





Sysdyne Technologies

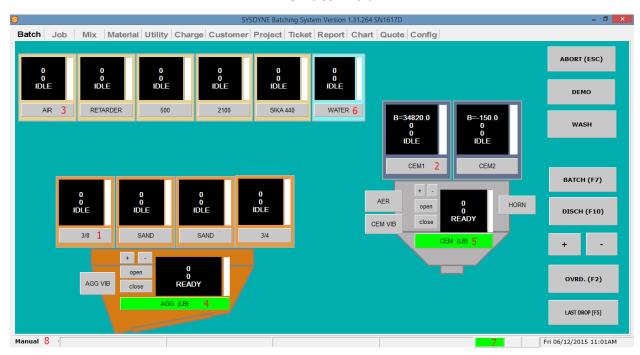
Customer-oriented innovator

Batch Control
Quick Start Manual

Sysdyne Technologies, LLC, d/b/a Sysdyne

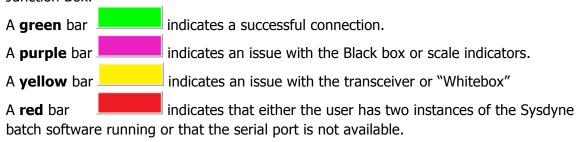
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The Batch Tab

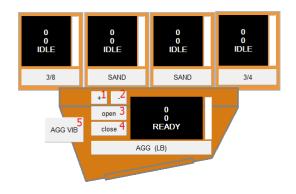


This is the **Sysdyne Batch screen**. It is a virtual button panel in real-time. Most of the plant equipment can be controlled through this virtual panel.

- 1. The button to activate the bin gate for the 3/8 material.
- 2. The button to activate the bin gate for the CEM1 material.
- 3. The button to activate the pump for the Air Admix.
- 4. The indicator showing the status of the Agg Scale gate (Green is Open/Active)
- 5. The indicator showing the status of the Cem Scale gate (Green is Open/Active)
- 6. The button to activate the pump for the water.
- 7. The indicator showing the status of the connection to the Transceiver in the Electrical Junction Box.

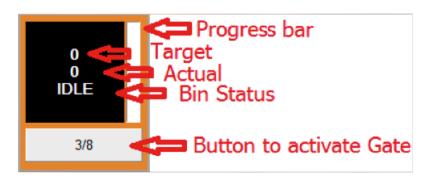


8. The Operation mode of the system. Automatic mode disables the manual panel from weighing or metering any material. In Manual the operator can weigh and meter material from the manual panel.



This is a scale with 4 materials. In this case the materials are in overhead bins. This is typically how weighed materials are represented in the Sysdyne batch screen. Below are the control options for this scale only.

- 1. Increase target discharge rate
- 2. Decrease target discharge rate
- 3. Open scale gate
- 4. Close scale gate
- 5. Vibrate Scale



Some **Bin Statuses** include:

IDLE: Not active

OVER: Actual weight has exceeded Target weight tolerance.

JOG: The bin is in jog mode.

SETTLING: The gate is closed waiting for the weight to stabilize.

PAUSE: The gate is paused.

FEED: The gate is feeding the scale. While feeding the "button to activate gate" will be green.

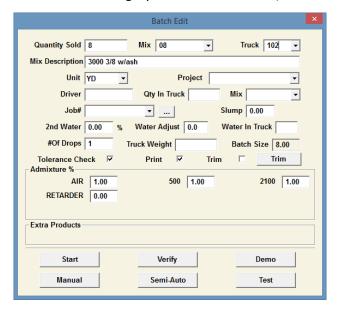
There are also **nine buttons** on the right of the Batch screen.

ABORT (ESC): The abort button will terminate the load and clear the screen. If pressed during an actual load the system will end the load, if activated when no load is in process the system will clear the screen. Its keyboard shortcut is the esc key.

DEMO: This button will disable control to the plant from the virtual panel. Clicking on any button in the batch screen will only do a simulation.

