

# **DOUBLE-LOCKING**

## **MECHANICAL QUICK HITCH**

Installation & Operation Manual (English)

Important: This manual should be kept with the excavator at all times for easy reference.





## Table of Contents

Item Checklist	3
Introduction	4
Safety Features	4
Guide to Safety Symbols	5
General Safety Information	5
Safety labels	6
Safety Sticker and Data Plate Location Guide	7
Specified Parameters	7
Storage Instructions	7
End of Life Considerations	8
Pro-Lok Compatible Attachments	8
Fitting the Harford Pro-Lok to your Excavator	9
Connecting an Attachment to Pro-Lok	10
Releasing an Attachment	12
Lifting a Load	13
Important Maintenance Information	14
Adjusting the Threaded Actuator	14
Routine Maintenance Information	15
Spare Parts List	16
Warranty	17

Serial Number Location	Serial Number
Stamped plate on side of hitch	

#### Serial number table (above) for completion by owner

This manual part number PROLOK/GEN/MAN/R5

If this Pro-Lok quick hitch is to be used on a jobsite, the operator shall follow the site rules where the machine is to be used.

If you require technical information or spare parts for your **HARFORD PRO-LOK** quick hitch please get in touch or fill in the contact form on our website:

#### **Harford Attachments Ltd**

Europe: Spar Road, Norwich. NR6 6BY. England Tel +44 (0) 1603 403099 <u>USA:</u> 4600 140<sup>th</sup> Avenue North, Suite 180, Clearwater, FL33762, Tel 1-800-542-6556

Email: info@harfordattachments.com Website: www.harfordattachments.co.uk

## **Item Checklist**

The following items are supplied with the Harford Pro-Lok Quick Hitch.

Item	Supplied
UKCA / CE Declaration of Conformity	1
Ratchet	1
Installation and operation manual	1
'Safety pins not required' stickers	3
Warning label for the cab	1
Lifting eye test certificate	See note below

<u>Note:</u> A lifting eye test certificate is only supplied if a lifting eye is fitted to the **Pro-Lok** during manufacture.

### **Introduction**

Thank you for purchasing the **Harford Pro-Lok** quick hitch for excavators. The information contained in this manual should be read carefully and understood by all operators of the quick hitch, to ensure optimum performance of the product.

The **Harford Pro-Lok** is designed to pick up standard attachments for excavators, made to OEM specification. The adjustable sliding wedge plate provides a locking device, which is free from movement. This minimises any wear over the lifetime of the hitch.

There are several unique safety features built-in to the **Pro-Lok**. The end result is a safe, tough and durable product. Regular maintenance of the hitch will give you many hours of reliable, trouble-free operation. Please see page 15 for Routine Maintenance Information.

It is important that the installation is carried out by a competent person, preferably someone with experience of quick hitch operation.

The operation and maintenance instructions should be followed carefully to ensure safe and correct use of the quick hitch. Failure to do so could cause injury and/or invalidate the product warranty.



#### **IMPORTANT:**

All **Harford Pro-Lok** hitches are CE and UKCA certified, having undergone a thorough evaluation process by Harford Attachments. Any subsequent modification to the hitch will invalidate this certification and the product warranty.

## **Safety Features**

There are several unique safety features incorporated into the **Harford Pro-Lok** quick hitch. The features combine to prevent attachments becoming unintentionally disengaged from the quick hitch.

- 1. The wedge plate is tightened the same way as a bolt, i.e., in a clockwise direction.
- 2. A patented anti-unwind feature is built into the threaded actuator. This can easily be adjusted to ensure firm rotation during maintenance.
- 3. The geometry of the wedge plate and quick hitch locking surface creates a locking mechanism in its own right. The clamping force of the wedge surface is up to 4.5 times the force applied by the threaded actuator. This feature creates a secure and safe locking device.
- 4. A spring-loaded front lock ensures that the front pin is secure when connecting an attachment and during operation. This is visible to the operator from the cab.
- 5. A rear lock indicator allows the operator to check that the rear locking wedge is in its correct operating position. This is also visible from the cab.

## **Guide to Safety Symbols**

SAFETY NOTICE: These indicate specific precautions and recommended perso equipment (PPE) for use during the given situations.	nal protective
IMPORTANT: Specific points to note and situations to be aware of.	
<b>IMPORTANT:</b> Prohibited situations are specified and should be avoided.	
WARNING: Situations of danger in which the operator or installer must pa attention to the information provided to minimise the risk of in others	

## **General Safety Information**

#### **IMPORTANT**:

Due to the weight of the product, handling of the hitch prior to installation should be done using lifting aids appropriate for the weight, which can be found on the punched information plate affixed to the side of the hitch.

