

RAM-TILT™ COUPLER

Tilting Hydraulic Quick Coupler



**MAKING
IT EASY!**

ATTACH23
EQUIPMENT

INTRODUCTION

Introduction	03
To the Owner	05

SAFETY

Safety Instructions	06
Identification Labels	08
Working Load Limit & Lifting Eye	08
Risk Assessment	10

INSTALLATION

Installation Checklist	11
Installation to Machine	12
Hydraulic Plumbing	13
Checking Attachments	16

MAINTENANCE

Pre-Start Checklist	17
Operating & Attaching	18
General Maintenance	20
Maintenance Schedule	21
Lifting Eye Inspection	22
Shackle Table	23
Parts Diagram	24

INTRODUCTION

Introduction

This manual contains important information about the installation, maintenance, connection and safe operation of your Ram-Tilt Coupler.

You can assist in this proactive safety approach by ensuring that all persons involved with the fitting and operation of the Ram-Tilt, read and understand these basic safety features and instructions.

ATTACH2 reserves the right of modification as a result of further technical developments with regard to the information and illustrations cited in this manual:

- ATTACH2 and its suppliers have sole copyright of this manual.
- The manual is intended solely for the use of the Ram-Tilt
- No part of this manual may be reprinted, translated or reproduced by any means without prior written permission from ATTACH2.
- Utilisation for the purposes of competition is forbidden.
- The Ram-Tilt Coupler is designed for safe and dependable service if installed, maintained and operated correctly.

We request that time be devoted to the study of installation and maintenance requirements. Users are also expected to familiarise themselves with the correct operation and use of the

Ram-Tilt Coupler and its advised safety procedures.

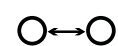
IMPORTANT NOTE

To comply with Occupational Safety and Health requirements, a record must be made of all repairs, adjustments and regular maintenance events involving your Ram-Tilt Coupler.

Ram-Tilt™ Coupler

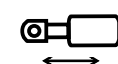
The Ram-Tilt Coupler draws from our famous Elite Tilt Bucket with uniquely placed rams that achieves one of the shortest heights on the market.

The Total tilt of 90° is generated by single acting high capacity cylinders that ensure positive pressure is applied even after thousands of hours.



MULTI-PIN CENTRE

Allows pick up of other attachments within the same size range.



SIMPLE SINGLE CYCLE

Simple to use, only a single cycle required to unlock the coupler, attach a new attachment and lock it in.



HARDENED PINS

Supplied with pins as standard to suit the weight class of the intended excavator. Additional pin options are also available.



SHIMS

Shims enable the fitment of the Sure-Grip Tilt Motor Coupler to various machines in the same weight class.



90° TOTAL TILT

The Ram-Tilt Coupler allows for a total tilt radius of 90° (45° each way). Enabling a range of movement for attachments.



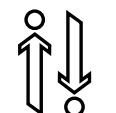
BIS80 STEEL

Using high grade BIS80 hardened, abrasion resistant steel on all moving and high wear area to give you the long life the coupler needs.



FULLY COMPLIANT

Meets the Standards of ISO 13031:2016.



SQUAT PROFILE

The low-profile design of the Ram Tilt Coupler gives the best possible breakout force while enhancing the excavator's productivity with a tilting coupler.



THREE YEAR WARRANTY

An industry-leading warranty for industry-leading attachments. We offer a 3 year warranty on all our Couplers, offering you the ultimate assurance.



To The Owner

As the new owner and/or operator of the Ram-Tilt we would recommend that you take the time to read this Operation Manual carefully before commencing work.

FOLLOW THE SAFETY INSTRUCTIONS:

- Carefully read all the safety information contained in this manual.
- Make sure all warning signs are securely fitted.
- Immediately replace any signs that are missing or damaged.
- Before starting work make sure you are familiar with the equipment and where necessary, with the machine and its control devices.

INFORMATION FOR THE USER:

The user of the Ram-Tilt is obliged to ensure that the equipment is always in safe working order in accordance with accident prevention regulations, Occupational Safety and Health regulations or any other official instructions.

WARRANTY:

ATTACH2 extends its warranty policy from twelve months to three years or 3000 machine hours (whichever comes first).

In order to qualify for the full three year warranty, customers must submit a Warranty Submission Form which can be found in our warranty book or on our website: www.attach2.com

Should a Warranty Submission Form upon purchase not be submitted, the standard 12 month warranty period will apply.

The extended guarantee assumes proper operation and use as intended but will be nullified as a result of:

- Repairs or other intervention not undertaken by persons authorised by ATTACH2.
- With use of accessories or replacement parts not approved by ATTACH2 or which are not original replacement parts supplied by ATTACH2.

After the warranty period has expired, we highly recommend the use of original replacement parts and manufacturer's replacement parts approved by ATTACH2.

Safety Instructions


WARNING:

Improper operation of the Ram-Tilt can cause injury or death. Before using this product make certain that every operator:

- Is instructed in safe and proper use of the attachment.
- Reads and understands the manual pertaining to the attachment.
- Reads and understands all safety decals and tags on the machine.
- Clears the area of all other persons.
- Learns and practises safely using attachment controls in a safe, clear area before operating this machine on a job site.

It is your responsibility to observe pertinent laws and regulations and follow ATTACH2's instructions for operation and maintenance.

ATTACH2 supplies a standard Ram-Tilt Coupler to fit ATTACH2 approved attachments. However, when fitting a non-standard attachment, check that the operation fitting guide for the attachment's pin range and width to suit the Ram-Tilt Coupler model.


WARNING:

This safety alert symbol indicates important safety messages in this manual. When you see this symbol carefully read the message that follows and be alerted to the possibility of personal injury or death.

Safety Standards

The Heli-Tilt is fully compliant with Australian and New Zealand Standards, AS4772-2008 and NSW Work-cover WC01783. EN474-5 Standards and ISO 13031 International Standard in all aspects*

FULLY COMPLIANT

Compliant with all Australian and New Zealand Safety Standards AS4772-2008 and NSW Work Cover WC01783.

Compliant with European Standard EN474-5 and ISO 13031: 2016 Earthmoving Machinery, and all other major contracting policies.


***THE ONUS FALLS ON THE INSTALLER REGARDING THE ENGAGEMENT/DISENGAGEMENT FUNCTION TO ENSURE:**

- (i) The control shall be protected against inadvertent activation.
- (ii) The acoustic signal shall be in continuous operation when the disengaging function is activated.
- (iii) Neither unlocking or disengagement shall be possible if the electrical signal for the acoustic signal device fails e.g. by cable failure/disconnection.
- (iv) The acoustic signal operation shall be activated automatically at every engine start to allow verification of signal to the operator.

ISO Requires - slide pick ups and pin sizes for all ranges and recommended bucket widths.