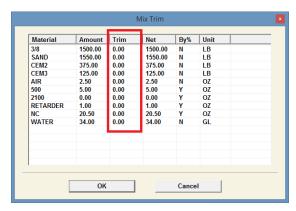
WASH: Allows for the automated process of loading water. Select the water, enter the amount and click on start. The system will load the desired amount of water automatically.

BATCH (F7): Hitting this button will bring up the window below, the Batch Edit:



Here you will enter the amount to Batch in the **Quantity Sold** field, the mix design in the **Mix** field, and the truck number in the **Truck** field.

Any adjustments can be handled with the **Trim** button Trim



When the Trim button is clicked this Mix Trim window will appear. Here the adjustments are handled on a per yard basis. All constituents can be modified by entering a value in the Trim column. A positive number will add to the amount, a negative value will subtract. Any adjustments can be seen in the Net column.



The Admixture% is where we can quickly adjust the amount of admix going into the load by percentage. In the picture above we see a value of 1.0 automatically assigned to the AIR. If we alter this value to 1.5, we increase the amount called for in the mix design by 50%. Reducing it to .50 will halve the amount in the mix design. This is all on a per yard basis.

There are six more buttons at the bottom of the screen:

Start	Verify	Demo
Manual	Semi-Auto	Test

START: Start the weight up process of a load without a verification screen.

VERIFY: Start the weight up process with a verification screen. A verification screen is where the calculated targets based on moisture, trims, and absorptions are displayed on the screen before the weighing begins.

DEMO: Start the weigh up process in simulation. All processes will be simulated accurately.

MANUAL: The system won't weigh up but the targets will be present on screen. The user will be responsible for accurately manually weighing up the material. The targets can be met by either the virtual panel on screen or the physical button panel. This mode will produce a ticket, batch weights, and track inventory when in manual mode.

SEMI-AUTO: Same as manual mode except the admixtures will be batched automatically.

TEST: The system will enter a simulation mode where scale weights can be simulated without the need of potentiometers.

DISCH (F10): Begin loading truck.

[+][-]: Speed up charge rate (+). Slow charge rate (-).

OVERD. (F2): This button will accept any weight that is over tolerance. The system will warn the user in red font along with an audible alarm. F2 can also be used to continue from tare errors and admix bottle empty errors. The keyboard shortcut is F2.

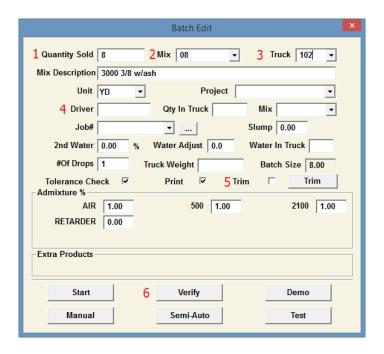
LAST DROP (F5): This button is more typically used in a block plant operation. If 50 yards are splits into 5 loads and the operator decides that the 4th load is enough material, activating F5 will make the 4th drop the last one.

Quick Start Guide to Batch:

Click Batch(F7)

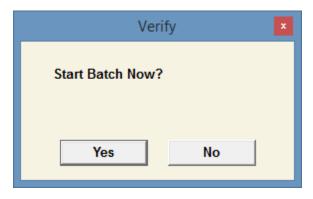
BATCH (F7)

or the shortcut key F7.



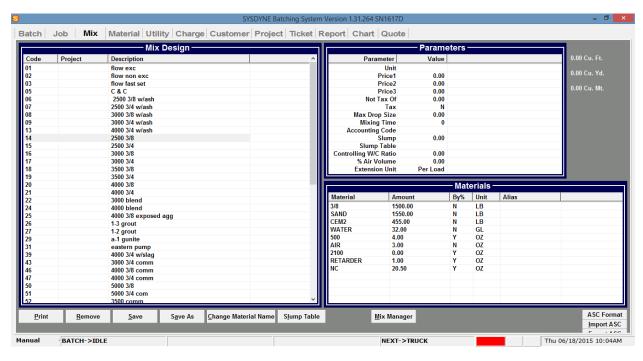
- 1. Enter the quantity to be loaded in this batch.
- 2. Select the mix design.
- 3. Select the truck or input the truck #.
- 4. Input Driver name.
- 5. Make any adjustments to your mix
- 6. Click on verify Verify

The verify screen will display all of your targets for this load, along with the verification window below.



