

Safelock

MECHANICAL QUICK COUPLER

Installation & Operation Manual (English)

Important: This manual must be kept with the excavator at all times and referred to as required



Harford Attachments Ltd

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Serial Number Location	Serial Number
Stamped plate on side of hitch	
Sticker on rear of control box	
Sticker on solenoid manifold	

Serial number table (above) for completion by owner

This manual part number SAFELOCK/GEN/MAN/R5

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

If at any time in the future, you require additional information on the
HARFORD SAFELOCK quick hitch or any aspects of its use, please do not hesitate to
 contact:

Harford Attachments Ltd

Spar Road, Norwich. NR6 6BY. England

Tel +44 (0) 1603 403099

email: info@harfordattachments.com

website: www.harfordattachments.com

Item Checklist

The following items are supplied.

Item	Supplied
Safelock Mechanical quick coupler	✓
CE Declaration of Conformity	✓
Installation and operation manual	✓
Lifting eye test certificate	see note

Note: The lifting eye test certificate is only supplied if fitted to the quick coupler at manufacture.

Introduction

Thank you for choosing to purchase the **Harford Safelock** quick coupler for excavators. The information contained in this manual should be thoroughly read and understood by all operators of the coupler.

The **Harford Safelock** quick coupler is designed to work with dedicated Safelock buckets and attachments. The sliding wedge plate provides a locking device which has a spring pressure acting on it, which means minimal wear over time.

It is important that installation be carried out by a competent person, preferably with quick coupler installation experience.

It is essential that the operation and maintenance instructions are followed carefully to ensure safe and reliable operation of the quick coupler at all times. Failure to do so could result in serious injury and invalidate the product warranty. Several safety features are built into the design of the coupler, which make it very safe and reliable.

This Manual contains installation and operation instructions for the mechanical **Harford Safelock** quick coupler. If the quick hitch you are operate is not a Safelock, please refer to the appropriate manual.







WARNING: The Safelock coupler is designed to pick up attachments which are dedicated to a particular Safelock model (SL★★) and category (★T); this information is shown on the data plate. **DO NOT** use oversized attachments with this quick coupler as personal injury could occur and any product warranty will be invalid.



IMPORTANT: This quick coupler has undergone CE certification by Harford Attachments. Any modification will invalidate this certification and therefore new, independent certification would be required.

Guide to Safety Symbols

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

Safety features

There are several important safety features that are an integral part of the **Harford Safelock Mechanical quick coupler**. Each feature is designed to reduce the eventuality of an attachment becoming disengaged whilst connected to the coupler.

1. The status of the safety handle is clearly visible by the operator.
2. Attachments can only be released when the safety handle is fully open.
3. The safety handle is retained with a spring-loaded safety lock.
4. The spring pressure acting on the locking wedge ensures there is no movement between the coupler and dedicated attachment.



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



IMPORTANT: Ensures that the machine to which the Safelock 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 Safelock 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 Safelock 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 Safelock quick hitch.

