

**THE**



**ALLIANCE INTERNATIONAL INC.**

**MOBILE MIXER**

**OWNER / OPERATORS MANUAL**

Reimer Alliance International Inc.

[www.reimermix.com](http://www.reimermix.com)

1-855-335-9500

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# WARRANTY

## 1. NEW EQUIPMENT WARRANTY

Subject to the limitations and exclusions set out below, **Reimer Alliance International Inc.** warrants that if any component or part of a mixer manufactured by Reimer proves to be defective in material or workmanship within (6) six months from the original delivery date, Reimer will either repair or replace the defective part of the mixer.

## 2. LIMITATIONS AND EXCLUSIONS

This warranty by **Reimer Alliance International Inc.** does not extend to or include:

- i Trucks- see the warranty information included with the truck manufacturer's information pack.
- ii Damage resulting from accident, misuse, abuse, neglect or from other than normal and ordinary use of the mixer.
- iii Damage resulting from failure to operate or maintain the mixer as specified in the operator's manual.

**3. IMPROVEMENTS OR CHANGES-** **Reimer Alliance International Inc.** reserves the right to make improvements or changes in design and specifications at any time without incurring any obligation to owners of mixers previously sold.

**REIMER ALLIANCE INTERNATIONAL INC. IS NOT RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.**



## Standard Specifications

<b>Capacity</b>	<b>9.5 yds<sup>3</sup> ( 7.5 m<sup>3</sup>)</b>
<b>Production rate</b>	<b>Variable up to 75 yds<sup>3</sup> per hour maximum</b>
<b>Dual Controls</b>	<b>Manual and wireless</b>
<b>Water Tank</b>	<b>450 US gallon polyethylene</b>
<b>Vibrators</b>	<b>Pneumatic</b>
<b>Fenders</b>	<b>Light weight and durable</b>
<b>Electronic digital counter</b>	<b>Calibration and delivery measurement</b>
<b>Powered</b>	<b>Chutes, auger and swing</b>
<b>Auger</b>	<b>9 or 12”</b>
<b>Mixer only weight</b>	<b>8350 lbs ( 3795 kgs )</b>

## Optional Equipment

**Hawk 6 Ad Mix System**  
**Manual AdMix System**  
**Color feeder**  
**Larger water tank**  
**Fibre feeder**  
**Cement level sensor and alarm**  
**Cement bin windows**  
**Auto tire inflation system**  
**Booster Axle**  
**Lift axle extension**  
**Stainless Steel fenders**  
**Hydraulic vibrators or electric vibrators**  
**Printer**

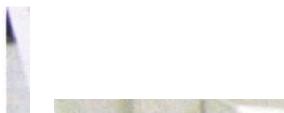
## Introduction

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

The serial number of your mobile mixer is located on the front support web of the main aggregate bin (driver's side). Please refer to this serial number when contacting Reimer Alliance International Inc. or its representatives, who are committed to providing prompt and efficient service.



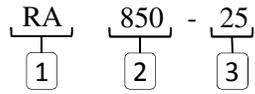
### NOTE:

Serial plate is located on the front support web on driver's side of the mixer.

# Model No.

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Model No.



1 Manufacturing Code

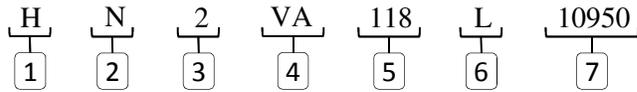
2 350 3.50 Cu Meter Capacity  
750 7.50 Cu Meter Capacity  
850 8.50 Cu Meter Capacity  
950 9.50 Cu Meter Capacity  
1150 11.50 Cu Meter Capacity

3 25 26" Frame Extensions  
50 52" Frame Extensions

# Serial Numbers

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Serial No.



1 H Hydraulic Series V

- 2 N 9 x 96" Auger
- NS 9 x 86" Auger
- NL 9 x 116" Auger
- T 12 x 96" Auger
- TS 12 x 86" Auger
- TL 12 x 116" Auger

- 3 2 2' 450 Gal Water Tank
- 3 3' 675 Gal Water Tank
- 0 Custom Tank Size

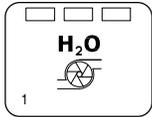
- 4 VA 12 Volt Operating System
- VB 24 Volt Operating System

- 5 95 }  
118 }  
135 }—Conveyor length indicating the number of cross bars on the chain  
153 }  
170 }

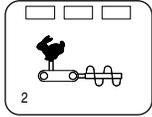
- 6  Blank L-20 Standard Actuator
- L L-30 Heavy Duty Actuator

7 Manufacturers Serial Number Code

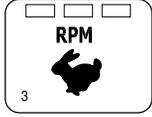
# Operating Symbols



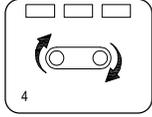
Water Pump



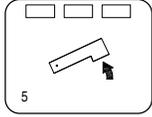
Auto Link



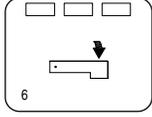
Engine RPM



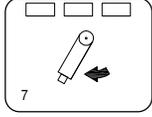
Conveyor Belt



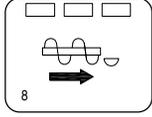
Boom Up



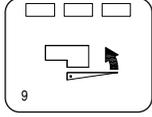
Boom Down



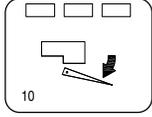
Swing Left



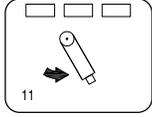
Auger Mix



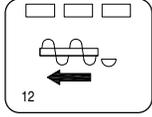
Chute Up



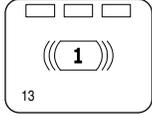
Chute Down



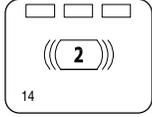
Swing Right



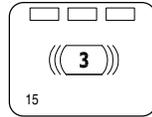
Auger Reverse



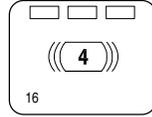
Vibrator 1



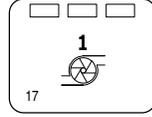
Vibrator 2



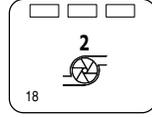
Vibrator 3



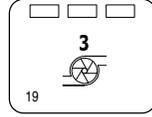
Vibrator 4



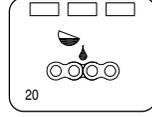
Admix Pump 1



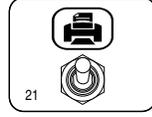
Admix Pump 2



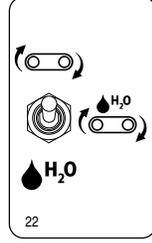
Admix Pump 3



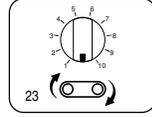
Chain Oiler



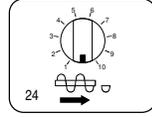
Print



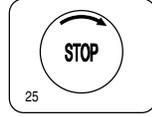
MODE {  
Conveyor Only  
Conveyor + Water  
Water



Conveyor Speed

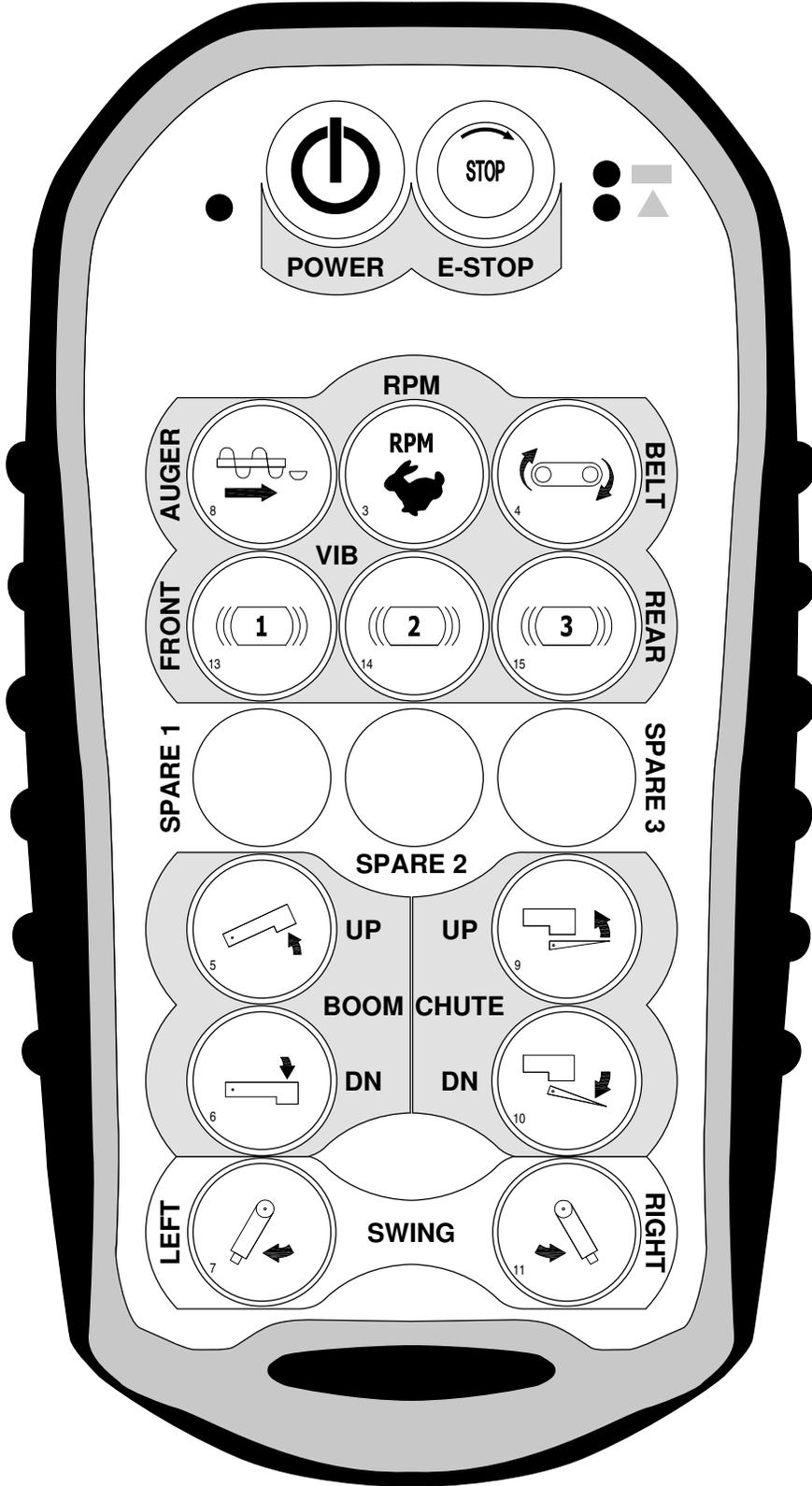


Mix Auger Speed

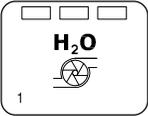
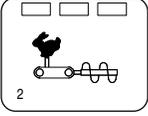
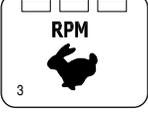
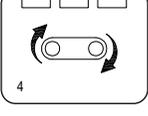
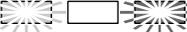
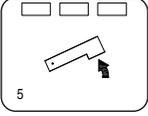
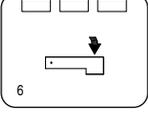
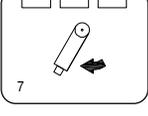
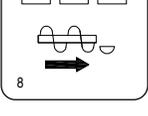
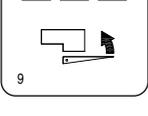
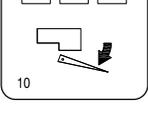
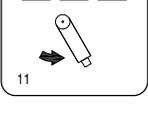


Emergency Stop

# Remote TX



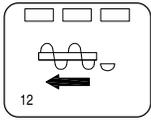
# Switch Indicator Lights

SWITCH	INDICATION
	 ON  ALERT: Water Pump OFF, Conveyor Switch ON (Note 1)
	 ON
	 ON
	 ON  ALERT: Water Pump OFF (Note 1)  Remote E-Stop ACTIVATED To Reset: PRESS E-Stop on Remote (Note 2)  ALERT: Closed Loop Error To Reset: Cycle MANUAL E-Stop (Note 3)
	 Activated
	 Activated
	 Activated
	 On
	 Activated
	 Activated
	 Activated

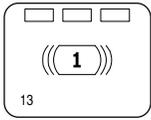
# Switch Indicator Lights

SWITCH

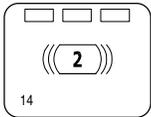
INDICATION



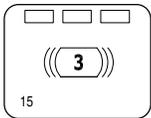
ON



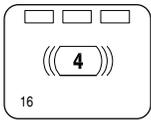
Activated



Activated



Activated



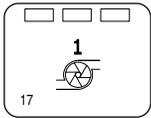
Activated (Note 4)

Off (Note 4)

  Standby

On

Prime

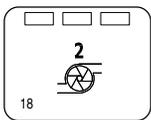


Off

  Standby (Note 5)

On

Prime

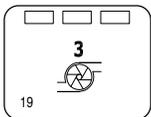


Off

  Standby (Note 5)

On

Prime

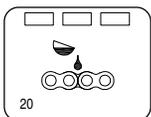


Off

  Standby (Note 5)

On

Prime



  Standby

On

# Switch Status Indications Notes

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## Note 1:

**FLASHING GREEN:** Alerts the operator that the CONVEYOR switch 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 switch 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 XX**) or replace SENSOR.
  - Clear Status Indication as described above.

## Note 5:

When program V.1.0V4F is installed VIB 4 (#16) will operate as a VIBRATOR switch input.

When program V.1.0A3F is installed VIB 4 (#16) will operate as an ADMIX switch 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

## **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 re-filled 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.

### **How Concrete is Accurately Batched With The Reimer Mobile Mixer**

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 coarse 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.

## Calibration

The calibration procedure, will provide the operator with a chart indicating the control gate settings for the each type of concrete mix as well as the digital counter readout required to determine the volume of concrete poured.

### **A basic overview of the calibration procedure is as follows:**

As previously explained, the cement discharge is proportional to the movement of the conveyor belt and to the digital counter. The first step in the procedure, then, is to determine the rate of cement discharge in pounds or kg per count. Once this is determined, the mix design is used to calculate the number of counts required to produce one cubic yard or meter of concrete.

**EXAMPLE:** You have determined, by weighing the cement discharged in a known number of counts, that the cement is delivered at a rate of .45 pounds per count. The mix design indicates that 450 pounds of cement is required per cubic yard of concrete. This means that the digital counter must read 1000 (450 divided by .45) for sufficient cement to be discharged to produce one cubic yard. Now determine the control gate settings, which will allow the proper volume of aggregate to pass through, producing one cubic yard of concrete when the digital counter reads 100.

Because the cement discharge is always proportional to the movement of the conveyor, the design of the mix will remain constant, even if the discharge rate is changed, until the operator changes the control gate settings.

Proper calibration and setup of the Reimer Mobile Mixer, is essential to it's successful operation ( *See Pages 26 to 29* ). Ensure that the operator has a good understanding of the concept of volumetric, continuous batching as explained in this manual.

## Operation

The key to a successful and profitable business as a mobile concrete producer, is the proper operation of your Reimer Mobile Mixer. The operator must be chosen with care, as he is responsible for the proper set up of the proportioning controls and the general delivery of a quality concrete product.

# Loading The Mixer

## Aggregate

Cement, sand and coarse 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.

### **CAUTION:**

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 effect the quality of that part of the load.

## Cement Powder

### **WARNING:**

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

## Water

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

### **WARNING: BOTTOM LOAD PROCEDURE**

Air venting is provided through the tank lid, however, damage to the tank and frame will result, if the tank is overfilled using a high pressure water supply.

