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# Reimer Mobile Mixer

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Operator's Manual

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REIM-14

March 2014

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## 1. Introduction

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

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 Reimer 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 driver's seat and facing in the direction of travel.

ALWAYS give your dealer 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.

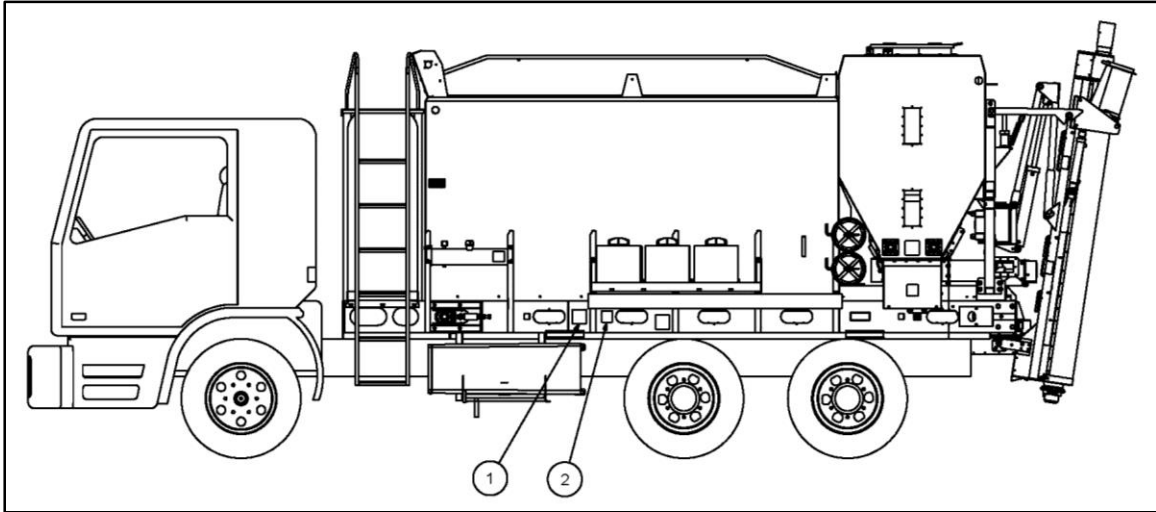


Plate 1. Serial/Model Number Plate

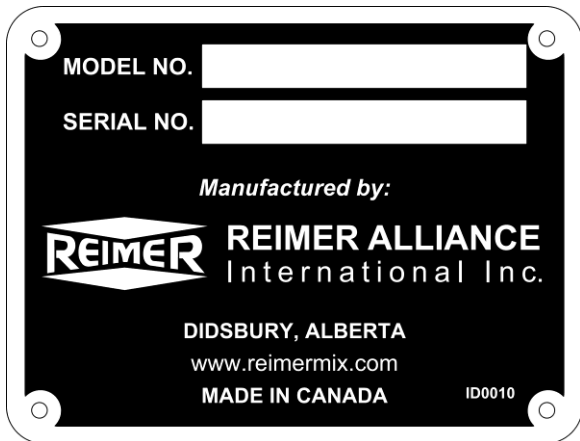
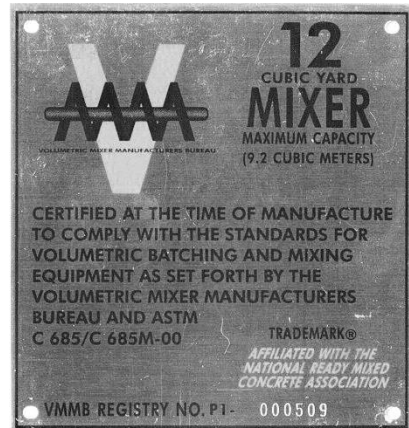
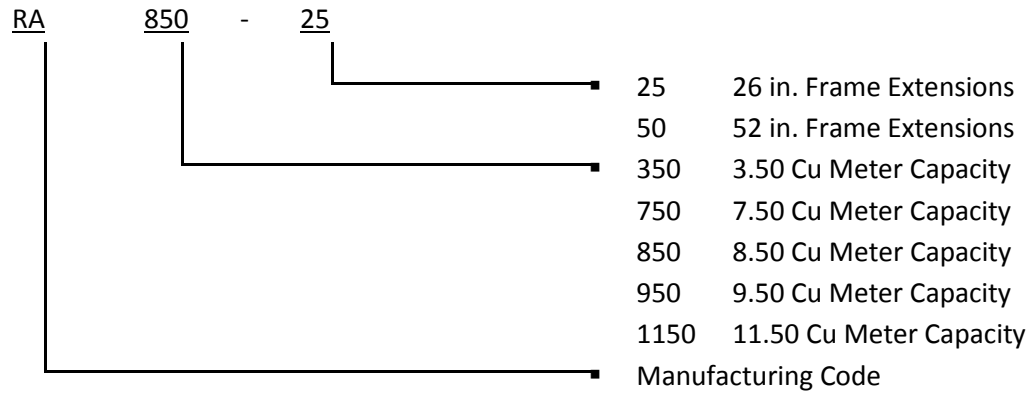


