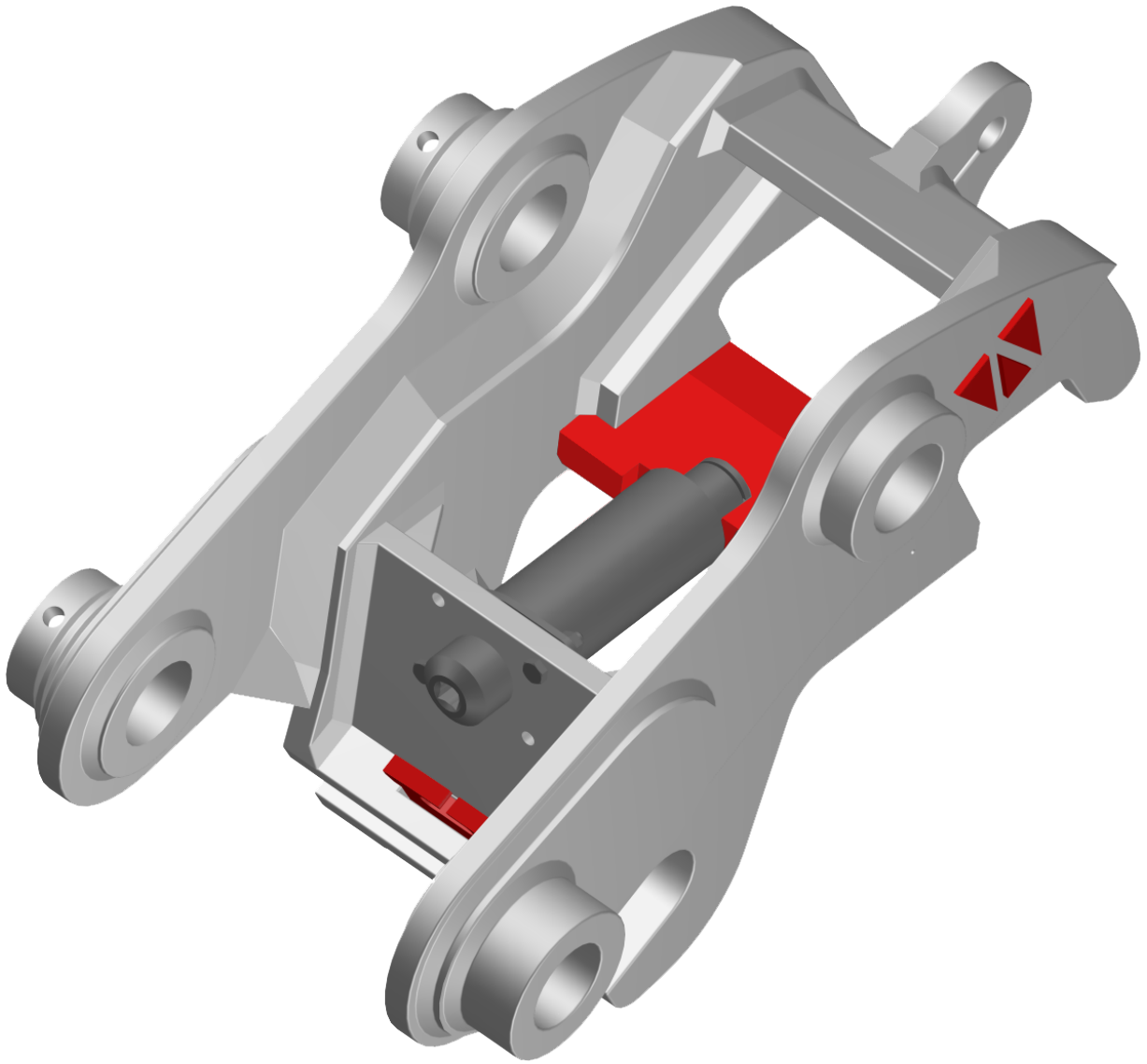


MECHANICAL COUPLER

Operators Manual



THIS OPERATORS MANUAL MUST BE KEPT WITH THE CARRIER MACHINE AT ALL TIME

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INTRODUCTION

OUR FOCUS IS....