## Controls

Locate and become familiar with the operating controls of the Reimer Mobile Mixer.

- Master electrical switch - located on truck dash
- 'In cab' mixer control box - Provides for operation of all on/off and directional control functions of the Reimer Mobile Mixer from the operators seat.
- 'T' handle control box - Provides for operation of all on/off and directional control functions from discharge area.
- Belt and mix auger speed controls
- Mix auger - Mix and Reverse
- Aggregate control gate adjustment hand wheels, dials and pointers
- Digital counter and reset button
- Water pump activation switch
- Conveyor function switch, labeled Belt/Auto/Water
- Water proportioning valve
- Water system blow-down valve - if installed for cold weather applications
- Master air supply valve
- **EMERGENCY STOP BUTTON**

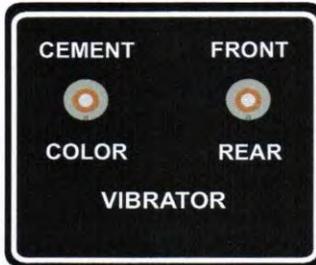
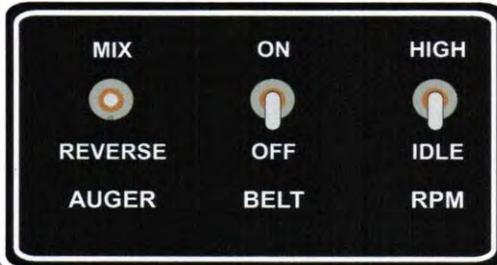
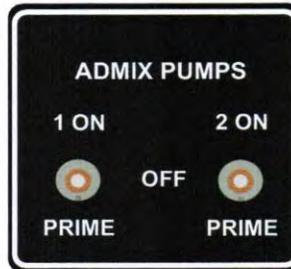
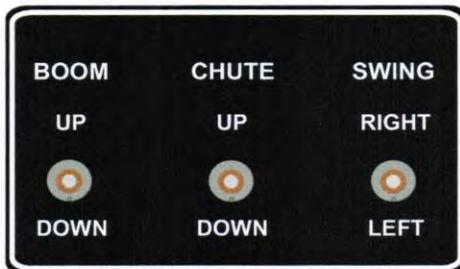
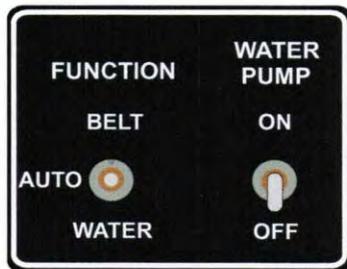


Large red knob on control panel.  
Press to stop entire operation.  
Turn to right to release.

- Power swing Lock/Free - allows for the auger trough to be pivoted manually.
- Cement Motor Control
  - Cement drive Motor On / Off }
  - Full / Lean } *see Page 10*
  - Cement lean adjustment }

# Control Panel

**REIMER** REIMER ALLIANCE  
International Inc.

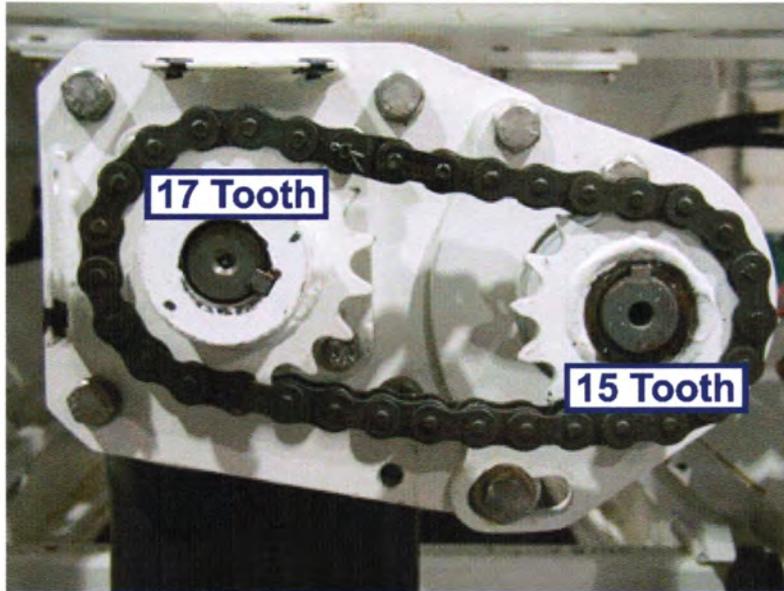


**NOTE:: WHEN USING THE WIRELESS SYSTEM**  
To operate the color vibrator, press the **GREEN** shift button  
**TOGETHER** with the **GREEN SPARE 1 BUTTON**

**REIMER** REIMER ALLIANCE  
International Inc.



## Cement Delivery System

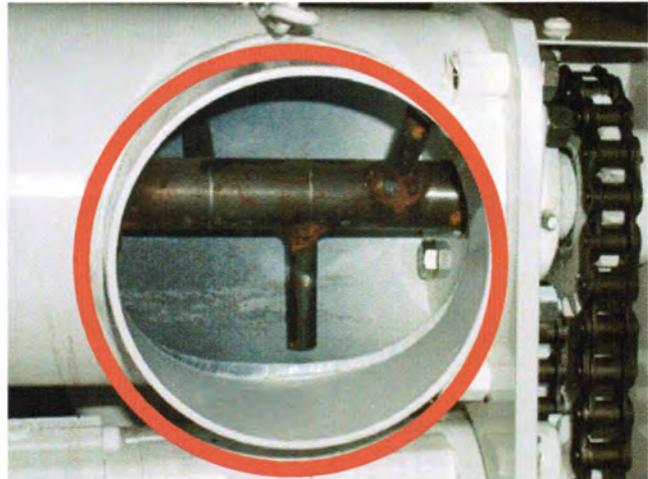


Cement sprocketing shown above, can be interchanged by the operator to increase cement delivery.

**15 x 17 Factory Setting**  
**17 x 15 Will deliver approximately 20% more cement**



**Roll up cement drop tube as shown during wash out.**



**Remove drop tube and check weekly for cement build up in this area.**

**NOTE:**  
Unroll cement tube prior to cement delivery.

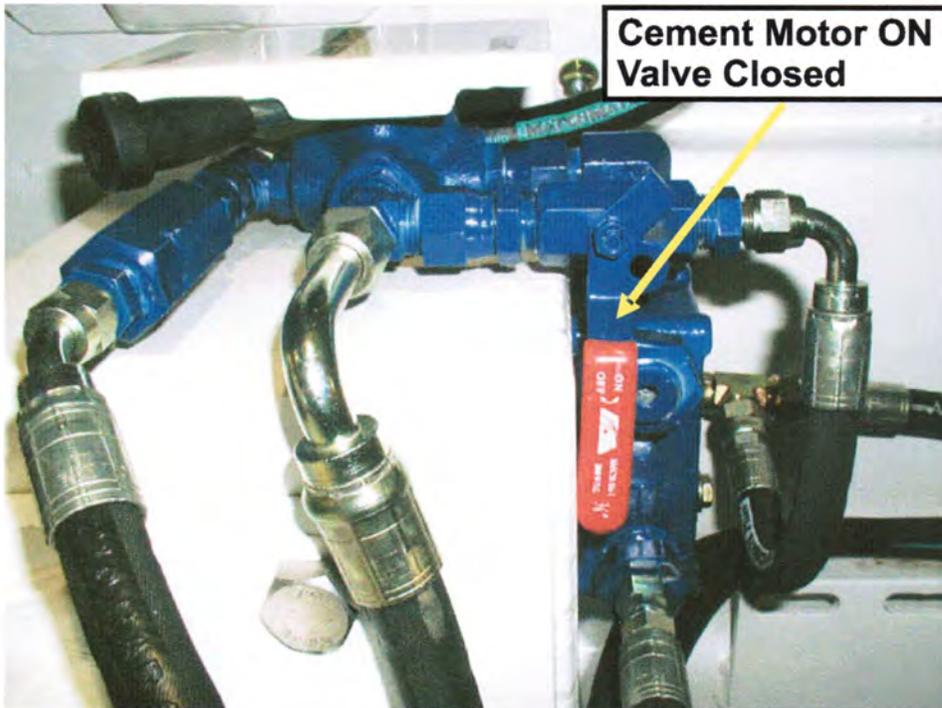
# Cement Motor Controls

## Cement Motor On/Off Valve

Cement Discharge can be stopped by placing this valve in the open position.

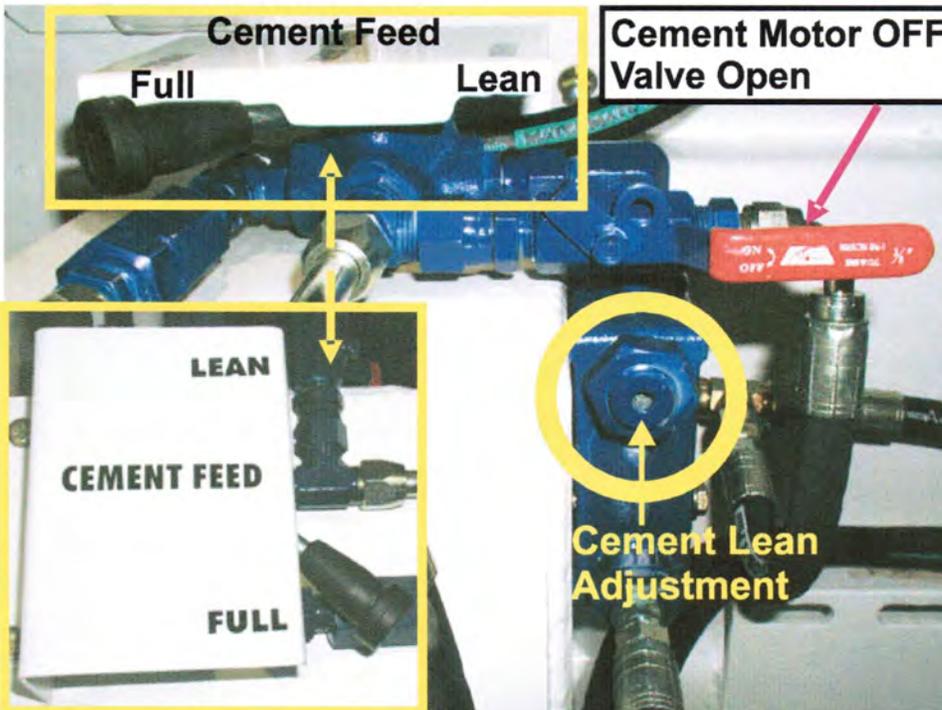
### WARNING:

This valve should always be fully closed when producing concrete.



### Cement Lean Adjustment

With the **cement feed valve** in the lean position, cement discharge will be reduced by approx. 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.



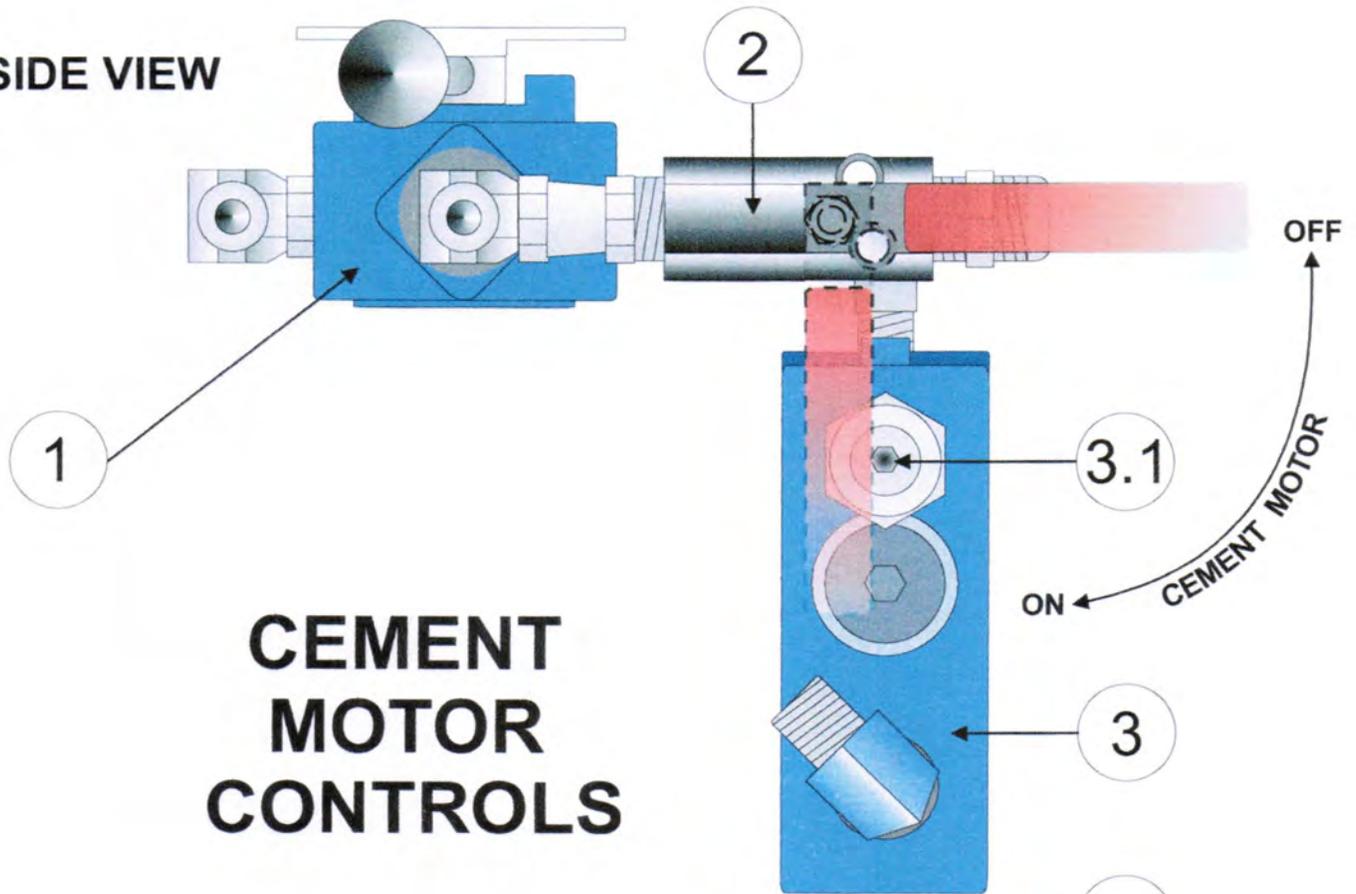
### NOTE:

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

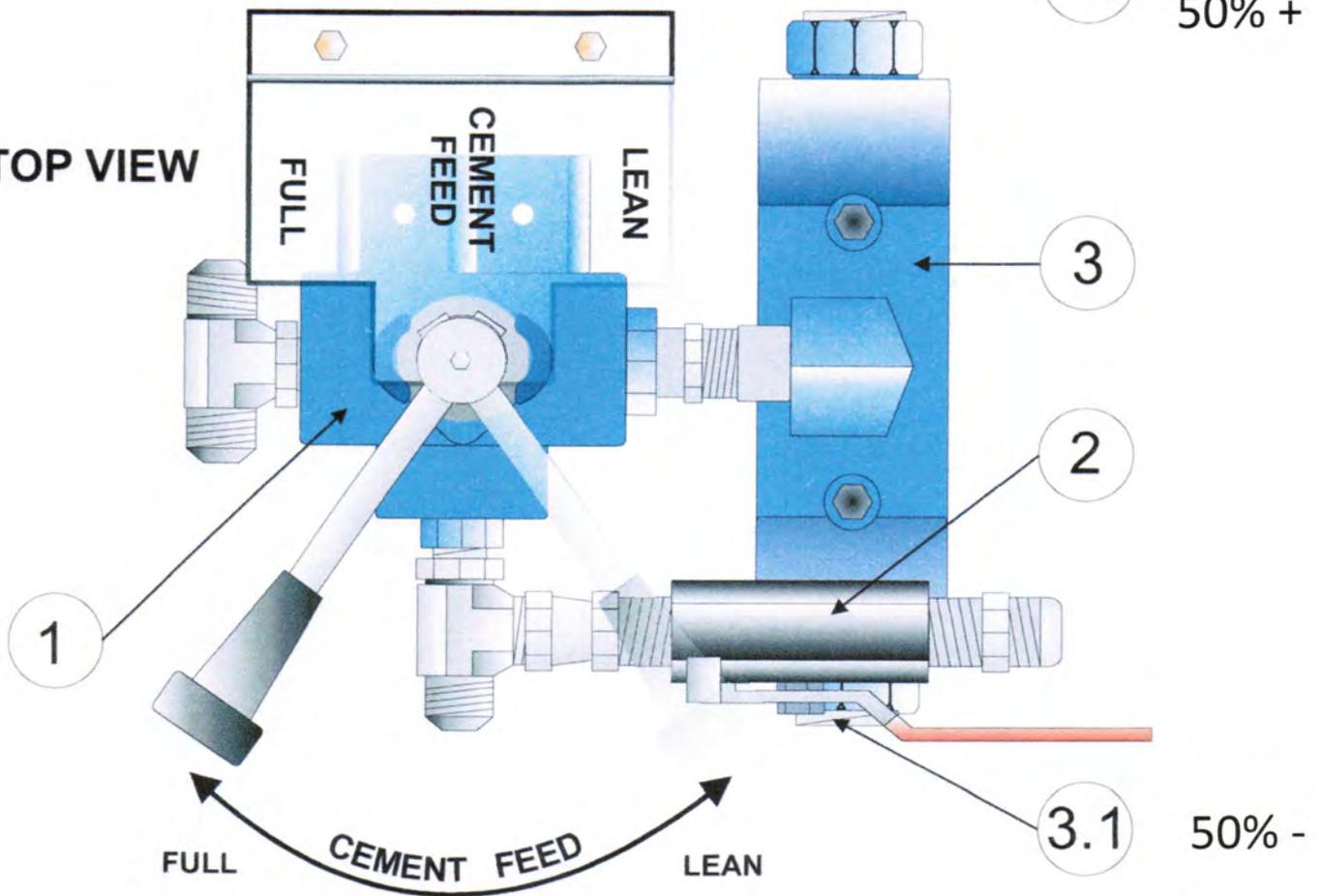
### WARNING:

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

SIDE VIEW



TOP VIEW



## **LEAN VALVE ADJUSTMENT**

Loosen the stop nut on both 3.1 and 3.2

Use an Allen wrench to turn the spool adjustment in (clockwise) on both 3.1 and 3.2 until you feel the adjustment bottom out

From this position Fully In turn both 3.1 and 3.2 Out (counterclockwise) 1 ½ to 2 turns. You will feel friction on the adjustment at this point. Do not continue to turn past this point or the seal may come out. Both adjustments should be set to a similar position

The valve is now set to approximately 50/50

If you require Less than 50% Turn adjustment 3.1 In (clockwise) until you achieve the desired %

If you require Greater than 50% Turn adjustment 3.2 In (clockwise) until you achieve the desired %

**Note:** Whenever making adjustments to one side the opposite side should always remain in the full Out position (1 ½ to 2 turns)

Failure to do this may result in excessive heat generation and will eventually cause the valve to lock up the hydraulic circuit. Readjusting the valve will solve the problem

Any adjustments made to this valve will NOT affect your calibration data when in the Full position

## 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 10 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:**
  - Master electrical switch - **On**
  - Water Tank Valve - **Open**
  - Water return valve - **Open**
  - Emergency stop – **Off**
  - To use Wireless set to ON**
  - Digital Counter - **Reset**
  - Conveyor function switch - **Auto Position**
  - Water pump switch - **On**
  - Add Mix Pumps - **As Required**
  - Belt speed control - **Set** - (start at one turn less than fully open), maximum 4 turns = **Fully Open**
  - Auger speed control, 5 turns = **Fully Open**
  - Auger mix/reverse lever - **Mix**
  - Mix water control - **Set** (*operator must become familiar with initial settings required for proper slump, using small trial batches*)
  - Cement delivery tube – **Extend**
- 2. Lower mix auger:** The transport lock will automatically disengage when the boom is lowered. An angle of no less than 25° should be used on the mixing auger.

### CAUTION:

**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.

If required, lower the transition chute and add extensions as needed

- 3. Set power swing selector to desired function.**
- 4. Apply any release agent at this time, if desired.**

## Pouring

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 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 bins:** to ensure initial flow of sand and cement to conveyor belt.

**NOTE:** The frequency and duration of vibrating depends upon the distance traveled 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:

- ◆ Using a scraper, remove any excess material from the discharge end of the conveyor belt.
- ◆ Roll up cement drop tube.
- ◆ Run the mix auger until it is empty.
- ◆ Adjust the mix auger speed control, to reduce auger speed as required.
- ◆ Wash out swivel ring and area directly around discharge end of conveyor belt.
- ◆ With mix auger still elevated, ensure that back plate and sides of the auger trough are free of build up. If desired, a rapid flow of water can be added to the mix auger by placing the conveyor function switch into the **water position**.
- ◆ Switch mix auger control to '**OFF**'.
- ◆ Open the mix auger cover and lower the auger as far as possible.

#### **WARNING:**

Never run the mix auger with the top cover open.

- ◆ Wash until the mix auger and trough are free of any cement or aggregate build up.
- ◆ Elevate mix auger to transport position. The retaining lock will automatically engage.

#### **CAUTION:**

Check for proper alignment as the auger is being raised.

- ◆ Water pump - **OFF**

#### **WARNING:**

**DO NOT ALLOW** the water pump to operate with out a water supply. Seal damage will result.

- ◆ Master switch in cab - **OFF**

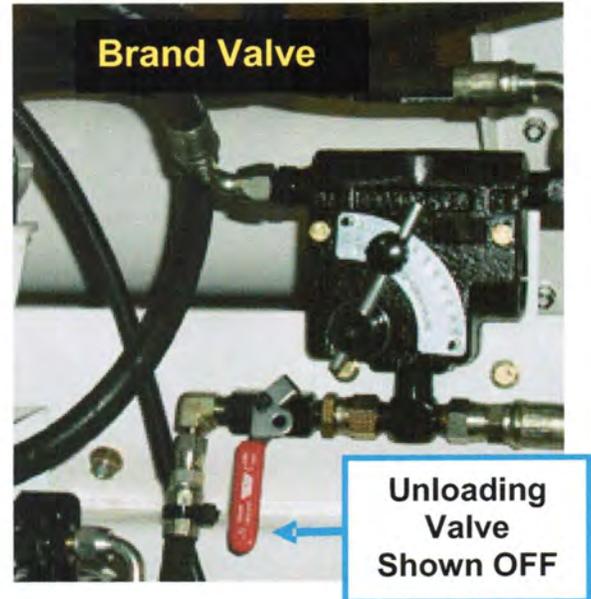
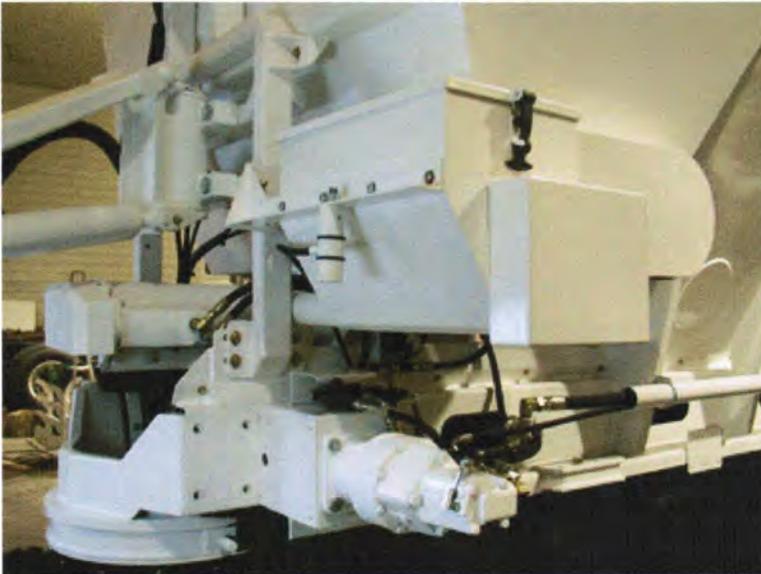
# Optional Color Feeder

## Description:

The Reimer Color feeder is designed to supply a controlled flow of powdered color to the concrete mix.

## Features:

- 1.7 ft<sup>3</sup> large capacity
- Large capacity extension available
- Pneumatic vibrator to insure even flow



## Calibrating The Color Feeder Using The Brand Flo-Control

Set the conveyor belt speed and note the position of the belt speed flow control (*e.g. number of turns open*).

Adjust the color feeder flow control to obtain the required discharge rate of colored powder. Record the settings of both the belt speed control and the color feed control for future reference.

### NOTE:

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

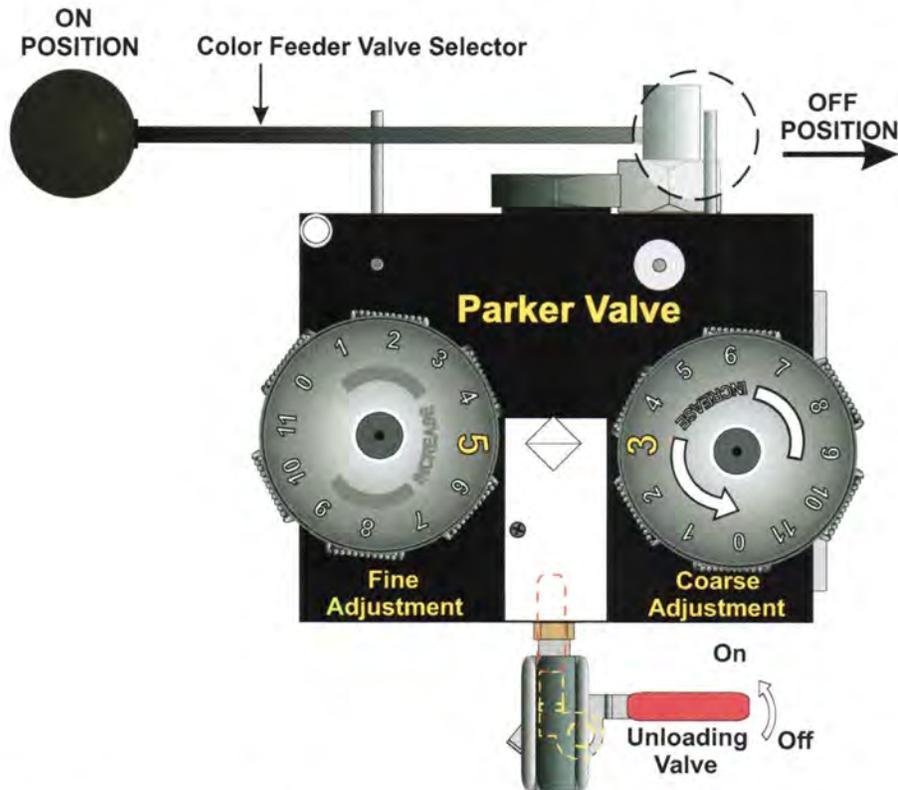
## Unloading the Color Feeder Hopper

Opening the unloading valve, allows the operator to unload the color feeder without the conveyor belt moving. The conveyor belt switch must be **ON** to supply oil flow to the color feeder.

### WARNING:

The unloading valve MUST be closed whenever producing concrete.

## Using The Color Feeder With Parker Flo-Control



- A. Color feeder selector valve: **ON**
- B. Start with the fine adjustment at the **#5** position and the coarse adjustment at the **#3** position.
- C. Rotate the **COARSE** adjustment counter clockwise to increase the discharge rate.
- D. The **FINE** adjustment is then used for more precise control. Clockwise rotation will increase and counter clockwise rotation will decrease the discharge rate.

### 2. Calibrating The Color Feeder

- A. Determine the number of lbs / yd<sup>3</sup> or kg / m<sup>3</sup> of color required.
- B. Cement motor: **OFF (see page10)**.
- C. Color Feeder selector valve: **ON**.
- D. Select a position for **Coarse** adjustment.
- E. Zero the conveyor meter computer.
- F. Run the conveyor to collect a color sample.
- G. Weigh the color sample and compare with the meter reading.
- H. Make adjustments as per **Section 1, D** and record the dial settings when the correct discharge rate is achieved for future reference.

**I. DISCHARGE RATE IS NOT AFFECTED BY BELT SPEED.**

### 3. Unloading Excess Color

- A. Cement motor: **OFF (See Page 10)**.
- B. Color feeder selector valve: **ON**.
- C. Unloading valve: **ON**
- D. Select a setting on the **COARSE** adjustment to unload the color feeder.
- E. Belt flo-control: **OPEN** ..... Belt switch: **ON**.

**WARNING:** The unloading valve **MUST** be closed whenever producing concrete.

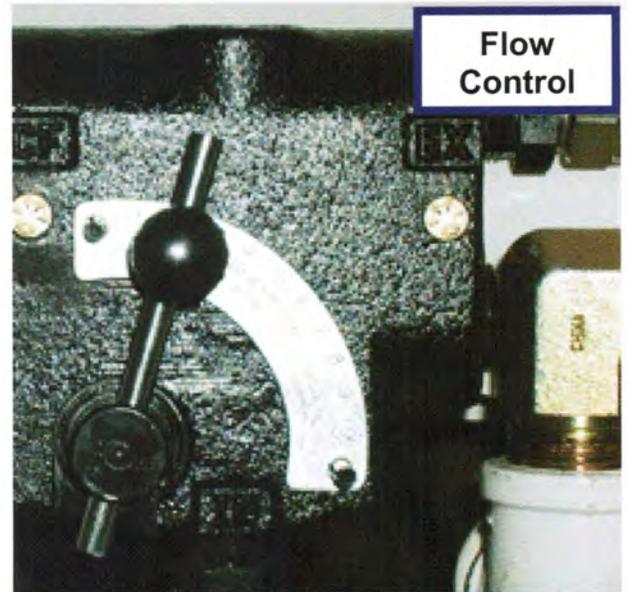
## Optional Hawkridge Fibre Feeder

### Description:

The Hawkridge Fibre Feeder is designed to supply a controlled flow of concrete reinforcement fibres, of various types, for mixing using volumetric batching concrete mixers.

### Features:

- Works with a variety of fibre types.
- No special packaging required.
- Easy to install and operate.
- Hydraulically driven. Other drive options are available.
- A hydraulic control valve sets discharge rate.



When calibrating the fibre feeder, adjust the flow control to obtain the required discharge rate of fibre.

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

### NOTE:

Slowing the belt speed during operation with the fibre feeder in use, will increase the amount of fibre being added, because the fibre feeder will not slow down at the same rate as the belt.

## Safety

Careful operation of your Reimer Mobile Mixer is your best insurance against an accident. Read and understand this operator's manual before operating.

### Operational Safety

#### 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 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.

### Maintenance Safety

#### WARNING:

Remove the key from the truck and keep it inaccessible while servicing the mix auger and hydraulic pump drive shaft.

