



# **BatchLink**

# **Help Guide**

**VERSION 2.2**

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## Introduction

Plant Studio, Link Application (BatchLink), allows you to control the production of concrete and manage concrete quality. BatchLink has following three main functions:

1. Concrete production management. This function is accessible from the menu "Order Entry".
2. Concrete production monitoring and control. This function is accessible from the menu "View" "Plant Ctrl".
3. Report functions. All the reports are accessible from the menu "Report".

There are other essential utilities which are designed to support the above three functions. They are:

- (1) Mix design functions, which are accessible from the menu "View" "Formula".
- (2) Material receipt, which is accessible from menu "View" "Receivership".
- (3) Report designer and HMI (human machine interface) designer, which are accessible from the menu "Tools" "Report Design" and "HMI Design".

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## Menus

### Menu File

This menu has all the commonly used database maintenance commands.

1. Menu "Renew": Empty and re-initialize the data table. This function is only available when a table editor or a report selector is active.
2. Menu "Close": Close the currently active data table.
3. Menu "Save as CSV File": Saves current active data table to a CSV file. MS Office Excel or Access can be used to read these CSV files. This function is only available when a table editor or a report selector is active. "How to Print the Mix Design" section shows an instance of how to use this function.
4. Menu "Backup Database": Save all data to default backup folder or any pre-determined folder. "How to Backup All Saved reports" has more information on this function.
5. Menu "Import Text File": Imports a text file into the database. The text file can be a batch report saved on the PLC memory card or a CSV file modified by MS Office Excel or Access. "How to use PLC Memory Card" section has more information on how to read a PLC memory card file. "How to Edit Mix Design outside the BatchLink Application" has more info on how to read CSV files.
6. Menu "Import Database File": Import backup database file back to the system. "How to Import Report from Previous Backup / Archived Database" section has more information on how to use this function.
7. Menu "Page Setup": Setup reports for a specific printer.
8. Menu "Print to Clipboard": Only available when a report is active. Send a report to Windows system clipboard. Windows System clipboard can be used to paste reports into other applications.
9. Menu "Print": Only available when a report is active. Send report to a specific printer.
10. Menu "Exit": Close BatchLink application

### Menu Edit

This menu is only available when a data table is active and has all the commonly used table edit commands. For cell edit, there are Copy, Paste and Delete commands. For row edit, there are Delete Selected Row(s), Copy Row commands. For column edit, there are Rename Selected Column, Hide/Show Selected Column and set a column as leader command. For the table edit, there are Find and Property commands.

## Menu View

This menu has all the concrete production monitoring and control utilities.

1. Menu "Plant Ctrl" will open a new window allowing the operator to monitor and control the production process. A graphic plant layout will display the main batching screen. Control buttons will allow the user to manually control production.

2. Menu "Formula" has several sub menus such as "Target", "Ingredient price" and "Formula price". Some options related to mix design editing are also accessible under menu "Formula". The user can choose to show the water cement ratio during water target editing, or to show the admixture to 100 units of cement ratio during admixture target editing, or display ingredient target in alternative units during any ingredient target editing.

(a) "Target" is for mix design modifications. Any modification made from this menu will be downloaded to the BatchTron; however, any modification made directly from BatchTron will not be uploaded automatically. The user can manually compare, upload and download mix designs between the BatchTron and the computer. "How to Edit Mix Design" section has more information on this function.

(b) "Ingredient Price" is the sale price and cost price editor.

(c) "Formula Price" is for the mix design price editor. The ingredient's sale and cost price can be used as reference during mix design price editing. "Procedure to Edit Mix Design Price" has more info on how to use this function.

3. Menu "Sequence" has two sub menus: "Batching Sequence" and "Mixing Sequence".

- "Batching Sequence" is the sequence in which the ingredients are started.

- "Mixing Sequence" " is the sequence in which ingredients are discharged to the mixer or truck.

4. Menu "Inventory Receivership" is for material receipts, quantity editing and ingredient on hand adjustment.

5. Menu "Batch Ctrl Setting" is for batching and mixing parameter editing. Please check "How to Edit Batching and Mixing Control Parameters" section for more info.

6. Menu "Order Entry" has all Concrete production management utilities.

7. Menu "Report" has all the report utilities.

8. Menu "PLC" has all PLC communication commands.

(Please check "How to Edit Mix Design" and "How to Edit Batching and Mixing Control Parameters" sections for more information on how to use "Download to PLC", "Upload from PLC" and "Verify with PLC". Please check "How to Use PLC Memory Card" for more information on how to use "Check Memory Card Report")

