WainRoy
Manual & Hydraulic Release
Rigid Coupler

1/16yd, 1/8yd, 1/4yd, 1/2yd, 3/4yd, 1yd sizes

3028211 – Manual Part Number
DATE CODE: 11/24/2023
REV C

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Contents

DEALER INFORMATION

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 Product Registration included in this manual. Both dealer and customer must sign the registration which certifies that all Dealer Check List items have been completed. The dealer is to return the prepaid postage portion to WainRoy, give one copy to the customer, and retain one copy. **Failure to complete and return this card 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 repairs parts.

Through 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.

⚠	This Safety-Alert Symbol indicates a hazard and means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!
⚠ DANGER	Indicates an imminently hazardous situation that, if not avoided, could result in death or serious injury.
⚠ WARNING	Indicates an imminently hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed.
⚠ CAUTION	Indicates an imminently hazardous situation that, if not avoided, could result in minor or moderate injury.
IMPORTANT	Indicates that failure to observe can cause damage.
NOTE	Indicates helpful information.

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 shut down 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.**

■ **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.**

■ **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 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.**

■ **Make sure attachment is properly secured, adjusted, and in good operating condition.**

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

■ **Clean all dirt, trash, and grease from operator's platform and steps.**

(Safety Rules continued on next page)

SAFETY RULES CONTINUED

ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

(Safety Rules continued from previous page)

- Consult local utilities before working. Know location of all underground cables, pipelines, overhead wires, and other hazards in working area and avoid contact.
- 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 walk or work under a raised loader, bucket, or attachment.
- Never go underneath equipment (lowered to the ground or raised) unless it is properly blocked and secured. 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.
- Do not operate equipment while under the influence of alcohol or drugs.
- Operate only in daylight or good artificial light.
- Do not allow riders. Do not lift or carry anybody on the power unit or attachments.
- Leak down or failure of mechanical or hydraulic system can cause equipment to drop.
- 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.
- Never perform service or maintenance with engine running.
- 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.

STORAGE

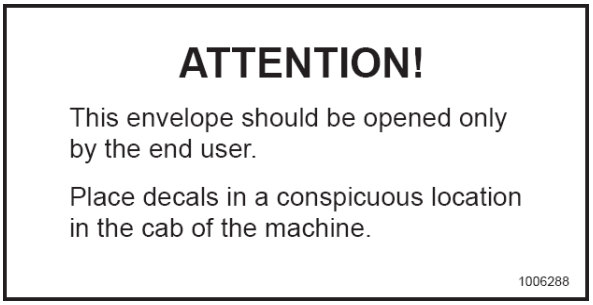
- Follow manual instructions for storage.
- Keep children and bystanders away from storage area.

SAFETY INFORMATION

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

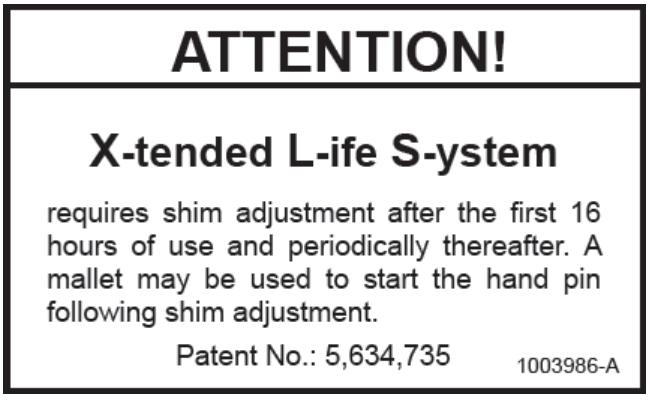
WARNING: The hitch pin with handle is NOT a lifting device. Do not attempt to use any portion of the hitch pin or handle for lifting purposes. This could cause the pin to fail and may result in the attachment to drop unexpectedly.

1 – Serial Tag (40313) On Coupler

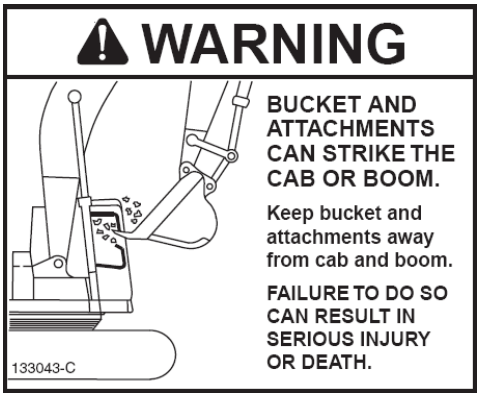


2 – Attention Card (1006288) On Coupler

3 – Bucket Drop Decal (44846) In Cab

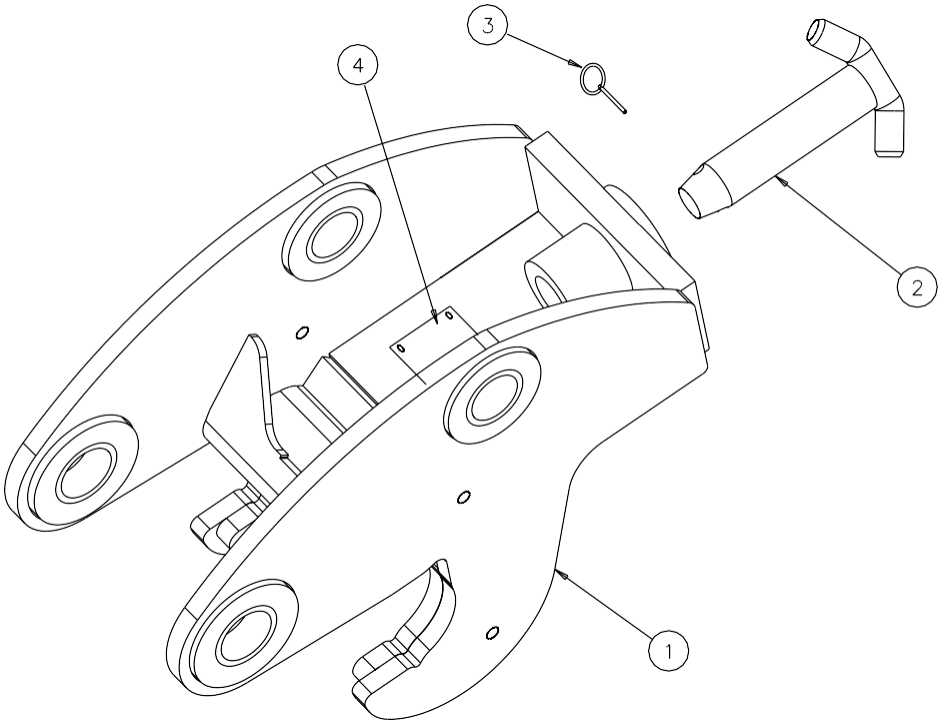


4 – XLS Adjustment (1003986) In Cab



5 – Bucket Strike (133043) In Cab

COUPLER DIAGRAM & PARTS LIST



Ref #	Part #	Description
1	As Ordered	Rigid Coupler (XLS or Original System)
2		Latch Pin Assembly
1/16yd	1024513	Pin Assembly
1/8yd	44772	Pin Assembly
1/4yd	147040	Pin Assembly
1/2yd	147054	Pin Assembly
3/4yd	147046	Pin Assembly
1 yd	108724	1yd is Hydraulic Pin Only
3		Locking Pin
1/16yd	E056	Klik Pin
1/8yd	27542	Klik Pin
1/4yd	27542	Klik Pin
1/2yd	147007	PIN ASSEMBLY-LOCKING
3/4yd	147014	PIN ASSEMBLY-LOCKING
1yd	N/A	No locking pin for hydraulic pin setup
4	40313	Serial Tag

