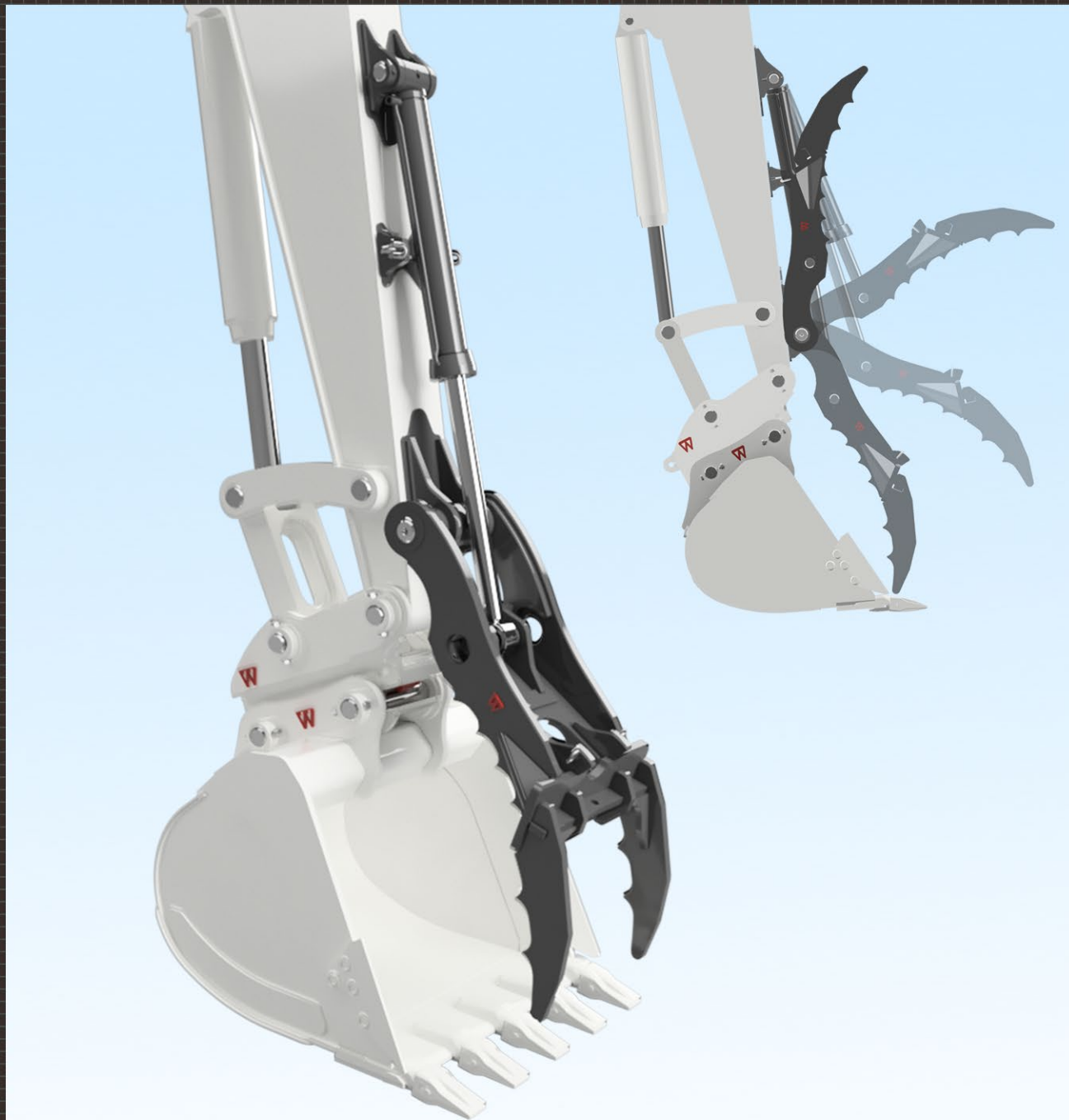




TUH Thumb Installation Manual

BT
SERIES



SPECIAL NOTE

Your new Wedglock TNH Thumb may have been manufactured to supplied specifications for a target carrier machine. Installation on any machine other than the target carrier may not be possible and will void warranty.



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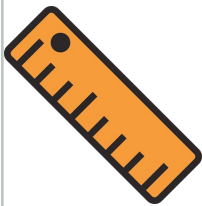
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IMPORTANT NOTICES



Wedglock TUH thumbs are manufactured for a specific carrier machine. Measurements and tolerances are designed to fit that machine and will not necessarily fit any other brand, model or weight class.



The thumb may have been manufactured using critical measurements supplied by the purchaser or end user. While there is a small margin for error, larger errors or omissions can cause the thumb's operation to be less than optimal. **STEP 8** is a final check/review that will determine the accuracy of the supplied measurements. It is vital that this step be carried out correctly, and if over-rotation occurs, the subsequent instructions are followed.



The installation of a major attachment like a thumb is best carried out in a secure workshop environment with safe lifting devices and specialist tools. Occasionally, however, this is not possible, and these instructions contain suggestions and tips on how to carry out an installation in the field. Unless otherwise noted, these procedural instructions are suggestions only, and Wedglock will not be held responsible for any adverse consequences of a field installation that does not return optimal results.



It is expected that installation of Wedglock thumbs be carried out by professionals whose experience will ensure the operation is carried out to a successful result. If, during the installation process, the installer has any doubts or questions, please contact Wedglock BEFORE engaging in a potentially damaging or dangerous process