9. Menu "Tools" has all the setup commands.

10. Menu "Window" has the all commonly used window arrangement commands.

## Tools Bar and Status Bar

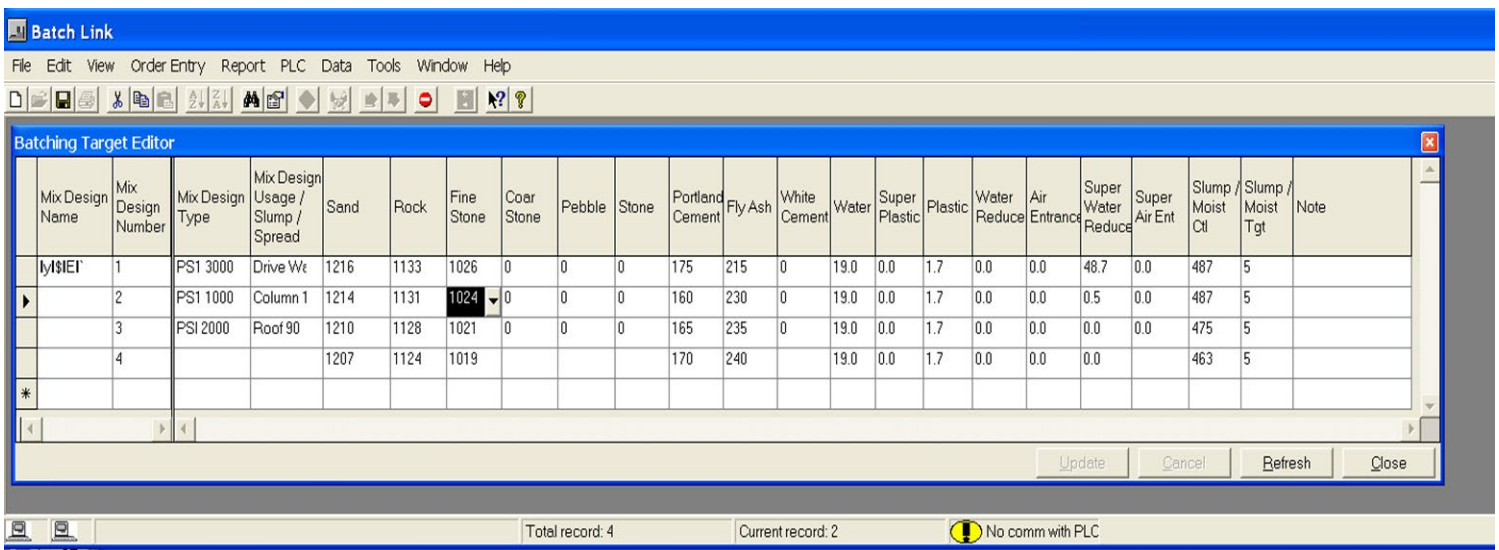
On top of the window is a menu. Below the menu is the tool bar button.

Frequently used menu items have tool bar buttons. The Toolbar button's function will be displayed when you hover your cursor over it.

There is status bar at bottom of the window. It shows if any data table is active. It also shows current connected PLC information.

## How to Edit Data in BatchLink

All data is displayed as a table. The mix design is shown here as an example:



The screenshot shows the 'Batch Link' software interface. The main window is titled 'Batching Target Editor' and contains a table with the following data:

Mix Design Name	Mix Design Number	Mix Design Type	Mix Design Usage / Slump / Spread	Sand	Rock	Fine Stone	Coar Stone	Pebble	Stone	Portland Cement	Fly Ash	White Cement	Water	Super Plastic	Plastic	Water Reduce	Air Entrance	Super Water Reduce	Super Air Ent	Slump / Moist Ctl	Slump / Moist Tgt	Note
ly18E1	1	PS1 3000	Drive Wt	1216	1133	1026	0	0	0	175	215	0	19.0	0.0	1.7	0.0	0.0	48.7	0.0	487	5	
	2	PS1 1000	Column 1	1214	1131	1024	0	0	0	160	230	0	19.0	0.0	1.7	0.0	0.0	0.5	0.0	487	5	
	3	PS1 2000	Roof 90	1210	1128	1021	0	0	0	165	235	0	19.0	0.0	1.7	0.0	0.0	0.0	0.0	475	5	
	4			1207	1124	1019				170	240		19.0	0.0	1.7	0.0	0.0	0.0		463	5	
*																						

At the bottom of the window, there are buttons for 'Update', 'Cancel', 'Refresh', and 'Close'. The status bar at the bottom shows 'Total record: 4', 'Current record: 2', and a warning icon with the text 'No comm with PLC'.

1. **Adding a new row:** A new row can be added by modifying any cell in the last row of the table.

2. **Column Sort:** (a) Highlight the column header, (b) Select the menu "File" -> "Sort" -> "Sort (AZ)" or "Sort (ZA)", or from sort buttons in the tool bar or from the pop-up menu (right click mouse then pick).

3. **Delete a row:** (a) Highlight the row from the row selector (far left tab on each row). (b) right click the mouse then delete.

4. **Copy / Paste a row:** (a) Highlight a row (b) Initialize the "Copy Row" functions from either the "Edit" menu or from the pop-up menu (right click the mouse then pick). (c) Select another row and initialize the "Paste Row" function from either the "Edit" menu or from the pop-up menu (right click the mouse then pick).

5. **Customizing a table:** table size, table display, column width, row height and column header captions can all be customized. Any column can be 'selected' and 'hidden' as required. All the dimension customization (size, position, width, height) can be adjusted by the mouse, clicking and dragging on the table's edge or on the boundary of the row/column. All other customization can be done from the "Edit" menu or from the pop-up menu (right click the mouse first). Some

customization functions are not available if "Disable Manager's Function" is checked. The "Disable Manager's Function" menu is under the menu "Tools" -> "Basic Setting". A password will be required to uncheck. Unchecking "Disable Manager's Function" will make all functions available. The default password is 123. See Security Principle section for detail.

