CONCRETE BATCHING BUCKET

OPERATING & MAINTENANCE MANUAL

NORM ENGINEERING

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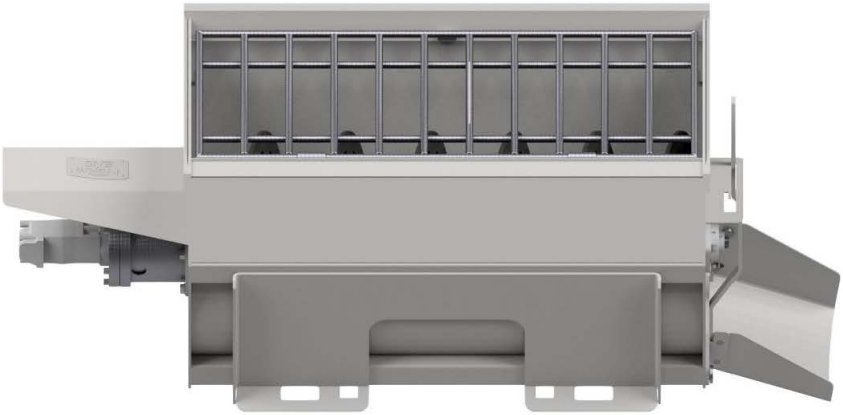
1 INTRODUCTION



Concrete Batching Bucket

Congratulations on purchasing a Norm Engineering Pty Ltd attachment. We have designed this concrete batching bucket for a long, productive, and safe life. Your attachment will provide you with years of service provided regular maintenance and correct usage is applied.

This manual offers a guide on how to safely assemble, mount, operate and maintain your concrete batching bucket. While the manual attempts to cover most situations, there are many unforeseen risks and events that are not included due to the capability of the concrete batching bucket. On this basis the owner and/or operator must determine if this attachment is suited for a particular purpose.

Norm Engineering Pty Ltd can accept no responsibility or liability for how you operate your equipment: we can only provide warning notes and safety precautions in relation to the standard operation of the concrete batching bucket.

The illustrations and data used in this manual were current at the time of printing but due to possible engineering and/or production changes, this product may vary slightly. Norm Engineering Pty Ltd reserves the right to redesign and/or change components as may be necessary without notification.

2 SAFETY DEFINITIONS: TERMS AND SYMBOLS

We will use the ANSI Z535.4-2011(R2017) standard for the definitions of signal words as described in conjunction with colours red, orange, and yellow. These are used with the Safety Alert Symbol:

- **Signal word:** Are defined as the words used in the signal word panel. The signal words for hazard alerting signs are "DANGER", "WARNING", and "CAUTION". Safety notice signs use the signal word "NOTICE". Safety instruction signs use signal words that are specific to the situation.

- **DANGER:** Indicates a hazardous situation, which, if not avoided, **will** result in death or serious injury. This signal word is to be limited to the most extreme situations. (White letters on a red background)

- **WARNING:** Indicates a hazardous situation, which, if not avoided, **could** result in death or serious injury. (Black letters on an orange background)

- **CAUTION:** Indicates a hazardous situation, which, if not avoided, **could** result in minor or moderate injury. (Black letters on a yellow background)

- **NOTICE:** Indicates information considered important, but **not** hazard-related (e.g., messages relating to property damage). (White letters on a blue background)

- **SAFETY INSTRUCTIONS**: Indicates a type of safety sign, where specific **safety-related instructions** or **procedures** are described. More definitive signal words are encouraged, where practical (e.g., SAFE SHUTDOWN PROCEDURE, SAFE OPERATING PROCEDURE). (White letters on a green background)

3 SAFETY INSTRUCTIONS

⚠ WARNING

Obey all the safety instructions listed in this section and throughout this manual. Failure to follow instructions could result in death or serious injury.

NOTICE

Before attempting any type of assembly operation, maintenance, or other work on or near this product:

- READ and COMPLETELY UNDERSTAND:
  - This manual,
  - The manuals provided with the power unit being used with this attachment.
- Read and understand all safety signs associated with the equipment being used.
- Know all your controls and know how to quickly stop all power unit movement, the attachment movement, and the engine in case of an emergency.

SAFETY IS YOUR RESPONSIBILITY AS THE OPERATOR OF THE EQUIPMENT

Inappropriate and/or irresponsible use of a concrete batching bucket may cause serious injury and trauma. The operator must have all relevant industry competencies, qualifications, certificates and/or licenses.

The operator must understand their responsibilities under the relevant acts and regulations of the governing body. Failure to comply with your legal obligations under the act may result in prosecutions against you.

As the equipment operator you are responsible to familiarise yourself, and anyone else who will assemble, operate, maintain, or work around this product with the safety information contained within this manual. You must make certain that all operators and maintenance personnel have a complete understanding of the full and exact contents of this manual and those of the power unit.

There are usually specific precautions and steps in the power unit operating manual to be taken to ensure your safety prior to engaging the attachment.

Conduct a job site survey during the planning phase of any construction project to identify potential hazards and develop and implement appropriate control measures to protect workers.

Accidents are preventable if the equipment operator is careful and responsible. No accident prevention program can be successful unless there is a wholehearted commitment and cooperation of the person who is directly responsible for the operation of the equipment.

Make sure anyone who will be installing, maintaining, repairing, removing, and/or storing this product applies the Workplace Health and Safety Act requirements. This includes ensuring that the person has been instructed in the safe operation of this product and of the power unit to which this attachment is likely to be attached.

Know and follow good work practices, some of these include:

- To optimise the physical environment such as having a well-lit, level surface that is clean and dry to work on.
- Use properly grounded, test and tagged electrical outlets and tools.
- Use the right tool for the job at hand.
- Make sure that your tools are in good condition for performing the required function.
- When using tools, wear the protective equipment specified by the tool manufacturer (hardhat, safety glasses, work gloves, protective shoe...)
- When the attachment has been out in the sun, remember to wear gloves.
- Before starting, know the job duration, job complexity, and best procedure.
- Ensure workers have the capacity to do the job.
- Check that all hazards have been identified and control measures implemented.
- Clear communication so everyone present knows what is happening.
- Clear emergency stop procedure so there is no confusion in an emergency.
- Ensure the use of tyre stoppers and securing framework to stop the plant and plant attachment moving during maintenance.

3.1 IMPORTANT POINTS

When your power unit is used during any type of assembly, operation, maintenance, or other work on or near this product:

- Before leaving the operator's station or before beginning any type of work on this product, lower this product to the ground, apply your power unit's parking brake, stop the engine, remove the starter key, wait for all moving parts to stop, and then relieve all pressure in the hydraulic lines. Refer to your power unit's operating manual for instructions on preparing the equipment for hitching up an attachment and relieving hydraulic pressure in lines.
- Know your power unit's safe lifting and operating capacity and the weight of this product. (Check the parent machines operator manuals for safe operating limits).
- Only allow the operator to be around the power unit or this product when either is in motion. Ensure work area is clear of all personnel.
- Apply all safety guidelines in relation to the operator and the equipment.
- Only operate controls from the operator's station.
- Maintain operator presence at all times when the engine is running, or the product is raised on the power unit.
- Reduce speeds when additional weight and width need to be considered especially over rough ground.
- Consider the operating environment if dust is a concern reduce the mixing speed.
- Whilst in motion keep the product close to the ground and under control.

4 PREDELIVERY

The following steps should be performed when fitting this attachment to a power unit for the first time. Failure to perform these checks may lead to damage of the attachment, the power unit and be a risk to safety. Warranty claims that arise as a result of skipping these steps may be challenged.

4.1 CHECK PICKUP FIT

Perform '5.1 Hitching Up the Concrete Bucket' to check how the attachment fits the coupler. Check for the following:

- Do the pins lock?
- Is it a snug fit?

4.2 CHECK RANGE OF MOTION

Carefully go through the attachment and parent machines full range of motion together. If unexpected contact occurs, contact Norm Engineering to discuss. Due to the capabilities of this product some contact with the machine may be unavoidable. In this case place the warning sticker provided on the attachment and inform the owner/operator.

4.3 CHECK HYDRAULIC HOSES

If you are unsure how to route the hydraulic hoses, contact Norm Engineering. Connect hoses and once again thoroughly check full range of motion to make sure:

- They **DON'T** pull tight.
- They **DON'T** have excessive length.

If the hose length is not correct, call Norm Engineering first for assistance.

4.4 CHECK ELECTRICAL CONNECTION

If the purchased attachment comes with a hydraulic gate instead of manually operated one, it will require an electrical connection to control a diverter valve between the hydraulic motor and hydraulic cylinder operating the gate.

We take every opportunity to supply the attachment as a plug and play solution with a factory matching electrical connector, but unfortunately this is not possible for all machines.

Norm Engineering recommends using a certified and qualified electrical technician to perform these modifications to the parent machine. For additional information refer to section '12 Warranty'.

