
ProAll Mobile Mixer

Operator's Manual
G Model



MX05001

3 March 2022
Rev.1



5810 - 47 Avenue, Olds, Alberta, Canada, T4H 1V1
E support@proallinc.com | P 403-335-9500 | F 403-335-9560

Table of Contents

1. Introduction.....	1-1
Model Number.....	1-3
Serial Number	1-3
2. Safety	2-1
Safety Decals.....	2-1
Safety Alert Symbol.....	2-4
Signal Words	2-4
Safety	2-5
General Safety.....	2-5
Operating Safety	2-6
Maintenance Safety	2-6
Hydraulic Safety	2-6
Storage Safety	2-7
Transport Safety.....	2-7
Tire Safety	2-7
Safety Signs	2-8
How to Install Safety Signs:.....	2-8
3. Overall Description.....	3-1
4. Controls, Instruments, and Operation	4-1
Mixer Controls	4-1
Mix Auger Paddle.....	4-2
Operator Control.....	4-2
Operating Keypad	4-3
Valve Locations	4-6
5. Calibration	5-1
Traditional Gunite Production Calibration Procedure	5-1
Step 1: Cement Output per Conveyor Count.....	5-1
Step 2: Counts per Unit Volume of Mix	5-1

Step 3: Sand Weight per Count.....	5-2
Results.....	5-2
Computer Guniting Production Calibration Procedure	5-2
Step 1: Cement Output per Auger Count.....	5-2
Step 2: Counts per Unit Volume of Mix	5-3
Step 3: Gate Calibration	5-3
Fibre Feeder Calibration	5-4
6. Field Operation	6-1
Principle of Operation.....	6-1
Mix Batching	6-1
Aggregate.....	6-1
Aggregate Control Gate	6-1
Cement Powder	6-2
Mix Auger.....	6-2
Drop-Away Bottom Mat.....	6-3
Auger Bearing.....	6-3
Mix Bowl	6-3
Auger Top Drive	6-4
Fibre Feeder	6-5
Setting up to Pour	6-6
Pouring.....	6-7
Clean up and Preparation for Transport.....	6-7
Chain Oiler.....	6-8
Tarp	6-9
Tarp Control	6-9
7. Lubrication and Maintenance	7-1
Maintenance	7-1
Speed Sensor.....	7-1
Take Up Bearing	7-1
Oil Specifications.....	7-1
Cleanliness	7-1
Hydraulic System.....	7-1

Minimum Requirements for Replacement Oil.....	7-1
Hydraulic Oil Filter.....	7-2
Wear Plates	7-2
Service.....	7-3
Lubrication and Maintenance Points	7-4
Lubrication and Maintenance Frequency	7-9
Electrical Distribution Box.....	7-10
Bolt Torque	7-11
8. Fault Finding	8-1
9. 1st 50 Hour Service.....	9-1
10. Index.....	10-2

1. Introduction

Congratulations, you have chosen the world's finest and most reliable mobile mixer. You are now part of the world-wide ProAll International family, operating successfully in 36 countries. Your ProAll Mobile Mixer, manufactured by ProAll International Inc. will meet, or exceed your concrete requirements. ProAll International represents over 30 years of experience in mobile, volumetric, continuous batching; both as a concrete supplier and as a mixer manufacturer. Now introducing dry mix mixers for Guniting operations.

Years of experience have helped us develop and engineer a mobile mixer that will give many years of dependable and profitable service.

This manual provides operating and maintenance procedures that are critical to the profitable and successful operation of your ProAll Mobile Mixer. Operation and maintenance of your new mixer in accordance with this manual will assure you of long and trouble-free service.

Keep this manual handy for frequent reference and pass it on to new operators or owners. Call your local dealer or distributor if you need assistance, information, or additional copies of the manual. Contact your dealer for a complete listing of parts.

OPERATOR ORIENTATION - The directions left, right, front, and rear, as mentioned throughout the manual, are as seen from the direction of travel.

ALWAYS give the SERIAL NUMBER when ordering parts or requesting service or other information.

Model Number: _____

Serial Number: _____

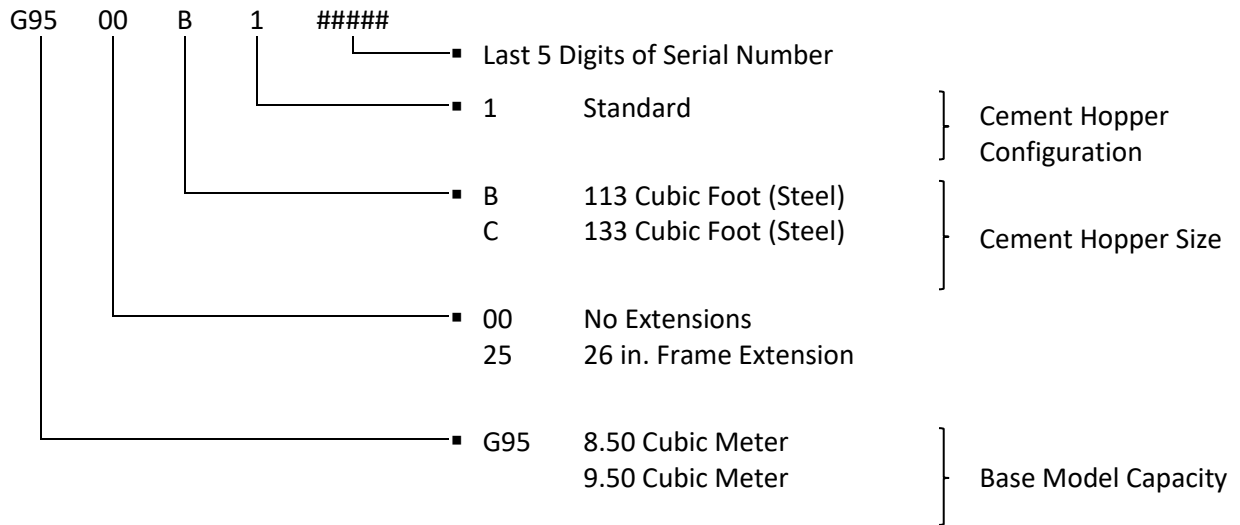
The serial number plate is located where indicated. Please mark the number in the space provided for easy reference.



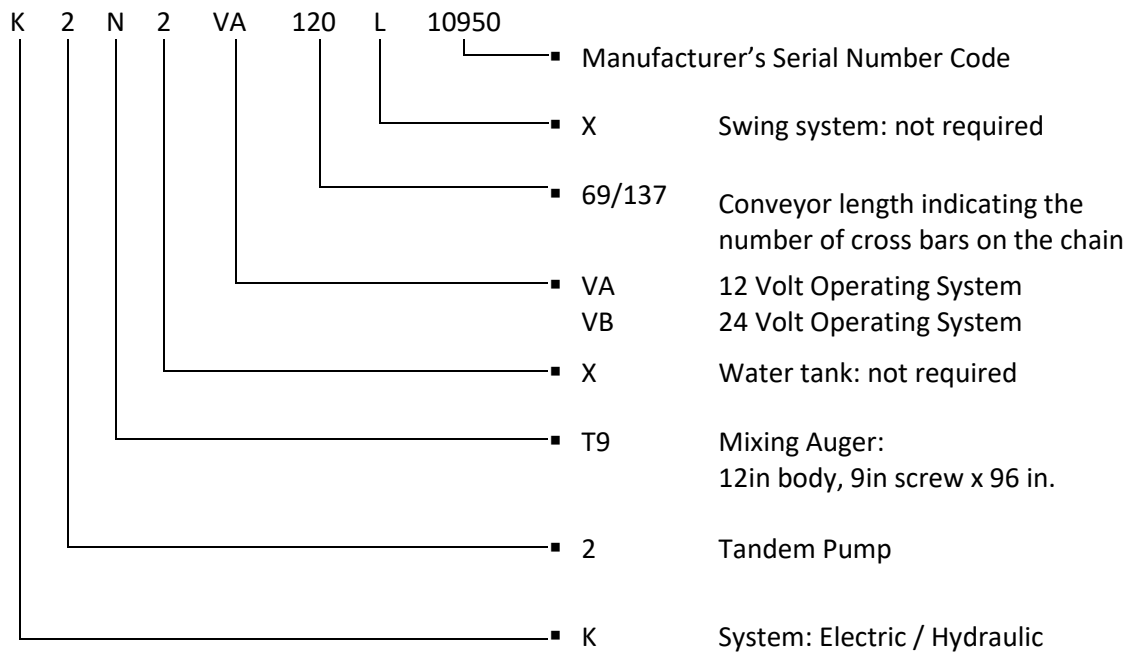
Plate 1. Model and Serial Number Plate

 PROALL Continuous Concrete Mixer	
MODEL NO:	_____
SERIAL NO:	_____
TYPE:	_____
YEAR OF MANUFACTURE:	_____
ProAll International Manufacturing Inc. 5810 - 47 Avenue OLDS, ALBERTA PH: (403) 335-9500 www.proallinc.com MADE IN CANADA	
	
071012	

Model Number



Serial Number



2. Safety

Safety Decals

The following safety decals have been placed on your machine in the areas indicated. They are intended for your personal safety and for those working with you.

Please take this manual and walk around your machine, noting the location of the decals and their significance.





Decal 1



Decal 2



Decal 3



Decal 4



Decal 5



Decal 7



Decal 6



Decal 8



Safety Alert Symbol

This Safety Alert symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

The Safety Alert symbol identifies important safety messages on the machine and in the

manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instruction in the safety message.



Why is SAFETY important to you?

3 BIG REASONS

Accidents Disable and Kill

Accidents Cost

Accidents Can Be Avoided

Signal Words

Note the use of signal words DANGER, WARNING and CAUTION messages. The appropriate signal word for each message has been selected using the following guidelines:



Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.



Indicates an imminently hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

IMPORTANT: The word “IMPORTANT” is followed by specific instructions. It is intended to prevent minor machine damage if a certain procedure is not followed.

NOTE: The word “NOTE” is used to identify and present supplementary information.

Safety



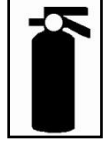

YOU are responsible for the SAFE operation and maintenance of your equipment. YOU must ensure that you and anyone who is operating, maintaining or working around the equipment are familiar with the operating and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the equipment.

Remember, YOU are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that EVERYONE operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. All accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

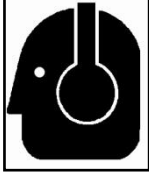
- Equipment owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter per OSHA (Occupational Safety and Health Administration) regulation 1928.57.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and operating instructions in the manual and to follow them. All accidents can be avoided.
- We feel that a person who has not read and understood all operating and safety instructions is not qualified to operate this machine. An untrained operator exposes himself and bystanders to possible serious injury or death.

- Do not modify the equipment in any way. Unauthorized modifications may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

General Safety

1. Read and understand the Operator's Manual and all safety signs before operating, servicing, maintaining, adjusting, or unplugging the equipment. 
2. Only trained competent persons shall operate the equipment. An untrained operator is not qualified to operate this machine.
3. Have a first-aid kit available for use should the need arise and know how to use it. 
4. Provide a fire extinguisher for use in case of a fire. Store in a highly visible place. 
5. Do not allow riders.
6. Wear appropriate protective gear. This list includes but is not limited to:
 - A hard hat
 - Protective shoes with slip resistant soles
 - Protective goggles
 - Heavy gloves
 - Hearing protection
7. Place all controls in neutral, stop the engine, turn the master power switch off and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.

8. Wear appropriate hearing protection when operating for long periods.
9. Know where overhead electrical lines are located and stay away from them. Electrocutation can occur without direct contact.
10. Review safety-related items annually with all personnel who will be operating or maintaining the equipment.



