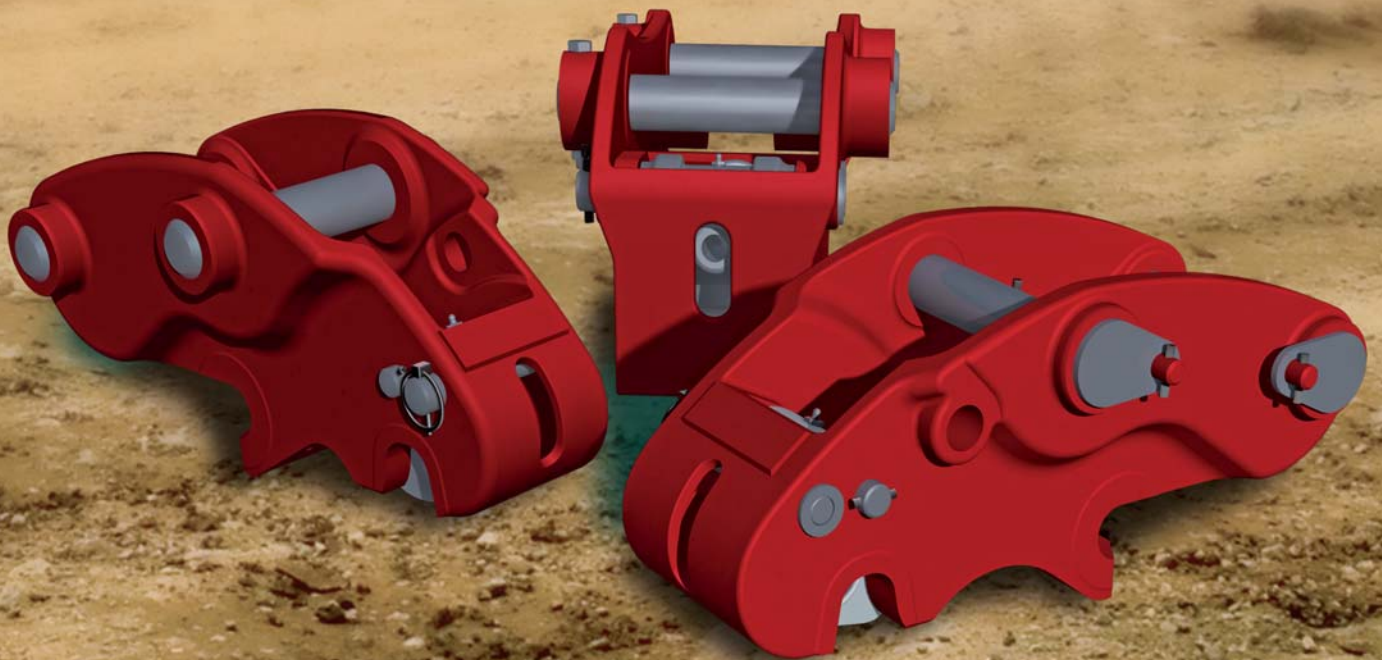




Miller Compact Manual Quick Couplers

For Mini Excavators (1 to 10 tonne) and Backhoe Loaders



Installation Guide and Operator's Instructions

IMPORTANT

Keep this manual with the machine at all times.
Refer to it during and after coupler installation.



CONTENTS

A Miller Compact Manual Quick Coupler provides safe, easy and reliable changeover of standard OEM buckets and attachments.

This manual describes the installation, operation, maintenance and safety procedures for Miller Compact Manual Quick Couplers. Please take the time to read the instructions carefully and follow the recommended procedures.

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PRODUCT INFORMATION

The Miller Compact Manual Quick Coupler is a durable, low maintenance quick coupler designed to provide fast, efficient, clean, on-site changeover of attachments. It is intended for use with mini excavators, midi excavators and backhoe loaders.

The Compact Quick Coupler operates with standard OEM buckets and a variety of attachments including hydraulic breakers. It can also be used as a safe and reliable lifting tool (see page 10).

As it is a manual quick coupler, attachments **MUST** be locked and released from **OUTSIDE** the cab using the coupler operating handle, locking pin and lynch pin provided.

For mini and midi hydraulic excavators Miller has also produced a unique bucket range to improve life on-site. The Digging & Loading Scoop, Trenching Scoop, Ditch Cleaning Bucket and Vertical Wall Bucket make up the Task Bucket Range. The combination of Miller Quick Coupler and Task Bucket Range can greatly enhance machine efficiency and versatility with the added bonus of potential cost savings.

The Miller task bucket range



IDENTIFICATION

The Data Plate attached to the coupler contains the details of the product type, weight, date of manufacture, safe working load (for lifting) and serial number (see example on the right).

MILLER®	
COUPLER TYPE	
SERIAL No.	
PART No.	
WEIGHT	SWL
KG	
MANUFACTURE DATE	
CE	
MADE IN CHINA BY MILLER WWW.MILLERGROUNDBREAKING.COM	



MINI EXCAVATORS AND BACKHOE LOADERS

The cost effective Miller Compact Quick Coupler is available for mini excavators (1 to 10 tonne) and backhoe loaders. This coupler is operated in exactly the same way on both machine types. It is attached and released manually, eliminating the need for hydraulic hoses and reducing installation costs.

The Miller Compact Quick Coupler is cast from high grade steel to produce a lighter, stronger and more durable design. This coupler provides quick and clean attachment changeover and the lighter weight product enhances machine efficiency and reduces fuel consumption.



Miller Compact Coupler on a Mini Excavator



Miller Compact Coupler on a Backhoe Loader



GENERAL SAFETY INFORMATION & PROCEDURES



WARNING

Use of the Miller Compact Manual Quick Coupler may allow the machine operator to fit buckets which are beyond the excavator's designed capacity (e.g. oversized tools, buckets or equipment). DO NOT exceed the operating capacity of the excavator, otherwise it may become unstable and/or dangerous.

Please ensure you have read and understand the following safety information and procedures before installing and operating the Miller Coupler.