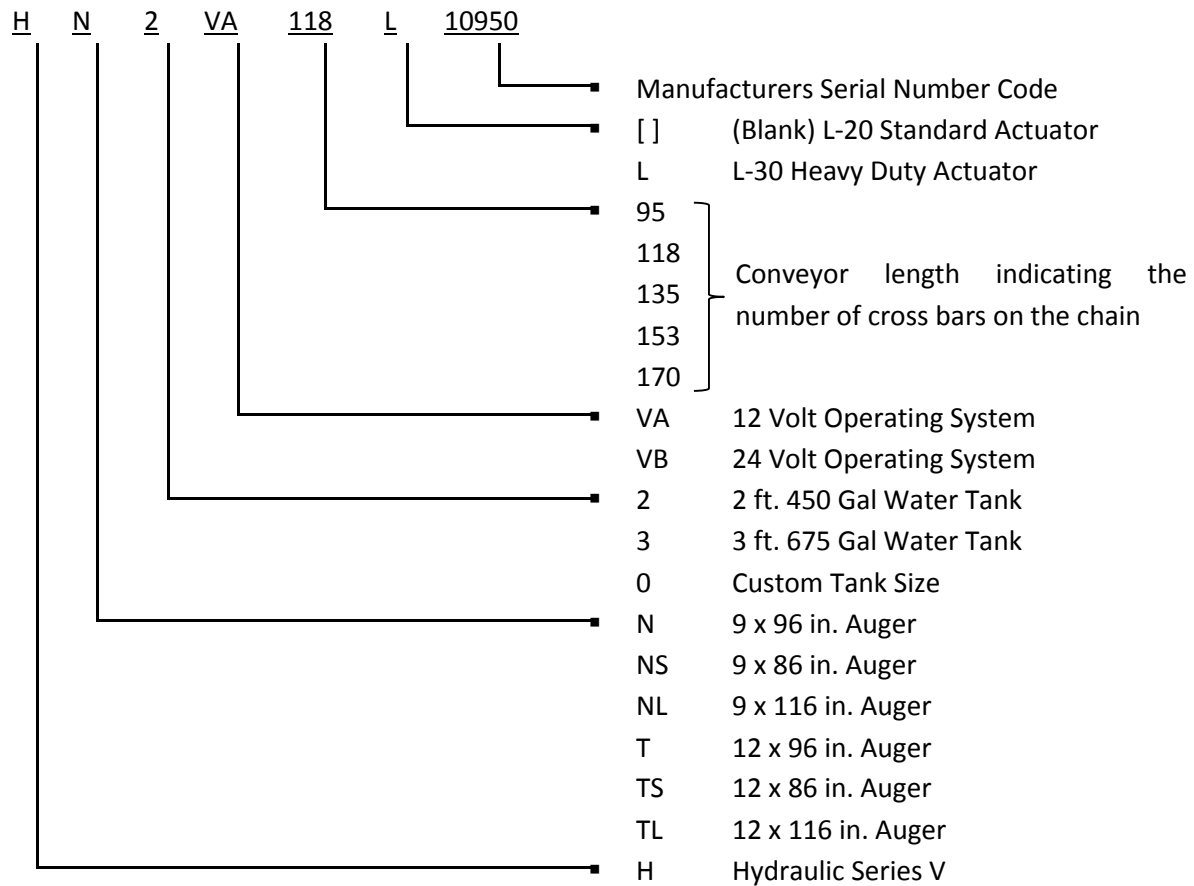
Plate 2. VMMB Plate



## Model Number



## Serial Number

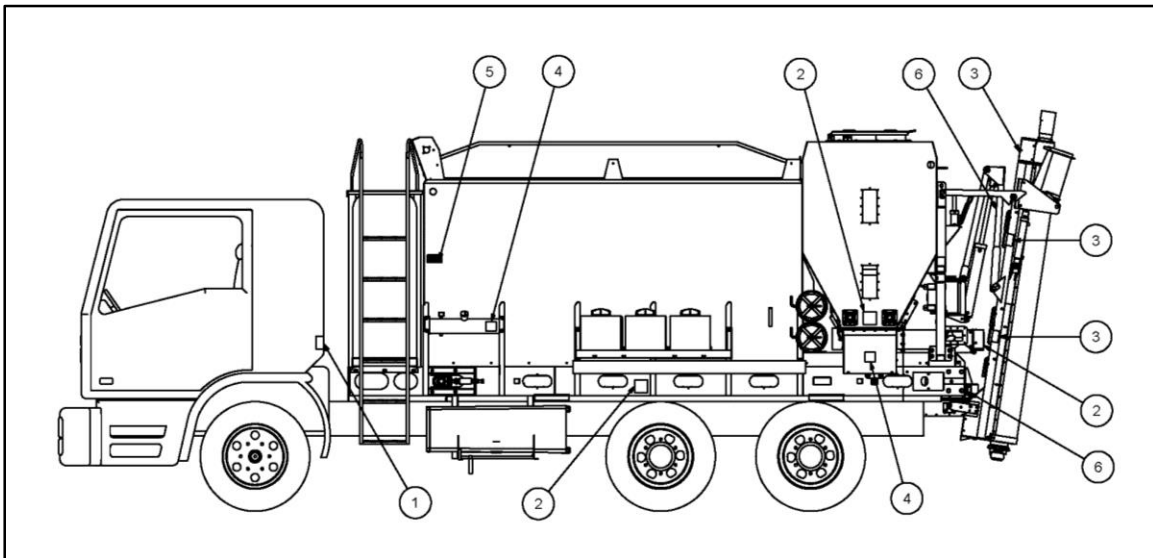
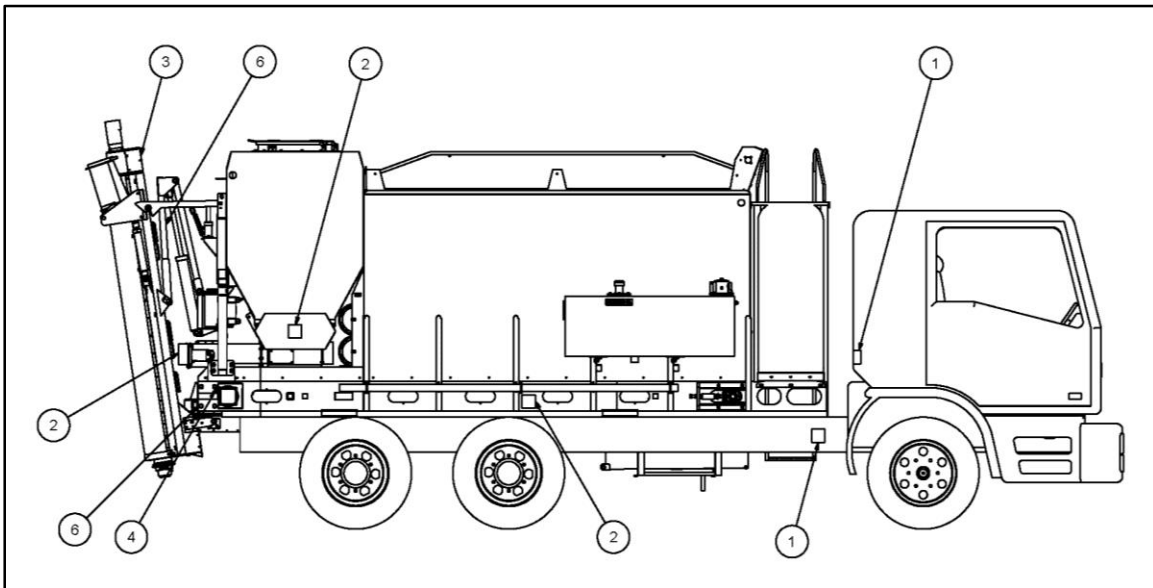


## 2. Safety

### 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 6



## 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 guide lines:

### DANGER

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.

### WARNING

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.

### CAUTION

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 “IMPORANT” 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.

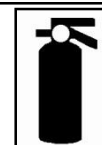


2. Only trained competent persons shall operate the equipment. An untrained operator is not qualified to operate this machine.

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.

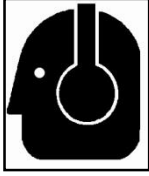
6. Wear appropriate protective gear. This list includes but is not limited to:



- A hard hat
- Protective shoes with slip resistant soles
- Protective goggles
- Heavy gloves
- Hearing protection

7. Place all controls in neutral, stop the engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.

8. Wear appropriate hearing protection when operating for long periods of time.
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, set park brake, remove ignition key 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.

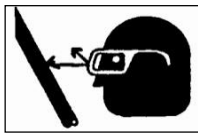


6. Use adequate light for the job at hand.
7. Use only tools, jacks and hoists of sufficient capacity for the job.
8. Place all controls in neutral, stop the engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
9. Make 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 hydraulic circuit before servicing or disconnecting from 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 hydraulic system.
4. Do not attempt any makeshift repairs to the hydraulic fittings or hoses by using tape, clamps or cements. 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 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 are in compliance 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. Keep safety signs clean and legible at all times.
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. Controls, Instruments and Operation

#### Master Mix Electronic Display

The **Master Mix** is a processor and display designed to provide the mobile mixer operator with information related to the Mixing and Discharge of concrete. During the Mixer Calibration Procedure pertinent mix data information is entered into the Apex I to provide for real-time calculations related to concrete volume, cement weight, aggregate weight, and admixture flow rates. Cement/water ratio, water flow rate and water totalizer are also available using the optional water meter.

#### Operating and data input

1. **START - UP screen** : displays time and counts/pulses

- **SCRN**- to toggle between **START-UP** and **ACTIVE-MIX** screen
- **PRGM**- to display the Program Screen
- **ADMIX**- to view admixture flow rates
- **Reset** – to Zero: counts/pulses and ACTIVE-MIX screen volume. Values will be stored in the **LAST 5 MIX** screen.

2. **ACTIVE - MIX screen**

- **MIX**: (number @ name)
- **ST**: (stone gate setting)
- **SA**: (sand gate setting)
- **CNT**: (total counts/pulses between resets)
- **MPA/PSI**: (strength)
- **C/W**: (cement/water ratio)
- **H2O**: (water flow rate)
- **H2OT**: (total amount of water used between resets)
- **RPM**: (conveyor speed)
- **VOLUME COUNT**: (yards or meters)

3. **PROGRAM screen**

- **OK** – return to the ACTIVE – MIX screen
- **SELECT**- to choose one of the options
- **UP**- scroll cursor up to the desired selection
- **DOWN**- scroll cursor down to the desired selection
- a. **MIX Select screen**
  - **UP and DOWN**- select mix 1-15
  - **SELECT**- to return to the active mix screen
- b. **MIX ENTRY screen**
  - **MIX** – select mix that is desired for data entry
  - **SELECT**- scroll data entry line through screen
  - **UP** – increase input value
  - **DOWN** – decrease input value
  - **EXIT**- note when data entry line is under **EXIT** : Use **Door** symbol (down key) to exit program

***Note:** Select will only scroll from top to bottom and repeat*

c. **SET UP PARAMETERS screen**

- **OK**- to return to the **ACTIVE-MIX** screen
- **SELECT** – allows programming of category selected
- **UP**- to move the cursor up to the desired category
- **DOWN**- to move the cursor down to the desired category

i. **SET CONTRAST**

- scroll between **Set Contrast** and **Set Bright**
- - to decrease value
- + to increase value

- Use the **door symbol** to **exit** this screen

ii. **SET TIME**

- scroll between minutes and hours
- **UP** and **DOWN** increase and decrease values
- Use the **door symbol** to **exit** this screen

iii. **H2O PULSE/ L (liters) or G (gallons)**

- Select- moves the cursor underneath the number indicating the pulse counts required to dispense 1 liter or 1 gallon
- Up- increases the pulse count value
- Down- decreases the pulse count value

**Water Calibration:** Active-Mix screen:

- a) Press Reset to zero all totals
- b) Dispense water into a container of known volume liters or gallons
- c) Note the volume of water displayed at H2OT and compare this with the actual total

If the displayed volume is **low** the number of pulse counts required per liter or gallon must be **decreased**.