If wiring is required Norm Engineering recommends connecting the attachment via a relay to a momentary push button on the opposite control switch to the one that operates the standard flow auxiliary hydraulics. Wire polarity is not important and max current draw is under 5 Amps.

4.5 HYDRAULIC MOTOR RUNNING-IN

To maximise the life of the unit, it must be run in for a period. To carry out the running in procedure, place the bucket on the ground. Ensure there is nothing obstructing the mixing shaft from freely moving and there are no bystanders within the nominated radius as defined in the risk assessment completed prior to commencing any works.

Operate the motor at 30% of rated pressure for 20 minutes in each direction before application of full operating load.

5 ASSEMBLY INSTRUCTIONS

⚠ WARNING Obey all instructions listed in this section of the manual. Failure to follow the instructions listed below could lead to serious injuries.

For any assistance with the following processes, please contact Norm Engineering.

5.1 HITCHING UP THE CONCRETE BUCKET

⚠ DANGER All safety precautions pertaining to both the power unit and the concrete batching bucket need to be followed. Sufficient planning should be made prior to any work commencing in case of an emergency situation.

Step one: Before beginning any work on this product, lower the product to the ground on a firm level surface that is large enough to accommodate this product, the power unit and all workers involved in the hitching up the concrete batching bucket.

Step two: Refer to your power unit's operating manual for instructions on hitching up this attachment. Visually inspect to ensure the attachment is fully engaged to the power unit hitch.

Step three: Engage the locking mechanism. A visual inspection should be performed to confirm all locking systems are secured. Give the concrete batching bucket a few short sharp movements close to the ground to ensure it is engaged.

Step four: Rest the attachment on the ground and refer to the power unit operating manual to release the pressure in the hydraulic system.

Step five: Connect the hydraulic couplings on the concrete batching bucket to the power unit couplings following all safety precautions specified in the power units operating manual.

Step six: Start the machine and cycle the concrete batching bucket hydraulic motor several times before taking it near other personnel.

5.2 REMOVING THE CONCRETE BUCKET

DANGER All safety precautions pertaining to both the power unit and the concrete batching bucket need to be followed. Sufficient planning should be made prior to any work commencing in case of an emergency situation.

Step one: Remove the machine from anywhere near other personnel and onto a firm level surface large enough to safely accommodate this product, the power unit and all workers involved in removing the concrete batching bucket.

Step two: Rest the concrete batching bucket on the ground.

Step three: Disconnect the attachments hydraulic couplings from the power unit following all safety precautions. Refer to your power unit's operating manuals.

Step four: Disengage the locking mechanism. A visual inspection should be performed to make sure the concrete batching bucket is fully disengaged.

Step five: Refer to your power unit's operating manual for instructions on removing the attachment and confirm the hitch is fully disengaged from the concrete batching bucket.

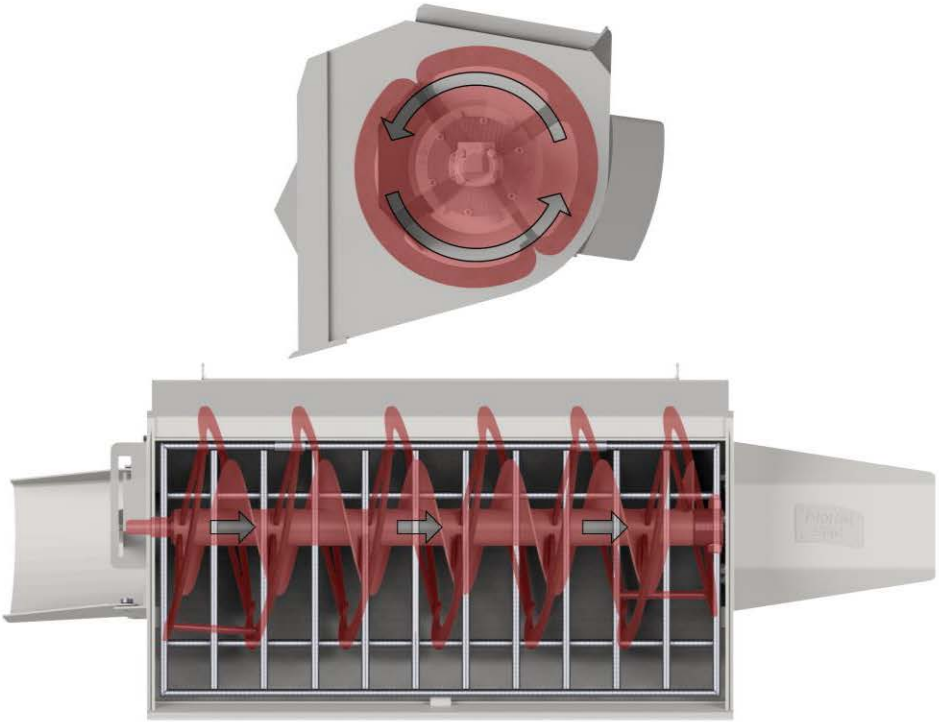
Step six: Store safely.

6 OPERATING INSTRUCTIONS

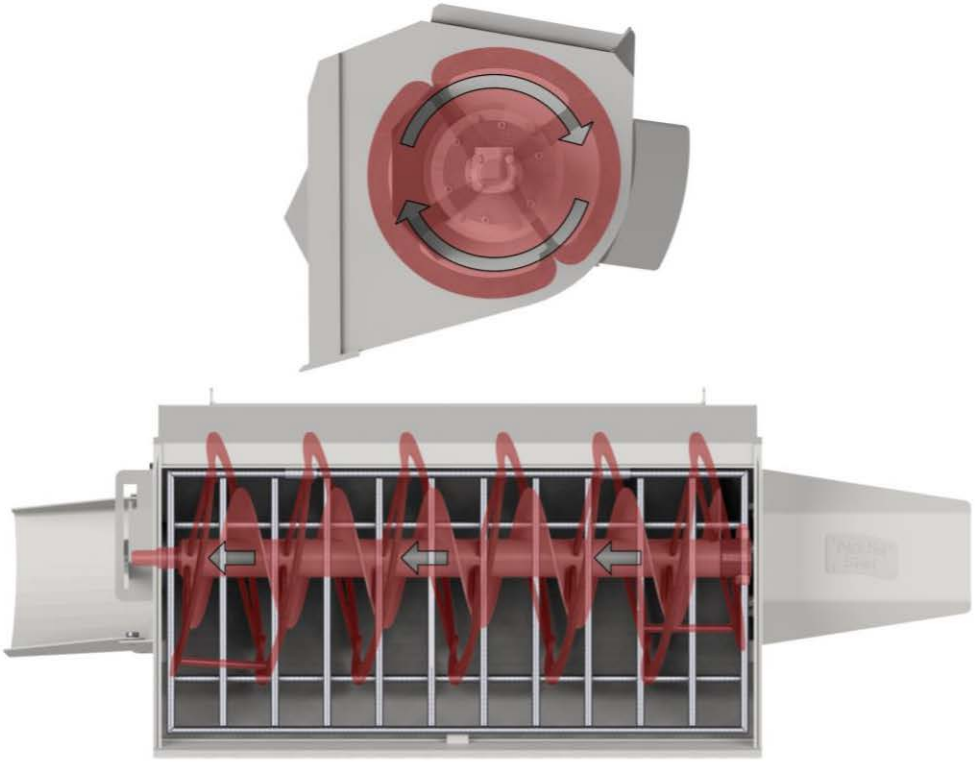
DANGER When using the concrete batching bucket, ensure all personnel wear appropriate personal protective equipment at all times. All personnel must stand well clear of the concrete batching bucket during operation. Contact with the attachment, parent machine or flying debris and dust could cause injury to personnel working in the vicinity of the machine.

6.1 SPECIFIED OPERATIONS AND LIMITATIONS

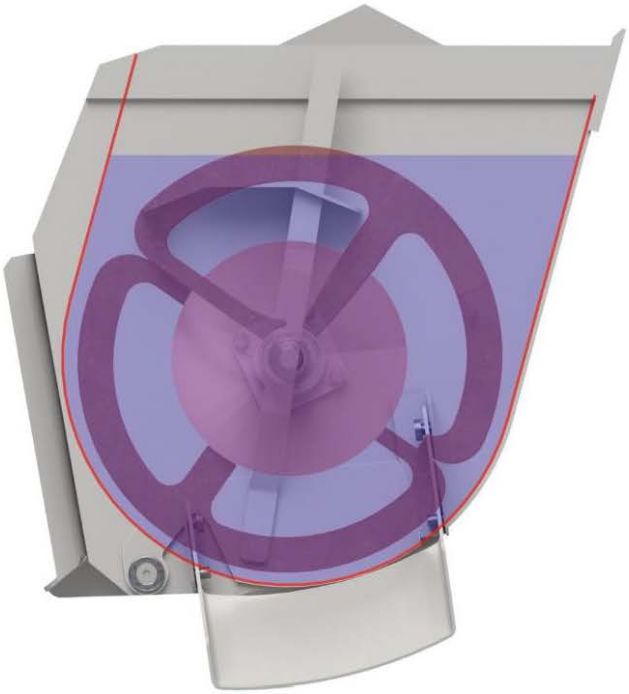
Follow the directions indicated by the arrows in the diagram below while mixing concrete. This will push the concrete slurry towards the motor side relieving pressure on the concrete chute gate.