Operating Safety

1. Read and understand the Operator's Manual and all safety signs before using.
2. Place all controls in neutral, stop the engine, turn the master power switch off and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
3. Do not operate when any guards are damaged or removed. Install and secure guards before starting.
4. Keep hands, feet, clothing, and hair away from all moving and/or rotating parts.
5. Do not allow riders on the equipment during operation or when transporting.
6. Clear the area of all bystanders, especially small children, before opening or folding equipment.
7. Clean reflectors, signs, and lights before transporting.
8. Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses, and couplings are in good condition.
9. Review safety instructions with all personnel annually.

Maintenance Safety

1. Follow ALL the operating, maintenance, and safety information in the manual.

2. Support the machine with blocks or safety stands when changing tires or working beneath.

3. Follow good shop practices.
4. Keep service area clean and dry.
5. Be sure electrical outlets and tools are properly grounded.

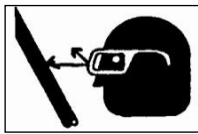


6. Use adequate light for the job at hand.
7. Use only tools, jacks, and hoists of sufficient capacity for the job.
8. Place all controls in neutral, stop the engine, turn the master power switch off and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
9. Make sure all guards are in place and properly secured when maintenance work is completed.
10. Before applying pressure to a hydraulic system, make sure all lines, fittings, and couplers are tight and in good condition.
11. Relieve pressure from the hydraulic circuit before servicing or disconnecting from a tractor.
12. Keep hands, feet, hair, and clothing away from all moving and/or rotating parts.
13. Place hydraulic controls in neutral and stop engine before working on equipment.
14. Clear the area of bystanders, especially small children, when carrying out any maintenance and repairs or making any adjustments.

Hydraulic Safety

1. Make sure that all components in the hydraulic system are kept in good condition and are clean.
2. Replace any worn, cut, abraded, flattened, or crimped hoses or metal lines immediately.

3. Relieve pressure before working on the hydraulic system.
4. Do not attempt any makeshift repairs to the hydraulic fittings or hoses by using tape, clamps, or cement. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.
5. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.
6. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.
7. Before applying pressure to the system, make sure all components are tight and that lines, hoses and couplings are not damaged.



3. Make sure all transport safety locks are in place before transporting.
4. Do not allow anyone to ride on the equipment during transport.
5. Add extra lights or use pilot vehicles when transporting during times of limited visibility.

Tire Safety

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform the required tire maintenance.

Storage Safety

1. Store unit in an area away from human activity.
2. Do not permit children to play on or around the stored machine.
3. Store the unit in a dry, level area. Support the base with planks if required.

Transport Safety

1. Make sure you comply with all local regulations regarding transporting equipment on public roads and highways.
2. Make sure all the lights and reflectors that are required by local highway and transport authorities are in place, are clean, and can be seen clearly by all overtaking and oncoming traffic.

Safety Signs

1. Always keep safety signs clean and legible.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs are available from your dealer.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50°F (10°C)
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

3. Overall Description

The major mixer system components are shown in the following figures.

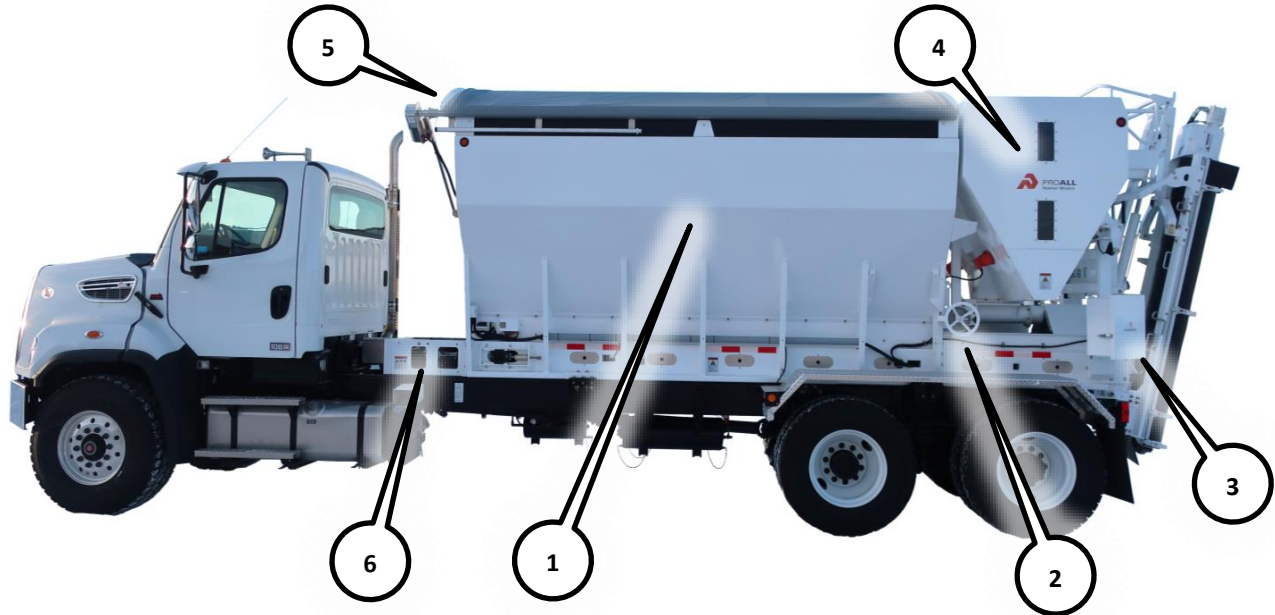


Table 1. Driver/Left Side System Components.

- | | |
|-----------------------------|-------------------|
| 1. Aggregate Bin | 4. Cement Bin |
| 2. Aggregate Control Gate | 5. Tarp |
| 3. Mixer Controls Enclosure | 6. Hydraulic pump |



Table 2. Right Side System Components.

- | | |
|------------------------------|----------------------------|
| 1. Mixing Auger | 5. Oil Reservoir |
| 2. Mixing Bowl | 6. Cement Bin |
| 3. Hydraulic Valve Enclosure | 7. Electrical Junction Box |
| 4. Oil Cooler | |

4. Controls, Instruments, and Operation

Mixer Controls



Table 3. Mixer Control Panel Table

1. Mixer Control System (Computer)	
• Ranger	Ranger Gunite Manual
2. Mix Auger	Paddle
3. Master Switch	On/Off
4. Operating Keypad.....	Push Button
5. Speed Control.....	Push Button/Dial Knob
6. Emergency Stop Button	
• In	Stop
• Twist	Reset

Mix Auger Paddle



Table 4. Paddle Table

- | | |
|----------------------------|-------------|
| 1. Mix Auger Control | Paddle |
| • Up | Auger Up |
| • Center | No Movement |
| • Down | Auger Down |

Operator Control

Rotate the Selection Knob until the desired speed is shown on the mixing computer (refer to

the mixer computer manual.) Push the Selection Knob to accept the value.

Table 5. Speed Control Table

- | | |
|--------------------------|-------------------------|
| 1. Auger Speed | |
| 2. Function not equipped | |
| 3. Conveyor Speed | |
| 4. Auger Forward | |
| 5. Conveyor Start | |
| 6. Select Knob | |
| • Push | Selection Confirmation |
| • Turn | Increase/Decrease Speed |



Operating Keypad

The keypad operations are selected by pressing the desired function button until the indicator light on the button shows the colour corresponding to the associated mode. Button

functions and status indicator lights are shown in the next section, Operating Keypad Status Indications.







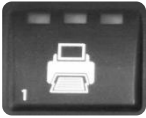













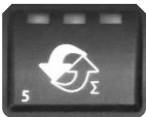



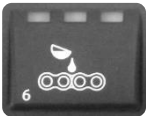












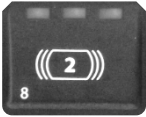









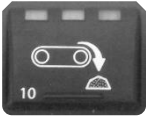






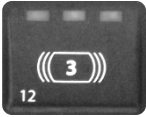



































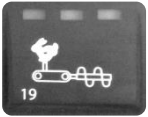










Figure 1. Operating Keypad

Table 6. Operating Keypad Table

1. Print	11. Function not equipped
2. Function not equipped	12. Vibrator 3
3. Function not equipped	13. Function not equipped
4. Vibrator 1	14. Cement Feed
5. Reset	15. Fibre Feeder
6. Chain Oiler	16. Vibrator 4
7. Function not equipped	17. Function not equipped
8. Vibrator 2	18. Engine High Idle
9. Function not equipped	19. Automatic Link
10. Conveyor Unload Momentary	20. Mix Auger Reverse

Operating Keypad Status Indications

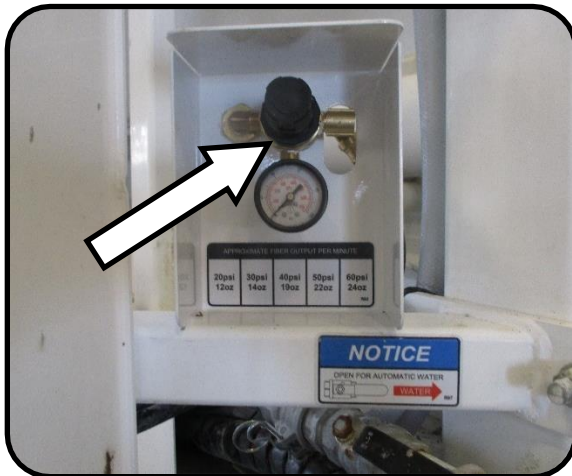
		Amber	Green	Red	
					Solid
					Flashing
Switch	Indication			Description	
				ON (prints current job ticket)	
				Indicates a selectable vibrator, see computer manual for further details	
				ON (holding this button will manually vibrate)	
				Automatic (vibrator will engage at intervals set on the computer)	
				Reset current job totals to zero	
				OFF (chain oiler is in the OFF part of the cycle during conveyor operation)	
				ON (chain oiler is in the ON part of the cycle during conveyor operation)	
				Automatic (chain oiler is activated)	
				Manual (chain oiler will cycle ON/OFF during conveyor operation for maximum 60 seconds)	
				Indicates a selectable vibrator, see computer manual for further details	
				ON (holding this button will manually vibrate)	
21. 5. Function not equipped				Automatic (vibrator will engage at intervals set on the computer)	
				Momentary (the conveyor will run while the button is pressed)	
					
				Indicates a selectable vibrator, see computer manual for further details	
				ON (holding this button will manually vibrate)	
				Automatic (vibrator will engage at intervals set on the computer)	
				ON (Belt bypass)	

				Automatic (indicates that this function is operating)
				Mixer fault (indicator only, refer to the computer manual for further details)
				Indicates a selectable vibrator, see computer manual for further details
				ON (holding this button will manually vibrate)
				Automatic (vibrator will engage at intervals set on the computer)
				ON (engine high idle)
				ON (ramps up engine, mix auger and conveyor begin running when button 5– Conveyor Start– on page 4-2 is pressed)
				ON (momentary reverse)
				Indicator, mix auger forward activated

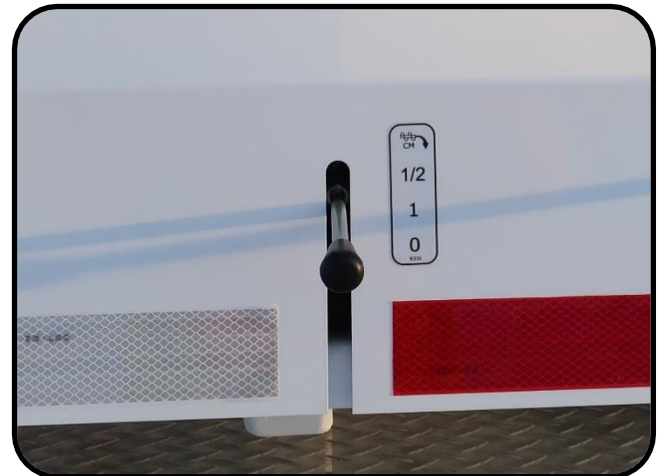
Valve Locations

The following identifies valve locations for hydraulic oil.