If the displayed volume is high the number of pulse counts required per liter or gallon must be **increased**.

It may be necessary to take several samples of water volume and make the appropriate adjustments to the **H2O PULSE** count in order to achieve the level of accuracy you require. Once calibrated properly no further changes should be needed.

iv. **METRIC/IMPERIAL**

- Select- used to change between metric and imperial

**Note:** Auger PSI and BELT PSI are for future use

**4. LAST 5 MIX screen** – view a log of the last 5 resets. Each time you press the **RESET** button it will log the concrete volume and strength of the current job. Note: if the **RESET** button is depressed with (zero) 0 counts, (zero) 0 volume will be logged.

**5. ADMIXTURE Screen** - Setting Flow rates for admixture

- Enter the desired amount of admixture required per meter or yard in the appropriate line from the **MIX ENTRY** screen. The Apex I will calculate the number of counts per minute and compute the desired flow rate – L/Minute or Gal/minute to be displayed in the **ADMIX** screen.
- From the **START-UP** screen or **ACTIVE MIX** screen with the conveyor belt running press the **ADMIX** button. The **ADMIX** screen will indicate the appropriate flow rate needed for the rate at which concrete is being produced. Use the admix flow-control and flow meter for either the HI flow or Lo Flow admix pumps to make the appropriate flow rate adjustment. This process can be done while mixing. You may easily move between the **ACTIVE-MIX** screen and the **ADMIX** screen to check the display which indicates the necessary flow rate.

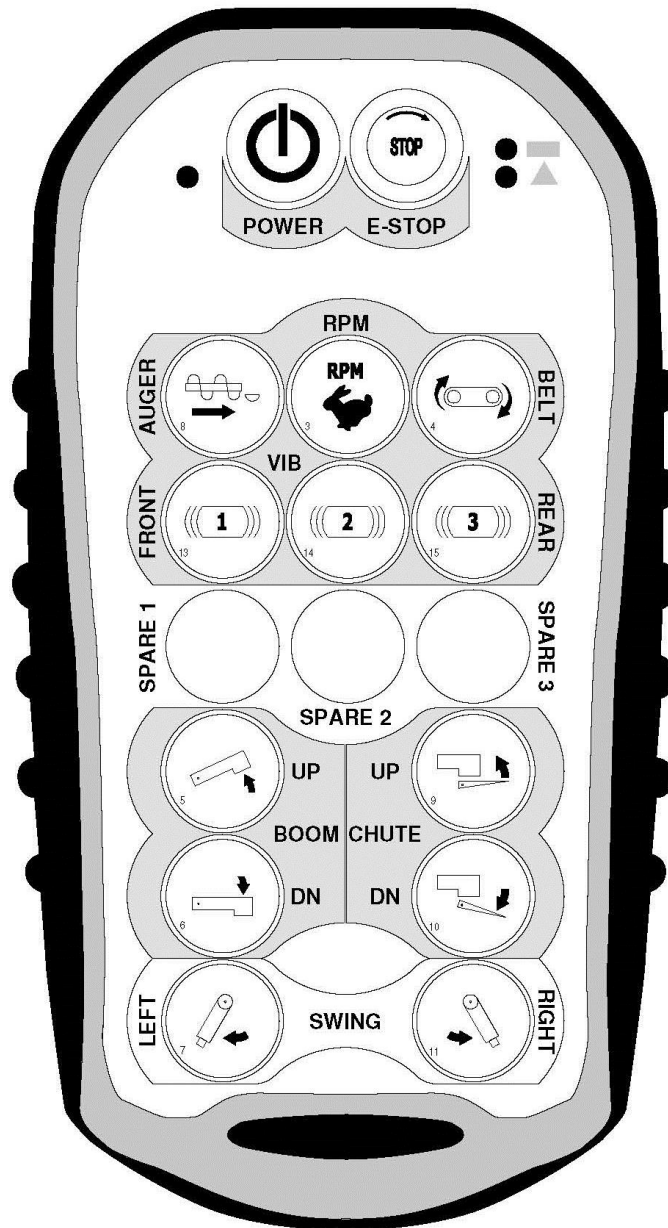
**IMPORTANT:** The computer does **NOT** control the admix. It only displays the amount of admixture that is required using the information that has been entered when setting up the **MIX**



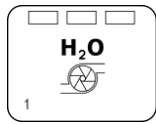
**ENTRY** screen. The operator must **manually** make adjustments to the **admix flow control**.

**Note:** If the conveyor speed is changed you must make the necessary adjustment to the admix flow-control in order to dispense the correct amount of admixture. The display in the ADMIX screen is to be used for reference only when making these adjustments

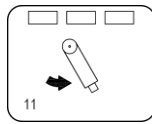
## Remote Transmitter



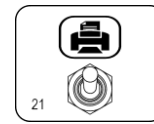
## Operating Symbols



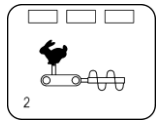
Water Pump



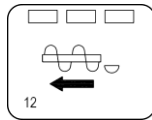
Swing Right



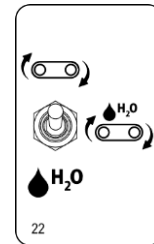
Print



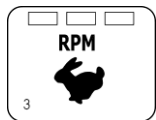
Auto Link



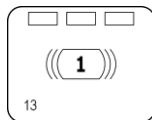
Auger Reverse



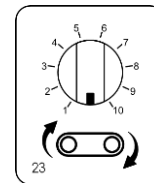
Mode: Conveyor Only  
Mode: Conveyor / Water  
Mode: Water Only