#### **IMPORTANT**:

Ensure that the machine to which the Pro-Lok quick hitch is installed does not exceed its safe working load (SWL), taking into account the additional weight of the hitch, which is stated on the punched information plate affixed to the side of the hitch.

#### **IMPORTANT**:

Be aware that the addition of the Pro-Lok quick hitch will increase the reach distance of the excavator arm, which may cause it to impact nearby objects and people or to impact the operators cab, leading potentially to property damage, injury, loss of limb or fatal injury.

#### **IMPORTANT**:

It is recommended for safety reasons that the machine to which this Pro-Lok quick hitch is installed is operated by an experienced, competent person, trained to ISO 7130:2013 or later.



#### IMPORTANT:

If hammers are to be used for long periods of time the quick hitch should be removed to prevent unnecessary wear.

#### **IMPORTANT:**

During installation, no alterations must be undertaken to any protective structure e.g., rollover protective structures (ROPS), tip-over protective structures (TOPS), or falling object protective structures (FOPS) are permitted except, where authorised by the manufacturer, or according to the manufacturer's specifications.



**IMPORTANT:** It is not permitted to transport or lift persons using the Pro-Lok quick hitch.

## Safety labels

All safety labels are to be kept clean and legible and should be replaced if missing or unreadable by contacting the manufacturer, Harford Attachments, on +44 (0)1603 403099, USA: 1-800-542-6556

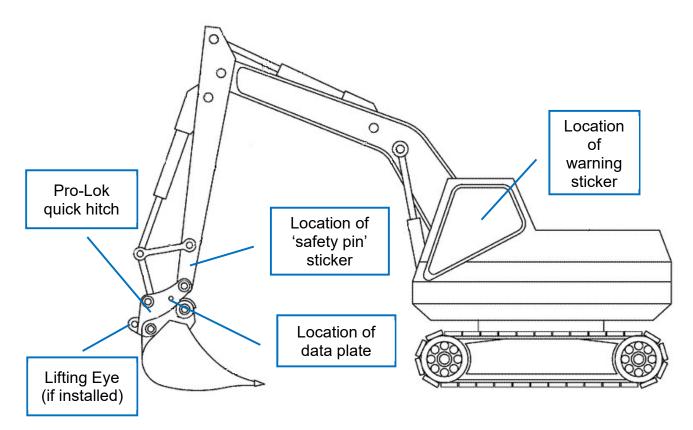
The following safety label is important for users. It is supplied with the Pro-Lok fitting kit and should be fixed prominently in the cab as shown in the diagram on Page 7.



Three of the following safety pin labels are also supplied and are intended to be fitted two on either side of the boom arm near the Pro-Lok quick hitch, and one prominently in the cab.



Safety Sticker and Data Plate Location Guide



## **Specified Parameters**

The Harford Pro-Lok quick hitch has been designed to the meet the original equipment manufacturer (OEM) specifications of the excavator for which it was ordered. The excavator model for which it was designed and the maximum load category of the hitch can be found on the punched information plate affixed to the side of the quick hitch body.

## Storage Instructions

If the Pro-Lok Quick hitch is to be removed for an extended period of time, please observe the following instructions:

#### SAFETY NOTICE:

It is strongly recommended that the Pro-Lok quick hitch is lowered to the ground, the machine switched off, the key removed and the parking brake engaged, blocks applied to the wheels, the system depressurised, and that safety gloves be worn during any maintenance on the quick hitch. A warning label should be affixed prominently in the cab to warn others of ongoing maintenance.

- Wearing appropriate PPE, hydraulic fluid should be drained from the quick hitch and disposed of according to local regulations.
- Basic maintenance tasks should be carried out on the hitch, including cleaning and greasing (see the Daily Checks on page 15 list for further information).
- The hitch should be covered and stored in a safe, dry location.

## End of Life Considerations

A large percentage of the Pro-Lok quick hitch is made using recyclable material. If the quick hitch becomes damaged beyond repair and is to be disposed of, please be aware of the environmentally unfriendly nature of the lubricants and hydraulic fluids used in its operation. Please check cleaning and disposal instructions from the supplier of the contaminants before disposing of the hitch in an environmentally responsible manner.