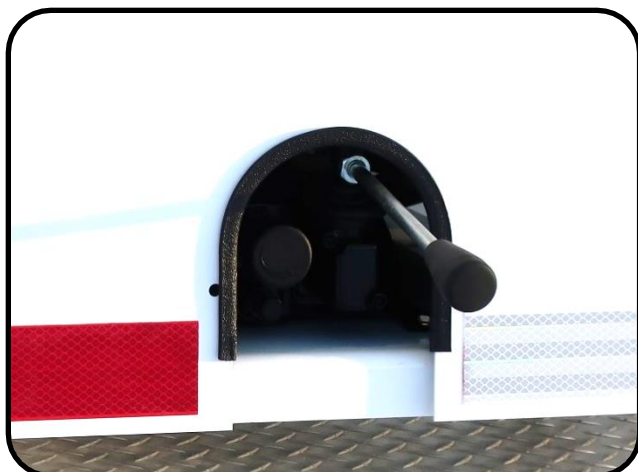
Numbers in the following figures correspond to the following valve locations.



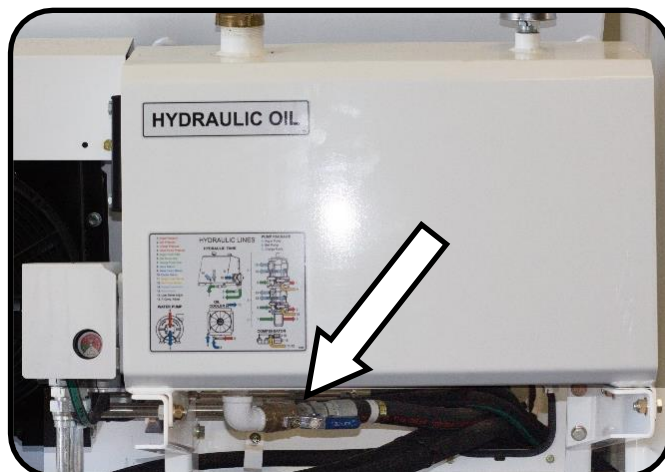
Valve Location 1. Fibre feeder control valve, if equipped.



Valve Location 2. Full, Lean, Cement Bypass valve.



Valve Location 3. Gunite pump control valve, if equipped.



Valve Location 4. Hydraulic oil control valve.

5. Calibration

The calibration of the mixer is the process that determines the control gate setting and the meter count required to produce a certain mix specification. A predetermined “mix design” is used as the guide for the calibration procedure.

NOTE: The volume is shown in the following sections as “unit volume” and refers to the volume in the standard units of measurement for the region and may refer to cubic meters, cubic yards, or other units of measurement being used.

Traditional Gunit Production Calibration Procedure

Step 1: Cement Output per Conveyor Count

Determine the ‘cement output per count of the conveyor.’ Each count is registered and displayed on the mixer computer (refer to mixer Control System manual.)

NOTE: The larger the sample you can measure, the lower the error will be.

NOTE: Samples taken from a newly filled cement bin should not be used to calibrate the cement because its bulk density does not reflect real working conditions where cement has been allowed to settle and compact. Ensure the cement is settled by driving the mixer or vibrating before samples are taken.

NOTE: On a new mixer, cement calibration should be confirmed after 500-unit volumes of mix have been produced.

1. Empty material from the sand bin, the cement bin should be at least 1/2 full.
2. Discharge an adequate amount of cement to ensure that the cement metering system is

full by pressing button 8 – Cement Feed - on the Operating Keypad (refer to page 4-3.)

3. Determine the empty weight of the container being used to collect the cement sample.
4. Zero the meter and place the container under the hopper.
5. Run the conveyor until the sample container is full, ensuring that all material being discharged is collected.
6. Weigh the container and sample together for total weight.
7. Subtract the container weight from the total weight to obtain the sample weight. Record the sample weight.
8. Divide the sample weight by the number of counts shown on the meter to determine the **cement output per count**.

Equation 1. Cement Formula

$$\frac{\text{Sample Weight}}{\text{Count}} = \text{Cement Output per Count}$$

NOTE: Collect and weigh a minimum of (3) three samples to ensure they are consistent.

Step 2: Counts per Unit Volume of Mix

Determine the number of counts required to deliver the specified weight of cement powder per cubic meter or cubic yard of a mix as needed in your mix design.

Equation 2. Count Formula

$$\frac{\text{Pounds of Cement per Unit Volume}}{\text{Cement Output per Count (from Step 1)}} = \text{Counts per Unit Volume}$$

Step 3: Sand Weight per Count

Determine the weight of sand that must be released per count. Using your mix design, establish the required weight of the sand to produce one unit volume of mix.

1. Turn the cement motor off by moving lever to bypass.
2. Fill the bin at least ¾ full.
3. Determine the empty weight of the container being used to collect the sand sample.
4. Adjust control gate to the setting taken from the 'Sample Data Chart' Found at the end of the calibration section.
5. Run the conveyor belt by pressing button 8 on the Operating keypad until sand is being discharged off the end of the conveyor.
6. Zero the counter and place the sample container under the discharge ring.
7. Run the conveyor until the sample container is full, ensuring that all material being discharged is collected.
8. Read the meter and record the value.
9. Weigh the container and sample together for total weight.
10. Subtract the container weight from the total weight to obtain the sample weight. Record the sample weight.
11. Divide the sample weight by the meter reading to calculate the **weight of sand per count** that has been discharged.
12. Adjust the control gate and re-sample until the **weight of sand per count** is equal to the amount established in the stone formula.

NOTE: After the control gate has been adjusted, the conveyor must be run until the adjusted material flow is past the discharge point. Disregard the material released during this operation and re-zero the meter.

Equation 3. Sand Formula

$$\frac{\text{Mix Design Weight of Sand per Unit Volume}}{\text{Counts per Unit Volume (from Step 2:)}} = \text{Weight of Sand per Count}$$

NOTE: Once a gate setting is established, check it by taking a minimum of (3) three samples.

Results

Mix # (Operator's Reference)	_____
Strength Required	_____
Counts per Unit Volume	_____
Sand Gate Setting	_____

After calibrating using weight it is recommended that the yield of each mix be verified by batching concrete into a yield box (container of known volume) and comparing the result with that displayed by the meter. Small adjustments in the gate settings may be necessary to produce the desired yield.

Computer Gunit Production Calibration Procedure

Step 1: Cement Output per Auger Count

Determine the 'cement output per count of the cement auger.' Each count is registered and displayed on the mixer computer (refer to mixer Control System manual.)

Cement calibration using this method no longer requires bin materials to be emptied as the conveyor is not required to run when calibrating. Cement is calibrated based on the output of the cement auger only. This value should be linear at normal operating speeds.

NOTE 1: The larger the sample you can measure, the lower the error will be.

NOTE 2: Samples taken from a newly filled cement bin should not be used to calibrate the

cement because its bulk density does not reflect real working conditions where cement has been allowed to settle and compact. Ensure the cement is settled by driving the mixer or vibrating before samples are taken.

NOTE 3: *On a new mixer, cement calibration should be confirmed after 500 unit volumes of concrete have been produced.*

1. The cement bin should be no less than 1/2 full.
2. Discharge an adequate amount of cement to ensure the cement metering system is full by pressing button 8 - Cement Feed –(refer to page 4-3.)
3. Determine the empty weight of the container being used to collect the cement sample.
4. Zero the meter and place the container under the hopper.
5. Run the cement auger until the sample container is full, ensuring that all material being discharged is collected.
6. Weigh the container and sample together for total weight.
7. Subtract the container weight from the total weight to obtain the sample weight.
8. Enter the weight and count values into the computer.

Equation 4. Cement Formula

$$\frac{\text{Sample Weight}}{\text{Auger Meter Count}} = \text{Cement Auger Output per Count}$$

NOTE: *Collect and weigh a minimum of (3) three samples.*

Step 2: Counts per Unit Volume of Mix

The computer will calculate the required counts per unit volume based on the calibration data

entered. This is done in the mix entry screen after calibration (see Control System manual.)

Step 3: Gate Calibration

Determine the weight of sand that is released per count of the conveyor. The computer will generate the curve for gate height (wheel position) vs. weight per count based on the data entered. Gate calibration can be done at various gate heights up to a total of 3. The calibration data should be entered at progressively higher gate heights (ie. 3, 5, 7). You must have at least two gate heights in the calibration data for the computer to calculate the curve.

Equation 5. Aggregate Formula

$$\frac{\text{Sample Weight}}{\text{Conveyor Count}} = \text{Gate Output per Count}$$

1. Place lever in *Cement bypass* mode.
2. Fill aggregate bin at least ¼ full.
3. Determine the empty weight of the container being used to collect the sample.
4. Adjust control gate to the calibration height being sampled.
5. Run the conveyor by pressing button 8 until sand is being discharged off the end of the conveyor.
6. Zero the counter and place the sample container under the discharge ring.
7. Run the conveyor until the sample container is full, ensuring that all material being discharged is collected.
8. Read the meter and record the value.
9. Weigh the container and sample together for total weight.
10. Subtract the container weight from the total weight to obtain the sample weight.
11. Enter the weight and count values into the computer for up to three samples per gate height.

NOTE: *After the control gate has been reset, the conveyor must be run until the adjusted material flow is past the discharge point. Disregard the material released during this operation and re-zero the meter.*

After calibrating using weight it is recommended that the yield of each mix be verified by batching concrete into a yield box (container of known volume) and comparing the results with that displayed by the meter. Small adjustments in the gate setting may be necessary to produce the desired yield. A yield correction factor can be entered into the computer that will adjust the gate heights accordingly in the mix entry screen (see Control System manual) or the adjusted heights can be entered and saved manually.

Fibre Feeder Calibration

NOTE: *There is a flow rate chart inside the front cover of the fibre feeder for reference*

1. Determine the amount of fibre required in kg/lb per minute according to the mix design (refer to the Calibration Sheets)
2. Set the fibre feeder air pressure with the air pressure control valve (refer to Fibre feeder control valve. on page 4-6) and the fibre feeder flow rate chart located on the valve bracket.
3. Press button **Error! Reference source not found.** - **Error! Reference source not found.** on the Operating Keypad (refer to page 4-3) to prime, collect and weigh the fibre. Compare the amount discharged with the amount required and make adjustments using the air pressure control valve as in step 2 above.
4. Place the fibre feeder in the Automatic position to dispense fibre when the conveyor belt is running by pressing button **Error! Reference source not found.** on the Operating Keypad.

6. Field Operation

Principle of Operation

The ProAll Mobile Mixer is uniquely designed to allow for the supply of freshly mixed gunite, regardless of delivery times, the elimination of wasted product, and flexibility of delivery that is not available with conventional transit mix operations. Your aggregate and cement are transported to the site in separate compartments and are accurately proportioned and delivered to the mixing auger as they are being discharged.

The mixing action is continuous until the bins are empty or indefinitely if the bins are being refilled as the unit is producing gunite. On the other hand, the mixing action may be stopped and then started again by the operator to facilitate the loading of wheelbarrows or any application where small amounts of product are required. The discharge rate is infinitely variable from maximum, 25+ cubic meters per hour down to zero.