Miller Compact Couplers must be installed and operated by appropriately trained and experienced personnel. Miller can provide an installation service and operator training if required. Please contact Miller and/or an authorised distributor for details.

Miller cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual and on the product are, therefore, not exhaustive. Before you use a tool, procedure, work method or operating technique not specifically recommended by Miller, you must satisfy yourself that it will be safe for you and for others. You should also ensure that the product will not be damaged or be made unsafe by the operation, lubrication, maintenance or repair procedures that you choose. It is the owner's and operator's responsibility to ensure the coupler is maintained in a safe working condition.

Field service personnel and operators must be fully conversant with the installation and operating procedures. If in doubt, seek advice.

Coupler condition

DO NOT operate a coupler that is defective: it may injure you or others.

Locking pin

Before operating the coupler ALWAYS ensure the locking pin and lynch pin are fitted correctly.

Machine operation

ALWAYS stop and shut off the engine when leaving the machine.

NEVER keep the machine running whilst installing or servicing the coupler.

Safety shutdown procedure

Work of any type on machinery is always more dangerous when the machine is operating. Before cleaning, lubricating or servicing the coupler, go through this safety shutdown procedure:

- 1 Position the coupler so that it is completely resting on the ground.
- 2 Move the machine's throttle to slow idle, shut the engine off and remove the ignition key.

Protective clothing

ALWAYS wear safety gloves during installation and dismantling.

Manual handling

Take CARE when manually handling the coupler, its components, buckets and installation pins.



COMPONENT PARTS AND TOOLS REQUIRED

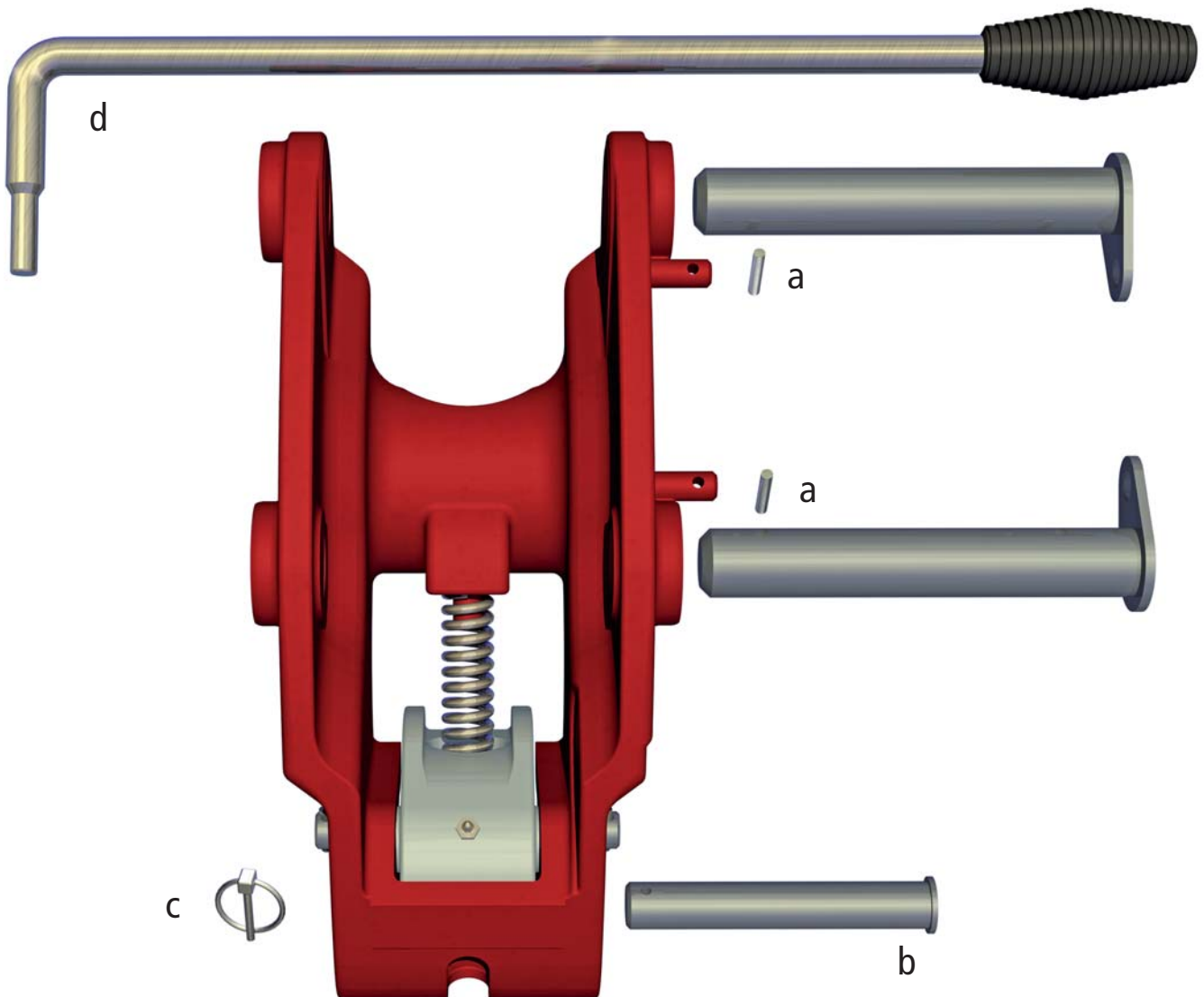
Compact Couplers installed using roll pins

This Coupler is supplied with:

- a 2 x roll pins (to secure bucket pins)
- b 1 x locking pin (for securing attachments)
- c 1 x lynch pin (to secure locking pin)
- d 1 x coupler operating handle

Tools required for installation
(not supplied with the coupler):

- Grease gun
- Mallet (to fit roll pins)