6. **Table info:** Current row number and total row number is shown in the status bar.

### How to Edit a Mix Design (Formula)


1. A mix design can be edited from the computer. Any edited mix design will automatically download from the computer to the BatchTron.

**Note** you must ensure the PC is connected to the BatchTron when using this function

There are "Download to PLC", "Upload from PLC", and "Verify with PLC" commands under the menu "PLC". This menu will be active when the mix design edit window is active. These commands are designed for synchronizing the mix design between computer and BatchTron.

2. There are some configurations that need to be setup before editing the mix design from the computer side. These configurations will define the ingredient unit, quantity, decimal place, save size, mix design name, save size, mix design save area, total number of mix designs saved in the BatchTron. The mix design must be uploaded again if you change any of these setup parameters. If this is not done "Verify with PLC" will show "failed". All setup parameters are accessible under menu "Tools".



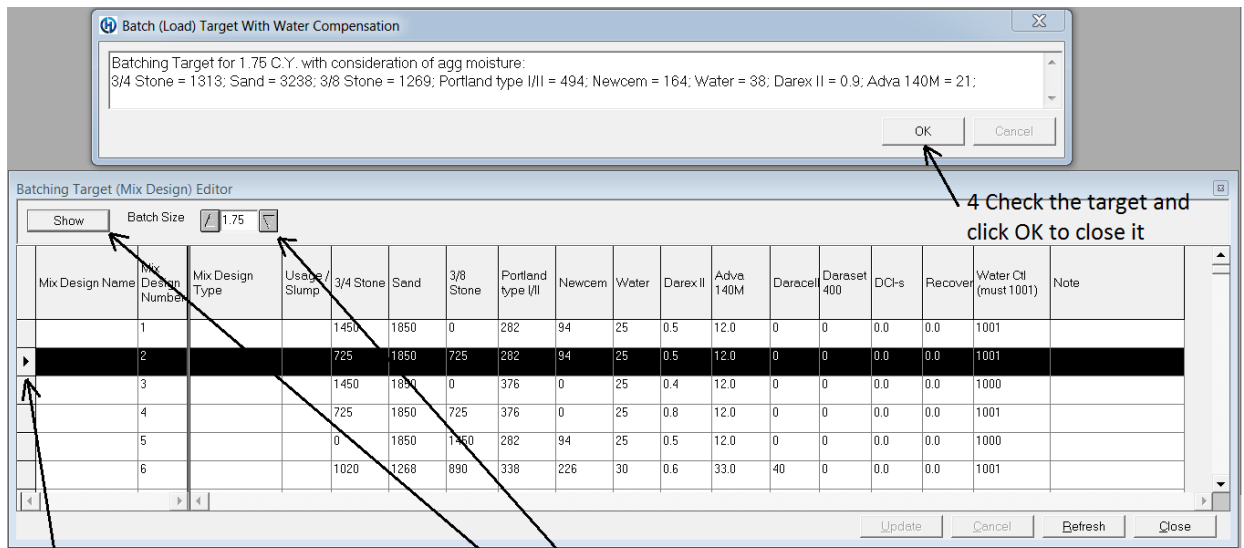
3. Click tool bar icon  or click menu "View" -> "Formula" -> "Target" to create a mix design (formula) edit from the computer. This menu is not available if "formula price" edit window is open. Mix design (formula) ingredient weight or volume should be for one cubic unit.

**Select any cell by mouse or by four direction arrow key on keyboard. Click Enter key to start edit, using up or down key for small change, type in new value for large change, click Enter key to finish the cell edit**

Mix Design Name	Mix Design Number	Mix Design Type	Usage / Slump	3/4 Stone	Sand	3/8 Stone	Portland type /III	Newcom	Water	Derec II	Adva 140M	Daracet	Deraset 400	DCI-s	Recover	Water Ctl (must 1001)	Note
3000 Grout W/S	7	3000 PSI	Block	0	0	2840	564	140	43.0	0.0	0.0	0.0					
3000 Residenta	8	3000 PSI	Footir	950	950	1425	336	84	26.0	26.0	5.0	0.0					
3500 Residenta	9	3500 PSI	Wall	925	925	1425	323	147	25.0	3.2	30.0	0.0					
4000N/Slag	10	4000 PSI		913	912	1450	517	0	24.0	3.8	32.0	0.0					
4500e5835%Air	11	4500 PSI		925	925	1375	428	230	30.5	5.3	40.0	0.0					
*																	

**Add new mix design from the last row. Mix design by default will be sorted by mix design number**

4. Select one row in the mix design editor table, change the batch size on top of the table, click "Show" button, the target for a particular batch size will be shown, the aggregate and water target will be compensated by the current aggregate moisture value.



1 Select one row to highlight one mix design


2 Change the batch size, here 1.75 is used as an example

3 Click Show button to show the target for 1.75 C.Y.

4 Check the target and click OK to close it

### How to Print the Mix Design

The mix design table may be wider than paper used in your printer. It is therefore recommended that if printing of mix designs is required, you save this file in an appropriate location and print using MS office, Excel or Access.

1. Open Mix Design by clicking tool bar icon  or click menu "View"->"Formula"->"Target"
2. Save the mix design to file by clicking menu "File"->"Save as CSV File"
3. Using Excel to open this file and print the mix design provides many additional page formatting tools.