Safety labels

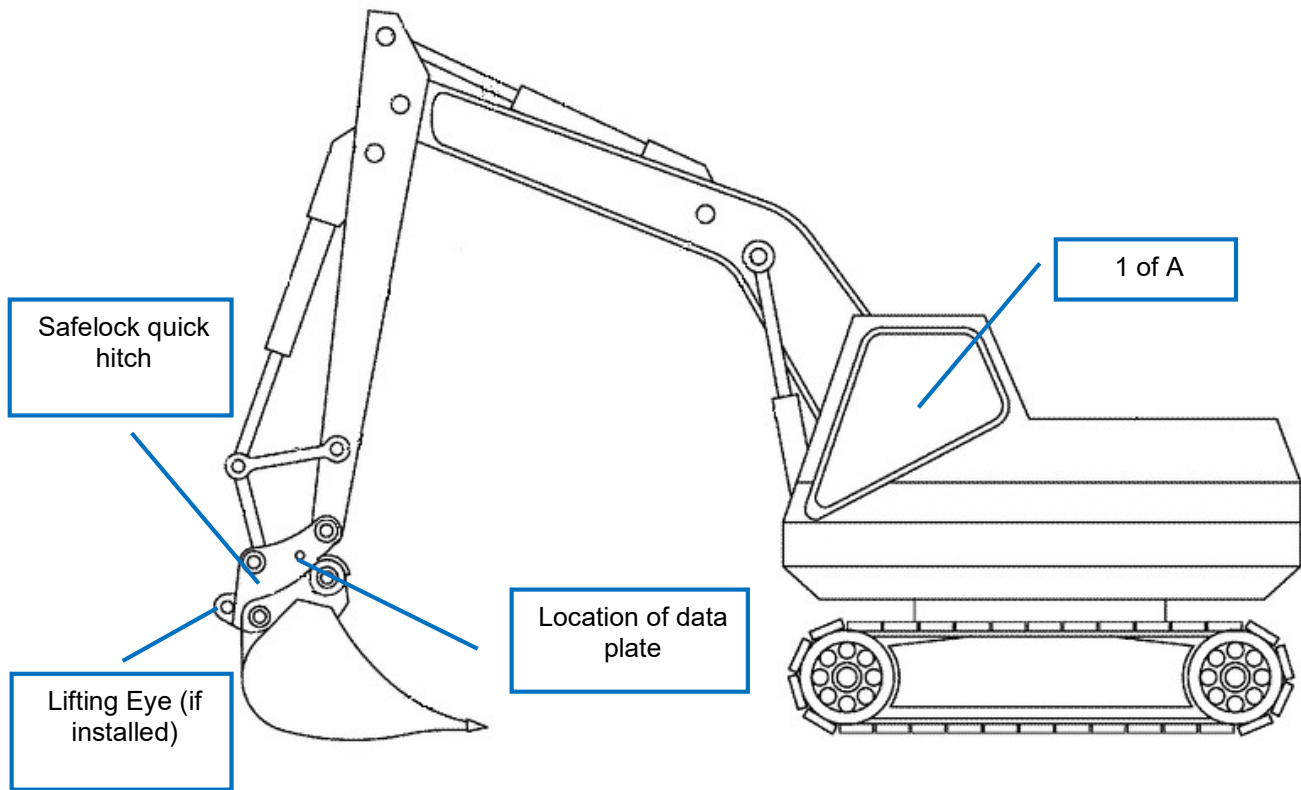
All safety labels are to be kept clean and legible and should be replaced if missing or unreadable by contacting the manufacturer, Harford Attachments, on +44 (0)1603 403099.

The following safety label is supplied in the required quantities with the Safelock fitting kit. Their locations are given in the description, and shown graphically in the following diagram.

- A) One yellow warning sticker to be affixed prominently in the cab warning that the attachment increases the overall length of the dipper arm and could therefore impact the cab or boom if care is not taken:



Safety Sticker and Data Plate Location Guide



Specified Parameters

Your Harford Safelock quick hitch has been designed to 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 your Safelock 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 Safelock 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 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.

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

End of Life Considerations

Your Safelock quick hitch is predominantly made of recyclable materials. If your quick hitch should become damaged beyond repair and is to be disposed of, please be aware of the environmentally unfriendly nature of the lubricants and hydraulic fluids used. Please check the cleaning and disposal instructions of the supplier of the contaminants before disposing of the hitch in an environmentally responsible manner.

Compatible Attachments

Attachment	Can be used (up to the safe working load)	Can be used, with limitations	Cannot be used
All Harford Safelock Attachments	<input checked="" type="checkbox"/>		
Buckets	<input checked="" type="checkbox"/>		
Hammer or breaker		For limited periods. For constant or long-term use, the Pro-Lok hitch should be removed to prevent unnecessary wear	
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	<input checked="" type="checkbox"/>		
Ripper Tooth	<input checked="" type="checkbox"/>		
Rake	<input checked="" type="checkbox"/>		



IMPORTANT:

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

Fitting the Safelock coupler to the Excavator



SAFETY NOTICE: It is recommended that safety gloves are worn during the installation of the coupler. It should not be necessary to use excessive force, at any stage of the installation procedure.

