

MINI-TILT COUPLER

Draw Pin Twin Ram



**MAKING
IT EASY!**

ATTACH23
EQUIPMENT

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Introduction

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

You can assist in this proactive safety approach by ensuring that all persons involved with the fitting and operation of the Mini-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 Mini-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 Mini-Tilt is designed for safe and dependable service if installed, maintained and operated correctly.

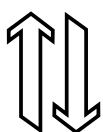
We request that time be devoted to the study of installation and maintenance requirements. Users are also expected to familiarise themselves with the correct operation and use of the Mini-Tilt and its advised safety procedures.

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 Mini-Tilt.

Mini-Tilt Coupler

The ultimate Coupler for all Mini Excavators giving you the ability to tilt all attachments through a range of 70°. Making changing attachments simpler through not needing to change hydraulic hoses and with Attach2's advanced Cast and CNC machined structure these are guaranteed the perfect fit.



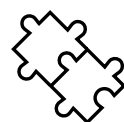
MAXIMUM BREAKOUT FORCE

The distance between the pivoting pin and the bucket pin has been reduced to the lowest possible height to maximise your breakout force on any application whilst retaining strength. Where pared with the A2 wide bucket compared with a Draw pin coupler and Tilt Bucket the breakout distance is reduced by 17%.



FASTER BUCKET CHANGES

Easily change buckets without needing to unplug and change over tilting hoses – removing this frustration of stiff QRC's, contamination and dripping hydraulic oil around the job site.



PRECISE FIT

All critical faces are CNC machined to ensure exact fitment and dimensions. High-quality cast structure featuring a one-piece design where all critical faces are CNC machined to ensure exact fitment and dimensions.



TILT ALL YOUR ATTACHMENTS

Giving you the ability to tilt all your attachments, the Mini-Tilt significantly increases the performance of your machine with the ability to do more.



To The Owner

As the new owner and/or operator of the Mini-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 Mini-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 Mini-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 Mini-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 Mini-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.

Identification Labels

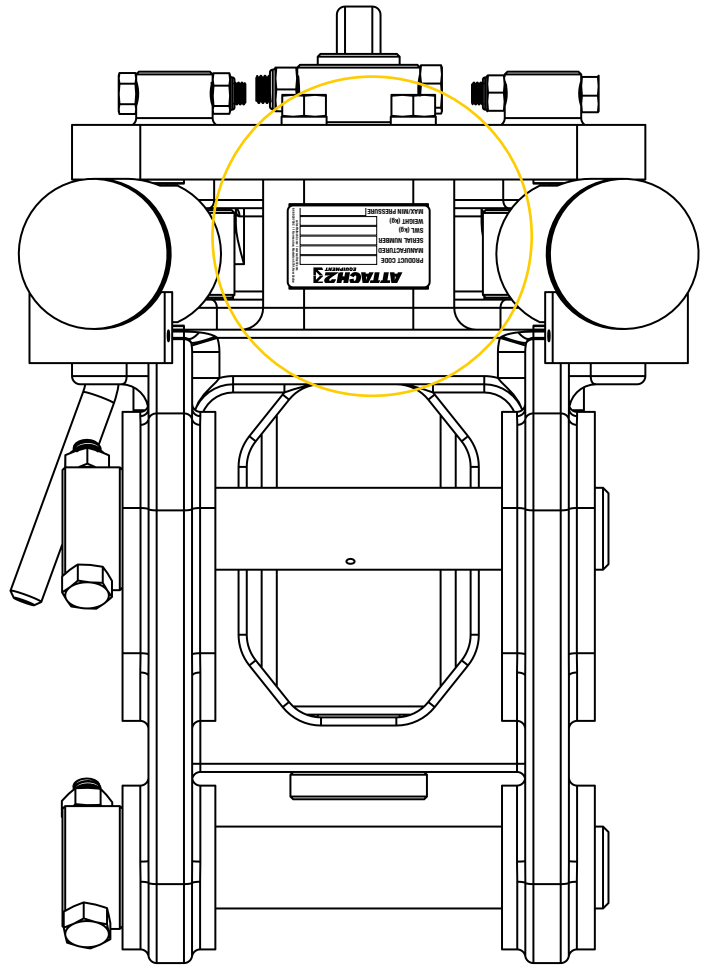
All Mini-Tilt Couplers are supplied with an Identification Label as shown below.