Ref	Description	Qty	1/16 YD MINI	1/8 YD Mini	1/4 YD HD1	1/2 YD HD2 & HD3	3/4 YD HD4	3/4 YD HD5	1 YD HD6	1 YD HD7
	Bucket Bearing Bar Assy	1	1024557	1007053	40379	40386	44007	44007	-----	-----
1	**Bracket - XLS (Support - Short)**	A/R	1024517	1007056	40376	40388	40343	40343	0104105	0104105
2	**Bearing Bar - XLS**	1	1024522	1006208	40377	40389	40341	40341	0104106	0104106
3	**Wear Plate - XLS**	1	1024556	1006209	40378	40387	40345	40345	0104107	0104107
4	**Shim - XLS (.010)**	A/R	-----	1006210	-----	-----	40362	40362	-----	-----
4	**Shim - XLS (.020)**	A/R	1024558	1006211	40381	44004	40361	40361	0104123	0104123
4	**Shim - XLS (.040)**	A/R	-----	----	40380	44003	-----	-----	0104124	0104124
5	**Screw – 3/8 NC x 1.25**	2	S769x3	----	----	----	----	----	----	----
5	**Screw - 3/8 NC x 1.5"**	2	----	S769x4	----	----	----	----	----	----
5	**Screw - 3/8 NC x 1.75"**	2	----	----	S769x5	S769x5	-----	-----	-----	-----
5	**Bolt - 1/2 NC x 2"**	2	----	----	-----	-----	S637x7	S637x7	-----	-----
5	**Bolt - 1/2 NC x 2 1/2"**	2	----	----	-----	-----	-----	-----	S637x8	S637x8
6	**Locknut - 3/8 NC**	2	S340x5	S340x5	S340x5	S340x5	-----	-----	-----	-----
6	**Locknut - 1/2 NC**	2	----	----	-----	-----	S340x9	S340x9	S340x9	S340x9
	Decal - Shim Adjustment	1	1003986	1003986	1003986	1003986	1003986	1003986	1003986	1003986
Not Shown	**Support - Long**	1	----	----	-----	-----	40344	1005105	0104104	40317

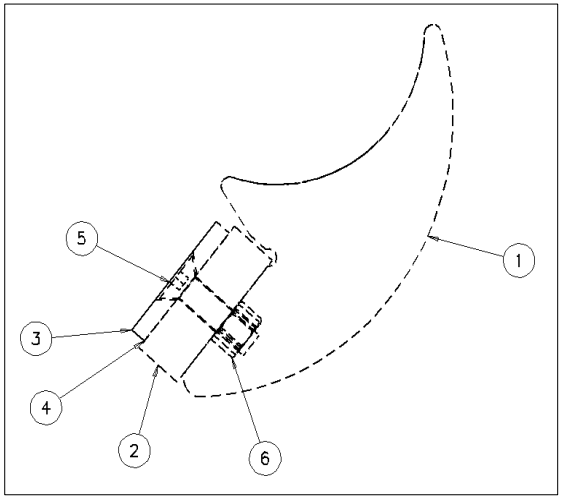
***A/R = As Required**

How to Shim the XLS Coupler System

The XLS system is designed to make it easy to keep the bucket tight to the coupler. The system works by placing enough shims under the wear plate on the bucket to get rid of any movement between the bucket and coupler. When the bucket and coupler are first installed on a machine the XLS system should be shimmed tight. As the bucket is used it is normal for the bucket and shims to wear a bit; at this time, it is necessary to put more shims under the wear plate. Enough shims should be used so that the hand pin is just able to fit and slide freely into the bucket and coupler. A rubber mallet may be used to start the hand pin after adjustment. **Do not use a hammer or maul to drive the Latch Pin Assembly in place. This may cause damage or failure to the Latch Pin Assembly.**

Failure to properly shim the XLS system will result in premature bucket and coupler wear.

"Support - Long" is a center brace that runs along the back sheet of the bucket and is welded to the backside of the XLS Bracket. (Not Shown)



RIGID XLS COUPLER DAILY INSPECTION

WARNING: Failure to follow these daily inspections could result in the attachment to drop unexpectedly and may cause serious injury or death.

Below are inspections and general maintenance procedures that must be performed on a daily basis. For the below instruction, see page 5 and page 8 for diagrams.

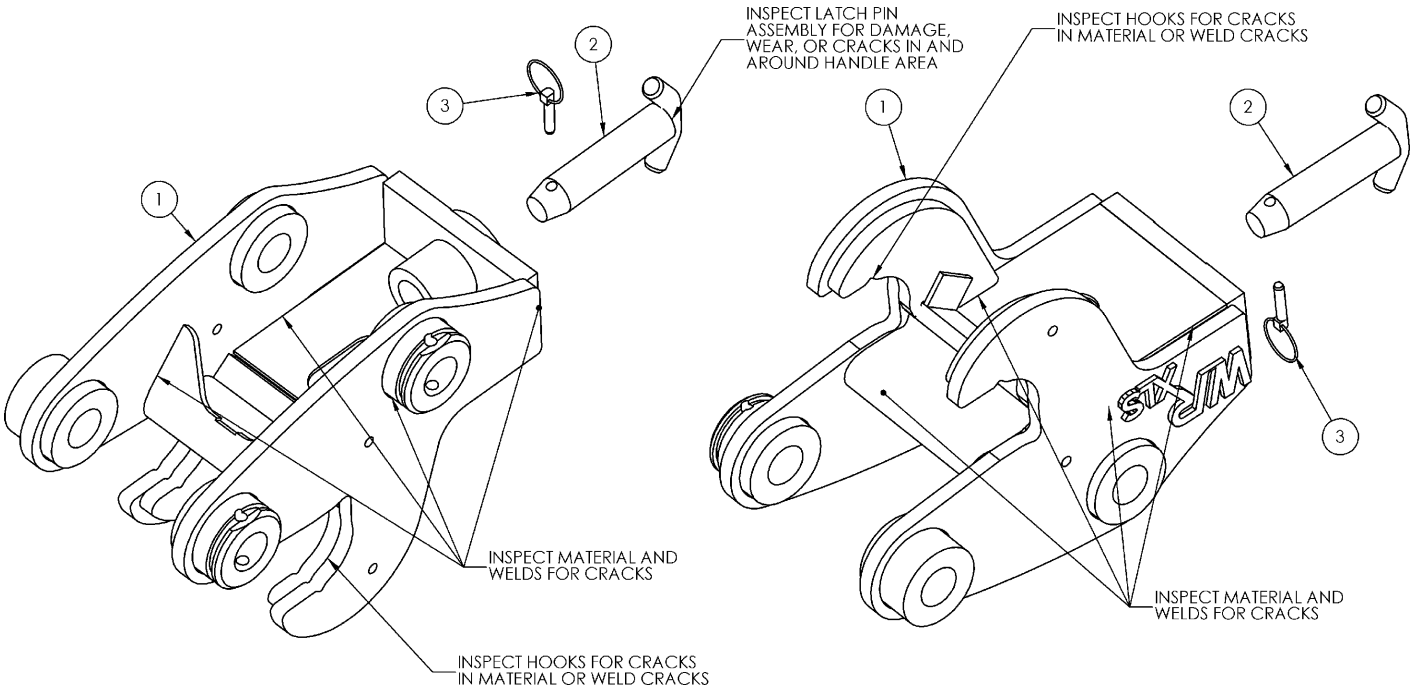
1. Visually check the bucket to make sure it's held tight to the coupler. If the bucket becomes loose and has the XLS system then add shims until the bucket is tight, see the instructions on How to Shim a XLS (Page 6). The latch pin assembly (#2 on the Coupler Diagram Parts List) must slide through the bucket and coupler without using force. If the bucket is an original system then check the coupler and flats to see if there is excessive wear.