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 coupler to the excavator (These pins are usually hardened and greaseable).
2. Position the Safelock coupler within easy operating reach of the excavator.
3. With the crowd link positioned above the rear mounting hole, lower the dipper arm to within 50-75 mm of the top of the Safelock, as shown in Figure 1.
4. Extend the crowd cylinder. Carefully align the crowd link arm between the two rear mounting holes. Replace any 'O' rings that were removed previously and slide one of the original pins through the coupler and crowd link arm. Securely fix the pin in place by using the original retention method.
5. Operate crowd and boom cylinders simultaneously, to slowly raise the hitch and align the front mounting holes as shown in
 . Carefully align the dipper arm between the two front mounting holes. Replace any 'O' rings that were removed previously and slide the other original pin through the coupler and dipper arm. Securely fix the pin in place by using the original retention method.
6. Use the excavator hydraulics to carefully rotate the coupler to the extremes of the crowd cylinder (e.g., no stroke and full stroke). Check the clearance of the Safelock with any part of the dipper arm and linkage.

Figure 1

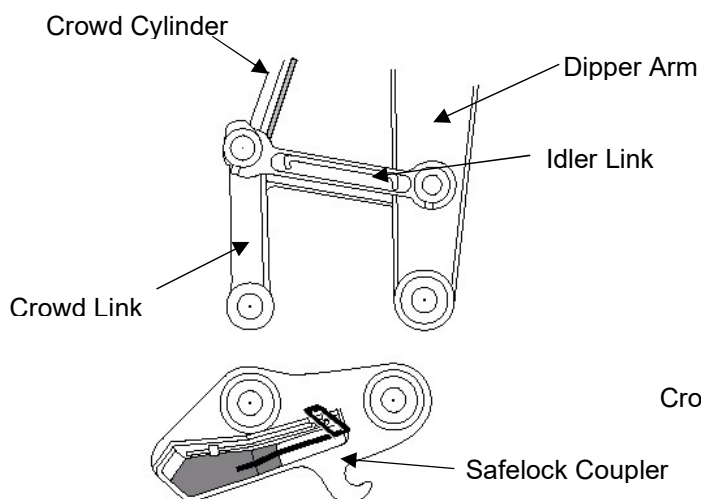
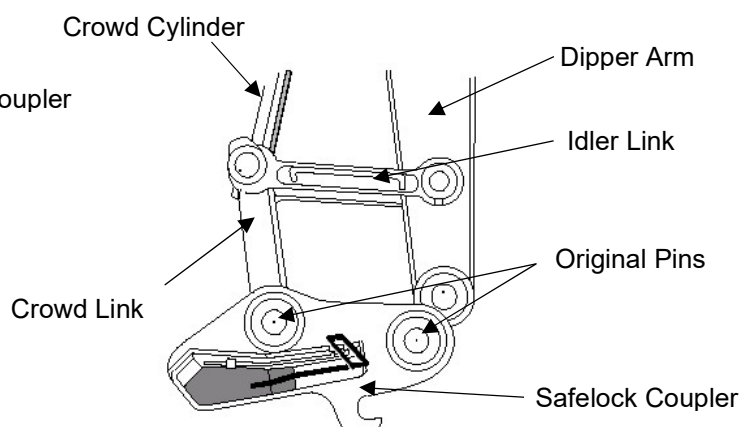


Figure 2





WARNING: During operation there should be no movement between the quick hitch and attachment. If any movement is detected, stop operation immediately, lower attachment to the ground and inspect the hitch.



WARNING: The quick hitch extends the length of the dipper arm and some attachments could hit the cab or boom in certain positions.



WARNING: The quick hitch is designed to accept attachments which are manufactured to OEM specifications and capacities. Oversized attachments could be hazardous when used with this quick hitch and could invalidate any warranties.



WARNING:

Ensure the Safe Working Load of the excavator is not exceeded by the combined weight of the hitch, attachment and load. Refer to the excavator manufacturer's information.