THE OPERATOR, because operators and their co-workers deserve safer work sites

OUR PURPOSE....

Transforming the world's excavators into highly productive, safe and user-friendly tool carriers.

OUR VALUES....

PIONEERING, we are continually pushing in new directions. We are building a reputation as the industry innovators through constantly looking for ways to make excavator operators' lives better. And we look to new opportunities in new markets, reaching customers that others don't.

COMMITTED - we are committed to our customers, our people, our community and New Zealand. We are committed to the cause of simple, user-centric design and we are committed to safety, without compromise.

COLLABORATIVE - we maximize the value we add to our customers' business by working in active, collaborative partnerships. We are onside: we take time to listen, we encourage honest dialogue, we look for opportunities on their behalf, we think proactively as well as responsively.

COURAGEOUS - we are bold and intrepid in our quest for earth-moving innovation. We do not turn back at the first hurdle. We are determined (the earth wasn't moved in a day!) Our attitude is robust and our product testing rigorous. We honour the Kiwi pioneering spirit and are proud to uphold it.

FAMILY - we believe people need to be treated as they are family. We look to build long-term relationships both internally and externally through an honest, down-to-earth approach. We believe business success is crucial – but not at the expense of people.

OUR MISSION....

CREATING HUMAN ATTACHMENTS

A business that builds stronger, more enduring human relationships

A business that creates uniquely user-centric products

The Wedgelock Quick Coupler was originally developed by Graham Calvert at Waikanae Engineering, NZ in 1987. The company and its reputation have since grown into a global leader in the design, manufacture and distribution of excavator attachments

Over the years Wedgelock has developed a complete range of excavator attachments to cater for machines from 1 tonne to 100 tonne. Spearheading the range is the I-Lock™ Coupler.

Changes in law and safety standards have piloted the design and development of the I-Lock™ Coupler, a world first in coupler safety. The I-Lock™ Coupler incorporates all the original features of a standard Wedgelock Hydraulic Coupler but with the added I-Lock™ Safety System.

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Congratulations on your purchase of the WedgeloK Mechanical Coupler. You have just bought the **SAFEST** mechanical coupler in the world.

1.0 MECHANICAL COUPLER SAFETY FEATURES

There are several important safety features that are an integral part of the WedgeloK Mechanical Coupler. Each safety feature removes the possibility of inadvertently disengaging an attachment that is connected to the quick coupler.

The simplicity of the primary locking wedge that is fully adjustable ensures that the attachment is securely and safely connected to the quick coupler after every attachment change.

1. The WedgeloK Mechanical Coupler is operated by means of a ratchet spanner. Using the ratchet spanner to tighten the threaded actuator enables the operator to generate extreme locking forces on the rear pin of the attachment. The locking integrity and engineering principles of a thread mechanism operating inside the WedgeloK Mechanical Coupler ensures the connection between the coupler and the attachment stays tight.
2. The patented “anti-unwind” threaded actuator ensures that the locking mechanism remains firm and tight during normal operation. This threaded actuator can be easily adjusted and maintained.
3. The “Wedge Locking Principle” used in all WedgeloK couplers sold worldwide is utilized in this Mechanical Coupler. This locking principle creates a force 4.5 times greater than that applied to the threaded actuator creating an extremely positive and safe locking device.
4. A secondary “Safety Lock” inserted through the front jaw of the coupler mechanically, closes the front aperture which captures the front pin. This will ensure that the attachment cannot fully detach should there be any failure of the primary locking wedge during operation.

1.1 SAFE COUPLER USE



Your WEDGELOCK MECHANICAL COUPLER will extend the overall length of the dipper arm. **ATTACHMENTS MAY HIT THE CABIN AND OR BOOM**



Your WEDGELOCK MECHANICAL COUPLER may enable the operator to use buckets and attachments for which it is not designed, i.e. oversized buckets or attachments.

ONLY USE ATTACHMENTS THAT ARE DESIGNED SPECIFICALLY FOR THE HOST MACHINE.