Follow the directions indicated by the arrows in the diagram below while dispensing the concrete via the chute. Once the gate has been opened switch mixing direction, this will push the slurry out of the bucket at a constant rate.



As seen below, the highlighted blue section of the concrete batching bucket represents the maximum concrete mixing level. Adjust your concrete mix proportions to account for the concrete slurry doesn't exceeding this level. This concrete batching bucket is **NOT** designed for a dry mixing. Mixing a slurry above this level may result in an inconsistent mix or damage to the attachment.



This attachment is designed in a bucket shape to allow the operator to drive the bucket into a pile of aggregate. This will speed up the mixing process and reduce the amount of physical labour required.

⚠ DANGER

The concrete batching bucket is NOT to be used:

- to carry people;
- as a lifting point;
- to pull or push over objects.

Misuse may damage the attachment or lead to injury and trauma.

7 MAINTENANCE AND CARE

WARNING

Before commencing maintenance, place the attachment on level ground. Ensure enough area to perform maintenance on the attachment. Follow '5.2 Removing the concrete bucket'.

WARNING

After maintenance is complete, follow '5.1 Hitching Up the concrete bucket'.

7.1 HYDRAULICS

WARNING

Read and understand all safety requirements prior to beginning any maintenance to any hydraulic connections. It is imperative that if there are any fittings, repairs etc. required these must be conducted by a fully certified and qualified hydraulics fitter.

7.2 PRIOR TO USE

Prior to use, the concrete batching bucket shall be visually inspected to verify the attachment is in an operational state. The inspection will check for:

- Signs of wear, including corrosive and abrasive wear.
- Markings are legible.
- Welds are not damaged, cracked or worn.
- Hydraulic hoses, fittings, hydraulic motor, and gearbox are in good conditions with no leaks.
- All fasteners are in place and correctly torqued.
- Inspect the wear of the cutting edge.
- Grease all fittings – this needs to be performed on a daily basis.
- Checking the mixing shaft will be able to move freely inside of the bucket.

7.3 POST USE ROUTINE

- Washout bucket to prevent concrete build-up and locking of driveshaft.
- Washout gearbox housing using side port to prevent concrete build-up.

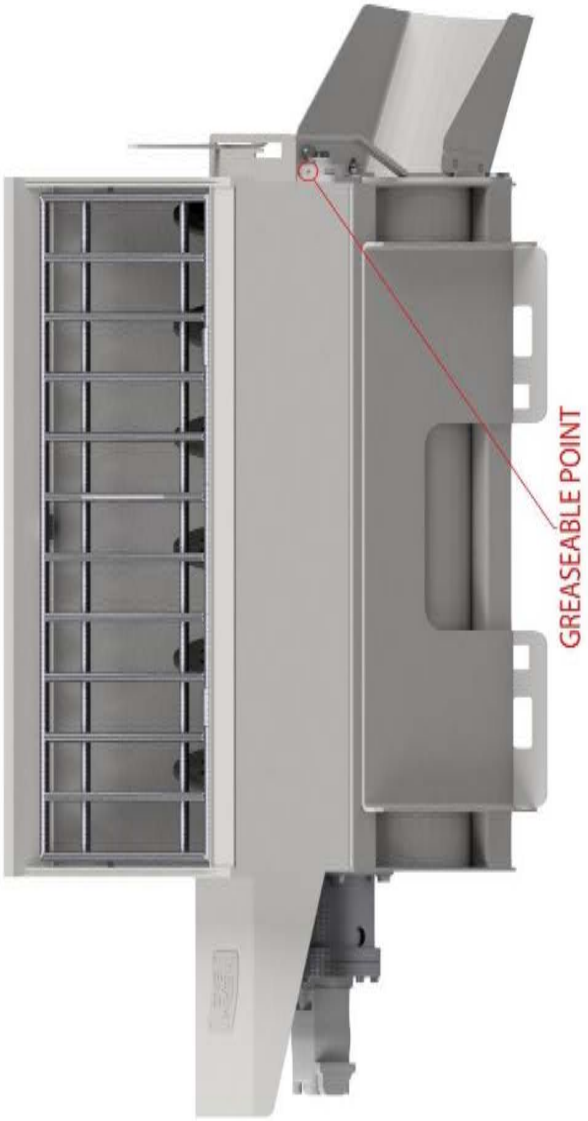
7.4 ROUTINE INSPECTION (EVERY 12 WEEKS)

Routine inspections should include but is not limited to the following:

- Fittings, hoses, and hydraulics must be checked to ensure there are no leaks.
- Pins and bushes should be inspected for signs of excessive wear and replaced before the wear damages the structure of the concrete batching bucket.
- Inspect the attachment for wear, particularly around the bolt-on cutting edge, and seek advice on repairs if wear is excessive.
- Check to ensure attachment markings are legible.
- Ensure the level of concrete build up doesn't cause contact between the mixing shaft and bucket.
- Organise for a certified and qualified hydraulics fitter to inspect and replace hydraulic hoses and seals in the hydraulic parts as necessary. For additional information refer to section '12 Warranty'

7.5 GREASEABLE POINT

The location of the greaseable point can be found in the diagram below. As part of 7.2 Prior to Use, ensure this point has been greased prior to use. Optional hydraulic opening gates has extra grease points on the hydraulic cylinder.



7.6 ROTATING THE BOLT-ON CUTTING EDGE

⚠ WARNING

- **DO NOT** use blocking material that could collapse or shift positions.
- **DO NOT** use wood or steel blocking that shows any signs of material decay.
- **DO NOT** use blocking that is warped, twisted, or tapered.
- **ENSURE** a safe working environment prior to undertaking any replacements to the concrete batching bucket.

Step one: Park your power unit on a level surface and lower this product onto preplaced blocking. It must be sufficient to support the attachment.

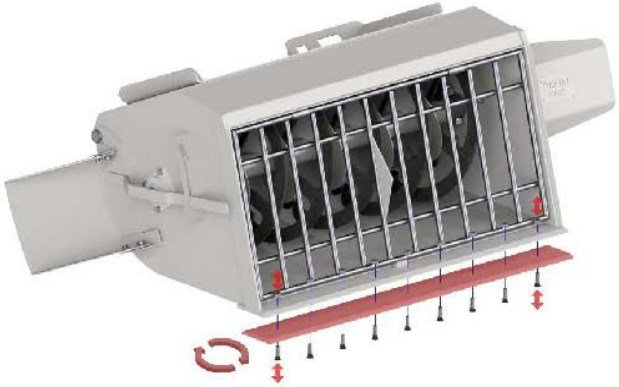
Step two: Follow '5.2 Removing the concrete batching bucket' and power unit operating manual for safe disengagement of the attachment.

Step three: Remove all nuts from the bolts that secure the cutting edge to the attachment. Begin in the centre and remove the end nuts last. Use of a pipe wrench or in some cases a hand grinder may be necessary to remove extremely worn or damaged nuts.

Step four: Remove the cutting edge and either rotate or, if this process has already occurred, properly dispose of cutting edge, nuts and bolts.

Step five: Install the new or reversed cutting edge by loosely securing each end of the cutting edge with new bolts and nuts.

Step six: Install all the remaining new bolts and nuts and tighten all the nuts to the required torque for the concrete batching bucket (60 ft. Lbs).



7.7 REPLACING THE MIXING SHAFT

⚠ WARNING

- **DO NOT** use blocking material that could collapse or shift positions.
- **DO NOT** use wood or steel blocking that shows any signs of material decay.
- **DO NOT** use blocking that is warped, twisted, or tapered.
- **ENSURE** a safe working environment prior to undertaking any replacements to the concrete batching bucket.

Step one: Lower the bucket onto sufficient blocking to replace the shaft before following '5.2 Removing the concrete batching bucket'.

Step two: Open and secure the bucket gate, so as to have full access to the mixing shaft.

⚠ WARNING

- Ensure the gate is properly secured, to prevent any accidental slamming shut.

Step three: Remove the bolt attaching the mixing shaft to the gearbox. Use of a pipe wrench or in some cases a hand grinder may be necessary to remove concrete covered or damaged nuts.

Step four: For a $0.5m^3$ concrete batching bucket move the concrete gate to the open position to allow for the removal of the bearing and bearing housings. For the $0.8m^3$ concrete batching bucket unbolt and remove the concrete chute pivot point allowing access to the bearing.

Step five: Remove the bolts attaching the bearing housing and the bearing from the mixing shaft.

Step six: Remove the bolts attaching the gearbox housing and gearbox assembly from the mixing shaft.