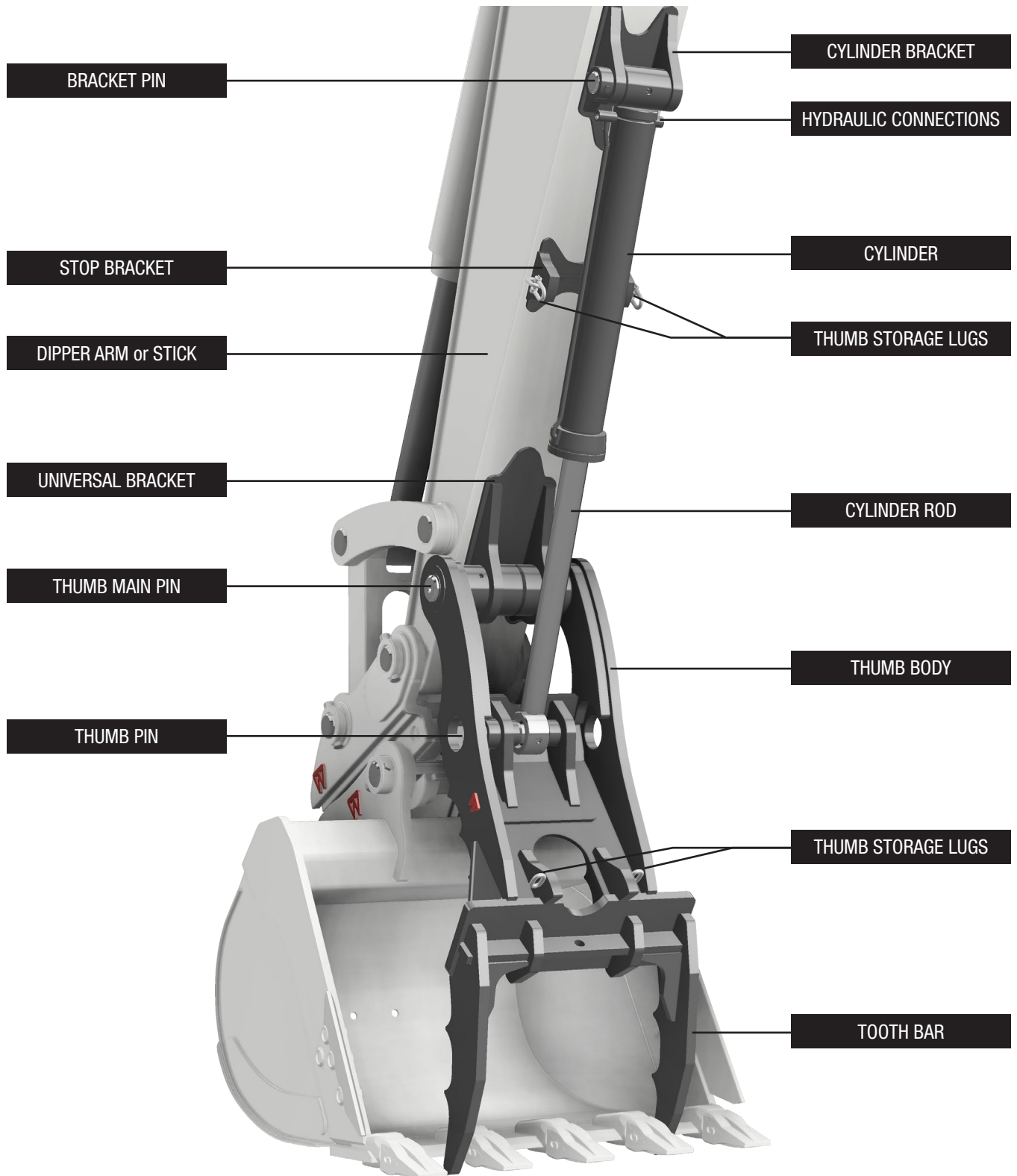
ALWAYS disconnect the battery circuit before undertaking any welding.



Be very careful where you place the earth strap when welding. **DO NOT** pass current through the cylinder. Earth to the dipper arm or bracket, **NOT** the thumb or cylinder.



SECTION 1: Components and Terminology





2.0 SAFETY PRECAUTIONS

- Always use PPE (Personal Protective Equipment) when servicing, operating or maintaining plant, machinery and its components.
- Refer to the carrier machine “Service Manual” for correct procedures when carrying out work on the machine. The machine service manual takes precedence over any discrepancies between that and this installation manual.
- Allow for hydraulic oil to cool adequately before opening or accessing any hydraulic lines. Hydraulic lines, fittings and components can be hot which can be harmful causing severe burns.
- Relieve the hydraulic tank pressure before accessing hydraulic lines. Refer to the carrier machine service manual for proper procedures.
- Unless otherwise noted in these instructions, ensure that the dipper arm of the carrier machine is resting on the ground at all times – do not leave attachments suspended in the air during service / installation.
- Visually inspect for oil leaks tighten and adjust accordingly. Avoid contact with hydraulic fluids and high pressure oils – use cardboard or similar as a backing when checking for leaks.
- Oil spills are sometimes unavoidable. Contain all fluid spills with appropriate absorbent materials and dispose accordingly. Immediately clean affected areas to minimize safety risks.
- When operating plant and machinery keep people and property well out of harms way. Evaluate the working environment and identify hazards. Ensure that all people involved in the installation understand the hazards associated with this procedure.