Never place your hands inside the coupler or anywhere near the linkage mechanism whilst the hydraulic system is pressurized or the carrier machine is turned on.



Never use the Primary Locking Wedge or Secondary Safety Bar as a lifting device.

FOR INFORMATION RELATING TO “SAFE LIFTING PROCEDURES” REFER TO SECTION 5 OF THIS MANUAL.



Always fully engage the coupler to the bucket or attachment even if you just want to lift or move the attachment to a different position on your work site



Any damage deemed by Wedgeloock to have been caused by operator mis-use will invalidate the manufacturers warranty.

CONNECTING AN ATTACHMENT

2.0 CONNECTING TO THE FIRST PIN

Operator Action

- Using the excavator arm control levers move the front c-section (front jaw) of the coupler over the first pin (front pin) of the attachment. Seat the first pin into the c-section. (Fig 2.0.1)

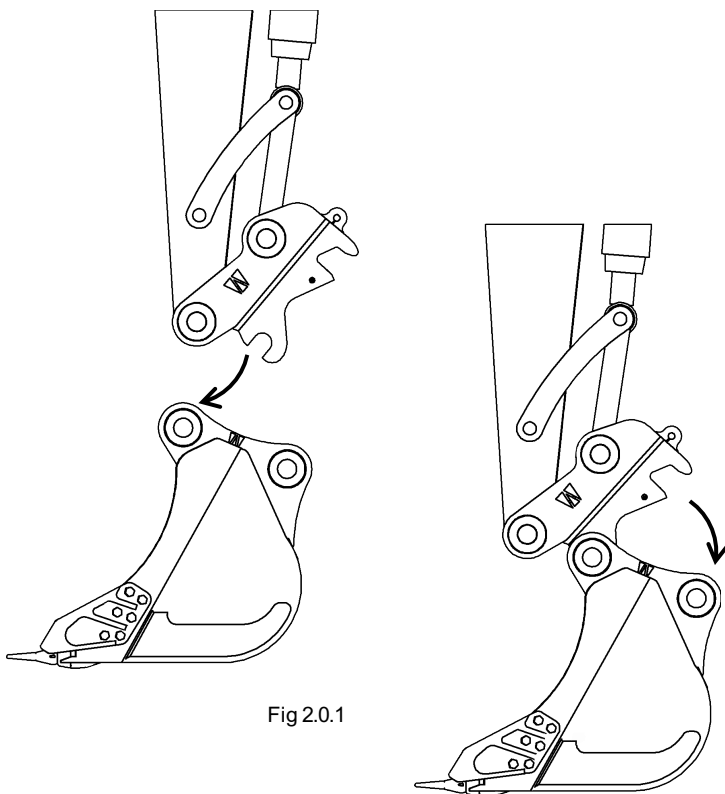


Fig 2.0.1

2.1 CONNECTING TO THE SECOND PIN

Operator Action

- Using the excavator arm control levers simultaneously lift and crowd the attachment until the second pin (rear pin) is seated in the rear jaw section (Fig 2.1.1)
- Using the operating ratchet spanner, tighten the threaded actuator in a clockwise direction until the primary wedge is securely wedged under the second pin. Check that the attachment is connected correctly
- Insert the secondary Safety Lock and retain as required – see Fig 2.2.1 & 2.2.2

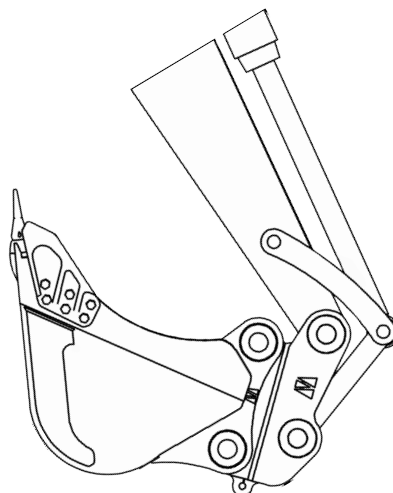


Fig 2.1.1



WARNING – There should be no movement between the Quick Coupler and the attachment pins.