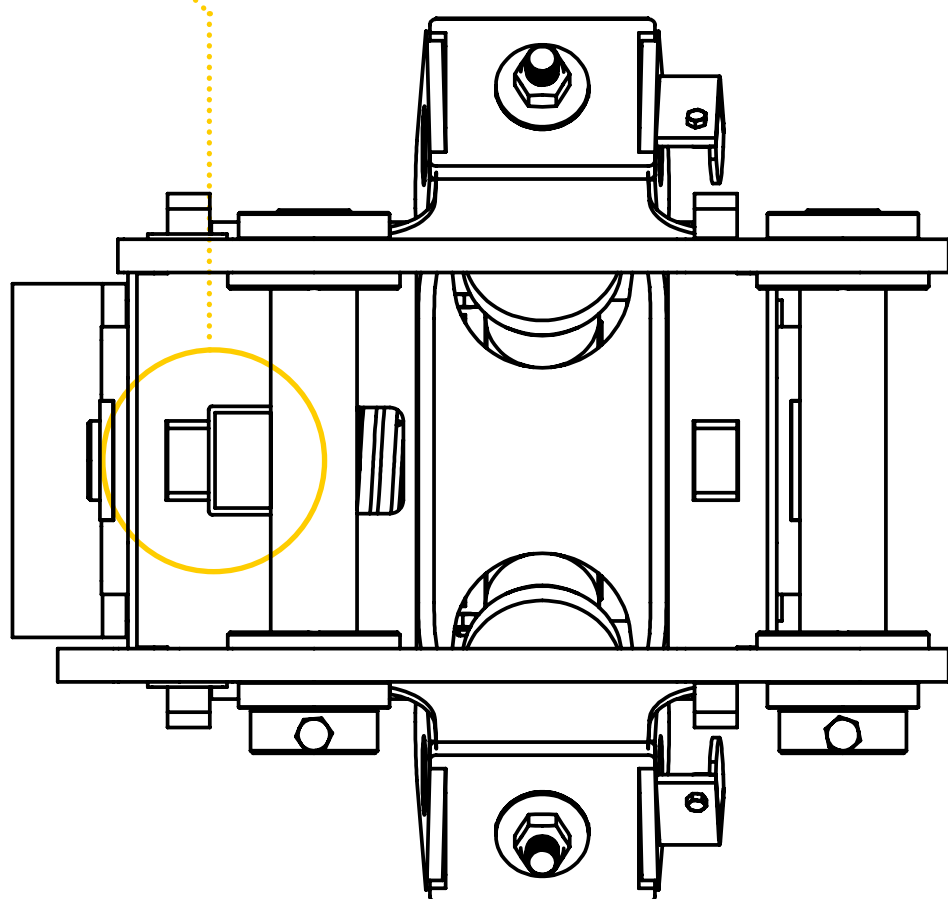
NOTE: For attachments supplied to or manufactured in countries other than New Zealand and Australia, the rules for prevention of accidents and safety regulations for the respective country must be strictly adhered to.

Identification Labels

All Ram-Tilt Couplers are supplied with an Identification Label as shown below.

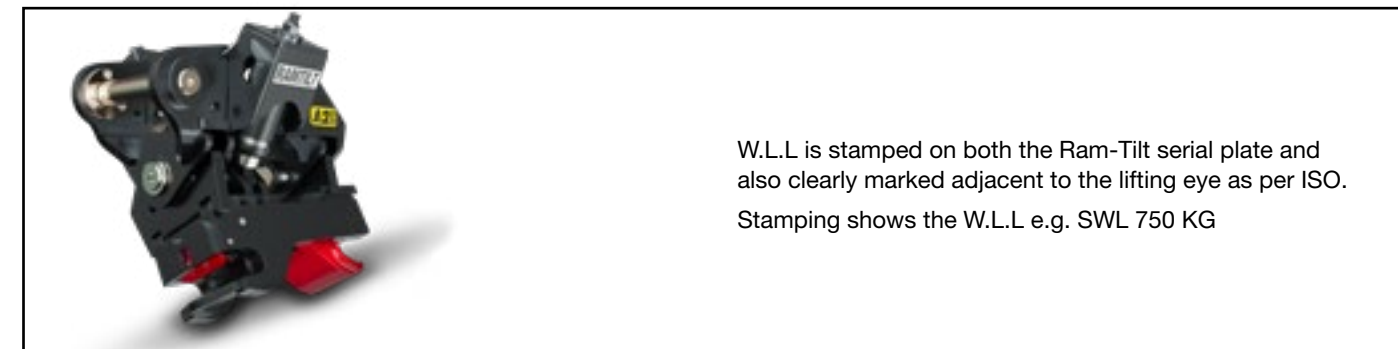
Note: It is recommended that a copy of these details are to be kept for reference.

ATTACH2 EQUIPMENT	
MACHINE MAKE: _____	MODEL: _____
MANUFACTURE DATE: _____	WEIGHT: _____
PICKUP PIN SIZE: _____	PART #: _____
LIFTING EYE SWL: _____	SERIAL #: _____
MIN PIN CENTRE RANGE: _____	MAX: _____
<small>FULLY COMPLIANT: AS2772-2008 / NSW WC01783 New Zealand: Tel +64 6 929 5792 Australia: Tel +61 7 3557 2654 www.attach2.com</small>	



W.L.L - Working Load Limit

The Ram-Tilt Coupler comes with an integrally designed Lifting Eye which has been designed to meet and exceed current standards.*

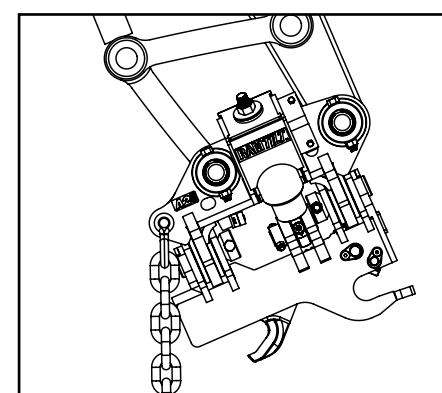


W.L.L is stamped on both the Ram-Tilt serial plate and also clearly marked adjacent to the lifting eye as per ISO. Stamping shows the W.L.L e.g. SWL 750 KG

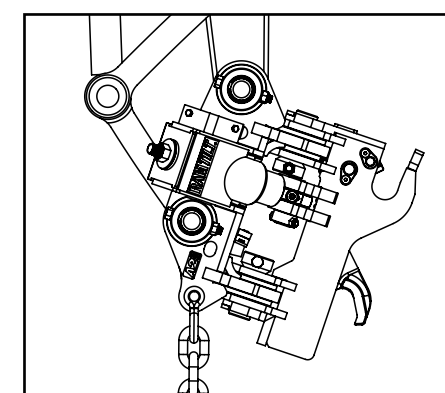
Lifting Eye

THE LIFTING EYE MUST BE USED ACCORDINGLY TO THE FOLLOWING GUIDELINES:

- Only use the Lifting Eye at the rear of the Ram-Tilt for lifting.
- Do not lift with a bucket or any other attachment fitted to the Ram-Tilt.
- Ensure that the load to be lifted does not exceed the rated W.L.L. of the Ram-Tilt and Lifting Eye.
- The Lifting Eye is to be used with certified Lifting Shackle with the same or greater safe working load.
- Lifting must be carried out with the Ram-Tilt in a vertical plane so that the load can hang freely without interfering with the Ram-Tilt body.
- It is recommend that Lifting Eye and Shackle must be visually inspected daily for defects and wear.
- During normal operation, it is not recommended to keep lifting devices attached to the lifting eye.



