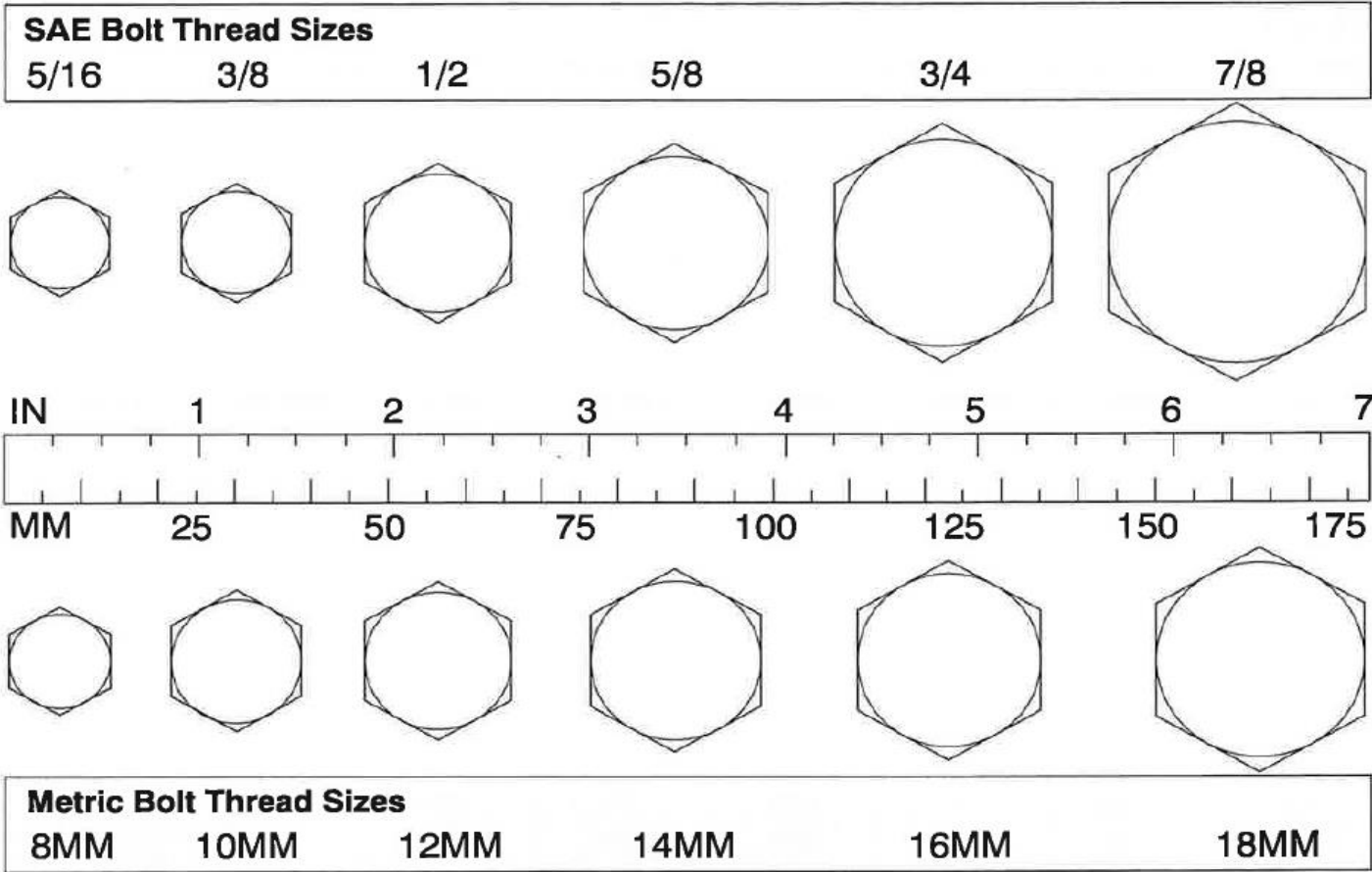
Metric Grade 8.8



Metric Grade 10.9

BOLT SIZE CHART

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



NOTES

OPERATION

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 a single careless act of an operator.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence 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 an operator.