2.2 FITTING THE SAFETY LOCK

There are two different styles of “Safety Lock” that are provided with the Wedgelo Mechanical Couplers.

1. The “Drop-Lock” style inserts from above the c-section through the safety lock slot. The retention of the drop-lock is by means of inserting a lynch pin through the hole on the drop-lock. (Fig 2.2.1)
2. The “Up-Lock” style inserts from below the c-section through the safety lock slot. The retention of the up-lock is by means of inserting a lynch pin through the safety lock spigot. (Fig 2.2.2)

Operator Action

- Insert the secondary Safety Lock through the safety lock slot on the front c-section of the coupler. Fit the lynch pin to retain the safety lock. As per In-cab decals below.

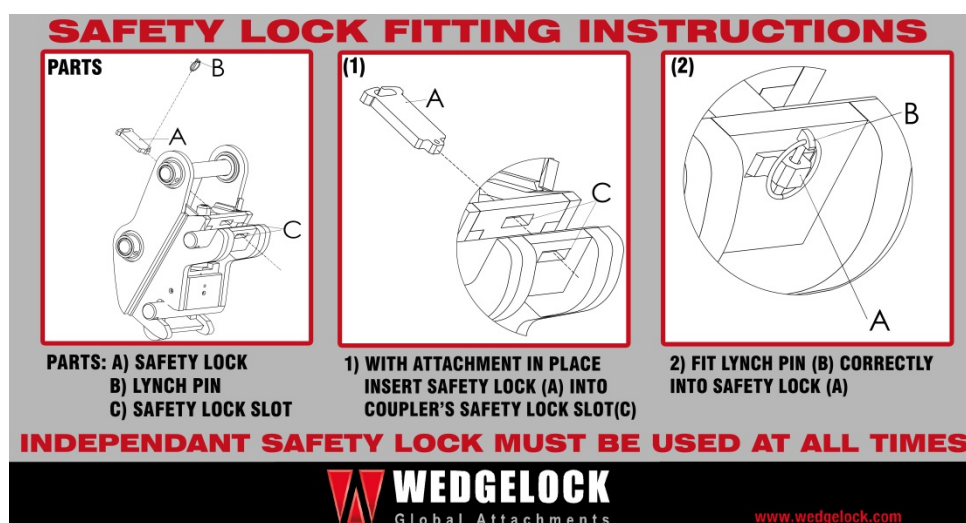


Fig 2.2.1

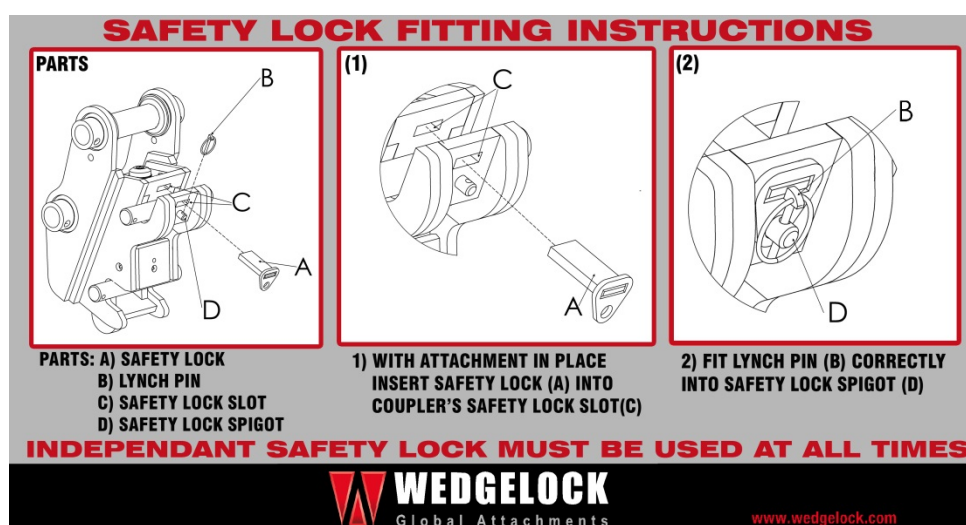


Fig 2.2.2

DISCONNECTING AN ATTACHMENT

2.3 DISENGAGE THE REAR PIN

Operator Action

- Using the excavator arm control levers position the attachment slightly above the ground so that the rear pin (second pin) is lower than the front pin (first pin). Using the operating ratchet spanner rotate the threaded actuator anti-clockwise until the primary wedge is fully retracted (Fig 2.3.1)