DO
Lift in vertical plane ONLY shackle MUST hang freely.



DON'T
Do not lift if the chain and shackle interfere with coupler.



WARNING:

- Use In A Safe Proper Manner At All Times.
- Report Damage Or Malfunctions Immediately.
- Do Not Exceed Rated Lift Capacity Of The Machine.
- Do Not Use If Damage Or Malfunction Has Occurred. Only Lift From Lifting Eye.
- Do Not Exceed Lifting Eye Capacity On Name Plate.

Risk Assessment

Location: _____ Date: _____ Ref no: _____

Hazards Identified

- ☐ Work Equipment
- ☐ Ergonomics
- ☐ Entanglement
- ☐ Crushing
- ☐ Environmental
- ☐ Lifting Devices
- ☐ Plant Movement
- ☐ Fumes
- ☐ Vibration
- ☐ Access / Exit
- ☐ Slip, Trip and Fall
- ☐ Warning Devices on Equipment
- ☐ Noise

People Affected

	Yes	No	N/A
Involved in Activity			
Close to Activity			
Everyone on Site			
Members of the Public			

Expected Precautions

	Yes	No	N/A
Has the operator been adequately trained on how to use the Ram-Tilt in general?			
Is the operator competent in using the specific attachment on the machine?			
Is there a system for checking that the attachment pins are in place on the Ram-Tilt prior to work starting every time a different attachment is fitted?			
Is the operator aware that they must not operate the machine unless they are satisfied that the Ram-Tilt is secured in place.			
Does the view of the operator from inside of the cab allow them to visually see that the Ram-Tilt is secured in place?			
Does the Ram-Tilt have the approved labels stating and referring to attachment specifications?			
Is there a risk assessment for the Ram-Tilt detachment?			
Are there cab instructions for the Ram-Tilt?			

Personal Protective Equipment

Hard Hat	High Visibility Vest	Safety Boots	Gloves
Ear Protection	Safety Glasses	Other	

Management

Assessed by:		Reported to:	
Name:	Date:	Name:	Date:

Installation Checklist

Customer Details / End User

Installation Date:		Customer:	
Landline:		Mobile:	
Company Name:		Email:	
Address:			

ATTACH2 Product Details

Description:		ATTACH2 Serial Number:	
Purchase Date:		Installation Date:	

Company Completing Installation

Company:		Installer Name:	
Landline:		Mobile:	
Machine Maker:		Machine Model:	
Email:			

Installation Inspection

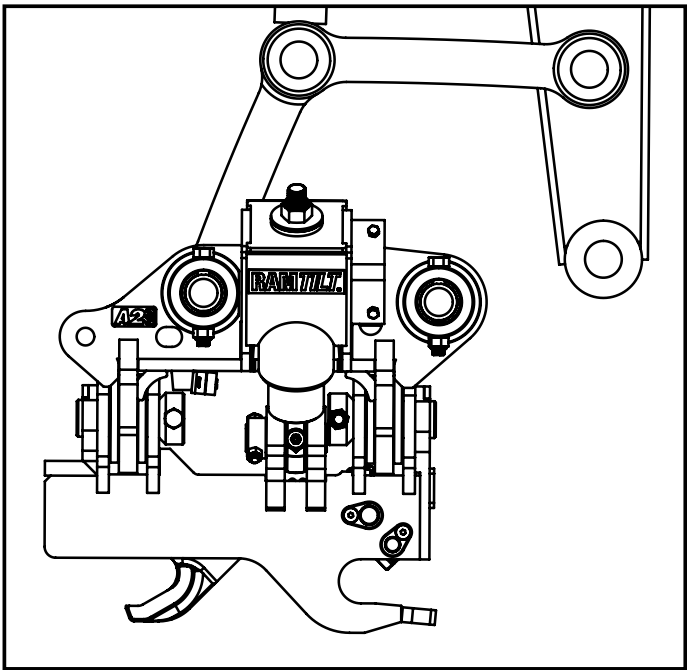
✓ Compliant ✗ Not Yet Compliant

CHECKS	✓	✗	CHECKS	✓	✗
Verify all hose installations are as per manual and free to move through the hitches designed full movement without hose issues.			Verify installation completed as per the manuals installation plumbing circuit diagram.		
Shimming of the hitch pins complete.			Verify hydraulic system is bled and free from the air.		
			Verify system pressures and flows for the: Tilting circuit pressure is set to: PSI Tilting flow rate set to: LPM Tilting cycle time LHS to RHS: Seconds		
Verify all hydraulic fittings are undamaged and free from leakages under operating pressure.			Verify all attachments are for use with the hitch attach and detach without operation issues or contact with machine.		

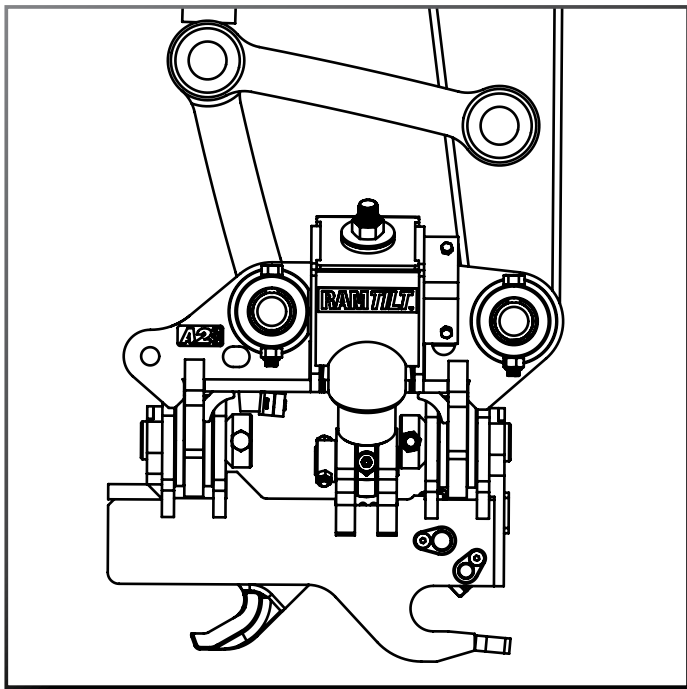
INSTALLATION SIGN OFF

Was the installation complete with proportional solenoid valves?			Was the installation complete with double P/O check valves?		
Is the hitch compliant at time of installation?			Are any follow ups required to make hitch complaint?		
Installation time/date:			Signature:		

Installation To Machine



- Align Ram-Tilt to the H-Link and insert the pin.
- Fit shims and O-Rings as required.