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 are available from dealer 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.**

■ **Do not allow children or untrained persons to operate equipment.**

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

■ **Never go underneath equipment lowered to the ground or raised. 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.**

• **Read operator's manual for service instructions or have done by a qualified dealer.**

■ **Ensure implement is properly attached, adjusted and in good operating condition.**

This Multi-Purpose bucket fits to Hew Holland 555E, 575E, 655E, and 675E Loader Backhoe models.

Read the Loader Backhoe operator manual for instructions on proper operation and safety.

The Multi-Purpose bucket is designed to perform multiple tasks using a single attachment.

PRE-OPERATION CHECK LIST (OWNER'S RESPONSIBILITY)

- Review and follow all safety rules and safety decal instructions on page 6.
- Check that all safety decals are installed and in good condition. Replace if damaged.
- Check that all shields and guards are properly installed and in good condition. Replace if damaged.
- Check that all hardware and cotter pins are properly installed and secured.
- Check that equipment is properly and securely attached to Loader Backhoe
- Do not allow riders.
- Check and keep all bystanders away from equipment working area.
- Check all lubrication points and grease as instructed in "Service, lubrication information."
- 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.
- Keep seat belt/operator restraint securely fastened during operation.

INSTALLING MULTI-PURPOSE BUCKET

WARNING

■ **After connecting hoses, check that all control lever positions function as instructed in the Operator's Manual. Do not operate until control lever and equipment movements are correct.**

■ **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.**

■ **Ensure implement is properly attached, adjusted and in good operating condition.**

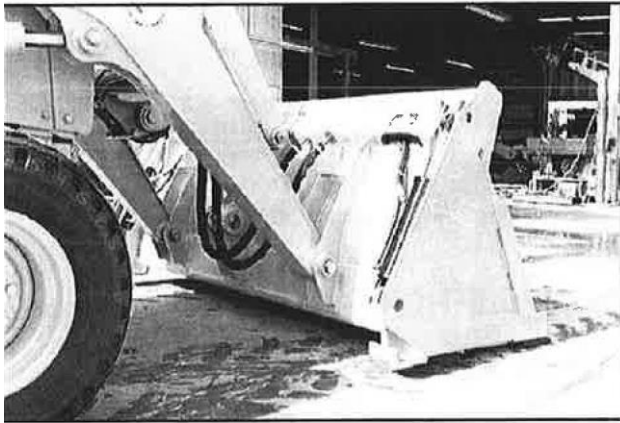


Figure 1. Installing Multi-Purpose Bucket (Typical)

Remove Loader Backhoe bucket and install Multi-Purpose bucket using existing hardware.

Connect Loader Backhoe hydraulic lines to Multi-Purpose bulkhead fittings using hose kit #23.

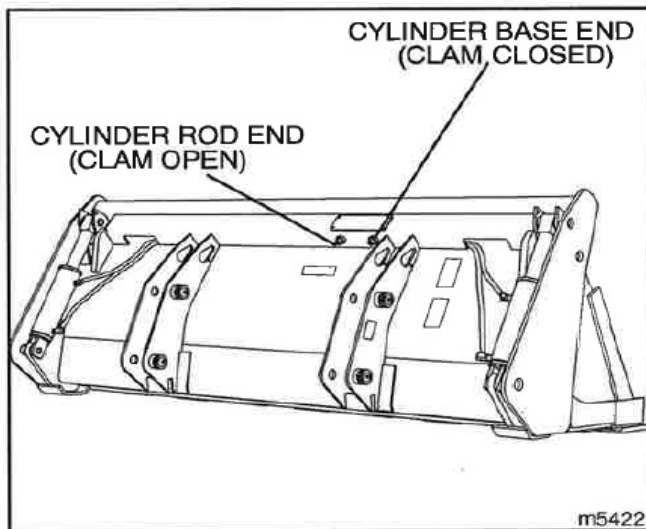


Figure 2. Multi-Purpose Bucket Hydraulic Connections

Lines must be connected so that moving hydraulic control lever forward closes the clam section and moving the control lever rearward opens the clam section.