## **Pro-Lok Compatible Attachments**

Attachment	<b>Can</b> be used (up to the safe working load)	Can be used, with limitations	Cannot be used
All Harford Attachments			
Buckets to OEM specification	V		
Hammer or breaker		For limited periods. The Pro-Lok should be removed to prevent unnecessary wear in cases of prolonged use.	
Pallet forks			Under no circumstances
Lifting Objects with hitch		Only if a factory fitted lifting eye was supplied with the hitch, certified to the SWL.	
Operator cages			Under no circumstances
Thumb			
Ripper Tooth			
Rake			



### IMPORTANT:

Attachments should be within the recommended limits of the carrying machine when the quick coupler is attached

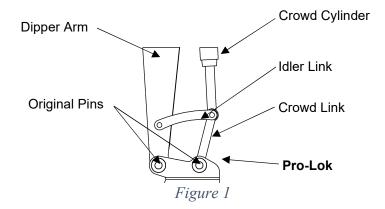
## Fitting the Harford Pro-Lok to your Excavator



#### SAFETY NOTICE:

It is recommended that safety gloves are worn during the installation of the quick hitch.

- 1. Remove any existing attachment from the machine dipper arm and crowd link arm. The two original pins that are removed from these pivot points must be used to attach the **Pro-Lok** hitch to the excavator (these pins are usually hardened and greaseable).
- 2. Carefully align the dipper arm between the two front bosses on the hitch as shown in Figure 1. Replace any 'O' rings that were removed and slide one of the original pins through the quick hitch and dipper arm. Securely fix the pin in place by using the original or supplied retention method. Ensure any retention bolts are tightened using double nuts to lock against each other, and any lynch pins are inserted fully.
- 3. If OEM pins are unavailable, suitable medium tensile (or better) pins should be used in both pin location. Visually check to ensure the pins are correctly fitted and are secure before the attachment is used. Ensure any retention bolts are tightened using double nuts to lock against each other, and any lynch pins are inserted fully.
- 4. Carefully raise the dipper arm until the hitch hangs freely, then repeat step 2 with the crowd link arm.
- 5. Grease the two pins and visually check that they are located and secured correctly.
- 6. Use the excavator hydraulics to carefully rotate the quick hitch to the extremes of the crowd cylinder (e.g., no stroke and full stroke), checking the clearance of the quick hitch with any part of the dipper arm and linkage.
- 7. Fit the supplied yellow **Warning sticker** in the cab in a prominent position. Also supplied are three '**Safety Pin Not Required**' **stickers** one to fit in the cab alongside the yellow **Warning sticker** and one each side of the dipper arm near the quick hitch.
- 8. You can now proceed to 'Connecting an Attachment to the Pro-Lok'.



## **Connecting an Attachment to Pro-Lok**



#### SAFETY NOTICE:

It is recommended that safety gloves are worn during the attachment changeover operation.

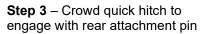
- 1. Lower the quick hitch front C-shaped jaw down towards the front attachment pin, as shown in Figure 2, step 1.
- 2. Engage C-shaped jaw with front attachment pin as shown in Figure 2, step 2.
- 3. Extend the crowd cylinder down towards the rear attachment pin whilst simultaneously lifting the attachment, as shown Figure 2, step 3.
- 4. Continue extending the crowd cylinder so the front attachment pin is firmly seated in the C-shaped jaw and the rear pin is seated on the rear locking surface, shown in Figure 2, step 4.
- 5. Use a ratchet handle to rotate the threaded actuator in a clockwise direction until the wedge plate is fully tightened against the rear attachment pin.
- 6. Visually check that the locking wedge plate is securely located against the rear attachment pin and the front lock is closed. Also ensure that the indicator bar is in the correct operating position as shown by Figure 3.