Replace any shields and guards prior to returning the mixer to service.

## 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 will help 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.

### Preventative Maintenance

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.

### Inspection and Maintenance Schedule

Component	Action	Frequency
Bottom auger bearing	Grease	Every 15 meters poured
2 Bottom auger seals	Grease	Every 15 meters poured
Top auger bearing	Grease	Every 25 meters poured
Conveyor shaft bearings	Inspect and grease	Every 250 meters poured
Cement hopper bearings	Grease	Every 250 meters poured
Hydraulic Oil	Check level	Daily or after repairs to hoses and/or other components
Conveyor chain	Apply Oil	As required
Cement feed chain	Oil and check for tension	As required
Air supply oiler for vibrator lubrication ( <i>See page 23</i> )	Inspect and fill Check and adjust flow	As required
AdMix filter screens	Inspect and clean	As required
Hydraulic oil	Drain and replace	Every 2 years
Cement feed auger and delivery boot	Inspect for cement build up	Weekly
Auger swivel ring	Inspect and lubricate	Weekly
Water suction screen	Inspect and clean	Weekly or on condition
Mixer tie down bolts	Check for security and condition	Weekly
Conveyor belt	Check for damage & wear	Monthly
Hydraulic pump drive shaft	Inspect and grease	Monthly
Mixer tie down bracket	Check and re-torque frame attachment bolts	Monthly
Hydraulic return line filter element	REPLACE	Yearly
Hydraulic suction screen ( <i>in tank</i> )	REPLACE	Yearly

## 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.

### CAUTION:

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 up coming 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.

### CAUTION:

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.

## Adjustments

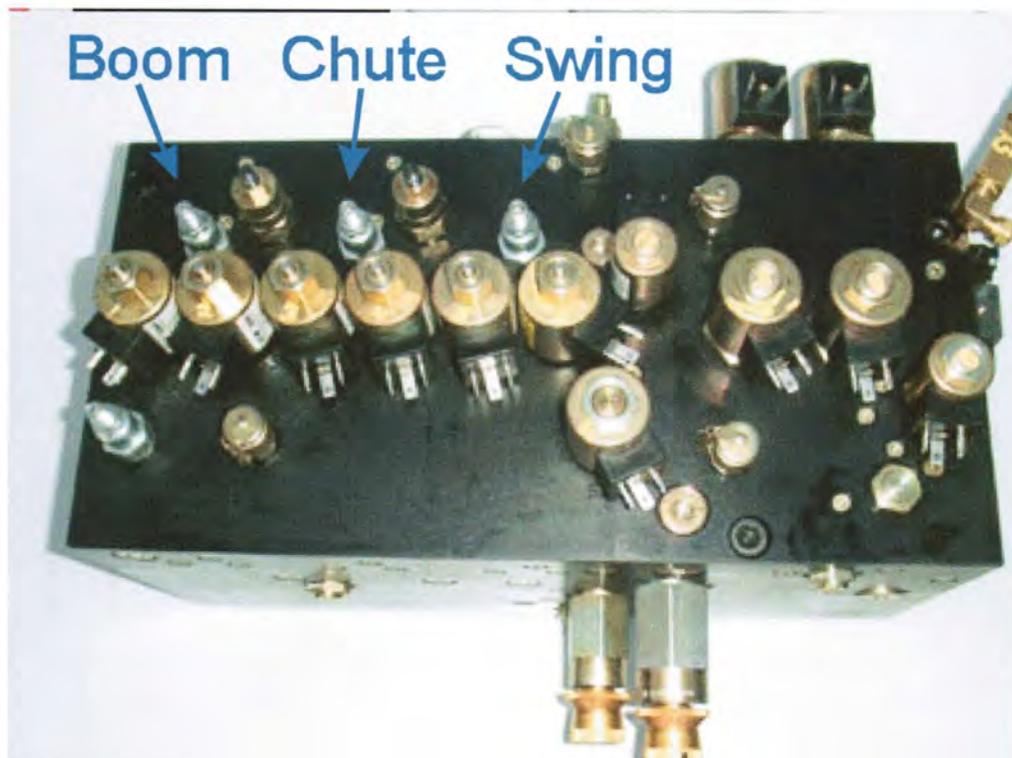
- 1. Conveyor chain:-** The take-ups on the front shaft of the conveyor must be adjusted to provide for proper tension on the conveyor chain. Proper adjustment is attained when the chain rollers are held about 1/8 " above the ends (front or back) of the chain return support bars. Be sure to check both 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, 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.

## Adjustments cont'd

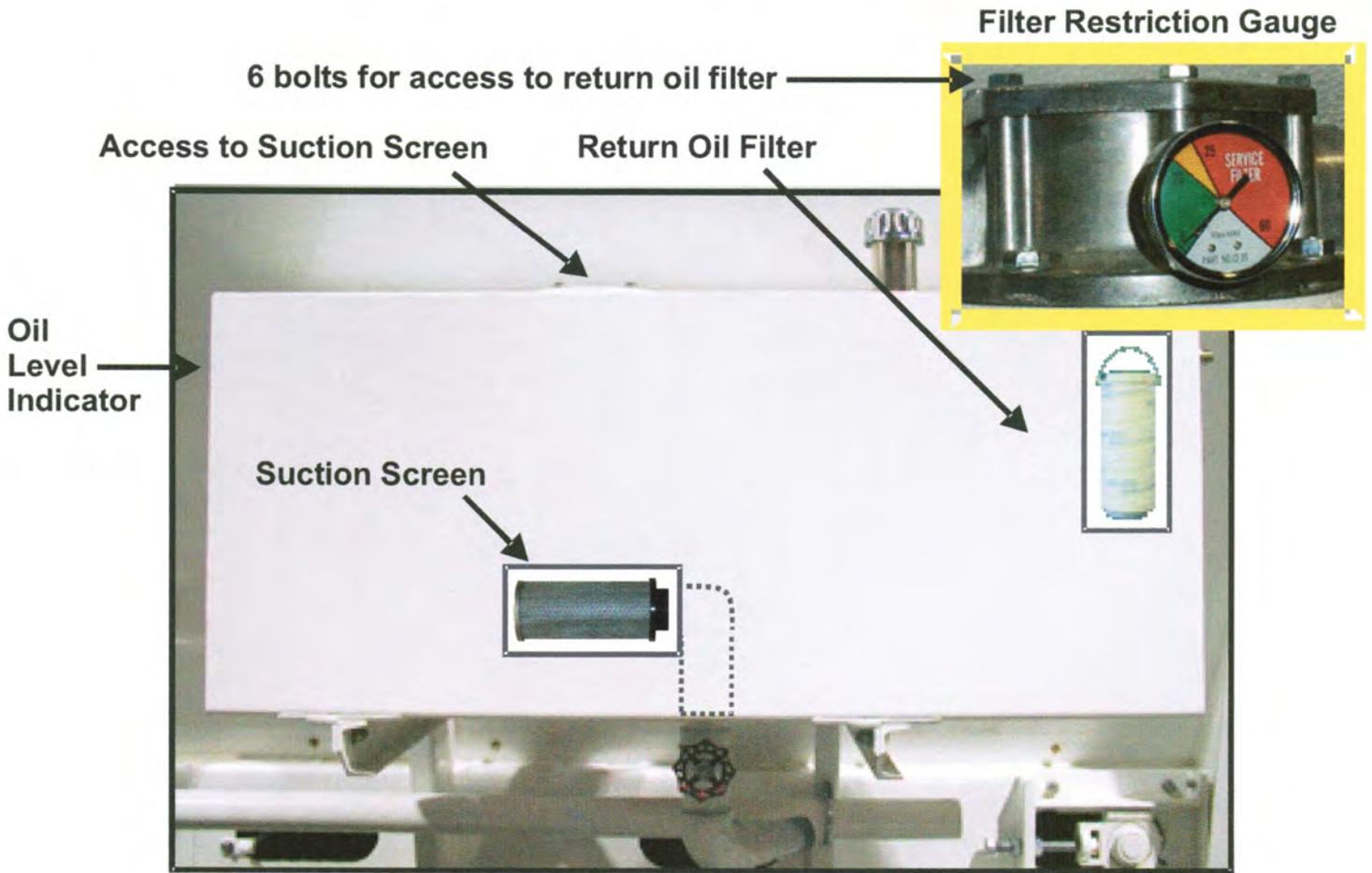
### CAUTION:

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 such 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.



# Main Hydraulic Oil Tank



Monitor the filter restriction gauge when the mixer is running and the oil warm.

**Operation in the RED zone should be avoided** as this indicates the return oil filter is contaminated.

This filter can be changed by removing the 6 bolts on the top of the housing.

## Replacement filter element part numbers:

<b>Pall</b>	<b>HC2544FMP9H</b>	<b>2004 model mixers</b>
<b>Western</b>	<b>E4051B3C05</b>	<b>mixers before 2004</b>

### NOTE:

The filter restriction gauge may run in the yellow zone when the oil is cold, but should drop into the green when normal temperatures are achieved.

# 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 2,500 particles per milliliter greater than 5  $\mu\text{m}$  and a maximum of 80 particles per milliliter greater than 15  $\mu\text{m}$ . When components with different cleanliness requirements are used in the same system, the cleanest standard should be applied.

## Hydraulic System

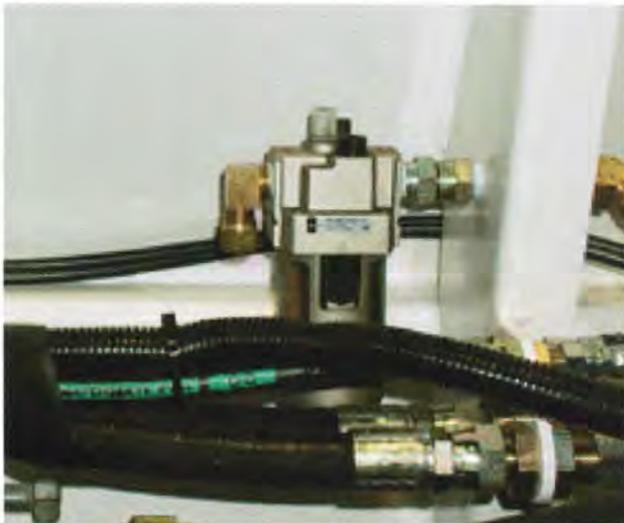
Your Reimer Mobile Mixer has been filled with Petro Canada **HYDREX\*<sup>XV</sup>** to give you best all season performance, plus longer lasting protection against wear.

**HYDREX\*<sup>XV</sup>** 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 operating 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 [2,000 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.

The vibrator exhaust air should show an indication of oil when feed rate is adequate.

## Trouble Shooting

Problem	Cause	Solution
No mixer functions operate	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.
No water pressure	Water pump not running	Check water pump activation switch on rear panel.
	Water tank is empty	Fill
	Water pump has lost it's prime	Ensure that no pressurized air is being allowed into water system through the blow-down valve or a faulty diaphragm in the automatic water valve.
	Water Suction Screen Plugged <i>(Page 11)</i>	Remove and clean or replace
Digital meter not counting	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" of sprocket.
	Sensor Damaged	<b>Replace</b>
No numbers on counter display	Digital counter has failed	<b>Replace</b>
Water leaking from pump	Mechanical seal has failed	Replace seal, ensuring that seal components are properly installed. <b>DO NOT RUN DRY!</b>
Inconsistent slump	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 "chase" it by over adjusting the 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.
Mix is too stony	Sand has bridged or become restricted	Operate vibrators to cause sand to flow properly. Check control gate opening for restriction.

# Reimer Mobile Mixer

## Calibration procedure

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.

### NOTE:

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

**STEP 1 - Determine the ‘cement output per count’.** Each count is registered and displayed in the window of your meter.

### Procedure:

1. Empty material from the sand and stone bins.
2. The cement bin should be at least 1/3 full.
3. Discharge an adequate amount of cement to ensure that the cement metering system is full.
4. Determine the empty weight of the container being used to collect the cement sample.
5. Zero the meter and place the container under the auger swivel ring.
6. Run the belt until the sample container is full, ensuring that all material being discharged is collected.
7. Weigh the sample.

### **CAUTION:**

Remember to subtract the empty weight of the container.

1. Divide the sample weight by the number of counts shown on the meter to determine the **cement output per count**.

### Cement Formula:

**Sample Weight** \_\_\_\_ divided by meter count \_\_\_\_ = **cement output per count** \_\_\_\_.

### NOTE:

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

**Step 2 – Determine the number of counts required** to deliver the specified weight of cement powder **per yd<sup>3</sup> of concrete** as needed in your mix design.

### Count Formula:

**Mix design requirements:** lbs. of cement per yd<sup>3</sup> \_\_\_\_ divided by **cement output per count** (from step 1) \_\_\_\_ = **counts required per yd<sup>3</sup>** \_\_\_\_.

# Turn Cement Motor OFF. ( See page 10 )

## 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 yd<sup>3</sup> of concrete.

Divide the weight of stone per yard needed by the number of **counts per yd<sup>3</sup> required** (from Step 2).

### Stone Formula:

Mix design requirement lbs. of stone per yd<sup>3</sup> \_\_\_\_\_ divided by **counts per yd<sup>3</sup>** (from step 2). \_\_\_\_\_ = **weight of stone per count** \_\_\_\_\_.

### Procedure:

1. Fill stone bin at least 1/4 full .
2. Determine the empty weight of the container being used to collect the material sample.
3. Adjust control gate to the setting taken from the '*Sample Data Chart*' found at the end of the calibration section.
4. Run the belt until material is being discharged off the end of the conveyor.
5. Zero the counter and place the sample container under the discharge ring.
6. Run the belt until the sample container is full, ensuring that all material being discharged is collected.
7. Read the meter and record the value.
8. Weigh the sample and divide by the meter reading to calculate the **weight of stone per count** that has been discharged.

### CAUTION:

Remember to subtract the empty weight of the sample container.

### 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.

1. 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 3 more samples.

Record stone control gate setting \_\_\_\_\_.

#### Step 4 - Determine the weight of sand that must be released per count.

##### Sand Formula:

Mix design requirement lbs.of sand per yd<sup>3</sup> \_\_\_\_\_ divided by **counts per yd<sup>3</sup>**  
(from step 2). \_\_\_\_\_ = **weight of sand per count** \_\_\_\_\_.

Empty the stone bin and fill the sand bin ¼ full, repeating step 3, replacing stone with sand in all references.

Record sand control gate setting \_\_\_\_\_.

##### SUMMARY:

Mix # \_\_\_\_\_ (Operators Reference)

Strength required \_\_\_\_\_

Counts per yd<sup>3</sup> \_\_\_\_\_

Stone gate setting \_\_\_\_\_

Sand gate setting \_\_\_\_\_

The mixer must be calibrated for each mix design used and the data should be recorded on a chart for use by the operator.

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

**Cement Output per count** .478 lbs. or .218 Kgs

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

**All calibration data should also be recorded elsewhere for a backup.**

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.

# APEX I

The **APEX I** 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

### C.1 SET CONTRAST

scroll between Set Contrast and Set Bright

- to decrease value

+ to increase value

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

### C.2 SET TIME

**Set Time** is used to scroll between minutes and hours

**UP** and **DOWN** increase and decrease values

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

### C.3 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. However, once calibrated properly no further changes should be needed.

### C.4 METRIC/IMPERIAL

**Select** - used to change between metric and imperial

**NOTE:** Auger PSI and BELT PSI are for future use.

1. **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.

# 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 conveyer or 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.

### **CAUTION:**

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.