IMPORTANT:

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



IMPORTANT:

The use of pallet forks with this quick hitch is not permitted



IMPORTANT

The operator of the machine should be adequately trained in the quick hitch's safe operation before use.

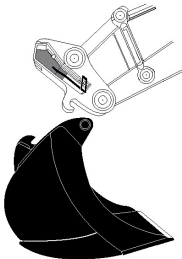
Connecting an Attachment



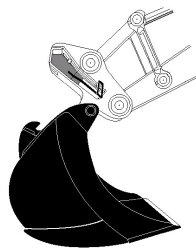
SAFETY NOTICE: It is recommended that safety gloves are worn during the attachment changeover operation.

1. Disengage the safety lock and release the safety handle.
2. Fully open the safety handle.
3. Lower the quick hitch front 'C' shaped jaw down towards the front attachment pin as shown in *Figure 3*, step 1.
4. Engage 'C' shaped jaws with the front attachment pin as shown in *Figure 3*, step 2.
5. Extend the crowd cylinder down towards the rear locking plate and lift the attachment at the same time as shown in *Figure 3*, step 3.
6. Keep extending the crowd cylinder so that the front attachment pin is firmly seated in the 'C' shaped jaw and the Safelock coupler is seated onto the rear locking plate.
7. Close the safety handle against the safety lock. Ensure the attachment is clear of the ground (failure to do so could put undue stress on the front hooks and cause distortion).
8. Engage the safety lock and lock the safety handle.
9. Visually check that the attachment is connected and locked correctly.

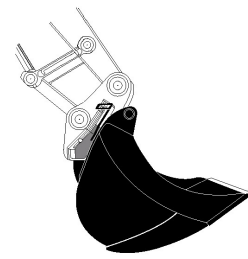
Figure 3



Step 1 – Lower hitch towards front attachment pin



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



Step 3 – Crowd and lift attachment until there is contact with rear locking surface



WARNING: During operation there should be no movement between the coupler and attachment. If any movement is detected, stop operation immediately, lower attachment to the ground and inspect the coupler.



WARNING: The Safelock coupler is designed to pick up attachments which are dedicated to a particular Safelock model (SL ★ ★) and category (★ T), which is shown on data plate. DO NOT use oversized attachments with the coupler as personal injury could occur and the product warranty will be invalidated.



WARNING: Ensure that the Safe Working Load of the excavator is not exceeded. Refer to the manufacturer's operation manual for this information.



IMPORTANT: If hammers are to be used on the excavator for long periods of time, remove the Safelock to prevent unnecessary wear and tear.

Releasing an Attachment

1. Place the attachment on level ground or in a position so that once released the attachment cannot roll away from the coupler. Ensure people and property are well clear of the immediate area.
2. Disengage the safety lock and release the safety handle.
3. Fully open the safety handle.
4. Using the crowd cylinder of the excavator, rotate the Safelock away from the rear locking plate of the attachment and then lift away from the front attachment pin.

Lifting a Load



IMPORTANT: This section only applies to Safelock couplers which are manufactured with a lifting eye as shown in *Figure 4*.

1. Ensure that the load to be lifted does not exceed the safe working load of the lifting eye.
2. The lifting eye is designed to be used with a lifting shackle with the same safe working load rating.
3. Release any attachment from the Safelock coupler prior to using it to lift a load.

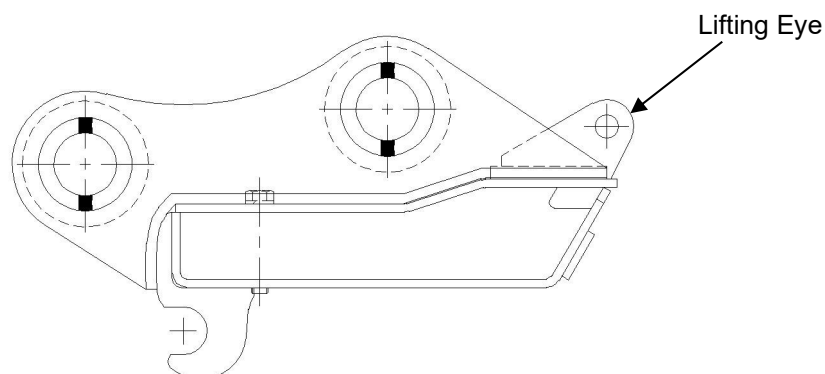


WARNING: Ensure that the safe lifting capacity of the excavator is not exceeded. Refer to the excavator manufacturer's operational manual for this information.