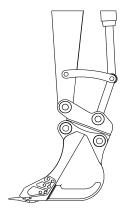
Figure 2

**Step 1** – Lower quick hitch to front attachment pin

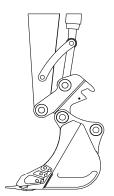
Front bucket pin

Rear bucket pin

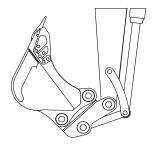




**Step 2** – Engage 'C' shaped jaw with front attachment pin



**Step 4** – Crowd bucket until rear pin is much lower than attachment pin



©2022 Harford Attachments Ltd PROLOCK/GEN/MAN/R5

10

Figure 3: Correct operating position

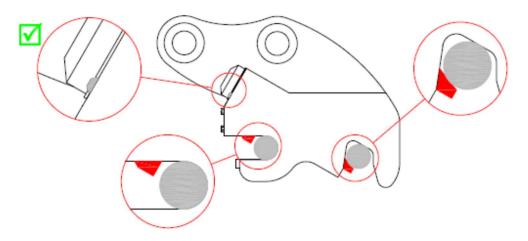


Figure 4: Incorrect operating position

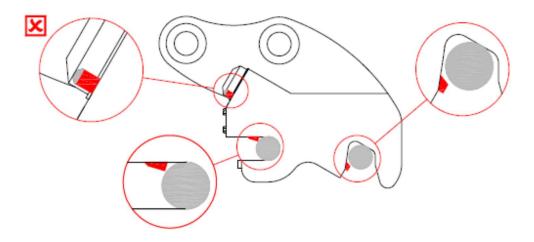
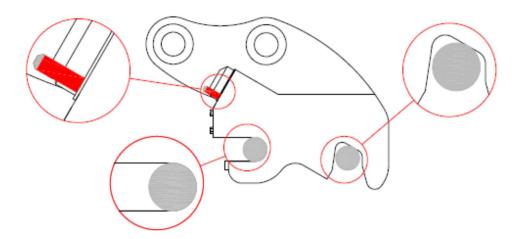


Figure 5: Releasing an attachment position



#### WARNING:



During operation there should be <u>no movement</u> between the **Pro-Lok** hitch and any attachment. If movement is detected, stop operation immediately, lower the attachment to the ground and inspect the hitch.



#### WARNING:

The **Pro-Lok** extends the length of the dipper arm and some attachments may hit the cab or boom in certain positions as a result.



#### WARNING:

The **Pro-Lok** is designed to pick up attachments manufactured to OEM specifications and capacities only. Use of oversized attachments with this quick hitch can be hazardous and may invalidate the product warranty should damage occur.



#### WARNING:

Ensure the Safe Working Load of the excavator is not exceeded - check the excavator manufacturer's information.



#### IMPORTANT:

To prevent unnecessary wear and tear, we recommend that the **Pro-Lok** hitch is removed if hydraulic hammers are to be used on the excavator for long periods of time to minimise damage caused by excessive vibration.

IMPORTANT:

The use of pallet forks with the **Pro-Lok** is not recommended, in order to maintain the integrity of the product design. Mis-use, resulting in damage to the hitch will invalidate the product warranty.

## **Releasing an Attachment**

- 1. When releasing an attachment ensure that people and property are well clear of the area of operation. Place the attachment on level ground or in a position so that once released the attachment cannot roll away from the hitch.
- 2. Use the ratchet handle to rotate the threaded actuator in an anti-clockwise direction until the rear wedge plate is fully retracted and front lock fully open as shown in Figure 5 on page 11.
- 3. Using the crowd cylinder of the excavator, rotate the quick hitch away from the rear pin of the attachment then lift away from the front attachment pin. You are now ready to load a new attachment.

## Lifting a Load



#### IMPORTANT:

This section only applies to quick hitches that are supplied with a certified, factory fitted lifting eye.

#### WARNING:

If your Pro-Lok hitch was not supplied with a factory fitted and certified lifting eye you must not attempt to lift loads that are not wholly contained within a bucket-type attachment. It is <u>unsafe</u>, may lead to damage and will invalidate the product warranty.



#### IMPORTANT:

Ensure the safe lifting capacity of the excavator is not exceeded. Refer to excavator manufacturer's information.

- 1. Ensure that the load to be lifted does not exceed the safe working load of the lifting eye. Visually inspect the load, lifting eye and shackle before lifting to ensure proper and safe retention of the load.
- 2. The lifting eye is designed to be used with a lifting shackle with the same safe working load rating to lift free hanging loads.
- 3. Release the attachment from the quick hitch prior to using it to lift load.
- 4. Curl the quick hitch towards the cab to prevent impact between the body of the hitch and the load or lifting equipment
- 5. Care must be taken to prevent harm to people, equipment or structures during the lifting and movement of a load.

If your **Pro-Lok** hitch was supplied with a factory-fitted lifting eye, it must be examined at regular intervals for damage and defects by a competent person, in accordance with UK HSE LOLER 1998 guidelines, which can be found at www.hse.gov.uk.

## **Important Maintenance Information**

#### Adjusting the Threaded Actuator

The rotational resistance of the threaded actuator must be firm at all times but can be easily adjusted using standard tools. This safety feature further enhances the positive locking mechanism built into the **Harford Pro-Lok** hitch.