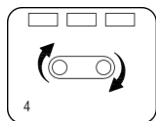
Engine RPM



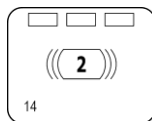
Vibrator 1



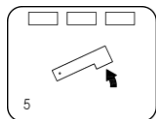
Conveyor Speed



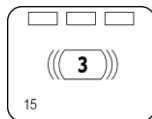
Conveyor



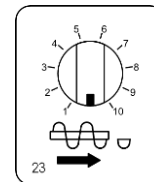
Vibrator 2



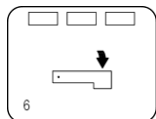
Boom Up



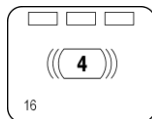
Vibrator 3



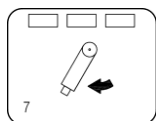
Mix Auger Speed



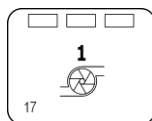
Boom Down



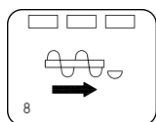
Vibrator 4



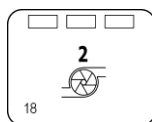
Swing Left



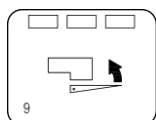
Admix 1



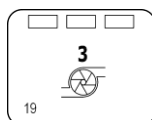
Auger Mix



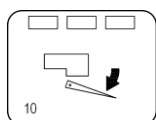
Admix 2



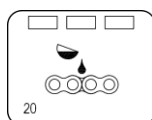
Chute Up



Admix 3







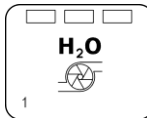






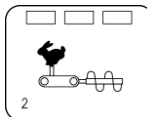






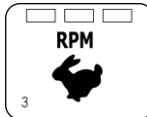



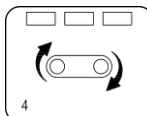












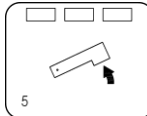



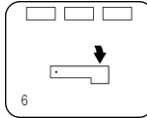



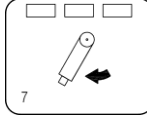



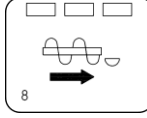



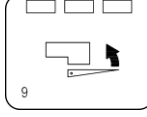



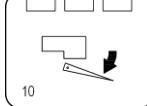





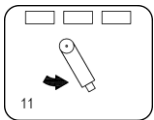



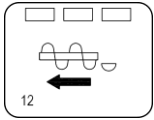



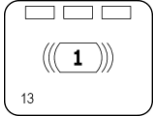



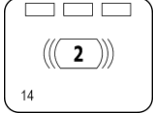



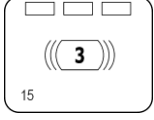



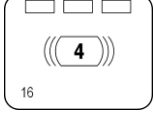















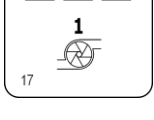












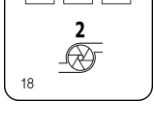












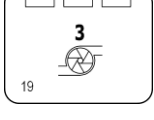












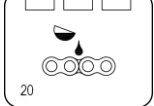









Chute Down



Chain Oiler






# Switch Status Indications

Switch	Indication			
	Amber	Green	Red	
				Steady
				Flashing
1 				ON
				ALERT: Water Pump OFF, Conveyor Switch ON ( <b>Note 1</b> )
2 				OFF
				ON ( <b>Note 2</b> )
3 				ON
4 				ON
				ALERT: Water Pump OFF ( <b>Note 1</b> )
				Remote TX E-Stop ACTIVATED      To Reset: PRESS E-Stop on Remote TX ( <b>Note 3</b> )
				ALERT: Closed Loop Error      To Reset: Cycle MANUAL E-Stop ( <b>Note 4</b> )
5 				Activated
6 				Activated
7 				Activated
8 				ON
9 				Activated
10 				Activated












				Activated
				ON
				Activated
				Activated
				Activated
				Activated (Note 5)
				OFF (Note 6)
				Standby
				ON
				Prime
				OFF (Note 6)
				Standby
				ON
				Prime
				OFF (Note 6)
				Standby
				ON
				Prime
				OFF (Note 6)
				Standby
				ON
				Prime
				OFF (Note 7)
				Standby
				ON

## Switch Status Indications Notes

### Note 1

**FLASHING GREEN** : Alerts the operator that the CONVEYOR  has been activated while the WATER PUMP  is OFF. The CONVEYOR  will NOT operate under this condition. Activate the WATER PUMP  to resume normal operation

### Note 2

**AUTO LINK** : The selection of AUTO LINK  allows RPM , CONVEYOR , WATER , MIX AUGER , (and ADMIX  if selected ON) to start together when the CONVEYOR  on the Keypad or the Remote TX is activated. (RPM  will engage 1 sec. in advance of the other functions.) – **MODE SWITCH (#22)**  must be in the CONVEYOR / WATER setting for AUTO LINK  to be operational.

### Note 3


Once the E-Stop on the Remote TX has been deactivated it will be necessary to RESET the desired functions for operation of the mixer.


### Note 4


**CLOSED LOOP ERROR**: Indicates the incoming conveyor pulse counts are out of range to maintain a CLOSED LOOP condition. The Mixer will revert to OPEN LOOP mode and CONTINUE to operate.

Probable cause for this indication:

Hydraulic Oil temperature LOW which can result in a slower CONVEYOR SPEED than has been

selected on the CONVEYOR SPEED (#23)  adjustment.

Reset CONVEYOR SPEED (#23)  to a LOWER value.



Next Cycle the MANUAL E-STOP (#25)  button to clear Status Indication. (Allow 6 sec for error indication to be cleared.)



Once the Oil temperature has increased to at least 100 F / 38 C the mixer may be operated at full speed with no error indication.

Pulse pickup SENSOR out of adjustment or failed.

Check adjustment (see page 6-1) or replace Clear Status Indication as described above.

### Note 5

When program V.1.0V4F is installed VIB 4  will operate as a VIBRATOR  input.

When program V.1.0A3F is installed VIB 4  will operate as an ADMIX  input.

### Note 6

**STEADY RED**: Admix OFF

**FLASHING GREEN**: Indicates Admix is in STANDBY mode and will operate as soon as the CONVEYOR is activated.

**SOLID GREEN**: Indicates Admix ON and CONVEYOR is activated.

**AMBER**: Indicates Admix is in PRIME mode which allows operation without the CONVEYOR activated.

### Note 7

FLASHING GREEN: Indicates Chain Oiler is in STANDBY mode and will operate as soon as the CONVEYOR is activated

SOLID GREEN: Indicates Chain Oiler ON and CONVEYOR is activated

### Valve Locations

The following identifies valve locations for water, hydraulic oil and air.

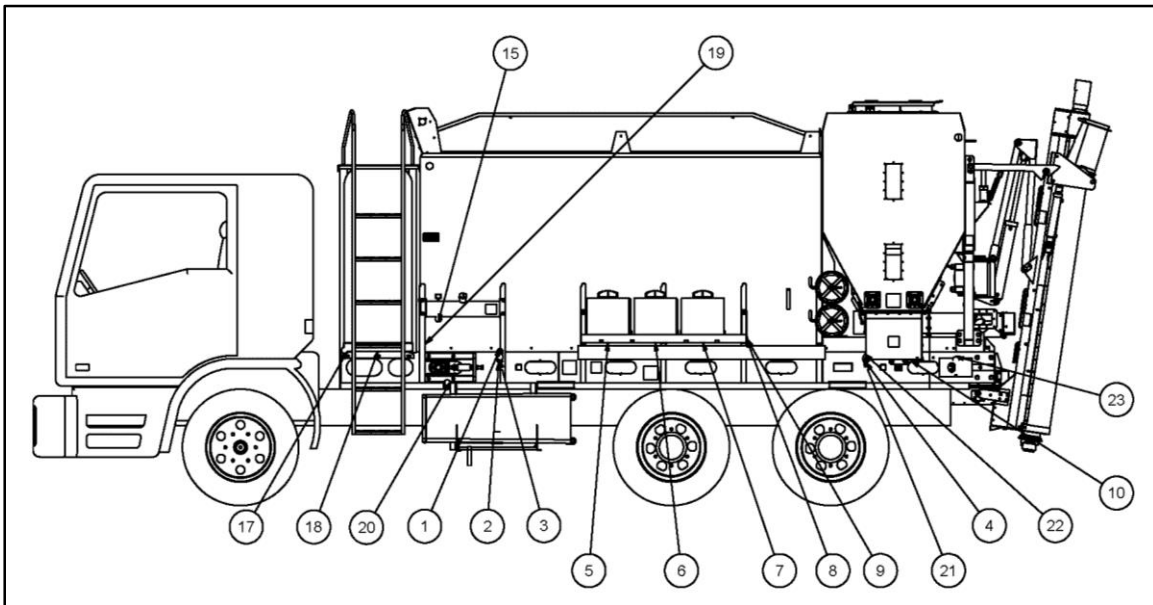
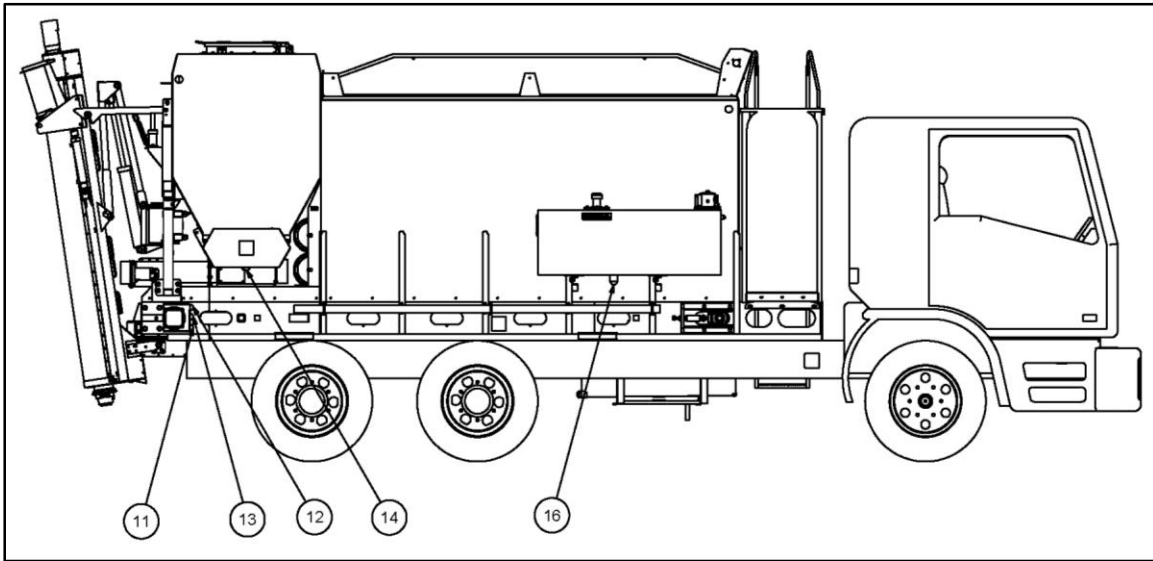