2. Visually check the latch pin assembly (#2 on the Coupler Diagram Parts List) for wear, damage, or cracks in the weld or to the handle portion of the latch pin assembly. If the handle is worn to less than 80% of the original diameter, the pin assembly **must** be replaced immediately. If any other wear, cracks, or damage the pin is found it is a safety hazard and **must** be replaced immediately.

3. Visually check the locking pin that holds the latch pin assembly in place (#2 & #3 on Coupler Diagram & Parts List). The ring on the locking pin should snap over the end of the latch pin assembly. The locking pin should have spring tension that will cause the ring to snap closed on its own. If this ring no longer engages properly then the locking pin **must** be replaced to prevent the latch pin assembly from falling out during operation. A latch pin assembly that isn't working properly is a safety hazard and **must** be replaced immediately.

4. Visually check the Rigid Coupler (#1 on the Coupler Diagram Parts List) for excessive wear, weld or material fractures, and cracks in the hook area. If any wear, cracking, or fractures is found the coupler **must** be removed from service immediately and replaced**.**

RIGID XLS COUPLER DAILY INSPECTION DIAGRAM



HYDRAULIC RELEASE XLS RIGID COUPLER

(WainRoy Equipment Company. Patent No: 5,727,342)

A. System Description:

Your new WainRoy hydraulic quick coupler is simple! Only one hose runs up the boom and down the dipper stick to a single acting cylinder in the coupler. The other end of this hose connects to a solenoid valve that is mounted inside the vehicle frame near the equipment valve. A drain line runs from the solenoid valve to a low pressure drain line or to the hydraulic tank. There is a wire that reaches from the solenoid to a locking toggle switch in the cab. The simplicity of the system makes installation easy and takes less time than other systems. Removing the mechanical portion inside the coupler is very simple and can be accomplished using only the supplied spring removal bolt. No tools are required.

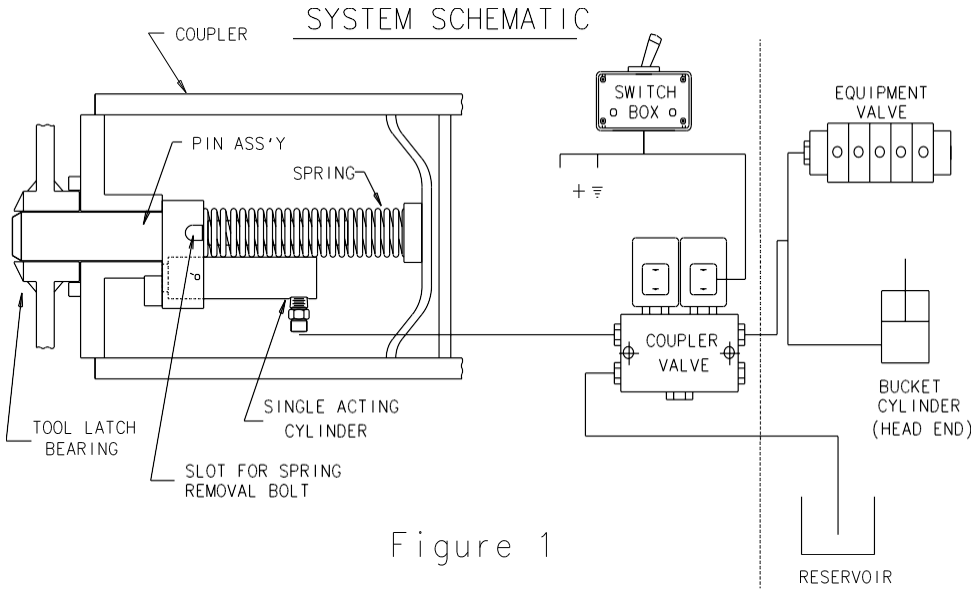


Figure 1

The new hydraulic quick coupler was designed with safety in mind! The system is spring apply, hydraulic release. The cylinder actually pushes the pin out to retract. If there is a loss of either electrical or hydraulic power, the pin will remain extended or if the pin is retracted when there is a loss of power, the pin will extend automatically. In the "latch" switch position the solenoid is shut off and no pressure can reach the pin cylinder. If there is a hydraulic failure due to solenoid leakage the drain line would divert the pressure thus not allowing the pin to retract. In the "unlatch" switch position, the solenoid is energized but still requires the bucket cylinder to be completely extended before enough pressure reaches the pin cylinder in order to retract the pin. In this position, the WainRoy Inc. coupler hooks are rolled inward thus assuring that the tool will not fall off. Also in this position, red lights and a beeper sound device alerts the operator that the switch is in the activated position.

The new hydraulic quick coupler is effective! The cylinder is in the retracted position during the tool working period. Because the cylinder is retracted, the rod is not exposed to being damaged from rocks and sharp objects. The pin indicator readily shows whether the pin is fully inserted or not. The indicator can be viewed easily from the operator position. Since a non-hydraulic coupler can be so easily retrofitted, in the unlikely event of a component failure, the coupler can easily be converted back to the mechanical manual hand pin version with no lost down time! Parts are easy to clean and broken parts are simple to replace.

B. Coupler Retrofit

(This does not apply if you purchased the coupler with the hydraulic pin already installed)

a. Prepare the coupler:

Cut the slot in the bottom of the coupler per the figure supplied with your retrofit kit. On the larger sizes locate and weld the spring support to the formed plate in the coupler as shown. On smaller size versions, add the cylinder stop block to the latch collar. Paint bare areas in order to inhibit corrosion.

b. Spring and pin installation:

Screw the cylinder into the pin block until the rod of the cylinder is flush with the pin block as shown in figure 6. Screw the two cap screws in the block to retain the cylinder. Insert the pin and cylinder assembly into the coupler. Place the compressed spring assembly into the pin block. Push the pin up against the spring so that the top of the spring is resting properly in the spring retainer on the coupler. Clamp or tie the pin in this retracted position. Turn on the machine, turn the latch switch to the on (unlatch) position and slowly roll the coupler forward, extending the bucket cylinder to its full length. This will extend the coupler cylinder and compress the spring. Remove the now loose retaining bolt from the end of the compressed spring. Turn off the switch (latched position) and the system is in full operational condition see figure 7. Reposition the coupler hose to its best orientation to accommodate the full motion of the bucket linkage.

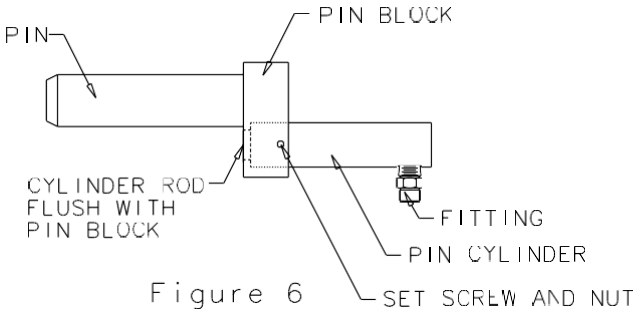


Figure 6

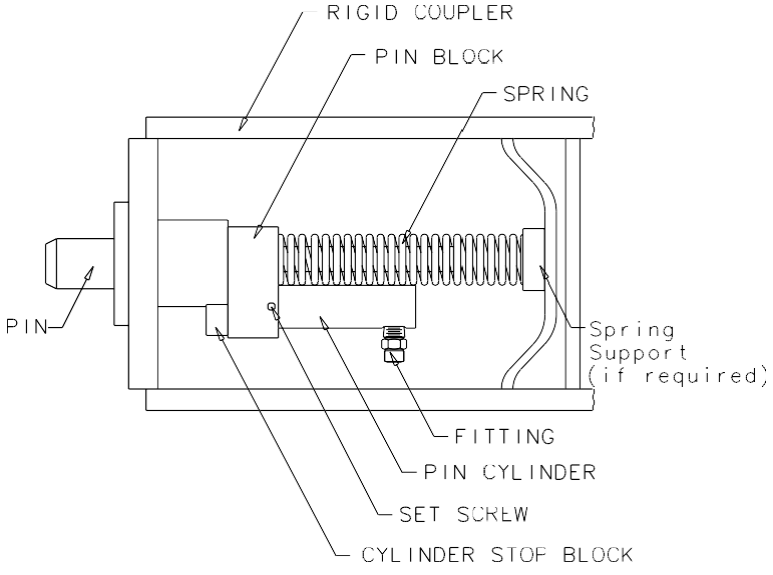


Figure 7

C. Maintenance:

WARNING: Do not proceed to operate the machine with a tool unless the pin is inserted into the tool latch bracket.