ATTACH23 EQUIPMENT		sales@attach2.com www.attach2.com +64 6 929 7592 11 Norman Ave, Masterton 5791, New Zealand
PRODUCT CODE		
MANUFACTURED		
SERIAL NUMBER		
SWL (kg)		
WEIGHT (kg)		
MAX/MIN PRESSURE		

EACH IDENTIFICATION LABEL DISPLAYS THE FOLLOWING;

- Product Code
- Manufactured
- Serial Number
- SWL (kg)
- Weight (kg)
- Max/Min Pressure

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



W.L.L - Working Load Limit

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



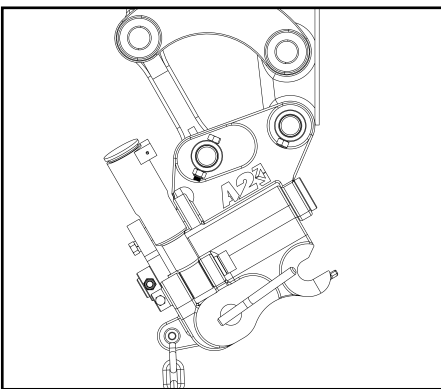
W.L.L is stamped on both the Mini-Tilt serial plate and also clearly marked adjacent to the lifting eye as per ISO.

Stamping shows the W.L.L e.g. SWL 750 KG

Lifting Eye

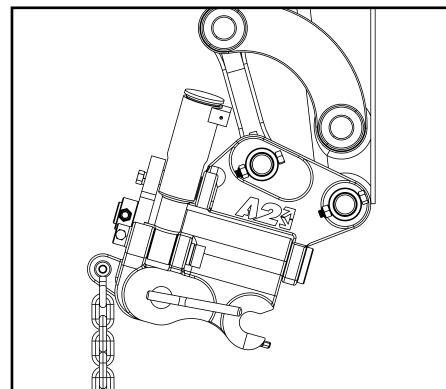
THE LIFTING EYE MUST BE USED ACCORDINGLY TO THE FOLLOWING GUIDELINES:

- Only use the Lifting Eye at the rear of the Mini-Tilt for lifting.
- Do not lift with a bucket or any other attachment fitted to the Mini-Tilt.
- Ensure that the load to be lifted does not exceed the rated W.L.L of the Mini-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 Mini-Tilt in a vertical plane so that the load can hang freely without interfering with the Mini-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

- | | | |
|---|--|---|
| <input type="checkbox"/> Work Equipment | <input type="checkbox"/> Lifting Devices | <input type="checkbox"/> Access / Exit |
| <input type="checkbox"/> Ergonomics | <input type="checkbox"/> Plant Movement | <input type="checkbox"/> Slip, Trip and Fall |
| <input type="checkbox"/> Entanglement | <input type="checkbox"/> Fumes | <input type="checkbox"/> Warning Devices on Equipment |
| <input type="checkbox"/> Crushing | <input type="checkbox"/> Vibration | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Environmental | | |

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 Mini-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 Mini-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 Mini-Tilt is secured in place.			
Does the view of the operator from inside of the cab allow them to visually see that the Mini-Tilt is secured in place?			
Does the Mini-Tilt have the approved labels stating and referring to attachment specifications?			
Is there a risk assessment for the Mini-Tilt detachment?			
Are there cab instructions for the Mini-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

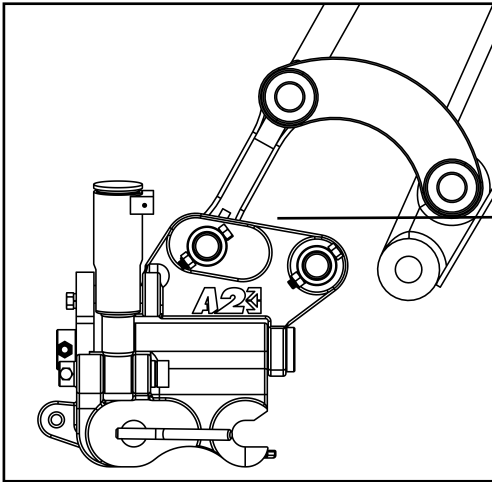
✓ Compliant ✗ Not Yet Compliant

CHECKS	✓	✗	CHECK	✓	✗
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.		