Table 1. Valve Descriptions

Item Number		
Air		
1	A1	Truck Air
2	A2	Regulator
3	A3	Lubricator
4	A4	Blow Down
Admix		
5	M1	# 1 Tank Valve
6	M2	# 2 Tank Valve
7	M3	# 3 Tank Valve
8	M4	# 1 Metering Valve
9	M5	# 2 Metering Valve
Mixer Oil		
10	O1	Swing Lock
11	O2	Conveyor ON/OFF
12	O3	Cement ON/OFF
13	O4	Full Lean Proportional Valve
14	O5	Colour Feeder
15	O6	Chain Oiler
16	O7	Hydraulic Tank
Water		
17	W1	Bottom Load Valve
18	W2	Tank Valve
19	W3	Bypass Valve
20	W4	Pump Drain Valve
21	W5	Wash Valve
22	W6	Admix Wash Valve
23	W7	Mix Valve



## 4. Calibration

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

### Procedure

#### Step 1.

Determine the ‘cement output per count.’ Each count is registered and displayed in the window of your meter.

**NOTE:** *The larger the sample you are able to measure, the lower the error factor will be.*

1. Empty material from the sand and stone bins, the cement bin should be at least 1/3 full.
2. Discharge an adequate amount of cement to ensure that the cement metering system is full.
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 auger swivel ring.
5. Run the belt until the sample container is full, ensuring that all material being discharged is collected.
6. Weigh the container and sample together for a 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

*Sample Weight*

*Meter Count*

*= Cement Output per Count*

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

#### Step 2.

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

#### Equation 2. Count Formula

*Pounds of Cement per Cubic Yard*

*Cement Output per Count (from Step 1.)*

*= Counts per Cubic Yard*

#### Step 3.

Determine the weight of stone that must be released per count. Using your mix design, establish the required weight of stone to produce (1) one cubic yard of concrete.

#### Equation 3. Stone Formula

*Mix Design Lbs. of Sand per Cubic Yard*

*Counts per Cubic Yard (from Step 2.)*

*= Weight of Sand per Count*

1. Turn cement motor off.
2. Fill stone bin at least ¼ full.
3. Determine the empty weight of the container being used to collect the stone 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 belt until stone 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 belt 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 a 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 stone per count** that has been discharged.

**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.

12. Adjust the control gate and re-sample until the **weight of stone per count** is equal to the amount established in the stone formula above.

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

#### Step 4.

Determine the weight of sand that must be released per count.

#### Equation 4. Sand Formula

$$\frac{\text{Mix Design Lbs. of Sand per Cubic Yard}}{\text{Counts per Cubic Yard (from Step 2.)}} = \text{Weight of Sand per Count}$$

1. Empty the stone bin and fill the sand bin  $\frac{1}{4}$  full.
2. Repeat Step 3. replacing stone with sand in all references.
3. Record sand gate control setting.

## Summary

Mix # (Operator's Reference) \_\_\_\_\_  
 Strength Required \_\_\_\_\_  
 Counts per Cubic Yard \_\_\_\_\_  
 Stone Gate Setting \_\_\_\_\_  
 Sand Gate Setting \_\_\_\_\_

### Sample Data Chart – **SAMPLE ONLY!**

Cement Output per Count  
 (0.478 lbs. or 0.218 kgs)

Strength	Counts Required per		Gate Setting	
	yd <sup>3</sup>	m <sup>3</sup>	Stone	Sand
3000 psi (20 MPa)	872	1147	11.2	10
3500 psi (25 MPa)	1008	1326	9.5	8
4000 psi (27.5 MPa)	1150	1513	8.5	7
4500 psi (30 MPa)	1238	1628	8.2	6.7

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.

## Water Calibration

This procedure refers to the use of the Master Mix Electronic Display on page 3-1.

### ACTIVE – MIX screen:

1. Press **Reset** to zero all totals
2. Dispense water into a container of known volume **liters** or **gallons**.
3. Note the volume of water displayed at **H2OT** and compare this with the actual total.

If the displayed volume is **low**, the number of pulse counts required per liter or gallon must be **decreased**.

If the displayed volume is **high**, the number of pulse counts required per liter or gallon must be **increased**.

It may be necessary to take several samples of water volume and make the appropriate adjustments to the **H2O PULSE** count in order to achieve the level of accuracy you require; however, once calibrated properly, no further changes should be needed.

**NOTE:** *The LAST 5 MIX screen will show a log of the last 5 resets. Each time the **RESET** button is pressed it will log the concrete volume and strength of the current job. If the **RESET** button is depressed with 0 (zero) counts, 0 (zero) volume will be logged.*

## 5. Field Operation

### Principle of Operation

The Reimer Mobile Mixer is uniquely designed to allow for the supply of freshly mixed concrete, regardless of delivery times, the elimination of wasted product, and flexibility of delivery that is not available with conventional transit mix operations. All the components of concrete, stone, sand, cement and water are transported to the site in separate compartments on one truck mounted unit. Dry ingredients are accurately proportioned and delivered to the mixing auger as they are being discharged. A controlled flow of water is added and the concrete is then blended as it is being discharged from a special mixing auger at the rear of the unit.

The mixing action is continuous until the bins are empty or indefinitely if the bins are being refilled as the unit is producing concrete. On the other hand, the mixing action (and delivery of concrete through the chute) 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, 60+ yards per hour down to zero.

### Concrete 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 gates allow the operator to change the proportional flow of both sand and course aggregate 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 concrete produced.

### Aggregate

Cement, sand and course aggregate are carried in separate, divided bins.

Materials loaded into the aggregate bins 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.

**IMPORTANT:** When loading aggregates, it is important that one aggregate not be allowed to spill over into the other's bin, especially when that bin is empty. This will adversely affect the quality of that part of the load

### 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.

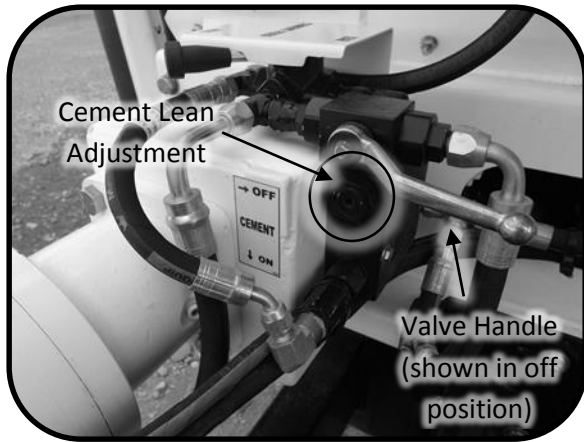


Figure 1. Cement Motor Control Valve

**IMPORTANT:** Lean adjustment should not be turned more than 1 ½ turns (counter clockwise) from the full IN position (see Figure 1) as seal damage will result.



Figure 2. Cement Feed Valve

**NOTE:** Cement discharge rate with the cement feed handle in the full position WILL NOT be changed by adjusting this valve.

With the cement feed valve in the lean position, cement discharge will be reduced by approximately 50%. Further reduction can be achieved by loosening the stop nut on the lean adjustment valve and turning the screw clockwise with an allen wrench.

## Water

Water may be loaded through the top of the water tank or bottom loaded at the cam lock fitting.

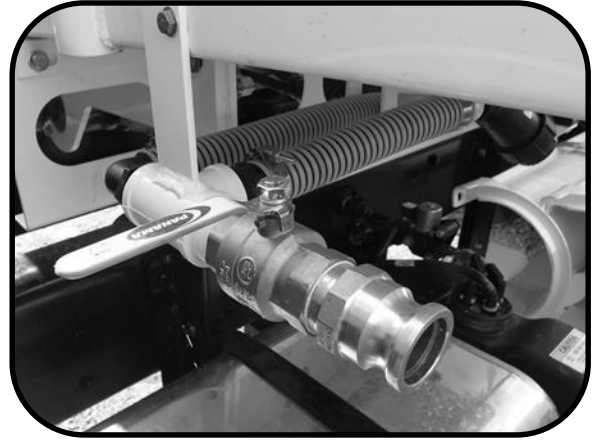


Figure 3. Cam lock fitting with valve in closed position.