Personal injury and machine damage could result.

Visibly verify that the pin is properly inserted in the tool latch bracket.

Note: Remember that the coupler hooks and the attachment top must not have clumps of dirt adhered to the surfaces. Dirt on the coupler must be removed.

Make sure all moving parts are clean and free of mud and rocks. Clean the parts with air pressure or water frequently in order to avoid malfunction due to excess buildup of debris that could inhibit the operation of the spring. Check that the hose and the sheathing on the hose are free of abrasion and wear.

D. Safety Precautions:

Located 133068 on Switch Box

Locate 133067 in Cab, must be Visible to Operator

WARNING: The spring comes compressed from the factory. Do not attempt to remove the bolt until the spring assembly is installed in the coupler.

Personal injury could result.

WARNING: Do not place any part of the body inside the coupler while someone is near the hydraulic controls, even if the machine is off.

Personal injury could result.

The spring and the cylinder are very powerful!

Use extreme caution while servicing or installing the components inside the coupler.

WARNING: Do not place any part of the body inside the machine linkage while someone is near the hydraulic controls, even if the machine is off.

Personal injury could result

WARNING: The coupler must be latched properly before operating the equipment or personal injury and machine damage could result.

The operator must visibly verify that the pin is inserted in the tool latch bracket.

The switch box lights, and beeper are solely to remind the operator that the switch is in the energized position!

The absence of the sound and the light does not mean that the coupler is latched properly!

WARNING: If the lights or the buzzer fail to operate properly, replace the necessary component immediately.

The absence of these components could cause a failure to notify the operator of an energized solenoid condition thus resulting in possible personal injury and machine damage.

HYDRAULIC XLS COUPLER DAILY INSPECTION

WARNING: Failure to follow these daily inspections could result in the attachment to drop unexpectedly and may cause serious injury or death.

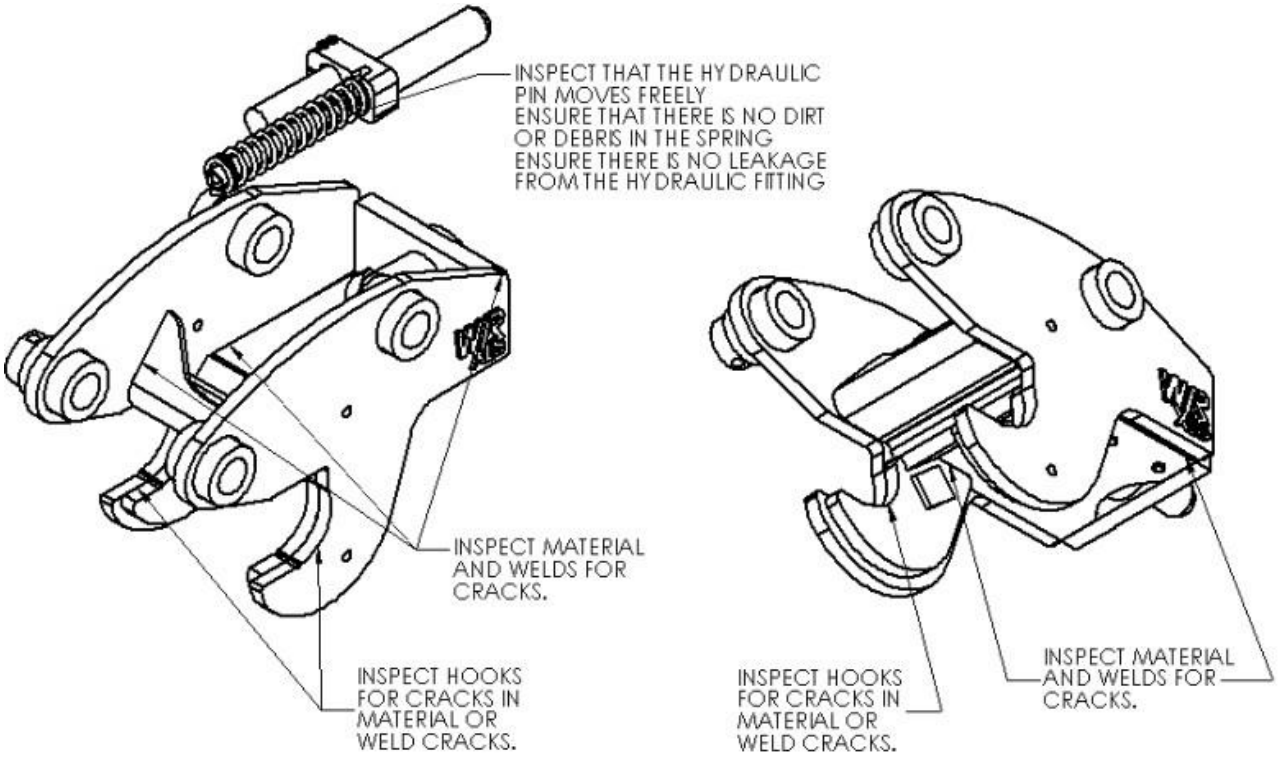
Below are inspections and general maintenance procedures that must be performed on a daily basis. For the below instruction, see page 5 and page 15 for diagrams.

1. Visually check the bucket to make sure it's held tight to the coupler. If the bucket becomes loose and has the XLS system then add shims until the bucket is tight, see the instructions on How to Shim a XLS (Page 6). The pin assembly (#1 on the Hydraulic Coupler Diagram Parts List - page 15) must slide through the bucket and coupler without using force.

2. Visually check the pin assembly (#1 on the Hydraulic Coupler Diagram Parts List- page 15) for wear, damage, or cracks.

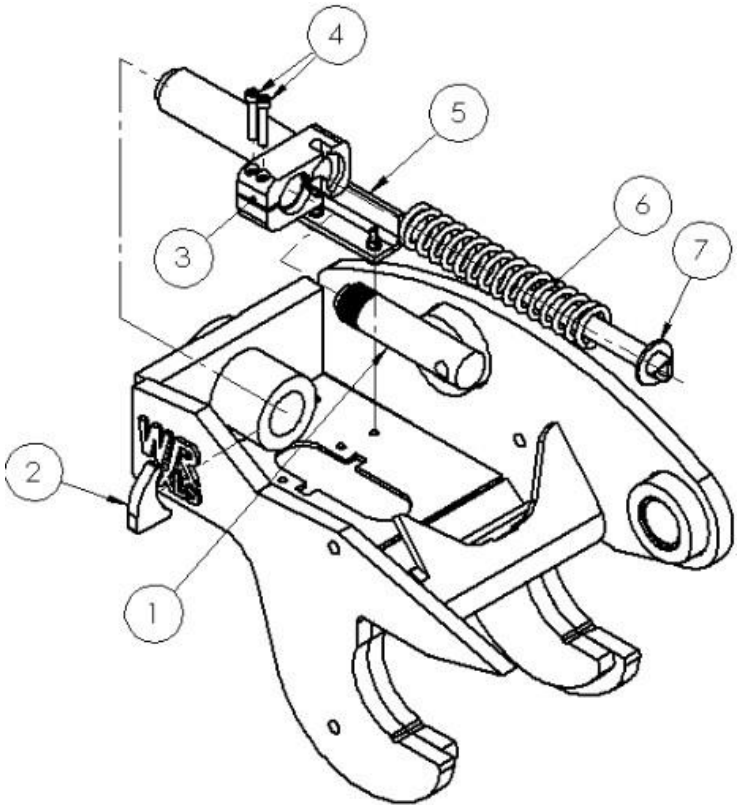
3. Visually check the Rigid Coupler (#1 on the Coupler Diagram Parts List- page 15) for excessive wear, weld or material fractures, and cracks in the hook area. If any wear, cracking, or fractures is found the coupler **must** be removed from service immediately and replaced**.**