**CAUTION:**

When mixing concrete, using a different cement powder or aggregates differing in size from those which were used when calibrating, errors in yield will result. The operator should be prepared to re-calibrate in these situations and make the necessary changes in the gate settings to maintain the accuracy of the Reimer Mobile Mixer.

**NOTE:**

Proper calibration will enable you to deliver an accurate volume of quality concrete without consuming extra cement powder.

Using a wheelbarrow to collect material samples for calibration.



# Manual AddMix System

**ADMIX MUST BE ADJUSTED WHEN MAKING CHANGES TO CONVEYOR OR SPEED.**



# MasterMix Electronic Display



# **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)**
  - a) **Select**- moves the cursor underneath the number indicating the pulse counts required to dispense **1** liter or **1** gallon
  - b) **Up**- increases the pulse count value
  - c) **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.
- **CAUTION:** 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



# **USER GUIDE**

**Reimer**

**Cement mixer**

**Display mix control**

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### I. Revisions

LEVEL	DESCRIPTION – ECO NUMBER	DATE	BY
0	CREATED	2/25/08	JH
1	Added printer	10/15/08	JH
2	Added Remote Print button	11/25/08	JH
3	Added company name to printer and ticket number	1/26/09	AE
4	Changes per Rev 110 addendum	4/7/09	AE
5	Updated to match current code rev	5/8/09	AE
6	Updated to match current code rev	5/22/09	AE
7	Updated to match current code rev	5/27/09	AE
8	Updated to match current code rev	6/9/09	AP
103-116	Shown on obsolete SA-3258-PRR revision record	5/11/11	AP
117	Added water ratio in Gal/Yd3 or Liter/m3. Switched rev record to User Guide	5/11/11	AP
118	Improved accuracy in the Liter/m3 calculations	5/18/11	AP
119	Corrected Cement, Stone and Sand kg values on Mix Setup screen	7/8/11	AP

### II. Software Specification

Module	NODE #	HWD Version	Baud Rate	Program Number
10106883	11	10106196v110	250k	SA3258DP200xxx

### III. Description of Operation:

This machine is a truck mounted cement mixing unit. The electronic display system is used for monitoring purposes and setup calculations only. It also is used to save specific data after a run is complete. There is also voltage monitoring that is done, so if the system voltage drops below 10VDC two red LED's will flash indicating to the operator that their battery voltage is too low. If the voltage gets too low, the display may not operate properly, and the counts from the pulse pickups will lose accuracy.

#### **Main Screen 1:**

Shows in large font the amount of counts that the conveyor has rotated. This is primarily used in calibrating the machine.

The operator will have to print after they are done with the mix. The operator will not have the ability to print previous runs after they have been reset.

#### **Main Screen 2:**

This screen shows operating data; which mix is selected, the strength that is being produced, the SA and ST gate positions, the amount of water that has been mixed with the concrete(H<sub>2</sub>O), current water flow meter reading(H<sub>2</sub>O) the RPM and Count of the cement conveyor, and in large letters the overall cubic yards or meters of concrete that have been distributed. It also shows the C/W (cement to water ratio) overall since the last reset.

#### **Program Screen:**

The operator will use this screen to navigate to the following;

**Mix Select** screen to select which mix he would like to run.

**Mix Entry** screen, used to setup the parameters for 10 preset mixes. This is where the operator will enter values that they want used for all calculations to include; Truck number, Strength, Pulses per yard (or meter), Cement weight per yard (or meter), Stone weight per yard (or meter), Sand weight per yard (or meter), ST gate position, SA gate position, Low Flow gallons (or liters) per yard (or meter), and Hi Flow gallons (or liters) per yard (or meter).

**Setup Parameters**, where the operator has the ability to set the contrast and backlight of the display, set the time, set the amount of pulses per gallon or liter of water, and to select between metric and imperial units of measure. This screen also shows the pressure at the belt and auger motors.

**Last 5 Mix**, when the operator is done with a load, they press the reset button to clear the counts. The values are calculated and will show the yards that were distributed and the strength of the mix for that and the 4 previous runs. This screen is also where the operator will need to go in order to reset the run values.

#### **Admix Screen:**

The operator will look at this screen for a reference as to how much of the Hi and Low flow fluid they should be adding to attain the correct mix they selected for the speed in which they are pumping.

#### **Calibration:**

There is no calibration required for the display once the program is loaded.

IV. DP200

SPLASH SCREEN



MAIN SCREEN



SCRN – Switch to Run Screen, PGRM - Switch to Program Screen  
ADMIX - Switch to Add Mix Screen

RUN SCREEN



SCRN – Switch to Main Screen, PGRM - Switch to Program Screen  
ADMIX - Switch to Add Mix Screen

PROGRAM SCREEN



OK – Switch to Run Screen, SELECT – Switch to highlighted screen  
Up – Highlight previous, DOWN – Highlight next

MIX SELECT SCREEN



SELECT – Select current mix, Up – Show previous mix,  
DOWN – Show next mix

MIX ENTRY SCREEN



MIX – Select mix number, SELECT – highlight value to adjust  
Up – Adjust value up, DOWN – Adjust value down

SETUP PARAMETERS SCREEN



OK – Switch to Run Screen, SELECT – Switch to highlighted screen  
 Up – Highlight previous, DOWN – Highlight next

LAST 5 MIX SCREEN



OK – Switch to Run Screen

ADMIX SCREEN



OK – Switch to Run Screen

SET CONTRAST



SET TIME AND DATE

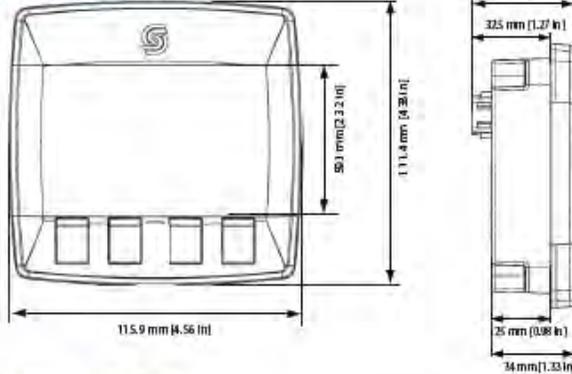


V. DP200 I/O

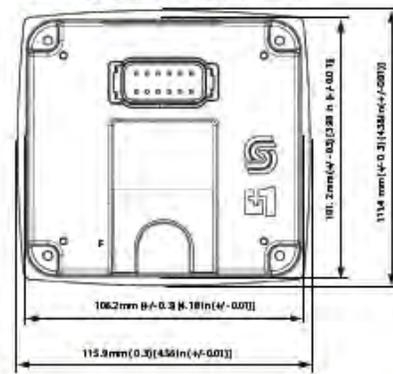


DP200 Series Graphical Terminal

Housing Dimensions



Mounting Panel Cutout Dimensions



DP200 Series Model Code

<b>A Model Name</b>	
DP200	Graphical Display, P 67 above panel
<b>B Inputs/Outputs</b>	
00	1 CAN port, 2 DIN/AIN
01	1 CAN port, 6 DIN/AIN
04	2 CAN ports, 2 DIN/AIN
<b>C Real Time Clock/Low Temperature Functionality</b>	
00	No RTC and LTF
01	RTC and LTF
<b>D Flash Memory/Application Key</b>	
02	2MB without Application Key
03	2MB with Application Key
<b>E Application Log</b>	
00	None
04	4MB
<b>F USB Port Type</b>	
00	None
01	USB Device

DP200 Series Product Parameters

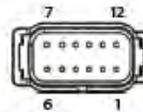
DP200 Series	
Processor	ARM 7 core 32bit/60 MHz
RAM	64KB on-chip, 512MB on board
FRAM	16 KB
Power Supply	9-33Vdc/6.5 Watts
Connector	Deutsch DTM-12
Type	LCD with 32 grayscale levels
Resolution	160 x 240 pixels
Viewable Area	80mm x 55mm [3.15 x 2.16]
IP Rating	IP67
Operation Temperature	Code C00: -20 °C — +70°C [-4°F — +158°F] Code C01: -40 °C — +85°C [-40°F — +176°F]
Storage Temperature	-40 °C — +85°C [-40°F — +176°F]
Weight	250g [0.5 lb]
Vibration Shock	5g/ 100g
EMC ESD	100V/m / 15kV
Digital Output (0.5A)	1

DP200 Series Available Models

DP200-00-00-01-00-00	10107021
DP200-00-01-03-00-00	10107380
DP200-01-01-02-00-00	10106883
DP200-01-01-03-00-00	10107381
DP200-04-01-02-00-00	10107022
DP200-04-01-03-00-00	10107382

DP200 Series Related Products Part Numbers

Deutsch Mating Connector Bag Assembly	10100944
DP2XX Mounting Hardware Replacement Kit	10107354
PLUS+1 GUIDE Single User License	10101000
DP200 Panel Seal Replacement Gasket	10107355



Use care when wiring mating connector. Diagram shows device pins.

DP200 Series pin assignments

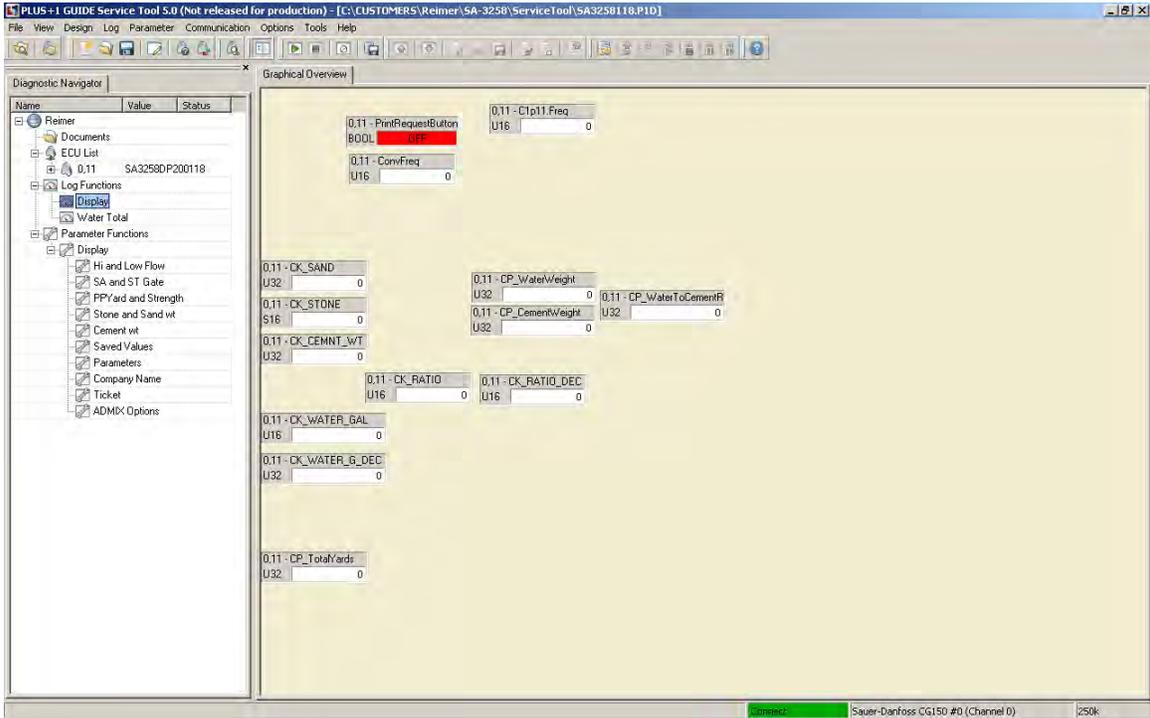
Pin	Assignment	Code B 00	Code B 01	Code B 04
1	Power ground-			
2	Power supply+			
3	CAN +			
4	CAN -			
5	AIN/ CAN Shield			
6	See Code B option	NC	DIN/AIN	NC
7	See Code B option	NC	DIN/AIN	NC
8	See Code B option	NC	DIN/AIN	CAN 1+
9	See Code B option	NC	DIN/AIN	CAN 1-
10	DIN/AIN/FREQ IN/ CURRENT IN			
11	DIN/AIN/FREQ IN/ CURRENT IN			
12	DOUT (0.5A)			

Comprehensive technical information: DP2XX Series Graphical Terminals Technical Information, 11023625  
Sauer-Danfoss product literature is online at [www.sauer-danfoss.com](http://www.sauer-danfoss.com)