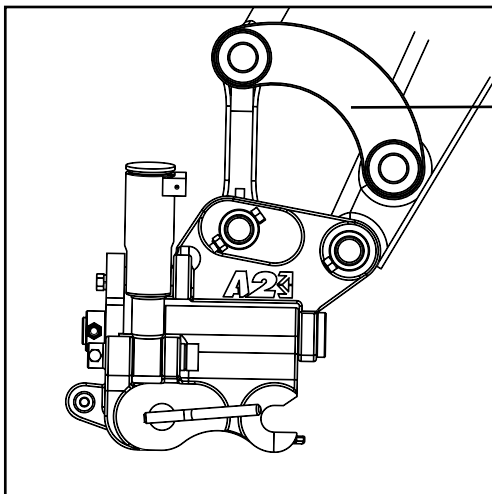
INSTALLATION SIGN OFF

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



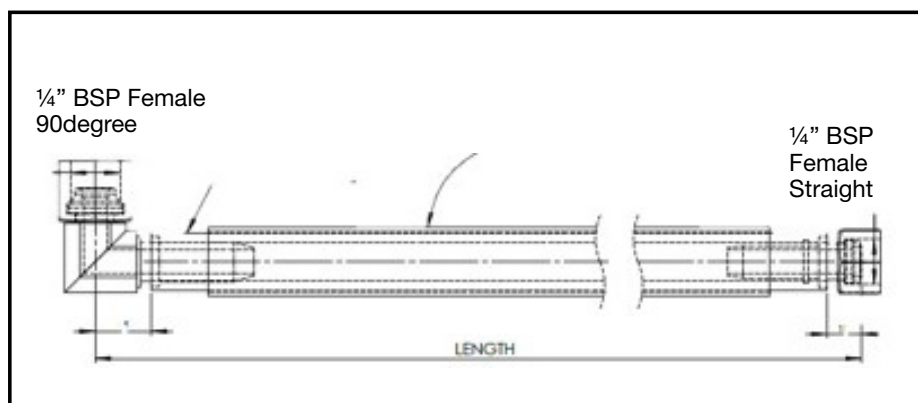
- Align Mini-Tilt to the H-Link and insert the pin.
- Fit shims and O-Rings as required.



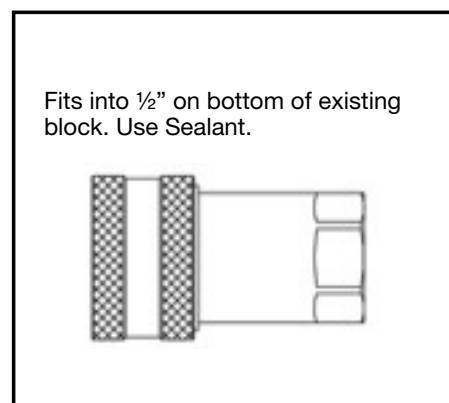
- Align Mini-Tilt to the dipper arm and insert the pin.
- Fit shims and O-Rings as required.
- Fit retaining bolts as per the OEM manual.