Mix Batching

Ingredient proportioning is based on the known dry weight of each ingredient and the requirements for each as specified in the mix design. The calibration procedure translates these weights into volume settings.

Cement is fed into the mix at a constant rate that is proportional to the movement of the conveyor belt. The control gate allows the operator to change the proportional flow of sand in relation to the movement of the conveyor belt and therefore, to the flow of cement. Because the cement and aggregate feeders are mechanically synchronized, the proportions of each of the dry ingredients are constant, once the proportioning controls are set and locked.

An electronic counter allows the operator to determine the accumulated amount of cement discharged and, based on the calibration, the amount of mix produced.

Aggregate

Materials loaded into the sand bin must be free of any foreign matter that may affect the quality of the concrete being produced or cause a partial or complete blockage in the control gates.

Aggregate Control Gate

The aggregate bin discharge gate controls the amount of material that exits the aggregate bin. The gate handwheel labeled 'GATE A' controls the opening.

NOTE: Once the gate height is set, ensure the gate is locked into place using the gate handle lock to prevent the gate height from changing while in operation.

NOTE: The numbers on the dial indicate the increase of height only, not the actual measurement of the height, and are for the operator's reference.

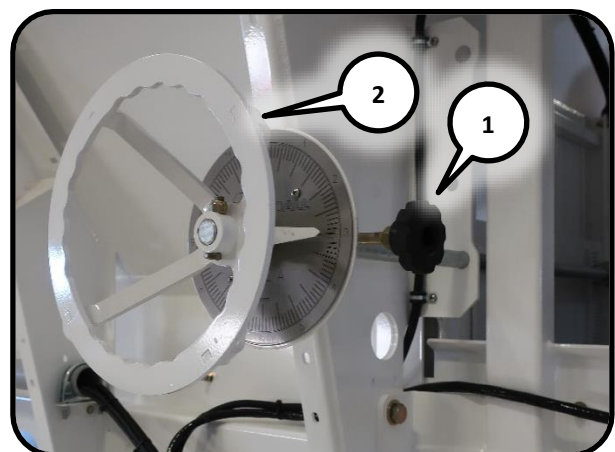


Figure 2. Aggregate bin control gate. (1) gate handle lock, (2) gate handle.

Cement Powder

IMPORTANT: Care must be taken that no stone, water, or other foreign material enters the cement bin. A serious malfunction of the cement feeding system may result.

The output of cement can be checked on the computer.

Mix Auger

The mix auger contains many sub-systems that work together in the mixing process. The following figure displays the major components of the mix auger system.

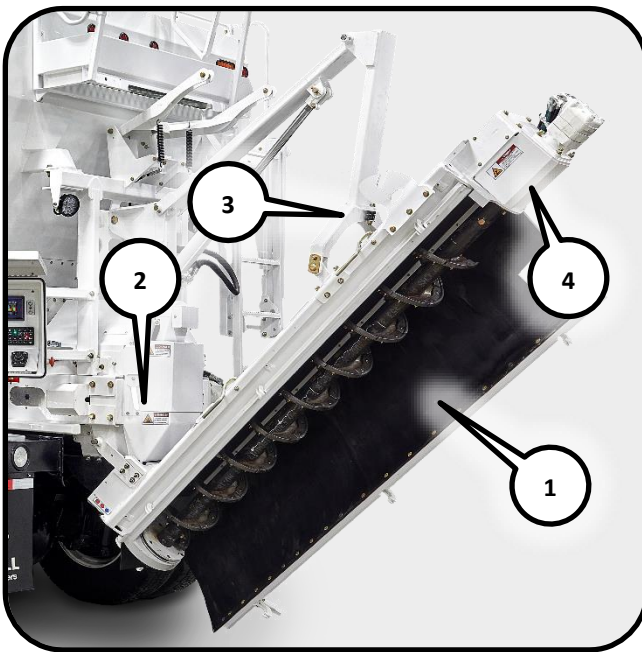


Figure 3. Installed mix auger equipped with drop-away bottom mat. (1) mix auger, (2) mix bowl, (3) lower link arm, (4) auger top drive.

The mixing auger receives the gunite materials through the mix bowl, mixing throughout its length and discharging the mix through the top of the auger. The auger position is controlled through the Mix Auger Paddle and its speed and direction are controlled using the Operator Control (refer to page 4-2.)

⚠ WARNING

The exposed mixing auger is extremely dangerous. The auger ball valve can prevent the auger from turning.

The auger cover is latched and may be opened for cleaning. A cover catch holds the cover open while cleaning by catching the cover handle.

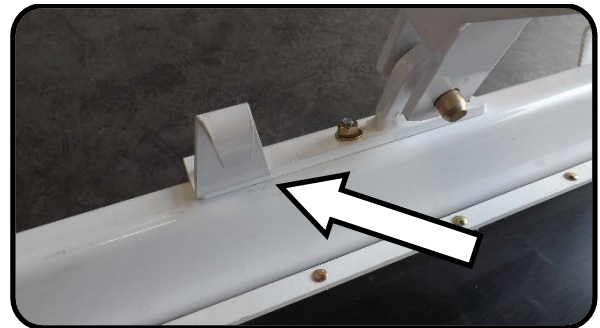


Figure 4. Cover catch.



Figure 5. Auger cover open for cleaning.

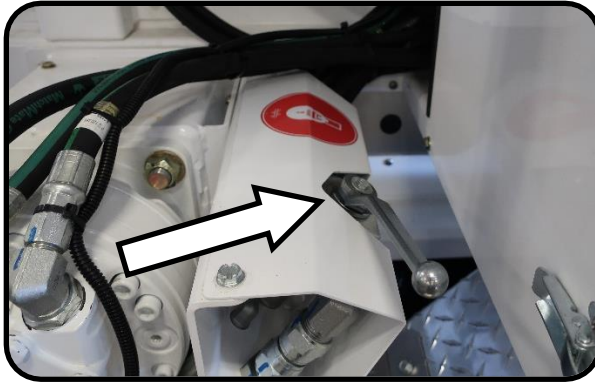


Figure 6. Auger ball valve safety on/off (found by the conveyor drive motor).

Drop-Away Bottom Mat

The gunite auger offers a drop-away bottom mat to facilitate cleaning. Simply unhook the four latches to have full access to its screw.

Remove three of the latches, leaving the middle one, clean up ends then unhook the middle.

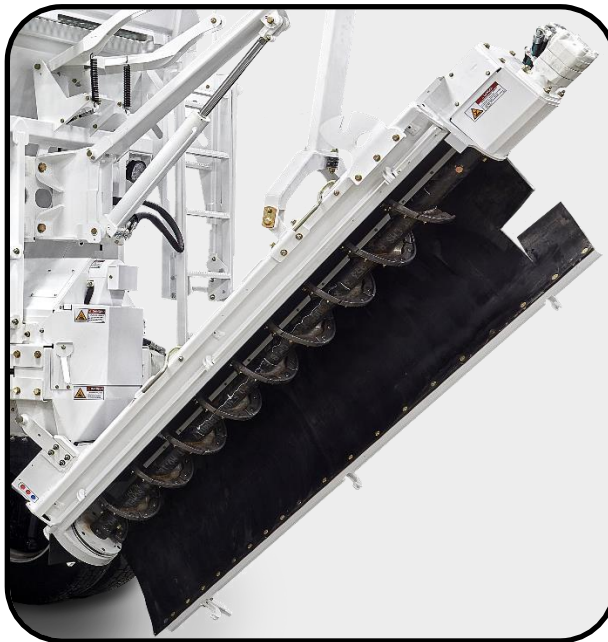


Figure 7. Drop-Away mat detail

Auger Bearing

IMPORTANT: The mix auger seal must be greased regularly for lubrication and to keep contaminants from wearing on the bearing and shaft components. Refer to Lubrication and

Maintenance Frequency on page 7-9 for lubrication maintenance.

The lower bearing supports the auger shaft and includes seals that help to keep materials from exiting the mix auger.

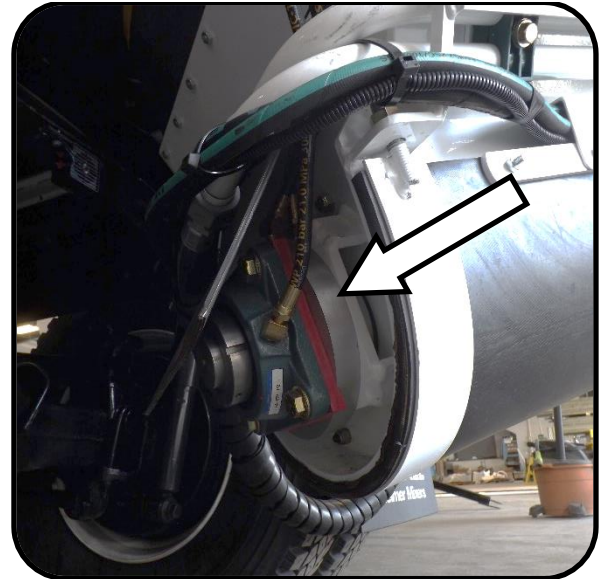


Figure 8. Mix auger bearing and seals.

Mix Bowl

The mixing auger attaches to the mix bowl by way of two removable mounts that enable the mix auger to pivot up and down on the mix bowl. A rubber shroud surrounds the interface between the mix bowl and the auger in order to keep materials from leaking out of the auger. The shroud may be unhooked from the cover for cleaning.



Figure 9. Mix bowl

The lower lift link attaches to the auger through self-aligning ball-type pivot points. The pivot pins on the lower link arm make it possible to remove the mix auger for maintenance.



Figure 10. Lower link auger pivot.

The lower link arm is designed to swivel in order to assist in maintenance and cleaning. Two bolts hold the swivel in place and need to be removed to use the link swivel.

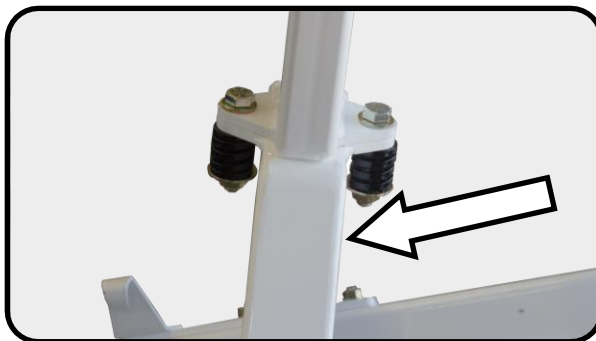


Figure 11. Lower link swivel.

Auger Top Drive

WARNING

The mixing auger drive contains rotating components. Always keep the cover on the top drive while the mix auger is in use.

IMPORTANT: The mix auger top drive must be greased regularly. Refer to *Lubrication and Maintenance Frequency* on page 7-9 for lubrication maintenance.

The hydraulically driven top drive holds and drives the auger. Refer to the Operator Control section on page 4-2 for information on auger drive control.

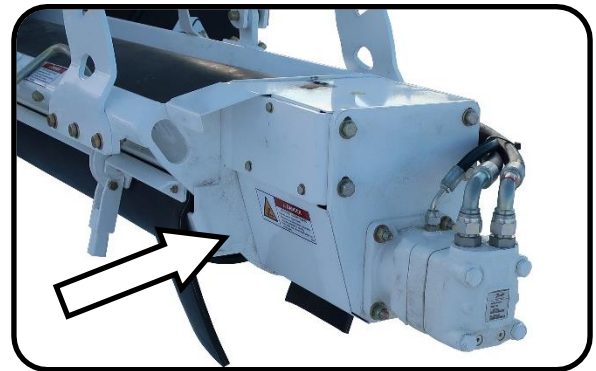


Figure 12. Mix auger top drive.