Step seven: Angling the gearbox side of the mixing shaft higher, remove the mixing shaft from the bucket and replace with new mixing shaft.

Step eight: Place the gearbox assembly back into place and fasten onto the side plate.

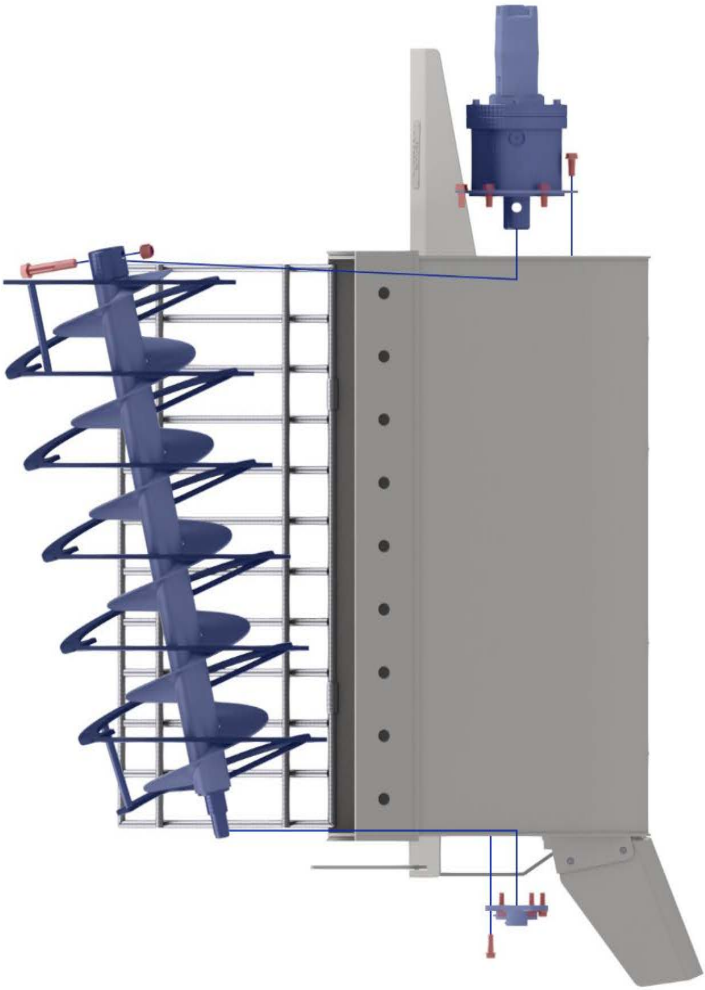
Step nine: Ensure the new mixing shaft fits on the gearbox then bolt together.

Step ten: Place the bearing back on the new mixing shaft and bolt into place.

Step eleven: Depending on bucket size either bolt the concrete chute pivot point back into place or move the concrete gate back to the closed position.

Step twelve: Remove your securing implement from the bucket gate and close.

Step nine: Follow '5.1 Hitching Up the concrete batching bucket' to ensure the new mixing shaft rotates freely.



8 RISK ASSESSMENT

Assessment Team: Norman Pesch, John Pesch, Sam Ramsden

Date of Assessment: 19/04/2022 **Manufacturer:** Norm Engineering Pty Ltd

Location: Brisbane **Contact Person:** Norman Pesch

Attachment: Concrete Batching Bucket **Weight:** 480-950kg

Intended use: Concrete Mixing **Construction material:** Steel

Air Operated: NO **Hydraulic Operated:** YES **Manually operated:** YES

NOTE: When assessing Risk, you MUST consider the following
Inherent Risk:
(Risk before ANY controls). I.e., Before guarding / safety features are fitted.
Residual Risk:
(Risk after controls are fitted). I.e., after guarding / safety features are fitted.
Non Standard Operating Risk:
(Cleaning, Maintenance). I.e., What other risks can these tasks create.
Predictable Misuse:
I.e., What risks could occur due to misuse of the attachment.

HAZARD INFORMATION

The plant must be assessed against the hazards listed for the probability of harm to operators working in close proximity and the environment.

Probability	Consequence	
A – Common or repeating occurrence	1 – Catastrophic	– Fatalities
B – Known to occur or "It has happened"	2 – Major	– Major injury, LTI
C – Could occur, "I've heard of it happening"	3 – Moderate	– Minor Injury
D – Not likely to occur	4 – Minor	– First aid, slight injury
E – Practically impossible	5 – Insignificant	– Minimal risk of injury

	A	B	C	D	E
1	H	H	H	S	S
2	H	H	S	S	M
3	H	H	S	M	L
4	H	S	M	L	L
5	S	S	M	L	L

H = High
S = Significant
M = Medium
L = Low

Entanglement:

Can anyone's hair, clothing gloves, necktie, jewellery, rags, and other materials become entangled with moving parts of plant, or materials in motion? **Plant attachment requires a worker to be within close proximity of the attachment during operation, so if SOP is not strictly followed workers can become entangled.**	Yes ☒	No ☐	A ☐ B ☐ C ☒ D ☐ E ☐		1 ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐		High ☒ Significant ☐ Medium ☐ Low ☐	

Crushing:

Can anyone be crushed due to falling, uncontrolled or unexpected movement of plant attachment or its load, lack of capacity to slow, stop or immobilise the plant, tipping or rolling over, parts of plant attachment collapsing, contact with moving parts during testing, inspection, maintenance, cleaning, or repair, thrown off, under or trapped between plant and materials or fixed structures? **People in close proximity to the plant and plant attachment during operation could be crushed if the operator is not being sufficiently observant, or control over the plant is lost.**	Yes ☒	No ☐	A ☐ B ☐ C ☐ D ☒ E ☐		1 ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐		High ☐ Significant ☒ Medium ☐ Low ☐	

Cutting, Stabbing, Puncturing:

Can anyone be cut, stabbed, or punctured by coming in contact with moving plant or parts, sharp or flying objects, work pieces ejected, work pieces disintegrated, or other factors not mentioned? **Plant attachment has sharp edges by design for opening concrete bags and reinforcing bucket edges.**	Yes ☒	No ☐	A ☐ B ☐ C ☐ D ☒ E ☐		1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 ☐		High ☐ Significant ☐ Medium ☒ Low ☐	

Striking:

Can anyone be struck by moving objects due to plant or work pieces being ejected or disintegrated, mobility, uncontrolled or unexpected movement of the plant or other factors? **People in close proximity to the plant and plant attachment during operation could be seriously hurt if they came into contact with the plant, or plant attachment if the operator is not being sufficiently observant, or control over the plant is lost.**	Yes ☒	No ☐	A ☐ B ☐ C ☐ D ☒ E ☐		1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 ☐		High ☐ Significant ☒ Medium ☐ Low ☐	

Slipping, Tripping, Falling:

Can anyone using the plant or in the vicinity of the plant, slip, trip or fall due to the working environment or other factors? poor housekeeping, dust on the floor around machines, slippery or uneven work surfaces or lack of guardrails. **People standing on the plant or plant attachment could slip or fall from it.**	Yes ☒	No ☐	A ☐ B ☐ C ☒ D ☐ E ☐	1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 ☐	High ☐ Significant ☒ Medium ☐ Low ☐

Shearing:

Can anyone's body parts be cut off between two parts of the plant, or between a part of the plant and a work piece or structure? For example, on a metal guillotine can a finger fit under the guard. **Plant attachment requires a worker to be within close proximity of the attachment during operation, so if SOP is not strictly followed limbs can become sheared in the rotating or gate mechanism.**	Yes ☒	No ☐	A ☐ B ☐ C ☒ D ☐ E ☐	1 ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐	High ☒ Significant ☐ Medium ☐ Low ☐

Friction:

Can anyone be burnt due to contact with moving parts or surfaces of the plant, or material handled by the plant? For example, on the grinder is there more than 1 mm gap between the tool rest and the wheel? **Unmaintained** mixing fins, bearings, gearbox, and motor could result in excessive friction heating the metal.	Yes ☒	No ☐	A ☐ B ☐ C ☒ D ☐ E ☐	1 ☐ 2 ☐ 3 ☐ 4 ☒ 5 ☐	High ☐ Significant ☐ Medium ☒ Low ☐

High Pressure Fluid:

Can anyone come into contact with fluids under high pressure, due to plant failure or misuse of the plant? **The plant attachment utilizes the plants high pressure hydraulic system, if a failure occurs it is possible to come into contact with high pressure fluid.**	Yes ☒	No ☐	A ☐ B ☐ C ☐ D ☒ E ☐	1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 ☐	High ☐ Significant ☒ Medium ☐ Low ☐

Electrical:

Can anyone be injured by electrical shock or burnt due to damaged or poorly maintained leads or switches, water near electrical equipment, working near or contact with live electrical conductors, lack of isolation procedures or the factors not mentioned? For example, are any switches broken, is there a red emergency stop? Can each machine be locked off for repairs?	Yes ☐	No ☒	A ☐ B ☐ C ☐ D ☐ E ☐	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐	High ☐ Significant ☐ Medium ☐ Low ☐