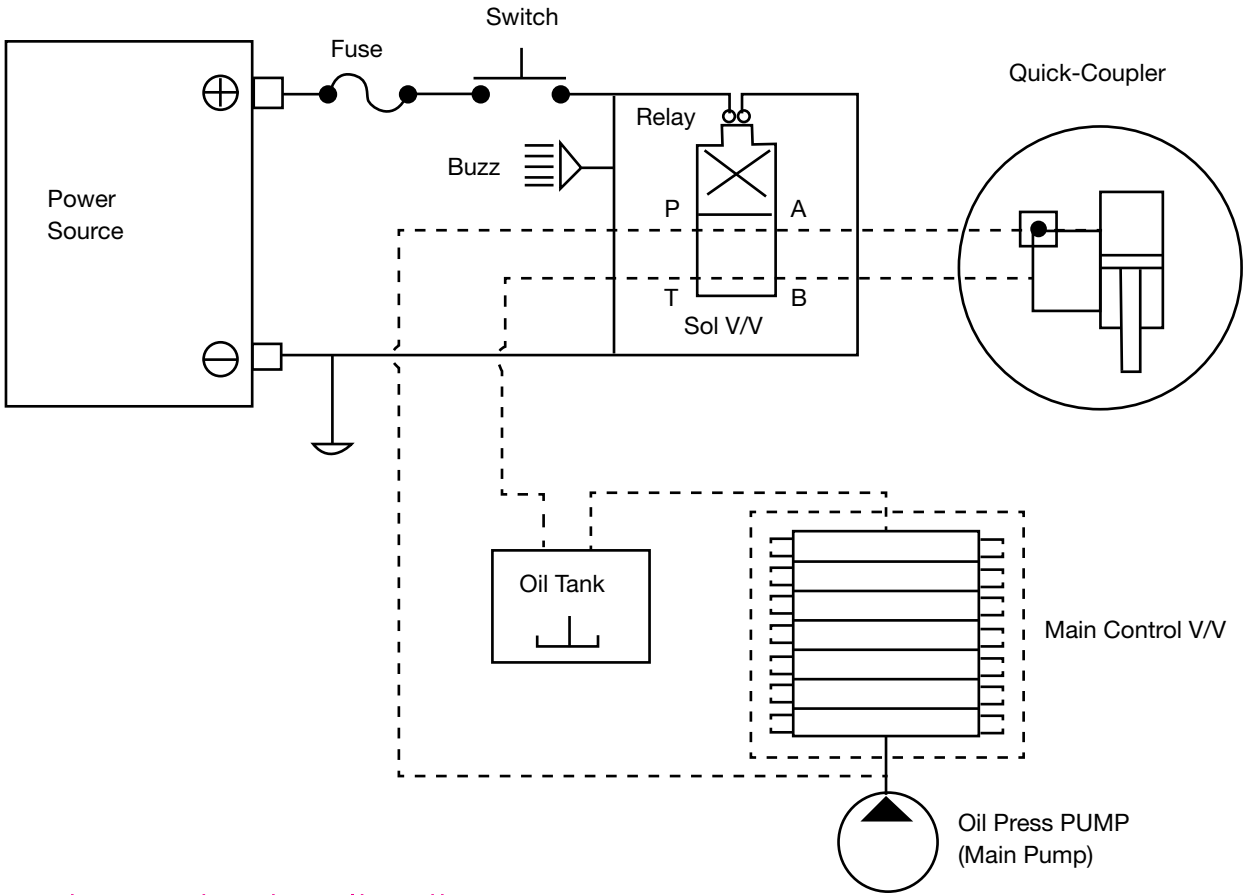
- Align Ram-Tilt to the dipper arm and insert the pin.
- Fit shims and O-Rings as required.
- Fit retaining bolts as per the OEM manual.

A2Lock Hydraulic Plumbing

NOTE- THIS IS GENERAL IN NATURE AND IS AS A RECOMMENDATION

Hitch Cylinder Pressure	2,000 - 4,500 PSI	LOW
Tilt Rams Pressure	3,000 - 3,500 PSI	LOW (to suit speed of operator)