### How to Edit Mix Design outside the BatchLink Application

The purpose of "Import CSV File" is to allow the user to edit the mix design (or other information) using Excel or Access and import the edited results into BatchLink.

The procedure is as follows:

1. Export the mix design to a CSV file by menu "File" -> "Save as CSV File"
2. Modify the CSV file using Excel or Access. Please do not change the table structure and column name during editing.
3. Import the file back into the application.



### How to Share Data with Other Applications

The batch or load data can be shared with other applications. There are two ways to share the data.

Option 1, manually save the data to a CSV file after production is complete so other applications are able to read this file.

Option 2, Use BatchLink to automatically update the CSV file batch by batch and other applications can then read the file to get the new production information batch by batch.

Procedure for Option 1:

1. Click menu "Data" -> "Batch Report Data" or "Load Report Data" depending on which information you would like to share.
2. Select the start and end date/time of the production.
3. All data regarding concrete target or actual values batched cannot be edited. Column names can be modified to match other application's column or field preference. See section "Menu Edit" for details on how to do this. The information can be sorted by any column, allowing the data to be sorted according to other application's preference. Edited names and sort selection will be saved by this application.
4. Select a group of rows by holding the "Shift" key while selecting the first row and last row; or pick up several rows by holding "Alt" key while selecting the rows. If you are sharing all production information you can skip this step.
5. Click menu "File" -> "Save as CSV File". Select a drive and folder to save the file to.

Procedure for Option 2:

1. Make sure no new reports are pending and no production is running.
2. Follow step one and two from option 1 above.
3. Make sure the date/time column is sorted from old to new, re-sort the column if necessary.
4. Click menu "File" -> "Save as CSV File". Select the folder: \BatchLink Support Files\; the file name must be Recording.CSV.
5. Make sure the menu "Tools" -> "Basic Settings" -> "Maintain Batch Data as CSV" is checked.
6. Close BatchLink then Restart the BatchLink.
7. BatchLink will update the Recording.CSV file after receiving every batch report. Other applications can read the Recording.CSV file periodically to get the new production information. The batching history is stored in the "Recording.CSV file". The historical data can be saved as per the specified time entered in menu "Tools" -> "Basic Settings" -> "Report Paging Settings".

Note BatchLink cannot verify if any reports are missing in the Recording.CSV file when compared to the database in the BatchTron.

### Procedure to Edit Mix Design Price

The delivery ticket can calculate and show the ingredient cost and concrete sale price. The cost/price calculation is based on the mix design price.

The Material Usage and Production report can calculate and show the cost by both mix design and actual ingredient values. The cost by mix design is calculated by individual batches mix design price (menu View -> Formula Price) and batch size. All batches are added together to get the cost by mix design value. The cost by ingredient is calculated by total ingredient usage and ingredient cost price. The ingredient cost price value is calculated from the first row in the menu View -> Formula Price -> Cost Price. The report value for cost by mix design will change if the formula price is changed after batching. The report value for ingredient will also change any time the first low value in the ingredient cost price is changed.

The Production Report Summary in Batch reports also shows the cost for each batch. This cost is based on formula price. This cost will not change if the formula price is changed after the load is complete.

Procedure to edit the mix design price.

(a) Edit mix design by menu "View" -> "Formula" -> "Target".

(b) Edit ingredient cost price and sale price by menu "View" -> "Formula" -> "Ingredient Price". This window will be not available while the mix design price editing window is open.

(c) Mix design (Formula) price can only be edited when both mix design edit window and ingredient price edit windows are closed.

(d) Edit mix design price by menu "View" -> "Formula" -> "Formula Price". In "Batch Formula Price Editor" window, each mix design has a price, which is editable. This price is for one cubic unit. There are ingredient cost prices and sale prices available as a reference. These ingredient prices are only changeable by selecting different ingredient price names. The cost or sale price will be refreshed by clicking the update button after the cost or sale price has been changed.

(e) A plant may have multiple material suppliers bringing in the same material. For this reason, the Ingredient Cost Price Editor table can have multiple rows. However, only the first row will be used by the Material Usage and Production report. The "price name" can be changed. The price name column sort function will arrange the row in alphabetical order.

## How to Calculate Concrete Yield

The mix design editor table can display the concrete yield. There are three ways to calculate the yield. Some calculation parameter must be entered from menu "View" -> "Concrete Yield" -> "Calculation Parameter". Calculation method can be selected by check "by Unit Weight" or "by Specific Gravity" or "by Relative Specific Gravity".

The screenshot shows the 'Plant Link' software interface. A menu is open under 'View' -> 'Concrete Yield' -> 'Calculation Parameter'. The 'Calculation Parameter' sub-menu is visible with three options: 'by Unit Weight' (checked), 'by Density', and 'by Specific Gravity'. A table of mix designs is displayed below. The table has columns for Mix Design Name, Mix Design Number, Mix Design Type, Usage/Slump, and various material quantities. The first row is highlighted, showing a yield of 0.9767. Red arrows and text annotations explain the calculation process.