**IMPORTANT:** In the bottom load procedure, air is vented through the tank lid; however, damage to the tank and frame will result if the tank is overfilled using a high pressure water supply.

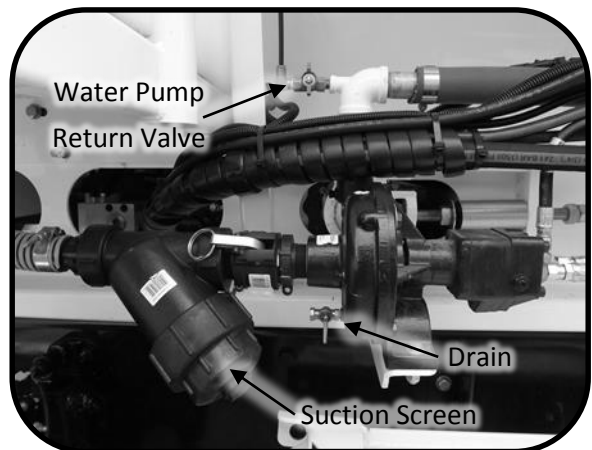


Figure 4. Water Pump

**IMPORTANT:** The water return valve should be open whenever the water pump is running. Operating the water pump with the valve closed will result in pump damage.

## Admixture

Using the Master Mix Electronic Display, enter the desired amount of admixture required per meter or yard in the appropriate line from the **MIX ENTRY** screen. The controller will calculate the number of counts per minute and compute the desired flow rate – Liters/minute or Gallons/minute to be displayed in the **ADMIX** screen.

From the **START-UP** screen or **ACTIVE MIX** screen with the conveyor belt running press the **ADMIX** button. The **ADMIX** screen will indicate the appropriate flow rate needed for the rate at which concrete is being produced. Use the admix flow-control and flow meter for either the HI flow or Lo flow admix pumps to make the appropriate flow rate adjustment.

This process can be done while mixing. You may easily move between the **ACTIVE-MIX** screen and the **ADMIX** screen to check the display which indicates the necessary flow rate.

**NOTE:** *The computer does NOT control the admix. It only displays the amount of admixture that is required using the information that has been entered when setting up the MIX ENTRY screen. The operator must MANUALLY make adjustments to the ADMIX FLOW CONTROL.*

**NOTE:** *If the conveyor speed is changed, you must make the necessary adjustment to the admix flow control in order to dispense the correct amount of admixture. The display in the ADMIX screen is to be used for reference only when making these adjustments.*

## Setting up to Pour

Upon arrival at the pour site, confirm the specifications of the concrete to be poured. SET CEMENT FEED VALVE AS REQUIRED. CONFIRM CEMENT MOTOR VALVE IS CLOSED. (See Page 5-

1, "Cement Powder", if lean mix is required.) Using this information and with reference to the calibration chart, SET AND LOCK THE CONTROL GATES. Using the following sequence, set up the mixer in preparation for pouring.

1. Set operating controls:
    - a. ON - Master electrical switch
    - b. OPEN – Water tank valve
    - c. OPEN – Water return valve
    - d. OFF – Emergency stop
    - e. ON – Wireless, if using
    - f. RESET – Digital counter
    - g. Auto Position – Conveyor function switch
    - h. ON – Water pump switch
    - i. As Required – Add mix pumps
    - j. SET – Belt speed control (start at one turn less than fully open). Fully Open = maximum 4 turns
    - k. Fully Open – Auger speed control, 5 turns
    - l. MIX – Auger mix/reverse lever
    - m. SET – Mix water control (operator must become familiar with initial settings required for proper slump, using small trial batches.)
    - n. Extend – Cement delivery tube
  2. Lower Mix Auger. The transport lock will automatically disengage when the boom is lowered. An angle of no less than 25 degrees should be used on the mixing auger.
- 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.*
3. Set power swing selector to desired function.
  4. Apply any release agent at this time, if desired.

## Pouring

### ⚠WARNING

Never run the mix auger with the top cover open. Do not allow anyone unfamiliar or untrained to operate the Reimer Mixer.

### ⚠WARNING

Never allow anyone directly under the chutes or 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 power swing, chute, or 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 Reimer 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 to the customer.

1. Activate high idle function: using the 'RPM' switch. Engine should be turning at no less than 1600 RPM.
2. Activate conveyor belt switch.

**NOTE:** When the conveyor belt is engaged, mix water flow is immediately activated. If the conveyor belt is not fully charged with materials to the discharge point, water will accumulate in the mix auger before the aggregate flow begins. This will cause a very wet slump in the initial flow of concrete. To prevent this, use the **BELT POSITION** on the **CONVEYOR FUNCTION** switch to run the conveyor belt independently from the flow of water until it is charged with aggregate to the point of discharge into the mixing bowl. The **WATER** position of this switch causes water to flow into the mix auger independently from belt operation. This function can be used during wash down or any other time that independent water flow is desired. During mixing operations, this switch must be in the center **AUTO** position.

3. Activate mix auger switch.

**NOTE:** Both the conveyor and mix auger switches may be activated simultaneously or separately at the judgement of the operator.

4. Immediately adjust mix water feed valve to obtain the desired concrete slump.

**NOTE:** The operator **MUST** guard against 'chasing' the slump by over adjustment of the mix water control valve. It takes several seconds for any changes in water flow to be noticed at the discharge end of the mix auger. **THE BELT SPEED CONTROL CAN ALSO BE USED TO FINE TUNE THE SLUMP.**



5. Vibrate the bins to ensure initial flow of sand and cement to conveyor belt.

**NOTE:** *The frequency and duration of vibrating 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 sand or cement to bridge in certain conditions, thereby affecting the quality and consistency of the concrete produced.*

6. 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.

### **Wash Down and Preparation for Transport**

When the pour is complete or the mixer is empty, it is important that the mix auger be properly washed out to prevent an excessive concrete buildup 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 washing 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.
3. Run the mix auger until it is empty.
4. Adjust the mix auger speed control to reduce the auger speed as required.
5. Wash out swivel ring and area directly around discharge end of conveyor belt.

6. With the mix auger still elevated, ensure that back plate and sides of the auger trough are free of buildup. If desired, a rapid flow of water can be added to the mix auger by placing the conveyor function switch into the **water position**.
7. Switch the mix auger control to 'OFF'.
8. Open the mix auger cover and lower the auger as far as possible.

### **⚠WARNING**

Never run the mix auger with the top cover open.

9. Wash until the mix auger and trough are free of any cement or aggregate buildup.
10. Elevate mix auger to transport position. The retaining lock will automatically engage.

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

11. Water pump – OFF

**IMPORTANT:** *DO NOT ALLOW the water pump to operate without a water supply. Seal damage will result*

12. Master switch in cab - OFF



## 6. Lubrication and Maintenance

### Maintenance

Regular maintenance and inspection will help ensure trouble free operation, eliminate unnecessary down time, and extend the life of your Reimer 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.

### Proximity Sensor

Ensure the gap between both proximity sensors and the sensor sprocket teeth are no less than 1/16 inch and not more than 1/8 inch as shown in Figure 5.

**NOTE:** The sensor must point to the center of the sprocket. Misalignment will result in sensor reading errors.

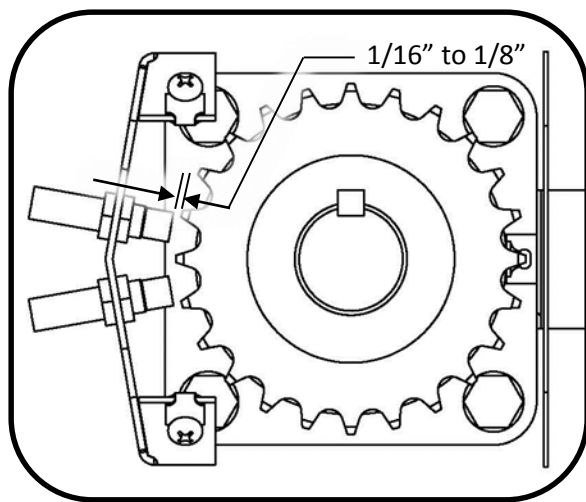


Figure 5. Proximity Sensor Gap

### Take Up Bearing

Ensure the take up bearing has a 1/4 inch gap between the washer and tubing as shown in Figure 6.