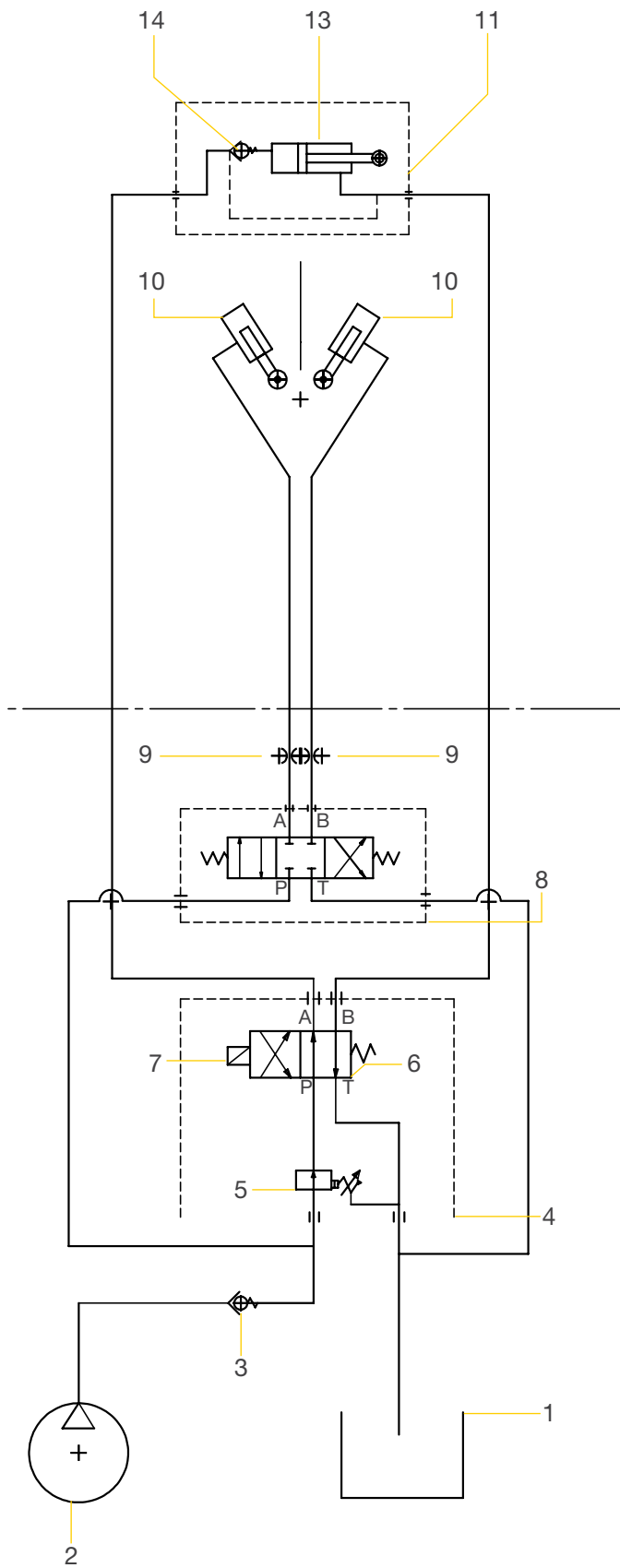
Basic System Schematic



need new hydraulic diagram to suit hitch and tilt circuit

Hydraulic Diagram

Item	Description	Comments
1	Oil Reservoir	
2	Pump	Must Have Min. 3000psi & 50lpm ***Do Not Use Pilot Pump***
3	Check Valve	
4	Coupler Cylinder Control Valve	Can be OEM Supply or Hydraulics Installer Supply
5	Pressure Reducing Cartridge	***Must set between 2800 - 3000psi****
6	Single Acting Solenoid Control Valve	
7	Connect Solenoid To Coupler Buzzer/ Alarm	
8	Tilt Cylinder Control Valve	Can be OEM supply or hydraulics installer supply
9	Optional Flow Control Orifice	See table for sizing
10	Tilt Cylinder	
11	Coupler Cylinder Manifold	
12	Pilot Operated Check Valve	
13	Coupler Cylinder	



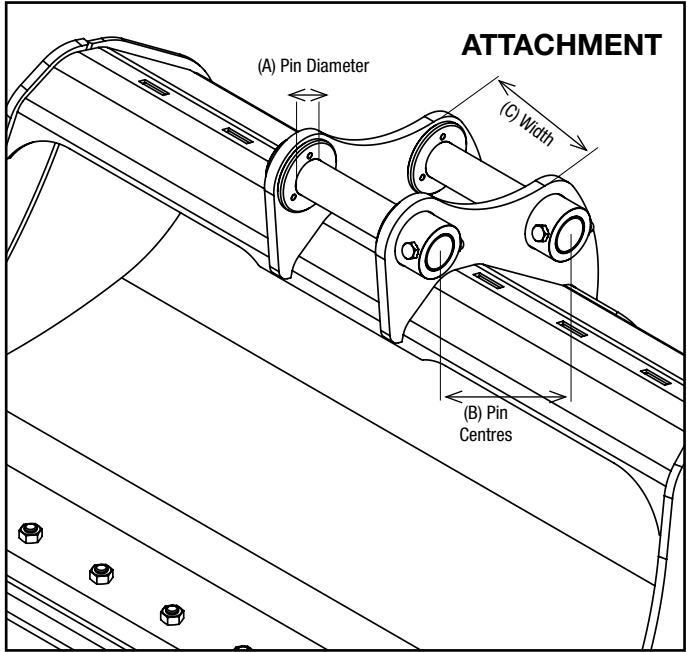
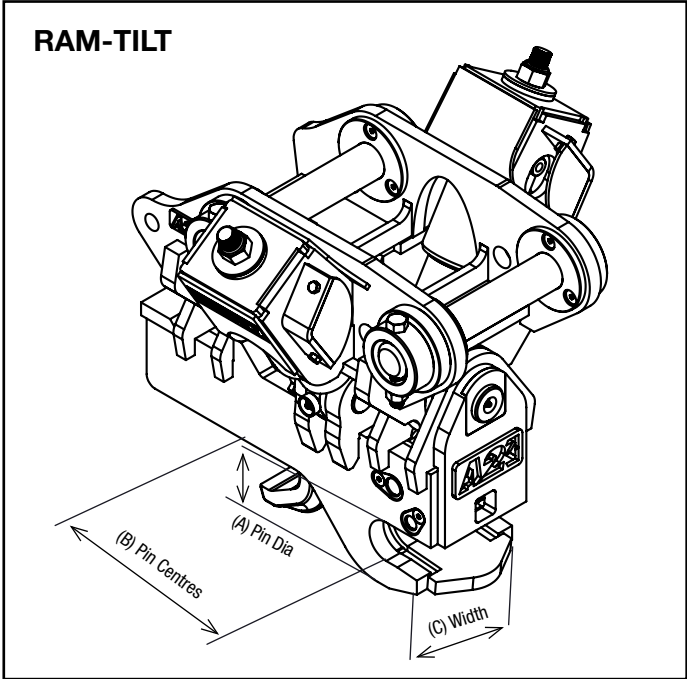
Checking Attachments

A Check the pin diameter of the attachment is the same as the pin diameter of the A2Lock base.

B Check that each individual attachment pin centre fits the A2Lock by confirming the pin centres on the A2Lock label.

C Check the inner width of the attachment ears, this must be the same or only a few mm wider than the A2Lock base.

NOTE: If interference with other attachments that aren't Attach2's, any adjustments needed is the responsibility of the customer.



DANGER:
Do Not use any Attachment unless all safety functions are serviceable and within Specifications.



WARNING:
Ensure attachments being picked up suit the build Information on the Ram-Tilt's Identification Label.

Pre-Start Checklist

Operators Name:		ATTACH2 Model:	
ATTACH2 Serial No:		Date:	

In Cab	M	T	W	T	F	S	S
Are the Ram-Tilt operating controls serviceable?							
Are the operating & maintenance manuals in the cabin?							

Hydraulic System	M	T	W	T	F	S	S
Check wear or damage to hoses or fittings.							
Check hoses are free from pinch points.							
Check for visible Hydraulic leaks.							