Mini-Tilt Hydraulic Plumbing

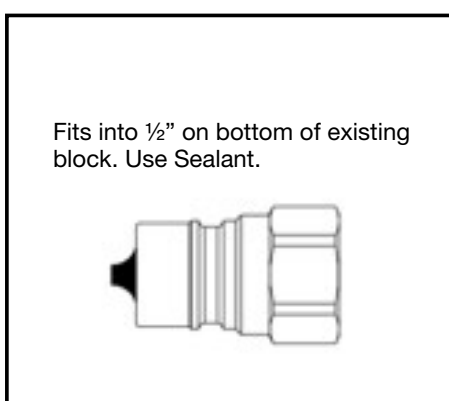
SUGGESTED HOSE SETUP



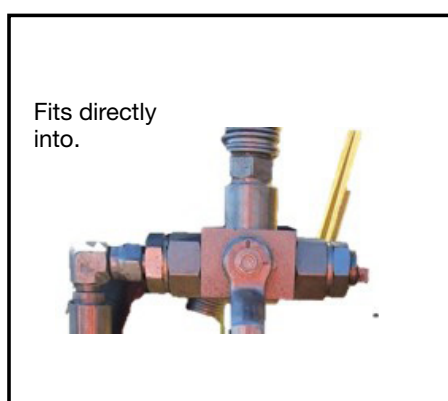
1/4' 2wire hyd hose, Qty x2



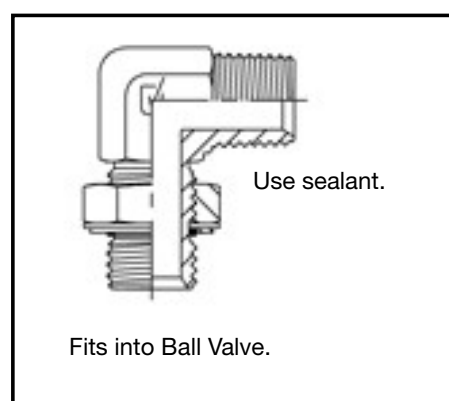
1/2" QRC Female, Qty x 1



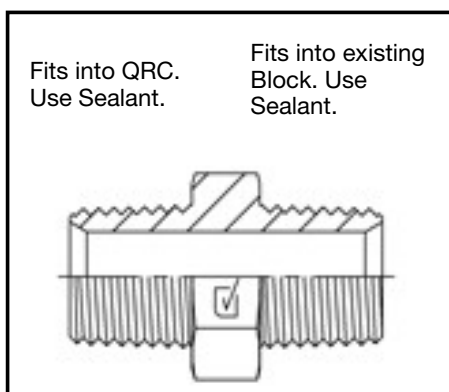
1/2" QRC Female, Qty x 1



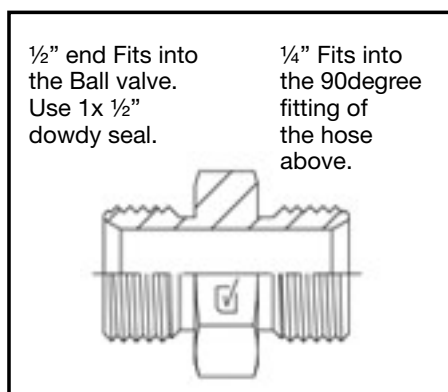
3 way 1/2" ball valve, Qty x 2



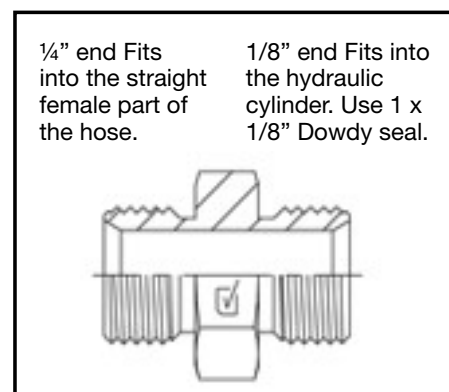
1/2" to 1/2" 90 degree with taper. Running nut & BSPT, Qty x 2.



1/2" - 1/2" BSPT Taper Adapter, Qty x 2

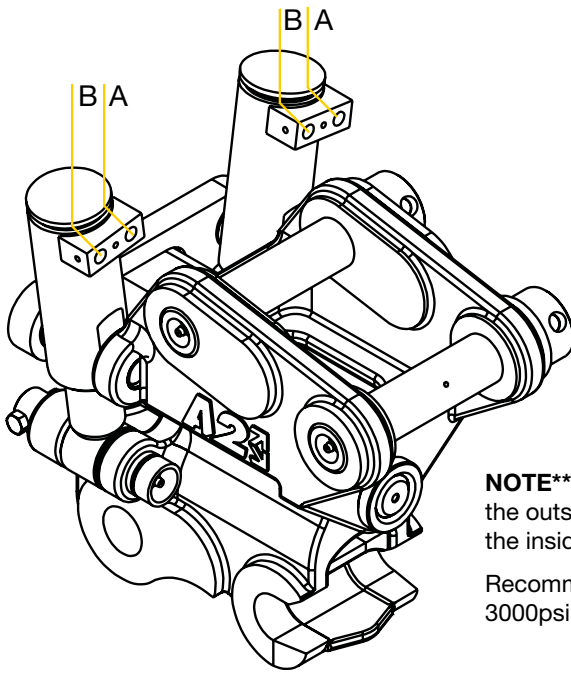


1/2" - 1/4" BSPP Parallel Adapter with 1.5mm restrictor, Qty x 2.



1/4" - 1/8" BSPM Parallel Adapter, Qty x 2

Mini-Tilt Hydraulic Plumbing



NOTE** 'Fit the hydraulic auxiliaries into the outside hydraulic ports (A) and leave the inside ports (B) bunged off'.

Recommended maximum pressure is 3000psi.

FINAL FIT UP



Checking Attachments



WARNING:

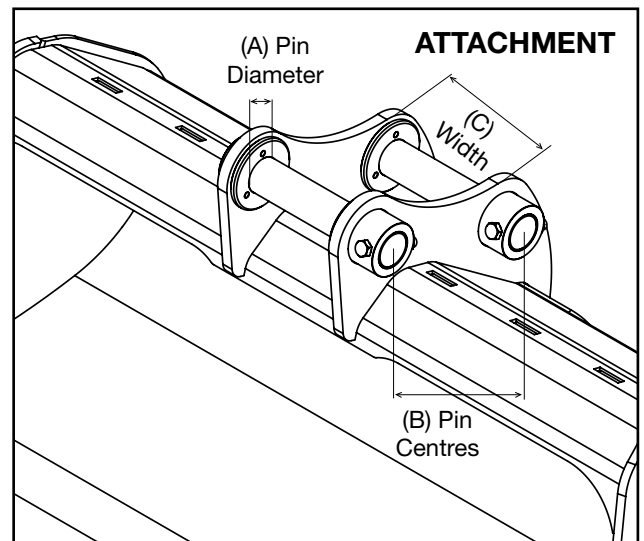
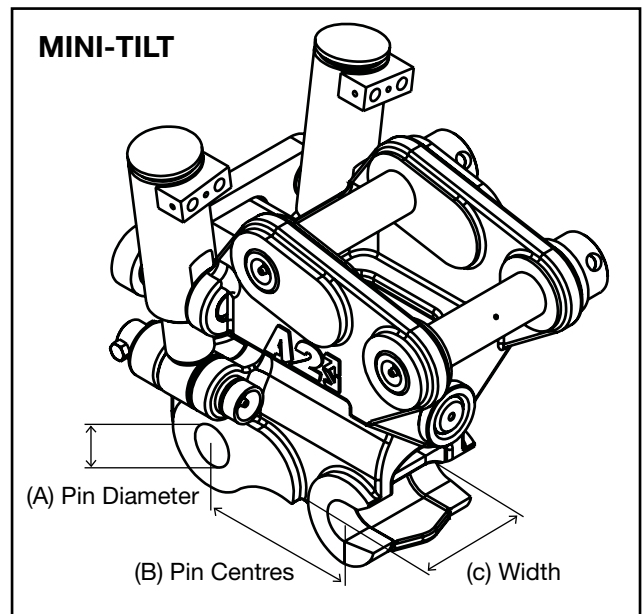
Ensure attachments being picked up suit the build Information on the Mini-Tilts Identification Label.