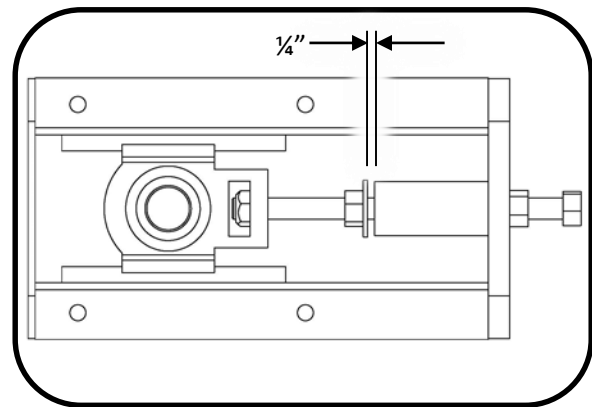


Figure 6. Take Up Bearing Gap

## Oil Specifications

### Cleanliness

In systems that use Eaton medium duty piston pumps, the fluid must be maintained at ISO Cleanliness Code 18/13 or better per SAE J1165. This code allows a maximum of 2500 particles per milliliter greater than 5µm and a maximum of 80 particles per milliliter greater than 15µm. When components with different cleanliness requirements are used in the same system, the cleanest standard should be applied.

### Hydraulic System

Your Reimer 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 hydraulic systems that use Eaton's Medium Duty piston pumps and motors, the optimum viscosity range is 10 – 39 cSt (60 – 180 SUS), at normal operation temperatures. Viscosity should never fall below 6 cSt (45 SUS.) At the lowest expected start-up temperature, the viscosity, with a non-charge system, should not exceed 432 cSt (2000 SUS.)

## Air Supply Oiler

Keep the lubricator reservoir filled with appropriate oil (SAE 10 WT non-gumming type oil.)

The oil feed rate can be varied using the adjusting screw on the top of the lubricator.

When the feed rate is adequate, oil will be visible in the exhaust air and oil will show on the body of the mixer.

## 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 washout 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 Reimer 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.

1. 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.
2. 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, tower 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.*

3. Control gate position pointers: The pointers are 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.
4. Cement feed drive chain: Adjustment is provided by slotted holes under the cement drive motor mounting bracket.
5. Cement cross auger drive chain adjustment: Under the cement bin on the cross auger drive motor.
6. Mix auger swing, boom and chute speed: Adjustment for these directional functions is provided by flow controls under the main control panel.

## 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 concrete being produced (ie. low slump, high

density) and other factors will affect the frequency of service required.

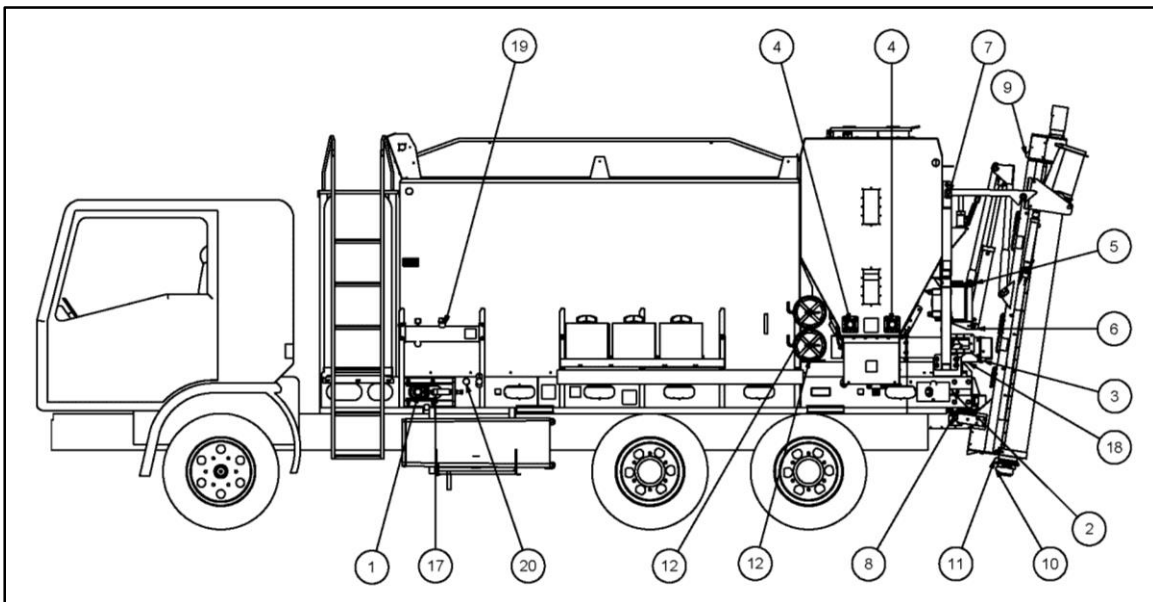
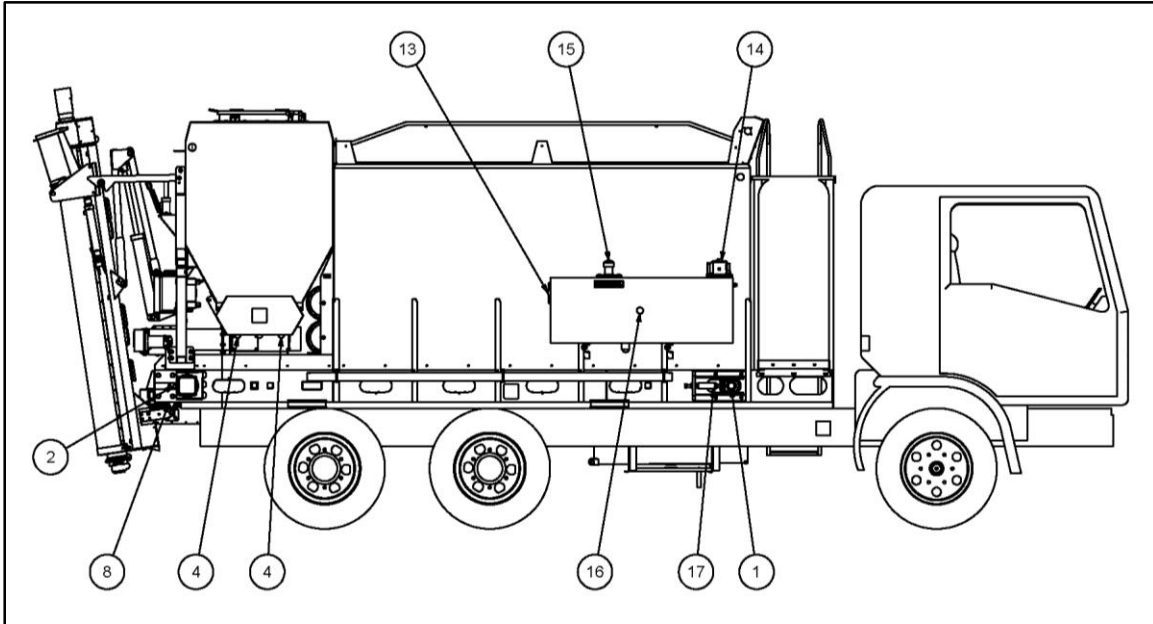


Table 2. Lubrication and Maintenance Locations

Item Number	No. Points		Daily	Every 1 Load	Every 10 Hours	Every 50 Hours	Every 500 Hours
1	2	Front Conveyor Shaft / right – left				•	
2	2	Rear Conveyor Shaft / right – left				•	
3	2	Cement Auger / front – rear				•	
4	4	Cross Auger / 2 right – 2 left				•	
5	2	Upper Rear Link			•		
6	1	Boom Cylinder			•		
7	1	Lock Arm			•		
8	2	Mix Bowl			•		
9	1	Auger Top Bearing			•		
10	1	Auger Bottom Bearing			•		
11	1	Auger Bottom Seal		•			
12	2	Gate Bearing				•	
13	1	<sup>A</sup> Hydraulic Oil Check	•				
14	1	<sup>B</sup> Hydraulic Return Filter					•
15	1	<sup>C</sup> Hydraulic Suction Filter					•
16	1	Hydraulic Oil Replace					•
17	2	<sup>D</sup> Check Conveyor Tension				•	
18	1	Clean Cement Auger Discharge	•				
19	1	Lube Conveyor Chain			•		
20	1	Clean Water Y Strainer	•				

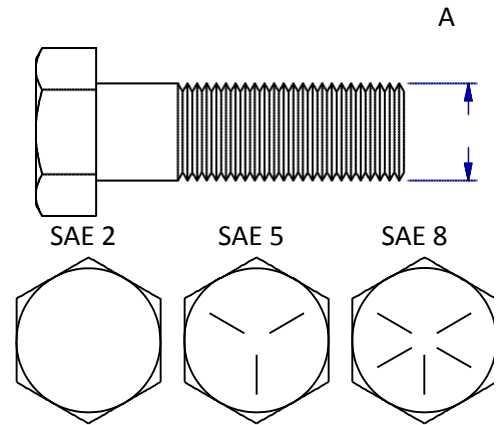
Notes:

- A. Refer to *Oil Specifications* section on page 6-1 for correct hydraulic oil.
- B. Check the return filter gauge at this location.
- C. The filter is located within the tank. A visual inspection of the filter will be required.
- D. Refer to *Take Up Bearing* section on page 6-1 for the correct gap setting.