HYD. RIGID XLS COUPLER DAILY INSPECTION DIAGRAM

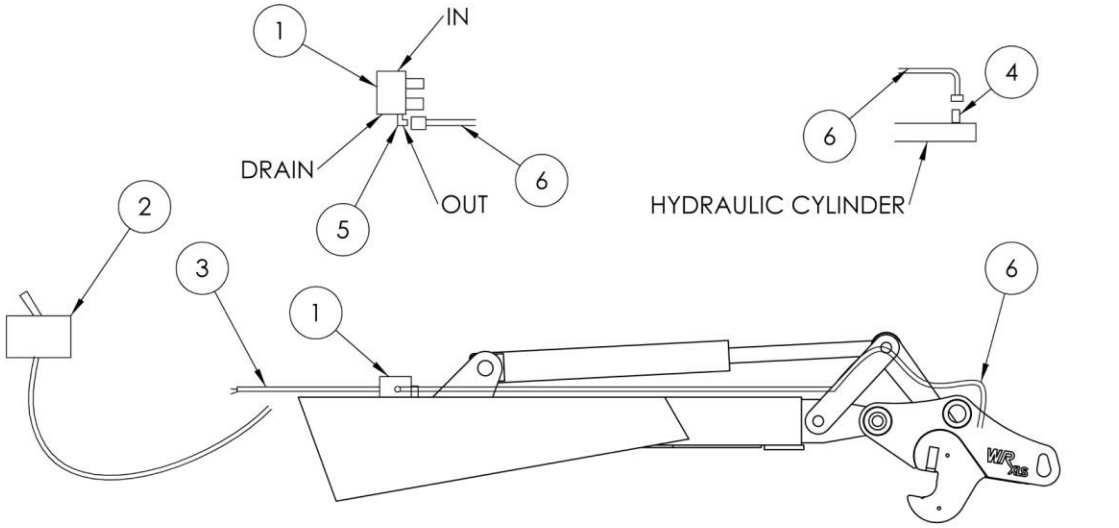


HYDRAULIC PART BREAKDOWN

	1/4 Yard	1/2 Yard	3/4 Yard	QTY	Description
Ref:	Part #				
1	004293	004293	004293	1	CYLINDER, HYD RGD CPL
2	108647	1080663	n/a		BEARING PLATE
3	108641	108656	108666	1	PIN ASY
4	S124X17	S124X17	S124X17	2	SHCS 5/16 NC X 1-3/4 GR5 ZP
5	3035580	3035507	3035507		HYD. RGD-XLS PIN STOP KIT
6	162003	162004	162005	1	SPRING
7	108639	108701	108703	1	SPRING ASSEMBLY
7.1	108644	108659	108669	1	SPRING ROD ASSEMBLY
7.2	162003	162004	162005	1	SPRING
7.3	S635X9	2290	90001237	1	BOLT HH 1/2 NC X 3 GR5
7.4	n/a	n/a	108672	1	SPRING KEEPER



GENERAL HYDRAULIC LAYOUT OVERVIEW



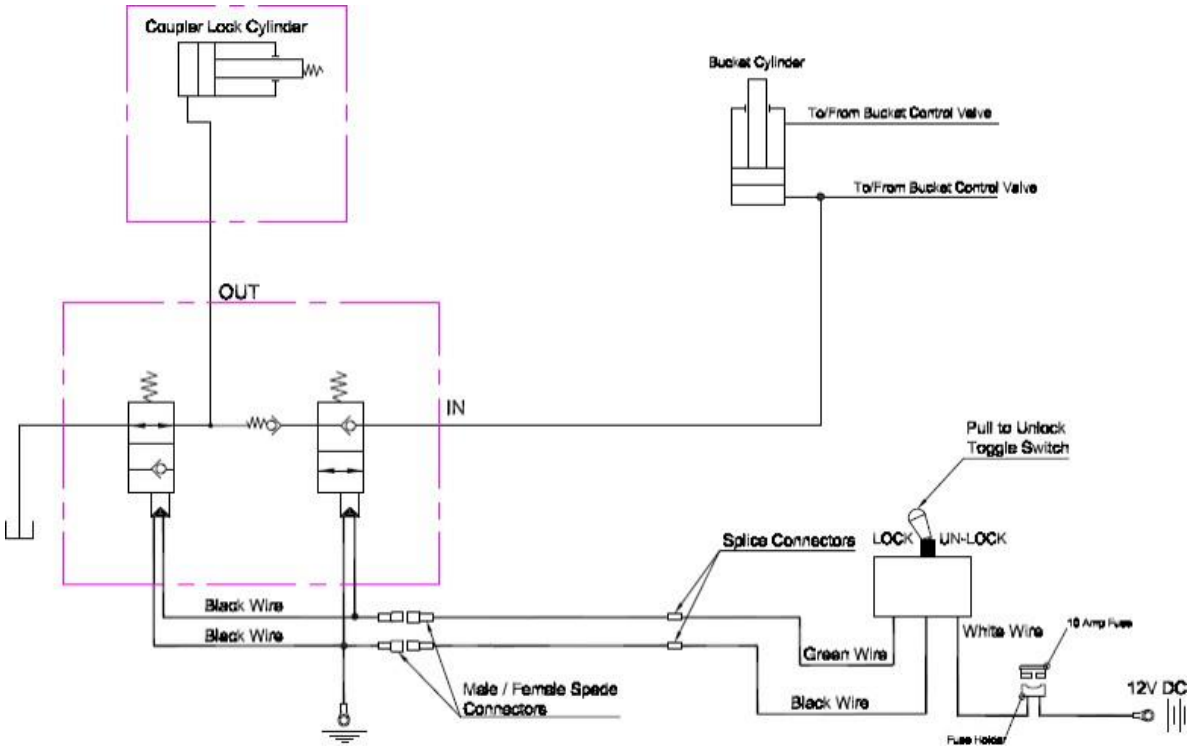
THIS DRAWING REPRSENTS THE TYPICAL LAYOUT FOR THE HYDRAULIC COMPONENTS INCLUDED IN THE KIT. THE BACKHOE STICK SHOWN IS FOR REFERANCE ONLY.

NUMBER	PART NUMBER	DESCRIPTION
1	SEE ORDER	VALVE (12v / 24v)
2	SEE ORDER	SWITCH BOX
3	SEE ORDER	WIRE (25 ft)
4	SEE ORDER	ADAPTER
5	SEE ORDER	90° ELBOW
6	SEE ORDER	HOSE

HYDRAULIC COMPONENT INSTALLATION

Each Hydraulic kit has its own installation manual specific for the OEM machine, below is a summary of the kit install.