Dust:

Can anyone suffer ill health or injury due to exposure to dust? For example, cutting, living silica Lack of vision – External influences causing the dust. Plant operation causing the dust. **Incorrect rations of water to mix can cause particles to spray while the plant attachment is in operation.**	Yes ☒	No ☐	A ☐ B ☐ C ☒ D ☐ E ☐	1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 ☐	High ☐ Significant ☒ Medium ☐ Low ☐			

Noise:

Can anyone suffer hearing discomforts while the plant is in use? For example, the plant is noisy, and it is difficult to hear. **Depending on the content of the mix the plant attachment can produce excessive noise.**	Yes ☒	No ☐	A ☐ B ☒ C ☐ D ☐ E ☐	1 ☐ 2 ☐ 3 ☐ 4 ☒ 5 ☐	High ☐ Significant ☒ Medium ☐ Low ☐			

Vibration:

Can anyone suffer injury due to the vibration of the plant? **An incorrectly installed plant attachment can generate excessive vibration whilst operated which can lead to other problems.**	Yes ☒	No ☐	A ☐ B ☐ C ☐ D ☒ E ☐	1 ☐ 2 ☐ 3 ☒ 4 ☐ 5 ☐	High ☐ Significant ☐ Medium ☒ Low ☐			

Environmental:

Can the plant operation cause an environmental issue? For example – pollution, waste materials, noise.	Yes ☐	No ☒	A ☐ B ☐ C ☐ D ☐ E ☐	1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐	High ☐ Significant ☐ Medium ☐ Low ☐			

Risk Evaluation

Overall risk category of plant:	High	Significant	Medium	Low

Risk Controls

Most Desirable

- Elimination – The best way to eliminate the risk is to remove the hazard.
- Substitution – Substitute the hazardous plant with a safer part, alternative process.
- Engineering Controls – Design modification, installation of guarding, automation/ventilation.
- Isolation – Isolate the plant, barricades, crossing, bunting, etc.
- Administrative Controls – Permits, clearances, lock out systems, certification.
- PPE – Short term control measure.

Least Desirable

Hazard	Controls
Entanglement Shearing	Engineering Controls – The addition of a guard gate over the face of the bucket to prevent unintentional entanglement, whilst still allowing concrete mix to be added. This does not prevent entanglement caused by misuse. Engineering Controls – A hydraulic gate option of the concrete batching bucket is available to reduce the need for close worker proximity to the bucket in operation. Administrative Controls – The operation manual will advise that nothing that could become entangled should pass the bucket opening whilst the machines hydraulics are connected to prevent accidents from happening. PPE – Ensuring all people who will be in the vicinity of the plant attachment during operation be wearing clothes with no loose ends that can become entangled in the plant attachment.
Crushing Striking	Isolation – Ensure the operating and maintenance manual provided with the plant attachment recommends the operator of the plant always follows SOP. The operator must make everybody working in the vicinity of the attachment aware of the dangers and before moving the plant ensure people are safe distance away. PPE – The use of the correct PPE for the worksite will minimize the damage caused by an incident. A hard hat, steel cap boots and tough worksite clothes as an example. PPE – The use of high visibility PPE will help reduce the case of incidents occurring from impaired vision or operator distraction.
Cutting, Stabbing, Puncturing	PPE – The use of the correct PPE for the worksite will minimize the risk of cutting when working in and around the attachment. Gloves and tough work clothes will reduce the risk associated with touching or bumping into sharp edges on the attachment whilst it is not in operation.
Slipping, Tripping, Falling	Administrative Controls – The manual should instruct the operator in the correct procedure of entering the plant and operating the plant attachment. (So, the mixing function is not active whilst the operator is entering or exiting the cab as it increases the danger) PPE – Wearing the correct work boots will reduce chances of slipping.
Friction	Isolation – Workers should be aware of surfaces that become hot to touch from operating and instructed to avoid them. PPE – Working gloves should be worn to reduce the chances of getting minor burns.

High Pressure Fluid	Engineering Controls – The routing of the hydraulic hoses and the design of the plates which guard the hydraulic motor minimize the risk of the hydraulic failure and exposure to high pressure fluids. Administrative Controls – The manual will address correct maintenance schedules for the plant attachment hydraulics to reduce the risk associated with hydraulic component failure. Only authorized hydraulics fitters should perform repairs on hydraulic systems. Administrative Controls – A warning sticker should be placed in a visible position on the plant attachment highlighting the potential risk.
Dust	Administrative Controls – The manual should suggest the plant should not be operated during the initial mixing stage with the plant attachment as dust from that process might be enough of a visual impairment to cause an accident. PPE – Depending on the partials used in the mix eye and breath protection should be used by workers in the vicinity.
Noise	PPE – To reduce the risk associated with excessive noise the correct PPE should be worn whilst operating or being within a vicinity of the plant and plant attachment during operations.
Vibration	Administrative Controls – A regular maintenance schedule will help prevent from issues such as misalignment or uneven wear which causes excessive vibration.

Any Modification to Plant Attachment Voids Risk Assessment

Purchaser and User are required to conduct their own risk assessment to identify hazards prior to use.

This risk assessment does not necessarily cover all possible hazards associated with this product and should be utilized in conjunction with the purchasers and users individual risk assessments to identify all environmental, health, and safety risks associated with specific tasks, locations, and personnel.

9 PARTS

QUALITY BACKUP

We manufacture 90% of our parts inhouse.
This means we can get your parts to you… quickly.

9.1 ORDERING PARTS

For ordering parts contact either your dealer or Norm Engineering directly. Contact details are included at the front of this manual. To assist, note the details of your concrete batching bucket in the spaces provided under *Section 9.1.1 Reference Information*.

9.1.1 REFERENCE INFORMATION

Always refer to the model and serial number when ordering parts or requesting from you dealer. The serial number for this product is located on the identification place of your concrete batching bucket.

Model Number:

……

Make:

……

Serial Number:

……

Date Purchased:

……

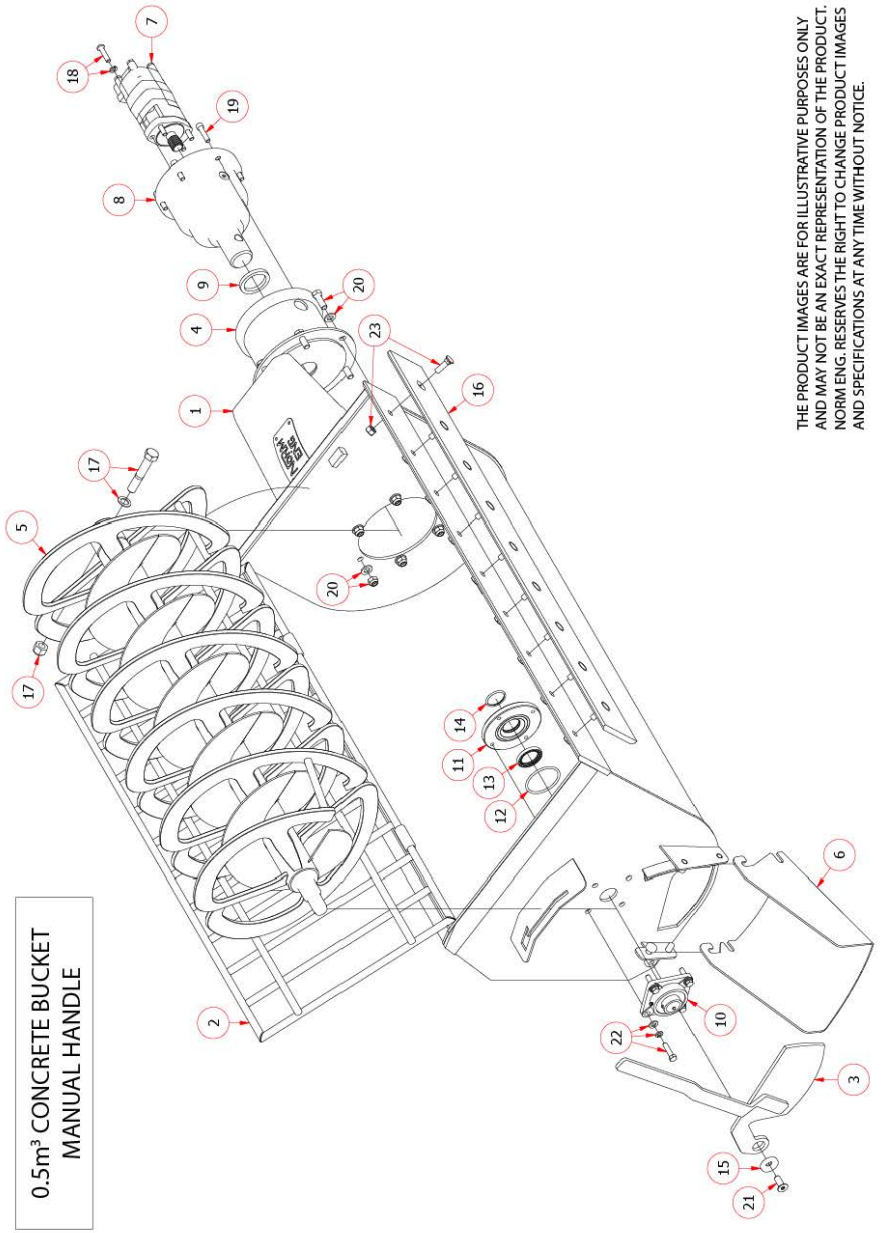
10 PARTS LIST

When ordering replacement parts, please include the following information:

- The machine make and model
- The serial number on the attachment
- The item number, as indicated by the following figures and tables.