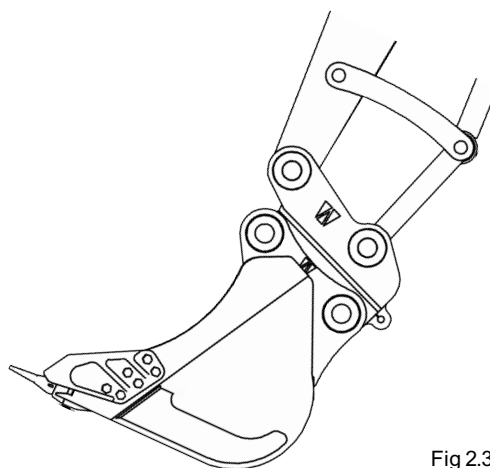


Fig 2.3.1

2.4 REMOVE SAFETY LOCK

Operator Action

- Remove the safety lock from the front c-section of the coupler

2.5 DISENGAGE THE FRONT PIN

Operator Action

- Using the excavator arm control levers crowd the Wedgeloock Mechanical Coupler away from the attachment pins (Fig 2.5.1)

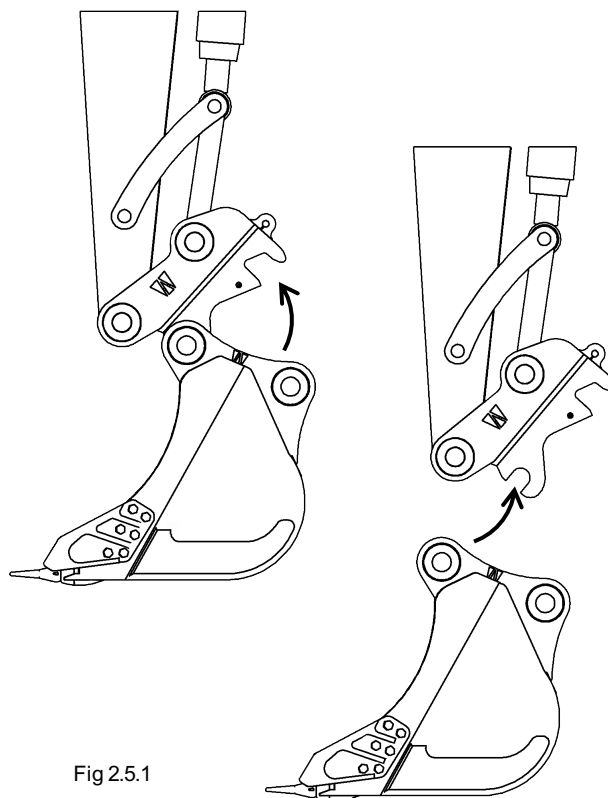
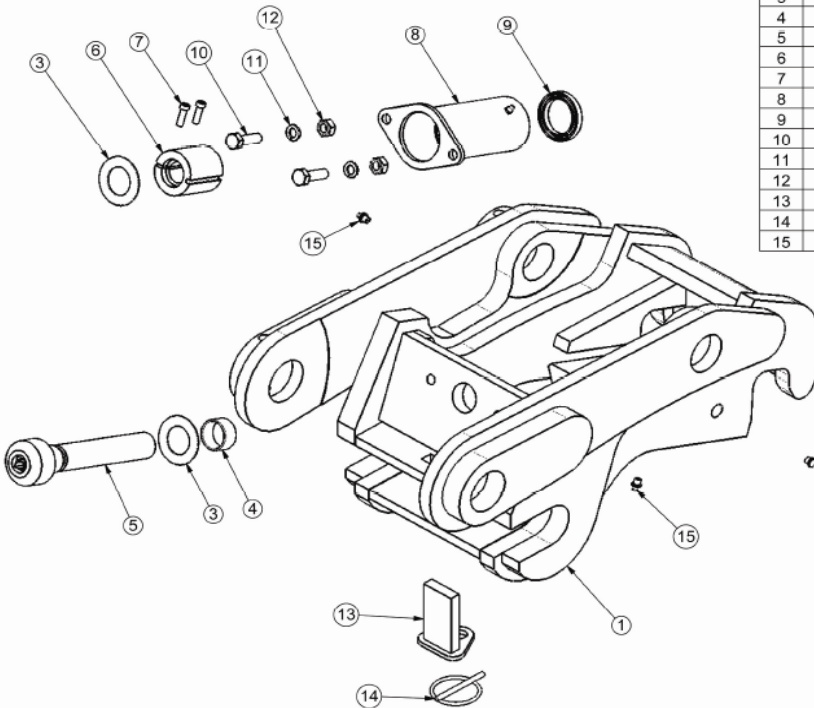