Fibre Feeder

The ProAll fibre feeder is designed to supply a controlled flow of fibre strands to the gunite mix.

NOTE: The fibre feeder discharge rate does not change proportionally with changes in the conveyor speed. Record the conveyor speed setting when calibrating the fibre feeder and use that conveyor speed whenever the fibre feeder is used.

To adjust the fibre flow rate, increase or decrease the air pressure with the air pressure control valve (refer to Valve Location 7 on page 4-6.)

Load the fibre feeder by placing the fibre spool into the fibre feeder cabinet. Fibre from the center of the spool is fed into the tubing at the top corner of the cabinet. The fibre is then passed through the top hole of the fibre cutter and fed through the rubber wheel and cutter as shown in Figure 14.

WARNING

The fibre feeder cutter contains a cutting wheel with very sharp knives. Care must be taken when loading the cutter to prevent being cut by the cutting wheel.

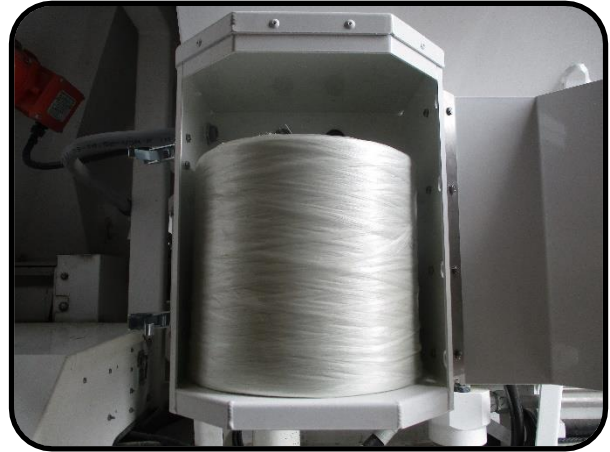


Figure 13A & 13B. Fibre feeder.



Figure 14A & 14B. Fibre cutter.



Setting up to Pour

Upon arrival at the pour site, confirm the specifications of the mix to be poured. Using the following sequence, set up the mixer in preparation for pouring.

NOTE: The following section refers to the Operating Keypad on page 4-3. Please refer to this page for further information on keypad buttons.

NOTE: The following section refers to the Mixer Control System on page 4-1. Please refer to the mixer computer manual for further information on the computer.

1. Set the master electrical switch to ON. This switch is in the Mixer Display Box (Figure 15).
2. Reset Emergency Stop Button, refer to page 4-1.



Figure 15. Mixer display box master electrical switch

3. Reset the job volume to zero by pressing the reset button on the operating keypad – button 5.
4. Select the mix required by the customer – please refer to the Mixer Control System

manual for information on setting the mix values.

5. Set the aggregate bin discharge gate height according to the desired mix design. SET AND LOCK THE CONTROL GATE. Refer to the Aggregate Control Gate section on page 6-1 for specific information concerning the control gates.
6. Adjust the fibre feeder flow rates (refer to the Fibre Feeder section on page 6-5.)
7. Pre-adjust conveyor and mix auger speeds. Set speeds using the Operator Control (refer to page 4-2.)
 - a. Adjust conveyor speed using the **Error! Reference source not found.** and Conveyor Speed button – button 3.
 - b. Adjust the mix auger speed using the **Error! Reference source not found.** and Auger Speed button – button 1.
8. Position sand material to point of discharge into the mixing bowl
Push the Conveyor Feed button – button 80 on the Operating Keypad – to ON to start the conveyor bringing the material to the discharge point of the conveyor.
9. Extend the cement delivery tube.
10. Lower the Mix Auger using the Mix Auger Paddle (refer to page 4-2). The transport lock will automatically disengage when the boom is lowered.

NOTE: DO NOT ALLOW the angle of the mix auger to become too low as this will limit the ability of the auger to mix thoroughly. An angle of no less than 25 degrees should be used on the mixing auger.

Pouring

WARNING

- Never run the mix auger with the top or bottom cover open. Do not allow anyone unfamiliar or untrained to operate the ProAll Mixer.
- Never allow anyone directly under the mix auger.

CAUTION

- Keep hands, feet and loose clothing away from rotating shafts, gears, chains, belts and other moving parts.
- When operating and moving about job sites, realize that the driver/operator holds the final responsibility for the safe operation of the mobile mixer. Be constantly aware of the location of open excavations, other workers, pilings, or anything else that could be a hazard.
- When operating the boom functions, be aware of the location of workers.
- While everything has been done to ensure their reliability, do not trust hydraulic cylinders, hoses or fittings.

As with any machine, the operator of the ProAll Mobile Mixer must understand and become confident in the operating procedures through training and experience. The following details the steps to be taken to deliver a quality product.

1. Activate high idle function using the speed control switch, refer to Operating Keypad - Engine High Idle button 10 on page 4-3. (If an engine is equipped, refer to **Error! Reference**

source not found. section on page **Error! Bookmark not defined..)**

2. Activate mix auger by pressing the Auger Forward button on the Operator Control (refer to page 4-2.)
3. Activate the conveyor belt switch by pressing the Conveyor Start button on the Operator Control (refer to page 4-2.)
4. Vibrate the bins to ensure initial flow of material to the conveyor belt.

NOTE: *The frequency and duration of vibration depends upon the distance travelled while loaded, road conditions, and the condition of the sand. The operator must judge, based on experience, the amount of vibration required. Insufficient vibration may allow the material to bridge in certain conditions, thereby affecting the quality and consistency of the concrete produced.*

5. Make frequent visual checks of aggregate flows as well as the flow of concrete to ensure that the customer is receiving a concrete product that is true to the desired specifications.

Clean up and Preparation for Transport

When the pour is complete or the mixer is empty, it is important that the mix auger be properly cleaned up to prevent an excessive material build-up which could interfere with the operation of the mixer on subsequent loads. The operator should take this opportunity to inspect the wear plates and make a general visual check of the mix auger and other components which may require maintenance or repair.

The following steps act as a guideline for cleaning out the mix auger and preparing the mobile mixer for road transport:

1. Using a scraper, remove any excess material from the discharge end of the conveyor belt.
2. Roll up the cement drop tube.



Figure 16. Cement drop tube.

3. Close the conveyor enclosure.
4. Run the mix auger until it is empty.
Adjust the mix auger speed control to reduce the auger speed as required.
5. With the mix auger still elevated, ensure that back plate and sides of the auger trough are free of build-up. Often the mix auger will be run in either forward or reverse to facilitate cleaning of the auger hopper area.
6. Switch the mix auger control to 'OFF'.
7. Open the mix auger cover and lower the auger as far as possible.

WARNING

Never run the mix auger with the top or bottom cover open.

8. Elevate mix auger to transport position. The retaining lock will automatically engage.

IMPORTANT: Check for proper alignment as the auger is being raised

9. Master switch in the display box, or if equipped with an engine, in the engine enclosure - OFF

Chain Oiler

The chain oiler consists of the chain oil reservoir and lubrication solenoid valve and is located between the gussets on the right-hand side of the mixer at the rear of the aggregate bin. The chain oiler keeps the conveyor and cement bin sump auger chains lubricated and runs automatically when the chain oiler switch is on. The chain oiler does not require adjustment but should be inspected periodically to ensure the reservoir has oil.

NOTE: Use SAE 30 W oil or similar when filling the reservoir.

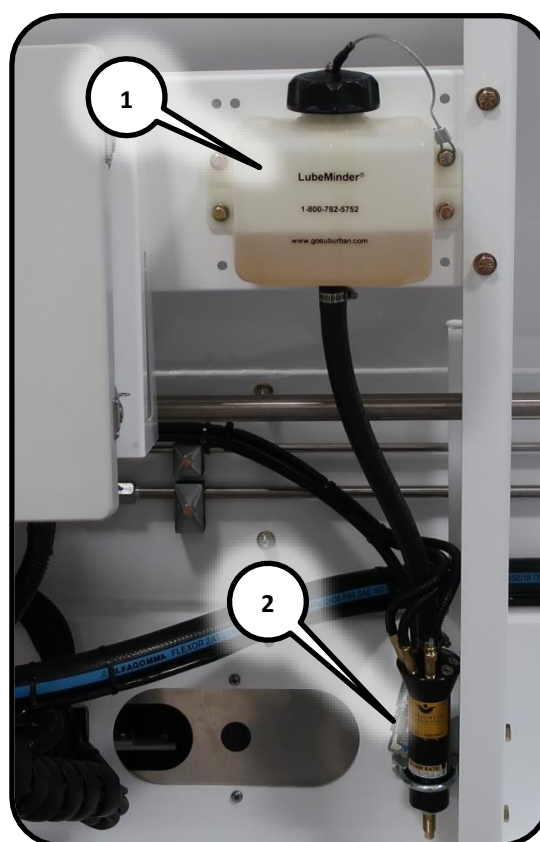


Figure 17. Chain oiler reservoir. (1) oil reservoir, (2) oil solenoid valve.

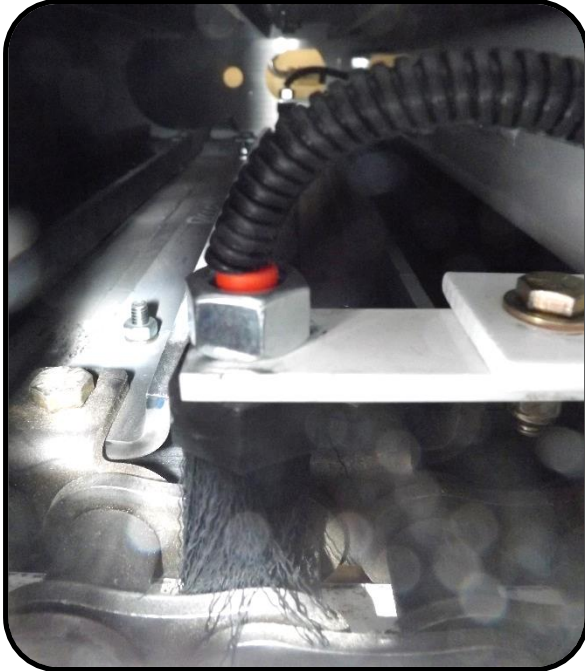


Figure 18. Chain oiler brushes.

Inspect the chain oil brushes periodically for debris and to ensure they are not clogged. Replace as necessary.

Tarp

The tarp is used to cover the aggregate bin. Operate the tarp use the tarp control toggle switch located on the front, left-hand side of the machine.

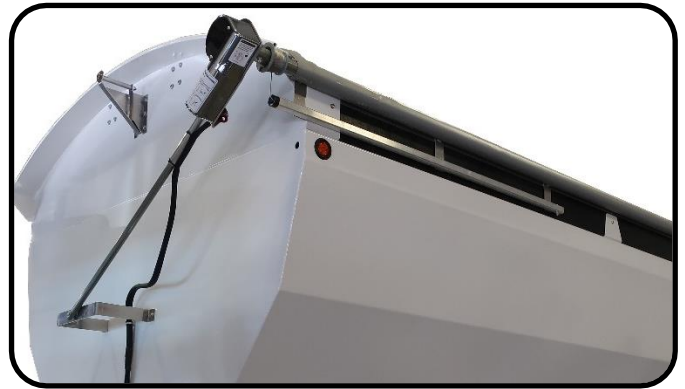


Figure 19. Tarp mechanism.

Tarp Control

The tarp control is a single toggle switch located on the left-hand side of the sand bin.