WARNING: If your Safelock 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 unsafe, may lead to damage and will invalidate the warranty.

Figure 4



Maintenance



SAFETY NOTICE:

It is strongly recommended that the Safelock 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, 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:

1. Remove dirt and debris from all moving parts. It is necessary to remove any attachment to gain access to the underside of the coupler.
2. Check all retaining bolts and nuts for tightness on the coupler.
3. Grease the wedge slide housing.
4. Check Safelock coupler for correct operation by connecting an attachment. Ensure there is spring resistance acting on the wedge when locating the safety handle.

Weekly

1. Check the Safelock coupler visually for evidence of fatigue, weld failure or stress.
2. Lubricate pivot points and other moving parts.



IMPORTANT: Due to the self-tightening and infinite wear feature accommodated with the hydraulic cylinder, 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 the continued safety, cease operation immediately and contact Harford Attachments Ltd, Technical Department on Europe: +44 (0)1603 403099, USA: 727 477 3044



WARNING: If the warning buzzer does not sound on machine start-up, please refer to the troubleshooting guide.



IMPORTANT: Any unauthorised modification of the quick hitch and/or associated control systems may compromise the safety of the operator and those nearby, and will invalidate the product warranty.



IMPORTANT: Opening the control box is strongly discouraged as doing so could make the product unsafe and will pass full liability to the end user and invalidate the warranty.

Warranty

Earthmoving Attachment

Harford Attachments Ltd (the seller) warrants their quick hitches as follows:

1. The seller shall repair or replace at the seller's option any of the goods which are, or which become, defective within 12 months from delivery due to faulty workmanship, materials or faulty design, provided that the buyer shall have notified the seller in writing of such defect and have given the seller a reasonable opportunity to inspect the defective goods.
2. If, in the opinion of the seller, the goods have not been operated or maintained in accordance with the instructions in this manual, or have been subject to unauthorised repair or modification, the warranty will be invalidated.
3. The seller's liability in respect of defects in the goods shall be limited to those stated in this clause and subject to Clause 2(1) of the **Unfair Contract Terms Act 1997**, the seller shall not be liable whether in contract or in tort, including but not limited to negligence, or by reason of breach of statutory duty or otherwise, for any damage or loss whatsoever suffered by the buyer arising out of or attributable to such defects.

Example Declaration

Example of declaration that will accompany your Safelock quick hitch

UKCA & EC DECLARATION OF CONFORMITY

Serial Number	D
Description	Excavator Quick Coupler
Name	Safelock
Denomination	SL
Type	Pin on
Model	Mechanical
Function	Manual

We hereby declare that the above Machinery complies with the essential health and safety requirements of the Machinery Directive 2006/42/EC enacted in the United Kingdom by The Supply of Machinery (Safety) Regulations 2008, (SI 2008/1597).

This machinery has been designed and manufactured in accordance with the following harmonised European standards.

BS EN 12100:2010	Safety of machinery-General Principles for Design – Risk Assessment and Risk Reduction Supersedes: EN ISO 12100-1:2003, EN ISO 12100-2:2003 & EN ISO 14121-1:2007
BSEN 474-1:2006 +A6:2019	Earth-Moving Machinery – Safety Pt 1 General Requirements Pt 5 Requirements for hydraulic excavators.
BSEN 14121:2007	Safety of machinery. Risk Assessment. Pt 1 Principles.
ISO 13031	Earth Moving Machinery – Quick Couplers – Safety
BS ISO 6750-1:2019	Earth-Moving Machinery – Operator's Manual Pt 1 Principles.

Signed	_____	Date	_____
Name	_____	Position	_____