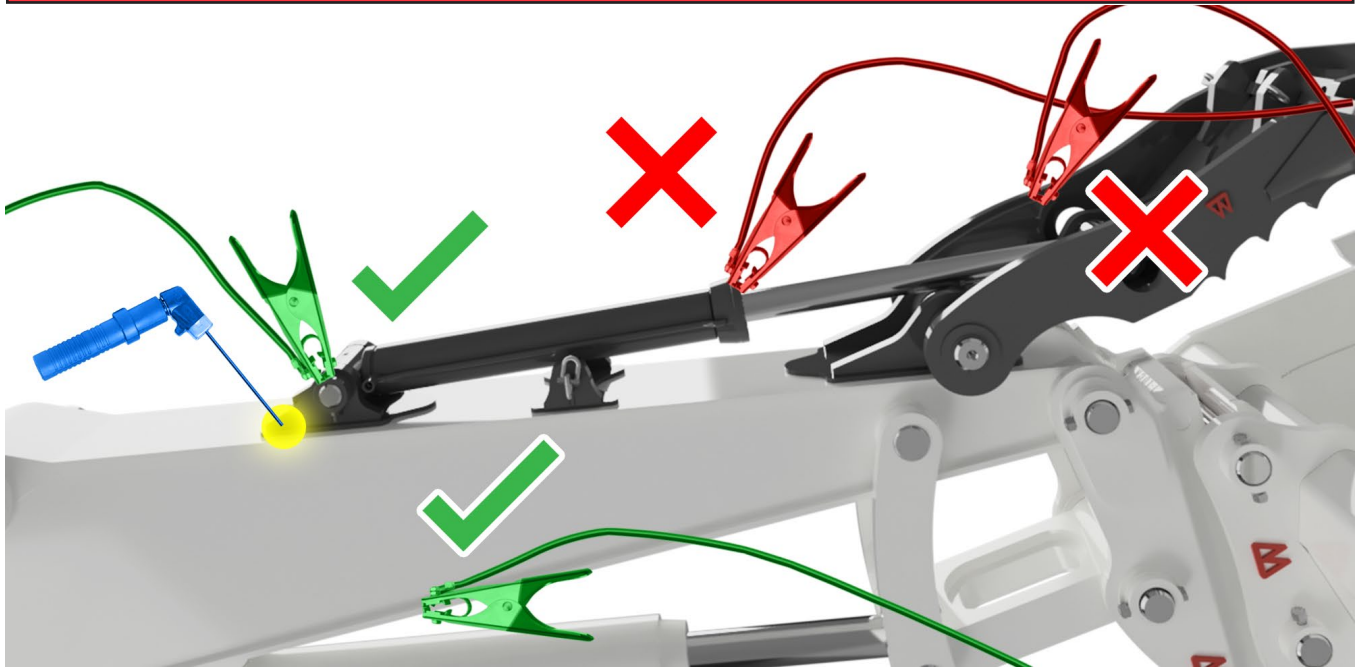
2.1 WELDING PRECAUTIONS

- Before commencing any welding procedures on the carrier machine ensure that the engine is turned off and the battery supply is disconnected (refer to the carrier machine service manual)
- Ensure all surrounding areas are protected with a flame resistant covering. Clear surrounding areas of combustible materials. Ensure you have a fire extinguisher at hand.
- Cover highly susceptible surfaces like cylinder rods, glass windows, electrical components and plastics to prevent spatter or heat damage.
- Ensure parts and surfaces to be welded are clean and prepared properly for welding. Remove all paint from the surfaces to be welded.
- Connect the ground cable (earth lead) from the welder to the component to be welded to the carrier machine (SEE NEXT PAGE).



SECTION 2: Safety Precautions

DO NOT PASS CURRENT THROUGH THE CYLINDER. CONNECT EARTH LEAD TO BRACKET OR ARM, NOT THE CYLINDER OR THUMB BODY



2.2 SAFETY DURING THUMB INSTALLATION

- Use appropriate PPE (Personal Protective Equipment) when carrying out any welding procedures.
- Always use the correct PPE when removing attachments from carrier machines.
- Stand well clear of machinery that is in motion at all times.
- NEVER place hands or fingers near pin holes or recesses.
- Always use correct tools when carrying out removal and installation of attachments on the carrier machine.
- Use correct lifting techniques and lifting equipment when maneuvering heavy objects
- Attachments may roll or tip during removal when placed on the ground – place with extreme caution
- Always use assistance when installing and removing attachments pinned to the carrier machine
- If installing in the field, ensure the surface is flat, clean and large enough for the operation to take place

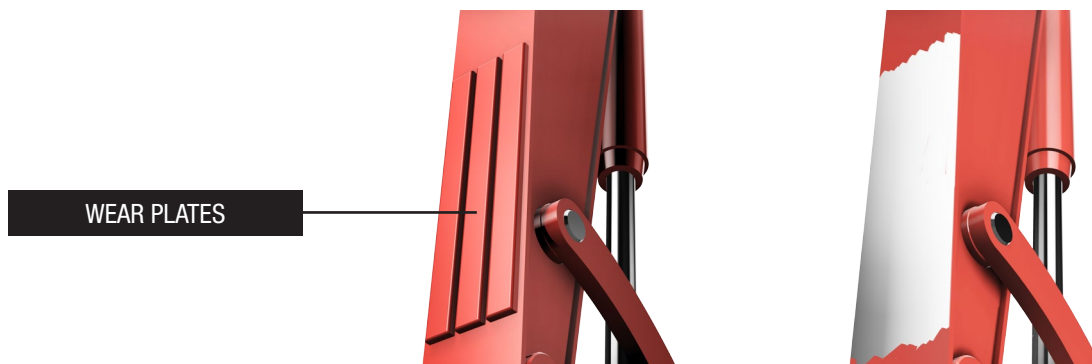
SECTION 3: Thumb Installation



STEP 1: PREPARE CARRIER MACHINE



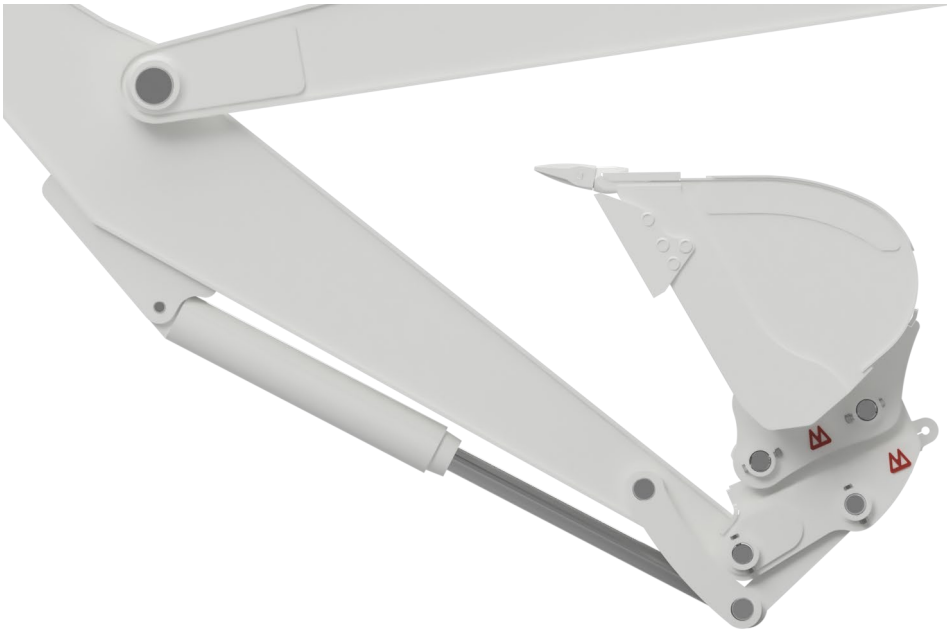
- Place the dipper arm in transport position providing a near-horizontal surface to mount the thumb.



- Remove any wear plates or protrusions on the inside of the dipper arm.
- Scrape off all paint on surfaces where brackets will be welded.