Select "Yes" if satisfied with the target. The system will batch the Mix.

The Mix Tab



This screen is where mix designs are created. There are **3 windows**.

Mix Design: In this window we can select a code for the mix design, a project that uses it and a description detailing the specifics of the mix.

Parameters: In the parameters window we can select a unit, up to 3 different prices for this mix, Taxability, Max drop size, a mixing time (if Central Mix), and a slump.

Materials: Here we enter the ingredients that will go into the mix.

Quick Start Guide to Creating a Mix:

- 1. Enter a code for the mix in the Mix Design.
- 2. Enter a project if applicable.
- 3. Enter a Description of the mix.
- 4. Select a unit in Parameters.
- Select a Price or Prices.
- 6. Select "Y" if taxable.
- 7. Select Max Drop Size.
- 8. Select Mix Time if applicable.
- 9. Enter Slump.
- 10. In Materials, select your first material.
- 11. Enter Amount.
- 12. Repeat the material selection (Step 10) until mix design is complete.
- 13. Click save <u>Save</u>

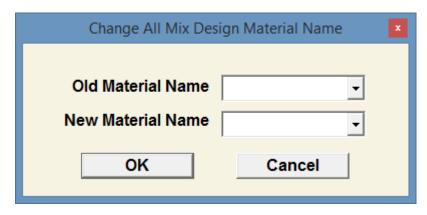
Removing a material from the mix design:

In the materials window, select the material, and click Remove

Remove

Replacing a material with another in all mixes at once:

- 1. Select a mix that contains the material to be replaced
- 2. Click on Change Material Name Change Material Name



- 3. This window will appear. Select the Old Material Name from the drop down.
- 4. Select the New Material Name.
- 5. Click OK.

The Job Tab

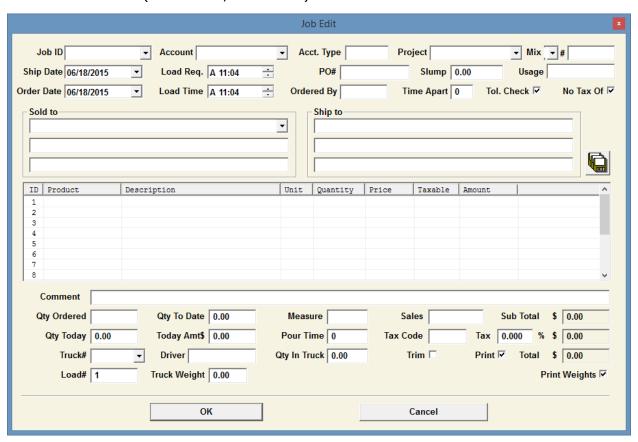


The Job Tab is a scheduler that receives all incoming tickets from dispatch and stacks them on this screen. It also stacks any located created jobs.

All created Jobs can be viewed with the search and query buttons. They can be summoned by Querying the dated range that is selected in the Job tab. Selecting the search option will bring up a more detailed search option.

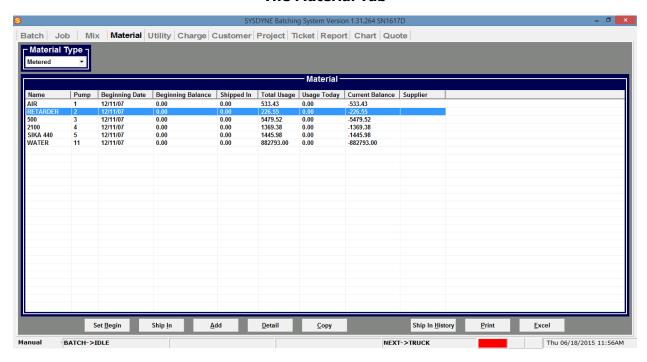
Quick Start Guide to Creating a Job:

Click the Add button (bottom row, first button).