COMPONENT PARTS AND TOOLS REQUIRED

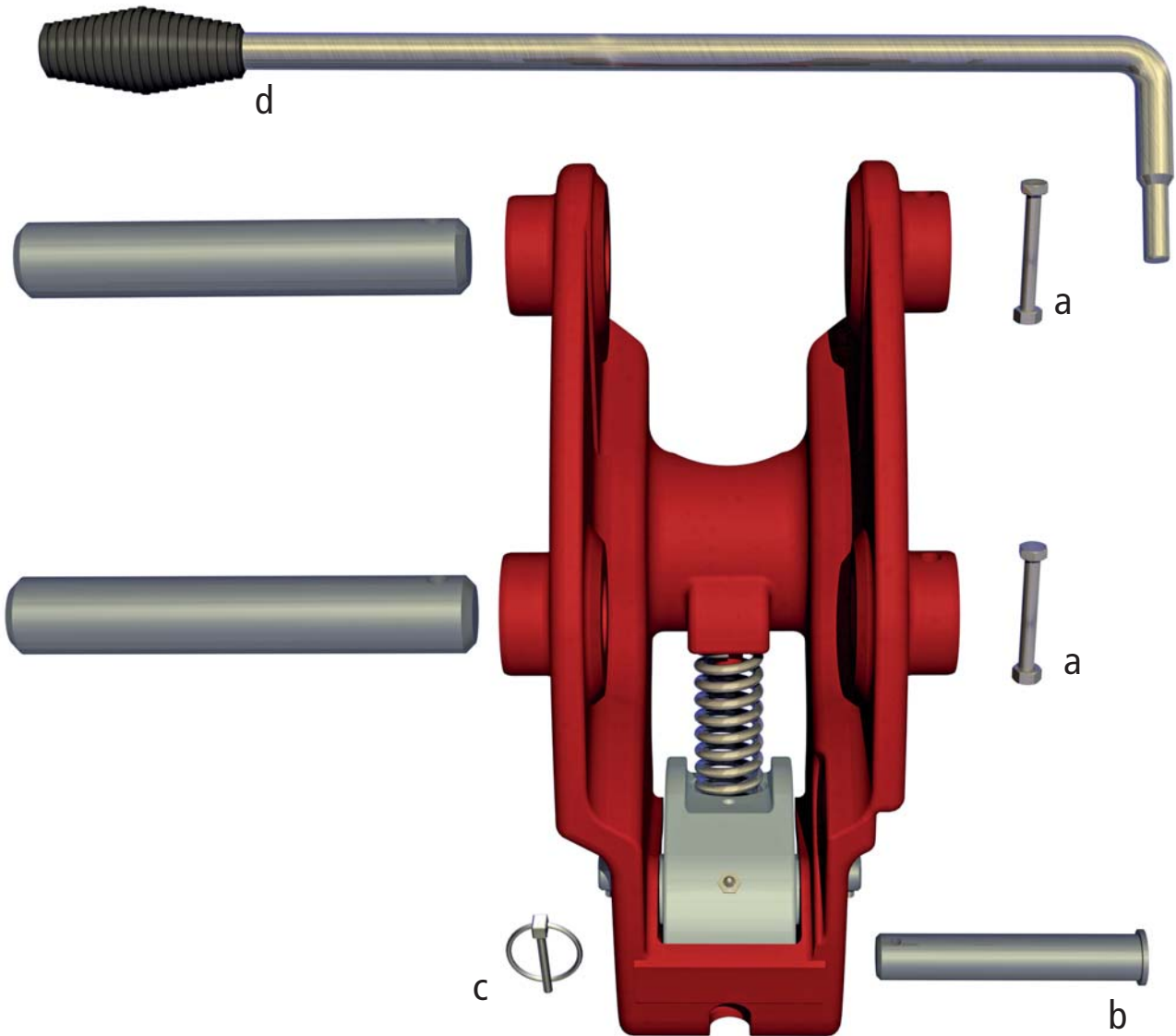
Compact Couplers installed using nuts and bolts

This Coupler is supplied with:

- a 2 x bolts and nuts (to secure bucket pins)
- b 1 x locking pin (for securing attachments)
- c 1 x lynch pin (to secure locking pin)
- d 1 x coupler operating handle

Tools required for installation
(not supplied with the coupler):

- Grease gun
- Spanner (to fit bolts and nuts)



COUPLER INSTALLATION AND REMOVAL - ROLL PINS

Installation

Step 1

Place coupler on the ground. Fit O-ring seals where required (place O-ring seals over the edge of the coupler and ensure they do not enter the pin bore or are damaged when the power link is lowered). Align machine power link with coupler link bore.



Step 2

Insert machine pin through coupler link bore and machine power link bore and slot over lugs.



Step 3

Fit O-ring seals where required (place O-ring seals over the edge of the coupler and ensure they do not enter the pin bore or are damaged when the machine dipper is lowered). Align machine dipper with coupler dipper bore.



Step 4

Insert machine pin through coupler dipper bore and machine dipper bore and slot over lugs.



Step 5

Insert roll pins through lugs to retain machine pins (see inset). Grease as required. Grease coupler hook via grease nipple.



Removal

Position the coupler so it is resting on the ground and switch off the machine. Remove roll pins and slide out machine pins, taking care not to damage O-ring seals. Restart machine and carefully lift machine power link away from the coupler. Refit machine pins, O-ring seals and roll pins to the coupler. Remove excess dirt and grease and lubricate all moving parts before safely storing the coupler undercover.



COUPLER INSTALLATION AND REMOVAL - NUTS & BOLTS

Installation

Step 1

Place coupler on the ground. Fit O-ring seals (place O-ring seals over the edge of the coupler and ensure they do not enter the pin bore or are damaged when the power link is lowered). Align machine power link with coupler link bore.



Step 2

Insert coupler machine pin through coupler link bore and machine power link bore.



Step 3

Fit O-ring seals (place O-ring seals over the edge of the coupler and ensure they do not enter the pin bore or are damaged when the machine dipper is lowered). Align machine dipper with coupler dipper bore.



Step 4

Insert coupler machine pin through coupler dipper bore and machine dipper bore.



Step 5

Insert bolts through coupler and machine pins. Insert nuts onto bolts and tighten (see inset). Grease as required. Grease coupler hook via grease nipple.