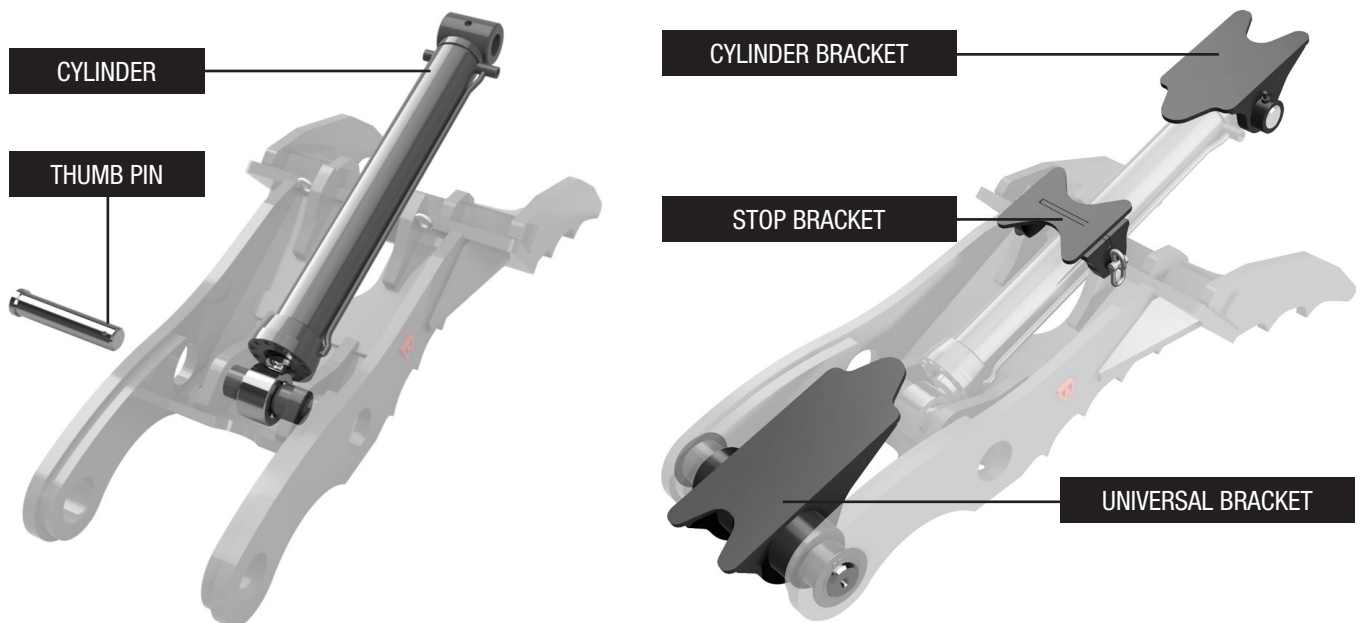


SECTION 3: Thumb Installation



- Position the bucket at full curl.

STEP 2: ASSEMBLE THUMB

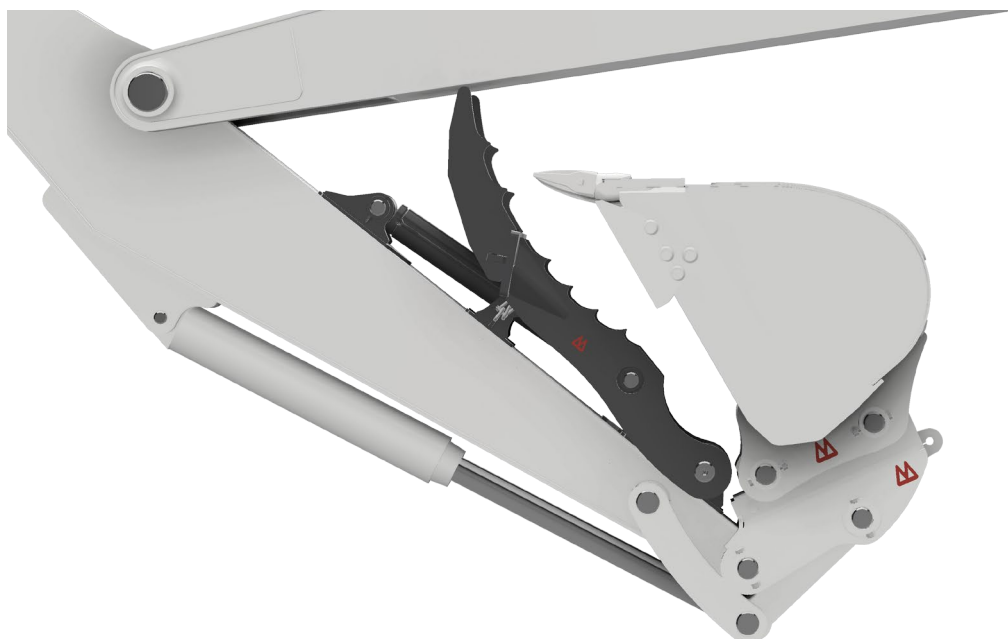


- Pin the cylinder to the thumb
- Pin the cylinder bracket to the cylinder and fix the stop bracket to the shackles
- Pin the universal bracket to the thumb**
- NOTE: The thumb will most likely arrive fully assembled
- **NOTE: You may wish to wait before pinning the universal bracket when installing larger thumbs. See page 10