Fig 2.5.1

3.0 MECHANICAL PARTS

Wedgelock manufactures couplers for machines from 1t to 120t and there is a large array of parts and assemblies available for servicing. As an example the following exploded diagram shows a typical breakdown of the serviceable parts inside a Wedgelock Mechanical Coupler. If you require parts for your coupler simply call Wedgelock or your local dealer and quote your product serial number.




ITEM	QTY	PART NO.	DESCRIPTION
1	1		COUPLER BODY
2	1		WEDGE PLATE
3	2		WASHER, DU
4	1		BUSH, DU
5	1		MALE, UNC LH
6	1		SPLIT NUT
7	2		CAP SCREW
8	1		GUARD
9	1		SEAL,WIPER
10	2		BOLT
11	2		SPRING WASHER
12	2		NUT
13	1		UP LOCK
14	1		LYNCH PIN
15	3		GREASE NIPPLE



www.wedgelock.com


DRG:

DATE:

REV 

3.1 COUPLER IDENTIFICATION

Made in Upper Hutt
NEW ZEALAND
www.wedgelock.com









MACHINE	
PRODUCT	
SERIAL #	
MASS	KG
WORK PRESS.	BAR
WLL	KG
DATE	

903.004.1

All Wedgelock Couplers are fitted with an Aluminium Data Plate (FIG 3.1.1). Information pertains to the carrier machine, product code, product serial number, mass of the product, working pressure, working load limit (for lifting purposes) and date of manufacture. If any of the cells are left blank it means that the information is not applicable to this attachment

Fig 3.3.1

3.2 SERVICING SCHEDULE

Maintenance Required	Daily	Weekly
Check all pin retainers, bolts & nuts for tightness on the quick coupler and the attachments		
Lubricate all greasing points – the attachment will have to be removed to access all grease points on the coupler.		
Check the full operation of all the moving parts within the quick coupler – repair or replace immediately if required.		
Check the threaded actuator is firm to rotate in its housing		
Thoroughly clean the quick coupler and ensure that there is no material build up around the threaded actuator or primary wedge.		
Check the quick coupler for evidence of fatigue, weld failure or stress – if evident contact your Wedgelock dealer immediately for assistance		

3.3 ADJUSTING THE THREAD ACTUATOR

The rotational resistance of the threaded actuator should be firm at all times. This is a safety feature that further enhances the positive locking mechanism built into the Wedgelock Mechanical Quick Coupler. The resistance can be easily adjusted by carrying out the following steps.