**Annotations:**

- Click on Mix Design Type cell on any row, the yield value for that mix design will be calculated and shown on top of the cell. Click on Mix Design Name or Usage / Slump cell will get the same result.
- Here mix design 7 (3000 Grout W/S) will yield 0.9767 C.Y. based on unit weight. By Specific Density will calculate yield with higher accuracy.
- select calculation method. Here by Unit Weight is shown as an example. In the Calculation Parameter table, there is density or specific density for each ingredient and unit weight. Only unit weight parameter will be used if by Unit Weight is checked

Mix Design Name	Mix Design Number	Mix Design Type	Usage/Slump	3/4 Stone	Sand	3/8 Stone	Portland type (II)	Newcem	Water	Derec	Advs 140M	Daracal	Doraset 400	DC-Is	Recove	Water Ct (max1001)	Note
3000 Grout W/S	7	Yield=0.9767	Block	0	0	2840	564	140	43.0	0.0	0.0	0.0					
3000 Residents	8	3000 PSI	Footr	950	950	1425	336	84	26.0	26.0	5.0	0.0					
3500 Residents	9		Wall	925	925	1425	323	147	25.0	3.2	30.0	0.0					
4000NSleg	10	4000 PSI		913	912	1450	517	0	24.0	3.8	32.0	0.0					
4500S5835%Ar	11	4500 PSI		925	925	1375	428	230	30.5	5.3	40.0	0.0					

If sub menu "by Unit Weight" is checked, then Concrete Unit Weight must be entered in "Concrete Yield Calculation Parameter Editor" table. All other columns can be left as zero. If the sub menu "by Specific Gravity" is checked, specific gravity (density) must be entered under all solid ingredient and water in "Concrete Yield Calculation Parameter Editor" table. All other columns can be left as zero. If sub menu "by Relative Specific Gravity" is checked, relative specific gravity (relative density) must be entered under all solid ingredient and water in "Concrete Yield Calculation Parameter Editor" table. All other column can be left as zero. If no calculation method is checked, BatchLink will not calculate yield.

The simplest way to calculate the yield is to enter the Concrete Unit Weight. The unit should be lbs/C.Y., if units used are pounds or Kg/C.M. , if units used are kilograms. In cases were 0.5 cubic foot containers are used to measure fresh concrete. Assuming the 0.5 C.F. container net weight is 72.3 lb, then  $(27 * 2 * 72.3)$  3904.2 lb should be entered under the column 'Concrete Unit Weight'

### How to Get Reports

BatchLink produces several reports, the most common being batch reports, load (truck) reports, material usage reports, production reports and inventory reports. Batch and load reports can have different formats for different plants. Load report are typically used for ready mix applications.

### 1 Procedure to open or print a report

Only several months report will open at any time to reduce open time and computer memory usage

Click here to open a report selector

Click here to select one row, or hold Ctrl key from keyboard and click several rows, or hold Shift key from keyboard and click one row as start and another row as end to select a row group. Selected row will be highlighted

Check this before select start and end

Select start date / time and end date / time from here. Selected time will be remembered as default for next report selector

Check this and change mix design number to select report for one particular mix design. This can be selected together with start and end to select report for one mix design within a time period.

Batch Size, etc. can also be selected as combination report selection condition.

Click here to show all the reports which meet the selection condition

Click here to check is any report missing

- Click menu "Report" -> sub menu "Batch".
- Select begin date / time, end date / time etc.
- Click "Show Report" button to open the report.
- Click tool bar printer icon to print the report.

### 2 Change how many reports are opened at the same time.

Including several thousand reports into report selector table may take time and use excessive computer memory. For this reason reports from several months ago may not need to be opened. BatchLink has a function to define how many months of the report need to be included in the report selector table and allow to select a time period before opening the report selector. This function

can be accessed from menu "Tool" -> sub menu "Basic Settings" -> "Report Paging Settings". In "Report Paging Setting" dialogue window, if 1 is entered as report period, only one month plus the current month report will be included in the report selector table. If "Yes" is entered this allows you to modify report interval, and a date period dialogue window will be open before opening the report selector table.

### Inventory Reports

Inventory (on-hand) reports rely on the batch report value and material received value. Receivership value must start with a date / time, prior to the date / time of first batch report. If this initial date / time is not known, a 1 must be entered under the column of a specific ingredient name as received amount before first batch begins. Inside receivership table, date and time column can be left empty, column with ingredient name (receivership column) is used to enter amount received and the date / time, on hand column is for inventory adjustments. Receivership column and on hand column cannot have the same value (one column must be empty or set as zero). If on hand column is empty and receivership column has a value, after clicking the "Update" button, on hand column will be populated to show the entered amount of material available. If on hand column is not empty and receivership column is empty, after clicking the "Update" button, receivership column will be populated to show how much material is supposedly received.

After editing the receivership table, the inventory report can be used to check how much material is on-hand at any time. The on-hand amount will have the same accuracy as the scale, it will not accumulate the material for the batch if it is aborted before a report is entered. For this reason, the inventory report may show incorrect amounts after several months production. If this happens, the receivership table can be edited by entering a new date, time and a new on hand amount to adjust the inventory report. This on hand amount can be positive or negative to increase or decrease the amount reported by inventory report

### How to Start Concrete Production from the Computer (PC)

There are two ways to start production from the PC side. The first method is used for single batch or single load production. This method is also the simplest approach. It only needs the Load Entry Table.

#### 1. Starting Single load production using the Load Entry Table Only.

(a) Prepare the BatchTron.