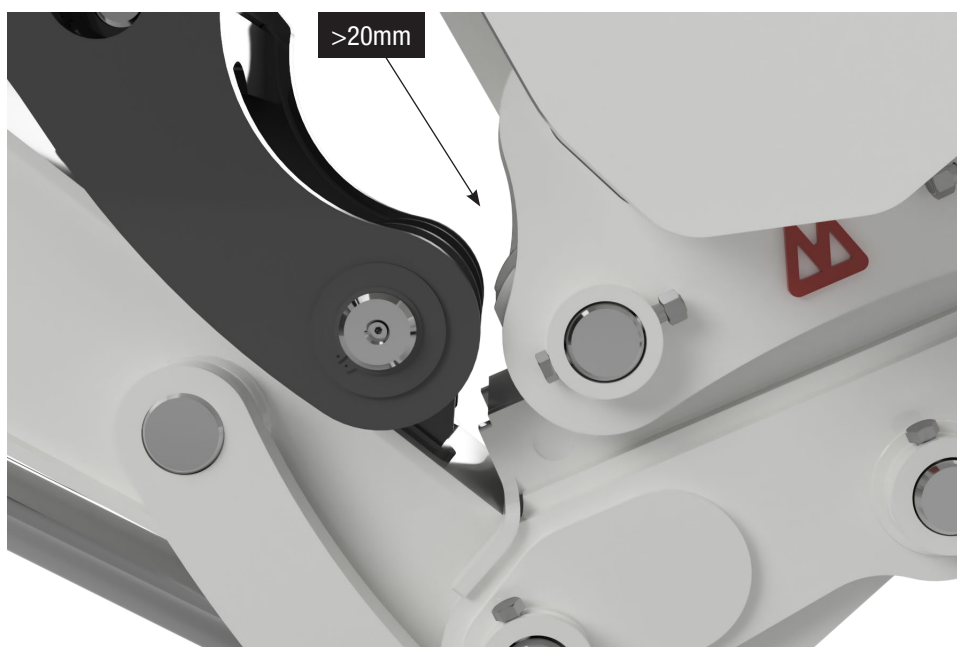
SECTION 3: Thumb Installation



STEP 3: POSITION THUMB ON DIPPER ARM

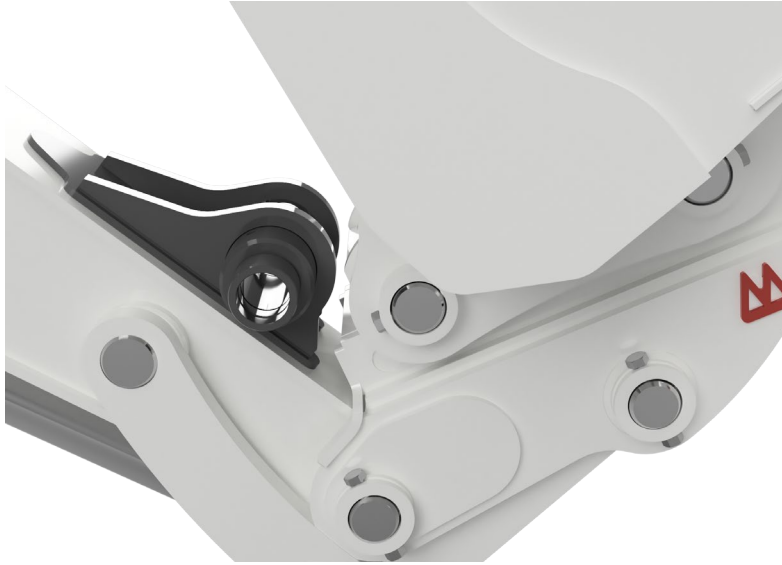


- With the bucket in full curl, position the thumb on the dipper arm as low as it will go (closest to the coupler/bucket)
- Ensure there is at least 20mm clearance from bucket ears or closest coupler element

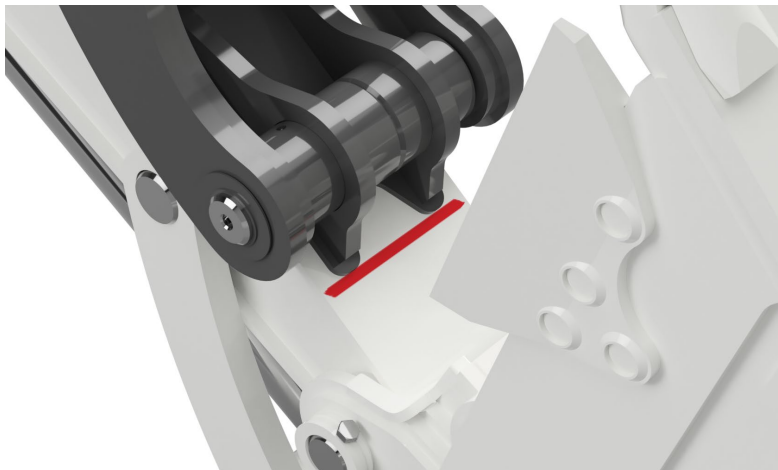




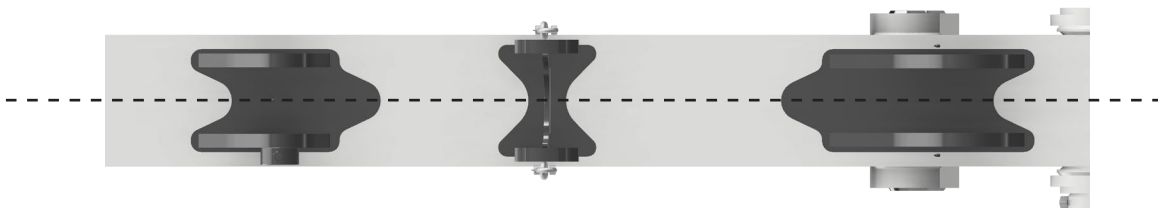
SECTION 3: Thumb Installation



- OPTION: In the case of larger thumbs it might be easier to perform this clearance test with the universal bracket detached from the thumb



- Mark the bottom universal bracket position on the dipper arm in case of movement during later steps. This is especially important if you have positioned the universal bracket without the thumb attached