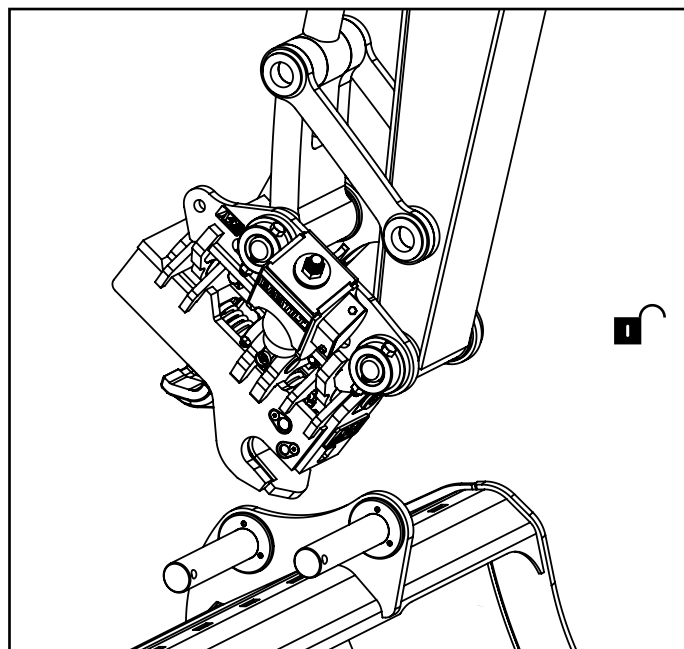
Ram-Tilt	M	T	W	T	F	S	S
Check wear and damage to hitch / attachment pins and retainers.							
Check security of mounting pins, locking bolts and nuts.							
Is the attachment safe to use? Yes or No.							

Lubrication	M	T	W	T	F	S	S
Greasing as per ATTACH2 manual.							

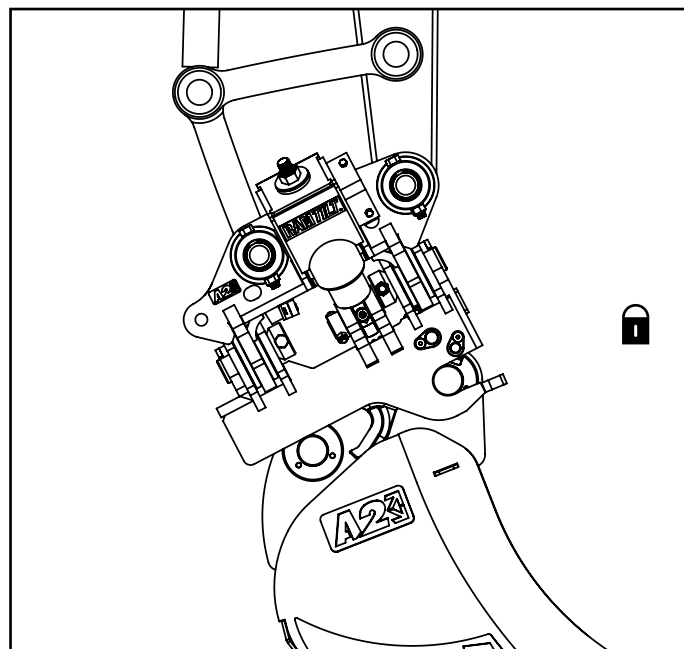
Operator:	Manager Signature:
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Operating & Attaching

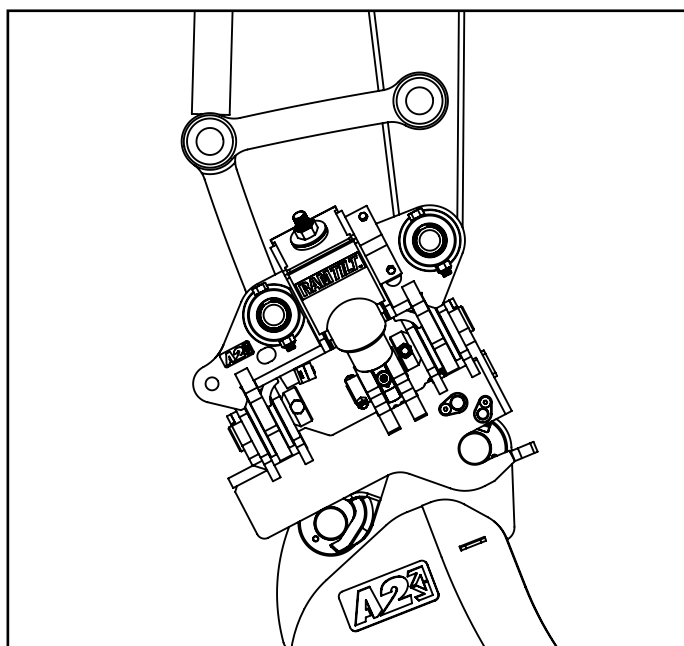
WITH THE ADDITION OF THE LATEST, DUAL LOCKING SURE-GRIP COUPLER BASE, THE CONNECTION AND DISCONNECTION PROCESS OF THE HELI-TILT COUPLER IS A SIMPLE AND EFFICIENT PROCESS.



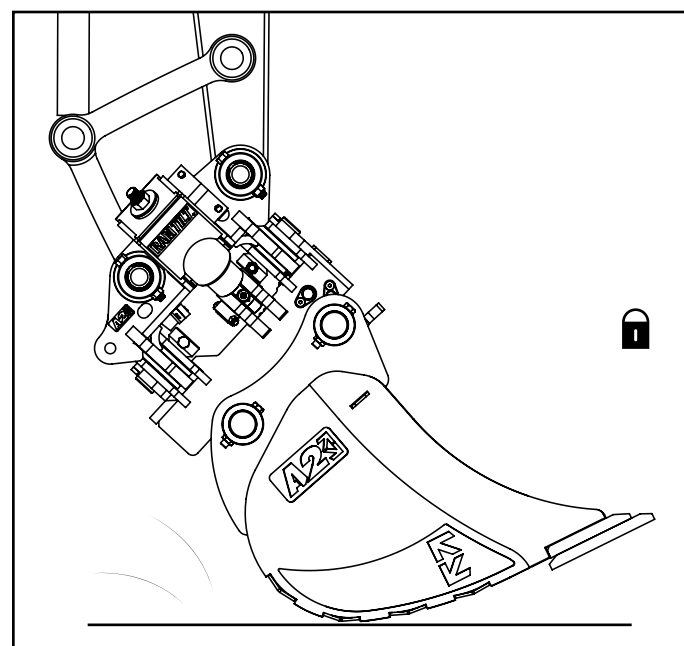
STEP 1
Buzzer on. With slide retracted engage coupler onto front pin.



STEP 2
Buzzer off. Crowd onto rear pin; front pin now secured.



STEP 3
Extend slide onto rear pin which engages front safety latch; Bucket now secured.