Removal

Position the coupler so it is resting on the ground and switch off the machine. Remove bolts and slide out machine pins, taking care not to damage O-ring seals. Restart machine and carefully lift machine power link away from the coupler. Refit machine pins, O-ring seals, bolts and nuts to the coupler. Remove excess dirt and grease and lubricate all moving parts before safely storing the coupler undercover.



OPERATION - SAFETY INFORMATION & PROCEDURES

Maintenance work

Maintenance of the coupler must ONLY be carried out by competent personnel.

Machine pins

Flying metal splinters can cause injury when hammering machine pins in and out.

ALWAYS wear safety glasses and use a soft-faced hammer or drift when fitting and removing machine pins.

Lifting

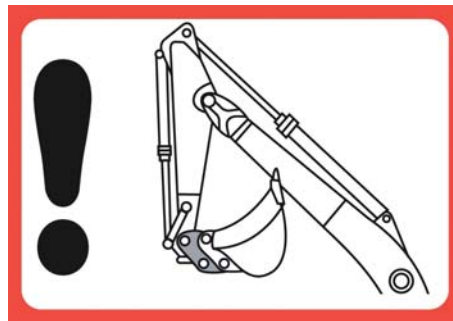
ALWAYS use the correctly rated shackle and lifting equipment. NEVER use worn, damaged or undersized lifting equipment.

Modification and welding

Non-approved modifications can make your coupler unsafe, leading to injury and damage. Please call Miller for advice and service requirements.

Machine cab safety

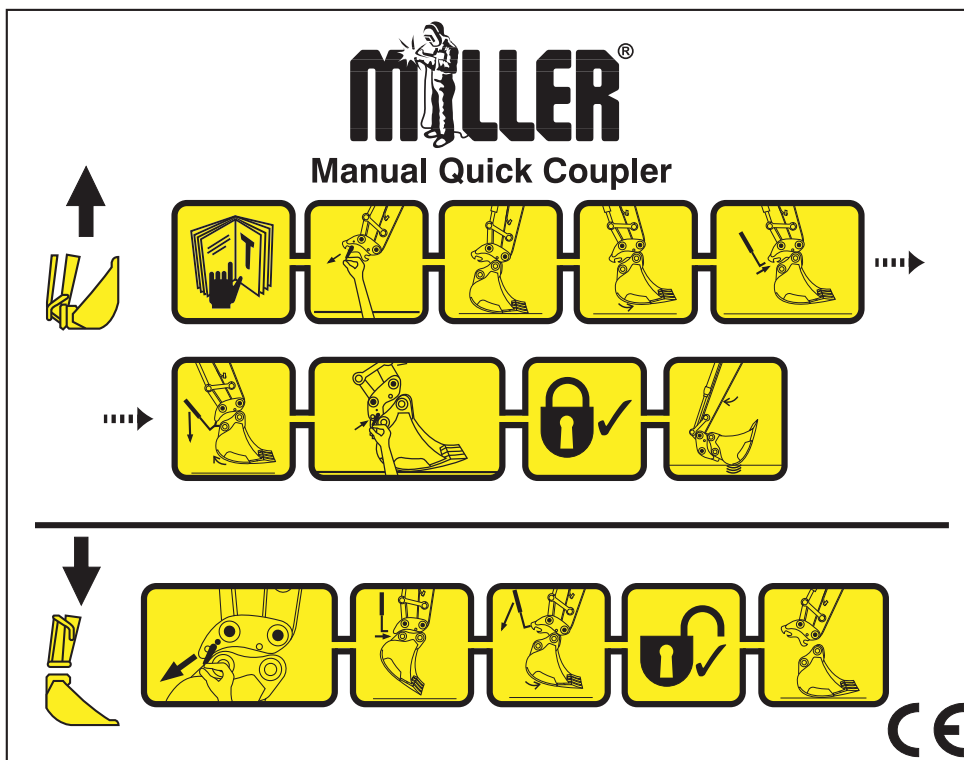
Because quick couplers extend the length of the dipper arm some attachments could hit the cab or dipper arm in some positions. Check this before operating the machine.



Example of warning decal

Decals

To ensure the safe operation of the quick coupler place the coupler decals in the machine cab where they can be seen clearly. Replace unreadable or missing decals with new ones before operating the machine.



Example of attach & release decal



OPERATION - ENGAGING & LOCKING ATTACHMENTS

The engaging and locking procedure is the same for all the Miller Compact Manual Quick Couplers. The example below shows the procedure to attach a bucket.

Step 1

Lower the coupler and engage the front bucket pin.



Step 2

Lift the bucket slightly off the ground. Rotate the bucket towards the cab until the back bucket pin bears against the hook. Insert the coupler operating handle into the hole at the back of the coupler.



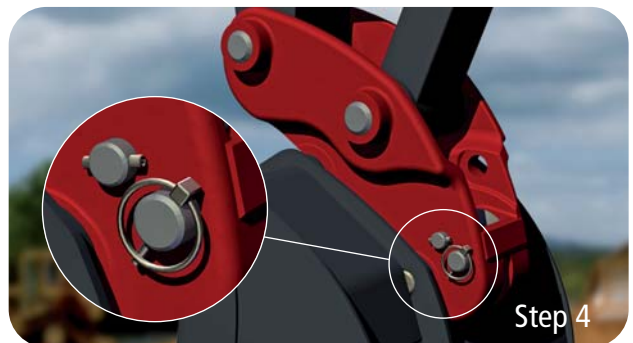
Step 3

Press down on the coupler operating handle to open the hook. The weight of the bucket drives the back bucket pin into the back socket of the coupler. Engage the hook by taking pressure off the coupler operating handle. Remove the coupler operating handle.



Step 4

Insert the locking pin and secure in place using the lynch pin (see inset).



Step 5

Check the bucket pins are securely held by the coupler. Apply pressure to the bucket by rotating it against the ground and away from the machine.



OPERATION - GENERAL PROCEDURES

Moving buckets and attachments

Always complete the engaging and locking procedure in full even if you are only moving a bucket from one location to another.