- 1. Enter a JobID. If the user does not enter one, Sysdyne batch will generate one automatically in numerical order. The system will store all the Jobs created locally. It is useful to use a descriptive JobID as some jobs may be reused in the future and a descriptive ID will aid in finding them. Selecting the JobID dropdown button will list all previous jobs created locally.
- 2. Select an Account.
- 3. Enter a shipping address and directions.
- 4. Select a mix design and the quantity to be loaded per load (Mix design must be Item 1).
- 5. Select any extra products in the next lines.
- 6. Enter total quantity ordered by the customer.
- 7. Enter truck # (if applicable).
- 8. Enter driver (if applicable).
- 9. Check the "Print Weights" check box if batch weights are required.
- 10. Click OK.
- 11. Select Job, click Batch.

The Material Tab



The Material tab contains all of the inventory information as well as configurations for each material.

Inventories are entered in this tab. A **Set Begin** value is necessary to begin tracking inventory. After the Set Begin value is set, the user can then continue by entering shipments with the **Ship In** button. All the ship in values will be stored in the **Ship in History** for records. The Sysdyne Batch software will keep an accurate inventory by deducting the appropriate amounts for each material, whether it was batched automatically or manually.

Material Type: Select between metered and weighed.

Set Begin: Set a beginning balance for the selected material.

Ship In: Add any shipments that need to be updated into inventory.

Add: Add a material profile.

Detail: Brings up Material Profile.

Copy: Makes copy of selected Material.

Ship In History: History of all Ship In entries.

Print: Prints the Materials in system.

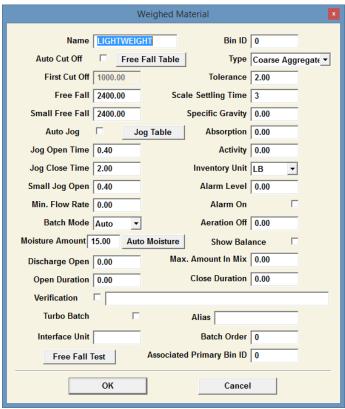
Jog Tables:

Each weighed material profile has the ability to use the **Jog Table** feature.

Getting to the **Jog Table:**

Click the Material drop down > (Material Type) Weighed > Double click on desired material

Fig 1.0

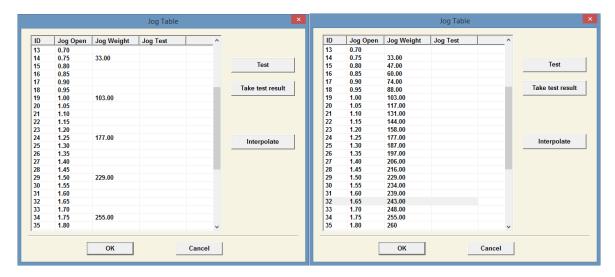


The **Jog Table** is a log that stores weight values in relation to the time the gate was held open.

Once Sysdyne Batch has known weights and jog time associated with them, the system will use this information to weigh up a material usually within two jogs.

Sysdyne Batch weighs materials by the following process:

- A target will be dictated by the mix design, moisture percentage and absorption.
- The system will then hold the gate open until the Slow Cut Off target is reached.
- The Slow Cut Off will allow it to stop a couple hundred pounds short of the target.
- The system will now enter Jog mode. For example, if it stops 500lbs short of target the
 system will search for the closest value within tolerance to 500lbs and open the gate for
 the associated Jog Open time. If the actual weight is still not within the tolerance
 allowed, the system will repeat another Jog Open associaeted with the remaining
 amount.



Test Samples taken at .25 intervals

Test Samples with Interpolation

ID: Identification number.

Jog Open: The amount of time in seconds the gate will be held open. Can be entered by user.

Jog Weight: The amount in lbs. or kgs. the system recorded during weighing (Auto Jog must be enabled) or first Test.

Jog Test: The amount of weight recorded with the Test button.

Test: This will tell the software to open the gate for the amount of time selected (the time can be selected simply by clicking on its **ID**) and record the amount of weight dropped. Smaller intervals give more accurate data. Tests done at .25s intervals are more accurate than tests done at .50s intervals.