- Ensure that brackets are lined up in the exact centre of the dipper arm

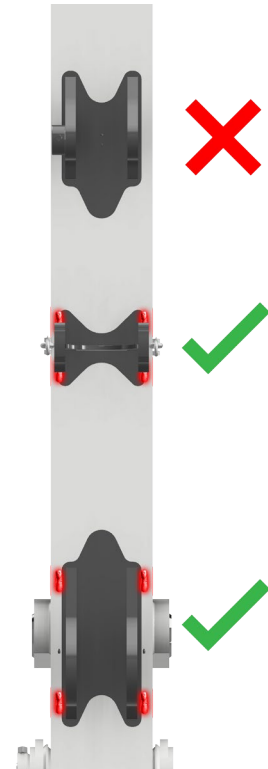
SECTION 3: Thumb Installation



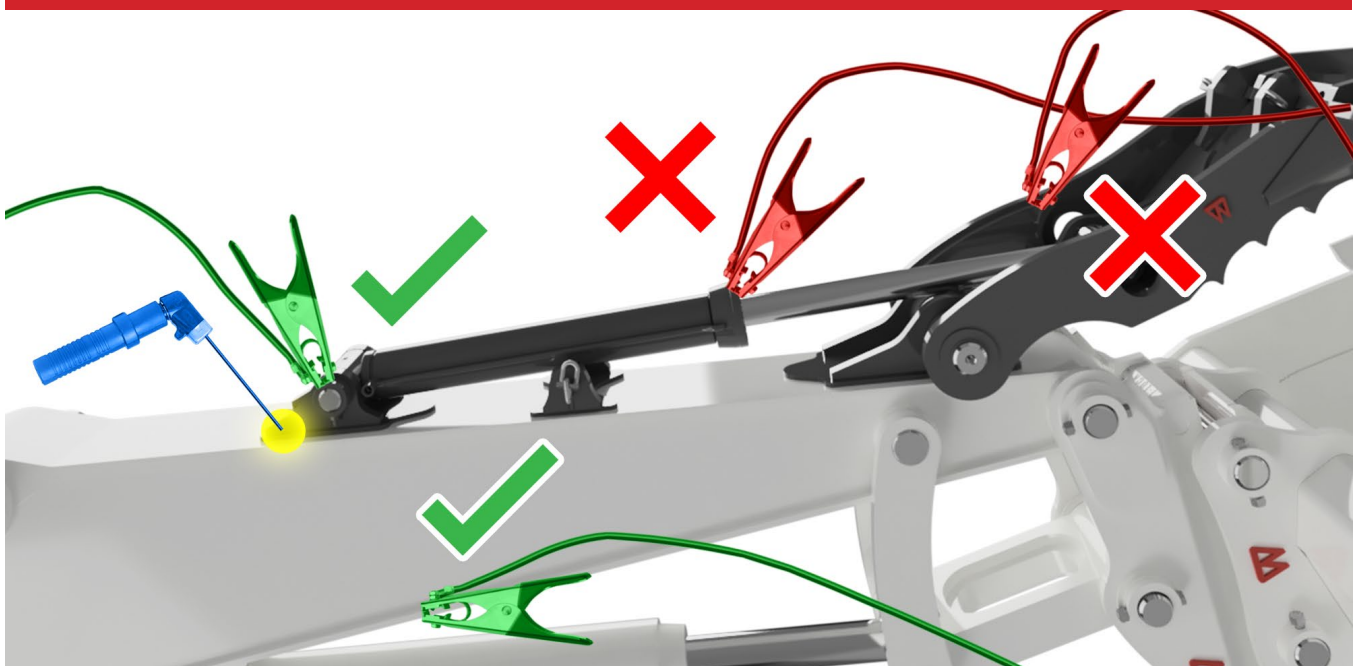
STEP 4: TACK WELD BRACKETS TO DIPPER ARM

BEFORE WELDING, DISCONNECT THE GROUND TERMINAL FROM THE MACHINE'S BATTERY. FOLLOW ANY OTHER INSTRUCTIONS IN THE MACHINE SERVICE MANUAL RELATED TO WELDING.

- Tack weld the universal bracket and stop bracket to the dipper arm
- Ensure tack welds are strong enough to hold the thumb during operation
- DO NOT weld the cylinder bracket yet



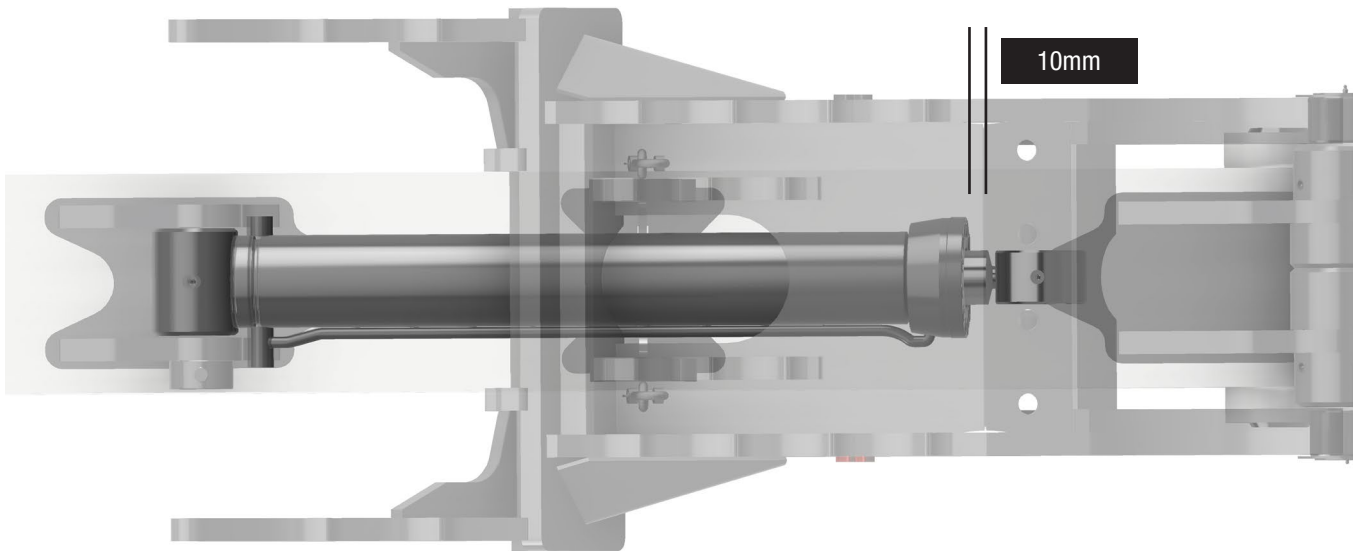
EARTH STRAP POSITION IS CRITICAL! ENSURE THAT NO CURRENT CAN PASS THROUGH THE CYLINDER. EARTH DIRECTLY TO THE DIPPER ARM **OR** BRACKETS – **NOT** TO THUMB BODY





SECTION 3: Thumb Installation

STEP 5: EXTEND CYLINDER ROD



- Extend the cylinder rod 10mm (3/8") from the fully retracted position. THIS MUST BE DONE, otherwise the cylinder may be damaged because of over-rotation interferences.