STEP 4
Put pressure on the bucket tip to ensure fitment is secure and tight. **Refer to pg 8, to release attachments.*

Maintenance

GENERAL MAINTENANCE

All maintenance is to be performed by a qualified and competent trades person. Before beginning maintenance work on the Ram-Tilt Coupler, there are several cautionary notices that should be considered. If you are not comfortable with the repair or maintenance of this product, please contact your local ATTACH2 Service Department on: AUS: +61 7 3557 2654 / NZ: +64 6 929 7592

OTHER SAFETY REQUIREMENTS

1. Ram-Tilt should only be used to perform tasks for which it was designed. Abusing the product and/or using it for purposes for which it was not intended can expose the operator and others to hazards as well as result in damage to the Ram-Tilt, carrier and/or other attachments.
2. Modification to the Ram-Tilt is done at the owner's risk and may void warranty.
3. The Ram-Tilt is designed for a maximum bucket width. Applying the full force of the excavator or backhoe to the corner of a wide bucket (e.g. corner digging with a wide bucket) may cause premature wear and/or reduced equipment life. Using excessive bucket widths will also cause premature wear.
4. It is the owners responsibility to be sure all safety equipment is in place and operating properly at all times. If safety decals fade, are damaged or become unreadable they should be replaced immediately.



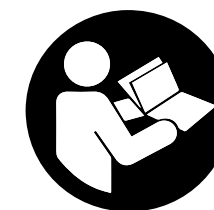
DANGER

Never use hands to search for hydraulic leaks. Escaping fluid under pressure can be invisible and can penetrate the skin and cause serious injury.



WARNING

Only fit the Sure Grip with genuine replacement parts. Quote serial number stamped on the Identification Label when ordering.



WARNING

To ensure that your Ram-Tilt works safely to a maximum efficiency, it is imperative that it is properly maintained in accordance with the manual.



WARNING

A defective Ram-Tilt could injure you or others. Do not operate a Ram-Tilt that is defective.

WARNING

Ensure that hoses aren't loose and don't foul when crowding or tilting in the full working range.

Maintenance Schedule

Daily

- ☐ Grease Ram-Tilt (max 2 pumps per nipple).
- ☐ Check lifting point for any damage or wear.
- ☐ Test the attachment is safe to operate and all safety features are operational as per the manual.
- ☐ Check attachment hydraulics for leaks and signs of wear.
- ☐ Ensure all safety decals and instructions are clear and legible.

Weekly

- ☐ Check attachment for any signs of cracking.
- ☐ Check base and attachments for signs of wear on pin engagement.
- ☐ Check attachments for loose bolts/pins.
- ☐ Check attachment operation and notify ATTACH2 of any defects found.

6 Monthly

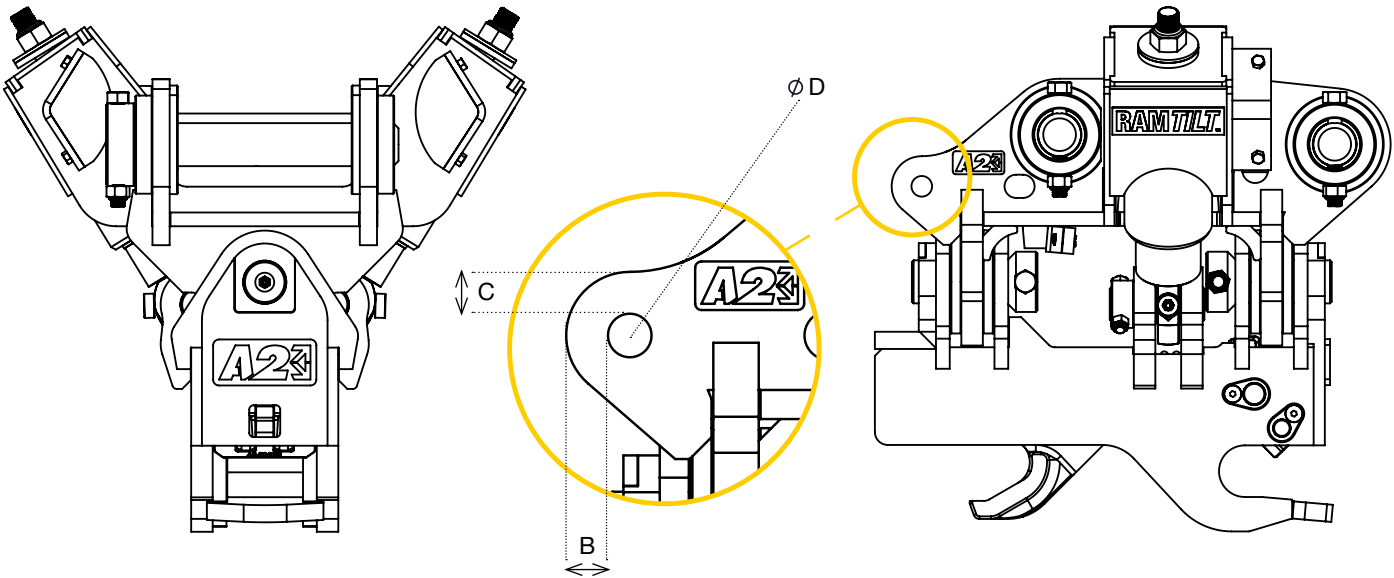
- ☐ Ensure operating and maintenance manuals are in cabin and pre-start check have been documented.
- ☐ Bleed all air from the hydraulic install.
- ☐ Check lifting point for any damage, wear or cracking.
- ☐ Check base wear as per the manual.
- ☐ Check and re-torque bolts as per the manual.

Notes / Remarks

Description:		ATTACH2 Serial Number:	
Machine Make:		Machine Model:	
Company:		Contact:	
Email:		Phone:	
Company:		Trades Person Number:	
Date:		Sign:	
Phone:		Email:	

Lifting Eye Inspection

Product Code	Minimum Lifting Eye Width (mm)	Minimum Distance to Edge (mm)	Minimum Distance to Edge (mm)	Hole Diameter (mm)
	A	B	C	D
SGTR60	20	23	23	24
SGTR65	25	36.9	36.9	30.2
SGTR80	32	35	35	38
SGTR90	40	42	42	44
SGTR100	40	42	42	44