Demolition attachments & work tools

The Miller Compact Manual Quick Coupler can be used with hydraulic breakers and work tools of appropriate pin spread and weight. DO NOT use a tool which is beyond the tonnage class specified by Miller.

Always use breakers in the vertical position. NEVER use the breaker as a lever. When used with a breaker the coupler should be inspected frequently. DO NOT use a breaker continuously for long periods without regular inspections of all moving parts.

If the hydraulic breaker is to be used continuously for long periods of time it should be mounted directly to the machine, not to the coupler.

Lifting with the coupler (where applicable)

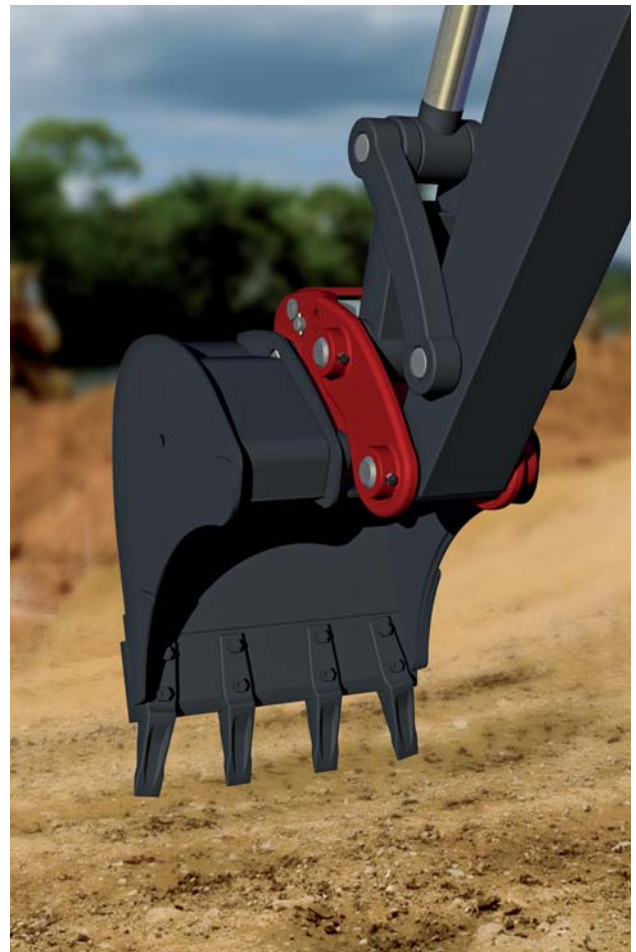
Most compact couplers incorporate an integral and certified lifting eye. The safe working load (SWL) is stamped on the data plate, you may also find it on the coupler frame next to the lifting eye.

Loads must not exceed the SWL limit of the coupler or the lifting capability of the machine.

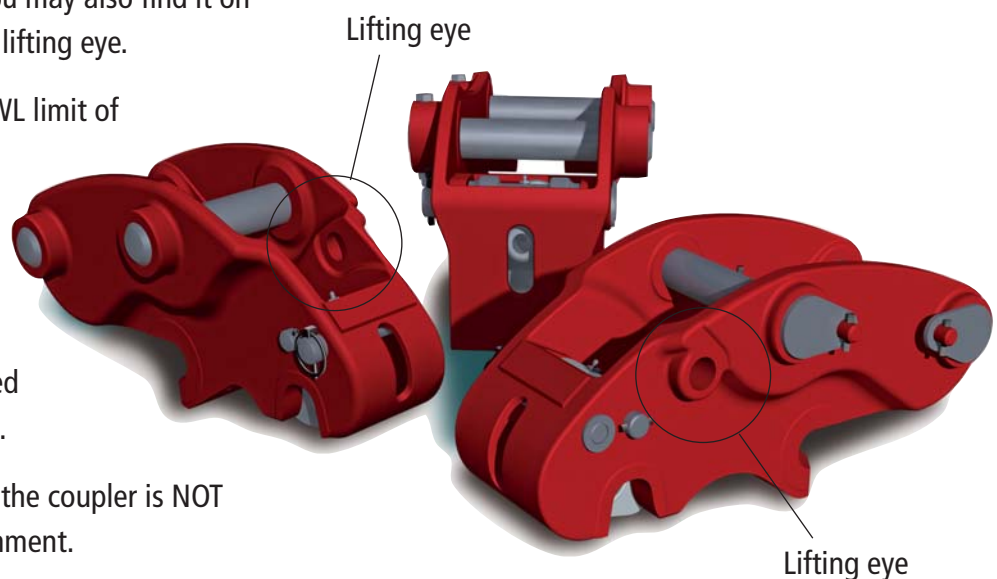
ALWAYS lift with the coupler in a vertical position.

ALWAYS use the correctly rated shackle and lifting equipment.

Only use the lifting eye when the coupler is NOT engaged to a bucket or attachment.



A bucket safely engaged by the coupler



OPERATION - THINGS TO AVOID

The Miller Compact Manual Quick Couplers must ONLY be used in accordance with the instructions in this manual. Miller will not be liable for any accidents or damage which result from bad working practices. The guidance below is applicable to all Miller Compact Manual Quick Couplers.

AVOID incorrect use of coupler to pick up and move attachments, for example:

- moving attachments with only the front jaw (A).
- lifting attachments using only the hook.
- nipping or jamming the rear pin with the hook.