STEP 6: TACK WELD CYLINDER BRACKET

- Tack weld cylinder bracket to dipper arm

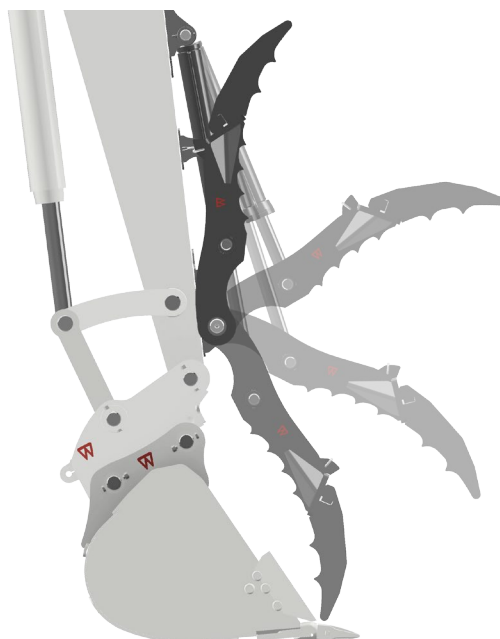
STEP 7: INSTALL AND TEST HYDRAULICS

- Connect hydraulic hoses to test rotation
- No hydraulic equipment is supplied with the thumb. Ensure hydraulic pressure supplied to the thumb meets the requirements in the Table of Settings on Page 15

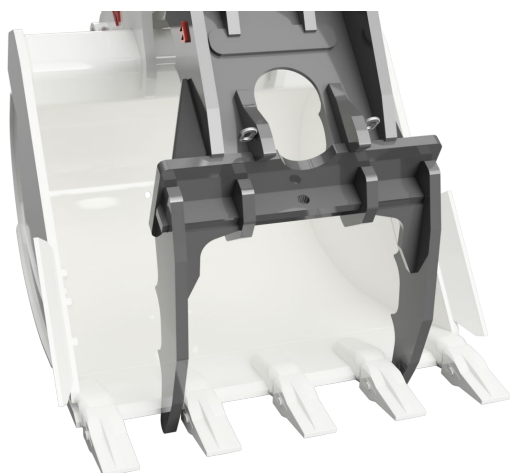
SECTION 3: Thumb Installation



STEP 8: TEST THUMB ROTATION



- Rotate the thumb through its complete rotation and check all clearances

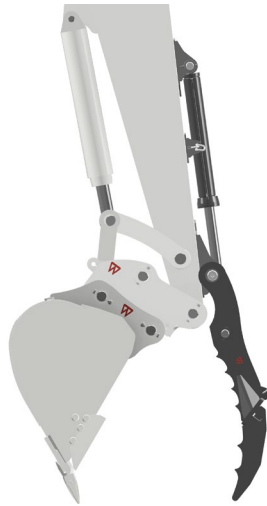


CYLINDER MUST NOT
TOUCH ARM

- Check the squareness of the thumb to the bucket and the dipper arm. Ensure the tooth bar meshes with the bucket teeth without contact
- The cylinder must not contact the dipper arm. If it does, remove the cylinder bracket from the dipper arm and increase the extended rod distance to 20mm (3/4"). Tack weld the cylinder bracket to the dipper arm and repeat STEP 8



SECTION 3: Thumb Installation



- NOTE: Due to the separation of rotational axes (Thumb Pin and Front Coupler Pin), the point of contact between the thumb and the bucket varies throughout rotation
- If the thumb teeth are hitting the bucket teeth, one of the following has occurred;
 1. The thumb has not been centred properly on the coupler (Repeat STEP 3 for remedy)
 2. The bucket differs from the one used as specification for the thumb manufacture (Use correct bucket for remedy)
 3. The measurements supplied for thumb manufacture were incorrect. (Contact Wedgelock.)

SECTION 3: Thumb Installation

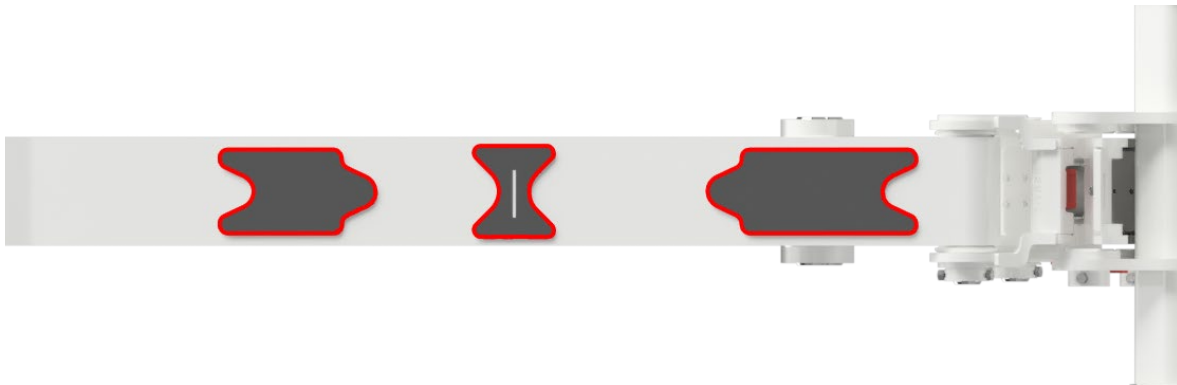


STEP 9: COMPLETE THE WELDING PROCESS

- AGAIN, BEFORE WELDING DISCONNECT THE GROUND TERMINAL FROM THE MACHINE'S BATTERY
- Remove cylinder from cylinder bracket.



- Position arm, coupler and thumb as shown above.



- Weld the brackets around perimeter.

STEP 10 FINISHING

- Grease the main pin and cylinder. Tighten all pin retention bolts.