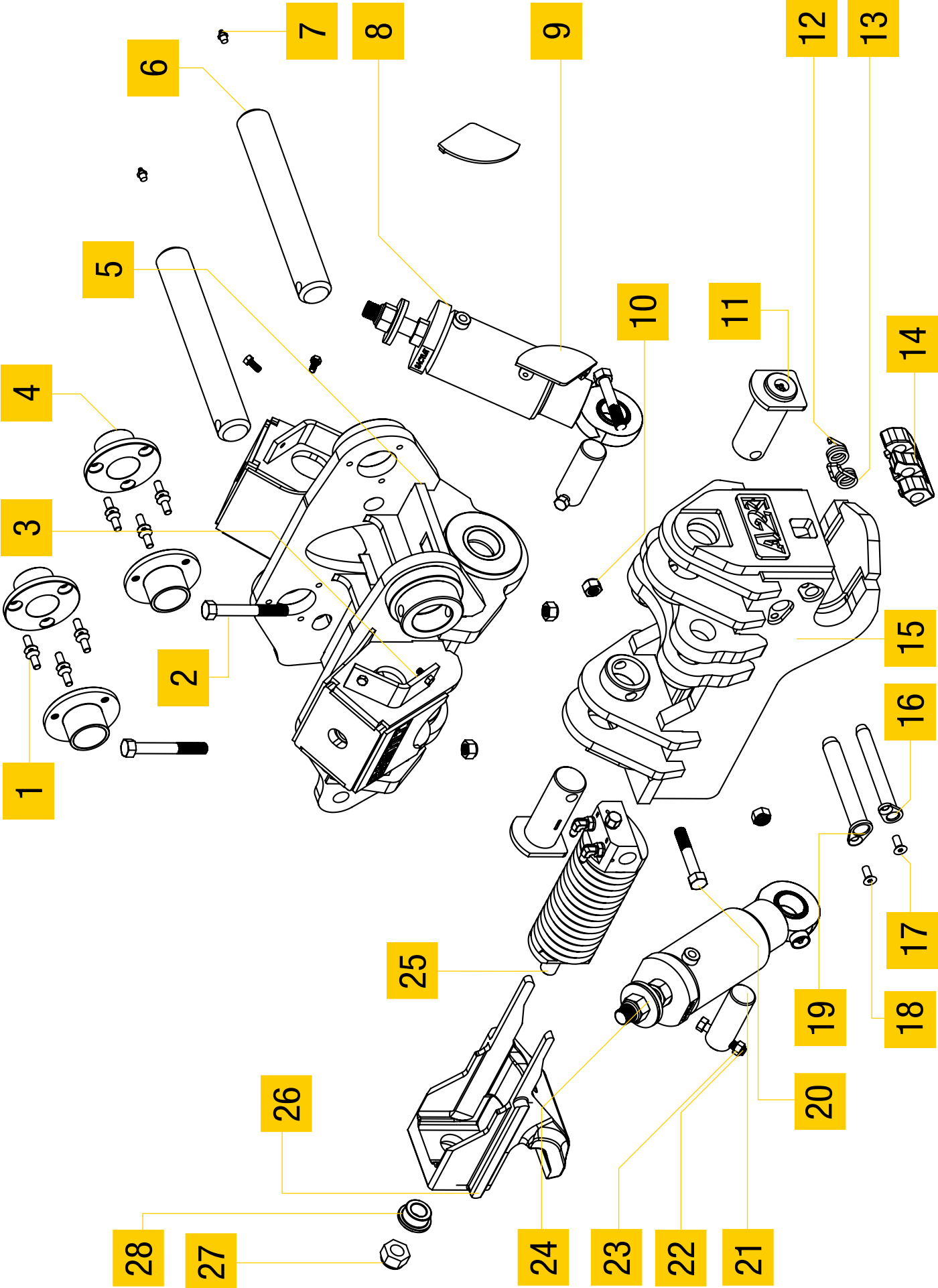
1. Visually check for cracking or deformation - if present.
2. Check for wear on the above chart.
3. Damage to outer surface (A, B, C, D) must be within the measurements in above chart.
If the Lifting Eye has exceeded recommended ratings - immediately stop using attachment.

Should you find any deformations or cracks anywhere on the Lifting Eye, please contact your local ATTACH2 Service Department on:
AUS: +61 7 3557 2654
NZ: +64 6 929 7592

WARNING: CHECK DAILY
The Lifting Eye requires visual inspection.

Parts Diagram & Parts List

Number	Description	QTY	A2 Part Number SGTR60	A2 Part Number SGTR65	A2 Part Number SGTR80	A2 Part Number SGTR90	A2 Part Number SGTR100
1	SCREW COUNTERSUNK	12	A2-800163	A2-800134	A2-800110		
2	HEX-BOLT-ZINC- PLATED	2	A2-800128	A2-800128	A2-800114	A2-800114	
3	HEX-BOLT-ZINC- PLATED	4	A2-800170	A2-800170	A2-800170	A2-800170	A2-800170
4	TOPHAT OR SPACER	4	900002	301018	301128		
5	TOP WLDMT	1	A2-300229	A2-300235	A2-300239	A2-300246	A2-300226
6	STANDARD OR GREASEABLE HARDEN PIN	2	900024	A2-200119	A2-200765	A2-200681	
7	0.125BSPT GREASE NIPPLE	2	A2-800139				
8	CYLINDER SA	2	A2-400179	A2-400182	A2-400136	A2-401010	A2-401010
9	PL COVER	2	A2-300213	A2-300213	A2-300213	A2-300213	A2-300213
10	HEXA-NYLOCK-NUT-ZINC-PLATED	4	A2-800118	A2-800118	A2-800113	A2-800113	A2-800113
11	PIVOT PIN ASSEMBLY	2	A2-300231	A2-300238	A2-300243	A2-300228	A2-300228
12	TORSION SPRING LH SG	1	303840	303840	303540	304225	304225
13	TORSION SPRING RH SG	1	303839	303839	303539	304224	304224
14	CAST LATCH SAFETY FRONT SG 8T	1	304021	303838	303538	304236	304236
15	TILT BASE WLDMT	1	A2-300230	A2-300236	A2-300240	A2-300247	A2-300227
16	PIN LATCH WLDMT	1	304024	303170	303542	304237	304237
17	CAPSCREW CSK	1	20189	20189	20189	20189	20189
18	CAPSCREW CSK	1	20189	20189	20189	20359	20359
19	PIN CYL WLDMT	1	304022	303837	303547	304220	304220
20	HEX-BOLT-ZINC- PLATED	2	A2-800161	A2-800128	A2-800113	A2-800164	A2-800164
21	CYLINDER PIN	2	A2-200762	A2-200759	A2-200786	A2-200763	A2-200763
22	HEXA-NYLOCK-NUT-ZINC-PLATED	2	A2-800122	A2-800122	A2-800118	A2-800113	A2-800113
23	HEX-BOLT-ZINC- PLATED	2	A2-800162	A2-800138	A2-800128	A2-800166	A2-800166
24	PL GPS BASE	1		A2-300237	A2-200208	A2-200208	A2-200208
25	CYLINDER	1	304019	303821	303521	304212	304212
26	CAST SLIDE HOOK	1	302287	304198	304199	304636	304636
27	NUT NYLOC	1	20271	20271	303541	303541	303541
28	BOSS	1	303826	303826	303226	303226	303226





ATTACH2 EQUIPMENT - NZ

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