- 1. Remove any attachment from the Harford Pro-Lok.
- 2. Remove the wedge assembly (15) from the **Pro-Lok** by rotating the threaded actuator (1) in a clockwise direction until the two parts disengage.
- 3. Remove the two bolts (4), retaining the protective shroud (8) over the threaded actuator. Slide the shroud off the threaded shaft (1) and remove completely.
- 4. Using an Allen key, loosen the cap screws (6) in the split nut (7).
- 5. Place the ratchet spanner in the square drive and rotate the split nut anti-clockwise (L.H. thread) until it tightens up firmly against the thrust washer (2).
- 6. Clamp the split nut against the threaded shaft by tightening up the cap screws.
- 7. Check the tightness of the threaded actuator. It should only be possible to rotate the actuator with the ratchet spanner, not by hand.
- 8. Re-assemble and grease, see Routine Maintenance Information on page 15, steps 3 and 4.



#### WARNING:

Ensure wedge plate is fully retracted before greasing.

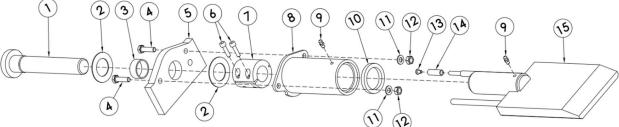


Figure 6: Typical thread actuator assembly

	$\bigcirc$
ITEM	DESCRIPTION
1	L.H. Thread
2	2 x DU Washer
3	DU Bush
4	2 x Hex. Head Bolt
5	Front Plate
6	2 x Cap Screw
7	L.H. Split Nut
8	Shroud
9	2 x Grease Nipple
10	Shroud Seal
11	2 x Spring Washer
12	2 x Hex. Nut
13	Pan Head Screw
14	Red Sleeve
15	Wedge Assembly

See page 16 for a full list of spare parts

## **Routine Maintenance Information**



#### SAFETY NOTICE:

It is strongly recommended that the Pro-Lok quick hitch is lowered to the ground, the machine switched off and the ignition key removed, the parking brake engaged and blocks applied to the wheels, that the system is depressurised and safety gloves are worn during any maintenance on the quick hitch. A warning label should be affixed prominently in the cab to warn others of ongoing maintenance.

#### **Daily Checks:**

Daily checks are to be carried out before the use of the Pro-Lok quick coupler; the operator shall have sufficient competence and training to perform the maintenance. During these checks, should any faults that could compromise safety be identified they should be remedied immediately.

- 1. Clean away any material build up around the front lock, indicator bar and wedge.
- 2. Check all pin retaining bolts and nuts for tightness on the quick hitch and attachments.
- 3. Grease wedge slide housing points as required. It is necessary to remove attachments in order to gain access to a grease nipple on the underside of the hitch or the top of the wedge.



#### WARNING:

Ensure wedge plate is fully retracted before greasing.

- 4. Grease threaded actuator points as required.
- 5. Check the **Pro-Lok** for correct operation by connecting an attachment.
- 6. Check that the threaded actuator is firm to rotate in its housing. Adjust as required, see "Adjusting the Threaded Actuator" on page 14.
- 7. Visually check the **Pro-Lok** for evidence of fatigue, weld failure or stress.
- 8. Visually inspect the lifting eye (if fitted) for evidence of damage, fatigue, weld failure or stress.



#### IMPORTANT:

Due to the self-tightening and infinite wear feature accommodated with the wedge lock, if any attachment is fitted to the hitch for long periods of time it should be released daily. If the daily maintenance tasks are adhered to, this will happen automatically.



#### WARNING:

If the quick hitch is damaged in any way and/or there is any doubt as to its safety, cease operation immediately and contact Harford Attachments Ltd, Technical Department. Europe: +44 (0)1603 403099, USA: 1-800-542-6556



#### IMPORTANT:

Any unauthorised modification of the quick hitch may compromise the safety of the operator and those nearby, and will invalidate the product warranty.