OPERATING MULTI-PURPOSE BUCKET

! WARNING

■ Never use attachment to carry loads that exceed power unit rated operating capacity or other specifications. 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.

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

The Multi-Purpose bucket has two main components. The moldboard is shaped to form a dozer blade and a moveable clam section. The Loader Backhoe auxiliary hydraulic system is used to control the position of bucket clam section.

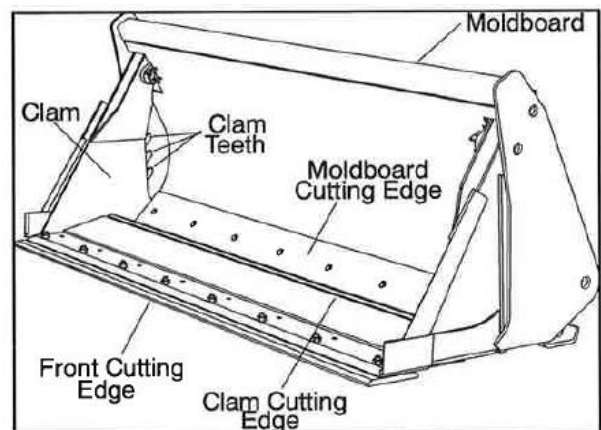


Figure 3. Multi-Purpose Bucket Components

Transporting Loads

! WARNING

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

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

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 accidental spillage falls away from operator cab.
- AVOID INJURY OR DEATH FROM FALLING BALES AND OTHER OBJECTS:
 - Hay bales, logs, fence posts, stones, and other objects can roll or fall from a raised bucket and crush operator. Do not carry shiftable items in loader bucket.
 - Do not handle round bales unless loader is equipped with approved bale handling attachment.
 - Handle raised loads with caution.
 - Carry loads low and drive slowly.

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

Slowly raise load to required dumping height. Rotate bucket forward and release load.

When loading over the side of the trucks or bins, tilt bucket fully forward to dump the load. The bucket clam may be extended (opened) to empty any additional material from the bucket.

When opening the bucket clam to empty, make sure the entire bucket bottom is over the side of the truck or bin to prevent spillage toward the Loader Backhoe. Check that the clam will not contact any obstruction when opening or closing.

Close the bucket clam fully against the bucket moldboard, lower Loader Backhoe lift arms and rotate forward so bucket rests on ground before exiting the tractor. Do not allow any persons near the bucket when operating the clam section.

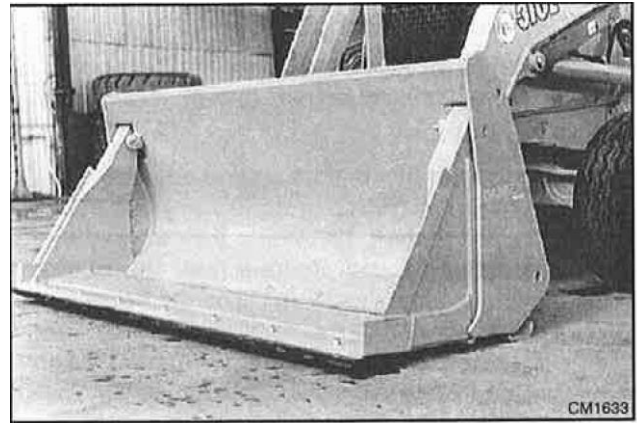


Figure 4. Front Clam Section Closed

Dozing (Figure 5)