AVOID using the jaw as a lifting tool or hammer, for example:

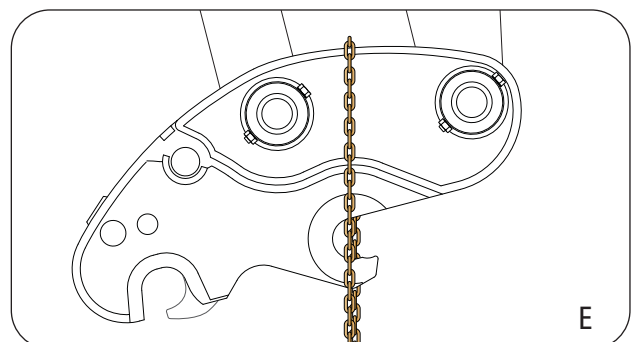
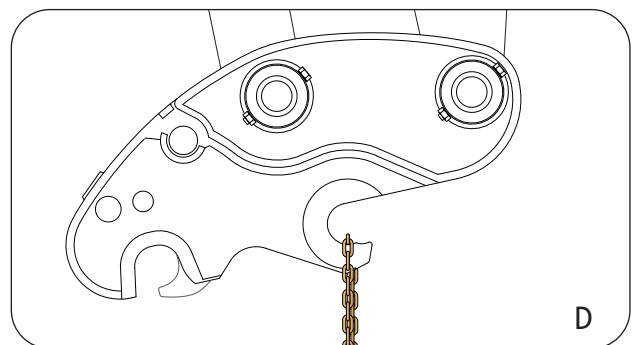
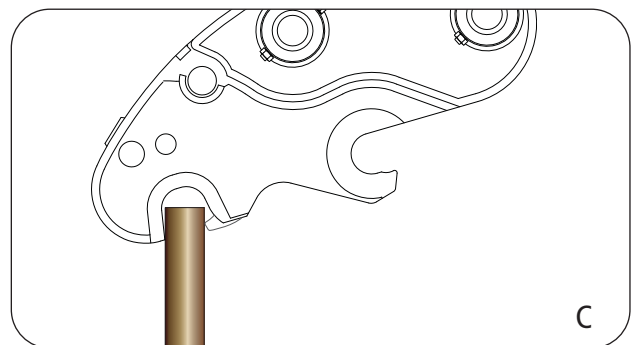
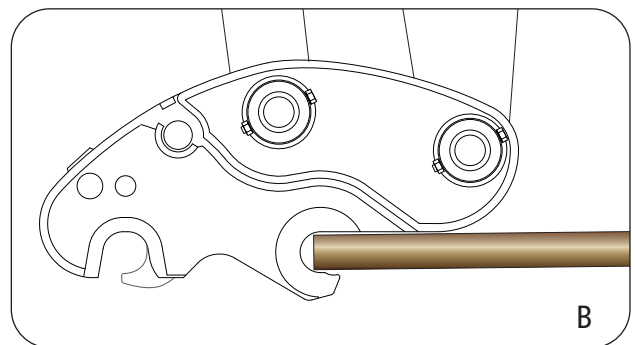
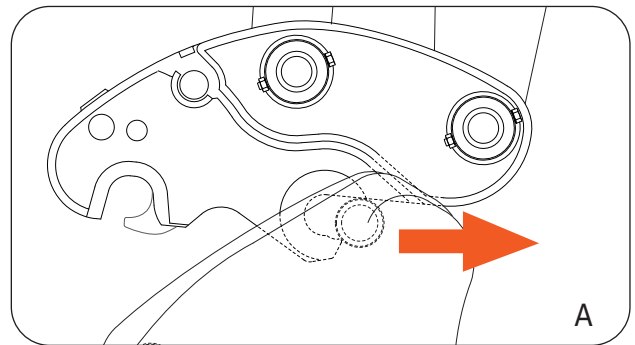
- moving items held in the jaw (B);
- using the jaw to hammer items into the ground.

AVOID using the hook to lift and manoeuvre items, for example:

- moving items using the hook;
- positioning items gripped with the hook (C).

AVOID incorrect use of the coupler to pick up items, for example:

- using the jaw to pick up items using chains (D);
- using the corner of the jaw to pick up items using chains;
- using the hook to pick up items using chains;
- using the coupler body to pick up items using chains (E);
- using the dipper arm to pick up items using chains.



OPERATION - RELEASING ATTACHMENTS

The releasing procedure is the same for all the Miller Compact Manual Quick Couplers. The example below shows the procedure to release a bucket.

Step 1

Raise the bucket slightly off the ground (about 50mm) and slightly angle the bucket teeth towards the ground - this will allow the bucket to rotate away from the rear pin after the coupler operating handle has released the hook.

Remove the lynch pin which secures the locking pin. Remove the locking pin.

Step 2

Insert the coupler operating handle into the hole at the back of the coupler.

Step 3

Press down on the coupler operating handle to disengage the hook and release the rear bucket pin. The bucket will swing forward on the front bucket pin.

CAUTION - the bucket is now engaged by the front pin only and may fall.

Remove the coupler operating handle.

Step 4

Lower the bucket to the ground. Rotate the coupler away from the cab to release the front bucket pin.



MAINTENANCE

Maintenance work must only be done by competent personnel. If in doubt contact the Miller service department.

Coupler condition

DO NOT operate a coupler that is defective or that you believe to be defective. A defective coupler could injure you or others.

Replacement Parts

Fit only genuine Miller replacement parts. When ordering parts, quote the coupler serial number stamped on the Data Plate (see Identification on page 01).

MAINTENANCE SCHEDULE

To ensure that your quick coupler works safely and to maximum efficiency it is imperative that it is properly maintained in accordance with the following service schedule and guidelines.

DAILY

1. Thoroughly clean the coupler.
2. Check the coupler for damage, missing parts, loose or bent pins and broken or damaged springs. Replace any missing, broken or damaged parts immediately.
3. Check the spring for defects and that the bolts are tight. DO NOT operate the coupler if any parts are damaged or broken.
4. The gap between the back of the hook and the locking pin should not exceed 1mm. If it does check the wear on the rear horseshoe of the coupler, build up with weld and grind to original profile.
5. Check the security of the machine pins or roll pins, locking bolts and nuts. Check for wear in and around all pin holes.
6. Check the locking pin is undamaged and in place. Replace if bent or faulty. Check that all pins are securely fastened. Replace if necessary.
7. Grease all grease points with general purpose chassis grease.