From the **Touchscreen on the BatchTron** ensure the "Demand Enable" button is blue and enable the "Truck in Place" button.

(b) **On the PC** Click the menu "Order Entry" -> "Load Entry" to open Load Entry editor.

(c) Add a new row or select an existing row to modify it.

(d) Enter Formula (Mix Design) number by clicking on the down arrow button on the right side of the Formula Number cell, or by pressing the enter key when the Formula number cell is highlighted. The predefined Formula (Mix Design) table will open to allow the selection of a formula. Using the up and down arrow keys on the keyboard or using the scrolling bar with the mouse select the desired row from the Formula table. Press the enter key or double click on the selected row to select a formula and close the Formula table. Formula type and Formula usage will be updated at the same time the Formula number is updated; however, these two cells can be independently modified if required after you update the Formula number.

(e) Enter a load size by clicking on the down arrow button on the right side of the Load size cell, or by pressing the enter key when the Load size cell is highlighted. A digital value editor will open. Use the up and down keys to adjust the value, or type in a new value, or by clicking on the down arrow button on either side of the editor to modify the value. Pressing the enter key to finish the

value editing or Esc key to abort the editing.

(f) Update the Load entry table by clicking the Update button.

(g) Highlight the modified row in the Load entry table (Click the row selector from the far left of the table).

(h) Click the menu "PLC" -> "Start Load" to start the load.

(i) The menu "PLC" -> "Start Load" Or click the Start Load button on the toolbar will be grayed out if the BatchTron is not ready for a new load. Sometimes the BatchTron may hang during the production due to external issues identified on the plant such as a gate which is still open. In this case, if the production cannot start, the Abort button must be pressed on the BatchTron control panels touch screen to enable the "Start Load" submenu.

The Formula Number and Load Size is the minimum requirement before starting production. All other cells are for the report function, they can be left blank. Any modification on these cells will be sent to the Load Report accordingly.

For ready mix, all information pertaining to the mixer truck can be entered in the Truck/Driver submenu.

All information pertaining to the customer or casting bed position can be entered in the Customer submenu.

2. Starting multi Load Production using Load Entry, Order Entry and Job Entry--Systematically.

When repeat batching for continuous production is required the following sequence should be used. It is assumed all these loads will share some common information such as the formula information, customer information, etc. In this case, an Order Entry can be defined before designing the Load Entry. Similarly, a Job Entry can be created before modifying the Order Entry.

#### Getting Cumulative Order Totals

The load report can show cumulative order totals. The value will be identified by the Load Information (name or ID) plus customer name. If the Load Information (name or ID) is not assigned, then only the customer's name will be used.

The calculation without any taxes is:  
sum of [load size] x [Mix design price]

This value and a correct tax rate together can be used to get the cumulative price for the order or customer.

If a customer only places 1 order, then the Load Information (name or ID) in the load entry table can be left empty. However, if same customer places multiple orders the Load Info (name or ID) in load entry table must be populated with different order name or order ID to identify the totals for each order.

The split ticket columns in the load entry table are used for special items such as hand added materials like fibers or special manually added admixtures.

## How to Start Concrete Production from the Computer (PC) for Multiple loads

All the loads in a particular order can be started if the Order Size in the Load Entry is populated. To enable this function on the BatchTron select "Enable Order Size" on the Demand page. The BatchTron will start another new load as soon as the last batch is complete. The operator only needs to confirm that the truck is in place for each load.

## Editing Batching and Mixing Control Parameters

1. All batching and mixing control parameter can be edited from the computer. Editing any parameter will automatically be downloaded from computer to the BatchTron if the computer is connected to the BatchTron.