1. Mount the solenoid valve (1) to the boom above the bucket cylinder. Be sure to measure the hose included (6) to ensure the valve is positioned close enough to allow slack for bucket curl. (Note: the valve can be mounted anywhere however the hose (6) provided is intended to be used with the valve mounted near the bucket cylinder. A new hose would have to be provided by the dealer if the valve location is to be moved.)
2. Attach item 5 to the coupler valve (1) as shown above. Attach item 4 to the coupler cylinder as shown above.
3. With the two fittings in place (4 & 5) the Hose (6) can now be attached between the valve and coupler hydraulic cylinder.
4. Determine a suitable location in the cab for installing the switch box (2) that is not part of the R.O.P.S. structure. Remove the four screws in the cover of the switch box (2). Drill two holes 2-1/2" apart for mounting the box. Use self-tapping screws. Mount the box and replace the cover.
5. Use the wire (3) provided to complete the rest of the wiring as shown in the hydraulic and wiring diagram below:



CONVERSION FROM RIGID COUPLER TO HYDRAULIC RIGID COUPLER

1/4YD Coupler

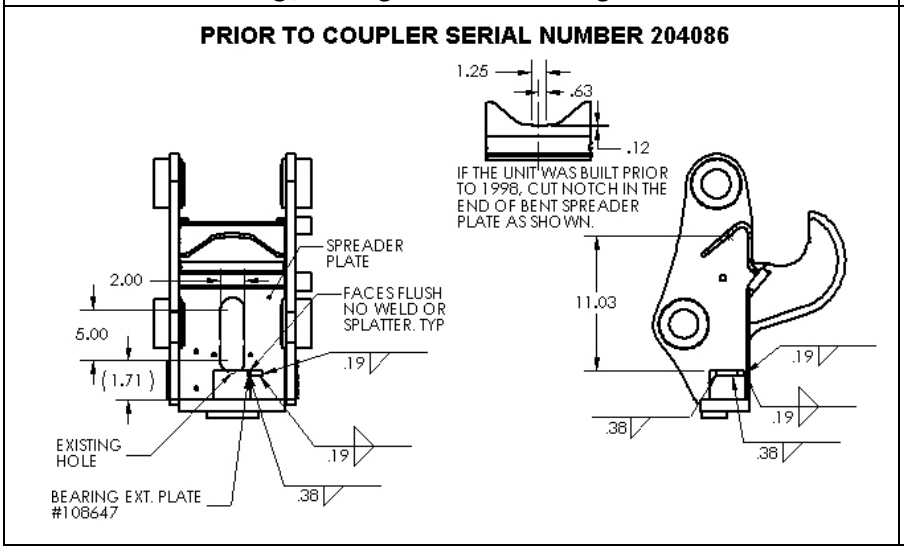
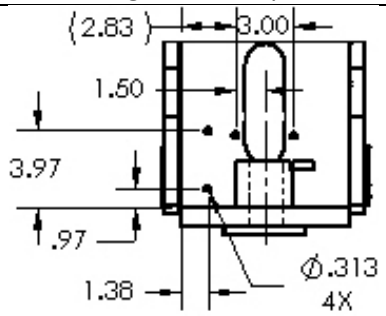
Required rework kit: **108706**

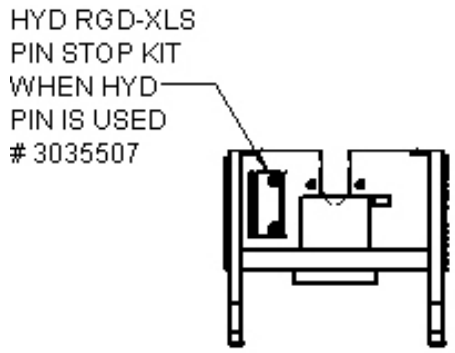
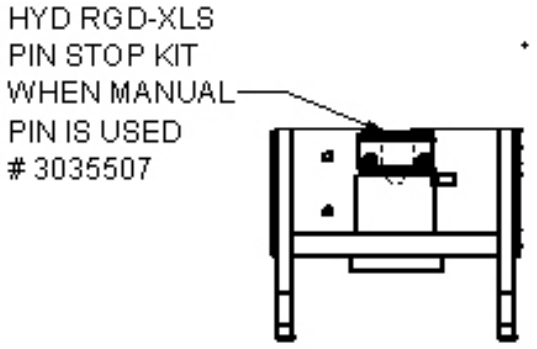
- Please contact your Dealer for the correct hydraulic Kit (kits include but not limited to: Switch box and Valve box assemblies, hoses and fittings) to fit your machine.
- Use of a kit not supplied by your WainRoy Dealer may void the warranty of the coupler and rework kit and may cause injury or death.

Before you convert your WainRoy Rigid XLS coupler to a hydraulic rigid coupler, please ensure you have all required parts and have read instructions below prior to installing the hydraulic pin assembly and coupler rework kit.

For couplers with a serial number prior to (s/n) 204086:

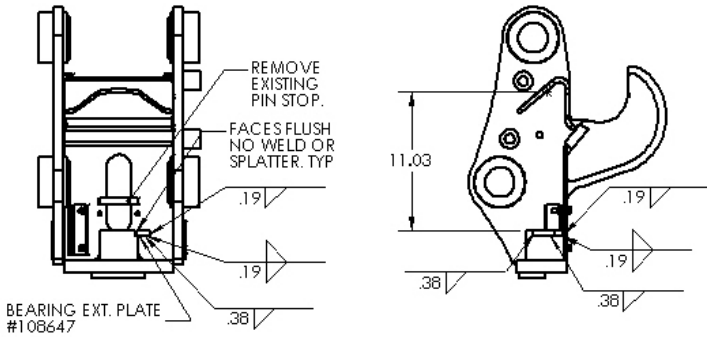
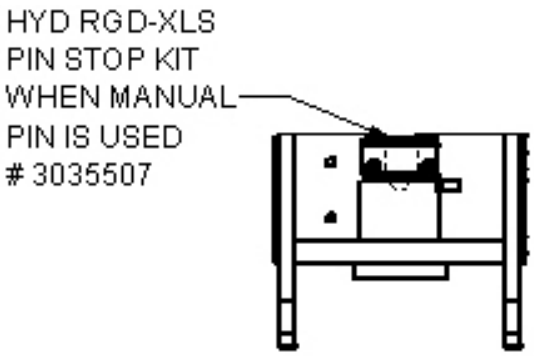
- Refer to print: 108693 supplied with the rework kit (The print supplied is a larger than the details below)
- You must extend the existing slot in the coupler spreader plate to the given dimensions shown below.
- You must drill (4ea) 7/16" holes in the coupler spreader plate to the given dimensions below.
- If the unit was built prior to 1998, you must cut a notch as shown in the "front" bent spreader plate
- You must bolt the HYD RGD-XLS PIN STOP KIT to the coupler. This kit is to be used when (and or if) you revert back to a non-Hyd coupler and should be located in the center of the coupler.
- Locate and weld the supplied Bearing Ext. Plate (108647) as shown below.

Drilling / Milling for Slot – Welding Gusset	Drilling for Pin Stop kit
	

Locating Pin Stop Kit when Hyd. Pin is used	Locating Pin Stop Kit when using Manual Pin
	

For couplers with a serial number after to (s/n) 204086:

- You must remove the existing pin stop
- Locate and weld the supplied Bearing Ext. Plate (108647) as shown below.