WEEKLY (AT LEAST once per week)

1. Lubricate. Ensure that all grease points are greased regularly (at least once a week) and that moving/rotating parts are lubricated and can move/rotate freely. Apply grease to the hook via the grease nipple.
2. Release the bucket/attachment (refer to the operation instructions).
3. Where applicable, check lifting eye is undamaged.

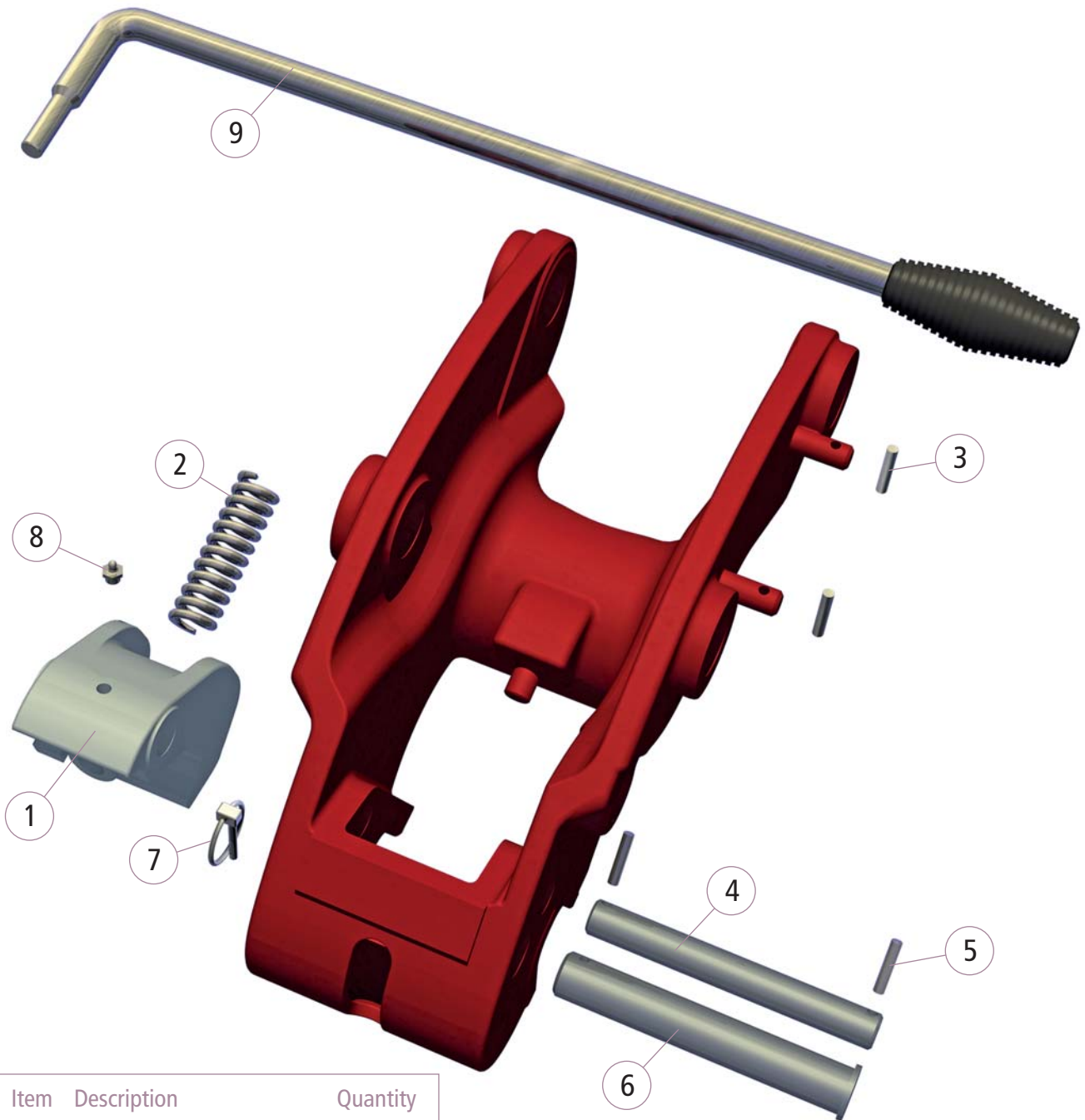
Trouble shooter

If a bucket appears slack on a coupler after the above schedule has been carried out, check the bucket pin diameter and that the OEM dimensions are both correct (especially the pin centre).

Contact Miller if you need further assistance.