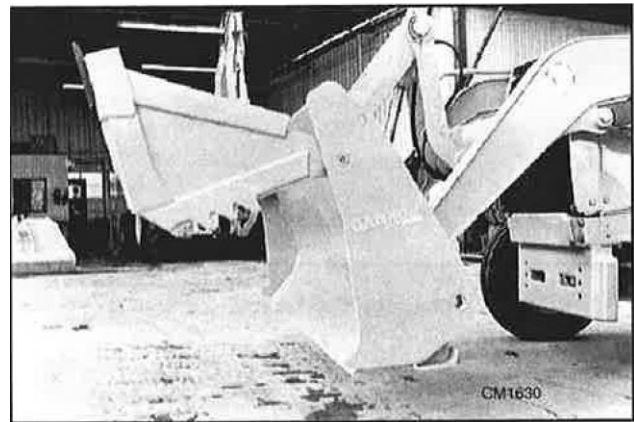


Figure 5. Dozing Position

The Multi-Purpose bucket may be operated as a dozing blade. Open the bucket clam fully, and place the moldboard at the desired depth. Using the tractor bucket hydraulics, tilt the moldboard forward or rearward to the required angle for dozing or backfilling. Do not allow any persons near the bucket when operating the clam section. Close the front clam section fully against the moldboard, lower tractor lift arms and rotate forward so bucket rest on ground, before exiting the tractor.

NOTES

Scraping and Leveling (Figure 6)

To operate the Multi-Purpose bucket as a scraper, tilt the top of the moldboard forward and open the clam section.

Lower the bucket until the clam cutting edge rests on the ground. Move tractor rearward to carry material in the opened clam section. Material will be spread and leveled. Do not allow any persons near the bucket when operating the clam section. Close the front clam section fully against the moldboard, lower Loader Backhoe lift arms and rotate forward so bucket rest on ground, before exiting the tractor.

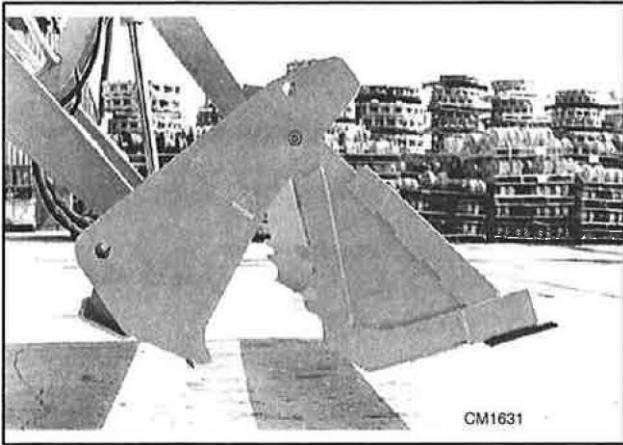


Figure 6. Scraping and Leveling Position

Grappling

WARNING

- Material carried by grapple use of bucket clam section has a greater possibility of becoming dislodged and falling. Always carry material low to the ground. Never lift or position bucket so that dislodged material can fall into the operator zone.

To operate the Multi-Purpose bucket as a grapple, open clam section fully, approach the material to be moved, and close the clam, firmly holding the load.

Loose material like dirt or small aggregate will be scooped into the bucket and may be moved as a conventional load.

Individual items like branches, roots, rocks, concrete pieces, or other debris may be dislodged by grapping action, but should not be carried or dumped while clamped in the bucket. When dumping, items could dislodge and enter the operator control area. After dislodging, load bucket as described above.

Do not exceed the tractor operating capacity when operating the Multi-Purpose bucket. Use care, as the weight distribution of odd shaped items to be grappled can be hard to estimate

Do not allow any persons near the bucket when operating the clam section. Retract the clam section fully against the moldboard and lower to ground before exiting the tractor.

OPTIONAL EQUIPMENT

Cutting Edge

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

Tooth Attachments

Bolt-on teeth with replaceable points are available. Bolt-on teeth may not be installed with replaceable cutting edge installed.