Removing Pin Stop – Welding Gusset	Locating Pin Stop Kit when using Manual Pin
AFTER COUPLER SERIAL NUMBER 204086 	

1/2YD Coupler

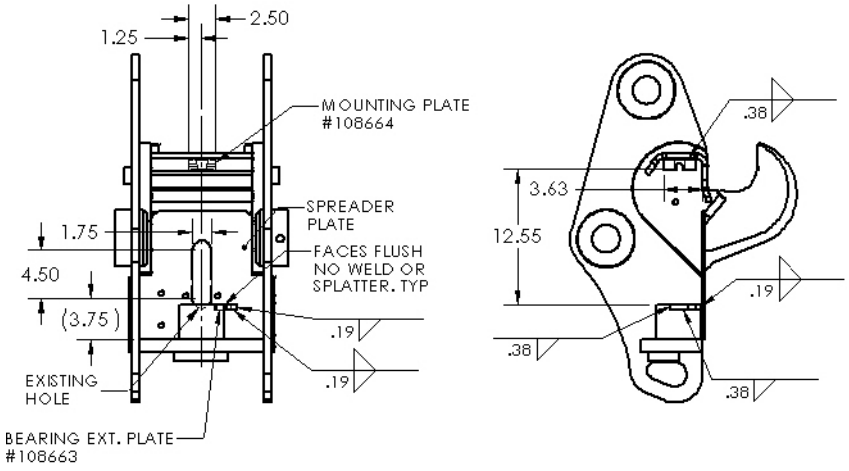
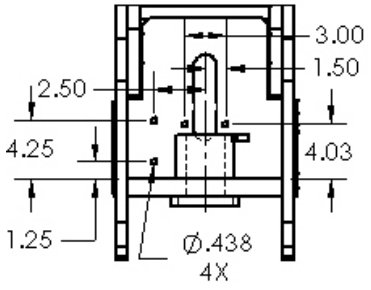
Required rework kit: **108707**

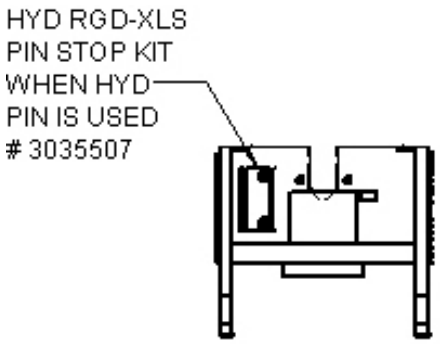
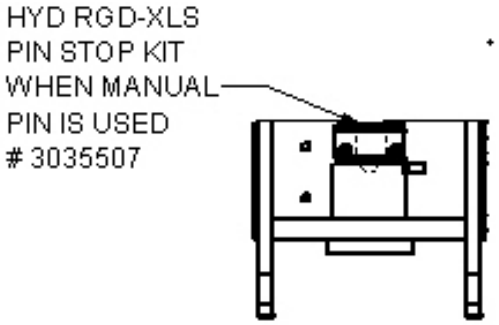
- Please contact your Dealer for the correct hydraulic Kit (kits include but not limited to: Switch box and Valve box assemblies, hoses and fittings) to fit your machine.
- Use of a kit not supplied by your WainRoy Dealer may void the warranty of the coupler and rework kit and may cause injury or death.

Before you convert your WainRoy Rigid XLS coupler to a hydraulic rigid coupler, please ensure you have all required parts and have read instructions below prior to installing the hydraulic pin assembly and coupler rework kit.

For couplers with a serial number prior to (s/n) 204086:

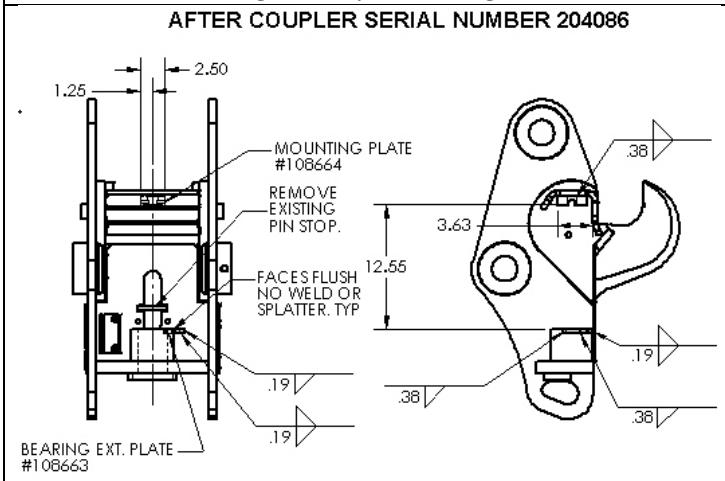
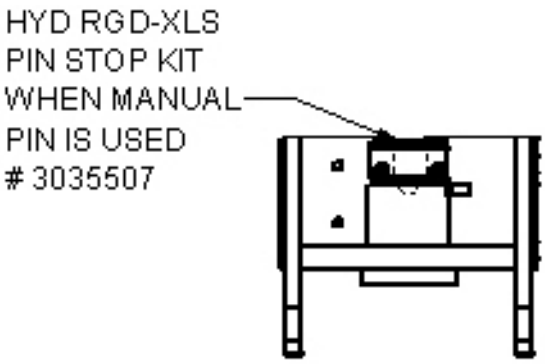
- Refer to print: 108694 supplied with the rework kit (The print supplied is a larger than the details below)
- You must extend the existing slot in the coupler spreader plate to the given dimensions shown below.
- You must drill (4ea) 7/16" holes in the coupler spreader plate to the given dimensions below.
- You must bolt the HYD RGD-XLS PIN STOP KIT to the coupler. This kit is to be used when (and or if) you revert back to a non-Hyd coupler and should be located in the center of the coupler.
- Locate and weld the supplied Bearing Ext. Plate (108663) and Mounting plate (108664) as shown below.

Drilling / Milling for Slot – Welding Gusset	Drilling for Pin Stop kit
PRIOR TO COUPLER SERIAL NUMBER 204086 	

Locating Pin Stop Kit when Hyd. Pin is used	Locating Pin Stop Kit when using Manual Pin
	

For couplers with a serial number after to (s/n) 204086:

- You must remove the existing pin stop
- Locate and weld the supplied Bearing Ext. Plate (108663) and Mounting plate (108664) as shown below.

Removing Pin Stop – Welding Gusset	Locating Pin Stop Kit when using Manual Pin
	

3/4YD Coupler

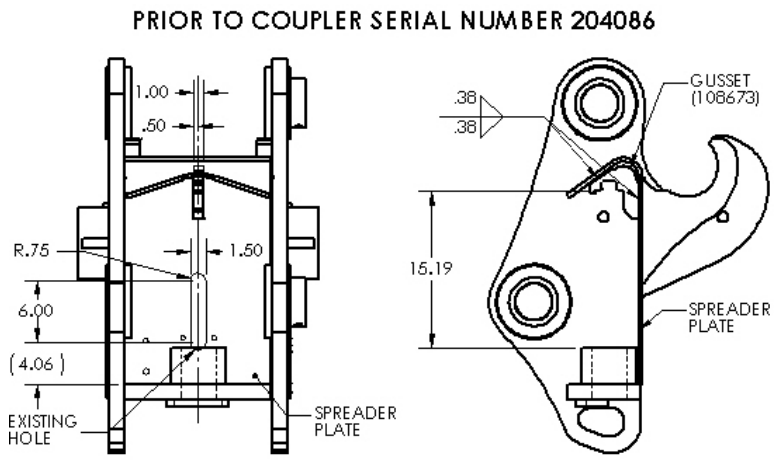
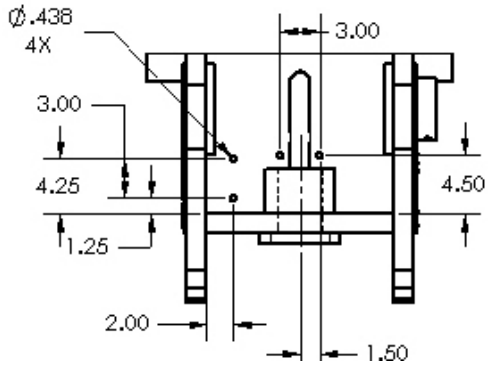
Required rework kit: **108708**

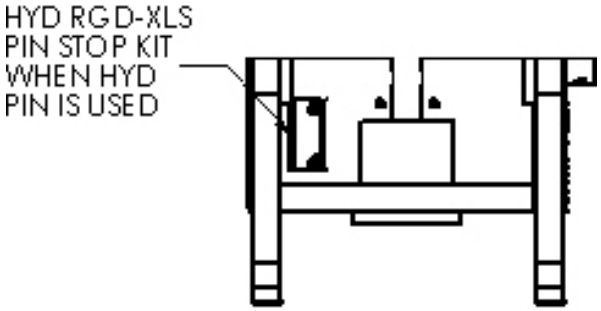
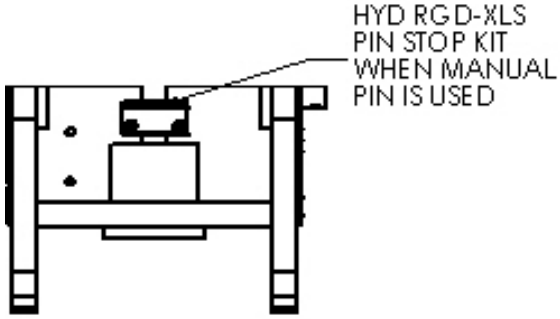
- Please contact your Dealer for the correct hydraulic Kit (kits include but not limited to: Switch box and Valve box assemblies, hoses and fittings) to fit your machine.
- Use of a kit not supplied by your WainRoy Dealer may void the warranty of the coupler and rework kit and may cause injury or death.