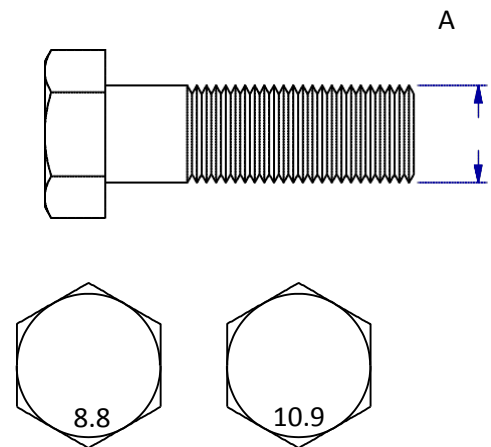
## Bolt Torque

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.

## 7. Fault Finding

Problem	Cause	Solution
<b>No mixer function operate</b>	Master switch not active	Locate and ensure that the cab master switch is turned on.
	Electrical failure	Locate and check main circuit breaker located in the main breaker box of truck. If a short circuit is indicated, find the short and repair.
<b>No water pressure</b>	Water pump not running	Check water pump activation switch on rear panel.
	Water tank is empty	Fill
	Water pump has lost its prime	Ensure that no pressurized air is being allowed into the water system through the blow-down valve or a faulty diaphragm in the automatic water valve.
	Water suction screen plugged	Remove and clean or replace.
<b>Digital meter not counting</b>	Proximity sensor has come out of adjustment	Light on top of sensor will flash when bolt head passes by if properly adjusted. Adjust to within 1/16 in. of sprocket.
	Sensor damaged	Replace
<b>No number on counter display</b>	Digital counter has failed	Replace
<b>Water leaking from pump</b>	Mechanical seal has failed	Replace seal, ensuring that seal components are properly installed. <b>DO NOT RUN DRY!</b>
<b>Inconsistent slump</b>	Moisture content of aggregates not consistent	Load materials of consistent moisture content. When this is not possible, the operator must compensate for moisture variations by making minor adjustments to the slump control valve or to the belt speed.
	Restriction in water supply line	Remove Y-strainer plug and screen. Check for contamination and clean if necessary.
	Air in water causing pump cavitation	Check blow down air valve if so equipped. Valve must be fully closed.
	Over adjustment of slump control valve	Check automatic water valve diaphragm. Replace if defective. When setting the slump, do not "case" it by over adjusting the

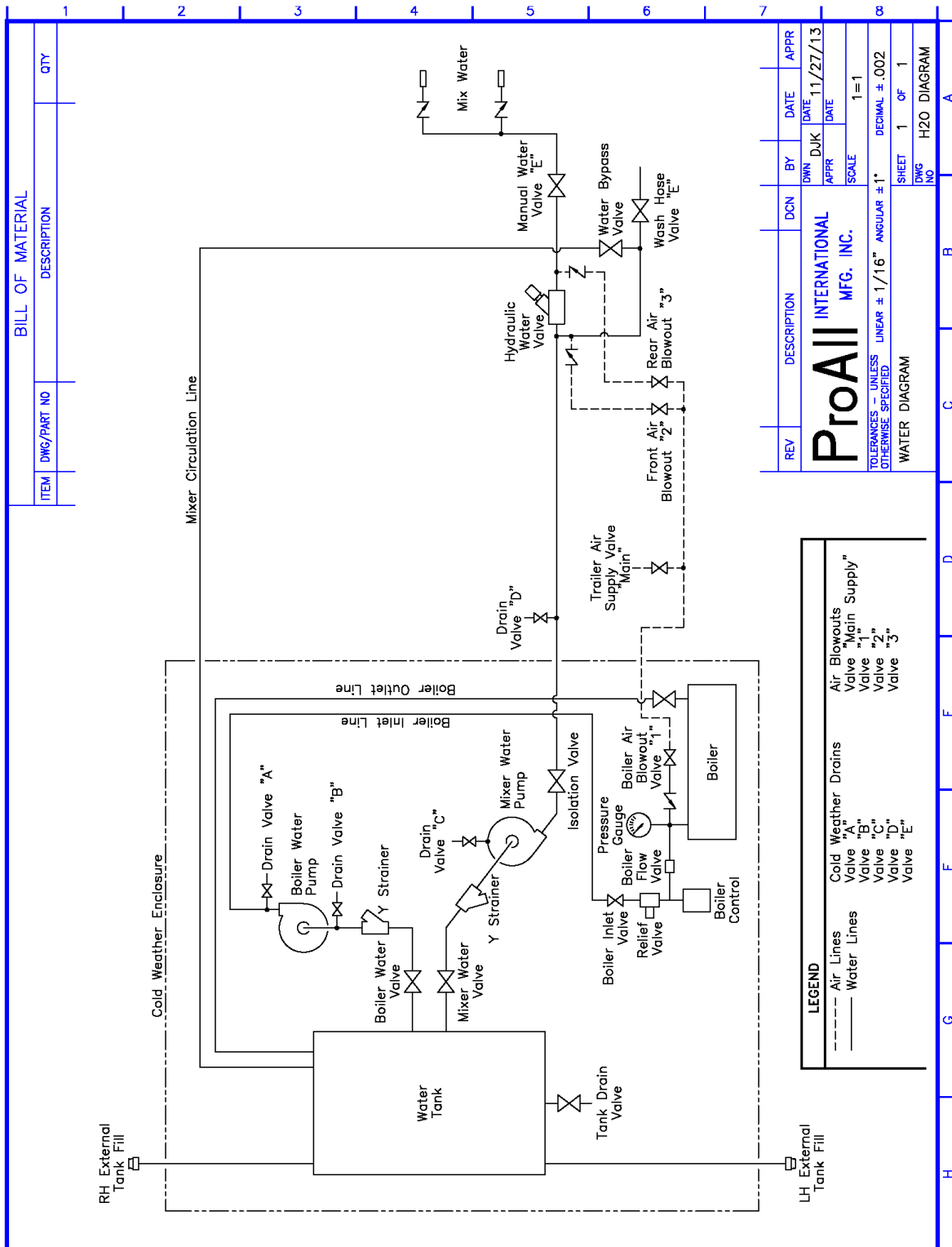


Problem	Cause	Solution
		control valve. It takes several seconds for the slump to respond to changes made to the valve setting.
	Engine speed too low	Do not operate at less than 1600 R.P.M.
<b>Mix is too "stony"</b>	Sand has bridged or become restricted	Operate vibrators to cause sand to flow properly and check control gate opening for restriction.

## 8. Specifications

Capacity	9.5 cubic yards (7.5 cubic meters)
Production rate	Variable up to 7 cubic yards per hour maximum
Controls	Dual – manual and wireless
Water Tank	Polyethylene tanks, 450 US Gallons (1700 Liters)
Vibrators	Pneumatic
Auger	9 or 12 inch
Mixer Only Weight	8350 Pounds (3800 Kilograms)

## 9. Schematics



### Figure 7. Water Schematic

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## 11. 1<sup>st</sup> 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 6-6.
2. It is recommended to perform the calibration procedure as outlined in the *Calibration* section on page 4-1 after the first 50 hours of service.
3. It is important to check the clean water Y strainer, ensure that this is monitored during the first 50 days according to Table 2 on page 6-5.



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