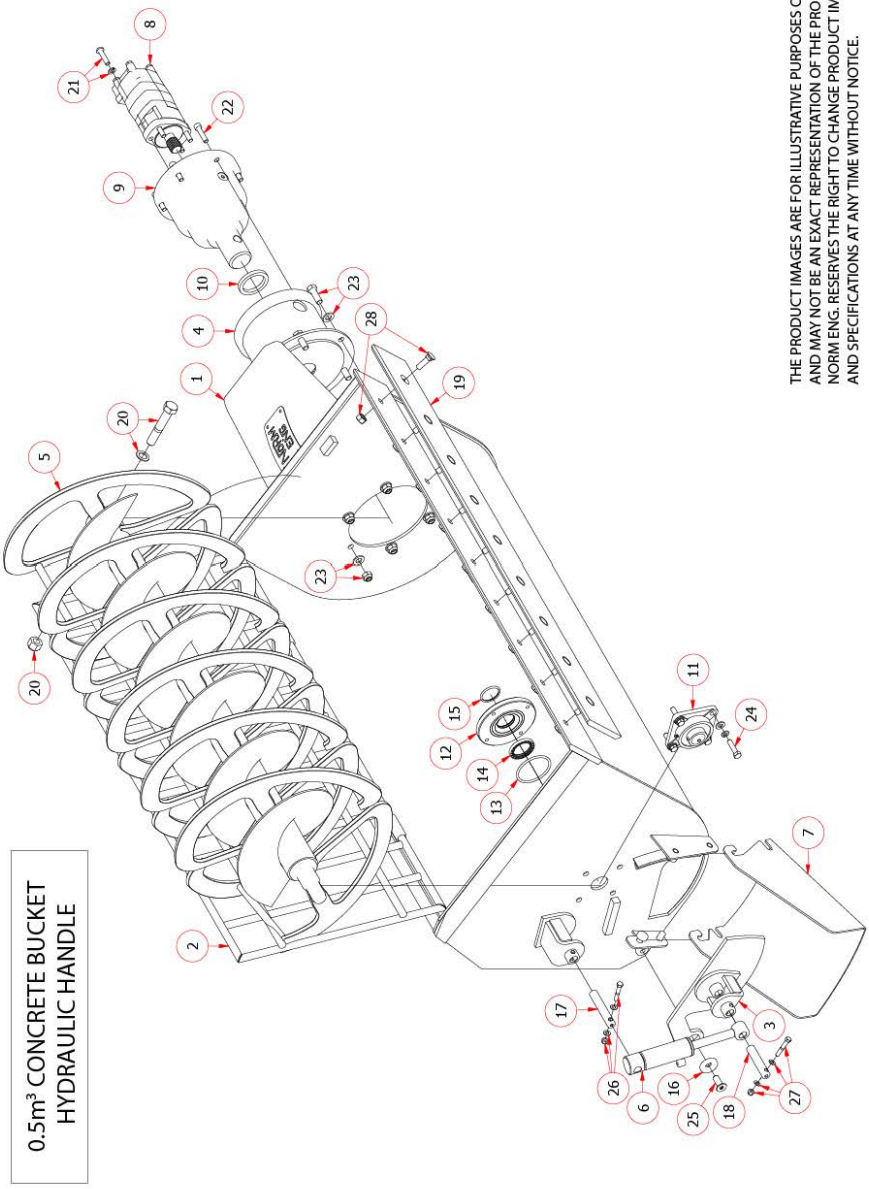
0.5m^3 MANUAL HANDLE CONCRETE BATCHING BUCKET PARTS LIST

Item	Part Number	QTY	Description	Diagram
1	NCB05001	1	0.5m^3 CONCRETE BUCKET ASSEMBLY	1
2	NCB05002	1	0.5m^3 TOP BAR COVER ASSEMBLY	1
3	NCB05004	1	0.5m^3 MANUAL CHUTE GATE ASSEMBLY	1
4	NCB05006	1	0.5m^3 GEARBOX COVER ASSEMBLY	1
5	NCB05007	1	0.5m^3 DUEL SPIRAL MIXING SHAFT	1
6	NCB0031	1	0.5m^3 BENT CONCRETE CHUTE	1
7	-	1	0.5m^3 HYDRAULIC MOTOR	1
8	NCB0002	1	0.5m^3 GEARBOX	1
9	TC12642	1	0.5m^3 GEARBOX TO BUCKET SEAL	1
10	UCF208-108	1	0.5m^3 MAIN SHAFT BEARING	1
11	NCB0244	1	0.5m^3 BEARING SEAL KIT HOUSING	1
12	ATB0093	1	O-RING – 90mm ID – 5.7mm	1
13	TC126598	1	RADIAL SHAFT LIP SEAL (50x72x8)	1
14	-	1	RADIAL LIP SEAL (50x58x4)	1
15	NCB0029	1	CHUTE GATE PIVOT FACE BUSH	1
16	CE072	1	0.5m^3 BOLT-ON CUTTING EDGE	1
17	-	1	BOLT KIT – GEARBOX TO MIXING SHAFT	1
18	-	4	BOLT KIT – HYDRAULIC MOTOR	1
19	-	6	BOLT KIT – GEARBOX TO COVER	1
20	-	6	BOLT KIT – GEARBOX COVER TO BUCKET	1
21	-	1	BOLT KIT – CHUTE GATE PIVOT	1
22	-	4	BOLT KIT – SHAFT BEARING	1
23	-	9	BOLT KIT – BOLT-ON CUTTING EDGE	1



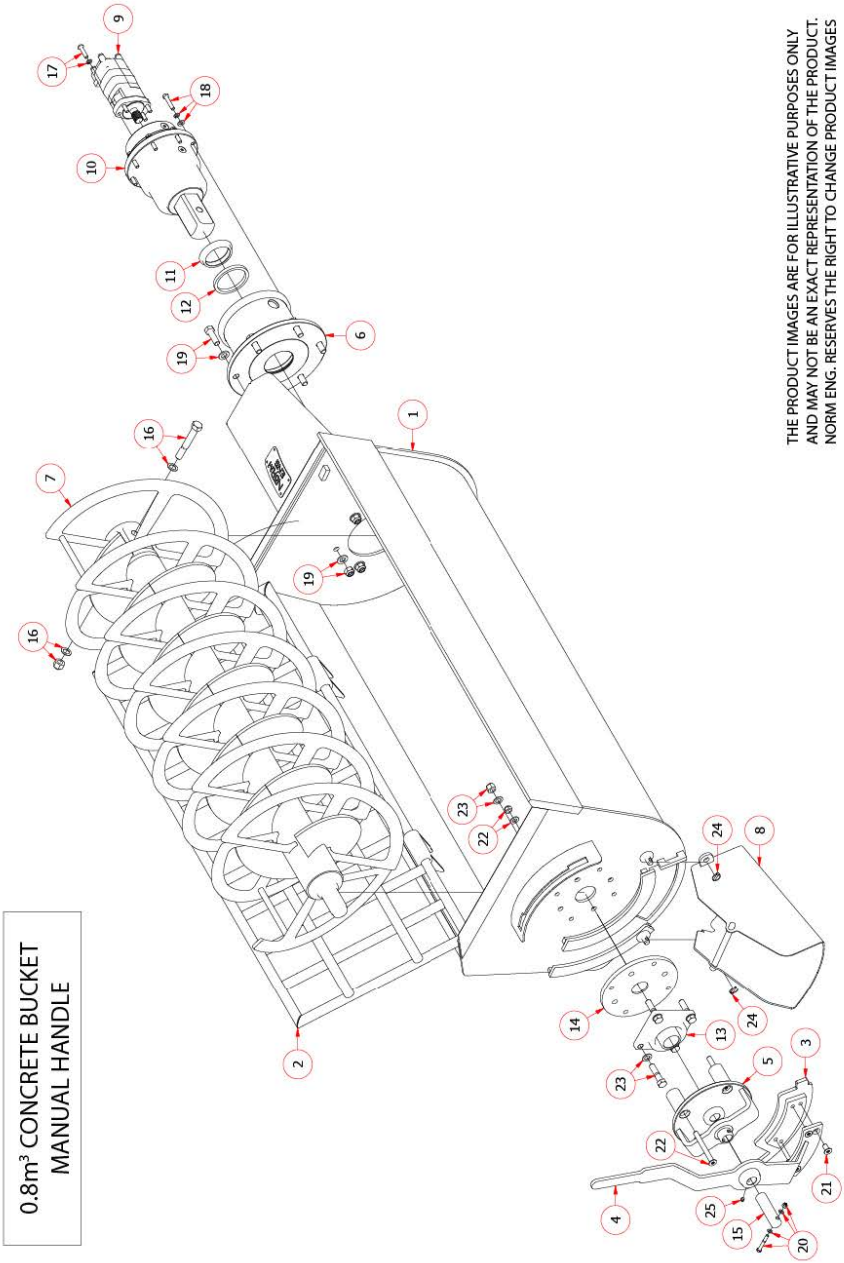
0.5m^3 HYDRAULIC HANDLE CONCRETE BATCHING BUCKET PARTS LIST