Figure 20. Tarp control switch.

7. Lubrication and Maintenance

Maintenance

Regular maintenance and inspection will help ensure trouble-free operation, eliminate unnecessary downtime, and extend the life of your ProAll Mobile Mixer. Keeping your mixer clean and free from cement build-up helps to maintain a good image to your customers. The operator should perform a daily pre-operation check, inspecting the truck and mixer for any mechanical defects.

Speed Sensor

If equipped, ensure the GAP SPACE between the speed sensors and shafts are set to 0.1 inch (2.5mm). Speed sensors are located on the left-hand side conveyor shaft at the rear of the machine, on the cement auger drive shaft and the colour feeder if equipped.

NOTE: The sensor must align with the center of the shaft. Misalignment will result in sensor reading errors.

Take Up Bearing

Ensure the take-up bearing has a $\frac{1}{4}$ inch gap between the washer and tubing as shown in Figure 18.

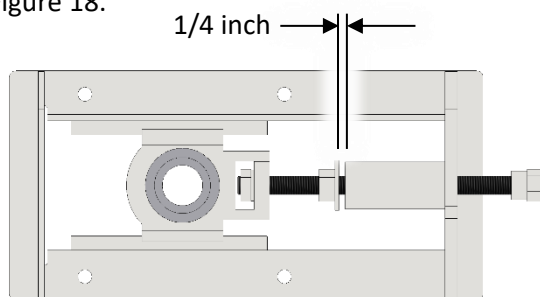


Figure 21. Take-up bearing gap

Oil Specifications

Cleanliness

The hydraulic fluid must be maintained at ISO Cleanliness Code 20/18/15 or better.

Hydraulic System

Your ProAll Mobile Mixer has been filled with Petro Canada HYDREX™ XV to give you best all-season performance, plus longer lasting protection against wear

HYDREX™ XV is recommended for use in equipment manufactured by **Eaton (Vickers), Cincinnati Machine, Denison, Racine, Sauer-Danfoss and others.**

Minimum Requirements for Replacement Oil

In this hydraulic, the optimum viscosity range is 16 – 36 cSt (75 – 168 SUS), at normal operation temperatures. Viscosity should never fall below 10 cSt (47 SUS.) At the lowest expected start-up temperature, the viscosity – less than one minute – should not exceed 1600 cSt (7500 SUS.)

Hydraulic Oil Filter

The high-pressure hydraulic oil filter is included with the machine for the conveyor belt.

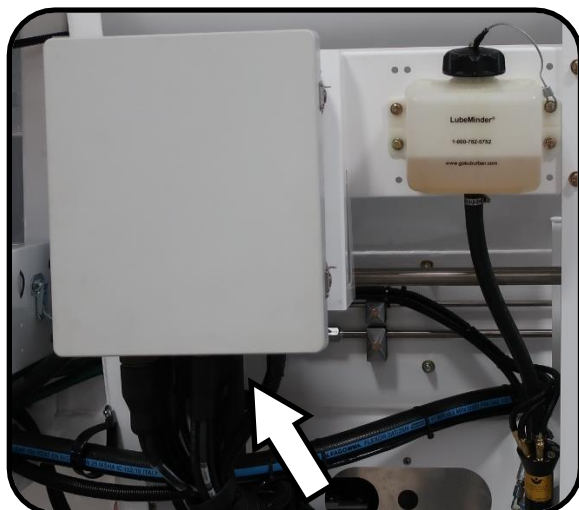


Figure 22. General location. Located behind distribution box

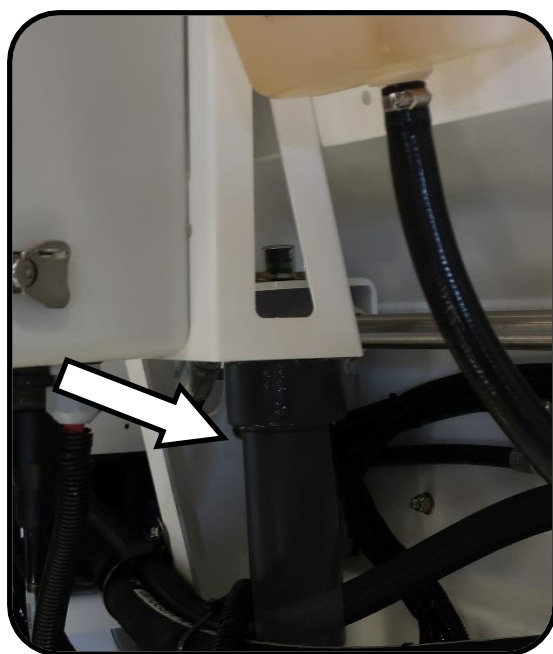


Figure 23. High Pressure hydraulic oil filter

The filters are equipped with indicator showing the status of the filter. Green indicates the filter is working properly. Red indicates flow through the filter is restricted requiring maintenance.

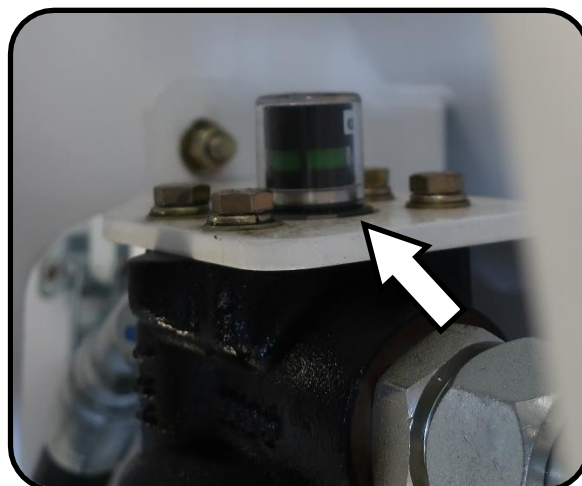


Figure 24. High pressure filter indicator.

Wear Plates

The mix auger is equipped with replaceable wear plates, designed to protect the auger from premature wear. The wear plates must be inspected frequently and replaced when they wear down to the auger flighting.

IMPORTANT: *Never allow the plates to wear into the mounting holes drilled into the flighting. The complete auger or portion of it will have to be replaced if this occurs.*

Inspect the wear plates during clean up and monitor their condition. Also, be aware of the nature of upcoming pours, this will help prevent a wear plate failure part way through a large, remote pour.

Remove the old wear plates by cutting the nuts off with a chisel or cutting torch, being careful not to damage the auger flighting. When using a torch, be careful not to scorch the rubber portions of the auger trough.

IMPORTANT: *When attaching the new wear plates, it is important that they are against a firm, even surface at the bolting area. Excessive pressure on an uneven surface may cause breakage.*

Service

The ProAll Mobile Mixer has been designed and tested to allow for a minimum number of adjustments and service items. The following sections describe adjustments and service that may be required.

- Conveyor chain: The take-ups on the front shaft of the conveyor must be adjusted to provide for proper tension on the conveyor chain. Proper adjustment is attained when the chain rollers are held about 1/8" above the ends (front or back) of the chain return support bars. Be sure to check both sides of the conveyor chain, ensuring that the front shaft remains square to the main frame of the mixer.
- Mix auger lift cylinder: The lift cylinder is provided with an adjustable clevis to allow the proper engagement of the transport position locking hook. If the lock does not fully engage, lower the mix auger and support it with blocking to allow for the removal of the cylinder pin (clevis end.) Loosen the tightening bolt to turn the clevis. Replace the pin and test for proper lock engagement. Repeat this procedure as necessary.

IMPORTANT: *Over adjustment puts undue stress on the swivel ring and support pins. When turning the clevis, do not hold the cylinder rod with a pipe wrench or other tool - seal damage will result. If necessary, extend the cylinder rod until it bottoms out. This will prevent it from turning easily. It may also be necessary to slightly spread the clevis with a chisel to loosen the threads.*

- Control gate position pointer: The pointer is set at the factory to indicate 0 or 12 on the dial when the control gates are in the lowest

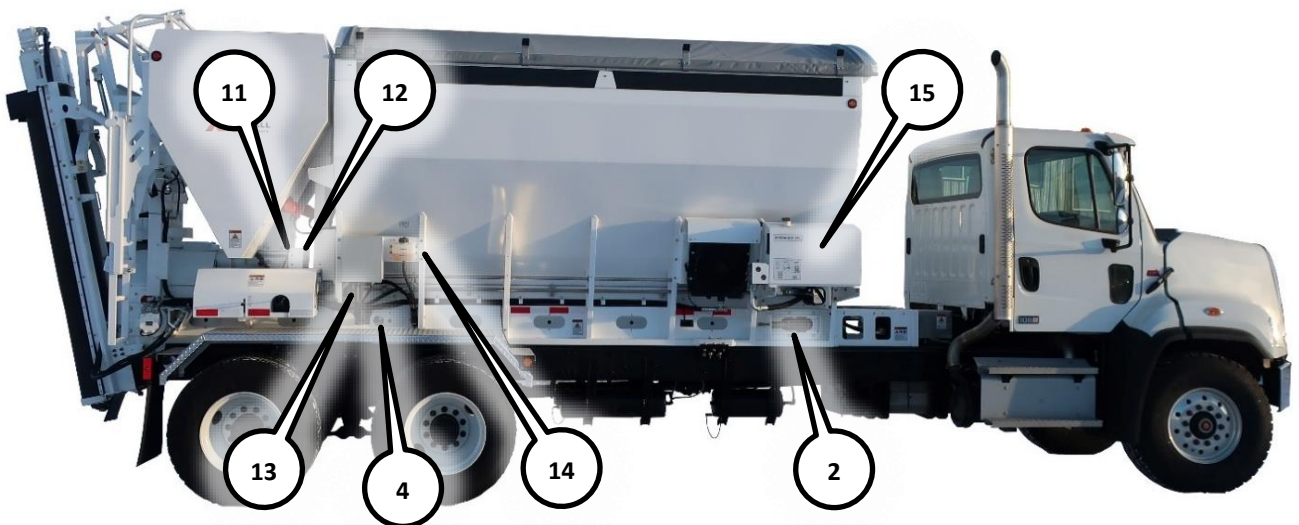
position (resting on the conveyor belt.) If a service function requires that the pointer setting relative to the gate position be changed, return it to the original factory setting. It is a good practice to check this setting during regular maintenance.

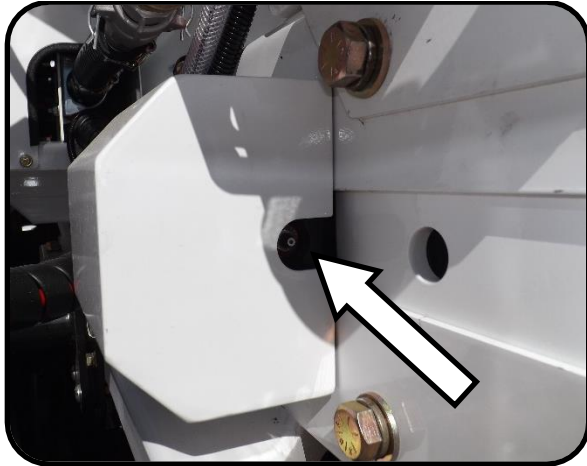
Lubrication and Maintenance Points

The following inspection and maintenance schedule acts as a guideline only. It should be noted that extreme weather conditions,

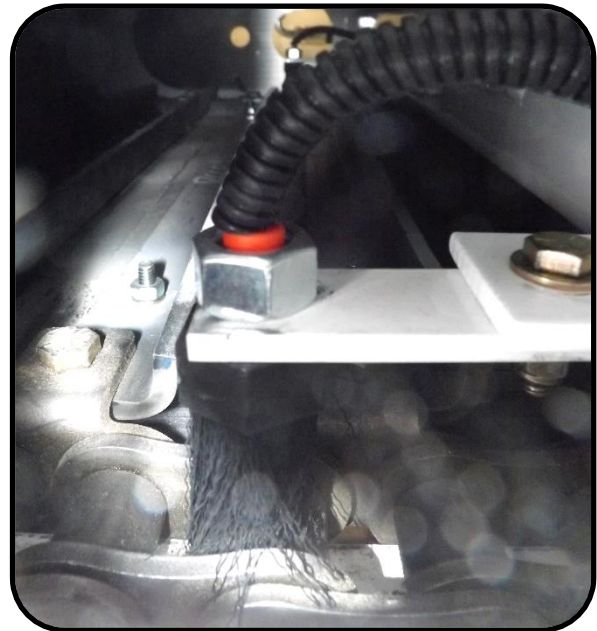
aggressive aggregates, the nature of the mix being produced and other factors will affect the frequency of service required.