A Check the pin diameter of the attachment is the same as the pin diameter of the Mini-Tilt base.

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

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

Pre-Start Checklist

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

In Cab	M	T	W	T	F	S	S
Are the Mini-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.							

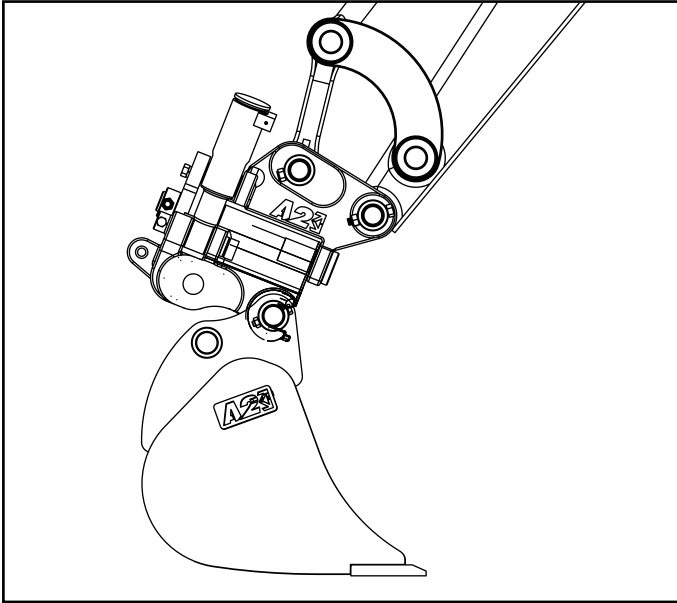
Mini-Tilt	M	T	W	T	F	S	S
Check wear and damage to hitch / attachment pins and retainers.							
Check security of mounting pins, locking bolts and nuts.							
Is the attachment safe to use? Yes or No.							

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

Operator:	Manager Signature:

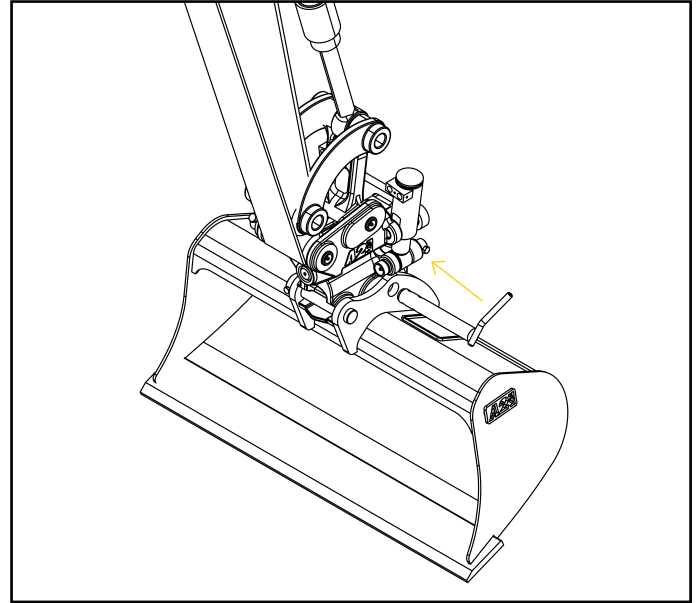
Operating & Attaching

With the addition of the latest, DualLocking Mini-Tilt coupler base, the connection and disconnection process of the Mini-Tilt Coupler is a simple and efficient process.



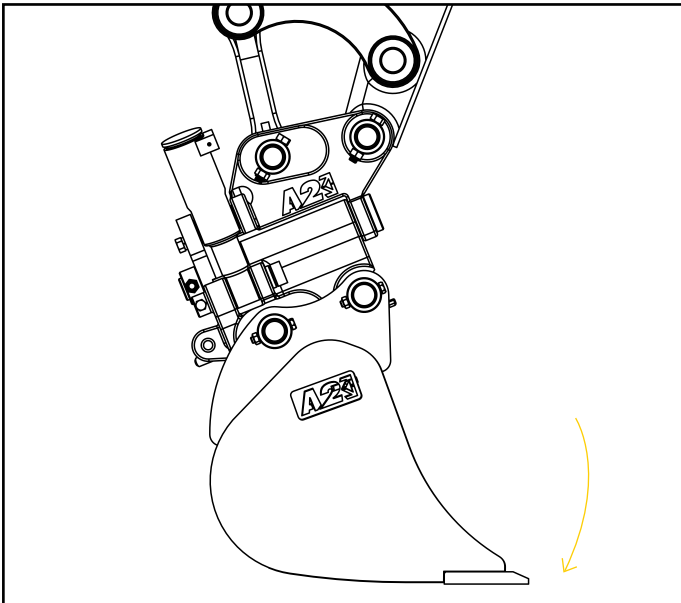
STEP 1

Engage the front pin of the attachment and crowd around so the rear pin holes are lining up.