Before you convert your WainRoy Rigid XLS coupler to a hydraulic rigid coupler, please ensure you have all required parts and have read instructions below prior to installing the hydraulic pin assembly and coupler rework kit.

For couplers with a serial number prior to (s/n) 204086:

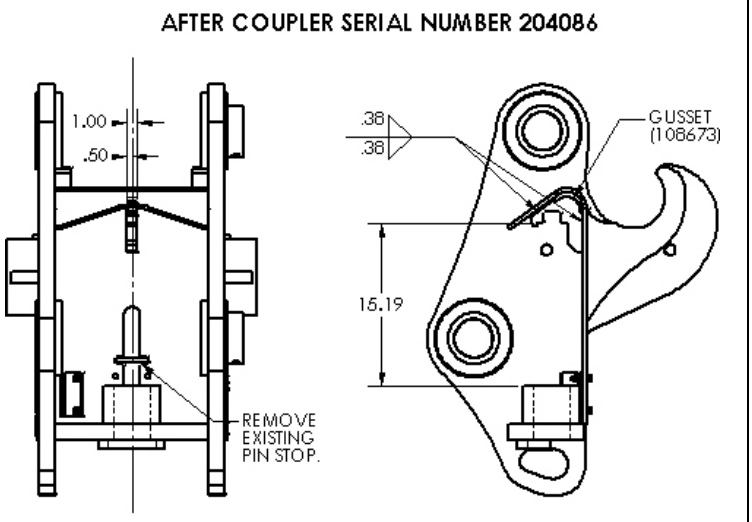
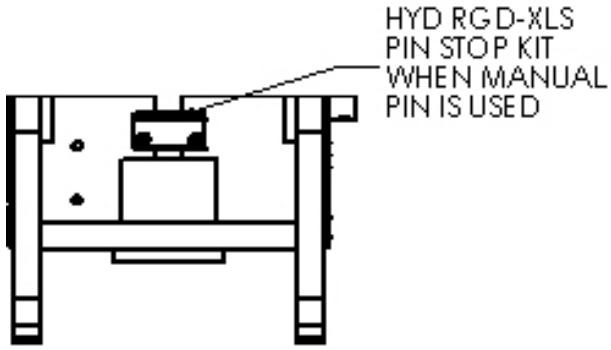
- Refer to print: 108695 supplied with the rework kit. (The print supplied is a larger than the details below)
- You must extend the existing slot in the coupler spreader plate to the given dimensions shown below.
- You must drill (4ea) 7/16" holes in the coupler spreader plate to the given dimensions below.
- You must bolt the HYD RGD-XLS PIN STOP KIT to the coupler. This kit is to be used when (and or if) you revert back to a non-Hyd coupler and should be located in the center of the coupler.
- Locate and weld the supplied gusset (108673) as shown below.

Drilling / Milling for Slot – Welding Gusset	Drilling for Pin Stop kit
	

Locating Pin Stop Kit when Hyd. Pin is used	Locating Pin Stop Kit when using Manual Pin
	

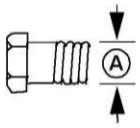
For couplers with a serial number after to (s/n) 204086:

- You must remove the existing pin stop
- Locate and weld the supplied gusset (108673) as shown below.

Removing Pin Stop – Welding Gusset	Locating Pin Stop Kit when using Manual Pin
	

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 & J1701M JUL96.



SAE SERIES TORQUE CHART

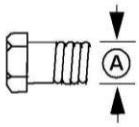
SAE Grade 2 (No Dashes)

SAE Bolt Head Identification

SAE Grade 5 (3 Radial Dashes)

SAE Grade 8 (6 Radial Dashes)

A 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

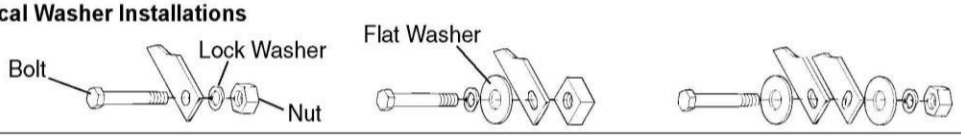
Metric Grade 8.8

Metric Bolt Head Identification

Metric Grade 10.9

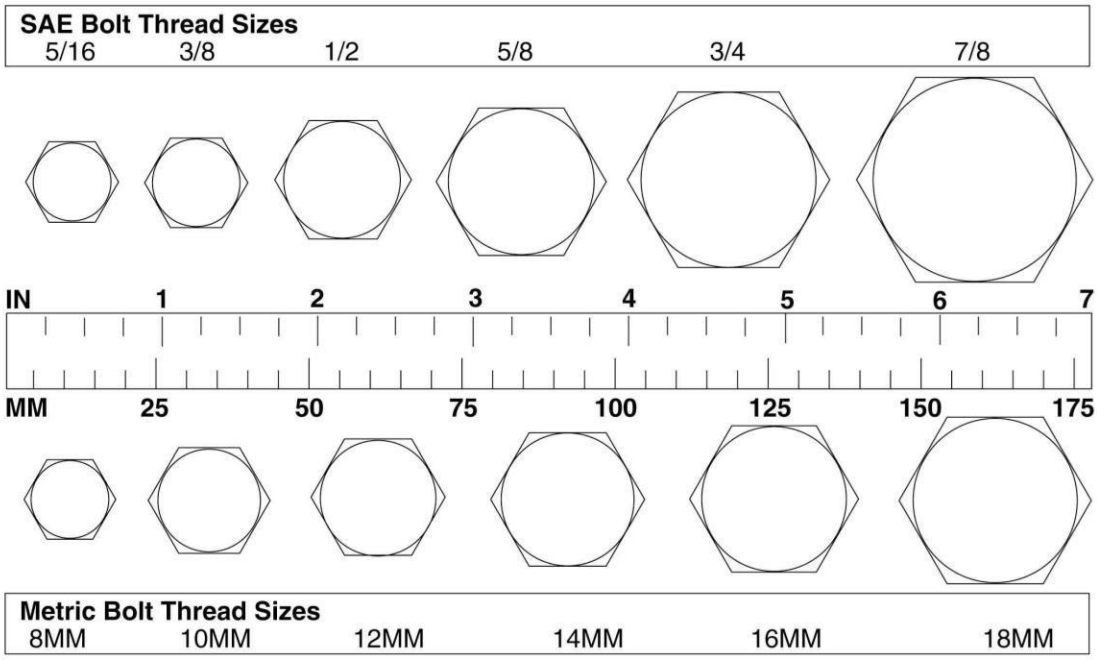
A Diameter & Thread Pitch (Millimeters)	Wrench Size	COARSE THREAD				FINE THREAD				A Diameter & Thread Pitch (Millimeters)
		MARKING ON HEAD				MARKING ON HEAD				
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	
6 x 1.0	10 mm	8	6	11	8	8	6	11	8	6 x 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



BOLT SIZE CHART

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



ABBREVIATIONS

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

WARRANTY

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 SERICE, 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 suck 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.