1. Disconnect the attachment from the Quick Coupler
2. Remove the Primary Wedge from the quick coupler by rotating the threaded actuator in a clockwise direction until the two parts disconnect.
3. Remove the two bolts retaining the protective guard over the threaded actuator. If the guard is part of the split nut (in some instances) go to step 5.
4. Slide the guard off the threaded actuator and remove completely.
5. Using a hex key, loosen the cap screw(s) in the split nut.
6. Place the ratchet spanner in the square drive and using a screw driver, chock the split nut and rotate it so that it tightens up firmly against the thrust washers.
7. Clamp the split nut against the threaded shaft by tightening the cap screw(s)
8. Check the firmness (torque) of the threaded actuator. **You should only be able to rotate the actuator with the ratchet spanner – not by hand!**

3.4 TROUBLE SHOOTING GUIDE

PROBLEM	CHECK	REMEDY
1. The threaded actuator is stiff or will not rotate with the operating ratchet.	Check the primary wedge for bruises or burrs	De-burr any damaged edges of the primary wedge – replace if required
	Check the mechanism is greased properly	Grease if necessary
	Check the mechanism is adjusted correctly	Dismantle and reassembly working mechanism - see 3.3
	Check the threaded actuator is not damaged	Dismantle and replace / repair parts
2. The threaded actuator will rotate but the primary wedge will not move in either direction.	Check the male thread	Replace the male thread
3. A gap has appeared between the flange of the male thread and the front housing	Check the split nut position relative to the front housing	Adjust the working mechanism – see 3.3
4. The primary wedge does not remain firm under the rear pin during normal operation	Check the threaded actuator for resistance / torque against the front housing	Adjust the working mechanism – see 3.3
	Check the wear on the attachment pins	Replace if worn
	Check for wear on the rear aperture (jaw) of the coupler body	Repairs are required – Contact your WedgeloK Dealer immediately.

4.0 SAFE LIFTING PROCEDURE

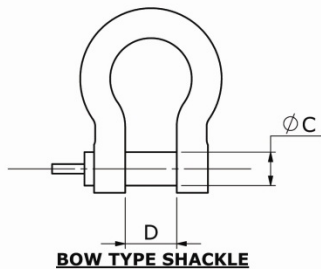


Your WedgeloK Quick Coupler may have been manufactured with an incorporated lifting eye as part of the side plate of the coupler or it may have a welded lifting eye fitted to the rear plate of the coupler. Either of these two options offers the operator a safe lifting point that can be used to lift loads suspended from the coupler body.

Before suspending any loads from the lifting eye you must first do the following

1. Remove any attachment or bucket that is currently fitted to the coupler.
2. Understand and verify the maximum suspended load that the carrier machine can lift taking into account the mass of the coupler.
3. Understand and verify the working load limit of the coupler lifting eye by referring to the coupler aluminum data plate affixed to the coupler body.
4. Ensure that you use the correct lifting rigs and lifting procedures for the loads that are to be suspended.
5. Ensure that co-workers KEEP WELL CLEAR at all times during the lifting procedure.

The following diagram indicates the working load limits of the certified lifting eyes that are either part of the side plate or welded to the rear plate of your WedgeloK Coupler. If you can not identify the W.L.L from either the aluminum data plate or chart below please contact your nearest WedgeloK dealer immediately for further assistance.



WEDGELOCK COUPLER LIFTING EYE AND SHACKLE COMPATABILITY								
	COUPLER LIFTING EYE				SHACKLE (RR-C-271)			
	A (mm)	B (mm)	SWL (TONNE)	WEDGELOCK CODE	C (mm)	D (mm)	SWL (TON)	PART#
WELD ON EYE	20	16	2	T9000-X11016	16	22	2	02325016
	24	25	4	T9003-X11025	22	31	4.75	02325022
	32	32	8	T9004-X11032	28	43	8.5	02325028
	38	40	10	T9005-X11040	35	51	12	02325035
	40	40	12	T9006-X11040	38	57	13.5	02325038
	44	50	15	T9007-X11050	42	60	17	02325042
SIDE PLATE EYE	32	25/ 32	7	C-7 SWL	28	43	8.5	02325028
	40	32/ 40	13	C-13 SWL	38	57	13.5	02325038
	44	40/ 50	15	C-15 SWL	42	60	17	02325042

Part Numbers quoted are from Bridon Cookes Catalogue (New Zealand)