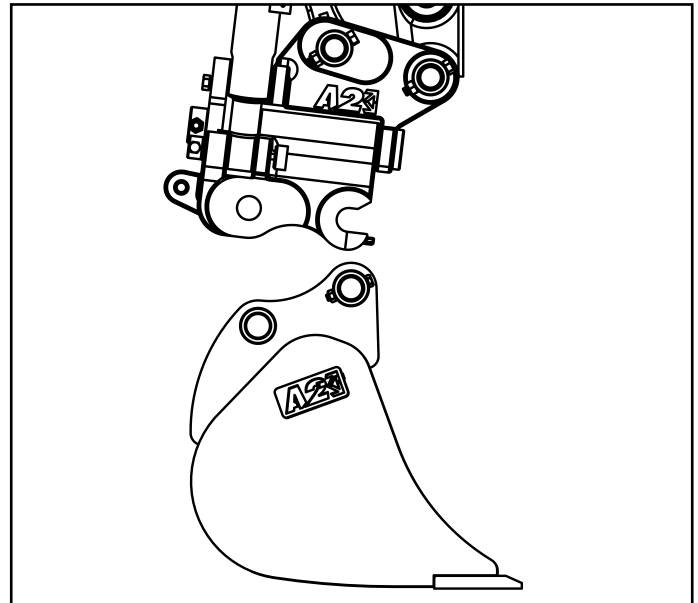
STEP 2

Slide the draw pin through the ear holes of the attachment and the coupler, insert the retainer clip so the draw pin cannot be removed



STEP 3

Ensure the coupler is securely fastened before operating by performing a bump test (Test this by applying pressure to the attachment by putting it on the ground and rotating against the ground and away from the machine).



TO RELEASE ATTACHMENTS

1. Place attachment on the ground
2. Remove retainer clip and draw pin
3. lift Mini-tilt away from attachment

Maintenance

GENERAL MAINTENANCE

All maintenance is to be performed by a qualified and competent trades person.

Before beginning maintenance work on the Mini-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. Mini-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 Mini-Tilt, carrier and/or other attachments.
2. Modification to the Mini-Tilt is done at the owner's risk and may void warranty.
3. The Mini-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 Mini-Tilt works safely to a maximum efficiency, it is imperative that it is properly maintained in accordance with the manual.



WARNING

A defective Mini-Tilt could injure you or others. Do not operate a Mini-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 Mini-Tilt (max 2 pumps per nipple).
- ☐ Check lifting point for any damage or wear.
- ☐ Check attachment hydraulics for leaks and signs of wear.
- ☐ Check attachment for signs of damage, wear or cracking.
- ☐ Ensure all safety decals and instructions are clear and legible.
- ☐ Test the attachment is safe to operate and all safety features are operational as per the manual.

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.
- ☐ Test the attachment is safe to operate and all safety features are operational as per the manual.
- ☐ Check and re-torque bolts as per the manual.
- ☐ Check base wear as per the manual.
- ☐ Check attachment for signs of damage, wear or cracking.
- ☐ Grease Mini-Tilt (max 2 pumps per nipple).
- ☐ Check attachment hydraulics for leaks and signs of wear.

Notes / Remarks

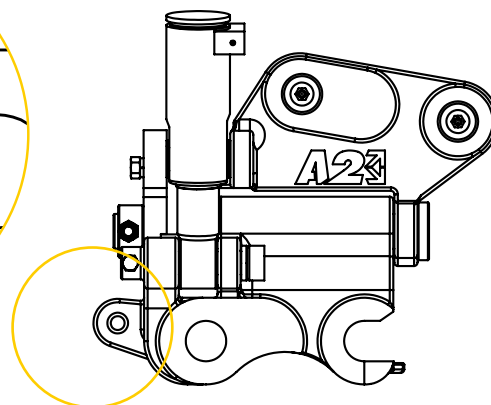
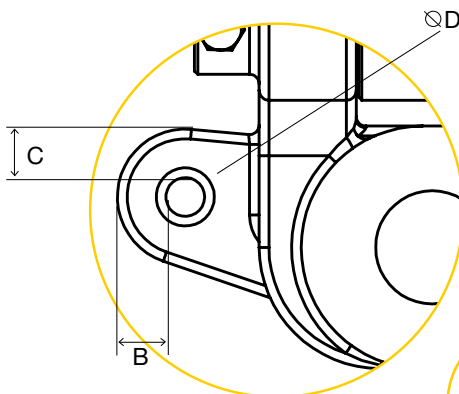
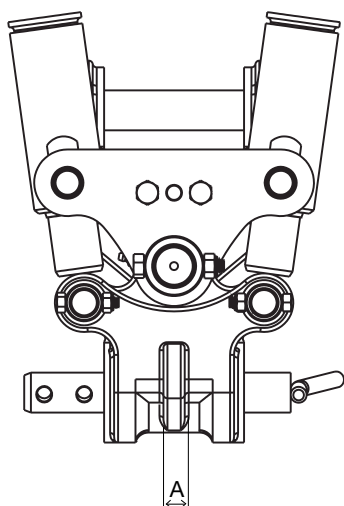
Description:		ATTACH2 Serial Number:	
Machine Make:		Machine Model:	
Company:		Contact:	
Email:		Phone:	
Company:		Trades Person Number:	
Date:		Sign:	
Phone:		Email:	

Lifting Eye Inspection

(CHECK DAILY)

WARNING: The Lifting Eye requires visual inspection.