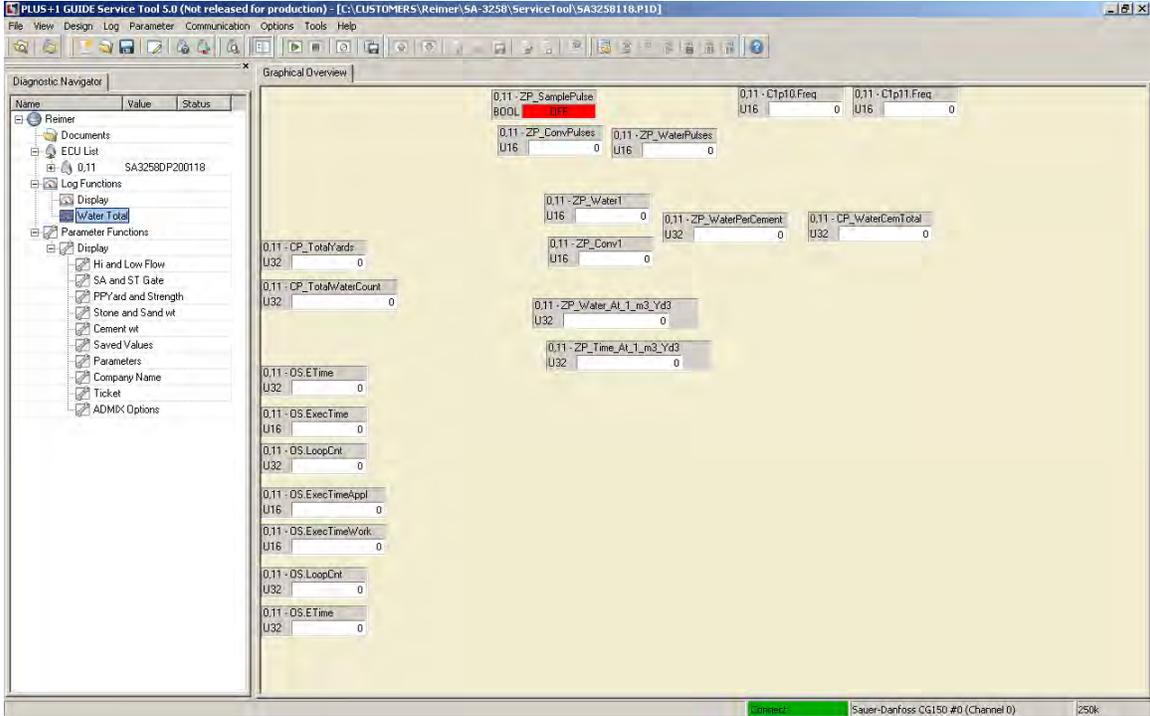


VI. Service Tool

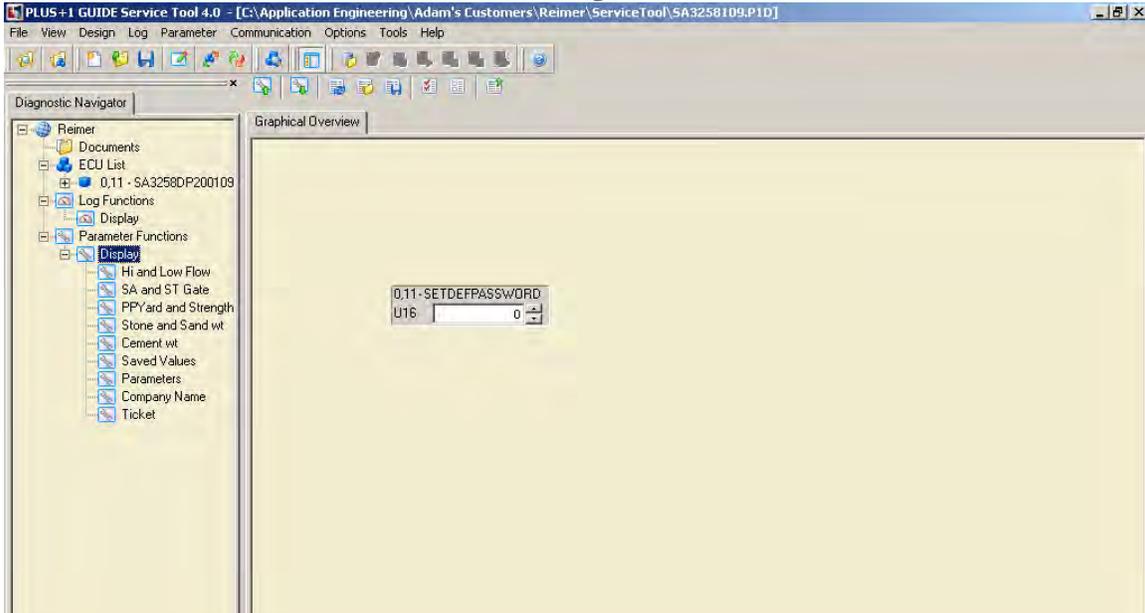
Main Screen



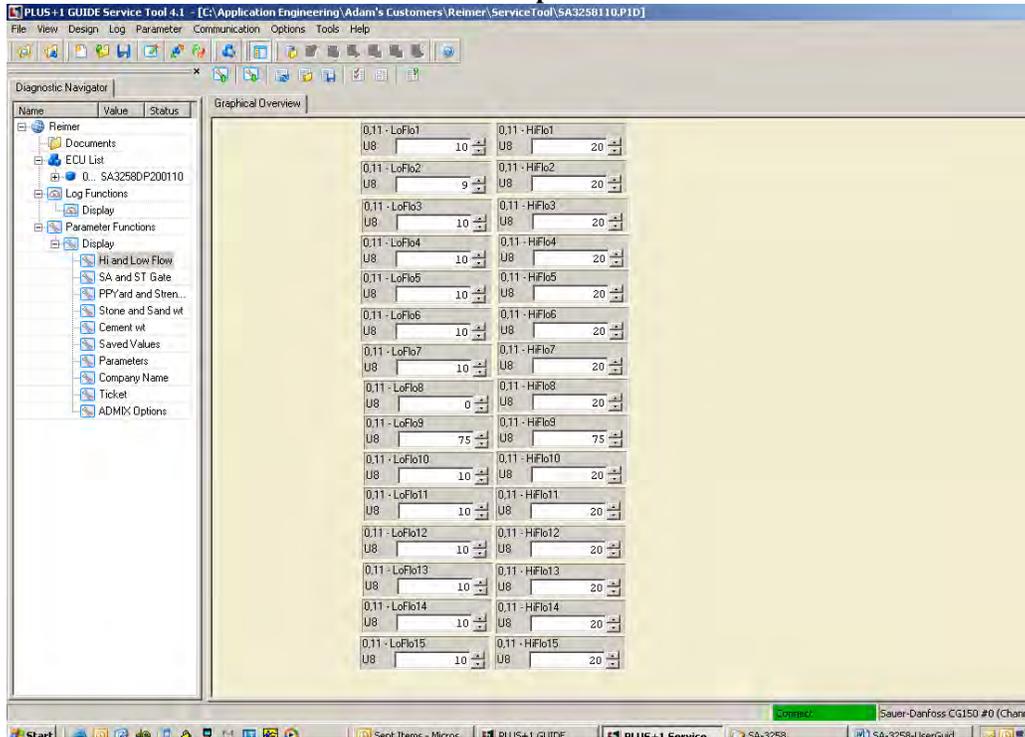
Water Total Screen



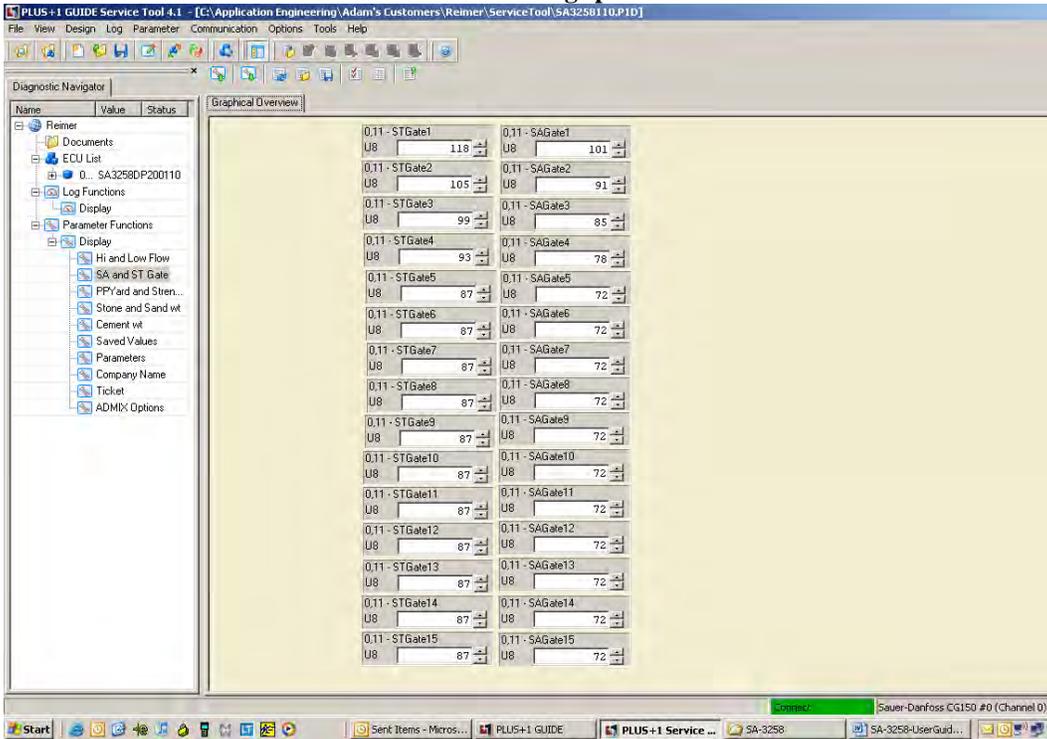
**Set Defaults Screen**  
 (If correct password is entered, all parameters go back to preset settings)



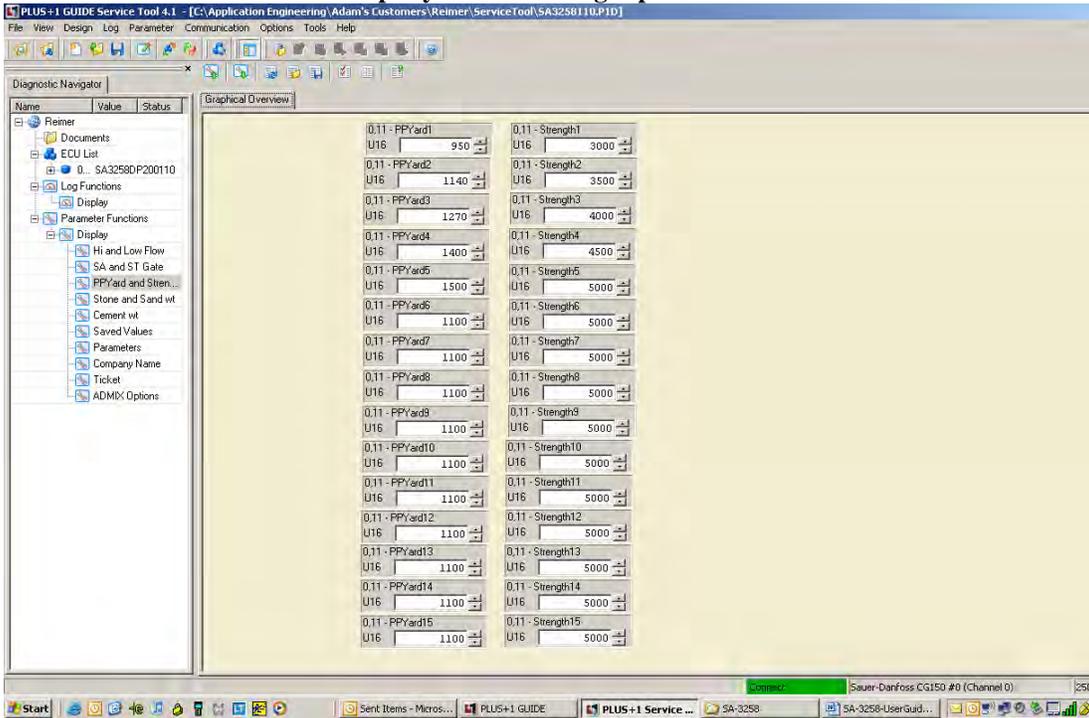
**Hi and Low flow presets screen**



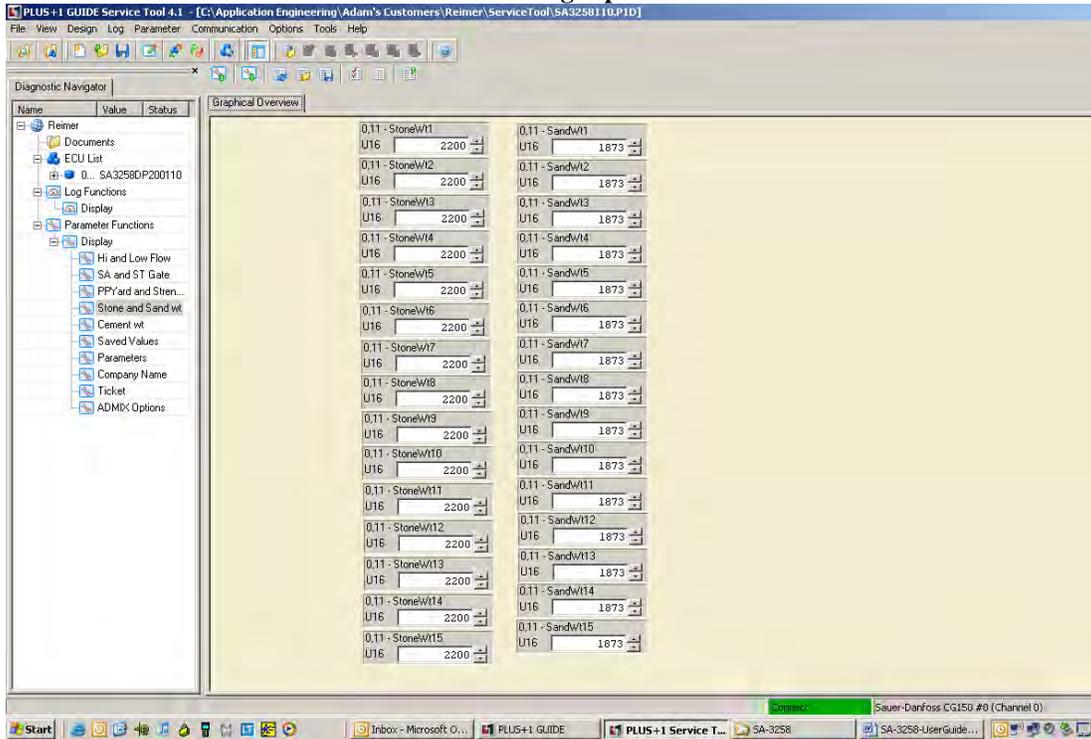
### SA and ST Gate settings preset screen



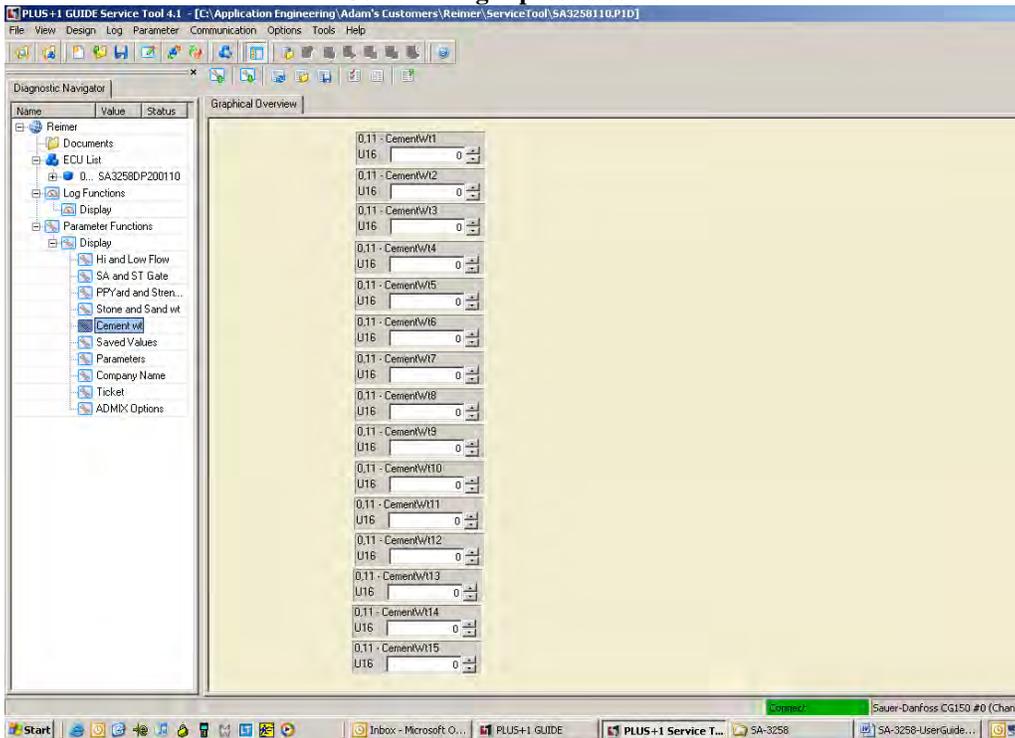
### Pulses per yard and Strength presets screen



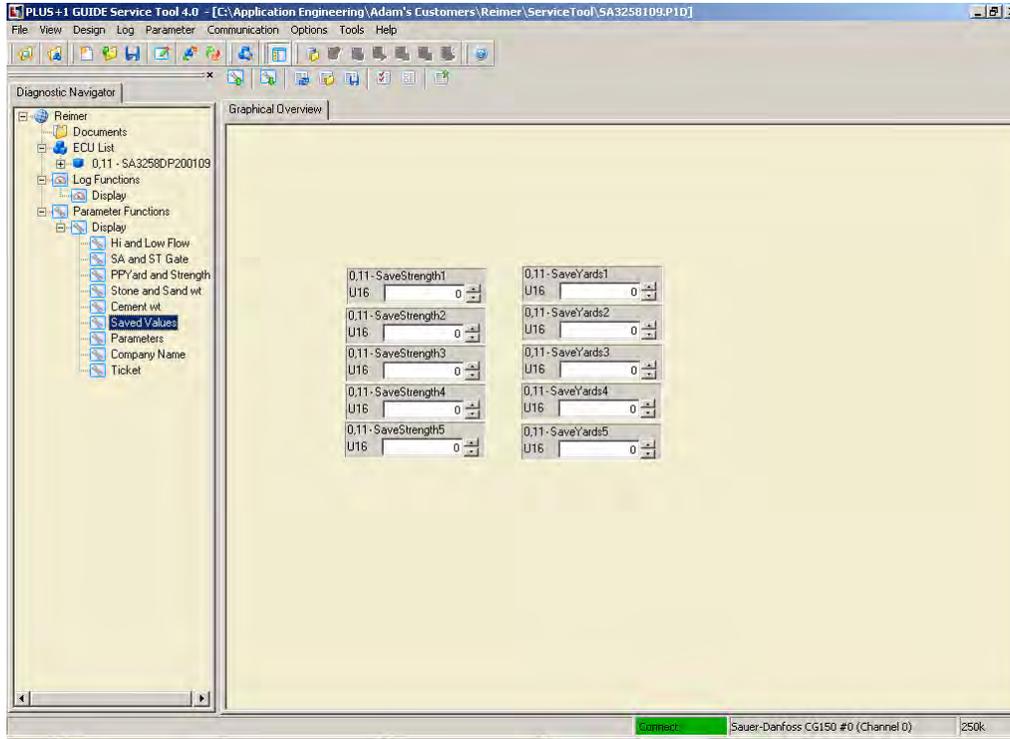
### Stone and Sand weight presets screen