NOTES

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 are available from dealer 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.

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 entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing and head.

■ 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 operating.

WARNING

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

■ Never go underneath equipment lowered to the ground or raised. 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.

- Read operator's manual for service instructions or have done by a qualified dealer.

WARNING

■ 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.

LUBRICATION (Figure 7)

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

Figure 7 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.



Ref #	Location	Frequency
1	Hinge - Both sides	Every 8 Hours - Daily
2	Cylinder Pivot - Both sides	Every 8 Hours - Daily

Figure 7. Lubrication

CUTTING EDGE REPLACEMENT

WARNING

■ Never go underneath equipment lowered to the ground or raised. 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.
- Read operator's manual for service instructions or have done by a qualified dealer.

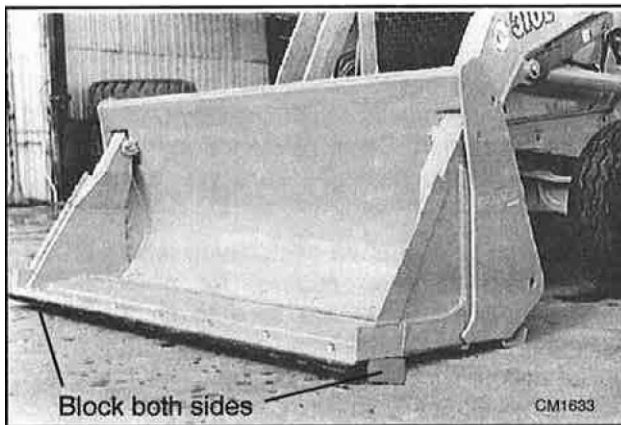


Figure 8. Front Cutting Edge Replacement Block Location (typical)

Front Cutting Edge Replacement

On a hard level surface, lower bucket to rest on blocks as shown in Figure 8.

Set park brake, shut off engine, remove key, remove seat belt/operator restraint, and carefully exit the tractor.

Remove cutting edge retaining plow bolts and cutting edge. Install new cutting edge and tighten nuts to specifications given in the Bolt Torque Chart, page 7.

Moldboard and Clam Cutting Edge Replacement

Open multi-purpose bucket clam section completely and roll bucket back completely rearward against the bucket stop (refer to Figure 9). Lower loader boom so that outer sides of clam are supported by two heavy duty jackstands. Select jackstand height that will

position moldboard cutting edge 3" to 6" off the ground.

Set park brake, shut off engine, and operate valve levers for all bucket functions and loader boom to release any hydraulic pressure. The jackstands must support the equipment with the clam fully opened, the bucket moldboard rotated back against the bucket stop, and loader boom supported from further lowering.

After this position is been established, remove key, remove seatbelt/operator restraint and carefully exit the loader Backhoe. Chock (place blocks) front and rear of loader rear wheels.

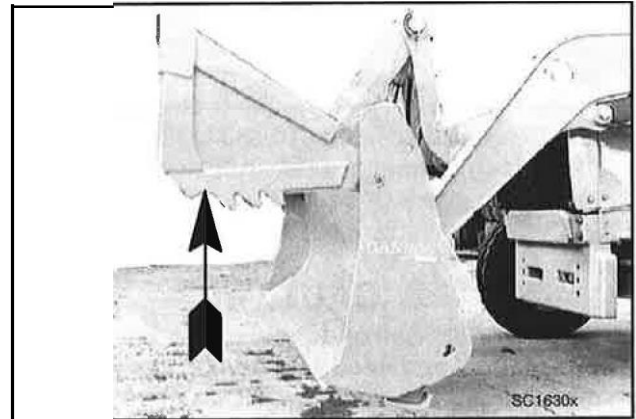


Figure 9. Moldboard and Clam Cutting Edge Replacement Jackstand Location (both sides)

Before proceeding, recheck jackstand stability. When blocking, you must consider overall stability of the unit. Just placing jackstands under the unit will not ensure your safety. The working surface must be level and solid to support the loaded weight of the jackstands. Ensure jackstands are stable both top and bottom. With full weight of unit lowered on jackstands, test blocking stability before working around any portion of the equipment.