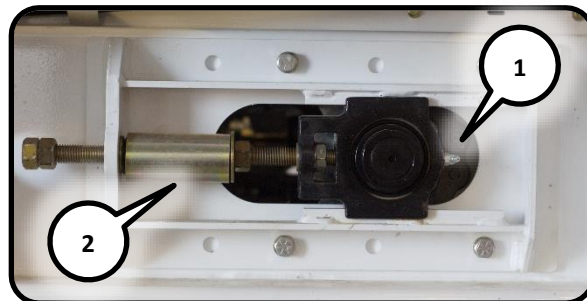




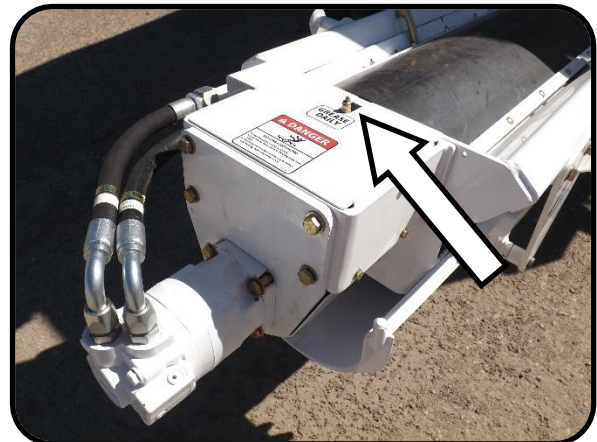
Maintenance 1. Rear conveyor shaft grease and sensor gap check, left.



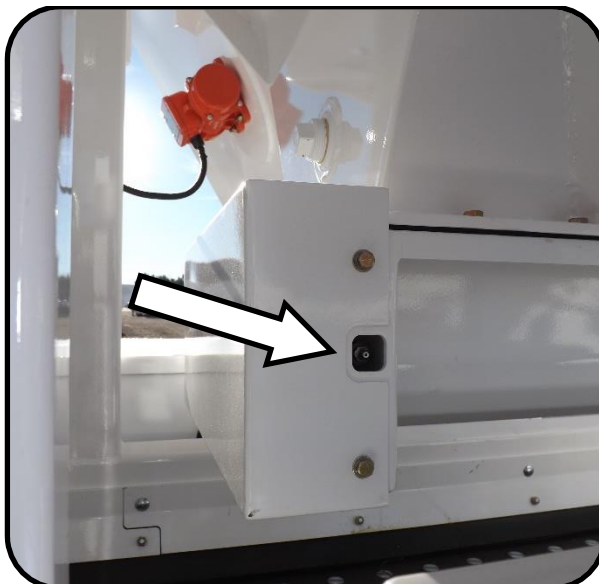
Maintenance 4. Conveyor chain brush check.



Maintenance 2. Front conveyor shaft, right and left. (1) bearing grease, (2) tension adjust



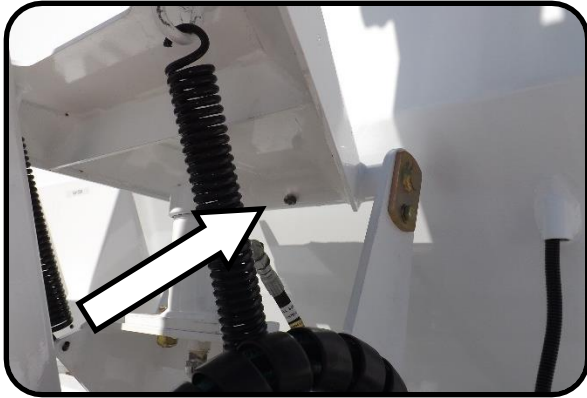
Maintenance 5. Mix auger top bearing grease.



Maintenance 3. Cement bin sump bearing grease.



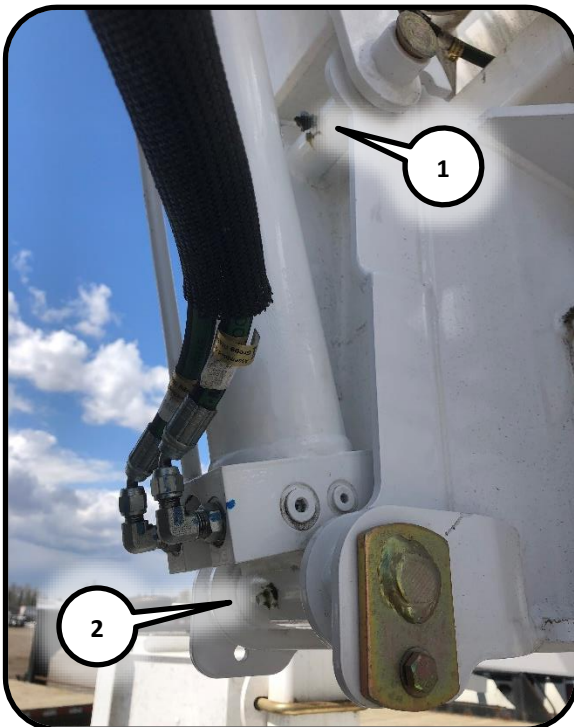
Maintenance 6. Upper lift link grease.



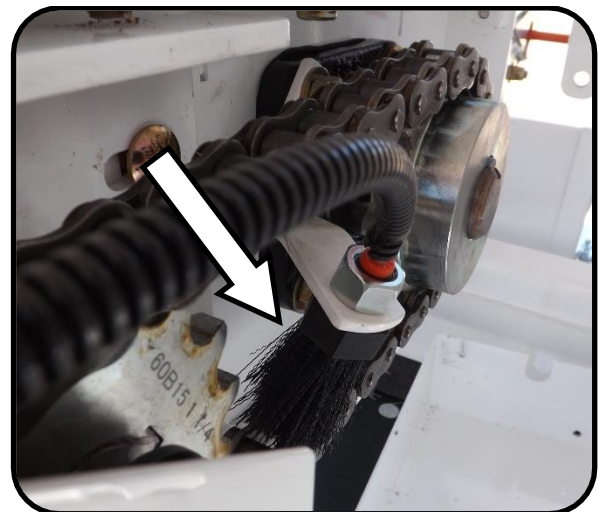
Maintenance 7. Lock arm grease.



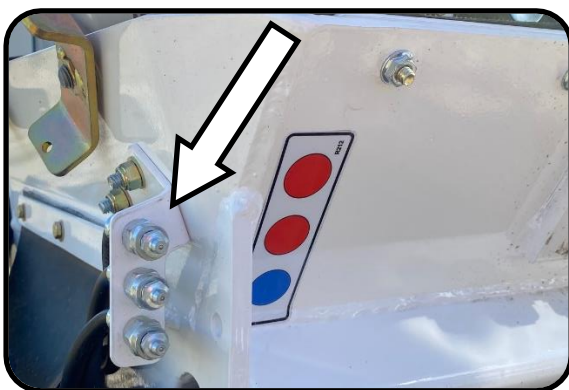
Maintenance 10. Rear conveyor shaft grease, right.



Maintenance 8. Lifting mechanism. (1) Lower lift link grease, (2) Boom cylinder



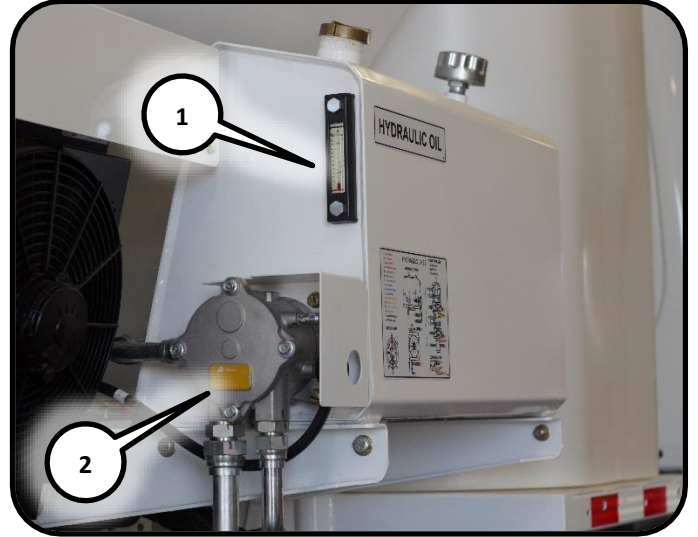
Maintenance 11. Cement bin sump brush check.



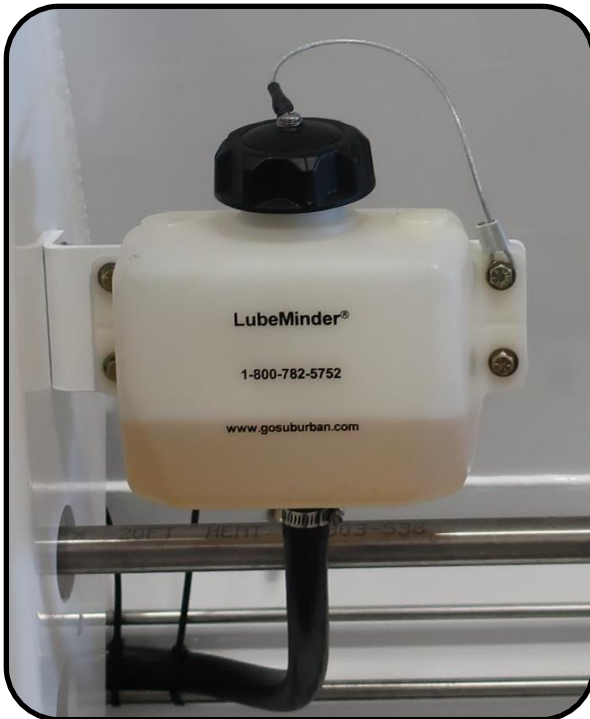
Maintenance 9. Mix auger bottom grease



Maintenance 12. High pressure hydraulic oil filter



Maintenance 14. Hydraulic reservoir check. (1) check oil level, (2) check return & suction filter.