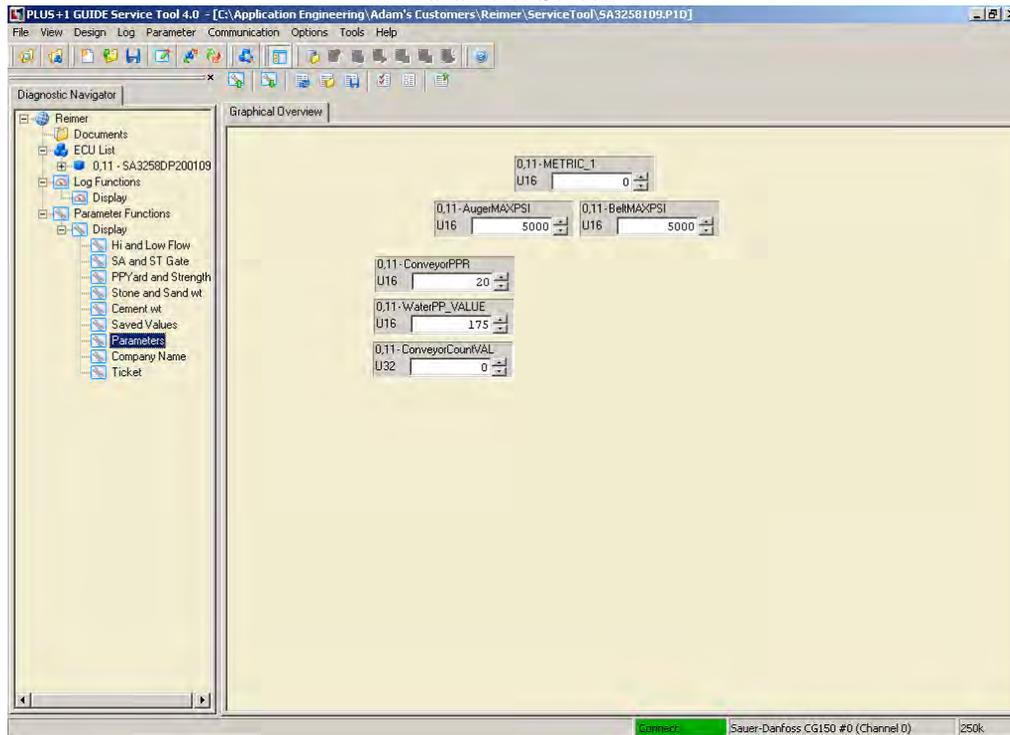
### Cement weight presets screen



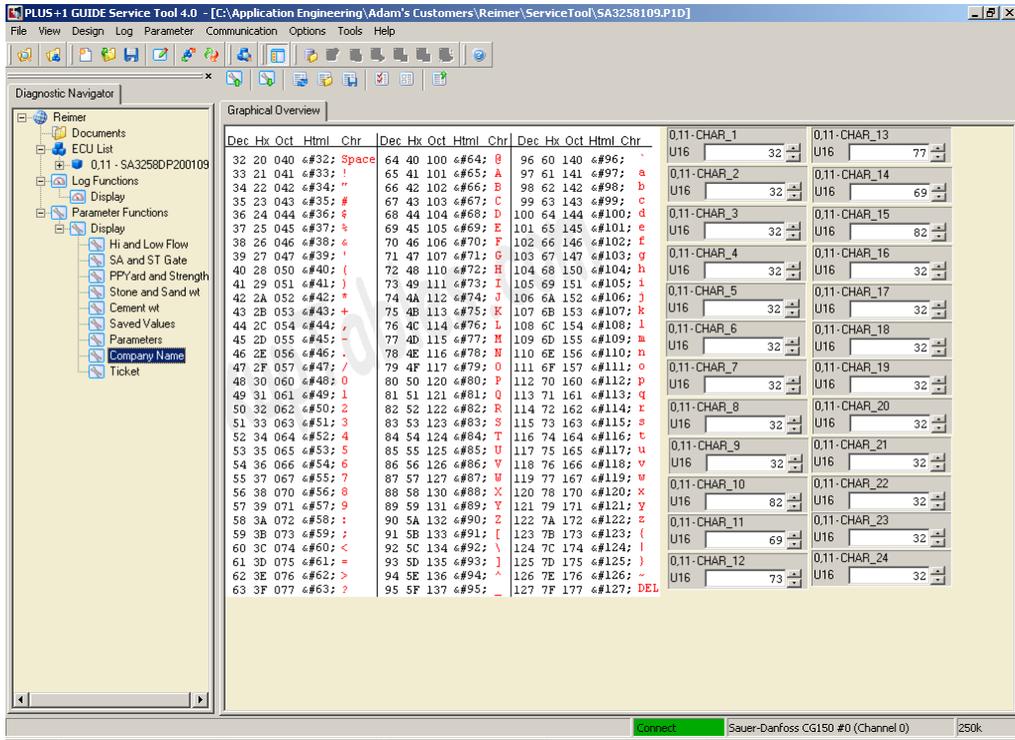
Last 5 saved values screen



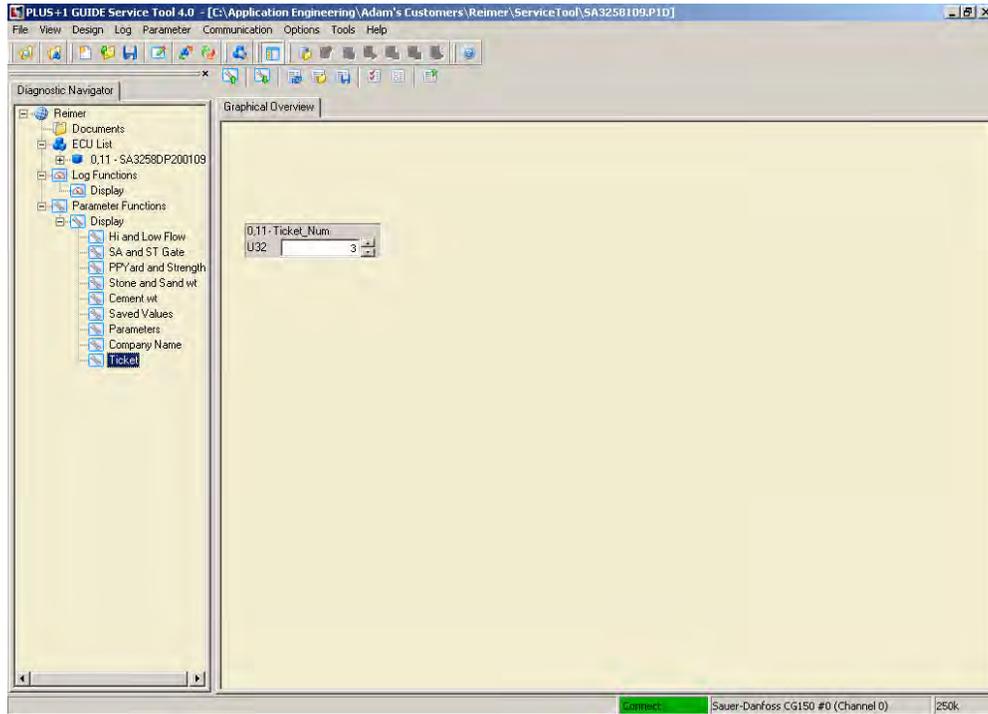
Parameter Screen



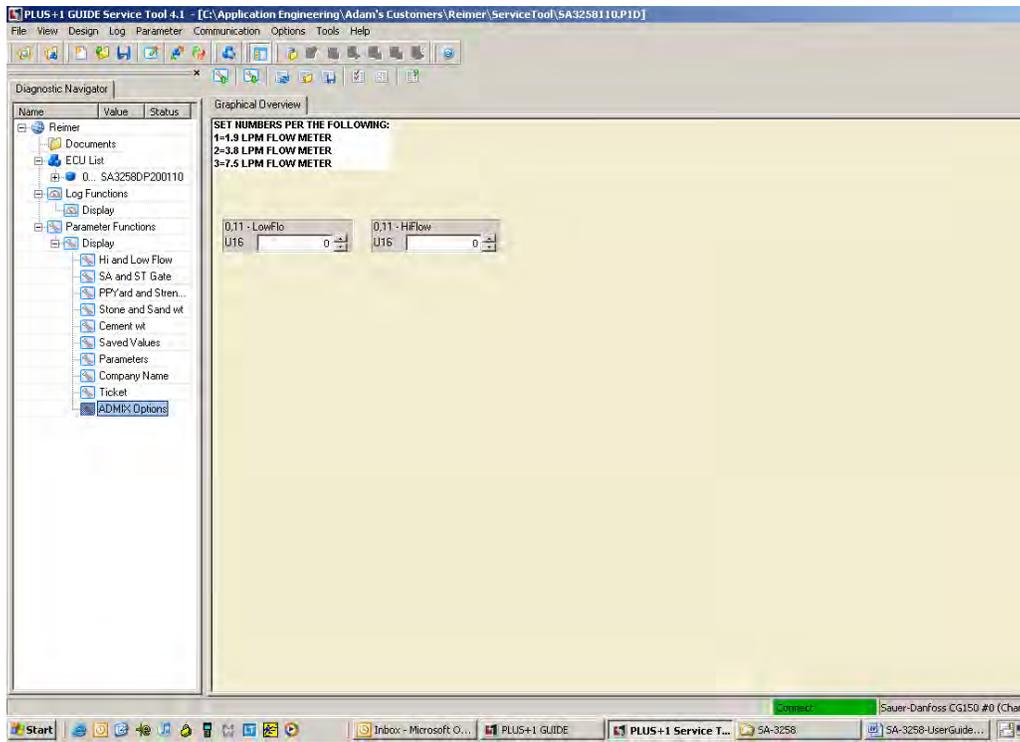
Company Name Screen



### Ticket Number Screen



### AdMix Meter Options Screen





DESIGNERS AND MANUFACTURERS OF ELECTRONIC CONTROLS

**KAR-TECH**.com

# **MEGA**

**RADIO REMOTE CONTROL SYSTEM**

**-PRELIMINARY-**

**INSTALLATION AND OPERATION MANUAL**

REIMER  
3A1931AJ.doc  
January 8, 2011  
BJ

# MEGA REMOTE

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## MEGA REMOTE

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## MEGA REMOTE

### DESCRIPTION

The MEGA REMOTE is a state of the art microprocessor based Radio Frequency (RF) control system. It will provide the operator the ability to wirelessly operate equipment. The operator is required to follow all OSHA [www.osha.gov](http://www.osha.gov) safety standards when operating the equipment.

The remote control system consists of the handheld radio transmitter and receiver module. Additional optional equipment such as wiring harnesses and Palm™ interface tools may be available.

The transmitter is equipped with pushbutton switches for the various functions . The

transmitter runs on 2 rechargeable batteries.

The system's radio receiver has CAN for J1939 output to accommodate the functions available on the transmitter. It also includes a port for RS-232 communication to allow software .

### OPERATION

Power must be applied to the receiver module for the system to work.

Pressing the POWER button will turn on the transmitter. Pressing and holding the POWER button until the LEDs flash and stop will turn off the transmitter. If the POWER or ESTOP button is pressed or the transmitter has been out of range for more than 2

## MEGA REMOTE

seconds, any outputs will be turned off as a safety feature.

Use the buttons on the keypad to operate the desired functions.

To save battery life, the transmitter will turn off when it is idle (no functions are used) for period greater than 15 minutes. The user must press the POWER button at this point to restore transmitter operation.

**The transmitter will NOT go to sleep as long as the receiver has power applied to it.**

## TRANSMITTER AND RECEIVER SYNCHRONIZATION

Each radio remote system is designed to operate with a unique radio ID code and RF channel sequence. Each receiver is programmed to respond *only* to the transmitter with the correct ID code/RF channel sequence for which it is set. This feature allows multiple systems to work in close proximity to one another without interference.

In the event that a transmitter becomes damaged and a new one is needed, the receiver can be reprogrammed to respond to the new transmitter. To teach the ID code to the receiver, use the following procedure.  
**\*Please note that if this procedure is interrupted**

## MEGA REMOTE

before it has completed, the system may have intermittent operation:

1. Turn the transmitter and receiver off
2. Press and hold the POWER button on the transmitter for more than 10 seconds. LEDs should blink at this point
3. Apply power to the receiver. Green LED stays on when teaching is in progress and it will double-blink when teaching is complete
4. Teach complete

## INDICATOR LEDs

The transmitter has two indicators, the red BATTERY indicator and the green TRANSMIT indicator. The green TRANSMIT indicator will blink 1x/second when transmitting and double-blink 2x/second when active but not transmitting.

The red BATTERY indicator starts blinking once every second when the battery voltage is low. Replace the batteries at this point for continued operation.

The receiver module can identify problems with the system in the form of an error code. Check the red indicator on the receiver to diagnose system problems. Then, refer to the ERROR CODE CHART in

## MEGA REMOTE

this manual for explanation of the error codes. The green LED indicator will blink on the receiver during normal communication.

### INSTALLATION

Refer to the WIRING CHART in this manual for hookup of the harness.

To install the receiver module, use the two mounting holes provided on the enclosure to attach it in a vertical manner with the connectors facing down. Please take extra caution not to damage internal components while installing. For high vibration applications, use shock absorbing mounts. It is advised to mount the unit as high as possible, keeping clear of metal obstructions around the antenna which

might affect RF performance.

The main power to the receiver should be connected through a switched, fused line capable of 20 amps. For best results, connect the power (+) to the receiver via an auxiliary terminal of the ignition switch, PTO switch, or ignition relay. Be sure that the ground (-) is connected securely to the chassis or battery with a star washer which digs into the base metal to insure good contact.

All connections must be properly insulated to protect against shorts.

Seal all connections with a non-conductive silicone grease to prevent corrosion.

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### **BEFORE APPLYING POWER!**

- Check power and ground for proper polarity.
- Check the wiring harness for possible shorts before connecting to output devices (i.e. valves and relays) by checking each mating pin terminal.
- Verify that the transmitter batteries are fresh.
- Read the rest of this manual.

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### USING THE OPTIONAL PALM™ INTERFACE

The Patented Palm Pilot™ interface, US patent No. 6,907,302, software is a very useful tool for troubleshooting the control system.

To use this tool, connect the Palm™ serial cable to the serial connector on the receiver control harness or adaptor, and apply power to the system.