PARTS LIST - Compact couplers using roll pins

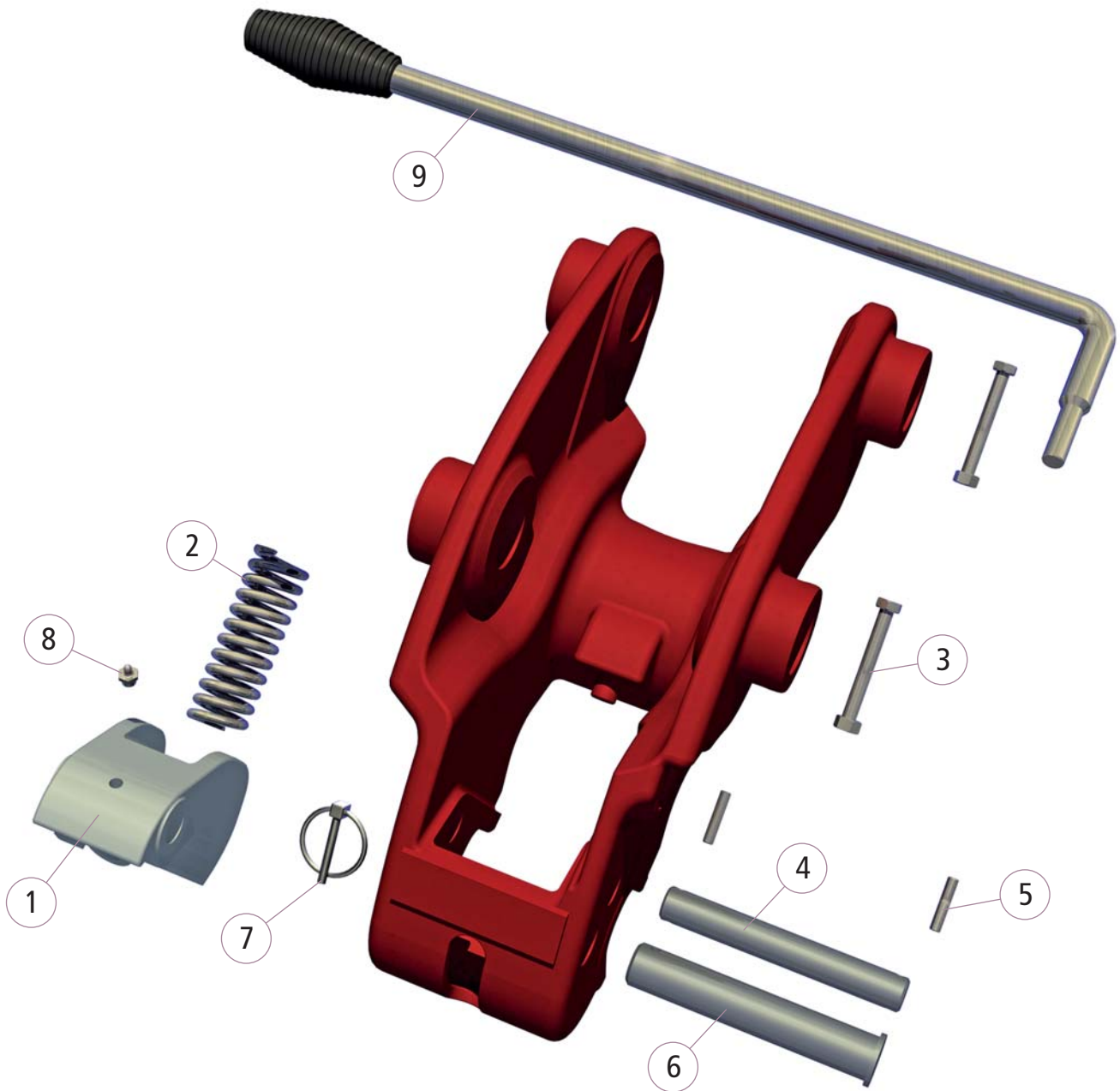


Item	Description	Quantity
1	Hook	1
2	Spring	1
3	Roll pin	2
4	Hook pin	1
5	Roll pin	2
6	Locking pin	1
7	Lynch pin	1
8	Grease nipple	1
9	Coupler operating handle	1

For part numbers and parts information on all items within the coupler assembly, contact your supplying dealer.



PARTS LIST - Compact couplers using nuts and bolts



Item	Description	Quantity
1	Hook	1
2	Spring	1
3	Bolt and nut	2
4	Hook pin	1
5	Roll pin	2
6	Locking pin	1
7	Lynch pin	1
8	Grease nipple	1
9	Coupler operating handle	1

For part numbers and parts information on all items within the coupler assembly, contact your supplying dealer.



WARRANTY

The warranty period is twelve (12) months from date of delivery to the first user, or eighteen (18) months from date of shipment ex-works MILLER, whichever is the sooner.

Limitation of Liability

Miller SHALL NOT BE liable for or in respect of:

1. Repair or replacement of (i) any normal wearing parts, (ii) any ageing or deterioration caused by foreign substances or by exposure to the natural elements or (iii) any consumable items, such as oil, grease etc.
2. Any cost of repairs, alterations or re-placements made by, or any expenses connected therewith incurred by, anyone other than Miller or its authorised distributor.
3. Any warranted product which has been subjected to:
 - (a) Misuse, improper operation or misapplication, including but not limited to operation beyond the rated capacity expressly prohibited by the manufacturer of the prime moving machine, as shown in the operator's manual or rated capacity charts furnished with the prime moving machine.
 - (b) Neglect, including but not limited to (i)improper maintenance and storage, (ii)use of the product while any parts are loose, broken or out of order.
 - (c) Accident.
 - (d) Improper or unauthorised installation, adjustment, repair or alteration, including but not limited to (i) adjustment or assembly procedures, not recommended or authorised in the installation guide and operator's instructions.,
 - (ii) use of unauthorised parts or attachments, (iii) unauthorised modification or alteration.

Miller shall be liable only for repair or replacement of parts as described under 'warranty coverage', and Miller shall not be liable, whether under breach of warranty, negligence or strict liability, for any other injury, loss, damage or expenses, whether direct or consequential, including but not limited to loss of use, income, profit or production, increased cost of operation, or spoilage of or damage to material.

Alterations

Miller reserves the right to make alterations or modifications to its products and literature at any time, which in their opinion may improve the performance and efficiency of the product. Miller shall not be obliged to make such alterations or modifications to products already in service.

The foregoing warranty is exclusively and in lieu of all other warranties, including warranties concerning merchantability or fitness for a particular purpose, which are expressly disclaimed, whether written, oral, express or implied.

Miller assumes no other obligations or responsibility with respect to the products whatsoever, and no employee or representative is authorised to change or extend this warranty in any way or grant any other warranty whatsoever.



REFERENCES

BS 6031:1981

'Code of practice for earthworks'

BS 8000-1:1989

'Workmanship on building sites.

Code of practice for excavation and filling'

BS EN 474-1:2006

'Earth-moving machinery. Safety.

General requirements'

BS EN 474-5:2006

'Earth-moving machinery. Safety.

Requirements for hydraulic excavators'

TECHNICAL SUPPORT

Miller can provide free advice and assistance.

For service assistance:

telephone **01670 707 272**

or email info@milller.gb.com

For parts assistance:

telephone **01670 707 272**

or email info@milller.gb.com

For general enquiries:

telephone **01670 707 272**

or email info@milller.gb.com



CONTACT MILLER

Telephone: +44 (0) 1670 707 272

Fax: +44 (0) 1670 707 474

E-mail: info@millergb.com

Web: www.millergroundbreaking.com



INVESTOR IN PEOPLE