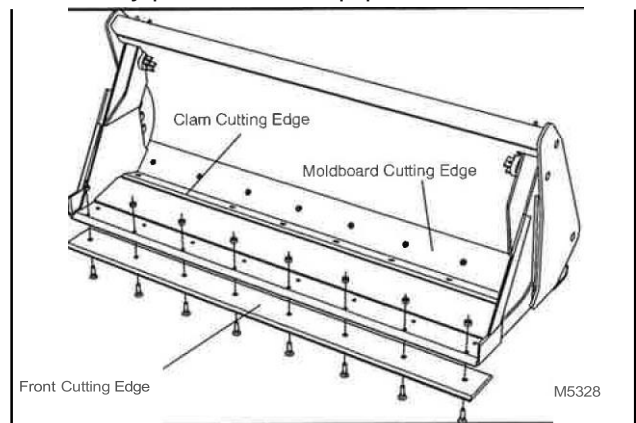


Figure 10. Install Cutting Edge

The clam cutting edge can be removed and installed from the front side of the clam. Do not go underneath the clam or between the clam and moldboard sections.

The moldboard cutting edge can be removed and installed from the rear side of the bucket. Do not go underneath the clam or moldboard sections. Do not go between the clam and moldboard sections.

After installing new cutting edge, tighten all nuts to specifications given in the Bolt Torque Chart, page 7.

NOTES

ASSEMBLY

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)

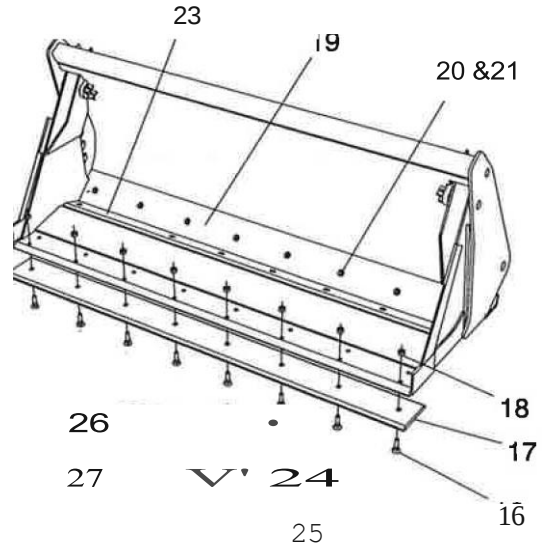
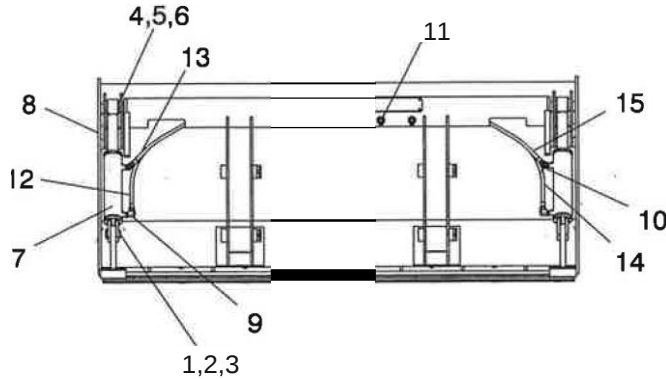
- Show customer how to make adjustments.
- Instruct customer how to lubricate and explain importance of lubrication.

- 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.