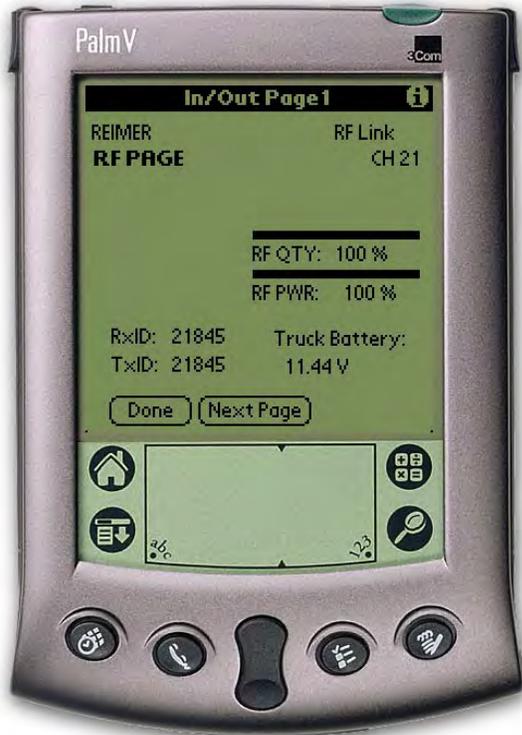
*Main Page*

Use the Palm's stylus pen and tap the icon REIMER to launch the application.

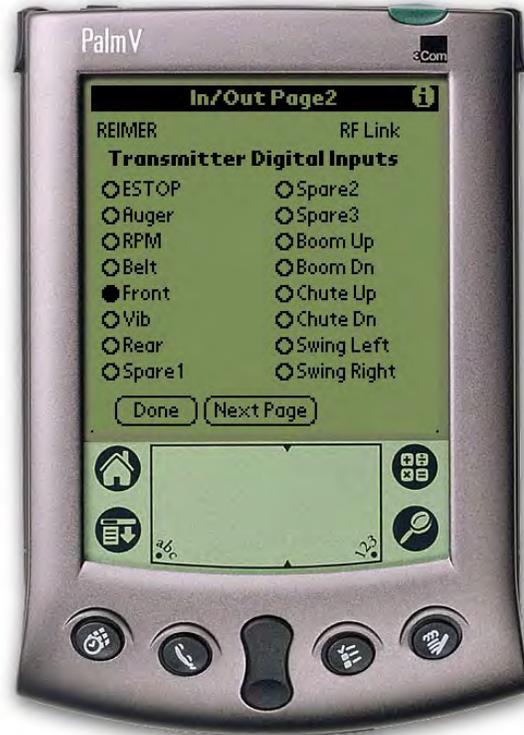
### DIAGNOSTIC

Tap the Diagnostic button to see the diagnostic screens, which shows the present state of remote communications, and system I/O.

## MEGA REMOTE



*RF Communications Page*



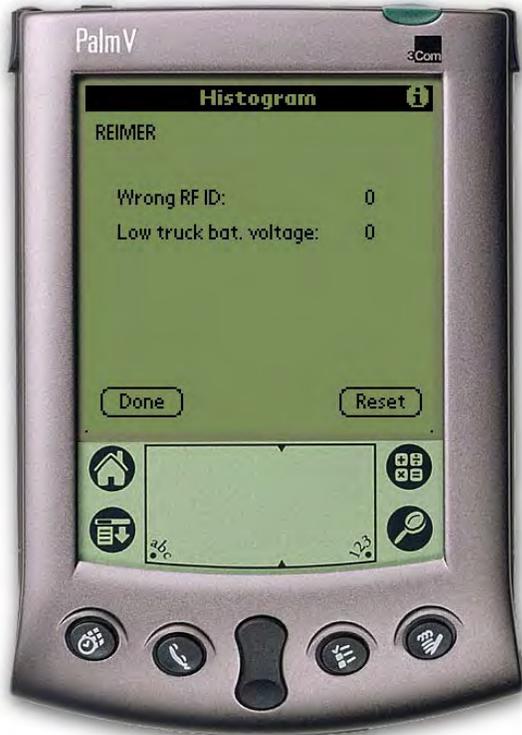
*Outputs Page*

When the round circle next to a label is dark, the corresponding ON/OFF input or output is sensed to be active or ON.

## HISTOGRAM

Tap the Histogram icon to see a set of screens that show which error codes are active and how many times the specific error code has been active.

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*Histogram Page*

This feature can be used to troubleshoot machine wiring and other problems. Tapping the **Reset** button resets the error code counts. The password to reset error codes is XXXXXXXXXX.

## FILE TRANSFER

Tap the **File Transfer** button to send new program files from the Palm to the receiver. New programs are

uploaded to the Palm via the Palm™ desktop as a \*.pdb file using HotSync™.



*File Transfer Page*

This is only used for software updates to the receiver. Tap the 'i' icon for more information on this procedure.

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### WIRING

<b>COLOR</b>	<b>DESCRIPTION</b>
RED	POWER A
BLACK	GROUND B
WHITE	CAN HIGH C
GREEN	CAN LOW D

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### CAN MESSAGING

J1939 message:

CAN BURD RATE: 250K

PGN: 65440

DATA BYTES SIZE: 8

DATA [0] LSB of Input

DATA [1] MSB of Input.

DATA [2]-DATA[7] RESERVED

We use the first two bytes for 16 switch input.

Here is the mask for switches.

```
#define ESTOP_MASK          0x0001
#define AUGER_MASK          0x0002
#define RPM_MASK            0x0004
#define BELT_MASK           0x0008
#define FRONT_MASK          0x0010
#define VIB_MASK            0x0020
#define REAR_MASK           0x0040
#define SPARE1_MASK         0x0080
#define SPARE2_MASK         0x0100
#define SPARE3_MASK         0x0200
#define BOOM_UP_MASK        0x0400
#define BOOM_DN_MASK        0x0800
#define CHUTE_UP_MASK       0x1000
#define CHUTE_DN_MASK       0x2000
#define SWING_LEFT_MASK     0x4000
#define SWING_RIGHT_MASK    0x8000
```

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### **ROUTINE MAINTENANCE**

Clean transmitter regularly with a damp cloth and mild detergent.

Inspect electrical wiring for wear points or other damage. Repair as required.

Inspect all connections for looseness or corrosion. Tighten and/or "seal" as necessary.

### **MAINTENANCE PRECAUTIONS**

When performing any inspection or maintenance work on the remote system, always exercise care to prevent injury to yourself and others or damage to the equipment. The following are general precautions, which should be closely followed in

carrying out any maintenance work.

Do not have hydraulic power available to the valves when performing electrical tests.

Never operate or test any function if any person is in an area where they could be hurt by being hit or squeezed by the hydraulic equipment.

Turn power off before connecting or disconnecting valve coils or other electrical loads.

### **TROUBLESHOOTING**

This next section provides basic operator level troubleshooting for the MEGA REMOTE system. If, after following these instructions, the system still does not function, contact your KAR-

## MEGA REMOTE

TECH representative for  
further instructions or  
servicing.

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### TROUBLESHOOTING CHART

<b>PROBLEM</b>	<b>SOLUTION</b>
1. No functions work	<ol style="list-style-type: none"><li>1. Check that transmitter power is on</li><li>2. Check that receiver power is on</li><li>3. Check system wiring for power into the system</li><li>4. Check LED status display for system status</li><li>5. Check for proper grounding of system's electrical circuit</li><li>6. Check system's hydraulic system</li></ol>
2. Certain functions do not work	<ol style="list-style-type: none"><li>1. Check the wiring connection from the system to the valve coil for the output function that does not work</li><li>2. Check LED status display for possible fault or error indication</li><li>3. Check system's hydraulic system</li><li>4. Check system's electrical system</li></ol>
3. Functions operate intermittently	<ol style="list-style-type: none"><li>1. Loose connector at the valve coil</li><li>2. Check LED status display for system status</li><li>3. Check receiver antenna for any damage and proper connection</li><li>4. Check system's hydraulic system</li></ol>

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### ERROR CODES

ERROR CODE	PROBLRM CAUSE
1	COMMUNICATION ERROR
2	WRONG RF ID
3	LOW TRUCK BATTERY

#### **Error code explanations:**

- 1** Transmitter is off  
Transmitter went to sleep mode  
Interference in RF communication link
- 2** Transmitter and receiver are not synchronized
- 3** Battery is below 10.5V (12V system) or 21V (24V system)

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### PARTS LIST

<b>PART NUMBER</b>	<b>DESCRIPTION</b>
<b>3A1932A</b>	RADIO TRANSMITTER
<b>3A1933A</b>	RADIO RECEIVER
<b>B20152A</b>	INDUCTIVE CHARGER

There are no user-serviceable parts inside the transmitter or the receiver. Return the units for service.

Note: For operation with negative ground systems only.

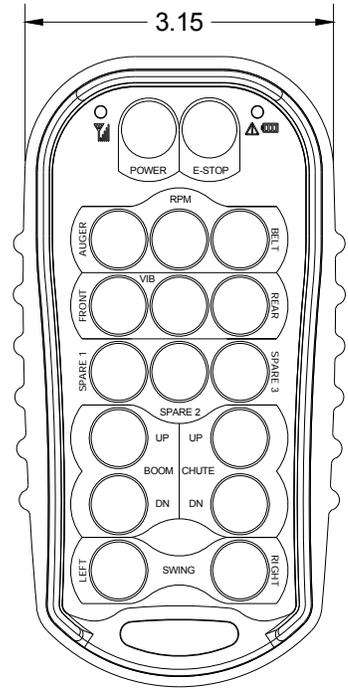
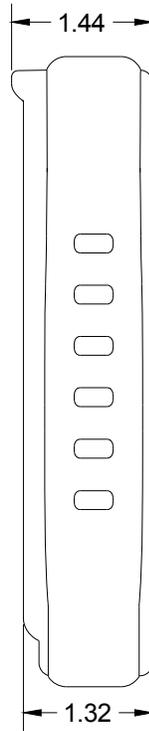
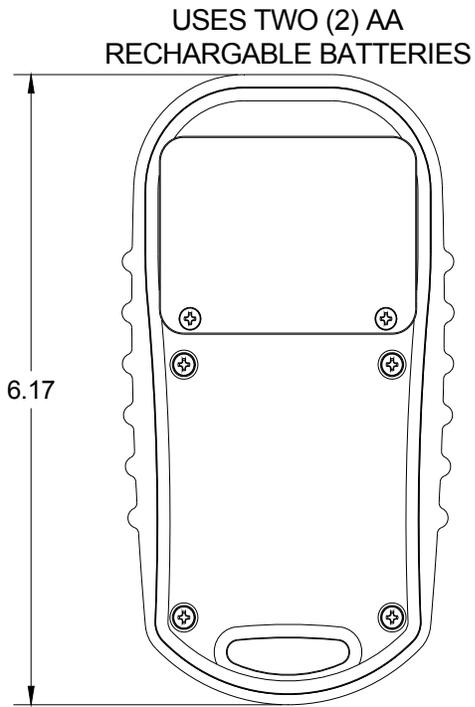
#### **WARNING:**

The MEGA REMOTE must be operated in compliance with all applicable safety regulations, rules, and practices. Failure to follow required safety practices may result in death or serious injury.

The information, specifications, and illustrations in this manual are those in effect at the time of printing. We reserve the right to change specifications or design at any time without notice.

# MEGA REMOTE

## TRANSMITTER PICTORIAL





# MEGA REMOTE

## SPECIFICATIONS

### **FCC ID:** P4U-VRTS

Industry Canada Certification Number: 4534A-VRTS

EQUIPMENT CLASS: PART 15 SPREAD SPECTRUM TRANSMITTER

### **TRANSMITTER**

Power .....	2 x AA rechargeable batteries
Operating temperature - Radio .....	-40 °C to +85 °C
Storage temperature.....	-40 °C to +100 °C
RF Frequency.....	2.4 GHZ
RF Transmit power (EIRP).....	33 mW
LCD display operating range (if equipped).....	-20 °C to +70 °C
Vibration .....	3G to 200Hz
Shock .....	50G
NEMA.....	12

### **RECEIVER**

Power supply voltage .....	9-30VDC
Operating temperature.....	-40 °C to +85 °C
Storage temperature.....	-40 °C to +100 °C
Outputs.....	5.0A max each, sourcing
RF Frequency.....	2.40GHZ
Vibration .....	3G to 200Hz
Shock .....	100G
NEMA.....	4X

## MEGA REMOTE

### INSTRUCTION TO THE USER

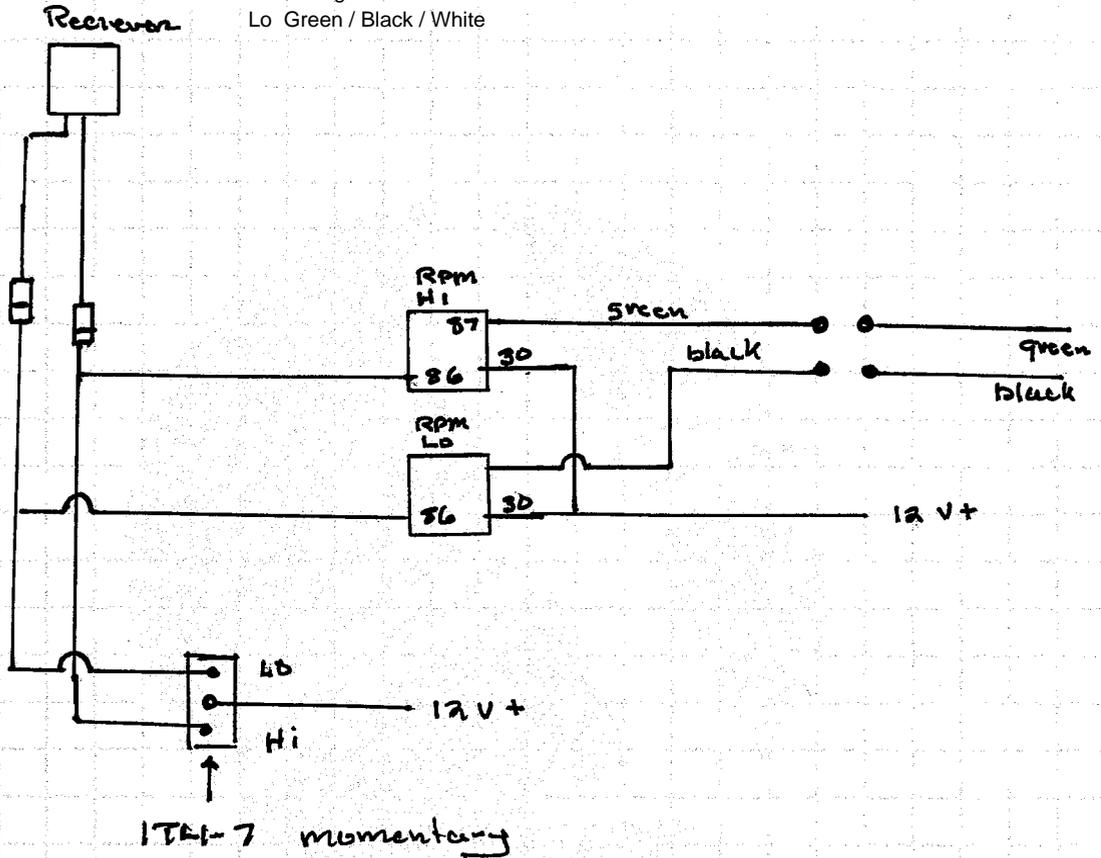
This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- \* Reorient or relocate the receiving antenna.
- \* Increase the separation between the equipment and receiver.
- \* Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- \* Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

SUPPLIMENTARY ELECTRICAL DRAWING

Hi Orange / Green  
Lo Green / Black / White



Transmitter	
AUGER ON/OFF	BELT ON/OFF
RPM HI	RPM LO