Maintenance 13. Chain oil level check

Lubrication and Maintenance Frequency

Table 7. Frequency Table

Maint. Item Number	No. Points		Daily	Every 1 Load	Every 20 Hrs	Every 50 Hrs	Every 500 Hrs
1	1	Rear conveyor shaft grease, right				•	
2	2	Front conveyor shaft grease, right and left				•	
2	2	^A Rear conveyor shaft sensor gap check				•	
3	1	Cement bin sump bearing grease				•	
4	2	^B Chain brush check, left and right				•	
5	1	Mix auger top bearing grease				•	
6	1	Upper rear link grease			•		
7	1	Lock arm grease			•		
8	1	Lower rear link grease			•		
8	1	Boom cylinder grease			•		
9	1	Auger bottom bearing grease				•	
9	2	^C Auger bottom bearing grease		•			
10	1	Rear conveyor shaft grease, right				•	
11	1	^B Cement bin sump brush check				•	
12	1	^D High pressure hydraulic oil filter check					•
13	1	^E Maintain conveyor chain oil level			•		
14	1	^F Hydraulic oil level check	•				
14	1	^G Hydraulic return filter check					•
14	1	^G Hydraulic suction filter check					•
	1	Hydraulic Oil Replace					•

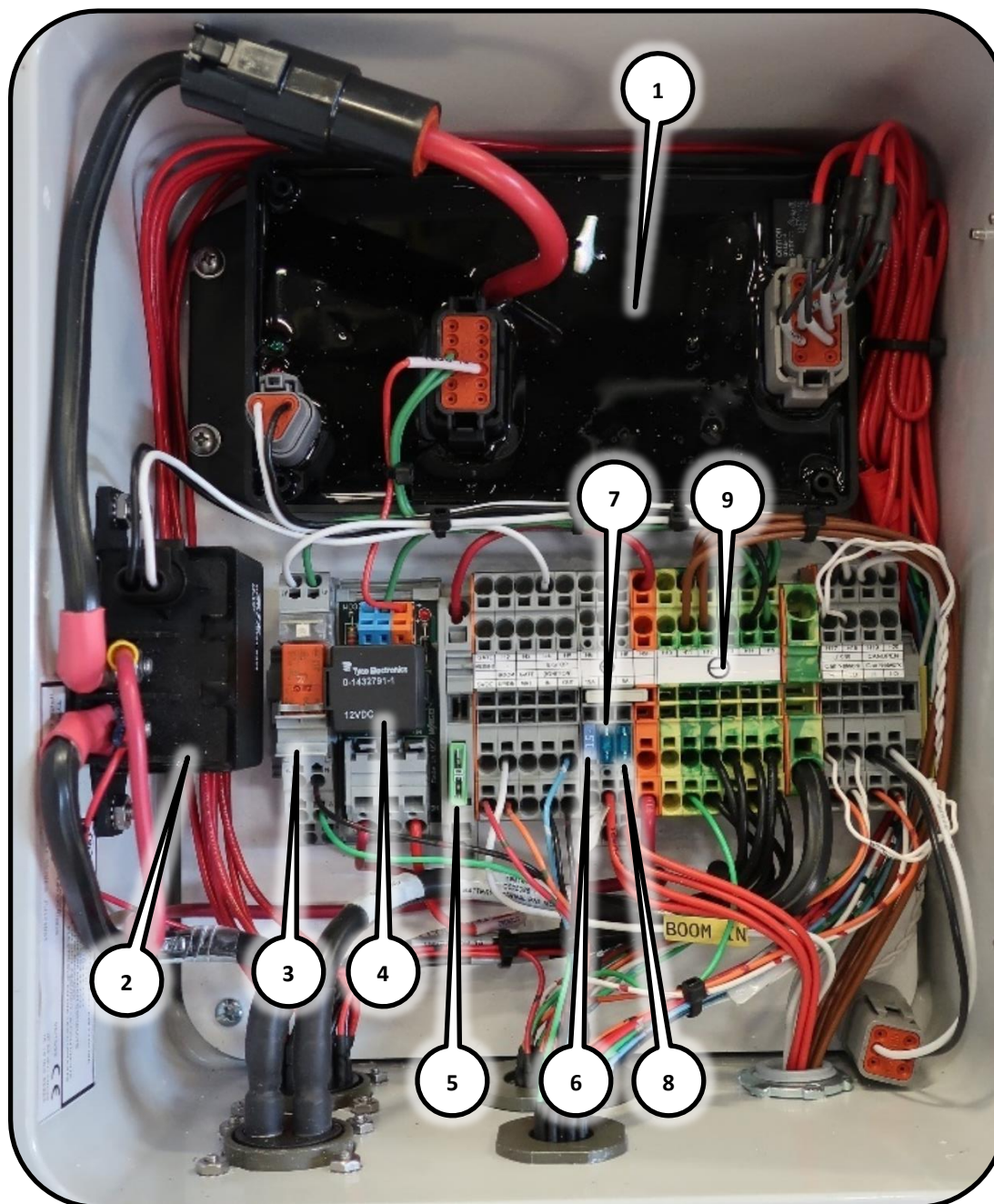
Notes:

- A. Refer to the Take Up Bearing section on page 7-1 for the correct gap setting.
- B. Clear brush off debris and replace it if worn.
- C. Purge the seal of mix residue immediately after cleanup. Ensure the auger is running while applying grease.
- D. Check the return filter gauge. Ensure the indicator shows green while the mix auger is running. Refer to the Hydraulic Oil Filter section on page 7-2.
- E. Use SAE 30 weight oil or similar. For chain oiler reservoir, fill chain oil to the base of the filler neck. Fill as needed.
- F. Check that the oil level is showing in the sight glass. Refer to Oil Specifications section on page 7-1 for correct hydraulic oil.
- G. The filter is located within the tank. A visual inspection of the filter will be required to ensure the filter is not clogged.

Electrical Distribution Box

The electrical timer, fuse and relay cabinet is located above the engine control panel on the left-hand side of the machine. **NOTE:** The electrical panel is enabled through the Mixer

display box master electrical switch (refer to page 6-6). The electrical functions – including lights and vibrators – will not work unless the power switch is set to ON.



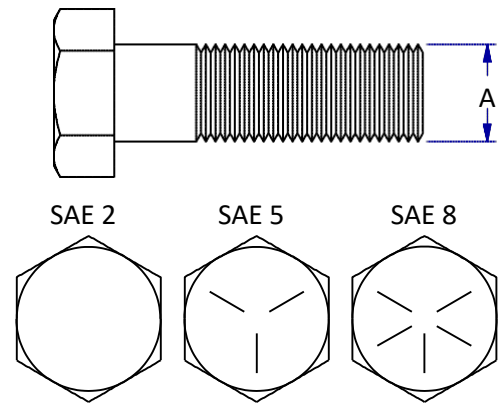
Electrical 1. Inside of distribution box

- | | | |
|----------------------------|---------------------------|---------------------------|
| 1. Pwr module, vib & admix | 4. Cooler fan relay | 7. Fuse H7, 15A, Module 1 |
| 2. Master relay | 5. Fuse, 30 A, Cooler | 8. Fuse H8, 15A, Module 2 |
| 3. High idle relay | 6. Fuse H6, 15 A, Display | 9. Ground terminals |

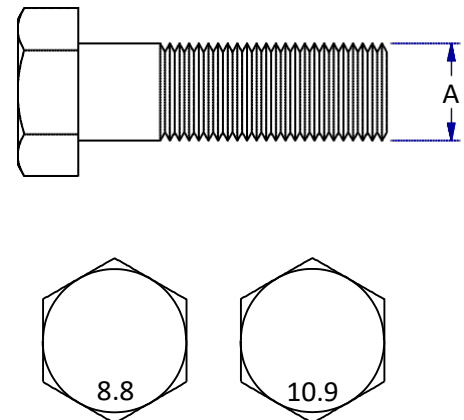
Bolt Torque

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torque specified in chart unless otherwise noted. When assembling equipment, use bolt torque chart as a guide.

Bolt Diameter "A"	Bolt Torque *					
	SAE 2 (N-m) (ft-lbs)		SAE 5 (N-m) (ft-lbs)		SAE 8 (N-m) (ft-lbs)	
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970



Bolt Diameter "A"	Bolt Torque *			
	8.8 (N-m) (ft-lbs)		10.9 (N-m) (ft-lbs)	
M3	0.5	0.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710



Torque figures indicated above are valid for non-greased or non-oiled threads and heads. Therefore, do not grease or oil bolts or capscrews unless otherwise specified. When using locking nuts, increase torque values by 5%.

* Torque value for bolts and capscrews are identified by their head markings.

8. Fault Finding

Problem	Cause	Solution
No electrical power	Master switch not active	Locate and ensure that the cab master switch is turned on.
	Electrical failure	Check main circuit fuse/breaker located at the battery. If a short circuit is indicated, find the short and repair.

To check for any alarms and their resolutions, please refer to the Ranger's Operator's Manual.

If you have any further questions or need assistance, please contact the ProAll Customer Service at 8-335-PROALL (833-577-6255)

9. 1st 50 Hour Service

CHECK AND ADJUST AS REQUIRED

1. Check mixer tie down bolts are the proper torque, refer to Bolt Torque section on page 7-11.
2. Check all hydraulic connections for leaks and tighten, if necessary.

10. Index

- aggregate bin, 6-1
- aggregate flow, 6-7
- aggregate gates, 6-1
 - gate A, 6-1
- auger cover, 6-2
- bridging, 6-7
- CAUTION
 - definition, 2-4
- cement bin
 - sump bearing, 7-6
 - sump brush, 7-8
 - sump sensor, 7-8
- cement output per count, 5-1
- chain oiler, **6-8**
 - brushes, **6-9**
 - reservoir, 6-8
- cleanliness code, 7-1
- concrete buildup, 6-7
- control gates, 6-1, 6-6, 7-3
 - position pointers, 7-3
- conveyor
 - belt, 6-7
 - shaft, front, 7-6
 - shaft, rear, 7-6
- conveyor chain, 6-8, 7-3
 - lubricating brush, 7-6
 - take up bearing, **7-1**
 - take-ups, 7-3
- cylinder rod, 7-3
- DANGER
 - definition, 2-4
- discharge gate. *See* control gates
- drop tube, **6-7**
- electrical cabinet, 7-10
- fiber feeder
 - cabinet, 6-5
 - control valve, 6-5
 - fiber cutter, 6-5
 - flow rate chart, 5-4
- gates. *See* control gates
- high idle, 6-7
- hydraulic suction filter, 7-8
- IMPORTANT
 - definition, 2-4
- lift cylinder, 7-3
 - adjustable clevis, 7-3
 - cylinder pin, 7-3
- lock arm, 7-7
- lower lift link, 6-4, 7-7
- lubrication solenoid valve, 6-8
- maintenance schedule, 7-4
- master switch, 6-8
- mix auger, 6-7, 6-8
 - alignment, 6-8
 - control, 6-8
 - cover, 6-8
 - hopper, 6-8
 - speed, 6-8
 - speed control, 6-8
 - top bearing, 7-6
 - top drive, 6-4
 - trough, 6-8
- mix bowl, 6-2, **6-3**
 - rubber shroud, 6-3
- mix design, 5-1
- model number, **1-3**
- NOTE
 - definition, 2-4
- operator orientation, 1
- retaining lock, 6-8
- SAE 20 oil, 6-8
- SAE 30 oil, 7-9
- selection knob, 4-2
- serial number, 1-2, **1-3**
 - serial number plate, 1-2
- speed sensor, 7-1
 - gap space, 7-1
- swivel ring, 7-3
- take up bearing. *See* conveyor chain take up bearing
- tarp, **6-9**
- tarp control, 6-9
- torque values, 7-11
- transition chute, 6-2
- transport position, 6-8
- unauthorized modifications, 2-5

unit volume, **5-1**, 5-2, 5-3
upper lift link, 7-6
vibrate, 6-7
vibrators, 7-10
viscosity, 7-1
viscosity range, 7-1

WARNING
definition, 2-4
wear plates, 6-7, **7-2**
weight of stone per count, 5-2
yield box, 5-2



5810 - 47 Avenue, Olds, Alberta, Canada, T4H 1V1
E info@proallinc.com | P 403-335-9500 | F 403-335-9560