NOTES

MULTI-PURPOSE BUCKET PARTS LIST

28 - SAFETY DECAL SET
(Not Shown)



M5423

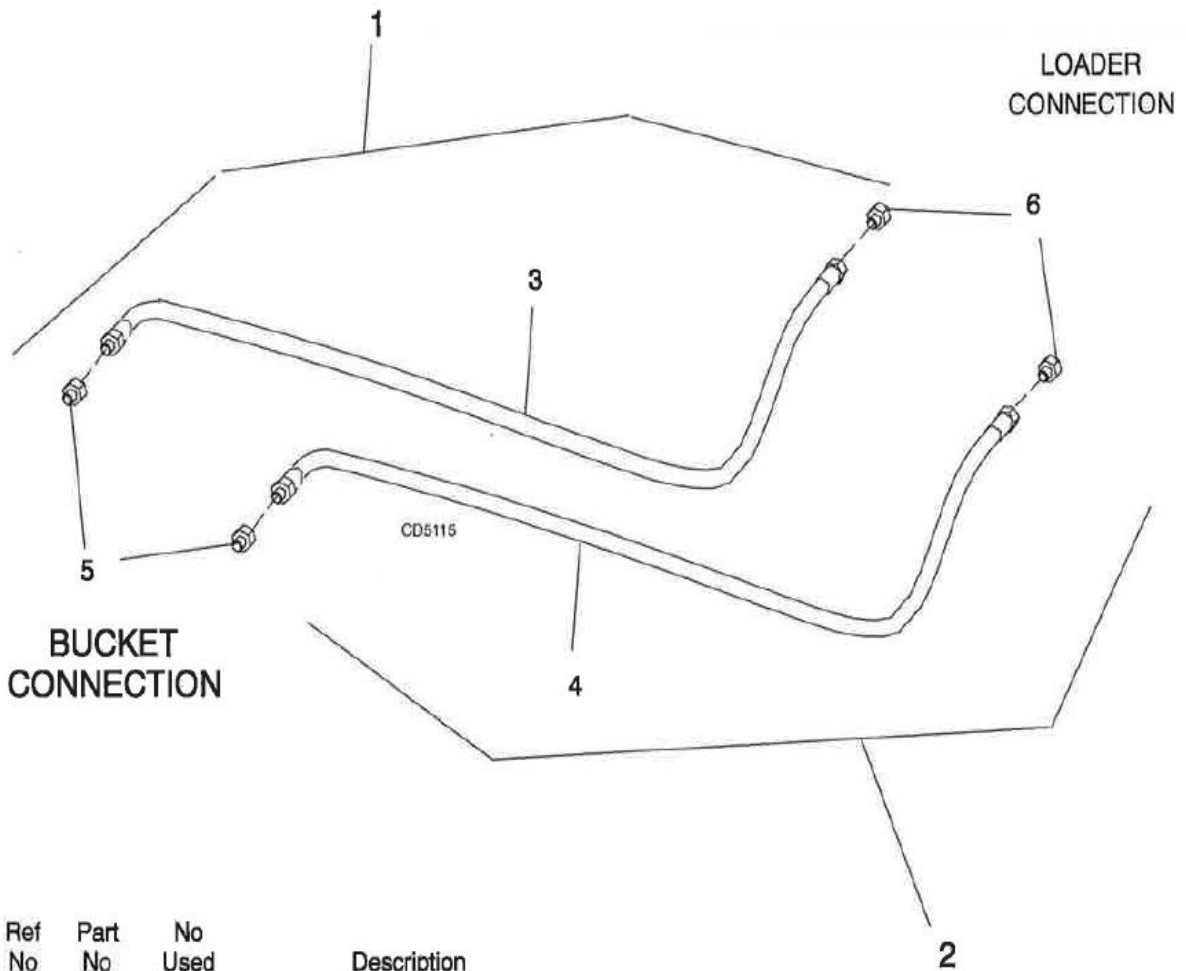
Ref No	Part No	No Used	Description
1	H793	2	Pin
2	21176	2	Flatwasher, 1"
3	21161	2	Cotter pin, 3/16 x 1-1/2
4	21137	2	Lockwasher, 3/8
5	21240	2	Bolt, 3/8 x 3/4GR5 UNC
6	192813	2	Lock pin assy
7	131261	2	Hydraulic cylinder
8	14023	4	Grease fitting
9	1082423	2	90 deg. Adapter, 9/16-M ORS/13/16-M SAE
10	1082413	2	45 deg. Adaptor, 9/16-M ORS/13/16-M SAE
11	1082545	2	T-adaptor, bulkhead, 13/16-M ORS
12	108367869	1*	3/8 Hose, 69" long
12	108367872	1**	3/8 Hose, 72" long
13	108367353	1*	3/8 Hose, 53" long
13	108367357	1**	3/8 Hose, 57" long
14	108367337	1*	3/8 Hose, 37" long
14	108367340	1**	3/8 Hose, 40" long
15	1083679	1*	3/8 Hose, 34" long
15	1083680	1**	3/8 Hose, 37" long
16	21261	7	Plow bolt, 5/8 x 2 (Optional) (88" Cutting edge)
16		8	Plow bolt, 5/8 x 2 (Optional) (92" Cutting edge)