Item	Part Number	QTY	Description	Diagram
1	NCB05001HYD	1	0.5m^3 CONCRETE BUCKET W/ HYD. GATE	2
2	NCB05002	1	0.5m^3 TOP BAR COVER ASSEMBLY	2
3	NCB05004HYD	1	0.5m^3 HYDRAULIC CHUTE GATE ASSEMBLY	2
4	NCB05006	1	0.5m^3 GEARBOX COVER ASSEMBLY	2
5	NCB05007	1	0.5m^3 DUEL SPIRAL MIXING SHAFT	2
6	C1545	1	1.5" BORE – 76.5mm STROKE – HYD. CYLINDER	2
7	NCB0031	1	0.5m^3 BENT CONCRETE CHUTE	2
8	-	1	0.5m^3 HYDRAULIC MOTOR	2
9	NCB0002	1	0.5m^3 GEARBOX	2
10	TC12642	1	0.5m^3 GEARBOX TO BUCKET SEAL	2
11	UCF208-108	1	0.5m^3 MAIN SHAFT BEARING	2
12	NCB0244	1	0.5m^3 BEARING SEAL KIT HOUSING	2
13	ATB0093	1	O-RING – 90mm ID – 5.7mm	2
14	TC126598	1	RADIAL SHAFT LIP SEAL (50x72x8)	2
15	-	1	RADIAL LIP SEAL (50x58x4)	2
16	NCB0029	1	CHUTE GATE PIVOT FACE BUSH	2
17	PI423	1	TOP HYDRAULIC GATE PIN	2
18	PI424	1	BOTTOM HYDRAULIC GATE PIN	2
19	CE072	1	0.5m^3 BOLT-ON CUTTING EDGE	2
20	-	1	BOLT KIT – GEARBOX TO MIXING SHAFT	2
21	-	4	BOLT KIT – HYDRAULIC MOTOR	2
22	-	6	BOLT KIT – GEARBOX TO COVER	2
23	-	6	BOLT KIT – GEARBOX COVER TO BUCKET	2
24	-	4	BOLT KIT – SHAFT BEARING	2
25	-	1	BOLT KIT – CHUTE GATE PIVOT	2
26	-	1	BOLT KIT – TOP HYD. GATE PIN	2
27	-	1	BOLT KIT – BOTTOM HYD. GATE PIN	2
28	-	9	BOLT KIT – BOLT-ON CUTTING EDGE	2



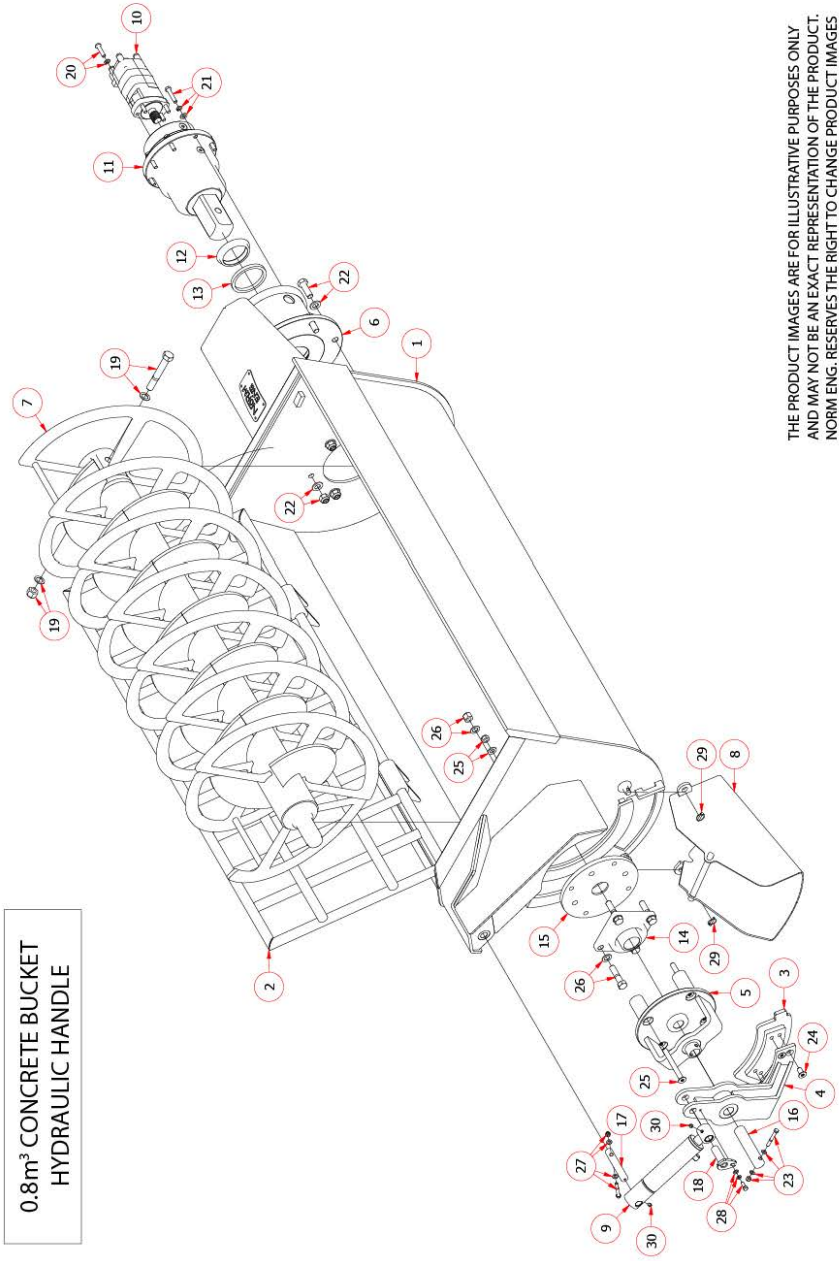
0.8m^3 MANUAL HANDLE CONCRETE BATCHING BUCKET PARTS LIST

Item	Part Number	QTY	Description	Diagram
1	NCB08001	1	0.8m^3 CONCRETE BUCKET ASSEMBLY	3
2	NCB08002	1	0.8m^3 TOP BAR COVER ASSEMBLY	3
3	NCB08004	1	0.8m^3 GATE CHUTE COVER ASSEMBLY	3
4	NCB08005	1	0.8m^3 GATE ARM ASSEMBLY	3
5	NCB08006	1	0.8m^3 GATE PIVOT ASSEMBLY	3
6	NCB08007	1	0.8m^3 GEARBOX COVER ASSEMBLY	3
7	NCB08009	1	0.8m^3 DUEL SPIRAL MIXING SHAFT	3
8	NCB08008	1	0.8m^3 BENT CONCRETE CHUTE ASSEMBLY	3
9	-	1	0.8m^3 HYDRAULIC MOTOR	3
10	NCB0257	1	0.8m^3 GEARBOX	3
11	NCB0151	1	0.8m^3 GEARBOX TO BUCKET METAL COLLAR	3
12	NCB0150	1	0.8m^3 GEARBOX TO BUCKET SEAL	3
13	NCB0134	1	0.8m^3 MAIN SHAFT BEARING	3
14	NCB0299	1	0.8m^3 BEARING SPACER PLATE	3
15	NCB0138	1	GATE PIVOT PIN	3
16	-	1	BOLT KIT – GEARBOX TO MIXING SHAFT	3
17	-	4	BOLT KIT – HYDRAULIC MOTOR	3
18	-	8	BOLT KIT – GEARBOX TO COVER	3
19	-	6	BOLT KIT – GEARBOX COVER TO BUCKET	3
20	-	1	BOLT KIT – GATE PIVOT PIN	3
21	-	4	BOLT KIT – CHUTE GATE ARM TO COVER	3
22	-	4	BOLT KIT – GATE PIVOT ASSEMBLY	3
23	-	4	BOLT KIT – SHAFT BEARING	3
24	-	2	BOLT KIT – BEND CHUTE ASSEMBLY	3
25	NS2001	1	3/8" GREASE NIPPLE	3