Take Test Result: Takes the result in **Jog Test**, if different from **Jog Weight**.

Interpolate: Interpolates any gaps between Jog weights.

OK: Accept Values.

Cancel: Discard Values.

Quick Start Guide to Jog Tables:

- 1. Select the Materials tab. Make sure "Weighed" is selected in the Material Type dropdown menu.
- 2. Double click on the desired material to create its Jog tables.
- 3. Click on the Jog Table button. Jog Table
- 4. Select Jog Open .50 or ID 8. This is done by clicking on ID 8, and then clicking the Test

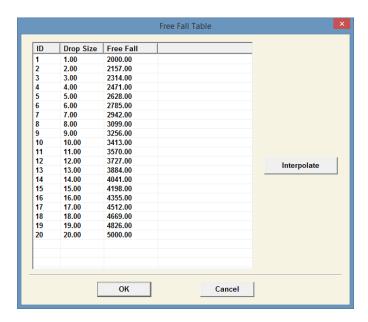
 Button

 Test
- 5. A weight will be recorded for the .50s jog.
- 6. Repeat the process at .25s intervals until Jog Open 2.50 is reached or ID 50.
- 7. Click the Interpolate button. Interpolate
- 8. Exit by clicking the OK button.

Quick Start Guide to Free Fall Tables:

The Free Fall table is similar in function to the Jog table. When populated with values, the system will dynamically choose a free fall value depending on the number of yards batched.

- 1. Select the Materials tab. Make sure "Weighed" is selected in the Material Type dropdown menu.
- 2. Double click on the desired material to bring up its Free Fall table.
- 3. Enter Free Fall values for each Drop size.
- 4. If you omit values for drop sizes, you can click Interpolate and Sysdyne Batch software will predict its Free Fall.
- 5. Click OK.

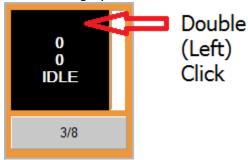


Batch Flex:

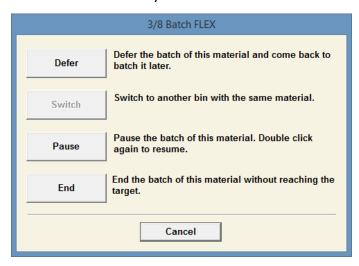
Batch Flex is a feature that allows the user to intervene during Material weigh up. While a Material is in the weigh up process, the user can double click on the black portion of the material icon and be prompted with the following menu.

Quick Start Guide To Batch Flex:

1. Start the batch. Double click on the black portion of the material icon that you wish to bring up the batch flex feature.

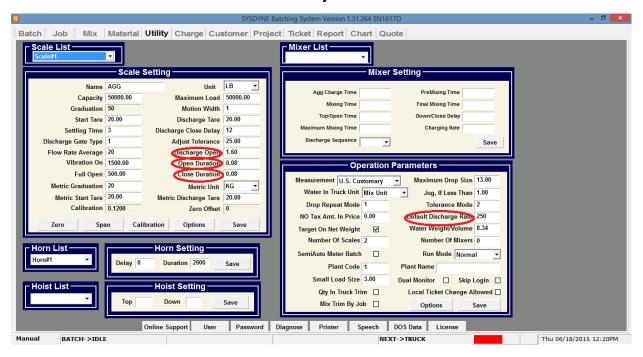


2. Select the action that you wish to enable.



It is important to note that when Pause is selected the user must double click on the icon again to resume it (user must click the space indicated in Step 1).

Utility Tab



The utility screen is where many system settings are configured – they are preconfigured by default. For this quick start guide we will only cover the most commonly used settings. The settings below help control discharge into the truck.

Discharge Open: The Initial amount of time the gate is opened at the initial start of discharge.