2. Procedure to edit or check any control parameter

1 Click here to open Control Parameter Group Selection

2 Select one group to narrow the selection

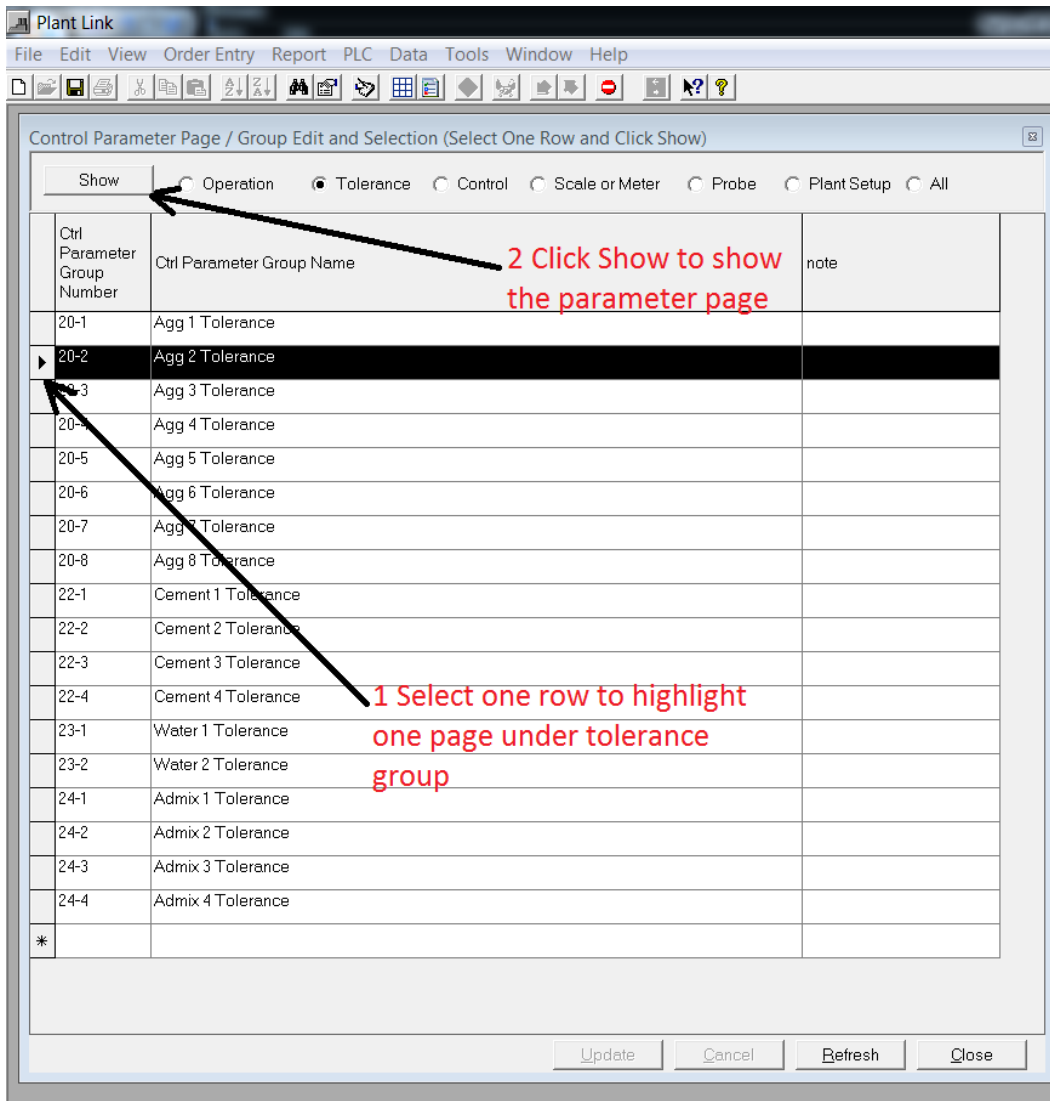
Ctrl Parameter Group Number	Ctrl Parameter Group Name	note
14-1	Agg Moisture	
19-1	Diagnostic-Tolerance Historian	
19-2	Diagnostic-Agg Moisture Historian	
19-3	Diagnostic-Mixer moisture Historian	
19-4	Diagnostic-Report Statistics	
19-5	Diagnostic-Analogue Input and Output	
19-6	Diagnostic-System	
20-1	Agg 1 Tolerance	
20-2	Agg 2 Tolerance	
20-3	Agg 3 Tolerance	
20-4	Agg 4 Tolerance	
20-5	Agg 5 Tolerance	
20-6	Agg 6 Tolerance	
20-7	Agg 7 Tolerance	
20-8	Agg 8 Tolerance	
22-1	Cement 1 Tolerance	
22-2	Cement 2 Tolerance	
22-3	Cement 3 Tolerance	
22-4	Cement 4 Tolerance	

The Operational group has the Aggregate bin moisture value, using the moisture probe will automatically propagate this value, if no probe is used/connected then you can manually enter a value. The Tolerance group has all ingredient's tolerance parameters, for example the tolerance amount to trigger an alarm.

The Control group has all the general control parameters, for example, cement weigh hopper vibrator or aeration equipment on/off status. Moisture probe group has parameter for the probe assignment and filter. Plant setup group has plant configuration parameter, for example, select cement weigh hopper has a fully closed limit switch.

Each parameter has a full description to aid the operator when editing.

(a) All control parameters are grouped by function. There are operational groups, tolerance groups, control groups, scale or liquid meter groups, moisture probe groups and plant setup groups. All groups are accessible through menu "View" -> "Ctl Parameter Group Selection". Each group has several sub groups. Each page has several parameters which are all related to each other.



(b) Select one group from the top of the "Control Parameter Page / Group Edit and Selection" window. Select one row to highlight one page. Click the "Show" button from the top to view the page.

(c) Edit the value for one or more parameter and click "Update" to save the change.

3. There are "Download to PLC", "Upload from PLC" and "Verify with PLC" commands under menu "PLC". This menu will be active when the parameter edit window is active. These commands are designed for synchronization of the parameters between the computer and BatchTron.

All control parameters defined in the BatchTron can be added and modified from the BatchLink application.

### Backup, Delete and Import Reports

The records in the database will accumulate, depending on how many batches you make per day, the report opening procedure will take longer as reports accumulate. You can speed up this procedure by backing up historical reports to another folder and delete or renew all the reports. This "Backup" will also provide a backup should the local computer fail for any reason. The "Renew" will check your report saving file's integrity and improve the safety on the report saving. You can use menu "File" -> "Import Database Files" to get reports from a backup.

### Scheduled Reports, Backup and Archive

The BatchLink can automatically backup all saved reports and all the database files to a sub folder inside the default backup folder. The sub folders name is the scheduled day (day-month-year). BatchLink can also automatically empty the report database after a scheduled backup. This second automatic action is called Archive. The schedule for the archive should be longer than or equal to the schedule for the backup. Archive only deletes reports from the database not mix design etc. You must adjust the inventory from menu "View" -> "Receivership" to compensate the material usage released by the deleted report after archiving.