0.8m³ HYDRAULIC HANDLE CONCRETE BATCHING BUCKET PARTS LIST

Item	Part Number	QTY	Description	Diagram
1	NCB08001HYD	1	0.8m³ CONCRETE BUCKET W/ HYD. GATE	4
2	NCB08002	1	0.8m³ TOP BAR COVER ASSEMBLY	4
3	NCB08004	1	0.8m³ GATE CHUTE COVER ASSEMBLY	4
4	NCB08005HYD	1	0.8m³ GATE ARM FOR HYD. GATE	4
5	NCB10006	1	0.8m³ GATE PIVOT FOR HYD. GATE	4
6	NCB08007	1	0.8m³ GEARBOX COVER ASSEMBLY	4
7	NCB08009	1	0.8m³ DUEL SPIRAL MIXING SHAFT	4
8	NCB08012	1	0.8m³ BENT CONCRETE CHUTE FOR HYD. GATE	4
9	C2055	1	2" BORE – 6" STROKE – HYD. CYLINDER	4
10	-	1	0.8m³ HYDRAULIC MOTOR	4
11	NCB0257	1	0.8m³ GEARBOX	4
12	NCB0151	1	0.8m³ GEARBOX TO BUCKET METAL COLLAR	4
13	NCB0150	1	0.8m³ GEARBOX TO BUCKET SEAL	4
14	NCB0134	1	0.8m³ MAIN SHAFT BEARING	4
15	NCB0299	1	0.8m³ BEARING SPACER PLATE	4
16	NCB0231	1	GATE PIVOT PIN	4
17	NCB0236	1	TOP HYDRAULIC GATE PIN	4
18	PI319	1	BOTTOM HYDRAULIC GATE PIN	4
19	-	1	BOLT KIT – GEARBOX TO MIXING SHAFT	4
20	-	4	BOLT KIT – HYDRAULIC MOTOR	4
21	-	8	BOLT KIT – GEARBOX TO COVER	4
22	-	6	BOLT KIT – GEARBOX COVER TO BUCKET	4
23	-	1	BOLT KIT – GATE PIVOT PIN	4
24	-	4	BOLT KIT – CHUTE GATE ARM TO COVER	4
25	-	4	BOLT KIT – GATE PIVOT ASSEMBLY	4
26	-	4	BOLT KIT – SHAFT BEARING	4
27	-	1	BOLT KIT – TOP HYDRAULIC GATE PIN	4
28	-	1	BOLT KIT – BOTTOM HYDRAULIC GATE PIN	4
29	-	2	BOLT KIT – CHUTE ASSEMBLY	4
30	NS2001	3	3/8" GREASE NIPPLE	4



11 APPENDICES

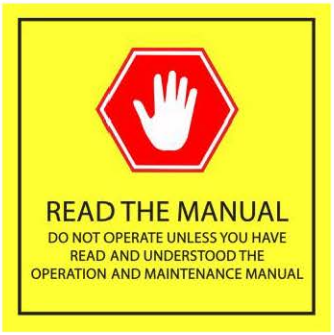
11.1 SAFETY SIGN LOCATIONS

Item	Description
1	Warning | Pinch point
2	Danger | High pressure fluid
3	Warning | Attachment can contact machine
4	Danger | Read the manual

ITEM 1

ITEM 2

ITEM 3



ITEM 4

Instructions

- Keep all safety signs clear and legible.
- Replace all missing, illegible, or damaged safety signs.
- When replacing parts which have safety signs attached make sure the replacement part has the safety sign.

12 WARRANTY

12.1DEFINITION

"Dealer" means a dealer that purchases products directly from Norm Engineering Pty Ltd.

"End consumer" means a consumer that purchases products either directly from Norm Engineering Pty Ltd or directly from a "dealer" as defined above.

"Products" includes goods and services.

12.2WARRANTY

Norm Engineering Pty Ltd welcomes you as a purchaser of its products. All Norm Engineering products are designed to ensure the highest standards, reliability, and performance.

Norm Engineering Pty Ltd warrants hydraulic cylinders against defects in manufacture for a period of twelve months from date of sale by the dealer or Norm Engineering Pty Ltd to the end consumer. The warranty in relation to hydraulic cylinders ceases upon the occurrence of damage to the piston rod of the hydraulic cylinder.

No warranty applies to hoses, tubes, and fittings in relation to any of the products.

Norm Engineering Pty Ltd warrants all its other products against defects in manufacture for a period of twelve months from the date of sale by the dealer or Norm Engineering Pty Ltd to the end consumer.

Norm Engineering Pty Ltd will, subject to the terms of this warranty, in relation to defective goods:

a) replace the defective goods at no cost to the end consumer; or

b) repair the defective goods at no cost to the end consumer; or

c) pay the cost of having the defective goods repaired.

Norm Engineering Pty Ltd will, subject to the terms of this warranty, in relation to defective services:

a) supply the services again to the end consumer at no cost to the end consumer; or

b) pay the cost of having the service supplied again to the end consumer.

Warranty claims may be sent either to Norm Engineering Pty Ltd., P.O. Box 178, Mt Ommaney, Qld. 4074 or to the dealer.

All warranty periods shall commence from the date of sale by Norm Engineering Pty Ltd or the dealer to the end consumer. It is the end consumer's responsibility to establish the date of sale of the product to the end consumer by the dealer.

The end consumer may establish the date of sale by producing to Norm Engineering Pty Ltd the dated contract of sale between the end consumer and the dealer with its warranty claim.

If the end consumer is not able to establish the date of sale of the product to the end consumer by the date of its warranty claim, the warranty period shall be deemed to commence from the date of sale of the product by Norm Engineering Pty Ltd to the dealer.

This warranty will not apply if the end consumer does not use the product in accordance with Norm Engineering Pty Ltd's recommendation.

This warranty will not apply if the end consumer does not use products applied or fitted to any machine, equipment, or plant, in accordance with Norm Engineering Pty Ltd's operating recommendation for the product.

This warranty does not apply to any loss or damage caused through consequential neglect. Unless the end consumer indicates to Norm Engineering Pty Ltd prior to purchasing the product that it intends to use the product for a particular purpose, there is no implied warranty that the product will fit for that particular purpose. Ask Norm Engineering for clarification of the intended use is not included in the manual.

Only a dealer authorised in writing, or issued with an order number, by Norm Engineering Pty Ltd may carry out warranty repairs. Prior written approval must be obtained from Norm Engineering Pty Ltd before warranty repairs are carried out. Norm Engineering Pty Ltd will not recognise any warranty claim for reimbursement of repair costs unless the repairs have been carried out by an authorised dealer with prior written approval from Norm Engineering Pty Ltd to carry out the repairs.

Norm Engineering Pty Ltd limits its liability, as follows:

1) Pursuant to Section 68A of the Trade Practices Act 1974, this clause applies in respect of any of the goods or services supplied under this contract which are not of a kind ordinarily acquired for personal, domestic, or household use or consumption, provided that this clause will not apply if the end consumer establishes that reliance on it would not be fair and reasonable.

2) Liability for breach of a condition or warranty implied into this contract by the Trade Practices Act 1974 other than a condition implied by Section 69 is limited:

a) In the case of goods, to any one of the following as determined by Norm Engineering Pty Ltd:

i. the replacement of goods

ii. the repair of the goods

iii. the payment of the cost of having the goods repaired, excluding travelling and freight charges.

b) In the case of services, to any one of the following as determined by Norm Engineering Pty Ltd.

i. the supplying of the services again; or

ii. the payment of the cost of having the services supplied again

Expenses incurred by the end consumer in connection with making a warranty claim shall be borne by the end consumer unless otherwise agreed by Norm Engineering Pty Ltd.

To the extent permitted by law, all implied conditions, and warranties in the contract of sale between Norm Engineering Pty Ltd and the end consumer are hereby excluded.

The benefits conferred by this warranty on the end consumer are in addition to all other legal rights and remedies that the end consumer has in respect of the products.

Contracts of sale for products, and this warranty are submitted to the exclusive jurisdiction of the courts of Queensland.

Notes:

NORM ENGINEERING

WARRANTY NOTICE

DEALER: .....

STATE: ..... SIGNED: .....

END CONSUMER:

NAME: .....

ADDRESS: .....

.....

.....

STATE: ..... POSTAL CODE: .....

PHONE: ..... SIGNED: .....

DATE OF SALE TO THE END CONSUMER: ...../...../.....

DESCRIPTION OF PRODUCTS: .....

.....

.....

.....

SERIAL NO: .....

DELIVERY DOCKET NO: .....

DELIVERY DATE: ...../..... /.....

NOTE: THIS FORM IS TO BE COMPLETED BY THE DEALER AND RETURNED TO: NORM ENGINEERING - P O BOX 178 MT OMMANEY, BRISBANE, QUEENSLAND, AUSTRALIA, 4074