Ref No	Part No	No Used	Description
17	19276108		88" Cutting edge (Optional)
17	19276102		92" Cutting edge (Optional)
18	21288	7	Locknut, 5/8 (Optional) (88" Cutting edge)
18		8	Locknut, 5/8 (Optional) (92" Cutting edge)
19	19276108		88" Cutting edge
19	19276102	1	92" Cutting edge
20	21157	14	Plow bolt, 5/8 x 1-3/4 (88" Cutting edge)
20		16	Plow bolt, 5/8 x 1-3/4 (92" Cutting edge)
21	21288	14	Locknut, 5/8 (88" Cutting edge)
21		16	Locknut, 5/8 (92" Cutting edge)
22	21121	14	Flatwasher, 5/8 (88" Cutting edge)
22		16	Flatwasher, 5/8 (92" Cutting edge)
23	19362788		Cutting edge-back drag, 88"
23	19362792	1	Cutting edge-back drag, 92"
24	21455	7	Bolt, 5/8 x 2-1/4GR5 (Optional) (88" Cutting edge)
24		8	Bolt, 5/8 x 2-1/4GR5 (Optional) (92" Cutting edge)
25	21507	7	Bolt, 5/8 x 3GR5 (Optional) (88" Cutting edge)
25		8	Bolt, 5/8 x 3GR5 (Optional) (92" Cutting edge)
26	21288	7	Locknut, 5/8 (Optional) (88" Cutting edge)

<u>Ref</u> <u>No</u>	<u>Part</u> <u>No</u>	<u>No</u> <u>Used</u>		<u>Ref</u> <u>No</u>	<u>Part</u> <u>No</u>	<u>No</u> <u>Used</u>	<u>Description</u>
26		8	Locknut, 5/8 (Optional) (92" Cutting edge)	27		8	Shank & point assy (Optional) (92" Cutting edge)
27	D1080	7	Shank & point assy (Optional) (88" Cutting edge)	28	Kit 24	1	Safety decal set
				* For 88" Bucket			
				** For 92" Bucket			

NOTES

HOSE KIT #23



Ref No	Part No	No Used	Description
1	1083687	1	Hose Assembly (cylinder base end, includes item 3, 5, and 6)
2	1083688	1	Hose Assembly (cylinder rod end, includes item 4, 5, and 6)
3	NSS	1	3/8 x 38" Hose (Spec. 100R2)
4	NSS	4	3/8 x 45" Hose (Spec. 100R2)
5	NSS	2	13/16" ORSF Adapter (bucket end)
6	NSS	2	13/16" ORSM Adapter (loader end)

NSS – Not Sold Separately

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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 Queensland 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 NUMBER

58221

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

LITHO IN USA