SECTION 4: Tables

4.1 TABLE OF SETTINGS

Product Code	Operating Pressure	Flow Rates	Extend Cylinder Rod
	Bar (PSI)	l/m in (gal/m in)	mm
TUH-015-022	200 (2900)	2.9 (0.8)	10
TUH-028-037		6.3 (1.7)	10
TUH-045-055		11.7 (3.1)	10
TUH-070-099		28.0 (7.4)	10
TUH-130-170		57.0 (15.0)	10
TUH-210-270		76.0 (20.0)	10
TUH-320-450		132.0 (35.0)	10

4.2 MAINTENANCE SCHEDULE

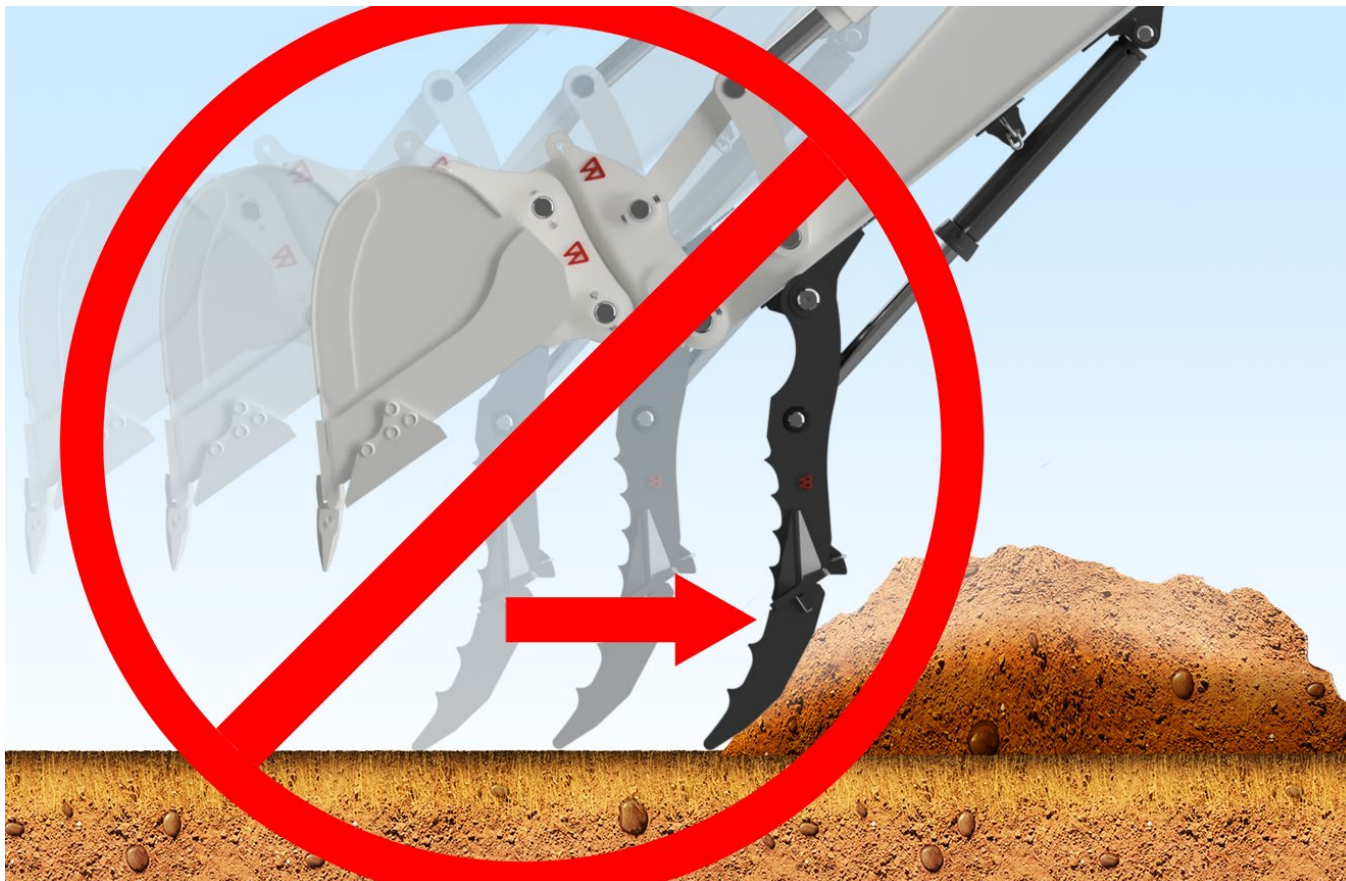
Maintenance Required	Daily	Weekly	Monthly
Check all pin retainers, bolts & nuts for tightness on the bucket and thumb. Include pin end cap bolts.	✓		
Lubricate all greasing points.	✓		
Check hydraulic hoses and fittings for any leaks or wear – replace immediately if required.	✓		
Check the hydraulic cylinder mounting bolts for tightness – remedy if required.		✓	
Thoroughly clean the thumb and ensure there is no material build up around cylinder mounting point and pin.		✓	
Check the thumb for evidence of fatigue, weld failure or stress – if evident contact your Wedgelock dealer immediately for assistance.		✓	
Check thumb alignment with bucket teeth. Should alignment have changed, new shims may be required.			✓

SECTION 5: Mis-use of attachment

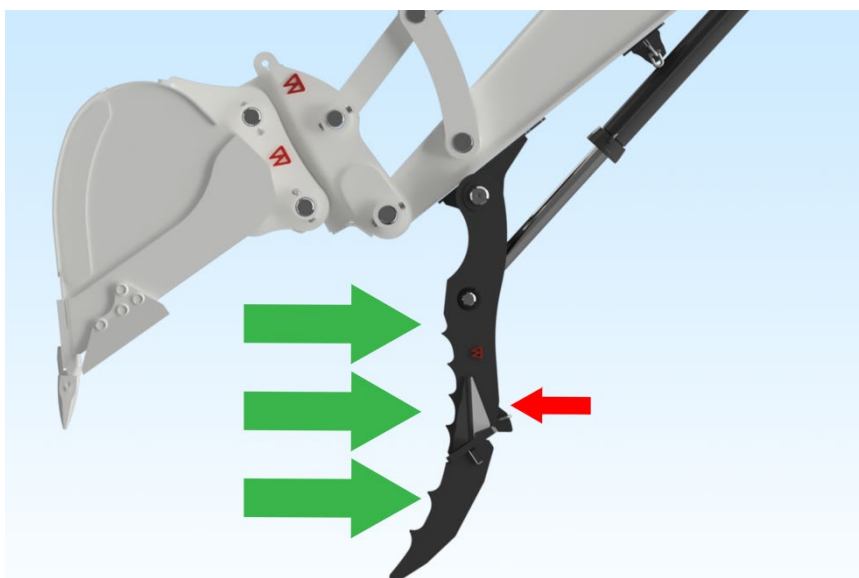


5.1 PRESSURE ON BACK OF THUMB

- Do not put excessive pressure on the back of the thumb (back-blading).



- The thumb is designed to receive stress in one direction only and excessive stress on the back of the thumb will cause damage and possible failure that is not covered under the manufacturer's warranty.





NOTES