Tonne Range	Minimum Lifting Eye Width (mm)	Minimum Distance to Edge (mm)	Minimum Distance to Edge (mm)
	A	B	C
1-2.9T	15	11	11



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.

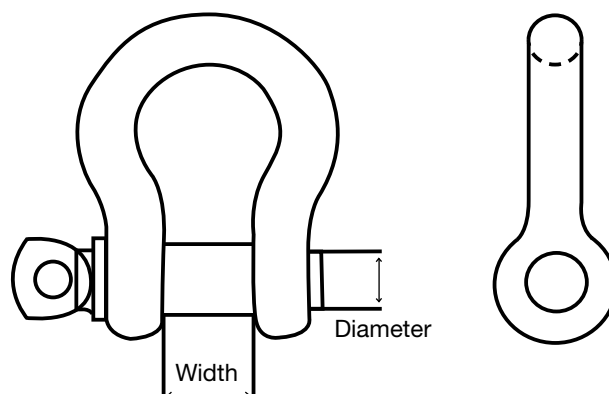
Should you find any deformations or cracks anywhere on the Lifting Eye, please contact your local ATTACH2 Service Department on:

AUS: +61 7 3557 2654

NZ: +64 6 929 7592

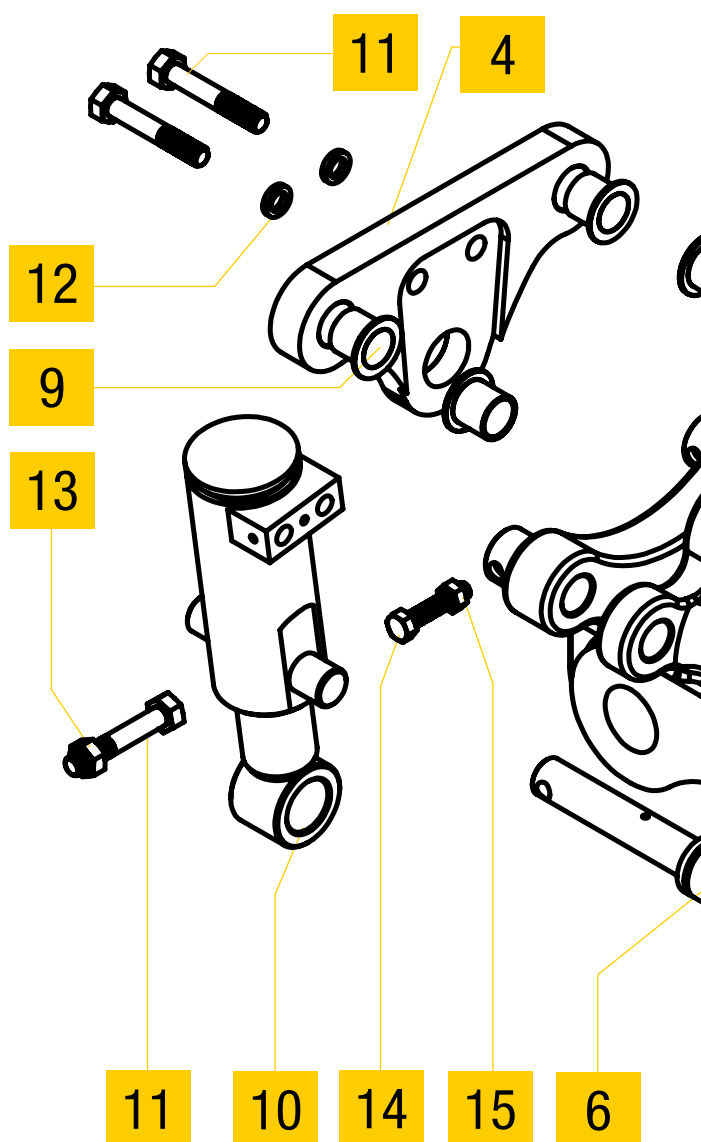
Shackle Table

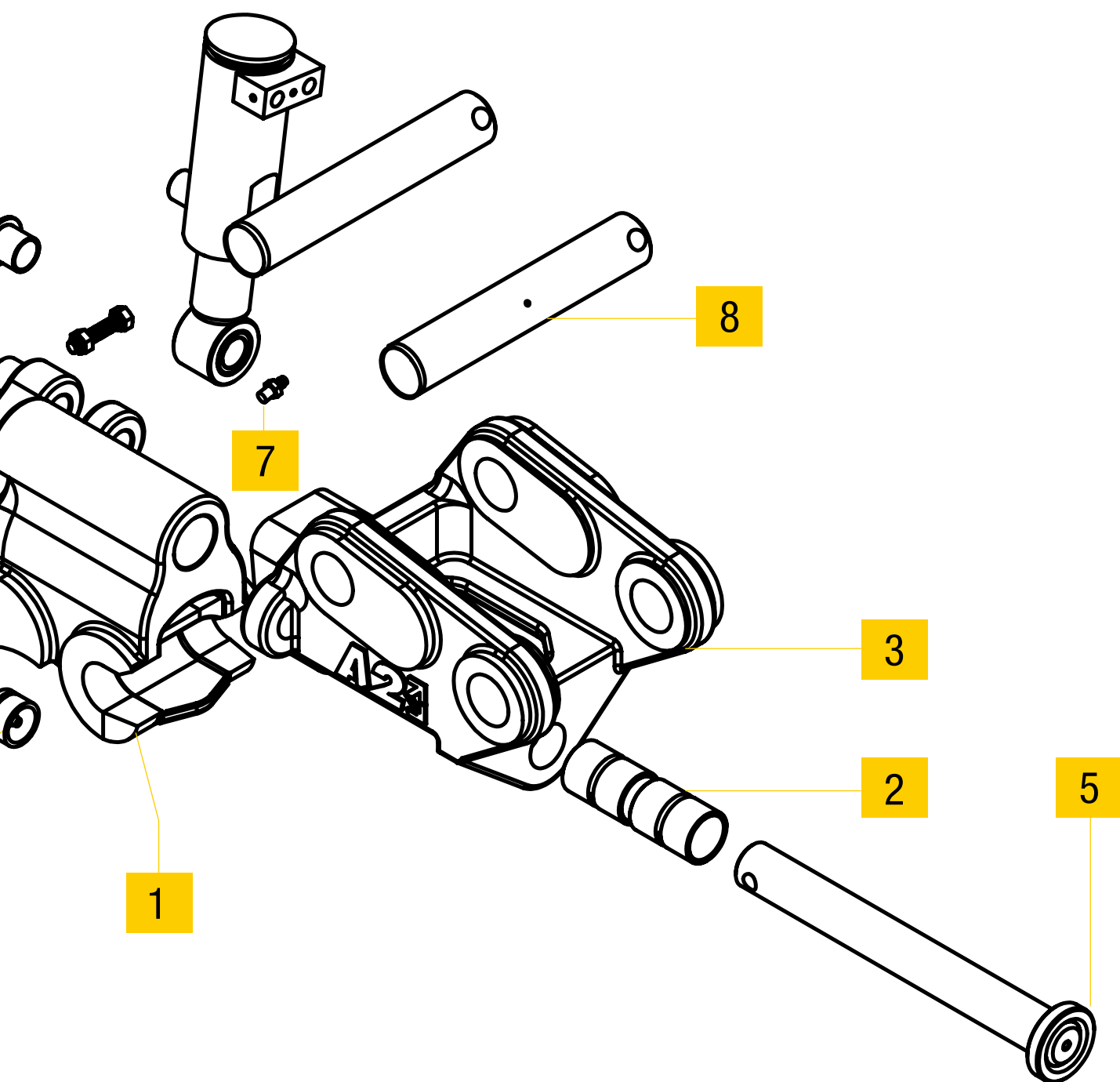
Model	W.L.L	Pin Diameter	Width	Standard
1-2.9T	1.00	11	17	AS2741



Parts Diagram & Parts List

Number	Description	A2 Part Number
1	A2-200135	Chassis Machining Mini-Tilt
2	A2-106643	Standard-Solid-Hard-Bush(Sb-30-35-50)
3	A2-200136	Top Machining Mini-Tilt
4	A2-200103	Cyl Mount Pivot Plate-Mini-Tilt
5	A2-300102	Pivot Pin Assy-Mini-Tilt
6	A2-300101	Cyl Lock Pin Assy Mini-Tilt
7	A2-800101	1/8" Bspt Grease Nipple
8	900013	Greasable Pin
9	A2-700101	Gfm-2023-21 Type G Iglide®
10	A2-500184	Cylinder Assembly- Mini-Tilt30
11	A2-800102	M10x1.5x60-Pt
12	A2-800104	Spring-Washer-W-Type-Nfe25515-M10
13	A2-800103	Hexa-Nylock-Nut-Zinc-Plated M10x1.5
14	A2-800105	Hexa-Bolt-Zinc-Plated M8x1.25x40
15	A2-800106	Hexa-Nylock-Nut-Zinc-Plated M8x1.25







ATTACH2 EQUIPMENT - NZ

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www.attach2.com
FREEPHONE: 1800 095 689