## Spare Parts List





Item

1

2

3 4

5

2d

Item

3a

Harford Attachments Ltd Spar Road, Norwich. NR6 6BY. England

Tel +44 (0) 1603 403099 Fax +44 (0) 1603 402399 email: info@harfordattachments.co.uk website: www.harfordattachments.co.uk

Description

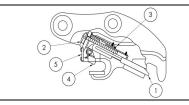
Wedge Assembly

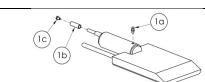
Thread Assembly

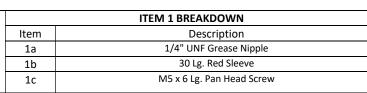
Shroud Assembly

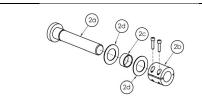
Front Lock Assembly

**Cover Plate Assembly** 







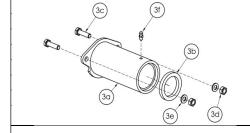


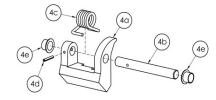
10	SU Lg. Red Sleeve
1c	M5 x 6 Lg. Pan Head Screw
	ITEM 2 BREAKDOWN
Item	Description
2a	1 1/8" x 170mm Lg. Thread
2b	1 1/8" X 50 Lg. Split Nut c/w Cap Screws
2c	34 x 30 x 15 DU Bush

54 x 32 x 1.5 DU Washer

Description Shroud

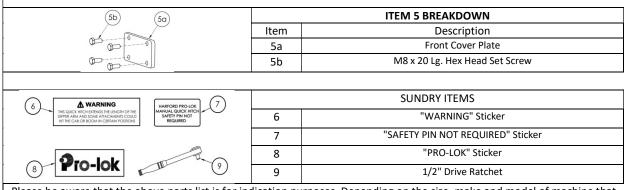
**ITEM 3 BREAKDOWN** 





3b	54 x 50 x 7 Shroud Seal
3c	M8 x 30 Lg. Hex Head Bolt
3d	M8 Hex Nut
3e	M8 Spring Washer
3f	1/4" UNF Grease Nipple
•	
	ITEM 4 BREAKDOWN
Item	Description
/12	Front Lock

4e	4a	Front Lock
	4b	Front Lock Shaft
,	4c	Torsion Spring
)	4d	Ø4 x 30 Lg. Roll Pin
	4e	16 x 18 x 12 Flanged Bush



Please be aware that the above parts list is for indication purposes. Depending on the size, make and model of machine that your Pro-Lok has been made for, your exact parts list may differ slightly from this one. For your Pro-Lok's specific parts list including part numbers and prices please contact our Sales team on 01603 403099 or sales@harfordattachments.co.uk

## **Warranty**

#### Warranty Policy

Harford warrants attachments and non-hydraulic components against defaults in materials, faulty design and workmanship for a period of 2 years from the date of delivery. The warranty policy does not extend to purchased sub-assemblies, including teeth assemblies, cylinders, auxiliary edges, electrical components and hydraulics. If a warranty claim is deemed appropriate on such items, they must be returned for assessment by Harford.

#### **NOT EVERYTHING IS COVERED**

Excavators are powerful machines and due to the nature of construction activity, some things are expected to wear and need replacing. Careless or inexperienced operators can also cause attachment failure. Here is a list of reasons why Harford will not consider warranty claims: -

- Product failed due to misuse, improper storage or neglect.
- Electrical components, hydraulic hosing, and fittings (past 3 months from installation)
- Paint finish
- Wear parts and consumables
- Product has been altered post manufacture.
- Travel, labour costs, loss of productivity or profit
- Personal injury, damage to property or machinery.

Should the product fail during the 2<sup>ND</sup> year from the date of purchase due to faulty design, workmanship or materials, Harford will repair or replace products only and will not be responsible for any costs associated with travel, repair or installation, or labour. Harford will approve all warranty decisions prior to any action being taken. To start a warranty, claim or initiate a product return, please complete the Contact form on our website and submit relevant photographic or video evidence to help Harford best assess your case.

#### **Returns Policy**

Harford will not accept return of any used, custom-made/designed, altered or non-standard product. Any returned item must be pre-authorized by a Harford Customer Service Representative and have Harford generated Return Goods paperwork attached. No paperwork, no return. All returns must be in a clean condition i.e., free from hazardous materials, contaminants, or biohazards. Attachments received in less than clean condition may be rejected and returned to the customer at their expense; they could also be subject to a cleaning surcharge. All returns accepted for return or exchange will be subject to a re-stocking charge of 15% of the product value.

#### Cancellation Policy

Cancellation of orders already in production will carry a penalty of a percentage of the order value, subject to product turnover. Cancellation of orders which are complete and awaiting shipment carry a penalty of 100% of net invoice.

<u>Europe</u>: Spar Road, Norwich, NR6 6BY, UK Tel +44 (0) 1603 403099 <u>USA:</u> 4600 140th Avenue North, Suite 180, Clearwater, FL33762. Tel: 1-800-542-6556

Email: info@harfordattachments.com Website: www.harfordattachments.co.uk