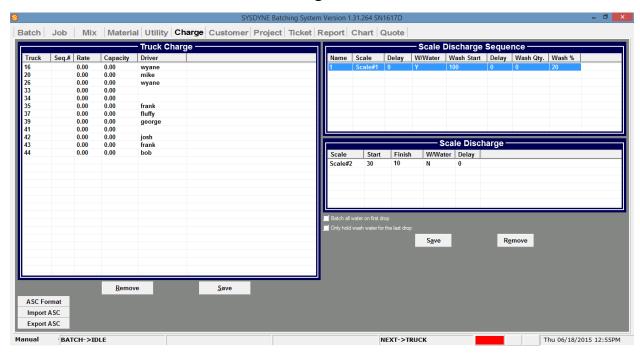
Open Duration: The amount of time the system will open the gate for if the flow rate is below the estimated rate.

Close Duration: The amount of time the system will close the gate for if the flow rate is above the estimated rate.

Default Discharge Rate: This charge rate is the combined total rate for both Agg and Cem. A rate of 250 will be roughly dived into 200lbs/s for the agg and 50lbs/s for the cement. This ratio is controlled in the Charge tab.

Horn List: Here we can select a delay time for the horn in milliseconds. Setting a delay of 2000 will rise the boot (if applicable) for 2 seconds then blow the horn. The duration is the amount of time horn will be on for.

Charge Tab



The Charge Tab stores truck information as well as discharge sequences.

For the Truck Charge we can assign it a number, a sequence to follow, a discharge rate, maximum capacity, and assigned driver. A rate of 0 is invalid - the system will default to the Default Discharge Rate set in Operation parameter in the Utility tab. Any number above 0 is valid.

The window labeled **Scale Discharge Sequence** is where the main scale is selected. All other scales entered in the Scale Discharge window will discharge relative to it.

Name: Select the scale name identification.

Scale: Select the main scale.

Delay: Select the delay in seconds to wait after Discharge (F10) is activated.

W/Water: Allow water to batch in tandem with the main scale. (Y=Yes, N=No)

Wash Start: When to start the wash (tail water). Example: a value of 95% means the wash water will start when 95% of the material in scale one is in the truck or mixer.

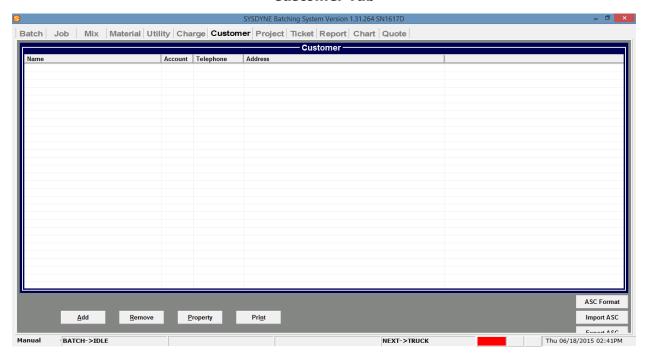
Delay: A delay in seconds of the water after wash start % is met.

Wash QTY: Select a wash quantity in gallons.

Wash %: Select a wash quantity by percentage of total water in mix design.

The **Scale Discharge** Window is where a second scale can be configured to discharge relative to the main scale. For example, in the screen above, we see scale#2 selected. This is our cement scale. The scale is set to start discharge when 30% of the material in scale#1 is in the truck, and it is configured to finish when 10% of the material is still in the scale. These percentages will dictate the charge rate of the material in scale#2, which in this case is cement. You will also notice the W/Water option is set to "N", so no water will ever be discharged in tandem with cement.

Customer Tab



This is the tab were customer accounts are entered and their information is stored.

Quick Start Guide To Creating Accounts:

Click the add button to add an account. The window below will pop up.

Customer				
Account Code		Account Type		
Name				
Tax Rate		Credit Limit	9999999999.00	
Telephone		Credit Used		
Tax Code		Price Code		
Address				
Comment				
Salesman				
Ship To				
0	к	Car	ncel	

Account Code: An alphanumerical value.

Account Type: COD or OPEN

Name: Name of customer Tax Rate: Local Tax Rate

Price Code: 1, 2, or 3. The prices are set in the Mix tab, under the Parameters window.

Once the necessary fields are populated, click the OK button.

We hope this Quick Start manual was helpful and will get you up and running. If you have any additional questions about Sysdyne batch, you can call at (203)327-3649 during normal working hours. Thank you!