You can enable/disable scheduled backup or archive functions, change the schedules, check the next due date and verify the success or failure of the backup / archive using the following procedure:

- (a) Click the menu "Tools" -> "Schedules".
- (b) Select backup or archive method. The function for each selection is as follows:  
Disable will stop the backup / archive. Remind me will display reminder message only  
Auto schedule will run backup /archive on each due date.
- (c) Select different backup or archive schedule. The due date for each selection is as follows:  
Weekly, Monthly, Quarterly. Bi annual will be July 1<sup>st</sup> and January 1<sup>st</sup> Yearly will be January 1<sup>st</sup>  
BatchLink will run backup / archive at the first instant on the due day.
- (d) Check next backup or archive due date.
- (e) Check previous backup or archive running result (success or fail).

### Backup All Saved Reports

In the "File" menu, click submenu "Backup Database Files". All databases will be copied to the default folder; or any preferred folder. It is highly recommended that the backup folder is on a USB drive or external hard drive. The backup folder should be named by year, month, date. There is a backup note file which contains the backup date and time. This file will be automatically saved in the backup folder. **Do not** change the backup file's name. The BatchLink program will check the file name before importing to the database.

### Importing Reports from a Previous Backup / Archived Database

If you permanently need to access a previously archived report, you can re-import reports back to the system.

- (a) Click menu "File" -> "Import Database Files".
- (b) Select the database file: RECORDINGV2000.MDB.



Remember, the backup file should use its original name.

You must adjust the inventory from menu "View" -> "Receivership" to compensate the material usage accumulated in the imported report after importing archival report.

#### Opening a Report from a Previous Backup / Archived Database

If you only need to reference the previous backup report occasionally, you can open it as archived reports from the folder where you have saved the backup reports files.

The archive reports file open procedure is as the following:

(a) Click menu "Report" -> "Archival Report".

(b) Select the database file: RECORDINGV2000.MDB.

Remember, the backup file should use its original name.

#### Using a PLC Memory Card

Batch reports are saved into PLC memory card of your BatchTron. This is a more secure backup compared with computer hard drive. Millions of batches can be saved on the card. There are two ways to access these reports.

1. From menu "File" -> "Import Text File" -> "Import PLC Memory Card".

(a) Unplug the PLC memory card from the PLC in your BatchTron and plug it into a memory card reader. Make sure there is no production in progress or pending before unplugging the card.

(b) Copy / paste the report files from PLC memory card to a temporary folder on the computer. Plug the memory card back into the PLC on your BatchTron. All batch reports are saved monthly on the card. All report files have the same name convention of YY-MM. Here YY is two digits for year, MM is two digits for month.

(c) Use menu "File" -> "Import Text File" -> "Import PLC Memory Card" to select the reports need to be imported. The user can select either import all reports or only the unread reports.

2. Direct from the BatchTron PLC.

(a) Ensure no production is in progress or pending. This method while secure is fairly slow so it is best to do this after batching is completed for the day.

(b) Use menu "PLC" -> "Check Memory Card" to show PLC Memory Card Info Display and File Selection window. This window shows all monthly saved batch report files recorded on the card. The top row shows the information of the card. Other rows are report files. One row per month. Each row shows how many reports have been recorded in the file and other useful information.

(c) Select the file you wish to import and click the OK button to continue importing the report. The user can select either import all reports or only the unread reports.

### Display Production Data as Trend Graph

BatchLink Studio - Plant Historian application can display any production data as graph. The mixer moisture probe reading, slump meter reading, mixer temperature and free water in the aggregate are some examples of data which can be added to the data graph. BatchLink will record this data. The Plant Historian application will display the recorded data as a trend graph.

#### 1 Procedure to setup data for recording

(a) Using menu "Tools" -> "HMI Design" -> "Plant Historian Settings" to setup the recording function.

(b) Using menu "Tools" -> "HMI Design" -> "Plant Historian Address Setting" to add or remove data you would like to record.

#### 2 How to show the trend graph

Run Plant Historian to display the data as a graph. Plant Historian application has all the settings built in to control how the graph is displayed. Automatically refresh the graph as new data recorded by BatchLink; Refresh interval, Data display color etc.

### Security

There are total of six security clearance levels for special operational functions.

Level 1 Modify mix designs.

Level 2 Start a load from load entry.

Level 3 Modify receivership data.

Level 4 Import data or delete data.

Level 5 Modify the control parameters.

Managers can assign passwords to each security level. The procedure is as follows:

(a) Uncheck "Disable Manager's Function" from menu "Tool" -> "Basic Setting".

(b) Select "Change Manager or Operator Password" from menu "Tool" -> "Basic Setting".

(c) Enter managers password. Modify password for each security level. or allow all operators to use the default security level. The default password for each level is 1 to 5. The default security level for all operators is 5.

If an in-correct password is entered you will only be able to view data.

If "Disable Manager's function" is unchecked, the System will treat the current operator as the manager, making all operational functions available without the need of any password.

"Disable Manager's function" must be checked to enable the security principle.

Manager password can be modified from menu "Tools" -> "Basic Settings" -> "Password" -> "Change manager or Operator Password". The default password is 123.

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